STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 16, 2005

U.S. Army Corps of Engineers
Wilmington Regulatory Field Office
Post Office Box 1890
Wilmington, NC 28402-1890

ATTN: Mr. Richard Spencer
NCDOT Coordinator, Division 6

Dear Sir:

Subject: **Application for a Permit Modification for Section 404 and 401 permits For the improvements to SR 1400 (Cliffdale Road) from US 401 to SR 1403 (Reilly Road),** Cumberland County. TIP No. U-2520; Federal Aid No. STP-1400(2); State Project No. 8.2441701; USACE Action ID 200200640; DWQ Project No. 020400. $475 to WBS No. 34818.1.1

The North Carolina Department of Transportation (NCDOT) proposes to improve SR 1400 with 4.5 miles of widening and 1.1 miles of new location. The proposed cross-section will consist of a combination of five-lane and four-lane median divided.

The U.S. Army Crops of Engineers issued an Section 404 Individual permit on August 12, 2002 (Action ID 200200640) and the N.C. Division of Water Quality issued a Section 401 Water Quality Certification on April 19, 2002.

The purpose of this submittal is to request a modification to the Section 404 permit and Section 401 Water Quality Certification. The modification for the permit is for additional stream impacts of 95 feet to Site 4.

The revised design does not compromise NCDOT's compliance with the existing permit conditions. The revision has been evaluated for compliance with the avoidance/minimization criteria and are in compliance with all previous issues, including the following:

- Protected Species, Aquatic Life passage, FEMA compliance or Cultural Resources.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Permit Drawing 9 of 11/Site 4

The stream at this site was not shown correctly on the plans and so at the inlet of this culvert, the stream is eroding, scouring and headcutting upstream. To control the erosion and provide stability for this stream a step pool is designed at the inlet. The step pool is 58 ft and the design is enclosed with this application.

At the outlet of this culvert a rip rap pad with an energy dissipator basin is needed to dissipate the water coming out of the culvert.

A preformed scour hole was changed to a energy dissipator basin near this site for the same reason as above. .

The additional impacts to both of these areas at Site 4 are 95 ft. This stream is intermittent and did not require mitigation in the original permit so no mitigation is required for these additional impacts.

This application is hereby made for a Section 404 Individual Permit Modification as stated for the above mentioned activity. By copy of this letter, we are also requesting a Section 401 Water Quality Certification modification. In compliance with Section 143-215.3D(e) of the NCAC we will provide $475 to act as payment for processing the Section 401 permit modification as previously noted in this application (see Subject Line). Seven copies of the application are being provided to the DWQ for their review.

