

# STREAM GRADIENT STABILIZATION OF WOLF RIVER LATERAL "J" DOWNSTREAM OF SHELTON ROAD FOR TOWN OF COLLIERVILLE, TN

NOVEMBER 3, 2017

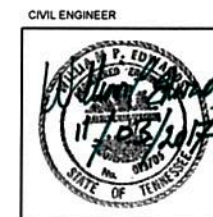


GENERAL	
Sheet Number	Sheet Name
G0.0	COVER

CIVIL	
Sheet Number	Sheet Name
C0.0	GENERAL NOTES
C0.1	SPECIFICATIONS
C1.0	PROPERTY MAP
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VICINITY MAP  
N.T.S.



TN. DEPT. OF ENV. & CONSERVATION

DEC 11 2017

DIVISION OF WATER RESOURCES

A2H PROJECT #14264.01

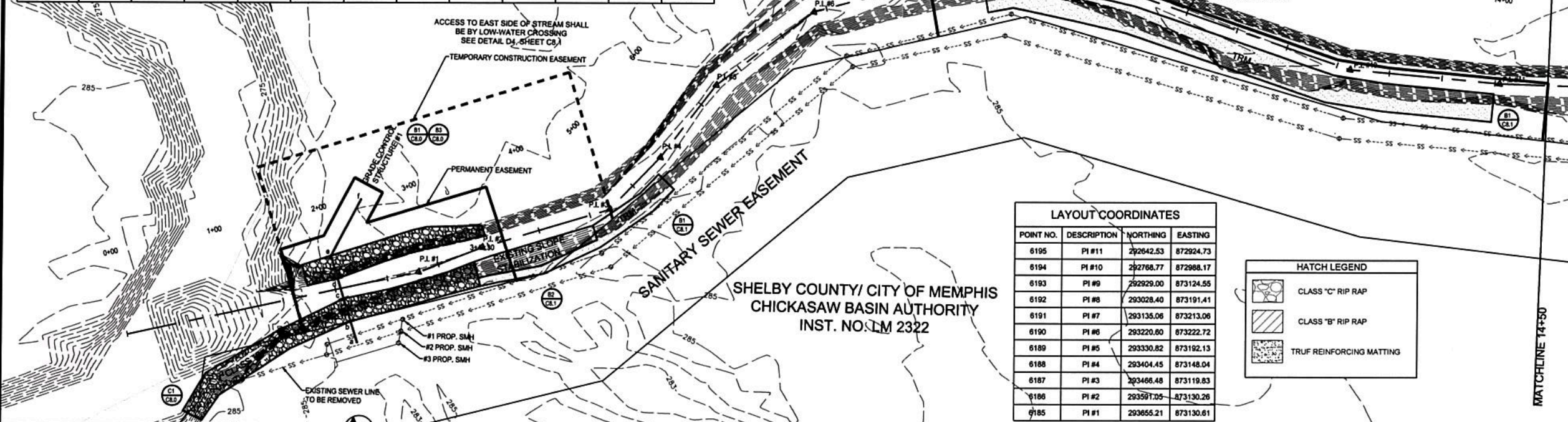
SHELBY COUNTY/ CITY OF MEMPHIS  
CHICKASAW BASIN AUTHORITY  
INST. NO. LM 2322

**A2H**  
ENGINEERS - ARCHITECTS - PLANNERS  
1800 Union Station Road  
Louisville, KY 40204  
Tel: 502.258.1000



LATERAL J, STREAM BANK STABILIZATION  
THE TOWN OF COLLIERVILLE  
500 KEOUGH ROAD, COLLIERVILLE, TN 38017

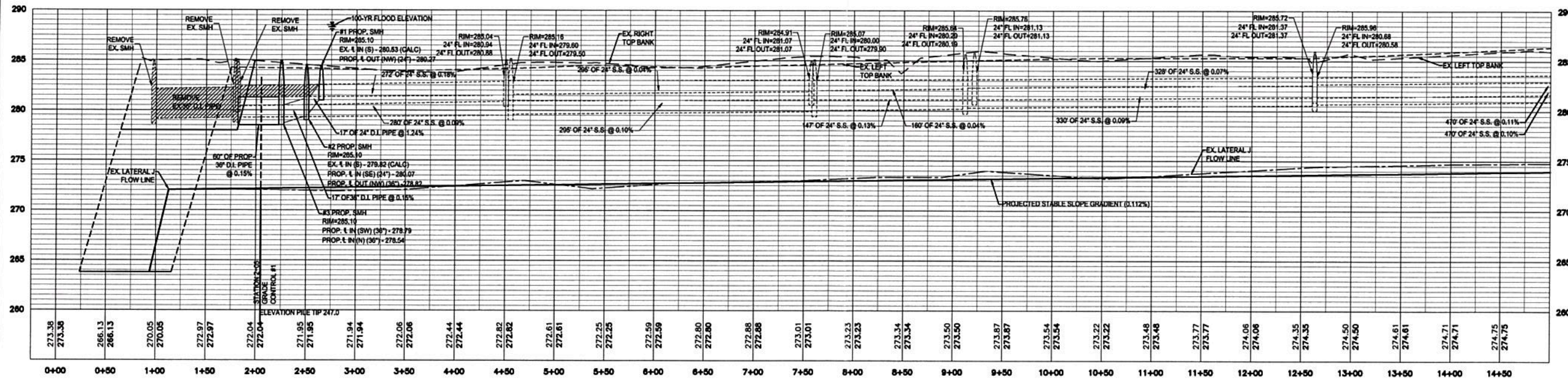
GRADE CONTROL NO.	LAYOUT POINTS FOR GRADE CONTROL STRUCTURES											
	a		b		c		d		e		f	
	N	E	N	E	N	E	N	E	N	E	N	E
1	293733.36	873089.7	293731.78	873110.64	293730.09	873133.07	293728.62	873152.52	293726.93	873174.95	293681.43	873214.07
2	291653.2	872412.58	291641.05	872429.71	291629.77	872445.62	291618.48	872461.52	291607.21	872477.43	291595.08	872494.58
3	291103.98	872036.48	291094.37	872055.15	291087.5	872068.48	291079.26	872084.49	291072.4	872097.82	291062.79	872116.49
4	290536.45	871716.26	290531.57	871736.68	290528.44	871749.81	290524.95	871764.4	290521.82	871777.53	290516.94	871797.96



