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

STILLMEADOW STREAM & OUTFALL RESTORATION
CONSTRUCTION DRAWINGS
HARFORD COUNTY, MARYLAND

GENERAL NOTES

1. TOPOGRAPHIC SURVEY WAS PERFORMED BY BAYLAND CONSULTANTS AND DESIGNERS, INC. IN MAY AND JUNE 2017. COORDINATES SHOWN HERE ON ARE REFERRED TO MARYLAND COORDINATE SYSTEM (NAD 83/1991) AND ARE BASED ON RTK GPS VIRTUAL NETWORK. ELEVATIONS SHOWN HERE ON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD 88) AND ARE BASED ON RTK GPS VIRTUAL NETWORK.

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
STILLMEADOW DRIVE				
TPS 3	633,076.15	1,497,499.06	6.62	REBAR/CAP
TPS 6	632,922.65	1,497,873.11	17.29	REBAR/CAP
TPS 11	632,843.18	1,498,479.56	53.97	REBAR/CAP
ROXBURY COURT				
TPS 3	632,647.91	1,499,008.70	88.24	REBAR/CAP
TPS 5	632,012.87	1,498,848.29	82.36	REBAR/CAP
TPS 7	632,019.93	1,498,602.61	85.46	REBAR/CAP
TRAILS WAY				
TRAV 2	631,512.27	1,497,162.28	26.86	REBAR/CAP
TRAV 7	631,549.91	1,497,357.22	46.95	REBAR/CAP
TRAV 8	631,463.05	1,497,084.52	10.99	REBAR/CAP

2. CONTOURS SHOWN OUTSIDE LIMIT OF WORK ARE BASED ON HARFORD COUNTY 2013 GIS TOPOGRAPHY.
3. EXISTING UTILITIES SHOWN OUTSIDE THE LIMIT OF WORK ARE BASED ON HARFORD COUNTY GIS & HAVE NOT BEEN FIELD LOCATED.
4. PROPERTY LINES AND EASEMENTS SHOWN ARE BASED ON HARFORD COUNTY 2017 CADASTRAL DATA
5. ONLY TREES WITH A 12" DIAMETER OR GREATER WITHIN THE LIMITS OF WORK WERE FIELD LOCATED.
6. WETLAND DELINEATION WAS PERFORMED BY BAYLAND CONSULTANTS AND DESIGNERS, INC IN JUNE 2017.
7. THE STREAM IS AN UNNAMED TRIBUTARY TO FOSTER BRANCH (GUNPOWDER WATERSHED MD BASIN CODE: 02130801) AND IS A USE I STREAM WITH A STREAM CLOSURE PERIOD OF MARCH 1ST TO JUNE 15TH.
8. THE 100-YEAR FEMA FLOODPLAIN IS SHOWN ON MAPS FM24025C0263E AND FM24025C0264E.
9. THE PROJECT IS LOCATED WITHIN THE CRITICAL AREA.

GENERAL CONSTRUCTION NOTES

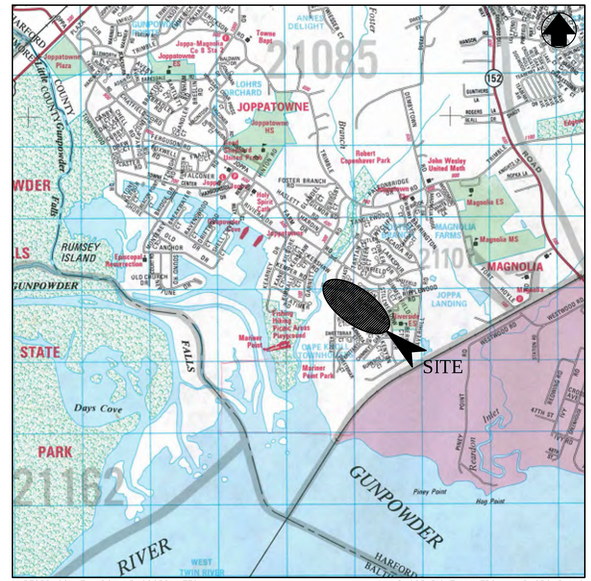
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HARFORD COUNTY STANDARD SPECIFICATIONS OR DETAILS FOR CONSTRUCTION UNLESS OTHERWISE NOTED. THE STATE HIGHWAY ADMINISTRATION'S HIGHWAY'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND THE BOOK OF STANDARDS FOR HIGHWAY & INCIDENTAL STRUCTURES SHALL BE USED IF NO HARFORD COUNTY 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 EXPENSE.
3. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-257-7777 AND THE HARFORD COUNTY WATER AND SEWER DIVISION AT 410-638-3300 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 8" 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...

SHEET LIST

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	KEY SHEET
3	SMSR EXISTING CONDITIONS & DEMOLITION PLAN
4	SMSR EXISTING CONDITIONS & DEMOLITION PLAN
5	SMSR EXISTING CONDITIONS & DEMOLITION PLAN
6	SMSR EXISTING TREE TABLES
7	SMSR SITE PLAN
8	SMSR SITE PLAN
9	SMSR SITE PLAN
10	SMSR PROFILES
11	SMSR PROFILES
12	RC EXISTING CONDITIONS & DEMOLITION PLAN
13	RC SITE PLAN
14	RC PROFILES AND DETAILS
15	TW EXISTING CONDITIONS & DEMOLITION PLAN
16	TW SITE PLAN
17	TW PROFILES
18	SPSC NOTES & DETAILS
19	STREAM DETAILS & NOTES
20	RC EXISTING TREE TABLE & NOTES
21	DRAINAGE AREA MAP



HARFORD COUNTY ADC MAP COORDINATES:
MAP 28 GRID F-6, F-7, G-6, G-7

MAP COPYRIGHT UNIVERSAL MAP GROUP LLC,
PERMITTED USE NUMBER 20911186

LOCATION MAP
SCALE: 1"=2000'

DEVELOPER

HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS AND STORMWATER MANAGEMENT
212 SOUTH BOND STREET, 3RD FLOOR
BEL AIR, MARYLAND 21014
CONTACT: GLEN HEBEL
PH: (410) 638-3509 EXT 1344

ENGINEER

BAYLAND CONSULTANTS & DESIGNERS, INC.
7455 NEW RIDGE ROAD, SUITE T
HANOVER, MARYLAND 21076
PH: 410-694-9401
FAX: 410-694-9405

LEGEND

TRAVERSE POINT — TPS# 3
EX. PROPERTY LINE/RIGHT-OF-WAY
EX. MAJOR CONTOUR — 5
EX. MINOR CONTOUR
EX. TOP OF BANK — TOB
EX. CHAIN LINK FENCE
EX. PLASTIC FENCE
EX. WOOD FENCE
EX. THALWEG
EX. 100-YR FEMA FLOODPLAIN
EX. CRITICAL AREA
EX./PR. DRAINAGE AREA
EX. SOIL — BoC
EX. NON-TIDAL WETLANDS
EX. SEWER & MANHOLE — EX. 12" SS
EX. STORM DRAIN, INLET, & MANHOLE — EX. 12" SD
EX. LIGHT POLE
EX. STORM DRAIN TO BE REMOVED
EX. WATER & VALVE
EX. TREE
EX. TREE TO BE REMOVED
EX. FIRE HYDRANT
EX. SIGN
EX. BORING
PR. MAJOR CONTOUR — 5
PR. MINOR CONTOUR
PR. ODD CONTOUR — 5.5
PR. BANK FULL — BF
PR. STREAM ℄ — 0+00, 0+15
PR. STORM DRAIN
PR. SILL BOULDER CONTROL STRUCTURE
PR. SPSC RIFFLE/POOL
PR. LOG-BOULDER STEP\POOL
PR. RIFFLE/POOL

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

OWNER/DEVELOPER SIGNATURE DATE

PRINTED NAME

ENGINEER'S CERTIFICATION

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HARFORD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HARFORD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER'S SIGNATURE DATE

CHRISTOPHER STEPP 31146
PRINTED NAME MD P.E. REGISTRATION NO.

AS-BUILT CERTIFICATION

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

ENGINEER'S SIGNATURE DATE

CHRISTOPHER STEPP 31146
PRINTED NAME MD P.E. REGISTRATION NO.

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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: 01/14/2019.

HARFORD SOIL CONSERVATION DISTRICT
SMALL POND APPROVAL

DISTRICT OFFICIAL DATE

TECHNICAL REVIEW FOR DISTRICT

HARFORD COUNTY DEPT. OF PUBLIC WORKS DATE

POND DESIGN CERTIFICATION FOR SMALL POND NUMBER

I CERTIFY THAT THIS DESIGN PLAN FOR THE CONSTRUCTION OF THE EMBANKMENT AND/OR EXCAVATED POND(S) REPRESENTS A HAZARD CLASS "A" POND(S) AND WAS DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE USDA, NATURAL RESOURCES CONSERVATION SERVICE – MARYLAND STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). I HAVE REVIEWED THIS PLAN WITH THE OWNER/DEVELOPER.

SIGNATURE
NAME CHRISTOPHER STEPP
ADDRESS 7455 NEW RIDGE ROAD, SUITE T
HANOVER, MD 21076
MD P.E. LICENSE # 33146
PHONE # (410) 694-9401

CAPITAL PROJECT APPROVAL

REVIEWED & APPROVAL RECOMMENDED
PROJECT ENGINEER DATE

APPROVAL RECOMMENDED
CHIEF ENGINEER DATE

APPROVAL RECOMMENDED
DEPUTY DIRECTOR OF PUBLIC WORKS DATE

APPROVAL
DIRECTOR OF PUBLIC WORKS DATE

SWM APPROVAL

HARFORD COUNTY BILLING NUMBER 99974
THESE PLANS HAVE BEEN REVIEWED BY HARFORD COUNTY AND MEET THE TECHNICAL REQUIREMENTS FOR STORMWATER MANAGEMENT ONLY.

REVIEWED & APPROVAL RECOMMENDED
WATER RESOURCES ENGINEERING DATE

APPROVAL RECOMMENDED
CHIEF ENGINEER DATE

APPROVAL RECOMMENDED
DEPUTY DIRECTOR OF PUBLIC WORKS DATE

APPROVAL
DIRECTOR OF PUBLIC WORKS DATE

30% DESIGN

S/C PLAN # _____ GRA # _____-_____

EG-SWMENG-_____-_____ #_____

CLEAR CREEKS CONSULTING
1317 Knopp Road, Jarrettsville, Maryland 21084 (410) 692-2164

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www.baylandinc.com
BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
COVER SHEET

DRAWN BY: JP
DESIGNED BY: JP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : AS SHOWN
SHEET 1 OF 21
DATE : 11/01/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

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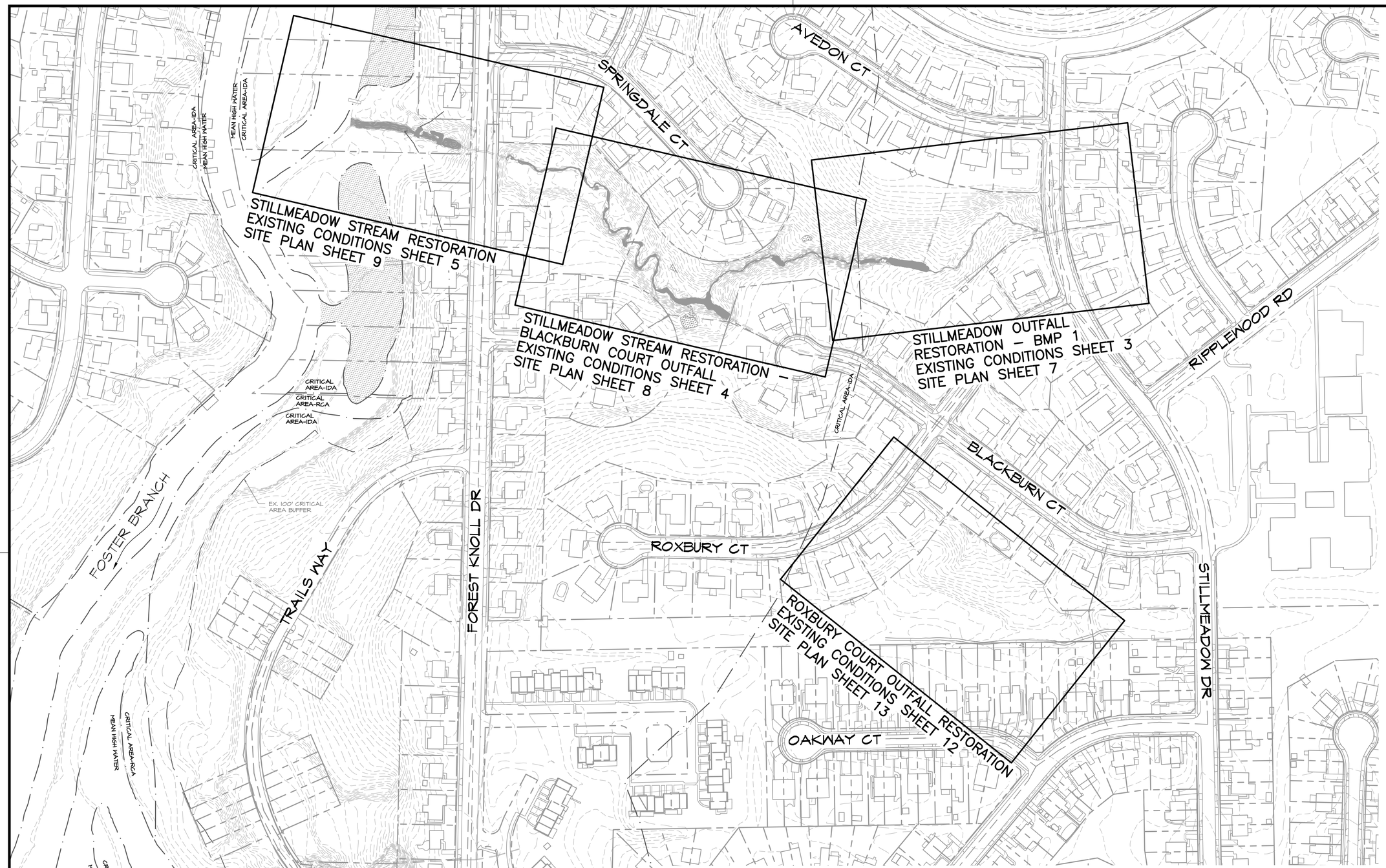

PLAN VIEW

SCALE: 1" = 100'

0 50 100 200

1 INCH = 100 FEET

SITE INFORMATION

STILLMEADOW STREAM & OUTFALL RESTORATION/ROXBURY COURT

1. OWNER INFORMATION:	FOSTER BRANCH HOMEOWNERS ASSOCIATION 1 INC JOPPA FARM/STILLMEADOW RD JOPPA, MD 21085
2. TAX MAP:	69
3. PARCEL:	207
4. DEED REFERENCE:	848/226
5. PLAT REFERENCE:	18/99
6. PROPERTY AREA:	11.50 AC

STILLMEADOW STREAM & OUTFALL RESTORATION

1. OWNER INFORMATION:	STEWART NASH E S FOSTER KNOLL DRIVE JOPPA, MD 21085
2. TAX MAP:	69
3. PARCEL:	217
4. DEED REFERENCE:	1535/588
5. PLAT REFERENCE:	23/94
6. PROPERTY AREA:	1.53 AC

30% DESIGN

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
KEY SHEET

EG–SWMENG–_____–____ #_____

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BAYLAND JOB NO. 4_3801

DRAWN BY: JP
DESIGNED BY: JP
REVIEWED BY: CJS

CONTRACT NO : 16–153
SCALE : 1" = 100'
SHEET 2 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE: 1 inch

