

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**WATAUGA COUNTY**

**LOCATION: SR 1353 HARDIN RD**

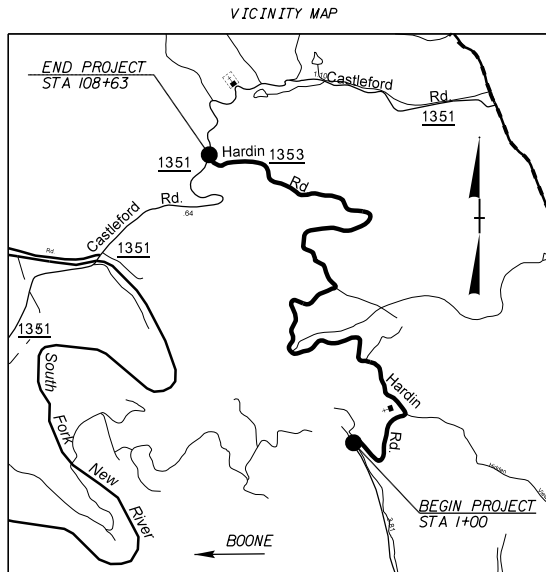
**FROM SR 1353 TO SR 1351  
STA 1+00 TO SR 85+25 AND  
STA 97+60 TO 108+63**

**TYPE OF WORK: GRADING, DRAINAGE, BASE  
AND PAVING - 1.80 MILES**

**BEGAN SURVEY: 03/01/17**

**END SURVEY: 05/03/17**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	11C096122	BC-1	32
STATE PROJ. NO.	F.L. PROJ. NO.	DESCRIPTION	



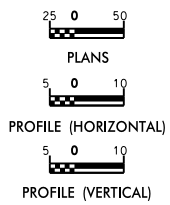
**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	---
1630.05	Temporary Diversion	---
1606.01	Temporary Silt Fence	---
1606.01	Special Sediment Control Fence	---
1622.01	Temporary Berms and Slope Drains	---
1630.02	Silt Basin Type B	---
1633.01	Temporary Rock Silt Check Type-A	---
1633.02	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	---
1633.02	Temporary Rock Silt Check Type-B	---
1633.02	Wattle / Coir Fiber Wattle	---
1633.02	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	---
1634.01	Temporary Rock Sediment Dam Type-A	---
1634.02	Temporary Rock Sediment Dam Type-B	---
1635.01	Rock Pipe Inlet Sediment Trap Type-A	---
1635.02	Rock Pipe Inlet Sediment Trap Type-B	---
1630.04	Stilling Basin	---
1630.06	Special Stilling Basin	---
Rock Inlet Sediment Trap:		
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
Skimmer Basin		---
Tiered Skimmer Basin		---
Infiltration Basin		---

THIS PROJECT CONTAINS  
EROSION CONTROL PLANS  
FOR CLEARING AND  
GRUBBING PHASE OF  
CONSTRUCTION.

HIGH QUALITY WATERS(S) EXIST  
ON THIS PROJECT  
High Quality Water Zone(s) Exist  
From Sta. 17+00  
to Sta. 108+63  
Refer To E. C. Special Provisions  
for Special Considerations.

**GRAPHIC SCALE**



ROADSIDE ENVIRONMENTAL UNIT  
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY  
WITH THE REGULATIONS SET FORTH BY THE  
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011  
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
DIVISION 11, DISTRICT 2 BOONE  
P. O. BOX 1460, BOONE, N.C. 28607  
**2012 STANDARD SPECIFICATIONS**

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type 1	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Jaffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

# EROSION CONTROL & PIPE INSTALLATION SCHEDULE TROUT BUFFER ZONE SEQUENCE GENERAL E&SC NOTES GROUND STABILIZATION CHART

## Erosion Control Schedule and Notes

1. Generally, the order of installation of the erosion control measures will be as follows:
  - A. Temporary silt basins shall be installed before clearing and grubbing begins.
  - B. Silt fences and temporary silt ditches shall be installed after clearing and before grading.
  - C. Temporary stone ditch checks with PAM or wattles with PAM shall be installed in all disturbed areas as soon as the disturbance begins.
  - D. Final stone ditch checks or wattles shall be installed as soon as ditch line is established.
  - E. Pipe outlet and inlet protection will be done as soon as the pipe is installed.
  - F. Other permanent erosion control measures are to be implemented as soon as practical.
2. Temporary rock silt checks, type B will be spaced by percent grade as shown in the erosion control plan.
3. No. 5 stone, or equivalent, will be used in conjunction with the temporary rock silt checks in locations where water is leaving the project or entering a pipe.
4. All devices are to be cleaned out when half full.
5. Establish permanent vegetation per ground stabilization chart.

**Notes:**

For silt basin size see the attached erosion control plans.

PAM is to be placed on all Type A checks and wattles in the erosion control chain except for the final device in HWQ and Trout projects.

## Wet Pipe Installation Schedule and Notes

1. Prior to installing any E&SC measures identify permit conditions and impact area limits.
2. Install erosion control devices.
3. Manage the water course. The pipe must be placed in the dry. Install dewatering measures.
4. Remove material and existing pipe while limiting material and sediment from entering stream and escaping the project.
5. Excavation of stream channel shall not exceed 10' on either side of new pipe or culvert unless indicated on permit.
6. Per permit conditions for Corps of Engineers and the Wildlife Resources Commission, all pipes in streams 48" or greater must be buried 12" below streambed elevation. Pipes less than 48" must be buried with 20% of the diameter below streambed elevation.
7. Place the new pipe and compact backfill.
8. Install slope protection on the outlet and inlet ends of the pipe. Also complete installation of erosion control measures and perform maintenance as needed on existing measures.
9. Establish permanent vegetation per ground stabilization chart.
10. More information on wet pipe installation can be found in the BMP manual section 4.2 "Pipe & Culvert installation"

## General Erosion Control Sequence & Notes for NC DOT Projects in Trout Buffer Zones

1. Prior to installing any E&SC measures identify permit conditions and impact area limits. Review trout buffer variance approval conditions for any special provisions.
2. All materials should be on the hand before work is commenced.
3. Install EC devices
4. Work within the buffer zone should be sequenced to minimize the length of time that disturbed areas are exposed. Stream bank stabilization, which includes the area from the edge of water to the top of bank, should be phased so that each day's work is a completed work, including provision of adequate ground cover.
5. Graded slopes and fills within the trout buffer zone will within 7 calendar days of completion of any phase of grading be planted or otherwise provided with temporary or permanent ground cover, devices, or structures sufficient to restrain erosion.
6. Graded slopes and fills within the trout buffer zone (excluding road shoulders) shall be protected with rolled erosion control product, bonded fiber matrix, or flexible growth medium after seeding.

**Notes:**

Silt fence backed by woven wire, with a post spacing of 6 feet, shall be used instead of standard silt fence in trout buffer zone. Special sediment control fence shall be used in areas where bedrock is encountered which prohibits the proper anchoring of fabric, and in low points of the silt fence in 3-foot sections to allow for concentrated flows.

The disturbed areas within the stream buffer shall be restored to native vegetation characteristic of an undisturbed buffer to the extent practical upon completion of construction.

Flyrock protection such as blast mats should be provided for blasting in close proximity to streams.

PAM is to be placed on all Type A checks and wattles in the erosion control chain except for the final device in HWQ and Trout projects.

### GROUND STABILIZATION CHART

Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10 ft. or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length
All other areas flatter than 4:1	14 days	None (except for perimeters and HQW zones)

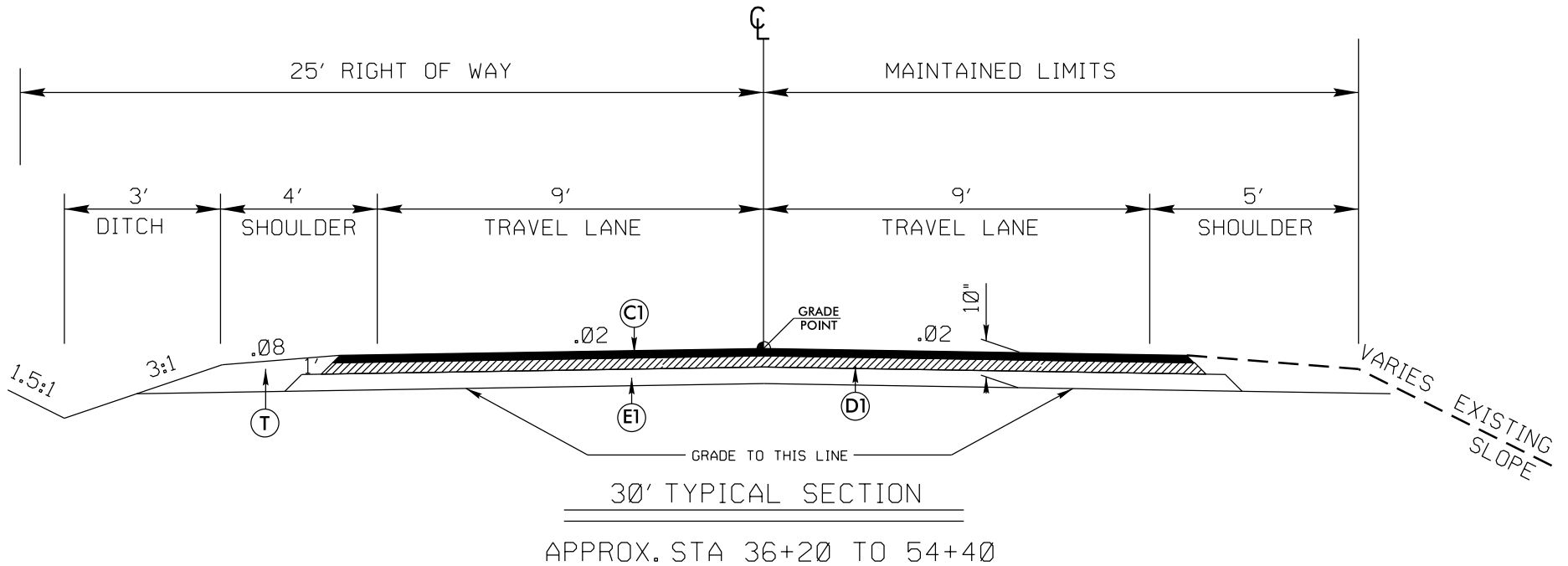
ROAD NAME: SR1353 (HARDIN ROAD)

DATE: 3-07-17

COUNTY: WATAUGA

PROJECT (WBS) : 11C.095122

NOTE: PAVEMENT MARKINGS FOR TWO 9' LANES



C1	AST
D1	3.0" Binder
E1	6" AGGREGATE BASE COURSE
T	

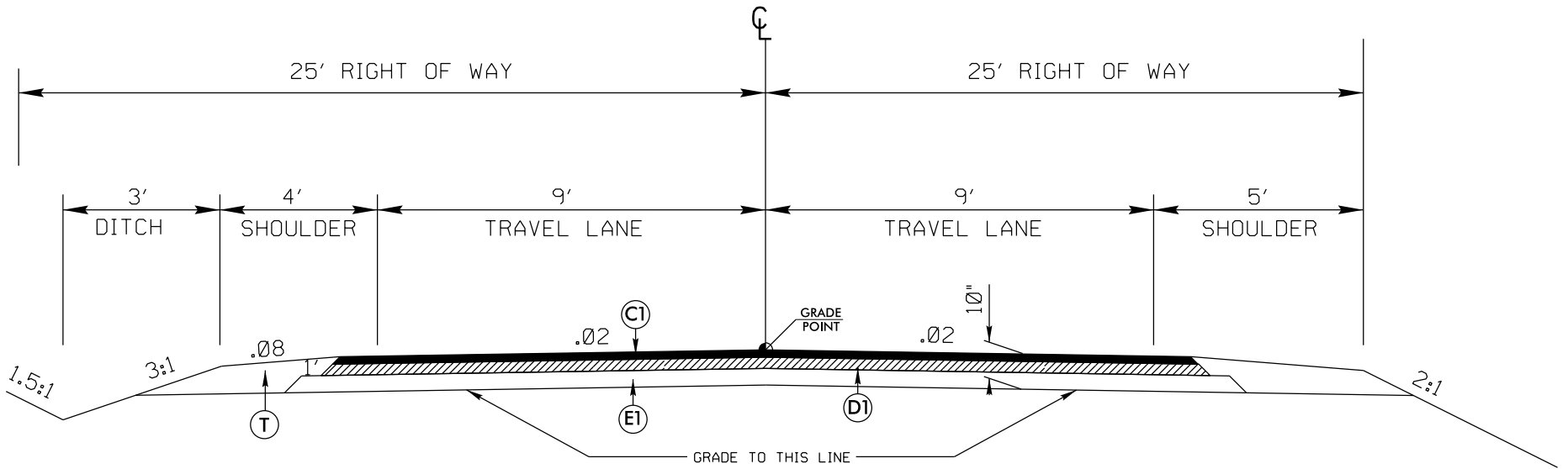
ROAD NAME: SR1353 (HARDIN ROAD)

DATE: 3-07-17

COUNTY: WATAUGA

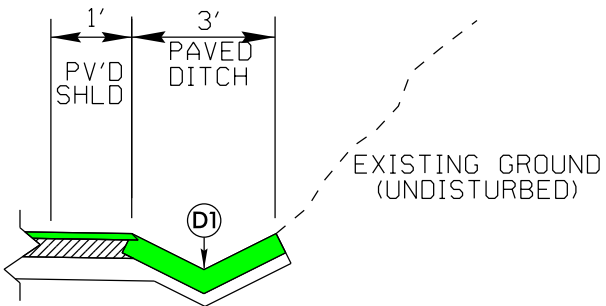
PROJECT (WBS) : 11C.095122

NOTE: PAVEMENT MARKINGS FOR TWO 9' LANES



PAVED DITCH DETAIL

30' TYPICAL SECTION



STA. 3+31 LT. TO STA. 5+00 LT.

USE 3" BINDER IN PAVED DITCH

C1	AST
D1	3.0" Binder
E1	6" AGGREGATE BASE COURSE
T	



**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

***SOIL STABILIZATION TIMEFRAMES***

PROJECT REFERENCE NO. <b>11C095122</b>	SHEET NO. <b>EC-3B</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT NO.      SHEET NO.


