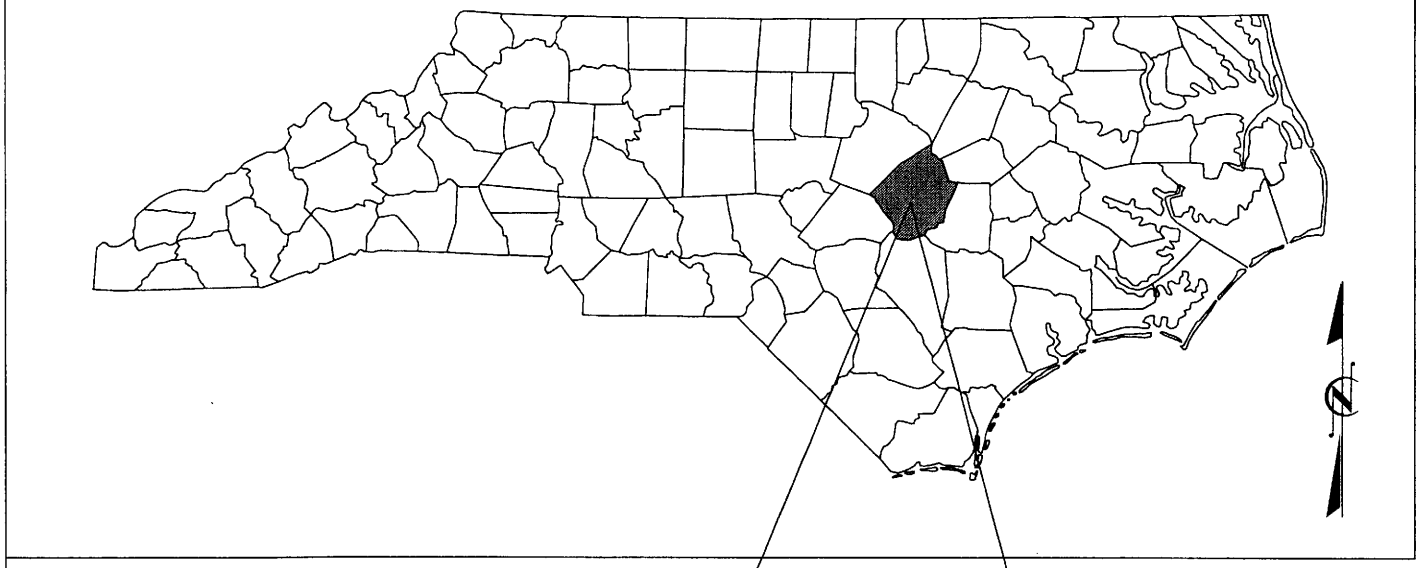
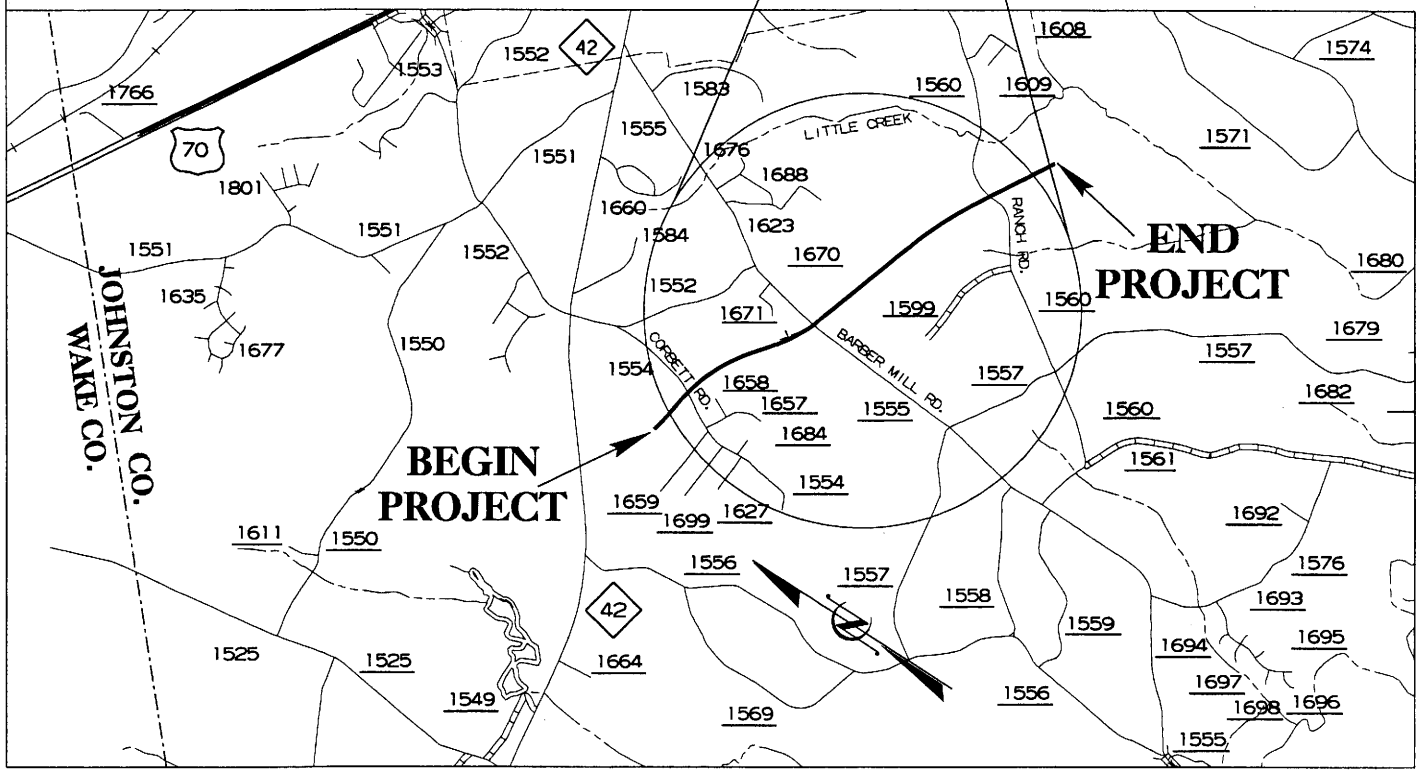
NORTH CAROLINA





BUFFER PERMIT DRAWING
VICINITY MAP
R-2552B

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

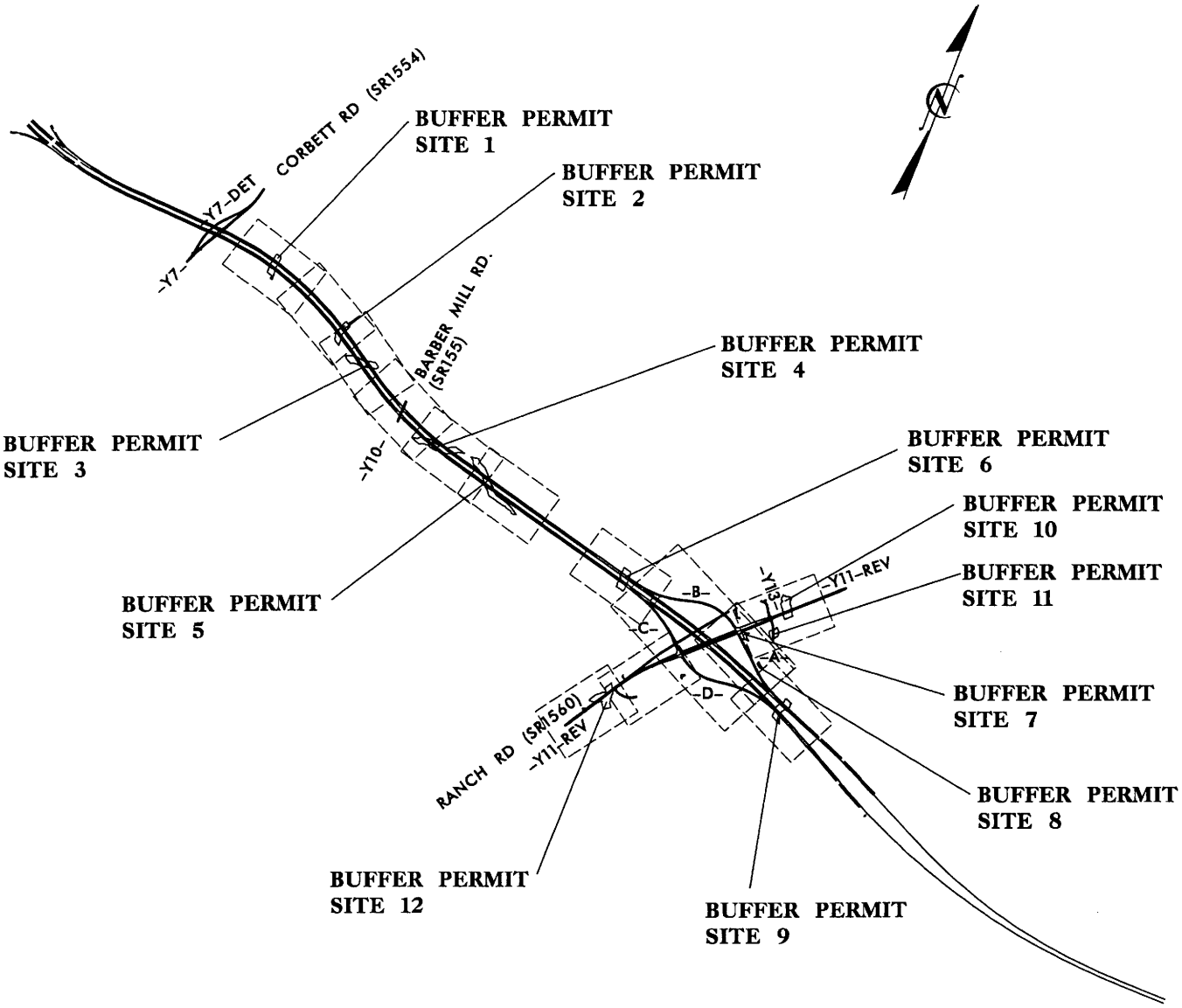
PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

SHEET 1 OF 11 9/23/2004

R:\0110560065\Plan\permits\buffer\BUFFvicinitymap.dgN

9/23/2004

SITE MAP



BUFFER PERMIT DRAWING VICINITY MAP

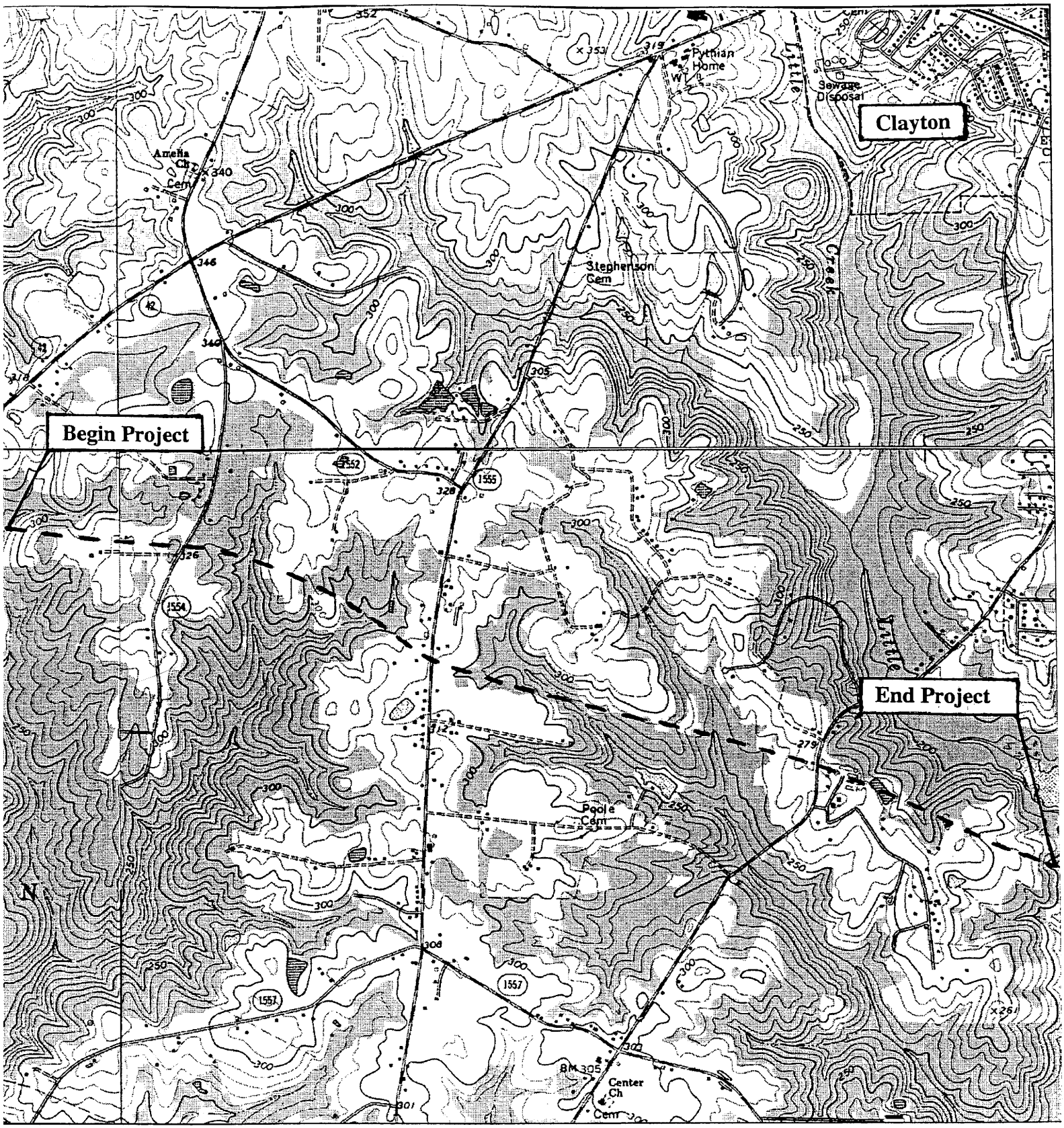
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 2 OF 11 *9/23/2004*

R:\01\056065\Plan\permits\buffer\buffSITEMAP.dgn

9/23/2004



BUFFER PERMIT DRAWING
LOCATION
R–2552B

SCALE: 1" = 2000'

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R–2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 3 OF 11 **8/4/04**

8/4/2004 R:\011056065\Plan\permits\buffer\location.bdr

LEGEND

WLB — WETLAND BOUNDARY

WLB — WETLAND

F F — DENOTES FILL IN WETLAND

S S — DENOTES FILL IN SURFACE WATER

P P — DENOTES FILL IN SURFACE WATER (POND)

T T — DENOTES TEMPORARY WETLAND IMPACTS (HAND CLEARING ONLY)

E E — DENOTES EXCAVATION IN WETLAND

TS TS — DENOTES TEMPORARY SURFACE WATER IMPACTS

DENOTES MECHANIZED CLEARING

DENOTES MITIGABLE BUFFER IMPACTS ZONE 1

DENOTES MITIGABLE BUFFER IMPACTS ZONE 2

DENOTES ALLOWABLE BUFFER IMPACTS ZONE 1

DENOTES ALLOWABLE BUFFER IMPACTS ZONE 2

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

BUFFER PERMIT DRAWING VICINITY MAP

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 4 OF 11 **9/16/2004**

R:\01\056065\Plan\permits\buffer\BUFFlegend.dgn

9/16/2004

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	66 in RCP	-L- Sta 68+60+/-	X					11249.7	12195.9	23445.6		
2	54 in RCP	-L- Sta 73+30+/-	X					14866.2	11954.1	26820.3		
3	60 in RCP	-L- Sta 74+50-75+80	X					24801.0	19088.2	43889.2		
4	42 in RCP	-L- Sta 79+60-82+00	X					36510.9	30222.6	66733.5		
5	10' x 7' RCBC	-L- Sta 82+30-86+00	X					37785.0	37688.1	75473.1	9671.3	7493.9
6	10' x 7' RCBC	-L- Sta 92+20+/-	X					25888.5	12147.8	38036.3		
7	48 in RCP	-RPA- Sta 4+00	X		4845.3	5625.8	10471.1					
8	24 in RCP	-RPA- Sta 2+40	X		1146.5	2137.9	3284.4					
9	48 in RCP	-L- Sta 102+30+/-	X					20306.2	18380.4	38686.6		
10	Bridge	-Y11- REV Sta 14+80	X					14885.8	11322.6	26208.4	5565.5	4911.0
11	48 in RCP	-Y13- REV Sta 9+20	X					11070.7	5718.3	16789.0		
12	10' x 7' RCBC &	-Y11- REV	X					36490.6	12864.5	49355.1	5770.0	3111.1
	8' x 8' RCBC	Sta 24+10 - 25+60	X									
TOTAL:					5991.8	7763.7	13755.5	233854.6	171582.5	405437.1	21006.8	15516.0

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 8.T311002 (R-2552B)
US-70 CLAYTON BYPASS
EAST OF NC 42 TO EAST OF SR 1560
10/14/04
SHEET 5 OF 11

BUFFER IMPACTS SUMMARY (within wetlands)

		WETLANDS IN BUFFER	
Site	Station	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	-L- Sta 68+60+/-	5984.7	1715.1
2	-L- Sta 73+30+/-	10382.3	4527.1
3	-L- Sta 74+50-75+80	19247.0	10620.0
4	-L- Sta 79+60-82+00	27400.0	11569.0
5	-L- Sta 82+30-86+00	21033.7	17608.7
12	-Y11- REV	3497.8	1787.0
	Sta 24+10 - 25+60		
		87545.5	47826.9

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 8.T311002 (R-2552B)
US-70 CLAYTON BYPASS
EAST OF NC 42 TO EAST OF SR 1560
9/23/04
SHEET 6 OF 11

OWNER'S NAME	ADDRESS
(14) Romero, Rubel	2012 Scott Court Clayton, NC 27520
(15) Stephenson, Clennis	5524 Rolling Field Dr. Garner, NC 27529
(16) Harris, Joseph L.	514 N. East St. Raleigh, NC 27604
(17) Gilbert, Jennifer P.	273-C Blue Pond Rd. Clayton, NC 27520
(18) Parrish, Samuel Clarence	377 Short Johnson Rd. Clayton, NC 27520
(19) Lane, Angela Yopp	606 S. 5th St. Mebane, NC 27302
(20) Poole, Reginald M., Sr.	3907 Barber Mill Rd. Clayton, NC 27520
(26) Delaine, Blanche Jean	3960 Barber Mill Rd. Clayton, NC 27520
(29) Johnson, Roland H.	2433 Tweedmore Ct. High Point, NC 27625
(30) Bolyard, Gypsy Rochelle	3047 Jack Rd. Clayton, NC 27520
(31) Edwards, Honey H.	216 E. Horne St. Clayton, NC 27520
(32) Canady, Kenneth R.	203 Blanche St. Clayton, NC 27520
(34) Langford, Taylor Morton, Jr.	2100 Twin Acres Rd. Clayton, NC 27520
(35) Haden, James Sullivan	1120 Ranch Rd. Clayton, NC 27520
(36) Whitley, Joseph M.	740 Ranch Rd. Clayton, NC 27520
(39) Carolina Packers, Inc.	P.O. Drawer 1109 Smithfield, N.C. 27577
(40) Ontiveros, Lynda Triplett	411 Pleasant Hill Ave. North Sebestopol, CA 95472
(58) Shand, Annie	PO Box 32 Clayton, NC 27520
(59) Whittemore, Joseph Franklin, Jr.	140 Canyon Rd. Clayton, NC 27520
(64) Jones, John A., Jr.	1357 Ranch Rd. Clayton, NC 27520
(68) Langford, Phillip E.	2130 Twin Acres Rd. Clayton, NC 27520
(69) Rethemeyer, J.W.	1521 Ranch Rd. Clayton, NC 27520
(902) Carolina Packers, Inc.	P.O. Drawer 1109 Smithfield, N.C. 27577

PROPERTY OWNER NAME AND ADDRESS

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 7 OF 11 **9/17/2004**

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	7
R/W SHEET NO.	

METRIC

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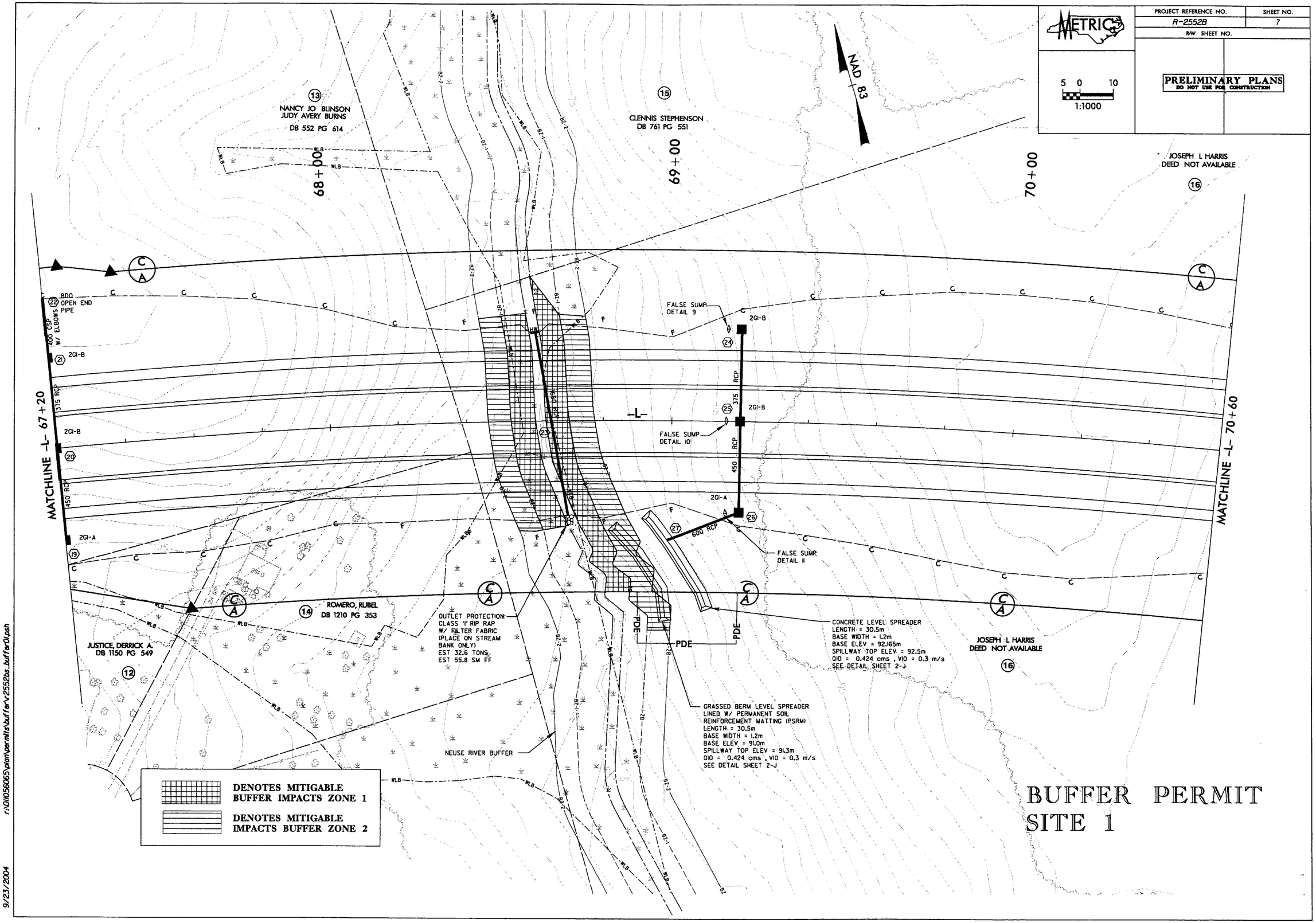
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT SITE 1

9/23/2004 r:\01\056065\plan\permits\buffer\r2552bs_buffer01.psh

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	7
R/W SHEET NO.	

METRIC

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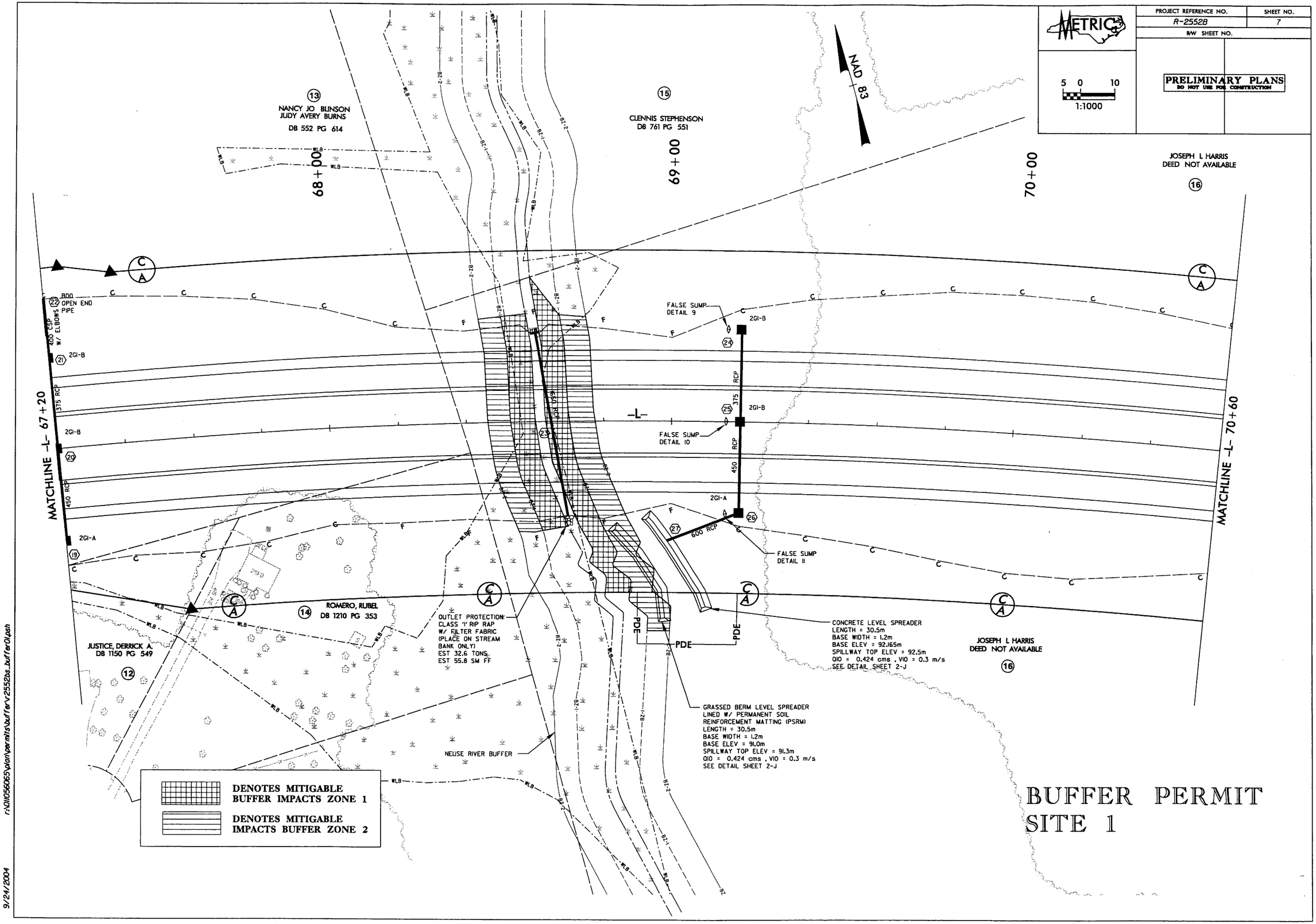
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT SITE 1

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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	8
R/W SHEET NO.	

METRIC

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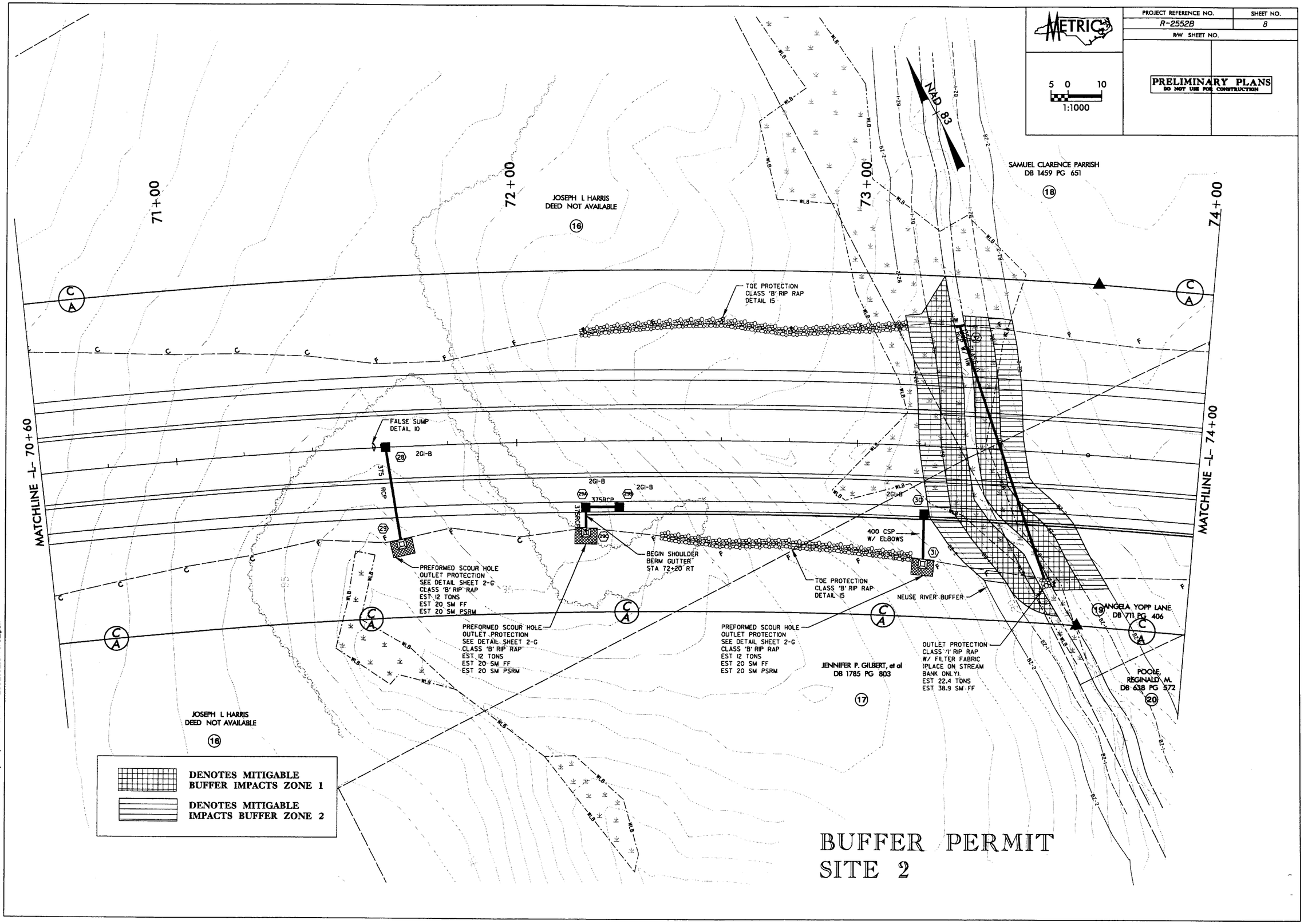
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT
SITE 2

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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	8
R/W SHEET NO.	

METRIC

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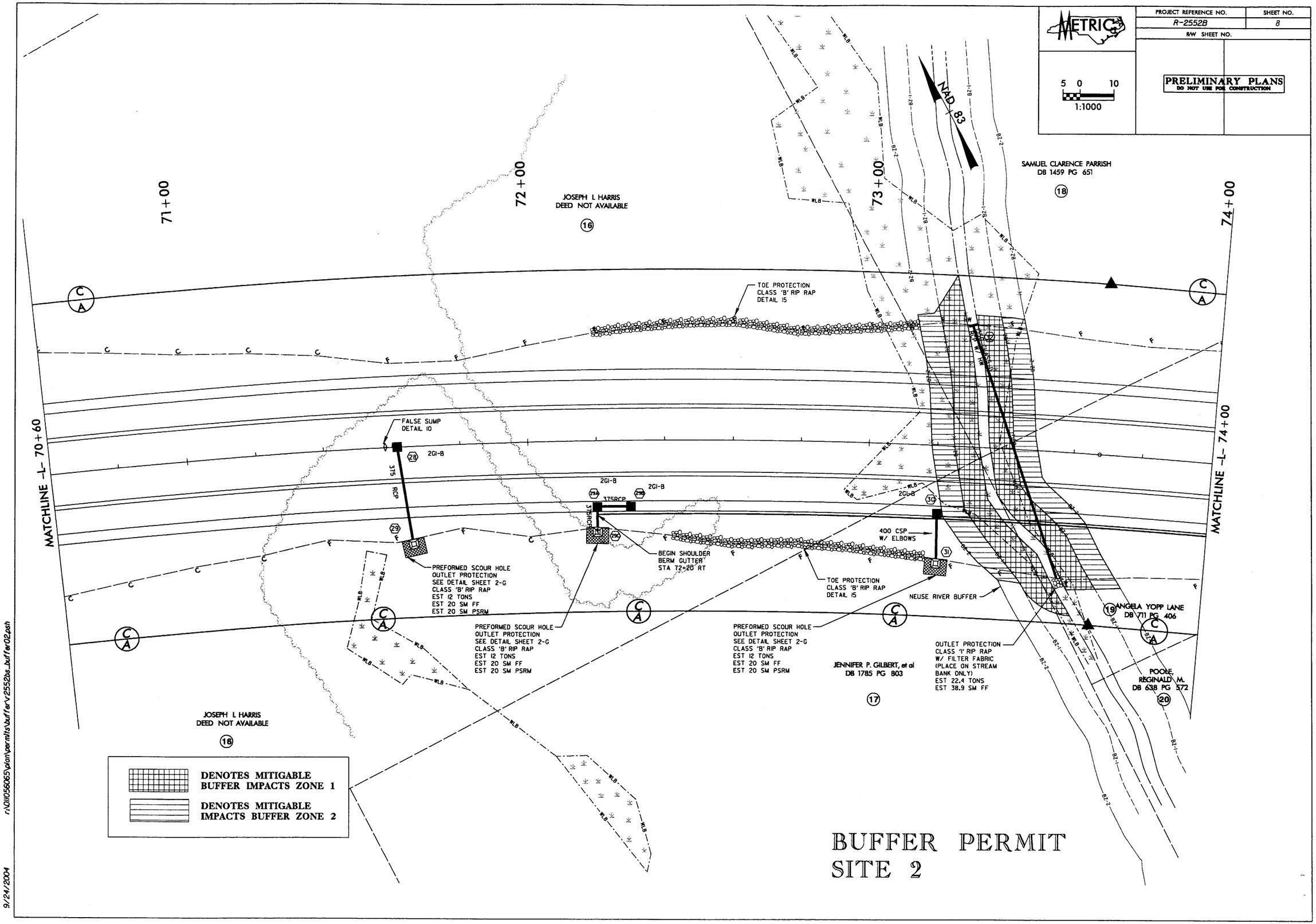
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT
SITE 2

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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	9
R/W SHEET NO.	

METRIC

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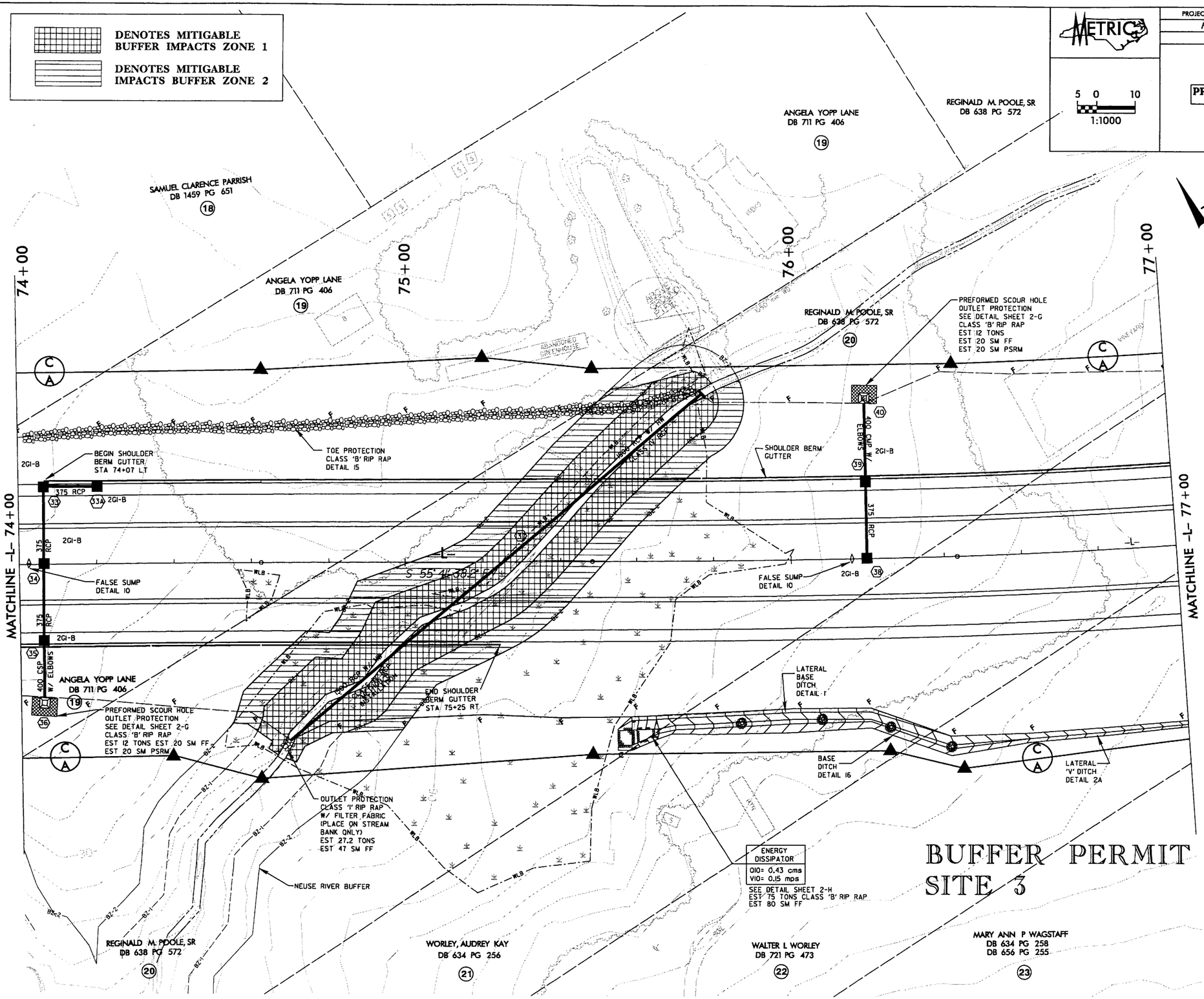
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	9
R/W SHEET NO.	

METRIC

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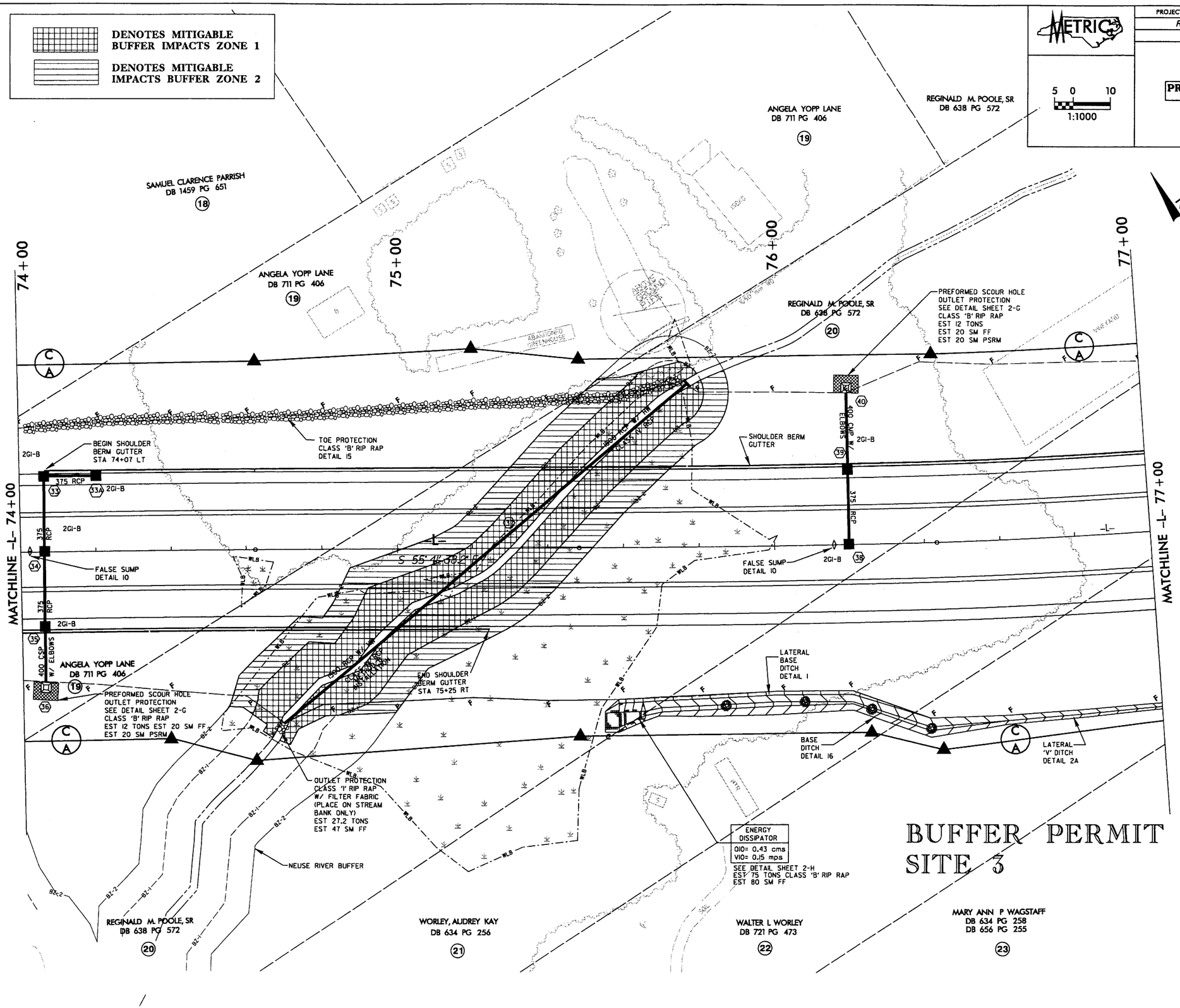
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	10
R/W SHEET NO.	

METRIC

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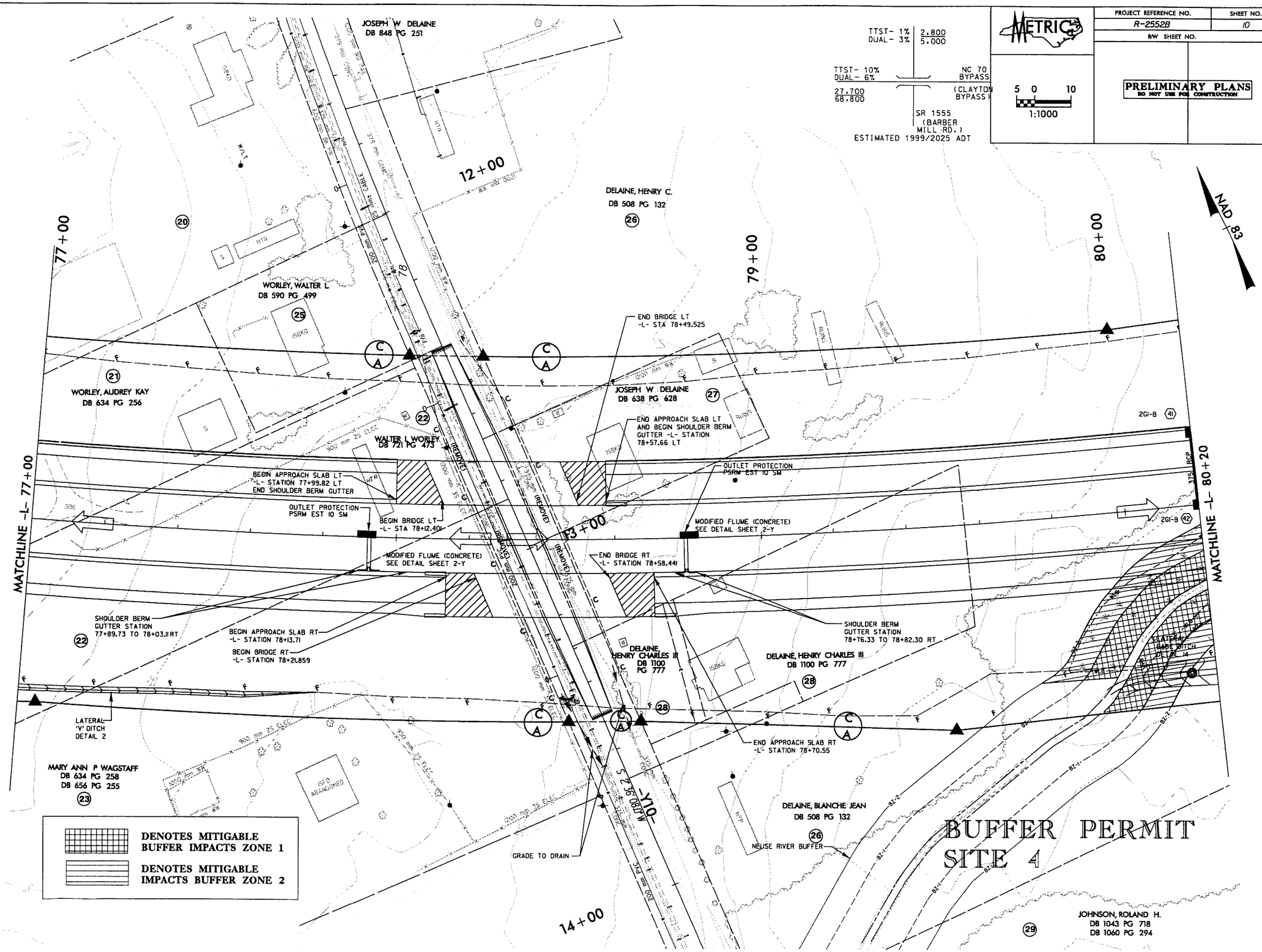
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	11
R/W SHEET NO.	

METRIC

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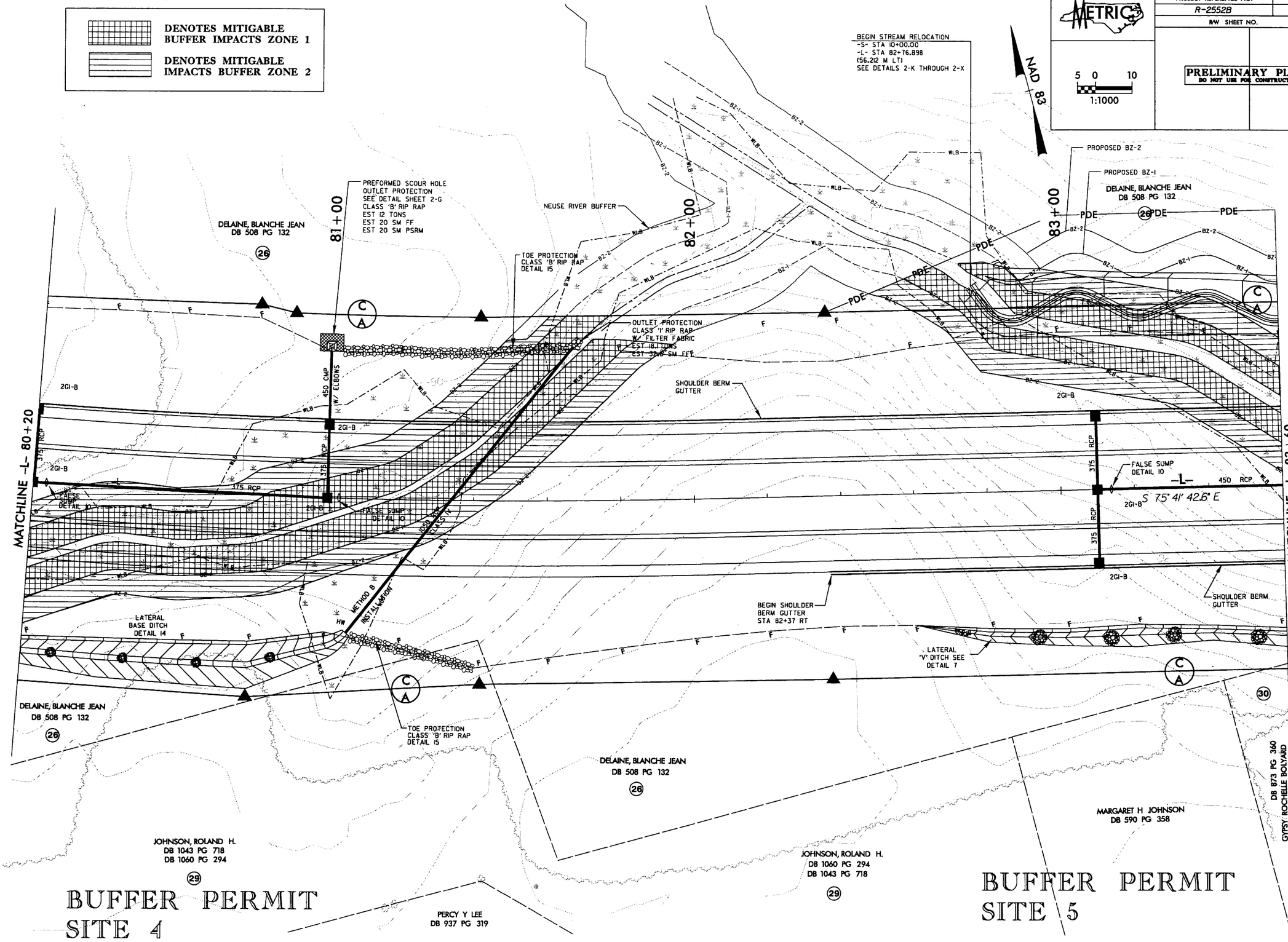
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/23/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	12
R/W SHEET NO.	

METRIC

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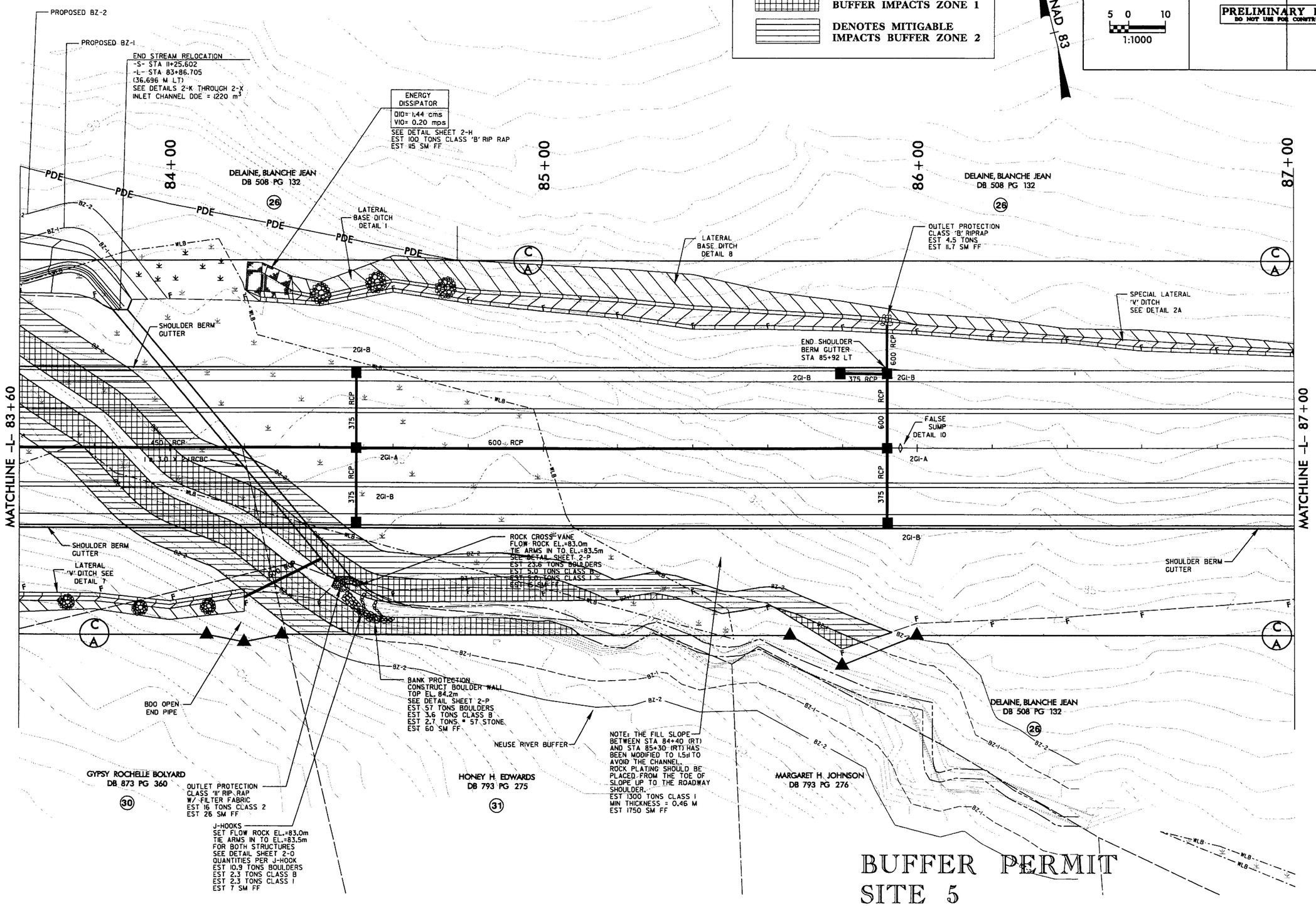
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/23/2004

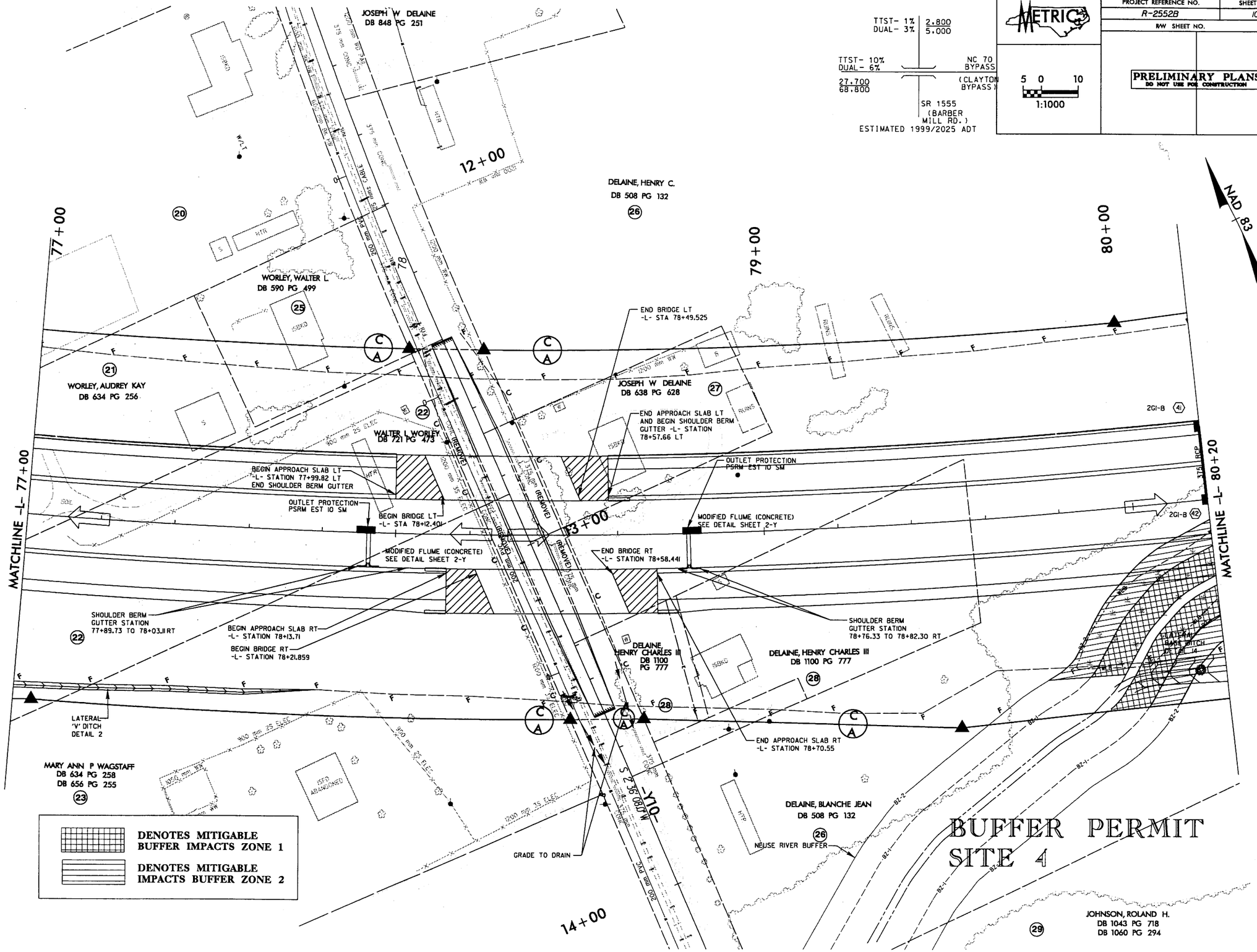
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	10
R/W SHEET NO.	

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

METRIC
5 0 10
1:1000

TTST- 1% DUAL- 3% 2,800 / 5,000
TTST- 10% DUAL- 6% 27,700 / 68,800
NC 70 BYPASS (CLAYTON BYPASS)
SR 1555 (BARBER MILL RD.)
ESTIMATED 1999/2025 ADT

NAD 83



BUFFER PERMIT
SITE 4

9/24/2004 r:\01\056065\plan\permits\buffer\r2552bs_buffer04.psh

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	11
R/W SHEET NO.	

METRIC

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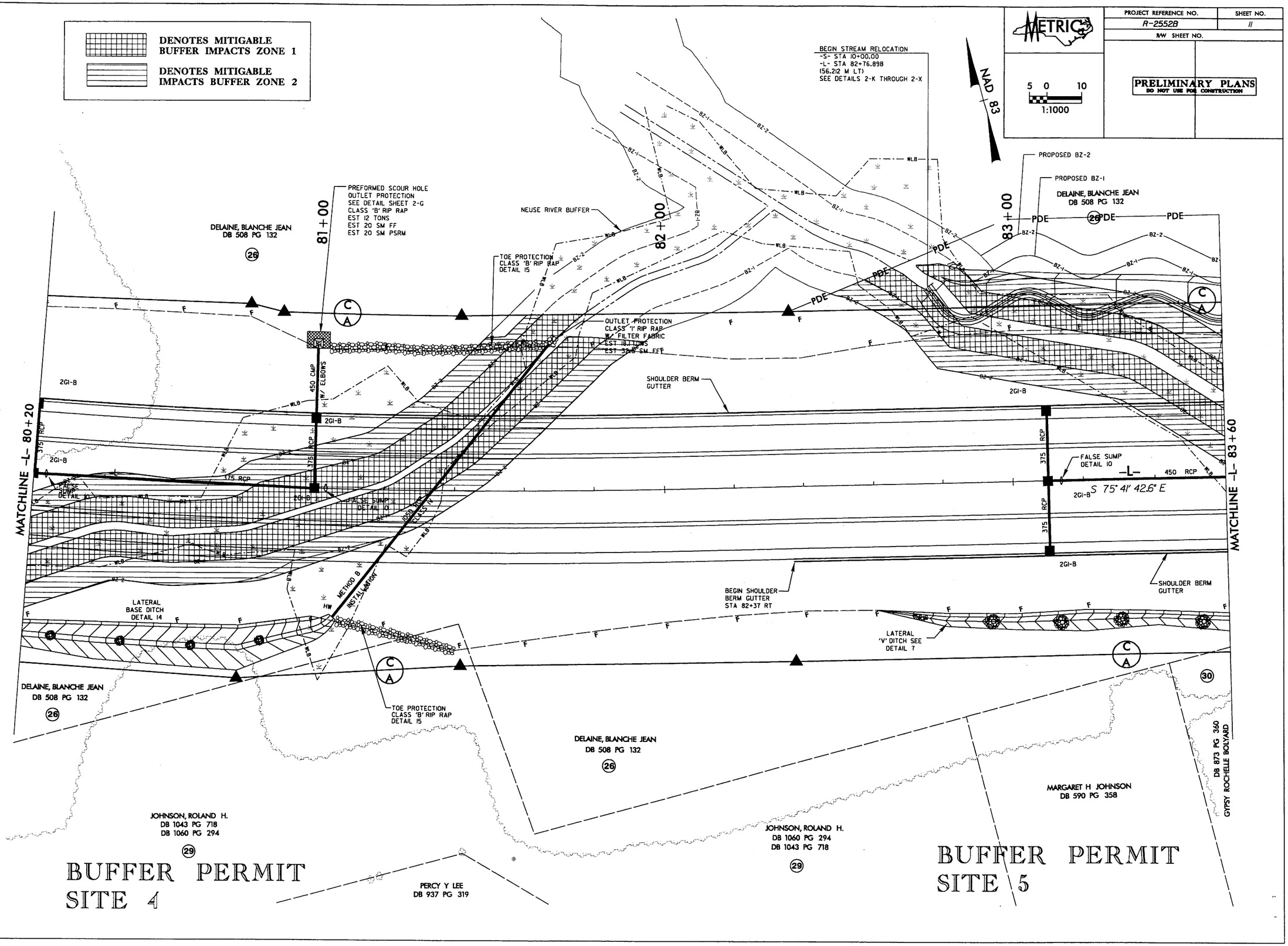
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	12
R/W SHEET NO.	

