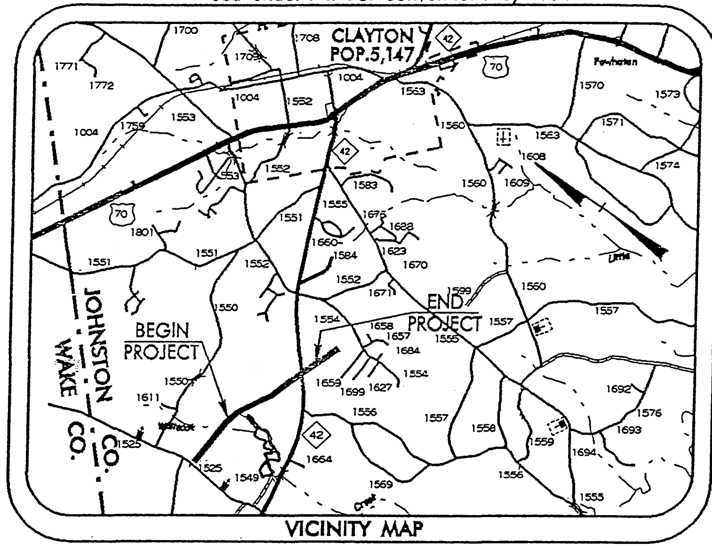
R-2552AB

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: US 70 CLAYTON BYPASS FROM EAST OF SR 1525 (CORNWALLIS RD.) TO EAST OF NC 42

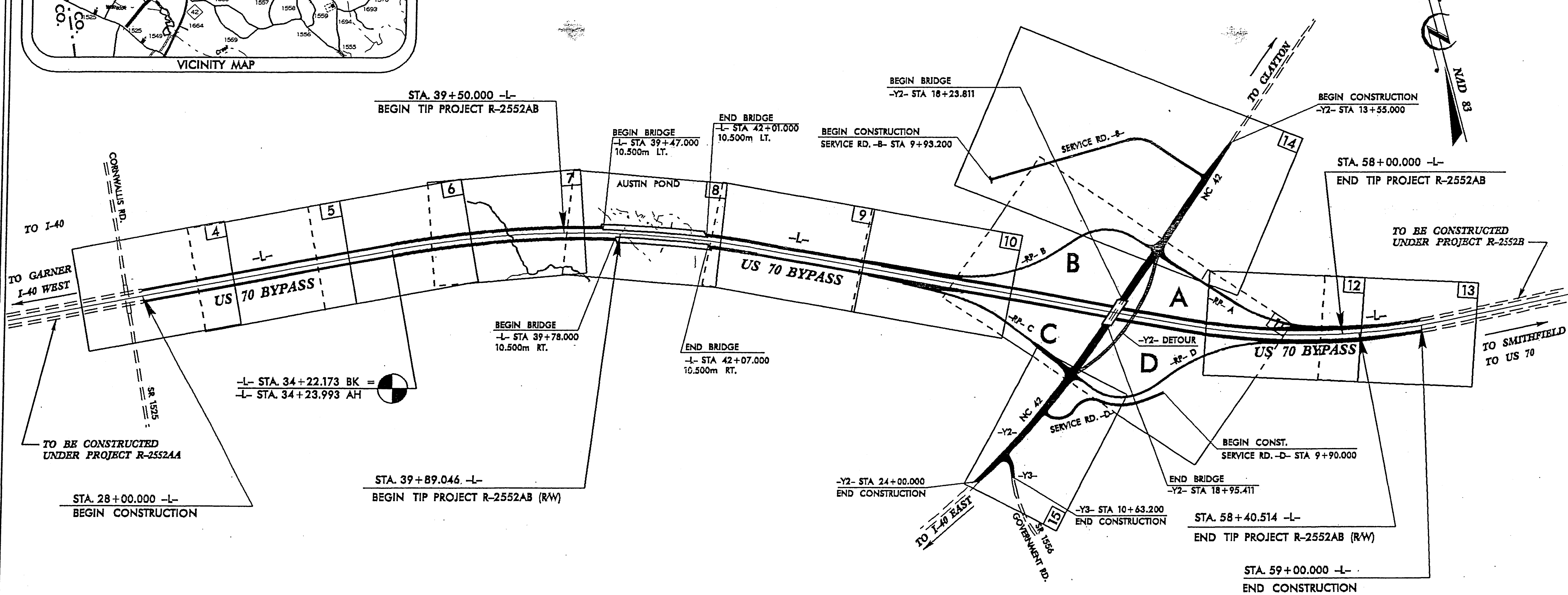
TYPE OF WORK: GRADING, DRAINAGE, GUARDRAIL, CABLE GUIDERAIL, STRUCTURES, CULVERTS, PAVING, AND SIGNALS

METRIC

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

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

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34459.1.4	NHF-60-1 (9)	PE
34459.2.4	N/A	R/W & UTL.
34459.3.8	N/A	CONST.



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

GRAPHIC SCALES

5 0 10 PLANS

5 0 10 PROFILE (HORIZONTAL)

1 0 2 PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 35,400 TO 40,800
ADT 2025 = 68,800 TO 85,000
DHV = 10 %
D = 65 %
T = 16 % *
V = 110 km/h

* (TTST 10% & DUAL 6%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2552AB	=	1.600 km
LENGTH STRUCTURES TIP PROJECT R-2552AB	=	0.250 km
TOTAL LENGTH OF TIP PROJECT R-2552AB	=	1.850 km

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 31, 2002

LETTING DATE: MAY 17, 2005

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR DATE

CONTRACT: C201227

09/09/99

07-JAN-2005 10:02

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

METRIC	PROJ. REFERENCE NO.	SHEET NO.
	R-2552AB	1 - B

*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

- Edge of Pavement
- Curb
- Prop. Slope Stakes Cut (C)
- Prop. Slope Stakes Fill (F)
- Prop. Woven Wire Fence
- Prop. Chain Link Fence
- Prop. Barbed Wire Fence
- Prop. Wheelchair Ramp (WCR)
- Curb Cut For Future Wheelchair Ramp (CCFR)
- Exist. Guardrail
- Prop. Guardrail
- Exist. Cable Guiderail
- Prop. Cable Guiderail
- Equality Symbol
- Pavement Removal

RIGHT OF WAY

- Baseline Control Point
- Existing Right of Way Marker
- Exist. Right of Way Line w/Marker
- Prop. Right of Way Line with Proposed R/W marker (Iron Pin & Cap)
- Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker
- Exist. Control of Access Line (CA)
- Prop. Control of Access Line (CA)
- Exist. Easement Line (E)
- Prop. Temp. Construction Easement Line (E)
- Prop. Temp. Drainage Easement Line (TDE)
- Prop. Perm. Drainage Easement Line (PDE)

HYDROLOGY

- Stream or Body of Water
- River Basin Buffer (BZ)
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Shoreline
- Falls, Rapids
- Prop Lateral, Tail, Head Ditches (FLOW)

STRUCTURES

MAJOR

- Bridge, Tunnel, or Box Culvert (CONC)
- Bridge Wing Wall, Head Wall and End Wall (CONC WW)

MINOR

- Head & End Wall (CONC HW)
- Pipe Culvert
- Footbridge
- Drainage Boxes (CB)
- Paved Ditch Gutter

UTILITIES

- Exist. Pole
- Exist. Power Pole
- Prop. Power Pole
- Exist. Telephone Pole
- Prop. Telephone Pole
- Exist. Joint Use Pole
- Prop. Joint Use Pole
- Telephone Pedestal (T)
- Cable TV Pedestal (C)
- Hydrant
- Satellite Dish
- Exist. Water Valve
- Sewer Clean Out
- Power Manhole (P)
- Telephone Booth
- Water Manhole (W)
- Light Pole
- H-Frame Pole
- Power Line Tower
- Pole with Base
- Gas Valve
- Gas Meter
- Telephone Manhole (T)
- Power Transformer
- Sanitary Sewer Manhole (S)
- Storm Sewer Manhole
- Tank; Water, Gas, Oil
- Water Tank With Legs
- Traffic Signal Junction Box (S)
- Fiber Optic Splice Box (F)
- Television or Radio Tower
- Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement (TS)

- Recorded Water Line (W)
- Designated Water Line (S.U.E.*) (W)
- Sanitary Sewer (SS)
- Recorded Sanitary Sewer Force Main (FSS)
- Designated Sanitary Sewer Force Main(S.U.E.*) (FSS)
- Recorded Gas Line (G)
- Designated Gas Line (S.U.E.*) (G)
- Storm Sewer (S)
- Recorded Power Line (P)
- Designated Power Line (S.U.E.*) (P)
- Recorded Telephone Cable (T)
- Designated Telephone Cable (S.U.E.*) (T)
- Recorded U/G Telephone Conduit (TC)
- Designated U/G Telephone Conduit (S.U.E.*) (TC)
- Unknown Utility (S.U.E.*) (?UTL)
- Recorded Television Cable (TV)
- Designated Television Cable (S.U.E.*) (TV)
- Recorded Fiber Optics Cable (FO)
- Designated Fiber Optics Cable (S.U.E.*) (FO)
- Exist. Water Meter
- U/G Test Hole (S.U.E.*)
- Abandoned According to U/G Record (ATTUR)
- End of Information (E.O.I.)

BOUNDARIES & PROPERTIES

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Property Line Symbol (PL)
- Exist. Iron Pin (EIP)
- Property Corner
- Property Monument (ECM)
- Property Number (123)
- Parcel Number (6)
- Fence Line (WW & ISBW)
- Existing Wetland Boundaries (WLB)
- Proposed Wetland Boundaries (WLB)
- Existing Endangered Animal Boundaries (EAB)
- Existing Endangered Plant Boundaries (EPB)

BUILDINGS & OTHER CULTURE

- Buildings
- Foundations
- Area Outline
- Gate
- Gas Pump Vent or U/G Tank Cap
- Church
- School
- Park
- Cemetery
- Dam
- Sign
- Well (W)
- Small Mine
- Swimming Pool

TOPOGRAPHY

- Loose Surface
- Hard Surface
- Change in Road Surface
- Curb
- Right of Way Symbol (R/W)
- Guard Post (GP)
- Paved Walk
- Bridge
- Box Culvert or Tunnel
- Ferry
- Culvert
- Footbridge
- Trail, Footpath
- Light House

VEGETATION

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard (VINEYARD)

RAILROADS

- Standard Gauge (CSX TRANSPORTATION)
- RR Signal Milepost (MILEPOST 35)
- Switch (SWITCH)

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

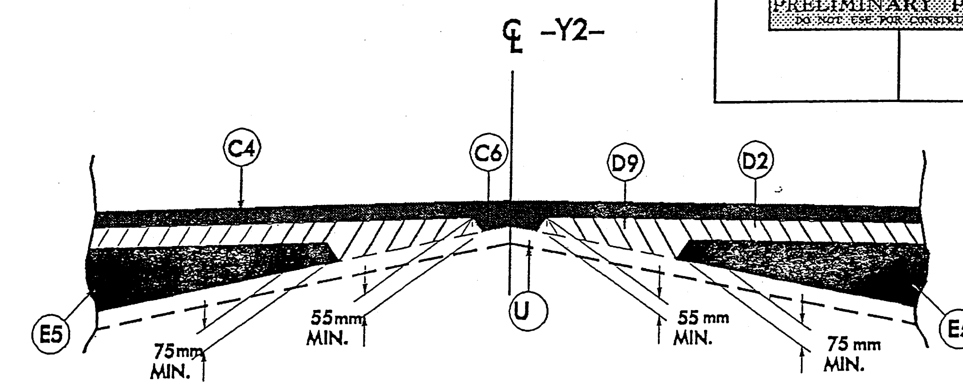
METRIC

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

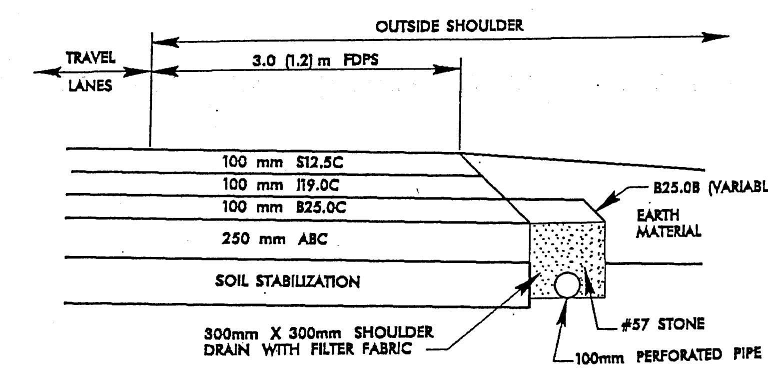
PAVEMENT SCHEDULE

C1	PROP. APPROX. 70 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 84 kg PER SQ. METER IN EACH OF TWO LAYERS.	E4	PROP. VAR. DEPTH ASPHALT CONC.BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 75 mm IN DEPTH OR GREATER THAN 140 mm IN DEPTH.
C2	PROP. APPROX. 80 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 96 kg PER SQ. METER IN EACH OF TWO LAYERS.	J1	PROP. 200 mm AGGREGATE BASE COURSE.
C3	PROP. APPROX. 100 mm ASPHALT CONC. SURFACE COURSE, TYPE S12.5C, AT AN AVERAGE RATE OF 120 kg PER SQ. METER IN EACH OF TWO LAYERS.	J2	PROP. 250 mm AGGREGATE BASE COURSE.
C4	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 2.4 kg PER SQ. METER PER 1 mm DEPTH,TO BE PLACED IN LAYERS NOT LESS THAN 30 mm IN DEPTH OR GREATER THAN 40 mm IN DEPTH.	J3	PROP. VAR. DEPTH AGGREGATE BASE COURSE.
D1	PROP. APPROX. 65 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 159.25 kg PER SQ. METER.	L	SUBBASE TO BE TREATED WITH LIME TO A DEPTH OF 200mm, AT A RATE OF 11 KG. PER SQ.METER, AS DIRECTED BY THE ENGINEER OR SUBBASE TO BE TREATED WITH CEMENT TO A DEPTH OF 180mm, AT A RATE OF 30 KG. PER SQ.METER, AS DIRECTED BY THE ENGINEER. OR SUBBASE TO BE TREATED WITH AGGREGATE AT A RATE OF 135 KG. PER SQ. METER AND CEMENT AT A RATE OF 30 KG. PER SQ.METER TO A DEPTH OF 180mm, AS DIRECTED BY THE ENGINEER.
D2	PROP. APPROX. 65 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 159.25 kg PER SQ. METER.		
D3	PROP. APPROX. 80 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 196.00 kg PER SQ. METER.		
D4	PROP. APPROX. 100 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 245.00 kg PER SQ. METER.	P	PRIME COAT AT THE RATE OF 1.8 L PER SQ. METER.
D5	PROP. VAR. DEPTH ASPHALT CONC.INTERMEDIATE COURSE,TYPE I19.0C, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 55 mm OR GREATER THAN 110 mm IN DEPTH.	R	125 mm MONOLITHIC CONCRETE ISLAND.
E1	PROP. APPROX. 90 mm ASPHALT CONC.BASE COURSE,TYPE B25.0C, AT AN AVERAGE RATE OF 220.50 kg PER SQ. METER.	T	EARTH MATERIAL.
E2	PROP. APPROX. 100 mm ASPHALT CONC.BASE COURSE,TYPE B25.0C,AT AN AVERAGE RATE OF 245.00 kg PER SQ. METER.	U	EXISTING PAVEMENT.
E3	PROP. APPROX. 180 mm ASPHALT CONC.BASE COURSE,TYPE B25.0C, AT AN AVERAGE RATE OF 220.50 kg PER SQ. METER, IN EACH OF TWO LAYERS	W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

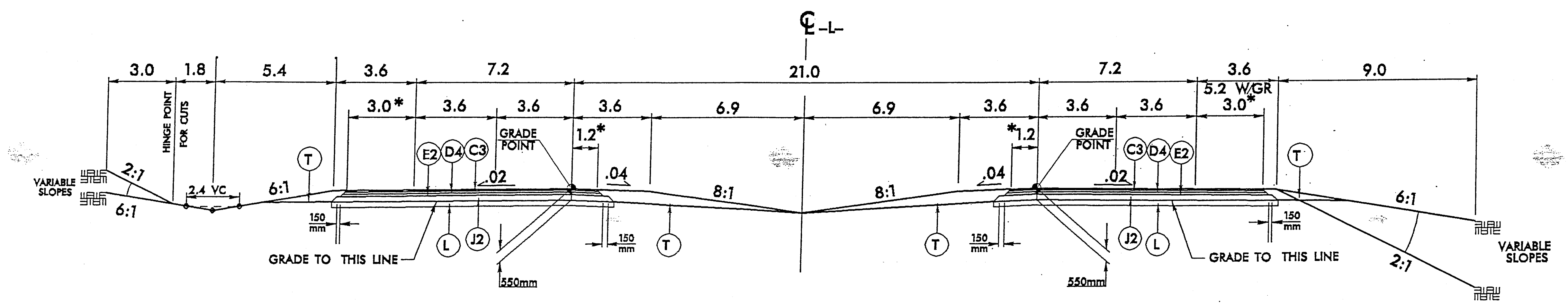


DETAIL OF WEDGING



SHOULDER DRAIN DETAIL

NOTE : ALL OUTLET PIPES SHALL USE A 1 % GRADE
USE IN CONJUNCTION WITH TYPICAL SECTION NO.s 1 & 2



TYPICAL SECTION NO. 1

*FULL DEPTH PAVED SHOULDER

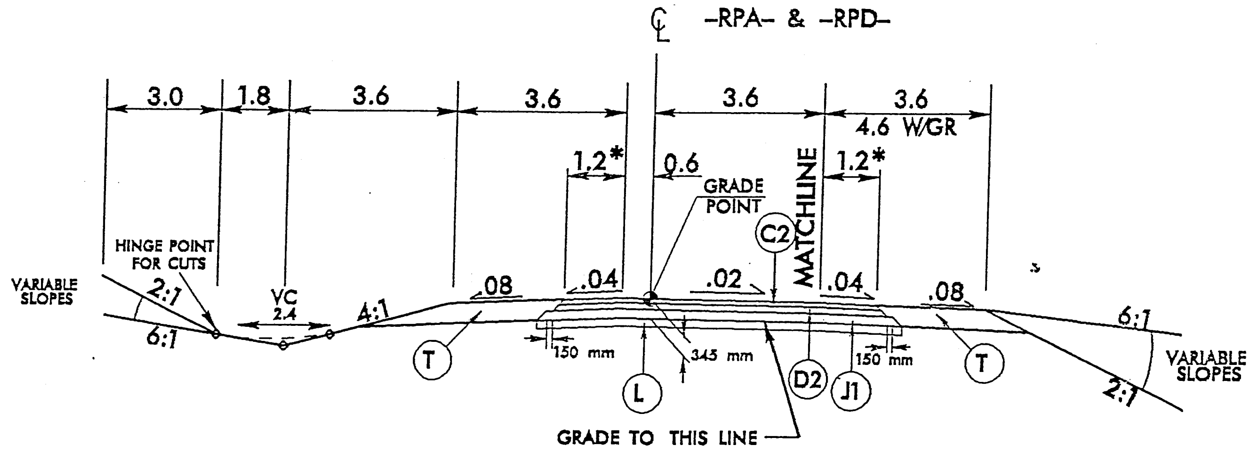
USE TYPICAL SECTION NO. 1 AS FOLLOWS:
-L- 28+00.000 TO (BEGIN BRIDGE)
-L- (END BRIDGE) TO 58+00.000

NOTE: USE DITCH DETAIL U IN CONJUNCTION WITH TS NO 1
-L- 46+00 TO 47+00
SEE CROSS-SECTION AND ROADWAY STANDARD DRAWING STD. 225.08 FOR SPECIAL MEDIAN GRADING -L- 28+00 TO 29+00

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

METRIC

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 2

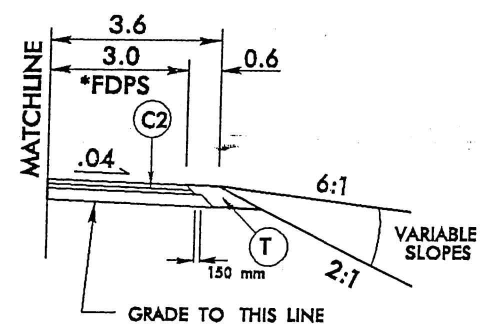
*FULL DEPTH PAVED SHOULDER

NOTE: USE DITCH DETAIL U IN CONJUNCTION WITH TS NO 2
-RPD- 13+70 TO 14+20

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

-RPA- 10+000 TO 14+91.683
-RPD- 10+000 TO 16+21.407 (REVERSE TYPICAL)

NOTE : SEE PARTIAL TYPICAL SECTION NO. 3A FOR
-RPD- 10+000 TO 16+21.407

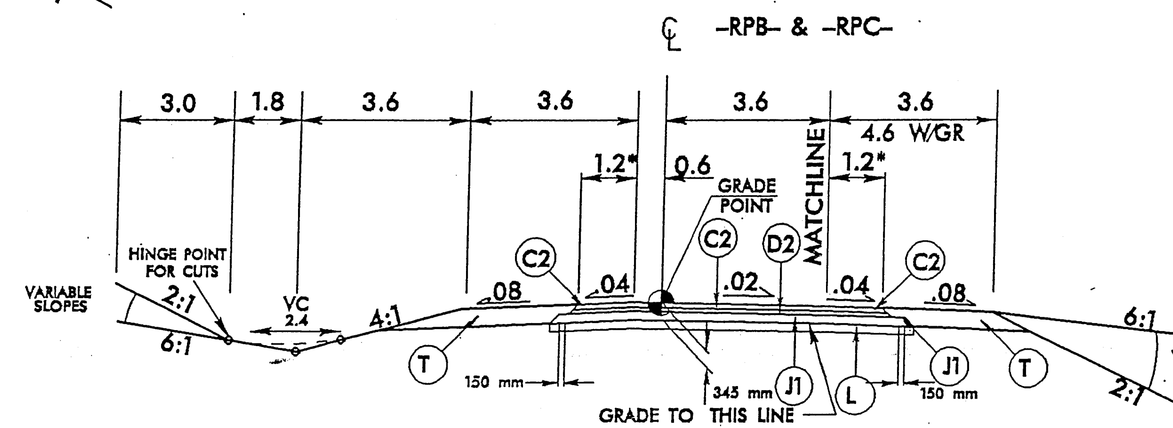


TYPICAL SECTION NO. 2A

*FULL DEPTH PAVED SHOULDER

T.S. 2A TO BE USED IN CONJUNCTION WITH
T.S. NO. 2 & 3 IN THE FOLLOWING LOCATIONS:

-RPB- 10+000 TO 15+94.234 (NOTE: USE T.S. NO. 4 PAVEMENT DESIGN)
-RPD- 10+000 TO 16+21.407 (REVERSE TYPICAL) (NOTE: USE T.S. NO. 3 PAVEMENT DESIGN)



TYPICAL SECTION NO. 3

*FULL DEPTH PAVED SHOULDER

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

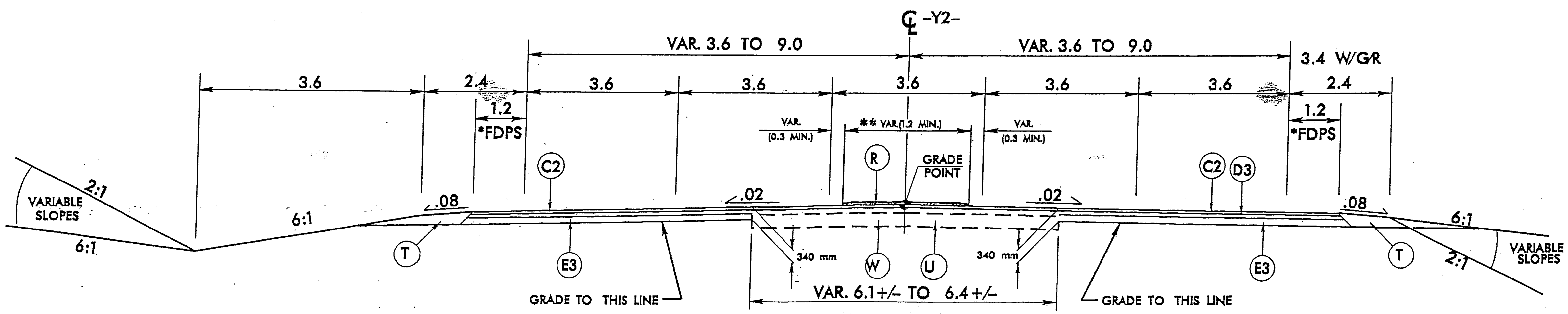
-RPB- 10+000 TO 15+94.234 (REVERSE TYPICAL)
-RPC- 10+000 TO 14+80.943