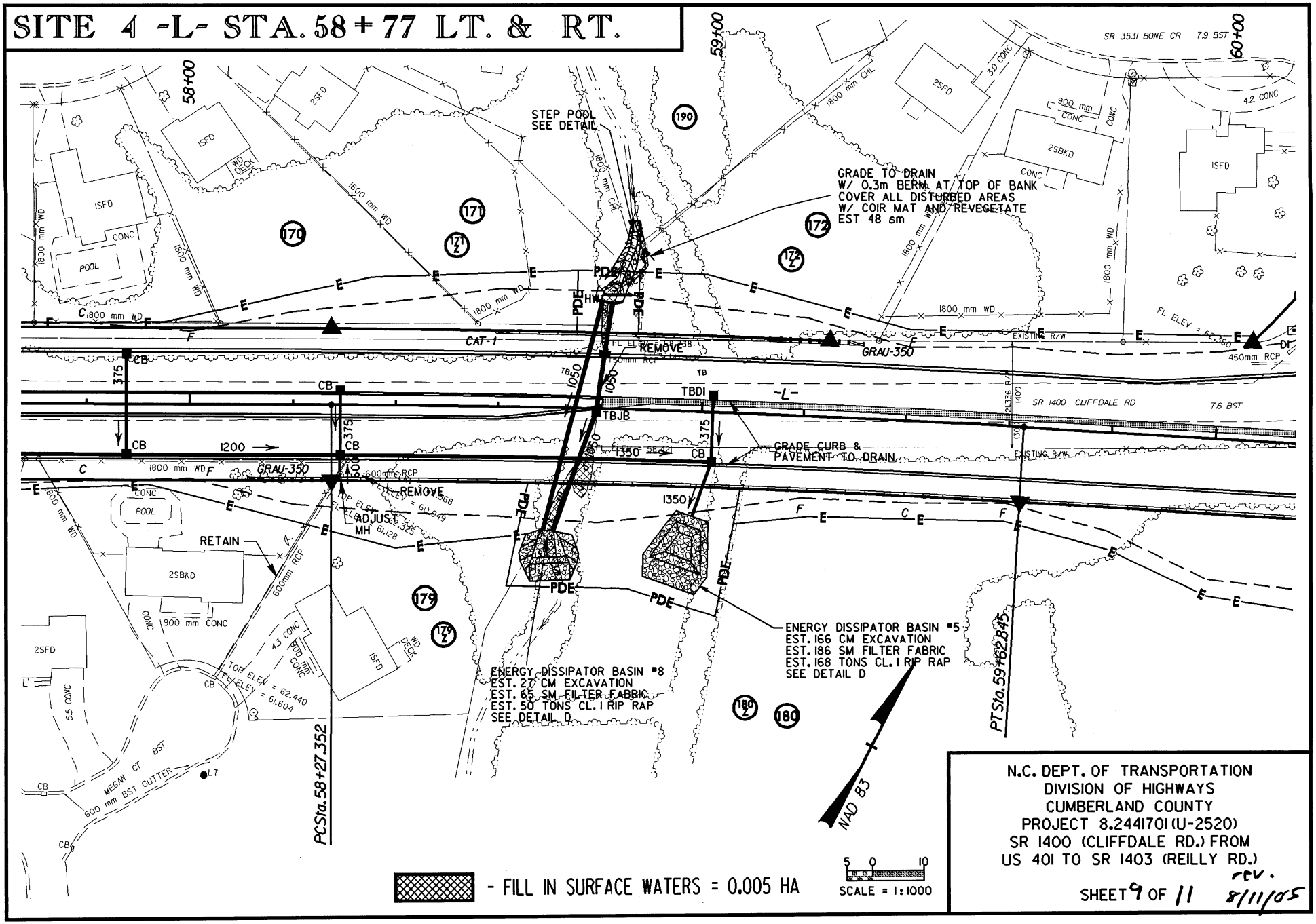
If you have any questions or need additional information please call Rachelle Beauregard at 715-1383.

Sincerely,

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

cc: w/attachment
Mr. John Hennessy, NCDWQ **(7 Copies)**
Mr. Travis Wilson, NCWRC
Ms. Becky Fox, USEPA – Whittier, NC
Mr. Ronald Mikulak, USEPA – Atlanta, GA
Mr. Gary Jordan, USFWS
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Terry Gibson, P.E., Division Engineer
Mr. Jim Rerko, Division Environmental Officer
w/o attachment
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. David Franklin, USACE, Wilmington

SITE 4 -L- STA. 58+77 LT. & RT.



N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT 8.2441701 (U-2520)
SR 1400 (CLIFFDALE RD.) FROM
US 401 TO SR 1403 (REILLY RD.)

SHEET 9 OF 11 rev. 8/11/05

IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station	Structure Size	Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Interchange Isolated Wetland (ha)	Mechanized Clearing (Method II) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Existing Channel Impact (m)	Natural Stream Design (m)	Enclosed Channel (m)
1	-L- 21+70 LT-RT	1.8x1.8	0.011		0.001		0.005	0.005		62.1		44.7
2	-L- 31+80 LT-RT	1200	0.002				0.004	0.006		27.8		45.6
3	-L- 41+70 LT-RT	1800	0.022				0.013	0.005		28.2		44.0
4	-L- 58+77 LT-RT	(2) 1050						0.009		57.0		46.2
5	-L- 62+30 LT-RT	(2) 4.0x3.0	0.288		0.008		0.041	0.039		101.5		56.5
6	-L- 68+20 LT-RT	1200	0.251				0.028	0.004		45.8		44.8
TOTALS:			**0.574**		**0.009**		**0.091**	**0.064**		**293.3**		**281.8**

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT: 8.2441701 (U-2520)
SR 1400 (CLIFFDALE RD.) FROM
US 401 TO SR 1403 (REILLY RD.)
rev.