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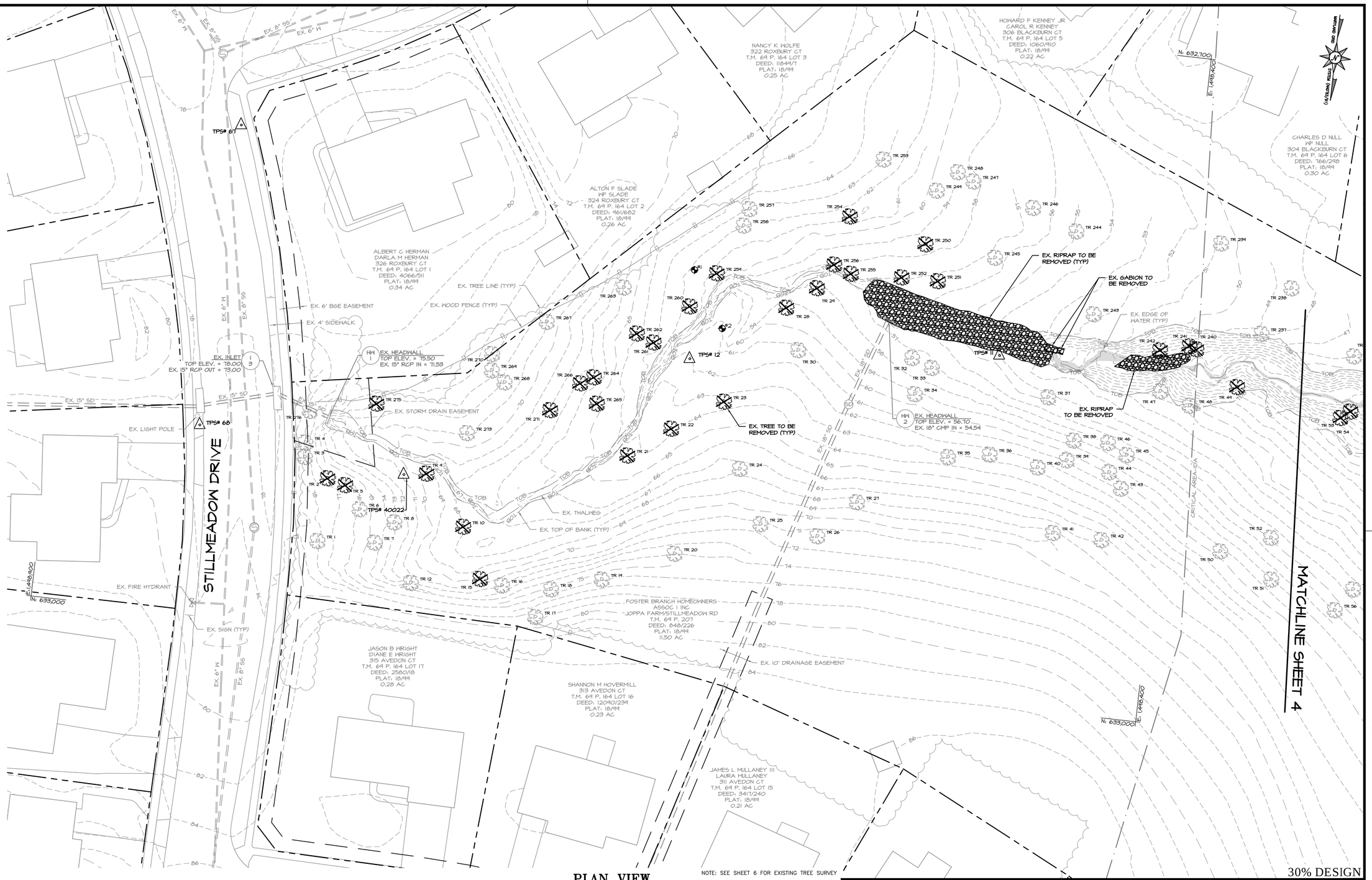

NOTE: SEE SHEET 6 FOR EXISTING TREE SURVEY

30% DESIGN

PLAN VIEW

SCALE: 1" = 20'

0 10 20 40

1 INCH = 20 FEET

EG-SWMENG-_____-____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE EXISTING CONDITIONS

DRAWN BY: JP	CONTRACT NO : 16-153
DESIGNED BY: JP	SCALE : 1" = 20'
REVIEWED BY: CJS	SHEET 3 OF 21
	DATE : 10/31/17

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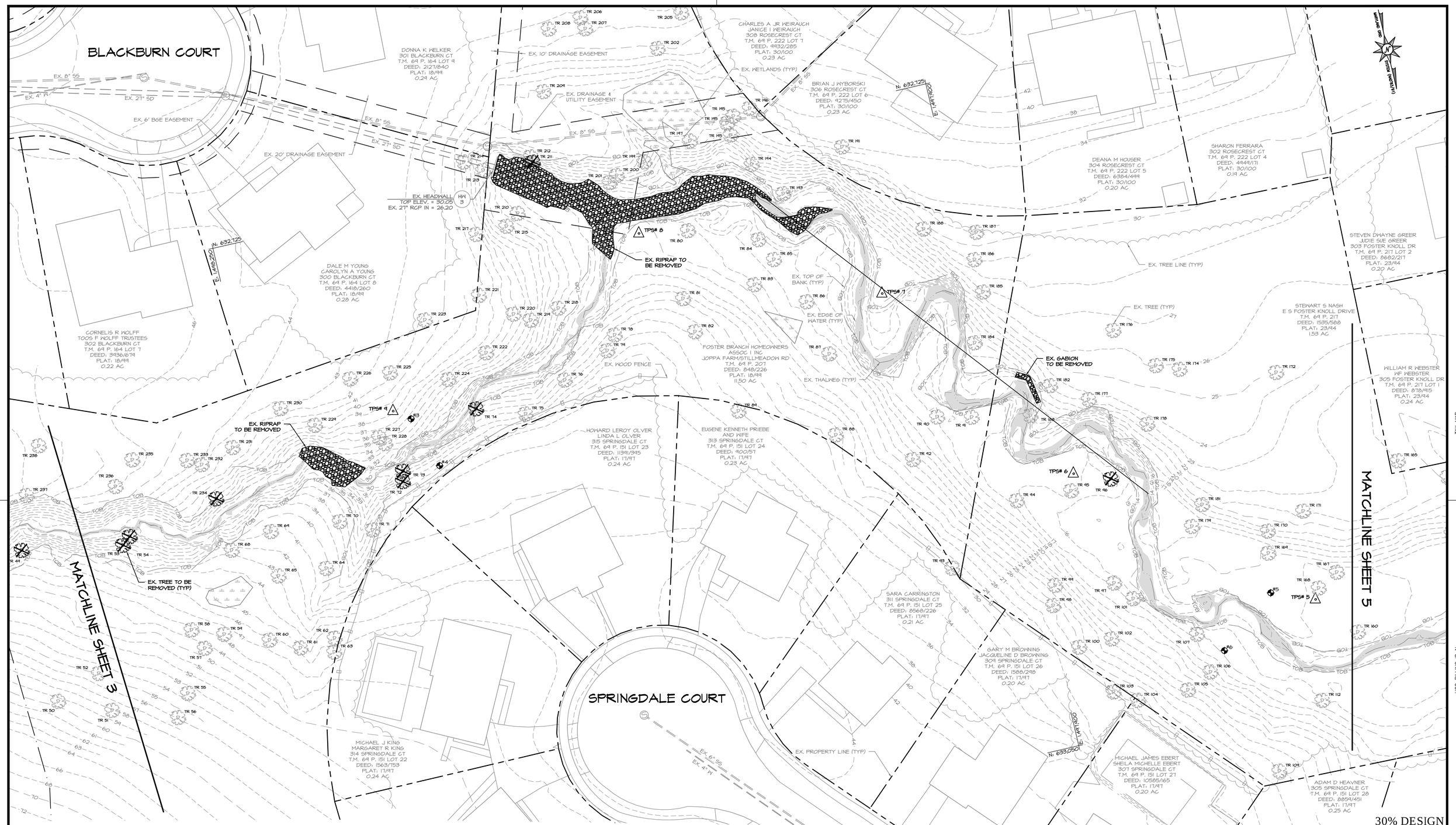

0 10 20 40

1 INCH = 20 FEET

PLAN VIEW

SCALE: 1" = 20'

NOTE: SEE SHEET 6 FOR EXISTING TREE SURVEY

30% DESIGN

EG-SWMENG-_____-_____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE EXISTING CONDITIONS

DRAWN BY: JP	CONTRACT NO : 16-153
DESIGNED BY: JP	SCALE : 1" = 20'
REVIEWED BY: CJS	SHEET 4 OF 21
	DATE : 10/31/17

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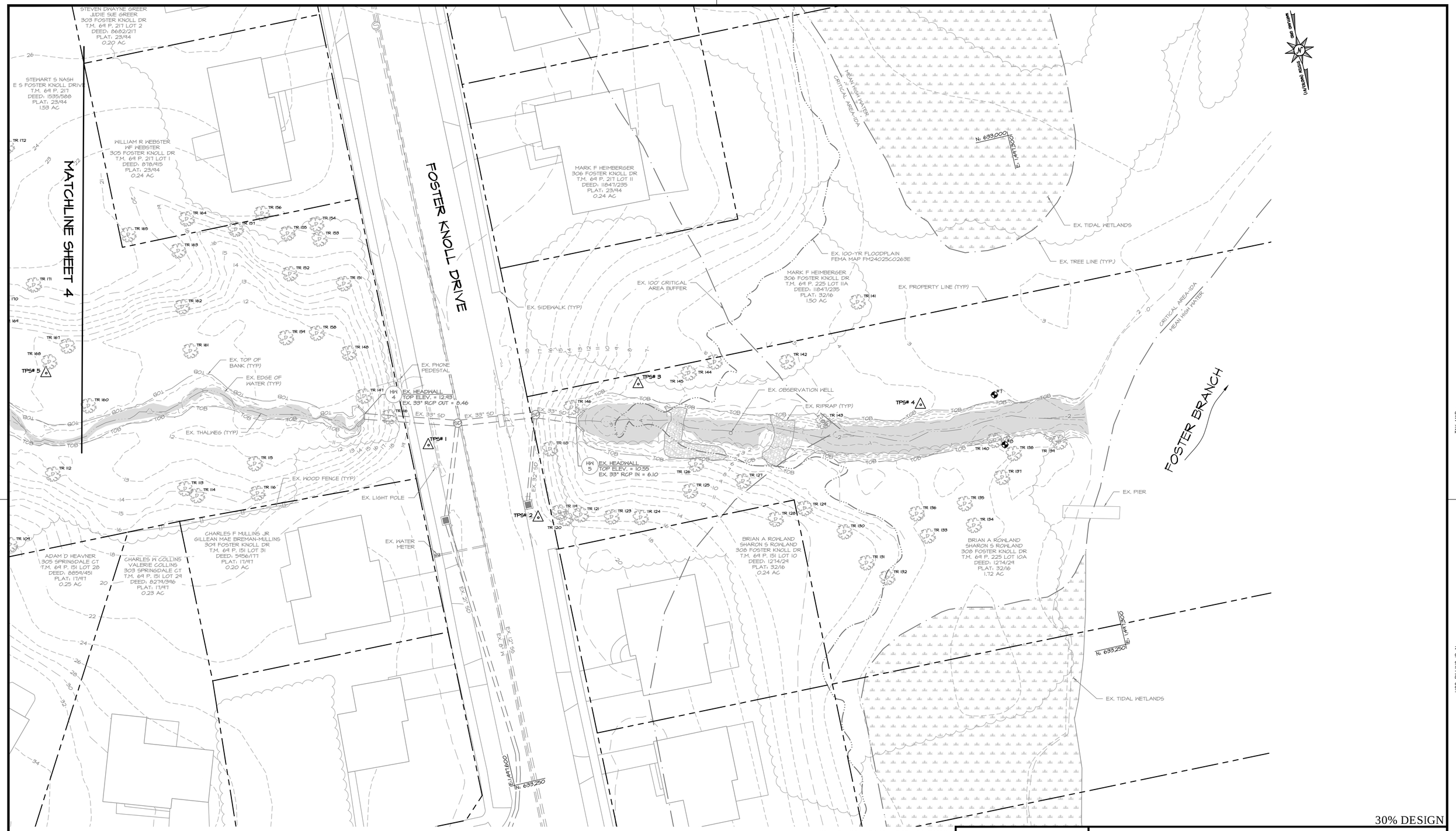

0 10 20 40

1 INCH = 20 FEET

NOTE: SEE SHEET 6 FOR EXISTING TREE SURVEY

PLAN VIEW

SCALE: 1" = 20'

30% DESIGN

EG-SWMENG-_____-____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE EXISTING CONDITIONS

DRAWN BY: JP
DESIGNED BY: JP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : 1" = 20'
SHEET 5 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

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EXISTING TREE SURVEY

TREE NUMBER	DBH (INCHES)	LATIN NAME	COMMON NAME	CONDITION/NOTES
TR 1	23.1	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 2*	22.5	QUERCUS RUBRA	NORTHERN RED OAK	FAIR (VINES)
TR 3	16.2	PRUNUS SEROTINA	BLACK CHERRY	FAIR (VINES)
TR 4	14.0	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 5*	28.1	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 6	17.6	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 7	19.5	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 8	23.5	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 9*	25.8	QUERCUS ALBA	WHITE OAK	GOOD
TR 10*	14.4	QUERCUS ALBA	WHITE OAK	POOR
TR 11	20.6	QUERCUS ALBA	WHITE OAK	GOOD
TR 12	15.1	ACER RUBRUM	RED MAPLE	GOOD
TR 13	17.8	ACER RUBRUM	RED MAPLE	GOOD
TR 14	14.3	ACER RUBRUM	RED MAPLE	GOOD
TR 15*	13.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 16	24.7	QUERCUS RUBRA	NORTHERN RED OAK	FAIR
TR 17	23.2	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 18	14.7	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 19	12.7	CARYA TOMENTOSA	MOCKERNUT HICKORY	GOOD
TR 20	13.6	QUERCUS ALBA	WHITE OAK	GOOD
TR 21*	20.1	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 22*	15.5	QUERCUS PRINUS	CHESTNUT OAK	FAIR (VINES)
TR 23*	22.0	QUERCUS ALBA	WHITE OAK	FAIR (VINES)
TR 24	25.2	QUERCUS ALBA	WHITE OAK	GOOD
TR 25	37.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 26	21.3	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 27	17.8	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 28*	27.1	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (CAVITY)
TR 29*	28.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 30	23.8, 17.5	QUERCUS PRINUS	CHESTNUT OAK	MULTI-STEM, GOOD
TR 31	18.4	QUERCUS ALBA	WHITE OAK	FAIR
TR 32	26.5	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 33	12.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 34	20.6	QUERCUS ALBA	WHITE OAK	GOOD
TR 35	32.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 36	23.9	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 37	12.9	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 38	18.3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 39	21.6	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 40	27.1	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 41	20.0	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 42	14.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 43	18.7	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 44	25.0	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 45	25.2	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 46	18.0	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 47	20.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 48	13.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 49*	19.3	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 50	17.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 51	24.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 52	25.6	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 53*	19.3	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 54*	13.1	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 55	22.0	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 56	16.7	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 57	20.1	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 58	12.4	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 59	16.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 60	34.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 61	15.6	ACER RUBRUM	RED MAPLE	GOOD
TR 62	19.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 63	16.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 64	16.4	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 65	26.8	QUERCUS ALBA	WHITE OAK	GOOD
TR 66	12.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	LEANING ACROSS STREAM, GOOD
TR 67	17.5	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	POOR
TR 68	17.2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 69	14.7	QUERCUS ALBA	WHITE OAK	GOOD

