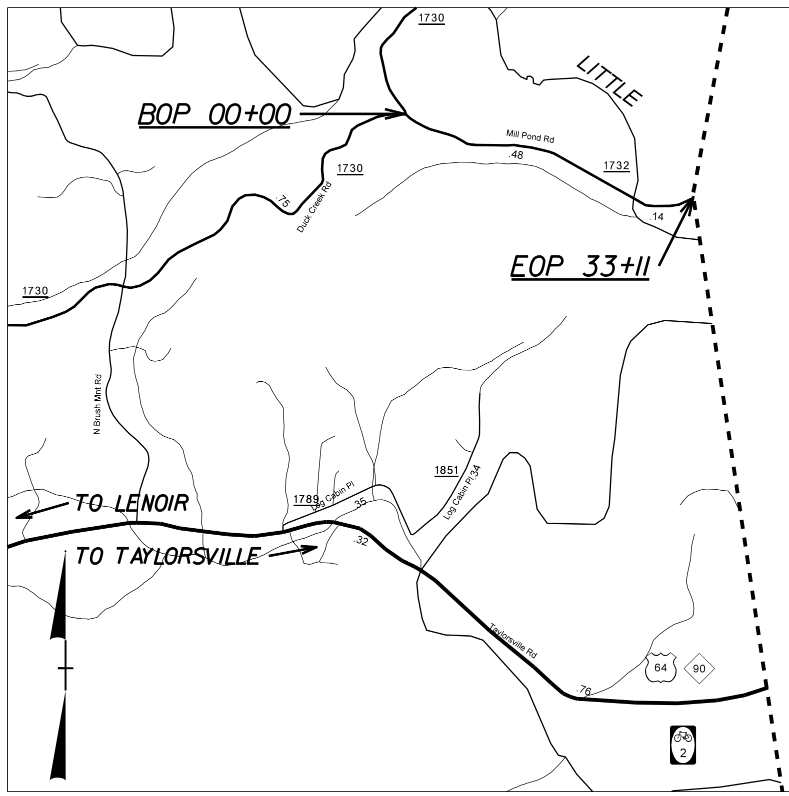
TIP PROJECT: X-XXXX

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	11C.0140??	EC-1	9

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

VICINITY MAP



STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

PLAN FOR PROPOSED

HIGHWAY EROSION CONTROL

CALDWELL COUNTY

LOCATION: SR 1732 MILL POND ROAD
FROM SR 1730 DUCK CREEK ROAD
TO ALEXANDER COUNTY LINE
TYPE OF WORK: GRADING, DRAINAGE, BASE
AND PAVING – 0.63 MILES

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	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	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle/Coir Fiber Wattle	
	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.

Porous Baffle Spacing
*Baffles in Silt Basins at drainage turnouts and all other temporary rock sediment dams–Type B:
–If basin length = 10' or less; 1 baffle
–If basin length = 11' to 20'; 2 baffles
–If basin length = 20' or more; 3 baffles equally spaced in basin

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

Level III-A Cert # 391
Level III-B Cert# 382

GRAPHIC SCALE

25 0 50
PLANS

5 0 10
PROFILE (HORIZONTAL)

5 0 10
PROFILE (VERTICAL)

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.