 8/11/05

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	-L- 21+70 Lt Rt	6'x6' RCBC	0.027		0.003	0.012		0.012		204		
2	-L- 31+80 Lt Rt	48"	0.005			0.010		0.015		91		
3	-L- 41+70 Lt Rt	72"	0.054			0.032		0.012		93		
4 **	-L- 58+77 Lt Rt	2 @ 42"						0.022		187		56
5	-L- 62+30 Lt Rt	2@ 13' X 10' RCBC	0.711		0.020	0.101		0.096		333		
6	-L- 68+20 Lt Rt	48"	0.620			0.069		0.010		150		
TOTALS:			1.42	0.00	0.02	0.22	0.00	0.17	0.00	1058	0	56

** Original Impacts for Permanent SW and Channel Impacts were 0.012 ac and 92 ft, respectively.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY
U-2520

SHEET ########

ATN Revised 3/31/05

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-2520	18
R/W SHEET NO.	
ROADWAY DESIGN AND HYDRAULICS ENGINEER	

METRIC

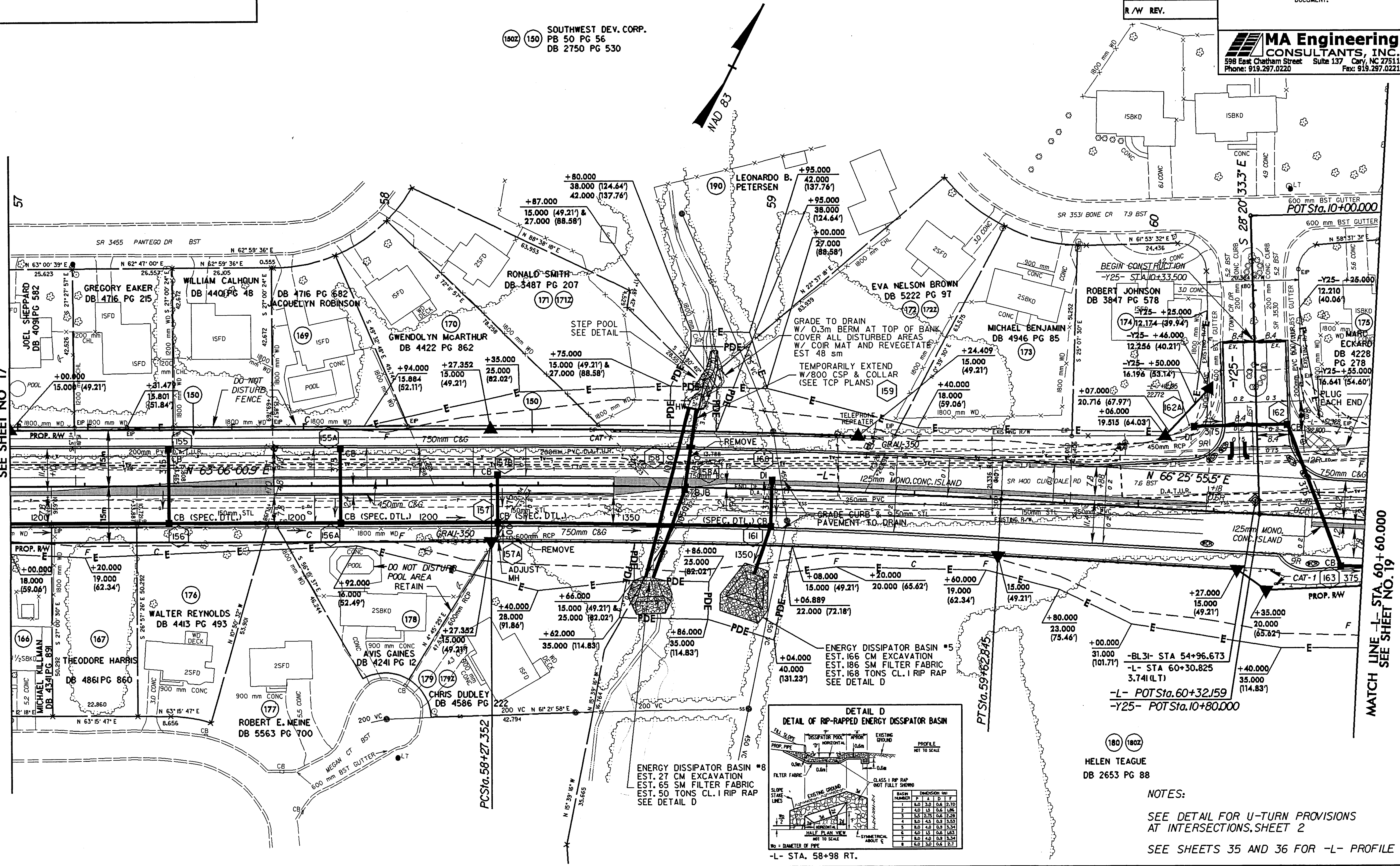
CONST. REV.