METRIC

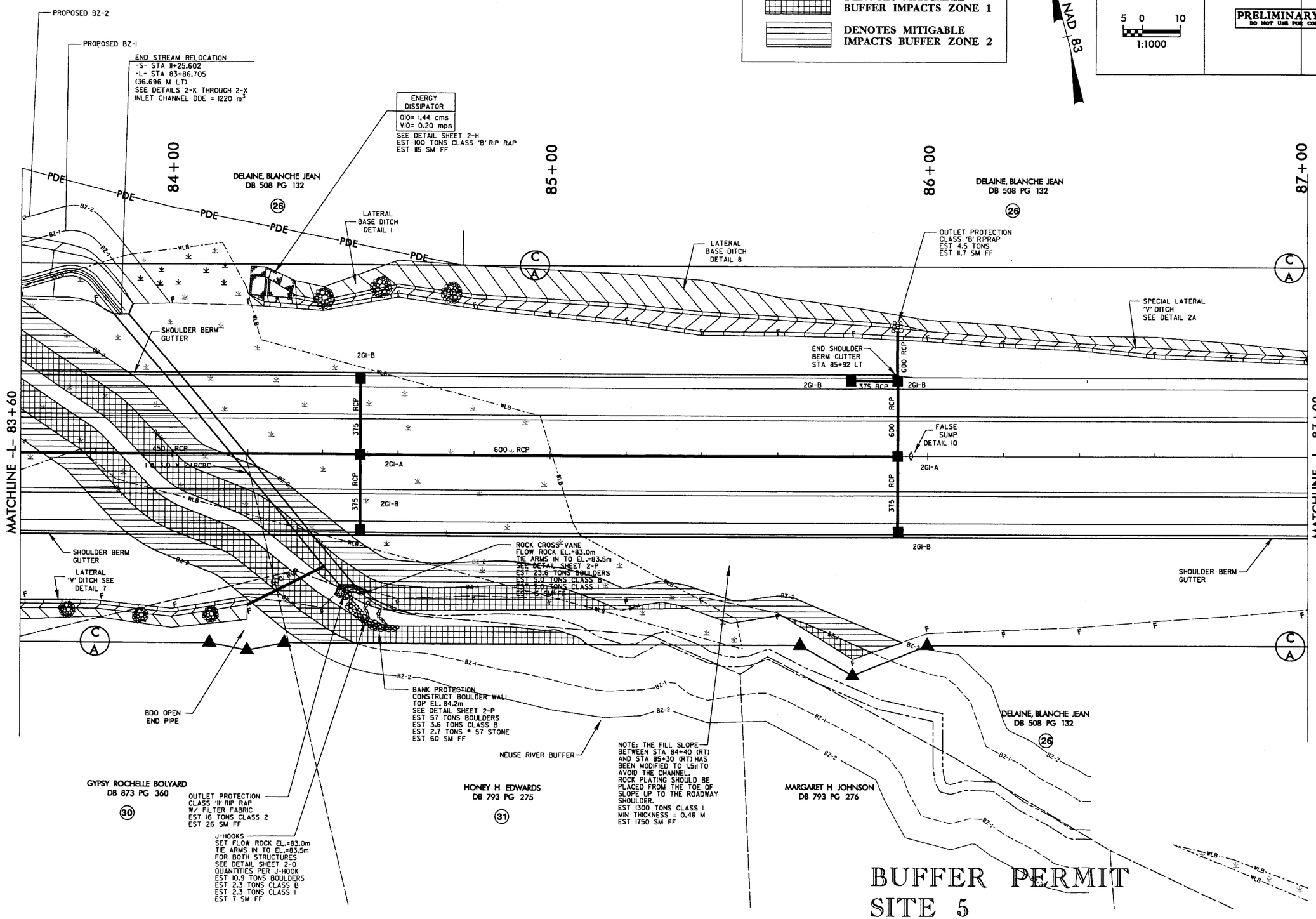
5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DENOTES MITIGABLE BUFFER IMPACTS ZONE 1

DENOTES MITIGABLE IMPACTS BUFFER ZONE 2

NAD 83



BUFFER PERMIT
SITE 5

9/24/2004 r:\01\056065\plan\permits\buffer\r-2552bs_buffer06.psh

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	14
R/W SHEET NO.	

METRIC

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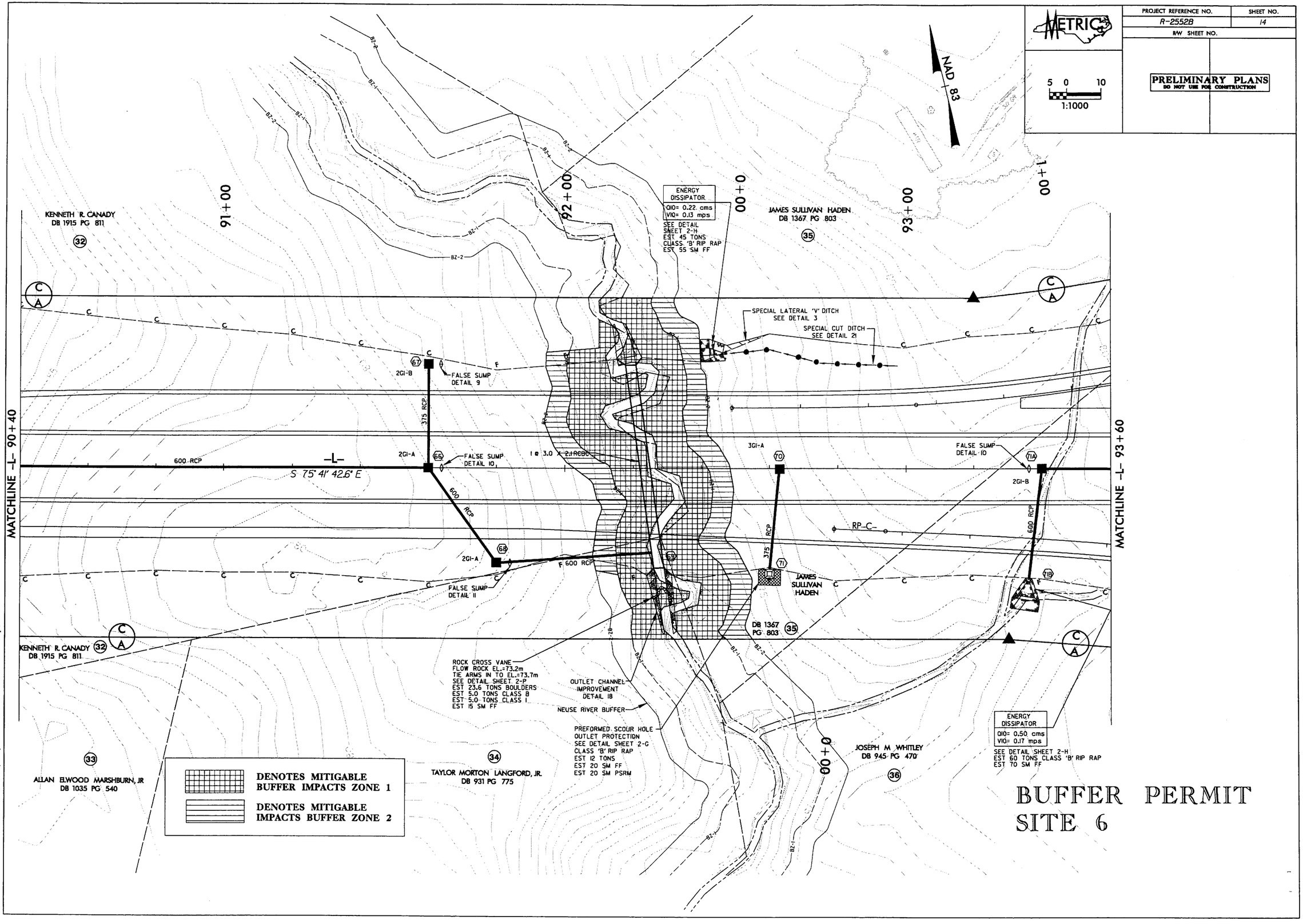
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT SITE 6

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9/23/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	14
R/W SHEET NO.	

METRIC

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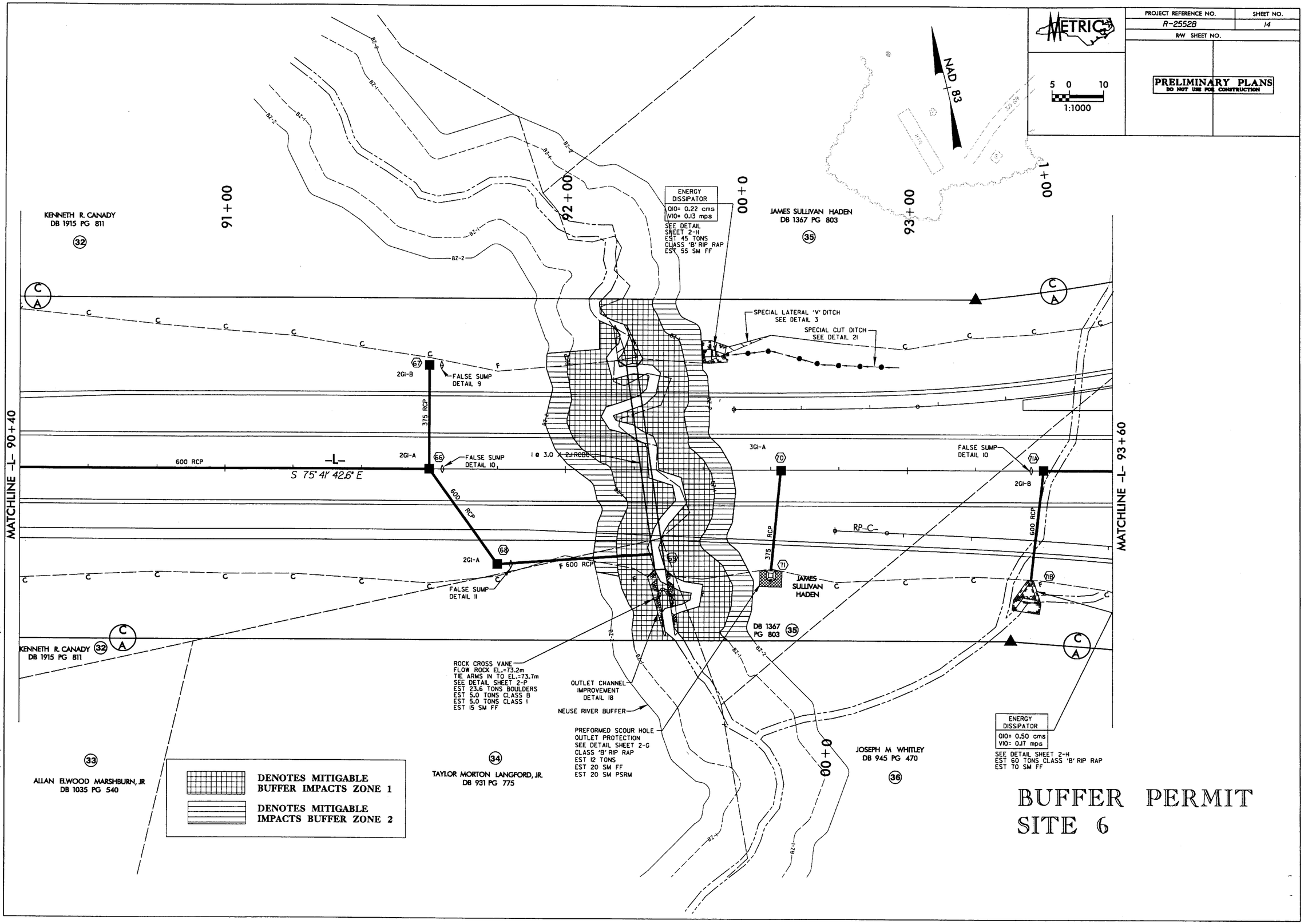
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT SITE 6

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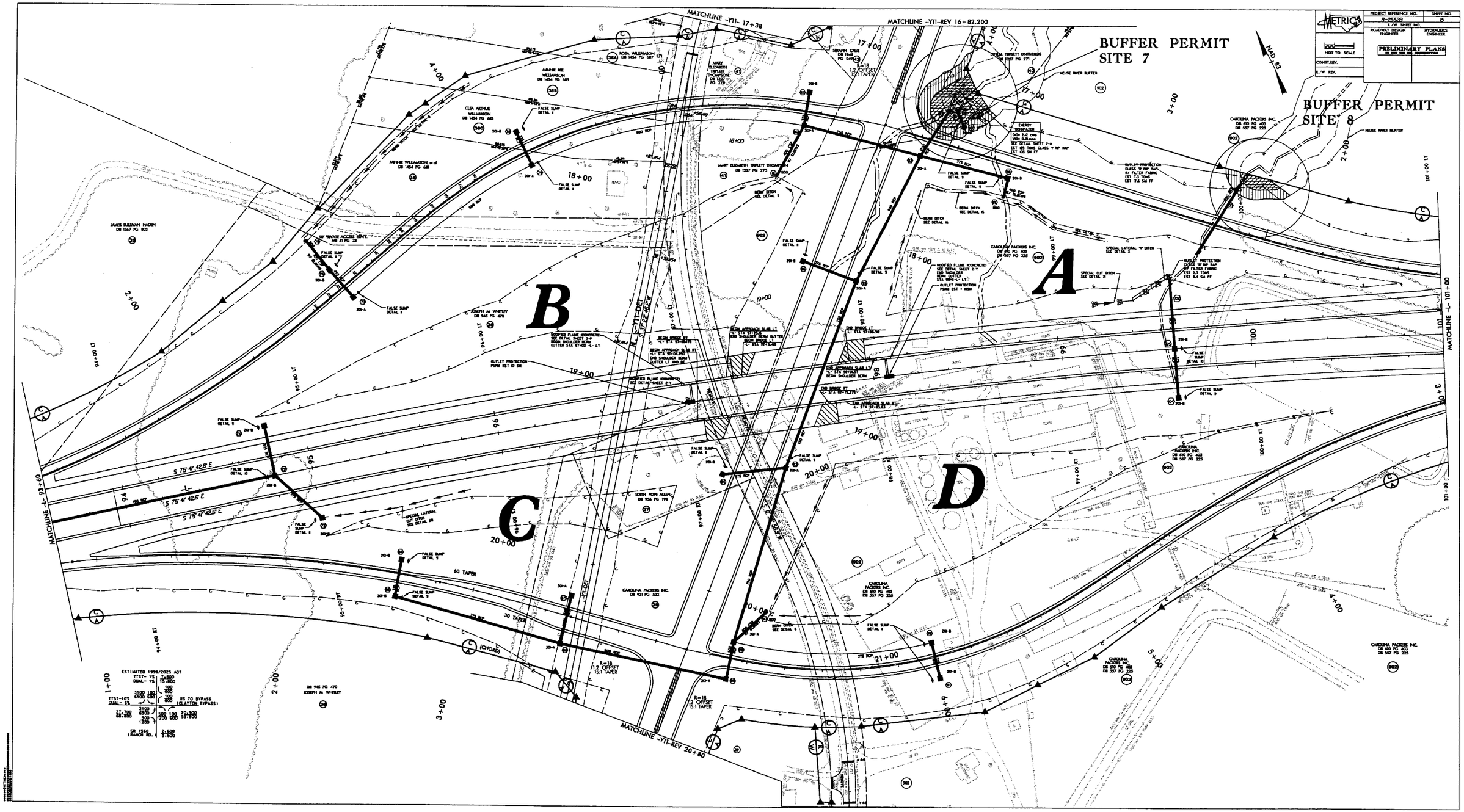
9/24/2004



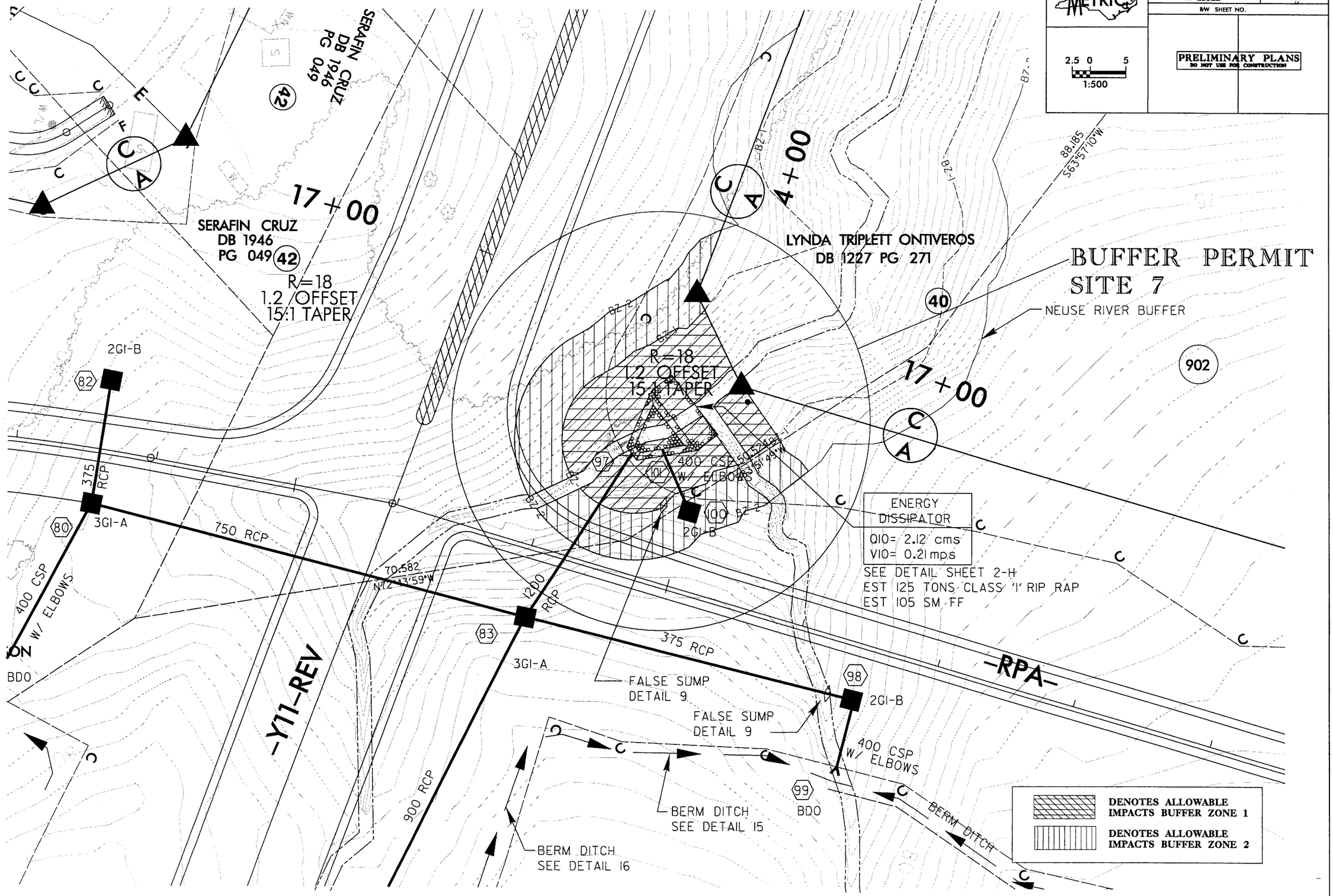
SEE NEXT 2 SHEETS FOR BUFFER PERMIT SITES 7 AND 8

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	
R/W SHEET NO.	

METRIC

2.5 0 5
1:500

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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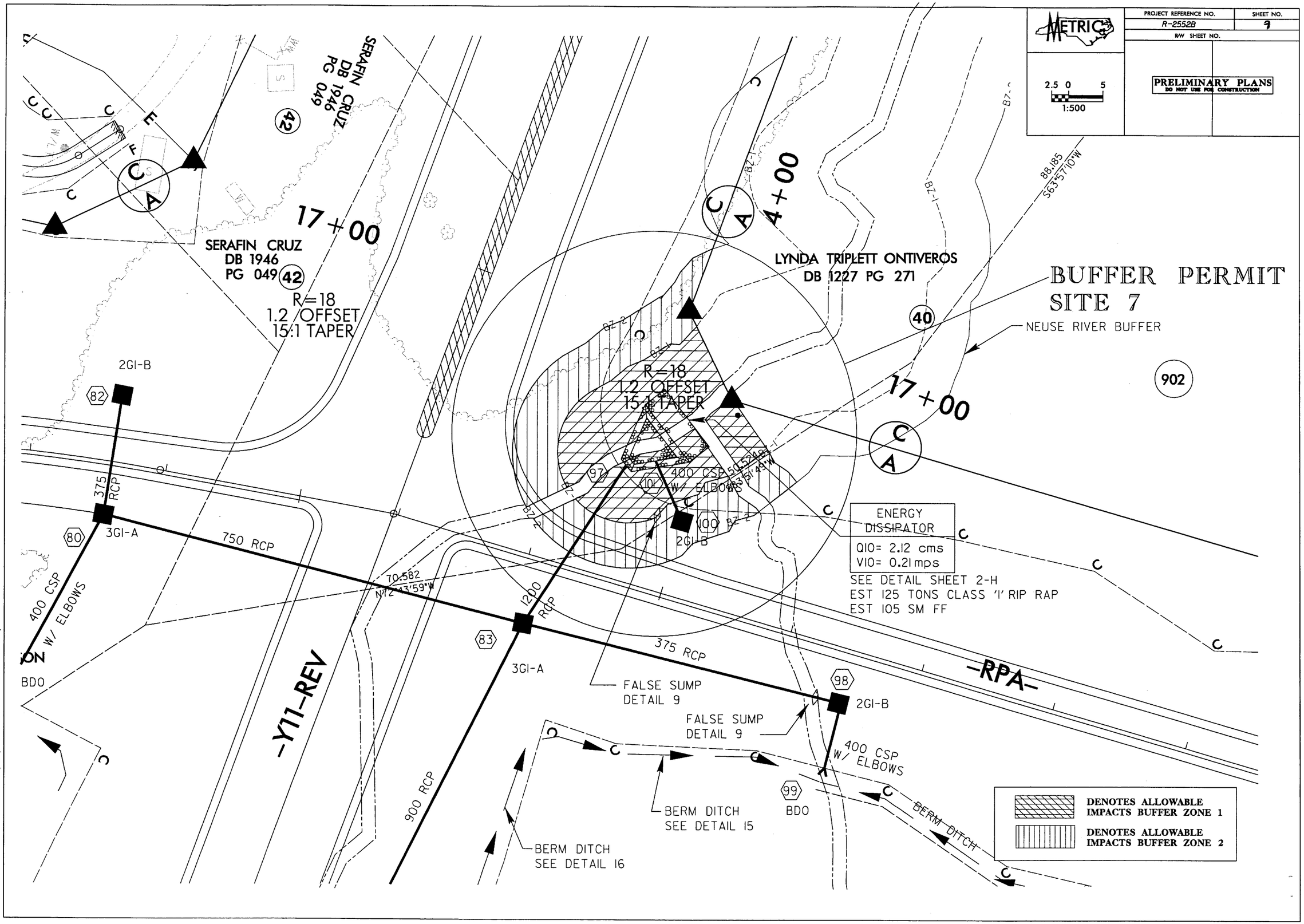
9/24/2004



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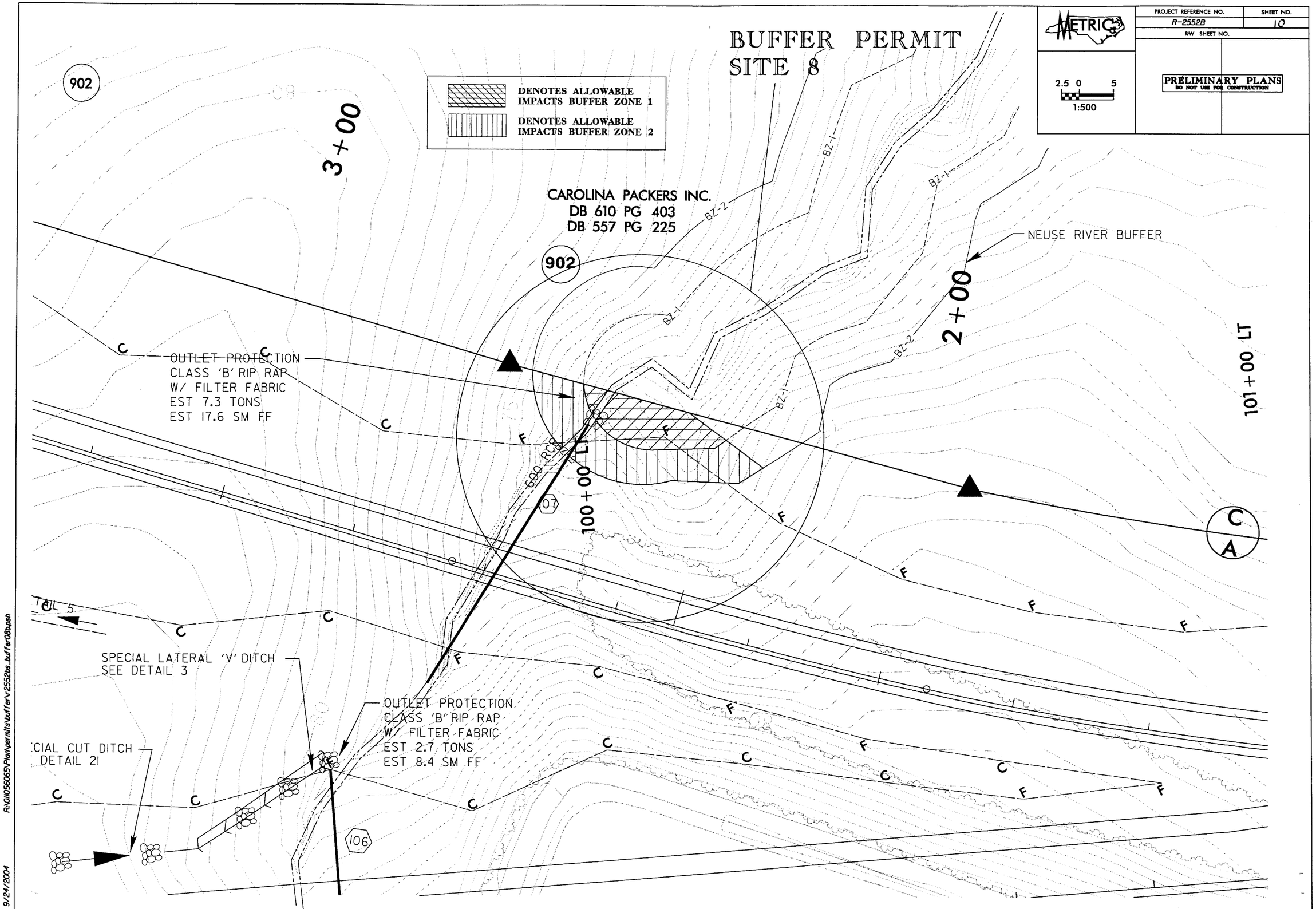
9/24/2004



R:\011056065\Plan\permits\buffer\r2552bs_buffer08b.psh

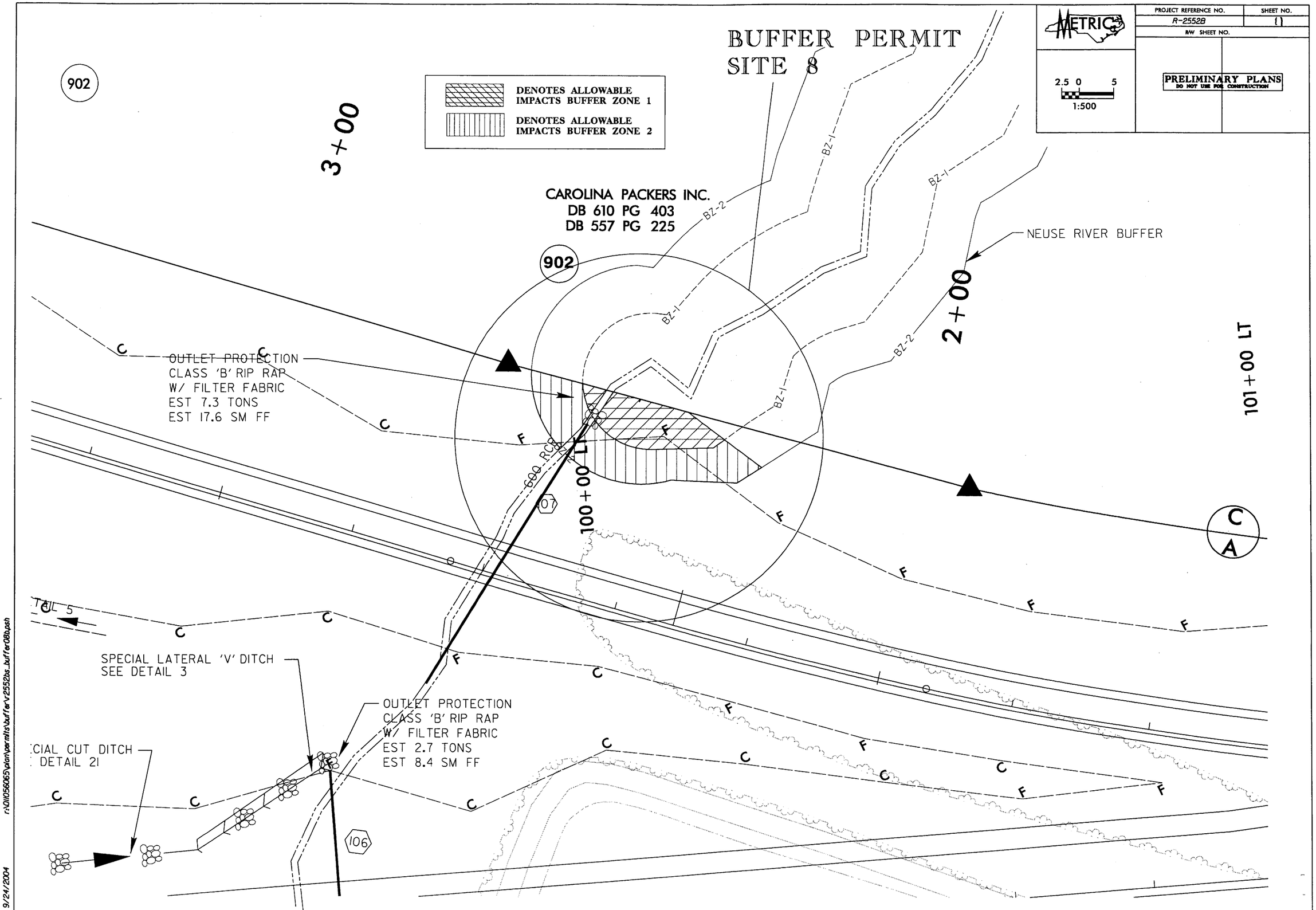
9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	1
R/W SHEET NO.	

METRIC

2.5 0 5
1:500

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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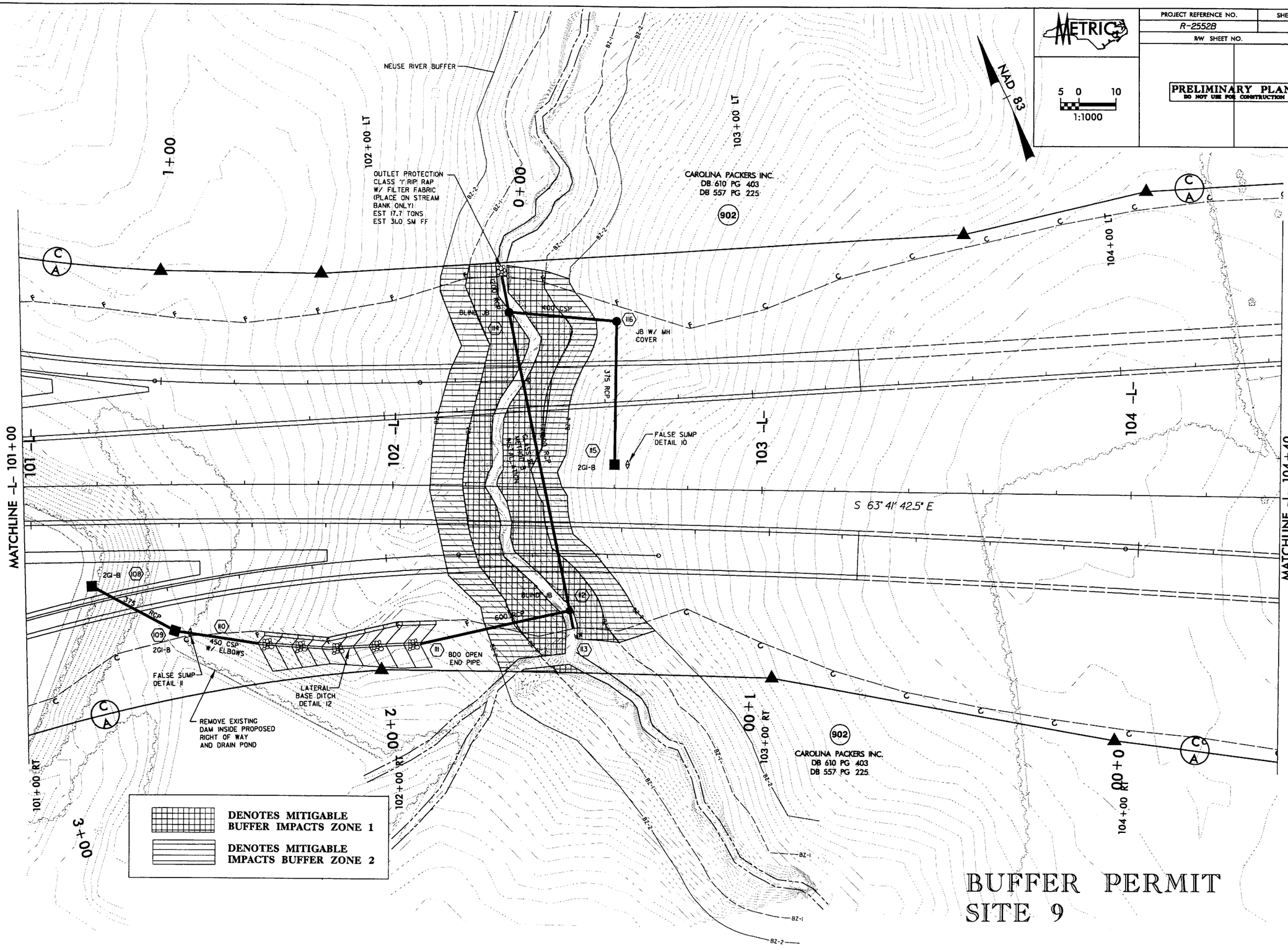
9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	16
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT
SITE 9

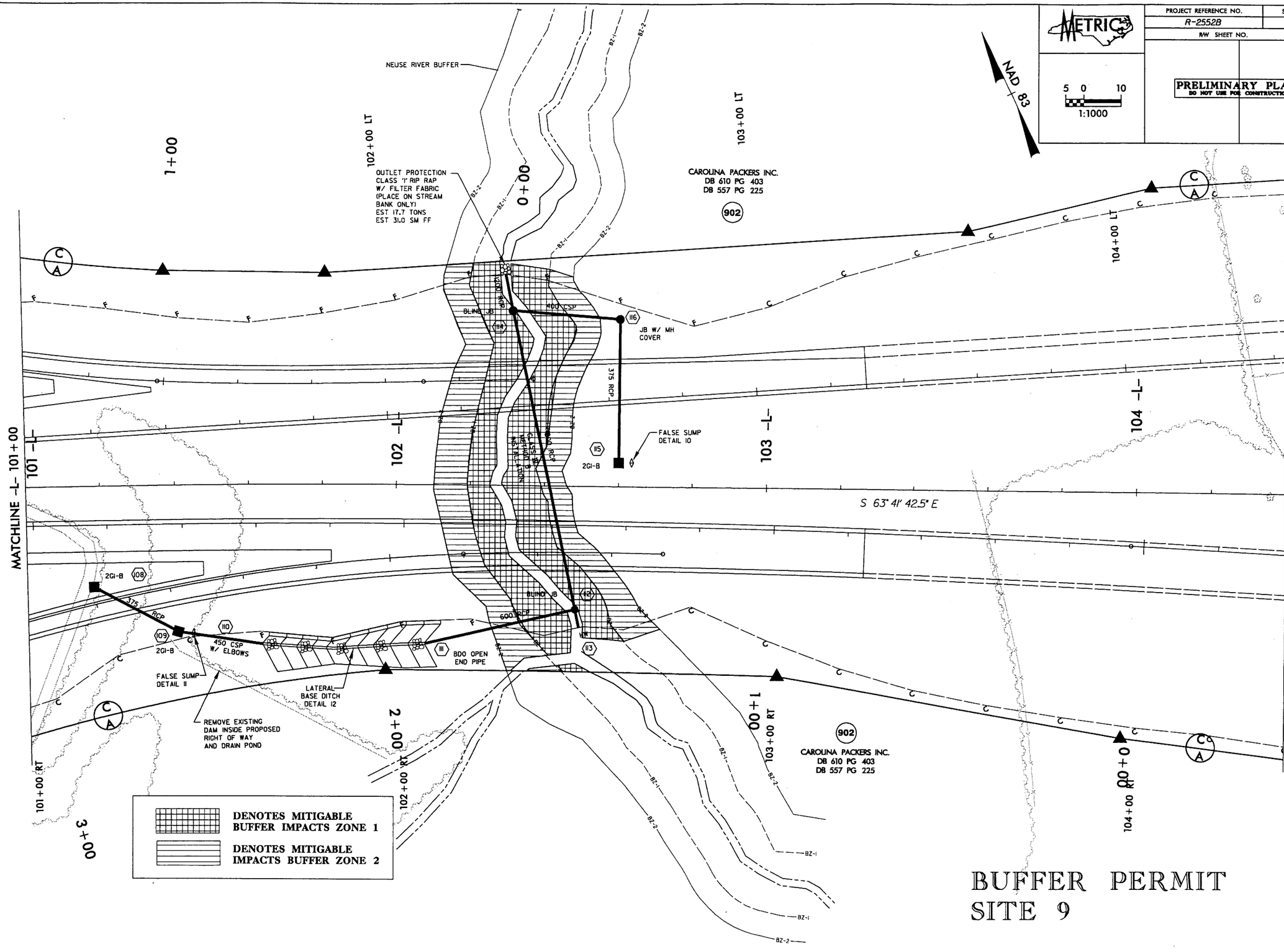
9/23/2004 r:\01\055065\plan\permits\buffer\r2552bs_buffer09.psh

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	16
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BUFFER PERMIT
SITE 9

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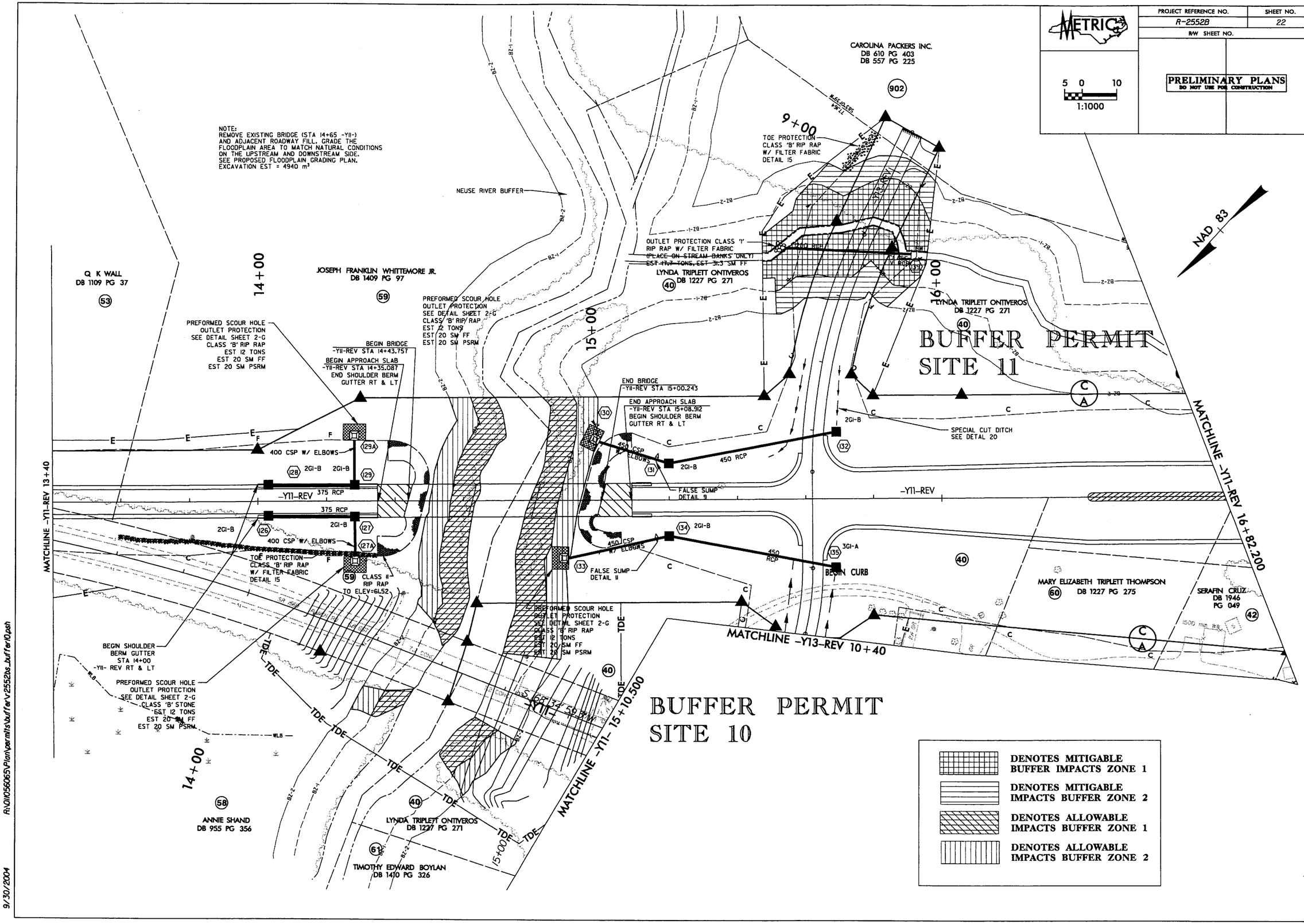
9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	22
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/30/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	22
R/W SHEET NO.	

METRIC

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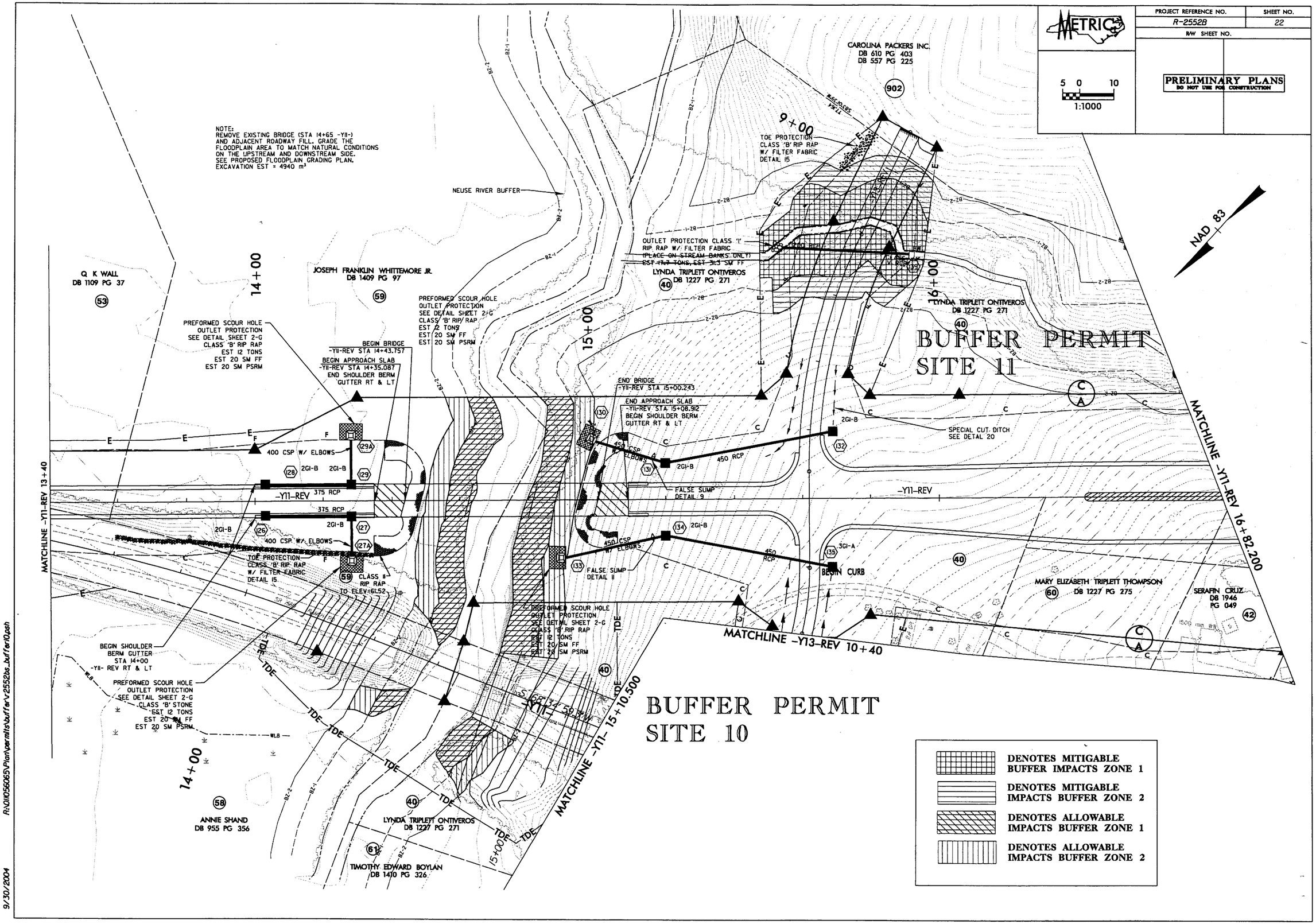
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/30/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	24
R/W SHEET NO.	

METRIC

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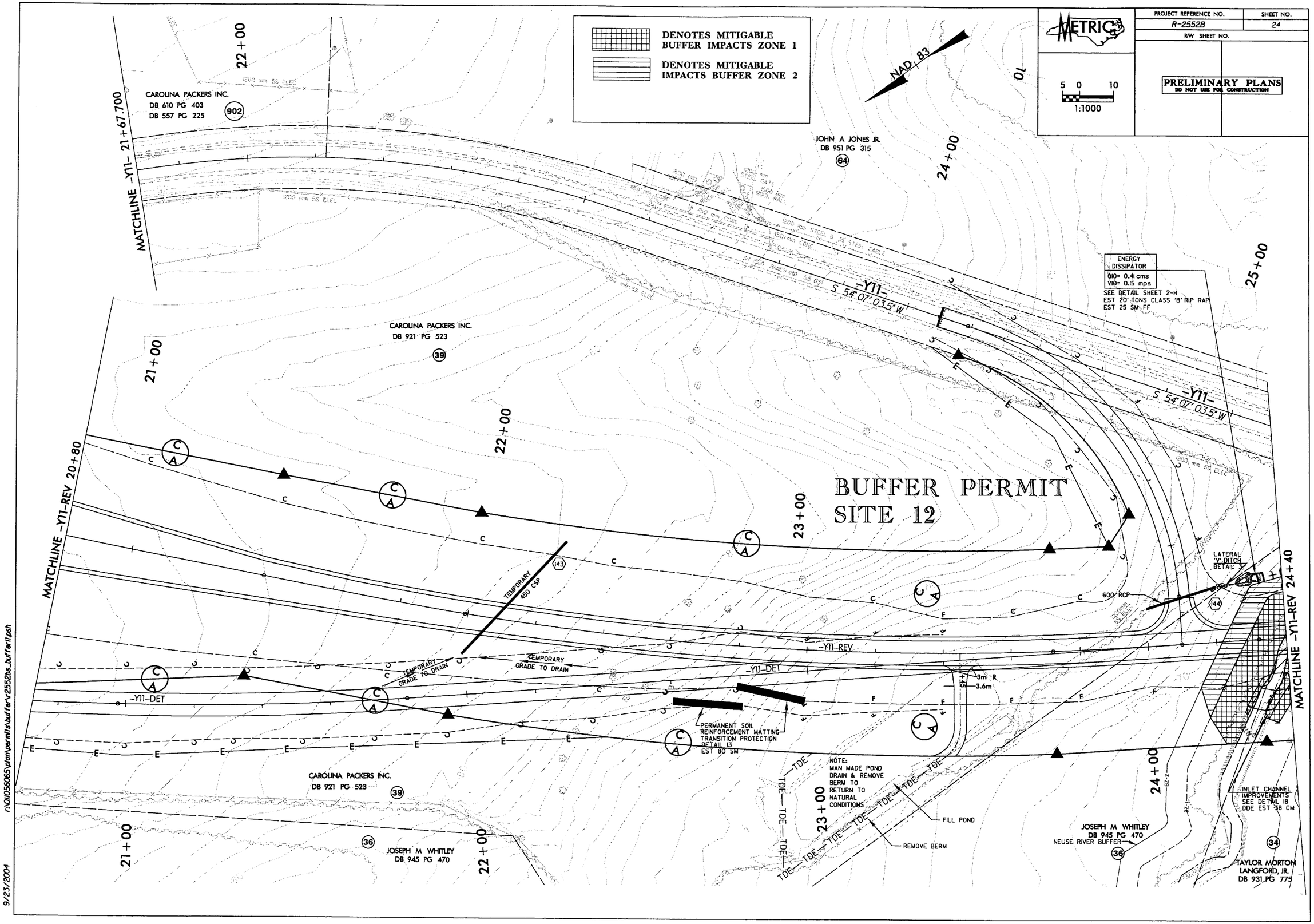
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/23/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	25
R/W SHEET NO.	

METRIC

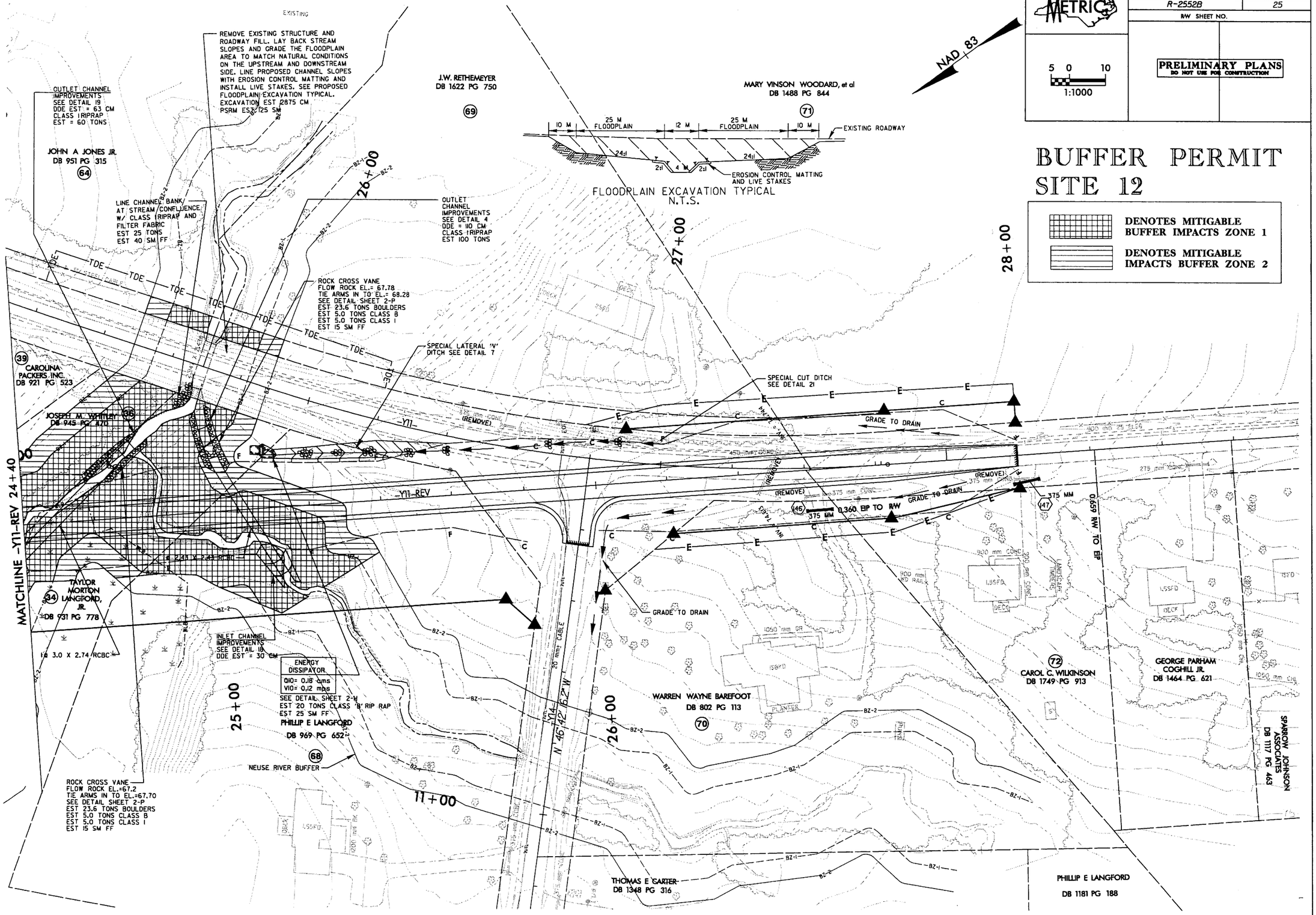
5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BUFFER PERMIT SITE 12

DENOTES MITIGABLE BUFFER IMPACTS ZONE 1

DENOTES MITIGABLE IMPACTS BUFFER ZONE 2



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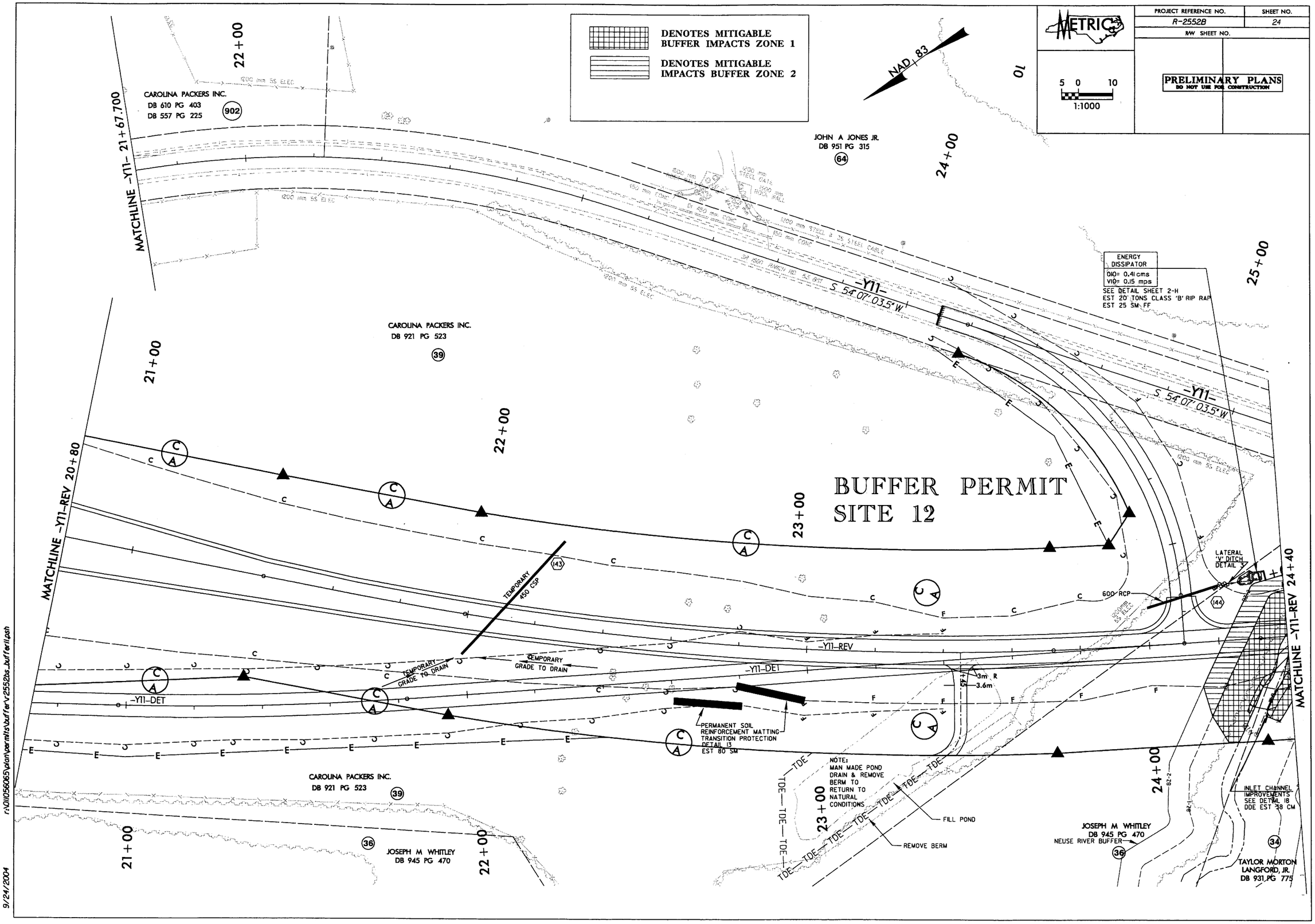

PROJECT REFERENCE NO.
R-2552B
SHEET NO.
24
R/W SHEET NO.
METRIC
5 0 10
1:1000
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DENOTES MITIGABLE BUFFER IMPACTS ZONE 1
DENOTES MITIGABLE IMPACTS BUFFER ZONE 2
NAD 83
BUFFER PERMIT
SITE 12
CAROLINA PACKERS INC.
DB 610 PG 403
DB 557 PG 225
902
JOHN A JONES JR.
DB 951 PG 315
64
CAROLINA PACKERS INC.
DB 921 PG 523
39
JOSEPH M WHITLEY
DB 945 PG 470
36
TAYLOR MORTON LANGFORD, JR.
DB 931 PG 775
34
MATCHLINE -Y11- 21+67.700
MATCHLINE -Y11-REV 20+80
MATCHLINE -Y11-REV 24+40
-Y11-
S 54°07'03.5" W
-Y11-REV
-Y11-DET
ENERGY DISSIPATOR
Q10= 0.41 cms
V10= 0.15 mps
SEE DETAIL SHEET 2-H
EST 20 TONS CLASS 'B' RIP RAP
EST 25 SM FF
TEMPORARY 450 CSP
TEMPORARY GRADE TO DRAIN
PERMANENT SOIL REINFORCEMENT MATTING TRANSITION PROTECTION DETAIL 13 EST 80 SM
LATERAL 'V' DITCH DETAIL 3
600 RCP
3m R
3.6m
NOTE: MAN MADE POND DRAIN & REMOVE BERM TO RETURN TO NATURAL CONDITIONS
FILL POND
REMOVE BERM
INLET CHANNEL IMPROVEMENTS SEE DETAIL 18 DDE EST 38 CM
NEUSE RIVER BUFFER
21+00
22+00
23+00
24+00
25+00
10
r:\01\056065\plan\permits\buffer\r2552bs_buffer1.psh
9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	25
R/W SHEET NO.	

METRIC

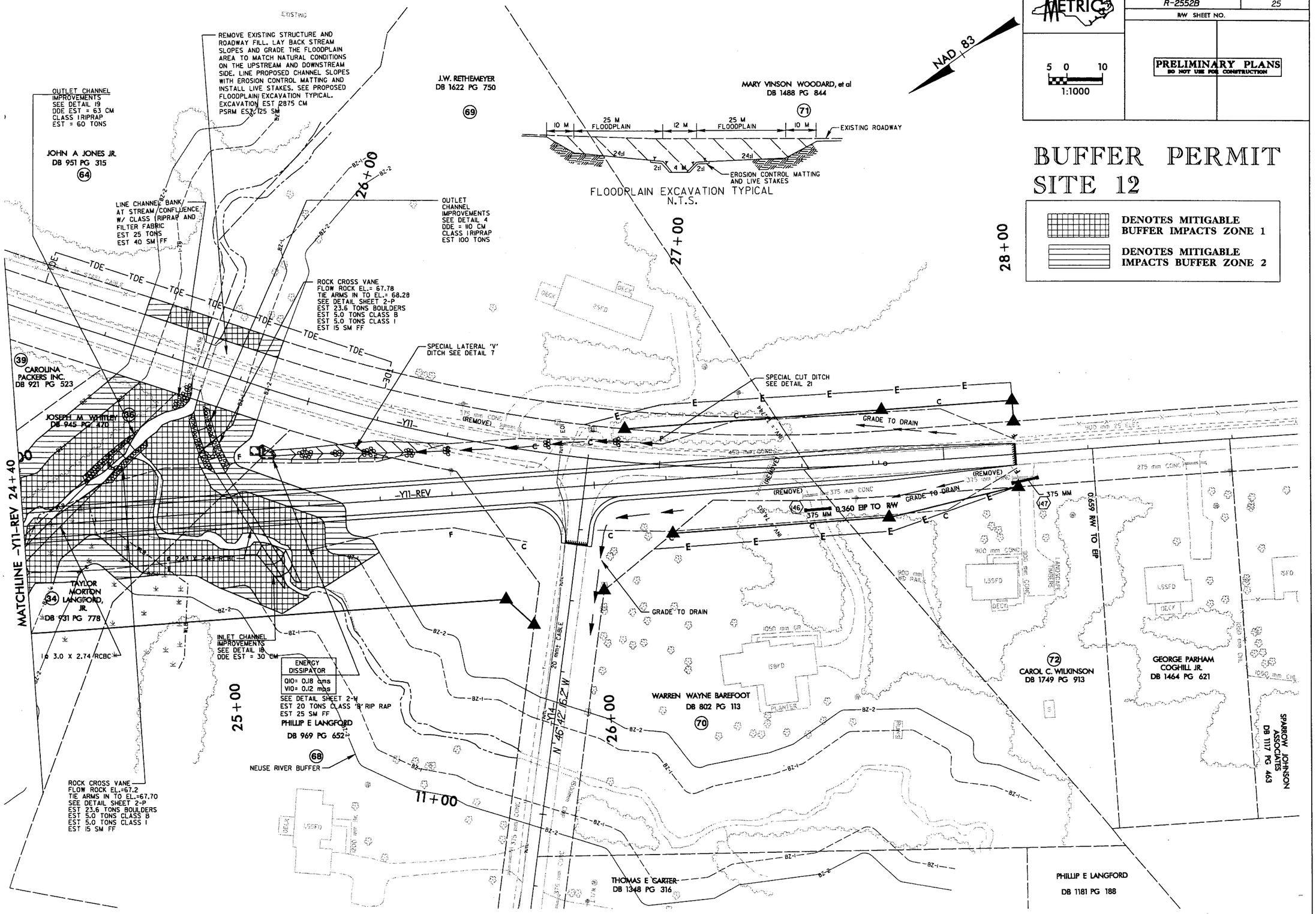
5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BUFFER PERMIT
SITE 12

DENOTES MITIGABLE BUFFER IMPACTS ZONE 1

DENOTES MITIGABLE IMPACTS BUFFER ZONE 2



9/24/2004 r:\01\056065\plan\permits\buffer\r2552bs_buffer12.psh

R-2552B, Johnston Co. Affected Buffer Areas
Discharge is considered to be treated if it meets the following criteria:
100 ft. of grass swale for every 1 acre of drainage area. AND
2 yr. velocity is less than or equal to 2 ft./sec (0.61 mps).