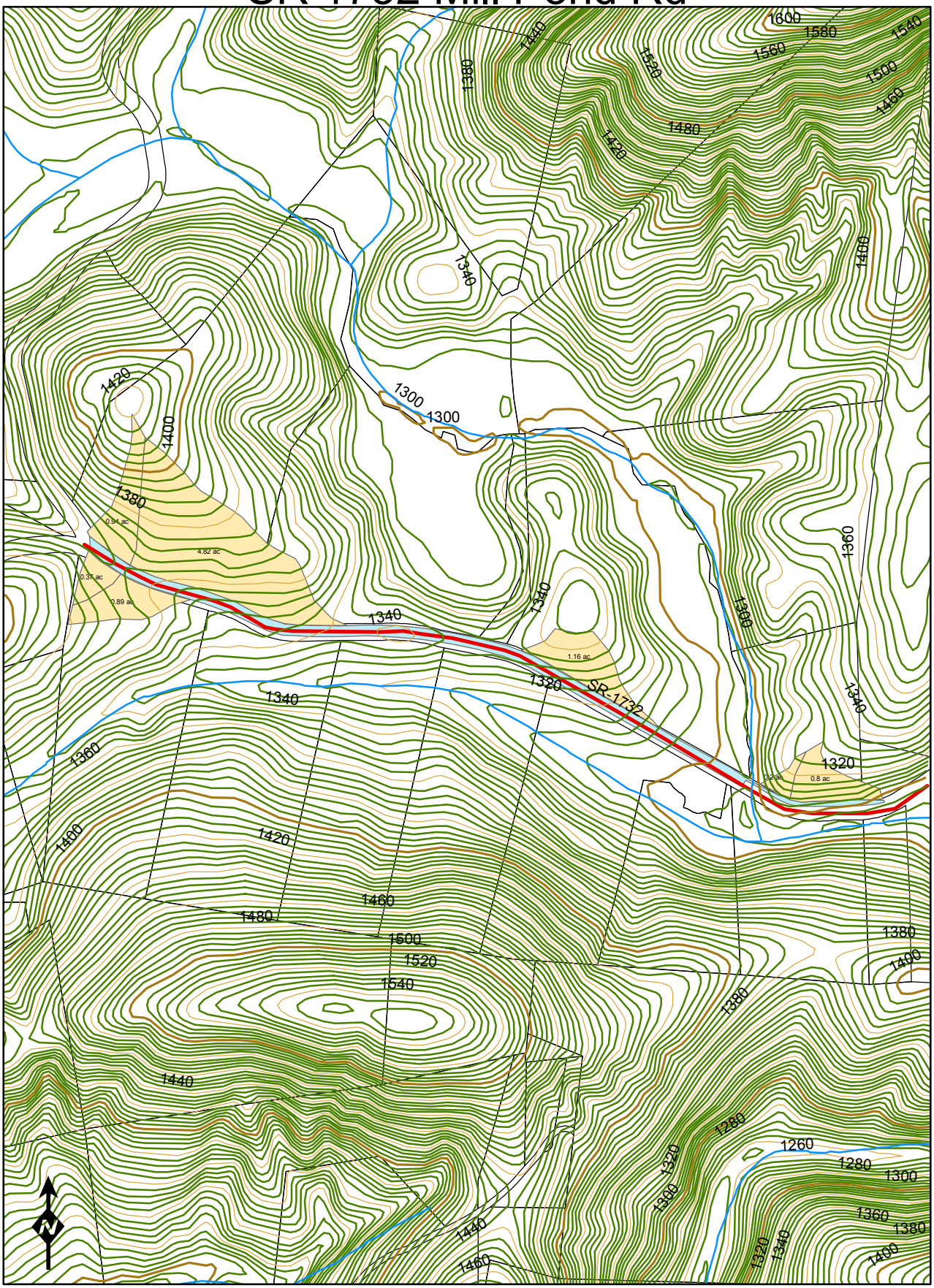
Prepared In the Office of:
DIVISION OF HIGHWAYS
DIVISION 11, DISTRICT 2 BOONE
P.O. BOX 1460, BOONE, N.C. 28607
2012 STANDARD SPECIFICATIONS

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 revison 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 B	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 Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

SR 1732 Mill Pond Rd



Legend

- Undisturbed Drainage Area
- Cut and Fill Area

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
CA1732	1A

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.