NOTE : SEE PARTIAL TYPICAL SECTION NO. 2A FOR
-RPB- 10+000 TO 15+94.234

NOTE: USE DITCH DETAIL U IN CONJUNCTION WITH TS NO 3
-RPC- 13+00 TO 14+60

PAVEMENT SCHEDULE	
C1	70 mm S9.5B
C2	80 mm S9.5C
C3	100 mm S12.5C
C4	VAR. DEPTH S9.5B
D1	65 mm I19.0B
D2	65 mm I19.0C
D3	80 mm I19.0C
D4	VAR. DEPTH I19.0C
E1	90 mm B25.0C
E2	100 mm B25.0C
E3	180 mm B25.0C
E4	VAR. DEPTH B25.0C
J1	200 mm AGGREGATE BASE COURSE.
J2	250 mm AGGREGATE BASE COURSE.
J3	VAR. DEPTH AGGREGATE BASE CORSE.
L	SUBGRADE STABILIZATION
P	PRIME COAT
R	125 mm MONO. CONC ISLAND
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

NOTE:
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



** 125 mm MONOLITHIC CONC. ISLAND
SEE PLANS FOR LOCATIONS

TYPICAL SECTION NO. 4

*FULL DEPTH PAVED SHOULDER

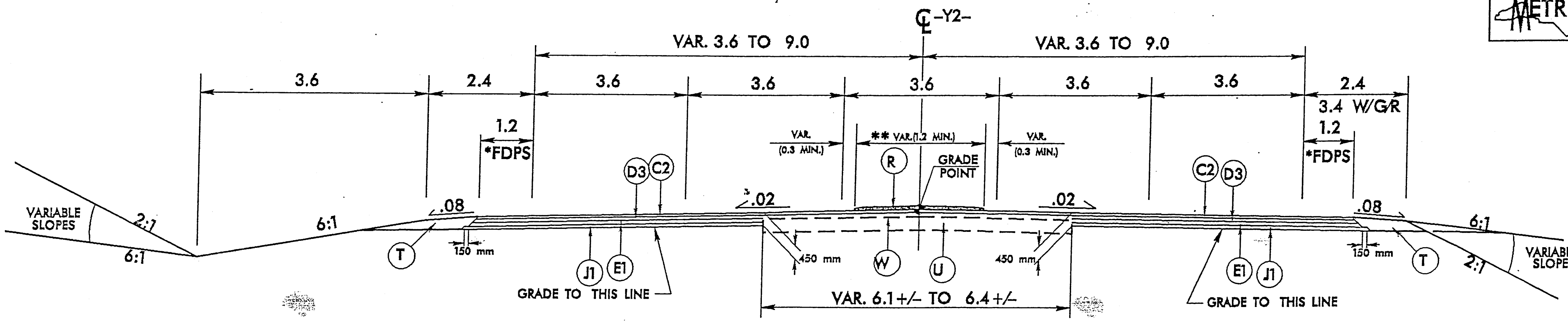
USE TYPICAL SECTION NO. 4 AS FOLLOWS:

-Y2- 13+55.000 TO 15+05 +/-
-Y2- 21+75 +/- TO 24+00.000
**

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

METRIC

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 5

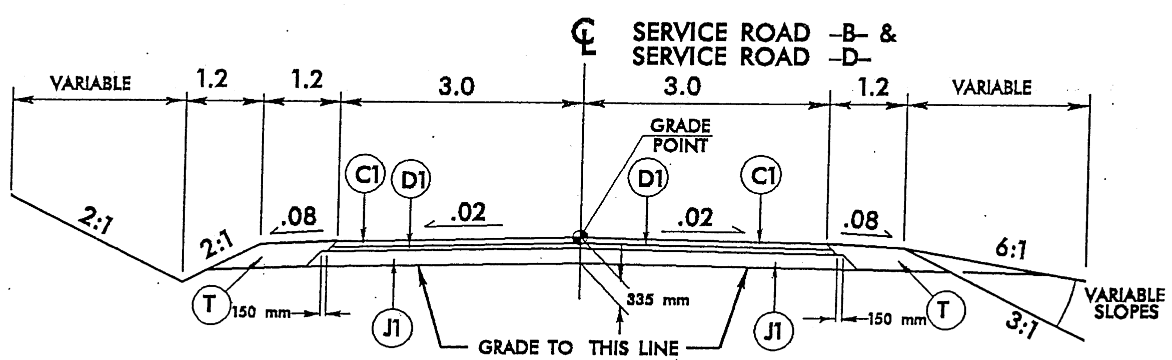
*FULL DEPTH PAVED SHOULDER

USE TYPICAL SECTION NO. 5 AS FOLLOWS:

-Y2- 15+05 +/- TO (BEGIN BRIDGE)
-Y2- (END BRIDGE) TO 21+75 +/-

	PAVEMENT SCHEDULE
C1	70 mm S9.5B
C2	80 mm S9.5C
C3	100 mm S12.5C
C4	VAR. DEPTH S9.5B
D1	65 mm I19.0B
D2	65 mm I19.0C
D3	80 mm I19.0C
D4	VAR. DEPTH I19.0C
E1	90 mm B25.0C
E2	100 mm B25.0C
E3	180 mm B25.0C
E4	VAR. DEPTH B25.0C
J1	200 mm AGGREGATE BASE COURSE.
J2	250 mm AGGREGATE BASE COURSE.
J3	VAR. DEPTH AGGREGATE BASE CORSE.
L	SUBGRADE STABILIZATION
P	PRIME COAT
R	125 mm MONO. CONC ISLAND
T	EARTH MATERIAL .
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

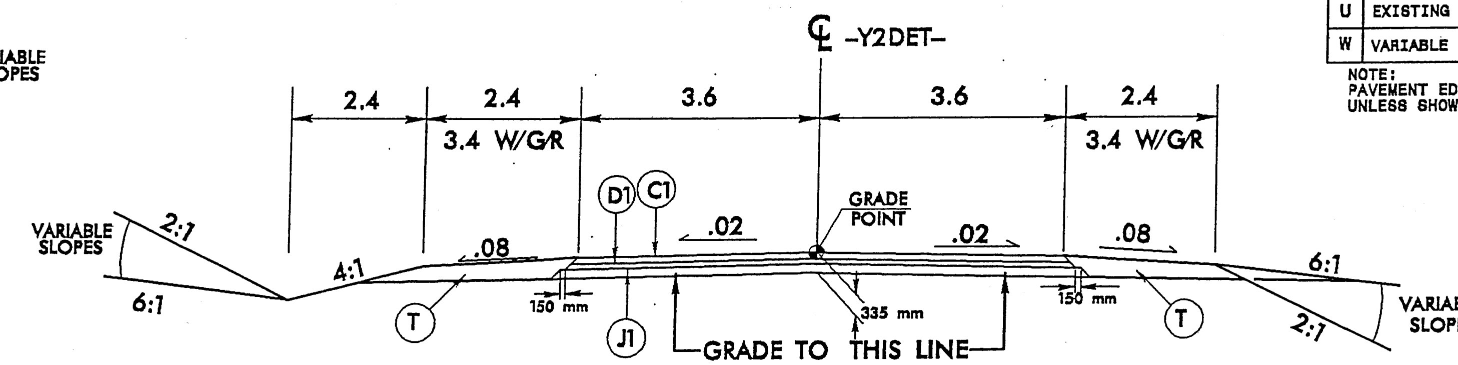
NOTE:
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AS FOLLOWS:

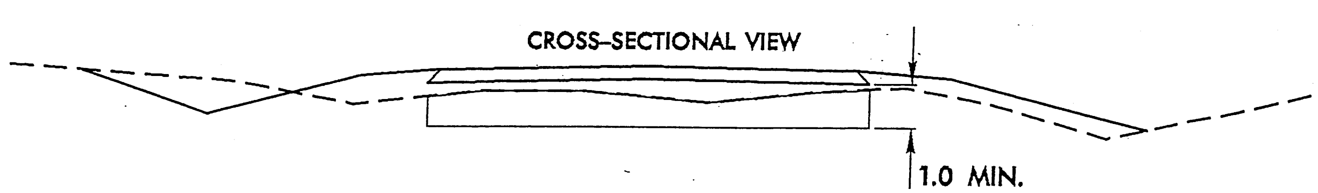
SERVICE ROAD -B- 9+93.200 TO 15+67.450
SERVICE ROAD -D- 9+90.000 TO 13+00.920



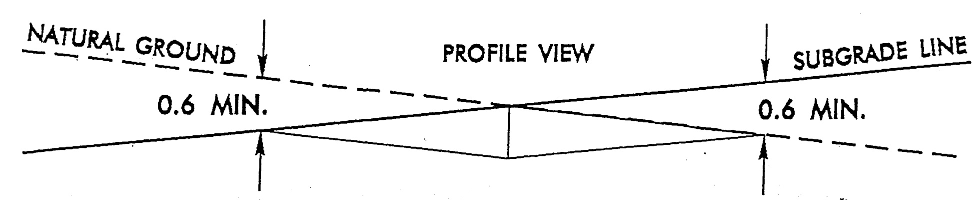
TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7 AS FOLLOWS:

-Y2DET- 16+58.778 TO 20+78.437



DETAIL OF UNDERCUT LIMITS



DETAIL OF UNDERCUT AT GRADE POINT

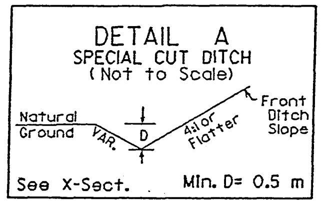
7F of 23

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	2-C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

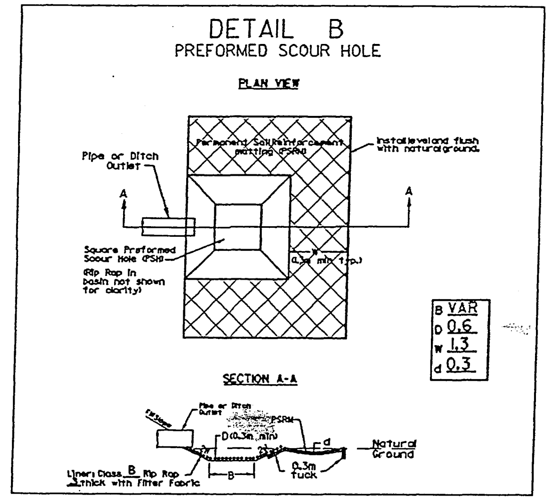
METRIC

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NOTE:
SEE SHEETS 4 THRU 15 FOR DESIGN
SEE SHEETS 16 THRU 33 FOR PROFILES

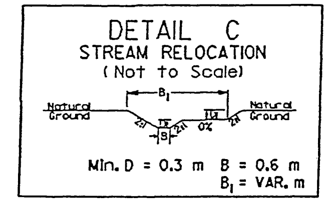


STA 39+00 TO 39+20 -L- RT
STA 52+60 TO 53+80 -L- RT
STA 15+40 TO 15+80 -Y2- RT
STA 11+85 TO 12+25 -RPA- RT



STA 33+70 -L- RT
STA 37+60 -L- RT
STA 37+80 -L- RT
STA 38+00 -L- RT
STA 38+20 -L- RT
STA 38+40 -L- RT

STA 56+20 -L- RT
STA 56+80 -L- RT
STA 12+50 -RPD- LT
STA 13+82 -RPD- RT
STA 18+80 -Y2 DET- LT
STA 19+34 -Y2 DET- LT

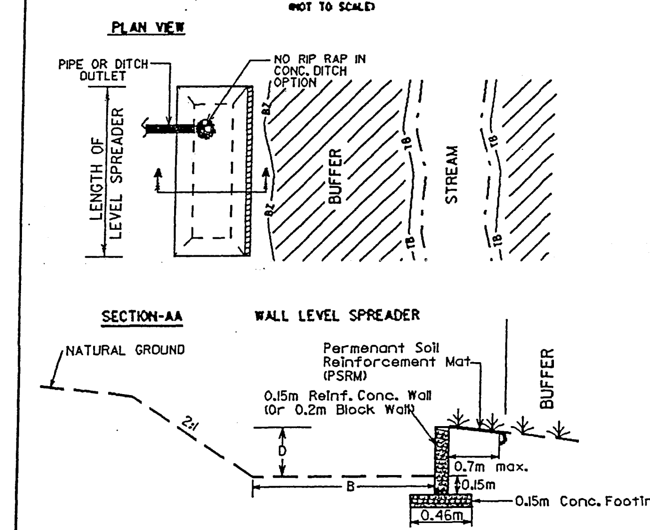


STA 50+20 -L- 30 TO 85 m LT

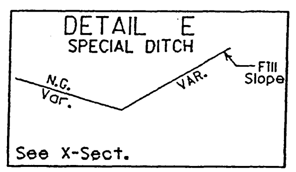
DETAIL D
PERM ROCK SILT CHECK DAM
SEE METRIC STD 1633.02

STA 13+00 TO 13+60 -RPB- LT
STA 12+80 TO 13+60 -RPB- RT
STA 13+00 TO 14+60 -RPC- RT

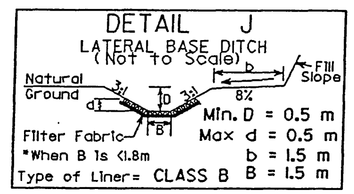
DETAIL O
LEVEL SPREADER DETAIL
(NOT TO SCALE)



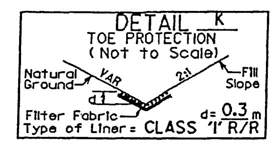
STATION	LENGTH	D	B	TOP ELEV.
STA 41+40 -L- LT	3.0	.45	1.2	60.75
STA 45+85 -L- RT	3.0	.45	1.2	73.95
STA 54+10 -L- RT	23.8	.45	1.2	89.85
STA 56+88 -L- LT	3.0	.45	1.2	86.41



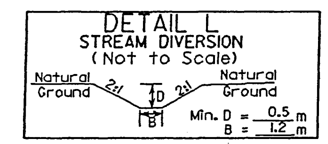
STA 48+80 TO 49+80 -L- LT
STA 17+00 TO 17+60 -Y2- LT
STA 17+20 TO 18+20 -Y2- RT



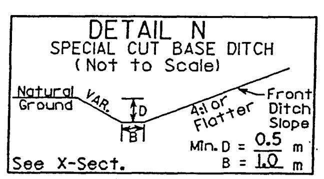
STA 12+20 TO 12+80 -RPC- RT



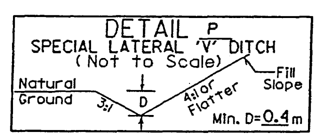
STA 11+80 TO 12+20 -RPC- RT
STA 15+05 TO 15+50 -RPD- LT
STA 35+20 TO 36+00 -L- RT
STA 50+50 TO 50+80 -L- RT



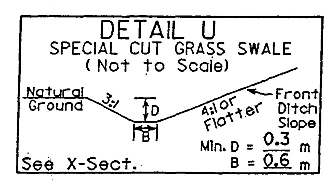
STA 13+00 TO 13+04 -RPC- LT



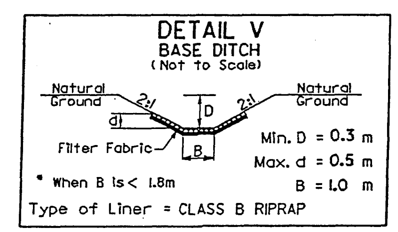
STA 13+00 TO 13+60 -RPB- LT
STA 12+80 TO 13+60 -RPB- RT



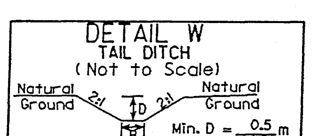
STA 33+00 TO 33+60 -L- LT



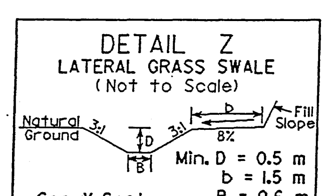
STA 46+00 TO 47+00 -L- RT
STA 13+00 TO 14+60 -RPC- RT
STA 13+80 TO 14+20 -RPD- RT



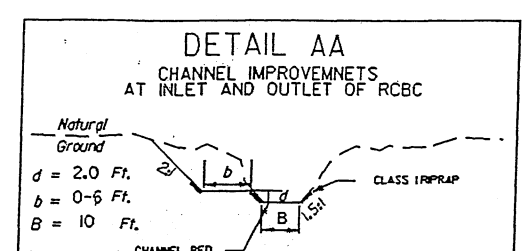
STA 42+20 TO 42+60 -L- LT



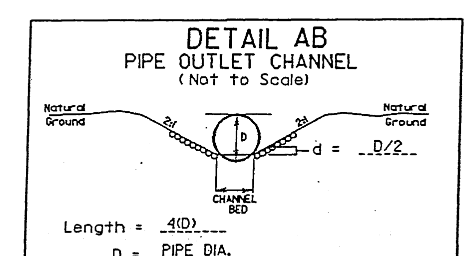
STA 53+95 -L- RT
STA 11+98 -SERVRD B- RT



STA 11+75 TO 12+80 -SERVRD D- RT

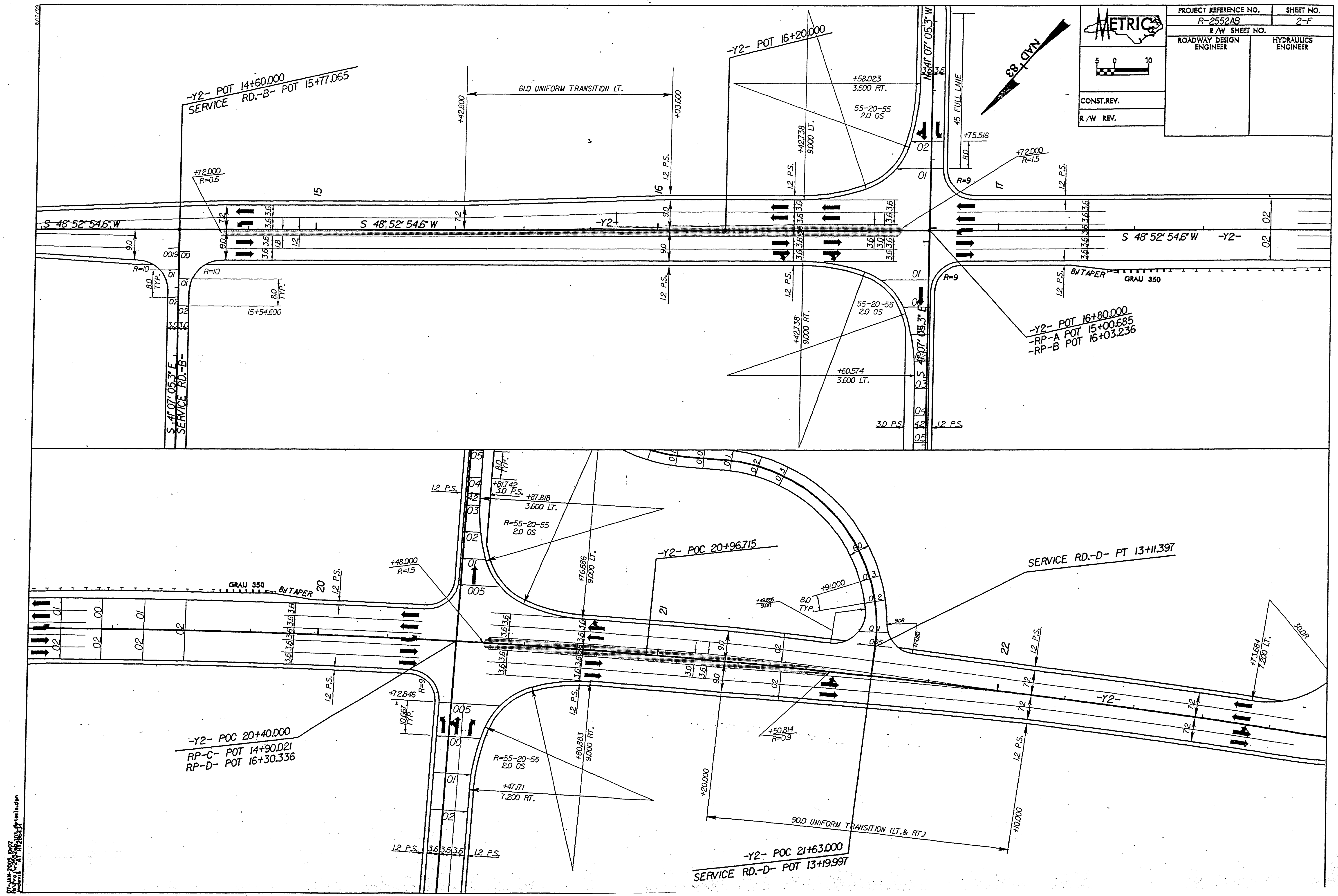


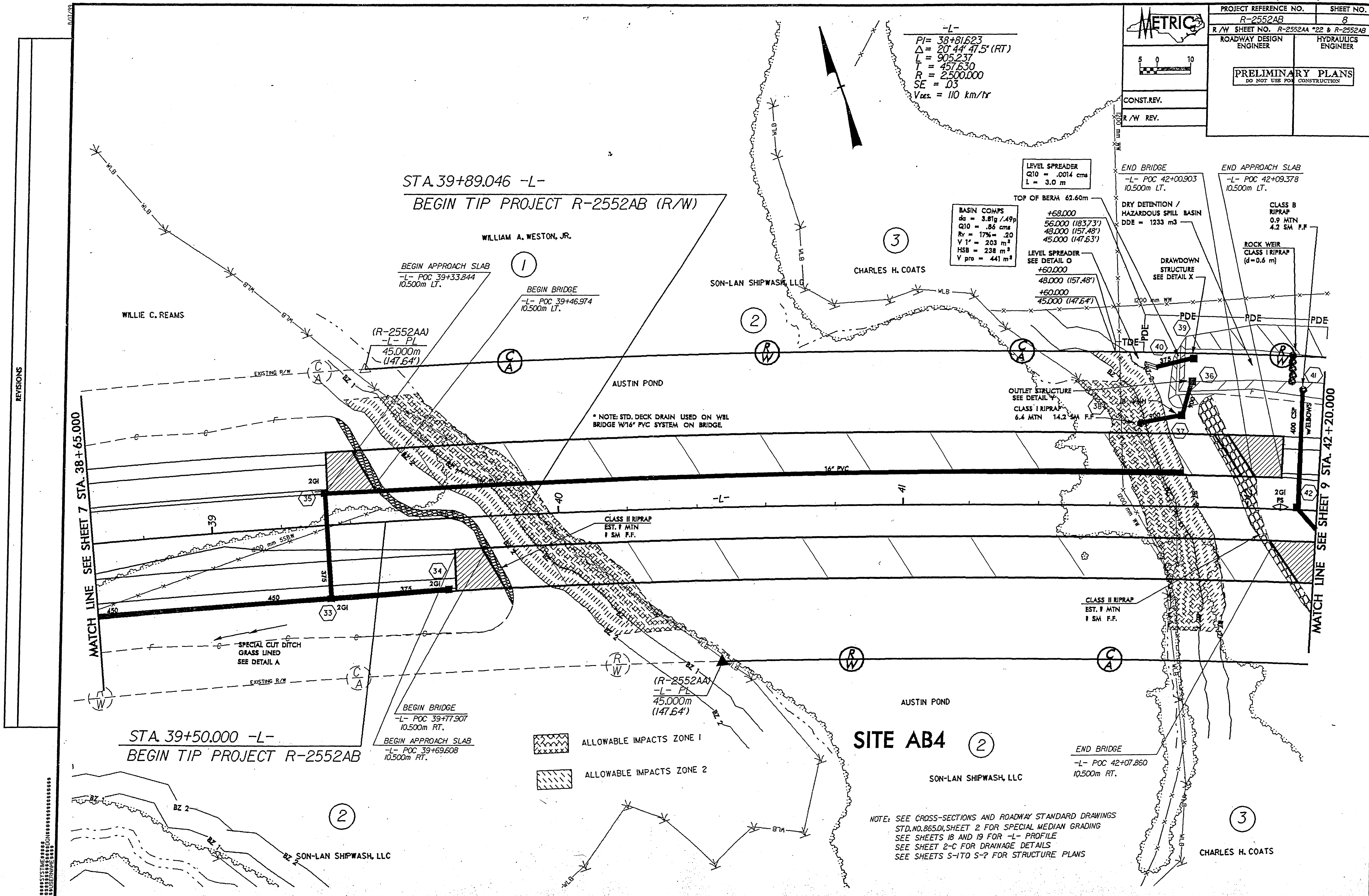
STA 37+11 -L- LT/RT



STA 50+20 -L- RT
STA 50+35 -L- RT
STA 11+65 -RPC- RT
STA 13+00 -RPD- LT

07-JAN-2005 10:02


PROJECT REFERENCE NO.
R-2552AB
SHEET NO.
2-F
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
METRIC
CONST. REV.
R/W REV.
NAD 83
-Y2- POT 14+60.000
SERVICE RD.-B- POT 15+77.065
61.0 UNIFORM TRANSITION LT.
+42.600
+03.600
-Y2- POT 16+20.000
+58.023
3.600 RT.
55-20-55
2.0 OS
+42.738
9.000 LT.
45 FULL LANE
+75.516
+72.000
R=1.5
+72.000
R=0.6
R=9
S 48° 52' 54.6" W
-Y2-
GRAU 350
8d TAPER
R=10
15+54.600
8.0 TYP.
1.2 P.S.
-Y2- POT 16+80.000
-RP-A POT 15+00.685
-RP-B POT 16+03.236
+42.738
9.000 RT.
+60.574
3.600 LT.
3.0 P.S.
S 41° 07' 05.3" E
SERVICE RD.-B-
N 41° 07' 05.3" W
+81.742
3.0 P.S.
+87.818
3.600 LT.
R=55-20-55
2.0 OS
+76.686
9.000 LT.
-Y2- POC 20+96.715
SERVICE RD.-D- PT 13+11.397
+48.000
R=1.5
+91.000
+49.896
8.0 TYP.
+72.846
10.661 TYP.
-Y2- POC 20+40.000
RP-C- POT 14+90.021
RP-D- POT 16+30.336
+80.883
9.000 RT.
+50.814
R=0.9
+47.171
7.200 RT.
+20.000
90.0 UNIFORM TRANSITION (LT.& RT.)
+10.000
+73.684
7.200 LT.
30 DR
-Y2- POC 21+63.000
SERVICE RD.-D- POT 13+19.997