POINT NO.	DESCRIPTION	NORTHING	EASTING
6195	PI #11	292642.53	872924.73
6194	PI #10	292768.77	872988.17
6193	PI #9	292929.00	873124.55
6192	PI #8	293028.40	873191.41
6191	PI #7	293135.06	873213.06
6190	PI #6	293220.00	873222.72
6189	PI #5	293330.82	873192.13
6188	PI #4	293404.45	873148.04
6187	PI #3	293466.48	873119.83
6186	PI #2	293597.05	873130.26
6185	PI #1	293655.21	873130.61

HATCH LEGEND	
	CLASS "C" RIP RAP
	CLASS "B" RIP RAP
	TRUF REINFORCING MATTING

**B1 PLAN**  
1"=50'  
GRAPHIC SCALE: 1" = 50'  
NORTH



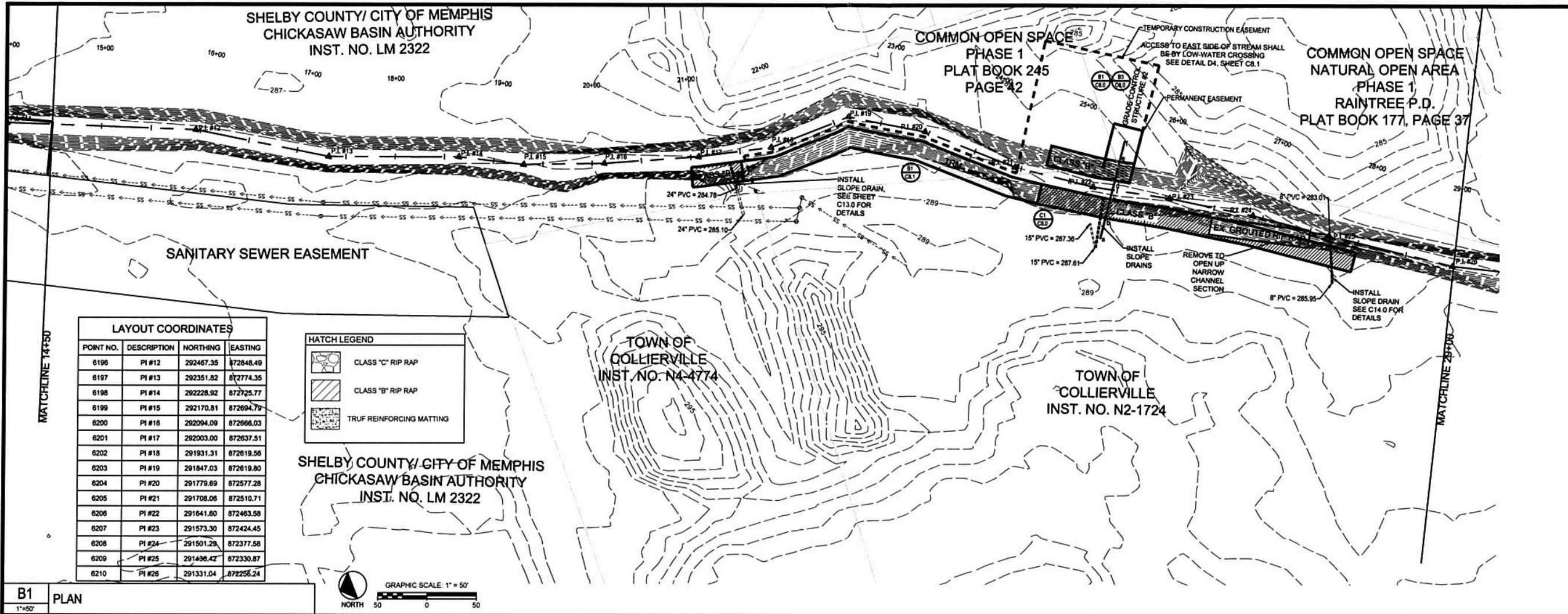
**D1 PROFILE**  
1"=50' H=5' V

REVISIONS	

PROJECT NO.	14254.01
DATE:	NOVEMBER 3, 2017
DRAWN:	MMD
CHECKED:	BE
SHEET TITLE:	PROFILE STATION: 0+00 TO 14+50

TN. DEPT. OF ENV. & CONSERVATION  
DEC 11 2017  
DIVISION OF WATER RESOURCES

SHEET NO:  
**C4.0**



LAYOUT COORDINATES

POINT NO.	DESCRIPTION	NORTHING	EASTING
6196	PI #12	292467.35	872848.49
6197	PI #13	292351.82	872774.35
6198	PI #14	292228.92	872725.77
6199	PI #15	292170.81	872694.79
6200	PI #16	292094.09	872666.03
6201	PI #17	292003.00	872637.51
6202	PI #18	291931.31	872619.56
6203	PI #19	291847.03	872619.80
6204	PI #20	291779.69	872577.28
6205	PI #21	291708.06	872510.71
6206	PI #22	291641.60	872463.58
6207	PI #23	291573.30	872424.45
6208	PI #24	291501.28	872377.58
6209	PI #25	291436.42	872330.87
6210	PI #26	291331.04	872256.24

