FALLSTON HIGH AND MIDDLE SCHOOL STREAM RESTORATION

BID NO. 24-215

WATERSHED PROTECTION AND RESTORATION OFFICE

HARFORD COUNTY, MARYLAND

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PROJECT SUMMARY

TOTAL LENGTH OF STREAM RESTORED:5,734 (4,850 LF PROTOCOL 1)
STREAM USE CLASS:IV-P
STREAM CLOSURE PERIOD:MARCH 1 - MAY 31, INCLUSIVE
LOAD REDUCTIONS:

FACILITY	TSS REDUCTION	TN REDUCTION	TP REDUCTION
PROTOCOL 1	162.4 TONS/YR	240.3 LBS/YR	47.1 LBS/YR
PROTOCOL 2	N/A	33.9 LBS/YR	N/A
PROTOCOL 5	213.8 TONS/YR	316.2 LBS/YR	62.0 LBS/YR
RSC	21.9 TONS/YR	90.6 LBS/YR	14.1 LBS/YR
SAND FILTER	22.8 TONS/YR	59.3 LBS/YR	12.8 LBS/YR

MDE ACCOUNTING FOR STORMWATER WASTELOAD ALLOCATIONS AND IMPERVIOUS AREAS TREATED
** RECOMMENDATION OF GROUP 2 FOR CREDITING OUTFALL AND GULLY STABILIZATION

IA CREDIT SUMMARY:

FACILITY	DA	IA	PE REQ.	PE PROV.	IA CREDIT
PROTOCOL 1	-	-	N/A	N/A	24.92 AC
PROTOCOL 2	-	-	N/A	N/A	0.62 AC
PROTOCOL 5	-	-	N/A	N/A	32.81 AC
RSC	10 AC	6.60 AC	N/A	0.59 IN	3.91 AC
SAND FILTER	10 AC	5.88 AC	N/A	1.0 IN	5.88 AC

MDE ACCOUNTING FOR STORMWATER WASTELOAD ALLOCATIONS AND IMPERVIOUS AREAS TREATED
** RECOMMENDATION OF GROUP 2 FOR CREDITING OUTFALL AND GULLY STABILIZATION PROJECTS.

CAPITAL PROJECT APPROVAL

REVIEWED & APPROVAL RECOMMENDED

Brittany Ayers 3/14/2024
PROJECT ~~ENGINEER~~ MANAGER DATE

APPROVAL RECOMMENDED

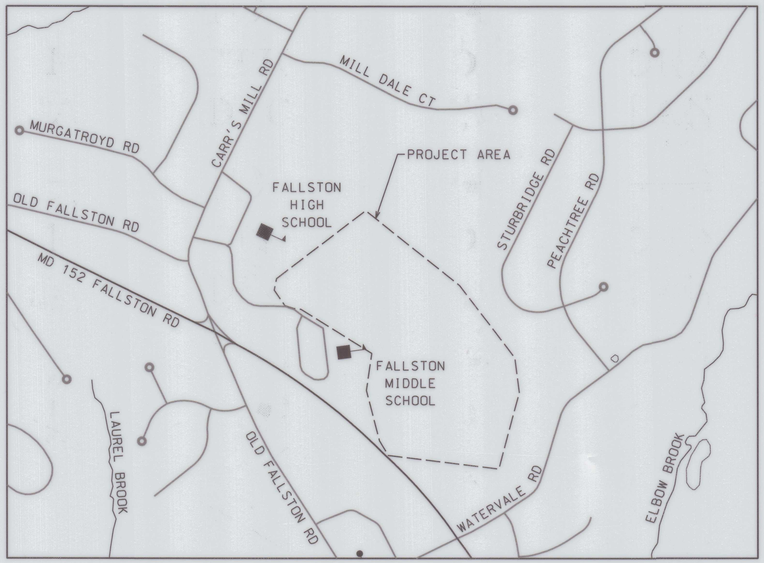
03/14/2024
~~CHIEF ENGINEER~~ MS4 PROGRAM ADMINISTRATOR DATE

APPROVAL RECOMMENDED

03/15/24
DEPUTY DIRECTOR OF PUBLIC WORKS DATE

APPROVAL

3-18-24
DIRECTOR OF PUBLIC WORKS DATE



LOCATION MAP

SCALE 1" = 600'

EXISTING PLAN LEGEND

- EXISTING CONTOUR
- EXISTING STORM DRAIN
- EXISTING HEADWALL/ ENDWALL
- EXISTING CONCRETE CHANNEL
- TREE LINE
- WETLAND
- WETLAND BUFFER
- WATERS OF THE U.S.
- EXISTING 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING MDOT SHA RIGHT OF WAY
- PROPERTY LINE
- SANITARY SEWER
- SANITARY SEWER MANHOLE
- UNDERGROUND WATER LINE

GENERAL NOTES

1. SPECIFICATIONS: ALL WORK IS TO BE PERFORMED IN ACCORDANCE MARYLAND STATE HIGHWAY ADMINISTRATIONS STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2020 AND THE MOST RECENT REVISIONS THEREOF AND ADDITIONS THERETO.

2. UTILITIES: UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON LIMITED INFORMATION AVAILABLE. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF THIS INFORMATION. THE COST OF REPAIR OR REPLACEMENT OF ANY SUCH FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE BORNE BY HIM.

   CONTACT "MISS UTILITY" PHONE 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THERE SHOULD BE NO EXCAVATION UNTIL THE LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN DETERMINED.

3. STANDARD DETAILS: REFERENCE MADE TO STANDARDS ARE TAKEN FROM THE HARFORD COUNTY ROAD CODE "BOOK OF STANDARD DETAILS" AND FROM "THE MARYLAND STATE HIGHWAY ADMINISTRATION'S BOOK OF STANDARDS-HIGHWAY AND INCIDENTAL STRUCTURES", IT WILL BE THE CONTRACTOR'S RESPONSIBILITY

   REVISED STANDARDS UP TO AND INCLUDING THE DATE OF THE ADVERTISEMENT OF THIS CONTRACT.

4. RIGHT-OF-WAY LINES: RIGHT-OF-WAY LINES SHOWN ON THESE PLANS DO NOT INCLUDE EASEMENTS. THEY ARE FOR ASSISTANCE IN INTERPRETING THE PLANS ONLY. THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES. FOR OFFICIAL FEE RIGHT-OF-WAY AND EASEMENT INFORMATION, SEE THE APPROPRIATE RIGHT-OF-WAY PLATS.

5. SOIL CONSERVATION: THE CONTRACTOR SHALL NOT DISTURB THE EXISTING VEGETATION OUTSIDE THE LIMITS OF DISTURBANCE. STOCKPILING AND STAGING WILL NOT BE ALLOWED ON SITE. THE CONTRACTOR MUST SECURE AN OFF-SITE AREA AND ANY NECESSARY PERMITS. SOIL STABILIZATION WILL CONFORM TO 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE CONTRACTOR WILL OBTAIN APPROVAL OF THE HARFORD COUNTY SOIL CONSERVATION DISTRICT FOR HIS PLANS IN CONTROLLING SEDIMENT EROSION FOR THE BORROW AREA AND DISPOSING OF ANY WASTE EXCAVATION.

6. EXISTING MAILBOXES AND EXISTING SIGNS: ALL EXISTING MAILBOXES, SIGNS AND PAPER BOXES DISTURBED DURING CONSTRUCTION SHALL BE TEMPORARILY RESET IMMEDIATELY AND PERMANENTLY RESET AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

7. SURVEYS:

   HORIZONTAL CONTROL - COORDINATES SHOWN ON THE PLANS ARE BASED ON THE MARYLAND GRID COORDINATE SYSTEM, NAD 83(1991).

   VERTICAL CONTROL - ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTCAL DATUM OF 1988 (NAVD88).

   TOPOGRAPHIC SURVEY WAS PERFORMED BY CEM BETWEEN FEBRUARY AND JUNE OF 2021.

   COORDINATES SHOWN HEREON ARE REFERENCED TO THE MARYLAND COORDINATE SYSTEM (NAD83/1991) AND ARE BASED ON GPS STATIC OBSERVATIONS OF LOCAL CONTROL COORDINATES AS FOLLOWS:

POINT	NORTHING	EASTING	ELEVATION	CODE	DESCRIPTION
FALLSTON	675445.1357	1477585.5669	455.7900	NGS JV6291	SURVEY DISK ON CONC. MON. STAMPED 41 FALLSTON 1989
FALLSTON AZ	676752.3192	1477595.2539	464.9790	NGS JV6325	AZIMUTH MARK DISK STAMPED 51 FALLSTON 1989

ONLY THOSE CONTROL POINTS SHOWN ON THESE PLANS ARE TO BE USED FOR THE CONSTRUCTION OF THIS PROJECT.

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. 40814, EXPIRATION DATE: 08/09/2023

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Owner:
HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS
DIVISION OF CONSTRUCTION MANAGEMENT
WATERSHED PROTECTION AND RESTORATION OFFICE

212 SOUTH BOND STREET, 1ST FLOOR
BEL AIR, MARYLAND, 21014
CONTACT: CHRISTINE BUCKLEY
PH: (410) 638-3217 EXT 1176

Prepared By :
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1 East Pratt Street, Suite 300
Baltimore, MD 21202
PH: (410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

S/C PLAN # 59886

GP # GRA-008162-2022

Revisions

3/13/2024

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TITLE SHEET

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 1 Of 124

Scale : AS SHOWN
Date : AUGUST 2023
Sheet No. TS-01 Of TS-01

BID No.:

HCG DWG ID No.:

BY: $USERNAME$

PLOTTED: $DATETIME$

ABBREVIATIONS

AASHTO ..... American Association of State Highway Transportation Officials
ADT..... Average Daily Traffic
AHD..... Ahead
APPROX..... Approximate
℄ or ℒ..... Baseline
BK ..... Back /Book
BIT. ..... Bituminous
B.C. ..... Bituminous Concrete
B.M. ..... Bench Mark
BOT. ..... Bottom
C.C. ..... Center of Curve
CAP..... Corrugated Aluminum Pipe
CAPA ..... Corrugated Aluminum Pipe Arch
CATV ..... Cable Television
C.B.R..... California Bearing Ratio
℄ or ℒ..... Centerline
CL. ..... Class
CLF..... Chainlink Fence
CMP..... Corrugated Metal Pipe
C.O. ..... Cleanout
COMB..... Combination
CONC. ..... Concrete
CONSTR. ..... Construction
COR. ..... Corner
CORR. ..... Correction
CPP–S ..... Corrugated Polyethylene Pipe – Type 'S'
CSP ..... Corrugated Steel Pipe – Aluminized Type 2
CSPA ..... Corrugated Steel Pipe Arch – Aluminized Type 2
DC..... Degree of Curve
D.H.V. ..... Design Hourly Volume
D.I. ..... Drop Inlet
DIA. ..... Diameter
D.O..... Double Opening
E ..... East
E ..... Electric
E ..... External Distance
EA ..... Each
EB ..... Eastbound
ELEV ..... Elevation
ES ..... End Section
EX or EXIST. Existing
FT ..... Feet
F or FL ..... Flowline
F.B.D. ..... Flat Bottom Ditch
FCE..... Forest Conservation Easement
F.H..... Fire Hydrant
FWD. ..... Forward
G ..... Gas
G.V. ..... Gas Valve
H.B. ..... Handbox
HDPE ..... High Density Polyetheylene
HDWL. ..... Headwall
HERCP..... Horizontal Ellipitical Reinforced Concrete Pipe
HP..... High Point
IN ..... Inch
I.S.T..... Inlet Sediment Trap
INV. ..... Invert
J.B. ..... Junction Box
K ..... K Inlet
L ..... Length
LF ..... Linear Feet
L.L. ..... Liquid Limit
LP ..... Low Point
L.P. ..... Light Pole
LT. ..... Left
MAC..... Macadam
M.C. ..... Moisture Content
MAX. ..... Maximum
M.D.D..... Maximum Dry Content
MOD..... Modified
MIN..... Minimum
N..... North
NB ..... Northbound
NE ..... Northeast
N.P. ..... Non–Plastic
O.C. ..... On Center
OHE ..... Overhead Electric
O.M. ..... Optimum Moisture
PAV'T..... Pavement
PC ..... Point of Curvature
PCC ..... Point of Compound Curvature
P/C ..... Point of Crown
P/GE ..... Profile Grade Elevation
P.G.E. ..... Profile Ground Elevation
P.G.L. ..... Profile Grade Line
P/GL ..... Profile Ground Line
P/R ..... Point of Rotation
P.I. ..... Plasticity Index
PI ..... Point of Intersection
POC ..... Point On Curve
POT ..... Point On Tangent
PPWP ..... Polyvinyl Chloride Profile Wall Pipe
PROP ..... Proposed
PRC ..... Point of Reverse Curve
PT ..... Point
PT ..... Point of Tangency
PVC ..... Point of Vertical Curve
PVC ..... Polyvinyl Chloride
PVI ..... Point of Vertical Intersection
PVRC ..... Point of Vertical Reverse Curve
PVT ..... Point of Vertical Tangency
R ..... Radius
R.F. ..... Rock Fragments
RT ..... Right
RTC ..... Real Time Control
RW or R/W... Right of Way
RCP ..... Reinforced Concrete Pipe
RCPP ..... Reinforced Concrete Pressure Pipe
R.Q.D. ..... Rock Quality Designation
R.M. ..... Rootmat
S ..... South
SAN. ..... Sanitary Sewer
SB or S/B ..... Southbound
S.D. ..... Storm Drain
S.D.D. ..... Surface Drain Ditch
S/E ..... Super Elevation
SF ..... Silt Fence
SF ..... Square Feet
SHT. ..... Sheet
SPP ..... Structural Steel Plate Pipe
SPPA ..... Structural Steel Plate Pipe Arch
S.P.T. ..... Standard Penetration Testing
SRP ..... Steel Spiral Rib Pipe – Aluminized Type 2
SRPA ..... Steel Spiral Rib Pipe Arch – Aluminized Type 2
SSD ..... Stopping Sight Distance
SSF ..... Super Silt Fence
STD. ..... Standard
STA. ..... Station
SO. ..... Single Opening
SY ..... Square Yards
SWM ..... Stormwater Management
T ..... Tangent
T ..... Telephone
T.C. ..... Top of Cover
T.G. ..... Top of Grate
T or TL ..... Traverse Line
T.M. ..... Top of Manhole
TRAV. ..... Traverse
TS ..... Temporary Swale
T.S. ..... Top of Slab
T.S. ..... Topsoil
TYP. ..... Typical
U.D. ..... Under Drain
U.G. ..... Underground
U.P. ..... Utility Pole
USDA ..... United States Department of Agriculture
VCL ..... Vertical Clearance
V.C.L. ..... Vertical Curve Length
W ..... Water
W ..... West
WB ..... Westbound
WB ..... Wetland Buffer
W.M. ..... Water Meter
W.S. ..... Wrapped Steel
WUS ..... Waters of the United States
W.V. ..... Water Valve

PLAN LEGEND

EXISTING CONTOUR
EXISTING STORM DRAIN
EXISTING HEADWALL/ ENDWALL
EXISTING CONCRETE CHANNEL
TREE LINE
WETLAND
WETLAND BUFFER
WATERS OF THE U.S.
EXISTING 100–YEAR FLOODPLAIN BOUNDARY
EXISTING MDOT SHA RIGHT OF WAY
PROPERTY LINE
SANITARY SEWER
SANITARY SEWER MANHOLE
UNDERGROUND WATER LINE
PROPOSED 100–YEAR FLOODPLAIN BOUNDARY
LIMIT OF DISTURBANCE
FLOODPLAIN BENCH LIMIT
CUT LINE
FILL LINE
PROPOSED STREAM/ CHANNEL ALIGNMENT
CLAY CHANNEL BLOCK
RIFFLE GRADE CONTROL
CASCADE
ROCK TOE
ROCK SILL
RIPRAP PLUNGE POOL
BRUSH ARMOR
TOE WOOD
FLOODPLAIN ROOTWAD
ROOTWAD REVETMENT
LOG VANE
LOG DROP
MICROPOOL
FLOODPLAIN SILL

GENERAL NOTES

1. REMOVAL OF FALLEN TREES AND DEBRIS JAMS WITHIN AND ALONG THE STREAM SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR CLEARING AND GRUBBING.
2. REFER TO DETAIL SHEETS (DE–A01 TO DE–A10) FOR STRUCTURE REFERENCE POINTS.
3. FLOODPLAIN BENCHES SHALL BE CONSTRUCTED WITH HEAVY BACKFILL, TOPSOIL, COIR MAT, AND COIR BLANKET. MEASUREMENT AND PAYMENT FOR EACH INDIVIDUAL COMPONENT SHALL BE INCLUDED IN THE ITEM FOR THAT COMPONENT.
4. CASCADE LIMITS AS SHOWN REPRESENT THE GRADE CONTROL SURFACE OF THE CASCADES. ADDITIONAL FURNISHED CASCADE MATERIAL IS TO BE PLACED IN POOLS ADJACENT TO CASCADES AS SHOWN ON THE PROFILE SHEETS (PR–A01 TO PR–A09) AND DETAIL SHEET DE–03.
5. FURNISHED RIFFLE BED MATERIAL LIMITS AS SHOWN REPRESENT THE FINISHED VISIBLE SURFACE OF THE RIFFLES. ADDITIONAL FURNISHED RIFFLE BED MATERIAL IS TO BE PLACED UPSTREAM AND DOWNSTREAM OF RIFFLES (GLIDES AND RUNS) AS SHOWN ON THE PROFILE SHEETS (PR–A01 TO PR–A09) AND DETAIL SHEET DE–A02. FURNISHED RIFFLE BED MATERIAL SHALL ALSO EXTEND PER DIM. H ON DETAIL SHEET DE–A02. THE TOE OF SLOPE LINE ON BOTH BANKS AND BE BURIED BELOW THE CONSTRUCTED CHANNEL BANKS, AS SHOWN ON THE CROSS–SECTION SHEETS (CS–A01 TO CS–A25) AND DETAIL SHEET DE–A02.
6. SYMBOLS FOR BANK STABILIZATION STRUCTURES ARE PROVIDED IN PLAN VIEW TO DEPICT THE GENERAL LOCATION OF THE STRUCTURE. THE STRUCTURE SHALL BE CONSTRUCTED PER THE DETAIL PROVIDED AND THE ASSOCIATED CONTROL POINTS. DETAILS FOR BANK STRUCTURES ARE LOCATED ON DE–A04, DE–A06, DE–A07, AND DE–A08.
7. CLAY BLOCKS ARE DEPICTED GENERALLY AS THE TOP DIMENSIONS IN PLAN VIEW ON SR–01 – SR–07. CONSTRUCT PER DETAIL ON DE–04 AND THE STRUCTURE TABLES ON SR–01 – SR–07.
8. EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS/HER OWN SATISFACTION PRIOR TO CONSTRUCTION. REPAIRS OR REPLACEMENTS TO UTILITIES OR TO PRIVATE PROPERTY DAMAGES RESULTING FROM THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION, SHALL BE MADE AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE COUNTY.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE SCHEDULE WITH THE ENGINEER IN ORDER TO HAVE OVERSIGHT OF STRUCTURES. STRUCTURES CONSTRUCTED FOR THE FIRST TIME SHALL BE OVERSEEN BY THE ENGINEER.

TREE PROTECTION NOTES:
1. MICRO–GRADING SHALL BE PERFORMED TO PRESERVE THE SPECIFIED TREES NOTED ON THE PLANS, OR ANY OTHER LARGE (18 TO <30–INCHES DBH) OR SPECIMEN TREES (>30–INCHES DBH) NOT NOTED FOR REMOVAL, WHERE THERE IS A MINIMAL DEPTH OF GRADING (CUT OR FILL) PROPOSED BENEATH THE CANOPY AND/OR WITHIN THE CRITICAL ROOT ZONE (CRZ) OF THE TREES. THE CRZ IS MEASURED AS 1–FOOT OF RADIUS OUTWARD FROM THE TREE TRUNK FOR EVERY 1–INCH OF DBH FOR TREES WITHIN FORESTED AREAS, AND 1.5–FEET OF RADIUS FOR EVERY 1–INCH OF DBH FOR ISOLATED SPECIMEN TREES (>30–INCHES DBH), IN ACCORDANCE WITH THE HARFORD COUNTY FOREST COVER CONSERVATION REPLACEMENT MANUAL.
2. MICRO–GRADING SHALL INCLUDE TREE ROOT PRUNING, PER SECTION 715 –TREE ROOT PRUNING MDOT SHA STANDARD SPECIFICATIONS FOR GRADING DEPTHS OF MORE THAN 6–INCHES, PRIOR TO MECHANICAL GRADING. IN AREAS WITH GRADING DEPTHS OF LESS THAN 6–INCHES, EXCAVATION AND GRADING ADJUSTMENT SHALL BE PERFORMED BY HAND DIGGING TO AVOID DAMAGE TO TREE ROOTS BY MECHANICAL EQUIPMENT.
3. TREES NOTED FOR TRIMMING SHALL HAVE THE TOP GROWTH OF THE TREE THINNED OUT BY TRIMMING THE LATERAL BRANCHES PER SECTION 712 – TREE BRANCH PRUNING MDOT SHA STANDARD SPECIFICATIONS.
4. TREES NOTED FOR FELLING AND DELIMBING, INCLUDING REMOVAL OF THE MATERIALS CUT, DUE TO POOR HEALTH OR OVERHANG CONCERNS WHICH MAY CAUSE A LONG–TERM RISK TO BANK STABILITY, SHALL BE FLUSH CUT IN ACCORDANCE WITH SECTION 714 – TREE FELLING MDOT SHA STANDARD SPECIFICATIONS. THE STUMPS OF SELECT TREES, AS DIRECTED BY THE ENGINEER, SHALL BE CUT TO A HEIGHT NO MORE THAN 1 TO 3–FEET ABOVE THE SOIL SURFACE, LEAVING THE ROOT BALL INTACT. THE CUT STUMP WILL PROVIDE A HABITAT FEATURE, MAY ALLOW FOR NEW SPROUTING AND REGROWTH TO OCCUR, AND THE ROOTS OF THE STUMP WILL CONTINUE TO HOLD THE SOIL ALONG THE BANKS.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG–SWMENG– 000121–2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GENERAL NOTES

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 2 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. GN–01 Of GN–01

BID No.:
HCG DWG ID No.:
SCALE: 1" = 1'-0"

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pGN-N001_Fallston.dgn

JENNIFER & MATTHEW BARLOW
2012 MILL DALE COURT
MAP 48, PARCEL 320
LOT 12 - P.B. 94, PLAT 90
L. 5374, F. 546

GLENN & NANCY GEALY
2011 MILL DALE COURT
MAP 48, PARCEL 320
LOT 11 - P.B. 100, PLAT 46
L. 2522, F. 124

PINNACLE DESIGN DEVELOPMENT INC.
1999 MILL DALE COURT
MAP 48, PARCEL 320
LOT 7 - P.B. 208, PLAT 49
L. 13659, F. 69

STURBRIDGE ROAD

CRAIG & CAROLYN HEIGER
1106 STURBRIDGE RD
MAP 48, PARCEL 388
LOT 5 - BLOCK 'B'
P.B. 18, P. 54
L. 9868, F. 29

DANIEL & KRISTA ZORN
1110 STURBRIDGE RD
MAP 48, PARCEL 398
LOT 6
P.B. 20, P. 60
L. 7760, F. 371

PHILIP BROTMAN
1106 STURBRIDGE RD
MAP 48, PARCEL 388
LOT 4 - BLOCK 'B'
P.B. 18, P. 54
L. 5886, F. 560

KIMBERLY & STEPHEN SHAW
1104 STURBRIDGE RD
MAP 48, PARCEL 388
LOT 3 - BLOCK 'B'
P.B. 18, P. 54
L. 12913, F. 474

AUDREY & KEVIN VOHS
1102 STURBRIDGE RD
MAP 48, PARCEL 388
LOT 2 - BLOCK 'B'
P.B. 18, P. 54
L. 11034, F. 63

CLINTON & SHARON GARDNER
1100 STURBRIDGE RD
MAP 48, PARCEL 388
LOT 1 - BLOCK 'B'
P.B. 18, P. 54
L. 7860, F. 115

BROOKHILL FARMS COMMUNITY ASSOC. INC.
WATERVALE RD
MAP 48, PARCEL 47
P.B. 18, P. 54
L. 1077, F. 652

JOSEPH & DEBORAH OPKYKE
WATERVALE RD
MAP 48, PARCEL 215
L. 1820, F. 15

JOSEPH & JENNIFER ERCOLANO
3200 WATERVALE RD
L. 8275, F. 656

CRAIG MELE
2214 WATERVALE RD
MAP 48, PARCEL 298
L. 13998, F. 395

STEVE & ERICA BLOUIN
2218 WATERVALE RD
MAP 48, PARCEL 297
L. 8341, F. 44

DONALD & SUSAN HESS
2304 WATERVALE RD
MAP 48, PARCEL 157
LOT 2, P.B. 137, PLAT 80
L. 9335, F. 85

JOHN C SULLIVAN
2308 WATERVALE RD
MAP 48, PARCEL 208
LOT 1, P.B. 137, PLAT 80
L. 10626, F. 282

JOHN SULLIVAN III
ROUTE 152
MAP 48, PARCEL 209
PARCEL A, P.B. 205, PLAT 67
L. 14349, F. 47

SHA PROPERTY
PLAT 39901
LIBER 557, FOLIO 335

BOARD OF EDUCATION OF HARFORD COUNTY
MAP 48, PARCEL 250
L. 924, FOLIO 588
4200995 S.F. <or> 96.4416 AC.

FALLSTON MIDDLE SCHOOL

ATHLETIC FIELD

EXISTING DRY DETENTION POND

FOREST LINE FROM GIS

EXISTING PICNIC TABLES

SAND FILTER

STAGING AREA

STOCKPILE AREA

UNSURVEYED AREA

PREVIOUSLY RESTORED AREA

ACCESS #1

ACCESS #2

ACCESS #3

ACCESS #4

REGENERATIVE STORMWATER CONVEYANCE

TRIBUTARY 1

TRIBUTARY 2

TRIBUTARY 3

TRIBUTARY 4

TRIBUTARY 5

MAINSTEM LOWER

MAINSTEM MIDDLE

MAINSTEM UPPER

TRIB 8 - MIDDLE

TRIB 8 - UPPER

TRIBUTARY 9

TRIBUTARY 10

TRIBUTARY 12

EC-01 GS-A01 SR-01 LP-01

EC-02 GS-A02 SR-02 LP-02

EC-03 GS-A03 SR-03 LP-03

EC-04 SR-04 LP-04

EC-05 GS-A04 SR-05 LP-05

EC-06 GS-A05 SR-06 LP-06

EC-07 GS-A06 SR-07 LP-07

EC-08 GS-B01 SW-01 LP-08

EC-09 SW-02 LP-09

EC-10 GS-B02 SW-03 LP-10

TO CARR'S MILL ROAD

MD 152 FALLSTON ROAD

N 676000
E 1478500
N 674500
E 1478100
W 614500

LEGEND
- STOCKPILE AREA
- LIMIT OF DISTURBANCE
- PROPOSED STREAM/CHANNEL ALIGNMENT
- ACCESS ROAD
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- EXISTING CONTOUR
- TREE LINE
- WETLAND
- WOS — WOS — WATERS OF THE U.S.
- PROPERTY LINE
- EXISTING BUILDING

100' 0 100' 200'
SCALE: 1"=100'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
KEY SHEET

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 3 Of 124

Scale : 1" = 100'
Date : AUGUST 2023
Sheet No. KS-01 Of KS-01

BID No.:

HCG DWG ID No.:

SCALE: 1" = 100'

LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

TEST PIT #	STA	OFFSET	DEPTH FT	VOLUME CY	NOTES
TP-1	20+71.1	10.5' LT	5.0	3.6	FIBER OPTIC LINE
TP-2	20+85.3	7.3' RT	5.0	3.6	FIBER OPTIC LINE

30' 0 30' 60'
SCALE: 1"=30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

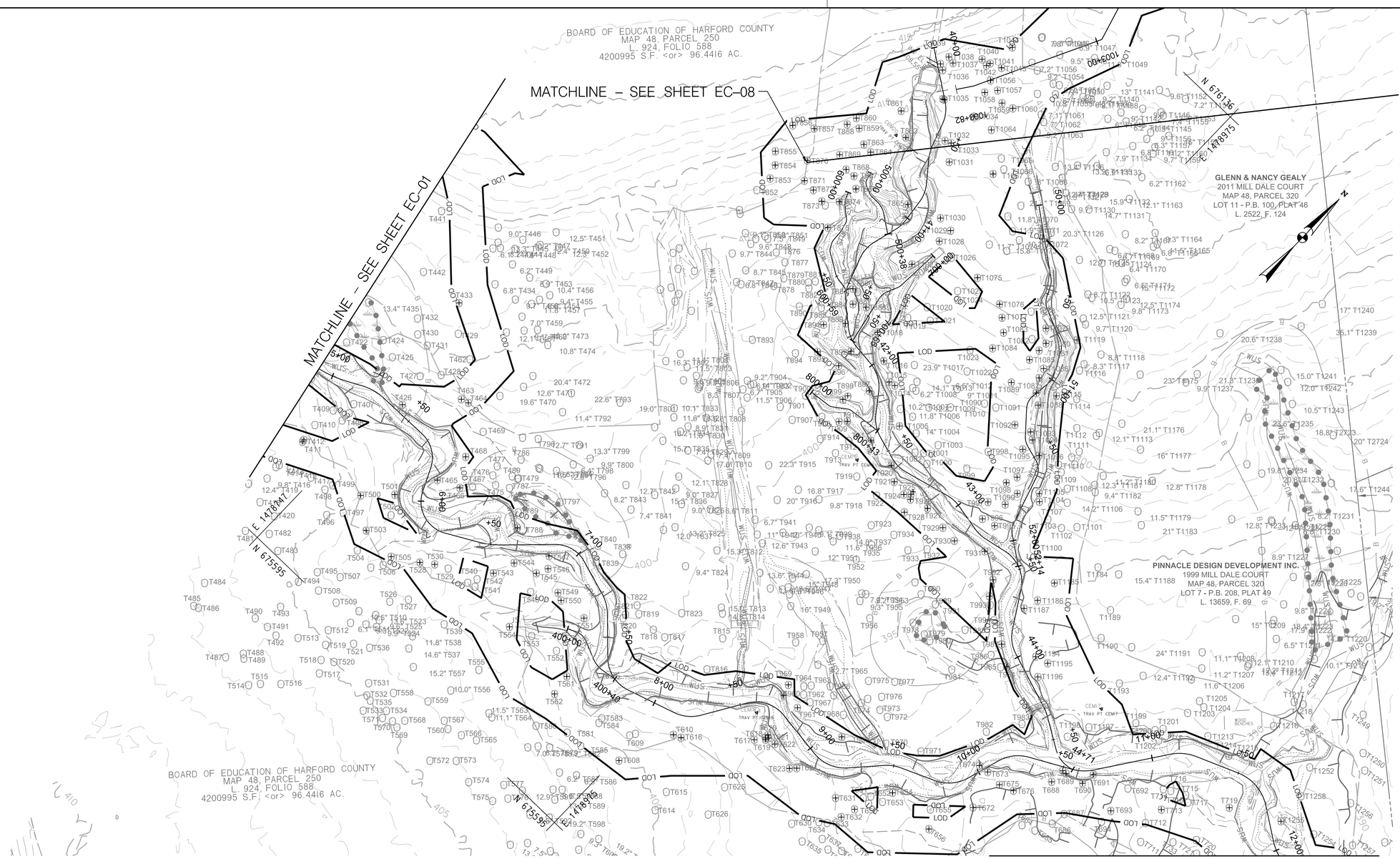
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 4 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-01 Of EC-10

BID No.:
HCG DWG ID No.:
SCALE: 1" = 1 INCH

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-# TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

MATCHLINE – SEE SHEET EC-03

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

30′ 0 30′ 60′
SCALE: 1″=30′

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS

Drawn By : C.A.B.	Scale : 1″ = 30′
Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 5 Of 124	Sheet No. EC-02 Of EC-10

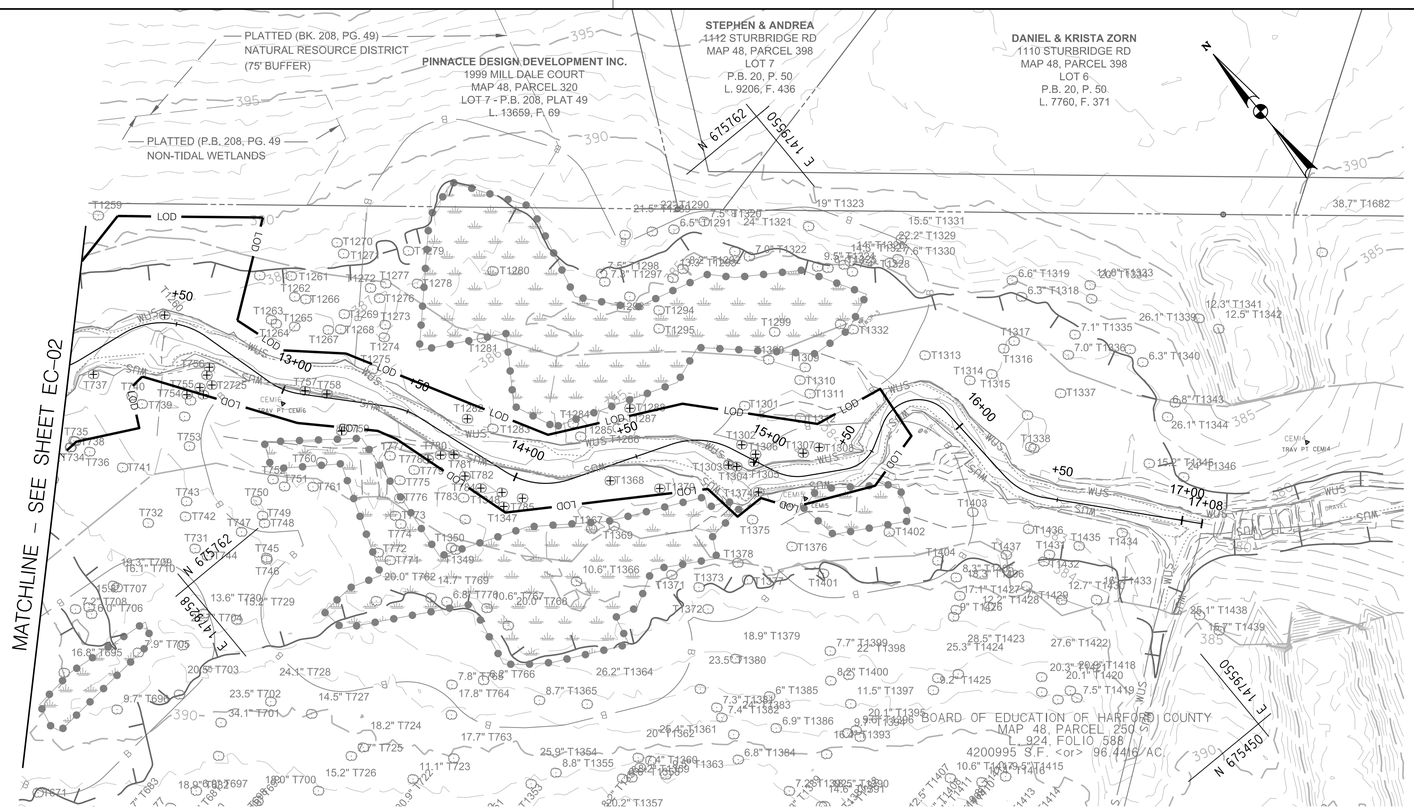
BID No.:

HCG DWG ID No.:

SCALE: 1:360

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$



LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-■ TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1" = 30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

PROFESSIONAL CERTIFICATION

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

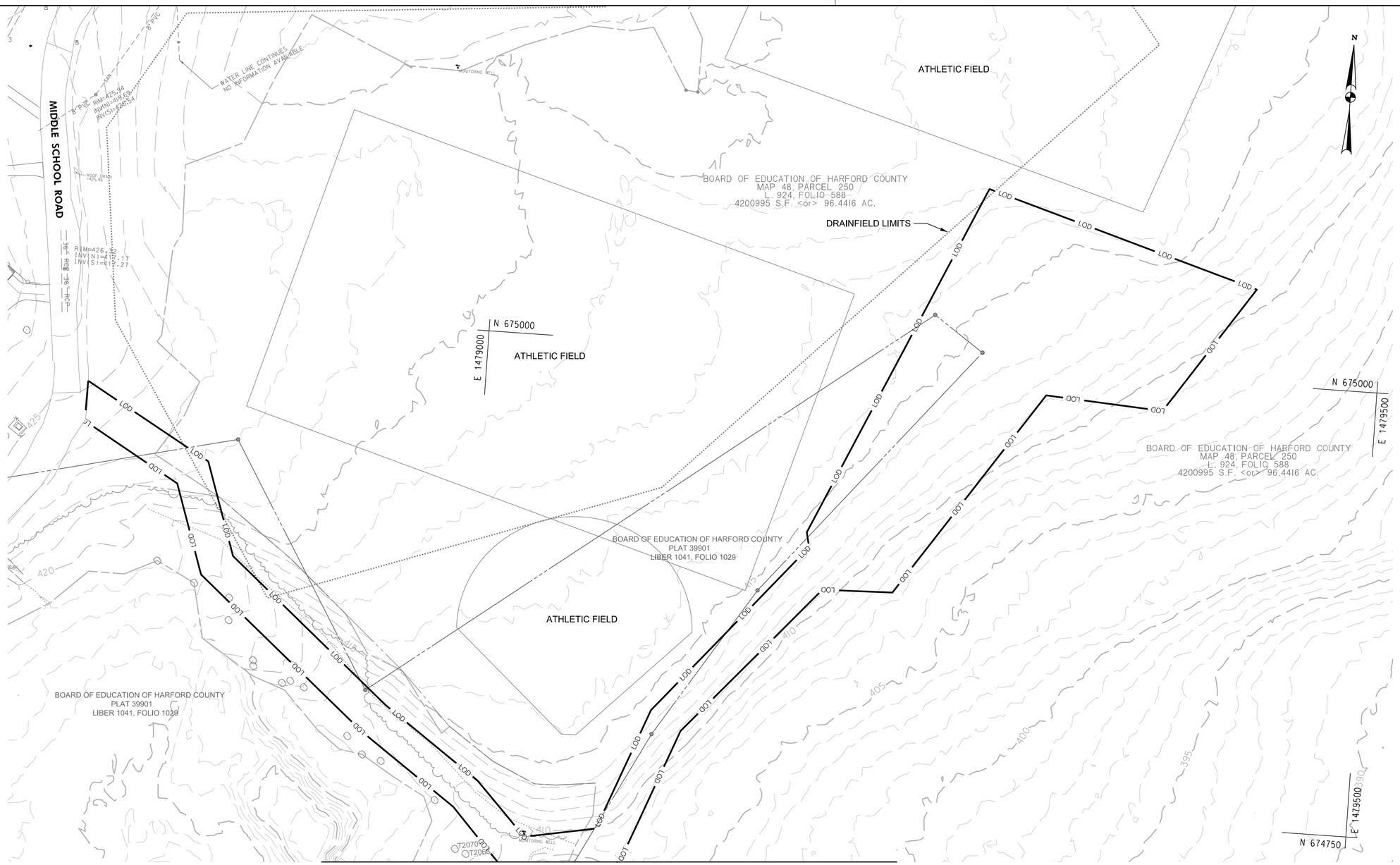
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 6 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-03 Of EC-10

BID No.:
HCG DWG ID No.:
SCALE: 1"=30'

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



MATCHLINE – SEE SHEET EC–05

LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI–01 THROUGH TI–10

30' 0 30' 60'
SCALE: 1" = 30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 7 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-04 Of EC-10

BID No.:
HCG DWG ID No.:

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

MATCHLINE – SEE SHEET EC-04

MATCHLINE – SEE SHEET EC-06

BOARD OF EDUCATION OF HARFORD COUNTY
MAP 48, PARCEL 250
L. 924, FOLIO 588
4200995 S.F. <or> 96.4416 AC.

BOARD OF EDUCATION OF HARFORD COUNTY
PLAT 39901
LIBER 1041, FOLIO 1029

EASEMENT FOR
OUTLET DITCH
SRC PLAT 18190

JOHN SULLIVAN III
ROUTE 152
MAP 48, PARCEL 209
PARCEL A, P.B. 208, PLAT 67
L. 14349, F. 47

BOARD OF EDUCATION OF HARFORD COUNTY
MAP 48, PARCEL 250
L. 924, FOLIO 588
4200995 S.F. <or> 96.4416 AC.

MD 152 FALLSTON RD

N 674650
E 1478950
N 674300
E 1478950
N 674300
E 1479500

LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

30' 0 30' 60'
SCALE: 1" = 30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 8 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-05 Of EC-10

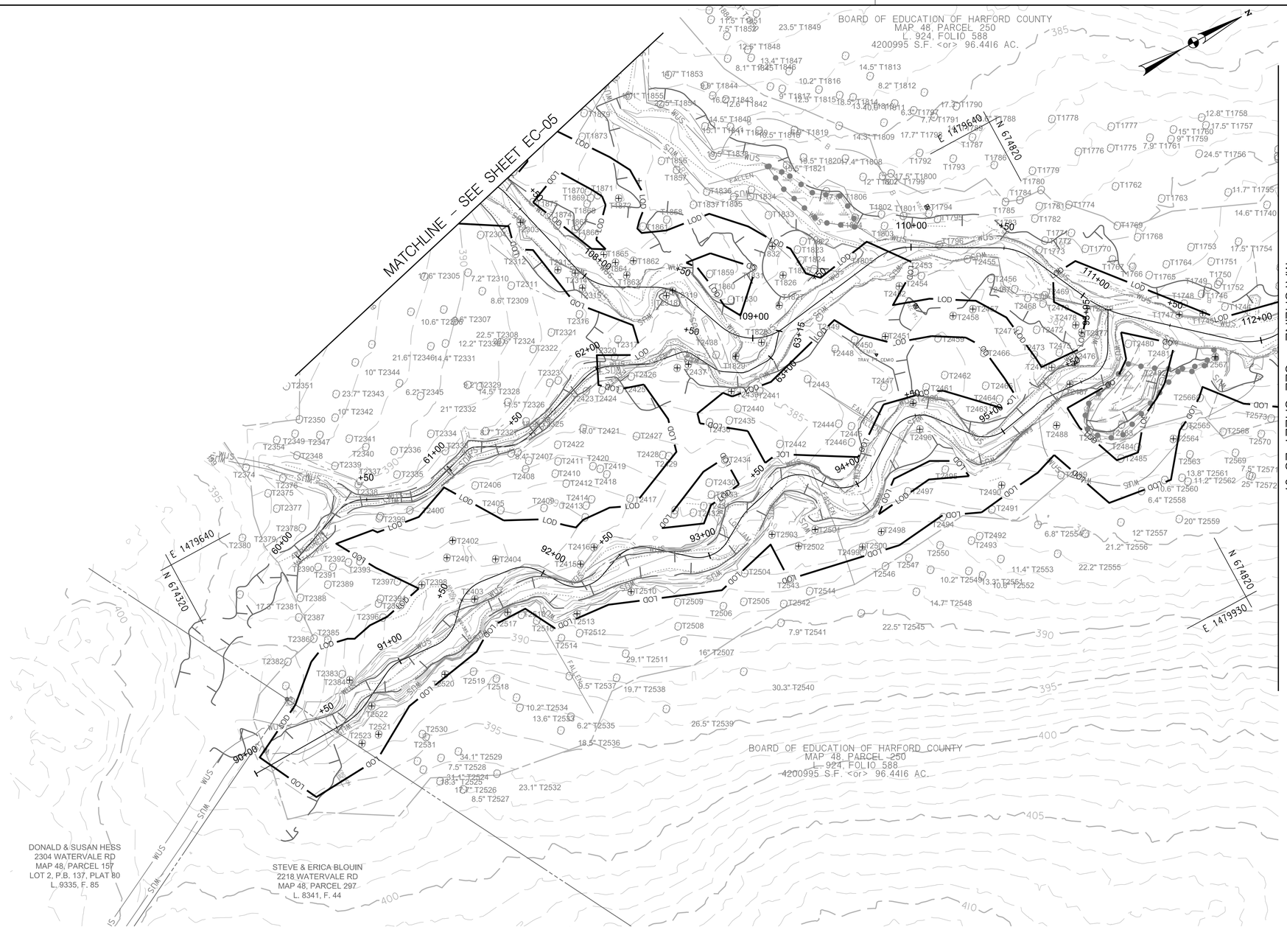
BID No.:

HCG DWG ID No.:

SCALE: 1" = 1'-0"

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$



LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

BID No.:

HCG DWG ID No.:

BY: $USERNAME$

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX. EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

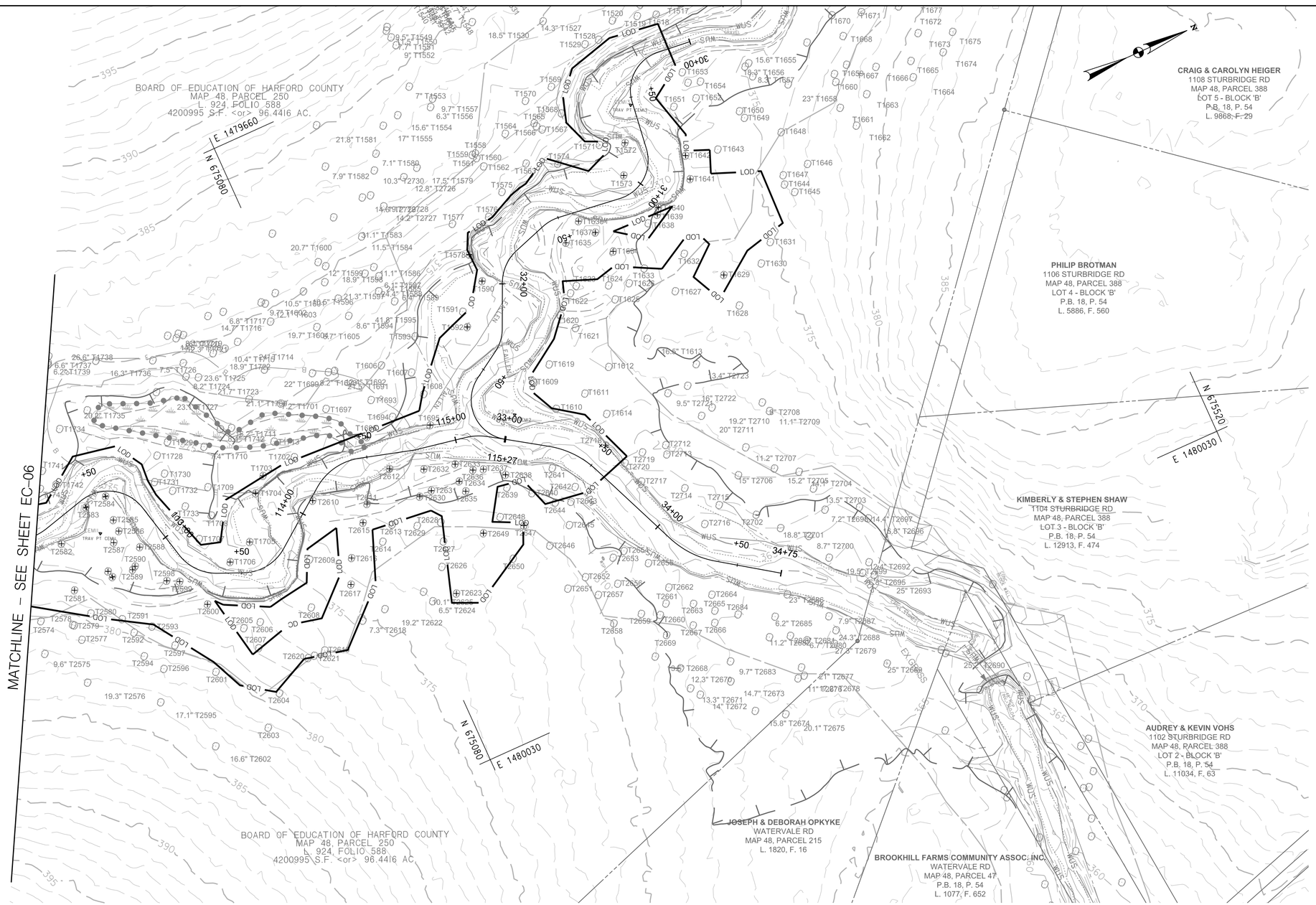
HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 9 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-06 Of EC-10

PLOTTED: $DATETIME$
FILE: $FILE$



BY: $USERNAME$

BID No.:

HCG DWG ID No.:

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

PLOTTED: $DATETIME$
FILE: $FILE$

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

PROFESSIONAL CERTIFICATION

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SIGN AND SEAL

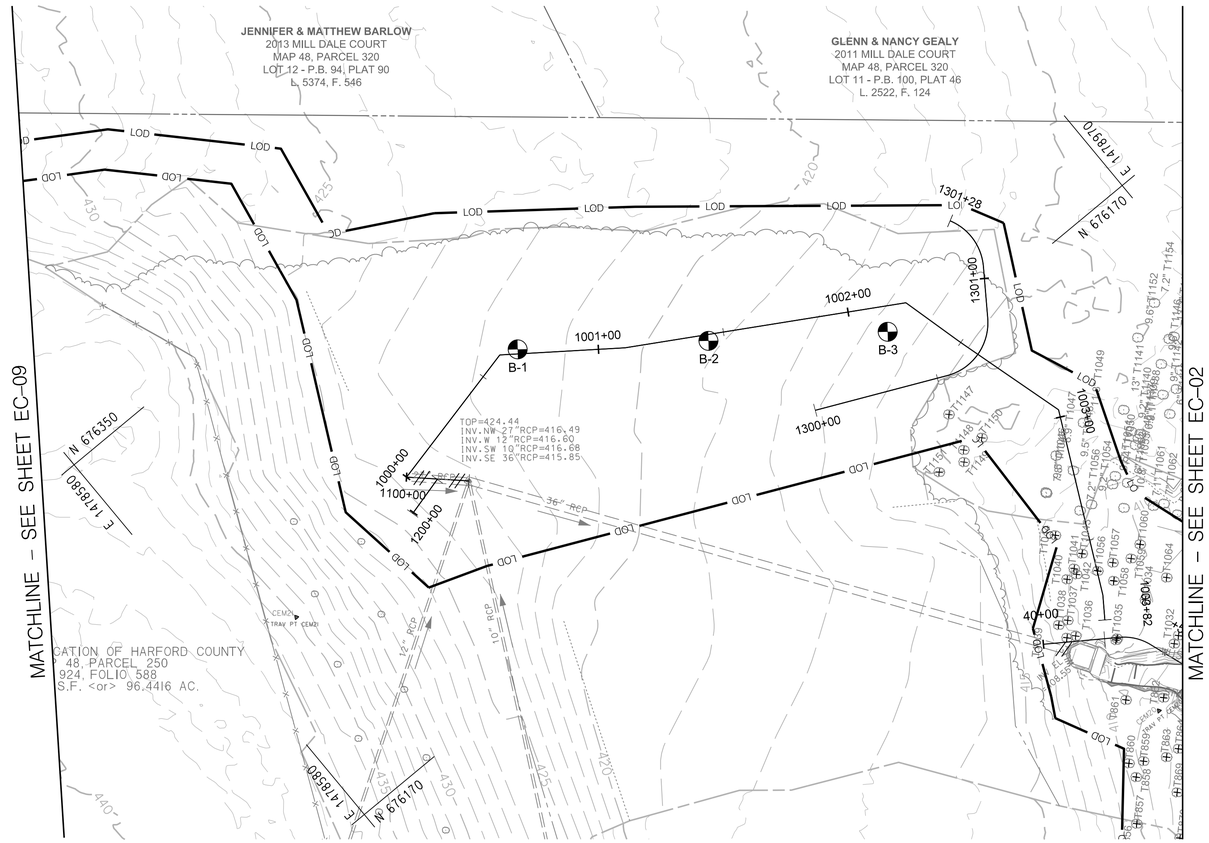
Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 10 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-07 Of EC-10



LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

Project No. 20206?2-00 — **LOG OF BOREHOLE B-1** — Sheet 1 of 1

CLIENT: WSP USA Inc
PROJECT: Fallston HS/MS SWM Facility
ARCHITECT/ENGINEER:
SITE: Harford County, Maryland

SURFACE ELEV.: 421.5 ft

DEPTH (FT)	BLOWS/6" N-VALUE R.Q.D.	NUMBER	TYPE	SAMPLES REC/DRIVEN (IN.)	MOISTURE (%)	TESTS DRY DENSITY (pcf)	TESTS SHEAR STRENGTH (Tsf)	REMARKS & ADDITIONAL DATA
0.0 – 2.0' Topsoil								
Moist, Medium Dense, Brown, SANDY SILT (ML) with mica	5-7-9 N=16	1	SS	18/18 100%	17			
3.0								
Moist, Stiff, Greenish Gray, Brown and Dark Brown, ELASTIC SILT (MH) with sand	10-9-8 N=17	2	SS	18/18 100%	27			LL = 52 PL = 21 PI = 31
6.0								
Moist, Medium Dense, Greenish Gray, Tan and Brown, SANDY SILT (ML)	5-7-8 N=15	3	SS	18/18 100%	33		47	
	4-4-6 N=10	4	SS	18/18 100%	30			
10								
	6-8-10 N=18	5	SS	18/18 100%	19			
15.0								

End of Boring @ 15 ft

Borehole was backfilled after 24 hrs water level reading

WATER LEVEL OBSERVATIONS: WL Dry @ Drilling; WL Dry, caved-in 10.5 ft @ 0 hr; WL Dry, caved-in 10 ft @ 24 hr

AB Consultants, Inc.
9450 Annapolis Road
Lanham, MD 20706
Phone: 301-306-3091
Fax: 301-306-3092

STARTED: 8/31/22 FINISHED: 8/31/22
DRILL CO.: ABC DRILL RIG/TV-CME 45
DRILLER: OL ASST DRILLER:
LOGGED BY: APPROVED:

Project No. 20206?2-00 — **LOG OF BOREHOLE B-2** — Sheet 1 of 1

CLIENT: WSP USA Inc
PROJECT: Fallston HS/MS SWM Facility
ARCHITECT/ENGINEER:
SITE: Harford County, Maryland

SURFACE ELEV.: 419.0 ft

DEPTH (FT)	BLOWS/6" N-VALUE R.Q.D.	NUMBER	TYPE	SAMPLES REC/DRIVEN (IN.)	MOISTURE (%)	TESTS DRY DENSITY (pcf)	TESTS SHEAR STRENGTH (Tsf)	REMARKS & ADDITIONAL DATA
0.0 – 2.0' Topsoil								
Moist, Firm to Stiff, Greenish Gray, Brown and Tan, SANDY ELASTIC SILT (ML) with mica	3-4-7 N=11	1	SS	18/18 100%	28			LL = 57 PL = 26 PI = 31
	7-9-10 N=19	2	SS	18/18 100%	40			
5								
	6-8-7 N=15	3	SS	18/18 100%	39			
	4-7-9 N=16	4	SS	18/18 94%	30		76	
10								
	5-7-10 N=17	5	SS	18/18 100%	27			
15.0								

End of Boring @ 15 ft

Borehole was backfilled after 24 hrs water level reading

WATER LEVEL OBSERVATIONS: WL Dry @ Drilling; WL Dry, caved-in 10.5 ft @ 0 hr; WL Dry, caved-in 10 ft @ 24 hr

AB Consultants, Inc.
9450 Annapolis Road
Lanham, MD 20706
Phone: 301-306-3091
Fax: 301-306-3092

STARTED: 8/31/22 FINISHED: 8/31/22
DRILL CO.: ABC DRILL RIG/TV-CME 45
DRILLER: OL ASST DRILLER:
LOGGED BY: APPROVED:

Project No. 20206?2-00 — **LOG OF BOREHOLE B-3** — Sheet 1 of 1

CLIENT: WSP USA Inc
PROJECT: Fallston HS/MS SWM Facility
ARCHITECT/ENGINEER:
SITE: Harford County, Maryland

SURFACE ELEV.: 416.5 ft

DEPTH (FT)	BLOWS/6" N-VALUE R.Q.D.	NUMBER	TYPE	SAMPLES REC/DRIVEN (IN.)	MOISTURE (%)	TESTS DRY DENSITY (pcf)	TESTS SHEAR STRENGTH (Tsf)	REMARKS & ADDITIONAL DATA
0.0 – 2.0' Topsoil								
Moist, Medium Dense, Brown, SANDY SILT (ML) with mica	4-6-7 N=13	1	SS	16/18 78%	28		69	
	9-9-9 N=18	2	SS	18/18 100%	29		50	
5.0								
Moist, Medium Dense, Tan, SILTY SAND (SM)	7-7-8 N=15	3	SS	18/18 100%	22			
8.0								
Moist, Medium Dense, Greenish Gray, Tan and Brown, SANDY SILT (ML)	5-7-6 N=13	4	SS	18/18 100%	30			
10.0								

End of Boring @ 10 ft

Borehole was backfilled after 24 hrs water level reading

WATER LEVEL OBSERVATIONS: WL Dry @ Drilling; WL Dry, caved-in 6.5 ft @ 0 hr; WL Dry, caved-in 6 ft @ 24 hr

AB Consultants, Inc.
9450 Annapolis Road
Lanham, MD 20706
Phone: 301-306-3091
Fax: 301-306-3092

STARTED: 8/31/22 FINISHED: 8/31/22
DRILL CO.: ABC DRILL RIG/TV-CME 45
DRILLER: OL ASST DRILLER:
LOGGED BY: APPROVED:

30' 0 30' 60'
SCALE: 1"=30'

BID No.:

HCG DWG ID No.:

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 11 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-08 Of EC-10

LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE GRADE WITHIN ACCESS PATH TO TRAVERSE REMAINING STUMPS AS NECCESSARY.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 12 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-09 Of EC-10

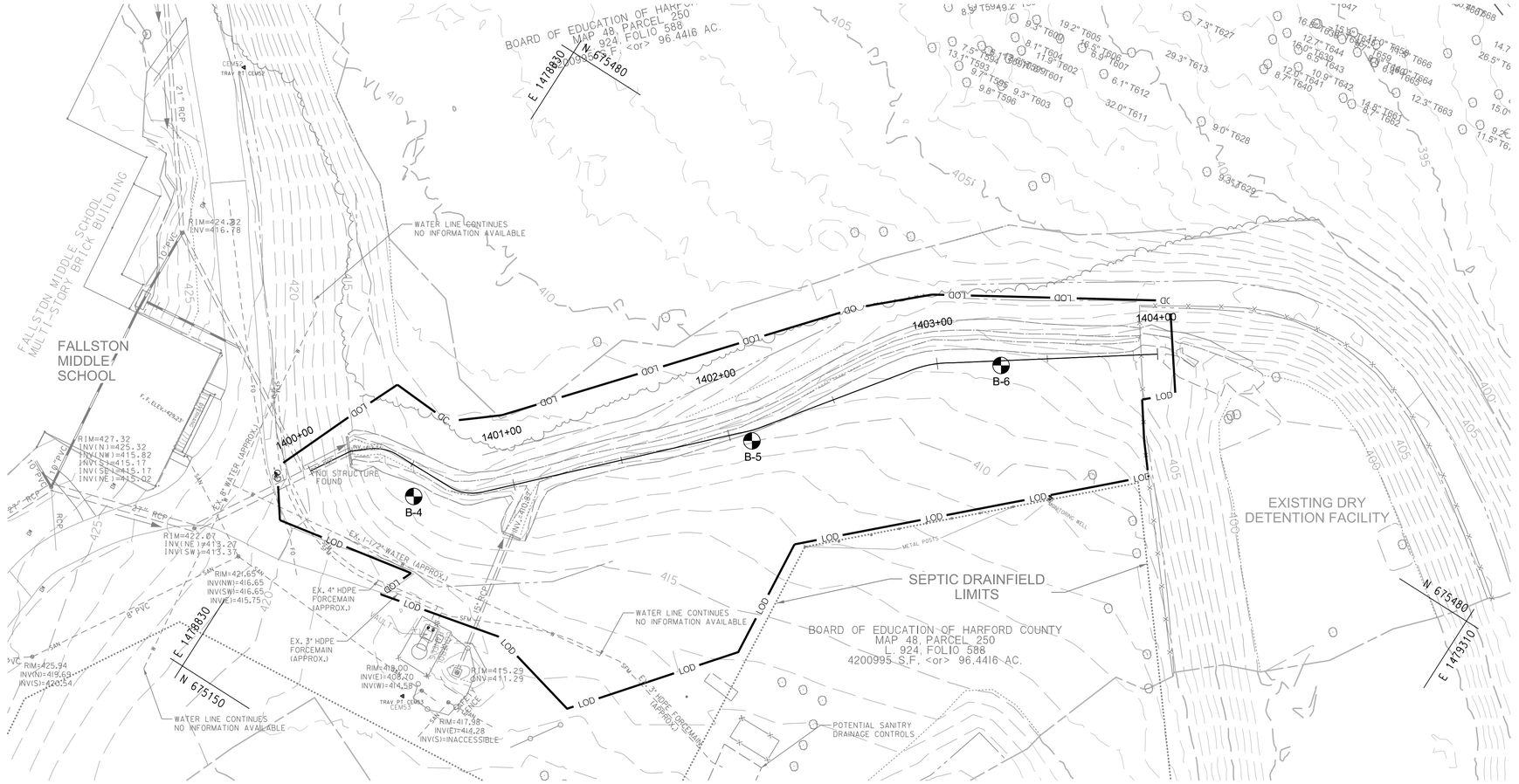
BID No.:

HCG DWG ID No.:

SCALE: 1 inch

BY: tetrickr –

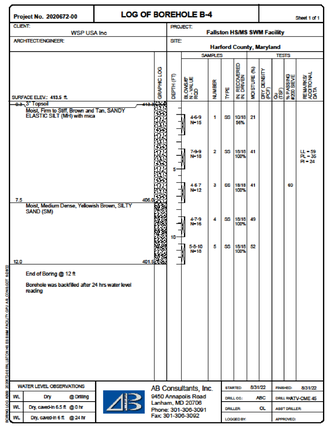
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pEC-P009_Fallston.dgn



LEGEND

- EX. PIPE REMOVAL
- EX. DRAINAGE STRUCTURE REMOVAL
- TP-* TEST PIT LOCATION
- TREE REMOVAL

TREE INVENTORY WITH TREE ID, SPECIES, HEALTH ARE LISTED IN TI-01 THROUGH TI-10



Project No. 2020672-00 — LOG OF BOREHOLE B-4 — Sheet 1 of 1

CLIENT: WSP USA Inc — PROJECT: Fallston HS/MS SWM Facility
ARCHITECT/ENGINEER: — SITE: Harford County, Maryland

SURFACE ELEV.: 433.5 ft.

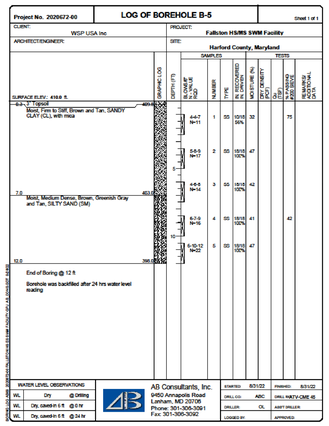
DEPTH (FT)	SAMPLES NUMBER	TYPE	BLOWS/6" N-VALUE RQD	REC. (INCHES) PEN. (INCHES)	TESTS MOISTURE (%)	DRY DENSITY (pcf)	OTHER	REMARKS ADDITIONAL DATA
0.0 – 7" Topsoil								
Moist, Firm to Stiff, Brown and Tan, SANDY ELASTIC SILT (MH) with mica	1	SS	4-6-9 N=15	10/10 100%	21			
	2	SS	7-9-9 N=18	10/10 100%	41			LL = 59 PL = 24 PI = 35
	3	SS	4-6-7 N=13	10/10 100%	41		60	
7.5 Moist, Medium Dense, Yellowish Brown, SILTY SAND (SM)	4	SS	4-7-9 N=16	10/10 100%	49			
	5	SS	5-6-10 N=16	10/10 100%	52			
12.0 End of Boring @ 12 ft								

Borehole was backfilled after 24 hrs water level reading

WATER LEVEL OBSERVATIONS: WL Dry @ Drilling; WL Dry, caved-in 6.5 ft @ 0 hr; WL Dry, caved-in 6 ft @ 24 hr

AB Consultants, Inc. 9450 Annapolis Road Lanham, MD 20706 Phone: 301-306-3061 Fax: 301-306-3092

STARTED: 8/31/22 — FINISHED: 8/31/22 — DRILL CO.: ABC — DRILL RIG/TYPE: DRILL RIG/TYPE CME-45 — DRILLER: CL — ASST DRILLER: — LOGGED BY: — APPROVED:



Project No. 2020672-00 — LOG OF BOREHOLE B-5 — Sheet 1 of 1

CLIENT: WSP USA Inc — PROJECT: Fallston HS/MS SWM Facility
ARCHITECT/ENGINEER: — SITE: Harford County, Maryland

SURFACE ELEV.: 418.8 ft.

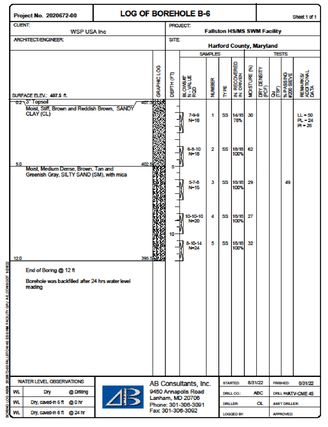
DEPTH (FT)	SAMPLES NUMBER	TYPE	BLOWS/6" N-VALUE RQD	REC. (INCHES) PEN. (INCHES)	TESTS MOISTURE (%)	DRY DENSITY (pcf)	OTHER	REMARKS ADDITIONAL DATA
0.0 – 7" Topsoil								
Moist, Firm to Stiff, Brown and Tan, SANDY CLAY (CL), with mica	1	SS	4-4-7 N=11	10/10 50%	32		75	
	2	SS	5-8-9 N=17	10/10 100%	47			
	3	SS	4-6-6 N=12	10/10 100%	42			
7.0 Moist, Medium Dense, Brown, Greenish Gray and Tan, SILTY SAND (SM)	4	SS	6-7-9 N=16	10/10 100%	41		42	
	5	SS	8-10-12 N=22	10/10 100%	47			
12.0 End of Boring @ 12 ft								

Borehole was backfilled after 24 hrs water level reading

WATER LEVEL OBSERVATIONS: WL Dry @ Drilling; WL Dry, caved-in 6.5 ft @ 0 hr; WL Dry, caved-in 6 ft @ 24 hr

AB Consultants, Inc. 9450 Annapolis Road Lanham, MD 20706 Phone: 301-306-3061 Fax: 301-306-3092

STARTED: 8/31/22 — FINISHED: 8/31/22 — DRILL CO.: ABC — DRILL RIG/TYPE: DRILL RIG/TYPE CME-45 — DRILLER: CL — ASST DRILLER: — LOGGED BY: — APPROVED:



Project No. 2020672-00 — LOG OF BOREHOLE B-6 — Sheet 1 of 1

CLIENT: WSP USA Inc — PROJECT: Fallston HS/MS SWM Facility
ARCHITECT/ENGINEER: — SITE: Harford County, Maryland

SURFACE ELEV.: 407.5 ft.

DEPTH (FT)	SAMPLES NUMBER	TYPE	BLOWS/6" N-VALUE RQD	REC. (INCHES) PEN. (INCHES)	TESTS MOISTURE (%)	DRY DENSITY (pcf)	OTHER	REMARKS ADDITIONAL DATA
0.0 – 7" Topsoil								
Moist, Stiff, Brown and Reddish Brown, SANDY CLAY (CL)	1	SS	7-9-9 N=18	10/10 70%	30			LL = 55 PL = 24 PI = 31
	2	SS	6-8-12 N=20	10/10 100%	62			
5.0 Moist, Medium Dense, Brown, Tan and Greenish Gray, SILTY SAND (SM), with mica	3	SS	5-7-8 N=15	10/10 100%	29		49	
	4	SS	10-10-10 N=20	10/10 100%	27			
	5	SS	8-10-14 N=24	10/10 100%	33			
12.0 End of Boring @ 12 ft								

Borehole was backfilled after 24 hrs water level reading

WATER LEVEL OBSERVATIONS: WL Dry @ Drilling; WL Dry, caved-in 6.5 ft @ 0 hr; WL Dry, caved-in 6 ft @ 24 hr

AB Consultants, Inc. 9450 Annapolis Road Lanham, MD 20706 Phone: 301-306-3061 Fax: 301-306-3092

STARTED: 8/31/22 — FINISHED: 8/31/22 — DRILL CO.: ABC — DRILL RIG/TYPE: DRILL RIG/TYPE CME-45 — DRILLER: CL — ASST DRILLER: — LOGGED BY: — APPROVED:

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EXISTING CONDITIONS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 13 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. EC-10 Of EC-10

BID No.:
HCG DWG ID No.:
SCALE: 1 INCH

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
1	PINE, SP	*Pinus spp.*	24.2	GOOD	
2	CHOKE CHERRY	*Prunus virginiana*	7.5	FAIR	
3	CHOKE CHERRY	*Prunus virginiana*	7.1	FAIR	
4	NORTHERN RED OAK	*Quercus rubra*	11.6	GOOD	
5	BALD CYPRESS	*Taxodium distichum*	11.3	GOOD	
6	BALD CYPRESS	*Taxodium distichum*	28.2	GOOD	
7	WILLOW OAK	*Quercus phellos*	28.4	FAIR	
8	SAWTOOTH OAK	*Quercus acutissima*	12.8	FAIR	
9	RIVER BIRCH	*Betula nigra*	9.1	GOOD	
10	RIVER BIRCH	*Betula nigra*	9.1	GOOD	
11	RED MAPLE	*Acer rubrum*	7.9	FAIR	
12	RED MAPLE	*Acer rubrum*	9.5	GOOD	
13	WHITE OAK	*Quercus alba*	7.3	GOOD	
14	TREE OF HEAVEN	*Ailanthus altissima*	13	GOOD	TBR
15	TREE OF HEAVEN	*Ailanthus altissima*	12.3	GOOD	TBR
16	TREE OF HEAVEN	*Ailanthus altissima*	12.6	FAIR	TBR
17	NORTHERN RED OAK	*Quercus rubra*	17.9	GOOD	
18	NORTHERN RED OAK	*Quercus rubra*	15.8	FAIR	
19	TREE OF HEAVEN	*Ailanthus altissima*	11.9	GOOD	TBR
20	TREE OF HEAVEN	*Ailanthus altissima*	17	GOOD	TBR
21	NORTHERN RED OAK	*Quercus rubra*	15.4	FAIR	
22	WHITE OAK	*Quercus alba*	11.6	FAIR	
23	WHITE OAK	*Quercus alba*	10.8	GOOD	
24	SASSAFRAS	*Sassafras albidum*	10.5	GOOD	
25	RED MAPLE	*Acer rubrum*	10.1	GOOD	
26	WHITE OAK	*Quercus alba*	7.5	GOOD	
27	NORTHERN RED OAK	*Quercus rubra*	14.2	GOOD	
28	SASSAFRAS	*Sassafras albidum*	10.6	FAIR	
29	BLACK GUM	*Nyssa sylvatica*	12.4	FAIR	
30	BLACK GUM	*Nyssa sylvatica*	9.1	FAIR	
31	BLACK GUM	*Nyssa sylvatica*	11.5	FAIR	
32	BALD CYPRESS	*Taxodium distichum*	13	GOOD	
33	WHITE OAK	*Quercus alba*	7	FAIR	
34	AMERICAN ELM	*Ulmus americana*	9.4	FAIR	
35	AMERICAN ELM	*Ulmus americana*	11.7	GOOD	
36	SUGAR MAPLE	*Acer saccharum*	8.1	POOR	-
37	SUGAR MAPLE	*Acer saccharum*	10.6	FAIR	
38	SUGAR MAPLE	*Acer saccharum*	9.3	FAIR	
39	WHITE OAK	*Quercus alba*	9	FAIR	
40	SYCAMORE	*Platanus occidentalis*	10.2	FAIR	
41	GREEN ASH	*Fraxinus pennsylvanica*	15.8	POOR	TBR
42	TULIP POPLAR	*Liriodendron tulipifera*	16.4	POOR	TBR
43	BALD CYPRESS	*Taxodium distichum*	17.3	POOR	-
44	TULIP POPLAR	*Liriodendron tulipifera*	10.8	POOR	-
45	BALD CYPRESS	*Taxodium distichum*	9.9	POOR	-
46	SYCAMORE	*Platanus occidentalis*	23.3	POOR	-
47	WILLOW OAK	*Quercus phellos*	8.4	FAIR	
48	SYCAMORE	*Platanus occidentalis*	10.8	POOR	-
49	WILLOW OAK	*Quercus phellos*	24.5	FAIR	
50	WILLOW OAK	*Quercus phellos*	14	FAIR	
51	TULIP POPLAR	*Liriodendron tulipifera*	11.4	POOR	-
52	TULIP POPLAR	*Liriodendron tulipifera*	8	FAIR	
53	GREEN ASH	*Fraxinus pennsylvanica*	12.2	POOR	-
54	GREEN ASH	*Fraxinus pennsylvanica*	13.1	POOR	-
55	SYCAMORE	*Platanus occidentalis*	14.3	FAIR	
56	BLACK LOCUST	*Robinia pseudoacacia*	13.7	POOR	TBR
57	BLACK LOCUST	*Robinia pseudoacacia*	11.1	POOR	TBR
58	BLACK LOCUST	*Robinia pseudoacacia*	9.7	POOR	TBR
59	BLACK LOCUST	*Robinia pseudoacacia*	10.5	POOR	TBR
60	BLACK LOCUST	*Robinia pseudoacacia*	8.8	POOR	TBR
61	RED MAPLE	*Acer rubrum*	9	POOR	TBR
62	BALD CYPRESS	*Taxodium distichum*	9.7	FAIR	
63	BALD CYPRESS	*Taxodium distichum*	11.4	FAIR	
64	BALD CYPRESS	*Taxodium distichum*	11.9	FAIR	
65	GREEN ASH	*Fraxinus pennsylvanica*	9.4	POOR	TBR
66	GREEN ASH	*Fraxinus pennsylvanica*	8.8	POOR	TBR
67	GREEN ASH	*Fraxinus pennsylvanica*	7.9	POOR	TBR
68	GREEN ASH	*Fraxinus pennsylvanica*	7.2	POOR	TBR
69	EASTERN WHITE PINE	*Pinus strobus*	15	GOOD	
70	RED MAPLE	*Acer rubrum*	10.8	POOR	-
71	AMERICAN ELM	*Ulmus americana*	30.1	FAIR	
72	RED MAPLE	*Acer rubrum*	11.7	POOR	-
73	RED MAPLE	*Acer rubrum*	11.1	POOR	-
74	SYCAMORE	*Platanus occidentalis*	7.7	FAIR	
75	SYCAMORE	*Platanus occidentalis*	8.8	POOR	-
76	SYCAMORE	*Platanus occidentalis*	7.3	FAIR	
77	GREEN ASH	*Fraxinus pennsylvanica*	9.6	POOR	-
78	RIVER BIRCH	*Betula nigra*	10.8	FAIR	
79	RIVER BIRCH	*Betula nigra*	8.3	FAIR	
80	RIVER BIRCH	*Betula nigra*	10.7	FAIR	
81	GREEN ASH	*Fraxinus pennsylvanica*	8.1	POOR	-
82	GREEN ASH	*Fraxinus pennsylvanica*	6.2	POOR	-
83	RIVER BIRCH	*Betula nigra*	8.3	FAIR	
84	RIVER BIRCH	*Betula nigra*	9.3	FAIR	
85	RIVER BIRCH	*Betula nigra*	10	FAIR	
86	BLACK LOCUST	*Robinia pseudoacacia*	10.6	FAIR	
87	BLACK LOCUST	*Robinia pseudoacacia*	8.9	FAIR	
88	BLACK LOCUST	*Robinia pseudoacacia*	8.9	FAIR	
89	BLACK LOCUST	*Robinia pseudoacacia*	14.8	FAIR	
90	BLACK WILLOW	*Salix nigra*	11.9	POOR	-
91	RED MAPLE	*Acer rubrum*	6.6	POOR	-
92	NORTHERN RED OAK	*Quercus rubra*	13.4	FAIR	
93	RED MAPLE	*Acer rubrum*	10.7	FAIR	
94	EASTERN WHITE PINE	*Pinus strobus*	10.3	GOOD	
95	AMERICAN ELM	*Ulmus americana*	21.2	FAIR	
96	RED MAPLE	*Acer rubrum*	7.5	FAIR	
97	RED MAPLE	*Acer rubrum*	6	FAIR	
98	AMERICAN ELM	*Ulmus americana*	8.9	POOR	TBR
99	AMERICAN ELM	*Ulmus americana*	11.4	POOR	TBR
100	AMERICAN ELM	*Ulmus americana*	12.6	FAIR	
101	RED MAPLE	*Acer rubrum*	6.3	POOR	-
102	PIN OAK	*Quercus palustris*	18.6	GOOD	
103	AMERICAN BEECH	*Fagus grandifolia*	7.1	FAIR	
104	NORTHERN RED OAK	*Quercus rubra*	7.8	FAIR	
105	NORTHERN RED OAK	*Quercus rubra*	47.4	GOOD	
106	RED MAPLE	*Acer rubrum*	21	POOR	TBR
107	RED MAPLE	*Acer rubrum*	7.4	POOR	-
108	BLACK WILLOW	*Salix nigra*	10.2	POOR	-
109	RED MAPLE	*Acer rubrum*	14.5	FAIR	
110	RED MAPLE	*Acer rubrum*	10.4	FAIR	
111	BLACK GUM	*Nyssa sylvatica*	15	POOR	TBR
112	SILVER MAPLE	*Acer saccharinum*	25.3	FAIR	TBR
113	RED MAPLE	*Acer rubrum*	7.2	POOR	TBR
114	RED MAPLE	*Acer rubrum*	8.9	FAIR	TBR
115	RED MAPLE	*Acer rubrum*	20.1	FAIR	
116	RED MAPLE	*Acer rubrum*	8.5	FAIR	
117	RED MAPLE	*Acer rubrum*	7.6	POOR	TBR
118	WHITE OAK	*Quercus alba*	22.2	GOOD	
119	PIN OAK	*Quercus palustris*	20.7	FAIR	
120	RED MAPLE	*Acer rubrum*	14	FAIR	
121	NORTHERN RED OAK	*Quercus rubra*	14.7	FAIR	
122	RED MAPLE	*Acer rubrum*	8.9	FAIR	
123	NORTHERN RED OAK	*Quercus rubra*	8.6	FAIR	
124	BLACK GUM	*Nyssa sylvatica*	13.9	FAIR	
125	NORTHERN RED OAK	*Quercus rubra*	19	FAIR	
126	NORTHERN RED OAK	*Quercus rubra*	15.9	FAIR	
127	TULIP POPLAR	*Liriodendron tulipifera*	15	FAIR	TBR
128	TULIP POPLAR	*Liriodendron tulipifera*	11	POOR	TBR
129	WHITE OAK	*Quercus alba*	10	FAIR	
130	WHITE OAK	*Quercus alba*	15.2	FAIR	
131	AMERICAN BEECH	*Fagus grandifolia*	8.3	GOOD	
132	WHITE OAK	*Quercus alba*	6.7	FAIR	
133	RED MAPLE	*Acer rubrum*	10.3	GOOD	
134	WHITE OAK	*Quercus alba*	11.9	FAIR	
135	WHITE OAK	*Quercus alba*	11.9	FAIR	
136	RED MAPLE	*Acer rubrum*	10.1	GOOD	
137	RED MAPLE	*Acer rubrum*	11.8	FAIR	
138	PIN OAK	*Quercus palustris*	14.6	FAIR	
139	RED MAPLE	*Acer rubrum*	14.1	FAIR	
140	NORTHERN RED OAK	*Quercus rubra*	16.5	FAIR	
141	TULIP POPLAR	*Liriodendron tulipifera*	17.1	GOOD	
142	RED MAPLE	*Acer rubrum*	13.3	POOR	TBR
143	PERSIMMON	*Diospyros virginiana*	20.3	FAIR	
144	BLACK CHERRY	*Prunus serotina*	8.1	FAIR	
145	RED MAPLE	*Acer rubrum*	13.8	GOOD	
146	TULIP POPLAR	*Liriodendron tulipifera*	13.8	GOOD	
147	RED MAPLE	*Acer rubrum*	8.1	FAIR	
148	AMERICAN ELM	*Ulmus americana*	10.8	FAIR	
149	BLACK JACK OAK	*Quercus marilandica*	7.2	GOOD	
150	RED MAPLE	*Acer rubrum*	9.5	FAIR	
151	RED MAPLE	*Acer rubrum*	6.1	FAIR	
152	WHITE OAK	*Quercus alba*	11.4	FAIR	
153	WHITE OAK	*Quercus alba*	44.3	GOOD	
154	NORTHERN RED OAK	*Quercus rubra*	7.4	FAIR	
155	NORTHERN RED OAK	*Quercus rubra*	13.4	FAIR	
156	RED MAPLE	*Acer rubrum*	20.3	FAIR	
157	RED MAPLE	*Acer rubrum*	13.6	FAIR	
158	NORTHERN RED OAK	*Quercus rubra*	19.5	FAIR	
159	NORTHERN RED OAK	*Quercus rubra*	10.2	FAIR	
160	RED MAPLE	*Acer rubrum*	22	FAIR	
161	NUMBER NOT USED	*Tree Not Surveyed*			
162	RED MAPLE	*Acer rubrum*	10.2	FAIR	
163	RED MAPLE	*Acer rubrum*	15.5	FAIR	
164	RED MAPLE	*Acer rubrum*	8.4	FAIR	
165	NUMBER NOT USED	*Tree Not Surveyed*			
166	PERSIMMON	*Diospyros virginiana*	17.7	POOR	-
167	RED MAPLE	*Acer rubrum*	11.4	FAIR	
168	RED MAPLE	*Acer rubrum*	10.9	POOR	-
169	RED MAPLE	*Acer rubrum*	9.6	FAIR	
170	AMERICAN ELM	*Ulmus americana*	16.2	FAİ	
171	HONEY LOCUST	*Gleditsia triacanthos*	6.8	FAIR	
172	RED MAPLE	*Acer rubrum*	6.6	FAIR	TBR
173	RED MAPLE	*Acer rubrum*	8.5	FAIR	
174	RED MAPLE	*Acer rubrum*	7	POOR	-
175	RED MAPLE	*Acer rubrum*	12.3	FAIR	
176	RED MAPLE	*Acer rubrum*	6.4	FAIR	
177	RED MAPLE	*Acer rubrum*	7.1	GOOD	
178	RED MAPLE	*Acer rubrum*	9	FAIR	
179	RED MAPLE	*Acer rubrum*	9.5	FAIR	TBR
180	RED MAPLE	*Acer rubrum*	14.9	FAIR	TBR
181	GREEN ASH	*Fraxinus pennsylvanica*	12.7	POOR	-
182	RED MAPLE	*Acer rubrum*	6.7	POOR	-
183	RED MAPLE	*Acer rubrum*	7	FAIR	
184	RED MAPLE	*Acer rubrum*	10.4	FAIR	
185	RED MAPLE	*Acer rubrum*	10.9	FAIR	
186	RED MAPLE	*Acer rubrum*	7.3	FAIR	
187	AMERICAN ELM	*Ulmus americana*	12.3	FAIR	
188	BLACK WALNUT	*Juglans nigra*	7.4	POOR	TBR
189	PERSIMMON	*Diospyros virginiana*	12.4	FAIR	
190	AMERICAN BEECH	*Fagus grandifolia*	30.1	FAIR	
191	AMERICAN BEECH	*Fagus grandifolia*	10.1	GOOD	
192	AMERICAN BEECH	*Fagus grandifolia*	6.3	GOOD	
193	AMERICAN BEECH	*Fagus grandifolia*	9.3	GOOD	
194	RED MAPLE	*Acer rubrum*	6.1	GOOD	
195	RED MAPLE	*Acer rubrum*	6.2	FAIR	
196	PIGNUT HICKORY	*Carya glabra*	7	FAIR	
197	RED MAPLE	*Acer rubrum*	8.9	GOOD	
198	RED MAPLE	*Acer rubrum*	7.1	FAIR	
199	TULIP POPLAR	*Liriodendron tulipifera*	11.7	FAIR	
200	NORTHERN RED OAK	*Quercus rubra*	15.2	FAIR	
201	BLACK JACK OAK	*Quercus marilandica*	16.3	GOOD	
202	TULIP POPLAR	*Liriodendron tulipifera*	8.4	GOOD	
203	BLACK JACK OAK	*Quercus marilandica*	15.7	FAIR	
204	NORTHERN RED OAK	*Quercus rubra*	7.9	FAIR	
205	RED MAPLE	*Acer rubrum*	9.2	FAIR	
206	BLACK CHERRY	*Prunus serotina*	11.6	FAIR	
207	BLACK CHERRY	*Prunus serotina*	11.1	FAIR	
208	RED MAPLE	*Acer rubrum*	6.7	GOOD	
209	RED MAPLE	*Acer rubrum*	14.8	GOOD	
210	TULIP POPLAR	*Liriodendron tulipifera*	13.3	GOOD	
211	TULIP POPLAR	*Liriodendron tulipifera*	13.3	GOOD	
212	RED MAPLE	*Acer rubrum*	8.7	FAIR	
213	AMERICAN BEECH	*Fagus grandifolia*	8.8	GOOD	
214	TULIP POPLAR	*Liriodendron tulipifera*	6.6	GOOD	
215	TULIP POPLAR	*Liriodendron tulipifera*	9.4	GOOD	
216	GREEN ASH	*Fraxinus pennsylvanica*	8.2	POOR	TBR
217	GREEN ASH	*Fraxinus pennsylvanica*	10.1	POOR	TBR
218	GREEN ASH	*Fraxinus pennsylvanica*	6.9	POOR	TBR
219	HACKBERRY	*Celtis occidentalis*	12.7	FAIR	
220	GREEN ASH	*Fraxinus pennsylvanica*	12.1	POOR	TBR
221	RED MAPLE	*Acer rubrum*	8.9	POOR	TBR
222	GREEN ASH	*Fraxinus pennsylvanica*	9.4	POOR	TBR
223	RED MAPLE	*Acer rubrum*	6.8	FAIR	
224	RED MAPLE	*Acer rubrum*	6.6	GOOD	
225	RED MAPLE	*Acer rubrum*	12.5	POOR	TBR
226	GREEN ASH	*Fraxinus pennsylvanica*	19.9	POOR	TBR
227	RED MAPLE	*Acer rubrum*	11.8	FAIR	TBR
228	RED MAPLE	*Acer rubrum*	7	GOOD	
229	RED MAPLE	*Acer rubrum*	7	FAIR	
230	RED MAPLE	*Acer rubrum*	7.1	FAIR	
231	RED MAPLE	*Acer rubrum*	7.6	GOOD	
232	NORTHERN RED OAK	*Quercus rubra*	15.4	GOOD	
233	RED MAPLE	*Acer rubrum*	20.9	GOOD	
234	AMERICAN ELM	*Ulmus americana*	7.4	FAIR	
235	RED MAPLE	*Acer rubrum*	6.1	POOR	TBR
236	RED MAPLE	*Acer rubrum*	10.9	POOR	TBR
237	MOCKERNUT HICKORY	*Carya tomentosa*	11.7	FAIR	
238	AMERICAN ELM	*Ulmus americana*	11.6	RAIR	
239	GREEN ASH	*Fraxinus pennsylvanica*	6.2	POOR	-
240	GREEN ASH	*Fraxinus pennsylvanica*	7.5	POOR	-
241	RED MAPLE	*Acer rubrum*	10.2	GOOD	
242	RED MAPLE	*Acer rubrum*	6.8	GOOD	
243	TULIP POPLAR	*Liriodendron tulipifera*	16	GOOD	
244	RED MAPLE	*Acer rubrum*	6.8	FAIR	
245	RED MAPLE	*Acer rubrum*	10.5	GOOD	
246	RED MAPLE	*Acer rubrum*	11.9	FAIR	
247	RED MAPLE	*Acer rubrum*	10.8	FAIR	
248	AMERICAN BEECH	*Fagus grandifolia*	22.3	GOOD	
249	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
250	RED MAPLE	*Acer rubrum*	25.2	FAIR	
251	RED MAPLE	*Acer rubrum*	6.4	FAIR	
252	TULIP POPLAR	*Liriodendron tulipifera*	8.5	FAIR	
253	TULIP POPLAR	*Liriodendron tulipifera*	11.9	GOOD	
254	AMERICAN BEECH	*Fagus grandifolia*	27.9	GOOD	
255	NORTHERN RED OAK	*Quercus rubra*	8.8	FAIR	
256	RED MAPLE	*Acer rubrum*	14.9	FAIR	
257	GREEN ASH	*Fraxinus pennsylvanica*	7.1	POOR	-
258	GREEN ASH	*Fraxinus pennsylvanica*	12.6	POOR	-
259	RED MAPLE	*Acer rubrum*	21.5	FAIR	
260	TULIP POPLAR	*Liriodendron tulipifera*	16.3	FAIR	
261	PERSIMMON	*Diospyros virginiana*	22.8	FAIR	
262	AMERICAN BEECH	*Fagus grandifolia*	19.1	FAIR	
263	AMERICAN BEECH	*Fagus grandifolia*	28.9	GOOD	
264	RED MAPLE	*Acer rubrum*	12.4	FAIR	
265	TULIP POPLAR	*Liriodendron tulipifera*	28.8	FAIR	
266	RED MAPLE	*Acer rubrum*	12.2	FAIR	
267	AMERICAN BEECH	*Fagus grandifolia*	12.5	GOOD	
268	TULIP POPLAR	*Liriodendron tulipifera*	18.3	GOOD	
269	RED MAPLE	*Acer rubrum*	12.9	FAIR	
270	TULIP POPLAR	*Liriodendron tulipifera*	14.4	FAIR	
271	SYCAMORE	*Platanus occidentalis*	15	FAIR	
272	WHITE OAK	*Quercus alba*	16.2	GOOD	
273	TULIP POPLAR	*Liriodendron tulipifera*	15.1	GOOD	
274	RED MAPLE	*Acer rubrum*	8.4	POOR	-
275	RED MAPLE	*Acer rubrum*	16.7	FAIR	
276	RED MAPLE	*Acer rubrum*	9.6	FAIR	
277	TULIP POPLAR	*Liriodendron tulipifera*	22.9	GOOD	
278	PERSIMMON	*Diospyros virginiana*	12.1	FAIR	
279	WHITE OAK	*Quercus alba*	10.7	FAIR	
280	RED MAPLE	*Acer rubrum*	6.6	FAIR	
281	GREEN ASH	*Fraxinus pennsylvanica*	10.3	POOR	-
282	GREEN ASH	*Fraxinus pennsylvanica*	7.9	POOR	-
283	RED MAPLE	*Acer rubrum*	9.7	FAIR	
284	RED MAPLE	*Acer rubrum*	6.5	FAIR	
285	WHITE OAK	*Quercus alba*	22.4	FAIR	
286	GREEN ASH	*Fraxinus pennsylvanica*	9.9	POOR	-
287	GREEN ASH	*Fraxinus pennsylvanica*	11.9	POOR	-
288	SYCAMORE	*Platanus occidentalis*	8.7	FAIR	
289	AMERICAN BEECH	*Fagus grandifolia*	10.3	GOOD	
290	GREEN ASH	*Fraxinus pennsylvanica*	10.3	POOR	-
291	RED MAPLE	*Acer rubrum*	9.3	POOR	-
292	HONEY LOCUST	*Gleditsia triacanthos*	11.4	FAIR	
293	RED MAPLE	*Acer rubrum*	7.4	POOR	-
294	HONEY LOCUST	*Gleditsia triacanthos*	9.1	POOR	-
295	RED MAPLE	*Acer rubrum*	14.3	POOR	-
296	RED MAPLE	*Acer rubrum*	8.3	FAIR	
297	RED MAPLE	*Acer rubrum*	9.8	FAIR	
298	RED MAPLE	*Acer rubrum*	7.4	GOOD	
299	RED MAPLE	*Acer rubrum*	6.5	FAIR	
300	GREEN ASH	*Fraxinus pennsylvanica*	8.3	POOR	-

TREES T-1 THROUGH T-300

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 14 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-01 Of TI-10

BID NO.:
HCG DWG ID No.:
SCALE: 1"=60'

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
301	RED MAPLE	*Acer rubrum*	8.1	FAIR	
302	RED MAPLE	*Acer rubrum*	7.6	FAIR	
303	RED MAPLE	*Acer rubrum*	8.7	FAIR	
304	RED MAPLE	*Acer rubrum*	6.3	FAIR	
305	RED MAPLE	*Acer rubrum*	11.4	GOOD	
306	BLACK CHERRY	*Prunus serotina*	8.1	FAIR	
307	RED MAPLE	*Acer rubrum*	7.4	FAIR	
308	BLACK CHERRY	*Prunus serotina*	9.3	FAIR	
309	RED MAPLE	*Acer rubrum*	9.4	FAIR	
310	RED MAPLE	*Acer rubrum*	11.5	FAIR	
311	RED MAPLE	*Acer rubrum*	16.9	FAIR	
312	TULIP POPLAR	*Liriodendron tulipifera*	14.5	GOOD	
313	RED MAPLE	*Acer rubrum*	9.6	FAIR	
314	TULIP POPLAR	*Liriodendron tulipifera*	17.3	GOOD	
315	RED MAPLE	*Acer rubrum*	6.8	FAIR	
316	RED MAPLE	*Acer rubrum*	6.4	FAIR	
317	TULIP POPLAR	*Liriodendron tulipifera*	12.8	POOR	-
318	TULIP POPLAR	*Liriodendron tulipifera*	15.1	FAIR	
319	NORTHERN RED OAK	*Quercus rubra*	17.2	GOOD	
320	TULIP POPLAR	*Liriodendron tulipifera*	7.8	FAIR	
321	BLACK CHERRY	*Prunus serotina*	9.2	FAIR	
322	TULIP POPLAR	*Liriodendron tulipifera*	14.2	FAIR	
323	TULIP POPLAR	*Liriodendron tulipifera*	12.6	POOR	-
324	TULIP POPLAR	*Liriodendron tulipifera*	16.6	FAIR	
325	TULIP POPLAR	*Liriodendron tulipifera*	17.4	FAIR	
326	TULIP POPLAR	*Liriodendron tulipifera*	9.7	FAIR	
327	BLACK JACK OAK	*Quercus marilandica*	16.4	GOOD	
328	RED MAPLE	*Acer rubrum*	21.7	FAIR	
329	NORTHERN RED OAK	*Quercus rubra*	12.2	FAIR	
330	RED MAPLE	*Acer rubrum*	10.3	FAIR	
331	WHITE OAK	*Quercus alba*	7.1	FAIR	
332	GREEN ASH	*Fraxinus pennsylvanica*	9.6	POOR	-
333	AMERICAN ELM	*Ulmus americana*	19.3	POOR	-
334	RED MAPLE	*Acer rubrum*	6.7	FAIR	
335	TULIP POPLAR	*Liriodendron tulipifera*	12.9	FAIR	
336	RED MAPLE	*Acer rubrum*	11.1	FAIR	
337	WHITE OAK	*Quercus alba*	8.2	FAIR	
338	RED MAPLE	*Acer rubrum*	7.4	FAIR	
339	WHITE OAK	*Quercus alba*	6.6	FAIR	
340	AMERICAN ELM	*Ulmus americana*	15.7	FAIR	
341	GREEN ASH	*Fraxinus pennsylvanica*	9.3	POOR	-
342	GREEN ASH	*Fraxinus pennsylvanica*	6.6	POOR	-
343	GREEN ASH	*Fraxinus pennsylvanica*	7.6	POOR	-
344	GREEN ASH	*Fraxinus pennsylvanica*	8.1	POOR	-
345	GREEN ASH	*Fraxinus pennsylvanica*	6.6	POOR	-
346	SILVER MAPLE	*Acer saccharinum*	10.4	FAIR	
347	RED MAPLE	*Acer rubrum*	7.4	FAIR	
348	RED MAPLE	*Acer rubrum*	12.2	FAIR	
349	RED MAPLE	*Acer rubrum*	11.7	FAIR	
350	BLACK GUM	*Nyssa sylvatica*	6.1	FAIR	
351	RED MAPLE	*Acer rubrum*	14.3	FAIR	
352	RED MAPLE	*Acer rubrum*	6.5	FAIR	
353	RED MAPLE	*Acer rubrum*	7.6	FAIR	
354	TULIP POPLAR	*Liriodendron tulipifera*	13.7	FAIR	TBR
355	RED MAPLE	*Acer rubrum*	6.6	FAIR	
356	RED MAPLE	*Acer rubrum*	15.8	FAIR	
357	RED MAPLE	*Acer rubrum*	6.3	FAIR	
358	AMERICAN BEECH	*Fagus grandifolia*	6.9	GOOD	
359	WHITE OAK	*Quercus alba*	12.5	GOOD	
360	RED MAPLE	*Acer rubrum*	9.6	FAIR	
361	RED MAPLE	*Acer rubrum*	7.5	FAIR	
362	RED MAPLE	*Acer rubrum*	10.9	FAIR	
363	RED MAPLE	*Acer rubrum*	6.2	FAIR	
364	RED MAPLE	*Acer rubrum*	6.2	FAIR	
365	TULIP POPLAR	*Liriodendron tulipifera*	9.5	GOOD	
366	TULIP POPLAR	*Liriodendron tulipifera*	12.8	FAIR	
367	BLACK CHERRY	*Prunus serotina*	7	FAIR	
368	TULIP POPLAR	*Liriodendron tulipifera*	12.5	FAIR	
369	TULIP POPLAR	*Liriodendron tulipifera*	13.2	FAIR	
370	TULIP POPLAR	*Liriodendron tulipifera*	12.7	FAIR	
371	TULIP POPLAR	*Liriodendron tulipifera*	12.4	FAIR	
372	TULIP POPLAR	*Liriodendron tulipifera*	6.3	FAIR	
373	PIGNUT HICKORY	*Carya glabra*	8.4	FAIR	
374	TULIP POPLAR	*Liriodendron tulipifera*	7.4	POOR	-
375	TULIP POPLAR	*Liriodendron tulipifera*	11.4	FAIR	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
376	RED MAPLE	*Acer rubrum*	11.2	GOOD	
377	TULIP POPLAR	*Liriodendron tulipifera*	10.2	FAIR	TBR
378	RED MAPLE	*Acer rubrum*	7.1	FAIR	
379	RED MAPLE	*Acer rubrum*	8.9	FAIR	
380	GREEN ASH	*Fraxinus pennsylvanica*	12.8	POOR	-
381	WHITE OAK	*Quercus alba*	16.1	GOOD	
382	WHITE OAK	*Quercus alba*	6.3	GOOD	
383	PIGNUT HICKORY	*Carya glabra*	7.3	GOOD	
384	RED MAPLE	*Acer rubrum*	32.7	FAIR	
385	PIGNUT HICKORY	*Carya glabra*	9.6	FAIR	
386	RED MAPLE	*Acer rubrum*	11.1	FAIR	
387	RED MAPLE	*Acer rubrum*	6.9	FAIR	
388	TULIP POPLAR	*Liriodendron tulipifera*	10.7	GOOD	
389	RED MAPLE	*Acer rubrum*	8.9	FAIR	
390	RED MAPLE	*Acer rubrum*	9.6	FAIR	
391	WHITE OAK	*Quercus alba*	16.6	FAIR	
392	RED MAPLE	*Acer rubrum*	8.1	FAIR	
393	BLACK CHERRY	*Prunus serotina*	6.5	FAIR	
394	RED MAPLE	*Acer rubrum*	10.6	FAIR	
395	RED MAPLE	*Acer rubrum*	9.5	FAIR	
396	RED MAPLE	*Acer rubrum*	11.7	FAIR	
397	RED MAPLE	*Acer rubrum*	7.2	FAIR	TBR
398	AMERICAN BEECH	*Fagus grandifolia*	6.6	GOOD	
399	RED MAPLE	*Acer rubrum*	6.2	FAIR	
400	RED MAPLE	*Acer rubrum*	9.3	GOOD	
401	TULIP POPLAR	*Liriodendron tulipifera*	6.8	FAIR	
402	NORTHERN RED OAK	*Quercus rubra*	16.5	FAIR	
403	TULIP POPLAR	*Liriodendron tulipifera*	8.5	GOOD	
404	NORTHERN RED OAK	*Quercus rubra*	13.2	FAIR	
405	TULIP POPLAR	*Liriodendron tulipifera*	13.4	FAIR	
406	TULIP POPLAR	*Liriodendron tulipifera*	10.5	FAIR	
407	RED MAPLE	*Acer rubrum*	7.1	FAIR	TBR
408	TULIP POPLAR	*Liriodendron tulipifera*	19.2	GOOD	
409	RED MAPLE	*Acer rubrum*	7.5	FAIR	
410	AMERICAN ELM	*Ulmus americana*	6.3	FAIR	
411	BLACK JACK OAK	*Quercus marilandica*	13.7		TBR
412	TULIP POPLAR	*Liriodendron tulipifera*	13.1	POOR	TBR
413	RED MAPLE	*Acer rubrum*	6.1	FAIR	
414	AMERICAN ELM	*Ulmus americana*	8.4	FAIR	
415	RED MAPLE	*Acer rubrum*	7.8	FAIR	
416	RED MAPLE	*Acer rubrum*	9.8	FAIR	
417	TULIP POPLAR	*Liriodendron tulipifera*	12.8	FAIR	
418	RED MAPLE	*Acer rubrum*	11.4	FAIR	
419	RED MAPLE	*Acer rubrum*	12.4	FAIR	
420	RED MAPLE	*Acer rubrum*	12.2	FAIR	
421	RED MAPLE	*Acer rubrum*	10	FAIR	
422	TULIP POPLAR	*Liriodendron tulipifera*	19.1	FAIR	
423	TULIP POPLAR	*Liriodendron tulipifera*	20.1	GOOD	
424	TULIP POPLAR	*Liriodendron tulipifera*	12	FAIR	
425	RED MAPLE	*Acer rubrum*	15.7	FAIR	
426	TULIP POPLAR	*Liriodendron tulipifera*	15.1	FAIR	TBR
427	RED MAPLE	*Acer rubrum*	18	POOR	-
428	AMERICAN BEECH	*Fagus grandifolia*	15.4	GOOD	
429	RED MAPLE	*Acer rubrum*	16.9	FAIR	
430	NORTHERN RED OAK	*Quercus rubra*	28.9	GOOD	
431	AMERICAN BEECH	*Fagus grandifolia*	6.4	FAIR	
432	RED MAPLE	*Acer rubrum*	17.9	FAIR	
433	RED MAPLE	*Acer rubrum*	19.6	POOR	TBR
434	NORTHERN RED OAK	*Quercus rubra*	6.8	FAIR	
435	TULIP POPLAR	*Liriodendron tulipifera*	13.4	FAIR	
436	TULIP POPLAR	*Liriodendron tulipifera*	14.3	FAIR	
437	AMERICAN BEECH	*Fagus grandifolia*	21.3	FAIR	
438	SYCAMORE	*Platanus occidentalis*	9.8	FAIR	
439	RED MAPLE	*Acer rubrum*	7.4	FAIR	
440	GREEN ASH	*Fraxinus pennsylvanica*	10.4	POOR	-
441	RED MAPLE	*Acer rubrum*	9.6	FAIR	
442	AMERICAN BEECH	*Fagus grandifolia*	23	GOOD	
443	RED MAPLE	*Acer rubrum*	6.1	FAIR	
444	RED MAPLE	*Acer rubrum*	8.2	FAIR	
445	RED MAPLE	*Acer rubrum*	13.3	FAI	
446	BLACK CHERRY	*Prunus serotina*	9	FAIR	
447	GREEN ASH	*Fraxinus pennsylvanica*	10.2	POOR	-
448	RED MAPLE	*Acer rubrum*	7.6	FAIR	
449	RED MAPLE	*Acer rubrum*	6.2	FAIR	
450	RED MAPLE	*Acer rubrum*	12.4	FAIR	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
451	GREEN ASH	*Fraxinus pennsylvanica*	12.5	POOR	-
452	RED MAPLE	*Acer rubrum*	12.3	FAIR	
453	RED MAPLE	*Acer rubrum*	8.9	FAIR	
454	RED MAPLE	*Acer rubrum*	6.6	FAIR	
455	RED MAPLE	*Acer rubrum*	9.4	FAIR	
456	RED MAPLE	*Acer rubrum*	10.4	FAIR	
457	RED MAPLE	*Acer rubrum*	11.8	FAIR	
458	GREEN ASH	*Fraxinus pennsylvanica*	9.7	POOR	-
459	RED MAPLE	*Acer rubrum*	7	FAIR	
460	BLACK CHERRY	*Prunus serotina*	9.1	FAIR	
461	RED MAPLE	*Acer rubrum*	12.1	FAIR	
462	TULIP POPLAR	*Liriodendron tulipifera*	8.8	GOOD	
463	TULIP POPLAR	*Liriodendron tulipifera*	24.4	FAIR	TBR
464	TULIP POPLAR	*Liriodendron tulipifera*	7	FAIR	TBR
465	TULIP POPLAR	*Liriodendron tulipifera*	24.2	FAIR	TBR
466	TULIP POPLAR	*Liriodendron tulipifera*	13.4	FAIR	TBR
467	TULIP POPLAR	*Liriodendron tulipifera*	20.1	FAIR	
468	AMERICAN BEECH	*Fagus grandifolia*	20.6	POOR	TBR
469	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
470	TULIP POPLAR	*Liriodendron tulipifera*	19.6	GOOD	
471	AMERICAN BEECH	*Fagus grandifolia*	12.6	GOOD	
472	AMERICAN BEECH	*Fagus grandifolia*	20.4	GOOD	
473	TULIP POPLAR	*Liriodendron tulipifera*	14.2	GOOD	
474	TULIP POPLAR	*Liriodendron tulipifera*	10.8	GOOD	
475	TULIP POPLAR	*Liriodendron tulipifera*	14.6	FAIR	
476	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
477	TULIP POPLAR	*Liriodendron tulipifera*	13.7	GOOD	
478	TULIP POPLAR	*Liriodendron tulipifera*	12.6	FAIR	
479	TULIP POPLAR	*Liriodendron tulipifera*	7.1	FAIR	
480	TULIP POPLAR	*Liriodendron tulipifera*	8.3	GOOD	
481	RED MAPLE	*Acer rubrum*	7.8	GOOD	
482	RED MAPLE	*Acer rubrum*	6.7	GOOD	
483	RED MAPLE	*Acer rubrum*	11.7	FAIR	
484	RED MAPLE	*Acer rubrum*	6.6	FAIR	
485	AMERICAN ELM	*Ulmus americana*	18.6	GOOD	
486	RED MAPLE	*Acer rubrum*	11.5	GOOD	
487	RED MAPLE	*Acer rubrum*	9.2	GOOD	
488	RED MAPLE	*Acer rubrum*	7.3	GOOD	
489	RED MAPLE	*Acer rubrum*	7	GOOD	
490	AMERICAN ELM	*Ulmus americana*	9.8	POOR	-
491	RED MAPLE	*Acer rubrum*	7.7	GOOD	
492	RED MAPLE	*Acer rubrum*	12.5	FAIR	
493	GREEN ASH	*Fraxinus pennsylvanica*	13.1	POOR	-
494	RED MAPLE	*Acer rubrum*	10.8	GOOD	
495	GREEN ASH	*Fraxinus pennsylvanica*	12.1	POOR	-
496	RED MAPLE	*Acer rubrum*	12.8	GOOD	
497	TULIP POPLAR	*Liriodendron tulipifera*	13.8	FAIR	
498	RED MAPLE	*Acer rubrum*	7	POOR	-
499	NORTHERN RED OAK	*Quercus rubra*	11.5	FAIR	
500	TULIP POPLAR	*Liriodendron tulipifera*	11	GOOD	TBR
501	TULIP POPLAR	*Liriodendron tulipifera*	20.6	POOR	TBR
502	NORTHERN RED OAK	*Quercus rubra*	16.9	FAIR	
503	TULIP POPLAR	*Liriodendron tulipifera*	8.3	GOOD	TBR
504	TULIP POPLAR	*Liriodendron tulipifera*	9.5	GOOD	
505	RED MAPLE	*Acer rubrum*	9.2	GOO	TBR
506	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
507	GREEN ASH	*Fraxinus pennsylvanica*	10.5	POOR	-
508	RED MAPLE	*Acer rubrum*	6.7	POOR	-
509	RED MAPLE	*Acer rubrum*	8.2	GOOD	
510	TULIP POPLAR	*Liriodendron tulipifera*	10.5	GOOD	
511	RED MAPLE	*Acer rubrum*	6.1	GOOD	
512	RED MAPLE	*Acer rubrum*	8.5	FAIR	
513	RED MAPLE	*Acer rubrum*	13.4	GOOD	
514	RED MAPLE	*Acer rubrum*	6.9	GOOD	
515	AMERICAN ELM	*Ulmus americana*	9	GOOD	
516	TULIP POPLAR	*Liriodendron tulipifera*	15.5	GOOD	
517	RED MAPLE	*Acer rubrum*	8	GOOD	
518	GREEN ASH	*Fraxinus pennsylvanica*	6.3	POOR	-
519	RED MAPLE	*Acer rubrum*	7.9	GOOD	
520	RED MAPLE	*Acer rubrum*	7.2	FAIR	
521	RED MAPLE	*Acer rubrum*	10.4	FAIR	
522	TULIP POPLAR	*Liriodendron tulipifera*	9	FAIR	
523	TULIP POPLAR	*Liriodendron tulipifera*	13.6	GOOD	
524	RED MAPLE	*Acer rubrum*	9.9	GOOD	
525	RED MAPLE	*Acer rubrum*	9.6	GOOD	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
526	RED MAPLE	*Acer rubrum*	10.3	FAIR	
527	RED MAPLE	*Acer rubrum*	8.2	GOOD	
528	TULIP POPLAR	*Liriodendron tulipifera*	17.5	POOR	TBR
529	TULIP POPLAR	*Liriodendron tulipifera*	16.4	FAIR	
530	RED MAPLE	*Acer rubrum*	14.7	FAIR	TBR
531	AMERICAN ELM	*Ulmus americana*	6.8	FAIR	
532	RED MAPLE	*Acer rubrum*	6.9	GOOD	
533	AMERICAN ELM	*Ulmus americana*	8	FAIR	
534	RED MAPLE	*Acer rubrum*	7.2	FAIR	
535	RED MAPLE	*Acer rubrum*	8.2	GOOD	
536	AMERICAN ELM	*Ulmus americana*	11.1	GOOD	
537	NORTHERN RED OAK	*Quercus rubra*	14.6	GOOD	
538	TULIP POPLAR	*Liriodendron tulipifera*	11.8	FAIR	
539	AMERICAN ELM	*Ulmus americana*	23	GOOD	
540	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
541	TULIP POPLAR	*Liriodendron tulipifera*	9.8	GOOD	
542	TULIP POPLAR	*Liriodendron tulipifera*	15.3	GOOD	
543	TULIP POPLAR	*Liriodendron tulipifera*	14	GOOD	TBR
544	TULIP POPLAR	*Liriodendron tulipifera*	19.5	FAIR	TBR
545	TULIP POPLAR	*Liriodendron tulipifera*	14.8	GOOD	TBR
546	TULIP POPLAR	*Liriodendron tulipifera*	19.5	GOOD	TBR
547	TULIP POPLAR	*Liriodendron tulipifera*	8.5	FAIR	TBR
548	BLACK CHERRY	*Prunus serotina*	9.8	GOOD	
549	TULIP POPLAR	*Liriodendron tulipifera*	7.1	FAIR	TBR
550	TULIP POPLAR	*Liriodendron tulipifera*	18.2	GOOD	TBR
551	TULIP POPLAR	*Liriodendron tulipifera*	20.3	GOOD	TBR
552	AMERICAN BEECH	*Fagus grandifolia*	22.5	GOOD	
553	RED MAPLE	*Acer rubrum*	13.5	GOOD	
554	AMERICAN BEECH	*Fagus grandifolia*	17.6	POOR	TBR
555	RED MAPLE	*Acer rubrum*	16.8	FAIR	
556	GREEN ASH	*Fraxinus pennsylvanica*	10	POOR	-
557	NORTHERN RED OAK	*Quercus rubra*	15.2	GOOD	
558	RED MAPLE	*Acer rubrum*	17.9	POOR	-
559	NORTHERN RED OAK	*Quercus rubra*	12.2	FAIR	
560	AMERICAN ELM	*Ulmus americana*	12.1	GOOD	
561	RED MAPLE	*Acer rubrum*	24.2	POOR	TBR
562	TULIP POPLAR	*Liriodendron tulipifera*	11.7	GOOD	TBR
563	AMERICAN ELM	*Ulmus americana*	11.5	GOOD	
564	AMERICAN ELM	*Ulmus americana*	11.1	GOOD	
565	TULIP POPLAR	*Liriodendron tulipifera*	20.2	FAIR	
566	TULIP POPLAR	*Liriodendron tulipifera*	12.6	FAIR	
567	AMERICAN ELM	*Ulmus americana*	12	GOOD	
568	AMERICAN ELM	*Ulmus americana*	10	FAIR	
569	AMERICAN ELM	*Ulmus americana*	8	FAIR	
570	AMERICAN ELM	*Ulmus americana*	6.2	FAIR	
571	GREEN ASH	*Fraxinus pennsylvanica*	8.5	POOR	-
572	AMERICAN ELM	*Ulmus americana*	16.3	GOOD	
573	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
574	RED MAPLE	*Acer rubrum*	7	GOOD	
575	RED MAPLE	*Acer rubrum*	6.8	GOOD	
576	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
577	TULIP POPLAR	*Liriodendron tulipifera*	12.2	GOOD	
578	RED MAPLE	*Acer rubrum*	7	GOOD	
579	AMERICAN ELM	*Ulmus americana*	6.2	GOOD	
580	TULIP POPLAR	*Liriodendron tulipifera*	12.2	GOOD	
581	TULIP POPLAR	*Liriodendron tulipifera*	13.5	GOOD	
582	NORTHERN RED OAK	*Quercus rubra*	13.7	GOOD	
583	TULIP POPLAR	*Liriodendron tulipifera*	10.8	FAIR	
584	NORTHERN RED OAK	*Quercus rubra*	14.8	GOOD	
585	NORTHERN RED OAK	*Quercus rubra*	16.6	GOOD	
586	AMERICAN ELM	*Ulmus americana*	6.5	POOR	-
587	RED MAPLE	*Acer rubrum*	6.2	GOOD	
588	RED MAPLE	*Acer rubrum*	6.1	FAIR	
589	TULIP POPLAR	*Liriodendron tulipifera*	13.2	FAIR	
590	RED MAPLE	*Acer rubrum*	8	GOOD	
591	TULIP POPLAR	*Liriodendron tulipifera*	12.9	GOOD	
592	GREEN ASH	*Fraxinus pennsylvanica*	8.3	POOR	-
593	TULIP POPLAR	*Liriodendron tulipifera*	13.1	GOOD	
594	BLACK CHERRY	*Prunus serotina*	7.5	GOOD	
595	RED MAPLE	*Acer rubrum*	9.7	FAIR	
596	TULIP POPLAR	*Liriodendron tulipifera*	9.8	GOOD	
597	BLACK CHERRY	*Prunus serotina*	6.1	POOR	-
598	NORTHERN RED OAK	*Quercus rubra*	19.2	FAIR	
599	TULIP POPLAR	*Liriodendron tulipifera*	12.6	GOOD	
600	TULIP POPLAR	*Liriodendron tulipifera*	9.3	FAIR	

