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PROJECT REFERENCE NO.	SHEET NO.
A-0009CA	EC-35/CONSTJ6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/2011

DETAIL 16A
BERM 'V' DITCH
(Not to Scale)

Natural Ground; 2:1; D; b; d; 2:1; Geotextile; RDWY; 2:1

Min. D= 1.0 Ft.
Max D= 1.0 Ft.
b= 5.0 Ft.
Type of Liner= CL 'B' Rip–Rap

FROM STA.152+50 TO STA.154+50–L– RT

DETAIL 16B
BERM BASE DITCH
(Not to Scale)

Natural Ground; 2:1; D; b; d; 2:1; B; GEOTEXTILE; RDWY; 2:1

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.
Type of Liner= CL 'B' Rip–Rap

FROM STA.154+50 TO STA.156+50–L– RT.

DETAIL 16C
TOE PROTECTION
(Not to Scale)

Natural Ground; d; 2:1 or Flatter Fill Slope; EC MATTING

d= 1.5 Ft.

Type of Liner= EC MATTING

FROM STA.158+00 TO STA.160+00–L– RT.

DETAIL 16D
PIPE INLET CHANNEL
(Not to Scale)

Natural Ground; 2:1; D; 2:1; Natural Ground; d; 2.0'; CHANNEL BED (B)

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
Type of Liner= CL "II" Rip–Rap (Keyed–In)

STA. 160+25–L– RT.
STA. 160+40–L– RT.

DETAIL 16E
PIPE OUTLET CHANNEL
(Not to Scale)

Natural Ground; 2:1; D; 2:1; Natural Ground; d; 2.0'; CHANNEL BED (B)

Min. D=VARIES
Max. d=VARIES
B=3.0 Ft.
Type of Liner= CL "II" Rip–Rap (Keyed–In)

STA.160+35–L– LT.

DETAIL 16F
PIPE INLET CHANNEL
(Not to Scale)

Natural Ground; 2:1; D; 2:1; Natural Ground; d; 1.5'; CHANNEL BED (B)

Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 4.0 Ft.
Type of Liner= CL "I" Rip–Rap (Keyed–In)

STA. 163+00–L– RT.

DETAIL 16G
PIPE OUTLET CHANNEL
(Not to Scale)

Natural Ground; 2:1; D; 2:1; Natural Ground; d; 1.5'; CHANNEL BED (B)

Min. D= VARIES
Max. d= VARIES
B= 4.0 Ft.
Type of Liner= CL "I" Rip–Rap (Keyed–In)

STA. 163+00–L– LT.

DETAIL 16H
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground; 2:1; D; 4:1 or Flatter; Fill Slope

Min. D=1.5 Ft.

FROM STA.157+25 TO STA.158+00–L– RT.
FROM STA.164+00 TO STA.166+00–L– RT.

SAFETY FENCE

MATCH LINE STA –L– 152+00.00
MATCH TO SHEET NO. 15

MATCH LINE STA –L– 166+00.00
MATCH TO SHEET NO. 17

99 x 33 x 3
2 inch Skimmer
with 1.625 inch
Orifice Diameter
12 ft. weir
ID 16.1

120 x 20 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
9 ft. weir
ID 16.4

72 x 20 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 16.3

43 SCOTT ANDERSON
42 JAMES T. KEEFER
44 KENNETH CODY, TRUSTEE, ET AL
45 KENNETH CODY, TRUSTEE, ET AL

PROP. DRIVE
720' TAPER
–L– PC 159+97.57
SWEETWATER CREEK
UT TO SWEETWATER CREEK (SR)
DRAIN LINE
SHOULDER BERM GUTTER –L– STA. 165+15 TO 169+39, LT
SHOULDER BERM GUTTER –L– STA. 159+75 TO 163+85, LT
SHOULDER BERM GUTTER –L– STA. 159+75 TO 163+85, LT

CL 'I' RIP–RAP
EST. 7 TON
GEOTEXTILE
EST. 15 SY

CL 'I' RIP–RAP
EST. 7 TON
GEOTEXTILE
EST. 17 SY

PIPE OUTLET CHANNEL
SEE DETAIL 16E
EST. 15 CY DDE
L=25'
S=10.0%
CL 'II' RIP–RAP
EST. 25 TONS

CLASS 'I' RIP RAP
EST. 3 TONS
GEOTEXTILE
EST. 7 SY

PIPE OUTLET CHANNEL
SEE DETAIL 16G
S=1.0%
L=20'
EST. 15 CY DDE
CL 'I' RIP–RAP
EST. 20 TONS

TSD; REMOVE; 8'FDPS; 24" RCP–III; 24" RCP–IV; 30" CSP; 60" CSP; 15" RCP–IV; 2GI; JB w/MH & 1.0' Weir Wall; ROD AND LUG WITH GASKETS (ELBOW); CFW; HPB; PDE; GREU TL–3; 15'R; 20'R; 24' 12 12 12; 24' 12 12 12; 36'TYP; 2 PLUG; FLOWABLE FILL; SEAMLESS INSTALLED 36" WELDED STEEL PIPE (THICKNESS 0.500"); PLUG; REMOVE HW; 15" RCP–IV; SEPTIC TANK; DRAIN LINES; SHED; 36" CONC WALL; 1½S FD

BERM 'V' DITCH
SEE DETAIL 16A
CL 'B' RIP–RAP
EST. 45 TONS
GEOTEXTILE
EST. 140 SY

BERM BASE DITCH
SEE DETAIL 16B
CL 'B' RIP–RAP
EST. 85 TONS
GEOTEXTILE
EST. 230 SY

FALSE SUMP
SEE DETAIL 16I

SPECIAL LATERAL
'V' DITCH
SEE DETAIL 16H

TOE PROECTION
SEE DETAIL 16C
EC MATTING
EST. 150 SY

FALSE SUMP
SEE DETAIL 16J
TOP EL=2158.5'

PIPE INLET CHANNEL
SEE DETAIL 16D
S=23.0%
L=35'
EST. 30 CY DDE
CL 'II' RIP–RAP
EST. 20 TONS

PIPE INLET CHANNEL
SEE DETAIL 16D
S=21.0%
L=32'
EST. 20 CY DDE
CL 'II' RIP–RAP
EST. 25 TONS

PIPE INLET CHANNEL
SEE DETAIL 16F
S=5.6%
L=43'
EST. 50 CY DDE
CL 'I' RIP–RAP
EST. 90 TONS

TRANSITION STONE
CL 'B' RIP–RAP
EST. 5 TONS
GEOTEXTILE
EST. 10 SY

SPECIAL LATERAL
'V' DITCH
SEE DETAIL 16H

DO NOT DISTURB TREES IN HPB

CLEAN WATER DIVERSION
CWD
(Not to Scale)

STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
1' MIN.
1' MIN.

DETAIL 16I
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow; 4:1; 2:1; 1.5'; S; S

S=Ditch Slope
℄ Proposed Ditch

STA. 157+25–L– RT.

DETAIL 16J
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow; 20:1; 10:1; 2'; 0.5' Min. 1.0' Max.; GI etc.; S

S=Ditch Slope
℄ Proposed Ditch

STA.160+00–L– RT.

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

For Slopes Excavated Greater Than 10 feet Install Matting for Erosion Control on Entire Slope as Work Allows.