R/W REV.

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY: CHAD H. CRITCHER, PE 19710 ON AUGUST 12, 2002 THIS MEDIA SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

-L-
PI Sta 58+95.117
Δ = 3°19' 54.6" (RT)
L = 135.493
T = 67.766
R = 2,330.000
RO = 28m
SE = 0.02



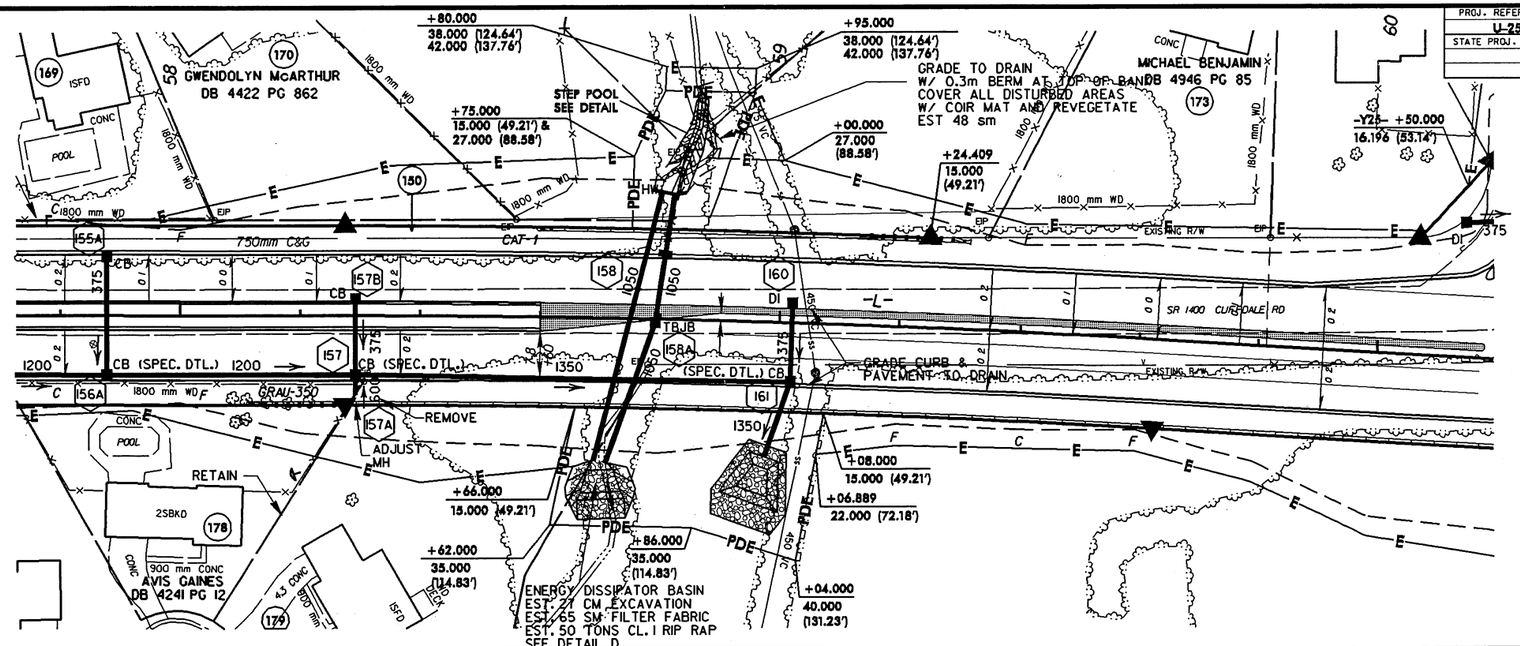
SOUTHWEST DEV. CORP. PB 50 PG 56 DB 2750 PG 530
NAD 83
MATCH LINE -L- STA. 57+00.000 SEE SHEET NO. 17
MATCH LINE -L- STA. 60+60.000 SEE SHEET NO. 19
JOEL SHEPPARD DB 409 PG 582
GREGORY EAKER DB 4716 PG 215
WILLIAM CALHOUN DB 440 PG 48
DB 4716 PG 682 JACQUELYN ROBINSON
GWENDOLYN MCARTHUR DB 4422 PG 862
RONALD SMITH DB 3487 PG 207
LEONARDO B. PETERSEN
EVA NELSON BROWN DB 5222 PG 97
MICHAEL BENJAMIN DB 4946 PG 85
ROBERT JOHNSON DB 3847 PG 578
MARC ECKARD DB 4228 PG 278
WALTER REYNOLDS DB 4413 PG 493
THEODORE HARRIS DB 4861 PG 860
MICHAEL KILLMAN DB 4341 PG 891
AVIS GAINES DB 4241 PG 12
CHRIS DUDLEY DB 4586 PG 222
ROBERT E. MEINE DB 5563 PG 700
