TIP: R2206BA&CA

PROJECT: C201900

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LINCOLN & CATAWBA COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2206BA&CA	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34383.1.1	STP-F-24-1(34)	P.E.
34383.3.7	STP-0016(39)	CONSTR.

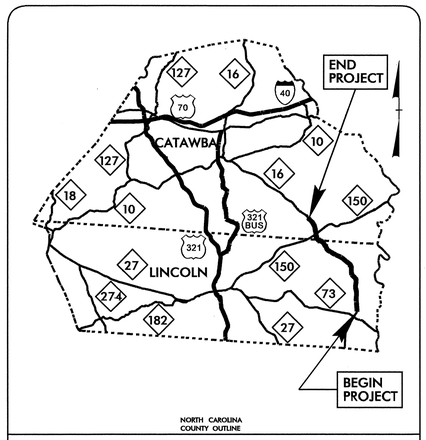
METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS

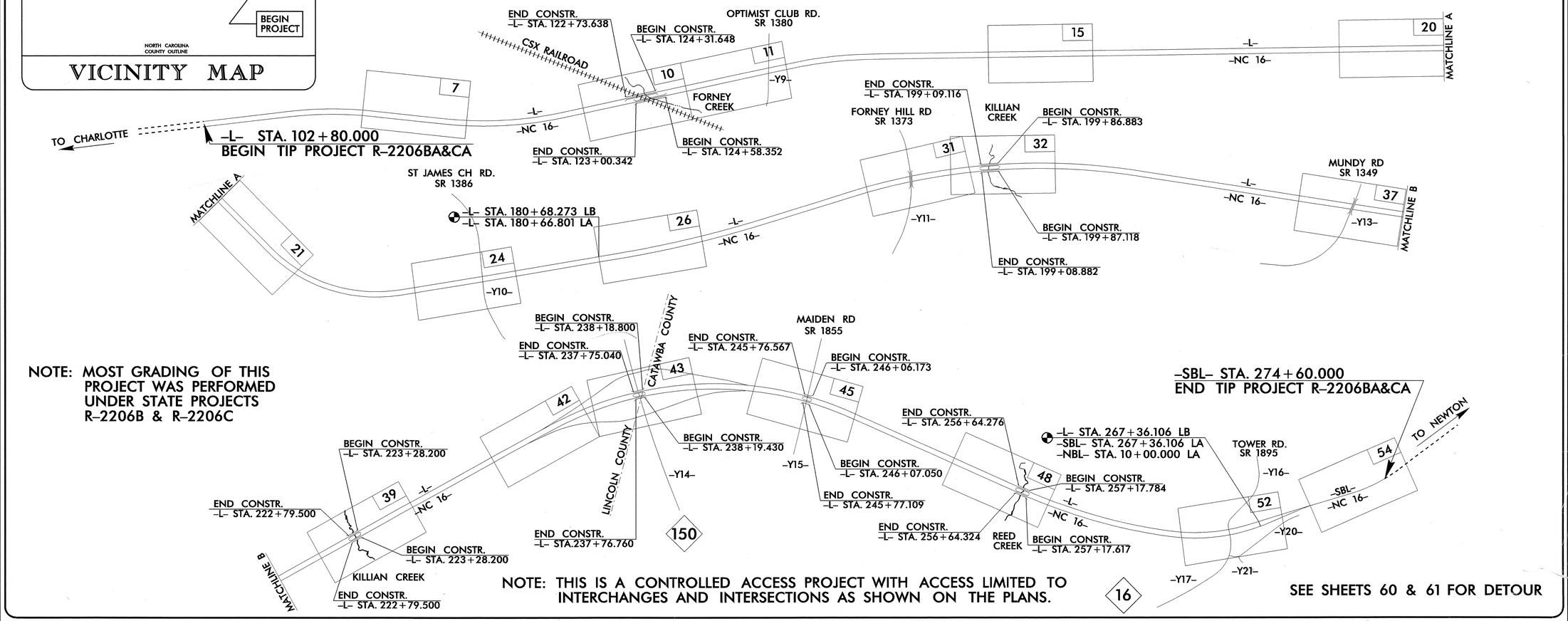
LOCATION: NC 16 BYPASS FROM NORTH OF NC 73 IN LINCOLN CO. TO NC 16 NORTH OF SR 1895 NEAR CHRONICLE IN CATAWBA CO.

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

NAD 83



VICINITY MAP



NOTE: MOST GRADING OF THIS PROJECT WAS PERFORMED UNDER STATE PROJECTS R-2206B & R-2206C

NOTE: THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO INTERCHANGES AND INTERSECTIONS AS SHOWN ON THE PLANS.

SEE SHEETS 60 & 61 FOR DETOUR

GRAPHIC SCALES

PLANS: 5 0 10

PROFILE (HORIZONTAL): 5 0 10

PROFILE (VERTICAL): 1 0 2

DESIGN DATA

ADT 2007	=	13,568
ADT 2030	=	22,298
DHV	=	11 %
D	=	62 %
T	=	13 % *
V	=	100 km/h

* TTST 7% DUAL 7%

PROJECT LENGTH

LENGTH OF ROADWAY TIIP PROJECT R-2206BA&CA = 16.770 Km*

LENGTH OF STRUCTURE TIP PROJECT R-2206BA&CA = 0.000 Km

TOTAL LENGTH OF TIP PROJECT R-2206BA&CA = 16.770 Km

* -SBL- ALIGNMENT USED TO CALCULATE LENGTH

** STRUCTURES COMPLETED UNDER PROJECT R-2206B & R-2206C

Prepared In the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE: SEPTEMBER 16, 2008

JASON MOORE, PE
PROJECT ENGINEER

JEANIE TYSON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL

SIGNATURE: W Galen Cail

ROADWAY DESIGN ENGINEER

4/18/08

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

SIGNATURE: Andrew Jason Moore

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

P.E.

STATE HIGHWAY DESIGN ENGINEER

9/09/99

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TIP: R2206BA&CA

PROJECT: C201900

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LINCOLN & CATAWBA COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2206BA&CA	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34383.1.1	STP-F-24-1(34)	P.E.
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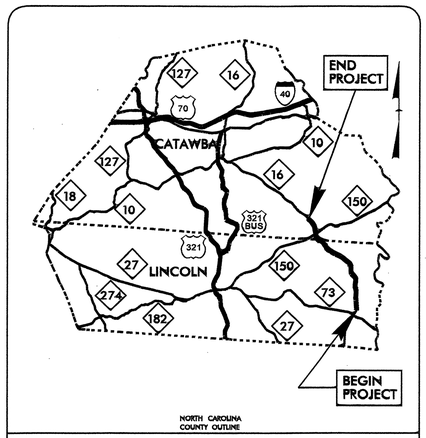
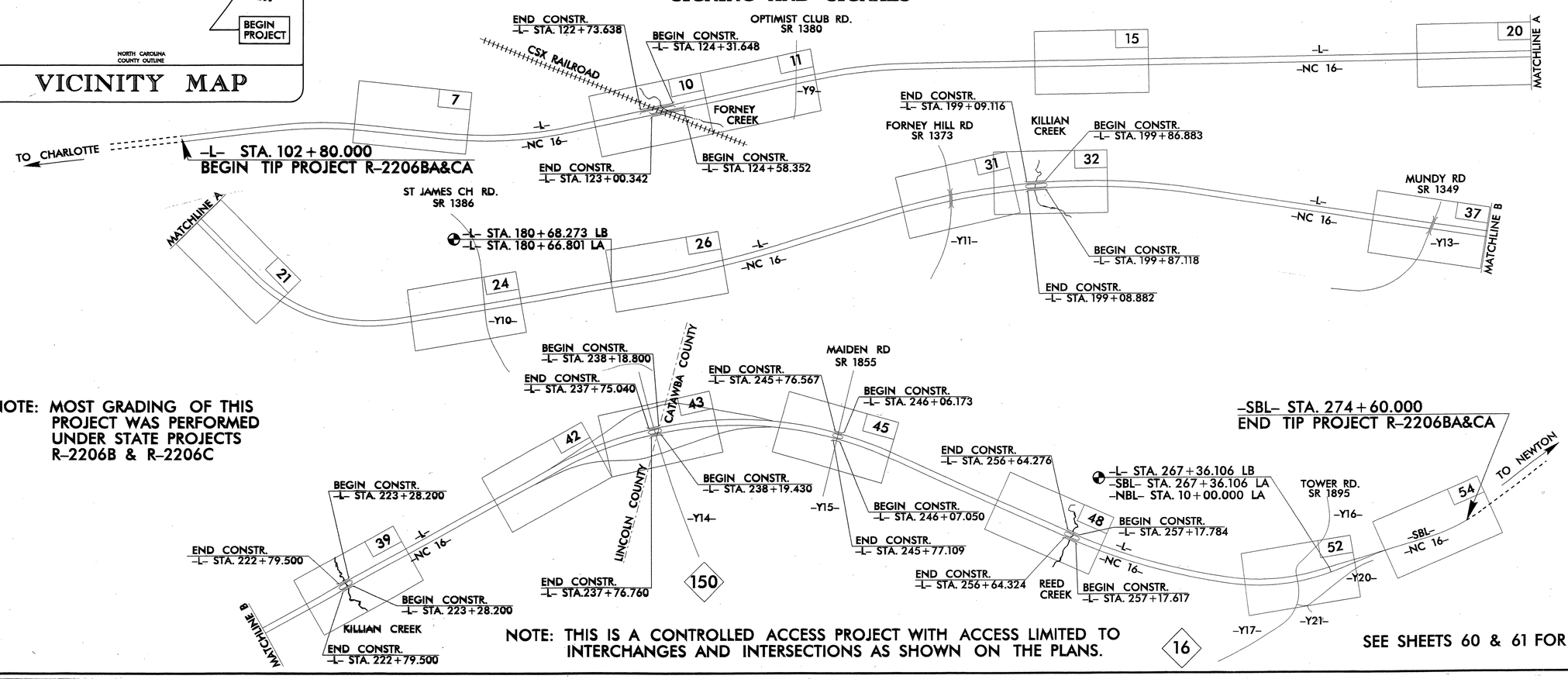
NAD 83



VICINITY MAP



NOTE: MOST GRADING OF THIS PROJECT WAS PERFORMED UNDER STATE PROJECTS R-2206B & R-2206C

NOTE: THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO INTERCHANGES AND INTERSECTIONS AS SHOWN ON THE PLANS.

SEE SHEETS 60 & 61 FOR DETOUR

PART 1 OF 2

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/18/08

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2 THRU 2-F	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-G THRU 2-O	INTERSECTION DETAILS
2-P	DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX
3	SUMMARY OF QUANTITIES
3-A THRU 3-C	SUMMARY OF DRAINAGE QUANTITIES
3-D THRU 3-E	SUMMARY OF GUARDRAIL & GUIDERAIL
3-F	EARTHWORK SUMMARY AND ASPHALT PAVEMENT REMOVAL SUMMARY
3-G	SHOULDER DRAIN SUMMARY
4 THRU 61	PLAN SHEET
62 THRU 110	PROFILE SHEET
TCP-1 THRU TCP- 20	TRAFFIC CONTROL PLANS
PM-1 THRU PM- 22	PAVEMENT MARKING PLANS
EC-1 THRU EC-68	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN- 39	SIGNING PLANS
SIG-1 THRU SIG- 17	SIGNAL PLANS
UO-1 THRU UO- 6	UTILITIES BY OTHERS PLANS
X-1 THRU X- 81	CROSS-SECTIONS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-18-06

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 AND 560.02.

SHOULDER DRAINS:

SHOULDER DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 816.03 AND DETAILS IN PLANS AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:
RUTHERFORD ELECTRICAL MEMBERSHIP CORP.
CHARTER COMMUNICATIONS
AT&T OF NC

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

EFF. 08-01-08
REV. 07-16-06

2006 ROADWAY METRIC STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
610.03	Guide for Paving Shoulders Under Bridges - Method III
665.01	Milled Rumble Strips - Asphalt Pavements
DIVISION 8 - INCIDENTALS	
816.01	Concrete Pads - for Shoulder Drain Installation
816.02	Aggregate Shoulder Drain
816.04	Markers for Drainage Structure and Concrete Pad
840.17	Concrete Grated Drop Inlet Type 'A' - 300mm thru 1800mm Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 300mm thru 900mm Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete
840.26	Brick Grated Drop Inlet Type 'A' - 300mm thru 1800mm Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 300mm thru 900mm Pipe
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
850.10	Guide For Berm Drainage Outlet-375mm and 450mm Pipe
852.01	Concrete Islands
857.01	Precast Reinforced Concrete Barrier - 1.0m Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
865.01	Cable Guiderail
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJ. REFERENCE NO.	SHEET NO.
R-2206BA&CA	1 - B

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

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
Exist. Guardrail
Prop. Guardrail
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
Flow Arrow
Disappearing Stream
Spring
Swamp Marsh
Shoreline
Falls, Rapids
Prop Lateral, Tail, Head Ditches

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
Storm Sewer Manhole — S
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 TS

Recorded Water Line — W W
Designated Water Line (S.U.E.*) — W W
Sanitary Sewer — SS SS
— FSS FSS
Designated Sanitary Sewer Force Main(S.U.E.*) — FSS FSS
Recorded Gas Line — G G
Designated Gas Line (S.U.E.*) — G G
Storm Sewer — S S
Recorded Power Line — P P
Designated Power Line (S.U.E.*) — P P
Recorded Telephone Cable — T T
Designated Telephone Cable (S.U.E.*) — T T
Recorded U/G Telephone Conduit — TC TC
Designated U/G Telephone Conduit (S.U.E.*) — TC TC
Unknown Utility (S.U.E.*) — ?UTL ?UTL
Recorded Television Cable — TV TV
Designated Television Cable (S.U.E.*) — TV TV
Recorded Fiber Optics Cable — FO FO
Designated Fiber Optics Cable (S.U.E.*) — FO 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
Dam
Sign — S
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

RAILROADS

Standard Gauge — CSX TRANSPORTATION
RR Signal Milepost — MILEPOST 35
Switch — SWITCH

revised 2/25/97

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/16/08

NORTH CAROLINA PROFESSIONAL SEAL 13968 ENGINEER FONG-CHI CHEN 6/16/08

PAVEMENT SCHEDULE

C1	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 2.40 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 50 mm IN DEPTH.	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. 50 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 120 kg PER SQ. METER.	E5	PROP. APPROX. 180 mm ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 221 kg PER SQ. METER.IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 80 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 96 kg PER SQ. METER IN EACH OF TWO LAYERS.	E6	PROP. APPROX. 120 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 294 kg PER SQ. METER.
C4	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 2.40 kg PER SQ. METER PER 1 mm DEPTH,TO BE PLACED IN LAYERS NOT TO EXCEED 50mm IN DEPTH.	J1	PROP. 200 mm AGGREGATE BASE COURSE.
C5	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.	J2	PROP. 150 mm AGGREGATE BASE COURSE.
C6	PROP. APPROX. 40 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 96 kg PER SQ. METER.	J3	PROP. 250 mm AGGREGATE BASE COURSE.
C7	PROP. APPROX. 40 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 96 kg PER SQ. METER.	K	SUBBASE TO BE TREATED WITH LIME TO A DEPTH OF 200 MM, 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 180 MM, AT A RATE OF 30 kg PER SQ. METER, AS DIRECTED BY THE ENGINEER. OR SUBBASE TO BE TREATED WITH AGGREGATE AS DIRECTED BY THE ENGINEER.
D1	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 65 mm OR GREATER THAN 110 mm IN DEPTH.		
D2	PROP. APPROX. 65 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 159.25 kg PER SQ. METER.		
D3	PROP. APPROX. 80 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 196 kg PER SQ. METER.	P	PRIME COAT OVER ABC AT THE RATE OF 1.58 LITERS PER SQ. METER.
D4	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 65 mm OR GREATER THAN 110 mm IN DEPTH.	R1	SHOULDER BERM GUTTER
D5	PROP. APPROX. 100 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 245 kg PER SQ. METER.	R2	MONOLITHIC CONCRETE ISLAND TO BE USED AS PART OF DIRECTIONAL CROSSOVERS. SEE PLANS FOR LOCATIONS.
E1	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, 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.	T	EARTH MATERIAL
E2	PROP. APPROX. 100 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 245 kg PER SQ. METER.	U	EXISTING PAVEMENT
E3	PROP. APPROX. 140 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 343 kg PER SQ. METER.	V	MILLED RUMBLE STRIPS
		W	VARIABLE DEPTH ASPHALT PAVEMENT

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

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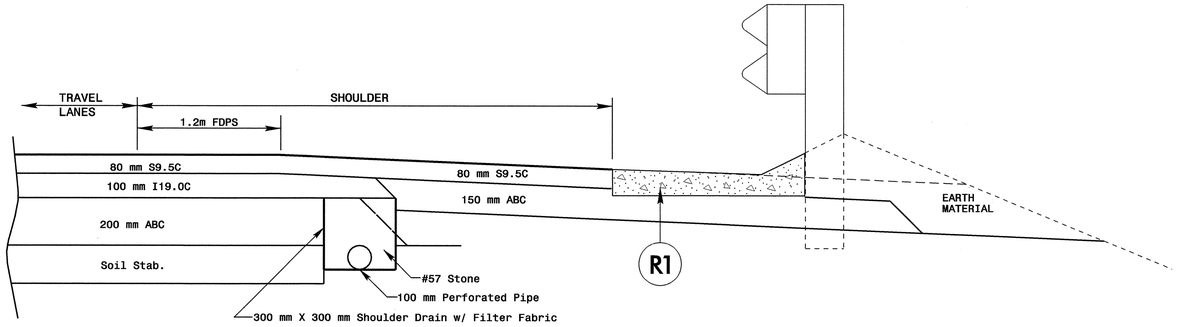
DETAILS TO BE USED IN CONJUNCTIONS WITH THE TYPICAL SECTIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-A

