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

MISS UTILITY
CALL BEFORE YOU DIG

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION CONSTRUCTION DRAWINGS

CITY OF ROCKVILLE
MONTGOMERY COUNTY, MARYLAND

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD– 378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

GENERAL SITE NOTES

1. TOPOGRAPHIC SURVEY PERFORMED BY BAYLAND CONSULTANTS & DESIGNERS, INC., DATED 3–28–2019.
2. HORIZONTAL AND VERTICAL CONTROL ESTABLISHED FROM REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) CONTROL POINTS. TRAVERSE POINTS ARE IRON REBAR UNLESS OTHERWISE SPECIFIED. COORDINATES AND BEARINGS SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD83/1991). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD'88).

INT	NORTHING	EASTING	ELEVATION	DESCRIPTION
TPS #1	519,241.70	1,275,119.33	389.60	REBAR W/ CAP
TPS #2	519,638.49	1,274,844.50	406.92	REBAR W/ CAP
TPS #3	519,460.32	1,274,612.09	392.84	REBAR W/ CAP
TPS #4	519,263.20	1,274,766.29	380.77	REBAR W/ CAP
TPS #5	519,120.16	1,275,007.91	386.20	REBAR W/ CAP

3. CONTOURS AND PLANIMETRICS SHOWN OUTSIDE OF LIMIT OF WORK ARE BASED ON CITY OF ROCKVILLE 2013, 2014 & 2017 GIS TOPOGRAPHY.
4. PROPERTY LINES SHOWN ARE BASED ON MONTGOMERY COUNTY 2014 CADASTRAL DATA.
5. ONLY TREES WITH A 6" DIAMETER OR GREATER THAT ARE WITHIN THE LIMIT OF WORK WERE FIELD LOCATED.
6. FEMA FIRM #24031C0334D EFFECTIVE SEPTEMBER 29TH 2006 SHOWS THAT THE PROJECT SITE IS NOT WITHIN FEMA FLOODPLAIN LIMITS.
7. ROCKS SHOWN IN PLAN VIEW AND PROFILE ARE SYMBOLIC AND DO NOT REPRESENT INDIVIDUAL STONES.
8. THE FACILITY DISCHARGES TO ROCK CREEK VIA AN UNNAMED TRIBUTARY (ROCK CREEK WATERSHED MD BASIN CODE: 02140206) WHICH IS A USE I STREAM WITH A STREAM CLOSURE PERIOD FROM MARCH 1ST THROUGH JUNE 15TH.
9. THE PROJECT SITE IS NOT LOCATED WITHIN THE CRITICAL AREA.
10. AS PER COORDINATION WITH THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, THE PROJECT IS EXEMPT FROM STATE WETLAND AND WATERWAY IMPACT PERMITTING AS ALL RESOURCES ARE WITHIN THE EXISTING FACILITY. THE PROJECT QUALIFIES AS A SELF–VERIFICATION ACTIVITY UNDER THE U.S. ARMY CORPS OF ENGINEERS TMDL REGIONAL GENERAL PERMIT ACTIVITY A: RETROFITS OF EXISTING STORMWATER MANAGEMENT FACILITIES.
11. THE GENERAL PERMIT NUMBER FOR STORMWATER DISCHARGE FROM CONSTRUCTION ASSOCIATED ACTIVITY GREATER THAN 1 ACRE IS MDRCP05H2.

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROCKVILLE STANDARD SPECIFICATIONS OR DETAILS FOR CONSTRUCTION UNLESS OTHERWISE NOTED. THE STATE HIGHWAY ADMINISTRATION'S HIGHWAY'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND THE BOOK OF STANDARDS FOR HIGHWAY & INCIDENTAL STRUCTURES SHALL BE USED IF NO CITY OF ROCKVILLE STANDARD OR DETAIL EXIST.
2. THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO THEIR 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 THE CONTRACTORS OWN EXPENSE.
3. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1–800–257–7777 AND THE CITY UTILITIES MAINTENANCE DIVISION AT 240–314–8567 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 EQUIPMENT.
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 THEIR RESPONSIBILITY TO COMPLETE SUCH WORK.
6. ALL TREES WITH A DIAMETER GREATER THAN 12 INCHES WITHIN THE LIMIT OF DISTURBANCE SHALL NOT BE REMOVED UNLESS PRIOR APPROVAL IS OBTAINED OR EXPLICITLY SHOWN ON THE PLANS TO BE REMOVED. ALL TREES TO REMAIN WITHIN THE LIMIT OF DISTURBANCE THAT ARE NOT TO BE REMOVED SHALL BE PROTECTED.
7. ALL FILL AREAS SHALL BE CLEANED OF ALL VEGETATION AND DEBRIS, SCARIFIED TO A MINIMUM DEPTH OF 12 INCHES PRIOR TO THE PLACEMENT OF FILL. FILL MATERIAL SHALL BE PLACED IN CONTROLLED LIFTS WITH A MAXIMUM THICKNESS OF 12 INCHES PRIOR TO COMPACTION THAT IS CONTINUOUS OVER THE ENTIRE AREA OF FILL. EACH LAYER OF FILL SHALL BE COMPACTED WITH THE MINIMUM NUMBER OF PASSES NECESSARY TO PRODUCE A FULL ASYMPTOTIC COMPACTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS TESTING INCLUDING CONCRETE, FLOWABLE FILL, HOT MIX ASPHALT AND FILL COMPACTION. ALL MATERIALS TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND SHALL BE COMPENSATED FOR AS PART OF THE APPROPRIATE PAY ITEM.
9. SEE STANDARD GEOTECHNICAL NOTES FOR FILL COMPACTION TESTING REQUIREMENTS.
10. ALL DISTURBED AREAS SHALL HAVE PERMANENT OR TEMPORARY STABILIZATION COMPLETED WITHIN:
    - 10.A. END OF THE WORK DAY FOR AREAS WITHIN WATERWAYS.
    - 10.B. THREE CALENDAR DAYS ON SLOPES GREATER THAN 3:1 AND TO THE SURFACE OF ALL PERIMETER SEDIMENT CONTROLS.
    - 10.C. SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS.
11. ALL DISTURBED AREAS WITH SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH 100% BIODEGRADABLE SOIL STABILIZATION MATTING THAT HAS A SUFFICIENT DESIGN SHEAR STRESS FOR THE APPLICATION OR AS SHOWN ON THE APPROVED SEDIMENT AND EROSION CONTROL PLANS.
12. ALL PERMANENTLY STABILIZED AREAS SHALL INCLUDE A MINIMUM OF 4" OF TOPSOIL PER THE 2011 MDE SPECIFICATIONS.
13. ALL STAKING, RESTAKING, AND CUT SHEETS SHALL BE PERFORMED BY A REGISTERED LAND SURVEYOR OR PROFESSIONAL ENGINEER AT THE CONTRACTOR'S EXPENSE.
14. ALL CONSTRUCTION TO BE PERFORMED IN ACCORDANCE WITH STATE OF MARYLAND OCCUPATIONAL SAFETY LAWS.
15. CONTRACTOR MUST ENSURE THAT COPIES OF FEDERAL, STATE, AND CITY PERMITS ARE POSTED ON SITE PRIOR TO THE START OF ANY WORK.
16. ALL ROADS SHALL BE CLEANED AND CLEARED BY THE END OF EACH DAY. ANY MUD OR ROCKS TRACKED ON THE ROADWAYS SHALL BE SWEPT BEFORE THE END OF SHIFT EACH DAY.
17. CONTRACTOR SHALL RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITY. THIS SHALL INCLUDE BUT IS NOT LIMITED TO GRASS AREAS, ROADS, PAVED AREAS, ETC...

SITE ANALYSIS

1. TOTAL SITE AREA:	5.90 ACRES
1.1. PROPOSED DISTURBED AREA:	2.35 ACRES
2. TOTAL AREA TO BE STABILIZED:	2.35 ACRES
2.1. TOTAL EX. IMPERVIOUS AREA:	0.18 ACRES
2.2. TOTAL EX. IMPERVIOUS AREA TO REMAIN:	0.18 ACRES
2.3. TOTAL PR. IMPERVIOUS AREA:	0.00 ACRES
2.4. TOTAL TO BE STABILIZED WITH VEGETATION:	1.42 ACRES
2.5. TOTAL POOL AREA:	0.75 ACRES
3. PROPOSED IMPERVIOUS AREA:	0.00 ACRES
4. ESTIMATED CUT:	4030 CY
5. ESTIMATED FILL:	300 CY

NOTE:
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. ESTIMATED CUT QUANTITIES DO NOT INCLUDE UNDERCUT FOR RIPRAP, STONE, IMPERVIOUS BACKFILL OR THE STRIPING OF TOPSOIL IN AREAS OF PROPOSED FILL OR OUTSIDE THE LIMITS OF GRADING. ESTIMATED FILL QUANTITIES DO NOT INCLUDE MATERIAL FILLS SUCH AS RIPRAP, STONE, IMPERVIOUS BACKFILL OR TOPSOIL.

SHEET LIST TABLE

SHEET	DESCRIPTION
1	COVER SHEET
2/FC–01	TREE TABLE
3	BORING LOGS
4/FC–02	EXISTING CONDITIONS & NNI REMOVAL PLAN
5	SITE PLAN
6	PROFILES & DETAILS
7	PROFILES & NOTES
8	CROSS SECTIONS
9	RSC DETAILS & NOTES
10	NEAL DRIVE BIORETENTION
11	WESLEY ROAD BIORETENTION
12	STRUCTURE DETAILS & NOTES
13	DRAINAGE AREA MAP
14	EROSION & SEDIMENT CONTROL PLANS
15	EROSION & SEDIMENT CONTROL PLANS
16	EROSION & SEDIMENT CONTROL NOTES & DETAILS
17	EROSION & SEDIMENT CONTROL NOTES
18	TRAFFIC CONTROL PLAN
19/FC–03	FOREST CONSERVATION AND PLANTING PLAN
20/FC–04	FOREST CONSERVATION AND PLANTING PLAN NOTES AND DETAILS
21/FC–05	FOREST CONSERVATION AND PLANTING PLAN NOTES AND DETAILS
22/FC–06	FOREST CONSERAVTION AND PLANTING PLAN NOTES

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"Integrating Engineering and Environment"
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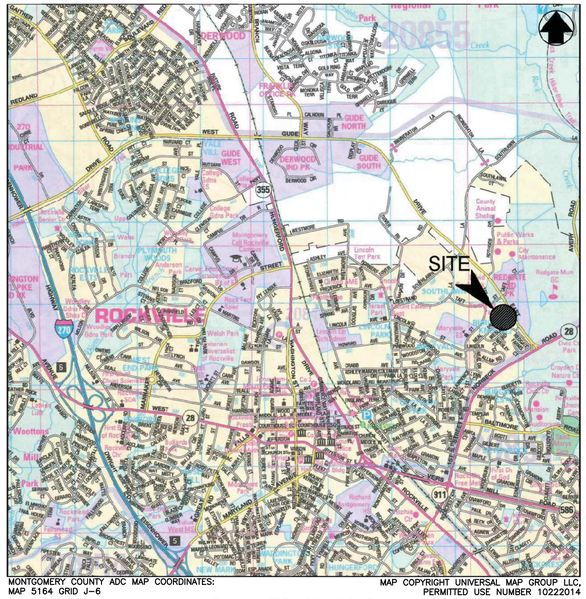
Phone: (410) 694-9401
Fax: (410) 694-9405
www.baylandinc.com
BAYLAND JOB NO. 8_31901



MONTGOMERY COUNTY ADC MAP COORDINATES:
MAP 5164 GRID J–6

MAP COPYRIGHT UNIVERSAL MAP GROUP LLC,
PERMITTED USE NUMBER 10222014

LOCATION MAP

SCALE: 1"=2000'

LEGEND

TRAVERSE POINT	TPS# 1 △
EX. PROPERTY LINE/RIGHT–OF–WAY	
EX. MAJOR CONTOUR	–380–
EX. MINOR CONTOUR	–382–
EX. ROAD	
EX. TREELINE	
EX. WOOD FENCE	
EX. SOIL	2uB
EX. EASEMENT	
EX. SEWER & MANHOLE.	EX. 12" SS Ⓢ EX. 12" SS
EX. STORM DRAIN, INLET & MANHOLE	EX. 12" RCP SD Ⓢ SD
EX. WATER & VALVE	
EX. TREELINE	
EX. CRITICAL ROOT ZONE	
EX. TREE	
EX. TREE (TO BE REMOVED)	
EX. LIGHT POLE	
EX. UTILITY POLE	∅
EX. FIRE HYDRANT	
EX. SIGN	
EX. GUY WIRE	
PR. MAJOR CONTOUR	380
PR. MINOR CONTOUR	379
PR. ODD CONTOUR	381.30
BORING LOCATION	B–1
PR. LIMIT OF DISTURBANCE	LOD
PR. EASEMENT	
PR. RIPRAP	
PR./EX. TC PATH	← ← ←
PR./EX. DRAINAGE AREA	
PR. TREELINE	
PR. CHAINLINK FENCE	X
PR. SD PIPE AND HEADWALL	PR. 20 LF 48" RCP SD

Approved 8/10/2021
Montgomery Soil Conservation District

CITY OF ROCKVILLE GENERAL NOTES (11/16)

1. THE APPLICANT IS THE ENTITY FOR WHICH THE CITY OF ROCKVILLE DEPARTMENT OF PUBLIC WORKS (DPW) HAS ISSUED A PERMIT. FOR DPW PROJECTS WHERE A PERMIT IS NOT APPLICABLE, THE ENTITY FOR WHICH THE CITY CONTRACT IS ISSUED SHALL BE CONSIDERED THE APPLICANT IN THESE NOTES. THE APPLICANT IS RESPONSIBLE FOR ALL CONTRACTORS, AGENTS, SUBCONTRACTORS, OR OTHER ENTITIES COMPLETING WORK UNDER THIS PERMIT AND/OR APPROVED PLAN.
2. THE APPLICANT MUST ARRANGE A PRE–CONSTRUCTION MEETING PRIOR TO COMMENCING ANY WORK. PROVIDE AT LEAST 48 HOURS OF NOTICE TO THE FOLLOWING: CITY PROJECT INSPECTOR LISTED IN THE PERMIT, CITY FORESTRY INSPECTOR AT 240–314–8713, IF REQUIRED BY EITHER A DPW AND/OR FORESTRY PERMIT, OR DPW SEDIMENT CONTROL INSPECTOR AT 240–314–8879, IF REQUIRED BY PERMIT.
3. THE APPLICANT MUST CONTACT MISS UTILITY AT 1–800–257–7777 OR #811 OR MISSUTILITY.NET SO THAT UTILITIES ARE MARKED PRIOR TO HOLDING ANY PRE–CONSTRUCTION MEETING.
4. INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES BY DIGGING TEST PITS AT THE UTILITY CROSSINGS WELL IN ADVANCE OF TRENCHING. IF CLEARANCE IS LESS THAN SHOWN ON THIS PLAN, CONTACT THE PROFESSIONAL ENGINEER WHO STAMPED THE DESIGN PLANS BEFORE PROCEEDING WITH CONSTRUCTION.
5. MAINTAIN A MINIMUM ONE–FOOT VERTICAL CLEARANCE BETWEEN ALL CITY UTILITIES CROSSING ANY OTHER UTILITY. UNLESS OTHERWISE NOTED, MAINTAIN A FIVE–FOOT HORIZONTAL CLEARANCE BETWEEN A CITY UTILITY WITH ANY OTHER UTILITY OR STRUCTURE. THE ONLY EXCEPTION IS THAT THERE SHALL BE A TEN–FOOT HORIZONTAL CLEARANCE BETWEEN CITY WATER AND SEWER MAINS.
6. AT THE END OF EACH DAY, ALL TRENCHES SHALL BE BACKFILLED, ALL EQUIPMENT SECURED, AND THE AREA LEFT IN A SAFE CONDITION. STEEL PLATES ARE ALLOWED TO REMAIN NO LONGER THAN SEVEN DAYS. PLATES ARE TO BE NOTCHED (RECESSED) AND PINNED TO THE ROADWAY. PLATES MUST BE LARGE ENOUGH TO ALLOW A MINIMUM OF ONE–FOOT BEARING ON ALL FOUR SIDES OF THE PAVEMENT SURROUNDING THE EXCAVATION. THE STEEL PLATE REQUIREMENTS ONLY APPLY TO PUBLIC STREETS.
7. THE PUBLIC ROAD UTILITY PATCH SHALL BE IN ACCORDANCE WITH CITY STANDARD DETAIL #60, OR AS SHOWN ON THE PLANS. ALL TRENCHES IN PUBLIC STREETS SHALL BE FILLED WITH COMPACTED GRADED AGGREGATE BASE (GAB) FROM BELOW THE PAVEMENT TO THE TOP OF THE PIPE EMBEDMENT ZONE OR TO A DEPTH OF FIVE–FEET, WHICHEVER IS LESS.
8. DPW NORMAL WORKING HOURS ARE MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS, FROM 7 A.M. TO 5 P.M. THE CITY OBSERVES THE FOLLOWING HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING JR.'S BIRTHDAY, PRESIDENT'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY, THANKSGIVING FRIDAY, AND CHRISTMAS DAY, AND ALL DAYS OF GENERAL AND CONGRESSIONAL ELECTIONS THROUGHOUT THE STATE. THE CONTRACTOR WILL NOT BE PERMITTED TO CLOSE LANES OR DO ANY WORK THAT REQUIRES THE SERVICES OF THE CITY FORCES, OUTSIDE OF THE NORMAL WORKING HOURS, UNLESS LISTED IN THE PERMIT OR AUTHORIZED BY DPW IN WRITING. HOWEVER, THE CONTRACTOR, WITH VERBAL PERMISSION OF DPW MAY BE PERMITTED TO WORK OUTSIDE OF THE NORMAL WORK HOURS FOR CLEAN–UP ACTIVITIES OR OTHER SUCH ITEMS THAT DO NOT ADVERSELY IMPACT TRAFFIC, RESIDENTS OR CITY SERVICES.
9. TRAFFIC MUST BE MAINTAINED ON ALL ROADWAYS WITHIN THE CONSTRUCTION AREA AS DIRECTED BY DPW. NO LANE CLOSURE SHALL BE PERMITTED BETWEEN 7:00–9:00 A.M. OR 3:30–6:00 P.M. MONDAY THROUGH FRIDAY. AN EXCEPTION IS THAT LANE CLOSURES ARE PERMITTED ON SECONDARY RESIDENTIAL STREETS AT ANY TIME DURING NORMAL WORKING HOURS. DEPLOYMENT AND DESIGN OF ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVISES (MUTCD). IF REQUIRED, TRAFFIC CONTROL PLANS SHALL BE REVIEWED AND APPROVED BY THE CHIEF OF THE TRAFFIC AND TRANSPORTATION DIVISION. DPW MAY SUSPEND LANE CLOSURE OR OTHER TRAFFIC CONTROLS AT ANY TIME DURING, OR IN ADVANCE OF, INCLEMENT WEATHER EVENTS.
10. SHEETING AND SHORING IS THE TOTAL RESPONSIBILITY OF THE APPLICANT. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND SHALL SEAL THESE DRAWINGS. PROVIDE THREE COPIES TO DPW FOR INFORMATIONAL PROPOSES ONLY.
11. IN ADDITION TO ALL CITY PERMITS, THE APPLICANT IS RESPONSIBLE TO ENSURE THAT ALL NECESSARY FEDERAL, STATE AND/OR MONTGOMERY COUNTY APPROVALS AND/OR PERMITS HAVE BEEN OBTAINED IN ASSOCIATION WITH THIS APPROVED PLAN.
12. SHOP DRAWINGS MUST BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND PRIOR TO FABRICATION. THE PROFESSIONAL ENGINEER WHO SEALED THE DESIGN PLANS (BUT NOT THE SHOP DRAWINGS) MUST APPROVE THE SHOP DRAWINGS FOR CONFORMANCE TO THE APPROVED DESIGN. PROVIDE THREE COPIES OF APPROVED SHOP DRAWINGS TO DPW PRIOR TO CONSTRUCTION. STANDARD PRE–CAST STRUCTURES PREVIOUSLY APPROVED BY THE MARYLAND STATE HIGHWAY ADMINISTRATION, MONTGOMERY COUNTY AND WASHINGTON SUBURBAN SANITATION COMMISSION DO NOT REQUIRE A SHOP DRAWING SUBMISSION. USE ACTUAL FIELD SOILS DATA FOR DESIGN OF PIPES AND STRUCTURES. ALL PIPES AND STRUCTURES IN PAVED AREAS SHALL BE DESIGNED FOR HS–20 VEHICLE LOADING.
13. UPON COMPLETION OF CONSTRUCTION, THE APPLICANT SHALL PROVIDE THREE SETS OF RED LINED AS–BUILT PRINTS (24" X 36") FOR REVIEW AND APPROVAL BY DPW. THE DRAWINGS MUST CONTAIN THE ORIGINAL APPROVAL SIGNATURES AND PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE (A SCANNED IMAGE OF THE ORIGINAL MYLAR IS ACCEPTABLE). THE AS–BUILT SHALL BE SEALED BY A PROFESSIONAL ENGINEER OR PROFESSIONAL SURVEYOR, AS APPROPRIATE AND MUST BE LICENSED BY THE STATE OF MARYLAND. THE SEAL SHALL NOTE THAT IT IS ONLY FOR THE AS–BUILT AND SHALL INCLUDE AN AS–BUILT CERTIFICATION ACCEPTABLE TO DPW. UPON RECEIPT OF WRITTEN APPROVAL, THE APPLICANT SHALL PROVIDE APPROVED AS–BUILT MYLAR DRAWINGS ALONG WITH THE ORIGINAL MYLARS (WITH ALL ORIGINAL SIGNATURES) TO DPW PRIOR TO THE RELEASE OF THE PERMIT.
14. THE APPLICANT MUST COMPLY WITH THE MONTGOMERY COUNTY NOISE CONTROL ORDINANCE. PLEASE REFER TO THE MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AT 240–777–7770, ASKDEP@MONTGOMERYCOUNTYMD.GOV, OR WWW.MONTGOMERYCOUNTYMD.GOV/DEP

DESIGN AND QUANTITIES CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND THE ORDINANCE OF THE ROCKVILLE CITY CODE. THE ESTIMATED TOTAL AMOUNT OF EXCAVATION AND FILL HAS BEEN COMPUTED TO BE 4,300 CUBIC YARDS OF EXCAVATION AND 300 CUBIC YARDS OF FILL AND THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE 2.35 ACRES, ALL OF WHICH IS ON–SITE. THE IMPERVIOUS AREA SUBJECT TO STORMWATER MANAGEMENT SHOWN ON THIS PLAN IS 27.99 ACRES.

07/26/2021
DATE

CHRISTOPHER STEPP P.E. 33146
MD P.E. REGISTRATION NO.

APPROVAL FOR WORK IN CITY PARKS

2/16/21
DIRECTOR OF RECREATION AND PARKS
DATE

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATION OF TRAINING AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT AND THAT THE APPLICABLE SEDIMENT CONTROL CONDITIONS AND REQUIREMENTS OF THE CITY OF ROCKVILLE AND THE STATE OF MARYLAND AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN.

Craig L. Simoneau
2021.11.08 17:08:13-05'00'

OWNER/DEVELOPER SIGNATURE
DATE

USDA – NRCS MARYLAND POND CODE 378 APPROVAL

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. 33146, EXPIRATION DATE: 01/14/2023
CHRISTOPHER STEPP

CHRISTOPHER JON STEPP
NO. 33146
10/8/21

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau
2021.11.08 17:08:14-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK# ________
SCP# 2021–00009
SMP# 2021–00012
FTP# 2020–00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
COVER SHEET

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05–22
SCALE AS SHOWN
SHEET NO. 1 OF 22
FILE # F–295

Z:\8_31901_NORTHEAST_PARK_SWM_&_STREAM\CAD Files\Sheet Files\8_31901_COV01

EXISTING TREE SURVEY

TREE NUMBER	DBH, IN (SINGLE STEM)	DBH, IN (MULTISTEM CALCULATED)	LATIN NAME	COMMON NAME	CONDITION	CRZ (FT)	LOCATION (IN/OUT OF FOREST)	REPLACMENTS REQUIRED
TR 1	18	NA	ACER RUBRUM	RED MAPLE	GOOD	18	OUT	**NA**
TR 2	31	NA	ACER RUBRUM	RED MAPLE	FAIR	31	OUT	**NA**
TR 3	10	NA	ROBINIA PSEUDOACACIA	BLACK LOCUST	GOOD	10	IN	**NA**
TR 4	12	NA	QUERCUS RUBRA	NORTHERN RED OAK	FAIR	12	IN	**NA**
TR 5	10	NA	ACER SACCHARUM	SUGAR MAPLE	GOOD	10	IN	**NA**
TR 6	29	NA	QUERCUS RUBRA	NORTHERN RED OAK	GOOD	29	IN	**NA**
TR 7	37	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	37	IN	**NA**
TR 8	17	NA	QUERCUS ALBA	WHITE OAK	GOOD	17	IN	**NA**
TR 9*	7	NA	MORUS ALBA	WHITE MULBERRY	FAIR	7	IN	**0**
TR 10	37	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	37	IN	**NA**
TR 11	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	30	IN	**NA**
TR 12	10	NA	ACER RUBRUM	RED MAPLE	FAIR	10	IN	**NA**
TR 13	11	NA	CARYA TOMENTOSA	MOCKERNUT HICKORY	GOOD	11	IN	**NA**
TR 14	8	NA	PRUNUS SEROTINA	BLACK CHERRY	FAIR	8	IN	**NA**
TR 15	24	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	24	IN	**NA**
TR 16	10	NA	ACER NEGUNDO	BOX ELDER	GOOD	10	IN	**NA**
TR 17	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	25	IN	**NA**
TR 18	8	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	8	IN	**NA**
TR 19	8	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	8	IN	**NA**
TR 20	10	NA	NA	NA	DEAD	NA	IN	**NA**
TR 21	29	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	29	IN	**NA**
TR 22	26	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	26	IN	**NA**
TR 23	NA	33	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	33	IN	**NA**
TR 24	8	NA	PRUNUS SEROTINA	BLACK CHERRY	FAIR	8	IN	**NA**
TR 25	20	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	20	IN	**NA**
TR 26	15	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	15	IN	**NA**
TR 27	9	NA	ACER RUBRUM	RED MAPLE	POOR	9	IN	**NA**
TR 28	28	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	28	IN	**NA**
TR 29	12	NA	ACER RUBRUM	RED MAPLE	GOOD	12	IN	**NA**
TR 30	17	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	17	IN	**NA**
TR 31	7	NA	ACER PLATANOIDES	NORWAY MAPLE	GOOD	7	IN	**NA**
TR 32	10	NA	ACER RUBRUM	RED MAPLE	GOOD	10	IN	**NA**
TR 33	10	NA	ACER RUBRUM	RED MAPLE	GOOD	10	IN	**NA**
TR 34	24	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	24	IN	**NA**
TR 35	18	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	18	IN	**NA**
TR 36	NA	16	ACER RUBRUM	RED MAPLE	GOOD	16	IN	**NA**
TR 37	31	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	31	IN	**NA**
TR 38	29	NA	QUERCUS ALBA	WHITE OAK	GOOD	29	IN	**NA**
TR 39	8	NA	ACER SACCHARUM	SUGAR MAPLE	GOOD	8	IN	**NA**
TR 40*	27	NA	ACER RUBRUM	RED MAPLE	GOOD	27	IN	**3**
TR 41*	22	NA	ACER RUBRUM	RED MAPLE	FAIR	22	IN	**0**
TR 42*	17	NA	ACER RUBRUM	RED MAPLE	FAIR	17	IN	**0**
TR 43*	12	NA	ACER RUBRUM	RED MAPLE	POOR	12	IN	**0**
TR 44*	24	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	24	IN	**2**
TR 45*	16	NA	ACER RUBRUM	RED MAPLE	FAIR	16	IN	**0**
TR 46*	22	NA	ACER RUBRUM	RED MAPLE	FAIR	22	IN	**0**
TR 47	23	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	23	IN	**NA**
TR 48	41	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	41	IN	**NA**
TR 49	9	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	9	IN	**NA**
TR 50	9	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	9	IN	**NA**
TR 51	17	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	17	IN	**NA**
TR 52	21	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	21	IN	**NA**
TR 53	13	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	13	IN	**NA**
TR 54	31	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	31	IN	**NA**
TR 55	11	NA	ACER RUBRUM	RED MAPLE	GOOD	11	IN	**NA**
TR 56	21	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	21	IN	**NA**
TR 57	21	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	21	IN	**NA**
TR 58	34	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	34	IN	**NA**
TR 59	11	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	11	IN	**NA**
TR 60	11	NA	ACER RUBRUM	RED MAPLE	GOOD	11	IN	**NA**
TR 61	31	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	31	IN	**NA**
TR 62	29	NA	QUERCUS ALBA	WHITE OAK	GOOD	29	IN	**NA**
TR 63	NA	7	ULMUS AMERICANA	AMERICAN ELM	GOOD	7	IN	**NA**
TR 64	17	NA	PINUS STROBUS	EASTERN WHITE PINE	FAIR	17	IN	**NA**
TR 65	10	NA	NA	NA	DEAD	NA	IN	**NA**
TR 66	9	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	9	IN	**NA**
TR 67	11	NA	ACER RUBRUM	RED MAPLE	GOOD	11	IN	**NA**
TR 68	12	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	12	IN	**NA**
TR 69	11	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	11	IN	**NA**
TR 70	55	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	55	IN	**NA**
TR 71	10	NA	ACER RUBRUM	RED MAPLE	GOOD	10	IN	**NA**
TR 72	7	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	7	IN	**NA**
TR 73	7	NA	ACER PLATANOIDES	NORWAY MAPLE	GOOD	7	IN	**NA**
TR 74	16	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	16	IN	**NA**
TR 75	9	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	9	IN	**NA**
TR 76	13	NA	PRUNUS SEROTINA	BLACK CHERRY	GOOD	13	IN	**NA**
TR 77	NA	33	ACER RUBRUM	RED MAPLE	GOOD	33	IN	**NA**
TR 78	17	NA	ACER RUBRUM	RED MAPLE	POOR	17	IN	**NA**
TR 79	13	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	13	IN	**NA**
TR 80*	9	NA	ACER PLATANOIDES	NORWAY MAPLE	GOOD	9	IN	**0**
TR 81*	22	NA	ACER RUBRUM	RED MAPLE	FAIR	22	IN	**0**
TR 82*	29	NA	ACER RUBRUM	RED MAPLE	GOOD	29	IN	**3**
TR 83	8	NA	ACER RUBRUM	RED MAPLE	GOOD	8	IN	**NA**
TR 84	22	NA	NA	NA	DEAD	NA	IN	**NA**
TR 85	9	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	9	IN	**NA**
TR 86	7	NA	ACER SACCHARUM	SUGAR MAPLE	GOOD	7	IN	**NA**
TR 87	16	NA	NYSSA SYLVATICA	BLACK TUPELO	POOR	16	IN	**NA**
TR 88	20	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	20	IN	**NA**
TR 89	18	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	18	OUT	**NA**
TR 90	NA	8	PRUNUS SEROTINA	BLACK CHERRY	FAIR	8	OUT	**NA**
TR 91	8	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	8	OUT	**NA**
TR 92	NA	28	NYSSA SYLVATICA	BLACK TUPELO	FAIR	28	IN	**NA**
TR 93	NA	21	ACER RUBRUM	RED MAPLE	FAIR	21	IN	**NA**
TR 94	23	NA	ROBINIA PSEUDOACACIA	BLACK LOCUST	POOR	NA	IN	**NA**
TR 95	18	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	18	IN	**NA**
TR 96	11	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	11	IN	**NA**
TR 97	18	NA	QUERCUS ALBA	WHITE OAK	FAIR	18	IN	**NA**
TR 98	7	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	7	IN	**NA**
TR 99	20	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	20	IN	**NA**
TR 100	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	30	IN	**NA**
TR 101	15	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	15	IN	**NA**
TR 102	7	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	7	IN	**NA**
TR 103	24	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	24	IN	**NA**
TR 104	23	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	23	IN	**NA**
TR 105	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	30	IN	**NA**
TR 106	36	NA	ACER RUBRUM	RED MAPLE	GOOD	36	IN	**NA**
TR 107	25	NA	ACER RUBRUM	RED MAPLE	GOOD	25	IN	**NA**
TR 108	18	NA	ACER RUBRUM	RED MAPLE	GOOD	18	OUT	**NA**
TR 109	35	NA	QUERCUS ALBA	WHITE OAK	GOOD	35	IN	**NA**
TR 110	10	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	10	IN	**NA**
TR 111	12	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	12	IN	**NA**
TR 112	21	NA	ACER RUBRUM	RED MAPLE	GOOD	21	IN	**NA**
TR 113	8	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	8	IN	**NA**
TR 114	36	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	36	IN	**NA**
TR 115	10	NA	ACER RUBRUM	RED MAPLE	FAIR	10	IN	**NA**
TR 116	23	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	23	IN	**NA**
TR 117	NA	7	ACER SACCHARUM	SUGAR MAPLE	FAIR	7	IN	**NA**
TR 118	35	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	35	IN	**NA**
TR 119	7	NA	PRUNUS SEROTINA	BLACK CHERRY	GOOD	7	IN	**NA**
TR 120	6	NA	ACER PLATANOIDES	NORWAY MAPLE	GOOD	6	IN	**NA**
TR 121	29	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	29	IN	**NA**
TR 122	9	NA	ACER PLATANOIDES	NORWAY MAPLE	GOOD	9	IN	**NA**
TR 123	8	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	8	IN	**NA**
TR 124	18	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	18	IN	**NA**
TR 125	24	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	24	IN	**NA**
TR 126	7	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	7	IN	**NA**
TR 127	18	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	18	IN	**NA**
TR 128	34	NA	QUERCUS ALBA	WHITE OAK	GOOD	34	IN	**NA**
TR 129	9	NA	ACER RUBRUM	RED MAPLE	GOOD	9	IN	**NA**
TR 130	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	30	IN	**NA**
TR 131	23	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	23	IN	**NA**
TR 132	21	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	21	IN	**NA**
TR 133	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	30	IN	**NA**
TR 134	9	NA	ACER NEGUNDO	BOX ELDER	GOOD	9	IN	**NA**
TR 135	12	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	12	IN	**NA**
TR 136	11	NA	ACER PLATANOIDES	NORWAY MAPLE	GOOD	11	IN	**NA**
TR 137	7	NA	PRUNUS SEROTINA	BLACK CHERRY	FAIR	7	IN	**NA**
TR 138	9	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	9	IN	**NA**
TR 139	10	NA	ACER RUBRUM	RED MAPLE	POOR	10	IN	**NA**
TR 140	9	NA	ACER RUBRUM	RED MAPLE	FAIR	9	OUT	**NA**
TR 141	7	NA	ACER RUBRUM	RED MAPLE	FAIR	7	OUT	**NA**
TR 142	14	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	14	OUT	**NA**
TR 143	18	NA	ACER RUBRUM	RED MAPLE	GOOD	18	OUT	**NA**
TR 144	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	25	OUT	**NA**
TR 145	24	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	24	IN	**NA**
TR 146	16	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	16	OUT	**NA**
TR 147	11	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	11	OUT	**NA**
TR 148*	NA	9	BETULA NIGRA	RIVER BIRCH	GOOD	9	OUT	**0**
TR 149*	10	NA	BETULA NIGRA	RIVER BIRCH	GOOD	10	OUT	**0**
TR 150*	7	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	7	OUT	**0**
TR 151*	11	NA	BETULA NIGRA	RIVER BIRCH	GOOD	11	OUT	**0**
TR 152	NA	10	BETULA NIGRA	RIVER BIRCH	GOOD	10	OUT	**0**
TR 153*	10	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	10	OUT	**0**
TR 154	8	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	8	OUT	**NA**
TR 155	9	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	9	IN	**NA**
TR 156	27	NA	QUERCUS ALBA	WHITE OAK	FAIR	27	IN	**NA**
TR 157	23	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	23	IN	**NA**
TR 158	28	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	28	IN	**NA**
TR 159	29	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	29	IN	**NA**
TR 160	7	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	7	IN	**NA**
TR 161	7	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	7	IN	**NA**
TR 162	16	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	16	IN	**NA**
TR 163	40	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	40	IN	**NA**
TR 164	6	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	6	OUT	**NA**
TR 165	9	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	9	OUT	**NA**
TR 166*	NA	10	BETULA NIGRA	RIVER BIRCH	GOOD	10	OUT	**0**
TR 167	8	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	8	OUT	**NA**
TR 168	6	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	6	OUT	**NA**
TR 169	31	NA	ACER RUBRUM	RED MAPLE	FAIR	31	IN	**NA**
TR 170	7	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	7	IN	**NA**
TR 171*	7	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	7	IN	**0**
TR 172	34	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	34	IN	**NA**
TR 173	27	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	27	IN	**NA**
TR 174	33	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	33	IN	**NA**
TR 175	6	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	6	IN	**NA**
TR 176	18	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	18	IN	**NA**
TR 177	32	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	32	IN	**NA**
TR 178	13	NA	NA	NA	DEAD	NA	IN	**NA**
TR 179	8	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	8	IN	**NA**
TR 180*	6	NA	PRUNUS SP.	PRUNUS SP.	GOOD	6	IN	**0**
TR 181	16	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	16	IN	**NA**
TR 182*	28	NA	NA	NA	DEAD	NA	IN	**NA**
TR 183*	6	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	6	IN	**0**
TR 184*	7	NA	PRUNUS SP.	PRUNUS SP.	GOOD	7	IN	**0**
TR 185*	10	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	10	IN	**0**
TR 186*	7	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	7	IN	**0**
TR 187*	9	NA	ACER SACCHARUM	SUGAR MAPLE	FAIR	9	IN	**0**
TR 188*	14	NA	ACER RUBRUM	RED MAPLE	FAIR	14	IN	**0**
TR 189**	7	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	7	OUT	**0**
TR 190**	8	NA	SALIX NIGRA	BLACK WILLOW	GOOD	8	OUT	**0**
TR 191**	6	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	6	OUT	**0**
TR 192**	7	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	7	OUT	**0**
TR 193	8	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	8	IN	**NA**
TR 194	7	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	7	IN	**NA**
TR 195	19	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	19	IN	**NA**
TR 196	13	NA	ACER RUBRUM	RED MAPLE	GOOD	13	IN	**NA**
TR 197	30	NA	QUERCUS ALBA	WHITE OAK	FAIR	30	IN	**NA**
TR 198	11	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	11	IN	**NA**
TR 199	9	NA	ACER SACCHARUM	SUGAR MAPLE	GOOD	9	IN	**NA**
TR 200	15	NA	ACER RUBRUM	RED MAPLE	FAIR	15	IN	**NA**
TR 201	7	NA	ACER SACCHARUM	SUGAR MAPLE	GOOD	7	IN	**NA**
TR 202	28	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	28	IN	**NA**
TR 203	7	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	7	IN	**NA**
TR 204	9	NA	ACER RUBRUM	RED MAPLE	FAIR	9	IN	**NA**
TR 205	16	NA	ACER RUBRUM	RED MAPLE	FAIR	16	IN	**NA**
TR 206	6	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	6	IN	**NA**
TR 207*	22	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	22	IN	**0**
TR 208*	11	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	11	IN	**0**
TR 209*	8	NA	PAULOWNIA TOMENTOSA	PRINCESS TREE	FAIR	8	IN	**0**
TR 210	11	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	11	IN	**NA**
TR 211	6	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	6	IN	**NA**
TR 212	14	NA	QUERCUS ALBA	WHITE OAK	FAIR	14	IN	**NA**
TR 213	26	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	26	IN	**NA**
TR 214	11	NA	ACER RUBRUM	RED MAPLE	FAIR	11	IN	**NA**
TR 215*	NA	20	ACER RUBRUM	RED MAPLE	GOOD	20	IN	**0**
TR 216	15	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	15	IN	**NA**
TR 217	24	NA	QUERCUS RUBRA	NORTHERN RED OAK	GOOD	24	IN	**NA**
TR 218*	10	NA	PRUNUS SEROTINA	BLACK CHERRY	POOR	10	IN	**0**
TR 219*	8	NA	ACER RUBRUM	RED MAPLE	FAIR	8	IN	**0**
TR 220*	23	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	23	IN	**0**
TR 221*	6	NA	FAGUS GRANDIFOLIA	AMERICAN BEECH	GOOD	6	IN	**0**
TR 222	8	NA	PRUNUS SEROTINA	BLACK CHERRY	GOOD	8	IN	**NA**
TR 223	7	NA	ACER RUBRUM	RED MAPLE	GOOD	7	IN	**NA**
TR 224	7	NA	NA	NA	DEAD	NA	IN	**NA**
TR 225*	28	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	28	IN	**3**
TR 226*	16	NA	CARYA GLABRA	PIGNUT HICKORY	FAIR	16	IN	**0**
TR 227*	18	NA	ACER RUBRUM	RED MAPLE	FAIR	18	IN	**0**
TR 228*	17	NA	QUERCUS ALBA	WHITE OAK	FAIR	17	IN	**0**
TR 229	19	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	19	IN	**NA**
TR 230	NA	9	ACER RUBRUM	RED MAPLE	FAIR	9	IN	**NA**
TR 231*	21	NA	ACER NEGUNDO	BOX ELDER	FAIR	21	IN	**0**
TR 232	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	30	IN	**NA**
TR 233	14	NA	ACER RUBRUM	RED MAPLE	FAIR	14	IN	**NA**
TR 234	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	POOR	25	IN	**NA**
TR 235	32	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	32	IN	**NA**
TR 236	18	NA	ACER RUBRUM	RED MAPLE	GOOD	18	IN	**NA**
TR 237	35	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	35	IN	**NA**
TR 238	14	NA	ACER RUBRUM	RED MAPLE	FAIR	14	IN	**NA**
TR 239	12	NA	ACER RUBRUM	RED MAPLE	FAIR	12	IN	**NA**
TR 240	13	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	13	IN	**NA**
TR 241	8	NA	ACER RUBRUM	RED MAPLE	GOOD	8	IN	**NA**
TR 242	NA	14	ACER RUBRUM	RED MAPLE	FAIR	14	IN	**NA**
TR 243	13	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	13	IN	**NA**
TR 244	31	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	31	IN	**NA**
TR 245	9	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	9	IN	**NA**
TR 246	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	25	IN	**NA**
TR 247	8	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	8	IN	**NA**
TR 248	11	NA	ACER RUBRUM	RED MAPLE	FAIR	11	IN	**NA**
TR 249	13	NA	PRUNUS SEROTINA	BLACK CHERRY	FAIR	13	IN	**NA**
TR 250	22	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	22	IN	**NA**
TR 251	7	NA	ACER RUBRUM	RED MAPLE	GOOD	7	IN	**NA**
TR 252	10	NA	ACER RUBRUM	RED MAPLE	GOOD	10	IN	**NA**
TR 253	19	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	19	IN	**NA**
TR 254	8	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	8	IN	**NA**
TR 255	8	NA	ACER RUBRUM	RED MAPLE	GOOD	8	IN	**NA**
TR 256	12	NA	ACER RUBRUM	RED MAPLE	GOOD	12	IN	**NA**
TR 257	11	NA	ACER RUBRUM	RED MAPLE	GOOD	11	IN	**NA**
TR 258	6	NA	ACER RUBRUM	RED MAPLE	GOOD	6	IN	**NA**
TR 259	11	NA	NA	NA	DEAD	NA	IN	**NA**
TR 260	NA	15	ACER RUBRUM	RED MAPLE	GOOD	15	IN	**NA**
TR 261	17	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	17	IN	**NA**
TR 262	12	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	12	IN	**NA**
TR 263	7	NA	ACER RUBRUM	RED MAPLE	GOOD	7	IN	**NA**
TR 264	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	25	IN	**NA**
TR 265	8	NA	ACER RUBRUM	RED MAPLE	FAIR	8	IN	**NA**
TR 266*	24	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	24	IN	**2**
TR 267*	7	NA	PRUNUS SEROTINA	BLACK CHERRY	GOOD	7	IN	**0**
TR 268	9	NA	JUGLANS NIGRA	BLACK WALNUT	GOOD	9	IN	**NA**
TR 269	NA	13	ACER NEGUNDO	BOX ELDER	GOOD	13	IN	**NA**
TR 270	11	NA	NA	NA	DEAD	NA	IN	**NA**
TR 271	6	NA	NA	NA	DEAD	NA	IN	**NA**
TR 272	16	NA	ACER RUBRUM	RED MAPLE	FAIR	16	IN	**NA**
TR 273*	13	NA	JUGLANS NIGRA	BLACK WALNUT	FAIR	13	IN	**0**
TR 274	NA	14	ACER RUBRUM	RED MAPLE	GOOD	14	IN	**NA**
TR 275	9	NA	ACER RUBRUM	RED MAPLE	FAIR	9	IN	**NA**
TR 276	29	NA	ROBINIA PSEUDOACACIA	BLACK LOCUST	GOOD	29	IN	**NA**
TR 277	NA	8	ACER NEGUNDO	BOX ELDER	GOOD	8	OUT	**NA**
TR 278*	15	NA	ROBINIA PSEUDOACACIA	BLACK LOCUST	FAIR	15	OUT	**1**
TR 279*	9	NA	JUGLANS NIGRA	BLACK WALNUT	FAIR	9	OUT	**0**
TR 280	10	NA	ACER NEGUNDO	BOX ELDER	GOOD	10	OUT	**NA**
TR 281*	9	NA	ACER RUBRUM	RED MAPLE	FAIR	9	OUT	**0**
TR 282*	27	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	27	IN	**3**
TR 283*	7	NA	ACER SACCHARUM	SUGAR MAPLE	GOOD	7	IN	**0**
TR 284*	9	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	9	IN	**0**
TR 285*	7	NA	PRUNUS SP.	PRUNUS SP.	GOOD	7	OUT	**0**
TR 286*	NA	28	ACER RUBRUM	RED MAPLE	FAIR	28	OUT	**3**
TR 287*	23	NA	NA	NA	DEAD	NA	OUT	**0**
TR 288*	NA	10	SALIX NIGRA	BLACK WILLOW	GOOD	10	OUT	**0**
TR 289*	10	NA	POPULUS DELTOIDES	EASTERN COTTONWOOD	GOOD	10	OUT	**0**
TR 290*	30	NA	NA	NA	DEAD	30	OUT	**6**
TR 291*	12	NA	QUERCUS PHELLOS	WILLOW OAK	GOOD	12	OUT	**1**
TR 292*	13	NA	QUERCUS PHELLOS	WILLOW OAK	GOOD	13	OUT	**1**
TR 293*	8	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	8	OUT	**0**
TR 294*	8	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	8	OUT	**0**
TR 295*	NA	24	ACER RUBRUM	RED MAPLE	FAIR	24	OUT	**2**
TR 296*	35	NA	NA	NA	DEAD	NA	OUT	**NA**
TR 297*	12	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	12	OUT	**1**
TR 298*	7	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	7	OUT	**0**
TR 299*	13	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	13	OUT	**1**
TR 300*	NA	16	ACER RUBRUM	RED MAPLE	GOOD	16	OUT	**1**
TR 301*	9	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	9	OUT	**0**
TR 302*	14	NA	ACER RUBRUM	RED MAPLE	GOOD	14	IN	**0**
TR 303	8	NA	ACER RUBRUM	RED MAPLE	GOOD	8	IN	**NA**
TR 304	24	NA	QUERCUS ALBA	WHITE OAK	GOOD	24	IN	**NA**
TR 305	16	NA	NA	NA	DEAD	NA	IN	**NA**
TR 306	7	NA	ACER RUBRUM	RED MAPLE	GOOD	7	IN	**NA**
TR 307	12	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	12	IN	**NA**
TR 308	7	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	7	IN	**NA**
TR 309*	16	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	16	IN	**0**
TR 310*	39	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	39	IN	**6**
TR 311*	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	30	IN	**6**
TR 312*	15	NA	ACER RUBRUM	RED MAPLE	FAIR	15	IN	**0**
TR 313*	19	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	19	IN	**0**
TR 314*	8	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	8	IN	**0**
TR 315*	33	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	33	IN	**6**
TR 316*	7	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	7	IN	**0**
TR 317*	10	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	10	IN	**0**
TR 318	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	25	IN	**NA**
TR 319	32	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	32	IN	**NA**
TR 320	7	NA	ULMUS AMERICANA	AMERICAN ELM	FAIR	7	IN	**NA**
TR 321	NA	7	ILEX OPACA	AMERICAN HOLLY	FAIR	7	IN	**NA**
TR 322	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	25	IN	**NA**
TR 323	NA	25	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	25	IN	**NA**
TR 324	50	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	50	IN	**NA**
TR 325	13	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	13	IN	**NA**
TR 326	6	NA	ACER SACCHARUM	SUGAR MAPLE	FAIR	6	IN	**NA**
TR 327	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	30	IN	**NA**
TR 328	13	NA	ACER RUBRUM	RED MAPLE	FAIR	13	IN	**NA**
TR 329	29	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	29	IN	**NA**
TR 330	NA	8	ILEX OPACA	AMERICAN HOLLY	FAIR	8	IN	**NA**
TR 331	19	NA	ACER RUBRUM	RED MAPLE	FAIR	19	IN	**NA**
TR 332*	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	25	IN	**3**
TR 333*	15	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	15	IN	**0**
TR 334*	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	30	IN	**6**
TR 335*	12	NA	ACER RUBRUM	RED MAPLE	FAIR	12	IN	**0**
TR 336*	31	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	31	IN	**6**
TR 337*	17	NA	ACER RUBRUM	RED MAPLE	FAIR	17	IN	**0**
TR 338*	28	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	28	IN	**3**
TR 339*	29	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	29	IN	**3**
TR 340	30	NA	ACER RUBRUM	RED MAPLE	FAIR	30	IN	**NA**
TR 341	30	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	30	IN	**NA**
TR 342	18	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	18	IN	**NA**
TR 343	25	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	25	IN	**NA**
TR 344	39	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	39	IN	**NA**
TR 345	22	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	22	IN	**NA**
TR 346	6	NA	ACER RUBRUM	RED MAPLE	FAIR	6	IN	**NA**
TR 347	17	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	17	IN	**NA**
TR 348	8	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	8	IN	**NA**
TR 349*	6	NA	PRUNUS SEROTINA	BLACK CHERRY	FAIR	6	IN	**0**
TR 350*	25	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	25	IN	**3**
TR 351*	19	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR	19	IN	**0**
TR 352*	6	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	6	IN	**0**
TR 353*	31	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	31	IN	**6**
TR 354*	12	NA	QUERCUS ALBA	WHITE OAK	GOOD	12	IN	**0**
TR 355*	8	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	8	IN	**0**
TR 356*	10	NA	ACER RUBRUM	RED MAPLE	FAIR	10	IN	**0**
TR 357*	27	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	27	IN	**3**
TR 358	9	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	9	IN	**NA**
TR 359	7	NA	ULMUS AMERICANA	AMERICAN ELM	GOOD	7	IN	**NA**
TR 360	39	NA	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD	39	IN	**NA**
TR 361*	18	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	18	IN	**0**
TR 362	12	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	12	IN	**NA**
TR 363	11	NA	NYSSA SYLVATICA	BLACK TUPELO	FAIR	11	IN	**NA**
TR 364	14	NA	ACER RUBRUM	RED MAPLE	FAIR	14	IN	**NA**
TR 365	7	NA	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD	7	IN	**NA**
TR 366	7	NA	NYSSA SYLVATICA	BLACK TUPELO	GOOD	7	IN	**NA**
TR 367	13	NA	PRUNUS SEROTINA	BLACK CHERRY	GOOD	13	IN	**NA**

*TO BE REMOVED DUE TO SITE IMPACTS

**TO BE REMOVED DUE TO MD-378 REGULATIONS

QUALIFIED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A DULY CERTIFIED FOREST CONSERVATION QUALIFIED PROFESSIONAL UNDER THE LAWS OF THE STATE OF MARYLAND AND THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION.

