TIP PROJECT: B-3450

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

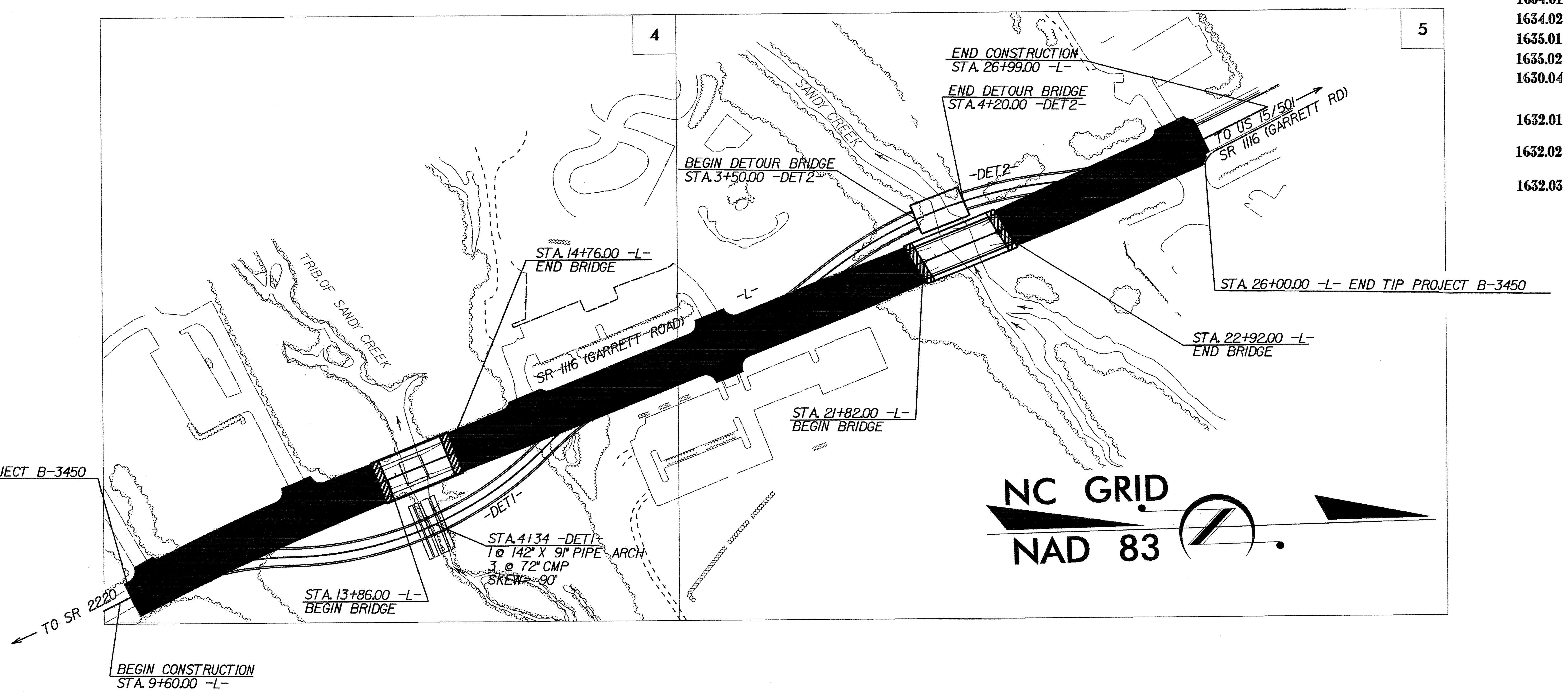
DURHAM COUNTY

LOCATION: BRIDGE NO. 217 OVER TRIBUTARY OF SANDY CREEK AND BRIDGE NO. 122 OVER SANDY CREEK AND APPROACHES ON SR 1116

TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3450	EC-1	

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



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
	Streambank Reforestation	
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	
1630.01	Riser Basin	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
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	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	

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

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Prepared in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2006 STANDARD SPECIFICATIONS

Roadway Standard Drawings

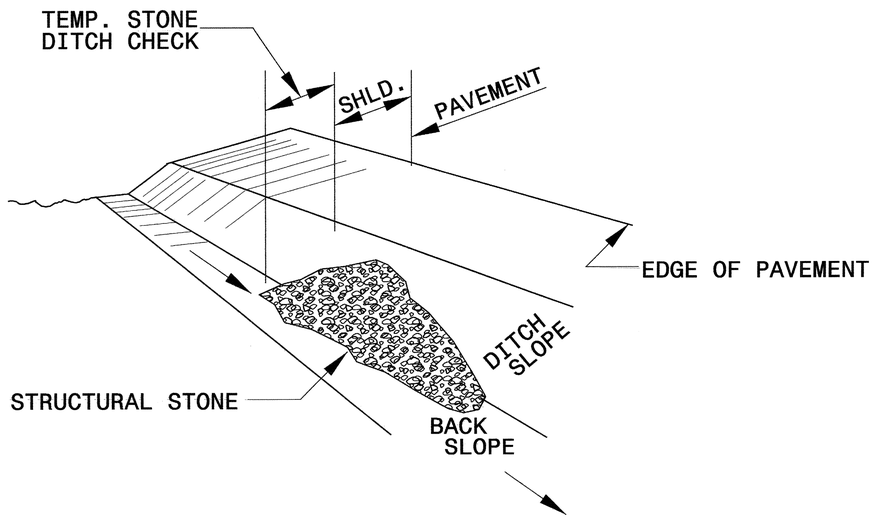
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated July 18, 2006 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence
1607.01 Gravel Construction Entrance
1630.02 Silt Basin Type B
1630.03 Temporary Silt Ditch
1630.05 Temporary Diversion
1630.06 Special Stilling Basin
1632.03 Rock Inlet Sediment Trap Type C
1633.01 Temporary Rock Silt Check Type A
1634.02 Temporary Rock Sediment Dam Type B