11C 095122

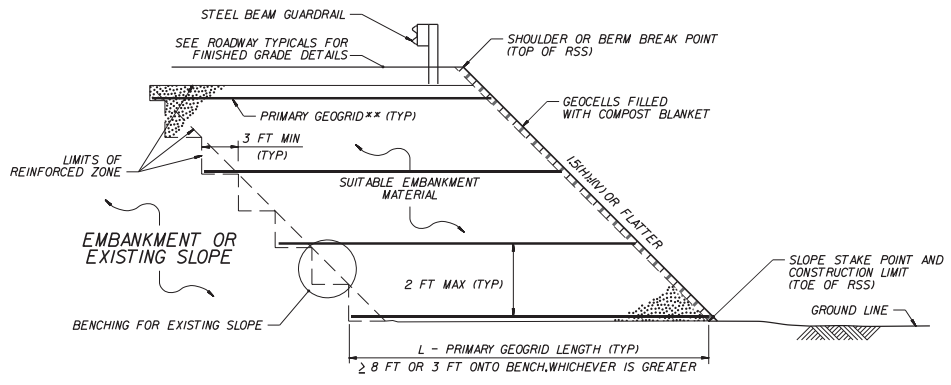
3-C

**LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)**

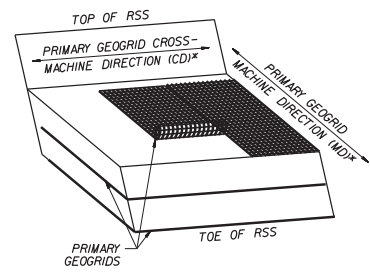
STATION	LOCATION, ELEV., OR CL.	NEW PIPES								EXISTING PIPES								PIPE REMOVAL D.I. STD. 840.1 OR STD. 840.15	D.I. FRAME AND GATE STD. 840.16	J.P. STD. 840.31 OR 840.32	REMARKS
		C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)																			
		12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"				
1+00	CL					45'							45'				45'	REPLACE			
1+30	CL			55'								55'					55'	REPLACE			
3+01	LT		60'															ADD			
5+00	CL			65'								25'					25'	REPLACE			
8+90	LT			40'								36'					36'	REPLACE			
12+35	LT			40'								40'					40'	REPLACE			
13+00	CL			55'								20'					20'	REPLACE			
15+60	LT		50'															ADD			
18+25	CL			65'														ADD			
20+75	CL			65'														ADD			
22+75	CL			35'								25'					25'	REPLACE			
27+35	CL			40'								40'					40'	REPLACE			
29+55	CL			35'								25'					25'	REPLACE			
31+85	CL			35'								25'					25'	REPLACE			
35+20	CL			40'								34'					34'	REPLACE			
38+15	CL			45'								40'					40'	REPLACE			
42+00	LT		20'															ADD			
42+20	CL			50'								40'					40'	REPLACE			
42+35	LT		30'									25'					25'	REPLACE			
45+05	CL			40'								32'					32'	REPLACE			
49+75	LT		25'									25'					25'	REPLACE			
49+95	CL			48'								48'					48'	REPLACE			
53+40	CL			45'								32'					32'	REPLACE			
55+75	LT		25'															ADD			
56+15	LT		25'															ADD			
57+70	LT		30'								24'						24'	REPLACE			
59+10	CL			65'								30'					30'	REPLACE			
60+35	CL			80'														ADD			
63+35	CL			60'														ADD			
65+95	CL			55'								40'					40'	REPLACE			
68+55	CL			50'								50'					50'	REPLACE			
73+75	CL			40'														ADD			
77+35	LT		55'															ADD			
83+17	CL			50'								50'					50'	REPLACE			
98+30	RT		40'															ADD			
102+18	CL			45'								25'					25'	REPLACE			
103+00	RT		30'									30'					30'	REPLACE			
105+50	CL			45'														ADD			
107+10	RT		30'									30'					30'	REPLACE			
SHEET TOTALS		0	420	1135	153	0	45	0	0	1753	24	110	569	143	45	0	0	891	0	0	0

D:\LCD-22\82C

<b>PROJECT REFERENCE NO.</b> 11C.095122		<b>SHEET NO.</b> 3-D	
GEOTECHNICAL ENGINEER 		ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			



**REINFORCED SOIL SLOPE (RSS)  
GEOCELLS WITH COMPOST BLANKET**




**GEOGRID PLACEMENT DETAILS**  
(% COVERAGE = 100%)

**NOTES:**

- SEE EROSION CONTROL AND ROADWAY PLANS FOR REINFORCED SOIL SLOPE (RSS) AND SLOPE EROSION CONTROL LOCATIONS.
- FOR REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- FOR GEOCELLS, SEE CELLULAR CONFINEMENT SYSTEMS PROVISION. FOR COMPOST BLANKET, SEE EROSION CONTROL PROVISIONS.
- RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:  
 UNIT WEIGHT,  $\gamma = 120$  LB/CF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  LB/SF
- INSTALL PRIMARY GEOGRIDS WITH A 75-YEAR MINIMUM LONG-TERM DESIGN STRENGTH (LTDS) FOR THE BORROW CATEGORY OF 1,000 LB/FT IN THE MACHINE DIRECTION (MD). INSTALL PRIMARY GEOGRIDS WITH 100% COVERAGE.
- THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:  
[connect.ncdot.gov/resources/Materials/Pages/SoilsLaboratory.aspx](http://connect.ncdot.gov/resources/Materials/Pages/SoilsLaboratory.aspx)
- IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE MD, DO NOT USE THE GEOGRID FOR PRIMARY GEOGRID.
- DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PPI) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.
- DO NOT PLACE ANY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.

TOTAL RSS QUANTITY = 240 SQ.YD.

PREPARED BY: D. HARDISTER, PE      DATE: 9/2017  
 REVIEWED BY:      DATE:

  
**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**  
  
**GEOTECHNICAL  
ENGINEERING UNIT**

<b>REINFORCED SOIL SLOPE</b> SR 1353 - WATAUGA CO. STA. 2+50 to STA. 3+30 -L-		<b>REVISIONS</b>				
		NO.	BY	DATE	NO.	BY
1			3			
2			4			





ROBERT R. AUSTIN  
BOR 1150- PG 423

KENNETH SCOTT KIKER  
BOR-521/763

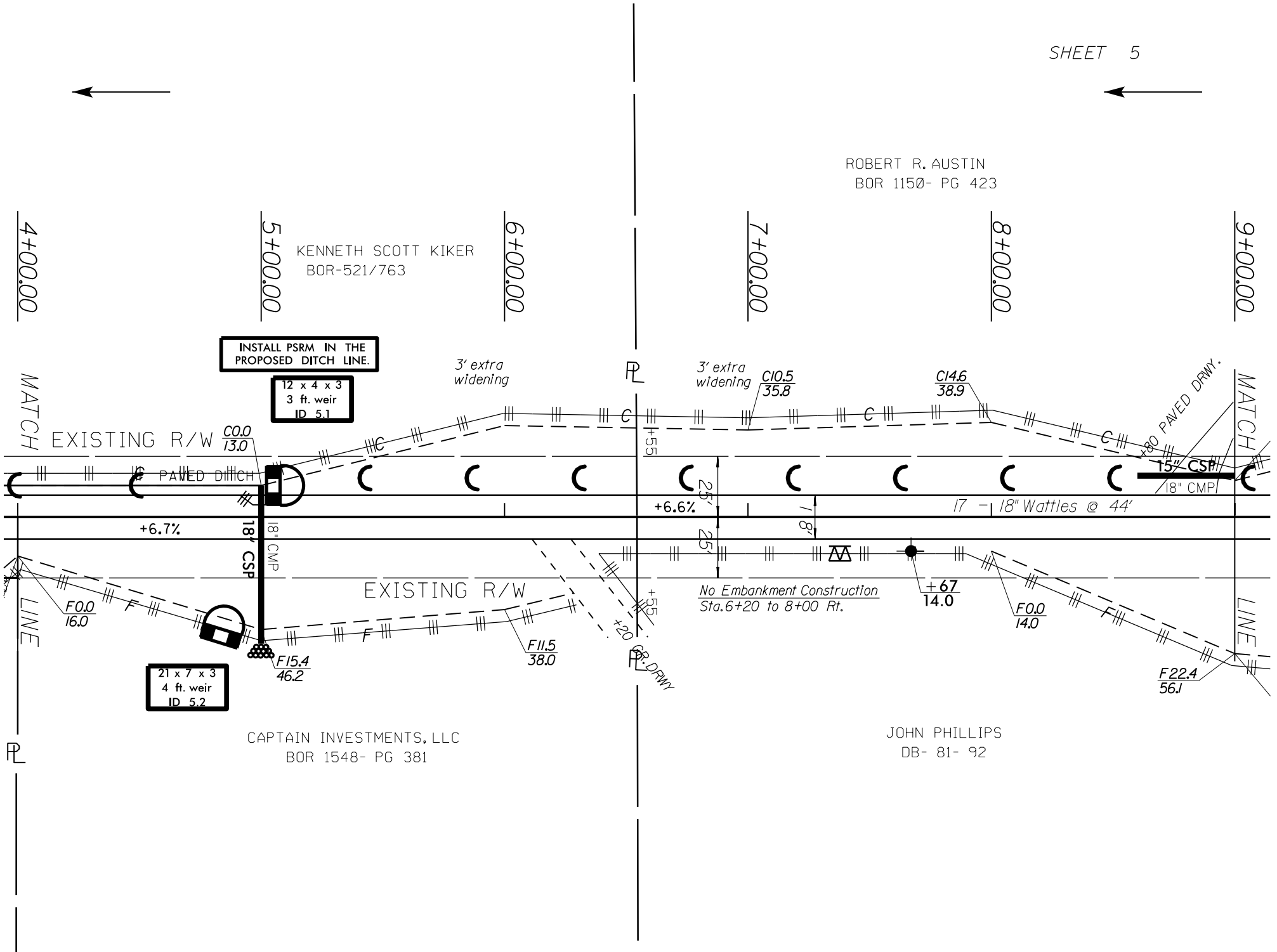
INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

12 x 4 x 3  
3 ft. weir  
ID 5.1

21 x 7 x 3  
4 ft. weir  
ID 5.2

CAPTAIN INVESTMENTS, LLC  
BOR 1548- PG 381

JOHN PHILLIPS  
DB- 81- 92

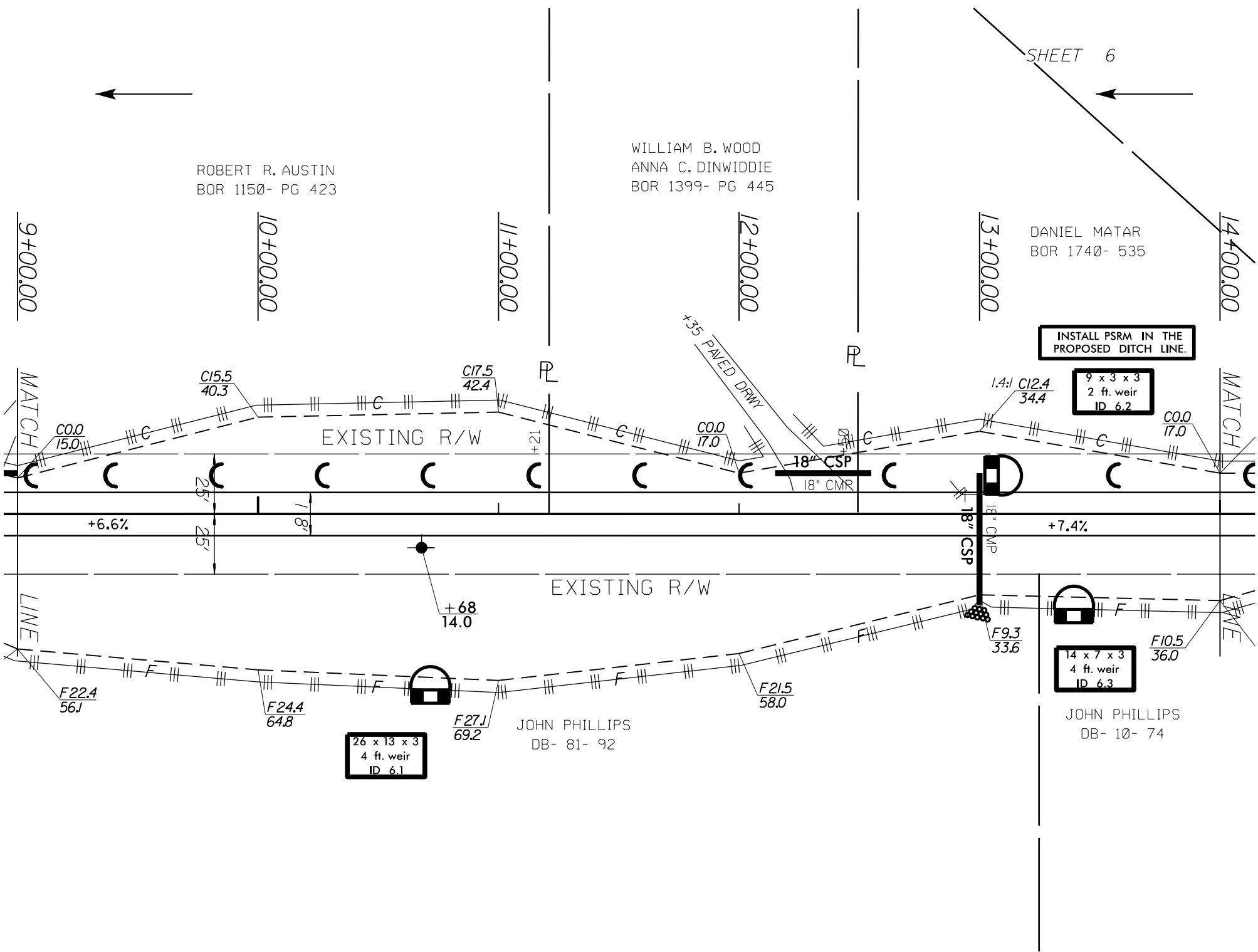


SHEET 6

ROBERT R. AUSTIN  
BOR 1150- PG 423

WILLIAM B. WOOD  
ANNA C. DINWIDDIE  
BOR 1399- PG 445

DANIEL MATAR  
BOR 1740- 535



INSTALL PSRM IN THE PROPOSED DITCH LINE.

