HARFORD COUNTY

Bid No. : TBD

Calvert's Walk Stream Restoration Project

INDEX OF SHEETS

SHEET NO.	TITLE
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2	GEOMETRIC SHEET
3–6	TYPICAL DETAILS
7–8	PLAN SHEETS
9	MAINTENANCE OF TRAFFIC PLAN SHEET
10	PROFILE
11	EROSION AND SEDIMENT CONTROL GENERAL NOTES
12–13	EROSION AND SEDIMENT CONTROL DETAILS
14–15	EROSION AND SEDIMENT CONTROL PLANS
16–17	LANDSCAPE PLANS
18–27	CROSS SECTIONS

LEGEND

EXISTING ROADWAY
BASE OR SURVEY LINE
TRAVERSE POINT
RIGHT OF WAY LINE
LIMIT OF DISTURBANCE — LOD
GRADING ELEVATION CONTOURS (5') — 55
GRADING ELEVATION CONTOURS (1') — 54
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EXISTING FENCE LINE
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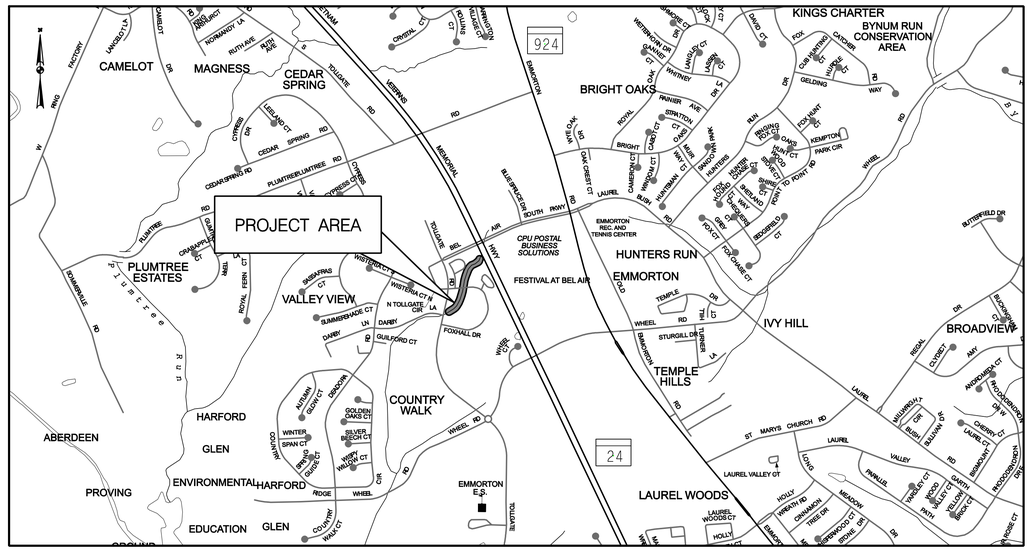
EXISTING DROP INLET
WETLAND
WETLAND BUFFER — B
WATERS OF THE US — WUS
HEDGE /TREE LINE
BUSH /TREE

Department Of Public Works
Water Resources Engineering



NOTE: COORDINATES AND BEARINGS SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD 831991) AND ARE BASED ON THE FOLLOWING HARFORD COUNTY SURVEY CONTROL MONUMENTS:

FALLSTON	N 675,445.19	E 1,477,585.69
FALLSTON AZ MK.	N 676,752.37	E 1,477,595.25

NOTE: ALL ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) WITH LOCAL REFERENCE TO THE FOLLOWING HARFORD COUNTY SURVEY CONTROL MONUMENTS:

FALLSTON	ELEV. 455.79
FALLSTON AZ MK.	ELEV. 464.98

NOTE: STATE STREAM USE CLASS DESIGNATION I–P (PUBLIC WATER SUPPLY) IN–STREAM CLOSURE MARCH 1 THROUGH JUNE 15, INCLUSIVE

HORIZONTAL DATUM	NAD 83 / 91
VERTICAL DATUM	NAVD 88

SCALE: 1"=1000'

1000 0 1000 2000 FEET

FINAL PLANS

GENERAL NOTES

1. ALL WORK PERFORMED ON THIS PROJECT SHALL BE IN ACCORDANCE WITH HARFORD COUNTY ROAD CODE AND STANDARD SPECIFICATIONS AND MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO AND MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THIS IS TO INCLUDE ALL SEWER LINES AND SERVICE LINES.
3. PRIOR TO ANY ONSITE LAND DISTURBANCES, FORTY–EIGHT (48) HOURS ADVANCE NOTICE SHALL BE GIVEN TO THE D.P.W. INSPECTION SECTION BY CONTACTING THE CHIEF INSPECTOR AT 410–638–3128 AT WHICH TIME A PRECONSTRUCTION MEETING WILL BE SCHEDULED.
4. ALL DISTURBED AREAS AS A RESULT OF STREAM CONSTRUCTION SHALL BE SEEDED AND MULCHED WITHIN SEVEN (7) DAYS AFTER COMPLETION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL DURING CONSTRUCTION AND PRIOR TO ACCEPTANCE BY THE COUNTY; CONSISTENT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
6. BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR IS TO VERIFY THE LOCATION OF EXISTING UTILITIES BY CONTACTING "MISS UTILITY" (1–800–257–7777).

REVIEWED AND APPROVAL RECOMMENDED — DATE
PROJECT ENGINEER

REVIEWED AND APPROVAL RECOMMENDED — DATE
CHIEF ENGINEER

APPROVAL RECOMMENDED — DATE
DEPUTY DIRECTOR OF PUBLIC WORKS

APPROVED — DATE
DIRECTOR OF PUBLIC WORKS

McCormick Taylor
Engineers & Planners
Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662–7400

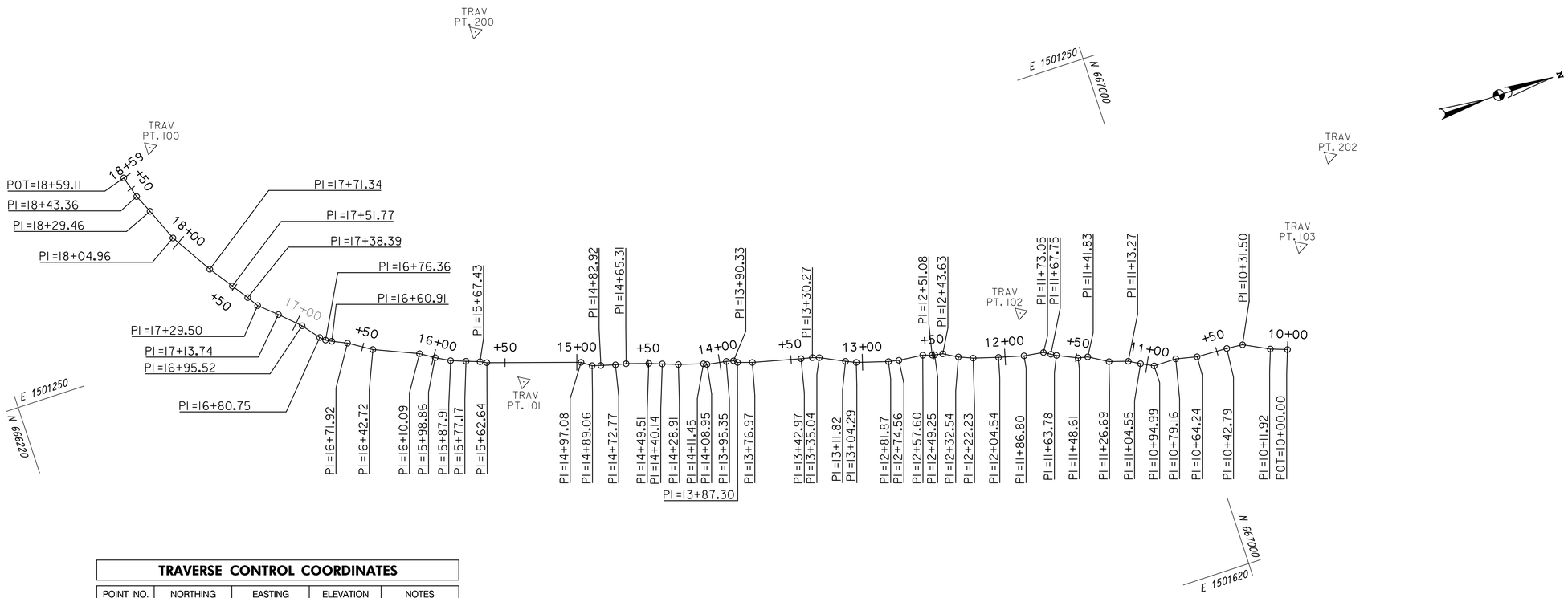
REVISIONS

REV#	DATE	DESCRIPTION

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS

WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3451
SC FLAN #59766

DATE 08–31–11	DRAWING NO.
SCALE 1" = 1000'	
DESIGNED BY	SHEET 1 OF 27
DRAWN BY WJW	FWA JOB NUMBER



TRAVERSE CONTROL COORDINATES

POINT NO.	NORTHING	EASTING	ELEVATION	NOTES
100	666363.5976	1501106.5212	281.59	REBAR W/CAP
101	666559.8339	1501342.4322	288.06	REBAR W/CAP
102	666903.3830	1501404.7014	297.82	REBAR W/CAP
103	667102.9603	1501421.3457	318.40	REBAR W/CAP
200	666603.7282	1501100.3352	291.62	REBAR W/CAP
202	667141.7194	1501368.3376	319.26	REBAR W/CAP

BASELINE CONTROL COORDINATES

℄ CONSTRUCTION	POINT NO.	NORTHING	EASTING	℄ STATION	BEARING AH
WHEEL CREEK	POT=	667072.0562	1501486.7485	10+00.00	S 20° 00'05.5642" W
	PI =	667060.8561	1501482.6717	10+11.92	S 26° 49'17.6921" W
	PI =	667043.3795	1501473.8353	10+31.50	S 4° 57'24.5081" W
	PI =	667032.1377	1501472.8603	10+42.79	S 2° 24'57.4242" W
	PI =	667010.7051	1501471.9560	10+64.24	S 12° 41'45.0791" W
	PI =	666996.1505	1501468.6771	10+79.16	S 0° 05'41.3032" W
	PI =	666980.3159	1501468.6509	10+94.99	S 27° 17'08.5135" W
	PI =	666971.8183	1501464.2677	11+04.55	S 29° 25'37.2539" W
	PI =	666964.2268	1501459.9854	11+13.27	S 17° 09'12.7677" W
	PI =	666951.4015	1501456.0267	11+26.69	S 30° 46'02.7632" W
	PI =	666938.3941	1501448.2827	11+41.83	S 11° 37'27.7325" W
	PI =	666931.7566	1501446.9173	11+48.61	S 24° 53'07.0171" W
	PI =	666917.9876	1501440.5303	11+63.78	S 29° 37'09.1401" W
	PI =	666914.5433	1501438.5721	11+67.75	S 31° 44'57.2063" W
	PI =	666910.0352	1501435.7825	11+73.05	S 8° 21'00.3044" W
	PI =	666896.4256	1501433.7849	11+86.80	S 14° 42'12.3223" W
	PI =	666879.2739	1501429.2841	12+04.54	S 16° 30'21.7067" W
	PI =	666862.3097	1501424.2572	12+22.23	S 22° 40'23.6269" W
	PI =	666852.7964	1501420.2829	12+32.54	S 29° 24'12.7099" W
	PI =	666843.1378	1501414.8397	12+43.63	S 10° 48'09.2145" W
	PI =	666837.6138	1501413.7857	12+49.25	S 12° 07'03.9491" W
	PI =	666835.8280	1501413.4023	12+51.08	S 17° 53'08.6655" W
	PI =	666829.6233	1501411.3999	12+57.60	S 5° 58'49.1060" W
	PI =	666812.7529	1501409.6327	12+74.56	S 11° 12'34.2179" W
	PI =	666805.5767	1501408.2105	12+81.87	S 16° 40'57.6406" W
	PI =	666784.1062	1501401.7761	13+04.29	S 23° 59'51.7461" W
	PI =	666777.2216	1501398.7112	13+11.82	S 26° 03'39.4628" W
	PI =	666760.6490	1501390.6064	13+30.27	S 18° 10'37.6437" W
	PI =	666756.1203	1501389.1194	13+35.04	S 12° 40'53.6604" W
	PI =	666748.3877	1501387.3794	13+42.97	S 13° 47'46.3384" W
	PI =	666715.3637	1501379.2703	13+76.97	S 18° 03'08.9908" W
	PI =	666705.5403	1501376.0685	13+87.30	S 40° 37'20.1848" W

BASELINE CONTROL COORDINATES

℄ CONSTRUCTION	POINT NO.	NORTHING	EASTING	℄ STATION	BEARING AH
WHEEL CREEK	PI =	666703.2453	1501374.0999	13+90.33	S 13° 33'02.9240" W
	PI =	666698.3652	1501372.9237	13+95.35	S 9° 12'24.8052" W
	PI =	666684.9317	1501370.7463	14+08.95	S 28° 11'50.1037" W
	PI =	666682.7358	1501369.5690	14+11.45	S 16° 37'49.4176" W
	PI =	666666.0063	1501364.5721	14+28.91	S 20° 01'40.8245" W
	PI =	666655.4551	1501360.7259	14+40.14	S 20° 07'14.3526" W
	PI =	666646.6505	1501357.5003	14+49.51	S 17° 33'23.2534" W
	PI =	666631.5939	1501352.7366	14+65.31	S 12° 14'10.1590" W
	PI =	666624.2976	1501351.1543	14+72.77	S 15° 19'13.9785" W
	PI =	666614.5063	1501348.4719	14+82.92	S 17° 17'49.5232" W
	PI =	666608.6508	1501346.6485	14+89.06	S 34° 52'01.2438" W
	PI =	666602.0701	1501342.0633	14+97.08	S 17° 56'15.8228" W
	PI =	666539.6983	1501321.8724	15+62.64	S 26° 24'08.2301" W
	PI =	666535.4050	1501319.7410	15+67.43	S 20° 01'18.6512" W
	PI =	666526.2562	1501316.4072	15+77.17	S 20° 31'00.0624" W
	PI =	666516.1971	1501312.6429	15+87.91	S 28° 58'48.5732" W
	PI =	666506.6175	1501307.3371	15+98.86	S 32° 29'47.9307" W
	PI =	666497.1455	1501301.3036	16+10.09	S 23° 11'01.7976" W
	PI =	666467.1517	1501288.4583	16+42.72	S 32° 25'40.3069" W
	PI =	666451.7922	1501278.7004	16+60.91	S 24° 57'25.7691" W
	PI =	666441.8153	1501274.0571	16+71.92	S 28° 21'48.5125" W
	PI =	666437.9041	1501271.9456	16+76.36	S 42° 23'06.7826" W
	PI =	666434.6611	1501268.9858	16+80.75	S 51° 48'29.5940" W
	PI =	666425.5310	1501257.3801	16+95.52	S 43° 27'33.3108" W
	PI =	666412.3070	1501244.8489	17+13.74	S 41° 32'43.7350" W
	PI =	666400.5074	1501234.3927	17+29.50	S 56° 57'55.1384" W
	PI =	666395.6623	1501226.9419	17+38.39	S 55° 08'16.5346" W
	PI =	666388.0132	1501215.9617	17+51.77	S 54° 54'31.6051" W
	PI =	666376.7622	1501199.9479	17+71.34	S 58° 23'41.9350" W
	PI =	666359.1432	1501171.3142	18+04.96	S 67° 36'17.6850" W
	PI =	666349.8097	1501148.6640	18+29.46	S 65° 59'21.0791" W
	PI =	666344.1561	1501135.9723	18+43.36	S 73° 18'24.5762" W
	POT=	666339.6318	1501120.8854	18+59.11	

DESIGN AND DRAWING BASED UPON THE MARYLAND COORIDINATE SYSTEM

HORIZONTAL - NAD 83 FT
VERTICAL - NAVD 88
HARFORD COUNTY

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

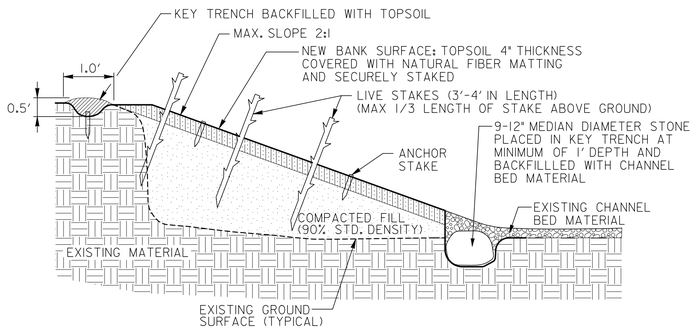
REV#	DATE	DESCRIPTION

REVISIONS

GEOMETRY SHEET

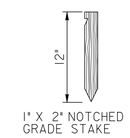
HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3447
SC PLAN #S9766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 40'	
DESIGNED BY HJD	SHEET 2 OF 27
DRAWN BY WJW	FWA JOB NUMBER



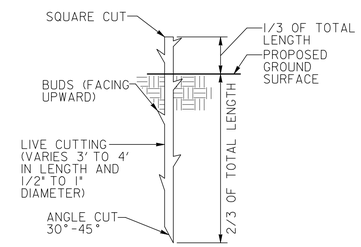
STREAMBANK IN FILL WITH STONE KEY

(NOT TO SCALE)



ANCHOR STAKE

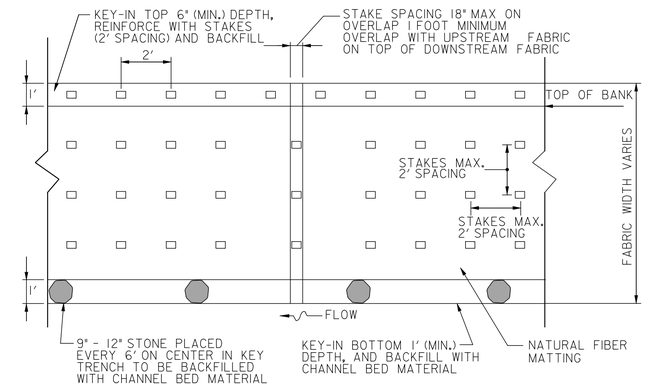
(NOT TO SCALE)



LIVE STAKE

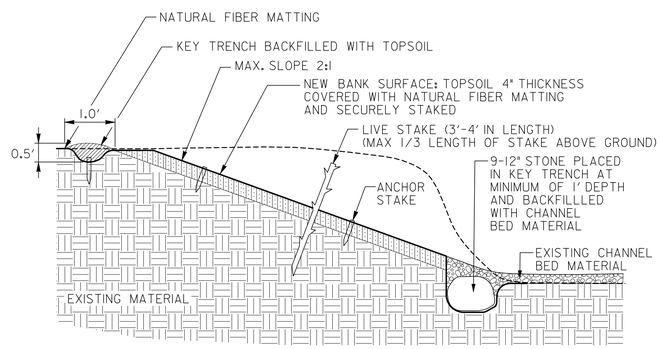
(NOT TO SCALE)

NOTE:
1. LIVE STAKES MUST BE INSTALLED WHILE DORMANT (LATE FALL TO EARLY SPRING) AND NOT ALLOWED TO DRY OUT.



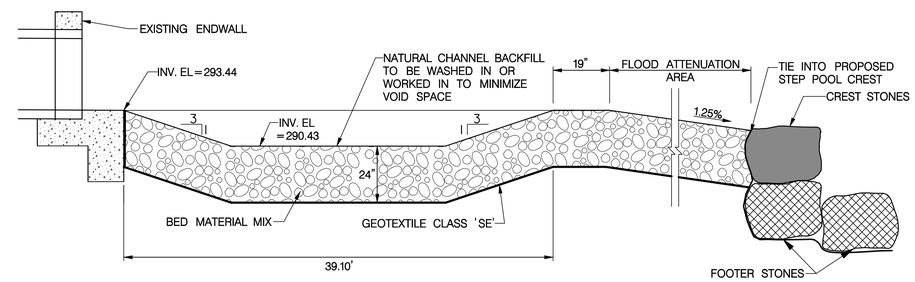
NATURAL FIBER MATTING WITH STONE KEY

(NOT TO SCALE)



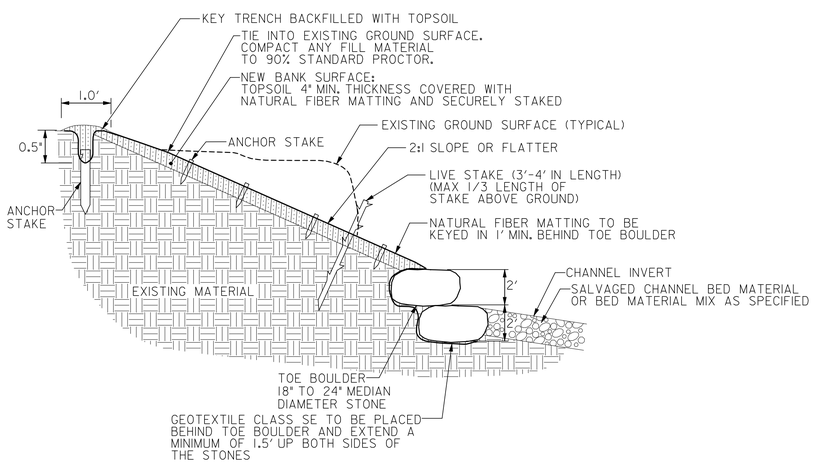
STREAMBANK IN CUT WITH STONE KEY

(NOT TO SCALE)



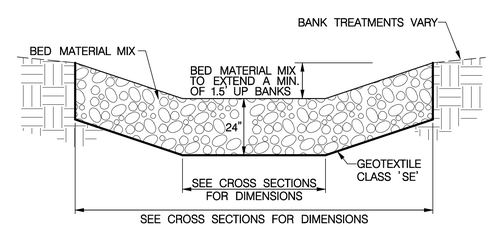
OUTFALL SCOUR POOL PROFILE

SCALE: 1" =2'



STONE TOE PROTECTION

(NOT TO SCALE)



OUTFALL SCOUR POOL CROSS SECTION

SCALE: 1" =2'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

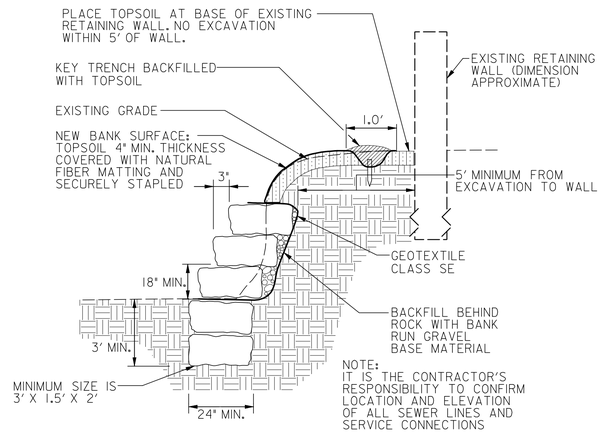
REV#	DATE	DESCRIPTION

REVISIONS

TYPICAL DETAILS

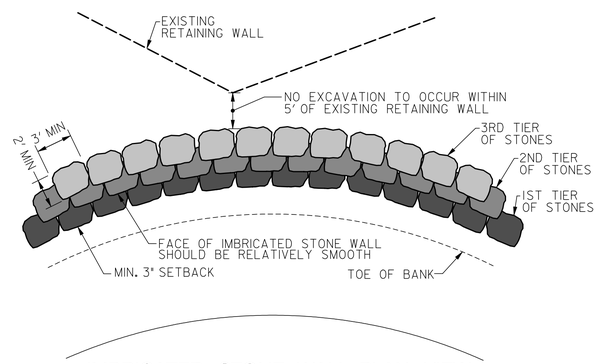
HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3545
SC PLAN #99766

DATE 08-31-11	DRAWING NO.
SCALE NOT TO SCALE	
DESIGNED BY	SHEET 3 OF 27
DRAWN BY WJW	FWA JOB NUMBER



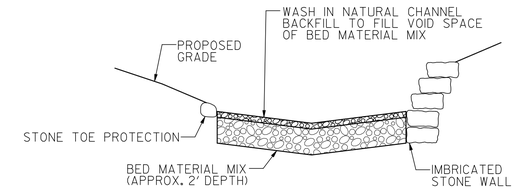
IMBRICATED STONE WALL–SECTION VIEW

(NOT TO SCALE)