Signed: Jason Traband   Date: 07/12/2021

JASON TRABAND
7455 NEW RIDGE ROAD, SUITE T
HANOVER, MD 21076
410-694-9401
JTRABAND@BAYLANDINC.COM

FC-01

No. 33146
10/8/21

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

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Hanover, Maryland 21076   Fax: (410) 694-9405
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BAYLAND JOB NO. 8_31901

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE.   ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau
2021.11.08 17:08:15-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SCP# 2021-00009
SMP# 2021-00012
FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
TREE TABLE

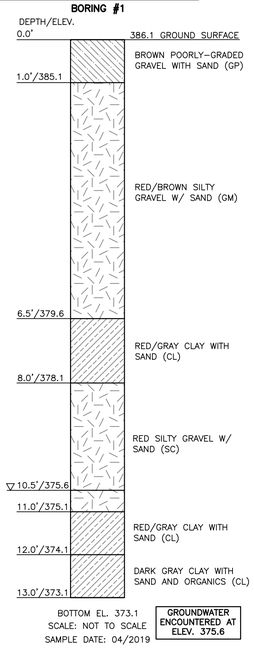
NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE -
SHEET NO. 2 OF 22
FILE # F-295

Z:\8_31901_NORTHEAST_PARK_SWM_&_STREAM\CAD Files\Sheet Files\8_31901_DTL01

SOIL BORING LOG

BORING #1

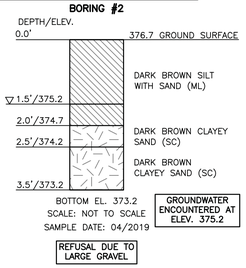


BOTTOM EL. 373.1
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

GROUNDWATER ENCOUNTERED AT ELEV. 375.6

SOIL BORING LOG

BORING #2



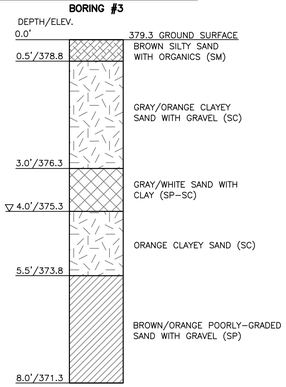
BOTTOM EL. 373.2
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

GROUNDWATER ENCOUNTERED AT ELEV. 375.2

REFUSAL DUE TO LARGE GRAVEL

SOIL BORING LOG

BORING #3

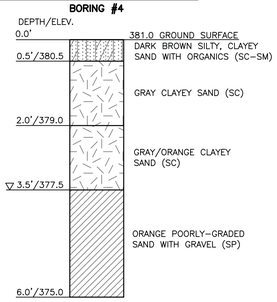


BOTTOM EL. 371.3
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

GROUNDWATER ENCOUNTERED AT ELEV. 375.3

SOIL BORING LOG

BORING #4

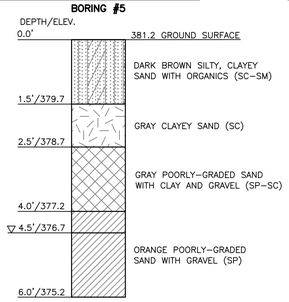


BOTTOM EL. 375.0
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

GROUNDWATER ENCOUNTERED AT ELEV. 377.5

SOIL BORING LOG

BORING #5

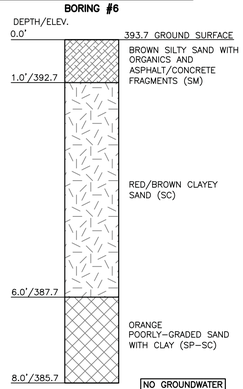


BOTTOM EL. 375.2
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

GROUNDWATER ENCOUNTERED AT ELEV. 376.7

SOIL BORING LOG

BORING #6

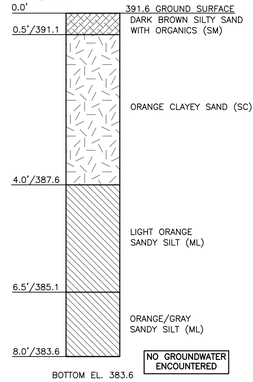


BOTTOM EL. 385.7
MIN. INFIL. RATE : 3.0IN/HR
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

NO GROUNDWATER ENCOUNTERED

SOIL BORING LOG

BORING #7



BOTTOM EL. 383.6
MIN. INFIL. RATE: 11IN/HR
SCALE: NOT TO SCALE
SAMPLE DATE: 04/2019

NO GROUNDWATER ENCOUNTERED

CITY OF ROCKVILLE GEOTECHNICAL NOTES 11/16

1. THE APPLICANT SHALL BE RESPONSIBLE FOR ALL SUBGRADE INSPECTION AND SOIL COMPACTION TESTING ASSOCIATED WITH ANY WORK WITHIN A CITY RIGHT-OF-WAY, PRIVATE PROPERTY SUBJECT TO A PUBLIC ACCESS EASEMENT, OR PRIVATE PROPERTY SUBJECT TO CITY EASEMENT FOR PUBLIC UTILITIES OR PUBLIC IMPROVEMENTS; AND/OR ANY WORK ASSOCIATED WITH A SEDIMENT CONTROL FACILITY, OR STORMWATER MANAGEMENT PRACTICE. THIS WORK SHALL BE COMPLETED BY OR UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND. FOR THE PURPOSES OF THESE NOTES AND ASSOCIATED APPROVED PLANS, THIS ENGINEER SHALL BE REFERRED TO AS THE GEOTECHNICAL ENGINEER AND SHALL BE AN INDEPENDENT FIRM FROM THE APPLICANT.
2. ANY PLANS SUBJECT TO NRCS-MD POND CODE 378 STANDARDS/SPECIFICATIONS, AS SHOWN ON THE PLANS, SHALL SUPERSEDE THESE NOTES WHEN THESE NOTES ARE LESS STRINGENT OR IN CASE OF CONFLICT. ANY REFERENCE TO THE ENGINEER IN THE 378 STANDARD/SPECIFICATIONS SHALL BE THE PROFESSIONAL ENGINEER WHO STAMPED AND SEALED THE DESIGN PLANS. ANY REFERENCE TO THE GEOTECHNICAL ENGINEER SHALL BE THE GEOTECHNICAL ENGINEER AS DEFINED ABOVE OR THE GEOTECHNICAL ENGINEER WHO COMPLETED CERTAIN ASPECTS OF THE POND DESIGN.
3. ALL INSPECTIONS, TESTS, SUPPORTING DATA, REPORTS, AND CERTIFICATIONS SHALL BE PROVIDED TO THE CITY OF ROCKVILLE DEPARTMENT OF PUBLIC WORKS (DPW) AND SHALL BE SEALED BY THE GEOTECHNICAL ENGINEER. DAILY INSPECTION REPORTS, IF REQUESTED BY THE CITY, CAN BE PROVIDED WITHOUT BEING IMMEDIATELY SEALED BY THE GEOTECHNICAL ENGINEER. THESE REPORTS SHALL BE COMPILED, REVIEWED, SEALED AND THEN SUBMITTED TO DPW AT A LATER DATE AS AGREED UPON BY THE CITY.
4. THE GEOTECHNICAL ENGINEER SHALL APPROVE ALL FILL MATERIALS THAT ARE USED FOR THE PROJECT. THE GEOTECHNICAL ENGINEER SHALL OBTAIN SAMPLES OF PROPOSED FILL MATERIALS AND PERFORM ALL REQUIRED TESTING TO DETERMINE THAT FILL MATERIALS ARE IN CONFORMANCE WITH THIS PLAN.
5. THE GEOTECHNICAL ENGINEER SHALL PROVIDE A REPORT THAT CERTIFIES THE SUBGRADE PREPARATION AND FILL/BACKFILL PLACEMENT ARE IN CONFORMANCE WITH THIS PLAN. THE CERTIFICATION APPLIES TO ALL FILL, BACKFILL, AND SUBGRADE OPERATIONS SUBJECT TO THIS PLAN AS DETAILED IN NOTE #1, INCLUDING UTILITY TRENCHES. WHEN CONSTRUCTING NEW ROADWAY PAVEMENT THIS CERTIFICATION REPORT SHALL BE PROVIDED PRIOR TO THE PLACEMENT OF GRADED AGGREGATE BASE (GAB). ALL OTHER CERTIFICATIONS SHALL BE PROVIDED AS REQUESTED BY THE CITY.
6. ALL FILL AND/OR BACKFILL MATERIAL SHALL BE FREE FROM 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; SHALL BE A MINIMUM OF 105 POUNDS PER CUBIC FOOT FOR THE MAXIMUM DRY DENSITY ACCORDING TO AASHTO T-180, METHOD C; AND SHALL NOT HAVE A LIQUID LIMIT GREATER THAN 30 NOR A PLASTICITY INDEX GREATER THAN SIX ACCORDING TO ASTM D-4318. ALL OTHER MATERIALS SHALL MEET THE REQUIREMENTS STATED IN CATEGORY 900 OF THE LATEST EDITION OF THE MARYLAND STATE HIGHWAY ADMINISTRATION (MSHA) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
7. COMPACT THE MATERIAL THAT IS ONE FOOT BELOW THE TOP OF SUBGRADE TO AT LEAST 92 PERCENT OF THE MAXIMUM DRY DENSITY PER AASHTO T-180. COMPACT THE TOP ONE FOOT TO AT LEAST 97 PERCENT OF THE MAXIMUM DRY DENSITY. WHEN NECESSARY, ADD WATER OR DRY THE LAYER IN ORDER TO COMPACT TO THE REQUIRED DENSITY. GENERALLY THE MATERIAL SHALL BE WITHIN TWO PERCENT OF THE OPTIMUM MOISTURE CONTENT BUT MAY BE OUTSIDE OF THIS RANGE IF APPROVED BY THE GEOTECHNICAL ENGINEER.
8. FILL AND BACKFILL MATERIALS MUST COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE STRUCTURE OR PIPE. FOR STORMWATER MANAGEMENT EMBANKMENTS, THE APPLICANT SHALL SCARIFY EACH LIFT WITH A SHEEPSFOOT ROLLER OR CLAW TO A MINIMUM DEPTH OF TWO-INCHES PRIOR TO PLACING THE NEXT LIFT. THE APPLICANT SHALL SCARIFY EMBANKMENTS PARALLEL WITH THE CENTERLINE OF THE DAM CORE AND PERPENDICULAR TO THE PRINCIPAL SPILLWAY. BEDDING SHALL BE PROVIDED IN ACCORDANCE WITH DETAILS INDICATED ON THE CONSTRUCTION DRAWINGS. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR-FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL THE APPLICANT DRIVE EQUIPMENT OVER ANY PART OF A CORRUGATED METAL PIPE UNLESS THERE IS A COMPACTED FILL OF 24-INCHES OR GREATER OVER THE STRUCTURE OR PIPE.
9. AT A MINIMUM, COMPACTION TESTS SHALL BE COMPLETED FOR EVERY LIFT OF FILL OR BACKFILL. THE TESTING FREQUENCY SHALL BE AT LEAST ONCE PER 150 LINEAR FEET OF TRENCH OR ONCE PER 1,500 SQUARE FEET OF FILL. AT A MINIMUM, THERE SHALL BE AT LEAST ONE COMPACTION TEST PER LIFT AND A LEAST TWO COMPACTION TESTS PER DAY. THE GEOTECHNICAL ENGINEER SHALL SUPPLY DPW WITH CERTIFIED COMPACTION TEST RESULTS, INCLUDING CERTIFICATION OF PIPE BEDDING SUBGRADE AND FILL SUBGRADE.
10. PRIOR TO PLACING ANY ROADWAY FILL ON EXISTING GRADES (ORIGINAL GRADE AFTER TOPSOIL HAS BEEN STRIPPED, FILL PREPARED BY OTHERS OUTSIDE OF THIS PLAN OR FILL NOT PREPARED UNDER THE SUPERVISION OF THE GEOTECHNICAL ENGINEER), SCARIFY THE MINIMUM TOP EIGHT-INCHES OF SOIL MATERIAL. COMPACT THIS LAYER TO THE COMPACTION REQUIREMENTS IN THESE NOTES. PROOF-ROLL THIS COMPACTED LAYER USING A FULLY LOADED DUMP TRUCK (MINIMUM 20 TON PAYLOAD CAPACITY). THE GEOTECHNICAL ENGINEER SHALL INSPECT THE PROOF-ROLLING AND DETERMINE IF THE SUBGRADE IS ACCEPTABLE OR IF THERE ARE AREAS THAT REQUIRE REMEDIATION. SUBGRADE AREAS THAT FAIL PROOF-ROLLING SHALL BE REMEDIATED TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER BY EITHER OF THE FOLLOWING METHODS:
    A. SCARIFYING, MOISTURE CONDITIONING, AND RE-COMPACTION OF THE SUBGRADE MATERIALS.
    B. UNDERCUTTING SOFT OR UNSUITABLE AREAS OF SUBGRADE AND BACKFILLING WITH COMPACTED SELECT BORROW (MSHA SECTION 916).
    C. UNDERCUTTING OF SOFT OR UNSUITABLE AREAS OF SUBGRADE AND PLACING A LAYER OF GEOTEXTILE COVERED BY MD SHA #57 COARSE AGGREGATE (TABLE 901A).

    DPW MAY APPROVE AN ALTERNATE APPROACH FOR SOIL REMEDIATION/IMPROVEMENT IF IT IS RECOMMENDED AND SEALED BY THE GEOTECHNICAL ENGINEER.
11. EXCEPT WHEN SPECIFIED, DO NOT PLACE LAYERS EXCEEDING EIGHT-INCHES UN-COMPACTED DEPTH. PLACE THE MATERIAL IN HORIZONTAL LAYERS ACROSS THE FULL WIDTH OF THE EMBANKMENT. PERFORM ALL ROLLING IN A LONGITUDINAL DIRECTION ALONG THE EMBANKMENT. BEGIN AT THE OUTER EDGES AND PROGRESS TOWARDS THE CENTER. VARY THE TRAVEL PATHS OF TRAFFIC AND EQUIPMENT OVER THE WIDTH OF THE EMBANKMENT TO AID IN OBTAINING UNIFORM COMPACTION.
12. UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANGES. GRADE AND PREPARE THE SUBGRADE SECTION TO THE LINES, GRADES, CROSS SECTIONS AND/OR ELEVATIONS SHOWN ON THE PLANS. AT ALL TIMES, MAINTAIN THE SUBGRADE SURFACE IN SUCH CONDITION AS TO READILY DRAIN.
13. DO NOT PLACE BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE. VEHICULAR AND EQUIPMENT TRAFFIC SHALL BE DISTRIBUTED ACROSS THE PREPARED SURFACE IN SUCH A MANNER AS TO PREVENT DISTURBANCE. REPAIR ANY DAMAGE TO THE PREPARED SUBGRADE TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER MUST APPROVE THE STORAGE OR STOCKPILING OF HEAVY LOADS ON A ROADWAY SUBGRADE.
14. UNSUITABLE EXISTING FILL, SOFT OR LOOSE NATURAL SOILS, ORGANIC MATERIAL, AND RUBBLE SHALL BE STRIPPED TO APPROVED GRADES AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
15. PROTECT ALL STRUCTURES AND UTILITIES FROM ANY DAMAGE IN THE HANDLING, PROCESSING OR COMPACTING OF EMBANKMENT OR BACKFILL MATERIAL. EXERCISE CAUTION NEAR ARCHES, RETAINING WALLS, CULVERTS AND UTILITY TRENCHES TO PREVENT UNDUE STRAIN OR MOVEMENT. THE GEOTECHNICAL ENGINEER MAY REQUIRE THE USE OF SPECIALLY SELECTED MATERIAL ADJACENT TO STRUCTURES TO PROTECT AGAINST DAMAGE. DO NOT USE ROCK GREATER THAN ONE AND A HALF INCHES IN ANY DIMENSION ADJACENT TO STRUCTURES.
16. WHEN PLACING AND COMPACTING EMBANKMENT ON HILLSIDES OR AGAINST EXISTING EMBANKMENTS, CONTINUOUSLY BENCH THE SLOPES WHERE THE SLOPE IS STEEPER THAN 4:1 WHEN MEASURED AT RIGHT ANGLES TO THE ROADWAY OR EMBANKMENT CENTERLINE. PERFORM THE BENCHING OPERATION AS THE EMBANKMENT IS CONSTRUCTED IN LAYERS. MAINTAIN A BENCH WIDTH OF AT LEAST FIVE-FEET. BEGIN EACH HORIZONTAL CUT AT THE INTERSECTION OF THE ORIGINAL GROUND AND THE VERTICAL SIDES OF THE PREVIOUS CUT. IF THE MATERIAL CUT FROM THE BENCHES MEETS FILL REQUIREMENTS, COMPACT THIS MATERIAL ALONG WITH THE NEW EMBANKMENT MATERIAL.
17. WHEN PLACING FILL OVER EXISTING PAVEMENT, THOROUGHLY BREAK UP, SCARIFY, OR REMOVE THE PAVEMENT AS SPECIFIED OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
18. PRIOR TO THE PLACEMENT OF ASPHALT PAVEMENT, PROOF-ROLL THE COMPACTED GRADED AGGREGATE BASE (GAB) LAYER USING A FULLY LOADED DUMP TRUCK (MINIMUM 20 TON PAYLOAD CAPACITY). THE GEOTECHNICAL ENGINEER SHALL INSPECT THE PROOF-ROLLING AND DETERMINE IF THE GAB IS ACCEPTABLE OR IF THERE ARE AREAS THAT REQUIRE REMEDIATION. GAB AREAS THAT FAIL PROOF-ROLLING SHALL BE REMEDIATED TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER BY EITHER OF THE FOLLOWING METHODS:
    A. SCARIFYING, MOISTURE CONDITIONING, AND RE-COMPACTION OF THE GAB MATERIALS.
    B. UNDERCUTTING SOFT OF UNSUITABLE AREAS OF GAB AND REPLACING WITH COMPACTED GAB.

    DPW MAY APPROVE AN ALTERNATE APPROACH FOR GAB REMEDIATION/IMPROVEMENT IF IT IS RECOMMENDED AND SEALED BY THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL PROVIDE A SEALED APPROVAL OF THE GAB PRIOR TO PLACEMENT OF ASPHALT. DPW MAY ACCEPT AN ORAL OR EMAIL APPROVAL WHILE THE FINAL APPROVAL AND REPORTS ARE BEING COMPILED AND COMPLETED.

SOIL CLASSIFICATION

BORING NUMBER	DEPTH (FEET)	MOISTURE CONTENT (%)	SOIL DESCRIPTION (USC)	LL	PL	PI	PERCENT PASSING 1 IN SIEVE	PERCENT PASSING 3/4 IN SIEVE	PERCENT PASSING 1/2 IN SIEVE	PERCENT PASSING NO. 4 SIEVE	PERCENT PASSING NO. 10 SIEVE	PERCENT PASSING NO. 40 SIEVE	PERCENT PASSING NO. 60 SIEVE	PERCENT PASSING NO. 100 SIEVE	PERCENT PASSING NO. 200 SIEVE	BULK DENSITY (G/CM^3)	BULK DENSITY (LBS/FT^3)	NOTES
B-2	2'-2.5'		DARK BROWN SILTY, CLAYEY SAND													1.46	91.14	
B-3	0.5'-3'		GRAY/ORANGE CLAYEY SAND WITH GRAVEL													1.49	93.02	
B-4	2'-3.5'		GRAY/ORANGE CLAYEY SAND													1.50	93.64	
B-5	1.5'-2.5'		GRAY CLAYEY SAND													1.58	98.64	
B-1	1'-6.5'		RED/BROWN SILTY GRAVEL WITH SAND	35	26	9	76.6	72.7	70.9	67.4	67.2	63.3	53.6	43.2	43.2			
B-2	2.5'3.5'		DARK BROWN CLAYEY SAND	30	22	8	100	100	97.2	90.5	89.9	83.8	68.9	50.9	26.0			
B-6	1'-6'		RED/BROWN CLAYEY SAND	32	21	11	100	100	100	97.6	97.6	95.8	95.8	95.8	24.9			
B-7	4'-6.5'		LIGHT ORANGE SANDY SILT	35	27	8	100	100	100	96.7	96.6	93	93	78.1	61			

NOTES:
1. SOIL BORINGS ARE NOT TO SCALE.
2. BORING LAYERS IDENTIFIED IN THE SOIL CLASSIFICATION TABLE HAVE UNDERGONE LABORATORY TESTING AND ASTM D2487 USCS CLASSIFICATION PROCEDURES. ALL OTHER BORING LOGS ARE BASED ON VISUAL FIELD CLASSIFICATION ONLY.
3. SOIL BORINGS WERE OBTAINED FOR DESIGN PURPOSES ONLY. BORING DATA IS PROVIDED FOR THE CONTRACTOR'S CONVENIENCE AND IS APPLICABLE ONLY AT THE SPECIFIC POINTS WHERE THE BORINGS WERE PERFORMED. NO WARRANTY IS IMPLIED FOR THE CONTINUITY OF SUBSURFACE CONDITIONS.

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DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
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PWK# ____ SCP# 2021-00009
SMP# 2021-00012 FTP# 2020-00001

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CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN

BORING LOGS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22

SCALE -

SHEET NO. 3 OF 22

FILE # F-295

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GENERAL INVASIVE SPECIES CONTROL NOTES

1. ALL TREE REMOVAL AND TREE CARE ACTIVITIES SHALL BE CONDUCTED BY A MARYLAND LICENSED TREE EXPERT (LTE) OR EMPLOYEES WORKING UNDER THE DIRECT SUPERVISION OF AN LTE.
2. HERBICIDES SHALL BE APPLIED BY MARYLAND LICENSE PESTICIDE APPLICATORS OR REGISTERED EMPLOYEES WORKING UNDER THE SUPERVISION OF A LICENSED APPLICATOR.
3. ALL HERBICIDES SHALL BE EPA REGISTERED CHEMICALS APPROVED FOR USE IN FORESTED AREAS AND/OR ADJACENT TO WATERWAYS TO CONTROL AND PREVENT RE-GROWTH OF UNDESIRABLE VEGETATION. HERBICIDES AND CHEMICAL COMPONENTS APPLIED ON THE PROJECT SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: AQUATIC GLYPHOSATE, GLYPHOSATE, TRICLOPYR, AQUATIC NON-IONIC WETTING AGENT, BASAL OIL, AND MARKING DYE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATION AND POSTING REQUIREMENTS FOR HERBICIDE APPLICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING REQUIRED FOR HERBICIDE APPLICATION.
5. THE CONTRACTOR SHALL DISPOSE OF ALL INVASIVE DEBRIS INCLUDING LOGS, CUT BRANCHES, AND CHIPS AT APPROVED OFF-SITE LOCATIONS.
6. ALL NON-NATIVE/INVASIVE TREES AND TREES IN EMBANKMENT CLEARING ZONE DESIGNATED FOR REMOVAL SHALL HAVE THEIR STUMPS CUT TO A HEIGHT OF NO MORE THAN 4 INCHES ABOVE THE SOIL SURFACE. AN APPROPRIATE HERBICIDE SHALL BE APPLIED TO ANY BASAL STEMS AND/OR CUT STUMPS.
7. USE SELECTIVE LOW VOLUME HERBICIDE APPLICATIONS TO AVOID OFF-TARGET DRIFT. CONDUCT HERBICIDE APPLICATIONS ONLY DURING APPROPRIATE WEATHER CONDITIONS AS INDICATED ON THE PRODUCT LABEL. SPRAYING DURING HIGH HUMIDITY AND/OR HIGH TEMPERATURES CAN RESULT IN UPTAKE BY OFF-TARGET VEGETATION DUE TO VOLATILITY OF CERTAIN HERBICIDES.
8. CLEAN UP CHEMICAL SPILLS AND REPORT THEM IMMEDIATELY TO THE OWNER/DEVELOPER'S REPRESENTATIVE.
9. THE SITE SHALL BE INSPECTED WITH THE OWNER/DEVELOPER'S REPRESENTATIVE DURING THE LAST GROWING SEASON (BETWEEN MAY 15 AND SEPTEMBER 15) DURING THE CONTRACTED CARE AND MANAGEMENT PERIOD TO DETERMINE IF FOLLOW-UP VEGETATION CONTROL IS REQUIRED. ADDITIONAL ACTIONS, MAY BE REQUIRED FOR EFFECTIVE VEGETATION CONTROL.

SITE PLAN

SCALE: 1" = 20'

0 10 20 40

1 INCH = 20 FEET

EAST GUDE DRIVE

NEAL DRIVE

WESLEY ROAD

MCG ASSOCIATES LTD PTNSHP 1601 E GUDE DR T.M. GR53 2.79 AC.

1055 FIRST STREET LLC 1055 1ST ST T.M. GR53 DEED: 18715/65 2.12 AC.

MAYOR & COUNCIL OF ROCKVILLE NEAL DR T.M. GR53, P. P550 DEED: 3514/324 5.9 AC.

REDGATE FARMS COMM ASSOC INC E GUDE DR T.M. GR53, P. A DEED: 4183/213 PLAT REF: 11149 2.92 AC.

EX. INLET
TOP ELEV. = 388.44
EX. 15" RCP IN = 382.22
EX. 42" RCP IN = 382.06
EX. 48" RCP OUT = 381.09 (TBR)

EX. PIPE OUTFALL
TOP ELEV. = 383.80
EX. 48" RCP IN = 380.45 (TBR)

EX. 21 LF 48" RCP TO BE REMOVED

EX. 42" RCP SD

EX. 15" RCP SD

EX. 20' UTILITY EASEMENT PLAT REF: 1261

EX. 20' STORM DRAIN EASEMENT PLAT REF: 11149

EX. 54" EMERGENCY SPILLWAY

EX. 16" HDPE SD

EX. 16" WAT

EX. 6" WAT

EX. WAT MAIN (TYP.)

EX. FIRE HYDRANT (TYP.)

EX. GRATE INLET

EX. BOLLARDS (TBR)

EX. LIGHT POLE

EX. SIDEWALK

EX. BENCH TO BE REMOVED & RESET

EX. SD MANHOLE
TOP ELEV. = 385.52
EX. 18" RCP IN = 381.97
EX. 18" RCP OUT = 378.64

EX. 14 LF 18" RCP SD TO BE REMOVED

EX. ENDWALL TO BE REMOVED
TOP ELEV. = 376.60
EX. 18" RCP IN = 374.80 (TBR)

NON-WOODY VEGETATION ZONE

EX. RISER
TOP ELEV. = 384.56
(TBR) EX. 18" RCP IN = 374.88
EX. 16" HDPE OUT = 374.43

EX. ENDWALL TO BE REMOVED
TOP ELEV. = 375.51
(TBR) EX. 18" RCP OUT = 373.40

EX. HEADWALL
TOP ELEV. = 372.28
EX. 16" HDPE IN = 370.70

EX. ASPHALT PATH TO BE REMOVED

EX. RIPRAP TO BE REMOVED, STOCKPILED AND RE-USED (TYP)

EX. RIPRAP OUTFALL PROTECTION

ROOT PRUNING LIMITS (TYP.)

EX. SPECIMEN TREE TO BE REMOVED (TYP.)

EX. TREE TO BE REMOVED (TYP.)

EX. 2 YR WSE

EX. 10 YR WSE

EX. TREE (TYP)

EX. CRITICAL ROOT ZONE (TYP)

EX. SURVEY LIMITS

EX. PAVEMENT TO BE REMOVED AND TIED INTO PR. BIORETENTION

EX. SPECIMEN TREE (TYP)

PR. TEST PIT TO ESTABLISH LOCATION OF SANITARY SEWER (TYP.)

TPS#1 TPS#2 TPS#3 TPS#4 TPS#5 TPS#6 TPS#7 TPS#8

B#1 B#2 B#3 B#4 B#5 B#6 B#7

N. 514,450 E. 1,274,800

N. 514,460 E. 1,274,550

INVASIVE SPECIES

A NATURAL RESOURCE INVENTORY CONDUCTED IN MARCH 2019 IDENTIFIED THE FOLLOWING INVASIVE SPECIES WITHIN NORTHEAST PARK FOR REMOVAL:

ALLIARIA PETIOLATA (GARLIC MUSTARD)
ALLIUM VINEALE (WILD GARLIC)
BERBERIS THUNBERGII (JAPANESE BARBERRY)
CELASTRUS ORBICULATUS (ORIENTAL BITTERSWEET)
CIRSIUM ARVENSE (CANADA THISTLE)
EUONYMOUS FORTUNEI (WINTER CREEPER)
FICARIA VERNA (LESSER CELANDINE)
GLECHOMA HEDERACEA (GROUND IVY)
HEDERA HELIX (ENGLISH IVY)
LIGUSTRUM (SPP, PRIVET)
LONICERA JAPONICA (JAPANESE HONEYSUCKLE)
LONICERA TATARICA (BUSH HONEYSUCKLE)
MICROSTEGIUM VIMINEUM (JAPANESE STILTGRASS)
MORUS ALBA (WHITE MULBERRY)
PACHYSANDRA TERMINALIS (JAPANESE PACHYSANDRA)
PAULOWNIA TOMENTOSA (PRINCESS TREE)
PERSICARIA PERFOLIATUM (TEARTHUMB)
PRUNUS (SP, NON-NATIVE CHERRY)
ROSA MULTIFLORA (MULTIFLORA ROSE)
RUBUS PHOENICOLASIUS (WINEBERRY)
STELLARIA MEDIA (COMMON CHICKWEED)
WISTERIA (SP, WISTERIA VINE)

QUALIFIED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A DULY CERTIFIED FOREST CONSERVATION QUALIFIED PROFESSIONAL UNDER THE LAWS OF THE STATE OF MARYLAND AND THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION.

Signed: _____ Date: 07/12/2021

JASON TRABAND
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410-694-9401
JTRABAND@BAYLANDINC.COM

FC-02

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PWK# _____ SCP# 2021-00009
SMP# 2021-00012 FTP# 2020-00001

AS BUILT PLAN APPROVAL

CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
EXISTING CONDITIONS & NNI REMOVAL PLAN

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22

SCALE 1" = 20'

SHEET NO. 4 OF 22

FILE # F-295

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FACILITY ANALYSIS

LOCATION:	MONTGOMERY COUNTY, MD
POND	
DRAINAGE AREA:	51.07 ACRES
IMPERVIOUS AREA:	26.59 ACRES (52.1%)
TARGET WQv STORAGE:	2.21 AC-FT
PR. WQv WETPOOL:	1.02 AC-FT
PR. WQv EXTENDED DETENTION:	1.02 AC-FT
TARGET CPv STORAGE:	2.67 AC-FT
PR. CPv STORAGE:	2.98 AC-FT
TOTAL TREATMENT PROVIDED:	5.02 AC-FT
RAINFALL DEPTH TREATED:	2.27 INCHES
IMPERVIOUS AREA TREATED:	35.1 ACRES
NEAL DRIVE	
DRAINAGE AREA:	0.89 ACRES
IMPERVIOUS AREA:	0.45 ACRES (50.6%)
TARGET WQV STORAGE:	0.04 AC-FT
PR. WQV WETPOOL:	0.04 AC-FT
RAINFALL DEPTH TREATED:	0.93 INCHES
IMPERVIOUS AREA TREATED:	0.42 ACRES
WESLEY COURT	
DRAINAGE AREA:	2.38 ACRES
IMPERVIOUS AREA:	0.95 ACRES (39.9%)
TARGET WQV STORAGE:	0.08 AC-FT
PR.WQV WETPOOL:	0.04 AC-FT
RAINFALL DEPTH TREATED:	0.49 INCHES
IMPERVIOUS AREA TREATED:	0.46 ACRES
STREAM RESTORATION CREDIT:	2.9 ACRES
TOTAL IMPERVIOUS AREA TREATED:	38.8 ACRES
EX 10-YR WSE:	383.29
EX 10-YR STORAGE:	6.6 AC-FT
EX 10-YR DISCHARGE:	20.0 CFS
PR 10-YR WSE:	383.00
PR 10-YR STORAGE:	6.6 AC-FT
PR 10-YR PEAK DISCHARGE:	19.7 CFS
EX 100-YR WSE:	384.96
EX 100-YR STORAGE:	10.9 AC-FT
EX 100-YR PEAK DISCHARGE:	117.8 CFS
PR 100-YR WSE:	384.42
PR 100-YR STORAGE:	9.9 AC-FT
PR 100-YR PEAK DISCHARGE:	130.8 CFS
ORIFICE SIZE REQUIRED:	5.0 IN DIA.
FREEBOARD REQUIRED:	1.00 FT
EX. FREEBOARD PROVIDED:	0.98 FT
PR. FREEBOARD PROVIDED:	1.58 FT
MD-378 HAZARD CLASSIFICATION:	A

LEGEND

- COMPACTED CLAY LINER
- SWM ACCESS ROAD
- PR. HIGH MARSH ELEV. 376.5 TO ELEV. 376.75
- PR. LOW MARSH ELEV. 376.25 TO ELEV. 376.5
- PR. PERMANENT POOL ELEV. 376.5

SITE PLAN

SCALE: 1" = 20'

0 10 20 40
1 INCH = 20 FEET

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STATE OF MARYLAND · CHRISTOPHER JON STEPS · NO. 33146 · REGISTERED PROFESSIONAL ENGINEER · 10/8/21

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CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
SITE PLAN

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE 1" = 20'
SHEET NO. 5 OF 22
FILE # F-295

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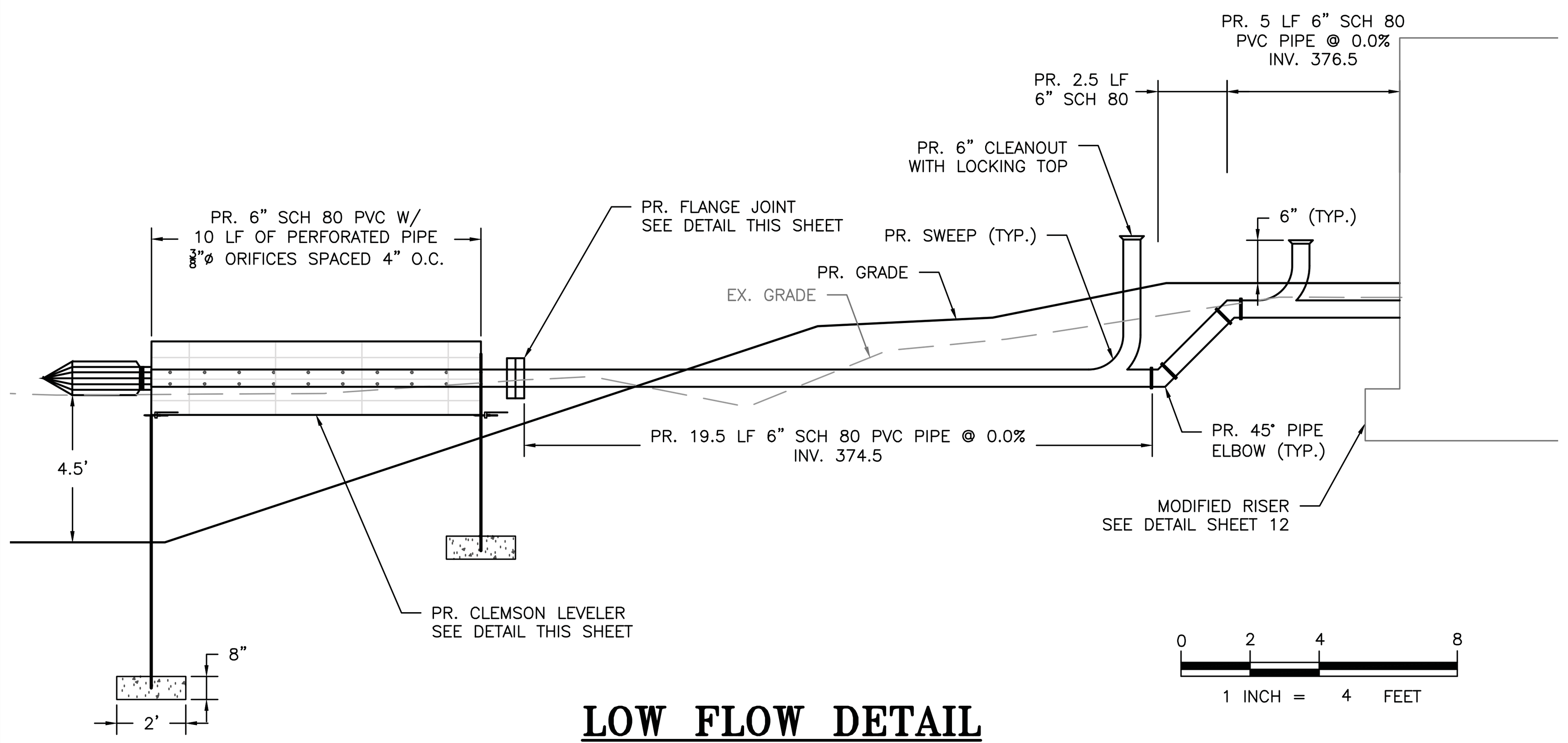
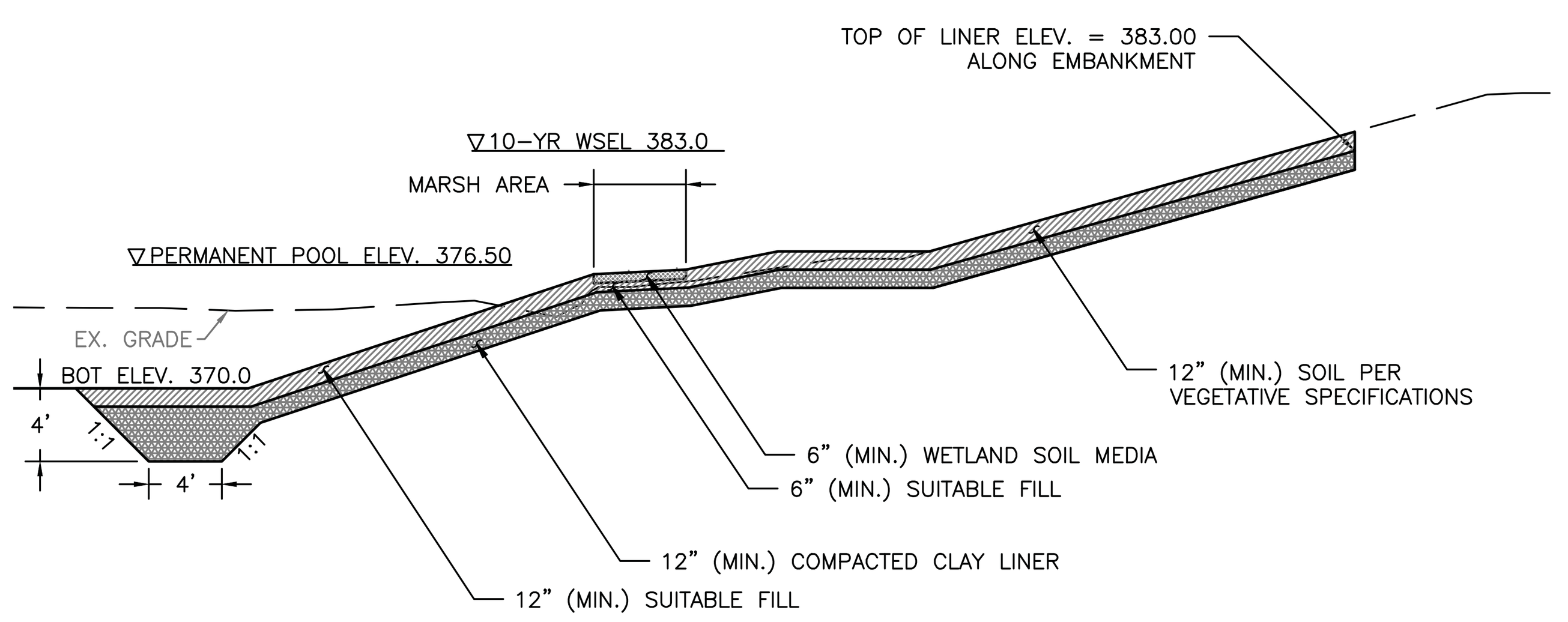


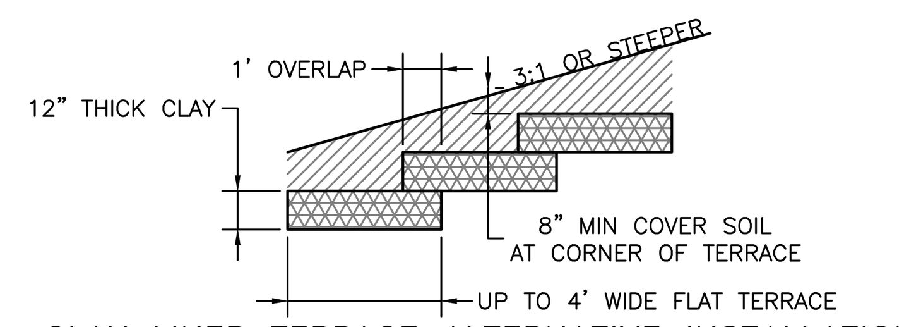
LOW FLOW DETAIL

SCALE: 1" = 4'



COMPACTED CLAY LINER DETAIL

SCALE: 1" = 10'

