



# 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.

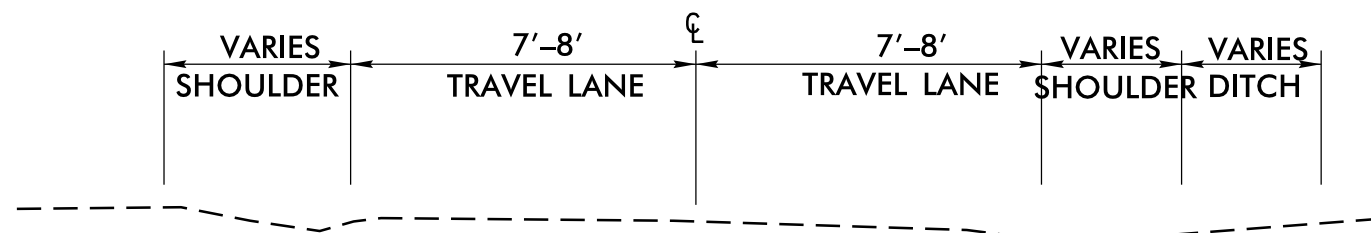
Flyrock protection such as blast mats should be provided for blasting in close proximity to streams.

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.

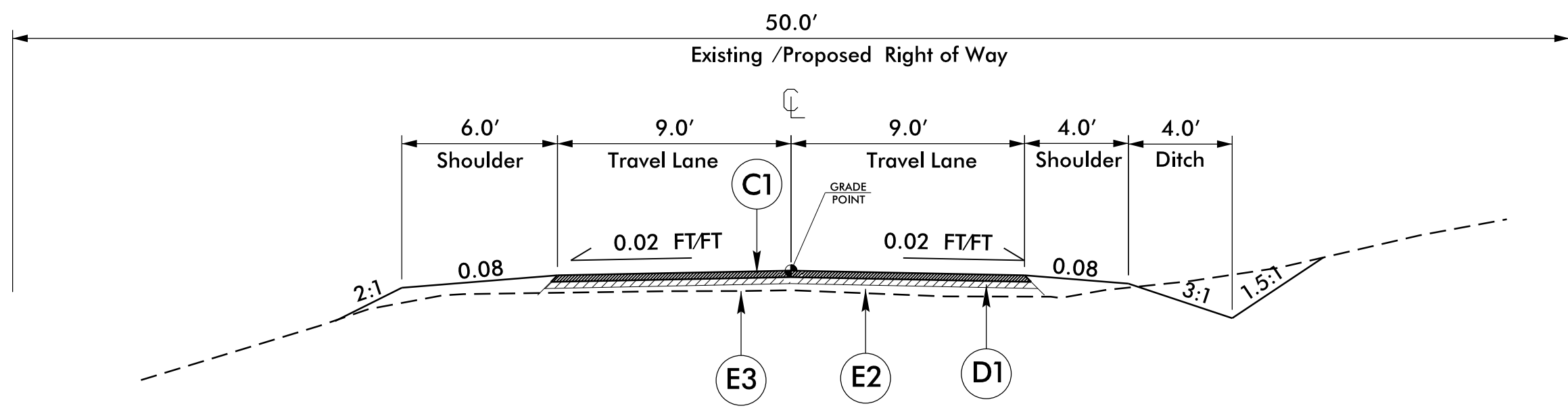
#### GROUND STABILIZATION CHART

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)

PROJECT REFERENCE NO.	SHEET NO.
11C.005148	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



**14'-16' EXISTING TYPICAL SECTION**

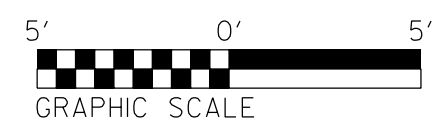


**TYPICAL SECTION NO. 1**

BOP Sta 0+00 to 13+00

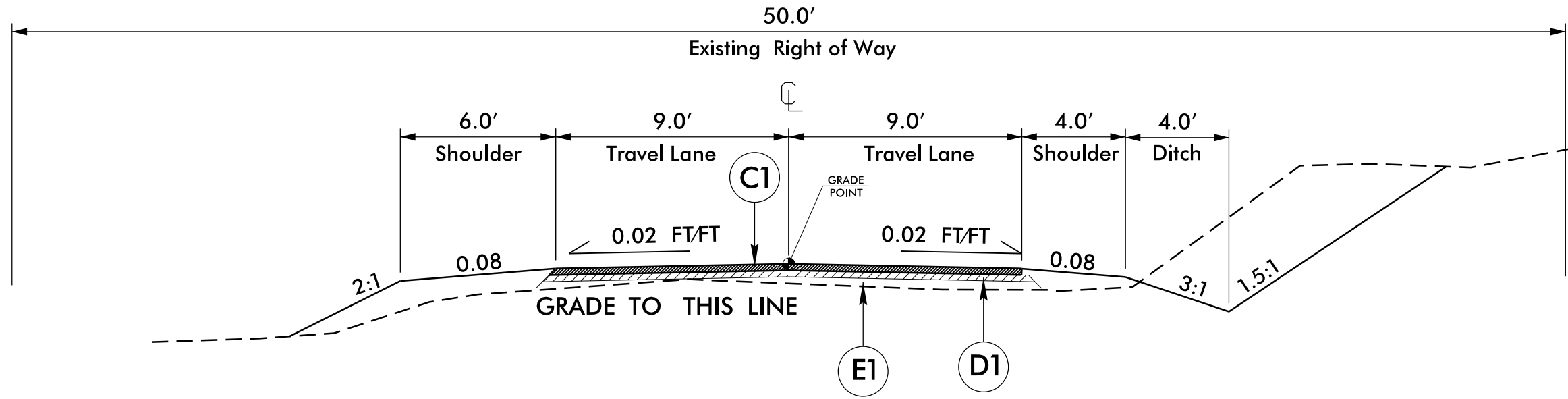
NOTE: Mix Proposed 4" ABC with the existing 6" ABC and grade to existing profile.