IMBRICATED STONE WALL–PLAN VIEW

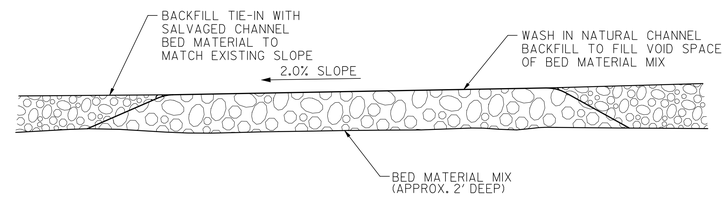
(NOT TO SCALE)



RIFFLE STRUCTURE – SECTION VIEW

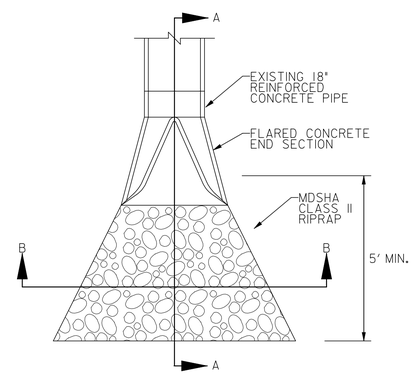
(NOT TO SCALE)

Bed Material Mix	
Amount of Stone (%)	Stone type
40	SHA CLASS 0
50	SHA CLASS 1
10	SHA CLASS 2
100	TOTAL



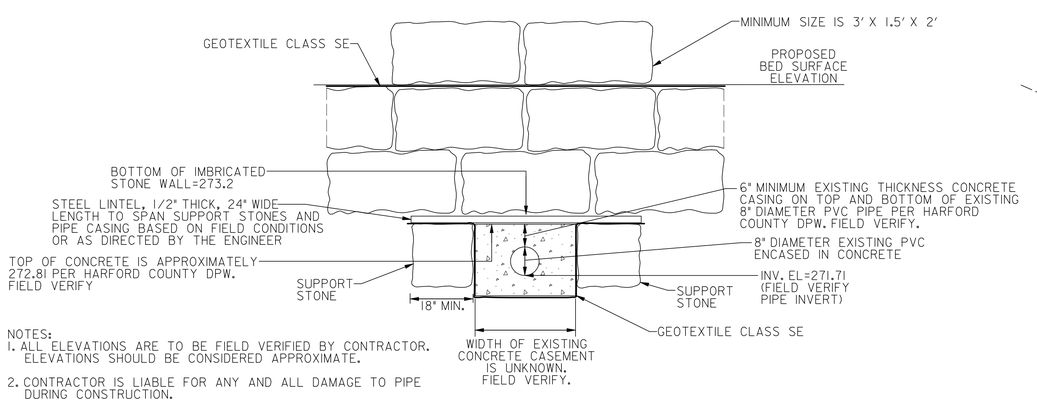
RIFFLE STRUCTURE – TYPICAL PROFILE

(NOT TO SCALE)



RIPRAP OUTFALL PROTECTION – PLAN VIEW

(NOT TO SCALE)



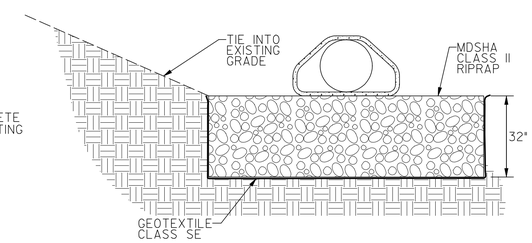
NOTES:

1. ALL ELEVATIONS ARE TO BE FIELD VERIFIED BY CONTRACTOR. ELEVATIONS SHOULD BE CONSIDERED APPROXIMATE.
2. CONTRACTOR IS LIABLE FOR ANY AND ALL DAMAGE TO PIPE DURING CONSTRUCTION.
3. DESIGN REQUIRES CONCRETE CASING TO BE STRUCTURALLY SOUND. FIELD VERIFY CONDITION AND ACQUIRE APPROVAL BY THE ENGINEER. AT ENGINEERS REQUEST, ADHERE TO HARFORD COUNTY MD DPW STANDARD GENERAL DETAIL FOR JACKING OR BORING REVISED 4/16/10, PLATE G-9

IMBRICATED STONE WALL AT SEWER CROSSING DETAIL

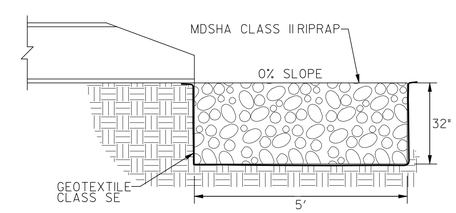
(NOT TO SCALE)

APPROX. STA. 16+72 TO 16+82



RIPRAP OUTFALL PROTECTION – SECTION B–B

(NOT TO SCALE)



RIPRAP OUTFALL PROTECTION – SECTION A–A

(NOT TO SCALE)

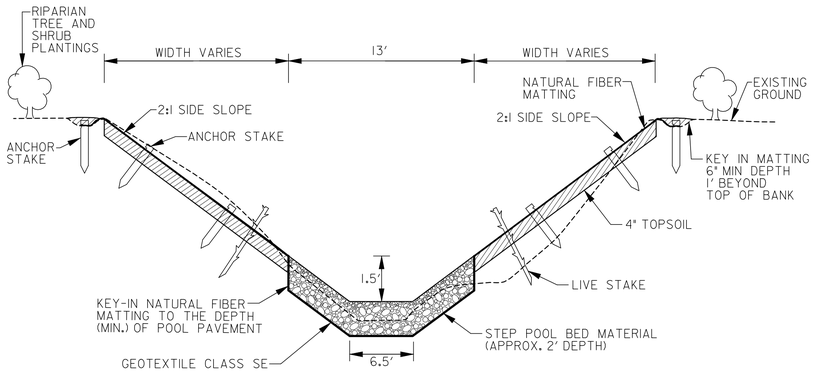
McCormick Taylor
Engineers & Planners
Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

REV#	DATE	REVISIONS DESCRIPTION

TYPICAL DETAILS

HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3345
SC PLAN #59766

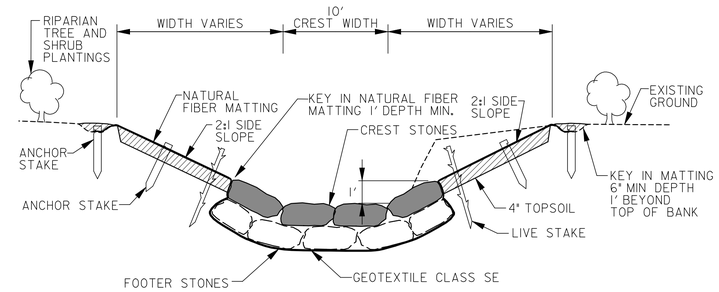
DATE 08-31-11	DRAWING NO.
SCALE NOT TO SCALE	
DESIGNED BY	SHEET 4 OF 27
DRAWN BY WJW	FWA JOB NUMBER



NOTE:
1. IF NECESSARY, FILL UNDER CREST SHALL CONSIST OF COMPACTED FILL MATERIAL. COMPACTED TO 90% PROCTOR.
2. IF NECESSARY, FILL ALONG CHANNEL BANK SHALL CONSIST OF FILL MATERIAL COMPACTED TO 90% PROCTOR.

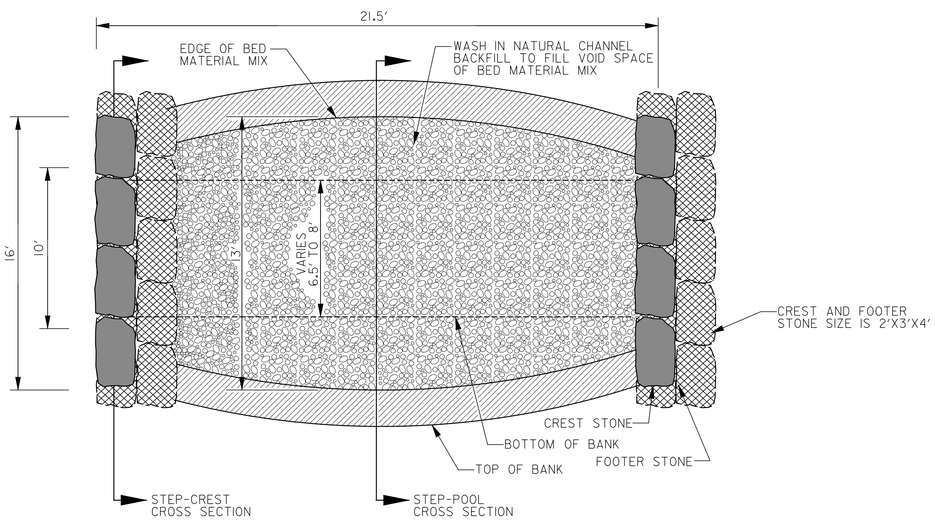
TYPICAL CROSS SECTION OF STEP-POOL POOL

(NOT TO SCALE)



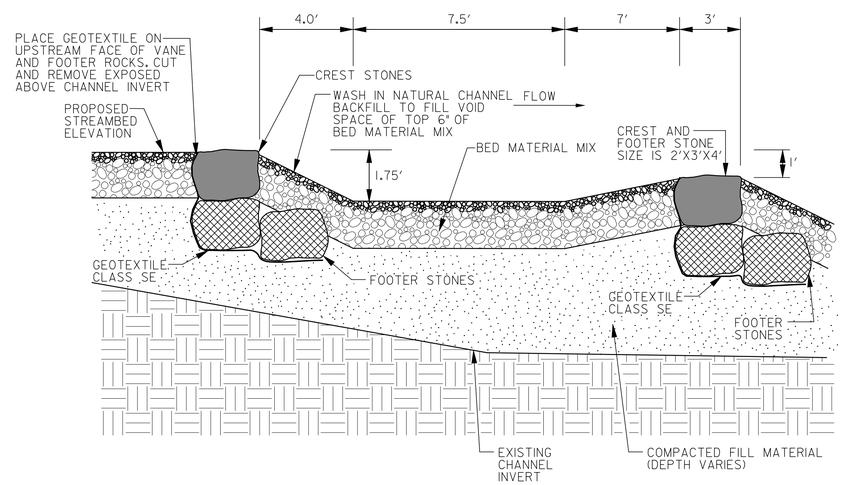
TYPICAL CROSS SECTION OF STEP-POOL CREST

(NOT TO SCALE)



STEP-POOL STRUCTURES TYPICAL PLAN VIEW

(NOT TO SCALE)



TYPICAL PROFILE THROUGH STEP POOL

(NOT TO SCALE)

NOTE:
1. SEE PROFILE FOR EXACT DIMENSIONING OF STRUCTURES.

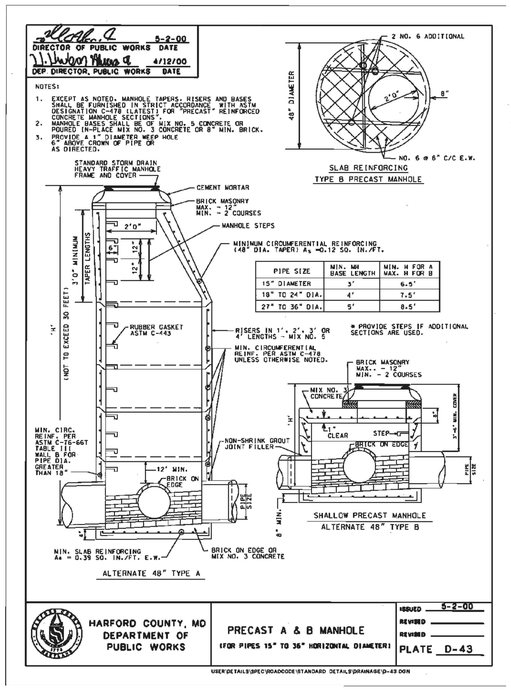
McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

REV#	DATE	REVISIONS DESCRIPTION

TYPICAL DETAILS

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3547
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE NOT TO SCALE	
DESIGNED BY	SHEET 5 OF 27
DRAWN BY WJW	FWA JOB NUMBER



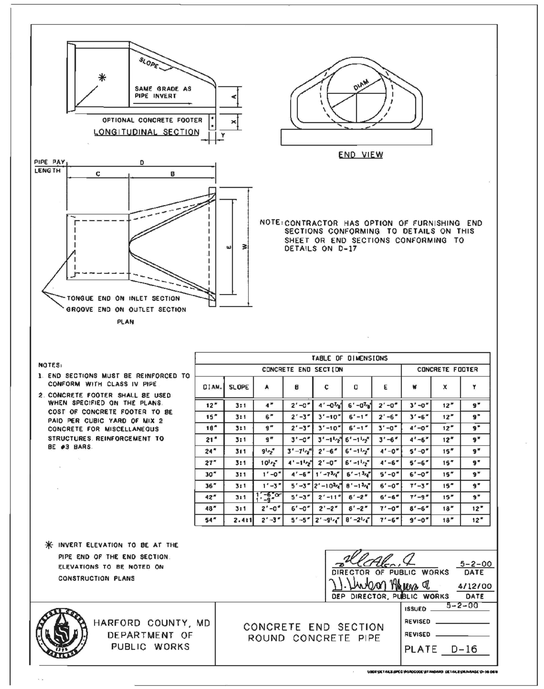
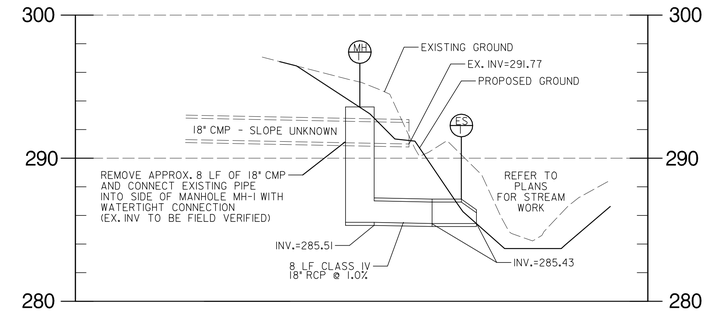


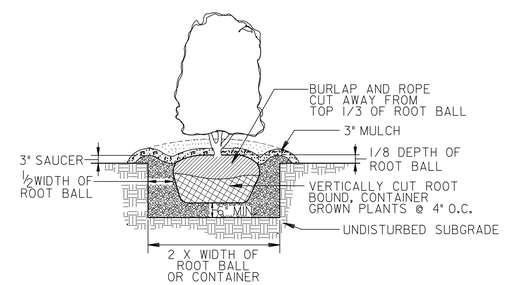
TABLE OF DIMENSIONS

CONCRETE END SECTION							CONCRETE FOOTER		
DIAM.	SLOPE	A	B	C	D	E	W	X	Y
12"	3:1	4"	2'-0"	4'-0½"	6'-0½"	2'-0"	3'-0"	12"	9"
15"	3:1	6"	2'-3"	3'-10"	6'-1"	2'-6"	3'-6"	12"	9"
18"	3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"	4'-0"	12"	9"
21"	3:1	9"	3'-0"	3'-11½"	6'-11½"	3'-6"	4'-6"	12"	9"
24"	3:1	9½"	3'-1½"	2'-6"	6'-11½"	4'-0"	5'-0"	15"	9"
27"	3:1	10½"	4'-1½"	2'-0"	6'-11½"	4'-6"	5'-6"	15"	9"
30"	3:1	1'-0"	4'-6"	1'-11½"	6'-11½"	5'-0"	6'-0"	15"	9"
36"	3:1	1'-3"	5'-3"	2'-10½"	8'-10½"	6'-0"	7'-3"	15"	9"
42"	3:1	1'-4½"	5'-3"	2'-11"	8'-2"	6'-6"	7'-9"	15"	9"
48"	3:1	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	8'-6"	18"	12"
54"	2.4:1	2'-3"	5'-5"	2'-9½"	8'-2½"	7'-6"	9'-0"	18"	12"



PROPOSED DROP STRUCTURE PROFILE

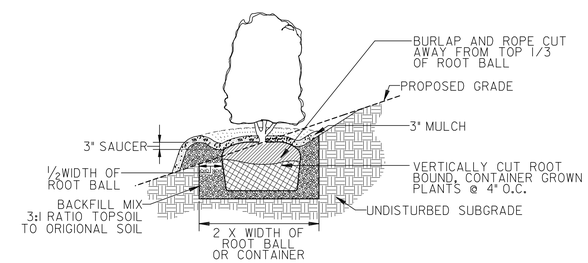
STA. 12+30 TO 12+38 RT
SCALE: 1"=10' HORIZ.
1"=5' VERT.



SHRUB PLANTING DETAIL

B & B AND CONTAINER GROWN

(NOT TO SCALE)



SLOPE PLANTING DETAIL FOR ALL SHRUBS

B & B AND CONTAINER GROWN
NOT TO SCALE

PLANT SCHEDULE – UPLAND TREE ZONE

LEGEND

TYPE	QUANTITY	BOTANICAL NAME/COMMON NAME	SIZE	ROOT	SPACING
LARGE TREES					
	11	Quercus velutina/Black Oak	5' ht.	Container	12' O.C.
	11	Quercus palustris/Pin Oak	5' ht.	Container	12' O.C.
	11	Carya cordiformis/Bitternut Hickory	5' ht.	Container	12' O.C.
	11	Quercus alba/White Oak	5' ht.	Container	12' O.C.
SMALL TREES					
	12	Aronia arbutifolia/Red Chokeberry	3' ht.	Container	8' O.C.
	12	Hamamelis virginiana/Witch Hazel	3' ht.	Container	8' O.C.
	12	Cornus sericea/Red Osier Dogwood	3' ht.	Container	8' O.C.

PLANT SCHEDULE – RIPARIAN TREE /SHRUB ZONE

LEGEND

TYPE	QUANTITY	BOTANICAL NAME/COMMON NAME	SIZE	ROOT	SPACING
TREES					
	13	Cercis canadensis/Eastern Redbud	5' ht.	Container	12' O.C.
	13	Carpinus caroliniana/Ironwood	5' ht.	Container	12' O.C.
	13	Amelanchier canadensis/Eastern Shadbush	5' ht.	Container	12' O.C.
	13	Cornus florida/Flowering Dogwood	5' ht.	Container	12' O.C.
SHRUBS					
	19	Cornus amomum/Silky Dogwood	3' ht.	Container	8' O.C.
	19	Lindera benzoin/Spicebush	3' ht.	Container	8' O.C.
	19	Aronia arbutifolia/Red Chokeberry	3' ht.	Container	8' O.C.
	19	Hamamelis virginiana/Witch-hazel	3' ht.	Container	8' O.C.
	19	Viburnum dentatum/Southern Arrowwood	3' ht.	Container	8' O.C.
	19	Cornus sericea/Red Osier Dogwood	3' ht.	Container	8' O.C.

PLANT SCHEDULE – BIOENGINEERING ZONE

LEGEND

TYPE	QUANTITY	BOTANICAL NAME/COMMON NAME	SIZE	ROOT	SPACING
LIVESTAKES					
	106	Viburnum dentatum/Southern arrowwood	3' - 4' ht.	N/A	3' O.C.
	106	Cornus amomum/Silky Dogwood	3' - 4' ht.	N/A	3' O.C.
	102	Salix purpurea/Streamco Willow	3' - 4' ht.	N/A	3' O.C.

TURFGRASS ZONE SEED MIX SCHEDULE

LEGEND

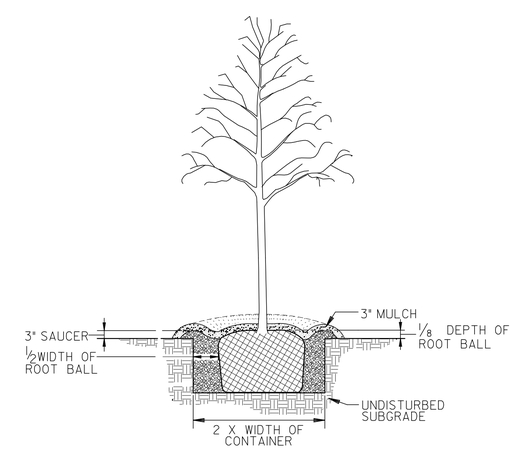
QUANTITY	BOTANICAL NAME/COMMON NAME	PERCENT OF MIX	TOTAL MIX (LBS.)
1	Poa pratengis/Kentucky Blue Grass	33	8.5
1	Lolium perenne/Perennial Rye Grass	33	8.5
1	Schedonoris phoenix/Tall Fescue	34	8.5
TOTAL			25.5

NOTE: APPLICATION RATE FOR TURF GRASS SEED MIX IS 50 LBS./ACRE.

RIPARIAN SEED MIX SCHEDULE

QUANTITY	BOTANICAL NAME/COMMON NAME	PERCENT OF MIX	TOTAL MIX (LBS.)
1	Elymus virginicus/Virgina Wildrye	5	1.7
1	Agrostis alba/Redtop	5	1.7
1	Poa compressa/Canada Bluegrass	5	1.7
1	Festuca arundinacea/Trident tall Fescue	10	3.4
1	Sorghastrum nutans/Indian Grass	5	1.7
1	Lolium multiflorum/Annual Ryegrass	25	8.5
1	Elymus sp./Saint Perennial Ryegrass	20	6.8
1	Festuca rubra/Creeping Red Fescue	25	8.5
TOTAL			34

NOTE: BIOENGINEERING AND RIPARIAN TREE/SHRUB ZONES ARE TO BE SEEDED WITH RIPARIAN SEED MIX (100 LBS.\ACRE).



