STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 8, 2006

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

Attention: Mr. Richard Spencer
NCDOT Coordinator, Division 8

Subject: **Additional Information for Section 404 Individual Permit and Section 401 Water Quality Certification** for US 421/NC 87 Bypass from East of SR 1521 to east of NC 42, Lee County; Federal Aid Project No. STP-NHF-421(2), WBS Element No. 34431.1.1, Division 8, **TIP No. R-2417AB**

Reference:
- USACE Section 404 Individual Permit (Action ID No. 200220899) dated May 29, 2002
- NCDENR-DWQ Section 401 Water Quality Certification (DWQ Project No. 001432) dated April 10, 2002

The purpose of this letter is to provide the US Army Corps of Engineers (USACE) and the NC Division of Water Quality (DWQ) with additional information regarding the North Carolina Department of Transportation's (NCDOT) activities to address an on-going erosion problem at the inlet side of Permit Site 10 (Station 18+62 SR4 LT / Station 33+50 Y). The erosion is occurring at the 36-inch (900 mm) CSP outlet pipe, located approximately 50 feet from the jurisdictional stream, that outlets stormwater drainage. Despite attempts to stabilize the area with riprap, scour hole, etc., there is continued erosion. The NCDOT will be extending the outlet to the stream in a pipe system with drainage structures that have drops in elevation. The drops will act to dissipate energy. The outlet pipe will be place at 0.00% to minimize velocity. The 10-year outlet velocity is estimated at 3.1 feet per second (ft/s). The placement of the additional approximately 66-foot long section of pipe will be within the footprint of the permitted impacts. As such, no additional impacts will occur.

Four (4) figures are attached, including a location map (showing the location of Permit Site 10), and figures depicting the pipe extension and a Detail sheet are attached to this letter. The NCDOT respectfully requests these sheets be incorporated into the referenced permit and certification.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
NATURAL ENVIRONMENT UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1334 or 919-715-1335

FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

The placement of the additional section of pipe does not result in any changes to the permitted jurisdictional impacts. As such, a permit modification is not warranted. The information contained in this letter, along with the attached sheets, is provided as a Permit Addendum. Two (2) copies of this letter are being provided to DWQ for their use.

Thank you for your assistance with this project. If you have any questions or need additional information, please call Bill Barrett at (919) 715-1624.

Sincerely,

Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Branch

cc:
w/attachment

Mr. John Hennessy, NCDWQ (2 Copies)
Mr. Travis Wilson, NCWRC
Ms. Becky Fox, USEPA – Whittier, NC
Mr. Ronald Mikulak, USEPA – Atlanta, GA
Mr. Clarence W. Coleman, P.E., FHWA
Mr. Gary Jordan, USFWS
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Tim Johnson, P.E., Division 8 Engineer
Mr. Art King, Division 8 Environmental Officer

w/o attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Jay McInnis, P.E., PDEA Project Planning Engineer