C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 4" AGGREGATE BASE COURSE.
E3	EXISTING APPROX. 6" AGGREGATE BASE COURSE.



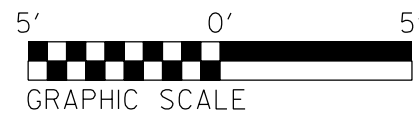
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PROJECT REFERENCE NO. <i>11C.005148</i>	SHEET NO. <i>2A</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



## TYPICAL SECTION NO. 2

Sta. 13+00 to EOP Sta 40+38.78



<b>C1</b>	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
<b>D1</b>	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
<b>E1</b>	PROP. APPROX. 6" AGGREGATE BASE COURSE.

6/2/99

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DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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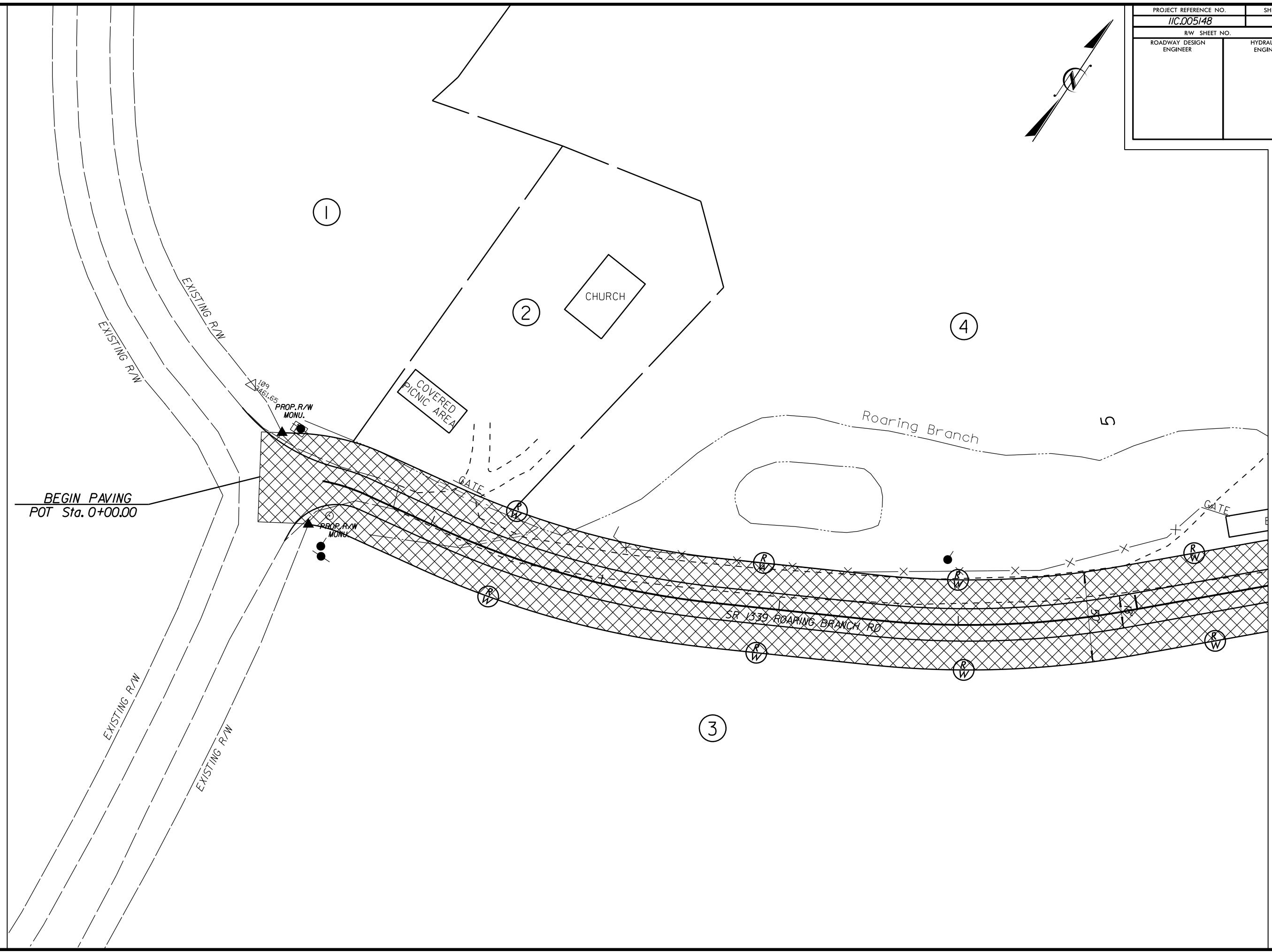
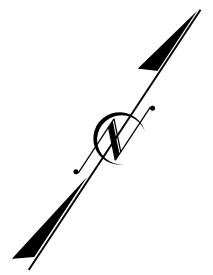
PROJECT REFERENCE NO. <i>11C.005148</i>	SHEET NO. <i>EC-3B</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# *SOIL STABILIZATION TIMEFRAMES*