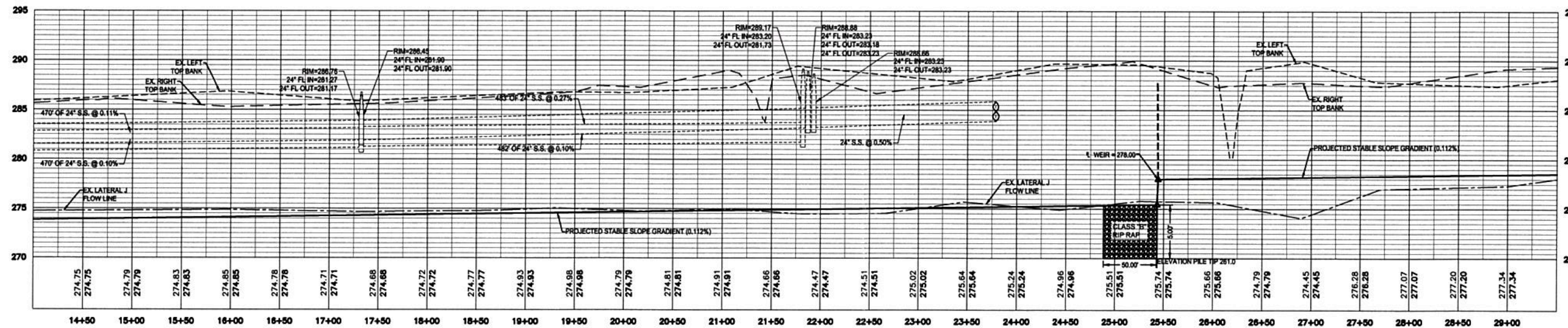
HATCH LEGEND

- CLASS "C" RIP RAP
- CLASS "B" RIP RAP
- TRUF REINFORCING MATTING

SHELBY COUNTY/ CITY OF MEMPHIS  
CHICKASAW BASIN AUTHORITY  
INST. NO. LM 2322



B1 PLAN  
1"=50'



D1 PROFILE  
1"=50' 1"=50'



LATERAL J, STREAM BANK STABILIZATION  
THE TOWN OF COLLIERVILLE  
500 KEOUGH ROAD, COLLIERVILLE, TN 38017

REVISIONS

NO.	DATE	DESCRIPTION

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SHEET TITLE: PROFILE STATION: 14+50 TO 29+00

TN. DEPT. OF ENV. & CONSERVATION

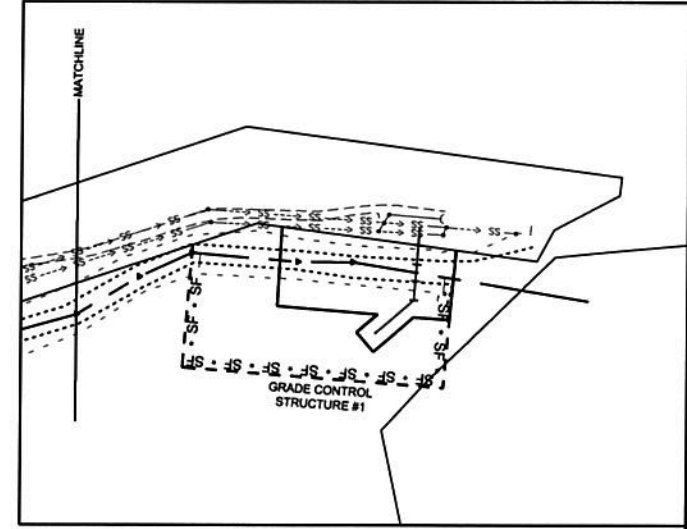
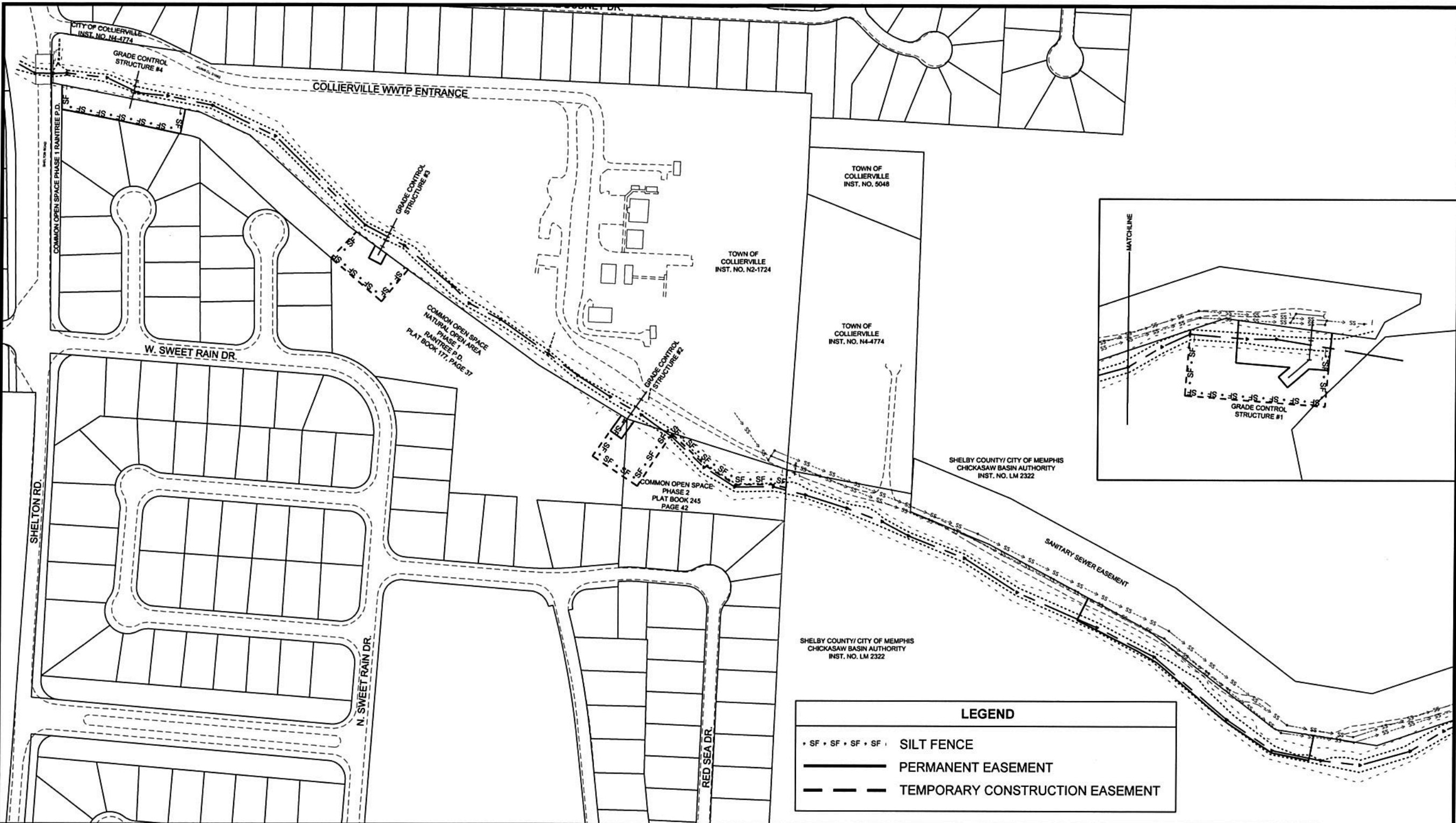
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DIVISION OF WATER RESOURCES