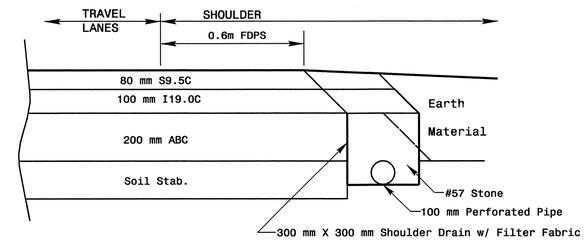
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE — 6/16/08

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER CHI CHEN — 6/16/08

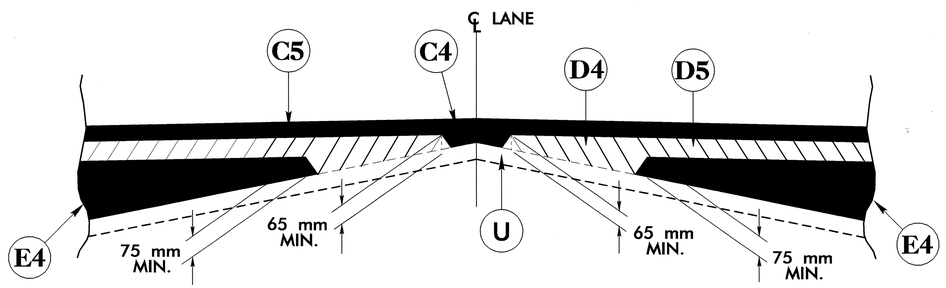


OUTSIDE SHOULDER DRAIN DETAIL

* USE IN GUARDRAIL AND SHOULDER BERM GUTTER LOCATIONS

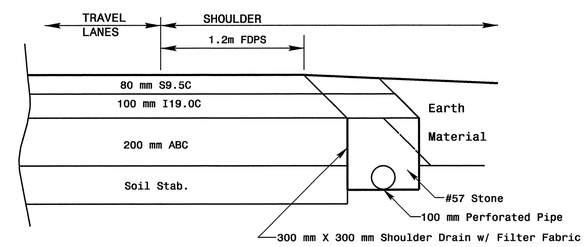


MEDIAN SHOULDER DRAIN DETAIL



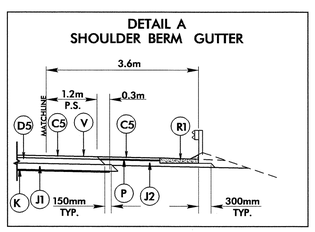
DETAIL SHOWING METHOD OF WEDGING NO. 1

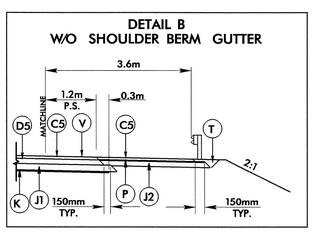
USE WITH TYPICAL SECTION NO. 4

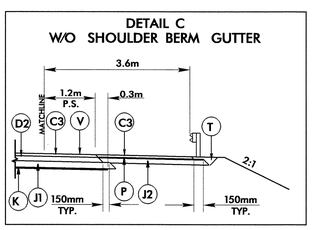


OUTSIDE SHOULDER DRAIN DETAIL

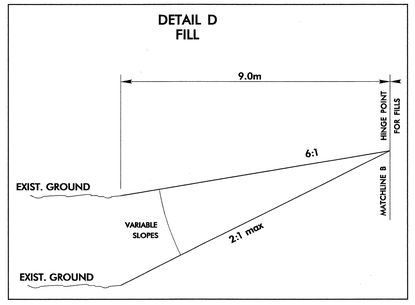
C3	80mm , TYPE S9.5B
C4	VAR , TYPE S9.5C
C5	80mm , TYPE S9.5C
D2	65mm , TYPE I19.0B
D4	VAR , TYPE I19.0C
D5	100mm , TYPE I19.0C
E4	VAR , TYPE B25.0C
J1	200mm , ABC
J2	150mm , ABC
K	200mm LIME TREATED OR 180mm , CEMENT TREATED OR STABILIZER AGGREGATE
P	PRIME COAT
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLED RUMBLE STRIPS

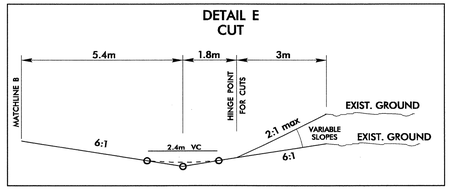


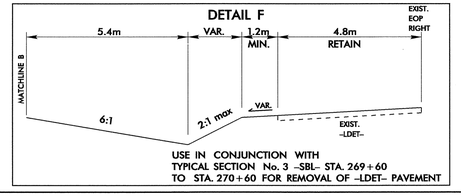


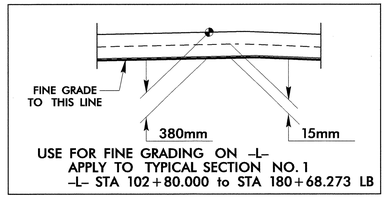


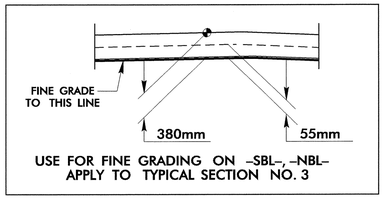
USE DETAILS A, B, AND C IN CONJUNCTION WITH TYPICAL SECTIONS 1, 2, 3, AND 5 IN GUARDRAIL AND SBG LOCATIONS. SEE PLANS FOR STATION LOCATIONS.

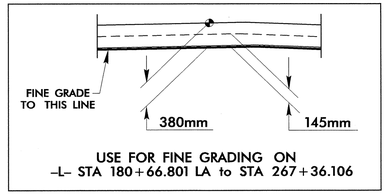


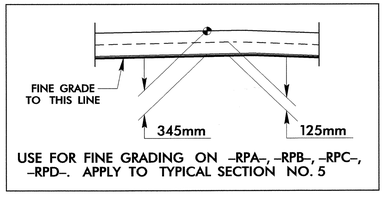












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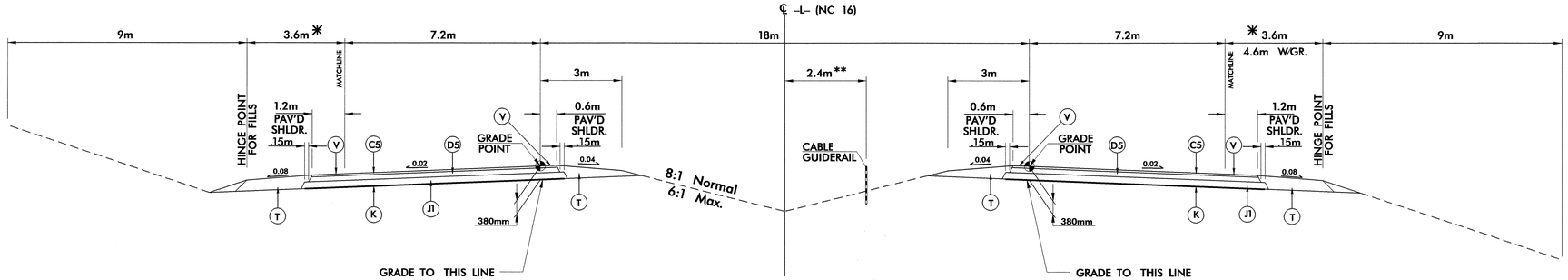
RD223180 6/16/2008 r2206bc_rdy_typ2a scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-B

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE — 6/13/08

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER CHI CHEN — 8/16/08



TYPICAL SECTION NO. 1

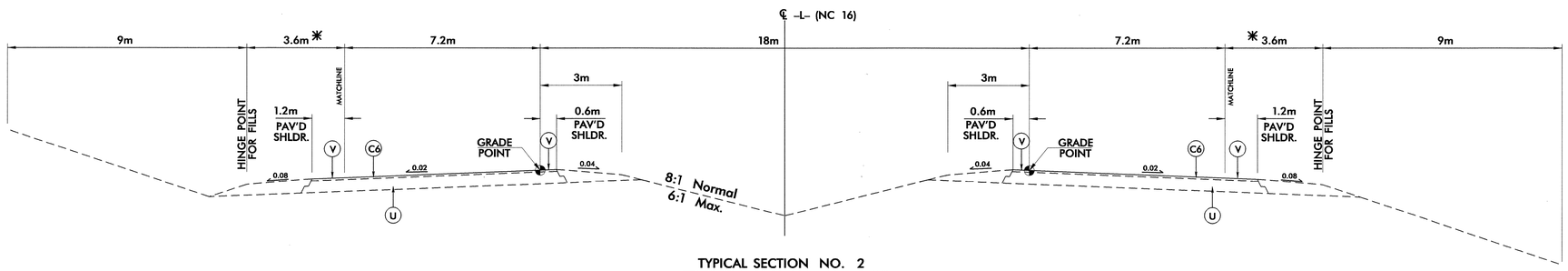
NOTE **: LOCATION OF GUIDERAIL PER MANUFACTURERE'S SPECIFICATIONS.
SEE PROJECT SPECIAL PROVISIONS.

TYPICAL SECTION NO. 1

-L- STA. 102+80.000 TO STA. 122+87.270 (BEGIN BRIDGE)
-L- STA. 124+45.000 (END BRIDGE) TO STA. 129+00.000
-L- STA. 130+05.000 TO STA. 174+60.000
-L- STA. 175+65.000 TO STA. 180+68.273 LB

-L- STA. 180+66.801 LA TO -L- STA. 199+09.116 LT (BEGIN BRIDGE)
-L- STA. 199+86.883 LT (END BRIDGE) TO -L- STA. 222+79.500 LT (BEGIN BRIDGE)
-L- STA. 223+28.200 LT (END BRIDGE) TO -L- STA. 237+75.040 LT (BEGIN BRIDGE)
-L- STA. 238+18.800 LT (END BRIDGE) TO -L- STA. 245+76.294 LT (BEGIN BRIDGE)
-L- STA. 246+07.158 LT (END BRIDGE) TO -L- STA. 256+64.277 LT (BEGIN BRIDGE)
-L- STA. 257+17.748 LT- (END BRIDGE) TO -L- STA. 267+36.106

-L- STA. 180+66.801 TO -L- STA. 199+08.882 RT (BEGIN BRIDGE)
-L- STA. 199+87.118 RT (END BRIDGE) TO -L- STA. 222+79.500 RT (BEGIN BRIDGE)
-L- STA. 223+28.200 RT (END BRIDGE) TO -L- STA. 237+76.760 RT (BEGIN BRIDGE)
-L- STA. 238+19.430 RT (END BRIDGE) TO -L- STA. 245+77.506 RT (BEGIN BRIDGE)
-L- STA. 246+05.923 RT (END BRIDGE) TO -L- STA. 256+64.323 RT (BEGIN BRIDGE)
-L- STA. 257+17.616 RT- (END BRIDGE) TO -L- STA. 267+36.106

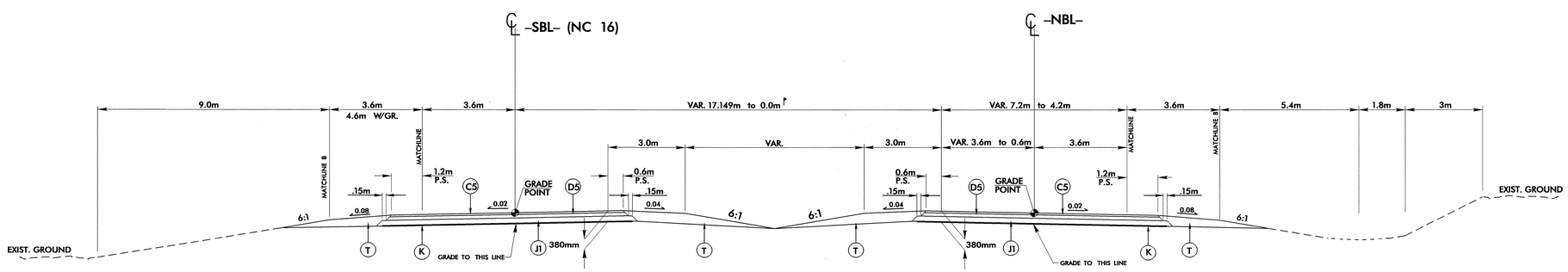


TYPICAL SECTION NO. 2

TYPICAL SECTION NO. 2

-L- STA. 129+00.000 TO STA. 130+05.000
-L- STA. 174+60.000 TO STA. 175+65.000

C5	80mm , TYPE S9.5C
C6	40mm , TYPE S9.5C
D5	100mm , TYPE I19.0C
J1	200mm , ABC
K	200mm LIME TREATED OR 180mm , CEMENT TREATED OR STABILIZER AGGREGATE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLED RUMBLE STRIPS



TYPICAL SECTION NO. 3

TYPICAL SECTION NO. 3

-SBL- STA. 267+36.106 TO -SBL- STA. 271+22.519
-NBL- STA. 10+00.000 TO -NBL- STA. 13+88.970

NOTE: SEE DETAILS D, E, & F AT MATCHLINE B AS FOLLOWS
-SBL- STA. 268+60.000 TO -SBL- STA. 274+04.914
-NBL- STA. 11+25.435 TO -NBL- STA. 13+88.970

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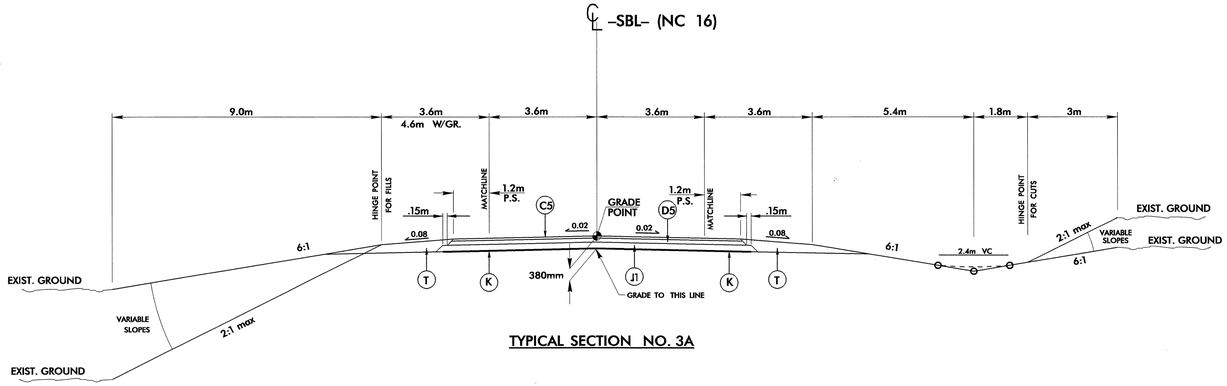
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-C

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
Andrew Jason Moore 6/13/08

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG CHI CHEN
Dong Chi Chen 6/16/08

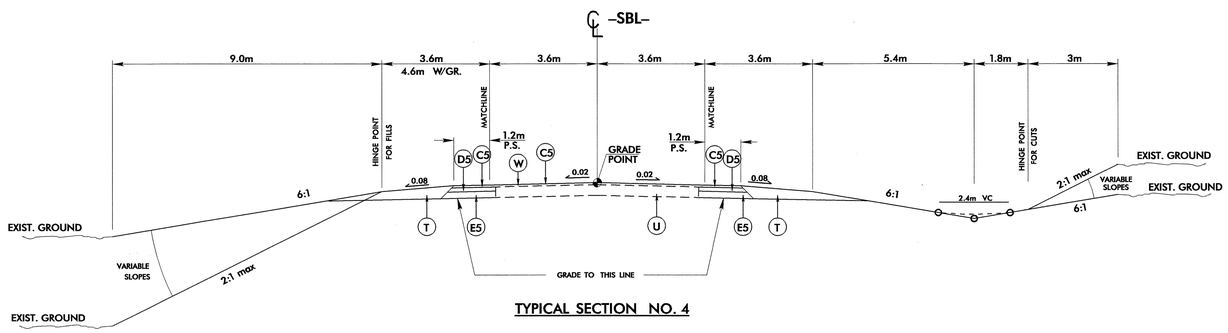
METRIC



TYPICAL SECTION NO. 3A

USE TYPICAL SECTION NO. 3A

-SBL- STA. 271+22.519 TO -SBL- STA. 273+60.000

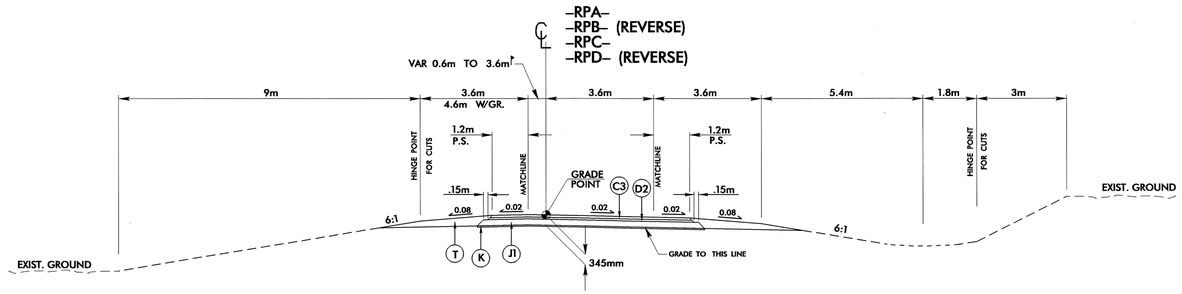


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-SBL- STA. 273+60.000 TO -SBL- STA. 274+04.914 (END PAVED SHOULDER)

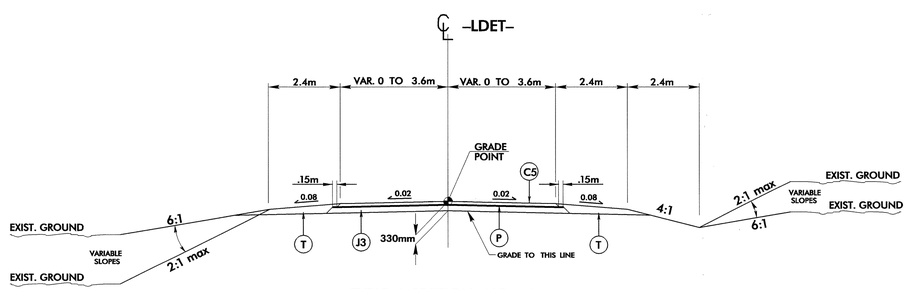
NOTE: RESURFACE AND TRANSITION FROM TYPICAL SECTION 4 TO EXISTING -SBL- STA. 274+04.914 TO -SBL- STA. 274+60.000