TREES T-301 THROUGH T-600

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 15 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-02 Of TI-10

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

BID No.:
HCG DWG ID No.:
SCALE 1 INCH

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
601	TULIP POPLAR	*Liriodendron tulipifera*	10.6	FAIR	
602	TULIP POPLAR	*Liriodendron tulipifera*	11.9	GOOD	
603	GREEN ASH	*Fraxinus pennsylvanica*	9.3	POOR	-
604	TULIP POPLAR	*Liriodendron tulipifera*	8.1	GOOD	
605	TULIP POPLAR	*Liriodendron tulipifera*	19.2	GOOD	
606	TULIP POPLAR	*Liriodendron tulipifera*	16.5	GOOD	
607	TULIP POPLAR	*Liriodendron tulipifera*	6.9	GOOD	
608	TULIP POPLAR	*Liriodendron tulipifera*	9.4	FAIR	TBR
609	NORTHERN RED OAK	*Quercus rubra*	6.3	FAIR	
610	TULIP POPLAR	*Liriodendron tulipifera*	14.7	FAIR	TBR
611	NORTHERN RED OAK	*Quercus rubra*	32	FAIR	
612	TULIP POPLAR	*Liriodendron tulipifera*	6.1	GOOD	
613	WHITE OAK	*Quercus alba*	29.3	GOOD	
614	RED MAPLE	*Acer rubrum*	23.1	GOOD	
615	AMERICAN BEECH	*Fagus grandifolia*	19.5	GOOD	
616	TULIP POPLAR	*Liriodendron tulipifera*	6.5	FAIR	TBR
617	PRINCESS TREE	*Paulownia tomentosa*	8.7	POOR	TBR
618	BLACK CHERRY	*Prunus serotina*	7.1	POOR	TBR
619	TULIP POPLAR	*Liriodendron tulipifera*	9.3	FAIR	TBR
620	TULIP POPLAR	*Liriodendron tulipifera*	12.6	FAIR	TBR
621	TULIP POPLAR	*Liriodendron tulipifera*	14.2	POOR	TBR
622	TULIP POPLAR	*Liriodendron tulipifera*	8.4	POOR	TBR
623	TULIP POPLAR	*Liriodendron tulipifera*	11.8	POOR	TBR
624	TULIP POPLAR	*Liriodendron tulipifera*	15.7	POOR	TBR
625	TULIP POPLAR	*Liriodendron tulipifera*	24.4	GOOD	
626	AMERICAN BEECH	*Fagus grandifolia*	27.6	FAIR	
627	TULIP POPLAR	*Liriodendron tulipifera*	7.3	FAIR	
628	RED MAPLE	*Acer rubrum*	9	GOOD	
629	RED MAPLE	*Acer rubrum*	9.3	POOR	-
630	AMERICAN ELM	*Ulmus americana*	9	FAIR	
631	TULIP POPLAR	*Liriodendron tulipifera*	16.2	GOOD	TBR
632	TULIP POPLAR	*Liriodendron tulipifera*	8.3	GOOD	TBR
633	PIN CHERRY	*Prunus pensylvanica*	12.6	FAIR	
634	TULIP POPLAR	*Liriodendron tulipifera*	8.5	GOOD	
635	TULIP POPLAR	*Liriodendron tulipifera*	20	GOOD	
636	TULIP POPLAR	*Liriodendron tulipifera*	20	GOOD	
637	RED MAPLE	*Acer rubrum*	6.5	POOR	-
638	TULIP POPLAR	*Liriodendron tulipifera*	16.8	FAI	
639	TULIP POPLAR	*Liriodendron tulipifera*	16	FAIR	
640	TULIP POPLAR	*Liriodendron tulipifera*	8.7	FAIR	
641	TULIP POPLAR	*Liriodendron tulipifera*	12	GOOD	
642	TULIP POPLAR	*Liriodendron tulipifera*	10.9	GOOD	
643	TULIP POPLAR	*Liriodendron tulipifera*	6.5	GOOD	
644	TULIP POPLAR	*Liriodendron tulipifera*	12.7	FAIR	
645	TULIP POPLAR	*Liriodendron tulipifera*	15.3	GOOD	
646	NORTHERN RED OAK	*Quercus rubra*	7	GOOD	
647	TULIP POPLAR	*Liriodendron tulipifera*	11.2	FAIR	
648	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
649	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
650	TULIP POPLAR	*Liriodendron tulipifera*	14.7	GOOD	TBR
651	TULIP POPLAR	*Liriodendron tulipifera*	11.2	FAIR	
652	TULIP POPLAR	*Liriodendron tulipifera*	16.1	GOOD	
653	TULIP POPLAR	*Liriodendron tulipifera*	11.5	FAIR	
654	TULIP POPLAR	*Liriodendron tulipifera*	8.7	POOR	TBR
655	TULIP POPLAR	*Liriodendron tulipifera*	21.7	FAIR	
656	GREEN ASH	*Fraxinus pennsylvanica*	6.6	POOR	TBR
657	RED MAPLE	*Acer rubrum*	19.2	POOR	-
658	TULIP POPLAR	*Liriodendron tulipifera*	11	HOOD	
659	TULIP POPLAR	*Liriodendron tulipifera*	9.7	GOOD	
660	TULIP POPLAR	*Liriodendron tulipifera*	8	GOOD	
661	TULIP POPLAR	*Liriodendron tulipifera*	14.8	FAIR	
662	NORTHERN RED OAK	*Quercus rubra*	8.7	GOOD	
663	NORTHERN RED OAK	*Quercus rubra*	12.3	FAIR	
664	TULIP POPLAR	*Liriodendron tulipifera*	14	GOOD	
665	RED MAPLE	*Acer rubrum*	6.4	GOOD	
666	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	
667	RED MAPLE	*Acer rubrum*	15.9	FAIR	
668	TULIP POPLAR	*Liriodendron tulipifera*	20.4	GOOD	
669	RED MAPLE	*Acer rubrum*	10.8	POOR	-
670	TULIP POPLAR	*Liriodendron tulipifera*	21.6	GOOD	
671	AMERICAN BEECH	*Fagus grandifolia*	21.7	GOOD	
672	AMERICAN ELM	*Ulmus americana*	8.8	POOR	TBR
673	RED MAPLE	*Acer rubrum*	7.2	FAIR	TBR
674	TULIP POPLAR	*Liriodendron tulipifera*	7.2	POOR	TBR
675	TULIP POPLAR	*Liriodendron tulipifera*	13.8	FAIR	TBR

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
676	TULIP POPLAR	*Liriodendron tulipifera*	15.3	FAIR	TBR
677	AMERICAN BEECH	*Fagus grandifolia*	26.5	FAIR	
678	TULIP POPLAR	*Liriodendron tulipifera*	11.5	FAIR	
679	NORTHERN RED OAK	*Quercus rubra*	9.2	GOOD	
680	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
681	RED MAPLE	*Acer rubrum*	8	FAIR	
682	RED MAPLE	*Acer rubrum*	18.9	FAIR	
683	TULIP POPLAR	*Liriodendron tulipifera*	14.7	GOOD	
684	AMERICAN BEECH	*Fagus grandifolia*	12	FAIR	
685	AMERICAN BEECH	*Fagus grandifolia*	23.5	FAIR	
686	AMERICAN BEECH	*Fagus grandifolia*	8.2	POOR	-
687	AMERICAN ELM	*Ulmus americana*	18.9	GOOD	
688	TULIP POPLAR	*Liriodendron tulipifera*	15.8	FAIR	TBR
689	TULIP POPLAR	*Liriodendron tulipifera*	8.6	POOR	TBR
690	TULIP POPLAR	*Liriodendron tulipifera*	12.6	POOR	TBR
691	TULIP POPLAR	*Liriodendron tulipifera*	9.7	POOR	TBR
692	AMERICAN ELM	*Ulmus americana*	15.9	FAIR	
693	AMERICAN ELM	*Ulmus americana*	18	FAIR	TBR
694	AMERICAN BEECH	*Fagus grandifolia*	25.1	FAIR	
695	AMERICAN BEECH	*Fagus grandifolia*	16.8	GOOD	
696	RED MAPLE	*Acer rubrum*	9.7	GOOD	
697	RED MAPLE	*Acer rubrum*	10.6	FAIR	
698	RED MAPLE	*Acer rubrum*	6.9	FAIR	
699	RED MAPLE	*Acer rubrum*	6.8	POOR	-
700	TULIP POPLAR	*Liriodendron tulipifera*	18	GOOD	
701	NORTHERN RED OAK	*Quercus rubra*	34.1	FAIR	
702	NORTHERN RED OAK	*Quercus rubra*	23.5	GOOD	
703	AMERICAN BEECH	*Fagus grandifolia*	20.5	GOOD	
704	AMERICAN BEECH	*Fagus grandifolia*	22.7	FAIR	
705	AMERICAN BEECH	*Fagus grandifolia*	7.8	FAIR	
706	RED MAPLE	*Acer rubrum*	7.9	FAIR	
707	TULIP POPLAR	*Liriodendron tulipifera*	15.8	GOOD	
708	TULIP POPLAR	*Liriodendron tulipifera*	7.2	FAIR	
709	TULIP POPLAR	*Liriodendron tulipifera*	19.3	GOOD	
710	TULIP POPLAR	*Liriodendron tulipifera*	16.1	GOOD	
711	TULIP POPLAR	*Liriodendron tulipifera*	14.7	GOOD	
712	TULIP POPLAR	*Liriodendron tulipifera*	16.8	GOOD	
713	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	TBR
714	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
715	TULIP POPLAR	*Liriodendron tulipifera*	16.1	GOOD	
716	TULIP POPLAR	*Liriodendron tulipifera*	20	GOOD	
717	TULIP POPLAR	*Liriodendron tulipifera*	10.6	GOOD	
718	TULIP POPLAR	*Liriodendron tulipifera*	15.6	FAIR	
719	RED MAPLE	*Acer rubrum*	6.5	FAIR	TBR
720	TULIP POPLAR	*Liriodendron tulipifera*	17.3	GOOD	
721	TULIP POPLAR	*Liriodendron tulipifera*	8.3	FAIR	
722	AMERICAN BEECH	*Fagus grandifolia*	30.9	GOOD	
723	TULIP POPLAR	*Liriodendron tulipifera*	11.1	GOOD	
724	TULIP POPLAR	*Liriodendron tulipifera*	18.2	GOOD	
725	BLACK CHERRY	*Prunus serotina*	7.7	FAIR	
726	TULIP POPLAR	*Liriodendron tulipifera*	15.2	FAIR	
727	BLACK GUM	*Nyssa sylvatica*	14.5	GOOD	
728	AMERICAN BEECH	*Fagus grandifolia*	24.1	FAIR	
729	BLACK GUM	*Nyssa sylvatica*	15.2	FAIR	
730	TULIP POPLAR	*Liriodendron tulipifera*	13.6	GOOD	
731	TULIP POPLAR	*Liriodendron tulipifera*	15.2	GOOD	
732	AMERICAN BEECH	*Fagus grandifolia*	25	POOR	-
733	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
734	TULIP POPLAR	*Liriodendron tulipifera*	15.6	FAIR	TBR
735	TULIP POPLAR	*Liriodendron tulipifera*	10.9	GOOD	TBR
736	TULIP POPLAR	*Liriodendron tulipifera*	15.5	FAIR	
737	TULIP POPLAR	*Liriodendron tulipifera*	19.5	FAIR	TBR
738	TULIP POPLAR	*Liriodendron tulipifera*	14.4	GOOD	
739	TULIP POPLAR	*Liriodendron tulipifera*	14.8	GOOD	
740	TULIP POPLAR	*Liriodendron tulipifera*	12.1	GOOD	
741	TULIP POPLAR	*Liriodendron tulipifera*	14.2	GOOD	
742	TULIP POPLAR	*Liriodendron tulipifera*	11.9	GOOD	
743	TULIP POPLAR	*Liriodendron tulipifera*	13.1	FAIR	
744	TULIP POPLAR	*Liriodendron tulipifera*	13.1	FAIR	
745	WHITE OAK	*Quercus alba*	23	FAIR	
746	RED MAPLE	*Acer rubrum*	8.5	POOR	-
747	TULIP POPLAR	*Liriodendron tulipifera*	10.7	GOOD	
748	TULIP POPLAR	*Liriodendron tulipifera*	13.5	GOOD	
749	TULIP POPLAR	*Liriodendron tulipifera*	13.5	GOOD	
750	TULIP POPLAR	*Liriodendron tulipifera*	13.7	GOOD	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
751	TULIP POPLAR	*Liriodendron tulipifera*	8.5	GOOD	
752	TULIP POPLAR	*Liriodendron tulipifera*	8.3	FAIR	
753	RED MAPLE	*Acer rubrum*	13.4	POOR	-
754	TULIP POPLAR	*Liriodendron tulipifera*	19.1	FAIR	TBR
755	TULIP POPLAR	*Liriodendron tulipifera*	15.2	FAIR	TBR
756	TULIP POPLAR	*Liriodendron tulipifera*	11.7	POOR	TBR
757	TULIP POPLAR	*Liriodendron tulipifera*	12.1	POOR	TBR
758	TULIP POPLAR	*Liriodendron tulipifera*	20.1	POOR	TBR
759	RED MAPLE	*Acer rubrum*	19.5	POOR	TBR
760	GREEN ASH	*Fraxinus pennsylvanica*	18.9	POOR	-
761	TULIP POPLAR	*Liriodendron tulipifera*	16.8	GOOD	
762	TULIP POPLAR	*Liriodendron tulipifera*	20	FAIR	
763	TULIP POPLAR	*Liriodendron tulipifera*	17.7	FAIR	
764	TULIP POPLAR	*Liriodendron tulipifera*	17.8	POOR	-
765	RED MAPLE	*Acer rubrum*	7.8	POOR	-
766	RED MAPLE	*Acer rubrum*	6.2	FAIR	
767	TULIP POPLAR	*Liriodendron tulipifera*	6.2	FAIR	
768	TULIP POPLAR	*Liriodendron tulipifera*	20	FAIR	
769	TULIP POPLAR	*Liriodendron tulipifera*	14.7	POOR	-
770	BLACK GUM	*Nyssa sylvatica*	6.8	POOR	-
771	TULIP POPLAR	*Liriodendron tulipifera*	13.5	FAIR	
772	BLACK GUM	*Nyssa sylvatica*	16.7	FAIR	
773	TULIP POPLAR	*Liriodendron tulipifera*	7.2	FAIR	
774	TULIP POPLAR	*Liriodendron tulipifera*	6	FAIR	
775	TULIP POPLAR	*Liriodendron tulipifera*	21	POOR	-
776	WHITE OAK	*Quercus alba*	7.3	POOR	-
777	AMERICAN BEECH	*Fagus grandifolia*	6.5	GOOD	
778	TULIP POPLAR	*Liriodendron tulipifera*	19.4	GOOD	
779	TULIP POPLAR	*Liriodendron tulipifera*	14.8	GOOD	
780	TULIP POPLAR	*Liriodendron tulipifera*	13.7	POOR	TBR
781	LARGE TOOTH ASPEN	*Populus grandidentata*	13.1	POOR	TBR
782	TULIP POPLAR	*Liriodendron tulipifera*	19.5	GOOD	TBR
783	TULIP POPLAR	*Liriodendron tulipifera*	9.4	GOOD	
784	TULIP POPLAR	*Liriodendron tulipifera*	20.8	GOOD	TBR
785	TULIP POPLAR	*Liriodendron tulipifera*	7.1	POOR	TBR
786	TULIP POPLAR	*Liriodendron tulipifera*	15.4	GOOD	
787	TULIP POPLAR	*Liriodendron tulipifera*	10.7	FAIR	
788	AMERICAN BEECH	*Fagus grandifolia*	15.6	POOR	TBR
789	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	TBR
790	TULIP POPLAR	*Liriodendron tulipifera*	14.3	GOOD	
791	TULIP POPLAR	*Liriodendron tulipifera*	12.7	GOOD	
792	TULIP POPLAR	*Liriodendron tulipifera*	11.4	POOR	-
793	AMERICAN BEECH	*Fagus grandifolia*	22.6	FAIR	
794	TULIP POPLAR	*Liriodendron tulipifera*	16.6	GOOD	
795	TULIP POPLAR	*Liriodendron tulipifera*	11.5	POOR	-
796	TULIP POPLAR	*Liriodendron tulipifera*	12.6	GOOD	
797	TULIP POPLAR	*Liriodendron tulipifera*	9.2	FAIR	
798	RED MAPLE	*Acer rubrum*	6.4	GOOD	
799	RED MAPLE	*Acer rubrum*	13.3	GOOD	
800	RED MAPLE	*Acer rubrum*	9.9	GOOD	
801	GREEN ASH	*Fraxinus pennsylvanica*	19	POOR	-
802	AMERICAN BEECH	*Fagus grandifolia*	16.3	GOOD	
803	RED MAPLE	*Acer rubrum*	11.5	GOOD	
804	GREEN ASH	*Fraxinus pennsylvanica*	11.1	POOR	-
805	GREEN ASH	*Fraxinus pennsylvanica*	9.6	POOR	-
806	GREEN ASH	*Fraxinus pennsylvanica*	9.3	POOR	-
807	TULIP POPLAR	*Liriodendron tulipifera*	8.3	FAIR	
808	TULIP POPLAR	*Liriodendron tulipifera*	6.6	FAIR	
809	RED MAPLE	*Acer rubrum*	7.4	GOOD	
810	TULIP POPLAR	*Liriodendron tulipifera*	17.6	GOOD	
811	AMERICAN BEECH	*Fagus grandifolia*	6.6	GOOD	
812	AMERICAN BEECH	*Fagus grandifolia*	15.3	POOR	-
813	AMERICAN BEECH	*Fagus grandifolia*	15.3	POOR	-
814	AMERICAN ELM	*Ulmus americana*	14.5	GOOD	
815	AMERICAN BEECH	*Fagus grandifolia*	22.8	GOOD	
816	TULIP POPLAR	*Liriodendron tulipifera*	15.2	GOOD	
817	WHITE OAK	*Quercus alba*	9.2	POOR	-
818	AMERICAN BEECH	*Fagus grandifolia*	23.7	FAIR	
819	TULIP POPLAR	*Liriodendron tulipifera*	9.8	GOOD	
820	TULIP POPLAR	*Liriodendron tulipifera*	9.8	POOR	-
821	TULIP POPLAR	*Liriodendron tulipifera*	19.6	FAIR	
822	TULIP POPLAR	*Liriodendron tulipifera*	14.6	GOOD	
823	AMERICAN BEECH	*Fagus grandifolia*	18.9	GOOD	
824	RED MAPLE	*Acer rubrum*	9.4	GOOD	
825	TULIP POPLAR	*Liriodendron tulipifera*	13.2	GOOD	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
826	RED MAPLE	*Acer rubrum*	9	GOOD	
827	RED MAPLE	*Acer rubrum*	9	GOOD	
828	RED MAPLE	*Acer rubrum*	12.1	GOOD	
829	RED MAPLE	*Acer rubrum*	7.4	GOOD	
830	TULIP POPLAR	*Liriodendron tulipifera*	11.6	GOOD	
831	RED MAPLE	*Acer rubrum*	8.9	GOOD	
832	RED MAPLE	*Acer rubrum*	11.6	GOOD	
833	TULIP POPLAR	*Liriodendron tulipifera*	10.1	GOOD	
834	AMERICAN BEECH	*Fagus grandifolia*	18.2	GOOD	
835	AMERICAN BEECH	*Fagus grandifolia*	15.7	GOOD	
836	RED MAPLE	*Acer rubrum*	15.3	GOOD	
837	TULIP POPLAR	*Liriodendron tulipifera*	12	GOOD	
838	AMERICAN BEECH	*Fagus grandifolia*	18.8	FAIR	
839	AMERICAN BEECH	*Fagus grandifolia*	21.6	FAIR	
840	AMERICAN BEECH	*Fagus grandifolia*	14.6	GOOD	
841	RED MAPLE	*Acer rubrum*	7.4	GOOD	
842	RED MAPLE	*Acer rubrum*	12.7	GOOD	
843	TULIP POPLAR	*Liriodendron tulipifera*	8.2	GOOD	
844	RED MAPLE	*Acer rubrum*	8.2	GOOD	
845	RED MAPLE	*Acer rubrum*	8.7	FAIR	
846	RED MAPLE	*Acer rubrum*	6.8	FAIR	
847	RED MAPLE	*Acer rubrum*	7	FAIR	
848	RED MAPLE	*Acer rubrum*	9.6	FAIR	
849	RED MAPLE	*Acer rubrum*	7.5	FAIR	
850	RED MAPLE	*Acer rubrum*	8.2	GOOD	
851	RED MAPLE	*Acer rubrum*	9.1	FAIR	
852	RED MAPLE	*Acer rubrum*	16.5	FAIR	
853	RED MAPLE	*Acer rubrum*	7.2	POOR	TBR
854	RED MAPLE	*Acer rubrum*	15.3	POOR	TBR
855	RED MAPLE	*Acer rubrum*	15.3	POOR	TBR
856	PIGNUT HICKORY	*Carya glabra*	12.1	POOR	TBR
857	RED MAPLE	*Acer rubrum*	6	POOR	TBR
858	RED MAPLE	*Acer rubrum*	6.2	POOR	TBR
859	RED MAPLE	*Acer rubrum*	9.4	POOR	TBR
860	RED MAPLE	*Acer rubrum*	12.6	FAIR	TBR
861	SYCAMORE	*Platanus occidentalis*	12.6	POOR	TBR
862	SYCAMORE	*Platanus occidentalis*	19.5	POOR	TBR
863	GREEN ASH	*Fraxinus pennsylvanica*	16.3	POOR	TBR
864	RED MAPLE	*Acer rubrum*	10.9	FAIR	TBR
865	RED MAPLE	*Acer rubrum*	9.5	FAIR	TBR
866	RED MAPLE	*Acer rubrum*	9.5	POOR	TBR
867	RED MAPLE	*Acer rubrum*	8.5	POOR	TBR
868	GREEN ASH	*Fraxinus pennsylvanica*	15.1	POOR	TBR
869	RED MAPLE	*Acer rubrum*	15.1	POOR	TBR
870	RED MAPLE	*Acer rubrum*	17.2	POOR	TBR
871	RED MAPLE	*Acer rubrum*	11	POOR	TBR
872	GREEN ASH	*Fraxinus pennsylvanica*	9	POOR	TBR
873	RED MAPLE	*Acer rubrum*	13.2	POOR	TBR
874	RED MAPLE	*Acer rubrum*	10.2	POOR	TBR
875	RED MAPLE	*Acer rubrum*	10.2	FAIR	TBR
876	RED MAPLE	*Acer rubrum*	6.2	GOOD	
877	RED MAPLE	*Acer rubrum*	9.2	GOOD	
878	RED MAPLE	*Acer rubrum*	9.8	FAIR	
879	RED MAPLE	*Acer rubrum*	9.3	FAIR	
880	GREEN ASH	*Fraxinus pennsylvanica*	9.3	FAIR	
881	SYCAMORE	*Platanus occidentalis*	8.8	GOOD	
882	RED MAPLE	*Acer rubrum*	7.2	GOOD	
883	AMERICAN BEECH	*Fagus grandifolia*	12.3	POOR	-
884	TULIP POPLAR	*Liriodendron tulipifera*	13.3	FAIR	
885	TULIP POPLAR	*Liriodendron tulipifera*	10.9	FAIR	
886	TULIP POPLAR	*Liriodendron tulipifera*	11.7	POOR	TBR
887	RED MAPLE	*Acer rubrum*	14.9	POOR	TBR
888	SYCAMORE	*Platanus occidentalis*	14.9	POOR	TBR
889	TULIP POPLAR	*Liriodendron tulipifera*	7	POOR	TBR
890	RED MAPLE	*Acer rubrum*	14.9	POOR	-
891	TULIP POPLAR	*Liriodendron tulipifera*	14.8	GOOD	TBR
892	TULIP POPLAR	*Liriodendron tulipifera*	15.6	GOOD	TBR
893	AMERICAN BEECH	*Fagus grandifolia*	14.8	GOOD	
894	AMERICAN BEECH	*Fagus grandifolia*	9.3	POOR	-
895	AMERICAN BEECH	*Fagus grandifolia*	14.9	POOR	TBR
896	AMERICAN BEECH	*Fagus grandifolia*	16	POOR	TBR
897	TULIP POPLAR	*Liriodendron tulipifera*	8.8	POOR	TBR
898	TULIP POPLAR	*Liriodendron tulipifera*	9.7	FAIR	TBR
899	TULIP POPLAR	*Liriodendron tulipifera*	11.7	FAIR	TBR
900	RED MAPLE	*Acer rubrum*	9.1	FAIR	

TREES T-601 THROUGH T-900

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 16 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-03 Of TI-10

BID No.:
HCG DWG ID No.:
SCALE: 1"=60'

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
901	RED MAPLE	*Acer rubrum*	9.3	FAIR	
902	TULIP POPLAR	*Liriodendron tulipifera*	9.3	POOR	-
903	RED MAPLE	*Acer rubrum*	6.9	FAIR	
904	GREEN ASH	*Fraxinus pennsylvanica*	9.2	POOR	-
905	TULIP POPLAR	*Liriodendron tulipifera*	6.7	FAIR	
906	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	
907	TULIP POPLAR	*Liriodendron tulipifera*	13.4	GOOD	
908	TULIP POPLAR	*Liriodendron tulipifera*	11.2	FAIR	
909	TULIP POPLAR	*Liriodendron tulipifera*	11.2	FAIR	TBR
910	TULIP POPLAR	*Liriodendron tulipifera*	8.4	FAIR	TBR
911	TULIP POPLAR	*Liriodendron tulipifera*	10.8	POOR	TBR
912	LARGE TOOTH ASPEN	*Populus grandidentata*	17.5	GOOD	
913	RED MAPLE	*Acer rubrum*	9.6	FAIR	
914	TULIP POPLAR	*Liriodendron tulipifera*	11.3	GOOD	
915	AMERICAN BEECH	*Fagus grandifolia*	9.3	GOOD	
916	AMERICAN BEECH	*Fagus grandifolia*	20	GOOD	
917	AMERICAN BEECH	*Fagus grandifolia*	16.8	FAIR	
918	AMERICAN BEECH	*Fagus grandifolia*	9.8	POOR	-
919	AMERICAN BEECH	*Fagus grandifolia*	17.7	GOOD	
920	TULIP POPLAR	*Liriodendron tulipifera*	10.5	POOR	TBR
921	BLACK CHERRY	*Prunus serotina*	8.2	POOR	TBR
922	TULIP POPLAR	*Liriodendron tulipifera*	11.3	GOOD	
923	GREEN ASH	*Fraxinus pennsylvanica*	11.2	POOR	-
924	TULIP POPLAR	*Liriodendron tulipifera*	9.8	GOOD	TBR
925	TULIP POPLAR	*Liriodendron tulipifera*	8.2	POOR	TBR
926	TULIP POPLAR	*Liriodendron tulipifera*	8.1	GOOD	TBR
927	TULIP POPLAR	*Liriodendron tulipifera*	13.2	POOR	TBR
928	RED MAPLE	*Acer rubrum*	6	FAIR	TBR
929	TULIP POPLAR	*Liriodendron tulipifera*	9.9	POOR	TBR
930	TULIP POPLAR	*Liriodendron tulipifera*	18	FAIR	TBR
931	TULIP POPLAR	*Liriodendron tulipifera*	7.7	POOR	TBR
932	BLACK GUM	*Nyssa sylvatica*	16.5	GOOD	
933	AMERICAN BEECH	*Fagus grandifolia*	18		
934	TULIP POPLAR	*Liriodendron tulipifera*	13.2	GOOD	
935	TULIP POPLAR	*Liriodendron tulipifera*	13	GOOD	
936	BLACK GUM	*Nyssa sylvatica*	11.6		
937	TULIP POPLAR	*Liriodendron tulipifera*	14.8	E⁄OOD	
938	TULIP POPLAR	*Liriodendron tulipifera*	8.1	GOOD	
939	TULIP POPLAR	*Liriodendron tulipifera*	9.1		
940	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
941	TULIP POPLAR	*Liriodendron tulipifera*	6.7	FAIR	
942	TULIP POPLAR	*Liriodendron tulipifera*	11	GOOD	
943	TULIP POPLAR	*Liriodendron tulipifera*	13.6	FAIR	
944	TULIP POPLAR	*Liriodendron tulipifera*	13.6	FAIR	
945	TULIP POPLAR	*Liriodendron tulipifera*	11.6	GOOD	
946	TULIP POPLAR	*Liriodendron tulipifera*	13.6	GOOD	
947	TULIP POPLAR	*Liriodendron tulipifera*	13.6	GOOD	
948	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
949	TULIP POPLAR	*Liriodendron tulipifera*	16	GOOD	
950	TULIP POPLAR	*Liriodendron tulipifera*	13	FAIR	
951	TULIP POPLAR	*Liriodendron tulipifera*	12	FAIR	
952	TULIP POPLAR	*Liriodendron tulipifera*	17.2	GOOD	
953	TULIP POPLAR	*Liriodendron tulipifera*	9.2	GOOD	
954	TULIP POPLAR	*Liriodendron tulipifera*	7.2	GOOD	
955	TULIP POPLAR	*Liriodendron tulipifera*	9.3	GOOD	
956	TULIP POPLAR	*Liriodendron tulipifera*	15.8	GOOD	
957	TULIP POPLAR	*Liriodendron tulipifera*	17.6	FAIR	
958	AMERICAN BEECH	*Fagus grandifolia*	23.7	FAIR	
959	BLACK CHERRY	*Prunus serotina*	7.7	POOR	TBR
960	TULIP POPLAR	*Liriodendron tulipifera*	18.4	POOR	TBR
961	TULIP POPLAR	*Liriodendron tulipifera*	18.4	FAIR	TBR
962	TULIP POPLAR	*Liriodendron tulipifera*	9.5	FAIR	
963	TULIP POPLAR	*Liriodendron tulipifera*	15.6	GOOD	
964	TULIP POPLAR	*Liriodendron tulipifera*	15.6	GOOD	
965	TULIP POPLAR	*Liriodendron tulipifera*	12.7	GOOD	
966	AMERICAN ELM	*Ulmus americana*	7.5	FAIR	
967	BITTERNUT HICKORY	*Carya cordiformis*	15.6	GOOD	
968	AMERICAN BEECH	*Fagus grandifolia*	8	GOOD	
969	AMERICAN BEECH	*Fagus grandifolia*	24.9	POOR	TBR
970	AMERICAN BEECH	*Fagus grandifolia*	16.5	GOOD	
971	AMERICAN BEECH	*Fagus grandifolia*	17.7	FAIR	
972	TULIP POPLAR	*Liriodendron tulipifera*	9.5	GOOD	
973	TULIP POPLAR	*Liriodendron tulipifera*	8.5	GOOD	
974	AMERICAN ELM	*Ulmus americana*	7.7	FAIR	
975	RED MAPLE	*Acer rubrum*	20	FAIR	
976	TULIP POPLAR	*Liriodendron tulipifera*	17.8	GOOD	
977	TULIP POPLAR	*Liriodendron tulipifera*	9.8	FAIR	
978	GREEN ASH	*Fraxinus pennsylvanica*	16.5	POOR	-
979	AMERICAN BEECH	*Fagus grandifolia*	22.1	FAIR	
980	TULIP POPLAR	*Liriodendron tulipifera*	22.8	GOOD	
981	TULIP POPLAR	*Liriodendron tulipifera*	11.7	GOOD	
982	AMERICAN BEECH	*Fagus grandifolia*	26.4	GOOD	
983	RED MAPLE	*Acer rubrum*	19	FAIR	
984	TULIP POPLAR	*Liriodendron tulipifera*	8.2	POOR	TBR
985	TULIP POPLAR	*Liriodendron tulipifera*	18	FAIR	
986	TULIP POPLAR	*Liriodendron tulipifera*	10.6	GOOD	
987	TULIP POPLAR	*Liriodendron tulipifera*	13	POOR	TBR
988	TULIP POPLAR	*Liriodendron tulipifera*	10.9	POOR	-
989	TULIP POPLAR	*Liriodendron tulipifera*	12.1	GOOD	
990	AMERICAN ELM	*Ulmus americana*	6.7	FAIR	
991	RED MAPLE	*Acer rubrum*	6.3	GOOD	
992	TULIP POPLAR	*Liriodendron tulipifera*	9.1	GOOD	TBR
993	GREEN ASH	*Fraxinus pennsylvanica*	10.5	POOR	TBR
994	TULIP POPLAR	*Liriodendron tulipifera*	8.3	FAIR	
995	GREEN ASH	*Fraxinus pennsylvanica*	15.2	POOR	TBR
996	TULIP POPLAR	*Liriodendron tulipifera*	6.4	FAIR	TBR
997	TULIP POPLAR	*Liriodendron tulipifera*	15.5	GOOD	TBR
998	AMERICAN BEECH	*Fagus grandifolia*	16.5	FAIR	
999	AMERICAN BEECH	*Fagus grandifolia*	22.4	GOOD	
1000	TULIP POPLAR	*Liriodendron tulipifera*	12.2	GOOD	
1001	TULIP POPLAR	*Liriodendron tulipifera*	13.1	GOOD	
1002	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
1003	AMERICAN BEECH	*Fagus grandifolia*	7.6	GOOD	
1004	TULIP POPLAR	*Liriodendron tulipifera*	14	GOOD	
1005	TULIP POPLAR	*Liriodendron tulipifera*	12.7	POOR	TBR
1006	TULIP POPLAR	*Liriodendron tulipifera*	11.8	GOOD	
1007	TULIP POPLAR	*Liriodendron tulipifera*	10.2	FAIR	
1008	TULIP POPLAR	*Liriodendron tulipifera*	6.2	FAIR	
1009	TULIP POPLAR	*Liriodendron tulipifera*	12.2	FAIR	
1010	TULIP POPLAR	*Liriodendron tulipifera*	12.3	FAIR	
1011	TULIP POPLAR	*Liriodendron tulipifera*	9	FAIR	
1012	TULIP POPLAR	*Liriodendron tulipifera*	6.5	FAIR	
1013	TULIP POPLAR	*Liriodendron tulipifera*	14.1	GOOD	
1014	TULIP POPLAR	*Liriodendron tulipifera*	12.5	POOR	TBR
1015	TULIP POPLAR	*Liriodendron tulipifera*	12.7	POOR	TBR
1016	TULIP POPLAR	*Liriodendron tulipifera*	15.6	POOR	TBR
1017	AMERICAN BEECH	*Fagus grandifolia*	23.9	FAIR	
1018	LARGE TOOTH ASPEN	*Populus grandidentata*	17.1	POOR	TBR
1019	TULIP POPLAR	*Liriodendron tulipifera*	16.8	FAIR	
1020	TULIP POPLAR	*Liriodendron tulipifera*	9.4	GOOD	
1021	TULIP POPLAR	*Liriodendron tulipifera*	7.2	FAIR	
1022	TULIP POPLAR	*Liriodendron tulipifera*	13.3	GOOD	
1023	TULIP POPLAR	*Liriodendron tulipifera*	7.3	GOOD	
1024	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
1025	TULIP POPLAR	*Liriodendron tulipifera*	13.5	FAIR	
1026	TULIP POPLAR	*Liriodendron tulipifera*	6.5	FAIR	
1027	TULIP POPLAR	*Liriodendron tulipifera*	14.1	POOR	TBR
1028	TULIP POPLAR	*Liriodendron tulipifera*	13.5	POOR	TBR
1029	RED MAPLE	*Acer rubrum*	10.7	POOR	TBR
1030	RED MAPLE	*Acer rubrum*	18.3/13.4	POOR	TBR
1031	AMERICAN ELM	*Ulmus americana*	9.6	POOR	TBR
1032	RED MAPLE	*Acer rubrum*	7.8	FAIR	TBR
1033	GREEN ASH	*Fraxinus pennsylvanica*	10.5	POOR	TBR
1034	GREEN ASH	*Fraxinus pennsylvanica*	15.2	POOR	TBR
1035	RED MAPLE	*Acer rubrum*	13	POOR	TBR
1036	TULIP POPLAR	*Liriodendron tulipifera*	17.2	POOR	TBR
1037	RED MAPLE	*Acer rubrum*	8.8	POOR	TBR
1038	GREEN ASH	*Fraxinus pennsylvanica*	7.7	POOR	TBR
1039	RED MAPLE	*Acer rubrum*	8.3/7.1	POOR	TBR
1040	RED MAPLE	*Acer rubrum*	7	POOR	TBR
1041	RED MAPLE	*Acer rubrum*	12.2	FAIR	TBR
1042	RED MAPLE	*Acer rubrum*	6.5	GOOD	TBR
1043	GREEN ASH	*Fraxinus pennsylvanica*	14.5	POOR	TBR
1044	RED MAPLE	*Acer rubrum*	6.6	POOR	TBR
1045	RED MAPLE	*Acer rubrum*	7.8	FAIR	
1046	RED MAPLE	*Acer rubrum*	9.5	FAIR	
1047	RED MAPLE	*Acer rubrum*	8.9	FAIR	
1048	RED MAPLE	*Acer rubrum*	9.5	FAIR	
1049	BLACK WILLOW	*Salix nigra*	11.8	POOR	-
1050	GREEN ASH	*Fraxinus pennsylvanica*	7.4	POOR	-
1051	GREEN ASH	*Fraxinus pennsylvanica*	9.5	POOR	-
1052	RED MAPLE	*Acer rubrum*	6	FAIR	
1053	GREEN ASH	*Fraxinus pennsylvanica*	10.8	POOR	-
1054	GREEN ASH	*Fraxinus pennsylvanica*	9.2	POOR	-
1055	RED MAPLE	*Acer rubrum*	7.2	FAIR	
1056	GREEN ASH	*Fraxinus pennsylvanica*	12.7	POOR	TBR
1057	RED MAPLE	*Acer rubrum*	8.5	GOOD	TBR
1058	GREEN ASH	*Fraxinus pennsylvanica*	7	POOR	TBR
1059	GREEN ASH	*Fraxinus pennsylvanica*	7.3	POOR	TBR
1060	RED MAPLE	*Acer rubrum*	7.9	POOR	TBR
1061	GREEN ASH	*Fraxinus pennsylvanica*	7.1	POOR	-
1062	RED MAPLE	*Acer rubrum*	7	FAI	
1063	GREEN ASH	*Fraxinus pennsylvanica*	9.2	POOR	-
1064	RED MAPLE	*Acer rubrum*	6.3	FAIR	
1065	RED MAPLE	*Acer rubrum*	12.9	FAIR	
1066	RED MAPLE	*Acer rubrum*	14.3	FAIR	
1067	BLACK CHERRY	*Prunus serotina*	9.4	POOR	TBR
1068	RED MAPLE	*Acer rubrum*	8	GOOD	
1069	TULIP POPLAR	*Liriodendron tulipifera*	21.1	GOOD	
1070	RED MAPLE	*Acer rubrum*	11.8	FAIR	
1071	GREEN ASH	*Fraxinus pennsylvanica*	11.9	POOR	-
1072	GREEN ASH	*Fraxinus pennsylvanica*	10.2	POOR	-
1073	TULIP POPLAR	*Liriodendron tulipifera*	15.8	FAIR	
1074	TULIP POPLAR	*Liriodendron tulipifera*	11.7	GOOD	
1075	GREEN ASH	*Fraxinus pennsylvanica*	8.4	POOR	TBR
1076	GREEN ASH	*Fraxinus pennsylvanica*	13.6	POOR	TBR
1077	GREEN ASH	*Fraxinus pennsylvanica*	7.2	POOR	TBR
1078	RED MAPLE	*Acer rubrum*	9.3	FAIR	
1079	RED MAPLE	*Acer rubrum*	14.5	POOR	TBR
1080	TULIP POPLAR	*Liriodendron tulipifera*	15.4	POOR	TBR
1081	RED MAPLE	*Acer rubrum*	6	FAIR	TBR
1082	AMERICAN ELM	*Ulmus americana*	6.8	FAIR	
1083	RED MAPLE	*Acer rubrum*	7.5	POOR	TBR
1084	BLACK CHERRY	*Prunus serotina*	7.2	POOR	TBR
1085	BLACK CHERRY	*Prunus serotina*	9.2	POOR	TBR
1086	TULIP POPLAR	*Liriodendron tulipifera*	11.8	POOR	TBR
1087	TULIP POPLAR	*Liriodendron tulipifera*	12.7	POOR	TBR
1088	TULIP POPLAR	*Liriodendron tulipifera*	7.7	POOR	TBR
1089	TULIP POPLAR	*Liriodendron tulipifera*	18	GOOD	TBR
1090	TULIP POPLAR	*Liriodendron tulipifera*	14.1	GOOD	
1091	TULIP POPLAR	*Liriodendron tulipifera*	13.6	FAIR	
1092	TULIP POPLAR	*Liriodendron tulipifera*	13.9	FAIR	TBR
1093	TULIP POPLAR	*Liriodendron tulipifera*	11.3	POOR	TBR
1094	TULIP POPLAR	*Liriodendron tulipifera*	10.3	POOR	TBR
1095	TULIP POPLAR	*Liriodendron tulipifera*	13.5	GOOD	TBR
1096	TULIP POPLAR	*Liriodendron tulipifera*	8.8	POOR	TBR
1097	TULIP POPLAR	*Liriodendron tulipifera*	14.5	GOOD	TBR
1098	TULIP POPLAR	*Liriodendron tulipifera*	14.4	GOOD	TBR
1099	TULIP POPLAR	*Liriodendron tulipifera*	15.7	GOOD	TBR
1100	AMERICAN BEECH	*Fagus grandifolia*	16.1	POOR	-
1101	TULIP POPLAR	*Liriodendron tulipifera*	7	GOOD	
1102	TULIP POPLAR	*Liriodendron tulipifera*	15.7	GOOD	
1103	AMERICAN BEECH	*Fagus grandifolia*	9.2	POOR	-
1104	TULIP POPLAR	*Liriodendron tulipifera*	9.3	GOOD	
1105	TULIP POPLAR	*Liriodendron tulipifera*	9.1	GOOD	
1106	TULIP POPLAR	*Liriodendron tulipifera*	14.2	GOOD	
1107	TULIP POPLAR	*Liriodendron tulipifera*	8.9	GOOD	
1108	TULIP POPLAR	*Liriodendron tulipifera*	13.1	GOOD	
1109	TULIP POPLAR	*Liriodendron tulipifera*	10.8	POOR	-
1110	TULIP POPLAR	*Liriodendron tulipifera*	12.1	GOOD	
1111	TULIP POPLAR	*Liriodendron tulipifera*	13.6	GOOD	
1112	NORTHERN RED OAK	*Quercus rubra*	10.3	GOOD	
1113	LARGE TOOTH ASPEN	*Populus grandidentata*	2.1	GOOD	
1114	TULIP POPLAR	*Liriodendron tulipifera*	11.9	GOOD	
1115	TULIP POPLAR	*Liriodendron tulipifera*	15.7	POOR	-
1116	NORTHERN RED OAK	*Quercus rubra*	8.3	GOOD	
1117	NORTHERN RED OAK	*Quercus rubra*	8.3	GOOD	
1118	TULIP POPLAR	*Liriodendron tulipifera*	8.8	POOR	-
1119	RED MAPLE	*Acer rubrum*	6.3	POOR	-
1120	RED MAPLE	*Acer rubrum*	9.7	FAIR	
1121	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
1122	RED MAPLE	*Acer rubrum*	8.7	POOR	-
1123	RED MAPLE	*Acer rubrum*	10.5	GOOD	
1124	TULIP POPLAR	*Liriodendron tulipifera*	15.4	GOOD	
1125	TULIP POPLAR	*Liriodendron tulipifera*	12.7	GOOD	
1126	GREEN ASH	*Fraxinus pennsylvanica*	10.5	POOR	
1127	RED MAPLE	*Acer rubrum*	12.7	GOOD	TBR
1128	RED MAPLE	*Acer rubrum*	14	GOOD	
1129	GREEN ASH	*Fraxinus pennsylvanica*	9.7	POOR	
1130	RED MAPLE	*Acer rubrum*	14.7	POOR	
1131	RED MAPLE	*Acer rubrum*	15.9	POOR	
1132	RED MAPLE	*Acer rubrum*	6.9	FAIR	
1133	RED MAPLE	*Acer rubrum*	7.9	GOOD	
1134	RED MAPLE	*Acer rubrum*	13.2	GOOD	
1135	RED MAPLE	*Acer rubrum*	13.4	FAIR	
1136	RED MAPLE	*Acer rubrum*	7.4	GOOD	
1137	PIN OAK	*Quercus palustris*	9.1	GOOD	
1138	SYCAMORE	*Platanus occidentalis*	6.2	GOOD	
1139	BITTERNUT HICKORY	*Carya cordiformis*	9.2	GOOD	
1140	TULIP POPLAR	*Liriodendron tulipifera*	13	GOOD	
1141	RED MAPLE	*Acer rubrum*	9	FAIR	
1142	GREEN ASH	*Fraxinus pennsylvanica*	6	POOR	
1143	BLACK CHERRY	*Prunus serotina*	6.2	FAIR	
1144	SYCAMORE	*Platanus occidentalis*	10.3	GOOD	
1145	RED MAPLE	*Acer rubrum*	9.6	POOR	
1146	BLACK WALNUT	*Juglans nigra*	7	POOR	
1147	RED MAPLE	*Acer rubrum*	9.1	POOR	
1148	RED MAPLE	*Acer rubrum*	7	POOR	
1149	RED MAPLE	*Acer rubrum*	10.7	POOR	
1150	RED MAPLE	*Acer rubrum*	6.7	POOR	
1151	SYCAMORE	*Platanus occidentalis*	9.6	POOR	
1152	GREEN ASH	*Fraxinus pennsylvanica*	13.2	POOR	
1153	RED MAPLE	*Acer rubrum*	7.2	POOR	
1154	RED MAPLE	*Acer rubrum*	7.4	FAIR	
1155	GREEN ASH	*Fraxinus pennsylvanica*	9	POOR	
1156	RED MAPLE	*Acer rubrum*	6.3	FAIR	
1157	RED MAPLE	*Acer rubrum*	15	FAIR	
1158	GREEN ASH	*Fraxinus pennsylvanica*	9.7	POOR	
1159	RED MAPLE	*Acer rubrum*	11.2	POOR	
1160	RED MAPLE	*Acer rubrum*	6.8	POOR	
1161	RED MAPLE	*Acer rubrum*	6.2	POOR	
1162	GREEN ASH	*Fraxinus pennsylvanica*	12.1	POOR	
1163	RED MAPLE	*Acer rubrum*	9.3	FAIR	
1164	NORTHERN RED OAK	*Quercus rubra*	11.5	FAIR	
1165	RED MAPLE	*Acer rubrum*	6.8	FAIR	
1166	RED MAPLE	*Acer rubrum*	8.2	POOR	
1167	RED MAPLE	*Acer rubrum*	6.7	GOOD	
1168	RED MAPLE	*Acer rubrum*	6.7	FAIR	
1169	RED MAPLE	*Acer rubrum*	6.4	GOOD	
1170	RED MAPLE	*Acer rubrum*	6.5	FAIR	
1171	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
1172	RED MAPLE	*Acer rubrum*	9.8	POOR	
1173	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
1174	BITTERNUT HICKORY	*Carya cordiformis*	23	GOOD	
1175	AMERICAN BEECH	*Fagus grandifolia*	21.1	GOOD	
1176	AMERICAN BEECH	*Fagus grandifolia*	16	GOOD	
1177	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
1178	LARGE TOOTH ASPEN	*Populus grandidentata*	11.5	FAIR	
1179	TULIP POPLAR	*Liriodendron tulipifera*	11.2	GOOD	
1180	TULIP POPLAR	*Liriodendron tulipifera*	12.3	GOOD	
1181	TULIP POPLAR	*Liriodendron tulipifera*	9.4	GOOD	
1182	AMERICAN BEECH	*Fagus grandifolia*	21	GOOD	
1183	AMERICAN BEECH	*Fagus grandifolia*	26.9	GOOD	
1184	TULIP POPLAR	*Liriodendron tulipifera*	19	GOOD	
1185	AMERICAN BEECH	*Fagus grandifolia*	15.3	POOR	
1186	GREEN ASH	*Fraxinus pennsylvanica*	17.5	POOR	
1187	AMERICAN BEECH	*Fagus grandifolia*	15.4	GOOD	
1188	AMERICAN BEECH	*Fagus grandifolia*	21.8	GOOD	
1189	AMERICAN BEECH	*Fagus grandifolia*	16.4	GOOD	
1190	AMERICAN BEECH	*Fagus grandifolia*	24	FAIR	
1191	AMERICAN BEECH	*Fagus grandifolia*	12.4	POOR	
1192	AMERICAN BEECH	*Fagus grandifolia*	18.3	GOOD	
1193	GREEN ASH	*Fraxinus pennsylvanica*	15.5	POOR	
1194	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
1195	TULIP POPLAR	*Liriodendron tulipifera*	15.3	GOOD	
1196	AMERICAN BEECH	*Fagus grandifolia*	22.6	FAIR	
1197	TULIP POPLAR	*Liriodendron tulipifera*	12	FAIR	
1198	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
1199	TULIP POPLAR	*Liriodendron tulipifera*	13	GOOD	
1200	AMERICAN BEECH	*Fagus grandifolia*	6.9	GOOD	

TREES T-901 THROUGH T-1200

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 17 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-04 Of TI-10

BID No.:
HCG DWG ID No.:
SCALE: 1:1000

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
1201	AMERICAN BEECH	*Fagus grandifolia*	6.9	GOOD	
1202	TULIP POPLAR	*Liriodendron tulipifera*	8.6	GOOD	
1203	BLACK CHERRY	*Prunus serotina*	9.4	FAIR	
1204	RED MAPLE	*Acer rubrum*	7.1	FAIR	
1205	RED MAPLE	*Acer rubrum*	9.3	GOOD	
1206	RED MAPLE	*Acer rubrum*	11.6	GOOD	
1207	RED MAPLE	*Acer rubrum*	11.2	FAIR	
1208	TULIP POPLAR	*Liriodendron tulipifera*	11.1	FAIR	
1209	TULIP POPLAR	*Liriodendron tulipifera*	15	FAIR	
1210	TULIP POPLAR	*Liriodendron tulipifera*	12.1	GOOD	
1211	TULIP POPLAR	*Liriodendron tulipifera*	12.2	FAIR	
1212	RED MAPLE	*Acer rubrum*	13.4	POOR	-
1213	TULIP POPLAR	*Liriodendron tulipifera*	14.3	GOOD	
1214	TULIP POPLAR	*Liriodendron tulipifera*	17.7	POOR	-
1215	RED MAPLE	*Acer rubrum*	14.9	POOR	-
1216	TULIP POPLAR	*Liriodendron tulipifera*	17.8	FAIR	
1217	RED MAPLE	*Acer rubrum*	7.4	FAIR	
1218	TULIP POPLAR	*Liriodendron tulipifera*	19.5	GOOD	
1219	TULIP POPLAR	*Liriodendron tulipifera*	10.1	FAIR	
1220	TULIP POPLAR	*Liriodendron tulipifera*	14.2	FAIR	
1221	RED MAPLE	*Acer rubrum*	6.5	FAIR	
1222	TULIP POPLAR	*Liriodendron tulipifera*	17.9	GOOD	
1223	TULIP POPLAR	*Liriodendron tulipifera*	18.4	GOOD	
1224	RED MAPLE	*Acer rubrum*	9.8	GOOD	
1225	TULIP POPLAR	*Liriodendron tulipifera*	19	GOOD	
1226	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
1227	TULIP POPLAR	*Liriodendron tulipifera*	8.9	FAIR	
1228	TULIP POPLAR	*Liriodendron tulipifera*	12	GOOD	
1229	TULIP POPLAR	*Liriodendron tulipifera*	18.9	GOOD	
1230	TULIP POPLAR	*Liriodendron tulipifera*	6.6	GOOD	
1231	TULIP POPLAR	*Liriodendron tulipifera*	8.2	GOOD	
1232	AMERICAN BEECH	*Fagus grandifolia*	20.8	GOOD	
1233	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
1234	AMERICAN BEECH	*Fagus grandifolia*	19.8	GOOD	
1235	NORTHERN RED OAK	*Quercus rubra*	23.6	FAIR	
1236	AMERICAN BEECH	*Fagus grandifolia*	21.3	GOOD	
1237	AMERICAN BEECH	*Fagus grandifolia*	9.9	GOOD	
1238	AMERICAN BEECH	*Fagus grandifolia*	20.6	POOR	-
1239	NORTHERN RED OAK	*Quercus rubra*	35.1	POOR	-
1240	AMERICAN BEECH	*Fagus grandifolia*	17	FAIR	
1241	TULIP POPLAR	*Liriodendron tulipifera*	15	FAIR	
1242	AMERICAN BEECH	*Fagus grandifolia*	12	FAIR	
1243	AMERICAN BEECH	*Fagus grandifolia*	10.5	POOR	-
1244	AMERICAN BEECH	*Fagus grandifolia*	17.6	FAIR	
1245	AMERICAN BEECH	*Fagus grandifolia*	45	FAIR	
1246	AMERICAN BEECH	*Fagus grandifolia*	19.2	FAIR	
1247	NORTHERN RED OAK	*Quercus rubra*	27	FAIR	
1248	WHITE OAK	*Quercus alba*	34.5	POOR	-
1249	AMERICAN BEECH	*Fagus grandifolia*	20.1	FAIR	
1250	AMERICAN BEECH	*Fagus grandifolia*	20	GOOD	
1251	AMERICAN BEECH	*Fagus grandifolia*	19.6	FAIR	
1252	AMERICAN BEECH	*Fagus grandifolia*	15	POOR	-
1253	AMERICAN BEECH	*Fagus grandifolia*	21.8	GOOD	
1254	AMERICAN BEECH	*Fagus grandifolia*	19.2	GOOD	
1255	TULIP POPLAR	*Liriodendron tulipifera*	15.5	POOR	-
1256	AMERICAN BEECH	*Fagus grandifolia*	19.7	GOOD	
1257	AMERICAN BEECH	*Fagus grandifolia*	16.7	POOR	-
1258	AMERICAN BEECH	*Fagus grandifolia*	16	GOOD	
1259	AMERICAN BEECH	*Fagus grandifolia*	13.8	POOR	-
1260	TULIP POPLAR	*Liriodendron tulipifera*	6.1	GOOD	TBR
1261	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
1262	TULIP POPLAR	*Liriodendron tulipifera*	14.3	GOOD	
1263	AMERICAN BEECH	*Fagus grandifolia*	6.1	POOR	-
1264	AMERICAN BEECH	*Fagus grandifolia*	22.7	FAIR	
1265	AMERICAN BEECH	*Fagus grandifolia*	13.7	FAIR	
1266	TULIP POPLAR	*Liriodendron tulipifera*	9.1	GOOD	
1267	TULIP POPLAR	*Liriodendron tulipifera*	17.3	GOOD	
1268	TULIP POPLAR	*Liriodendron tulipifera*	15.1	GOOD	
1269	TULIP POPLAR	*Liriodendron tulipifera*	14.1	GOOD	
1270	TULIP POPLAR	*Liriodendron tulipifera*	6.7	GOOD	
1271	TULIP POPLAR	*Liriodendron tulipifera*	10.5	GOOD	
1272	TULIP POPLAR	*Liriodendron tulipifera*	12.7	GOOD	
1273	TULIP POPLAR	*Liriodendron tulipifera*	21.3	GOOD	
1274	TULIP POPLAR	*Liriodendron tulipifera*	19	GOOD	
1275	AMERICAN BEECH	*Fagus grandifolia*	16.3	GOOD	
1276	AMERICAN BEECH	*Fagus grandifolia*	10.5	GOOD	
1277	TULIP POPLAR	*Liriodendron tulipifera*	15.6	GOOD	
1278	RED MAPLE	*Acer rubrum*	7.5	FAIR	
1279	TULIP POPLAR	*Liriodendron tulipifera*	18.5	GOOD	
1280	RED MAPLE	*Acer rubrum*	8.9	POOR	-
1281	RED MAPLE	*Acer rubrum*	26.2	FAIR	
1282	TULIP POPLAR	*Liriodendron tulipifera*	20.8	GOOD	TBR
1283	TULIP POPLAR	*Liriodendron tulipifera*	8.7	GOOD	
1284	RED MAPLE	*Acer rubrum*	6.3	FAIR	
1285	TULIP POPLAR	*Liriodendron tulipifera*	14.2	FAIR	
1286	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
1287	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
1288	GREEN ASH	*Fraxinus pennsylvanica*	17	POOR	TBR
1289	BLACK GUM	*Nyssa sylvatica*	21.5	POOR	-
1290	WHITE OAK	*Quercus alba*	22	GOOD	
1291	RED MAPLE	*Acer rubrum*	6.5	FAIR	
1292	RED MAPLE	*Acer rubrum*	8.2	POOR	-
1293	RED MAPLE	*Acer rubrum*	13.3	FAIR	
1294	RED MAPLE	*Acer rubrum*	6.8	FAIR	
1295	RED MAPLE	*Acer rubrum*	6.5	FAIR	
1296	RED MAPLE	*Acer rubrum*	6	GOOD	
1297	RED MAPLE	*Acer rubrum*	7.3	FAIR	
1298	RED MAPLE	*Acer rubrum*	7.5	FAIR	
1299	RED MAPLE	*Acer rubrum*	16.5	POOR	-
1300	TULIP POPLAR	*Liriodendron tulipifera*	23.6	FAIR	
1301	TULIP POPLAR	*Liriodendron tulipifera*	15.8	GOOD	
1302	TULIP POPLAR	*Liriodendron tulipifera*	9.5	POOR	TBR
1303	TULIP POPLAR	*Liriodendron tulipifera*	8.2	POOR	TBR
1304	TULIP POPLAR	*Liriodendron tulipifera*	19	POOR	TBR
1305	TULIP POPLAR	*Liriodendron tulipifera*	14.1	POOR	TBR
1306	NORTHERN RED OAK	*Quercus rubra*	20.4	POOR	TBR
1307	TULIP POPLAR	*Liriodendron tulipifera*	22.8	POOR	TBR
1308	BITTERNUT HICKORY	*Carya cordiformis*	9	POOR	TBR
1309	TULIP POPLAR	*Liriodendron tulipifera*	14	GOOD	
1310	RED MAPLE	*Acer rubrum*	32.5	FAIR	
1311	TULIP POPLAR	*Liriodendron tulipifera*	8	GOOD	
1312	TULIP POPLAR	*Liriodendron tulipifera*	6.6	GOOD	
1313	TULIP POPLAR	*Liriodendron tulipifera*	29.1	FAIR	
1314	GREEN ASH	*Fraxinus pennsylvanica*	8.9	POOR	-
1315	BLACK CHERRY	*Prunus serotina*	7.1	FAIR	
1316	GREEN ASH	*Fraxinus pennsylvanica*	9.8	POOR	-
1317	GREEN ASH	*Fraxinus pennsylvanica*	16.5	POOR	-
1318	TULIP POPLAR	*Liriodendron tulipifera*	6.3	GOOD	
1319	RED MAPLE	*Acer rubrum*	6.6	FAIR	
1320	GREEN ASH	*Fraxinus pennsylvanica*	7.5	FAIR	
1321	RED MAPLE	*Acer rubrum*	24	FAIR	
1322	RED MAPLE	*Acer rubrum*	7	FAIR	
1323	BLACK CHERRY	*Prunus serotina*	19	POOR	-
1324	GREEN ASH	*Fraxinus pennsylvanica*	9.5	POOR	-
1325	GREEN ASH	*Fraxinus pennsylvanica*	8	POOR	-
1326	BLACK CHERRY	*Prunus serotina*	14	FAIR	
1327	BLACK CHERRY	*Prunus serotina*	14.3	POOR	-
1328	GREEN ASH	*Fraxinus pennsylvanica*	7.4	POOR	-
1329	TULIP POPLAR	*Liriodendron tulipifera*	22.2	GOOD	
1330	RED MAPLE	*Acer rubrum*	7.6	FAIR	
1331	BLACK CHERRY	*Prunus serotina*	15.5	POOR	-
1332	GREEN ASH	*Fraxinus pennsylvanica*	7.2	POOR	-
1333	RED MAPLE	*Acer rubrum*	11	FAIR	
1334	TULIP POPLAR	*Liriodendron tulipifera*	20	FAIR	
1335	GREEN ASH	*Fraxinus pennsylvanica*	7.1	POOR	-
1336	RED MAPLE	*Acer rubrum*	7	POOR	-
1337	GREEN ASH	*Fraxinus pennsylvanica*	26.8	POOR	-
1338	TULIP POPLAR	*Liriodendron tulipifera*	28.5	FAIR	
1339	WHITE OAK	*Quercus alba*	26.1	GOOD	
1340	BLACK CHERRY	*Prunus serotina*	6.3	POOR	-
1341	NORTHERN RED OAK	*Quercus rubra*	12.3	GOOD	
1342	NORTHERN RED OAK	*Quercus rubra*	12.5	GOOD	
1343	GREEN ASH	*Fraxinus pennsylvanica*	6.8	POOR	-
1344	BLACK WALNUT	*Juglans nigra*	26.1	FAIR	
1345	AMERICAN ELM	*Ulmus americana*	15.2	FAIR	
1346	BLACK WALNUT	*Juglans nigra*	24	GOOD	
1347	GREEN ASH	*Fraxinus pennsylvanica*	8.5	POOR	TBR
1348	TULIP POPLAR	*Liriodendron tulipifera*	7.5	GOOD	TBR
1349	GREEN ASH	*Fraxinus pennsylvanica*	14	POOR	-
1350	RED MAPLE	*Acer rubrum*	16.7	POOR	-
1351	TULIP POPLAR	*Liriodendron tulipifera*	15.3	POOR	-
1352	BLACK CHERRY	*Prunus serotina*	14	POOR	-
1353	BLACK CHERRY	*Prunus serotina*	15.4	POOR	-
1354	GREEN ASH	*Fraxinus pennsylvanica*	25.9	POOR	-
1355	BLACK CHERRY	*Prunus serotina*	6.6	POOR	-
1356	BLACK CHERRY	*Prunus serotina*	8.2	POOR	-
1357	BLACK CHERRY	*Prunus serotina*	20.2	POOR	-
1358	BLACK CHERRY	*Prunus serotina*	6.6	GOOD	
1359	BLACK CHERRY	*Prunus serotina*	8.2	POOR	-
1360	RED MAPLE	*Acer rubrum*	7.4	POOR	-
1361	GREEN ASH	*Fraxinus pennsylvanica*	25.4	POOR	-
1362	GREEN ASH	*Fraxinus pennsylvanica*	20	POOR	-
1363	BLACK CHERRY	*Prunus serotina*	9.5	POOR	-
1364	TULIP POPLAR	*Liriodendron tulipifera*	26.2	FAIR	
1365	RED MAPLE	*Acer rubrum*	8.7	POOR	-
1366	RED MAPLE	*Acer rubrum*	10.6	POOR	-
1367	RED MAPLE	*Acer rubrum*	15.1	FAIR	
1368	AMERICAN BEECH	*Fagus grandifolia*	25.5	FAIR	TBR
1369	RED MAPLE	*Acer rubrum*	6.3	GOOD	
1370	TULIP POPLAR	*Liriodendron tulipifera*	19.5	FAIR	TBR
1371	WHITE OAK	*Quercus alba*	18	POOR	-
1372	GREEN ASH	*Fraxinus pennsylvanica*	11.2	POOR	-
1373	AMERICAN BEECH	*Fagus grandifolia*	26.7	GOOD	
1374	RED MAPLE	*Acer rubrum*	13.2	POOR	TBR
1375	BLACK CHERRY	*Prunus serotina*	20.3	POOR	-
1376	RED MAPLE	*Acer rubrum*	20	POOR	-
1377	RED MAPLE	*Acer rubrum*	8.6	POOR	-
1378	TULIP POPLAR	*Liriodendron tulipifera*	9.6	POOR	-
1379	NORTHERN RED OAK	*Quercus rubra*	18.9	FAIR	
1380	TULIP POPLAR	*Liriodendron tulipifera*	23.5	POOR	-
1381	BLACK CHERRY	*Prunus serotina*	7.3	POOR	-
1382	BLACK CHERRY	*Prunus serotina*	7.4	POOR	-
1383	GREEN ASH	*Fraxinus pennsylvanica*	24	POOR	-
1384	BLACK CHERRY	*Prunus serotina*	6.8	POOR	-
1385	RED MAPLE	*Acer rubrum*	6	FAIR	
1386	BLACK CHERRY	*Prunus serotina*	6.9	POOR	-
1387	GREEN ASH	*Fraxinus pennsylvanica*	14.5	POOR	-
1388	GREEN ASH	*Fraxinus pennsylvanica*	14.6	POOR	-
1389	GREEN ASH	*Fraxinus pennsylvanica*	7.8	POOR	-
1390	RED MAPLE	*Acer rubrum*	18.5	POOR	-
1391	RED MAPLE	*Acer rubrum*	14.6	GOOD	
1392	RED MAPLE	*Acer rubrum*	7.2	POOR	-
1393	GREEN ASH	*Fraxinus pennsylvanica*	16.4	POOR	-
1394	RED MAPLE	*Acer rubrum*	9.7	POOR	-
1395	GREEN ASH	*Fraxinus pennsylvanica*	20.1	POOR	-
1396	NORTHERN RED OAK	*Quercus rubra*	9.6	FAIR	
1397	GREEN ASH	*Fraxinus pennsylvanica*	11.5	POOR	-
1398	NORTHERN RED OAK	*Quercus rubra*	22	FAIR	
1399	NORTHERN RED OAK	*Quercus rubra*	7.7	POOR	-
1400	SWEET CHERRY	*Prunus avium*	8.2	FAIR	
1401	NORTHERN RED OAK	*Quercus rubra*	20.9	POOR	-
1402	AMERICAN BEECH	*Fagus grandifolia*	21.5	FAIR	
1403	PRINCESS TREE	*Paulownia tomentosa*	16.5	POOR	-
1404	GREEN ASH	*Fraxinus pennsylvanica*	8	POOR	-
1405	GREEN ASH	*Fraxinus pennsylvanica*	8.3	POOR	-
1406	BLACK GUM	*Nyssa sylvatica*	18.3	FAIR	
1407	RED MAPLE	*Acer rubrum*	12.5	POOR	-
1408	GREEN ASH	*Fraxinus pennsylvanica*	7.8	POOR	-
1409	GREEN ASH	*Fraxinus pennsylvanica*	8.1	POOR	-
1410	GREEN ASH	*Fraxinus pennsylvanica*	7.3	POOR	-
1411	GREEN ASH	*Fraxinus pennsylvanica*	11	POOR	-
1412	GREEN ASH	*Fraxinus pennsylvanica*	10.8	POOR	-
1413	GREEN ASH	*Fraxinus pennsylvanica*	10.9	POOR	-
1414	GREEN ASH	*Fraxinus pennsylvanica*	8.7	POOR	-
1415	GREEN ASH	*Fraxinus pennsylvanica*	9.5	POOR	-
1416	GREEN ASH	*Fraxinus pennsylvanica*	10.4	POOR	-
1417	GREEN ASH	*Fraxinus pennsylvanica*	10.6	POOR	-
1418	GREEN ASH	*Fraxinus pennsylvanica*	20.9	POOR	-
1419	NORTHERN RED OAK	*Quercus rubra*	7.5	FAIR	
1420	NORTHERN RED OAK	*Quercus rubra*	20.1	POOR	-
1421	AMERICAN BEECH	*Fagus grandifolia*	20.3	GOOD	
1422	AMERICAN BEECH	*Fagus grandifolia*	27.6	FAIR	
1423	GREEN ASH	*Fraxinus pennsylvanica*	28.5	POOR	-
1424	GREEN ASH	*Fraxinus pennsylvanica*	25.3	POOR	-
1425	RED MAPLE	*Acer rubrum*	9.2	POOR	-
1426	TULIP POPLAR	*Liriodendron tulipifera*	9	GOOD	
1427	TULIP POPLAR	*Liriodendron tulipifera*	9	GOOD	
1428	TULIP POPLAR	*Liriodendron tulipifera*	12.2	GOOD	
1429	TULIP POPLAR	*Liriodendron tulipifera*	7	GOOD	
1430	TULIP POPLAR	*Liriodendron tulipifera*	12.7	FAIR	
1431	TULIP POPLAR	*Liriodendron tulipifera*	11.1	FAIR	
1432	TULIP POPLAR	*Liriodendron tulipifera*	16.3	GOOD	
1433	TULIP POPLAR	*Liriodendron tulipifera*	16	GOOD	
1434	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
1435	TULIP POPLAR	*Liriodendron tulipifera*	19.7	GOOD	
1436	TULIP POPLAR	*Liriodendron tulipifera*	18.6	GOOD	
1437	TULIP POPLAR	*Liriodendron tulipifera*	10.1	GOOD	
1438	AMERICAN BEECH	*Fagus grandifolia*	25.1	GOOD	
1439	AMERICAN BEECH	*Fagus grandifolia*	15.7	POOR	-
1440	BLACK CHERRY	*Prunus serotina*	15	POOR	-
1441	BLACK WALNUT	*Juglans nigra*	9.5	POOR	-
1442	BLACK WALNUT	*Juglans nigra*	18.4	FAIR	
1443	GREEN ASH	*Fraxinus pennsylvanica*	16.9	POOR	-
1444	BLACK LOCUST	*Robinia pseudoacacia*	7.8	POOR	-
1445	BLACK LOCUST	*Robinia pseudoacacia*	9.3	POOR	-
1446	BITTERNUT HICKORY	*Carya cordiformis*	7.5	POOR	-
1447	TULIP POPLAR	*Liriodendron tulipifera*	10.8	POOR	-
1448	WHITE OAK	*Quercus alba*	14.8	FAIR	
1449	GREEN ASH	*Fraxinus pennsylvanica*	7.8	FAIR	
1450	GREEN ASH	*Fraxinus pennsylvanica*	32.7	POOR	-
1451	BLACK CHERRY	*Prunus serotina*	9	POOR	-
1452	BLACK WALNUT	*Juglans nigra*	17.9	POOR	-
1453	BITTERNUT HICKORY	*Carya cordiformis*	9.3	FAIR	
1454	AMERICAN BEECH	*Fagus grandifolia*	11	FAIR	
1455	GREEN ASH	*Fraxinus pennsylvanica*	8.9	POOR	-
1456	BLACK CHERRY	*Prunus serotina*	11.5	POOR	-
1457	AMERICAN BEECH	*Fagus grandifolia*	6.2	FAIR	
1458	RED MAPLE	*Acer rubrum*	16.5	FAIR	
1459	TULIP POPLAR	*Liriodendron tulipifera*	18.4	POOR	-
1460	GREEN ASH	*Fraxinus pennsylvanica*	21.5	POOR	-
1461	TULIP POPLAR	*Liriodendron tulipifera*	29.5	POOR	-
1462	BITTERNUT HICKORY	*Carya cordiformis*	9.1	FAIR	
1463	TULIP POPLAR	*Liriodendron tulipifera*	31.1	POOR	-
1464	AMERICAN BEECH	*Fagus grandifolia*	15.1	FAIR	
1465	GREEN ASH	*Fraxinus pennsylvanica*	14	FAIR	
1466	GREEN ASH	*Fraxinus pennsylvanica*	23.5	POOR	-
1467	TULIP POPLAR	*Liriodendron tulipifera*	16.4	FAIR	
1468	GREEN ASH	*Fraxinus pennsylvanica*	8.6	POOR	-
1469	AMERICAN BEECH	*Fagus grandifolia*	23.7	GOOD	
1470	BLACK CHERRY	*Prunus serotina*	15.1	GOOD	
1471	AMERICAN BEECH	*Fagus grandifolia*	6.4	GOOD	
1472	TULIP POPLAR	*Liriodendron tulipifera*	20	FAIR	
1473	AMERICAN BEECH	*Fagus grandifolia*	9	GOOD	
1474	GREEN ASH	*Fraxinus pennsylvanica*	14.5	POOR	-
1475	GREEN ASH	*Fraxinus pennsylvanica*	12.7	POOR	-
1476	GREEN ASH	*Fraxinus pennsylvanica*	14.7	POOR	-
1477	TULIP POPLAR	*Liriodendron tulipifera*	20.2	FAIR	
1478	BLACK CHERRY	*Prunus serotina*	17	FAIR	
1479	AMERICAN BEECH	*Fagus grandifolia*	6	GOOD	
1480	BLACK CHERRY	*Prunus serotina*	6.3	POOR	-
1481	BLACK LOCUST	*Robinia pseudoacacia*	9.1	POOR	-
1482	BLACK LOCUST	*Robinia pseudoacacia*	6.5	POOR	-
1483	BLACK LOCUST	*Robinia pseudoacacia*	7.6	POOR	-
1484	BLACK LOCUST	*Robinia pseudoacacia*	7.8	POOR	-
1485	BLACK LOCUST	*Robinia pseudoacacia*	6.3	POOR	-
1486	TULIP POPLAR	*Liriodendron tulipifera*	13.2	FAIR	
1487	BLACK LOCUST	*Robinia pseudoacacia*	6.3	POOR	-
1488	BLACK LOCUST	*Robinia pseudoacacia*	6.6	FAIR	
1489	TULIP POPLAR	*Liriodendron tulipifera*	15.2	GOOD	
1490	BLACK LOCUST	*Robinia pseudoacacia*	6	POOR	-
1491	BLACK LOCUST	*Robinia pseudoacacia*	11.4	FAIR	
1492	RED MAPLE	*Acer rubrum*	6	FAI	
1493	RED MAPLE	*Acer rubrum*	9.1	FAIR	
1494	RED MAPLE	*Acer rubrum*	8	GOOD	
1495	GREEN ASH	*Fraxinus pennsylvanica*	6.7	FAIR	
1496	TULIP POPLAR	*Liriodendron tulipifera*	13.2	GOOD	
1497	TULIP POPLAR	*Liriodendron tulipifera*	7.6	GOOD	
1498	TULIP POPLAR	*Liriodendron tulipifera*	10.5	GOOD	
1499	TULIP POPLAR	*Liriodendron tulipifera*	6.5	GOOD	
1500	TULIP POPLAR	*Liriodendron tulipifera*	8.1	GOOD	

TREES T-1201 THROUGH T-1500

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 18 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-05 Of TI-10

BID No.:
HCG DWG ID No.:
SCALE: 1" = 100'
BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
1501	TULIP POPLAR	*Liriodendron tulipifera*	8	GOOD	
1502	TULIP POPLAR	*Liriodendron tulipifera*	7.9	GOOD	
1503	TULIP POPLAR	*Liriodendron tulipifera*	9.7	FAIR	
1504	TULIP POPLAR	*Liriodendron tulipifera*	8.4	GOOD	
1505	TULIP POPLAR	*Liriodendron tulipifera*	9.7	GOOD	
1506	TULIP POPLAR	*Liriodendron tulipifera*	10	GOOD	
1507	TULIP POPLAR	*Liriodendron tulipifera*	9	GOOD	
1508	TULIP POPLAR	*Liriodendron tulipifera*	13.2	GOOD	
1509	TULIP POPLAR	*Liriodendron tulipifera*	9	POOR	-
1510	TULIP POPLAR	*Liriodendron tulipifera*	22.7	FAIR	
1511	TULIP POPLAR	*Liriodendron tulipifera*	22	GOOD	
1512	GREEN ASH	*Fraxinus pennsylvanica*	14.5	POOR	-
1513	WHITE OAK	*Quercus alba*	26.6	FAIR	
1514	AMERICAN BEECH	*Fagus grandifolia*	9	FAIR	
1515	NORTHERN RED OAK	*Quercus rubra*	13.5	POOR	-
1516	AMERICAN BEECH	*Fagus grandifolia*	7.7	GOOD	
1517	RED MAPLE	*Acer rubrum*	6.7	POOR	-
1518	GREEN ASH	*Fraxinus pennsylvanica*	15	POOR	-
1519	AMERICAN BEECH	*Fagus grandifolia*	6.2	GOOD	
1520	GREEN ASH	*Fraxinus pennsylvanica*	14.9	POOR	-
1521	GREEN ASH	*Fraxinus pennsylvanica*	13.4	POOR	-
1522	GREEN ASH	*Fraxinus pennsylvanica*	15.2	POOR	-
1523	BLACK CHERRY	*Prunus serotina*	10.7	POOR	-
1524	TULIP POPLAR	*Liriodendron tulipifera*	18	GOOD	
1525	TULIP POPLAR	*Liriodendron tulipifera*	20.6	POOR	-
1526	BLACK CHERRY	*Prunus serotina*	9.1	POOR	-
1527	BLACK WALNUT	*Juglans nigra*	14.3		
1528	GREEN ASH	*Fraxinus pennsylvanica*	20.7	POOR	-
1529	GREEN ASH	*Fraxinus pennsylvanica*	18.1	POOR	-
1530	TULIP POPLAR	*Liriodendron tulipifera*	18.5	FAIR	
1531	TULIP POPLAR	*Liriodendron tulipifera*	16.8	FAIR	
1532	TULIP POPLAR	*Liriodendron tulipifera*	14.6	FAIR	
1533	TULIP POPLAR	*Liriodendron tulipifera*	9.1	GOOD	
1534	TULIP POPLAR	*Liriodendron tulipifera*	7.8	GOOD	
1535	TULIP POPLAR	*Liriodendron tulipifera*	10.1	GOOD	
1536	TULIP POPLAR	*Liriodendron tulipifera*	8.6	POOR	-
1537	TULIP POPLAR	*Liriodendron tulipifera*	11.6	GOOD	
1538	TULIP POPLAR	*Liriodendron tulipifera*	10.9	FAIR	
1539	TULIP POPLAR	*Liriodendron tulipifera*	13.2	FAIR	
1540	BLACK CHERRY	*Prunus serotina*	7.1	POOR	-
1541	RED MAPLE	*Acer rubrum*	9	FAIR	
1542	TULIP POPLAR	*Liriodendron tulipifera*	11.5	FAIR	
1543	TULIP POPLAR	*Liriodendron tulipifera*	11.2	FAIR	
1544	WHITE PINE	*Pinus strobus*	11.2	POOR	-
1545	TULIP POPLAR	*Liriodendron tulipifera*	10.8	FAIR	
1546	TULIP POPLAR	*Liriodendron tulipifera*	6	GOOD	
1547	TULIP POPLAR	*Liriodendron tulipifera*	13.2	GOOD	
1548	EMPRESS TREE	*Paulownia tomentosa*	11.7	FAIR	
1549	TULIP POPLAR	*Liriodendron tulipifera*	9.5	FAIR	
1550	TULIP POPLAR	*Liriodendron tulipifera*	11.5	FAIR	
1551	TULIP POPLAR	*Liriodendron tulipifera*	7.7	FAIR	
1552	TULIP POPLAR	*Liriodendron tulipifera*	9	POOR	-
1553	BLACK CHERRY	*Prunus serotina*	7	POOR	-
1554	TULIP POPLAR	*Liriodendron tulipifera*	15.6	FAIR	
1555	TULIP POPLAR	*Liriodendron tulipifera*	17	FAIR	
1556	RED MAPLE	*Acer rubrum*	6.3	FAIR	
1557	RED MAPLE	*Acer rubrum*	9.7	FAIR	
1558	AMERICAN ELM	*Ulmus americana*	10	FAIR	
1559	PIN OAK	*Quercus palustris*	9.8	FAIR	
1560	GREEN ASH	*Fraxinus pennsylvanica*	13.9	FAIR	
1561	TULIP POPLAR	*Liriodendron tulipifera*	31.1	FAIR	
1562	PIN OAK	*Quercus palustris*	12.7	FAIR	
1563	NORTHERN RED OAK	*Quercus rubra*	38	GOOD	
1564	GREEN ASH	*Fraxinus pennsylvanica*	12.5	POOR	-
1565	GREEN ASH	*Fraxinus pennsylvanica*	18.5	POOR	-
1566	RED MAPLE	*Acer rubrum*	6.5	FAIR	
1567	GREEN ASH	*Fraxinus pennsylvanica*	15	POOR	-
1568	GREEN ASH	*Fraxinus pennsylvanica*	11.7	POOR	-
1569	PIN OAK	*Quercus palustris*	8.9	FAIR	
1570	GREEN ASH	*Fraxinus pennsylvanica*	17.2	POOR	-
1571	AMERICAN BEECH	*Fagus grandifolia*	6.6	GOOD	
1572	AMERICAN BEECH	*Fagus grandifolia*	20.5	FAIR	TBR
1573	GREEN ASH	*Fraxinus pennsylvanica*	18.6	POOR	TBR
1574	GREEN ASH	*Fraxinus pennsylvanica*	10.4	POOR	-
1575	AMERICAN BEECH	*Fagus grandifolia*	17.5	GOOD	
1576	RED MAPLE	*Acer rubrum*	7.1	FAIR	
1577	AMERICAN BEECH	*Fagus grandifolia*	27.8	GOOD	
1578	PIN OAK	*Quercus palustris*	23.5	POOR	TBR
1579	GREEN ASH	*Fraxinus pennsylvanica*	17.5	POOR	-
1580	RED MAPLE	*Acer rubrum*	7.1	FAIR	
1581	TULIP POPLAR	*Liriodendron tulipifera*	21.8	GOOD	
1582	RED MAPLE	*Acer rubrum*	7.9	FAIR	
1583	NORTHERN RED OAK	*Quercus rubra*	31.1	POOR	-
1584	PIN OAK	*Quercus palustris*	11.5	FAIR	
1585	TULIP POPLAR	*Liriodendron tulipifera*	24	GOOD	
1586	TULIP POPLAR	*Liriodendron tulipifera*	11.1	GOOD	
1587	AMERICAN BEECH	*Fagus grandifolia*	6.1	GOOD	
1588	TULIP POPLAR	*Liriodendron tulipifera*	24.4	GOOD	
1589	NORTHERN RED OAK	*Quercus rubra*	6.4	GOOD	
1590	PRINCESS TREE	*Paulownia tomentosa*	16.3	POOR	TBR
1591	TULIP POPLAR	*Liriodendron tulipifera*	12.8	GOOD	
1592	TULIP POPLAR	*Liriodendron tulipifera*	22	GOOD	TBR
1593	AMERICAN BEECH	*Fagus grandifolia*	20.7	GOOD	
1594	NORTHERN RED OAK	*Quercus rubra*	8.6	FAIR	
1595	NORTHERN RED OAK	*Quercus rubra*	41.8	FAIR	
1596	RED MAPLE	*Acer rubrum*	10.5	FAIR	
1597	AMERICAN BEECH	*Fagus grandifolia*	21.3	GOOD	
1598	GREEN ASH	*Fraxinus pennsylvanica*	18.9	POOR	-
1599	BLACK GUM	*Nyssa sylvatica*	12	FAIR	
1600	TULIP POPLAR	*Liriodendron tulipifera*	20.7	GOOD	
1601	GREEN ASH	*Fraxinus pennsylvanica*	10.5	POOR	-
1602	RED MAPLE	*Acer rubrum*	9.7	POOR	-
1603	TULIP POPLAR	*Liriodendron tulipifera*	12.1	FAIR	
1604	TULIP POPLAR	*Liriodendron tulipifera*	1907	FAIR	
1605	NORTHERN RED OAK	*Quercus rubra*	6.7	FAIR	
1606	AMERICAN BEECH	*Fagus grandifolia*	23.3	GOOD	
1607	AMERICAN BEECH	*Fagus grandifolia*	18.4	GOOD	
1608	TULIP POPLAR	*Liriodendron tulipifera*	21.2	GOOD	TBR
1609	AMERICAN BEECH	*Fagus grandifolia*	17.3	FAIR	
1610	AMERICAN BEECH	*Fagus grandifolia*	23.3	FAIR	
1611	AMERICAN BEECH	*Fagus grandifolia*	16.7	GOOD	
1612	AMERICAN BEECH	*Fagus grandifolia*	23.5	GOOD	
1613	AMERICAN BEECH	*Fagus grandifolia*	16.5	GOOD	
1614	AMERICAN BEECH	*Fagus grandifolia*	9.5	GOOD	
1615					
1616		NOT ASSIGNED			
1617					
1618					
1619	AMERICAN BEECH	*Fagus grandifolia*	18	GOOD	
1620	TULIP POPLAR	*Liriodendron tulipifera*	12.4	GOOD	
1621	TULIP POPLAR	*Liriodendron tulipifera*	23	GOOD	
1622	TULIP POPLAR	*Liriodendron tulipifera*	17	FAIR	
1623	TULIP POPLAR	*Liriodendron tulipifera*	23.6	GOOD	
1624	AMERICAN BEECH	*Fagus grandifolia*	6.9	GOOD	
1625	AMERICAN BEECH	*Fagus grandifolia*	11.6	FAIR	
1626	AMERICAN BEECH	*Fagus grandifolia*	6.8	GOOD	
1627	AMERICAN BEECH	*Fagus grandifolia*	19	GOOD	
1628	AMERICAN BEECH	*Fagus grandifolia*	17.5	FAIR	
1629	TULIP POPLAR	*Liriodendron tulipifera*	18	POOR	-
1630	AMERICAN BEECH	*Fagus grandifolia*	15	GOOD	
1631	AMERICAN BEECH	*Fagus grandifolia*	9	GOOD	
1632	AMERICAN BEECH	*Fagus grandifolia*	14.9	FAIR	
1633	NORTHERN RED OAK	*Quercus rubra*	12.2	GOOD	
1634	BLACK CHERRY	*Prunus serotina*	9.2	GOOD	TBR
1635	NORTHERN RED OAK	*Quercus rubra*	27.9	FAIR	TBR
1636	TULIP POPLAR	*Liriodendron tulipifera*	14.6	POOR	TBR
1637	AMERICAN BEECH	*Fagus grandifolia*	19	FAIR	TBR
1638	RED MAPLE	*Acer rubrum*	22.5	FAIR	
1639	AMERICAN BEECH	*Fagus grandifolia*	15.9	POOR	TBR
1640	AMERICAN BEECH	*Fagus grandifolia*	8.8	POOR	TBR
1641	TULIP POPLAR	*Liriodendron tulipifera*	10.9	POOR	TBR
1642	AMERICAN BEECH	*Fagus grandifolia*	21.4	POOR	TBR
1643	AMERICAN BEECH	*Fagus grandifolia*	25.3	GOOD	
1644	AMERICAN BEECH	*Fagus grandifolia*	14.9	GOOD	
1645	BITTERNUT HICKORY	*Carya cordiformis*	16	GOOD	
1646	AMERICAN BEECH	*Fagus grandifolia*	21	POOR	-
1647	AMERICAN BEECH	*Fagus grandifolia*	16.4	GOOD	
1648	TULIP POPLAR	*Liriodendron tulipifera*	19.3	GOOD	
1649	AMERICAN BEECH	*Fagus grandifolia*	14.9	GOOD	
1650	AMERICAN BEECH	*Fagus grandifolia*	14	FAIR	
1651	TULIP POPLAR	*Liriodendron tulipifera*	22.8	GOOD	
1652	AMERICAN BEECH	*Fagus grandifolia*	13.1	FAIR	
1653	GREEN ASH	*Fraxinus pennsylvanica*	14	POOR	-
1654	TULIP POPLAR	*Liriodendron tulipifera*	20.9	POOR	-
1655	TULIP POPLAR	*Liriodendron tulipifera*	15.6	FAIR	
1656	TULIP POPLAR	*Liriodendron tulipifera*	18.3	FAIR	
1657	GREEN ASH	*Fraxinus pennsylvanica*	8.3	POOR	-
1658	AMERICAN BEECH	*Fagus grandifolia*	23	POOR	-
1659	NORTHERN RED OAK	*Quercus rubra*	9	POOR	-
1660	RED MAPLE	*Acer rubrum*	11.7	POOR	-
1661	BLACK CHERRY	*Prunus serotina*	13.5	FAIR	
1662	BLACK CHERRY	*Prunus serotina*	14.2	FAIR	
1663	GREEN ASH	*Fraxinus pennsylvanica*	11.3	POOR	-
1664	TULIP POPLAR	*Liriodendron tulipifera*	22.5	FAIR	
1665	RED MAPLE	*Acer rubrum*	6.8	FAIR	
1666	AMERICAN BEECH	*Fagus grandifolia*	12.1	GOOD	
1667	TULIP POPLAR	*Liriodendron tulipifera*	11.7	GOOD	
1668	AMERICAN BEECH	*Fagus grandifolia*	21.4		
1669	GREEN ASH	*Fraxinus pennsylvanica*	18.2	POOR	-
1670	GREEN ASH	*Fraxinus pennsylvanica*	8.3	POOR	-
1671	AMERICAN BEECH	*Fagus grandifolia*	10.5	FAIR	
1672	AMERICAN BEECH	*Fagus grandifolia*	23.9	GOOD	
1673	BLACK CHERRY	*Prunus serotina*	12	GOOD	
1674	GREEN ASH	*Fraxinus pennsylvanica*	13.7	POOR	-
1675	GREEN ASH	*Fraxinus pennsylvanica*	7.5	POOR	-
1676	TULIP POPLAR	*Liriodendron tulipifera*	14.2	FAIR	
1677	AMERICAN BEECH	*Fagus grandifolia*	13.7	GOOD	
1678	GREEN ASH	*Fraxinus pennsylvanica*	19.7	POOR	-
1679	AMERICAN BEECH	*Fagus grandifolia*	12.9	FAIR	
1680	AMERICAN BEECH	*Fagus grandifolia*	7	GOOD	
1681	GREEN ASH	*Fraxinus pennsylvanica*	6.2	POOR	-
1682	TULIP POPLAR	*Liriodendron tulipifera*	38.7	GOOD	
1683	AMERICAN BEECH	*Fagus grandifolia*	43	FAIR	
1684	TULIP POPLAR	*Liriodendron tulipifera*	33.4	FAIR	
1685	TULIP POPLAR	*Liriodendron tulipifera*	21.5	POOR	-
1686	RED MAPLE	*Acer rubrum*	6.3	POOR	-
1687	AMERICAN BEECH	*Fagus grandifolia*	16.1	GOOD	
1688	AMERICAN BEECH	*Fagus grandifolia*	18.2	FAIR	
1689	TULIP POPLAR	*Liriodendron tulipifera*	13.2	FAIR	
1690	AMERICAN BEECH	*Fagus grandifolia*	24	FAIR	
1691	TULIP POPLAR	*Liriodendron tulipifera*	21.5	GOOD	
1692	TULIP POPLAR	*Liriodendron tulipifera*	12.4	GOOD	
1693	BLACK CHERRY	*Prunus serotina*	9.7	POOR	-
1694	TULIP POPLAR	*Liriodendron tulipifera*	11.8	GOOD	
1695	AMERICAN BEECH	*Fagus grandifolia*	15.1	POOR	TBR
1696	AMERICAN BEECH	*Fagus grandifolia*	21.1	POOR	TBR
1697	AMERICAN BEECH	*Fagus grandifolia*	8.5	GOOD	
1698	RED MAPLE	*Acer rubrum*	8.2	POOR	-
1699	NORTHERN RED OAK	*Quercus rubra*	22	POOR	-
1700	AMERICAN BEECH	*Fagus grandifolia*	21.1	FAIR	
1701	AMERICAN BEECH	*Fagus grandifolia*	7.2	GOOD	
1702	AMERICAN BEECH	*Fagus grandifolia*	18.8	POOR	-
1703	AMERICAN BEECH	*Fagus grandifolia*	26.5	POOR	TBR
1704	AMERICAN BEECH	*Fagus grandifolia*	9.5	POOR	TBR
1705	GREEN ASH	*Fraxinus pennsylvanica*	9.1	FAIR	TBR
1706	GREEN ASH	*Fraxinus pennsylvanica*	10	POOR	TBR
1707	AMERICAN BEECH	*Fagus grandifolia*	6.9	GOOD	
1708	NORTHERN RED OAK	*Quercus rubra*	23.9	GOOD	
1709	AMERICAN BEECH	*Fagus grandifolia*	21.5	GOOD	
1710	AMERICAN BEECH	*Fagus grandifolia*	7.4	GOOD	
1711	RED MAPLE	*Acer rubrum*	16.2	GOOD	
1712	GREEN ASH	*Fraxinus pennsylvanica*	8.4	POOR	-
1713	PIN OAK	*Quercus palustris*	14.8	GOOD	
1714	BITTERNUT HICKORY	*Carya cordiformis*	24	GOOD	
1715	PIN OAK	*Quercus palustris*	10.4	GOOD	
1716	GREEN ASH	*Fraxinus pennsylvanica*	14.7	POOR	-
1717	NORTHERN RED OAK	*Quercus rubra*	6.8	POOR	-
1718	NORTHERN RED OAK	*Quercus rubra*	14.5	PO	
1719	NORTHERN RED OAK	*Quercus rubra*	8.1	F	
1720	PIN OAK	*Quercus palustris*	6	FAIR	
1721	BITTERNUT HICKORY	*Carya cordiformis*	12.3	GOOD	
1722	TULIP POPLAR	*Liriodendron tulipifera*	18.9	GOOD	
1723	NORTHERN RED OAK	*Quercus rubra*	21.7	GOOD	
1724	AMERICAN BEECH	*Fagus grandifolia*	8.2	GOOD	
1725	TULIP POPLAR	*Liriodendron tulipifera*	23.6	GOOD	
1726	AMERICAN BEECH	*Fagus grandifolia*	7.5	GOOD	
1727	TULIP POPLAR	*Liriodendron tulipifera*	23.1	GOOD	
1728	AMERICAN ELM	*Ulmus americana*	8	GOOD	
1729	AMERICAN BEECH	*Fagus grandifolia*	12.1	POOR	-
1730	TULIP POPLAR	*Liriodendron tulipifera*	17.7	GOOD	
1731	RED MAPLE	*Acer rubrum*	14.7	POOR	-
1732	AMERICAN BEECH	*Fagus grandifolia*	11.4	GOOD	
1733	AMERICAN BEECH	*Fagus grandifolia*	11.1	GOOD	
1734	AMERICAN BEECH	*Fagus grandifolia*	20.9	GOOD	
1735	RED MAPLE	*Acer rubrum*	20.2	GOOD	
1736	AMERICAN BEECH	*Fagus grandifolia*	16.3	GOOD	
1737	AMERICAN BEECH	*Fagus grandifolia*	6.6	POOR	-
1738	RED MAPLE	*Acer rubrum*	26.6	POOR	-
1739	AMERICAN BEECH	*Fagus grandifolia*	6.2	POOR	-
1740	TULIP POPLAR	*Liriodendron tulipifera*	14.6	GOOD	
1741	TULIP POPLAR	*Liriodendron tulipifera*	13.5	GOOD	
1742	AMERICAN BEECH	*Fagus grandifolia*	17.6	POOR	-
1743	SYCAMORE	*Platanus occidentalis*	21.9	FAIR	
1744	AMERICAN ELM	*Ulmus americana*	9.5	FAIR	
1745	BLACK CHERRY	*Prunus serotina*	10.6	POOR	TBR
1746	TULIP POPLAR	*Liriodendron tulipifera*	13.7	GOOD	
1747	AMERICAN BEECH	*Fagus grandifolia*	7.6	POOR	TBR
1748	RED MAPLE	*Acer rubrum*	9.1	FAIR	
1749	RED MAPLE	*Acer rubrum*	8.2	GOOD	
1750	RED MAPLE	*Acer rubrum*	8.3	GOOD	
1751	RED MAPLE	*Acer rubrum*	6.7	GOOD	
1752	RED MAPLE	*Acer rubrum*	7.6	GOOD	
1753	AMERICAN BEECH	*Fagus grandifolia*	18.3	GOOD	
1754	RED MAPLE	*Acer rubrum*	17.5	GOOD	
1755	RED MAPLE	*Acer rubrum*	11.7	GOOD	
1756	AMERICAN BEECH	*Fagus grandifolia*	24.5	POOR	-
1757	GREEN ASH	*Fraxinus pennsylvanica*	17.5	POOR	-
1758	AMERICAN BEECH	*Fagus grandifolia*	12.8	GOOD	
1759	AMERICAN BEECH	*Fagus grandifolia*	9	GOOD	
1760	GREEN ASH	*Fraxinus pennsylvanica*	15	GOOD	
1761	RED MAPLE	*Acer rubrum*	7.9	GOOD	
1762	RED MAPLE	*Acer rubrum*	17.1	POOR	-
1763	AMERICAN BEECH	*Fagus grandifolia*	15.8	GOOD	
1764	AMERICAN BEECH	*Fagus grandifolia*	22.3	GOOD	
1765	TULIP POPLAR	*Liriodendron tulipifera*	20.1	GOOD	
1766	TULIP POPLAR	*Liriodendron tulipifera*	18.5	GOOD	
1767	RED MAPLE	*Acer rubrum*	12.8	GOOD	
1768	BITTERNUT HICKORY	*Carya cordiformis*	18.1	GOOD	
1769	AMERICAN BEECH	*Fagus grandifolia*	14.3	GOOD	
1770	TULIP POPLAR	*Liriodendron tulipifera*	10.9	FAIR	
1771	TULIP POPLAR	*Liriodendron tulipifera*	12	FAIR	
1772	TULIP POPLAR	*Liriodendron tulipifera*	14.9	FAIR	
1773	TULIP POPLAR	*Liriodendron tulipifera*	22.6	POOR	-
1774	TULIP POPLAR	*Liriodendron tulipifera*	11.7	GOOD	
1775	AMERICAN BEECH	*Fagus grandifolia*	18	FAIR	
1776	AMERICAN BEECH	*Fagus grandifolia*	13.6	GOOD	
1777	AMERICAN BEECH	*Fagus grandifolia*	10.8	GOOD	
1778	AMERICAN BEECH	*Fagus grandifolia*	16.8	GOOD	
1779	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
1780	TULIP POPLAR	*Liriodendron tulipifera*	11.6	GOOD	
1781	TULIP POPLAR	*Liriodendron tulipifera*	11.7	GOOD	
1782	TULIP POPLAR	*Liriodendron tulipifera*	6.8	GOOD	
1783	AMERICAN BEECH	*Fagus grandifolia*	13.5	FAIR	
1784	AMERICAN BEECH	*Fagus grandifolia*	7.2	GOOD	
1785	RED MAPLE	*Acer rubrum*	12.4	FAIR	
1786	GREEN ASH	*Fraxinus pennsylvanica*	10.6	FAIR	
1787	AMERICAN BEECH	*Fagus grandifolia*	23.7	GOOD	
1788	AMERICAN BEECH	*Fagus grandifolia*	18.6	GOOD	
1789	RED MAPLE	*Acer rubrum*	14	POOR	-
1790	RED MAPLE	*Acer rubrum*	17.3	GOOD	
1791	RED MAPLE	*Acer rubrum*	7.7	GOOD	
1792	AMERICAN BEECH	*Fagus grandifolia*	18.1	GOOD	
1793	RED MAPLE	*Acer rubrum*	14.3	GOOD	
1794	RED MAPLE	*Acer rubrum*	14.7	FAIR	
1795	AMERICAN BEECH	*Fagus grandifolia*	6.1	GOOD	
1796	BLACK CHERRY	*Prunus serotina*	9	POOR	-
1797	RED MAPLE	*Acer rubrum*	6.3	GOOD	
1798	RED MAPLE	*Acer rubrum*	17.7	POOR	-
1799	RED MAPLE	*Acer rubrum*	12.2	FAIR	
1800	TULIP POPLAR	*Liriodendron tulipifera*	17.5	GOOD	