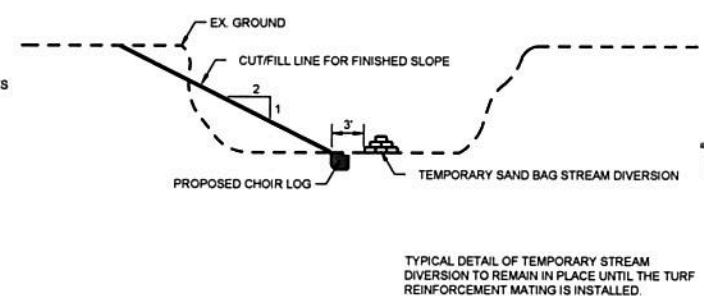
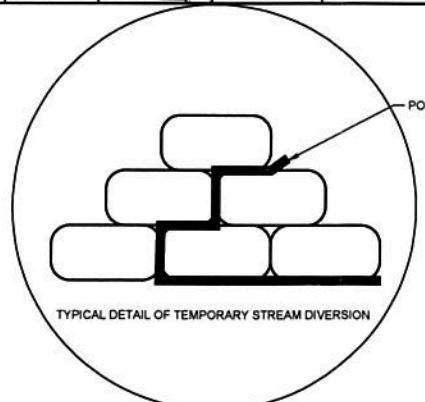
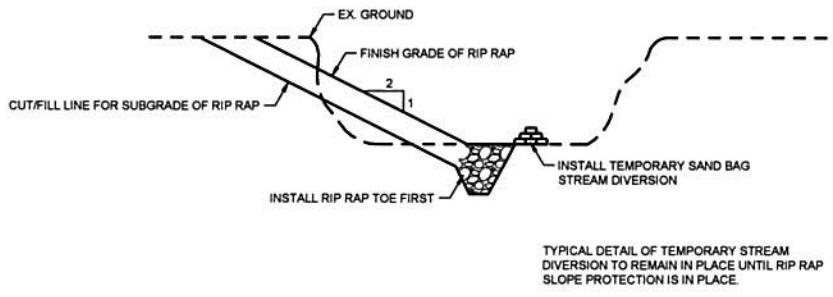
SHEET NO:  
**C4.1**



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LEGEND	
• SF • SF • SF • SF •	SILT FENCE
—————	PERMANENT EASEMENT
- - - - -	TEMPORARY CONSTRUCTION EASEMENT



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 DIVISION OF WATER RESOURCES  
 DEC 11 2017

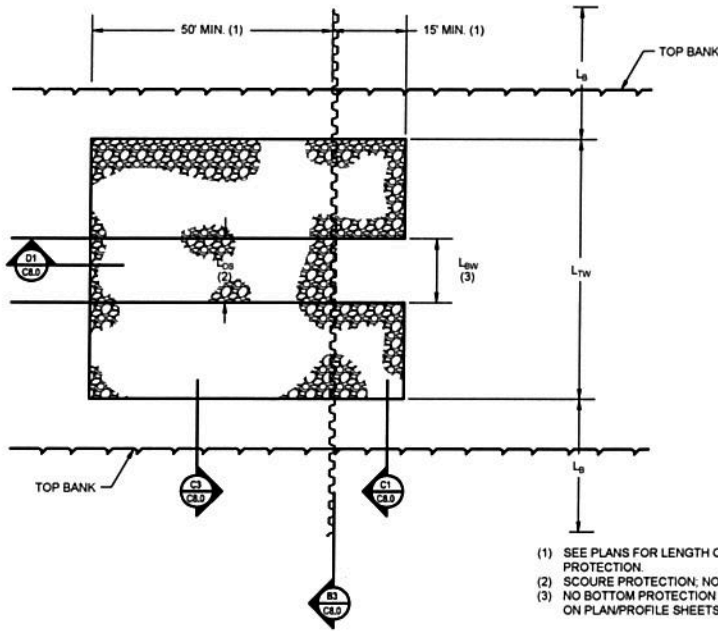
REVISIONS	

PROJECT NO.	14264.01
DATE:	NOVEMBER 3, 2017
DRAWN:	CHECKED:
MMD	BE
SHEET TITLE:	
DIVISION PREVENTION AND SEDIMENTATION CONTROL	
SHEET NO.:	C5.0