16-MAR-2007 12:48
\t:pprojects-b\b3450\envirormental\design\b3450.tsh
nchan AT RENV221445

PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

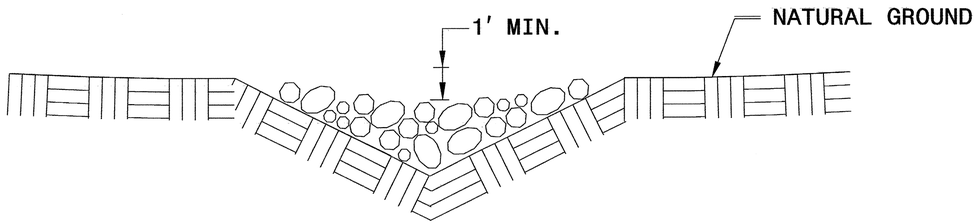


ISOMETRIC VIEW

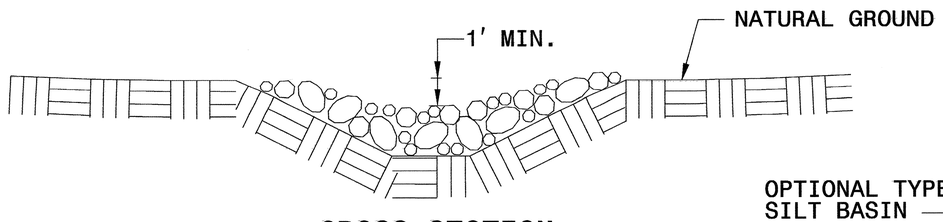
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

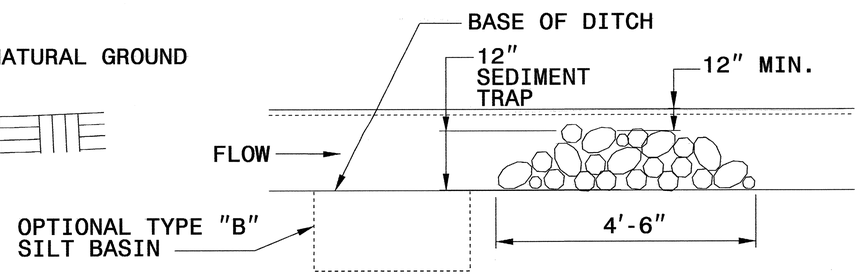
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