Date: 9/27/2004
Dsn. By: JDL
Check: LDR

Sheet	Structure	Station	Type	Total D.A. (ha)	Total D.A. (ac)	Length Required (ft)	Length Required (m)	Length Provided (m)	Channel Slope (m/m)	Side Slopes	Treated Discharge?	Q2 cms	V2 mps	Q10 cms	V10 mps	Treatment Provided	Remarks
		-L-															
4	2	57+80R	2GI / GS	0.699	1.73	172.7	53	188	0.0051	6 / 6	YES	-	-	0.143	0.53	GS	
4	3	58+00M	2GI / GS	0.357	0.88	88.2	27	167	0.0051	7.783 / 8	YES	-	-	0.058	0.40	GS	
4	4	58+20L	2GI / GS	0.416	1.03	102.8	31	148	0.0051	6 / 6	YES	-	-	0.093	0.47	GS	
4	5	59+70M	2GI / GS	0.441	1.09	109.0	33	190	0.0051	7.783 / 8	YES	-	-	0.070	0.41	GS	
4	6	59+70L	2GI / GS	0.540	1.33	133.4	41	185	0.0051	6 / 6	YES	-	-	0.121	0.51	GS	
4	7	59+70R	2GI / GS	0.636	1.57	157.2	48	191	0.0051	6 / 6	YES	-	-	0.132	0.52	GS	
		-L-															
5	8	61+60M	2GI / GS	0.441	1.09	109.0	33	210	0.0051	8 / 8	YES	-	-	0.071	0.41	GS	
5	9	61+60L	2GI / GS	0.692	1.71	171.0	52	210	0.0051	6 / 6	YES	-	-	0.147	0.53	GS	
5	10	61+60R	2GI / GS	0.765	1.89	189.0	58	210	0.0051	6 / 6	YES	-	-	0.156	0.54	GS	
5	11	63+70M	2GI / GS	0.565	1.40	139.6	43	210	0.0051	8 / 8	YES	-	-	0.120	0.47	GS	
5	12	63+70L	2GI / GS	0.669	1.65	165.3	50	221	0.0051	6 / 6	YES	-	-	0.111	0.50	GS	
5	13	63+70R	2GI / GS	0.701	1.73	173.2	53	180	0.0051	6 / 6	YES	-	-	0.143	0.53	GS	
		-L-															
6	14	65+51R	2GI / GS	0.538	1.33	132.9	41	167	0.0051	6 / 6	YES	-	-	0.116	0.50	GS	
6	15	65+80M,R	2GI / GS	0.213	0.53	52.6	16	120	0.0051	25 / 4	YES	-	-	0.045	0.32	GS	
6	16	65+80M,L	2GI / GS	0.213	0.53	52.6	16	120	0.0051	4 / 25	YES	-	-	0.045	0.32	GS	
6	17	65+90L	2GI / GS	0.410	1.01	101.3	31	132	0.0051	6 / 6	YES	-	-	0.066	0.44	GS	
6	19	67+20R	2GI / GS	0.177	0.44	43.7	13	80	0.0051	6 / 6	YES	-	-	0.049	0.40	GS	
6	20	67+20M	2GI / GS	0.56	1.38	138.4	42	195	0.0051	8 / 7.783	YES	-	-	0.119	0.47	GS	
6	20A	67+00M	2GI / GS	0.054	0.13	13.3	4	20	0.0051	8 / 7.783	YES	-	-	0.017	0.29	GS	
6	21	67+20L	2GI / GS	0.214	0.53	52.9	16	100	0.0051	6 / 6	YES	-	-	0.037	0.39	GS	
		-Y7-															
6	18	13+65L	BDO	0.870	2.15	215.0	66	185	0.0061	3 / 3	YES	0.126	0.57	0.147	0.66	GS	
6	118B	14+84L	2GI / EG	0.104	0.26	25.7	8	N/A	N/A	N/A	NO	0.038	N/A	-	-	GS	Adequate Treatment Down -Y7-

INLET TYPE
2GI = 2 GRATED INLET
EG = EXPRESSWAY GUTTER
CB = CATCH BASIN
BDO = BERM DRAINAGE OUTLET STRUCTURE
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RCBSF = REINFORCED CONCRETE BARRIER-SINGLE FACE
MI = MONOLITHIC ISLAND

TREATMENT TYPE
PSH = PREFORMED SCOUR HOLE
LS = LEVEL SPREADER
EDB = ENERGY DISSIPATOR BASIN
GS = GRASS SWALE

R-2552B, Johnston Co. Affected Buffer Areas
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Date: 9/27/2004
Dsn. By: JDL
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Sheet	Structure	Station	Type	Total D.A. (ha)	Total D.A. (ac)	Length Required (ft)	Length Required (m)	Length Provided (m)	Channel Slope (m/m)	Side Slopes	Treated Discharge?	Q2 cms	V2 mps	Q10 cms	V10 mps	Treatment Provided	Remarks
		-L-															
7	24	69+20L	2GI / GS	0.900	2.22	222.4	68	250	0.0051	6 / 6	YES	-	-	0.121	0.51	GS, LS	
7	25	69+20M	2GI / GS	0.682	1.69	168.5	51	240	0.0051	8 / 7.783	YES	-	-	0.137	0.49	GS, LS	
7	26	69+20R	2GI / GS	0.548	1.35	135.4	41	200	0.0051	6 / 6	YES	-	-	0.122	0.51	GS, LS	
		-L-															
8	28	71+61R	2GI / GS	0.695	1.72	171.7	52	240	0.0051	8 / 7.783	YES	-	-	0.139	0.49	GS, PSH	
8	29A	72+20R	2GI / EG	0.010	0.02	2.5	1	N/A	N/A	N/A	NO	0.004	N/A	-	-	PSH	
8	29B	72+30R	2GI / EG	0.092	0.23	22.7	7	N/A	N/A	N/A	NO	0.034	N/A	-	-	PSH	
8	30	73+20R	2GI / EG	0.093	0.23	23.0	7	N/A	N/A	N/A	NO	0.024	N/A	-	-	PSH	
		-L-															
9	33	74+07L	2GI / EG	0.005	0.01	1.2	0	N/A	N/A	N/A	NO	0.001	N/A	-	-	PSH	
9	33A	74+20L	2GI / EG	0.187	0.46	46.2	14	N/A	N/A	N/A	NO	0.049	N/A	-	-	PSH	
9	34	74+07M	2GI / GS	0.550	1.36	135.9	41	213	0.0051	8 / 8	YES	-	-	0.110	0.46	GS, PSH	
9	35	74+07R	2GI / EG	0.133	0.33	32.9	10	N/A	N/A	N/A	NO	0.035	N/A	-	-	PSH	
9	38	76+20M	2GI / GS	0.532	1.31	131.5	40	180	0.019	7.889 / 8	YES	0.095	0.65	0.111	0.76	GS, PSH	
9	39	76+20L	2GI / EG	0.222	0.55	54.9	17	N/A	N/A	N/A	NO	0.058	N/A	-	-	PSH	
		-L-															
10	41	80+20L	2GI / EG	0.210	0.52	51.9	16	N/A	N/A	N/A	NO	0.055	N/A	-	-	PSH	
10	42	80+20M	2GI / GS	0.456	1.13	112.7	34	140	0.015	7.783 / 8	YES	0.083	0.58	0.097	0.67	GS, PSH	
		-L-															
11	43	81+00M	2GI / GS	0.085	0.21	21.0	6	80	0.015	7.783 / 8	YES	-	-	0.022	0.51	GS, PSH	
11	44	81+00L	2GI / EG	0.226	0.56	55.8	17	N/A	N/A	N/A	NO	0.045	N/A	-	-	PSH	
11	47	83+10M	2GI / GS	0.544	1.34	134.4	41	210	0.015	8 / 8	YES	0.087	0.58	0.101	0.68	GS, PSH	
11	48	83+10R	2GI / EG	0.079	0.20	19.5	6	N/A	N/A	N/A	NO	0.021	N/A	-	-	PSH	
11	49	83+10L	2GI / EG	0.228	0.56	56.3	17	N/A	N/A	N/A	NO	0.06	N/A	-	-	PSH	

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Sheet	Structure	Station	Type	Total D.A. (ha)	Total D.A. (ac)	Length Required (ft)	Length Required (m)	Length Provided (m)	Channel Slope (m/m)	Side Slopes	Treated Discharge?	Q2 cms	V2 mps	Q10 cms	V10 mps	Treatment Provided	Remarks
		-L-															
12	50	84+50M	2GI / GS	0.294	0.73	72.6	22	140	0.015	8 / 8	YES	-	-	0.043	0.55	GS, EDB	
12	51	84+50L	2GI / EG	0.151	0.37	37.3	11	N/A	N/A	N/A	NO	0.039	N/A	-	-	EDB	
12	52	84+50R	2GI / EG	0.151	0.37	37.3	11	N/A	N/A	N/A	NO	0.039	N/A	-	-	EDB	
12	53	85+92M	2GI / GS	0.298	0.74	73.6	22	142	0.015	8 / 8	YES	-	-	0.042	0.54	GS, EDB	
12	54	85+92R	2GI / EG	0.153	0.38	37.8	12	N/A	N/A	N/A	NO	0.040	N/A	-	-	EDB	
12	55	85+92L	2GI / EG	0.013	0.03	3.2	1	N/A	N/A	N/A	NO	0.003	N/A	-	-	EDB	
12	55A	85+80L	2GI / EG	0.140	0.35	34.6	11	N/A	N/A	N/A	NO	0.037	N/A	-	-	EDB	
		-L-															
13	57	87+17M	2GI / GS	0.263	0.65	65.0	20	124	0.015	8 / 8	YES	-	-	0.037	0.53	GS, PSH	
13	58	87+17R	2GI / EG	0.013	0.03	3.2	1	N/A	N/A	N/A	NO	0.003	N/A	-	-	PSH	
13	58A	87+05R	2GI / EG	0.122	0.30	30.1	9	N/A	N/A	N/A	NO	0.032	N/A	-	-	PSH	
13	60	88+30M	2GI / GS	0.258	0.64	63.8	19	113	0.015	8 / 8	YES	0.033	-	0.038	0.62	GS, PSH	
13	61	88+30L	2GI / GS	0.321	0.79	79.3	24	130	0.015	6 / 6	YES	0.063	-	0.073	0.79	GS, PSH	
13	62	89+60M	2GI / GS	0.251	0.62	62.0	19	130	0.031	8 / 8	YES	0.032	0.60	0.037	0.69	GS	
13	63	89+60R	2GI / GS	0.286	0.71	70.7	22	130	0.031	6 / 6	YES	0.055	0.73	0.064	0.85	GS	
13	64	89+60L	2GI / GS	0.397	0.98	98.1	30	130	0.031	6 / 6	YES	0.065	0.76	0.076	0.89	GS	
		-L-															
14	66	91+60M	2GI / GS	0.420	1.04	103.8	32	200	0.019	8 / 8	YES	0.051	0.56	0.059	0.65	GS	
14	67	91+60L	2GI / GS	0.582	1.44	143.8	44	200	0.019	6 / 6	YES	0.108	0.72	0.125	0.84	GS	
14	68	91+80R	2GI / GS	0.990	2.45	244.6	75	220	0.017	6 / 6	YES	0.148	0.75	0.172	0.87	GS	
14	70	92+63M	3GI / GS	0.220	0.54	54.4	17	103	0.0245	8 / 8	YES	-	-	0.032	0.61	GS, PSH	
14	70	92+63M	3GI / GS	0.160	0.40	39.5	12	77	0.0245	8 / 8	YES	-	-	0.023	0.56	GS, PSH	
14	71A	93+40M	2GI / GS	0.450	1.11	111.2	34	140	0.0245	8 / 8	YES	0.113	0.75	0.131	0.87	GS, EDB	

INLET TYPE
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Sheet	Structure	Station	Type	Total D.A. (ha)	Total D.A. (ac)	Length Required (ft)	Length Required (m)	Length Provided (m)	Channel Slope (m/m)	Side Slopes	Treated Discharge?	Q2 cms	V2 mps	Q10 cms	V10 mps	Treatment Provided	Remarks
		-L-															
15	72	94+80M	2GI	0.654	1.62	161.6	49	230	0.039	8 / 8	YES	0.074	0.60	0.086	0.62	GS	
15	73	95+00R	2GI	0.487	1.20	120.3	37	183	0.0056	6 / 4	YES	0.092	0.46	0.107	0.77	GS	
15	74	94+80L	2GI	0.826	2.04	204.1	62	223	0.0185	6 / 6	YES	0.098	0.72	0.114	1.06	GS	
		-RP-B-															
15	75	3+00L	BDO	0.42	1.04	103.8	32	N/A	N/A	2 / 2	NO	-	-	0.054	N/A		
15	76	3+00L	2GI	0.7	1.73	173.0	53	132	0.0139	4 / 2	YES	0.0855	0.70	0.111	0.84	GS	
15	77	3+00R	2GI	0.55	1.36	135.9	41	132	0.02	4 / 4	YES	0.0785	0.74	0.102	0.89	GS	
15	78	4+20L	2GI	0.47	1.16	116.1	35	115	0.0185	4 / 2	YES	0.0516	0.69	0.067	0.83	GS	
15	79	4+20R	2GI	0.64	1.58	158.1	48	115	0.0185	4 / 4	YES	0.0762	0.72	0.099	0.87	GS	
15	80	5+72R	2GI	0.763	1.89	188.5	57	142	0.003	4 / 4	YES	-	-	0.132	0.47	GS	
15	80	5+72R	3GI	0.28	0.69	69.2	21	64	0.003	4 / 4	YES	-	-	0.052	0.37	GS	
15	81	5+60R	BDO	0.692	1.71	171.0	52	N/A	N/A	2 / 2	NO	-	-	0.089	N/A		
15	82	5+72L	2GI	0.588	1.45	145.3	44	155	0.0196	4 / 2	YES	0.0662	0.75	0.086	0.9	GS	
		-RP-A-															
15	83	4+18L	3GI	0.165	0.41	40.8	12	46	0.003	4 / 2	YES	-	-	0.034	0.35	GS,EDB	
15	83	4+18L	3GI	0.165	0.41	40.8	12	70	0.003	4 / 2	YES	-	-	0.034	0.35	GS	
15	98	3+70L	2GI	0.201	0.50	49.7	15	90	0.05	4 / 2	NO	0.0233	0.82	0.0302	0.98	GS	
15	99	3+70L	BDO	0.546	1.35	134.9	41	N/A	N/A	2 / 2	NO	-	-	0.089	N/A		
15	100	4+00R	2GI	0.230	0.57	56.8	17	119	0.046	6 / 4	YES	0.0354	0.79	0.046	0.95	GS,EDB	
		-RP-C-															
15	84	2+60L	2GI	0.407	1.01	100.6	31	110	0.01	4 / 4	YES	0.0739	0.56	0.096	0.68	GS	
15	85	2+60R	2GI	0.186	0.46	46.0	14	98	0.01	4 / 2	YES	-	-	0.038	0.57	GS	
15	86	3+51.5R	3GI	0.223	0.55	55.1	17	90	0.003	4 / 2	YES	-	-	0.05	0.39	GS	
15	86	3+51.5R	3GI	0.223	0.55	55.1	17	50	0.003	4 / 2	YES	-	-	0.05	0.38	GS	
15	87	3+51.5L	3GI	0.389	0.96	96.1	29	90	0.003	4 / 4	YES	-	-	0.55	0.37	GS	
15	87	3+51.5L	3GI	0.389	0.96	96.1	29	50	0.003	4 / 4	YES	-	-	0.55	0.35	GS	

INLET TYPE
2GI = 2 GRATED INLET
EG = EXPRESSWAY GUTTER
CB = CATCH BASIN
BDO = BERM DRAINAGE OUTLET STRUCTURE
OTCB = OPEN THROAT CATCH BASIN
OEP = OPEN END PIPE
RCBSF = REINFORCED CONCRETE BARRIER-SINGLE FACE
MI = MONOLITHIC ISLAND

TREATMENT TYPE
PSH = PREFORMED SCOUR HOLE
LS = LEVEL SPREADER
EDB = ENERGY DISSIPATOR BASIN
GS = GRASS SWALE

R-2552B, Johnston Co. Affected Buffer Areas
Discharge is considered to be treated if it meets the following criteria:
100 ft. of grass swale for every 1 acre of drainage area. AND
2 yr. velocity is less than or equal to 2 ft./sec (0.61 mps).

Date: 9/27/2004
Dsn. By: JDL
Check: LDR

Sheet	Structure	Station	Type	Total D.A. (ha)	Total D.A. (ac)	Length Required (ft)	Length Required (m)	Length Provided (m)	Channel Slope (m/m)	Side Slopes	Treated Discharge?	Q2 cms	V2 mps	Q10 cms	V10 mps	Treatment Provided	Remarks
		-RP-D-															
15	88	7+09.9L	3GI	0.321	0.79	79.3	24	110	0.003	4 / 2	NO	-	-	0.054	0.4	GS	
15	89	7+09.9R	3GI	0.365	0.90	90.2	27	110	0.003	4 / 2	YES	-	-	0.074	0.43	GS	
15	90	6+93R	BDO	0.76	1.88	187.8	57	60	0.06	2 / 2	NO	-	-	0.098	N/A	GS	
15	91	6+00L	2GI	0.212	0.52	52.4	16	83	0.013	4 / 2	YES	-	-	0.032	0.6	GS	
15	92	6+00R	2GI	0.682	1.69	168.5	51	154	0.013	4 / 4	YES	0.0832	0.64	0.108	0.77	GS	
		-Y11 REV-															
15	93	19+25L	2GI	0.314	0.78	77.6	24	98	0.0134	4 / 6	YES	0.0531	0.55	0.069	0.66	GS	
15	94	19+40R	2GI	0.262	0.65	64.7	20	72	0.0115	4 / 6	YES	-	-	0.061	0.6	GS	
15	95	18+20L	2GI	0.381	0.94	94.1	29	105	0.023	4 / 6	YES	0.0631	0.70	0.082	0.84	GS	
15	96	18+20R	2GI	0.432	1.07	106.7	33	120	0.023	4 / 6	YES	0.0685	0.72	0.089	0.86	GS	
		RP-D-															
16	108	2+80R	2GI / GS	0.792	1.96	195.7	59.6	150	0.010	3 / 6	YES	0.123	0.62	0.143	0.73	GS	
16	109	2+60L	2GI / GS	0.643	1.59	158.9	48.4	250	0.010	2 / 4	YES	0.095	0.64	0.111	0.66	GS	
		-L-															
16	115	102+60M	2GI / GS	0.781	1.93	193.0	58.8	300	0.029	8 / 7.489	YES	0.098	0.71	0.114	0.74	GS	
		-Y11-REV															
22	126	14+03R	2GI / EG	0.0163	0.04	4.0	1.2	N/A	N/A	N/A	NO	0.0043	N/A	-	-	PSH	
22	127	14+28R	2GI / EG	0.036	0.09	8.9	2.7	N/A	N/A	N/A	NO	0.0094	N/A	-	-	PSH	
22	128	14+03L	2GI / EG	0.0163	0.04	4.0	1.2	N/A	N/A	N/A	NO	0.0043	N/A	-	-	PSH	
22	129	14+28L	2GI / EG	0.036	0.09	8.9	2.7	N/A	N/A	N/A	NO	0.0094	N/A	-	-	PSH	
22	131	15+20L	2GI / GS	0.104	0.26	25.7	7.8	60	0.0425	5.46 / 6	YES	0.0211	0.65	0.0245	0.76	GS, PSH	
22	134	15+20R	2GI / GS	0.185	0.46	45.7	13.9	90	0.0425	6 / 6	YES	0.034	0.73	0.040	0.85	GS, PSH	

INLET TYPE
2GI = 2 GRATED INLET
EG = EXPRESSWAY GUTTER
CB = CATCH BASIN
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TREATMENT TYPE
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LS = LEVEL SPREADER
EDB = ENERGY DISSIPATOR BASIN
GS = GRASS SWALE

R-2552B, Johnston Co. Affected Buffer Areas
Discharge is considered to be treated if it meets the following criteria:
100 ft. of grass swale for every 1 acre of drainage area. AND
2 yr. velocity is less than or equal to 2 ft./sec (0.61 mps).

Date: 9/27/2004
Dsn. By: JDL
Check: LDR

Sheet	Structure	Station	Type	Total D.A. (ha)	Total D.A. (ac)	Length Required (ft)	Length Required (m)	Length Provided (m)	Channel Slope (m/m)	Side Slopes	Treated Discharge?	Q2 cms	V2 mps	Q10 cms	V10 mps	Treatment Provided	Remarks
		-Y13-REV															
22	132	9+80L	2GI / GS	0.426	1.05	105.3	32.1	130	0.0425	2 / 4	YES	-	-	0.110	0.47	GS, PSH	
22	135	10+20R	3GI / GS	1.00	2.47	247.1	75.3	160	0.0425	4 / 2	YES	-	-	0.197	0.55	GS, PSH	

INLET TYPE
2GI = 2 GRATED INLET
EG = EXPRESSWAY GUTTER
CB = CATCH BASIN
BDO = BERM DRAINAGE OUTLET STRUCTURE
OTCB = OPEN THROAT CATCH BASIN
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TREATMENT TYPE
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EDB = ENERGY DISSIPATOR BASIN
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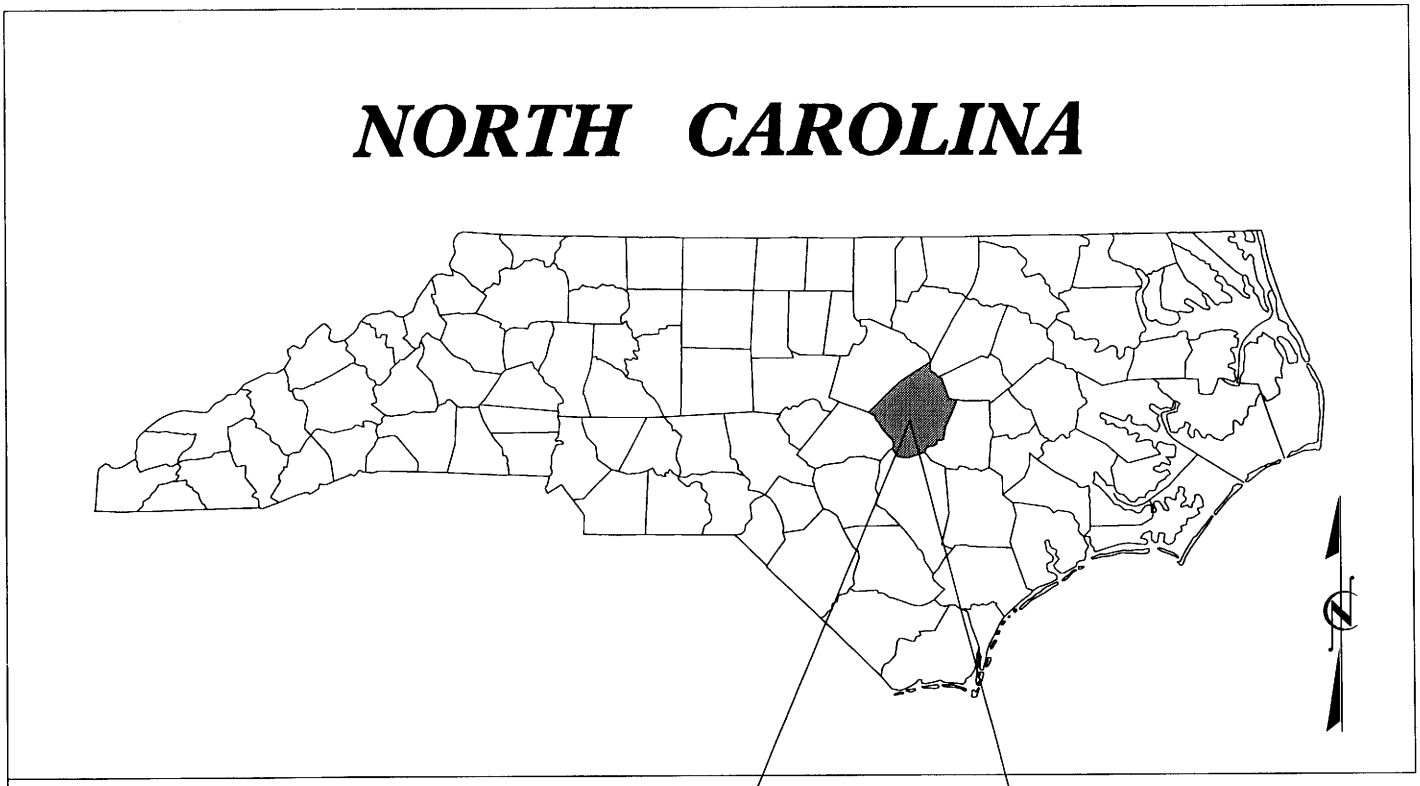
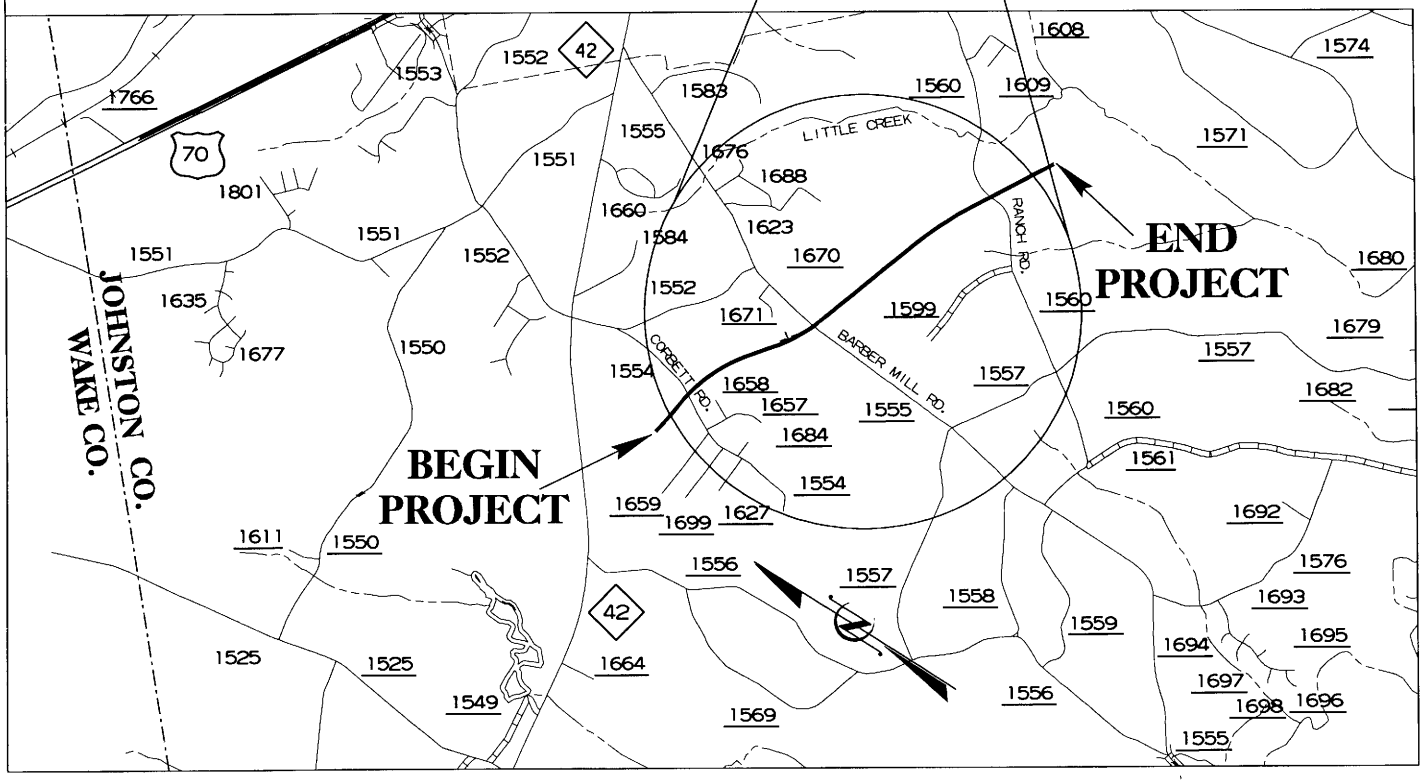
NORTH CAROLINA





WETLAND PERMIT DRAWING
VICINITY MAP
R-2552B

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 1 OF 23 **9/23/2004**

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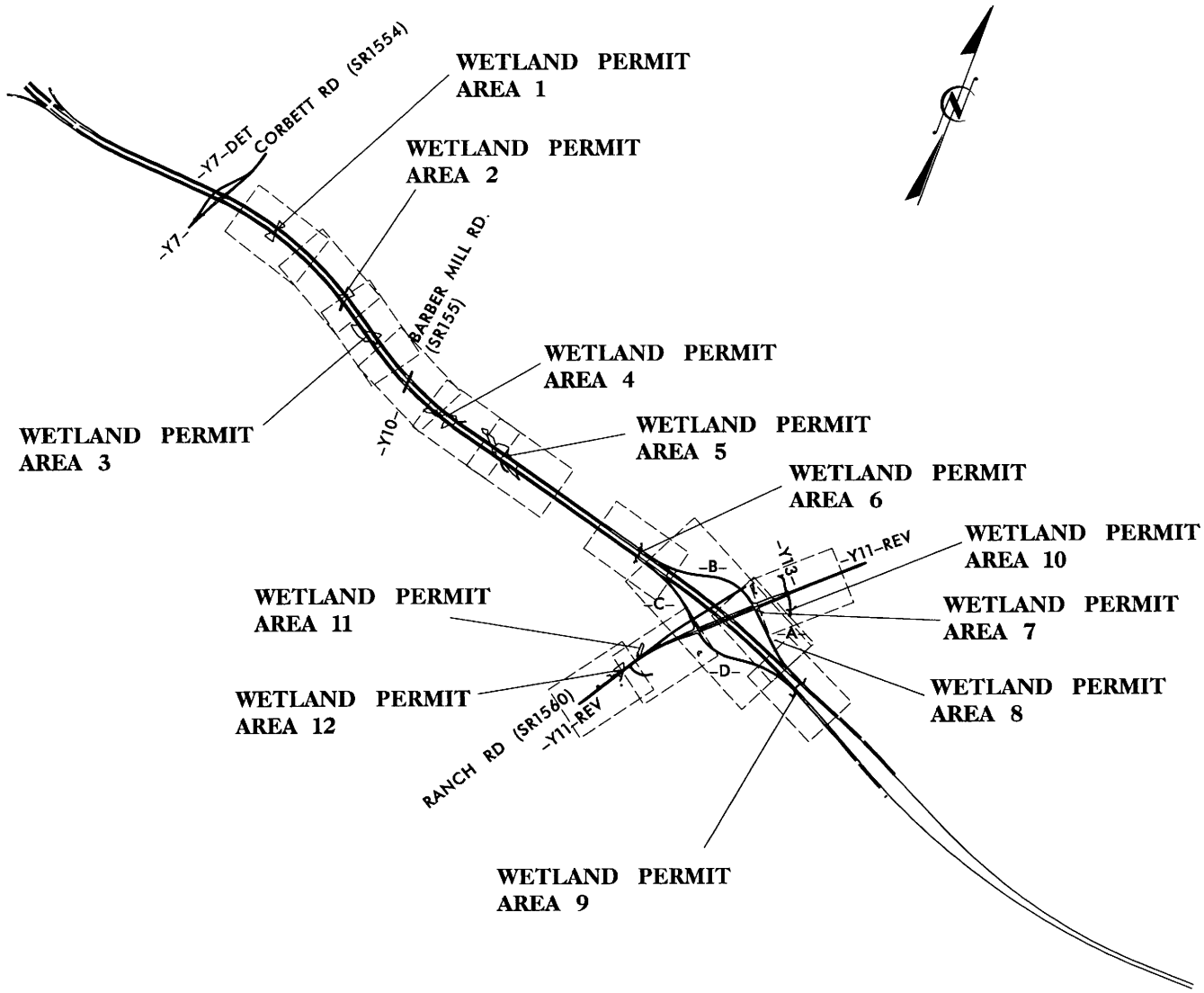
9/23/2004

SITE MAP



WETLAND PERMIT DRAWING VICINITY MAP

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 2 OF 23 *9/23/2004*

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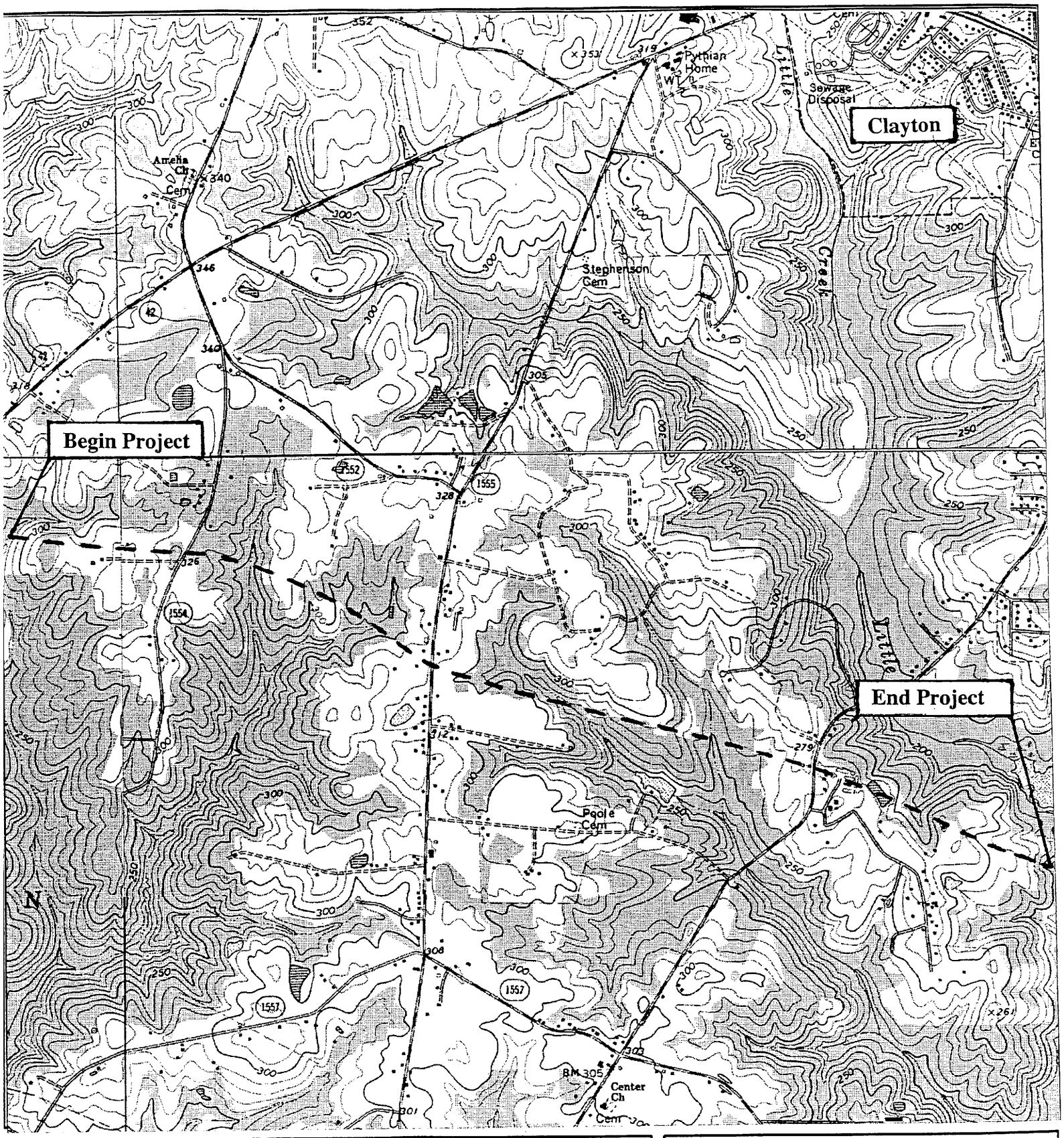
9/23/2004



WETLAND PERMIT DRAWING
LOCATION
R-2552B

SCALE: 1" = 2000'

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

SHEET 3 OF 23 8/4/04

8/4/2004 R:\011056065\Plan\permits\wetland\location.bdr

LEGEND

WLB — WETLAND BOUNDARY

WLB — WETLAND

F F — DENOTES FILL IN WETLAND

S S — DENOTES FILL IN SURFACE WATER

P P — DENOTES FILL IN SURFACE WATER (POND)

T T — DENOTES TEMPORARY WETLAND IMPACTS (HAND CLEARING ONLY)

E E — DENOTES EXCAVATION IN WETLAND

TS TS — DENOTES TEMPORARY SURFACE WATER IMPACTS

DENOTES MECHANIZED CLEARING

DENOTES MITIGABLE BUFFER IMPACTS ZONE 1

DENOTES MITIGABLE BUFFER IMPACTS ZONE 2

DENOTES ALLOWABLE BUFFER IMPACTS ZONE 1

DENOTES ALLOWABLE BUFFER IMPACTS ZONE 2

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

WETLAND PERMIT DRAWING VICINITY MAP

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 4 OF 23 **9/17/2004**

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9/17/2004

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS					
			Fill In Wetlands (ac)	Temp. Wetland Impacts (hand clearing) (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. SW Impacts (ac)	Existing Channel Impacted (ft)	Existing Channel Temporary Impacts (ft)	Natural Stream Design (ft)
1	-L- Sta 68+60	66 in RCP	0.160	0.000		0.045	0.043		0.024	191.3	105.0	
2	-L- Sta 73+30	54 in RCP	0.429	0.000		0.046	0.063		0.020	276.3	88.3	
3	-L- Sta 74+60 TO	60 in RCP	1.203	0.000		0.081	0.071		0.009	474.8	62.3	
	Sta 76+00											
4	-L- Sta 79+80 TO	42 in RCP	1.217	0.000		0.028	0.103		0.010	672.6	70.5	
	Sta 81+80											
5	-L- Sta 82+60 TO	10' x 7' RCBC	1.899	0.000	0.175	0.117	0.245		0.024	721.5	73.2	410.1
	Sta 85+50											
6	-L- Sta 92+20	10' x 7' RCBC					0.103		0.008	442.9	46.3	
7	-RPA- Sta 4+00	48 in RCP					0.014		0.011	89.2	74.2	
8	-RPA- Sta 2+50	24 in RCP					0.000		0.002	5.9	30.1	
9	-L- Sta 102+30	48 in RCP					0.081		0.026	354.3	114.5	
10	-Y13-REV Sta 9+30	48 in RCP					0.024		0.011	127.0	57.7	
11	-Y11-REV Sta 23+20	POND						0.274				
12	-Y11-REV Sta 24+30 TO	10' x 9' RCBC &	0.117	0.000		0.000	0.065		0.031	388.1	166.0	
	Sta 25+20	8' x 8' RCBC										
TOTALS:			5.025	0.000	0.175	0.317	0.812	0.274	0.176	3743.9	888.1	410.1

Form Revised 3/22/01

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT 8.T311002 (R-2552B)
US-70 CLAYTON BYPASS
EAST OF NC 42 TO
EAST OF SR 1560 (RANCH RD.)

10/14/04

OWNER'S NAME	ADDRESS
(14) Romero, Rubel	2012 Scott Court Clayton, NC 27520
(15) Stephenson, Clennis	5524 Rolling Field Dr. Garner, NC 27529
(16) Harris, Joseph L.	514 N. East St. Raleigh, NC 27604
(17) Gilbert, Jennifer P.	273-C Blue Pond Rd. Clayton, NC 27520
(18) Parrish, Samuel Clarence	377 Short Johnson Rd. Clayton, NC 27520
(19) Lane, Angela Yopp	606 S. 5th St. Mebana, NC 27302
(20) Poole, Reginald M., Sr.	3907 Barber Mill Rd. Clayton, NC 27520
(26) Delaine, Blanche Jean	3960 Barber Mill Rd. Clayton, NC 27520
(29) Johnson, Roland H.	2433 Tweedmore Ct. High Point, NC 27625
(30) Bolyard, Gypsy Rochelle	3047 Jack Rd. Clayton, NC 27520
(31) Edwards, Honey H.	216 E. Horne St. Clayton, NC 27520
(32) Canady, Kenneth R.	203 Blanche St. Clayton, NC 27520
(34) Langford, Taylor Morton, Jr.	2100 Twin Acres Rd. Clayton, NC 27520
(35) Haden, James Sullivan	1120 Ranch Rd. Clayton, NC 27520
(36) Whitley, Joseph M.	740 Ranch Rd. Clayton, NC 27520
(39) Carolina Packers, Inc.	P.O. Drawer 1109 Smithfield, N.C. 27577
(40) Ontiveros, Lynda Triplett	411 Pleasant Hill Ave. North Sebestopol, CA 95472
(58) Shand, Annie	PO Box 32 Clayton, NC 27520
(59) Whittemore, Joseph Franklin, Jr.	140 Canyon Rd. Clayton, NC 27520
(64) Jones, John A., Jr.	1357 Ranch Rd. Clayton, NC 27520
(68) Langford, Phillip E.	2130 Twin Acres Rd. Clayton, NC 27520
(69) Rethemeyer, J.W.	1521 Ranch Rd. Clayton, NC 27520
(902) Carolina Packers, Inc.	P.O. Drawer 1109 Smithfield, N.C. 27577

PROPERTY OWNER NAME AND ADDRESS

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 6 OF 23 **9/17/2004**

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	7
R/W SHEET NO.	

METRIC

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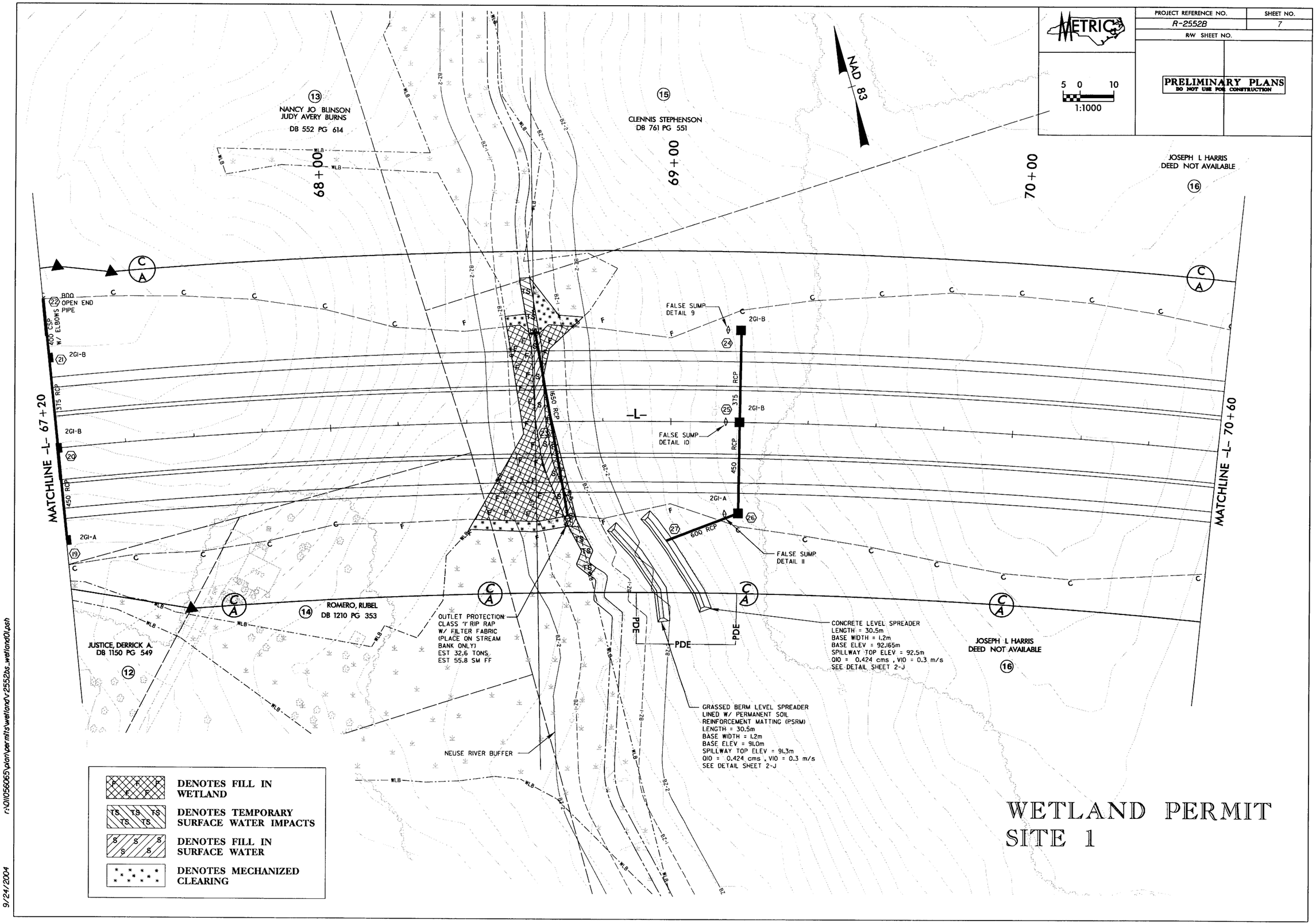
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



WETLAND PERMIT SITE 1

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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	7
R/W SHEET NO.	

METRIC

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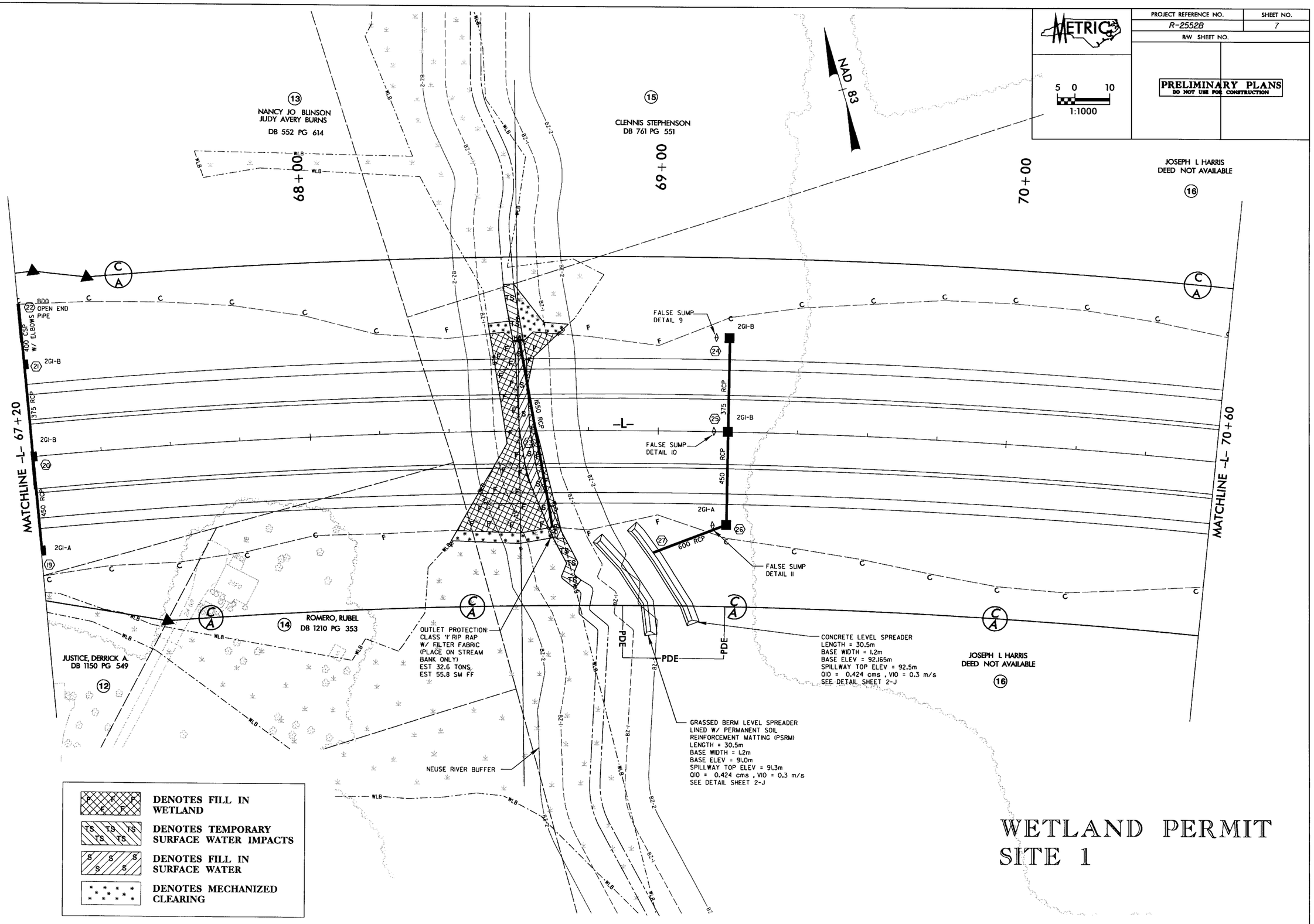
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



WETLAND PERMIT SITE 1

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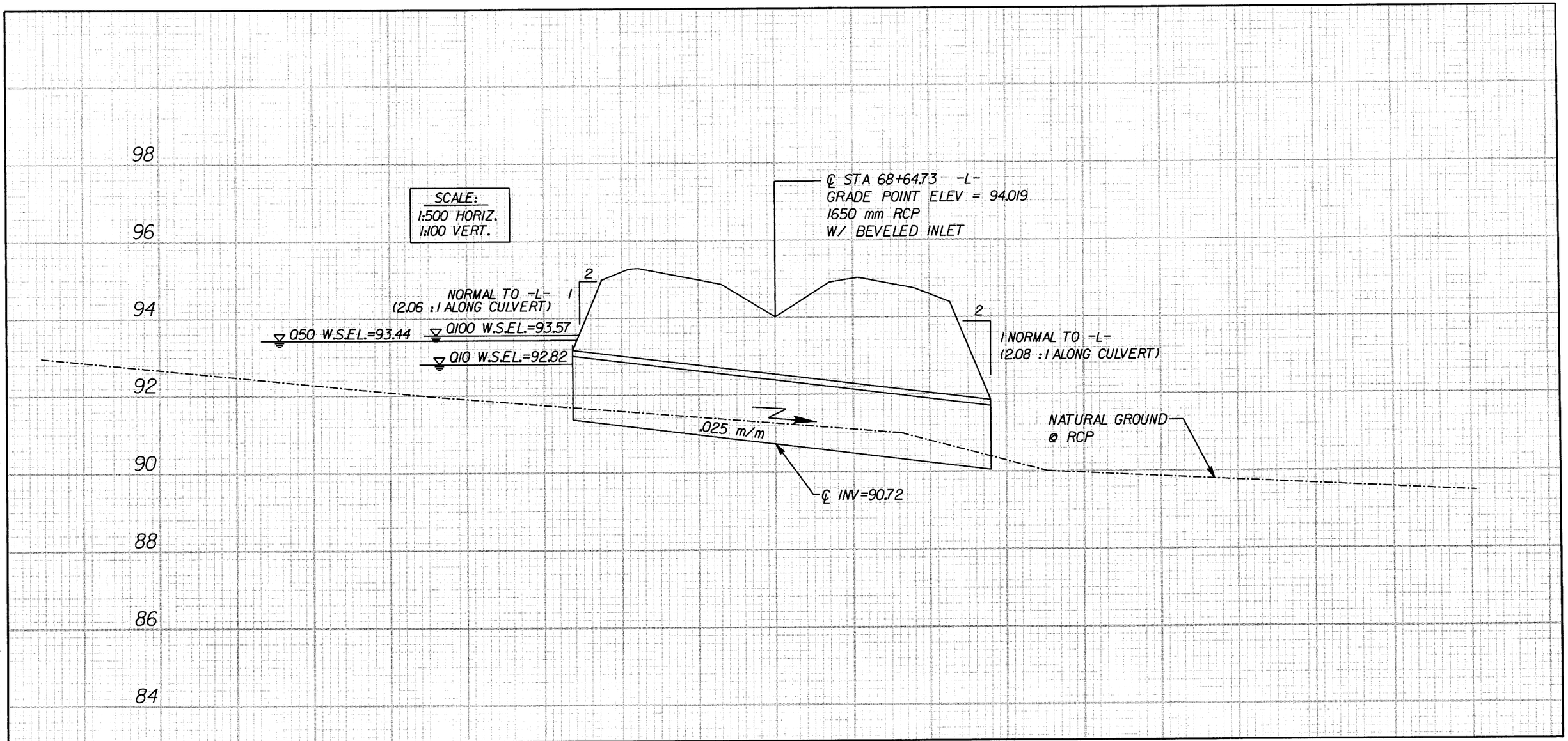

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9/16/2004

WETLAND PERMIT DRAWING
PROFILE of 1650mm RCP at 68+65 -L-
R-2552B

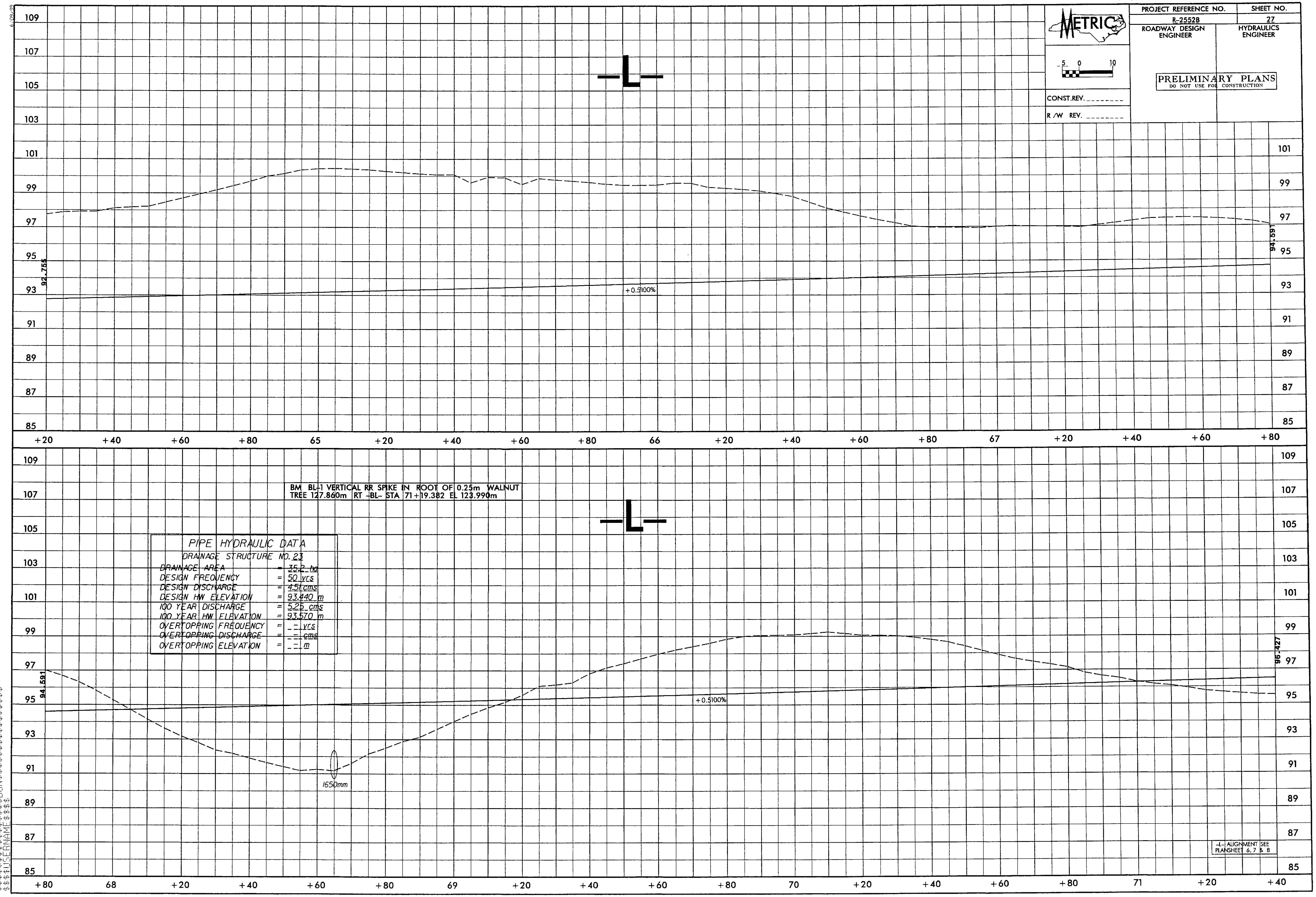
NCDOT

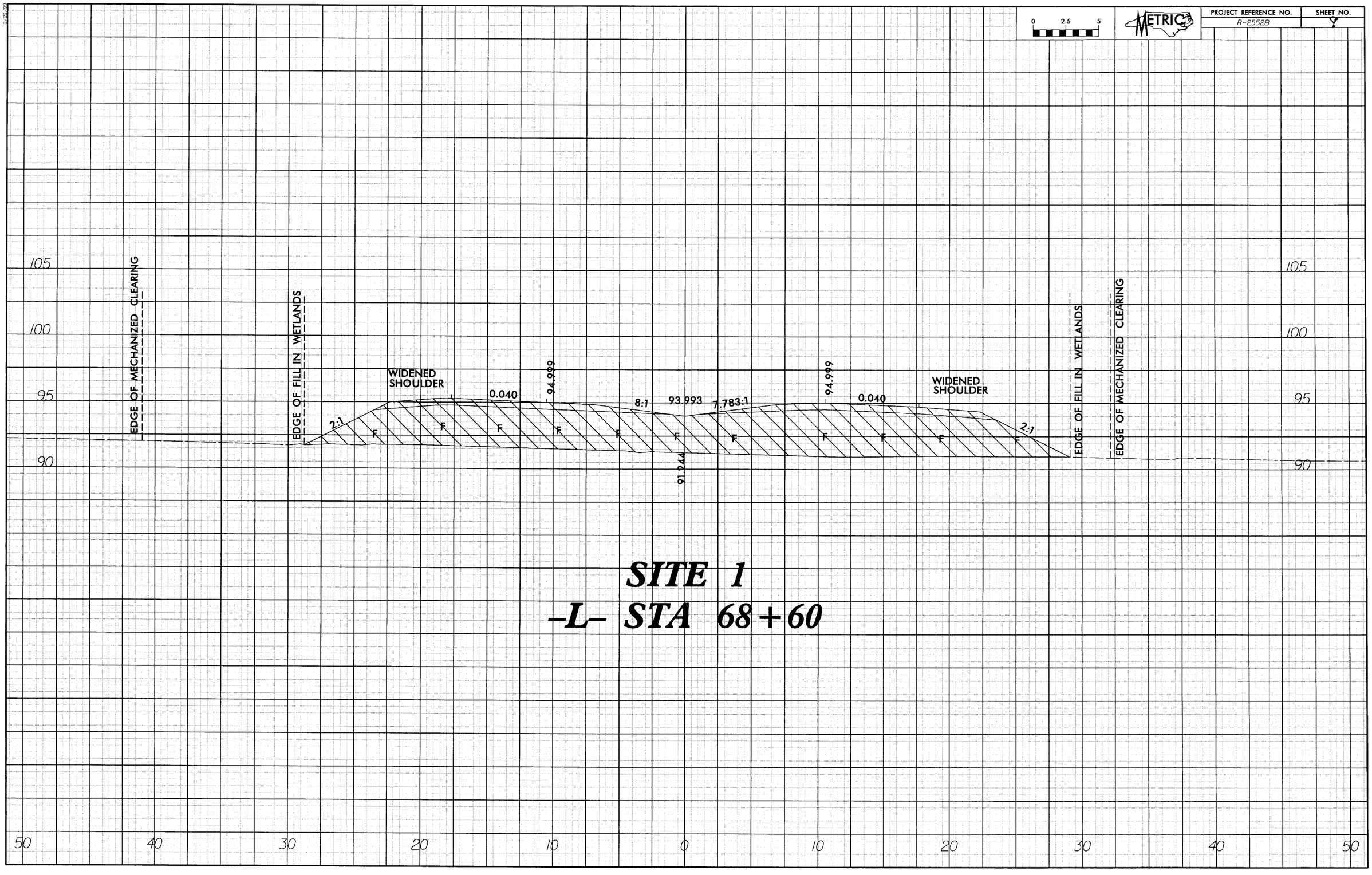
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