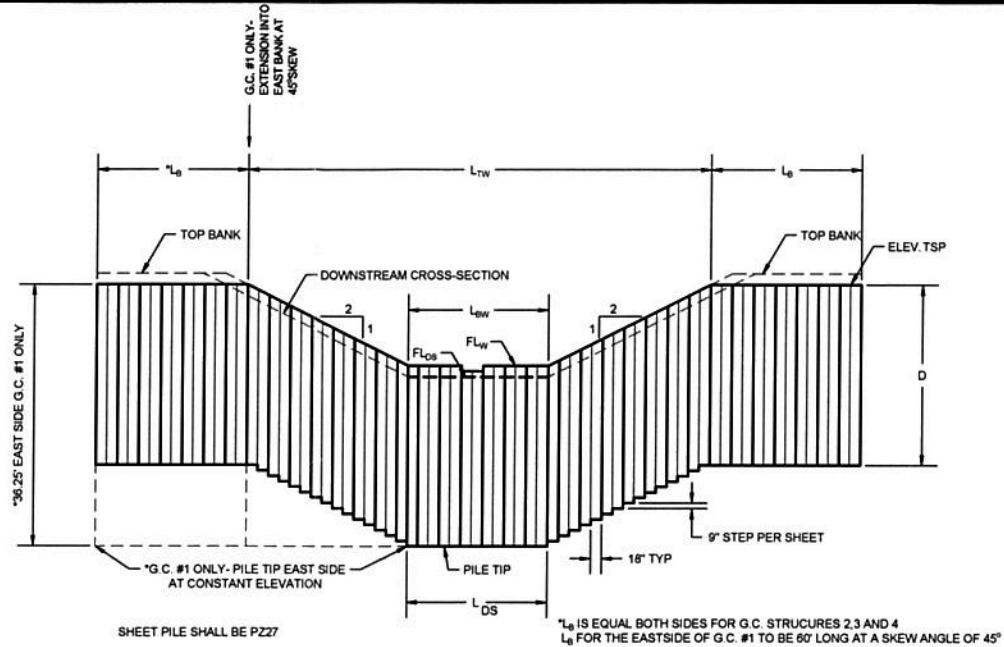
**A2H**  
 ENGINEERS - ARCHITECTS - PLANNERS  
 1000 South Parkwood Blvd  
 Collierville, TN 38017  
 (901) 241-1000

STATE OF TENNESSEE  
 11/20/17  
 11/20/17

LATERAL J, STREAM BANK STABILIZATION  
**THE TOWN OF COLLIERVILLE**  
 500 KEOUGH ROAD, COLLIERVILLE, TN 38017

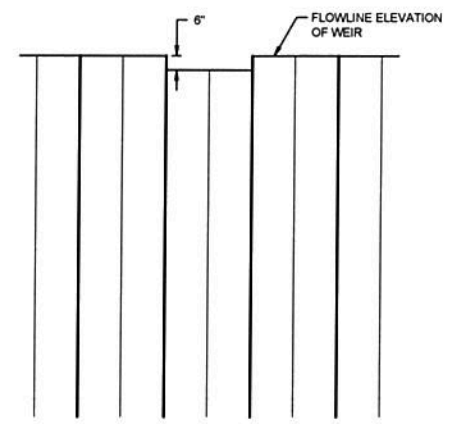


- (1) SEE PLANS FOR LENGTH OF SLOPE PROTECTION
- (2) SCOUR PROTECTION; NOT REQ'D STR #1
- (3) NO BOTTOM PROTECTION UNLESS SHOWN ON PLAN/PROFILE SHEETS



GRADE CONTROL STRUCTURE	FLW ELEV FLOWLINE WEIR	PILE TIP ELEV	TSP ELEV TOP SHEET PILE	D LENGTH OF SHEET PILE (FT.)	LBW WIDTH BOTTOM OF WEIR (FT.)	L_TW WIDTH TOP OF WEIR (FT.)	LB LENGTH EXTENDED INTO BANK (FT.)	FLDS ELEV BOTTOM DOWN STREAM	LDS WIDTH CHANNEL BOTTOM DOWN STREAM (FT.)
1	2+05	272.00	247.00	283.25	25.0 (1)	19.5	64.5	272.0	20
2	25+45	278.00	261.00	287.75	17.0	19.5	58.5	275.7	20
3	32+07	280.20	263.20	287.70	17.0	18.0	48.0	278.6	20
4	38+68	282.30	269.30	289.05	13.0	15.0	21.0	280.3	18

- (1) EAST SIDE OF GRADE CONTROL STRUCTURE #1 ONLY. THE LENGTH SHALL VARY FROM 25.0' TO 38.25'
- (2) EAST SIDE OF GRADE CONTROL STRUCTURE #1 ONLY. LB TO BE 60.0' EXTENDED AT 45° SKEW

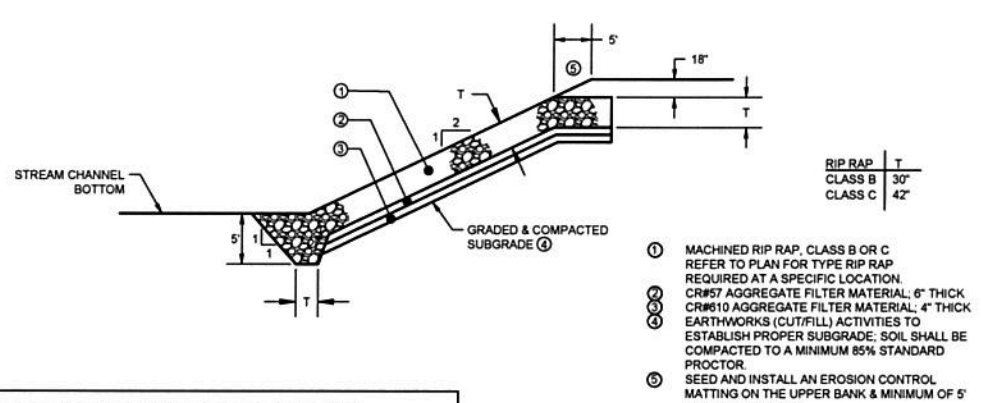


DRIVE ONE PAIR OF SHEET PILES NEAR THE CENTER OF THE WEIR 6" LOWER THAT OF THE WEIR FLOWLINE FOR MINIMUM FLOW CONDITION

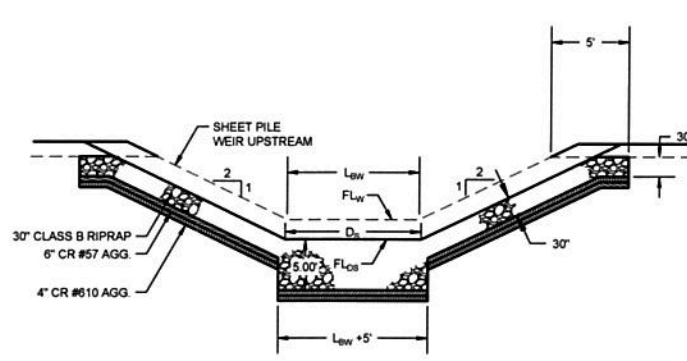
**B1** GRADE CONTROL STRUCTURE PLAN VIEW