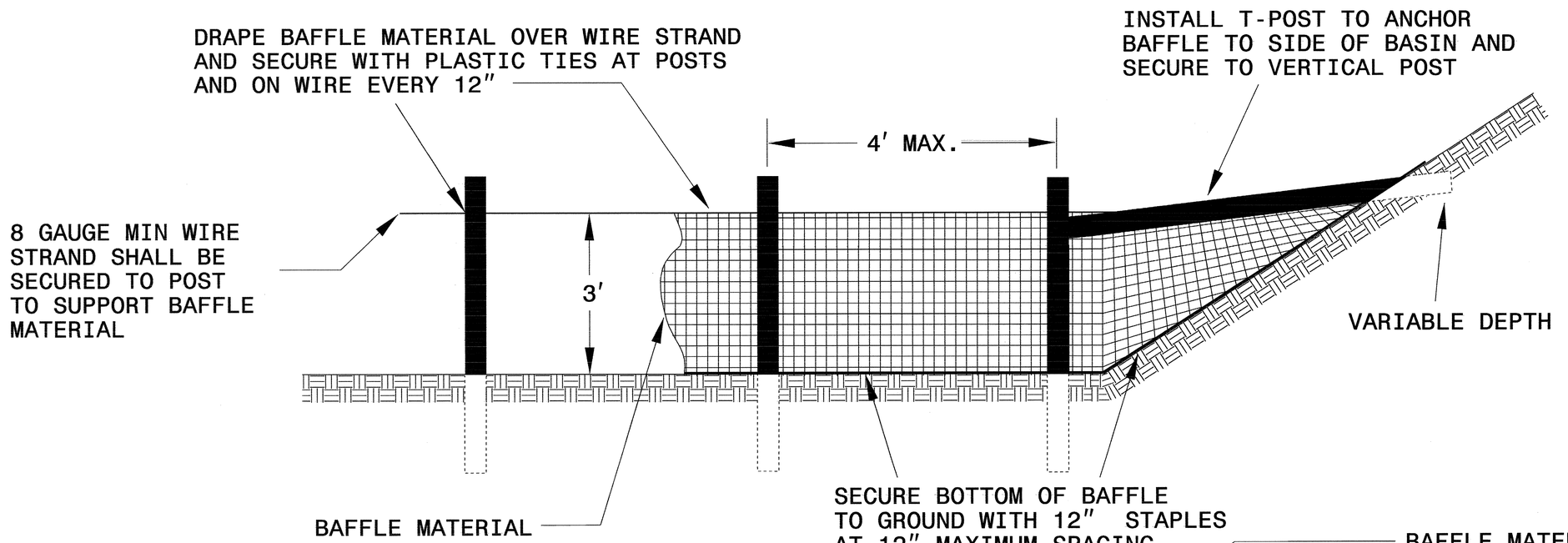
CROSS SECTION TRAPEZOIDAL DITCH

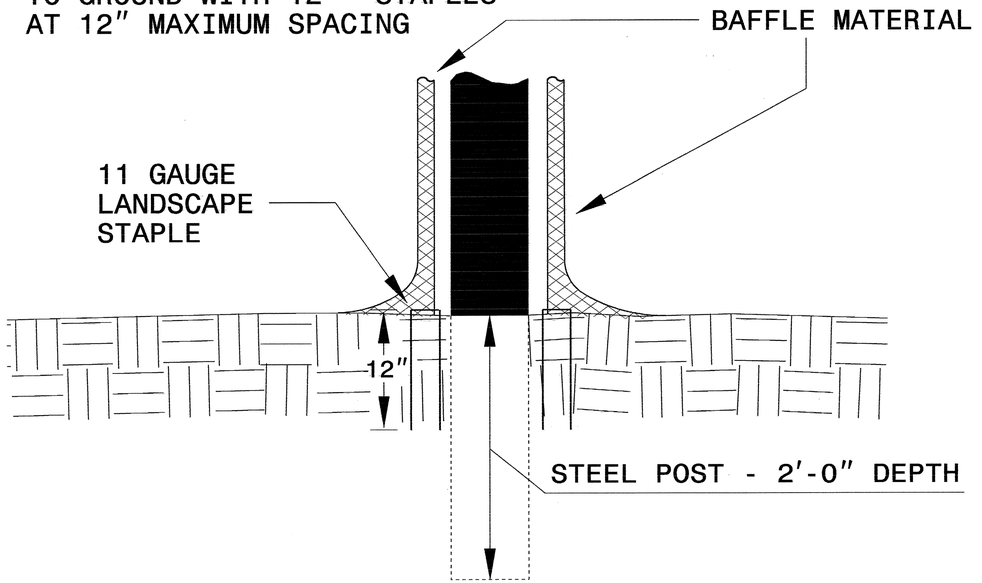


ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL

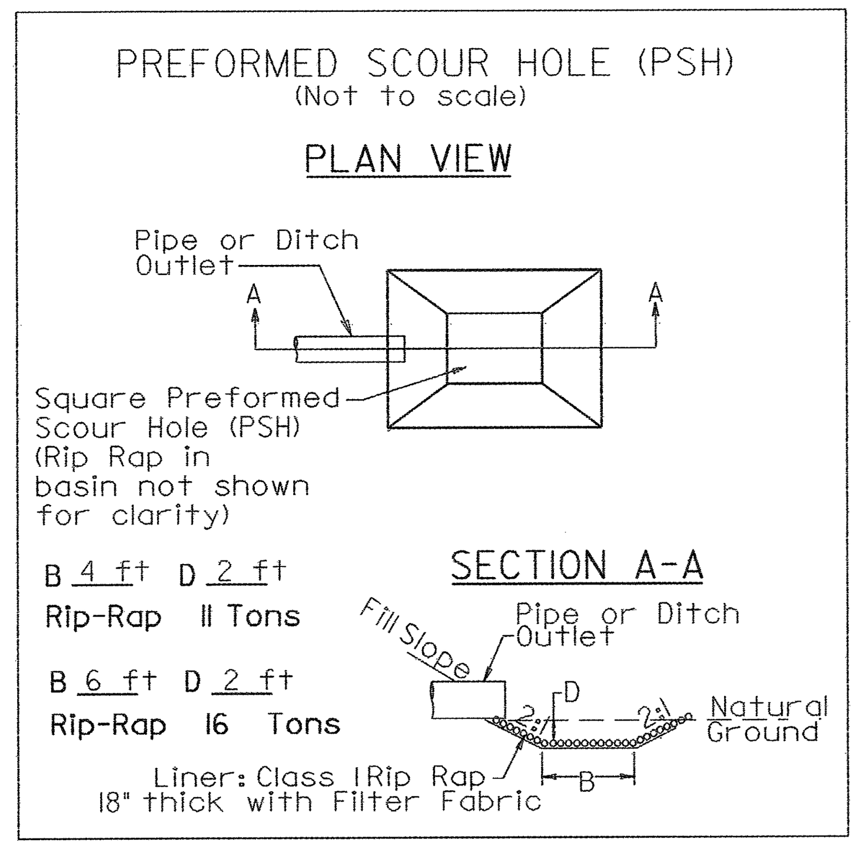




BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12″ LANDSCAPE STAPLES

NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-3/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

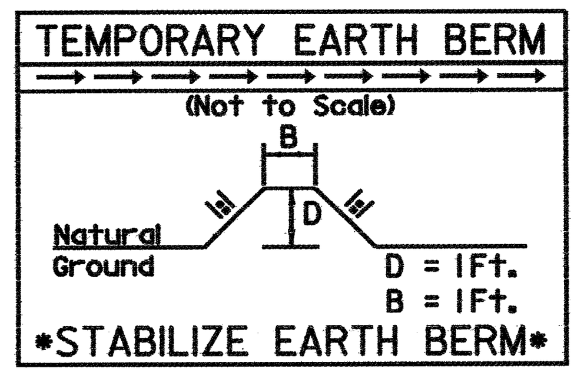


STATION 13+30 LT.
STATION 15+57 LT.