TREES T-1501 THROUGH T-1800

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX. EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 19 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-06 Of TI-10

BID No.:
HCG DWG ID No.:
SCALE: 1" = 100'

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
1801	TULIP POPLAR	*Liriodendron tulipifera*	16.2	GOOD	
1802	TULIP POPLAR	*Liriodendron tulipifera*	24.2	FAIR	
1803	RED MAPLE	*Acer rubrum*	14.6	FAIR	
1804	RED MAPLE	*Acer rubrum*	10.5	GOOD	
1805	RED MAPLE	*Acer rubrum*	15.1	GOOD	
1806	TULIP POPLAR	*Liriodendron tulipifera*	17.6	FAIR	
1807	RED MAPLE	*Acer rubrum*	12	POOR	
1808	AMERICAN BEECH	*Fagus grandifolia*	17.4	GOOD	
1809	RED MAPLE	*Acer rubrum*	14.3	FAIR	
1810	NORTHERN RED OAK	*Quercus rubra*	13.2	GOOD	
1811	RED MAPLE	*Acer rubrum*	10.9	FAIR	
1812	RED MAPLE	*Acer rubrum*	8.2	FAIR	
1813	AMERICAN BEECH	*Fagus grandifolia*	14.5	FAIR	
1814	RED MAPLE	*Acer rubrum*	18.5	GOOD	
1815	RED MAPLE	*Acer rubrum*	12.5	POOR	
1816	BLACK CHERRY	*Prunus serotina*	10.2	POOR	
1817	TULIP POPLAR	*Liriodendron tulipifera*	9	GOOD	
1818	RED MAPLE	*Acer rubrum*	10.5	POOR	
1819	GREEN ASH	*Fraxinus pennsylvanica*	6.9	POOR	
1820	RED MAPLE	*Acer rubrum*	19.5	FAIR	
1821	GREEN ASH	*Fraxinus pennsylvanica*	15.5	POOR	
1822	TULIP POPLAR	*Liriodendron tulipifera*	17	GOOD	
1823	RED MAPLE	*Acer rubrum*	11.4	FAIR	
1824	SWEET CHERRY	*Prunus avium*	9.6	FAIR	
1825	RED MAPLE	*Acer rubrum*	8.1	GOOD	
1826	BITTERNUT HICKORY	*Carya cordiformis*	8.6	GOOD	TBR
1827	TULIP POPLAR	*Liriodendron tulipifera*	16.2	GOOD	TBR
1828	AMERICAN BEECH	*Fagus grandifolia*	12.8	FAIR	TBR
1829	AMERICAN BEECH	*Fagus grandifolia*	6.2	POOR	TBR
1830	BLACK GUM	*Nyssa sylvatica*	15.3	FAIR	
1831	TULIP POPLAR	*Liriodendron tulipifera*	15.7	GOOD	
1832	NORTHERN RED OAK	*Quercus rubra*	11	POOR	TBR
1833	NORTHERN RED OAK	*Quercus rubra*	16.1	POOR	
1834	TULIP POPLAR	*Liriodendron tulipifera*	14.8	GOOD	
1835	RED MAPLE	*Acer rubrum*	6.3	FAIR	
1836	TULIP POPLAR	*Liriodendron tulipifera*	13.8	GOOD	
1837	RED MAPLE	*Acer rubrum*	6.8	FAIR	
1838	TULIP POPLAR	*Liriodendron tulipifera*	19.5	GOOD	
1839	PIN OAK	*Quercus palustris*	7.1	GOOD	
1840	TULIP POPLAR	*Liriodendron tulipifera*	14.5	GOOD	
1841	TULIP POPLAR	*Liriodendron tulipifera*	15.1	GOOD	
1842	TULIP POPLAR	*Liriodendron tulipifera*	12.6	FAIR	
1843	TULIP POPLAR	*Liriodendron tulipifera*	16.2	GOOD	
1844	RED MAPLE	*Acer rubrum*	14.9	DOOR	
1845	AMERICAN ELM	*Ulmus americana*	8.1	FAIR	
1846	AMERICAN BEECH	*Fagus grandifolia*	7.2	GOOD	
1847	GREEN ASH	*Fraxinus pennsylvanica*	13.4	POOR	
1848	GREEN ASH	*Fraxinus pennsylvanica*	12.5	POOR	
1849	AMERICAN BEECH	*Fagus grandifolia*	23.5	GOOD	
1850	RED MAPLE	*Acer rubrum*	6.1	FAIR	
1851	RED MAPLE	*Acer rubrum*	11.5	GOOD	
1852	AMERICAN BEECH	*Fagus grandifolia*	7.5	GOOD	
1853	AMERICAN BEECH	*Fagus grandifolia*	14.7	FAIR	
1854	TULIP POPLAR	*Liriodendron tulipifera*	22.5	FAIR	
1855	RED MAPLE	*Acer rubrum*	10.1	GOOD	
1856	RED MAPLE	*Acer rubrum*	9.1	FAIR	
1857	TULIP POPLAR	*Liriodendron tulipifera*	18.5	GOOD	
1858	AMERICAN BEECH	*Fagus grandifolia*	27.5	GOOD	
1859	AMERICAN BEECH	*Fagus grandifolia*	21.8	GOOD	
1860	AMERICAN BEECH	*Fagus grandifolia*	18.3	FAIR	
1861	RED MAPLE	*Acer rubrum*	6	GOOD	
1862	AMERICAN BEECH	*Fagus grandifolia*	6.5	GOOD	TBR
1863	AMERICAN BEECH	*Fagus grandifolia*	10.1	GOOD	TBR
1864	TULIP POPLAR	*Liriodendron tulipifera*	23.5	FAIR	TBR
1865	RED MAPLE	*Acer rubrum*	8.5	GOOD	TBR
1866	TULIP POPLAR	*Liriodendron tulipifera*	19.3	GOOD	
1867	TULIP POPLAR	*Liriodendron tulipifera*	19.4	GOOD	
1868	AMERICAN BEECH	*Fagus grandifolia*	6	GOOD	
1869	NORTHERN RED OAK	*Quercus rubra*	14.1	GOOD	
1870	GREEN ASH	*Fraxinus pennsylvanica*	9.2	POOR	
1871	RED MAPLE	*Acer rubrum*	9.6	FAIR	
1872	TULIP POPLAR	*Liriodendron tulipifera*	23.5	POOR	TBR
1873	AMERICAN BEECH	*Fagus grandifolia*	15.8	FAIR	
1874	RED MAPLE	*Acer rubrum*	8.3	GOOD	
1875	AMERICAN BEECH	*Fagus grandifolia*	15.8	FAIR	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
1876	RED MAPLE	*Acer rubrum*	15.1	POOR	
1877	AMERICAN BEECH	*Fagus grandifolia*	23.5	GOOD	
1878	RED MAPLE	*Acer rubrum*	10	GOOD	
1879	AMERICAN BEECH	*Fagus grandifolia*	23.4	GOOD	
1880	TULIP POPLAR	*Liriodendron tulipifera*	25	GOOD	
1881	AMERICAN BEECH	*Fagus grandifolia*	22.2	GOOD	
1882	AMERICAN BEECH	*Fagus grandifolia*	8.2	GOOD	
1883	TULIP POPLAR	*Liriodendron tulipifera*	26	FAIR	
1884	GREEN ASH	*Fraxinus pennsylvanica*	9.5	POOR	
1885	AMERICAN BEECH	*Fagus grandifolia*	6.9	FAIR	
1886	TULIP POPLAR	*Liriodendron tulipifera*	15.7	FAIR	
1887	GREEN ASH	*Fraxinus pennsylvanica*	9.5	POOR	
1888	AMERICAN BEECH	*Fagus grandifolia*	21.5	GOOD	
1889	AMERICAN BEECH	*Fagus grandifolia*	22.9	GOOD	
1890	AMERICAN BEECH	*Fagus grandifolia*	20.5	GOOD	
1891	RED MAPLE	*Acer rubrum*	14.5	GOOD	
1892	NORTHERN RED OAK	*Quercus rubra*	13.1	POOR	TBR
1893	PIN OAK	*Quercus palustris*	7.8	POOR	TBR
1894	TULIP POPLAR	*Liriodendron tulipifera*	16.3	GOOD	TBR
1895	TULIP POPLAR	*Liriodendron tulipifera*	10.9	GOOD	
1896	NUMBER NOT USED	*NUMBER NOT USED*			
1897	NORTHERN RED OAK	*Quercus rubra*	19.3	POOR	TBR
1898	RED MAPLE	*Acer rubrum*	13.1	FAIR	TBR
1899	AMERICAN BEECH	*Fagus grandifolia*	21.8	FAIR	
1900	AMERICAN BEECH	*Fagus grandifolia*	20.1	FAIR	
1901	AMERICAN BEECH	*Fagus grandifolia*	13.3	POOR	TBR
1902	AMERICAN BEECH	*Fagus grandifolia*	23.6	GOOD	
1903	TULIP POPLAR	*Liriodendron tulipifera*	10.9	POOR	TBR
1904	BLACK CHERRY	*Prunus serotina*	8.3	POOR	TBR
1905	TULIP POPLAR	*Liriodendron tulipifera*	19.1	GOOD	
1906	GREEN ASH	*Fraxinus pennsylvanica*	13.8	POOR	TBR
1907	AMERICAN BEECH	*Fagus grandifolia*	16.3	FAIR	
1908	AMERICAN BEECH	*Fagus grandifolia*	21.5	FAIR	
1909	AMERICAN BEECH	*Fagus grandifolia*	13.4	GOOD	
1910	AMERICAN BEECH	*Fagus grandifolia*	10.9	GOOD	
1911	AMERICAN BEECH	*Fagus grandifolia*	8	POOR	
1912	AMERICAN BEECH	*Fagus grandifolia*	6.8	FAIR	
1913	AMERICAN BEECH	*Fagus grandifolia*	16.8	GOOD	
1914	AMERICAN BEECH	*Fagus grandifolia*	6	FAIR	
1915	TULIP POPLAR	*Liriodendron tulipifera*	9	GOOD	TBR
1916	TULIP POPLAR	*Liriodendron tulipifera*	8.8	GOOD	TBR
1917	TULIP POPLAR	*Liriodendron tulipifera*	17.7	GOOD	
1918	AMERICAN BEECH	*Fagus grandifolia*	19	GOOD	
1919	AMERICAN BEECH	*Fagus grandifolia*	14	GOOD	
1920	GREEN ASH	*Fraxinus pennsylvanica*	8.9	POOR	
1921	GREEN ASH	*Fraxinus pennsylvanica*	8.2	POOR	
1922	AMERICAN BEECH	*Fagus grandifolia*	21.5	GOOD	
1923	RED MAPLE	*Acer rubrum*	9.2	GOOD	
1924	RED MAPLE	*Acer rubrum*	10.1	FAIR	
1925	RED MAPLE	*Acer rubrum*	7.1	FAIR	
1926	TULIP POPLAR	*Liriodendron tulipifera*	19.9	GOOD	
1927	RED MAPLE	*Acer rubrum*	11.3	POOR	TBR
1928	AMERICAN BEECH	*Fagus grandifolia*	28.7	POOR	
1929	TULIP POPLAR	*Liriodendron tulipifera*	18.9	POOR	
1930	AMERICAN BEECH	*Fagus grandifolia*	12.1	GOOD	
1931	RED MAPLE	*Acer rubrum*	22.2	FAIR	TBR
1932	GREEN ASH	*Fraxinus pennsylvanica*	7.6	POOR	TBR
1933	TULIP POPLAR	*Liriodendron tulipifera*	21.1	POOR	
1934	RED MAPLE	*Acer rubrum*	7.7	POOR	
1935	RED MAPLE	*Acer rubrum*	11.2	FAIR	
1936	RED MAPLE	*Acer rubrum*	8.7	POOR	TBR
1937	RED MAPLE	*Acer rubrum*	21.5	POOR	TBR
1938	TULIP POPLAR	*Liriodendron tulipifera*	20.1	GOOD	
1939	AMERICAN BEECH	*Fagus grandifolia*	16.9	GOOD	
1940	AMERICAN BEECH	*Fagus grandifolia*	11.3	FAIR	
1941	GREEN ASH	*Fraxinus pennsylvanica*	15.4	POOR	
1942	AMERICAN BEECH	*Fagus grandifolia*	21.6	GOOD	
1943	BLACK GUM	*Nyssa sylvatica*	8.5	GOOD	
1944	RED MAPLE	*Acer rubrum*	16.7	GOOD	
1945	AMERICAN BEECH	*Fagus grandifolia*	15.8	GOOD	
1946	AMERICAN BEECH	*Fagus grandifolia*	14	GOOD	
1947	NORTHERN RED OAK	*Quercus rubra*	32.5	GOOD	
1948	AMERICAN BEECH	*Fagus grandifolia*	6.7	FAIR	
1949	RED MAPLE	*Acer rubrum*	9.2	FAIR	
1950	RED MAPLE	*Acer rubrum*	15.5	POOR	TBR

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
1951	NORTHERN RED OAK	*Quercus rubra*	7.9	FAIR	TBR
1952	SWEET CHERRY	*Prunus avium*	18.2	POOR	TBR
1953	RED MAPLE	*Acer rubrum*	15.9	POOR	TBR
1954	AMERICAN BEECH	*Fagus grandifolia*	7.2	GOOD	TBR
1955	AMERICAN BEECH	*Fagus grandifolia*	13.1	FAIR	
1956	RED MAPLE	*Acer rubrum*	12	FAIR	
1957	GREEN ASH	*Fraxinus pennsylvanica*	12.8	POOR	
1958	TULIP POPLAR	*Liriodendron tulipifera*	16.7	GOOD	
1959	NORTHERN RED OAK	*Quercus rubra*	19.3	POOR	
1960	BLACK CHERRY	*Prunus serotina*	7.6	FAIR	
1961	GREEN ASH	*Fraxinus pennsylvanica*	7.6	POOR	
1962	TULIP POPLAR	*Liriodendron tulipifera*	21.3	GOOD	
1963	TULIP POPLAR	*Liriodendron tulipifera*	7.5	GOOD	
1964	TULIP POPLAR	*Liriodendron tulipifera*	13.7	GOOD	
1965	TULIP POPLAR	*Liriodendron tulipifera*	14.3	GOOD	
1966	TULIP POPLAR	*Liriodendron tulipifera*	10.2	GOOD	
1967	GREEN ASH	*Fraxinus pennsylvanica*	13.2	POOR	TBR
1968	AMERICAN BEECH	*Fagus grandifolia*	20	GOOD	
1969	RED MAPLE	*Acer rubrum*	12.6	GOOD	
1970	RED MAPLE	*Acer rubrum*	12.1	POOR	
1971	RED MAPLE	*Acer rubrum*	6.7	FAIR	
1972	RED MAPLE	*Acer rubrum*	13.5	GOOD	
1973	RED MAPLE	*Acer rubrum*	25.1	POOR	TBR
1974	RED MAPLE	*Acer rubrum*	16.1	POOR	TBR
1975	TULIP POPLAR	*Liriodendron tulipifera*	16.8	GOOD	
1976	AMERICAN BEECH	*Fagus grandifolia*	19	GOOD	
1977	AMERICAN BEECH	*Fagus grandifolia*	20	GOOD	
1978	BITTERNUT HICKORY	*Carya cordiformis*	17.2	GOOD	
1979	TULIP POPLAR	*Liriodendron tulipifera*	10.7	GOOD	
1980	TULIP POPLAR	*Liriodendron tulipifera*	12.9	GOOD	
1981	RED MAPLE	*Acer rubrum*	6.2	FAIR	
1982	TULIP POPLAR	*Liriodendron tulipifera*	19.6	GOOD	
1983	TULIP POPLAR	*Liriodendron tulipifera*	21.2	GOOD	
1984	TULIP POPLAR	*Liriodendron tulipifera*	19.5	GOOD	
1985	RED MAPLE	*Acer rubrum*	9	POOR	
1986	RED MAPLE	*Acer rubrum*	6.4	POOR	
1987	RED MAPLE	*Acer rubrum*	6.4	POOR	
1988	TULIP POPLAR	*Liriodendron tulipifera*	6.3	FAIR	
1989	RED MAPLE	*Acer rubrum*	14.5	FAIR	
1990	AMERICAN BEECH	*Fagus grandifolia*	12.1	GOOD	
1991	AMERICAN BEECH	*Fagus grandifolia*	9	GOOD	
1992	AMERICAN BEECH	*Fagus grandifolia*	18.3	GOOD	
1993	AMERICAN BEECH	*Fagus grandifolia*	15.8	GOOD	
1994	AMERICAN BEECH	*Fagus grandifolia*	9.1	FAIR	
1995	RED MAPLE	*Acer rubrum*	15.8	POOR	TBR
1996	AMERICAN BEECH	*Fagus grandifolia*	12.3	FAIR	
1997	GREEN ASH	*Fraxinus pennsylvanica*	14.1	POOR	TBR
1998	RED MAPLE	*Acer rubrum*	11.9	FAIR	
1999	AMERICAN BEECH	*Fagus grandifolia*	26.9	GOOD	
2000	AMERICAN BEECH	*Fagus grandifolia*	21.7	GOOD	
2001	NORTHERN RED OAK	*Quercus rubra*	31.6	FAIR	
2002	NUMBER NOT USED	*Tree Not Surveyed*			
2003	NORTHERN RED OAK	*Quercus rubra*	27.1	POOR	
2004	RED MAPLE	*Acer rubrum*	6	FAIR	
2005	RED MAPLE	*Acer rubrum*	28.5	GOOD	
2006	WHITE OAK	*Quercus alba*	8.4	GOOD	
2007	BLACK WALNUT	*Juglans nigra*	11.8	FAIR	
2008	BLACK CHERRY	*Prunus serotina*	7.8	GOOD	
2009	PIN OAK	*Quercus palustris*	6.7	FAIR	
2010	GREEN ASH	*Fraxinus pennsylvanica*	6.3	POOR	
2011	NORTHERN RED OAK	*Quercus rubra*	11.4	FAIR	
2012	TULIP POPLAR	*Liriodendron tulipifera*	31	FAIR	
2013	PIN OAK	*Quercus palustris*	8	FAIR	
2014	BLACK LOCUST	*Robinia pseudoacacia*	22	POOR	
2015	BLACK CHERRY	*Prunus serotina*	8.2	FAIR	
2016	BLACK LOCUST	*Robinia pseudoacacia*	15.1	POOR	TBR
2017	BLACK CHERRY	*Prunus serotina*	6.6	FAIR	
2018	AMERICAN BEECH	*Fagus grandifolia*	6.8	GOOD	
2019	RED MAPLE	*Acer rubrum*	9	GOOD	TBR
2020	AMERICAN BEECH	*Fagus grandifolia*	6	FAIR	TBR
2021	AMERICAN BEECH	*Fagus grandifolia*	6.1	GOOD	TBR
2022	RED MAPLE	*Acer rubrum*	9.2	POOR	
2023	WHITE OAK	*Quercus alba*	28.4	FAIR	
2024	TULIP POPLAR	*Liriodendron tulipifera*	13.3	FAIR	
2025	TULIP POPLAR	*Liriodendron tulipifera*	15.6	GOOD	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2026	TULIP POPLAR	*Liriodendron tulipifera*	15.7	GOOD	
2027	NORTHERN RED OAK	*Quercus rubra*	6.7	GOOD	
2028	TULIP POPLAR	*Liriodendron tulipifera*	12	POOR	
2029	WHITE OAK	*Quercus alba*	30.2	GOOD	
2030	WHITE OAK	*Quercus alba*	43.6	POOR	TBR
2031	TULIP POPLAR	*Liriodendron tulipifera*	24.2	FAIR	TBR
2032	BLACK GUM	*Nyssa sylvatica*	10.3	FAIR	
2033	TULIP POPLAR	*Liriodendron tulipifera*	25.3	FAIR	
2034	GREEN ASH	*Fraxinus pennsylvanica*	10.8	FAIR	TBR
2035	BLACK GUM	*Nyssa sylvatica*	6.2	FAIR	
2036	NORTHERN RED OAK	*Quercus rubra*	18.7	FAIR	TBR
2037	BLACK CHERRY	*Prunus serotina*	7.6	FAIR	TBR
2038	LARGE TOOTH ASPEN	*Populus grandidentata*	8.7	POOR	TBR
2039	NORTHERN RED OAK	*Quercus rubra*	6.5	FAIR	TBR
2040	TULIP POPLAR	*Liriodendron tulipifera*	18.8	POOR	TBR
2041	TULIP POPLAR	*Liriodendron tulipifera*	19.3	POOR	TBR
2042	TULIP POPLAR	*Liriodendron tulipifera*	10.9	FAIR	TBR
2043	LARGE TOOTH ASPEN	*Populus grandidentata*	17.8	FAIR	TBR
2044	AMERICAN BEECH	*Fagus grandifolia*	7.2	POOR	TBR
2045	GREEN ASH	*Fraxinus pennsylvanica*	16.3	POOR	TBR
2046	BLACK JACK OAK	*Quercus marilandica*	26.3	FAIR	TBR
2047	RED MAPLE	*Acer rubrum*	9.4	POOR	TBR
2048	RED MAPLE	*Acer rubrum*	7.2	POOR	TBR
2049	RED MAPLE	*Acer rubrum*	7.8	FAIR	
2050	RED MAPLE	*Acer rubrum*	6.9	FAIR	
2051	NORTHERN RED OAK	*Quercus rubra*	22.1	GOOD	
2052	RED MAPLE	*Acer rubrum*	2052	FAIR	
2053	GREEN ASH	*Fraxinus pennsylvanica*	14.8	POOR	TBR
2054	BLACK WALNUT	*Juglans nigra*	16.7	FAIR	
2055	PIN OAK	*Quercus palustris*	6.3	FAIR	
2056	RED MAPLE	*Acer rubrum*	7.3	FAIR	
2057	NORTHERN RED OAK	*Quercus rubra*	6	GOOD	
2058	NORTHERN RED OAK	*Quercus rubra*	15.6	FAIR	
2059	BLACK GUM	*Nyssa sylvatica*	9.2	FAIR	
2060	NORTHERN RED OAK	*Quercus rubra*	12.2	FAIR	
2061	BLACK WALNUT	*Juglans nigra*	13.8	GOOD	
2062	RED MAPLE	*Acer rubrum*	7.2	FAIR	
2063	AMERICAN ELM	*Ulmus americana*	6	FAIR	
2064	AMERICAN ELM	*Ulmus americana*	9.2	FAIR	
2065	NORTHERN RED OAK	*Quercus rubra*	27.8	GOOD	
2066	BITTERNUT HICKORY	*Carya cordiformis*	8.9	GOOD	
2067	BITTERNUT HICKORY	*Carya cordiformis*	16.2	GOOD	
2068	AMERICAN ELM	*Ulmus americana*	10	FAIR	
2069	TULIP POPLAR	*Liriodendron tulipifera*	23.5	FAIR	
2070	NORTHERN RED OAK	*Quercus rubra*	9.6	FAIR	
2071	PIN OAK	*Quercus palustris*	6.5	POOR	
2072	GREEN ASH	*Fraxinus pennsylvanica*	7	POOR	
2073	DOGWOOD	*Cornus florida*	8	POOR	
2074	BLACK WALNUT	*Juglans nigra*	18.6	GOOD	
2075	GREEN ASH	*Fraxinus pennsylvanica*	15.2	POOR	
2076	AMERICAN ELM	*Ulmus americana*	7.1	POOR	
2077	AMERICAN ELM	*Ulmus americana*	8.7	POOR	
2078	RED MAPLE	*Acer rubrum*	6	POOR	
2079	BLACK LOCUST	*Robinia pseudoacacia*	9.6	POOR	
2080	AMERICAN ELM	*Ulmus americana*	10.2	FAIR	
2081	AMERICAN ELM	*Ulmus americana*	6.7	FAIR	
2082	AMERICAN ELM	*Ulmus americana*	10.1	GOOD	
2083	RED MAPLE	*Acer rubrum*	18.7	FAIR	
2084	AMERICAN ELM	*Ulmus americana*	6.5	POOR	
2085	BITTERNUT HICKORY	*Carya cordiformis*	6.8	GOOD	
2086	RED MAPLE	*Acer rubrum*	10.6	GOOD	TBR
2087	GREEN ASH	*Fraxinus pennsylvanica*	11.4	POOR	
2088	GREEN ASH	*Fraxinus pennsylvanica*	9.2	POOR	TBR
2089	GREEN ASH	*Fraxinus pennsylvanica*	10.5	POOR	TBR
2090	GREEN ASH	*Fraxinus pennsylvanica*	10.6	POOR	TBR
2091	TULIP POPLAR	*Liriodendron tulipifera*	16.6	FAIR	TBR
2092	AMERICAN ELM	*Ulmus americana*	8.3	POOR	TBR
2093	AMERICAN ELM	*Ulmus americana*	6.7	FAIR	TBR
2094	AMERICAN ELM	*Ulmus americana*	6	POOR	TBR
2095	PIN OAK	*Quercus palustris*	6.3	FAIR	TBR
2096	BLACK CHERRY	*Prunus serotina*	7.7	POOR	TBR
2097	GREEN ASH	*Fraxinus pennsylvanica*	8.6	POOR	TBR
2098	AMERICAN ELM	*Ulmus americana*	9.8	FAIR	
2099	AMERICAN ELM	*Ulmus americana*	11.7	FAIR	
2100	GREEN ASH	*Fraxinus pennsylvanica*	8.2	POOR	TBR

TREES T-1801 THROUGH T-2100

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 20 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-07 Of TI-10

BID No.:

HCG DWG ID No.:

SCALE 1" = 100'

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2101	NORTHERN RED OAK	*Quercus rubra*	29.3	FAIR	
2102	RED MAPLE	*Acer rubrum*	13.8	POOR	-
2103	BLACK LOCUST	*Robinia pseudoacacia*	13.6	POOR	-
2104	AMERICAN ELM	*Ulmus americana*	6.5	POOR	-
2105	RED MAPLE	*Acer rubrum*	9.6	FAIR	
2106	BLACK LOCUST	*Robinia pseudoacacia*	17.4	POOR	-
2107	AMERICAN ELM	*Ulmus americana*	6.1	FAIR	
2108	RED MAPLE	*Acer rubrum*	9.8	FAIR	
2109	BLACK LOCUST	*Robinia pseudoacacia*	12	FAIR	
2110	RED MAPLE	*Acer rubrum*	10.3	FAIR	
2111	RED MAPLE	*Acer rubrum*	7	FAIR	
2112	GREEN ASH	*Fraxinus pennsylvanica*	9.9	POOR	TBR
2113	AMERICAN BEECH	*Fagus grandifolia*	7.6	GOOD	
2114	RED MAPLE	*Acer rubrum*	8.7	POOR	-
2115	GREEN ASH	*Fraxinus pennsylvanica*	8.2	POOR	-
2116	BITTERNUT HICKORY	*Carya cordiformis*	25.5	POOR	-
2117	PIN OAK	*Quercus palustris*	8.6	GOOD	
2118	BLACK CHERRY	*Prunus serotina*	11.8	GOOD	
2119	AMERICAN BEECH	*Fagus grandifolia*	6	FAIR	
2120	RED MAPLE	*Acer rubrum*	11	FAIR	
2121	BLACK LOCUST	*Robinia pseudoacacia*	11.8	FAIR	
2122	RED MAPLE	*Acer rubrum*	11.5	FAIR	
2123	AMERICAN BEECH	*Fagus grandifolia*	6.2	FAIR	
2124	AMERICAN BEECH	*Fagus grandifolia*	9	FAIR	
2125	BLACK LOCUST	*Robinia pseudoacacia*	12.1	POOR	-
2126	RED MAPLE	*Acer rubrum*	11.3	POOR	-
2127	PRINCESS TREE	*Paulownia tomentosa*	11.2	POOR	-
2128	RED MAPLE	*Acer rubrum*	9.5	POOR	-
2129	RED MAPLE	*Acer rubrum*	13	POOR	-
2130	RED MAPLE	*Acer rubrum*	7.2	POOR	-
2131	RED MAPLE	*Acer rubrum*	11	POOR	-
2132	RED MAPLE	*Acer rubrum*	10.2	POOR	-
2133	AMERICAN BEECH	*Fagus grandifolia*	21	FAIR	
2134	WHITE OAK	*Quercus alba*	44	FAIR	
2135	WHITE OAK	*Quercus alba*	29.4	GOOD	
2136	AMERICAN BEECH	*Fagus grandifolia*	11.5	GOOD	
2137	NORTHERN RED OAK	*Quercus rubra*	11.4	GOOD	
2138	LARGE TOOTH ASPEN	*Populus grandidentata*	9	FAIR	
2139	TULIP POPLAR	*Liriodendron tulipifera*	7.9	GOOD	
2140	TULIP POPLAR	*Liriodendron tulipifera*	16	GOOD	
2141	BLACK LOCUST	*Robinia pseudoacacia*	22.9	POOR	-
2142	AMERICAN BEECH	*Fagus grandifolia*	27.6	FAIR	
2143	AMERICAN BEECH	*Fagus grandifolia*	19	FAIR	
2144	AMERICAN BEECH	*Fagus grandifolia*	20	POOR	-
2145	AMERICAN BEECH	*Fagus grandifolia*	10.7	POOR	-
2146	AMERICAN BEECH	*Fagus grandifolia*	19.5	GOOD	
2147	AMERICAN BEECH	*Fagus grandifolia*	6.9	GOOD	TBR
2148	TULIP POPLAR	*Liriodendron tulipifera*	15.8	POOR	TBR
2149	TULIP POPLAR	*Liriodendron tulipifera*	13.5	GOOD	
2150	WHITE OAK	*Quercus alba*	17.9	GOOD	
2151	TULIP POPLAR	*Liriodendron tulipifera*	9.8	GOOD	
2152	BITTERNUT HICKORY	*Carya cordiformis*	13.4	FAIR	
2153	RED MAPLE	*Acer rubrum*	9.8	POOR	-
2154	AMERICAN BEECH	*Fagus grandifolia*	22.9	GOOD	
2155	AMERICAN BEECH	*Fagus grandifolia*	2.8	FAIR	
2156	RED MAPLE	*Acer rubrum*	8.8	POOR	-
2157	RED MAPLE	*Acer rubrum*	7.1	FAIR	
2158	GREEN ASH	*Fraxinus pennsylvanica*	7	POOR	-
2159	BLACK WALNUT	*Juglans nigra*	9.7	POOR	-
2160	RED MAPLE	*Acer rubrum*	7.2	POOR	-
2161	RED MAPLE	*Acer rubrum*	7	POOR	-
2162	RED MAPLE	*Acer rubrum*	10.3	FAIR	
2163	TULIP POPLAR	*Liriodendron tulipifera*	6.7	POOR	-
2164	PIN OAK	*Quercus palustris*	12.6	POOR	-
2165	NORTHERN RED OAK	*Quercus rubra*	11.1	FAIR	
2166	GREEN ASH	*Fraxinus pennsylvanica*	11.4	POOR	-
2167	AMERICAN BEECH	*Fagus grandifolia*	6.9	FAIR	
2168	NORTHERN RED OAK	*Quercus rubra*	11.2	FAIR	
2169	NORTHERN RED OAK	*Quercus rubra*	11.2	FAIR	
2170	NORTHERN RED OAK	*Quercus rubra*	9.7	FAIR	
2171	NORTHERN RED OAK	*Quercus rubra*	8.5	FAIR	
2172	NORTHERN RED OAK	*Quercus rubra*	7.8	FAIR	
2173	NORTHERN RED OAK	*Quercus rubra*	7	GOOD	
2174	LARGE TOOTH ASPEN	*Populus grandidentata*	10.3	GOOD	
2175	NORTHERN RED OAK	*Quercus rubra*	11.8	FAIR	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2176	NORTHERN RED OAK	*Quercus rubra*	9.1	POOR	-
2177	NORTHERN RED OAK	*Quercus rubra*	14	GOOD	
2178	BITTERNUT HICKORY	*Carya cordiformis*	9.8	POOR	-
2179	BITTERNUT HICKORY	*Carya cordiformis*	10.7	POOR	-
2180	RED MAPLE	*Acer rubrum*	21.8	FAIR	
2181	RED MAPLE	*Acer rubrum*	10.6	GOOD	
2182	GREEN ASH	*Fraxinus pennsylvanica*	13.1	FAIR	
2183	NORTHERN RED OAK	*Quercus rubra*	31.5	GOOD	
2184	AMERICAN BEECH	*Fagus grandifolia*	22.7	GOOD	
2185	BITTERNUT HICKORY	*Carya cordiformis*	23.2	FAIR	
2186	AMERICAN ELM	*Ulmus americana*	7.1	FAIR	
2187	TULIP POPLAR	*Liriodendron tulipifera*	7.5	POOR	-
2188	GREEN ASH	*Fraxinus pennsylvanica*	10.3	POOR	-
2189	AMERICAN ELM	*Ulmus americana*	10.3	FAIR	
2190	PIN OAK	*Quercus palustris*	10.2	FAIR	
2191	AMERICAN BEECH	*Fagus grandifolia*	15.2	FAIR	
2192	GREEN ASH	*Fraxinus pennsylvanica*	9.9	POOR	-
2193	AMERICAN BEECH	*Fagus grandifolia*	23.5	GOOD	
2194	AMERICAN BEECH	*Fagus grandifolia*	8.5	FAIR	
2195	AMERICAN BEECH	*Fagus grandifolia*	19.3	GOOD	
2196	TULIP POPLAR	*Liriodendron tulipifera*	14.6	EXCOOD	
2197	AMERICAN BEECH	*Fagus grandifolia*	14.6	GOOD	
2198	AMERICAN BEECH	*Fagus grandifolia*	21.3	FAIR	
2199	AMERICAN BEECH	*Fagus grandifolia*	12.9	GOOD	
2200	AMERICAN BEECH	*Fagus grandifolia*	14.9	POOR	-
2201	AMERICAN BEECH	*Fagus grandifolia*	22.3	GOOD	
2202	RED MAPLE	*Acer rubrum*	12.5	POOR	-
2203	TULIP POPLAR	*Liriodendron tulipifera*	13.8	POOR	-
2204	TULIP POPLAR	*Liriodendron tulipifera*	12.5	GOOD	
2205	AMERICAN BEECH	*Fagus grandifolia*	6.2	POOR	-
2206	RED MAPLE	*Acer rubrum*	8.2	FAIR	
2207	AMERICAN BEECH	*Fagus grandifolia*	21.6	GOOD	
2208	AMERICAN BEECH	*Fagus grandifolia*	36.5	FAIR	
2209	RED MAPLE	*Acer rubrum*	10.6	FAIR	
2210	AMERICAN BEECH	*Fagus grandifolia*	7.5	GOOD	
2211	RED MAPLE	*Acer rubrum*	9.7	GOOD	
2212	AMERICAN ELM	*Ulmus americana*	23.4	FAIR	
2213	AMERICAN BEECH	*Fagus grandifolia*	8.6	GOOD	
2214	AMERICAN BEECH	*Fagus grandifolia*	19	GOOD	
2215	WHITE OAK	*Quercus alba*	23.5	GOOD	
2216	AMERICAN BEECH	*Fagus grandifolia*	17.3	GOOD	
2217	AMERICAN BEECH	*Fagus grandifolia*	19.6	GOOD	
2218	AMERICAN BEECH	*Fagus grandifolia*	13.3	GOOD	
2219	AMERICAN BEECH	*Fagus grandifolia*	22.8	GOOD	
2220	TULIP POPLAR	*Liriodendron tulipifera*	19.6	GOOD	
2221	AMERICAN BEECH	*Fagus grandifolia*	19.5	GOOD	
2222	AMERICAN BEECH	*Fagus grandifolia*	10.6	GOOD	
2223	TULIP POPLAR	*Liriodendron tulipifera*	15.5	GOOD	
2224	RED MAPLE	*Acer rubrum*	6.5	GOOD	
2225	TULIP POPLAR	*Liriodendron tulipifera*	22.5	GOOD	
2226	TULIP POPLAR	*Liriodendron tulipifera*	14.5	GOOD	
2227	AMERICAN BEECH	*Fagus grandifolia*	18.3	GOOD	
2228	AMERICAN BEECH	*Fagus grandifolia*	12.4	GOOD	
2229	AMERICAN BEECH	*Fagus grandifolia*	16.4	GOOD	
2230	AMERICAN BEECH	*Fagus grandifolia*	16.6	FAIR	
2231	TULIP POPLAR	*Liriodendron tulipifera*	14.3	FAIR	
2232	TULIP POPLAR	*Liriodendron tulipifera*	17.3	POOR	-
2233	AMERICAN BEECH	*Fagus grandifolia*	13.5	POOR	-
2234	TULIP POPLAR	*Liriodendron tulipifera*	18.7	GOOD	
2235	AMERICAN BEECH	*Fagus grandifolia*	14.8	FAIR	
2236	BLACK CHERRY	*Prunus serotina*	8.9	FAIR	
2237	TULIP POPLAR	*Liriodendron tulipifera*	13	GOOD	
2238	AMERICAN BEECH	*Fagus grandifolia*	8.3	GOOD	
2239	GREEN ASH	*Fraxinus pennsylvanica*	11.3	POOR	-
2240	AMERICAN ELM	*Ulmus americana*	10	FAIR	
2241	GREEN ASH	*Fraxinus pennsylvanica*	11.3	POOR	-
2242	TULIP POPLAR	*Liriodendron tulipifera*	11.2	POOR	-
2243	TULIP POPLAR	*Liriodendron tulipifera*	15.6	FAIR	
2244	TULIP POPLAR	*Liriodendron tulipifera*	22.5	GOOD	
2245	TULIP POPLAR	*Liriodendron tulipifera*	7.1	GOOD	
2246	AMERICAN BEECH	*Fagus grandifolia*	9.1	POOR	-
2247	GREEN ASH	*Fraxinus pennsylvanica*	6.5	POOR	-
2248	RED MAPLE	*Acer rubrum*	10	GOOD	
2249	AMERICAN BEECH	*Fagus grandifolia*	6.1	GOOD	
2250	RED MAPLE	*Acer rubrum*	6	POOR	-

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2251	TULIP POPLAR	*Liriodendron tulipifera*	15.1	GOOD	
2252	GREEN ASH	*Fraxinus pennsylvanica*	9	POOR	-
2253	AMERICAN BEECH	*Fagus grandifolia*	23.3	GOOD	
2254	AMERICAN BEECH	*Fagus grandifolia*	12.5	GOOD	
2255	NORTHERN RED OAK	*Quercus rubra*	8.1	GOOD	
2256	GREEN ASH	*Fraxinus pennsylvanica*	8.2	POOR	-
2257	TULIP POPLAR	*Liriodendron tulipifera*	18.3	GOOD	
2258	RED MAPLE	*Acer rubrum*	11.3	GOOD	
2259	AMERICAN BEECH	*Fagus grandifolia*	19	GOOD	
2260	GREEN ASH	*Fraxinus pennsylvanica*	9.4	POOR	-
2261	GREEN ASH	*Fraxinus pennsylvanica*	9.3	POOR	-
2262	AMERICAN BEECH	*Fagus grandifolia*	16.3	GOOD	
2263	RED MAPLE	*Acer rubrum*	8.2	GOOD	
2264	NORTHERN RED OAK	*Quercus rubra*	30.2	FAIR	
2265	AMERICAN BEECH	*Fagus grandifolia*	18.1	GOOD	
2266	AMERICAN BEECH	*Fagus grandifolia*	17.4	GOOD	
2267	AMERICAN BEECH	*Fagus grandifolia*	14.1	GOOD	
2268	AMERICAN BEECH	*Fagus grandifolia*	18.6	GOOD	
2269	TULIP POPLAR	*Liriodendron tulipifera*	12.7	POOR	-
2270	AMERICAN BEECH	*Fagus grandifolia*	11.8	GOOD	
2271	TULIP POPLAR	*Liriodendron tulipifera*	12.6	FAIR	
2272	TULIP POPLAR	*Liriodendron tulipifera*	25.6	GOOD	
2273	RED MAPLE	*Acer rubrum*	8	GOOD	
2274	TULIP POPLAR	*Liriodendron tulipifera*	17.1	FAIR	
2275	AMERICAN BEECH	*Fagus grandifolia*	12.4	GOOD	
2276	TULIP POPLAR	*Liriodendron tulipifera*	12.6	GOOD	
2277	GREEN ASH	*Fraxinus pennsylvanica*	7.3	POOR	-
2278	GREEN ASH	*Fraxinus pennsylvanica*	12.2	POOR	-
2279	AMERICAN BEECH	*Fagus grandifolia*	7.3	GOOD	
2280	TULIP POPLAR	*Liriodendron tulipifera*	17.1	GOOD	
2281	TULIP POPLAR	*Liriodendron tulipifera*	14.8	GOOD	
2282	AMERICAN BEECH	*Fagus grandifolia*	21.7	GOOD	
2283	GREEN ASH	*Fraxinus pennsylvanica*	10.1	POOR	-
2284	BLACK CHERRY	*Prunus serotina*	9.7	POOR	-
2285	BLACK CHERRY	*Prunus serotina*	10.2	POOR	TBR
2286	RED MAPLE	*Acer rubrum*	11	POOR	-
2287	TULIP POPLAR	*Liriodendron tulipifera*	17.8	GOOD	
2288	AMERICAN BEECH	*Fagus grandifolia*	7.6	GOOD	
2289	TULIP POPLAR	*Liriodendron tulipifera*	14	POOR	TBR
2290	TULIP POPLAR	*Liriodendron tulipifera*	13.7	FAIR	
2291	TULIP POPLAR	*Liriodendron tulipifera*	11.8	FAIR	
2292	RED MAPLE	*Acer rubrum*	18.2	FAIR	
2293	AMERICAN BEECH	*Fagus grandifolia*	19.9	GOOD	
2294	AMERICAN BEECH	*Fagus grandifolia*	19.5	GOOD	
2295	RED MAPLE	*Acer rubrum*	13.6	GOOD	
2296	TULIP POPLAR	*Liriodendron tulipifera*	17.8	GOOD	
2297	RED MAPLE	*Acer rubrum*	18.3	GOOD	
2298	AMERICAN BEECH	*Fagus grandifolia*	24.2	GOOD	
2299	AMERICAN BEECH	*Fagus grandifolia*	19.5	GOOD	
2300	RED MAPLE	*Acer rubrum*	12.5	GOOD	
2301	RED MAPLE	*Acer rubrum*	14	GOOD	
2302	AMERICAN BEECH	*Fagus grandifolia*	16	FAIR	TBR
2303	AMERICAN BEECH	*Fagus grandifolia*	7.5	POOR	TBR
2304	AMERICAN BEECH	*Fagus grandifolia*	21.2	GOOD	
2305	RED MAPLE	*Acer rubrum*	17.6	GOOD	
2306	AMERICAN BEECH	*Fagus grandifolia*	10.6	GOOD	
2307	GREEN ASH	*Fraxinus pennsylvanica*	9.6	POOR	-
2308	AMERICAN BEECH	*Fagus grandifolia*	22.5	GOOD	
2309	RED MAPLE	*Acer rubrum*	8.6	FAIR	
2310	RED MAPLE	*Acer rubrum*	7.2	GOOD	
2311	RED MAPLE	*Acer rubrum*	14.2	GOOD	
2312	AMERICAN BEECH	*Fagus grandifolia*	13.2	GOOD	
2313	RED MAPLE	*Acer rubrum*	10.3	POOR	TBR
2314	GREEN ASH	*Fraxinus pennsylvanica*	23.5	POOR	TBR
2315	GREEN ASH	*Fraxinus pennsylvanica*	12.7	POOR	TBR
2316	AMERICAN BEECH	*Fagus grandifolia*	20.4	GOOD	
2317	AMERICAN BEECH	*Fagus grandifolia*	16.8	GOOD	
2318	AMERICAN BEECH	*Fagus grandifolia*	14.7	POOR	TBR
2319	TULIP POPLAR	*Liriodendron tulipifera*	23.5	POOR	TBR
2320	AMERICAN BEECH	*Fagus grandifolia*	14.1	GOOD	
2321	GREEN ASH	*Fraxinus pennsylvanica*	8.5	POOR	-
2322	RED MAPLE	*Acer rubrum*	17.6	GOOD	
2323	GREEN ASH	*Fraxinus pennsylvanica*	8.9	POOR	-
2324	AMERICAN BEECH	*Fagus grandifolia*	23.6	FAIR	
2325	AMERICAN BEECH	*Fagus grandifolia*	18.9	FAIR	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2326	TULIP POPLAR	*Liriodendron tulipifera*	8.7	GOOD	
2327	TULIP POPLAR	*Liriodendron tulipifera*	14.5	FAIR	TBR
2328	RED MAPLE	*Acer rubrum*	9.2	POOR	
2329	TULIP POPLAR	*Liriodendron tulipifera*	12.2	GOOD	
2330	TULIP POPLAR	*Liriodendron tulipifera*	14.4	GOOD	
2331	AMERICAN BEECH	*Fagus grandifolia*	21	GOOD	
2332	AMERICAN BEECH	*Fagus grandifolia*	13.9	GOOD	
2333	AMERICAN BEECH	*Fagus grandifolia*	7.8	GOOD	
2334	AMERICAN BEECH	*Fagus grandifolia*	6.6	GOOD	
2335	TULIP POPLAR	*Liriodendron tulipifera*	21.4	FOOD	
2336	TULIP POPLAR	*Liriodendron tulipifera*	20.1	GOOD	
2337	GREEN ASH	*Fraxinus pennsylvanica*	8.7	POOR	
2338	WHITE OAK	*Quercus alba*	18.6	POOR	
2339	TULIP POPLAR	*Liriodendron tulipifera*	12.5	POOR	
2340	TULIP POPLAR	*Liriodendron tulipifera*	16.8	GOOD	
2341	AMERICAN BEECH	*Fagus grandifolia*	10	GOOD	
2342	AMERICAN BEECH	*Fagus grandifolia*	23.7	POOR	
2343	RED MAPLE	*Acer rubrum*	10	GOOD	
2344	RED MAPLE	*Acer rubrum*	6.2	GOOD	
2345	AMERICAN BEECH	*Fagus grandifolia*	21.6	GOOD	
2346	TULIP POPLAR	*Liriodendron tulipifera*	20.9	GOOD	
2347	RED MAPLE	*Acer rubrum*	11.3	FAIR	
2348	BLACK CHERRY	*Prunus serotina*	7.7	POOR	
2349	RED MAPLE	*Acer rubrum*	11.8	GOOD	
2350	RED MAPLE	*Acer rubrum*	6.9	GOOD	
2351	GREEN ASH	*Fraxinus pennsylvanica*	9	POOR	
2352	AMERICAN BEECH	*Fagus grandifolia*	14.3	GOOD	
2353	TULIP POPLAR	*Liriodendron tulipifera*	9.3	GOOD	
2354	TULIP POPLAR	*Liriodendron tulipifera*	18.2	FAIR	
2355	RED MAPLE	*Acer rubrum*	15.3	GOOD	
2356	RED MAPLE	*Acer rubrum*	6.6	GOOD	
2357	AMERICAN BEECH	*Fagus grandifolia*	19.2	GOOD	
2358	TULIP POPLAR	*Liriodendron tulipifera*	39.1	GOOD	
2359	AMERICAN BEECH	*Fagus grandifolia*	15.8	GOOD	
2360	RED MAPLE	*Acer rubrum*	14.2	GOOD	
2361	BLACK CHERRY	*Prunus serotina*	7.9	POOR	
2362	AMERICAN BEECH	*Fagus grandifolia*	20.7	GOOD	
2363	BLACK CHERRY	*Prunus serotina*	10.4	GOOD	
2364	GREEN ASH	*Fraxinus pennsylvanica*	12	POOR	
2365	RED MAPLE	*Acer rubrum*	14	FAIR	
2366	SWEET CHERRY	*Prunus avium*	8.8	POOR	
2367	GREEN ASH	*Fraxinus pennsylvanica*	6.6	POOR	
2368	GREEN ASH	*Fraxinus pennsylvanica*	18.2	POOR	
2369	AMERICAN BEECH	*Fagus grandifolia*	14.5	GOOD	
2370	BLACK CHERRY	*Prunus serotina*	10	POOR	
2371	RED MAPLE	*Acer rubrum*	7.5	FAIR	
2372	TULIP POPLAR	*Liriodendron tulipifera*	13.7	GOOD	
2373	GREEN ASH	*Fraxinus pennsylvanica*	12.6	POOR	
2374	GREEN ASH	*Fraxinus pennsylvanica*	10.3	POOR	
2375	AMERICAN BEECH	*Fagus grandifolia*	10.3	FAIR	
2376	AMERICAN BEECH	*Fagus grandifolia*	25.5	GOOD	
2377	AMERICAN BEECH	*Fagus grandifolia*	7.7	GOOD	
2378	AMERICAN BEECH	*Fagus grandifolia*	18.3	FAIR	
2379	AMERICAN BEECH	*Fagus grandifolia*	15.6	GOOD	
2380	GREEN ASH	*Fraxinus pennsylvanica*	17.3	POOR	
2381	AMERICAN BEECH	*Fagus grandifolia*	22.1	FAIR	
2382	AMERICAN BEECH	*Fagus grandifolia*	9.6	FAIR	
2383	AMERICAN BEECH	*Fagus grandifolia*	20.3	POOR	
2384	TULIP POPLAR	*Liriodendron tulipifera*	12.9	GOOD	
2385	TULIP POPLAR	*Liriodendron tulipifera*	10.3	GOOD	
2386	TULIP POPLAR	*Liriodendron tulipifera*	19.3	GOOD	
2387	RED MAPLE	*Acer rubrum*	11.9	POOR	
2388	TULIP POPLAR	*Liriodendron tulipifera*	21.7	GOOD	
2389	GREEN ASH	*Fraxinus pennsylvanica*	9.2	POOR	
2390	AMERICAN BEECH	*Fagus grandifolia*	7.3	GOOD	
2391	RED MAPLE	*Acer rubrum*	7.3	FAIR	
2392	RED MAPLE	*Acer rubrum*	10	FAIR	
2393	AMERICAN BEECH	*Fagus grandifolia*	19.5	GOOD	
2394	AMERICAN BEECH	*Fagus grandifolia*	13.3	GOOD	
2395	AMERICAN BEECH	*Fagus grandifolia*	23.6	GOOD	
2396	NORTHERN RED OAK	*Quercus rubra*	27.3	GOOD	
2397	BLACK CHERRY	*Prunus serotina*	6.8	FAIR	
2398	TULIP POPLAR	*Liriodendron tulipifera*	14.5	FAIR	
2399	RED MAPLE	*Acer rubrum*	16.8	POOR	
2400	BLACK CHERRY	*Prunus serotina*	10.4	GOOD	

TREES T-2101 THROUGH T-2400

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 21 Of 124

Scale : N/A
Date : AUGUST 2023
Sheet No. TI-08 Of TI-10

BID No.:

HCC DWG ID No.:

SCALE: 1" = 100'

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2401	BLACK CHERRY	*Prunus serotina*	10.4	GOOD	TBR
2402	RED MAPLE	*Acer rubrum*	14	POOR	TBR
2403	AMERICAN BEECH	*Fagus grandifolia*	18.9	POOR	TBR
2404	TULIP POPLAR	*Liriodendron tulipifera*	19	FAIR	TBR
2405	AMERICAN BEECH	*Fagus grandifolia*	22.5	GOOD	
2406	AMERICAN BEECH	*Fagus grandifolia*	26.6	FAIR	
2407	BLACK CHERRY	*Prunus serotina*	8.4	POOR	-
2408	AMERICAN BEECH	*Fagus grandifolia*	9.2	GOOD	
2409	AMERICAN BEECH	*Fagus grandifolia*	18	FAIR	
2410	RED MAPLE	*Acer rubrum*	6.5	FAIR	
2411	NORTHERN RED OAK	*Quercus rubra*	13.3	GOOD	
2412	TULIP POPLAR	*Liriodendron tulipifera*	18	GOOD	
2413	SWEET CHERRY	*Prunus avium*	9.2	FAIR	
2414	AMERICAN BEECH	*Fagus grandifolia*	10	FAIR	
2415	AMERICAN BEECH	*Fagus grandifolia*	26.7	POOR	TBR
2416	BLACK GUM	*Nyssa sylvatica*	17.4	POOR	TBR
2417	AMERICAN BEECH	*Fagus grandifolia*	11.3	GOOD	
2418	TULIP POPLAR	*Liriodendron tulipifera*	16.1	GOOD	
2419	RED MAPLE	*Acer rubrum*	10.2	GOOD	
2420	GREEN ASH	*Fraxinus pennsylvanica*	10.2	POOR	-
2421	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
2422	RED MAPLE	*Acer rubrum*	6.2	GOOD	
2423	BLACK CHERRY	*Prunus serotina*	9.5	POOR	-
2424	BLACK CHERRY	*Prunus serotina*	9.4	FAIR	
2425	AMERICAN BEECH	*Fagus grandifolia*	15.6	GOOD	
2426	AMERICAN BEECH	*Fagus grandifolia*	19.2	FAIR	
2427	RED MAPLE	*Acer rubrum*	11.9	FAIR	
2428	RED MAPLE	*Acer rubrum*	10.5	POOR	-
2429	TULIP POPLAR	*Liriodendron tulipifera*	16	GOOD	
2430	BLACK GUM	*Nyssa sylvatica*	13.9	FAIR	
2431	AMERICAN BEECH	*Fagus grandifolia*	15.2	GOOD	
2432	AMERICAN BEECH	*Fagus grandifolia*	11.8	GOOD	
2433	TULIP POPLAR	*Liriodendron tulipifera*	15.9	GOOD	
2434	AMERICAN BEECH	*Fagus grandifolia*	23.6	GOOD	
2435	TULIP POPLAR	*Liriodendron tulipifera*	12.6	GOOD	
2436	AMERICAN BEECH	*Fagus grandifolia*	17.5	GOOD	
2437	BLACK GUM	*Nyssa sylvatica*	17.5	POOR	TBR
2438	AMERICAN BEECH	*Fagus grandifolia*	18.8	POOR	-
2439	TULIP POPLAR	*Liriodendron tulipifera*	15.8	POOR	TBR
2440	TULIP POPLAR	*Liriodendron tulipifera*	17.7	GOOD	
2441	TULIP POPLAR	*Liriodendron tulipifera*	13.6	GOOD	
2442	RED MAPLE	*Acer rubrum*	13	FAIR	
2443	AMERICAN BEECH	*Fagus grandifolia*	22.6	GOOD	
2444	AMERICAN BEECH	*Fagus grandifolia*	18.1	GOOD	
2445	AMERICAN BEECH	*Fagus grandifolia*	8	GOOD	
2446	AMERICAN BEECH	*Fagus grandifolia*	13.9	GOOD	
2447	AMERICAN BEECH	*Fagus grandifolia*	22.2	GOOD	
2448	TULIP POPLAR	*Liriodendron tulipifera*	18	GOOD	
2449	AMERICAN BEECH	*Fagus grandifolia*	15.8	FAIR	
2450	AMERICAN BEECH	*Fagus grandifolia*	18.5	FAIR	
2451	AMERICAN BEECH	*Fagus grandifolia*	8.2	POOR	TBR
2452	TULIP POPLAR	*Liriodendron tulipifera*	13.6	POOR	-
2453	AMERICAN ELM	*Ulmus americana*	10.4	FAIR	
2454	TULIP POPLAR	*Liriodendron tulipifera*	22.5	FAIR	
2455	RED MAPLE	*Acer rubrum*	16.9	POOR	-
2456	AMERICAN BEECH	*Fagus grandifolia*	12.6	GOOD	
2457	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	TBR
2458	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	TBR
2459	AMERICAN BEECH	*Fagus grandifolia*	18	FAIR	
2460	AMERICAN BEECH	*Fagus grandifolia*	14.4	POOR	TBR
2461	AMERICAN BEECH	*Fagus grandifolia*	7.6	FAIR	
2462	AMERICAN BEECH	*Fagus grandifolia*	17.7	GOOD	
2463	AMERICAN BEECH	*Fagus grandifolia*	19.8	GOOD	
2464	AMERICAN BEECH	*Fagus grandifolia*	8.2	GOOD	
2465	AMERICAN BEECH	*Fagus grandifolia*	18.7	GOOD	
2466	AMERICAN BEECH	*Fagus grandifolia*	16.4	GOOD	
2467	GREEN ASH	*Fraxinus pennsylvanica*	10.4	GOOD	
2468	TULIP POPLAR	*Liriodendron tulipifera*	14.7	GOOD	
2469	RED MAPLE	*Acer rubrum*	7.5	POOR	-
2470	TULIP POPLAR	*Liriodendron tulipifera*	15.7	GOOD	
2471	RED MAPLE	*Acer rubrum*	11.1	FAIR	
2472	RED MAPLE	*Acer rubrum*	6.8	FAIR	
2473	AMERICAN BEECH	*Fagus grandifolia*	7.5	FAIR	
2474	BLACK GUM	*Nyssa sylvatica*	17.2	POOR	TBR
2475	BLACK GUM	*Nyssa sylvatica*	13.5	FAIR	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2476	AMERICAN BEECH	*Fagus grandifolia*	16.5	POOR	TBR
2477	AMERICAN BEECH	*Fagus grandifolia*	6.7	FAIR	TBR
2478	RED MAPLE	*Acer rubrum*	17.3	POOR	TBR
2479	GREEN ASH	*Fraxinus pennsylvanica*	6.4	POOR	TBR
2480	AMERICAN BEECH	*Fagus grandifolia*	12	GOOD	
2481	AMERICAN BEECH	*Fagus grandifolia*	25	FAIR	
2482	AMERICAN BEECH	*Fagus grandifolia*	10.8	GOOD	
2483	GREEN ASH	*Fraxinus pennsylvanica*	9.4	POOR	-
2484	TULIP POPLAR	*Liriodendron tulipifera*	18.5	GOOD	
2485	AMERICAN BEECH	*Fagus grandifolia*	23.4	FAIR	
2486	AMERICAN ELM	*Ulmus americana*	7.1	FAIR	
2487	RED MAPLE	*Acer rubrum*	15.7	FAIR	TBR
2488	AMERICAN BEECH	*Fagus grandifolia*	26.2	POOR	TBR
2489	AMERICAN BEECH	*Fagus grandifolia*	27.2	GOOD	
2490	AMERICAN BEECH	*Fagus grandifolia*	10	POOR	TBR
2491	AMERICAN BEECH	*Fagus grandifolia*	21.2	GOOD	
2492	AMERICAN BEECH	*Fagus grandifolia*	23.3	GOOD	
2493	AMERICAN BEECH	*Fagus grandifolia*	14	GOOD	
2494	AMERICAN BEECH	*Fagus grandifolia*	15.3	GOOD	
2495	AMERICAN BEECH	*Fagus grandifolia*	22.5	GOOD	
2496	TULIP POPLAR	*Liriodendron tulipifera*	7.5	FAIR	TBR
2497	AMERICAN BEECH	*Fagus grandifolia*	19.8	GOOD	
2498	RED MAPLE	*Acer rubrum*	12.4	FAIR	TBR
2499	TULIP POPLAR	*Liriodendron tulipifera*	15.9	GOOD	
2500	TULIP POPLAR	*Liriodendron tulipifera*	18	FAIR	TBR
2501	GREEN ASH	*Fraxinus pennsylvanica*	15.1		TBR
2502	TULIP POPLAR	*Liriodendron tulipifera*	26.6	GOOD	TBR
2503	AMERICAN BEECH	*Fagus grandifolia*	21	POOR	TBR
2504	AMERICAN BEECH	*Fagus grandifolia*	10.8	POOR	-
2505	AMERICAN BEECH	*Fagus grandifolia*	24.7	GOOD	
2506	AMERICAN BEECH	*Fagus grandifolia*	15.6	FAIR	
2507	TULIP POPLAR	*Liriodendron tulipifera*	16	FAIR	
2508	TULIP POPLAR	*Liriodendron tulipifera*	27.3	GOOD	
2509	TULIP POPLAR	*Liriodendron tulipifera*	26.1	POOR	-
2510	GREEN ASH	*Fraxinus pennsylvanica*	12	POOR	TBR
2511	TULIP POPLAR	*Liriodendron tulipifera*	29.1	GOOD	
2512	TULIP POPLAR	*Liriodendron tulipifera*	20.9	FAIR	
2513	TULIP POPLAR	*Liriodendron tulipifera*	25.8	POOR	TBR
2514	RED MAPLE	*Acer rubrum*	16	POOR	-
2515	AMERICAN BEECH	*Fagus grandifolia*	8.7	GOOD	
2516	AMERICAN BEECH	*Fagus grandifolia*	12.9	POOR	-
2517	TULIP POPLAR	*Liriodendron tulipifera*	27.7	POOR	TBR
2518	TULIP POPLAR	*Liriodendron tulipifera*	27.1	GOOD	
2519	WHITE OAK	*Quercus alba*	38.8	POOR	-
2520	AMERICAN BEECH	*Fagus grandifolia*	22	POOR	TBR
2521	RED MAPLE	*Acer rubrum*	11.5	POOR	TBR
2522	AMERICAN BEECH	*Fagus grandifolia*	30.7	POOR	TBR
2523	AMERICAN BEECH	*Fagus grandifolia*	7.8	POOR	TBR
2524	TULIP POPLAR	*Liriodendron tulipifera*	31.1	FAIR	
2525	TULIP POPLAR	*Liriodendron tulipifera*	18.3	FAIR	
2526	RED MAPLE	*Acer rubrum*	17.7	POOR	-
2527	BLACK CHERRY	*Prunus serotina*	8.5	POOR	-
2528	RED MAPLE	*Acer rubrum*	7.5	GOOD	
2529	AMERICAN BEECH	*Fagus grandifolia*	34.1	GOOD	
2530	AMERICAN BEECH	*Fagus grandifolia*	11.8	GOOD	
2531	NORTHERN RED OAK	*Quercus rubra*	16.7	FAIR	
2532	TULIP POPLAR	*Liriodendron tulipifera*	23.1	FAIR	
2533	TULIP POPLAR	*Liriodendron tulipifera*	13.6	POOR	-
2534	TULIP POPLAR	*Liriodendron tulipifera*	10.2	POOR	-
2535	RED MAPLE	*Acer rubrum*	6.2	POOR	-
2536	TULIP POPLAR	*Liriodendron tulipifera*	18.5	POOR	-
2537	RED MAPLE	*Acer rubrum*	9.5	FAIR	
2538	RED MAPLE	*Acer rubrum*	19.7	POOR	-
2539	TULIP POPLAR	*Liriodendron tulipifera*	26.5	GOOD	
2540	AMERICAN BEECH	*Fagus grandifolia*	30.3	POOR	-
2541	AMERICAN BEECH	*Fagus grandifolia*	7.9	GOOD	
2542	AMERICAN BEECH	*Fagus grandifolia*	10.7	FAIR	
2543	TULIP POPLAR	*Liriodendron tulipifera*	15.7	GOOD	
2544	AMERICAN BEECH	*Fagus grandifolia*	21.5	GOOD	
2545	TULIP POPLAR	*Liriodendron tulipifera*	22.5	EXCELLENT	
2546	RED MAPLE	*Acer rubrum*	7.1	POOR	-
2547	RED MAPLE	*Acer rubrum*	12.7	FAIR	
2548	TULIP POPLAR	*Liriodendron tulipifera*	14.7	GOOD	
2549	AMERICAN BEECH	*Fagus grandifolia*	10.2	POOR	-
2550	TULIP POPLAR	*Liriodendron tulipifera*	18.2	GOOD	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2551	TULIP POPLAR	*Liriodendron tulipifera*	13.3	FAIR	
2552	AMERICAN BEECH	*Fagus grandifolia*	10.6	GOOD	
2553	AMERICAN BEECH	*Fagus grandifolia*	11.4	FAIR	
2554	AMERICAN BEECH	*Fagus grandifolia*	6.8	FAIR	
2555	AMERICAN BEECH	*Fagus grandifolia*	22.2	GOOD	
2556	AMERICAN BEECH	*Fagus grandifolia*	21.2	GOOD	
2557	AMERICAN BEECH	*Fagus grandifolia*	12	FAIR	
2558	TULIP POPLAR	*Liriodendron tulipifera*	6.4	GOOD	
2559	TULIP POPLAR	*Liriodendron tulipifera*	20	GOOD	
2560	TULIP POPLAR	*Liriodendron tulipifera*	10.6	GOOD	
2561	TULIP POPLAR	*Liriodendron tulipifera*	13.8	GOOD	
2562	TULIP POPLAR	*Liriodendron tulipifera*	11.2	FAIR	
2563	TULIP POPLAR	*Liriodendron tulipifera*	10.5	GOOD	
2564	RED MAPLE	*Acer rubrum*	7	FAIR	TBR
2565	TULIP POPLAR	*Liriodendron tulipifera*	15	GOOD	
2566	TULIP POPLAR	*Liriodendron tulipifera*	17	FAIR	
2567	RED MAPLE	*Acer rubrum*	22.6	POOR	TBR
2568	RED MAPLE	*Acer rubrum*	12.8	POOR	-
2569	TULIP POPLAR	*Liriodendron tulipifera*	21.3	GOOD	
2570	AMERICAN ELM	*Ulmus americana*	12.5	POOR	-
2571	RED MAPLE	*Acer rubrum*	7.5	POOR	-
2572	TULIP POPLAR	*Liriodendron tulipifera*	25	FAIR	
2573	AMERICAN ELM	*Ulmus americana*	6.9	POOR	-
2574	TULIP POPLAR	*Liriodendron tulipifera*	14.2	GOOD	
2575	AMERICAN ELM	*Ulmus americana*	9.6	FAIR	
2576	AMERICAN BEECH	*Fagus grandifolia*	19.3	GOOD	
2577	TULIP POPLAR	*Liriodendron tulipifera*	16.1	GOOD	
2578	TULIP POPLAR	*Liriodendron tulipifera*	10.7	FAIR	
2579	TULIP POPLAR	*Liriodendron tulipifera*	21.3	GOOD	
2580	TULIP POPLAR	*Liriodendron tulipifera*	8	POOR	-
2581	TULIP POPLAR	*Liriodendron tulipifera*	18.3	FAIR	TBR
2582	GREEN ASH	*Fraxinus pennsylvanica*	8.5	POOR	TBR
2583	TULIP POPLAR	*Liriodendron tulipifera*	21.5	POOR	TBR
2584	GREEN ASH	*Fraxinus pennsylvanica*	12.7	POOR	TBR
2585	AMERICAN BEECH	*Fagus grandifolia*	17.7	GOOD	TBR
2586	AMERICAN BEECH	*Fagus grandifolia*	7.7	FAIR	TBR
2587	TULIP POPLAR	*Liriodendron tulipifera*	19.2	POOR	TBR
2588	TULIP POPLAR	*Liriodendron tulipifera*	17.5	FAIR	TBR
2589	TULIP POPLAR	*Liriodendron tulipifera*	17.3	POOR	TBR
2590	TULIP POPLAR	*Liriodendron tulipifera*	9.9	POOR	TBR
2591	AMERICAN ELM	*Ulmus americana*	6.3	GOOD	
2592	TULIP POPLAR	*Liriodendron tulipifera*	25	GOOD	
2593	AMERICAN BEECH	*Fagus grandifolia*	8.3	FAIR	
2594	AMERICAN BEECH	*Fagus grandifolia*	11	GOOD	
2595	TULIP POPLAR	*Liriodendron tulipifera*	17.1	FAIR	
2596	TULIP POPLAR	*Liriodendron tulipifera*	13.3	FAIR	
2597	TULIP POPLAR	*Liriodendron tulipifera*	14.5	GOOD	
2598	RED MAPLE	*Acer rubrum*	9.3	FAIR	TBR
2599	TULIP POPLAR	*Liriodendron tulipifera*	19.3	FAIR	TBR
2600	TULIP POPLAR	*Liriodendron tulipifera*	19.4	POOR	TBR
2601	AMERICAN BEECH	*Fagus grandifolia*	21.7	GOOD	
2602	AMERICAN BEECH	*Fagus grandifolia*	16.6	GOOD	
2603	AMERICAN BEECH	*Fagus grandifolia*	18.9	FAIR	
2604	TULIP POPLAR	*Liriodendron tulipifera*	11.8	GOOD	
2605	AMERICAN BEECH	*Fagus grandifolia*	28.1	GOOD	
2606	AMERICAN BEECH	*Fagus grandifolia*	15.8	FAIR	
2607	AMERICAN BEECH	*Fagus grandifolia*	8.1	POOR	-
2608	AMERICAN BEECH	*Fagus grandifolia*	25.2	GOOD	
2609	AMERICAN BEECH	*Fagus grandifolia*	22	GOOD	
2610	AMERICAN BEECH	*Fagus grandifolia*	24.3	POOR	TBR
2611	SWEET CHERRY	*Prunus avium*	9.7	FAIR	TBR
2612	AMERICAN BEECH	*Fagus grandifolia*	11.3	POOR	TBR
2613	AMERICAN ELM	*Ulmus americana*	14.1	FAIR	
2614	AMERICAN BEECH	*Fagus grandifolia*	17.9	GOOD	
2615	RED MAPLE	*Acer rubrum*	8.8	GOOD	TBR
2616	RED MAPLE	*Acer rubrum*	9	POOR	TBR
2617	BLACK GUM	*Nyssa sylvatica*	12.5	POOR	TBR
2618	AMERICAN BEECH	*Fagus grandifolia*	7.3	GOOD	
2619	TULIP POPLAR	*Liriodendron tulipifera*	16.8	GOOD	
2620	TULIP POPLAR	*Liriodendron tulipifera*	18.6	FAIR	
2621	TULIP POPLAR	*Liriodendron tulipifera*	17.6	FAIR	
2622	TULIP POPLAR	*Liriodendron tulipifera*	19.2	GOOD	
2623	RED MAPLE	*Acer rubrum*	6.5	POOR	TBR
2624	RED MAPLE	*Acer rubrum*	6.5	POOR	-
2625	RED MAPLE	*Acer rubrum*	10.1	GOOD	

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2626	TULIP POPLAR	*Liriodendron tulipifera*	17.8	GOOD	
2627	RED MAPLE	*Acer rubrum*	6.5	FAIR	
2628	TULIP POPLAR	*Liriodendron tulipifera*	10.1	GOOD	
2629	AMERICAN BEECH	*Fagus grandifolia*	17.3	GOOD	
2630	RED MAPLE	*Acer rubrum*	8.1	GOOD	TBR
2631	TULIP POPLAR	*Liriodendron tulipifera*	16.3	GOOD	TBR
2632	TULIP POPLAR	*Liriodendron tulipifera*	23.9	POOR	TBR
2633	TULIP POPLAR	*Liriodendron tulipifera*	15.8	GOOD	TBR
2634	TULIP POPLAR	*Liriodendron tulipifera*	11.5	GOOD	TBR
2635	TULIP POPLAR	*Liriodendron tulipifera*	8.6	FAIR	TBR
2636	RED MAPLE	*Acer rubrum*	9.7	POOR	TBR
2637	TULIP POPLAR	*Liriodendron tulipifera*	13.6	FAIR	TBR
2638	NORTHERN RED OAK	*Quercus rubra*	15.4	POOR	TBR
2639	TULIP POPLAR	*Liriodendron tulipifera*	14.2	GOOD	
2640	TULIP POPLAR	*Liriodendron tulipifera*	11.6	GOOD	
2641	TULIP POPLAR	*Liriodendron tulipifera*	8.3	GOOD	
2642	TULIP POPLAR	*Liriodendron tulipifera*	14.7	POOR	-
2643	TULIP POPLAR	*Liriodendron tulipifera*	16.8	GOOD	
2644	TULIP POPLAR	*Liriodendron tulipifera*	15.3	FAIR	
2645	AMERICAN BEECH	*Fagus grandifolia*	22	POOR	-
2646	AMERICAN BEECH	*Fagus grandifolia*	17.9	FAIR	
2647	AMERICAN BEECH	*Fagus grandifolia*	20	POOR	TBR
2648	AMERICAN BEECH	*Fagus grandifolia*	7.3	GOOD	
2649	RED MAPLE	*Acer rubrum*	14	POOR	TBR
2650	RED MAPLE	*Acer rubrum*	16.9		
2651	RED MAPLE	*Acer rubrum*	16.3	POOR	-
2652	TULIP POPLAR	*Liriodendron tulipifera*	9.5	POOR	-
2653	TULIP POPLAR	*Liriodendron tulipifera*	22.2	GOOD	TBR
2654	TULIP POPLAR	*Liriodendron tulipifera*	9.6	POOR	TBR
2655	RED MAPLE	*Acer rubrum*	11.9	POOR	TBR
2656	RED MAPLE	*Acer rubrum*	7.8	GOOD	
2657	TULIP POPLAR	*Liriodendron tulipifera*	12.9	GOOD	
2658	GREEN ASH	*Fraxinus pennsylvanica*	14.6	POOR	-
2659	AMERICAN BEECH	*Fagus grandifolia*	15.7	POOR	-
2660	GREEN ASH	*Fraxinus pennsylvanica*	16.7	POOR	-
2661	RED MAPLE	*Acer rubrum*	11.1	GOOD	
2662	AMERICAN BEECH	*Fagus grandifolia*	6.1	GOOD	
2663	RED MAPLE	*Acer rubrum*	9.7	POOR	-
2664	AMERICAN BEECH	*Fagus grandifolia*	17	FAIR	
2665	BLACK GUM	*Nyssa sylvatica*	20.5	FAIR	
2666	RED MAPLE	*Acer rubrum*	10.2	GOOD	
2667	AMERICAN BEECH	*Fagus grandifolia*	15.9	FAIR	
2668	RED MAPLE	*Acer rubrum*	13.5	GOOD	
2669	AMERICAN BEECH	*Fagus grandifolia*	10.3	FAIR	
2670	RED MAPLE	*Acer rubrum*	12.3	POOR	-
2671	RED MAPLE	*Acer rubrum*	13.3	POOR	-
2672	TULIP POPLAR	*Liriodendron tulipifera*	14	FAIR	
2673	GREEN ASH	*Fraxinus pennsylvanica*	14.7	POOR	-
2674	WHITE OAK	*Quercus alba*	15.8	FAIR	
2675	GREEN ASH	*Fraxinus pennsylvanica*	20.1	POOR	-
2676	AMERICAN BEECH	*Fagus grandifolia*	11	FAIR	
2677	NORTHERN RED OAK	*Quercus rubra*	21	FAIR	
2678	BLACK GUM	*Nyssa sylvatica*	17.2	POOR	-
2679	TULIP POPLAR	*Liriodendron tulipifera*	27.3	GOOD	
2680	RED MAPLE	*Acer rubrum*	6.7	FAIR	
2681	TULIP POPLAR	*Liriodendron tulipifera*	20.8	GOOD	
2682	RED MAPLE	*Acer rubrum*	11.2	POOR	-
2683	RED MAPLE	*Acer rubrum*	9.7	POOR	-
2684	TULIP POPLAR	*Liriodendron tulipifera*	18.4	GOOD	
2685	BLACK GUM	*Nyssa sylvatica*	6.2	GOOD	
2686	NORTHERN RED OAK	*Quercus rubra*	23	POOR	-
2687	AMERICAN BEECH	*Fagus grandifolia*	7.9	FAIR	
2688	TULIP POPLAR	*Liriodendron tulipifera*	24.3	GOOD	
2689	RED MAPLE	*Acer rubrum*	25	POOR	-
2690	TULIP POPLAR	*Liriodendron tulipifera*	25.2	POOR	-
2691	N/A	#N/A			
2692	RED MAPLE	*Acer rubrum*	12.4	POOR	-
2693	GREEN ASH	*Fraxinus pennsylvanica*	25	POOR	-
2694	N/A	#N/A			
2695	AMERICAN BEECH	*Fagus grandifolia*	6.8	POOR	-
2696	TULIP POPLAR	*Liriodendron tulipifera*	16.8	POOR	-
2697	GREEN ASH	*Fraxinus pennsylvanica*	14.4	POOR	-
2698	RED MAPLE	*Acer rubrum*	7.2	POOR	-
2699	RED MAPLE	*Acer rubrum*	19.5	POOR	-
2700	BLACK CHERRY	*Prunus serotina*	8.7	POOR	-

BID No.:

HCG DWG ID No.:

BY: $USERNAME$

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

TREES T-2401 THROUGH T-2700

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX. EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.

Designed By : R.B.T.

Reviewed By : N.A.R.

Scale : N/A

Date : AUGUST 2023

Drawing No. 22 Of 124

Sheet No. TI-09 Of TI-10

SCALE: 1" = 100'

PLOTTED: $DATETIME$
FILE: $FILE$

TREE ID	SPECIES COMMON NAME	SPECIES BOTANICAL NAME	DIAMETER (INCHES)	CONDITION	REMOVED
2701	AMERICAN BEECH	*Fagus grandifolia*	18.8	FAIR	
2702	AMERICAN BEECH	*Fagus grandifolia*	22.1	GOOD	TBR
2703	GREEN ASH	*Fraxinus pennsylvanica*	13.5	POOR	
2704	RED MAPLE	*Acer rubrum*	14.1	POOR	
2705	GREEN ASH	*Fraxinus pennsylvanica*	15.2	POOR	
2706	AMERICAN BEECH	*Fagus grandifolia*	15	GOOD	
2707	AMERICAN BEECH	*Fagus grandifolia*	11.2	GOOD	
2708	GREEN ASH	*Fraxinus pennsylvanica*	8	POOR	
2709	GREEN ASH	*Fraxinus pennsylvanica*	11.1	POOR	
2710	TULIP POPLAR	*Liriodendron tulipifera*	19.2	FAIR	
2711	TULIP POPLAR	*Liriodendron tulipifera*	20	GOOD	
2712	AMERICAN BEECH	*Fagus grandifolia*	6.5	FAIR	
2713	RED MAPLE	*Acer rubrum*	19.2	POOR	
2714	AMERICAN BEECH	*Fagus grandifolia*	20.8	POOR	
2715	AMERICAN BEECH	*Fagus grandifolia*	15.5	FAIR	
2716	GREEN ASH	*Fraxinus pennsylvanica*	7.7	POOR	
2717	AMERICAN BEECH	*Fagus grandifolia*	15.3	POOR	
2718	AMERICAN BEECH	*Fagus grandifolia*	10.2	POOR	
2719	AMERICAN BEECH	*Fagus grandifolia*	23.3	POOR	
2720	AMERICAN BEECH	*Fagus grandifolia*	11.8	POOR	
2721	AMERICAN BEECH	*Fagus grandifolia*	9.5	POOR	
2722	TULIP POPLAR	*Liriodendron tulipifera*	16	GOOD	
2723	AMERICAN BEECH	*Fagus grandifolia*	18.8	POOR	
2724	AMERICAN BEECH	*Fagus grandifolia*	20	GOOD	
2725	TULIP POPLAR	*Liriodendron tulipifera*	18.4	FAIR	
2726	GREEN ASH	*Fraxinus pennsylvanica*	12.8	POOR	
2727	GREEN ASH	*Fraxinus pennsylvanica*	14.2	POOR	
2728	BLACK CHERRY	*Prunus serotina*	19.7	POOR	
2729	RED MAPLE	*Acer rubrum*	14.6	POOR	
2730	RED MAPLE	*Acer rubrum*	10.3	FAIR	

TREES T-2701 THROUGH T-2730

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
TREE INVENTORY

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.

Scale : N/A
Date : AUGUST 2023

Drawing No. 23 Of 124
Sheet No. TI-10 Of TI-10

BID No.:
HCG DWG ID No.:
SCALE: 1"=50'

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

LEGEND

- LOD — LOD — LIMIT OF DISTURBANCE
- 1+00 +50 — PROPOSED STREAM CHANNEL ALIGNMENT
- CROSS SECTION CUT EXTENT

EPHEMERAL CHANNEL WC-01 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	200+00.00		16.5879	N 74.7293 E	675799.62	1478097.06
PC	200+16.59	20	2.8474	N 78.8079 E	675803.98	1478113.06
PT	200+19.44		11.7206	N 82.8864 E	675804.54	1478115.86
POE	200+31.16				675805.99	1478127.49

EPHEMERAL CHANNEL WC-03 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	300+00.00		17.9666	S 62.7510 E	675649.75	1478313.84
POE	300+17.97				675641.52	1478329.81

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
GT-A-01: ALIGNMENT TABLES
CS-01 - CS-22: CROSS SECTIONS

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 24 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. GS-A01 Of GS-A06

BID No.:
HCG DWG ID No.:
SCALE: 1"=30'

BY: $USERNAME$
PLOTTED: $DATETIMES
FILE: $FILES

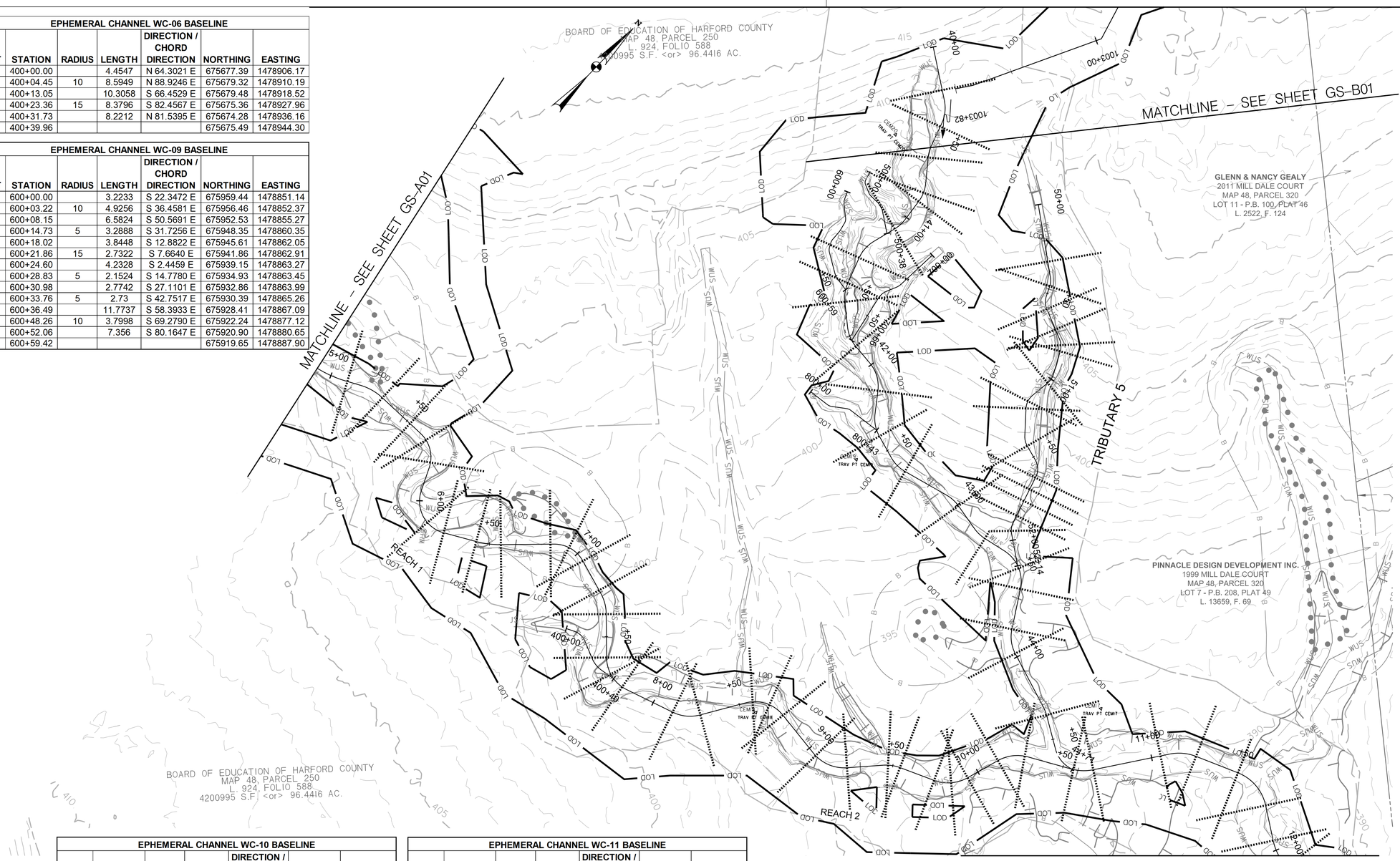
EPHEMERAL CHANNEL WC-06 BASELINE						
POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	400+00.00		4.4547	N 64.3021 E	675677.39	1478906.17
PC	400+04.45	10	8.5949	N 88.9246 E	675679.32	1478910.19
PT	400+13.05		10.3058	S 66.4529 E	675679.48	1478918.52
PC	400+23.36	15	8.3796	S 82.4567 E	675675.36	1478927.96
PT	400+31.73		8.2212	N 81.5395 E	675674.28	1478936.16
POE	400+39.96				675675.49	1478944.30

EPHEMERAL CHANNEL WC-09 BASELINE						
POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	600+00.00		3.2233	S 22.3472 E	675959.44	1478851.14
PC	600+03.22	10	4.9256	S 36.4581 E	675956.46	1478852.37
PT	600+08.15		6.5824	S 50.5691 E	675952.53	1478855.27
PC	600+14.73	5	3.2888	S 31.7256 E	675948.35	1478860.35
PT	600+18.02		3.8448	S 12.8822 E	675945.61	1478862.05
PC	600+21.86	15	2.7322	S 7.6640 E	675941.86	1478862.91
PT	600+24.60		4.2328	S 2.4459 E	675939.15	1478863.27
PC	600+28.83	5	2.1524	S 14.7780 E	675934.93	1478863.45
PT	600+30.98		2.7742	S 27.1101 E	675932.86	1478863.99
PC	600+33.76	5	2.73	S 42.7517 E	675930.39	1478865.26
PT	600+36.49		11.7737	S 58.3933 E	675928.41	1478867.09
PC	600+48.26	10	3.7998	S 69.2790 E	675922.24	1478877.12
PT	600+52.06		7.356	S 80.1647 E	675920.90	1478880.65
POE	600+59.42				675919.65	1478887.90

EPHEMERAL CHANNEL WC-10 BASELINE						
POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	500+00.00		4.7164	S 15.7176 E	675975.70	1478852.66
PC	500+04.72	3	2.6224	S 40.7599 E	675971.16	1478853.94
PT	500+07.34		4.916	S 65.8023 E	675969.24	1478855.60
PC	500+12.25	5	2.1103	S 77.8933 E	675967.22	1478860.08
PT	500+14.37		5.0275	S 89.9842 E	675966.78	1478862.13
PC	500+19.39	5	1.3233	S 82.4022 E	675966.78	1478867.16
PT	500+20.72		2.4572	S 74.8201 E	675966.61	1478868.46
PC	500+23.17	5	1.7229	S 64.9484 E	675965.96	1478870.84
PT	500+24.90		12.8165	S 55.0767 E	675965.24	1478872.39
POE	500+37.71				675957.90	1478882.90

EPHEMERAL CHANNEL WC-11 BASELINE						
POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	700+00.00		23.3327	S 3.2982 W	675966.57	1478909.31
PC	700+23.33	10	3.6527	S 13.7624 W	675943.28	1478907.97
PT	700+26.99		5.3554	S 24.2266 W	675939.75	1478907.10
PC	700+32.34	10	6.245	S 6.3360 W	675934.87	1478904.90
PT	700+38.59		27.5704	S 11.5547 E	675928.76	1478904.23
POE	700+66.16				675901.75	1478909.75

EPHEMERAL CHANNEL WC-12 BASELINE						
POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	800+00.00		11.6188	N 83.9086 E	675865.54	1478913.08
PC	800+11.62	5	2.5678	N 69.1962 E	675866.78	1478924.63
PT	800+14.19		8.4012	N 54.4838 E	675867.68	1478927.01
PC	800+22.59	5	2.561	N 69.1575 E	675872.56	1478933.84
PT	800+25.15		18.0079	N 83.8312 E	675873.46	1478936.21
POE	800+43.16				675875.40	1478954.12



LEGEND

- LOD — LOD — LIMIT OF DISTURBANCE
- 1+00 — +50 — PROPOSED STREAM/CHANNEL ALIGNMENT
- CROSS SECTION CUT EXTENT

30′ 0 30′ 60′

SCALE: 1″=30′

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
GT-A-01: ALIGNMENT TABLES
CS-01 - CS-22: CROSS SECTIONS

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

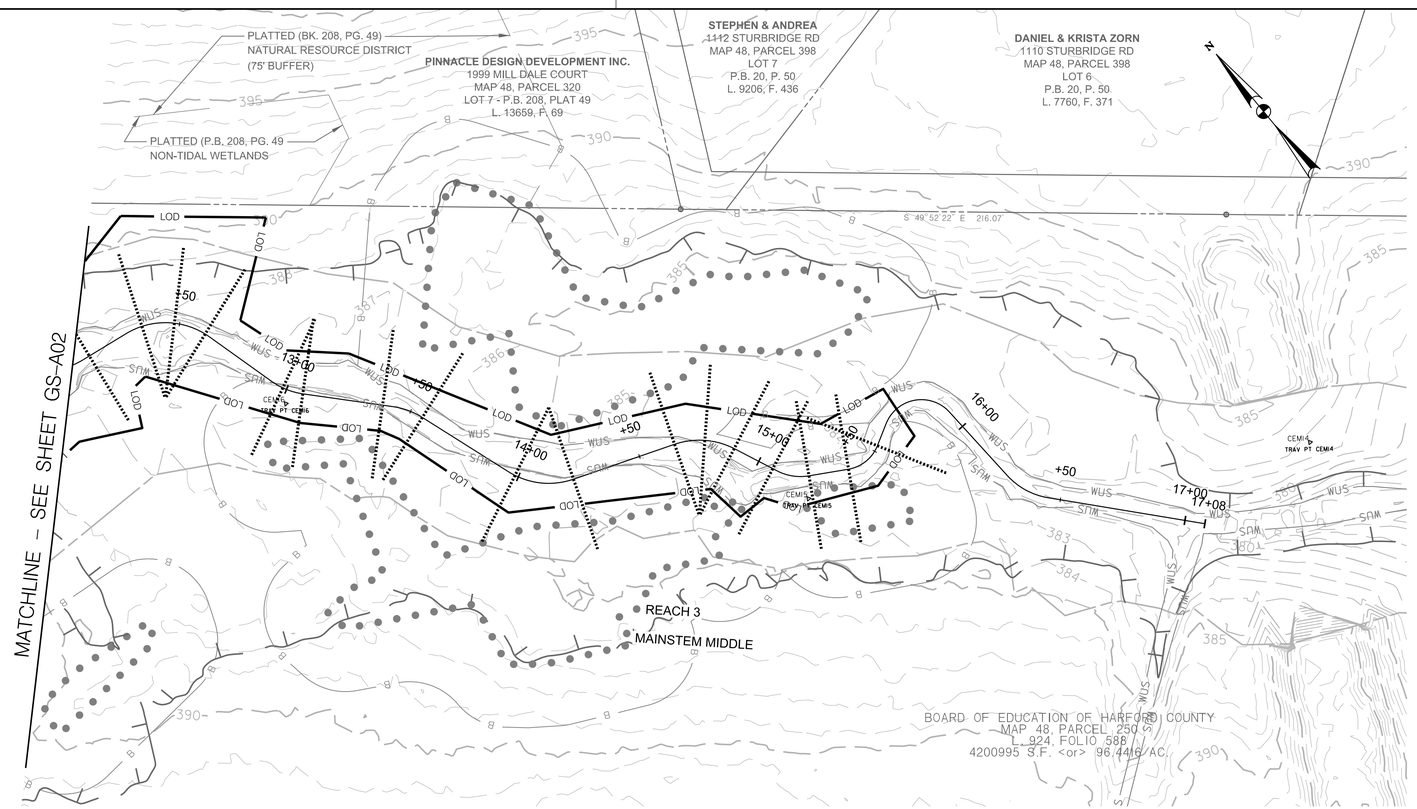
HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 25 Of 124

Scale : 1″ = 30′
Date : AUGUST 2023
Sheet No. GS-A02 Of GS-A06

BID No.:
HCG DWG ID No.:
BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



LEGEND

- LOD — LOD — LIMIT OF DISTURBANCE
- 1+00 — +50 — PROPOSED STREAM/CHANNEL ALIGNMENT
- CROSS SECTION CUT EXTENT

30' 0 30' 60'
SCALE: 1" = 30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

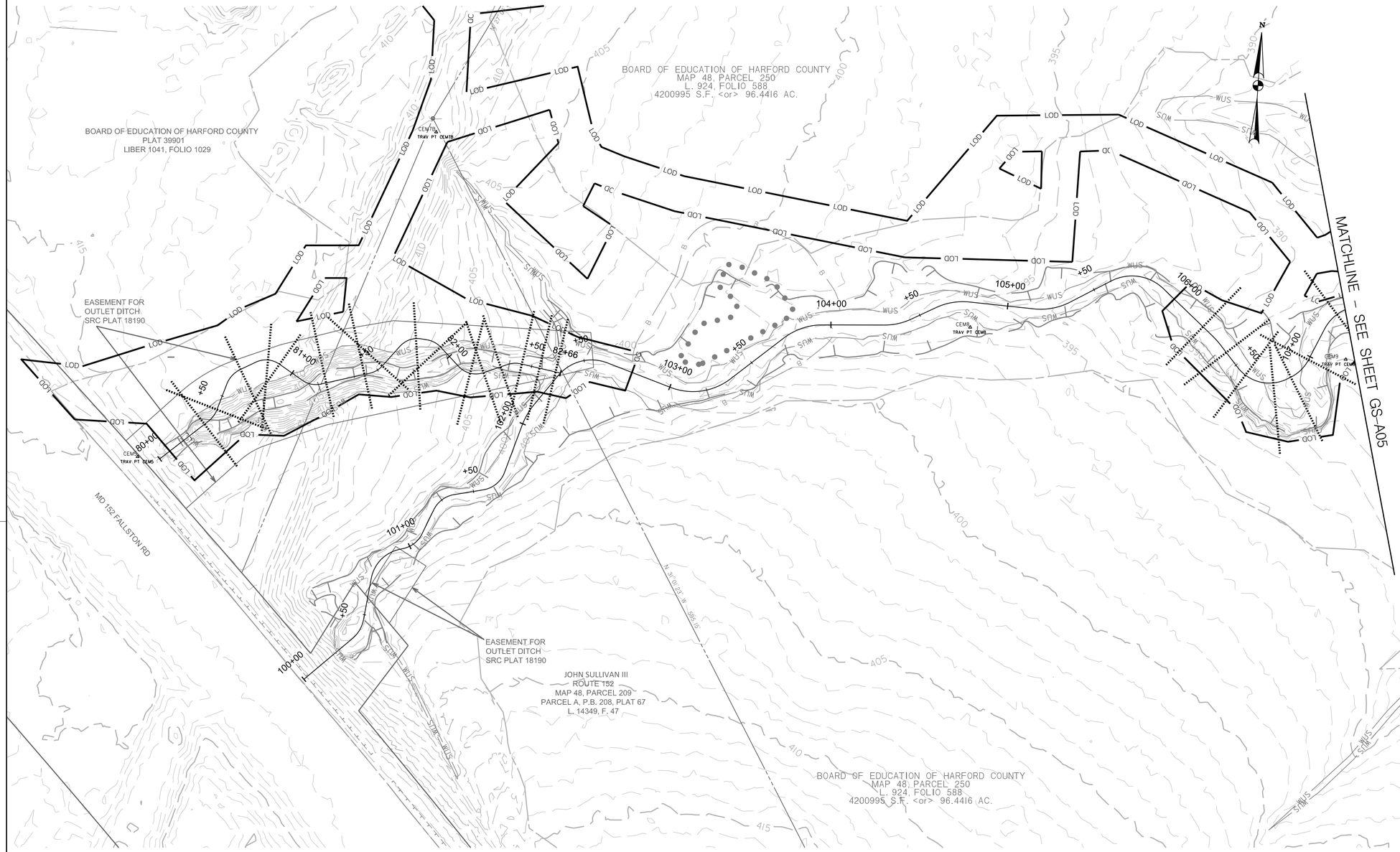
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Scale : 1" = 30'
Date : AUGUST 2023

Drawing No. 26 Of 124
Sheet No. GS-A03 Of GS-A06

BID No.:
HCG DWG ID No.:
SCALE: 1:1

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



WSP USA Inc
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BALTIMORE, MD 21202
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GT-A-01: ALIGNMENT TABLES
CS-01 - CS-22: CROSS SECTIONS

30' 0 30' 60'
SCALE: 1" = 30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 27 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. GS-A04 Of GS-A06

BID No.:

HCG DWG ID No.:

SCALE: 1" = 1'-0"

BY: $USERNAME$

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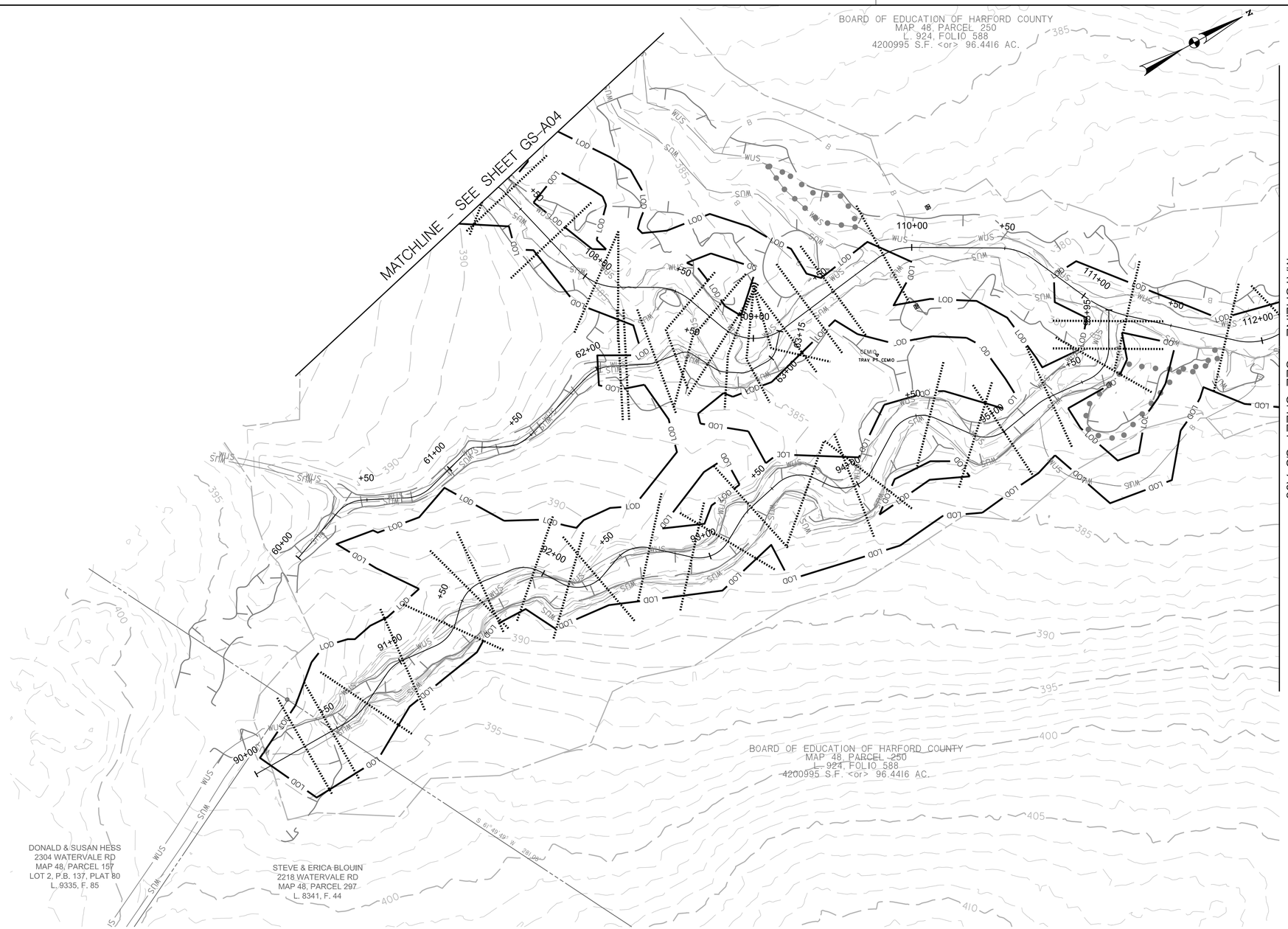
FILE: $FILE$



LEGEND

- LOD ——— LOD — LIMIT OF DISTURBANCE
- 1+00 +50 — PROPOSED STREAM/CHANNEL ALIGNMENT
- CROSS SECTION CUT EXTENT

30' 0 30' 60'

SCALE: 1"=30'

WSP USA Inc
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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

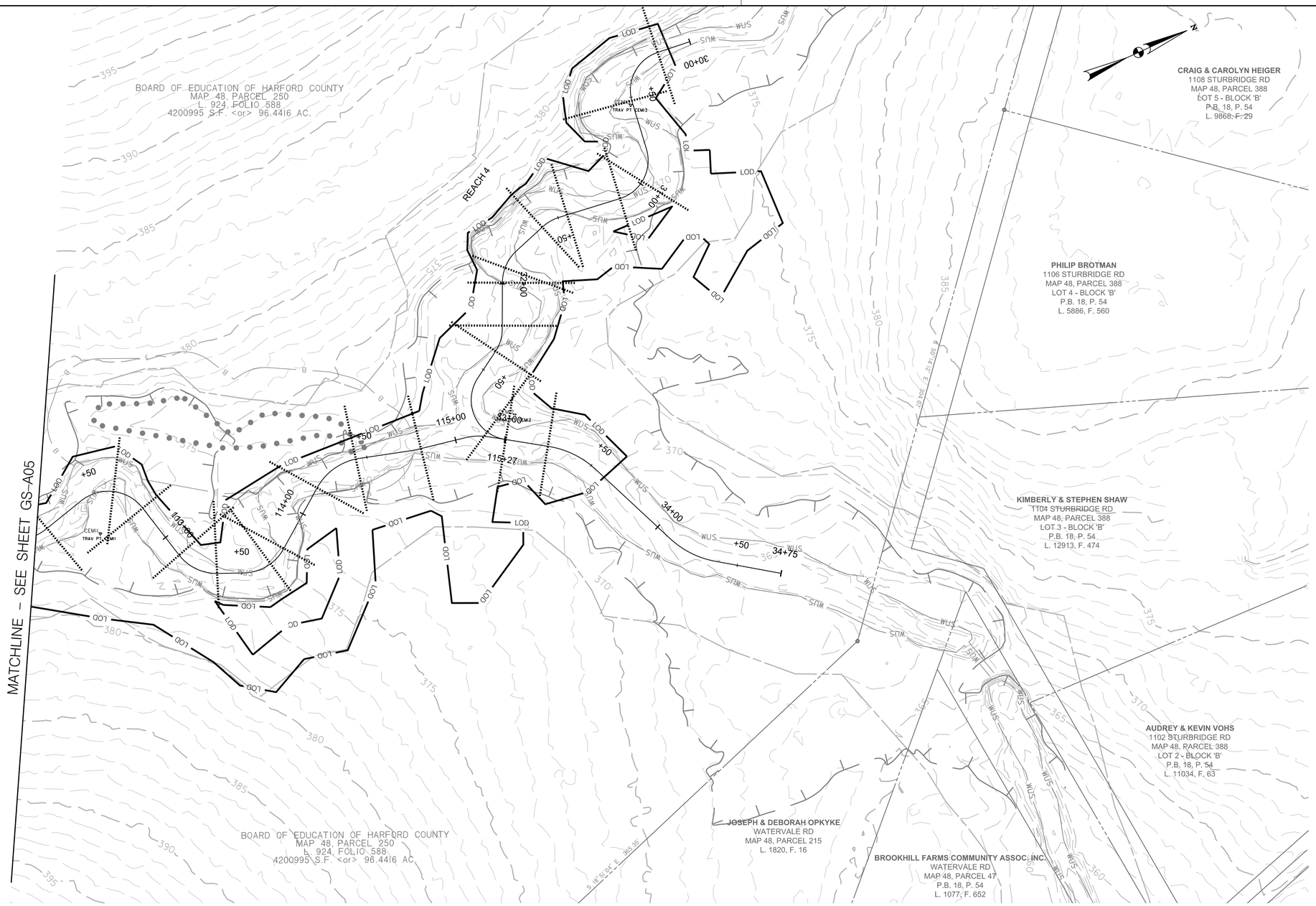
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 28 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. GS-A01 Of GS-A06