* TREES TO BE REMOVED

TREE NUMBER	DBH (INCHES)	LATIN NAME	COMMON NAME	CONDITION/NOTES
TR 70	12.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 71	15.1	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 72*	16.7	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 73*	18.5	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 74*	13.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 75	21.9	ACER RUBRUM	RED MAPLE	GOOD
TR 76	13.9	ACER RUBRUM	RED MAPLE	POOR
TR 77	21.9	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 78	21.1	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 79	14.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 80	27.7	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 81	35.1	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 82	20.5	QUERCUS ALBA	WHITE OAK	GOOD
TR 83	15.3	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 84	15.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 85	18.7	NYSSA SYLVATICA	BLACK TUPELO	POOR
TR 86	22.9	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 87	24.2	QUERCUS ALBA	WHITE OAK	GOOD
TR 88	26.3	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 89	14.2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 90	31.4	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 91	14.7	QUERCUS ALBA	WHITE OAK	GOOD
TR 92	20.5	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 93	23.3	QUERCUS RUBRA	NORTHERN RED OAK	FAIR (VINES)
TR 94	21.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 95	27.5	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 96*	26.3	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 97	21.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 98	19.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 99	22.4	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 100	33.8	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 101	17.3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 102	14.3	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 103	13.4	ACER RUBRUM	RED MAPLE	GOOD
TR 104	26.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 105	32.0	QUERCUS ALBA	WHITE OAK	GOOD
TR 106	18.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 107	14.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 108	14.8	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 109	20.8	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 110	31.0	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 111	16.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 112	21.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 113	19.9	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 114	19.1	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 115	20.3	ACER RUBRUM	RED MAPLE	GOOD
TR 116	37.4	QUERCUS ALBA	WHITE OAK	MULTI-STEM ABOVE BH, GOOD
TR 117	24.0	MORUS RUBRA	RED MULBERRY	GOOD
TR 118	16.1	ROBINIA PSEUDOACACIA	BLACK LOCUST	GOOD
TR 119	12.6	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 120	14.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 121	17.5	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 122	12.3	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 123	14.7	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 124	20.2	QUERCUS ALBA	WHITE OAK	GOOD
TR 125	22, 19.4	QUERCUS PRINUS	CHESTNUT OAK	MULTI-STEM, GOOD
TR 126	15.6	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 127	19.6	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 128	19.2	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 129	19.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 130	20.7	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 131	12.9	ILEX OPACA	AMERICAN HOLLY	GOOD
TR 132	27.1	QUERCUS PRINUS	CHESTNUT OAK	POOR
TR 133	12.6, 5.4	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	MULTI-STEM, GOOD
TR 134	13.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 135	17.1	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 136	13.3	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 137	18.2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	FAIR
TR 138	16.2	PRUNUS SEROTINA	BLACK CHERRY	POOR

TREE NUMBER	DBH (INCHES)	LATIN NAME	COMMON NAME	CONDITION/NOTES
TR 139	16.5	ROBINIA PSEUDOACACIA	BLACK LOCUST	FAIR
TR 140	15.9	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 141	20.2	ACER RUBRUM	RED MAPLE	GOOD
TR 142	17.7	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 143	15.8	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 144	13.1	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	FAIR (CAVITY)
TR 145	19.9	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	FAIR (DEAD TOP)
TR 146	13.0	ROBINIA PSEUDOACACIA	BLACK LOCUST	GOOD
TR 147	13.6	ACER RUBRUM	RED MAPLE	GOOD
TR 148	13.4	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 149	14.8	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 150	13.6	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 151	17.5	ROBINIA PSEUDOACACIA	BLACK LOCUST	GOOD
TR 152	16.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 153	16.7	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 154	12.4	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 155	24.0	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 156	17.8, 11.0	QUERCUS ALBA	WHITE OAK	MULTI-STEM, GOOD
TR 157	22.0	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 158	24.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 159	13.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 160	14.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 161	13.2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 162	13.7	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 163	27.5	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 164	13.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 165	12.8	QUERCUS ALBA	WHITE OAK	GOOD
TR 166	13.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 167	27.6	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	FAIR (CAVITY)
TR 168	26.3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 169	25.8	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	FAIR (CAVITY)
TR 170	28.6	QUERCUS ALBA	WHITE OAK	GOOD
TR 171	34.2	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 172	16.6	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 173	12.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 174	21.0	QUERCUS ALBA	WHITE OAK	GOOD
TR 175	21.0	QUERCUS ALBA	WHITE OAK	GOOD
TR 176	17.0	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 177	12.3	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 178	23.1	QUERCUS ALBA	WHITE OAK	GOOD
TR 179	12.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 180	14.4	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 181	37.0	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 182	18.6	QUERCUS ALBA	WHITE OAK	GOOD
TR 183	13.8	QUERCUS PRINUS	CHESTNUT OAK	LEANING ACROSS STREAM, GOOD
TR 184	28.3	QUERCUS ALBA	WHITE OAK	GOOD
TR 185	33.1	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 186	12.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 187	12.9	QUERCUS ALBA	WHITE OAK	GOOD
TR 188	18.3	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 189	16.2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 190	13.4	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 191	12.3	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 192	13.6	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	LEANING ACROSS STREAM, GOOD
TR 193	14.9	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 194	18.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 195	17.5, 10.3, 15.5, 14.0, 9.3	ACER RUBRUM	RED MAPLE	MULTI-STEM, GOOD
TR 196	14.0	ACER RUBRUM	RED MAPLE	GOOD
TR 197	15.4	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 198	16.6	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD
TR 199	15.1	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	GOOD
TR 200	17.7	ACER RUBRUM	RED MAPLE	GOOD
TR 201	16.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 202	28.5	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 203	15.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 204	32.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 205	14.4	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 206	14.6	ACER RUBRUM	RED MAPLE	GOOD

TREE NUMBER	DBH (INCHES)	LATIN NAME	COMMON NAME	CONDITION/NOTES
TR 207	27.4	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 208	21.3	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 209	13.5	ACER RUBRUM	RED MAPLE	GOOD
TR 210	16.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 211*	12.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 212	12.2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 213	13.0, 12.0	ROBINIA PSEUDOACACIA	BLACK LOCUST	MULTI-STEM, FAIR (VINES)
TR 214	14.5	PRUNUS SEROTINA	BLACK CHERRY	POOR (VINES)
TR 215	13.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	FAIR (VINES)
TR 216	16.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (VINES)
TR 217	19.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 218	20.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (VINES)
TR 219	22.6	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 220	21.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 221	16.4	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 222	15.9	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 223	16.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 224	24.2	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 225	14.4	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 226	21.8	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 227	13.7	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 228	22.1	QUERCUS ALBA	WHITE OAK	GOOD
TR 229	27.7	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 230	23.8	QUERCUS ALBA	WHITE OAK	GOOD
TR 231	15.4	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 232	14.8	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 233	19.0	NYSSA SYLVATICA	BLACK TUPELO	GOOD
TR 234*	13.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 235	15.0	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 236	13.0	ACER RUBRUM	RED MAPLE	GOOD
TR 237	16.1	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 238	14.8	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 239	13.8	QUERCUS ALBA	WHITE OAK	FAIR
TR 240*	18.7	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 241*	15.4	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 242*	13.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 243	14.5	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 244	12.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 245	21.4	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 246	30.1	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 247	28.0	QUERCUS ALBA	WHITE OAK	GOOD
TR 248	14.5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	GOOD
TR 249	17.4	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 250*	20.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 251*	31.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 252*	23.9	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 253	30.8	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 254*	21.1	QUERCUS PRINUS	CHESTNUT OAK	FAIR
TR 255*	25.1	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 256*	16.3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR
TR 257	12.1	ACER RUBRUM	RED MAPLE	FAIR (VINES)
TR 258	27.6	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 259*	25.0	QUERCUS ALBA	WHITE OAK	GOOD
TR 260*	28.7	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 261*	23.1	QUERCUS ALBA	WHITE OAK	GOOD
TR 262*	19.6	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 263	26.7	QUERCUS VELUTINA	BLACK OAK	FAIR (VINES)
TR 264*	25.7	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 265*	12.4	QUERCUS VELUTINA	BLACK OAK	FAIR (VINES)
TR 266*	31.7	QUERCUS VELUTINA	BLACK OAK	FAIR (VINES)
TR 267	41.0	QUERCUS FALCATA	SOUTHERN RED OAK	FAIR (VINES)
TR 268	19.2	QUERCUS VELUTINA	BLACK OAK	GOOD
TR 269	33.5	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 270	13.9	QUERCUS ALBA	WHITE OAK	FAIR (VINES)
TR 271*	12.8, 10.7	QUERCUS PRINUS	CHESTNUT OAK	MULTI-STEM ,FAIR (VINES)
TR 272	15.5	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 273	25.8	QUERCUS VELUTINA	BLACK OAK	FAIR (VINES)
TR 274	14.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (CAVITY)
TR 275*	18.0	MORUS RUBRA	RED MULBERRY	FAIR (VINES)
TR 276	19.9	PINUS STROBUS	EASTERN WHITE PINE	FAIR (VINES)

30% DESIGN

REVISIONS

EG-SWMENG-_____-____ #_____

CLEAR CREEKS CONSULTING
1317 Knopp Road, Jarrettsville, Maryland 21084 (410) 692-2164

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
7455 New Ridge Road, Suite T Phone: (410) 694-9401
Hanover, Maryland 21076 Fax: (410) 694-9105
www.baylandinc.com

BAYLAND JOB NO. 4_3801

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
SMSR EXISTING TREE TABLES

DRAWN BY: JP
DESIGNED BY: JP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : AS SHOWN
SHEET 6 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

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BMP ANALYSIS

DRAINAGE AREA:	7.35 ACRES
IMPERVIOUS AREA:	2.51 ACRES (34.1%)
LOCATION:	HARFORD COUNTY, MD
TARGET WQv STORAGE:	0.22 AC-FT
TOTAL WQV PROVIDED:	0.51 AC-FT
RAINFALL DEPTH TREATED:	2.33 INCHES
IMPERVIOUS AREA TREATED:	3.34 ACRES
STREAM RESTORATION:	375 LF
IMPERVIOUS ACRE CREDIT:	2.00 ACRES
TOTAL IMPERVIOUS AREA TREATED:	5.34 ACRES

NOTE: ROCKS SHOWN ON PLAN AND PROFILE VIEW ARE SYMBOLIC AND DO NOT REPRESENT INDIVIDUAL STONES. SEE SPSC ROCK SIZING TABLE SHEET 18 FOR ACTUAL ROCK DIMENSIONS.

SITE PLAN

SCALE: 1" = 20'

0 10 20 40

1 INCH = 20 FEET

EG-SWMENG-_____-_____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE SITE PLAN

DRAWN BY: EM
DESIGNED BY: MKB
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : 1" = 20'
SHEET 7 OF 21
DATE : 10/31/17

SCALE: 1 inch

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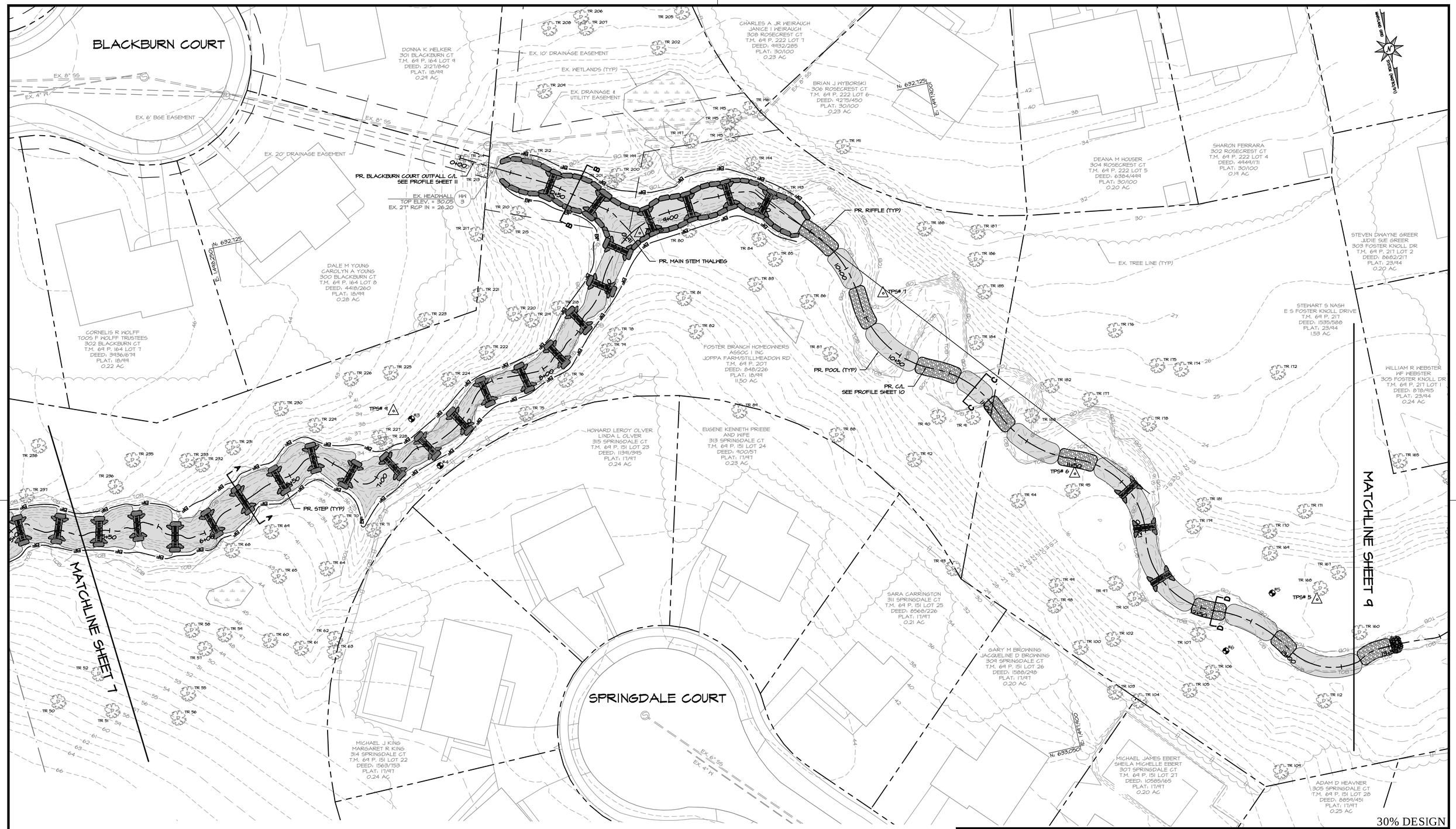

0 10 20 40

1 INCH = 20 FEET

SITE PLAN

SCALE: 1" = 20'

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE SITE PLAN

DRAWN BY: JP
DESIGNED BY: RP/JP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : 1" = 20'
SHEET 8 OF 21
DATE : 10/31/17

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30% DESIGN

0 10 20 40
1 INCH = 20 FEET

SITE PLAN

SCALE: 1" = 20'

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE SITE PLAN

DRAWN BY: JP
DESIGNED BY: RP/JP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : 1" = 20'
SHEET 9 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE : 1 inch

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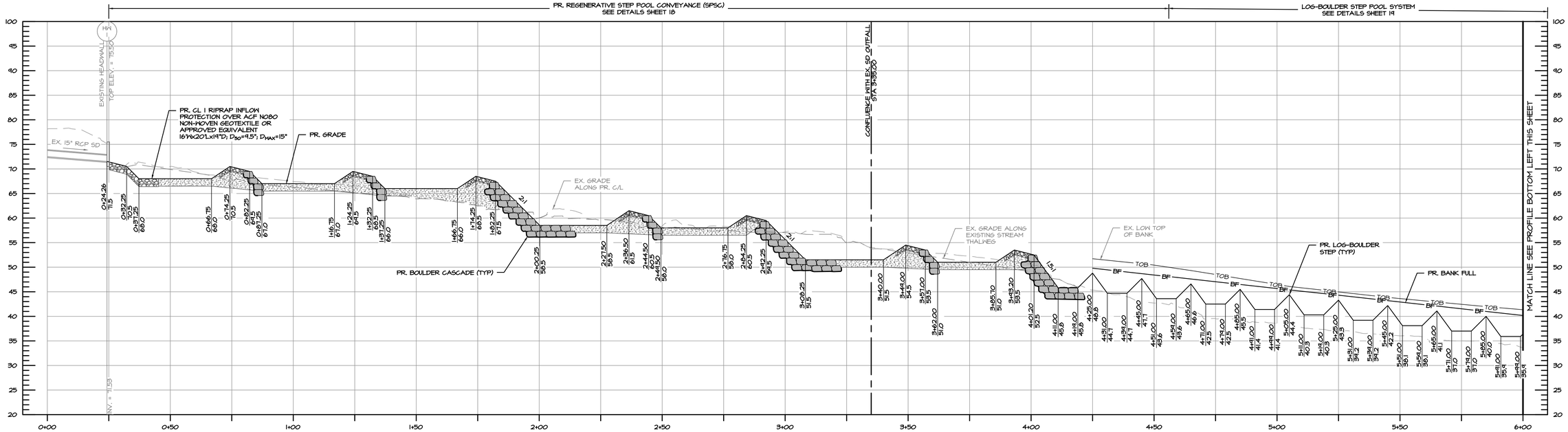
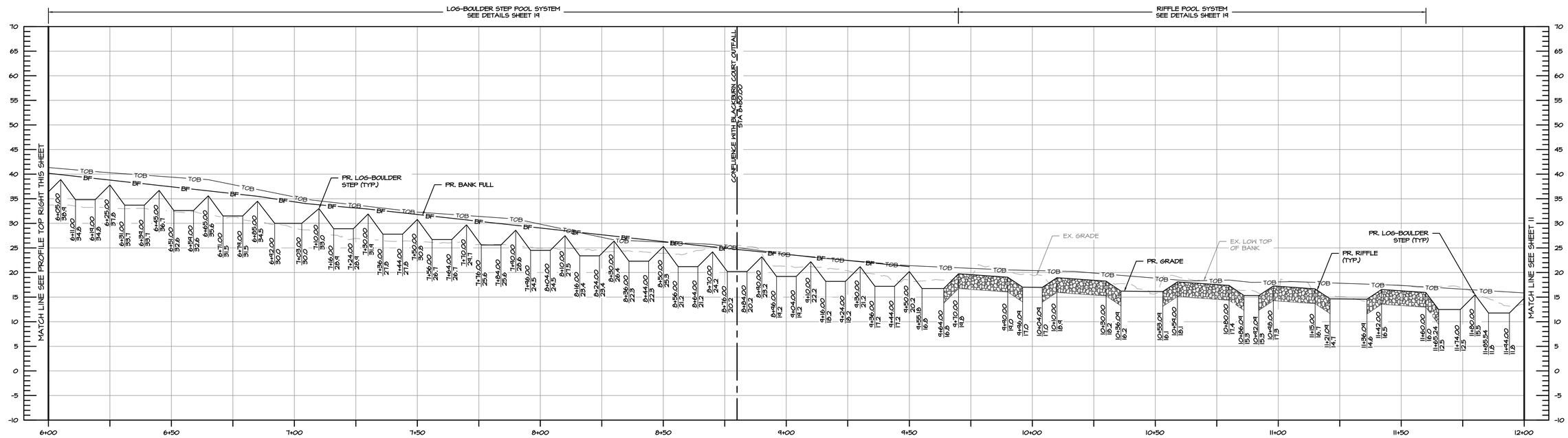