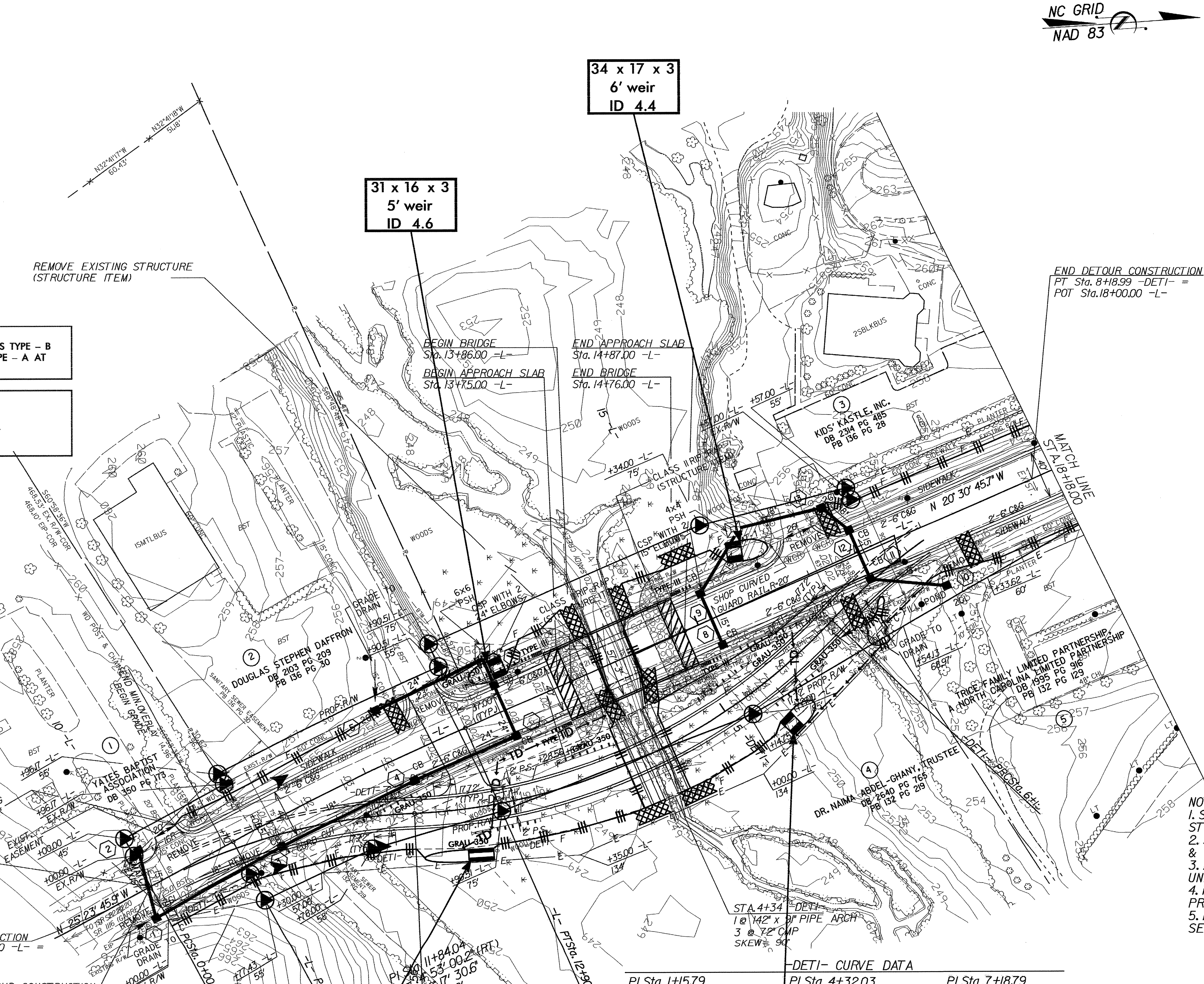
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4 AND 2C

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
UTILIZE SPECIAL STILLING BASIN AND TEMPORARY ROCK SILT CHECK TYPE – A AS STILLING BASIN WHERE APPLICABLE.



INSTALL FILTER FABRIC UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.



-L- CURVE DATA
PI Sta 11+84.04
Δ = 4° 53' 00.2" (RT)
D = 2° 17' 30.6"
L = 213.08'
T = 106.60'
R = 2500.00'
SE=0.03
RUNOFF = SEE PLANS
V=45 MPH

-DETI- CURVE DATA

PI Sta 1+15.79	PI Sta 4+32.03	PI Sta 7+18.79
Δ = 26° 04' 35.3" (RT)	Δ = 44° 28' 59.1" (LT)	Δ = 23° 17' 23.9" (RT)
D = 11° 27' 33.0"	D = 11° 27' 33.0"	D = 11° 27' 33.0"
L = 227.56'	L = 388.19'	L = 203.24'
T = 115.79'	T = 204.47'	T = 103.04'
R = 500.00'	R = 500.00'	R = 500.00'
SE = SEE PLANS	SE = 0.057	SE = SEE PLANS
RUNOFF = SEE PLANS	RUNOFF = SEE PLANS	RUNOFF = SEE PLANS
V = 35 MPH	V = 35 MPH	V = 35 MPH

NOTES:
1. SEE SHEETS S-1 THRU S-24 FOR STRUCTURE PLANS.
2. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 7 FOR -DETI- GRADE & PROFILE.
3. ALL PROPOSED DRIVEWAY RADII 25 FT UNLESS OTHERWISE SHOWN.
4. FLAT GRATES TO BE USED ON ENTIRE PROJECT.
5. FOR ACCURATE APPROACH SLAB LOCATIONS SEE STRUCTURE PLAN SHEETS S-23 AND S-24.

DENOTES APPROACH SLAB

NOTES:
1. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 7 FOR -DETI- GRADE & PROFILE.
2. ALL PROPOSED DRIVEWAY RADII 25 FT UNLESS OTHERWISE SHOWN.
3. FLAT GRATES TO BE USED ON ENTIRE PROJECT.

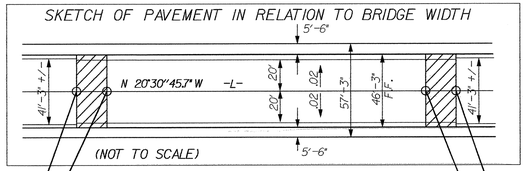
PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-4/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5

NOTE: UTILIZE TEMPORARY ROCK SEDIMENT DAM TYPE – B AS STILLING BASIN WHERE APPLICABLE.

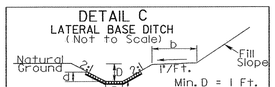
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

SKETCH OF PAVEMENT IN RELATION TO BRIDGE WIDTH



(NOT TO SCALE)

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Type of Liner = Class B Rip Rap

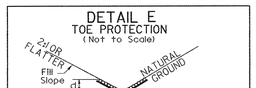
FROM STATION 21+00 TO STATION 21+50 LT.
FROM STATION 22+85 TO STATION 23+40 LT.

DETAIL D
TOE PROTECTION
(Not to Scale)

Type of Liner = Class A Rip Rap

FROM STATION 19+25 TO STATION 21+00 LT.
FROM STATION 23+40 TO STATION 25+20 LT.