9 x 3 x 3  
2 ft. weir  
ID 6.2

14 x 7 x 3  
4 ft. weir  
ID 6.3

26 x 13 x 3  
4 ft. weir  
ID 6.1

JOHN PHILLIPS  
DB- 81- 92

JOHN PHILLIPS  
DB- 10- 74

MATCH

MATCH

LINE

LINE

EXISTING R/W

EXISTING R/W

+6.6%

+7.4%

+68  
14.0

9+00.00

10+00.00

11+00.00

12+00.00

13+00.00

14+00.00

C0.0  
15.0

C15.5  
40.3

C17.5  
42.4

C0.0  
17.0

1.4:1 C12.4  
34.4

C0.0  
17.0

F22.4  
56J

F24.4  
64.8

F27J  
69.2

F21.5  
58.0

F9.3  
33.6

F10.5  
36.0

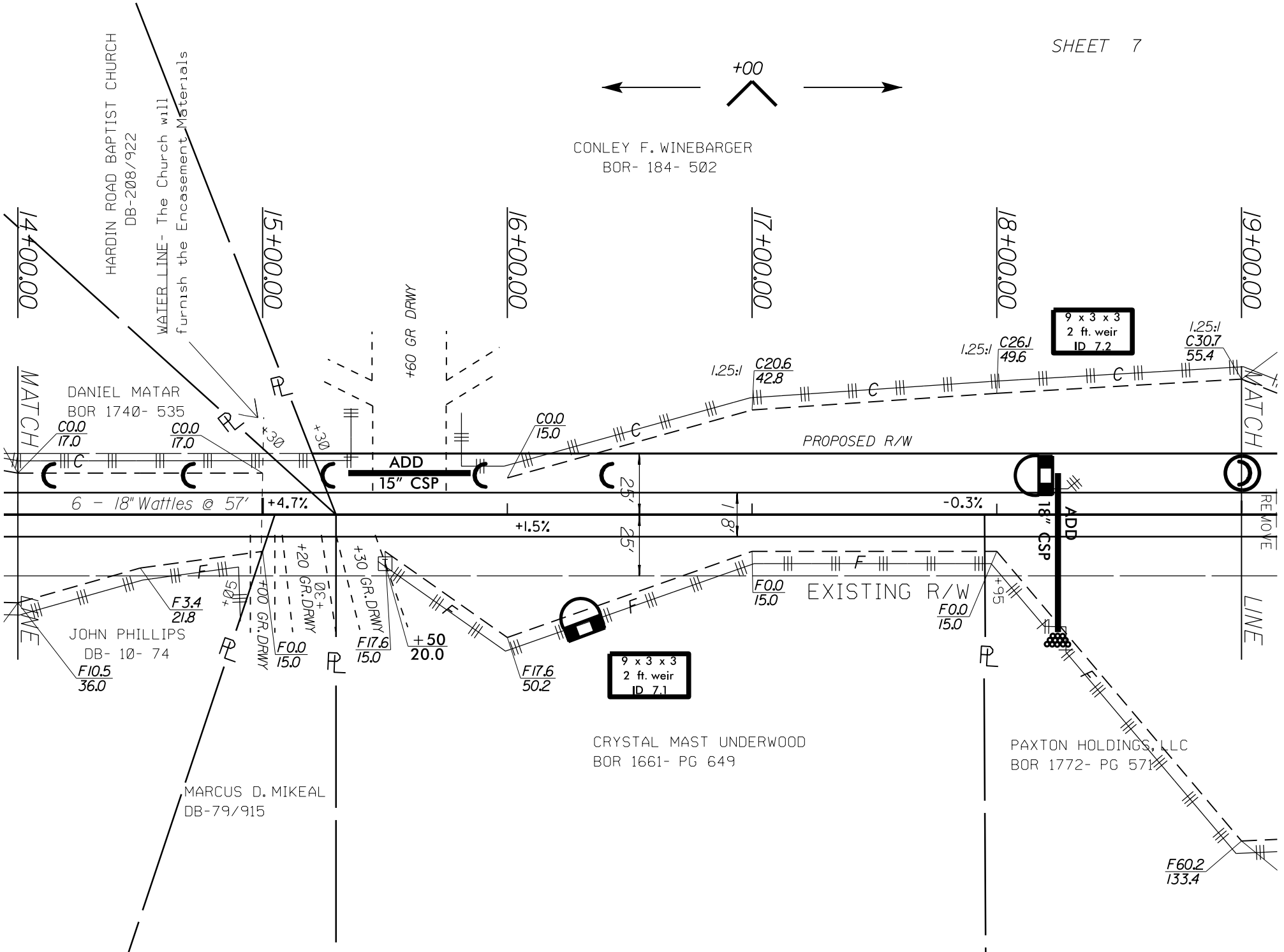
+35 PAVED DRWY

18" CSP  
18" CMR

18" CSP  
18" CMP



CONLEY F. WINEBARGER  
BOR- 184- 502



HARDIN ROAD BAPTIST CHURCH  
DB-208/922

WATER LINE- The Church will  
furnish the Encasement Materials

DANIEL MATAR  
BOR 1740- 535

JOHN PHILLIPS  
DB- 10- 74

MARCUS D. MIKEAL  
DB-79/915

CRYSTAL MAST UNDERWOOD  
BOR 1661- PG 649

PAXTON HOLDINGS, LLC  
BOR 1772- PG 571

9 x 3 x 3  
2 ft. weir  
ID 7.2

9 x 3 x 3  
2 ft. weir  
ID 7.1

F60.2  
133.4

1.25:1  
C30.7  
55.4

1.25:1  
C20.6  
42.8

1.25:1  
C26.1  
49.6

14+00.00

15+00.00

16+00.00

17+00.00

18+00.00

19+00.00

MATCH

MATCH

REMOVE

LINE

REMOVE

LINE

R

R

R

R

R

R

R

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R

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R

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6 - 18" Wattles @ 57'

+4.7%

+1.5%

-0.3%

+20 GR. DRWY

+30 GR. DRWY

+50 GR. DRWY

ADD  
15" CSP

ADD  
18" CSP

EXISTING R/W

PROPOSED R/W

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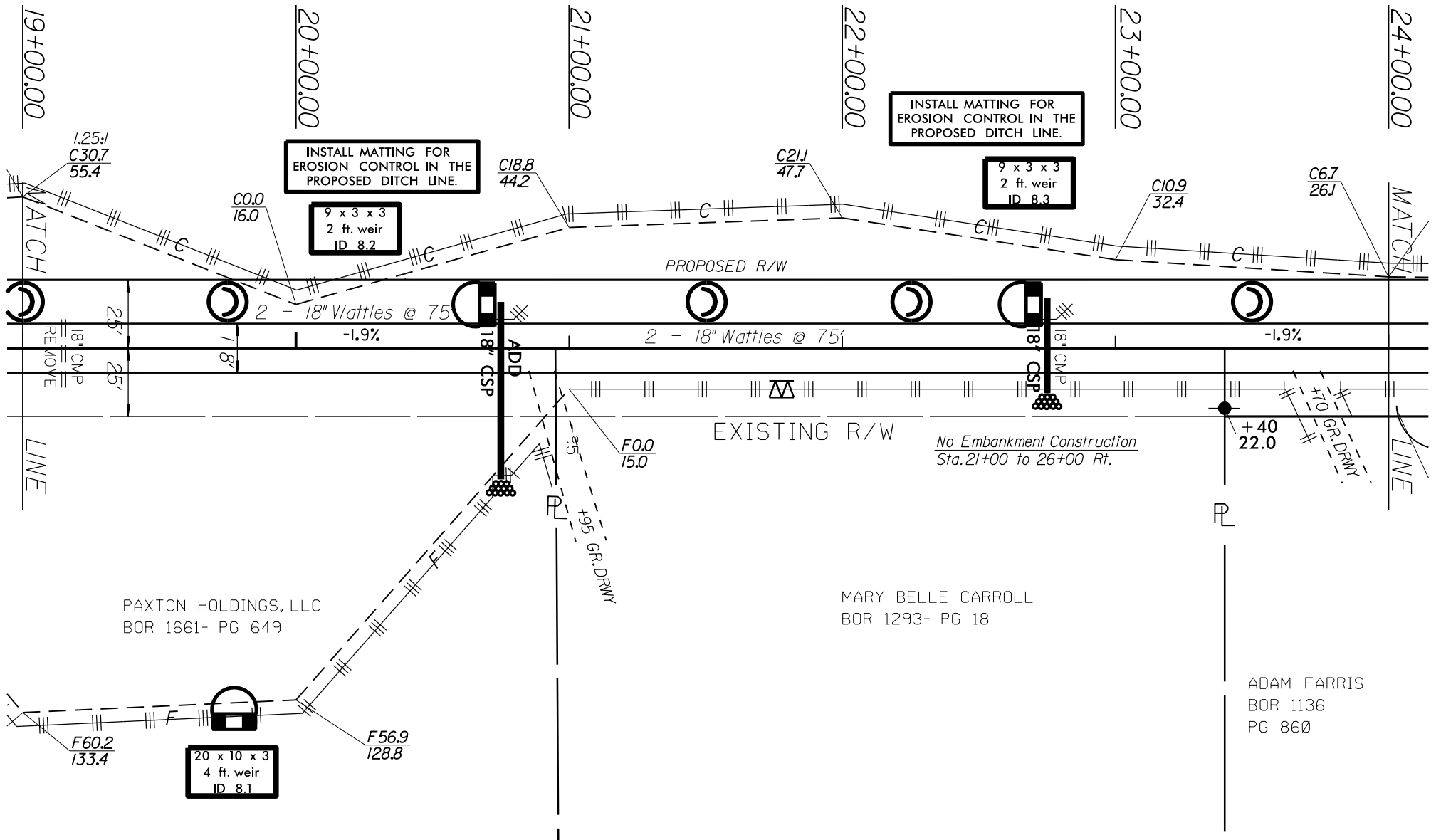
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CONLEY F. WINEBARGER  
BOR 184- 502

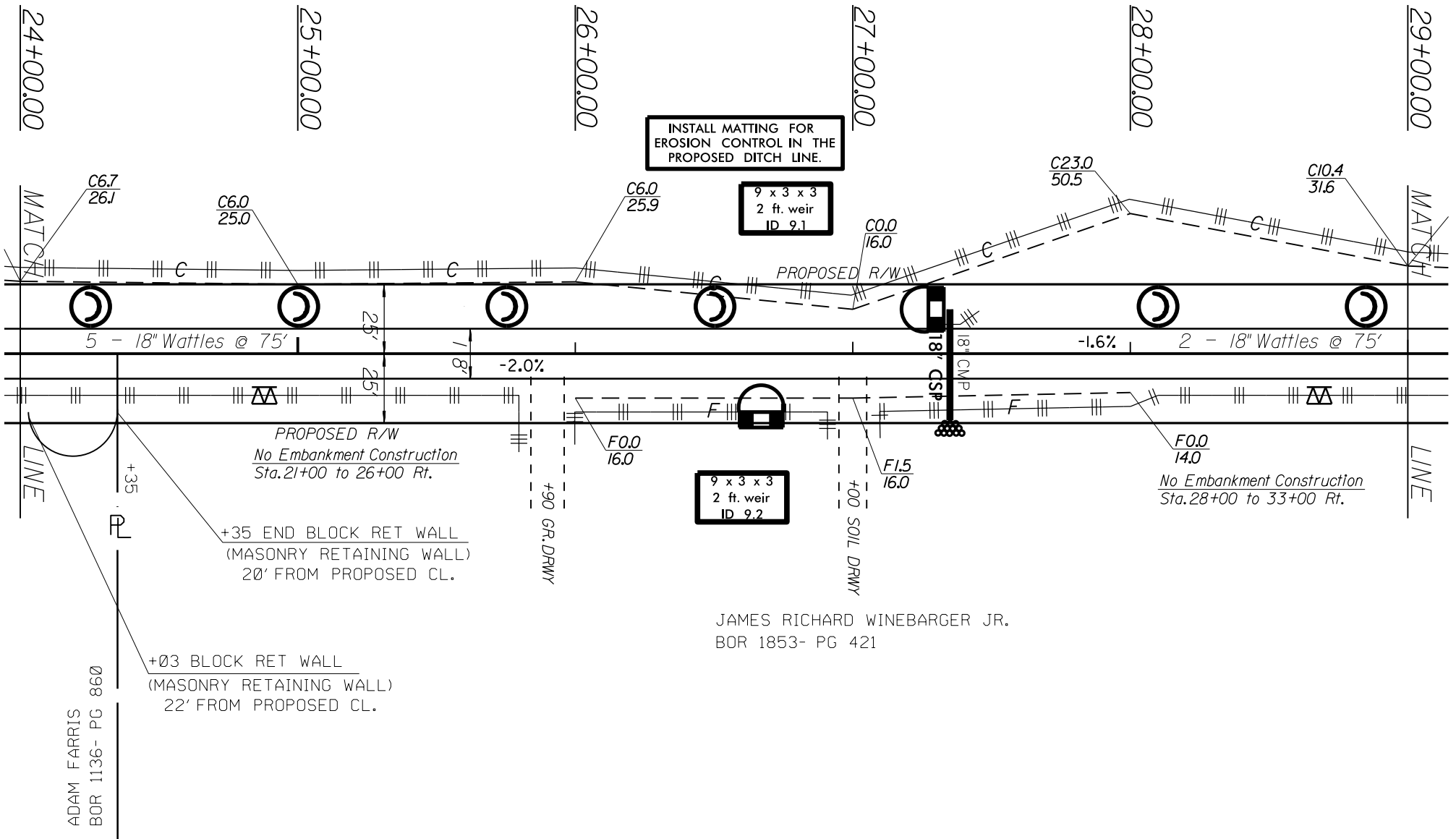


PAXTON HOLDINGS, LLC  
BOR 1661- PG 649

MARY BELLE CARROLL  
BOR 1293- PG 18

ADAM FARRIS  
BOR 1136  
PG 860

CONLEY F. WINEBARGER  
BOR 184- PG 502



INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

9 x 3 x 3  
2 ft. weir  
ID 9.1

9 x 3 x 3  
2 ft. weir  
ID 9.2

JAMES RICHARD WINEBARGER JR.  
BOR 1853- PG 421

ADAM FARRIS  
BOR 1136- PG 860

PROPOSED R/W  
No Embankment Construction  
Sta. 21+00 to 26+00 Rt.