METRIC
PROJECT REFERENCE NO. R-2552AB
SHEET NO. 8
R/W SHEET NO. R-2552AA *22 & R-2552AB *8
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV.
REVISIONS
-L-
PI= 38+81.623
Δ = 20° 44' 47.5" (RT)
L = 905.237
T = 457.530
R = 2,500.000
SE = .03
Vdes. = 110 km/hr
STA. 39+89.046 -L-
BEGIN TIP PROJECT R-2552AB (R/W)
WILLIAM A. WESTON, JR.
WILLIE C. REAMS
BEGIN APPROACH SLAB
-L- POC 39+33.844
10.500m LT.
BEGIN BRIDGE
-L- POC 39+46.974
10.500m LT.
(R-2552AA)
-L- PL
45.000m
(147.64')
EXISTING R/W
AUSTIN POND
* NOTE: STD. DECK DRAIN USED ON WBL BRIDGE W/16" PVC SYSTEM ON BRIDGE.
SON-LAN SHIPWASH, LLC
CHARLES H. COATS
LEVEL SPREADER
Q10 = .0014 cms
L = 3.0 m
TOP OF BERM 62.60m
BASIN COMPS
da = 3.81g / .49p
Q10 = .86 cms
Rv = 17% = .20
V 1" = 203 m³
HSB = 238 m³
V pro = 441 m³
+68.000
56.000 (183.73')
48.000 (157.48')
45.000 (147.63')
LEVEL SPREADER
SEE DETAIL O
+60.000
48.000 (157.48')
+60.000
45.000 (147.64')
END BRIDGE
-L- POC 42+00.903
10.500m LT.
DRY DETENTION / HAZARDOUS SPILL BASIN
DDE = 1233 m3
DRAWDOWN STRUCTURE
SEE DETAIL X
END APPROACH SLAB
-L- POC 42+09.378
10.500m LT.
CLASS B RIPRAP
0.9 MTN
4.2 SM F.F
ROCK WEIR
CLASS I RIPRAP
(d=0.6 m)
1200 mm WW
PDE
TDE
OUTLET STRUCTURE
SEE DETAIL Y
CLASS I RIPRAP
6.4 MTN 14.2 SM F.F
400 CSP
W/ELBOWS
16" PVC
-L-
CLASS II RIPRAP
EST. # MTN
SM F.F.
600 mm SSBW
2GI
MATCH LINE SEE SHEET 7 STA. 38+65.000
MATCH LINE SEE SHEET 9 STA. 42+20.000
SPECIAL CUT DITCH
GRASS LINED
SEE DETAIL A
(R-2552AA)
-L- PL
45.000m
(147.64')
BEGIN BRIDGE
-L- POC 39+77.907
10.500m RT.
BEGIN APPROACH SLAB
-L- POC 39+69.608
10.500m RT.
STA. 39+50.000 -L-
BEGIN TIP PROJECT R-2552AB
ALLOWABLE IMPACTS ZONE I
ALLOWABLE IMPACTS ZONE 2
SITE AB4
END BRIDGE
-L- POC 42+07.860
10.500m RT.
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS STD.NO.865.01,SHEET 2 FOR SPECIAL MEDIAN GRADING
SEE SHEETS 18 AND 19 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEETS S-1 TO S-? FOR STRUCTURE PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	5
R/W SHEET NO.	R-2552AA "19 & "20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

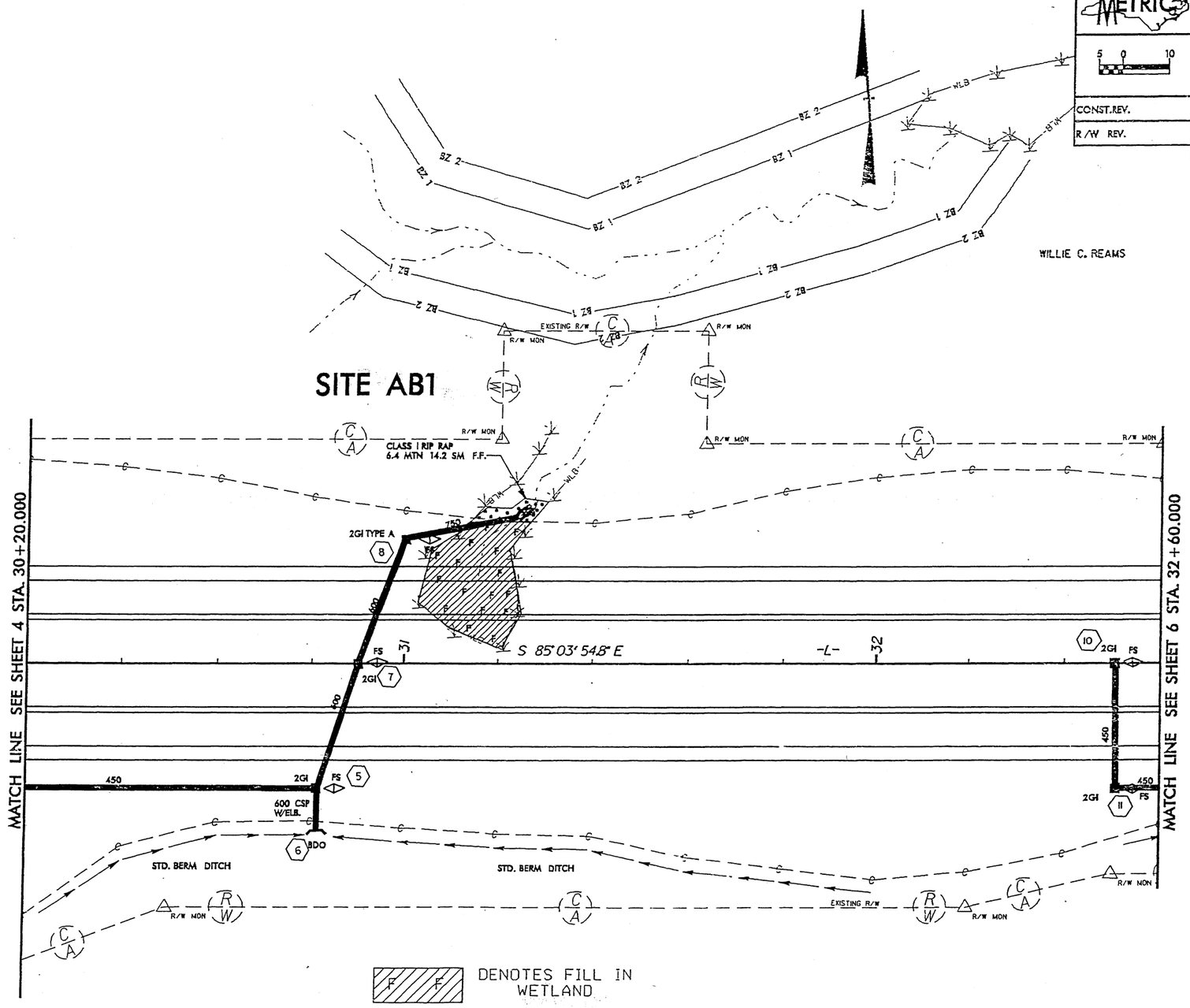
R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

WILLIE C. REAMS

SITE AB1



F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

WILLIE C. REAMS

SEE SHEET 16 FOR -L- PROFILE

SEE SHEET 2-C FOR DRAINAGE DETAILS

75 of 23

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	5
R/W SHEET NO. R-2552AA #19 & #20	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

R/T-190

MATCH LINE SEE SHEET 4 STA. 30+20.000

MATCH LINE SEE SHEET 6 STA. 32+60.000

SITE AB1

(R-2552AA)
-L- +20.000
48.000m (157.48')
71.000m (232.94')

(R-2552AA)
-L- +63.000
47.000m (154.20')
71.000m (232.94')

(R-2552AA)
-L- +60.000
47.000m
(154.20')

CLASS I RIP RAP
6.4 MTN 14.2 SM F.T.

2GI TYPE A

600 CSP W/ELB.

STD. BERM DITCH

STD. BERM DITCH

EXISTING R/W

R/W MON

WILLIE C. REAMS

S 85°03'54" E

(R-2552AA)
-L- +50.000
52.000m
(170.60')

(R-2552AA)
-L- +20.000
52.000m
(170.60')

(R-2552AA)
-L- +50.000
45.000m
(147.64')

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

WILLIE C. REAMS

SEE SHEET 16 FOR -L- PROFILE

SEE SHEET 2-C FOR DRAINAGE DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	7
R/W SHEET NO. R-2552AA "21 & "22	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST.REV.	
R/W REV.	

METRIC 5 0 10

REVISIONS

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

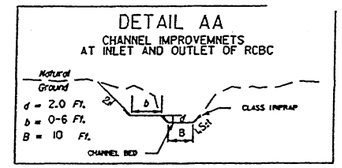
DENOTES FILL IN SURFACE WATER

DENOTES EXISTING CHANNEL IMPACTS (TEMP)

DENOTES EXISTING CHANNEL IMPACTS (PERM)

-L-
PI= 38+81.623
Δ= 20° 44' 47.5" (RT)
L = 905.237
T = 457.630
R = 2,500.000
SE = .03
$V_{DES.}$ = 110 km/hr

DETAIL AA
CHANNEL IMPROVEMNETS AT INLET OF RCBC



STA 37+11-L- LT/RT

BEGIN CULVERT
-L- POC 37+06.250

END CULVERT
-L- POC 37+12.233

SITE AB2

SITE AB3

WILLIE C. REAMS

PROPOSED STREAM IMPROVEMENTS SEE DETAIL AA

TOE PROTECTION CLASS 'I' RIP RAP SEE DETAIL K

2 - 2.7 X 2.1m RCBC W/ BAFFLES

TOE PROTECTION CLASS 'I' RIP RAP 45.301 MTN 128.690 SM F.F. SEE DETAIL K

PROPOSED STREAM IMPROVEMENTS SEE DETAIL AA

PSH 1.5 x 1.5m SEE DETAIL B

JANE A. CUNNINGHAM

MATCH LINE SEE SHEET 6 STA. 35+60.000

MATCH LINE SEE SHEET 8 STA. 38+65.000

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS STD. 862.865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
SEE SHEETS 17 AND 18 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEET C-1 TO C-2 FOR CULVERT PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	7
R/W SHEET NO.	R-2552AA *21 & *22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

REVISIONS

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

DENOTES EXISTING CHANNEL IMPACTS (TEMP)

DENOTES EXISTING CHANNEL IMPACTS (PERM)

-L-
PI= 38+81.623
Δ= 20° 44' 47.5" (RT)
L = 905.237
T = 457.630
R = 2,500.000
SE = .103
V_{DES} = 110 km/hr

DETAIL AA
CHANNEL IMPROVEMENETS AT INLET AND OUTLET OF RCBC

Natural Ground
d = 2.0 Ft.
b = 0.6 Ft.
B = 10 Ft.
CLASS I RIPRAP
CHANNEL BED

STA 37+11-L- LT/RT

BEGIN CULVERT
-L- POC 37+06.250

END CULVERT
-L- POC 37+12.233

WILLIE C. REAMS

SITE AB2

SITE AB3

PROPOSED STREAM IMPROVEMENTS SEE DETAIL AA

TOE PROTECTION CLASS 'I' RIP RAP SEE DETAIL K

2 - 2.7 X 2.1m RCBC W/ BAFFLES

TOE PROTECTION CLASS 'I' RIP RAP 45.301 MTN 128.690 SM F.F. SEE DETAIL K

EXISTING POND

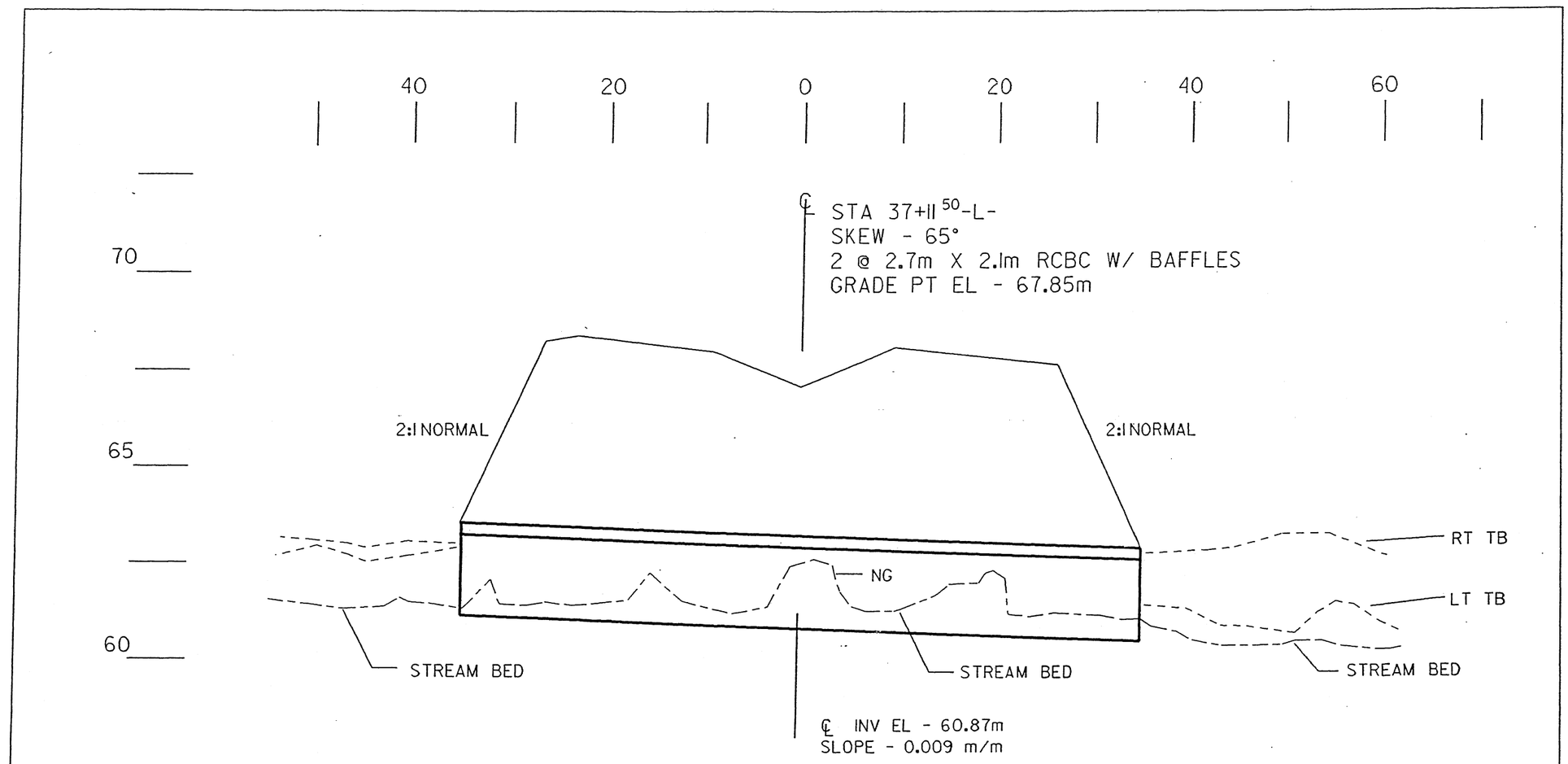
PSH 1.5 x 1.5m SEE DETAIL B

JANE A. CUNNINGHAM

MATCH LINE SEE SHEET 6 STA. 35+60.000

MATCH LINE SEE SHEET 8 STA. 38+65.000

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
SEE SHEETS 17 AND 18 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEET C-1 TO C-2 FOR CULVERT PLANS



SITE AB2
CROSS SECTION

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552 AB)

US 70 CLAYTON BYPASS

SHEET 8 OF 23 **10/01/04**

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	8
R/W SHEET NO. R-2552AA "22 & R-2552AB "8	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

REVISIONS

Sheet 9 of 23

-L-
PI= 38+81.623
Δ = 20° 44' 47.5" (RT)
L = 905.237
T = 457.630
R = 2,500.000
SE = .03
Vdes. = 110 km/hr

STA. 39+89.046 -L-
BEGIN TIP PROJECT R-2552AB (R/W)

WILLIAM A. WESTON, JR.

WILLIE C. REAMS

BEGIN APPROACH SLAB
-L- POC 39+33.844
10.500m LT.

BEGIN BRIDGE
-L- POC 39+46.974
10.500m LT.

SON-LAN SHIPWASH, LLC

CHARLES H. COATS

AUSTIN POND

* NOTE: STD. DECK DRAIN USED ON WBL BRIDGE W/16" PVC SYSTEM ON BRIDGE.

FINGERS

END BRIDGE
-L- POC 42+00.903
10.500m LT.

END APPROACH SLAB
-L- POC 42+09.378
10.500m LT.

TOP OF BERM 62.60m

DRY DETENTION / HAZARDOUS SPILL BASIN
DDE = 1233 m3

CLASS B RIPRAP
0.9 MTN
4.2 SM F.F

ROCK WEIR
CLASS I RIPRAP
(d=0.6 m)

LEVEL SPREADER
SEE DETAIL O

DRAWDOWN STRUCTURE
SEE DETAIL X

OUTLET STRUCTURE
SEE DETAIL Y

CLASS I RIPRAP
6.4 MTN 14.2 SM F.F

MATCH LINE SEE SHEET 7 STA. 38+65.000

MATCH LINE SEE SHEET 9 STA. 42+20.000

SPECIAL CUT DITCH
GRASS LINED
SEE DETAIL A

CLASS II RIPRAP
EST. 9 MTN
9 SM F.F.

BEGIN TEMP WORK BRIDGE

END TEMP WORK BRIDGE

BEGIN BRIDGE
-L- POC 39+77.907
10.500m RT.

BEGIN APPROACH SLAB
-L- POC 39+69.508
10.500m RT.

STA. 39+50.000 -L-
BEGIN TIP PROJECT R-2552AB

DENOTES HAND CLEARING IN WETLANDS

WORK BRIDGE

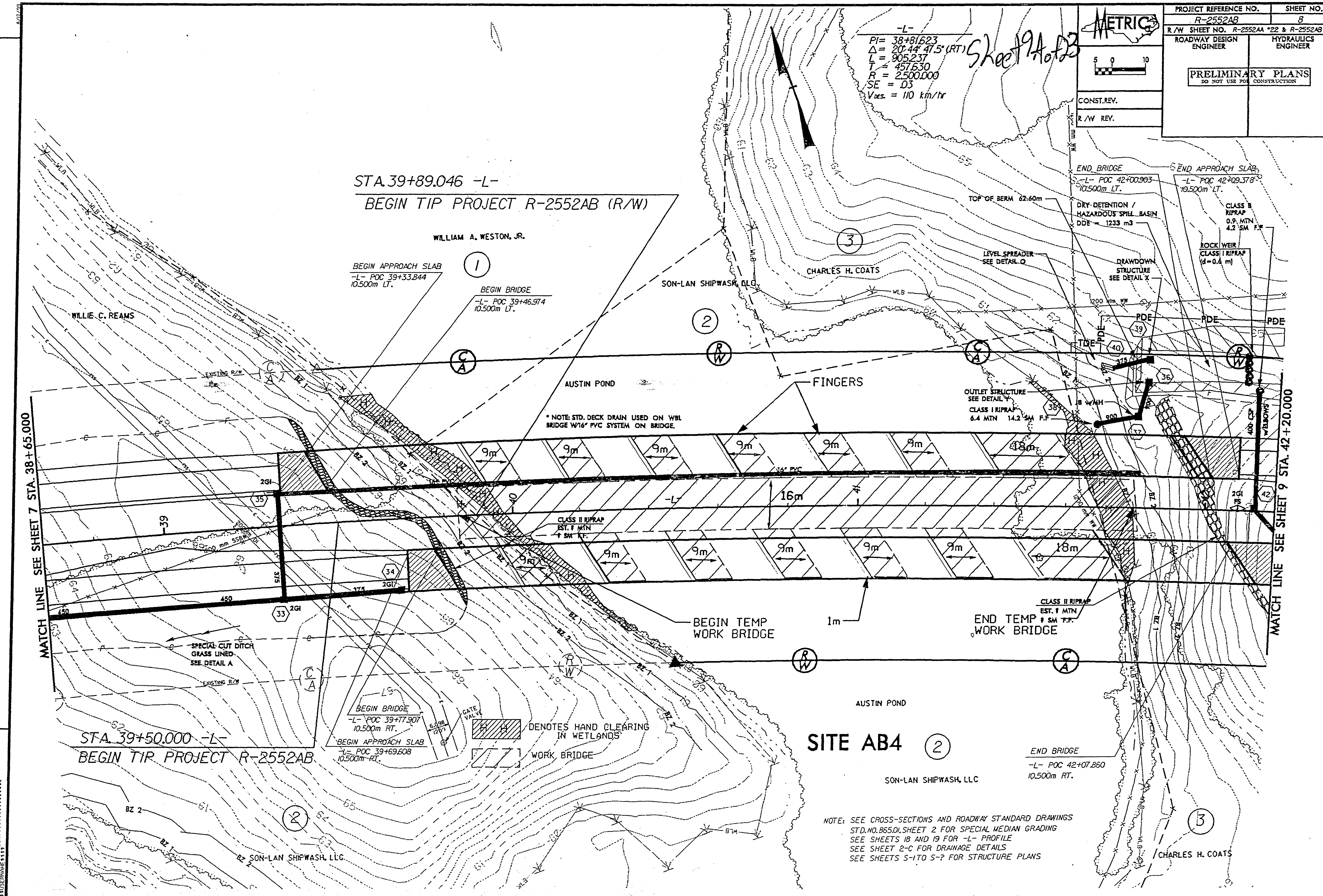
SITE AB4

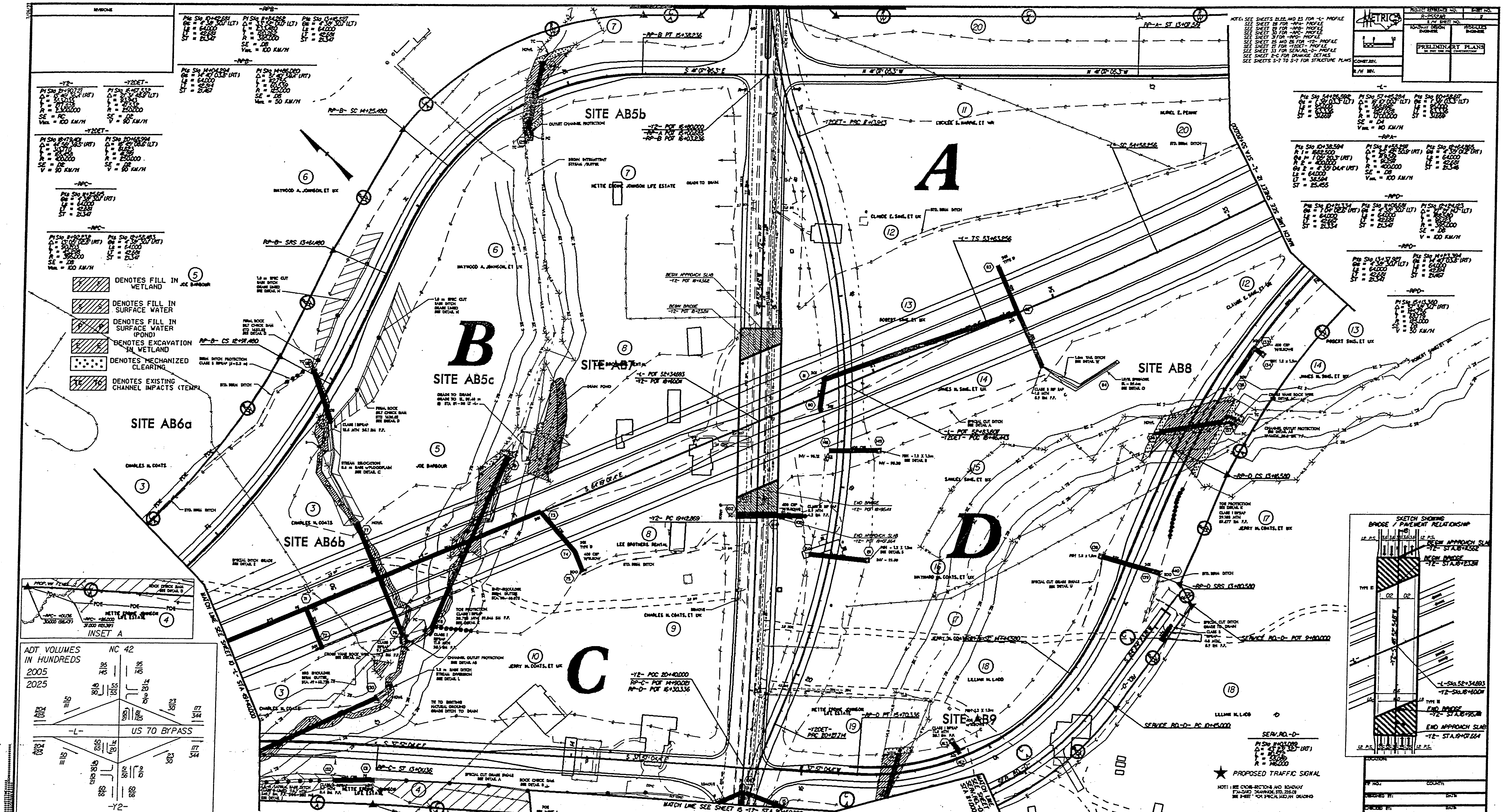
SON-LAN SHIPWASH, LLC

END BRIDGE
-L- POC 42+07.860
10.500m RT.