DETAIL E
TOE PROTECTION
(Not to Scale)

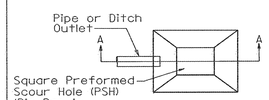


Type of Liner = Class B Rip Rap

FROM STATION 20+85 TO STATION 21+80 RT.

PREFORMED SCOUR HOLE (PSH)
(Not to scale)

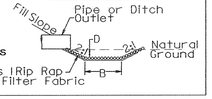
PLAN VIEW



B 4 ft D 2 ft
Rip-Rap 11 Tons

B 6 ft D 2 ft
Rip-Rap 16 Tons

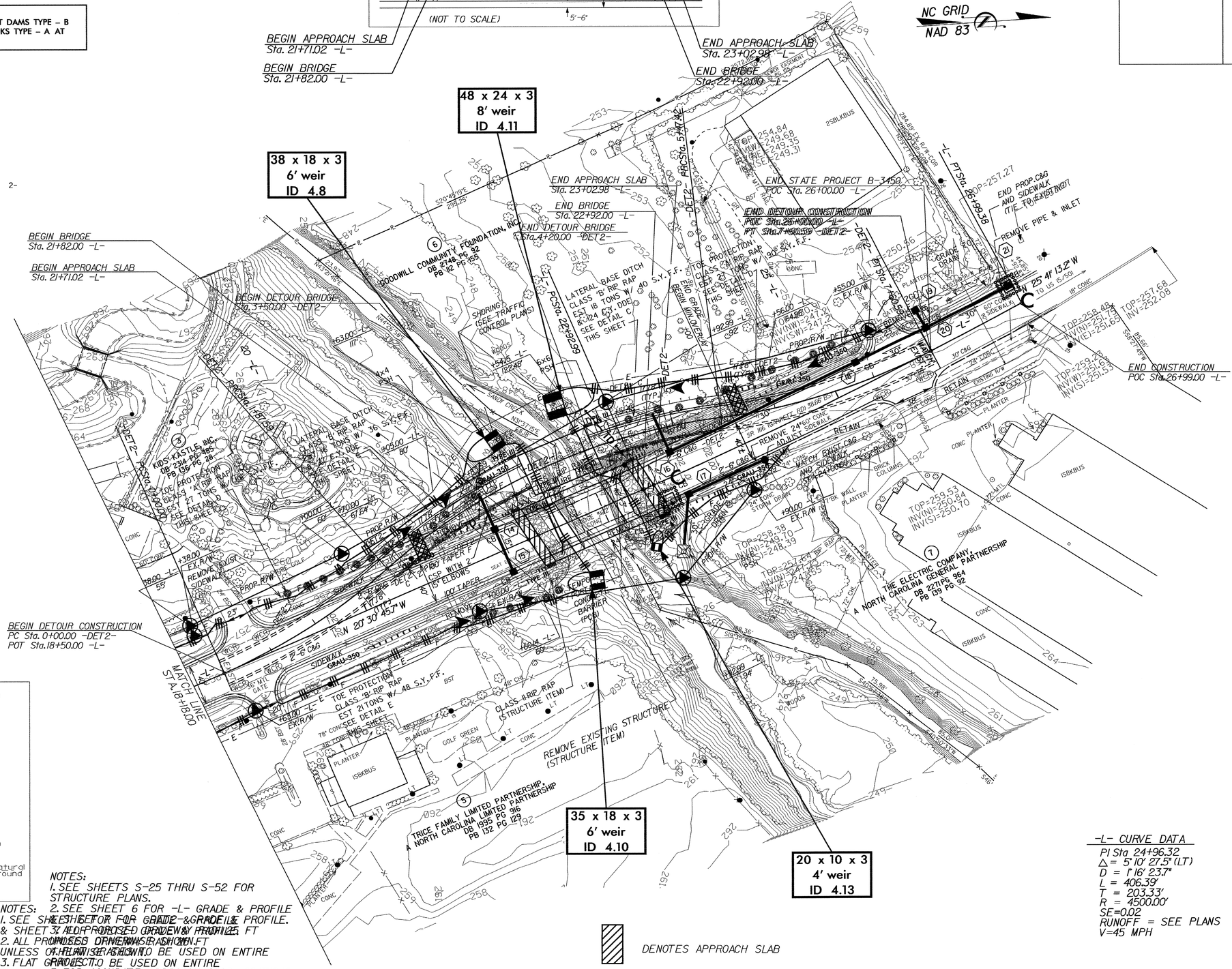
SECTION A-A



Liner: Class I Rip Rap 18" thick with Filter Fabric

STATION 21+50 LT.
STATION 22+85 LT.
STATION 23+05 RT.

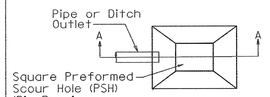
NOTES:
1. SEE SHEETS S-25 THRU S-52 FOR STRUCTURE PLANS.
2. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 3 FOR PROPOSED DRIVEWAY PROFILES.
3. FLAT GRADE TO BE USED ON ENTIRE PROJECT.
4. ALL PROPOSED DRIVEWAYS TO BE PAVED UNLESS OTHERWISE SHOWN.
5. FOR ACCURATE APPROACH SLAB LOCATIONS SEE STRUCTURE PLAN SHEETS S-51 AND S-52.



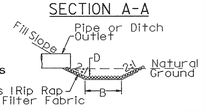
PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PREFORMED SCOUR HOLE (PSH)
(Not to scale)

PLAN VIEW



SECTION A-A



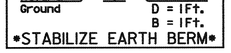
B 4 ft D 2 ft
Rip-Rap 11 Tons

B 6 ft D 2 ft
Rip-Rap 16 Tons

STATION 13+30 LT.
STATION 15+57 LT.

NOTE:
UTILIZE SPECIAL STILLING BASIN AND TEMPORARY ROCK SILT CHECK TYPE – A AS STILLING BASIN WHERE APPLICABLE.