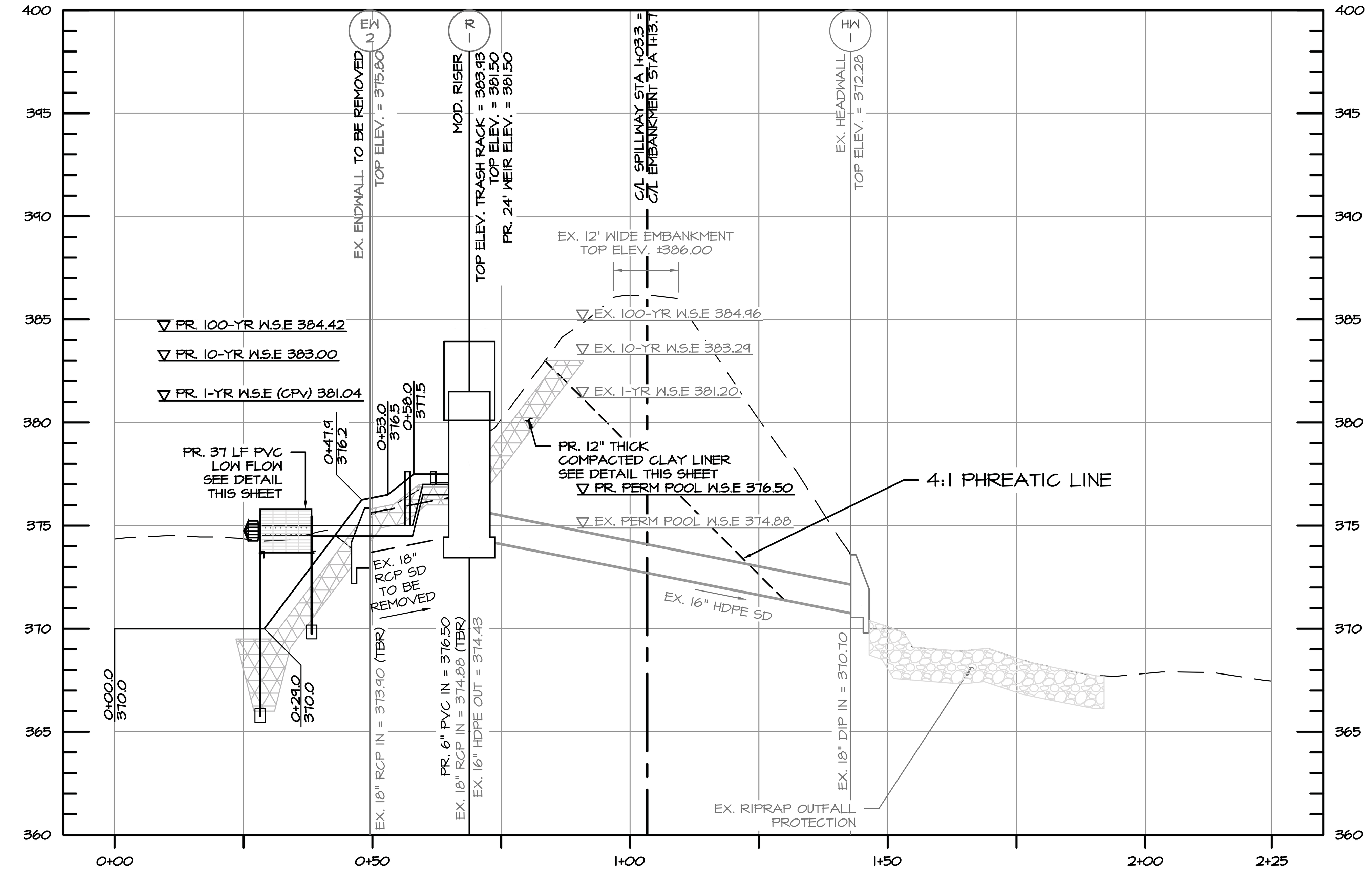


CLAY LINER TERRACE ALTERNATIVE INSTALLATION

SCALE: 1" = 5'

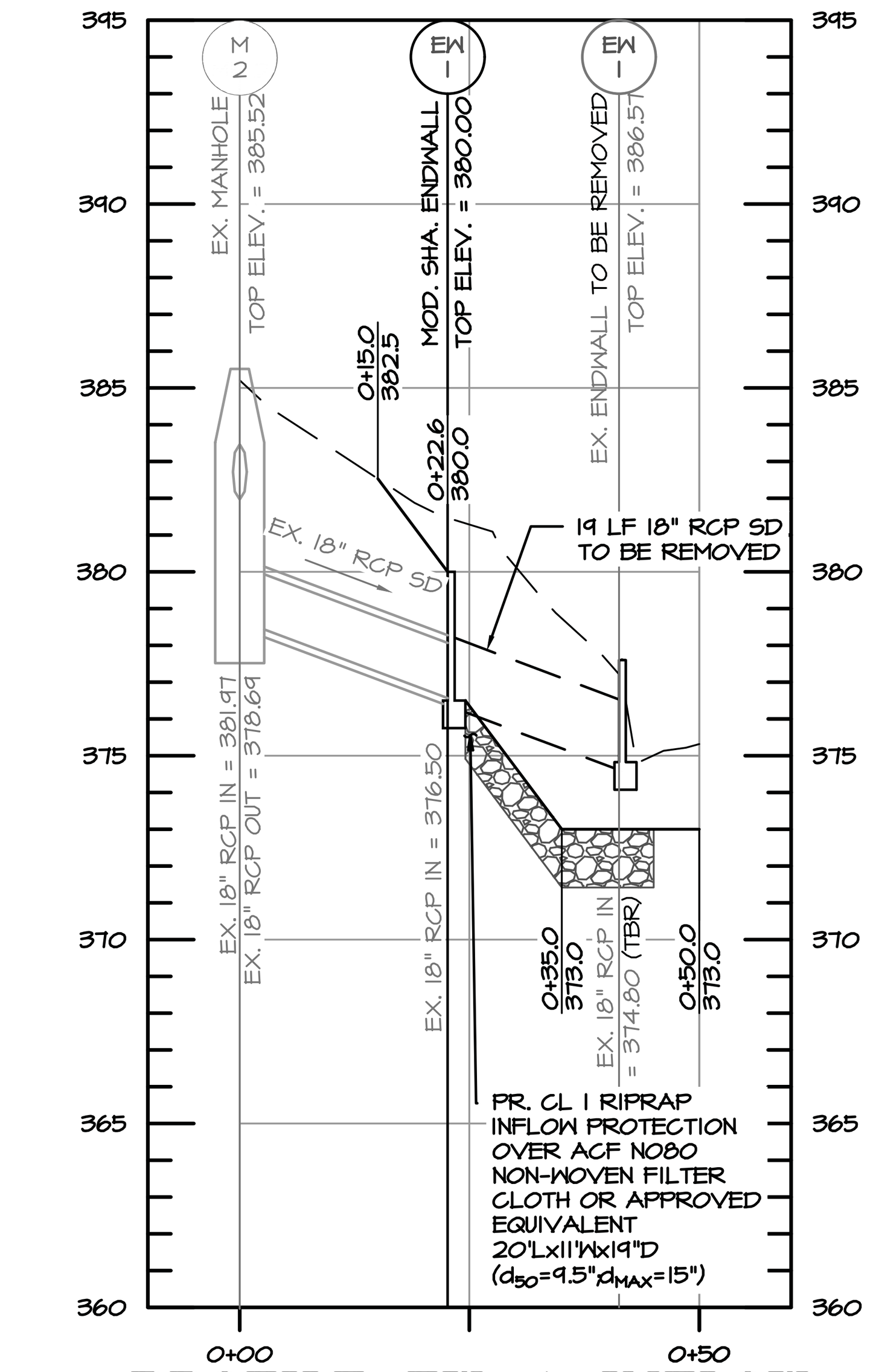
NOTES:

1. THE 12" COMPACTED CLAY LINER SHALL MEET THE MD-378 REQUIREMENTS FOR IMPERVIOUS MATERIAL (GC, SC, CH, CL) AND SHALL HAVE A PERMEABILITY OF LESS THAN 10^{-7} CM/SEC.
2. THE 12" COMPACTED CLAY LINER SHALL BE INSTALLED AS PER MD-378 CONSTRUCTION SPECIFICATIONS, IN TWO (2) 8" LIFTS BEFORE COMPACTION.
3. THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITH ±2% OF THE OPTIMUM. EACH LAYER SHALL BE COMPACTED AS NECESSARY TO OBTAIN THE DENSITY AND IS TO BE CERTIFIED BY A GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE COMPLETED AS PER AASHTO METHOD T-99 (STANDARD PROCTOR).
4. BELOW PERMANENT POOL, THERE SHALL BE A MINIMUM OF 12" SUITABLE FILL OVER COMPACTED CLAY LINER. IN WETLAND MARSH AREAS, 6" OF WETLAND SOIL MEDIA SHALL BE INSTALLED OVER 6" OF SUITABLE OVER THE COMPACTED CLAY LINER. A MINIMUM OF 4" OF TOPSOIL AND 8" OF SUITABLE FILL OVER THE COMPACTED CLAY LINER ALONG THE EMBANKMENT. CONTRACTOR SHALL INSTALL COMPACTED CLAY LINER UNDER DRIVABLE GRASS ACCESS ROAD WHERE SPECIFIED.
5. THE COMPACT CLAY LINER MAY BE INSTALLED ON SLOPES 3:1 OR STEEPER IN UP TO 4 FOOT WIDE FLAT TERRACES WITH A MINIMUM OVERLAP OF 12" ON EACH TERRACE.



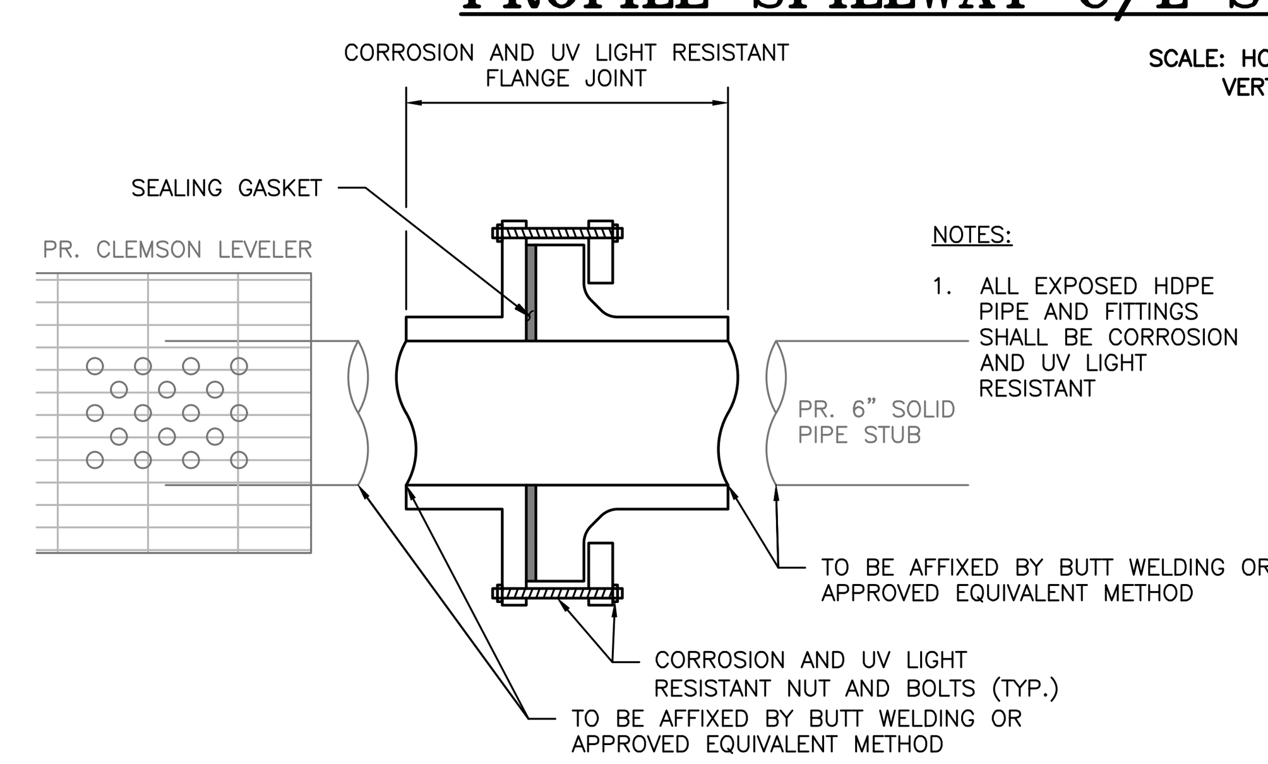
PROFILE SPILLWAY C/L STA: 0+00 TO STA: 1+30

SCALE: HORZ. 1" = 20'
VERT. 1" = 5'



PROFILE EW-1 INFLOW STA: 0+00 TO STA: 0+50

SCALE: HORZ. 1" = 20'
VERT. 1" = 5'



NOTES:

1. ALL EXPOSED HDPE PIPE AND FITTINGS SHALL BE CORROSION AND UV LIGHT RESISTANT

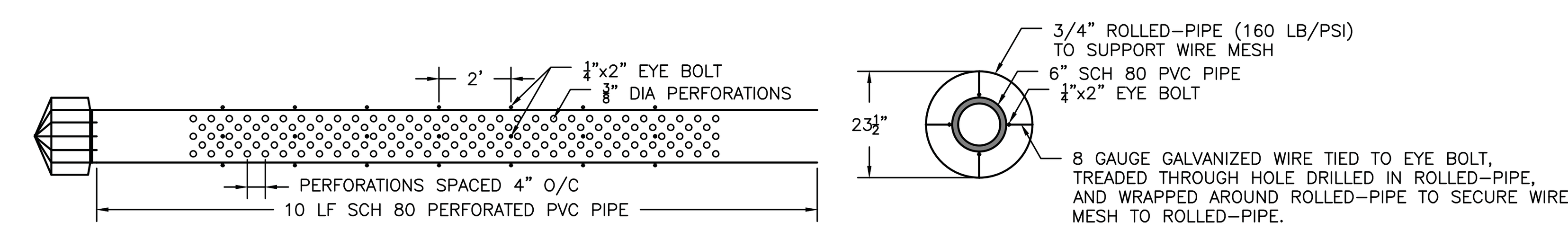
FLANGE JOINT DETAIL

SCALE: NOT TO SCALE

NOTES:

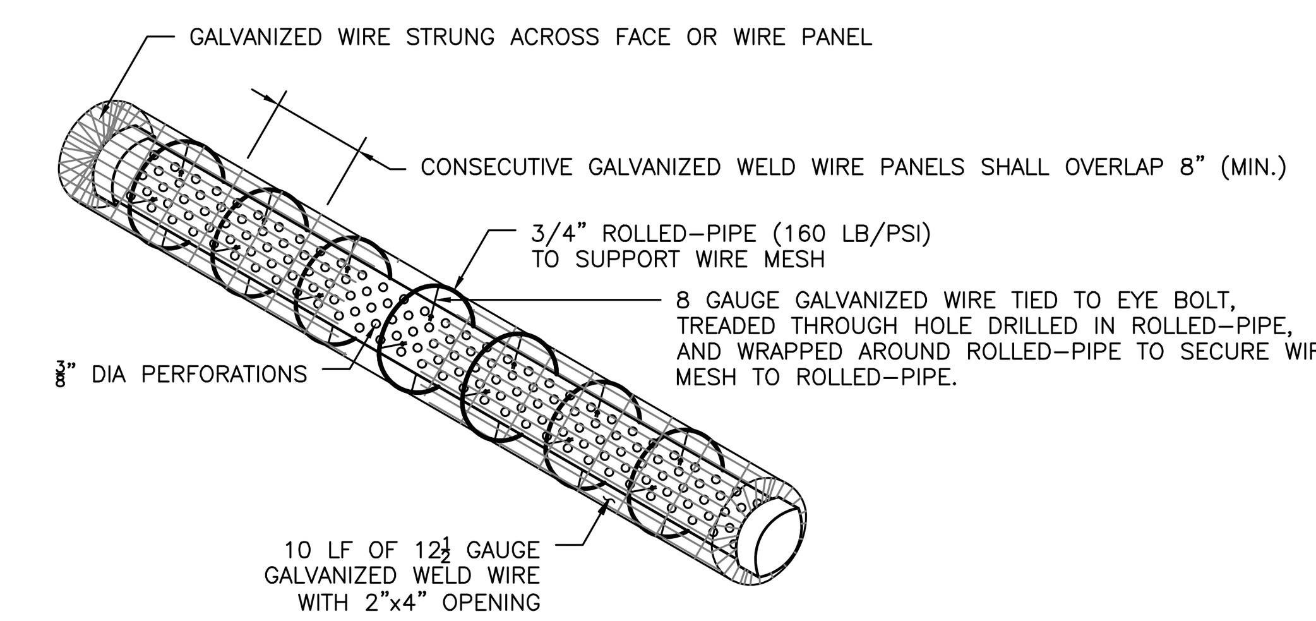
ALL EXPOSED PVC PIPES AND FITTINGS SHALL BE RATED FOR DIRECT SUNLIGHT EXPOSURE (EG. 80 ELECTRICAL CONDUIT MEETING THE RESISTANCE REQUIREMENTS FOR SUNLIGHT RESISTANCE IN UL STANDARD UL 651)

WHEN REQUIRED REBAR SHALL BE PRE-BENT 'L' REBAR AND EPOXY COATED. NO REBAR SHALL BE BENT ON-SITE.



PROFILE — SCALE: NOT TO SCALE

SECTION — SCALE: NOT TO SCALE



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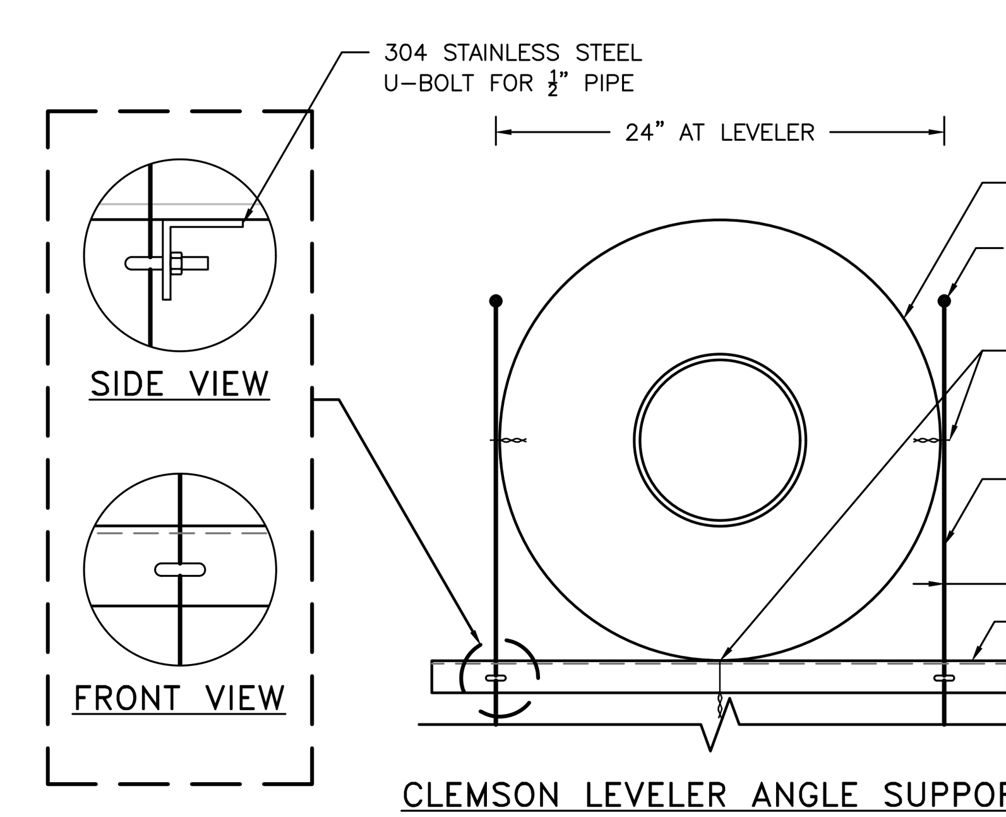
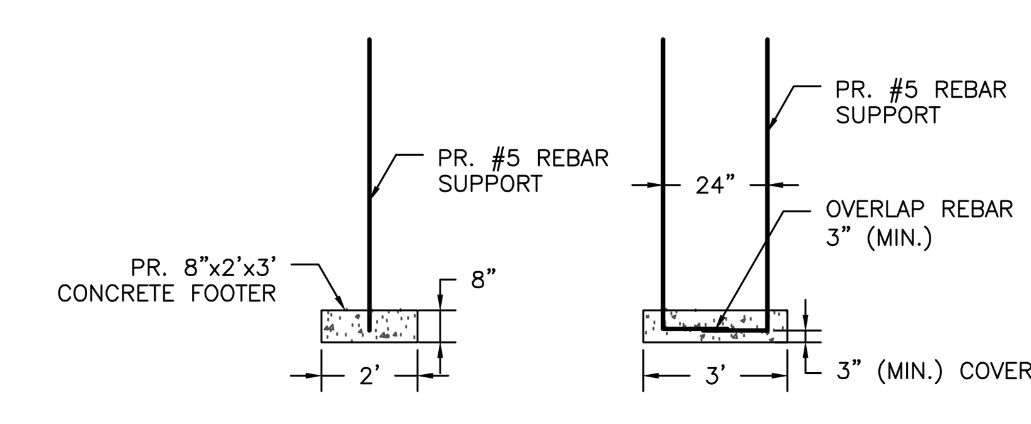


CLEMSON LEVELER ANGLE SUPPORT

SCALE: NOT TO SCALE

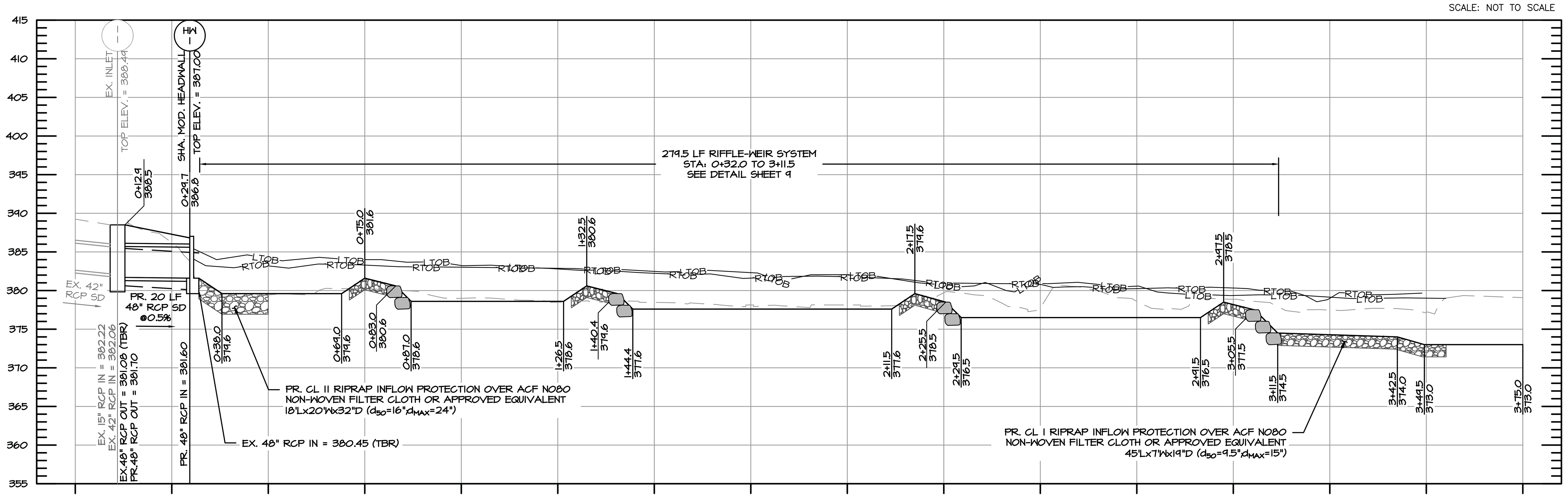


CONCRETE FOOTER DETAIL

SCALE: NOT TO SCALE

CLEMSON LEVELER DETAIL

SCALE: NOT TO SCALE



PROFILE CHANNEL C/L STA: 0+00 TO STA: 3+75

SCALE: HORZ. 1" = 20'
VERT. 1" = 10'

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NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

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CHECKED	CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau
2021.11.08 17:08:18-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SMP# 2021-00012
SCP# 2021-00009
FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
PROFILES & DETAILS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE: AS SHOWN
SHEET NO. 6 OF 22
FILE # F-295

MD-378 CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI, 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6' (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS (POLYMER COATED STEEL PIPE) STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

   MATERIALS (ALUMINUM COATED STEEL PIPE)
   - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A.

   ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

   MATERIALS (ALUMINUM PIPE) THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

   ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PREPUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12INCH WIDE STANDARD LAP TYPE BAND WITH 12INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

   HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE 'STRUCTURE BACKFILL' SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" TO 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING -THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

DRAINAGE DIAPHRAGMS WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

CARE OF WATER DURING CONSTRUCTION

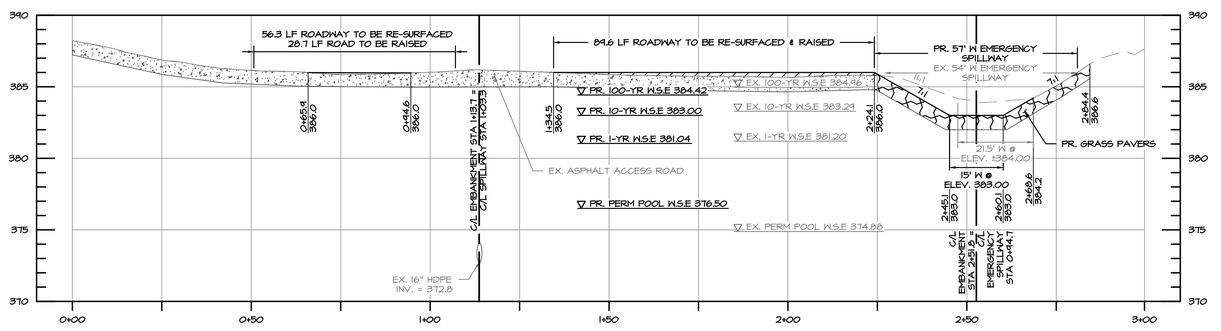
ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.



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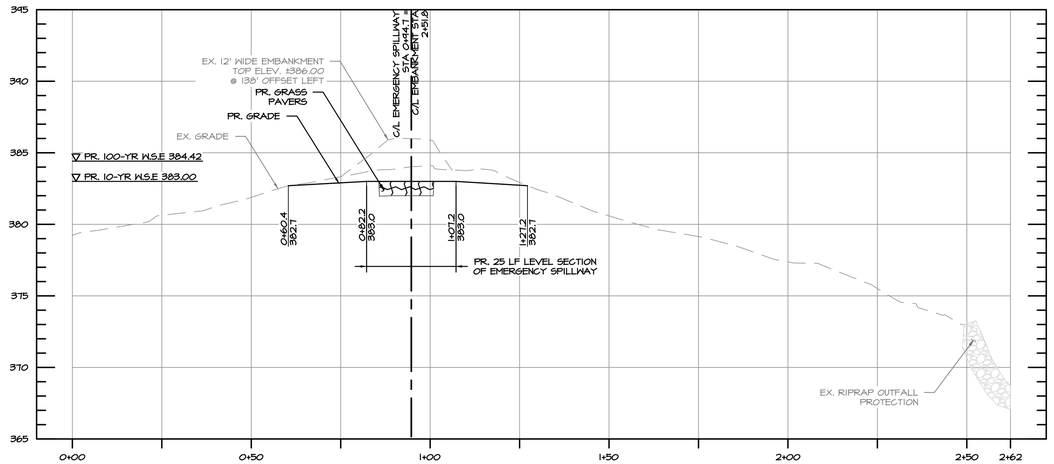

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VERT. 1" = 5'

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DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.08.17:08:19-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK# SCP# 2021-00009
SMP# 2021-00012 FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
PROFILES & NOTES

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22

SCALE AS SHOWN

SHEET NO. 7 OF 22

FILE # F-295

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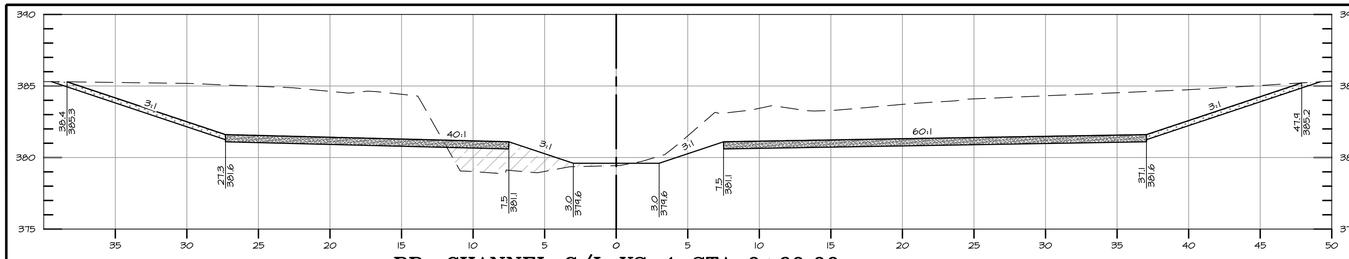

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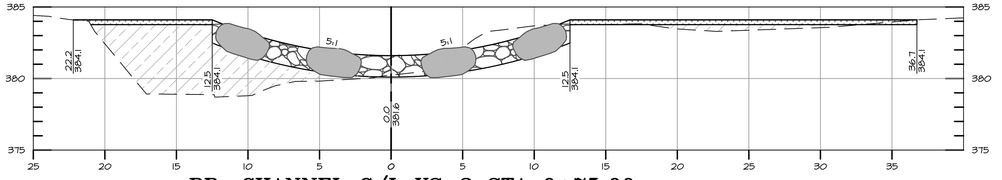

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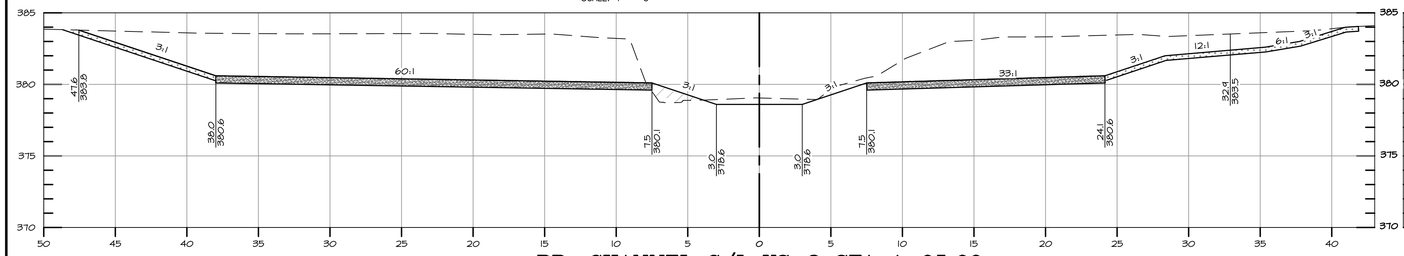

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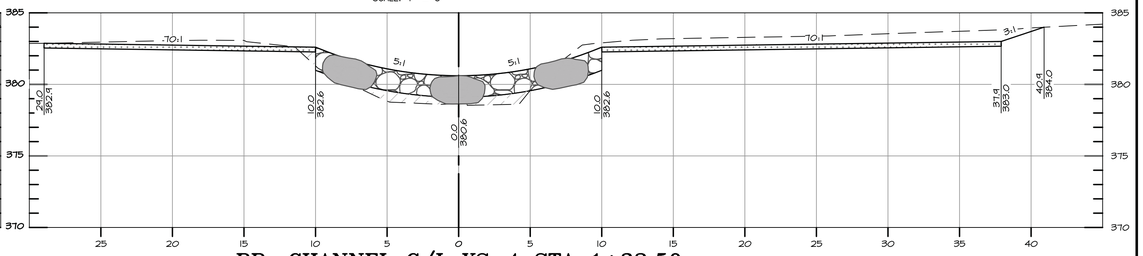

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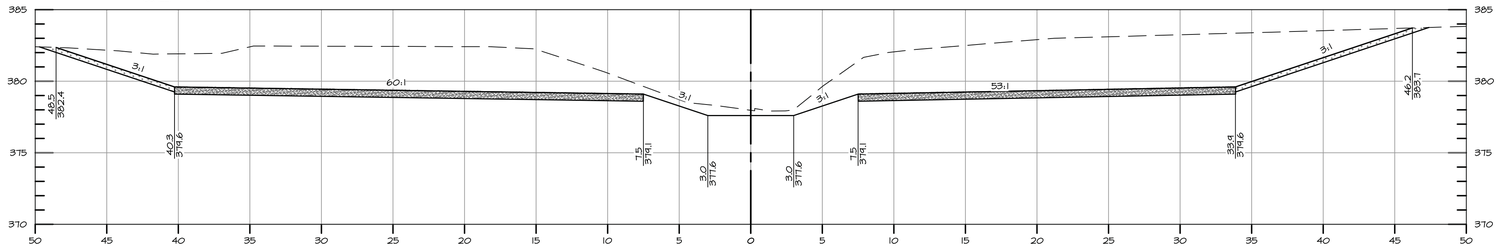

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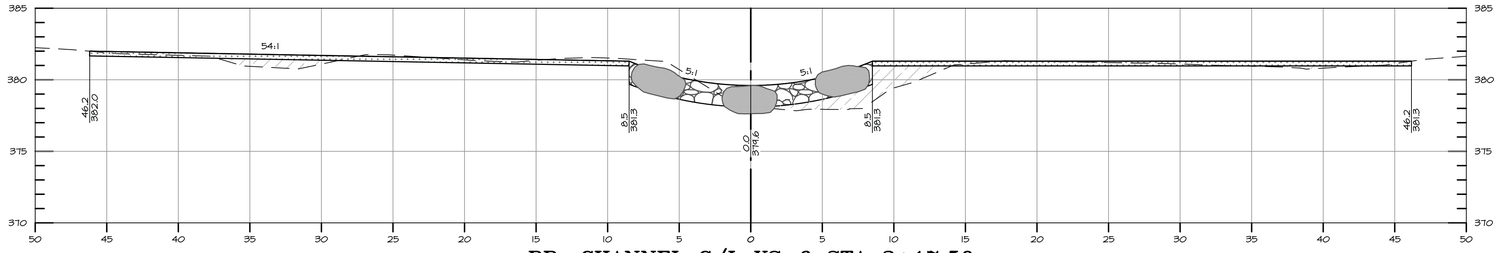

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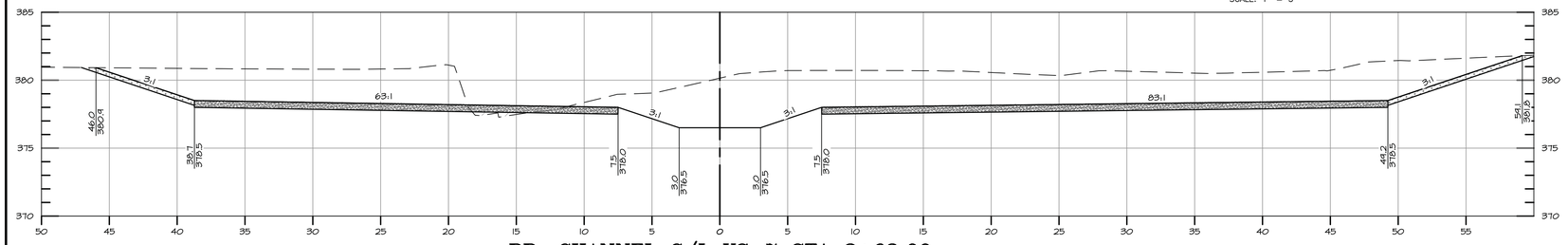

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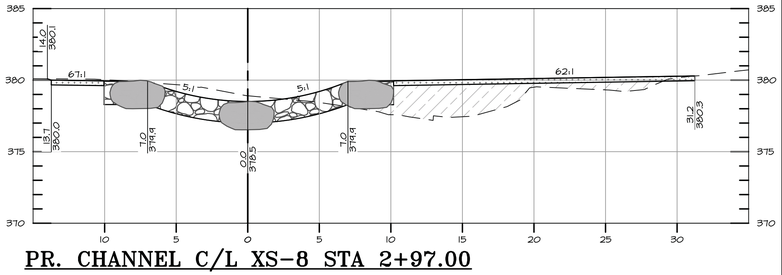
SCALE: 1" = 5'



PR. CHANNEL C/L XS-8 STA 2+97.00

SCALE: 1" = 5'

CROSS SECTION LEGEND

EX. GRADE

PR. GRADE

PR. RSC COBBLE (d_{50}=9")

PR. RSC BOULDERS

PR. FILTER FABRIC

PR. SUITABLE FILL MATERIAL

PR. TOPSOIL

PR. WETLAND SOIL MEDIA

0 2.5 5 10

1 INCH = 5 FEET

NOTE: ROCKS SHOWN ON CROSS SECTION VIEWS ARE SYMBOLIC AND DO NOT REPRESENT INDIVIDUAL STONES. SEE ROCK SIZING TABLES SHEET 9 FOR ACTUAL ROCK DIMENSIONS.

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NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.08 17:08:20-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK# SCP# 2021-00009
SMP# 2021-00012 FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
CROSS SECTIONS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22

SCALE 1" = 5'

SHEET NO. 8 OF 22

FILE # F-295

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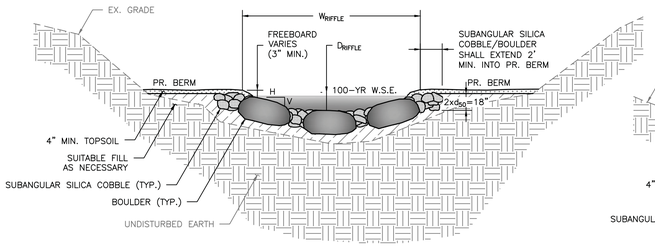
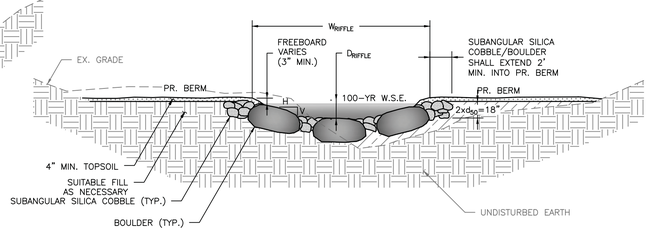


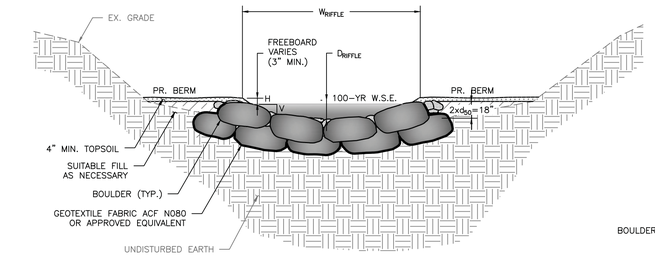
SECTION A
WEIR BACK VIEW (THROUGH COBBLE)
IN FILL

SCALE: NOT TO SCALE



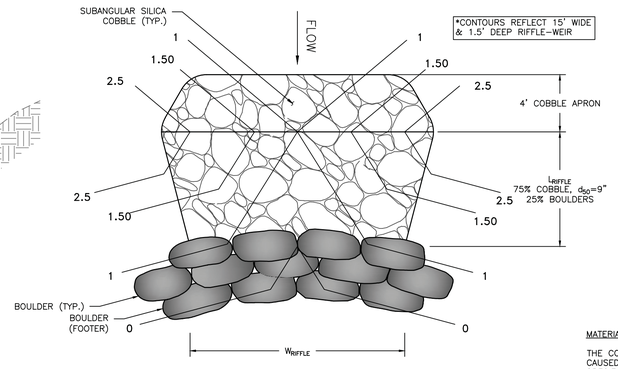
SECTION A
WEIR BACK VIEW (THROUGH COBBLE)
IN CUT

SCALE: NOT TO SCALE



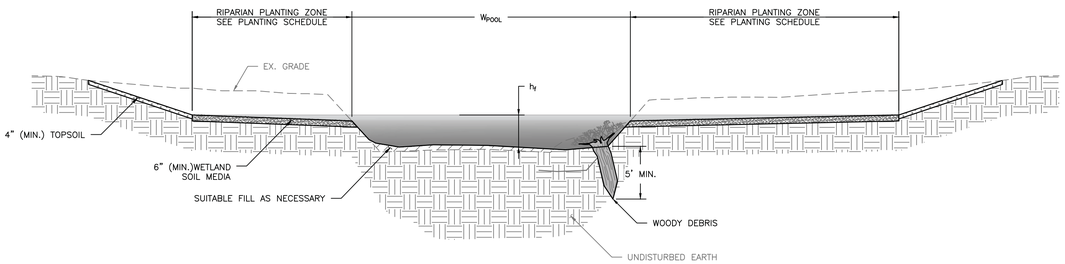
SECTION B
WEIR FRONT VIEW (THROUGH BOULDER)

SCALE: NOT TO SCALE



RIFFLE-WEIR TYPICAL PLAN VIEW

SCALE: NOT TO SCALE



SECTION C
THROUGH POOL

TYPICAL RIFFLE-WEIR SECTIONS

SCALE: NOT TO SCALE

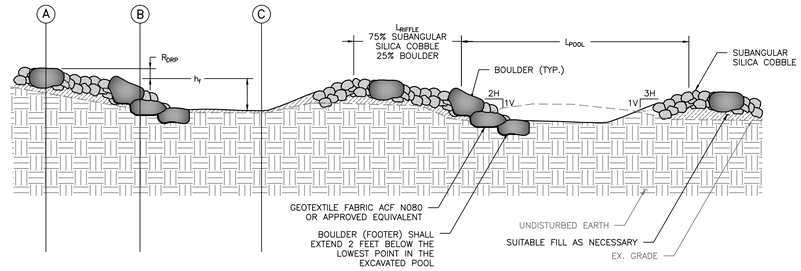
RIFFLE-WEIR DATA TABLE

	PR. REGENERATIVE STORMWATER CONVEYANCE SYSTEM (RSC) FROM STA: 0+32.0 TO 3+11.5
L_{RIFFLE} (RIFFLE LENGTH)	12 FT.
L_{POOL} (POOL LENGTH)	VARIES – SEE PROFILE
h_f (POOL DEPTH)	2.0 FT.
W_{POOL} (POOL WIDTH)	VARIES – SEE SECTIONS
W_{RIFFLE} (RIFFLE WIDTH)	VARIES – SEE SECTIONS
D_{RIFFLE} (RIFFLE DEPTH)	VARIES – SEE PROFILE
R_{DRP} (DROP ACROSS RIFFLE)	VARIES – SEE PROFILE
H:V (RIFFLE SIDE SLOPE)	5H:1V

RIFFLE-WEIR ROCK SIZE TABLE

ROCK SIZE TABLE		
ROCK TYPE	ROCK SIZE	% MIX
SUBANGULAR SILICA COBBLE	D50 = 9" MIN. = 6", MAX. = 12"	–
BOULDERS	GREATER THAN 6'X2'X2'	10
	3'X2'X1.25' TO 6'X3'X2'	80
	LESS THAN 3'X2'X1.25'	10

NOTE:
1. BOULDERS SHALL BE STACKABLE, OBLONG AND FLAT IN APPEARANCE
2. PERCENTAGES BY WEIGHT SHOWN REFER TO THE MAXIMUM ALLOWABLE ROCK SIZE DISTRIBUTION
3. ROCK SIZE DISTRIBUTION 3'X2'X1.25' TO 6'X3'X2' CAN BE UP TO 100% OF MIX



RIFFLE/POOL TYPICAL PROFILE

SCALE: NOT TO SCALE

RIFFLE-WEIR CONSTRUCTION SPECIFICATIONS

MATERIALS

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 CERTIFICATION OF GRADATION ANALYSIS OR SAMPLE OF STONE TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION. IT 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.

- FOOTER AND WEIR BOULDERS – BOULDERS SHALL BE AS SPECIFIED ON THE RIFFLE-WEIR ROCK SIZE TABLE. BOULDERS SHALL BE EITHER SANDSTONE OR GRANITE, STACKABLE, OBLONG, AND FLAT IN APPEARANCE, AND DARK BROWN OR DARK GRAY IN COLOR. THE MINIMUM DRY UNIT WEIGHT OF SANDSTONE WILL BE 145 POUNDS PER CUBIC FOOT & GRANITE BOULDERS WILL BE 155 POUNDS PER CUBIC FOOT. 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 TRENCH. FOOTER BOULDERS SHALL EXTEND 2 FEET BELOW THE LOWEST POINT IN THE EXCAVATED POOL. SANDSTONE BOULDERS ARE PREFERRED, HOWEVER, GRANITE BOULDERS MAY BE USED IF THE CONTRACTOR SHOWS THE CITY DUE DILIGENCE IN ATTEMPTING TO LOCATE SANDSTONE BOULDERS. ANY SUBSTITUTION WILL BE AT NO COST TO THE CITY.
- COBBLE – THE STONE SHALL BE SUBANGULAR SILICA COBBLE AND 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 NOTED IN RIFFLE-WEIR ROCK SIZE TABLE. A WELL GRADED MIXTURE AS USED HEREIN IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE LARGE VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE SHALL NOT EXCEED 1.5 TIMES THE SPECIFIED D50 SIZE. THE MINIMUM DRY UNIT WEIGHT OF COBBLE WILL BE 155 POUNDS PER CUBIC FOOT.
- WOODY DEBRIS – LARGE WOODY DEBRIS OR INVERTED ROOTWADS SHALL BE CUT FROM HARDWOOD TREES WITH A TRUNK DIAMETER AT BREAST HEIGHT (DBH) OF 6 INCHES TO 24 INCHES. ROOT FANS SHALL BE OBLONG TO CIRCULAR SHAPE AND HAVE A MINIMUM SPREAD OF 2 FEET AS MEASURED AT ITS NARROWEST AXIS AND COVERING AN AREA A MINIMUM OF 16 SQUARE FEET. THE ATTACHED TRUNK SHALL BE A MINIMUM OF 6 FEET IN LENGTH AND BE CLEAR OF LEAF MATTER. THEIR SIZE SHALL NOT EXCEED 10 PERCENT OF THE POOL VOLUME.