BID No.:
HCG DWG ID No.:
SCALE: 1 INCH

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



LEGEND

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- 1+00 +50 — PROPOSED STREAM CHANNEL ALIGNMENT
- CROSS SECTION CUT EXTENT

30' 0 30' 60'
SCALE: 1" = 30'

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY PLAN

Drawn By : C.A.B.	Scale : 1" = 30'
Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 29 Of 124	Sheet No. GS-A06 Of GS-A06

BID No.:

HCG DWG ID No.:

SCALE: 1" = 30'

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$

MAINSTEM UPPER BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	0+00.00		9.6736	N 44.4665 E	675577.95	1478279.51
PC	0+09.67	8	12.8274	S 89.5988 E	675584.86	1478286.29
PT	0+22.50		4.5983	S 43.6641 E	675584.78	1478297.78
PC	0+27.10	8	11.2598	S 83.9854 E	675581.45	1478300.96
PT	0+38.36		7.7937	N 55.6933 E	675580.36	1478311.26
PC	0+46.15	12	11.2863	N 82.6374 E	675584.76	1478317.69
PT	0+57.44		16.5136	S 70.4186 E	675586.15	1478328.48
PC	0+73.95	20	7.7435	S 81.5103 E	675580.62	1478344.04
PT	0+81.70		8.8244	N 87.3980 E	675579.48	1478351.65
PC	0+90.52	10	6.8245	N 67.8473 E	675579.88	1478360.46
PT	0+97.35		2.8479	N 48.2965 E	675582.4	1478366.66
PC	1+00.19	5	4.9267	N 76.5243 E	675584.3	1478368.79
PT	1+05.12		3.5739	S 75.2479 E	675585.4	1478373.39
PC	1+08.69	8	5.5264	N 84.9620 E	675584.49	1478376.84
PT	1+14.22		11.1904	N 65.1719 E	675584.97	1478382.24
PC	1+25.41	8	6.5063	N 88.4710 E	675589.67	1478392.4
PT	1+31.92		4.7135	S 68.2300 E	675589.83	1478398.72
PC	1+36.63	5	3.4205	S 87.8277 E	675588.09	1478403.1
PT	1+40.05		22.4044	N 72.5745 E	675587.96	1478406.45
PC	1+62.46	20	15.6215	N 50.1984 E	675594.67	1478427.83
PT	1+78.08		12.4132	N 27.8223 E	675604.42	1478439.53
PC	1+90.49	22	14.767	N 47.0516 E	675615.39	1478445.32
PT	2+05.26		28.2465	N 66.2809 E	675625.27	1478455.93
PC	2+33.50	22	9.0582	N 78.0763 E	675636.63	1478481.79
PT	2+42.56		17.7897	N 89.8718 E	675638.49	1478490.59
PC	2+60.35	22	16.1692	N 68.8166 E	675638.53	1478508.38
PT	2+76.52		26.3764	N 47.7614 E	675644.24	1478523.12
PC	3+02.90	22	19.9973	N 73.8015 E	675661.97	1478542.64
PT	3+22.89		27.3776	S 80.1584 E	675667.36	1478561.19
PC	3+50.27	20	22.5332	N 67.5651 E	675662.68	1478588.17
PT	3+72.80		22.9181	N 35.2887 E	675670.83	1478607.91
PC	3+95.72	18.5055	31.5187	N 84.0820 E	675689.54	1478621.15
PT	4+27.24		14.2479	S 47.1247 E	675692.41	1478648.85
PC	4+41.49	18	17.7672	S 75.4021 E	675682.72	1478659.29
PT	4+59.26		34.4505	N 76.3206 E	675678.42	1478675.79
PC	4+93.71	60	14.1559	N 69.5616 E	675686.56	1478709.27
PT	5+07.86		9.5882	N 62.8027 E	675691.5	1478722.5
PC	5+17.45	30	13.8461	N 76.0248 E	675695.88	1478731.03
PT	5+31.30		28.9218	N 89.2468 E	675699.19	1478744.35
PC	5+60.22	18	20.6897	S 57.8245 E	675699.57	1478773.27
PT	5+80.91		13.4665	S 24.8959 E	675689.15	1478789.83
PC	5+94.38	18	29.4712	S 71.8008 E	675676.94	1478795.5
PT	6+23.85		18.6941	N 61.2943 E	675668.73	1478820.47
PC	6+42.54	50	13.6405	N 53.4789 E	675677.71	1478836.87
PT	6+56.18		29.5525	N 45.6634 E	675685.8	1478847.8
PC	6+85.73	18	19.3671	N 76.4872 E	675706.45	1478868.93
PT	7+05.10		20.5536	S 72.6890 E	675710.76	1478886.87
PC	7+25.65	24	11.9174	S 58.4637 E	675704.65	1478906.49
PT	7+37.57		24.0456	S 44.2384 E	675698.48	1478916.55
PC	7+61.62	20	22.1396	S 75.9511 E	675681.25	1478933.32
PT	7+83.76		28.2011	N 72.3363 E	675676.15	1478953.72
PC	8+11.96	22	15.7553	N 51.8201 E	675684.7	1478980.59
PT	8+27.71		25.8301	N 31.3038 E	675694.23	1478992.71
PC	8+53.54	20	23.1129	N 64.4107 E	675716.3	1479006.13
PT	8+76.66		26.7079	S 82.4825 E	675725.74	1479025.84
PC	9+03.36	22	21.2239	N 69.8802 E	675722.25	1479052.32
PT	9+24.59		20.1252	N 42.2429 E	675729.27	1479071.48
PC	9+44.71	22	9.3954	N 54.4774 E	675744.17	1479085.01
PT	9+54.11		20.1314	N 66.7119 E	675749.58	1479092.6
PC	9+74.24	22	19.1913	N 41.7215 E	675757.54	1479111.09
PT	9+93.43		19.246	N 16.7311 E	675771.42	1479123.46
PC	10+12.68	22	17.337	N 39.3070 E	675789.85	1479129
PT	10+30.01		24.596	N 61.8829 E	675802.92	1479139.7
PC	10+54.61	26	12.3786	N 48.2436 E	675814.51	1479161.4
PT	10+66.99		43.0115	N 34.6044 E	675822.68	1479170.54
PC	11+10.00	26	14.9792	N 51.1091 E	675858.08	1479194.97
PT	11+24.98		24.8977	N 67.6139 E	675867.35	1479206.47
PC	11+49.88	25	24.6703	S 84.1161 E	675876.84	1479229.49
PT	11+74.55		19.872	S 55.8461 E	675874.41	1479253.05
PC	11+94.42	30	13.5551	S 68.7903 E	675863.25	1479269.49
PT	12+07.98		19.9697	S 81.7345 E	675858.39	1479282.02
PC	12+27.94	30	35.0046	S 48.3075 E	675855.52	1479301.78
PT	12+62.95		30.3183	S 14.8806 E	675833.53	1479326.46
PC	12+93.27	28	13.4279	S 28.6192 E	675804.23	1479334.25
PT	13+06.70		35.9086	S 42.3578 E	675792.56	1479340.62
PC	13+42.60	30	12.6372	S 30.2902 E	675766.02	1479364.81
PT	13+55.24		40.3004	S 18.2225 E	675755.19	1479371.14
PC	13+95.54	30	26.8373	S 43.8502 E	675716.91	1479383.74
PT	14+22.38		42.3604	S 69.4780 E	675698.2	1479401.72
PC	14+64.74	30	24.2915	S 46.2813 E	675683.35	1479441.39
PT	14+89.03		19.2417	S 23.0847 E	675667.01	1479458.47
PC	15+08.27	20	12.9123	S 41.5802 E	675649.31	1479466.02
PT	15+21.19		15.892	S 60.0758 E	675639.82	1479474.44
PC	15+37.08	15	15.3881	S 89.4649 E	675631.89	1479488.21

MAINSTEM UPPER BASELINE (Continued)

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
PT	15+52.47		9.4337	N 61.1460 E	675631.76	1479502.93
PC	15+61.90	15	30.3867	S 60.8196 E	675636.31	1479511.2
PT	15+92.29		34.0876	S 2.7853 E	675623.9	1479533.42
PC	16+26.37	28	18.6874	S 21.9051 E	675589.85	1479535.07
PT	16+45.06		62.9298	S 41.0250 E	675572.83	1479541.92
POE	17+07.99				675525.36	1479583.22

MAINSTEM LOWER BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	30+00.00		18.682	S 5.8679 W	675343.45	1479714.35
PC	30+18.68	22	33.9886	S 38.3913 E	675324.86	1479712.44
PT	30+52.67		27.045	S 82.6504 E	675300.8	1479731.51
PC	30+79.72	22	34.4906	S 37.7376 E	675297.34	1479758.33
PT	31+14.21		34.9348	S 7.1752 W	675272.77	1479777.34
PC	31+49.14	25	11.1	S 5.5445 E	675238.11	1479772.98
PT	31+60.24		19.3109	S 18.2642 E	675227.15	1479774.04
PC	31+79.55	24	19.7821	S 41.8774 E	675208.81	1479780.09
PT	31+99.33		25.6782	S 65.4905 E	675194.5	1479792.93
PC	32+25.01	22	12.8252	S 48.7899 E	675183.84	1479816.29
PT	32+37.84		17.6775	S 32.0892 E	675175.51	1479825.81
PC	32+55.51	22	43.9548	S 89.3260 E	675160.54	1479835.2
PT	32+99.47		24.4766	N 33.4371 E	675160.1	1479872.19
PC	33+23.95	50	29.4887	N 50.3329 E	675180.53	1479885.68
PT	33+53.43		55.9072	N 67.2286 E	675199.08	1479908.05
PC	34+09.34	50	28.3795	N 50.9684 E	675220.72	1479959.6
PT	34+37.72		36.8702	N 34.7081 E	675238.35	1479981.35
POE	34+74.59				675268.66	1480002.35

TRIBUTARY 2 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	20+00.00		13.6712	S 65.6683 E	675850.26	1478006.17
PC	20+13.67	18	10.8121	S 48.4602 E	675844.63	1478018.62
PT	20+24.48		11.6398	S 31.2522 E	675837.57	1478026.60
PC	20+36.12	12	12.9249	S 62.1080 E	675827.62	1478032.63
PT	20+49.05		13.9616	N 87.0361 E	675821.86	1478043.51
PC	20+63.01	18	8.2604	S 79.8171 E	675822.58	1478057.46
PT	20+71.27		11.8016	S 66.6703 E	675821.13	1478065.52
PC	20+83.07	15	10.3247	S 86.1945 E	675816.46	1478076.35
PT	20+93.40		15.0791	N 74.0867 E	675815.79	1478086.45
PC	21+08.48	14	11.0368	S 83.3288 E	675819.92	1478100.95
PT	21+19.51		11.7437	S 60.7444 E	675818.67	1478111.63
PC	21+31.26	12	12.9299	S 29.8765 E	675812.93	1478121.88
PT	21+44.19		10.118	S 0.9914 W	675802.26	1478128.01
PC	21+54.30	13	7.8116	S 16.2228 E	675792.14	1478127.84
PT	21+62.12		11.1771	S 33.4370 E	675784.75	1478129.99
PC	21+73.29	15	10.6351	S 53.7486 E	675775.42	1478136.15
PT	21+83.93		19.5933	S 74.0601 E	675769.27	1478144.54
PC	22+03.52	16	5.8079	S 84.4590 E	675763.89	1478163.38
PT	22+09.33		16.8246	N 85.1420 E	675763.33	1478169.13
PC	22+26.15	14	12.352	S 69.5823 E	675764.75	1478185.90
PT	22+38.51		12.462	S 44.3066 E	675760.58	1478197.10
PC	22+50.97	14	10.8009	S 22.2049 E	675751.66	1478205.81
PT	22+61.77		16.2891	S 0.1033 E	675741.91	1478209.79
PC	22+78.06	15	14.8184	S 28.4043 E	675725.62	1478209.82
PT	22+92.88		8.3365	S 56.7053 E	675713.11	1478216.58
PC	23+01.21	15	10.9445	S 77.6077 E	675708.53	1478223.55
PT	23+12.16		7.1041	N 81.4899 E	675706.24	1478234.00
PC	23+19.26	12	15.3188	S 61.9392 E	675707.29	1478241.03
PT	23+34.58		7.2417	S 25.3683 E	675700.56	1478253.65
PC	23+41.82	13	16.4944	S 61.7168 E	675694.02	1478256.75
PT	23+58.32		14.2958	N 81.9348 E	675686.72	1478270.32
PC	23+72.61	13	10.2863	S 75.3974 E	675688.72	1478284.48
PT	23+82.90		31.5892	S 52.7295 E	675686.20	1478294.17
PC	24+14.49	15	9.1054	S 35.3395 E	675667.07	1478319.31
PT	24+23.59		14.9216	S 17.9495 E	675659.78	1478324.50
PC	24+38.51	15	5.9718	S 6.5443 E	675645.56	1478329.10
PT	24+44.49		13.8951	S 4.8610 W	675639.66	1478329.77
PC	24+58.38	15	13.8675	S 21.6240 E	675625.82	1478328.59
PT	24+72.25		13.8152	S 48.1090 E	675613.38	1478333.53
PC	24+86.06	15	6.5198	S 35.6571 E	675604.16	1478343.81
PT	24+92.58		11.2458	S 23.2051 E	675598.90	1478347.58
PC	25+03.83	15	9.0542	S 40.4973 E	675588.56	1478352.01
PT	25+12.88		3.5501	S 57.7895 E	675581.78	1478357.80
POE	25+16.43				675579.89	1478360.81

TRIBUTARY 4 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	40+00.00		30.3141	S 55.5394 E	676050.13	1478829.97
PC	40+30.31	20	12.7971	S 37.2088 E	676032.97	1478854.96
PT	40+43.11		13.7065	S 18.8783 E	676022.95	1478862.57
PC	40+56.82	20	6.7876	S 28.6008 E	676009.98	1478867.00
PT	40+63.61		14.3131	S 38.3234 E	676004.05	1478870.24
PC	40+77.92	20	10.9689	S 22.6116 E	675992.82	1478879.11
PT	40+88.89		12.4912	S 6.8998 E	675982.83	1478883.28
PC	41+01.38	20	7.7203	S 4.1587 W	675970.42	1478884.78
PT	41+09.10		13.6795	S 15.2172 W	675962.77	1478884.22
PC	41+22.78	20	12.1773	S 2.2256 E	675949.57	1478880.63
PT	41+34.96		15.3908	S 19.6683 E	675937.59	1478881.10
PC	41+50.35	20	10.5589	S 34.7928 E	675923.10	1478886.28

TRIBUTARY 4 BASELINE (Continued)

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
PT	41+60.91		14.0326	S 49.9174 E	675914.53	1478892.23
PC	41+74.94	20	11.8156	S 66.8420 E	675905.49	1478902.97
PT	41+86.75		12.0132	S 83.7666 E	675900.91	1478913.68
PC	41+98.77	20	16.441	S 60.2166 E	675899.61	1478925.62
PT	42+15.21		13.041	S 36.6667 E	675891.67	1478939.49
PC	42+28.25	20	12.7099	S 54.8723 E	675881.21	1478947.28
PT	42+40.96		13.5904	S 73.0778 E	675874.02	1478957.50
PC	42+54.55	20	10.8118	S 88.5646 E	675870.06	1478970.50
PT	42+65.36		26.6467	N 75.9486 E	675869.80	1478981.18
PC	42+92.01	20	8.7425	N 88.4713 E	675876.26	1479007.03
PT	43+00.75		15.552	S 79.0059 E	675876.50	1479015.70
PC	43+16.30	20	7.8286	N 89.7805 E	675873.53	1479030.96
PT	43+24.13		12.8147	N 78.5669 E	675873.56	1479038.74
PC	43+36.95	20	24.2989	S 66.6275 E	675876.10	1479051.30
PT	43+61.24		22.8073	S 31.8218 E	675867.04	1479072.26
PC	43+84.05	20	13.8477	S 51.6572 E	675847.66	1479084.29
PT	43+97.90		33.6433	S 71.4927 E	675839.24	1479094.93
PC	44+31.54	20	4.5018	S 65.0444 E	675828.56	1479126.83
PT	44+36.04		19.6172	S 58.5961 E	675826.67	1479130.91
PC	44+55.66	17	13.9924	S 82.1757 E	675816.45	1479147.65
PT	44+69.65		0.9038	N 74.2446 E	675814.60	1479161.13
POE	44+70.56				675814.84	1479162.00

TRIBUTARY 5 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	50+00.00		40.8177	S 53.2908 E	676027.35	1478932.24
PC	50+40.82	10	4.9416	S 39.1343 E	676002.95	1478964.96
PT	50+45.76		5.8068	S 24.9777 E	675999.15	1478968.05
PC	50+51.57	10	7.2761	S 45.8221 E	675993.89	1478970.50
PT	50+58.84		18.1098	S 66.6666 E	675988.93	1478975.60
PC	50+76.95	10	6.8567	S 47.0236 E	675981.76	1478992.23
PT	50+83.81		13.1684	S 27.3806 E	675977.17	1478997.15
PC	50+96.98	10	5.9714	S 10.2738 E	675965.48	1479003.21
PT	51+02.95		10.734	S 6.8331 W	675959.69	1479004.26
PC	51+13.68	10	8.3881	S 17.1971 E	675949.03	1479002.98
PT	51+22.07		15.278	S 41.2272 E	675941.25	1479005.39
PC	51+37.35	10	5.6873	S 57.5200 E	675929.76	1479015.46
PT	51+43.04		8.9376	S 73.8128 E	675926.75	1479020.19
PC	51+51.97	10	9.8556	S 45.5786 E	675924.26	1479028.77
PT	51+61.83		28.1235	S 17.3443 E	675917.64	1479035.53
PC	51+89.95	10	6.5047	S 35.9789 E	675890.79	1479043.92
PT	51+96.46		17.9578	S 54.6134 E	675885.62	1479047.67
POE	52+14.42				675875.22	1479062.31

TRIBUTARY 8 UPPER BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	80+00.00		33.7527	N 48.2850 E	674443.29	1478898.39
PC	80+33.75	15	8.1462	N 32.7269 E	674465.75	1478923.59
PT	80+41.90		15.1634	N 17.1688 E	674472.52	1478927.94
PC	80+57.06	15	11.4057	N 38.9520 E	674487.01	1478932.41
PT	80+68.47		9.3609	N 60.7353 E	674495.66	1478939.41
PC	80+77.83	13	13.749	S 88.9662 E	674500.24	1478947.58
PT	80+91.58		15.2656	S 58.6677 E	674500.00	1478960.69
PC	81+06.84	13	10.8331	S 82.5404 E	674492.07	1478973.73
PT	81+17.68		27.6186	N 73.5870 E	674490.70	1478984.17
PC	81+45.30	13	8.1078	N 55.7199 E	674498.50	1479010.66
PT	81+53.40		14.5395	N 37.8529 E	674503.00	1479017.25
PC	81+67.94	13	13.1283	N 66.7834 E	674514.48	1479026.17
PT	81+81.07		3.3381	S 84.2861 E	674519.43	1479037.73
PC	81+84.41	13	8.4652	S 65.6315 E	674519.10	1479041.05
PT	81+92.87		14.6217	S 46.9769 E	674515.67	1479048.63
PC	82+07.50	13	14.9381	S 79.8957 E	674505.69	1479059.32
PT	82+22.43		14.0529	N 67.1855 E	674503.22	1479073.23
PC	82+36.49	13	7.2476	N 83.1568 E	674508.66	1479086.18
PT	82+43.73		22.5894	S 80.8718 E	674509.52	1479093.29
POE	82+66.32				674505.93	1479115.59

TRIBUTARY 8 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	100+00.00		35.0025	N 45.9583 E	674327.57	1478986.21
PC	100+35.00	18	12.3462	N 26.3087 E	674351.90	1479011.37
PT	100+47.35		23.2274	N 6.6592 E	674362.75	1479016.74
PC	100+70.58	20	23.3137	N 40.0536 E	674385.82	1479019.43
PT	100+93.89		2.4859	N 73.4480 E	674402.67	1479033.60
PC	100+96.38	15	13.4671	N 47.7278 E	674403.38	1479035.98
PT	101+09.84		14.9118	N 22.0076 E	674412.14	1479045.62
PC	101+24.75	15	14.2945	N 49.3081 E	674425.97	1479051.20
PT	101+39.05		16.5249	N 76.6085 E	674434.94	1479061.64

TRIBUTARY 8 BASELINE (Continued)

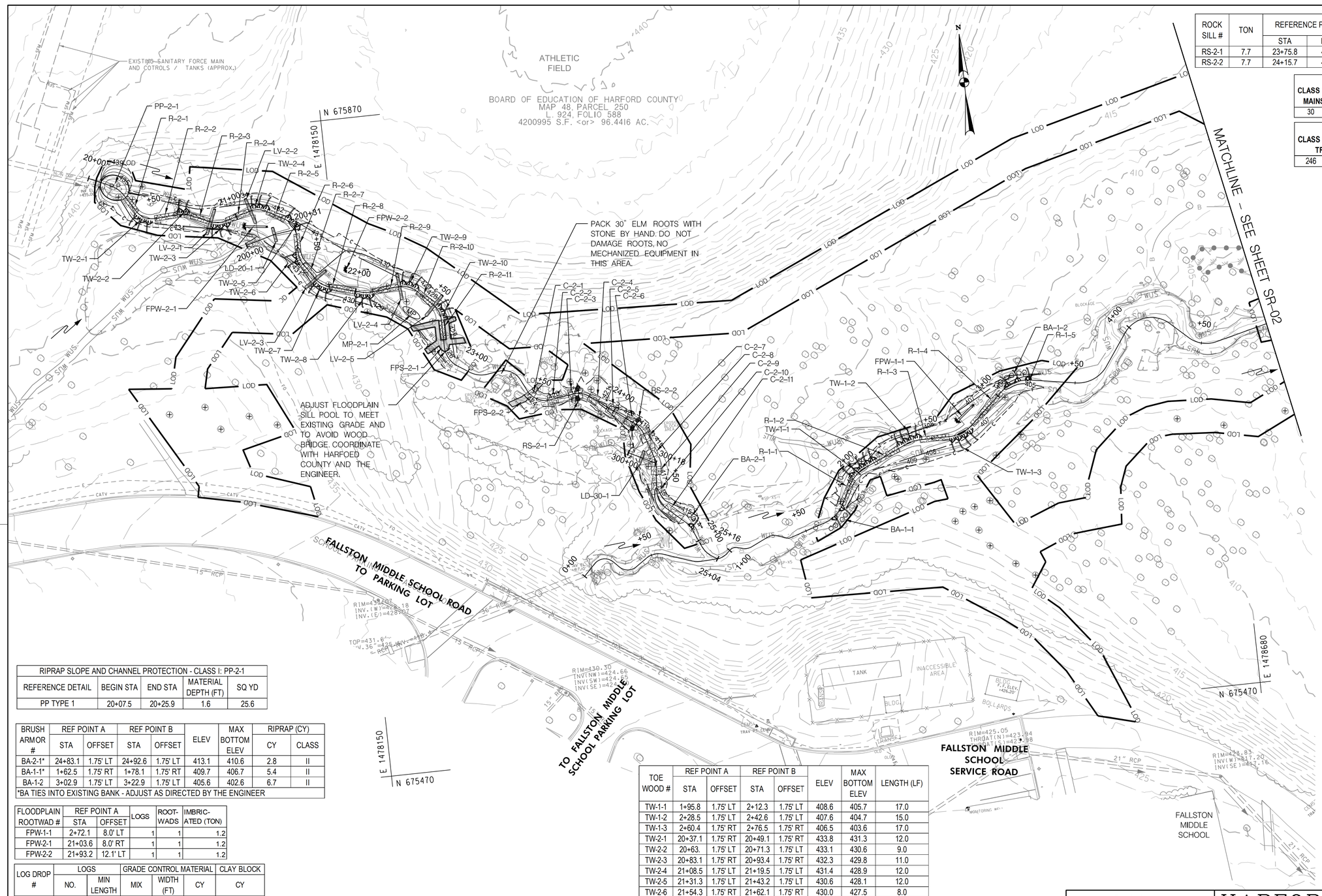
POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
PC	101+55.57	15	15.7465	N 46.5350 E	674438.76	1479077.71
PT	101+71.32		27.7034	N 16.4614 E	674449.11	1479088.62
PC	101+99.02	40	13.4822	N 26.1173 E	674475.67	1479096.47
PT	102+12.51		20.6566	N 35.7731 E	674487.72	1479102.38
PC	102+33.16	24	29.9196	N 71.4870 E	674504.48	1479114.46
PT	102+63.08		37.4226	S 72.7992 E	674513.38	1479141.03
PC	103+00.50	34	34.7907	N 77.8867 E	674502.31	1479176.77
PT	103+35.30		37.1967	N 48.5726 E	674509.30	1479209.33
PC	103+72.49	35	22.9674	N 67.3716 E	674533.91	1479237.22
PT	103+95.46		33.9012	N 86.1707 E	674542.59	1479258.04
PC	104+29.36	35	15.3731	N 73.5876 E	674544.85	1479291.86
PT	104+44.73		15.0829	N 61.0045 E	674549.16	1479306.49
PC	104+59.82	35	18.982	N 76.5415 E	674556.47	1479319.68
PT	104+78.80		35.8537	S 87.9215 E	674560.84	1479337.92
PC	105+14.65	35	20.3443	N 75.4265 E	674559.54	1479373.75
PT	105+35.00		25.6294	N 58.7744 E	674564.58	1479393.16
PC	105+60.63	25	31.0327	S 85.6647 E	674577.87	1479415.08
PT	105+91.66		36.933	S 50.1038 E	674575.67	1479444.07
PC	106+28.59	50	7.6078	S 45.7448 E	674551.98	1479472.41
PT	106+36.20		15.3781	S 41.3858 E	674546.68	1479477.85
PC	106+51.58	22	30.3026	S 80.8452 E	674535.14	1479488.02
PT	106+81.88		2.3066	N 59.6955 E	674530.69	1479515.63
PC	106+84.19	22	13.9083	N 41.5845 E	674531.86	1479517.62
PT	106+98.10		19.0269	N 23.4735 E	674542.09	1479526.70
PC	107+17.12	24	21.6394	N 49.3036 E	674559.54	1479534.28
PT	107+38.76		55.9797	N 75.1337 E	674573.18	1479550.13
PC	107+94.74	30	24.3653	N 51.8665 E	674587.54	1479604.24
PT	108+19.11		19.701	N 28.5993 E	674602.17	1479622.88
PC	108+38.81	30	20.9837	N 48.6373 E	674619.47	1479632.31
PT	108+59.79		21.5112	N 68.6752 E	674633.06	1479647.74
PC	108+81.30	27	36.3296	N 30.1283 E	674640.88	1479667.78
PT	109+17.63		61.7948	N 8.4186 W	674669.98	1479684.67
PC	109+79.43	32	20.7737	N 10.1790 E	674731.11	1479675.62
PT	110+00.20		46.7727	N 28.7765 E	674751.20	1479679.23
PC	110+46.97	32	19.9681	N 46.6529 E	674792.20	1479701.75
PT	110+66.94		34.0323	N 64.5293 E	674805.68	1479716.03
PC	111+00.97	60	24.3846	N 52.8865 E	674820.32	1479746.76
PT	111+25.36		60.6111	N 41.2437 E	674834.93	1479766.07
PC	111+85.97	32	31.2164	N 13.2973 E	674880.51	1479806.03
PT	112+17.19		24.083	N 14.6490 W	674909.70	1479812.93
PC	112+41.27	24	38.2039	N 30.9535 E	674933.00	1479806.84
PT	112+79.47		32.8139	N 76.5561 E	674962.41	1479824.48
PC	113+12.29	26	24.1118	N 49.9887 E	674970.04	1479856.39
PT	113+36.40		14.4393	N 23.4214 E	674984.99	1479874.20
PC	113+50.84	26	27.3862	N 6.7539 W	674998.24	1479879.94
PT	113+78.22		38.1805	N 36.9292 W	675024.20	1479876.87
PC	114+16.40	32	29.4839	N 10.5339 W	675054.72	1479853.93
PT	114+45.89		28.6754	N 15.8615 E	675082.69	1479848.73
PC	114+74.56	40	3.7096	N 13.2048 E	675110.27	1479856.57
PT	114+78.27		27.1753	N 10.5480 E	675113.88	1479857.41
PC	115+05.45	32	12.634	N 21.8585 E	675140.60	1479862.39
PT	115+18.08		9.3832	N 33.1691 E	675152.25	1479867.06
POE	115+27.47				675160.10	1479872.19

TRIBUTARY 10 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	60+00.00		31.9048	N 20.8091 W	674381.91	1479668.92
PC	60+31.90	20	16.2325	N 2.4422 E	674411.74	1479657.59
PT	60+48.14		23.1902	N 25.6936 E	674427.51	1479658.26
PC	60+71.33	20	14.7009	N 4.6361 E	674448.41	1479668.32
PT	60+86.03		27.5202	N 16.4214 W	674462.74	1479669.48
PC	61+13.55	7	5.4066	N 5.7053 E	674489.13	1479661.70
PT	61+18.96		14.6058	N 27.8321 E	674494.38	1479662.22
PC	61+33.56	20	15.819	N 5.1730 E	674507.30	1479669.04
PT	61+49.38		43.4939	N 17.4860 W	674522.64	1479670.43
PC	61+92.87	20	14.9897	N 3.9852 E	674564.13	1479657.36
PT	62+07.86		18.8957	N 25.4564 E	674578.73	1479658.38
PC	62+26.76	15	4.5856	N 16.6985 E	674595.80	1479666.50
PT	62+31.34		14.8086	N 7.9405 E	674600.17	1479667.82
PC	62+46.15	7	6.4402	N 34.2973 E	674614.84	1479669.86
PT	62+52.59		15.1148	N 60.6541 E	674619.97	1479673.36
PC	62+67.71	10	5.0294	N 46.2460 E	674627.38	1479686.54
PT	62+72.74		8.3876	N 31.8380 E	674630.82	1479690.13
PC	62+81.13	10	5.5177	N 16.0308 E	674637.95	1479694.56
PT	62+86.64		9.8667	N 0.2237 E	674643.18	1479696.06
PC	62+96.51	10	8.6411	N 24.5312 W	674653.05	1479696.10
PT	63+05.15		10.1477	N 49.2861 W	674660.67	1479692.62
POE	63+15.30				674667.29	1479684.93

TRIBUTARY 12 BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
POB	90+00.00		54.9563	N 1.2590 W	674306.70	1479760.31
PC	90+54.96	35	16.0225	N 14.3736 W	674361.64	1479759.10
PT	90+70.98		19.4438	N 27.4881 W	674377.02	1479755.16
PC	90+90.42	20	11.2227	N 11.4127 W	674394.27	1479746.18
PT	91+01.65		18.8192	N 4.6627 E	674405.13	1479743.99
PC	91+20.46	20	17.5807	N 20.5199 W	674423.89	1479745.52
PT	91+38.05		9.0068	N 45.7024 W	674439.83	1479739.55
PC	91+47.05	20	18.1898	N 19.6475 W	674446.12	1479733.11
PT	91+65.24		16.8586	N 6.4074 E	674462.66	1479727.20
PC	91+82.10	18	15.8668	N 31.6602 E	674479.42	1479729.08
PT	91+97.97		13.2158	N 56.9131 E	674492.49	1479737.14
PC	92+11.18	18	24.658	N 17.6686 E	674499.70	1479748.22
PT	92+35.84		11.4161	N 21.5758 W	674521.40	1479755.13
PC	92+47.26	18	19.5757	N 9.5798 E	674532.02	1479750.93
PT	92+66.83		23.3318	N 40.7355 E	674550.39	1479754.03
PC	92+90.16	18	22.462	N 4.9861 E	674568.07	1479769.25
PT	93+12.63		13.4096	N 30.7633 W	674589.02	1479771.08
PC	93+26.04



ROCK SILL #	TON	REFERENCE POINT		CONFIG	BOULDER TYPE	THALWEG DEPTH	CUTOFF OFFSET	KEY IN DISTANCE	DROP 1	DROP 2
		STA	ELEV			A	B	C	D	E
RS-2-1	7.7	23+75.8	421.1	A	2	0.2	0.5	5.0	0.7	--
RS-2-2	7.7	24+15.7	418.0	A	2	0.2	0.5	5.0	0.7	--

CLASS 5 EXCAVATION - MAINSTEM REACH 1	
30	CY

CLASS 5 EXCAVATION - TRIBUTARY 2	
246	CY

RIFFLE #	RIFFLE GRADE CONTROL MATERIAL			BOULDERS
	DEPTH	VOLUME	MIX	
	FT	CY		EA
R-1-1	2.0	13.0	M-7	4
R-1-2	2.0	13.5	M-7	4
R-1-3	2.0	13.8	M-7	4
R-1-4	2.0	19.1	M-7	4
R-1-5	2.0	4.5	M-7	4
R-2-1	2.0	7.1	M-7	4
R-2-2	2.0	8.8	M-7	4
R-2-3	2.0	7.4	M-7	4
R-2-4	2.0	9.5	M-7	4
R-2-5	2.0	7.4	M-7	4
R-2-6	2.0	7.0	M-7	4
R-2-7	2.0	7.0	M-7	4
R-2-8	2.0	9.8	M-7	4
R-2-9	2.0	10.0	M-7	4
R-2-10	2.0	7.8	M-7	4
R-2-11	2.0	9.3	M-7	4

CASCADE #	CASCADE MATERIAL			RUN MATERIAL (RIPRAP)	
	DEPTH	VOLUME	MIX		
	FT	CY		CLASS	CY
C-2-1	2.0	8.1	M-12	II	1.9
C-2-2	2.0	7.8	M-12	II	1.9
C-2-3	2.0	9.6	M-12	-	0.0
C-2-4	2.0	7.8	M-12	II	1.9
C-2-5	2.0	7.8	M-12	II	1.9
C-2-6	2.0	10.8	M-12	-	0.0
C-2-7	2.0	5.8	M-12	II	1.9
C-2-8	2.0	6.3	M-12	II	1.9
C-2-9	2.0	5.6	M-12	II	1.9
C-2-10	2.0	10.1	M-12	II	1.9
C-2-11	2.0	9.3	M-12	II	1.9

FLOODPLAIN SILL			
FPS #	T (FT)	VOLUME (CY)	MIX
FPS-2-1	2.0	15.8	M-12
FPS-2-2	2.0	3.8	M-12

CHANNEL BED SAND AND GRAVEL		
BOUNDING STR #		VOLUME
US	DS	CY
R-1-1	R-1-2	2.72
R-1-2	R-1-3	2.10
R-1-3	R-1-4	2.64
R-1-4	R-1-5	2.54
R-2-1	R-2-2	2.65
R-2-2	R-2-3	1.84
R-2-3	R-2-4	2.30
R-2-4	R-2-5	2.45
R-2-5	R-2-6	2.65
R-2-6	R-2-7	1.74
R-2-7	R-2-8	2.36
R-2-8	R-2-9	2.40
R-2-9	R-2-10	2.75
R-2-10	R-2-11	2.40
R-2-11	C-2-1	14.53

LOG VANE #	REF POINT A		MIN. LENGTH (FT)
	STA	ELEV	
LV-2-1	20+83.1	432.1	12.0
LV-2-2	21+08.5	431.2	12.0
LV-2-3	21+73.3	429.1	12.0
LV-2-4	22+26.2	427.2	12.0
LV-2-5	22+51.	426.5	12.0

HEAVY BACKFILL				
Start Sta	End Sta	Class 0	Bank Run Gravel	Subsoil
		CY	CY	CY
20+07.8	24+92.6	2.15	4.31	15.08
1+62.5	3+22.9	1.02	2.05	7.17
Salvaged materials paid under Class 5 Excavation. Fumish Class 0 and Bank Run as directed by Engineer				

RIPRAP SLOPE AND CHANNEL PROTECTION - CLASS I: PP-2-1				
REFERENCE DETAIL	BEGIN STA	END STA	MATERIAL DEPTH (FT)	SQ YD
PP TYPE 1	20+07.5	20+25.9	1.6	25.6

BRUSH ARMOR #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	RIPRAP (CY)	
	STA	OFFSET	STA	OFFSET			CY	CLASS
BA-2-1*	24+83.1	1.75' LT	24+92.6	1.75' LT	413.1	410.6	2.8	II
BA-1-1*	1+62.5	1.75' RT	1+78.1	1.75' RT	409.7	406.7	5.4	II
BA-1-2	3+02.9	1.75' LT	3+22.9	1.75' LT	405.6	402.6	6.7	II
*BA TIES INTO EXISTING BANK - ADJUST AS DIRECTED BY THE ENGINEER								

FLOODPLAIN ROOTWAD #	REF POINT A		LOGS	ROOT-WADS	IMBRIC-ATED (TON)
	STA	OFFSET			
FPW-1-1	2+72.1	8.0' LT	1	1	1.2
FPW-2-1	21+03.6	8.0' RT	1	1	1.2
FPW-2-2	21+93.2	12.1' LT	1	1	1.2

LOG DROP #	LOGS		GRADE CONTROL MATERIAL			CLAY BLOCK
	NO.	MIN LENGTH	MIX	WIDTH (FT)	CY	CY
LD-20-1	1.0	9.0	M-7	6.0	1.4	0.9
LD-30-1	1.0	9.0	M-12	6.0	1.4	0.9

TOE WOOD #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	LENGTH (LF)
	STA	OFFSET	STA	OFFSET			
TW-1-1	1+95.8	1.75' LT	2+12.3	1.75' LT	408.6	405.7	17.0
TW-1-2	2+28.5	1.75' LT	2+42.6	1.75' LT	407.6	404.7	15.0
TW-1-3	2+60.4	1.75' RT	2+76.5	1.75' RT	406.5	403.6	17.0
TW-2-1	20+37.1	1.75' RT	20+49.1	1.75' RT	433.8	431.3	12.0
TW-2-2	20+63.	1.75' LT	20+71.3	1.75' LT	433.1	430.6	9.0
TW-2-3	20+83.1	1.75' RT	20+93.4	1.75' RT	432.3	429.8	11.0
TW-2-4	21+08.5	1.75' LT	21+19.5	1.75' LT	431.4	428.9	12.0
TW-2-5	21+31.3	1.75' LT	21+43.2	1.75' LT	430.6	428.1	12.0
TW-2-6	21+54.3	1.75' RT	21+62.1	1.75' RT	430.0	427.5	8.0
TW-2-7	21+73.3	1.75' RT	21+83.9	1.75' RT	429.3	426.8	11.0
TW-2-8	21+99.5	1.75' RT	22+10.3	1.75' RT	428.4	425.9	11.0
TW-2-9	22+26.2	1.75' LT	22+38.5	1.75' LT	427.4	424.9	13.0
TW-2-10	22+51.	1.75' LT	22+61.8	1.75' LT	426.7	424.2	11.0

MICRO POOL #	REF POINT		LENGTH	WIDTH	BOTTOM	DEPTH
	STA	OFFSET	LF	LF	LF	
			L	W	B	D
MP-2-1	22+43.9	12.2' RT	12	5	2.5	0.5

30' 0 30' 60'
SCALE: 1"=30'

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING AND ACCESS PATHS

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY
PR-A01 - PR-A09: RIFFLE & CASCADE ELEV.
SW-01: STORMDRAIN & OUTFALL STRUCTURES

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX. EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 31 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SR-01 Of SR-07

BID No.:
HCG DWG ID No.:
SCALE: 1"=30'

BY: tetrickr –
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-P001_Fallston.dgn

ROCK SILL #	TON	REFERENCE POINT		CONFIG	BOULDER TYPE	THALWEG DEPTH	CUTOFF OFFSET	KEY IN DISTANCE	DROP 1	DROP 2
		STA	ELEV			A	B	C	D	E
RS-4-1	6.0	40+55.6	404.3	B	1	0.2	0.5	5.0	0.5	--
RS-4-2	6.0	40+77.9	403.3	B	1	0.2	0.5	5.0	0.5	--
RS-4-3	6.0	41+22.8	401.4	B	1	0.2	0.5	5.0	0.5	--
RS-4-4	6.0	41+74.9	399.4	B	1	0.2	0.5	5.0	0.5	--
RS-4-5	6.0	42+28.3	397.2	B	1	0.2	0.5	5.0	0.5	--
RS-4-6	6.0	42+54.6	396.3	B	1	0.2	0.5	5.0	0.5	--
RS-4-7	6.0	43+37.7	392.8	B	1	0.2	0.5	5.0	0.5	--

TOE WOOD #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	LENGTH (LF)
	STA	OFFSET	STA	OFFSET			
TW-1-4	6+42.5	1.75' RT	6+56.3	1.75' RT	398.0	395.1	14.0
TW-1-5	7+23.7	1.75' LT	7+37.6	1.75' LT	396.1	393.2	14.0
TW-1-6	8+12.	2.25' RT	8+27.7	2.25' RT	394.0	391.1	16.0
TW-1-7	9+05.4	2.25' RT	9+24.6	2.25' RT	391.8	388.9	20.0
TW-1-8	9+40.7	2.25' LT	9+54.1	2.25' LT	391.2	388.3	14.0
TW-1-9	9+74.2	2.25' RT	9+93.4	2.25' RT	390.3	387.4	20.0
TW-1-10	10+12.7	2.25' LT	10+28.	2.25' LT	389.5	386.6	16.0
TW-1-11	11+05.	3.00' LT	11+25.	3.00' LT	387.8	384.9	20.0
TW-1-12	11+94.4	3.00' RT	12+08.	3.00' RT	386.6	383.7	14.0
TW-5-1	50+40.8	0.75' LT	50+45.8	0.75' LT	405.0	402.9	5.0
TW-5-2	50+51.6	0.75' RT	50+58.8	0.75' RT	404.3	402.2	8.0
TW-5-3	50+65.3	0.75' LT	50+71.1	0.75' LT	403.5	401.4	6.0
TW-5-4	50+77.	0.75' LT	50+83.8	0.75' LT	402.8	400.7	7.0
TW-5-5	50+94.	0.75' LT	51+03.	0.75' LT	401.7	399.6	9.0
TW-5-6	51+13.7	0.75' RT	51+22.1	0.75' RT	400.6	398.5	9.0
TW-5-7	51+32.6	0.75' RT	51+43.	0.75' RT	399.3	397.2	11.0
TW-5-8	51+52.2	0.75' LT	51+62.2	0.75' LT	397.5	395.4	11.0

CHANNEL BED SAND AND GRAVEL		
BOUNDING STR #		VOLUME
US	DS	CY
EX. GRADE	R-1-6	5.21
R-1-6	R-1-7	4.07
R-1-7	R-1-8	2.97
R-1-8	R-1-9	2.01
R-1-9	R-1-10	2.95
R-1-10	R-1-11	2.64
R-1-11	R-1-12	3.05
R-1-12	R-1-13	3.25
R-1-13	R-1-14	3.04
R-1-14	R-1-15	3.07
R-1-15	R-1-16	2.46
R-1-16	R-1-17	3.06
R-1-17	R-1-18	3.11
R-1-18	R-1-19	6.11
R-1-19	R-1-20	5.17
R-1-20	R-1-21	7.61
R-5-1	R-5-2	0.55
R-5-2	R-5-3	0.81
R-5-3	R-5-4	0.65
R-5-4	R-5-5	0.76
R-5-5	R-5-6	1.00
R-5-6	R-5-7	0.93
R-5-7	R-5-8	1.16
R-5-8	C-5-1	1.12

FLOODPLAIN SILL			
FPS #	T (FT)	VOLUME (CY)	MIX
FPS-5-1	2	4.2	M-5

MICRO POOL #	REF POINT		LENGTH	WIDTH	BOTTOM	DEPTH
	STA	OFFSET	LF	LF	LF	
			L	W	B	D
MP-1-1	6+46.5	10.2' LT	12	5	2.5	0.5
MP-1-2	8+30.18	11.8' LT	12	5	2.5	0.5
MP-1-3	9+86.4	8.5' LT	8	4	3	0.2
MP-1-4	10+71.6	11.0' LT	8	4	3	0.2

LOG DROP #	REF POINT A			LOGS		GRADE CONTROL MATERIAL			CLAY BLOCK
	STA	ELEV	OFFSET	NO.	MIN LENGTH	MIX	WIDTH (FT)	CY	CY
LD-40-1	400+09.1	396.0	0.0'	1.0	9.0	M-7	6.0	1.4	0.9
LD-50-1	500+06.3	405.5	0.0'	1.0	9.0	M-5	6.0	1.4	0.9
LD-50-2	500+13.1	404.7	0.0'	1.0	9.0	M-5	6.0	1.4	--
LD-50-3	500+20.	404.0	0.0'	1.0	9.0	M-5	6.0	1.4	--
LD-50-4	500+26.8	403.2	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-60-1	600+08.5	405.2	0.0'	1.0	9.0	M-5	6.0	1.4	0.9
LD-60-2	600+17.5	404.4	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-60-3	600+26.4	403.6	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-60-4	600+35.4	402.7	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-60-5	600+44.4	401.9	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-70-1	700+11.6	403.3	0.0'	1.0	9.0	M-5	6.0	1.4	0.9
LD-70-2	700+23.8	402.4	0.0'	1.0	9.0	M-5	6.0	1.4	--
LD-70-3	700+35.9	401.6	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-70-4	700+48.1	400.7	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-80-1	800+06.8	399.4	0.0'	1.0	9.0	M-5	6.0	1.4	0.9
LD-80-2	800+14.	399.0	0.0'	1.0	9.0	M-5	6.0	1.4	--
LD-80-3	800+21.3	398.6	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-80-4	800+28.5	398.3	0.0'	1.0	9.0	M-9	6.0	1.4	--
LD-1-1	8+53.9	394.7	13.5'	1.0	9.0	M-7	6.0	1.4	0.9

NOTE: LOG DROPS AND LOG VANES IN CLOSE PROXIMITY ARE ONLY LABELLED AT THE BEGINNING AND END OF THE SERIES.

LOG VANE #	REF POINT A		MIN. LENGTH (FT)
	STA	ELEV	
LV-5-1	50+40.8	405.0	12.0
LV-5-2	50+51.6	404.3	12.0
LV-5-3	50+65.3	403.5	12.0
LV-5-4	50+77.	402.8	12.0
LV-5-5	50+83.8	402.6	12.0
LV-5-6	50+94.	401.7	12.0
LV-5-7	51+03.	401.5	12.0
LV-5-8	51+13.7	400.7	12.0
LV-5-9	51+22.1	400.4	12.0
LV-5-10	51+32.6	399.4	12.0
LV-5-11	51+52.2	397.8	12.0

NOTE: LOG DROPS AND LOG VANES IN CLOSE PROXIMITY ARE ONLY LABELLED AT THE BEGINNING AND END OF THE SERIES.

CLAY BLOCK #	TYPE	REF POINT A				REF POINT B				VOLUME
		STA	OFFSET	TOP ELEV	BOTTOM ELEV	STA	OFFSET	TOP ELEV	BOTTOM ELEV	CY
CB-4-1	A	40+73.6	17.6' RT	405.0	400.0	40+72.9	4.9' RT	405.0	400.0	25.1
CB-4-2	B	41+17.7	14.5' RT	402.0	396.0	41+16.9	9.7' LT	402.0	396.0	62.1
CB-4-3	A	41+78.3	18.5' RT	400.0	396.0	41+79.8	3.6' RT	400.0	396.0	21.8
CB-4-4	B	41+65.7	8.7' LT	400.0	393.0	41+92.0	17.6' LT	400.0	393.0	62.2
CB-4-5	B	41+92.9	9.9' RT	399.0	393.0	41+93.4	11.5' LT	399.0	393.0	54.7
CB-5-1	A	51+16.3	4.0' LT	400.0	396.0	51+07.8	11.1' LT	400.0	396.0	14.6
CB-5-2	A	51+43.1	4.9' LT	398.0	395.0	51+48.7	13.4' LT	398.0	395.0	10.2

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

RIPRAP SLOPE AND CHANNEL PROTECTION - CLASS I: PP-4-1				
REFERENCE DETAIL	BEGIN STA	END STA	MATERIAL DEPTH (FT)	SQ YD
PP TYPE 1	40+15.4	40+45.2	1.6	34.8

HEAVY BACKFILL				
Start Sta	End Sta	Class 0	Bank Run Gravel	Subsoil
		CY	CY	CY
5+07.9	7+61.	1.62	3.23	11.32
7+61.	10+66.	2.49	4.99	17.46
10+66.	12+05.	2.22	4.44	15.54
40+00.	44+60.4	7.35	14.7	51.46
50+32.	52+08.	0.33	0.65	2.28

Salvaged materials paid under Class 5 Excavation.
Furnish Class 0 and Bank Run as directed by Engineer

CLASS 5 EXCAVATION - MAINSTEM UPPER	
449	CY

COMMON BORROW - TRIB 4	
564	CY

CLASS 5 EXCAVATION - TRIBUTARY 4	
143	CY

COMMON BORROW - TRIB 5	
43	CY

CLASS 5 EXCAVATION - TRIBUTARY 5	
33	CY

FLOODPLAIN ROOTWAD #	REF POINT A		LOGS	ROOT-WADS	IMBRIC-ATED (TON)
	STA	OFFSET			
FPW-1-2	5+58.9	10.7' RT	1	1	1.2
FPW-1-3	6+14.3	10.1' LT	1	1	1.2
FPW-1-4	7+25.0	10.5' RT	1	1	1.2
FPW-1-5	7+87.5	9.5' LT	1	1	1.2
FPW-1-6	10+34.2	11.1' RT	1	1	1.2

RIFFLE #	RIFFLE GRADE CONTROL MATERIAL			BOULDERS
	DEPTH	VOLUME	MIX	
	FT	CY		EA
R-1-6	2.0	15.4	M-7	6
R-1-7	2.0	19.9	M-7	6
R-1-8	2.0	15.3	M-7	6
R-1-9	2.0	20.8	M-7	6
R-1-10	2.0	15.2	M-7	6
R-1-11	2.0	18.7	M-7	6
R-1-12	2.0	28.7	M-7	8
R-1-13	2.0	27.7	M-7	8
R-1-14	2.0	27.9	M-7	6
R-1-15	2.0	17.0	M-7	6
R-1-16	2.0	20.1	M-7	6
R-1-17	2.0	19.4	M-7	6
R-1-18	2.0	17.8	M-7	6
R-1-19	2.0	40.5	M-9	10
R-1-20	2.0	28.8	M-9	8
R-1-21	2.0	23.0	M-9	6
R-5-1	1.6	2.9	M-5	1
R-5-2	1.6	1.9	M-5	1
R-5-3	1.6	2.1	M-5	1
R-5-4	1.6	1.9	M-5	1
R-5-5	1.6	3.3	M-5	1
R-5-6	1.6	3.5	M-5	1
R-5-7	1.6	3.4	M-5	1
R-5-8	1.6	3.0	M-5	1

CASCADE #	CASCADE MATERIAL			RUN MATERIAL (RIPRAP)	
	DEPTH	VOLUME	MIX		
	FT	CY		CLASS	CY
C-4-1	2.0	17.8	M-9	-	0.0
C-4-2	2.0	24.3	M-9	-	0.0
C-4-3	2.0	17.1	M-9	II	2.4
C-4-4	2.0	24.9	M-9	-	0.0
C-4-5	2.0	22.6	M-9	II	2.4
C-4-6	2.0	24.9	M-9	-	0.0
C-4-7	2.0	25.0	M-9	II	2.4
C-4-8	2.0	24.8	M-9	-	0.0
C-4-9	2.0	23.5	M-9	-	0.0
C-4-10	2.0	31.7	M-9	II	2.4
C-4-11	2.0	20.1	M-9	II	2.4
C-4-12	2.0	35.7	M-9	-	0.0
C-4-13	2.0	32.9	M-9	II	2.4
C-4-14	2.0	34.3	M-9	II	2.4
C-4-15	2.0	17.3	M-9	II	6.1
C-5-1	2.0	2.4	M-7	II	1.3
C-5-2	2.0	2.4	M-7	II	1.3
C-5-3	2.0	3.4	M-7	II	1.3
C-5-4	2.0	3.4	M-7	II	1.3
C-5-5	2.0	6.9	M-7	II	1.3

BRUSH ARMOR #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	RIPRAP (CY)	
	STA	OFFSET	STA	OFFSET			CY	CLASS
BA-1-3*	5+07.9	1.75' LT	5+31.3	1.75' LT	401.1	398.1	8	II
BA-1-4	5+52.2	1.75' LT	5+77.9	1.75' LT	399.9	396.9	8.7	II
BA-1-5	6+02.4	1.75' RT	6+23.9	1.75' RT	398.8	395.8	7.4	II
BA-1-6	6+83.7	1.75' LT	7+05.1	1.75' LT	396.8	393.8	7.4	II
BA-1-7	7+61.6	2.25' RT	7+80.8	2.25' RT	395.1	392.1	6.7	II
BA-1-8	8+57.6	2.25' LT	8+76.7	2.25' LT	392.9	389.9	6.7	II
BA-1-9	10+45.2	3.00' RT	10+67.	3.00' RT	388.6	385.6	7.4	II
BA-1-10	11+48.9	3.00' LT	11+59.	3.00' LT	387.0	384.0	3.7	II
BA-1-11	11+68.3	3.00' LT	11+74.6	3.00' LT	387.0	384.0	2.4	II

*BA TIES INTO EXISTING BANK - ADJUST AS DIRECTED BY THE ENGINEER

STANDARD MANHOLE				
STR #	STA	OFFSET	INV. ELEV.	DIAMETER
MH-4-1	40+02.5	0.0' LT/ RT	405.30	60"

STANDARD TYPE C ENDWALL				
STR #	INV. STA	OFFSET	INV. ELEV.	PIPE SIZE
ESW-4-1	40+15.4	0.0' LT/ RT	405.00	36"

MATCHLINE – SEE SHEET SR-01

MATCHLINE – SEE SHEET SR-03

MATCHLINE SEE SHEET SW-08

BOARD OF EDUCATION OF HARFORD COUNTY
MAP 48, PARCEL 250
L. 924, FOLIO 588
4200995 S.F. <or> 96.4416 AC.

UNSURVEYED AREA

GLENN & NANCY GEALY
2011 MILL DALE COURT
MAP 48, PARCEL 320
LOT 11 - P.B. 100, PLAT 46
L. 2522, F. 124

PINNACLE DESIGN DEVELOPMENT INC.
1999 MILL DALE COURT
MAP 48, PARCEL 320
LOT 7 - P.B. 208, PLAT 49
L. 13659, F. 69

E 1418747
N 675595
E 1418975
N 676136

LD-1-1
STA: 8+53.9
OFFSET: 13.5' LT
ELEV A: 394.7

30' 0 30' 60'
SCALE: 1"=30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY
PR-A01 - PR-A09: RIFFLE & CASCADE ELEV.
SW-01: STORMDRAIN & OUTFALL STRUCTURES

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

PROFESSIONAL CERTIFICATION

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 32 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SR-02 Of SR-07

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$
BID No.:
HCG DWG ID No.:
SCALE: 1"=30'

HEAVY BACKFILL				
Start Sta	End Sta	Class 0	Bank Run Gravel	Subsoil
		CY	CY	CY
12+05.	15+52.5	5.55	11.1	38.84
Salvaged materials paid under Class 5 Excavation. Furnish Class 0 and Bank Run as directed by Engineer				

MICRO POOL #	REF POINT		LENGTH	WIDTH	BOTTOM	DEPTH
	STA	OFFSET	LF	LF	LF	
			L	W	B	D
MP-1-5	12+47.7	12.2' RT	12	5	2.5	0.5
MP-1-6	14+08.9	12.1' LT	12	5	2.5	0.5

FLOODPLAIN ROOTWAD #	REF POINT A		LOGS	ROOT-WADS	IMBRIC-ATED (TON)
	STA	OFFSET			
FPW-1-7	15+17.9	11.9' LT	1	1	1.2

BRUSH ARMOR #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	RIPRAP (CY)	
	STA	OFFSET	STA	OFFSET			CY	CLASS
BA-1-12	12+35.	3.00' LT	12+61.	3.00' LT	385.8	382.8	8.7	II
BA-1-13	13+98.5	3.00' RT	14+22.4	3.00' RT	383.5	380.5	8	II
BA-1-14	14+64.7	3.00' LT	14+89.	3.00' LT	382.5	379.5	8.4	II

TOE WOOD #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	LENGTH (LF)
	STA	OFFSET	STA	OFFSET			
TW-1-13	12+90.3	3.00' RT	13+06.7	3.00' RT	385.2	382.3	17.0
TW-1-14	13+38.6	3.00' LT	13+55.2	3.00' LT	384.5	381.6	17.0
TW-1-15	15+06.3	3.00' RT	15+21.2	3.00' RT	382.1	379.2	15.0

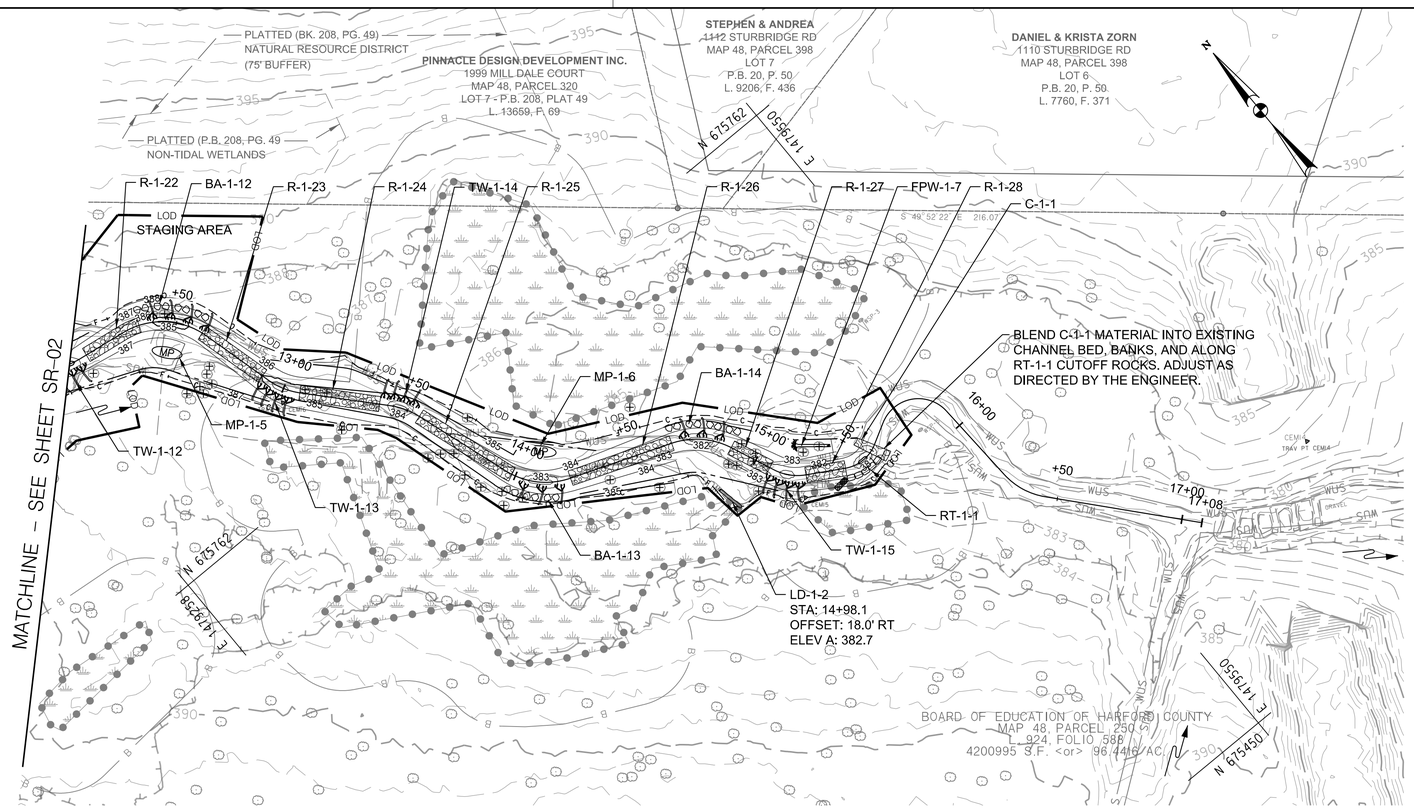
CHANNEL BED SAND AND GRAVEL		
BOUNDING STR #		VOLUME
US	DS	CY
R-1-21	R-1-22	5.5
R-1-22	R-1-23	8.3
R-1-23	R-1-24	5.4
R-1-24	R-1-25	5.5
R-1-25	R-1-26	7.2
R-1-26	R-1-27	7.4
R-1-27	R-1-28	4.6
R-1-28	C-1-1	4.9

RIFFLE #	RIFFLE GRADE CONTROL MATERIAL			BOULDERS
	DEPTH	VOLUME	MIX	
	FT	CY		EA
R-1-22	2.0	26.6	M-9	6
R-1-23	2.0	31.4	M-9	8
R-1-24	2.0	32.4	M-9	8
R-1-25	2.0	43.8	M-9	10
R-1-26	2.0	44.3	M-9	10
R-1-27	2.0	20.7	M-9	6
R-1-28	2.0	18.1	M-9	6

CASCADE #	CASCADE MATERIAL			RUN MATERIAL (RIPRAP)	
	DEPTH	VOLUME	MIX		
	FT	CY		CLASS	CY
C-1-1	2.0	3.1	M-9	-	0.0

ROCK TOE #	REF POINT A		REF POINT B		REF POINT C		ELEVATIONS		BOULDER TYPE	# OF U/S CUTOFF ROCKS	# OF D/S CUTOFF ROCKS	WEIGHT
	STA	OFFSET	STA	OFFSET	STA	OFFSET	TOP	MAX BOTTOM ELEV				TON
RT-1-1	15+37.1	6.0' RT	15+43.3	6.0' RT	15+49.5	6.0' RT	381.6	377.7	1	2	0	7.6

LOG DROP #	LOGS		GRADE CONTROL MATERIAL			CLAY BLOCK
	NO.	MIN LENGTH	MIX	WIDTH (FT)	CY	CY
LD-1-2	1.0	12.0	M-9	6.0	1.8	0.9



NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE GRADE WITHIN ACCESS PATH TO TRAVERSE REMAINING STUMPS AS NECCESSARY.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
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TI-01 - TI-11: TREE INVENTORY
PR-A01 - PR-A09: RIFFLE & CASCADE ELEV.
SW-01: STORMDRAIN & OUTFALL STRUCTURES

30' 0 30' 60'
SCALE: 1" =30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.

Scale : 1" = 30'
Date : AUGUST 2023

Drawing No. 33 Of 124

Sheet No. SR-03 Of SR-07

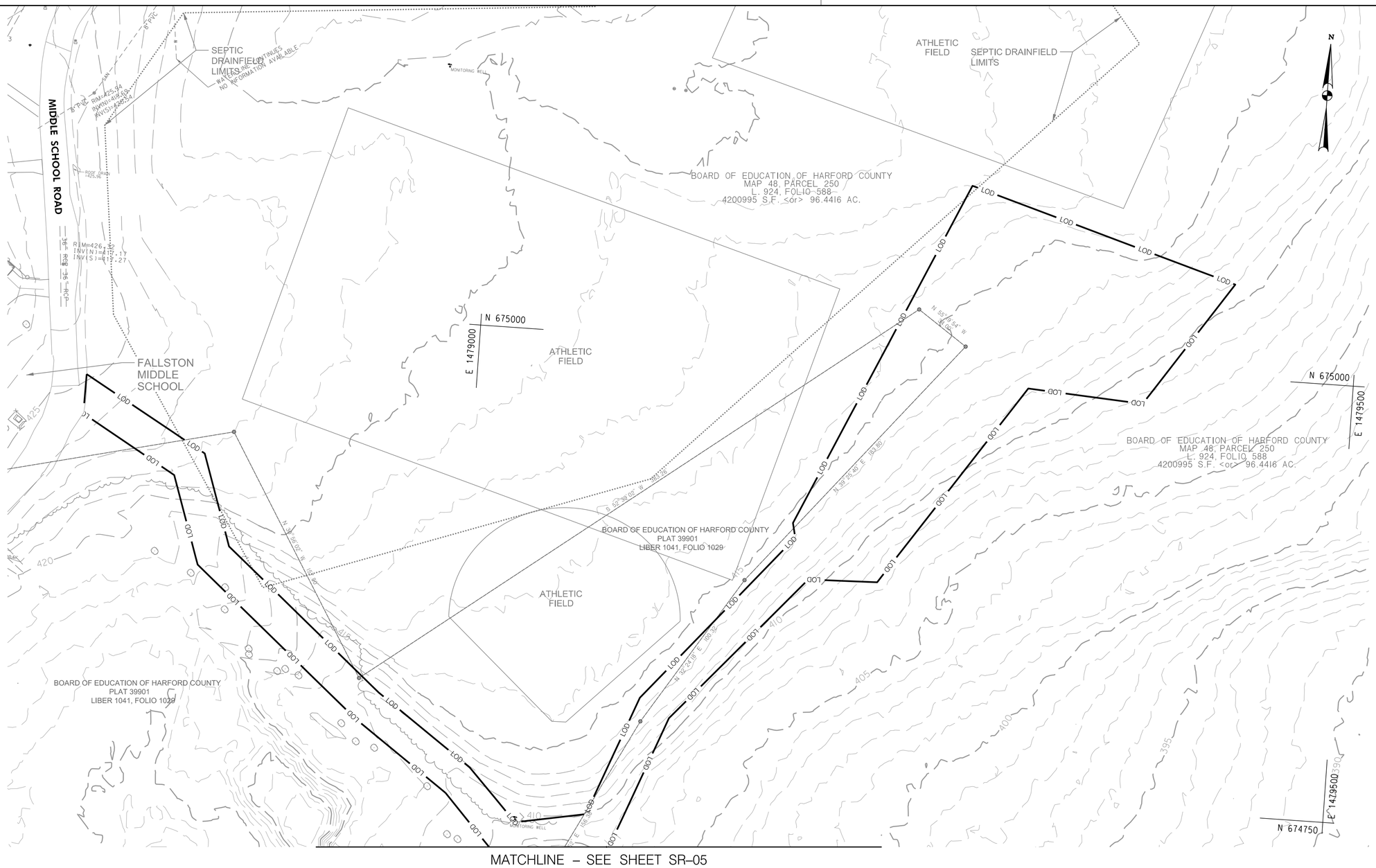
BID No.:

HCG DWG ID No.:

SCALE: 1" = 1 inch

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-P003_Fallston.dgn



MATCHLINE – SEE SHEET SR-05

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE GRADE WITHIN ACCESS PATH TO TRAVERSE REMAINING STUMPS AS NECCESSARY.

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BALTIMORE, MD 21202
(410) 727-5050

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SW-01: STORMDRAIN & OUTFALL STRUCTURES

30' 0 30' 60'
SCALE: 1" =30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 34 Of 124

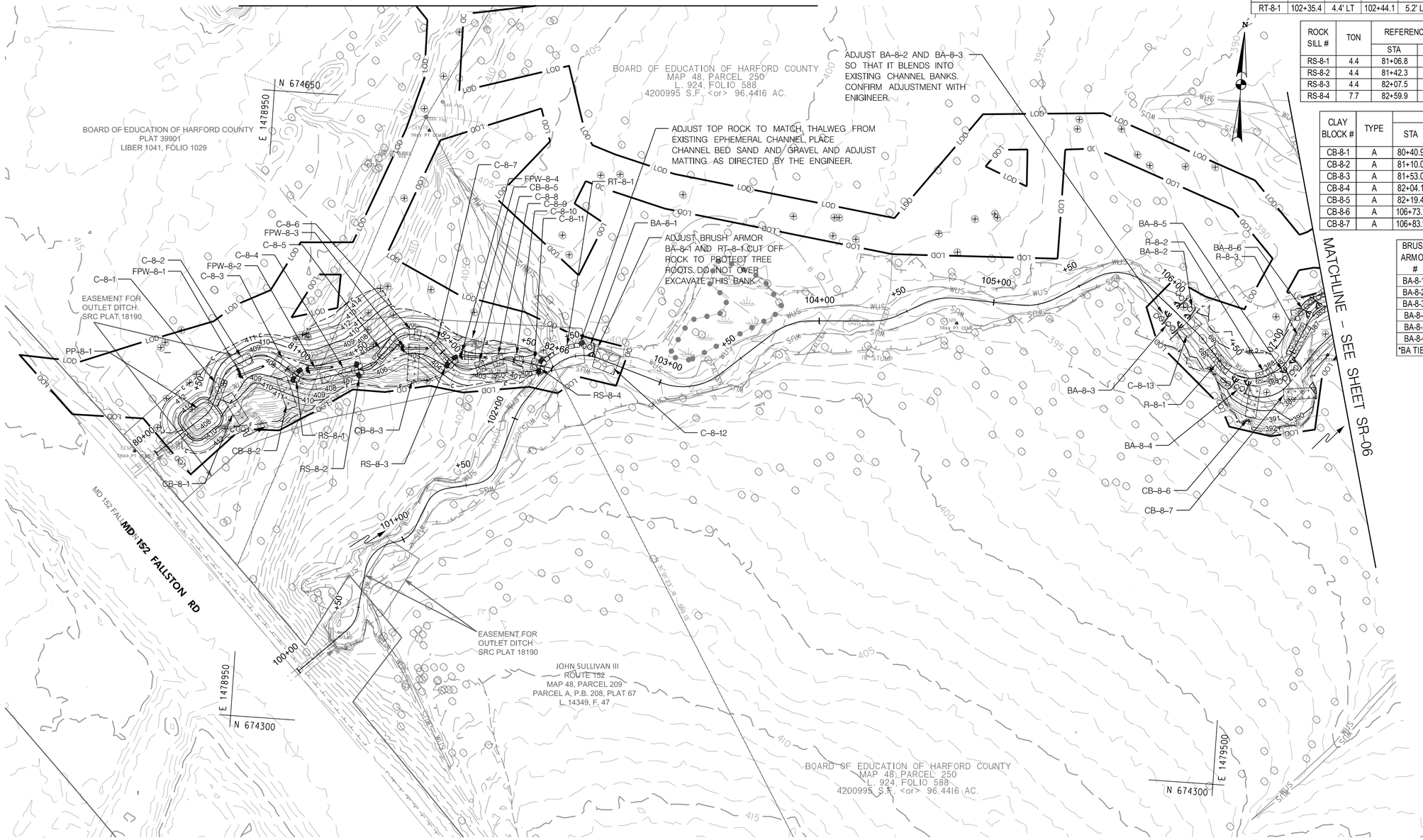
Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SR-04 Of SR-07

BID No.:

HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-P004_Fallston.dgn



ROCK TOE #	REF POINT A STA	REF POINT A OFFSET	REF POINT B STA	REF POINT B OFFSET	REF POINT C STA	REF POINT C OFFSET	REF POINT C TOP	REF POINT C MAX BOTTOM ELEV	BOULDER TYPE	# OF U/S CUTOFF ROCKS	# OF D/S CUTOFF ROCKS	WEIGHT TON
RT-8-1	102+35.4	4.4' LT	102+44.1	5.2' LT	102+52.8	5.9' LT	398.0	394.4	2	0	1	11.9

ROCK SILL #	TON	REFERENCE POINT STA	REFERENCE POINT ELEV	CONFIG	BOULDER TYPE	THALWEG DEPTH A	CUTOFF OFFSET B	KEY IN DISTANCE C	DROP 1 D	DROP 2 E
RS-8-1	4.4	81+06.8	406.5	A	1	0.3	0.5	5.0	0.5	--
RS-8-2	4.4	81+42.3	405.4	A	1	0.3	0.5	5.0	0.5	--
RS-8-3	4.4	82+07.5	402.6	A	1	0.3	0.5	5.0	0.5	--
RS-8-4	7.7	82+59.9	398.1	A	2	0.3	0.5	5.0	0.7	--

CLAY BLOCK #	TYPE	REF POINT A STA	REF POINT A OFFSET	REF POINT A TOP ELEV	REF POINT A BOTTOM ELEV	REF POINT B STA	REF POINT B OFFSET	REF POINT B TOP ELEV	REF POINT B BOTTOM ELEV	VOLUME CY
CB-8-1	A	80+40.9	19.9' RT	409.0	402.0	80+49.8	5.6' RT	409.0	402.0	57.0
CB-8-2	A	81+10.0	17.5' RT	407.0	401.0	81+03.3	6.1' RT	407.0	401.0	45.0
CB-8-3	A	81+53.0	15.1' RT	404.0	400.0	81+62.7	7.0' RT	404.0	400.0	18.6
CB-8-4	A	82+04.1	15.6' RT	403.0	399.0	81+93.5	5.7' RT	403.0	399.0	23.5
CB-8-5	A	82+19.4	5.7' LT	402.0	398.0	82+24.2	15.1' LT	402.0	398.0	14.7
CB-8-6	A	106+73.2	4.4' RT	387.0	386.0	106+71.3	21.7' RT	387.0	386.0	5.8
CB-8-7	A	106+83.9	13.7' RT	387.0	384.0	106+92.3	23.8' RT	387.0	384.0	18.2

BRUSH ARMOR #	REF POINT A STA	REF POINT A OFFSET	REF POINT B STA	REF POINT B OFFSET	ELEV	MAX BOTTOM ELEV	RIPRAP (CY) CY	RIPRAP (CY) CLASS
BA-8-1*	102+52.8	5.90' LT	102+69.	5.90' LT	397.5	394.5	5.7	II
BA-8-2*	106+01.9	4.50' LT	106+22.	3.00 ' LT	389.1	386.1	7	II
BA-8-3*	106+01.9	4.50' RT	106+22.	3.00' RT	389.1	386.1	7	II
BA-8-4	106+57.6	3.00' RT	106+73.9	3.00' RT	387.8	384.8	5.7	II
BA-8-5	106+84.2	3.00' RT	106+98.1	3.00' RT	387.2	384.2	4.7	II
BA-8-6	107+17.1	3.00' LT	107+38.8	3.00' LT	386.2	383.2	7.4	II
*BA TIES INTO EXISTING BANK - ADJUST AS DIRECTED BY THE ENGINEER								

RIPRAP SLOPE AND CHANNEL PROTECTION - CLASS I: PP-8-1				
REFERENCE DETAIL	BEGIN STA	END STA	MATERIAL DEPTH (FT)	SQ YD
PP TYPE 1	80+19.8	80+42.	1.6	34.8

FLOODPLAIN ROOTWAD #	REF POINT A STA	REF POINT A OFFSET	LOGS	ROOT-WADS	IMBRIC-ATED (TON)
FPW-8-1	80+69.5	6.4' RT	1	1	1.2
FPW-8-2	81+15.1	5.7' LT	1	1	1.2
FPW-8-3	81+71.8	7.0' RT	1	1	1.2
FPW-8-4	82+11.7	7.0' LT	1	1	1.2

CASCADE #	CASCADE MATERIAL DEPTH FT	CASCADE MATERIAL VOLUME CY	CASCADE MATERIAL MIX	RUN MATERIAL (RIPRAP) CLASS	RUN MATERIAL (RIPRAP) CY
C-8-1	2.0	17.8	M-9	II	1.9
C-8-2	2.0	15.3	M-9	II	1.9
C-8-3	2.0	21.6	M-9	-	0.0
C-8-4	2.0	24.2	M-9	-	0.0
C-8-5	2.0	16.4	M-9	II	1.9
C-8-6	2.0	9.1	M-9	II	1.9
C-8-7	2.0	21.9	M-9	-	0.0
C-8-8	3.0	7.2	M-15	III	3.9
C-8-9	3.0	9.4	M-15	III	3.9
C-8-10	3.0	7.2	M-15	III	3.9
C-8-11	3.0	6.0	M-15	-	0.0
C-8-12	2.0	16.6	M-9	-	0.0
C-8-13	2.0	27.1	M-9	II	3.1

RIFFLE #	RIFFLE GRADE CONTROL MATERIAL DEPTH FT	RIFFLE GRADE CONTROL MATERIAL VOLUME CY	RIFFLE GRADE CONTROL MATERIAL MIX	BOULDERS EA
R-8-1	2.0	18.6	M-7	6
R-8-2	2.0	13.2	M-7	6
R-8-3	2.0	22.2	M-7	8

CHANNEL BED SAND AND GRAVEL		
BOUNDING STR #		VOLUME
US	DS	CY
R-8-1	R-8-2	4.2
R-8-2	R-8-3	3.2
R-8-3	R-8-4	4.7

CLASS 5 EXCAVATION - TRIBUTARY 8 REACH 1	
356	CY

HEAVY BACKFILL				
Start Sta	End Sta	Class 0	Bank Run Gravel	Subsoil
		CY	CY	CY
80+20.7	82+59.9	1.06	2.13	7.44
102+35.4	102+69.	0.34	0.69	2.41
106+25.3	107+33.	1.11	2.21	7.74
Salvaged materials paid under Class 5 Excavation. Furnish Class 0 and Bank Run as directed by Engineer				

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30' 0 30' 60'
SCALE: 1" = 30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

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BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 35 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SR-05 Of SR-07

BID No.:

HCG DWG ID No.:

SCALE: 1" = 1'HGT

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-P005_Fallston.dgn

BRUSH ARMOR #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	RIPRAP (CY)	
	STA	OFFSET	STA	OFFSET			CY	CLASS
BA-8-7	107+94.7	3.00' RT	108+19.1	3.00' RT	384.2	381.2	8.4	II
BA-8-8	108+38.8	3.00' LT	108+59.8	3.00' LT	383.2	380.2	7	II
BA-8-9	108+90.3	3.00' RT	109+17.6	3.00' RT	381.6	378.6	9.4	II
BA-8-10*	109+67.4	3.00' LT	109+90.	5.5' LT	380.7	377.7	7.7	II
BA-8-11*	109+67.4	3.00' RT	109+95.	8.5' RT	380.7	377.7	9.4	II
BA-8-12*	110+95.	3.00' RT	111+10.	3.00' RT	377.2	374.2	5	II
BA-8-13*	110+94.3	5.00' LT	111+10.	3.00' LT	377.2	374.2	5.4	II
BA-12-1	92+15.2	2.00' RT	92+32.8	2.00' RT	387.1	384.6	5	II
BA-12-2	92+50.3	2.00' LT	92+66.8	2.00' LT	386.4	383.9	4.8	II
BA-12-3	92+90.2	2.00' RT	93+12.6	2.00' RT	385.5	383.0	6.4	II
BA-12-4	94+36.6	2.00' RT	94+57.4	2.00' RT	381.7	379.2	5.9	II
BA-12-5	94+84.0	2.00' LT	95+01.7	2.00' LT	380.8	378.3	5	II

*BA TIES INTO EXISTING BANK - ADJUST AS DIRECTED BY THE ENGINEER

CLASS 5 EXCAVATION - TRIBUTARY 8 REACH 3	
111	CY

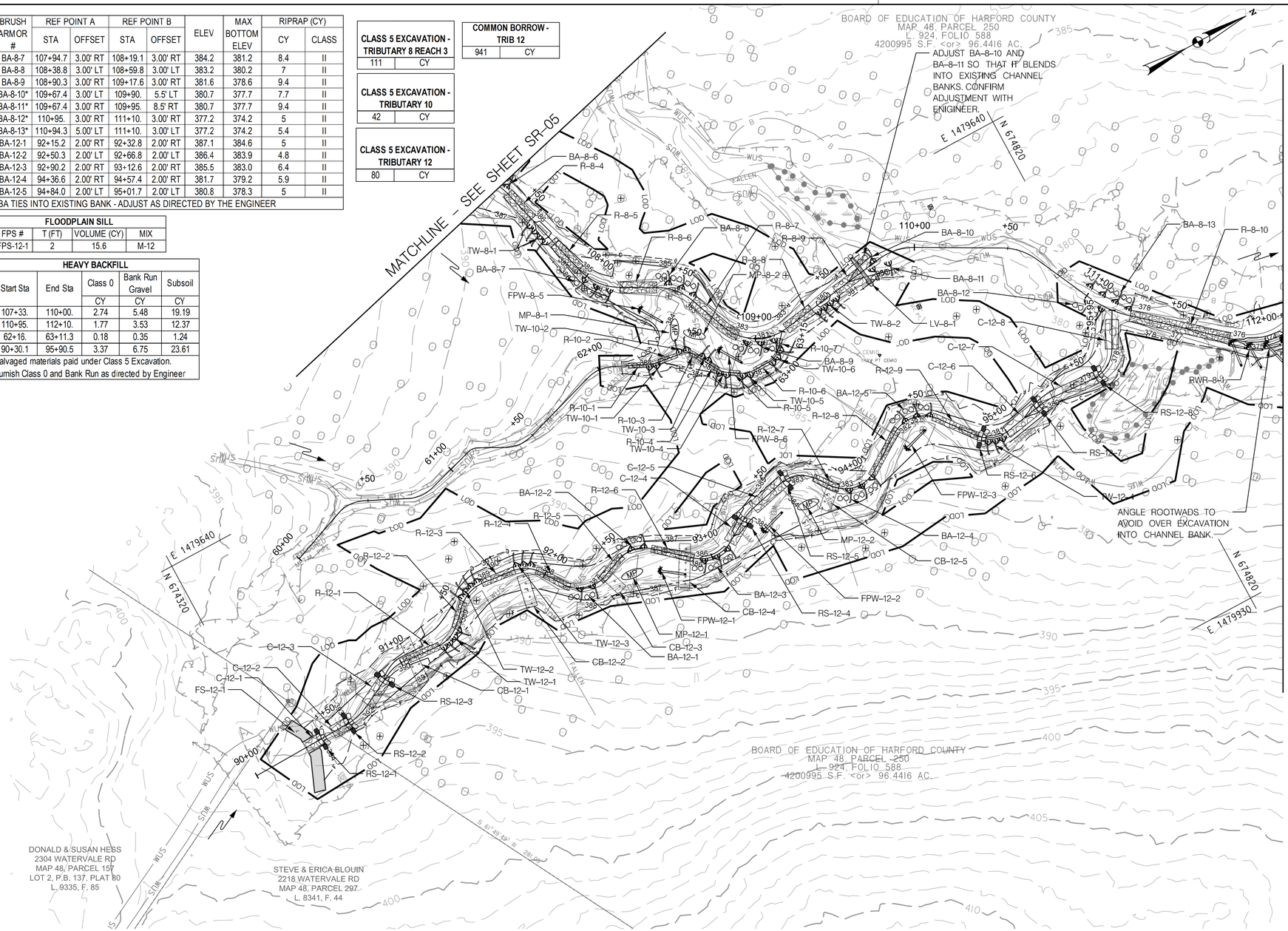
CLASS 5 EXCAVATION - TRIBUTARY 10	
42	CY

CLASS 5 EXCAVATION - TRIBUTARY 12	
80	CY

COMMON BORROW - TRIB 12	
941	CY

FLOODPLAIN SILL			
FPS #	T (FT)	VOLUME (CY)	MIX
FPS-12-1	2	15.6	M-12

HEAVY BACKFILL				
Start Sta	End Sta	Class 0	Bank Run Gravel	Subsoil
		CY	CY	CY
107+33.	110+00.	2.74	5.48	19.19
110+95.	112+10.	1.77	3.53	12.37
62+16.	63+11.3	0.18	0.35	1.24
90+30.1	95+90.5	3.37	6.75	23.61
Salvaged materials paid under Class 5 Excavation. Furnish Class 0 and Bank Run as directed by Engineer				



ROCK SILL #	TON	REFERENCE POINT		CONFIG	BOULDER TYPE	THALWEG DEPTH	CUTOFF OFFSET	KEY IN DISTANCE	DROP 1	DROP 2
		STA	ELEV			A	B	C	D	E
RS-12-1	10.5	90+40.	393.2	B	2	0.2	0.5	5.0	0.7	--
RS-12-2	10.5	90+57.	391.8	B	2	0.2	0.5	5.0	0.7	--
RS-12-3	10.5	90+87.4	390.0	B	2	0.2	0.5	5.0	0.7	--
RS-12-4	10.5	93+26.	384.2	B	2	0.2	0.5	5.0	0.7	--
RS-12-5	12.6	93+55.9	383.0	B	2	0.2	0.5	5.0	0.7	0.7
RS-12-6	10.5	94+87.	380.5	B	2	0.2	0.5	5.0	0.7	--
RS-12-7	10.5	95+20.	379.5	B	2	0.2	0.5	5.0	0.7	--
RS-12-8	12.6	95+56.2	377.8	B	2	0.2	0.5	5.0	0.7	0.7

CLAY BLOCK #	TYPE	REF POINT A				REF POINT B				VOLUME
		STA	OFFSET	TOP ELEV	BOTTOM ELEV	STA	OFFSET	TOP ELEV	BOTTOM ELEV	CY
CB-12-1	B	91+06.7	14.8' RT	389.0	384.0	91+06.7	10.9' LT	389.0	384.0	29.4
CB-12-2	A	92+02.4	18.6' RT	387.5	382.0	91+87.0	3.5' RT	387.5	382.0	40.1
CB-12-3	B	92+36.0	11.9' RT	386.4	382.0	92+37.1	4.11' LT	386.4	382.0	26.3
CB-12-4	B	92+88.5	17.8' RT	385.4	381.0	92+83.8	6.5' LT	385.4	381.0	40.7
CB-12-5	B	93+85.2	13.3' RT	382.7	379.0	93+84.6	5.1' LT	382.7	379.0	24.0

TOE WOOD #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	LENGTH (LF)
	STA	OFFSET	STA	OFFSET			
TW-8-1	107+57.5	3.00' RT	107+73.5	3.00' RT	385.3	382.4	16.0
TW-8-2	109+34.9	3.00' RT	109+50.9	3.00' RT	380.7	377.8	16.0
TW-10-1	62+25.6	0.75' RT	62+32.5	0.75' RT	383.9	381.7	7.0
TW-10-2	62+43.2	0.75' LT	62+50.5	0.75' LT	383.7	381.5	8.0
TW-10-3	62+55.1	0.75' LT	62+62.6	0.75' LT	383.6	381.4	8.0
TW-10-4	62+67.7	0.75' RT	62+73.9	0.75' RT	383.5	381.3	7.0
TW-10-5	62+79.9	0.75' RT	62+87.8	0.75' RT	383.3	381.1	8.0
TW-10-6	62+96.5	0.75' RT	63+05.2	0.75' RT	382.4	380.2	9.0
TW-12-1	91+22.5	2.00' RT	91+35.1	2.00' RT	389.2	386.7	13.0
TW-12-2	91+50.1	2.00' LT	91+64.2	2.00' LT	388.6	386.1	15.0
TW-12-3	91+83.1	2.00' LT	91+95.	2.00' LT	387.9	385.4	12.0
TW-12-4	94+84.	2.00' RT	95+01.7	2.00' RT	380.8	378.3	18.0

CHANNEL BED SAND AND GRAVEL		
BOUNDING STR #		VOLUME
US	DS	CY
R-8-4	R-8-5	4.1
R-8-5	R-8-6	5.9
R-8-6	R-8-7	4.5
R-8-7	R-8-8	5.4
R-8-8	R-8-9	4.1
R-8-10	R-8-11	11.0
R-10-1	R-10-2	0.8
R-10-2	R-10-3	0.8
R-10-3	R-10-4	0.8
R-10-4	R-10-5	0.7
R-10-5	R-10-6	0.9
R-10-6	R-10-7	1.0
R-12-1	R-12-2	1.7
R-12-2	R-12-3	2.1
R-12-3	R-12-4	1.5
R-12-4	R-12-5	3.0
R-12-5	R-12-6	2.7
R-12-6	C-12-4	20.0
R-12-7	R-12-8	3.5
R-12-8	R-12-9	3.9
R-12-9	C-12-6	3.0

FLOODPLAIN ROOTWAD #	REF POINT A		LOGS	ROOT-WADS	IMBRIC-ATED (TON)
	STA	OFFSET			
FPW-8-5	108+31.2	12.5' RT	1	1	1.2
FPW-8-6	108+86.8	11.2' RT	1	1	1.2
FPW-12-1	92+75.3	10.4' RT	1	1	1.2
FPW-12-2	96+30.6	12.5' RT	1	1	1.2
FPW-12-3	94+31.0	10.2' RT	1	1	1.2

MICRO POOL #	REF POINT		LENGTH	WIDTH	BOTTOM	DEPTH
	STA	OFFSET	LF	LF	LF	
			L	W	B	D
MP-8-1	108+59.8	17.2' RT	12	5	2.5	0.5
MP-8-2	108+72.3	13.8' RT	12	5	2.5	0.5
MP-12-1	92+46.4	10.6' RT	12	5	2.5	0.5
MP-12-2	93+77.1	14.0'RT	12	5	2.5	0.5

LOG VANE #	REF POINT A		MIN. LENGTH (FT)
	STA	ELEV	
LV-8-1	109+67.4	379.5	18.0

RIFFLE #	RIFFLE GRADE CONTROL MATERIAL			BOULDERS
	DEPTH	VOLUME	MIX	
	FT	CY		EA
R-8-4	2.0	22.0	M-7	8
R-8-5	2.0	24.2	M-7	8
R-8-6	2.0	24.2	M-7	8
R-8-7	2.0	35.1	M-7	10
R-8-8	2.0	22.0	M-7	8
R-8-9	2.0	18.7	M-7	8
R-8-10	2.0	58.0	M-12	14
R-10-1	2.0	5.8	M-5	1
R-10-2	2.0	5.1	M-5	1
R-10-3	2.0	2.2	M-5	1
R-10-4	2.0	2.5	M-5	1
R-10-5	2.0	2.9	M-5	1
R-10-6	2.0	4.2	M-5	1
R-10-7	2.0	3.0	M-5	1
R-12-1	2.0	13.7	M-9	6
R-12-2	2.0	11.6	M-9	6
R-12-3	2.0	13.8	M-9	6
R-12-4	2.0	14.6	M-9	6
R-12-5	2.0	13.0	M-9	6
R-12-6	2.0	16.5	M-9	6
R-12-7	2.0	11.4	M-9	6
R-12-8	2.0	19.8	M-9	8
R-12-9	2.0	18.4	M-9	8

CASCADE #	CASCADE MATERIAL			RUN MATERIAL (RIPRAP)	
	DEPTH	VOLUME	MIX	CLASS	CY
	FT	CY			
C-12-1	2.0	8.0	M-12	-	0.0
C-12-2	2.0	8.3	M-12	-	0.0
C-12-3	2.0	13.4	M-12	-	0.0
C-12-4	3.0	20.1	M-12	-	0.0
C-12-5	2.0	17.1	M-12	-	0.0
C-12-6	2.0	17.4	M-12	-	0.0
C-12-7	2.0	20.7	M-12	-	0.0
C-12-8	2.0	12.9	M-12	II	0.0

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING. CONTRACTOR SHALL MAKE . ADJUSTMENTS TO THE GRADE WITHIN ACCESS PATH TO TRAVERSE REMAINING STUMPS AS NECCESSARY.

ROOTWAD REVETMENT #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	No. ROOTWADS	Footer LOGS	IMBRICATED (TON)
	STA	OFFSET	STA	OFFSET					
RWR-8-1	111+80.4	3.00' RT	112+17.2	3.00' RT	375.4	372.27	8	5	9.6

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

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PR-A01 - PR-A09: RIFFLE & CASCADE ELEV.
SW-01: STORMDRAIN & OUTFALL STRUCTURES

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX. EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 36 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SR-06 Of SR-07

BID No.:

HCG DWG ID No.:

BY: tetrickr –

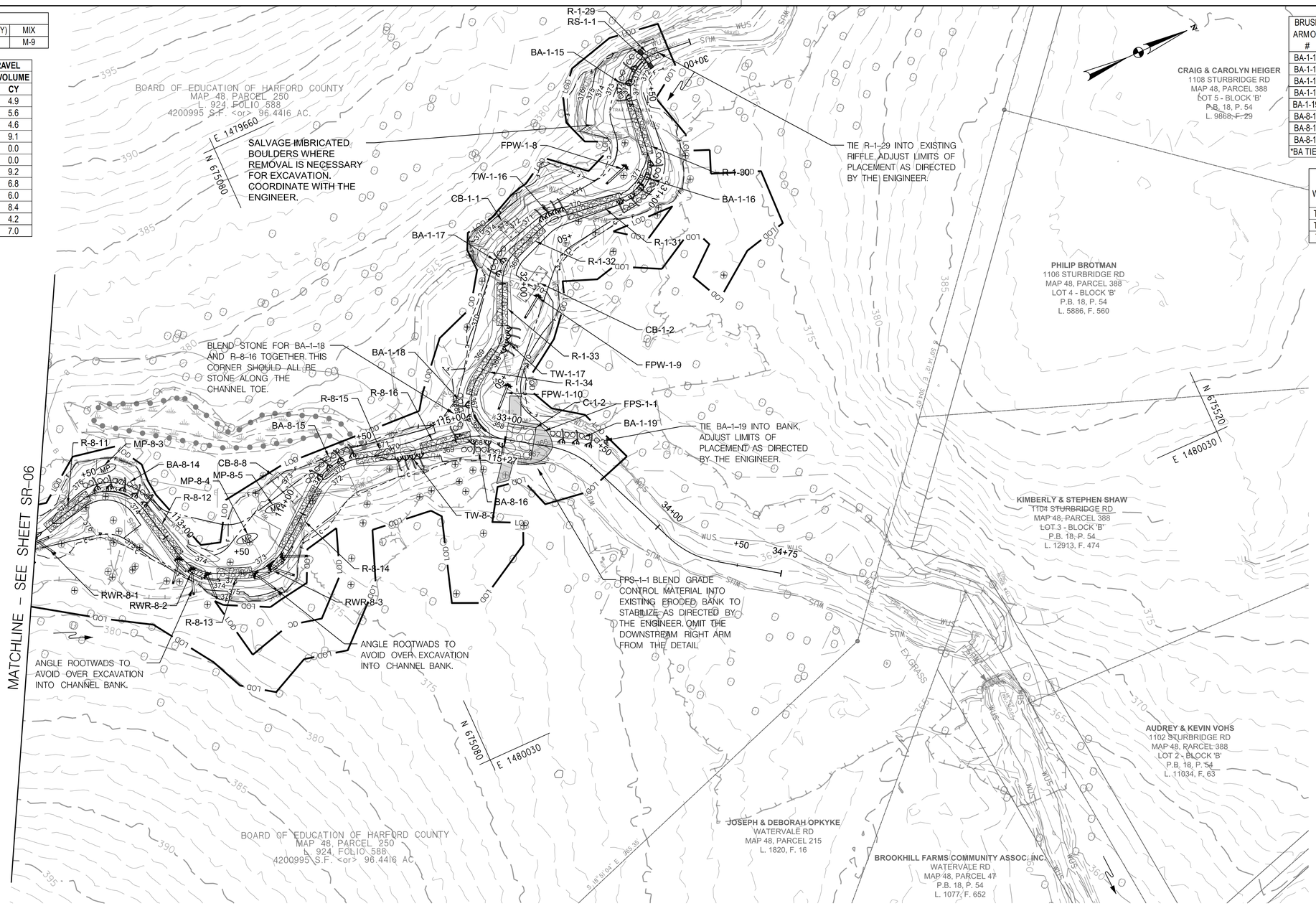
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-P006_Fallston.dgn

FLOODPLAIN SILL			
FPS #	T (FT)	VOLUME (CY)	MIX
FPS-1-1	2	28.6	M-9

CHANNEL BED SAND AND GRAVEL		
BOUNDING STR #		VOLUME
US	DS	CY
R-1-29	R-1-30	4.9
R-1-30	R-1-31	5.6
R-1-31	R-1-32	4.6
R-1-32	R-1-33	9.1
R-1-33	R-1-34	0.0
R-1-34	C-1-1	0.0
R-8-11	R-8-12	9.2
R-8-12	R-8-13	6.8
R-8-13	R-8-14	6.0
R-8-14	R-8-15	8.4
R-8-15	R-8-16	4.2
R-8-16	C-1-1	7.0

CLASS 5 EXCAVATION - TRIBUTARY 8 REACH 4	
69	CY

CLASS 5 EXCAVATION - MAINSTEM LOWER	
169	CY



BRUSH ARMOR #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	RIPRAP (CY)	
	STA	OFFSET	STA	OFFSET			CY	CLASS
BA-1-15	30+25.9	3.00' RT	30+52.	3.00' RT	370.7	367.5	9.6	II
BA-1-16	30+82.7	3.00' LT	31+14.2	3.00' LT	370.2	367.0	11.4	II
BA-1-17	31+82.6	3.00' RT	31+99.3	3.00' RT	368.8	365.6	6.1	II
BA-1-18	32+65.5	3.00' RT	32+81.5	5.00' RT	367.2	364.0	5.7	II
BA-1-19*	33+15.6	4.50' LT	33+50.	6.50' LT	366.3	362.8	13.7	II
BA-8-14	112+46.3	3.00' LT	112+79.5	3.00' LT	374.1	370.9	12.1	II
BA-8-15	114+16.4	3.00' RT	114+43.9	3.00' RT	370.9	367.7	10	II
BA-8-16	115+08.5	3.00' RT	115+27.5	4.50' RT	367.2	364.0	6.8	II

*BA TIES INTO EXISTING BANK - ADJUST AS DIRECTED BY THE ENGINEER

TOE WOOD #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	LENGTH (LF)
	STA	OFFSET	STA	OFFSET			
TW-1-16	31+44.8	3.00' RT	31+60.2	3.00' RT	369.4	366.3	16.0
TW-1-17	32+23.	3.00' LT	32+37.8	3.00' LT	368.2	365.1	15.0
TW-8-3	114+65.6	3.00' RT	114+80.3	3.00' RT	369.4	366.3	15.0

MICRO POOL #	REF POINT		LENGTH	WIDTH	BOTTOM	DEPTH
	STA	OFFSET	LF	LF	LF	
			L	W	B	D
MP-8-3	112+56.6	12.5' LT	12	5	2.5	0.5
MP-8-4	113+59.5	18.7' LT	12	5	2.5	0.5
MP-8-5	113+95.9	14.5' LT	12	5	2.5	0.5

RIFFLE #	RIFFLE GRADE CONTROL MATERIAL			BOULDERS
	DEPTH	VOLUME	MIX	
	FT	CY		EA
R-1-29	2.0	4.8	M-9	0
R-1-30	2.0	38.0	M-9	8
R-1-31	2.0	33.8	M-9	8
R-1-32	2.0	23.8	M-9	8
R-1-33	2.0	25.0	M-9	8
R-1-34	2.0	32.3	M-9	10
R-8-11	2.0	35.2	M-12	10
R-8-12	2.0	37.2	M-12	12
R-8-13	2.0	23.9	M-12	8
R-8-14	2.0	40.6	M-12	12
R-8-15	2.0	24.6	M-12	8
R-8-16	2.0	30.4	M-12	10

CASCADE #	CASCADE MATERIAL			RUN MATERIAL (RIPRAP)	
	DEPTH	VOLUME	MIX		
	FT	CY		CLASS	CY
C-1-2	2.0	39.2	M-9	II	0.0

FLOODPLAIN ROOTWAD #	REF POINT A		LOGS	ROOT-WADS	IMBRIC-ATED (TON)
	STA	OFFSET			
FPW-1-8	30+96.8	12.6' RT	1	1	1.2
FPW-1-9	32+08.0	19.1' LT	1	1	1.2
FPW-1-10	31+51.3	16.5' LT	1	1	1.2

HEAVY BACKFILL				
Start Sta	End Sta	Class 0	Bank Run Gravel	Subsoil
		CY	CY	CY
112+10.	115+27.5	4.88	9.76	34.15
30+18.7	33+50.	5.29	10.58	37.03
Salvaged materials paid under Class 5 Excavation. Furnish Class 0 and Bank Run as directed by Engineer				

ROOTWAD REVETMENT #	REF POINT A		REF POINT B		ELEV	MAX BOTTOM ELEV	No. ROOTWADS	Footer LOGS	IMBRICATED (TON)
	STA	OFFSET	STA	OFFSET					
RWR-8-2	113+12.3	3.00' RT	113+36.4	3.00' RT	373.0	369.9	5	4	6
RWR-8-3	113+55.8	3.00' RT	113+78.2	3.00' RT	372.2	369.07	5	3	6

CLAY BLOCK #	TYPE	REF POINT A				REF POINT B				VOLUME
		STA	OFFSET	TOP ELEV	BOTTOM ELEV	STA	OFFSET	TOP ELEV	BOTTOM ELEV	CY
CB-1-1	A	31+75.3	16.7' RT	369.0	366.0	31+75.0	5.4' RT	369.0	366.0	11.3
CB-1-2	A	32+08.4	10.5' LT	369.0	367.0	31+75.4	17.4' LT	369.0	367.0	13.0
CB-8-8	A	114+05.5	5.8 LT	372.0	368.0	114+10.8	24.0' LT	372.0	368.0	27.4

ROCK SILL #	TON	REFERENCE POINT		CONFIG	BOULDER TYPE	THALWEG DEPTH	CUTOFF OFFSET	KEY IN DISTANCE	DROP 1	DROP 2
		STA	ELEV			A	B	C	D	E
RS-1-1	6	30+25.9	370.3	B	1	0.2	0.5	5.0	0.5	--

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
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(410) 727-5050

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30' 0 30' 60'
SCALE: 1" = 30'

BILLING NO. 97069

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Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
STREAM RESTORATION PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 37 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SR-07 Of SR-07

BID No.:
HCG DWG ID No.:
SCALE: 1" = 30'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-P007_Fallston.dgn

CHANNEL BED SAND AND GRAVEL

1. A MIXTURE OF SAND AND GRAVEL PLACED AT SPECIFIED LOCATIONS TO LINE THE CHANNEL BED WITHIN POOLS, AND TO SEAL RIFFLES, CASCADES, AND OTHER IN-STREAM GRADE CONTROL STRUCTURES SPECIFIED THROUGHOUT THESE CONTRACT DOCUMENTS FROM PIPING FLOWS BENEATH OR THROUGH THE STRUCTURES. SAND AND GRAVEL MAY BE SALVAGED FROM THE EXISTING CHANNEL BED OR FURNISHED.
2. FOR SALVAGED CHANNEL BED SAND AND GRAVEL, EXCAVATE AND STOCKPILE SALVAGED SAND AND GRAVEL FROM WITHIN THE LIMITS OF DISTURBANCE AND THE ACTIVE CONSTRUCTION STAGE. SUITABLE MATERIALS WILL CONSIST OF GRAVEL, SAND, AND SILT SOILS. SOILS WITH VISIBLY NOTED FRACTIONS OF CLAY OR ORGANIC SILT ARE NOT APPROPRIATE. SUITABLE SALVAGED MATERIALS SHOULD HAVE LITTLE TO NO COHESION. GENERALLY, EXCAVATE MATERIAL FROM THE TOP 8 IN. OF STREAM RIFFLES AND THE TOP 12 IN. OF CHANNEL BARS. ADJUST LIMITS OF EXCAVATION BASED UPON THE SUITABILITY OF THE MATERIAL ENCOUNTERED.
3. FOR FURNISHED CHANNEL BED SAND AND GRAVEL, PROVIDE MATERIAL CONSISTING OF SAND AND GRAVEL WITH SOME NATURAL BED SILTS. THE MATERIAL COMPOSITION SHALL BE 20 PERCENT NATIVE CHANNEL SILT, 30 PERCENT GRAVEL WITH A SIZE DISTRIBUTION RANGING FROM A NO. 8 SIEVE UP TO 1 IN., AND 50 PERCENT SAND. THE SILT COMPONENT OF THE MIXTURE SHALL BE SALVAGED FROM CHANNEL AND STREAM BANK EXCAVATION MATERIALS DEEMED OTHERWISE UNSUITABLE AS SALVAGED CHANNEL BED SAND AND GRAVEL.
4. SALVAGED CHANNEL BED SAND AND GRAVEL AND FURNISHED CHANNEL BED SAND AND GRAVEL SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.

HEAVY BACKFILL NOTES

1. HEAVY BACKFILL IS A ROCK ENHANCED MIXTURE OF BACKFILL TO BE USED FOR BACKFILLING ABANDONED CHANNELS AND FOR THE CONSTRUCTION OF LOW CHANNEL BANKS AND FLOODPLAIN BENCHES THROUGHOUT THE STREAM LENGTH ALONG THE RESTORATION PROJECT.
2. HEAVY BACKFILL CONSISTS, BY VOLUME, OF 10% CLASS 0 RIPRAP, 20% BANK RUN GRAVEL-SUBBASE, AND 70% SALVAGED SUBSOIL MEETING THE REQUIREMENTS OF MDOT SHA STANDARD SPECIFICATION 920.01.03. SALVAGED SUBSURFACE SOIL MUST BE VISUALLY INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO USE IN THE HEAVY BACKFILL MIX. THE MIXTURE SHALL BE FIELD MIXED TO AN EVEN DISTRIBUTION OF MATERIALS. THE MIXTURE SHALL BE PLACED IN 12-INCH LIFTS AND SHALL BE THOROUGHLY COMPACTED USING THE EXCAVATOR BUCKET OR OTHER METHODS APPROVED BY THE ENGINEER TO A POINT WHERE THE SURFACE OF THE BACKFILL IS EVEN AND THERE ARE NO AREAS WHERE THE BACKFILL MATERIAL IS SLUMPING, TO MEET THE GRADES/SUBGRADES DEPICTED ON THE PLANS AND DETAILS.
3. SALVAGED SUBSURFACE SOIL WITH SIMILAR GRADATION DESCRIBED IN NOTE 2 MAY BE USED AS HEAVY BACKFILL. THE ENGINEER WILL VISUALLY INSPECT AND APPROVE USE OF 100% SALVAGED SUBSOIL. SUITABLE SALVAGED SUBSURFACE SOIL NOT MEETING THE STONE REQUIREMENT WILL HAVE STONE ADDED AS DESCRIBED IN NOTE 2.