TEMPORARY EARTH BERM
(Not to Scale)



STABILIZE EARTH BERM

INSTALL FILTER FABRIC UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.

-L- CURVE DATA
PI Sta 11+84.04
△ = 4° 53' 00.2" (RT)
D = 2° 17' 30.6"
L = 213.08'
T = 106.60'
R = 2500.00'
SE=0.03
RUNOFF = SEE PLANS
V=45 MPH

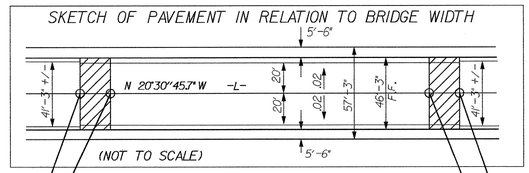
DENOTES APPROACH SLAB

NOTES:
1. SEE SHEETS S-1 THRU S-24 FOR STRUCTURE PLANS.
2. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 7 FOR -DETI- GRADE & PROFILE.
3. ALL PROPOSED DRIVEWAY RADII 25 FT UNLESS OTHERWISE SHOWN.
4. FLAT GRATES TO BE USED ON ENTIRE PROJECT.
5. FOR ACCURATE APPROACH SLAB LOCATIONS SEE STRUCTURE PLAN SHEETS S-23 AND S-24.

PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-6/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
UTILIZE TEMPORARY ROCK SEDIMENT DAM TYPE – B AS STILLING BASIN WHERE APPLICABLE.

SKETCH OF PAVEMENT IN RELATION TO BRIDGE WIDTH



BEGIN APPROACH SLAB
Sta. 21+71.02 -L-

BEGIN BRIDGE
Sta. 21+82.00 -L-

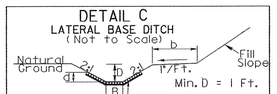
END APPROACH SLAB
Sta. 23+02.98 -L-

END BRIDGE
Sta. 22+92.00 -L-

NC GRID
NAD 83

45 x 23 x 3
8' weir
ID 4.12

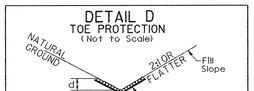
DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Type of Liner = Class B Rip Rap

FROM STATION 21+00 TO STATION 21+50 LT.
FROM STATION 22+85 TO STATION 23+40 LT.

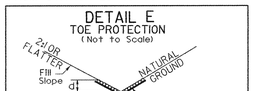
DETAIL D
TOE PROTECTION
(Not to Scale)



Type of Liner = Class A Rip Rap

FROM STATION 19+25 TO STATION 21+00 LT.
FROM STATION 23+40 TO STATION 25+20 LT.

DETAIL E
TOE PROTECTION
(Not to Scale)

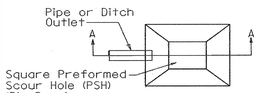


Type of Liner = Class B Rip Rap

FROM STATION 20+85 TO STATION 21+80 RT.

PREFORMED SCOUR HOLE (PSH)
(Not to scale)

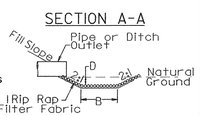
PLAN VIEW



B 4 ft D 2 ft
Rip-Rap II Tons

B 6 ft D 2 ft
Rip-Rap 16 Tons

SECTION A-A



Liner: Class I Rip Rap
18" thick with Filter Fabric

STATION 21+50 LT.
STATION 22+85 LT.
STATION 23+05 RT.

BEGIN DETOUR CONSTRUCTION
PC Sta. 0+00.00 -DET2-
POT Sta.18+50.00 -L-

END DETOUR CONSTRUCTION
POC Sta.26+00.00 -L-
PT Sta.7+60.59 -DET2-

END STATE PROJECT B-3450
POC Sta. 26+00.00 -L-

PT Sta. 26+99.98 -L-

END PROP. C&G AND SIDEWALK (TIE TO EXISTING)

END CONSTRUCTION
POC Sta.26+99.00 -L-

REMOVE EXISTING STRUCTURE (STRUCTURE ITEM)

35 x 18 x 3
6' weir
ID 4.10

20 x 10 x 3
4' weir
ID 4.13

GOODWILL COMMUNITY FOUNDATION, INC.
DB 2748 PG 92
PB 112 PG 155

KIDS-KASTLE, INC.
DB 2714 PG 485
PB 136 PG 28

TRICE FAMILY LIMITED PARTNERSHIP; A NORTH CAROLINA LIMITED PARTNERSHIP
DB 1995 PG 916
PB 132 PG 129

THE ELECTRIC COMPANY, A NORTH CAROLINA GENERAL PARTNERSHIP
DB 2271 PG 964
PB 139 PG 92

NOTES:
1. SEE SHEETS S-25 THRU S-52 FOR STRUCTURE PLANS.
2. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 7 FOR -DET2- GRADE & PROFILE.
3. ALL PROPOSED DRIVEWAY RADII 25 FT UNLESS OTHERWISE SHOWN.
4. FLAT GRATES TO BE USED ON ENTIRE PROJECT.
5. FOR ACCURATE APPROACH SLAB LOCATIONS SEE STRUCTURE PLAN SHEETS S-51 AND S-52.

DENOTES APPROACH SLAB

-L- CURVE DATA
PI Sta. 24+96.32
Δ = 5° 10' 27.5" (LT)
D = 1° 16' 23.7"
L = 406.39'
T = 203.33'
R = 4500.00'
SE=0.02
RUNOFF = SEE PLANS
V=45 MPH

PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-7/CONST.2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

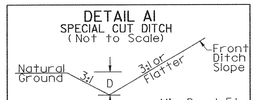
DETOUR 1

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE: UTILIZE TEMPORARY ROCK SEDIMENT DAM TYPE – B AND TEMPORARY ROCK SILT CHECK TYPE – A AS STILLING BASIN WHERE APPLICABLE.