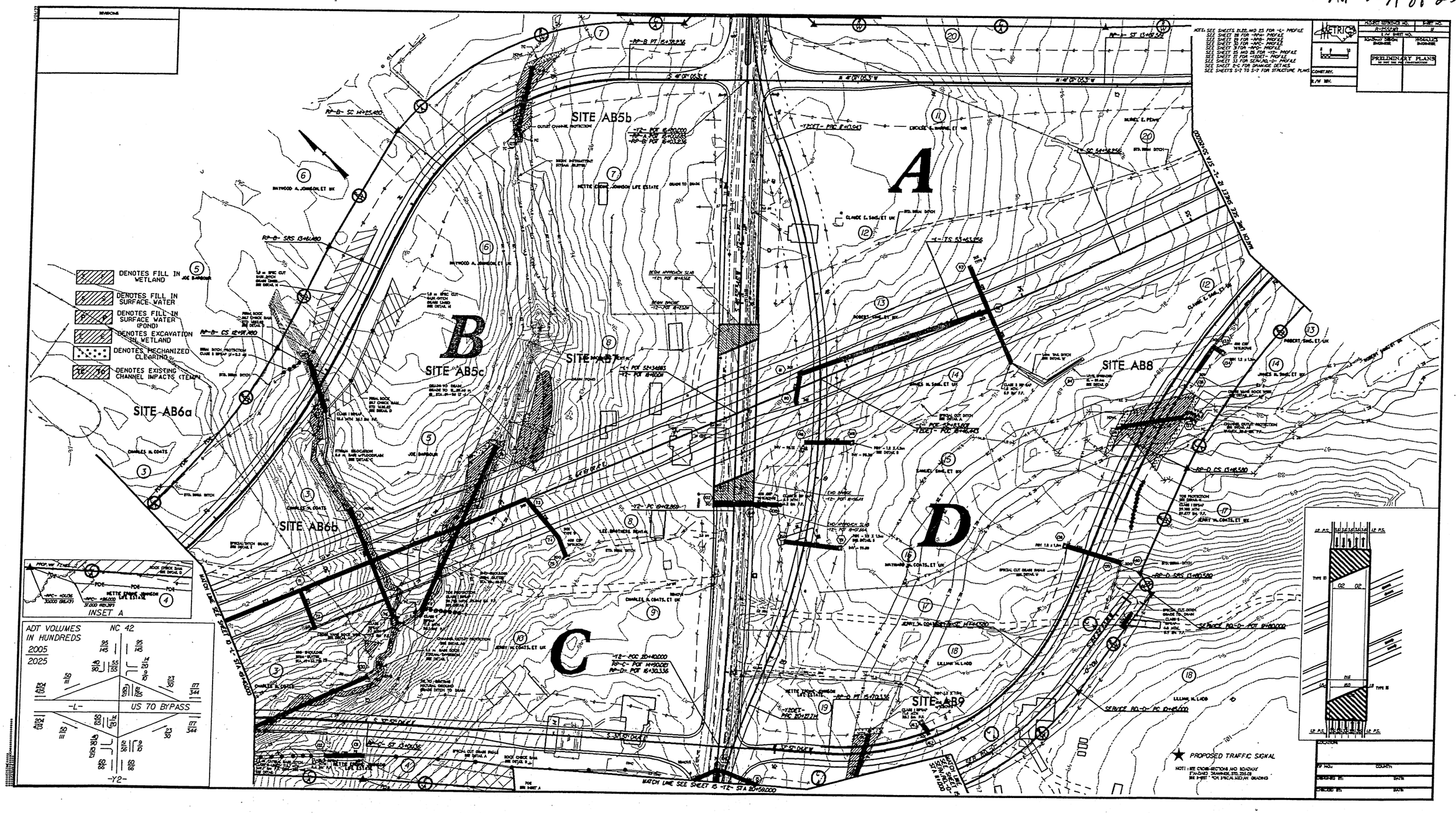
CHARLES H. COATS

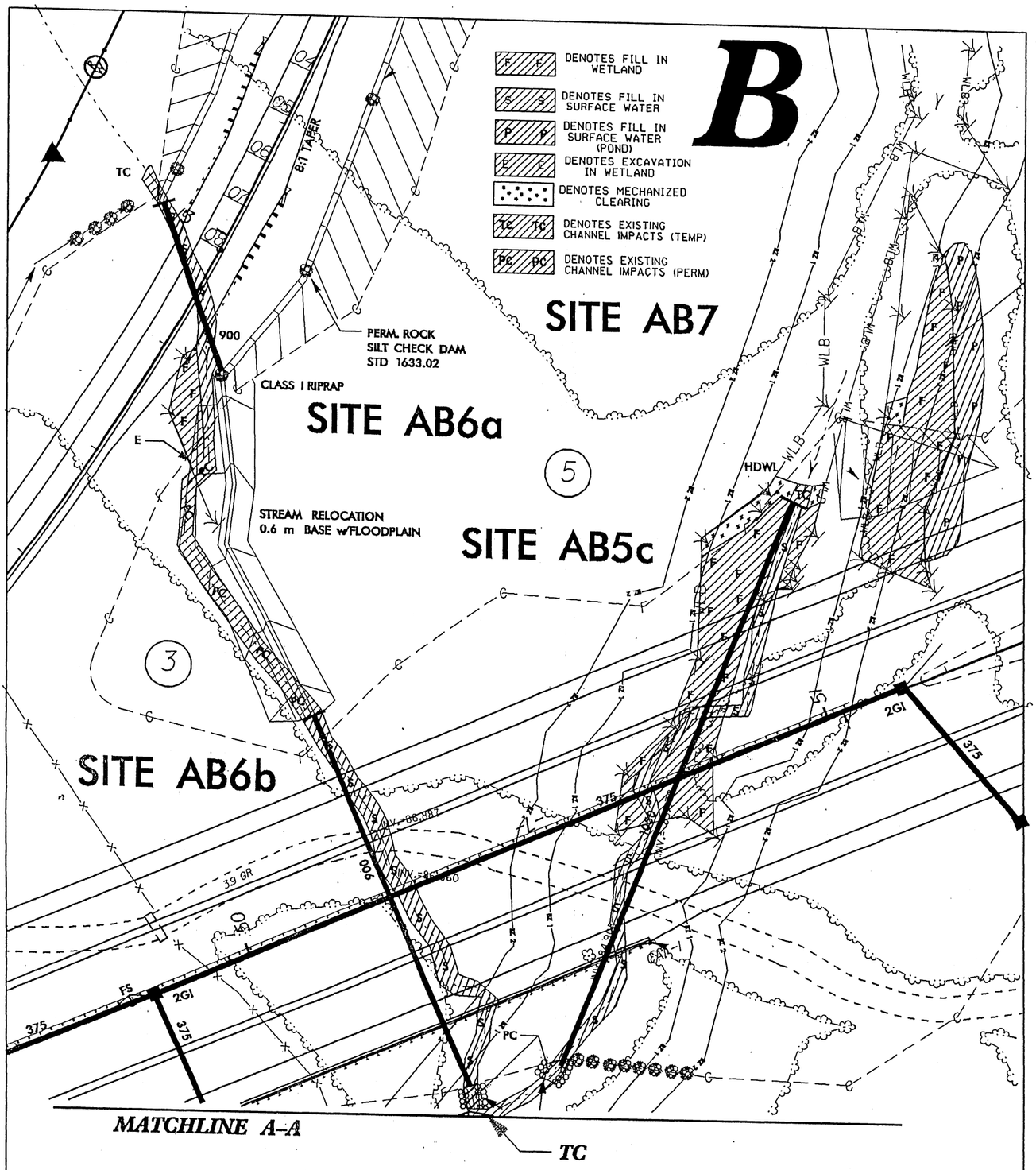
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS
STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING
SEE SHEETS 18 AND 19 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEETS S-1 TO S-7 FOR STRUCTURE PLANS


PROJECT REFERENCE NO.
SHEET NO.
R-2552AB
8
R/W SHEET NO. R-2552AA *22 & R-2552AB *8
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
METRIC
CONST. REV.
R/W REV.
REVISIONS
Sheet 9A of 23
-L-
PI= 38+81.623
Δ= 20°44' 47.5" (RT)
L = 905.237
T = 457.630
R = 2,500.000
SE = .03
Vdes. = 110 km/hr
STA. 39+89.046 -L-
BEGIN TIP PROJECT R-2552AB (R/W)
WILLIAM A. WESTON, JR.
BEGIN APPROACH SLAB
-L- POC 39+33.844
10.500m LT.
BEGIN BRIDGE
-L- POC 39+46.974
10.500m LT.
SON-LAN SHIPWASH, LLC
CHARLES H. COATS
WILLIE C. REAMS
AUSTIN POND
* NOTE: STD. DECK DRAIN USED ON WBL BRIDGE W/16" PVC SYSTEM ON BRIDGE.
FINGERS
16m
9m
18m
1m
CLASS II RIPRAP
EST. # MTN
SM F.F.
BEGIN TEMP WORK BRIDGE
END TEMP WORK BRIDGE
SPECIAL CUT DITCH GRASS LINED SEE DETAIL A
EXISTING R/W
MATCH LINE SEE SHEET 7 STA. 38+65.000
MATCH LINE SEE SHEET 9 STA. 42+20.000
END BRIDGE
-L- POC 42+00.903
10.500m LT.
END APPROACH SLAB
-L- POC 42+09.378
10.500m LT.
TOP OF BERM 62.60m
DRY DETENTION / HAZARDOUS SPILL BASIN
DDE = 1233 m3
CLASS B RIPRAP
0.9 MTN
4.2 SM F.F.
ROCK WEIR
CLASS I RIPRAP
(d=0.6 m)
LEVEL SPREADER SEE DETAIL O
DRAWDOWN STRUCTURE SEE DETAIL X
OUTLET STRUCTURE SEE DETAIL Y
CLASS I RIPRAP
6.4 MTN 14.2 SM F.F.
PDE
TDE
STA. 39+50.000 -L-
BEGIN TIP PROJECT R-2552AB
BEGIN BRIDGE
-L- POC 39+77.907
10.500m RT.
BEGIN APPROACH SLAB
-L- POC 39+69.608
10.500m RT.
GATE VALVE
DENOTES HAND CLEARING IN WETLANDS
WORK BRIDGE
SITE AB4
END BRIDGE
-L- POC 42+07.860
10.500m RT.
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS
STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING
SEE SHEETS 18 AND 19 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEETS S-1 TO S-? FOR STRUCTURE PLANS


PRELIMINARY PLANS
METRIC
SITE AB5b
SITE AB5c
SITE AB7
SITE AB8
SITE AB6a
SITE AB6b
SITE AB9
A
B
C
D
DENOTES FILL IN WETLAND
DENOTES FILL IN SURFACE WATER
DENOTES FILL IN SURFACE WATER (POND)
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES EXISTING CHANNEL IMPACTS (TEMP)
INSET A
ADT VOLUMES IN HUNDREDS
2005
2025
NC 42
US 70 BYPASS
-L-
-Y2-
SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP
PROPOSED TRAFFIC SIGNAL
MATCH LINE SEE SHEET 15 -Y2- STA 20+58.000
JOE BARBOUR
CHARLES W. COATS
HAYWOOD A. JOHNSON, ET UX
LEE BROTHERS RENTAL
JERRY W. COATS, ET UX
LILLIAN W. LADD
SERV. RD. -D-

Sht 10A of 23


DENOTES FILL IN WETLAND
DENOTES FILL IN SURFACE WATER
DENOTES FILL IN SURFACE WATER (POND)
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES EXISTING CHANNEL IMPACTS (TEMP)
SITE AB5b
SITE AB5c
SITE AB6a
SITE AB6b
SITE AB7
SITE AB8
SITE AB9
A
B
C
D
INSET A
ADT VOLUMES IN HUNDREDS
2005
2025
NC 42
-L- US 70 BYPASS
-Y2-
PROPOSED TRAFFIC SIGNAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION



SITES AB5c, AB6a AB6b & AB7

10m 0 20m SCALE

NCDOT

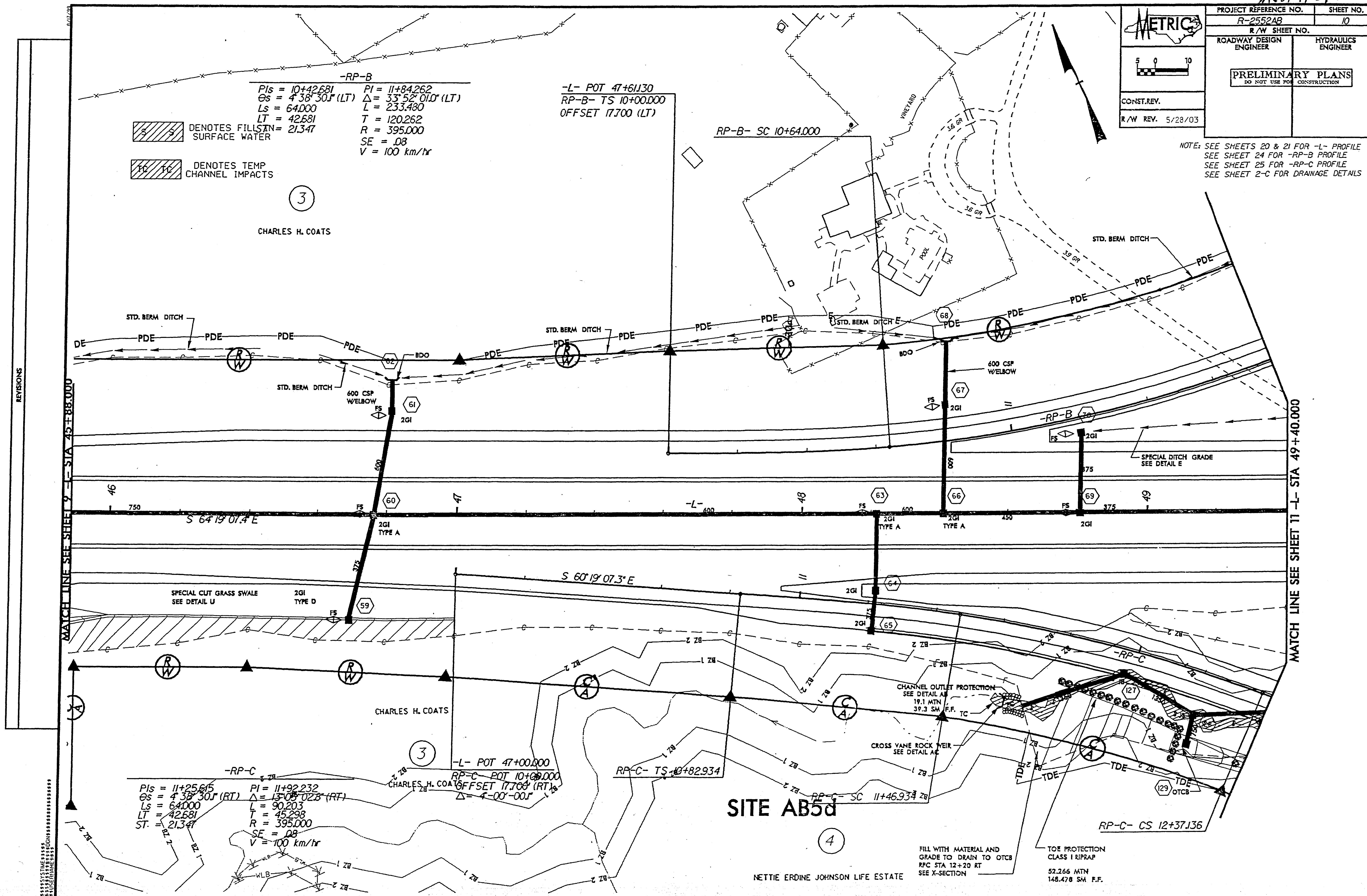
DIVISION OF HIGHWAYS

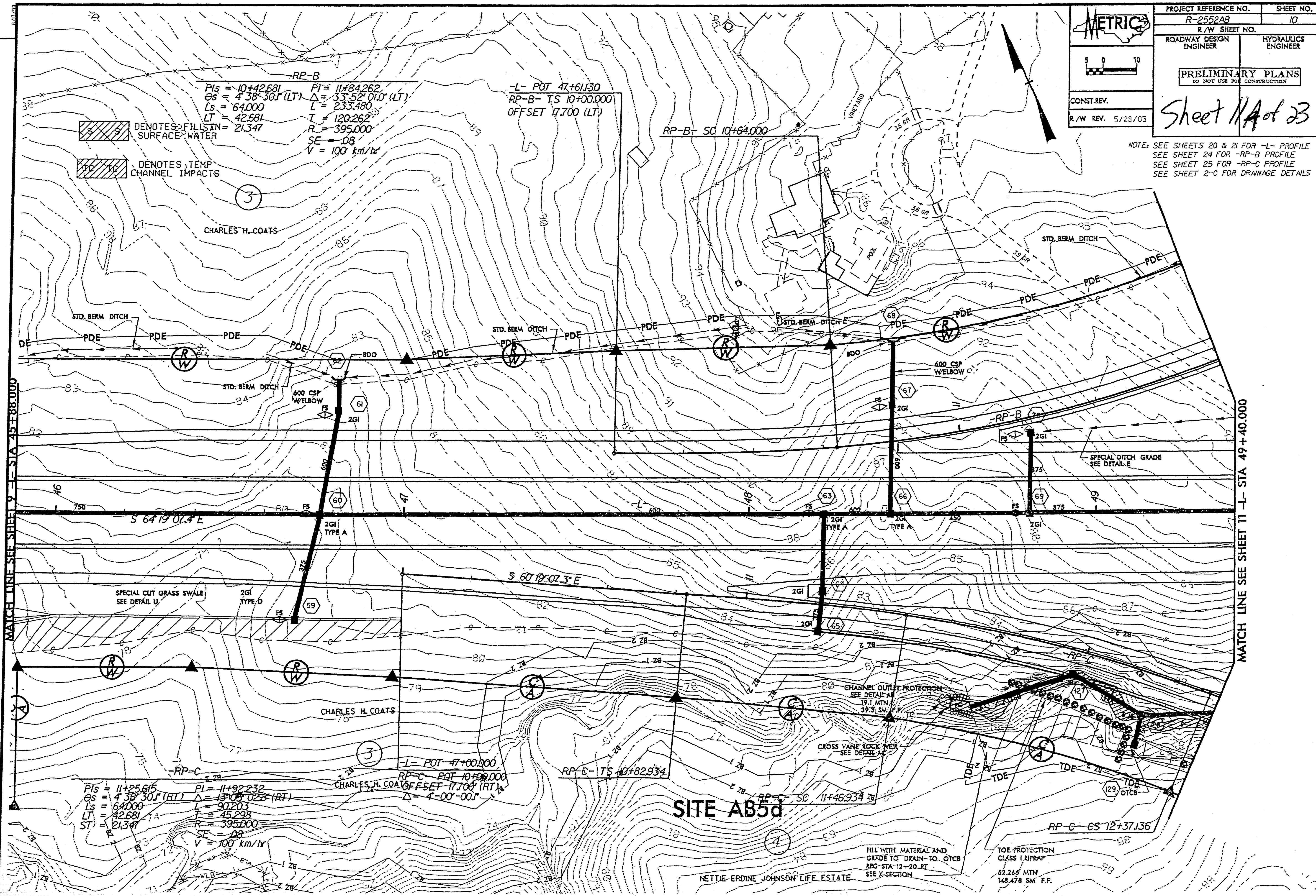
JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552AB)