PROFILE PROPOSED ALIGNMENT STA: 0+00 TO STA: 6+00

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



PROFILE PROPOSED ALIGNMENT STA: 6+00 TO STA: 12+00

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

30% DESIGN

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE PROFILES

DRAWN BY: EM	CONTRACT NO : 16-153
DESIGNED BY: MKB/RP/JP	SCALE : AS SHOWN
REVIEWED BY: CJS	SHEET 10 OF 21
	DATE : 10/31/17

EG-SWMENG-_____-____ #_____

CLEAR CREEKS CONSULTING
1317 Knopp Road, Jarrettsville, Maryland 21084 (410) 692-2164

BayLand Consultants & Designers, Inc.
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Hanover, Maryland 21076 Fax: (410) 694-9105
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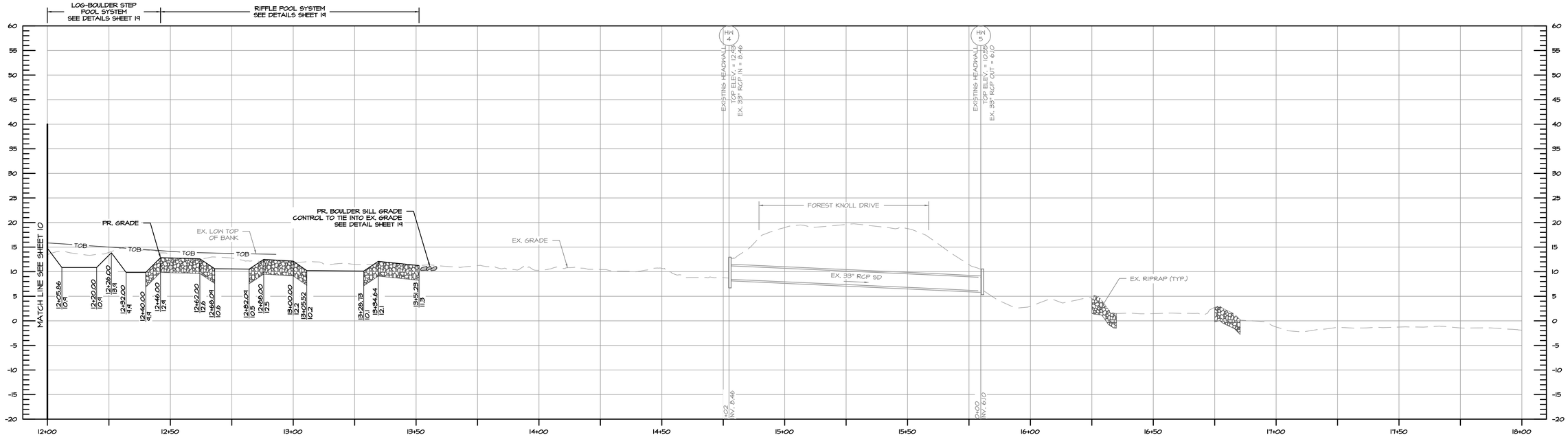
BAYLAND JOB NO. 4_3801

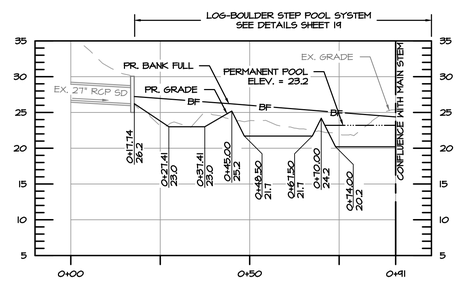
TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

2:\4_3801_STILLMEADOW_STREAM_&_OUTFALL\STILLMEADOW_SR\CAD Files\Sheet Files\4_3801_SMSR_PROF01.dwg



PROFILE PROPOSED ALIGNMENT STA: 12+00 TO STA: 18+00

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



PROFILE BLACKBURN CT STA: 0+00 TO STA: 0+91

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

30% DESIGN

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STILLMEADOW DRIVE PROFILES

EG-SWMENG-_____-____ #_____

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BAYLAND JOB NO. 4_3801

DRAWN BY: EM
DESIGNED BY: RP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : AS SHOWN
SHEET 11 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE : 1 inch

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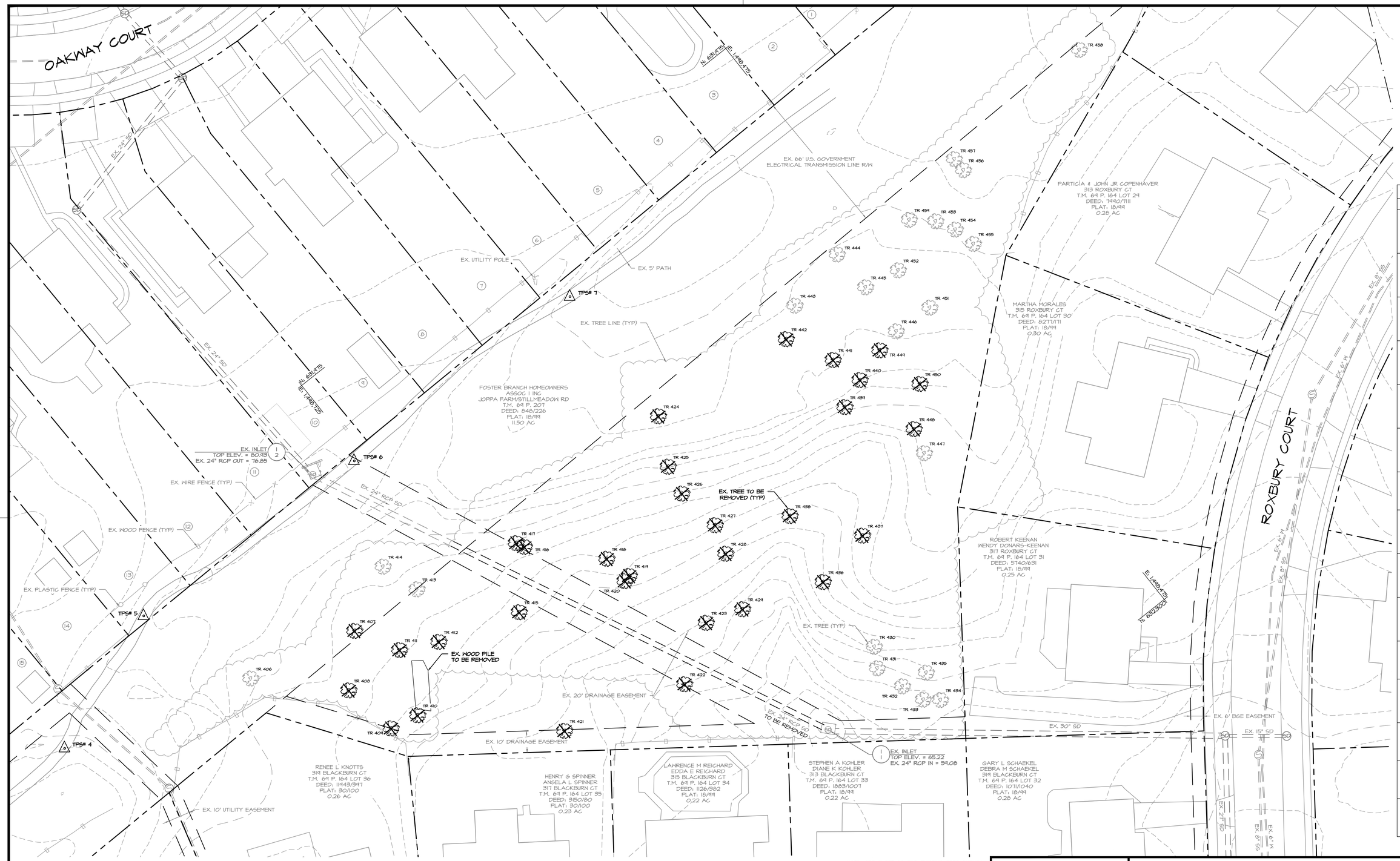

PARCEL TABLE

NO.	PARCEL INFO.
1	BLYTHE HANNES 312 OAKWAY CT T.M. 69 P. 259 LOT 20 DEED: 7905/630 PLAT: 36/87 0.14 AC
2	AARON SANDERSON & MICHELLE MCCRACKEN 314 OAKWAY CT T.M. 69 P. 259 LOT 19 DEED: 6669/42 PLAT: 36/87 0.15 AC
3	ROBERT BETZ JR & LAURA GILBERT 316 OAKWAY CT T.M. 69 P. 257 LOT 18 DEED: 7252/709 PLAT: 35/73 0.14 AC
4	ANNAMAE RUSSEL ET AL 318 OAKWAY CT T.M. 69 P. 257 LOT 17 DEED: 2508/973 PLAT: 35/73 0.14 AC
5	MICHAEL MINITOR JR 320 OAKWAY CT T.M. 69 P. 257 LOT 16 DEED: 8577/339 PLAT: 35/73 0.15 AC
6	SHAWN HEWTON 1320 WINDING VALLEY DR T.M. 69 P. 257 LOT 15 DEED: 9249/80 PLAT: 35/73 0.14 AC
7	DALE WAGNER 324 CHIMNEY OAK DR T.M. 69 P. 257 LOT 14 DEED: 11096/96 PLAT: 35/73 0.17 AC
8	WILLIAM ROBERT SAYERS & GINA GIANNI 326 CHIMNEY OAK DR T.M. 69 P. 257 LOT 13 DEED: 3276/605 PLAT: 35/73 0.13 AC
9	TIMOTHY ANDERSON & JANICE NEWTON 328 CHIMNEY OAK DR T.M. 69 P. 257 LOT 12 DEED: 2116/1006 PLAT: 35/73 0.14 AC
10	KAREN ANNE & KENNETH MARK BEDELL 330 CHIMNEY OAK DR T.M. 69 P. 257 LOT 11 DEED: 1622/992 PLAT: 35/73 0.15 AC
11	SHAWN HEWTON 332 CHIMNEY OAK DR T.M. 69 P. 257 LOT 10 DEED: 11511/89 PLAT: 35/73 0.25 AC
12	NIKI & CHARLES ANDERSON 334 CHIMNEY OAK DR T.M. 69 P. 257 LOT 9 DEED: 6203/497 PLAT: 35/73 0.25 AC
13	MARLON WELLS 336 CHIMNEY OAK DR T.M. 69 P. 234 LOT 8 DEED: 9238/301 PLAT: 32/95 0.14 AC
14	JARRETT & JENNIFER DEEL 338 CHIMNEY OAK DR T.M. 69 P. 234 LOT 7 DEED: 2939/71 PLAT: 32/95 0.18 AC
15	SALLY CHERRY 340 CHIMNEY OAK DR T.M. 69 P. 234 LOT 6 DEED: 1712/251 PLAT: 32/95 0.13 AC

30% DESIGN

NOTE: SEE SHEET 20 FOR EXISTING TREE SURVEY

PLAN VIEW

SCALE: 1" = 20'

EG-SWMENG-_____-_____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
ROXBURY COURT EXISTING CONDITIONS

DRAWN BY: EM
DESIGNED BY: EM
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : 1" = 20'
SHEET 12 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

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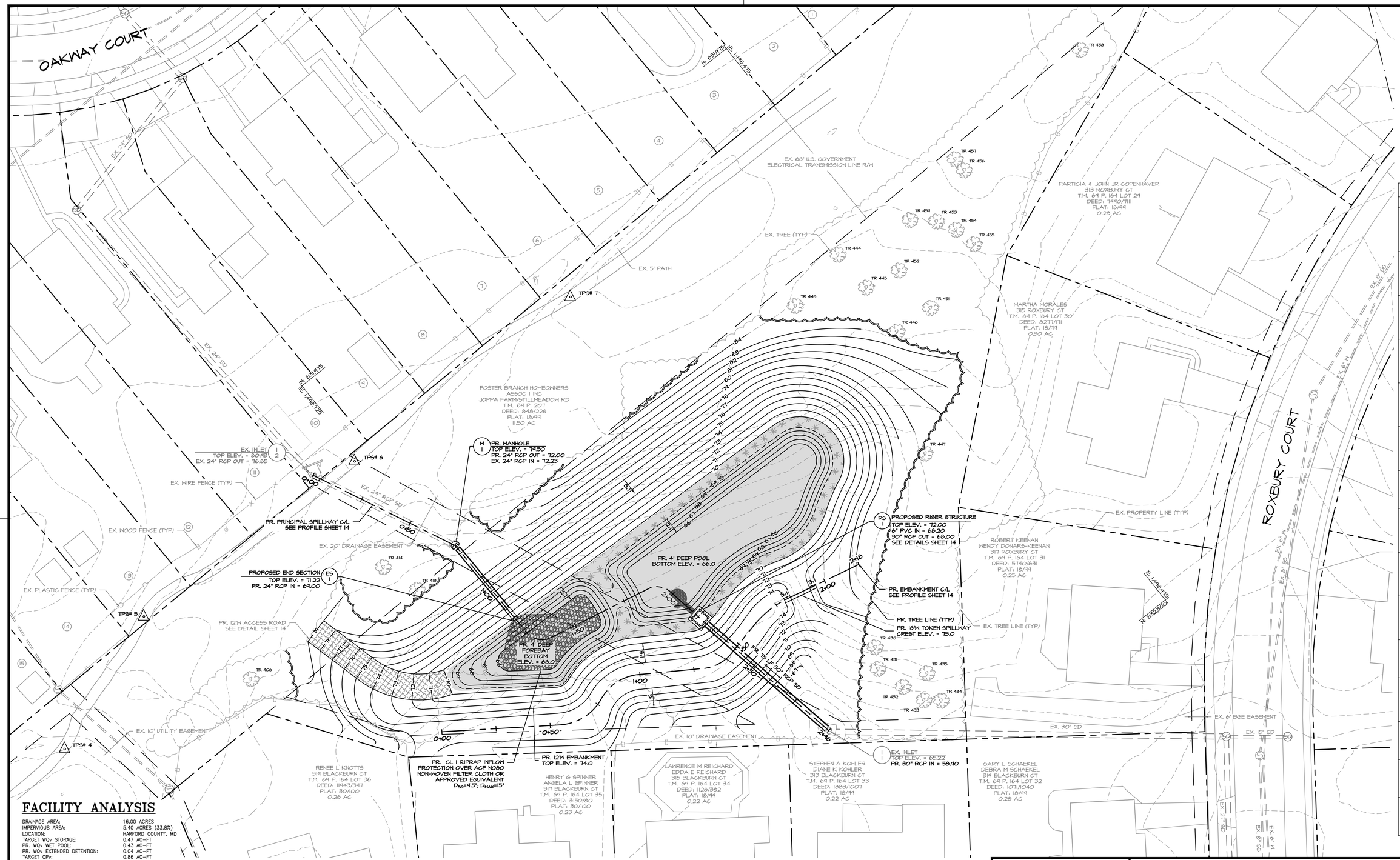