NC GRID
NAD 83

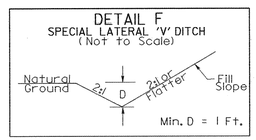
DETAIL AI
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner = Synthetic Matting

FROM STATION 0+25 TO STATION 1+50 RT. -DET1-

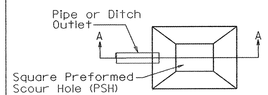
DETAIL F
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STATION 1+50 TO STATION 2+75 RT. -DET1-
FROM STATION 5+50 TO STATION 7+00 RT. -DET1-

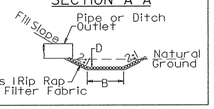
PREFORMED SCOUR HOLE (PSH)
(Not to scale)

PLAN VIEW



B 4 ft D 2 ft
Rip-Rap 11 Tons

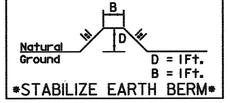
SECTION A-A



Liner: Class 1 Rip Rap 18" thick with Filter Fabric

STATION 2+75 RT. -DET1-
STATION 5+50 RT. -DET1-

TEMPORARY EARTH BERM
(Not to Scale)



STABILIZE EARTH BERM

INSTALL FILTER FABRIC UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.

21 x 11 x 3
4' weir
ID 4.7

57 x 10 x 3
4' weir
ID 4.1

31 x 16 x 3
5' weir
ID 4.2

END DETOUR CONSTRUCTION
PT Sta. 8+18.99 -DET1-
POT Sta.18+00.00 -L-

MATCH LINE STA.18+18.00

BEGIN STATE PROJECT B-3450
POT Sta. 10+00.00 -L-

BEGIN DETOUR CONSTRUCTION
POT Sta. 10+00.00 -L-
PC Sta.0+00.00 -DET1-

-L- PCSta. 10+77.43

-DET1- PCSta. 2+27.59

-L- PTSta. 12+90.51

-DET1- PTSta. 6+15.75

STA.4+34 -DET1-
1 @ 142" x 91" PIPE ARCH
3 @ 72" CMP
SKEW= 90°

-L- CURVE DATA

PI Sta 11+84.04
Δ = 4° 53' 00.2" (RT)
D = 2° 17' 30.6"
L = 213.08'
T = 106.60'
R = 2500.00'
SE=0.03
RUNOFF = SEE PLANS
V=45 MPH

-DET1- CURVE DATA

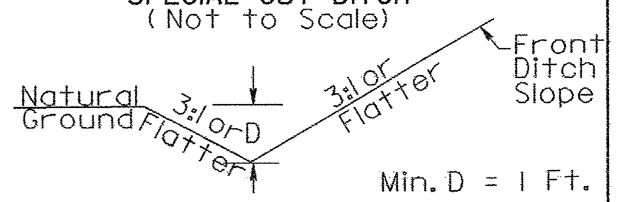
PI Sta 1+15.79	PI Sta 4+32.03	PI Sta 7+18.79
Δ = 26° 04' 35.3" (RT)	Δ = 44° 28' 59.1" (LT)	Δ = 23° 17' 23.9" (RT)
D = 11° 27' 33.0"	D = 11° 27' 33.0"	D = 11° 27' 33.0"
L = 227.56'	L = 388.19'	L = 203.24'
T = 115.79'	T = 204.47'	T = 103.04'
R = 500.00'	R = 500.00'	R = 500.00'
SE = SEE PLANS	SE = 0.057	SE = SEE PLANS
RUNOFF = SEE PLANS	RUNOFF = SEE PLANS	RUNOFF = SEE PLANS
V = 35 MPH	V = 35 MPH	V = 35 MPH

NOTES:
1. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 7 FOR -DET1- GRADE & PROFILE.
2. ALL PROPOSED DRIVEWAY RADII 25 FT UNLESS OTHERWISE SHOWN.
3. FLAT GRATES TO BE USED ON ENTIRE PROJECT.

PROJECT REFERENCE NO.	SHEET NO.
B-3450	EC-8/CONST.2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