DECIDUOUS TREE PLANTING DETAIL

CONTAINER GROWN

(NOT TO SCALE)

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509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

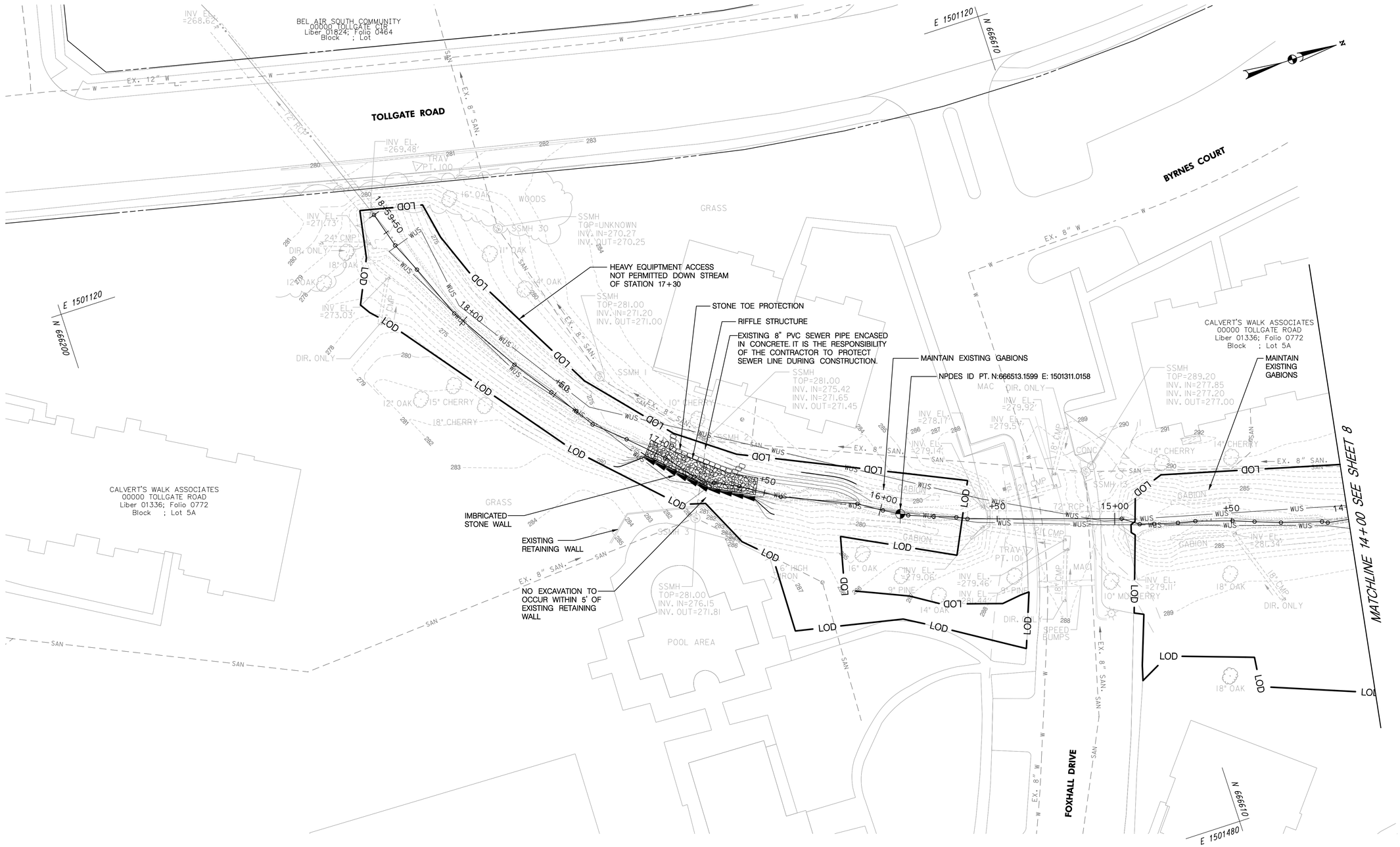
REVISIONS

REV#	DATE	DESCRIPTION

TYPICAL DETAILS

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545
SC PLAN #69766

DATE 08-31-11	DRAWING NO.
SCALE NOT TO SCALE	
DESIGNED BY	SHEET 6 OF 27
DRAWN BY WJW	FWA JOB NUMBER



LEGEND
MANHOLE DROP STRUCTURE
IMBRICATED STONE WALL
STONE TOE PROTECTION
STEP POOL CREST
RIFFLE STRUCTURE MATERIAL
RIP RAP

NOTE:
SEE HARFORD COUNTY WATER AND SEWER DEPARTMENT CONTRACT #91367 FOR SEWER LINE INFORMATION

STONE TOE PROTECTION

STATION FROM	STATION TO
16+61, RT	16+87, RT

IMBRICATED STONE WALL

STATION FROM	STATION TO
16+53, LT	17+03, LT

RIFFLE STRUCTURE

STATION FROM	STATION TO
16+54	17+04

BED MATERIAL MIX

AMOUNT OF STONE (%)	STONE TYPE
40	SHA CLASS 0
50	SHA CLASS I
10	SHA CLASS II
100	TOTAL

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PLAN SHEET

HARFORD COUNTY
DEPARTMENT OF
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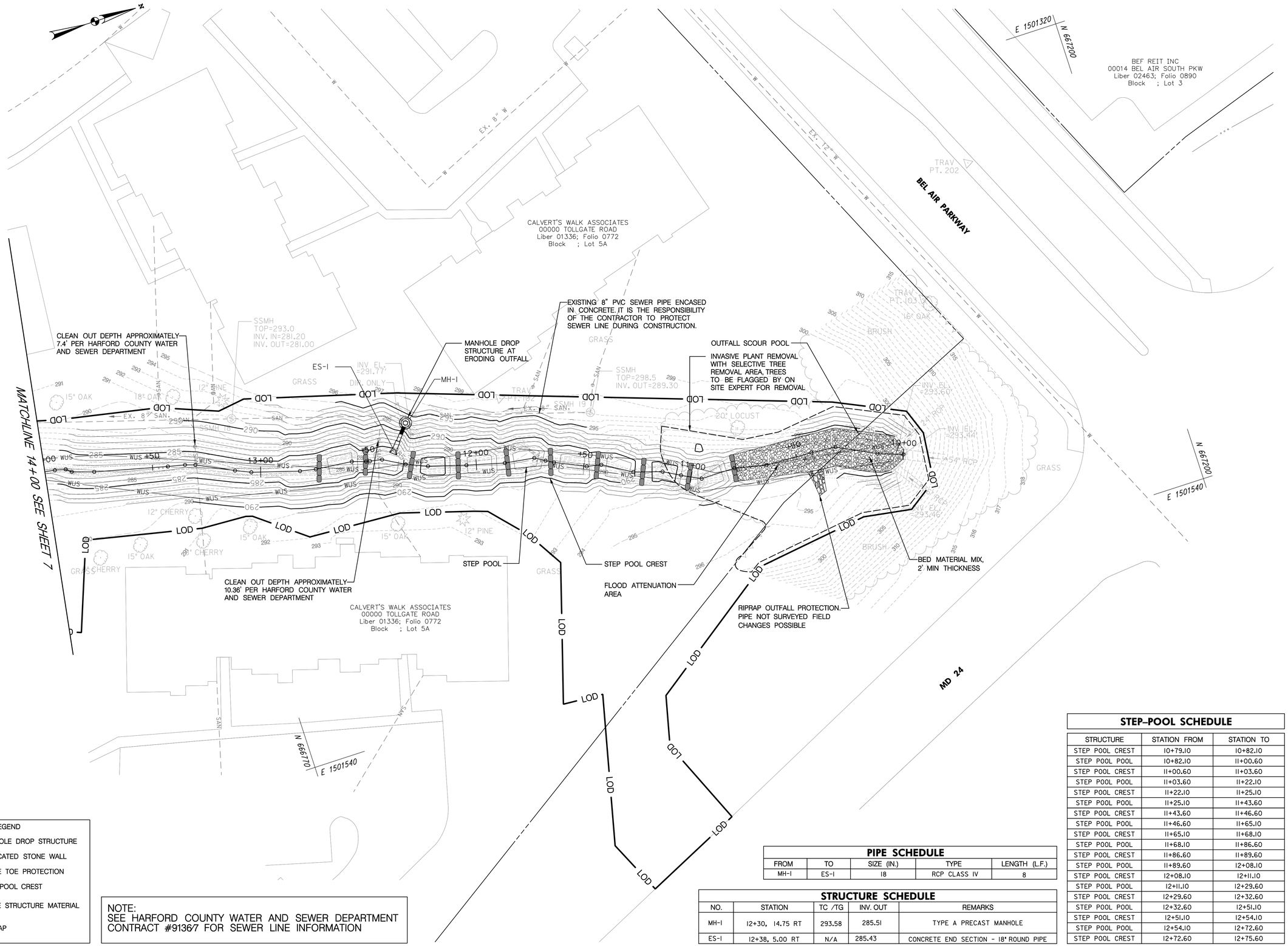
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 20'	
DESIGNED BY HJD	SHEET 7 OF 27
DRAWN BY WJW	FWA JOB NUMBER



LEGEND

- MANHOLE DROP STRUCTURE
- IMBRICATED STONE WALL
- STONE TOE PROTECTION
- STEP POOL CREST
- RIFFLE STRUCTURE MATERIAL
- RIP RAP

NOTE:
SEE HARFORD COUNTY WATER AND SEWER DEPARTMENT CONTRACT #91367 FOR SEWER LINE INFORMATION

PIPE SCHEDULE

FROM	TO	SIZE (IN.)	TYPE	LENGTH (L.F.)
MH-I	ES-I	18	RCP CLASS IV	8

STRUCTURE SCHEDULE

NO.	STATION	TC /TG	INV. OUT	REMARKS
MH-I	12+30, 14.75 RT	293.58	285.51	TYPE A PRECAST MANHOLE
ES-I	12+38, 5.00 RT	N/A	285.43	CONCRETE END SECTION - 18" ROUND PIPE

STEP-POOL SCHEDULE

STRUCTURE	STATION FROM	STATION TO
STEP POOL CREST	10+79.10	10+82.10
STEP POOL POOL	10+82.10	11+00.60
STEP POOL CREST	11+00.60	11+03.60
STEP POOL POOL	11+03.60	11+22.10
STEP POOL CREST	11+22.10	11+25.10
STEP POOL POOL	11+25.10	11+43.60
STEP POOL CREST	11+43.60	11+46.60
STEP POOL POOL	11+46.60	11+65.10
STEP POOL CREST	11+65.10	11+68.10
STEP POOL POOL	11+68.10	11+86.60
STEP POOL CREST	11+86.60	11+89.60
STEP POOL POOL	11+89.60	12+08.10
STEP POOL CREST	12+08.10	12+11.10
STEP POOL POOL	12+11.10	12+29.60
STEP POOL CREST	12+29.60	12+32.60
STEP POOL POOL	12+32.60	12+51.10
STEP POOL CREST	12+51.10	12+54.10
STEP POOL POOL	12+54.10	12+72.60
STEP POOL CREST	12+72.60	12+75.60

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PLAN SHEET

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
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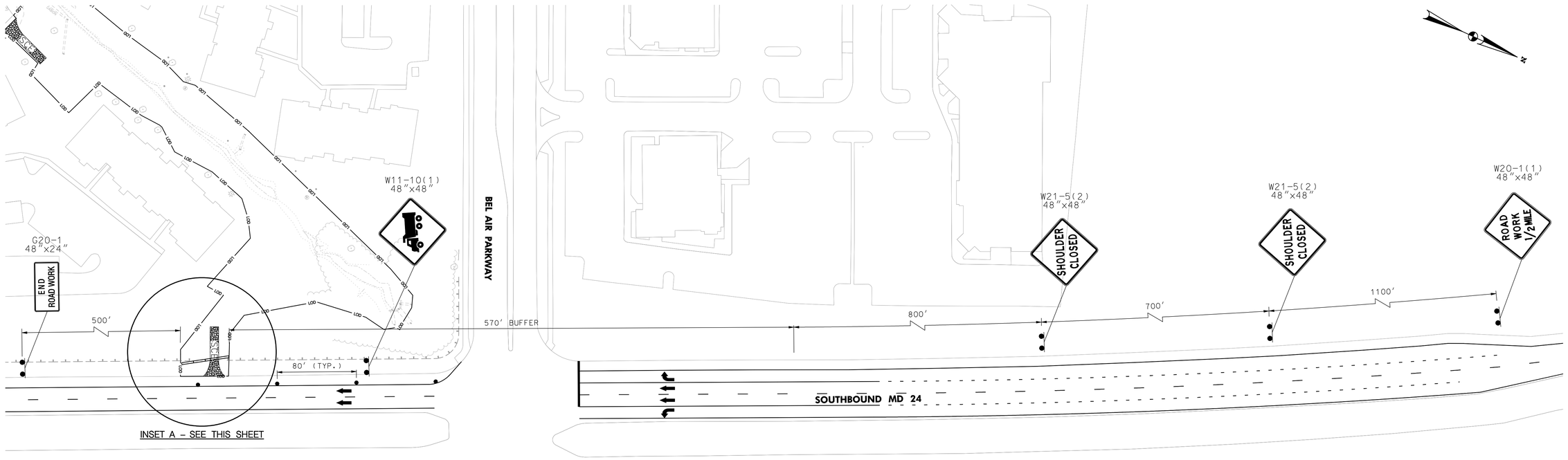

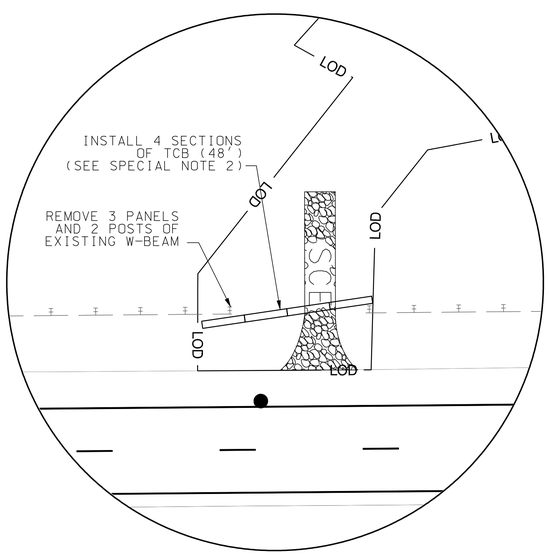

INSET A - SEE THIS SHEET

1" = 20'

GENERAL NOTES

1. ALL TRAFFIC CONTROL MUST BE IN ACCORDANCE WITH THE CURRENT EDITIONS AND REVISIONS OF FHWA'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE MARYLAND STATE HIGHWAY ADMINISTRATION'S WORK ZONE TRAFFIC CONTROL STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY, INSTALL, AND MAINTAIN ALL TRAFFIC CONTROL EQUIPMENT FOR THE DURATION OF THE CONTRACT.
2. SEE THE SPECIAL PROVISION 104.01 TRAFFIC CONTROL PLAN FOR LANE CLOSURE SCHEDULE DAYS AND TIMES.
3. EXITING AND ENTERING THE WORK ZONE VIA MD 24 WILL NOT BE PERMITTED BETWEEN 6:00 AM TO 9:00 AM AND 3:00 PM TO 7:00 PM.
4. LONGITUDINAL DISTANCES OF ALL ADVANCED WARNING SIGNS AND CHANNELIZING DEVICES MAY BE ADJUSTED DUE TO INTERSECTING STREETS, DRIVEWAYS, AND/OR FIELD CONDITIONS AS APPROVED BY THE ENGINEER AND SHA. WHERE ADVANCE SIGNING CONFLICTS WITH TEMPORARY SIGNING FOR LANE CLOSURE OPERATIONS, ADJUSTMENTS TO ADVANCE SIGNING SHALL BE MADE PER THE ENGINEER TO AVOID CONFUSING AND/OR CONFLICTING MESSAGES.
5. ADDITIONAL LANE CLOSURES FOR PLACEMENT OF TRAFFIC CONTROL DEVICES, DELIVERY OF MATERIAL, ETC., MUST BE APPROVED BY AND SCHEDULED IN WRITING WITH THE ENGINEER AND SHALL BE IN ACCORDANCE WITH SHA'S BOOK OF STANDARDS.
6. EXISTING SIGNING THAT CONFLICTS WITH TEMPORARY TRAFFIC PATTERNS SHALL BE REMOVED OR COVERED (USING A METHOD APPROVED BY THE ENGINEER). ANY EXISTING SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR•S EXPENSE.
7. SIGNS USED FOR TEMPORARY TRAFFIC CONTROL THAT ARE NOT APPLICABLE FOR A PARTICULAR CONSTRUCTION PHASE SHALL BE REMOVED OR COMPLETELY COVERED WITH A NON-TRANSPARENT MATERIAL.
8. UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER, TEMPORARY TRAFFIC CONTROL SIGNS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF CONSTRUCTION. SIGNS SHALL HAVE RETROREFLECTIVE SHEETING AND SHALL BE MOUNTED ON BREAKAWAY POSTS OR AN APPROVED EQUAL IF LOCATED WITHIN THE CLEAR ZONE.
9. TRAFFIC CONTROL DEVICES AND OTHER CONSTRUCTION MATERIALS AND FEATURES SHALL NOT INTRUDE INTO THE USABLE WIDTH OF THE SIDEWALK, TEMPORARY PATHWAY, OR OTHER PEDESTRIAN FACILITY.
10. AS NECESSARY, PORTABLE VARIABLE MESSAGE SIGN (PVMS) MESSAGES AND LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
11. THE CONTRACT LUMP SUM PRICE FOR MAINTENANCE OF TRAFFIC WILL BE FULL COMPENSATION FOR ALL WORK NECESSARY TO MAINTAIN TRAFFIC, INCLUDING RELOCATING, TURNING, COVERING, SLIDING, REMOVING, CLEANING, AND MAINTAINING LIKE NEW ALL EXISTING AND TEMPORARY SIGNS AND TRAFFIC SIGNAL HEADS. THESE CONDITIONS SHALL ALSO APPLY TO ANY OTHER TRAFFIC CONTROL DEVICE NOT INCLUDED ELSEWHERE IN THE SPECIFICATIONS, BUT NECESSARY FOR THE FULFILLMENT OF THE CONTRACT REQUIREMENTS AND THE IMPLEMENTATION OF THE APPROVED TRAFFIC CONTROL PLAN, AND FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
12. REFER TO THE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
13. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN ANY AND ALL ACCESS OR UTILITY PERMITS TO COMPLETE MAINTENANCE OF TRAFFIC WORK.

SPECIAL NOTES

1. THIS MOT PLAN GENERALLY FOLLOWS TTCTA STANDARD NO. MD 104.04-01.
2. DURING NON-WORKING HOURS, TEMPORARY CONCRETE BARRIER (TCB) SHALL BE PLACED AS SHOWN ON THE PLAN. NO BLUNT ENDS OF THE TCB OR THE EXISTING W-BEAM SHALL BE LEFT EXPOSED.
3. DURING WORKING HOURS, TCB SHALL BE STORED BEHIND THE EXISTING W-BEAM UPSTREAM OF THE STABILIZED CONSTRUCTION ENTRANCE.
4. AT THE COMPLETION OF THE PROJECT, REMOVED W-BEAM POSTS AND PANELS SHALL BE REPLACED AND APPROVED BY THE ENGINEER.
5. FAILURE OF THE CONTRACTOR TO ADHERE TO THESE CONDITIONS WILL RESULT IN THE IMPLEMENTATION OF MORE RESTRICTIVE MAINTENANCE OF TRAFFIC REQUIREMENTS.
6. MODIFICATION OF THIS PROPOSED MOT SET UP SHALL BE REQUESTED AT LEAST ONE (1) WEEK IN ADVANCE FROM MS. ERIN KUHN, SHA DISTRICT 4 ASSISTANT DISTRICT ENGINEER - TRAFFIC AT (410) 229-2381.

MAINTENANCE OF TRAFFIC LEGEND

●	CHANNELIZATION DEVICE
●●●	TEMPORARY TRAFFIC SIGN
═══	TEMPORARY CONCRETE BARRIER (TCB)
←	TRAFFIC FLOW ARROW
SCE	STABILIZED CONSTRUCTION ENTRANCE
— LOD —	LIMIT OF DISTURBANCE

McCormick Taylor
Engineers & Planners Since 1946
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4th Floor
Baltimore, MD 21202
(410) 662-7400

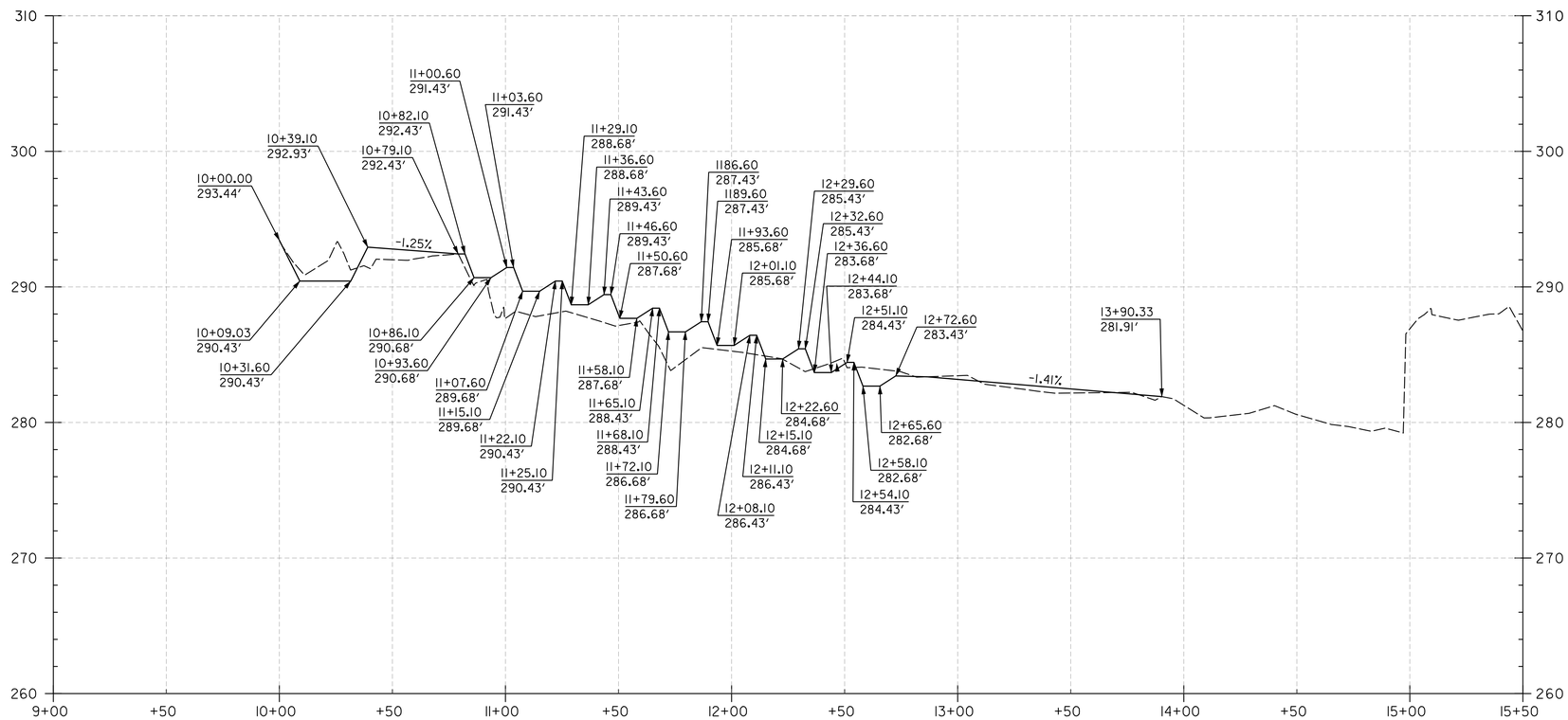
REV#	DATE	REVISIONS DESCRIPTION

MOT PLAN SHEET

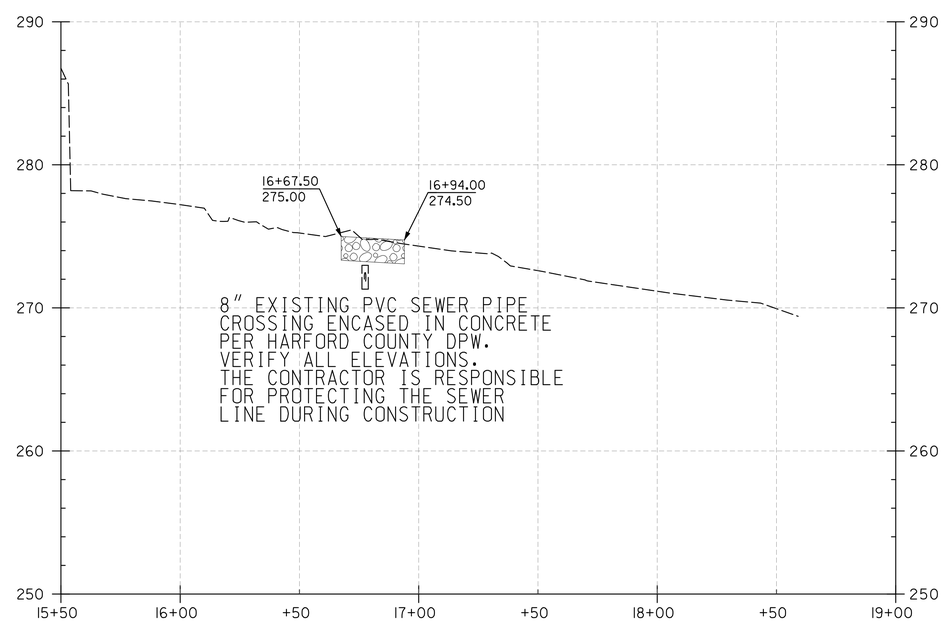
HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS

WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3447
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 50'	
DESIGNED BY HJD	SHEET 9 OF 27
DRAWN BY WJW	FWA JOB NUMBER



MAINSTEM PROFILE
STA. 9+00 TO 15+50



MAINSTEM PROFILE
STA. 15+50 TO 19+00

SCALE:
HORIZONTAL: 1"=50' VERTICAL: 1" = 10'

LEGEND

- EXISTING PROFILE
- PROPOSED PROFILE
- SAN EXISTING SANITARY LINE

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PROFILE

HARFORD COUNTY
DEPARTMENT OF
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WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
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410-638-3545
S/C PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE AS SHOWN	
DESIGNED BY	SHEET 10 OF 27
DRAWN BY WJW	FWA JOB NUMBER

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK.

2. THE CONTRACTOR SHALL NOTIFY THE HARFORD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 638-3128 AND WATER AND SEWER DIVISION (410) 638-3300: A MINIMUM OF 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR AT (301) 665-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY

3. ORANGE HIGH VISIBILITY CONSTRUCTION FENCE (OCF) SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS AND ALONG THE OUTER LOD PERIMETER. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRECONSTRUCTION MEETING.

4. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, AND A REPRESENTATIVE FROM THE EROSION AND SEDIMENT CONTROL INSPECTOR.

5. THE CONTRACTOR SHALL REFER TO STANDARD NO. MD 104.03-01 FOR TRAFFIC CONTROL DETAILS AND UTILIZE SHOULDER CLOSURES WHEN NECESSARY.