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30% DESIGN

FACILITY ANALYSIS

DRAINAGE AREA:	16.00 ACRES
IMPERVIOUS AREA:	5.40 ACRES (33.8%)
LOCATION:	HARFORD COUNTY, MD
TARGET WQv STORAGE:	0.47 AC-FT
PR. WQv WET POOL:	0.43 AC-FT
PR. WQv EXTENDED DETENTION:	0.04 AC-FT
TARGET CPv:	0.86 AC-FT
PR. CPv PROVIDED:	0.43 AC-FT
TOTAL TREATMENT PROVIDED:	0.90 AC-FT
RAINFALL DEPTH TREATED:	1.91 INCHES
IMPERVIOUS AREA TREATED:	6.63 ACRES
REQ. 24HR DRAWDOWN ORIFICE SIZE:	3.50 INCH
EX 10-YR PEAK DISCHARGE:	26.12 CFS
PR 10-YR WSE:	72.54
PR 10-YR STORAGE:	1.06 AC-FT
PR 10-YR PEAK DISCHARGE:	25.52 CFS
EX 100-YR PEAK DISCHARGE:	45.13 CFS
PR 100-YR WSE:	72.79
PR 100-YR STORAGE:	1.13 AC-FT
PR 100-YR PEAK DISCHARGE:	44.49 CFS
FREEBOARD REQUIRED:	1.00 FT
FREEBOARD PROVIDED:	1.21 FT (100-YR)
MD-378 STRUCTURE CLASS:	CLASS 'B'
STORAGE HEIGHT PRODUCT:	8.45 AC-FT-FT
PR ANNUAL POLLUTANT LOAD REMOVAL:	
TOTAL NITROGEN:	77.9 LBS/YR
TOTAL PHOSPHORUS:	8.5 LBS/YR
TOTAL SUSPENDED SOLIDS:	2.5 TONS/YR

SWM LEGEND

PR. PERMANENT POOL ELEV. 70.0

PR. HIGH MARSH ELEV. 69.75 TO ELEV. 70.0 (WATER DEPTH 0"-3")

SITE PLAN

SCALE: 1" = 20'

EG-SWMENG-_____-_____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
ROXBURY COURT SITE PLAN

DRAWN BY: EM
DESIGNED BY: CJS/EM
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : 1" = 20'
SHEET 13 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

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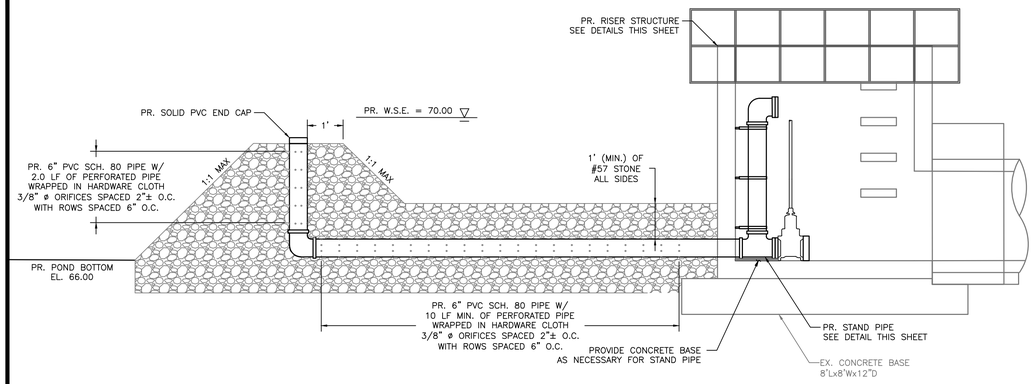
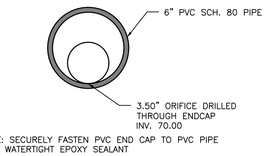


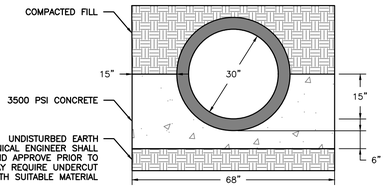
LOW FLOW/DEWATERING DEVICE DETAIL

SCALE: 1" = 2'



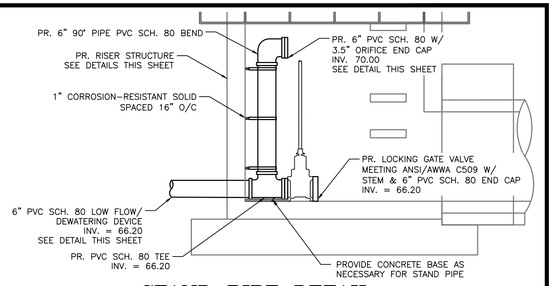
BMP 3 PVC END CAP DETAIL

SCALE: NOT TO SCALE



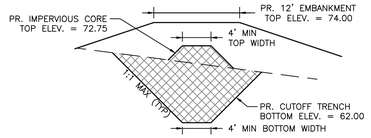
CONCRETE CRADLE DETAIL

SCALE: 1" = 2'



STAND PIPE DETAIL

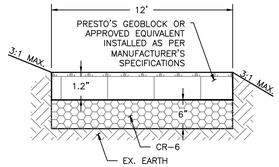
SCALE: 1" = 2'



IMPERVIOUS MATERIAL SHALL MEET OR EXCEED THE REQUIREMENTS FOR FILL MATERIAL AS SPECIFIED IN MD-378 CONSTRUCTION SPECIFICATIONS TO AND IS SUBJECT TO GEOTECHNICAL ENGINEER APPROVAL

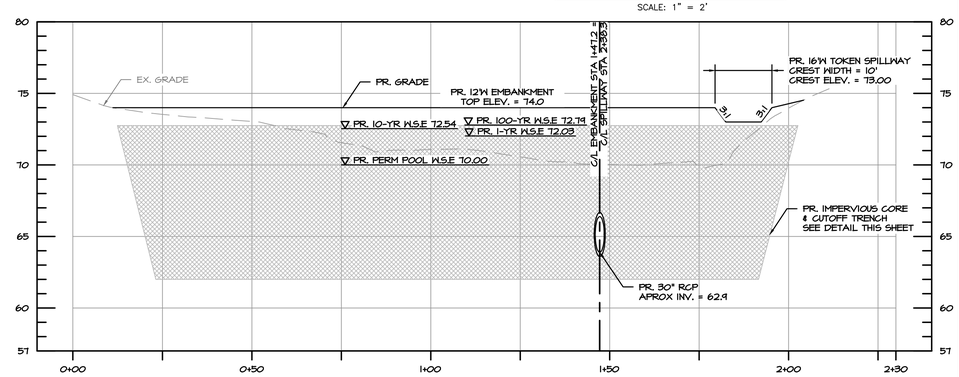
PROPOSED IMPERVIOUS CORE/ CUTOFF TRENCH DETAIL

SCALE: 1" = 10'



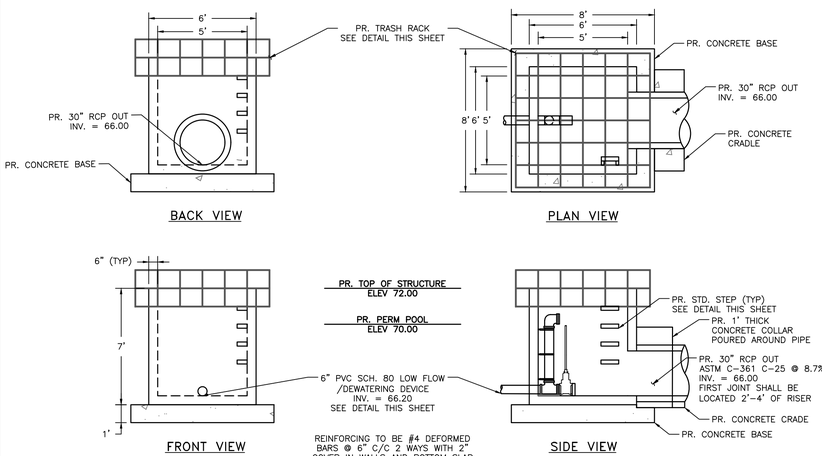
ACCESS ROAD DETAIL

SCALE: NOT TO SCALE



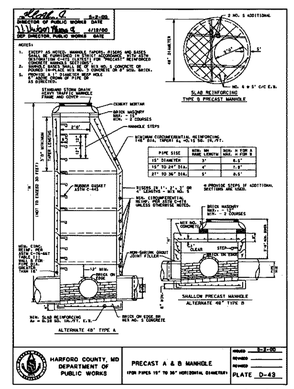
PROFILE PR. EMBANKMENT C/L STA: 0+00 TO STA: 2+30

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



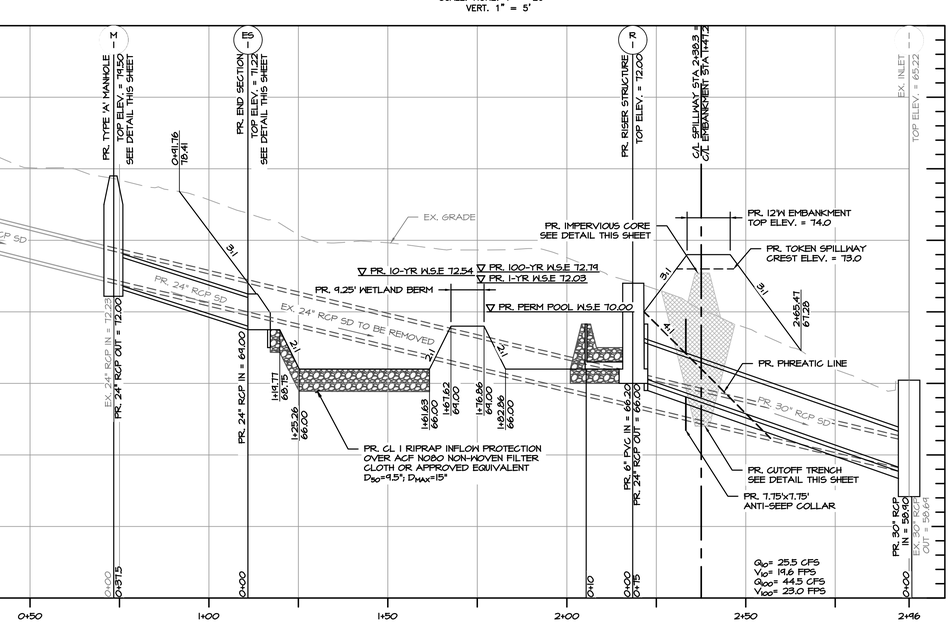
PROPOSED RISER DETAIL

SCALE: 1" = 4'



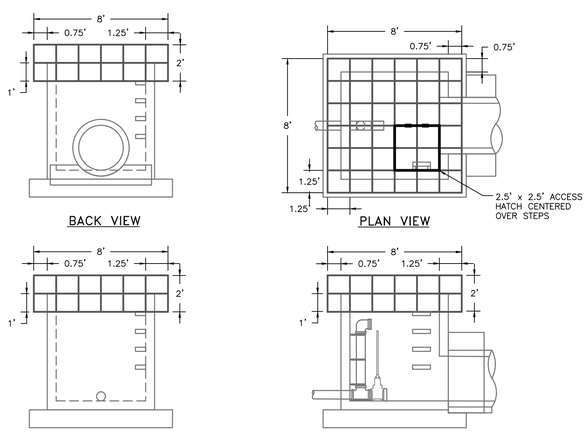
STANDARD TYPE 'A' MANHOLE DETAIL

SCALE: NOT TO SCALE



PROFILE PR. PRINCIPAL SPILLWAY C/L STA: 0+00 TO STA: 2+96

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

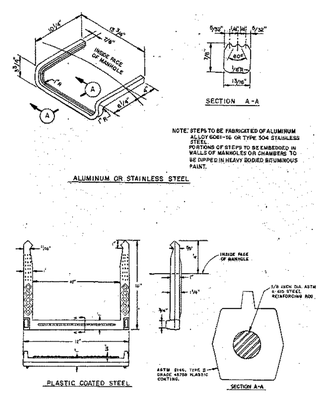


GENERAL NOTES

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 SHALL BE BUTT WELDED.
4. TRASH RACK SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A-123.
5. TRASH RACK SHALL SECURED TO RISER STRUCTURE USING ½" DIA x 5" LONG HOT-DIPPED GALVANIZED OR SS STEEL ANCHOR BOLTS. @ 2' MINIMUM SPACING.

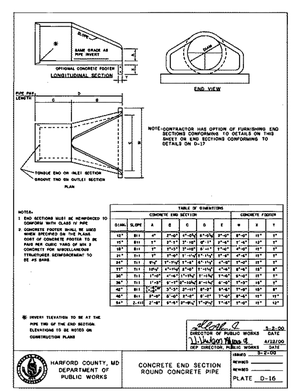
TRASH RACK DETAIL

SCALE: 1" = 4'



STANDARD STEP DETAIL

SCALE: NOT TO SCALE



STANDARD END SECTION DETAIL

SCALE: NOT TO SCALE

1 INCH = 4 FEET

30% DESIGN

EG-SWMENG-_____-_____ #_____

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BAYLAND JOB NO. 4_3801

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
ROXBURY COURT PROFILES AND DETAILS

DRAWN BY: EM
DESIGNED BY: EM/CJS
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : AS SHOWN
SHEET 14 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE : 1 inch

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SPSC 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 SPSC 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 COUNTY 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.

- CASCADE, FOOTER, AND WEIR BOULDERS – BOULDERS SHALL BE AS SPECIFIED ON THE SPSC ROCK SIZE TABLE. BOULDERS SHALL BE SANDSTONE, STACKABLE, OBLONG, AND FLAT IN APPEARANCE, AND DARK BROWN OR DARK GRAY IN COLOR. 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. GRANITE BOULDERS MAY BE SUBSTITUTED FOR SANDSTONE BOULDERS IF THE CONTRACTOR SHOWS THE COUNTY DUE DILIGENCE IN ATTEMPTING TO LOCATE SANDSTONE BOULDERS. ANY SUBSTITUTION WILL BE AT NO COST TO THE COUNTY.
- COBBLE – THE STONE SHALL BE SUBANGULAR SILICA COBBLE AND THE STONE SIZE SHALL BE AS SPECIFIED ON THE SPSC ROCK SIZE TABLE. COBBLE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES, BY WEIGHT, SHALL BE LARGER THAN THE D50 SIZE DETERMINED BY USING CHARTS PREPARED BY THE US DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE. 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.
- SAND/WOOD CHIP FILTER MEDIA – SAND SHALL BE AS SPECIFIED ON THE SPSC ROCK SIZE TABLE. SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO 'ROCK DUST' CAN BE USED FOR SAND.

  WOOD CHIPS SHALL BE EITHER HARDWOOD OR SOFTWOOD PRODUCED BY A CHIPPING MACHINE TO A MAXIMUM SIZE OF 2X2X0.5 INCHES. WOOD CHIPS SHALL BE FREE FROM LEAVES, TWIGS, WOOD SHAVINGS, FINES, SAWDUST, TOXIC SUBSTANCES, AND ALL FOREIGN MATERIAL. THE WOODCHIPS ARE ADDED TO THE SAND MIX (PRIOR TO PLACEMENT), APPROXIMATELY 20% BY VOLUME, TO INCREASE THE ORGANIC CONTENT AND PROMOTE PLANT GROWTH AND SUSTAINABILITY.