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LEE COUNTY

METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE NOTED

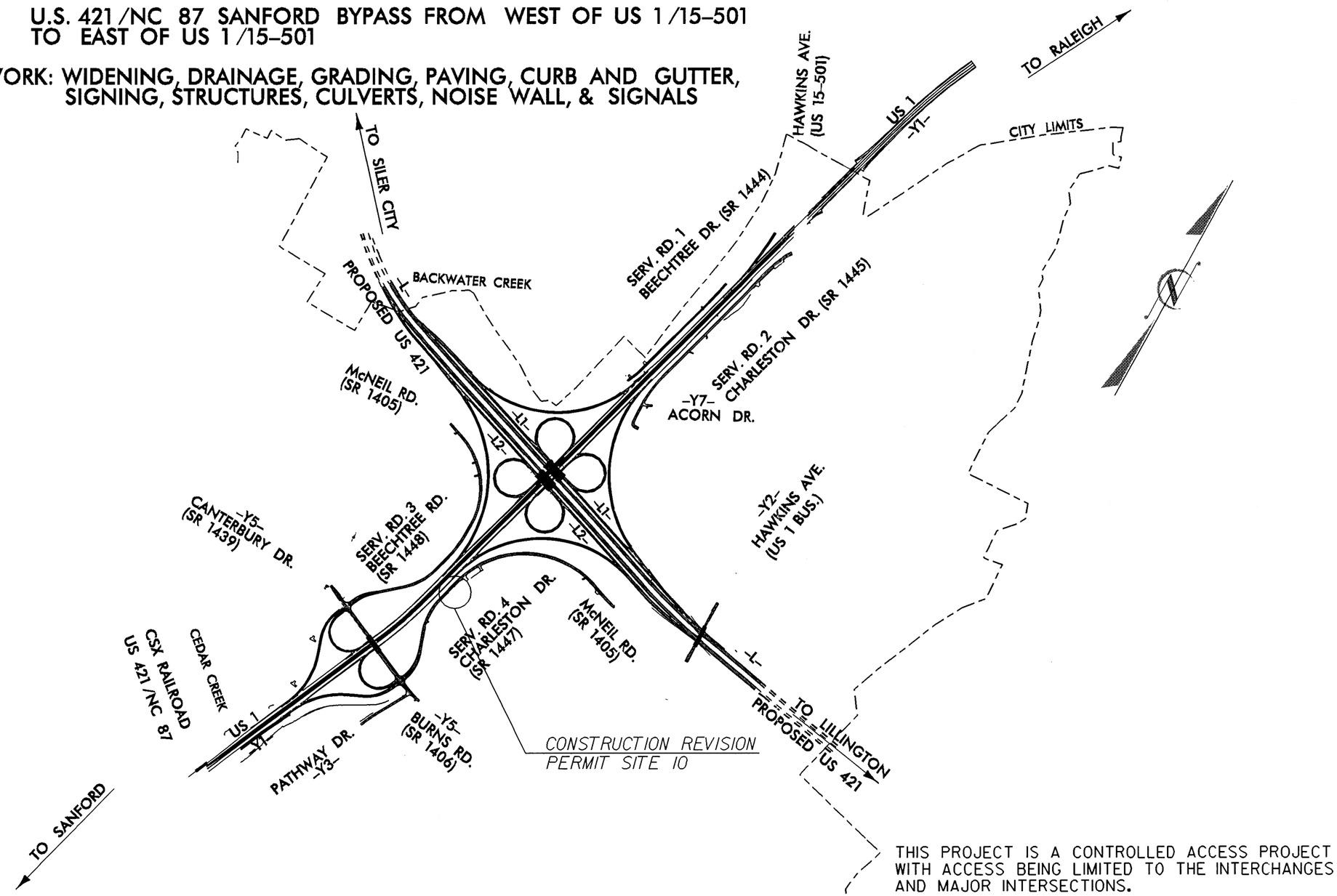
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	6.549009T	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
8.T540402	STPNHF-421(2)	P.E.
6.549006T		R/W, UTIL.
6.549009T		CONST.

ADDITIONAL INFO. SHEET 1 OF 4

LOCATION: U.S. 421/NC 87 SANFORD BYPASS FROM WEST OF US 1/15-501 TO EAST OF US 1/15-501

TYPE OF WORK: WIDENING, DRAINAGE, GRADING, PAVING, CURB AND GUTTER, SIGNING, STRUCTURES, CULVERTS, NOISE WALL, & SIGNALS



THIS PROJECT IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE INTERCHANGES AND MAJOR INTERSECTIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-2417AB	18
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