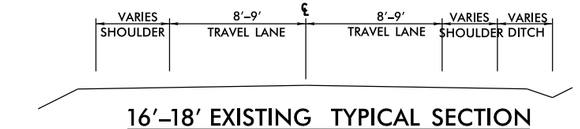
PAM is to be placed on all Type A checks and wattles in the erosion control chain except for the final device in HWQ and Trout projects.

GROUND STABILIZATION CHART

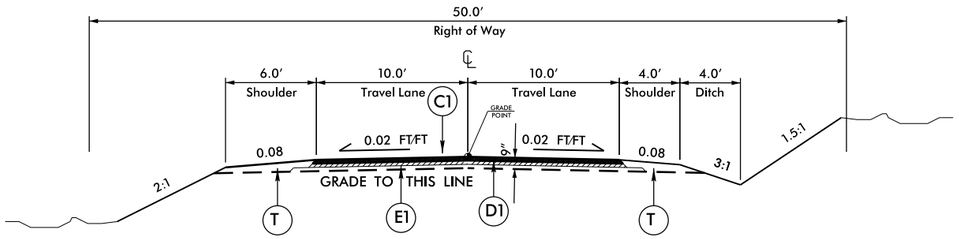
Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10 ft. or less in length and are not steeper than 2:1, 14 days are allowed
Slopes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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
CA-1732	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



16'–18' EXISTING TYPICAL SECTION
SR 1732



TYPICAL SECTION NO. 1

GRAPHIC SCALE

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PROJECT REFERENCE NO.	SHEET NO.
CA-1732	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
5	-L-	2+00	4+50	RT	180
5	-L-	7+50	8+75	RT	90
6	-L-	2+00	10+25	LT	590
6	-L-	11+61	12+38	LT	55
6	-L-	11+61	13+25	RT	120
7	-L-	20+18	21+75	RT	115
8	-L-	16+18	24+50	LT	595
8	-L-	27+53	26+53	LT	95
9	-L-	27+53	31+06	LT	255
			SUBTOTAL		2095
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					
				TOTAL	2095
				SAY	2095

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		
		ADDITIONAL PSRM TO BE INSTALLED			
				TOTAL	
				SAY	

PROJECT REFERENCE NO.	SHEET NO.
CA-1732	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	*STABILIZATION TIME*	*TIMEFRAME EXCEPTIONS*
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.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
CA-1732	3-C

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

		NEW PIPES									EXISTING PIPES											
		BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)																				
SIZE	LOCATION (LT, RT, OR CL)'	12"	15"	18"	24"	30"	36"	42"	48"		12"	15"	18"	24"	30"	36"	42"	48"	PIPE REMOVAL	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	J.B. STD. 840.31 OR 840.32	REMARKS
TYPE																						
STATION																						
02+11	LT											25'							25				REMOVE PIPE
																			0				
03+42	RT		30'									30'							30				DRWY PIPE
07+94	LT		30'																0				ADD DRWY PIPE
10+32	RT		30'								30'								30				DRWY PIPE
																			0				
10+42	LT		40'										40'						40				DRWY PIPE
																			0				
14+02	RT												30'						30				REMOVE PIPE
																			0				
21+99	RT		40'										40'						40				DRWY PIPE
27+78	LT		25'																0				ADD DRWY PIPE
31+06	CL												*40'										RETAIN CROSSLINE
																			0				
31+39	LT												*40'						0				RETAIN CROSSLINE
																			0				
																			0				
																			0				
																			0				
																			0				
																			0				
																			0				
																			0				
																			0				
																			0				
SHEET TOTALS		0	195	0	0	0	0	0	0	**195**	30	55	110	0	0	0	0	0	**195**				

PROJECT REFERENCE NO.	SHEET NO.
EC-1732	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

60 DAY OPTION
THIS SECTION MUST BE PERMANENTLY STABILIZED WITHIN 60 DAYS FROM THE TIME CLEARING & GRUBBING BEGINS

DOTSON, JOHN & MARJORIE E
DB 1211 PG 2031

0+00

+00

9 x 3 x 3
2 ft. weir
ID 4.1

12" Wattles

0+47.00
25.00

+91

+10 Paved

GATE

C2.8
22.2

C2.3
21.5

EXISTING R/W

50.00'

SR 1730 DUCK CREEK

EXISTING R/W

STA 2+40

+11.0%

SR 1732

MILL POND RD.