WOODY DEBRIS NOTES

1. WOODY DEBRIS IS A MIXTURE OF BOUGHS, LIMBS, BRANCHES AND TWIGS FROM RECENTLY FELLED TREES AND SHRUBS. DIAMETER AND LENGTH OF WOODY DEBRIS MAY VARY BY APPLICATION. WOODY DEBRIS OF UNSPECIFIED SIZE SHALL RANGE IN DIAMETER FROM 1" TO 6" AND LENGTH FROM 18" TO 36".
2. STRIP LEAVES FROM BRANCHES PRIOR TO PLACEMENT UNLESS OTHERWISE NOTED.
3. WOODY DEBRIS SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.
4. WOODY DEBRIS SHALL BE SOURCED FROM HEALTHY, RECENTLY FELLED TREES.

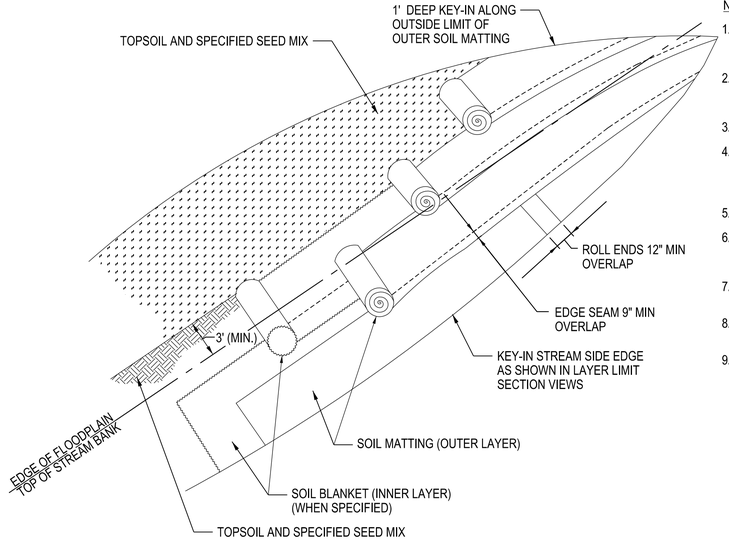
CLAY MATERIAL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SAMPLES AND ATTAIN WRITTEN APPROVAL PRIOR TO FURNISHING CLAY TO THE SITE.
2. CLAY MATERIAL FOR CLAY CHANNEL BLOCKS OPTION B SHALL CONFORM TO THE UNIFIED SOILS CLASSIFICATIONS GC, SC, CH OR CL. THE MATERIAL SHALL BE FREE OF WOOD, STONE, AND DEBRIS GREATER THAN 2 INCHES IN DIAMETER.
3. CLAY MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.

GRADE CONTROL MATERIAL NOTES

1. MATERIAL SHALL CONSIST OF A HARD DURABLE STONE MADE FROM A MIXTURE OF THE MATERIALS SHOWN IN THE GRADE CONTROL MATERIAL MIXES TABLE SHOWN IN THIS SHEET. STONE SHALL MEET REQUIREMENTS OF SECTION 901.
2. PROVIDE A MIXTURE FREE FROM OVERBURDEN, SPOIL, SHALE, SLATE AND ORGANIC MATERIAL. DO NOT FURNISH WHITE LIMESTONE, SANDSTONE, OR OTHER SEDIMENTARY ROCK.
3. PROVIDE STONE COLOR THAT IS SITE APPROPRIATE. DO NOT FURNISH WHITE, OR RED ROCK UNLESS SPECIFICALLY MENTIONED TO MATCH NATIVE CHANNEL MATERIAL.
4. WHEN USED AS A REPLACEMENT FOR STANDARD RIPRAP, SALVAGED STONE MUST BE APPROVED BY THE ENGINEER PRIOR TO USE.
5. THE NATIVE CHANNEL BED MATERIAL COMPONENT OF THE MIXTURE WILL BE RIFFLE AND GRAVEL BAR MATERIALS SALVAGED FROM THE CHANNEL. MATERIAL SIZE VARIES DEPENDING ON LOCATION AND IS GENERALLY IDENTIFIED AS THE COARSEST MATERIAL AVAILABLE IN THE STREAM. NATIVE CHANNEL BED MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.

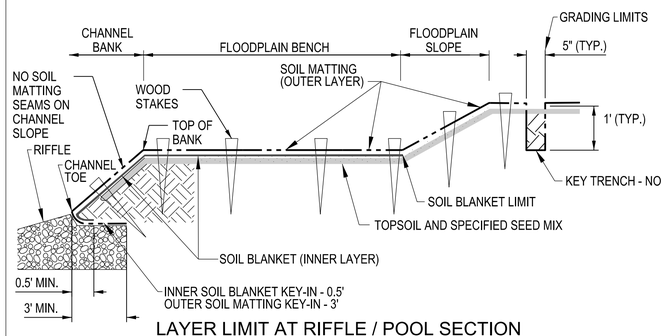
GRADE CONTROL MATERIAL MIXES								
MATERIAL MIX	NOMINAL STONE SIZE	NO. PARTS OF STONE/RIPRAP						TOTAL # PARTS
		SALVAGED BED MATERIAL*	MD #2	CLASS 0	CLASS I	CLASS II	CLASS III	
M-5	5-INCH	1	0	1	1	0	0	3
M-7	7-INCH	2	0	1	1	1	0	5
M-9	9-INCH	1	0	0	2	1	0	4
M-12	12-INCH	1	0	0	2	3	0	6
M-15	15-INCH	1	0	0	0	2	1	4
* IF NO NATIVE STREAMBED MATERIAL IS AVAILABLE, USE FURNISHED CHANNEL BED SAND AND GRAVEL MATERIAL								



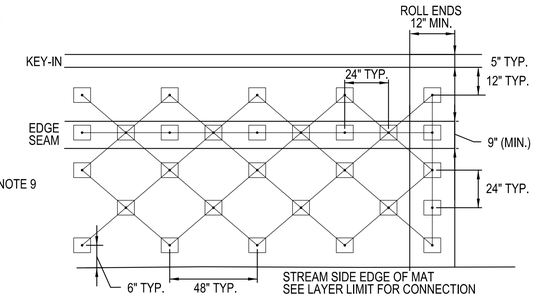
PERSPECTIVE VIEW

NOTES:

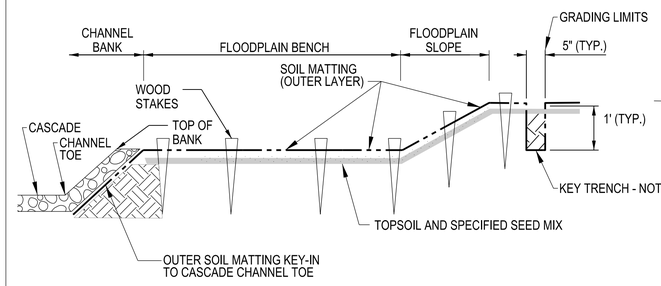
1. THE SOIL MATTING MATERIAL WILL BE USED THROUGHOUT THE PROJECT AS PERMANENT STABILIZATION MATTING. LIMITS ARE DEPICTED IN THE PERSPECTIVE VIEW, AND SECTION VIEW. THE SOIL MATTING WILL BE PLACED ATOP THE SOIL BLANKET.
2. THE SOIL BLANKET WILL BE APPLIED ALONG THE RIFFLE AND POOL SECTIONS WITH PLANTED SLOPES, KEYED-IN AS NOTED IN THE SECTION VIEW. THE SOIL BLANKET WILL BE PLACED ATOP THE TOPSOIL AND WILL BE COVERED BY THE SOIL MATTING.
3. THE SOIL MATTING AND SOIL BLANKET SHALL BE SECURED USING WOOD STAKES ARRANGED AS NOTED IN THIS DETAIL.
4. STREAM BANKS REQUIRING BOTH MATTING AND BLANKETS SHALL BE STABILIZED SAME DAY AS TOPSOIL/SEEDING APPLICATION. TEMPORARY MATTING WILL BE PROVIDED FOR MASS GRADING AREAS AND TIE-INS. SEE EROSION AND SEDIMENT CONTROL NOTES, PLANS, AND DETAILS FOR TEMPORARY STABILIZATION.
5. COVER ALL SPECIFIED TOPSOIL / SEED BED AREAS WITH STRAW MULCH EXCEPT IN AREAS WITH A DUAL TYPE D/E LAYER MATTING.
6. MATTING SHALL BE UNROLLED / PLACED ACROSS THE STREAM BANK SLOPE / PARALLEL TO THE TOE OF THE SLOPE. LAY MATTING SMOOTHLY UPON THE PREPARED SEED BED. AVOID STRETCHING OR BUNCHING OF MATTING.
7. INNER SOIL MATTING TO BE PLACED ON RIFFLE / POOL CHANNEL BANKS. KEY BENEATH THE TOE 6" AND EXTEND BEYOND THE TOP OF BANK 3 FEET AS NOTED.
8. OVERLAP EDGE SEAM OF OUTER AND INNER ROLLS BY 9 INCHES (MINIMUM) AND ROLL ENDS BY 12 INCHES (MINIMUM), WITH THE UP SLOPE MAT OVERLAPPING ON TOP OF THE DOWN SLOPE MAT.
9. THE UP SLOPE FACE OF MATTING SHALL BE KEYED IN 1 FOOT (MINIMUM) BY DIGGING A TRENCH, AND PLACING THE MATTING ROLL END IN THE TRENCH. CONTRACTOR SHALL KEEP MATTING FLUSH AGAINST SIDES OF TRENCH DURING INSTALLATION AND REPLACE THE EXCAVATED MATERIAL, AND TAMP TO SECURE THE MATTING END IN THE KEY TRENCH AS SHOWN ON THE PLAN.



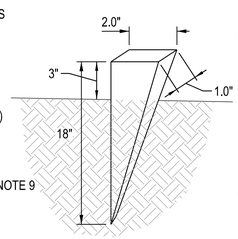
LAYER LIMIT AT RIFFLE / POOL SECTION



WOOD STAKING PLAN



LAYER LIMIT AT CASCADE SECTION



WOOD STAKES

CROSS REFERENCES:

1. SOIL MATTING (OUTER) - WOVEN COIR FABRIC - TYPE D SOIL STABILIZATION MATTING STANDARD SPECIFICATION 920.05.01(D)
2. SOIL BLANKET (INNER) - STRAW OR EXCELSIOR MATTING - TYPE E SOIL STABILIZATION MATTING STANDARD SPECIFICATION 920.05.01(E)
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LS-
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LS-
   C. TOPSOIL DEPTH AND LIMITS - LS-
   D. SEEDING AND PLANTING ZONES - LS-
4. SEE RIFFLE DETAIL FOR CHANNEL DIMENSIONS DE-02.
5. SEE CASCADE DETAIL FOR CHANNEL DIMENSIONS DE-03.

SOIL STABILIZATION MATTING (SSM) DETAIL

NOT TO SCALE

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(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By : C.A.B.	Scale : NOT TO SCALE
Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 38 Of 124	Sheet No. DE-A01 Of DE-A10

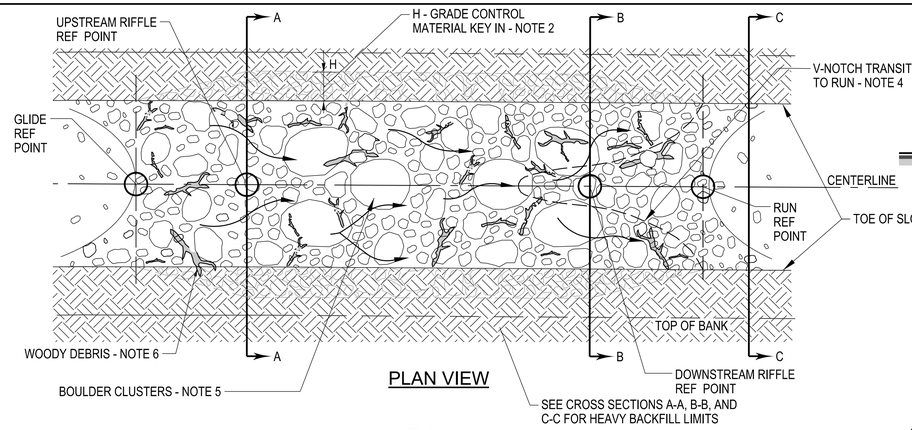
BID No.:

HCG DWG ID No.:

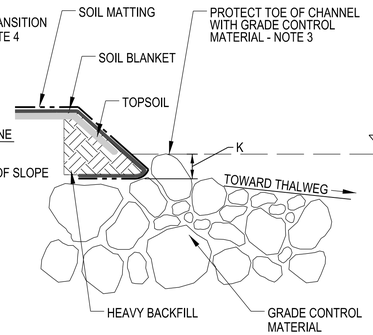
SCALE 1" = 1'-0"

BY: tetrickr –

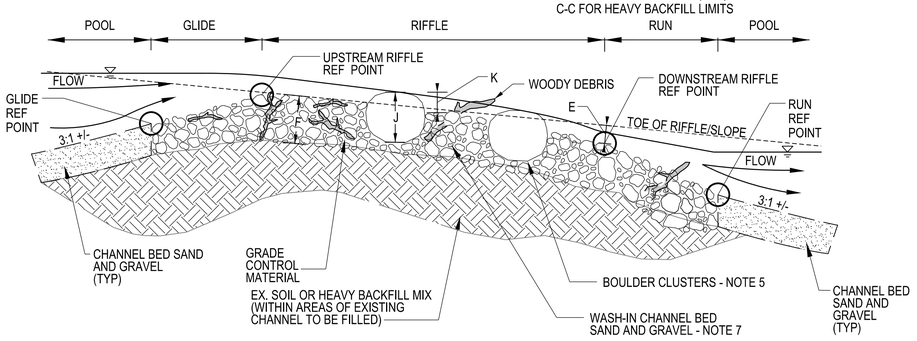
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D001_Fallston.dgn



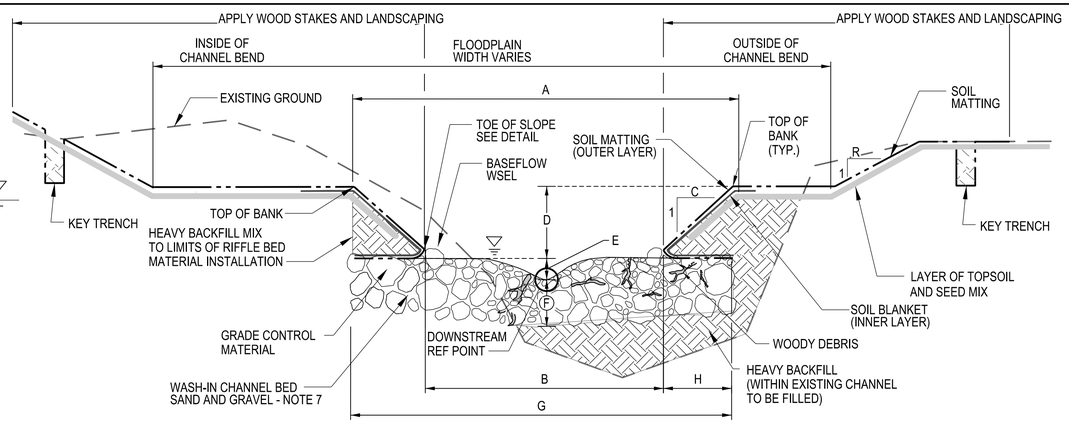
PLAN VIEW



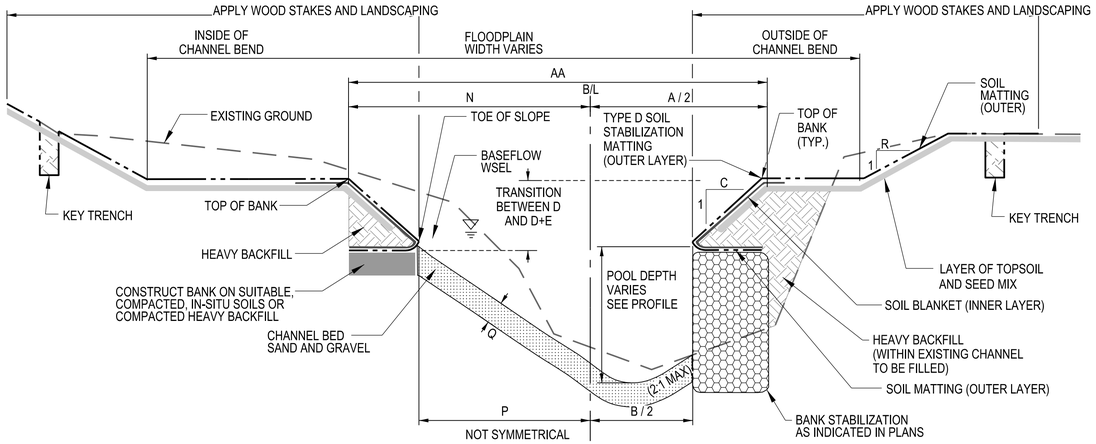
TOE OF SLOPE DETAIL



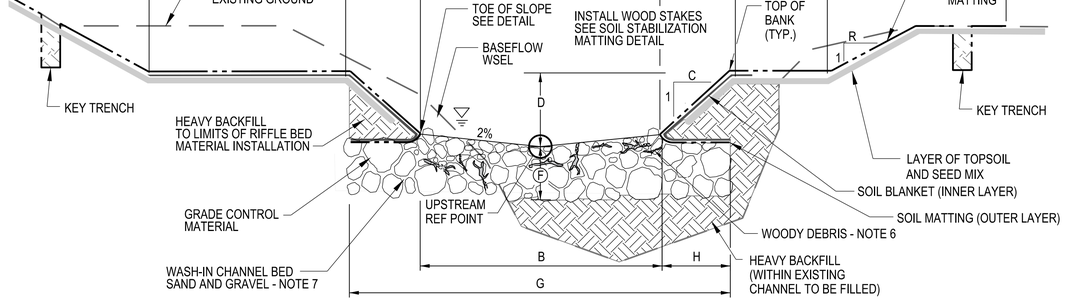
PROFILE VIEW



SECTION B-B TYPICAL RIFFLE-RUN TRANSITION



SECTION C-C TYPICAL RIFFLE CHANNEL POOL



SECTION A-A TYPICAL RIFFLE CROSS SECTION

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. WOODY DEBRIS - DE-01
   D. HEAVY BACKFILL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. SEE DETAILS FOR BANK STABILIZATION WITHIN POOLS
   A. BRUSH ARMOR - DE-06
   B. TOE WOOD - DE-06
   C. ROOT WAD REVETMENT - DE-08
   D. ROCK TOE - DE-04

NOTES:

1. RIFFLES SHALL BE CONSTRUCTED FOLLOWING THE THALWEG IN THE PROFILES SHEETS, REFERENCE POINTS INDICATED IN THE PLAN SHEETS, AND DIMENSIONS HEREIN. POOL, GLIDE, AND RUN EXTENTS ARE VARIABLE AND INDICATED IN THE PROFILE SHEETS OR ON THE REFERENCE POINTS IN THE PLAN SHEETS.
2. GRADE CONTROL MATERIAL EXTENDS BEYOND THE FINISHED CHANNEL BOTTOM INTO THE BANKS ALONG THE LENGTH OF THE RIFFLE AND TAPERS TO THE CHANNEL BOTTOM WIDTH WHERE IT CONTACTS THE POOLS AT THE RUNS AND GLIDES.
3. THE TOE OF BANK ALONG THE LENGTH OF THE RIFFLE SHALL BE PROTECTED BY EMBEDDING OR OTHERWISE SHAPING GRADE CONTROL MATERIAL TO PROTRUDE ABOVE THE CHANNEL BOTTOM AGAINST THE EDGE OF THE SOIL STABILIZATION MATTING TO THE ELEVATION OF THE BASEFLOW DEPTH, THE STONE WILL NOT BE PLACED LOOSELY BUT WILL BE PARTIALLY BURIED OR MECHANICALLY COMPACTED WITH THE REST OF THE GRADE CONTROL MATERIAL. THIS MAY NEED TO BE COMPLETED AFTER SHAPING AND MATTING THE CHANNEL BANKS.
4. V-NOTCH WILL BE GRADED WITHIN THE GRADE CONTROL MATERIAL ALONG THE CENTERLINES STARTING APPROXIMATELY 1/2-WAY DOWN THE RIFFLE TO TRANSITION FROM A FLAT CHANNEL BOTTOM TO A V SHAPE. THE TYPICAL DEPTH OF THE V-NOTCH IS NOTED IN THE DIMENSION TABLE AND SLOPE IS DEPICTED IN THE PROFILE.
5. BOULDER CLUSTERS ARE GROUPINGS OF LARGE RIPRAP. BOULDERS WILL MEET OR EXCEEDING THE AVERAGE SIZE OF THE RIPRAP CLASS SPECIFIED IN THE DIMENSION TABLE. BOULDER CLUSTERS MAY BE PLACED BEFORE GRADE CONTROL PLACEMENT BUT MUST BE BURIED AND PROTRUDE ABOVE GRADE CONTROL AS INDICATED IN THE DIMENSION TABLE. A BOULDER CLUSTER SHALL BE PLACED AT THE HEAD AND TAIL OF EACH RIFFLE. ADDITIONAL CLUSTERS SHALL BE EVENLY SPACED ALONG THE LENGTH OF THE RIFFLE WHERE INDICATED.
6. SET WOODY DEBRIS INTO RIFFLE DURING PLACEMENT OF GRADE CONTROL MATERIAL SO THAT A MINIMUM OF 50% OF EACH BRANCH IS BURIED IN STONE AND DOES NOT PROTRUDE 0.5' ABOVE THE RIFFLE SURFACE.
7. AFTER COMPLETING PLACEMENT OF THE GRADE CONTROL MATERIAL, CHANNEL BED SAND AND GRAVEL SHALL BE WASHED, HYDRAULICALLY, INTO THE MATERIAL TO PROVIDE CHOKING OF THE CHANNEL BED VOID SPACES. UPON OPENING OF THE CHANNEL SECTION TO NORMAL BASEFLOW, FLOW SHALL TRAVEL ALONG THE SURFACE OF THE RIFFLES WITH MINIMAL SUBSURFACE FLOW. IN THE EVENT OF SUBSTANTIVE SUBSURFACE FLOW, ADDITIONAL MATERIAL WASH-IN WILL BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING SUFFICIENT HYDRAULIC PRESSURE FOR WASH-IN PROCEDURE. INSTALLING GRADE CONTROL MATERIAL IN LIFTS BETWEEN WASHIN PROCEDEDURES MAY BE NECESSARY TO FULLY WASH-IN.
8. CHANNEL BANKS, FLOODPLAIN BENCHES, AND HIGH CHANNEL BANKS (I.E. BANKS THAT DO NOT INCLUDE FLOODPLAIN BENCHES) SHALL BE STABILIZED AS INDICATED IN THE SOIL STABILIZATION MATTING DETAIL AND IMPLEMENTED ALONG THE TOE OF THE CHANNEL BANK AND BENCH GRADING PRIOR TO PLACEMENT OF THE BACKFILL LIFTS TO ALLOW FOR PROPER KEY-IN DURING CONSTRUCTION OF THE BANK AND BENCH. THE MATTING SHALL BE SECURED WITH WOOD STAKES ACCORDING TO THE SOIL STABILIZATION MATTING DETAIL.
9. AN EVEN LAYER OF TOPSOIL SHALL BE PLACED ALONG THE STREAM BANKS AND BENCH TO BRING THE FINISHED SURFACE TO THE FINAL FLOODPLAIN AND UP TO LIMITS OF LOD LINE AND GRADE. TOPSOIL SHALL NOT BE PLACED ALONG THE LOWER STREAMBANK PORTION OF THE POOLS, RUNS, AND GLIDES THAT WILL BE BELOW THE BASEFLOW WATER SURFACE ELEVATION.
10. UPON COMPLETION OF GRADING ACTIVITIES, COMPLETE STABILIZATION PER SOIL STABILIZATION MATTING (SSM) DETAIL.

RIFFLE GRADE CONTROL (R) DETAIL (TYP.)

NOT TO SCALE

RIFFLE DIMENSIONS TABLES

ALIGNMENT	STATIONS START	STATIONS END	CHANNEL DIMENSIONS: TOP WIDTH A (FT)	BOTTOM WIDTH B (FT)	SIDE SLOPE C (:1)	DEPTH OF CHANNEL D (FT)	V- NOTCH DEPTH E (FT)	RIFFLE MATERIAL DIMENSIONS: MATERIAL MIX NO.	MINIMUM THICKNESS F (FT)	WIDTH G (FT)	KEY-IN H (FT)	BOULDER DIMENSIONS: MATERIAL SIZE I RIPRAP CLASS	PROTRUSION K (FT)	NO. PER CLUSTER L	CLUSTER PER RIFFLE M	POOL DIMENSIONS: POOL DEPTH (FT)	INSIDE TOP OF BANK OFFSET N (FT)	INSIDE TOE OFFSET P (FT)	MINIMUM MATERIAL THICKNESS Q (FT)	POOL TOP WIDTH AA (FT)	FLOODPLAIN: SIDE SLOPE R (:1)	TOPSOIL DEPTH (IN)
MAINSTEM 1	1+62.0	7+61.0	7.0	3.5	2.9	0.6	0.1	M-7	2.0	8.5	2.5	I	0.4	2	2	1.7	4.9	2.5	1.0	8.4	3	4
MAINSTEM 2	7+61.0	10+66.0	9.0	4.5	2.8	0.8	0.3	M-7	2.0	10.5	3.0	I	0.4	2	2	1.7	6.3	3.2	1.0	10.8	3	4
MAINSTEM 3	10+66.0	15+52.5	14.0	6.0	3.1	1.3	0.4	M-9	2.0	12.0	3.0	II	0.4	2	3	1.7	9.8	4.2	1.0	16.8	3	4
MAINSTEM 4	30+18.7	32+82.5	14.0	6.0	3.1	1.3	0.4	M-9	2.0	12.0	3.0	II	0.4	2	3	2.2	9.8	4.2	1.0	16.8	3	4
TRIBUTARY 2-1	20+26.0	22+89.9	6.0	3.5	2.5	0.5	0.2	M-7	2.0	8.5	2.5	I	0.4	2	2	1.3	4.2	2.5	1.0	7.2	3	4
TRIBUTARY 5-1	50+32.0	51+62.2	3.0	1.5	2.5	0.3	0.1	M-5	2.0	5.5	2.0	I	0.4	1	1	0.7	2.1	1.1	1.0	3.6	3	4
TRIBUTARY 8-3	106+38.1	109+84.0	11.0	6.0	2.8	0.9	0.3	M-7	2.0	12.0	3.0	I	0.4	2	4	1.7	7.7	4.2	1.0	13.2	3	4
TRIBUTARY 8-4	111+18.7	114+39.0	13.0	6.0	2.9	1.2	0.4	M-12	2.5	12.0	3.0	II	0.4	2	4	2.2	9.1	4.2	1.0	15.6	3	4
TRIBUTARY 8-5	114+38.9	115+27.5	13.0	6.0	2.9	1.2	0.3	M-12	2.5	12.0	3.0	II	0.4	2	4	1.7	9.1	4.2	1.0	15.6	3	4
TRIBUTARY 10	62+12.6	63+11.3	3.0	1.5	2.5	0.3	0.1	M-5	2.0	5.5	2.0	I	0.4	1	1	0.9	2.1	1.1	1.0	3.6	3	4
TRIBUTARY 12-2	91+01.7	93+99.6	7.0	4.0	2.5	0.6	0.2	M-9	2.0	10.0	3.0	II	0.4	2	2	1.4	4.9	2.8	1.0	8.4	3	4
TRIBUTARY 12-4	93+70.3	94+98.7	7.0	4.0	2.5	0.6	0.2	M-9	2.0	10.0	3.0	II	0.4	2	2	1.4	4.9	2.8	1.0	8.4	3	4
TOLERANCE			+/- 1.	+/- 1.	+/- .3	+/- .2	TYP		MIN	+/- .5	+/- .5	-	TYP	-	-	TYP	+/- .5	+/- .5	MIN	+/- 1.	-	MIN

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

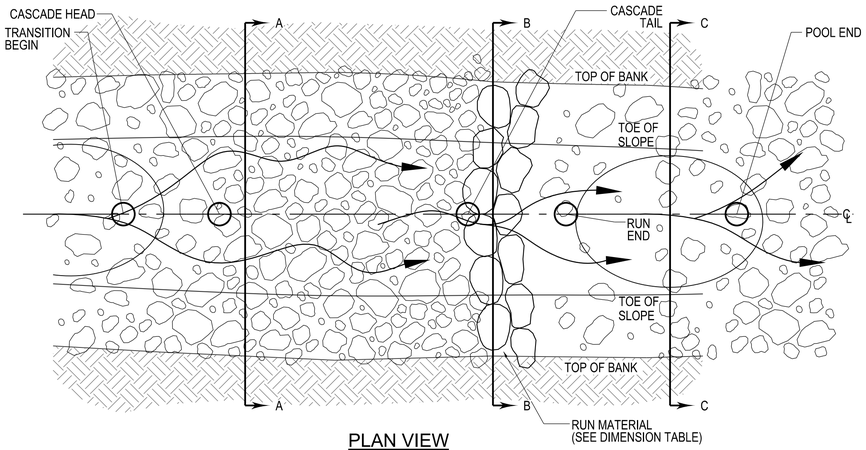
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 39 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. DE-A02 Of DE-A10

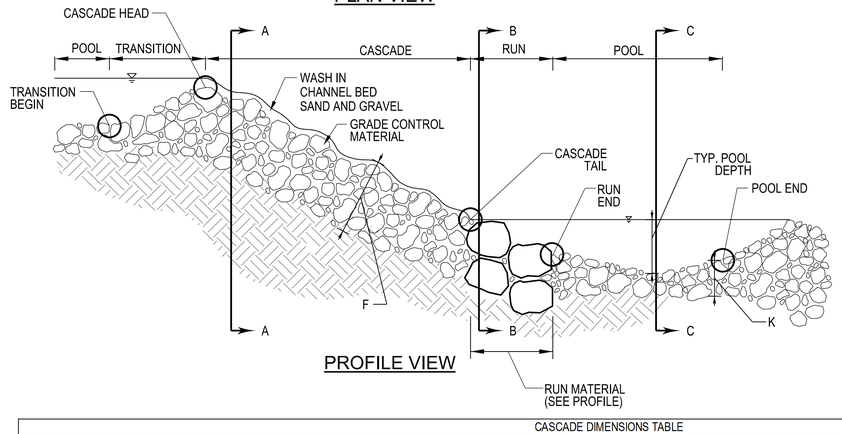
BID No.:
HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D002_Fallston.dgn



PLAN VIEW



PROFILE VIEW

NOTES:

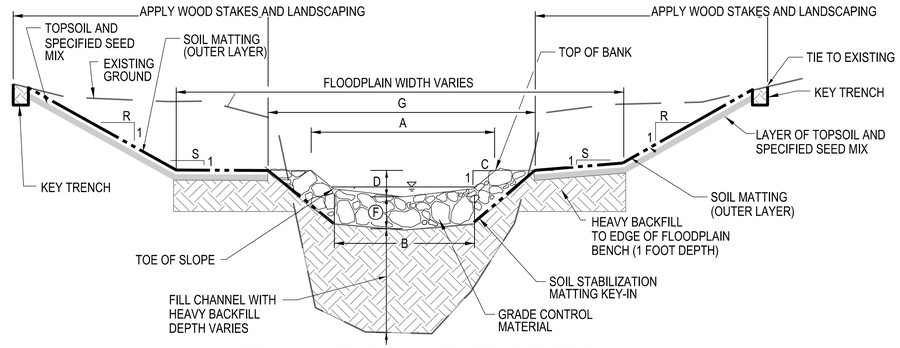
1. CASCADES SHALL BE CONSTRUCTED FOLLOWING THE THALWEG IN THE PROFILES SHEETS, REFERENCE POINTS INCLUDED IN THE PLAN SHEETS, AND DIMENSIONS HEREIN.
2. WHERE REQUIRED TO ACHIEVE THE PROPOSED GRADE, OVER-EXCAVATION OF THE EXISTING CHANNEL BED SHALL BE PERFORMED FOR PLACEMENT OF THE GRADE CONTROL MATERIAL TO THE MINIMUM DEPTH (F).
3. THE GRADE CONTROL MATERIAL SHALL BE PLACED TO EXTEND ALONG THE ENTIRE CHANNEL CROSS-SECTION FROM THE TOP OF BANK TO TOP OF BANK AT THE FLOODPLAIN BENCH. GRADE CONTROL MATERIAL SHALL BE PLACED AFTER GRADING AND MATTING OF THE BANKS AND FLOODPLAIN BENCH TO ALLOW FOR COMPLETE COVERAGE AND TO HOLD THE MATTING IN PLACE.
4. AFTER COMPLETING PLACEMENT OF THE GRADE CONTROL MATERIAL, CHANNEL BED SAND AND GRAVEL SHALL BE WASHED, HYDRAULICALLY, INTO THE MATERIAL TO PROVIDE CHOKING OF THE CHANNEL BED VOID SPACES. SIMILARLY, AFTER COMPLETING PLACEMENT OF BOULDER WEIR STRUCTURES, RUN MATERIAL SHALL BE WASHED, HYDRAULICALLY, INTO THE STRUCTURES TO PROVIDE CHOKING OF THE CHANNEL BED VOID SPACES. UPON OPENING OF THE CHANNEL SECTION TO NORMAL BASEFLOW, FLOW SHALL TRAVEL ALONG THE SURFACE OF THE CASCADES WITH MINIMAL SUBSURFACE FLOW. IN THE EVENT OF SUBSTANTIVE SUBSURFACE FLOW, ADDITIONAL MATERIAL WASH-IN WILL BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING SUFFICIENT HYDRAULIC PRESSURE FOR WASH-IN PROCEDURE. INSTALLING GRADE CONTROL MATERIAL IN LIFTS BETWEEN WASHIN PROCEDURES MAY BE NECESSARY TO FULLY WASH-IN.
5. CHANNEL BANKS AND FLOODPLAIN BENCHES SHALL BE STABILIZED PER THE SOIL STABILIZATION MATTING DETAIL. INFORMATION ON WOOD STAKES, TOPSOIL AND MATTING KEY IN ARE LOCATED IN THE SOIL STABILIZATION MATTING DETAIL. SEEDING / PLANTING INFORMATION IS IN THE LANDSCAPING PLANS.
6. AN EVEN LAYER OF TOPSOIL SHALL BE PLACED ON TOP OF THE HEAVY BACKFILL AND TAMPED ALONG THE FLOODPLAIN BENCH TO BRING THE FINISHED SURFACE OF THE BENCH TO THE FINAL LINES AND GRADES. TOPSOIL SHALL NOT BE PLACED ALONG THE LOWER STREAM BANK PORTION OF THE CASCADE CROSS-SECTION THAT WILL BE CAPPED WITH THE GRADE CONTROL MATERIAL, OR ALONG THE LOWER STREAM BANK PORTION OF THE POOLS THAT WILL BE BELOW THE BASEFLOW WATER SURFACE ELEVATION.
7. CHANNEL BOTTOM ELEVATIONS AND THE CONSTRUCTED CHANNEL DEPTH AT THE DOWNSTREAM END OF CASCADE SHOULD BE MEASURED FROM CHANNEL PROFILE. FOR CHANNEL DEPTH AT THE UPSTREAM END OF CASCADE, SEE THE CASCADE TABLE.
8. FLOODPLAIN WIDTH AND POOL DEPTH VARY. FLOODPLAIN WIDTH CAN BE SCALED FROM PLAN VIEW OR TAKEN FROM CROSS SECTIONS.
9. GRADE CONTROL MATERIAL THICKNESS ALONG FROM THE TOE OF SLOPE TO THE TOP OF BANK IS THE SAME THICKNESS INDICATED IN DIMENSIONS (F)

CASCADE DIMENSIONS TABLE

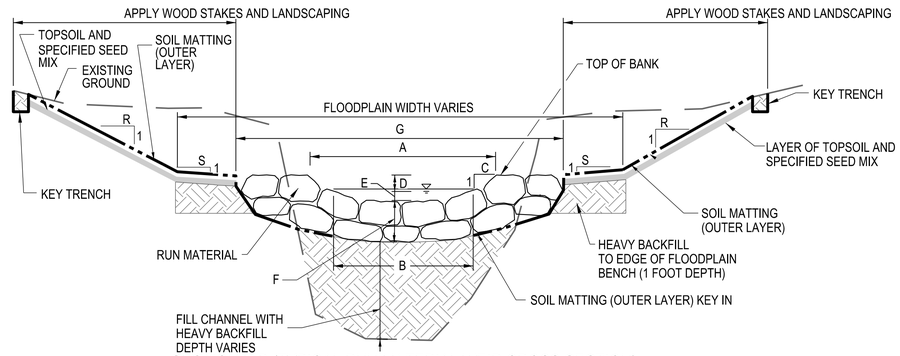
ALIGNMENT	STATIONING START	STATIONING END	CHANNEL DIMENSIONS: TOP WIDTH A (FT)	BOTTOM WIDTH B (FT)	SIDE SLOPE C :1	DEPTH OF CHANNEL D (FT)	V-NOTCH DEPTH E (FT)	CASCADE MATERIAL DIMENSIONS: MATERIAL MIX NO.	MINIMUM THICKNESS F (FT)	TOP WIDTH G (FT)	RUN STONE MATERIAL RIPRAP CLASS	POOL DEPTH (FT)	POOL DIMENSIONS: INSIDE TOP OF BANK OFFSET H (FT)	INSIDE TOE OFFSET J (FT)	MINIMUM MATERIAL THICKNESS K (FT)	POOL TOP WIDTH AA (FT)	FLOODPLAIN: SIDE SLOPE R :1	BENCH SLOPE S :1	TOPSOIL DEPTH (IN)
MAINSTEM 5	32+82.5	34+56.0	18.0	8.5	3.0	1.6	0.3	M-9	2.0	22.0	II	2.2	12.6	6.0	1.5	21.6	3	0	4
TRIBUTARY 2-2	22+89.9	24+83.1	6.0	3.5	2.5	0.5	0.3	M-12	2.0	10.0	II	0.5	4.2	2.5	2.0	7.2	3	0	4
TRIBUTARY 4	40+45.2	44+60.7	9.0	5.0	2.5	0.8	0.2	M-9	2.0	13.0	II	1.0	6.3	3.5	1.5	10.8	3	0	4
TRIBUTARY 5-2	51+62.2	52+12.0	3.0	1.5	2.5	0.3	0.2	M-7	2.0	7.0	II	0.3	2.1	1.1	1.2	3.6	3	0	4
TRIBUTARY 8-1	80+42.0	82+59.9	6.0	3.5	2.5	0.5	0.3	M-9	2.0	10.0	II	1.1	4.2	2.5	1.5	7.2	3	0	4
TRIBUTARY 8-2	82+59.9	82+74.3	6.0	3.5	2.5	0.5	0.3	M-15	3.0	12.0	III	0.3	4.2	2.5	2.5	7.2	3	0	4
TRIBUTARY 8-3	102+61.1	106+38.1	11.0	6.0	2.8	0.9	0.3	M-9	2.0	15.0	II	1.7	7.8	4.2	1.5	13.3	3	0	4
TRIBUTARY 12-1	90+30.0	91+07.1	7.0	4.0	2.5	0.6	0.4	M-12	2.0	11.0	II	0.6	4.9	2.8	2.0	8.4	3	0	4
TRIBUTARY 12-3	93+09.6	93+70.3	7.0	4.0	2.5	0.6	0.3	M-12	2.0	11.0	II	2.2	4.9	2.8	2.0	8.4	3	0	4
TRIBUTARY 12-5	94+98.7	95+90.4	7.0	4.0	2.5	0.6	0.4	M-12	2.0	11.0	II	3.2	4.9	2.8	2.0	8.4	3	0	4
TOLERANCE			+/- 1.	+/- 1.	+/- .3	+/- .2	TYP		MIN	+/- .5		TYP	+/- .5	+/- .5	MIN	+/- 1.	-	-	MINIMUM

CROSS REFERENCES:

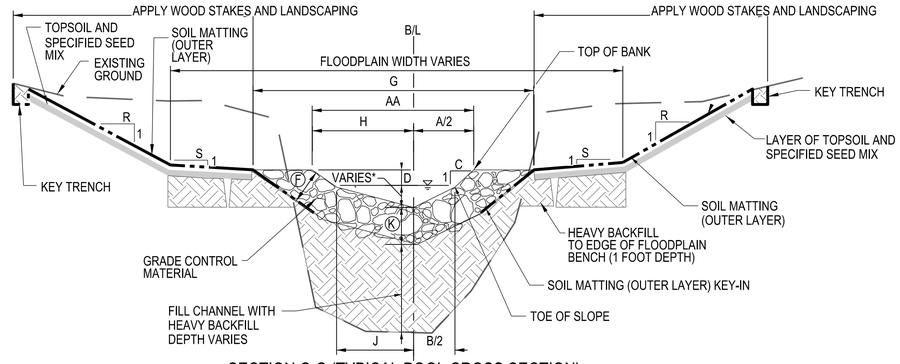
1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. WOODY DEBRIS - DE-01
   D. HEAVY BACKFILL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. WOOD STAKES
   C. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. SEE DETAILS FOR BANK STABILIZATION WITHIN POOLS
   A. BRUSH ARMOR - DE-06
   B. TOE WOOD - DE-06
   C. ROOT WAD REVETMENT - DE-08
   D. ROCK TOE - DE-04



SECTION A-A (TYPICAL CASCADE CROSS SECTION)
TOP OF CASCADE



SECTION B-B (TYPICAL RUN MATERIAL WEIR CROSS SECTION)



SECTION C-C (TYPICAL POOL CROSS SECTION)

* POOL DEPTH PROVIDED IN PROFILE

CASCADE (C) DETAIL & TYPICAL SECTION
NOT TO SCALE

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(410) 727-5050

BILLING NO. 97069

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 40 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. DE-A03 Of DE-A10

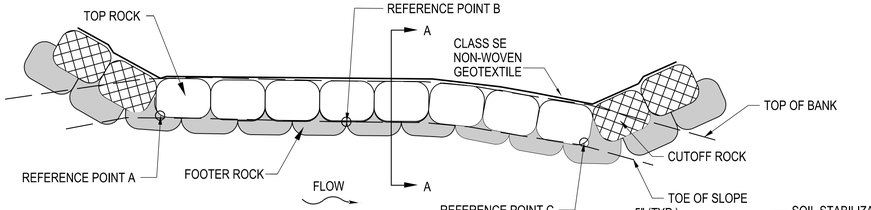
BID No.:

HCG DWG ID No.:

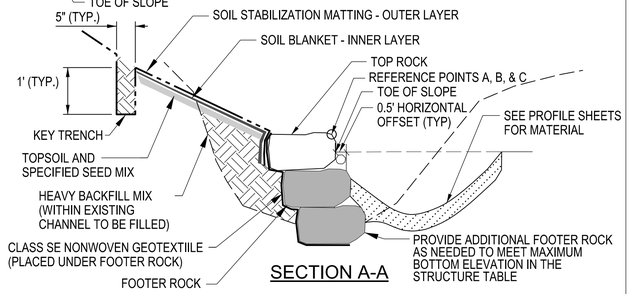
SCALE 1" = 1 inch

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D003_Fallston.dgn



PLAN VIEW

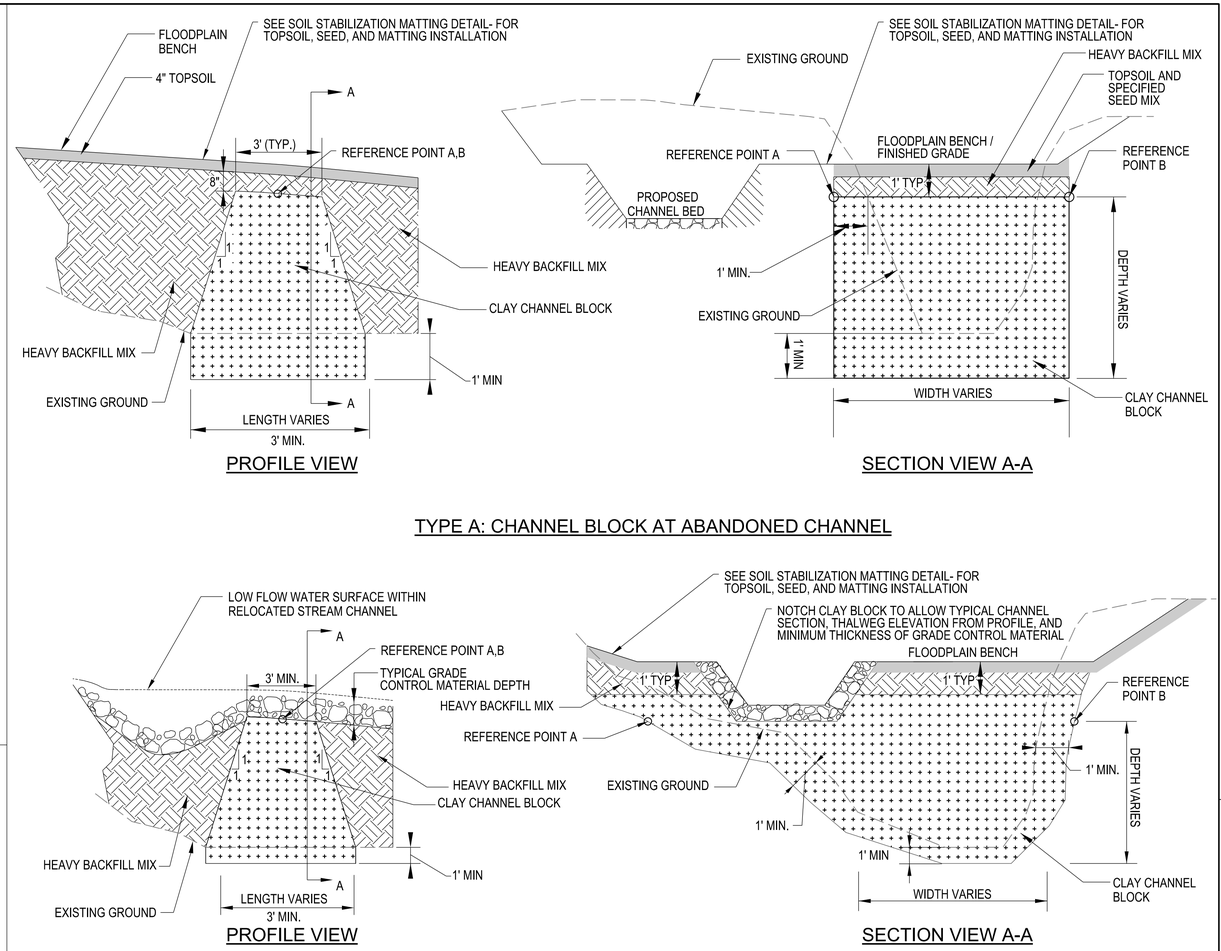


SECTION A-A

NOTES:

1. ROCK TOE SHALL BE CONSTRUCTED WITH THE TYPE OF IMBRICATED BOULDERS SPECIFIED (OR LARGER). REFER TO TYPICAL IMBRICATED BOULDER DETAIL AND STRUCTURE TABLE FOR ROCK TOE FOR SPECIFIED SIZES. IMBRICATED BOULDERS SHALL BE INSTALLED IN A GAP FREE SEQUENCE.
2. GEOTEXTILE IS TO BE PLACED BEHIND AND UNDER ENTIRE LENGTH OF ROCK TOE.
3. TOP ROCK LOCATION IS TO BE STAGGERED OVER THE UNDERLYING FOOTER ROCKS.
4. THE FRONT FACE OR OUTER SURFACE OF THE ROCK TOE ALONG THE EDGE OF WATER SHALL BE RELATIVELY EVEN AND PRESENT A GENERALLY NEAT APPEARANCE. NO ROCKS SHALL PROTRUDE INTO THE CHANNEL.
5. CUTOFF ROCKS SHALL BE INSTALLED AT APPROXIMATELY 20 TO 50 DEGREES FROM THE TOE OF SLOPE INTO BANKS FOR TWO ROCK LENGTHS.
6. REFERENCE POINTS ARE LOCATED AT REGULAR INTERVALS ALONG THE ROCK TOE AND NOT NECESSARILY AT CONNECTION POINTS. REFER TO STRUCTURE TABLES ON AS-BUILT CHECKLIST FOR STATIONING AND ELEVATIONS.
7. FILL VOIDS BETWEEN BOULDERS WITH LARGEST POSSIBLE CHANNEL BED MATERIAL PER ENGINEER REQUEST. SEE TYPICAL BOULDER DETAIL FOR CLARIFICATION.

ROCK TOE (RT) DETAIL
NOT TO SCALE



PROFILE VIEW

SECTION VIEW A-A

TYPE A: CHANNEL BLOCK AT ABANDONED CHANNEL

PROFILE VIEW

SECTION VIEW A-A

TYPE B: CHANNEL BLOCK UNDER CHANNEL

NOTES:

1. CLAY CHANNEL BLOCKS ARE TO BE LOCATED AS SHOWN ON THE PLAN SHEETS, REFER TO STRUCTURE TABLES FOR REFERENCE POINTS COORDINATES.
2. CLAY CHANNEL BLOCKS ARE INCORPORATED INTO THE DESIGN TO BLOCK SUBSURFACE FLOW FROM PIPING THROUGH CHANNEL BACKFILL.
3. THE TOP ELEVATION AND WIDTH ACROSS THE CHANNEL SHALL VARY BASED ON THE PROPOSED GRADE DEPICTED ON THE PLAN SHEETS AND THE EXISTING CHANNEL BED WIDTH. THE TOP OF THE BLOCK SHALL EXTEND TO THE BOTTOM LIMIT OF THE GRADE CONTROL MATERIAL (UNDER CHANNEL) OR 1-FOOT BELOW THE TOP GRADE OF FLOODPLAIN BENCHES AT ABANDONED CHANNELS.
4. CLAY CHANNEL BLOCKS SHALL BE CONSTRUCTED USING 8-INCH UNCOMPACTED LAYERS OF CLAY MATERIAL PLACEMENT. THE BLOCKS SHALL BE COMPACTED AFTER THE PLACEMENT OF EACH SUCCESSIVE LAYER.
5. THE BOTTOM LENGTH MUST BE A MINIMUM OF 3-FEET. HOWEVER, IF SLOPING IS NECESSARY, THE CONTRACTOR SHALL DETERMINE THE BOTTOM LENGTH. THE CLAY BLOCK VOLUME ASSUMES THE MAXIMUYM LENGTH BUT THIS VOLUME MAY NOT BE NECESSARY.

CLAY CHANNEL BLOCK DETAIL (CB)
NOT TO SCALE

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. CLAY MATERIAL - DE-01
   D. IMBRICATED BOULDERS - DE-05
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. STRUCTURE TABLES ARE PROVIDED ON THE PLAN SHEET WHERE THE STRUCTURE IS DISPLAYED - SR-01 - SR-07

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By :	C.A.B.	Scale :	NOT TO SCALE
Designed By :	R.B.T.	Date :	AUGUST 2023
Reviewed By :	N.A.R.		
Drawing No.	41 Of 124	Sheet No.	DE-A04 Of DE-A10

BID No.:

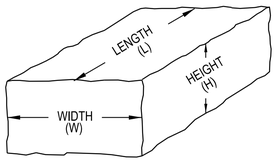
HCG DWG ID No.:

SCALE 1" = 1'-0"

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D004_Fallston.dgn

IMBRICATED BOULDER TYPE	PARAMETER	LENGTH (FT)	WIDTH (FT)	HEIGHT (FT)
TYPE 1	MIN	2.5	1.5	1
	MAX	-	2.5	1.5
TYPE 2	MIN	3	2	1.5
	MAX		3	2
TYPE 3	MIN	3.5	2.5	2
	MAX	-	3.5	2.5

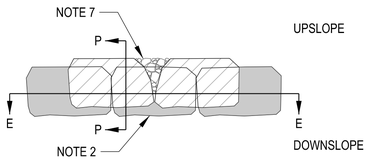


NOTES:

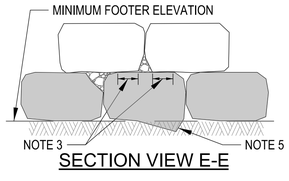
1. IMBRICATED BOULDERS SHALL BE RECTANGULAR IN SHAPE. NO ROUND, SQUARE, OR TRIANGULAR BOULDERS SHALL BE PERMITTED. DIMENSIONS SHALL MEET THE FOLLOWING: HEIGHT<WIDTH<LENGTH. ALL BOULDERS SHALL BE APPROVED BY ENGINEER TO USE. BOULDERS NOT CONFORMING TO SPECIFIC TYPE MAY BE USED IF APPROVED BY THE ENGINEER.
2. SUBMIT SOURCE FOR IMBRICATED STONE FOR APROVAL PRIOR TO DELIVERY.
3. ALL IMBRICATED BOULDERS SHALL BE FREE FROM LAMINATIONS, WEAK CLEAVAGES AND WILL NOT DISINTEGRATE FROM THE ACTION OF AIR, WATER AND IN HANDLING AND PLACING. WHITE STONES WILL NOT BE ACCEPTABLE.
4. IMBRICATED BOULDERS SHALL NOT BE HARVESTED FROM STREAMS OR RIVERS OUTSIDE A COMMERCIAL QUARRY OPERATION.
5. GRANULAR SEDIMENTARY STONES SHALL NOT BE ACCEPTABLE.
6. UNLESS OTHERWISE STATED, THE BOULDERS SHALL HAVE A MINIMUM UNIT WEIGHT OF 160 LBS PER CUBIC FOOT.

TYPICAL IMBRICATED BOULDER DIMENSIONS DETAIL

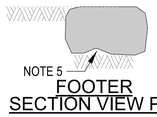
NOT TO SCALE



PLAN VIEW



SECTION VIEW E-E



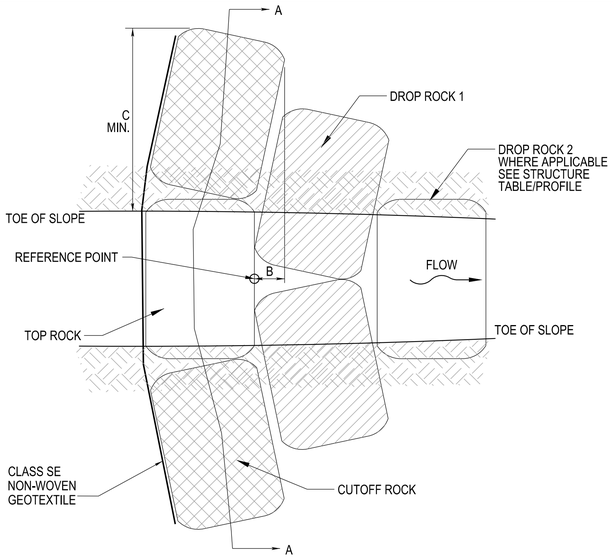
FOOTER SECTION VIEW P-P

TYPICAL IMBRICATED BOULDER PLACEMENT DETAIL

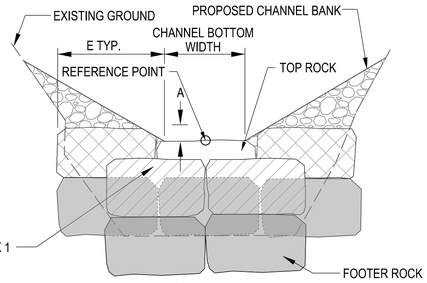
NOT TO SCALE

NOTES:

1. COMPACT SUBGRADE PRIOR TO PLACEMENT. REMOVE AND REPLACE UNSUITABLE MATERIAL WITH CHANNEL BED SAND AND GRAVEL.
2. ARRANGE IMBRICATED BOULDERS TO BE IN CONTACT WITH ADJACENT BOULDERS. THE DOWNSLOPE FACES OF THE BOULDERS SHOULD BE IN SOLID CONTACT.
3. STAGGER STACKED BOULDERS SO THAT A MINIMUM OF 8 INCHES OF BOULDER IS OVERLAPPING EACH OF THE SUPPORTING BOULDERS. ALL IMBRICATED BOULDERS SHALL BE INTERLOCKED.
4. SEAT ROCKS FIRMLY SO THEY DO NOT ROCK OR ROTATE. SELECT AND PLACE ROCKS TO AVOID AND REDUCE THE CREATION OF VOIDS. UNAVOIDABLE VOIDS ARE TO BE FILLED PER NOTE 7 PRIOR TO PLACEMENT OF OTHER IMBRICATED BOULDERS.
5. PLACE FLAT, SQUARE ENDS IN CONTACT WITH ONE ANOTHER. IRREGULAR ENDS SHALL BE PLACED IN CONTACT WITH SUBGRADE, AGGREGATE MATERIAL OR SOIL WHERE THE IMBRICATED BOULDER IRREGULARITIES CAN BE BURIED. EXCEPTIONS WILL BE MADE FOR BOULDERS THAT HAVE COMPLIMENTARY IRREGULARITIES AND INTERLOCK TOGETHER.
6. THE OUTER ROCK SURFACE WILL BE EVEN AND PRESENT A GENERALLY NEAT APPEARANCE. SURFACE ELEVATIONS OR INDIVIDUAL ROCKS WITHIN THE FINISHED INSTALLATIONS MUST BE WITHIN 0.25 FT OF THE ELEVATIONS SPECIFIED ON THE CONSTRUCTION DRAWINGS UNLESS OTHERWISE NOTED IN THE STRUCTURE SPECIFIC DETAIL.
7. FILL VOIDS BETWEEN IMBRICATED BOULDERS WITH THE LARGEST POSSIBLE ROCK THAT WILL FIT THE GAP. GRADE CONTROL MATERIAL OR OTHER ON-SITE ROCK IS SUITABLE. HAND PLACE PRIOR TO STACKING OTHER ROCKS.



PLAN VIEW



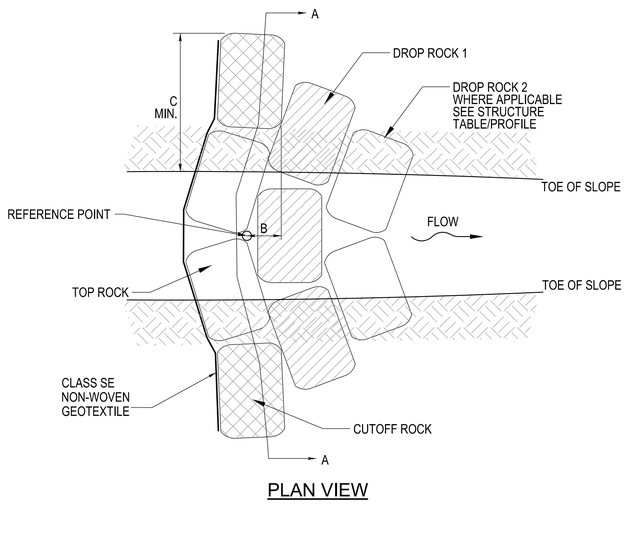
SECTION A-A

TYPE A CONFIGURATION

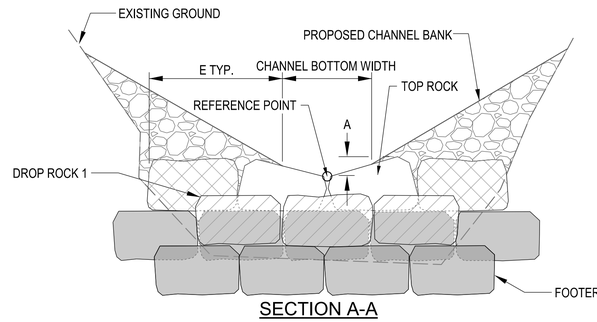
NOT TO SCALE

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. IMBRICATED BOULDERS - DE-05
   D. HEAVY BACKFILL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. STRUCTURE TABLES ARE PROVIDED ON THE PLAN SHEET WHERE THE STRUCTURE IS DISPLAYED - SR-01 - SR-07



PLAN VIEW

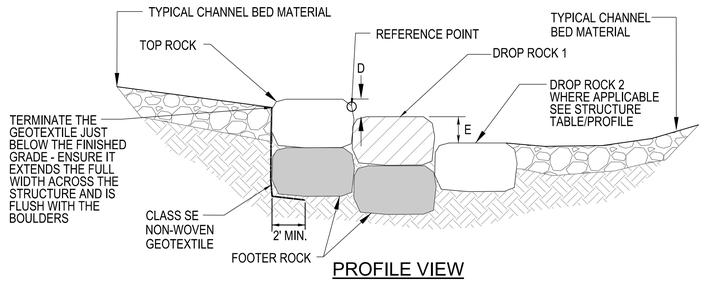


SECTION A-A

TYPE B CONFIGURATION

NOT TO SCALE

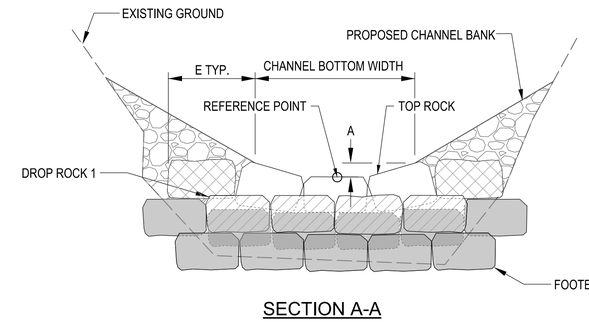
*FOR CLARITY - DROP ROCK 2 NOT SHOWN IN SECTION A-A



PROFILE VIEW

ROCK SILL (RS) DETAIL

NOT TO SCALE



SECTION A-A

TYPE C CONFIGURATION

NOT TO SCALE

NOTES:

1. ROCK SILLS ARE TO BE CONSTRUCTED USING THE IMBRICATED BOULDER TYPES AND SIZES LISTED IN THE TYPICAL BOULDER DIMENSIONS DETAIL. ROCK SILLS WILL BE CONSTRUCTED USING THE BOULDER TYPES SPECIFIED IN THE STRUCTURE TABLES.
2. TOP ROCKS AND DROP ROCKS ARE TO BE STAGGERED OVER THE UNDERLYING FOOTER ROCKS.
3. THE NUMBER OF ROCKS TO BE USED DEPENDS ON THE INDIVIDUAL STRUCTURE SIZE. EXACT LOCATION OF REFERENCE POINTS WILL VARY DEPENDING ON THE SIZE OF EACH STRUCTURE.
4. PLACE NON-WOVEN CLASS SE GEOTEXTILE ON UPSTREAM SIDE OF SILL. GEOTEXTILE FABRIC SHALL COVER THE UPSTREAM FACE OF THE ENTIRE SILL AND SHALL EXTEND A MAXIMUM OF 2 FEET UPSTREAM OF THE STRUCTURE.
5. DISTURBED STREAM BED SHALL BE BACKFILLED WITH 6" MIN. OF FURNISHED/SALVAGED STREAMBED MATERIAL TO MEET GRADE.
6. STREAM BANK AROUND STRUCTURE SHALL BE BACKFILLED AND COMPACTED BY HAND TAMPING.
7. REFER TO STRUCTURE TABLES CONFIGURATION TYPES.
8. WHEN ROCKSILLS ARE APPLIED WITH RIFFLES AND MATTED CHANNEL BANKS, FILL VOIDS BETWEEN THE DROP ROCKS AND THE OVERLYING SOIL MATTING WITH AVAILABLE GRADE CONTROL MATERIAL OR RIPRAP.

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By :	C.A.B.	Scale :	NOT TO SCALE
Designed By :	R.B.T.	Date :	AUGUST 2023
Reviewed By :	N.A.R.		
Drawing No.	42 Of 124	Sheet No.	DE-A05 Of DE-A10

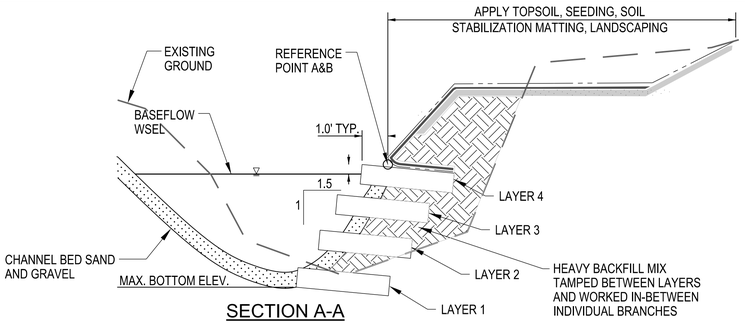
BID No.:

HCG DWG ID No.:

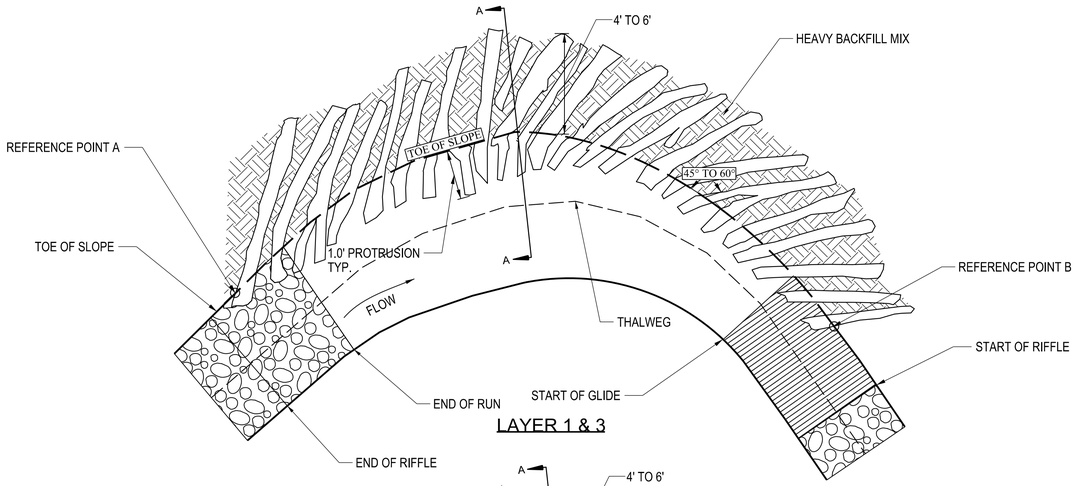
SCALE 1 inch

BY: tetrickr –

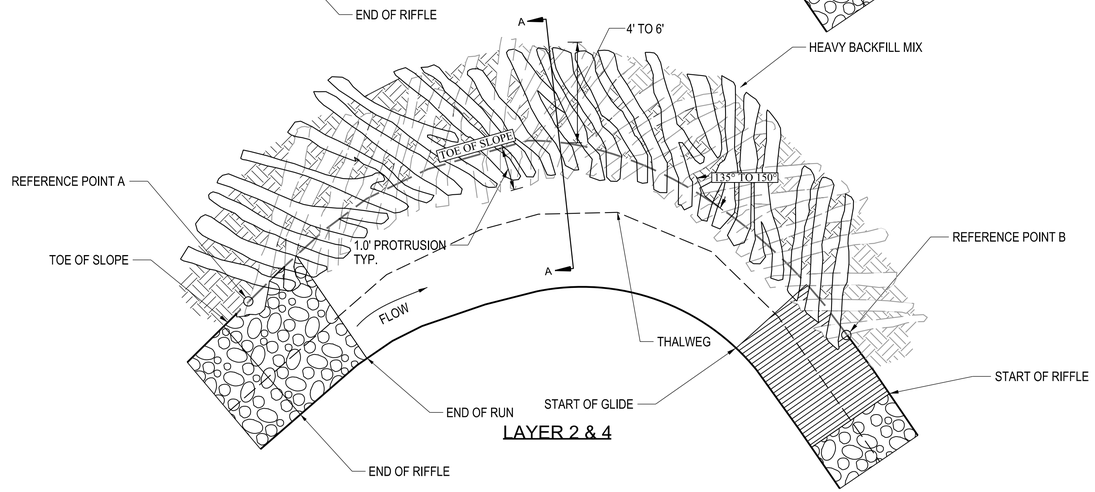
PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D005_Fallston.dgn



SECTION A-A



LAYER 1 & 3



LAYER 2 & 4

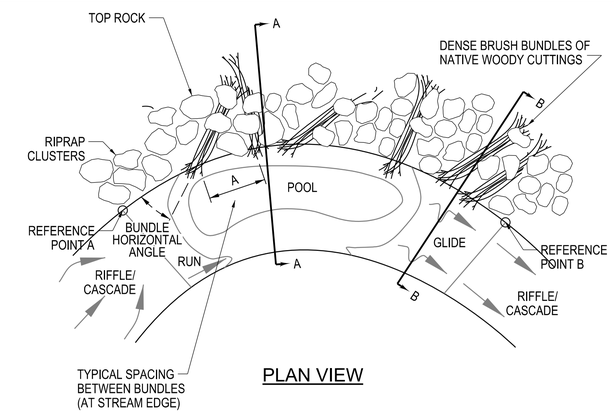
TOE WOOD (TW) DETAIL
NOT TO SCALE

NOTES:

1. TOE WOOD SHALL BE PLACED IN POOL LOCATIONS AS SPECIFIED ON THE PLANS FOR THE PURPOSE OF AQUATIC HABITAT ENHANCEMENT AND BANK STABILITY.
2. TOE WOOD SHALL CONSIST OF 3-INCH TO 6-INCH DIAMETER HARDWOOD TREE BRANCHES HARVESTED FROM FELLED TREES ON SITE. PLACE LARGER BRANCHES ON THE LOWER LAYERS. SLOPE LAYERS SO THE BANK HAS A 1.5:1 SLOPE. DETERIORATING OR ROTTEN BRANCHES PREVIOUSLY FELLED SHALL NOT BE USED. THE BRANCHES SHALL BE 6-FEET TO 12-FEET IN TOTAL LENGTH. LEAVES AND SMALL BRANCHES (LESS THAN 1-INCH DIAMETER) SHALL BE REMOVED FROM THE BRANCHES PRIOR TO INSTALLATION.
3. THE BRANCHES SHALL BE PLACED SUCH THAT AT LEAST 2/3 OF THE TOTAL BRANCH LENGTH IS EMBEDDED IN THE STREAM BANK AND SUCH THAT THE TOTAL BRANCH WILL BE SUBMERGED BELOW THE BASEFLOW WATER SURFACE ELEVATION.
4. THE BRANCHES SHALL BE PLACED DURING THE STREAM BACKFILL AND GRADING PROCESS, IN BETWEEN THE BACKFILL AND COMPACTION OF SUCCESSIVE LIFTS OF SOIL IN THE SUBJECT PLACEMENT AREA. THERE SHOULD BE 3" OF HEAVY BACKFILL MIX BETWEEN BRANCH LAYERS. THE BRANCHES ARE NOT TO BE PLACED AFTER COMPLETION OF THE FINAL GRADING AS INSUFFICIENT EMBEDMENT IS ANTICIPATED TO OCCUR.
5. SUCCESSIVE LIFTS OF HEAVY BACKFILL MIX SHALL BE HAND TAMPED FOR COMPACTION. CONTRACTOR IS RESPONSIBLE FOR REPLACING BRANCHES BROKEN DURING COMPACTION.
6. THE BRANCHES SHALL BE PLACED EVERY ONE FOOT HORIZONTALLY WITHIN THE POOL AREA.
7. SEE DETAIL "SOIL STABILIZATION MATTING" FOR WOOD STAKES SPACING.

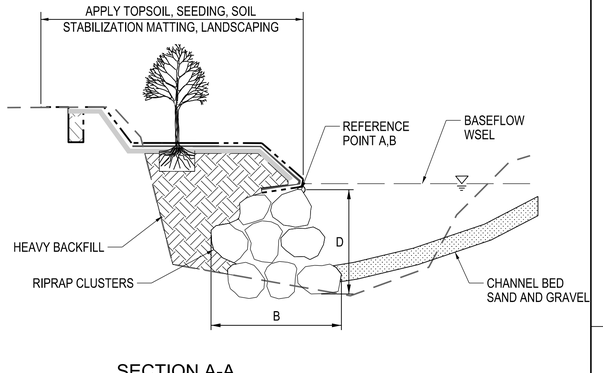
NOTES:

1. RIPRAP CLUSTERS SHALL BE UTILIZED TO ANCHOR THE BUNDLES OF BRUSH AND TO FILL LARGE VOIDS IN BETWEEN.
2. BUNDLES SHALL BE COMPRISED OF WOODY DEBRIS, AND INDIVIDUAL CUTTINGS SHALL BE THE FULL LENGTH OF THE BUNDLE. APPROXIMATELY 50% OF THE BRANCHES SHALL BE GREATER THAN 3" IN DIAMETER.
3. WOODY DEBRIS WILL BE TIED TOGETHER AT EACH END USING BIODEGRADABLE TWINE MADE OF JUTE, COIR, COTTON OR ANY OTHER SIMILAR MATERIAL IN BUNDLES THAT ARE (E) FEET IN DIAMETER.
4. BRUSH BUNDLES SHALL BE INSTALLED AT A HORIZONTAL ANGLE OF 30-60 DEGREES FROM TOE OF SLOPE AND A VERTICAL ANGLE OF 10-45 DEGREES FROM TOE OF SLOPE INTO THE STREAM BANK. THE END OF THE BUNDLES SHALL EXTEND A LENGTH (C), PAST THE FRONT FACE OF THE RIPRAP.
5. CHANNEL BED SAND AND GRAVEL WILL BE WASHED INTO THE BOULDER CLUSTER VOIDS.

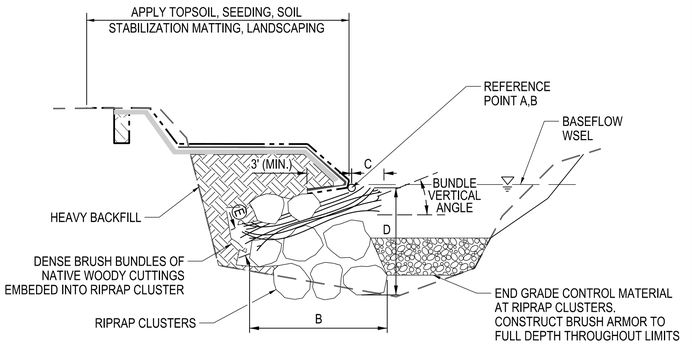


PLAN VIEW

AUGMENT	STATIONING		BRUSH ARMOR DIMENSIONS						
	START	END	BUNDLE LENGTH	RIPRAP CLASS	BUNDLE SPACING A	ARMOR WIDTH B	BUNDLE PROTR-USION C	ARMOR DEPTH D	BUNDLE DIA. E
			(FT)		(FT)	(FT)	(FT)	(FT)	(FT)
MAINSTEM 1	1+62.0	7+61.0	5.0	II	5.0	3.0	2.0	3.0	0.8
MAINSTEM 2	7+61.0	10+66.0	5.0	II	5.0	3.0	2.0	3.0	0.8
MAINSTEM 3	10+66.0	16+41.0	5.0	II	5.0	3.0	2.0	3.0	0.8
MAINSTEM 4	30+25.0	33+00.0	5.0	II	5.0	3.0	2.0	3.2	0.8
MAINSTEM 5	33+00.0	34+56.0	5.0	II	5.0	3.0	2.0	3.5	0.8
TRIBUTUARY 2	20+26.0	24+93.0	4.0	II	4.0	3.0	1.0	2.5	0.8
TRIBUTARY 8-3	102+35.0	111+10.0	5.0	II	5.0	3.0	2.0	3.0	0.8
TRIBUTARY 8-4	111+26.0	114+39.0	5.0	II	5.0	3.0	2.0	3.2	0.8
TRIBUTARY 8-5	114+39.0	115+27.0	5.0	II	5.0	3.0	2.0	3.2	0.8
TRIBUTARY 12	90+30.0	95+95.0	4.0	II	4.0	3.0	1.0	2.5	0.8
TOLERANCE			+/- .5		+/- 1.	+/- .5	+/- .25	+/- .5	+/- .25



SECTION A-A



SECTION B-B

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. WOODY DEBIS - DE-01
   D. HEAVY BACKFILL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. STRUCTURE TABLES ARE PROVIDED ON THE PLAN SHEET WHERE THE STRUCTURE IS DISPLAYED - SR-01 - SR-07

BRUSH ARMOR (BA) DETAIL
NOT TO SCALE

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

PROFESSIONAL CERTIFICATION

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 43 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. DE-A06 Of DE-A10

BID No.:

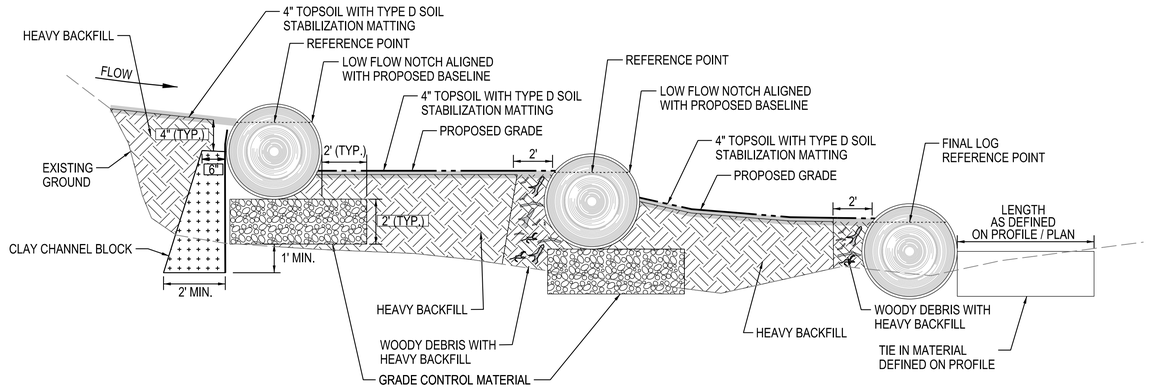
HCG DWG ID No.:

SCALE: 1" = 1'-0"

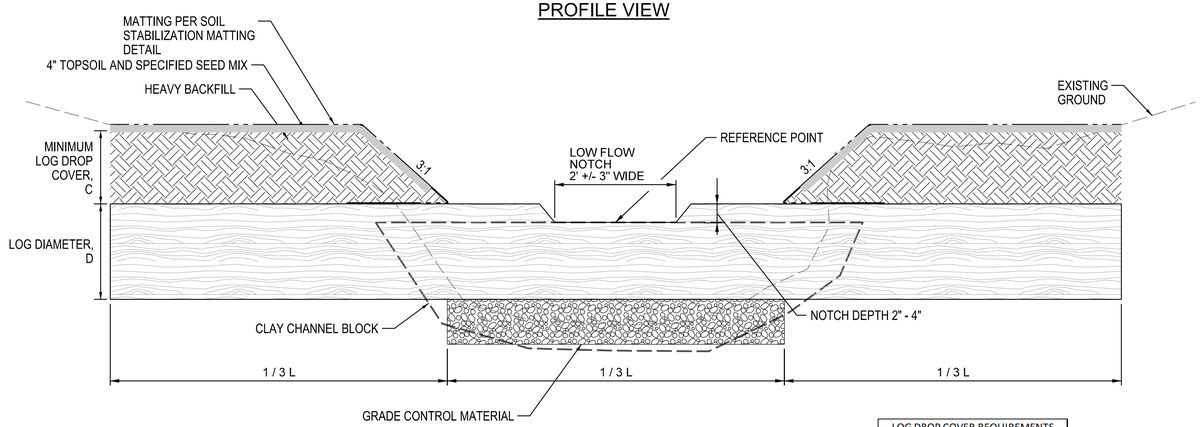
BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D006_Fallston.dgn

UPSTREAM LOG SCENARIO INTERMEDIATE LOG SCENARIO DOWNSTREAM LOG SCENARIO



PROFILE VIEW



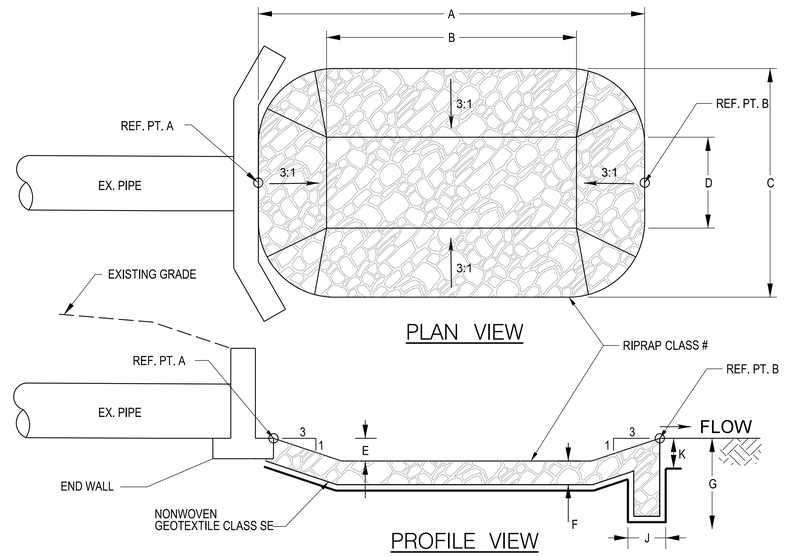
SECTION VIEW

LOG DROP COVER REQUIREMENTS	
DIAMETER	MINIMUM COVER (INCHES)
UP TO 12"	8
12" - 15"	10
OVER 15"	12

NOTES:

1. LOG DROPS ARE SINGLE LOGS TRENCHED INTO EXISTING GRADE TO PROVIDE EROSION CONTROL FOR SMALL HEADWATER CHANNELS. LOGS WILL HAVE A MINIMUM 9 INCH AND MAXIMUM OF 18 INCH DIAMETER.
2. TO RESIST BUOYANCY, LOGS SHALL BE EMBEDDED AS NOTED IN THE SECTION VIEW WITH MINIMUM COVER AS SHOWN IN THE "LOG DROP COVER REQUIREMENTS" TABLE.
3. GRADE CONTROL MATERIAL WILL BE PLACED BENEATH EACH LOG WITHIN THE EXISTING CHANNEL. THE GRADE CONTRL MATERIAL WILL HAVE CHANNEL BED SAND AND GRAVEL WASHED IN SIMILARLY TO THE RIFFLE AND/OR CASCADE DETAIL. GRADE CONTROL MIX IS SPECIFIED IN THE STRUCTURE TABLES.
4. WOODY DEBRIS WILL BE PLACED AND TAMP-COMPACTED UPSTREAM OF ALL BUT THE FIRST LOG DROP IN THE SERIES. MIX THE WOODY DEBRIS WITH HEAVY BACKFILL DURING COMPACTION.
5. TOPSOIL, SEED, MULCH AND SOIL STABILIZATION MATTING WILL BE PLACED ON ALL DISTURBED AREAS BETWEEN THE LOGS AND ALONG THE BANKS. PROVIDE PLANTINGS PER THE PLANTING PLAN. TOPSOIL, MULCH AND SOIL STABILIZATION MATTING WILL FOLLOW THE SOIL STABILIZATION MATTING DETAIL.
6. LOGS SHALL BE PLACED PERPENDICULAR TO CHANNEL.
7. LOGS SHALL BE APPROVED BY THE ENGINEER.
8. A CLAY CHANNEL BLOCK WILL BE PLACED AT THE UPSTREAM END AND EMBEDDED 1 FOOT MINIMUM INTO EXISTING UNDISTURBED GROUND. IF THE LOG DROPS ARE PLACED IN A SERIES - THIS MATERIAL IS PLACED ONLY AT THE UPSTREAM END. CLAY CHANNEL BLOCK IS DEFINED AS A SEPARATE DETAIL.
9. CLAY CHANNEL BLOCKS SHALL BE CONSTRUCTED USING 8-INCH UNCOMPACTED LAYERS OF CLAY MATERIAL PLACEMENT. THE BLOCKS SHALL BE COMPACTED AFTER THE PLACEMENT OF EACH SUCCESSIVE LAYER.

LOG DROP (LD) DETAIL (TYP.)
NOT TO SCALE



RIPRAP PLUNGE POOL-DIMENSIONS											
RPP-#	PIPE SIZE/ TYPE	RIPRAP CLASS	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	F (FT)	G (FT)	J (FT)	K (FT)
PP-2-1	36	I	18.4	9	15	6	1.5	0.8	1.6	0.8	0.33
PP-4-1	36	I	29.8	9	15	6	1.5	0.8	1.6	0.8	0.33
PP-8-1	42	I	22.2	10.5	17.5	7	1.75	0.8	1.6	0.8	0.33

NOTES:

1. RIPRAP PLUNGE POOL TO BE INSTALLED DOWNSTREAM OF CULVERTS AND STORMDRAIND AS SHOWN ON THE PLANS.
2. USE GEOTEXTILE CLASS SE AND PROTECT GEOTEXTILE FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THEN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING. PROVIDE A MINIMUM OF 1 FOOT OVERLAP FOR ALL REPAIRS.
3. PLACE RIPRAP TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR RIPRAP IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. PLACE INDIVIDUALLY TO EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
4. PLACE THE STONE SO THAT IT BLENDS IN WITH THE EXISTING GROUND.

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. WOODY DEBRIS - DE-01
   D. HEAVY BACKFILL - DE-01
   E. CLAY CHANNEL BLOCK MATERIAL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. STRUCTURE TABLES ARE PROVIDED ON THE PLAN SHEET WHERE THE STRUCTURE IS DISPLAYED - SR-01 - SR-07

RIPRAP PLUNGE POOL (RPP) DETAIL
NOT TO SCALE

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 44 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. DE-A07 Of DE-A10

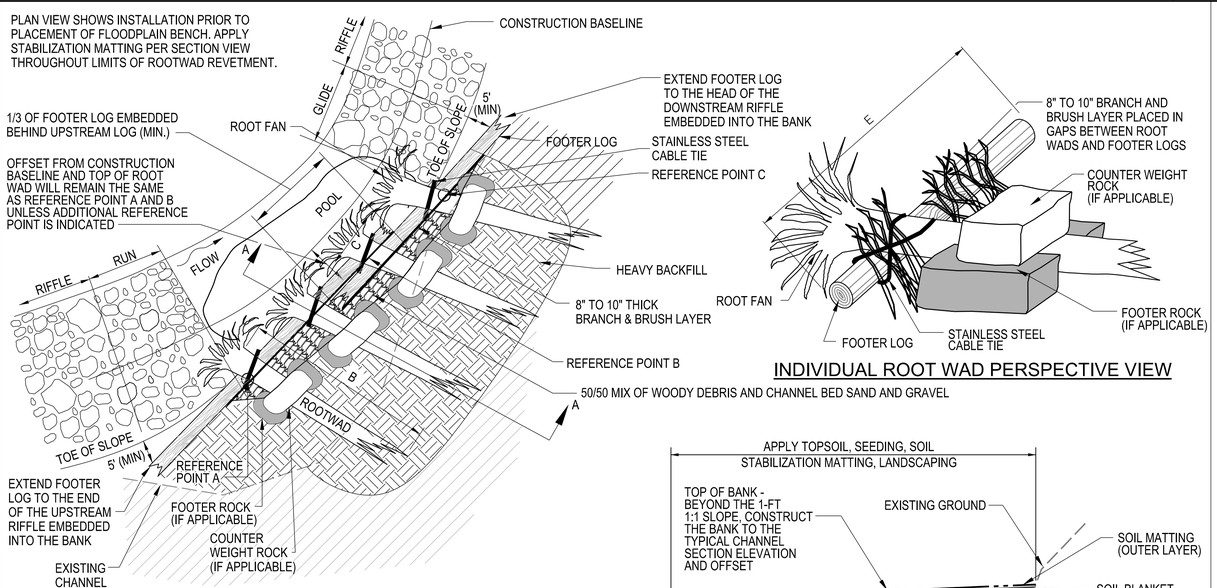
BID No.:

HCG DWG ID No.:

SCALE: 1" = 1'-0"

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D007_Fallston.dgn

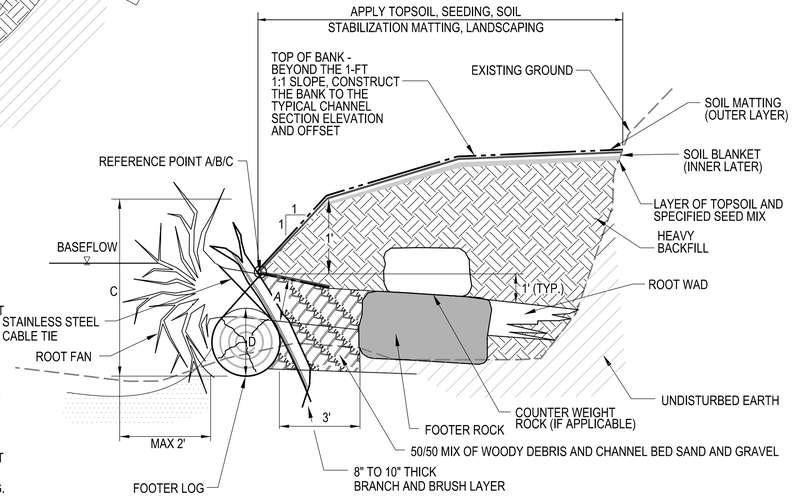


PLAN VIEW

INDIVIDUAL ROOT WAD PERSPECTIVE VIEW

NOTES:

1. ROOT WADS SHALL BE CONSTRUCTED TO THE ELEVATION AS SPECIFIED. THE FINISHED ROOT WAD REVETMENT SHALL HAVE +/- 75% SUBMERGENCE OF THE ROOT FAN (ROOT BALL). THE LOWER PORTION OF THE ROOT FAN MAY BE EMBEDDED BELOW THE FINISHED POOL GRADE.
2. ROOT WADS ARE TO CONSIST OF DECIDUOUS HARDWOOD TREE TRUNKS, FELLED SUCH THAT THE ROOT FAN IS ATTACHED. PLACE ROOT WADS SO THAT ROOT FANS ARE IN CONTACT WITH ADJACENT ROOTWADS AND FACINGS UPSTREAM AT A 45 DEGREE ANGLE.
3. REFERENCE POINTS REFER TO THE UPSTREAM AND DOWNSTREAM LIMITS OF THE ROOTWADS. TO RESIST BUOYANCY, PLACE THE MINIMUM NUMBER OF ROOTWADS AS NOTED IN THE STRUCTURE TABLE.
4. ROOT WAD DIMENSIONS SHALL HAVE LOG DIAMETER (A), LOG LENGTH (B) AND ROOT FAN DIAMETER (C). IF MINIMUM LOG LENGTH CANNOT BE MET - USE COUNTERWEIGHT ROCKS.
5. FOOTER LOGS ARE TO CONSIST HARDWOOD TREE TRUNKS WITH A DIAMETER OF (D) AND A MINIMUM LENGTH OF (E). THE LENGTH OF INDIVIDUAL LOGS SHALL BE DETERMINED BY FIELD CONDITIONS AND A TEST FITTING OF AVAILABLE MATERIALS. LOGS SHALL BE SET SUCH THAT THE UPSTREAM $\frac{1}{3}$RD OF EACH LOG IS EMBEDDED BEHIND THE DOWNSTREAM END OF THE UPSTREAM ADJACENT LOG. BURY THE UPSTREAM-MOST AND DOWNSTREAM-MOST FOOTER LOGS INTO THE BANK AS NOTED IN THE PLAN VIEW.
6. COUNTER WEIGHT ROCKS ARE ONLY NECESSARY WHEN THE MINIMUM TRUNK LENGTH (B) IS NOT MET. COUNTER WEIGHT ROCKS ARE TO REST ON THE ROOT WAD TREE TRUNK WITH THE FOOTER ROCKS POSITIONED TO PREVENT TIPPING OR SLIDING OF THE COUNTER WEIGHT ROCK.
7. BRANCH AND BRUSH LAYER IS TO CONSIST OF WOODY DEBRIS, CONSISTING OF INDIVIDUAL CUTTINGS AT LEAST 4 FT IN LENGTH. BRUSH AND BRANCH LAYERS ARE TO BE DENSELY PACKED BEHIND THE FOOTER LOG AND AROUND THE ROOT WAD TO RETAIN THE 50/50 MIX OF WOODY DEBRIS AND CHANNEL BED SAND AND GRAVEL BACKFILL. THE BRANCH AND BRUSH LAYER SHALL HAVE A THICKNESS OF 8" TO 10".
8. STAINLESS STEEL CABLE TIE SHALL WRAP AROUND THE FOOTER LOG AND ROOT WAD, TIGHTLY BINDING THE LOGS TOGETHER. CABLE AND CONNECTING HARDWARE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 2500 LBS. ENDS OF CABLE SHALL BE LOOPED TOGETHER WITH EACH END SECURED WITH A HIGH STRENGTH SWAGED TERMINATION. CONNECTING HARDWARE SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
9. ALL LOGS AND ROOT WADS SHALL BE RECENTLY FELLED HEALTHY / LIVING TREES FREE OF ROT AND OPEN CAVITIES.
10. ALL LOGS SHALL BE APPROVED BY THE ENGINEER.
11. SEE DETAIL "SOIL STABILIZATION MATTING" FOR TYPICAL MATTING PLACEMENT, WOOD STAKE DETAILS AND SPACING.
12. PLACE FOOTER LOG ON TAMPED, COMPACTED INSITU SOIL. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH CHANNEL BED SAND AND GRAVEL FOR COMPACTION.

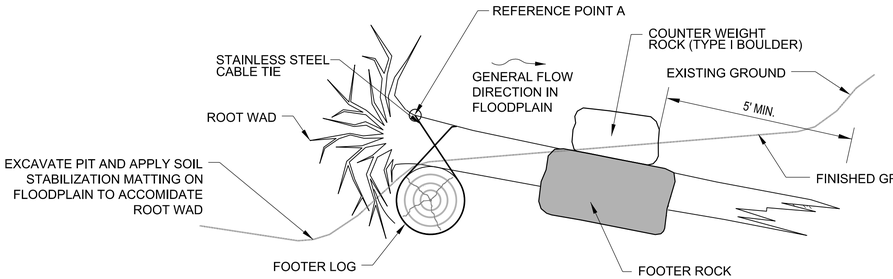


SECTION A-A

ALIGNMENT	STATIONING		ROOTWAD			FOOTER LOG		COUNTER-WEIGHT BOULDER
			DIAMETER	LOG LENGTH	DIAMETER	DIAMETER	LENGTH	
	START	END	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	TYPE
TRIBUTARY 8-4	111+26.0	115+27.0	1.0	16.0	2.5	1.0	12.0	2
TOLERANCE			0.3+/-	MIN	MIN	0.3+/-	MIN	MIN

ROOTWAD (RWD) REVETMENT DETAIL (TYP.)

NOT TO SCALE



SECTION A–A

NOTES:
1. FLOODPLAIN ROOTWAD PROVIDES FLOW RESISTANCE IN THE FLOODPLAIN TO REDUCE VELOCITIES AND PROVIDE HABITAT OPPORTUNITY.
2. ROOTWAD LOG AND FOOTER LOG SHALL BE RECENTLY FELLED HARDWOOD SPECIES FREE OF ROT BETWEEN 12" AND 18" DIAMETER.
3. THE ROOTWAD FAN SHALL BE A MINIMUM OF 5 FEET IN DIAMETER – AND TRIMMED TO BE FLUSH WITH THE GROUND.
4. INSTALL THE FOOTER LOG 50% BELOW THE FINISHED GRADE.
5. EMBED THE ROOTWAD LOG A MINIMUM OF 5 FEET INTO THE FLOODPLAIN SOIL.
6. ROODWAD SHALL BE PLACED GENERALLY IN THE UPSTREAM DIRECTION, WITH ROOTWAD LOG PLACED GENERALLY PARALLEL TO THE DIRECTION OF FLOW IN THE FLOODPLAIN AND THE FOOTER LOG PLACED GENERALLY PERPENDICULAR TO THE DIRECTION OF FLOW IN THE FLOODPLAIN.

FLOODPLAIN ROOTWAD

NOT TO SCALE

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. WOODY DEBRIS - DE-01
   D. HEAVY BACKFILL- DE-01
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   A. SOIL MATTING - OUTER LAYER
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   D. KEY TRENCH
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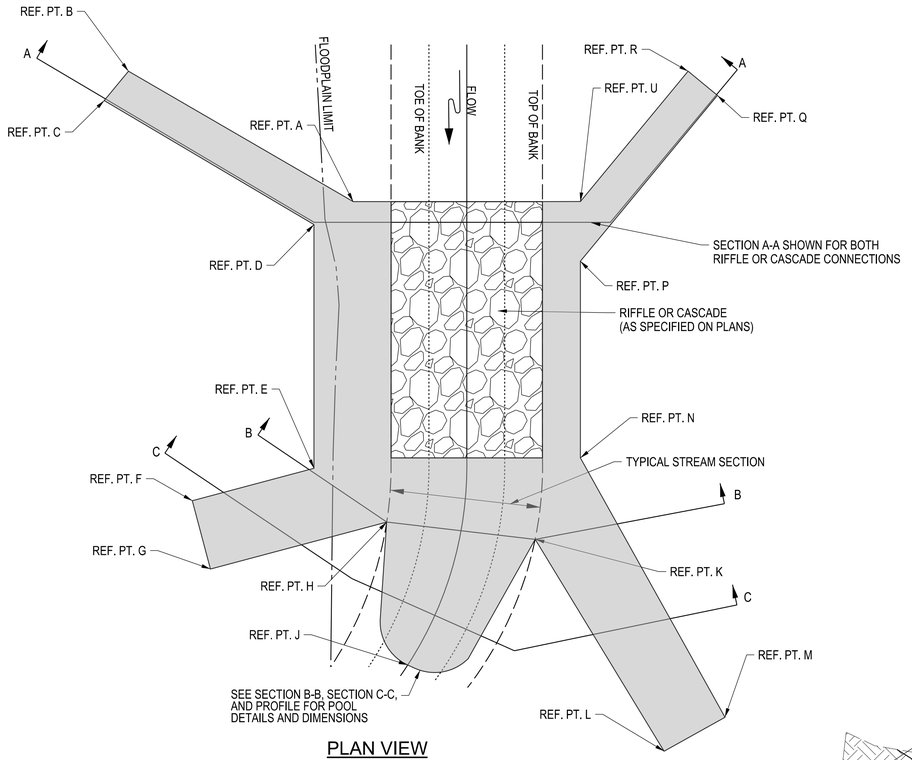
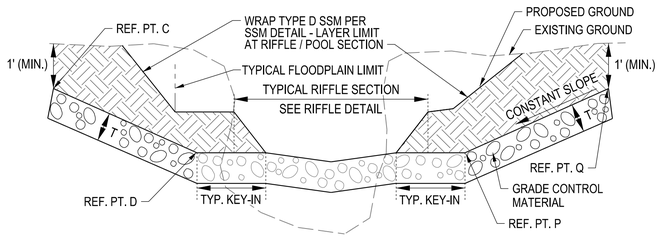
Designed By : R.B.T.
Reviewed By : N.A.R.
Scale : NOT TO SCALE
Date : AUGUST 2023
Drawing No. 45 Of 124
Sheet No. DE-A08 Of DE-A10

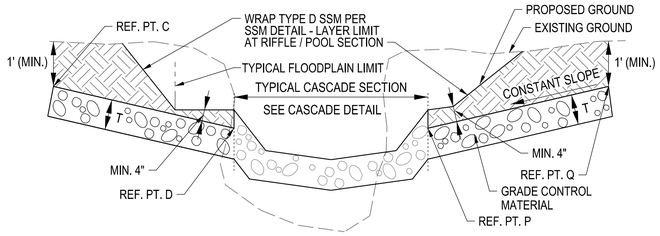
BID No.:
HCG DWG ID No.:
SCALE: 1" = 1'-0"
BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



PLAN VIEW



SECTION A-A AT RIFFLE



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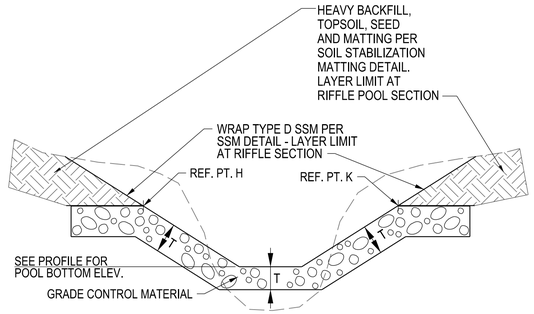
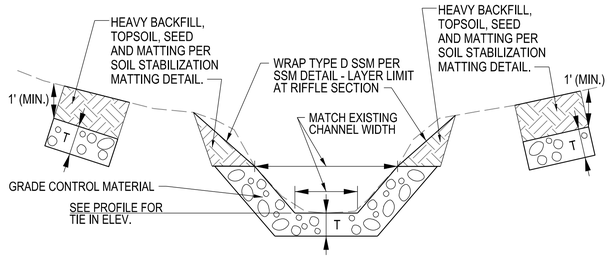


SECTION B-B



SECTION C-C
SECTION C TRANSITIONS TO
EXISTING CHANNEL DIMENSIONS

FLOODPLAIN SILL				
AREA		SQ FT	213.7	
THICKNESS (T)		FT	2	
VOLUME		CY	15.8	
MIX			M-12	
FPS #	REF. POINT	STA	OFFSET	ELEV
FPS-2-1	A	22+61.8	4.25' RT	426.5
	B	22+63.8	19.0' RT	426.7
	C	22+66.6	17.7' RT	426.7
	D	22+65.4	4.25' RT	426.4
	E	22+73.9	4.25' RT	426.0
	F	22+78.3	11.9' RT	426.2
	G	22+79.9	10.6' RT	426.2
	H	22+77.	3.0' RT	425.8
	J	22+81.1	0.0' RT/LT	425.4
	K	22+77.	3.0' LT	425.8
	L	22+77.	13.0' LT	426.2
	M	22+73.9	12.1' LT	426.2
	N	22+73.9	4.25' LT	426.0
	P	22+64.1	4.25' LT	426.4
	Q	22+62.9	8.9' LT	426.7
	R	22+61.1	8.3' LT	426.7
	U	22+61.8	4.25' LT	426.5

FLOODPLAIN SILL				
AREA		SQ FT	51	
THICKNESS (T)		FT	2	
VOLUME		CY	3.8	
MIX			M-12	
FPS #	REF. POINT	STA	OFFSET	ELEV
FPS-2-2	A	23+43.1	5.0' RT	424.1
	B	23+42.1	13.5' RT	424.5
	C	23+43.8	13.1' RT	424.5
	D	23+45.8	5.0' RT	423.9
	E	--	--	--
	F	--	--	--
	G	--	--	--
	H	--	--	--
	J	--	--	--
	K	--	--	--
	L	--	--	--
	M	--	--	--
	N	--	--	--
	P	23+49.7	5.0' LT	423.8
	Q	23+47.	10.0' LT	424.5
	R	23+41.6	7.7' LT	424.5
	U	23+43.1	5.0' LT	424.1

FLOODPLAIN SILL				
AREA		SQ FT	56.8	
THICKNESS (T)		FT	2	
VOLUME		CY	4.2	
MIX			M-5	
FPS #	REF. POINT	STA	OFFSET	ELEV
FPS-5-1	A	50+32.	2.8' RT	405.6
	B	50+27.1	7.6' RT	405.8
	C	50+31.2	9.2' RT	405.8
	D	50+36.	2.8' RT	405.4
	E	--	--	--
	F	--	--	--
	G	--	--	--
	H	--	--	--
	J	--	--	--
	K	--	--	--
	L	--	--	--
	M	--	--	--
	N	--	--	--
	P	50+36.	2.8' LT	405.4
	Q	50+35.2	6.5' LT	405.8
	R	50+31.2	6.1' LT	405.8
	U	50+32.	2.8' LT	405.6

FLOODPLAIN SILL				
AREA		SQ FT	210.3	
THICKNESS (T)		FT	2	
VOLUME		CY	15.6	
MIX			M-12	
FPS #	REF. POINT	STA	OFFSET	ELEV
FPS-12-1	A	90+30.1	5.5' RT	394.2
	B	90+22.4	23.2' RT	394.4
	C	90+28.2	24.8' RT	394.4
	D	90+36.6	5.5' RT	393.7
	E	--	--	--
	F	--	--	--
	G	--	--	--
	H	--	--	--
	J	--	--	--
	K	--	--	--
	L	--	--	--
	M	--	--	--
	N	--	--	--
	P	90+36.6	5.5' LT	393.7
	Q	90+30.9	16.5' LT	394.4
	R	90+25.5	13.9' LT	394.4
	U	90+30.1	5.5' LT	394.2

FLOODPLAIN SILL				
AREA		SQ FT	385.7	
THICKNESS (T)		FT	2	
VOLUME		CY	28.6	
MIX			M-9	
FPS #	REF. POINT	STA	OFFSET	ELEV
FPS-1-1	A	33+00.	11.0' RT	368.0
	B	32+98.8	24.7' RT	368.2
	C	33+05.2	21.9' RT	368.2
	D	33+06.	11.0' RT	368.0
	E	33+15.6	11.0' RT	367.3
	F	--	--	--
	G	--	--	--
	H	--	--	--
	J	33+23.6	0.0' RT/LT	364.6
	K	--	--	--
	L	--	--	--
	M	--	--	--
	N	33+15.6	11.0' LT	367.3
	P	33+06.8	11.0' LT	368.0
	Q	33+04.5	24.8' LT	368.2
	R	32+98.6	24.1' LT	368.2
	U	33+00.	11.0' LT	368.0

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   D. HEAVY BACKFILL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. STRUCTURE TABLES ARE PROVIDED ON THE PLAN SHEET WHERE THE STRUCTURE IS DISPLAYED - SR-01 - SR-07

NOTES:

1. WASH IN CHANNEL BED SAND AND GRAVEL INTO ALL GRADE CONTROL MATERIAL.
2. CONSTRUCT THE CHANNEL PER THE TYPICAL RIFFLE OR CASCADE GRADE CONTROL SECTION. SEE CASCADE OR RIFFLE DETAIL AND PROFILE.
3. THE FLOODPLAIN SILL IS CONSTRUCTED AS AN EXTENSION OF GRADE CONTROL MATERIAL BEYOND THE TYPICAL CHANNEL SECTION.
4. REFER TO STRUCTURE TABLES.