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) 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 HQW ZONES.



PROJECT REFERENCE NO.	SHEET NO.
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R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



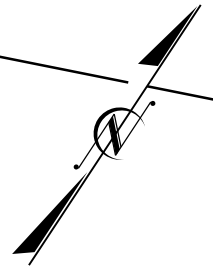
MATCHLINE SEE SHEET 5

REVISIONS  
 ALIGNMENT AND PROPOSED DESIGN REVISED PER R/W AGENT 3/28/2013

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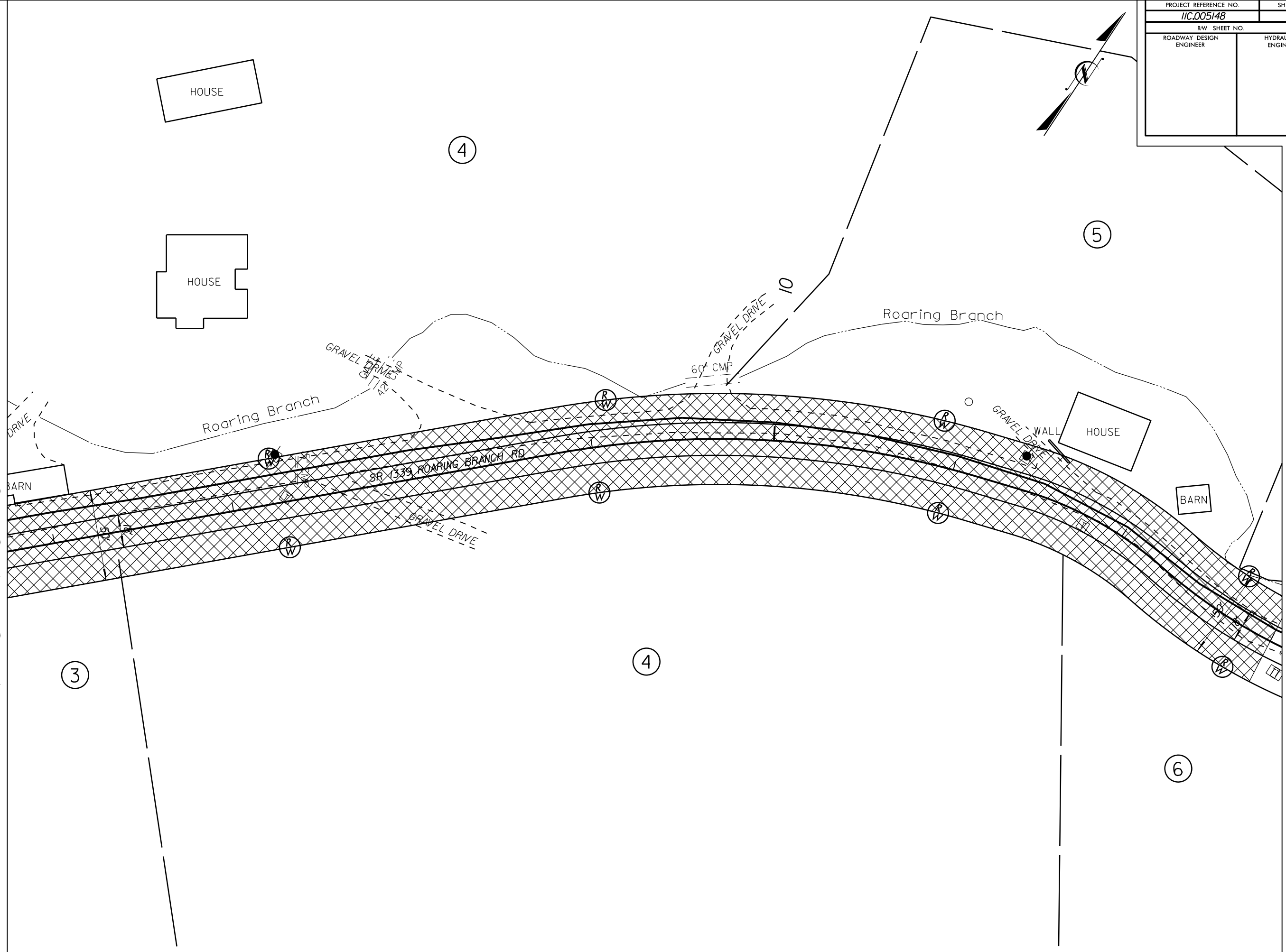