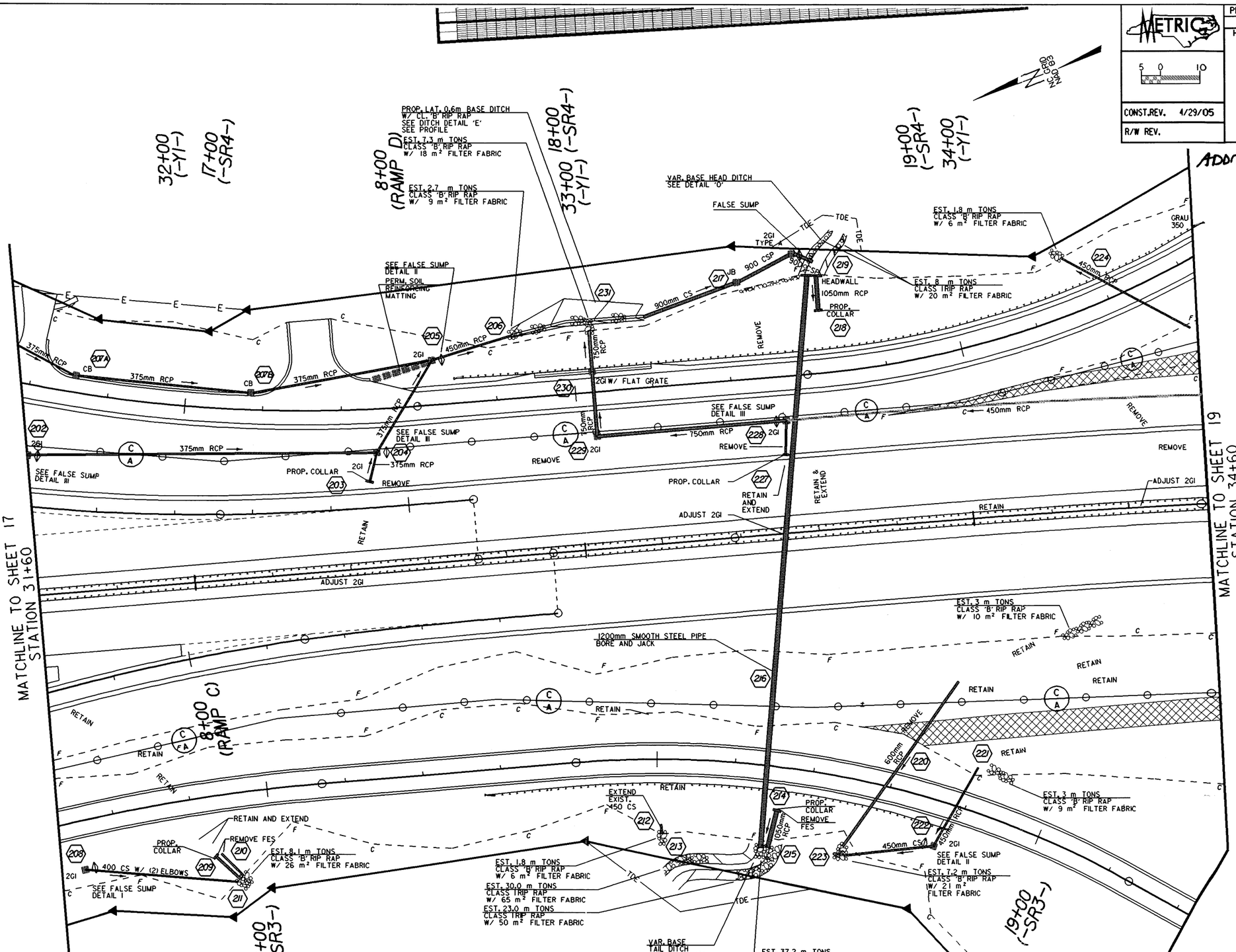
METRIC

5 0 10

CONST.REV. 4/29/05

R/W REV.

ADDITIONAL INFO SHEET 2 of 4



FOR -Y1- PROFILE, SEE SHEETS 45 & 46
FOR RAMP C PROFILE, SEE SHEET 58
FOR RAMP D PROFILE, SEE SHEET 58
FOR SERVICE RD. 3 PROFILE, SEE SHEET 67
FOR SERVICE RD. 4 PROFILE, SEE SHEETS 68 & 69
FOR DITCH DETAILS, SEE SHEETS 2-M & 2-N
FOR SPECIAL DETAIL OF HEADWALL, SEE SHEET 2-U

SUNGATE DESIGN GROUP
915-A Jones Franklin Rd.
Raleigh, N.C. 27606
(919) 859-2243
(919) 859-6258 (FAX)

BARBARA H. MULKEY ENGINEERING, INC.
P.O. Box 33127
Raleigh, N.C. 27636-3127
(919) 851-1912
(919) 851-1918 (FAX)