STAGE 1

1. CONSTRUCT THE PERIMETER CONTROLS AS SHOWN ON THE PLAN INCLUDING: OCF, BOTH STABILIZED CONSTRUCTION ENTRANCES, AND SUPER SILT FENCE, CLEARING ONLY THE AREAS NEEDED TO INSTALL THE E&S CONTROLS. CONSTRUCT THE MULCH ACCESS ROAD AS SHOWN ON THE PLANS ALONG THE STREAM CHANNEL. CARE SHALL BE TAKEN TO MINIMIZE DISTURBANCE TO ALL TREES. NO DISTURBED AREA SHALL BE LEFT OVERNIGHT UNLESS DIRECTED TO AN APPROVED EROSION AND SEDIMENT CONTROL DEVICE. STAGING AND STORAGE AREAS MAY BE CLEARED AND UTILIZED AS NEEDED.

2. AT THE END OF EACH DAY ALL DISTURBED AREAS SHALL BE STABILIZED UNLESS DIRECTED TO AN APPROVED EROSION AND SEDIMENT CONTROL DEVICE. AREAS WITHIN THE CHANNEL SHALL BE STABILIZED WITH STREAM BED MATERIAL, CHANNEL BANKS SHALL BE STABILIZED WITH MATTING, ALL OTHER AREAS SHALL BE STABILIZED WITH MULCH.

A. CONSTRUCT SANDBAG DIVERSION AND PUMP AROUND BETWEEN STA. 10+ 00 TO STA. 15+00. STREAM RESTORATION SHALL PROCEED UPSTREAM TO DOWNSTREAM UTILIZING SANDBAG DAMS WITH PUMP AROUNDS TO ALLOW ACCESS INTO THE STREAM. WORK AREA SHALL BE DEWATERED AND PUMPED TO AN APPROVED DEWATERING DEVICE. COMMENCE CHANNEL GRADING, AND CONSTRUCT INCHANNEL STABILITY STRUCTURES.

B. CONSTRUCT SANDBAG DIVERSION AND PUMP AROUND BETWEEN STA. 16+50 TO STA. 18+50. STREAM RESTORATION SHALL PROCEED DOWNSTREAM TO UPSTREAM UTILIZING SANDBAG DAMS WITH PUMP AROUNDS TO ALLOW ACCESS INTO THE STREAM. WORK AREA SHALL BE DEWATERED AND PUMPED TO AN APPROVED DEWATERING DEVICE. COMMENCE CHANNEL GRADING AND CONSTRUCTOIN CHANNEL STABILITY STRUCTURES.

5. UPON COMPLETION OF WORK PERMANENTLY STABILIZE ALL DISTURBED AREAS AS SHOWN ON THE LANDSCAPE PLANS.

6. WHEN AREAS ARE FULLY STABILIZED REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND IMMEDIATELY STABILIZE ANY DISTURBED AREAS.

FOR SIGNING AND CLOSURES REFER TO STD # MD 104.03-01 INSTALL W11-10 MOTORIZED TRAFFIC SIGN (2006 MUTCD SECTION 6F.34) AND CONTRACT DOCUMENTS

CONTRACTOR SHALL ONLY WORK BETWEEN 8:30 AM TO 5:00 PM MONDAY THRU FRIDAY

PUMPS SHALL ONLY OPERATE DURING APPROVED WORKING HOURS

PERMANENT VEGETATIVE STABILIZATION

ALL DISTURBED AREAS WHICH ARE NOT TO BE PAVED SHALL BE PERMANENTLY STABILIZED AS FOLLOWS:

A) SEEDBED PREPARATION:
LOOSEN UPPER THREE INCHES BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS AFTER SPREADING FOUR INCHES OF TOPSOIL.

B) SOIL AMENDMENTS:
APPLY 500 LBS PER ACRE OF 10-10-10 FERTILIZER AND TWO TONS PER ACRE OF LIME.

C) SEEDING:*
FOR PERIODS OF MARCH I TO MAY 15 AND AUGUST 15 TO OCTOBER 15, SEED WITH 125 LBS PER ACRE OF TALL FESCUE, 15 LBS PER ACRE OF PERENNIAL RYEGRASS, AND 10 LBS OF KENTUCKY BLUEGRASS.

FOR PERIOD OF MAY 16 TO AUGUST 14, SEED WITH 110 LBS PER ACRE OF T 41- 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 60 LBS 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 SEEDED AREAS. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHALL BE INCREASED TO 2.5 TONS PER ACRES. **

MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND AND WATER. THE TYPE OF MULCH ANCHORING USED MUST COMPLY WITH THE 1994 MARYLAND STANDARD AND SPECIFICATIONS.

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED, THEY MUST COMPLY WITH THE 1994 MARYLAND STANDARD AND SPECIFICTAIONS, CHAPTER 20, TABLE 25.
** IF A DIFFERENT TYPE OF MULCH IS TO BE USED, IT MUST COMPLY WITH THE 1994 MARYLAND STANDARD AND SPECIFICTION, CHAPTER 20.

TEMPORARY VEGETATION STABILIZATION

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 PERIODS OF MARCH 1 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 PERIOD OF MAY 1 TO AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS OR 40 LBS PER ACRE OF JAPANESE OR FOXTAIL MILLET.

FOR THE PERIOD 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 2 TONS PER ACRE OF STRAW OVER ALL SEEDED AREAS. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHALL BE INCREASED TO 2.5 TONS PER ACRES. **

MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND AND WATER. THE TYPE OF MULCH ANCHORING USED MUST COMPLY WITH THE 1994 MARYLAND STANDARD AND SPECIFICATIONS.

HARFORD COUNTY SEDIMENT CONTROL NOTES

1. THE CONTRACTOR/OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. NO FURTHER 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. ANY WORK BEYOND THE LIMITS OF DISTURBANCE 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 DPW. NO ADDITIONAL CONSTRUCTION ACTIVITY WILL BE AUTHORIZED WITHOUT THE APPROVAL OF THE 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 PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:A) SEVEN CALENDAR DAYS ON SLOPE GREATER THAN 3: I, ALL WATERWAYS AND TO THE SURFACE OF ALL PERIMETER CONTROLS. B) FOURTEEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS OF THE PROJECT SITE.

7. SEDIMENT BASINS MUST BE BUILT TO DESIGN SPECIFICATIONS SHOWN ON THE PLAN. 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.

8. TEMPORARY FENCING SHALL BE PLACED AROUND ALL SEDIMENT BASINS, TRAPS, AND PONDS DURING CONSTRUCTION AND SITE GRADING.

9. 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 NPDES REGULATIONS. A COPY OF THE APPROVED SEDIMENT CONTROL PLANS SHALL BE AVAILABLE AT THE SITE AT ALL TIMES.

10. CUT AND/OR FILL SHALL BE DONE IN CONFORMANCE WITH 1994 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS FOR LAND GRADING.

11. 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.

12. 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.

13. ALL MATERIAL ORIGINATING FROM THE DEVELOPMENT OF THE PROPERTY AND DEPOSITED ON THE PUBLIC RIGHT-OF-WAY SHALL BE IMMEDIATELY REMOVED.

14. STORM DRAIN INLETS AND OUTLETS SHALL BE PROTECTED PER 1994 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.

15. TOPSOIL, LIMING, FERTILIZING, SEEDING, MULCHING, SOD, ETC. ARE ALL ESSENTIAL PARTS OF THE SEDIMENT CONTROL AND MUST BE COMPLETED ALONG WITH ALL OTHER PRACTICES.

16. TRAPS TO BE REMOVED SHALL BE DEWATERED AS PER THE 1994 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.

17. PRIOR TO REMOVAL OF TRAPS OR CONVERSION OF SEDIMENT BASINS TO SWM FACILITIES, THE STORM DRAINS WILL BE FLUSHED

18. 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 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.

SITE ANALYSIS

TOTAL AREA OF SITE: 1.28 ACRES

AREA TO BE CLEARED: 1.13

AREA TO VEGETATED: 1.13

AREA TO BE PAVED: 0.00

AREA DISTURBED: 1.13

TOTAL CUT:

TOTAL FILL:

TOPSOIL:

NPDES ID PT N:666513.1599 E:1501311.0158

PROFESSIONAL CERTIFICATION

"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY PROFESSIONAL ENGINEER UNDER THE LAW OF

STATE OF MARYLAND, LICENSE No. 33945

EXPIRATION DATE 01-14-13

ENGINEER'S CERTIFICATION
I certify that this plan for erosion and sediment control and storm water 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 1994 Maryland Standard and Specifications for Soil Erosion and Sediment Control.

(Engineer / Date)

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 a Department of Natural Resources 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 their authorized agents, or as deemed necessary

(Owner / Date)

EROSION AND SEDIMENT CONTROL
PLAN #:59766

RECOMENDED FOR APPROVAL:

HARFORD COUNTY - D.P.W.

TECHNICAL CONCURRENCE:

NRCS-NATURAL RESOURCES
CONSERVATION SERVICE

APPROVED:

HARFORD SOIL CONSERVATION DISTRICT

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

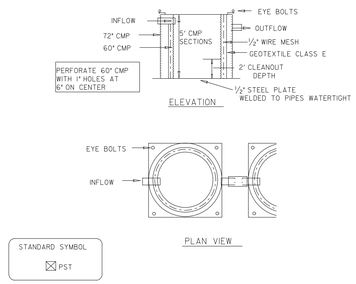
REV#	DATE	REVISIONS DESCRIPTION

EROSION AND SEDIMENT
GENERAL NOTES SHEET

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3547
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE NOT TO SCALE	
DESIGNED BY JMH	SHEET 11 OF 27
DRAWN BY WJW	FWA JOB NUMBER

DETAIL 21 – PORTABLE SEDIMENT TANK



Construction Specifications

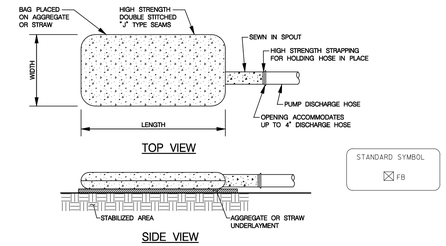
1. The following formula should be used in determining the storage volume of the sediment tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity.

2. An example of a typical sediment tank is shown above. Other container designs can be used if the storage volume is adequate and approval is obtained from the local approving agency.

3. Tanks may be connected in series.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D - 14 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

FILTER BAG DETAIL

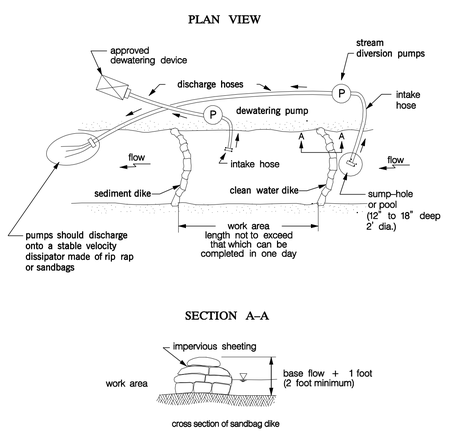


DEWATERING FILTER BAG SPECIFICATIONS

1. FILTER BAG SHALL BE MADE OF NON-WOVEN GEOTEXTILE WITH A MINIMUM SURFACE AREA OF 225 SQUARE FEET PER SIDE.
2. ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD. SEAM STRENGTH SHALL WITHSTAND 100 LBIN USING ASTM D-4884 TEST METHOD.
3. FILTER BAG SHALL HAVE A NOZZLE LARGE ENOUGH TO ACCOMMODATE A FOUR (4) INCH DIAMETER PUMP DISCHARGE HOSE.
4. NOZZLE SHALL BE SEALED TIGHTLY AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE TO PREVENT UNFILTERED WATER FROM ESCAPING.
5. FILTER BAG SHALL BE PLACED ON A LEVEL OR GENTLY SLOPING AREA (5% MAXIMUM).
6. FILTER BAG SHALL BE PLACED UPON A BASE OF STRAW BALES OR THREE (3) INCHES OF CLEAN STONE TO PROMOTE DEWATERING THROUGH BOTTOM SURFACE OF THE FILTER BAG.
7. PURIFYING RATE SHALL BE CONTROLLED TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG.AS THE BAG BECOMES FILLED WITH SEDIMENT THE PUMPING RATE SHALL BE REDUCED.
8. WHEN SEDIMENTS FILL HALF THE VOLUME OF A FILTER BAG, IMMEDIATELY REMOVE THAT BAG FROM SERVICE. PROPERLY DISPOSE OF SPENT BAGS WITH THEIR SEDIMENT.
9. THE FILTER BAG SHALL BE DEWATERED, REMOVED AND DISPOSED OF UPON COMPLETION OF PUMPING OPERATIONS OR AFTER IT HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. THE DEWATERED SEDIMENT FROM THE BAG SHALL BE SPREAD IN AN UPLAND AREA AND STABILIZED WITHIN 24 HOURS.
10. THE GEOTEXTILE FABRIC SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS WITH PROPERTIES DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROPERTIES

WEIGHT	ASTM D-3776	10 OZ/YD
GRAB TENSILE	ASTM D-4632	210 LBS.
PUNCTURE	ASTM D-4833	150 LBS.
FLOW RATE	ASTM D-4491	70 GAL/MIN/FT^2
PERMITIVITY	ASTM D-4491	1.3 SEC-1
UV RESISTANCE	ASTM D-4355	70%
APPARENT OPENING SIZE (AOS)%	ASTM D-4751	40-80

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



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.2 - 2	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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

DESCRIPTION

The work should consist of installing a temporary pump around and supporting measures to divert flow around instream construction sites.

IMPLEMENTATION SEQUENCE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.

2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.

3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.

4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimizedisturbance within the work area whenever possible.

5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, 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 sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. 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 should not be conducted in the channel during rain events.

6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

7. Water from the work area should 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.

8. 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).

9. All stream restoration measures should 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.

10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.

11. A pump-around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should 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 should discharge onto the same velocity dissipater used for the main stem pump around.

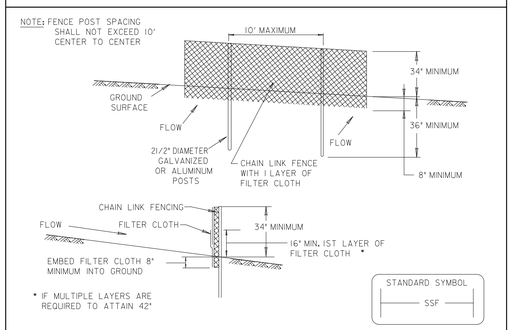
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction 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.

13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.

14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

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

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft^2 / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter St.
4th Floor
Baltimore, MD 21202
(410) 662-7400

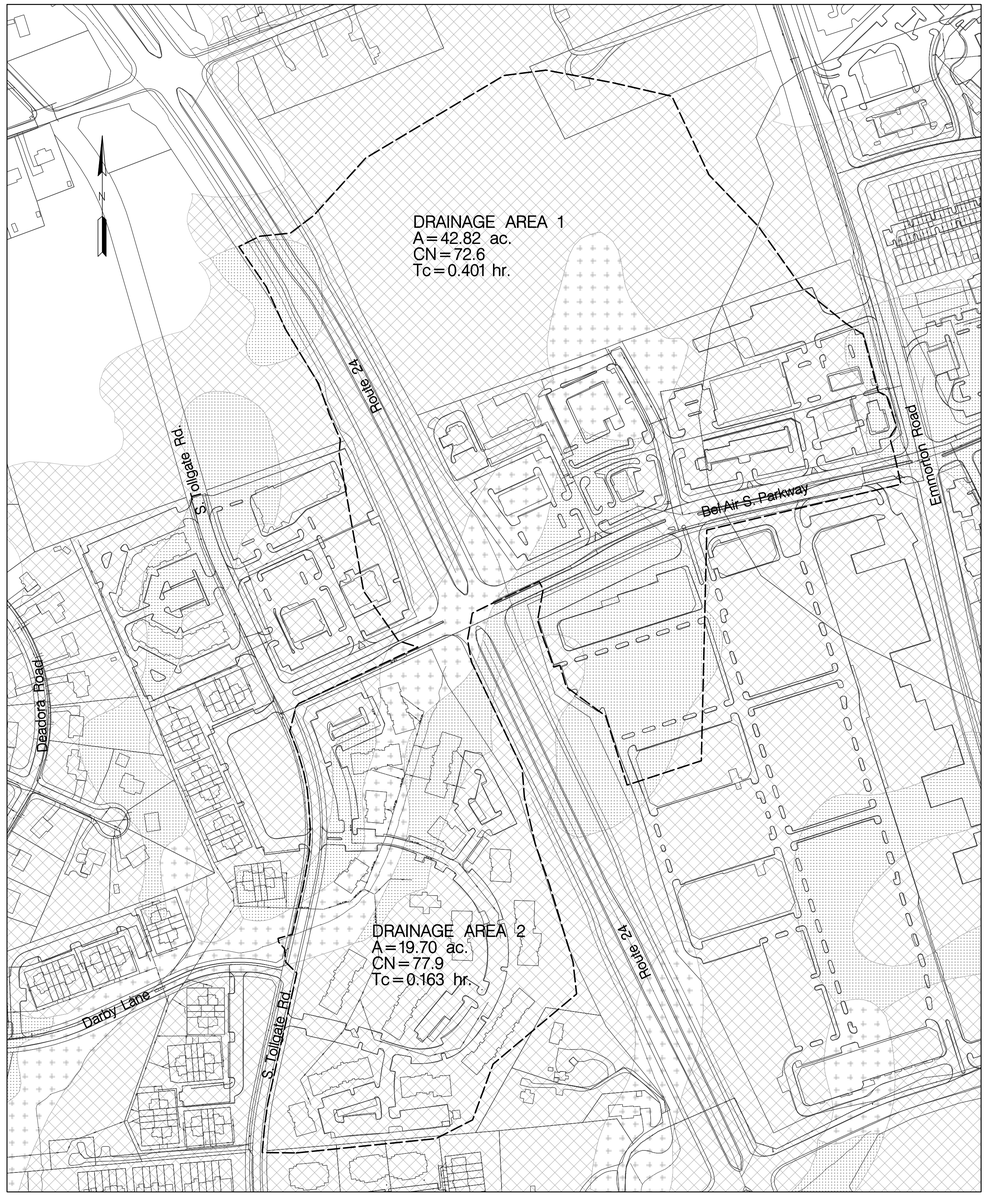
REV#	DATE	DESCRIPTION

REVISIONS

EROSION AND SEDIMENT CONTROL DETAILS

HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3545
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE NOT TO SCALE	
DESIGNED BY JMH	SHEET 12 OF 27
DRAWN BY WJW	FWA JOB NUMBER



300' 0 300' 600'

SCALE: 1" = 300'

LEGEND

DA Boundary

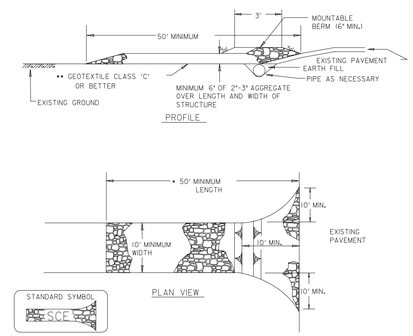
Hydrologic Soil Group

B

C

D

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE

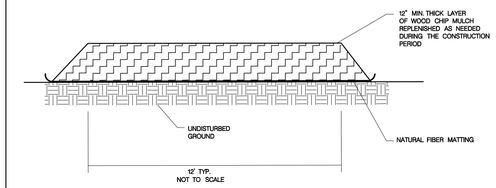


Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MULCH ACCESS ROAD



NOTES:

1. NATURAL FIBER MATTING SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC, OVERLAP FABRIC BY 18" MINIMUM AT SEAMS.
2. NATURAL FIBER MATTING MAY BE ELIMINATED AT DIRECTION OF ENGINEER.
3. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.

SOIL STABILIZATION MATTING

DESCRIPTION

Soil stabilization matting shall be placed to the details on the Construction Plans and as directed by the Engineer.

MATERIALS

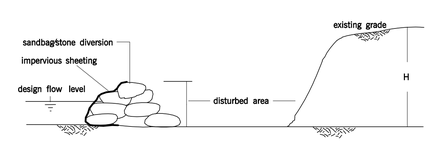
1. Soil stabilization matting shall be Nedia Koir Mat 700 type matting, GeoCoir DeKoWe 900 type matting or an equivalent matting consisting of machine produced matting meeting the following minimum specifications:

Material	Woven Coir Matting
Thickness	0.3 inches
Weight	20 oz/SY
Water Velocity	12 ft./ sec.
Open Area	50%

2. Staples for securing the soil stabilization matting shall be U steel wire with a minimum gage of 8. The U shaped staples shall average 1 to 1.5 inches wide. The length of the staples shall be 6 inches minimum.

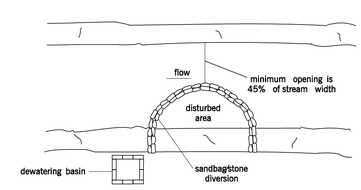
Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION

TRANSVERSE SECTION VIEW



H/2+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

Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION

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.

TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.5 - 1,2	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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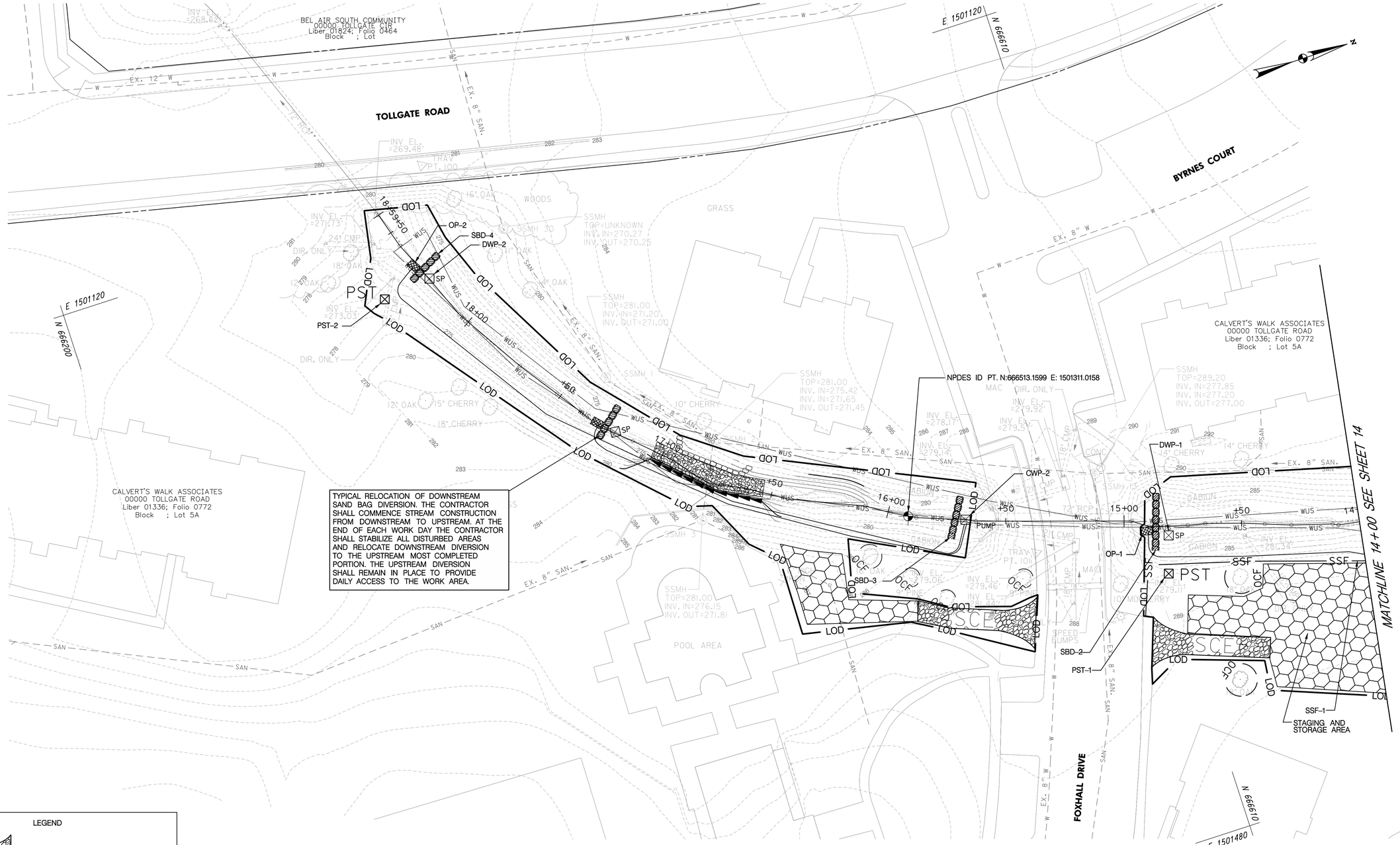
REVISIONS

REV#	DATE	DESCRIPTION

EROSION AND SEDIMENT CONTROL DETAILS

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3546
SC PLAN #S0766

DATE	DRAWING NO.
08-31-11	
SCALE NOT TO SCALE	
DESIGNED BY JMH	SHEET 13 OF 27
DRAWN BY WJW	FWA JOB NUMBER



LEGEND

SCE	STABILIZED CONSTRUCTION ENTRANCE
	MULCH ACCESS ROAD
	PUMP DISCHARGE OUTFALL PROTECTION
PUMP	CLEAN WATER PUMP
SP	DEWATERING PUMP
PST	PORTABLE SEDIMENT TANK
SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
	SAND BAG DIVERSION
OCF	EXISTING TREE TO REMAIN

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED AT THE END OF EACH WORKDAY.
2. REFER TO THE SEQUENCE OF CONSTRUCTION FOR WORK HOURS.