PROJECT REFERENCE NO.	SHEET NO.
11C.005148	5
R/W SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCHLINE SEE SHEET 4

MATCHLINE SEE SHEET 6



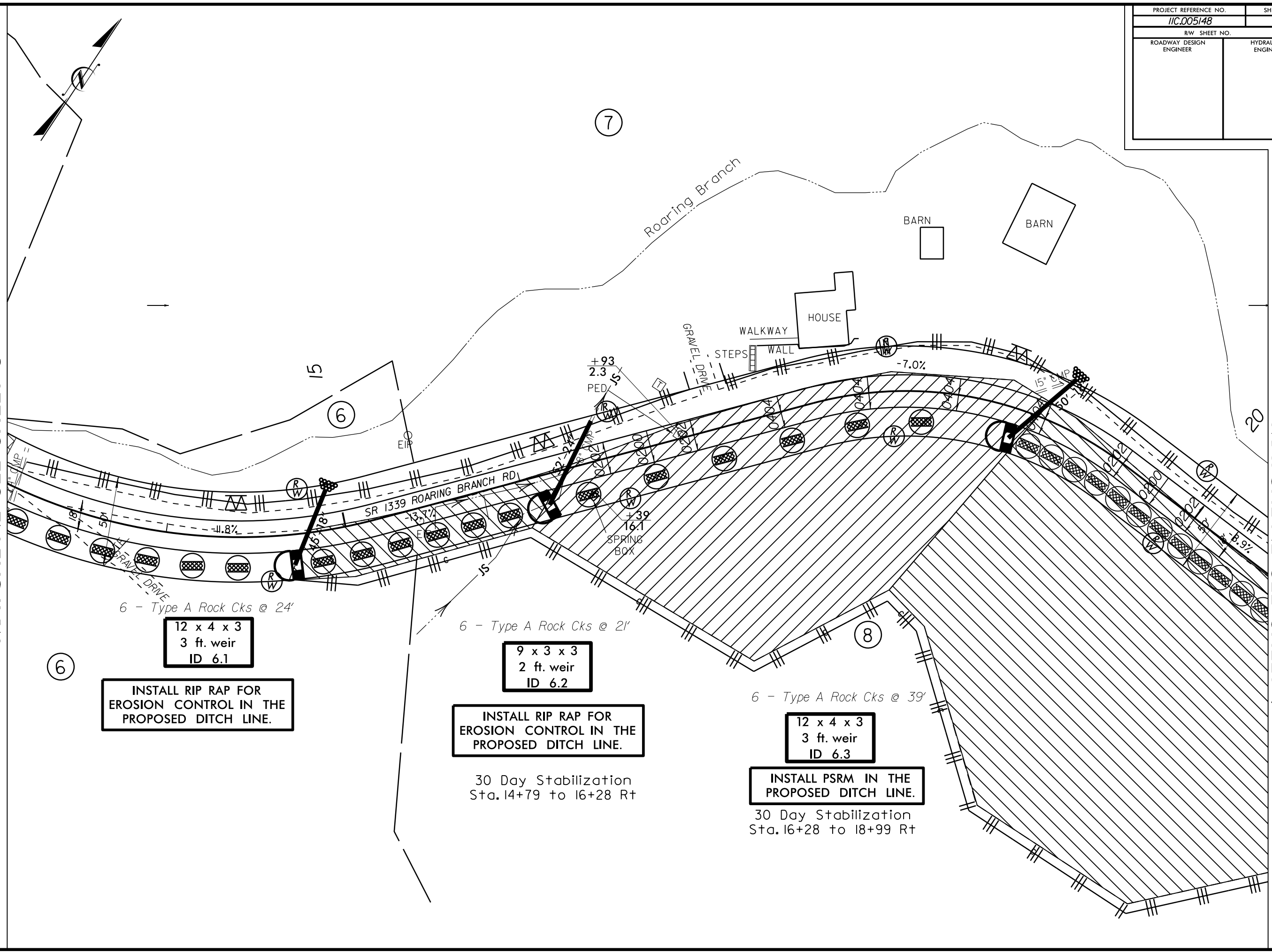
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PROJECT REFERENCE NO.	SHEET NO.
11C.005148	6
R/W SHEET NO.	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCHLINE SEE SHEET 5

MATCHLINE SEE SHEET 7



6 - Type A Rock Cks @ 24'

12 x 4 x 3  
3 ft. weir  
ID 6.1

INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

6 - Type A Rock Cks @ 21'

9 x 3 x 3  
2 ft. weir  
ID 6.2

INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

6 - Type A Rock Cks @ 39'

12 x 4 x 3  
3 ft. weir  
ID 6.3

INSTALL PSRM IN THE  
PROPOSED DITCH LINE.