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-RPA- STA.10+95.403 TO -RPA- STA. 15+52.607
-RPB- STA. 11+40.344 TO -RPB- STA. 15+08.104
-RPC- STA. 10+97.097 TO -RPC- STA. 14+91.050
-RPD- STA. 11+41.527 TO -RPD- STA. 15+20.966



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-LDET- STA. 10+88.848 TO 15+97.762

C3	80mm , TYPE S9.5B
C5	80mm , TYPE S9.5C
D2	65mm , TYPE I19.0B
D5	100mm , TYPE I19.0C
E5	180mm , TYPE B25.0C
J1	200mm , ABC
J3	250mm , ABC
K	200mm LIME TREATED OR 180mm , CEMENT TREATED OR STABILIZER AGGREGATE
P	PRIME COAT
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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RD223180 6/11/2008 r2206bc_rdy_typ2c scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-D

ROADWAY DESIGN ENGINEER

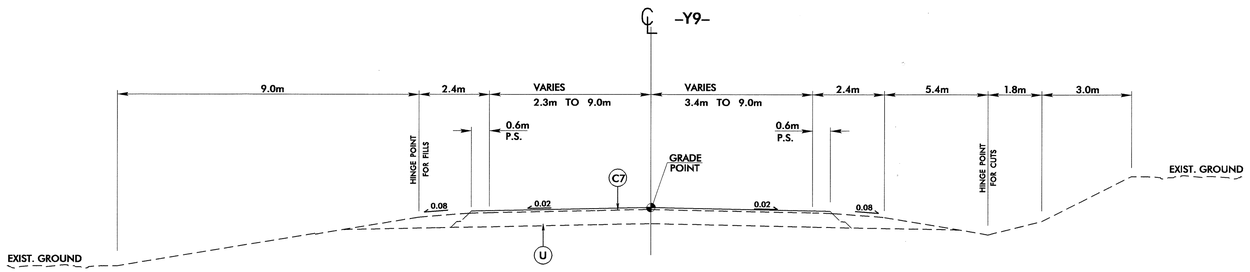
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13708 ENGINEER CHI CHEN

6/16/08

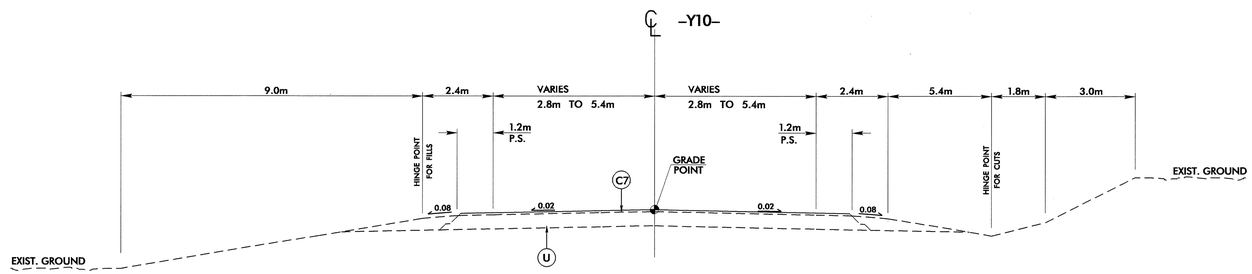


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

-Y9- STA. 11+09.429 TO -Y9- STA. 15+90.000
-Y9- STA. 16+80.000 TO -Y9- STA. 19+83.707

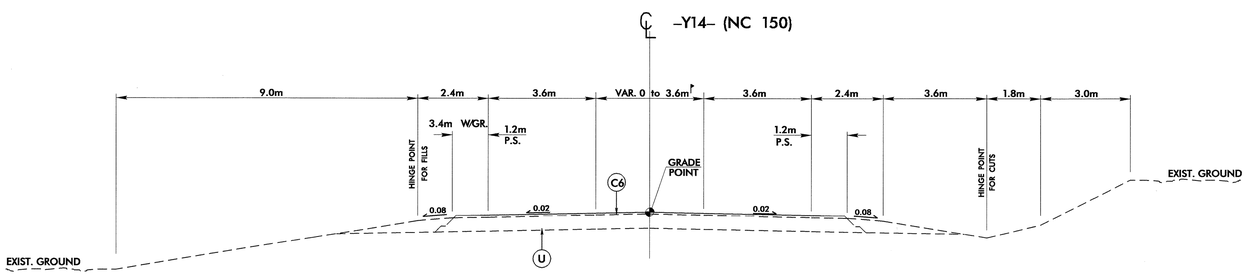
C6	40mm , TYPE S9.5C
C7	40mm , TYPE S9.5B
U	EXISTING PAVEMENT



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

-Y10- STA. 10+72.211 TO -Y10- STA. 14+75.000
-Y10- STA. 15+55.000 TO -Y10- STA. 18+00.000



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

-Y14- STA. 12+20.000 TO -Y14- STA. 12+40.000 (MIN. RESURFACING)
-Y14- STA. 12+40.000 TO -Y14- STA. 19+80.000
-Y14- STA. 19+80.000 TO -Y14- STA. 21+00.000 (MIN. RESURFACING)

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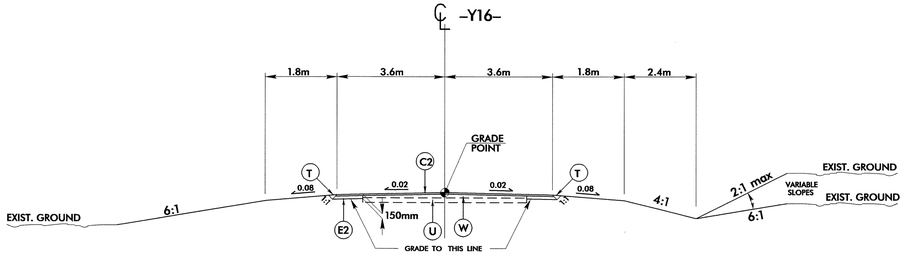
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-E

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
6/13/08

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER CHI CHEN
6/16/08

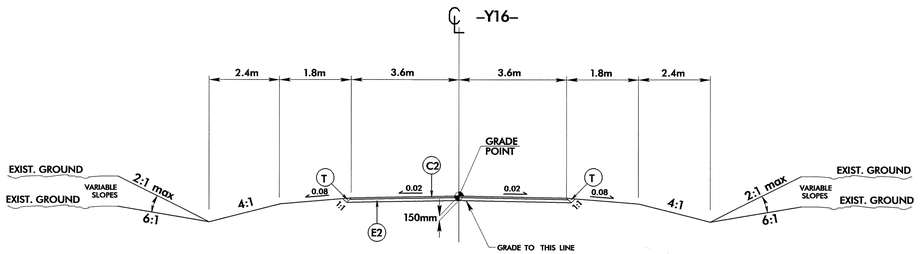


TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10

-Y16- STA. 10+40.000 TO -Y16- STA. 11+00.000

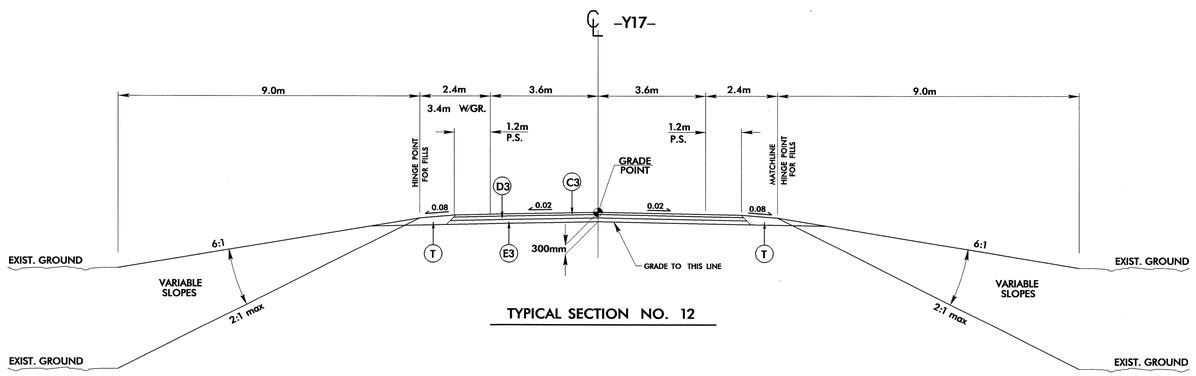
NOTE: MINIMUM RESURFACING -Y16- STA. 10+00.000 TO -Y16- STA. 10+40.000



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

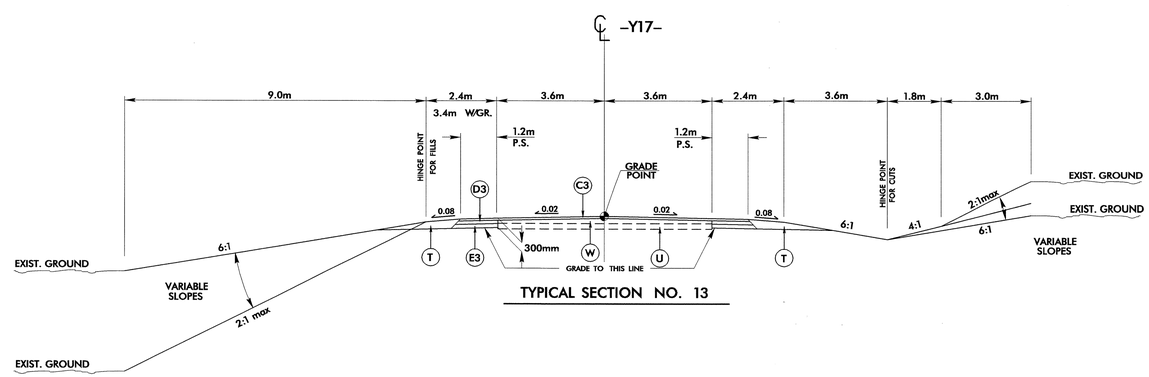
-Y16- STA. 11+00.000 TO -Y16- STA. 13+72.604



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

-Y17- STA. 10+46.020 TO -Y17- STA. 12+00.000



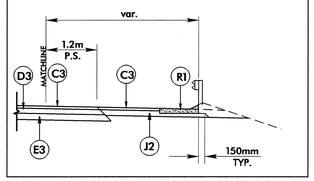
TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13

-Y17- STA. 12+00.000 TO -Y17- STA. 13+60.000

C2	50mm , TYPE S9.5B
C3	80mm , TYPE S9.5B
D3	80mm , TYPE I19.0B
E2	100mm , TYPE B25.0B
E3	140mm , TYPE B25.0B
J2	150mm , ABC
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

DETAIL G
SHOULDER BERM GUTTER



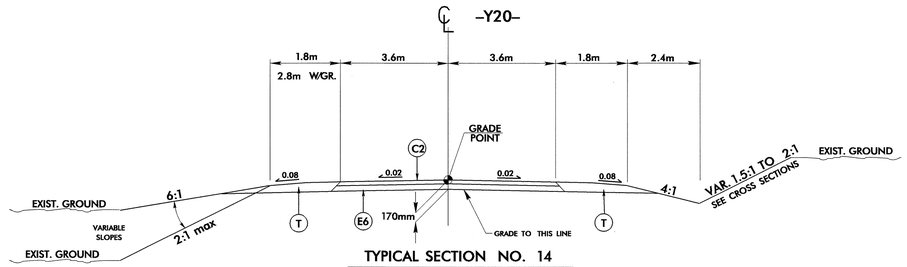
USE WITH TYPICAL SECTION NO. 12
SEE PLANS FOR STATION LOCATIONS.

RD223180 6/11/2008 r2206bc_rdy_typ2e scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-F

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE — 6/19/08

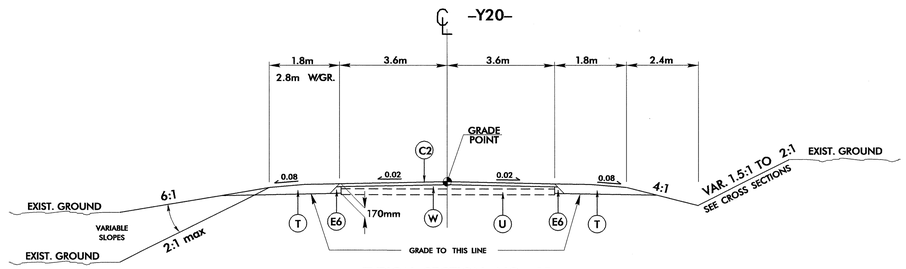
PAVEMENT DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG-CHI CHEN — 6/16/08



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

-Y20- STA. 10+07.215 TO -Y20- STA. 11+00.000

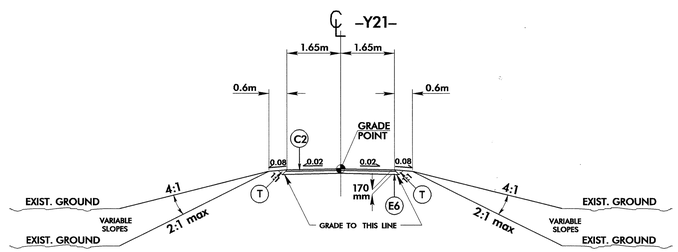


TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15

-Y20- STA. 11+00.000 TO -Y20- STA. 11+40.000
-Y20- STA. 11+40.000 TO -Y20- STA. 11+60.000 (MIN. RESURFACING)

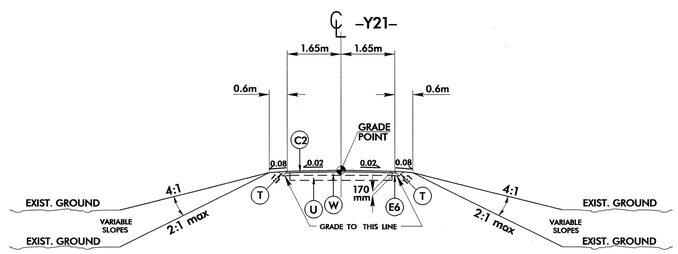
C2	50mm , TYPE S9.5B
E6	120mm , TYPE B25.0B
J2	150mm , ABC
P	PRIME COAT
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16

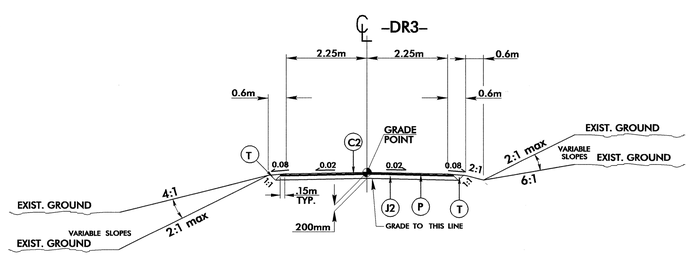
-Y21- STA. 10+03.600 TO -Y21- STA. 10+30.000



TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17

-Y21- STA. 10+30.000 TO -Y21- STA. 10+37.805



TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18

-DR3- STA. 10+03.600 TO 10+46.620
-DR3- STA. 11+15.000 TO 11+68.400

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RD223180 6/16/2008 r2206bc_rdy_typ2f scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	2-G
R /W SHEET NO.	

METRIC

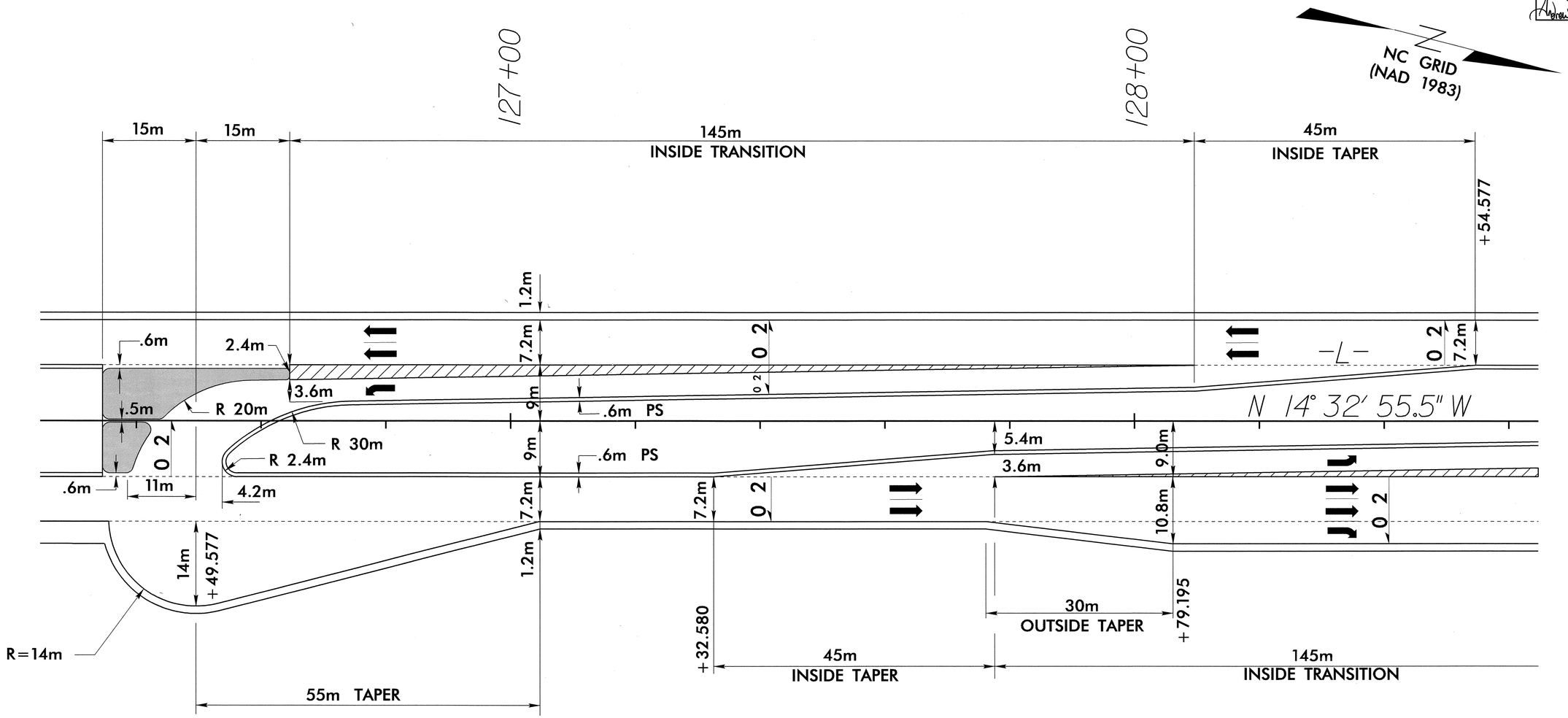
NOT TO SCALE

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/18/08

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 11 FOR PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	2-H
R /W SHEET NO.	