SUPER SILT FENCE (SSF)

FROM	TO	QTY (LF)	REMARKS
13+90	14+90, LT	125	SSF-1

PORTABLE SEDIMENT TANK (PST)

STATION	QTY (EA)	REMARKS
14+80.90	1	PST-1

STABILIZED CONSTRUCTION ENTRANCE (SCE)

STATION	QTY (EA)	REMARKS
14+75, LT	1	
15+50, LT	1	

OUTFALL PROTECTION (OP)

STATION	QTY (EA)	REMARKS
14+91.90	1	OP-1
18+33.07	1	OP-2

• INCIDENTAL TO THE DEWATERING PUMP

DEWATERING PUMP (DWP)

STATION	QTY (EA)	REMARKS
14+80.79	1	DWP-1
18+23.36	1	DWP-2

CLEAN WATER PUMP (CWP)

STATION	QTY (EA)	REMARKS
15+67.07	1	CWP-2

MULCH ACCESS ROAD

FROM	TO	QTY (SY)	REMARKS
15+83, LT	16+38, LT	105	

ORANGE CONSTRUCTION FENCE (OCF)

STATION	QTY (LF)	REMARKS
10+00 TO 18+50	2700	

SAND BAG DIVERSIONS (SBD)

FROM	TO	QTY (LF)	REMARKS	TOP ELVE.
14+84.67	14+87.83	25	SBD-2	
15+67.32	15+81.62	19	SBD-3	
18+26.65	18+30.69	16	SBD-4	

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REV#	DATE	DESCRIPTION

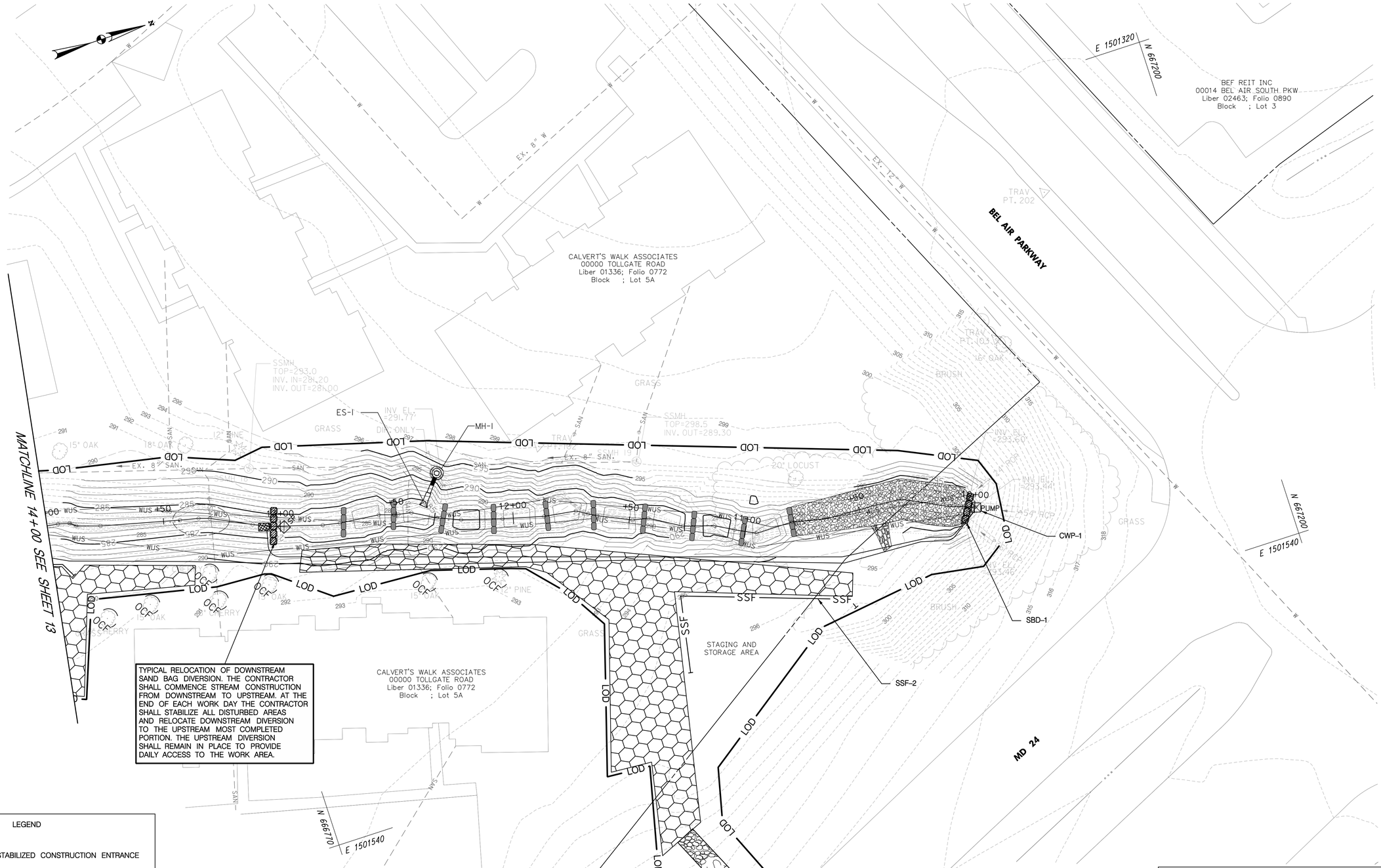
REVISIONS

EROSION AND SEDIMENT CONTROL PLAN

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS

WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545
SC PLAN #59766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 20'	
DESIGNED BY JMH	SHEET 14 OF 27
DRAWN BY WJW	FWA JOB NUMBER



LEGEND

SCE	STABILIZED CONSTRUCTION ENTRANCE
	MULCH ACCESS ROAD
	PUMP DISCHARGE OUTFALL PROTECTION
PUMP	CLEAN WATER PUMP
SP	DEWATERING PUMP
PST	PORTABLE SEDIMENT TANK
SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
	SAND BAG DIVERSION
OCF	EXISTING TREE TO REMAIN

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED AT THE END OF EACH WORKDAY.
2. REFER TO THE SEQUENCE OF CONSTRUCTION FOR WORK HOURS.

STABILIZED CONSTRUCTION ENTRANCE (SCE)

STATION	QTY (EA)	REMARKS
10+05.19	1	

CLEAN WATER PUMP (CWP)

STATION	QTY (EA)	REMARKS
10+05.19	1	CWP-1

MULCH ACCESS ROAD

FROM	TO	QTY (SY)	REMARKS
10+60, LT	14+80, LT	1101	

SAND BAG DIVERSIONS (SBD)

FROM	TO	QTY (LF)	REMARKS	TOP ELVE.
10+05.05	10+12.17	22	SBD-1	295

SUPER SILT FENCE (SSF)

FROM	TO	QTY (LF)	REMARKS
10+63, LT	11+15, LT	110	SSF-2

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EROSION AND SEDIMENT CONTROL PLAN

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR, MARYLAND 21014
410-638-3545
SC PLAN #99766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 20'	
DESIGNED BY JMH	SHEET 15 OF 27
DRAWN BY WJW	FWA JOB NUMBER

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REVISIONS

LANDSCAPE SHEET

HARFORD COUNTY
DEPARTMENT OF
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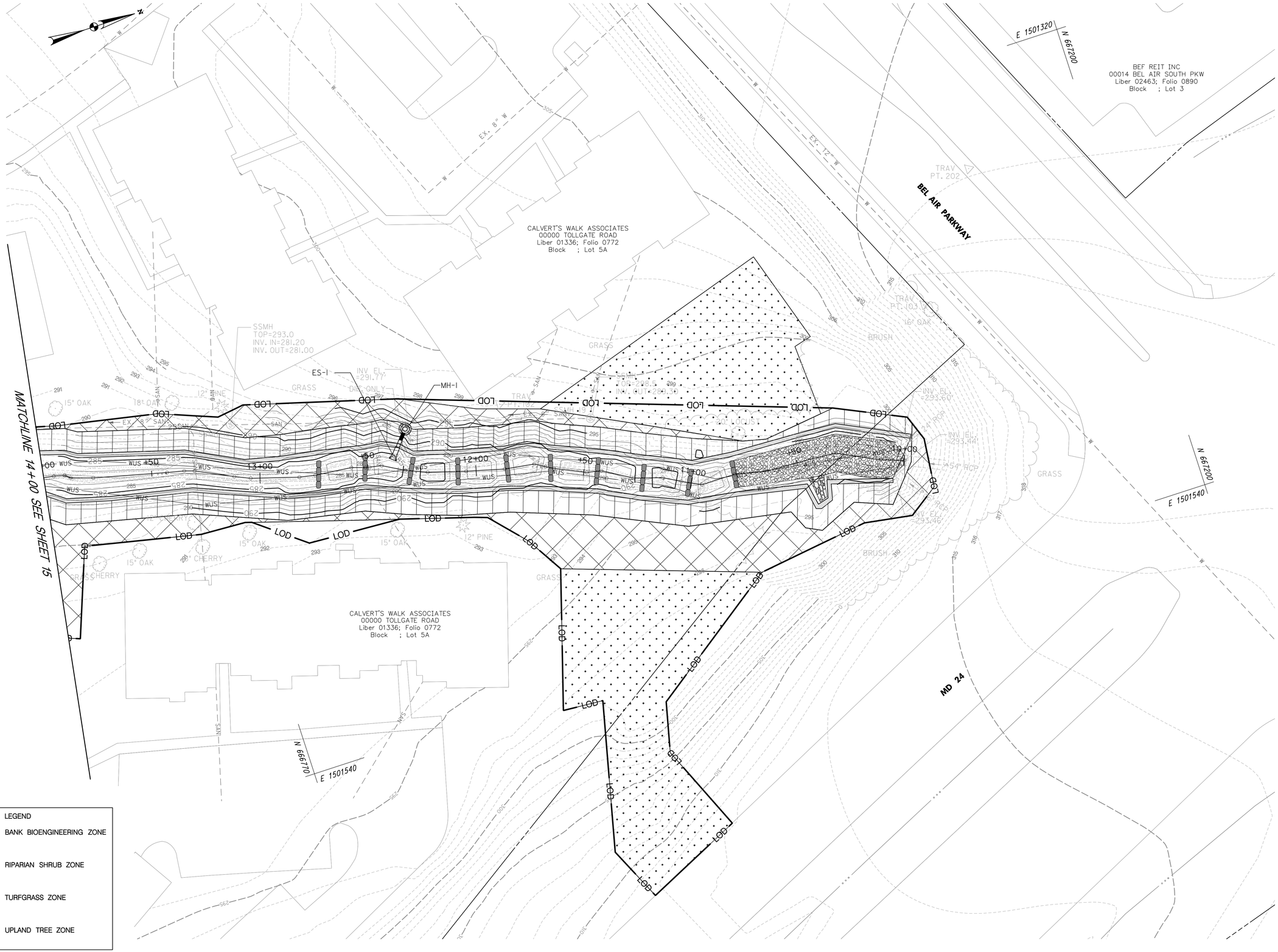
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545
SC PLAN #39766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 20'	
DESIGNED BY	SHEET 16 OF 27
DRAWN BY WJW	FWA JOB NUMBER



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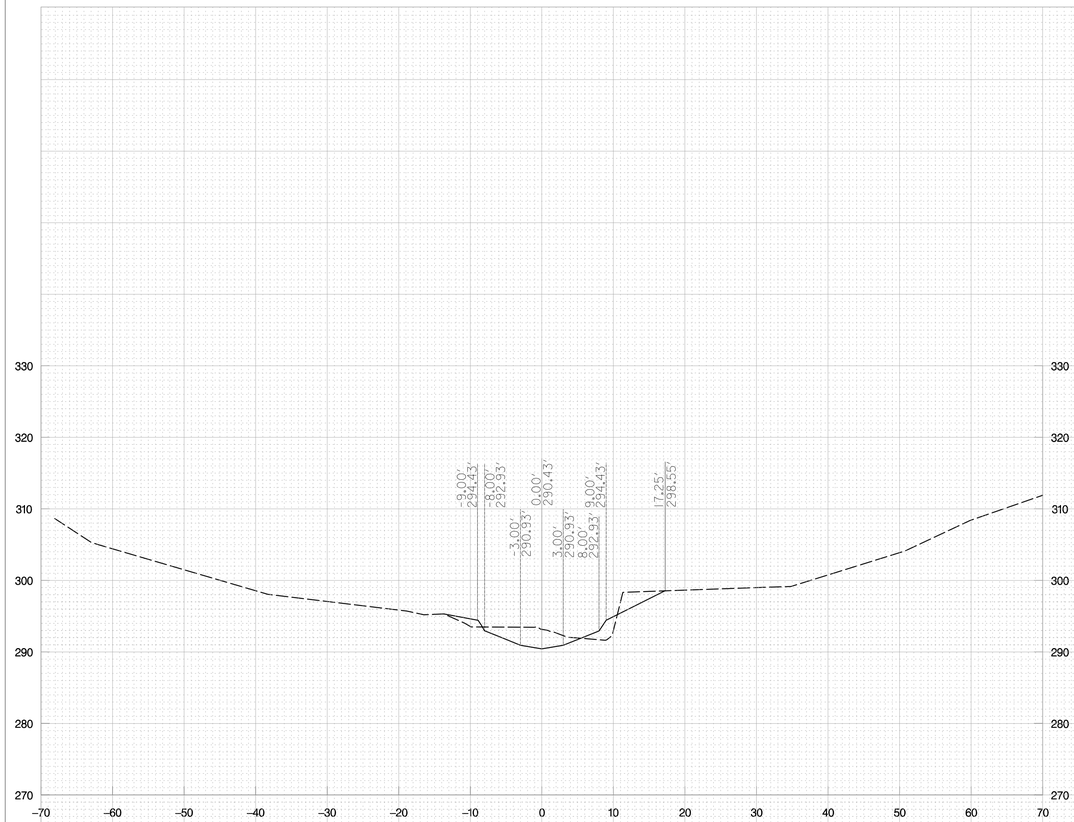
REV#	DATE	DESCRIPTION

LANDSCAPE SHEET

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545
SC PLAN #99766

DATE 08-31-11	DRAWING NO.
SCALE 1" = 20'	
DESIGNED BY	SHEET 17 OF 27
DRAWN BY WJW	FWA JOB NUMBER



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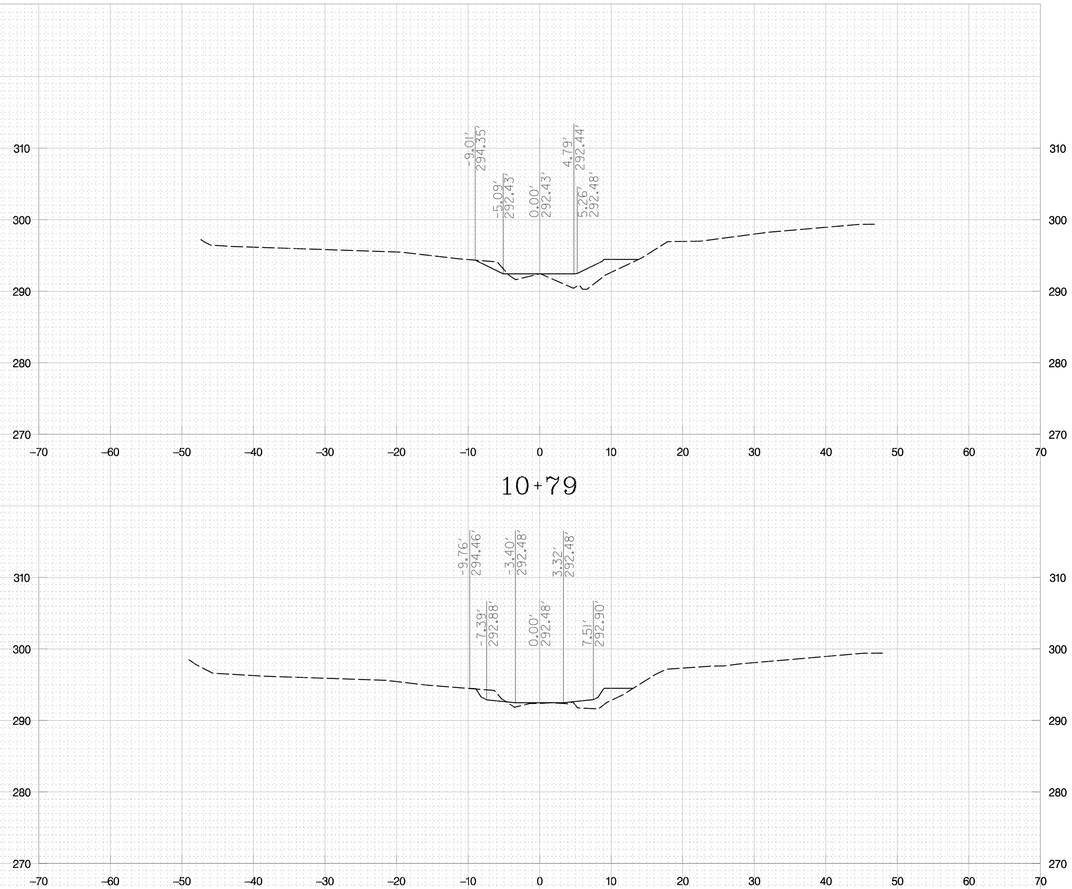

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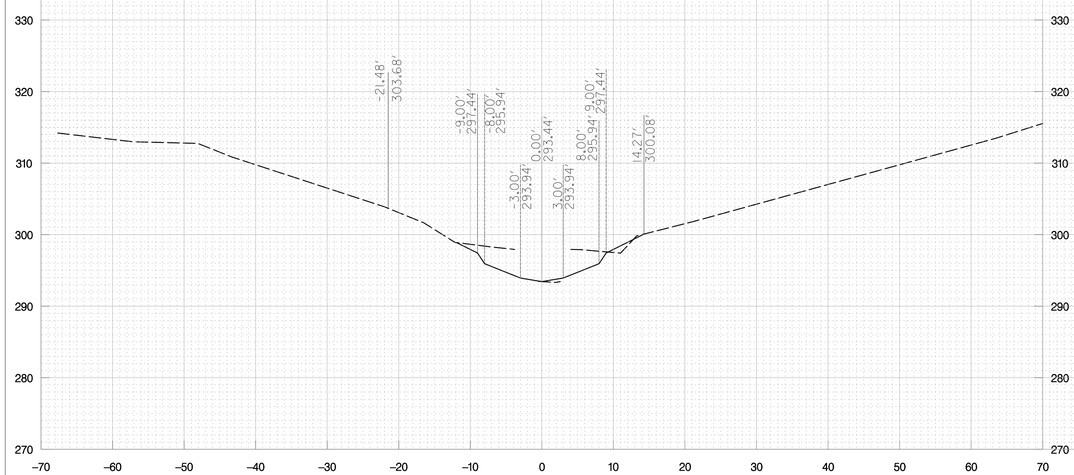

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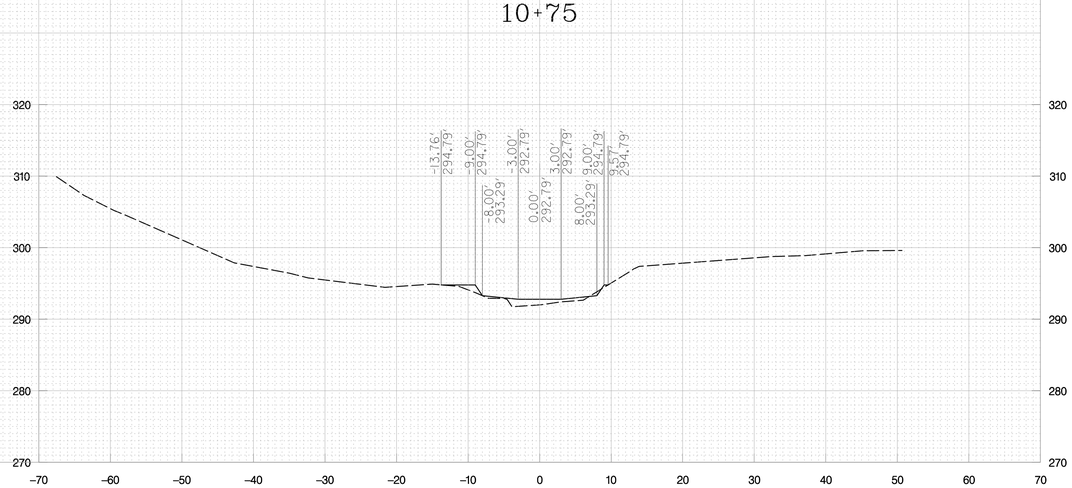

10+50

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212 SOUTH BOND STREET
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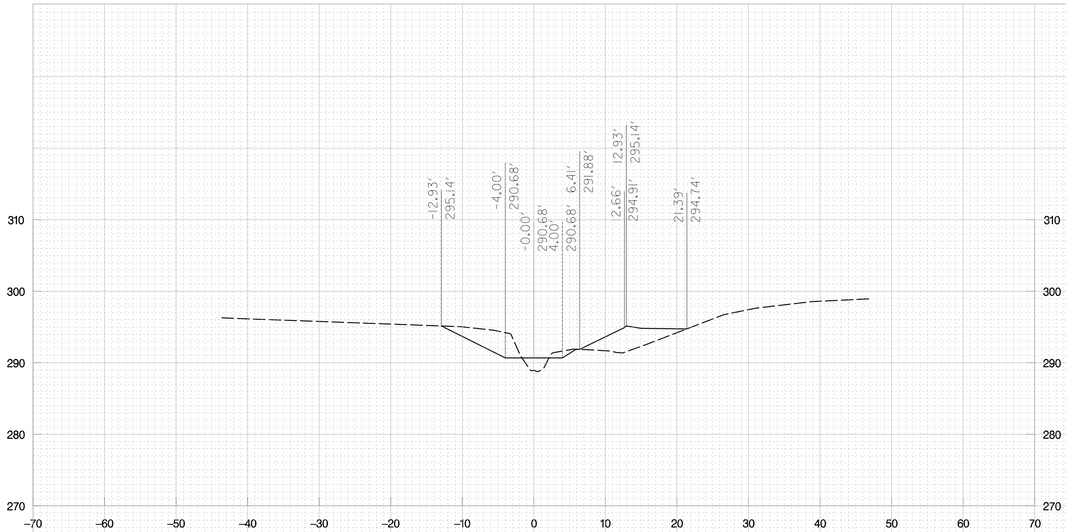
410-638-3545

DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 18 OF 27
DRAWN BY JDW	FWA JOB NUMBER