30 Day Stabilization  
Sta. 16+28 to 18+99 Rt

30 Day Stabilization  
Sta. 14+79 to 16+28 Rt

REVISIONS  
 ALIGNMENT AND PROPOSED DESIGN REVISED PER R/W AGENT 3/28/2013  
 REVISED PIPE, WETLAND, AND SUPERELEVATION OF ROADWAY 8/3/2022  
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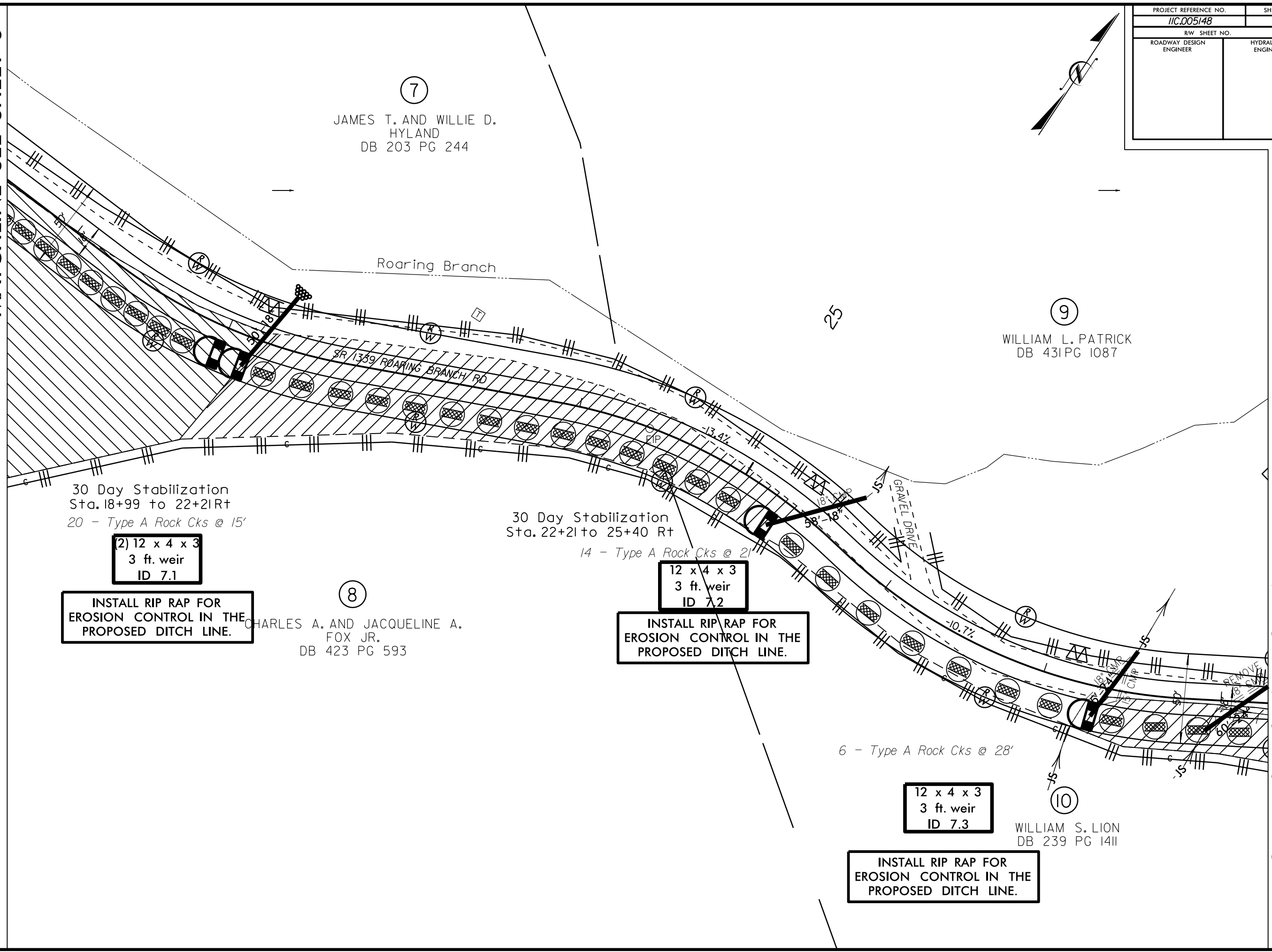
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PROJECT REFERENCE NO.	SHEET NO.
11C.005148	7
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 8



7

JAMES T. AND WILLIE D.  
HYLAND  
DB 203 PG 244

9

WILLIAM L. PATRICK  
DB 431 PG 1087

8

CHARLES A. AND JACQUELINE A.  
FOX JR.  
DB 423 PG 593

10

WILLIAM S. LION  
DB 239 PG 1411

30 Day Stabilization  
Sta. 18+99 to 22+21Rt  
20 - Type A Rock Cks @ 15'

2) 12 x 4 x 3  
3 ft. weir  
ID 7.1

INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

30 Day Stabilization  
Sta. 22+21 to 25+40 Rt  
14 - Type A Rock Cks @ 21'

12 x 4 x 3  
3 ft. weir  
ID 7.2

INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

6 - Type A Rock Cks @ 28'