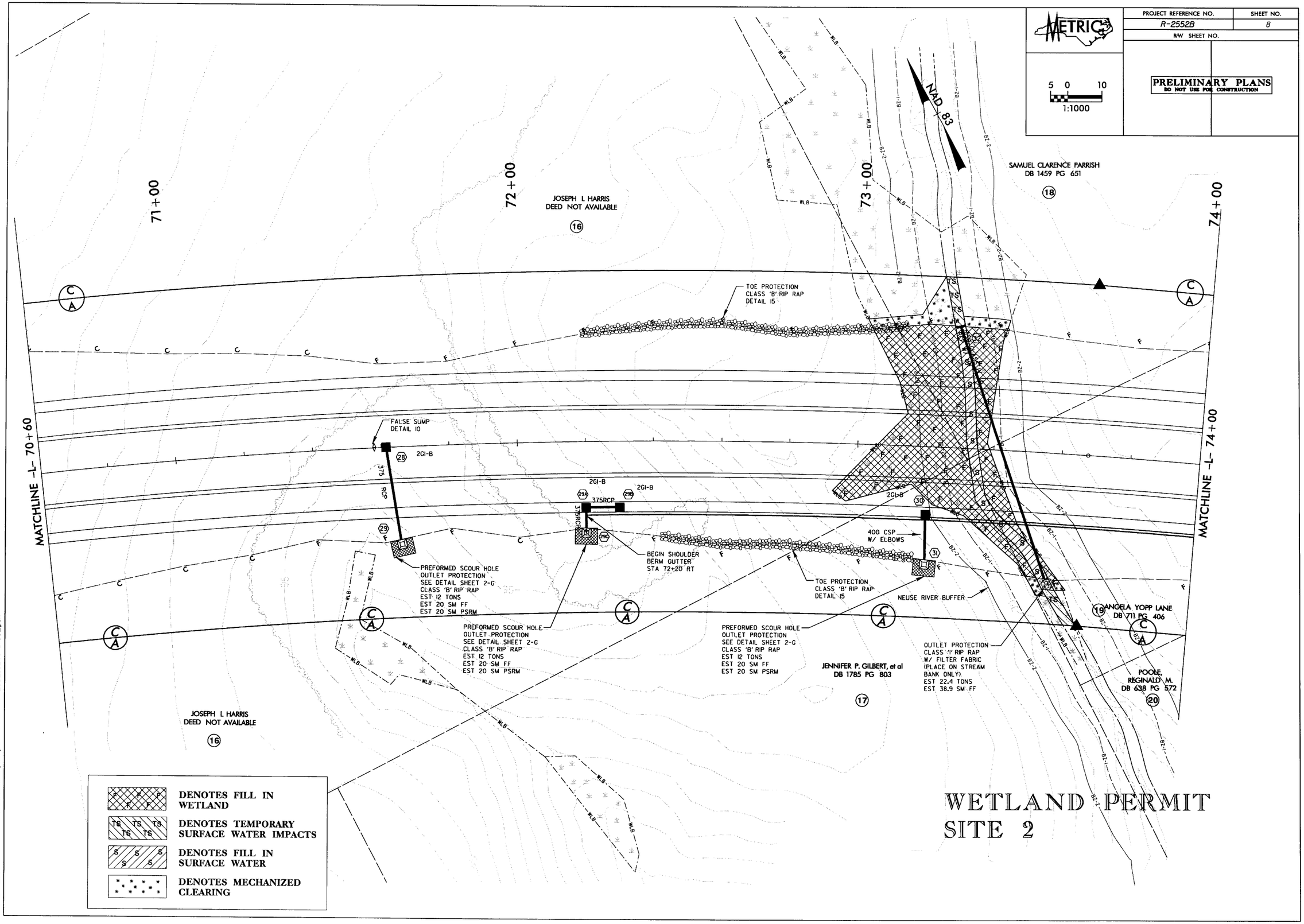
SHEET 7 OF 23 9/16/2004

-L- 64+20 TO 71+40





0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2552B
SHEET NO.
105
100
95
90
EDGE OF MECHANIZED CLEARING
EDGE OF FILL IN WETLANDS
WIDENED SHOULDER
2:1
0.040
94.999
8:1
93.993
7.783:1
91.244
94.999
0.040
WIDENED SHOULDER
2:1
EDGE OF FILL IN WETLANDS
EDGE OF MECHANIZED CLEARING
SITE 1
-L- STA 68+60
50
40
30
20
10
0
10
20
30
40
50



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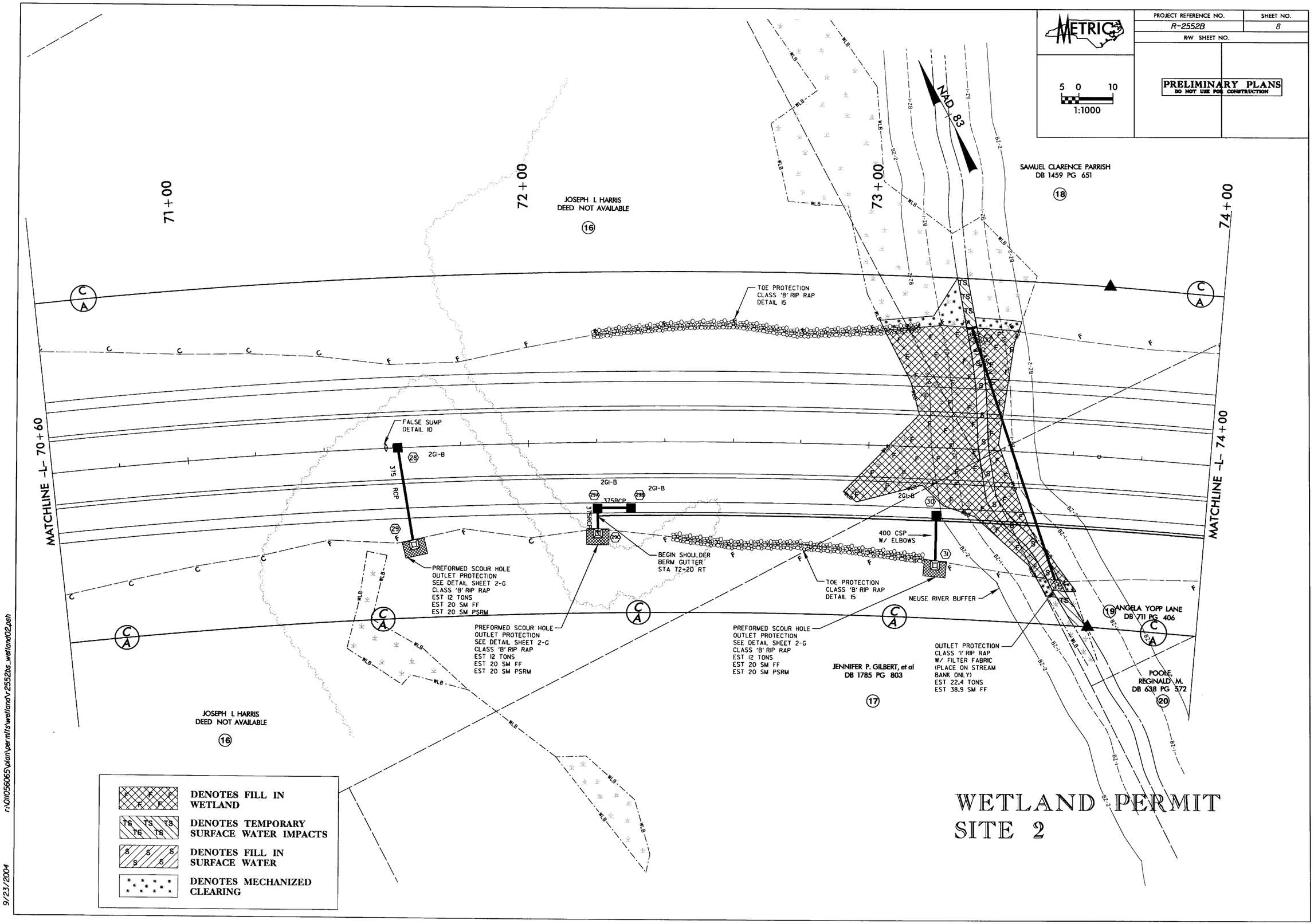
9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	8
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



WETLAND PERMIT SITE 2

r:\01\055065\plan\permits\wetland\r2552bs_wetland02.psh

9/23/2004

-L- 71+40 TO 78+60

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

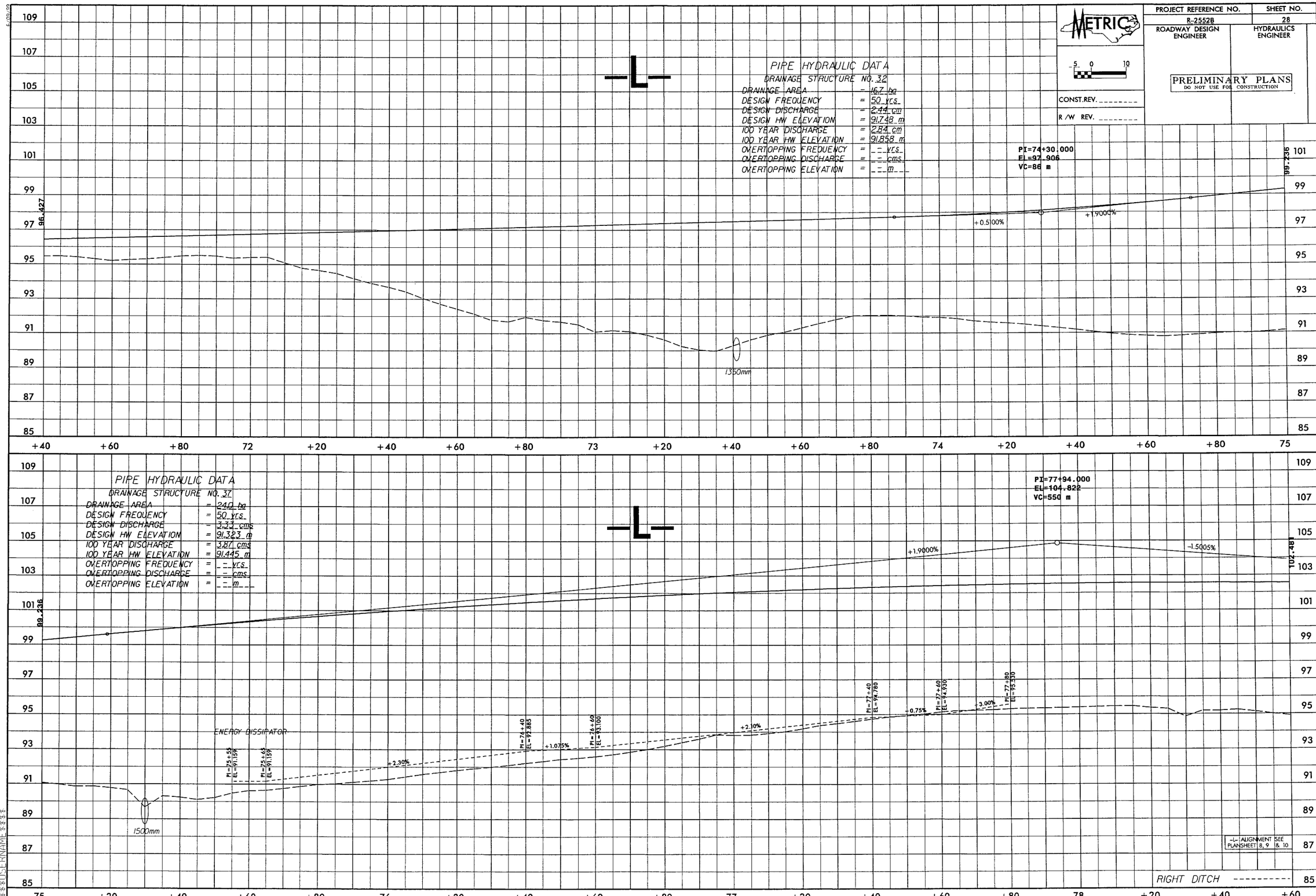
METRIC

-5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____

R/W REV. _____



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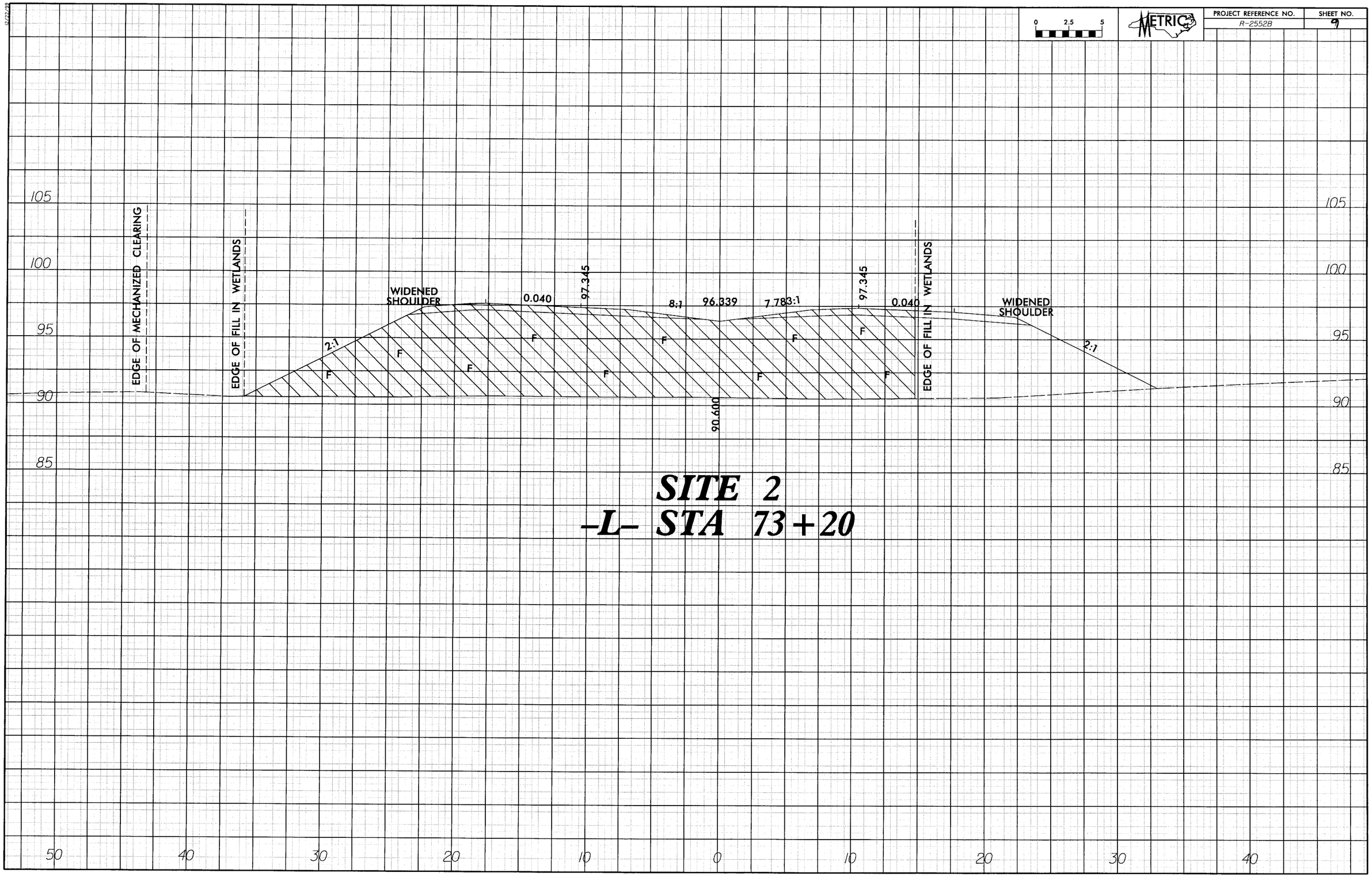
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



SITE 2
-L- STA 73+20

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	9
R/W SHEET NO.	

METRIC

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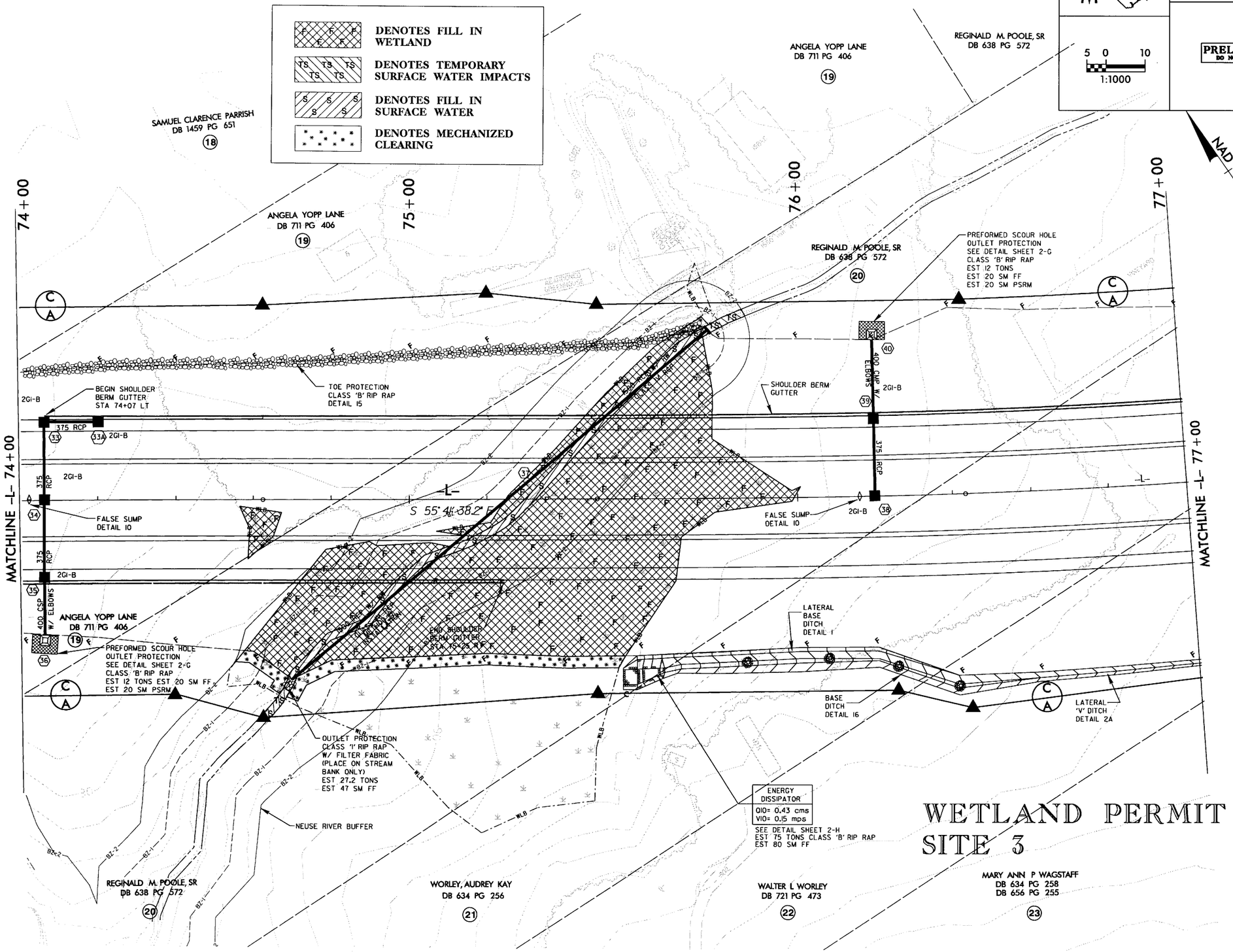
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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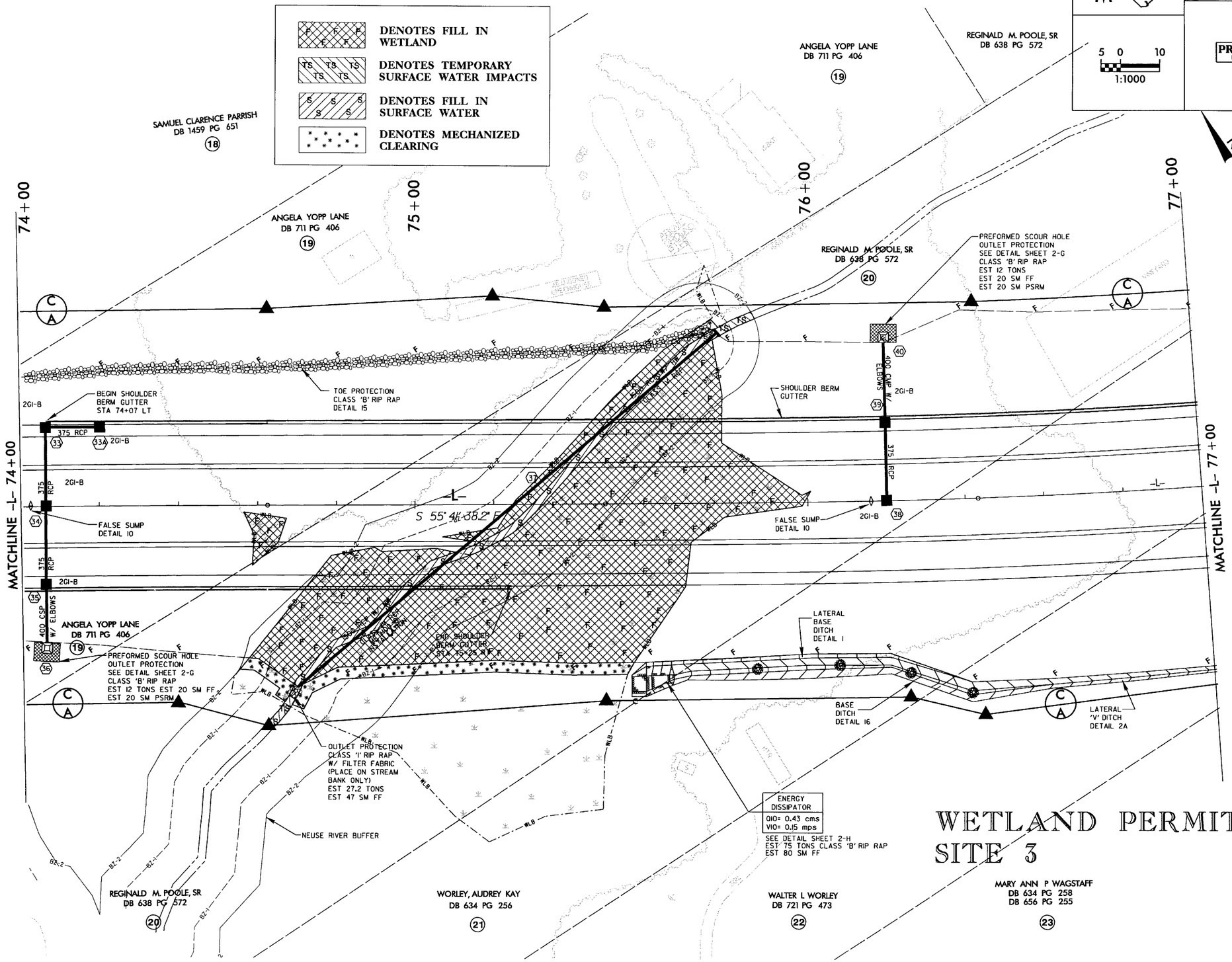
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	9
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83



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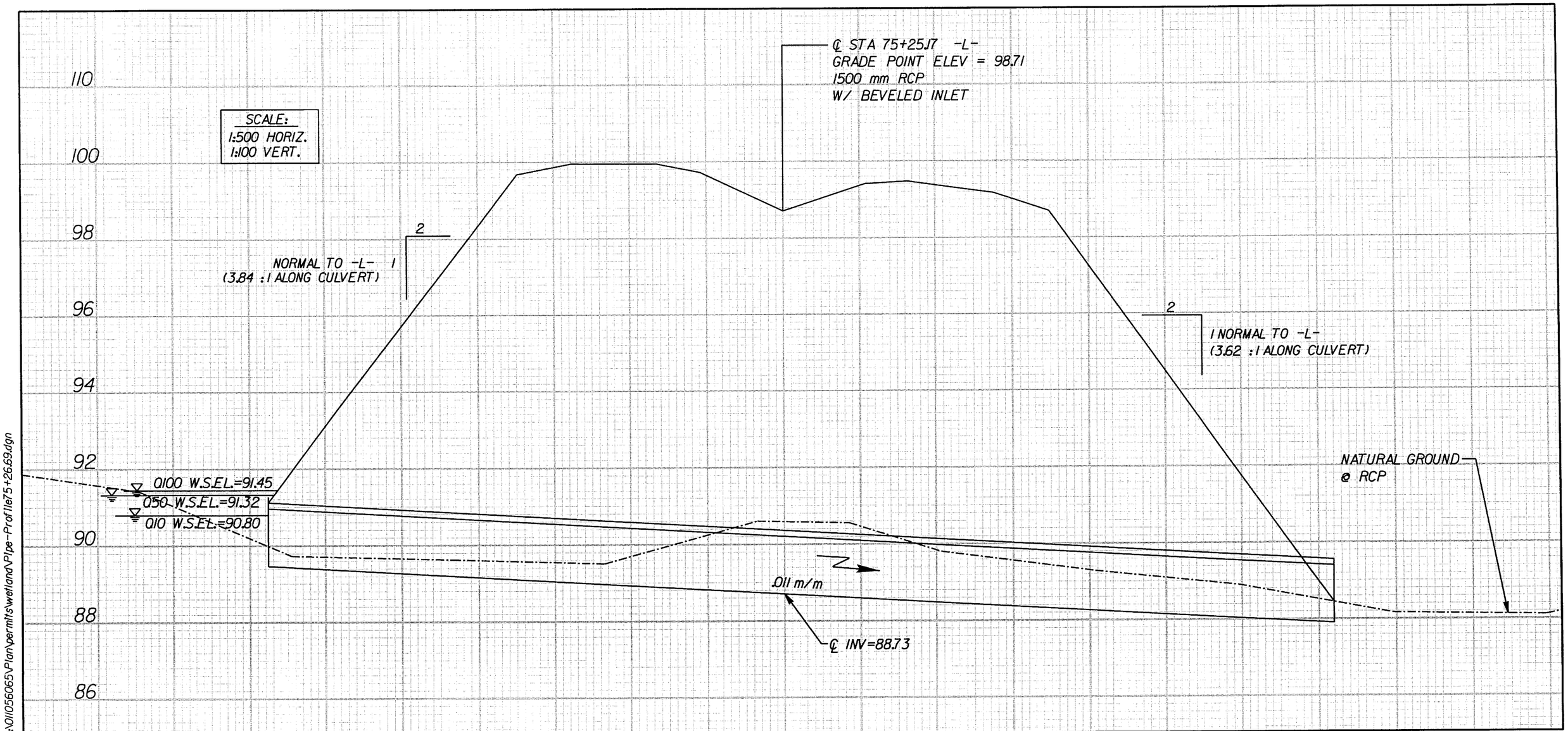
09/27/2004



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9/16/2004

WETLAND PERMIT DRAWING
PROFILE of 1500mm RCP at 75+25 -L-
R-2552B

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

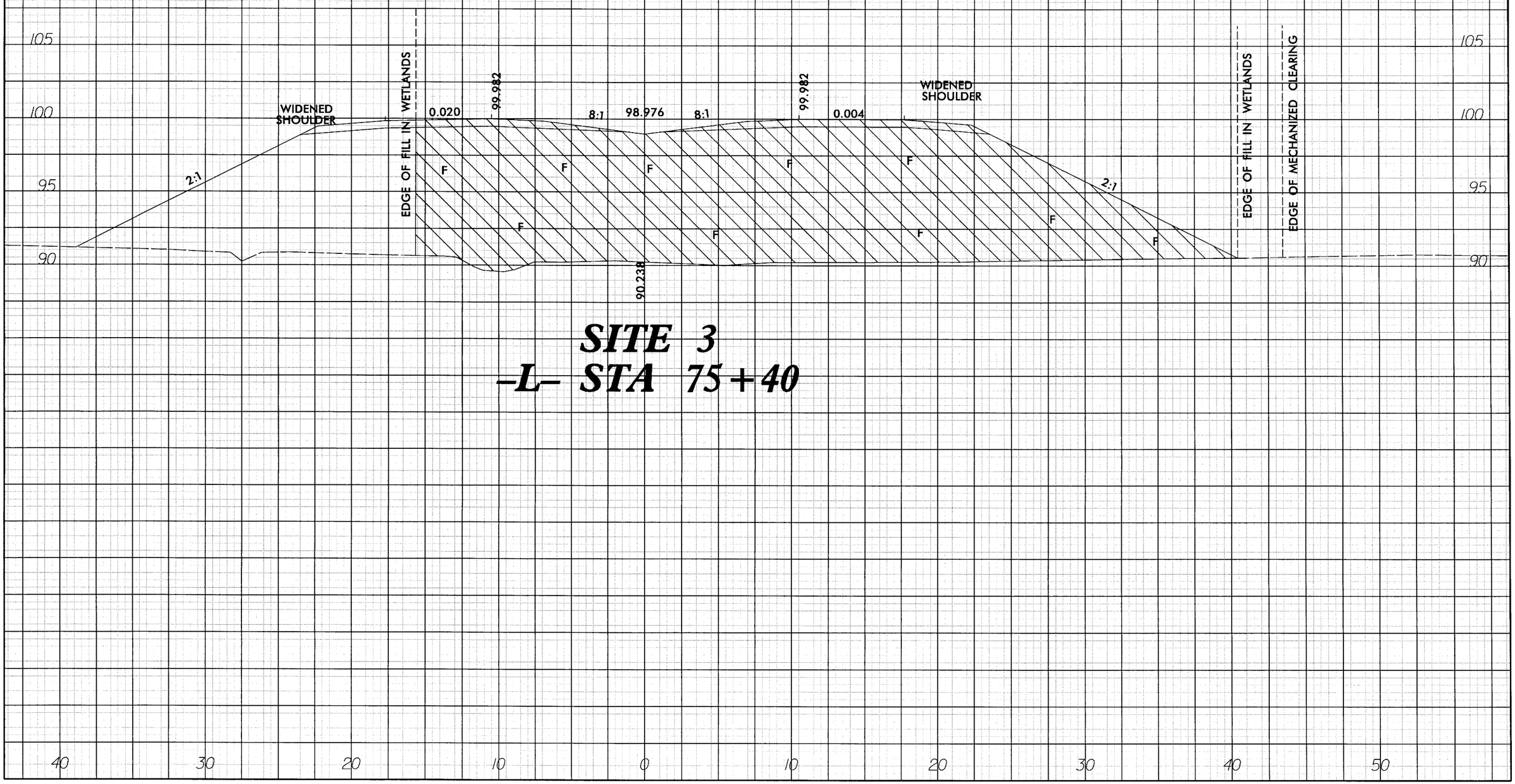
SHEET 10 OF 23 **9/16/2004**

12/22/98

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	11

0 2.5 5

METRIC



SITE 3
–L– STA 75+40

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	10
R/W SHEET NO.	

METRIC

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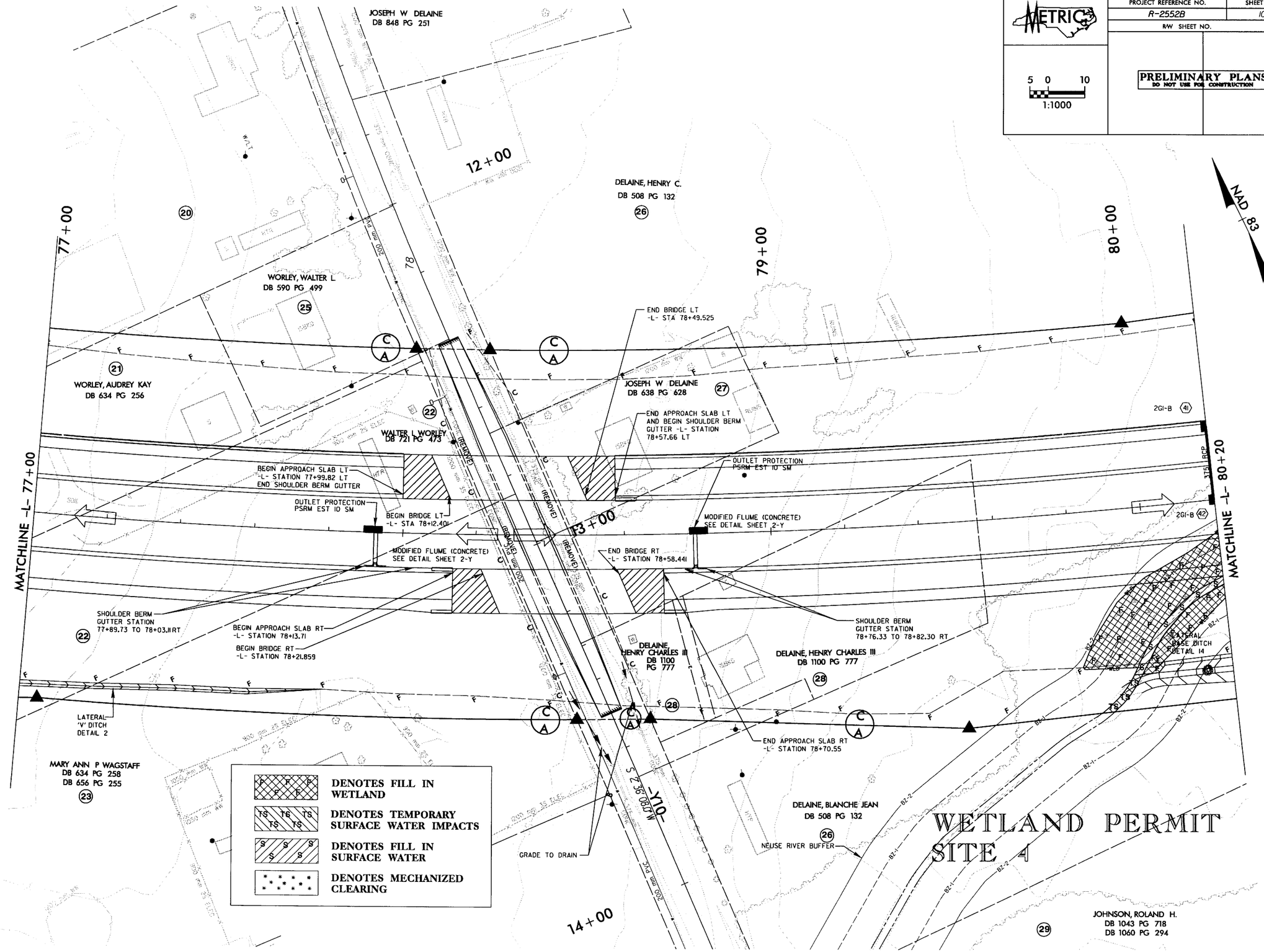
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	11
R/W SHEET NO.	

METRIC

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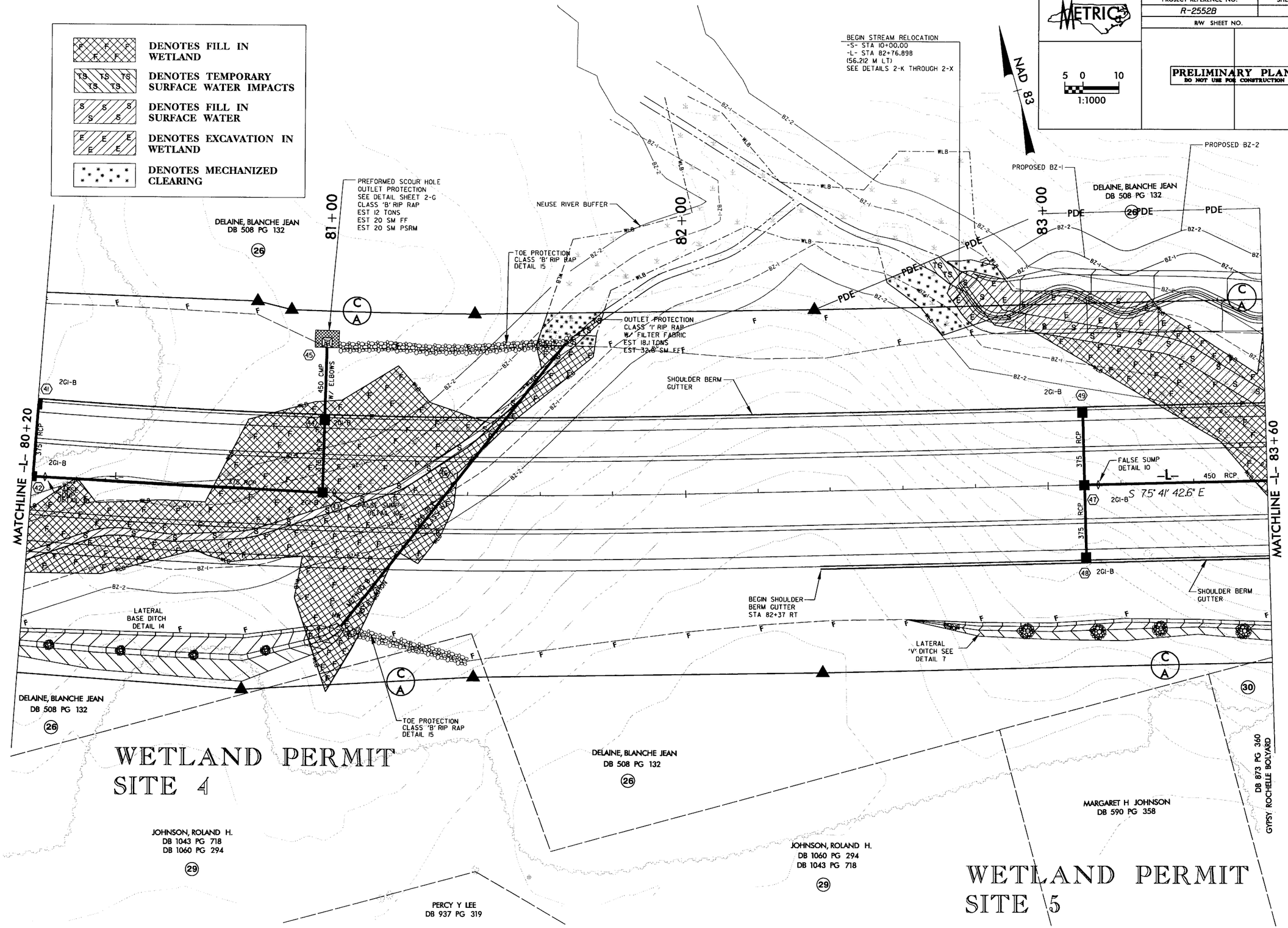
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	12
R/W SHEET NO.	

METRIC

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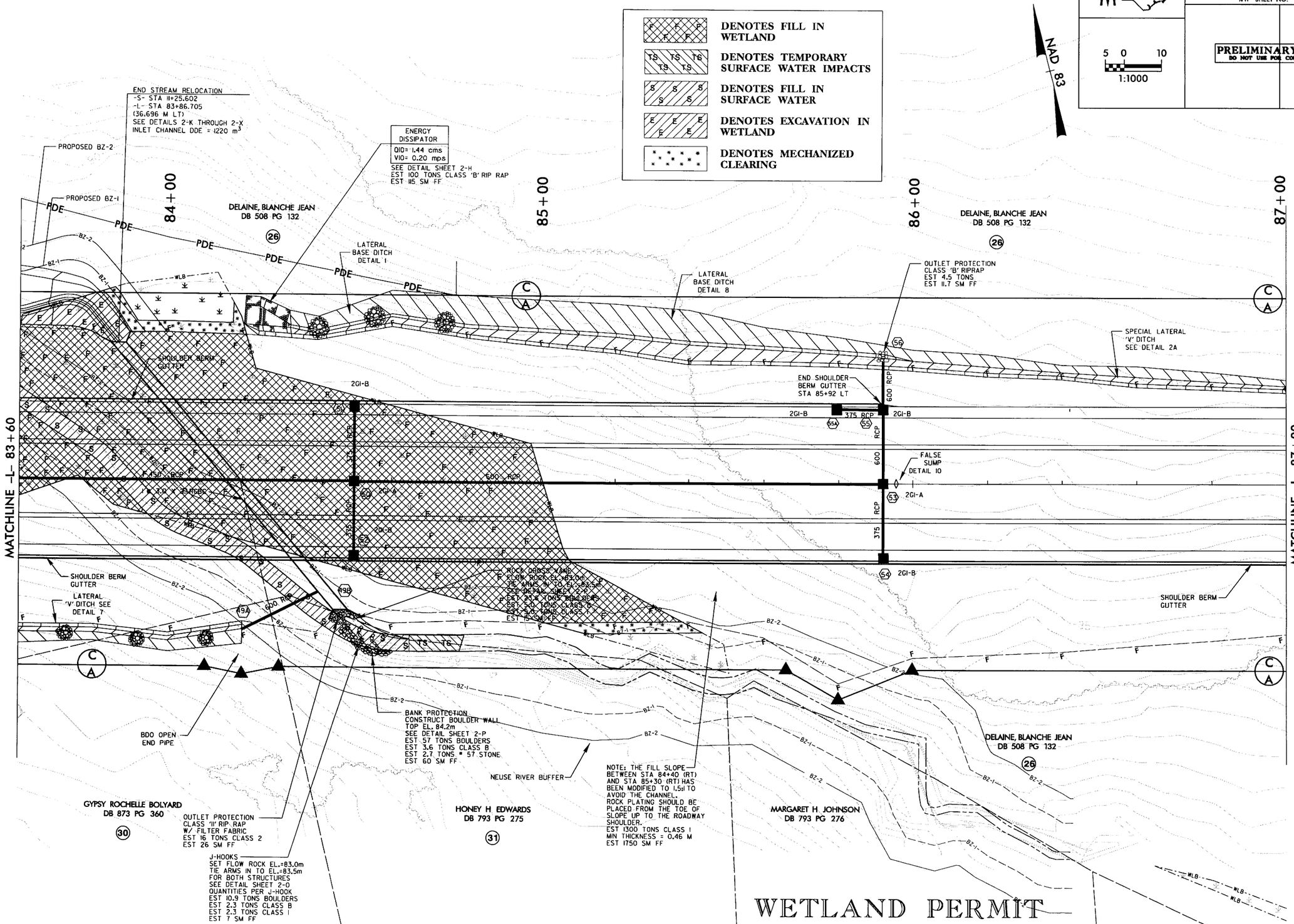
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	10
R/W SHEET NO.	

METRIC

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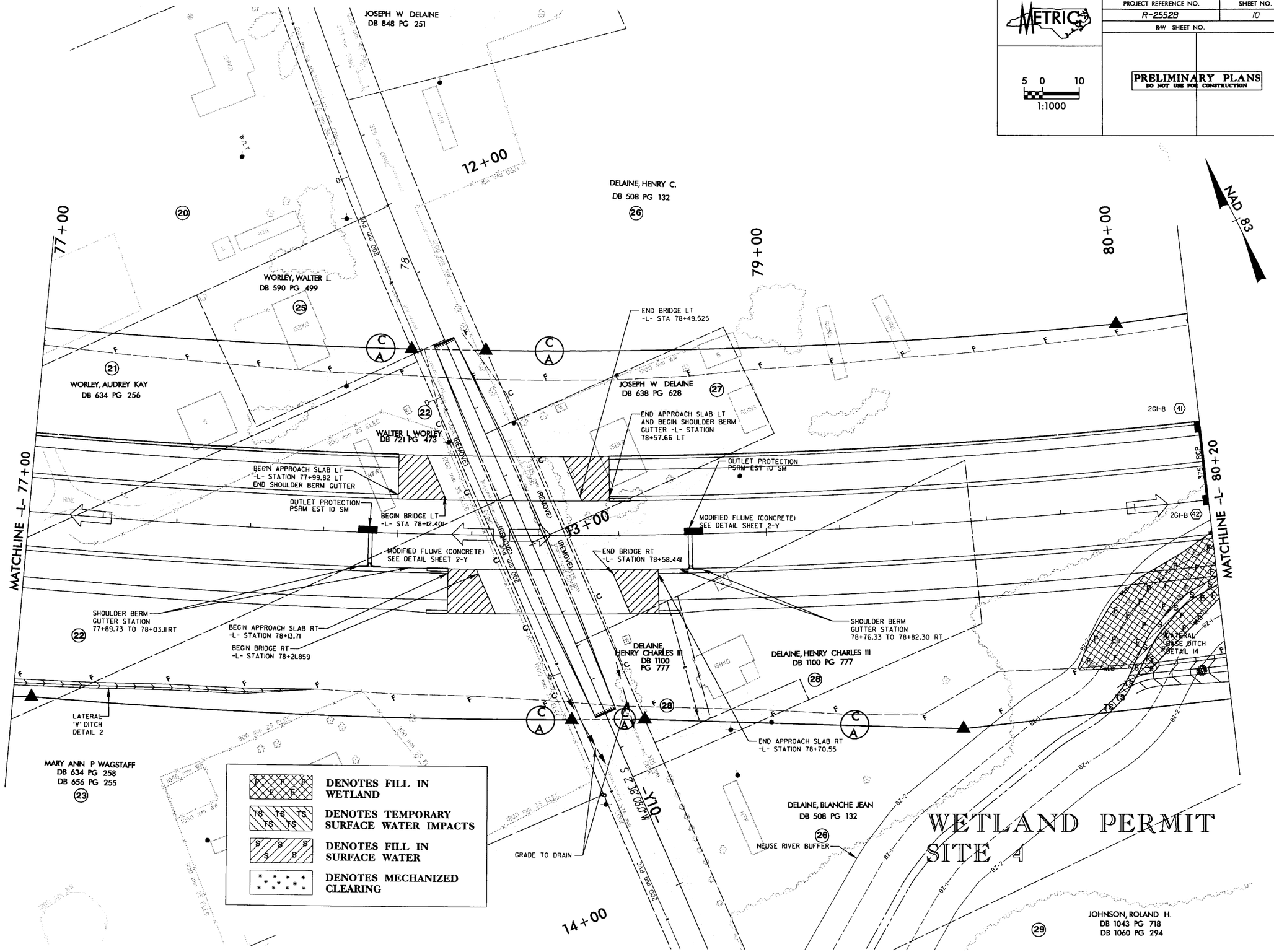
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	11
R/W SHEET NO.	

METRIC

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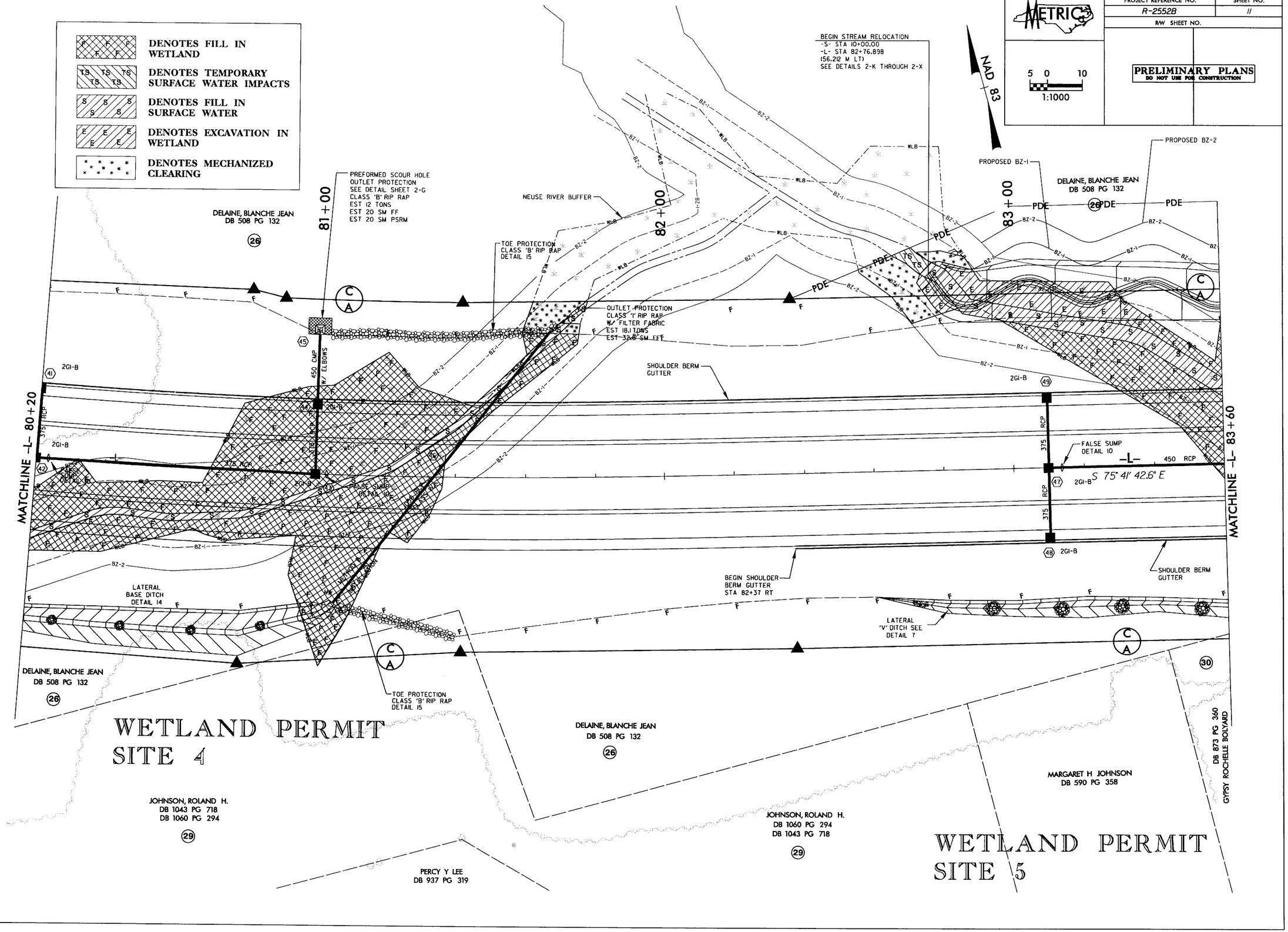
DO NOT USE FOR CONSTRUCTION



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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	12
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DENOTES FILL IN WETLAND
DENOTES TEMPORARY SURFACE WATER IMPACTS
DENOTES FILL IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

END STREAM RELOCATION
-S- STA 11+25.602
-L- STA 83+86.705
(36.696 M LT)
SEE DETAILS 2-K THROUGH 2-X
INLET CHANNEL DDE = 1220 m^3

ENERGY DISSIPATOR
QI0= 1.44 cms
VI0= 0.20 mps
SEE DETAIL SHEET 2-H
EST 100 TONS CLASS 'B' RIP RAP
EST 115 SM FF

PROPOSED BZ-2
PROPOSED BZ-1
PDE
84+00
85+00
86+00
87+00
MATCHLINE -L- 83+60
MATCHLINE -L- 87+00
DELAINE, BLANCHE JEAN
DB 508 PG 132
26
LATERAL BASE DITCH DETAIL 1
LATERAL BASE DITCH DETAIL 8
OUTLET PROTECTION
CLASS 'B' RIPRAP
EST 4.5 TONS
EST 11.7 SM FF
SPECIAL LATERAL 'V' DITCH SEE DETAIL 2A
SHOULDER BERM GUTTER
2GI-B
END SHOULDER BERM GUTTER STA 85+92 LT
375 RCP
600 RCP
FALSE SUMP DETAIL 10
2GI-A
450 RCP
ROCK CROSS VANE
FLOW ROCK EL.=83.0m
TIE ARMS IN TO EL.=83.5m
SEE DETAIL SHEET 2-O
EST 23.9 TONS BOULDERS
EST 5.0 TONS CLASS B
EST 5.0 TONS CLASS I
EST 75 SM FF
SHOULDER BERM GUTTER
LATERAL 'V' DITCH SEE DETAIL 7
BDO OPEN END PIPE
BANK PROTECTION
CONSTRUCT BOULDER WALL
TOP EL. 84.2m
SEE DETAIL SHEET 2-P
EST 57 TONS BOULDERS
EST 3.6 TONS CLASS B
EST 2.7 TONS * 57 STONE
EST 60 SM FF
NEUSE RIVER BUFFER
NOTE: THE FILL SLOPE BETWEEN STA 84+40 (RT) AND STA 85+30 (RT) HAS BEEN MODIFIED TO 1.5:1 TO AVOID THE CHANNEL. ROCK PLATING SHOULD BE PLACED FROM THE TOE OF SLOPE UP TO THE ROADWAY SHOULDER.
EST 1300 TONS CLASS I
MIN THICKNESS = 0.46 M
EST 1750 SM FF
GYPSY ROCHELLE BOLYARD
DB 873 PG 360
30
OUTLET PROTECTION
CLASS 'A' RIP RAP
W/ FILTER FABRIC
EST 16 TONS CLASS 2
EST 26 SM FF
J-HOOKS
SET FLOW ROCK EL.=83.0m
TIE ARMS IN TO EL.=83.5m
FOR BOTH STRUCTURES
SEE DETAIL SHEET 2-O
QUANTITIES PER J-HOOK
EST 10.9 TONS BOULDERS
EST 2.3 TONS CLASS B
EST 2.3 TONS CLASS I
EST 7 SM FF
HONEY H EDWARDS
DB 793 PG 275
31
MARGARET H JOHNSON
DB 793 PG 276
BZ-1
BZ-2
WLB

WETLAND PERMIT
SITE 5

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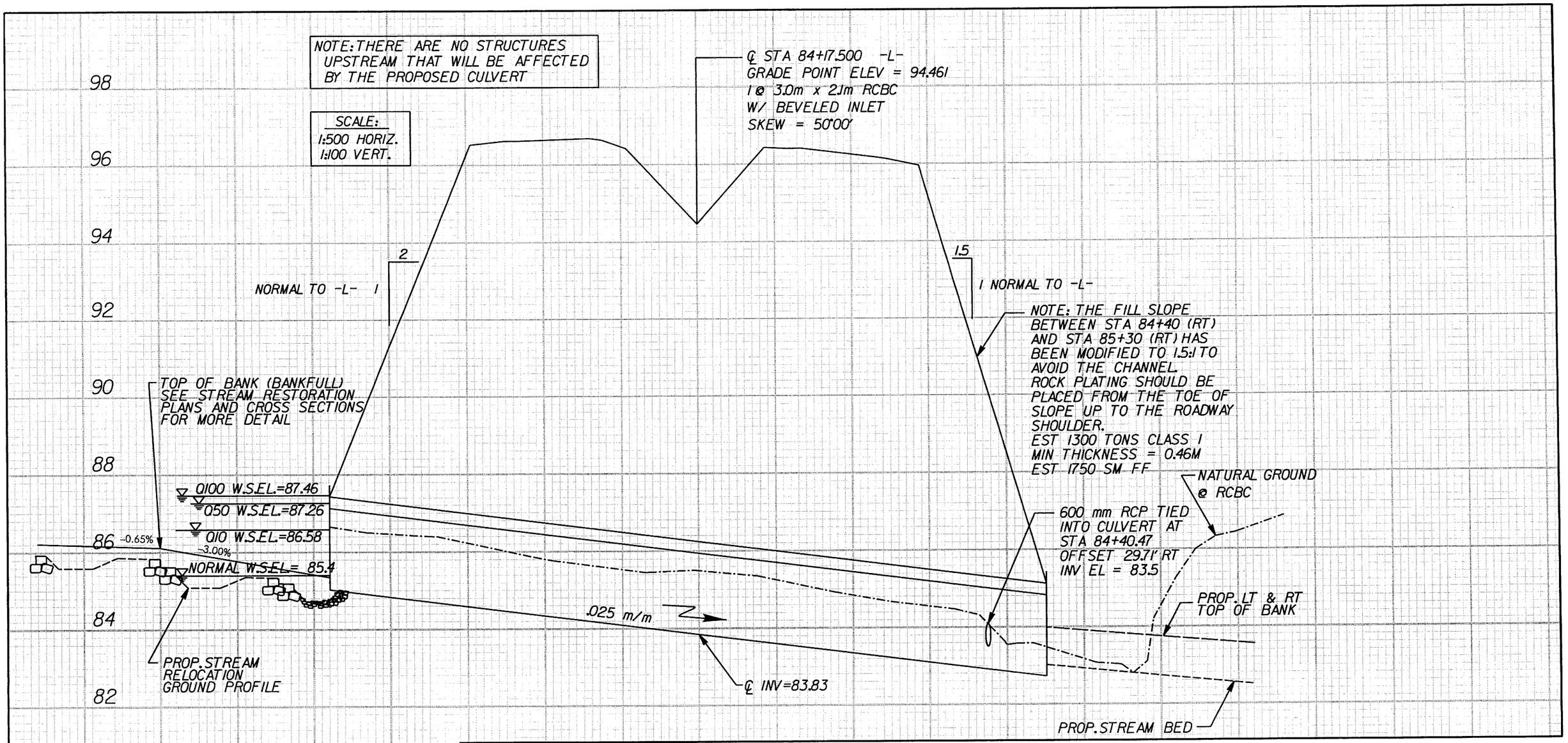
9/23/2004



WETLAND PERMIT DRAWING
CSR 1 of 4 PROFILE
R-2552B

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

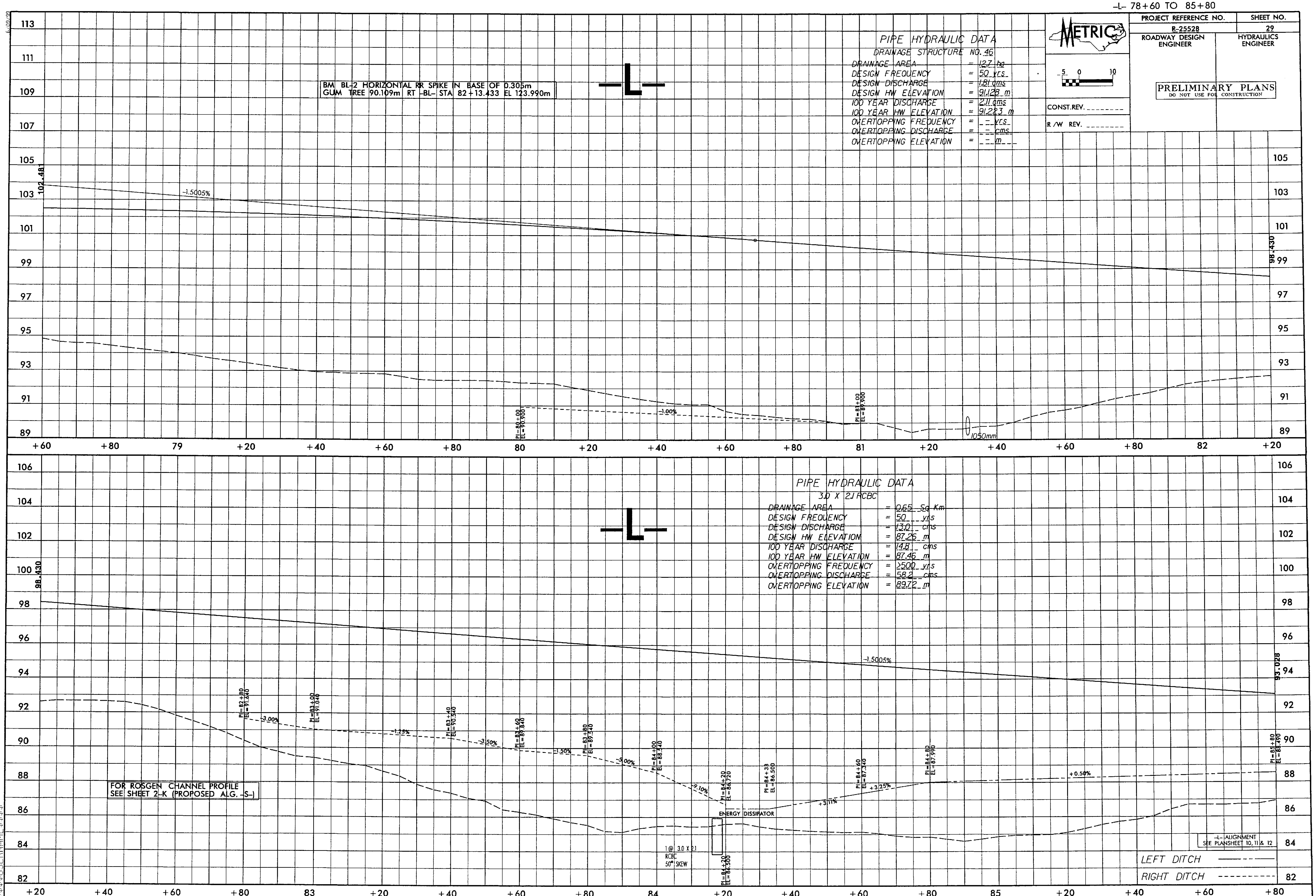
PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