  LARGE WOODY DEBRIS CAN BE SALVAGED FROM THE PROJECT SITE PROVIDED THEY MEET THE ABOVE REQUIREMENTS AND ARE CLEARLY FLAGGED FOR CLEARING AND GRUBBING. NO LIVE TREES SHALL BE HARVESTED FOR THE SOLE PURPOSE OF PROVIDING MATERIALS FOR THIS ITEM. IF SUFFICIENT MATERIALS MEETING THE ABOVE REQUIREMENTS ARE NOT AVAILABLE FROM THE PROJECT SITE, THE CONTRACTOR SHALL THEN OBTAIN OFF-SITE MATERIAL MEETING THE SPECIFIED REQUIREMENTS.
- TOPSOIL – TOPSOIL SHALL BE PER THE STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS AS SPECIFIED ON SHEET 17. TOPSOIL SHALL NOT BE SALVAGED FROM AREAS AFFECTED BY NNI REMOVAL. THE CONTRACTOR SHALL MAINTAIN A SEPARATE STOCKPILE FOR TOPSOIL, AND IT SHALL NOT BE COMINGLED WITH OTHER FILL MATERIALS.
- FILTER CLOTH – FILTER CLOTH SHALL MEET OR EXCEED THE REQUIREMENTS OF ACF NO80 POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC. THE CONTRACTOR SHALL PROVIDE MATERIAL SPECIFICATION TO THE COUNTY FOR APPROVAL. FILTER FABRIC SHALL BE PLACED UNDER ALL BOULDERS. REFER TO CONSTRUCTION DRAWINGS FOR PLACEMENT LOCATION. TO PREVENT UNDERCUTTING, A CONTINUOUS SHEET OF FILTER FABRIC SHALL BE USED ALONG THE CROSS-SECTION. FILTER FABRIC SHALL NOT BE PLACED IN THE POOLS SO AS NOT TO IMPEDE FILTRATION.

SUBMITTALS

- FOOTER AND WEIR BOULDERS – THE CONTRACTOR WILL LOCATE POTENTIAL SOURCES FOR THE STONE. THE CONTRACTOR SHALL SUBMIT TO THE CITY A CERTIFICATE VERIFYING THE FOLLOWING BOULDER INFORMATION:

  (1) STONE CLASSIFICATION
  (2) STONE DENSITY (I.E., WEIGHT PER CUBIC FOOT)
  (3) WEIGHT OF STONE BEING SUPPLIED.
  (4) STONE QUALITY SHALL MEET ALL OF THE ABOVE SPECIFICATIONS.
- COBBLE – THE CONTRACTOR SHALL OBTAIN COBBLE SAMPLES FROM THE QUARRY AND SUBMIT TO THE CITY THE SAMPLES AND A CERTIFICATE VERIFYING THE FOLLOWING COBBLE INFORMATION:

  (1) STONE CLASSIFICATION
  (2) STONE DENSITY (I.E., WEIGHT PER CUBIC FOOT)
  (3) WEIGHT OF STONE BEING SUPPLIED.
  (4) STONE QUALITY SHALL MEET ALL OF THE ABOVE SPECIFICATIONS.
- TOPSOIL – THE CONTRACTOR SHALL OBTAIN A TOPSOIL SAMPLE AND SUBMIT TO THE CITY FOR APPROVAL THE SAMPLE AND CERTIFICATE WITH THE SOURCE AND SPECIFICATIONS OF THE COMPOST.
- FILTER CLOTH – THE CONTRACTOR SHALL PROVIDE MATERIAL SPECIFICATION TO THE CITY FOR APPROVAL.

CONSTRUCTION

THE RIFFLE-WEIR SYSTEM SHALL BE INSTALLED ACCORDING TO THE SEQUENCE OF CONSTRUCTION, THE CONSTRUCTION DRAWINGS, THESE SPECIFICATIONS, AND AS DIRECTED BY THE CITY.

CONSTRUCTION OF THE RIFFLE-WEIR SYSTEM SHALL BEGIN AT THE UPSTREAM END AND PROCEED DOWNSTREAM TO THE SWM POND. CONTRACTOR MAY WORK DOWNSTREAM TO UPSTREAM PER STEPS BELOW WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.

EXCAVATE THE FIRST POOL AND INSTALL RIPRAP INFLOW PROTECTION TO PROVIDE STABILIZATION. THEN INSTALL THE DOWNSTREAM WEIR. FOOTER BOULDERS SHALL BE PLACED AT THE INTERFACE OF THE POOLS AND RIFFLES AS SHOWN ON THE CONSTRUCTION DRAWINGS. A CONTINUOUS SHEET OF GEOTEXTILE SHALL BE USED TO SEPARATE ANY POTENTIAL EARTHERN FILL AND THE BOULDERS THAT LINE THE FACILITY BOTTOM. ADDITIONAL BOULDERS SHALL BE PLACED ON TOP OF THE FOOTER BOULDERS AT THE WEIR ELEVATION UPSTREAM OF THE FOOTER BOULDERS TO FORM THE WEIR CHANNEL PARABOLIC SHAPE. BOULDERS SHALL BE ARRANGED HORIZONTALLY IN THE CENTER OF THE CHANNEL AND THE ARMS ON EITHER SIDE OF THE CHANNEL SHALL BE EXTENDED PARABOLICALLY/APPROXIMATELY 20 DEGREE ANGLE LONGITUDINALLY TO THE CENTER OF THE POOL. THE BOULDERS SHALL BE ARRANGED TO MAXIMIZE INTERLOCKING. THE FACE OF THE BOULDERS SHALL BE TILTED DOWNSTREAM TO OCCUPY HALF OF THE INCLINE (6"VERTICAL) MADE UP OVER THE ENTIRE LENGTH OF THE WEIR.

ONCE THE BOULDERS HAVE BEEN PLACED, FILL WITH 75% COBBLE AND 25% BOULDERS TO FORM THE BACKSIDE OF THE WEIR. A SMALL COBBLE APRON SHALL BE PLACED WHERE THE BOULDERS MEET THE POOL ON THE DOWNSTREAM SIDE. ONCE THE WEIR-POOL COMBINATION IS COMPLETE, THE ENTIRE SURFACE SHALL BE STABILIZED WITH TEMPORARY SEEDING. ANY DISTURBED AREA SHALL BE STABILIZED AT THE END OF EACH WORKING DAY WITH TEMPORARY SEEDING. EXCAVATED MATERIAL SHALL BE USED TO BLEND THE EDGES OF DOWNSTREAM WEIR AND SURROUNDING GRADE.

CONTINUE THE PROCESS OF ALTERNATING POOLS AND RIFFLES/WEIRS DOWN THROUGH THE SYSTEM TO THE SWM POND.

PLACE LARGE WOODY DEBRIS/INVERTED ROOT WADS IN POOLS AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PUSH THE TRUNK (STEM SIDE DOWN) INTO SOIL OR EXCAVATE THE TRENCH FOR THE INVERTED ROOT WAD AND PLACE IN THE TRENCH SO THE INVERTED ROOT WAD SITS WITH THE ROOT MASS UPWARD IN THE SHALLOW AQUATIC POOLS AND BACKFILL TO SECURE. ROOT WADS SHALL BE EMBEDDED 5 FEET BELOW THE INVERT OF THE POOL IN A VERTICAL ALIGNMENT.

BLOW TOPSOIL OVER THE TOPS OF THE WEIRS AND BERMS. COMPOST SHALL NOT BE BLOWN OVER TEMPORARILY DISTURBED WETLANDS. COMPLETE FINAL STABILIZATION AND PERMANENT SEEDING AS INDICATED IN THESE CONSTRUCTION DRAWINGS.

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DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.08 17:08:21-05'00'
DIRECTOR OF PUBLIC WORKS
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PWK# SCP# 2021-00009
SMP# 2021-00012 FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
RSC DETAILS & NOTES

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22

SCALE AS SHOWN

SHEET NO. 9 OF 22

FILE # F-295

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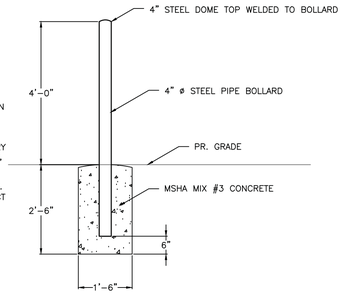
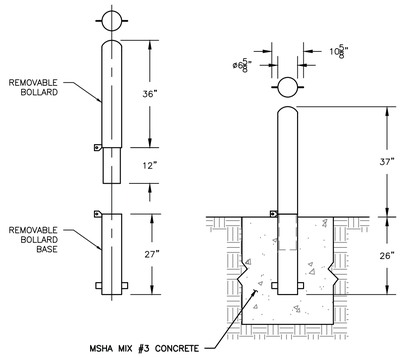
NOTES:

1. ALL PIPE TO BE STANDARD WEIGHT AS PER AISC MANUAL.
2. ALL EXPOSED METAL SURFACES SHALL BE PAINTED WITH GALVANIZED PAINT – ONE COAT METAL PRIMER AND TWO COATS HUNTER GREEN RAL 6009 FROM KEYSTONE RIDGE DESIGNS.
3. 18" X 18" YELLOW REFLECTOR (REFLECTIVE PAINT/TAPE) BE SECURELY FASTENED TO EVERY OTHER BOLLARD. IF REFLECTIVE TAPE IS USED, THE MINIMUM ROLL WIDTH SHALL BE 6" AND THERE SHALL BE NO GAPS BETWEEN LAYERS. SIGNAGE WILL NOT BE ALLOWED ON BOLLARDS. END OF ROAD MARKER (MUTCD TYPE 4 OBJECT MARKER OM4-3) SHALL BE INSTALLED SEPARATELY ADHERING TO SIGNAGE REQUIREMENTS FOR HEIGHT, IF REQUIRED.



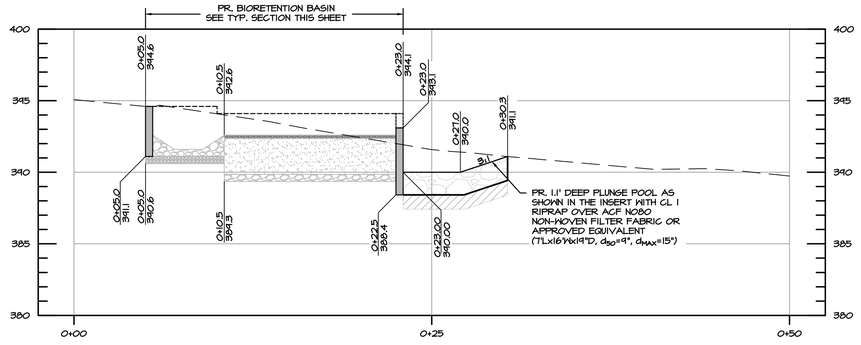
PROPOSED BOLLARD DETAIL

SCALE: 1" = 2'



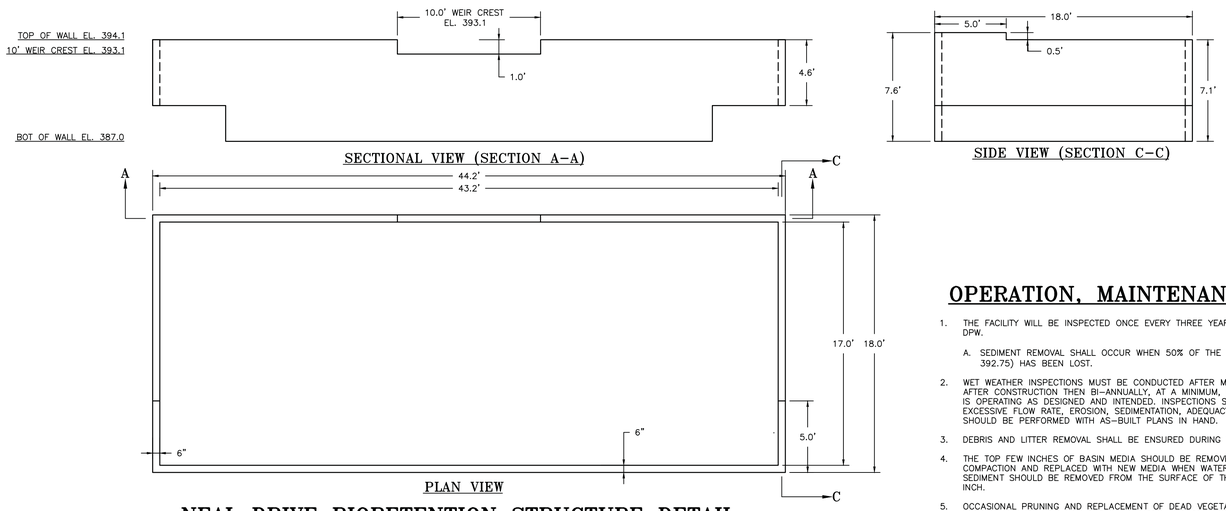
PROPOSED REMOVABLE BOLLARD DETAIL

SCALE: NOT TO SCALE



PROFILE NEAL DRIVE BIORETENTION C/L STA: 0+00 TO STA: 0+50

SCALE: HORZ. 1" = 5'
VERT. 1" = 5'



SECTIONAL VIEW (SECTION A-A)

SIDE VIEW (SECTION C-C)

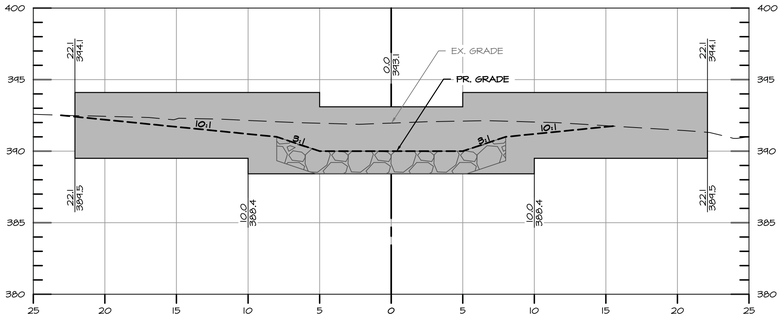
PLAN VIEW

NEAL DRIVE BIORETENTION STRUCTURE DETAIL

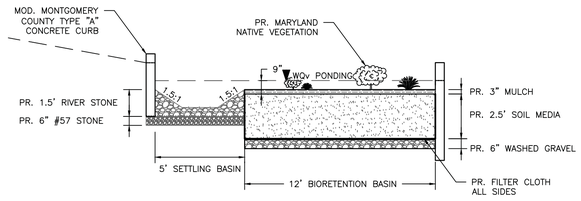
SCALE: 1" = 5'

OPERATION, MAINTENANCE & INSPECTION

1. THE FACILITY WILL BE INSPECTED ONCE EVERY THREE YEARS AND MAINTAINED BY THE CITY OF ROCKVILLE DPW.
   A. SEDIMENT REMOVAL SHALL OCCUR WHEN 50% OF THE TOTAL FOREBAY CAPACITY (0.75' DEPTH @ ELEV. 392.75) HAS BEEN LOST.
2. WET WEATHER INSPECTIONS MUST BE CONDUCTED AFTER MAJOR STORM EVENTS DURING THE FIRST YEAR AFTER CONSTRUCTION THEN BI-ANNUALLY, AT A MINIMUM, THEREAFTER TO ENSURE THAT THE BIORETENTION IS OPERATING AS DESIGNED AND INTENDED. INSPECTIONS SHALL EXAMINE FOR EVIDENCE OF CLOGGING, EXCESSIVE FLOW RATE, EROSION, SEDIMENTATION, ADEQUACY OF INFLOWS AND OUTFLOWS, ETC. INSPECTIONS SHOULD BE PERFORMED WITH AS-BUILT PLANS IN HAND.
3. DEBRIS AND LITTER REMOVAL SHALL BE ENSURED DURING REGULAR INSPECTIONS.
4. THE TOP FEW INCHES OF BASIN MEDIA SHOULD BE REMOVED WITH LIGHT EQUIPMENT TO PREVENT COMPACTION AND REPLACED WITH NEW MEDIA WHEN WATER PONDS FOR MORE THAN 72 HOURS. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH.
5. OCCASIONAL PRUNING AND REPLACEMENT OF DEAD VEGETATION SHALL BE PERFORMED AS NECESSARY. IF SPECIFIC PLANTS ARE NOT SURVIVING, MORE APPROPRIATE SPECIES SHOULD BE USED. WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.



NEAL DRIVE BIORETENTION SECTION A-A' STA 0+22.75

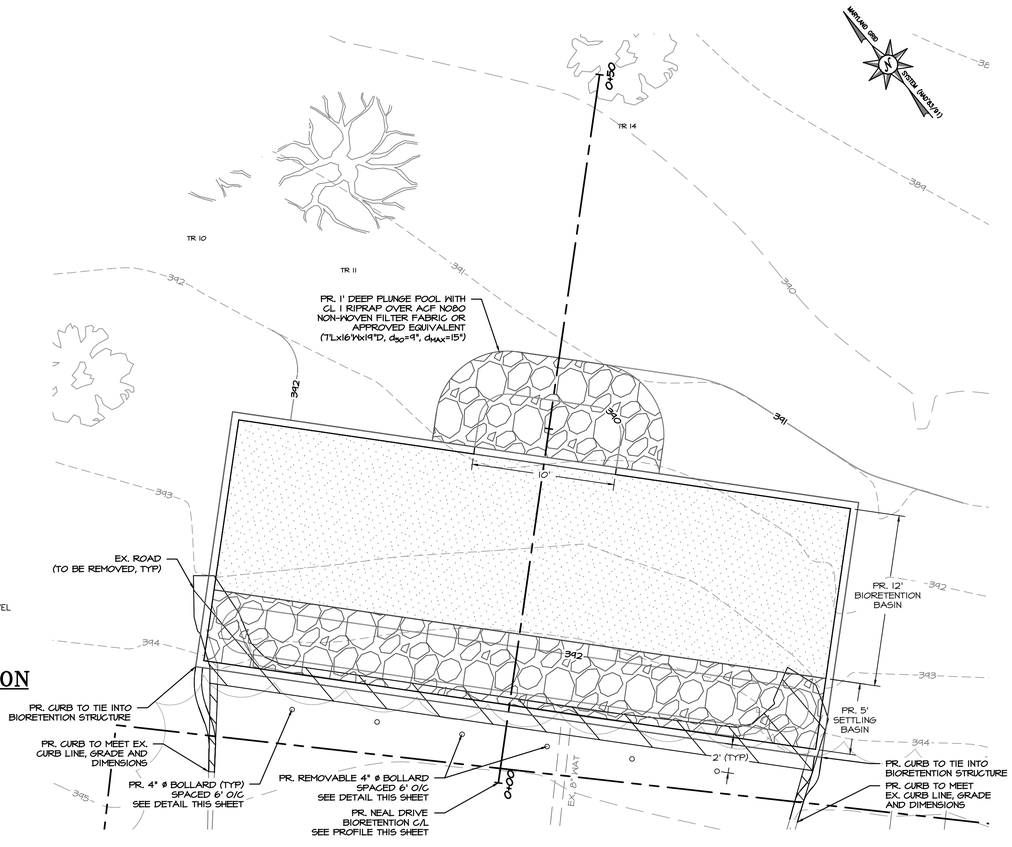


PR. TYPICAL NEAL DRIVE BIORETENTION SECTION

SCALE: 1" = 4'

BIORETENTION MATERIAL SPECIFICATIONS

MATERIAL	SPECIFICATION	SIZE	NOTES
MULCH	HARDWOOD MULCH		SINGLE OR DOUBLE SHREDDED WELL AGED. NO PINE OR WOOD CHIPS.
SOIL MEDIA	LOAMY SAND (60-65%) & COMPOST (35-40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)		USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT <5% ORGANIC CONTENT >10% pH RANGE: 5.5-7.0 REQUIRED INFILTRATION RATES*: LOAMY SAND = 2.41 IN/HR (4.8 FT/DAY) SANDY LOAM = 1.02 IN/HR (2.0 FT/DAY) COARSE SAND = 8.27 IN/HR (16.5 FT/DAY)
NON-WOVEN FILTER CLOTH	ACF NOBO OR APPROVED EQUIVALENT	N/A	FOR USE AS SHOWN
WASHED GRAVEL/#57 STONE	AASHTO M-43	NO. 57 OR NO. 6	3/8" TO 3/4"
RIVER STONE	MARYLAND RIVER STONE	2" TO 4"	
CONCRETE	MDSHA MIX NO. 3		PRE-CAST AND BROUGHT ON SITE



WATER QUALITY VOLUME ANALYSIS NEAL DRIVE BIORETENTION INSET

SCALE: 1" = 5'

DRAINAGE AREA:	0.89 ACRES
IMPERVIOUS AREA:	0.45 ACRES (51%)
TARGET WQv STORAGE:	0.037 AC-FT
PR. WQv PROVIDED:	0.035 AC-FT
RAINFALL DEPTH TREATED:	0.93 INCHES
IMPERVIOUS AREA TREATED:	0.42 ACRES

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STORMWATER MANAGEMENT PLAN
NEAL DRIVE BIORETENTION

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
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SHEET NO. 10 OF 22

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OPERATION, MAINTENANCE & INSPECTION

1. THE FACILITY WILL BE INSPECTED ONCE EVERY THREE YEARS AND MAINTAINED BY THE CITY OF ROCKVILLE DPW.

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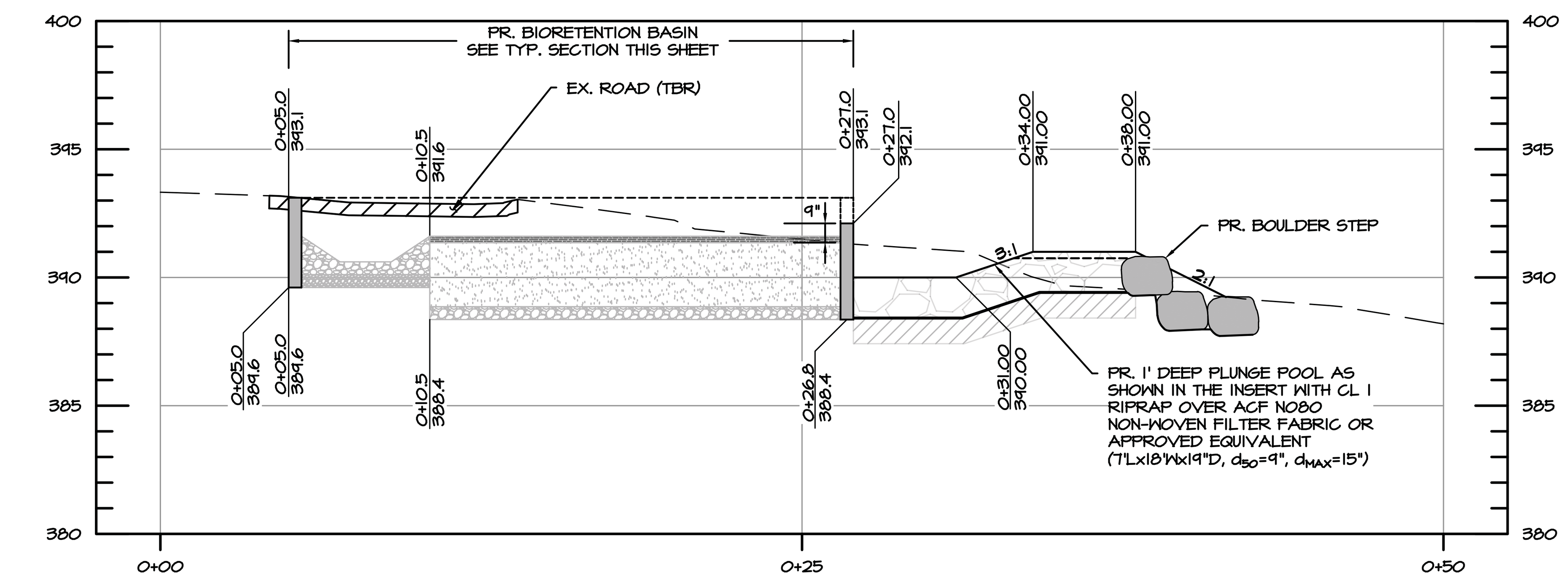
2. WET WEATHER INSPECTIONS MUST BE CONDUCTED AFTER MAJOR STORM EVENTS DURING THE FIRST YEAR AFTER CONSTRUCTION THEN BI–ANNUALLY, AT A MINIMUM, THEREAFTER TO ENSURE THAT THE BIORETENTION IS OPERATING AS DESIGNED AND INTENDED. INSPECTIONS SHALL EXAMINE FOR EVIDENCE OF CLOGGING, EXCESSIVE FLOW RATE, EROSION, SEDIMENTATION, ADEQUACY OF INFLOWS AND OUTFLOWS, ETC. INSPECTIONS SHOULD BE PERFORMED WITH AS–BUILT PLANS IN HAND.

3. DEBRIS AND LITTER REMOVAL SHALL BE ENSURED DURING REGULAR INSPECTIONS.

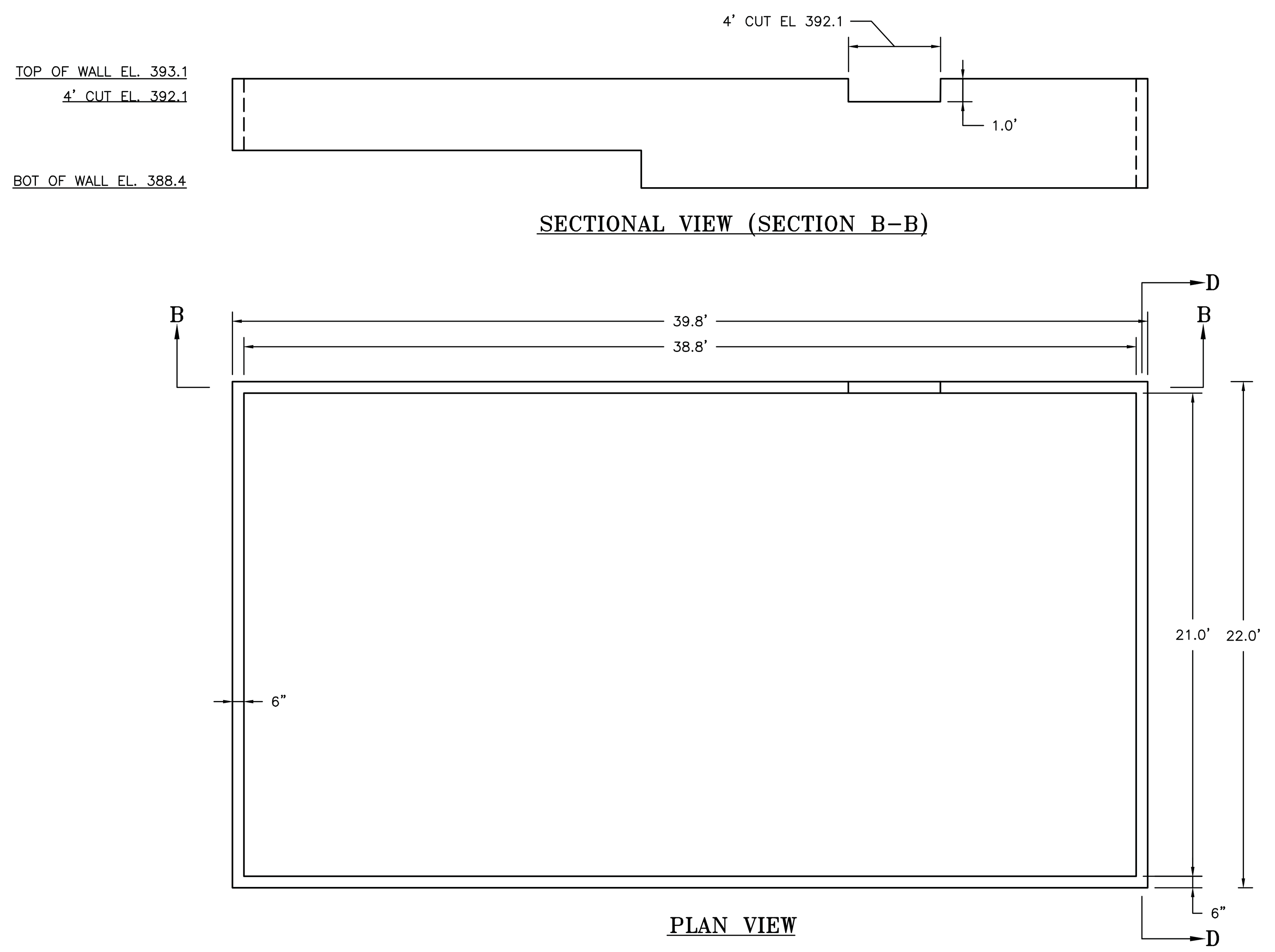
4. THE TOP FEW INCHES OF BASIN MEDIA SHOULD BE REMOVED WITH LIGHT EQUIPMENT TO PREVENT COMPACTION AND REPLACED WITH NEW MEDIA WHEN WATER PONDS FOR MORE THAN 72 HOURS. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH.

5. OCCASIONAL PRUNING AND REPLACEMENT OF DEAD VEGETATION SHALL BE PERFORMED AS NECESSARY. IF SPECIFIC PLANTS ARE NOT SURVIVING, MORE APPROPRIATE SPECIES SHOULD BE USED. WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.



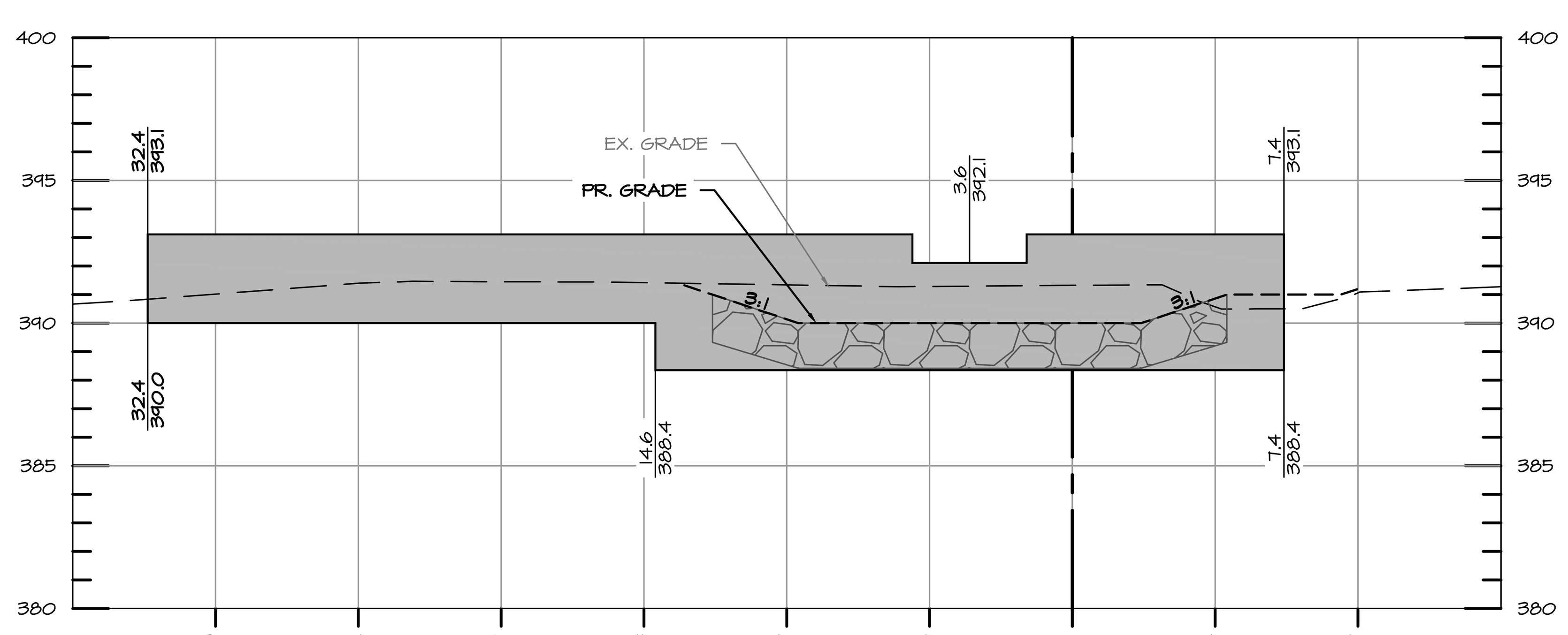
PROFILE WESLEY ROAD BIORETENTION C/L
STA: 0+00 TO STA: 0+50

SCALE: HORZ. 1" = 5'
VERT. 1" = 5'

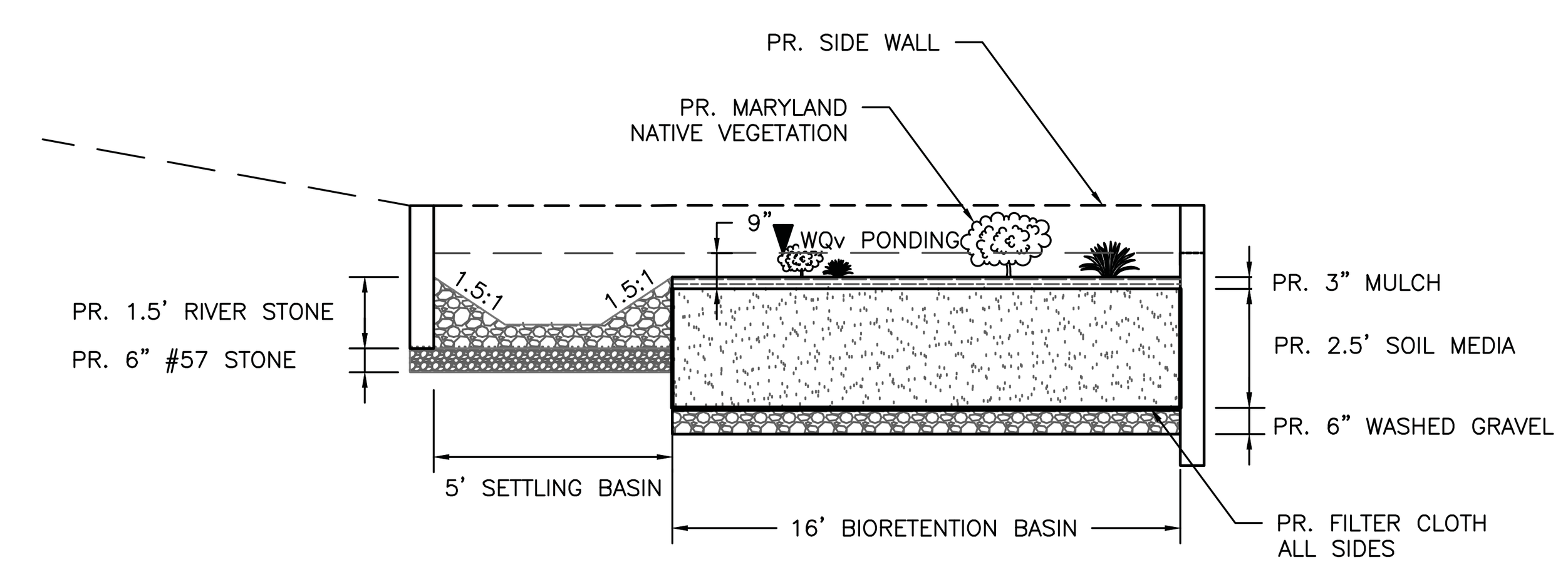


WESLEY ROAD BIORETENTION STRUCTURE DETAIL

SCALE: 1" = 5'

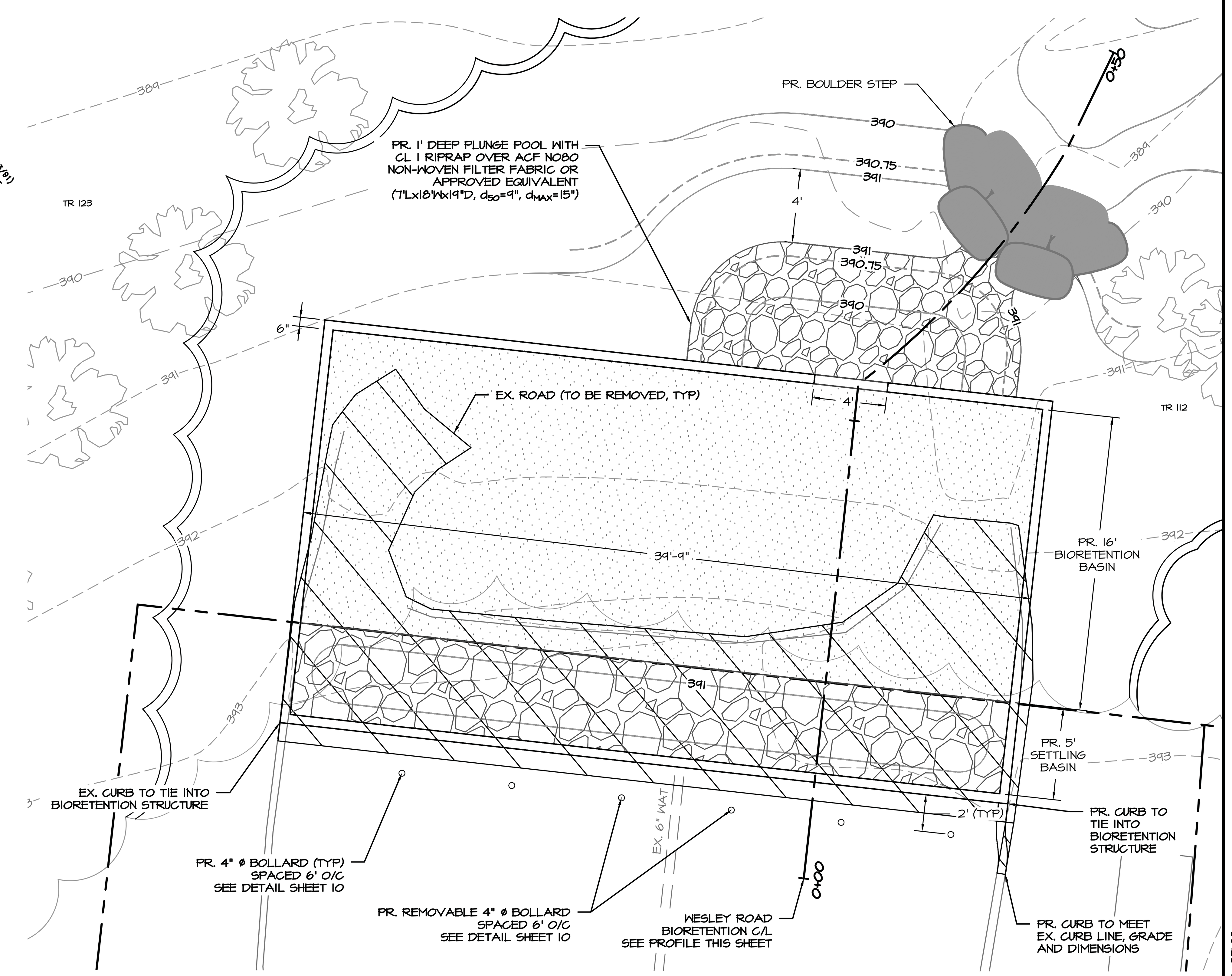


WESLEY ROAD BIORETENTION SECTION B-B' STA 0+26.75



PR. TYPICAL WESLEY ROAD BIORETENTION SECTION

SCALE: 1" = 4'



WESLEY ROAD BIORETENTION INSET

SCALE: 1" = 5'

WATER QUALITY VOLUME ANALYSIS

DRAINAGE AREA:	2.38 ACRES
IMPERVIOUS AREA:	0.95 ACRES (40%)
TARGET WQv STORAGE:	0.081 AC–FT
PR. WQv PROVIDED:	0.039 AC–FT
RAINFALL DEPTH TREATED:	0.49 INCHES
IMPERVIOUS AREA TREATED:	0.46 ACRES

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NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.08 17:08:23-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SCP# 2021–00009
SMP# 2021–00012
FTP# 2020–00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
WESLEY ROAD BIORETENTION

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05–22
SCALE AS SHOWN
SHEET NO. 11 OF 22
FILE # F–295

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GENERAL STRUCTURAL NOTES

1. BUILDING CODES

1.1. ALL CONSTRUCTION SHALL CONFORM WITH THE 2000 IBC BUILDING CODE AND ALL SUBSEQUENT SUPPLEMENTS.

1.2. IN ADDITION, ALL CONSTRUCTION SHALL CONFORM WITH THE GOVERNING LOCAL BUILDING CODE.

2. MISCELLANEOUS

2.1. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONSTRUCTION DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR OR OWNER FOR REVIEW BY THE DESIGN ENGINEER. IF THE CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS, THE ENGINEER WILL NOT BE RESPONSIBLE FOR STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT. THE SHOP DRAWINGS SHALL INDICATE ANY DEVIATIONS OR OMISSIONS FROM THE CONSTRUCTION DRAWINGS. THE GENERAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMISSION AND MAKE ALL CORRECTIONS DEEMED NECESSARY.

2.2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS BEFORE PROCEEDING WITH CONSTRUCTION. ALL DISCREPANCIES AND OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

2.3. THE CONTRACTOR SHALL NOT SUBMIT REPRODUCTIONS OF THE STRUCTURAL CONSTRUCTION DRAWINGS AS SHOP DRAWINGS.

2.4. SCALES SHOWN ON THE STRUCTURAL CONSTRUCTION DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONAL INFORMATION SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.

3. CAST IN PLACE CONCRETE

3.1. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301)"; AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)"

3.2. IN ADDITION TO THE ABOVE, ALL CONCRETE WORK SHALL CONFORM TO THE FOLLOWING:
3.2.1. RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING (ACI 305).
3.2.2. RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING (ACI 306).
3.2.3. RECOMMENDED PRACTICE FOR CONCRETE FORMWORK (ACI 347).

3.3. ALL CONCRETE EXPOSED TO PUBLIC VIEW SHALL CONFORM TO THE REQUIREMENTS FOR ARCHITECTURAL CONCRETE CONTAINED IN ACI 301.

3.4. ALL CONCRETE, UNLESS OTHERWISE NOTED, SHALL BE STONE AGGREGATE CONCRETE HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 5% +/− 1%. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED. MAXIMUM AGGREGATE SIZE SHALL BE 1", AND MAXIMUM SLUMP SHALL BE 4", 3" FOR SLABS ON GRADE. ALL CONCRETE, EXCEPT FOOTINGS, SHALL CONTAIN A WATER REDUCING ADMIXTURE. PORTLAND CEMENT SHALL CONFORM TO ASTM C 150 AND NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C 33.

3.5. ALL REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A 615 GRADE 60. ALL WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A 185. LAP ALL REINFORCING BARS A MINIMUM OF 24 BAR DIAMETERS AND ALL W.W.F. A MINIMUM OF 2 FULL GRIDS, UNLESS NOTED OTHERWISE.

3.6. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE CRSI "MANUAL OF STANDARD PRACTICE", ACI 315 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", ACI SP 66 "DETAILING MANUAL".

3.7. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED INDEPENDENT TESTING AGENCY. ALL CONCRETE SHALL BE SAMPLED AND TESTED BY THE TESTING AGENCY. THE CONTRACTOR SHALL NOTIFY THE TESTING AGENCY 48 HOURS PRIOR TO THE PLACEMENT OF ANY CONCRETE. THE TESTING AGENCY SHALL PERFORM ALL SAMPLING AND TESTING IN ACCORDANCE WITH ASTM C 1077.

3.8. THE CONCRETE STRUCTURE SHALL NOT SUPPORT THE DESIGN LIVE LOAD FOR A MINIMUM OF 28 DAYS AND ALL SHORING AND RESHORING REQUIRED TO SUPPORT THE CONCRETE STRUCTURE DURING CONSTRUCTION SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR. SHOP DRAWINGS, SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF MARYLAND, SHALL BE SUBMITTED FOR REVIEW. SHOP DRAWINGS SHALL INDICATE THE TYPE, EXTENT, SIZE, AND LOCATION OF ALL SHORING AND RESHORING AS WELL AS THE SEQUENCE OF CONSTRUCTION.

3.9. GROUND BLAST FURNACE SLAG MAY BE USED TO REPLACE UP TO 50% OF THE PORTLAND CEMENT IN A MIX, AND FLY ASH OR POZZOLAN MAY BE USED TO REPLACE UP TO 25% OF PORTLAND CEMENT, SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND SHALL CONFORM TO ASTM C 989.

3.10. MINIMUM COVER FOR ALL REINFORCING SHALL BE 3" UNLESS NOTED OTHERWISE.

3.11. THE GENERAL CONTRACTOR SHALL SUBMIT PLANS SHOWING ALL PENETRATIONS THROUGH THE FRAMED CONCRETE SLABS. THE OPENINGS SHALL BE ACCURATELY LOCATED AND DIMENSIONED.

4. PRECAST CONCRETE

4.1. ALL PRECAST CONCRETE ELEMENTS SHALL BE DESIGNED BY THE CONTRACTOR AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI. HIGHER STRENGTH CONCRETE MAY BE USED IF REQUIRED BY DESIGN. COMPLETE DESIGN CALCULATIONS AND SHOP DRAWINGS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND, SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.