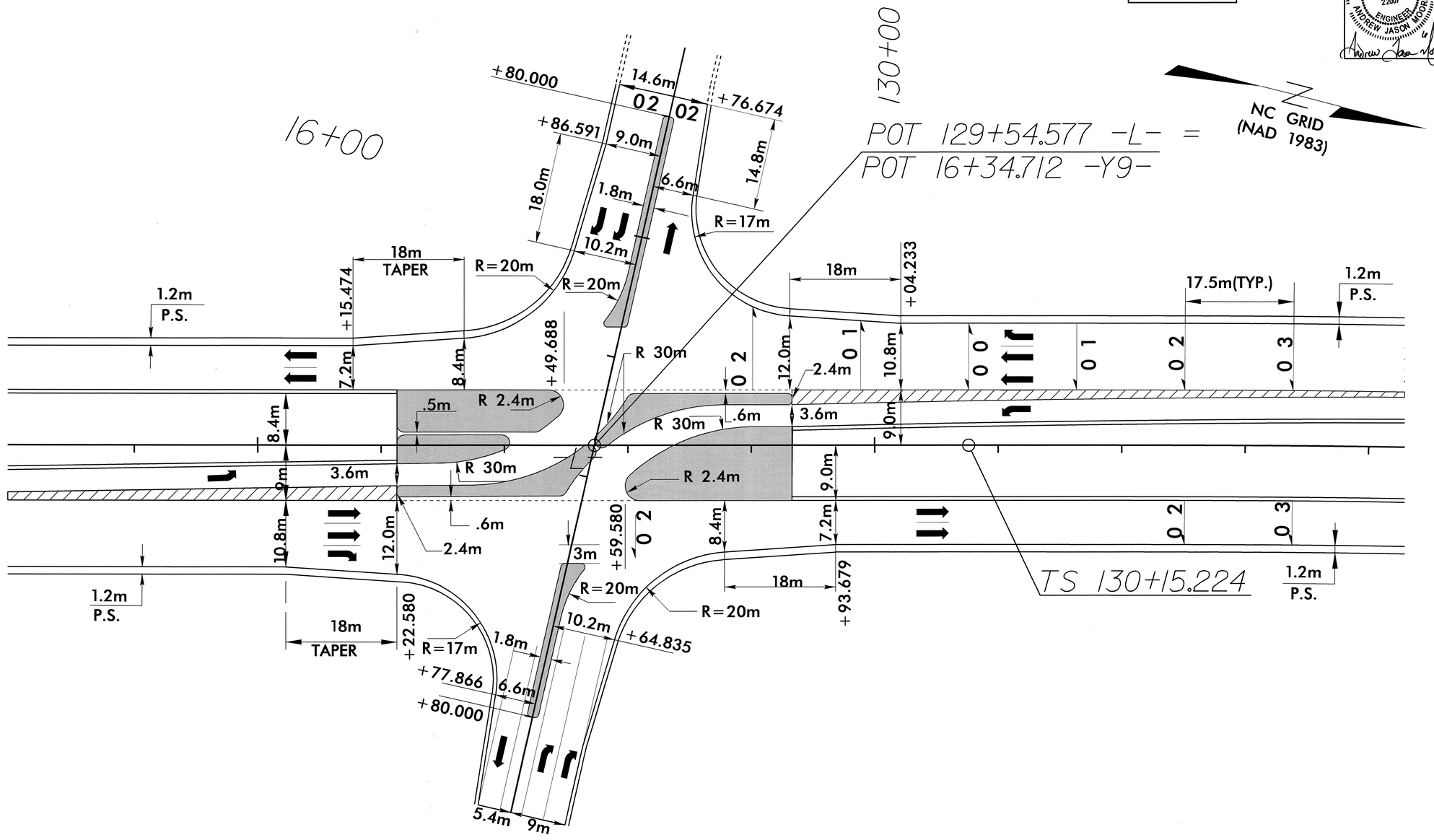
METRIC

NOT TO SCALE

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 11 FOR PLANS

18-JUN-2008 14:02
R:\Roadway\Proj\r2206bc_rdy_detail 2h.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	2-1
R /W SHEET NO.	

METRIC

NOT TO SCALE

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

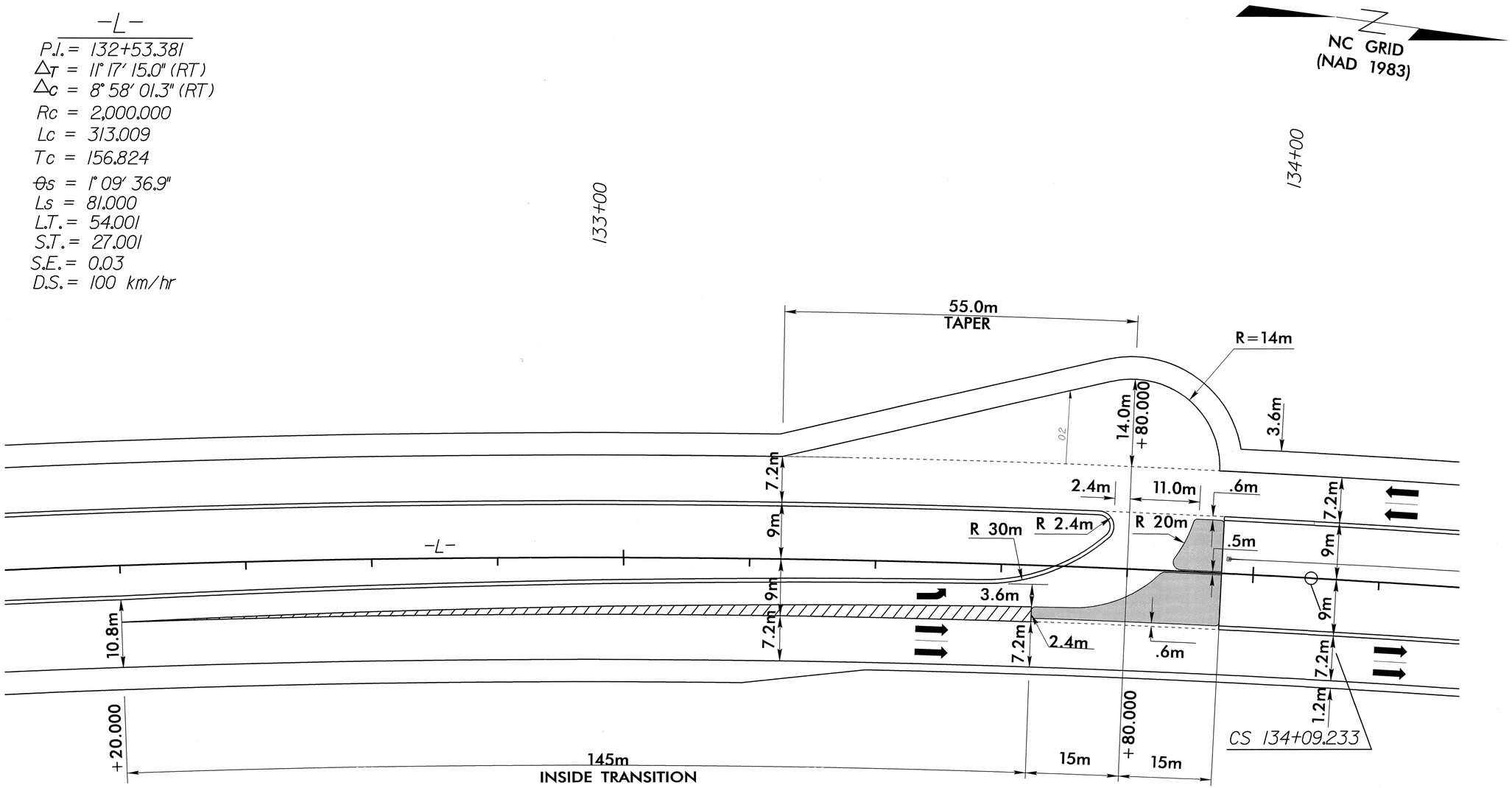
6/18/08

DETAIL OF DIRECTIONAL CROSSOVER

NC GRID (NAD 1983)

-L-

P.I. = 132+53.381
Δ_T = 11° 17' 15.0" (RT)
Δ_C = 8° 58' 01.3" (RT)
Rc = 2,000.000
Lc = 313.009
Tc = 156.824
θ_s = 1° 09' 36.9"
Ls = 81.000
L.T. = 54.001
S.T. = 27.001
S.E. = 0.03
D.S. = 100 km/hr



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

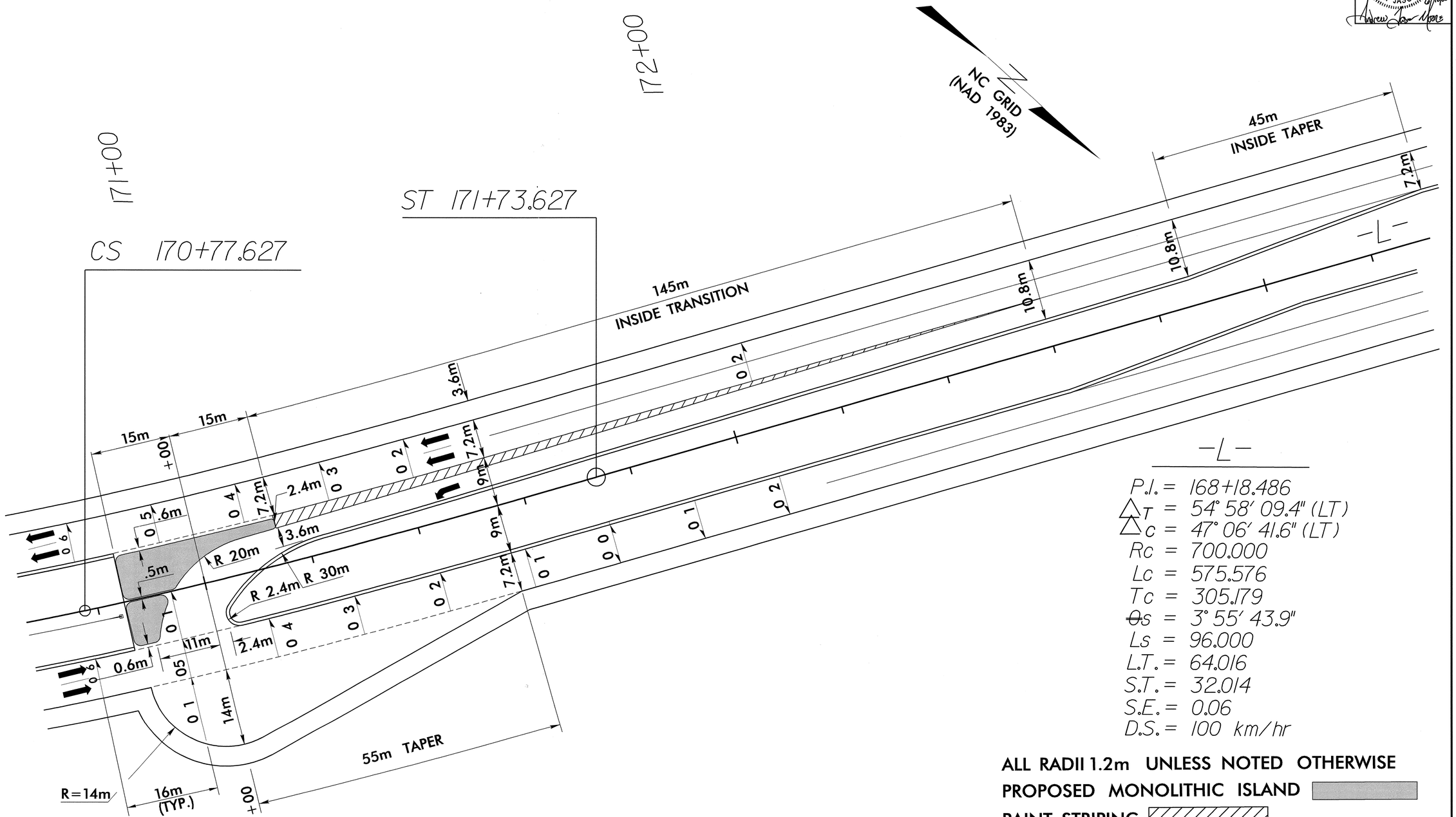
SEE PLAN SHEET 12 FOR PLANS

18-JUN-2008 14:01
r:\roadway\proj\r2206bc_rdy_detail 2i.dgn
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
NOT TO SCALE	R-2206BA&CA	2-J
	R /W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

DETAIL OF DIRECTIONAL CROSSOVER



-L-

P.I. = 168+18.486
Δ_T = 54° 58′ 09.4″ (LT)
Δ_C = 47° 06′ 41.6″ (LT)
Rc = 700.000
Lc = 575.576
Tc = 305.179
Θs = 3° 55′ 43.9″
Ls = 96.000
L.T. = 64.016
S.T. = 32.014
S.E. = 0.06
D.S. = 100 km/hr

ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 24 FOR PLANS

18-JUN-2008 14:01 r2206bc_rdy_detail 2j.dgn
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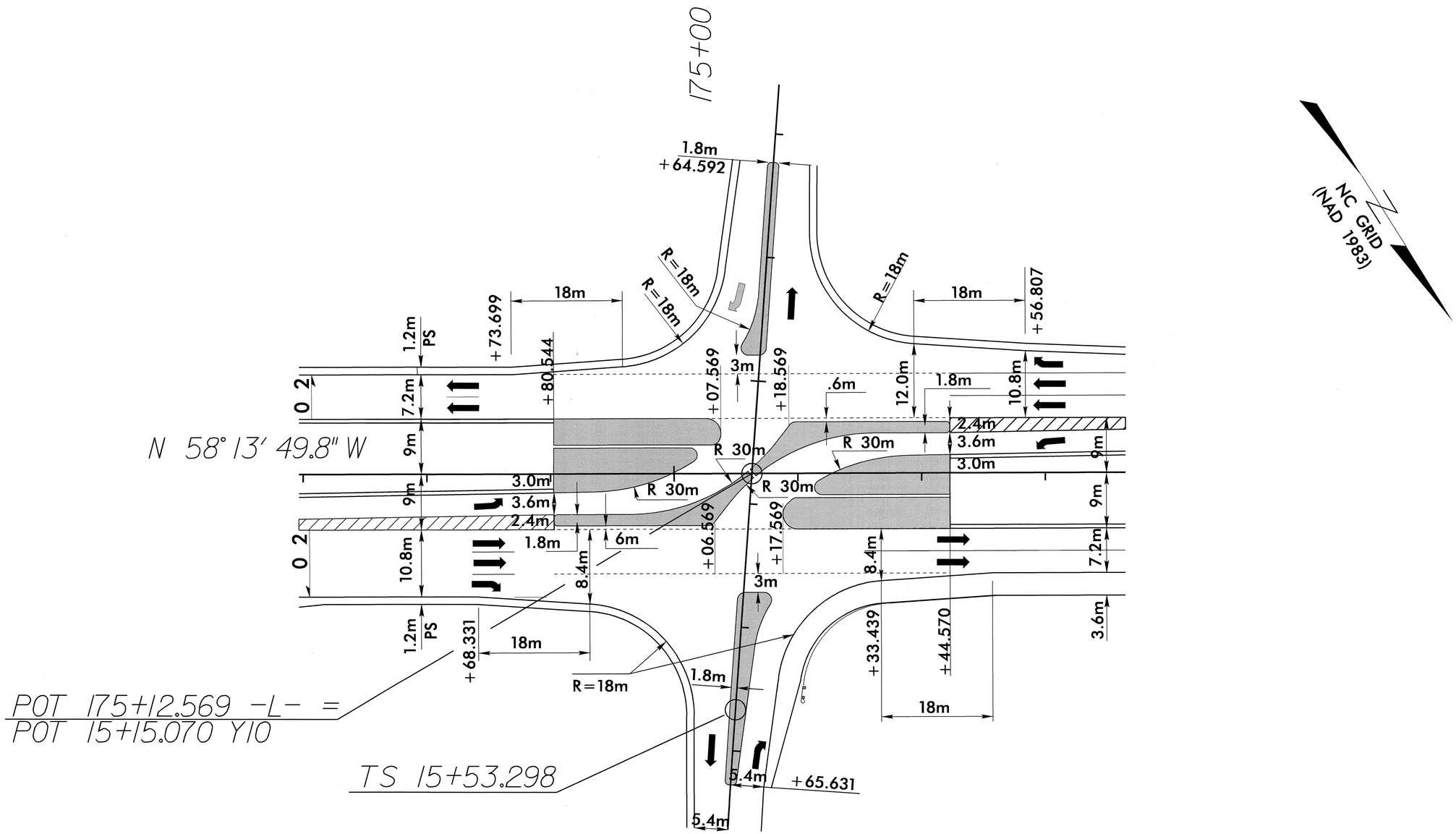
METRIC	PROJECT REFERENCE NO.	SHEET NO.
NOT TO SCALE	R-2206BA&CA	2-K
	R /W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
6/18/08

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 24 FOR PLANS

18-JUN-2008 14:13
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	2-L
R /W SHEET NO.	