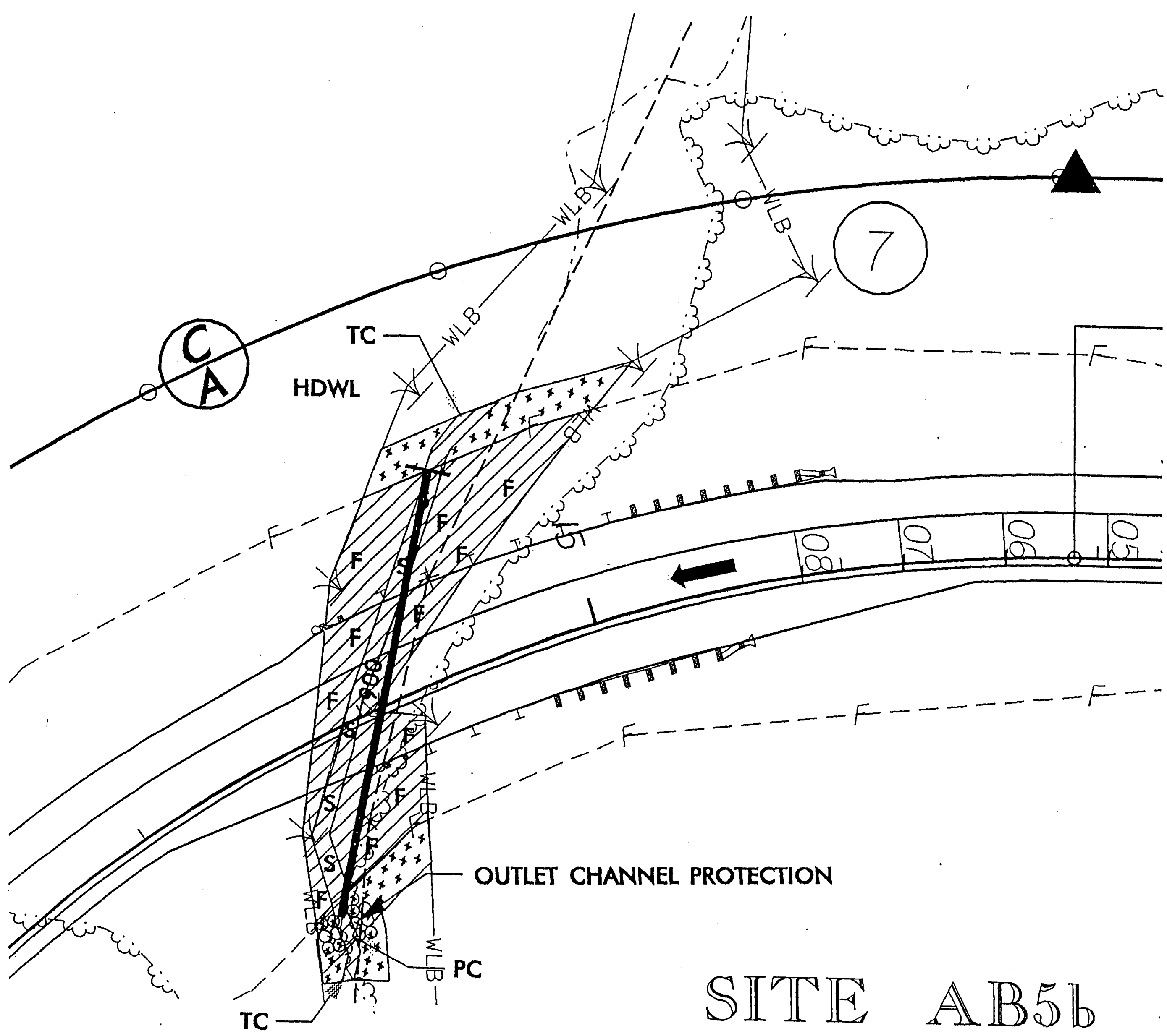
US 70 CLAYTON BYPASS

SHEET 10B OF 23 10/01/04


PROJECT REFERENCE NO.
R-2552AB
SHEET NO.
10
R/W SHEET NO.
METRIC
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV. 5/28/03
NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEET 24 FOR -RP-B PROFILE
SEE SHEET 25 FOR -RP-C PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
-RP-B
PIs = 10+42.681
Θs = 4°38'30.1" (LT)
Ls = 64.000
LT = 42.681
ST = 21.347
PI = 11+84.262
Δ = 33°52'01.0" (LT)
L = 233.480
T = 120.262
R = 395.000
SE = .08
V = 100 km/hr
-L- POT 47+61.130
RP-B- TS 10+00.000
OFFSET 17.700 (LT)
RP-B- SC 10+64.000
DENOTES FILL IN SURFACE WATER
DENOTES TEMP CHANNEL IMPACTS
CHARLES H. COATS
STD. BERM DITCH
600 CSP W/ELBOW
SPECIAL DITCH GRADE SEE DETAIL E
S 64°19'07.4" E
S 60°19'07.3" E
SPECIAL CUT GRASS SWALE SEE DETAIL U
2GI TYPE D
2GI TYPE A
MATCH LINE SEE SHEET 9 -L- STA 45+88.000
MATCH LINE SEE SHEET 11 -L- STA 49+40.000
CHANNEL OUTLET PROTECTION SEE DETAIL AB
19.1 MTN
39.3 SM F.F.
CROSS VANE ROCK WEIR SEE DETAIL AC
-RP-C
PIs = 11+25.615
Θs = 4°38'30.1" (RT)
Ls = 64.000
LT = 42.681
ST = 21.347
PI = 11+92.232
Δ = 13°05'02.8" (RT)
L = 90.203
T = 45.298
R = 395.000
SE = .08
V = 100 km/hr
-L- POT 47+00.000
RP-C- POT 10+00.000
OFFSET 17.700 (RT)
Δ = 4°00'00.1"
RP-C- TS 10+82.934
RP-C- SC 11+46.934
RP-C- CS 12+37.136
SITE AB5d
NETTIE ERDINE JOHNSON LIFE ESTATE
FILL WITH MATERIAL AND GRADE TO DRAIN TO OTCB RPC STA 12+20 RT SEE X-SECTION
TOE PROTECTION CLASS I RIPRAP
52.266 MTN
148.478 SM F.F.
REVISIONS



PROJECT REFERENCE NO. R-2552AB
SHEET NO. 10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
METRIC
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV. 5/28/03
Sheet 11A of 23
NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEET 24 FOR -RP-B PROFILE
SEE SHEET 25 FOR -RP-C PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
REVISIONS
-RP-B
PIs = 10+42.681
Θs = 4°38'30.1" (LT)
Ls = 64.000
LT = 42.681
STN = 21.347
PI = 11+84.262
Δ = 33°52'01.0" (LT)
L = 233.480
T = 120.262
R = 395.000
SE = .08
V = 100 km/hr
-L- POT 47+61.130
RP-B- TS 10+00.000
OFFSET 17.700 (LT)
RP-B- SC 10+64.000
DENOTES FILL IN SURFACE WATER
DENOTES TEMP CHANNEL IMPACTS
CHARLES H. COATS
STD. BERM DITCH
600 CSP W/ELBOW
SPECIAL DITCH GRADE SEE DETAIL E
S 64°19'07.4" E
S 60°19'07.3" E
SPECIAL CUT GRASS SWALE SEE DETAIL U
MATCH LINE SEE SHEET 9 -L- STA 45+88.000
MATCH LINE SEE SHEET 11 -L- STA 49+40.000
CHANNEL OUTLET PROTECTION SEE DETAIL AJ
19.1 MTN
39.3 SM F.F.
CROSS VANE ROCK WEIR SEE DETAIL AC
-RP-C
PIs = 11+25.615
Θs = 4°38'30.1" (RT)
Ls = 64.000
LT = 42.681
ST = 21.347
PI = 11+92.232
Δ = 13°05'02.8" (RT)
L = 90.203
T = 45.298
R = 395.000
SE = .08
V = 100 km/hr
-L- POT 47+00.000
RP-C POT 10+00.000
OFFSET 17.700 (RT)
Δ = 4°-00'-00.1"
RP-C- TS 10+82.934
RP-C- SC 11+46.934
RP-C- CS 12+37.136
SITE AB5d
FILL WITH MATERIAL AND GRADE TO DRAIN TO OTCB
RPC STA 12+20 RT
SEE X-SECTION
TOE PROTECTION CLASS I RIPRAP
62.265 MTN
148.478 SM F.F.
NETTIE ERDINE JOHNSON LIFE ESTATE
POOL
VINEYARD



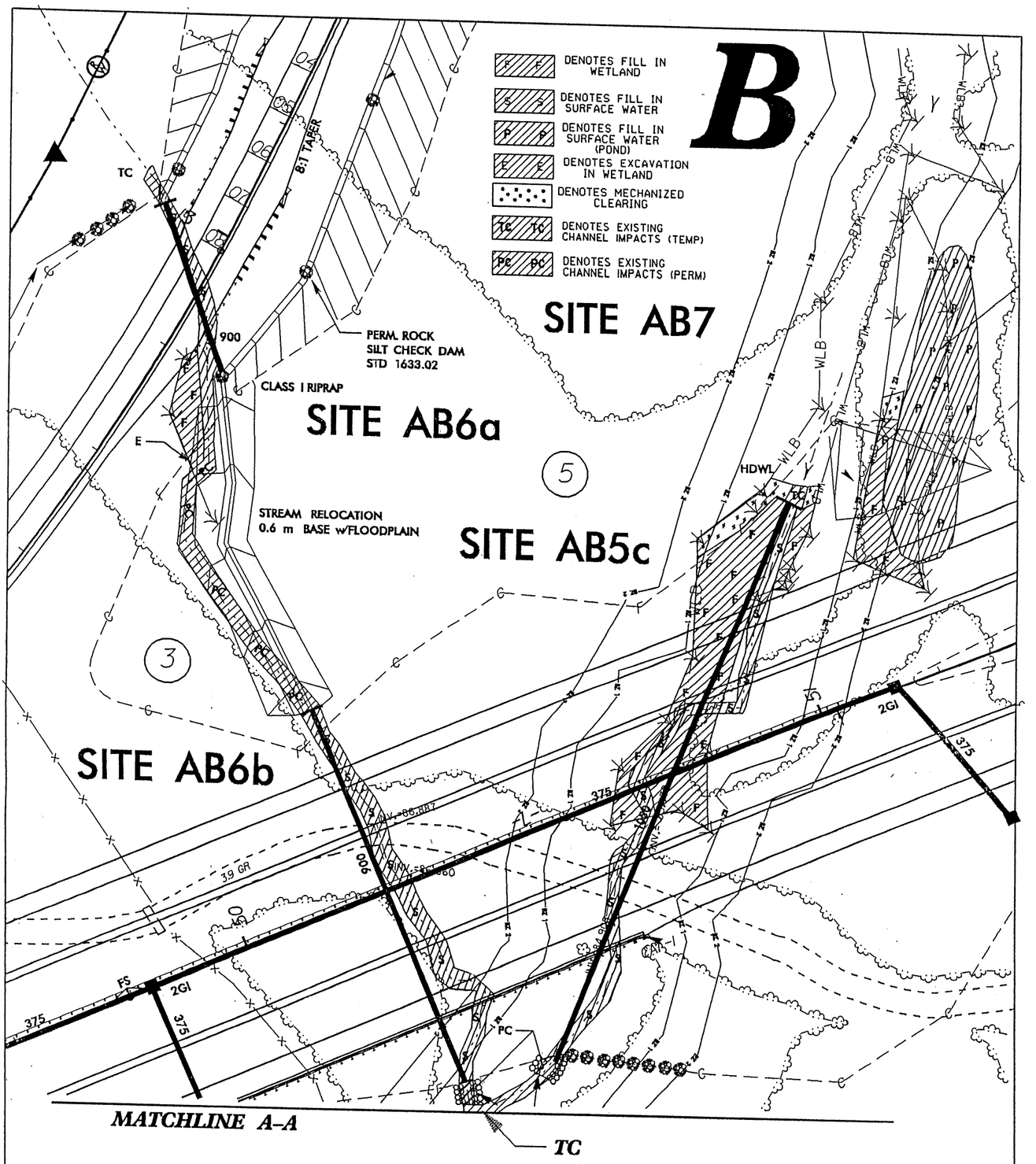
SITE AB5b

- F / F — DENOTES FILL IN WETLAND
- S / S — DENOTES FILL IN SURFACE WATER
- * * * — DENOTES MECHANIZED CLEARING
- TC / TC — DENOTES EXISTING CHANNEL IMPACTS (TEMP)
- PC / PC — DENOTES EXISTING CHANNEL IMPACTS (PERM)

SCALE: 5m 0 10m

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS

SHEET 12 OF 23 10/01/04



SITES AB5c, AB6a AB6b & AB7

10m 0 20m SCALE

NCDOT

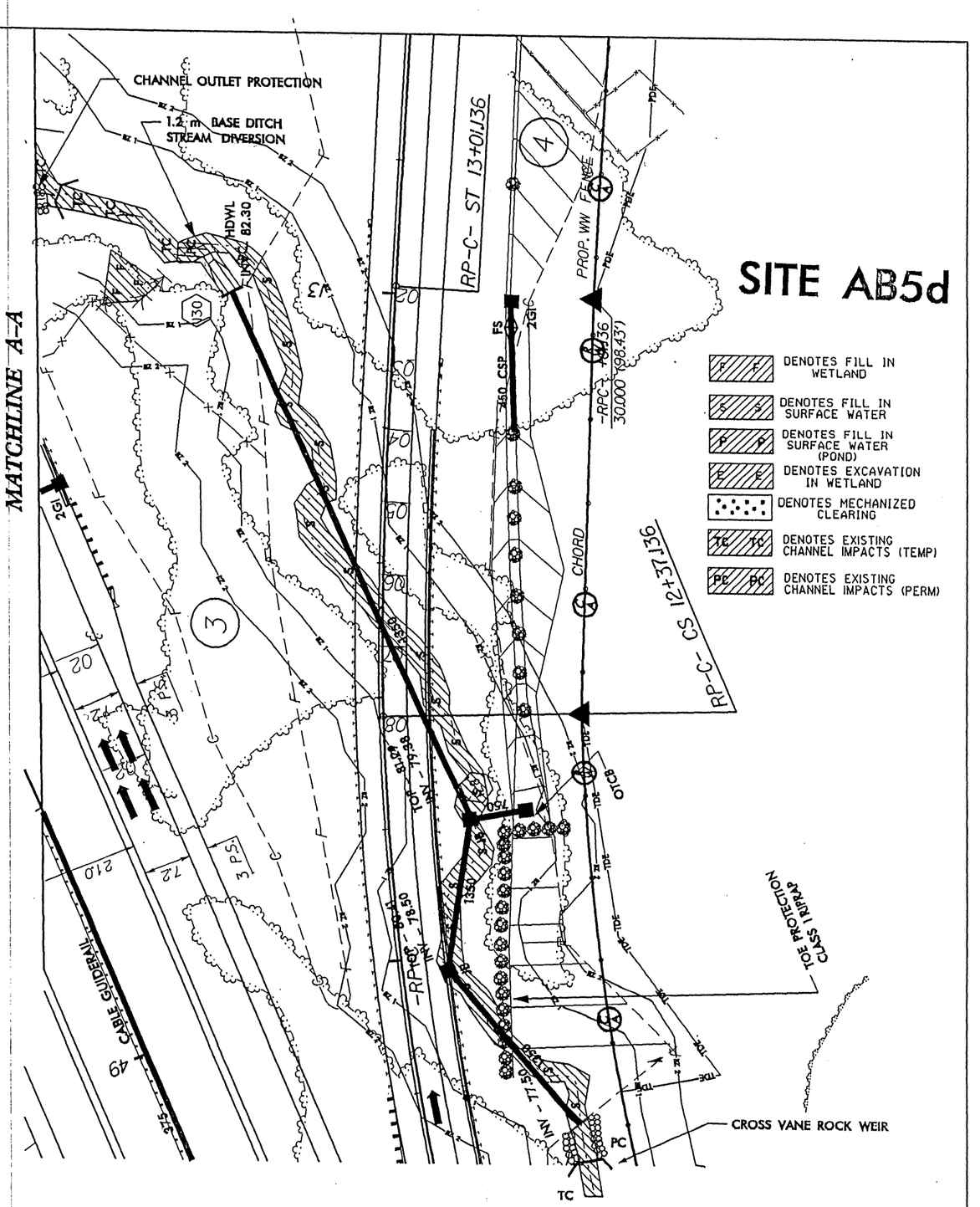
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552AB)

US 70 CLAYTON BYPASS

SHEET 13 OF 23 10/01/04



SITES AB5d

10 0 20m

SCALE

NCDOT

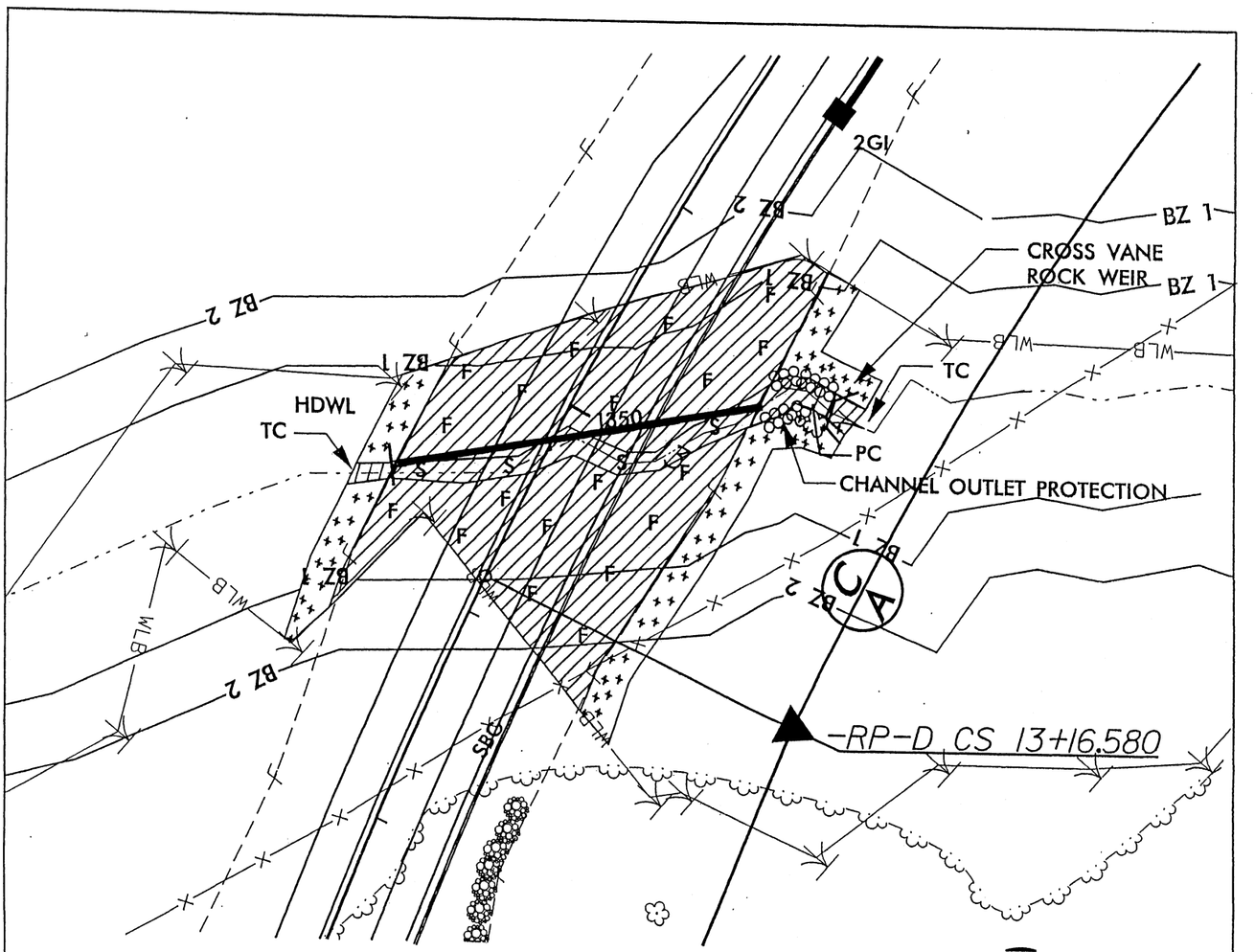
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552AB)

US 70 CLAYTON BYPASS

SHEET 14 OF 23 10/01/04



F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TC TC DENOTES EXISTING CHANNEL IMPACTS (TEMP)

PC PC DENOTES EXISTING CHANNEL IMPACTS (PERM)

SITE AB8

5m 0 10m SCALE

NCDOT

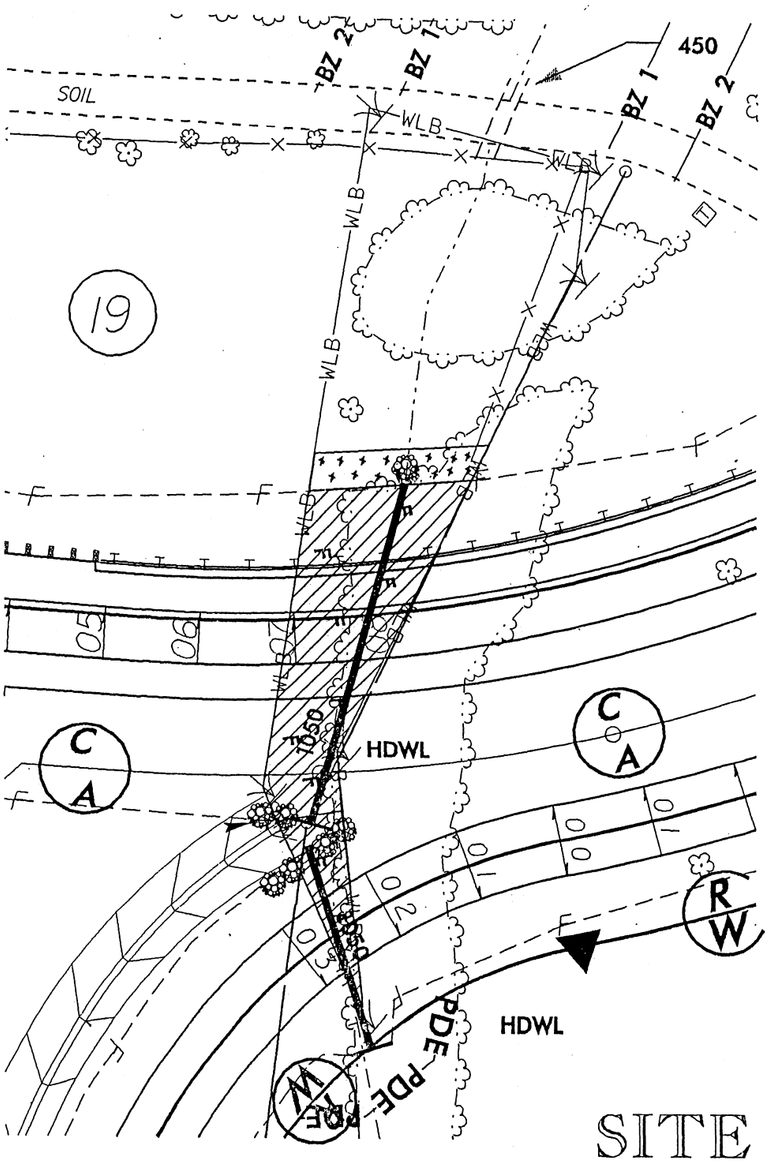
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552AB)

US 70 CLAYTON BYPASS

SHEET 15 OF 23 **10/01/04**



SITE AB9

F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TC TC DENOTES EXISTING CHANNEL IMPACTS (TEMP)

PC PC DENOTES EXISTING CHANNEL IMPACTS (PERM)

5m 0 10m SCALE

NCDOT

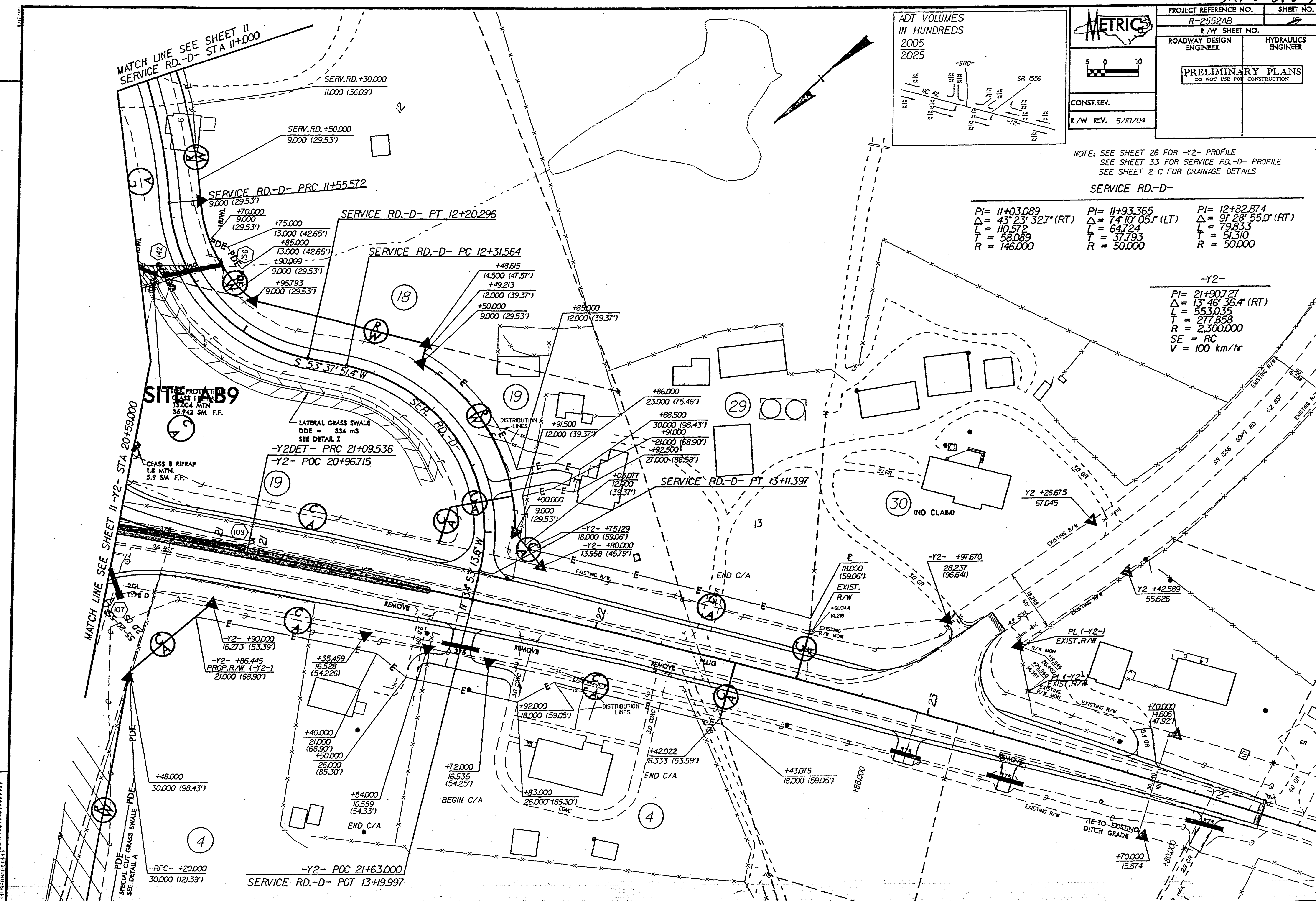
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