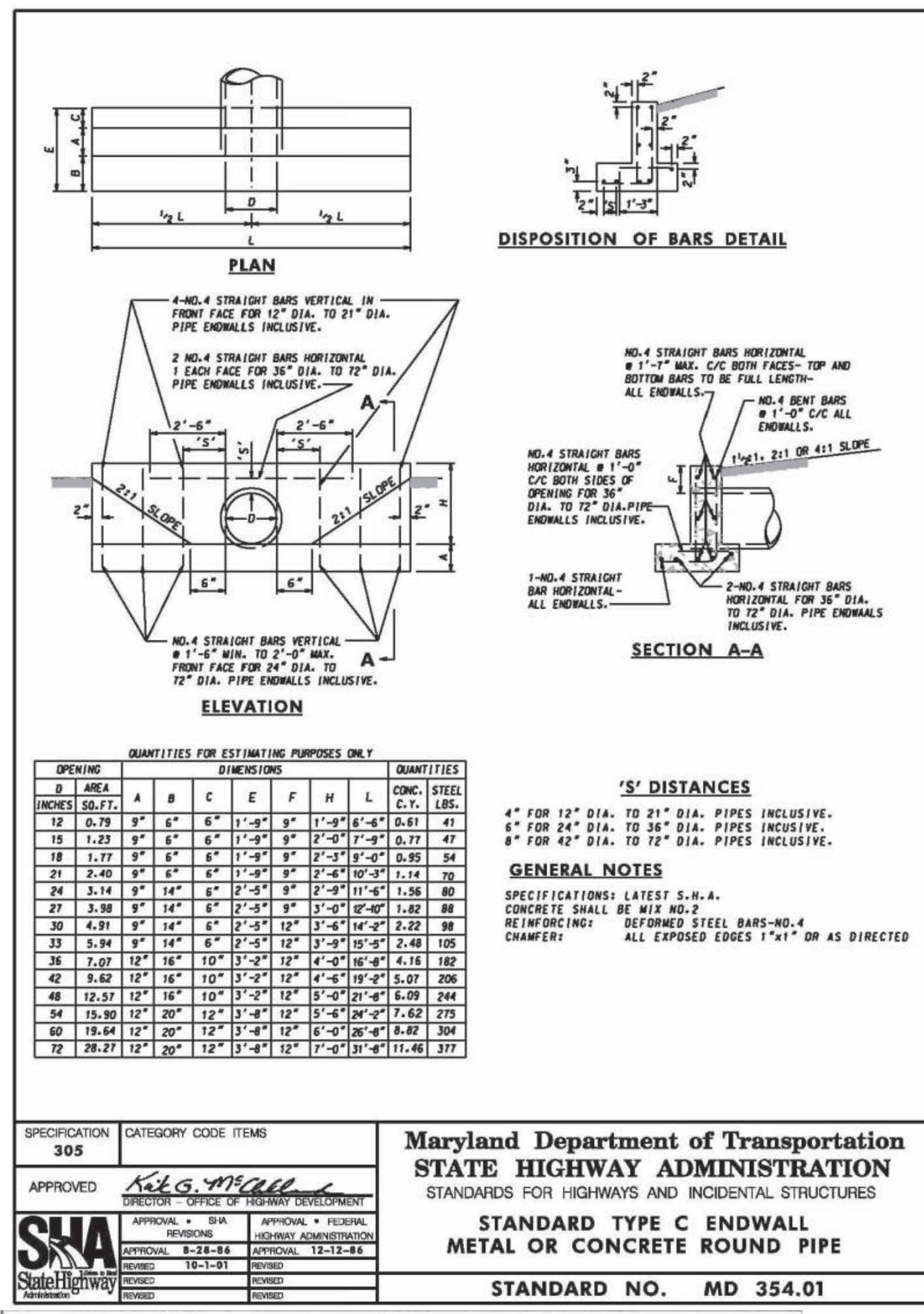
4.2. ALL PRECAST CONCRETE ELEMENTS SHALL BE DESIGNED TO SUPPORT THE DEAD AND LIVE LOADING CONDITIONS SHOWN OR INDICATED IN THE CONSTRUCTION DOCUMENTS. THE CONNECTIONS FOR PRECAST CONCRETE ELEMENTS SHOWN ARE SCHEMATIC AND FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN OF ALL CONNECTIONS.

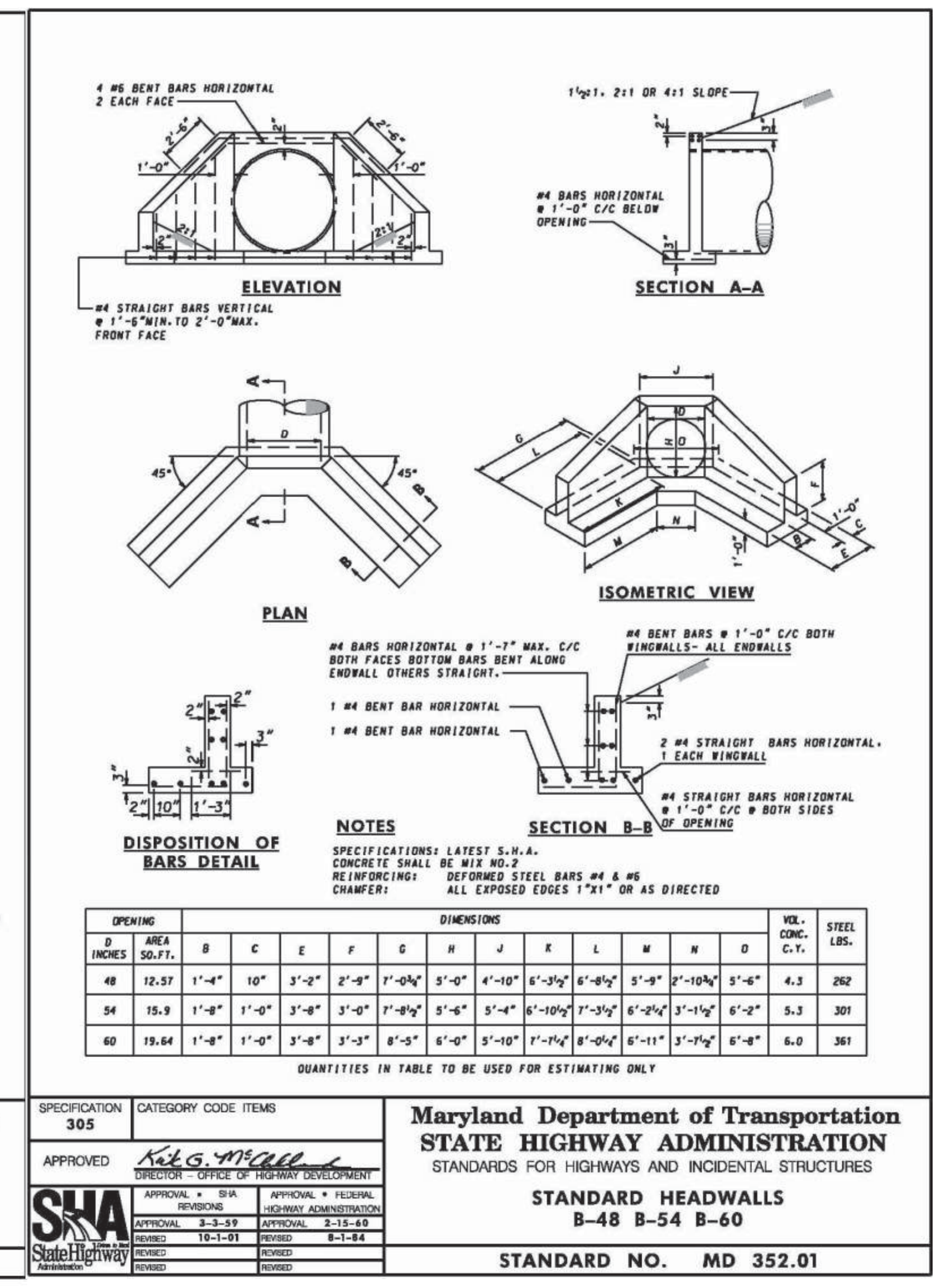
4.3. THE CONTRACTOR SHALL NOT CUT OR DRILL ANY OPENINGS INTO THE PRECAST CONCRETE ELEMENTS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER AND PRECAST MANUFACTURER.

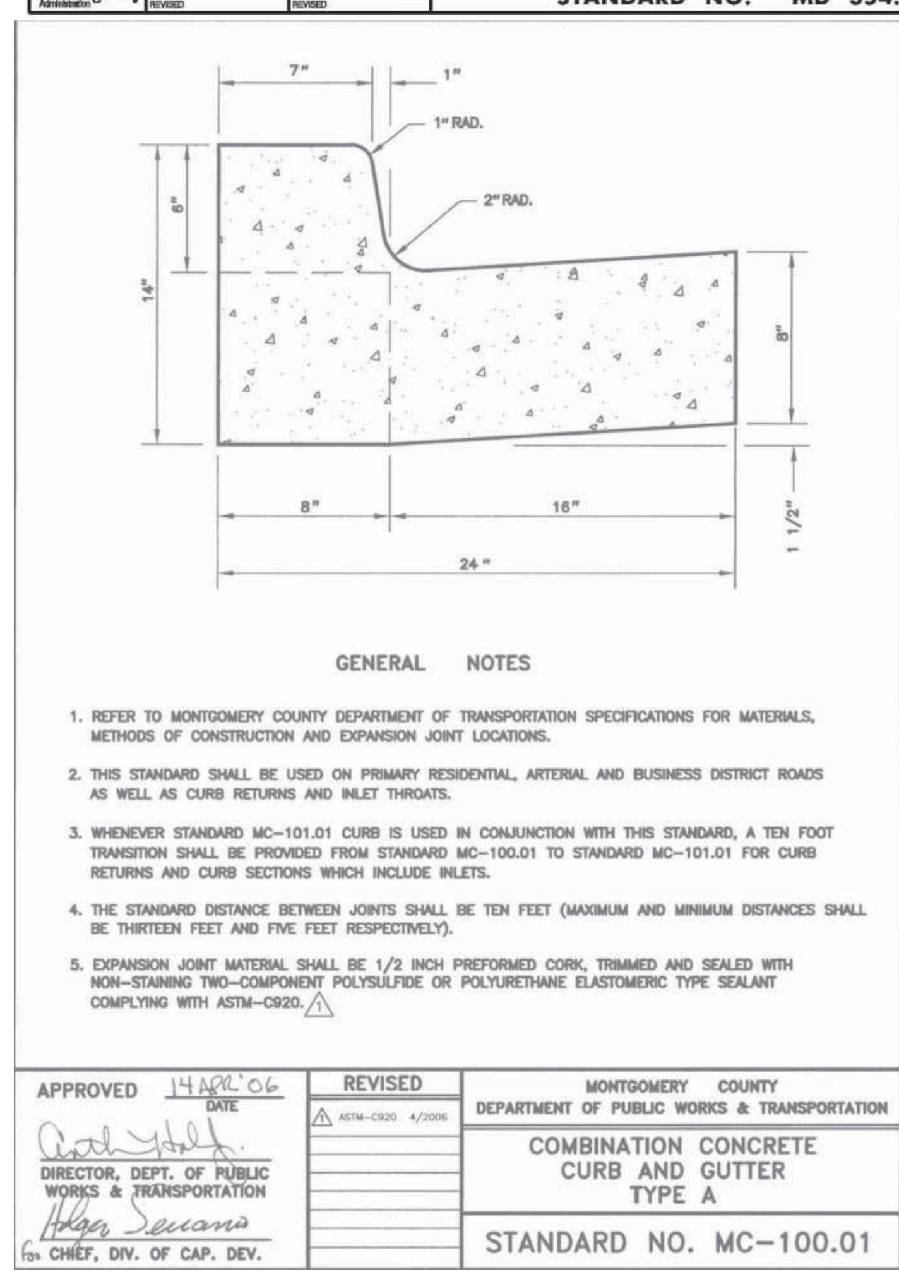
4.4. REFER TO "CAST IN PLACE CONCRETE SECTION" FOR ADDITIONAL INFORMATION ON CONCRETE AND REINFORCING.

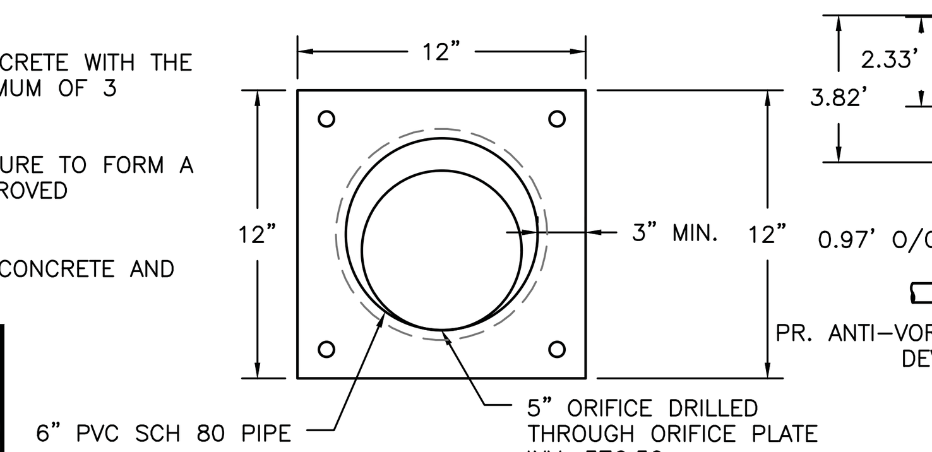
MODIFICATIONS TO CONCRETE STRUCTURES GENERAL NOTES

1. ALL REMOVAL SHALL BE COMPLETED WITH SAW CUTS.
2. ANY EXPOSED REBAR SHALL BE PROTECTED FROM CORROSION BY USING A REBAR EPOXY SPRAY, BACK GOUGING AND FILL HOLES WITH MORTAR, OR OTHER APPROVED METHOD.
3. THE EXISTING CONCRETE SURFACE SHALL BE PREPARED BY SCABBING, SCARIFYING, HIGH PRESSURE (5,000 TO 45,000 PSI) WATER JETTING OR OTHER APPROVED METHOD. THE SURFACE SHALL THEN BE CLEANED BY LOW PRESSURE (5,000 PSI) WATER CLEANING, DETERGENT CLEANING, OR OTHER APPROVED METHOD AND ALLOWED TO DRY THOROUGHLY.
4. FOLLOWING SURFACE PREPARATION, ALL CUT CONCRETE SURFACES SHALL BE COATED WITH A EPOXY POLYSULFIDE JOINT SEALANT.
5. REBAR DOWELS SHALL BE INSTALLED TO TIE THE NEW CONCRETE WITH THE EXISTING STRUCTURE AND SHALL BE COUNTERSUNK A MINIMUM OF 3 INCHES INTO THE EXISTING STRUCTURE.
6. ALL REBAR SHALL BE EPOXYED INTO THE EXISTING STRUCTURE TO FORM A TIGHT FIT. EPOXY SHALL BE HILTI HIT−RE 500 V3 OR APPROVED EQUIVALENT.
7. SEE "GENERAL STRUCTURAL NOTES" FOR INFORMATION ON CONCRETE AND STEEL REINFORCING SPECIFICATIONS.





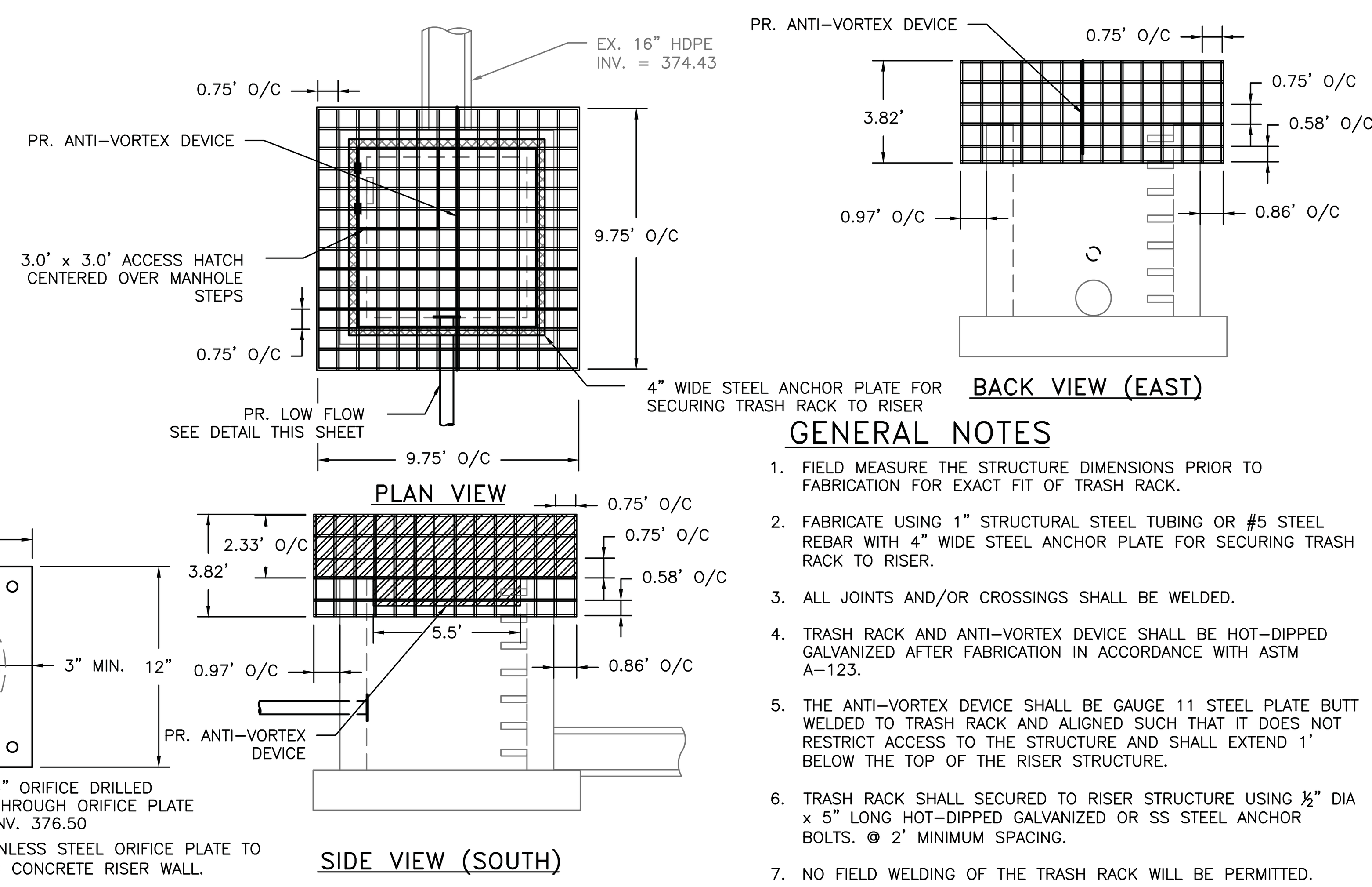




NOTE: SECURELY FASTEN 316 GRADE STAINLESS STEEL ORIFICE PLATE TO RISER W/ ANCHORED BOLTS DRILLED INTO CONCRETE RISER WALL.

5" ORIFICE PLATE DETAIL

SCALE: NOT TO SCALE

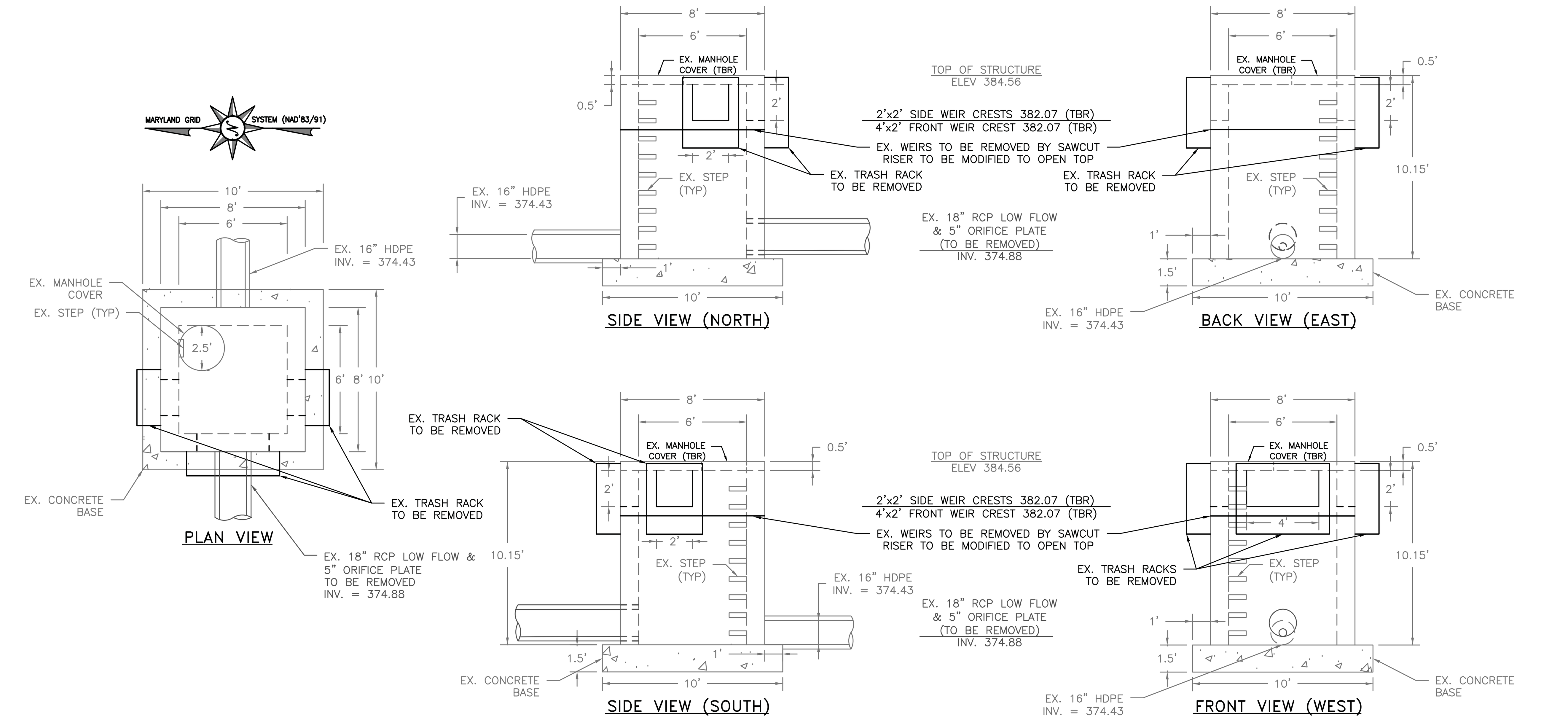


GENERAL NOTES

1. FIELD MEASURE THE STRUCTURE DIMENSIONS PRIOR TO FABRICATION FOR EXACT FIT OF TRASH RACK.
2. FABRICATE USING 1" STRUCTURAL STEEL TUBING OR #5 STEEL REBAR WITH 4" WIDE STEEL ANCHOR PLATE FOR SECURING TRASH RACK TO RISER.
3. ALL JOINTS AND/OR CROSSINGS SHALL BE WELDED.
4. TRASH RACK AND ANTI−VORTEX DEVICE SHALL BE HOT−DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A−123.
5. THE ANTI−VORTEX DEVICE SHALL BE GAUGE 11 STEEL PLATE BUTT WELDED TO TRASH RACK AND ALIGNED SUCH THAT IT DOES NOT RESTRICT ACCESS TO THE STRUCTURE AND SHALL EXTEND 1' BELOW THE TOP OF THE RISER STRUCTURE.
6. TRASH RACK SHALL SECURED TO RISER STRUCTURE USING ½" DIA x 5" LONG HOT−DIPPED GALVANIZED OR SS STEEL ANCHOR BOLTS. @ 2' MINIMUM SPACING.
7. NO FIELD WELDING OF THE TRASH RACK WILL BE PERMITTED.

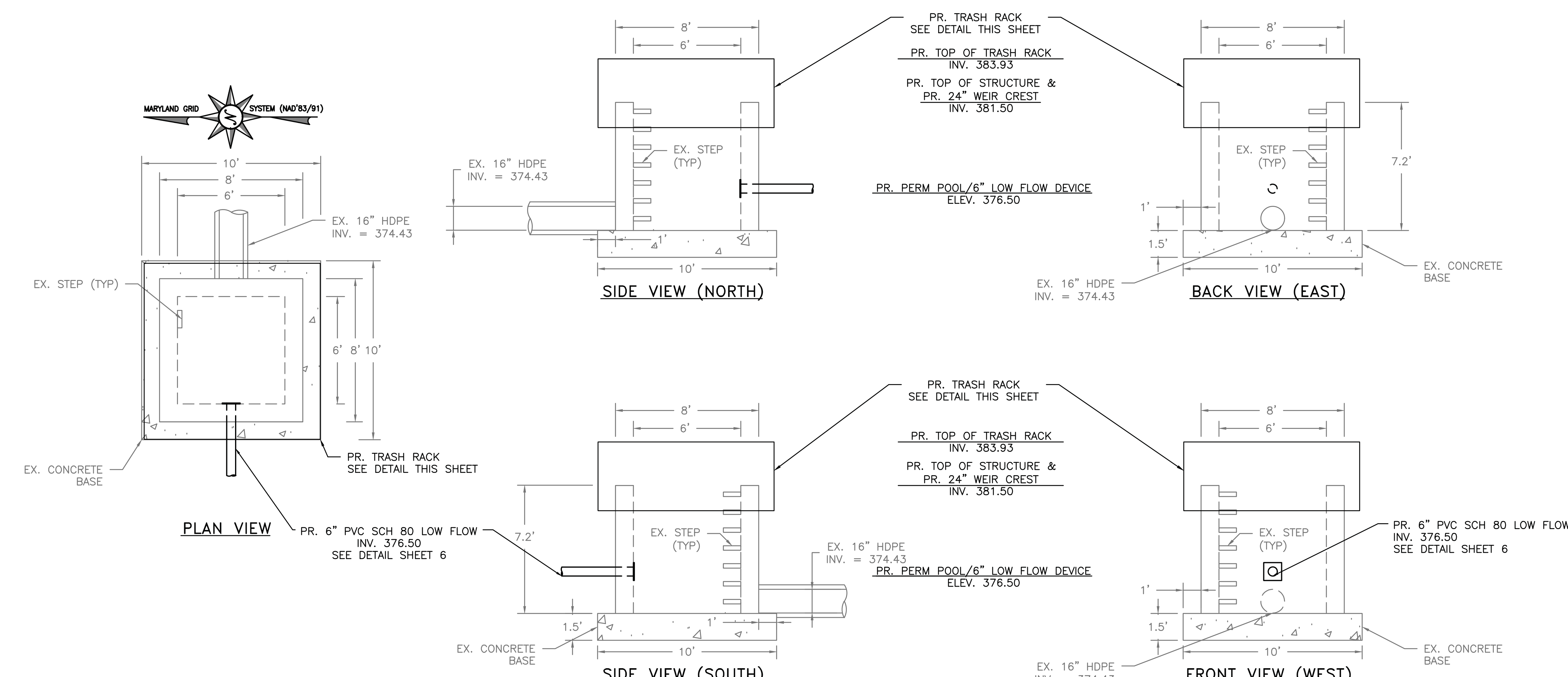
TRASH RACK DETAIL

SCALE: 1" = 5'



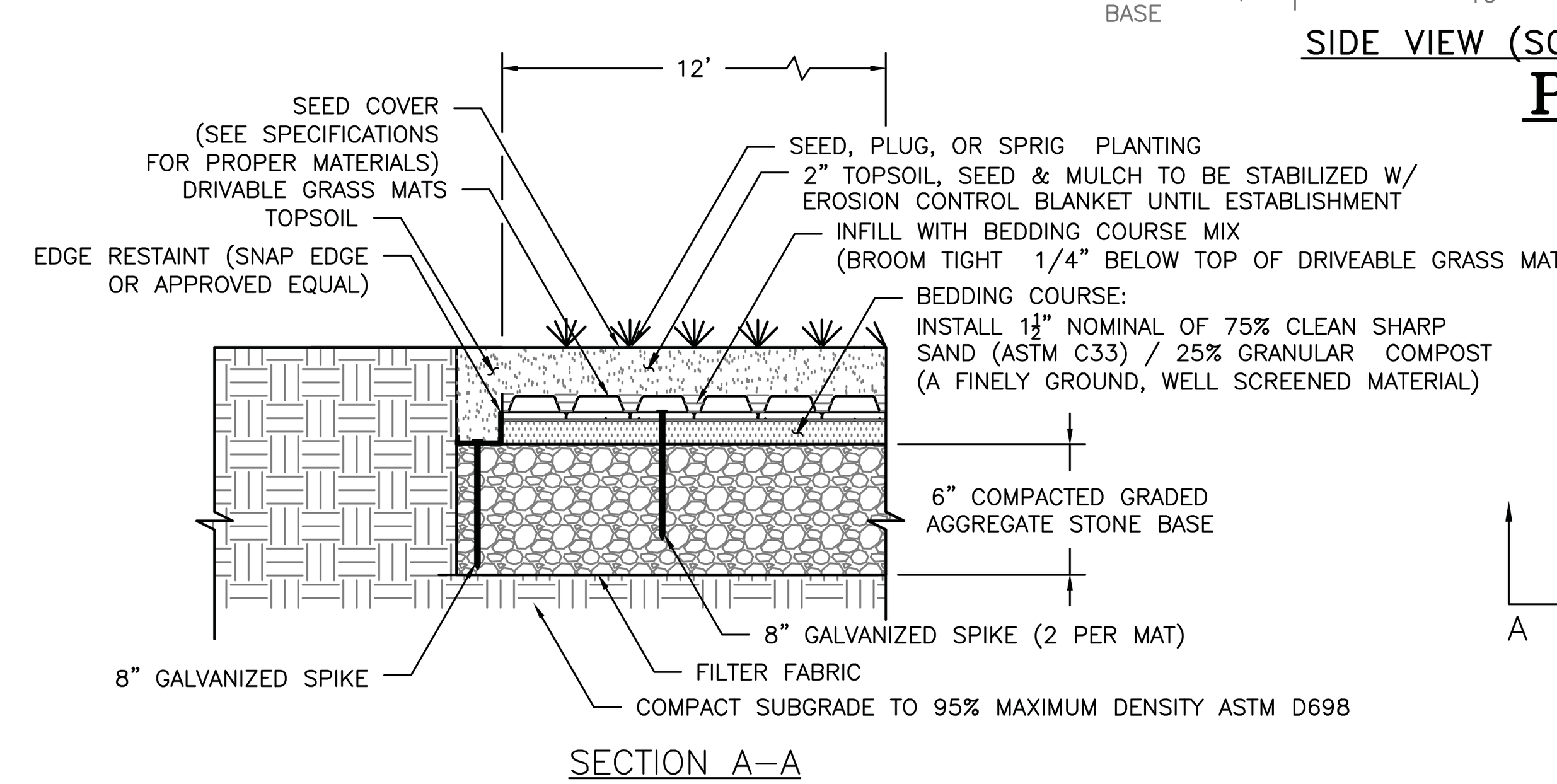
EXISTING RISER WITH DEMO

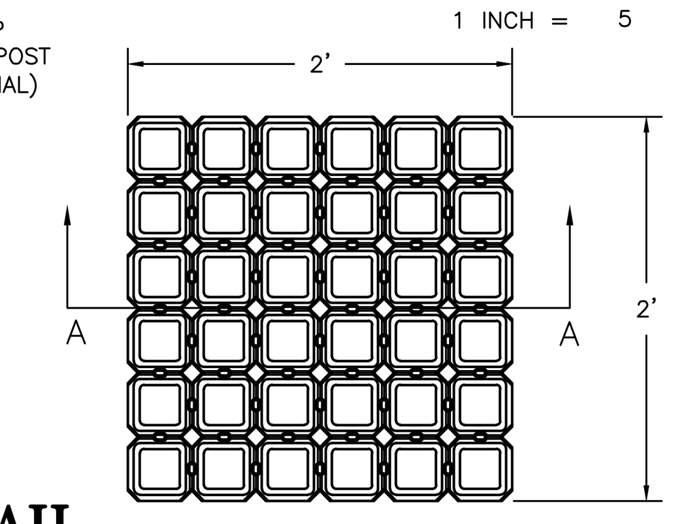
SCALE: 1" = 5'



PROPOSED RISER MODIFICATIONS

SCALE: 1" = 5'





0 2.5 5 10
1 INCH = 5 FEET

DRIVEABLE GRASS PAVER ACCESS ROAD DETAIL

SCALE: NOT TO SCALE

NOTE:

1. THE CONTRACTOR SHALL REVIEW ALL MANUFACTURER SPECIFICATIONS AND ENSURE THE INSTALLATION MEETS OR EXCEEDS THE REQUIREMENTS.
2. THE CONTRACTOR SHALL SUBMIT DESIGN SHOP DRAWINGS, DETAILS, AND MATERIAL SPECIFICATIONS INCLUDING COLOR AND FINISH FOR REVIEW AND APPROVAL.

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NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG DRAFTED JG/MW CHECKED CS	DEPARTMENT OF PUBLIC WORKS CITY OF ROCKVILLE 111 MARYLAND AVE. ROCKVILLE, MARYLAND	DESIGN PLAN APPROVAL Craig L. Simoneau 2021.11.08 17:08:24-05'00' DIRECTOR OF PUBLIC WORKS PLAN APPROVAL DATE PWK# SMP# 2021−00012 SCP# 2021−00009 FTP# 2020−00001	AS BUILT PLAN APPROVAL CHIEF, CONSTRUCTION MANAGEMENT PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN STRUCTURE DETAILS & NOTES	NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION BURGUNDY & CHESTNUT GROVE, P550 CITY OF ROCKVILLE, MARYLAND	DATE SUBMITTED: 10/8/2021 IFB #05−22	SCALE 1" = 5'	SHEET NO. 12 OF 22	FILE # F−295

10/8/21

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DRAINAGE AREA MAP

SCALE: 1" = 100'

0 50 100 200

1 INCH = 100 FEET

SOILS TABLE

SYMBOL	SOIL NAME	HSG
1B	GAILA SILT LOAM (3–8% SLOPES)	B
1C	GAILA SILT LOAM (8–15% SLOPES)	B
2UB	GLENELG–URBAN LAND COMPLEX (0–8% SLOPES)	B
2UC	GLENELG–URBAN LAND COMPLEX (8–15% SLOPES)	B
400	URBAN LAND	D

EXISTING CONDITIONS HYDROLOGY

DRAINAGE AREA	AREA (AC.)	CN	Tc (hr)	Q_1 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
DRAINAGE AREA 1	37.74	85	0.25	62.8	163.9	254.8
DRAINAGE AREA 3	0.89	80	0.10	1.4	4.2	6.9
DRAINAGE AREA 5	5.95	60	0.31	0.7	8.9	19.3
TO STUDY POINT #1	37.74	–	–	63.3	172.1	272.9
DRAINAGE AREA 2	2.31	90	0.10	6.0	13.8	20.6
DRAINAGE AREA 4	2.38	76	0.10	2.8	9.9	16.8
DRAINAGE AREA 6	1.80	60	0.12	0.4	3.5	7.6
TO STUDY POINT #2 (TO SWM FACILITY)	51.07	–	–	70.7	195.3	311.9
FROM SWM FACILITY	51.07	–	–	1.7	20.0	117.8

PROPOSED CONDITIONS HYDROLOGY

DRAINAGE AREA	AREA (AC.)	CN	Tc (hr)	Q_1 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
DRAINAGE AREA 1	37.74	85	0.25	62.8	163.9	254.8
DRAINAGE AREA 3	0.89	80	0.10	1.4	4.2	6.9
DRAINAGE AREA 5	5.95	60	0.31	0.7	8.9	19.3
TO STUDY POINT #1	37.74	–	–	63.3	172.1	272.9
DRAINAGE AREA 2	2.31	90	0.10	6.0	13.8	20.6
DRAINAGE AREA 4	2.38	76	0.10	2.8	9.9	16.8
DRAINAGE AREA 6	1.80	60	0.12	0.4	3.5	7.6
TO STUDY POINT #2 (TO SWM FACILITY)	51.07	–	–	70.7	195.3	311.9
FROM SWM FACILITY	51.07	–	–	1.4	19.7	130.8

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CITY OF
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111 MARYLAND AVE. ROCKVILLE, MARYLAND

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FTP# 2020–00001

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CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN

DRAINAGE AREA MAP

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05–22

SCALE 1" = 100'

FILE # F–295

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SEDIMENT CONTROL LEGEND

LIMIT OF DISTURBANCE/ HIGH VISIBILITY FENCE	— HVF — LOD — HVF —
LIMIT OF DISTURBANCE/ SUPER SILT FENCE	— LOD — SSF —
SILT FENCE ON PAVEMENT	— SFOP —
TREE PROTECTION	
FILTER LOG	— FL-18 —
DIVERSION PIPE	
SANDBAG DIVERSION	
EX. TREE TO BE REMOVED	TR 332
SUMP PIT	SP
PUMP	P
CONSTRUCTION ACCESS ROAD	
PORTABLE SEDIMENT TANK	PST
MOUNTABLE BERM	
UTILITY PROTECTION	
FILTER BAG	

SUMMARY OF ESC QUANTITIES

PHASE I/II

HIGH VISIBILITY FENCE/TREE PROTECTION FENCE:	2,175	LF
TREE PLANKING:	17	EA
UTILITY PROTECTION:	3	EA
MOUNTABLE BERM:	2	EA
CONSTRUCTION ACCESS ROAD:	205	LF
SUPER SILT FENCE:	275	LF
SILT FENCE ON PAVEMENT:	130	LF
FILTER LOG:	125	LF

PHASE I

DIVERSION & DEWATERING PIPE:	385	LF
PUMP:	2	EA
SUMP PIT:	1	EA
FILTER BAG:	1	EA
MOUNTABLE BERM:	1	EA
CONSTRUCTION ACCESS ROAD:	225	LF
SANDBAG DIVERSION:	90	LF
FILTER LOG:	205	LF

NOTE: THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE CITY INSPECTORS ONLY. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES. ALL TREES WITHIN LOD SHALL BE PROTECTED UNLESS OTHERWISE NOTED ON PLANS.

CARE OF WATER DURING CONSTRUCTION

1. CLEARWATER DIVERSIONS ARE REQUIRED WHEN BASEFLOW IS PRESENT FROM POINT SOURCES.
2. ALL SIGNIFICANT RAINFALL EVENTS SHALL BE DEWATERED THROUGH EITHER THE SUMP PIT/FILTER BAG OR HORIZONTAL DRAWDOWN DEVICE.
3. BECAUSE OF SEASONAL VARIATIONS, THE SIZE OF ANY PUMP AND THE SIZE AND TYPE OF PIPING NECESSARY TO CONVEY WATER FOR ANY PUMPED PRACTICES SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE SEDIMENT CONTROL INSPECTOR. CARE SHOULD BE TAKEN BY THE CONTRACTOR AS TO NOT OVER OR UNDERSIZE THE PUMP/PIPING NECESSARY TO CONVEY FLOW.
4. PIPES, PUMPS, SUMP PITS, AND ASSOCIATED SEDIMENT FILTRATION DEVICES SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE PLANS TO ILLUSTRATE POTENTIAL ALIGNMENTS AND PLACEMENT.
5. WITH THE SEDIMENT CONTROL INSPECTORS APPROVAL, ANY PIPES, PUMPS, SUMP PITS, AND ASSOCIATED SEDIMENT FILTRATION DEVICES MAY BE RELOCATED WITHIN THE LIMIT OF DISTURBANCE TO ACCOMMODATE CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST.
6. THE CONTRACTOR SHALL SUFFICIENTLY DEWATER THE WORK AREA BEFORE COMMENCING ANY GRADING OPERATIONS. ADDITIONAL SUMP PUMPS, AT NO ADDITIONAL COST, MAY BE NECESSARY AT LOCATIONS WHERE GROUNDWATER IS INFILTRATING THE WORK AREA.
7. ANY FUEL SHALL BE STORED ABOVE THE 100-YR FLOOD ELEVATION.
8. THE CONTRACTOR SHALL ENSURE THAT ALL SEDIMENT CONTROLS ARE IN WORKING CONDITION AT THE END OF EACH WORKING DAY TO PREVENT SEDIMENT LADEN MATERIAL FROM DISCHARGING FROM THE WORK AREA.

NOTE: ALL STOCKPILING AND STAGING SHALL OCCUR WITHIN THE LIMIT OF DISTURBANCE AND BE STABILIZED AS NECESSARY. MAXIMUM STOCKPILE HEIGHT SHALL NOT EXCEED 15 FEET AND MAXIMUM SLOPE SHALL NOT EXCEED 2:1. CONTRACTOR SHALL USE SUPER SILT FENCE OR OTHER RESTRAINTS TO PREVENT MIGRATION OF THE STOCKPILED MATERIAL.

PRIOR TO THE PLANTING OF TREES, STOCKPILED AREAS SHALL BE AMENDED WITH 6" OF COMPOST AND TILLED TO A DEPTH OF 24"

EMBANKMENT CLEARING NOTES

1. REMOVE ALL WOODY VEGETATION WITHIN 15' OF THE EMBANKMENT TOE IN ACCORDANCE WITH USDA SCS TECHNICAL NOTE 705 – OPERATIONS AND MAINTENANCE FOR REMOVING TREES FROM DAMS.
2. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EMBANKMENT. EQUIPMENT WHICH MINIMIZE DISTURBANCE SHALL BE USED.
3. REMOVE ALL STUMPS BY GRINDING TO A DEPTH OF 12" USING SHARP CUTTING TOOLS TO MINIMIZE THE DISTURBANCE TO THE UNDERLYING ROOT MASS.
4. TREAT ALL TAP ROOTS EXPOSED BY GRUBBING WITH SILVICIDE TO PREVENT REEMERGENCE.
5. BACKFILL RESULTING HOLE IN LIFTS OF 6" AND COMPACTED SUITABLE FILL TO A MINIMUM OF 90% DENSITY. CAP WITH 4" OF LIGHTLY TAMPED TOP SOIL.
6. REMOVAL ALL OTHER BRUSH AND TALL VEGETATION FROM THE EMBANKMENT, FINISH GRADE (TO A MOWABLE SURFACE), AND PERMANENTLY STABILIZE THE AREA IN ACCORDANCE WITH THE SPECIFICATIONS.

EXCAVATION NOTES

1. AT A MINIMUM ANY SATURATED SEDIMENT SHALL BE PARTIALLY DEWATERED ON-SITE BEFORE TRANSPORT TO THE DISPOSAL AREA.
2. THE DISPOSAL SITE SHALL HAVE AN ACTIVE GRADING PERMIT.
3. DREDGED 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.
4. CONTRACTOR SHALL KEEP STREET FREE OF ANY DREDGED MATERIAL. IF NECESSARY, CONTRACTOR MAY BE REQUIRED TO PERFORM ROUTINE STREET SWEEPING AND/OR STREET CLEANING.

PH I ESC PLAN

SCALE: 1" = 20'

0 10 20 40
1 INCH = 20 FEET

BayLand Consultants & Designers, Inc.
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www.baylandinc.com
BAYLAND JOB NO. 8_31901

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

10/8/21

DESIGNED	CS/JG
DRAFTED	JG/MW
CHECKED	CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.08 17:08:26-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SCP# 2021-00009
SMP# 2021-00012
FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
EROSION & SEDIMENT CONTROL PLANS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE 1" = 20'
SHEET NO. 14 OF 22
FILE #

SCP2021-00009

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SEDIMENT CONTROL LEGEND

LIMIT OF DISTURBANCE/ HIGH VISIBILITY FENCE	— HVF — LOD — HVF —
LIMIT OF DISTURBANCE/ SUPER SILT FENCE	—— LOD —— SSF ——
SILT FENCE ON PAVEMENT	—— SFOP ——
TREE PROTECTION	
FILTER LOG	—— FL-18 ——
DIVERSION PIPE	
SANDBAG DIVERSION	
EX. TREE TO BE REMOVED	TR 332
SUMP PIT	SP
PUMP	P
CONSTRUCTION ACCESS ROAD	
PORTABLE SEDIMENT TANK	PST
MOUNTABLE BERM	
UTILITY PROTECTION	
FILTER BAG	

SUMMARY OF ESC QUANTITIES

PHASE I/II

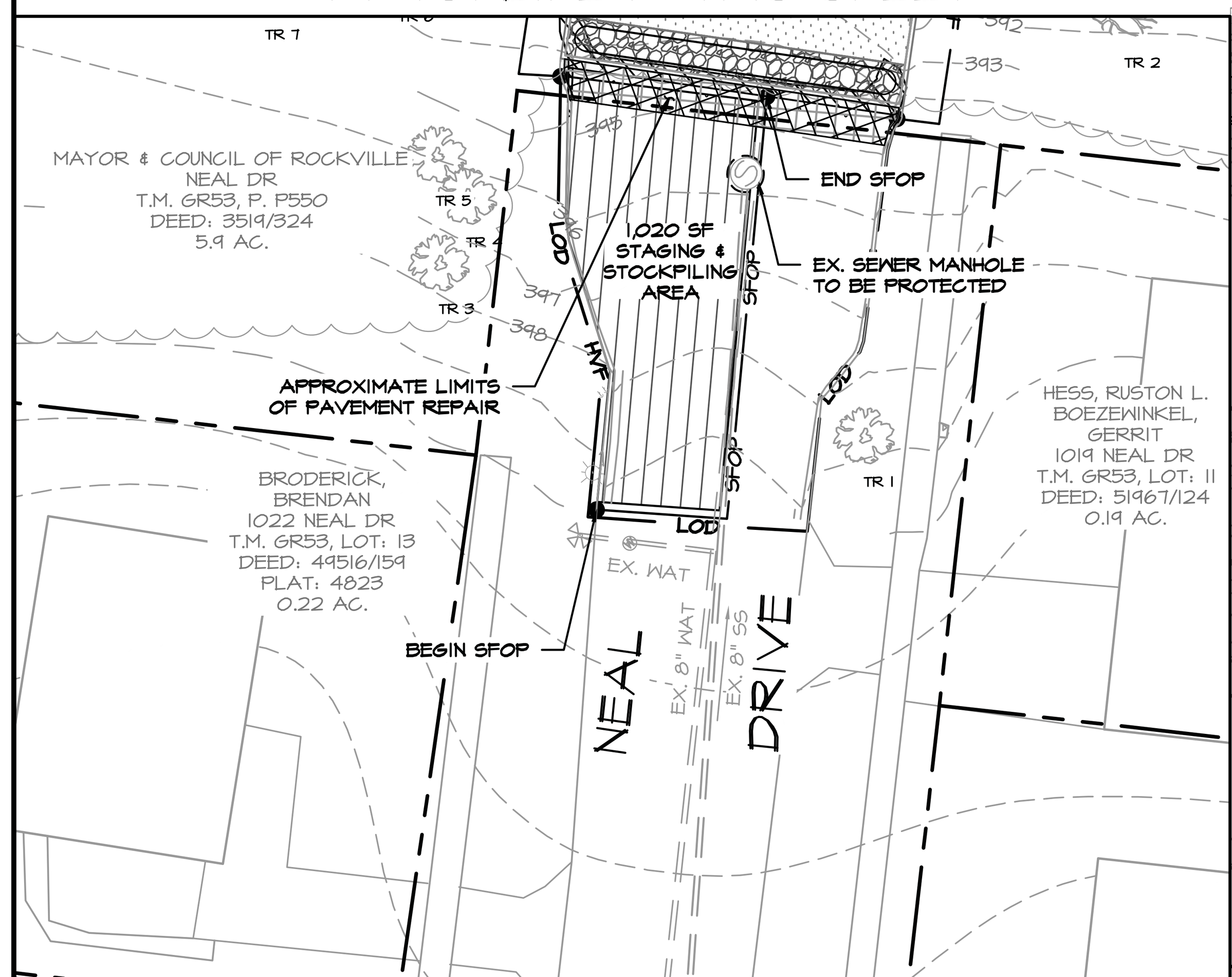
HIGH VISIBILITY FENCE/TREE PROTECTION FENCE:	2,175	LF
TREE PLANKING:	17	EA
UTILITY PROTECTION:	3	EA
MOUNTABLE BERM:	2	EA
CONSTRUCTION ACCESS ROAD:	205	LF
SUPER SILT FENCE:	275	LF
SILT FENCE ON PAVEMENT:	130	LF
FILTER LOG:	125	LF

PHASE II

DIVERSION & DEWATERING PIPE:	385	LF
PUMP:	2	EA
SUMP PIT:	1	EA
FILTER BAG:	1	EA
MOUNTABLE BERM:	1	EA
CONSTRUCTION ACCESS ROAD:	280	LF
SANDBAG DIVERSION:	90	LF

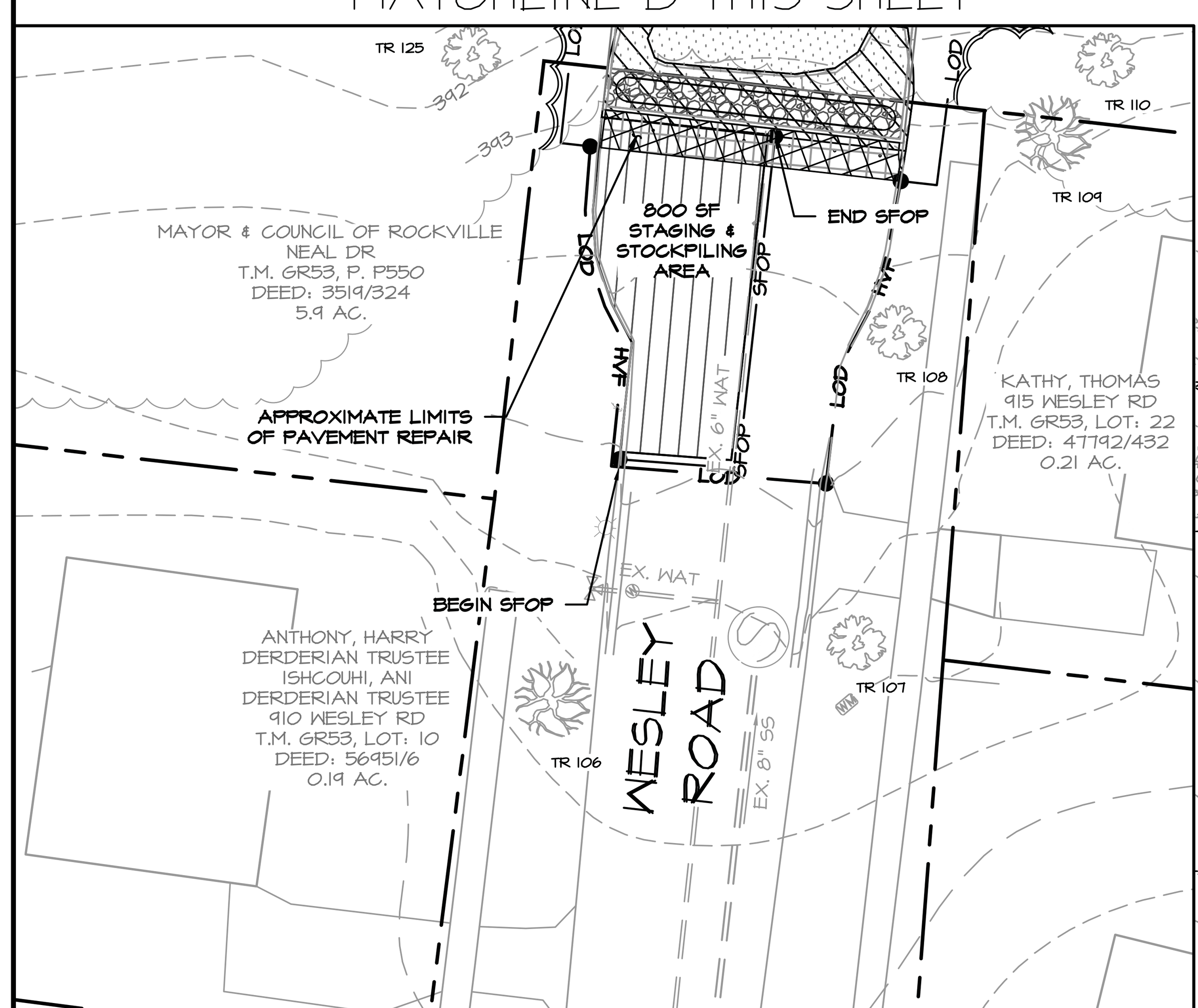
NOTE: THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE CITY INSPECTORS ONLY. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES. ALL TREES WITHIN LOD SHALL BE PROTECTED UNLESS OTHERWISE NOTED ON PLANS.