METRIC

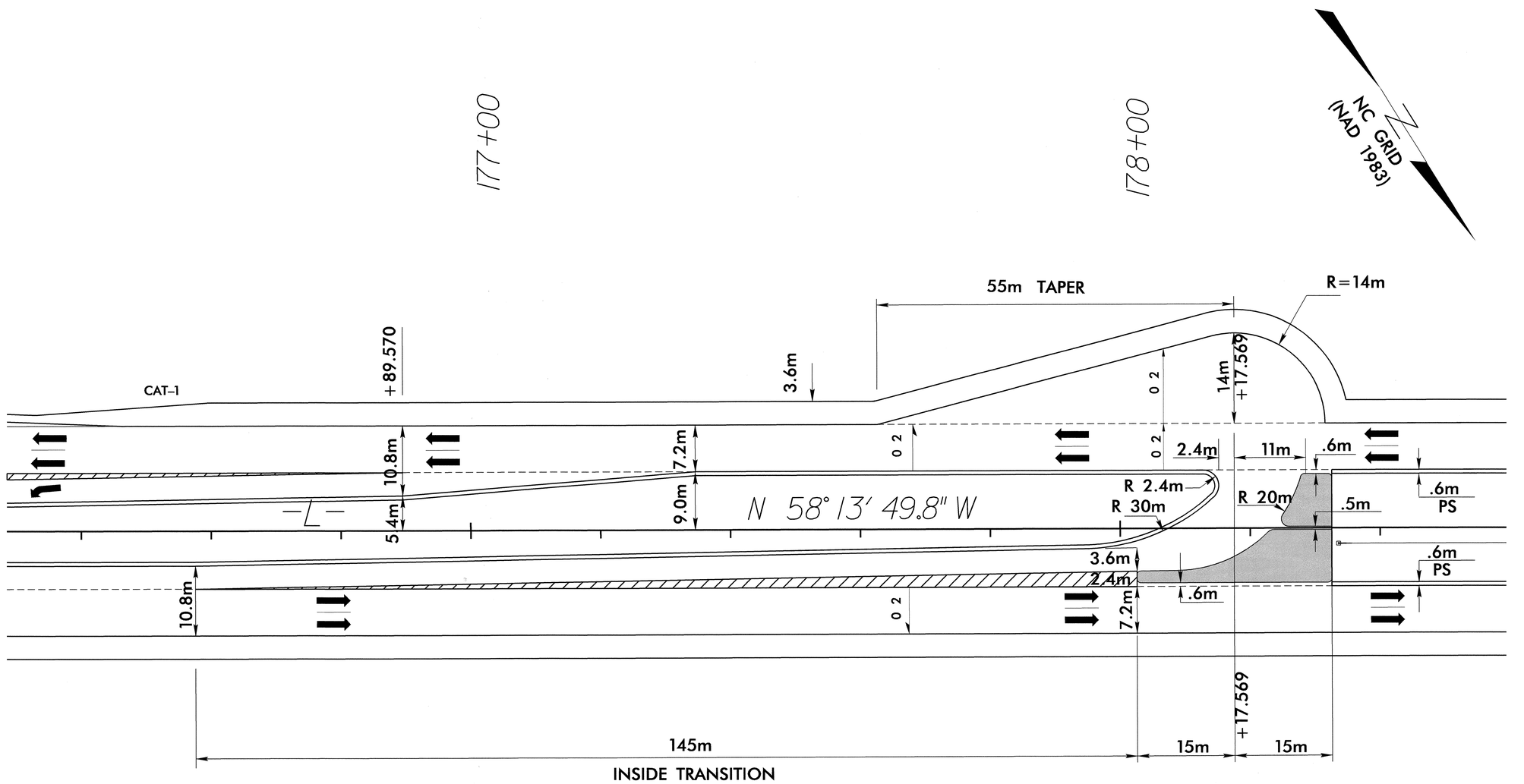
NOT TO SCALE

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/18/08

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 25 FOR PLANS

18-JUN-2008 14:01
S:\ROADWAY\proj\r2206bc_rdy_detail 2l.dgn
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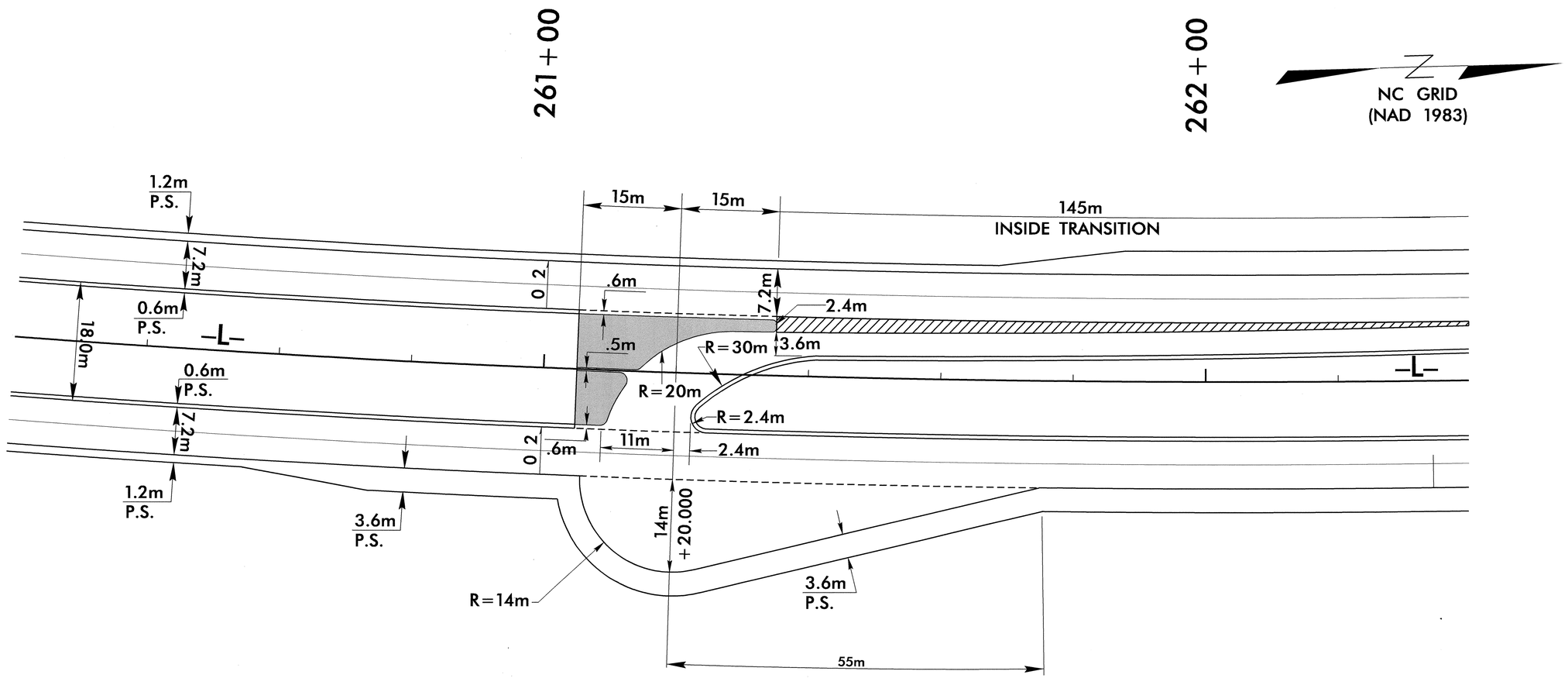
PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	2-M
R/W SHEET NO.	

METRIC

NOT TO SCALE

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
6/18/08

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 50 FOR PLANS

18-JUN-2008 14:01
r2206bc_rdy_detail 2m.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	2-N
R/W SHEET NO.	

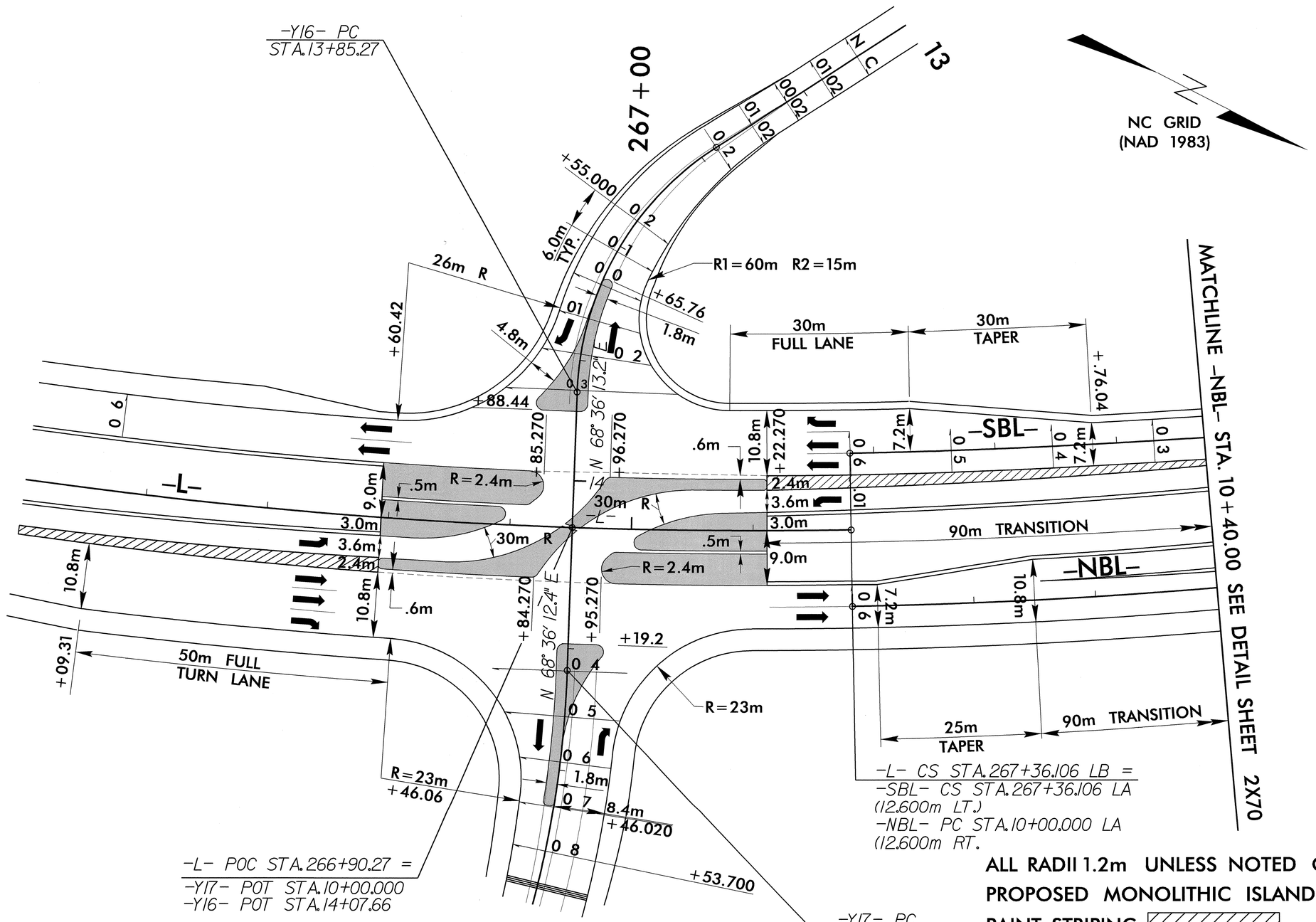
METRIC

NOT TO SCALE

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

SEE PLAN SHEET 52 FOR PLANS

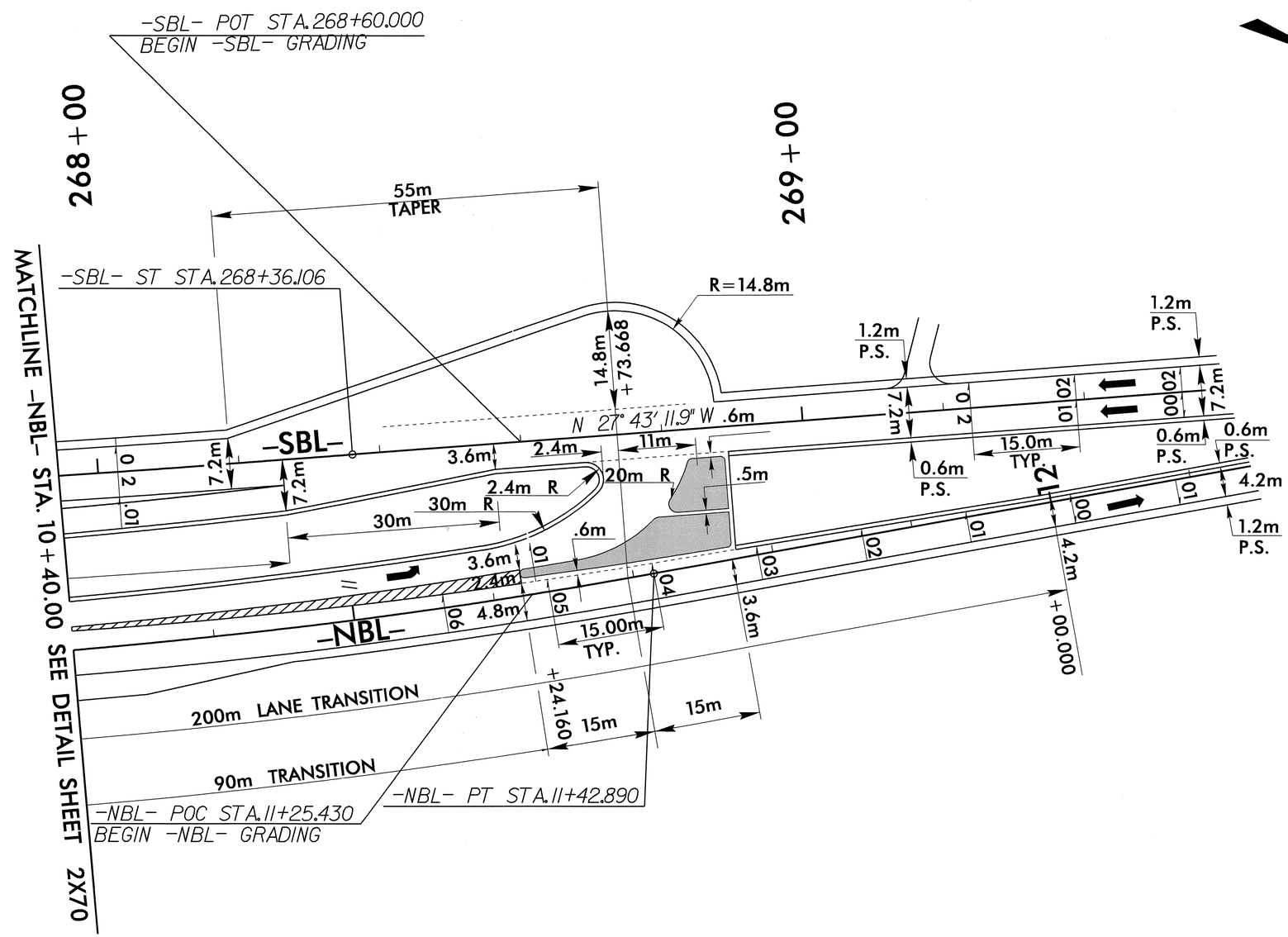
METRIC	PROJECT REFERENCE NO.	SHEET NO.
NOT TO SCALE	R-2206BA&CA	2-0
	R /W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/18/08

DETAIL OF DIRECTIONAL CROSSOVER



ALL RADII 1.2m UNLESS NOTED OTHERWISE

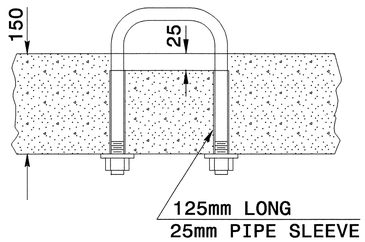
PROPOSED MONOLITHIC ISLAND

PAINT STRIPING

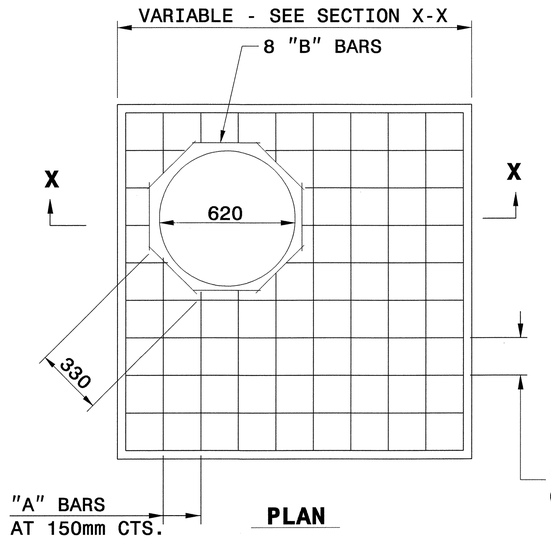
SEE PLAN SHEET 52 FOR PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	2-P

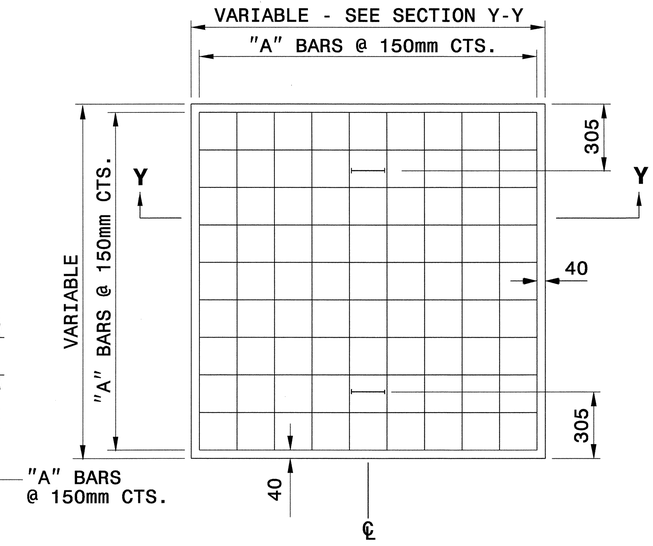
METRIC



PARTIAL SECTION



PLAN



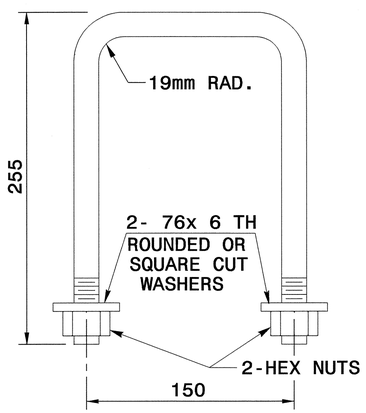
PLAN

GENERAL NOTES:

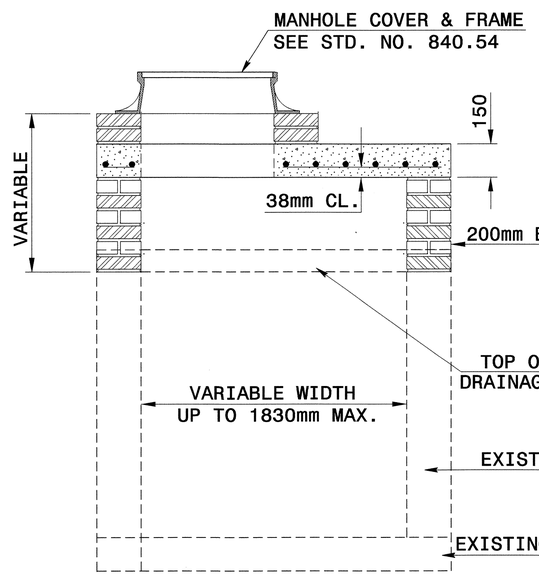
CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

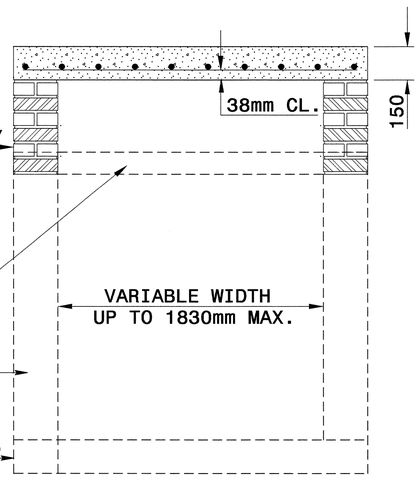
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



DETAIL OF HANDLE



SECTION X-X



SECTION Y-Y

BILL OF MATERIALS

REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL kgs.
A	#16	20	1370	45.52
B	#16	8	330	4.10
			TOTAL	49.62 *

MASONRY	m^3
TOP SLAB CONCRETE CLASS "B"	.3305 *
BRICK MASONRY PER m HT (MIN)	1.7651

* NOTE:
QUANTITIES BASED ON 1070mm X 1070mm DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON
6/20/08

PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV 1997
MODIFIED BY: T.S.S. DATE: FEB 2000
CHECKED BY: DATE: 6/08
FILE SPEC.: ds174:/usr/details/metric/stand/boxtojb.dgn

6/15/99

COMPUTED BY: ____________ DATE: ____________
CHECKED BY: ____________ DATE: ____________

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	3
	(Sheet 1 of 2)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201900

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0001000000-M	200	Lump Sum		CLEARING & GRUBBING .. HECTACRE(S)
0008000000-M	200	0.4	HA	SUPPLEMENTARY CLEARING & GRUB-BING
0022000000-M	225	111,700	M3	UNCLASSIFIED EXCAVATION
0036000000-M	225	4,000	M3	UNDERCUT EXCAVATION
0080000000-M	SP	3,300	MTN	CLASS IV SUBGRADE STABILIZA-TION
0134000000-M	240	800	M3	DRAINAGE DITCH EXCAVATION
0156000000-M	250	5,650	M2	REMOVAL OF EXISTING ASPHALT PAVEMENT
0195000000-M	265	2,500	M3	SELECT GRANULAR MATERIAL
0196000000-M	270	5,100	M2	FABRIC FOR SOIL STABILIZATION
0248000000-N	SP	Lump Sum		GENERIC GRADING ITEM FINE GRADING
0318000000-M	300	410	MTN	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRS
0343000000-M	310	19.2	M	375MM SIDE DRAIN PIPE
0366000000-M	310	495.6	M	375MM RC PIPE CULVERTS, CLASS III
0372000000-M	310	379.2	M	450MM RC PIPE CULVERTS, CLASS III
0378000000-M	310	229.2	M	600MM RC PIPE CULVERTS, CLASS III
0384000000-M	310	63.6	M	750MM RC PIPE CULVERTS, CLASS III
0708000000-M	310	61.2	M	400MM BIT COAT CS PIPE CUL-VERTS, TYPE B 1.63MM THICK
0714000000-M	310	16.8	M	450MM BIT COAT CS PIPE CUL-VERTS, TYPE B 1.63MM THICK
0806000000-M	310	6	EA	400MM BIT COAT CS PIPE ELBOWS, TYPE B 1.63MM THICK
0807000000-M	310	1	EA	450MM BIT COAT CS PIPE ELBOWS, TYPE B 1.63MM THICK
0995000000-M	340	153.6	M	PIPE REMOVAL
1044000000-M	501	132,430	M2	LIME TREATED SOIL (SLURRY METHOD)
1066000000-M	501	1,490	MTN	LIME FOR LIME TREATED SOIL
1110000000-M	510	1,500	MTN	STABILIZER AGGREGATE
1121000000-M	520	183,500	MTN	AGGREGATE BASE COURSE
1176000000-M	542	198,640	M2	SOIL CEMENT BASE
1187000000-M	542	6,020	MTN	PORTLAND CEMENT FOR SOIL CE-MENT BASE
1209000000-M	543	225,130	L	ASPHALT CURING SEAL
1220000000-M	545	500	MTN	INCIDENTAL STONE BASE
1231000000-M	560	31,500	M3	SHOULDER BORROW
1275000000-M	600	13,746	L	PRIME COAT
1330000000-M	607	9,600	M2	INCIDENTAL MILLING
1489000000-M	610	1,880	MTN	ASPHALT CONC BASE COURSE, TYPE B25.0B
1491000000-M	610	70	MTN	ASPHALT CONC BASE COURSE, TYPE B25.0C
1498000000-M	610	2,500	MTN	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1503000000-M	610	78,100	MTN	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
1519000000-M	610	4,900	MTN	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1523000000-M	610	68,200	MTN	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1560000000-M	620	4,150	MTN	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1565000000-M	620	4,095	MTN	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22
1840000000-M	665	62,000	M	MILLED RUMBLE STRIPS (ASPHALT CEMENT CONCRETE)
2099000000-M	816	6,950	M	SHOULDER DRAIN
2110000000-M	816	6,950	M	100MM SHOULDER DRAIN PIPE
2121000000-M	816	685	M	100MM OUTLET PIPE (SHOULDER DRAINS)
2132000000-N	816	22	EA	CONCRETE PAD FOR SHOULDER DRAIN PIPE OUTLET
2143000000-M	818	15	MTN	BLOTTING SAND
2253000000-M	840	0.5	M3	PIPE COLLARS
2264000000-M	840	0.5	M3	PIPE PLUGS
2275000000-M	SP	3	M3	FLOWABLE FILL
2286000000-N	840	37	EA	MASONRY DRAINAGE STRUCTURES
2354000000-N	840	1	EA	FRAME WITH GRATE, STD 840.22
2364200000-N	840	64	EA	FRAME WITH TWO GRATES, STD 840.20
2365000000-N	840	21	EA	FRAME WITH TWO GRATES, STD 840.22
2366000000-N	840	6	EA	FRAME WITH TWO GRATES, STD 840.24
2396000000-N	840	3	EA	FRAME WITH COVER, STD 840.54
2556000000-M	846	6,800	M	SHOULDER BERM GUTTER
2619000000-M	850	8.5	M2	100MM CONCRETE PAVED DITCH
2655000000-M	852	3,570	M2	125MM MONOLITHIC CONCRETE IS-LANDS (KEYED IN)
2724000000-M	857	42	M	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED
2752000000-M	SP	610	M	GENERIC PAVING ITEM REMOVE & STOCKPILE EXISTING BARRIER
2905000000-N	859	2	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX
2938000000-N	SP	2	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX WITH MANHOLE COVER
3000000000-N	SP	4	EA	IMPACT ATTENUATOR UNIT, TYPE 350
3030000000-M	862	12,531.09	M	STEEL BM GUARDRAIL
3045000000-M	862	210	M	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3210000000-N	862	40	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3215000000-N	862	26	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	48	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3285000000-N	SP	10	EA	GUARDRAIL ANCHOR UNITS, TYPE M-350
3317000000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3389200000-M	865	13,400	M	CABLE GUIDERAIL
3389500000-N	SP	12	EA	ADDITIONAL GUIDERAIL POSTS
3389600000-N	865	58	EA	CABLE GUIDERAIL ANCHOR UNITS
3580000000-M	866	125	M	GENERIC FENCING ITEM WOVEN WIRE FENCE, 1200MM FABRIC, REPAIR
3628000000-M	876	90	MTN	RIP RAP, CLASS I
3649000000-M	876	550	MTN	RIP RAP, CLASS B
3656000000-M	876	2,210	M2	FILTER FABRIC FOR DRAINAGE
4048000000-M	902	12	M3	REINFORCED CONCRETE SIGN FOUN-DATIONS
4060000000-M	903	3,118	KG	SUPPORTS, BREAKAWAY STEEL BEAM
4066000000-M	903	2,445	KG	SUPPORTS, SIMPLE STEEL BEAM
4072000000-M	903	1,282	M	SUPPORTS, 4.5-KG STEEL U-CHANN EL
4096000000-N	904	12	EA	SIGN ERECTION, TYPE D
4102000000-N	904	163	EA	SIGN ERECTION, TYPE E
4108000000-N	904	54	EA	SIGN ERECTION, TYPE F
4110000000-N	904	12	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
4110000000-N	904	2	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (B)
4116100000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
4155000000-N	907	38	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4236000000-N	907	3	EA	DISPOSAL OF SIGN, A OR B (GROUND MOUNTED)
4238000000-N	907	1	EA	DISPOSAL OF SIGN, D, E OR F
4400000000-M	1110	80	M2	WORK ZONE SIGNS (STATIONARY)
4405000000-M	1110	20	M2	WORK ZONE SIGNS (PORTABLE)
4410000000-M	1110	10	M2	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	1	EA	FLASHING ARROW PANELS, TYPE C
4420000000-N	1120	4	EA	CHANGEABLE MESSAGE SIGN
4430000000-N	1130	300	EA	DRUMS
4435000000-N	1135	200	EA	CONES
4445000000-M	1145	75	M	BARRICADES (TYPE III)
4455000000-N	1150	100	MD	FLAGGER
4480000000-N	1165	1	EA	TMIA
4650000000-N	1251	2,850	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-M	1205	500	M	THERMOPLASTIC PAVEMENT MARKING LINES (100MM, 2.3MM)
4686000000-M	1205	900	M	THERMOPLASTIC PAVEMENT MARKING LINES (100MM, 3.1MM)
4695000000-M	1205	60	M	THERMOPLASTIC PAVEMENT MARKING LINES (200MM, 2.3MM)
4710000000-M	1205	40	M	THERMOPLASTIC PAVEMENT MARKING LINES (600MM, 3.1MM)
4725000000-M	1205	100	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (2.3MM)
4810000000-M	1205	175,160	M	PAINT PAVEMENT MARKING LINES (100MM)
4820000000-M	1205	11,980	M	PAINT PAVEMENT MARKING LINES (200MM)
4835000000-M	1205	400	M	PAINT PAVEMENT MARKING LINES (600MM)
4845000000-N	1205	200	EA	PAINT PAVEMENT MARKING SYMBOL
4847000000-M	1205	86,170	M	POLYUREA PAVEMENT MARKING LINES (100MM, **********) (STANDARD GLASS BEADS)
4847110000-M	1205	5,930	M	POLYUREA PAVEMENT MARKING LINES (200MM, **********) (STANDARD GLASS BEADS)
4847140000-M	1205	160	M	POLYUREA PAVEMENT MARKING LINES (600MM, **********) (STANDARD GLASS BEADS)
4850000000-M	1205	1,000	M	REMOVAL OF PAVEMENT MARKING LINES (100MM)
4860000000-M	1205	300	M	REMOVAL OF PAVEMENT MARKING LINES (200MM)
4875000000-N	1205	10	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
4900000000-N	1251	70	EA	PERMANENT RAISED PAVEMENT MARKERS
4905000000-N	1253	2,846	EA	SNOWPLOWABLE PAVEMENT MARKERS
4935000000-N	1267	80	EA	FLEXIBLE DELINEATORS (CRYSTAL)
4940000000-N	1267	80	EA	FLEXIBLE DELINEATORS (YELLOW)
6000000000-M	1605	3,900	M	TEMPORARY SILT FENCE
6006000000-M	1610	610	MTN	STONE FOR EROSION CONTROL, CLASS A
6009000000-M	1610	7,515	MTN	STONE FOR EROSION CONTROL, CLASS B
6012000000-M	1610	5,205	MTN	SEDIMENT CONTROL STONE
6015000000-M	1615	67	HA	TEMPORARY MULCHING
6018000000-M	1620	2,575	KG	SEED FOR TEMPORARY SEEDING
6021000000-M	1620	20.5	MTN	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-M	1622	250	M	TEMPORARY SLOPE DRAINS
6027000000-N	1622	11	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-M	SP	400	M	SAFETY FENCE
6030000000-M	1630	16,070	M3	SILT EXCAVATION
6036000000-M	1631	52,300	M2	MATTING FOR EROSION CONTROL
6037000000-M	SP	45	M2	COIR FIBER MAT
6042000000-M	1632	1,135	M	6.4MM HARDWARE CLOTH
6071010000-M	SP	585	M	WATTLE
6071020000-M	SP	332	KG	POLYACRYLAMIDE (PAM)
6071030000-M	SP	330	M	COIR FIBER BAFFLES

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STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
R-2206 BA & CA	3

(Sheet 2 of 2)

ItemNumber	Sec #	Quantity	Unit	Description
6071050000-M	SP	3	EA	***MM SKIMMER (38MM)
6071050000-M	SP	5	EA	***MM SKIMMER (51MM)
6071050000-M	SP	1	EA	***MM SKIMMER (76MM)
6084000000-M	1660	63.5	HA	SEEDING & MULCHING
6087000000-M	1660	39.5	HA	MOWING
6090000000-M	1661	850	KG	SEED FOR REPAIR SEEDING
6093000000-M	1661	3	MTN	FERTILIZER FOR REPAIR SEEDING
6096000000-M	1662	1,775	KG	SEED FOR SUPPLEMENTAL SEEDING
6108000000-M	1665	105.75	MTN	FERTILIZER TOPDRESSING
6114000000-N	SP	169	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	27	EA	RESPONSE FOR EROSION CONTROL
6123000000-M	1670	0.5	HA	REFORESTATION
6133000000-N	SP	Lump Sum		GENERIC EROSION CONTROL ITEM REMOVAL OF EROSION CONTROL DEVICES
6135000000-M	SP	33.5	HA	GENERIC EROSION CONTROL ITEM LIMESTONE FOR SOIL AMENDMENT
7060000000-M	1705	280	M	SIGNAL CABLE
7120000000-M	1705	10	EA	VEHICLE SIGNAL HEAD (300MM, 3 SECTION)
7144000000-M	1705	2	EA	VEHICLE SIGNAL HEAD (300MM, 5 SECTION)
7264000000-M	1710	220	M	MESSENGER CABLE (9.52MM)
7300000000-M	1715	565	M	UNPAVED TRENCHING (**********) (1, 50MM)
7324000000-N	1716	8	EA	JUNCTION BOX (STANDARD SIZE)
7432000000-M	1722	2	EA	50MM RISER WITH HEAT SHRINK TUBING
7444000000-M	1725	325	M	INDUCTIVE LOOP SAWCUT
7456000000-M	1726	925	M	LEAD-IN CABLE (**********) (14-2)
7575142000-N	SP	2	EA	900MHZ WIRELESS RADIO SYSTEM
7576000000-N	SP	8	EA	METAL STRAIN SIGNAL POLE

ItemNumber	Sec #	Quantity	Unit	Description
7613000000-N	SP	8	EA	SOIL TEST
7614100000-M	SP	40	M3	DRILLED PIER FOUNDATION
7636000000-N	1745	8	EA	SIGN FOR SIGNALS
7684000000-N	1750	2	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	2	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	8	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	2	EA	CABINET BASE EXTENDER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH WIRELESS RADIO MODEM

COMPUTED BY: REO DATE: 5/14/2008

CHECKED BY: SEC DATE: 5/27/2008

METRIC

PROJECT NO.	SHEET NO.
R-2206BA&CA	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 1200mm & UNDER)

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

Table part 1: Station, structure, elevations and CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE); SIZE / THICKNESS OR GAUGE