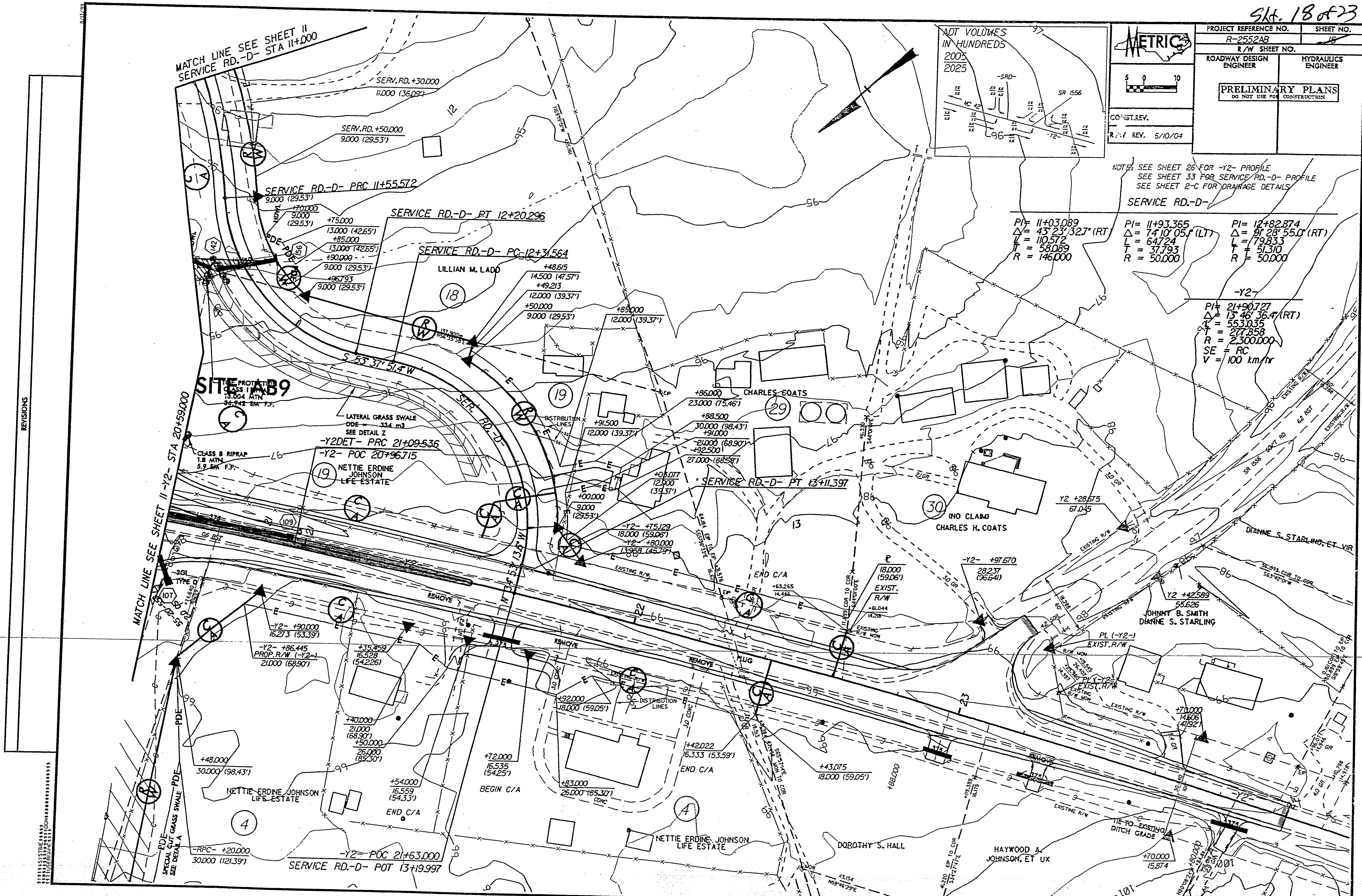
PROJECT: WBS 34459.1.1 (R-2552AB)

US 70 CLAYTON BYPASS

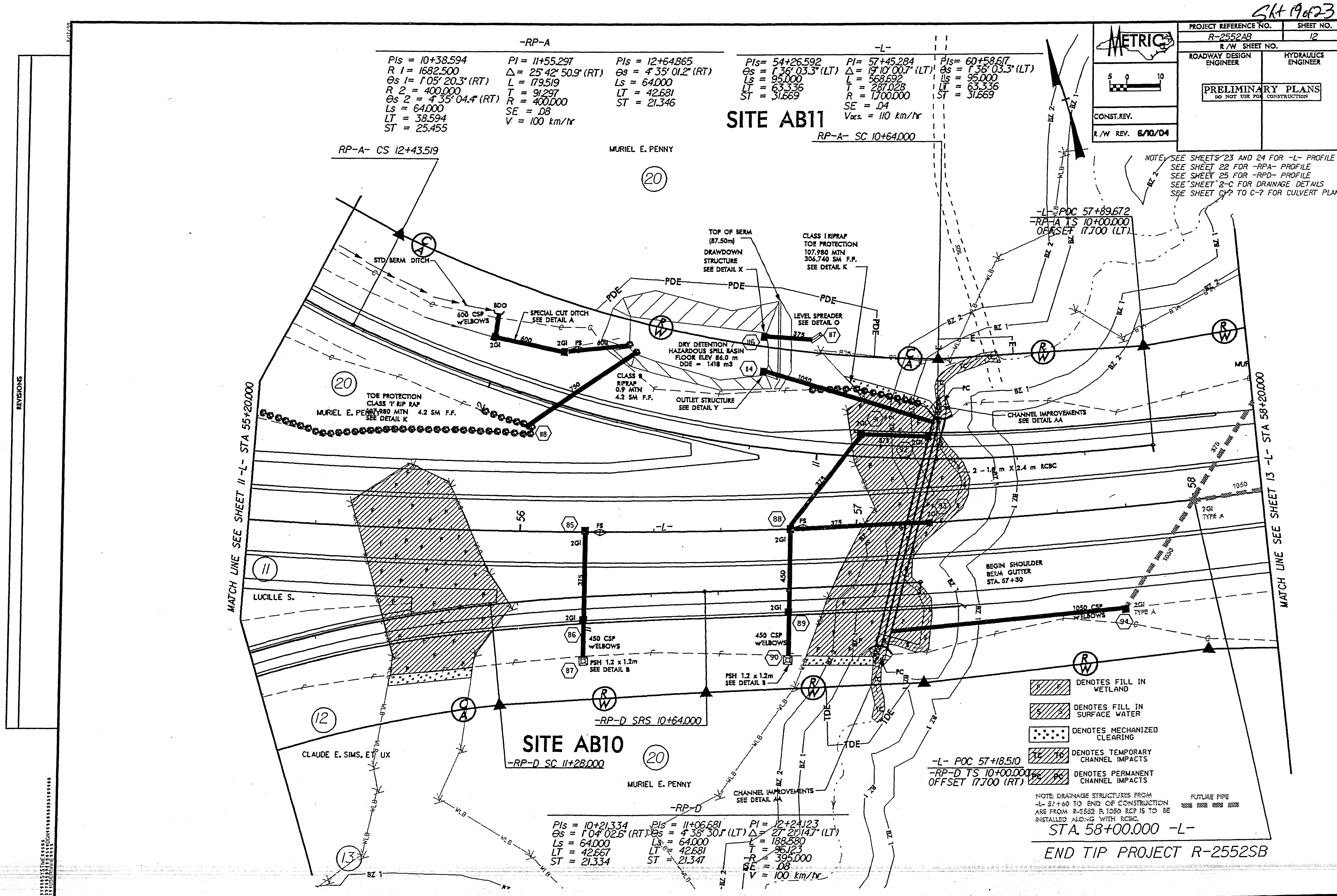
SHEET 16 OF 23 **10/01/04**


PROJECT REFERENCE NO. R-2552AB
SHEET NO. 15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
METRIC
CONST.REV.
R/W REV. 6/10/04
ADT VOLUMES
IN HUNDREDS
2005
2025
-SRD-
SR 1556
NC 42
-Y2-
NOTE: SEE SHEET 26 FOR -Y2- PROFILE
SEE SHEET 33 FOR SERVICE RD.-D- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SERVICE RD.-D-
PI= 11+03.089
Δ= 43° 23' 32.7" (RT)
L = 110.572
T = 58.089
R = 146.000
PI= 11+93.365
Δ= 74° 10' 05.1" (LT)
L = 64.724
T = 37.793
R = 50.000
PI= 12+82.874
Δ= 91° 28' 55.0" (RT)
L = 79.833
T = 51.310
R = 50.000
-Y2-
PI= 21+90.727
Δ= 13° 46' 36.4" (RT)
L = 553.035
T = 277.858
R = 2,300.000
SE = RC
V = 100 km/hr
MATCH LINE SEE SHEET 11
SERVICE RD.-D- STA 11+.000
SERV.RD. +30.000
11.000 (36.09')
SERV.RD. +50.000
9.000 (29.53')
SERVICE RD.-D- PRC 11+55.572
9.000 (29.53')
SERVICE RD.-D- PT 12+20.296
SERVICE RD.-D- PC 12+31.564
SERVICE RD.-D- PT 13+11.397
S 53° 37' 51.4" W
N 34° 53' 13.6" W
SER. RD.-D-
SITE AB9
TOE PROTECTION CLASS I RIPRAP
13.004 MTN
36.942 SM F.F.
LATERAL GRASS SWALE
DDE = 334 m3
SEE DETAIL Z
CLASS B RIPRAP
1.8 MTN
5.9 SM F.F.
-Y2DET- PRC 21+09.536
-Y2- POC 20+96.715
-Y2- POC 21+63.000
SERVICE RD.-D- POT 13+19.997
MATCH LINE SEE SHEET 11 -Y2- STA 20+59.000
-Y2- +90.000
16.273 (53.39')
-Y2- +86.445
PROP.R/W (-Y2-)
21.000 (68.90')
-RPC- +20.000
30.000 (121.39')
+48.000
30.000 (98.43')
PDE
SPECIAL CUT GRASS SWALE
SEE DETAIL A
DISTRIBUTION LINES
EXISTING R/W
REMOVE
PLUG
BEGIN C/A
END C/A
-Y2- +75.129
18.000 (59.06')
-Y2- +80.000
13.958 (45.79')
-Y2- +97.670
28.237 (96.641)
Y2 +28.675
67.045
Y2 +42.589
55.626
PL (-Y2-)
EXIST.R/W
R/W MON
TIE TO EXISTING DITCH GRADE
SR 1556 GOV'T RD 6.2 BST
(NO CLAIM)
60'
18.288

Sht. 18 of 23



PROJECT REFERENCE NO.
SHEET NO.
R-2552AB
15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
METRIC
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST. REV.
R/W REV. 5/10/04
ADT VOLUMES IN HUNDREDS
2005
2025
NOTE: SEE SHEET 26 FOR -Y2- PROFILE
SEE SHEET 33 FOR SERVICE RD.-D- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SERVICE RD.-D-
PI = 11+03.089
Δ = 43°23'32.7" (RT)
L = 110.572
T = 58.089
R = 146.000
PI = 11+93.365
Δ = 74°10'05.1" (LT)
L = 64.724
T = 37.793
R = 50.000
PI = 12+82.874
Δ = 91°28'55.0" (RT)
L = 79.833
T = 51.310
R = 50.000
-Y2-
PI = 21+90.727
Δ = 13°46'36.4" (RT)
L = 553.035
T = 277.858
R = 2,300.000
SE = RC
V = 100 km/hr
MATCH LINE SEE SHEET 11 SERVICE RD.-D- STA 11+000
MATCH LINE SEE SHEET 11 -Y2- STA 20+59.000
SERVICE RD.-D- PRC 11+55.572
SERVICE RD.-D- PT 12+20.296
SERVICE RD.-D- PC 12+31.564
SERVICE RD.-D- PT 13+11.397
SERVICE RD.-D- POT 13+19.997
-Y2DET- PRC 21+09.536
-Y2- POC 20+96.715
-Y2- POC 21+63.000
SITE AB9
LATERAL GRASS SWALE
SEE DETAIL Z
CLASS B RIPRAP
LILLIAN M. LADD
NETTIE ERDINE JOHNSON LIFE ESTATE
CHARLES COATS
(NO CLAIM) CHARLES H. COATS
DIANNE S. STARLING, ET VIR
JOHNNY B. SMITH
DIANNE S. STARLING
DOROTHY S. HALL
HAYWOOD A. JOHNSON, ET UX
SR 1556
BEGIN C/A
END C/A
TIE TO EXISTING DITCH GRADE
EXISTING R/W
DISTRIBUTION LINES
REMOVE
PLUG
SPECIAL CUT GRASS SWALE SEE DETAIL A
REVISIONS



Sht 19 of 23
PROJECT REFERENCE NO. R-2552AB
SHEET NO. 12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
METRIC
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST. REV.
R/W REV. 6/10/04
REVISIONS
-RP-A
PIs = 10+38.594
R 1 = 1682.500
θs 1 = 1°05' 20.3" (RT)
R 2 = 400.000
θs 2 = 4°35' 04.4" (RT)
Ls = 64.000
LT = 38.594
ST = 25.455
PI = 11+55.297
Δ = 25°42' 50.9" (RT)
L = 179.519
T = 91.297
R = 400.000
SE = .08
V = 100 km/hr
PIs = 12+64.865
θs = 4°35' 01.2" (RT)
Ls = 64.000
LT = 42.681
ST = 21.346
-L-
PIs = 54+26.592
θs = 1°36' 03.3" (LT)
Ls = 95.000
LT = 63.336
ST = 31.669
PI = 57+45.284
Δ = 19°10' 00.7" (LT)
L = 568.692
T = 287.028
R = 1,700.000
SE = .04
Vdes = 110 km/hr
PIs = 60+58.617
θs = 1°36' 03.3" (LT)
Ls = 95.000
LT = 63.336
ST = 31.669
SITE AB11
RP-A- SC 10+64.000
RP-A- CS 12+43.519
MURIEL E. PENNY
NOTE: SEE SHEETS 23 AND 24 FOR -L- PROFILE
SEE SHEET 22 FOR -RPA- PROFILE
SEE SHEET 25 FOR -RPD- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEET C-? TO C-? FOR CULVERT PLANS
-L- POC 57+89.672
-RP-A TS 10+00.000
OFFSET 17.700 (LT)
TOP OF BERM (87.50m)
DRAWDOWN STRUCTURE SEE DETAIL X
CLASS I RIPRAP TOE PROTECTION 107.980 MTN 306.740 SM F.F. SEE DETAIL K
STD BERM DITCH
SPECIAL CUT DITCH SEE DETAIL A
600 CSP W/ELBOWS
LEVEL SPREADER SEE DETAIL O
DRY DETENTION HAZARDOUS SPILL BASIN FLOOR ELEV 86.0 m DDE = 1418 m3
CLASS B RIPRAP 0.9 MTN 4.2 SM F.F.
OUTLET STRUCTURE SEE DETAIL Y
TOE PROTECTION CLASS 'I' RIP RAP 107.980 MTN 4.2 SM F.F. SEE DETAIL K
MURIEL E. PENNY
CHANNEL IMPROVEMENTS SEE DETAIL AA
2 - 1.8 m X 2.4 m RCBC
MATCH LINE SEE SHEET 11 -L- STA 55+20.000
MATCH LINE SEE SHEET 13 -L- STA 58+20.000
BEGIN SHOULDER BERM GUTTER STA. 57+30
LUCILLE S.
450 CSP W/ELBOWS
PSH 1.2 x 1.2m SEE DETAIL B
1050 CSP W/ELBOWS
2GI TYPE A
CLAUDE E. SIMS, ET UX
SITE AB10
-RP-D SRS 10+64.000
-RP-D SC 11+28.000
MURIEL E. PENNY
CHANNEL IMPROVEMENTS SEE DETAIL AA
-L- POC 57+18.510
-RP-D TS 10+00.000
OFFSET 17.700 (RT)
DENOTES FILL IN WETLAND
DENOTES FILL IN SURFACE WATER
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY CHANNEL IMPACTS
DENOTES PERMANENT CHANNEL IMPACTS
NOTE: DRAINAGE STRUCTURES FROM -L- 57+60 TO END OF CONSTRUCTION ARE FROM R-2552 & 1050 RCP IS TO BE INSTALLED ALONG WITH RCBC.
FUTURE PIPE
STA. 58+00.000 -L-
END TIP PROJECT R-2552SB
-RP-D
PIs = 10+21.334
θs = 1°04' 02.6" (RT)
Ls = 64.000
LT = 42.667
ST = 21.334
PIs = 11+06.681
θs = 4°38' 30.1" (LT)
Ls = 64.000
LT = 42.681
ST = 21.347
PI = 12+24.123
Δ = 27°21' 14.7" (LT)
L = 188.580
T = 96.123
R = 395.000
SE = .08
V = 100 km/hr

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	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. 6/10/04

REVISIONS

SITE AB11

-RP-A
PIs = 10+38.594
R 1 = 1682.500
Θs 1 = 1° 05' 20.3" (RT)
R 2 = 400.000
Θs 2 = 4° 35' 04.4" (RT)
Ls = 64.000
LT = 38.594
ST = 25.455

PI = 11+55.297
Δ = 25° 42' 50.9" (RT)
L = 179.519
T = 91.297
R = 400.000
SE = .08
V = 100 km/hr

PIs = 12+64.865
Θs = 4° 35' 01.2" (RT)
Ls = 64.000
LT = 42.681
ST = 21.346

-L-
PIs = 54+26.592
Θs = 1° 36' 03.3" (LT)
Ls = 95.000
LT = 63.336
ST = 31.669

PI = 57+45.284
Δ = 19° 10' 00.7" (LT)
L = 568.692
T = 287.028
R = 1700.000
SE = .04
V = 110 km/hr

PIs = 60+58.617
Θs = 1° 36' 03.3" (LT)
Ls = 95.000
LT = 63.336
ST = 31.669

RP-A- CS 12+43.519

RP-A- SC 10+64.000

-L- POC 57+89.672
-RP-A TS 10+00.000
OFFSET 17.700 (LT)

NOTE: SEE SHEETS 23 AND 24 FOR -L- PROFILE
SEE SHEET 22 FOR -RPA- PROFILE
SEE SHEET 25 FOR -RPD- PROFILE
SEE SHEET C-6 FOR DRAINAGE DETAILS
SEE SHEET C-7 TO C-7 FOR CULVERT PLANS

MATCH LINE SEE SHEET 11 -L- STA 55+20.000

MATCH LINE SEE SHEET 13 -L- STA 58+20.000

MURIEL E. PENNY

STD BERM DITCH

600 CSP w/ELBOWS

SPECIAL CUT DITCH SEE DETAIL A

TOP OF BERM (87.50m)

DRAWDOWN STRUCTURE SEE DETAIL X

CLASS I RIPRAP TOE PROTECTION 107.980 MTN 306.740 SM F.F. SEE DETAIL K

LEVEL SPREADER SEE DETAIL O

DRY DETENTION / HAZARDOUS SPILL BASIN FLOOR ELEV 86.0 m DDE = 1418 m3

CLASS B RIPRAP 0.9 MTN 4.2 SM F.F.

OUTLET STRUCTURE SEE DETAIL Y

TOE PROTECTION CLASS 'I' RIP RAP 107.980 MTN 4.2 SM F.F. SEE DETAIL K

CHANNEL IMPROVEMENTS SEE DETAIL AA

2 - 1.8 m X 2.4 m RCBC

BEGIN SHOULDER BERM GUTTER STA. 57+30

1050 CSP w/ELBOWS

LUCILLE S.

450 CSP w/ELBOWS

PSH 1.2 x 1.2m SEE DETAIL B

-RP-D SRS 10+64.000

SITE AB10

-RP-D SC 11+28.000

CLAUDE E. SIMS, ET UX

-RP-D

PIs = 10+21.334
Θs = 1° 04' 02.6" (RT)
Ls = 64.000
LT = 42.667
ST = 21.334

PIs = 11+06.681
Θs = 4° 38' 30.5" (LT)
Ls = 64.000
LT = 42.681
ST = 21.347

PI = 12+24.123
Δ = 27° 21' 14.7" (LT)
L = 188.580
T = 96.123
R = 395.000
SE = .08
V = 100 km/hr

-L- POC 57+18.510
-RP-D TS 10+00.000
OFFSET 17.700 (RT)

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

NOTE: DRAINAGE STRUCTURES FROM -L- STA 57+60 TO END OF CONSTRUCTION ARE FROM R-2552 & 1050 RCP IS TO BE INSTALLED ALONG WITH RCBC.