MATCHLINE A THIS SHEET

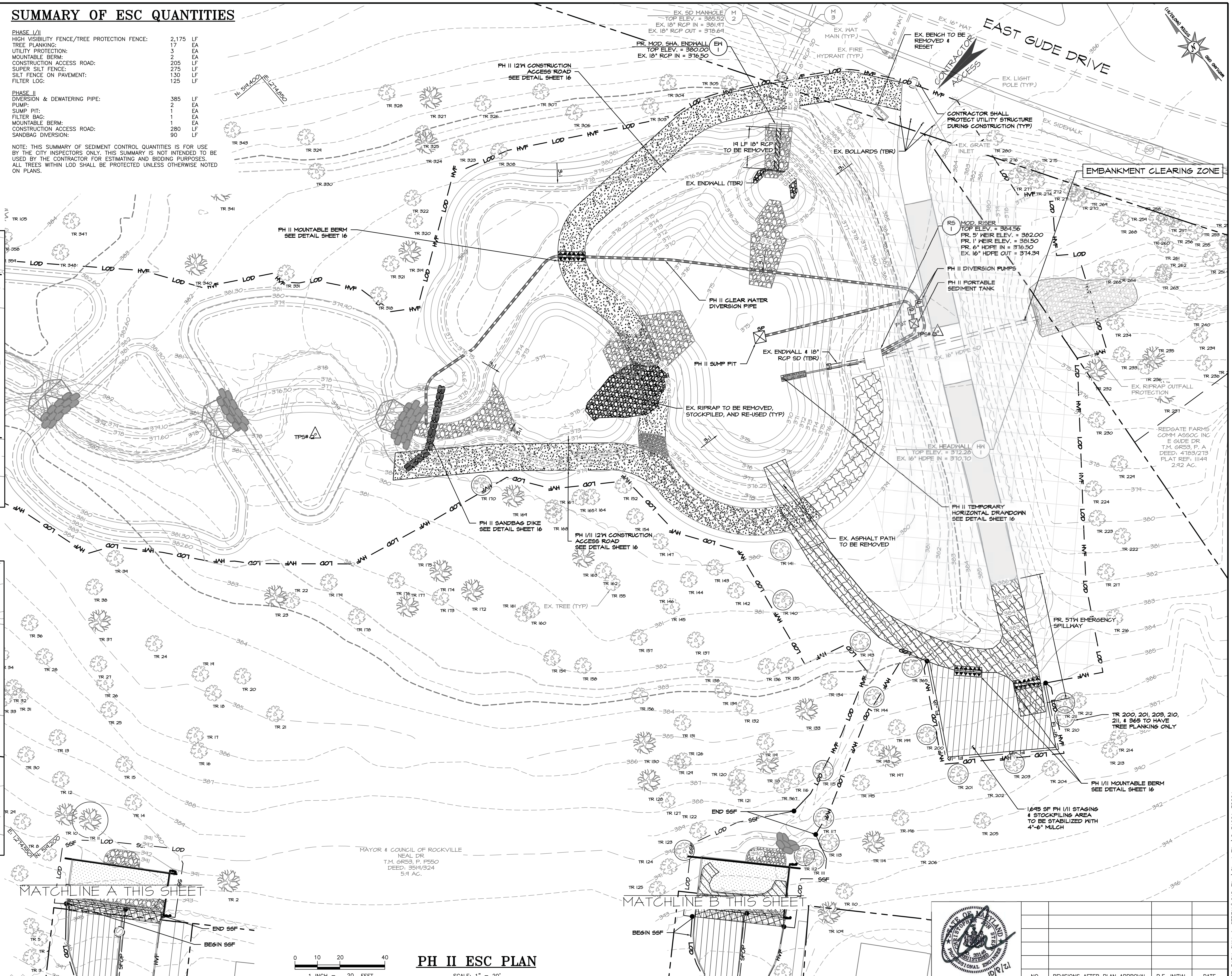


CONTRACTOR SHALL RESTORE PAVEMENT AND CURB & GUTTER TO PRE-CONSTRUCTION CONDITIONS

MATCHLINE B THIS SHEET



GATE ACCESS TO STAGING/STOCKPILE AREA PER CONTRACTOR'S MEANS AND METHODS W/ APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR



PH II ESC PLAN

SCALE: 1" = 20'

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NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG DRAFTED JG/MW CHECKED CS	DEPARTMENT OF PUBLIC WORKS CITY OF ROCKVILLE 111 MARYLAND AVE. ROCKVILLE, MARYLAND	DESIGN PLAN APPROVAL Craig L. Simoneau 2021.11.08 17:08:27-05'00' DIRECTOR OF PUBLIC WORKS PLAN APPROVAL DATE PWK# SMP# 2021-00012 SCP# 2021-00009 FTP# 2020-00001	AS BUILT PLAN APPROVAL CHIEF, CONSTRUCTION MANAGEMENT PLAN APPROVAL DATE	STORMWATER MANAGEMENT PLAN EROSION & SEDIMENT CONTROL PLANS	NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION BURGUNDY & CHESTNUT GROVE, P550 CITY OF ROCKVILLE, MARYLAND	DATE SUBMITTED: 10/8/2021 IFB #05-22 SCALE 1" = 20'	SHEET NO. 15 OF 22 FILE #

10/8/21

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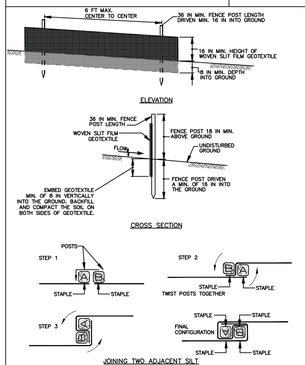
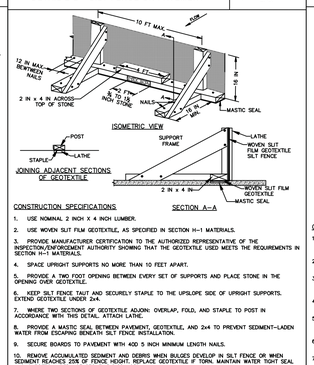
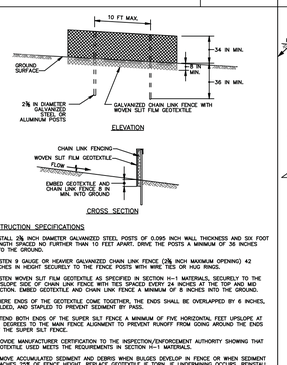
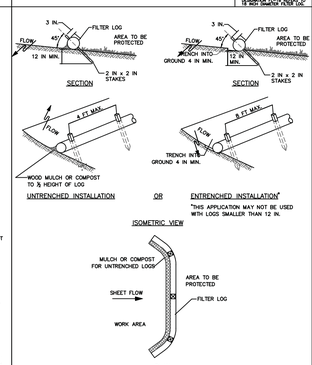
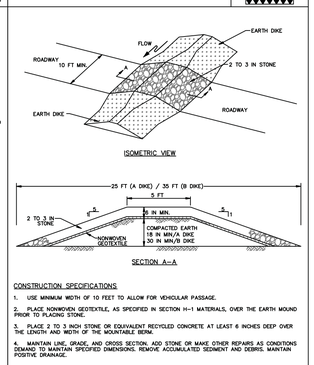
SCP2021-00009

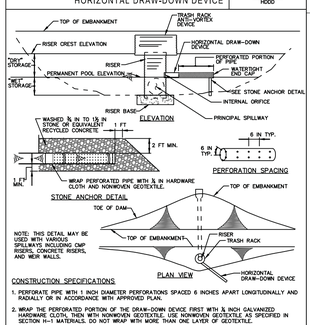


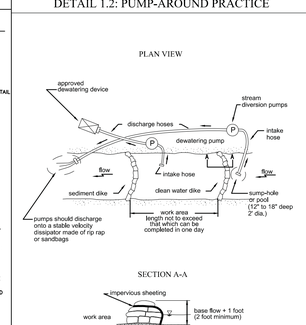


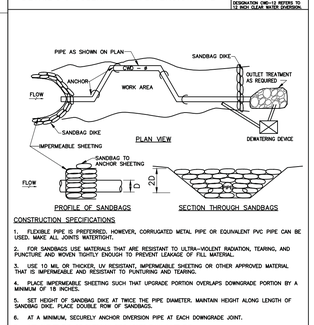


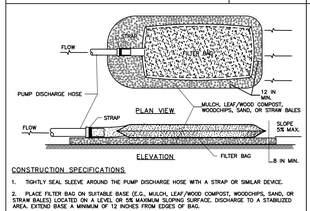


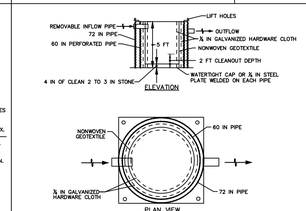


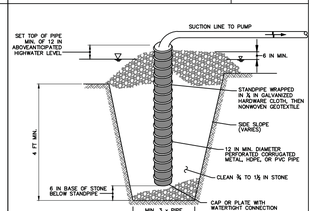


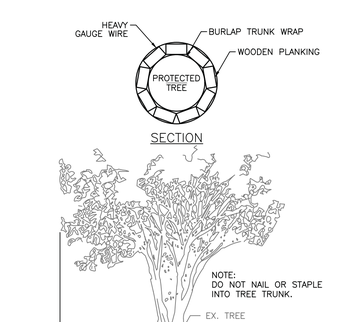


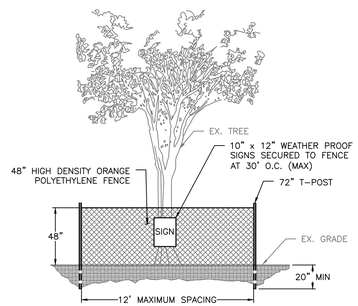


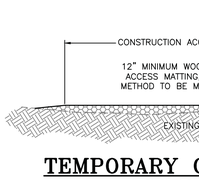












DETAIL E-1 SILT FENCE

STANDARD SYMBOL ├──SF──┤

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL ├──SF──┤

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-2 SILT FENCE ON PAVEMENT

STANDARD SYMBOL ├──SFOP──┤

CONSTRUCTION SPECIFICATIONS

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

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL ├──SSF──┤

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-6 FILTER LOG

STANDARD SYMBOL ├──FL–18──┤
DESIGNATION FL–18 REFERS TO 18 INCH DIAMETER FILTER LOG.

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-6 FILTER LOG

STANDARD SYMBOL ├──FL–18──┤
DESIGNATION FL–18 REFERS TO 18 INCH DIAMETER FILTER LOG.

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H–1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL MB

CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL G-2-6 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE

STANDARD SYMBOL HDDD

CONSTRUCTION SPECIFICATIONS

1. PERFORATE PIPE WITH 1 INCH DIAMETER PERFORATIONS SPACED 6 INCHES APART LONGITUDINALLY AND RADIALLY OR IN ACCORDANCE WITH APPROVED PLAN.
2. WRAP THE PERFORATED PORTION OF THE DRAW–DOWN DEVICE FIRST WITH ¼ INCH GALVANIZED HARDWARE CLOTH, THEN WITH NONWOVEN GEOTEXTILE. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.
3. AS AN ALTERNATE TO STONE ANCHORING, SECURE DRAW–DOWN DEVICE WITH TWO 1 INCH STEEL ANGLES SET 3 FEET MINIMUM INTO THE GROUND ATTACHED TO DRAW–DOWN DEVICE BY A 1 INCH WIDE GALVANIZED STEEL STRAP OR 12 GAUGE OR HEAVIER WIRE.
4. REMOVE SEDIMENT WHEN IT ACCUMULATES TO CLEANOUT ELEVATION (50% OF THE WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA IN A SUCH A MANNER THAT IT WILL NOT ERODE. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE

TEMPORARY INSTREAM CONSTRUCTION MEASURES | REVISED NOVEMBER 2000 PAGE 1.2 - 3 | MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL CWD – 12
DESIGNATION CWD–12 REFERS TO 12 INCH CLEAR WATER DIVERSION.

CONSTRUCTION SPECIFICATIONS

1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA–VIOLENT RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-4 FILTER BAG

STANDARD SYMBOL ☒FB

CONSTRUCTION SPECIFICATIONS

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

GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D–4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL ☒PST

CONSTRUCTION SPECIFICATIONS

1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, ¼ INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-2 SUMP PIT

STANDARD SYMBOL ☒SP

CONSTRUCTION SPECIFICATIONS

1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

TREE PLANKING DETAIL

SCALE: NOT TO SCALE

NOTES:
1. INSTALL PLANKS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE CITY
2. PLANK BOARD MATERIAL SHALL BE UNTREATED PINE OR APPROVED EQUIVALENT
3. INSTALL PLANKS COMPLETELY AROUND THE TREE. DO NOT PLACE PLANK BOARDS ON THE ROOT FLARE OF THE TREE
4. DO NOT PIN OR STAKE PLANKS INTO THE GROUND
5. DO NOT FASTEN PLANKS TO THE TREE

TREE PROTECTION/HIGH VISIBILITY FENCE DETAIL

SCALE: NOT TO SCALE

TREE PROTECTION SIGN DETAIL

SCALE: NOT TO SCALE

NOTES:
1. TREE PROTECTION/HIGH VISIBILITY FENCE DETAIL SHALL BE DIAMOND MESH FENCING WITH A ROLL WEIGHT OF 20 POUNDS PER ROLL AND A MULTILINGUAL SIGN IS REQUIRED.
2. ALL TREES WITHIN THE LIMIT OF DISTURBANCE THAT ARE NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS PER THE TREE PROTECTION/HIGH VISIBILITY FENCE DETAIL AND THE TREE PLANKING DETAIL AS INDICATED ON THE APPROVED FCP OR AS DIRECTED DURING THE PRE–CONSTRUCTION MEETING.
3. TREE PROTECTION FENCE SHALL BE UTILIZED WHEN THERE IS ADEQUATE ROOM TO AVOID DAMAGING THE TREE DURING CONSTRUCTION. TRUNK PROTECTION SHALL BE UTILIZED FOR TREES THAT ARE DIRECTLY ADJACENT TO OR HAVE THE POTENTIAL TO BE DAMAGED BY MACHINERY.
4. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
6. THE HIGH VISIBILITY FENCE SHOULD BE FASTENED SECURELY TO THE T–POSTS WITH WIRE OR ZIP TIES.
7. ROOT DAMAGE SHOULD BE AVOIDED. IF REQUIRED, ROOT PRUNING MUST BE PERFORMED EXCLUSIVELY BY AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST WHO IS ALSO A MARYLAND DEPARTMENT OF NATURAL RESOURCES LICENSED TREE EXPERT, AS PER CITY OF ROCKVILLE ROOT PRUNING DETAIL (A–3).
8. AFTER APPROVED LOCATION AND INSTALLATION, TREE PROTECTION FENCE MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; MODIFICATIONS TO LOCATIONS AND LIMITS OF TREE PROTECTION FENCE MUST BE COORDINATED IN THE FIELD WITH THE CITY'S FORESTRY STAFF.
9. POST CONSTRUCTION, TREE PROTECTION FENCE MUST REMAIN IN PLACE UNTIL A FINAL INSPECTION IS REQUESTED AND COMPLETED BY THE CITY'S FORESTRY STAFF.

TREE PROTECTION NOTES

1. INDIVIDUAL TREES MARKED TO BE PROTECTED WITHIN THE LIMIT OF DISTURBANCE THAT ARE NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS PER THE TREE PROTECTION AND PLANKING DETAILS. TREE PLANKING SHALL BE UTILIZED FOR TREES THAT ARE DIRECTLY ADJACENT TO OR HAVE THE POTENTIAL TO BE DAMAGED BY MACHINERY. IN ADDITION, THE FOLLOWING NOTES SHALL BE APPLICABLE:
2. THE CONTRACTOR SHALL AVOID THE PASSAGE OF HEAVY CONSTRUCTION EQUIPMENT WITHIN THE TREE DRIP LINE. WHEN NECESSARY, THE CONTRACTOR SHALL INSTALL TIMBER MATS OVER A 4" MULCH LAYER AND MINIMIZE PASSAGE.
3. WHEN TREE LIMBS ARE THREATENED BY CONSTRUCTION EQUIPMENT, THE CONTRACTOR MUST COMPLETE LIMB PRUNING PRIOR TO THE CONTINUATION OF WORK.
4. WHEN EXCAVATION IS PROPOSED WITHIN THE TREE DRIP LINE, THE CONTRACTOR MUST COMPLETE ROOT PRUNING PRIOR TO THE CONTINUATION OF WORK.
5. IF REQUIRED BY THE OWNER/DEVELOPER, ROOT AND LIMB PRUNING WILL BE PERFORMED EXCLUSIVELY BY AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST WHO IS ALSO A MARYLAND DEPARTMENT OF NATURAL RESOURCES LICENSED TREE EXPERT. THE SAME PERSON MUST HOLD BOTH TITLES.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE ANY ACTIVITIES WHICH WILL REQUIRE ROOT OR LIMB PRUNING AND SEQUENCE SITE OPERATIONS SUCH THAT THE WORK SCHEDULE IS NOT IMPACTED.
7. THE CONTRACTOR SHALL FINE GRADE AROUND TREES WITH SMALL EQUIPMENT OR HAND GRADE ONLY. THIS INCLUDES ANY EXCAVATION NECESSARY TO PERFORM ROOT PRUNING.
8. THE CONTRACTOR SHALL NOT REMOVE OR INTENTIONALLY DAMAGE ANY TREES NOT MARKED FOR REMOVAL.

TEMPORARY CONSTRUCTION ACCESS ROAD

NOT TO SCALE

TEMPORARY SAND BAG DIKE–SECTION

NOT TO SCALE

OUTLET PROTECTION FOR PUMP AROUND PRACTICE

NOT TO SCALE

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BAYLAND JOB NO. 8_31901

10/8/21

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau
2021.11.08 17:08:28-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SMP# 2021–00012
SCP# 2021–00009
FTP# 2020–00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
EROSION & SEDIMENT CONTROL NOTES & DETAILS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05–22
SCALE AS SHOWN
SHEET NO. 16 OF 22
FILE #

SCP2021-00009

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STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

CONTRACTOR SHALL UTILIZE HYDROSEEDING & HYDROMULCHING PROCEDURES UNLESS OTHERWISE APPROVED BY THE CITY.

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
   - a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
   - b. APPLY FERTILIZER AND LIME AS NEEDED. APPLICATIONS RATES SHALL BE AS PRESCRIBED ON THE PLANS.
   - c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL AS NEEDED 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 SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
   - iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
   - v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   - b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   - c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   - d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   - e. MIX LIME AND FERTILIZER SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. IF SOIL IS AMENDED WITH MATURE COMPOST, MIX TO A DEPTH OF 9 INCHES. 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.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. 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.
   - c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   - d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
   - a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
   - b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
   - c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
   - a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
   - b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM 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.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE 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.
6. MATURE COMPOST MAY BE SUBSTITUTE AS A SOIL AMENDMENT AND INCORPORATED INTO THE TOP 9 INCHES OF SOILS BY DISKING OR OTHER SUITABLE MEANS WITH APPROVAL FROM THE CITY. APPLICATION RATE SHALL BE AS DIRECTED BY THE CITY.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 7a SEED MIXTURE (FROM TABLE B.1)					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS		
1	ANNUAL RYEGRASS	40 (1lb/1000 sf)	2/15 - 4/30 8/15 - 11/30	0.5"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
2	FOXTAIL MILLET	30 (0.7lb/1000 sf)	5/1 - 8/14	0.5"		

NOTES:

1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE. OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
3. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

A. SEEDING

1. SPECIFICATIONS
   - a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
   - b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
   - c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
   - d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
   - a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
   - i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
   - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
   - b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
   - i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
   - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
   - c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
   - i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
   - ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
   - iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
   - iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
   - a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
   - b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
   - i. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
   - ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
   - iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
   - iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
   - v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
   - a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
   - b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
   - c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
   - a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
   - i. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
   - iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRATACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 7a SEED MIXTURE (FROM TABLE B.3)					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
1	SWITCHGRASS CREEPING RED FESCUE BUSH CLOVER	10 15 2	2/15 - 4/30 5/1 - 5/31	½" - ¼"	45 lb/ac (1.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
3	SHEEP FESCUE REDTOP COMMON LESPEDEZA	20 1 10	2/15 - 4/30 5/1 - 5/31	½" - ¼"				
6	TALL FESCUE PERENNIAL RYEGRASS WHITE CLOVER	40 25 5	2/15 - 4/30 8/15 - 10/31	½" - ¼"				

NOTES:

1. PERMANENT SEEDING SHALL ONLY BE NECESSARY FOR STABILIZATION OF AREAS WHERE THE PERMANENT LANDSCAPING PLAN DOES NOT PROPOSE ANY ALTERNATIVE STABILIZATION.

CITY OF ROCKVILLE STANDARD EROSION AND SEDIMENT CONTROL NOTES 11/16

1. THE APPLICANT MUST OBTAIN INSPECTION AND APPROVAL BY THE CITY OF ROCKVILLE DEPARTMENT OF PUBLIC WORKS (DPW) AT THE FOLLOWING POINTS:
   - a. AT THE REQUIRED PRECONSTRUCTION MEETINGS.
   - b. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
   - c. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
   - d. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL DEVICES.
   - e. PRIOR TO FINAL ACCEPTANCE.
2. ALL EROSION CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH APPLICABLE PUBLISHED STANDARDS AND SPECIFICATIONS AND THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
3. THE APPLICANT SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY DPW PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURES WITHOUT PRIOR PERMISSION FROM DPW.
4. ANY REQUEST FOR CHANGES TO THE APPROVED SEDIMENT CONTROL PLAN OR SEQUENCE OF CONSTRUCTION MUST BE SUBMITTED TO THE DPW SEDIMENT CONTROL INSPECTOR AND APPROVED BEFORE IMPLEMENTING CHANGES. MAJOR CHANGES WILL REQUIRE A PLAN REVISION.
5. THE APPLICANT SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.
6. THE APPLICANT SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DPW SEDIMENT CONTROL INSPECTOR.
7. ALL SEDIMENT BASINS, TRAP EMBANKMENTS, SWALES, PERIMETER DIKES AND PERMANENT SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD, SEED AND ANCHORED STRAW MULCH OR OTHER APPROVED STABILIZATION MEASURES, WITHIN SEVEN CALENDAR DAYS OF ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. RESTABILIZATION OR OVERSEEDING WILL BE REQUIRED, IF NECESSARY.
8. THE APPLICANT SHALL APPLY SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. OTHER ACTIVE CONSTRUCTION AREAS THAT ARE NOT BEING ACTIVELY GRADED (I.E. ROUTES FOR CONSTRUCTION VEHICLES WITHIN A SITE) MAY BE REQUIRED TO BE STABILIZED AT THE DIRECTION OF THE INSPECTOR. STOCKPILES, WHICH HAVE NOT BEEN USED FOR SEVEN (7) CALENDAR DAYS, SHALL BE STABILIZED THROUGH THE APPLICATION OF SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION METHODS.
9. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE APPLICANT SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.
10. THE SITE WORK, MATERIALS, APPROVED SEDIMENT CONTROL AND STORMWATER MANAGEMENT PLANS, AND ANY REQUIRED TEST REPORTS SHALL BE AVAILABLE, AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF THE CITY OF ROCKVILLE.
11. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
12. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.
13. TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF DPW, WITHIN 30 CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. IF ESTABLISHMENT IS NOT FULL AND UNIFORM AS DETERMINED BY THE DPW SEDIMENT CONTROL INSPECTOR, OVERSEEDING WILL BE REQUIRED. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.
14. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN AREAS THAT ARE NOT TO BE MAINTAINED PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
15. THE APPLICANT SHALL INSTALL A SPLASH BLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.
16. ALL WATER PUMPED FROM AN EXCAVATION DURING CONSTRUCTION SHALL BE PUMPED EITHER TO SEDIMENT TANKS AND/OR SEDIMENT TRAPS. NO WATER WILL BE PUMPED TO THE STORM DRAIN SYSTEM OR SWALE. DE-WATERING SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
17. FOR FINISHED GRADING, THE APPLICANT SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO: (1) PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN 24 HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS WHICH MAY DRAIN AS LONG AS 48 HOURS AFTER THE END OF A RAINFALL, AND (2) PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS OR OPENINGS.
18. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20-FEET OF A BUILDING, WHICH EXISTS OR IS UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN 20-FEET OF A SEDIMENT TRAP OR BASIN.
19. ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING TO DIRECT RUNOFF TO INLETS.
20. THE DPW SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.
21. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.
22. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
23. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE-HALF THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP.
24. SEDIMENT REMOVED FROM TRAPS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS IN SUCH A MANNER THAT IT DOES NOT FOUL EXISTING OR PROPOSED STORM DRAINAGE SYSTEMS OR AREAS ALREADY STABILIZED. SEDIMENT SHALL NOT BE PLACED WITHIN A FLOOD PLAIN OR WETLAND.
25. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42-INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN EIGHT-FEET, HAVE MESH OPENINGS NO GREATER THAN TWO-INCHES IN WIDTH AND FOUR-INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
26. OFF-SITE SPOIL OR BORROW AREAS MUST HAVE APPROVED SEDIMENT CONTROL PLANS.
27. PROTECT ALL TREES TO BE PRESERVED DURING CONSTRUCTION IN ACCORDANCE WITH THE APPROVED FOREST CONSERVATION PLAN.
28. THE APPLICANT IS RESPONSIBLE FOR ALL ACTIONS OF CONTRACTOR AND SUBCONTRACTORS, INCLUDING REPAIRING DAMAGE TO SEDIMENT CONTROL DEVICES AND EXISTING INFRASTRUCTURE.
29. THE APPLICANT SHALL COMPLY WITH ALL PROVISIONS OF THE NPDES CONSTRUCTION DISCHARGE PERMIT. A COPY OF THE PERMIT AND ALL REQUIRED REPORTS SHALL BE AVAILABLE ON SITE AT ALL TIMES.

SEQUENCE OF CONSTRUCTION

NOTES:

- CONTACT THE FOLLOWING ENTITIES AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION: CITY UTILITIES SECTION AT 240-314-8567 AND MISS UTILITY AT 1-800-257-7777.
- TREE FELLING AND REMOVAL SHALL NOT IMPACT TREES THAT ARE TO REMAIN.
- EROSION AND SEDIMENT PRACTICES, AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY, AND AFTER EACH RAIN FALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.
- EXISTING TOPSOIL, RIPRAP, AND SPOIL MATERIAL SHALL BE STOCKPILED SEPARATELY.
- ANY MATERIAL TAKEN OFF SITE MUST GO TO A SITE WITH AN ACTIVE AND APPROVED SEDIMENT AND EROSION CONTROL PLAN.
- SITE MUST BE GRADED IN SUCH A MANNER THAT THE APPROVED DRAINAGE DIVIDES ARE MAINTAINED THROUGHOUT SITE CONSTRUCTION.
- STANDARD STABILIZATION NOTE: FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE. SEEDING FOR PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED 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.
- THE SEQUENCE OF CONSTRUCTION IS INTENDED TO CONVEY THE INSTALLATION OF SEDIMENT CONTROLS AND GENERAL INSTRUCTION TO THE CONTRACTOR. THE SEQUENCE MAY BE ADJUSTED IN THE FIELD WITH THE DPW SEDIMENT CONTROL INSPECTOR'S PERMISSION TO ACCOMMODATE CONTRACTOR'S MEANS AND METHODS. ANY CHANGES TO THE PLANS MUST BE APPROVED BY CITY OF ROCKVILLE.
- RELOCATE PUMP AROUND PRACTICE AND DEWATERING PRACTICE INCLUDING DIVERSION PIPES AND PUMPS, SAND BAG DIKES, AND FILTER BAG AS NEEDED TO COMPLETE PROPOSED WORK. CHANGES MUST BE APPROVED BY THE DPW SEDIMENT CONTROL INSPECTOR IN THE FIELD.
- CONTRACTOR MUST PROTECT AND REPAIR/REPLACE EXISTING INFRASTRUCTURE IN-KIND IF DAMAGED DURING CONSTRUCTION AT NO EXPENSE TO THE CITY.
- AREAS OUTSIDE LOD SHALL NOT BE DISTURBED DURING PLACEMENT OF THE DIVERSION PIPE. NO MECHANICAL EQUIPMENT SHALL BE USED FOR PLACEMENT OF DIVERSION PIPE.
- SEDIMENT AND EROSION CONTROLS CANNOT BE REMOVED UNTIL THE SITE HAS ADEQUATE STABILIZATION. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUNDCOVER TO BE CONSIDERED ADEQUATELY STABILIZED AND THE DPW SEDIMENT CONTROL INSPECTOR HAS APPROVED SUCH REMOVAL.
- REMOVE ALL DEBRIS RESULTING FROM CONSTRUCTION SUCH AS BOTTLES AND TRASH DAILY.
- IF REQUIRED BY PERMIT, THE CONTRACTOR SHALL CONTACT THE MARYLAND DEPARTMENT OF THE ENVIRONMENT COMPLIANCE PROGRAM AT 301-665-2850 AT LEAST 5 DAYS IN ADVANCE OF THE PRE-CONSTRUCTION MEETING.

	DAYS
1. THE CONTRACTOR SHALL NOTIFY THE CITY OF ROCKVILLE'S CONSTRUCTION MANAGEMENT DIVISION (240-314-8542), FORESTRY INSPECTOR (240-314-8713) AND SEDIMENT CONTROL INSPECTOR (240-314-8879) AT LEAST 48 HOURS BEFORE COMMENCING WORK TO SCHEDULE A PRE-CONSTRUCTION MEETING. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OF THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS. THE LOCATIONS OF THE HIGH VISIBILITY FENCEING/TREE PROTECTION FENCING, SUPER SILT FENCE, FILTER LOG, AND TREES DESIGNATED FOR REMOVAL ON THE PLANS SHALL BE CLEARLY STAKED OUT PRIOR TO SCHEDULING THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF INVASIVE SPECIES WITH THE CITY OF ROCKVILLE PERSONNEL.	2 DAYS
2. CONTACT MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.	1 DAY
3. INSTALL TREE PROTECTION MEASURES, HIGH VISIBILITY FENCE, TRAFFIC CONTROL SIGNS AND PRUNE AS DIRECTED DURING THE PRECONSTRUCTION MEETING. THE ASHPALT ROAD OFF EAST GUDE DRIVE SHALL CLOSED FOR USE THROUGH THE DURATION OF THE PROJECT. ANY TEMPORARY CLOSURES OF THE ASPHALT ROAD MUST BE APPROVED BY THE CITY PROJECT MANAGER IN ADVANCE OF THE CLOSURES. INSTALL PH I/II UTILITY PROTECTION, CONSTRUCTION ACCESS ROAD, STAGING/STOCKPILE AREA, FILTER LOG, AND MOUNTABLE BERMS. REMOVE SECTION OF ASPHALT PATH AS SHOWN ON PLANS. REMOVE EXISTING BENCH ADJACENT TO CONSTRUCTION ENTRANCE.	5 DAYS
4. OBTAIN WRITTEN APPROVAL FROM THE CITY'S SEDIMENT AND EROSION CONTROL INSPECTOR THAT ALL ESC DEVICES ARE INSTALLED PER SPECIFICATION AND PER THE APPROVED PLAN PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION.	2 DAYS
CONCURRENT WITH PHASE I AND II	
5. INSTALL HIGH VISIBILITY FENCE, STAGING/STOCKPILE AREAS, SILT FENCE ON PAVEMENT, AND SUPER SILT FENCE AS SHOWN ON PLANS AROUND NEAL DRIVE AND WESLEY ROAD. REMOVE EXISTING PAVEMENT AS SHOWN ON PLANS TO BE TIED INTO PROPOSED BIORETENTION.	1 DAY
6. INSTALL PROPOSED BIORETENTION BASINS AT THE ENDS OF NEAL DRIVE AND WESLEY ROAD. COMPLETE GRADING OF EXISTING CHANNEL AT OUTFALL OF WESLEY ROAD BIORETENTION BASIN.	10 DAYS
7. WITH SEDIMENT AND EROSION CONTROL INSPECTOR'S APPROVAL, REMOVE EROSION AND SEDIMENT CONTROLS AND STABILIZE ANY AREAS DISTURBED. RESTORE ANY DAMAGES CAUSED TO EXISTING STRUCTURES DURING CONSTRUCTION (IE. PAVEMENT, SIDEWALKS, CURBS AND GUTTER, ETC.)	2 DAYS
PHASE I	
8. INSTALL PH I CONSTRUCTION ACCESS ROAD, MOUNTABLE BERM, FILTER LOG, SANDBAG DIKES, PUMPS & DIVERSION PIPES FOR CLEAR WATER DIVERSION AS NECESSARY FOR BASE FLOW. REMOVE DESIGNATED TREES AND NNI SPECIES REMOVAL.	5 DAYS
9. INSTALL SUMP PIT, PIPE, AND FILTER BAG FOR DEWATERING SITE OF SEDIMENT LADEN RUNOFF. CLEAR WATER DIVERSIONS SHALL BE USED FOR BASEFLOW ONLY. ALL SIGNIFICANT RAIN EVENTS SHALL BE DEWATERED THROUGH THE SUMP PIT. CONTRACTOR SHALL ENSURE DEWATERING & DIVERSION PIPES DISCHARGE TO A STABILIZED AREA.	1 DAY
10. REMOVE EXISTING 48" RCP PIPE OUTFALL AND SALVAGE EXISTING RIPRAP MATERIAL. INSTALL PROPOSED 48" RCP, HW-1, AND RIPRAP OUTFALL PROTECTION.	3 DAYS
11. STARTING UPSTREAM AND MOVING DOWNSTREAM (STA. 0+32.0 TO 3+11.5), BEGIN CONSTRUCTION OF PROPOSED RIFFLE-WEIR SYSTEM. WORK SHALL BE LIMITED TO AREAS THAT CAN BE COMPLETED AND STABILIZED AT THE END OF EACH WORKING DAY. REMOVE CONSTRUCTION ACCESS AS WORK IS COMPLETED MOVING DOWNSTREAM.	15 DAYS
12. PERMANENTLY STABILIZE ALL DISTURBED AREAS WITHIN THE SPSC AREA. WITH SEDIMENT AND EROSION CONTROL INSPECTOR'S APPROVAL, REMOVE ANY REMAINING PH I EROSION AND SEDIMENT CONTROLS AND STABILIZE ANY AREAS DISTURBED.	1 DAY
PHASE II	
13. INSTALL PH II CONSTRUCTION ACCESS ROAD, SANDBAG DIVERSIONS, PUMPS & DIVERSION PIPES FOR CLEAR WATER DIVERSION AS NECESSARY FOR BASE FLOW. INSTALL SUMP PIT, PIPE, AND PORTABLE SEDIMENT TANK FOR DEWATERING SITE OF SEDIMENT LADEN RUNOFF. CONTRACTOR MAY INITIALLY EXCAVATE TO PROPOSED POND BOTTOM AS NECESSARY FOR INSTALLATION OF SUMP PIT. CLEAR WATER DIVERSIONS SHALL BE USED FOR BASEFLOW ONLY. CONTRACTOR SHALL ENSURE DEWATERING PIPES DISCHARGE INTO EXISTING RISER. CONSTRUCTION ACCESS ROAD MAY BE ADJUSTED/REMOVED AS NECESSARY TO FACILITY GRADING OPERATIONS. DEWATER THE EXISTING POND PER APPROVED DEWATERING METHOD.	3 DAYS
14. REMOVE EXISTING EW-1 AND 19 LF OF 18" RCP AS SHOWN ON PLAN; SALVAGE EXISTING RIPRAP MATERIAL. INSTALL PROPOSED EW-1 AND RIPRAP OUTFALL PROTECTION.	3 DAYS
15. BEGIN GRADING AS NECESSARY OF DRIVEABLE GRASS ACCESS ROAD TO REACH EXISTING R-1. REMOVE EXISTING EW-2 AND 18" RCP. COMPLETE RISER MODIFICATIONS AND INSTALL TEMPORARY HORIZONTAL DRAWDOWN IN PROPOSED 6" ORIFICE AT INV. 376.50.	3 DAYS
16. BEGIN POND EXCAVATION AND AND INSTALLATION OF CLAY LINER. INSTALL RIPRAP INFLOW PROTECTIONS.	25 DAYS
17. UPON COMPLETION OF EXCAVATION, FINE GRADE POND AND INSTALL THE SAFETY BENCH AND AQUATIC BENCH, INCLUDING WETLAND SOIL MEDIA. CONVERT TEMPORARY HORIZONTAL DRAWDOWN INTO PROPOSED LOW FLOW.	5 DAYS
18. PERMANENTLY STABILIZE ALL DISTURBED AREAS WITHIN THE BASIN. REMOVE THE CLEAR WATER DIVERSIONS AND ALLOW THE POND TO FILL. ONCE THE WETLAND AREAS ARE SATURATED, DRAIN POND JUST BELOW AQUATIC BENCH AND INSTALL PLANTINGS/DEER BROWSE PROTECTION PER THE PLANTING PLAN DURING THE APPROPRIATE CALENDAR PERIOD. GRADE PROPOSED EMERGENCY SPILLWAY.	5 DAYS
19. REMOVE ANY REMAINING CONSTRUCTION ACCESS ROAD AND REPLACE WITH DRIVEABLE GRASS ACCESS ROAD. PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS.	2 DAYS
20. WITH SEDIMENT AND EROSION CONTROL INSPECTORS APPROVAL, REMOVE ANY REMAINING EROSION AND SEDIMENT CONTROLS, FENCING AND STABILIZE ANY AREAS DISTURBED. RESTORE ANY DAMAGES CAUSED TO EXISTING STRUCTURES DURING CONSTRUCTIONS (IE. PAVED WALKWAY, SIDEWALK, DRIVEWAY ENTRANCE ETC.). REINSTALL REMOVED BENCH AND FACE TOWARDS FACILITY.	2 DAYS
	TOTAL: 97 DAYS

BEST MANAGEMENT PRACTICES FOR WORKING IN NON TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 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 PLAIN.
5. 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 PERMANENT 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 BEEN COMPLETED.
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.