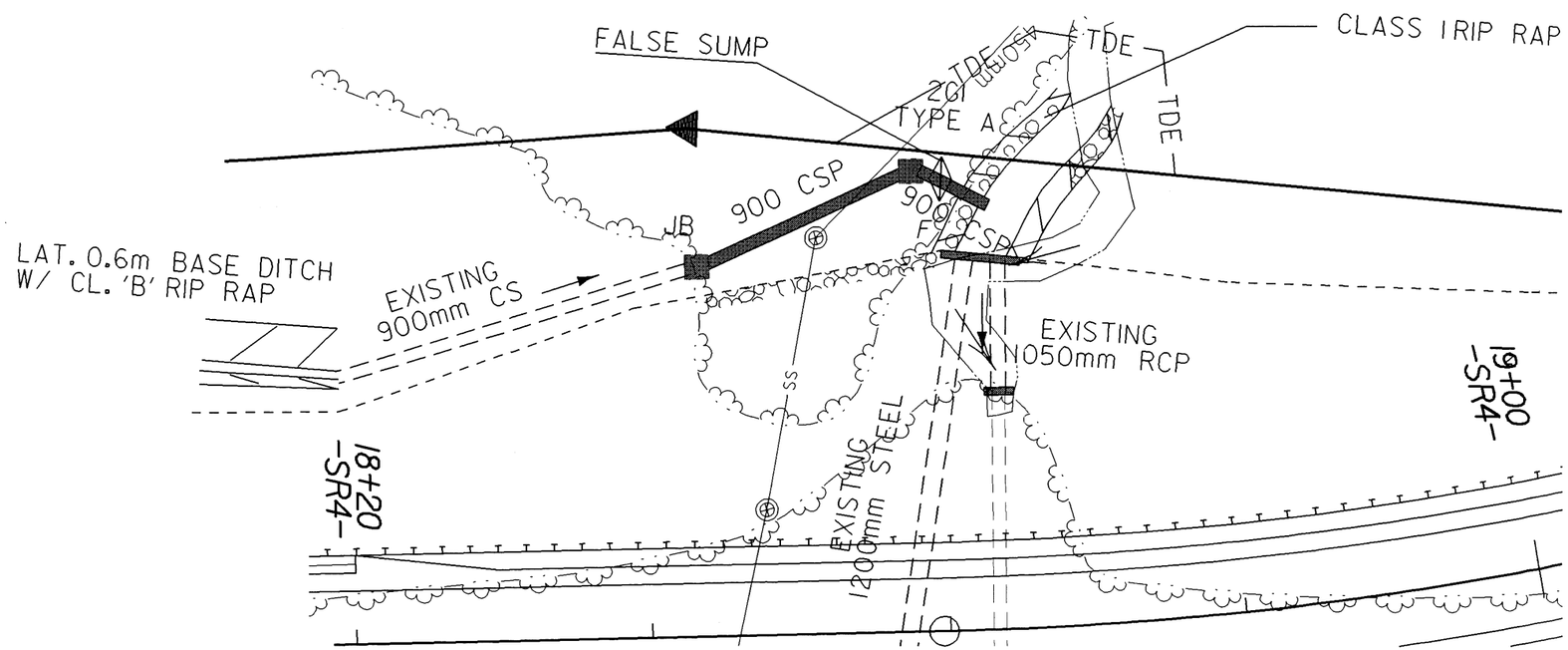
CONSTRUCTION REVISION - 04/29/05 - ADDED DOUBLE FACED CONCRETE BARRIER AND REVISED DRAINAGE ON -Y1-