No Embankment Construction  
Sta. 28+00 to 33+00 Rt.

+35 END BLOCK RET WALL  
(MASONRY RETAINING WALL)  
20' FROM PROPOSED CL.

+03 BLOCK RET WALL  
(MASONRY RETAINING WALL)  
22' FROM PROPOSED CL.

+90 GR. DRWY

+00 SOIL DRWY

+35

PL

25'  
25'

18'

-2.0%

F0.0  
16.0

F1.5  
16.0

F0.0  
14.0

C6.7  
26.1

C6.0  
25.0

C6.0  
25.9

C0.0  
16.0

C23.0  
50.5

C10.4  
31.6

-1.6%

18' CSP

18" CMP1

MATCH

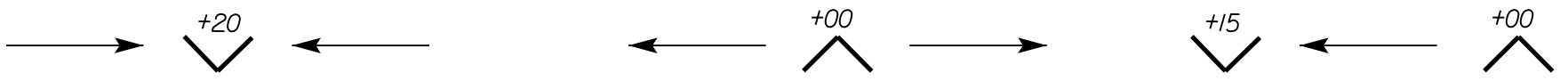
MATCH

LINE

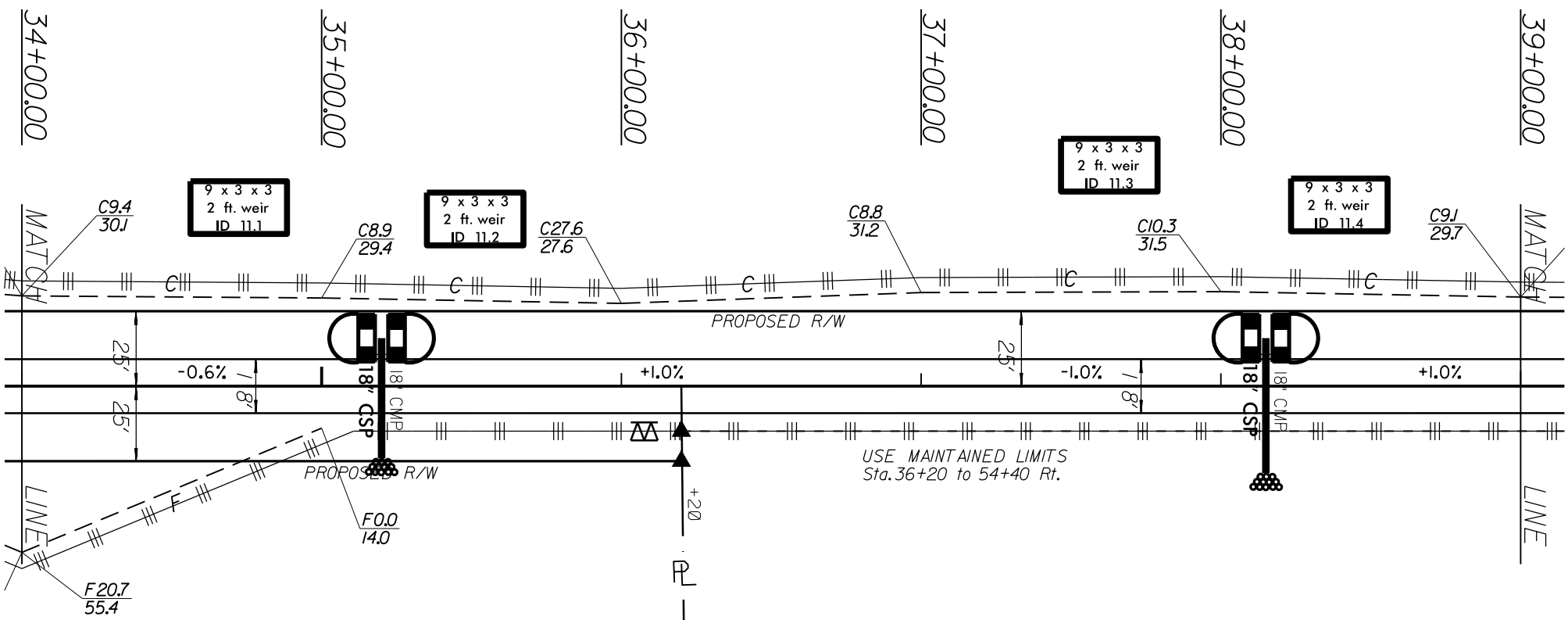
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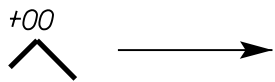
CONLEY F. WINEBARGER  
BOR 184- PG 502



CONLEY F. WINEBARGER  
BOR 184- PG 502

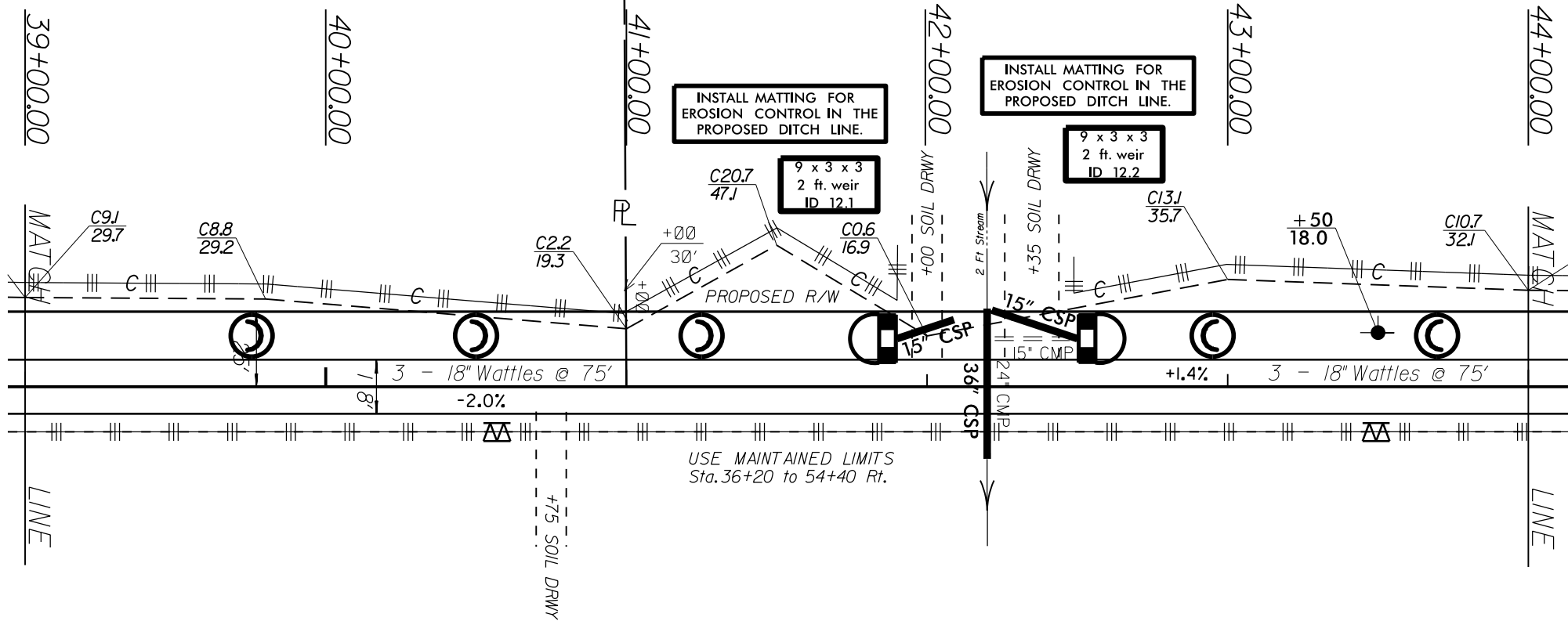
WILLIAM JOSEPH JAY CARTER IRREVOCABLE  
TRUST  
BOR 1432- PG 360





CONLEY F. WINEBARGER  
BOR 184- PG 502

CONLEY F. WINEBARGER  
BOR 1847- PG 667



INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

9 x 3 x 3  
2 ft. weir  
ID 12.1

9 x 3 x 3  
2 ft. weir  
ID 12.2

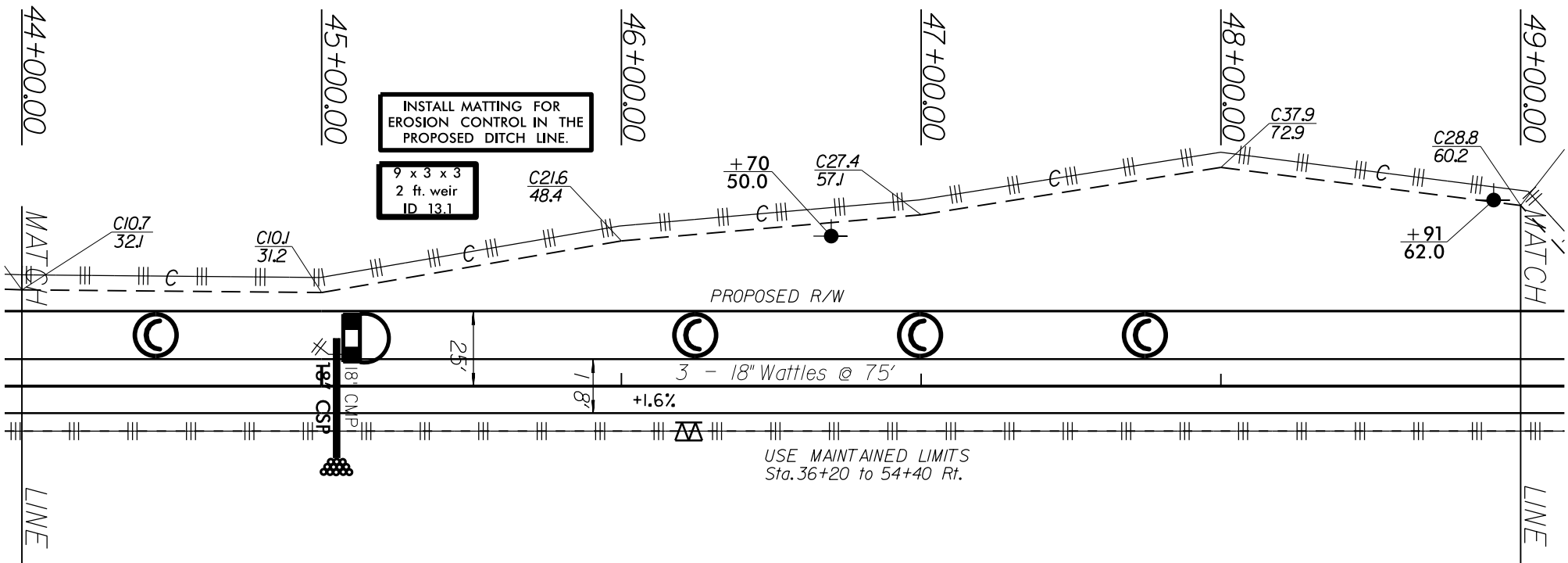
USE MAINTAINED LIMITS  
Sta. 36+20 to 54+40 Rt.

WILLIAM JOSEPH JAY CARTER IRREVOCABLE  
TRUST

BOR 1432- PG 360

+00

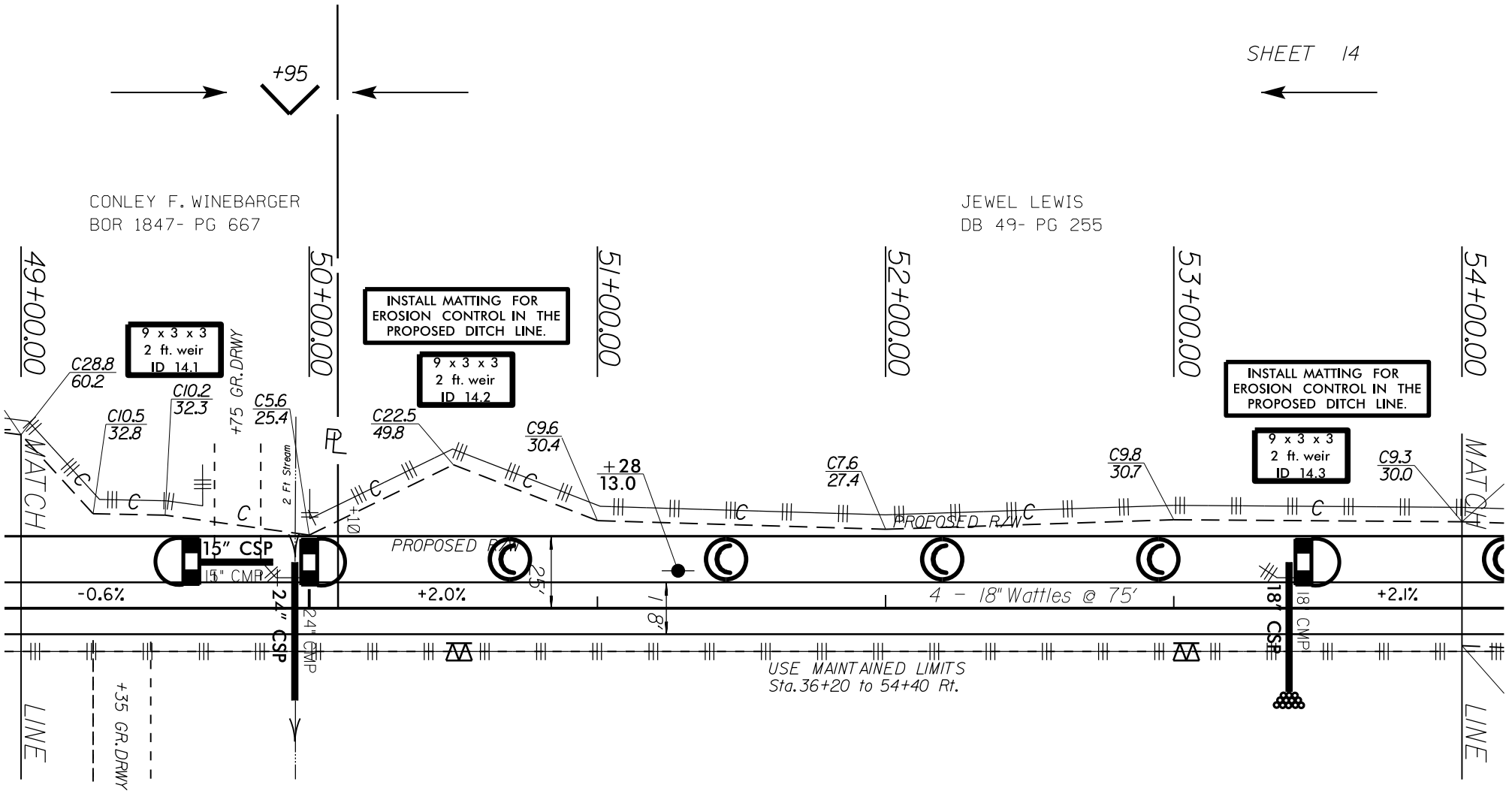
CONLEY F. WINEBARGER  
BOR 1847- PG 667



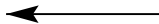
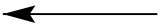
WILLIAM JOSEPH JAY CARTER IRREVOCABLE  
TRUST  
BOR 1432- PG 360