FUTURE PIPE

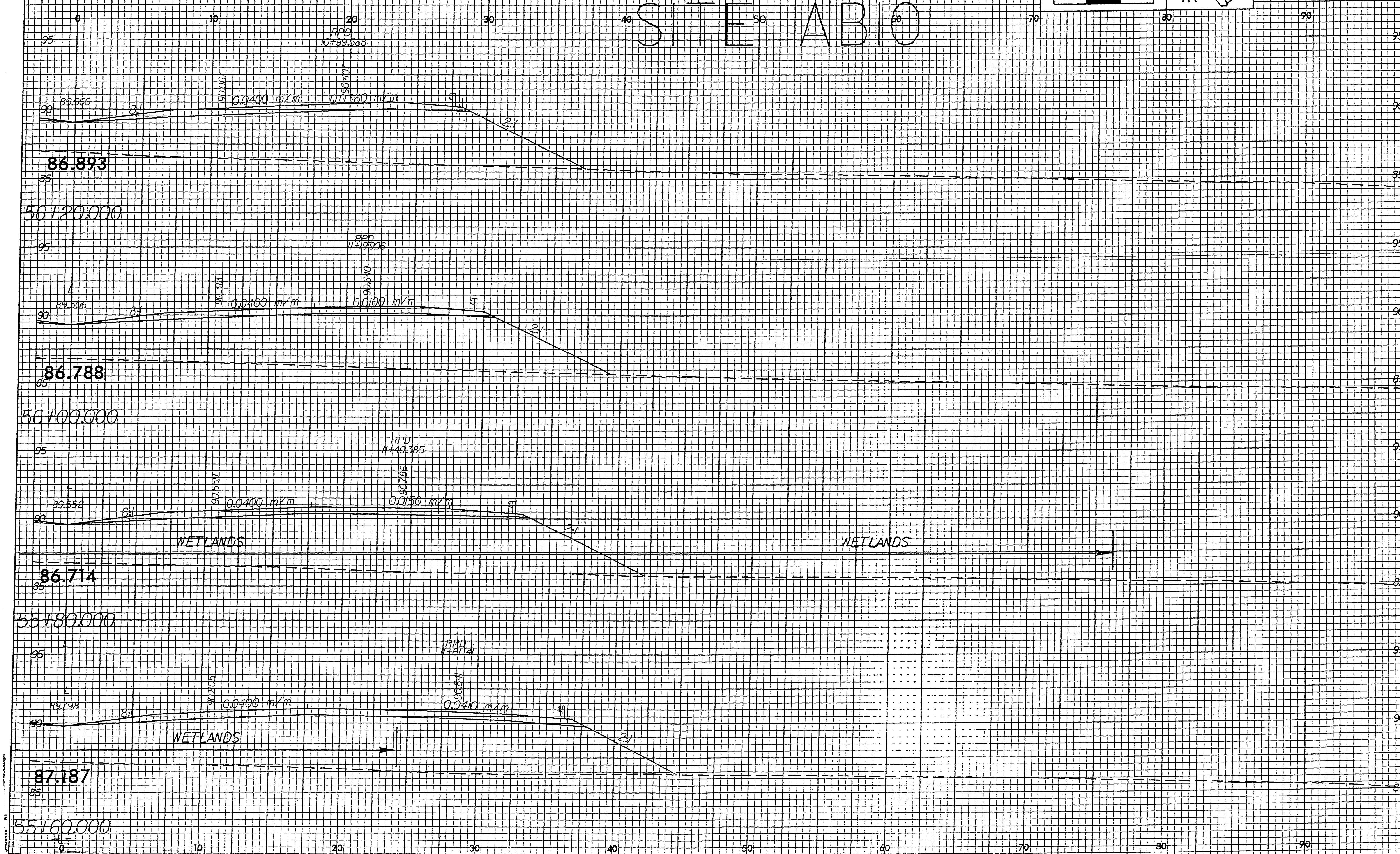
STA. 58+00.000 -L- R-2552AB

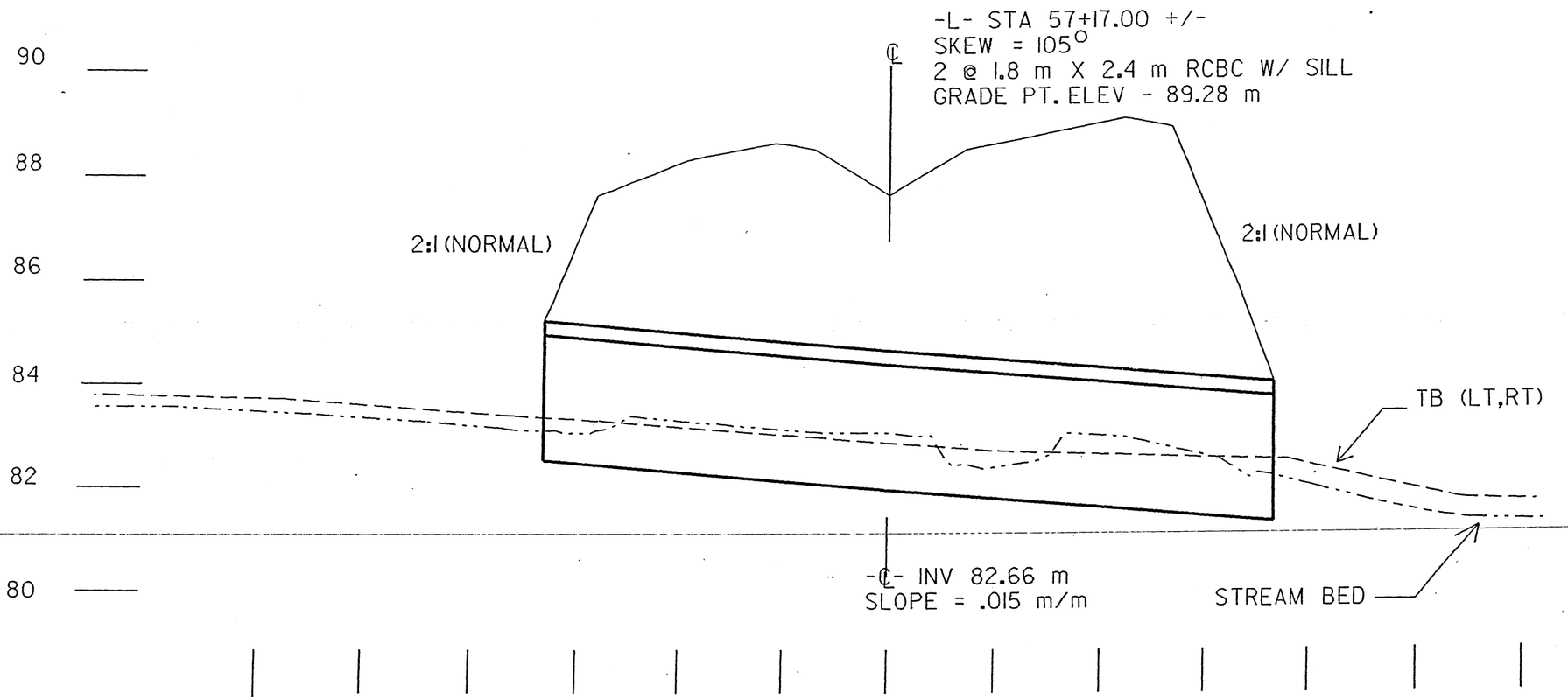
END STATE PROJECT 8.T311002
END F.A. PROJECT NHF-60-1(9)

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	31[illegible]

METRIC

SITE AB10





SITE AB11
CROSS SECTION

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552 AB)

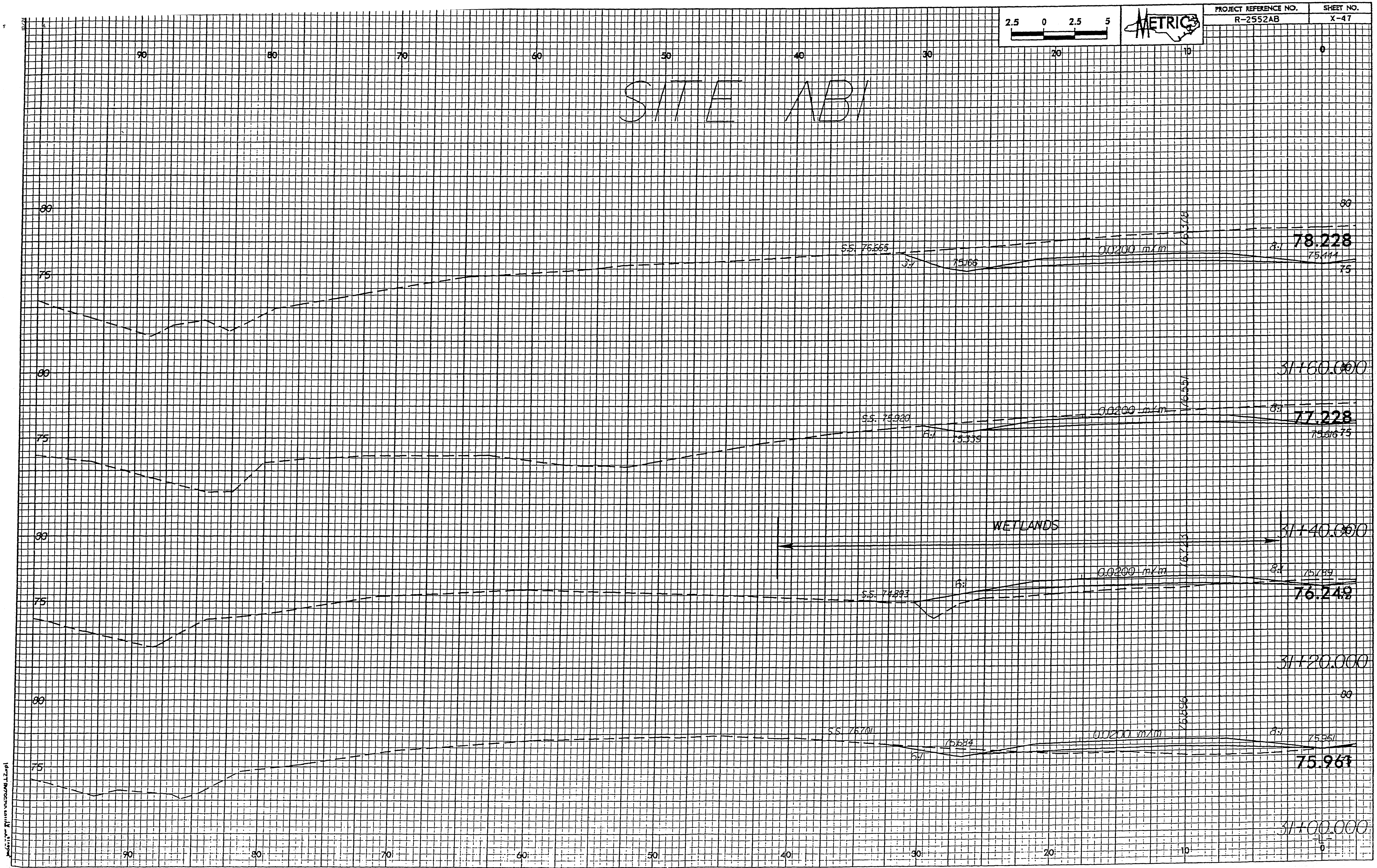
US 70 CLAYTON BYPASS

SHEET 22 OF 23 10/01/04

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	23

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	X-47



-L- US 70 BYPASS

SITE AB2

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	18

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

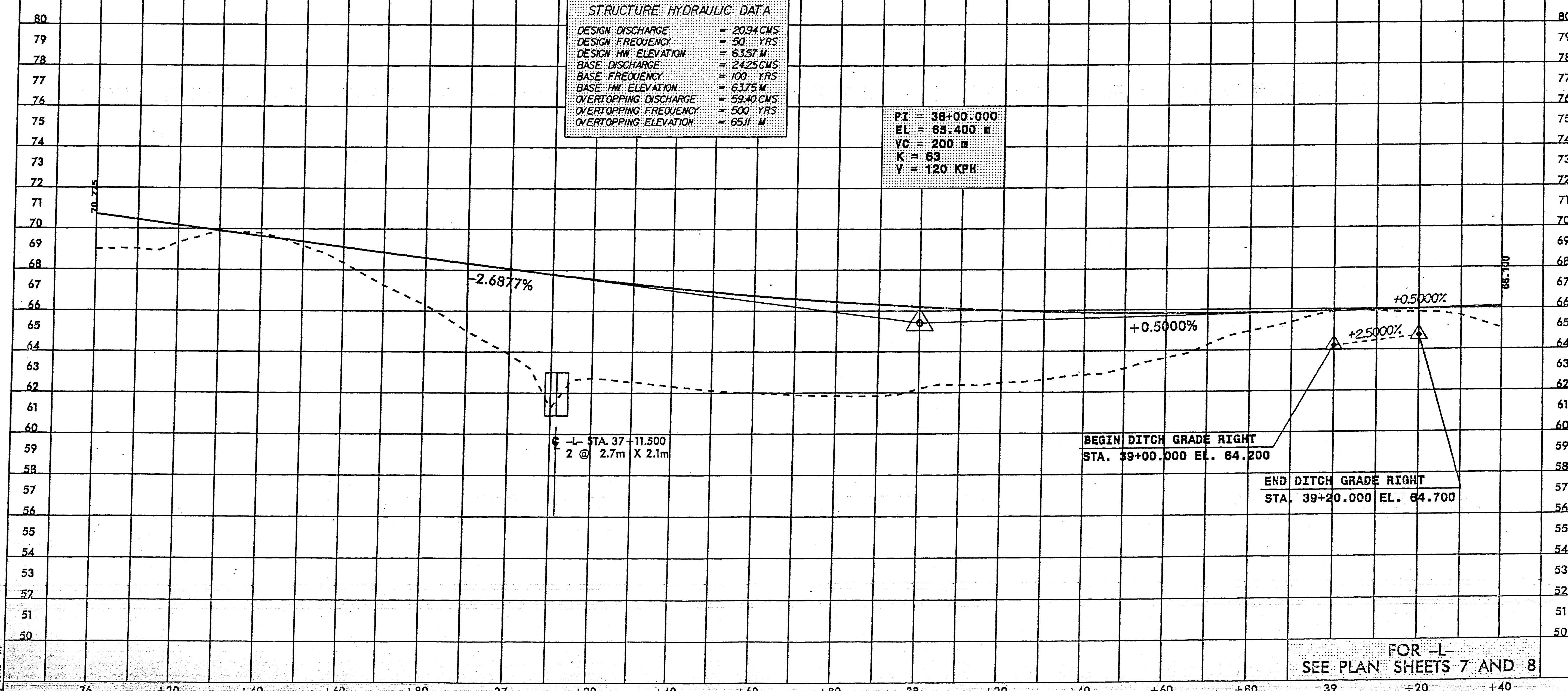
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

B.M. R-2552-21
N 208,585.2620 E 652,727.2850
LOCATED 71.134 LT. OF -L- STA.
38+65.077 AT AN ELEVATION 64.746

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 20.94 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 63.57 M
BASE DISCHARGE	= 24.25 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 63.75 M
OVERTOPPING DISCHARGE	= 59.40 CMS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 65.11 M

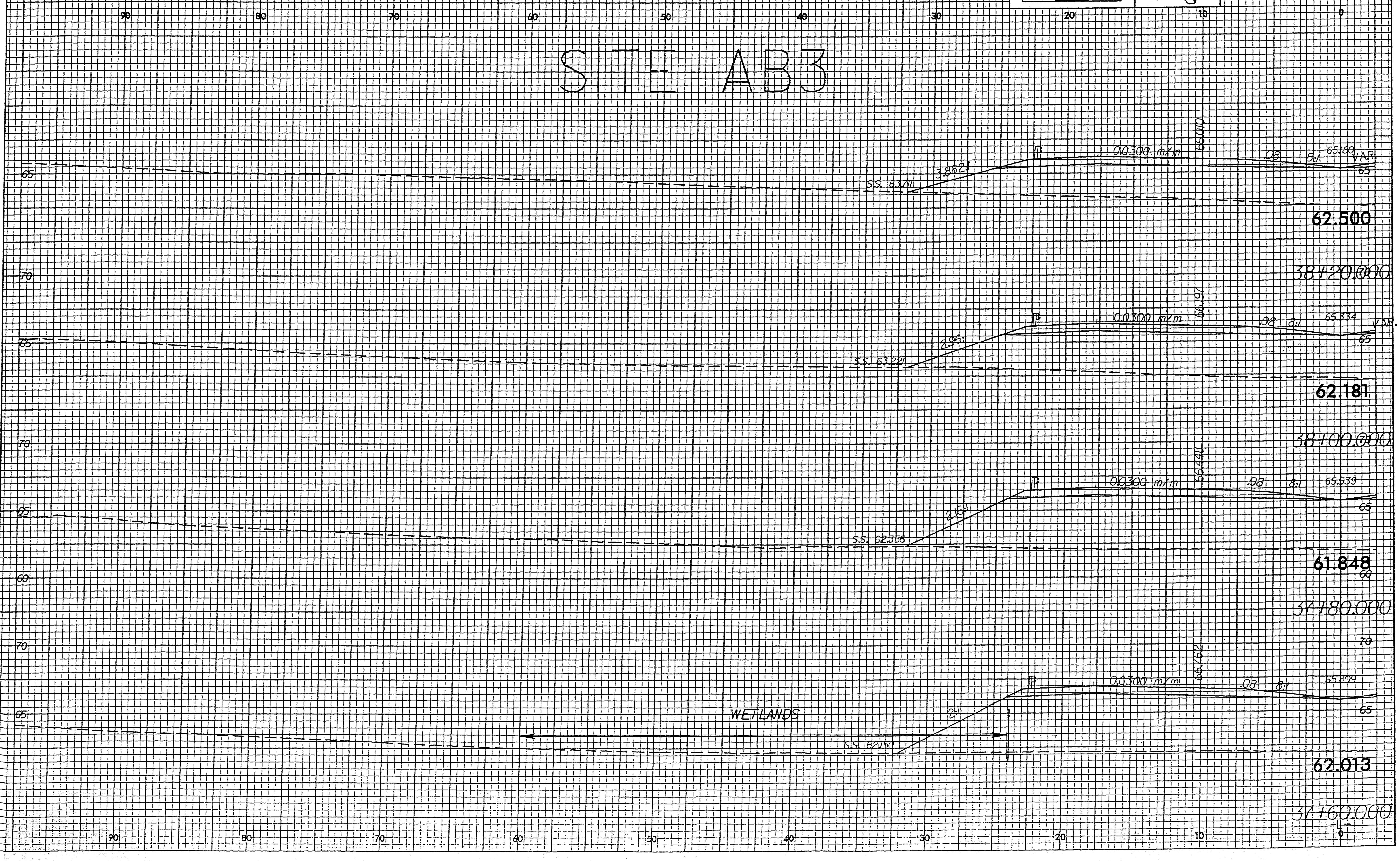


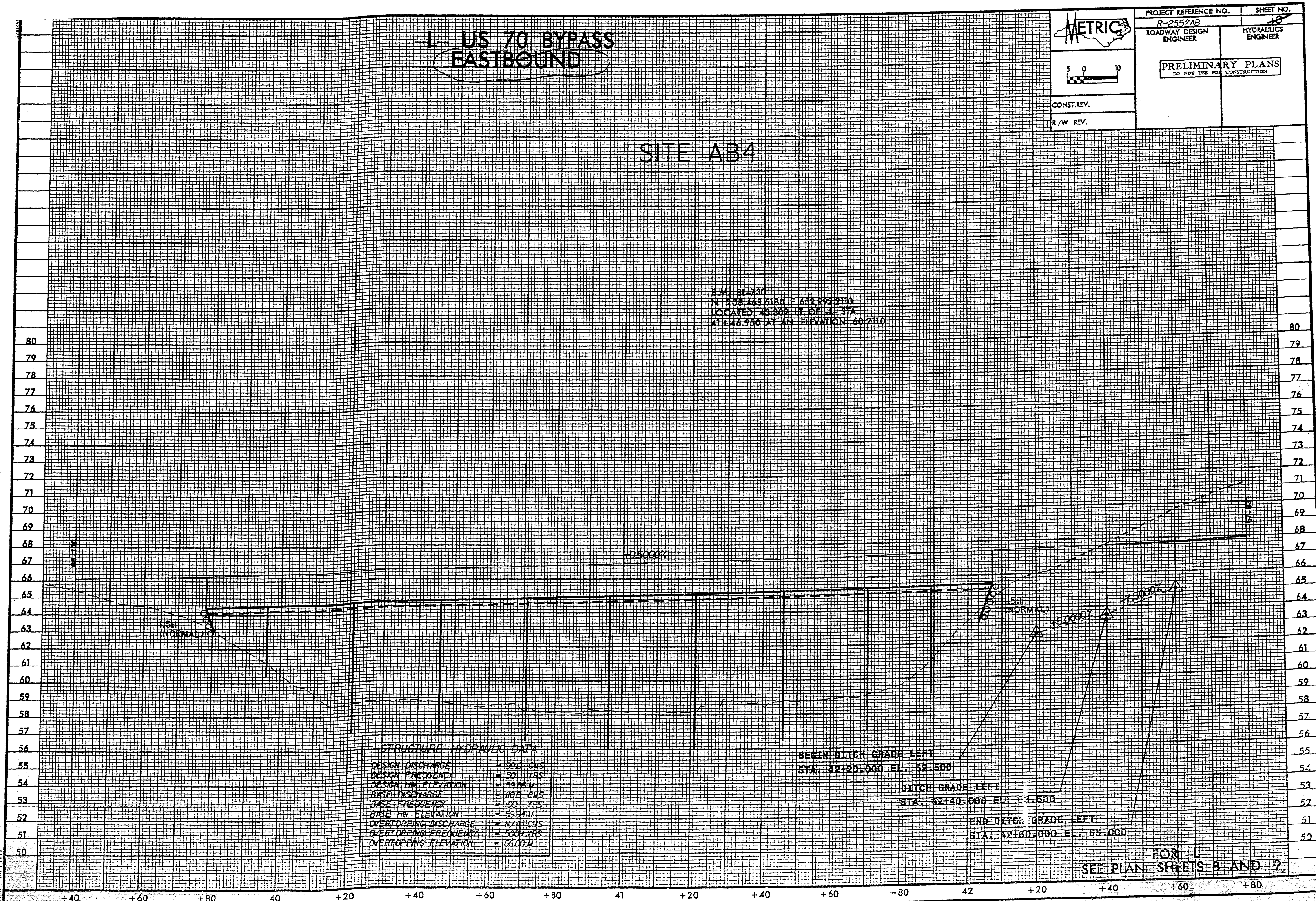
FOR -L-
SEE PLAN SHEETS 7 AND 8

PROJECT REFERENCE NO. R-2552AB | SHEET NO.

METRIC

SITE AB3





-L- US 70 BYPASS
EASTBOUND
METRIC
PROJECT REFERENCE NO.
R-2552AB
SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5 0 10
CONST.REV.
R/W REV.
SITE AB4
B.M. BL-730
N. 208 468.5180 E 652 892.2110
LOCATED 43.302 LT OF -L- STA.
41+46.950 AT AN ELEVATION 60.2110
+0.5000%
(.5s)
(NORMAL)
+5.0000%
+7.5000%
STRUCTURE HYDRAULIC DATA
DESIGN DISCHARGE = 99.0 CMS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 59.66 M
BASE DISCHARGE = 110.0 CMS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 59.94 M
OVERTOPPING DISCHARGE = N/A CMS
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING ELEVATION = 66.00 M
BEGIN DITCH GRADE LEFT
STA. 42+20.000 EL. 62.500
DITCH GRADE LEFT
STA. 42+40.000 EL.
END DITCH GRADE LEFT
STA. 42+60.000 EL. 65.000
FOR -L-
SEE PLAN SHEETS 8 AND 9
+40 +60 +80 40 +20 +40 +60 +80 41 +20 +40 +60 +80 42 +20 +40 +60 +80

METRIC

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

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

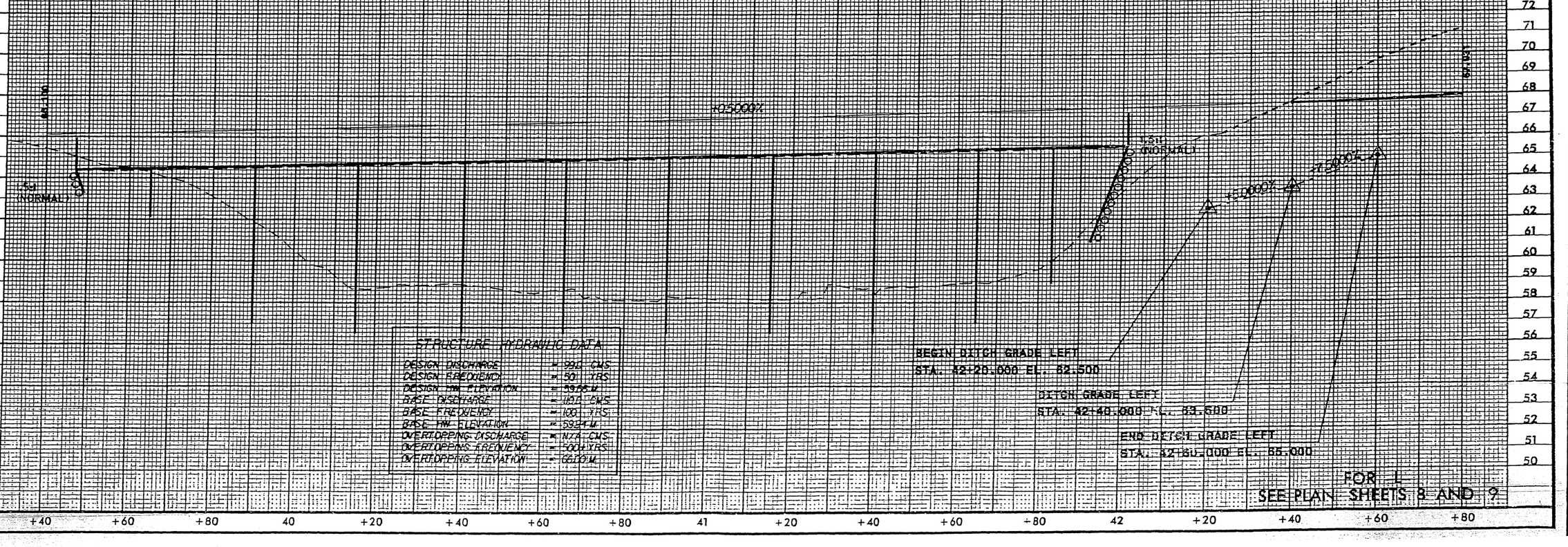
CONST.REV.