FLOODPLAIN SILL (FS) DETAIL
NOT TO SCALE

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

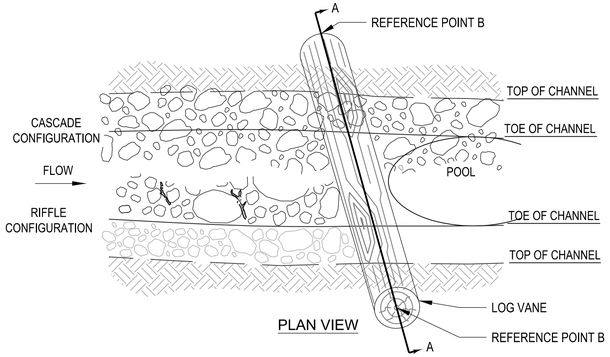
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 46 Of 124

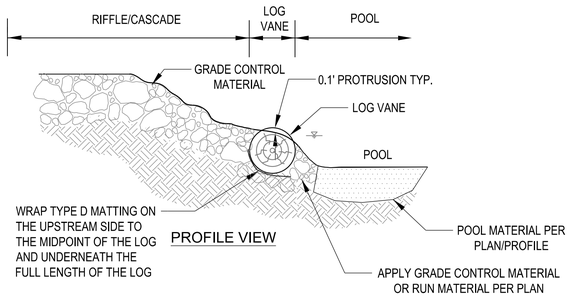
Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. DE-A09 Of DE-A10

BID No.:
HCG DWG ID No.:
SCALE 1" = 1'-0"

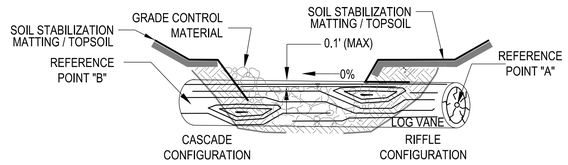
BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



PLAN VIEW



PROFILE VIEW



CROSS SECTION VIEW

NOTES:

1. LOG VANES ARE TO BE CONSTRUCTED USING HARDWOOD LOGS HARVESTED FROM ON-SITE TREE FELLING. LOGS FOR USE SHALL BE FREE OF ROT OR VOIDS AND SHALL HAVE 100% BARK COVER. LOGS SHALL HAVE A MAXIMUM DIAMETER OF 12" AND A MINIMUM LENGTH OF 12'.
2. LOGS SHALL BE PLACED FLUSH WITH THE RIFFLE BED ELEVATION. IF NATURAL VARIATIONS IN THE LOGS RESULT IN DEPRESSED AREAS, THE LOW PORTION SHALL BE CENTERED IN THE CHANNEL. NO PORTION OF THE LOG IS TO PROTRUDE MORE THAN 0.1 FOOT ABOVE THE FINISHED RIFFLE SURFACE.
3. LOG VANES SHALL EXTEND BETWEEN REFERENCE POINTS AS A SINGLE CONTINUOUS LOG. LOGS MAY EXTEND PAST REFERENCE POINTS.
4. LOGS SHALL BE PLACED PERPENDICULAR TO THE CHANNEL AND EMBEDDED A MINIMUM OF 4.5' INTO EITHER BANK.
5. WASH IN CHANNEL BED SAND AND GRAVEL AFTER LOG VANE AND GRADE CONTROL MATERIAL ARE INSTALLED PER THE RIFFLE/CASCADE.

LOG VANE (LV) DETAIL
NOT TO SCALE

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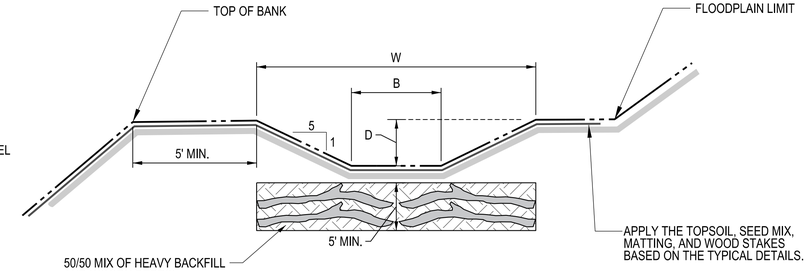
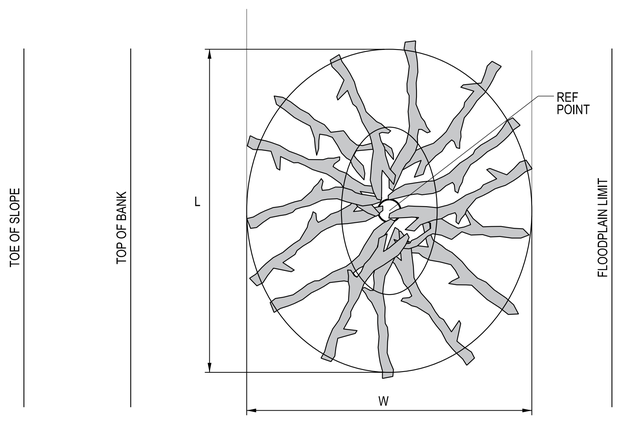
BALTIMORE, MD 21202
(410) 727-5050



SECTION VIEW

NOTES:

1. MICROPOOL DIMENSIONS VARY, THE WIDTH, LENGTH, AND DEPTH ARE INDICATED IN THE PLAN SHEETS.
2. THE 50-50 MIX OF HEAVY BACKFILL AND WOODY DEBRIS SHALL BE MIXED PRIOR TO PLACEMENT OR THE WOODY DEBRIS SHALL BE INSTALLED IN 1-FOOT LIFTS WITH THE HEAVY BACKFILL WORKED INTO EACH LIFT. IN EITHER CASE, TAMP THE MIXTURE TO MINIMIZE SETTLING AFTER CONSTRUCTION.
3. THE 50-50 MIX OF WOODY DEBRIS AND HEAVY BACKFILL DEPTH CAN BE INCREASED WITH APPROVAL OF THE ENGINEER. THIS IS MEANT TO BE A LOCATION TO DISPOSE OF EXCESS GREEN WASTE. NO PAYMENT FOR EXCAVATION TO BE PROVIDED FOR OVEREXCAVATION TO PLACE ADDITIONAL GREENWASTE.
4. INDIVIDUAL PIECES OF WOODY DEBRIS MUST BE BURIED A MINIMUM 2/3 INTO THE MICROPOOL SLOPE OR CONSTRUCTED FLOODPLAIN.
5. THE MICROPOOL GRADING AND WOODY DEBRIS MUST BE A MINIMUM 5 FEET FROM THE TOP OF CHANNEL BANK. THIS MINIMUM DISTANCE REQUIREMENT OVERRIDES DIMENSION TABLE INFORMATION IF THE TWO ARE IN CONFLICT.
6. THE POOL DEPTH IS THE VERTICAL DISTANCE FROM THE TYPICAL FLOODPLAIN ELEVATION TO THE BOTTOM OF THE MICROPOOL.
7. APPLY THE TOPSOIL, SEED MIX, MATTING, AND WOOD STAKES BASED ON THE TYPICAL CONSTRUCTION DETAILS. SEE CROSS REFERENCES.



PLAN VIEW

CROSS REFERENCES:

1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. GRADE CONTROL MATERIAL - DE-01
   B. CHANNEL BED SAND AND GRAVEL - DE-01
   C. WOODY DEBRIS - DE-01
   D. HEAVY BACKFILL - DE-01
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING:
   A. SOIL MATTING - OUTER LAYER
   B. SOIL BLANKET - INNER LAYER
   C. WOOD STAKES
   D. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09
4. SEE DETAILS FOR BANK STABILIZATION WITHIN POOLS
   A. BRUSH ARMOR - DE-06
   B. TOE WOOD - DE-06
   C. ROOT WAD REVETMENT - DE-07

MICROPOOL (MP) DETAIL
NOT TO SCALE

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX. EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

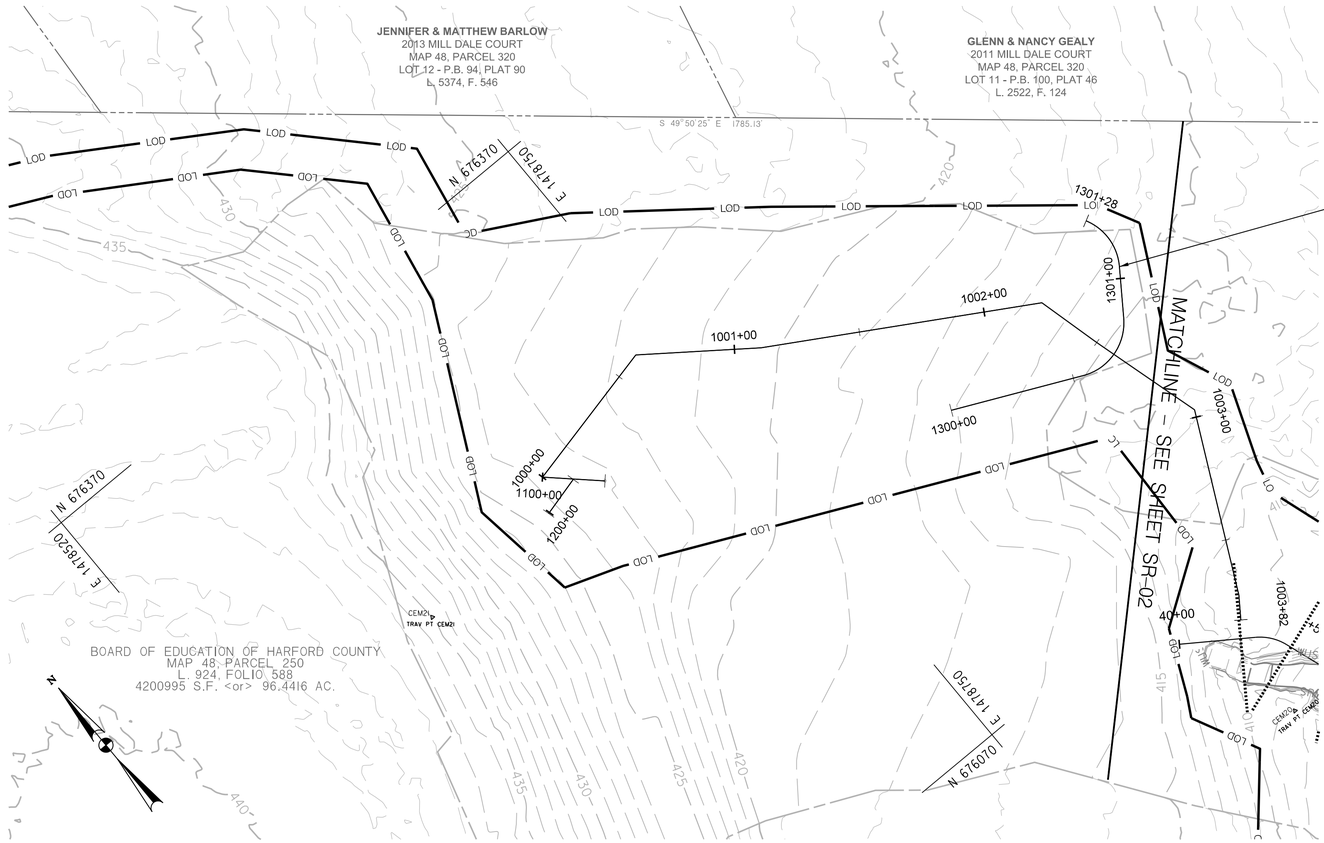
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 47 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. DE-A10 Of DE-A10

BID No.:
HCG DWG ID No.:
SCALE: 1:1 IF BAR MEASURES 1"

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSR-D010_Fallston.dgn



LEGEND

LOD ——— LOD LIMIT OF DISTURBANCE

1+00 +50 PROPOSED STREAM CHANNEL ALIGNMENT

30' 0 30' 60'

SCALE: 1"=30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
GT-A-01: ALIGNMENT TABLES
CS-01 - CS-22: CROSS SECTIONS

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

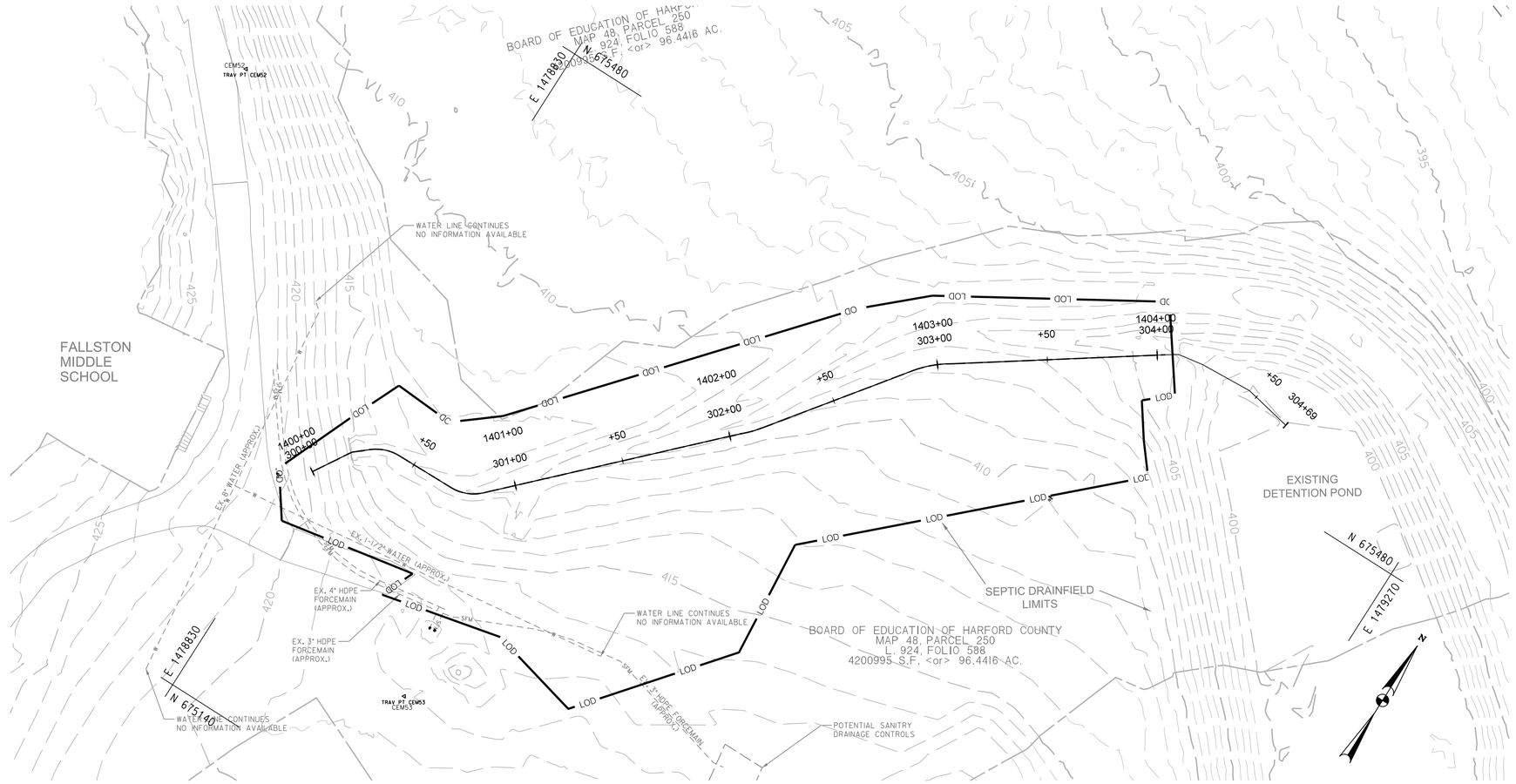
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 81 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. GS-B01 Of GS-B02

BID No.:
HCG DWG ID No.:
SCALE: 1"=30'

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



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1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EXISTING FEATURES LEGEND
GT-A-01: ALIGNMENT TABLES
CS-01 - CS-22: CROSS SECTIONS

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.

Scale : 1" = 30'
Date : AUGUST 2023

Drawing No. 82 Of 124
Sheet No. GS-B02 Of GS-B02

BID No.:
HCG DWG ID No.:

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

SWM SURFACE SAND FILTER BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
L1	1000+00.00		60.8666	N 77.0562 E	676262.14	1478678.18
L2	1000+60.87		49.7126	S 53.5688 E	676275.78	1478737.50
L3	1001+10.58		112.6047	S 59.4146 E	676246.26	1478777.50
L4	1002+23.18		25.4658	S 14.4174 E	676188.96	1478874.44
L5	1002+48.65		2.8887	S 15.0378 E	676164.30	1478880.78
L6	1002+51.54		17.0649	S 15.6577 E	676161.51	1478881.53
L7	1002+68.60		28.4178	S 15.8976 E	676145.07	1478886.13
L8	1002+97.02		75.4372	S 26.2431 W	676117.74	1478893.92
L9	1003+72.46		9.8998	S 35.1014 W	676050.08	1478860.56
END	1003+82.36				676041.98	1478854.87

SWM STORM DRAIN BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
L1	1100+00.00		24.786	S 46.8163 E	676262.14	1478678.18
END	1100+24.79				676245.18	1478696.25

SWM STORM DRAIN BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
L1	1200+00.00		16.6735	N 75.4588 E	676249.51	1478670.84
END	1200+16.67				676253.7	1478686.98

SWM SAND FILTER EMBANKMENT BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
L1	1300+00.00		54.0221	S 65.0330 E	676179.13	1478819.65
C1	1300+54.02	21.6	30.1683	N 74.9551 E	676156.32	1478868.63
L2	1300+84.19		20.5392	N 34.9432 E	676163.53	1478895.45
C3	1301+04.73	21.6	23.5641	N 3.6903 E	676180.37	1478907.21
END	1301+28.29				676202.74	1478908.66

SWM RSC BASELINE

POINT	STATION	RADIUS	LENGTH	DIRECTION / CHORD DIRECTION	NORTHING	EASTING
L1	1400+00.00		20	N 31.3064 E	675255.86	1478831.50
L2	1400+20.00		8.261	N 49.3987 E	675272.95	1478841.89
C1	1400+28.26	20	13.8494	N 69.2365 E	675278.33	1478848.16
L3	1400+42.11		27.5617	N 89.0743 E	675283.14	1478860.86
C2	1400+69.67	20	16.5473	N 65.3721 E	675283.59	1478888.41
L4	1400+86.22		0.0629	N 41.6699 E	675290.29	1478903.03
L5	1400+86.28		118.5253	N 44.5507 E	675290.33	1478903.07
L6	1402+04.81		0.0784	N 48.1447 E	675374.80	1478986.22
C3	1402+04.89	50	10.0012	N 42.4144 E	675374.85	1478986.28
L7	1402+14.89		58.5487	N 36.7105 E	675382.22	1478993.01
L8	1402+73.44		14.5014	N 36.5703 E	675429.16	1479028.01
C4	1402+87.94	50	18.8072	N 47.3460 E	675440.81	1479036.65
L9	1403+06.74		93.2551	N 55.0735 E	675453.47	1479050.40
END	1404+00.00				675506.86	1479126.86

WSP USA Inc
1 EAST PRATT STREET SUITE 300
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(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
GEOMETRY-SWM-TABLES

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 83 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. GT-B01 Of GT-B01

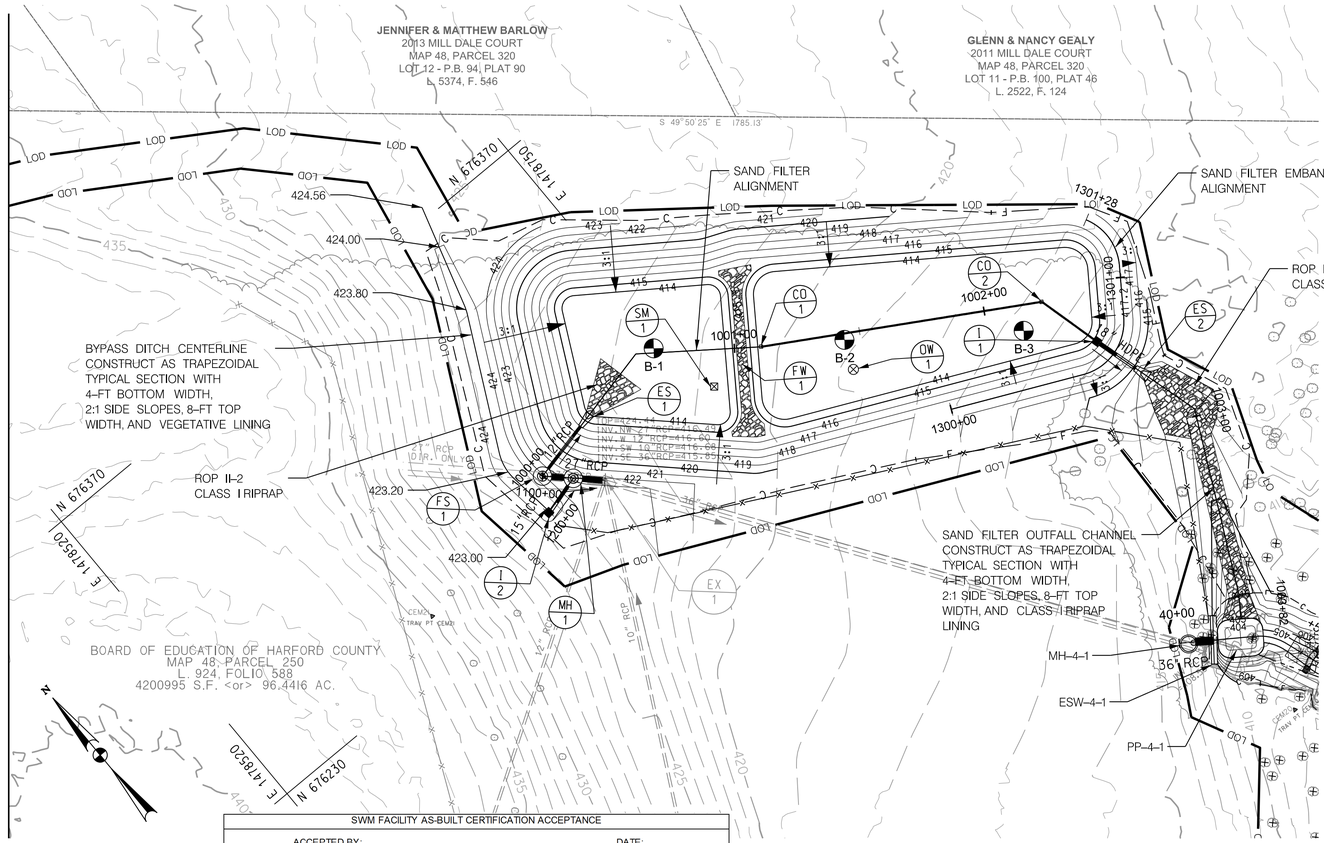
BID No.:

HCG DWG ID No.:

SCALE: 1" = 100'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pGT-B001_Fallston.dgn



LEGEND

- INLET
- PROPOSED PIPE
- MANHOLE
- END–SECTION
- END–WALL
- CLEANOUT
- SEDIMENT MARKER
- OBSERVATION WELL
- UNDER DRAIN
- 420 MAJOR CONTOUR
- 419 MINOR CONTOUR
- BORING LOCATION
- TREE TAKE
- CLASS I RIPRAP
- CLASS II RIPRAP
- LOD LIMIT OF DISTURBANCE
- C CUT LINE
- F FILL LINE
- PROPOSED CHAIN LINK FENCE

NOTE:
IF SAND FILTER AS–BUILT CONDITIONS INCLUDE EMBANKMENT HEIGHT EXCEEDING 6 FEET, SAND FILTER WILL BE RECONSTRUCTED TO MEET MD–378 GUIDLINES.

OBSERVATION WELL	
OW#	EA
OW-01	1

SEDIMENT MARKER	
SM#	EA
SM-01	1

RIPRAP SLOPE AND CHANNEL PROTECTION (ROCK OUTLET PROTECTION)		
ROP #	RIPRAP CLASS	VOLUME (CY)
ROP II-2	I	26
ROP III-3	I	39

CLEAN OUT			
STR #	INV. STA	OFFSET	RIM ELEV.
CO-1	1001+10.6	0.0' LT/ RT	416.00
CO-2	1002+23.2	0.0' LT/ RT	416.00

END SECTION					
STR #	INV. STA	OFFSET	INV. ELEV.	PIPE SIZE	TYPE
ES-1	1000+24.8	0.0' LT/ RT	414.00	12"	RCP
ES-2	1002+68.6	0.0' LT/ RT	411.50	18"	HDPE

INLET					
STR #	INV. STA	OFFSET	RIM ELEV.	STD. TYPE	H
I-1	1002+51.0	0.0' LT/ RT	415.50	S	3.9'
I-2	1200+01.5	0.0' LT/ RT	423.00	S	5.3'

COARSE SAND - SWM	
237	CY

NO. 57 AGGREGATE - SWM	
99	CY

NO. 7 AGGREGATE - SWM PEA GRAVEL	
79	CY

18" HDPE DUAL-WALL PIPE	
18	LF

4 FT. GALV. CHAIN LINK FENCE	
322	LF

CLASS 1 EXCAVATION	
3,126	CY

SELECT BORROW - EMBANKMENT	
78	CY

12" RCP PIPE	
22.0	LF

15" RCP PIPE	
12.0	LF

27" RCP PIPE	
14.0	LF

36" RCP PIPE	
12.0	LF

CLASS I RIPRAP - FOR SLOPE AND CHANNEL PROTECTION	
188	CY

SCH 40 PVC PIPE	
15.0	LF

SCH 40 PERFORATED PVC PIPE	
134.4	LF

FLOW SPLITTER						
STR #	INV. STA	OFFSET	RIM ELEV.	STD. TYPE	DIAMETER	H
FS-1	1000+03.0	0.0' LT/ RT	424.80	C-3	72"	9.5'

STANDARD MANHOLE				
STR #	STA	OFFSET	INV. ELEV.	DIAMETER
MH-1	1100+12.2	0.0' LT/ RT	415.95	72"

SWM FACILITY AS-BUILT CERTIFICATION ACCEPTANCE

ACCEPTED BY: _____ DATE: _____

(NAME)

As-Built Inspection Tabulations/Checklist for BMP Number:
SWM Billing No.:

Accepted by HC-DPW:

Name Date

SAND FILTER CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location*			
Placement of geotextiles and filter fabric*			
Subdrain and observations well installed according to plans*			
Placement of aggregate layers according to plans and details*			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlets, outlets, orifices and flow distribution structures) installed according to plans			
Final grading and permanent stabilization completed*			

***AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10**

November 2021

F-1 SAND FILTER TABULATONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
AS-BUILT SURVEY	N/A				
FOREBAY BED AREA (LxW)	3,108 SF				
FOREBAY VOLUME	5,428 CF				
FOREBAY BED SURFACE ELEVATION	414.00				
FOREBAY WEIR ELEVATION	415.50				
FOREBAY WEIR LENGTH	66.5 FT				
FILTER BED AREA (LxW)	6,402 SF				
FILTER BED SURFACE ELEVATION	414.00				
FILTER INLET PIPE SIZE	15 IN				
FILTER INLET PIPE INVERT ELEVATION	414.00				
FILTER INLET PIPE INVERT ELEVATION AT FLOWSPLITTER	415.15				
FLOWSPLITTER BYPASS PIPE SIZE	27 IN				
FLOWSPLITTER BYPASS PIPE INVERT ELEVATION	416.50				
THICKNESS OF FILTER MEDIA (PEA GRAVEL, SAND, & TOPSOIL)	1.6 FT				
OUTLET PIPE (SUBDRAIN) SIZE	6 IN				
OUTLET PIPE (SUBDRAIN) ELEVATION	411.65				
OUTLET PROTECTION STONE DIMENSIONS (LxWxD)	22.2 FTx 18.75 FTx1.6 FT				
OUTLET PROTECTION STONE SIZE	CLASS I RIPRAP				
OBSERVATION WELL WITH DEPTH TO FILTER BOTTOM INDICATED ON CAP	3.52 FT				
OUTLET CONTROL STRUCTURE ELEVATION	415.50				
OUTLET PIPE SIZE	18 IN				
OUTLET PIPE INVERT ELEVATION	411.65				

SAND FILTER MAINTENANCE SCHEDULE

INSPECTION ITEM	FREQUENCY OF INSPECTION	INSPECTION REQUIREMENTS	REMEDIAL ACTION
SAND FILTER BASIN DEWATERING	SEASONALLY AND AFTER A MAJOR STORM	FACILITY MUST DEWATER WITHIN 48 HOURS OF RAINFALL. NOTICEABLE ODORS, STAINED WATER ON THE FILTER SURFACE OR AT THE OUTLET, OR THE PRESENCE OF ALGAE OR AQUATIC VEGETATION ARE INDICATORS OF ANAEROBIC CONDITIONS AND INADEQUARTE DEWATERING OF THE FACILITY.	THE BOTTOM SOIL SHOULD BE TILLED AND REVEGETATED
PLANT COMPOSITION AND HEALTH	SPRING AND FALL	COMPARE PLANT COMPOSITION WITH APPROVED PLANS. CHECK FOR INVASIVE SPECIES OR WEEDS. CHECK FOR DEAD OR DYING VEGETATION.	REMOVE AND REPLACE PLANTS IN ACCORDANCE WITH PLAN SPECIFICATIONS DURING NEXT PLANTING SEASON.
VEGETATIVE COVER AND EROSION	QUARTERLY	CHECK FOR EVIDENCE OF EROSION, RUNOFF CHANNELIZING, OR BARE SPOTS.	RE-SEED OR RE-PLANT IN ACCORDANCE WITH APPROVED LANDSCAPING PLANS. RE-GRADING MAY BE REQUIRED WHEN CONCENTRATED FLOW CAUSES RILLS OR GULLYING THROUGH THE FACILITY.
DEBRIS AND TRASH CLEANOUT	MONTHLY	CHECK THAT THE FACILITY IS CLEAN OF TRASH AND DEBRIS. INLETS, OUTLETS, AND CONTRIBUTING AREAS AROUND THE FACILITY MUST BE CLEARED.	TRASH AND DEBRIS MUST BE DISPOSED OF IN AN ACCEPTABLE MANNER ACCORDING TO CURRENT REGULATIONS
STRUCTURAL COMPONENTS	ANNUALLY	CHECK FOR EVIDENCE OF STRUCTURAL DETERIORATION, SPALLING, OR CRACKING. INLET AND OUTLET STRUCTURES MUST BE IN GOOD CONDITION.	REPAIR TO GOOD CONDITION IN ACCORDANCE TO SPECIFICATIONS ON THE APPROVED PLANS.
FOREBAY SEDIMENT ACCUMULATION	TWO TIMES PER YEAR	CHECK FOR SEDIMENT ACCUMULATION IN THE FOREBAY.	WHEN THE FOREBAY DEPTH IS LESS THAN HALF THE PROPOSED DESIGN, SEDIMENT MUST BE REMOVED AND THE FOREBAY RESTORED ACCORDING TO THE APPROVED DESIGN.
GRASS CHANNEL CONVEYANCE SYSTEMS	SEASONALLY AND AFTER A MAJOR STORM	CHECK FOR EROSION, FLOW BLOCKAGES, AND STABLE CONVEYANCE.	STABILIZE AND GRADE ACCORDING TO APPROVED PLAN.
OVERALL FUNCTION OF THE FACILITY	ANNUALLY	CHECK THAT FLOW SPLITTERS ARE FUNCTIONING AS DESIGNED AND THAT BYPASS IS OPERATING AS DESIGNED.	CONSTRUCTION MUST BE IN ACCORDANCE WITH APPROVED PLANS.

FALLSTON SAND FILTER FACILITY ANALYSIS

DRAINAGE AREA:	10.0 ACRES	EX 10-YR WSE:	N/A
IMPERVIOUS AREA:	5.88 ACRES (60%)	EX 10-YR STORAGE:	N/A
LOCATION:	HARFORD COUNTY, MD	EX 10-YR PEAK DISCHARGE:	31.36 CFS
WQv REQUIRED:	0.495 AC-FT	PR 10-YR WSE:	415.87 FT
PERCENT STORAGE REQ. ABOVE SURFACE:	75%	PR 10-YR STORAGE:	0.502 AC-FT
MIN. SURFACE STORAGE REQ. (ESDv REQ.)	0.372 AC-FT	PR 10-YR PEAK DISCHARGE:	34.53 CFS
TARGET CPv:	N/A		
PR CPv:	N/A	EX 100-YR WSE:	N/A
TOTAL ESDv PROVIDED:	0.372 AC-FT	EX 100-YR STORAGE:	N/A
RAINFALL DEPTH TREATED:	1 INCH	EX 100-YR PEAK DISCHARGE:	61.17 CFS
IMPERVIOUS AREA TREATED:	5.88 ACRES	PR 100-YR WSE:	416.06 FT
TOTAL NITROGEN REMOVAL:	59.6 LBS/YR	PR 100-YR STORAGE:	0.543 AC-FT
TOTAL PHOSPHORUS REMOVAL:	12.8 LBS/YR	PR 100-YR PEAK DISCHARGE:	70.35 CFS
TOTAL SUSPENDED SEDIMENT REMOVAL:	45,530.7 LBS/YR		
REQ. 24 HR DRAWDOWN ORIFICE SIZE:	N/A	FREEBOARD REQUIRED:	1.0'
		FREEBOARD PROVIDED:	1.33' (10-YEAR)
		378 STR. HAZARD CLASS:	N/A
		STORAGE HEIGHT PRODUCT:	5.80 AC-FT-FT

WSP USA Inc
1 EAST PRATT STREET SUITE 300
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Cross References

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SW-02: RSC AS-BUILT CERTIFICATIONS

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION STORMWATER MANAGEMENT PLAN

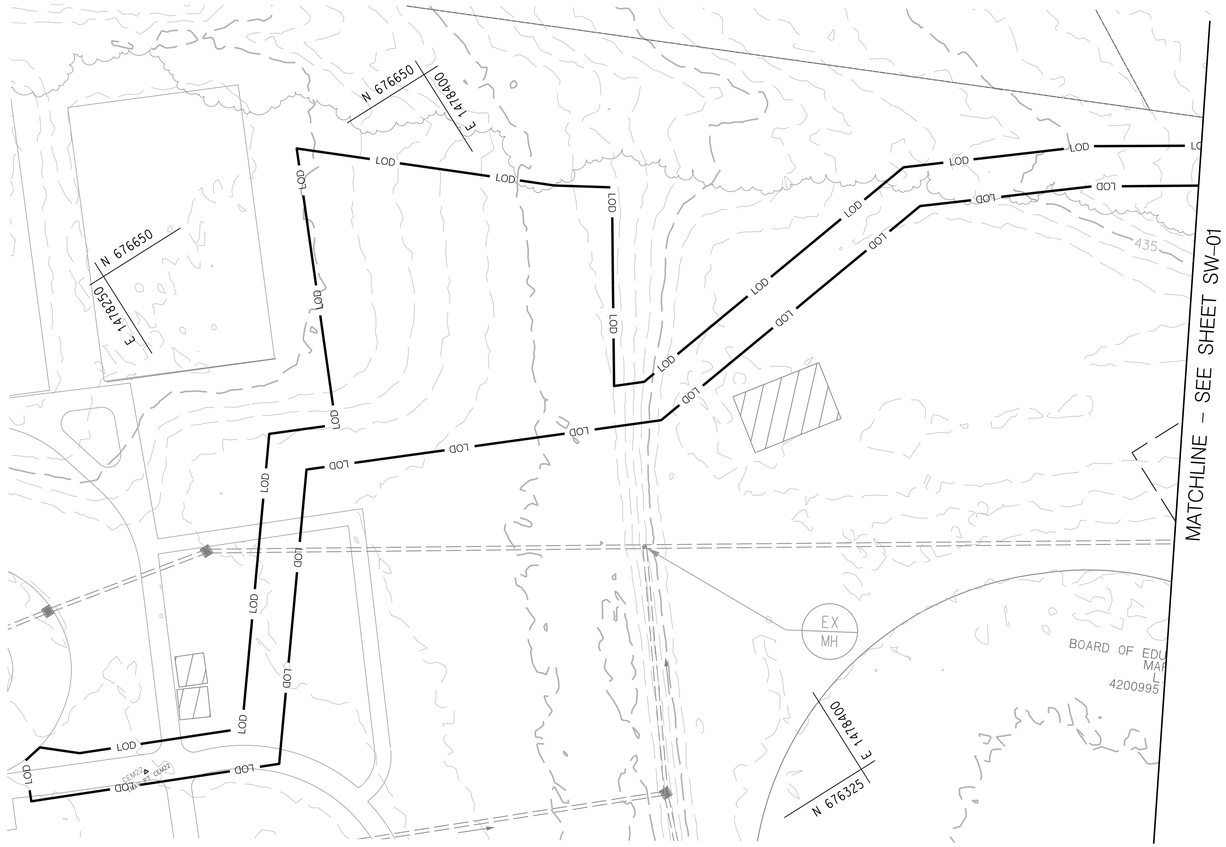
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 84 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. SW-01 Of SW-03

BID No.:
HCG DWG ID No.:
SCALE 1" = 30'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pSW-P001_Fallston.dgn



LEGEND

- INLET
- PROPOSED PIPE
- MANHOLE
- END–SECTION
- END–WALL
- CLEANOUT
- SEDIMENT MARKER
- OBSERVATION WELL
- UNDER DRAIN
- 420 MAJOR CONTOUR
- 419 MINOR CONTOUR
- BORING LOCATION
- TREE TAKE
- CLASS I RIPRAP
- CLASS II RIPRAP
- LOD LIMIT OF DISTURBANCE
- C CUT LINE
- F FILL LINE
- PROPOSED CHAIN LINK FENCE

RSC FACILITY AS-BUILT CERTIFICATION DATA TABLE

FEATURE	DESIGN	AS-BUILT
RSC 1		
POOL LENGTH (FT)	28.0	
POOL WIDTH (FT)	37.5	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	7.0	
UPSTREAM RIFFLE LENGTH (FT)	24.4	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	
RSC 2		
POOL LENGTH (FT)	32.0	
POOL WIDTH (FT)	35.0	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	6.5	
UPSTREAM RIFFLE LENGTH (FT)	15.4	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	

RSC FACILITY AS-BUILT CERTIFICATION DATA TABLE

FEATURE	DESIGN	AS-BUILT
RSC 3		
POOL LENGTH (FT)	32.0	
POOL WIDTH (FT)	35.0	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	8.6	
UPSTREAM RIFFLE LENGTH (FT)	11.7	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	
RSC 4		
POOL LENGTH (FT)	32.0	
POOL WIDTH (FT)	35.0	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	8.7	
UPSTREAM RIFFLE LENGTH (FT)	11.5	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	

RSC FACILITY AS-BUILT CERTIFICATION DATA TABLE

FEATURE	DESIGN	AS-BUILT
RSC 5		
POOL LENGTH (FT)	32.0	
POOL WIDTH (FT)	35.0	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	8.7	
UPSTREAM RIFFLE LENGTH (FT)	11.5	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	
RSC 6		
POOL LENGTH (FT)	32.0	
POOL WIDTH (FT)	29.0	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	8.6	
UPSTREAM RIFFLE LENGTH (FT)	11.6	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	

RSC FACILITY AS-BUILT CERTIFICATION DATA TABLE

FEATURE	DESIGN	AS-BUILT
RSC 7		
POOL LENGTH (FT)	32.0	
POOL WIDTH (FT)	26.0	
POOL DEPTH (FT)	2.0	
POOL FILTER MEDIA (IN).	3.0	
RIGHT SIDE SLOPE (C:1)	3.0	
LEFT SIDE SLOPE (C:1)	3.0	
UPSTREAM RIFFLE SLOPE (%)	9.3	
UPSTREAM RIFFLE LENGTH (FT)	10.7	
UPSTREAM RIFFLE GRADE CONTROL DEPTH (IN.)	19.0	
CASCADE MATERIAL DEPTH (IN.)	32.0	

SWM FACILITY AS-BUILT CERTIFICATION ACCEPTANCE

ACCEPTED BY: _____ DATE: _____

(NAME)

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE GRADE WITHIN ACCESS PATH TO TRAVERSE REMAINING STUMPS AS NECCESSARY.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
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Drawing No. 85 Of 124

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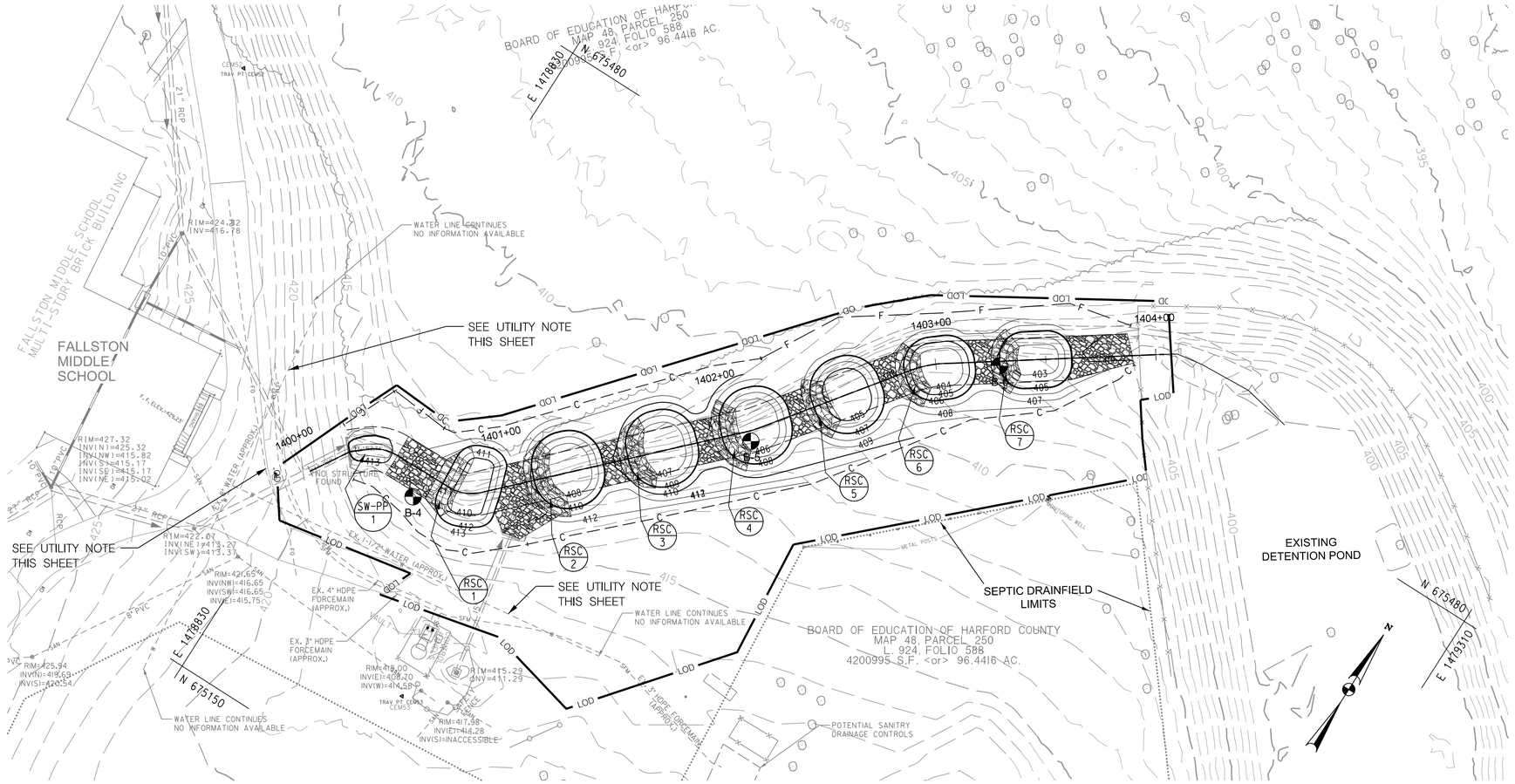

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- CLASS I RIPRAP
- CLASS II RIPRAP
- LIMIT OF DISTURBANCE
- CUT LINE
- FILL LINE
- PROPOSED CHAIN LINK FENCE

NOTE:
ALL UTILITIES ARE PRIVATE AND MAY NOT BE MARKED BY ONE-CALL. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING. NOTIFY THE ENGINEER IF A SUBSURFACE STRUCTURE OR UTILITY IS CONTACTED. UTILITY INFORMATION IS BASED ON DESIGN AND AS-BUILT PLANS.

CLASS 5 EXCAVATION - RSC	
400	CY

CLASS I RIPRAP - FOR SLOPE AND CHANNEL PROTECTION	
153	CY

CLASS II RIPRAP - FOR SLOPE AND CHANNEL PROTECTION	
315	CY

COARSE SAND - SWM	
544	CY

SHREDDED HARDWOOD BARK MULCH - RSC MEDIA	
136	CY

FALLSTON RSC FACILITY ANALYSIS	
DRAINAGE AREA:	10.28 ACRES
IMPERVIOUS AREA:	6.57 ACRES (64%)
LOCATION:	HARFORD COUNTY, MD
TARGET WQv STORAGE:	1.07 AC-FT
PR WQv WETPOOL:	0.20 AC-FT
WQv SUBSURFACE STORAGE:	0.13 AC-FT
TOTAL WQv PROVIDED:	0.33 AC-FT
RAINFALL DEPTH TREATED:	0.59 INCHES
IMPERVIOUS AREA TREATED:	3.91 ACRES
TOTAL NITROGEN REMOVAL:	90.6 LBS/YR
TOTAL PHOSPHORUS REMOVAL:	14.1 LBS/YR
TOTAL SUSPENDED SEDIMENT REMOVAL:	43,774.9 LBS/YR

RSC MAINTENANCE SCHEDULE

INSPECTION ITEM	FREQUENCY OF INSPECTION	INSPECTION REQUIREMENTS	REMEDIAL ACTION
PLANT COMPOSITION AND HEALTH	SPRING AND FALL	COMPARE PLANT COMPOSITION WITH APPROVED PLANS. CHECK FOR INVASIVE SPECIES OR WEEDS. CHECK FOR DEAD OR DYING VEGETATION.	REMOVE AND REPLACE PLANTS IN ACCORDANCE WITH PLAN SPECIFICATIONS DURING NEXT PLANTING SEASON.
VEGETATIVE COVER AND EROSION	QUARTERLY	CHECK FOR EVIDENCE OF EROSION, RUNOFF CHANNELIZING, OR BARE SPOTS.	RE-SEED OR RE-PLANT IN ACCORDANCE WITH APPROVED LANDSCAPING PLANS. RE-GRADING MAY BE REQUIRED WHEN CONCENTRATED FLOW CAUSES RILLS OR GULLYING THROUGH THE FACILITY.
DEBRIS AND TRASH CLEANOUT	MONTHLY	CHECK THAT THE FACILITY IS CLEAN OF TRASH AND DEBRIS. INLETS, OUTLETS, AND CONTRIBUTING AREAS AROUND THE FACILITY MUST BE CLEARED.	TRASH AND DEBRIS MUST BE DISPOSED OF IN AN ACCEPTABLE MANNER ACCORDING TO CURRENT REGULATIONS

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Drawing No. 86 Of 124
Sheet No. SW-03 Of SW-03

BID No.:
HCG DWG ID No.:
SCALE 1:1000

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$

MDE - CHAPTER 3 FACILITY 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. 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).

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.

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 - ALL OF 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"- 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.

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.

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 LICENSEDIN THE STATE OFMARYLAND.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 AMXIMUM 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 FILL MATERIAL SHALL HAVE A MINIMUM DENSITY 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 REIEW AND ACCPETANCE, AT A MINIMUM, COMPACTION TESTS SHALL BE COMPLETED FOR EVERY LIFT OF FILL AND THE TESTING FREQUENCY SHALL BE AT 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 SIGNALED 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.

OWNER'S CERTIFICATION

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATION OF ATTENDANCE AT THE MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HARFORD SOIL CONSERVATION DISTRICT OR THIER AUTHORIZED AGENTS, OR AS DEEMED NECESSARY.

OWNER/DEVELOPER SIGNATURE — DATE: 3-18-24

JOSEPH J. SIEMEK, P.E.
PRINTED NAME

ENGINEER'S CERTIFICATION

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

ENGINEER'S SIGNATURE — DATE: 3/13/2024

ROBERT BRIAN TETRICK — 40814
PRINTED NAME — MD PE REGISTRATION NO.

AS-BUILT CERTIFICATION

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

ENGINEER'S SIGNATURE — DATE

PRINTED NAME — MD PE REGISTRATION NO.

SWM APPROVAL

HARFORD COUNTY BILLING NUMBER 97069
THESE PLANS HAVE BEEN REVIEWED BY HARFORD COUNTY AND MEET THE TECHNICAL REQUIREMENTS FOR STORMWATER QUANTITY AND/OR QUALITY MANAGEMENT ONLY.

REVIEWED FOR TECHNICAL SUFFICIENCY:
STORMWATER MANAGEMENT — DATE: 03/29/2024

REVIEW AND APPROVAL RECOMMENDED:
CHIEF ENGINEER — DATE: 4-5-24

APPROVAL RECOMMENDED:
DEPUTY DIRECTOR OF PUBLIC WORKS — DATE: 4/8/24

APPROVED:
DIRECTOR OF PUBLIC WORKS — DATE: 4-9-24

FIELD VERIFICATION CERTIFICATION

I HEREBY CERTIFY THAT I COMPLETED A FIELD VERIFICATION TO THE INFORMATION SHOWN ON THE PLANS ON 12/21/22 AND THAT THE INFORMATION SHOWN ON THE PLANS IS IN AGREEMENT WITH THE ACTUAL FIELD CONDITIONS

ROBERT BRIAN TETRICK
PRINTED NAME
SIGNED — DATE: 3/15/2024

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

STATE OF MARYLAND — ROBERT BRIAN TETRICK — 40814 — PROFESSIONAL ENGINEER

3/13/2024

Revisions

240446

HARFORD COUNTY, MARYLAND

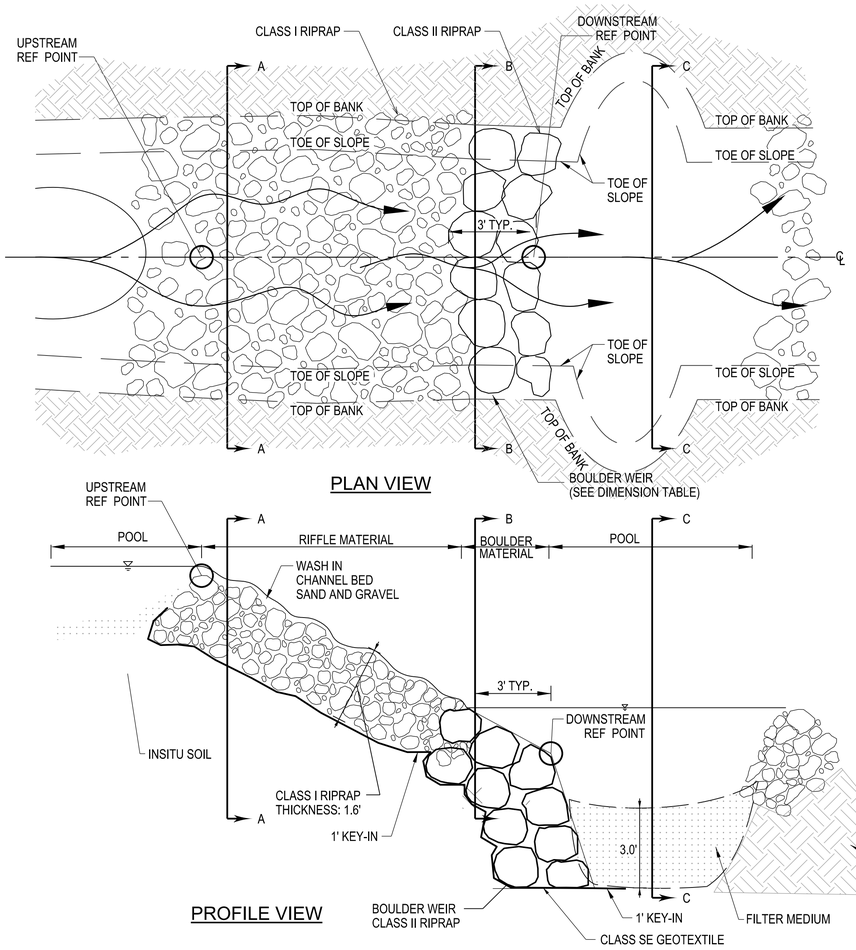
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
DETAILS - SWM

Drawn By : C.A.B. — Scale : N.T.S.
Designed By : R.B.T. — Date : AUGUST 2023
Reviewed By : N.A.R.
Drawing No. 87 Of 124 — Sheet No. DE-B01 Of DE-B02

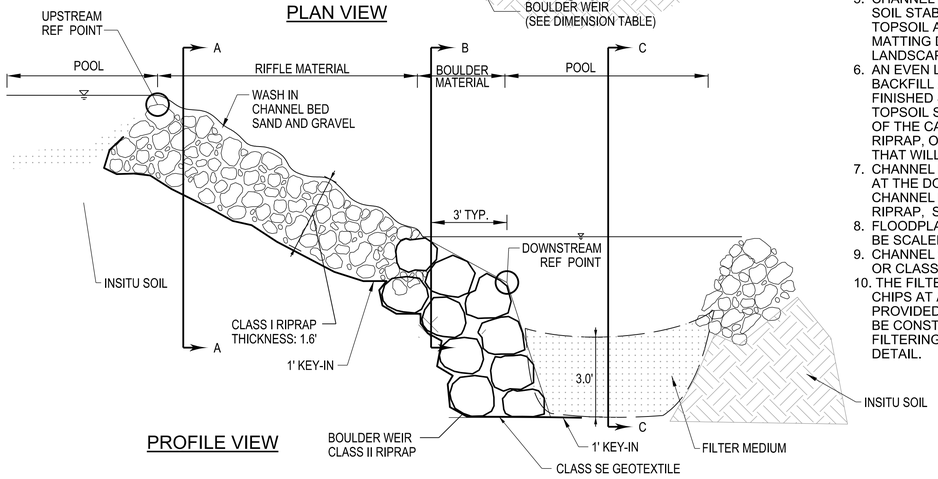
BID No.:
HCG DWG ID No.:
SCALE: 1 inch

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



PLAN VIEW



PROFILE VIEW

NOTES:

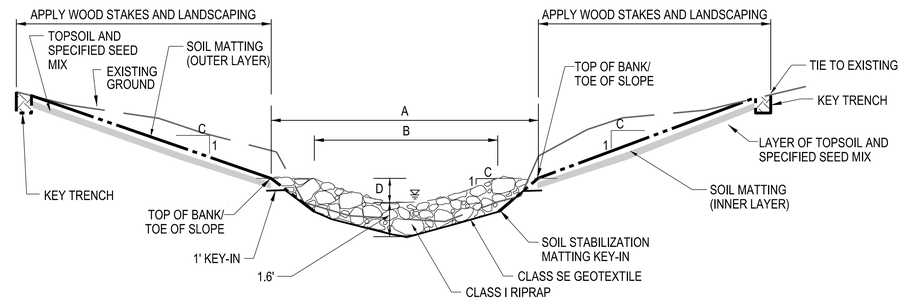
1. RSC STRUCTURES SHALL BE CONSTRUCTED FOLLOWING THE THALWEG IN THE PROFILES SHEETS, REFERENCE POINTS INCLUDED IN THE PLAN SHEETS, AND DIMENSIONS HEREIN.
2. WHERE REQUIRED TO ACHIEVE THE PROPOSED GRADE, OVER-EXCAVATION OF THE EXISTING CHANNEL BED SHALL BE PERFORMED FOR PLACEMENT OF RIPRAP TO THE MINIMUM DEPTH.
3. THE CLASS I RIPRAP SHALL BE PLACED TO EXTEND ALONG THE ENTIRE CHANNEL CROSS-SECTION FROM THE TOP OF BANK TO TOP OF BANK AT THE FLOODPLAIN BENCH. CLASS I RIPRAP SHALL BE PLACED AFTER GRADING AND MATTING OF THE BANKS AND FLOODPLAIN BENCH TO ALLOW FOR COMPLETE COVERAGE AND TO HOLD THE MATTING IN PLACE.
4. AFTER COMPLETING PLACEMENT OF THE CLASS I RIPRAP, BUT PRIOR TO EXCAVATING AND PLACING THE MATERIAL FOR THE DOWNSTREAM POOL, CHANNEL BED SAND AND GRAVEL SHALL BE WASHED, HYDRAULICALLY, INTO THE MATERIAL TO PROVIDE CHOKING OF THE CHANNEL BED VOID SPACES. SIMILARLY, AFTER COMPLETING PLACEMENT OF CLASS II RIPRAP, BUT PRIOR TO EXCAVATING AND PLACING THE MATERIAL FOR THE DOWNSTREAM POOL, RUN MATERIAL SHALL BE WASHED, HYDRAULICALLY, INTO THE STRUCTURES TO PROVIDE CHOKING OF THE CHANNEL BED VOID SPACES. UPON OPENING OF THE CHANNEL SECTION TO NORMAL BASEFLOW, FLOW SHALL TRAVEL ALONG THE SURFACE OF THE RSC STRUCTURES WITH MINIMAL SUBSURFACE FLOW. IN THE EVENT OF SUBSTANTIVE SUBSURFACE FLOW, ADDITIONAL MATERIAL WASH-IN WILL BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING SUFFICIENT HYDRAULIC PRESSURE FOR WASH-IN PROCEDURE. INSTALLING RIPRAP IN LIFTS BETWEEN WASHIN PROCEDEDURES MAY BE NECESSARY TO FULLY WASH-IN.
5. CHANNEL BANKS AND FLOODPLAIN BENCHES SHALL BE STABILIZED PER THE SOIL STABILIZATION MATTING DETAIL. INFORMATION ON WOOD STAKES, TOPSOIL AND MATTING KEY IN ARE LOCATED IN THE SOIL STABILIZATION MATTING DETAIL. SEEDING / PLANTING INFORMATION IS IN THE LANDSCAPING PLANS.
6. AN EVEN LAYER OF TOPSOIL SHALL BE PLACED ON TOP OF THE HEAVY BACKFILL AND TAMPED ALONG THE FLOODPLAIN BENCH TO BRING THE FINISHED SURFACE OF THE BENCH TO THE FINAL LINES AND GRADES. TOPSOIL SHALL NOT BE PLACED ALONG THE LOWER STREAM BANK PORTION OF THE CASCADE CROSS-SECTION THAT WILL BE CAPPED WITH THE CLASS II RIPRAP, OR ALONG THE LOWER STREAM BANK PORTION OF THE POOLS THAT WILL BE BELOW THE BASEFLOW WATER SURFACE ELEVATION.
7. CHANNEL BOTTOM ELEVATIONS AND THE CONSTRUCTED CHANNEL DEPTH AT THE DOWNSTREAM END OF CLASS I RIPRAP SHOULD BE MEASURED FROM CHANNEL PROFILE. FOR CHANNEL DEPTH AT THE UPSTREAM END OF CLASS I RIPRAP, SEE THE RSC TABLE.
8. FLOODPLAIN WIDTH AND POOL DEPTH MAY VARY. FLOODPLAIN WIDTH CAN BE SCALED FROM PLAN VIEW OR TAKEN FROM CROSS SECTIONS.
9. CHANNEL SIDE SLOPE MATERIAL THICKNESS IS THE SAME AS THE CLASS I OR CLASS II RIPRAP THICKNESS THROUGHOUT THE RSC STRUCTURES.
10. THE FILTER MEDIUM SHALL BE COMPOSED OF COARSE SAND AND WOOD CHIPS AT A RATIO OF 4:1, BY VOLUME. THE RATIO OF EACH MATERIAL IS PROVIDED IN THE SPECIAL PROVISION. THE CLASS II RIPRAP WEIRS SHALL BE CONSTRUCTED BEFORE INSTALLING THE FILTERING MEDIUM. INSTALL FILTERING MEDIUM TO THE SPECIFIED THICKNESS SHOWN IN THE PROFILE DETAIL.

RSC DIMENSIONS TABLE

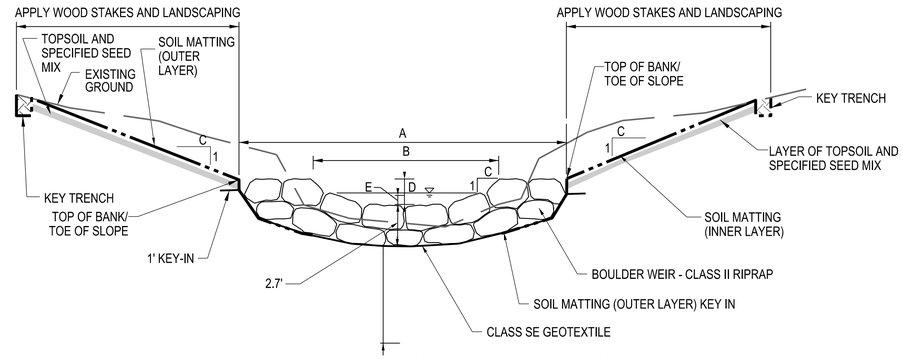
STRUCTURE	RIFFLE/ CASCADE DIMENSIONS					MATERIAL		POOL DIMENSIONS	
	TOP WIDTH	BOTTOM WIDTH	SIDE SLOPE	DEPTH OF CHANNEL	NOTCH DEPTH	RIFFLE STONE MATERIAL	CASCADE STONE MATERIAL	BOTTOM WIDTH	POOL TOP WIDTH
	A	B	C	D	E			B	W
	(FT)	(FT)	:1	(FT)	(FT)	RIPRAP CLASS	RIPRAP CLASS	(FT)	(FT)
RSC 1	26.0	20.0	3	1.0	0.2	I	II	26.5	37.5
RSC 2								23.5	35.0
RSC 3								23.5	35.0
RSC 4								23.5	35.0
RSC 5								23.5	35.0
RSC 6								17.5	29.0
RSC 7								13.5	26.0
TOLERANCE	+/- 1.	+/- 1.	+/- .3	+/- .2	TYP	TYP	TYP	MIN	+/- 1.

CROSS REFERENCES:

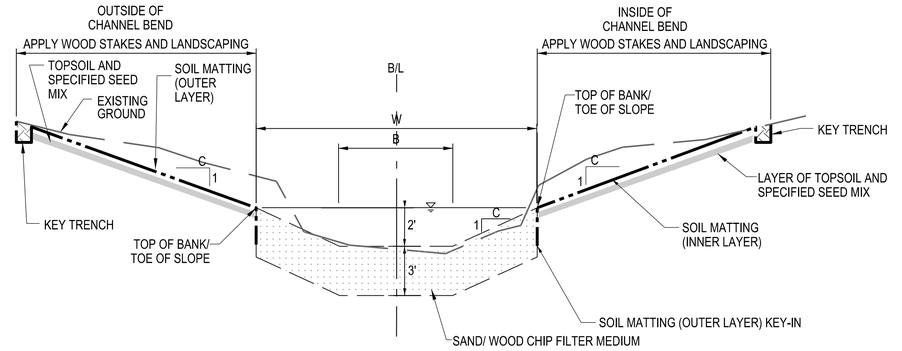
1. SEE SPECIAL PROVISIONS AND LISTED DETAIL SHEET FOR THE FOLLOWING MATERIALS:
   A. CHANNEL BED SAND AND GRAVEL - DE-01
   B. HEAVY BACKFILL - DE-01
   C. FILTER MEDIUM - THIS SHEET
2. SEE SOIL STABILIZATION MATTING DETAIL ON DE-01 FOR THE FOLLOWING. APPLY MATTING SIMILARLY TO THE CASCADE DETAIL.
   A. OUTER SOIL MATTING
   B. WOOD STAKES
   C. KEY TRENCH
3. SEE LANDSCAPE PLANS FOR THE FOLLOWING:
   A. SEED MIXES - LD-01 - LD-02
   B. TREES, SHRUBS, AND OTHER PLANT MATERIAL - LD-01 - LD-02
   C. TOPSOIL DEPTH AND LIMITS - LP-01 - LP-09
   D. PLANTING ZONES - LP-01 - LP-09



SECTION A-A (TYPICAL PARABOLIC CASCADE CROSS SECTION)
TOP OF CASCADE



SECTION B-B (TYPICAL BOULDER WEIR CROSS SECTION)



SECTION C-C (TYPICAL POOL CROSS SECTION)

REGENERATIVE STORMWATER CONVEYANCE (RSC) DETAIL & TYPICAL SECTION

NOT TO SCALE

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
DETAILS - SWM

Drawn By : C.A.B.	Scale : N.T.S.
Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 88 Of 124	Sheet No. DE-B02 Of DE-B03

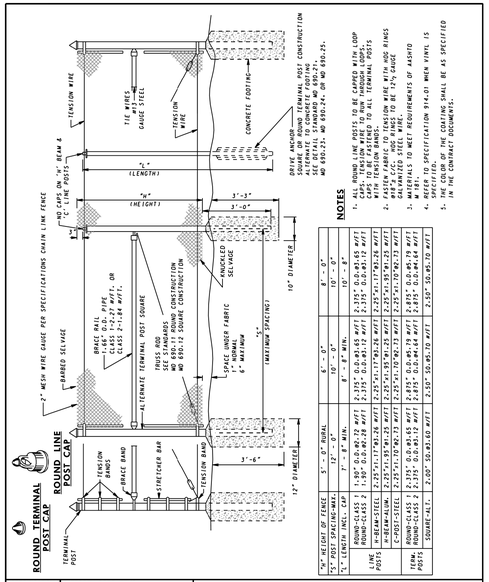
BID No.:

HCG DWG ID No.:

SCALE 1" = 1 inch

BY: $USERNAME$

PLOTTED: $DATETIME$
FILE: $FILE$



SPECIFICATION	CATEGORY CODE ITEMS
607	

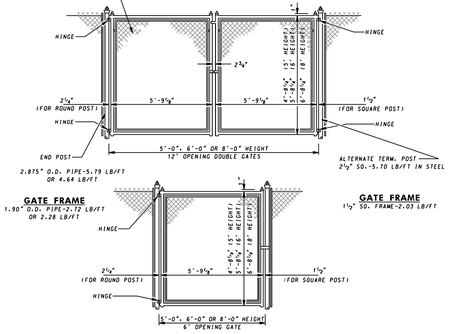
APPROVED: Kirk G. Mabell, DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA	REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 6-1-84		APPROVAL 8-1-84
REVISED 10-1-01		REVISED 10-10-89
REVISED		REVISED
REVISED		REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CHAIN LINK FENCE
TYPICAL 5 FT. RURAL 6 FT. & 8 FT

STANDARD NO. MD 690.01



SQUARE POST HINGE

ROUND POST HINGE

SPECIFICATION	CATEGORY CODE ITEMS
615	

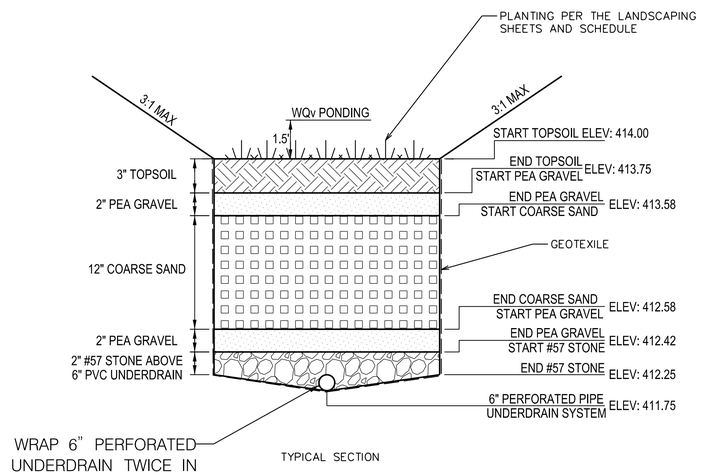
APPROVED: Kirk G. Mabell, DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA	REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 12-1-70		APPROVAL 9-14-71
REVISED 10-1-01		REVISED 4-3-85
REVISED		REVISED
REVISED		REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

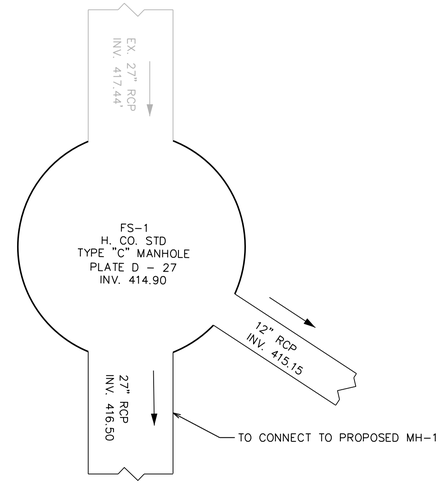
CHAIN LINK FENCE
GATE DETAILS

STANDARD NO. MD 692.01

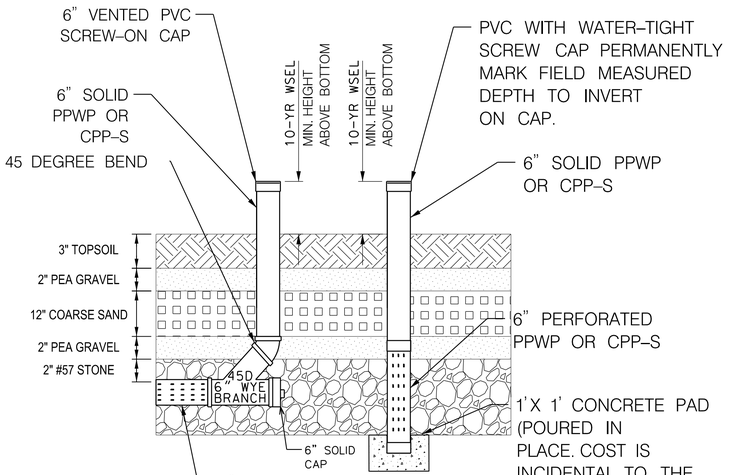


TYPICAL SECTION

SURFACE SAND FILTER



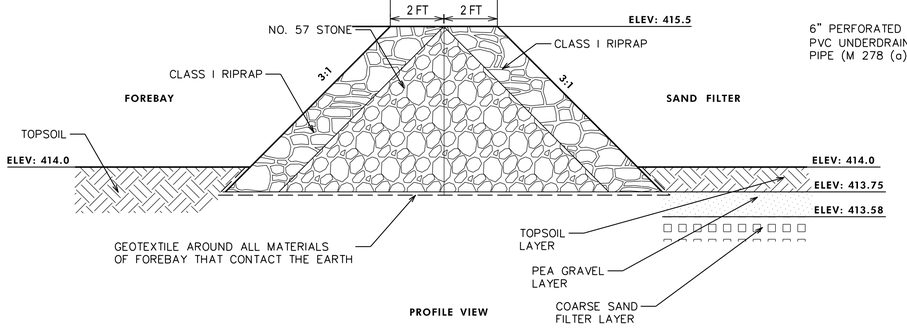
FLOW SPLITTER - H. CO., STD. TYPE "C" MANHOLE



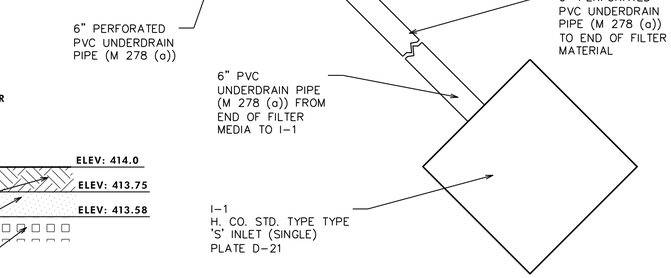
TYPICAL CLEANOUT/OBSERVATION WELL DETAIL FOR BMP FACILITIES

CAP DETAIL
NOT TO SCALE

SEDIMENT CONTROL MONITORING DEVICE DETAIL
NOT TO SCALE



FOREBAY WEIR DETAIL



TYPICAL UNDERDRAIN DETAIL
N.T.S.

NOTE:
PERFORATED PIPE MUST BE WITHIN NO. 57 STONE JACKET

SAND FILTER MATERIAL SPECIFICATIONS

MATERIAL	SPECIFICATION	SIZE	NOTES
PEA GRAVEL	AAShto M-43	NO. 7	WASHED
GEOTEXTILE	ACF N080 OR APPROVED EQUIVALENT	N/A	FOR USE AS NECESSARY
NO. 57 STONE	M 80 Class A	AS STATED	
CLASS I RIPRAP		Heavier than 150 lb (0%) Heavier than 40 lb (50%) Less than 2 lb (10% max)	Optimum gradation is 50 percent of the stone being above and 50 percent below
COARSE SAND	ASTM M-6 OR C-33	0.05 MM - 2.0 MM	
REINFORCED CONCRETE PIPE	M 170, Class 4 & 5	AS STATED	54 in. and smaller diameter M 170, load bearing option. 60 in. and larger diameter M 170, material option.
PVC UNDERDRAIN	F 758, Type PS 28, D 3034, SDR 35 (a), M 278 (a)	AS STATED	PERFORATED UNDERDRAIN
PVC UNDERDRAIN	M 278	AS STATED	UNDERDRAIN PIPE OUTLETS
TOPSOIL	MD SHA 920.01.01 or 920.01.02	AS STATED	SALVAGED OR FURNISHED

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

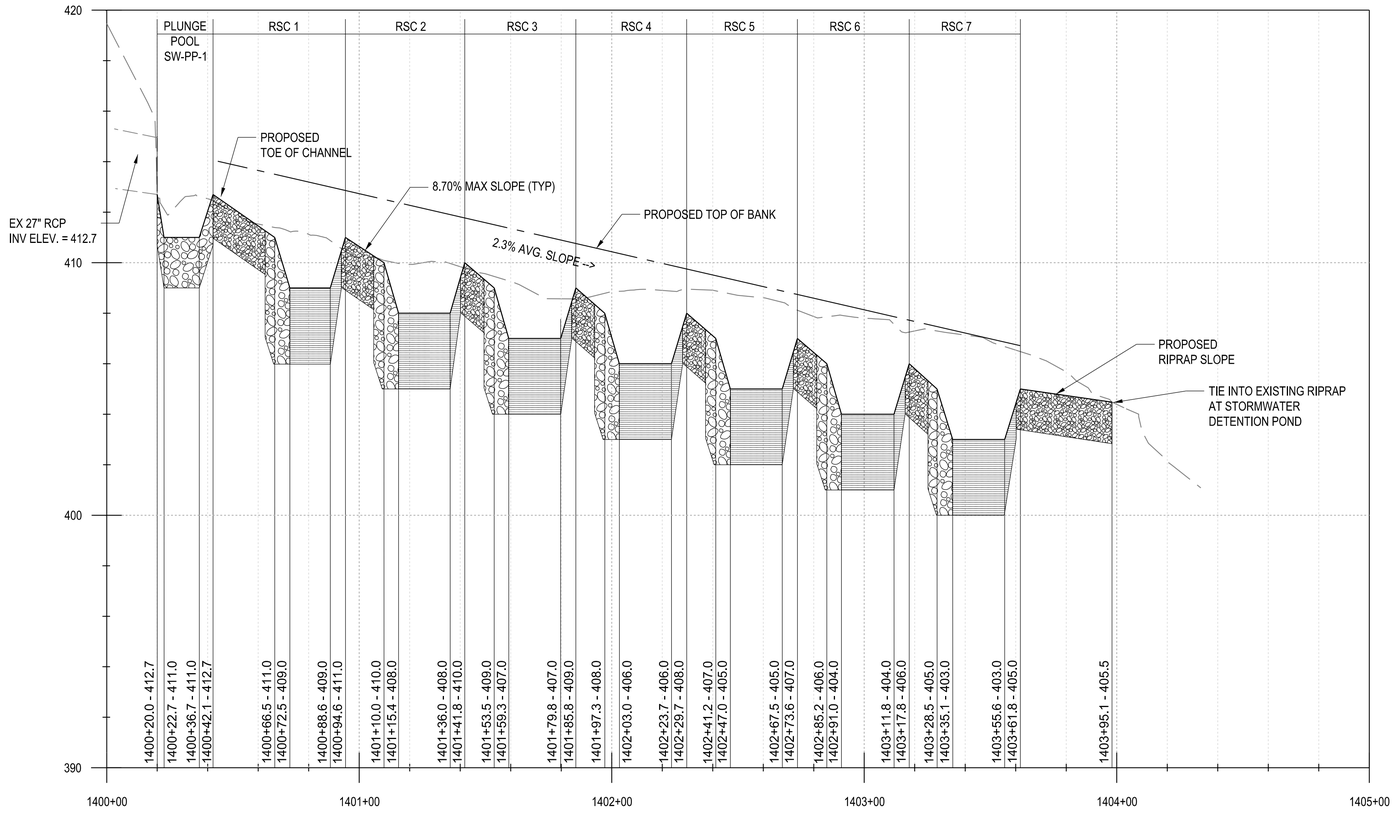
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION DETAILS - SWM

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 89 Of 124

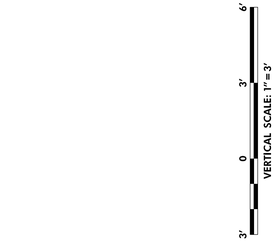
Scale : N.T.S.
Date : AUGUST 2023
Sheet No. DE-B03 Of DE-B03

BID NO.:
HCG DWG ID No.:

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



RSC PROFILE
STA: 1400 + 00 TO STA: 1404 + 00



BID No.:

HCG DWG ID No.:

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

LEGEND:

TOP ROCK
FOOTER ROCK
DROP ROCK
LOG DROP
EXISTING GROUND
TOP OF BANK
PROPOSED GROUND
RIFFLE GRADE CONTROL
CASCADE
CHANNEL BED SAND AND GRAVEL
CLASS I RIPRAP
CLASS II RIPRAP
EXISTING PIPE
PROPOSED PIPE
4" LAYER OF TOPSOIL WITH SEEDING AND TYPE D SSM
BACKFILL
CHANNEL BLOCK

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

PROFESSIONAL CERTIFICATION

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

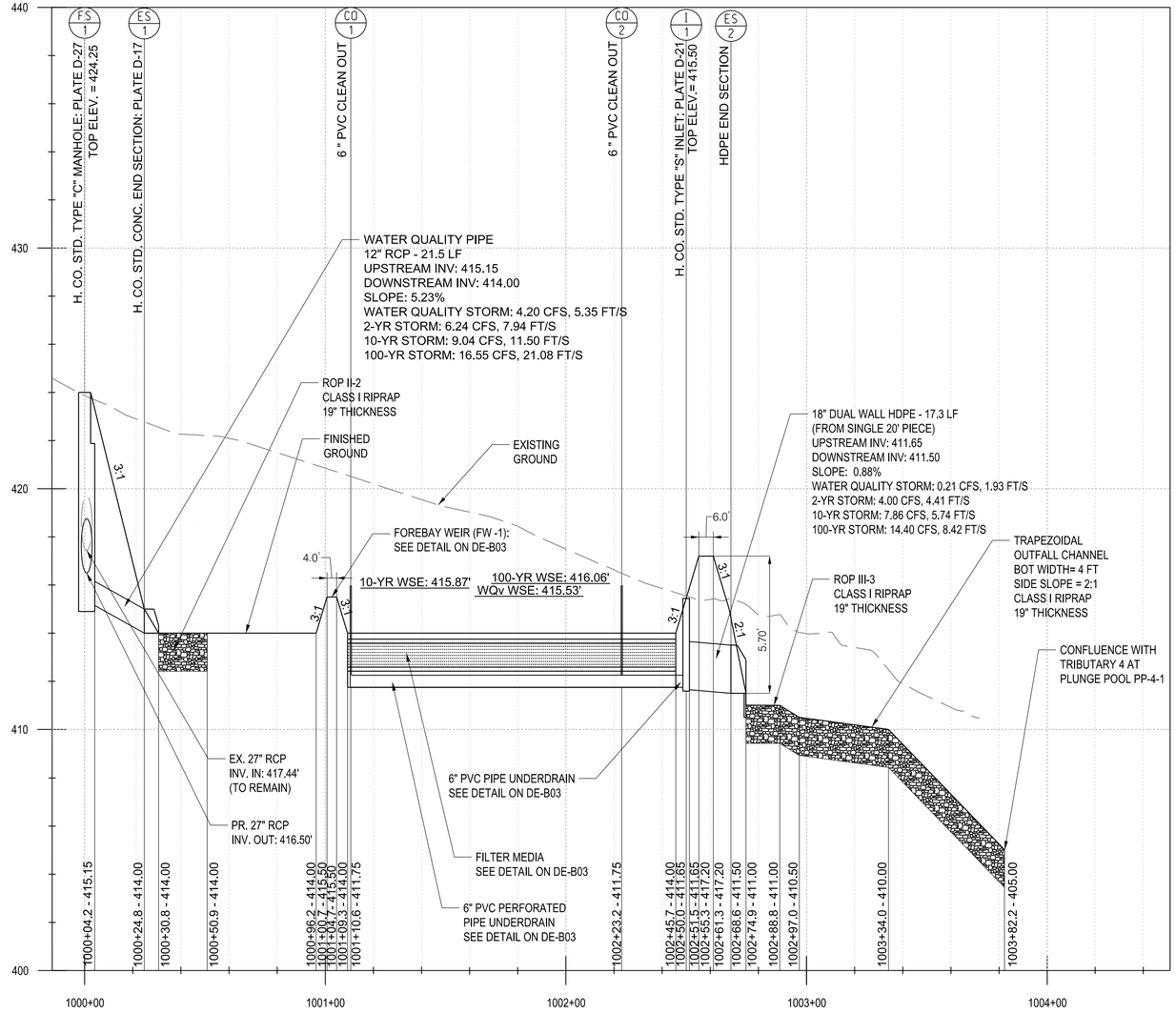
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
PROFILE - RSC

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 90 Of 124

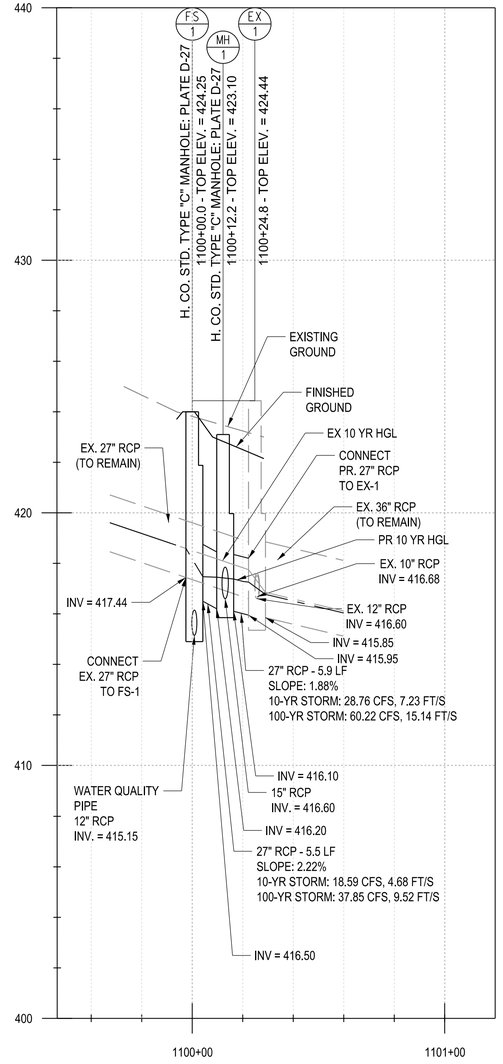
Scale : H:1" = 30' V:1" = 3'
Date : AUGUST 2023
Sheet No. PR-B01 Of PR-B02

BY: $USERNAME$

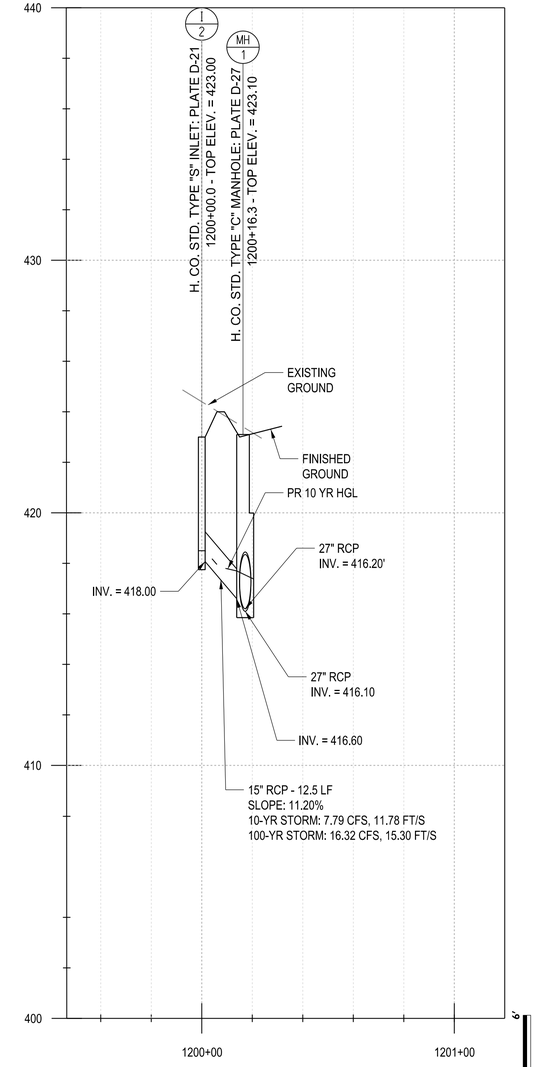
PLOTTED: $DATETIME$
FILE: $FILE$



SURFACE SAND FILTER PROFILE
STA: 1000 + 00 TO STA: 1003 + 84



STORM DRAIN PROFILE
STA: 1100 + 00 TO STA: 1100 + 24.9



STORM DRAIN PROFILE
STA: 1200 + 00 TO STA: 1200 + 16.3

VERTICAL SCALE: 1" = 3'
6'
3'
0
3'

30' 0 30' 60'
HORIZONTAL SCALE: 1" = 30'

SAND FILTER EMBANKMENT NOTES:

1. EMBANKMENT FILL MATERIAL SHALL BE FREE OF ROOTS STUMPS, WOOD, RUBBISH, AND STONES. FILL FOR EMBANKMENT CORE MUST CONFORM TO UNITED SOIL CLASSIFICATION GC, SC, CH, OR CL, AND MUST CONTAIN 30% PASSING THE #200 SIEVE. THE OUTER 4' OF THE EMBANKMENT SHALL BE TOPSOIL TO SUPPORT VEGETATIVE STABILIZATION. SANDY MATERIAL SHALL NOT BE USED FOR EMBANKMENT FILL.

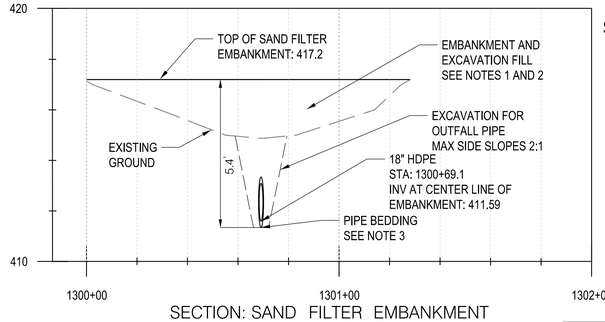
2. ON-SITE SOILS ARE GENERALLY SUITED FOR EMBANKMENT FILL. THESE SOILS ARE SUSPEPTIBLE TO MOISTURE DURING COMPACTION, SO SHALL BE PROTECTED FROM MOISTURE CHANGES DURING STOCKPILE AND PRIOR TO COMPACTION.

3. EMBANKMENT FILL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR VALUE.

4. OUTFALL PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS LENGTH ON UNDISTURBED SOIL. UNSUITABLE SOIL SHALL BE REMOVED AND REPLACED WITH SUITABLE COMPACTED BACKFILL.

5. EXCAVATION FOR OUTFALL PIPE TRENCH SHALL HAVE MAXIMUM SIDE SLOPES OF 2:1.

6. IF SAND FILTER AS-BUILT CONDITIONS INCLUDE EMBANKMENT HEIGHT EXCEEDING 6 FEET, SAND FILTER WILL BE RECONSTRUCTED TO MEET MD-378 GUIDELINES.



SECTION: SAND FILTER EMBANKMENT
STA: 1300 + 00 TO STA: 1301 + 28.3

LEGEND:

TOP ROCK
FOOTER ROCK
DROP ROCK
LOG DROP
EXISTING GROUND
TOP OF BANK
PROPOSED GROUND
RIFFLE GRADE CONTROL
CASCADE
CHANNEL BED SAND AND GRAVEL
CLASS I RIPRAP
CLASS II RIPRAP
EXISTING PIPE
PROPOSED PIPE
4" LAYER OF TOPSOIL WITH SEEDING AND TYPE D SSM
BACKFILL
CHANNEL BLOCK

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

PROFESSIONAL CERTIFICATION

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

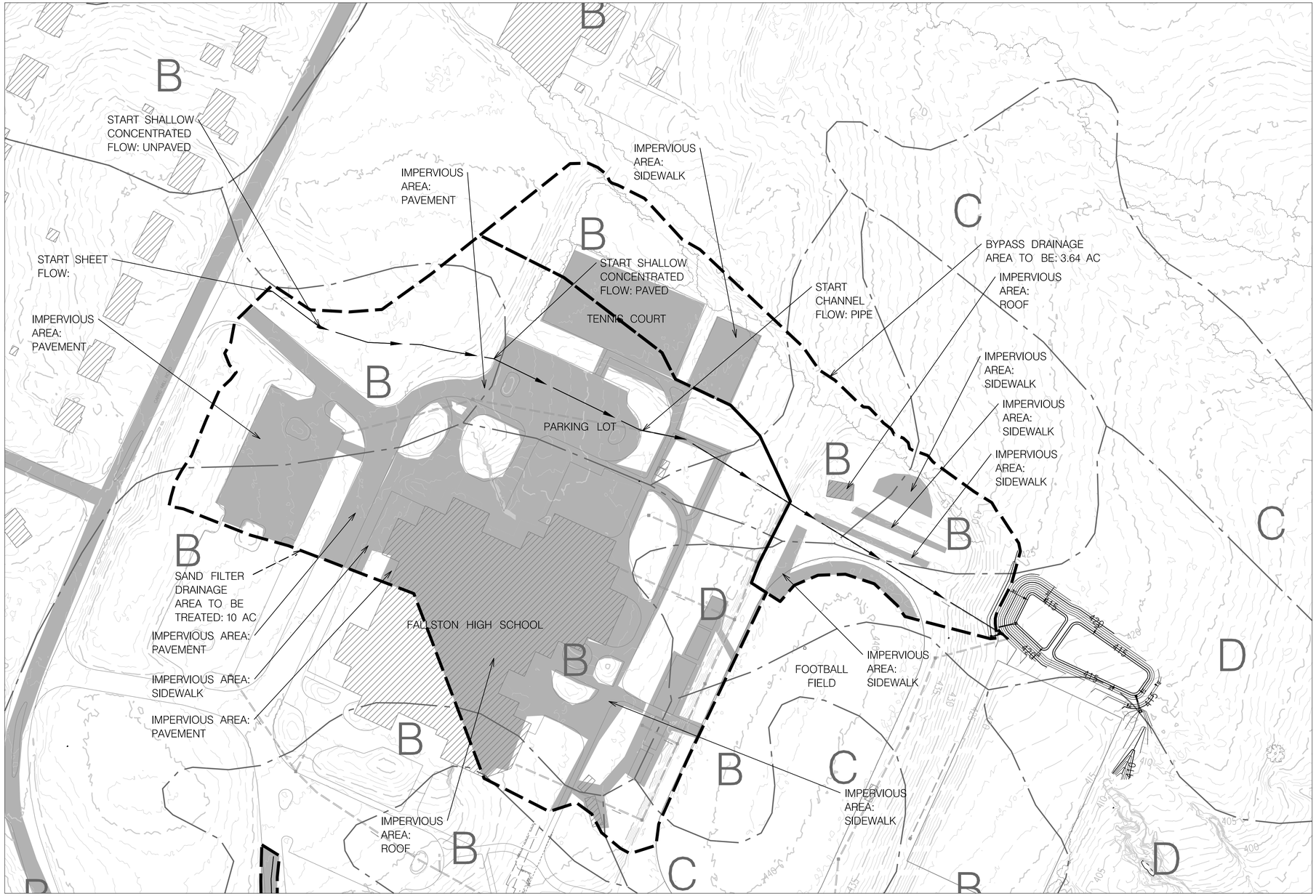
FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
PROFILE - SURFACE SAND FILTER

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 91 Of 124

Scale : H:1" = 30' V:1" = 3'
Date : AUGUST 2023
Sheet No. PR-B02 Of PR-B02

BID No.:
HCG DWG ID No.:
SCALE 1 INCH

BY: $USERNAME$
PLOTTED: $DATETIME$
FILE: $FILE$



LEGEND

- PROPOSED INLET
- PROPOSED STD MANHOLE
- PROPOSED PIPE
- EXISTING PIPE
- PROPOSED MAJOR CONTOUR (420)
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR (420)
- EXISTING MINOR CONTOUR
- TIME OF CONCENTRATION
- DRAINAGE AREA
- SOIL HSG TYPE (B)
- IMPERVIOUS AREA
- EXISTING BUILDING
- OPEN SPACE

TIME OF CONCENTRATION FOR DRAINAGE AREA TO SAND FILTER

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Pipe DA							
SHEET	98	0.0102	0.150				0.208
SHALLOW	247	0.0322	0.050				0.024
SHALLOW	234	0.0385	0.025				0.016
CHANNEL	842	0.0380	0.013	1.50	9.42	6.497	0.036
					Time of Concentration		.284

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1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
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Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

80′ 0 80′ 160′
SCALE: 1″=80′

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
SAND FILTER DRAINAGE AREA MAP

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 92 Of 124

Scale : 1″ = 80′
Date : AUGUST 2023
Sheet No. DA-01 Of DA-02

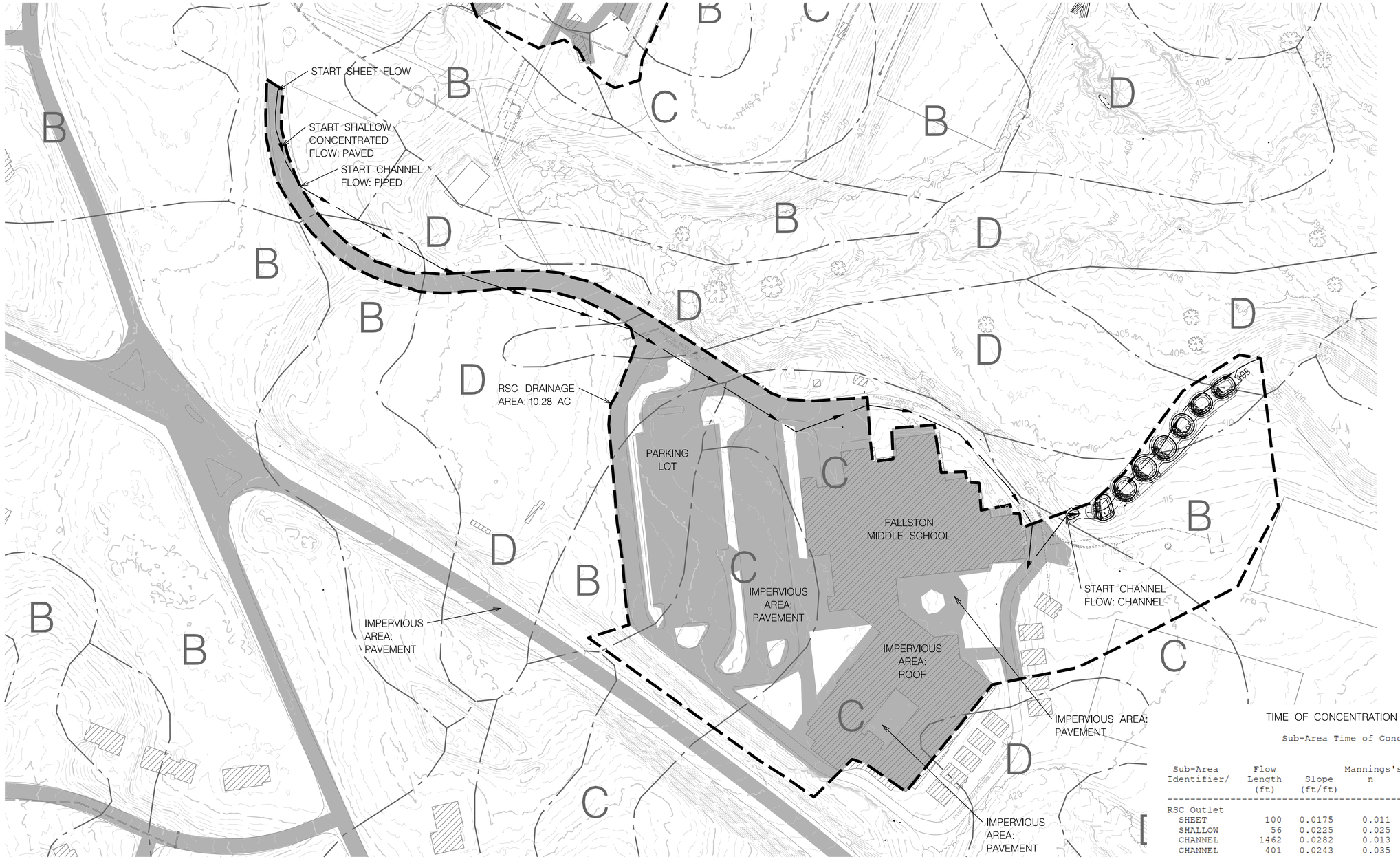
BID No.:

HCG DWG ID No.:

SCALE 1:80

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pDA-P001_Fallston.dgn



LEGEND

- PROPOSED INLET
- PROPOSED STD MANHOLE
- PROPOSED PIPE
- EXISTING PIPE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- TIME OF CONCENTRATION
- DRAINAGE AREA
- SOIL HSG TYPE
- IMPERVIOUS AREA
- EXISTING BUILDING
- OPEN SPACE

TIME OF CONCENTRATION FOR DRAINAGE AREA TO RSC

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
RSC Outlet							
SHEET	100	0.0175	0.011				0.021
SHALLOW	56	0.0225	0.025				0.005
CHANNEL	1462	0.0282	0.013	3.14	6.28	12.306	0.033
CHANNEL	401	0.0243	0.035	22.00	34.64	4.843	0.023
Time of Concentration							0.1

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Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

80′ 0 80′ 160′
SCALE: 1″=80′

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION RSC DRAINAGE AREA MAP

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.