HELEN TEAGUE DB 2653 PG 88
SR 3455 PANTEGO DR BST
SR 3531 BONE CR 7.9 BST
SR 1400 CUILDALE RD
MEGAN CT BST
POT Sta. 10+00.000
BEGIN CONSTRUCTION -Y25- STA 10+33.500
GRADE TO DRAIN W/ 0.3m BERM AT TOP OF BANK COVER ALL DISTURBED AREAS W/ COIR MAT AND REVEGETATE EST 48 sm
TEMPORARILY EXTEND W/800 CSP & COLLAR (SEE TCP PLANS)
STEP POOL SEE DETAIL
DO NOT DISTURB FENCE
DO NOT DISTURB POOL AREA RETAIN
ADJUST MH
REMOVE
TELEPHONE REPEATER
GRADE CURB & PAVEMENT TO DRAIN
N 63°06'00.9" E
N 66°25'55.5" E
125mm MONO. CONC. ISLAND
750mm C&G
PROP. R/W
ENERGY DISSIPATOR BASIN #5 EST. 166 CM EXCAVATION EST. 186 SM FILTER FABRIC EST. 168 TONS CL. I RIP RAP SEE DETAIL D
ENERGY DISSIPATOR BASIN #8 EST. 27 CM EXCAVATION EST. 65 SM FILTER FABRIC EST. 50 TONS CL. I RIP RAP SEE DETAIL D
PCSta. 58+27.352
PTSta. 59+62.845
-BL3I- STA 54+96.673 -L- STA 60+30.825 3.741 (LT)
-L- POT Sta. 60+32.159 -Y25- POT Sta. 10+80.000
DETAIL D
DETAIL OF RIP-RAPPED ENERGY DISSIPATOR BASIN
-L- STA. 58+98 RT.