12 x 4 x 3  
3 ft. weir  
ID 7.3

INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

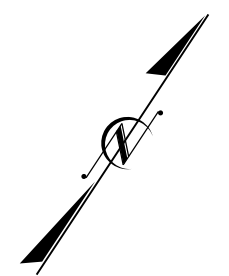
REVISIONS

ALIGNMENT AND PROPOSED DESIGN REVISED PER R/W AGENT 3/28/2013  
REVISED PIPE LOCATIONS 8/03/2022

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PROJECT REFERENCE NO.	SHEET NO.
11C.005148	8
R/W SHEET NO.	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



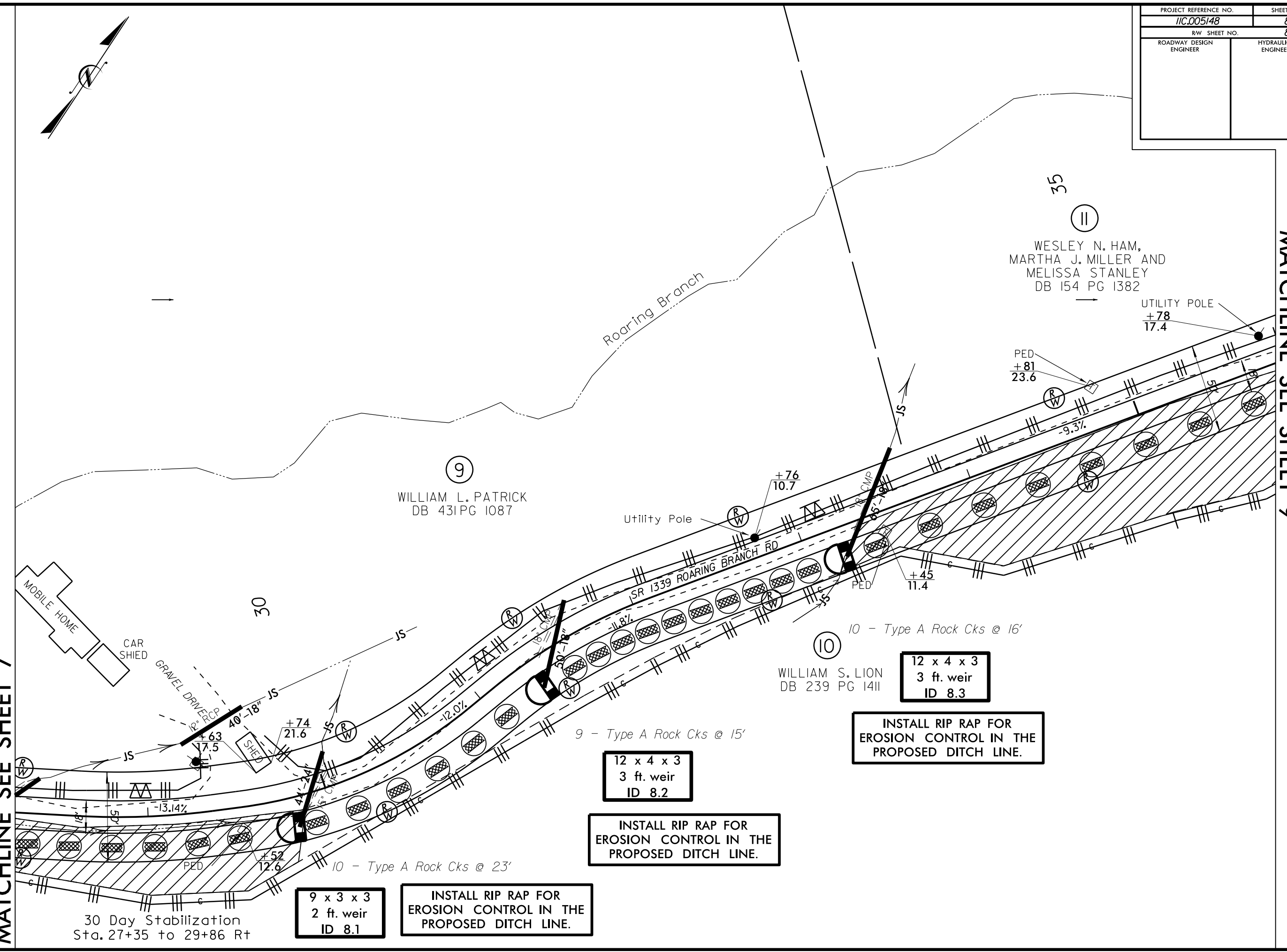
REVISIONS

ALIGNMENT AND PROPOSED DESIGN REVISED PER R/W AGENT 3/28/2013  
 REVISED PIPE AND JURISDICTIONAL STREAM LOCATIONS. LOCATED SHED TO BE MOVED FROM R/W. 8/03/2022

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MATCHLINE SEE SHEET 7

MATCHLINE SEE SHEET 9



9 x 3 x 3  
 2 ft. weir  
 ID 8.1

INSTALL RIP RAP FOR  
 EROSION CONTROL IN THE  
 PROPOSED DITCH LINE.