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	300	375	375 CLASS IV	450	450 CLASS IV	600	600 CLASS IV	750	750 CLASS IV	750 CLASS V	900 CLASS IV	1050 CLASS IV	1050 CLASS V	1200 CLASS IV
L 104+20.000	LT	1																			
L 104+49.000	LT	2																			
L 106+00.000	RT	3																			
L 113+60.000	LT	4																			
L 113+60.000	RT	5																			
L 115+40.000	LT	6																			
L 119+80.000	LT	7																			
L 122+46.000	LT	8																			
L 122+95.000	RT	9																			
L 125+00.000	LT	10																			
L 126+17.000	CL	11																			
L 126+17.000	CL	11	12						18.0												
L 126+17.000	RT	12																			
L 126+17.000	RT	12	13																		
L126+00.000	RT	12A																			
L 126+74.000	LT	14																			
L 126+74.000	LT	14	15								30.0										
L 126+74.000	CL	15																			
L 126+74.000	RT	15	16										33.6								
L 126+74.000	RT	16																			
L 126+74.000	RT	16	17										40.8								
L 126+74.000	CL	15	18						57.6												
L 127+30.000	CL	18																			
L 129+80.000	CL	19																			
L 129+80.000	CL	19	20								21.6										
L 129+80.000	CL	20																			
L 130+03.000	CL	20	21								28.8										
L 130+23.000	CL	21																			
L 131+90.000	RT	22																			
L 133+29.000	LT	23																			
L 133+60.000	CL	24	25		236.22	237.02			51.6												
L 134+12.000	CL	25		237.86																	
L 140+40.000	LT	26																			
L 140+40.000	RT	27																			
L 142+90.000	LT	28																			
L 142+90.000	RT	29																			
L 145+27.000	RT	29A																			
L 152+30.000	LT	30																			
L 152+30.000	RT	31																			
L 155+20.000	LT	32																			
L 155+20.000	RT	33																			
L 158+22.500	LT	34																			
L 158+22.500	RT	35																			
L 169+00.000	LT	36																			
SHEET TOTAL									127.2		80.4		74.4								

Table part 2: BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE), side drain pipe, endwalls (STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE), CU. METERS), QUANITIES FOR DRAINAGE STRUCTURES (*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')), FRAME, GRATES, AND HOOD STANDARD 840.03

STATION	LOCATION	FROM	TO	300 1.63	400 1.63	450 1.63	600 1.63	600	800 2.01	800	900 2.01	900	1000 2.01	1000	1200 2.01	1200	375mm SIDE DRAIN PIPE	400mm SIDE DRAIN PIPE	600mm SIDE DRAIN PIPE	ENDWALLS R.C.P.	ENDWALLS C.S.P.	PER EACH (0 THRU 1.50)	METERS A 1.5 THRU 3.00	METERS B 3.00 AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	TYPE OF GRATE E	F	G
L 104+20.000	LT	1																										
L 104+49.000	LT	2																										
L 106+00.000	RT	3																										
L 113+60.000	LT	4																										
L 113+60.000	RT	5																										
L 115+40.000	LT	6																										
L 119+80.000	LT	7																										
L 122+46.000	LT	8																										
L 122+95.000	RT	9																										
L 125+00.000	LT	10																										
L 126+17.000	CL	11																					1						
L 126+17.000	CL	11	12																									
L 126+17.000	RT	12																					1						
L 126+17.000	RT	12	13		18.0																							
L126+00.000	RT	12A																										
L 126+74.000	LT	14																					1						
L 126+74.000	LT	14	15																									
L 126+74.000	CL	15																					1						
L 126+74.000	RT	15	16																									
L 126+74.000	RT	16																					1						
L 126+74.000	RT	16	17																									
L 126+74.000	CL	15	18																									
L 127+30.000	CL	18																					1						
L 129+80.000	CL	19																										
L 129+80.000	CL	19	20																									
L 129+80.000	CL	20																					1						
L 130+03.000	CL	20	21																									
L 130+23.000	CL	21																					1						
L 131+90.000	RT	22																										
L 133+29.000	LT	23			21.6																		1						
L 133+60.000	CL	24	25																									
L 134+12.000	CL	25																					1						
L 140+40.000	LT	26																										
L 140+40.000	RT	27																										
L 142+90.000	LT	28																										
L 142+90.000	RT	29																										
L 145+27.000	RT	29A																										
L 152+30.000	LT	30																										
L 152+30.000	RT	31																										
L 155+20.000	LT	32																										
L 155+20.000	RT	33																										
L 158+22.500	LT	34																										
L 158+22.500	RT	35																										
L 169+00.000	LT	36																										
SHEET TOTAL					39.6																	10						

Table part 3: Drop inlets, frames, manholes, elbows, collars, plugs, pipe removal and remarks

STATION	LOCATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	M.D.I. TYPE "A" STD. 840.17 OR 840.26	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAMES AND WIDE SLOT FLAT GRATES STD. 840.20	M.D.I. FRAME WITH GRATE STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35		TRAFFIC BEARING JB STD 840.34	M.H. STD. 840.51 OR 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXIST. 2GI TO JB	CONVERT EXIST. 2GI TO JB W/ MANHOLE COVER		BERM DRAINAGE OUTLET SM STD. 850.10					CORR. STEEL ELBOWS NO. & SIZE 400	450	800	CONC. COLLARS CL. "B" C.M. STD. 840.72	CONC. & BRICK PIPE PLUG, C.M. STD. 840.71	PIPE REMOVAL (METERS)	REMARKS
L 104+20.000	LT	1							1																								
L 104+49.000	LT	2							1																								
L 106+00.000	RT	3							1																								
L 113+60.000	LT	4							1																								
L 113+60.000	RT	5							1																								
L 115+40.000	LT	6							1																								
L 119+80.000	LT	7							1																								
L 122+46.000	LT	8							1																								
L 122+95.000	RT	9							1																								
L 125+00.000	LT	10							1																								
L 126+17.000	CL	11					1				1																						
L 126+17.000	CL	11	12																														
L 126+17.000	RT	12					1		1																							45.6	REMOVE EXIST. SYSTEM
L 126+17.000	RT	12	13																								2						
L126+00.000	RT	12A							1																								
L 126+74.000	LT	14					1				1																						
L 126+74.000	LT	14	15																													30.0	REMOVE EXIST. SYSTEM
L 126+74.000	CL	15					1				1																						
L 126+74.000	RT	15	16																													25.2	REMOVE EXIST. SYSTEM
L 126+74.000	RT	16				1			1																								
L 126+74.000	RT	16	17																													15.6	REMOVE EXIST. SYSTEM
L 126+74.000	CL	15	18																														
L 127+30.000	CL	18				1				1	1																						3GI
L 129+80.000	CL	19																1		1													
L 129+80.000	CL	19	20																														REMOVE EXIST. SYSTEM
L 129+80.000	CL	20					1				1																						
L 130+03.000	CL	20	21																														REMOVE EXIST. SYSTEM
L 130+23.000	CL	21					1				1																						REMOVE EXIST. 2GI
L 131+90.000	RT	22							1																								
L 133+29.000	LT	23					1		1																		2						
L 133+60.000	CL	24	25																														TIE TO EXiST. 2GI
L 134+12.000	CL	25					1				1																						
L 140+40.000	LT	26							1																								
L 140+40.000	RT	27							1																								
L 142+90.000	LT	28							1																								
L 142+90.000	RT	29							1																								
L 145+27.000	RT	29A							1																								
L 152+30.000	LT	30							1																								
L 152+30.000	RT	31							1																								
L 155+20.000	LT	32							1																								
L 155+20.000	RT	33							1																								
L 158+22.500	LT	34							1																								
L 158+22.500	RT	35							1																								
L 169+00.000	LT	36							1																								
SHEET TOTAL						2	8		27	1	7							1		1							4					116.4	

COMPUTED BY: REO DATE: 5/14/2008

CHECKED BY: SEC DATE: 5/27/2008

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

METRIC

PROJECT NO.	SHEET NO.
R-2206BA&CA	3-B

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 1200mm & UNDER)

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 300	375	375 CLASS IV	450	450 CLASS IV	600	600 CLASS IV	750	750 CLASS IV	750 CLASS V	900 CLASS IV	1050 CLASS IV	1050 CLASS V	1200 CLASS IV	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) 300 1.63	400 1.63	450 1.63	600 1.63	800 2.01	900 2.01	1000 2.01	1200 2.01
Sheet 1 Totals									127.2		80.4		74.4										39.6						
L 171+22.000	LT	37		265.89																									
L 171+22.000	LT	37	38		265.08	265.12			22.8																				
L 171+22.000	CL	38		265.70																									
L 172+10.000	LT	39																											
L 172+10.000	RT	40																											
L 177+70.000	LT	41		265.11																									
L 177+70.000	LT	41	42		264.27	262.96			50.4																				
L 178+18.000	LT	42		263.80																									
L 178+18.000	LT	42	43		262.96	262.89			18.0																				
L 178+33.000	LT	43		263.73					24.0																				
L 177+97.000	CL	44		264.55					43.2																				
L 179+80.000	LT	45																											
L 179+80.000	RT	46																											
L 180+40.000	LT	47																											
L 182+00.000	LT	48																											
L 182+00.000	RT	49																											
L 183+33.000	LT	50																											
L 183+33.000	RT	51																											
L 191+39.000	LT	52																											
L 191+39.000	RT	53																											
L 199+00.000	RT	54																											
L 201+43.000	RT	55																											
L 202+10.000	RT	56																											
L 211+60.000	LT	57																											
L 211+60.000	RT	58																											
L 218+50.000	RT	59																											
L 222+68.000	LT	60																											
L 222+68.000	RT	61																											
L 223+35.000	LT	62																											
L 223+35.000	RT	63																											
L 237+60.000	RT	64																											
RPD 11+43.000	LT	65																											
L 244+40.000	RT	66																											
L 246+30.000	RT	67																											
L 254+40.000	RT	68																											
L 257+50.000	RT	69																											
L 257+75.000	LT	70																											
L 261+40.000	RT	71		292.45	291.87				40.8																				
L 261+90.000	LT	72																											
L 261+90.000	RT	73		293.95	293.37				3.6																				
L 261+90.000	RT	73A																											
L 262+80.000	LT	74																											
L 262+80.000	RT	75		296.05	295.47				3.6																				
L 262+80.000	RT	75A																											
L 264+25.000	LT	76																											
L 267+20.000	CL	77		311.95	311.15																								
DR3 11+13.200	RT	78		328.50																									
DR3 11+25.600	CL	78	79		327.66	326.16			15.6																				
DR3 11+26.000	LT	79		327.00																									
DR3 11+64.650	LT	80		319.95					13.2																				
SBL 269+00.000	LT	80	OUT		319.11				28.8																				
SBL 269+00.000	LT	79	81		326.16	315.70			33.6																				
SBL 269+00.000	LT	81		316.53																									
SBL 269+00.000	CL	81	82		315.62	315.55	X				22.8																		
SBL 269+00.000	RT	82		317.10																									
NBL 11+58.950	CL	82	83		315.55	315.47	X				24.0																		
NBL 11+49.000	RT	83	OUT	316.51	315.47	315.40	X				22.8																		
NBL 12+03.730	RT	84		317.04																									
NBL 12+03.730	RT	84	85		316.20	317.10																			6.0				
SHEET TOTAL									424.8		150.0		74.4										39.6	6.0					

STATION	STRUCTURE NO. FROM	STRUCTURE NO. TO	375mm SIDE DRAIN PIPE	400mm SIDE DRAIN PIPE	600mm SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. METERS R.C.P.	C.S.P.	QUANITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0 THRU 1.50)	METERS A 1.5 THRU 3.00	METERS B 3.00 AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	M.D.I. TYPE "A" STD. 840.17 OR 840.26	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAMES AND WIDE SLOT FLAT GRATES STD. 840.20	M.D.I. FRAME WITH GRATE STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	TRAFFIC BEARING JB STD 840.34	M.H. STD. 840.51 OR 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXIST. 2GI TO JB	CONVERT EXIST. 2GI TO JB W/ MANHOLE COVER	BERM DRAINAGE OUTLET SM STD. 850.10	CORR. STEEL ELBOWS NO. & SIZE 400	450	800	CONC. COLLARS CL. "B" C.M. STD. 840.72	CONC. & BRICK PIPE PLUG, C.M. STD. 840.71	PIPE REMOVAL (METERS)	REMARKS
Sheet 1 Totals								10									2	8		27	1	7						1		1		4					116.4	
L 171+22.000	37							1										1		1																		
L 171+22.000	37	38																																				
L 171+22.000	38							1										1				1																
L 172+10.000	39																			1																		
L 172+10.000	40																			1																		
L 177+70.000	41							1										1		1																		
L 177+70.000	41	42																																				
L 178+18.000	42							1										1		1																		
L 178+18.000	42	43																																				
L 178+33.000	43							1										1		1																		
L 177+97.000	44							1										1				1																
L 179+80.000	45																			1																		
L 179+80.000	46																			1																		
L 180+40.000	47																			1																		
L 182+00.000	48																			1																		
L 182+00.000	49																			1																		
L 183+33.000	50																			1																		
L 183+33.000	51																			1																		
L 191+39.000	52																			1																		
L 191+39.000	53																			1																		
L 199+00.000	54																			1																		
L 201+43.000	55																			1																		
L 202+10.000	56																			1																		
L 211+60.000	57																			1																		
L 211+60.000	58																			1																		
L 218+50.000	59																			1																		
L 222+68.000	60																			1																		
L 222+68.000	61																			1																		
L 223+35.000	62																			1																		
L 223+35.000	63																			1																		
L 237+60.000	64																			1																		
RPD 11+43.000	65																			1																		
L 244+40.000	66																			1																		
L 246+30.000	67																			1																		
L 254+40.000	68																			1																		
L 257+50.000	69																			1																		
L 257+75.000	70																			1																		
L 261+40.000	71							1											1			1																
L 261+90.000	72																			1																		
L 261+90.000	73							1											1			1																
L 261+90.000	73A																												1									
L 262+80.000	74																			1																		
L 262+80.000	75							1											1			1																
L 262+80.000	75A																												1									
L 264+25.000	76																			1																		
L 267+20.000	77																											1		1								
DR3 11+13.200	78							1										1						1														
DR3 11+25.600	78	79																																				
DR3 11+26.000	79							1										1						1														
DR3 11+64.650	80							1										1						1														
SBL 269+00.000	80	OUT																																				
SBL 269+00.000	79	81																																				
SBL 269+00.000	81							1										1						1														
SBL 269+00.000	81	82																																				
SBL 269+00.000	82							1										1				1																
NBL 11+58.950	82	83																																				
NBL 11+49.000	83	OUT						1										1				1																
NBL 12+03.730	84							1										1		1																		
NBL 12+03.730	84	85																																				
SHEET TOTAL								26.0									2.0	21.0	3.0	63.0	1.0	14.0		4.0				2.0	2.0	2.0		4.0					116.4	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

COMPUTED BY: REO DATE: 5/14/2008

CHECKED BY: SEC DATE: 5/27/2008

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

METRIC

PROJECT NO.	SHEET NO.
R-2206BA&CA	3-C

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 1200mm & UNDER)

STATION	LOCATION (LT, RT, OR CL)*	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) SIZE 300	375	375 CLASS IV	450	450 CLASS IV	600	600 CLASS IV	750	750 CLASS IV	750 CLASS V	900	900 CLASS IV	1050	1050 CLASS V	1200	1200 CLASS IV	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) SIZE 300	400	450	600	800	900	1000	1200
THICKNESS OR GAUGE																								1.63	1.63	1.63	1.63	2.01	2.01	2.01	2.01
Sheet 1+2 Totals									424.8		150		74.4												39.6	6					
NBL 12+03.730	RT	85																													
NBL 12+64.600	RT	84	85A		316.20	316.00	X				61.2																				
NBL 12+64.600	RT	85A		317.40																											
SBL 270+00.000	RT	86		317.43																											
SBL 270+00.000	RT	85A	86		316.00	315.55					21.6																				
NBL 13+14.000	LT	86A	86		314.30	315.25									50.4																
SBL 270+20.500	RT	86	87		315.25	315.69	X				142.8																				
SBL 271+65.000	RT	87		316.57																											
SBL 271+65.000	RT	87	88		315.69	315.90	X		27.6																						
SBL 271+65.000	LT	88		316.46																											
SBL 273+24.000	LT																														
SBL 274+23.000	RT	89																													
LDET 11+52.000	LT	90	86	320.50	318.52	315.25									13.2																
LDET 13+80.000	RT	91		317.20																											
LDET 13+80.000	RT	91	92		316.28	320.70																				10.8					
LDET 13+80.000	CL	91	93		316.13	312.95							24.0																		
LDET 13+92.000	LT	93		314.40																											
LDET 13+92.000	LT	93	94		312.95	311.96	X						37.2																		
LDET 14+30.000	LT	94		313.11																											
LDET 14+30.000	LT	94	95		311.96	309.65	X						57.6																		
LDET 14+86.000	RT	95		311.10																											
LDET 14+86.000	RT	95	96		309.65	308.60	X						36.0																		
LDET 14+86.000	RT	95	97		309.65	309.69			13.2																						
LDET 14+99.000	RT	97		310.53																											
LDET 15+08.000	RT	98																													
LDET 15+05.000	LT	99																													
LDET 14+99.000	LT	97																													
Y17 11+73.010	RT	100																							21.6						
Y16 11+48.000	LT	101							10.8																						
Y16 11+07.000	LT	102							8.4																						
Y17 12+56.000	RT	103							10.8																						
Y21 10+17.260	RT	104									3.6																				
GRAND TOTALS									495.6		379.2		229.2		63.6										61.2	16.8					
SAY TOTALS									495.6		379.2		229.2		63.6										61.2	16.8					

STATION	375mm SIDE DRAIN PIPE	400mm SIDE DRAIN PIPE	600mm SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. METERS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL."B") PER EACH (0 THRU 1.50)	METERS A 1.5 THRU 3.00	B 3.00 AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	M.D.I. TYPE "A" STD. 840.17 OR 840.26	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAMES AND WIDE SLOT FLAT GRATES STD. 840.20	M.D.I. FRAME WITH GRATE STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	TRAFFIC BEARING JB STD 840.34	M.H. STD. 840.51 OR 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXIST. 2GI TO JB	CONVERT EXIST. 2GI TO JB W/ MANHOLE COVER	BERM DRAINAGE OUTLET SM STD. 850.10	CORR. STEEL ELBOWS NO. & SIZE TYPE "B" 400	450	800	CONC. COLLARS CL. "B" C.M. STD. 840.72	CONC. & BRICK PIPE PLUG, C.M. STD. 840.71	PIPE REMOVAL (METERS)	REMARKS
Sheet 1+2 Totals						26									2	21	3	63	1	14		4			2	2					4					116.4	
NBL 12+03.730																															1						
NBL 12+64.600																																					
NBL 12+64.600						1										1				1																	
SBL 270+00.000						1										1				1																	
SBL 270+00.000																																					
NBL 13+14.000																																					
SBL 270+20.500																																					
SBL 271+65.000						1										1				1																	
SBL 271+65.000																																					
SBL 271+65.000						1										1				1																	
SBL 273+24.000																																			14.4		
SBL 274+23.000	13.2																																		13.2		
LDET 11+52.000						1																	1		1												REMOVE 3.6m OF EXIST PIPE
LDET 13+80.000						1										1				1																	
LDET 13+80.000																												8.4									
LDET 13+80.000																																					
LDET 13+92.000						1									1					1																	
LDET 13+92.000																																					
LDET 14+30.000						1									1					1																	
LDET 14+30.000																																					
LDET 14+86.000						1									1						1																
LDET 14+86.000																																					
LDET 14+99.000						1										1					1																
LDET 15+08.000	6.0																																				
LDET 15+05.000																																		0.10			
LDET 14+99.000																																			9.6	REMOVE EXIST SYSTEM	
Y17 11+73.010						1										1		1													2						
Y16 11+48.000																																					
Y16 11+07.000																																					
Y17 12+56.000																																					
Y21 10+17.260																																					
																																	0.34				
GRAND TOTALS	19.2					37.0									5	28	3	64	1	21		6		1		3	2	2	8.40			6	1.0		0.34	0.10	153.6	
SAY TOTALS	19.2					37.0									5	28	3	64	1	21		6		1		3	2	2	8.50			6	1		0.5	0.5	153.6	

TOTAL LENGTH OF PIPE = 1264.8

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	(NARROW SLOT)
	JUNCTION BOX
	MANHOLE
J.B.	TRAFFIC BEARING DROP INLET
M.H.	TRAFFIC BEARING JUNCTION BOX
T.B.D.I.	
T.B.J.B.	