NO. 33148
10/8/21

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

BayLand Consultants & Designers, Inc.
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Hanover, Maryland 21076   Fax: (410) 694-9405
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BAYLAND JOB NO. 8_31901

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau
2021.11.08 17:08:29-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SMP# 2021-00012
SCP# 2021-00009
FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

STORMWATER MANAGEMENT PLAN
EROSION & SEDIMENT CONTROL NOTES

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE
SHEET NO. 17 OF 22
FILE #

SCP2021-00009

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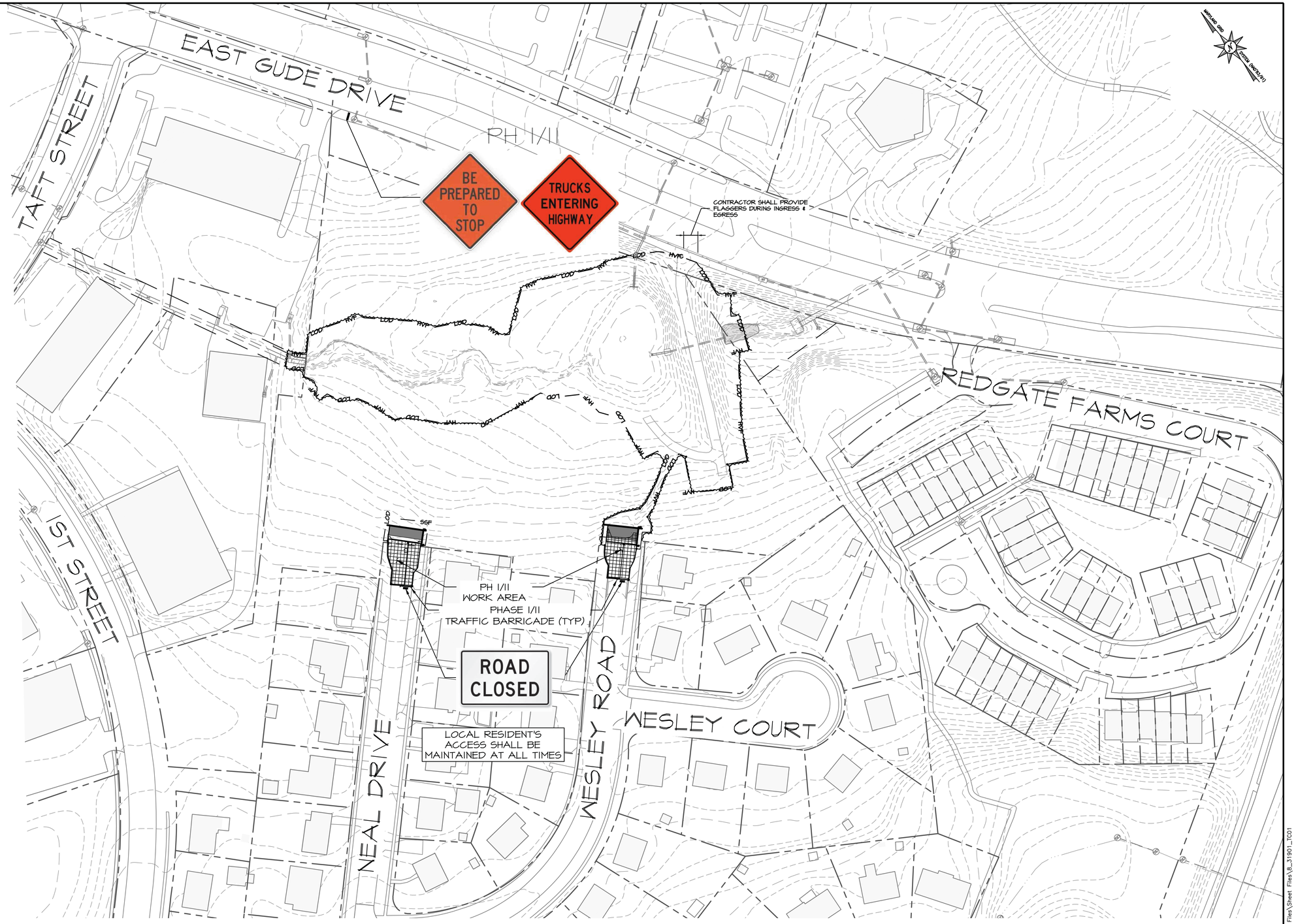
TEMPORARY TRAFFIC CONTROL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST: MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MD MUTCD); STATE HIGHWAY ADMINISTRATION (SHA) BOOK OF STANDARDS, SPECIFICATIONS AND GUIDELINES; THESE PLANS; THE PROJECT SPECIAL PROVISIONS; AND ALL OTHER CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FABRICATING AND POSTING NO PARKING SIGNS 48 HOURS BEFORE BAGGING ON-STREET PARKING SIGNS/METERS TEMPORARILY.
3. THE CONTRACTOR SHALL NOTIFY UPCOMING CONSTRUCTION TO THE CITY INSPECTOR, NEIGHBORHOOD RESOURCES COORDINATOR (240-314-8344), CITY POLICE (240-314-8900), AND AFFECTING HOA AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777, 5 WORKING DAYS BEFORE WORK.
5. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN CIRCULATIONS DURING CONSTRUCTION. FOR ANY SIDEWALK CLOSURE, THE CONTRACTOR SHALL SET UP APPLICABLE DETOUR SIGNS AND BARRICADES BASED ON THE MD SHA STANDARDS NO. 401.06-09A, 104.06-09B, OR 104.06-09D.
6. ACCESS TO THE RESIDENTIAL PROPERTIES AND DRIVEWAYS MUST BE MAINTAINED AT ALL TIMES.
7. THE CONTRACTOR SHALL ONLY PERFORM AS MUCH WORK AS CAN BE COMPLETED DURING EACH WORK DAY.
8. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SIGNS THAT ARE NOT APPLICABLE.
9. PERMANENT SIGNS IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE COVERED OR REMOVED AND SHALL BE RETURNED TO THEIR ORIGINAL PLACES AFTER THE COMPLETION OF CONSTRUCTION.
10. ANY PAVEMENT MARKINGS, SIGNS, CITY FACILITIES OR OTHER TRAFFIC CONTROL DEVICES DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
11. ADDITIONAL CONSTRUCTION WARNING SIGNS SHALL BE PLACED AS NEEDED WHEN DIRECTED BY THE CITY ENGINEER OR INSPECTOR.
12. FOR ROADWAY CLOSURE, THE APPLICANT SHALL PLACE A VARIABLE MESSAGE SIGN BOARD IN EACH DIRECTION OF THE ROAD AT LEAST 48 HOURS PRIOR TO THE CLOSURE AND THE MESSAGE SHOULD BE APPROVED BY THE CITY'S CHIEF OF CONSTRUCTION MANAGEMENT OR CITY INSPECTOR.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING WORK ON OR ADJACENT TO A PUBLIC ROAD TO PROVIDE, INSTALL, AND MAINTAIN APPROPRIATE TRAFFIC CONTROL DEVICES, AS WELL AS ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT MAY BE REQUIRED TO ENSURE THE SAFE AND EFFICIENT MOVEMENT OF TRAFFIC AND PEDESTRIANS THROUGH OR AROUND THE WORK AREA AND TO PROVIDE THE REQUIRED PROTECTION FOR THE SAFETY OF ROAD WORKERS.
14. THE MAINTENANCE OF TRAFFIC DRAWINGS SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES IN SHA STANDARDS MD 104.00-01 TO MD 104.00-18 AND STANDARD DETAILS IN SHA STANDARDS MD 104.01-1 TO MD 104.01-62.
15. WORK MAY NOT BE PERFORMED UNTIL ALL APPLICABLE TRAFFIC CONTROL DEVICES ARE IN PLACE. TRAFFIC CONTROL DEVICES MUST BE IN PLACE ANY TIME WORK IN OR ADJACENT TO A PUBLIC ROAD IS IN PROGRESS.
16. THE CITY MUST APPROVE ANY CORRECTIONS, MODIFICATIONS, OR ADDITIONS TO THIS PLAN.
17. LOCATIONS OF DEVICES MAY BE MODIFIED AS DIRECTED BY THE CITY TO ACCOMMODATE FIELD CONDITIONS.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES AND SHALL IMMEDIATELY REPLACE ANY WHICH ARE MISSING OR DETERMINED BY THE CITY TO BE UNSUITABLE FOR USE.
19. ALL SIGNS THAT ARE PART OF A WORK ZONE FOR MORE THAN THREE (3) DAYS SHALL BE PLACED ON POSTS.
20. ALL CONSTRUCTION SHALL BE COMPLETED DURING THE HOURS OF 7AM AND 5PM OR AS DIRECTED BY THE CITY. IT IS ANTICIPATED THAT PHASE I/II WILL BE COMPLETED IN APPROXIMATELY 84 WORKING DAYS WITH EAST GUDE DRIVE OPEN TO TRAFFIC. IT IS ANTICIPATED THAT THE PROPOSED BIORETENTIONS WILL BE COMPLETED IN APPROXIMATELY 13 WORKING DAYS WITH THE ENDS OF NEAL DRIVE AND WESLEY ROAD CLOSED FOR THAT TIME.
21. PHASE I/II TRAFFIC CONTROL INCLUDES:
    - 21.1. INSTALLATION OF WARNING SIGNS
    - 21.2. REMOVAL OF PHASE I/II SIGNAGE UPON COMPLETION OF STREAM RESTORATION AND POND RETROFIT
22. NEAL DRIVE AND WESLEY ROAD TRAFFIC CONTROL INCLUDES:
    - 22.1. INSTALLATION OF WARNING SIGNS AND TRAFFIC BARRICADE
    - 22.2. FLAGGING AS NECESSARY TO ALLOW CONSTRUCTION VEHICLE PASSAGE DURING BIORETENTION CONSTRUCTION
    - 22.3. REMOVAL OF NEAL DRIVE AND WESLEY ROAD SIGNAGE AND BARRICADES UPON COMPLETION OF THE PROJECT



TRAFFIC CONTROL PLAN

SCALE: 1" = 60'

0 30 60 120

1 INCH = 60 FEET

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AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
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STORMWATER MANAGEMENT PLAN
TRAFFIC CONTROL PLAN

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22

SCALE 1" = 60'

SHEET NO. 18 OF 22

FILE # F-295

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PROPOSED FOREST & TREE CLEARING

TOTAL FORESTED LOD	40,465	SF
DEDUCTION FOR CHANNEL AREA IN LOD WITH NO TREES	4,786	SF
DEDUCTION FOR FOREST WITHIN EMBANKMENT CLEARING ZONE	3,185	SF
ADJUSTED CLEARING/REFORESTATION REQUIRED	32,494	SF
SIGNIFICANT TREE REMOVALS		
REMOVALS IN FOREST	67	TREES
REMOVALS OUTSIDE FOREST	17	TREES
TOTAL	84	TREES

SEE SHEETS 2 AND 4 FOR TREE TABLE AND EXISTING CONDITIONS RESPECTIVELY.

ROOT PRUNING SHALL BE REQUIRED WHERE GRADING AND SSF FENCE WILL IMPACT TREE CRITICAL ROOT ZONES. SEE DETAIL ON SHEET 21.

PLANTING KEY

ZONE A: MARSH	
ZONE B: SCRUB-SHRUB WETLAND	
ZONE C: RIPARIAN FOREST	
ZONE D: RIPARIAN MEADOW	
ZONE E: UPLAND FOREST	
ZONE F: UPLAND MEADOW/ NON-WOODY VEGETATION ZONE	
ZONE G-1 & G-2: BIORETENTION	
2 INCH CALIPER TREE PLANTING	

PROPOSED PLANTING SUMMARY

ZONE A: HIGH MARSH PLANTING	9,076	SF
ZONE B: SCRUB-SHRUB WETLAND PLANTING	7,602	SF
ZONE C: RIPARIAN FOREST	25,787	SF
ZONE D: RIPARIAN MEADOW	8,429	SF
ZONE E: UPLAND FOREST	2,872	SF
ZONE F: UPLAND MEADOW	9,337	SF
ZONE G-1 & G-2: BIORETENTION	1,140	SF
TOTAL REFORESTATION AREA (ZONE B, C & E)	36,261	SF

PLANTING PLAN

SCALE: 1" = 20'

0 10 20 40 — 1 INCH = 20 FEET

QUALIFIED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A DULY CERTIFIED FOREST CONSERVATION QUALIFIED PROFESSIONAL UNDER THE LAWS OF THE STATE OF MARYLAND AND THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION.

Signed: ______ Date: 07/12/2021

JASON TRABAND
7455 NEW RIDGE ROAD, SUITE T
HANOVER, MD 21076
410-694-9401
JTRABAND@BAYLANDINC.COM

FC-03

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

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DRAFTED	JG/MW
CHECKED	CS

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PLAN APPROVAL DATE

FOREST CONSERVATION AND PLANTING PLAN

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE 1" = 20'
SHEET NO. 19 OF 22
FILE # F-295

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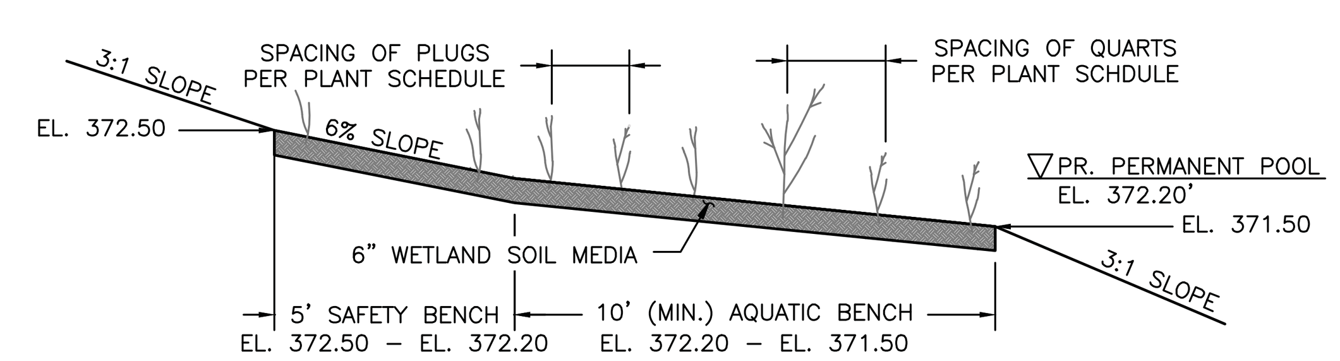
ZONE A: HIGH MARSH PLANTING SCHEDULE - 9,076 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
HERBACEOUS QUARTS						
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	100
CHELONE GLABRA	WHITE TURTLEHEAD	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	100
HIBISCUS MOSCHEUTOS	ROSE MALLOW	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	100
LOBELIA CARDINALIS**	CARDINAL FLOWER	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	40
LOBELIA SIPHILITICA	GREAT BLOE LOBELIA	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	40
SCIRPUS ATROVIRENS	GREEN BULRUSH	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	80
SCIRPUS CYPERINUS	WOOLGRASS	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	80
HERBACEOUS PLUGS						
ALISMA SUBCORDATUM	WATER PLANTAIN	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	750
CAREX VULPINOIDEA	FOX SEDGE	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	600
ELEOCHARIS OBTUSA	BLUNT SPIKE RUSH	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	800
IRIS VERSICOLOR	BLUE FLAG	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	800
JUNCUS EFFUSUS	SOFT RUSH	FACW	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	800
PELTANDRA VIRGINICA*	ARROW ARUM	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	500
PONTEDERIA CORDATA*	PICKERELWEED	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	500
SAGITTARIA LATIFOLIA*	DUCK POTATO	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	500
SAURURUS CERNUUS	LIZARDS TAIL	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	750
SCIRPUS TABERNAEMONTANI	SOFT STEM BULRUSH	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	800
VERBENA HASTATA**	BLUE VERVAIN	FACW	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	200

*INSTALL AT LOWER ELEVATIONS OF ZONE
**INSTALL AT HIGHER ELEVATIONS OF ZONE

ZONE B: SHRUB-SCRUB WETLAND PLANTING SCHEDULE - 7,602 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
LIVE STAKES						
CORNUS AMOMUM	SILKY DOGWOOD	FACW	2 FT.	LIVE STAKE	RANDOM AT 4' O.C.	25
SALIX NIGRA	BLACK WILLOW	OBL	2 FT.	LIVE STAKE	RANDOM AT 4' O.C.	25
SHRUBS						
ALNUS SERRULATA	SMOOTH ALDER	OBL	2-3 FT, 5 CANE MIN	#5 CONTAINER	NATURALIZED AT 7' O.C.	22
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	OBL	2-3 FT, 5 CANE MIN	#5 CONTAINER	NATURALIZED AT 7' O.C.	21
ITEA VIRGINICA	VIRGINIA SWEETSPIRE	OBL	2-3 FT, 4 CANE MIN	#5 CONTAINER	NATURALIZED AT 7' O.C.	20
ROSA PALUSTRIS	SWAMP ROSE	OBL	2-3 FT, 4 CANE MIN	#5 CONTAINER	NATURALIZED AT 7' O.C.	15
HERBACEOUS QUARTS						
HELIANTHUS ANGUSTIFOLIUS	SWAMP SUNFLOWER	FACW	QUART	CONTAINER	RANDOM AT 3' O.C.	22
ONOCLEA SENSIBILIS	SENSTIVE FERN	FACW	QUART	CONTAINER	RANDOM AT 3' O.C.	24
OSMUNDA CINNAMOMEA	CINNAMON FERN	FACW	QUART	CONTAINER	RANDOM AT 3' O.C.	22
PHLOX MACULATA	MEADOW PHLOX	FACW	QUART	CONTAINER	RANDOM AT 3' O.C.	22
SYMPHYOTRICHUM NOVI-BELGII	NEW YORK ASTER	OBL	QUART	CONTAINER	RANDOM AT 3' O.C.	22
HERBACEOUS PLUGS						
HIBISCUS MOSCHEUTOS	ROSE MALLOW	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 18" O.C.	150
IRIS VERSICOLOR	BLUE FLAG	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 18" O.C.	150
LOBELIA CARDINALIS	CARDINAL FLOWER	FACW	PLUG	TRAY/CONTAINER	RANDOM AT 18" O.C.	150
MIMULUS RINGENS	SQUARE-STEMED MONKEYFLOWER	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 18" O.C.	150
SCIRPUS ATROVIRENS	GREEN BULRUSH	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 18" O.C.	150
VERONIA NOVEBORACENSIS	NEW YORK IRONWEED	FACW	PLUG	TRAY/CONTAINER	RANDOM AT 18" O.C.	150
SEEDING - INITIAL						
NATIVE SEED MIX (ERNMX 122 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	N/A	2.5 LBS
NATIVE SEED MIX (ERNMX 183 OR EQUIVALENT)	NATIVE DETENTION AREA SEED MIX	N/A	N/A	SEED	N/A	1.0 LBS
SEEDING - YEAR 1						
NATIVE SEED MIX (ERNMX 122 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	N/A	2.5 LBS



SAFETY & AQUATIC BENCH DETAIL

SCALE: NOT TO SCALE

WHEN FURNISHED, THE WETLAND SOIL MEDIA SHALL CONSIST OF: 40% ASTM C33 CONCRETE SAND WITH A GRAIN SIZE DIAMETER OF 0.02-0.04", 40% COMPOST AND 20% TOPSOIL WITH LESS THAN 5% CLAY CONTENT.

NOTES:

ALL AREAS WITHIN THE LIMIT OF DISTURBANCE NOT SHOWN TO BE STABILIZED WITH NATIVE SEEDING SHALL BE REVEGETATED IN ACCORDANCE WITH THE PERMANENT SEEDING SUMMARY TABLE AND STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING ON SHEET 16.

WOODY VEGETATION SHALL NOT BE INSTALLED WITHIN THE EMBANKMENT CLEARING ZONE OR WITHIN 15' OF THE EMBANKMENT TOE.

NATIVE RIPARIAN WOODY SEED MIX

% COMPOSTION	BOTANICAL NAME	COMMON NAME
20%	CORNUS RACEMOSA	GRAY DOGWOOD
15%	LINDERA BENZOIN	SPICEBUSH
15%	NYSSA SYLVATICA	BLACK GUM
15%	VIBURNUM LENTAGO	NANNYBERRY
14%	VIBURNUM TRILOBUM	AMERICAN CRANBERRY
10%	VIBURNUM DENTATUM	SOUTHERN ARROWWOOD
5%	ILEX VERTICILLATA	WINTERBERRY
2%	PHOTONIA MELANOCARPA	BLACK CHOKEBERRY
2%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE
2%	SAMBUCUS CANADENSIS	COMMON ELDERBERRY

ZONE C: RIPARIAN FOREST PLANTING SCHEDULE - 25,787 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
OVERSTORY TREES - LARGE						
BETULA NIGRA	RIVER BIRCH	FACW	10-12 FT, 3-STEM MIN	#25 CONTAINER	AS SHOWN	2
QUERCUS PHELLOS	WILLOW OAK	FACW	2" CAL	#25 CONTAINER	AS SHOWN	3
OVERSTORY TREES- SMALL						
BETULA NIGRA	RIVER BIRCH	FACW	6-7 FT, 3-STEM MIN	#10 CONTAINER	NATURALIZED AT 15' O.C.	7
NYSSA SYLVATICA	BLACK GUM	FAC	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	8
POPULUS DELTOIDES	EASTERN COTTONWOOD	FAC	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	7
QUERCUS BICOLOR	SWAMP WHITE OAK	FACW	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	9
QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	FACW	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	8
QUERCUS PHELLOS	WILLOW OAK	FACW	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	8
TAXODIUM DISTICHUM	BALD CYPRESS	OBL	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	8
ULMUS AMERICANA	AMERICAN ELM	FACW	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	8
UNDERSTORY TREES						
AMELANCHIER CANADENSIS	SERVICEBERRY	FAC	6-7 FT OR 0.5" CAL	#7 CONTAINER	NATURALIZED AT 12' O.C.	11
ASIMINA TRILOBA	PAW PAW	FAC	4-5 FT	#5 CONTAINER	NATURALIZED AT 12' O.C. & CLUSTERED IN GROUPS OF 3	12
CARPINUS CAROLIANA	IRONWOOD	FAC	6-7 FT OR 0.5" CAL	#7 CONTAINER	NATURALIZED AT 12' O.C.	12
MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	FACW	6-7 FT	#7 CONTAINER	NATURALIZED AT 12' O.C.	13
TUBELINGS						
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	FACW	N/A	TUBELINGS	4' O.C.	40
CORNUS AMOMUM	SILKY DOGWOOD	FACW	N/A	TUBELINGS	4' O.C.	40
CORNUS SERICEA	RED OSIER DOGWOOD	FACW	N/A	TUBELINGS	4' O.C.	40
PHOTINIA ARBUTIFOLIA	RED CHOKEBERRY	FACW	N/A	TUBELINGS	4' O.C.	40
PHYSOCARPUS OPULIFOLIUS	NINEBARK	FACW	N/A	TUBELINGS	4' O.C.	40
SALIX NIGRA	BLACK WILLOW	OBL	N/A	TUBELINGS	4' O.C.	40
SEEDING - INITIAL						
NATIVE SEED MIX (ERNMX 122 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	N/A	9.0 LBS
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	3.0 LBS
COVER/NURSE CROP (SEE TABLE)		N/A	N/A	SEED	SEE TABLE FOR APPLICATION RATES & DATES	
SEEDING - YEAR 1						
NATIVE RIPARIAN WOODY SEED MIX	NATIVE RIPARIAN WOODY SEED MIX	N/A	N/A	SEED	N/A	11.0 LBS
NATIVE SEED MIX (ERNMX 122 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	N/A	7.0 LBS
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	2.0 LBS

ZONE D: RIPARIAN MEADOW SEEDING SCHEDULE - 8,429 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
SEEDING - INITIAL						
NATIVE SEED MIX (ERNMX 122 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	N/A	3.0 LBS
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	1.0 LBS
COVER/NURSE CROP (SEE TABLE)		N/A	N/A	SEED	SEE TABLE FOR APPLICATION RATES & DATES	
SEEDING - YEAR 1						
NATIVE SEED MIX (ERNMX 122 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	N/A	2.0 LBS
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	1.0 LB

ZONE E: UPLAND FOREST PLANTING SCHEDULE - 2,478 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
OVERSTORY TREES - LARGE						
CELTIS OCCIDENTALIS	COMMON HACKBERRY	FACU	2" CAL	#25 CONTAINER	AS SHOWN	3
QUERCUS RUBRA	NORTHERN RED OAK	FACU	2" CAL	#25 CONTAINER	AS SHOWN	2
OVERSTORY TREES- SMALL						
CARYA TOMENTOSA	MOCKERNUT HICKORY	FACU	0.5" CAL	#5 CONTAINER	NATURALIZED AT 12' O.C.	2
FAGUS GRANDIFOLIA	AMERICAN BEECH	FACU	0.5" CAL	#5 CONTAINER	NATURALIZED AT 12' O.C.	2
QUERCUS ALBA	WHITE OAK	FACU	1" CAL	#10 CONTAINER	NATURALIZED AT 15' O.C.	1
UNDERSTORY TREES						
CERCIS CANADENSIS	EASTERN REDBUD	UPL	0.5" CAL	#10 CONTAINER	NATURALIZED AT 12' O.C.	1
CORNUS FLORIDA 'APPALACHIAN SPRING'	APPALACHIAN SPRING FLOWERING DOGWOOD	FACU	0.5" CAL	#10 CONTAINER	NATURALIZED AT 12' O.C.	1
SEEDING - INITIAL						
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	1.0 LB
COVER/NURSE CROP (SEE TABLE)		N/A	N/A	SEED	SEE TABLE FOR APPLICATION RATES & DATES	
SEEDING - YEAR 1						
NATIVE UPLAND WOODY SEED MIX	NATIVE UPLAND WOODY SEED MIX	N/A	N/A	SEED	N/A	1.0 LB
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	1.0 LB

ZONE F: UPLAND MEADOW SEEDING SCHEDULE - 8,995 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
SEEDING - INITIAL						
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	4.5 LBS
COVER/NURSE CROP (SEE TABLE)		N/A	N/A	SEED	SEE TABLE FOR APPLICATION RATES & DATES	
SEEDING - YEAR 1						
NATIVE SEED MIX (ERNMX 105 OR EQUIVALENT)	NATIVE UPLAND SEED MIX	N/A	N/A	SEED	N/A	3.0 LBS

ZONE G-1: NEAL DRIVE BIORETENTION PLANTING SCHEDULE - 520 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
HERBACEOUS QUARTS						
CHASMANTHIUM LATIFOLIUM	RIVER OATS	FACU	QUART	CONTAINER	RANDOM AT 2' O.C.	18
CONOCLINIUM COELESTINUM	WILD AGERATUM	FAC	QUART	CONTAINER	RANDOM AT 2' O.C.	16
EUPATORIUM PERFOLIATUM	BONESET	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	14
HIBISCUS MOSCHEUTOS	ROSE MALLOW	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	9
IRIS VERSICOLOR	BLUE FLAG	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	9
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	16
PANICUM VIRGATUM	SWITCHGRASS	FAC	QUART	CONTAINER	RANDOM AT 2' O.C.	15
RUDBECKIA FULGIDA	CUTLEAF CONEFLOWER	FAC	QUART	CONTAINER	RANDOM AT 2' O.C.	14
HERBACEOUS PLUGS						
CAREX VULPINOIDEA	FOX SEDGE	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	50
JUNCUS EFFUSUS	SOFT RUSH	FACW	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	50

ZONE G-2: WESLEY ROAD BIORETENTION PLANTING SCHEDULE - 620 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING	QUANTITY
HERBACEOUS QUARTS						
CHASMANTHIUM LATIFOLIUM	RIVER OATS	FACU	QUART	CONTAINER	RANDOM AT 2' O.C.	22
CONOCLINIUM COELESTINUM	WILD AGERATUM	FAC	QUART	CONTAINER	RANDOM AT 2' O.C.	20
EUPATORIUM PERFOLIATUM	BONESET	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	18
HIBISCUS MOSCHEUTOS	ROSE MALLOW	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	11
IRIS VERSICOLOR	BLUE FLAG	OBL	QUART	CONTAINER	RANDOM AT 2' O.C.	11
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	FACW	QUART	CONTAINER	RANDOM AT 2' O.C.	20
PANICUM VIRGATUM	SWITCHGRASS	FAC	QUART	CONTAINER	RANDOM AT 2' O.C.	17
RUDBECKIA FULGIDA	CUTLEAF CONEFLOWER	FAC	QUART	CONTAINER	RANDOM AT 2' O.C.	18
HERBACEOUS PLUGS						
CAREX VULPINOIDEA	FOX SEDGE	OBL	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	50
JUNCUS EFFUSUS	SOFT RUSH	FACW	PLUG	TRAY/CONTAINER	RANDOM AT 1' O.C.	50

NATIVE WETLAND SEED MIX COMPOSITION

% COMPOSTION	BOTANICAL NAME	COMMON NAME
33.00%	CAREX VULPINOIDEA	FOX SEDGE
20.00%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
16.80%	CAREX SCOPARIA	BLUNT BROOM SEDGE
5.2%	CINNA ARUNDINACEA	WOOD REEDGRASS
4.0%	VERBENA HASTATA	BLUE VERVAIN
3.0%	CAREX LUPULINA	HOP SEDGE
3.0%	CAREX LURIDA	LURID SEDGE
3.0%	JUNCUS EFFUSUS	SOFT RUSH
2.0%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
2.0%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
1.5%	BIDENS CERNUA	NODDING BUR MARIGOLD
1.0%	EUPATORIUM PERFOLIATUM	BONESET
1.0%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED
1.0%	ZIZIA AUREA	GOLDEN ALEXANDERS
0.5%	ALISMA SUBCORDATUM	MUD PLANTAIN
0.5%	ASTER PUNICEUS	PURPLESTEM ASTER
0.4%	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER
0.4%	SYMPHYOTRICHUM PRENANTHOIDES	ZIGZAG ASTER
0.4%	SYMPHYOTRICHUM UMBELLATUS	FLAT TOPPED WHITE ASTER
0.3%	EUPATORIUM FISTULOSUM	JOE PYE WEED
0.3%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
0.3%	SCIRPUS CYPERINUS	WOOLGRASS
0.2%	PENTHORUM SEDOIDES	DITCH STONECROP
0.1%	CHELONE GLABRA	TURTLEHEAD
0.10%	SOLIDAGO RUGOSA	WRINKLELEAF GOLDENROD

NATIVE DETENTION AREA SEED MIX COMPOSITION

% COMPOSTION	BOTANICAL NAME	COMMON NAME
26.00%	PANICUM VIRGATUM	SWITCHGRASS
25.00%	PANICUM CLANDESTINUM	DEERTONGUE
20.00%	CAREX VULPINOIDEA	FOX SEDGE
20.00%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
4.00%	AGROSTIS PERENNANS	AUTUMN BENTGRASS
3.00%	JUNCUS EFFUSUS	SOFT RUSH
1.00%	JUNCUS TENUIS	PATH RUSH
1.00%	PANICUM RIGIDULUM	REDTOP PANICGRASS

COVER/NURSE CROP SEEDING TABLE

SEEDING RATE	BOTANICAL NAME	COMMON NAME	SEEDING DATE
30 LB/AC	SECALE CEREAL	CEREAL RYE	11/1-2/28
30 LB/AC	AVENA SATIVA	GRAIN OATS	3/1-4/30
10 LB/AC	SETARIA ITALICA	FOXTAIL MILLET	5/1-8/14
10 LB/AC	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	8/15-10/31

NATIVE FLOODPLAIN SEED MIX COMPOSITION

% COMPOSTION	BOTANICAL NAME	COMMON NAME
30.20%	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
22.00%	SORGHASTRUM NUTANS	INDIANGRASS
15.00%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
5.0%	ECHINACEA PURPUREA	PURPLE CONEFLOWER
5.0%	PANICUM CLANDESTINUM	DEERTONGUE
3.0%	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
3.0%	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS
3.0%	RUDBECKIA HIRTA	BLACKEYED SUSAN
3.0%	VERBENA HASTATA	BLUE VERVAIN
2.0%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
1.5%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
1.0%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
1.0%	SENNA HEBECARPA	WILD SENNA
0.7%	PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT
0.7%	SOLIDAGO NEMORALIS	GRAY GOLDENROD
0.6%	EUPATORIUM PERFOLIATUM	BONESET
0.5%	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO
0.5%	GEUM CANADENSE	WHITE AVENS
0.5%	MONARDA FISTULOSA	WILD BERGAMOT
0.5%	TRADESCANTIA OHIENSIS	OHIO SPIDERWORT
0.5%	ZIZIA AUREA	GOLDEN ALEXANDERS
0.3%	PENSTEMON DIGITALIS	TALL WHITE BEARDTONGUE
0.2%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER

NATIVE UPLAND SEED MIX COMPOSITION

% COMPOSTION	BOTANICAL NAME	COMMON NAME
30.20%	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
22.00%	SORGHASTRUM NUTANS	INDIANGRASS
15.00%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
5.00%	ECHINACEA PURPUREA	PURPLE CONEFLOWER
5.00%	PANICUM CLANDESTINUM	DEERTONGUE
3.00%	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
3.00%	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS
3.00%	RUDBECKIA HIRTA	BLACKEYED SUSAN
3.00%	VERBENA HASTATA	BLUE VERVAIN
2.00%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
1.50%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
1.00%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
1.00%	SENNA HEBECARPA	WILD SENNA
0.70%	PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT
0.70%	SOLIDAGO NEMORALIS	GRAY GOLDENROD
0.60%	EUPATORIUM PERFOLIATUM	BONESET
0.50%	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO
0.50%	GEUM CANADENSE	WHITE AVENS
0.50%	MONARDA FISTULOSA	WILD BERGAMOT
0.50%	TRADESCANTIA OHIENSIS	OHIO SPIDERWORT
0.50%	ZIZIA AUREA	GOLDEN ALEXANDERS
0.30%	ASCLEPIAS SYRIACA	COMMON MILKWEED
0.30%	PENSTEMON DIGITALIS	TALL WHITE BEARDTONGUE
0.20%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER

QUALIFIED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A DULY CERTIFIED FOREST CONSERVATION QUALIFIED PROFESSIONAL UNDER THE LAWS OF THE STATE OF MARYLAND AND THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION.

Signed: __________ Date: 07/12/2021

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FC-04

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BAYLAND JOB NO. 8_31901

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

DESIGNED CS/JG DRAFTED JG/MW CHECKED CS	DEPARTMENT OF PUBLIC WORKS CITY OF ROCKVILLE 111 MARYLAND AVE. ROCKVILLE, MARYLAND	DESIGN PLAN APPROVAL Craig L. Simoneau 2021.11.08 17:08:32-05'00' DIRECTOR OF PUBLIC WORKS PLAN APPROVAL DATE PWK# ____ SCP# 2021-00009 SMP# 2021-00012 FTP# 2020-00001	AS BUILT PLAN APPROVAL CHIEF, CONSTRUCTION MANAGEMENT PLAN APPROVAL DATE	FOREST CONSERVATION AND PLANTING PLAN NOTES AND DETAILS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021 | IFB #05-22 | SCALE AS NOTED | SHEET NO. 20 OF 22 | FILE # F-295

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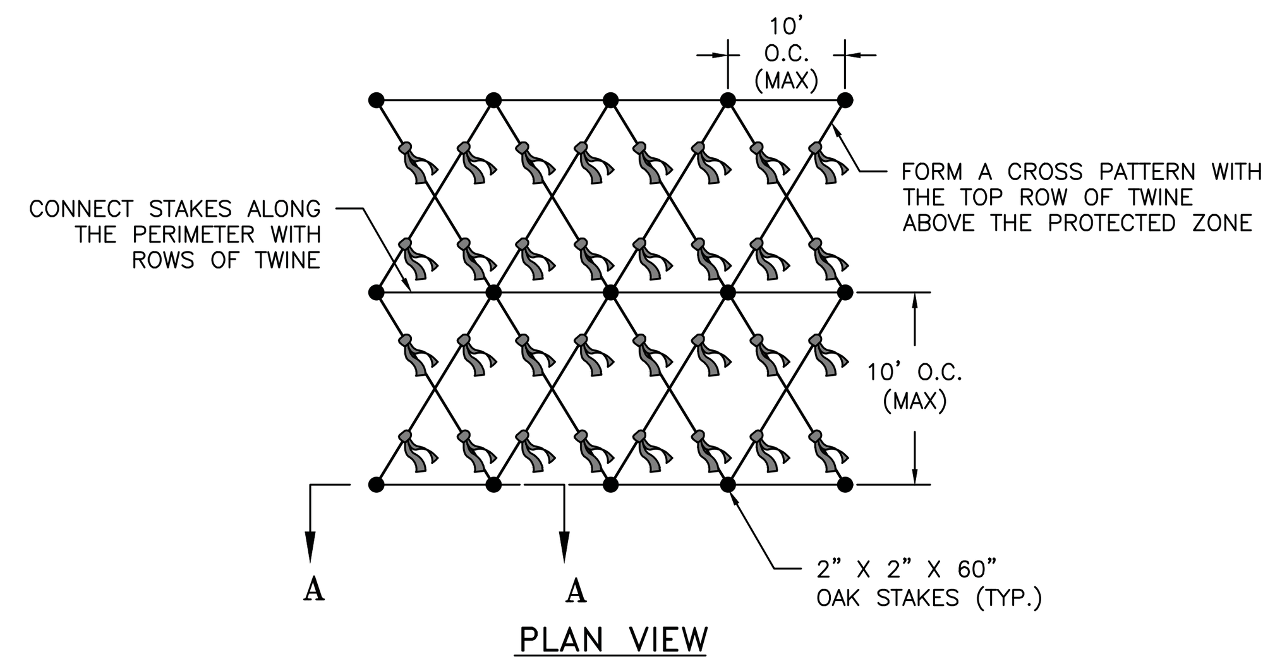
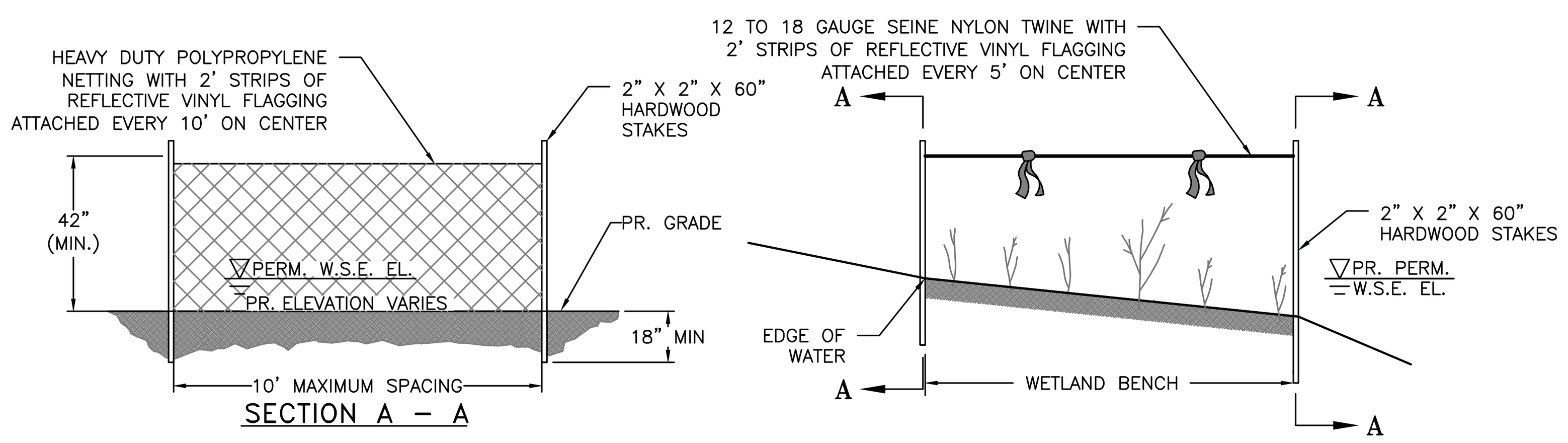


PLAN VIEW



SECTION A – A

NOTES:

1. HARDWOOD T-POSTS SHALL BE INSTALLED IN TWO ROWS ALONG THE INNER AND OUTER WETLAND BENCH PERIMETER. STAKES SHALL BE SPACED A MAXIMUM OF 10' O/C. AND SHALL BE DRIVEN A MINIMUM OF 18" DEEP.
2. HEAVY DUTY POLYPROPYLENE NETTING WITH 1"x3/4" OPENINGS SHALL BE STRETCHED TAUGHT AND ATTACHED TO EACH ADJACENT STAKE IN THE SAME ROW USING 4-5 HEAVY DUTY UV RESISTANT ZIP TIES TO CREATE AN INNER AND OUTER PERIMETER FENCE.
3. EVERY 100' OF OUTER PERIMETER FENCE, THE INNER NETTING WILL BE STRETCHED ACROSS THE WETLAND BENCH TO THE OUTER PERIMETER FENCE AND BACK TO THE INNER PERIMETER TO CONTINUE THE INNER PERIMETER FENCE.
4. 2' STRIPS OF FLUORESCENT COLORED REFLECTIVE VINYL FLAGGING SHALL BE SECURELY FASTENED TO THE PERIMETER FENCE BETWEEN THE HARDWOOD STAKES AT A MAXIMUM 10' O/C.
5. 12 TO 18 GAUGE NYLON SEINE TWINE SHALL BE STRUNG ACROSS THE WETLAND BENCH IN A ZIG-ZAG PATTERN RUNNING FROM INNER STAKE TO OUTER STAKE. ADDITIONAL FLUORESCENT COLORED REFLECTIVE VINYL FLAGGING SHALL SECURELY FASTENED TO THE NYLON SEINE TWINE AT A MAXIMUM OF 5' O/C. ADDITIONAL STAKES MAY BE REQUIRED TO ADEQUATELY SUPPORT THE NYLON SEINE TWINE IN WIDER SECTIONS OF THE WETLAND BENCH.
6. THE GOOSE PROTECTION FENCING SHALL COMPLETELY ENCLOSE THE WETLAND BENCH AND PREVENT GOOSE ACCESS TO THE WATER FROM LAND AND VISE VERSA.
7. THE FENCING MUST REMAIN IN PLACE UNTIL THE VEGETATION HAS HAD TIME TO BECOME ESTABLISHED. AFTER TWO GROWING SEASONS OR AT THE DIRECTION OF THE OWNER/DEVELOPER THE FENCING SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

GOOSE EXCLUSION FENCING DETAIL

SCALE: NOT TO SCALE

GENERAL PLANTING NOTES

1. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN, INC. STANDARDS.
2. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS PRIOR TO PLANTING MATERIAL. IF CONFLICTS ARISE, BAYLAND, INC. AND THE CITY OF ROCKVILLE MUST BE NOTIFIED PRIOR TO ANY GROUND BREAKING.
3. WETLAND PLANTING WILL BE ACCOMPLISHED BETWEEN MARCH 15TH AND MAY 15TH (SPRING PLANTING SEASON) OR SEPTEMBER 15TH AND NOVEMBER 15TH (FALL PLANTING SEASON).
4. TREES AND SHRUBS SHALL BE PLANTED FROM MARCH 1 TO MAY 31 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.
5. NO CONTAINER-GROWN MATERIAL SHALL BE PLANTED IF NOT ACCLIMATED TO THE CURRENT WEATHER CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR GENERAL MAINTENANCE INCLUDING WATERING.
6. NO AQUATIC BENCH PLANTINGS SHALL BE INSTALLED UNTIL POND HAS BEEN ALLOWED TO FILL AND BENCH HAS BECOME SATURATED. IMMEDIATELY INSTALL GOOSE PROTECTION FENCING (DETAIL THIS SHEET) AFTER INSTALLATION OF AQUATIC BENCH PLANTINGS).
7. ALL PLANTING MATERIAL AND PLANTING METHODS SHALL CONFORM TO CONSTRUCTION SPECIFICATIONS.
8. ALL AREAS WITHIN THE LIMITS OF DISTURBANCE SHALL BE STABILIZED PER THE DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT.
9. IF A MINIMUM COVERAGE OF 85% IS NOT ACHIEVED IN THE PLANTED AQUATIC BENCH AFTER THE SECOND GROWING SEASON, A REINFORCEMENT PLANTING WILL BE REQUIRED.
10. REMOVE GOOSE PROTECTION FENCING AFTER TWO GROWING SEASONS IF THE PLANTS HAVE BECOME ESTABLISHED.

PLANT MATERIALS AND PLANTING METHODS

PLANT MATERIALS

THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL ALL OF THE PLANT MATERIALS CALLED FOR ON DRAWINGS AND/OR LISTED IN THE PLANT SCHEDULE.

1. PLANT NAMES

   PLANT NAMES USED IN THE PLANT SCHEDULE SHALL CONFORM TO "STANDARDIZED PLANT NAMES", LATEST EDITION.

2. PLANT STANDARDS

   A. ALL PLANTS SHALL BE NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATE AS THE LOCATION OF THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING. NEITHER HEELED IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED

3. PLANT IDENTIFICATION

   LEGIBLE LABELS SHALL BE ATTACHED TO ALL SHADE TREES, MINOR TREES, SPECIMEN SHRUBS AND BUNDLES OR BOXES OF OTHER PLANT MATERIAL GIVING THE BOTANICAL AND COMMON NAMES, SIZE AND QUANTITY OF EACH. EACH SHIPMENT OF PLANTS SHALL BEAR CERTIFICATES OF INSPECTION AS REQUIRED BY FEDERAL, STATE AND COUNTY AUTHORITIES.

PLANTING METHODS

4. PLANTING SEASONS ARE DESCRIBED AS FOLLOWS:

   ALL PROPOSED PLANT MATERIAL ARE TO BE PLANTED IN ACCORDANCE WITH THE FOLLOWING PLANTING METHODS DURING THE PROPER PLANTING SEASONS AS DESCRIBED IN THE FOLLOWING:

   A. PLANTING SHALL BE IN ACCORDANCE WITH CITY OF ROCKVILLE SPECIFICATIONS AND SHALL NOT BE CONDUCTED BETWEEN JUNE 1 AND SEPTEMBER 1, OR AS DIRECTED BY THE CITY.

5. EXCAVATION OF PLANT PITS

   A. LOCATIONS OF ALL PROPOSED TREES SHALL BE STAKED AND APPROVED IN THE FIELD BY THE CITY FORESTRY INSPECTOR BEFORE ANY OF THE PROPOSED PLANT MATERIAL IS INSTALLED BY THE LANDSCAPE CONTRACTOR.

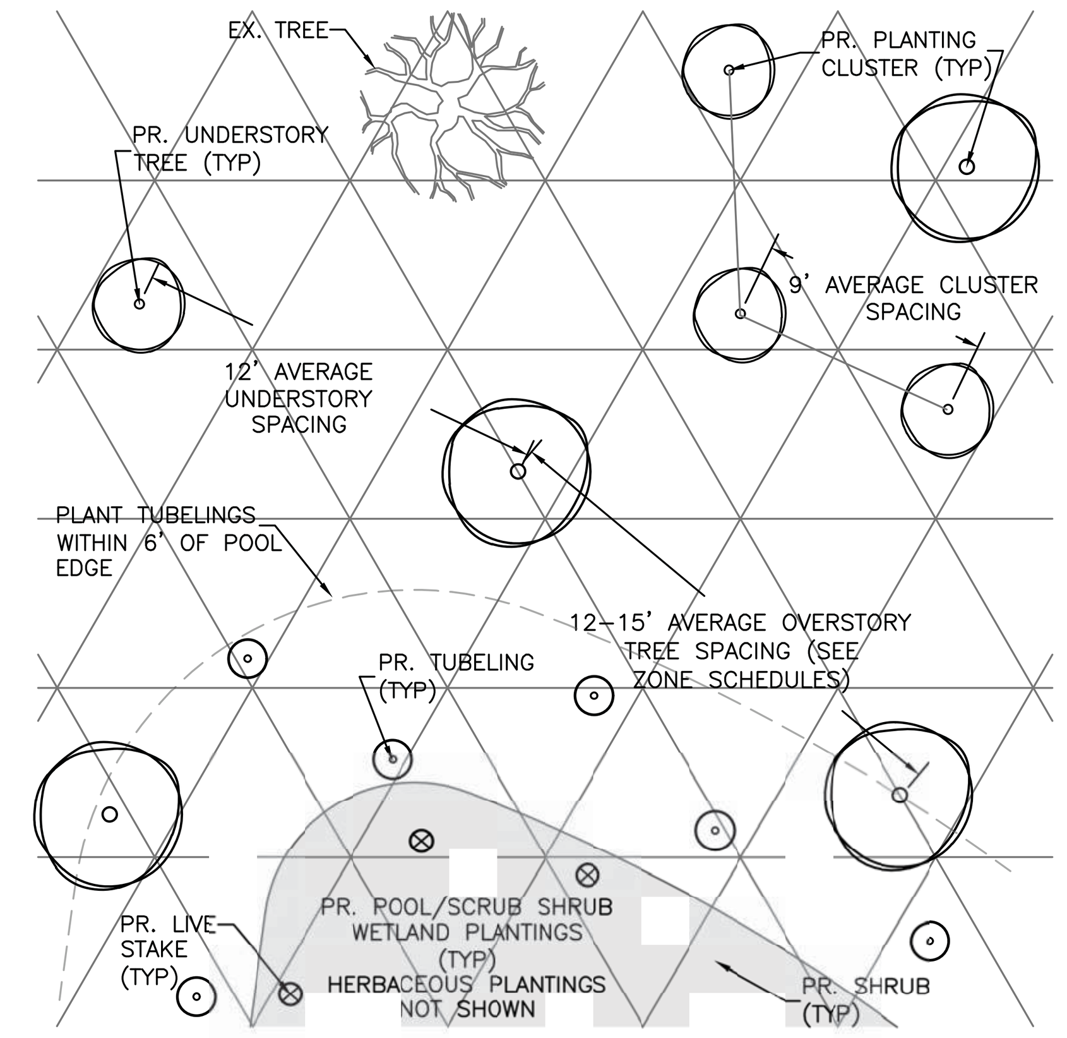
   B. PLANTING PITS SHALL BE IN ACCORDANCE WITH CITY OF ROCKVILLE SPECIFICATIONS OR AS DIRECTED BY THE CITY.

6. PLANT GUARANTEE

   ALL PLANT MATERIAL SHALL BE GUARANTEED FOR THE DURATION TWO (2) YEARS WITH 100% CARE AND REPLACEMENT WARRANTY ON ALL TREES AND A TWO (2) YEAR, 85% CARE AND REPLACEMENT WARRANTY ON ALL OTHER LANDSCAPING PLANTS.