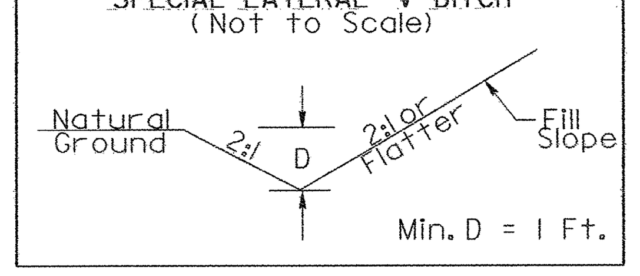
DETOUR 2

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



FROM STATION 1+00 TO STATION 1+55 LT. -DET2-

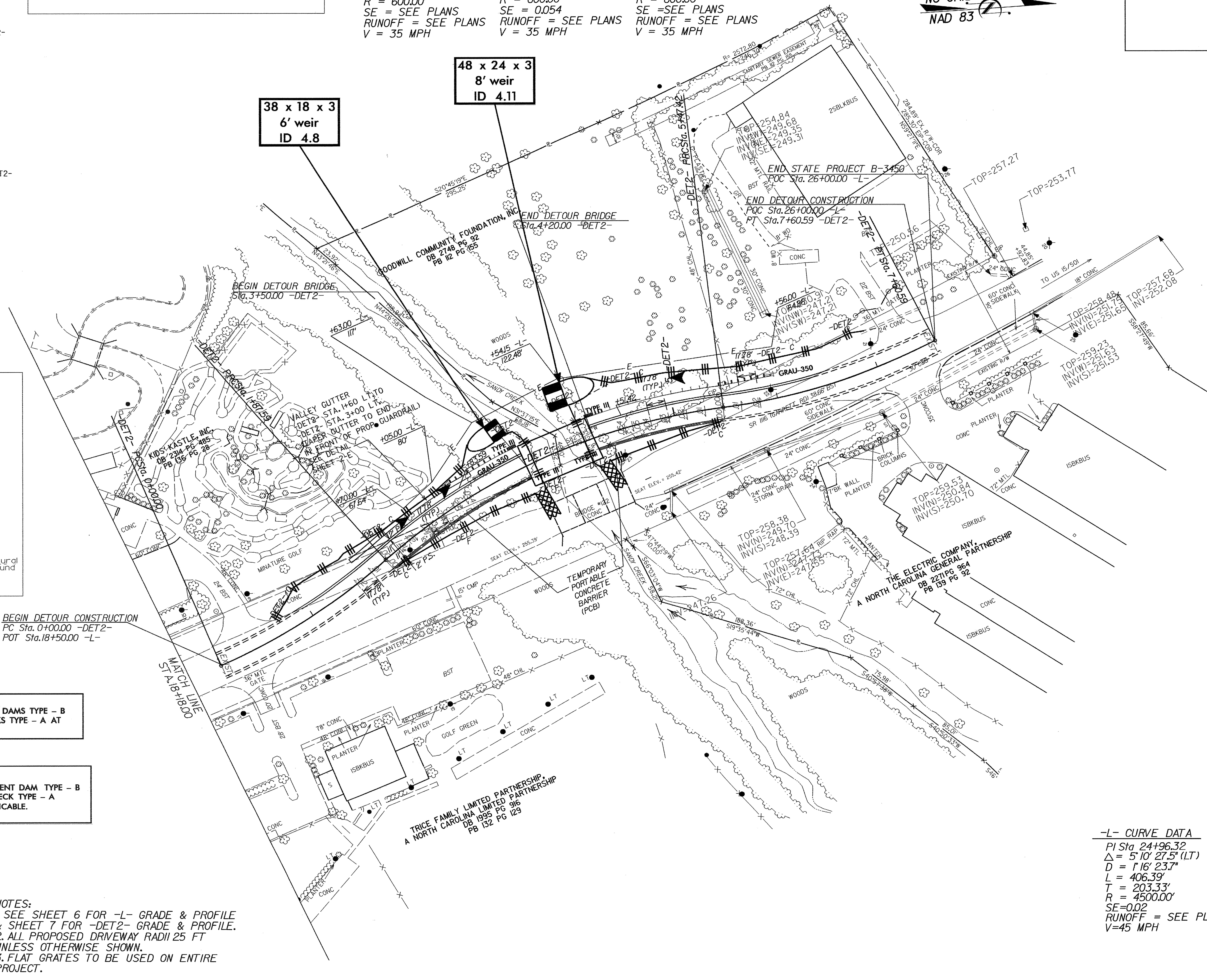
DETAIL F
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STATION 4+30 TO STATION 6+90 LT. -DET2-

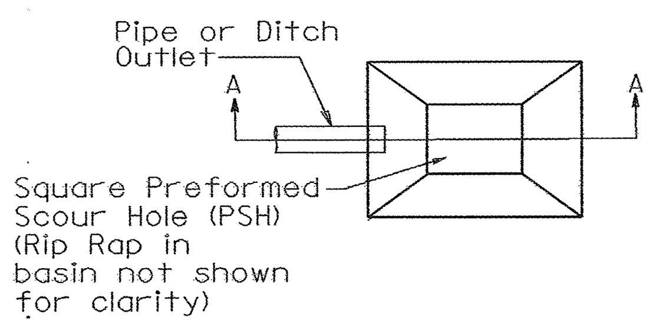
-DET2- CURVE DATA

PI Sta 0+94.57	PI Sta 3+73.10	PI Sta 6+55.14
△ = 17° 54′ 49.5″ (LT)	△ = 34° 21′ 39.3″ (RT)	△ = 20° 21′ 22.0″ (LT)
D = 9° 32′ 57.5″	D = 9° 32′ 57.5″	D = 9° 32′ 57.5″
L = 187.59′	L = 359.83′	L = 213.17′
T = 94.57′	T = 185.51′	T = 107.72′
R = 600.00′	R = 600.00′	R = 600.00′
SE = SEE PLANS	SE = 0.054	SE = SEE PLANS
RUNOFF = SEE PLANS	RUNOFF = SEE PLANS	RUNOFF = SEE PLANS
V = 35 MPH	V = 35 MPH	V = 35 MPH



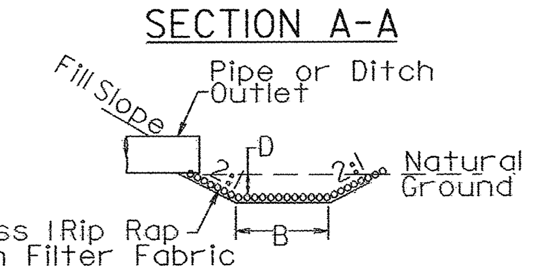
PREFORMED SCOUR HOLE (PSH)
(Not to scale)

PLAN VIEW



B 4 ft D 2 ft
Rip-Rap 11 Tons

SECTION A-A



STATION 3+30 LT. -DET2-
STATION 4+30 LT. -DET2-

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
UTILIZE TEMPORARY ROCK SEDIMENT DAM TYPE – B AND TEMPORARY ROCK SILT CHECK TYPE – A AS STILLING BASIN WHERE APPLICABLE.

NOTES:
1. SEE SHEET 6 FOR -L- GRADE & PROFILE & SHEET 7 FOR -DET2- GRADE & PROFILE.
2. ALL PROPOSED DRIVEWAY RADII 25 FT UNLESS OTHERWISE SHOWN.
3. FLAT GRATES TO BE USED ON ENTIRE PROJECT.

-L- CURVE DATA
PI Sta 24+96.32
△ = 5° 10′ 27.5″ (LT)
D = 1° 16′ 23.7″
L = 406.39′
T = 203.33′
R = 4500.00′
SE=0.02
RUNOFF = SEE PLANS
V=45 MPH