CONLEY F. WINEBARGER  
BOR 1847- PG 667

JEWEL LEWIS  
DB 49- PG 255



WILLIAM JOSEPH JAY CARTER IRREVOCABLE  
TRUST  
BOR 1432- PG 360



JEWEL LEWIS  
DB 49- PG 255

54+00.00

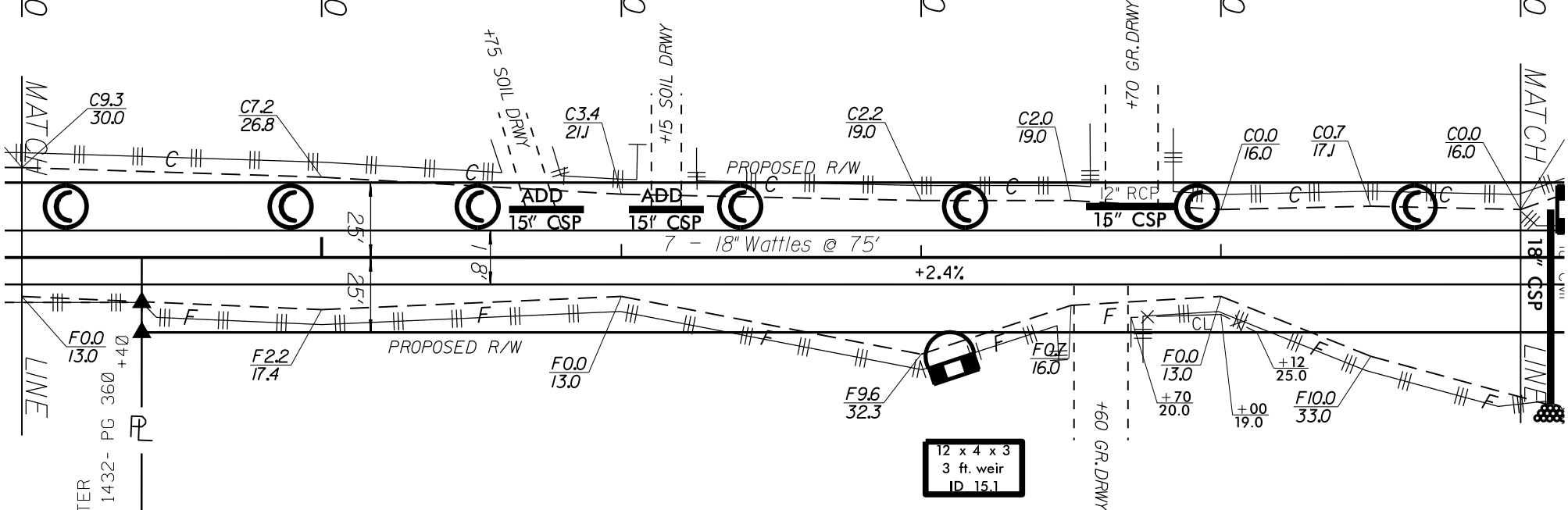
55+00.00

56+00.00

57+00.00

58+00.00

59+00.00



WILLIAM JOSEPH JAY CARTER  
IRREVOCABLE TRUST BOR 1432- PG 360

MARIAN S. GREENO LIFE ESTATE  
BOR 275- PG 408

KENNETH F. LISK  
BOR 275- PG 408

JEWEL LEWIS  
DB 49- PG 255

MARJORIE HELEN WRIGHT  
REVOCABLE LIVING TRUST  
BOR 1841- PG 298

INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

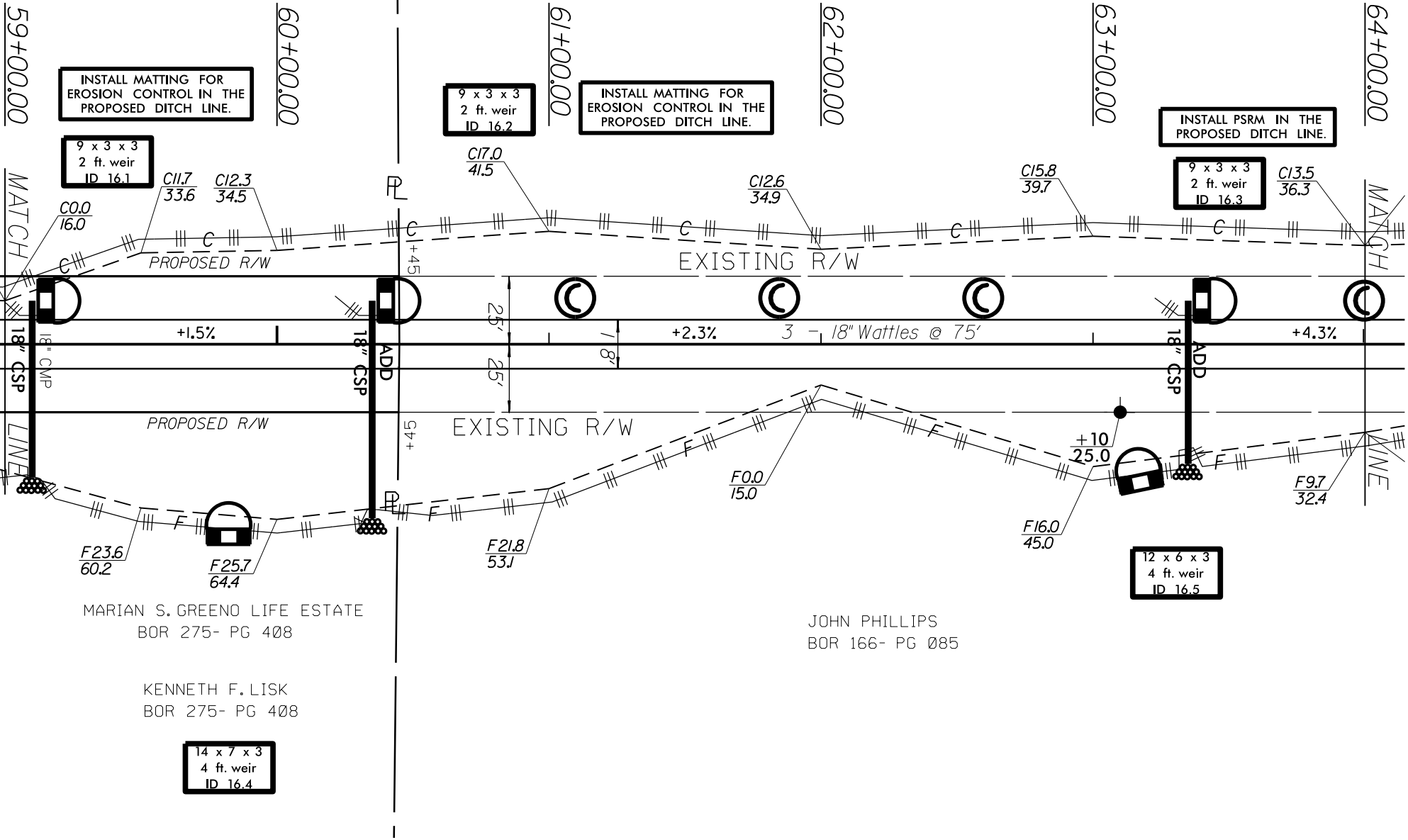
9 x 3 x 3  
2 ft. weir  
ID 16.2

INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

9 x 3 x 3  
2 ft. weir  
ID 16.3

9 x 3 x 3  
2 ft. weir  
ID 16.1



59+00.00

60+00.00

61+00.00

62+00.00

63+00.00

64+00.00

MATCH LINE

MATCH LINE

+1.5%

+2.3%

+4.3%

PROPOSED R/W

EXISTING R/W

18" CSP

18" CSP

ADD

ADD

F0.0  
15.0

F16.0  
45.0

F9.7  
32.4

F23.6  
60.2

F25.7  
64.4

F21.8  
53.1

MARIAN S. GREENO LIFE ESTATE  
BOR 275- PG 408

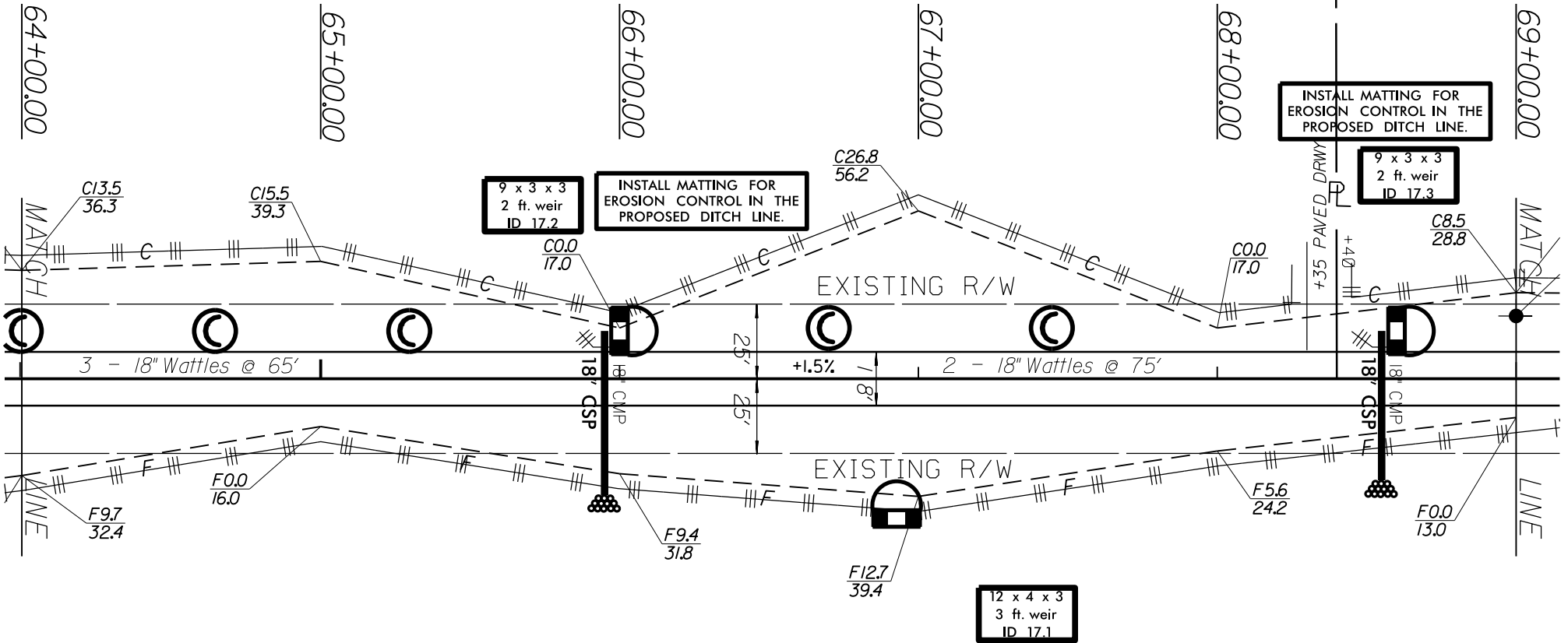
JOHN PHILLIPS  
BOR 166- PG 085

KENNETH F. LISK  
BOR 275- PG 408

14 x 7 x 3  
4 ft. weir  
ID 16.4

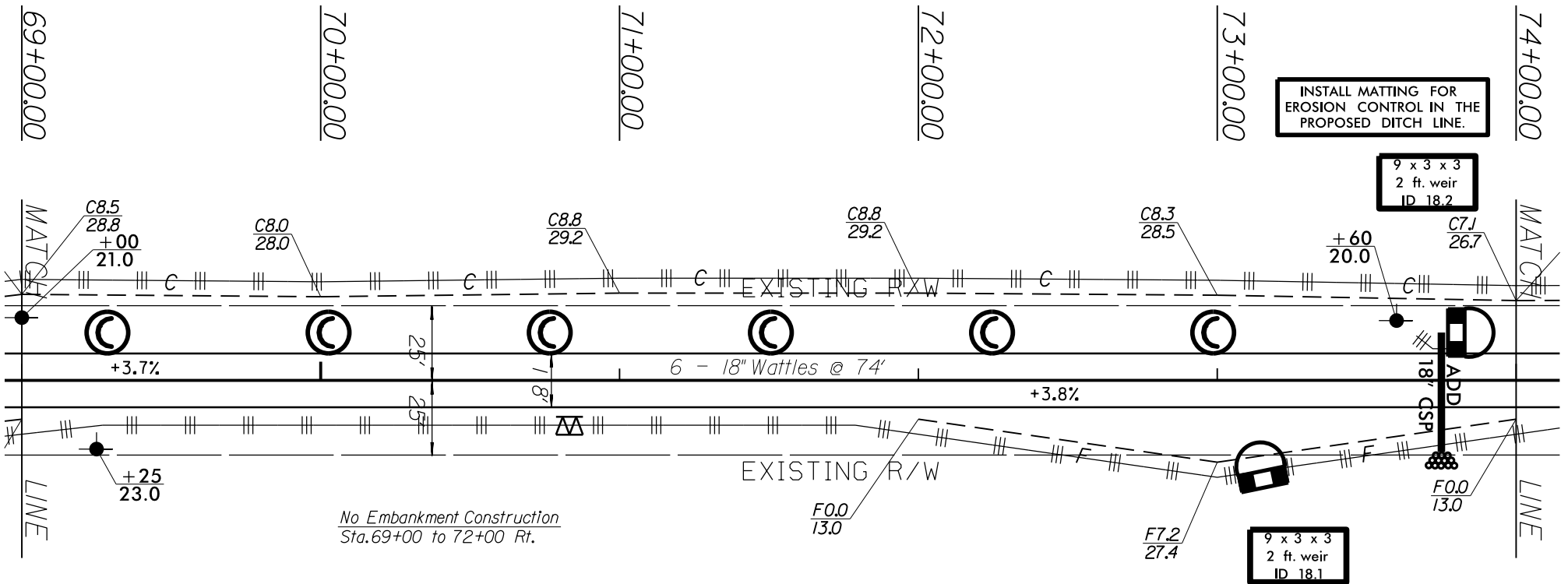
MARJORIE HELEN WRIGHT  
REVOCABLE LIVING TRUST  
BOR 1841- PG 298

DANNY DUNN  
BOR 1778  
PG 55