SHEET 12 OF 23 9/16/2004

R:\01\056065\Plan\permits\wetland\CSR-Prof1of4.dgn

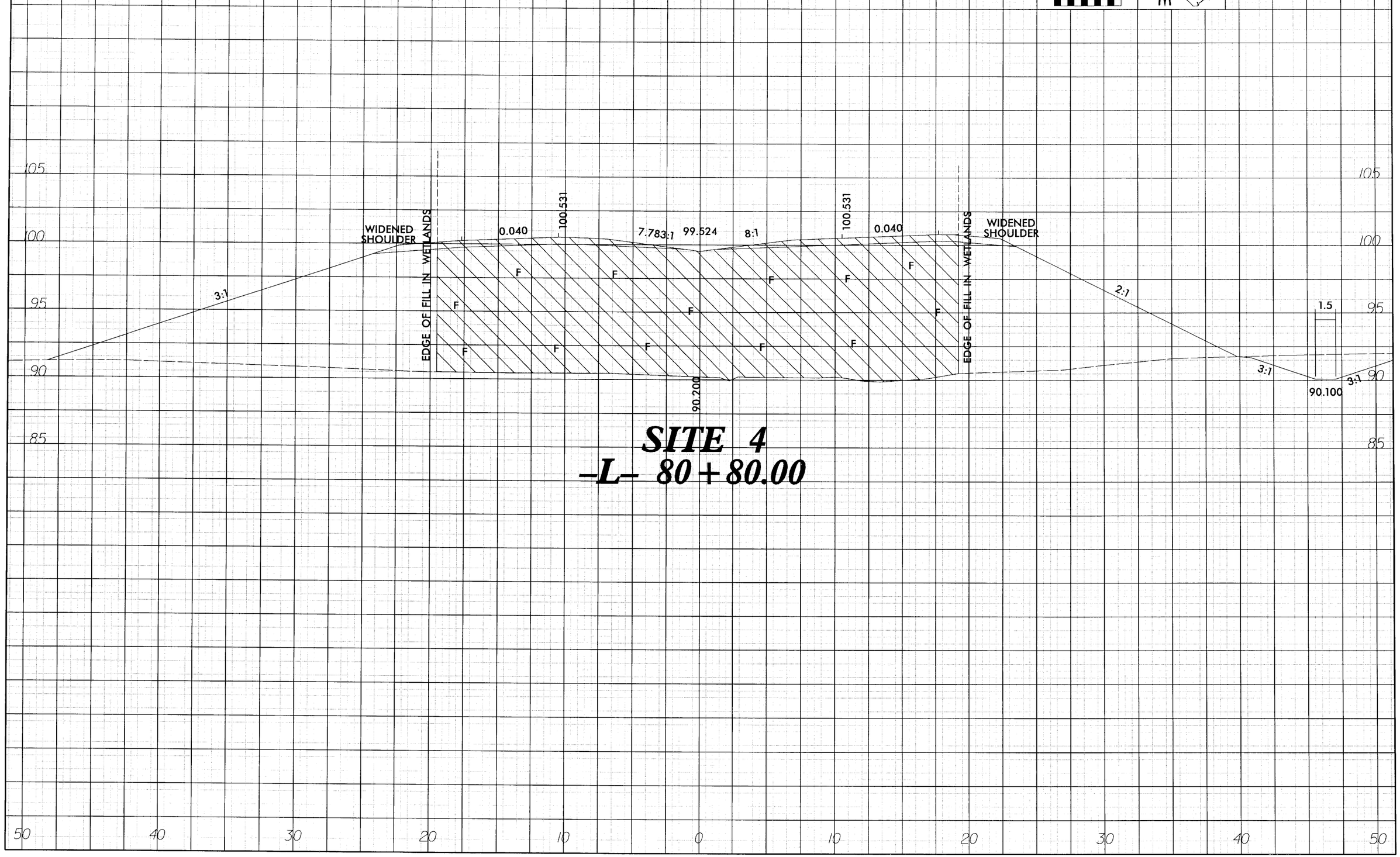
9/16/2004

-L- 78+60 TO 85+80



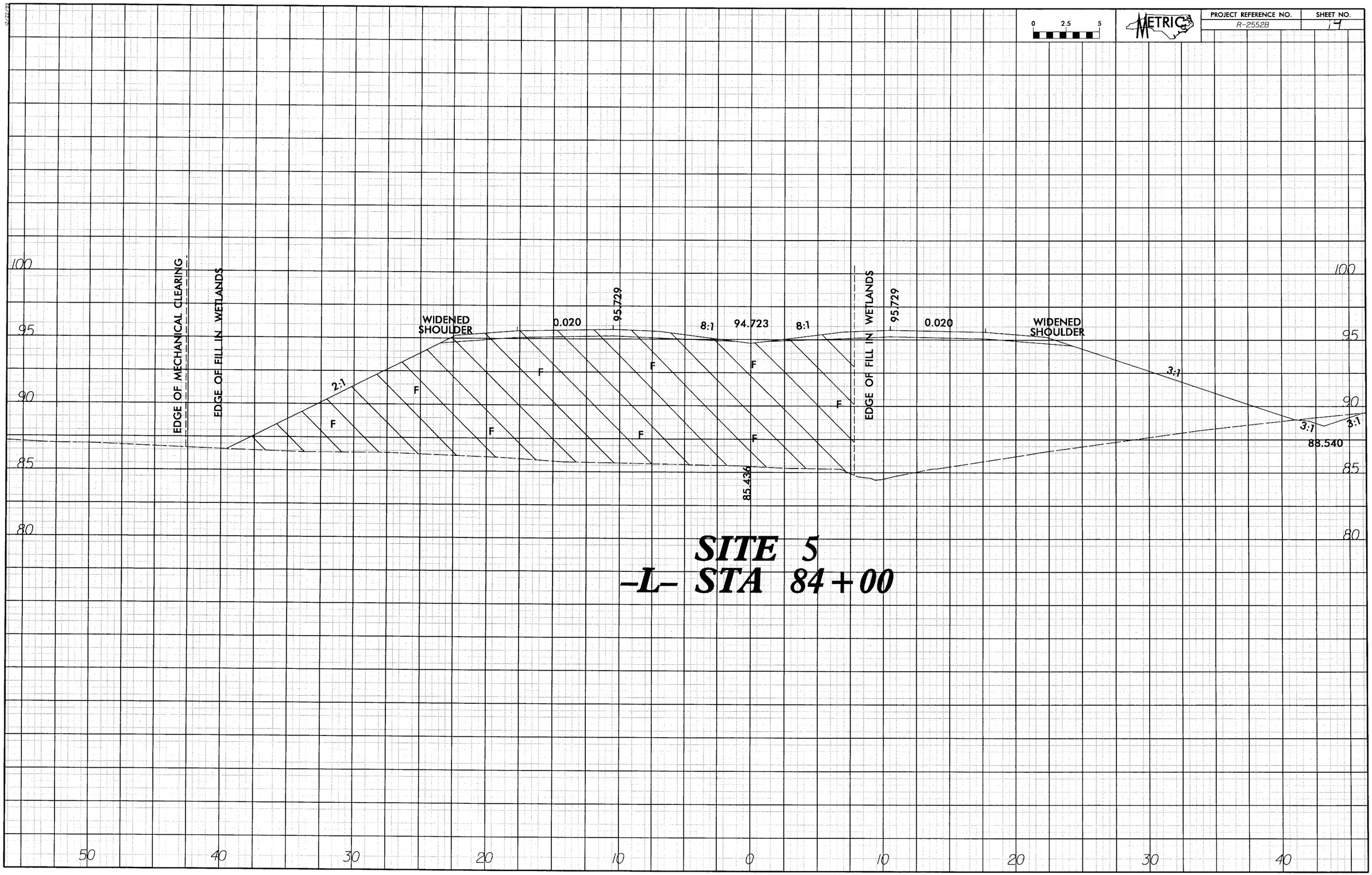
12/22/99

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	13



12/22/99

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	17



SITE 5
-L- STA 84+00

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-K
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

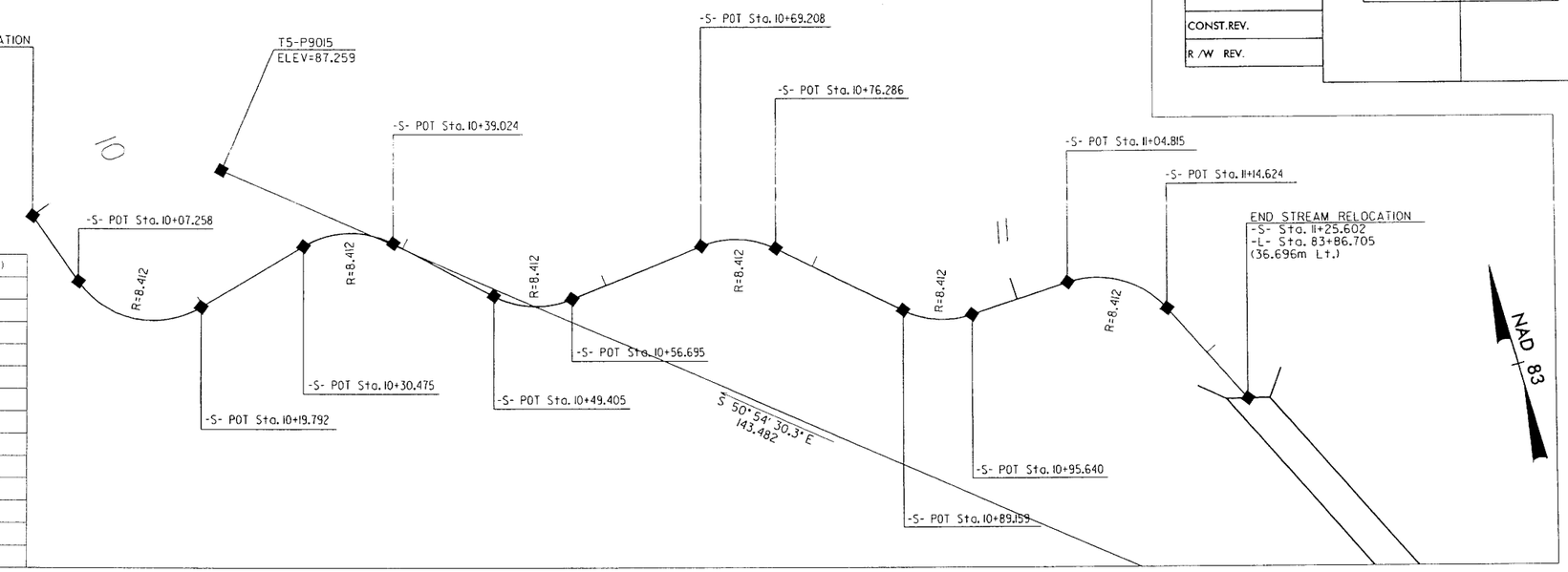
METRIC 2.5 0 5

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

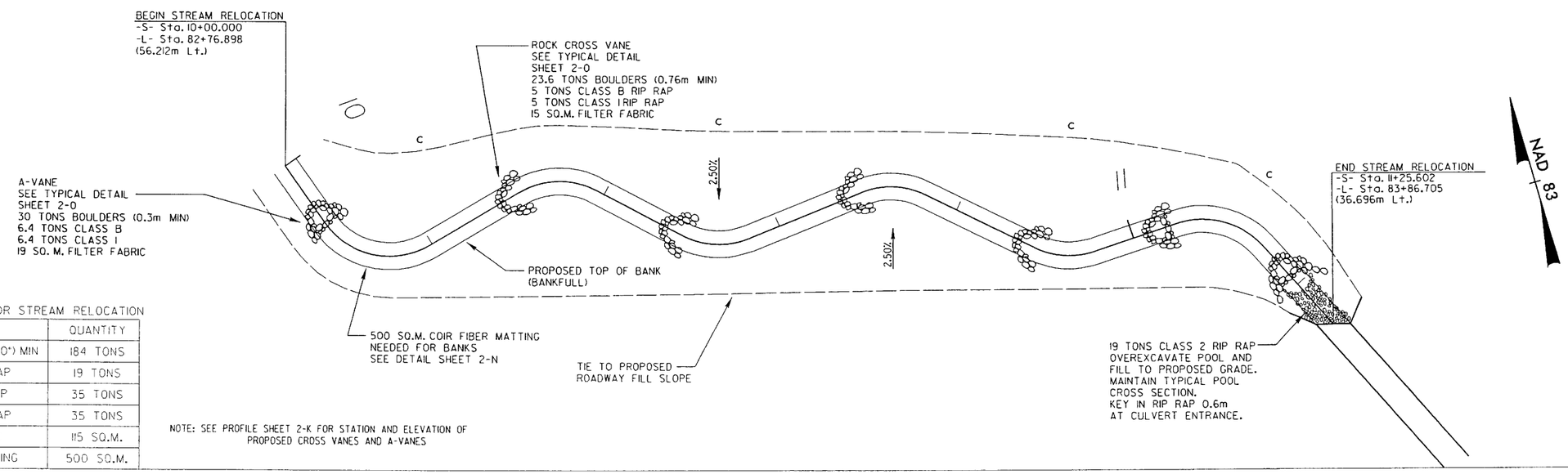
R /W REV.

STREAM RELOCATION – PROPOSED ALIGNMENT –S–



FROM STATION	TO STATION	BEARING	DISTANCE (M)
10+00.000	10+07.258	S 19°49'22.8" E	7.258
10+07.258	10+19.792	S 62°30'37.1" E	11.407
10+19.792	10+30.475	N 74°48'12.2" E	10.683
10+30.475	10+39.024	S 76°04'52.3" E	8.187
10+39.024	10+49.405	S 46°57'51.1" E	10.381
10+49.405	10+56.695	S 71°47'20.4" E	7.064
10+56.695	10+69.208	N 83°23'10.0" E	12.514
10+69.208	10+76.286	S 72°30'37.8" E	6.871
10+76.286	10+89.159	S 48°24'27.4" E	12.873
10+89.159	10+95.640	S 70°28'58.8" E	6.323
10+95.640	11+04.815	N 87°26'28.7" E	9.175
11+04.815	11+14.624	S 59°09'16.6" E	9.262
11+14.624	11+25.602	S 25°45'00.4" E	10.954

STREAM RELOCATION – PROPOSED STRUCTURES –S–



TOTAL QUANTITIES FOR STREAM RELOCATION

ITEM	QUANTITY
BOULDERS 0.76m (30") MIN	184 TONS
CLASS 2 RIP RAP	19 TONS
CLASS I RIP RAP	35 TONS
CLASS B RIP RAP	35 TONS
FILTER FABRIC	115 SQ.M.
COIR FIBER MATTING	500 SQ.M.

NOTE: SEE PROFILE SHEET 2-K FOR STATION AND ELEVATION OF PROPOSED CROSS VANES AND A-VANES

REVISIONS

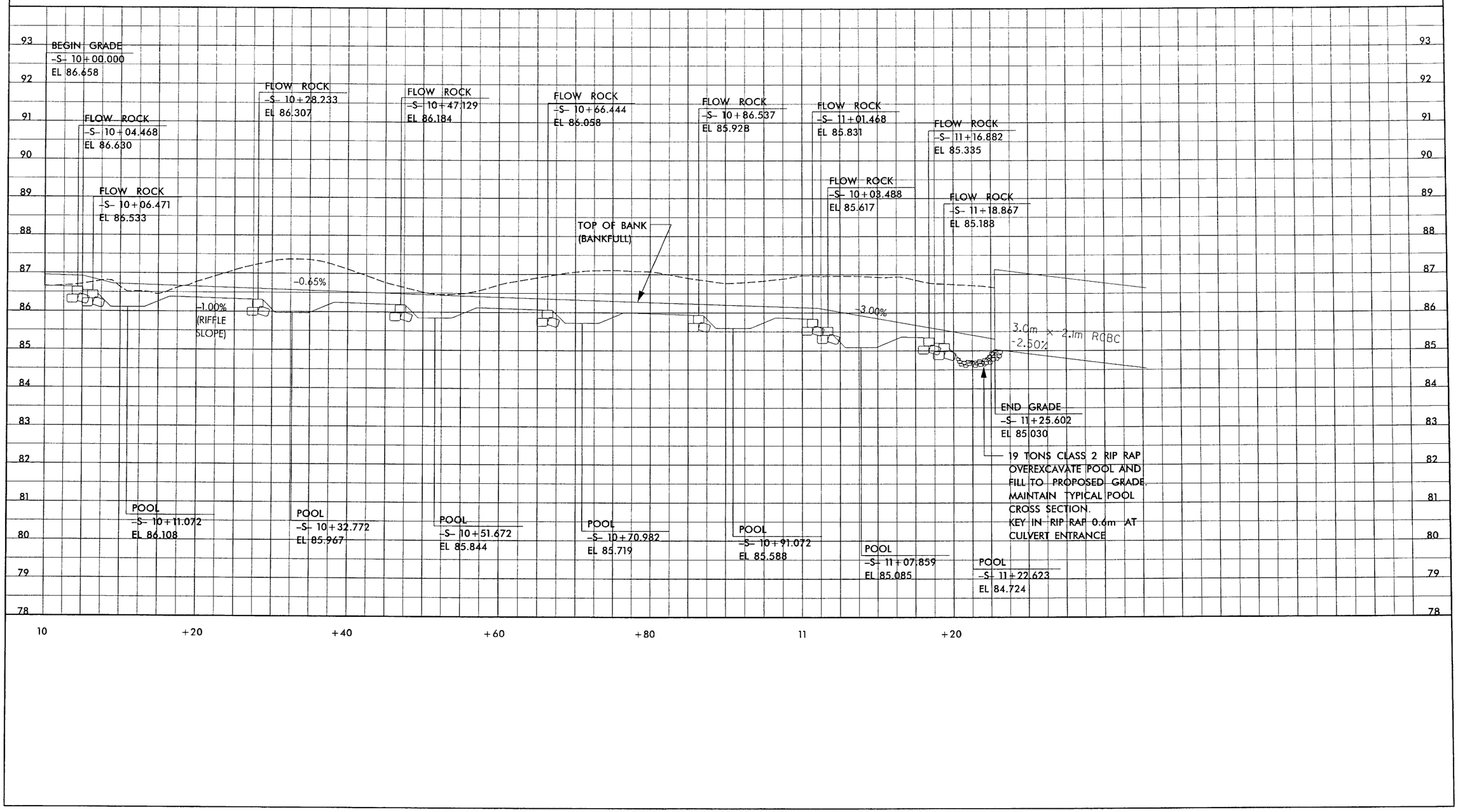
R/W REVISIONS - JUNE 7,2002 PER SUMITTAL OF APRIL 9,2002
VARIOUS NAME CHANGES
MRH

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-L
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.



8/17/99

CLAYTON BYPASS STREAM RELOCATION
MORPHOLOGY CHARACTERISTICS

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-M
R/W SHEET NO.	
	HYDRAULICS ENGINEER

METRIC

0

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MORPHOLOGY CHARACTERISTICS

Restoration Site: Unnamed Tributary of Little Creek, Johnston County, NC
Stream Channel Relocation for Clayton Bypass
Reference Reach: Existing Channel

English Units

	VARIABLES	Existing Reach			Proposed Channel		
1.	Stream Type						
	(Rosgen)	E4			C4		
2.	Drainage Area						
	(sq. mile)	0.25			0.25		
3.	Bankfull Width	**Mean:**	5.8		**Mean:**	9.2	
	(W_{bkf})	Range:			Range:		
4.	Bankfull Mean	**Mean:**	0.7		**Mean:**	0.66	
	depth (d_{bkf})	Range:			Range:		
5.	Width/Depth Ratio	**Mean:**	8.9		**Mean:**	14.0	
	(W_{bkf}/d_{bkf})	Range:			Range:		
6.	Bankfull cross-sectional	**Mean:**	3.8		**Mean:**	6.0	
	Area (Abkf)	Range:			Range:		
7.	Bankfull Mean Velocity[1]	**Mean:**	3.3		**Mean:**	2.2	
	(V_{bkf})	Range:			Range:		
8.	Bankfull Discharge, cfs[2]	**Mean:**	12.5		**Mean:**	13.4	
	(Q_{bkf})	Range:			Range:		
9.	Bankfull Maximum Depth	**Mean:**	0.9		**Mean:**	0.95	
	(d_{max})	Range:			Range:		
10.	Max d_{riff}/d_{bkf}	**Mean:**	1.4		**Mean:**	1.0	
	ratio	Range:			Range:		
11.	Low Bank Height to max	**Mean:**	1.0		**Mean:**	1.0	
	d_{bkf} ratio	Range:			Range:		
12.	Width of Flood Prone	**Mean:**	300.0		**Mean:**	50.0	
	Area (W_{fpa})	Range:			Range:	22.0	55
13.	Entrenchment Ratio	**Mean:**	51.7		**Mean:**	5.4	
	(W_{fpa}/W_{bkf})	Range:			Range:	2.4	6.0
14.	Meander Length	**Mean:**	75.0		**Mean:**	120.0	
	(L_m)	Range:			Range:	110.0	130.0
15.	Ratio of Meander Length to	**Mean:**	12.9		**Mean:**	13.0	
	Bankfull Width (L_m/W_{bkf})	Range:			Range:	12.0	14.1
16.	Radius of Curvature	**Mean:**	13.0		**Mean:**	27.6	
	(R_c)	Range:	12.0	14	Range:	27.6	27.6

	VARIABLES	Existing Reach			Proposed Channel		
17.	Ratio of Radius of Curvature	**Mean:**	2.2		**Mean:**	3.0	
	to Bankfull Width (R_c/W_{bkf})	Range:	2.1	2.4	Range:	3.0	3.0
18.	Belt Width	**Mean:**	18.0		**Mean:**	31.0	
	(W_{blt})	Range:			Range:	27.0	36
19.	Meander Width Ratio	**Mean:**	3.1		**Mean:**	3.4	
	(W_{blt}/W_{bkf})	Range:			Range:	2.9	3.9
20.	Sinuosity (k)	**Mean:**	1.14		**Mean:**	1.12	
	(Stream Length / Valley Length)	Range:			Range:		
21.	Valley Slope (Sv_{alley})	**Mean:**	0.0080		**Mean:**	0.0073	
	(ft/ft)	Range:			Range:		
22.	Average Stream Slope	**Mean:**	0.0070		**Mean:**	0.0065	
	(S_{avg}) = (S_{valley}/k)	Range:			Range:		
23.	Riffle Slope	**Mean:**	0.012		**Mean:**	0.010	
	(S_{riff})	Range:			Range:		
24.	Ratio of Riffle Slope to Avg.	**Mean:**	1.7		**Mean:**	1.5	
	Slope (S_{riffle}/S_{avg})	Range:			Range:		
25.	Pool Slope	**Mean:**	0.000		**Mean:**	0.000	
	(S_{pool})	Range:			Range:		
26.	Ratio of Pool Slope to Avg.	**Mean:**	0.0		**Mean:**	0.0	
	Slope (S_{pool}/S_{avg})	Range:			Range:		
27.	Maximum Pool	**Mean:**	1.9		**Mean:**	1.9	
	Depth (d_{pool})	**Range:**			**Range:**		
28.	Ratio of Pool Depth to Avg.	**Mean:**	2.9		**Mean:**	2.9	
	Depth (d_{pool}/d_{avg})	Range:			Range:		
29.	Pool Width	**Mean:**	8.4		**Mean:**	20.0	
	(W_{pool})	Range:			Range:		
30.	Ratio of Pool Width to	**Mean:**	1.4		**Mean:**	2.2	
	Bankfull Width (W_{pool}/W_{bkf})	Range:			Range:		
	Pool Area	**Mean:**	9.7		**Mean:**	15.6	
	(A_{pool})	Range:			Range:		
31.	Ratio of Pool Area to	**Mean:**	2.6		**Mean:**	2.6	
	Bankfull Area (A_{pool}/A_{bkf})	Range:			Range:		
32.	Pool to Pool Spacing	**Mean:**	23.0		**Mean:**	60.0	
	(p - p)	Range:	21.0	24	Range:	57.4	65
33.	Ratio of Pool to Pool Spacing	**Mean:**	4.0		**Mean:**	6.5	
	to Bankfull Width (p-p/Wbkf)	Range:	3.6	4.1	Range:	6.2	7.1

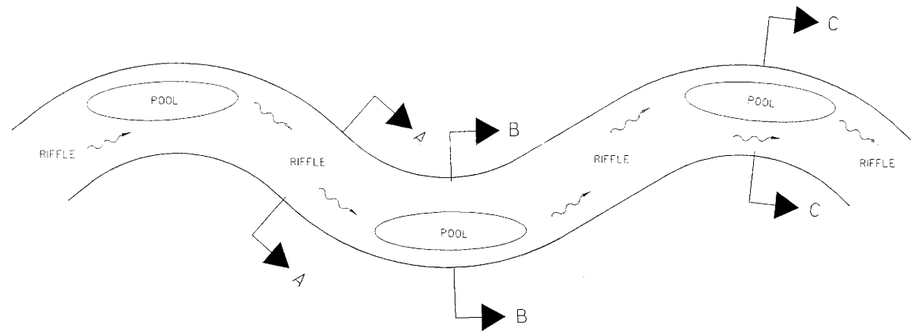
Notes

1. Derived Using Mannings Equation: $U = 1.49R^{2/3}S^{1/2}/n$
2. Derived using continuity equation: $Q = U \times A_{bkf}$

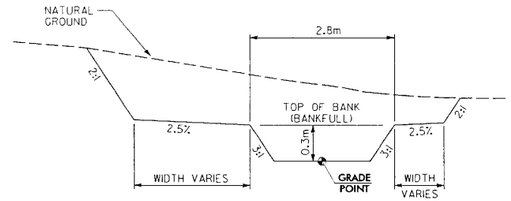
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2552B	2-N
	R /W SHEET NO.	
NTS 0	HYDRAULICS ENGINEER	
	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST.REV.		
R /W REV.		

CLAYTON BYPASS STREAM RELOCATION TYPICAL SECTIONS



TYPICAL PLAN VIEW SCHEMATIC



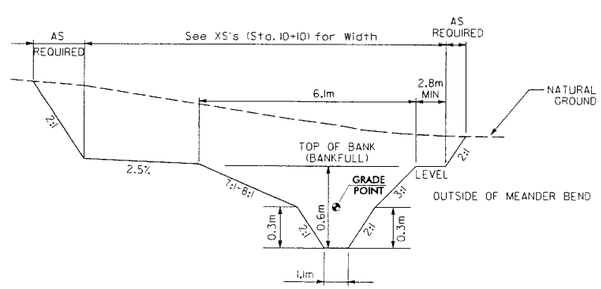
RIFFLE SECTION A-A

NOTE:

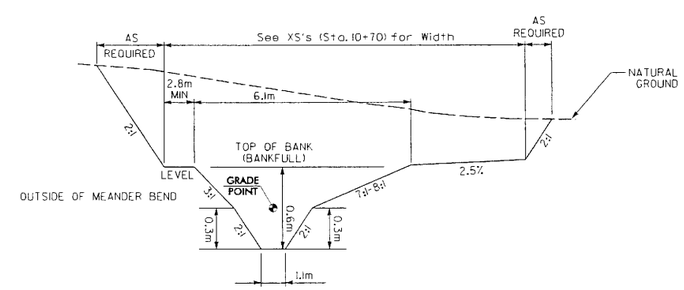
TYPICAL SECTIONS ARE PROVIDED TO GIVE THE GENERAL DIMENSIONS OF THE CHANNEL. FINAL GRADING WILL GIVE THE CHANNEL A MORE "NATURAL" APPEARANCE AND ALLOW A SMOOTH TRANSITION FROM EXISTING CHANNEL TO NEW CHANNEL.

REFER TO CROSS SECTIONS (SHEETS X-1 TO X-8) FOR ADDITIONAL INFORMATION.

GRADE POINTS REPRESENT THE LOCATION OF THE TYPICAL SECTION IN RELATION TO THE PROPOSED STREAM CHANNEL ALIGNMENT. THE VERTICAL POSITION OF THE GRADE POINT REPRESENTS A CONSTANT SLOPE BETWEEN FLOW ROCK ELEVATIONS. POOLS ARE TO BE OVEREXCAVATED 0.3m BELOW THE GRADE POINT. SEE STREAM PROFILE SHEET 2-K FOR STREAM BED ELEVATIONS.



POOL SECTION B-B



POOL SECTION C-C

RELOCATED BANKFULL CHANNEL TYPICAL SECTIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-O
R /W SHEET NO.	
	HYDRAULICS ENGINEER

METRIC

NTS

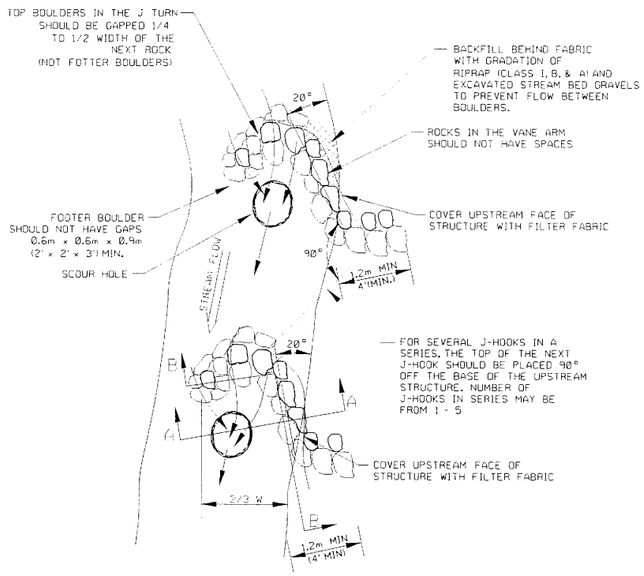
0

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

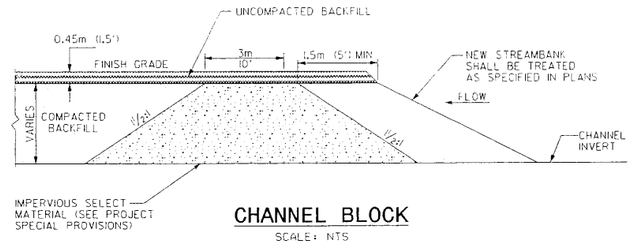
R /W REV.

CLAYTON BYPASS STREAM RELOCATION DETAILS



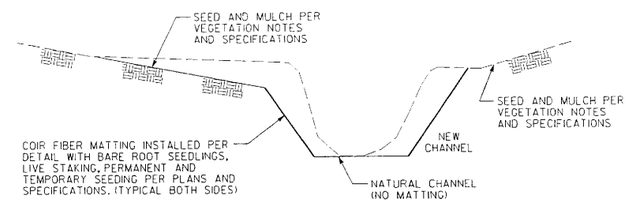
PLAN

SCALE: NTS



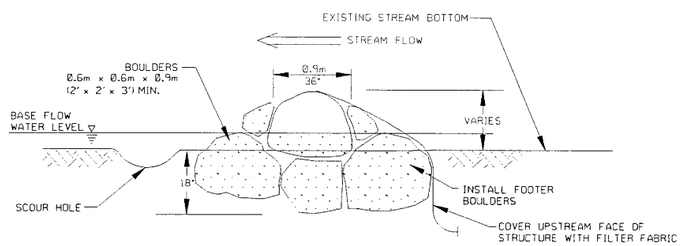
CHANNEL BLOCK

SCALE: NTS

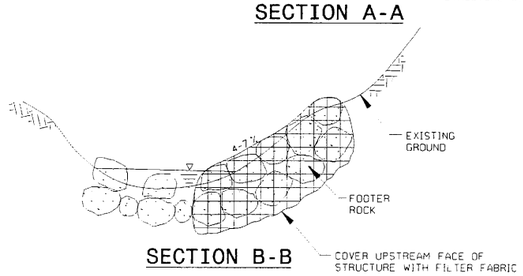


MATTING INSTALLATION GUIDE

SCALE: NTS



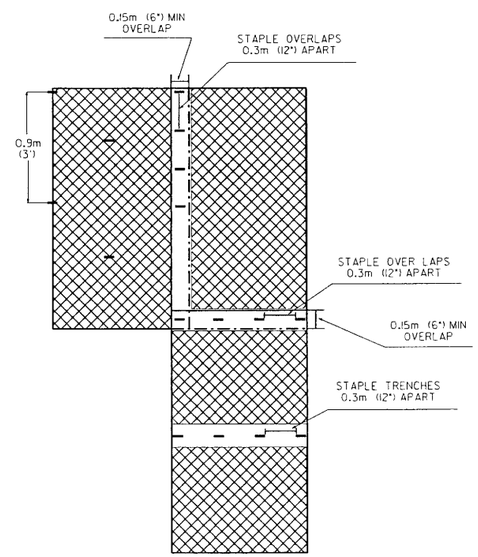
SECTION A-A

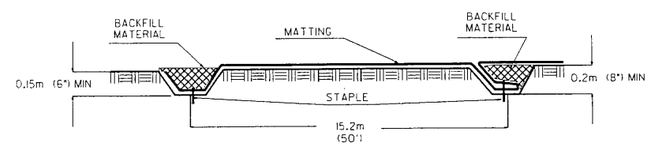


SECTION B-B

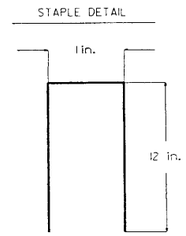
J-HOOK VANE

SCALE: NTS





STAPLE DETAIL



COIR FIBER MAT DETAIL

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-P
R /W SHEET NO.	

METRIC

NTS

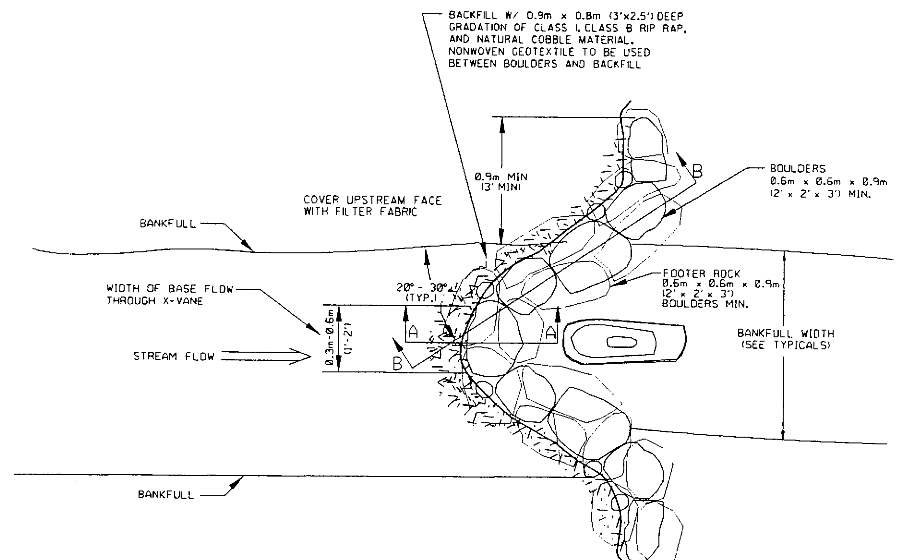
CONST.REV.

R /W REV.

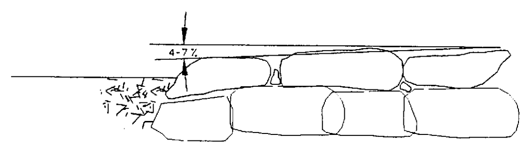
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

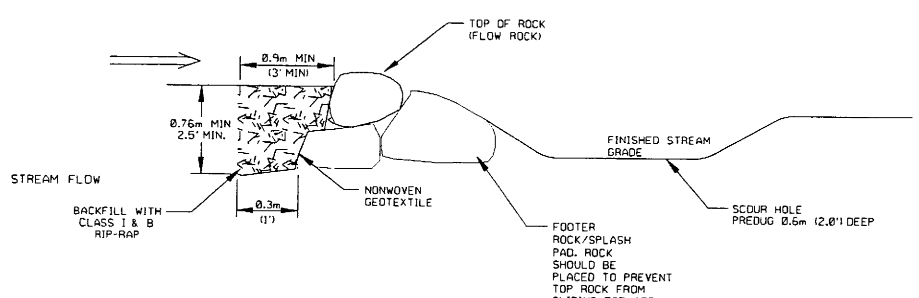
CLAYTON BYPASS STREAM RELOCATION DETAILS



PLAN



SECTION B-B



SECTION A-A

ROCK CROSS VANE

SCALE: NTS

NOTE: CLASS B RIP RAP SHALL BE HAND PLACED TO FILL VOIDS BETWEEN LARGER BOULDERS.

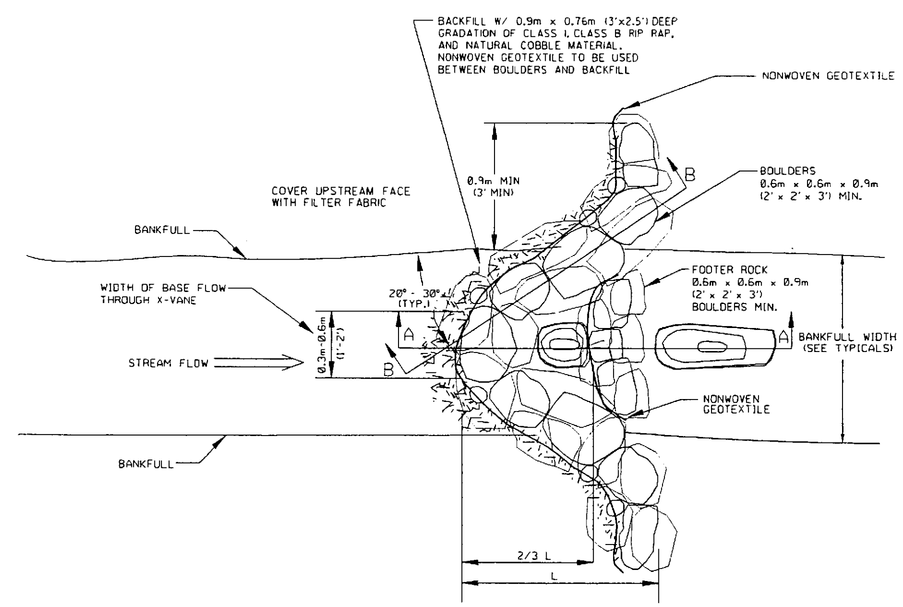
LOCATIONS

-L- STA 84+45 RT

-L- STA 92+27 RT

-Y11- REV STA 24+65 RT

-Y11- REV STA 24+95 LT



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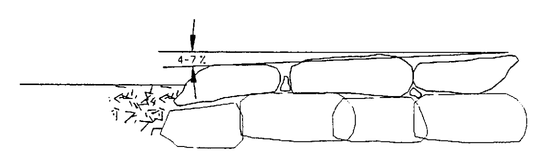
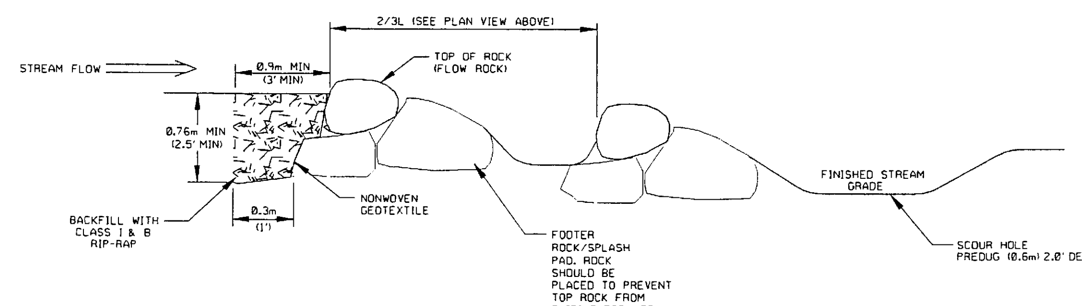


SECTION B-B

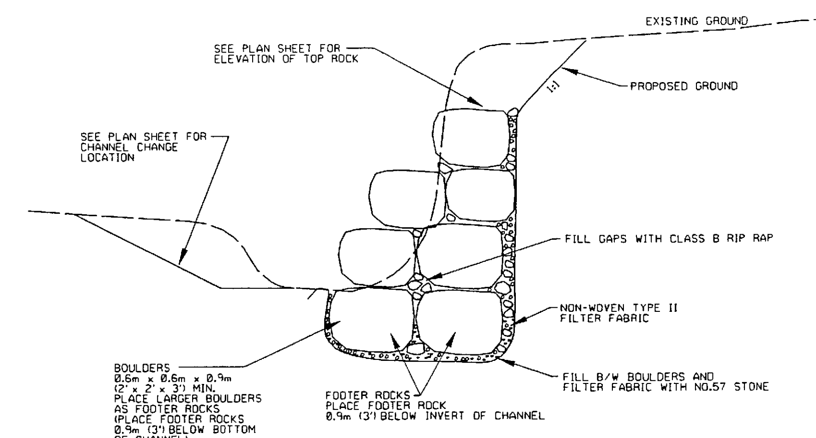


SECTION A-A

A-VANE

SCALE: NTS

NOTE: CLASS B RIP RAP SHALL BE HAND PLACED TO FILL VOIDS BETWEEN LARGER BOULDERS.



BOULDER WALL

SCALE: NTS

$$$$$$SYSTIME$$$$$ $$$$$$DGN$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-Q
R /W SHEET NO.	

HYDRAULICS ENGINEER

NTS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

CLAYTON BYPASS STREAM RELOCATION
PEBBLE COUNT AND STREAM PROFILE

PEBBLE COUNT

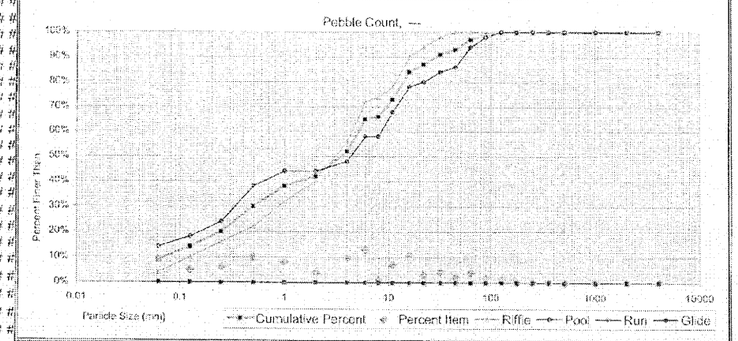
Weighted Pebble Count

Percent Riffle:	50	Percent Run:	
Percent Pool:	50	Percent Glide:	

Pebble Count:

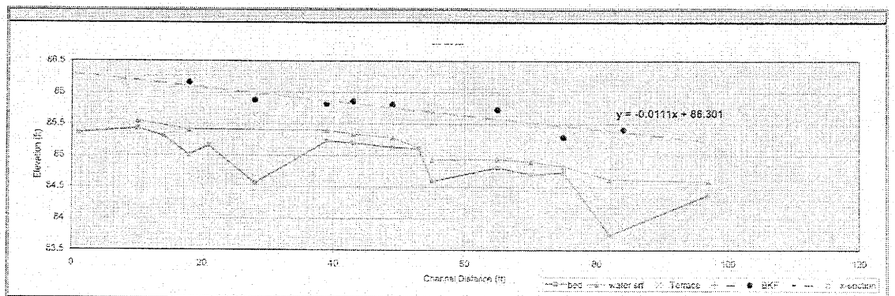
Note:

Material	Size Range (mm)		Total #	
silt/clay	0	0.062	9.0	# #
very fine sand	0.062	0.13	5.0	# #
fine sand	0.13	0.25	6.0	# #
medium sand	0.25	0.5	10.0	# #
coarse sand	0.5	1	8.0	# #
very coarse sand	1	2	4.0	# #
very fine gravel	2	4	10.0	# #
fine gravel	4	6	13.0	# #
fine gravel	6	8	1.0	# #
medium gravel	8	11	7.0	# #
medium gravel	11	16	11.0	# #
coarse gravel	16	22	3.0	# #
coarse gravel	22	32	4.0	# #
very coarse gravel	32	45	2.0	# #
very coarse gravel	45	64	4.0	# #
small cobble	64	90	2.0	# #
medium cobble	90	128	1.0	# #
large cobble	128	180	0.0	# #
very large cobble	180	256	0.0	# #
small boulder	256	362	0.0	# #
small boulder	362	512	0.0	# #
medium boulder	512	1024	0.0	# #
large boulder	1024	2048	0.0	# #
very large boulder	2048	4096	0.0	# #
bedrock			0.0	#
		Weighted Count:	100	
		True Total Particle Count:	100	



Size percent less than (mm)					Percent by substrate type					
D16	D35	D50	D84	D95	silt/clay	sand	gravel	cobble	boulder	bedrock
0.157	0.77	3.5	18	54	9%	33%	55%	3%	0%	0%

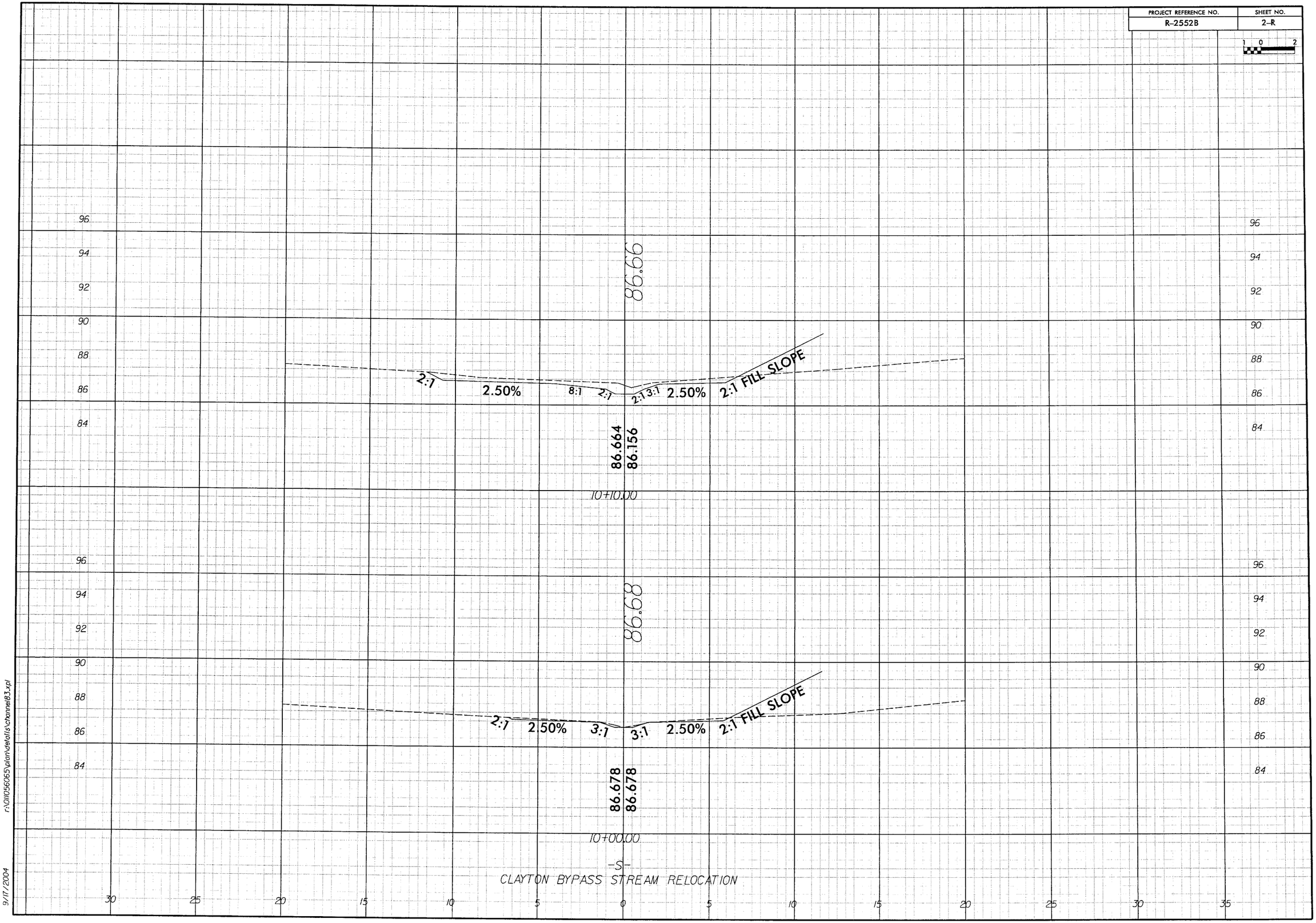
SLOPE PROFILE



87.259 Elevation BM

notes	cross section	station	SS 4.8	HI	FS TP	FS bed	depth water	FS BKF	FS Terrace	FS	FS	AZ azimuth	ELEV bed	ELEV water srf	ELEV BKF	ELEV Terrace	ELEV	ELEV
		1		92.059		6.7							85.359					
		10		92.059		6.03	0.12						85.429	85.549				
		14		92.059		6.75							85.309					
		18		92.059		7.66	0.4	5.9					85.009	85.409	86.159			
		21		92.059		8.9							85.159					
		29		92.059		7.5		6.18					84.559		85.879			
		39		92.059		8.03	0.17	6.24					85.229	85.399	85.879			
		43		92.059		8.80	0.14	6.2					85.199	85.339	85.859			
		48		92.059		8.93	0.15	6.25					85.129	85.279	85.809			
		53		92.059		8.95	0.01						85.109	85.119				
		58		92.059		7.47	0.34						84.589	84.929				
		62		92.059		7.25	0.13	6.33					84.809	84.939	85.729			
		70		92.059		7.35	0.1						84.709	84.809				
		75		92.059		7.33	0.1	6.77					84.729	84.829	85.289			
		82		92.059		8.32	0.82						83.739	84.559				
		84		92.059				6.65							85.409			
		97		92.059		7.58	0.21						84.479	84.689				
				92.059														
				92.059														

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-R



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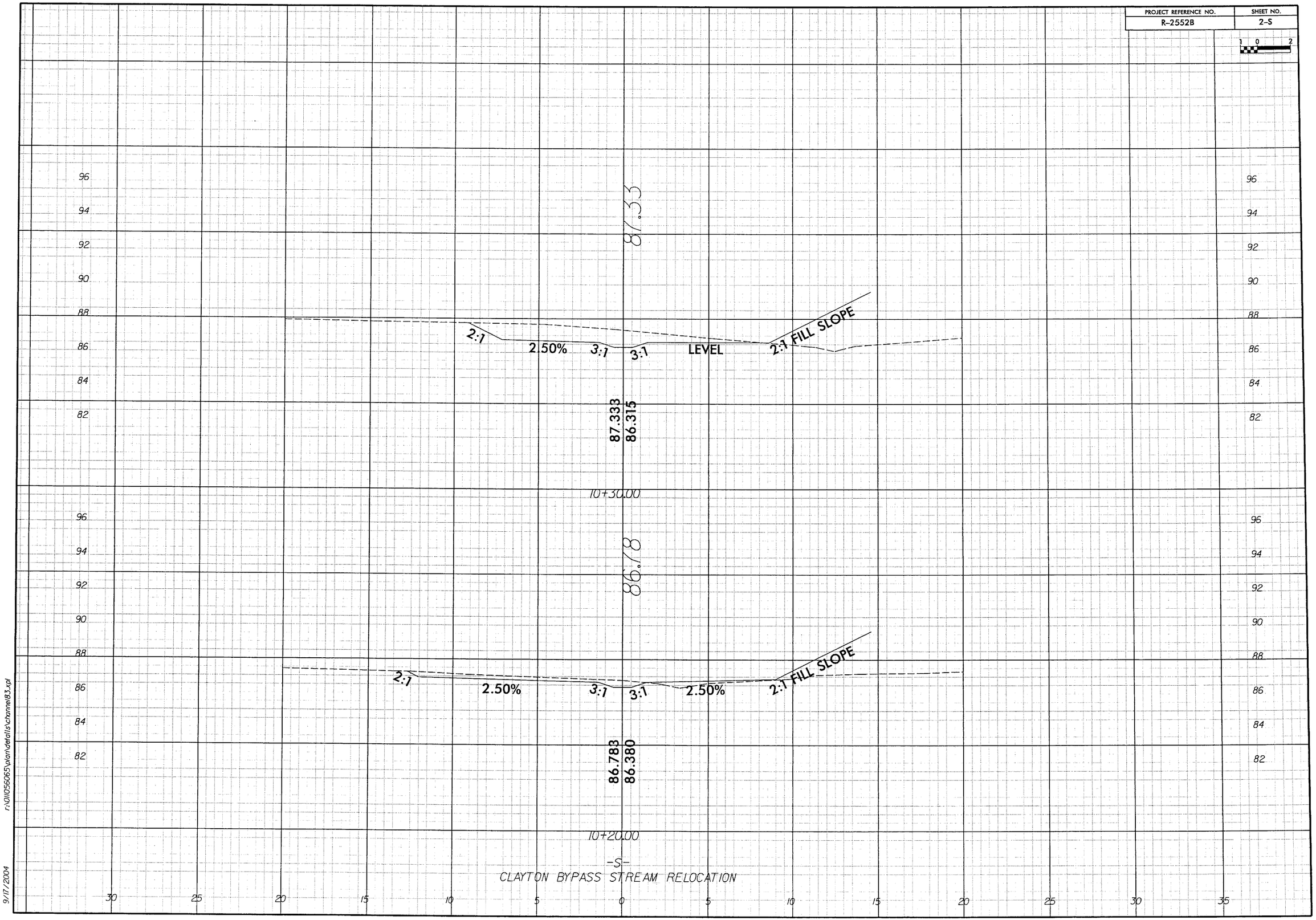
9/17/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-S



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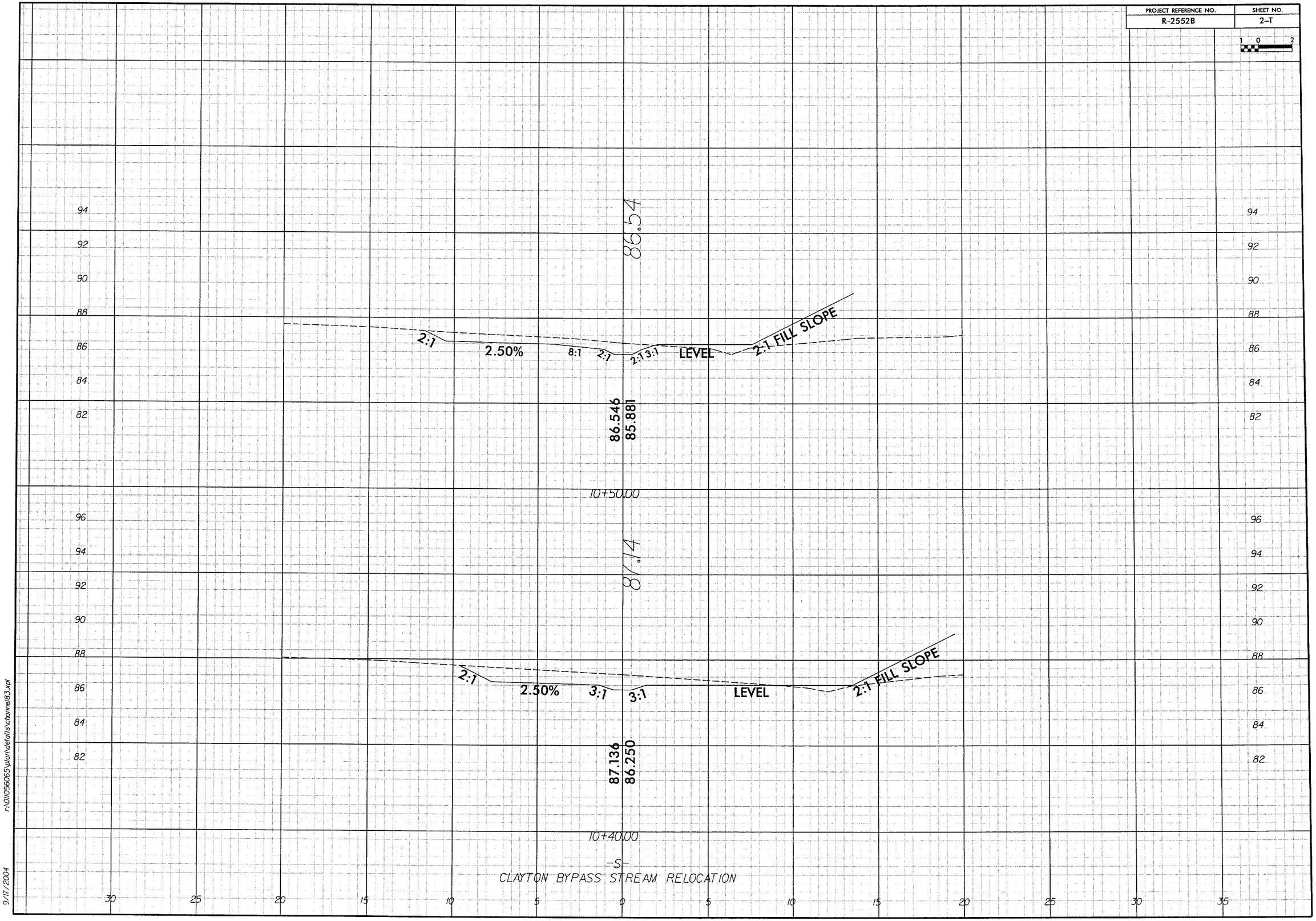
9/17/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-T



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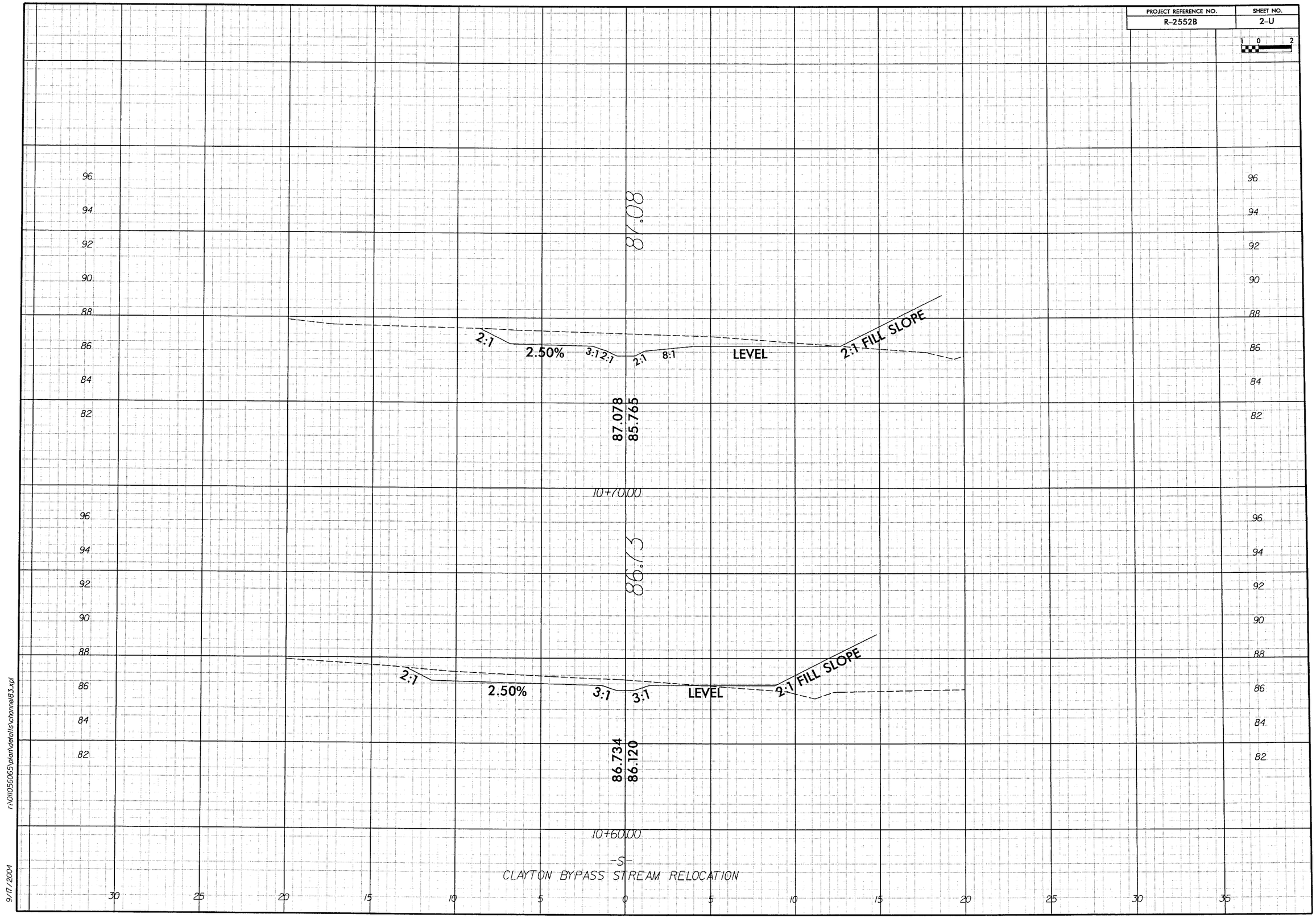
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-U



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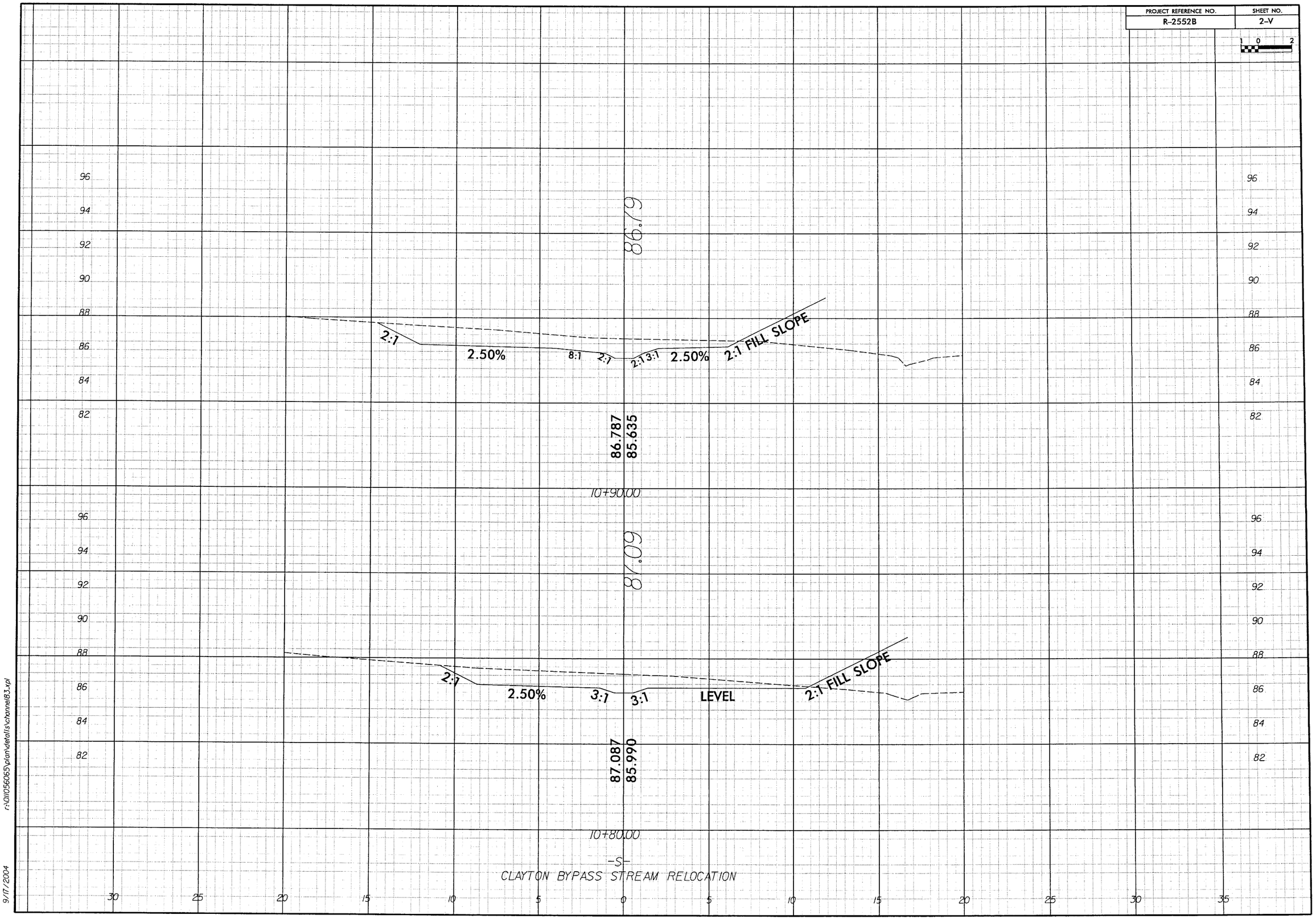
9/17/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-V



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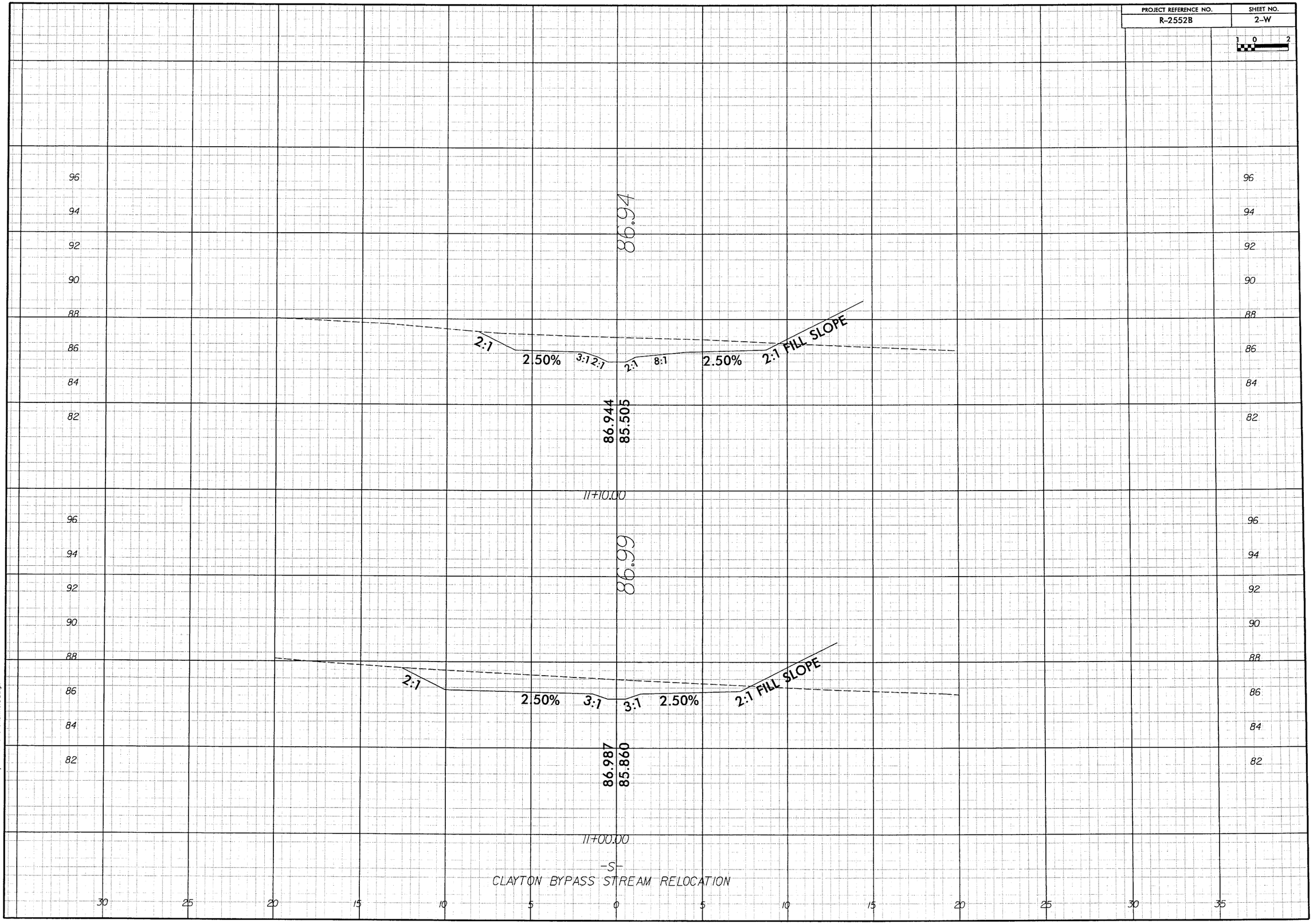
9/17/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-W



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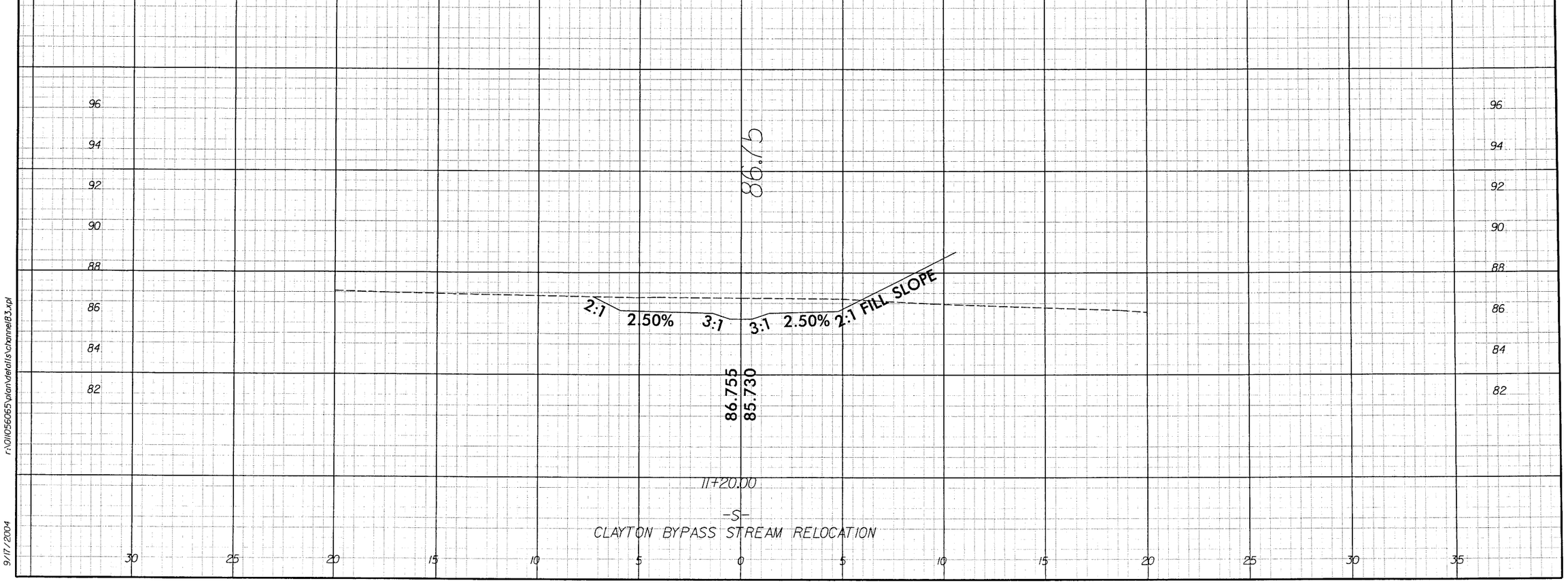
9/17/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	2-X



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9/17/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	14
R/W SHEET NO.	