  THE SAND/WOODCHIP MIX FILTER BED SHALL HAVE A MINIMUM DEPTH OF EIGHTEEN (18) INCHES UNDER THE RIFFLE CHANNEL/POOL BOTTOM AND A MINIMUM WIDTH OF FOUR (4) FEET AND SHALL BE PLACED AS THE SUBSTRATE DRAINAGE MATERIAL ALONG THE ENTIRE PROJECT LENGTH.
- WOODY DEBRIS – LARGE WOODY DEBRIS OR INVERTED ROOTWADS SHALL BE CUT FROM HARDWOOD OR PINE 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. 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.
- COMPOST – COMPOST SHALL HAVE A PH BETWEEN 5.0 AND 7.0. IT SHALL BE STABLE AND NOT REHEAT UPON RESTACKING. COMPOST SHALL HAVE A MOISTURE CONTENT BETWEEN 30 AND 55 PERCENT, AND A PARTICLE SIZE OF 0.5 INCHES OR LESS. COMPOST SHALL BE SOURCE-SEPARATED COMPOST (TYPE B), APPROVED BY THE MARYLAND DEPARTMENT OF AGRICULTURE (MDA). COMPOST SHALL BE PRODUCED BY AN MDA CERTIFIED COMPOST OPERATOR AND HAVE A SOLUBLE SALT CONCENTRATION NOT TO EXCEED 5 DS (MMHOS/CM). THE SOURCE-SEPARATED COMPOST SHALL BE ONE OF THE FOLLOWING TYPES:
  A. TREE LEAF COMPOST
  B. NON-TREE LEAF COMPOST. WHEN COMPOST IS FROM LAWN CLIPPINGS, IT SHALL BE TESTED IN CONFORMANCE WITH COMAR 15.18.04.05.
- FILTER CLOTH – FILTER CLOTH SHALL MEET OR EXCEED THE REQUIREMENTS OF ACF N080 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.
- CLASS I RIPRAP – RIPRAP SHALL MEET CLASS I RIPRAP REQUIREMENTS, PER HARFORD COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 901.02 AND AS DESCRIBED ON THE CONSTRUCTION DRAWINGS.
- BACKFILL – BACKFILL SHALL MEET HARFORD COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 916.01 AND AS DESCRIBED ON THE CONSTRUCTION DRAWINGS.

SUBMITTALS

- CASCADE, FOOTER, AND WEIR BOULDERS – THE CONTRACTOR WILL LOCATE POTENTIAL SOURCES FOR THE STONE. THE CONTRACTOR AND THE COUNTY OR ITS AGENT WILL JOINTLY VISIT THE SOURCE SITES TO DETERMINE WHETHER THE STONE MEETS THE SPECIFIED REQUIREMENTS AND WHETHER THERE ARE SUFFICIENT QUANTITIES OF THE STONE TO MEET THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY 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 COUNTY THE SAMPLES AND 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.
- SAND/WOOD CHIP MIX – THE CONTRACTOR SHALL PROVIDE THE SOURCE AND MATERIAL SPECIFICATIONS TO THE COUNTY FOR APPROVAL.
- COMPOST – THE CONTRACTOR SHALL OBTAIN A COMPOST SAMPLE AND SUBMIT TO THE COUNTY FOR APPROVAL THE SAMPLE AND CERTIFICATE WITH THE SOURCE AND SPECIFICATIONS OF THE COMPOST.
- GEOTEXTILE – THE CONTRACTOR SHALL PROVIDE MATERIAL SPECIFICATION TO THE COUNTY FOR APPROVAL.
- CLASS I RIPRAP – THE CONTRACTOR SHALL OBTAIN CERTIFICATION FROM THE QUARRY FOR THE ROCK AND SUBMIT TO THE COUNTY FOR APPROVAL. THE CERTIFICATION SHALL INCLUDE:

  (1) STONE SIZE
  (2) STONE DENSITY (I.E., WEIGHT PER CUBIC FOOT)
  (3) THAT SIZES STIPULATED IN THE SPECIFICATIONS ARE BEING SUPPLIED TO THE SITE, WITH SOURCE(S) OF STONE INDICATED
  (4) THAT STONE QUALITY WILL MEET ALL PROJECT SPECIFICATIONS.

CONSTRUCTION

THE SPSC SYSTEM SHALL BE INSTALLED ACCORDING TO THE SEQUENCE OF CONSTRUCTION, THE CONSTRUCTION DRAWINGS, THESE SPECIFICATIONS, AND AS DIRECTED BY THE COUNTY.

CONSTRUCTION OF THE SPSC SYSTEM SHALL BEGIN AT THE DOWNSTREAM END AND PROCEED UPSTREAM TO THE OUTFALL.

THE SAND/WOOD CHIP MIX SHALL BE USED FOR FILLING THE FACILITY BOTTOM TO ACHIEVE THE GRADE NECESSARY FOR THE INSTALLATION OF THE WEIRS. THE SAND/WOODCHIP MIX FILTER BED SHALL HAVE A MINIMUM DEPTH OF 18 INCHES UNDER THE RIFFLE CHANNEL AND A MINIMUM WIDTH OF 4 FEET AND SHALL BE PLACED AS THE SUBSTRATE DRAINAGE MATERIAL ALONG THE ENTIRE PROJECT LENGTH.

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 THE SAND/WOOD CHIP MIX 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 WOOD CHIPS AND TEMPORARY SEEDING. ANY DISTURBED AREA SHALL BE STABILIZED AT THE END OF EACH WORKING DAY WITH WOOD CHIPS AND TEMPORARY SEEDING.

DISCONNECT THE DIVERSION PIPE ABOVE THE COMPLETED WEIR IN THE UPSTREAM POOL AND EXCAVATE UPSTREAM POOL FROM SAND BED USING EXCAVATED MATERIAL TO BLEND EDGES OF DOWNSTREAM WEIR AND SURROUNDING GRADE. CONTINUE THE PROCESS OF ALTERNATING POOLS AND RIFFLES/WEIRS UP THROUGH THE SYSTEM TO THE CASCADE.

THE CASCADE SHALL BE CONSTRUCTED WITH A SERIES OF RIBS IN AN ARC FORMATION PERPENDICULAR TO THE FACILITY. THE CENTER AND UPSTREAM APEX OF EACH RIB SHALL BE SET IN THE PROPOSED SPILLWAY CENTERLINE. RIBS ARE ARRANGED IN A SERIES WITH LOCATIONS INDICATED IN THE CONSTRUCTION DRAWINGS.

FOOTER ROCKS FOR EACH INDIVIDUAL RIB SHALL BE INSTALLED BY EXCAVATING A TRENCH TO ACCOMMODATE BOTH THE FOOTER ROCKS AND A 2-FOOT AREA UPSTREAM. GEOTEXTILE FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE TRENCH OF EACH RIB, SO THE FOOTER ROCK OVERLAPS THE MATERIAL A MINIMUM OF 1.0 FOOT. THE GEOTEXTILE FABRIC SHALL SPAN THE WIDTH OF THE RIB. THE FOOTER ROCKS SHALL BE PLACED AT THE BOTTOM OF THE TRENCH AND SHALL ABUT ONE ANOTHER. FOOTER ROCKS SHALL BE FIRMLY EMBEDDED INTO THE TRENCH BOTTOM. THE TOP ELEVATION OF THE FOOTER ROCK PLACED AT THE CENTERLINE OF THE SPILLWAY SHALL BE BELOW THE PROPOSED FINISHED GRADE.

THE TRENCH BEHIND THE FOOTER ROCKS SHALL BE BACKFILLED BEFORE THE TOP ROCKS ARE SET, WITH THE GEOTEXTILE FABRIC BETWEEN THE FOOTER ROCK AND STREAM BED MATERIAL, TAKING CARE TO FILL ALL VOIDS BETWEEN THE FOOTER ROCKS WITH THE BED MATERIAL.

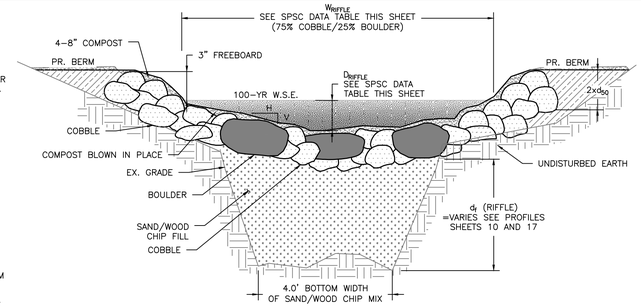
TOP ROCKS SHALL BE PLACED DIRECTLY ON TOP OF THE FOOTER ROCKS AND FIT TIGHTLY AGAINST EACH OTHER. CARE SHOULD BE TAKEN WHEN PLACING TOP ROCKS THAT THE SEAMS BETWEEN TOP ROCKS DO NOT LINE UP WITH THE SEAMS BETWEEN THE FOOTER ROCKS. THE TOP ELEVATION OF THE TOP ROCK PLACED AT THE CENTERLINE OF THE STREAM SHALL BE FLUSH WITH THE PROPOSED STREAM GRADE IMMEDIATELY UPSTREAM AND DOWNSTREAM OF THE CASCADE RIB. STARTING AT THE CENTERLINE, ADJACENT ROCKS SHALL TAPER TO THE OUTSIDE LIMIT OF THE RIB WHERE ½ THE DIAMETER OF THE END ROCK SHALL BE KEYED INTO THE BANK.

THE TRENCH BEHIND THE TOP ROCKS SHALL BE BACK-FILLED WITH CASCADE BED MATERIAL, WITH THE GEOTEXTILE FABRIC BETWEEN THE TOP ROCK AND CASCADE BED MATERIAL. THE GEOTEXTILE FABRIC SHALL BE KEYED IN A MINIMUM OF 1 FOOT BELOW THE TOP ROCK OR CUT A MINIMUM OF SIX INCHES BELOW THE TOP ROCK, BEFORE INSTALLING THE STREAM BED MATERIAL TO THE PROPOSED GRADE. THE CONTRACTOR SHALL TAKE CARE TO FILL ALL VOIDS UNDERNEATH AND BETWEEN THE TOP ROCKS. CASCADE BED MATERIAL SHALL BE PLACED A MINIMUM OF 2 FEET UPSTREAM OF THE FIRST RIB OF EACH CASCADE STRUCTURE AS SPECIFIED IN THE CONSTRUCTION DRAWINGS.

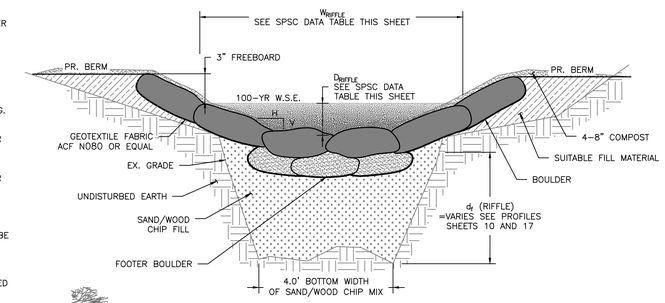
EACH SUCCESSIVE CASCADE RIB SHALL BE INSTALLED FOLLOWING THE STEPS ABOVE. THE TOP ELEVATION OF ROCKS ALONG RIBS SHALL VARY UP TO 1 FOOT TO CREATE VARIED FLOW PATTERNS. THE EXISTING GULLY SHALL BE BACKFILLED PER THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS WITH THE CASCADE INSTALLATION. ONCE THE CASCADE IS COMPLETE AND GULLY HAS BEEN BACKFILLED, THE CONTRACTOR SHALL INSTALL THE RIPRAP OUTFALL PROTECTION FROM THE OUTFALL AND TIE-INTO THE TOP CASCADE RIB.

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.

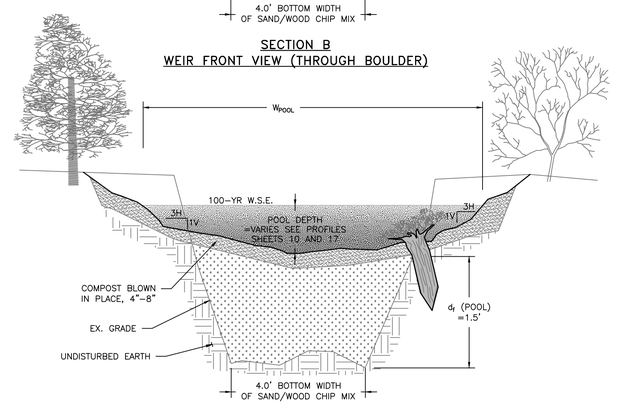
COMPOST SHALL BE BLOWN OVER THE ENTIRE SPSC SITE, INCLUDING ON THE TOPS OF WEIRS AND IN THE POOL FOR FINAL STABILIZATION AND PERMANENT SEEDING AS INDICATED IN THESE CONSTRUCTION DRAWINGS.



SECTION A
WEIR BACK VIEW VIEW (THROUGH COBBLE)



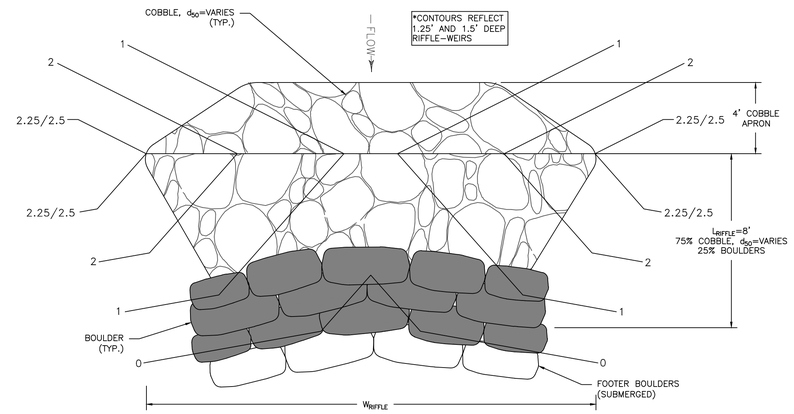
SECTION B
WEIR FRONT VIEW (THROUGH BOULDER)



SECTION C
THROUGH POOL

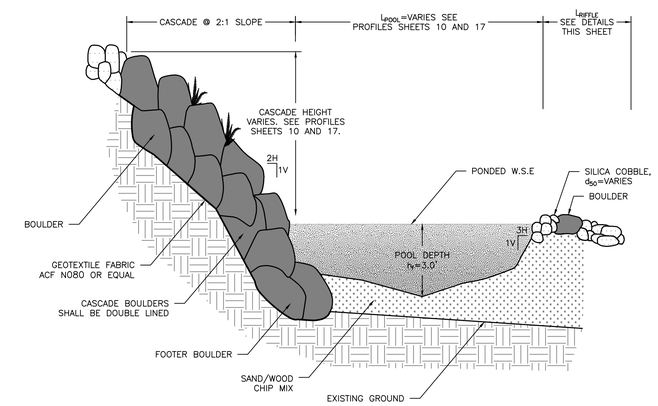
TYPICAL SPSC SECTIONS

SCALE: NOT TO SCALE



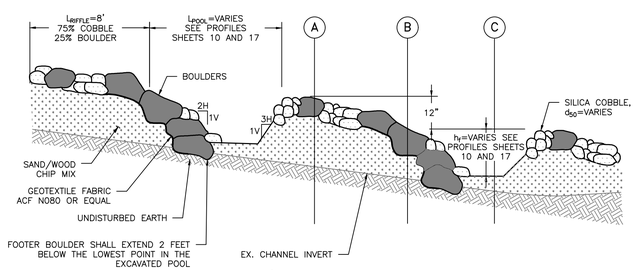
SPSC RIFFLE-WEIR TYPICAL PLAN VIEW

SCALE: NOT TO SCALE



SPSC CASCADE/POOL TYPICAL PROFILE

SCALE: NOT TO SCALE



SPSC RIFFLE/POOL TYPICAL PROFILE

SCALE: NOT TO SCALE

SPSC ROCK SIZE TABLE

ROCK SIZE TABLE		
ROCK TYPE	ROCK SIZE	% BY WEIGHT
COBBLE	D50 = VARIES (SEE SPSC DATA TABLE)	–
BOULDERS	GREATER THAN 6'X2'X2'	10
	3'X2'X2' TO 6'X2'X2'	80
	LESS THAN 3'X2'X2'	10
SAND/WOODCHIP MIX	SAND: 0.02"-0.04" (AASHTO M-6 OR ASTM C-33)	–