NOTES:

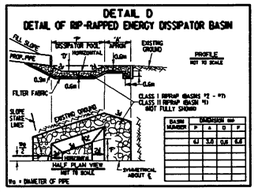
SEE DETAIL FOR U-TURN PROVISIONS AT INTERSECTIONS, SHEET 2

SEE SHEETS 35 AND 36 FOR -L- PROFILE

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
U-2520		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

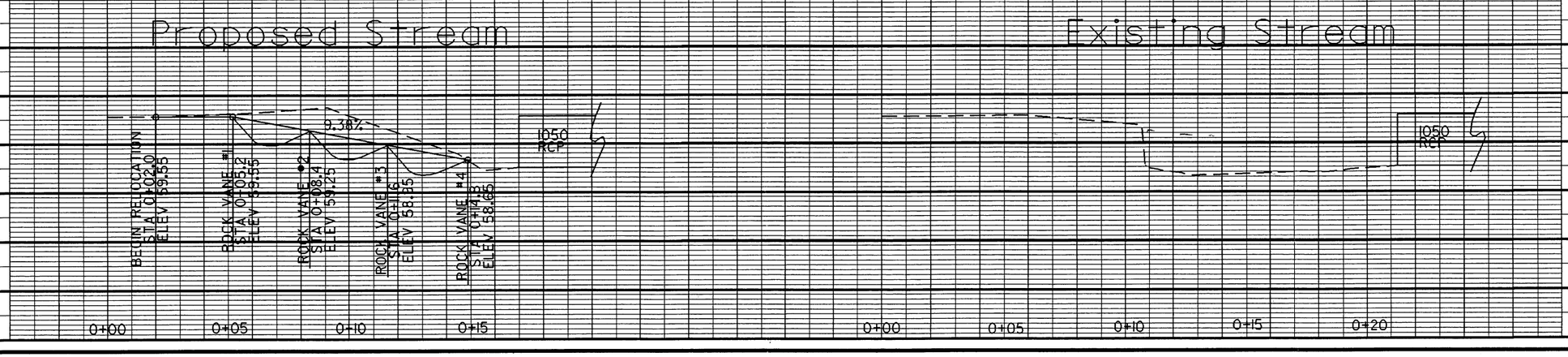


DETAIL D
DETAIL OF RIP-RAPPED ENERGY DISSPATOR BASIN



-L- STA. 58+70 RT.

STA	NORTHING	EASTING
Begin Relocation	605769.4	145590.7
Rock Vane #1	605770.5	145587.8
Rock Vane #2	605771.3	145584.6
Rock Vane #3	605771.5	145581.4
Rock Vane #4	605771.8	145578.3



7/2/99

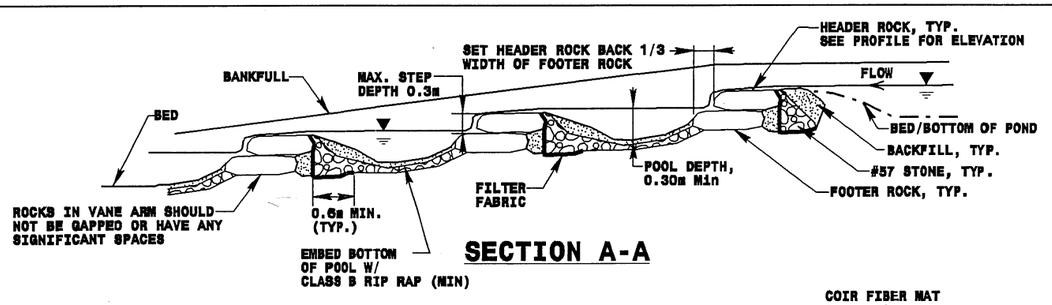
REVISIONS

U-2520
Sta 58+85 -L- Lt

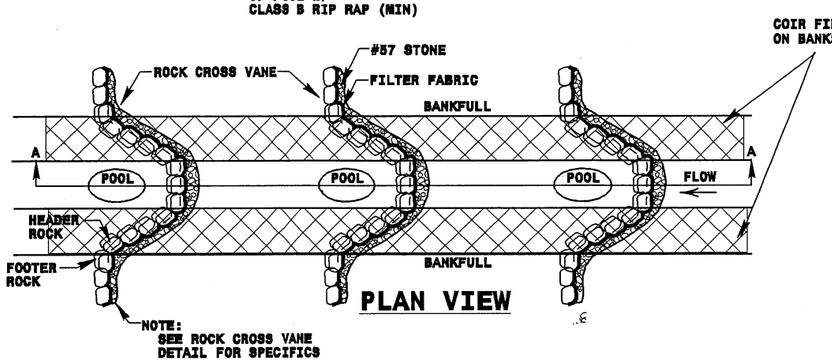
PROJECT REFERENCE NO.	SHEET NO.
U-2520	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STEP POOL DETAIL