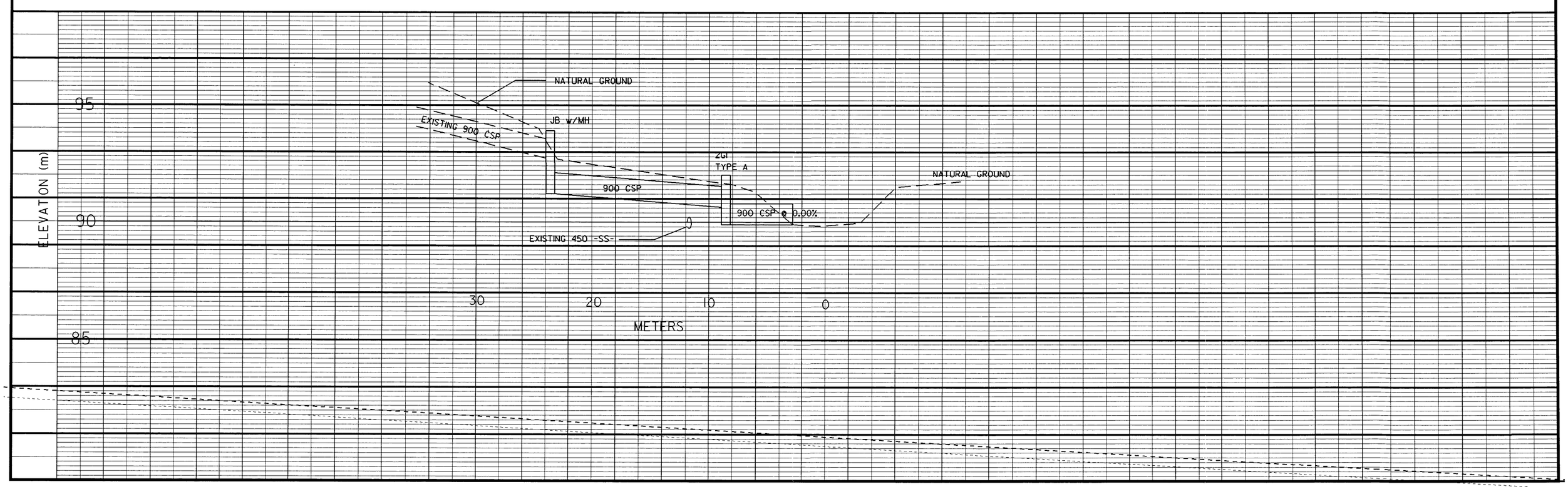
$DATE$ $TIME$ $FILE$

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
R-2417AB		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

ADDITIONAL INFO SHEET 3 of 4

PERMIT SITE 10 (INLET)





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METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2417AB	2-M
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

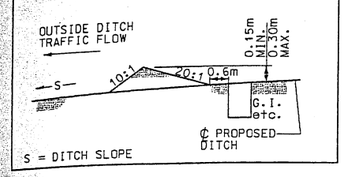
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
3/10/03

CONST. REV.

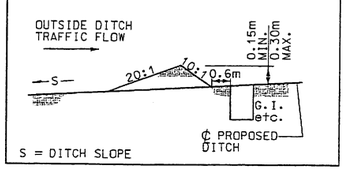
R/W REV.

ADDITONAL INFO SHEET 4 of 4

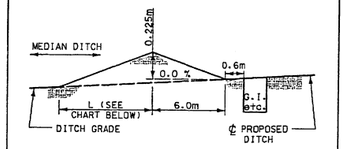
FALSE SUMP DETAIL I



FALSE SUMP DETAIL II



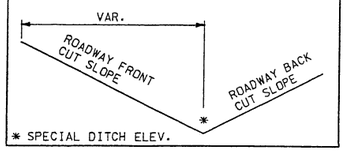
FALSE SUMP DETAIL III



DITCH GRADE	L	DITCH GRADE	L
0.0% TO 2.0%	20'	OVER 4.0% TO 6.0%	40'
OVER 2.0% TO 4.0%	30'	OVER 6.0%	50'

SPECIAL DITCH DETAIL

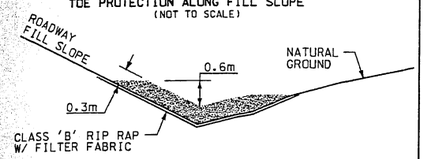
(NOT TO SCALE)



* SPECIAL DITCH ELEV.