NOTE:
BOULDERS SHALL BE STACKABLE, OBLONG AND FLAT IN APPEARANCE

SPSC DATA TABLE

	STILLMEADOW SPSC	TRAILS WAY SPSC #1	TRAILS WAY SPSC #2
L_{RIFFLE}	8 FT.		
L_{POOL}	VARIES SEE PROFILES SHEETS 10 AND 17		
POOL DEPTH h_r	VARIES SEE PROFILES SHEETS 10 AND 17		
W_{RIFFLE}	15 FT.		
D_{RIFFLE}	1.25 FT.	1.5 FT.	
d_{50}	6"	12"	
D_r(RIFFLE)	VARIES SEE PROFILES SHEETS 10 AND 17		
D_r(POOL)	1.5 FT.		
CASCADE HEIGHT	VARIES SEE PROFILES SHEETS 10 AND 17		
H:V	VARIES SEE PROFILES SHEETS 10 AND 17		

30% DESIGN

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
SPSC NOTES & DETAILS

DRAWN BY: BF
DESIGNED BY: BF
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : AS SHOWN
SHEET 18 OF 21
DATE : 10/31/17

EG-SWMENG-_____-____ #_____

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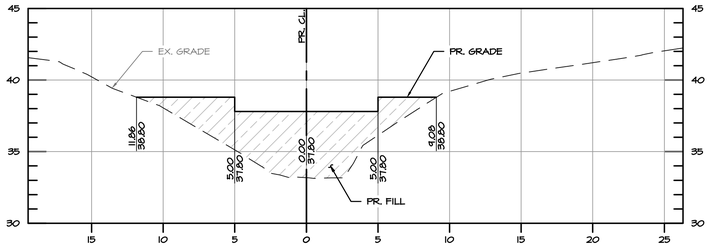
BAYLAND JOB NO. 4_3801

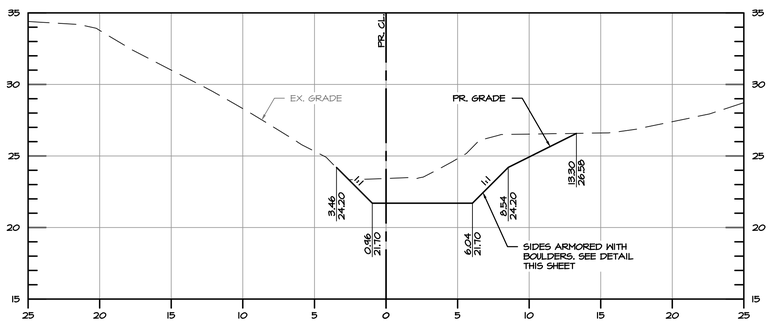
TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

2:\4_3801_STILLMEADOW_STREAM_&_OUTFALL\STILLMEADOW_SR\CAD Files\Sheet Files\4_3801_SMSR_PROFO3.dwg



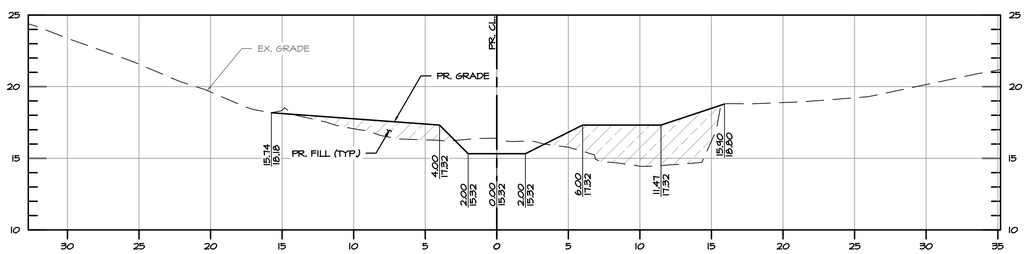
A–A TYPICAL STEP

HORIZONTAL: 1" = 5'
VERTICAL: 1" = 5'



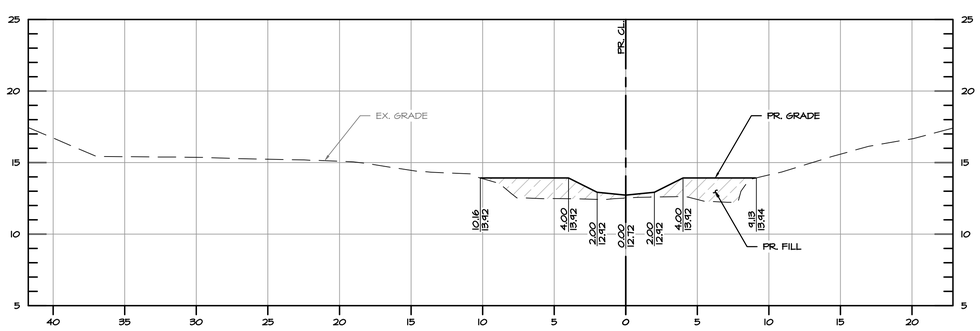
B–B TYPICAL ARMORED STEP POOL

HORIZONTAL: 1" = 5'
VERTICAL: 1" = 5'



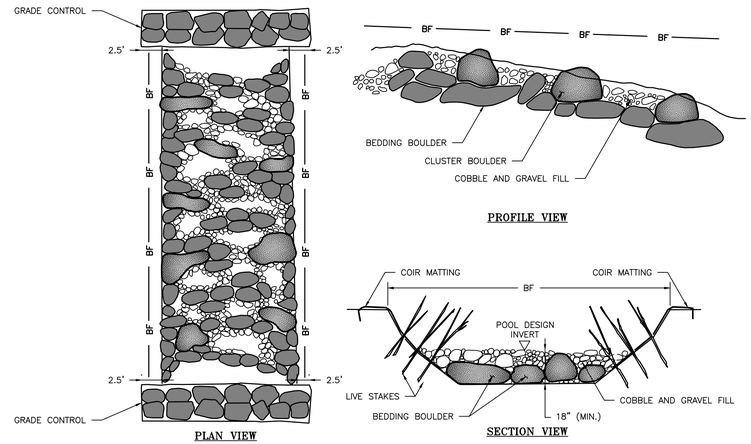
C–C TYPICAL RIFFLE POOL

HORIZONTAL: 1" = 5'
VERTICAL: 1" = 5'



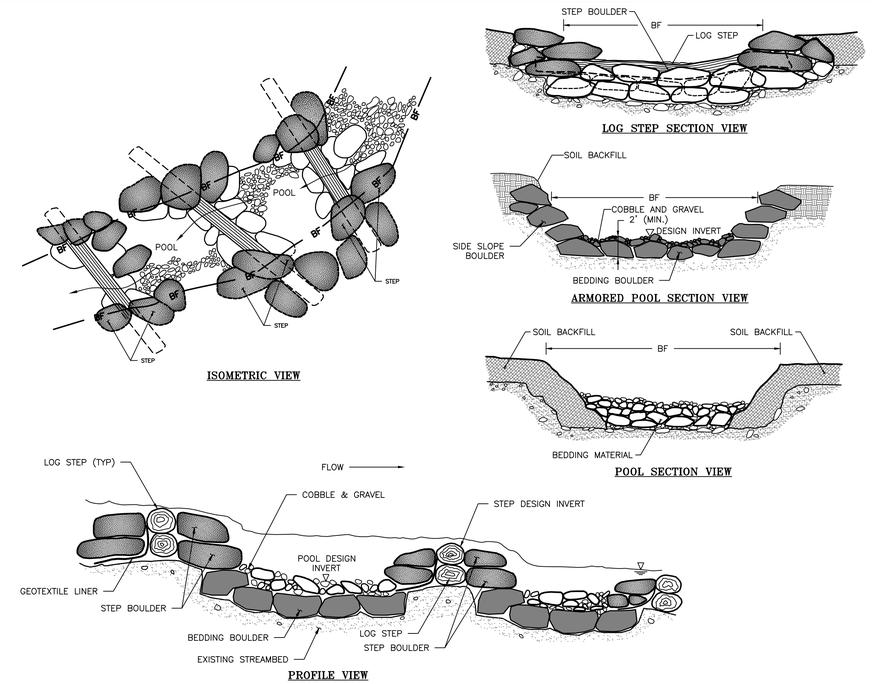
D–D TYPICAL RIFFLE

HORIZONTAL: 1" = 5'
VERTICAL: 1" = 5'



CONSTRUCTED RIFFLE DETAILS

SCALE: NOT TO SCALE

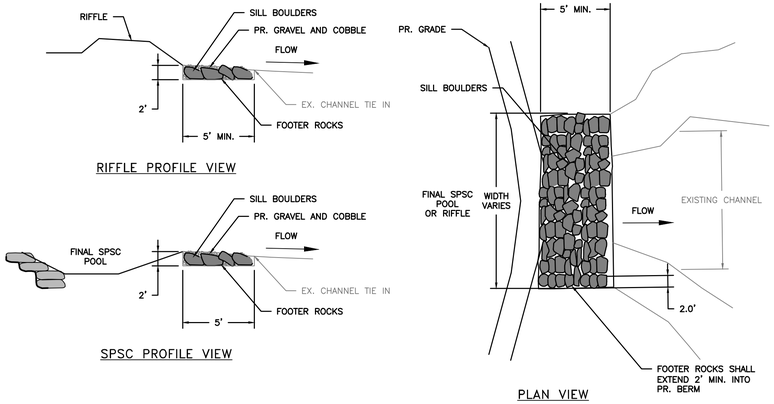


LOG BOULDER STEP POOL DETAILS

SCALE: NOT TO SCALE

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.



SILL ROCK GRADE CONTROL STRUCTURE DETAIL

SCALE: NOT TO SCALE

SILL ROCK GRADE CONTROL STRUCTURE NOTES

1. INSTALLATION OF THE ROCK SILL WILL INVOLVE EXCAVATING A TRENCH ACROSS THE EXISTING STREAMBED AND BACKFILLING WITH LARGE BOULDERS TO FORM THE MAIN COMPONENTS OF THE SILL STRUCTURE. SMALL BOULDERS, COBBLE AND GRAVEL SIZED MATERIAL WILL BE UTILIZED TO FILL THE VOIDS BETWEEN THE BOULDERS AND COMPLETE THE SILL STRUCTURES.
2. THE ROCKS SHALL CONSIST OF ROUND, SUBANGULAR, OR ANGULAR ROCK, SIMILAR IN COLOR, TEXTURE AND DENSITY TO THE NATIVE ROCK ON THE SITE.
3. THE DIMENSIONS OF THE BOULDERS WILL BE A MINIMUM OF 1.5 FOOT AND MAXIMUM OF 2.5 FEET IN DIAMETER. THE COBBLE SIZE MATERIAL WILL RANGE FROM 2.5 INCHES TO 10 INCHES IN DIAMETER AND THE GRAVEL SIZE MATERIAL WILL RANGE FROM 0.5 INCHES TO 2 INCHES IN DIAMETER.
4. THE ROCK SILLS SHALL BE CONSTRUCTED PERPENDICULAR TO THE FLOW, EXTENDING A MINIMUM OF 2 FT INTO THE EXISTING CHANNEL SLOPE FROM BOTTOM OF SLOPE. THE CONTRACTOR SHALL ENSURE THAT THE SILL INVERT IS LOWER THAN THE SIDE SLOPES AT CROSS SECTION 1, AS DIRECTED BY THE ENGINEER.

30% DESIGN

EG–SWMENG–_____–_____ #_____

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REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
STREAM DETAILS & NOTES

DRAWN BY: JP
DESIGNED BY: JP
REVIEWED BY: CJS

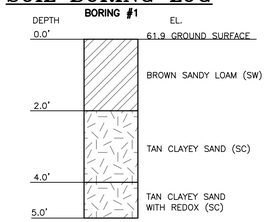
CONTRACT NO : 16–153
SCALE : AS SHOWN
SHEET 19 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

Z:\4_3801_STILLMEADOW_STREAM_&_OUTFALL\STILLMEADOW_OVERALL\CAD Files\Sheet Files\4_3801_DTL01.dwg

SOIL BORING LOG

BORING #1

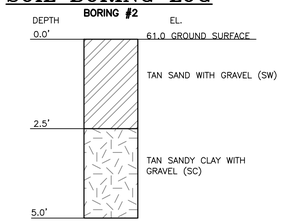


BOTTOM EL. 56.9

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #2

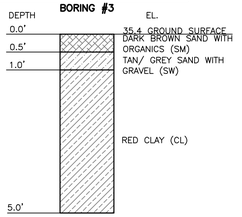


BOTTOM EL. 56.0

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #3

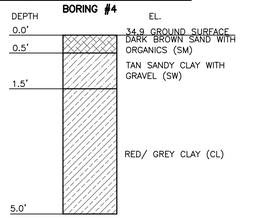


BOTTOM EL. 30.4

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #4

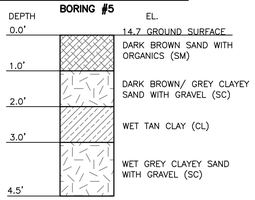


BOTTOM EL. 29.9

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #5

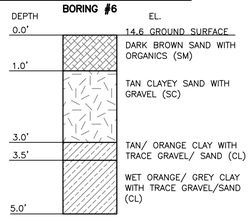


BOTTOM EL. 10.2

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #6

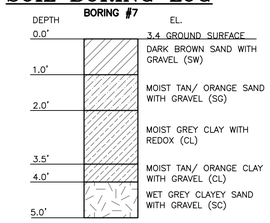


BOTTOM EL. 9.6

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #7

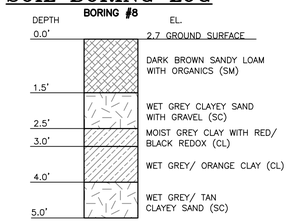


BOTTOM EL. −1.6

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #8

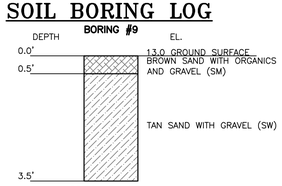


BOTTOM EL. −2.3

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #9

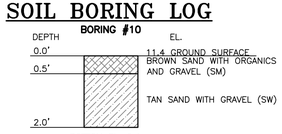


BOTTOM EL. 9.5

SCALE: NOT TO SCALE

SOIL BORING LOG

BORING #10



BOTTOM EL. 9.4

SCALE: NOT TO SCALE

GENERAL GEOTECHNICAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUBGRADE INSPECTIONS AND SOIL COMPACTION TESTING ASSOCIATED WITH THE PROPOSED WORK. THIS WORK SHALL BE COMPLETED BY OR UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND, IF REQUESTED BY THE OWNER/DEVELOPER OR AS INDICATED ON THE APPROVED PLANS. THIS ENGINEER IS HEREON REFERRED TO AS THE GEOTECHNICAL ENGINEER AND SHALL BE FROM AN INDEPENDENT FIRM FROM THAT OF THE CONTRACTOR.

2. ALL FILL AREAS SHALL BE CLEANED OF ALL VEGETATION AND DEBRIS, STRIPPED OF ALL TOPSOIL, AND THEN 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 8" PRIOR TO COMPACTION THAT IS CONTINUOUS OVER THE ENTIRE AREA WHERE FILL IS TO BE PLACED. EACH LAYER OF FILL SHALL BE COMPACTED WITH THE MINIMUM NUMBER OF PASSES NECESSARY TO PRODUCE A FULL ASYMPTOTIC COMPACTION.

3. FOR STRUCTURAL AREAS, UNLESS OTHERWISE NOTED BY THE APPROVED PLANS, COMPACTION SHALL BE CARRIED OUT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT TO A DRY DENSITY OF 95% OF THE MAXIMUM DENSITY (STANDARD PROCTOR DENSITY PER ASTM D-698 AND AASHTO METHOD T-99).

4. FOR VEGETATIVE AREAS, UNLESS OTHERWISE NOTED BY THE APPROVED PLANS, COMPACTION SHALL BE CARRIED OUT AT A LESS THAN OPTIMUM MOISTURE CONTENT (E.G., AT A WATER CONTENT OF LESS THAN 13% ON A SOIL HAVING AN OPTIMUM CONTENT OF 15%) TO A DRY DENSITY OF BETWEEN 80% AND 85% OF THE MAXIMUM DENSITY (STANDARD PROCTOR DENSITY PER ASTM D-698).