NOT TO SCALE



SECTION A-A

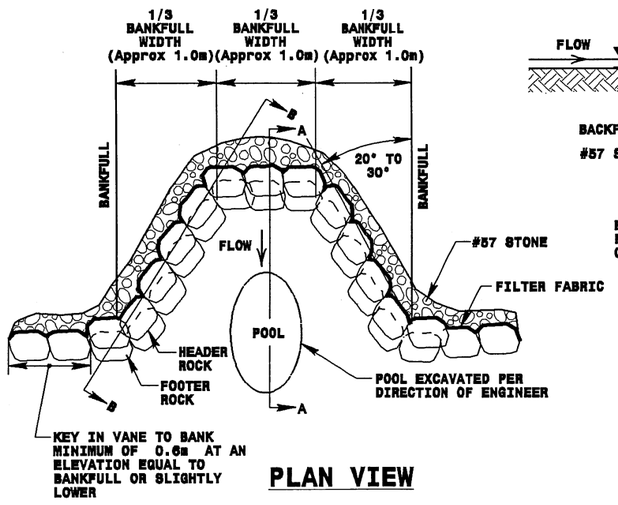


PLAN VIEW

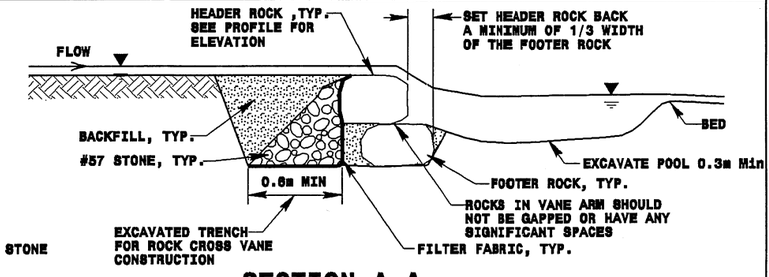
NOTES:
1. STEPS TO BE SHORT, FREQUENT, AND CLOSELY SPACED.
2. POOL SPACING SHALL BE INVERSELY PROPORTIONAL TO STREAM SLOPE, AND DIRECTLY PROPORTIONAL TO BANKFULL WIDTH.(APPROX 6.4m)
3. POOL DEPTHS AT BANKFULL ELEVATION SHALL BE TYPICALLY 2 TO 3 TIMES DEEPER THAN STEP DEPTHS AT BANKFULL ELEVATION.
4. ADEQUATE NUMBER OF FOOTER BOULDERS TO BE USED IN ORDER TO HOLD UP THE BOULDERS AT HEAD OF STEPS DURING HIGH ENERGY/HIGH FLOW EVENTS.
5. STEP POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

ROCK CROSS VANE DETAIL FOR STEP POOL

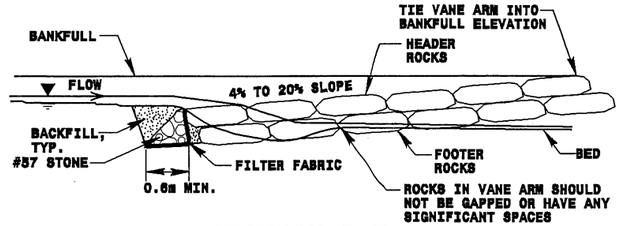
NOT TO SCALE



PLAN VIEW



SECTION A-A



SECTION B-B

	BOULDER DIMENSIONS (m)		
STATION	HEIGHT	LENGTH	WIDTH
PER VANE	0.6m	1.2m	0.9m

NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BANKFULL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

09-AUG-2005 08:16
s:\engr-cgord\projects\galen\u-2520\step pool.dgn
galen
AT HY221524