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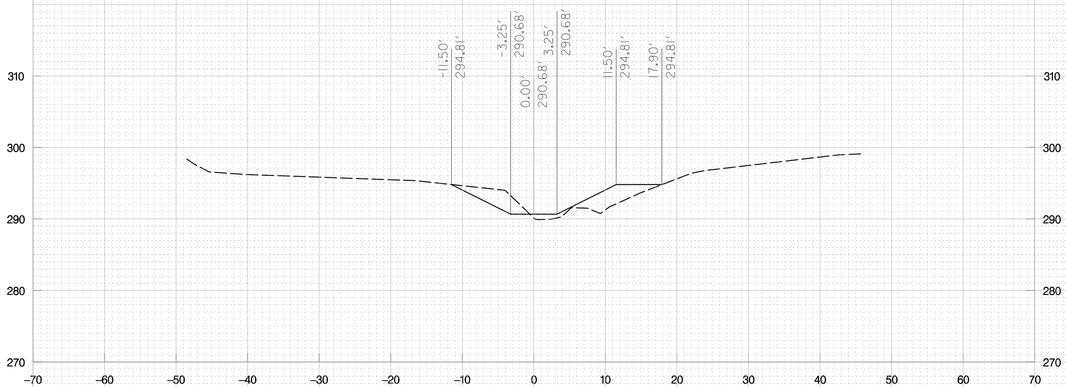

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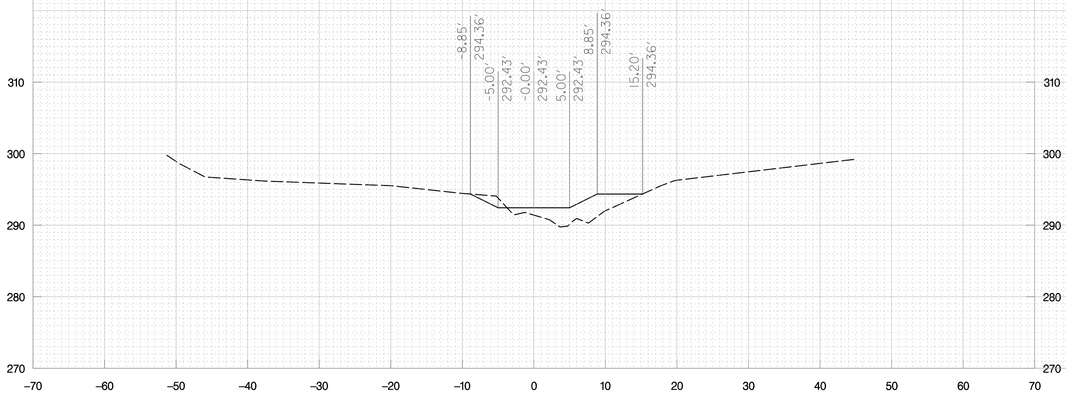

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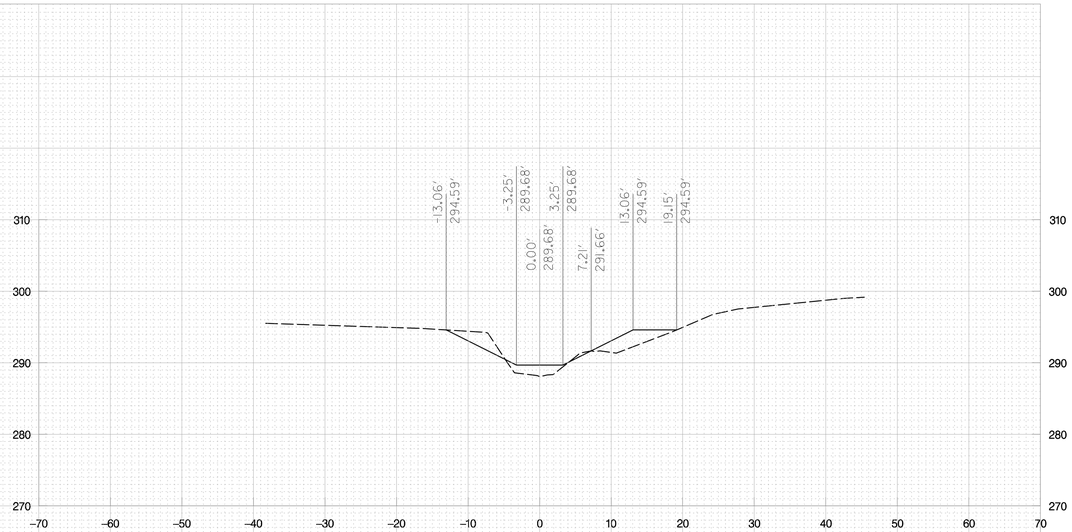

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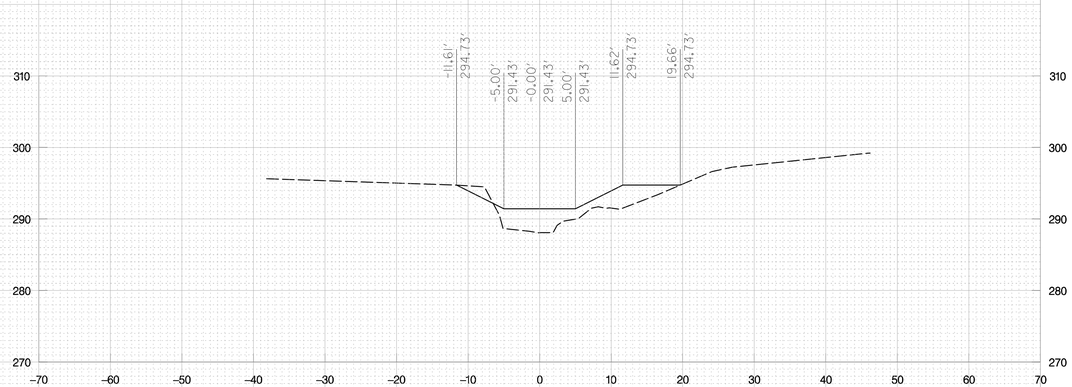

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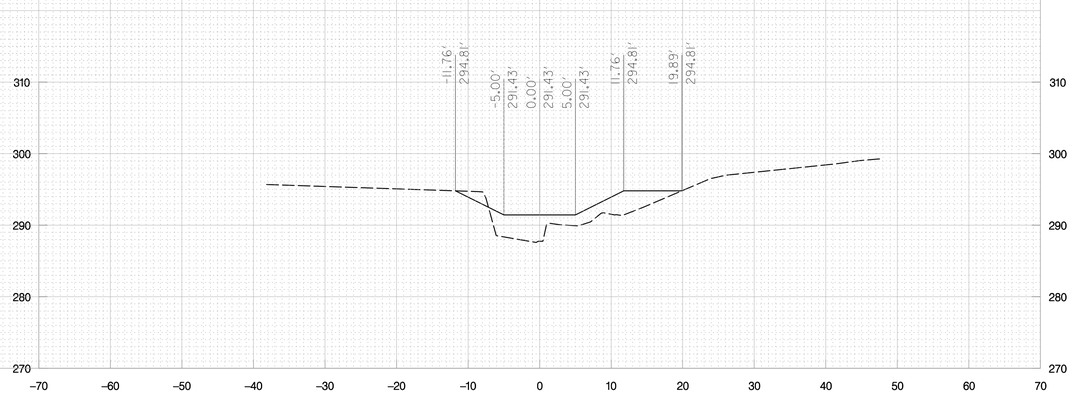

11+01

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REV#	DATE	DESCRIPTION

REVISIONS

HARFORD COUNTY
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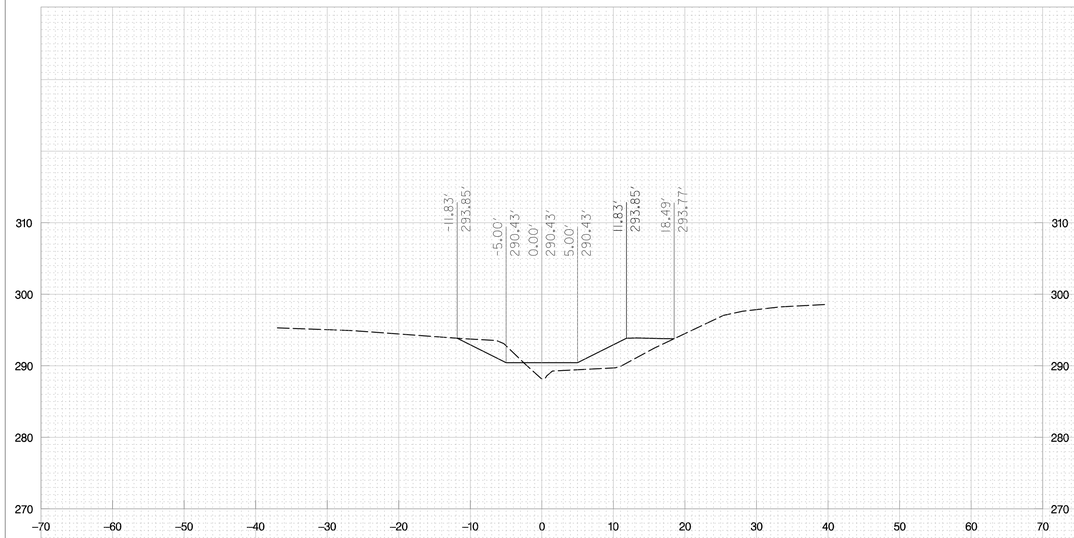
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3345

DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 19 OF 27
DRAWN BY JDW	FWA JOB NUMBER



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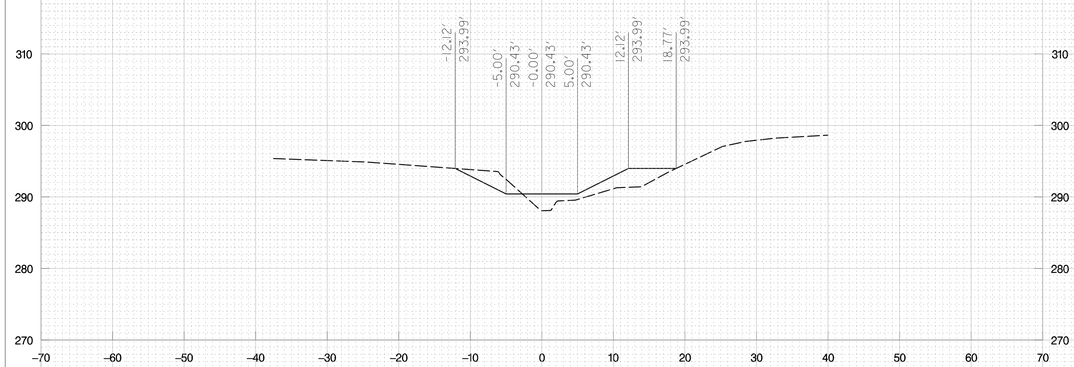

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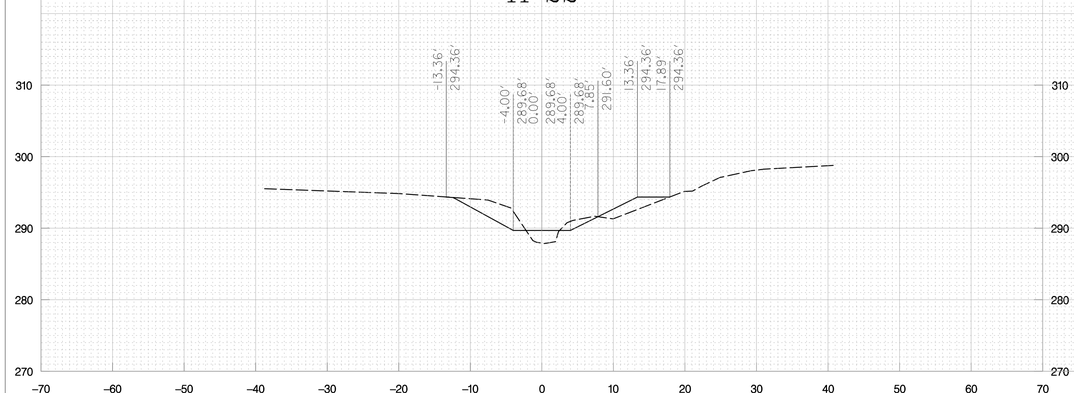

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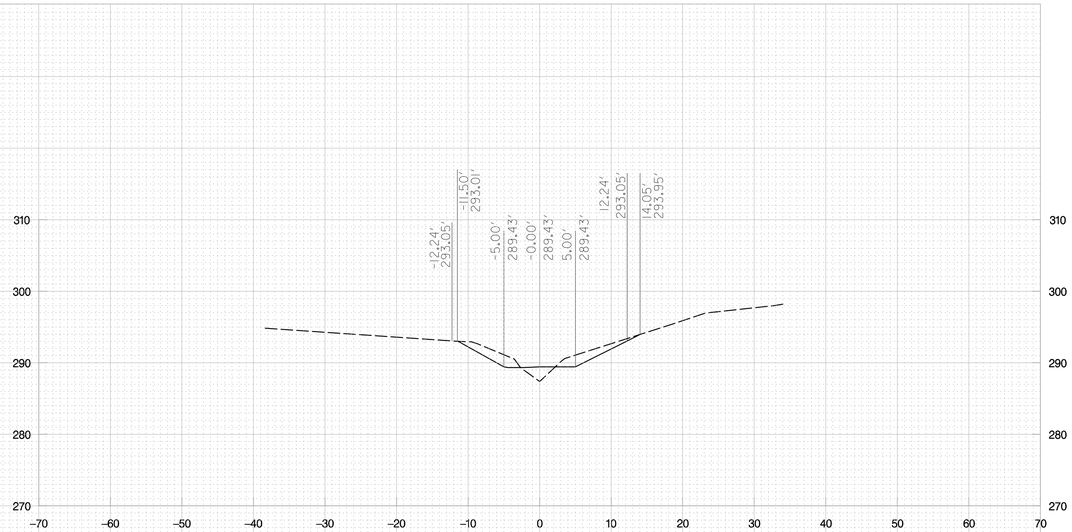

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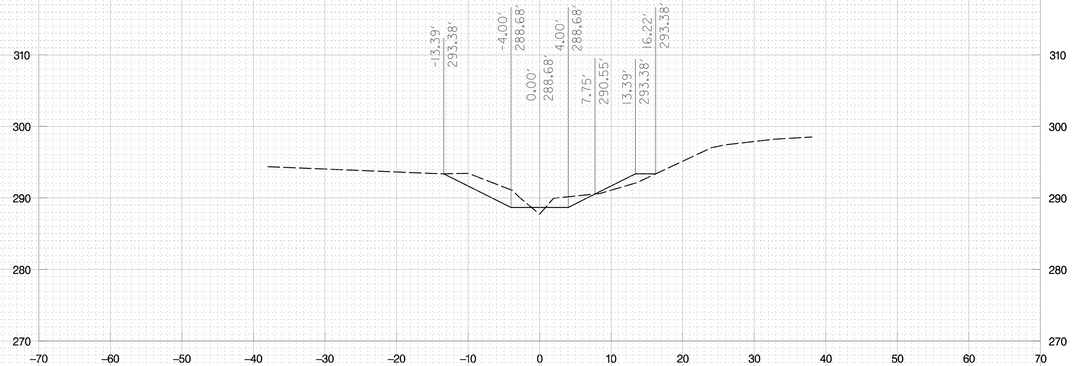

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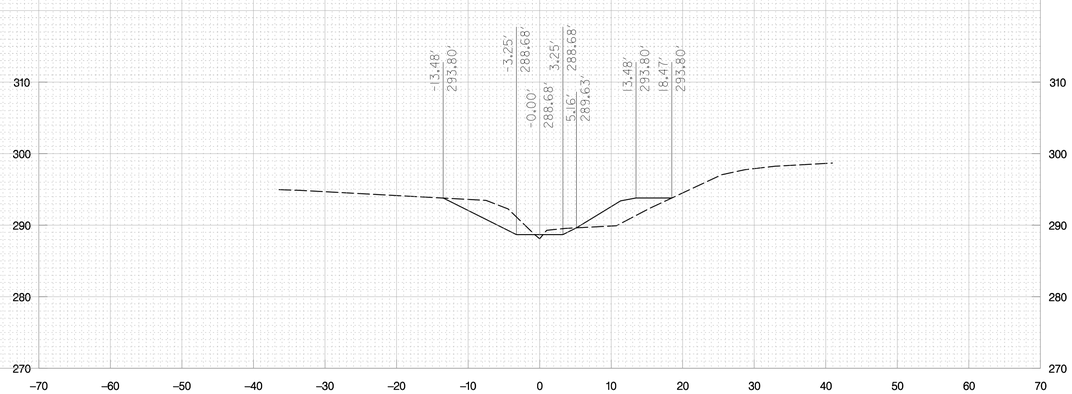

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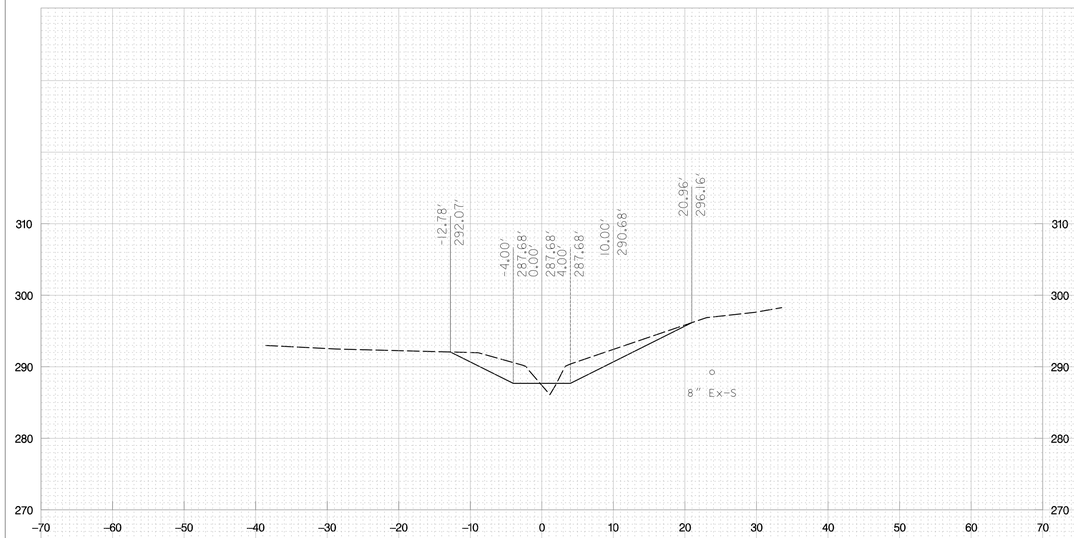
REV#	DATE	REVISIONS DESCRIPTION

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS

WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545

DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 20 OF 27
DRAWN BY JDW	FWA JOB NUMBER



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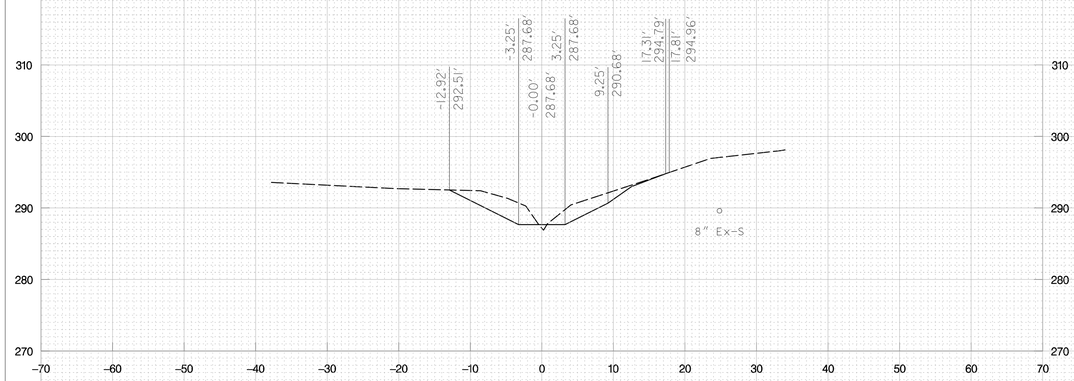

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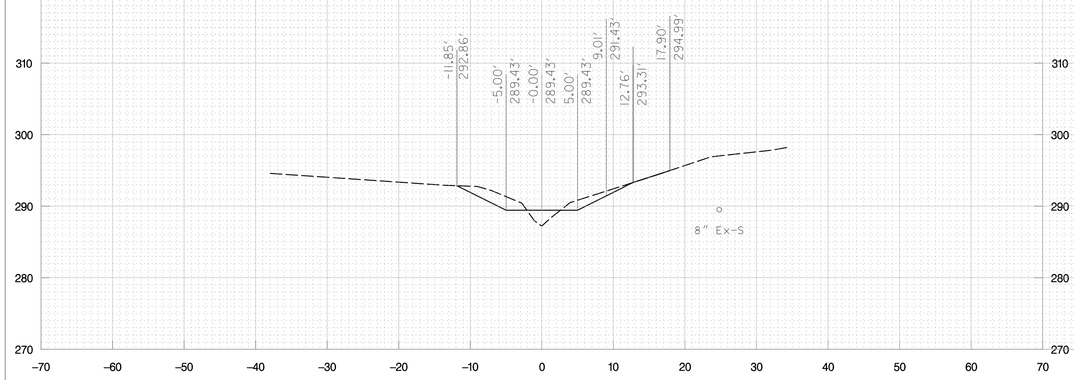

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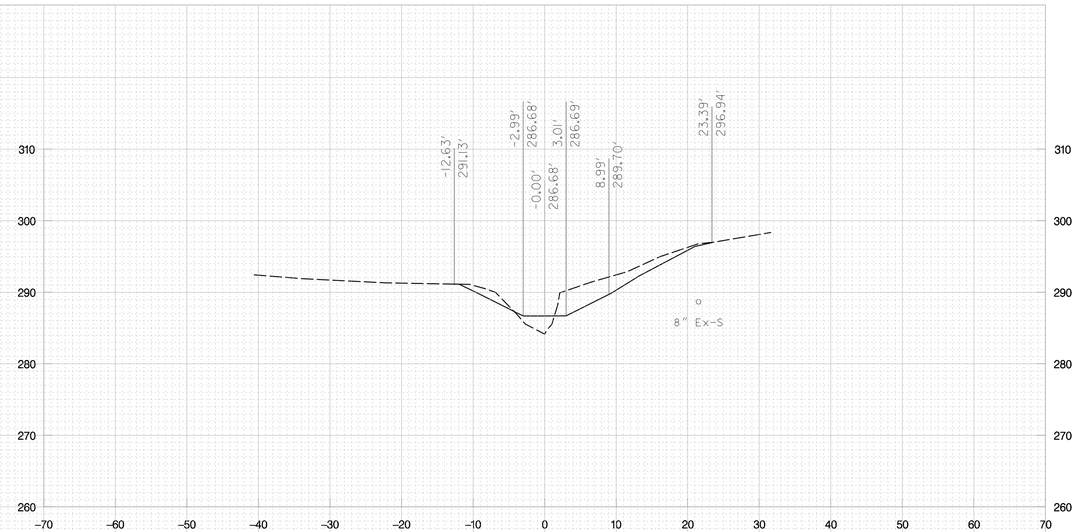

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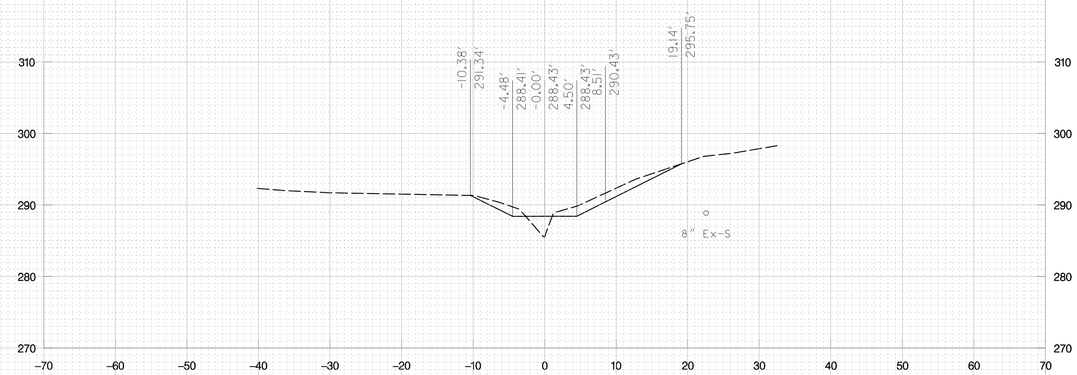