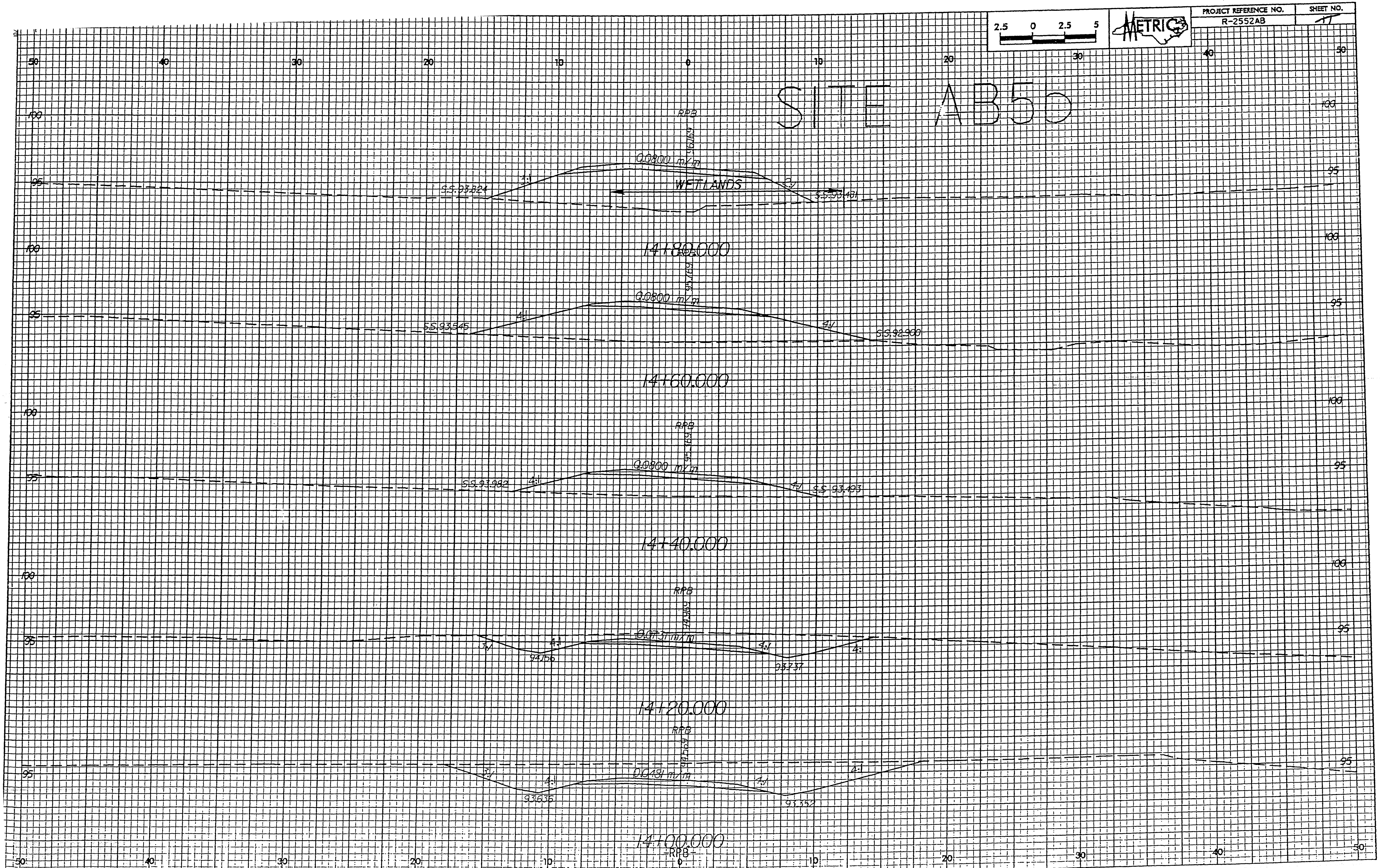
R/W REV.

-L- US 70 BYPASS WESTBOUND

SITE AB4

S.M. BL-730
N. 208,468.2180 E 652,992.2110
LOCATED 43.302 LT. OF -L- STA.
41+46.950 AT AN ELEVATION 60.2110

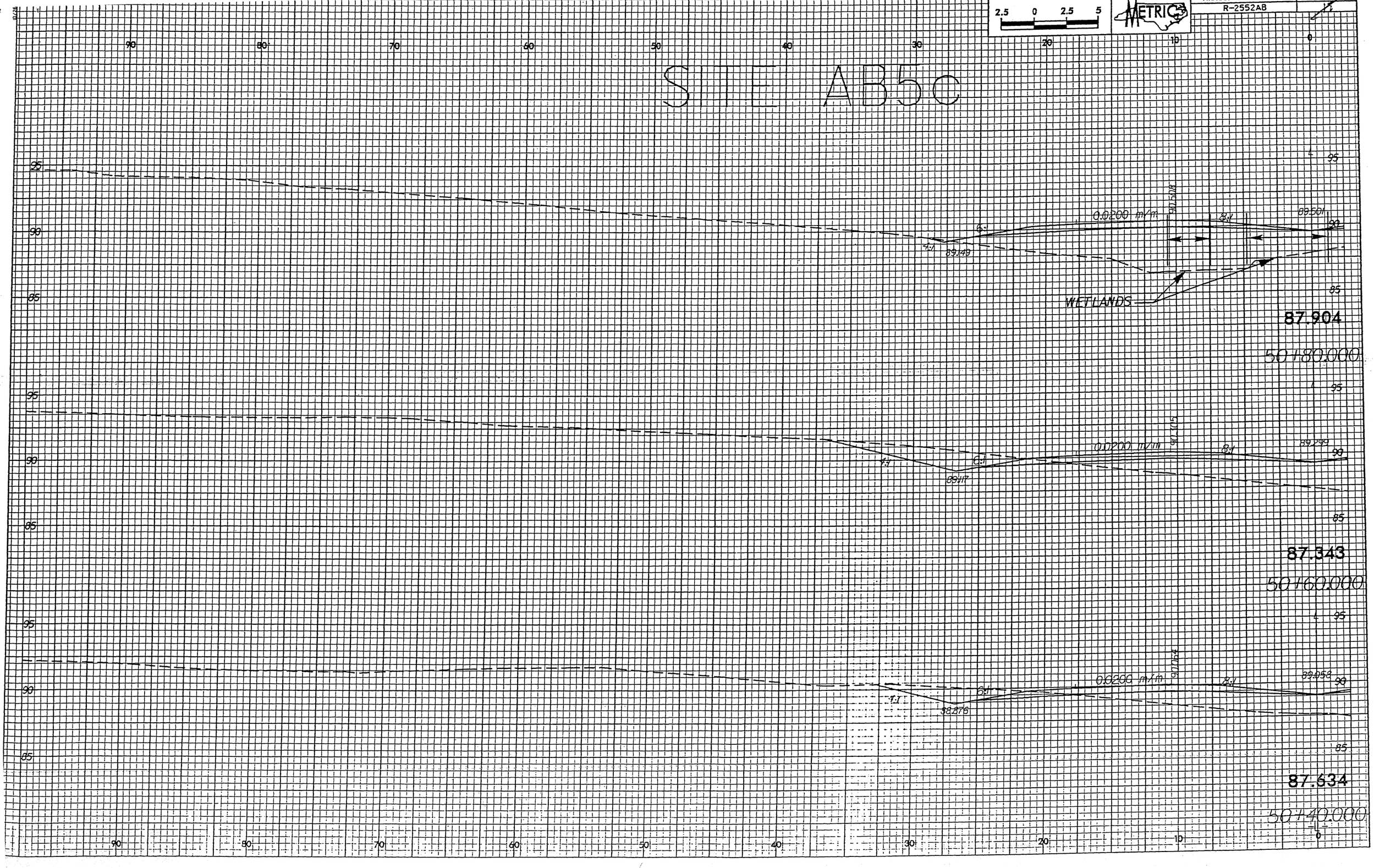




PROJECT REFERENCE NO.
R-2552AB
SHEET NO.
2.5 0 2.5 5
METRIC
SITE AB5b
RPB
0.0800 m/m
WETLANDS
S.S. 93.824
S.S. 93.481
3:1
14+80.000
0.0800 m/m
S.S. 93.545
S.S. 92.900
4:1
14+60.000
RPB
0.0800 m/m
S.S. 93.982
S.S. 93.493
4:1
14+40.000
RPB
0.0731 m/m
94.156
93.737
4:1
3:1
14+20.000
RPB
0.0481 m/m
93.535
93.352
4:1
3:1
14+00.000
RPB

2.5 0 2.5 5	METRIC	PROJECT REFERENCE NO. R-2552AB	SHEET NO.

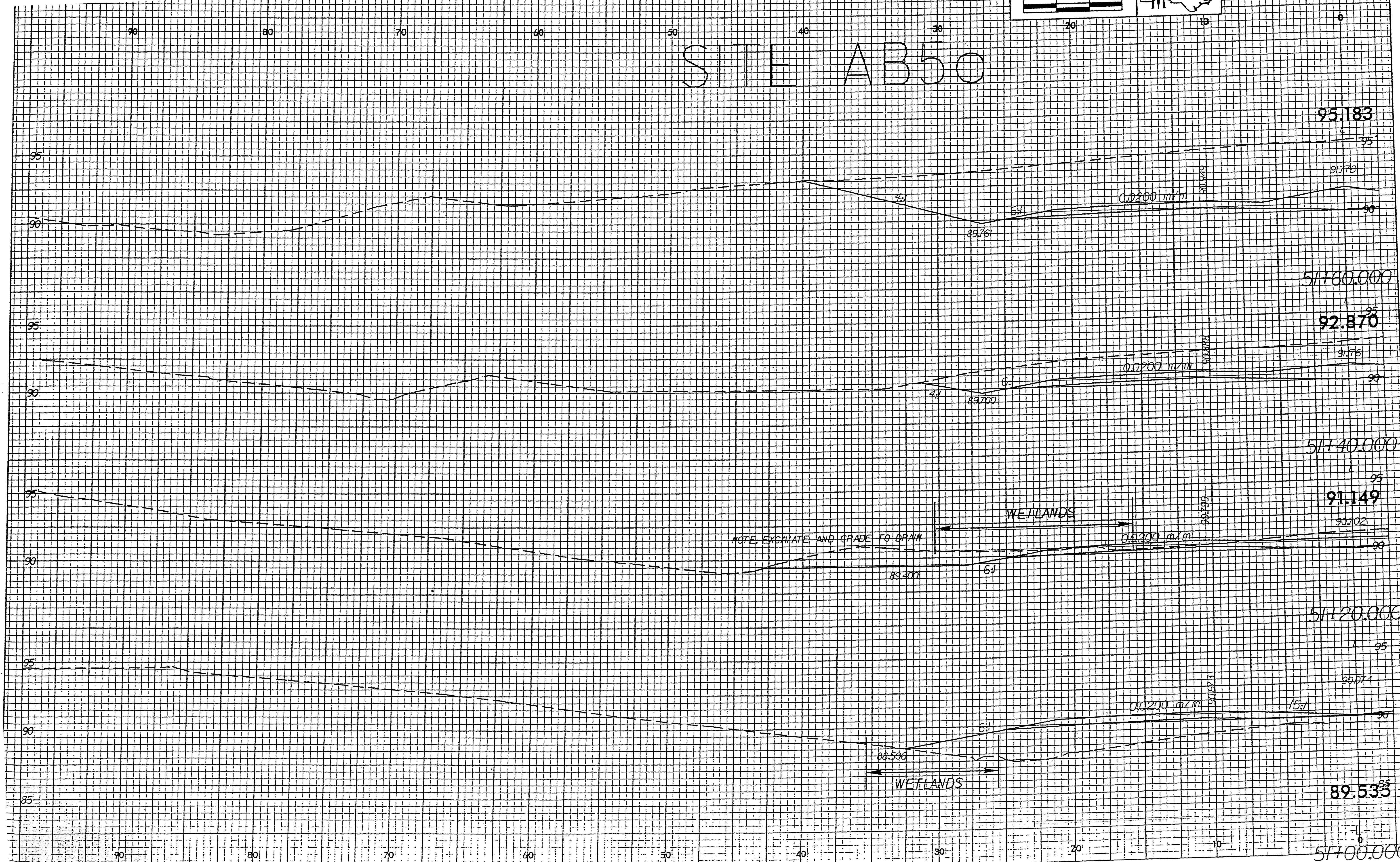
SITE ABBC



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

METRIC

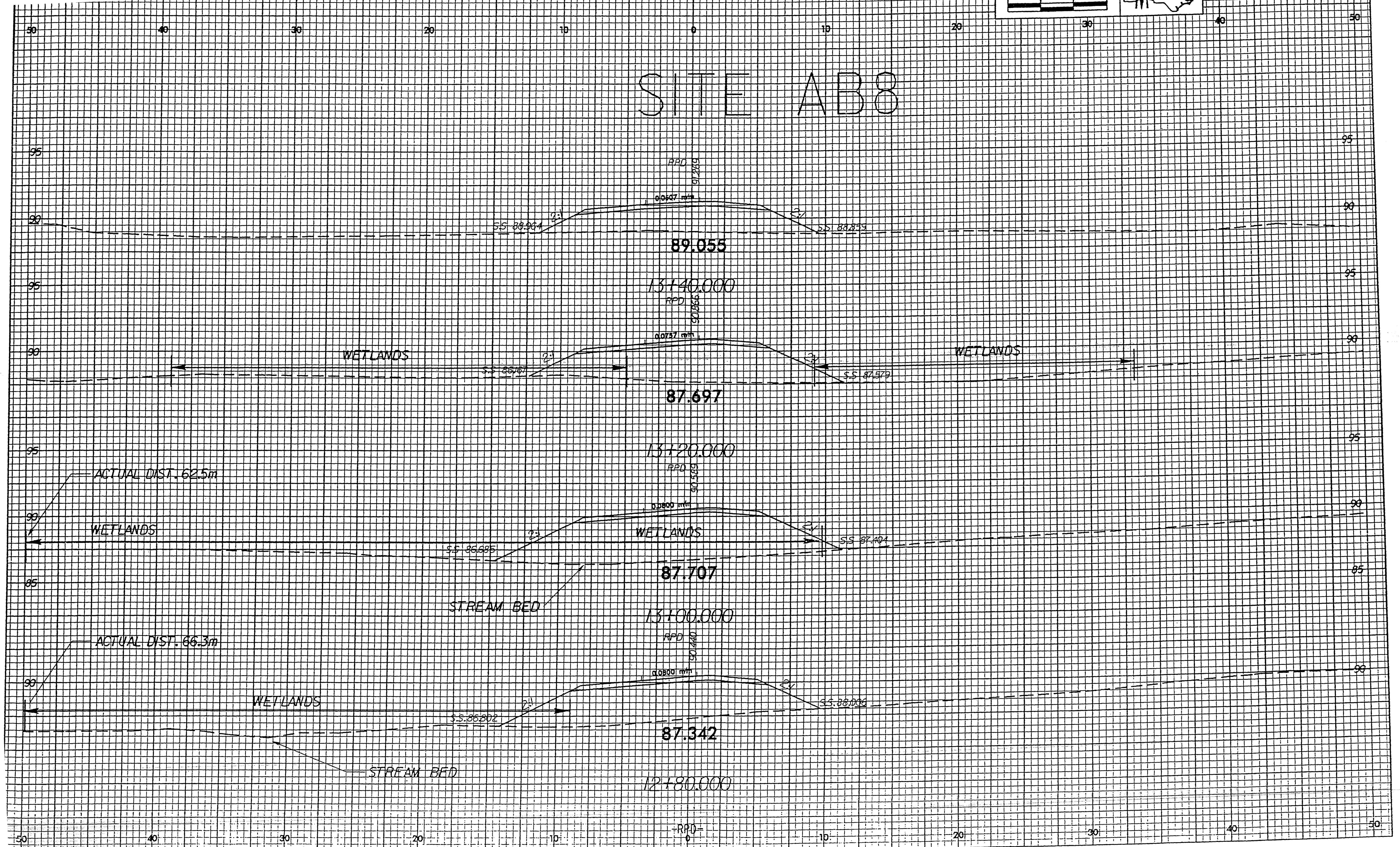
SITE AB5c



PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	20

2.5 0 2.5 5

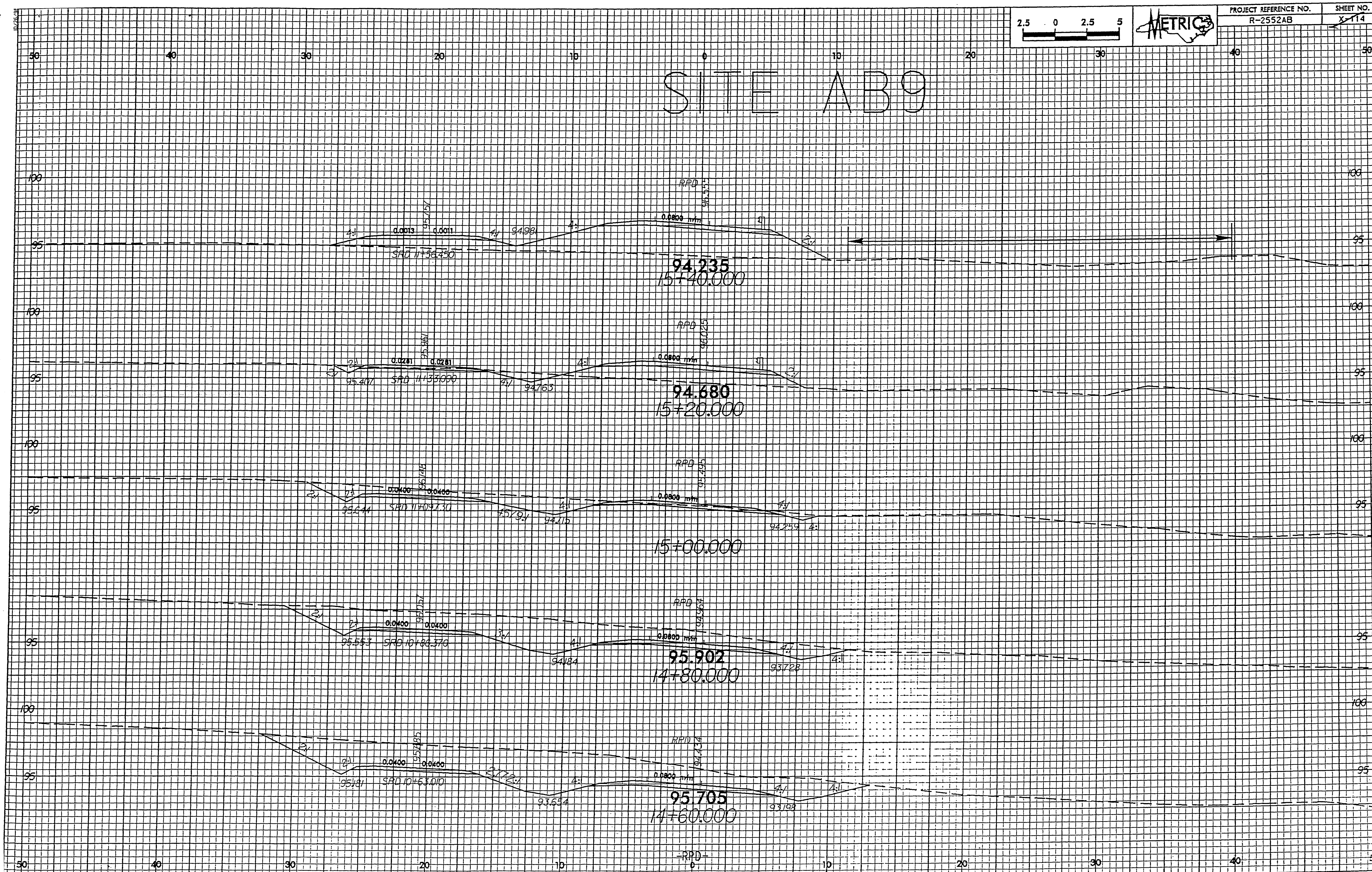
METRIC

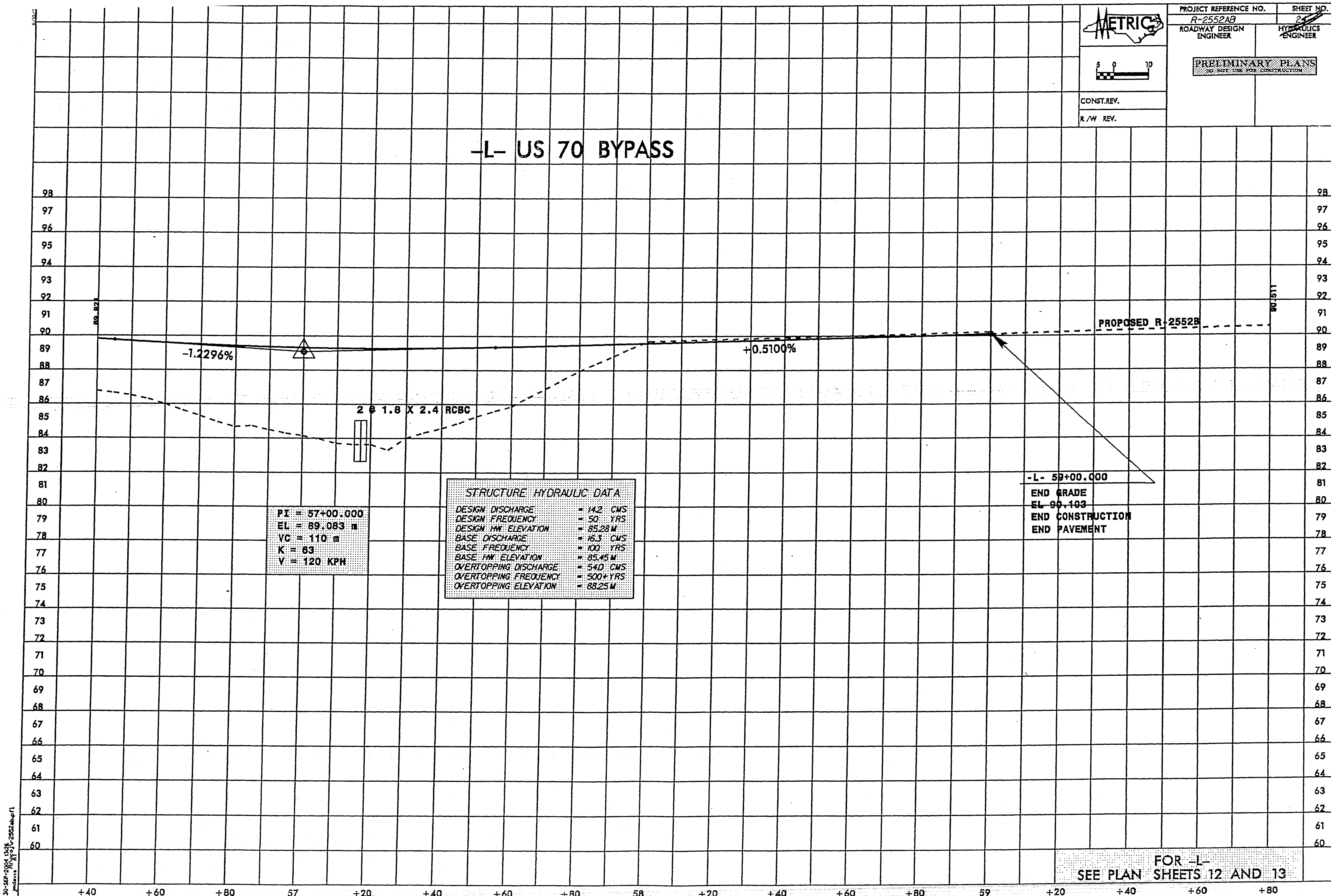


PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	X-114

METRIC

SITE AB9




METRIC
PROJECT REFERENCE NO.
R-2552AB
SHEET NO.
24
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
5 0 10
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV.
-L- US 70 BYPASS
89.821
90.511
-1.2296%
+0.5100%
PROPOSED R-2552B
2 @ 1.8 X 2.4 RCBC
PI = 57+00.000
EL = 89.083 m
VC = 110 m
K = 63
V = 120 KPH
STRUCTURE HYDRAULIC DATA
DESIGN DISCHARGE = 142 CMS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 85.28 M
BASE DISCHARGE = 163 CMS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 85.45 M
OVERTOPPING DISCHARGE = 540 CMS
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING ELEVATION = 88.25 M
-L- 59+00.000
END GRADE
EL 90.103
END CONSTRUCTION
END PAVEMENT
FOR -L-
SEE PLAN SHEETS 12 AND 13
+40 +60 +80 57 +20 +40 +60 +80 58 +20 +40 +60 +80 59 +20 +40 +60 +80