METRIC

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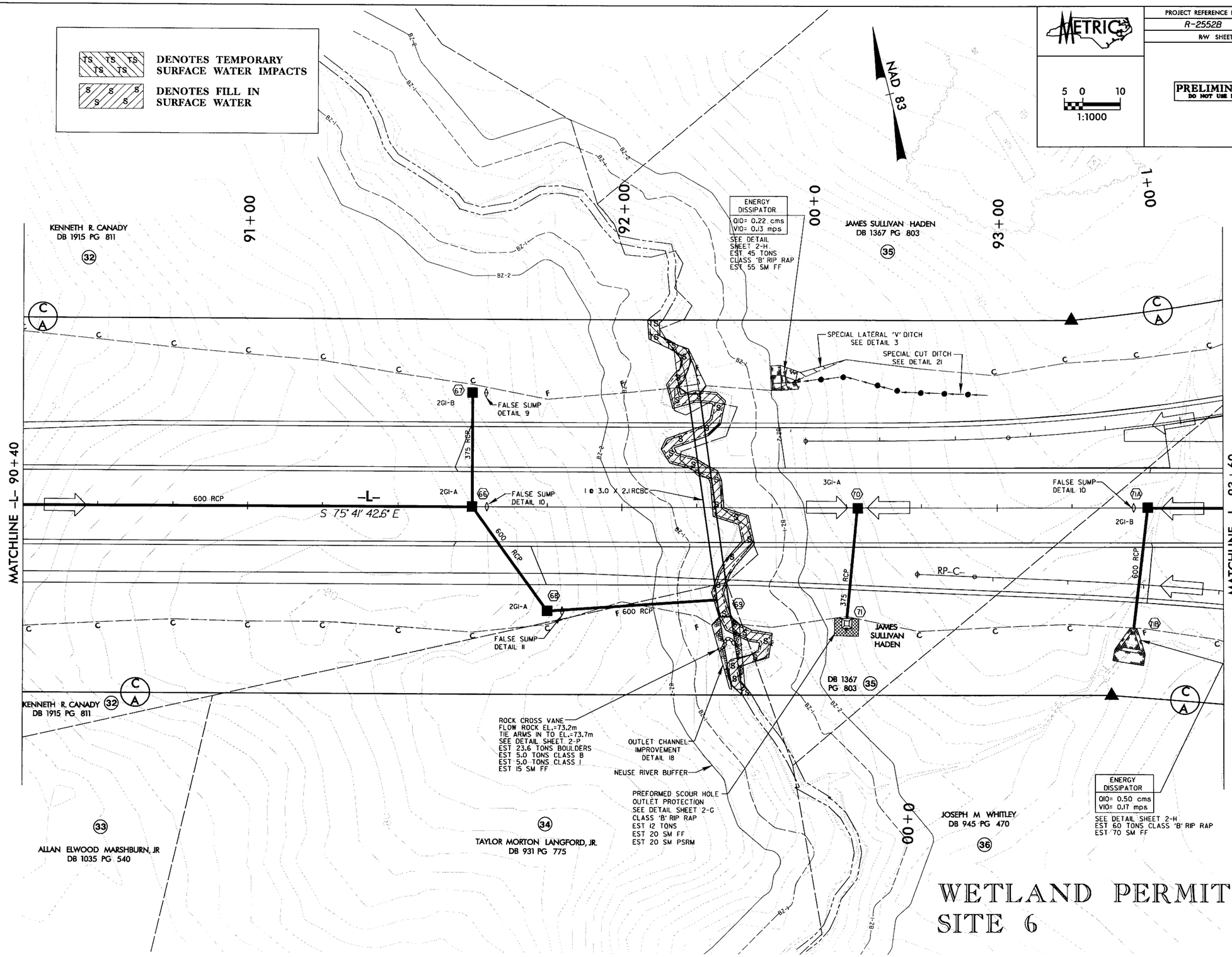
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	14
R/W SHEET NO.	

METRIC

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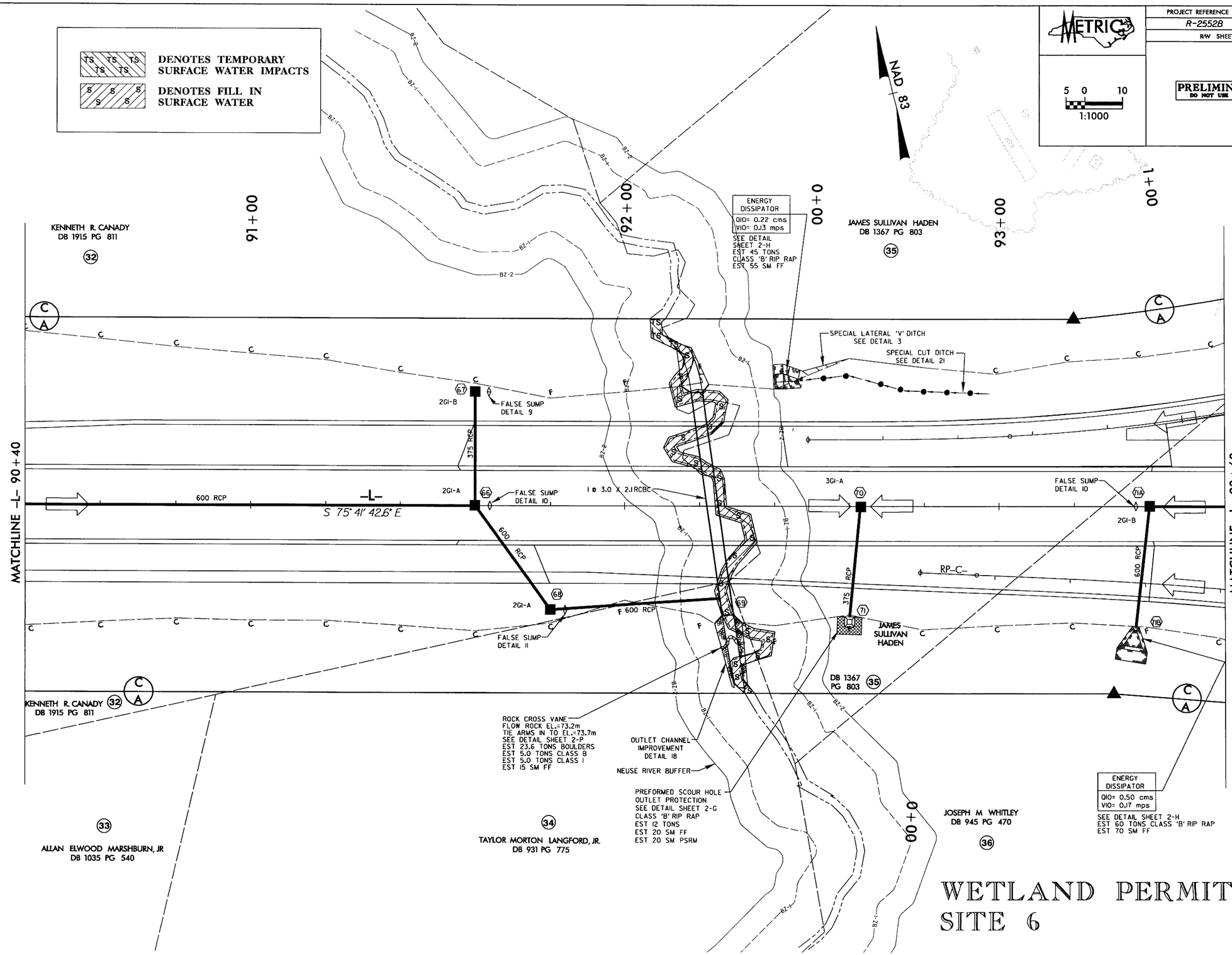
DO NOT USE FOR CONSTRUCTION



WETLAND PERMIT SITE 6

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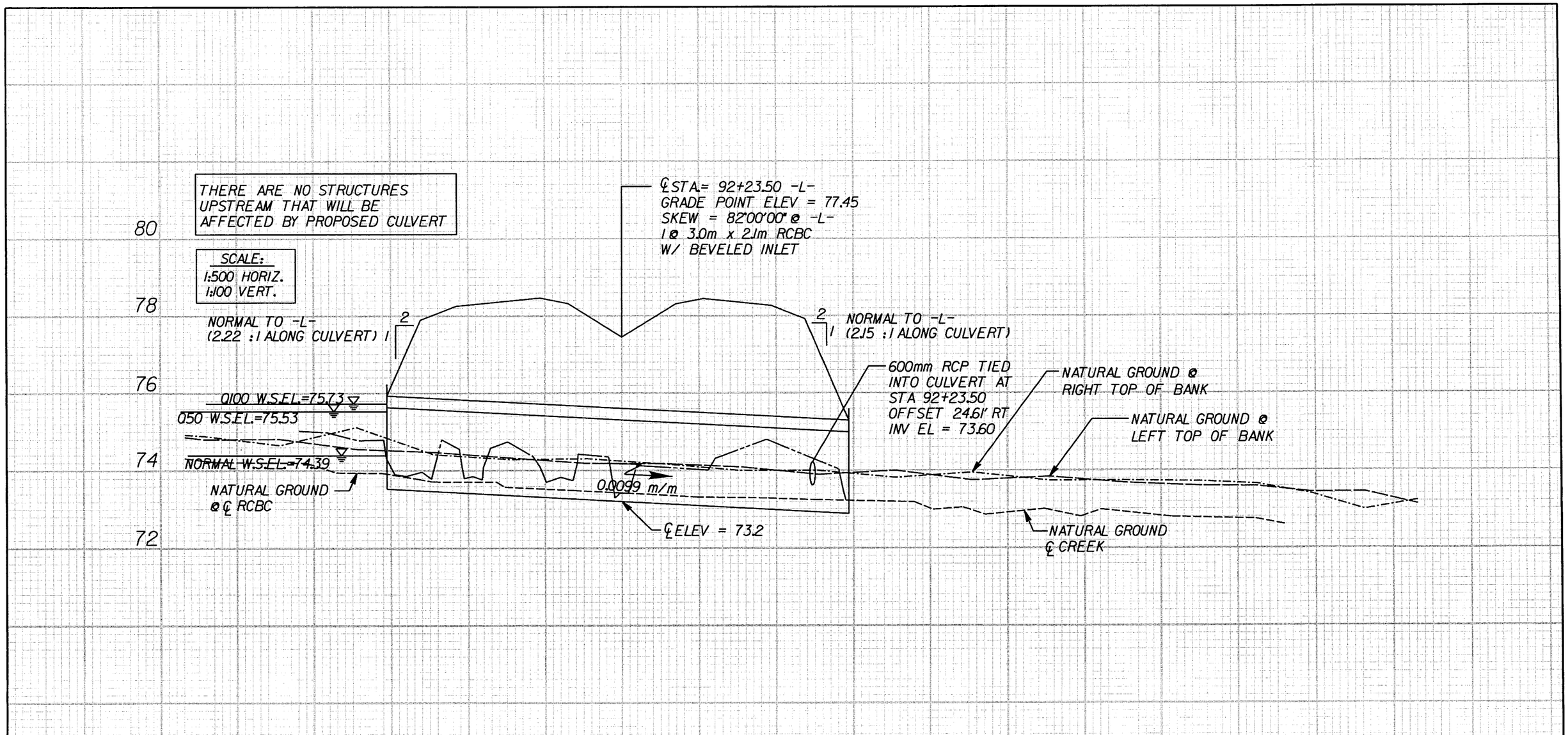
9/23/2004



WETLAND PERMIT DRAWING
CSR 2 of 4 PROFILE
R-2552B

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

SHEET 15 OF 23 9/16/2004

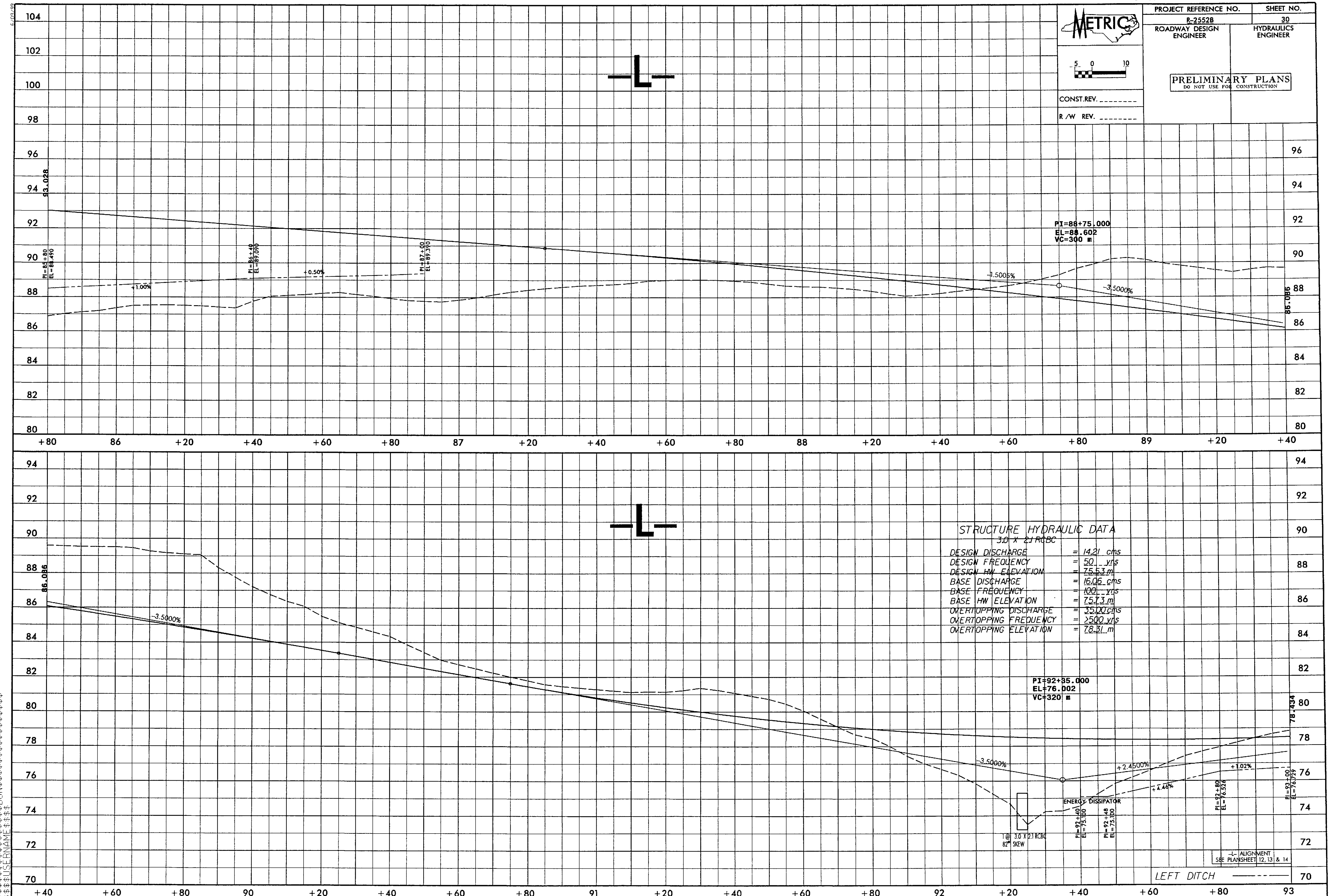
R:\01\056065\Plan\permits\wetland\CSR-Profile2of4.dgn

9/16/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. ________
R /W REV. ________



STRUCTURE HYDRAULIC DATA
3.0 X 2.1 RCBC

DESIGN DISCHARGE	=	14.21 cms
DESIGN FREQUENCY	=	50 yrs
DESIGN HW ELEVATION	=	75.53 m
BASE DISCHARGE	=	16.06 cms
BASE FREQUENCY	=	100 yrs
BASE HW ELEVATION	=	75.73 m
OVERTOPPING DISCHARGE	=	35.00 cms
OVERTOPPING FREQUENCY	=	>500 yrs
OVERTOPPING ELEVATION	=	78.31 m

$$$$$SYSTIME$$$$$ $$$$$$$$DGN$$$$$$$$$$$$$$$$ $$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

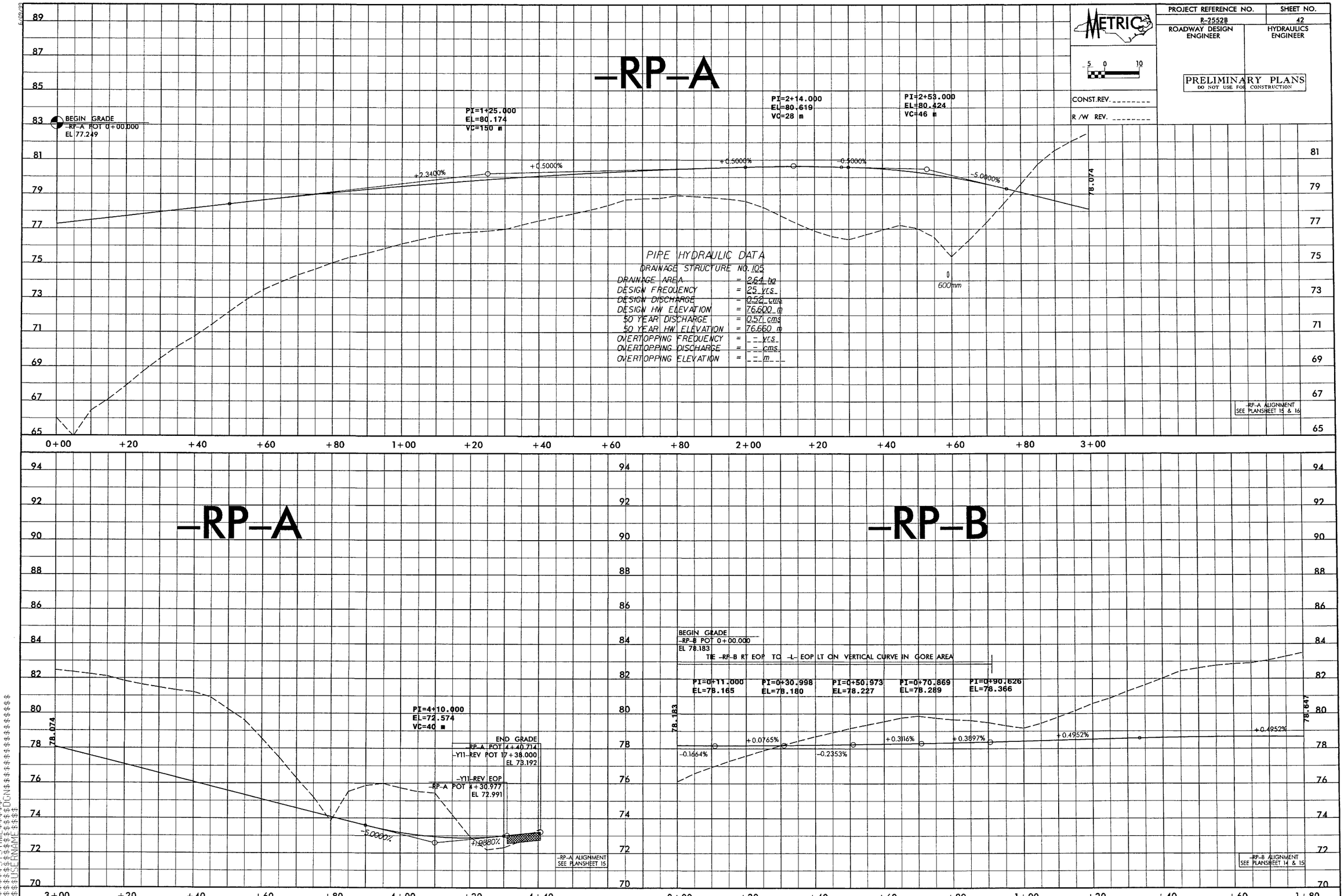
METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____

R/W REV. _____



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$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
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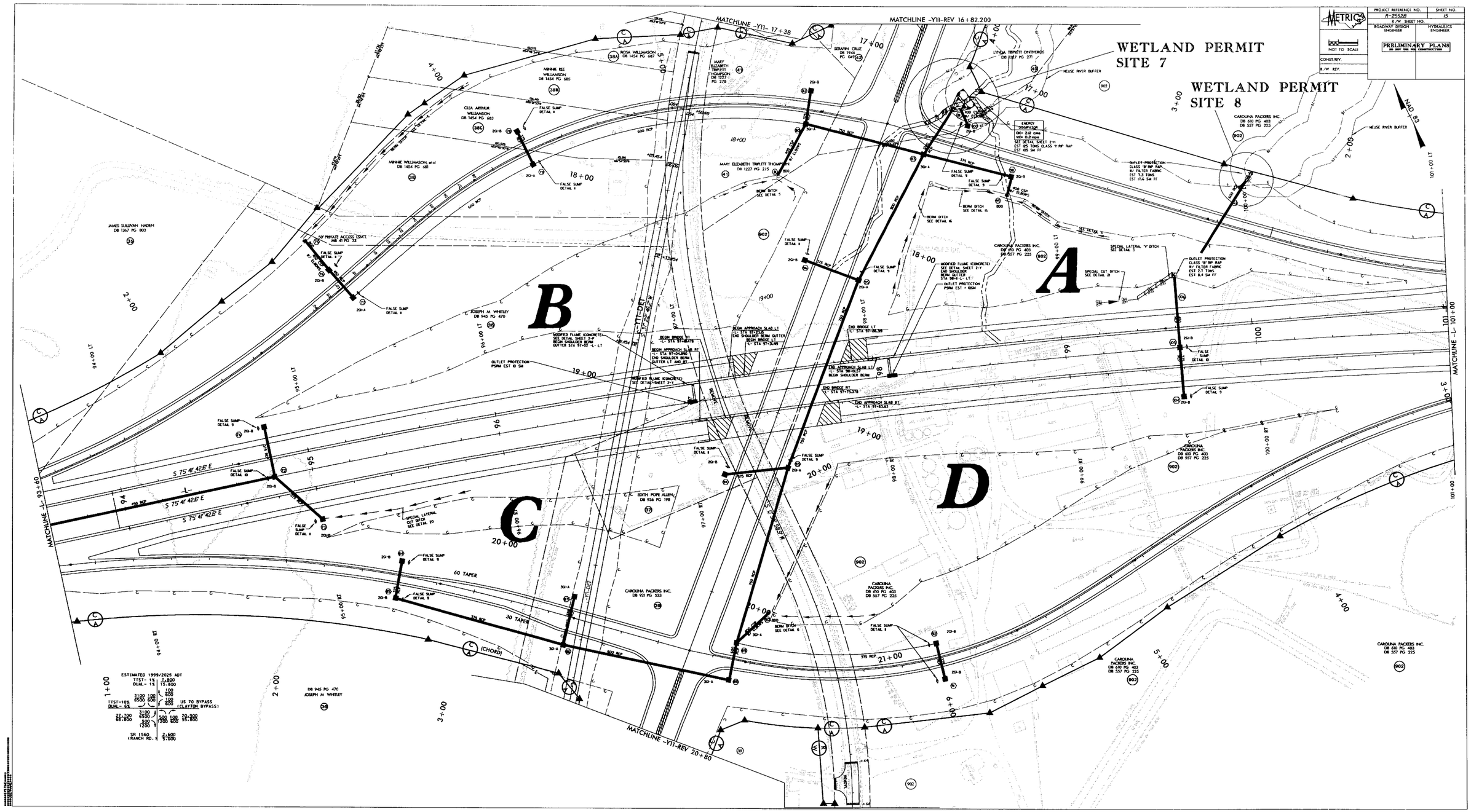

SEE NEXT 2 SHEETS FOR WETLAND PERMIT SITES 7 AND 8

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	16
R/W SHEET NO.	

METRIC

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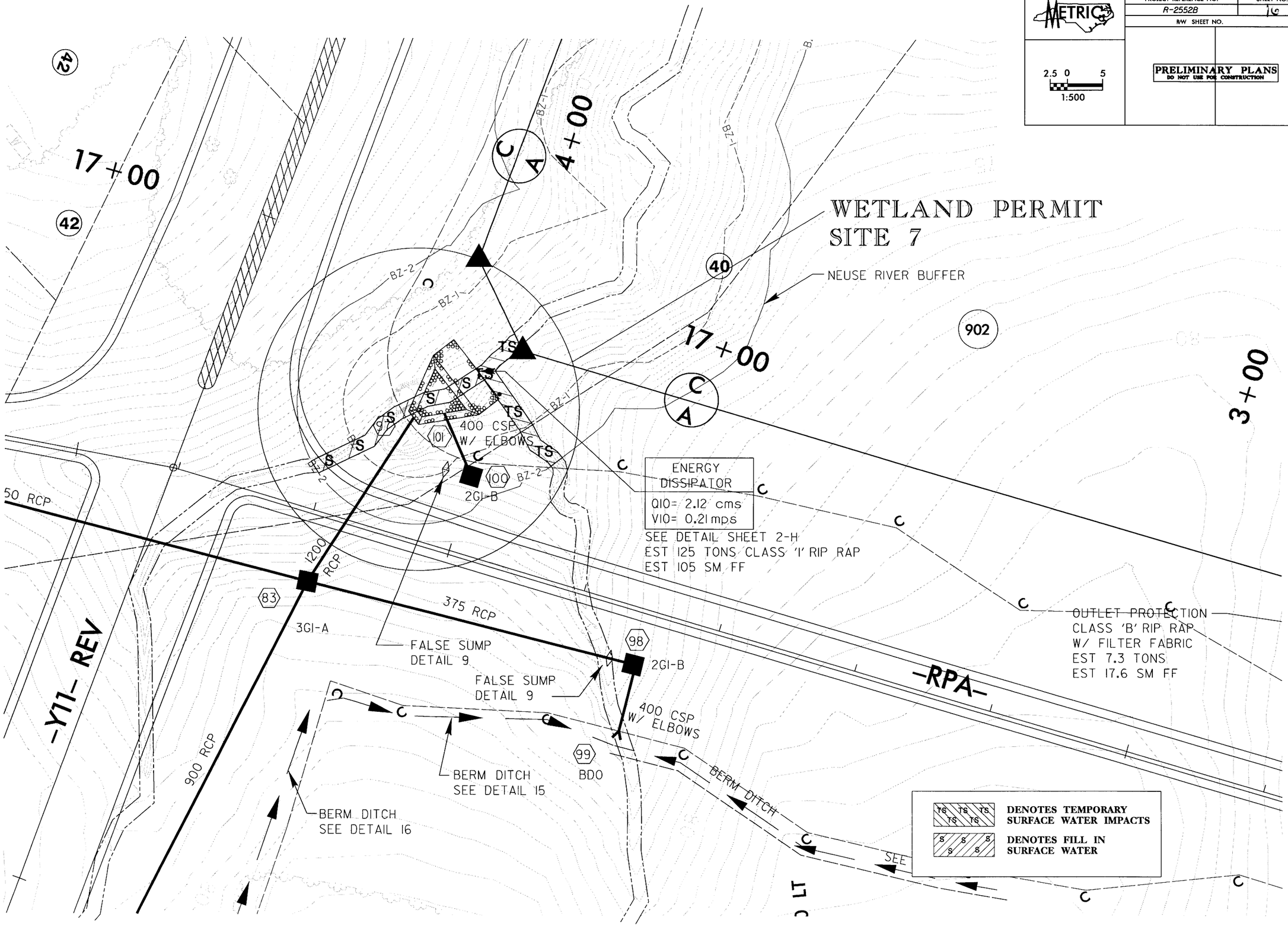
1:500

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	17
R/W SHEET NO.	

METRIC

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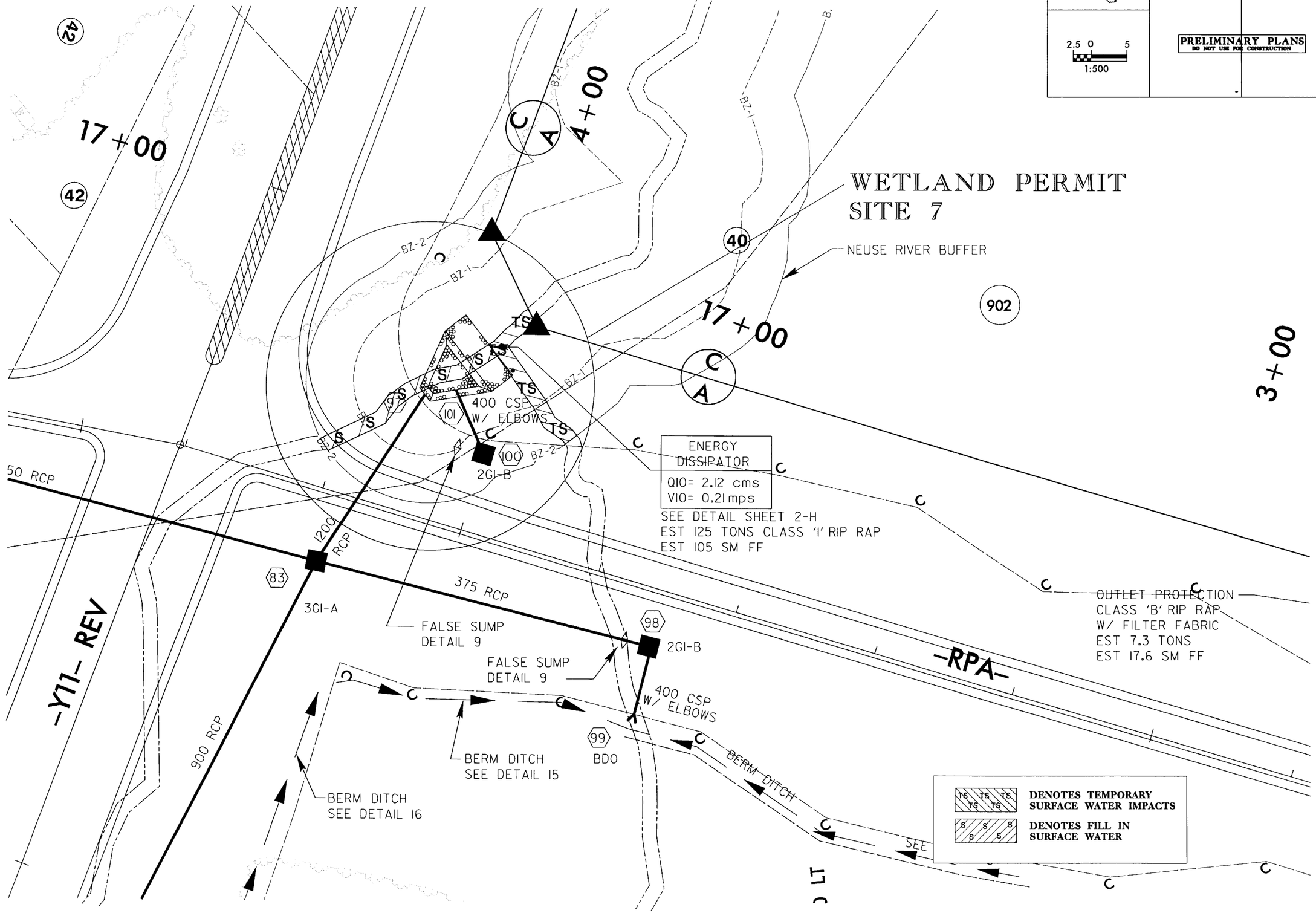
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/23/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	15
R/W SHEET NO.	

METRIC

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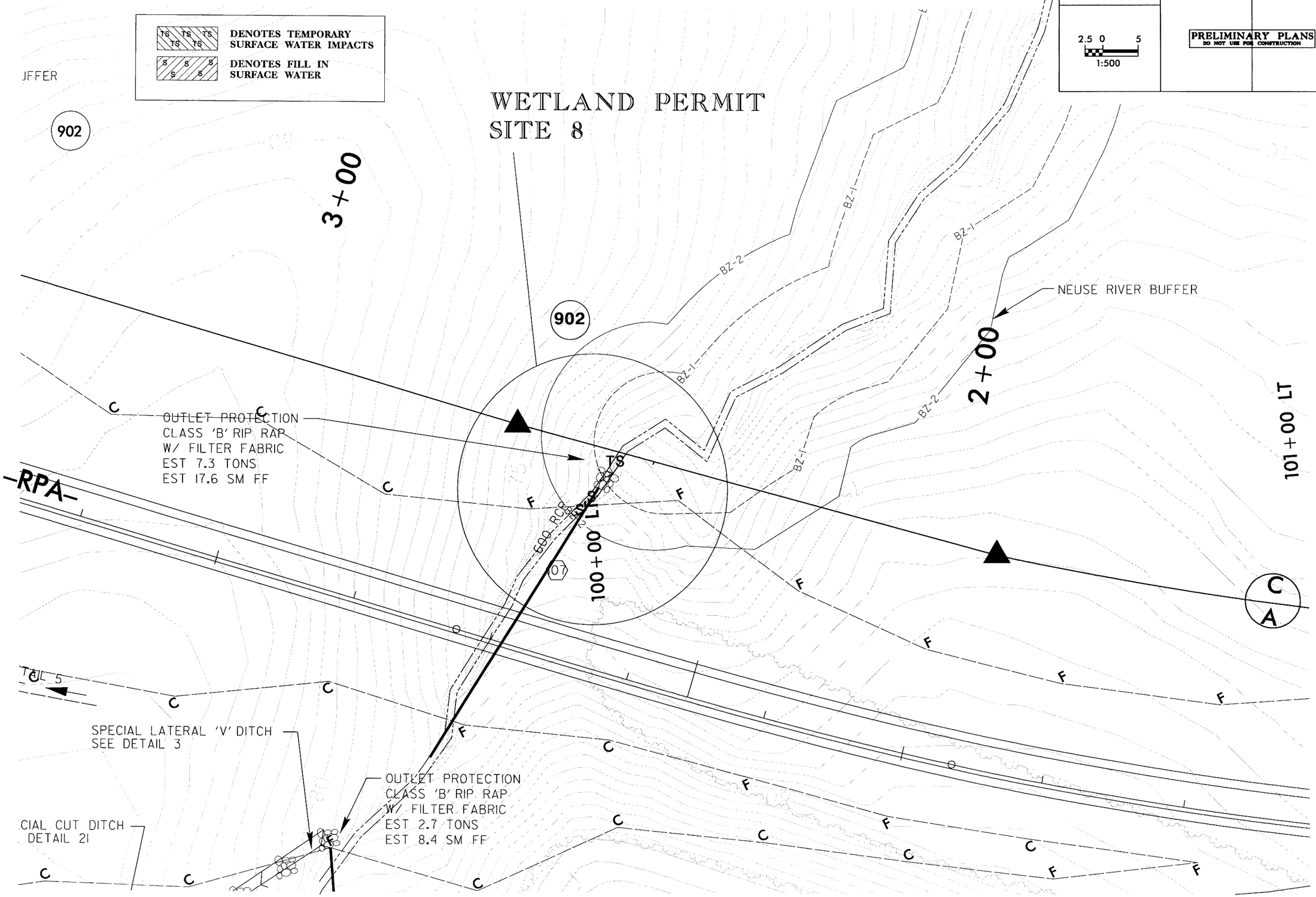
1:500

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	19
R/W SHEET NO.	

METRIC

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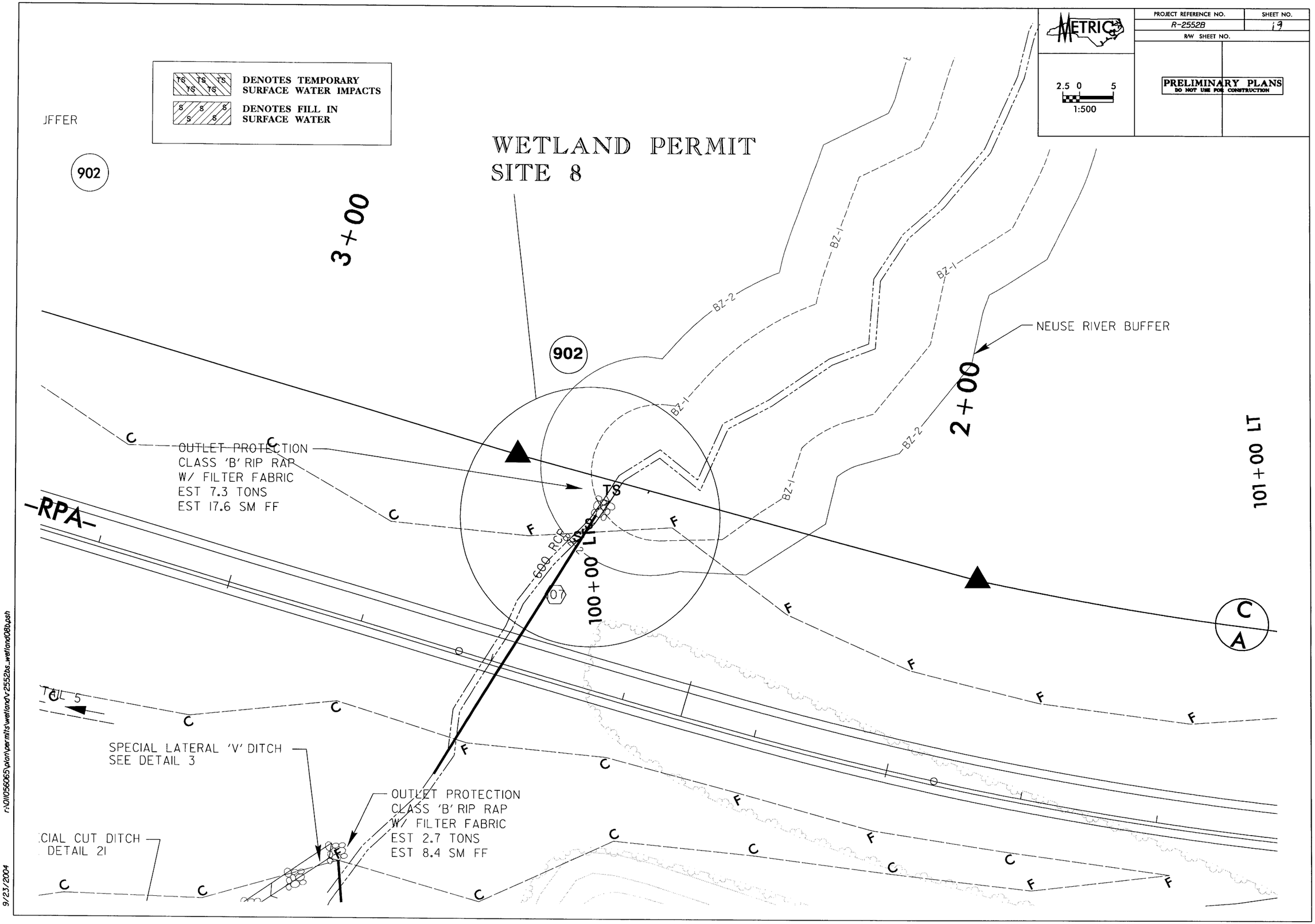
1:500

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
R-2552B	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

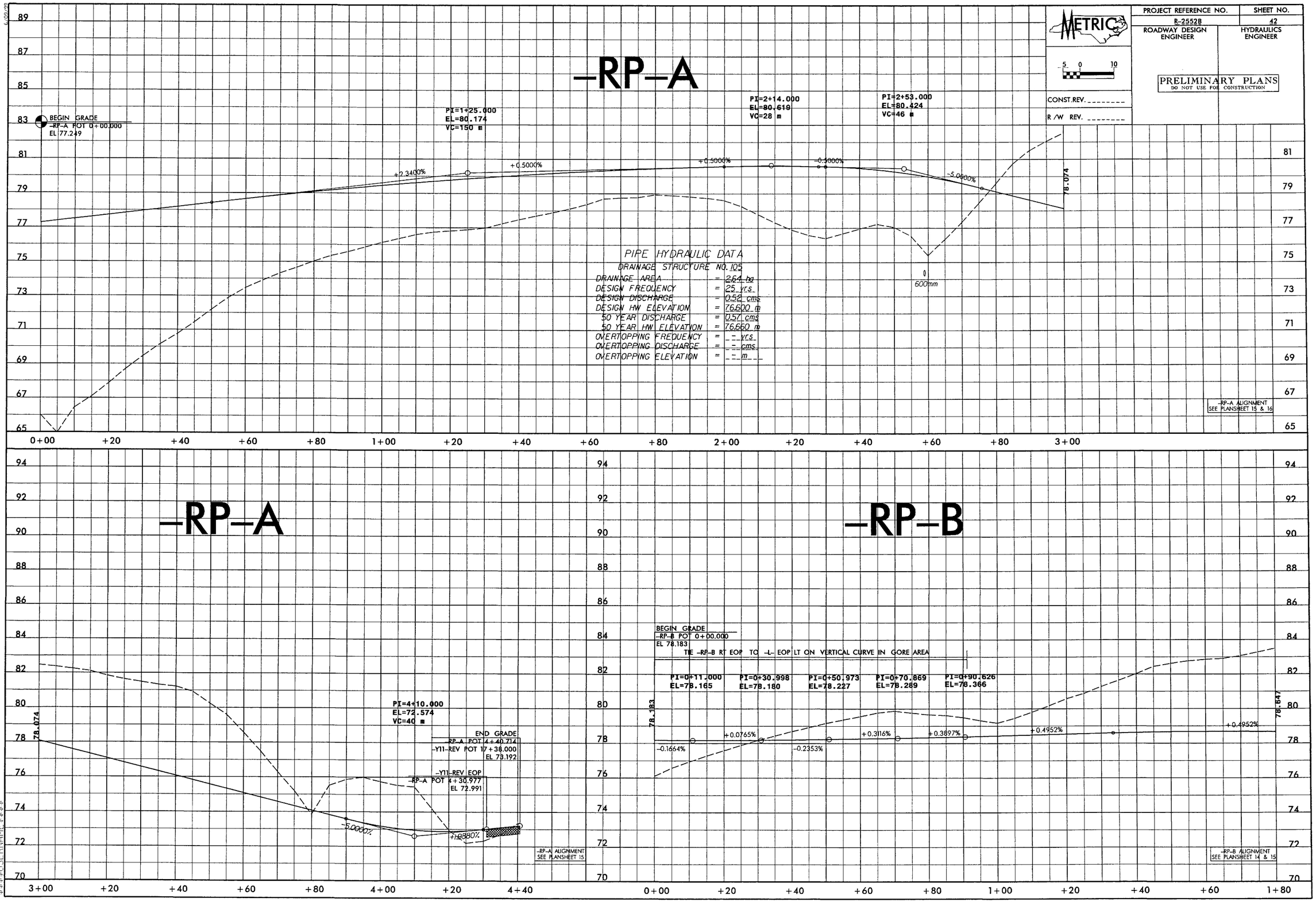
METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____

R/W REV. _____



6/09/98

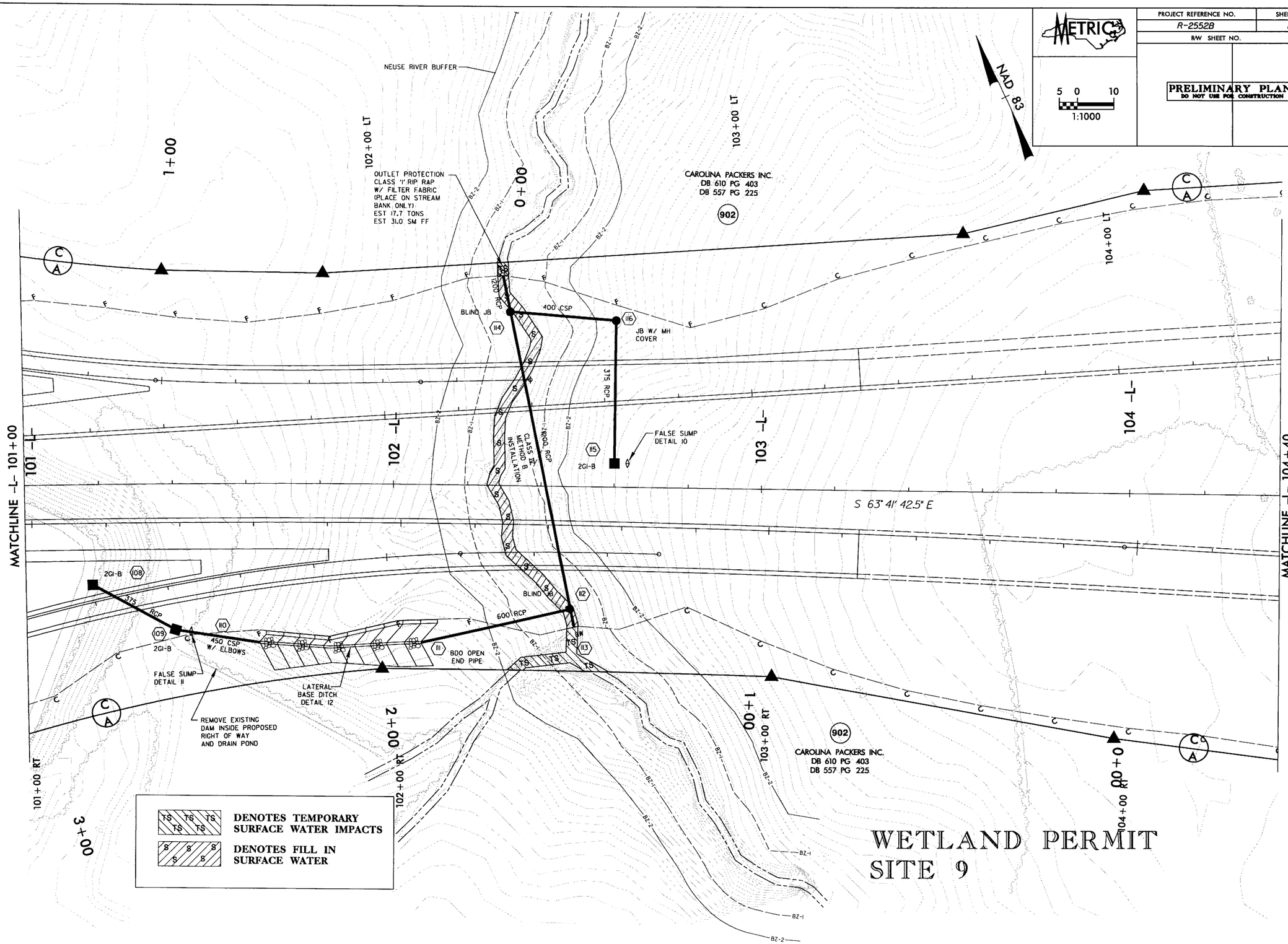
$$$$$$$SYSTIME$$$$$
$$$
$$$
$$$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	16
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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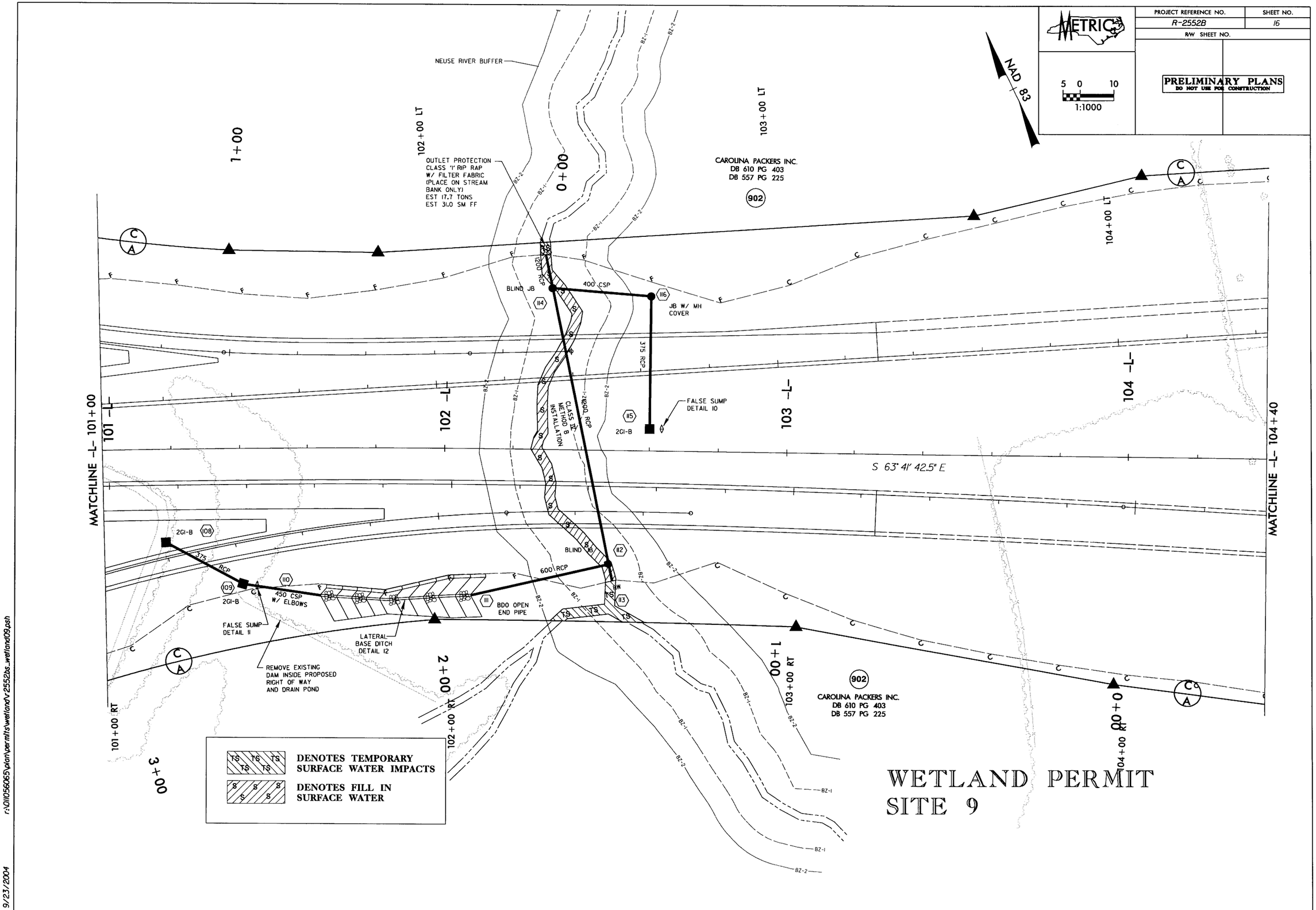


r:\011056065\plan\permits\wetland\r2552bs_wetland09.psh

9/23/2004

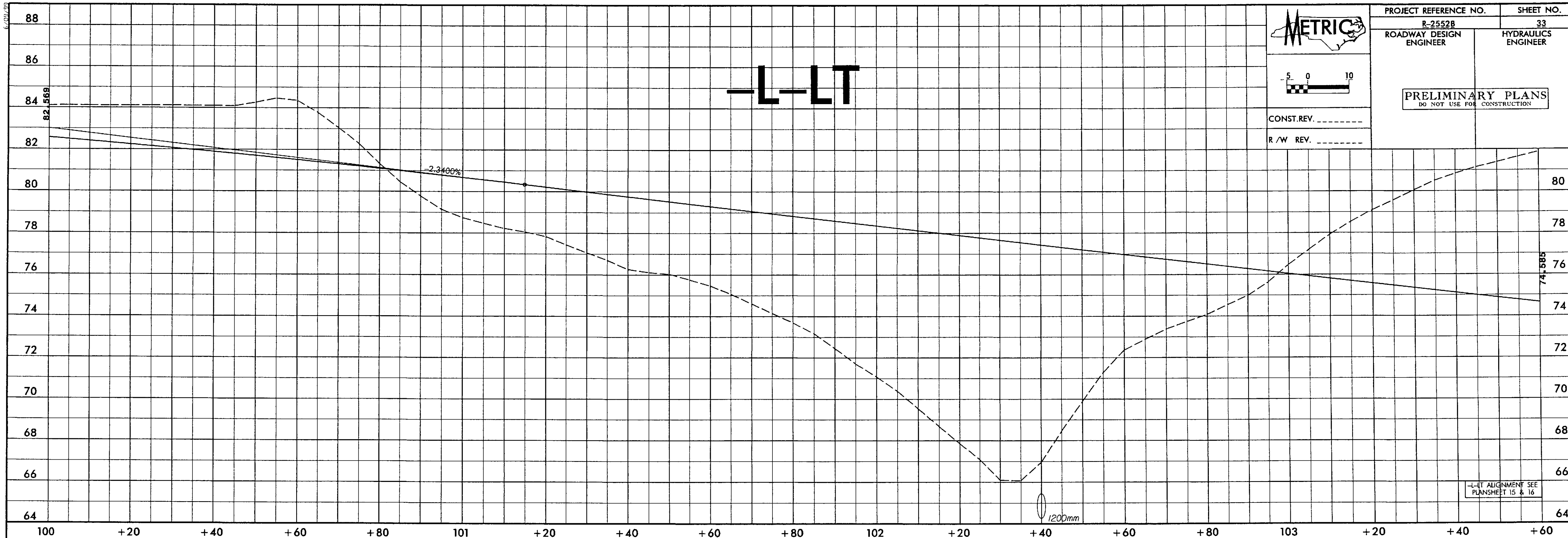
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

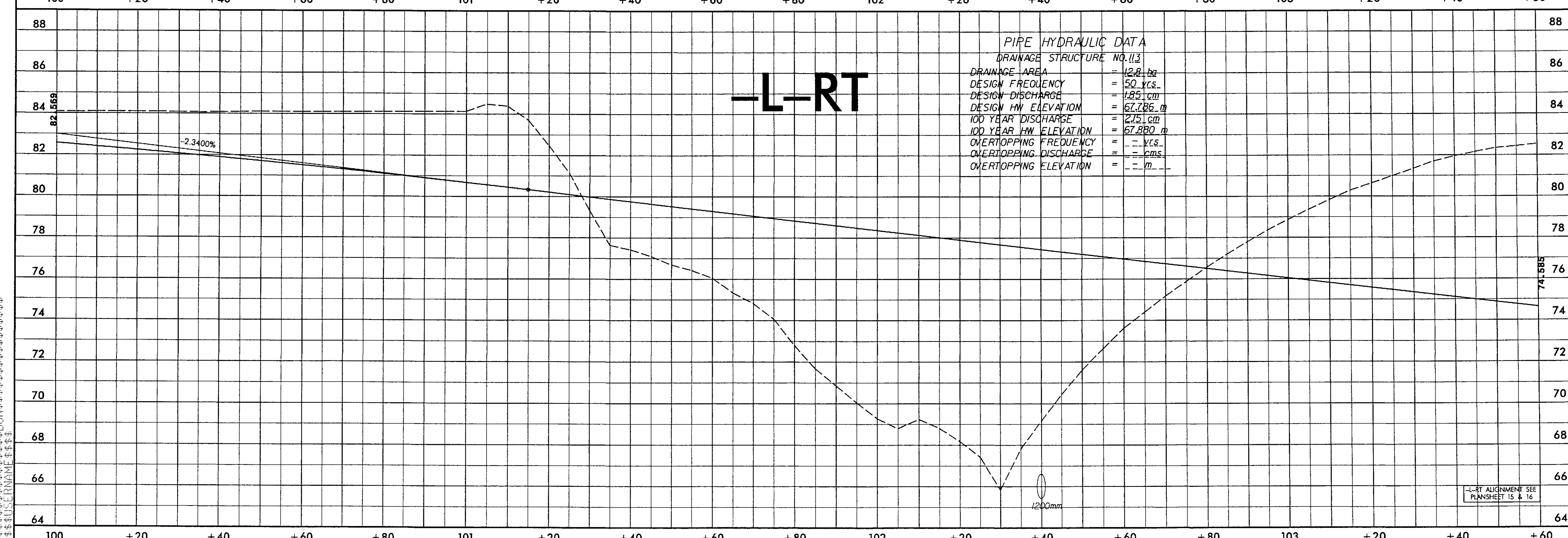
METRIC

CONST. REV. ________

R/W REV. ________

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 113

DRAINAGE AREA	=	12.8 ha
DESIGN FREQUENCY	=	50 yrs.
DESIGN DISCHARGE	=	1.85 cm
DESIGN HW ELEVATION	=	67.786 m
100 YEAR DISCHARGE	=	2.15 cm
100 YEAR HW ELEVATION	=	67.880 m
OVERTOPPING FREQUENCY	=	- yrs.
OVERTOPPING DISCHARGE	=	- cms
OVERTOPPING ELEVATION	=	- m

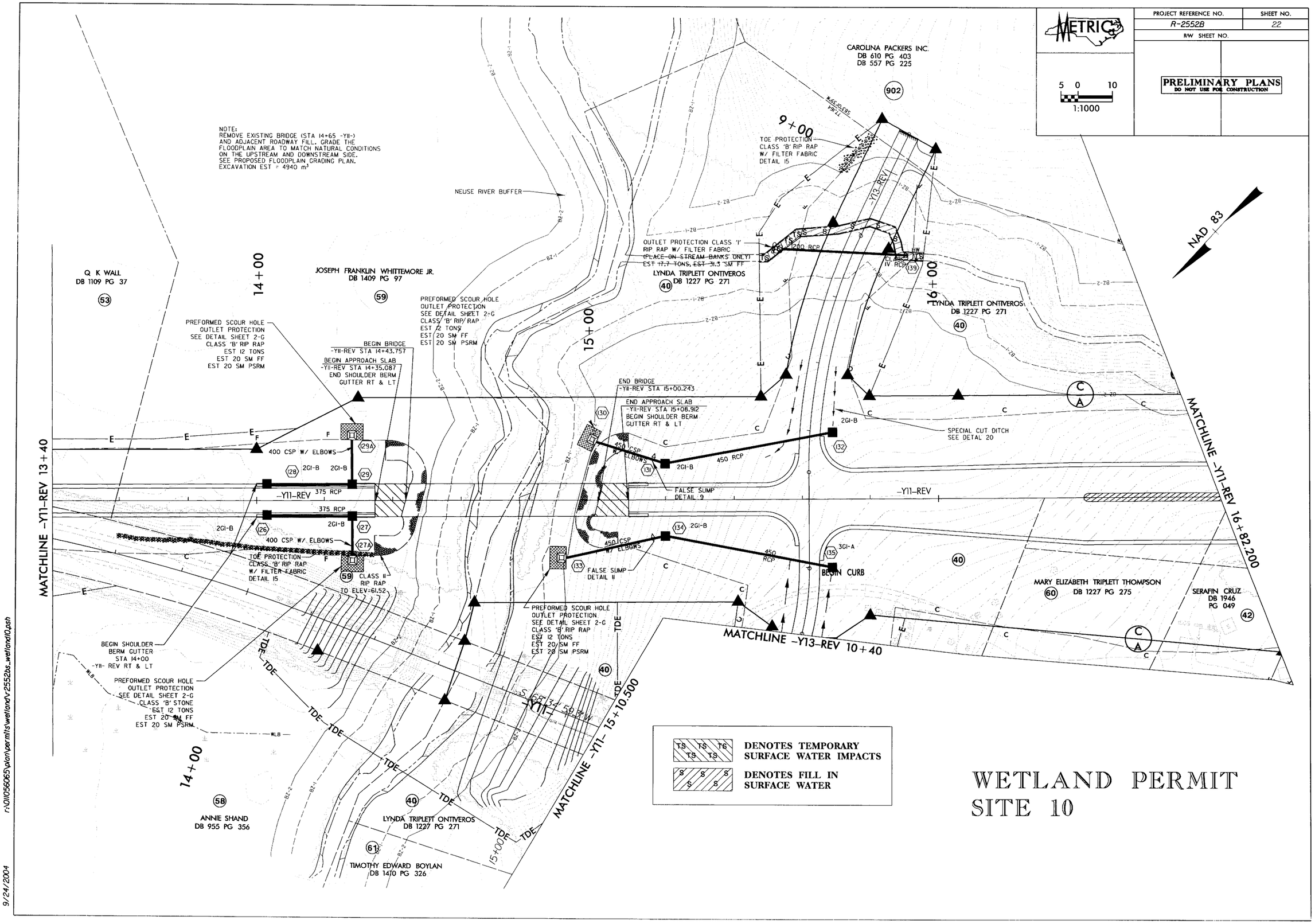
$$$$$SYSTIME$$$$$
$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	22
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



WETLAND PERMIT SITE 10

r:\01\056065\plan\permits\wetland\r2552bs_wetland10.psh

9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	22
R/W SHEET NO.	