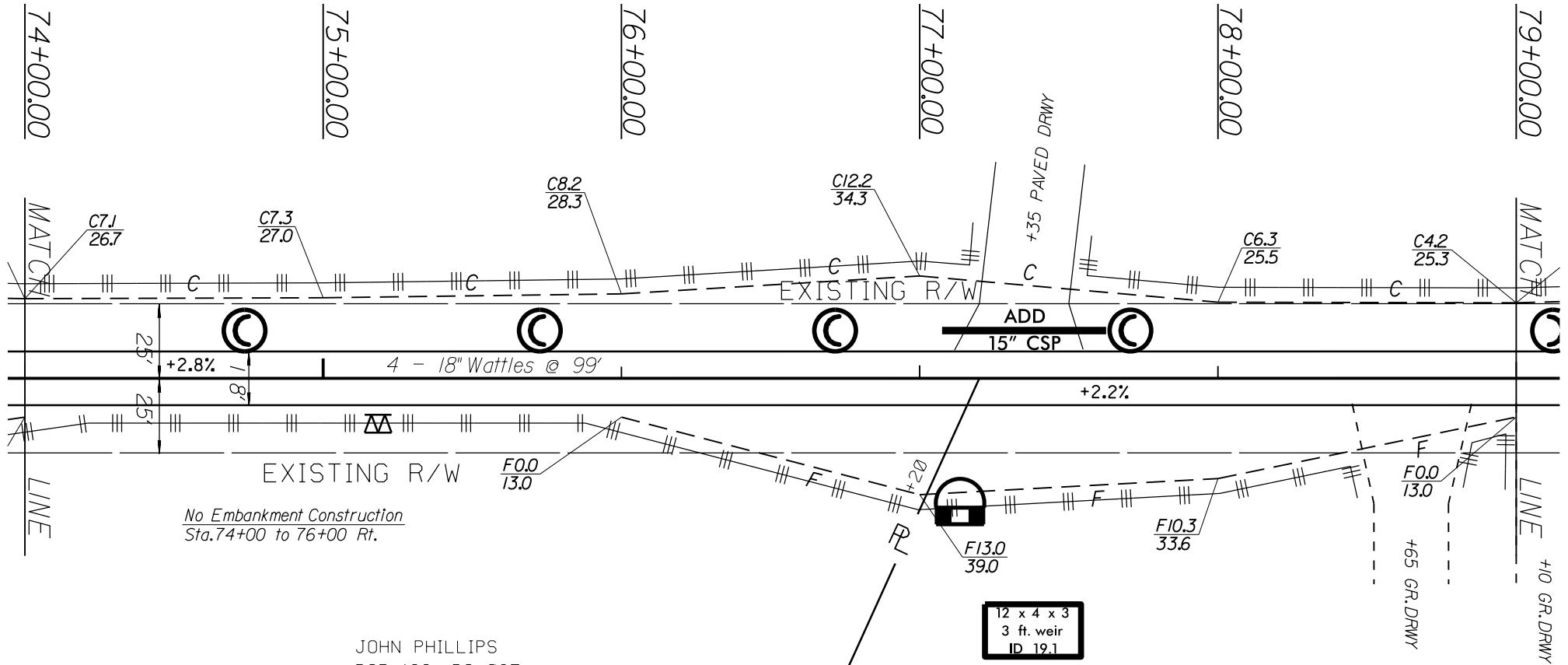
JOHN PHILLIPS  
BOR 166- PG 085

DANNY DUNN  
BOR 1778- PG 55



JOHN PHILLIPS  
BOR 166- PG 085

DANNY DUNN  
BOR 1778- PG 55

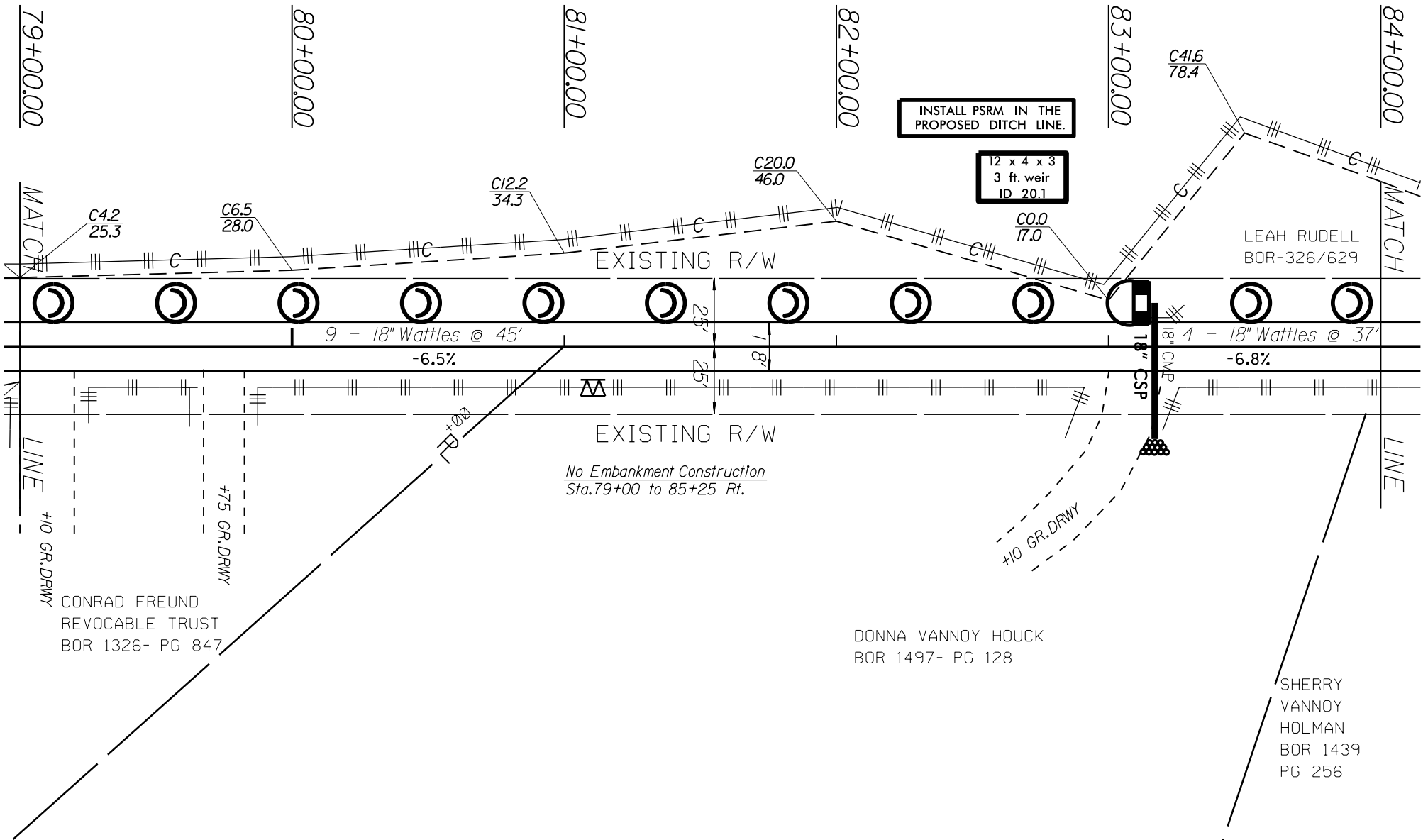


JOHN PHILLIPS  
BOR 166- PG 085

CONRAD N. FREUND REVOCABLE TRUST  
BOR 1326- PG 847



DANNY DUNN  
BOR 1778- PG 55



INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

12 x 4 x 3  
3 ft. weir  
ID 20.1

LEAH RUDELL  
BOR-326/629

No Embankment Construction  
Sta. 79+00 to 85+25 Rt.

CONRAD FREUND  
REVOCABLE TRUST  
BOR 1326- PG 847

DONNA VANNOY HOUCK  
BOR 1497- PG 128

SHERRY  
VANNOY  
HOLMAN  
BOR 1439  
PG 256

MATCH

MATCH

LINE

LINE

+10 GR. DRWY

+75 GR. DRWY

+10 GR. DRWY

EXISTING R/W

EXISTING R/W

9 - 18" Wattles @ 45'  
-6.5%

4 - 18" Wattles @ 37'  
-6.8%

18" CSP

25'  
25'

1.8'

C12.2  
34.3

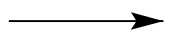
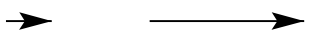
C20.0  
46.0

C41.6  
78.4

C4.2  
25.3

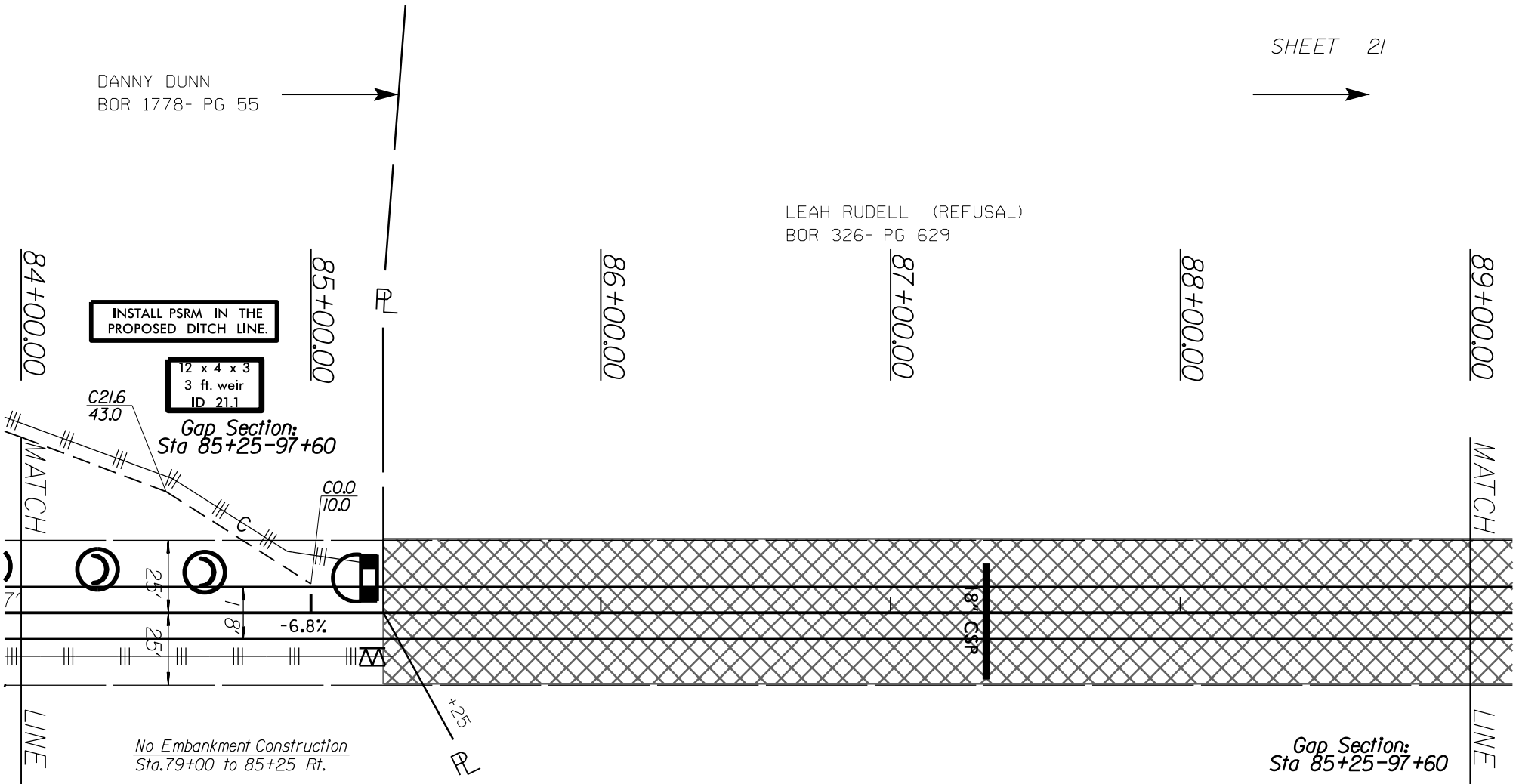
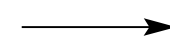
C6.5  
28.0

C0.0  
17.0



DANNY DUNN  
BOR 1778- PG 55

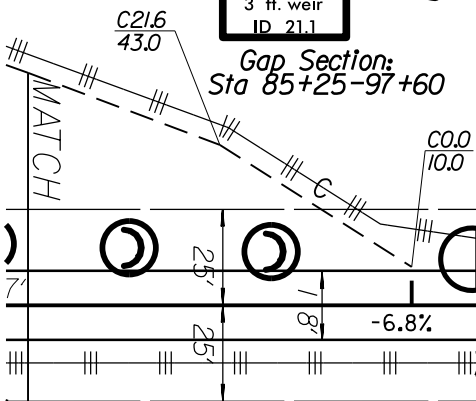
LEAH RUDELL (REFUSAL)  
BOR 326- PG 629



INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

12 x 4 x 3  
3 ft. weir  
ID 21.1

Gap Section:  
Sta 85+25-97+60



No Embankment Construction  
Sta. 79+00 to 85+25 Rt.