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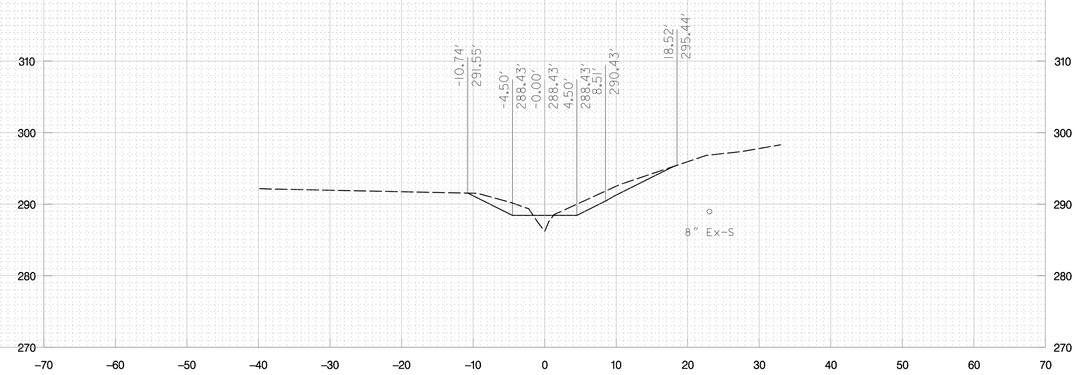

11+65

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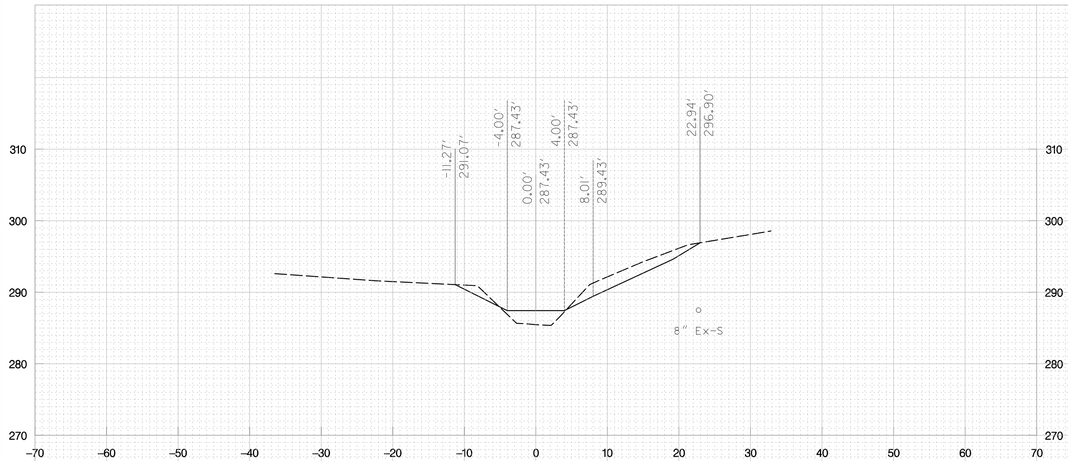
REVISIONS

REV#	DATE	DESCRIPTION

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545

DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 21 OF 27
DRAWN BY JDW	FWA JOB NUMBER



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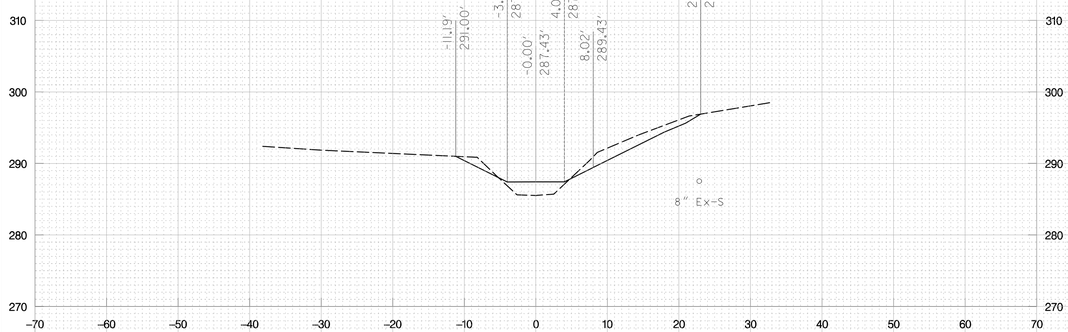

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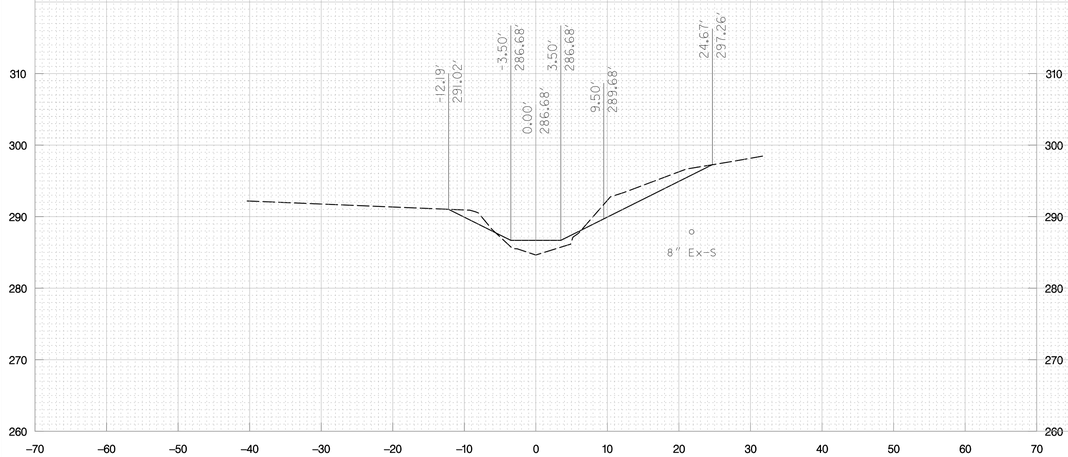

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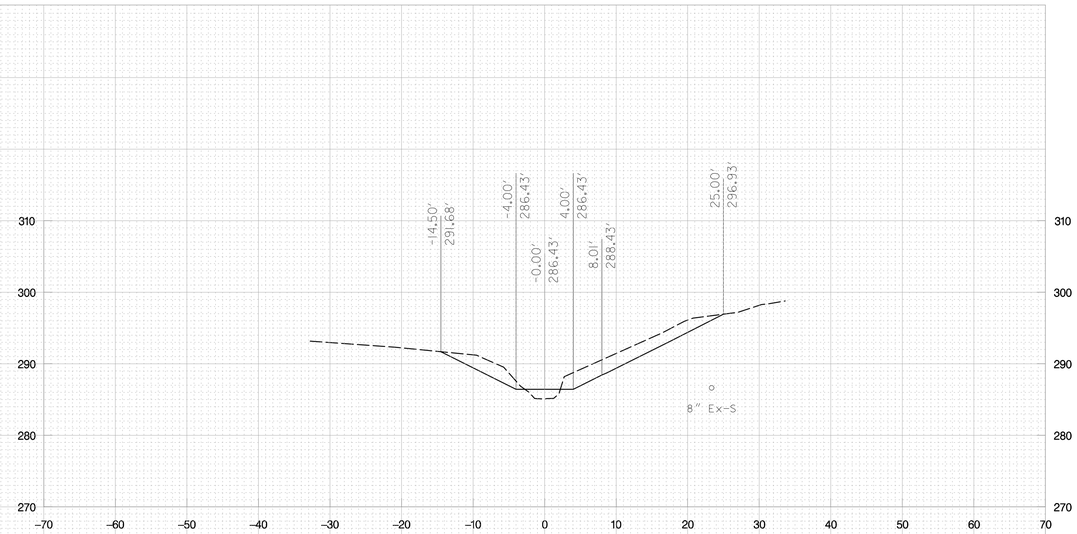

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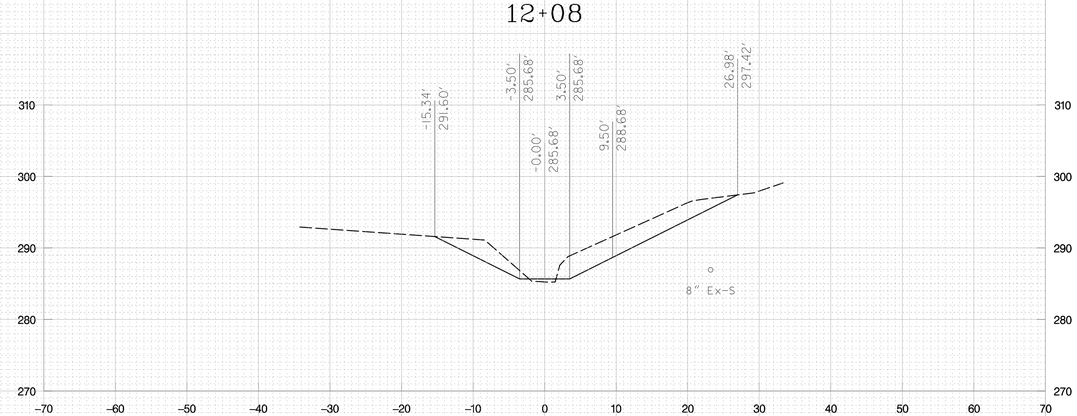

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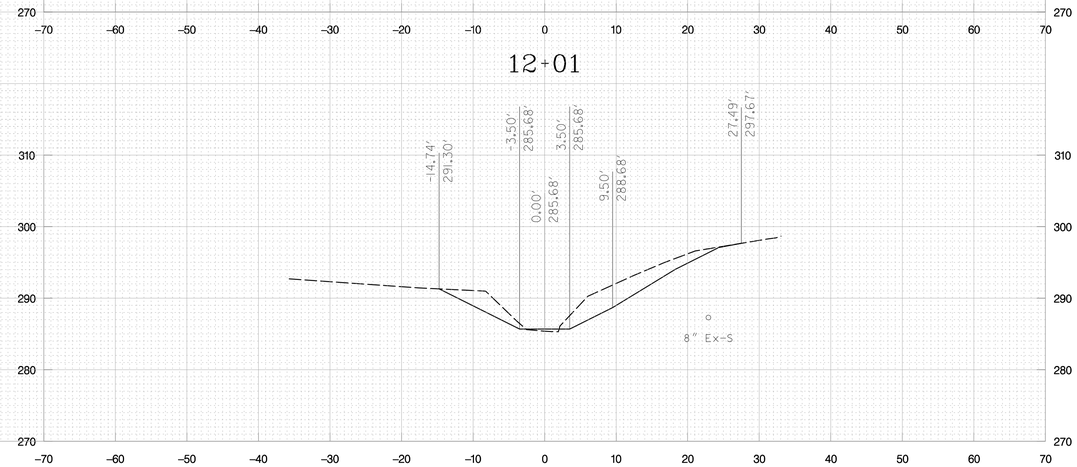

11+94

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REV#	DATE	REVISIONS DESCRIPTION

HARFORD COUNTY
DEPARTMENT OF
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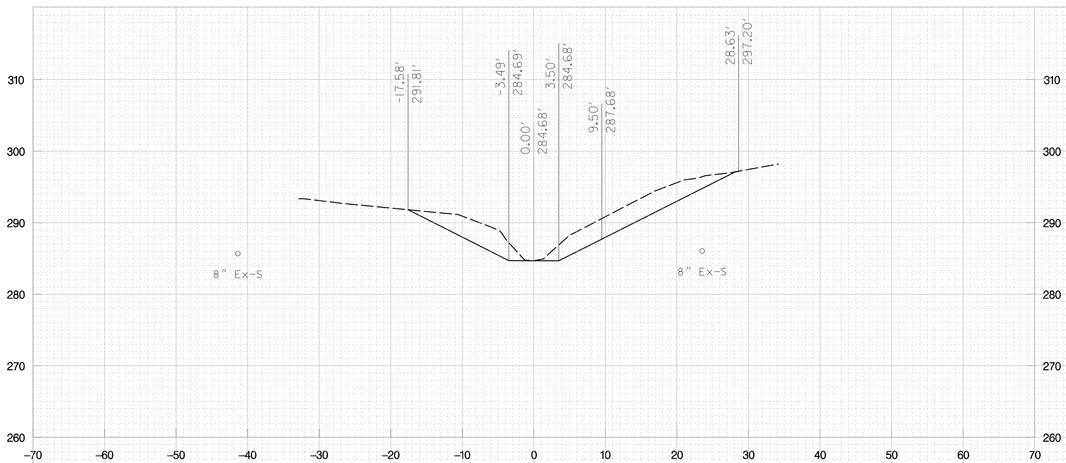
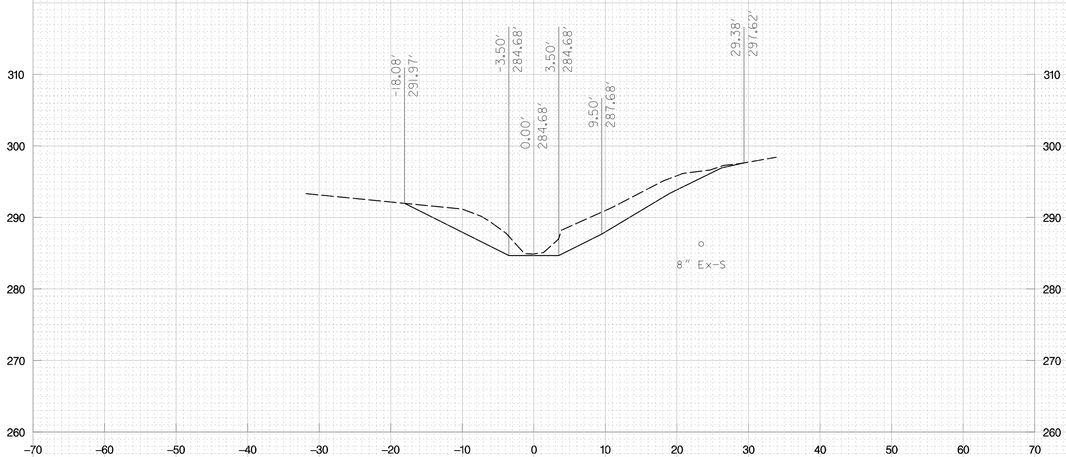
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545

DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 22 OF 27
DRAWN BY JDW	FWA JOB NUMBER



12+23



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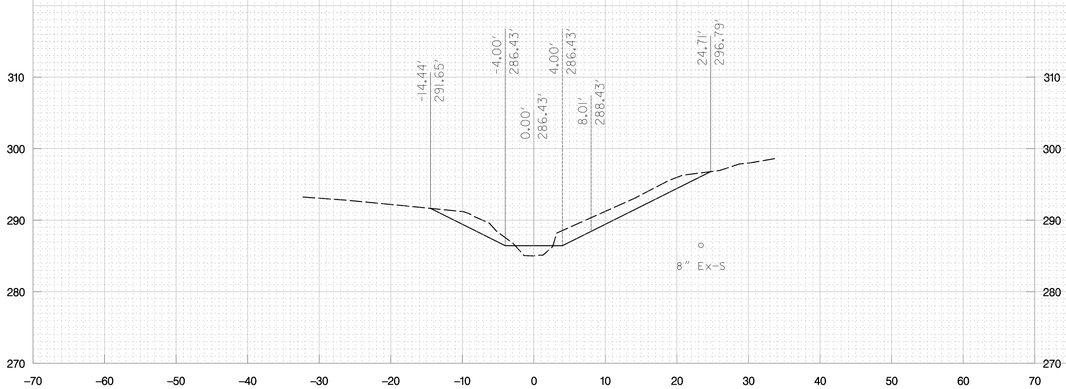

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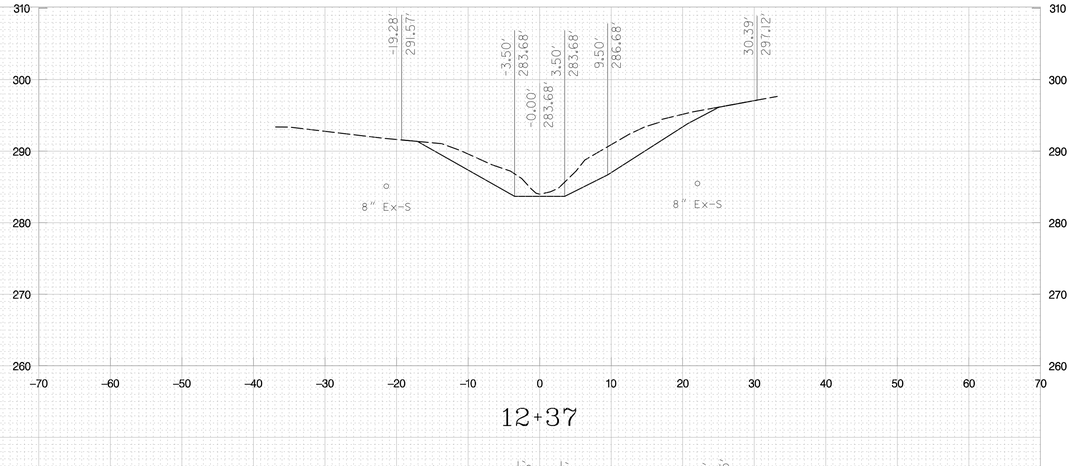

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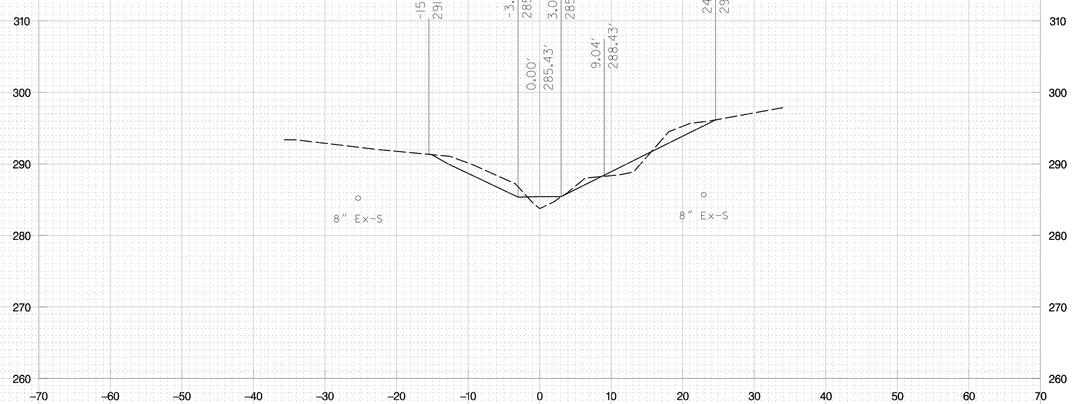
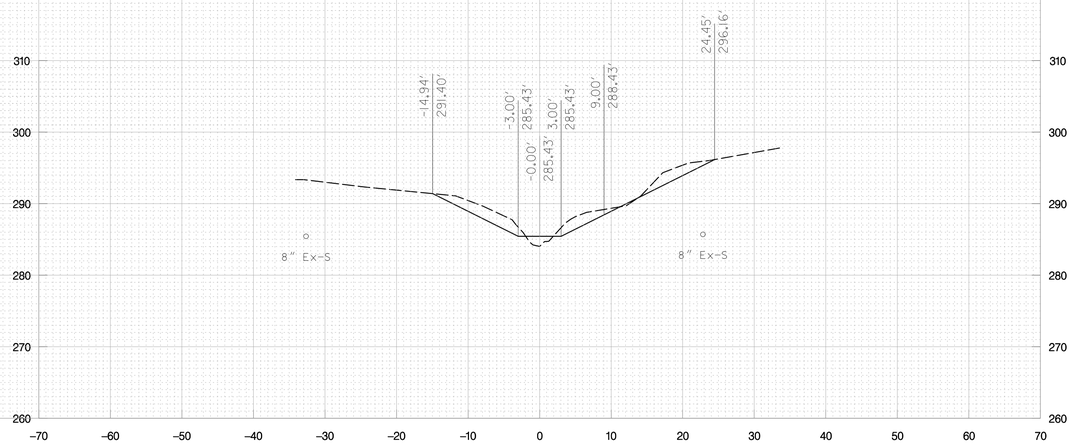


12+33



12+30

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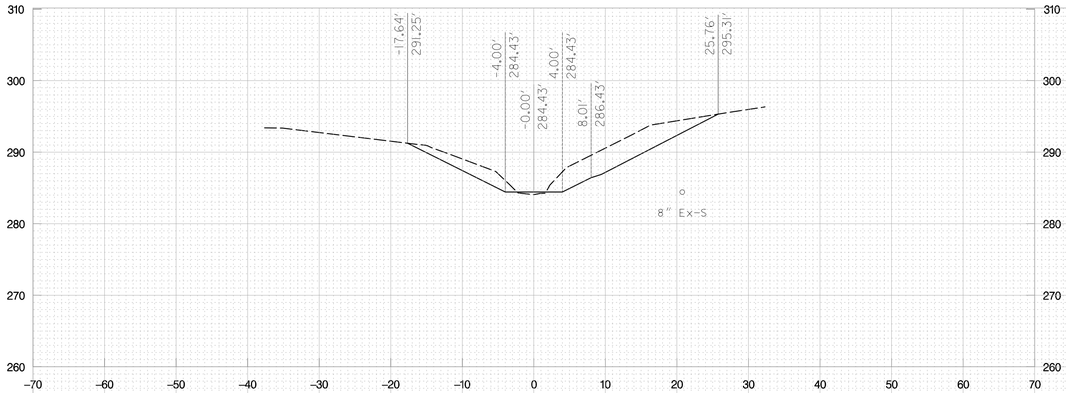
REV#	DATE	DESCRIPTION

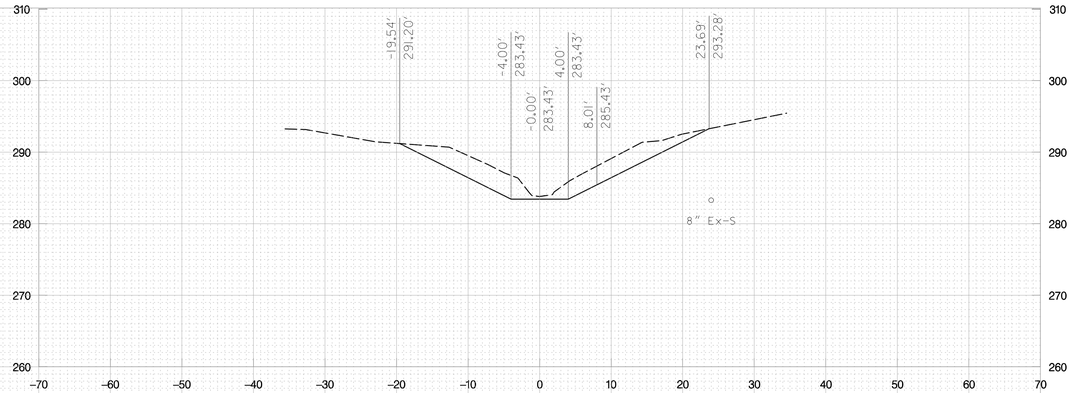
REVISIONS

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545

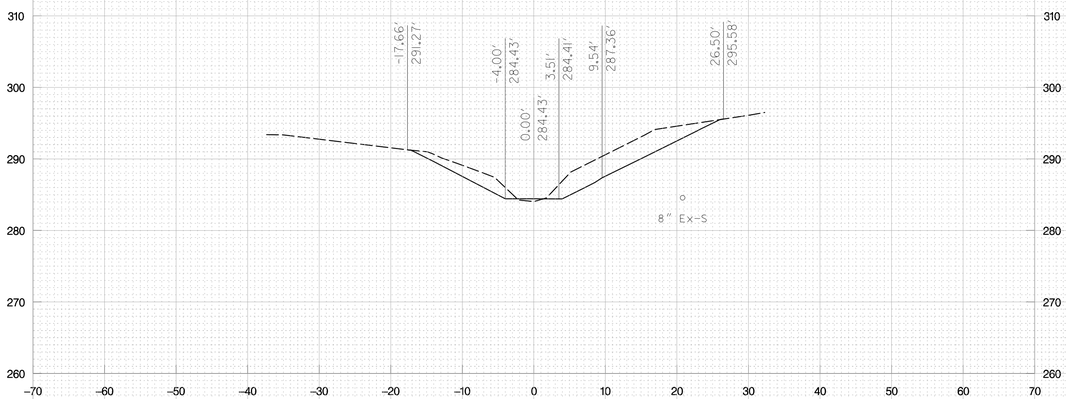
DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 23 OF 27
DRAWN BY JDW	FWA JOB NUMBER