12 x 4 x 3  
 3 ft. weir  
 ID 8.2

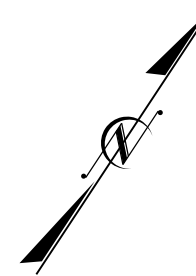
INSTALL RIP RAP FOR  
 EROSION CONTROL IN THE  
 PROPOSED DITCH LINE.

12 x 4 x 3  
 3 ft. weir  
 ID 8.3

INSTALL RIP RAP FOR  
 EROSION CONTROL IN THE  
 PROPOSED DITCH LINE.

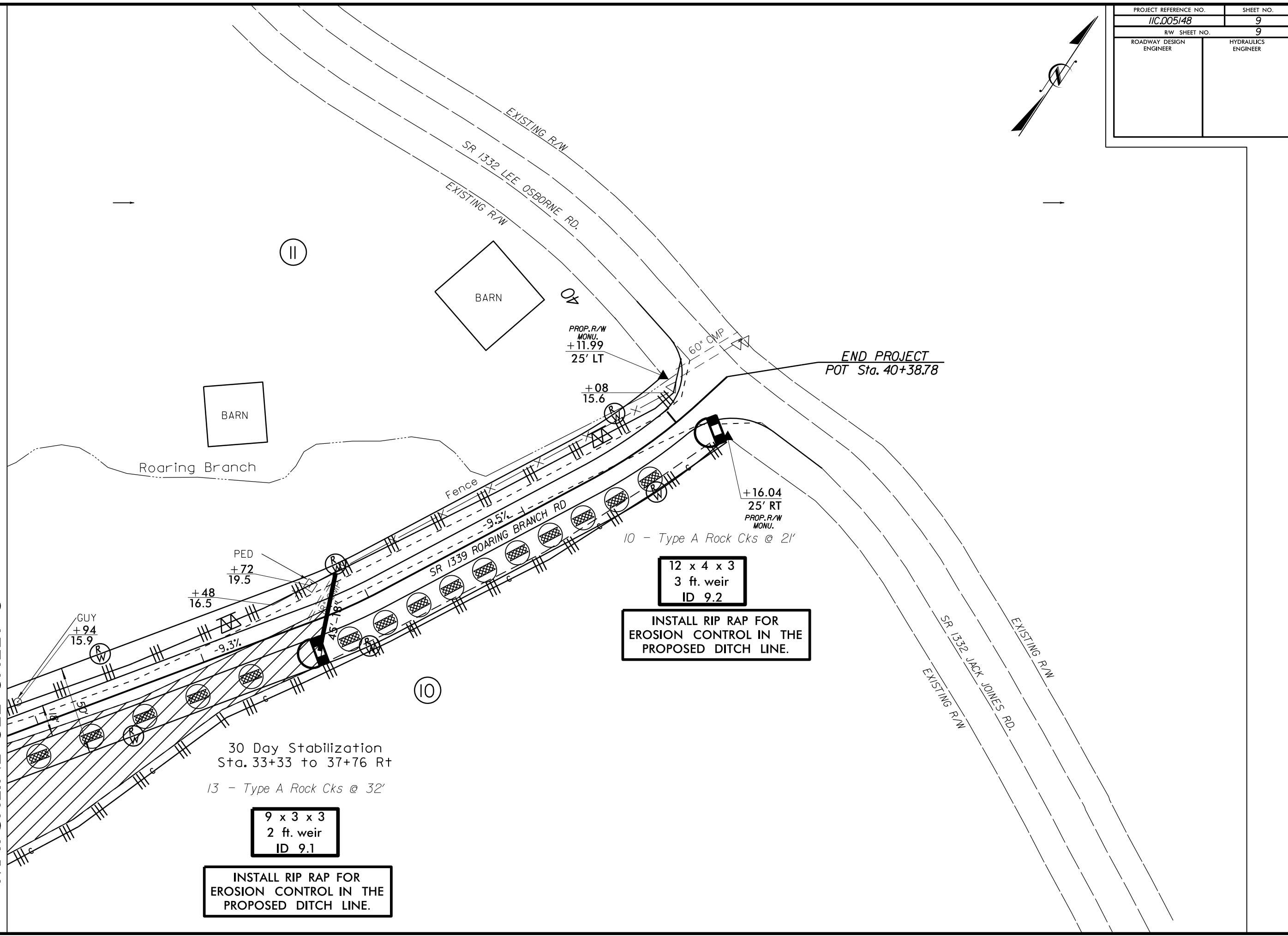
30 Day Stabilization  
 Sta. 27+35 to 29+86 Rt

PROJECT REFERENCE NO.	SHEET NO.
IIC.005148	9
R/W SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS  
 ALIGNMENT AND PROPOSED DESIGN REVISED PER R/W AGENT 3/28/2013  
 REVISED PIPE 8/03/2022  
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MATCHLINE SEE SHEET 8



12 x 4 x 3  
3 ft. weir  
ID 9.2

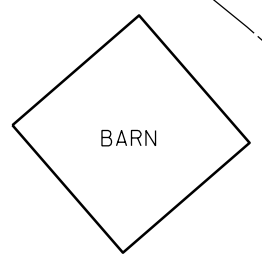
INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

9 x 3 x 3  
2 ft. weir  
ID 9.1

INSTALL RIP RAP FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.