**B3** SHEET PILE GRADE CONTROL DIMENSIONS

**B5** SHEET PILE GRADE CONTROL BLOWUP

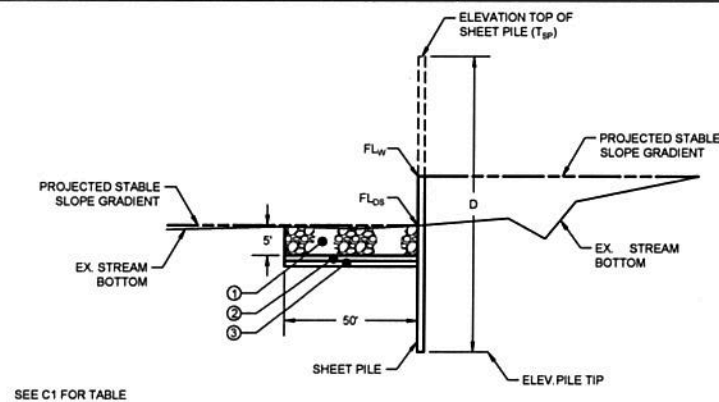


- ① MACHINED RIP RAP, CLASS B OR C REFER TO PLAN FOR TYPE RIP RAP REQUIRED AT A SPECIFIC LOCATION
- ② CR#57 AGGREGATE FILTER MATERIAL; 6" THICK
- ③ EARTHWORKS (CUT/FILL) ACTIVITIES TO ESTABLISH PROPER SUBGRADE; SOIL SHALL BE COMPACTED TO A MINIMUM 85% STANDARD PROCTOR
- ④ SEED AND INSTALL AN EROSION CONTROL MATTING ON THE UPPER BANK & MINIMUM OF 5' BEYOND TOP BANK

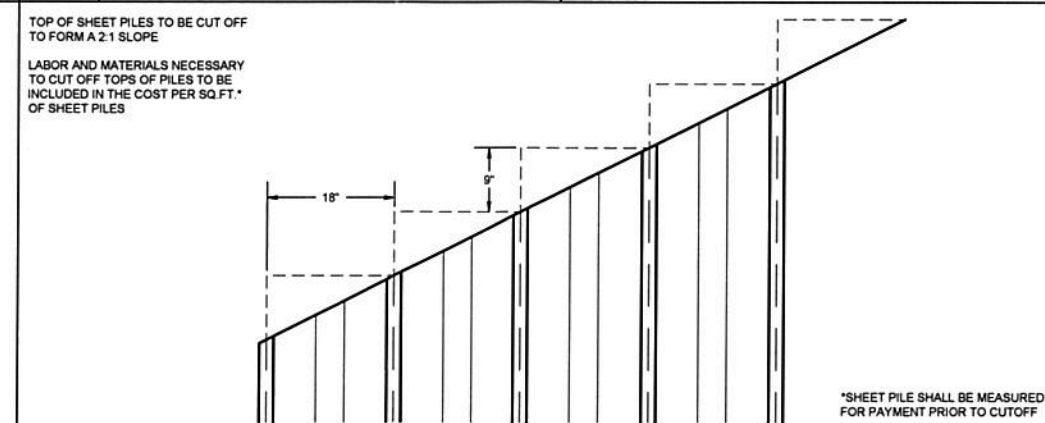


**C1** TYPICAL RIP RAP SLOPE PROTECTION

**C3** SCOUR PROTECTION DOWNSTREAM



**D1** GRADE CONTROL PROFILE

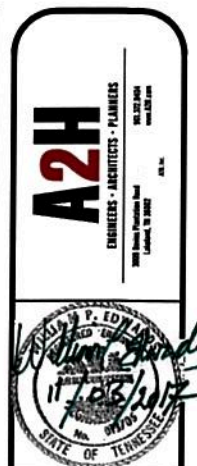


**D3** PILE CUTOFF DETAIL

- STEEL SHEET PILES**
- THE STEEL SHEET PILES SHALL CONFORM TO REQUIREMENTS OF ASTM A 572 GRADE 50 AND HAVE THE MINIMUM SECTION MODULUS, WEIGHT, SHAPE AND SIZE FOR A PZ 27 SECTION.
  - THE SHEET PILE WALLS SHALL BE INSTALLED WITH A VIBRATORY HAMMER AND NOT AN IMPACT HAMMER IF POSSIBLE IN ORDER TO MINIMIZE VIBRATIONAL FORCES.
  - THE POSSIBLE NEED FOR DRIVING SHOES SHOULD BE CONSIDERED BY THE INSTALLATION CONTRACTOR TO PROTECT THE END OF THE PILING.
  - WATER JETTING INSTALLATION OF THE SHEET PILING SHALL NOT BE PERMITTED.
  - THE SHEET PILES SHALL BE DRIVEN TO ELEVATION SHOWN ON THE PLANS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, WHERE IMPRACTICAL TO DRIVE TO PLAN ELEVATION DUE TO SUBSURFACE CONDITION, THE DRIVING OF PILES MAY BE STOPPED AT HIGHER ELEVATION WITH THE WRITTEN PERMISSION OF THE GEOTECHNICAL ENGINEER.
  - THE TOP OF THE PILING SHALL BE DRIVEN OR CUT-OFF TO A STRAIGHT LINE AT THE ELEVATION INDICATED ON THE PLANS. THE LENGTH OF PILE CUT OFF SHALL BE SUFFICIENT TO PERMIT THE REMOVAL OF ALL DAMAGED MATERIAL. STEEL SHEET PILES SHALL BE CUT OFF IN CLEAN, STRAIGHT LINES. ANY IRREGULARITIES SHALL BE LEVELED OFF WITH DEPOSITS OF WELD METAL OR BY GRINDING.
  - PILING GUIDES AND FRAME TEMPLATES SHALL BE EMPLOYED TO OBTAIN PROPER PLUMBNESS OF THE SHEET PILE WALL. THE PILING SHALL BE DRIVEN IN SUCH A MANNER AS TO INSURE PERFECT INTERLOCKING THROUGHOUT THE ENTIRE LENGTH OF EACH PILE TO THE DEPTH SPECIFIED. TEMPORARY GUIDE STRUCTURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR PURPOSE.
  - SHEET PILING SHALL BE INSTALLED PLUMB AND TRUE WITH THE FOLLOWING TOLERANCES:
    - A. DEVIATION FROM VERTICAL: NOT MORE THAN 1/8-INCH PER FOOT.
    - B. ALIGNMENT: IN ANY GIVEN 30-FOOT LENGTH OF WALL, NO POINT AT THE TOP OF THE WALL SHALL DEVIATE MORE THAN 2-INCHES FROM A STRAIGHT LINE.
  - THE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES OR DRAIN LINES THAT PASS THROUGH THE AREA IN WHICH THE SHEET PILING IS TO BE DRIVEN, AND SHALL PROTECT SAME DURING INSTALLATION OF SHEET PILING.