METRIC

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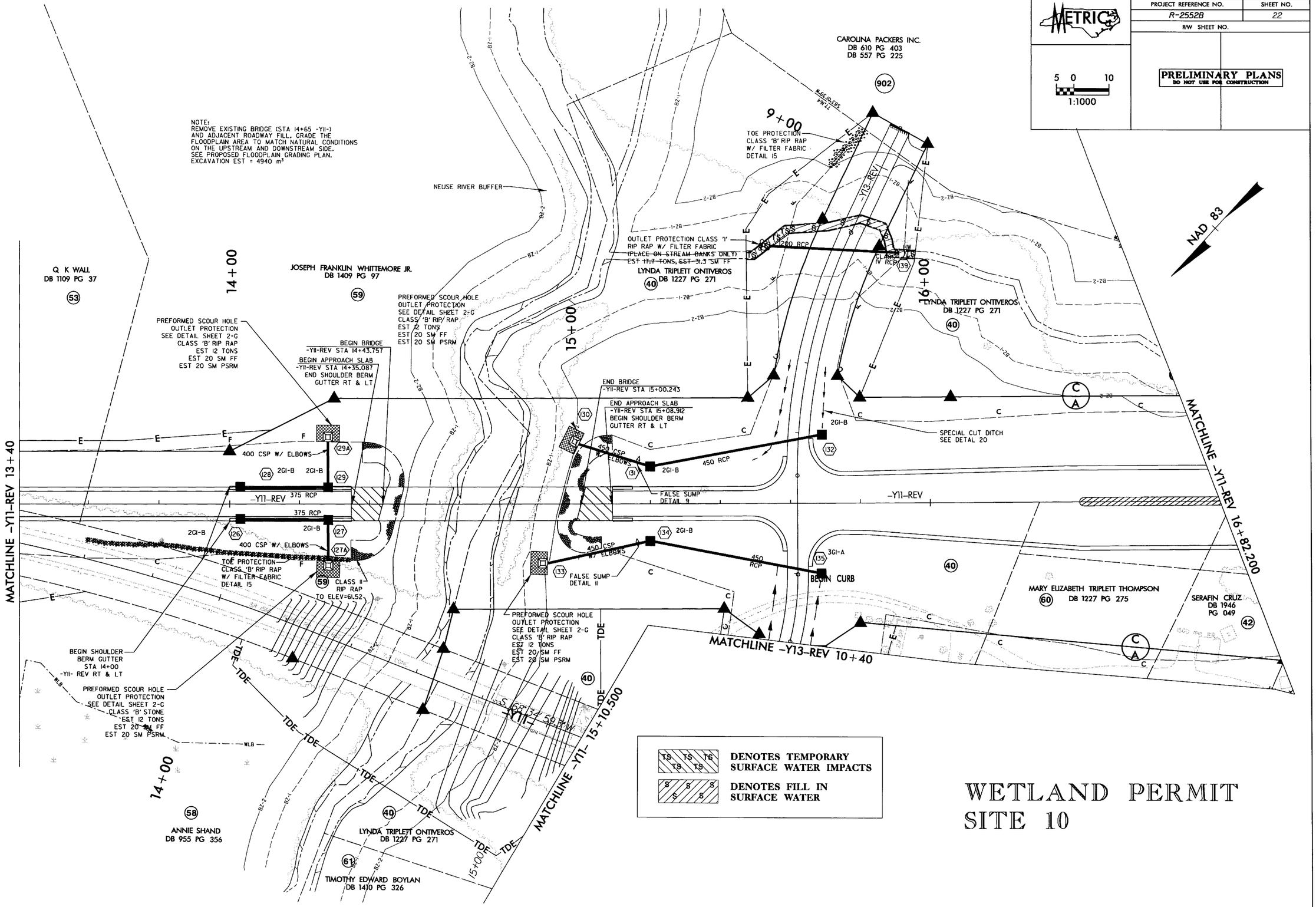
1:1000

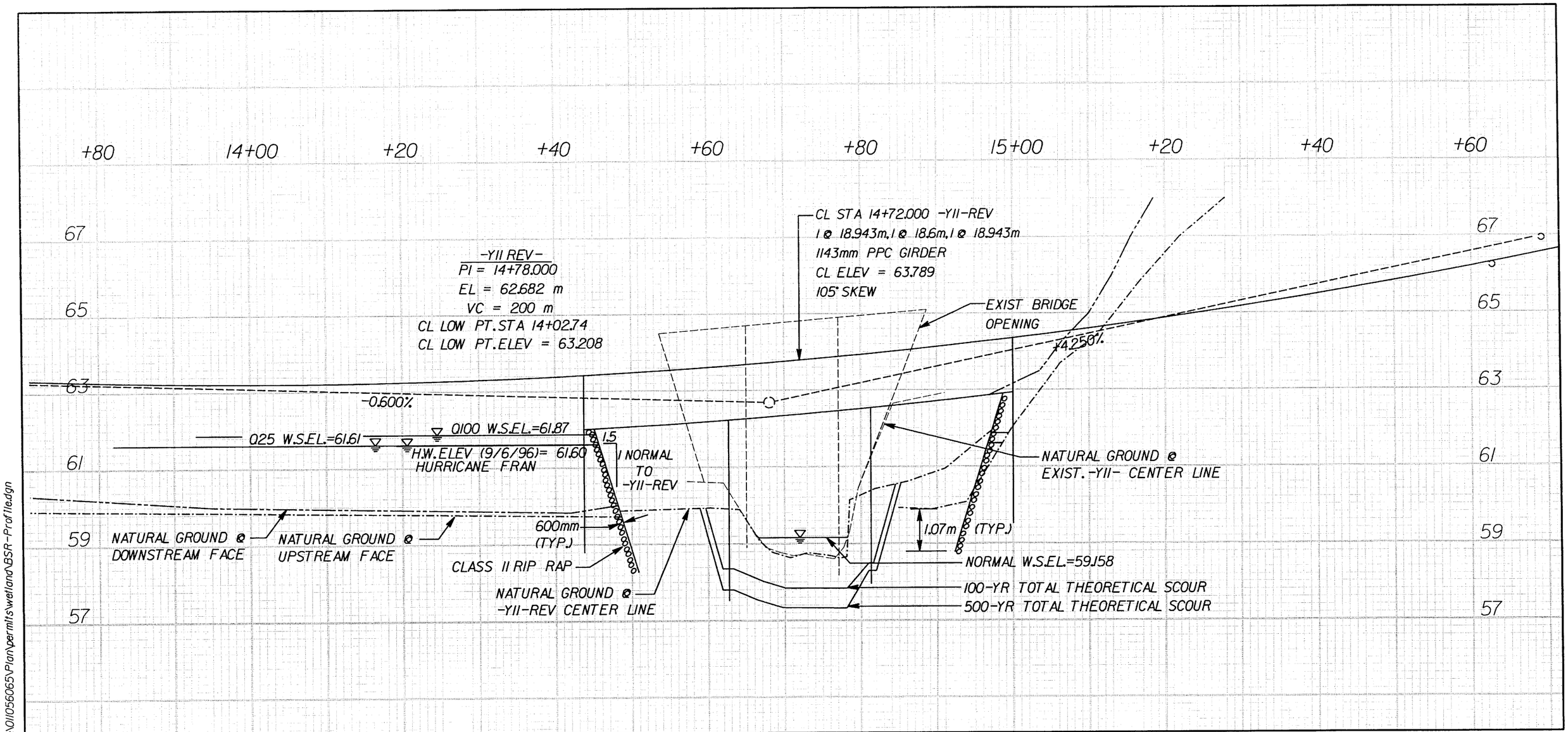
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



WETLAND PERMIT
SITE 10

r:\01\056065\plan\permits\wetland\r2552bs_wetland10.psh

9/23/2004



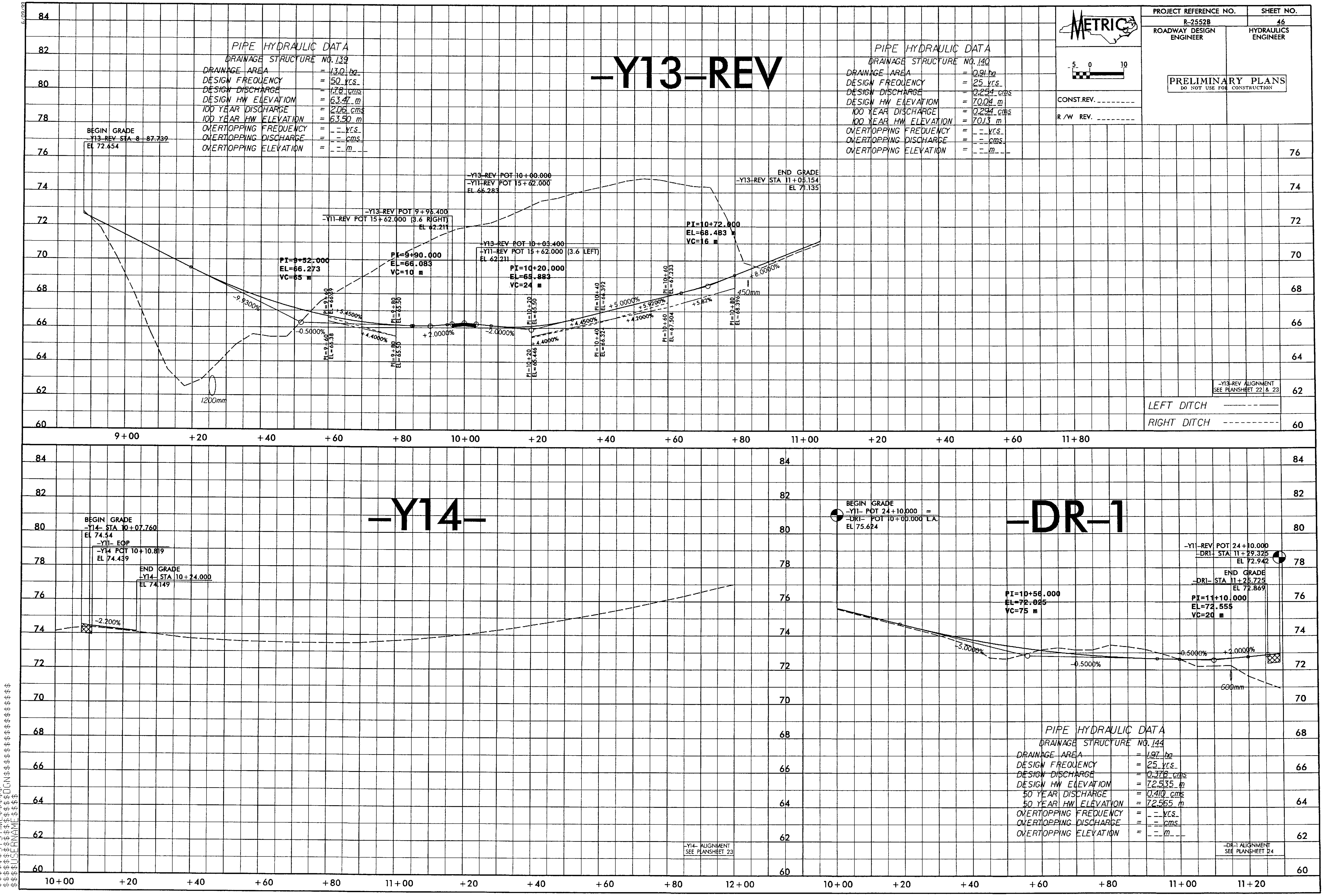
WETLAND PERMIT DRAWING
BSR PROFILE
R-2552B

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

SHEET 20 OF 23 **9/16/2004**

R:\01\056065\Plan\permits\wetland\BSR-Profile.dgn
9/16/2004



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 139

DRAINAGE AREA	=	13.0 ha
DESIGN FREQUENCY	=	50 yrs
DESIGN DISCHARGE	=	1.78 cms
DESIGN HW ELEVATION	=	63.47 m
100 YEAR DISCHARGE	=	2.06 cms
100 YEAR HW ELEVATION	=	63.50 m
OVERTOPPING FREQUENCY	=	_ - yrs
OVERTOPPING DISCHARGE	=	_ - cms
OVERTOPPING ELEVATION	=	_ - m

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 140

DRAINAGE AREA	=	0.91 ha
DESIGN FREQUENCY	=	25 yrs
DESIGN DISCHARGE	=	0.254 cms
DESIGN HW ELEVATION	=	70.04 m
100 YEAR DISCHARGE	=	0.294 cms
100 YEAR HW ELEVATION	=	70.13 m
OVERTOPPING FREQUENCY	=	_ - yrs
OVERTOPPING DISCHARGE	=	_ - cms
OVERTOPPING ELEVATION	=	_ - m

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 144

DRAINAGE AREA	=	1.97 ha
DESIGN FREQUENCY	=	25 yrs
DESIGN DISCHARGE	=	0.378 cms
DESIGN HW ELEVATION	=	72.535 m
50 YEAR DISCHARGE	=	0.410 cms
50 YEAR HW ELEVATION	=	72.565 m
OVERTOPPING FREQUENCY	=	_ - yrs
OVERTOPPING DISCHARGE	=	_ - cms
OVERTOPPING ELEVATION	=	_ - m

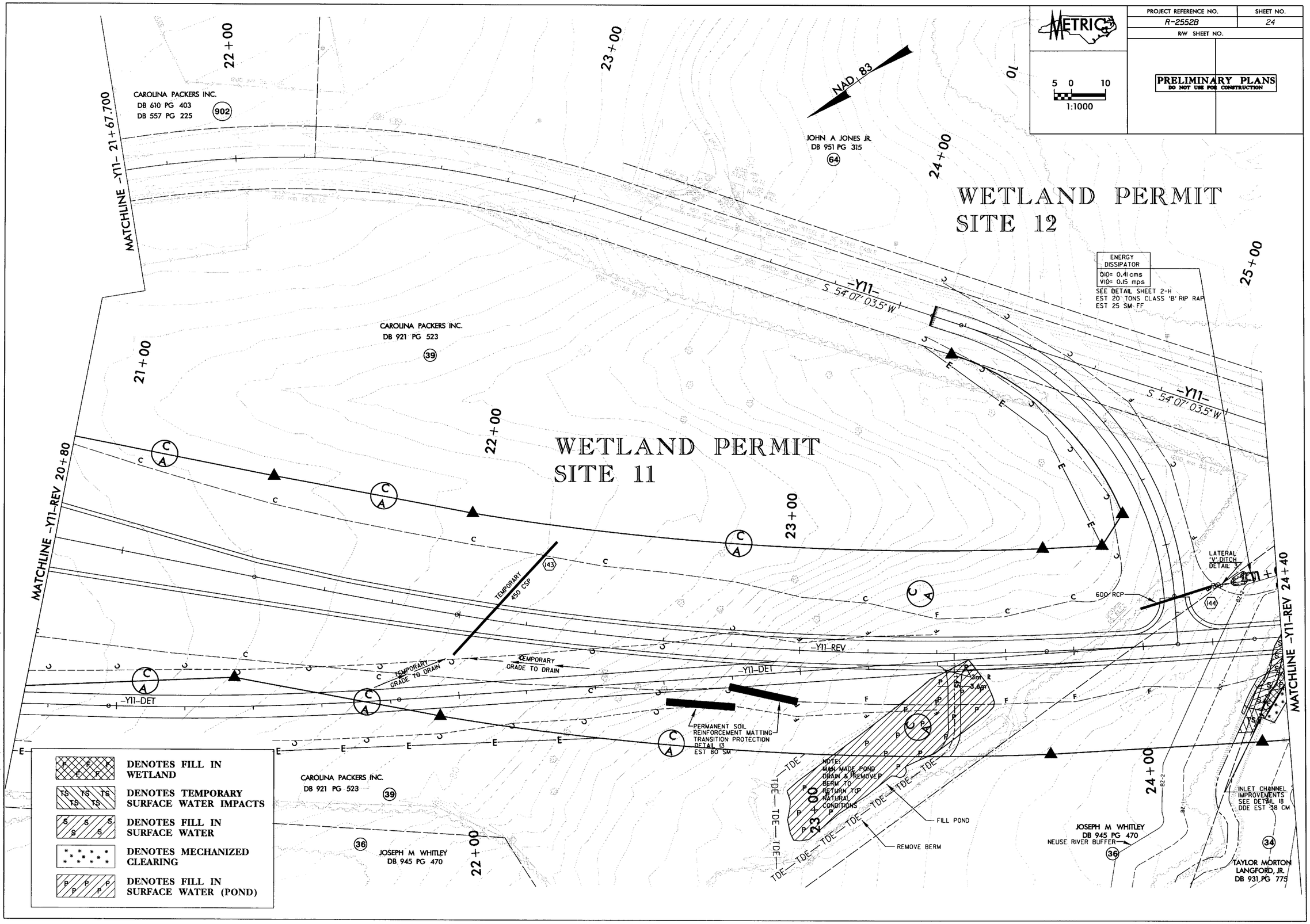
$$$$$$SYSTIME$$$$$ $$$$$$$$$$$$$$$$$$$$$DGN$$$$$ $$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	24
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	25
R/W SHEET NO.	

METRIC

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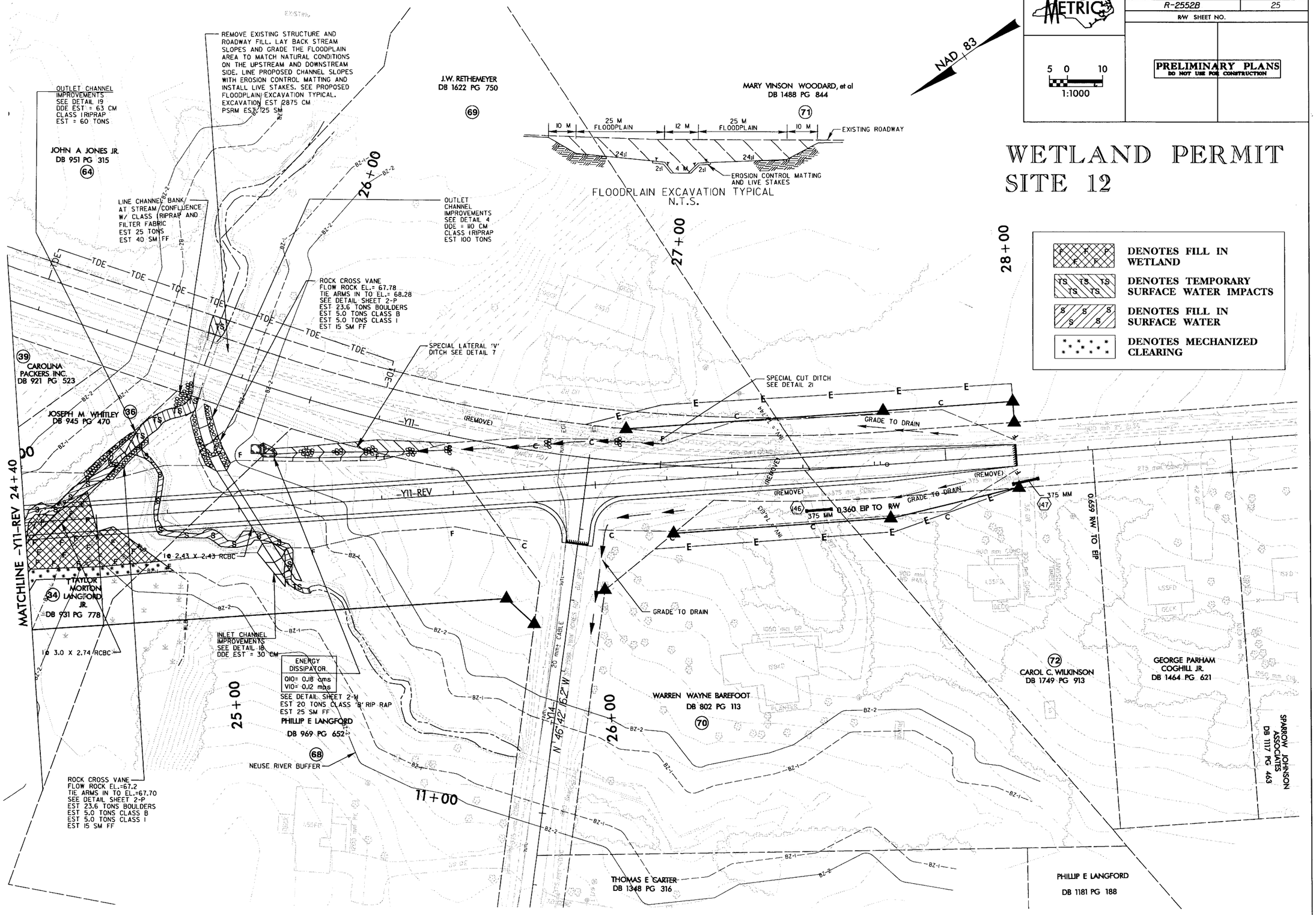
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WETLAND PERMIT SITE 12

NAD 83



	DENOTES FILL IN WETLAND
	DENOTES TEMPORARY SURFACE WATER IMPACTS
	DENOTES FILL IN SURFACE WATER
	DENOTES MECHANIZED CLEARING

r:\0110\56065\plan\permits\wetland\r2552bs_wetland12.psh

9/24/2004

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	24
R/W SHEET NO.	

METRIC

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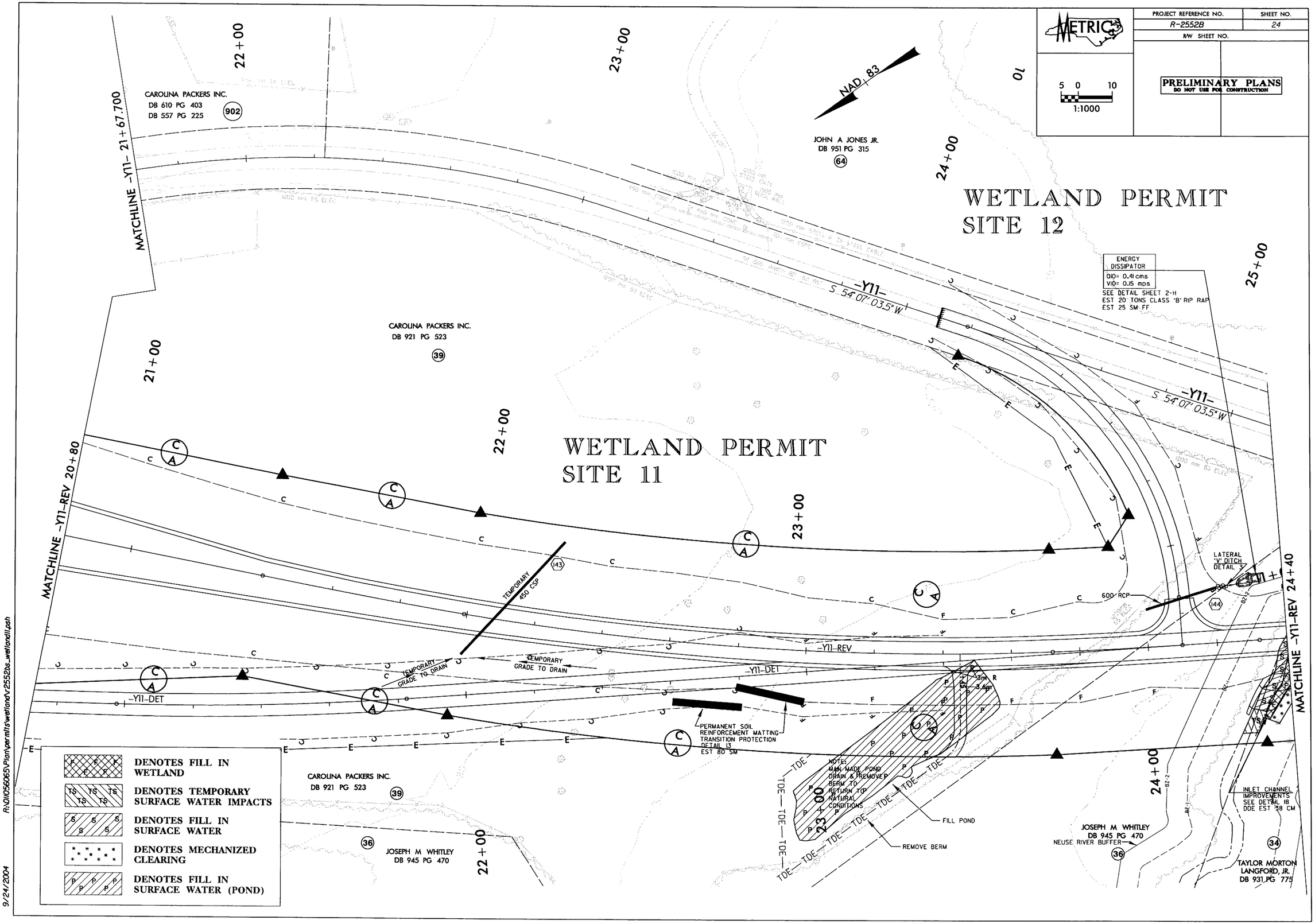
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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9/24/2004

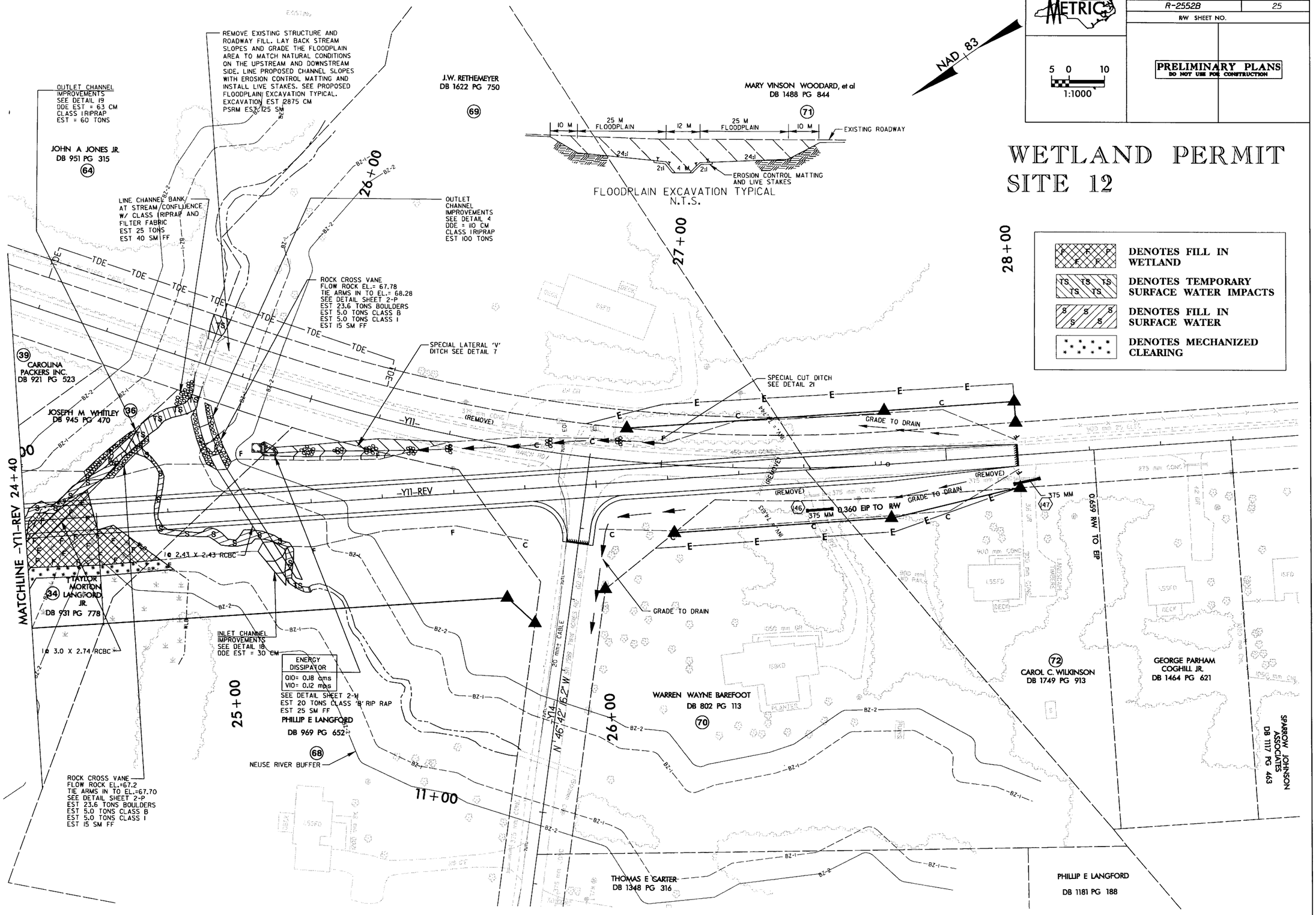
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	25
R/W SHEET NO.	

METRIC

5 0 10
1:1000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WETLAND PERMIT SITE 12



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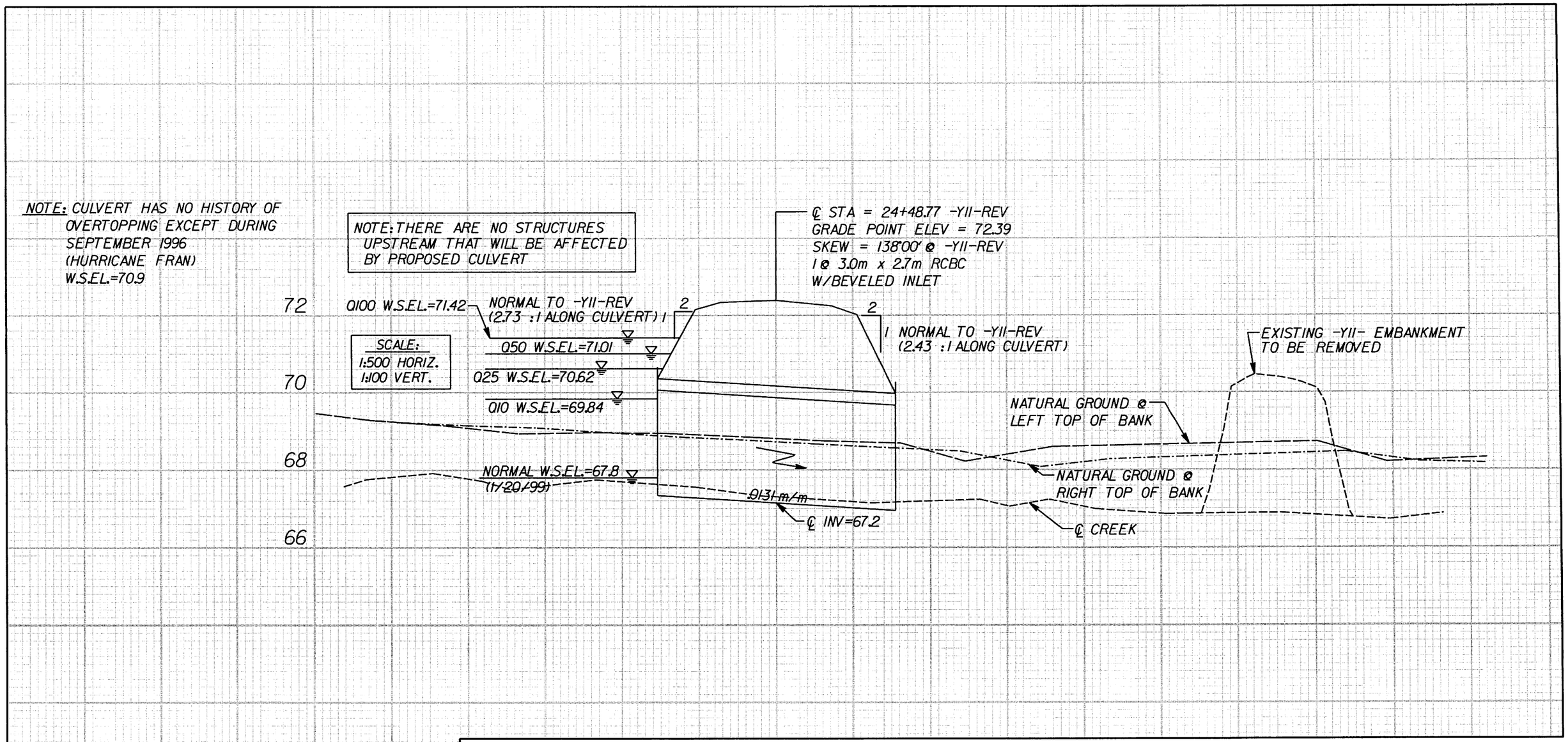
9/23/2004



R:\01\056065\Plan\permits\wetland\CSR-Profile3of4.dgn

9/16/2004

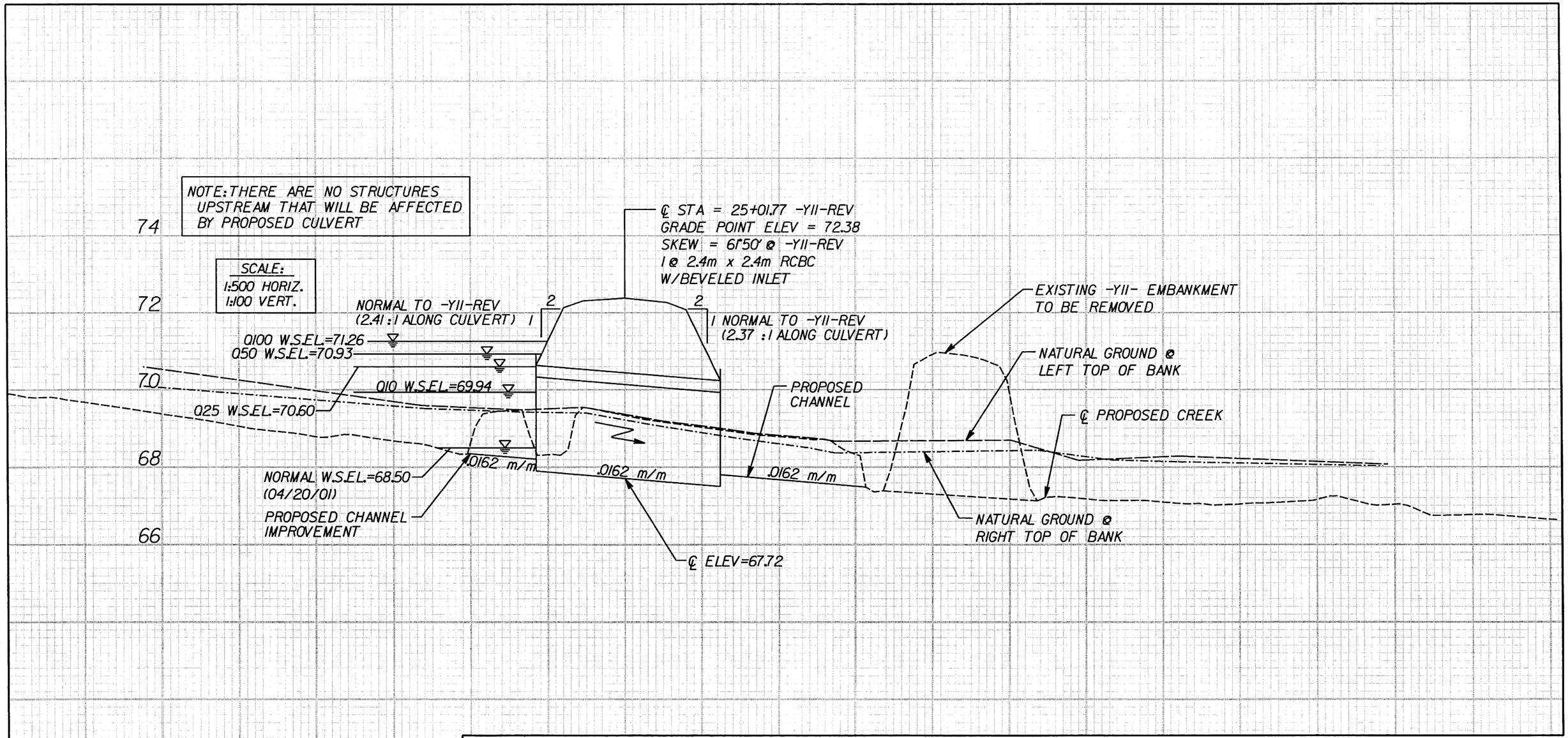
WETLAND PERMIT DRAWING
CSR 3 of 4 PROFILE
R-2552B

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

SHEET 21 OF 23 9/16/2004



R:\01\056065\Plan\permits\wetland\CSR-Profile4of4.dgn

9/16/2004

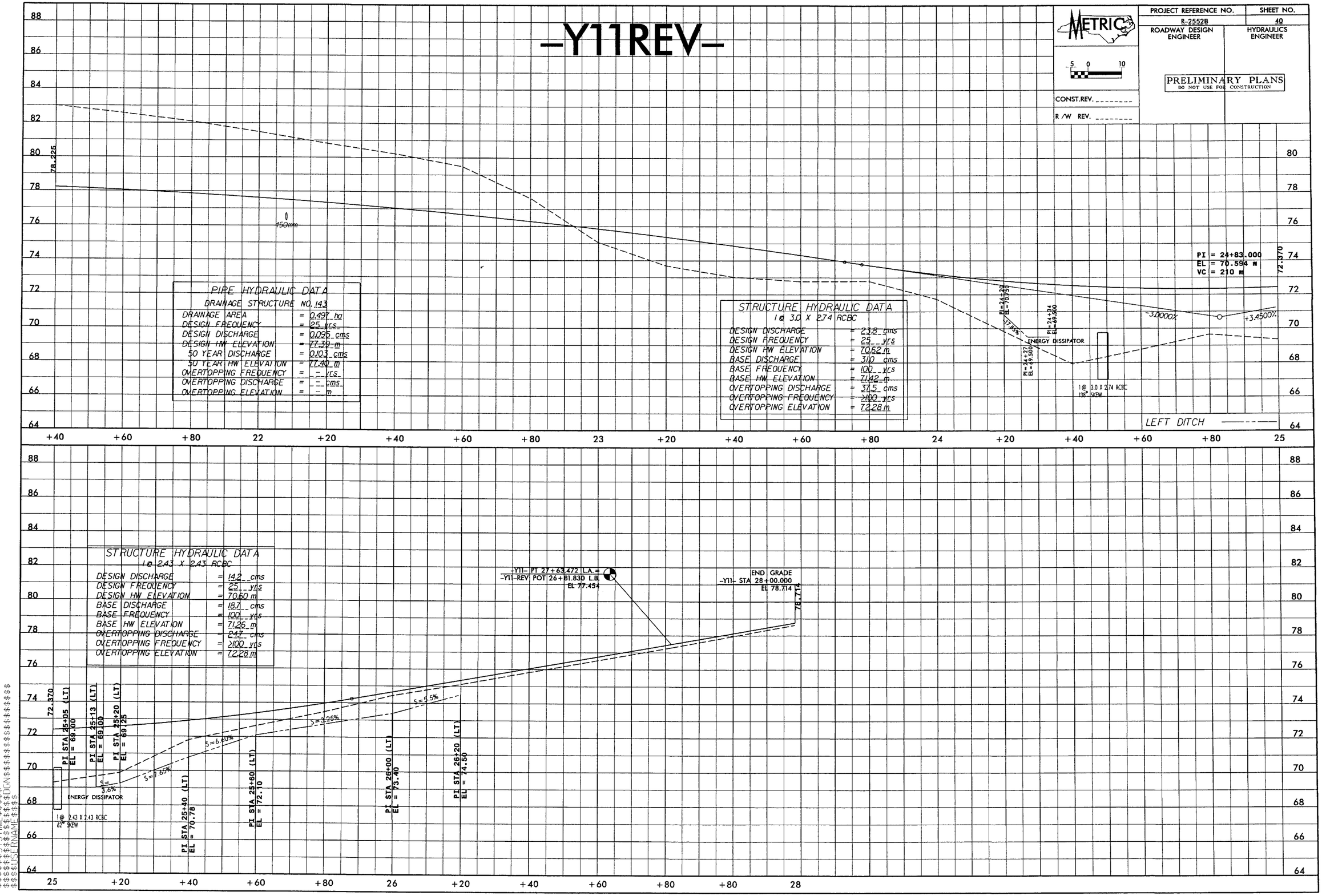
WETLAND PERMIT DRAWING
CSR 4 of 4 PROFILE
R-2552B

NCDOT

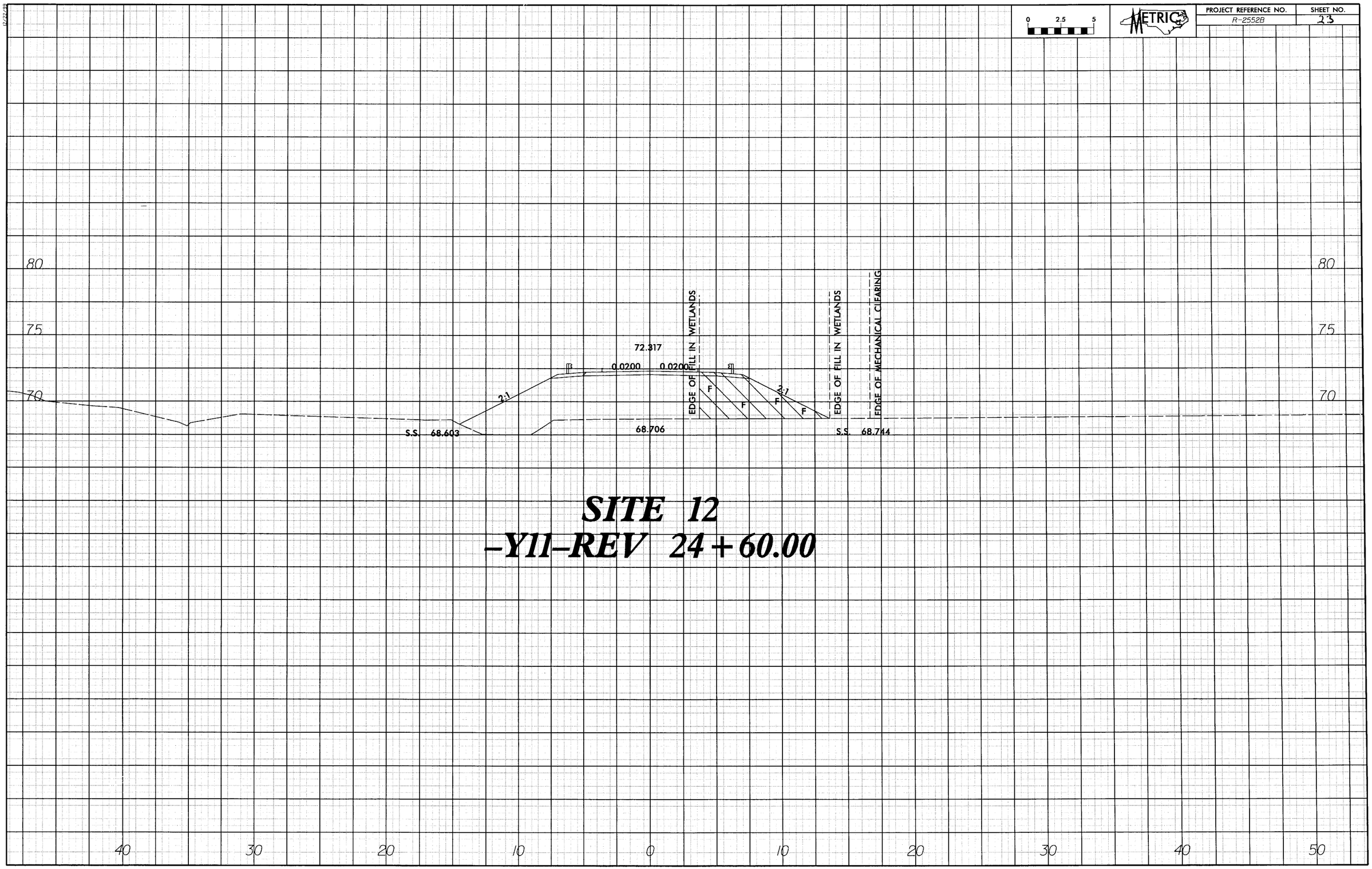
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.T311002 (R-2552B)
US 70 CLAYTON BYPASS FROM
EAST OF NC 42 TO EAST OF
SR 1560 (RANCH ROAD)

SHEET 22 OF 23 9/16/2004



-Y11REV-
METRIC
PROJECT REFERENCE NO.
R-2552B
SHEET NO.
40
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV.
PI = 24+83.000
EL = 70.594 m
VC = 210 m
-3.0000%
+3.4500%
ENERGY DISSIPATOR
1@ 3.0 X 2.74 RCBC
138° SKEW
LEFT DITCH
PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 143
DRAINAGE AREA = 0.497 ha
DESIGN FREQUENCY = 25 yrs
DESIGN DISCHARGE = 0.095 cms
DESIGN HW ELEVATION = 77.39 m
50 YEAR DISCHARGE = 0.103 cms
50 YEAR HW ELEVATION = 77.40 m
OVERTOPPING FREQUENCY = - yrs
OVERTOPPING DISCHARGE = - cms
OVERTOPPING ELEVATION = - m
STRUCTURE HYDRAULIC DATA
1@ 3.0 X 2.74 RCBC
DESIGN DISCHARGE = 23.8 cms
DESIGN FREQUENCY = 25 yrs
DESIGN HW ELEVATION = 70.62 m
BASE DISCHARGE = 31.0 cms
BASE FREQUENCY = 100 yrs
BASE HW ELEVATION = 71.42 m
OVERTOPPING DISCHARGE = 37.5 cms
OVERTOPPING FREQUENCY = >100 yrs
OVERTOPPING ELEVATION = 72.28 m
STRUCTURE HYDRAULIC DATA
1@ 2.43 X 2.43 RCBC
DESIGN DISCHARGE = 14.2 cms
DESIGN FREQUENCY = 25 yrs
DESIGN HW ELEVATION = 70.60 m
BASE DISCHARGE = 18.7 cms
BASE FREQUENCY = 100 yrs
BASE HW ELEVATION = 71.26 m
OVERTOPPING DISCHARGE = 24.7 cms
OVERTOPPING FREQUENCY = >100 yrs
OVERTOPPING ELEVATION = 72.28 m
-Y11- PT 27+63.472 L.A. =
-Y11-REV POT 26+81.830 L.B.
EL 77.454
END GRADE
-Y11- STA 28+00.000
EL 78.714
PI STA 25+05 (LT)
EL = 69.00
PI STA 25+13 (LT)
EL = 69.00
PI STA 25+20 (LT)
EL = 69.25
PI STA 25+40 (LT)
EL = 70.78
PI STA 25+60 (LT)
EL = 72.10
PI STA 26+00 (LT)
EL = 73.40
PI STA 26+20 (LT)
EL = 74.50
S=3.6%
S=7.65%
S=6.60%
S=3.25%
S=5.5%
ENERGY DISSIPATOR
1@ 2.43 X 2.43 RCBC
62° SKEW



SITE 12
–Y11–REV 24+60.00

TIP: R-2552B

CONTRACT: C201228

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2552B	1	

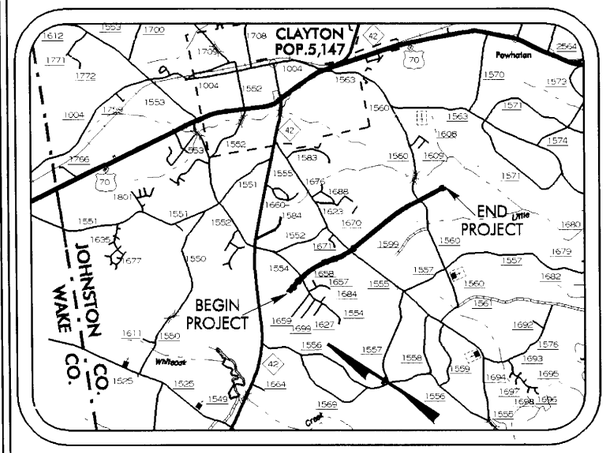
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34459.1.1	NHF-60-1(9)	P.E. & UTIL.
34459.2.5		R.O.W.

METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

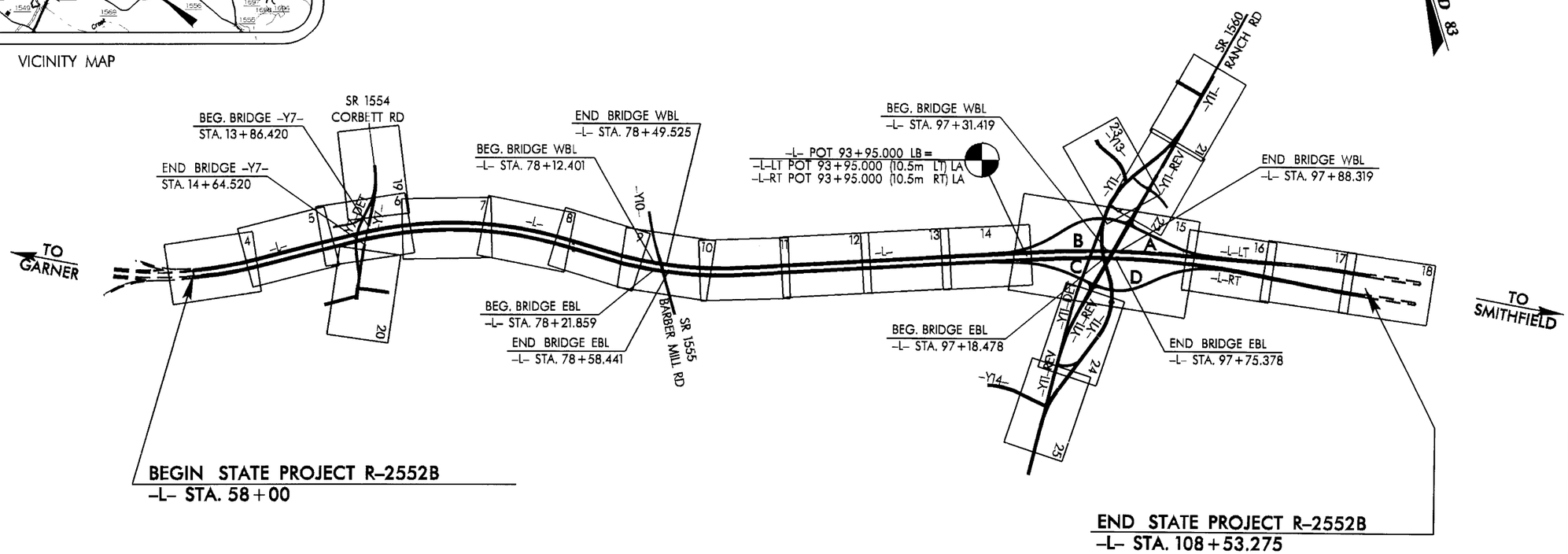


VICINITY MAP

LOCATION: US 70 CLAYTON BYPASS FROM EAST OF NC 42 TO EAST OF SR 1560 (RANCH ROAD)

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

NAD 83



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

GRAPHIC SCALES

5 0 10
PLANS

5 0 10
PROFILE (HORIZONTAL)

1 0 2
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005	=	37,185
ADT 2025	=	68,800
DHV	=	10 %
D	=	65 %
T	=	16 % *
V	=	110 km/h

* TTST 10% DUAL 6 %

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT NHF-60-1(9) = 4.959 km
LENGTH STRUCTURES F.A. PROJECT NHF-60-1(9) = 0.094 km

TOTAL LENGTH STATE PROJECT 34459.1.1 = 5.053 km

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 31, 2000

LETTING DATE: MAY 17, 2005

JIMMY GOODNIGHT, P.E.
PROJECT ENGINEER

STEVE KENDALL
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRAN
FEDERAL HIGHWAY A

APPROVED
DIVISION ADMI

03-AUG-2004 08:50
R:\Proj\r2552b.tsh
SDKendall AT HD212456

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

-L-
PI= 57+45.283
Δ = 19° 10' 00.7" (LT)
L = 568.6919
T = 287.0276
R = 1,700.000
SE = 0.04

BL-802 PINC 64+28.045
-L- 57+38.396: OFF 71.936m LT

MURIEL E. PENNY
DB 579 PG. 376
(1)
(NO CLAIM)

-L- POC 58+00.000 (R-2552B)
BEGIN STATE PROJECT 8.T311002
BEGIN F.A. PROJECT NHF-60-1(9)

NEUSE RIVER BUFFER

POOLE, F R MRS, HEIRS
REF. NOT AVAILABLE
(2)

BL-803 PINC 66+59.637
-L- 59+78.736: OFF 56.420 LT

-L- CS 60+26.947
+26.947
50
(164.04')

S 75° 34' 46.1" E -BL-

S 82° 56' 53.0" E
(CHORD)

PL
50
(164.04')

BEGIN FENCE

FALSE SUMP DETAIL 9

2GI-B
d=0.84

2 - 1.8 m X 2.4 m RCBC

FALSE SUMP DETAIL 10

2GI-A
X-DEPTH
d=2.657

1050 RCP

1050 RCP W/ELBOWS

2GI-A
X-DEPTH
d=2.841

INV - 82.40

-L- POC 59+00.000
BEGIN PAVEMENT

FALSE SUMP DETAIL 9

2GI-B
d=0.84

FALSE SUMP DETAIL 10

2GI-A
X-DEPTH
d=2.54

900 RCP

CABLE GUIDERAIL

FALSE SUMP DETAIL 11

2GI-B
d=0.84

SEE SHEET 5

MATCHLINE -L- 60+60

BEGIN FENCE

(CHORD)

+49.273
50.782
(166.61')

+00
56
(183.73')

+20
56
(183.73')

+60
50
(164.04')

+26.947
50
(164.04')

(CHORD)

(CHORD)

AXLE

MURIEL E. PENNY
DB 579 PG. 376
(1)
(NO CLAIM)

POOLE, F R MRS, HEIRS
REF. NOT AVAILABLE
(2)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "LAKE DAM"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 222085.5690(m) EASTING: 636096.3610(m)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999893375
THE N.C. LAMBERT GRID BEARING
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"LAKE DAM" TO -L- STATION 58+00.000 IS
S 52 04' 44.86" E 22,310.5113 m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

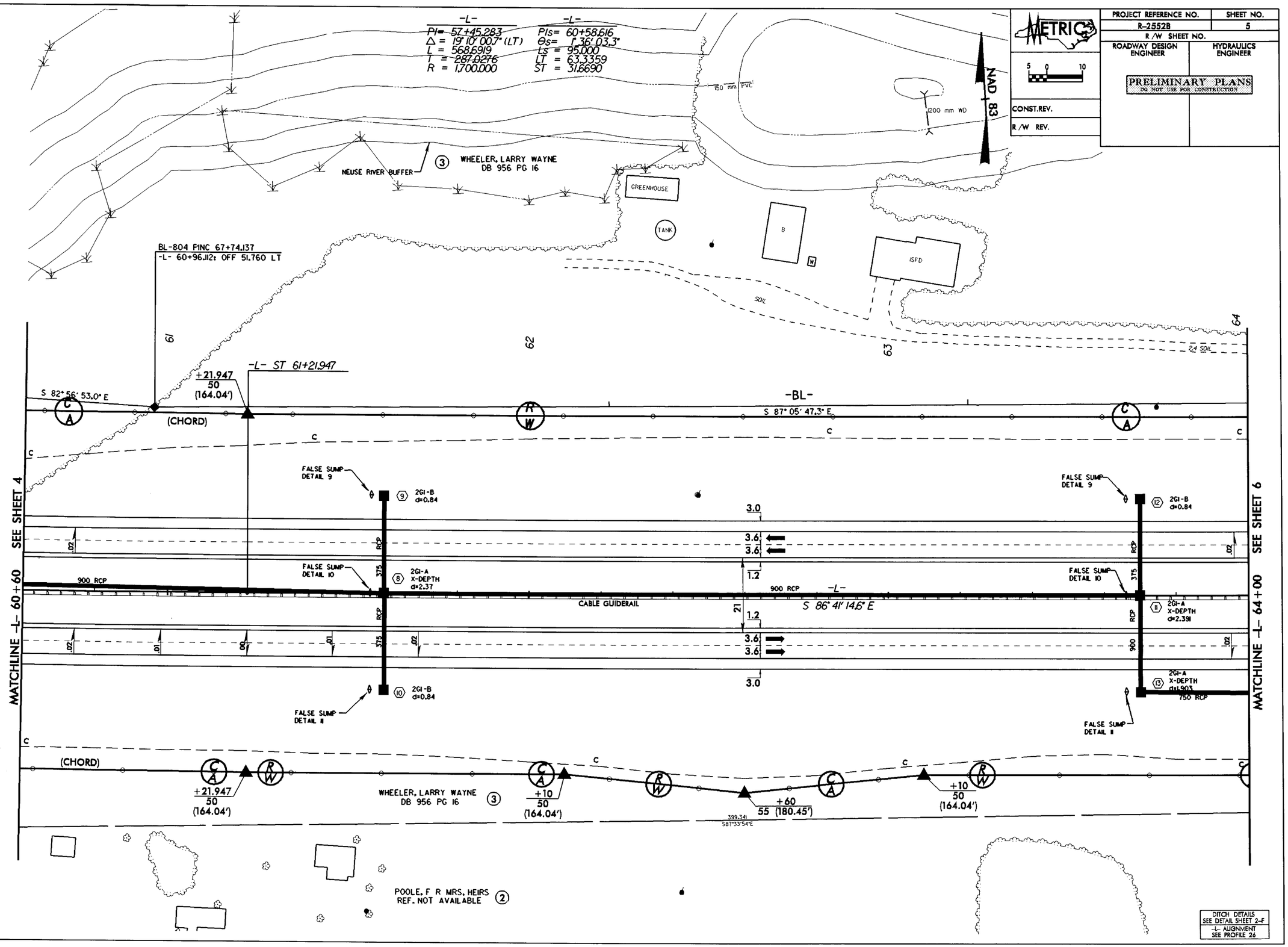
DITCH DETAILS
SEE DETAIL SHEET 2-F
-L- ALIGNMENT
SEE PROFILE 26

REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUBMITTAL OF APRIL 9, 2002
VARIOUS FLAGGING CHANGES
MRH

6/10/99

03-AUG-2004 8:06
SDK:mdall
AT R2552B



PROJECT REFERENCE NO.	SHEET NO.
R-2552B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