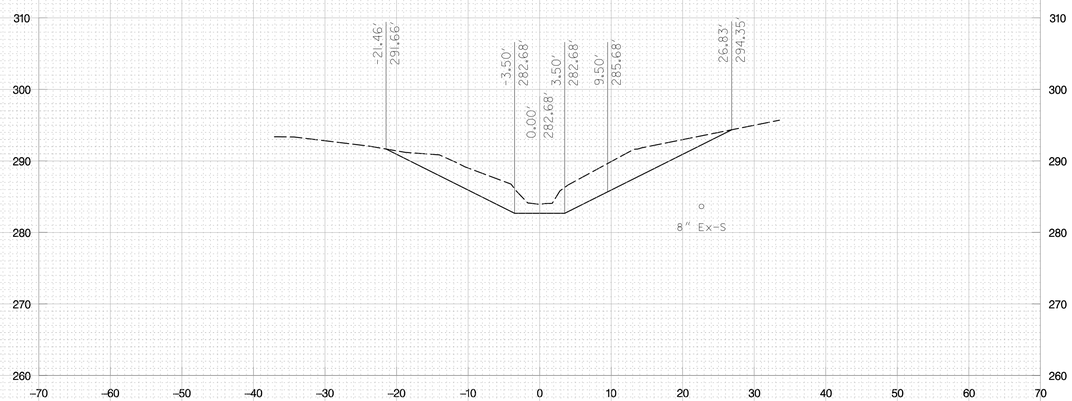
12+54



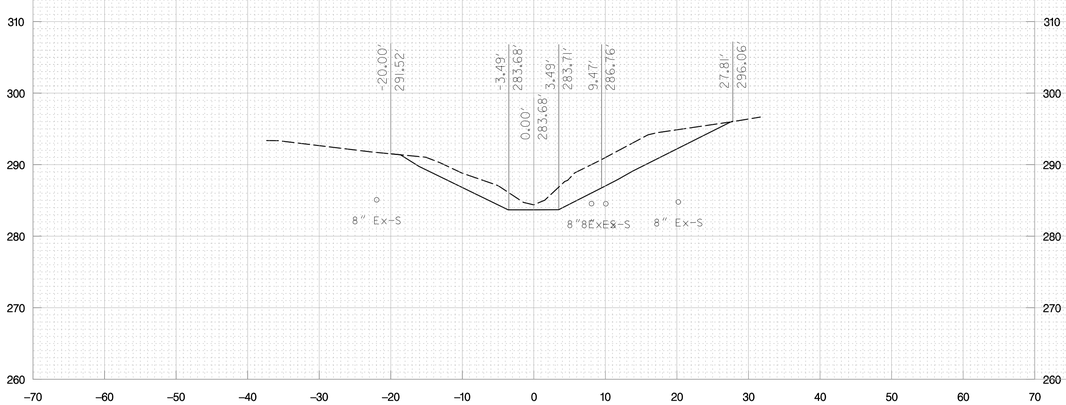
12+73



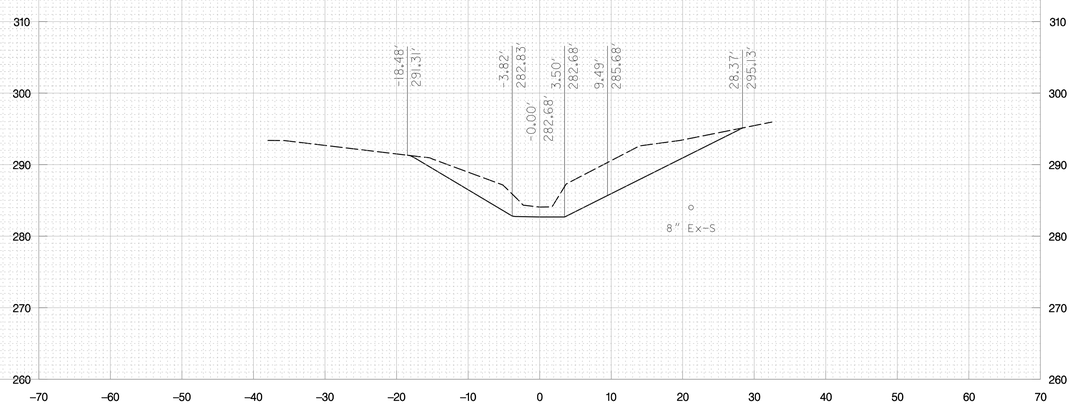
12+51



12+66



12+44



12+58

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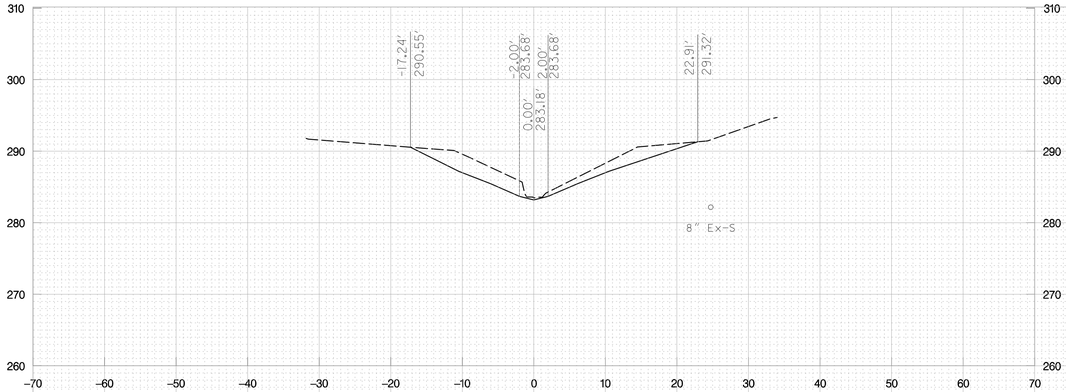
REV#	DATE	REVISIONS DESCRIPTION

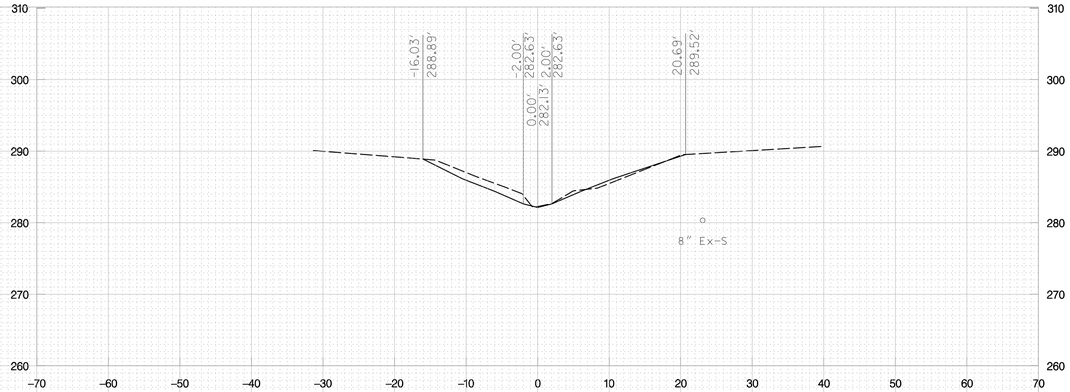
HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS

WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3345

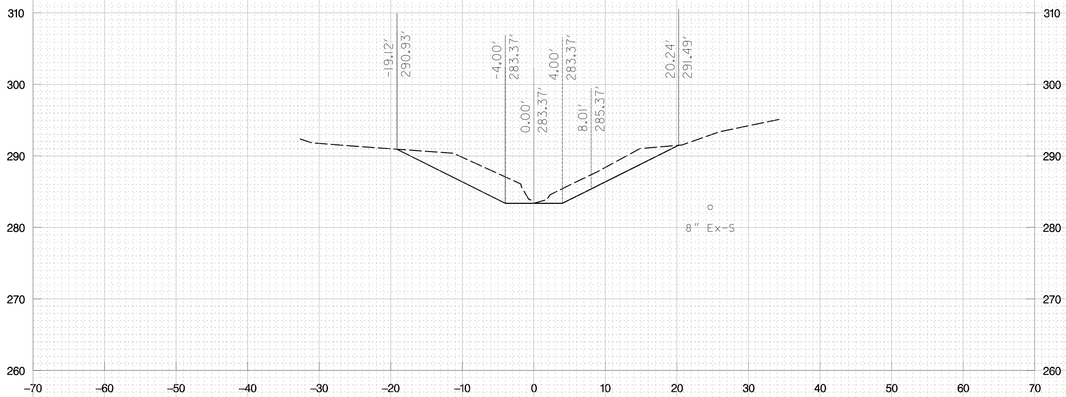
DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 24 OF 27
DRAWN BY JDW	FWA JOB NUMBER



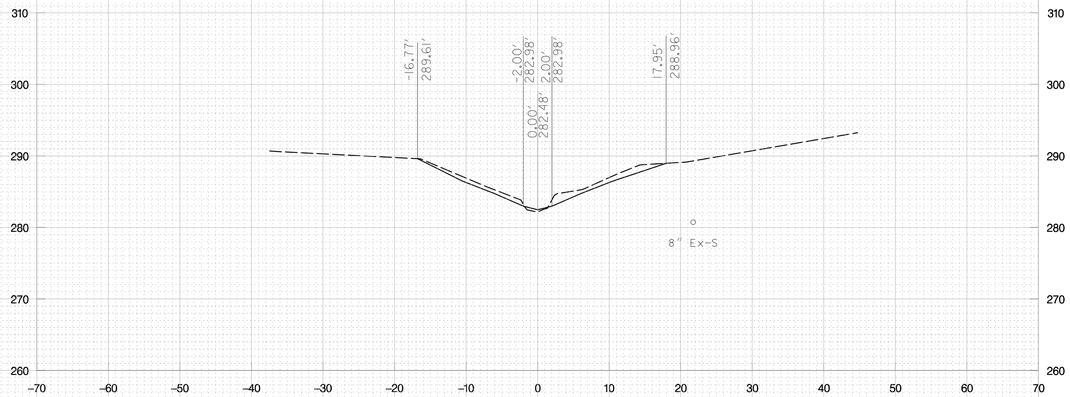
13+00



13+75



12+87



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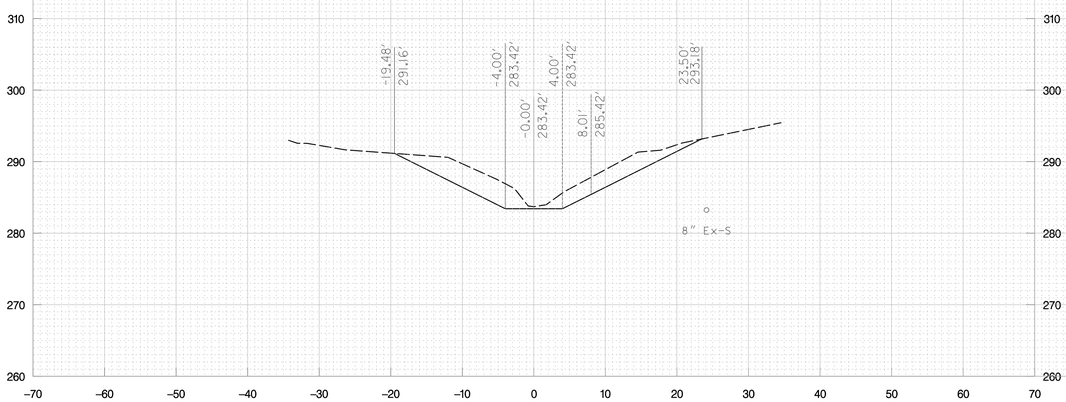

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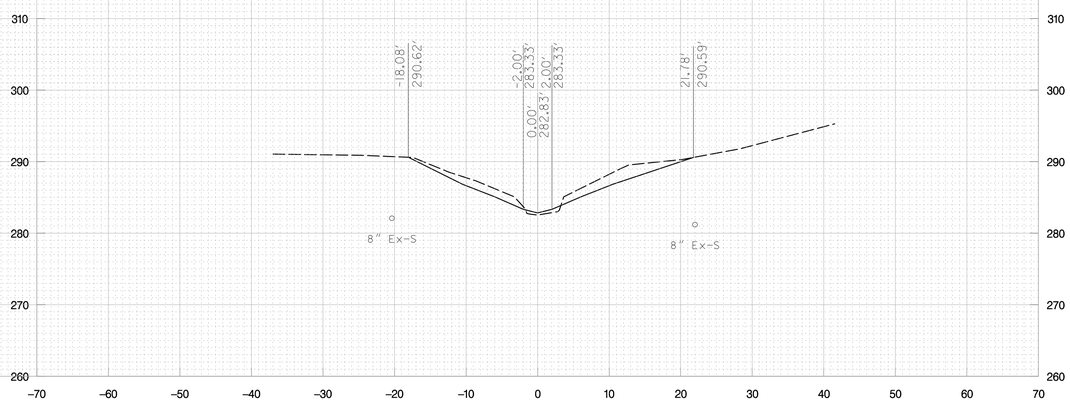

13+25

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REV#	DATE	REVISIONS DESCRIPTION

HARFORD COUNTY
DEPARTMENT OF
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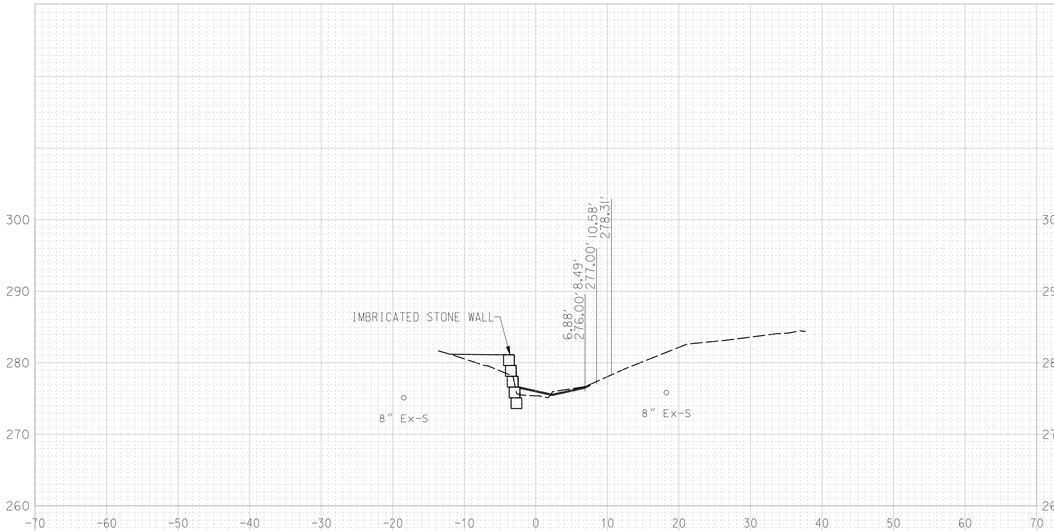
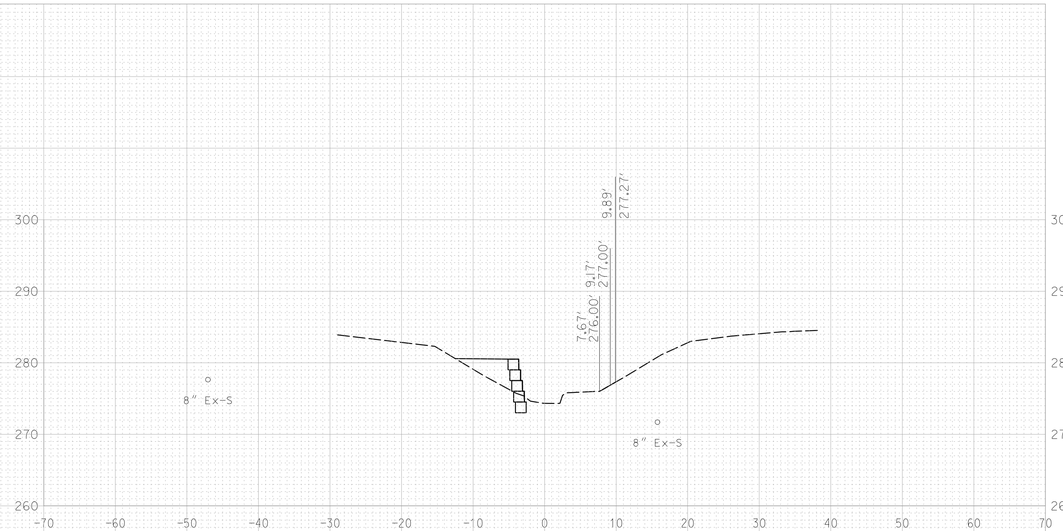
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3546

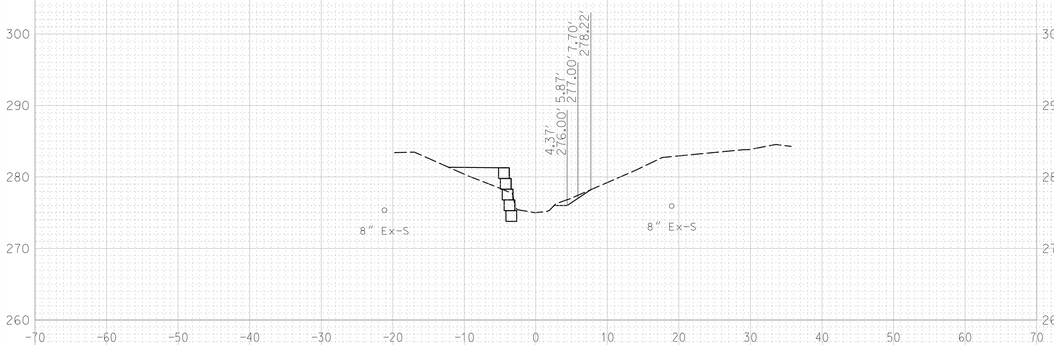
DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 25 OF 27
DRAWN BY JDW	FWA JOB NUMBER



16+70



17+00



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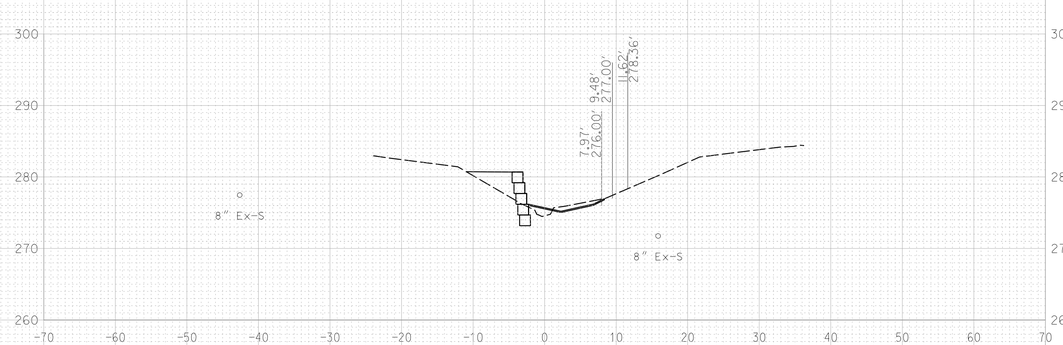

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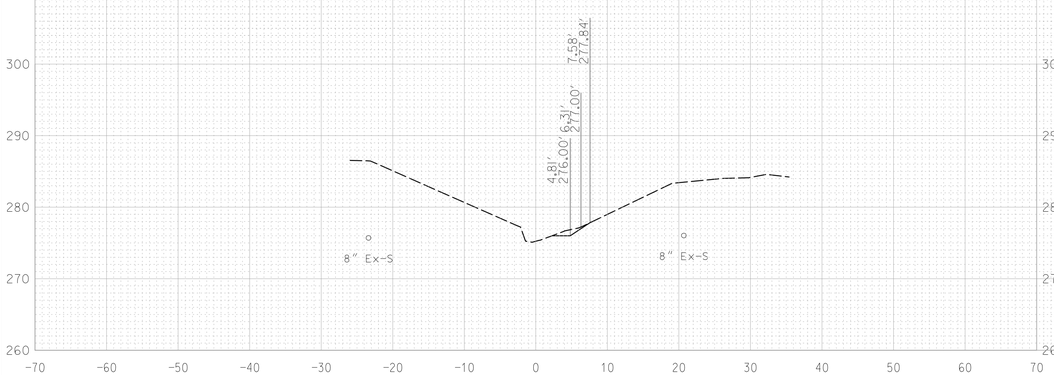

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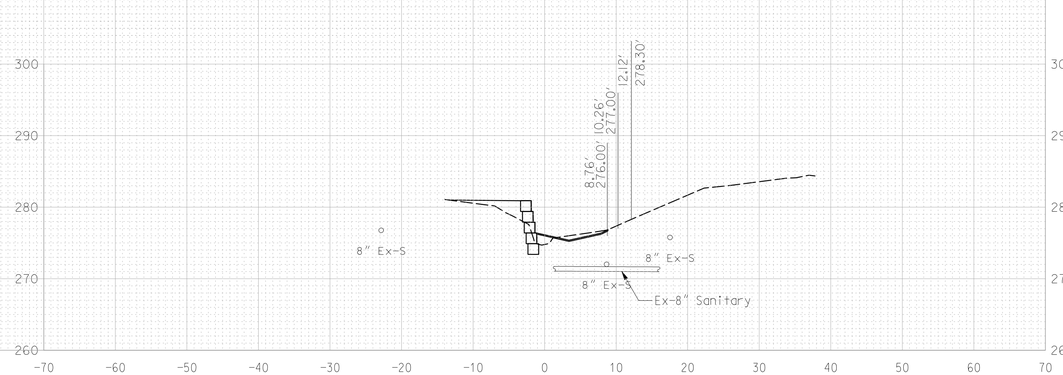

16+80

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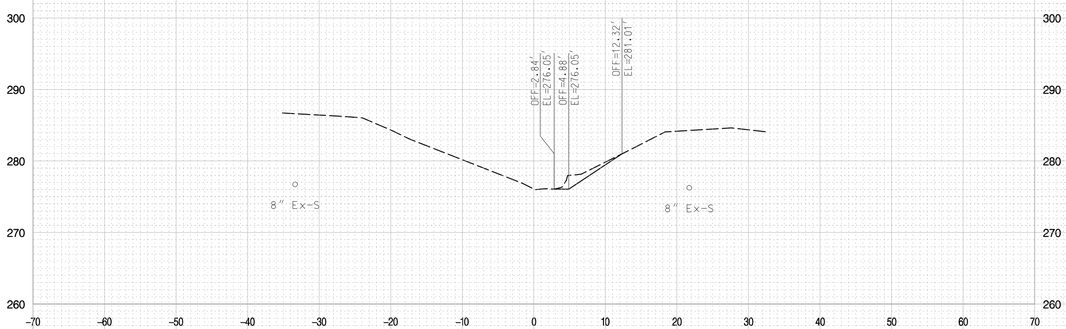
REV#	DATE	REVISIONS DESCRIPTION

HARFORD COUNTY
DEPARTMENT OF
PUBLIC WORKS
WATER RESOURCES ENGINEERING
212 SOUTH BOND STREET
3RD FLOOR
BEL AIR MARYLAND 21014
410-638-3545

DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 26 OF 27
DRAWN BY JDW	FWA JOB NUMBER



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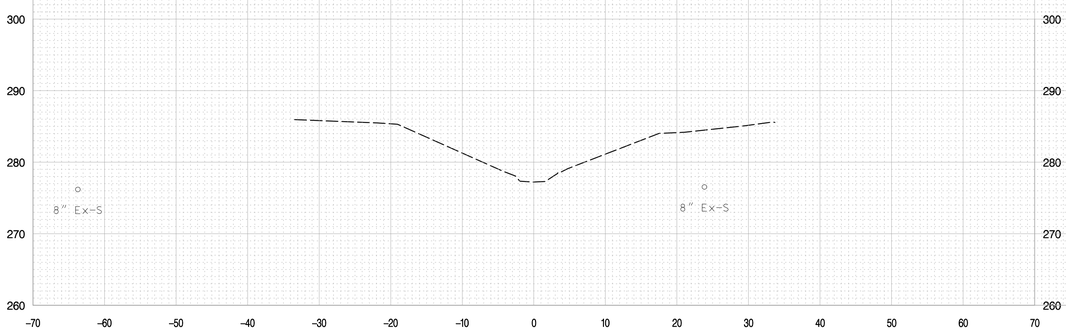

16+00

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DEPARTMENT OF
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WATER RESOURCES ENGINEERING
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BEL AIR MARYLAND 21014
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DATE 08-31-11	DRAWING NO.
SCALE 1" = 10'	
DESIGNED BY GCB	SHEET 27 OF 27
DRAWN BY JDW	FWA JOB NUMBER