Gap Section:  
Sta 85+25-97+60

SHERRY VANNOY HOLMAN  
BOR 1439- PG 256

ROBERT P. CANNON  
BOR 378- PG 540

LEAH RUDELL (REFUSAL)  
BOR 326- PG 629

89+00.00

90+00.00

91+00.00

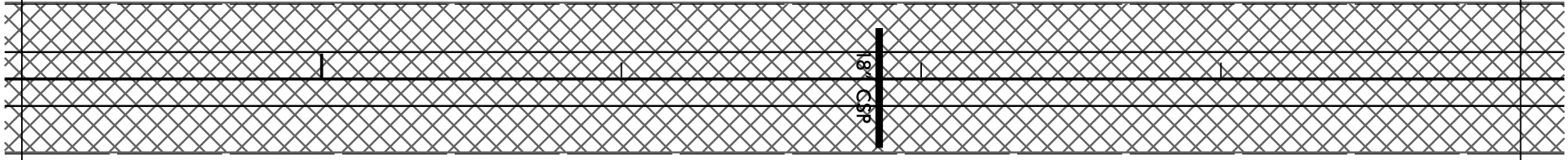
92+00.00

93+00.00

94+00.00

MATCH

MATCH



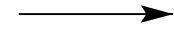
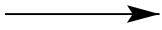
LINE

LINE

Gap Section:  
Sta 85+25-97+60

Gap Section:  
Sta 85+25-97+60

ROBERT P. CANNON  
BOR 378- PG540



GRAHAM FISHER  
BOR 119- PG 070

(REFUSAL)

SCOTT M. MASCIOLI  
BOR 1662- PG 822

LEAH RUDELL (REFUSAL)  
BOR 326- PG 629

94+00.00

95+00.00

96+00.00

97+00.00

98+00.00

99+00.00

MATCH

MATCH

INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

9 x 3 x 3  
2 ft. weir  
ID 23.1

C0.0  
16.0

C2.1  
19.2

F0.0  
14.0

EXISTING R/W



6.8%

2 - 18" Wattles @ 30'

12.5'

2.51'



15" CSP



EXISTING R/W

C0.0  
16.0

C1.4  
18.1

C0.0  
16.0

+30 GR. DRWY

Gap Section:  
Sta 85+25-97+60

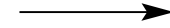
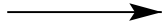
Gap Section:  
Sta 85+25-97+60

ROBERT P. CANNON  
BOR 378- PG 540

JO S. WEAVER & DAVID L.  
WEAVER  
BOR 1837- PG 697

18" CSP

+67



SCOTT M. MASCIOLI  
BOR 1662- PG 822

SCOTT M. MASCIOLI  
BOR 1662- PG 822

99+00.00

100+00.00

101+00.00

102+00.00

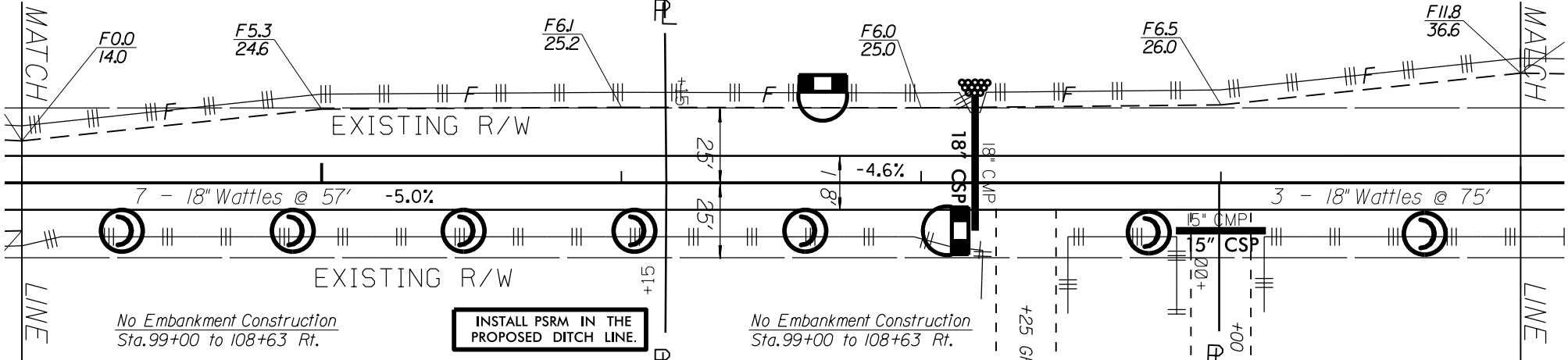
103+00.00

104+00.00

15 x 5 x 3  
4 ft. weir  
ID 24.2

9 x 3 x 3  
2 ft. weir  
ID 24.1

INSTALL PSRM IN THE  
PROPOSED DITCH LINE.



No Embankment Construction  
Sta. 99+00 to 108+63 Rt.

No Embankment Construction  
Sta. 99+00 to 108+63 Rt.

+25' GR. DRWY.

+00' GR. DRWY.

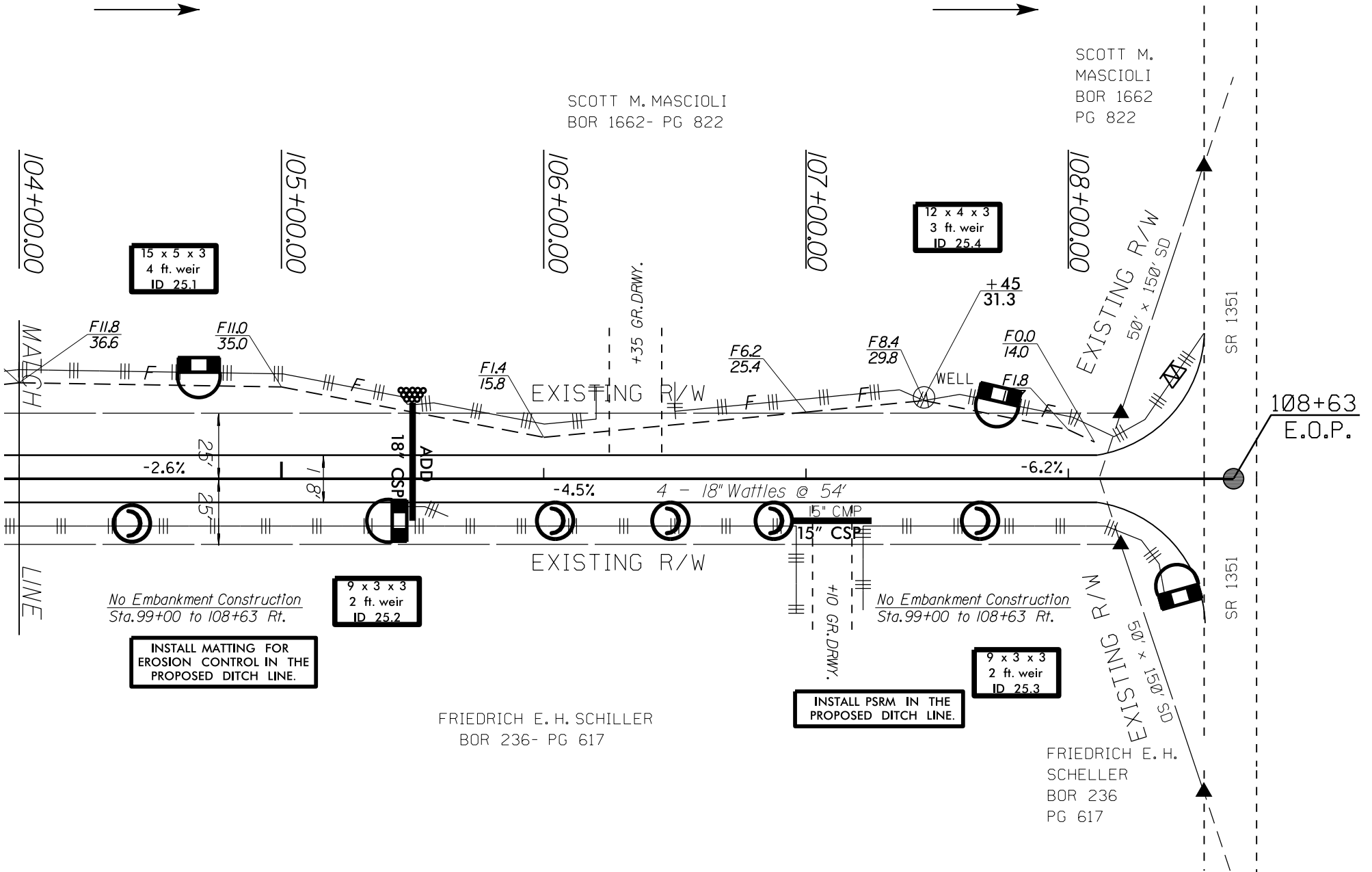
JO S. WEAVER AND DAVID L.  
WEAVER  
BOR 1837- PG 697

ROBERT P. CANNON  
BOR 220- PG 525

FRIEDRICH E. H. SCHILLER  
BOR 236- PG 617

SCOTT M. MASCIOLI  
BOR 1662- PG 822

SCOTT M.  
MASCIOLI  
BOR 1662  
PG 822



No Embankment Construction  
Sta. 99+00 to 108+63 Rt.

No Embankment Construction  
Sta. 99+00 to 108+63 Rt.

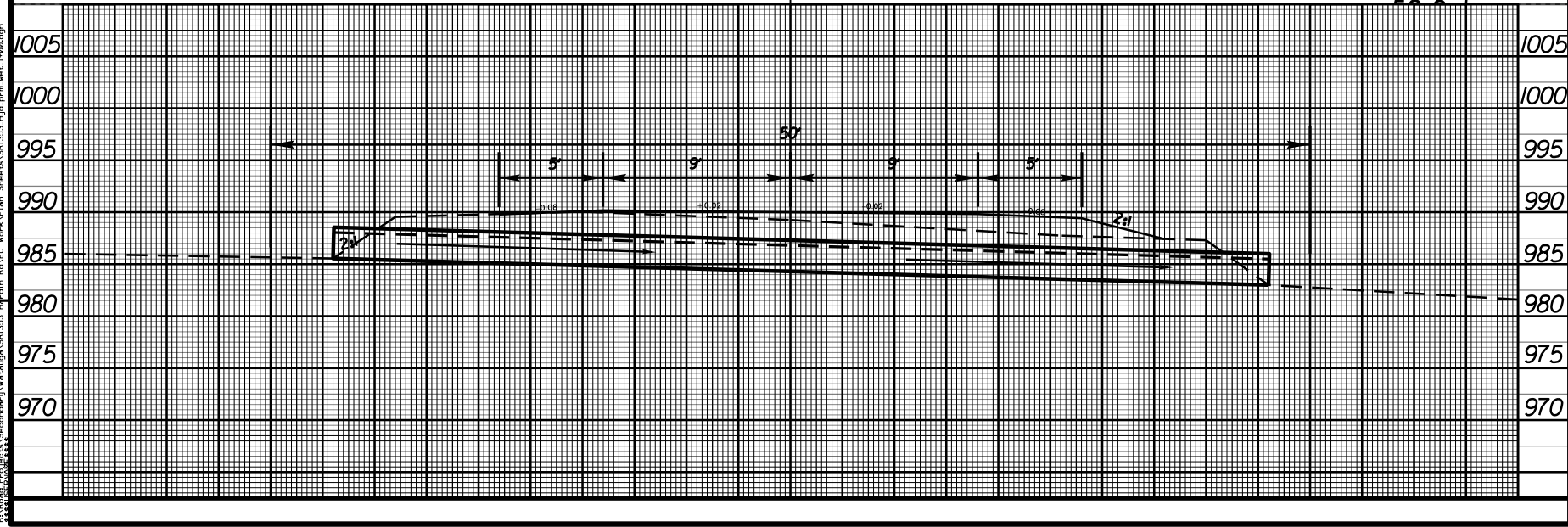
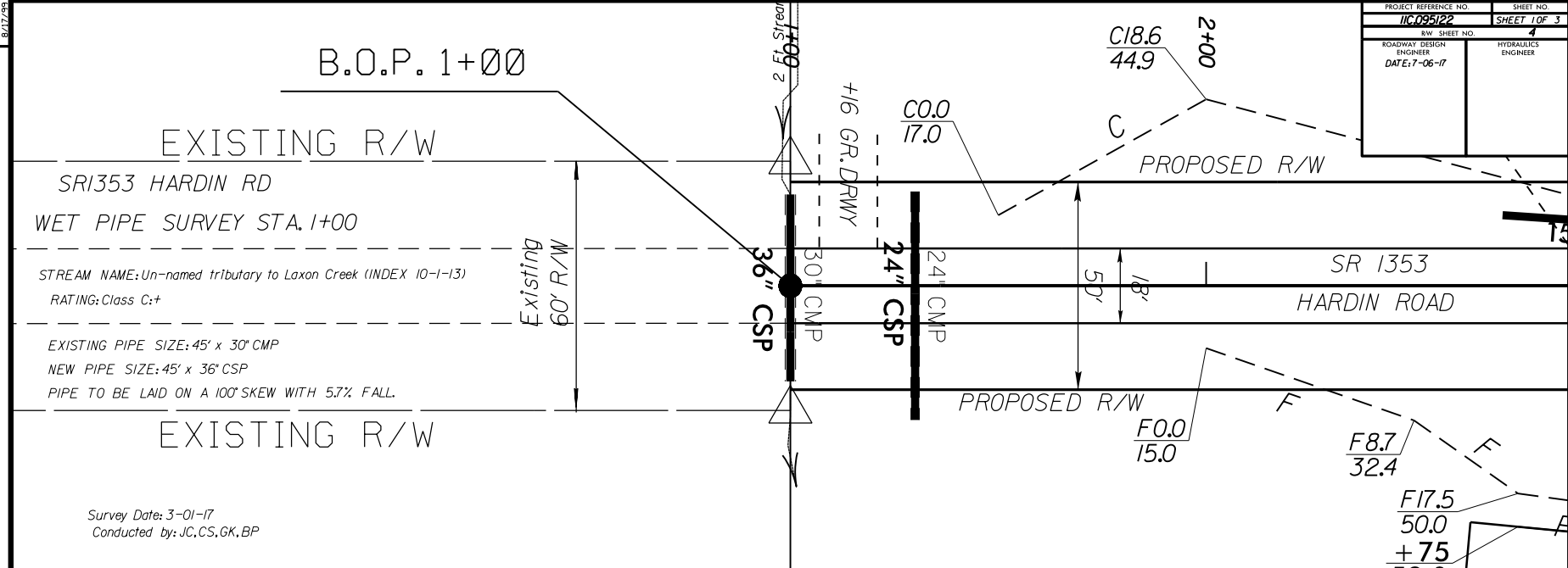
INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