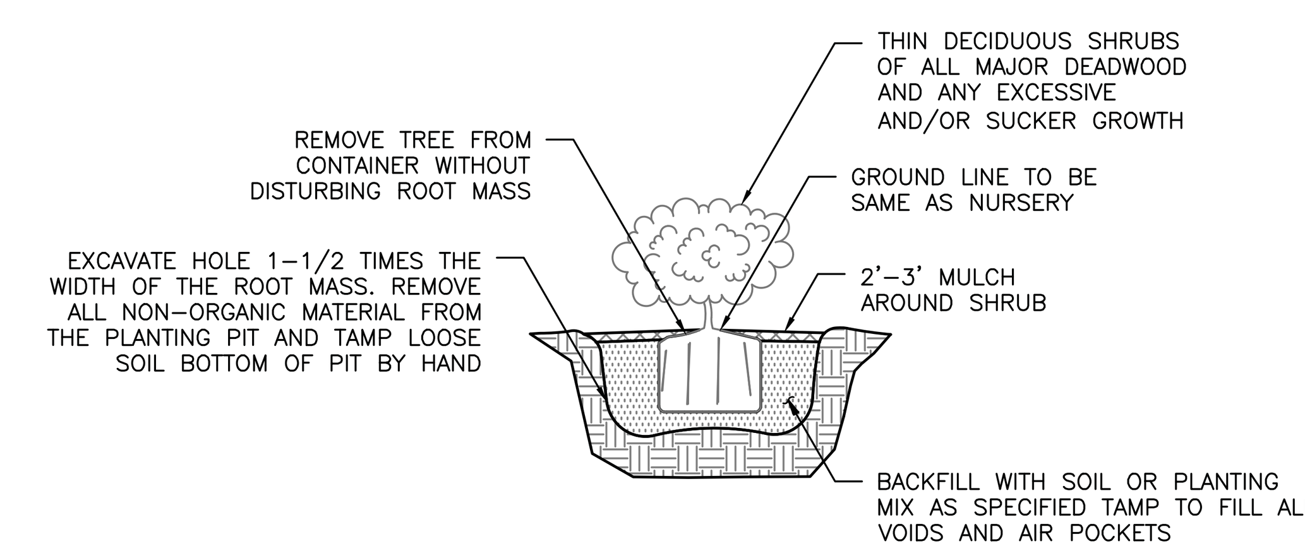
   THE PERIOD OF CARE AND REPLACEMENT SHALL BEGIN AFTER FINAL INSPECTION AND APPROVAL OF THE INITIAL INSTALLATION OF ALL PLANTS AND CONTINUE FOR TWO YEARS, WITH TWO (2) POTENTIAL PLANT REPLACEMENT PERIODS EACH YEAR. THE CITY WILL ASSUME MAINTENANCE AND REPLACEMENT WARRANTY RESPONSIBILITY AFTER THE TWO-YEAR CARE AND REPLACEMENT WARRANTY HAS BEEN COMPLETED.

   PLANT REPLACEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF ROCKVILLE SPECIFICATIONS.



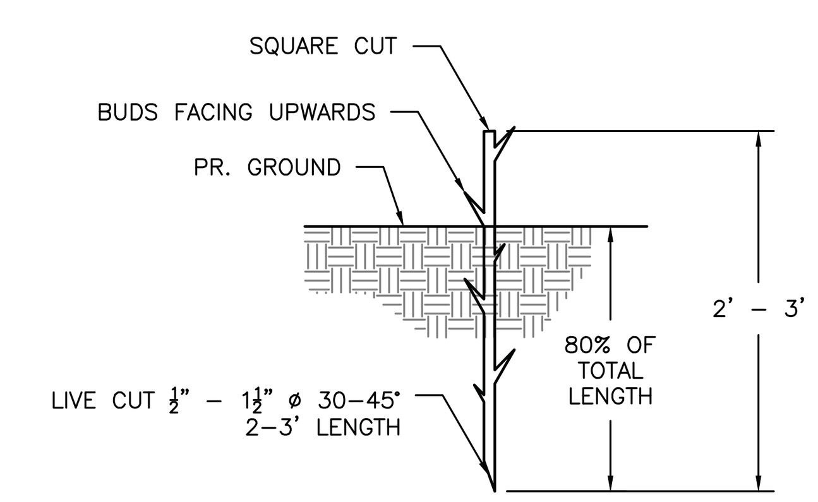
TYPICAL 30'X30' NATURALIZED WOODY PLANTING DETAIL

SCALE: NOT TO SCALE



SHRUB PLANTING – CONTAINER GROWN

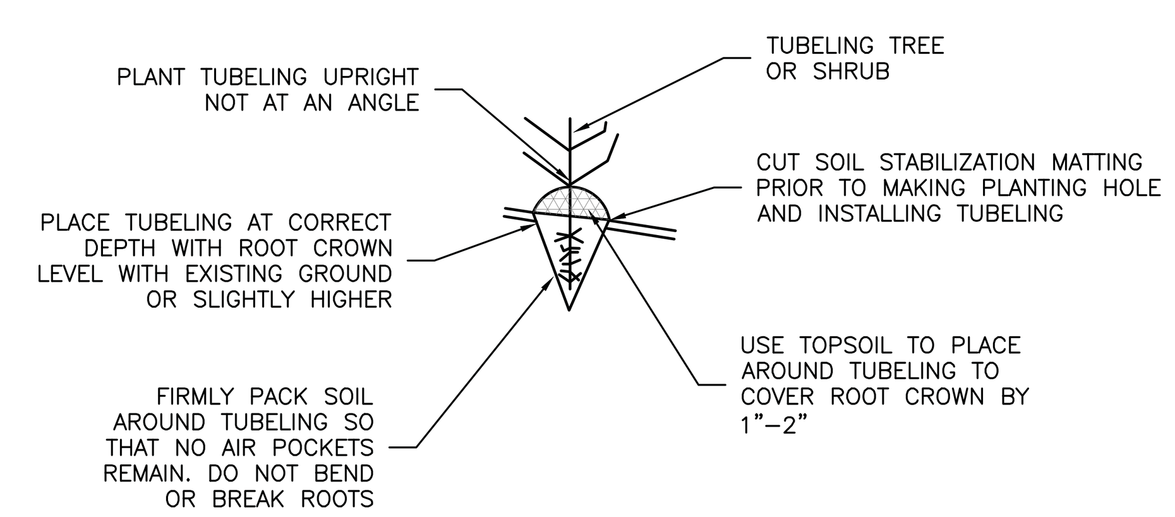
SCALE: NOT TO SCALE



NOTES:
1. LIVE STAKES MUST BE INSTALLED WHILE DORMANT (DECEMBER 1 – APRIL 1). DO NOT ALLOW THEM TO DRY OUT.
2. LIVE STAKE MATERIALS SHALL CONSIST OF DORMANT BRANCHES OF CORNUS AMOMUM (SILKY DOGWOOD) AND SALIX NIGRA (BLACK WILLOW) ONLY. EACH SPECIES SHALL COMPRISE 50 PERCENT OF THE MIX. MATERIALS SHALL BE PURCHASED FROM A NURSERY SPECIALIZING IN THE PRODUCTION OF SIMILAR MATERIALS AND SHALL INCLUDE CONFIRMATION OF SPECIES. EACH LIVE CUTTING SHALL RANGE IN DIAMETER FROM 0.5 TO 1.5 IN. AT ITS SMALLEST POINT AND SHALL HAVE A MINIMUM LENGTH OF 2 FT.

LIVE STAKE DETAIL

SCALE: NOT TO SCALE

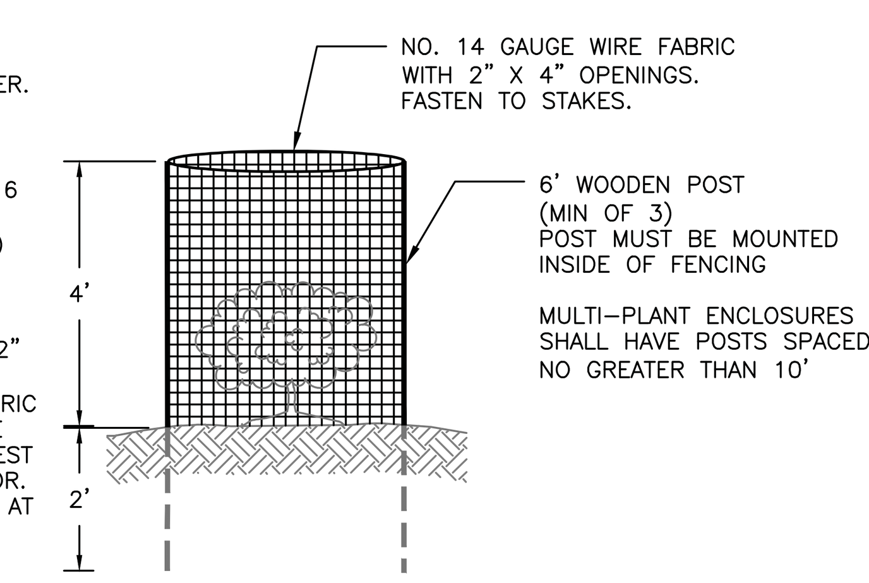


NOTE:
1. MATERIALS SHALL BE PURCHASED FROM A NURSERY SPECIALIZING IN THE PRODUCTIONS OF SIMILAR MATERIALS AND SHALL INCLUDE CONFIRMATION OF SPECIES. EACH TUBELING SHALL HAVE A MINIMUM ROOT VOLUME OF 6-10 CUBIC INCHES.

TUBELING DETAILS

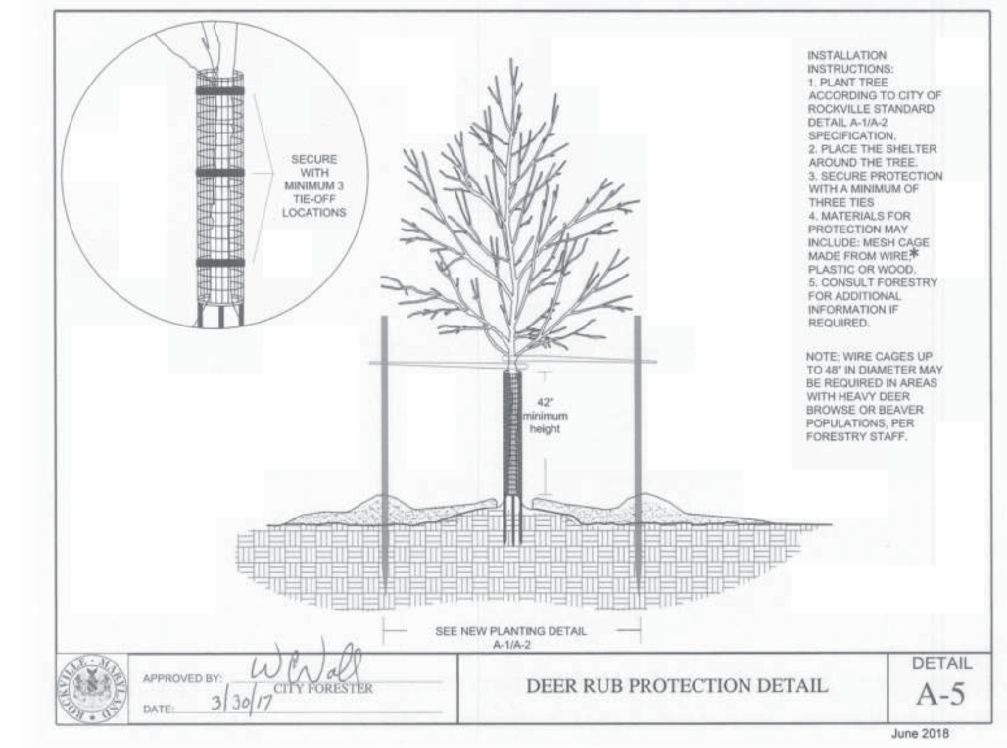
SCALE: NOT TO SCALE

NOTES:
1. HEIGHT OF CAGE SHALL BE 4 FT. (MIN.)
2. CUT A SECTION OF WELDED WIRE FENCING WITH PLANT(S) IN CENTER.
3. CREATE ENCLOSURE BY FASTENING 11-INCH RELEASABLE CABLE TIES (ONE AT TOP AND ONE 6 IN. MIN. ABOVE THE GROUND AT EACH POST) TO EACH POST.
4. DO NOT DAMAGE PLANT DURING INSTALLATION.
5. CAGE SHALL PROVIDE 12" OF SPACE BETWEEN PLANT(S) AND WIRE FABRIC
6. SUBSTITUTIONS MUST BE APPROVED BY THE FOREST CONSERVATION INSPECTOR.
7. CAGES TO BE REMOVED AT THE DIRECTION OF THE FOREST CONSERVATION INSPECTOR.

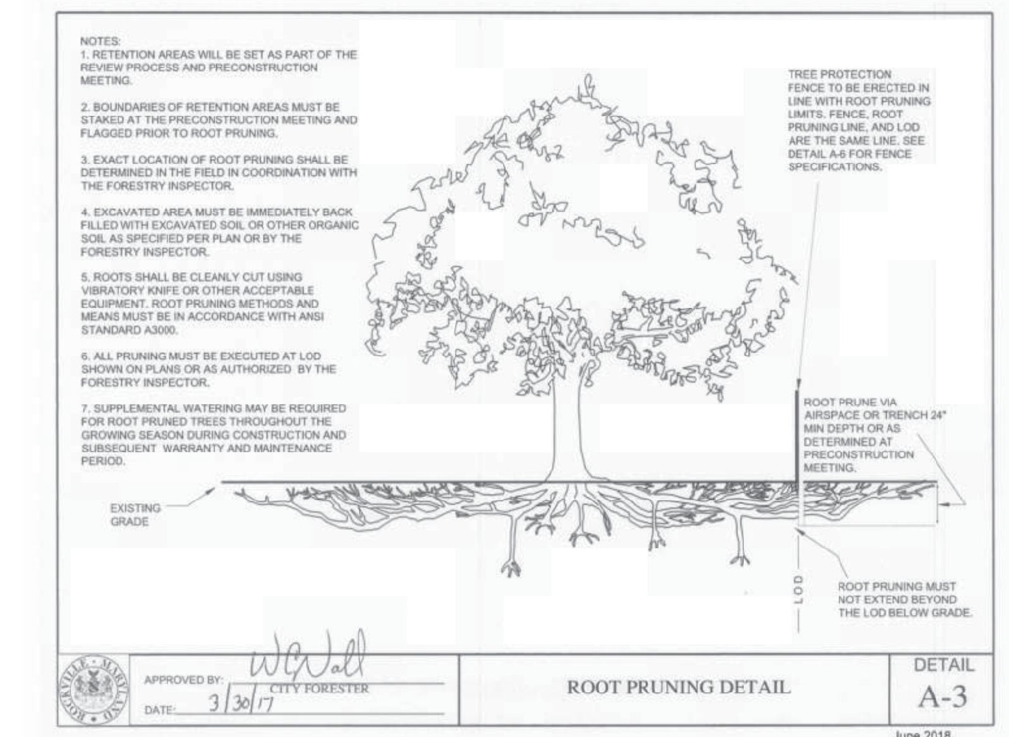


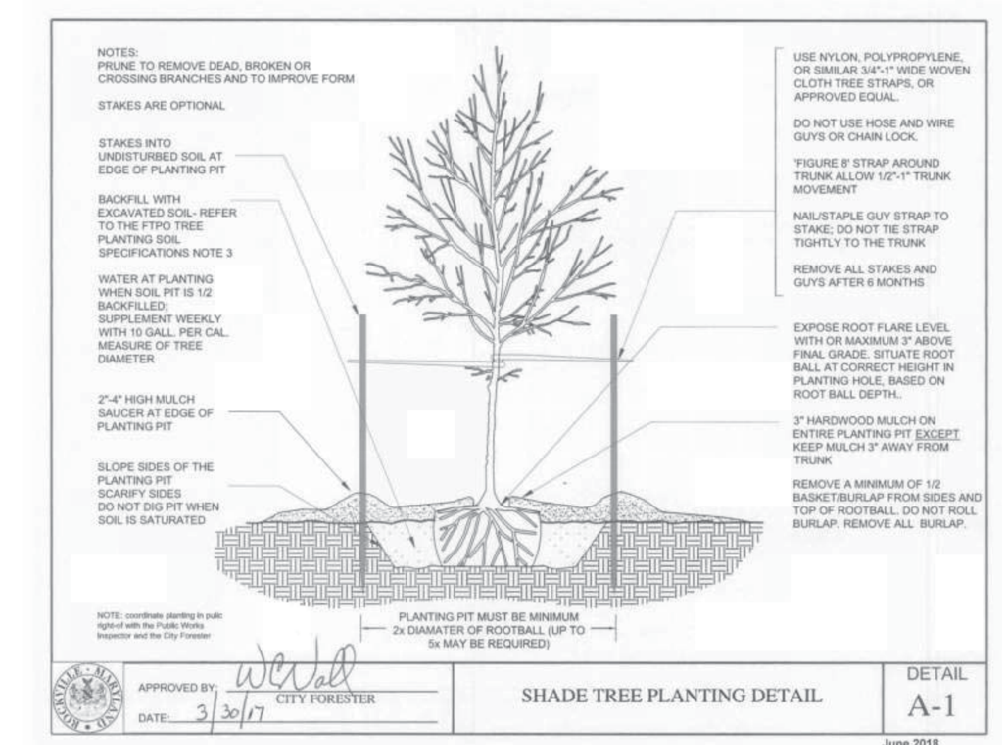
SHRUB PLANTING/MULTI-STEM TREE/GROUPED PLANTING DEER BROWSE PROTECTION

NOT TO SCALE



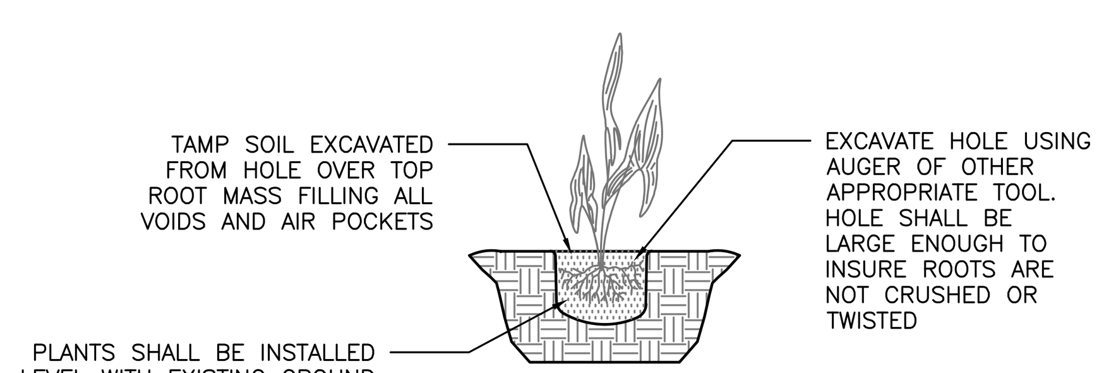
NOTE:
*DEER PROTECTION CAGES MUST BE WELDED WIRE.





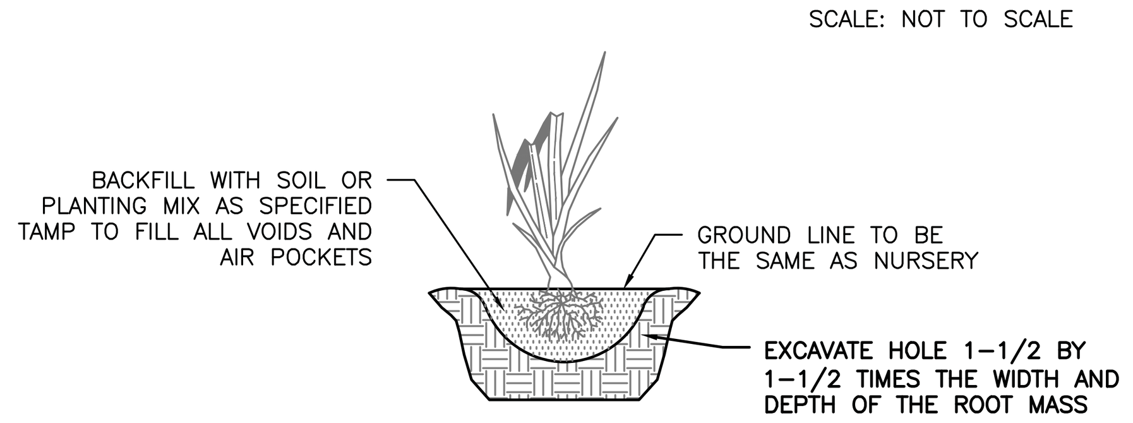
SEE SHEET 16 FOR THE FOLLOWING DETAILS:

TREE PROTECTION/HIGH VISIBILITY FENCE
TREE PROTECTION SIGN



HERBACEOUS PLANTING – PLUG

SCALE: NOT TO SCALE



HERBACEOUS PLANTING – QUART

SCALE: NOT TO SCALE

QUALIFIED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A DULY CERTIFIED FOREST CONSERVATION QUALIFIED PROFESSIONAL UNDER THE LAWS OF THE STATE OF MARYLAND AND THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION.

Signed: [signature] Date: 07/12/2021

JASON TRABAND
7455 NEW RIDGE ROAD, SUITE T
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FC-05

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
7455 New Ridge Road, Suite T
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Phone: (410) 694-9401
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BAYLAND JOB NO. 8_31901

DESIGNED CS/JG
DRAFTED JG/MW
CHECKED CS

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.08 17:08:34-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK#
SMP# 2021-00012
SCP# 2021-00009
FTP# 2020-00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

FOREST CONSERVATION AND PLANTING PLAN NOTES AND DETAILS

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05-22
SCALE AS NOTED
SHEET NO. 21 OF 22
FILE # F-295

Z:\8_31901_NORTHEAST_PARK_SWM_&_STREAM\CAD Files\Sheet Files\8_31901_PLN103

Forest and Tree Preservation Ordinance Notes

JULY 2018

SEQUENCE OF EVENTS

The permittee is responsible for strict adherence to the sequence and details as outlined. During each stage of the project, forestry staff may provide additional direction based on site conditions, unforeseen circumstances, or approved revisions.

PRE-CONSTRUCTION

1. Permittee shall obtain a Forestry Permit (FTP) for the project and secure copies of the approved Forest Conservation Plan (FCP) for distribution to contractors. The Permittee is responsible for obtaining a Maryland Roadside Tree Permit if applicable. Contact Miss Utility at 1-800 257-7777.
2. The Permittee must coordinate and schedule an onsite preconstruction meeting with the following attendees: Permittee, Construction Superintendent, Maryland LTE/ISA Certified Arborist (if required by Forestry Department), the City Forestry Inspector, City Project Inspector, and City Sediment Control Inspector. The limits of disturbance must be staked and flagged prior to the preconstruction meeting. No land disturbance shall occur prior to this meeting. This includes, but is not limited to, the installation of tree protection fencing, sediment control measures, clearing, grading and tree stress reduction measures. The limits of disturbance will be reviewed and tree protection and tree care measures will be discussed.
3. No land disturbance shall begin before stress-reduction measures as indicated on the approved FCP, or otherwise directed by the Forestry Inspector have been implemented and approved by Forestry Inspector. Measures not specified on the plan may be required as determined by the Forestry Inspector in consultation with the Permittee's MD LTE/ISA Certified Arborist. Appropriate stress-reduction measures may include, but are not limited to:
   a. Root pruning
   b. Crown reduction or pruning
   c. Watering
   d. Fertilizing
   e. Surface mulching
   f. Vertical mulching
   g. Root aeration matting
4. A MD LTE who is also an ISA Certified Arborist must perform all stress reduction measures. Documentation of these qualifications may be required. The measures must be done in accordance with *ANSI Standards for Tree Care Operations* (A300) and other industry best management practices. Implementation of the stress reduction measures must be observed by the Forestry Inspector or written documentation, including photographs must be sent via mail or email to the City Forestry Inspector.
5. Temporary tree protection devices, including signage, shall be installed per the approved Forest Conservation Plan, or as otherwise directed by the Forestry Inspector, and prior to any land disturbance. Tree protection fencing locations must be staked and flagged prior to the pre-construction meeting. The Forestry Inspector, in coordination with the City Sediment Control Inspector, may make field adjustments to increase the survivability of trees and forest shown as saved on the approved plan. The Permittee must contact the Forestry Inspector to schedule a follow up construction inspection after installing all tree protection measures and performing all stress reduction measures. Upon a satisfactory inspection by the Forestry Inspector and Sediment Control Inspector, a Notice to Proceed will be issued and clearing and grading can commence. Temporary tree protection devices may include:
   a. Chain link fence (four feet high)
   b. Super silt fence with wire strung between the support poles (minimum 4 feet high) with high visibility flagging.
   c. 14 gauge 2 inch x 4 inch welded wire fencing supported by steel T-bar posts (minimum 4 feet high) with high visibility flagging.
6. The Permittee and contractor shall maintain the temporary tree protection devices for the duration of the project and the location must not be altered without prior approval of the Forestry Inspector. No equipment, trucks, materials, debris, or any other items may be stored within the tree protection fence areas during the entire construction project. No access beyond the fenced area will be permitted. Tree Protection fencing shall not be removed without prior approval of the Forestry Inspector.
7. Long term tree protection devices/techniques, as shown on the FCP or as directed by the Forestry Inspector may include but are not limited to:
   a. Root aeration systems
   b. Retaining walls
   c. Raised sidewalks
   d. Tunneling of utilities
   e. Pier and panel walls
   f. Porous pavers

DURING CONSTRUCTION

1. Periodic inspections at the discretion of the Forestry Inspector will occur during the construction project. Corrections and repairs to all tree protection devices and other protective measures, as determined by the Forestry Inspector, must be made within the timeframe established by the Forestry Inspector.
2. The Permittee must immediately notify the Forestry Inspector of any damage to trees, forests, understory, ground cover, and any other undisturbed areas shown on the plan. Remedial actions to the restore these areas will be determined by the Forestry Inspector and the corrective actions must be made within the timeframe established by the Forestry Inspector.
3. Failure to comply with the approved FCP or any directive of the City Forester's office is a violation of the Forest and Tree Preservation Ordinance (FTPO). Pursuant to Section 10.5-34 of the FTPO, a fine in the amount of $1,000 may be imposed for each violation. Each day a violation continues is a separate violation. In addition, a stop work order may be issued until the violation has been abated and the fine has been paid or an appeal has been filed pursuant to Section 10.5-35 of the FTPO. Additional punitive measures as stated under Section 10.5-34 of the FTPO may be imposed.

POST CONSTRUCTION

1. After construction is completed, the Permittee must request a final inspection in writing with the Forestry Inspector. At the final inspection, the Forestry Inspector may require additional corrective measures, which may include, but is not limited to:
   a. Removal and replacement of dead and dying trees
   b. Pruning of damaged, dead or declining limbs
   c. Surface mulching
   d. Soil aeration
   e. Fertilization
   f. Watering
   g. Wound repair
   h. Clean up of retention areas including trash removal
2. After the final inspection and completion of all corrective measures the Forestry Inspector will request all temporary tree and forest protection devices be removed from the site. Removal of tree protection devices that also operate for erosion and sediment control must be coordinated with both the City Sediment Control Inspector and the Forest Conservation Inspector. No additional grading, sodding, or burial may take place after the tree protection fencing is removed.

INSTALLATION OF PLANT MATERIAL

1. The Permittee is responsible for obtaining the approved Forest Conservation Plan/Landscape Plan and providing a copy to the Landscape Contractor. The Permittee shall ensure that the Landscape Contractor can secure the plants shown the FCP/Landscape Plan. Plant substitutions are not allowed. It is strongly recommended that plant material be secured from supplier by the project start date.
2. A pre-planting meeting is required before installation of landscaping, afforestation, or reforestation. The applicant must schedule an on-site pre-planting meeting with the City Forestry Inspector. Attendees must include the Permittee, landscape contractor, and Forestry Inspector. Trees and shrubs shall conform to the current edition of the American Standard for Nursery Stock (ANSI Z60.1).
3. Comply with appropriate City Soil Specification:
   I. Soil Specification FOR TREE PLANTING WHERE EXISTING PAVEMENT OR OTHER IMPERVIOUS SURFACES WERE PREVIOUSLY LOCATED OR WHERE EXISTING GREENSPACE HAS BEEN SEVERELY DEGRADED[1]
      1. Site preparation
         a. Demolish existing impervious surface and remove all existing asphalt, concrete, stone and construction materials to expose subsoil free of debris.
         b. Excavate so that final planting bed will provide quality soil to a depth of forty-eight (48) inches, and to a radius of 10' minimum or to new hard edge of planting bed, whichever is less.
         c. Loosen exposed subsoil below 48" by ripping 18" into the sub grade elevation.
         d. Test to ensure that planting bed drains at a rate of at least 1 inch/per hour.
         e. Install imported soil to fill excavated planting bed. Imported soil shall consist of 50% top soil[2], 40% coarse washed sand, and 10% mature[3] compost, by volume, and have a chemical composition compatible with healthy growth. When installing the soil, it should be installed in lifts or layers of < 12 inches (30 cm), tamping or watering (not both) between lifts to minimize potential settling.
      2. Immediately prior to installation of plant material, the soil must be tested and must have a pH range between 6 and 7 and a nutrient content which corresponds to an adequate rating, per current industry standards. Amend soil, if necessary to achieve the current industry standard.
      3. The Forestry Inspector may require additional soil specifications, based on site conditions.

   II. Soil Specification FOR PLANTING WHERE EXISTING GREEN SPACE HAS NOT BEEN PROTECTED FROM CONSTRUCTION IMPACTS BUT IS NOT SEVERELY DEGRADED.
      1. Site Preparation:
         a. Remove all construction debris and top four to six inches of existing soil.
         b. Test remaining existing soil to verify a pH range between 6 and 7, and has a nutrient content which corresponds to an adequate rating, per current industry standards.
         c. Apply four (4) inches of mature compost evenly over the entire planting surface. (4" = 12 Cubic Yard/1,000 s.f.). Provide compost supplier information and specifications to the City Forestry Inspector for approval prior to install
         d. Till the compost into the existing soil to a minimum depth of thirty-six (36) inches using the city's soil profile rebuilding specification.
         e. If soil does not meet nutrient standards, mitigate soil chemistry to meet the chemical parameters.
      2. The Forestry Inspector may require additional soil specifications, based on site conditions.

   III. Soil Specification FOR PLANTING WITHIN EXISTING GREEN SPACE AREAS WHICH HAVE BEEN PROTECTED FROM CONSTRUCTION IMPACTS (One of two options, as determined by Forestry Inspector) Refer to approved City of Rockville Detail A-7
      1. Test existing soil to verify it has a pH range between 6 and 7, and a nutrient content which corresponds to an adequate rating, per current industry standards. If soil does not meet nutrient standards, one of two options will be performed to mitigate the soil:
         a. Option 1- Till Method- Depth of tilling for planting must be at least twenty-four (24) inches:
            i. Apply four (4) inches of mature compost evenly over the entire planting surface (4" = 12 cubic yards/1,000 s.f.). Provide compost supplier information and specifications to the City Forestry Inspector for approval prior to install.
            ii. Till the compost into the existing soil to a minimum depth of twenty-four (24") inches.
         b. Option 2 – Aeration and Vertical Mulching
            i. Using a 2- 3" Auger, drill a series of holes in the soil to a depth of twenty-four (24) inches.
            ii. Begin at the edge of the hole dug for the root ball, and continue drilling at one-foot intervals (maximum), in concentric rings around the tree out to ten (10) feet from the tree.
            iii. Each hole must be refilled with mature compost.
         c. The Forestry Inspector may require additional soil specifications, based on site conditions.

   IV. Soil testing of the existing soil may be conducted with PRIOR approval from the City's Forestry Inspector to determine the number and location of the samples. The above requirements may be reduced if soil testing shows the following:
      1. Soil pH is between 5.5 and 7
      2. The top 24" of existing soil contains a minimum of 4-6% organic matter by weight
      3. The soil is free of contaminants
      4. The soil texture is sandy loam or loam
      5. The soil has an infiltration rate not less than 1" per hour
      6. The soil does not contain debris or stones greater than one inch
      7. The soluble salt content is less than 3 dS/m
      8. Consult the University of Maryland Extension website: http://extension.umd.edu/ for a listing of commercial soil testing facilities.

   V. Soil preparation is required for street trees planted within the city's rights-of-way and private street trees, if they are part of the approved plan.
4. The depths and grades shown on plan drawings are final grades after settlement and shrinkage of the organic material. The contractor shall install the soil mix at a higher level to anticipate this reduction of volume. All grades are assumed to be 'as measured" to be prior to the addition of any surface compost till layer or mulch or sod.
5. All details of the planting plans regarding plant quality and proper planting will be discussed including but not limited to:
   a. Plant quality.
   b. Proper form for species.
   c. Proper ratio of caliper size/height to container size/root ball size.
   d. Proper pruning cuts if applicable in accordance with current ANSI A300 pruning standards (generally there should be no recent pruning).
   e. No co-dominant stems or multiple trunks (unless approved by FCP or by The Forestry Inspector).
   f. Sound graft union.
   g. Free of girdling roots, or the ability to remove girdling roots without damaging the tree.
   h. Trees shall be healthy, vigorous, insect/disease free, and without cankers/cracks or trunk damage.
6. Proper Installation
   a. Root flare no higher than 3 inches from existing grade.
   b. Exposed root flare (not graft); removing more than several inches of soil to expose the root flare may result in the rejection of the plant material.
   c. Wire baskets/twine/burlap removed from at least the top half of root ball, or as directed by Forestry Inspector.
   d. All burlap or twine removed completely.
   e. No hose and wire; staking and strapping per City planting detail.
   f. Planting Hole a minimum of twice the width of the root ball; could be greater. Planting detail assumes soil has been prepared per the city's specifications (Planting, #3).
   g. Mulched properly, per City planting detail.
   h. Wildlife protection installed, if required; type approved by the Forestry Inspector.
7. Trees not complying with the above requirements may be rejected at the discretion of the City Forestry Inspector.
8. Tree planting will generally not be permitted between the dates of June 1 and September 1, or when the ground is frozen.

POST INSTALLATION

1. The Permittee shall notify the City Forestry Inspector IN WRITING when the planting is complete and request a post planting inspection. The inspection must include the Permittee, landscape contractor and Forestry Inspector. The maintenance and warranty period will not begin until the City Forestry Inspector has accepted ALL plantings.
2. Trees will be inspected for plant quality and proper planting in accordance with City specifications and nursery standards. Once the maintenance period has begun, the applicant is responsible for maintaining plant health in accordance with the signed Warranty and Maintenance Agreement.
3. Routine inspections will be conducted throughout the warranty period and the applicant will be notified in writing when corrective measures are required. Failure to complete the corrective measures by the given date may result in fines being issued, permits revoked, extension of warranty period or other punitive measures.
4. Such maintenance shall include when appropriate, but not necessarily be limited to:
   a. Weekly watering equal to 10 gallons per caliper measure of tree diameter. (ex: 2.5" caliper tree =25 gallons/week.) Documented drenching natural rainfall may substitute for weekly watering.
   b. Control of competing vegetation throughout the maintenance period as necessary.
   c. Fertilizing, as required by soil analysis.
   d. Pruning, mulching, tightening of strapping, resetting of plants to proper grades or upright position.
   e. Furnishing and applying pesticides or other items necessary to thwart damage from insects and disease.
   f. Providing protection measures such as fencing and interpretive signs as necessary, to prevent destruction or degradation of the planting site.
   g. Replacement of dead and dying trees. Survival standards contained in the State Forest Conservation Manual shall be followed for the protection and satisfactory establishment of forest where applicable.
   h. Eradicate, suppress and control non-native and invasive plant species during the maintenance period to the satisfaction of the City Forestry Inspector.
   i. Installing and maintaining devices to protect against wildlife damage.
   j. Removal of staking and strapping after six months, or as directed by the Forestry Inspector.

NON-NATIVE INVASIVE PLANT CONTROL:

1. The City of Rockville maintains a list of non-native and invasive plants for certain available on the City's website. The State of Maryland maintains a noxious weed list. The Permittee shall submit a Non-Native and Invasive Management Plan to the City Forestry Inspector for review and approval prior to the pre-planting meeting. Details to be included in the management plan are:
   a. Narrative and/or plan stating the location, type and amount of non-native and invasive plants present on the site.
   b. Proposed treatment measures and methods of control by plant type.
   c. Timing and frequency of treatments by plant type.
   d. Plan for seeding and/or re-planting following management/eradication treatment.
   e. Proposed signage type and locations for installing herbicide application notification signs.
   f. Copies of contractor certifications/pesticide licenses.
2. Contractor is responsible for complying with MDE, EPA and other government agency regulations as well as obtaining proper permits from these agencies as applicable. The Forestry inspector must be notified 48 hours in advance prior to commencing any and all treatments.
3. The Forestry Inspector will perform periodic inspections of the non-native and invasive treatments throughout the warranty and maintenance period. The applicant may be required to submit proof of treatment.

[1] See definitions section of *City Soil Profile Rebuilding Specification*
[2] See definitions section of *City Soil Profile Rebuilding Specification*
[3] See definitions section of *City Soil Profile Rebuilding Specification*

SEE SHEET 4 FOR ADDITIONAL NON–NATIVE AND INVASIVE INFORMATION

Soil Profile Rebuilding Specification

JUNE 2018

Specification for Restoration of Graded and Compacted Soils that will be Vegetated

Based on Specifications developed At Virginia Polytechnic Institute- Department of Horticulture

1. PURPOSE AND DESCRIPTION

1.1 Purpose

Soil Profile Rebuilding is an appropriate soil restoration technique for sites where topsoil has been completely or partially removed and subsoil layers have been compacted (graded and/or trafficked by equipment). It may also be used with some modifications if topsoil is present. This is not an appropriate technique in sites with surface compaction only (6 inches or less), although this situation is rare on construction sites. This technique is not appropriate within the root zones of trees that are to be protected. Soil Profile Rebuilding can improve physical and biological characteristics of soil to allow for revegetation. Soil chemical problems, soil contamination from heavy metals, pathogens, or excessive debris or gravel shall be addressed separately.

1.2 Description of Procedure

The procedure includes a subsoiling procedure, addition of organic matter in the form of compost, replacement or addition of topsoil, and subsequent planting with woody plants. The soil preparation portion of Soil Profile Rebuilding puts the components in place for restoration to characteristics similar to undisturbed soils, however, the complete restoration process requires root activity and occurs over many years. This technique may be appropriate for restoration of disturbed soils as defined by SITES™.

1.3 Expected Outcomes

Soil Profile Rebuilding may improve vegetation establishment, increase tree growth rates, increase soil permeability, enhance formation of aggregates in the subsoil, and enhance long-term soil carbon storage.

2. PROCEDURE

2.1 Location

Profile Rebuilding shall occur on all soil areas that are to be vegetated that have been disturbed by trafficking or grading during construction or prior to construction. Soil areas that are not to be treated should be protected by permanent fencing during the construction period, and all access to these areas prohibited. A soil map delineating protected areas and areas to be treated shall be approved by the forestry inspector before grading or construction begins.

2.2 Sequencing

Profile Rebuilding shall occur after site disturbance is complete, including all vehicle and equipment trafficking, but before replacement of topsoil. Once profile rebuilding is complete, all traffic and equipment or materials storage on treated areas is prohibited, with the exception of foot traffic, for the purposes of planting or mulching.

If topsoil is already present and is 4 inches or greater in depth, use the "modifications for pre- existing topsoil (2.62)."

2.3 Remove foreign materials

Remove all foreign materials resulting from construction operations, including oil drippings, stone, gravel, and other construction materials from the existing soil surface.

2.4 Application of Compost

Spread mature, stable compost to a 4 inch depth over compacted subsoil (see Section 3. Definitions for definition of compost).

2.5 Subsoiling

Subsoiling may be performed when soil is neither wet nor dry. If a shovel cannot be forced into the soil, it is too dry. If the surface is sticky or muddy, it is too wet. Use a mini-backhoe or similar equipment with a narrow (less than 24"), tined bucket to break up the compacted soil and incorporate the compost. Work backwards away from excavated soils so that treated soil is not trafficked by the equipment. Insert the bucket through the compost layer and into the subsoil to a depth of thirty-inches (36"), and raise a bucket of soil at least twenty-four inches above the soil surface. Tip the bucket and allow soil to fall. Repeat this procedure until no clumps of compacted soil larger than 12 inches in diameter remain. The tines of the bucket can be used to break apart larger clumps if necessary. 50% of the soil shall be in clumps 6 inches or smaller. No clumps shall be greater than 18" in diameter. The subsoiling is not intended to homogenize the compost and soil, but rather loosen the soil to a thirty-six inch depth and create veins of compost down to that depth as well. To ensure that subsoiling reached the appropriate depth, a push tube soil sampler shall be used to verify compost is present at thirty-six inch depth.

2.6 Replacement of topsoil

2.6.1 Standard procedure

Stockpiled topsoil, or additional topsoil if none is available from the site, shall be returned to the site to a four (4) inch minimum depth (see *Section 3.3 Definitions* for definition of topsoil). If soil was severely disturbed (see definitions), a six (6) to eight (8) inch minimum shall be replaced with topsoil that meets city standards.

2.6.2 Modification if significant topsoil is already present before Profile Rebuilding is initiated Case 1:
At least four inches of topsoil is present on the site after construction activities are completed AND soil is not severely disturbed (see *Section 3.3 Definitions* for description of severely disturbed).

Case 2:

Less than four inches of topsoil is present on site after construction activities were completed but before Profile Rebuilding is initiated, OR soil is severely disturbed (see *Section 3.3 Definitions* for description of severely disturbed).

For Case 1: A minimum of three inches additional topsoil shall be placed over the subsoiled layer before tilling.

For Case 2: Follow *Section 2.6.1 Standard procedure*, as if no topsoil had been present.

2.7 Tilling

Rototill topsoil to a depth of six to eight inches when soil is neither dry nor very moist. Rototilling depth should cross the interface with the subsoiled layer by a minimum of one (1) inch and can be verified with a random sampling with a push tube soil sampler.

2.8 Planting

Plant the site with woody plants, trees or shrubs, at a density that insure a minimum of 50% of the site will be occupied with roots within 10 years. Planting of at least one large stature tree (e.g., one that will mature at approximately 60-70 feet in height) or 20 medium stature shrubs per 5,000 sq. ft. shall be considered to achieve this.

3. DEFINITIONS

3.1 Topsoil

Soil can be considered topsoil if it originates from an A horizon of a natural soil or is a mineral soil with 4-6%% organic matter content, and a NRCS textural class similar to pre-development A horizon soils for the site, or as specified by the City Forestry Division. Blended soils shall not be used unless specified by the City Forestry Division. In addition, topsoil shall:

1. Be friable and well drained
2. Have a pH between 6-7.
3. Have an organic matter content between 4-6%.
4. Have low salinity as indicated by a soluble salt content which is less than 3 dS/m
5. Be free of debris, stone, gravel, trash, large sticks, heavy metals, and other deleterious contaminants, (if screening is used to remove debris, screen size must be ¾ inch or larger).
6. Have a nutrient profile such that it has an adequate rating, per current industry standards.
7. Be free of noxious weed seeds

3.2 Compost

Compost shall be composed of leaves, yard waste, or food waste. Biosolid-based composts shall not be used. A compost sample with analysis shall be submitted for approval to the City Forestry Division before application.

Stability refers to the rate of biological breakdown, measured by carbon dioxide release. Maturity refers to completeness of the aerobic composting process and suitability (lack of plant toxicity) as a plant growth media, often measured by ammonia release and by plant growth tests. Compost manufacturers that subscribe to the US Composting Council's testing program may document stability as compost testing 7 or below in accordance with TMECC 05.08-B, "Carbon Dioxide Evolution Rate". Maturity (suitability for plant growth) may be documented as compost testing greater than 80% in accordance with TMECC 05.05-A, "Germination and Vigor". Compost is considered mature and stable if it tests at 6.0 or higher on the Solvita Compost Maturity Index Rating, which is a combination of Carbon Dioxide and Ammonia Maturity Tests (test information and equipment available at www.solvita.com).

Compost shall also:

1. Free of weed seeds.
2. Free of heavy metals or other deleterious contaminants.
3. Have a soluble salt content which is less than 3 dS/m.

3.3 Severely Disturbed Soil

Soil shall be considered *severely disturbed* if grade was lowered or raised more than 14 inches OR soil was compacted in lifts regardless of the final grade OR was used as a staging area for construction materials, equipment or processes.

4. SUBMITTALS

4.1 Soil Map

A soil map indicating soil areas to be protected and those to be restored via Soil Profile Rebuilding shall be submitted by the contractor for approval to the City Forestry Division before construction begins.

4.2 Compost

A compost sample with analysis certifying it is stable, mature, from acceptable feedstocks and free of contaminants and weed seeds shall be submitted for approval to the City Forestry Division before compost is applied to the soil.

4.3 Topsoil

A topsoil sample with analysis from a certified testing laboratory and verification of source shall be submitted for approval to by the City Forestry Division before application. Separate documentation is required for each 100 cubic yards of topsoil unless otherwise approved by the City Forestry Division.

5. REFERENCES & PERMISSIONS

Use of this specification has been documented to increase tree canopy and soil carbon stores compared with typical practices. See www.urbanforestry.frec.vt.edu/SRES for more information.

QUALIFIED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A DULY CERTIFIED FOREST CONSERVATION QUALIFIED PROFESSIONAL UNDER THE LAWS OF THE STATE OF MARYLAND AND THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION.

Signed: ______________ Date: 07/12/2021

JASON TRABAND
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FC-06

STATE OF MARYLAND · CHRISTOPHER JON STEP · NO. 33148 · REGISTERED PROFESSIONAL ENGINEER · 10/8/21

NO.	REVISIONS AFTER PLAN APPROVAL	P.E. INITIAL	DATE

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DESIGNED	CS/JG	
DRAFTED	JG/MW	
CHECKED	CS	

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

DESIGN PLAN APPROVAL
Craig L. Simoneau 2021.11.10 14:58:46-05'00'
DIRECTOR OF PUBLIC WORKS
PLAN APPROVAL DATE
PWK# ______ SCP# 2021–00009
SMP# 2021–00012 FTP# 2020–00001

AS BUILT PLAN APPROVAL
CHIEF, CONSTRUCTION MANAGEMENT
PLAN APPROVAL DATE

FOREST CONSERVATION AND PLANTING PLAN NOTES

NORTHEAST PARK SWM RETROFIT AND STREAM RESTORATION
BURGUNDY & CHESTNUT GROVE, P550
CITY OF ROCKVILLE, MARYLAND

DATE SUBMITTED: 10/8/2021
IFB #05–22
SCALE: AS SHOWN
SHEET NO. 22 OF 22
FILE # F–295

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