C +0.5%

REMOVE

8" CMP

RETAIN 24" CMP

B.O.P.
0+00

C2.4
21.6

C2.4
21.6

+39

EXISTING R/W

SR 1730 DUCK CREEK

50.0'

EXISTING R/W

9 x 3 x 3
2 ft. weir
ID 4.2

ROSS, DAVID B
DB 1213 PG 1536

NAD 83

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PROJECT REFERENCE NO.	SHEET NO.
EC-1732	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

60 DAY OPTION
THIS SECTION MUST BE PERMANENTLY STABILIZED WITHIN 60 DAYS FROM THE TIME CLEARING & GRUBBING BEGINS

5+00

DOTSON, JOHN & MARJORIE E
DB 1211 PG 2031

CASSAVAUGH, WILLIAM M & ANGELA
DB 1210 PG 21

12" Wattles

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

+72

C4.6 / 24.9

C4.8 / 25.2

C6.0 / 27.0

C5.0 / 25.5

C6.0 / 27.0

C1.3 / 20.0

STA 2+40

STA 8+90

-3.0%

-3.0%

15" CSP

15" CSP

EIP

+42 Gravel

+94 Gravel

C1.0 / 19.5

C0.4 / 18.6

F1.0 / 18.0

F1.1 / 18.2

F0.0 / 16.0

C1.2 / 19.8

Add Special Sediment Control Fence in low points of Silt fence along project.

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

9 x 3 x 3
2 ft. weir
ID 5.1

9 x 3 x 3
2 ft. weir
ID 5.2

Type B
or wattle
ID 5.3

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

+27

ROSS, DAVID B
DB 1213 PG 1536

ROSS, DAVID B & ROBIN L
DB 1219 PG 504

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PROJECT REFERENCE NO.	SHEET NO.
EC-1732	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

60 DAY OPTION
THIS SECTION MUST BE PERMANENTLY STABILIZED WITHIN 60 DAYS FROM THE TIME CLEARING & GRUBBING BEGINS

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

9 x 3 x 3 2 ft. weir (See Infiltration Basin Detail) ID 6.1

9 x 3 x 3 2 ft. weir ID 6.2

9 x 3 x 3 2 ft. weir ID 6.3

9 x 3 x 3 2 ft. weir ID 6.4

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

Type B or Wattle ID 6.5

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

9 x 3 x 3 2 ft. weir ID 6.6

9 x 3 x 3 2 ft. weir ID 6.7

10+00

15+00

STA 8+90

STA 15+40

+25

+42 Gravel

+61

12" Wattles

+17

+32 Gravel

+88

+82

+81 Gravel

+02 Gravel

C1.8 20.7

C0.0 18.0

15" CSP

C2.2 20.4

C1.0 19.5

F2.0 20.0

F2.0 20.0

F2.1 20.2

+4.0%

-1.7%

REMOVE

REMOVE

F1.9 19.8

F1.9 19.8

F1.1 18.2

C2.1 21.2

C1.8 20.7

F1.2 18.4

F1.3 18.6

CONC. MONUMENT & E.I.P.

Add Special Sediment Control Fence in low points of Silt fence along project.