FRIEDRICH E. H. SCHILLER  
BOR 236- PG 617

FRIEDRICH E. H.  
SCHELLER  
BOR 236  
PG 617

PROJECT REFERENCE NO. <b>11C095122</b>	SHEET NO. <b>SHEET 1 OF 3</b>
ROADWAY DESIGN ENGINEER DATE: 7-06-17	HYDRAULICS ENGINEER

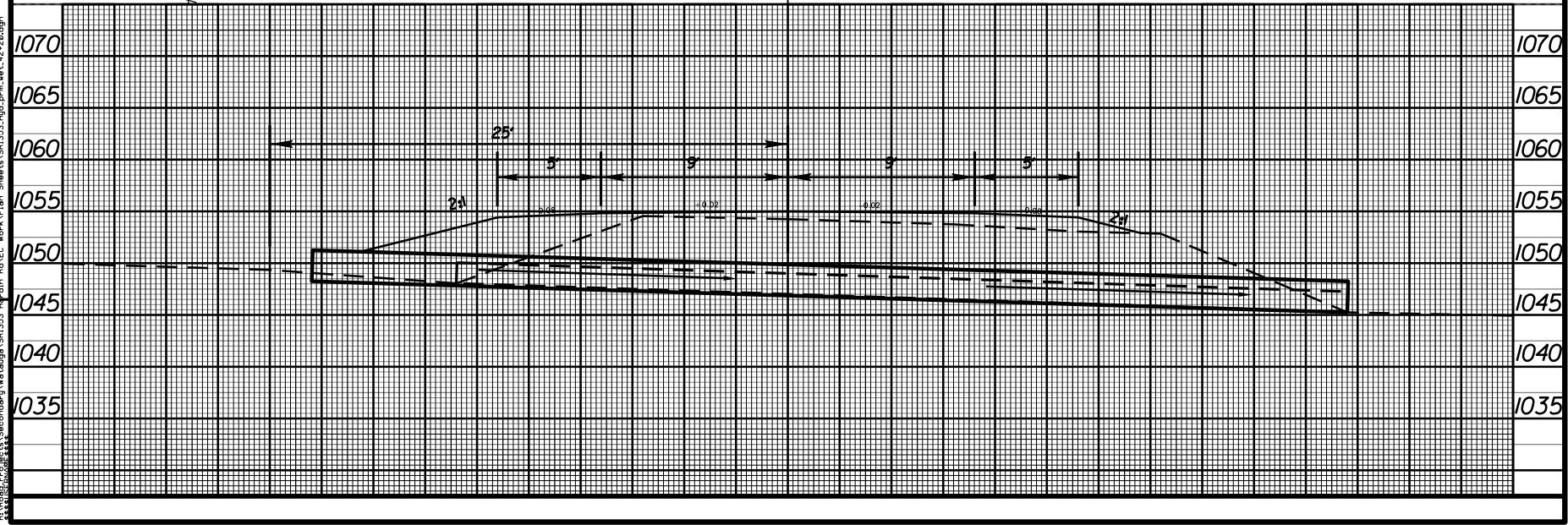
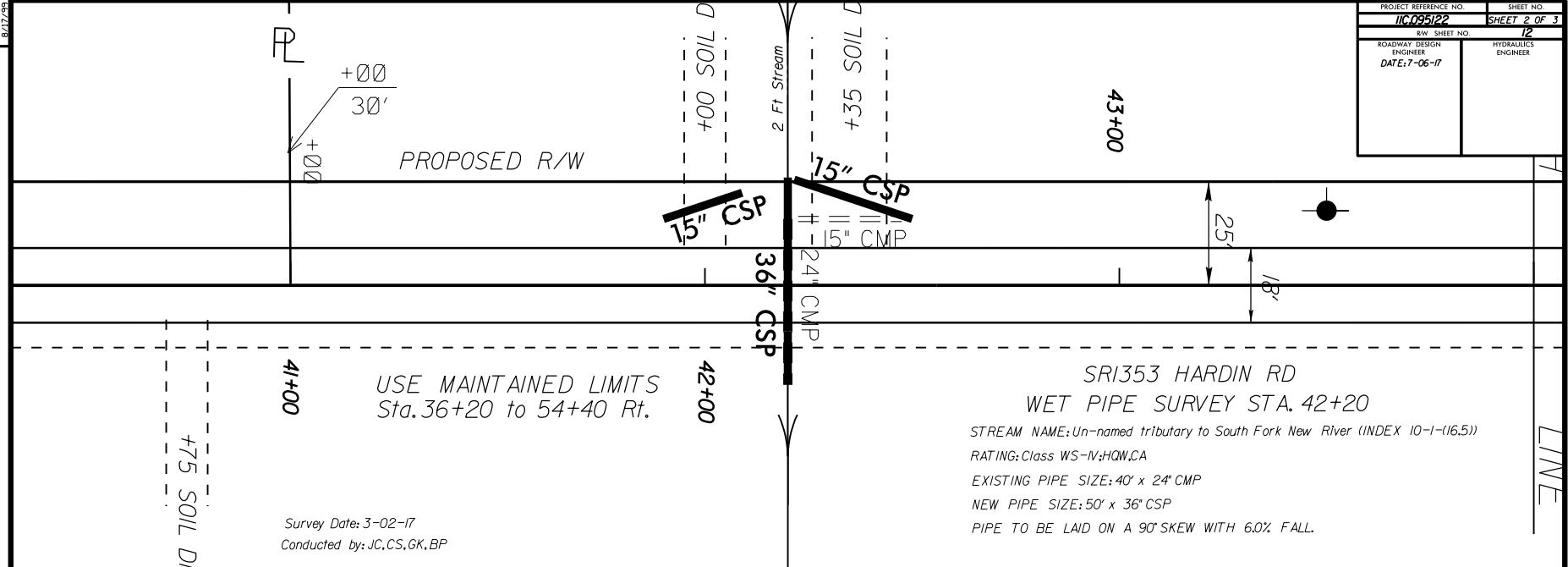


8/17/17  
 REVISIONS  
 25-AUG-2017 14:57  
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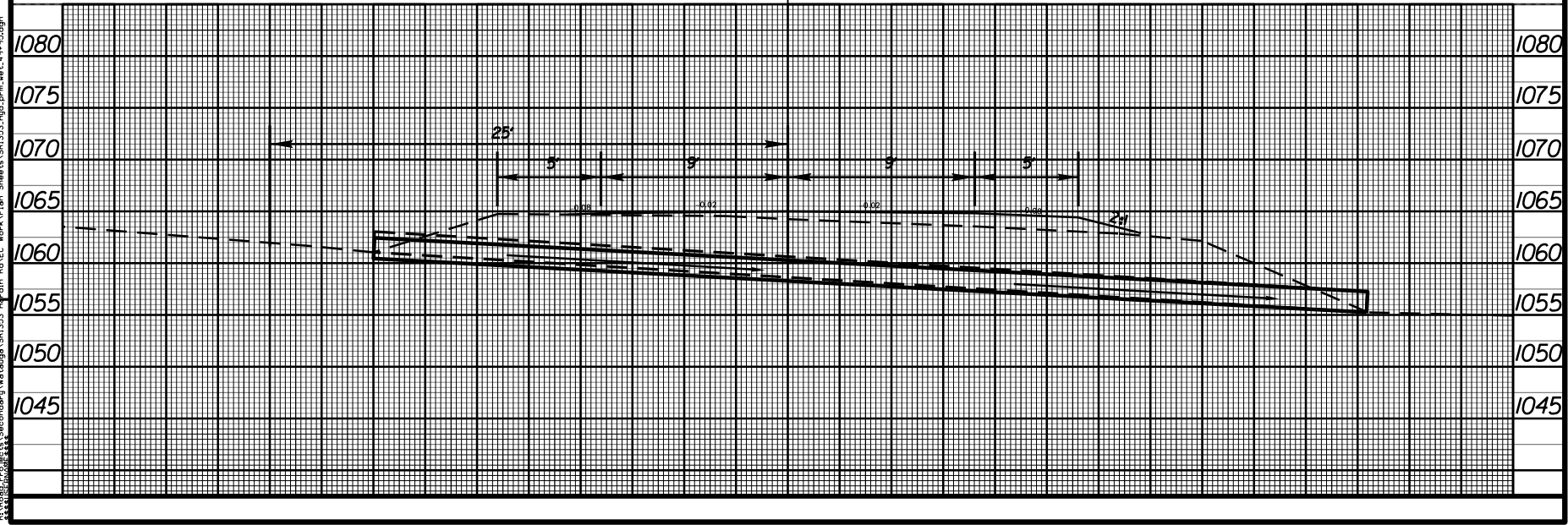
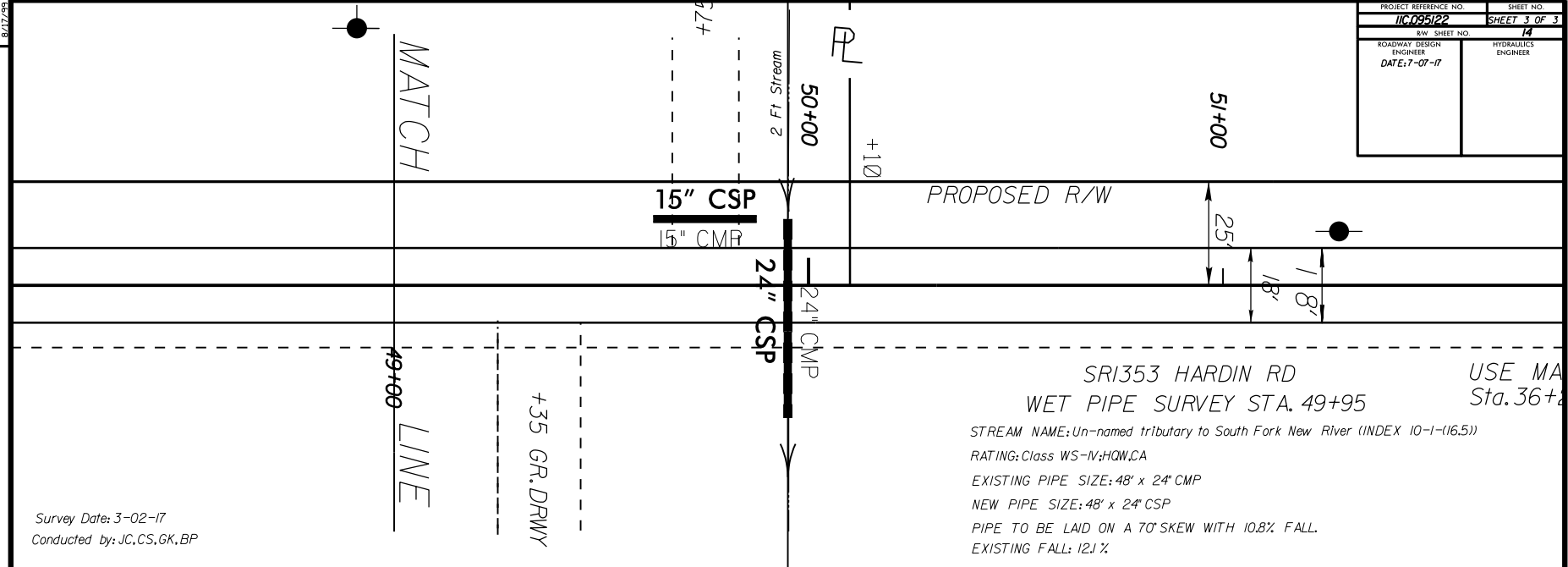


PROJECT REFERENCE NO.	SHEET NO.
11C095122	SHEET 2 OF 3
R/W SHEET NO.	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DATE: 7-06-17	



8/17/99  
 REVISIONS  
 22-AUG-2007 07:47  
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PROJECT REFERENCE NO.	SHEET NO.
11C.095122	SHEET 3 OF 3
R/W SHEET NO.	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DATE: 7-07-17	



8/17/19  
 REVISIONS  
 22-AUG-2017 07:47: Secondary\No usage\SR1353\_Hyd.dwg Road\VEC\_Work\Plan\_Sheets\SR1353\_Hyd.dwg, vet\_48x24.dgn  
 22-AUG-2017 07:47: Secondary\No usage\SR1353\_Hyd.dwg Road\VEC\_Work\Plan\_Sheets\SR1353\_Hyd.dwg, vet\_48x24.dgn