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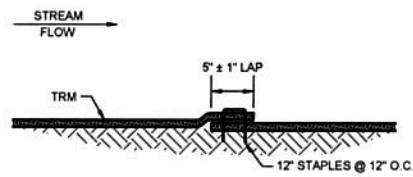
**D5** SHEET PILE NOTES



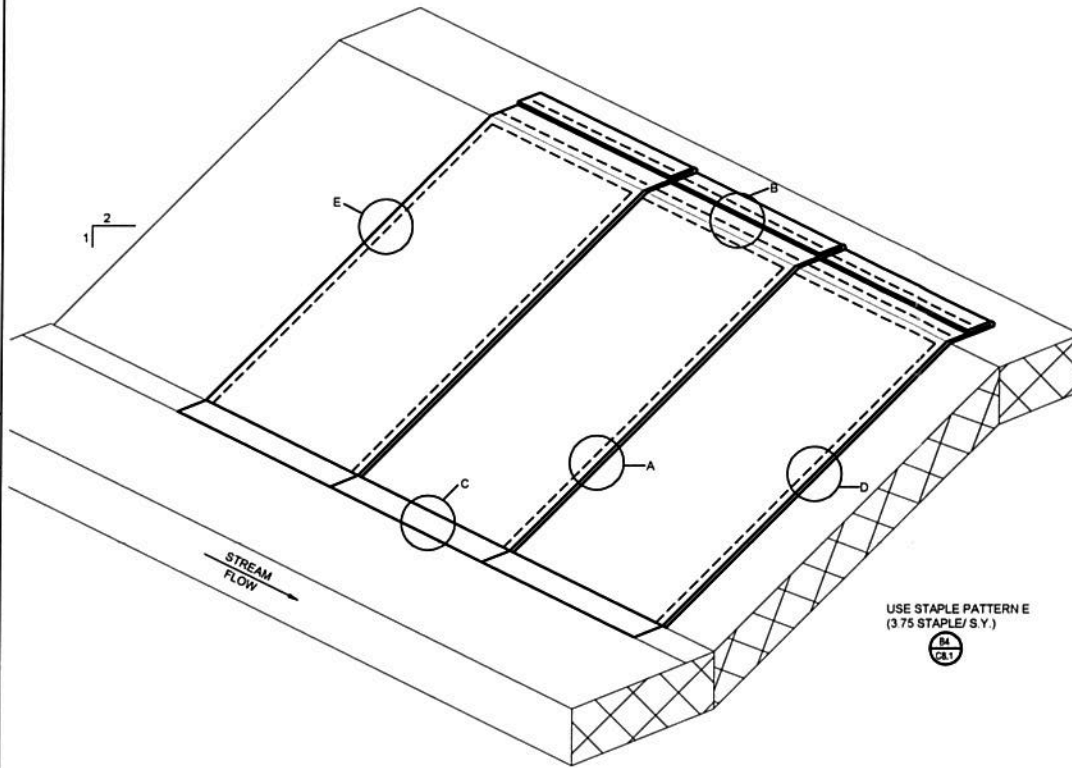
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 THE TOWN OF COLLIERVILLE  
 500 KEOUGH ROAD, COLLIERVILLE, TN 38017

REVISIONS

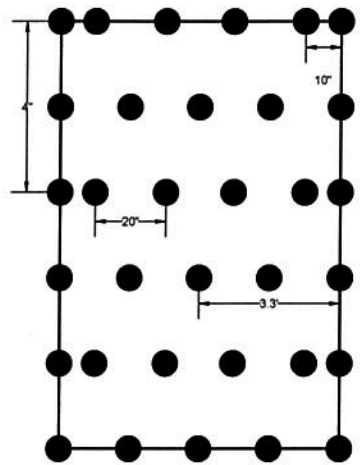

PROJECT NO. 14284.01  
 DATE: NOVEMBER 3, 2017  
 DRAWN: MMD CHECKED: BE  
 SHEET TITLE: DETAILS  
 SHEET NO: C8.0



LONGITUDINAL LAP- SHINGLED IN DIRECTION OF FLOW



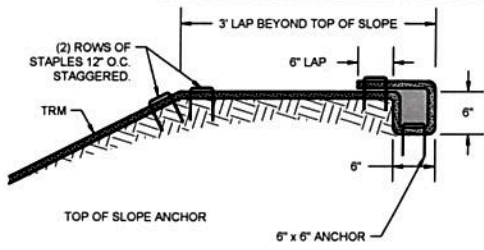
TURF REINFORCEMENT MATTING STREAM BANK STABILIZATION



STAPLE PATTERN E

3.75 STAPLES PER SQ. YD.

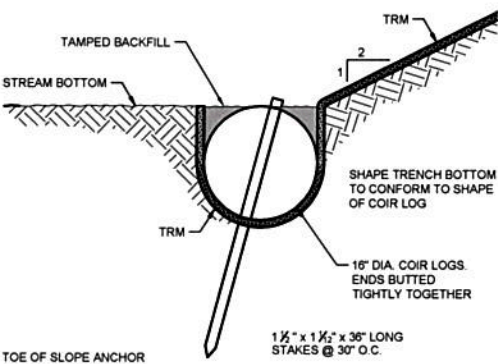
**A1** DETAIL A  
N.T.S.