30 Day Stabilization  
Sta. 33+33 to 37+76 Rt  
13 - Type A Rock Cks @ 32'

END PROJECT  
POT Sta. 40+38.78



II

40

10

Roaring Branch

Fence

SR 1339 ROARING BRANCH RD

EXISTING R/W  
SR 1332 LEE OSBORNE RD.  
EXISTING R/W

SR 1332 JACK JONES RD.  
EXISTING R/W

10 - Type A Rock Cks @ 21'

13 - Type A Rock Cks @ 32'

END PROJECT  
POT Sta. 40+38.78

PROP. R/W  
MONU.  
+11.99  
25' LT

+08  
15.6

+16.04  
25' RT  
PROP. R/W  
MONU.

+48  
16.5

PED  
+72  
19.5

GUY  
+94  
15.9

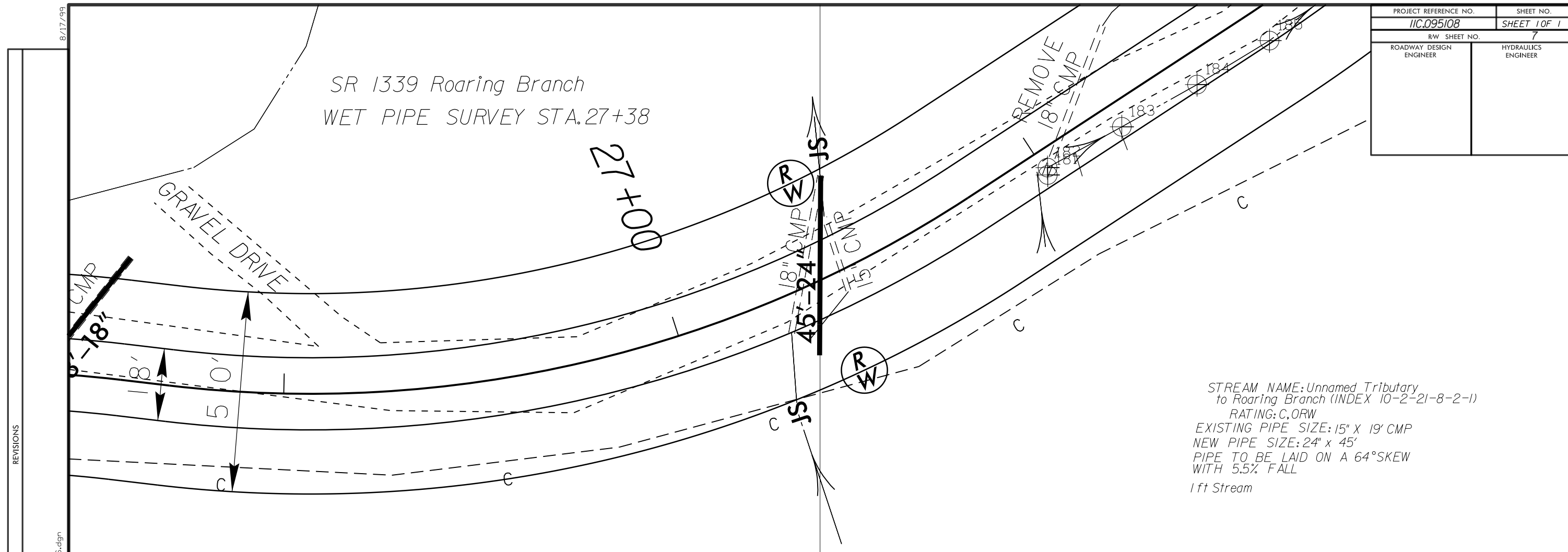
-9.3%

-9.5%

60° CMP

PROJECT REFERENCE NO.	SHEET NO.
11C.095108	SHEET 10 OF 1
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SR 1339 Roaring Branch  
WET PIPE SURVEY STA. 27+38



STREAM NAME: Unnamed Tributary  
to Roaring Branch (INDEX 10-2-21-8-2-1)  
RATING: C, ORW  
EXISTING PIPE SIZE: 15' X 19' CMP  
NEW PIPE SIZE: 24' X 45'  
PIPE TO BE LAID ON A 64° SKEW  
WITH 5.5% FALL  
1 ft Stream

REVISIONS

05-AUG-2022 15:06  
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