DITCH DETAIL 'A'

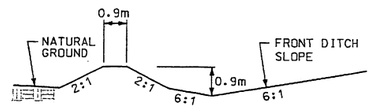
TOE PROTECTION ALONG FILL SLOPE
(NOT TO SCALE)



LINE	STA. TO STA.		RIP RAP (m TONS)	FILTER FABRIC (m^2)
-L-	69+81 - 70+40 RT.		52.7	149.6
-Y1-	42+60 - 43+05 RT.		86.2	196.1
-Y1- LP 'A'	2+90 - 3+12 RT.		49.8	120.6
-Y1- LP 'B'	2+90 - 3+12 LT.		48.7	117.8
-SR4-	18+44 - 18+60 LT.		44.2	96.9

FALSE CUT DITCH DETAIL 'B'

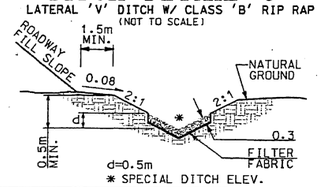
(NOT TO SCALE)



LINE	STATION TO STATION
-L2-	1+42 - 1+52 RT.
-L-	86+80 - 87+00 LT.

DITCH DETAIL 'C'

LATERAL 'V' DITCH W/ CLASS 'B' RIP RAP
(NOT TO SCALE)

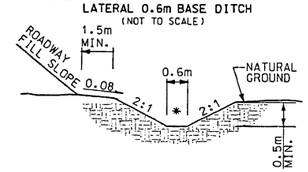


* SPECIAL DITCH ELEV.

LINE	STA. TO STA.	D.D.E. (m^3)	RIP RAP (m TONS)	FILTER FABRIC (m^2)
-L-	69+80 - 69+96 LT.	9.6	17.2	46.5
-L-	74+40 - 74+80 RT.	52.4	42.9	116.3
-Y1-	42+40 - 43+08 LT.	493.4	73.0	197.7
-Y1- RP 'A'	4+40 - 4+88 RT.	42.5	51.5	139.5
-Y5- RP 'D'	3+15 - 3+73 LT.	68.5	62.3	58.0

DITCH DETAIL 'D'

LATERAL 0.6m BASE DITCH
(NOT TO SCALE)

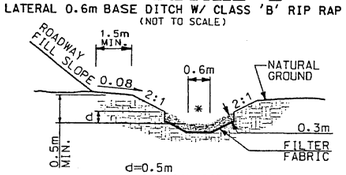


* SPECIAL DITCH ELEV.

LINE	STA. TO STA.	D.D.E. (m^3)	
-L-	70+40 - 70+75 LT.	40.5	
SER.RD.4	12+60 - 14+00 LT.	452.9	
SER.RD.4	13+50 - 14+90 RT.	765.4	
-Y1-	13+95 - 14+17 LT.	13.6	

DITCH DETAIL 'E'

LATERAL 0.6m BASE DITCH W/ CLASS 'B' RIP RAP
(NOT TO SCALE)

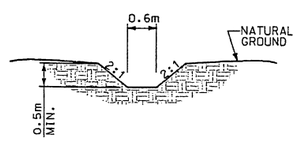


* SPECIAL DITCH ELEV.

LINE	STA. TO STA.	D.D.E. (m^3)	RIP RAP (m TONS)	FILTER FABRIC (m^2)
-L-	70+75 - 71+40 LT.	543.5	88.2	226.9
-L-	74+18 - 74+35 LT.	12.4	23.1	59.3
-L-	83+60 - 83+80 RT.	14.1	27.1	69.8
SER.RD.4	15+20 - 15+37 LT.	23.9	23.1	59.3
SER.RD.4	17+85 - 18+20 LT.	139.7	47.5	122.2

DITCH DETAIL 'F'

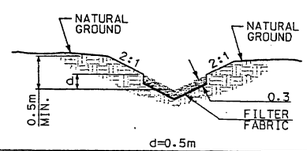
0.6m BASE HEAD/TAIL DITCH
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)
-L-	74+15 RT.	4.5
-Y1- RP 'B'	5+10 LT.	11.0
-Y5- LP 'A'	1+60 LT.	9.0

DITCH DETAIL 'G'