12" Wattles

ANDERSON, JERRY DEAN & GLENNA
DB 1226 PG 107

CASSAVAUGH, WILLIAM M & ANGELA
DB 1210 PG 21

BROWN, RONALD W
DB 1252 PG 1264

BENTLEY, HARLEY R JR & KIMBERLY
DB 1208 PG 1090

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PROJECT REFERENCE NO.	SHEET NO.
EC-1732	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

ANDERSON, JERRY DEAN & GLENNA
DB 1226 PG 107

ANDERSON, JERRY DEAN & GLENNA
DB 1203 PG 1057

20+00

21+90

STA 15+40

+44

+18

+94

+49 Concrete

9 x 3 x 3
2 ft. weir
ID 7.1

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

12" Wattles

F1.7
19.4

C3.1
22.7

C1.6
20.4

C1.9
20.9

C1.6
20.4

C2.2
21.3

+0.7%

-3.8%

F2.6
21.2

F2.5
21.0

CONC. MONUMENT
& E.I.P.

F1.4
18.4

F2.1
20.2

F1.0
18.0

C1.2
19.8

+61

Add Special Sediment Control Fence in low points of Silt fence along project.

9 x 3 x 3
2 ft. weir
ID 7.2

9 x 3 x 3
2 ft. weir
ID 7.3

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

9 x 3 x 3
2 ft. weir
ID 7.4

12" Wattles

BENTLEY, HARLEY R JR & KIMBERLY
DB 1208 PG 1090

ECKERD, RONALD M & CYNTHIA C
DB 1211 PG 1726

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PROJECT REFERENCE NO.	SHEET NO.
EC-1732	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

ANDERSON, JERRY DEAN & GLENNA
DB 1203 PG 1057

PRICE, RONNIE D JR & SHANNON L
DB 1328 PG 964

PRICE, RONNIE D & ELAINE
DB 1075 PG 1371

PRICE, RONNIE D & ELAINE
DB 1048 PG 641

STA 21+90

STA 25+00

STA 28+40

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

12" Wattles

9 x 3 x 3
2 ft. weir
ID 8.3

9 x 3 x 3
ID 8.1

9 x 3 x 3
2 ft. weir
ID 8.4

9 x 3 x 3
2 ft. weir
ID 8.2

C1.0 19.5

C0.0 18.0

C0.2 18.3

F2.3 20.6

C3.4 23.1

C4.4 24.6

C0.4 18.6

F1.6 19.2

F1.7 19.4

F1.8 19.6

+73

+23

+53

+98

+95

+95

+27 Gravel

+99 Gravel

-3.8%

+3.2%

15" CSP

15" CSP

15" CSP

WOOD DECK BRIDGE
WITH WOOD END WALLS

BRIDGE #57

MIDDLE LITTLE RIVER

Add Special Sediment Control Fence in low points of Silt fence along project.

No Embankment Construction
STA. 25+69 Rt. to E.O.P.