REVISIONS

03-AUG-2004 11:57
SDKendall AT R0212456

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

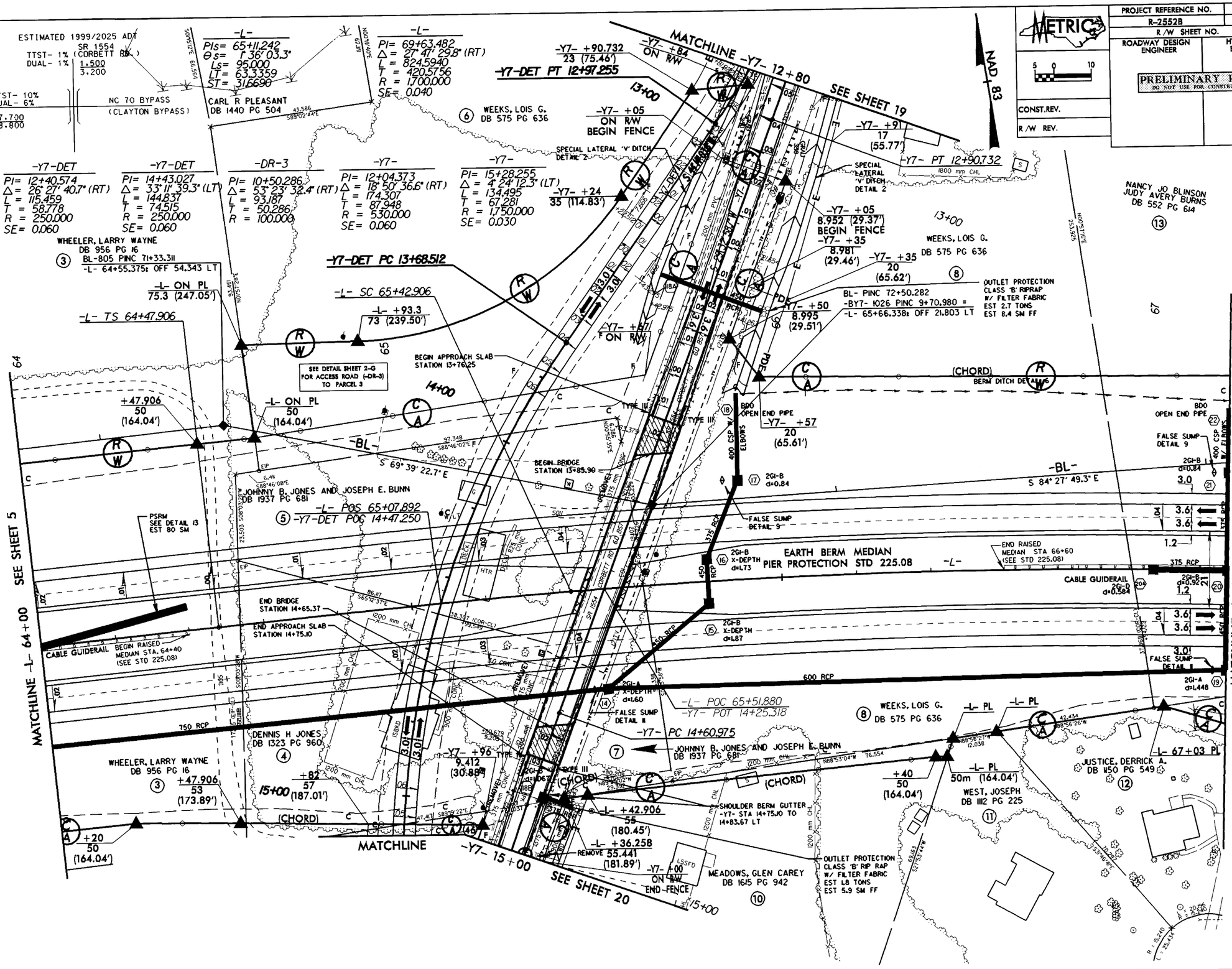
METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

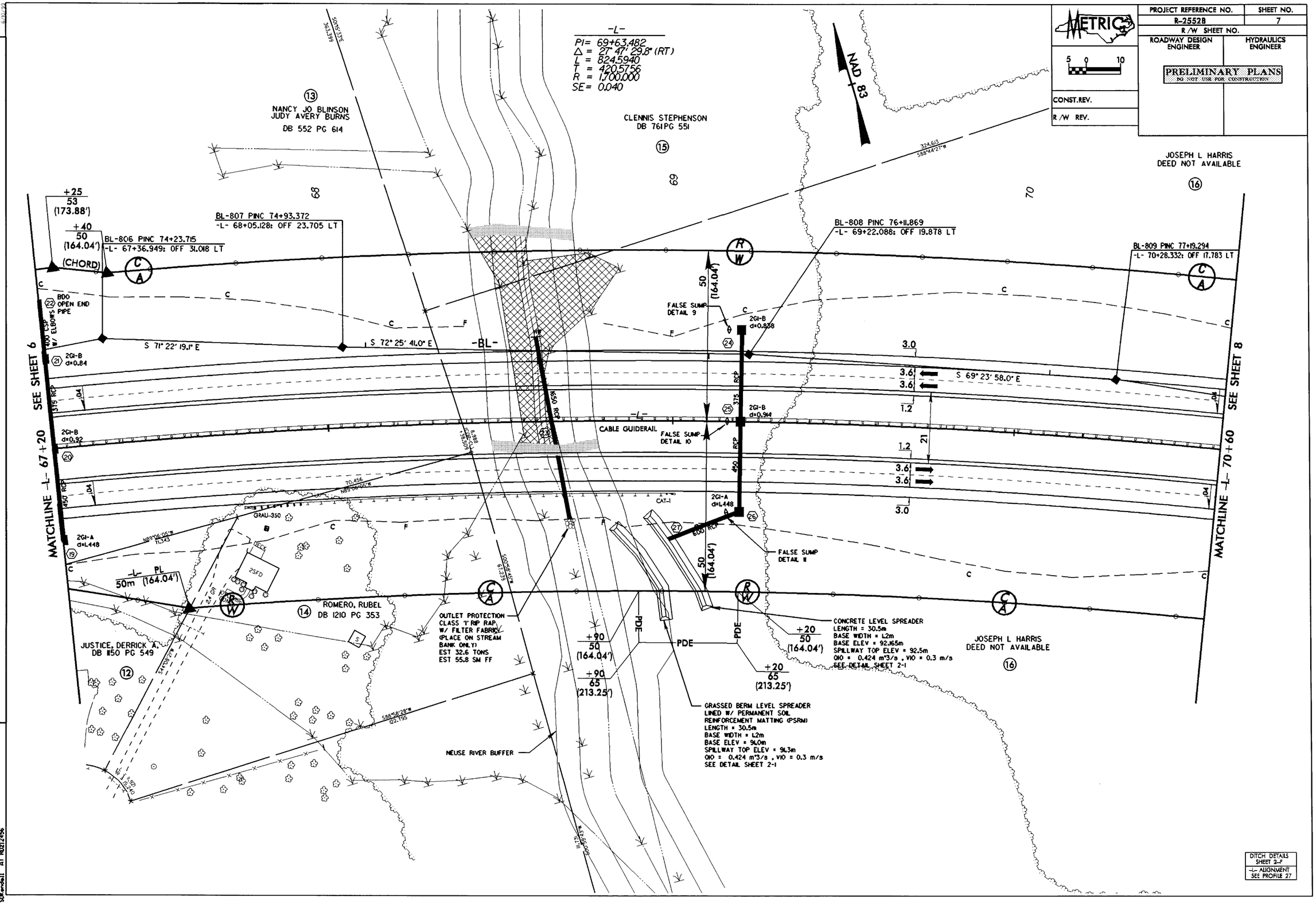


BRIDGE SKETCH
DETAIL SHEET 2-H
DITCH DETAILS
DETAIL SHEET 2-F
-DR-3 ALIGNMENT
SEE PROFILE 50
-L- ALIGNMENT
SEE PROFILE 27
-Y7- ALIGNMENT
SEE PROFILE 36
-Y7-DET ALIGNMENT
SEE PROFILE 37

REVISIONS

R/W REVISIONS 12-20-2001 PER SUBMITTAL OF 11-06-2001 WFW
R/W REVISIONS 06-07-02 PER SUBMITTAL OF 04-09-02 MRH
R/W REVISIONS 07-11-02 PER SUBMITTAL OF 07-08-02
FLAGGING CHANGE PARCEL 8
MRH

03-AUG-2004 14:57
SDK:pw94:11 RT R2552B26596.PSH



REVISIONS

R/W REVISIONS 12-20-2001 PER SUBMITTAL OF 11-06-2001 WPW
R/W REVISIONS - JUNE 7, 2002 PER SUMITTAL OF APRIL 9, 2002
VARIOUS NAME CHANGES
MRH

03-AUG-2004 11:57
SDKendall

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

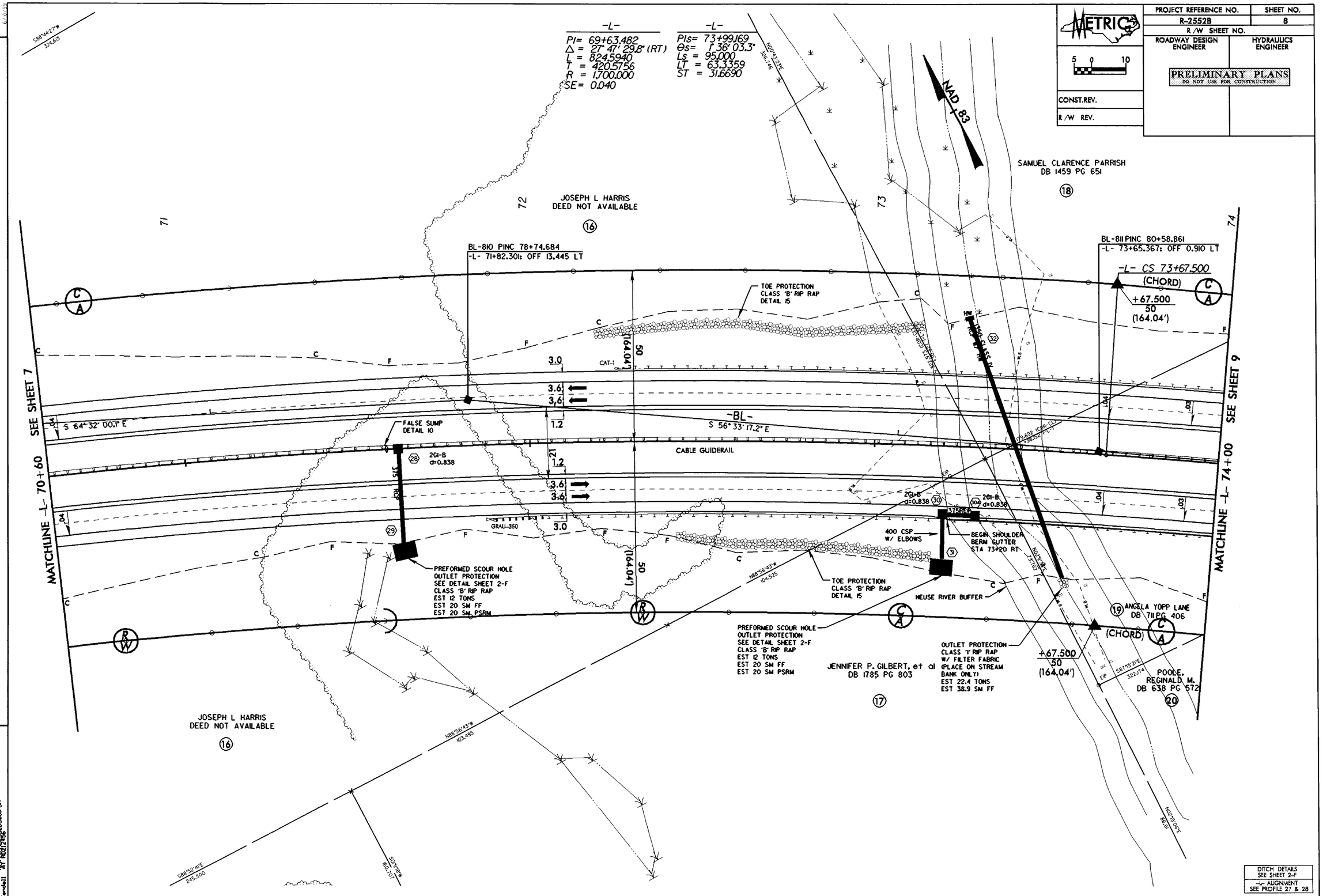
METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DITCH DETAILS
SEE SHEET 2-F

-L- ALIGNMENT
SEE PROFILE 27 & 28

REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUMITTAL OF APRIL 9, 2002
VARIOUS NAME AND DEED BOOK CHANGES
MRH

03-AUG-2004 14:57
SDX-mdell AT R2552B

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

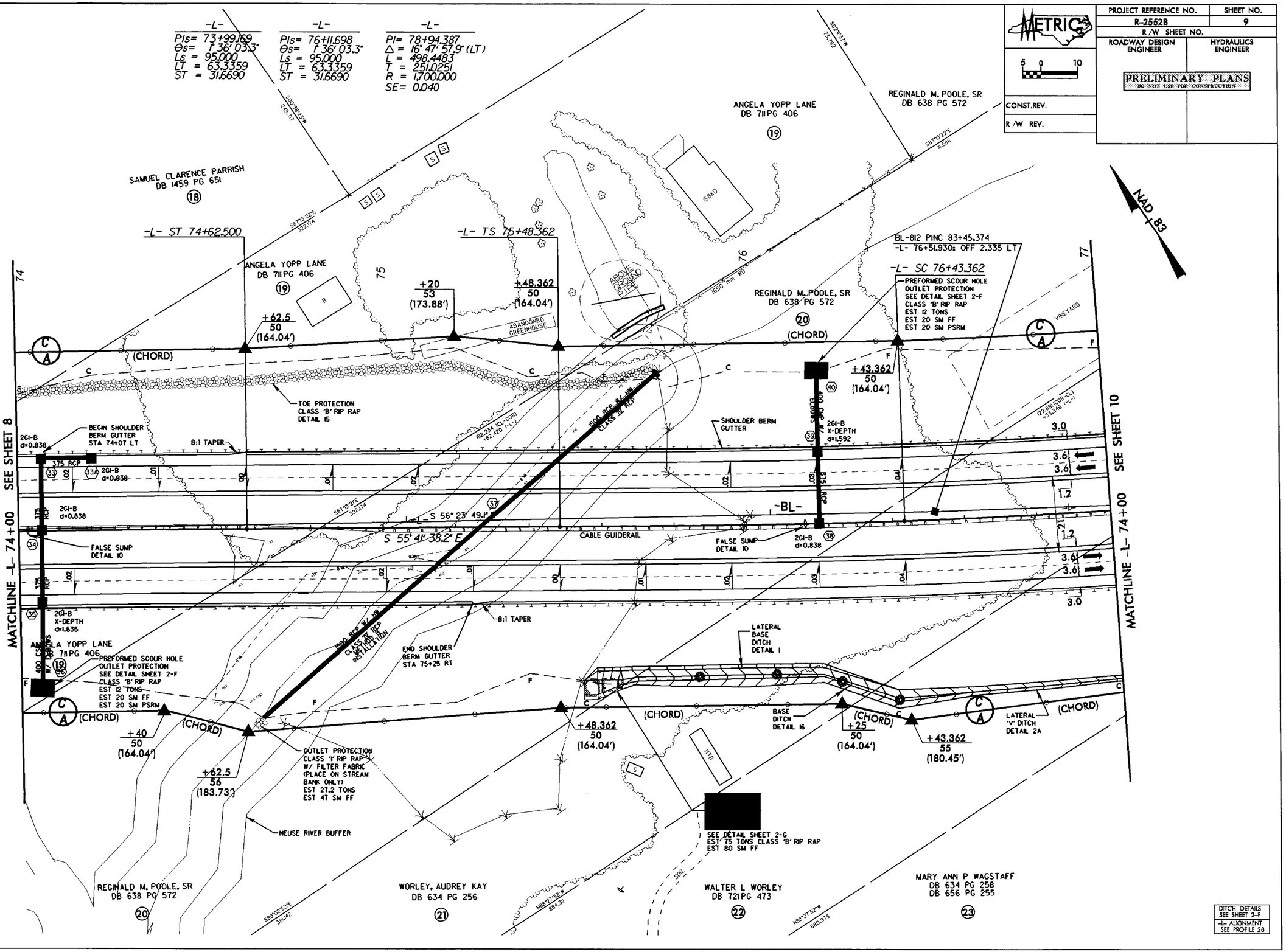
METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DITCH DETAILS
SEE SHEET 2-F
-L- ALIGNMENT
SEE PROFILE 28

REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUMITTAL OF APRIL 9, 2002
VARIOUS NAME AND DEED BOOK CHANGES
MRH

6/10/99

03-AUG-2004 14:58
SDKendall
R2552B_SHEET_PSH

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

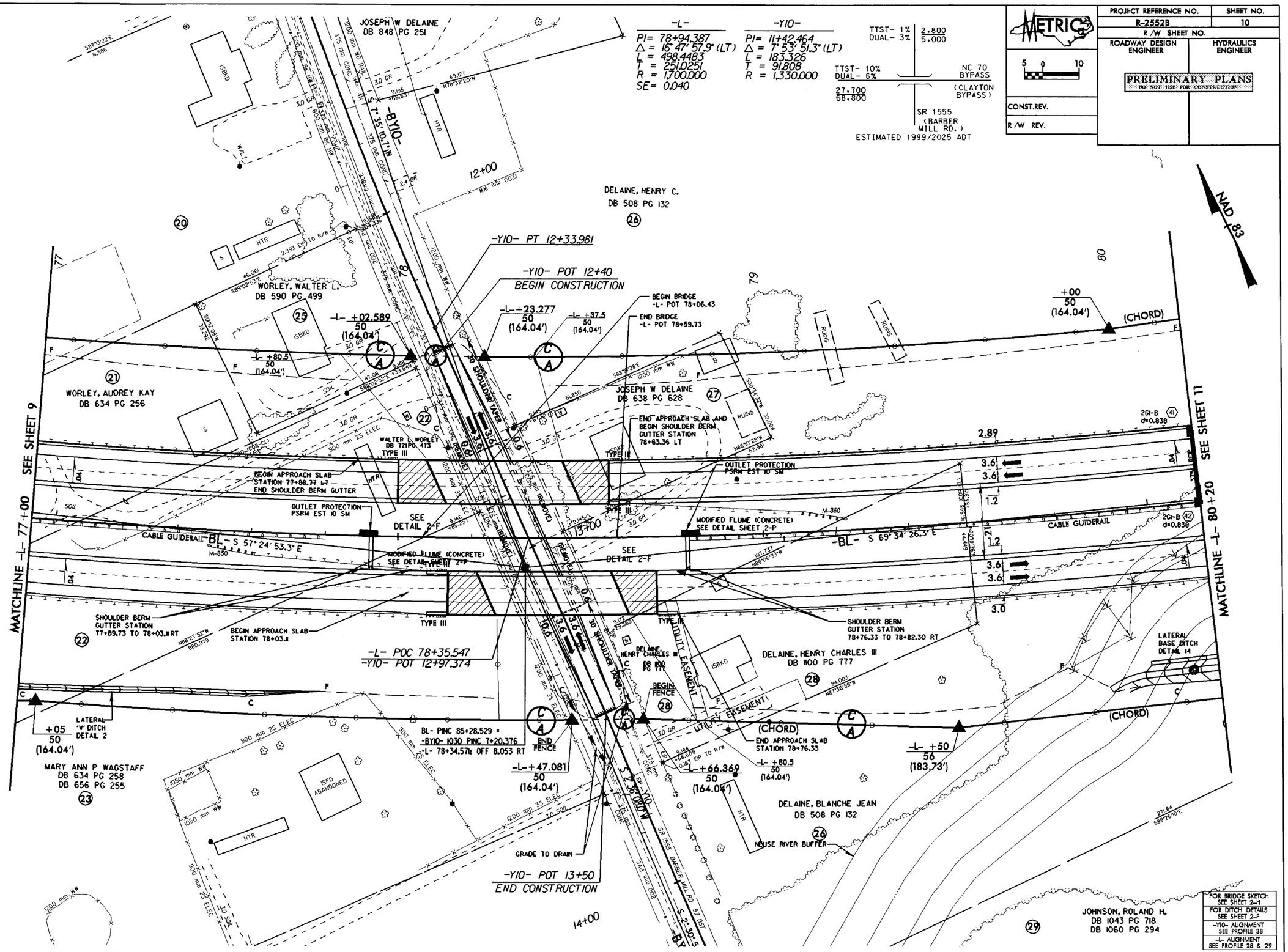
METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.



REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUMITTAL OF APRIL 9, 2002
VARIOUS NAME, FLAGGING, AND DEED BOOK CHANGES
REVISED PROPERTY LINE PARCEL 23
MRH

03-AUG-2004 14:18
SDX:endsll R1 R2012.dgn

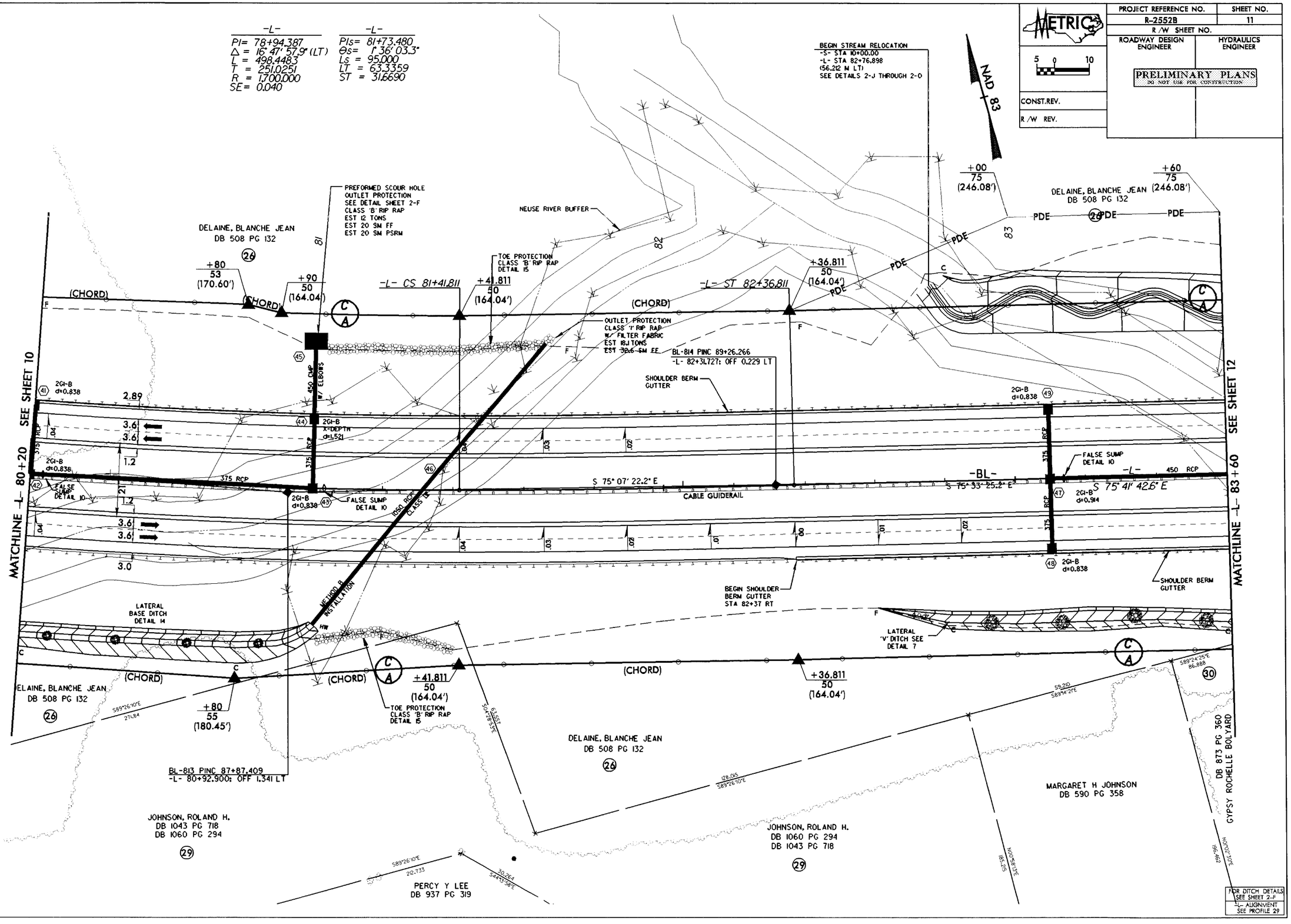
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.



REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUMMITAL OF APRIL 9, 2002
VARIOUS NAME CHANGES
MRH

03-AUG-2006 14:13
SDKevdell AT R2012456

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

NAD 83

REVISIONS

R/W REVISIONS - JUNE 7,2002 PER SUMMITAL OF APRIL 9,2002
VARIOUS NAME CHANGES
MRH

END STREAM RELOCATION
-S- STA 11+25.602
-L- STA 83+86.705
(36.696 M LT)
SEE DETAILS 2-J THROUGH 2-O
INLET CHANNEL DDE = 1220 m³

SEE DETAIL SHEET 2-G
EST 100 TONS CLASS 'B' RIP RAP
EST 115 SM FF

+60
75
(246.08')

+00
60
(196.85')

DELAINE, BLANCHE JEAN
DB 508 PG 132

LATERAL BASE DITCH DETAIL 1

+77
50
(164.04')

LATERAL BASE DITCH DETAIL 8

OUTLET PROTECTION
CLASS 'B' RIPRAP
EST 4.5 TONS
EST 11.7 SM FF

BL-816 PINC 93+68.747
-L- 86+74.197: OFF 2.093 LT

SPECIAL LATERAL 'V' DITCH SEE DETAIL 2

END FENCE

BEGIN FENCE

SHOULDER BERM GUTTER

END SHOULDER BERM GUTTER
STA 85+92 LT

2GI-B
d=0.838

2GI-B
d=0.838

2GI-B
X-DEPTH
d=2.584

GRAU-350

FALSE SUMP DETAIL 10

-BL-

S 76° 13' 45.8" E

450 RCP

600 RCP

1 @ 3.0 X 2.1 RCBC

2GI-A
d=1.448

CABLE GUIDERAIL

2GI-B
d=0.838

2GI-A
d=1.448

2GI-B
d=0.838

MATCHLINE -L- 83+60

SEE SHEET 11

MATCHLINE -L- 87+00

SEE SHEET 13

SHOULDER BERM GUTTER

BL-815 PINC 91+18.972
-L- 84+24.433: OFF 0.236 RT

LATERAL 'V' DITCH SEE DETAIL 7

END FENCE

BEGIN FENCE

ROCK CROSS VANE
FLOW ROCK EL.=83.0m
TIE ARMS IN TO EL.=83.5m
SEE DETAIL SHEET 2-O
EST 23.6 TONS BOULDERS
EST 5.0 TONS CLASS B
EST 5.0 TONS CLASS I
EST 15 SM FF

+10
50
(164.04')

+20
55
(180.45')

+30
50
(164.04')

BDO OPEN END PIPE

BANK PROTECTION
CONSTRUCT BOULDER WALL
TOP EL. 84.2m
SEE DETAIL SHEET 2-O
EST 57 TONS BOULDERS
EST 3.6 TONS CLASS B
EST 2.7 TONS = 57 STONE
EST 60 SM FF

NEUSE RIVER BUFFER

NOTE: THE FILL SLOPE BETWEEN STA 84+40 (RT) AND STA 85+30 (RT) HAS BEEN MODIFIED TO 1.5:1 TO AVOID THE CHANNEL. ROCK PLATING SHOULD BE PLACED FROM THE TOE OF SLOPE UP TO THE ROADWAY SHOULDER.
EST 1300 TONS CLASS I
MIN THICKNESS = 0.46 M
EST 1750 SM FF

+66
50
(164.04')

+80
58
(190.29')

+00
50
(164.04')

DELAINE, BLANCHE JEAN
DB 508 PG 132

GYPSY ROCHELLE BOLYARD
DB 873 PG 360

OUTLET PROTECTION
CLASS 'A' RIP RAP
W/ FILTER FABRIC
EST 16 TONS CLASS 2
EST 26 SM FF

J-HOOKS
SET FLOW ROCK EL.=83.0m
TIE ARMS IN TO EL.=83.5m
FOR BOTH STRUCTURES
SEE DETAIL SHEET 2-N
QUANTITIES PER J-HOOK
EST 10.9 TONS BOULDERS
EST 2.3 TONS CLASS B
EST 2.3 TONS CLASS I
EST 7 SM FF

HONEY H EDWARDS
DB 793 PG 275

MARGARET H JOHNSON
DB 793 PG 276

FOR DITCH DETAILS
SEE SHEET 2-F
-L- ALIGNMENT
SEE PROFILE 29 & 30

03-AUG-2004 8:48
SPK-mdell AT R2012.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

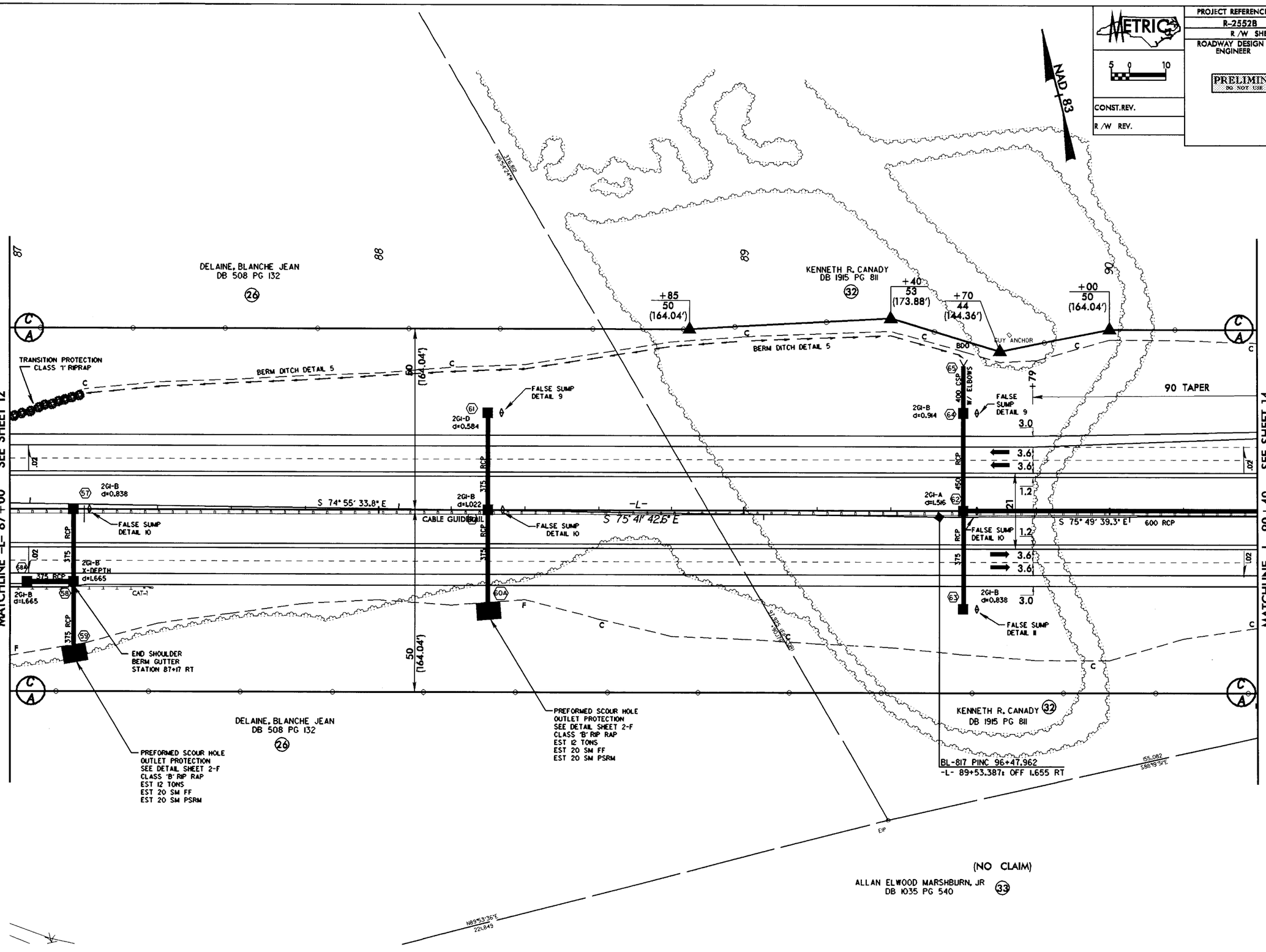
METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.



FOR DITCH DETAILS
SEE SHEET 2-F
-L- ALIGNMENT
SEE PROFILE 30

REVISIONS

R/W REVISIONS - 06-07-02 PER SUBMITTAL OF 04-09-02 MRH
R/W REVISIONS - 07-11-02 PER SUBMITTAL OF 07-08-02
DEEDBOOK REFERENCE CHANGE PARCEL 32
MRH

03-AUG-2004 14:53
SDKendell R:\R2552B\R2552BS13.PSH
AT R2212495

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

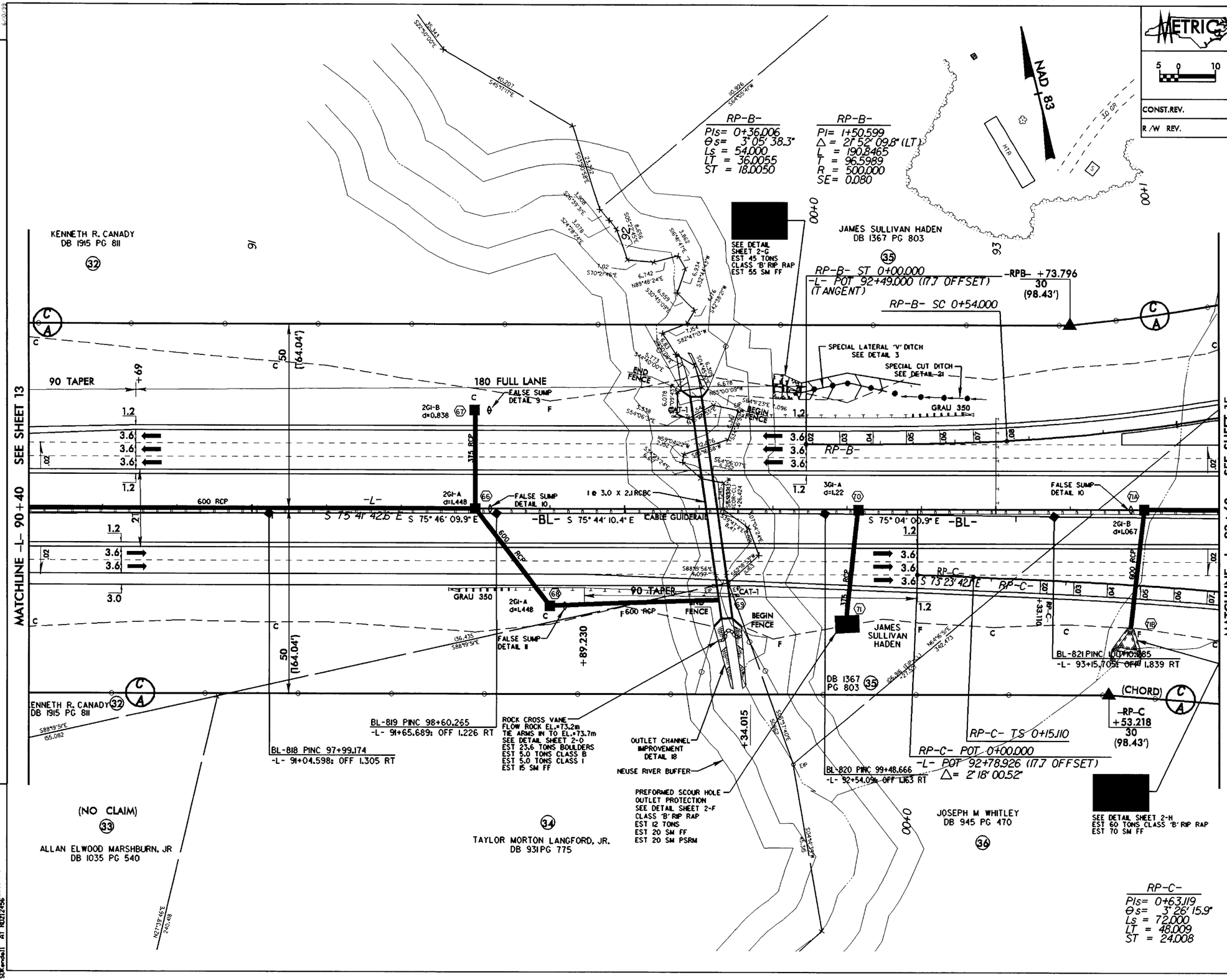
R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

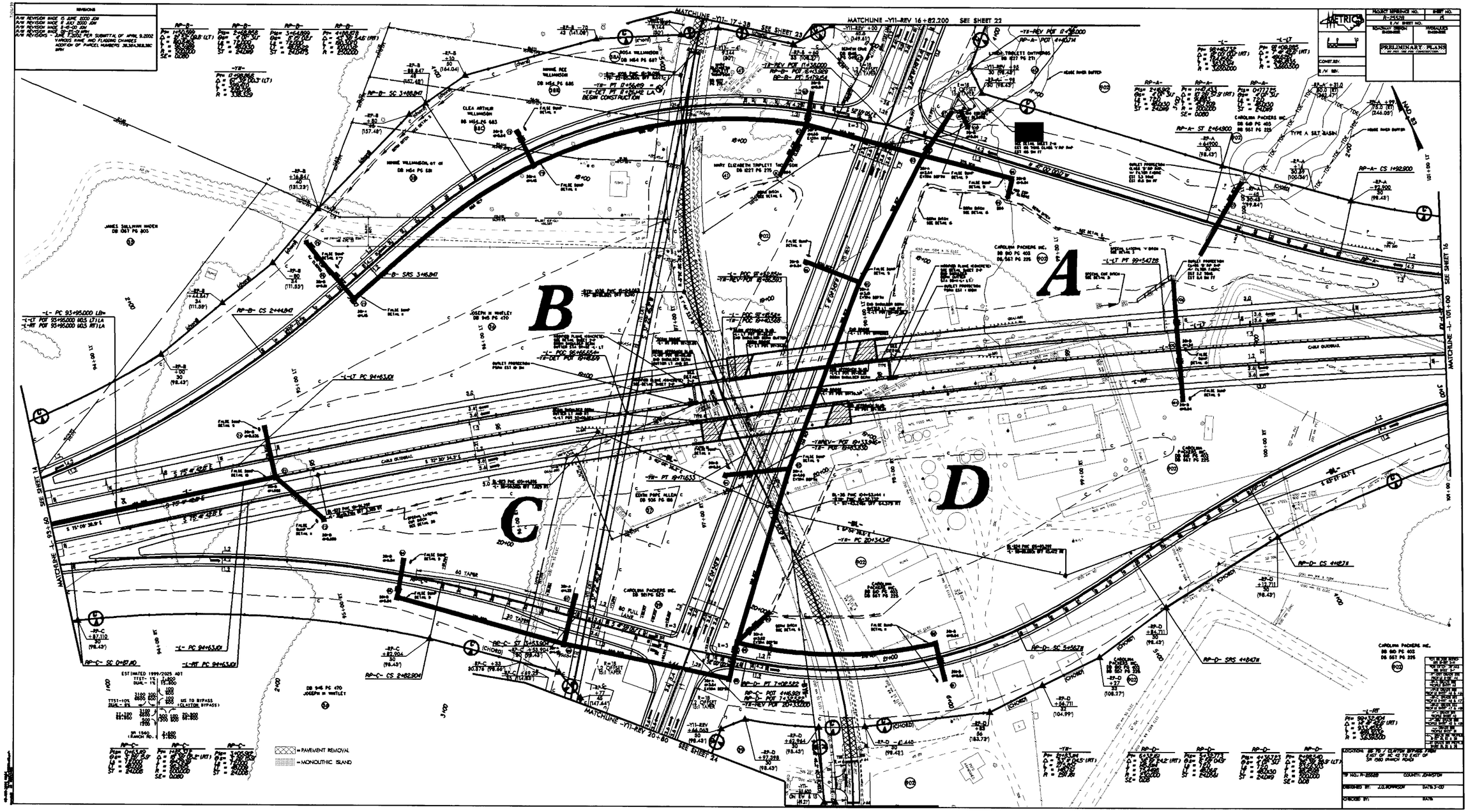
R/W REVISIONS - JUNE 7, 2002 PER SUMMITTAL OF APRIL 9, 2002
VARIOUS NAME AND FLAGGING CHANGES
MRH

6/10/99



FOR DITCH DETAILS SEE SHEET 2-F
-RP-A ALIGNMENT SEE PROFILE 45
-RP-B ALIGNMENT SEE PROFILE 46
-L- ALIGNMENT SEE PROFILE 30 & 31

03-AUG-2004 14:53
SDKwendall
R:\Roadway\Proj\r2552bsh14.dgn



MATCHLINE -Y11-REV 16+82.200 SEE SHEET 22
MATCHLINE -Y11-REV 20+80 SEE SHEET 24
MATCHLINE -L- 101+00 SEE SHEET 16
MATCHLINE -L- 93+60 SEE SHEET 14
A
B
C
D
PRELIMINARY PLANS
= PAVEMENT REMOVAL
= MONOLITHIC ISLAND

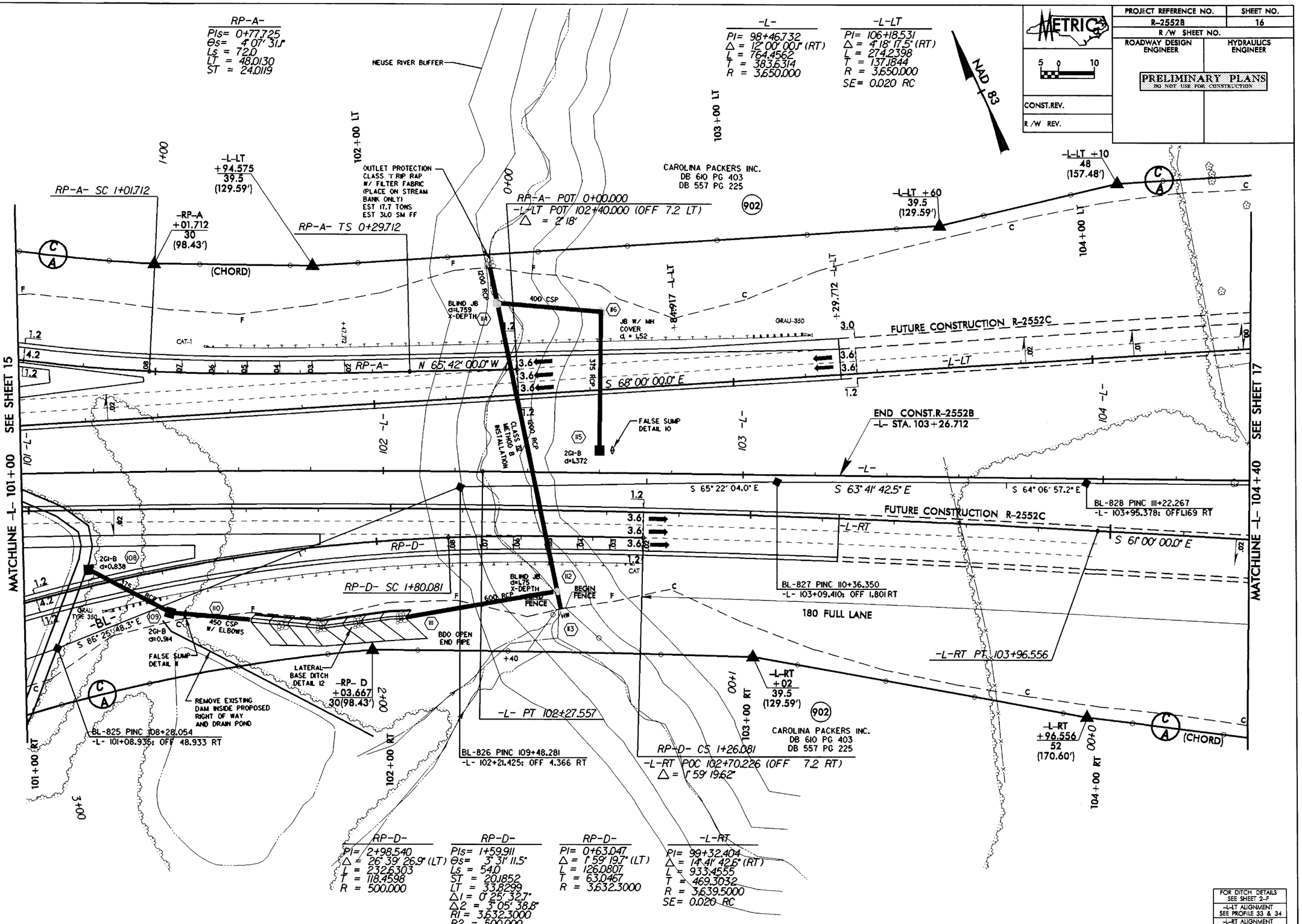
PROJECT REFERENCE NO.	SHEET NO.
R-2552B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.



FOR DITCH DETAILS
SEE SHEET 2-F
-L-LT ALIGNMENT
SEE PROFILE 33 & 34
-L-RT ALIGNMENT
SEE PROFILE 33 & 34

REVISIONS

ROW REVISION BY JCM 8-15-00

03-AUG-2004 12:00
SDK:wndell AT R2012456

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

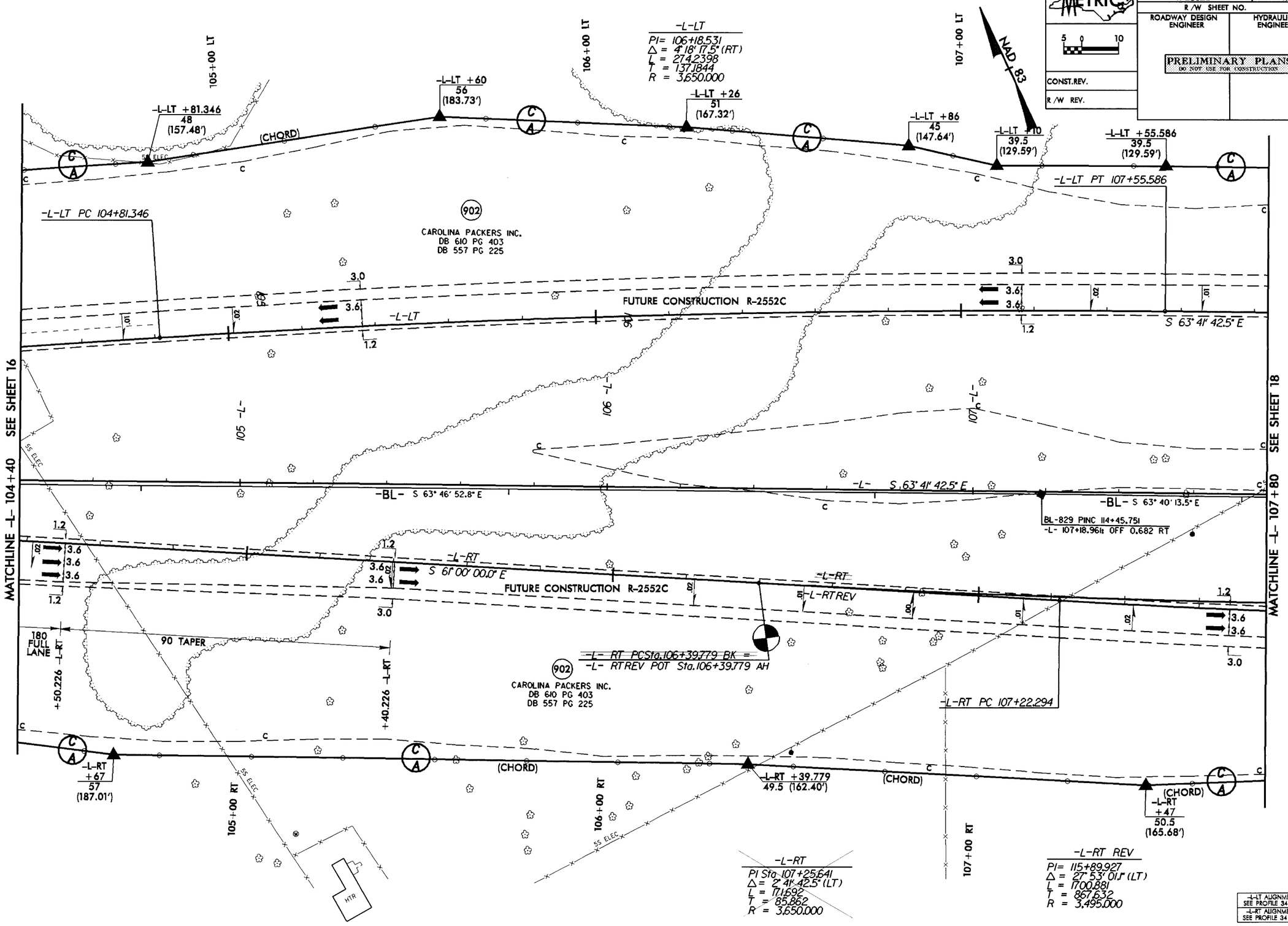
METRIC 5 0 10

CONST. REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



03-AUG-2004 09:
SDK-mdell

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

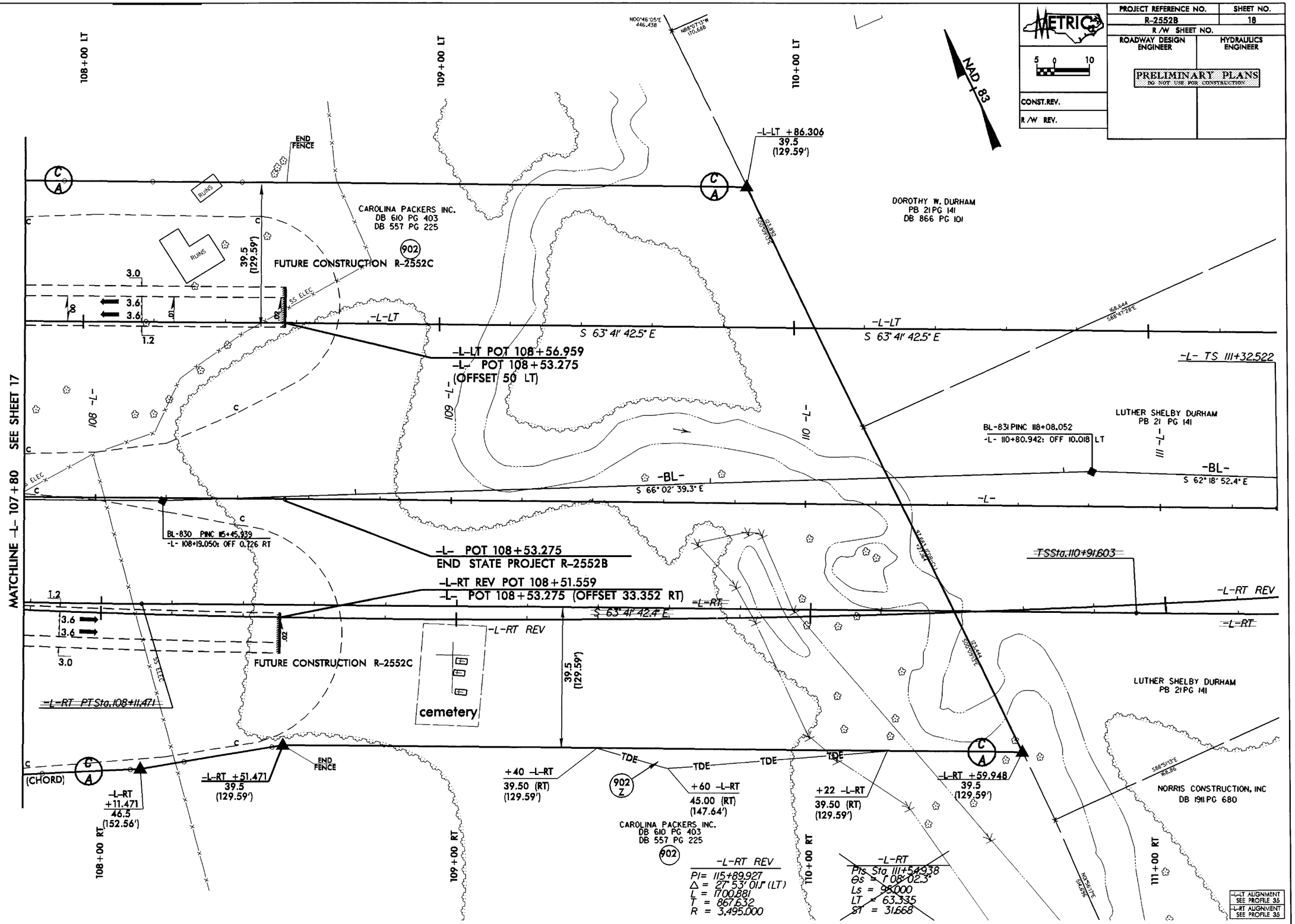
CONST.REV.

R/W REV.

REVISIONS

R/W REVISION - JUNE 7,2002 PER SUBMITTAL OF APRIL 9,2002
VARIOUS NAME AND FLAGGING CHANGES
MRH

R/W REVISION - 6-15-00 JOM
R/W REVISION - 7-05-00 JOM
R/W REVISION - 5-15-01 MRH



03-AUG-2004 5:06
C:\pwworkdir\pw\d0022456
SS-CALT-R-2552B_18.DGN

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

NAD 83

-Y7-
PI= 12+04.373
Δ = 18° 50' 36.6" (RT)
L = 174.307
T = 87.948
R = 530.000
SE= 0.060

-Y7-DET
PI= 12+40.574
Δ = 26° 27' 40.7" (RT)
L = 115.459
T = 58.778
R = 250.000
SE= 0.060

-Y7- POT 10+00.000

-Y7- PC 11+16.425

-Y7- +00
9.056
(29.71')

-Y7- +00
9.244
(30.33')

-Y7- +16.425
8.980
(29.46')

-Y7- +16.425
9.279
(30.44')

-Y7- +40
14
(45.93')

-Y7- +40
13
(42.65')

BEGIN CONSTRUCTION
-Y7- POC 11+20
-BY7- 1025 PINC 7+08.677
-Y7- 11+37.637: OFF 4.350

-Y7 POC 11+81.796 =
-Y7DET PC 11+81.796 LA.

PERRY, WILMER HOMER
DB 742 PG 147

NANCY JO BLINSON
JUDY AVERY BURNS
DB 552 PG 614
(13)

BLINSON, NANCY A.
DB 1359 PG 459
(NO CLAIM)
(43)

CORBETT, JOHNNY
DB 1359 PG 463
DB 1359 PG 461
(45)
(NO CLAIM)

WEEKS, LOIS G.
DB 575 PG 636
(8)

CARL R. PLEASANT
DB 1810 PG 322

CORBETT, VICTOR M.
DB 620 PG 536
(NO CLAIM)
(44)

WEEKS, LOIS G.
DB 575 PG 636
(6)

SPECIAL LATERAL 'V' DITCH
DETAIL 2

PL
12.058 LT (39.56')

PL
EX. R/W

PL
14.038 RT (46.06')

S 7° 28' 51.6" W

S 10° 42' 22.7" W

CORBETT RD
SR 1554
6.0 BST

1050 mm CONC

375 mm CONC
(REMOVE)

375 mm

1800 mm CHL

ISBKD

MATCHLINE -Y7- 12+80
SEE SHEET 6

-Y7- ALIGNMENT
SEE PROFILE 36
-Y7-DET ALIGNMENT
SEE PROFILE 37

REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUBMITTAL OF APRIL 9, 2002
VARIOUS NAME AND FLAGGING CHANGES
ELIMINATED TOE ON PARCELS 44 AND 45
MRH

03-AUG-2004 12:02
SDK:w-0611 BY RDU12456

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

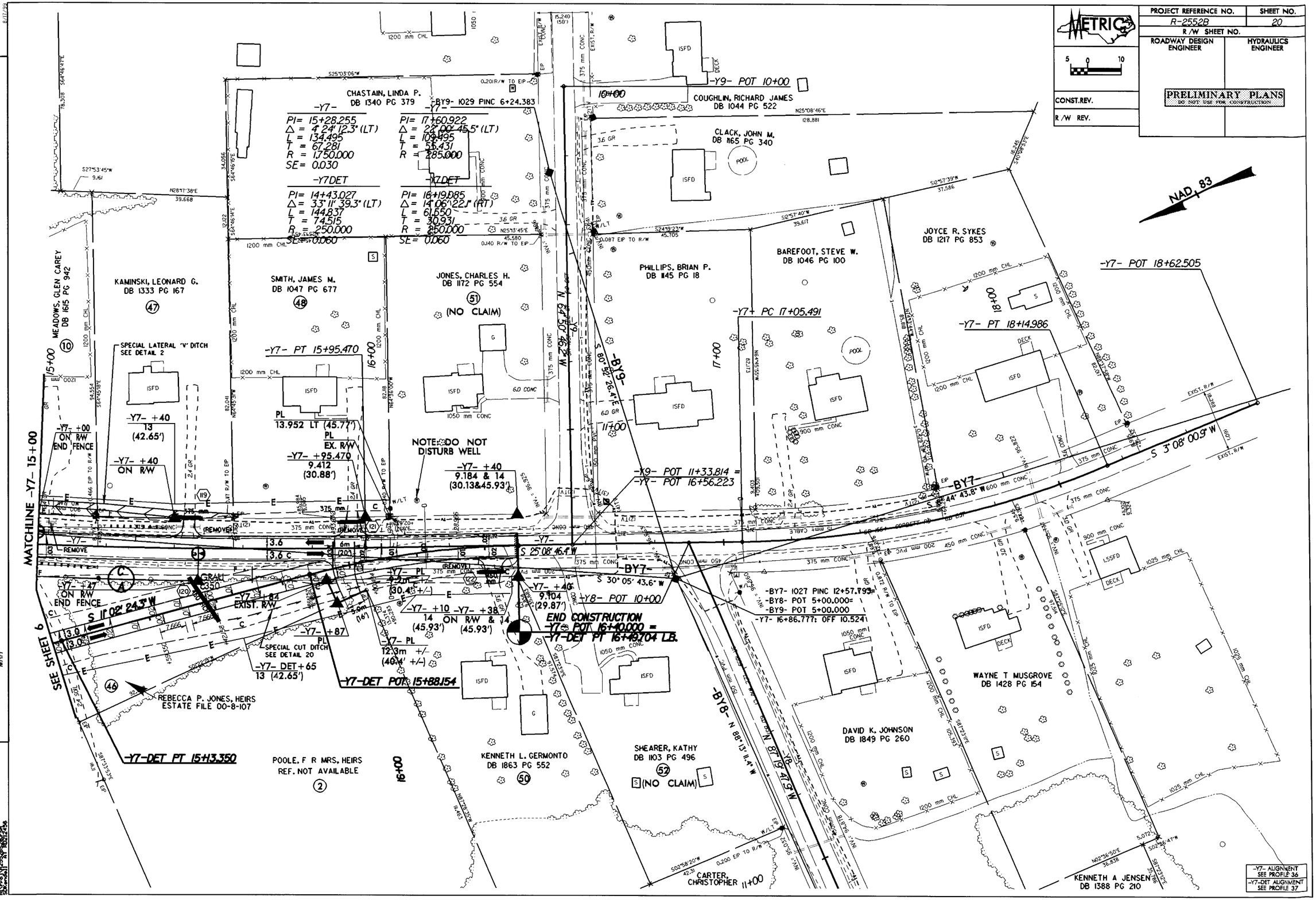
CONST. REV.

R/W REV.

REVISIONS

R/W REVISIONS - JUNE 7, 2002 PER SUBMITTAL OF APRIL 9, 2002
VARIOUS NAME, DEED BOOK AND FLAGGING CHANGES
ELIMINATED TCE ON PARCEL 51
MRH

8/17/99



03-AUG-2004 12:02
S:\Proj\R2552B\Sht20.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2552B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

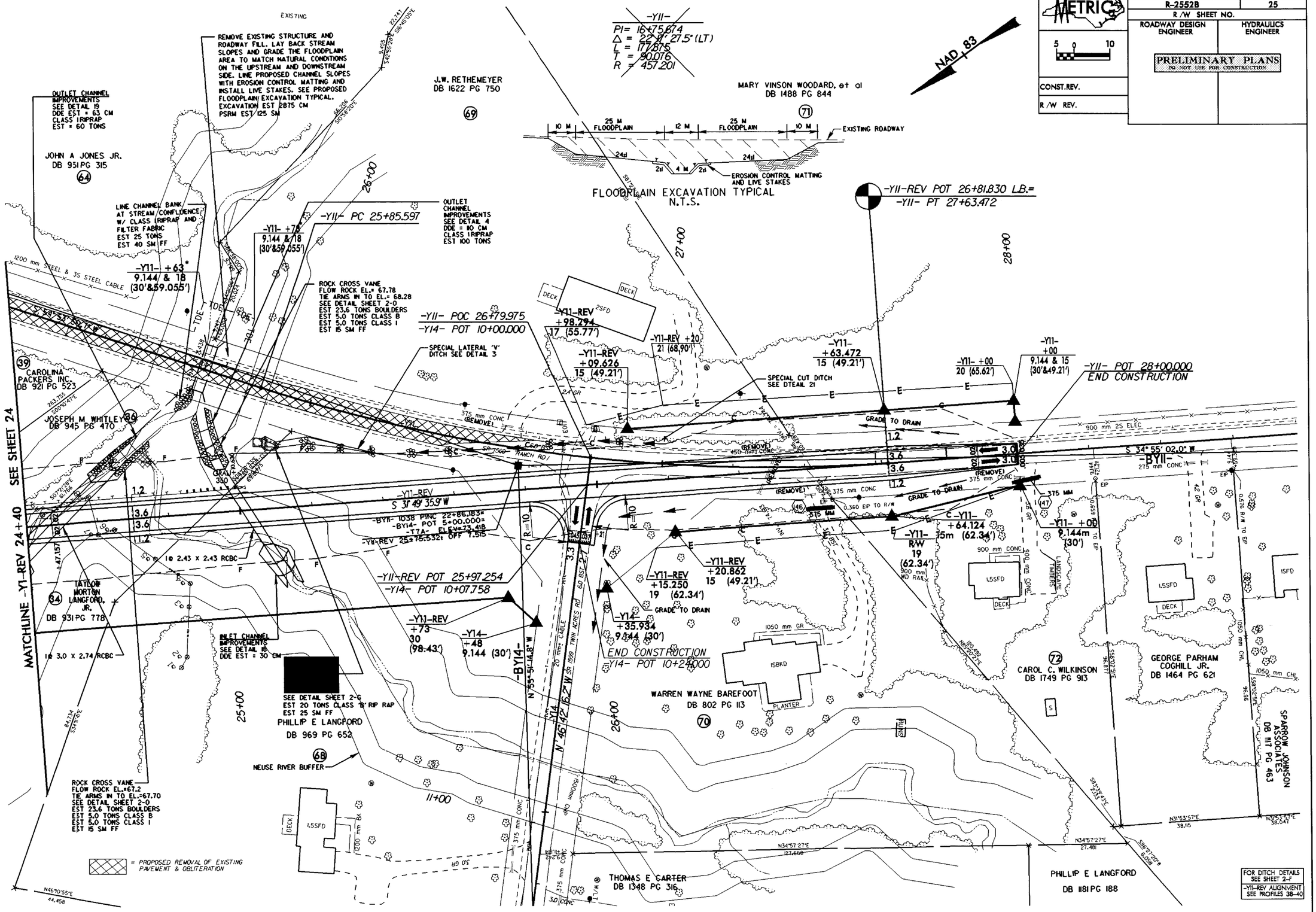
CONST. REV.

R/W REV.

REVISIONS

R/W REVISION - 12-20-2001 WRW
R/W REVISION - 6-29-2000 JOW

R/W REVISIONS - 06-07-02 PER SUBMITTAL OF 04-09-02 WRH
R/W REVISIONS - 07-11-02 PER SUBMITTAL OF 07-08-02 DEEDBOOK REFERENCE CHANGE PARCEL 69 WRH



03-AUG-2004 12:03
SDK:m4b11 R1 R2552b_sht25b+25p.pgh