TRENCH: FIT TRM INTO BOTTOM AND WALLS AS SHOWN. STAPLE TO BOTTOM OF TRENCH (12" O.C.)

TAMP BACKFILL INTO TRENCH. FOLD TRM BACK OVER TRENCH WITH A 6" OVER LAP. STAPLE LAP EVERY 12" O.C.

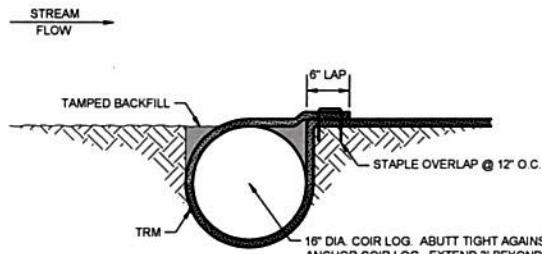
**B1** DETAIL B  
N.T.S.



TOE OF SLOPE ANCHOR

1 1/2" x 1 1/2" x 36" LONG STAKES @ 30" O.C.

**B2** BANK STABILIZATION  
N.T.S.

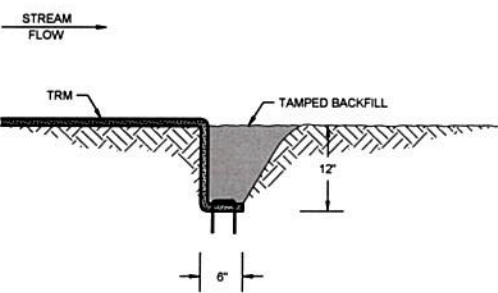


SHAPE TRENCH BOTTOM TO CONFORM TO SHAPE OF CHAIR LOG

16" DIA. COIR LOG. ABUTT TIGHT AGAINST TOE ANCHOR COIR LOG. EXTEND 3" BEYOND TOP BANK OF STREAM CHANNEL

TERMINATION OF UPSTREAM END OF TRM AT INTERFACE WITH NATURAL CHANNEL BANK

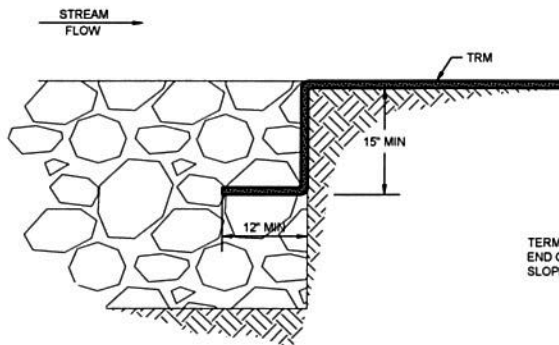
**C1** DETAIL C  
N.T.S.



TERMINATION OF DOWNSTREAM END OF TRM AT INTERFACE WITH NATURAL CHANNEL BANK

NOTE: DOWNSTREAM TERMINATION AGAINST RIP RAP MIRROR IMAGE OF DETAIL E

**D2** DETAIL E  
N.T.S.

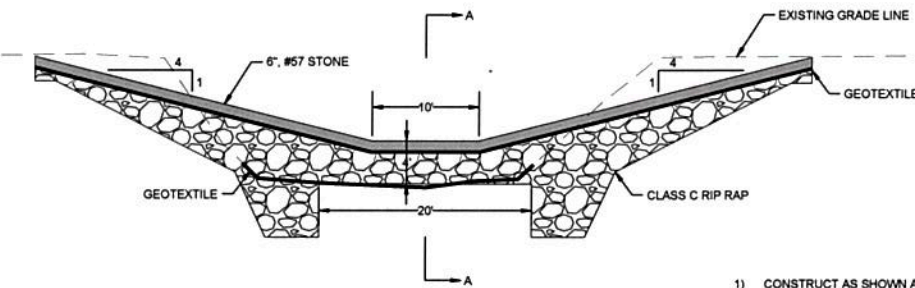


TERMINATION OF UPSTREAM END OF TRM AGAINST RIP RAP SLOPE PROTECTION

**D1** DETAIL D  
N.T.S.

**D1** DETAIL D  
N.T.S.

**B4** DETAIL F  
N.T.S.

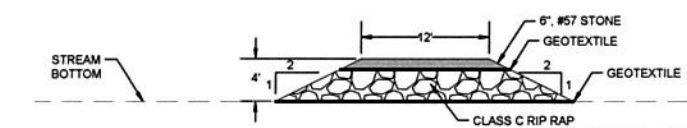


TOP BANK

STREAM BOTTOM

- 1) CONSTRUCT AS SHOWN AT GRADE CONTROL STRUCTURE #1.
- 2) CROSSINGS AT GRADE CONTROL STRUCTURES #2 AND #3 SHALL BE CONSTRUCTED ON THE DOWNSTREAM SIDE OF THE SHEET PILE WEIR. PLACE STONE ACROSS STREAM BOTTOM PER DETAIL C3. REMOVE FROM CHANNEL BOTTOM WHEN CONSTRUCTION OF GRADE CONTROL STRUCTURE #1.

**D4** LOW WATER CROSS SECTION- GR  
N.T.S.



TN. DEPT. OF ENV. & CONSERVATION

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SHEET TITLE:  
DETAILS

SHEET NO.

**C8.1**