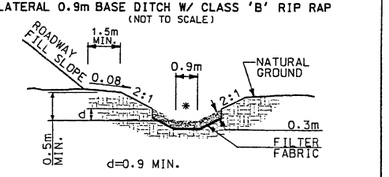
'V' HEAD DITCH W/ CLASS 'B' RIP RAP
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)	RIP RAP (m TONS)	FILTER FABRIC (m^2)
-Y1- RP 'A'	4+88 RT.	5.9	4.9	21.2

DITCH DETAIL 'H'

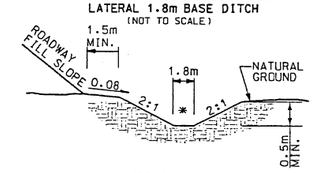
LATERAL 0.9m BASE DITCH W/ CLASS 'B' RIP RAP
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)	RIP RAP (m TONS)	FILTER FABRIC (m^2)
-L-	79+90 - 80+15 LT.	67.6	141.6	334.7

DITCH DETAIL 'I'

LATERAL 1.8m BASE DITCH
(NOT TO SCALE)

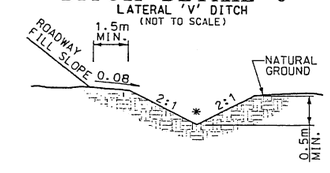


* SPECIAL DITCH ELEV.

LINE	STA. TO STA.	D.D.E. (m^3)	
-Y1- RP 'B'	3+64 - 3+96 LT.	473.1	

DITCH DETAIL 'J'

LATERAL 'V' DITCH
(NOT TO SCALE)

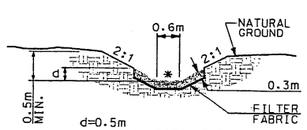


* SPECIAL DITCH ELEV.

LINE	STA. TO STA.	D.D.E. (m^3)	
-L-	76+90 - 77+25 RT.	109.7	
-L-	81+22 - 81+29 RT.	3.5	
MIN. DEPTH , NO GRADE			
-Y1-	22+07 - 22+47 RT.	197.6	
SER.RD.2	18+10 - 18+50 LT.	20.0	
SER.RD.3	20+03 - 20+20 LT.	53.6	

DITCH DETAIL 'K'

0.6m BASE HEAD/TAIL DITCH W/ CLASS 'B' RIP RAP
(NOT TO SCALE)

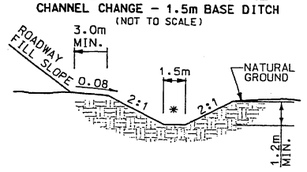


* SPECIAL DITCH ELEV.

LINE	STA. TO STA.	D.D.E. (m)	RIP RAP (m TONS)	FILTER FABRIC (m^2)
-L-	81+50 LT.	8.0	11.0	40.8

DITCH DETAIL 'L'

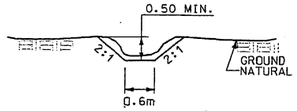
CHANNEL CHANGE - 1.5m BASE DITCH
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)	
-Y1- RP 'A'	2+35 - 2+60 RT.	125.0	

DITCH DETAIL 'M'

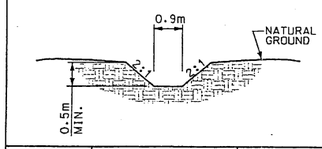
DITCH CLEANOUT
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)
-Y1-	41+50 RT.	9.0

DITCH DETAIL 'N'

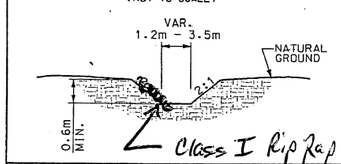
0.9m BASE HEAD/TAIL DITCH
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)
-Y1-	21+80 LT.	14.0
-Y1- RP 'B'	7+10 LT.	19.0

DITCH DETAIL 'O'

VARIABLE BASE HEAD/TAIL DITCH
(NOT TO SCALE)



LINE	STA. TO STA.	D.D.E. (m^3)
-SER.RD.3-	18+20 RT.	100.0
-SER.RD.4-	18+60 LT.	36.0

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