Scale : 1″ = 80′
Date : AUGUST 2023

Drawing No. 93 Of 124
Sheet No. DA-02 Of DA-02

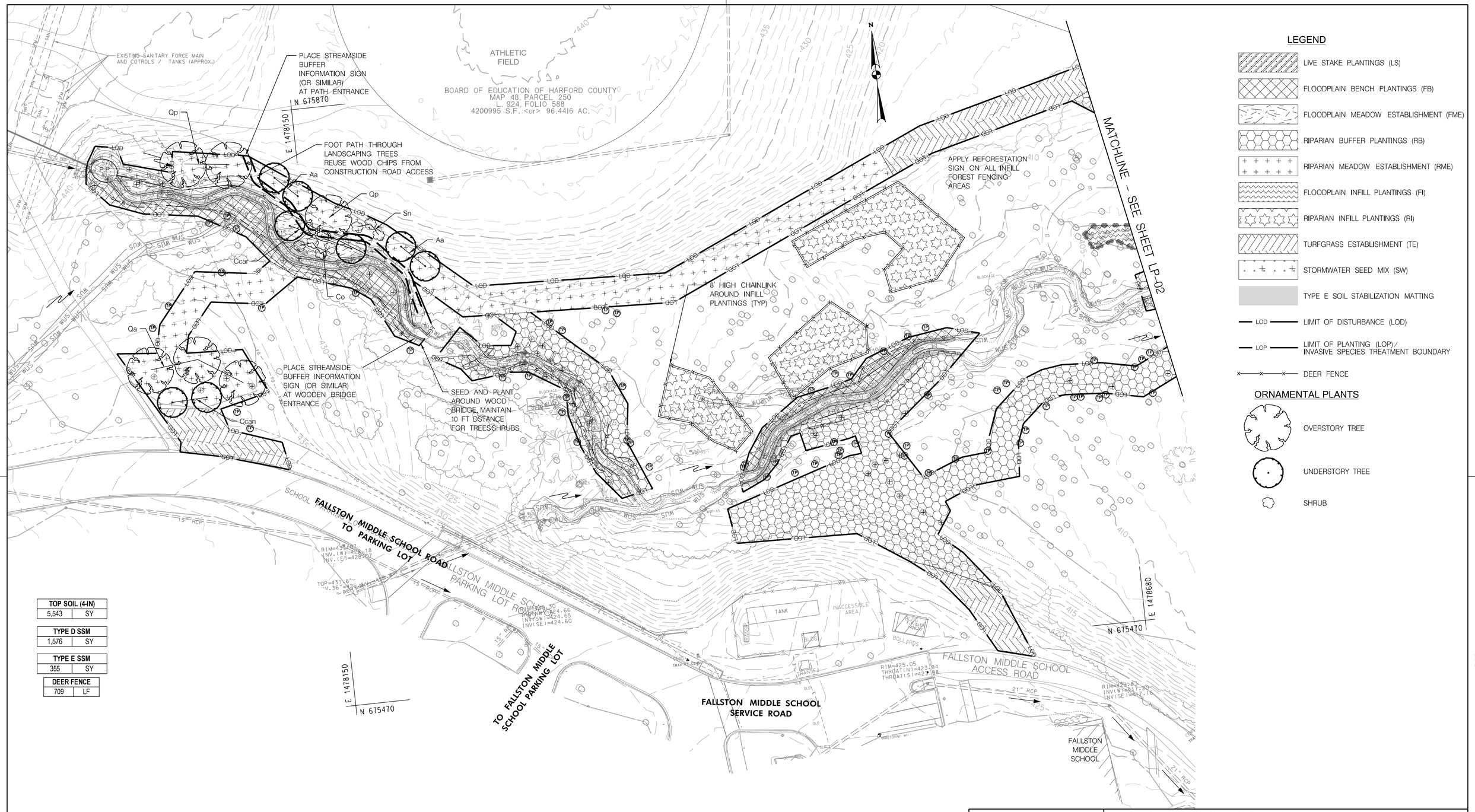
BID No.:

HCG DWG ID No.:

SCALE: 1" = 1 inch

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pDA-P002_Fallston.dgn



LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
- RIPARIAN BUFFER PLANTINGS (RB)
- RIPARIAN MEADOW ESTABLISHMENT (RME)
- FLOODPLAIN INFILL PLANTINGS (FI)
- RIPARIAN INFILL PLANTINGS (RI)
- TURFGRASS ESTABLISHMENT (TE)
- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
- LOD — LIMIT OF DISTURBANCE (LOD)
- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

TOP SOIL (4-IN)	
5,543	SY

TYPE D SSM	
1,576	SY

TYPE E SSM	
355	SY

DEER FENCE	
709	LF

30' 0 30' 60'
SCALE: 1"=30'

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Cross References

GN-01: EX. & PR. FEATURES LEGEND
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TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 94 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-01 Of LP-10

BID No.:
HCG DWG ID No.:

BY: tetrickr -

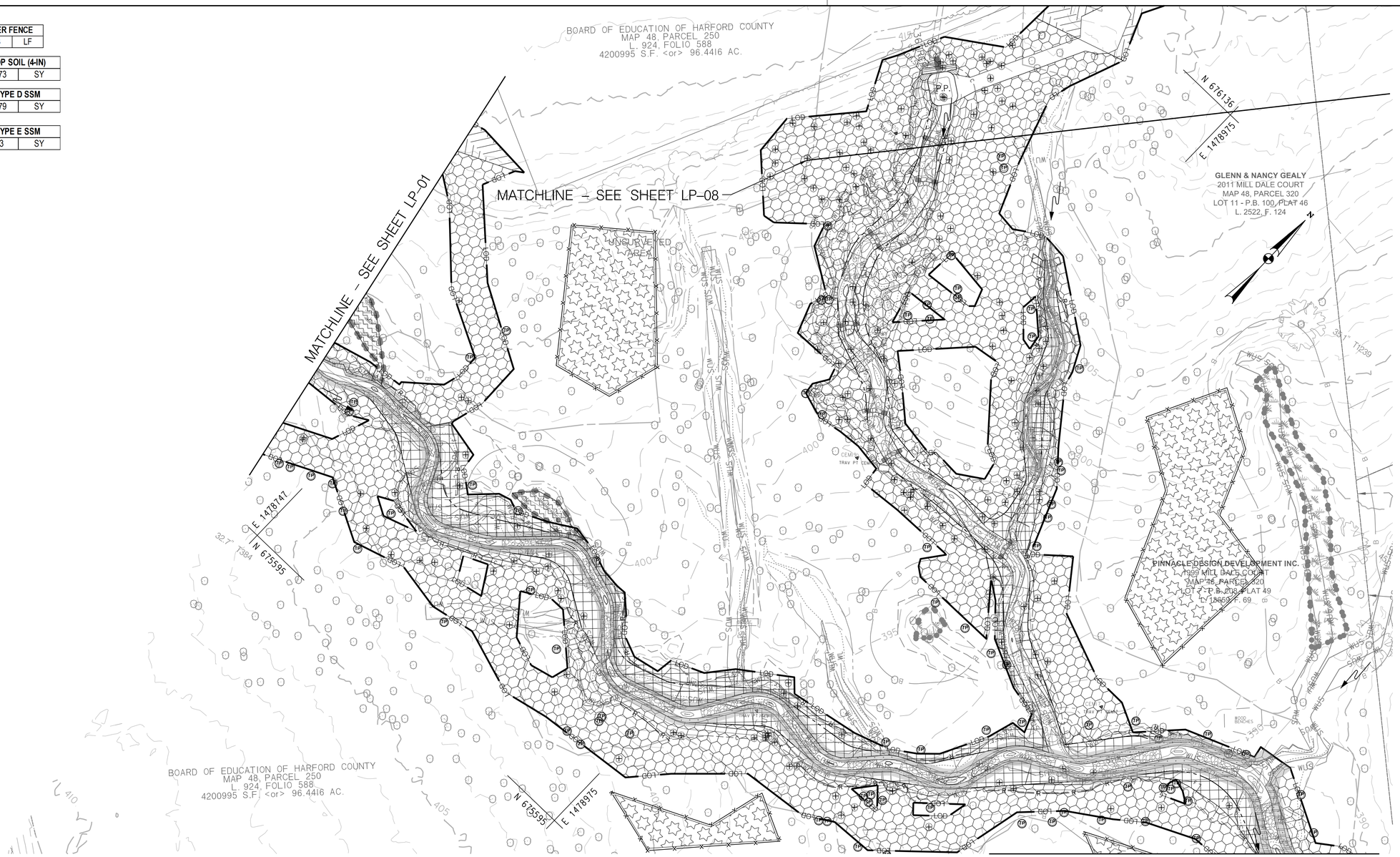
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P001_Fallston.dgn

DEER FENCE	
938	LF

TOP SOIL (4-IN)	
7,873	SY

TYPE D SSM	
3,979	SY

TYPE E SSM	
793	SY



LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
- RIPARIAN BUFFER PLANTINGS (RB)
- RIPARIAN MEADOW ESTABLISHMENT (RME)
- FLOODPLAIN INFILL PLANTINGS (FI)
- RIPARIAN INFILL PLANTINGS (RI)
- TURFGRASS ESTABLISHMENT (TE)
- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
- LOD — LIMIT OF DISTURBANCE (LOD)
- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

30′ 0 30′ 60′
SCALE: 1″=30′

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 95 Of 124

Scale : 1″ = 30′
Date : AUGUST 2023
Sheet No. LP-02 Of LP-10

BID No.:
HCG DWG ID No.:
SCALE: 1:1

BY: tetrickr –

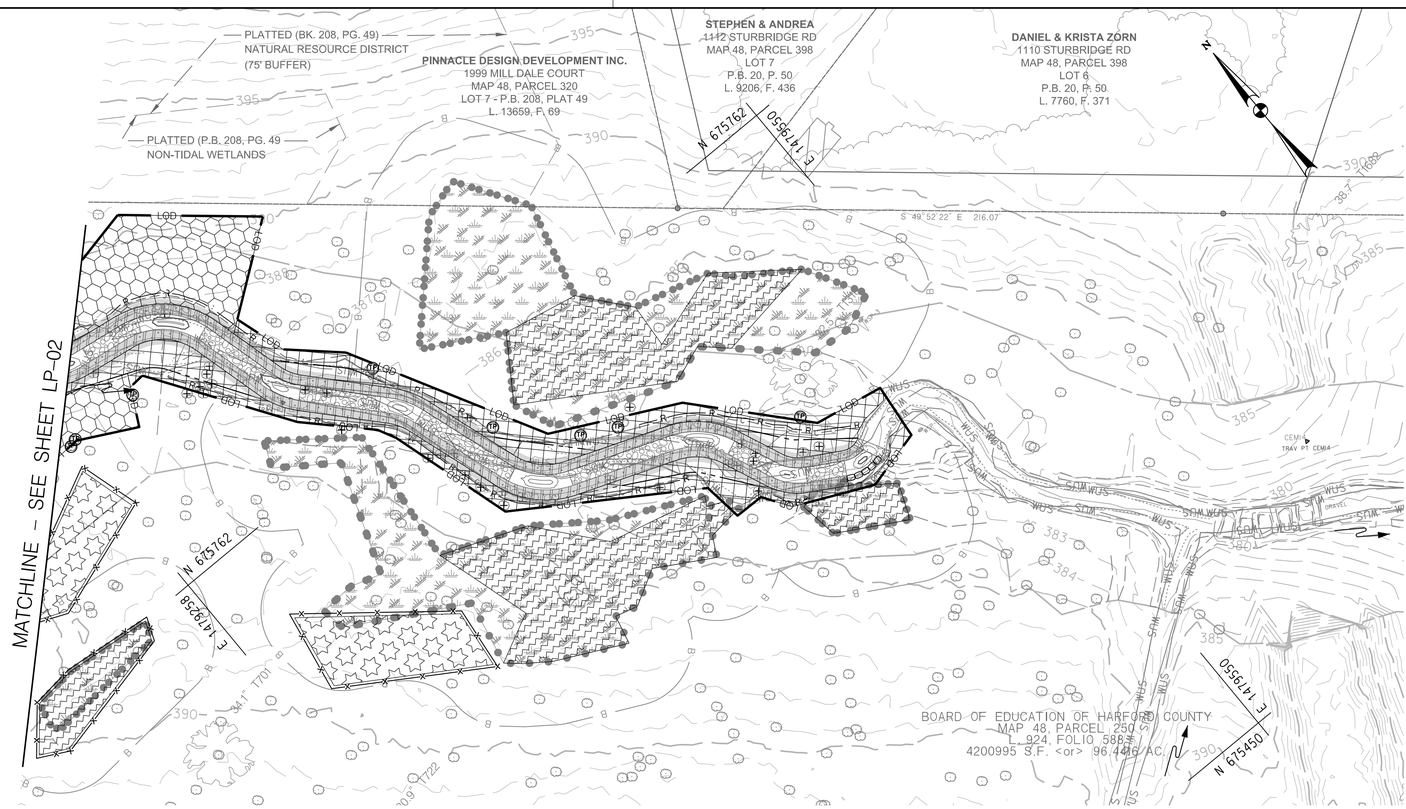
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P002_Fallston.dgn

TYPE E SSM	
449	SY

TYPE D SSM	
940	SY

TOP SOIL (4-IN)	
1,239	SY

DEER FENCE	
412	LF



LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
- RIPARIAN BUFFER PLANTINGS (RB)
- RIPARIAN MEADOW ESTABLISHMENT (RME)
- FLOODPLAIN INFILL PLANTINGS (FI)
- RIPARIAN INFILL PLANTINGS (RI)
- TURFGRASS ESTABLISHMENT (TE)
- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
- LOD — LIMIT OF DISTURBANCE (LOD)
- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1" = 30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE PLAN

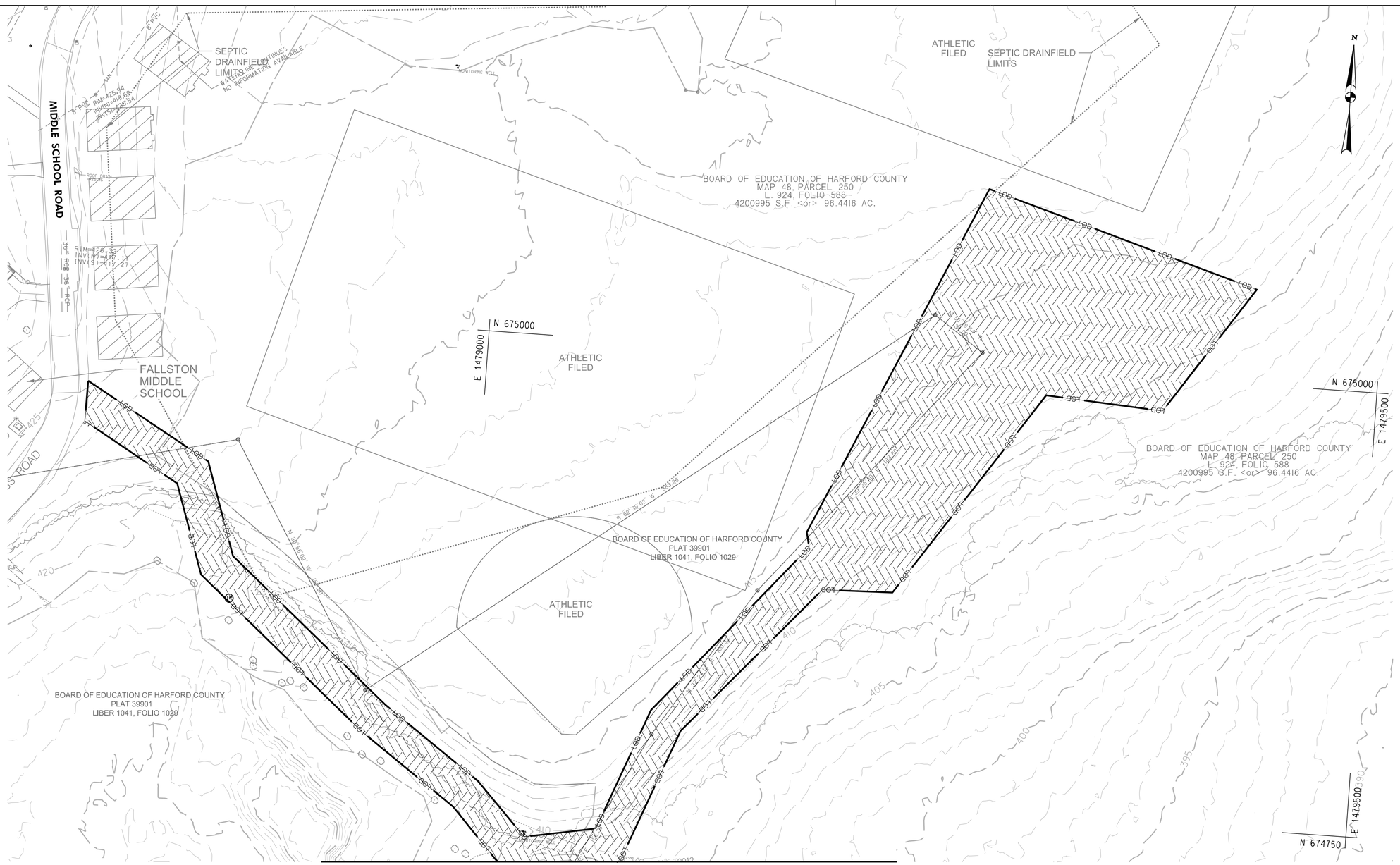
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 96 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-03 Of LP-10

BID No.:
HCG DWG ID No.:
SCALE 1" = 30'

BY: tetrickr -

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P003_Fallston.dgn



LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
- RIPARIAN BUFFER PLANTINGS (RB)
- RIPARIAN MEADOW ESTABLISHMENT (RME)
- FLOODPLAIN INFILL PLANTINGS (FI)
- RIPARIAN INFILL PLANTINGS (RI)
- TURFGRASS ESTABLISHMENT (TE)
- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
- LOD — LIMIT OF DISTURBANCE (LOD)
- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

TOP SOIL (4-IN)	
4,015	SY

SCALE: 1" = 30'

BID No.:

HCG DWG ID No.:

BY: tetrickr –

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 – EC-09: TREE NUMBERING
TI-01 – TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

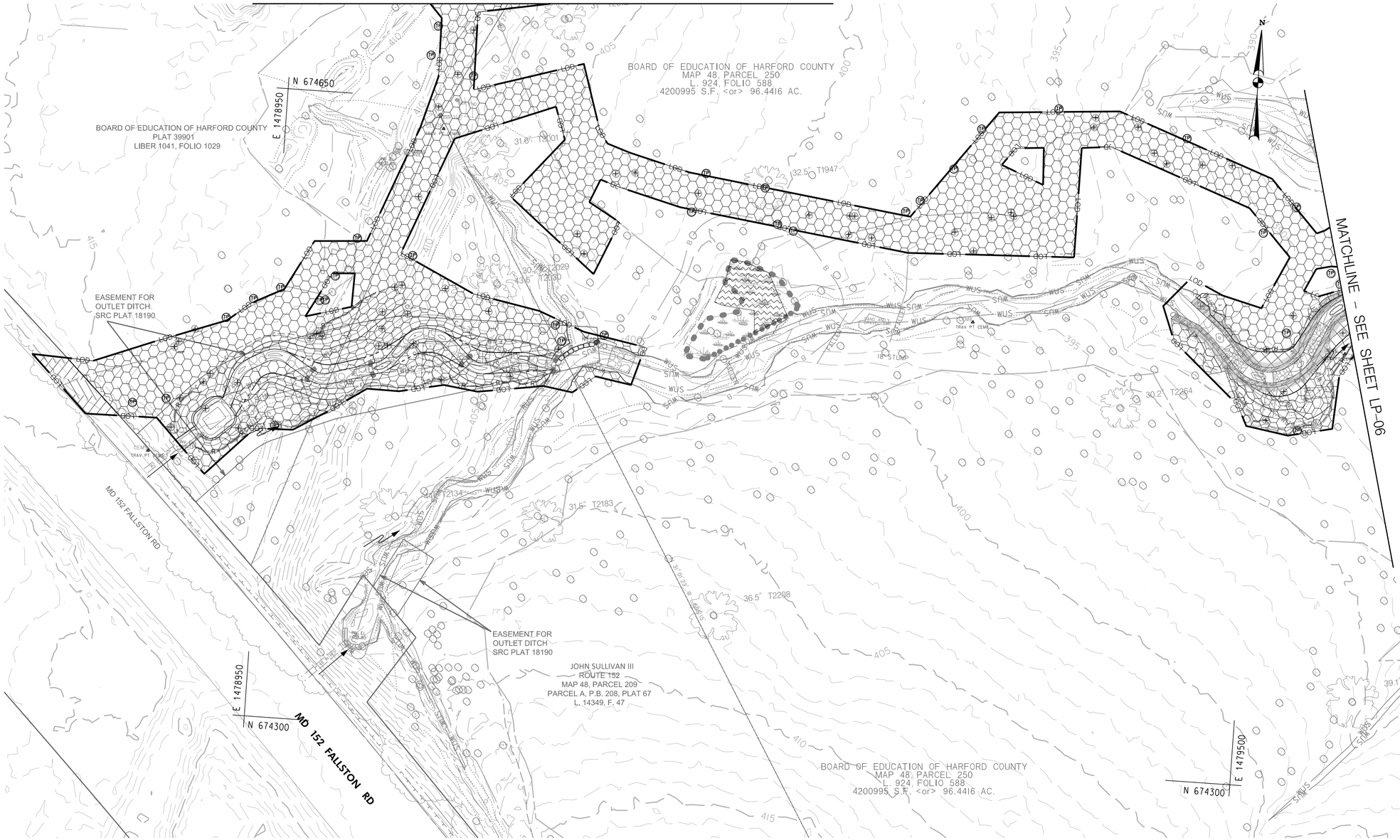
HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 97 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-04 Of LP-10

PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P004_Fallston.dgn



LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
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- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

TYPE D SSM	
1,290	SY

TYPE E SSM	
138	SY

TOP SOIL (4-IN)	
4,607	SY

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1" = 30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 98 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-05 Of LP-10

BID No.:
HCG DWG ID No.:
SCALE: 1 INCH

BY: tetrickr –

PLOTTED: 2/9/2024
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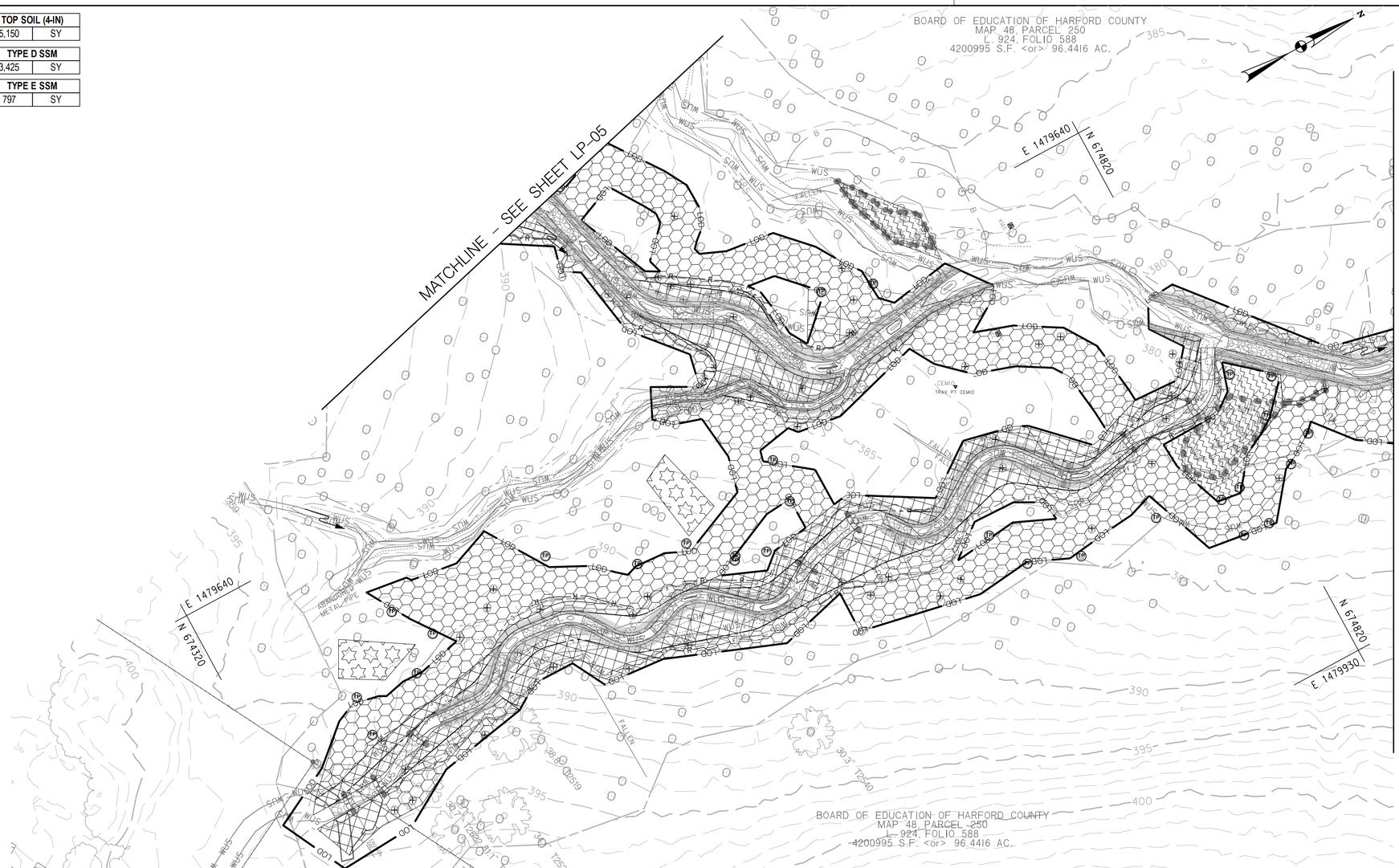
TOP SOIL (4-IN)	
5,150	SY

TYPE D SSM	
3,425	SY

TYPE E SSM	
797	SY



LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
- RIPARIAN BUFFER PLANTINGS (RB)
- RIPARIAN MEADOW ESTABLISHMENT (RME)
- FLOODPLAIN INFILL PLANTINGS (FI)
- RIPARIAN INFILL PLANTINGS (RI)
- TURFGRASS ESTABLISHMENT (TE)
- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
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- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

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30' 0 30' 60'
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EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 99 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-06 Of LP-10

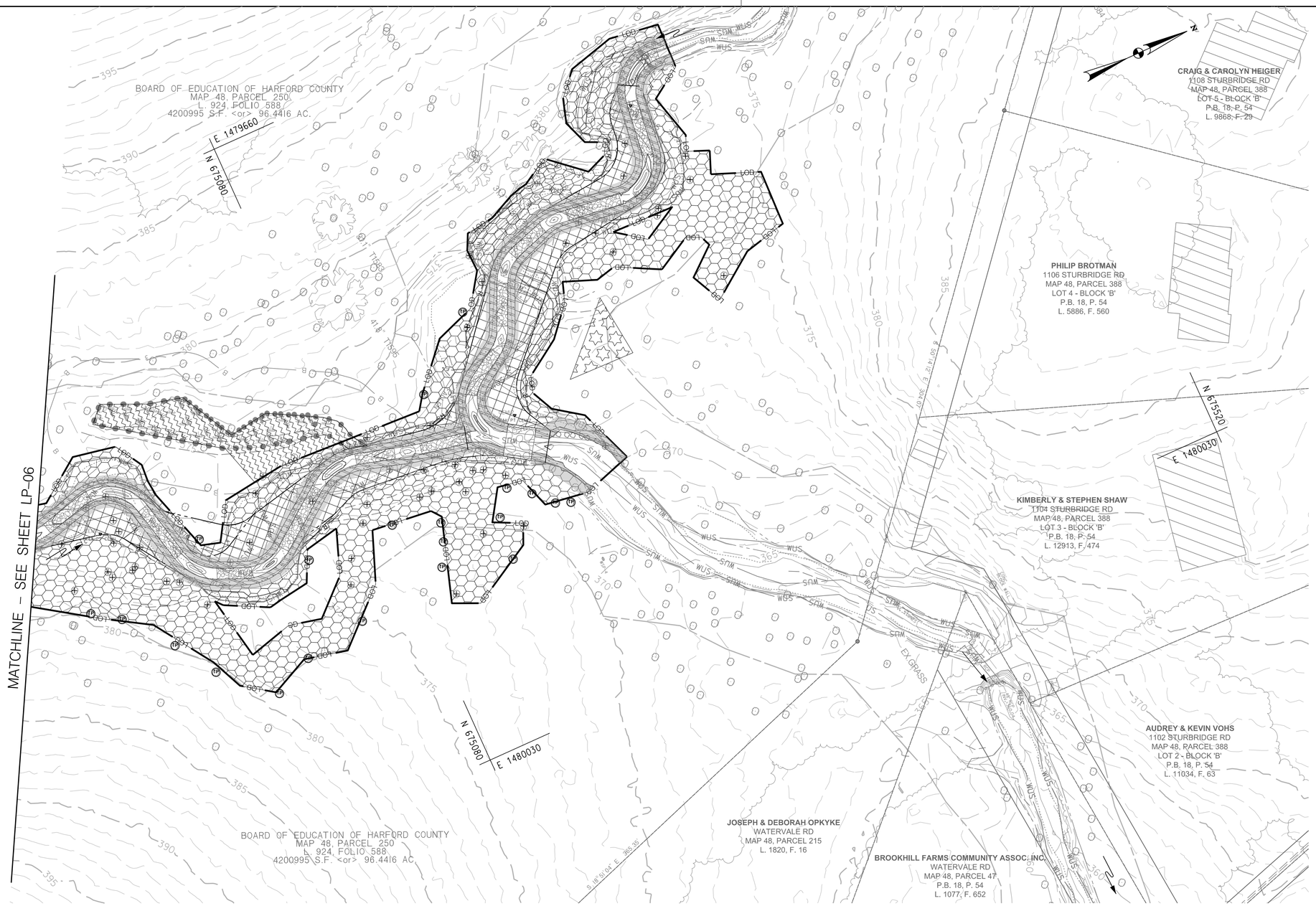
BID No.:

HCG DWG ID No.:

SCALE: 1 inch

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P006_Fallston.dgn



TYPE D SSM	
2,389	SY

TYPE E SSM	
844	SY

TOP SOIL (4-IN)	
4,037	SY

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

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EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
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EG-SWMENG- 000121-2020 #XXXX

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Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 100 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-07 Of LP-10

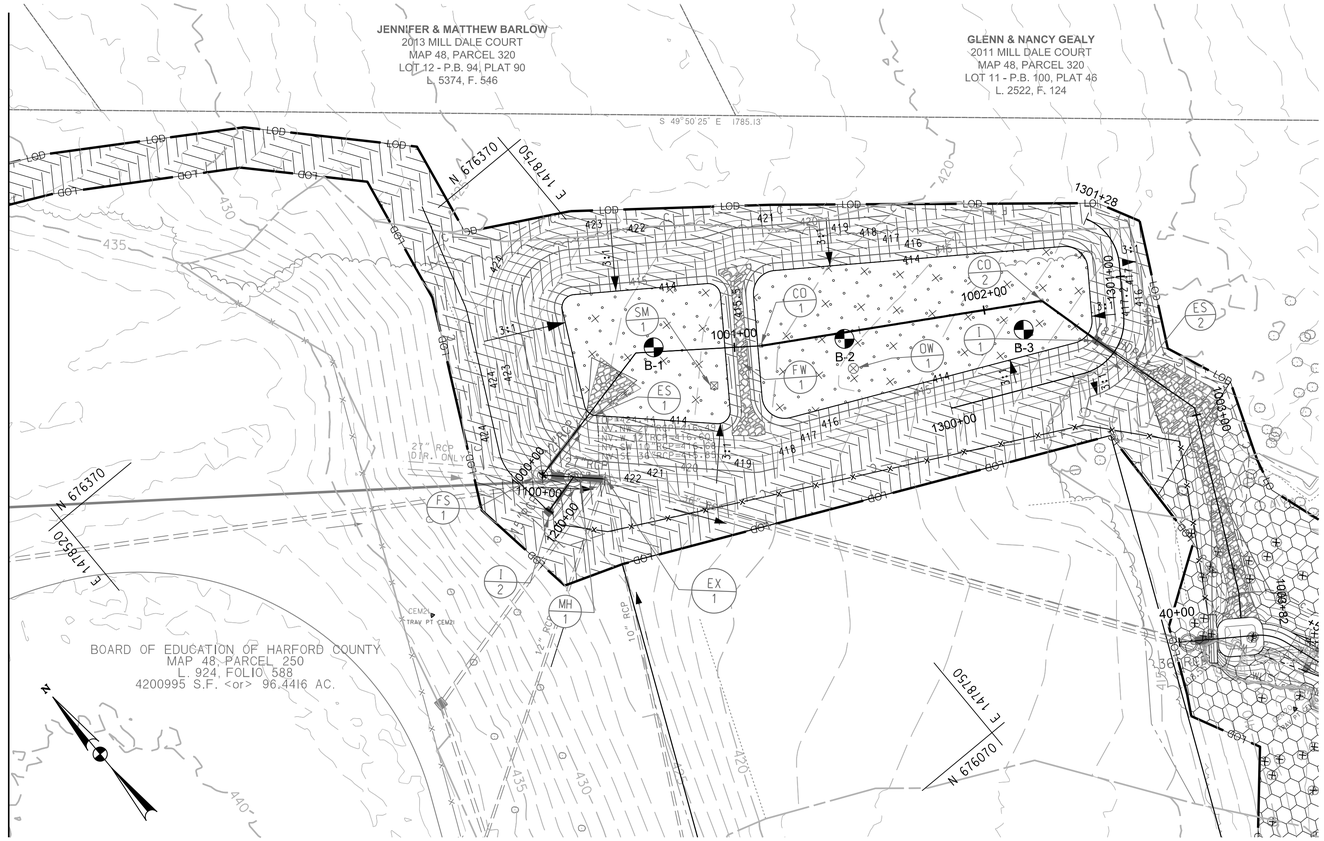
BID No.:

HCG DWG ID No.:

SCALE: 1 INCH

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P007_Fallston.dgn



TOP SOIL (4-IN)	
2,292	SY

LEGEND

- LIVE STAKE PLANTINGS (LS)
- FLOODPLAIN BENCH PLANTINGS (FB)
- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
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- RIPARIAN MEADOW ESTABLISHMENT (RME)
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- RIPARIAN INFILL PLANTINGS (RI)
- TURFGRASS ESTABLISHMENT (TE)
- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
- LOD — LIMIT OF DISTURBANCE (LOD)
- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

30' 0 30' 60'
SCALE: 1"=30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

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TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE PLAN

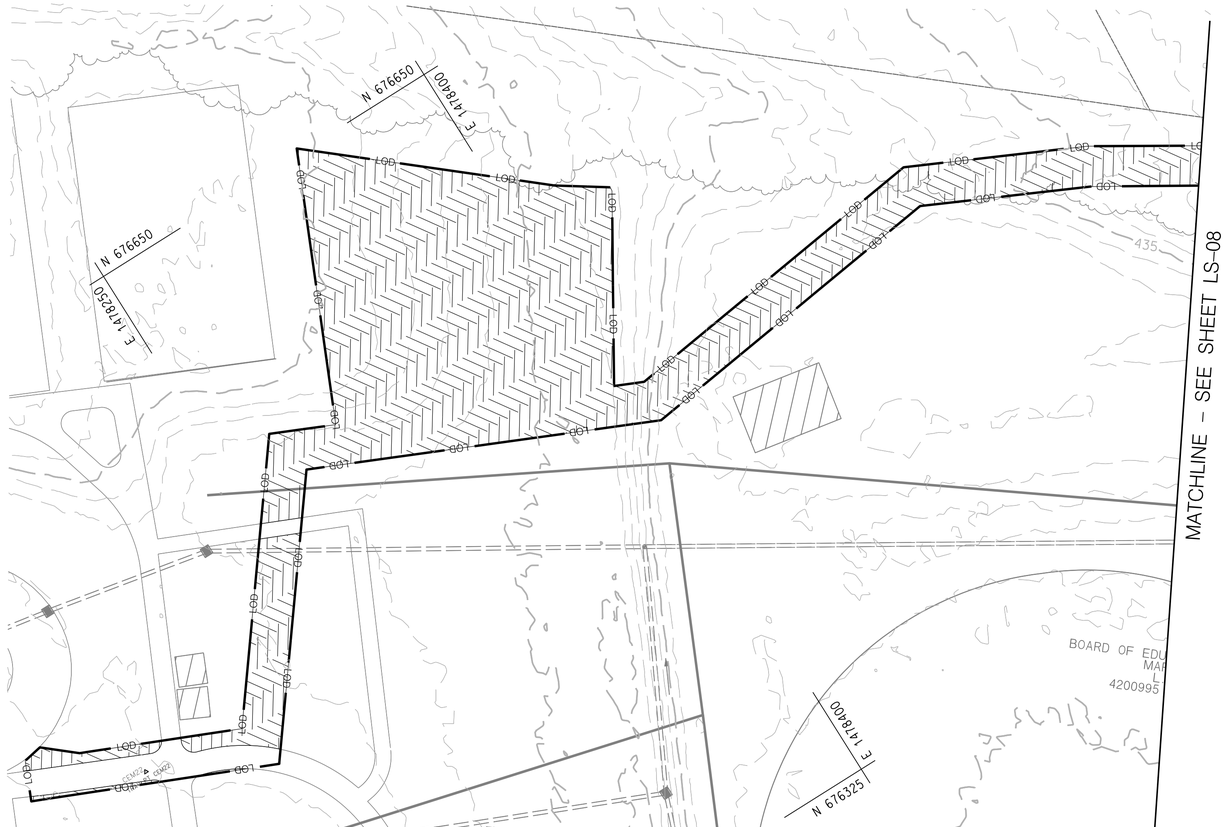
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 101 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-08 Of LP-10

BID No.:
HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P008_Fallston.dgn



LEGEND

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- FLOODPLAIN MEADOW ESTABLISHMENT (FME)
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- LOP — LIMIT OF PLANTING (LOP) / INVASIVE SPECIES TREATMENT BOUNDARY
- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

TOP SOIL (4-IN)	
3,936	SY

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE GRADE WITHIN ACCESS PATH TO TRAVERSE REMAINING STUMPS AS NECCESSARY.

BID No.:

HCG DWG ID No.:

BY: tetrickr –

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 102 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-09 Of LP-10

SCALE: 1 inch

PLOTTED: 2/9/2024
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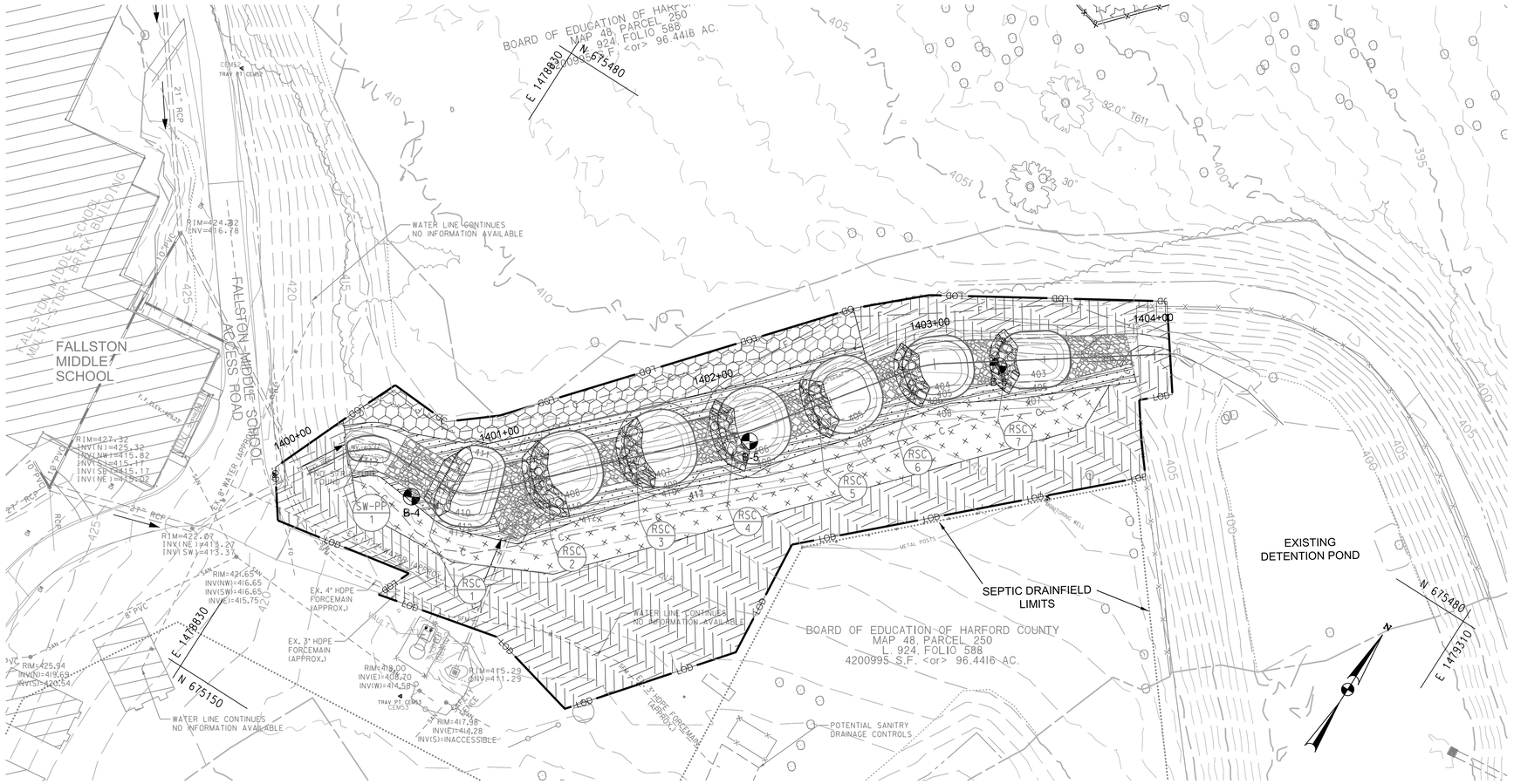

LEGEND

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- FLOODPLAIN BENCH PLANTINGS (FB)
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- FLOODPLAIN INFILL PLANTINGS (FI)
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- STORMWATER SEED MIX (SW)
- TYPE E SOIL STABILIZATION MATTING
- LOD — LIMIT OF DISTURBANCE (LOD)
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- DEER FENCE

ORNAMENTAL PLANTS

- OVERSTORY TREE
- UNDERSTORY TREE
- SHRUB

TOP SOIL (4-IN)	
3,593	SY

TYPE D SSM	
1,370	SY

30' 0 30' 60'
SCALE: 1"=30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

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FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION LANDSCAPE PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 103 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. LP-10 Of LP-10

BID No.:
HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLP-P010_Fallston.dgn

MASTER PLANT SCHEDULE – ALL SHEETS

PLANTING ZONE SCHEDULE					
SYMBOL	ZONE	SEEDING TYPE (STANDARD SPEC ITEM)	SEEDING RATE (LB/AC)	PLANTING TABLE	SY
LS	LIVE STAKE PLANTINGS	FLOODPLAIN MEADOW ESTABLISHMENT	11.4	LIVE STAKE	2160
FB	FLOODPLAIN BENCH PLANTINGS	FLOODPLAIN MEADOW ESTABLISHMENT	11.4	FLOODPLAIN BENCH	3918
FI	FLOODPLAIN INFILL PLANTINGS	FLOODPLAIN MEADOW ESTABLISHMENT	11.4	FLOODPLAIN INFILL	1675
FME	FLOODPLAIN MEADOW ESTABLISHMENT	FLOODPLAIN MEADOW ESTABLISHMENT	11.4	N/A	153
RB	RIPARIAN BUFFER PLANTINGS	RIPARIAN MEADOW ESTABLISHMENT	36.0	RIPARIAN BUFFER	19243
RI	RIPARIAN INFILL PLANTINGS	RIPARIAN MEADOW ESTABLISHMENT	36.0	RIPARIAN INFILL	2601
RME	RIPARIAN MEADOW ESTABLISHMENT	RIPARIAN MEADOW ESTABLISHMENT	36.0	N/A	2647
SW	STORMWATER SEED MIX	STORMWATER FACILITY ESTABLISHMENT	20.0	N/A	1031
TE	TURFGRASS ESTABLISHMENT	TURFGRASS ESTABLISHMENT	200.0	N/A	11553

PLANT SCHEDULE				OVERALL QTY. PER ACRE: 5589				
LIVE STAKE PLANTINGS (LS)				TOTAL PLANTS PER ZONE: 2494 TOTAL ZONE SIZE (ACRES): 0.45				
QUANTITY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
	BOTANICAL NAME	COMMON NAME [3]						
	LIVE STAKES							
832	*Cornus sericea*	Red Osier Dogwood	Live Stake	0.5 - 1.5 IN. DIA.	FACW	3' LENGTH	3 FT. ON CENTER	
831	*Salix discolor*	Pussy Willow	Live Stake	0.5 - 1.5 IN. DIA.	FACW	3' LENGTH	3 FT. ON CENTER	
831	*Salix sericea*	Silky Willow	Live Stake	0.5 - 1.5 IN. DIA.	OBL	3' LENGTH	3 FT. ON CENTER	

PLANT SCHEDULE				OVERALL QTY. TREES / SHRUBS PER ACRE: 250 / 200				
FLOODPLAIN BENCH PLANTINGS (FB)				TOTAL TREES / SHRUBS PER ZONE: 203 / 162 TOTAL ZONE SIZE (ACRES): 0.81				
QUANTITY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
	BOTANICAL NAME	COMMON NAME [3]						
TREES								
30%	**OVERSTORY TREES 1.25"**							
15	*Acer rubrum*	Red Maple	CONT.	#10	FAC	1.25 IN. CAL	12 FT. ON CENTER	
15	*Quercs palustris*	Pin Oak	CONT.	#10	FACW	1.25 IN. CAL	12 FT. ON CENTER	Plant in more open area
15	*Platanus occidentalis*	American Sycamore	CONT.	#10	FACW	1.25 IN. CAL	12 FT. ON CENTER	
16	*Quercus bicolor*	Swamp White Oak	CONT.	#10	FACW	1.25 IN. CAL	12 FT. ON CENTER	
30%	**OVERSTORY TREES 5' HT**							
15	*Acer rubrum*	Red Maple	CONT.	#5	FAC	5 FT. HT.	12 FT. ON CENTER	
15	*Quercus palustris*	Pin Oak	CONT.	#5	FACW	5 FT. HT.	12 FT. ON CENTER	Plant in more open area
16	*Platanus occidentalis*	Sycamore	CONT.	#5	FACW	5 FT. HT.	12 FT. ON CENTER	
15	*Quercus bicolor*	Swamp White Oak	CONT.	#5	FACW	5 FT. HT.	12 FT. ON CENTER	
40%	**UNDERSTORY TREES**							
40	*Carpinus caroliniana*	American Hornbeam	CONT.	#10	FAC	1.25 IN. CAL	12 FT. ON CENTER	Highest elev/ furthest from stream
40	*Magnolia virginiana*	Sweetbay Magnolia	CONT.	#10	FACW	5 FT. HT.	12 FT. ON CENTER	
SHRUBS								
75%	**SHRUBS 24" HT**							
31	*Ilex verticillata*	Winterberry	CONT.	#3	FACW	24 IN. HT.	15 FT. ON CENTER	10% male of compatible varities
30	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#3	OBL	24 IN. HT.	15 FT. ON CENTER	
31	*Sambucus nigra*	American Elderberry	CONT.	#3	FAC	24 IN. HT.	15 FT. ON CENTER	
30	*Cornus sericea*	Redosier Dogwood	CONT.	#3	FACW	24 IN. HT.	15 FT. ON CENTER	
25%	**SHRUBS 36" HT**							
10	*Alnus serrulata*	Hazel Alder	CONT.	#5	OBL	36 IN. HT.	15 FT. ON CENTER	
10	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#5	OBL	36 IN. HT.	15 FT. ON CENTER	
10	*Sambucus nigra*	American Elderberry	CONT.	#5	FAC	36 IN. HT.	15 FT. ON CENTER	
10	*Cornus sericea*	Redosier Dogwood	CONT.	#5	FACW	36 IN. HT.	15 FT. ON CENTER	

PLANT SCHEDULE				OVERALL QTY. TREES / SHRUBS PER ACRE: 100 / 300				
FLOODPLAIN INFILL PLANTINGS (FI)				TOTAL TREES / SHRUBS PER ZONE: 35 / 104 TOTAL ZONE SIZE (ACRES): 0.35				
QUANTITY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
	BOTANICAL NAME	COMMON NAME [3]						
TREES								
100%	**UNDERSTORY TREES**							
35	*Magnolia virginiana*	Sweetbay Magnolia	CONT.	#10	FACW	5 FT. HT.	20 FT. ON CENTER	
SHRUBS								
75%	**SHRUBS 24" HT**							
25	*Alnus serrulata*	Hazel Alder	CONT.	#3	OBL	24 IN. HT.	12 FT. ON CENTER	No shade tolerance
26	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#3	OBL	24 IN. HT.	12 FT. ON CENTER	
26	*Cornus sericea*	Redosier Dogwood	CONT.	#3	FACW	24 IN. HT.	12 FT. ON CENTER	
25%	**SHRUBS 36" HT**							
9	*Alnus serrulata*	Hazel Alder	CONT.	#5	OBL	36 IN. HT.	12 FT. ON CENTER	
9	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#5	OBL	36 IN. HT.	12 FT. ON CENTER	
9	*Cornus sericea*	Redosier Dogwood	CONT.	#5	FACW	36 IN. HT.	12 FT. ON CENTER	

[1] MINIMUM CONTAINER SIZES LISTED FOR TREES AND SHRUBS ARE ASSUMED TO BE THE TRADITIONAL 1:1 RELATIONSHIP BETWEEN GALLON SIZE AND NURSERY POT/CONTAINER SIZE (I.E., 5-GAL = #5 CONTAINER), ALTHOUGH ACTUAL NURSERY POT/CONTAINER SIZE NOMENCLATURE DOES NOT ALWAYS REFLECT THE TRUE MEASURE OF VOLUME. NURSERY PLANTS MUST MEET BOTH THE "MINIMUM CONTAINER SIZE" AND THE "SIZE/HEIGHT" OF THE PLANTS, AS SPECIFIED.
[2] WETLAND INDICATOR STATUS SOURCE: U.S. ARMY CORPS OF ENGINEERS 2017. NATIONAL WETLAND PLANT LIST, VERSION 3.3, (HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/), U.S. ARMY CORPS OF ENGINEERS, ENGINEER RESEARCH AND DEVELOPMENT CENTER, COLD REGIONS RESEARCH AND ENGINEERING LABORATORY, HANOVER, NH - EASTERN MOUNTAINS AND PIEDMONT 2016 REGIONAL LIST (REG_EMP_2016V1.PDF), BOTANICAL NAMES IN PARENTHESES ARE SYNONYMS COMMONLY USED BY NATIVE PLANT NURSERIES.
[3] BOTANICAL AND COMMON NAME SOURCE: SHA PREFERRED PLANT LIST (PPL); 05/09/2018.
[4] SEEDING TYPE TO BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS SECTIONS 705, 706, AND 707 FOR TURFGRASS, SHRUB SEEDING, AND MEADOW ESTABLISHMENT.
[5] LIVE STAKES SHALL BE HARVESTED AND PLANTED DURING THE DORMANT SEASON. CONTRACTOR MAY SUBSTITUTE WITH TUBELIGS WITH APPROVAL BY THE ENGINEER.
[6] IF TUBELINGS ARE USED SHALL BE PLACED AFTER INVASIVE SPECIES TREATMENT / REMOVAL AND SPACED TO AVOID MAJOR ROOTS AND LIMBS OF EXISTING SHRUBS AND TREES.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

PLANTING OFFSETS			
UTILITY	TREE/SHRUB TYPE	OFFSET TO PLANTING (FT)	NOTES
OVERHEAD LINES - ELECTRIC AND OTHERS	SHRUB	10	
	UNDERSTORY TREE	20	
	OVERSTORY TREE	30	
SANITARY AND WATER	SHRUB	7	MEASURED FROM OUTSIDE EDGE OF PIPE
	UNDERSTORY TREE	15	MEASURED FROM OUTSIDE EDGE OF PIPE
	CANOPY TREE	20	MEASURED FROM OUTSIDE EDGE OF PIPE
TRAFFIC BARRIER	ALL	15	MEASURED FROM BACK OF BARRIER
BACK OF CURB	ALL	5	IN CLOSED-SECTION MEDIANS

PLANT SCHEDULE				OVERALL QTY. TREES / SHRUBS PER ACRE: 250 / 200				
RIPARIAN BUFFER PLANTINGS (RB)				TOTAL TREES / SHRUBS PER ZONE: 994 / 796 TOTAL ZONE SIZE (ACRES): 3.98				
QUANTITY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
	BOTANICAL NAME	COMMON NAME [3]						
TREES								
30%	**OVERSTORY TREES 1.25"**							
75	*Acer rubrum*	Red Maple	CONT.	#10	FAC	1.25 IN. CAL	12 FT. ON CENTER	
75	*Liquidambar styraciflua*	Sweetgum	CONT.	#10	FAC	1.25 IN. CAL	12 FT. ON CENTER	
74	*Celtis occidentalis*	Hackberry	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	
75	*Quercus phellos*	Willow Oak	CONT.	#10	FAC	1.25 IN. CAL	12 FT. ON CENTER	
30%	**OVERSTORY TREES 5' HT**							
75	*Acer rubrum*	Red Maple	CONT.	#5	FAC	5 FT. HT.	12 FT. ON CENTER	
74	*Liquidambar styraciflua*	Sweetgum	CONT.	#5	FAC	5 FT. HT.	12 FT. ON CENTER	Highest elev/ furthest from stream
75	*Celtis occidentalis*	Hackberry	CONT.	#5	FACU	5 FT. HT.	12 FT. ON CENTER	
75	*Quercus phellos*	Willow Oak	CONT.	#5	FAC	5 FT. HT.	12 FT. ON CENTER	
40%	**UNDERSTORY TREES**							
99	*Prunus serotina*	Black Cherry	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	
99	*Chionanthus virginicus*	White Fringetree	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	Plant in drier locations
99	*Amelanchier arborea*	Downy Serviceberry	CONT.	#10	FACU	5 FT. HT.	12 FT. ON CENTER	Multi-stem
99	*Ilex opaca*	American Holly	CONT.	#10	FACU	5 FT. HT.	12 FT. ON CENTER	
SHRUBS								
75%	**SHRUBS 24" HT**							
149	*Ilex verticillata*	Winterberry	CONT.	#3	FACW	24 IN. HT.	15 FT. ON CENTER	10% male of compatible varities
149	*Lindera benzoin*	Spicebush	CONT.	#3	FACW	24 IN. HT.	15 FT. ON CENTER	
149	*Viburnum dentatum*	Southern Arrowwood Viburnum	CONT.	#3	FAC	24 IN. HT.	15 FT. ON CENTER	
149	*Viburnum prunifolium*	Blackhaw Viburnum	CONT.	#3	FACU	24 IN. HT.	15 FT. ON CENTER	Highest elev/ furthest from stream
25%	**SHRUBS 36" HT**							
50	*Ilex verticillata*	Winterberry	CONT.	#5	FACW	36 IN. HT.	15 FT. ON CENTER	10% male of compatible varities
50	*Lindera benzoin*	Spicebush	CONT.	#5	FACW	36 IN. HT.	15 FT. ON CENTER	
50	*Viburnum dentatum*	Southern Arrowwood Viburnum	CONT.	#5	FAC	36 IN. HT.	15 FT. ON CENTER	
50	*Viburnum prunifolium*	Blackhaw Viburnum	CONT.	#5	FACU	36 IN. HT.	15 FT. ON CENTER	Highest elev/ furthest from stream

PLANT SCHEDULE				OVERALL QTY. TREES / SHRUBS PER ACRE: 250 / 200				
RIPARIAN INFILL PLANTINGS (RI)				TOTAL TREES / SHRUBS PER ZONE: 135 / 108 TOTAL ZONE SIZE (ACRES): 0.54				
QUANTITY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
	BOTANICAL NAME	COMMON NAME [3]						
TREES								
90%	**UNDERSTORY TREES**							
41	*Prunus serotina*	Black Cherry	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	
40	*Chionanthus virginicus*	White Fringetree	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	Plant in drier locations
41	*Amelanchier arborea*	Downy Serviceberry	CONT.	#10	FACU	5 FT. HT.	12 FT. ON CENTER	Multi-stem
10%	**UNDERSTORY 5' HT**							
13	*Ilex opaca*	American Holly	CONT.	#10	FACU	5 FT. HT.	12 FT. ON CENTER	
SHRUBS								
75%	**SHRUBS 24" HT**							
20	*Ilex verticillata*	Winterberry	CONT.	#3	FACW	24 IN. HT.	15 FT. ON CENTER	10% male of compatible varities
20	*Lindera benzoin*	Spicebush	CONT.	#3	FACW	24 IN. HT.	15 FT. ON CENTER	
20	*Viburnum dentatum*	Southern Arrowwood Viburnum	CONT.	#3	FAC	24 IN. HT.	15 FT. ON CENTER	
20	*Viburnum prunifolium*	Blackhaw Viburnum	CONT.	#3	FACU	24 IN. HT.	15 FT. ON CENTER	Highest elev/ furthest from stream
25%	**SHRUBS 36" HT**							
7	*Ilex verticillata*	Winterberry	CONT.	#5	FACW	36 IN. HT.	15 FT. ON CENTER	10% male of compatible varities
7	*Lindera benzoin*	Spicebush	CONT.	#5	FACW	36 IN. HT.	15 FT. ON CENTER	
7	*Viburnum dentatum*	Southern Arrowwood Viburnum	CONT.	#5	FAC	36 IN. HT.	15 FT. ON CENTER	
7	*Viburnum prunifolium*	Blackhaw Viburnum	CONT.	#5	FACU	36 IN. HT.	15 FT. ON CENTER	Highest elev/ furthest from stream

PLANT SCHEDULE								
ORNAMENTAL PLANTS				ALL ORNAMENTAL PLANT PLACEMENT SHOWN ON LP-01				
QUANTITY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	SYMBOL	NOTES
	BOTANICAL NAME	COMMON NAME [3]						
TREES - 1.25" Caliper (Single Stem)								
3	*Quercus alba*	White Oak	CONT.	#10	FACU	1.25 IN. CAL	Qa	
3	*Quercs palustris*	Pin Oak	CONT.	#10	FACW	1.25 IN. CAL	Qp	Plant in more open area
2	*Carpinus caroliniana*	American Hornbeam	CONT.	#10	FAC	1.25 IN. CAL	Ccar	Plant at highest elevation/ furthest from stream
4	*Amelanchier arborea*	Downy Serviceberry	CONT.	#10	FACU	5 FT. HT.	Aa	Multi-stem
2	*Cercis canadensis*	Eastern Redbud	CONT.	#10	FACU	6 FT. HT.	Ccan	Multi-stem
SHRUBS								
4	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#5	OBL	36 IN. HT.	Co	
3	*Sambucus nigra*	American Elderberry	CONT.	#5	FAC	36 IN. HT.	Sn	

GENERAL LANDSCAPE NOTES

1. MAINTAIN OR INSTALL SUBSOIL AND TOPSOIL IN ALL AREAS INDICATED TO BE LANDSCAPED.
2. PLANT IN CLUSTERS OF 3 TO 5 INDIVIDUAL TREES/SHRUBS OF LIKE SPECIES TO CREATE A PATTERN CONSISTENT WITH NATURAL FOREST DEVELOPMENT.
3. KNOWN UTILITIES ARE SHOWN ON THE PLANS. LANDSCAPING CONTRACTOR SHALL CONTACT MISS UTILITY AS NOTED ON THE GENERAL NOTE SHEET GN-01.
4. PLANT MATERIALS SHALL BE INSPECTED TO BE IN GOOD, HEALTHY CONDITION, FREE OF INVASIVE INSECTS AND DISEASE.

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

FLOODPLAIN MEADOW ESTABLISHMENT		SEEDING RATE (LB/AC): 11.4 TOTAL AREA (AC): 1.63		
Frequency (%)	Total Qty. (lbs.)	Common name	Root	Comments
4%	0.65	King of the Meadow	seed	Pure Live Seed
4%	0.65	Flat-top Goldenrod	seed	Pure Live Seed
4%	0.65	New York Aster	seed	Pure Live Seed
4%	0.65	New York Ironweed	seed	Pure Live Seed
2%	0.33	Swamp Milkweed	seed	Pure Live Seed
12%	2.29	Swamp Verbena	seed	Pure Live Seed
4%	0.65	Trumpetweed	seed	Pure Live Seed
4%	0.65	Crimsoneyed Rosemallow	seed	Pure Live Seed
14%	2.61	Common Rush	seed	Pure Live Seed
9%	1.63	Fox Sedge	seed	Pure Live Seed
18%	3.27	Fowl Bluegrass	seed	Pure Live Seed
5%	0.98	Longhair Sedge	seed	Pure Live Seed
9%	1.63	Rattlesnake Mannagrass	seed	Pure Live Seed
5%	0.98	Shallow Sedge	seed	Pure Live Seed
5%	0.98	Woolgrass	seed	Pure Live Seed
100%	**18.620**	**= TOTAL**		

RIPARIAN MEADOW ESTABLISHMENT		SEEDING RATE (LB/AC): 36.0 TOTAL AREA (AC): 5.06		
Frequency (%)	Total Qty. (lbs.)	Common name	Root	Comments
1%	1.01	Common Boneset	seed	Pure Live Seed
3%	6.07	Eastern Purple Coneflower	seed	Pure Live Seed
1%	2.53	Maximilian Sunflower	seed	Pure Live Seed
1%	1.01	New England Aster	seed	Pure Live Seed
1%	1.01	New York Ironweed	seed	Pure Live Seed
1%	1.52	Stiff Goldenrod	seed	Pure Live Seed
2%	3.54	Swamp Verbena	seed	Pure Live Seed
1%	1.01	Trumpetweed	seed	Pure Live Seed
6%	10.12	Big Bluestem	seed	Pure Live Seed
6%	10.12	Eastern Gamagrass	seed	Pure Live Seed
56%	101.20	Hard Fescue	seed	Pure Live Seed
6%	10.12	Indiangrass	seed	Pure Live Seed
14%	25.30	Kentucky Bluegrass	seed	Pure Live Seed
3%	5.06	Switchgrass	seed	Pure Live Seed
1%	2.53	Virginia Wildrye	seed	Pure Live Seed
100%	**182.160**	**= TOTAL**		

STORMWATER FACILITY ESTABLISHMENT		SEEDING RATE (LB/AC): 20.0 TOTAL AREA (AC): 0.21		
Frequency (%)	Total Qty. (lbs.)	Common name	Root	Comments
26%	1.11	Switchgrass	seed	Pure Live Seed
21%	0.89	Coastal Panicgrass	seed	Pure Live Seed
21%	0.89	Indiangrass	seed	Pure Live Seed
20%	0.85	Canada Wildrye	seed	Pure Live Seed
10%	0.43	Winter Bentgrass	seed	Pure Live Seed
1%	0.04	Soft Rush	seed	Pure Live Seed
1%	0.04	Path Rush	seed	Pure Live Seed
100%	**4.259**	**= TOTAL**		

TURFGRASS ESTABLISHMENT		SEEDING RATE (LB/AC): 200.0 TOTAL AREA (AC): 2.39		
Frequency (%)	Total Qty. (lbs.)	Common name	Root	Comments
95%	453.52	Tall Fescue	seed	Pure Live Seed
5%	23.87	Kentucky Bluegrass	seed	Pure Live Seed
100%	**477.392**	**= TOTAL**		

TREE SHELTERS		
WIRE CAGES	1685	UNDERSTORY TREES, ORNAMENTAL TREES AND ALL SHRUBS
TREE SLEEVES	665	OVERSTORY TREES

NOTE: WIRE CAGES AND TREE SLEEVES NOT INSTALLED IN AREAS WITHIN DEER FENCE

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE DETAILS

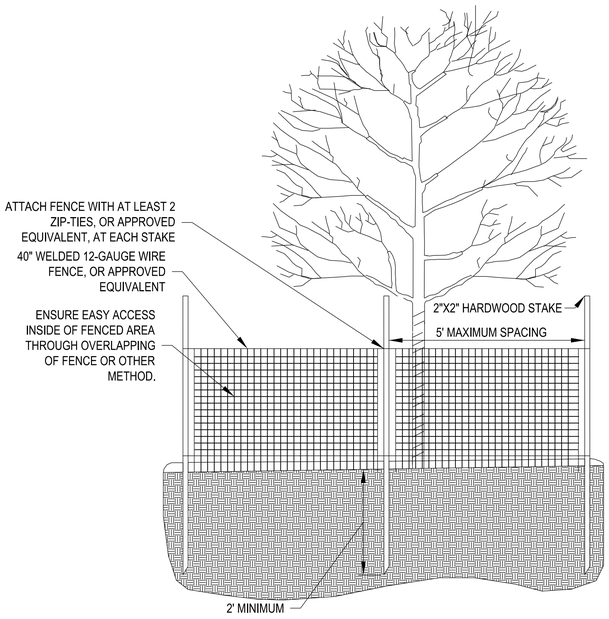
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 104 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. LD-01 Of LD-03

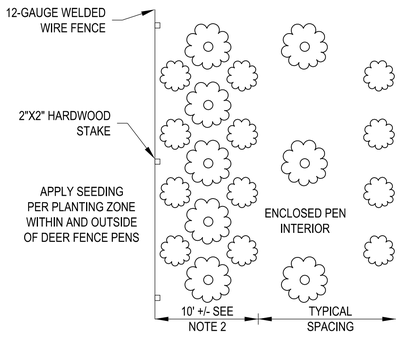
BID No.:
HCG DWG ID No.:
SCALE: 1" = 1'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLD-D001_Fallston.dgn



ELEVATION



PLAN VIEW

DEER FENCE NOTES

1. DEER FENCE IS PLACED TO FORM ENCLOSED PENS FOR EXCLUDING DEER. FOLLOW FENCE LINES ON THE PLANS. GENERALLY, THERE SHOULD BE A MINIMUM OF 10-FOOT GAP BETWEEN FENCE LINES FOR PATHS BETWEEN THE PENS.
2. PLANT TREES AND SHRUBS WITHIN THE ENCLOSED PENS. WITHIN 10-FEET OF FENCE LINE, PLANT TREES AND SHRUBS AT HALF THE DENSITY LISTED ON THE PLANTING TABLE. PLANT THE REMAINING INTERIOR OF THE ENCLOSED PENS AT THE DENSITY INDICATED IN THE PLANTING TABLES.
3. DO NOT PLANT TREES WITHIN THE 10-FT TO 15-FT GAPS BETWEEN THE ENCLOSED PENS. THESE AREAS WILL BE MAINTAINED AS PATHS THROUGH THE PLANTINGS. APPLY THE SEED AS INDICATED BY THE PLANTING ZONE.
4. INDIVIDUAL WELDED-WIRE CAGES WILL NOT BE APPLIED ON TREES AND SHRUBS WITHIN THE ENCLOSED PENS.
5. EMBED 8-INCH DIAMETER (MIN.) LOGS INTO THE GROUND TO SPAN THE FENCE GAPS AS NOTED IN THE PLANS. THE LOGS SHALL BE ANGLED TO PREVENT RUNOFF FROM FOLLOWING POTENTIAL DEER PATH BETWEEN FENCING. NON-NATIVE, INVASIVE TREES MAY NOT BE USED FOR THE LOGS.

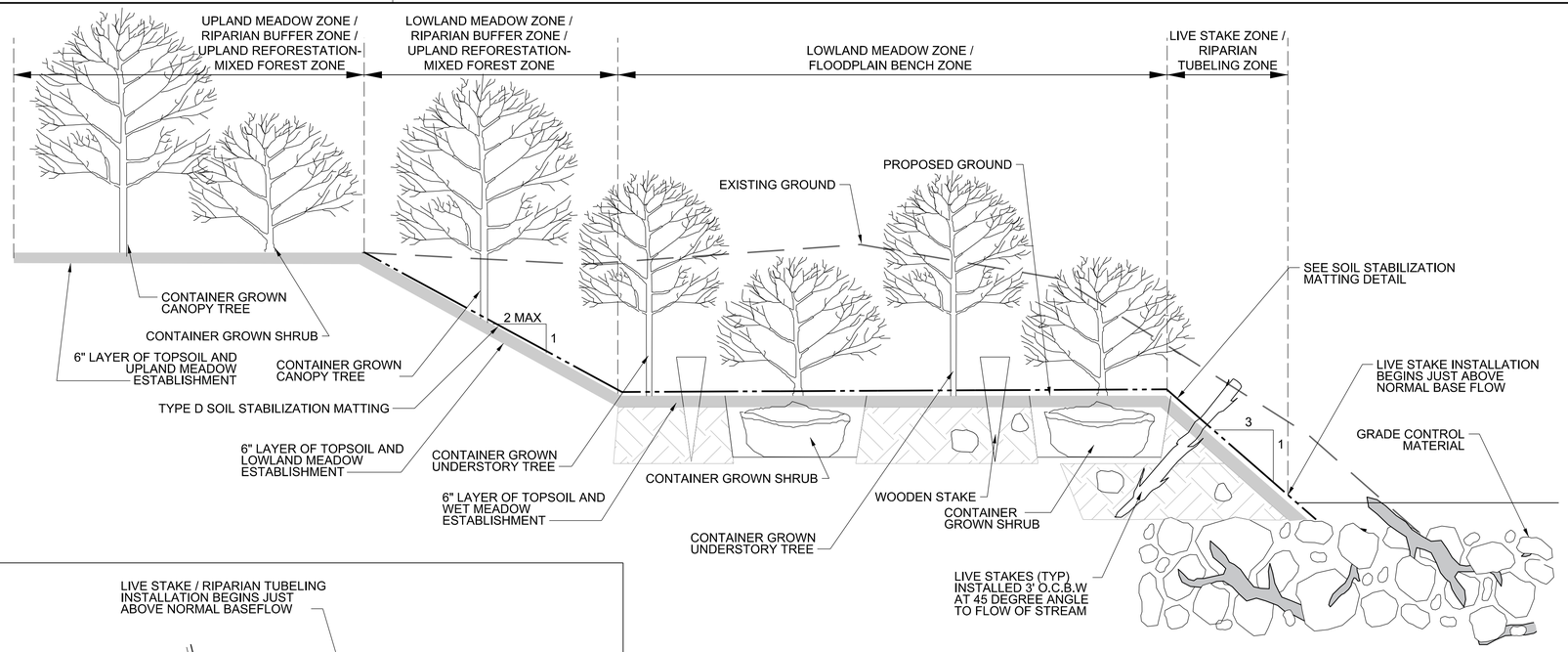
DEER FENCE INSTALLATION DETAIL

NOT TO SCALE

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

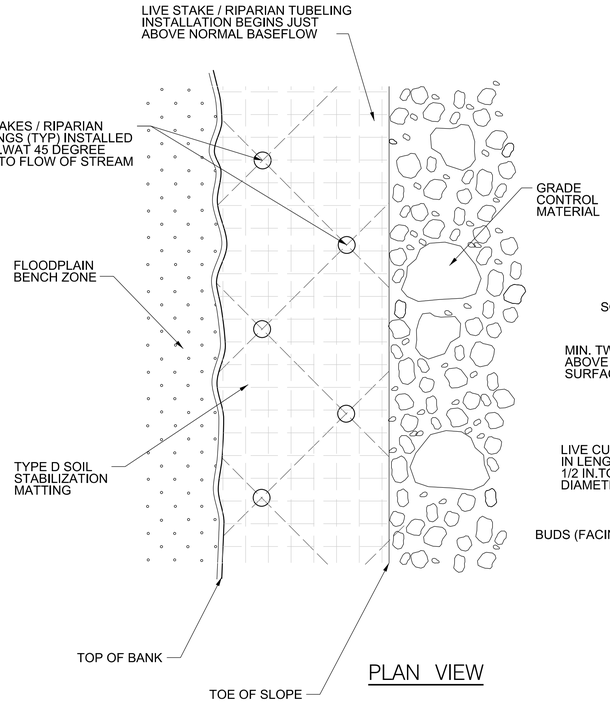
CROSS REFERENCES:

1. SEE SOIL STABILIZATION MATTING DETAIL ON SHEET DE-01 FOR MATTING AND STAKING INFORMATION. ALL SEEDING AND LANDSCAPED AREAS SHALL MEET THE REQUIREMENTS OF THE SHA LANDSCAPE DESIGN GUIDE FOR SOIL STABILIZATION MATTING (SSM).
2. SEE MASTER PLANT SCHEDULE AND LANDSCAPE PLANTS FOR PLANTING AND SEEDING INFORMATION.

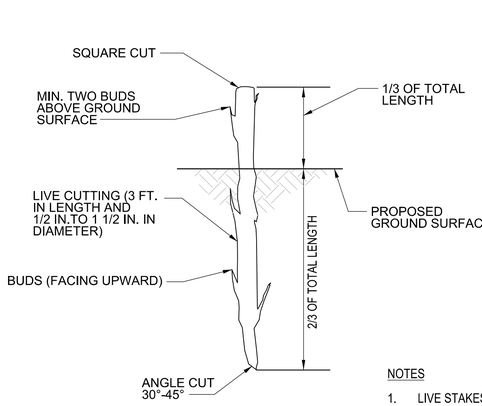


TYPICAL SECTION – PLANTING ZONES (RIFFLES)

NOT TO SCALE



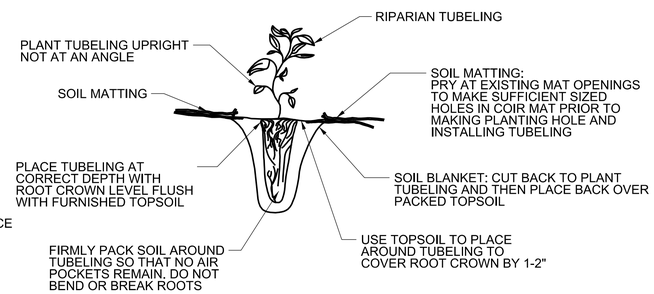
PLAN VIEW



LIVE STAKE DETAIL

NOTES

1. LIVE STAKES SHALL BE INSTALLED WITHIN A MAXIMUM OF 3 FEET VERTICALLY FROM THE BASEFLOW ELEVATION.



RIPARIAN TUBELING DETAIL

LIVE STAKE /RIPARIAN TUBELING INSTALLATION DETAIL

NOT TO SCALE

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION LANDSCAPE DETAILS

Drawn By : C.A.B.	Scale : NOT TO SCALE
Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 105 Of 124	Sheet No. LD-02 Of LD-03

BID No.:

HCG DWG ID No.:

SCALE 1" = 1'-0"

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLD-D002_Fallston.dgn

JAPANESE STILT GRASS (MICROSTEGIUM VIMINEUM) IS A NON-NATIVE INVASIVE (NNI) PLANT FOUND ALONG SHADED STREAM BANKS AND ABANDONED FLOODPLAIN AREAS . IT IS AN ANNUAL GRASS THAT BUILDS UP A LARGE SEED BANK IN THE SOIL AND CREATES A MONOCULTURE COMMUNITY. IT GERMINATES IN APRIL, SEEDS ARE TYPICALLY PRODUCED IN SEPTEMBER THROUGH OCTOBER.

WITHIN GRADING LIMITS

1.CLEAR AND GRUB, REMOVE AND PROPERLY DISPOSE ALL NON-NATIVE HERBACEOUS VEGETATION WITHIN THE GRADING LIMITS.
2.REMOVE OR PULL ANY NON-NATIVE SEEDLINGS THAT APPEAR AFTER GRADING ENSURING ENTIRE PLANT, INCLUDING ROOTS, FROM GROUND; OR WHERE SMALL QUANTITIES OR PATCHES ARE LOCATED FOLIAR SPOT SPRAY SYSTEMIC HERBICIDE GLYPHOSATE USING LOW VOLUME/LOW PRESSURE SPRAYERS (BACKPACKS) TWICE DURING THE GROWING SEASON (BETWEEN APRIL 15-JUNE 15 AND BETWEEN AUGUST 15 TO OCTOBER 15 PERIOR TO THE FIRST KILLING FROST).
3.ESTABLISH NATIVE VEGETATION IN TREATED AREAS PER THE LANDSCAPE PLANS.
4.CONTINUE TREATMENTS AS NEEDED THROUGHOUT DURATION OF THE CONTRACT.

OUTSIDE GRADING LIMITS

1.MOW OR CUT STILTGRASS TO GROUND LEVEL (0-1 INCH) 2 TIMES DURING EACH GROWING SEASON, BETWEEN JULY 1 AND IN SEPTEMBER 1, PRIOR TO THE PLANTS GOING TO SEED
2.HAND PULL AND/OR RAKE OFF THE CUT VEGETATION FOLLOWING EACH MOWING/CUTTING EVENT. COLLECT AND PROPERLY DISPOSE THE PLANT MATERIALS OFF SITE.
3.APPLY SYSTEMIC AQUATIC SAFE HERBICIDE GLYPHOSATE (E.G. AQUANEAT) TO STILTGRASS IMMEDIATELY AFTER MOWIING, AND COLLECTION OF CUT STILTGRASS USING LOW VOLUME/LOW PRESSURE SPRAYERS (BACKPACKS). AVOID OVERSPRAY OR DRIFT ONTO NON-TARGET SPECIES.
3.REMOVE OF ALL COLLECTED PLANT MATERIAL FROM THE SITE TO AN APPROVED DISPOSAL FACILITY.

HERBACEOUS SPECIES

OTHER HERBACEOUS SPECIES INCLUDING JAPANESE HONEYSUCKLE (LONICERA JAPONICA) ARE HERBACEOUS NON-NATIVE INVASIVE PLANTS FOUND GROWING THROUGHOUT THE PROJECT AREA AS INDIVIDUALS OR IN VARIABLE SIZED PATCHES AND DENSITIES.

WITHIN GRADING LIMITS

1.CLEAR AND GRUB, REMOVE AND PROPERLY DISPOSE ALL NON-NATIVE HERBACEOUS VEGETATION WITHIN THE GRADING LIMITS.
2.REMOVE OR PULL ANY NON-NATIVE SEEDLINGS THAT APPEAR AFTER GRADING ENSURING ENTIRE PLANT, INCLUDING ROOTS, FROM GROUND; OR WHERE SMALL QUANTITIES OR PATCHES ARE LOCATED FOLIAR SPOT SPRAY SYSTEMIC HERBICIDE GLYPHOSATE USING LOW VOLUME/LOW PRESSURE SPRAYERS (BACKPACKS) TWICE DURING THE GROWING SEASON (BETWEEN APRIL 15-JUNE 15 AND BETWEEN AUGUST 15 TO OCTOBER 15 PERIOR TO THE FIRST KILLING FROST).
3.ESTABLISH NATIVE VEGETATION IN TREATED AREAS.
4.CONTINUE TREATMENTS AS NEEDED THROUGHTOUT DURATION OF THE CONTRACT

OUTSIDE OF GRADING LIMITS (WITHIN AND 50 FEET OUTSIDE OF LOD)

1.REMOVE OR PULL ANY NON-NATIVE SEEDLINGS ENSURING ENTIRE PLANT, INCLUDING ROOTS, FROM GROUND; OR WHERE SMALL QUANTITIES OR PATCHES ARE LOCATED FOLIAR SPOT SPRAY SYSTEMIC HERBICIDE GLYPHOSATE USING LOW VOLUME/LOW PRESSURE SPRAYERS (BACKPACKS) TWICE DURING THE GROWING SEASON (BETWEEN APRIL 15-JUNE 15 AND BETWEEN AUGUST 15 TO OCTOBER 15 PERIOR TO THE FIRST KILLING FROST). THE SEMI-EVERGREEN JAPANESE HONEYSUCKLE CAN BE TREATED AFTER THE KILLING FROST AFTER OTHER HERBACEOUS PLANTS HAVE DIED BACK.
2.ESTABLISH NATIVE VEGETATION IN TREATED AREAS PER THE LANDSCAPING PLANS.
3.CONTINUE TREATMENTS AS NEED THROUGHOUT THE DURATION OF THE CONTRACT AS DIRECTED BY THE PROJECT ENGINEER OR DSIGNATED SPECIALIST.

WOODY SPECIES

JAPANESE BARBERRY (*BERBERIS THUNBERGII*), PRIVET (*LIGUSTRUM SP.*), AND MULTIFLORA ROSE (*ROSA MULTIFLORA*) ARE WOODY NNIs FOUND GROWING THROUGHOUT THE PROJECT AREA AS INDIVIDUALS OR IN VARIABLE SIZED PATCHES AND DENSITIES.

WITHIN GRADING LIMITS

1. CLEAR AND GRUB, REMOVE AND PROPERLY DISPOSE ALL NON-NATIVE WOODY VEGETATION WITHIN THE LIMITS OF DISTURBANCE.
2. ANY WOODY NON-NATIVES THAT CANNOT BE REMOVED AS PART OF THE CLEARING AND GRUBBING- CUT INDIVIDUAL TREES, SHRUBS OR WOODY VINES FLUSH WITH GROUND. WOODY VINES SHOULD BE "WINDOW CUT" TO ENSURE NO UNTREATED PORTION OF THE VINES ARE IN CONTACT WITH THE GROUND.
2.APPLY OIL BASED HERBICIDE TRICLOPYR (E.G. GARLON) TO THE FRESH CUT STUMP, TAKING CARE NOT TO APPLY CHEMICAL TO UNTARGETED PLANTS.
3.COLLECT AND REMOVE TOP GROWTH OF CUT TREES, SHRUBS, AND WOODY VINES AND PROPERLY DISPOSE OFF SITE.
THIS METHOD OF TREATMENT CAN BE PERFORMED THROUGHOUT THE CALENDAR YEAR, INCLUDING THE WINTER MONTHS WHEN PLANTS ARE DORMANT, IF GROUND IS NOT FROZEN.

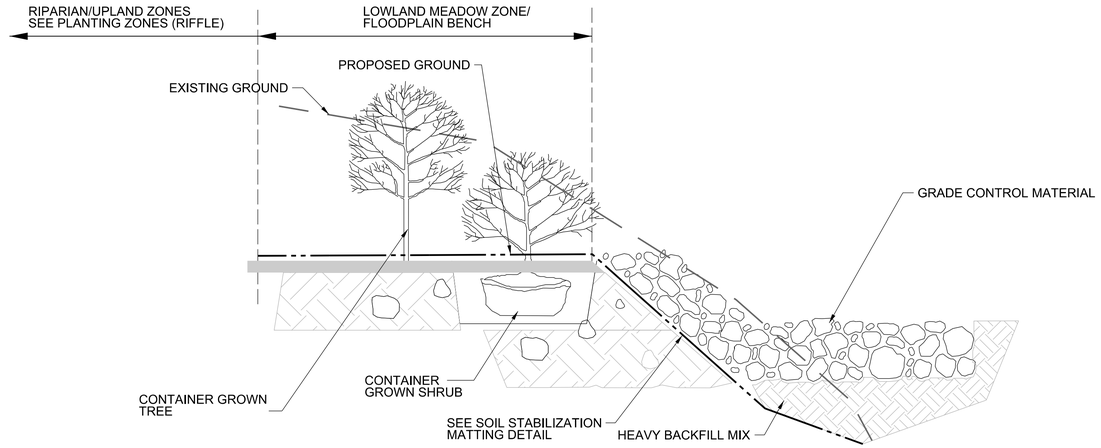
OUTSIDE OF GRADING LIMITS (WITHIN AND 50 FEET OUTSIDE OF LOD)

1.CUT INDIVIDUAL TREES, SHRUBS OR WOODY VINES FLUSH WITH GROUND. WOODY VINES SHOULD BE "WINDOW CUT" TO ENSURE NO UNTREATED PORTION OF THE VINES ARE IN CONTACT WITH THE GROUND.
2.APPLY OIL BASED HERBICIDE TRICLOPYR (E.G. GARLON) TO THE FRESH CUT STUMP, TAKING CARE NOT TO APPLY CHEMICAL TO UNTARGETED PLANTS.
3.COLLECT AND REMOVE TOP GROWTH OF CUT TREES, SHRUBS, AND WOODY VINES AND PROPERLY DISPOSE OFF SITE.
THIS METHOD OF TREATMENT CAN BE PERFORMED THROUGHOUT THE CALENDAR YEAR, INCLUDING THE WINTER MONTHS WHEN PLANTS ARE DORMANT, IF GROUND IS NOT FROZEN.THIS METHOD IS SUITABLE FOR AREAS WHERE TARGET SPECIES ARE INTERMINGLED WITH NATIVE DESIRABLE SPECIES.
4.ESTABLISH NATIVE WOODY AND HERBACEOUS VEGETATION TO REPLACE NON-NATIVE WOODY SPECIES PER THE LANDSCAPING PLANS.
5.HAND PULL, OR FOLIAR SPOT SPRAY WITH GLYPHOSATE ANY SMALL SEEDLINGS THAT PERSIST OR APPEAR AFTER INTIAL TREATMENT AS NEEDED FOR THE DURATION OF THE CONTRACT.

INVASIVE CONTROL PLAN

STYLE 24

METAL INFORMATION SIGNS



TYPICAL SECTION – PLANTING ZONES (CASCADES)

NOT TO SCALE

PLANT SCHEDULE

FORESTED INFILL PLANTINGS (FI)

OVERALL QTY. TREES / SHRUBS PER ACRE: 250 / 200
TOTAL TREES / SHRUBS PER ZONE: 131 / 105
TOTAL ZONE SIZE (ACRES): 0.52

QUANTITY	LP-01 QTY	LP-02 QTY	LP-03 QTY	LP-04 QTY	LP-05 QTY	LP-06 QTY	LP-07 QTY	LP-08 QTY	LP-09 QTY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
										BOTANICAL NAME	COMMON NAME [3]						
90%										**UNDERSTORY TREES**							
39	12	20	4	0	0	2	1	0	0	*Prunus serotina*	Black Cherry	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	
39	12	20	4	0	0	2	1	0	0	*Chionanthus virginicus*	White Fringetree	CONT.	#10	FACU	1.25 IN. CAL	12 FT. ON CENTER	Plant in drier locations
39	12	20	4	0	0	2	1	0	0	*Amelanchier arborea*	Downy Serviceberry	CONT.	#10	FACU	5 FT. HT.	12 FT. ON CENTER	Multi-stem
10%										**EVERGREEN TREES 5' HT**							
50	41	7	1	0	0	1	0	0	0	*Ilex opaca*	American Holly	CONT.	#10	FACU	5 FT. HT.	15 FT. ON CENTER	
75% of 200										**SHRUBS 24" HT**							
20	6	10	2	0	0	1	1	0	0	*Ilex verticillata*	Winterberry	CONT.	#3	FACW	24 IN. HT.	5 FT. ON CENTER	Provide 10% male plants of compatible varities
20	6	10	2	0	0	1	1	0	0	*Lindera benzoin*	Spicebush	CONT.	#3	FACW	24 IN. HT.	5 FT. ON CENTER	
20	6	10	2	0	0	1	1	0	0	*Viburnum dentatum*	Southern Arrowwood Viburnum	CONT.	#3	FAC	24 IN. HT.	5 FT. ON CENTER	
20	6	10	2	0	0	1	1	0	0	*Viburnum prunifolium*	Blackhaw Viburnum	CONT.	#3	FACU	24 IN. HT.	5 FT. ON CENTER	Plant at highest elevation/ furthest from stream
25% of 200										**SHRUBS 36" HT**							
6	2	3	1	0	0	0	0	0	0	*Ilex verticillata*	Winterberry	CONT.	#5	FACW	36 IN. HT.	5 FT. ON CENTER	Provide 10% male plants of compatible varities
6	2	3	1	0	0	0	0	0	0	*Lindera benzoin*	Spicebush	CONT.	#5	FACW	36 IN. HT.	5 FT. ON CENTER	
6	2	3	1	0	0	0	0	0	0	*Viburnum dentatum*	Southern Arrowwood Viburnum	CONT.	#5	FAC	36 IN. HT.	5 FT. ON CENTER	
6	2	3	1	0	0	0	0	0	0	*Viburnum prunifolium*	Blackhaw Viburnum	CONT.	#5	FACU	36 IN. HT.	5 FT. ON CENTER	Plant at highest elevation/ furthest from stream

PLANT SCHEDULE

WETLAND INFILL PLANTINGS (WI)

OVERALL QTY. TREES / SHRUBS PER ACRE: 100 / 300
TOTAL TREES / SHRUBS PER ZONE: 35 / 103
TOTAL ZONE SIZE (ACRES): 0.34

QUANTITY	LP-01 QTY	LP-02 QTY	LP-03 QTY	LP-04 QTY	LP-05 QTY	LP-06 QTY	LP-07 QTY	LP-08 QTY	LP-09 QTY	DESCRIPTION		ROOT TYPE	MINIMUM CONTAINER SIZE [1]	WETLAND INDICATOR STATUS [2]	SIZE OR HEIGHT	MAXIMUM SPACING	NOTES
										BOTANICAL NAME	COMMON NAME [3]						
100%										**UNDERSTORY TREES**							
34	1	2	18	0	2	6	5	0	0	*Magnolia virginiana*	Sweetbay Magnolia	CONT.	#10	FACW	5 FT. HT.	12 FT. ON CENTER	
75% of 200										**SHRUBS 24" HT**							
26	1	2	14	0	1	4	4	0	0	*Alnus serrulata*	Hazel Alder	CONT.	#3	OBL	24 IN. HT.	5 FT. ON CENTER	No shade tolerance
26	1	2	14	0	1	4	4	0	0	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#3	OBL	24 IN. HT.	5 FT. ON CENTER	
26	1	2	14	0	1	4	4	0	0	*Cornus sericea*	Redosier Dogwood	CONT.	#3	FACW	24 IN. HT.	5 FT. ON CENTER	
25% of 200										**SHRUBS 36" HT**							
8	0	1	5	0	0	1	1	0	0	*Alnus serrulata*	Hazel Alder	CONT.	#5	OBL	36 IN. HT.	5 FT. ON CENTER	
8	0	1	5	0	0	1	1	0	0	*Cephalanthus occidentalis*	Common Buttonbush	CONT.	#5	OBL	36 IN. HT.	5 FT. ON CENTER	
8	0	1	5	0	0	1	1	0	0	*Cornus sericea*	Redosier Dogwood	CONT.	#5	FACW	36 IN. HT.	5 FT. ON CENTER	

PLANTING LIST (CONTINUED)

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
LANDSCAPE DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.

Scale : NOT TO SCALE
Date : AUGUST 2023

Drawing No. 106 Of 124

Sheet No. LD-03 Of LD-03

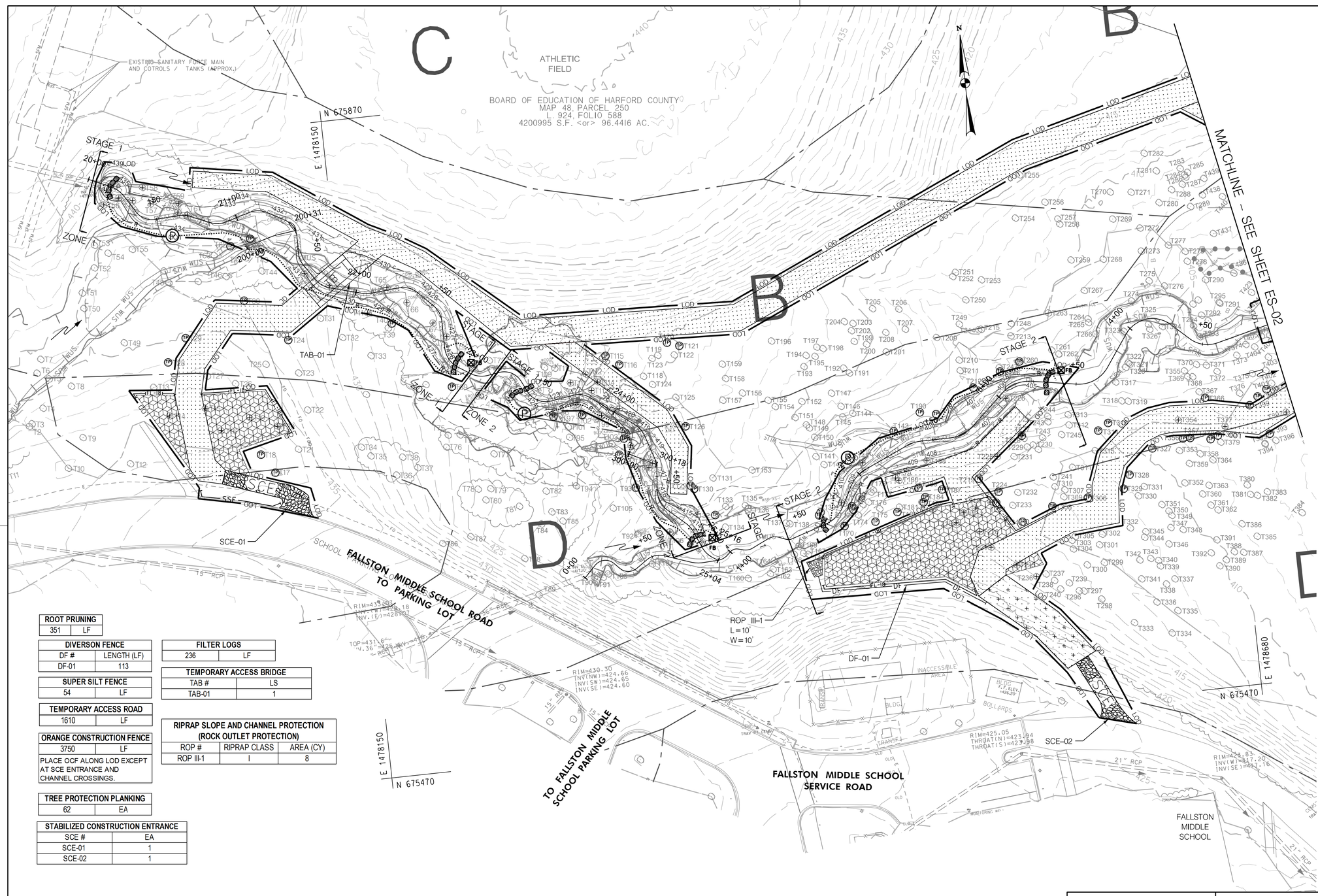
BID No.:

HCG DWG ID No.:

SCALE 1" = 0.000'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pLD-D003_Fallston.dgn



ROOT PRUNING	
351	LF

DIVERSON FENCE	
DF #	LENGTH (LF)
DF-01	113

SUPER SILT FENCE	
54	LF

TEMPORARY ACCESS ROAD	
1610	LF

ORANGE CONSTRUCTION FENCE	
3750	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TREE PROTECTION PLANKING	
62	EA

STABILIZED CONSTRUCTION ENTRANCE	
SCE #	EA
SCE-01	1
SCE-02	1

FILTER LOGS	
236	LF

TEMPORARY ACCESS BRIDGE	
TAB #	LS
TAB-01	1

RIPRAP SLOPE AND CHANNEL PROTECTION (ROCK OUTLET PROTECTION)		
ROP #	RIPRAP CLASS	AREA (CY)
ROP III-1	I	8

LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TREE PROTECTION PLANKING
- OBSERVATION WELL
- SEDIMENT MARKER
- R — TREE ROOT PRUNING
- SSF — SUPER SILT FENCE /SMART FENCE
- DF — DIVERSION FENCE
- TB — TEMPORARY ACCESS BRIDGE
- FB — FILTER BAG
- CWD-12 — CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FL-18 — FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
- PSD-24 — PIPE SLOPE DRAIN
- A-2 — TEMPORARY SWALE
- WUS — WATERS OF THE U.S.
- PROPOSED 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING 100-YEAR FLOODPLAIN BOUNDARY
- LOD — LIMIT OF DISTURBANCE /ORANGE CONSTRUCTION FENCE

NOTES FOR IN-STREAM WORK

NO FUEL SHALL BE STORED WITHIN THE 100-YEAR FLOODPLAIN

- FOR EACH PHASE, INSTREAM WORK SHALL NOT START UNTIL ALL NEEDED RESOURCES ARE ON SITE. STREAM PUMP-AROUND SHALL BE SETUP BEFORE THE START OF GRADING OPERATIONS.
- STREAM PUMP-AROUND OPERATION SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE PLANS TO ILLUSTRATE POTENTIAL ALIGNMENTS AND LENGTH.
- CONTRACTOR SHALL INSTALL PUMP AROUND OPERATION FOR THOSE INSTREAM STRUCTURES AND DEVICES THAT CAN BE COMPLETED AND STABILIZED BY THE END OF THAT WORKDAY. ONCE THE WORK AREA IS STABILIZED, PUMP AROUND DEVICES MAY BE REMOVED TO ALLOW WATER TO PASS THROUGH STABILIZED CHANNEL.
- COMPLETELY DEWATER THE WORK AREA WHEN CONSTRUCTION ACTIVITIES ARE TAKING PLACE.
- BECAUSE OF SEASONAL VARIATION IN FLOW, THE SIZE OF PUMP AND THE SIZE AND TYPE OF PIPE NEEDED TO CONVEY STREAM FLOW MAY VARY. CARE SHOULD BE TAKEN BY THE CONTRACTOR AS TO NOT UNDERSIZE THE PUMP/PIPPING NECESSARY TO CONVEY THE STREAM FLOW.
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- ALL TREES WITH THE LIMIT OF DISTURBANCE NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS PER THE TREE PROTECTION DETAILS.
- CONTRACTOR SHALL INSTALL MOUNTABLE BERMS AT ALL AREAS OF INGRESS/EGRESS FOR CONSTRUCTION ACCESS ROAD.

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30' 0 30' 60'
SCALE: 1"=30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

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BILLING NO. 97069

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HARFORD COUNTY, MARYLAND

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Drawn By :	C.A.B.	Scale :	1" = 30'
Designed By :	R.B.T.	Date :	AUGUST 2023
Reviewed By :	N.A.R.		
Drawing No.	107 Of 124	Sheet No.	ES-01 Of ES-10

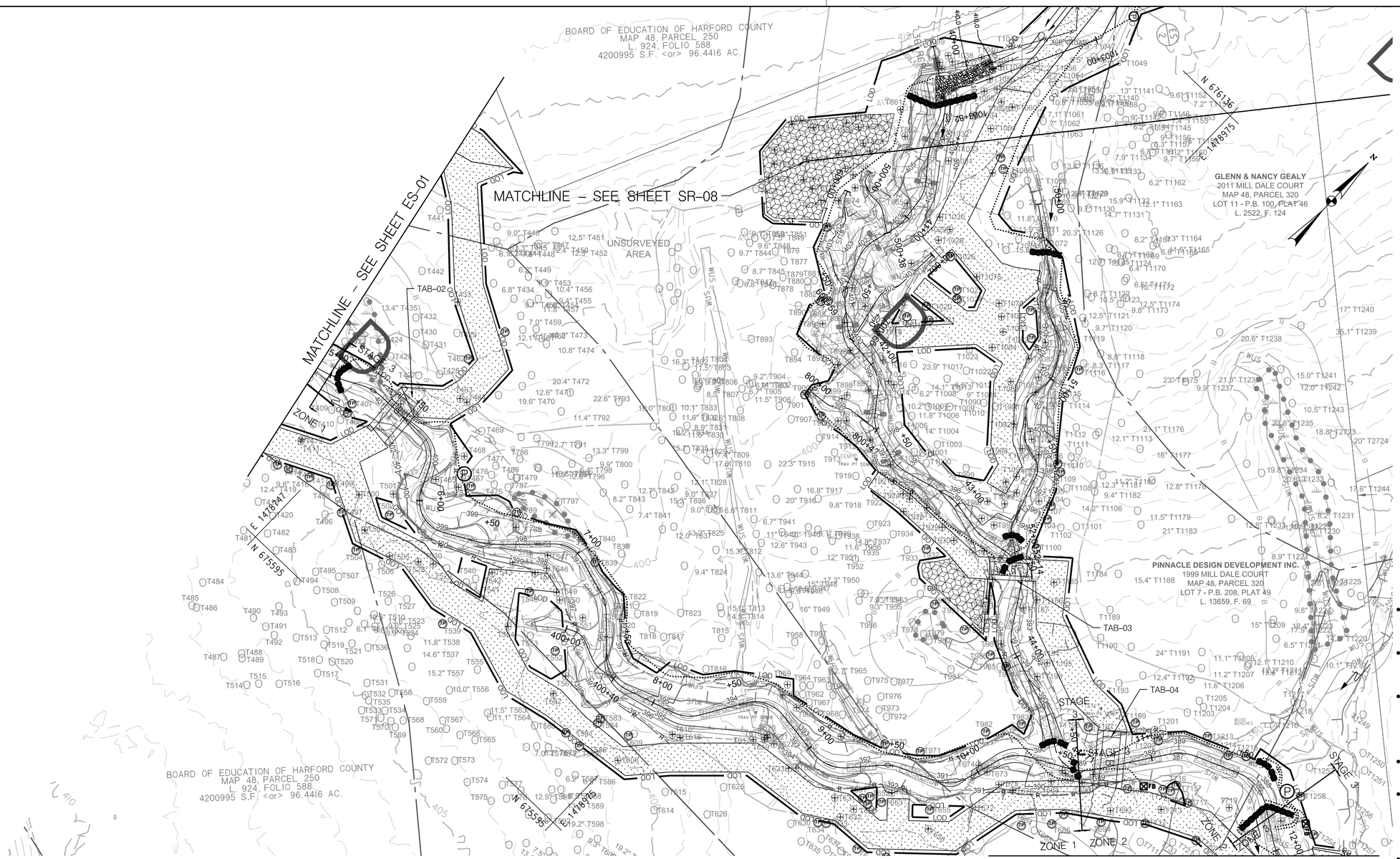
BID No.:

HCG DWG ID No.:

SCALE: 1"=30'

BY: tetrickr -

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P001_Fallston.dgn



LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TREE PROTECTION PLANKING
- OBSERVATION WELL
- SEDIMENT MARKER
- TREE ROOT PRUNING
- SUPER SILT FENCE /SMART FENCE
- DIVERSION FENCE
- TEMPORARY ACCESS BRIDGE
- FILTER BAG
- CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
- PIPE SLOPE DRAIN
- TEMPORARY SWALE
- WATERS OF THE U.S.
- PROPOSED 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING 100-YEAR FLOODPLAIN BOUNDARY
- LIMIT OF DISTURBANCE /ORANGE CONSTRUCTION FENCE

NOTES FOR IN-STREAM WORK

NO FUEL SHALL BE STORED WITHIN THE 100-YEAR FLOODPLAIN

- FOR EACH PHASE, INSTREAM WORK SHALL NOT START UNTIL ALL NEEDED RESOURCES ARE ON SITE. STREAM PUMP-AROUND SHALL BE SETUP BEFORE THE START OF GRADING OPERATIONS.
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- ALL TREES WITH THE LIMIT OF DISTURBANCE NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS PER THE TREE PROTECTION DETAILS.
- CONTRACTOR SHALL INSTALL MOUNTABLE BERMS AT ALL AREAS OF INGRESS/EGRESS FOR CONSTRUCTION ACCESS ROAD.

SUPER SILT FENCE	
23	LF

TEMPORARY ACCESS ROAD	
2340	LF

TREE PROTECTION PLANKING	
80	EA

ORANGE CONSTRUCTION FENCE	
4040	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TEMPORARY ACCESS BRIDGE	
TAB #	LS
TAB-02	1
TAB-03	1
TAB-04	1

FILTER LOGS	
30	LF

ROOT PRUNING	
485	LF

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30′ 0 30′ 60′
SCALE: 1″=30′

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(410) 727-5050

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Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL PLAN

Drawn By :	C.A.B.	Scale :	1″ = 30′
Designed By :	R.B.T.	Date :	AUGUST 2023
Reviewed By :	N.A.R.		
Drawing No.	108 Of 124	Sheet No.	ES-02 Of ES-10

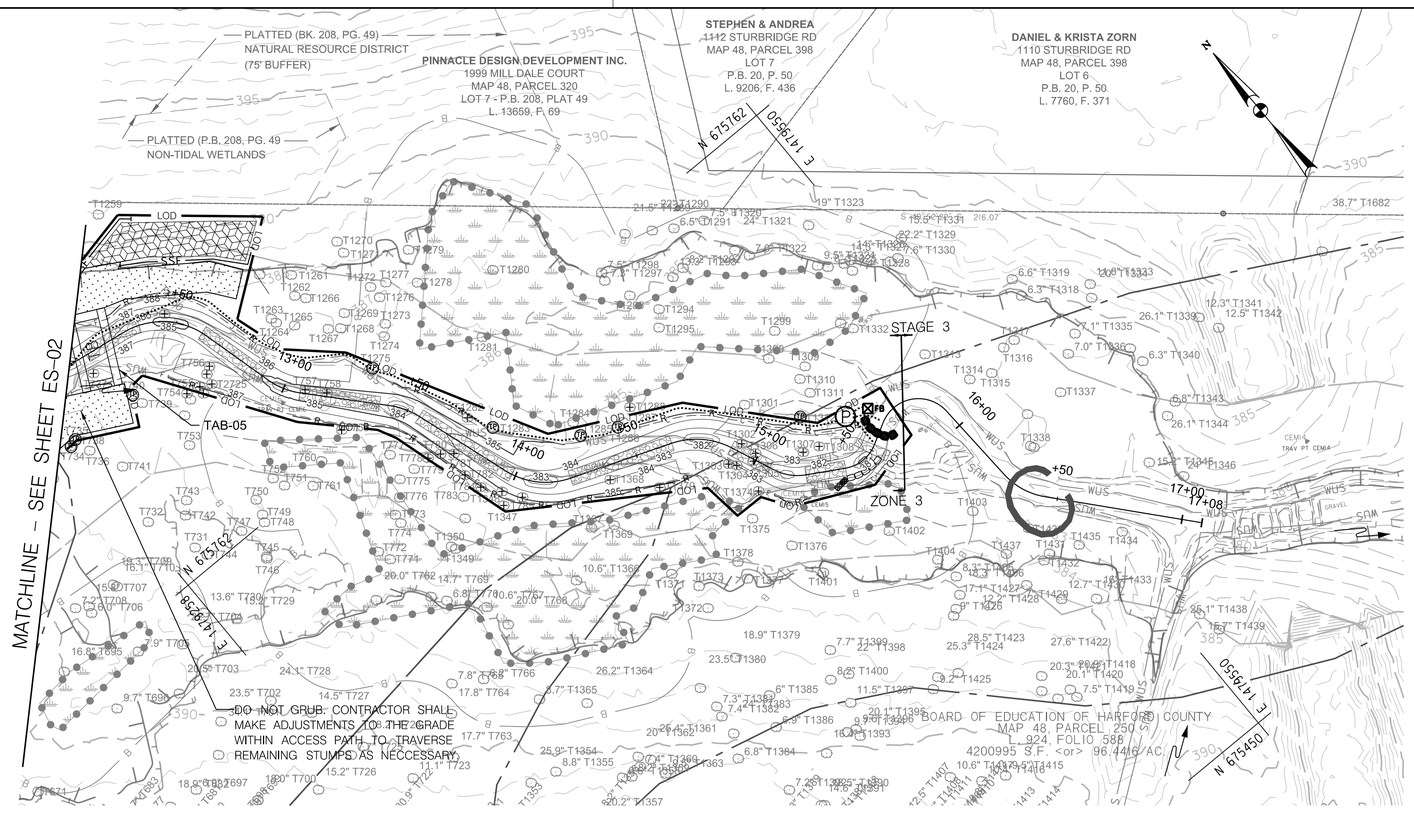
BID No.:

HCG DWG ID No.:

SCALE: 1:360

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P002_Fallston.dgn



LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- P — PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TP — TREE PROTECTION PLANKING
- OBSERVATION WELL
- SEDIMENT MARKER
- R — TREE ROOT PRUNING
- SSF — SUPER SILT FENCE /SMART FENCE
- DF — DIVERSION FENCE
- TB — TEMPORARY ACCESS BRIDGE
- FB — FILTER BAG
- CWD - 12 — CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FL-18 — FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
- PSD-24 — PIPE SLOPE DRAIN
- A-2 — TEMPORARY SWALE
- WUS — WATERS OF THE U.S.
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TREE PROTECTION PLANKING	
8	EA

ORANGE CONSTRUCTION FENCE	
810	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TEMPORARY ACCESS ROAD	
120	LF

SUPER SILT FENCE	
77	LF

ROOT PRUNING	
362	LF

TEMPORARY ACCESS BRIDGE	
TAB #	EA
TAB-05	1

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

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SCALE: 1" = 30'

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HARFORD COUNTY, MARYLAND

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Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 109 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. ES-03 Of ES-10

BID No.:
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BY: tetrickr -

PLOTTED: 2/9/2024
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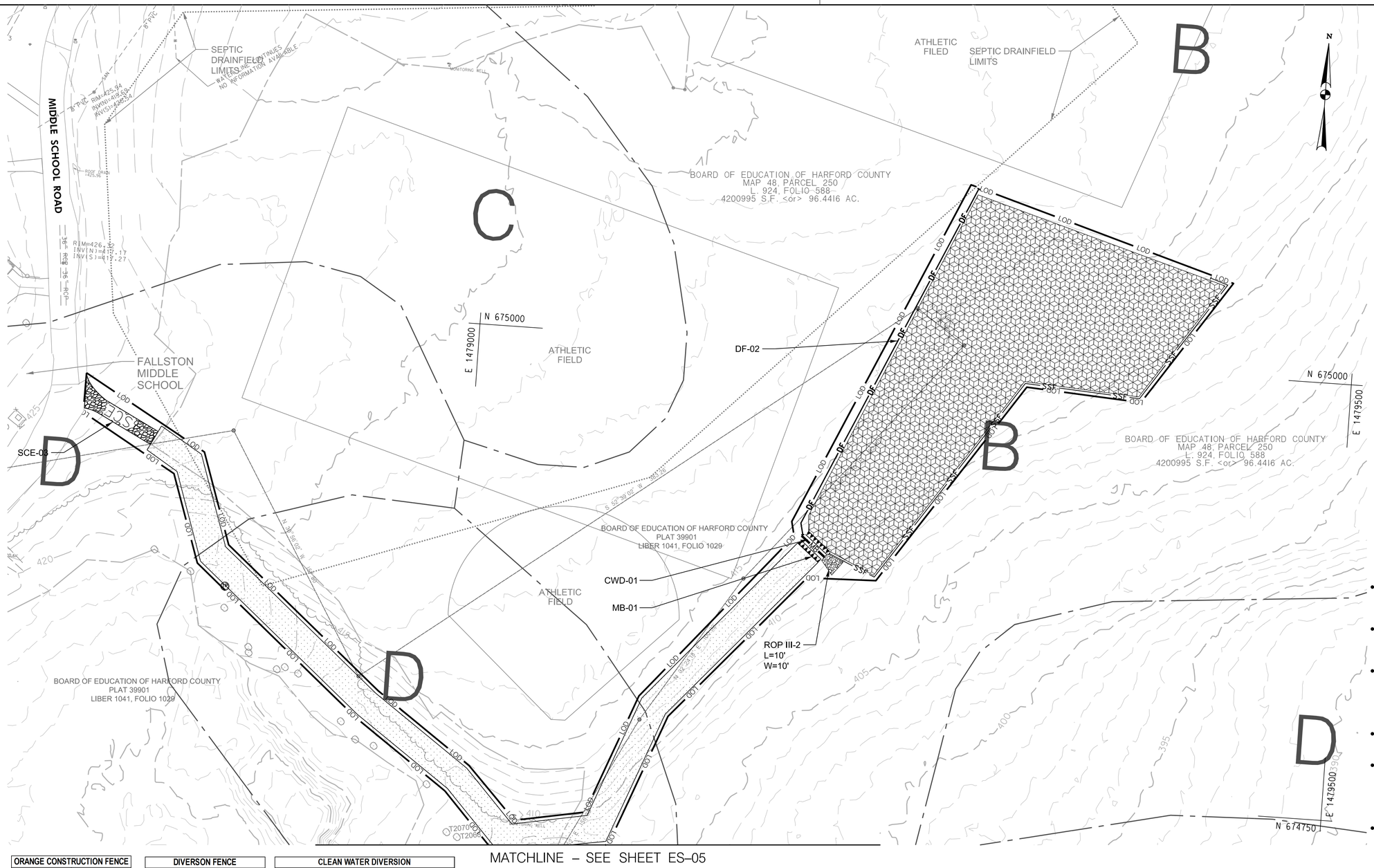

MATCHLINE – SEE SHEET ES–05

LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TREE PROTECTION PLANKING
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- FB — FILTER BAG
- CWD - 12 — CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FL-18 — FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
- PSD-24 — PIPE SLOPE DRAIN
- A-2 — TEMPORARY SWALE
- WUS — WATERS OF THE U.S.
- PROPOSED 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING 100-YEAR FLOODPLAIN BOUNDARY
- LOD — LIMIT OF DISTURBANCE /ORANGE CONSTRUCTION FENCE

NOTES FOR IN-STREAM WORK

NO FUEL SHALL BE STORED WITHIN THE 100-YEAR FLOODPLAIN

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- STREAM PUMP-AROUND OPERATION SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE PLANS TO ILLUSTRATE POTENTIAL ALIGNMENTS AND LENGTH.
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- CONTRACTOR SHALL INSTALL MOUNTABLE BERMS AT ALL AREAS OF INGRESS/EGRESS FOR CONSTRUCTION ACCESS ROAD.