5. ALL SOILS USED IN FILL AND BACKFILL MUST BE MOISTENED OR AERATED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. WHERE THE SOIL LAYER IS TOO DRY, THE CONTRACTOR MUST APPLY WATER UNIFORMLY USING APPROVED EQUIPMENT TO INCREASE THE MOISTURE CONTENT TO WITHIN 2% OF THE OPTIMUM. WHERE THE SOIL LAYER IS TOO WET, THE CONTRACTOR MUST DRY THE SOILS BY PLOWING OR DISKING TO AERATE THE SOIL AND REDUCE THE MOISTURE CONTENT TO WITHIN 2% OF THE OPTIMUM.

6. IF THE EXISTING ONSITE MATERIAL IS ROCKY, THEN THE SAME CAN BE USED UP TO 9 INCHES BELOW THE FINAL ELEVATION OR SUBBASE. THE REMAINING FILL MUST BE SELECT EARTH FILL. SOFT SPOTS IDENTIFIED DURING COMPACTION SHALL BE UNDERCUT AND BACKFILLED APPROPRIATELY.

7. ALL SELECT EARTH FILL SHALL BE FREE FROM ORGANICS, FROZEN MATERIAL, AND ROCKS/STONES GREATER THAN 2" INCHES IN ANY DIMENSION. ALL FILL MATERIAL MUST BE FREE FROM WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL OR OTHER DELETERIOUS MATERIALS.

8. ALL IMPORTED EARTH FILL MATERIAL SHALL HAVE A MINIMUM DENISTY 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 6 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.

9. NRCS-MD POND CODE NO. 378 STANDARDS/SPECIFICATIONS (MD-378) SHALL SUPERSEDE THESE NOTES FOR ANY FILL SUBJECT TO MD-378 WHEN THESE NOTES ARE LESS STRINGENT AND/OR IN THE CASE OF CONFLICT. ANY REFERENCE TO THE ENGINEER IN THE MD-378 SHALL BE THE PROFESSIONAL ENGINEER WHO SIGNED AND SEALED THE DESIGN PLANS. ANY REFERENCE TO THE GEOTECHNICAL ENGINEER SHALL BE THE GEOTECHNICAL ENGINEER IN THESE GENERAL NOTES.

10. THE CONTRACTOR SHALL SUBMIT ALL REQUIRED PROCTOR DENSITY RESULTS OF TESTED FILL TO THE OWNER/DEVELOPER FOR REVIEW AND ACCEPTANCE. AT A MINIMUM, WHEN TESTING IS REQUIRED, COMPACTION TESTS SHALL BE COMPLETED FOR EVERY LIFT OF FILL AND 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, WHEN TESTING IS REQUIRED, THERE SHALL BE AT LEAST ONE COMPACTION TEST PER LIFT AND AT LEAST TWO COMPACTION TESTS PER DAY. THE GEOTECHNICAL ENGINEER SHALL SUPPLY THE OWNER/DEVELOPER WITH CERTIFIED COMPACTION TEST RESULTS, INCLUDING CERTIFICATION OF PIPE BEDDING SUBGRADE AND/OR FILL SUBGRADE, WHERE APPROPRIATE.

11. ALL REQUIRED INSPECTIONS, TESTS, SUPPORTING DATA, REPORTS, AND CERTIFICATIONS SHALL BE PROVIDED TO THE OWNER/DEVELOPER AND SHALL BE SIGNED AND SEALED BY THE GEOTECHNICAL ENGINEER. DAILY INSPECTION REPORTS, IF REQUESTED, MAY BE PROVIDED WITHOUT BEING IMMEDIATELY SIGNED AND SEALED BY THE GEOTECHNICAL ENGINEER. THESE REPORTS SHALL BE COMPILED, REVIEWED, SIGNED AND SEALED, AND SUBMITTED TO THE OWNER/DEVELOPER NO LATER THAN 30 DAYS AFTER THE COMPLETION OF THE PROJECT.

ROXBURY COURT
EXISTING TREE SURVEY

TREE NUMBER	DBH (INCHES)	LATIN NAME	COMMON NAME	CONDITION/NOTES
TR 400	12.0	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 401	22.0	PINUS STROBUS	EASTERN WHITE PINE	GOOD
TR 402	17.9	PINUS TAEDA	LOBLOLLY PINE	GOOD
TR 403	17.0	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 404	17.5	ZELKOVA SERRATA	JAPANESE ZELKOVA	GOOD
TR 405	29.3	PINUS STROBUS	EASTERN WHITE PINE	GOOD
TR 406	14.9	PAULOWNIA TOMENTOSA	PRINCESS TREE	GOOD
TR 407*	14.9	ACER RUBRUM	RED MAPLE	GOOD
TR 408*	17.0	PICEA ABIES	NORWAY SPRUCE	GOOD
TR 409*	25.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 410*	32.7, 22.5	CARYA TOMENTOSA	MOCKERNUT HICKORY	MULTI-STEM, FAIR
TR 411*	18.1	ACER RUBRUM	RED MAPLE	GOOD
TR 412*	16.1	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 413	15.7, 15.5	PRUNUS SEROTINA	BLACK CHERRY	MULTI-STEM, GOOD
TR 414	23.9	PAULOWNIA TOMENTOSA	PRINCESS TREE	GOOD
TR 415*	18.0	CARYA TOMENTOSA	MOCKERNUT HICKORY	GOOD
TR 416*	13.0	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 417*	13.0	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 418*	34.0	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 419*	23.4	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
TR 420*	33.5	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (CAVITY)
TR 421*	32.2	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 422*	29.6	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (CAVITY)
TR 423*	12.4	PRUNUS AVIUM	SWEET CHERRY	GOOD
TR 424*	18.0	PRUNUS SEROTINA	BLACK CHERRY	POOR
TR 425*	12.3	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 426*	15.8	PRUNUS SEROTINA	BLACK CHERRY	FAIR (VINES)
TR 427*	26.4	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 428*	16.0	CARYA TOMENTOSA	MOCKERNUT HICKORY	GOOD
TR 429*	25.8	PAULOWNIA TOMENTOSA	PRINCESS TREE	FAIR
TR 430	27.8	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR (VINES)
TR 431	12.8	ACER RUBRUM	RED MAPLE	GOOD
TR 432	20.5	PRUNUS SEROTINA	BLACK CHERRY	FAIR (VINES)
TR 433	19.0	PRUNUS SEROTINA	BLACK CHERRY	FAIR (VINES)
TR 434	17.2, 14.9	PRUNUS SEROTINA	BLACK CHERRY	MULTI-STEM, FAIR (VINES)
TR 435	21.0	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR
TR 436*	17.0	QUERCUS PRINUS	CHESTNUT OAK	GOOD
TR 437*	34.0	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
TR 438*	12.5	CARYA GLABRA	PIGNUT HICKORY	GOOD
TR 439*	12.2	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 440*	15.3	PRUNUS AVIUM	SWEET CHERRY	GOOD
TR 441*	15.8, 5.2	MORUS RUBRA	RED MULBERRY	MULTI-STEM, POOR
TR 442*	15.3	QUERCUS RUBRA	NORTHERN RED OAK	FAIR
TR 443	13.2	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
TR 444	13.0	PRUNUS SEROTINA	BLACK CHERRY	POOR
TR 445	13.8	CARYA GLABRA	PIGNUT HICKORY	GOOD
TR 446	17.9	QUERCUS COCCINEA	SCARLET OAK	GOOD
TR 447	16.8	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 448*	18.0	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 449*	18.8	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 450*	44.2	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR
TR 451	14.9	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 452	14.9	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 453	16.1	PRUNUS SEROTINA	BLACK CHERRY	GOOD
TR 454	13.5	PRUNUS SEROTINA	BLACK CHERRY	POOR (VINES)
TR 455	12.2	PRUNUS SEROTINA	BLACK CHERRY	FAIR (VINES)
TR 456	14.0	PINUS STROBUS	EASTERN WHITE PINE	GOOD
TR 457	13.5	ACER SACCHARINUM	SILVER MAPLE	GOOD
TR 458	28.5	PINUS STROBUS	EASTERN WHITE PINE	GOOD
TR 459	15.5	PRUNUS SEROTINA	BLACK CHERRY	GOOD

*** TREES TO BE REMOVED**

30% DESIGN

REVISIONS

EG-SWMENG-_____-____ #_____

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BAYLAND JOB NO. 4_3801

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
RC EXISTING TREE TABLE & NOTES

DRAWN BY: JP
DESIGNED BY: JP
REVIEWED BY: CJS

CONTRACT NO : 16-153
SCALE : AS SHOWN
SHEET 20 OF 21
DATE : 10/31/17

TAX MAP :
HCG BILLING ID No.:
HCG DWG ID No.:
SCALE 1 inch

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EXISTING CONDITIONS HYDROLOGY

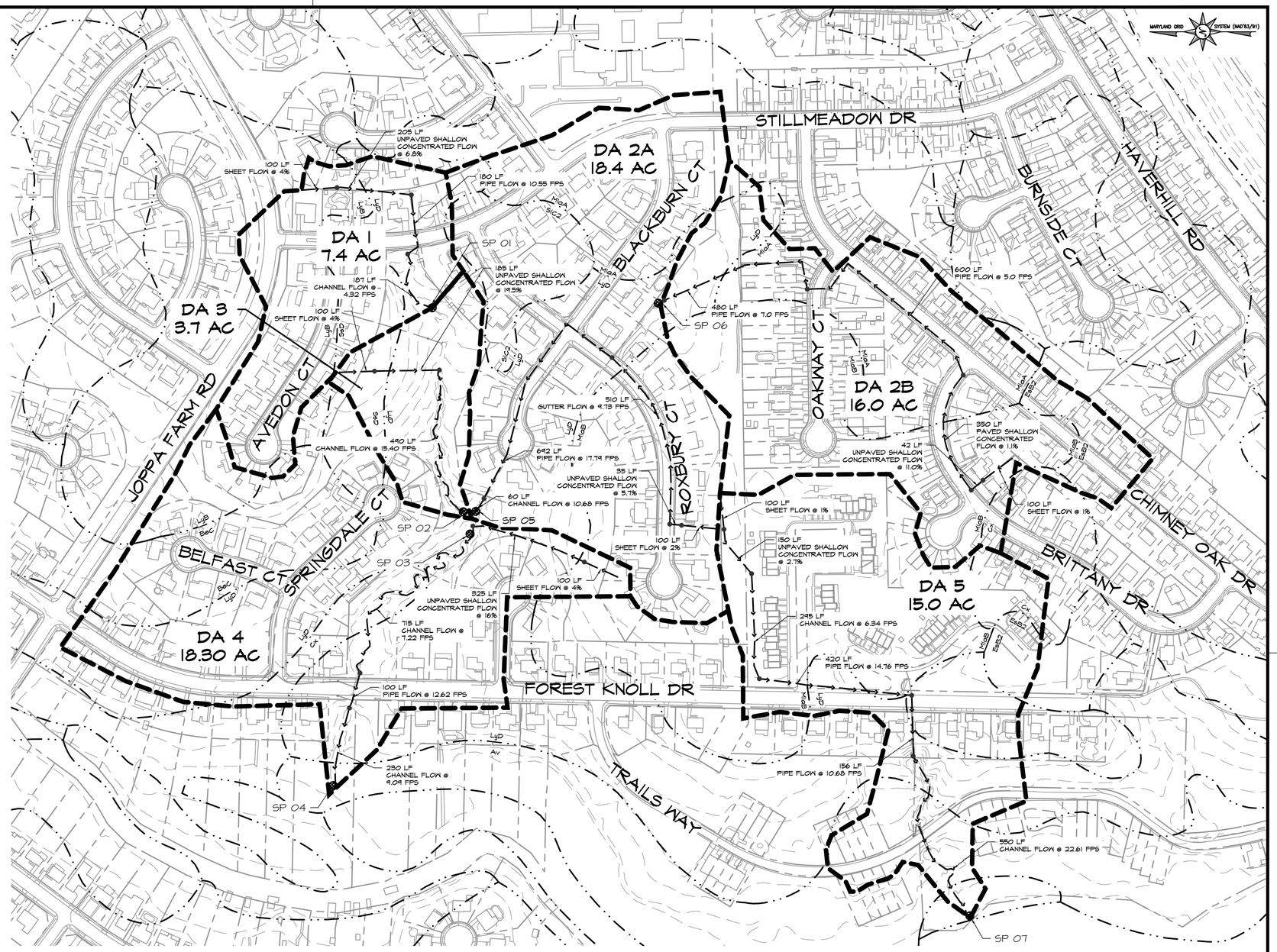
	AREA (AC.)	CN	Tc (hr)	Q_1 (cfs)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
DA 1 (SP01)	7.40	80	0.211	3.90	5.96	16.78	28.09
DA 3	3.66	68	0.374	0.32	0.67	3.78	8.19
SP02	–	–	–	4.09	6.43	20.13	35.61
DA 2 (SP05)	18.40	81	0.238	18.66	28.14	76.01	126.15
SP03	–	–	–	22.71	34.55	96.06	161.36
DA 4	18.30	80	0.231	9.19	14.11	39.85	66.93
OUTLET (SP04)	–	–	–	31.73	48.36	135.11	226.59
DA 5 (TRAILS WAY) (SP07)	14.99	80	0.268	17.52	25.02	44.21	71.30

PROPOSED CONDITIONS HYDROLOGY

	AREA (AC.)	CN	Tc (hr)	Q_1 (cfs)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
DA 1 (BMP 1) (SP01)	7.40	80	0.211	3.90	5.96	16.78	28.09
DA 3	3.66	68	0.374	0.32	0.67	3.78	8.19
SP02	–	–	–	4.09	6.43	20.13	35.61
DA 2B (RC) (TO FACILITY)	16.00	81	0.409	6.22	9.38	26.12	45.13
DA 2B (RC) (SP06) (FROM FACILITY)	–	–	–	1.55	4.99	25.52	44.49
DA 2A (BLACKBURN COURT OUTFALL)	18.43	80	0.193	10.26	15.70	44.20	73.19
SP05	–	–	–	10.41	15.90	60.85	107.90
SP03	–	–	–	14.44	22.22	80.85	143.61
DA 4	18.30	80	0.231	9.19	14.11	39.85	66.93
OUTLET (SP04)	–	–	–	23.43	35.97	118.25	208.09
DA 5 (TRAILS WAY) (SP07)	14.99	80	0.268	17.52	25.02	44.21	71.30

SOILS CHART

SYMBOL	SOIL	HSG
Av	ALLUVIAL LAND	D
BeC	BELTSVILLE SILT LOAM (SLOPES 5%–10%)	C
Cx	CUT AND FILL LAND	
EsB2	ELSINBORO LOAM (SLOPES 2%–5%) MODERATELY ERODED	B
EsC2	ELSINBORO LOAM (SLOPES 5%–10%) MODERATELY ERODED	B
LyB	LOAMY AND CLAYEY LAND (SLOPES 0%–5%)	C
LyD	LOAMY AND CLAYEY LAND (SLOPES 5%–15%)	C
MlaA	MATTAPEX SILT LOAM (SLOPES 0%–2%) NORTHERN COASTAL PLAIN	C
MlaB	MATTAPEX SILT LOAM (SLOPES 2%–5%) NORTHERN COASTAL PLAIN	C
SlC2	SASSAFRAS LOAM (SLOPES 10%–15%) MODERATELY ERODED	B
SsD	SASSAFRAS AND JOPPA SOILS (SLOPES 10%–15%)	B



DRAINAGE AREA MAP

SCALE: 1" = 150'

0 75 150 300

1 INCH = 150 FEET

30% DESIGN

REVISIONS

HARFORD COUNTY, MARYLAND

STILLMEADOW STREAM & OUTFALL RESTORATION
DRAINAGE AREA MAP

DRAWN BY: FHM/EM
DESIGNED BY: FHM
REVIEWED BY: CJS

CONTRACT NO : 16–153
SCALE : AS SHOWN
SHEET 21 OF 21
DATE : 10/31/17

S/C PLAN # _____ GRA # _____–____

EG–SWMENG–_____–____ #_____

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BAYLAND JOB NO. 4_3801

TAX MAP :

HCG BILLING ID No.:

HCG DWG ID No.:

SCALE: 1 inch

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