P/L FOLLOWS
C/L of BRANCH

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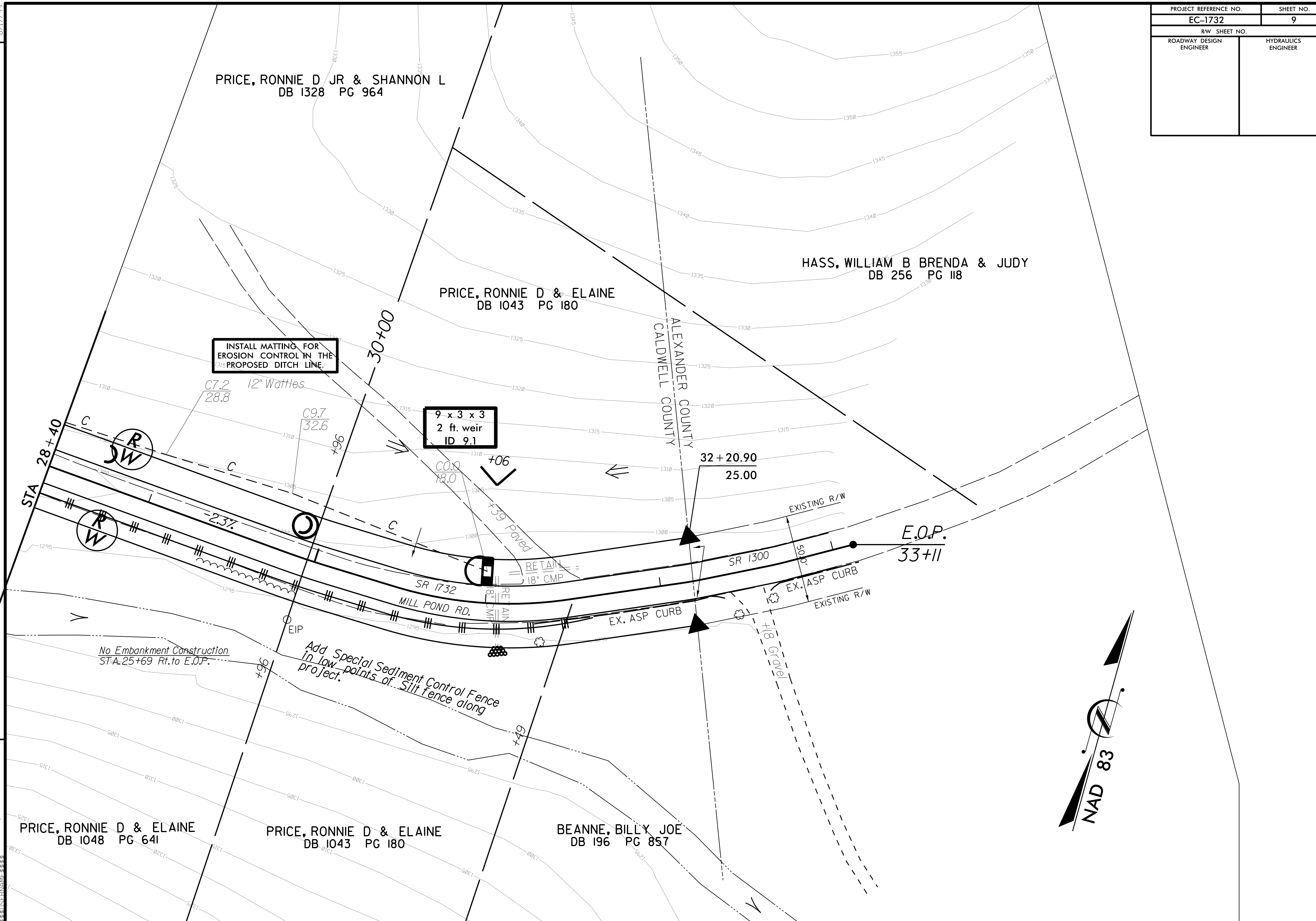
PROJECT REFERENCE NO.	SHEET NO.
EC-1732	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PRICE, RONNIE D JR & SHANNON L
DB 1328 PG 964
PRICE, RONNIE D & ELAINE
DB 1043 PG 180
HASS, WILLIAM B BRENDA & JUDY
DB 256 PG 118
ALEXANDER COUNTY
CALDWELL COUNTY
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.
12" Wattles
C7.2
28.8
C9.7
32.6
9 x 3 x 3
2 ft. weir
ID 9.1
C0.0
18.0
+06
+39 Paved
30+00
+96
STA 28+40
-2.3%
SR 1732
MILL POND RD.
RETAIN
18" CMP
32+20.90
25.00
EXISTING R/W
SR 1300
50.0'
EX. ASP CURB
E.O.P.
33+11
EIP
No Embankment Construction
STA.25+69 Rt.to E.O.P.
Add Special Sediment Control Fence in low points of Silt fence along project.
+49
+18 Gravel
NAD 83
PRICE, RONNIE D & ELAINE
DB 1048 PG 641
PRICE, RONNIE D & ELAINE
DB 1043 PG 180
BEANNE, BILLY JOE
DB 196 PG 857

8/17/99

REVISIONS

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