ORANGE CONSTRUCTION FENCE	
1880	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TEMPORARY ACCESS ROAD	
750	LF

SUPER SILT FENCE	
323	LF

DIVERSON FENCE	
DF #	LENGTH (LF)
DF-02	224

MOUNTABLE BERM	
MB #	EA
MB-01	1

TREE PROTECTION PLANKING	
1	EA

CLEAN WATER DIVERSION		
CWD #	DIAMETER (IN)	LENGTH (LF)
CWD-01	24 (TWIN)	18

STABILIZED CONSTRUCTION ENTRANCE	
SCE #	EA
SCE-03	1

RIPRAP SLOPE AND CHANNEL PROTECTION (ROCK OUTLET PROTECTION)		
ROP #	RIPRAP CLASS	VOLUME (CY)
ROP III-2	I	8

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30' 0 30' 60'
SCALE: 1" =30'

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL PLAN

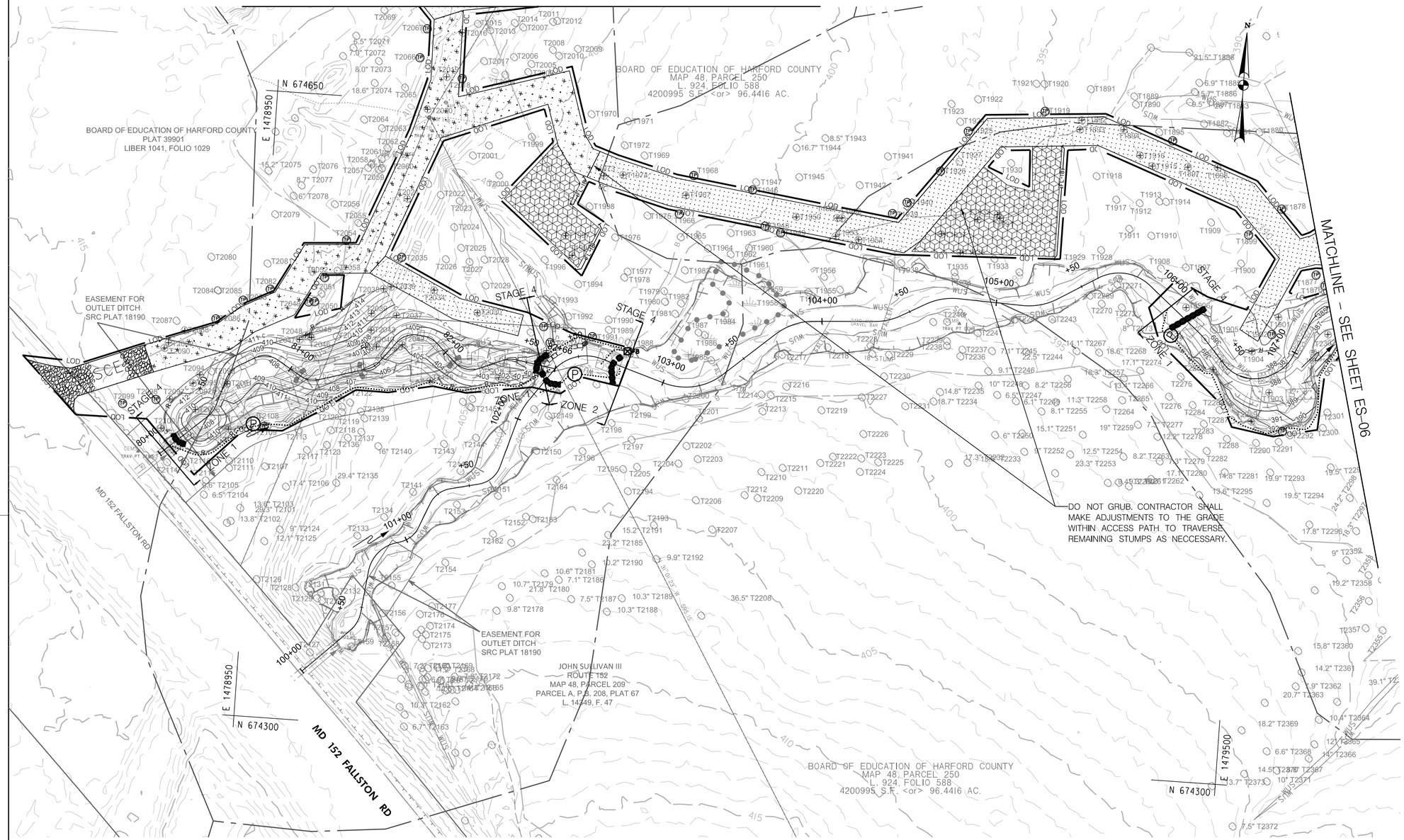
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 110 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. ES-04 Of ES-10

BID No.:
HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P004_Fallston.dgn



LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TREE PROTECTION PLANKING
- OBSERVATION WELL
- SEDIMENT MARKER
- TREE ROOT PRUNING
- SUPER SILT FENCE /SMART FENCE
- DIVERSION FENCE
- TEMPORARY ACCESS BRIDGE
- FILTER BAG
- CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
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- TEMPORARY SWALE
- WATERS OF THE U.S.
- PROPOSED 100–YEAR FLOODPLAIN BOUNDARY
- EXISTING 100–YEAR FLOODPLAIN BOUNDARY
- LIMIT OF DISTURBANCE /ORANGE CONSTRUCTION FENCE

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- CONTRACTOR SHALL INSTALL MOUNTABLE BERMS AT ALL AREAS OF INGRESS/EGRESS FOR CONSTRUCTION ACCESS ROAD.

TREE PROTECTION PLANKING	
34	EA

TEMPORARY ACCESS ROAD	
1310	LF

ORANGE CONSTRUCTION FENCE	
2967	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

STABILIZED CONSTRUCTION ENTRANCE	
SCE #	EA
SCE-04	1

FILTER LOGS	
116	LF

ROOT PRUNING	
166	LF

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
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(410) 727-5050

Cross References

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BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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HARFORD COUNTY, MARYLAND

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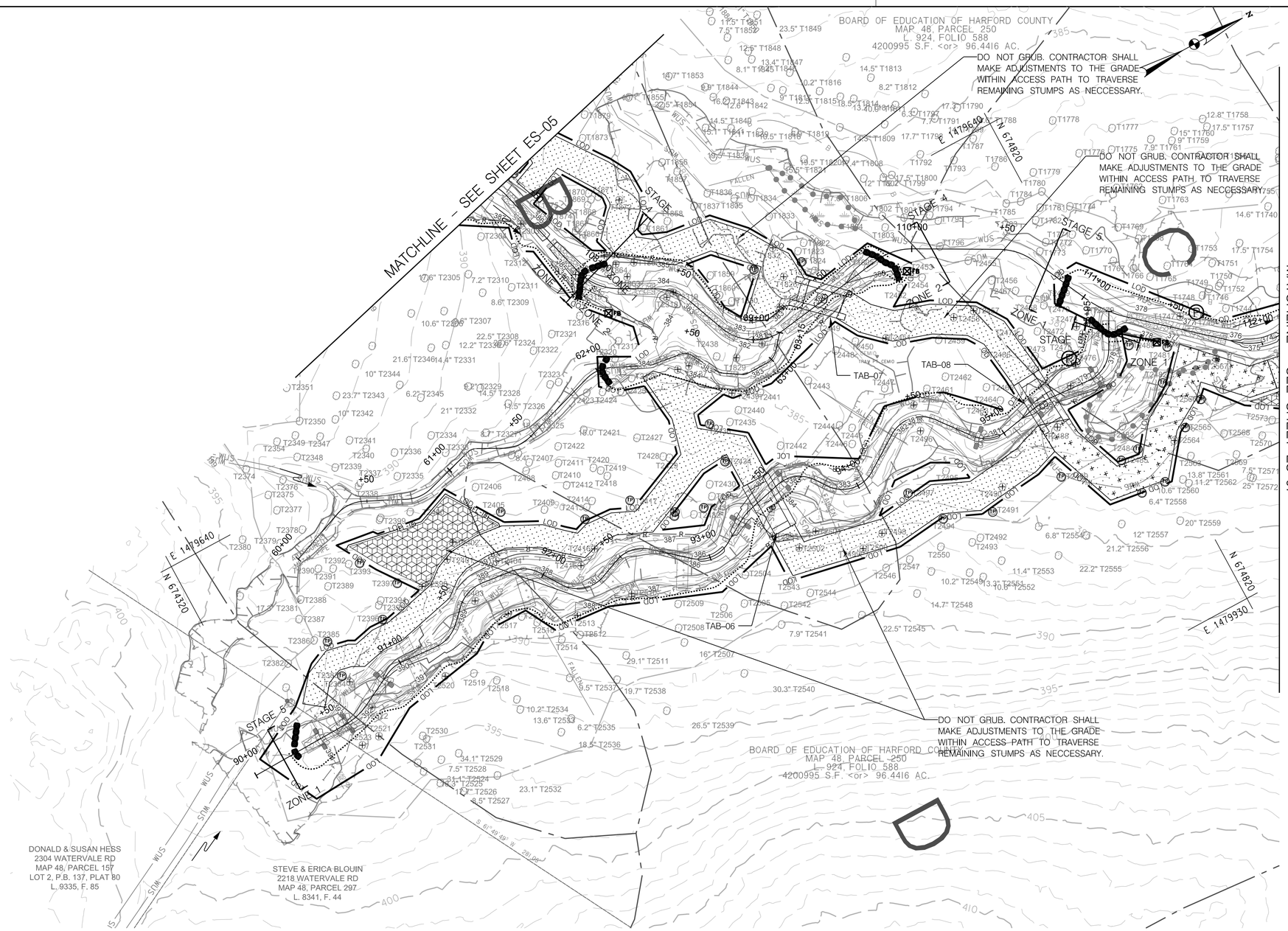
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Scale : 1" = 30'
Date : AUGUST 2023
Drawing No. 111 Of 124
Sheet No. ES-05 Of ES-10

BID No.:
HCG DWG ID No.:
SCALE: 1" = 1'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P005_Fallston.dgn



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TREE PROTECTION PLANKING	
28	EA

ORANGE CONSTRUCTION FENCE	
2660	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TEMPORARY ACCESS ROAD	
1300	LF

ROOT PRUNING	
18	LF

FILTER LOGS	
99	LF

TEMPORARY ACCESS BRIDGE	
TAB #	EA
TAB-06	1
TAB-07	1
TAB-08	1

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30' 0 30' 60'
SCALE: 1"=30'

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HARFORD COUNTY, MARYLAND

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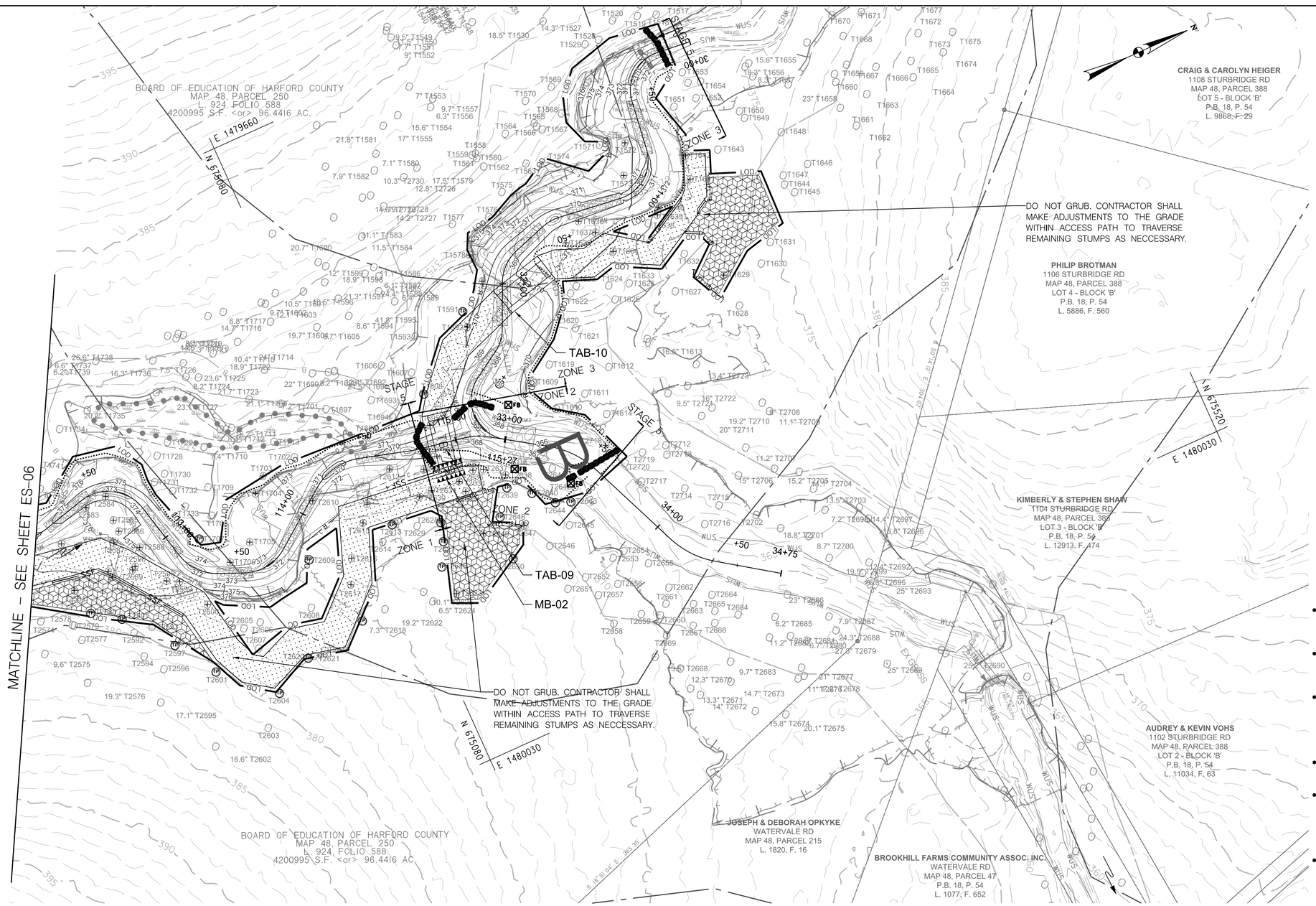
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Scale : 1" = 30'
Date : AUGUST 2023
Drawing No. 112 Of 124
Sheet No. ES-06 Of ES-10

BID No.:
HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P006_Fallston.dgn



LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TP — TREE PROTECTION PLANKING
- OBSERVATION WELL
- SEDIMENT MARKER
- R — TREE ROOT PRUNING
- SSF — SUPER SILT FENCE /SMART FENCE
- DF — DIVERSION FENCE
- TB — TEMPORARY ACCESS BRIDGE
- FB — FILTER BAG
- CWD - 12 — CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FL-18 — FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
- PSD-24 — PIPE SLOPE DRAIN
- A-2 — TEMPORARY SWALE
- WUS — WATERS OF THE U.S.
- PROPOSED 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING 100-YEAR FLOODPLAIN BOUNDARY
- LOD — LIMIT OF DISTURBANCE /ORANGE CONSTRUCTION FENCE

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- CONTRACTOR SHALL INSTALL MOUNTABLE BERMS AT ALL AREAS OF INGRESS/EGRESS FOR CONSTRUCTION ACCESS ROAD.

TREE PROTECTION PLANKING	
21	EA

ORANGE CONSTRUCTION FENCE	
1860	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TEMPORARY ACCESS ROAD	
700	LF

SUPER SILT FENCE	
27	LF

ROOT PRUNING	
345	LF

FILTER LOGS	
129	LF

MOUNTABLE BERM	
MB #	EA
MB-02	1

TEMPORARY ACCESS BRIDGE	
TAB #	EA
TAB-09	1
TAB-10	1

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30' 0 30' 60'
SCALE: 1" = 30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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HARFORD COUNTY, MARYLAND

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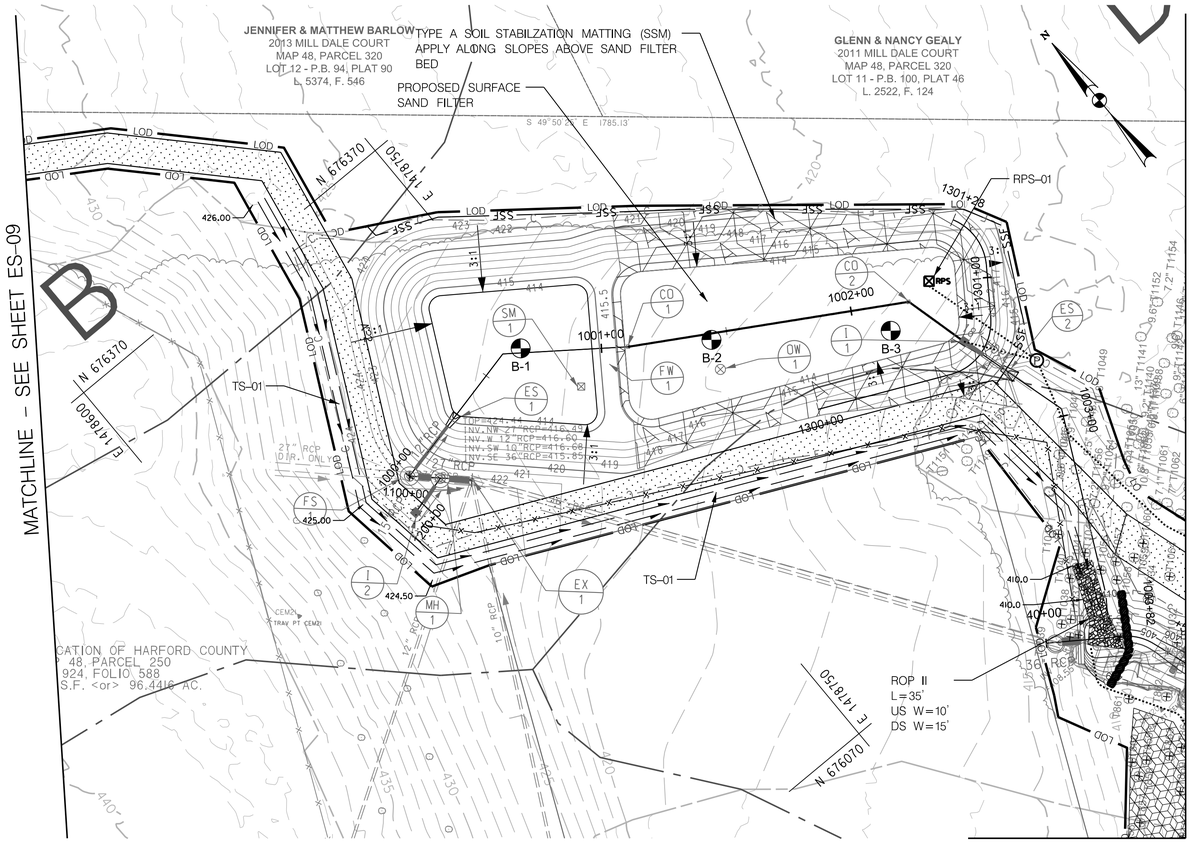
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 113 Of 124

Scale : 1" = 30'
Date : AUGUST 2023
Sheet No. ES-07 Of ES-10

BID No.:
HCG DWG ID No.:
SCALE 1 INCH

BY: tetrickr -

PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P007_Fallston.dgn



LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
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- SEDIMENT MARKER
- R — TREE ROOT PRUNING
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  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
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ESC CONSTRUCTION NOTES:

1. SAND FILTER CONSTRUCTION (PHASE 1) MAY OCCUR AT ANY TIME DURING CONSTRUCTION, INCLUDING PERIODS DURING WHICH IN-STREAM WORK IS RESTRICTED.

2. FLOW SPLITTER AND INFLOW TO SAND FILTER ARE TO BE CONSTRUCTED ONLY AFTER EMBANKMENT CONSTRUCTION AND MEDIA PLACEMENT FOR THE SAND FILTER ARE COMPLETED AND STABILIZED. AFTER APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE FLOW SPLITTER AND SAND FILTER INFLOW.

3. STABILIZED CONSTRUCTION ENTRANCE, STOCKPILE, EROSION AND SEDIMENT CONTROL FEATURES, AND TEMPORARY ACCESS PATH USED FOR SAND FILTER ACCESS AND CONSTRUCTION (PHASE 1) ARE TO REMAIN FOR IN-STREAM WORK THROUGH STAGE 3 - ZONE 3 OF PHASE 3. AFTER COMPLETION OF BOTH PHASE 1 AND PHASE 3 - STAGE 3 - ZONE 3, REMOVE SCE, STOCKPILE, ESC FEATURES, AND THE ACCESS PATH, STARTING AT THE FURTHEST POINT OF THE ACCESS PATH AND WORKING BACK TOWARD THE SCE. CONSTRUCTION OF THE PERMANENT BYPASS DITCH AND ANY FINISH GRADING FOR THE SAND FILTER EMBANKMENT CAN BE COMPLETED AS ESC FEATURES AND PATH ARE REMOVED.

ORANGE CONSTRUCTION FENCE	
1042	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

TEMPORARY ACCESS ROAD	
640	LF

SUPER SILT FENCE	
322	LF

TEMPORARY SWALE	
#	LENGTH (LF)
TS-01	484

ROOT PRUNING	
159	LF

TYPE A SSM	
1,383	SY

REMOVABLE PUMPING STATION	
RPS #	EA
RPS-01	1

RIPRAP SLOPE AND CHANNEL PROTECTION (ROCK OUTLET PROTECTION)		
ROP #	RIPRAP CLASS	VOLUME (CY)
ROP II-1	I	34

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30' 0 30' 60'
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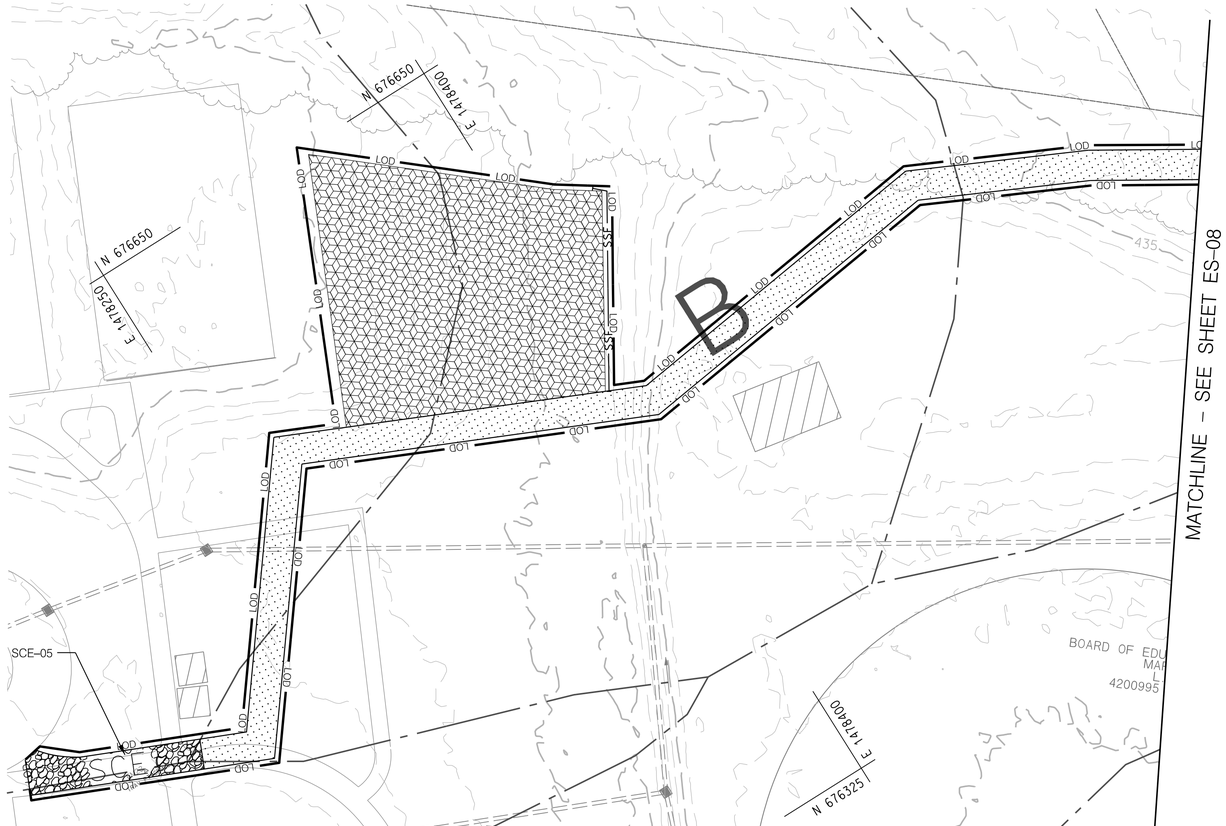
Drawn By : C.A.B.	Scale : 1" = 30'
Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 114 Of 124	Sheet No. ES-08 Of ES-10

BID No.:

HCG DWG ID No.:

BY: tetrickr -

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P008_Fallston.dgn



ORANGE CONSTRUCTION FENCE	
1420	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

STABILIZED CONSTRUCTION ENTRANCE	
SCE #	EA
SCE-05	1

TEMPORARY ACCESS ROAD	
540	LF

SUPER SILT FENCE	
85	LF

LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
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- TB — TEMPORARY ACCESS BRIDGE
- FB — FILTER BAG
- CWD - 12 — CLEAR WATER DIVERSION PIPE
  NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.
- FL-18 — FILTER LOG
  NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.
- PSD-24 — PIPE SLOPE DRAIN
- A-2 — TEMPORARY SWALE
- WUS — WATERS OF THE U.S.
- PROPOSED 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING 100-YEAR FLOODPLAIN BOUNDARY
- LOD — LIMIT OF DISTURBANCE /ORANGE CONSTRUCTION FENCE

NOTES FOR IN-STREAM WORK

NO FUEL SHALL BE STORED WITHIN THE 100-YEAR FLOODPLAIN

- FOR EACH PHASE, INSTREAM WORK SHALL NOT START UNTIL ALL NEEDED RESOURCES ARE ON SITE. STREAM PUMP-AROUND SHALL BE SETUP BEFORE THE START OF GRADING OPERATIONS.
- STREAM PUMP-AROUND OPERATION SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE PLANS TO ILLUSTRATE POTENTIAL ALIGNMENTS AND LENGTH.
- CONTRACTOR SHALL INSTALL PUMP AROUND OPERATION FOR THOSE INSTREAM STRUCTURES AND DEVICES THAT CAN BE COMPLETED AND STABILIZED BY THE END OF THAT WORKDAY. ONCE THE WORK AREA IS STABILIZED, PUMP AROUND DEVICES MAY BE REMOVED TO ALLOW WATER TO PASS THROUGH STABILIZED CHANNEL.
- COMPLETELY DEWATER THE WORK AREA WHEN CONSTRUCTION ACTIVITIES ARE TAKING PLACE.
- BECAUSE OF SEASONAL VARIATION IN FLOW, THE SIZE OF PUMP AND THE SIZE AND TYPE OF PIPE NEEDED TO CONVEY STREAM FLOW MAY VARY. CARE SHOULD BE TAKEN BY THE CONTRACTOR AS TO NOT UNDERSIZE THE PUMP/PIPPING NECESSARY TO CONVEY THE STREAM FLOW.
- 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.
- ALL TREES WITH THE LIMIT OF DISTURBANCE NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS PER THE TREE PROTECTION DETAILS.
- CONTRACTOR SHALL INSTALL MOUNTABLE BERMS AT ALL AREAS OF INGRESS/EGRESS FOR CONSTRUCTION ACCESS ROAD.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

Cross References

GN-01: EX. & PR. FEATURES LEGEND
EC-01 - EC-09: TREE NUMBERING
TI-01 - TI-11: TREE INVENTORY

NOTE: DO NOT GRUB AND, IF POSSIBLE, AVOID UNNECESSARY CLEARING WITHIN WOODED AREAS OF LOD, OUTSIDE LIMITS OF GRADING.

30' 0 30' 60'
SCALE: 1"=30'

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL PLAN

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.

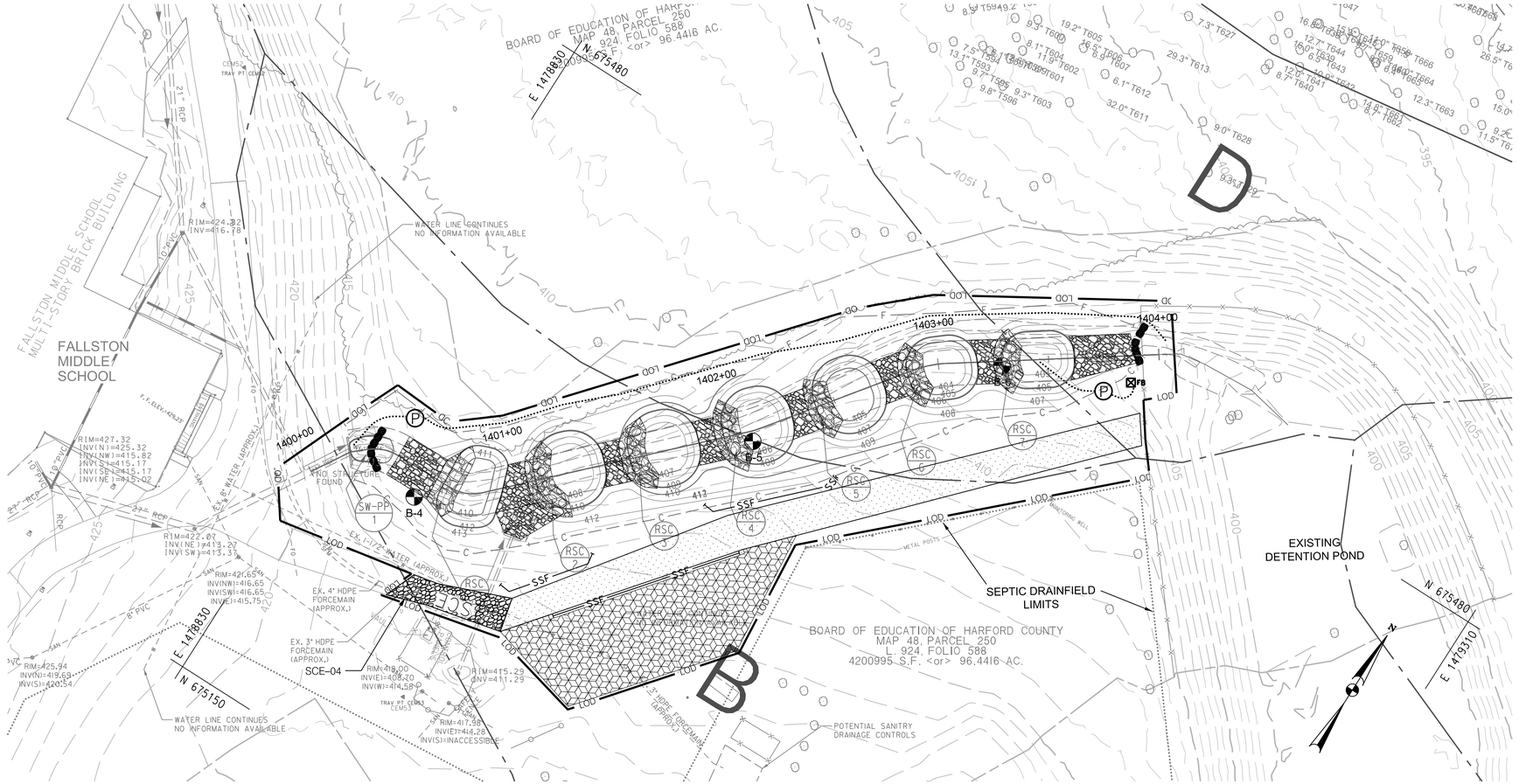
Scale : 1" = 30'
Date : AUGUST 2023

Drawing No. 115 Of 124
Sheet No. ES-09 Of ES-10

BID No.:
HCG DWG ID No.:
SCALE: 1 inch

BY: tetrickr -

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-P009_Fallston.dgn



LEGEND

- MULCH ACCESS ROAD
- MULCH MAT ACCESS ROAD
- TEMPORARY TIMBER MATTING
- STOCKPILE AREA
- DROP OFF AREA
- SANDBAG DIKE
- PUMP WITH HOSES
- TREE CRITICAL ROOT ZONE
- TREE PROTECTION PLANKING
- OBSERVATION WELL
- SEDIMENT MARKER
- R — TREE ROOT PRUNING
- SSF — SUPER SILT FENCE /SMART FENCE
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SUPER SILT FENCE	
200	LF

TEMPORARY ACCESS ROAD	
380	LF

ORANGE CONSTRUCTION FENCE	
1010	LF
PLACE OCF ALONG LOD EXCEPT AT SCE ENTRANCE AND CHANNEL CROSSINGS.	

STABILIZED CONSTRUCTION ENTRANCE	
SCE #	EA
SCE-06	1

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SEDIMENT CONTROL NOTES

1. THE CONTRACTOR/OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. FURTHER, NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE UNTIL ALL REQUIRED PERMITS HAVE BEEN OBTAINED.
2. THE LIMITS OF DISTURBANCE SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO GRADING OF THE SITE TO ENSURE COMPLIANCE WITH APPROVED PLANS. ALL FOREST RETENTION AREAS WILL BE DELINEATED WITH BLAZE ORANGE FENCE AS WELL AS ANY SWM INFILTRATION PRACTICE PRIOR TO ANY CLEARING. WORK BEYOND THE LIMITS OF DISTURBANCE AND IN ANY AREA INSIDE THE FOREST RETENTION AND SWM INFILTRATION AREA IS CONSIDERED TO BE A VIOLATION OF THIS PLAN.
3. ALL SEDIMENT CONTROL PRACTICES MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY. UPON COMPLETION OF THE INSTALLATION OF PERIMETER SEDIMENT CONTROL PRACTICES THE SITE MUST BE INSPECTED BY THE DEPARTMENT OF PUBLIC WORKS (DPW). NO ADDITIONAL CONSTRUCTION ACTIVITY WILL BE AUTHORIZED WITHOUT THE APPROVAL OF DPW.
4. ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT TRACKING OF MUD INTO PUBLIC WAYS. DURING CONSTRUCTION, EVERY MEANS WILL BE TAKEN TO CONTROL SOIL EROSION AND SILTATION. IF NECESSARY A WASH RACK MAY NEED TO BE ESTABLISHED.
5. EARTH DIKES, SEDIMENT TRAPS, ETC. WILL BE LOCATED AS SHOWN ON THESE DRAWINGS. FIELD CHANGES AND MINOR ADJUSTMENTS ARE PERMISSIBLE AS LONG AS THE INSTALLATION FUNCTIONS AND CONFORMS TO SPECIFICATIONS. THE SITE INSPECTOR PRIOR TO INSTALLATION MUST APPROVE ALL SUCH CHANGES. MAJOR CHANGES TO THE APPROVED PLAN WILL REQUIRE RE-APPROVAL BY THE HARFORD SOIL CONSERVATION DISTRICT.
6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. THREE CALENDAR DAYS ON SLOPES GREATER THAN 3:1, ALL WATERWAYS AND TO THE SURFACE OF ALL PERIMETER CONTROLS.
   B. SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS OF THE PROJECT SITE.
7. DUST CONTROL MUST BE MANAGED AS PART OF ALL SEDIMENT CONTROL PLANS. FAILURE TO DO SO IS A VIOLATION OF THIS PLAN.
8. SEDIMENT BASINS MUST BE BUILT TO DESIGN SPECIFICATIONS SHOWN ON THE PLANS. IF THE BASIN IS TO BE USED AS A FUTURE SWM FACILITY, THE BASIN WILL BE BUILT IN ACCORDANCE WITH THE LATEST MD-378 STANDARDS AND SPECIFICATIONS. SPECIFIED MATERIALS MUST BE USED. NO CHANGES OR MODIFICATIONS WILL BE MADE WITHOUT WRITTEN AUTHORIZATION OF THE HARFORD SOIL CONSERVATION DISTRICT.
9. TEMPORARY FENCING SHALL BE PLACED AROUND ALL SEDIMENT BASINS, TRAPS, AND PONDS DURING CONSTRUCTION AND SITE GRADING.
10. AT THE END OF EACH WORKING DAY ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT OPERATIONAL. A WEEKLY LOG WILL BE KEPT IN ACCORDANCE WITH NOI/NPDES REGULATIONS. A COPY OF THE APPROVED SEDIMENT CONTROL PLANS SHALL BE AVAILABLE AT THE SITE AT ALL TIMES.
11. ENSURE POSITIVE DRAINAGE TO ALL ROAD INLETS DURING ALL PHASES OF ROAD CONSTRUCTION TO ENSURE POSITIVE FLOW TO TRAPS AND OR BASINS.
12. CUT AND/OR FILL SHALL BE DONE IN CONFORMANCE WITH 2020 EROSION AND SEDIMENT CONTROL STANDARD AND SPECIFICATIONS FOR LAND GRADING.
13. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY CONVEY WATER DOWN SLOPES WITHOUT CAUSING EROSION.
14. OFF-SITE WASTE OR BORROW AREAS SHALL HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN PRIOR TO THE IMPORT OR EXPORT OF MATERIAL TO/FROM THE PROJECT SITE.
15. ALL MATERIAL ORIGINATING FROM THE DEVELOPMENT OF THE PROPERTY AND DEPOSITED ON THE PUBLIC RIGHT-OF-WAY SHALL BE IMMEDIATELY REMOVED.
16. STORM DRAIN INLETS AND OUTLETS SHALL BE PROTECTED PER 2020 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.
17. TOPSOIL, LIMING, FERTILIZING, SEEDING, MULCHING, SOD, ETC. ARE ALL AN ESSENTIAL PART OF THE SEDIMENT CONTROL PLAN AND MUST BE COMPLETED ALONG WITH ALL OTHER PRACTICES.
18. TRAPS TO BE REMOVED SHALL BE DEWATERED AS PER THE 2020 EROSION AND SEDIMENT AND EROSION CONTROL STANDARDS AND SPECIFICATIONS.
19. PRIOR TO REMOVAL OF TRAPS OR CONVERSION OF SEDIMENT BASINS TO SWM FACILITIES, THE STORM DRAINS WILL BE FLUSHED.
20. SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL ALL DISTURBED AREAS FOR WHICH THE PRACTICES WERE INSTALLED HAVE BEEN STABILIZED. SEDIMENT CONTROL PRACTICES MAY BE REMOVED ONLY WITH THE AUTHORIZATION OF THE DPW INSPECTOR. ALL DISTURBED AREAS RESULTING FROM THE REMOVAL OF SEDIMENT CONTROL DEVICES SHALL BE STABILIZED IMMEDIATELY. REMOVAL PRIOR TO INSPECTOR'S APPROVAL CONSTITUTES A VIOLATION.

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

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 PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A 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 SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

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 (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) 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.

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; P 2 O 5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K 2 O (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. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

II. 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, TERRA TACK 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.

IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

TEMPORARY STABILIZATION

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA:

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

A. TEMPORARY SEEDING SUMMARY

HARDINESS ZONE 7A

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS (IN)	FERTILIZER RATE (10-20-20)	LIME RATE
1	BARLEY (Hordeum vulgare)	96	MAR 1 TO MAY 15; AUG 1 TO OCT 15	1.0	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
	OATS (Avena sativa)	72		1.0		
	WHEAT (Triticum aestivum)	120		1.0		
	CEREAL RYE (Secale cereale)	112	MAR 1 TO MAY 15; AUG 1 TO OCT 15	1.0		
	FOXTAIL MILLET (Setaria italica)	30	MAY 16 TO JULY 31	0.5		

PERMANENT STABILIZATION

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA:

A. SEED MIXTURES

1. GENERAL USE

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY .

2. TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE B.22 RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES:

USE DATES IN THE PERMANENT SEEDING SUMMARY TABLE.

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

A. PERMANENT SEEDING SUMMARY

HARDINESS ZONE: 7A
(FROM 2011 MARYLAND STANDARDS AND SPEC

(NOTES CONTINUED FROM EN-01)
A.

B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

DAILY STABILIZATION

THIS NOTE SHOULD BE USED FOR MINIMAL AREAS WITHIN THE LIMITS OF DISTURBANCE THAT DO NOT DRAIN TO A SEDIMENT CONTROL MEASURE AND/OR WHERE THE INSTALLATION OF CONTROLS IS NOT FEASIBLE. (ROAD WIDENING, SIDEWALK INSTALLATION, ETC.).

CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH DAY.

STABILIZATION SHALL BE AS FOLLOWS:

1. FOR AREAS TO BE PAVED, THE APPLICATION OF STONE BASE.

2. FOR AREAS TO VEGETATIVELY STABILIZED:

A. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.

B. PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.

ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.

PERMANENT VEGETATIVE STABILIZATION

ALL DISTURBED AREAS WHICH ARE NOT BE PAVED. SHALL BE PERMANENTLY STABILIZED AS FOLLOWS:

A). SEEDBED PREPARATION:
LOOSEN UPPER THREE INCH BY RAKING,DISCING. OR OTHER ACCEPTABLE MEANS AFTER SPREADING FOUR INCHES OF TOP SOIL.

B). SOIL AMENDMENTS:
APPLY 500 LBS. PER ACRE OF 10-10-10 FERTILIZER AND TWO TONS PER ACRE OF LIME.

C). SEEDING:*
FOR PERIODS MARCH1 TO MAY 15 AND AUGUST 15 TO OCTOBER 15. SEED WITH 125LBS. PER ACRE OF TALL FESCUE. 15 LBS. PER ACRE OF PERENNIAL RYEGRASS. AND 10 LBS. OF KENTUCKY BLUEGRASS.

FOR PERIOD OF MARCH 16 TO AUGUST 14. SEED WITH 110 LBS. PER ACRE OF TALL FESCUE AND 3 LBS. PER ACRE OF WEEPING LOVEGRASS.

FOR PERIOD OF OCTOBER 16 TO FEBRUARY 28. PROTECT SITE BY: OPTIONS (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. (2) USE SOD OR (3) SEED WITH 60LBS. PER ACRE OF TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.
NOTE: FOR QUICK COVER WITH TALL FESCUE. ADD 2 LBS. OF SMALL GRAIN PER 1,000 SQ.FT.

D). MULCHING SPECIFICATIONS
MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

APPLY 2 TONS PER ACRE OF STRAW OVER ALL SEEDD AREAS. IF A MULCH ANCHORING TOOL IS TO BE USED. THE RATE SHALL BE INCREASED TO 2.5 TONS PER ACRE.**

MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MUCH APPLICATION TO MINIMIZE LOSS BY WIND AND WATER. THE TYPE OF MULCH ANCHORING USED MUST COMPLY WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS.

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED. THEY MUST COMPLY WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS. CHAPTER 20. TABLE 25.
** IF A DIFFERENT TYPE OF MULCH IS TO BE USED. IT MUST COMPLY WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS. CHAPTER 20.

TEMPORARY VEGETATION STABILIZATION

A). SEEDBED PREPARATION:
LOOSEN UPPER THREE INCHES BY DISCING. RAKING OR OTHER ACCEPTABLE MEANS.

B). SOIL AMENDMENTS:
APPLY 600 LBS. PER ACRE OF 10-10-10 FERTILIZER AND TWO TONS PER ACRE OF LIME.

C). SEEDING:
FOR PERIOD OF MARCH 11 TO APRIL 30 AND AUGUST 15 TO NOVEMBER 15. SEED WITH 2.5 BU PER ACRE OF CEREAL RYE PLUS 30 LBS. PER ACRE OF TALL FESCUE OR 5 LBS. PER ACRE OF REDTOP OR 20 LBS. PER ACRE OF PERENNIAL RYEGRASS.

FOR PERIODS LOF MAY1 TO AUGUST 14. SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS OR 40 LBS. PER ACRE OF JAPANESE OR FOXTAIL MILLET.

FOR PERIODS OF NOVEMBER 16 TO FEBRUARY 28. PROTECT THE SITE BY APPLYING TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OR USE SOD.

D). MULCHING SPECIFICATIONS:
MULCH SHALL BE APPLIED TO ALL SEEDED AREAS. IMMEDIATELY AFTER SEEDING.
APPLY TWO TONS PER ACREA OF STRAW OVER ALL SEEDED AREAS. IF A MULCH ANCHORING TOOL IS TO BE USED. THE RATE SHALL BE INCREASED TO 25 TONS PER ACRE.**
MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND AND AETER. THE MULCH ANCHORING TOOL MUST COMPLY WITH THE 1994 MARYLAND STANDARDS SPECIFICATIONS.

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED. THEY MUST COMPLY WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS. CHAPTER 20. TABLE 25
** IF A DIFFERENT TYPE OF MULCH IS TO BE USED. IT MUST COMPLY WITH THE 1994 MAYLAND STANDARDS AND SPECIFICATIONS. CHAPTER 20.

SITE ANALYSIS
(NOT FOR BIDDING PURPOSES)

TOTAL AREA TO BE STABILIZED	=	9.6 AC
TOTAL DISTURBED AREA	=	9.6 AC
TOTAL AREA TO BE PAVED	=	0 AC
TOTAL CUT	=	3,479 CY
TOTAL FILL	=	2,218 CY
NPDES ID POINT:		39°31'11.6"N 76°24'27.4"W

FALLSTON MIDDLE SCHOOL/HIGH SCHOOL SEQUENCE OF CONSTRUCTION

GENERAL NOTES:
1. CONTACT HARFORD COUNTY DPW 7 DAYS PRIOR TO MOBILIZING TO THE SITE TO SCHEDULE A PRE-CONSTRUCTION MEETING BETWEEN THE CONTRACTOR, INSPECTORS, AND ENGINEERS.
2. NOTIFY HARFORD COUNTY DPW INSPECTORS AT 410-638-3127 EXT 2434 OR EXT 1260 AND MDE INSPECTION AND COMPLIANCE AT 410-537-3501 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES AS REQUIRED. SEE PERMITS FOR DETAILS.
3. THIS SITE HAS TIME OF YEAR RESTRICTIONS. NO IN-STREAM WORK PERMITTED FROM MARCH 1 THROUGH MAY 31. TREE CLEARING SHALL BE MINIMIZED FROM APRIL THROUGH AUGUST. SEE USACE AND MDE PERMITS AND CONTRACT DOCUMENTS FOR DETAILS.
4. WORK ON PHASE 1 MAY PROCEED AT ANY TIME DURING CONSTRUCTION AS CONVENIENT, INCLUDING PERIODS DURING WHICH IN-STREAM WORK IS RESTRICTED.
5. ACCESS THROUGH THE HIGH SCHOOL AND MIDDLE SCHOOL PROPERTIES HAS TIME-OF-DAY RESTRICTIONS. SEE MAINTENANCE OF TRAFFIC PLAN MT-01 FOR ACCESS AND DELIVERY TIME RESTRICTIONS.

PHASE 1 SAND FILTER AND ASSOCIATED ACCESS AND STOCKPILE AREAS
1. STAKE OUT LOD AND INSTALL THE ORANGE CONSTRUCTION FENCE (OCF) ALONG THE BOUNDARY OF THE PHASE 1 LOD.
2. BEGIN CLEARING AND GRUBBING FOR INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE, TEMPORARY CONSTRUCTION ACCESS ROAD, SUPER SILT FENCE, AND DIVERSION FENCE FOR THE STOCKPILE AREAS. GRUB ONLY WHAT CAN BE STABILIZED OR DIRECTED TO AN APPROVED EROSION AND SEDIMENT CONTROL FEATURE BY THE END OF THE WORKING DAY.
3. ONCE SILT FENCE AND DIVERSION FENCE ARE IN PLACE, OBTAIN PERMISSION FROM THE DPW INSPECTOR TO GRUB WITHIN THE STOCKPILE AREAS.
4. CLEAR AND GRUB FOR THE TEMPORARY SWALE.
5. INSTALL THE TEMPORARY SWALE FROM DOWNSTREAM TO UPSTREAM.
6. SET UP DEWATERING DEVICE FOR THE SAND FILTER.
7. WITH PERMISSION OF DPW INSPECTOR, BEGIN EXCAVATION OF THE SAND FILTER AND THE DOWNSTREAM EMBANKMENT WITHOUT INSTALLING THE FLOW SPLITTER, 15" PIPE OR FILTER MEDIA. (SEE SHEET SW-01)
8. AFTER THE INTERIOR SLOPES OF THE SAND FILTER ARE STABILIZED WITH TEMPORARY MATTING OR ONCE THE INTERIOR SLOPES HAVE 90% VEGETATION COVERAGE, WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE FILTER MEDIA SECTION INCLUDING THE NO. 57 STONE, SAND, PEA GRAVEL, TOPSOIL, PLANTINGS AND UNDERDRAIN PIPE.
9. ONCE THE SAND FILTER IS FULLY CONSTRUCTED AND STABILIZED AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE FLOW SPLITTER AND ASSOCIATED 15-INCH RCP.
10. REMOVE THE DEWATERING DEVICE COMPLETELY, STABILIZING THE AREA ON THE SAME DAY.
11. ONCE THE SITE GRADING IS COMPLETE, INSTALL PLANTINGS ON THE LANDSCAPING SCHEDULE.
12. MAINTAIN THE SCE, STOCKPILE, EROSION AND SEDIMENT CONTROL FEATURES, AND ACCESS PATH FOR CONSTRUCTION IN PHASE 3. AFTER BOTH PHASE 1 AND STAGE 3-ZONE 3 OF PHASE 3 HAVE BEEN COMPLETED, REMOVE SCE, STOCKPILE, ESC FEATURES AND ACCESS PATH, STARTING AT THE FURTHEST POINT OF THE ACCESS PATH AND WORKING BACK TOWARD THE SCE. CONSTRUCT THE PERMANENT BYPASS DITCH AND ANY FINISH GRADING FOR THE EMBANKMENT AS ESC FEATURES AND PATH ARE REMOVED.
13. WITH PERMISSION OF DPW INSPECTOR, PROCEED TO PHASE 2.

PHASE 2 REGENERATIVE STORMWATER CONVEYANCE (RSC)
1. STAKE OUT LOD AND INSTALL THE ORANGE CONSTRUCTION FENCE (OCF) ALONG THE BOUNDARY OF THE PHASE 2 LOD.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, TEMPORARY CONSTRUCTION ACCESS ROAD, AND SUPER SILT FENCE FOR THE STOCKPILE AREA. GRUB ONLY WHAT CAN BE STABILIZED OR DIRECTED TO AN APPROVED EROSION AND SEDIMENT CONTROL FEATURE BY THE END OF THE WORKING DAY.
3. ONCE SUPER SILT FENCE IS IN PLACE, OBTAIN PERMISSION FROM DPW INSPECTOR TO GRUB WITHIN THE STOCKPILE AREAS.
4. SET UP PUMP AROUND AND DEWATERING DEVICE TO CONSTRUCT THE REGENERATIVE STORMWATER CONVEYANCE WITH PERMISSION OF DPW INSPECTOR . MAINTAIN DEWATERING AND CLEAR WATER PUMP AROUND DURING CONSTRUCTION.
5. BEGIN EXCAVATION OF THE RSC WORKING FROM UPSTREAM TO DOWNSTREAM.
a. ONLY EXCAVATE AND GRADE WHAT CAN BE CONSTRUCTED AND STABILIZED AT THE END OF EACH DAY.
b. CONSTRUCT EACH STRUCTURE FOR THE RSC IN ORDER FROM UPSTREAM TO DOWNSTREAM, COMPLETING THE CONSTRUCTION OF EACH BY THE END OF EACH WORKDAY AND BEFORE BEGINNING ON THE NEXT GRADE CONTROL STRUCTURE
c. STABILIZE THE BANKS WITH TOPSOIL, SEED AND TYPE D MATTING AT THE END OF EACH WORK DAY.
6. AS THE RSC IS CONSTRUCTED, USE THE TEMPORARY END OF DAY STABILIZATION DETAIL TO STABILIZE ALONG THE CHANNEL AT THE END OF EACH WORK DAY.
7. ONCE THE RSC IS COMPLETELY STABILIZED, REMOVE THE PUMPING SYSTEM, INCLUDING THE SANDBAGS, FILTER BAGS AND PUMPING DEVICES.
8. APPLY THE LANDSCAPING PLANTINGS ONCE THE SITE HAS BEEN FULLY GRADED AND STABILIZED. WITH PERMISSION OF DPW INSPECTOR, PROCEED TO PHASE 3.

PHASE 3 STREAM RESTORATION
GENERAL STREAM SOC
1. THIS SITE HAS TIME OF YEAR RESTRICTIONS. NO IN-STREAM WORK PERMITTED FROM MARCH THROUGH MAY. TREE CLEARING IS RESTRICTED FROM APRIL THROUGH AUGUST. SEE PERMITS AND CONTRACT DOCUMENTS FOR MORE DETAILS.
2. STAKE OUT LOD AND INSTALL THE ORANGE CONSTRUCTION FENCE ALONG THE BOUNDARY FOR THE STREAM WORK AND THE ASSOCIATED ACCESS PATHS PRIOR TO WORK IN-STREAM.
3. IDENTIFY THE TREES TO BE TAKEN AND THE TREES TO BE SAVED.
4. SCHEDULE AN ON-SITE MEETING AFTER THE FIRST THREE STEPS TO REVIEW THE LOD, TREE TAKES AND OTHER ENVIRONMENTAL FEATURE IMPACTS BEFORE CONSTRUCTION.
5. STAGES ARE SEPARATE CONSTRUCTION AREAS AND IN-STREAM WORK MAY OCCUR CONCURRENTLY OR IN ANY ORDER RELATIVE TO OTHER STAGES.
6. WORK ZONES MUST BE CONSTRUCTED IN THE ORDER WITHIN EACH STAGE AS INDICATED.
7. WORK WITHIN EACH STAGE STARTING IN THE UPSTREAM-MOST ZONE AND WORKING DOWNSTREAM.
8. THE DAILY WORK FOR ALL IN-STREAM WILL PROCEED AS FOLLOWS. STAGE SPECIFIC WORK WILL BE ADDRESSED IN THE STAGE SOC BELOW.
a. STARTING AT THE UPSTREAM-MOST SECTION OF THE STAGE, CLEAR AND GRUB WHAT IS NECESSARY FOR THE DAILY WORK AREA. ONLY DISTURB WHAT CAN BE STABILIZED BY THE END OF EACH WORKDAY.
b. CLEAR AND GRUB AS NECESSARY TO INSTALL DAILY ESC DEVICES INCLUDING THE SAND BAGS, PUMPS, DEWATERING BAGS.
c. START DIVERSION OPERATION AND DEWATERING OPERATION BEFORE WORKING IN-STREAM EACH WORKDAY.
d. INSTALL STREAM STRUCTURES AND GRADING ALONG THE BANKS AS SHOWN IN THE PLANS. WORK ALONG THE PROFILE, CONSTRUCTING AND COMPLETING THE STREAM STRUCTURES AND THE ASSOCIATED GRADING WORKING FROM UPSTREAM TO DOWNSTREAM. FLOODPLAIN GRADING AND STABILIZATION WITH TOPSOIL, SEED AND MATTING MUST BE COMPLETE BY THE END OF EACH WORKDAY. STREAM CHANNEL AND FLOODPLAIN AREAS THAT CANNOT BE TOPSOILED AND SEEDED MUST BE TEMPORARILY STABILIZED USING TYPE D SOIL STABILIZATION MATTING.
e. THE CONSTRACTOR IS RESPONSIBLE FOR ENSURING A STABLE CONSTRUCTED CHANNEL AT THE END OF EACH WORKDAY AND A TRANSITION USING THE END-OF-DAY DETAIL.
9. AT THE END OF EACH WORKDAY, FULLY DEWATER THE SITE, REMOVE THE CLEARWATER DIVERSION PUMP AND HOSE FROM THE STREAM, AND REMOVE THE SAND BAG DIVERSIONS COMPLETELY FROM THE STREAM CHANNEL.

STAGE 1
1. USE THE SCE AND ACCESS TO PHASE 1 TO ACCESS THE SITE. THE FILTER LOGS AND ACCESS PATHS SHOULD ALREADY BE IN PLACE.
2. REFER TO THE DAILY WORK IN "GENERAL STREAM SOC NOTE 8."

STAGE 2
1. CONSTRUCT THE SCE, ACCESS PATH, CLEARING WHAT IS NECESSARY TO CONSTRUCT.
2. PLACE THE FILTER LOGS AROUND THE STOCKPILE AREA, CLEARING ONLY WHAT IS NECESSARY TO INSTALL THE FILTER LOGS
3. CLEAR AND GRUB FOR THE STOCKPILE ONLY AFTER FILTER LOGS ARE INSTALLED.
4. CONSTRUCT THE ACCESS PATHS, CLEARING ONLY WHAT CAN BE STABILIZED WITH ACCESS PATH AT THE END OF EACH DAY.
5. REFER TO THE DAILY WORK IN "GENERAL STREAM SOC NOTE 8."

STAGE 3
1. ACCESS VIA THE TIMBER MAT PATH FROM STAGE 2 OR FROM PHASE 1 ACCESS ROAD TO THE SAND FILTER.
2. CONSTRUCT STAGE 1 FROM UPSTREAM TO DOWNSTREAM FOLLOWING "GENERAL STREAM SOC NOTE 8."
3. DO NOT START IN ZONE 2, ZONE 4 OR ZONE 5 UNTIL ZONE 1 IS COMPLETED.
4. DO NOT START ON ZONE 3 UNTIL ZONE 2 IS COMPLETED.
5. FOR EACH ZONE, CONSTRUCTION FROM UPSTREAM TO DOWNSTREAM FOLLOWING THE DAILY PUMP AROUND DESCRIBED IN "GENERAL STREAM SOC NOTE 8."

STAGE 4
1. ACCESS VIA ACCESS POINT FROM MD-152 FALLSTON ROAD, PER MT-01.
2. INSTALL THE SCE AND ACCESS ROADS, CLEARING AND DISTRURBING ONLY WHAT CAN BE STABILIZED WITH MULCH ACCESS A THE END OF EACH DAY.
3. INSTALL THE SUPER SILT FENCE, DIVERSION FENCE, AND PSD PRIOR TO CLEARING AND GRUBING FOR THE STOCKPILE AREA.
4. ONCE THE STOCKPILE AREA IS STABILIZED, ACCESS THE SITE TO CONSTRUCT THE STREAM CHANNEL FOLLOWING THE DAILY PUMP AROUND DESCRIBED IN "GENERAL STREAM SOC NOTE 8."
5. CONSTRUCT STAGE 1 FROM UPSTREAM TO DOWNSTREAM FOLLOWING "GENERAL STREAM SOC NOTE 8."

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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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
EROSION AND SEDIMENT CONTROL NOTES

Drawn By :	C.A.B.	Scale :	NOT TO SCALE
Designed By :	R.B.T.	Date :	AUGUST 2023
Reviewed By :	N.A.R.		
Drawing No.	118 Of 124	Sheet No.	EN-02 Of EN-02

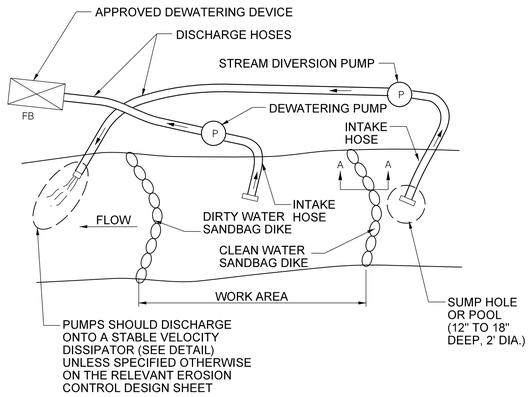
BID No.:

HCG DWG ID No.:

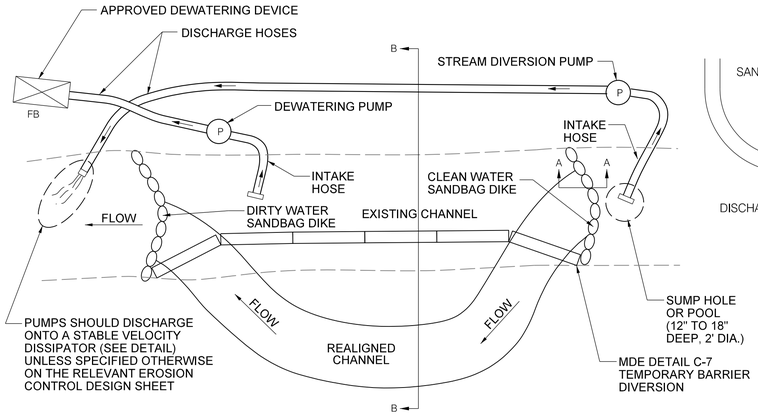
SCALE: 1 INCH

BY: tetrickr –

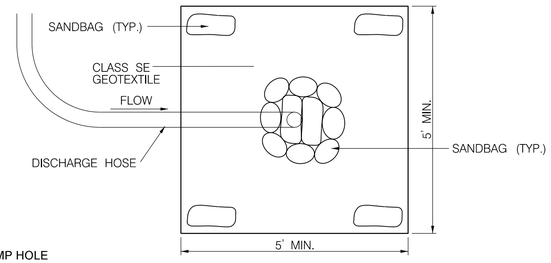
PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-N002_Fallston.dgn



IN–PLACE METHOD
PLAN VIEW



RELOCATION METHOD
PLAN VIEW



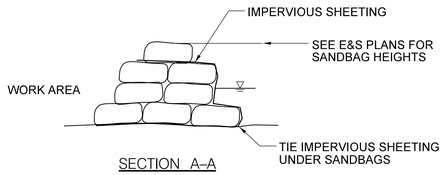
NOTE: PLACE DISCHARGE HOSE IN CENTER OF OUTLET PROTECTION.

VELOCITY DISSIPATOR

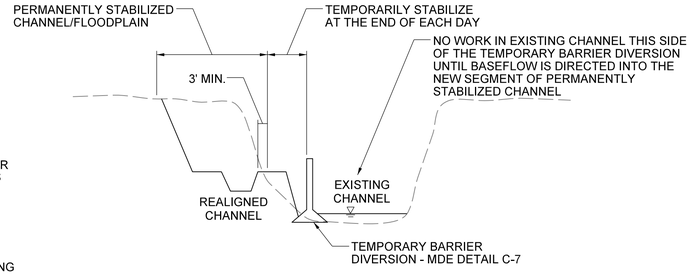
STREAM RESTRICTION PERIODS

STREAM CLOSURE DATES FOR FISH SPAWNING OR MIGRATION WITHIN WATERWAYS ARE AS FOLLOWS:

USE I AND IP	MARCH 1 - JUNE 15
USE II	JUNE 1 - SEPTEMBER 30 DECEMBER 16 - MARCH 14
USE III AND IIIP	OCTOBER 1 - APRIL 30
USE IV	MARCH 1 - MAY 31
SAP	APRIL 15 - OCTOBER 15



SECTION A–A



SECTION B–B

IMPLEMENTATION SEQUENCE:

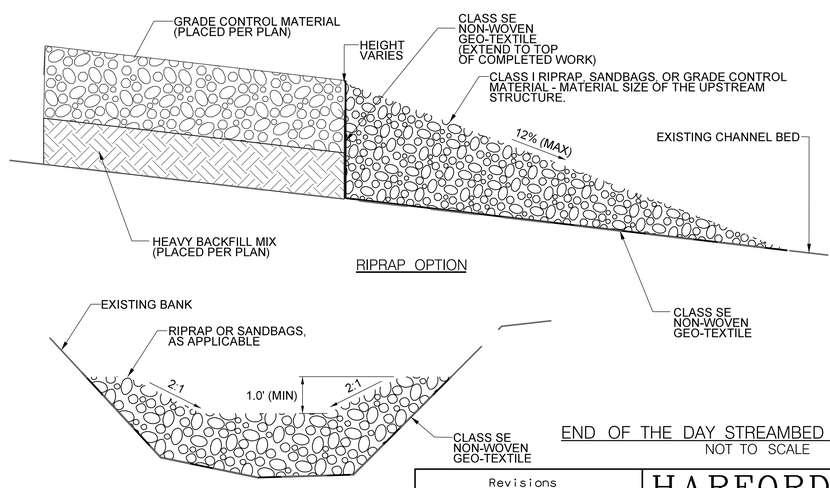
1. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE REC. THE CONTRACTOR SHOULD STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHENEVER POSSIBLE.
2. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE REC, THE CONTRACTOR SHOULD BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ENTRANCES. IN SOME CASES, WORK MAY BEGIN DOWNSTREAM IF APPROPRIATE. THE CONTRACTOR SHOULD ONLY BEGIN WORK IN AN AREA WHICH CAN BE COMPLETED BY THE END OF THE DAY INCLUDING GRADING ADJACENT TO THE CHANNEL. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS.
3. SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATER MADE OF RIPRAP OR SANDBAGS. SUPER SILT FENCE SHOULD BE UTILIZED IN CONJUNCTION WITH SANDBAG DIKES TO ENSURE THAT NO SEDIMENT LADEN RUNOFF (OR STREAMFLOW) LEAVES THE ACTIVE WORK AREA.
4. WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A DEWATERING BASIN, SEDIMENT BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHOULD BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
5. TRAVERSING A CHANNEL REACH WITH EQUIPMENT WITHIN THE WORK AREA WHERE NO WORK IS PROPOSED SHOULD BE AVOIDED. IF EQUIPMENT HAS TO TRAVERSE SUCH A REACH FOR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHOULD BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHOULD BE USED ONLY WHEN NECESSARY AND ONLY WHERE NOTED ON THE PLANS OR SPECIFIED. (SEE SECTION 4, STREAM CROSSINGS, MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION).
6. ALL STREAM RESTORATION MEASURES SHALL BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CROSS- SECTIONS. ALL GRADING MUST BE STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH OR SEED AND MATTING AS SPECIFIED ON THE PLANS.
7. AFTER AN AREA IS COMPLETED AND STABILIZED, THE CLEAN WATER DIKE SHALL BE REMOVED. AFTER THE FIRST SEDIMENT FLUSH, A NEW CLEAN WATER DIKE SHALL BE ESTABLISHED UPSTREAM FROM THE OLD SEDIMENT DIKE. FINALLY, UPON ESTABLISHMENT OF A NEW SEDIMENT DIKE BELOW THE OLD ONE, THE OLD SEDIMENT DIKE AND ASSOCIATED SUPER SILT FENCE SHALL BE REMOVED.
8. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHALL BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHALL DISCHARGE ONTO THE SAME VELOCITY DISSIPATER USED FOR THE MAIN STEM PUMP AROUND.
9. IF A TRIBUTARY IS TO BE RESTORED, CONSTRUCTION SHOULD TAKE PLACE ON THE TRIBUTARY BEFORE WORK ON THE MAIN STEM REACHES THE TRIBUTARY CONFLUENCE. CONSTRUCTION IN THE TRIBUTARY, INCLUDING PUMP AROUND PRACTICES, SHOULD FOLLOW THE SAME SEQUENCE AS FOR THE MAIN STEM OF THE RIVER OR STREAM. WHEN CONSTRUCTION ON THE TRIBUTARY IS COMPLETED, WORK ON THE MAIN STEM SHOULD RESUME. WATER FROM THE TRIBUTARY SHOULD CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.
11. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE REVEGETATED AS PER THE PLANTING PLAN.
12. IN INSTANCES WHERE THE STREAM CHANNEL IS RELOCATED BUT THE EXISTING CHANNEL IS DISTURBED - USE THE "RELOCATION METHOD". PROVIDE THE PUMP AROUND AND DEWATERING TO INSTALL TEMPORARY DIVERSION BARRIER. ONCE THE TEMPORARY DIVERSION BARRIER IS INSTALLED, CONSTRUCT THE REALIGNED CHANNEL, STABILIZING AT THE END OF EACH DAY. ONCE THE REALIGNED CHANNEL IS CONSTRUCTED, USE THE STREAM DIVERSION PUMP AND DEWATERING PUMP TO PROVIDE A STABLE TIE IN TO THE UPSTREAM AND DOWNSTREAM CHANNELS.

GENERAL NOTES:
PUMP-AROUND TO BE CONDUCTED IN ACCORDANCE WITH:
1.THE GENERAL CONSTRUCTION "SEQUENCE OF CONSTRUCTION"
2.ALL PROJECT SPECIFICATIONS AND SPECIAL PROVISIONS
3.ALL STATE/LOCAL LAWS AND REGULATIONS

PUMP AROUND DETAIL
NOT TO SCALE

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, ERODIBLE CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL 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 NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIALS 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 NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL 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 NONTIDAL 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:
   A. USE I WATERS (WITHOUT YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
   B. USE I WATERS (WITH YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
   C. USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THORUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
   D. USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
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 RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.



RIPRAP OPTION

NOTES:

1. END OF THE DAY STREAMBED STABILIZATION IS FOR USE DURING CONSTRUCTION OF THE STREAMBED.
2. TREATMENT SHALL BE USED BY THE CONTRACTOR AT THE END OF EACH WORK DAY TO STABILIZE THE DOWNSTREAM LIMIT OF THE DAILY WORK ZONE. TREATMENT SHALL BE INSTALLED PRIOR TO SHUTTING OFF THE PUMP AROUND PRACTICE.
3. TREATMENT SHALL BE COMPLETELY REMOVED FROM THE CHANNEL AT THE START OF THE SUCCESSIVE WORK DAY AFTER ESTABLISHMENT OF THE PUMP-AROUND AND DEWATERING OPERATIONS.
4. MATERIALS FROM THE END OF DAY STABILIZATION MAY BE RE-USED BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL USE EITHER CLASS I RIPRAP OR SANDBAGS FOR STABILIZATION.
6. IF THEY CONTRACTOR ELECTS TO USE SANDBAGS, THEY SHOULD BE INSTALLED TO THE SAME EXTENTS AND ELEVATIONS AS THE RIPRAP SHOWN IN THE DETAIL.

SECTION VIEW

END OF THE DAY STREAMBED STABILIZATION
NOT TO SCALE

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL DETAILS

Drawn By :	C.A.B.	Scale :	NOT TO SCALE
Designed By :	R.B.T.	Date :	AUGUST 2023
Reviewed By :	N.A.R.		
Drawing No.	119 Of 124	Sheet No.	ED-01 Of ED-05

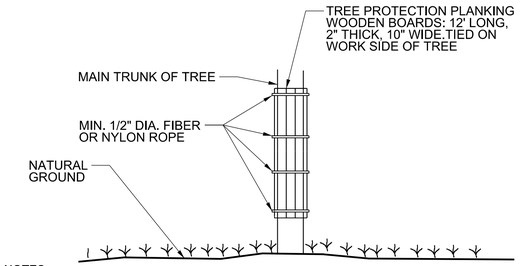
BID No.:

HCG DWG ID No.:

SCALE 1:100

BY: tetrickr –

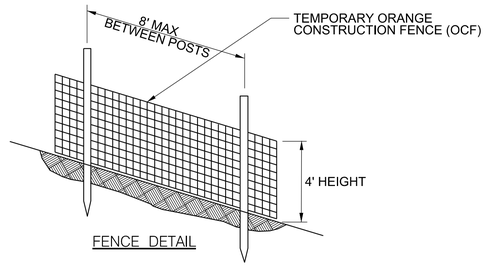
PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-D001_Fallston.dgn



NOTES:

1. FOR TREE PROTECTION PLANKING, TIE WITH 1/2" DIAMETER ROPE (FIBER OR NYLON), SUFFICIENT 2"X10"X12' BOARDS AROUND MAIN TRUNK OF TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION.
2. INSTALL WIRE EYE BOLTS NEAR TOP AND BOTTOM OF EACH PLANK AND APPROXIMATELY 3 FEET APART. DO NOT AFFIX BOLTS INTO TREE.
3. INSTALLATION OF TREE PLANKING MAY BE REQUIRED OUTSIDE OF THE LOD. IN THESE INSTANCES, DO NOT USE VEHICLES TO ACCESS LOCATIONS OUTSIDE OF THE LOD.
5. BOUNDARIES OF PROTECTION AREA SHOULDBE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
6. ROOT DAMAGE SHOULD BE AVOIDED.
7. PLANKING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION PLANKING DETAIL (TYP.)
NOT TO SCALE



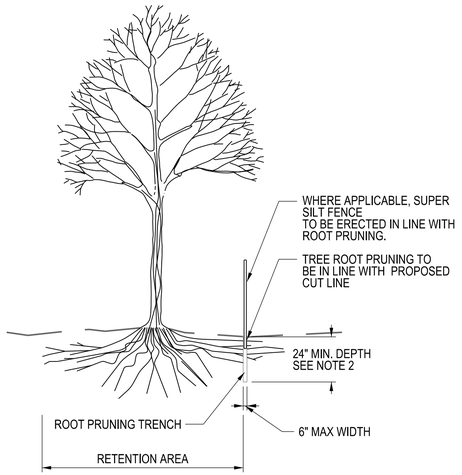
FENCE DETAIL

NOTES:

1. FENCE POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE POST HEIGHT.
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH REC.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
6. TEMPORARY ORANGE CONSTRUCTION FENCE MAY BE USED AS TREE PROTECTION FENCE AS LONG AS ALL OTHER REQUIREMENTS ARE SATISFIED.
7. LOCATE TREE PROTECTION FENCE TO MAXIMIZE THE PROTECTED AREA OF CRITICAL ROOT ZONES OF EXISTING TREES, LIMITING CRITICAL ROOT ZONE IMPACTS TO THE GREATEST EXTENT POSSIBLE. THIS MAY INCLUDE TREE PROTECTION WITHIN THE LIMITS OF DISTURBANCE.

TEMPORARY ORANGE CONSTRUCTION FENCE (OCF) DETAIL (TYP.)
NOT TO SCALE

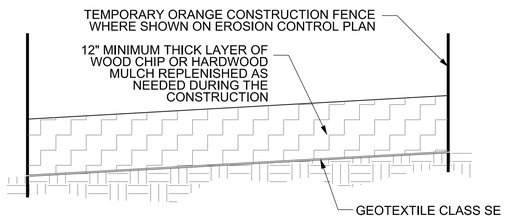
TREE PRESERVATION DETAILS (TYP.)
NOT TO SCALE



NOTES:

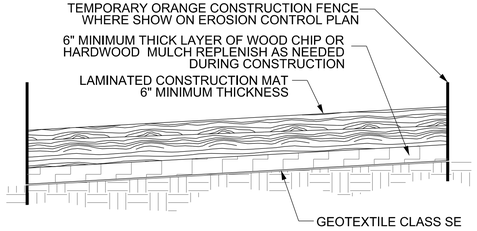
1. ROOT PRUNING AREAS WILL BE IDENTIFIED AS PART OF THE REVIEW PROCESS AND PRECONSTRUCTION MEETING.
2. MINIMUM TRENCH DEPTH WILL BE REVIEWED, AND MAY BE ADJUSTED DURING THE PRECONSTRUCTION MEETING.
3. BOUNDARIES OF RETENTION AREAS MUST BE STAKED AT THE PRECONSTRUCTION MEETING AND FLAGGED PRIOR TO TRENCHING.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH EXCAVATED SOIL OR OTHER ORGANIC SOIL AS SPECIFIED PER PLAN OR BY THE INSPECTOR.
5. ROOTS SHALL BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
6. ALL PRUNING MUST BE EXECUTED WITHIN LOD AS SHOWN ON PLANS OR AS AUTHORIZED IN WRITING BY THE INSPECTOR.
7. EXACT LOCATION OF TRENCH SHALL BE DETERMINED IN FIELD IN COORDINATION WITH THE INSPECTOR.
8. TREE ROOT PRUNING SHOULD BE CONDUCTED IN LINE WITH PROPOSED GRADING (PROPOSED CUT LINE). AN OFFSET IS SHOWN ON THE PLAN FOR EASE OF VIEWING ONLY.
9. SUPER SILT FENCE AROUND STAGING AREAS SHOULD BE ERECTED IN LINE WITH TREE ROOT PRUNING AND PROPOSED CUT LINE. AN OFFSET IS SHOWN ON THE PLAN OR VISUAL CLARITY ONLY.

TREE ROOT PRUNING DETAIL
NOT TO SCALE



SECTION VIEW

MULCH ACCESS ROAD DETAIL
NOT TO SCALE



SECTION VIEW

MULCH MAT ACCESS ROAD DETAIL
NOT TO SCALE

NOTES:

1. ACCESS ROUTES TO BE VERIFIED BY THE REC AT PRE-CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY THE REC.
2. GEOTEXTILE SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC. OVERLAP FABRIC BY 18" MINIMUM AT SEAMS.
3. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.
4. THE ACCESS ROAD IS DESIGNED TO PREVENT COMPACTION OF EXISTING SOILS.
5. ALL MATS AND FENCING SHALL BE REMOVED AT THE END OF CONSTRUCTION. MULCH MAY BE LEFT AND SPREAD TO A THICKNESS OF 2 IN MAX. GEOTEXTILE MAY BE ELIMINATED WHERE MULCH IS TO REMAIN. NO MULCH MAY REMAIN BELOW THE BANKFULL ELEVATION.

GENERAL NOTES:

1. CONTRACTOR SHALL USE MULCH MAT ACCESS ROAD AND TEMPORARY TIMBER MATTING AT SPECIFIED LOCATIONS.
2. CONTRACTOR MAY SUBSTITUTE MULCH ACCESS ROAD WITH MULCH MAT AND TEMPORARY TIMBER MATTING AS SITE CONDITIONS NECESSITATE.

NOTES:

1. TIMBER MATS SHALL BE USED TO TRAVERSE STREAM CHANNEL AND AT UNDERGROUND UTILITY LINE CROSSINGS. TIMBER MATS CAN BE REUSED AS NECESSARY THROUGHOUT THE PROJECT.
2. MATERIAL: DRAGLINE MATS OR SIMILAR TIMBER MATTING SHALL BE CONSTRUCTED FROM MIXED AMERICAN OAK HARDWOODS INCLUDING OAK, BEECH AND HICKORY.
3. CONTRACTOR IS RESPONSIBLE FOR SELECTING APPROPRIATE SIZE/STRENGTH OF TIMBER MATTING BASED ON EQUIPMENT TO BE USED

TEMPORARY TIMBER MATTING NOTES
NOT TO SCALE

TEMPORARY STABILIZED CONSTRUCTION ACCESS
NOT TO SCALE

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BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

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HARFORD COUNTY, MARYLAND

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Designed By : R.B.T.	Date : AUGUST 2023
Reviewed By : N.A.R.	
Drawing No. 120 Of 124	Sheet No. ED-02 Of ED-05

BID No.:

HCG DWG ID No.:

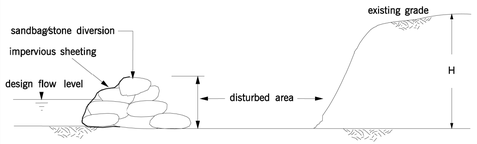
SCALE 1" = 1 inch

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-D002_Fallston.dgn

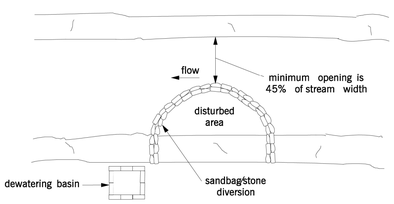
Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION

TRANSVERSE SECTION VIEW



H2 +1 ft (0.3 m) for projects of duration < 2 weeks;
2–year flood elevation for projects of longer duration

PLAN VIEW

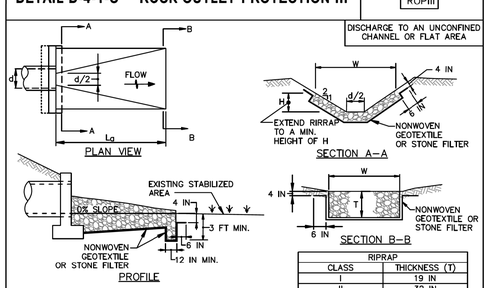


TEMPORARY INSTREAM CONSTRUCTION MEASURES | *REVISED NOVEMBER 2000 PAGE 1.5 – 3* | MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL: ROPIII

DISCHARGE TO AN UNCONFINED CHANNEL OR FLAT AREA



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

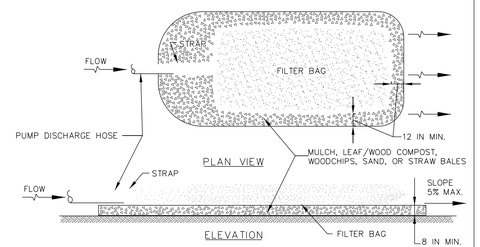
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

D.22

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.

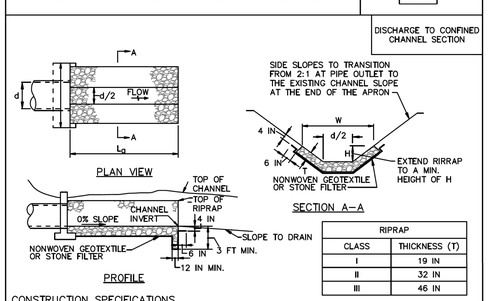
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL D-4-1-B ROCK OUTLET PROTECTION II

STANDARD SYMBOL: ROPII

DISCHARGE TO CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

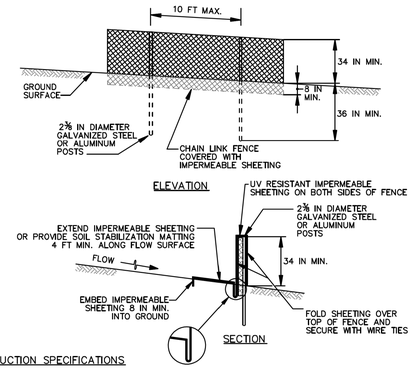
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.21

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: —DF—

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

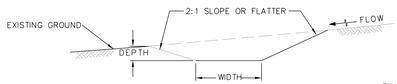
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

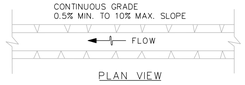
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-2 TEMPORARY SWALE

STANDARD SYMBOL: A–1



SWALE TYPE	A	B
MIN. DEPTH	1 FT MIN.	1 FT MIN.
BOTTOM WIDTH	4 FT MIN.	6 FT MIN.



FLOW CHANNEL STABILIZATION

A–1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A–2/B–2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A–3/B–3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF TEMPORARY SWALE.
2. EXCAVATE OR SHAPE TEMPORARY SWALE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. STABILIZE TEMPORARY SWALE WITHIN THREE DAYS OF INSTALLATION. STABILIZE SWALES USED FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP TEMPORARY SWALE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION.
7. UPON REMOVAL OF TEMPORARY SWALE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- *Riprap*: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- *Sandbags*: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- *Sheeting*: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment-laden water from the construction area should be pumped to a dewatering basin.
5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 121 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. ED-03 Of ED-05

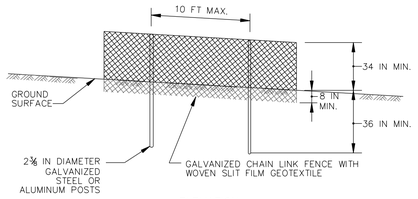
BID No.:
HCG DWG ID No.:
SCALE: 1 INCH = 1 FOOT

BY: tetrickr –

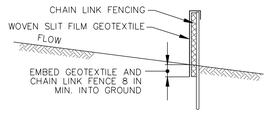
PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-D003_Fallston.dgn

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

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

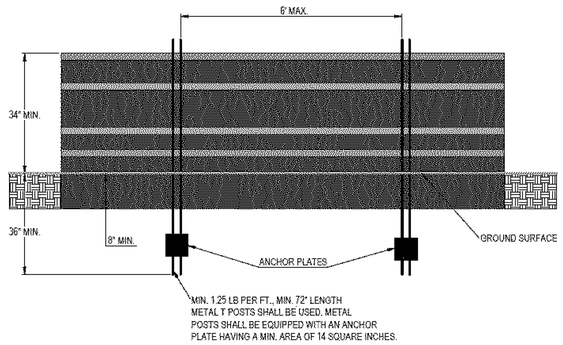
LET'S GET IT DONE

SMARTFENCE 42”

SEDIMENT & PERIMETER CONTROL

INSTALLATION INSTRUCTIONS

SMARTFENCE® MD 42



SMARTfence® 42 is NTPEP Compliant
GTX-2018-01-187

SMART FENCE MAY BE SUBSTITUTED FOR SUPER SILT FENCE IN ALL LOCATIONS SUPER SILT FENCE IS PROPOSED

ACF ENVIRONMENTAL
LET'S GET IT DONE®
800.448.3636
acfenvironmental.com

STEP 1: EXCAVATE TRENCH
Excavate trench a maximum of 4” wide and 6” deep. The trench shall be hand-cleaned following excavation to remove bulky debris such as rocks, sticks, and soil clods.

STEP 2: PREPARE FENCE
Lay SMARTfence 42 out on the ground along the proposed fence line and next to the anchor trench. Reference NOTE ONE prior to beginning.

STEP 3: INSTALL INITIAL POST
3A) For the initial post, place the end of SMARTfence 42 along the post height and rotate the post 360 degrees, maintaining tension on the fabric. Secure the fence to the post at all four (4) orange-colored band locations with steel wire or nylon ties as per NOTE TWO.

3B) Drive the initial post (72” metal t-post) with the attached fence to a depth of 36” below surface.

STEP 4: INSTALL INTERIOR POSTS
Using spacing no greater than 6’ on center, drive interior posts to 36” depth below surface and attach the fencing as you go (see NOTE ONE and SMARTfence detail on page 2).

To attach fencing, position SMARTfence 42 in front of the adjacent t-post, pulling the fencing tight and fasten it to the post at all four (4) orange-colored band locations (as per NOTE TWO). It is critical that SMARTfence 42 is pulled tight prior to attaching it to each interior post.

STEP 5: INSTALL FINAL POST
After the interior posts have been fastened, secure the fence to the final post by pulling the final section of fencing taut, and then rotating the post 360 degrees while maintaining tension on the fence system. Secure the fence to the post at all four (4) orange-colored band locations with the steel wire or nylon ties as per NOTE TWO. Drive the final post into the ground to a 36” depth below the surface.

STEP 6: BACKFILL TRENCH
Ensure bottom 8” of fabric has been placed in trench. Backfill trench (overfill) with soil placed around fabric. Compact soil backfill manually or via mechanical equipment such as the front wheel of a tractor, skid steer, roller, or other device (per Note 5 of ASTM D 6462 Standard Practice for Silt Fence Installation).

**Be careful not to damage the fabric during compaction (damaged fabric will not be replaced).

NOTE ONE - INSTALL SPECIFICATIONS:
SMARTfence 42 shall be installed using a 6’ (72”) metal t-post, 1.25 lbs per foot with a kick plate embedded 3’ (36”) deep on no more than 6’ (72”) centers (see detail on page 2.)

NOTE TWO - SUPPLIES FOR ATTACHING FENCING:
To fasten SMARTfence 42 to studded, metal T-posts, use one of following methods:

- Steel wire: Wire-attach SMARTfence 42 to metal T-posts using 16-gage 304 SS wire with mitered ends, securing with safety pliers.

- Nylon ties: Puncture two 0.25” openings, spaced at a width apart that is roughly equivalent to the post width, and secure the fence to the post using 8” nylon heavy-duty cable ties (zip-ties) that are UV resistant and have a minimum 120-lb tensile strength.

Please contact our team at 800-448-3636 or info@acfenv.com with any questions regarding the installation process.

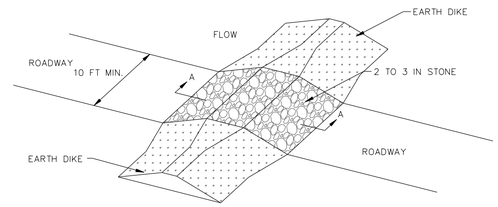
SMARTfence

For more information, contact our Inside Sales team at 800.448.3636 email us info@acfenv.com

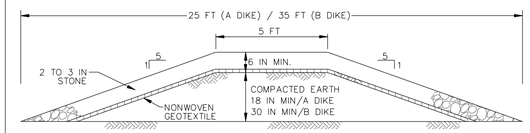
ACF ENVIRONMENTAL

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



ISOMETRIC VIEW



SECTION A—A

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.

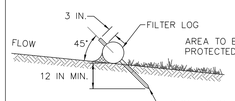
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

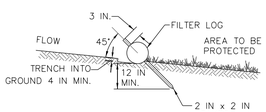
DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18

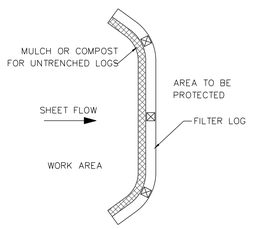
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.



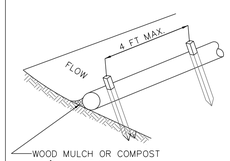
SECTION



SECTION

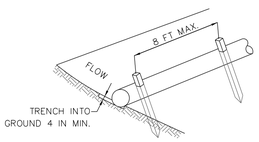


PLAN



UNTRENCHED INSTALLATION

OR



ENTRENCHED INSTALLATION*

*THIS APPLICATION MAY NOT BE USED WITH LOGS SMALLER THAN 12 IN.

ISOMETRIC VIEW

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–3 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

		WOVEN SLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE[1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size[2]	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec^{-1}		0.28 sec^{-1}		1.1 sec^{-1}	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

[1] All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

[2] Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

GEOTEXTILE FABRIC SPECIFICATIONS

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL DETAILS

Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 122 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. ED-04 Of ED-05

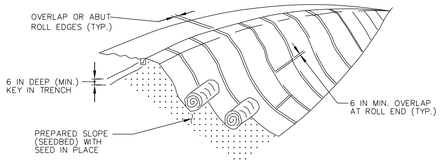
BID No.:
HCG DWG ID No.:
SCALE 1" = 1'-0"

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-D004_Fallston.dgn

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS – 2.25 lb/ft²



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

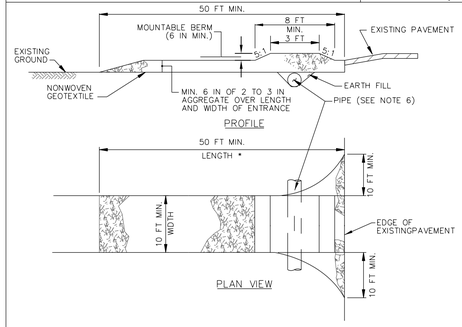
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

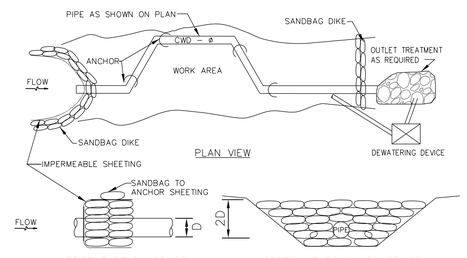
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	201 1	MARYLAND DEPARTMENT OF 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 TWCE 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.

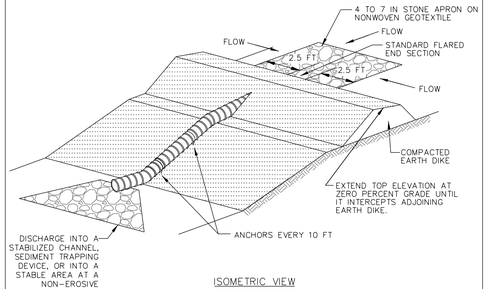
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

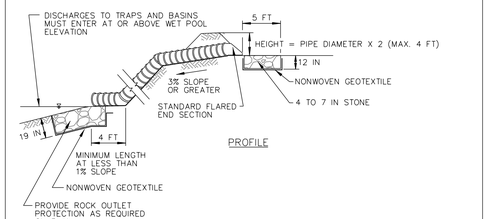
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-1 PIPE SLOPE DRAIN

STANDARD SYMBOL: PSD – 12

DESIGNATION PSD-12 REFERS TO 12 IN PIPE SLOPE DRAIN.





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 D-1 PIPE SLOPE DRAIN

STANDARD SYMBOL: PSD – 12

DESIGNATION PSD-12 REFERS TO 12 IN PIPE SLOPE DRAIN.

CONSTRUCTION SPECIFICATIONS

1. THE HEIGHT OF THE EARTH DIKE MUST BE AT LEAST 2 TIMES THE PIPE DIAMETER MEASURED FROM THE INVERT OF THE PIPE. EXTEND THE TOP ELEVATION OF DIKE AT ZERO PERCENT GRADE UNTIL IT INTERCEPTS THE TOP OF THE ADJOINING EARTH DIKE.
2. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. ALL CONNECTIONS MUST BE WATERTIGHT.
3. ATTACH A FLARED END SECTION TO THE INLET END OF PIPE WITH A WATERTIGHT CONNECTION. AT THE INLET OF THE PIPE SLOPE DRAIN, INSTALL 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PLACED 12 INCHES IN DEPTH ON NONWOVEN GEOTEXTILE AND EXTEND OUT 5 FEET FROM THE INLET IN ALL DIRECTIONS.
4. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
5. SECURELY ANCHOR THE PIPE SLOPE DRAIN (PSD) TO THE SLOPE. SPACE THE ANCHORS EVERY 10 FEET.
6. HAND TAMP THE SOIL AROUND AND UNDER THE PIPE AND END SECTION IN 4 INCH LIFTS TO THE TOP OF THE EARTH DIKE.
7. UPON COMPLETING INSTALLATION OF THE PSD, STABILIZE ASSOCIATED DISTURBANCES WITH SEED, MULCH, AND TACK.
8. INSTALL OUTLET PROTECTION AS SPECIFIED ON APPROVED PLAN.
9. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REMOVE ACCUMULATED SEDIMENT AND DEBRIS.

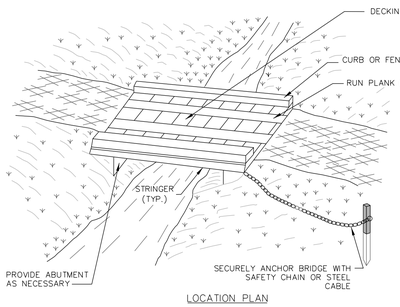
2 OF 2

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 H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB



NOTE:
TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

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 H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
2. PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
3. CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
4. USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
5. SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD. PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTEN. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.
6. SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
7. INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
8. ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM.
9. AREAS DISTURBED DURING BRIDGE INSTALLATION AND\OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
10. STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
11. AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

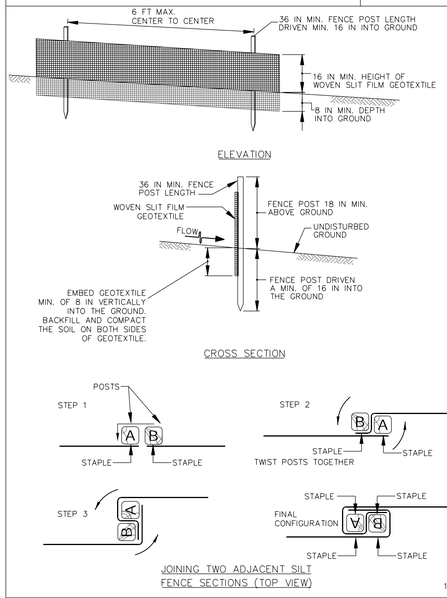
2 OF 2

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-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 ± 3/16 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

WSP USA Inc
1 EAST PRATT STREET SUITE 300
BALTIMORE, MD 21202
(410) 727-5050

BILLING NO. 97069

EG-SWMENG- 000121-2020 #XXXX

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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION EROSION AND SEDIMENT CONTROL DETAILS

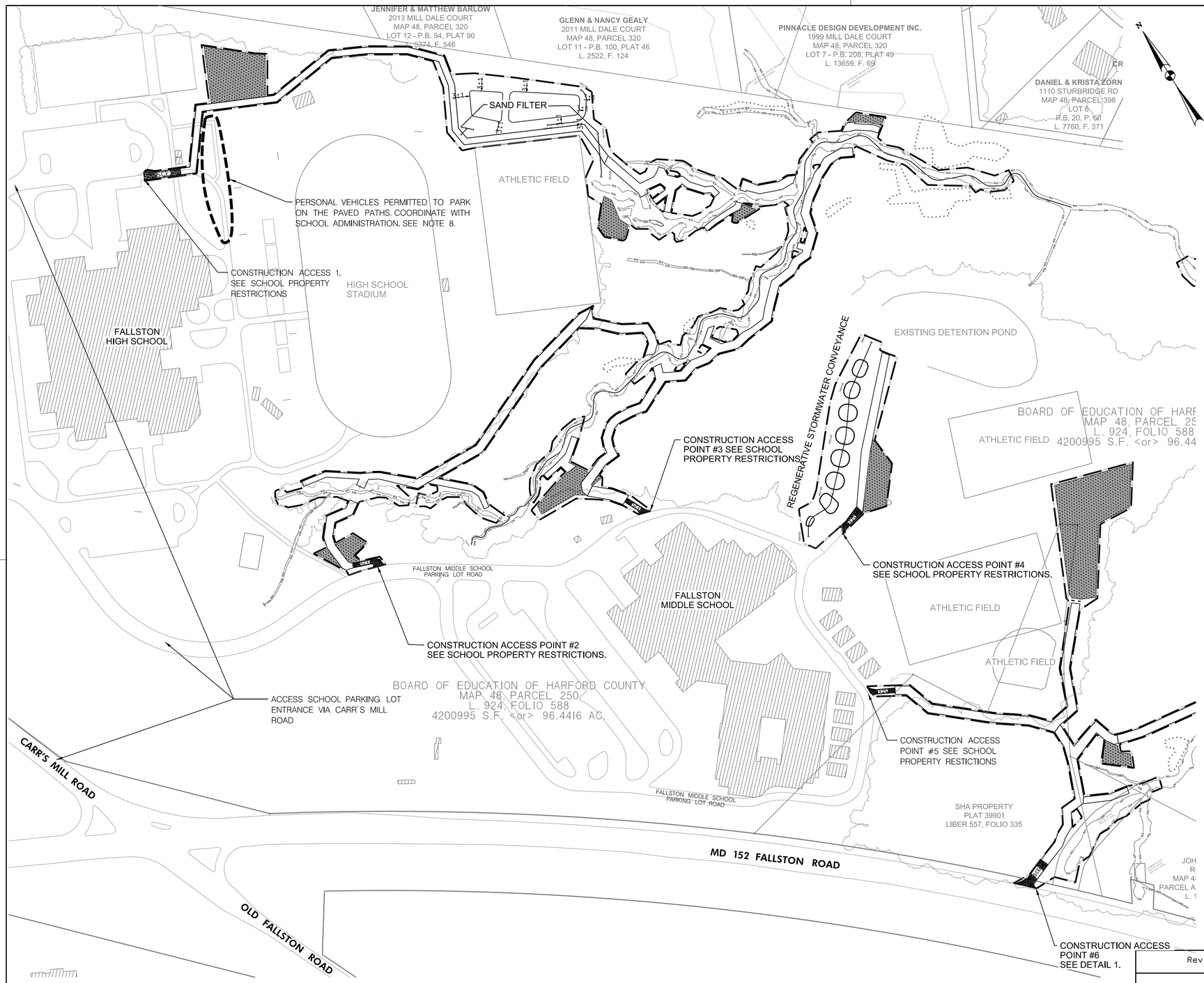
Drawn By : C.A.B.
Designed By : R.B.T.
Reviewed By : N.A.R.
Drawing No. 123 Of 124

Scale : NOT TO SCALE
Date : AUGUST 2023
Sheet No. ED-05 Of ED-05

BID No.:
HCG DWG ID No.:

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw://wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pES-D005_Fallston.dgn



GENERAL NOTES:

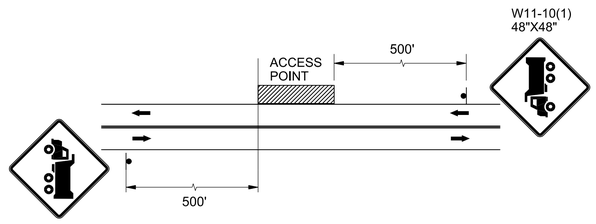
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION WORK ZONE TRAFFIC CONTROL TYPICALS IN CATEGORY 1 OF THE BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES, THE 2011 MARYLAND MUTCD AND SUBSEQUENT REVISIONS ADOPTED BY THE STATE OF MARYLAND, THESE PLANS, AND THE OTHER CONTRACT DOCUMENTS.

2. NO WORK IS TO BEGIN UNTIL ALL ADVANCE MAINTENANCE OF TRAFFIC CONTROL DEVICES ARE IN PLACE AND OPERATIONAL, AS APPROVED BY THE ENGINEER.

3. PLACE TEMPORARY SIGNS AS SHOWN ON THE PLANS. ADJUST PLACEMENT OF SIGNS TO AVOID CONFLICTS WITH EXISTING SIGNS, DRIVEWAYS, AND OTHER FEATURES AS APPROVED BY THE ENGINEER.

4. ALL EXISTING SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.

5. TRAFFIC SIGNS SHALL NOT BE PLACED WHERE THEY WILL IMPEDE THE PATH OF PEDESTRIANS OR MOTORISTS.



DETAIL 1
TRAFFIC CONTROL SET-UP
FOR CONSTRUCTION ACCESS POINT 6

SCHOOL PROPERTY RESTRICTIONS:

1. NO CONSTRUCTION VEHICLES, EQUIPMENT OR MATERIALS SHALL BE STORED ON THE SCHOOL PROPERTY OUTSIDE OF THE LOD.

2. PERSONAL VEHICLES FOR CONSTRUCTION CREW MAY BE PARKED IN THE AREA(S) INDICATED ON THIS MAP. ALL OTHER LOCATIONS BEYOND THE LOD ARE PROHIBITED FOR PERSONAL VEHICLES.

3. FOLLOW POSTED ONE-WAY AND ACCESS SIGNAGE THROUGHOUT THE PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING DELIVERY TIMING AND AVOIDING CONFLICTS WITH OTHER VEHICLES THROUGH THE USE OF STAFF AND FLAGGERS.

4. RESTRICTIONS IN NOTES 5-6 APPLY TO ALL SCHOOLS DAYS WHEN STUDENTS ARE ATTENDING FALLSTON HIGH/MIDDLE SCHOOL. THE SCHOOL DAY INCLUDES TIMES STUDENTS ARE IN CLASS AND WHEN BUSES ARE ARRIVING OR DEPARTING. TYPICALLY MONDAY - FRIDAY, SEPTEMBER THROUGH JUNE, 30 MINUTES BEFORE CLASSES START AND 30 MINUTES AFTER DISMISSAL. COORDINATE EXACT DATES AND TIMES WITH HARFORD COUNTY SCHOOL BOARD AND THE ENGINEER. EXCEPTIONS WILL BE MADE WHEN THERE IS NO SCHOOL IN SESSION WITH WRITTEN REQUEST 2 WEEKS IN ADVANCE (E.G.: SPRING BREAK.

5. TO AVOID BUS CONFLICTS: NO MATERIAL, EQUIPMENT DELIVERIES OR TRANSPORT SHALL BE MADE DURING SCHOOL DAYS WITHIN 30 MINUTES BEFORE OR AFTER THE START OR DISMISSAL OF EITHER THE HIGH SCHOOL OR MIDDLE SCHOOL. THE CONTRACTOR IS RESPONSIBLE FOR ACCOUNTING FOR VARIATIONS IN BUS SCHEDULE FOR LATE STARTS AND EARLY DISMISSALS. ON A TYPICAL SCHOOL DAY, THIS RESULTS IN NO DELIVERIES BETWEEN THE HOURS OF 7 AM TO 8:45 AM AND 1:00 PM TO 3:30 PM.

6. NO DELIVERIES, EQUIPMENT OR MOVEMENT OF CONSTRUCTION VEHICLES SHALL BE MADE TO ACCESS #3, ACCESS #4, OR ACCESS #5 DURING THE SCHOOL DAY. ON A TYPICAL SCHOOL DAY, THIS IS BETWEEN 7 AM AND 3:30 PM. CONTRACTOR TO VERIFY WITH THE ENGINEER AND SCHOOL ADMINISTRATION.

7. THE CHAIN LINK FENCE TO SEPARATE THE ATHLETIC FIELD ON SHEET SW-02 MUST BE COMPLETED BEFORE THE SCHOOL YEAR BEGINS IF CONSTRUCTION ON THE SAND FILTER HAS BEGUN. THE ATHLETIC FIELD MUST BE AVAILABLE TO USE BY THE BEGINNING OF THE SCHOOL YEAR.

8. PARKING IS AVAILABLE FOR PERSONAL VEHICLES VIA ACCESS POINT #1 EAST OF THE PARKING LOT ON THE NORTH SIDE OF THE HIGH SCHOOL AND IS IDENTIFIED ON THIS MAP. PARKING IS ONLY PERMITTED ON THE PAVED PATHS. SOIL OR GRASS DISTURBANCE BEYOND THE LOD SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL COST. COORDINATE PARKING WITH THE SCHOOL. ADDITIONAL BARRIERS REQUIRED BY THE SCHOOL TO SEPARATE PARKING AREAS FROM WALKING PATHS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE COUNTY.

LEGEND

- STOCKPILE AREA
- LIMIT OF DISTURBANCE
- PROPOSED STREAM/CHANNEL ALIGNMENT
- ACCESS ROAD
- STABILIZED CONSTRUCTION ENTRANCE
- EXISTING CONTOUR
- TREE LINE
- WETLAND
- WATERS OF THE U.S.
- PROPERTY LINE
- EXISTING BUILDING

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SIGN AND SEAL

Revisions

HARFORD COUNTY, MARYLAND

FALLSTON HIGH/MIDDLE SCHOOL STREAM RESTORATION
MAINTENANCE OF TRAFFIC

Drawn By :	M.V.P.	Scale :	1" = 100'
Designed By :	M.V.P.	Date :	AUGUST 2023
Reviewed By :	K.M.P.		
Drawing No.	124 Of 124	Sheet No.	MT-01 Of MT-01

BID No.:

HCG DWG ID No.:

SCALE 1" = 100'

BY: tetrickr –

PLOTTED: 2/9/2024
FILE: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-02\Documents\MD - Baltimore Projects\186665C_Fallston S.R.\CADD\Plans\pMT-P001_Fallston.dgn