RD244219

COMPUTED BY:	RPS	DATE:	5/9/08
CHECKED BY:	*JBM*	DATE:	*5/14/08*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
GUARDRAIL SUMMARY

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	3-D

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
W = TOTAL WIDTH OF FLARE FROM BEGIN

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	B-77	GRAU 350	M-350	TYPE III	CAT-1	AT-I	BIC	G	NG						
L	103+98.470	107+79.470	LT	381.000			107+41.370	103+98.470	3.6	3.6	15.24		0.3				1			1										
L	105+42.640	106+87.420	RT	144.780			106+87.420	106+87.420	3.6	3.6	15.24		0.3				1			1										
L	111+92.640	116+07.930	RT	415.290			112+30.740	116+07.930	3.6	3.6	15.24		0.3				1			1										
L	112+60.000	115+99.090	LT	339.090			115+60.990	112+60.000	3.6	3.6	15.24		0.3				1			1										
L	117+60.000	119+20.020	RT	160.020			117+98.100	119+20.020	3.6	3.6	15.24		0.3				1			1										
L	118+70.320	122+55.130	LT	384.810			122+55.130	118+70.320	3.6	3.6									1	1										
L	120+81.000	123+13.410	RT	232.410			121+19.100	123+12.090	3.6	3.6							1		1											
L	122+38.030	122+95.180	MEDIAN	57.150			122+95.180	122+95.180	3.6	3.6	55.245		2.967					1	1											
L	124+21.180	125+58.340	LT	137.160			125+20.240	124+21.180	3.6	3.6	15.24		0.3				1		1											
L	124+38.090	124+95.240	MEDIAN	57.150			124+38.090	124+38.090	3.6	3.6	55.245		2.967					1	1											
L	124+78.140	126+34.350	RT	156.210			124+78.140	126+34.350	3.6	3.6									1	1										
L	131+80.000	135+61.000	LT	381.000	26.67		135+57.16	131+80.000	3.6	3.6	15.24		0.3				1			1										
L	131+42.000	133+21.070	RT	179.070			131+80.100	133+21.070	3.6	3.6							1			1										
L	137+91.400	140+42.860	RT	251.460			138+29.500	140+42.860	3.6	3.6	15.24		0.3				1			1										
L	139+51.910	140+66.210	LT	114.300			140+28.110	139+51.910	3.6	3.6	15.24		0.3				1			1										
L	142+69.000	143+94.730	RT	125.730			143+07.100	143+94.730	3.6	3.6	15.24		0.3				1			1										
L	142+72.370	143+67.620	LT	95.250			143+29.520	142+72.370	3.6	3.6	15.24		0.3				1			1										
L	144+92.000	146+21.540	RT	129.540			145+30.100	146+21.540	3.6	3.6	15.24		0.3				1			1										
L	145+58.000	146+87.540	LT	129.540			146+49.440	145+58.000	3.6	3.6	15.24		0.3				1			1										
L	150+00.000	152+32.410	RT	232.410			150+38.100	152+32.410	3.6	3.6	15.24		0.3				1			1										
L	150+62.110	152+52.610	LT	190.500			152+14.510	150+62.110	3.6	3.6	15.24		0.3				1			1										
L	153+82.000	155+22.970	RT	140.970			154+20.100	155+22.970	3.6	3.6	15.24		0.3				1			1										
L	154+69.000	155+60.440	LT	91.440			155+22.300	154+69.000	3.6	3.6	15.24		0.3				1			1										
L	157+29.000	159+23.310	RT	194.310			157+67.100	159+23.310	3.6	3.6	15.24		0.3				1			1										
L	158+22.000	160+31.550	LT	209.550			159+93.450	158+22.000	3.6	3.6	15.24		0.3				1			1										
L	168+22.000	174+20.170	RT	598.170	30.48		168+60.100	174+20.170	3.6	3.6	15.24		0.3				1			1										
L	168+79.000	174+23.830	LT	544.830			173+85.730	168+79.000	3.6	3.6	15.24		0.3				1			1										
L	175+34.870	180+68.270	RT	533.400			175+72.970		3.6	3.6	15.24		0.3							1										
L	176+56.790	180+68.270	LT	411.480	30.48			176+56.790	3.6	3.6	15.24		0.3				1													
Y10	15+34.120	15+51.210	RT	3.810	19.05		15+34.120		3.6	3.6											1									
L	180+66.800	184+70.660	RT	403.860				184+70.660	3.6	3.6	15.24		0.3							1										
L	180+66.800	184+09.700	LT	342.900			183+71.600		3.6	3.6	15.24		0.3				1													
L	189+84.320	192+85.310	RT	300.990			199+05.206	196+27.076	3.6	3.6	15.24						1			1										
L	190+07.840	192+36.440	LT	228.600			191+98.340	190+07.840	3.6	3.6	15.24						1			1										
L	195+53.640	195+96.700	MEDIAN	43.060												4								2	20.077'					
L	196+30.850	199+05.170	LT	274.320			198+67.070	196+30.850	3.6	3.6	15.24								1	1										
L	198+47.990	199+05.140	MEDIAN	57.150			199+05.140	199+05.140	3.6	3.6								1	1											
L	197+94.630	199+05.120	RT	110.490			198+32.730	199+05.120	3.6	3.6	15.24						1			1										
L	199+90.900	200+48.050	MEDIAN	57.150			199+90.900	199+90.900	3.6	3.6								1	1											
L	199+90.900	200+44.240	LT	53.340			200+06.140	199+90.900	3.6	3.6	15.24		0.3				1		1											
L	199+90.970	203+71.970	RT	381.000			203+33.870	199+90.970	3.6	3.6	15.24						1		1											
L	210+84.290	212+93.840	RT	209.550			211+22.390	212+93.840	3.6	3.6	15.24		0.3				1			1										
L	211+58.370	213+45.060	LT	186.690			213+93.160	211+58.370	3.6	3.6	15.24		0.3				1			1										
L	216+36.210	216+84.970	MEDIAN	48.760												4								2	21'					
L	217+34.290	218+94.310	RT	160.020			213+06.960	218+94.310	3.6	3.6	15.24		0.3				1			1										
L	222+18.690	222+75.840	MEDIAN	57.150			222+75.840	222+75.840	3.6	3.6								1	1											
L	222+03.450	222+75.840	LT	57.150			222+37.74	222+03.450	3.6	3.6	15.24						1			1										
L	222+79.200	223+36.350	MEDIAN	57.150			222+79.200	222+79.200	3.6	3.6								1	1											
L	223+31.850	224+04.240	LT	72.390			224+00.430	223+31.850	3.6	3.6	15.24						1		1											
L	223+31.850	223+81.300	RT	49.450			223+69.950	223+81.300	3.6	3.6	15.24						1		1											
RPB	10+16.520	12+14.64	LT	198.120			11+76.540	10+16.520	3.6	3.6	15.24						1			1										
RPA	10+00.000	12+17.170	RT	217.170				12+17.170	3.6	3.6	15.24									1										
L	243+20.000	245+71.460	RT	251.460			245+33.360		3.6	3.6	15.24								1											
RPD	10+00.000	11+48.590	LT	148.590			11+10.490		3.6	3.6	15.24						1													
L	243+40.000	245+76.220	RT	236.220				245+76.220	3.6	3.6	15.24								1											
L	245+17.110	245+74.260	MEDIAN	57.150			245+74.260	245+74.260	3.6	3.6								1	1											
L	246+10.170	246+67.320	MEDIAN	57.150			246+10.170	246+10.170	3.6	3.6								1	1											
L	246+09.630	247+46.790	LT	137.160			247+08.690	246+09.630	3.6	3.6	15.24						1		1											
L	246+09.980	248+11.910	RT	201.930			247+73.810	246+09.980	3.6	3.6	15.24								1	1										
L	252+21.470	254+46.260	RT	224.790			252+59.570	254+46.260	3.6	3.6	15.24						1			1										
L	255+84.430	256+60.630	RT	76.200			256+22.530	256+60.630	3.6	3.6	15.24						1		1											
L	256+03.480	256+60.630	MEDIAN	57.150			256+60.630	256+60.630	3.6	3.6								1	1											
L	257+21.510	257+78.660	MEDIAN	57.150			257+21.510	257+21.510	3.6	3.6								1	1											
L	257+21.520	257+97.720	LT	76.200			257+59.620	257+21.520	3.6	3.6	15.24						1		1											
L	257+21.240	257+63.150	RT	41.91			257+59.340	257+63.150	3.6	3.6	15.24						1		1											
L	258+93.860	259+92.920	RT	99.06			259+31.960	259+92.920	3.6	3.6	15.24						1			1										
L	260+74.950	266+61.690	RT	586.74	30.48		261+13.050	266+61.690	3.6	3.6	15.24						1													
L	261+87.590	266+37.170	LT	449.58			265+99.070	261+87.590	3.6	3.6	15.24						1			1										
Y17	10+46.060	11+90.840	RT	144.78	34.29		11+33.690		3.6	3.6	15.24						1													
Y20	10+16.590	10+66.120	LT	49.53	7.62				3.6	3.6	15.24						1													
Y17	10+36.390	10+97.350	LT	60.96	26.67				3.6	3.6	15.24																			
L	267+19.800	267+46.470	RT	26.67					3.6	3.6	15.24									1										
SHEET 1 SUBTOTAL				13628.670	205.740											8	48	10	26	40	1			4	41.077'					

RD244219

COMPUTED BY:	RPS	DATE:	5/9/08
CHECKED BY:	JBM	DATE:	5/14/08

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	3-E

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
W = TOTAL WIDTH OF FLARE FROM BEGIN

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	B-77	GRAU 350	M-350	TYPE III	CAT-1	AT-I	BIC		G	NG						
TOTALS				13628.670	205.74											8	48	10	26	40	1				4	41.077m					
			ANCHORS																												
		GRAU-350	48@15.24	-731.520																											
		M-350	10@11.43=	-114.300																											
		TYPE III	26@5.715=	-148.590																											
		CAT-1	40@1.005	-40.200																											
		AT-1	1@1.005	-1.005																											
		B-77	8@5.715	-45.72																											
		IMPCT ATT TYPE 350	4@6.4	-25.60																											
		GRAND TOTALS		12520.42	205.74											8	48	10	26	40	1				4	41.077m					
		SAY=		12531.09	210											8	48	10	26	40	1				4	42m					
		ADD 10 GUARDRAIL POSTS																													

GUIDERAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS											CABLE GUIDERAIL TOTAL DISTANCE	CABLE GUIDERAIL PAY LIMITS	ADDITIONAL GUIDERAIL POSTS	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	B-77	GRAU 350	M-350	TYPE III	CAT-1	AT-I	BIC	AT-I	GUIDE RAIL					
	102+80.000	107+80.000	MEDIAN																					2		500.000	484.760		CABLE GUIDERAIL
	107+80.000	112+80.000	MEDIAN																					2		500.000	484.760		CABLE GUIDERAIL
L	112+80.000	117+80.000	MEDIAN																					2		500.000	484.760		CABLE GUIDERAIL
L	117+80.000	122+64.060	MEDIAN																					2		484.060	468.820		CABLE GUIDERAIL
L	124+59.300	126+33.840	MEDIAN																					2		174.540	159.300		CABLE GUIDERAIL
L	133+96.000	139+25.000	MEDIAN																					2		529.000	513.760		CABLE GUIDERAIL
L	139+25.000	144+50.000	MEDIAN																					2		525.000	509.760		CABLE GUIDERAIL
L	144+50.000	149+60.000	MEDIAN																					2		510.000	494.760		CABLE GUIDERAIL
L	149+60.000	155+00.000	MEDIAN																					2		540.000	524.760		CABLE GUIDERAIL
L	155+00.000	160+25.000	MEDIAN																					2		525.000	509.760		CABLE GUIDERAIL
L	160+25.000	165+50.000	MEDIAN																					2		525.000	509.760		CABLE GUIDERAIL
L	165+50.000	170+84.140	MEDIAN																					2		534.140	518.900		CABLE GUIDERAIL
L	178+33.310	180+68.273	MEDIAN																					1		234.963	227.343		CABLE GUIDERAIL
L	180+68.270	180+66.801	MEDIAN																					0		0.000	0.000		CABLE GUIDERAIL
L	180+66.801	184+10.000	MEDIAN																					1		343.199	335.579		CABLE GUIDERAIL
L	184+10.000	189+80.000	MEDIAN																					2		570.000	554.760		CABLE GUIDERAIL
L	189+80.000	195+47.520	MEDIAN																					2		567.520	552.280	3	CABLE GUIDERAIL
L	196+03.990	199+02.730	MEDIAN																					2		298.740	283.500	3	CABLE GUIDERAIL
L	199+93.340	205+50.000	MEDIAN																					2		556.660	541.420		CABLE GUIDERAIL
L	205+50.000	211+00.000	MEDIAN																					2		550.000	534.760		CABLE GUIDERAIL
L	211+00.000	216+30.130	MEDIAN																					2		530.130	514.890	3	CABLE GUIDERAIL
L	216+91.050	222+73.410	MEDIAN																					2		582.360	567.120	3	CABLE GUIDERAIL
L	223+34.280	228+10.000	MEDIAN																					2		475.720	460.480		CABLE GUIDERAIL
L	228+10.000	232+85.000	MEDIAN																					2		475.000	459.760		CABLE GUIDERAIL
L	232+85.000	237+69.030	MEDIAN																					2		484.030	468.790		CABLE GUIDERAIL
L	238+24.990	242+10.000	MEDIAN																					2		385.010	369.770		CABLE GUIDERAIL
L	242+10.000	245+70.530	MEDIAN																					2		360.530	345.290		CABLE GUIDERAIL
L	246+12.710	251+35.000	MEDIAN																					2		522.290	507.050		CABLE GUIDERAIL
L	251+35.000	256+58.260	MEDIAN																					2		523.260	508.020		CABLE GUIDERAIL
L	257+23.750	261+04.260	MEDIAN																					2		380.510	365.270		CABLE GUIDERAIL
L	268+89.910	269+77.850	MEDIAN																					2		87.940	72.700		
PROJECT TOTALS																								58		13774.602	13332.642	12	
																						SAY		58			13,400.00	12	

COMPUTED BY: SEC DATE: 2/08
CHECKED BY: JT DATE: 2/08

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	3-F

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC METERS

LINE	STATION	STATION	UNCL. EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
L	126+20.000	134+20.000	802		5149	4347	
SUBTOTAL			802		5149	4347	
L	170+80.000	178+40.000	64		8273	8209	
SUBTOTAL			64		8273	8209	
L	260+80.000	267+36.106	504		2535	2031	
Y16	10+40.000	13+72.604	2613		64		2549
Y17	10+46.020	13+60.000	904		7614	6710	
Y20	10+07.215	11+40.000	1190		2742	1552	
Y21	10+03.600	10+37.000	7		437	430	
DR3	10+03.600	11+68.400	622		17		605
SUBTOTAL			5840		13409	10723	3154
SBL(NBL)	267+36.106	274+00.000	53036		8508		44528
SUBTOTAL			53036		8508		44528
LDET	11+26.000	15+27.000	51909		25		51884
SUBTOTAL			51909		25		51884
PROJECT TOTAL			111,651		35,364	23,279	99,566
WASTE IN LIEU OF BORROW						-23,279	-23,279
GRAND TOTALS			111,651		35,364	0	76,287
SAY:			111,700				76,300
SHOULDER BORROW			31,500				
UNDERCUT			4,000				
DDE			800				

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROFIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

SUMMARY OF ASPHALT PAVEMENT REMOVAL

IN SQUARE METERS

LOCATION	ASPHALT REMOVAL
-SBL- STA. 269+59.000 TO STA. 273+64.000 RT	2732.52
-LDET- (EXIST. NC 16) STA. 10+89.000 TO STA 14+98.000 LT	951.96
-Y20- STA. 10+14.000 TO STA 10+30.000 RT	169.50
-Y16- STA. 11+02.000 TO STA. 11+06.000 CL	3.29
-Y16- STA. 11+10.000 TO STA. 11+47.000 CL	190.74
-Y16- STA 11+47.000 TO STA 11+65.000 CL	29.70
-LDET- STA 11+34.000 TO STA 15+93.000 LT	1561.93
TOTAL	5,639.64 m^2
SAY	5,650 m^2

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COMPUTED BY: SEC DATE: 1/08
CHECKED BY: JT DATE: 1/08

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	3-G

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SHOULDER DRAINS

IN METERS

LOCATION	SHOULDER DRAIN PIPE (M)	SHOULDER DRAINS (M)	OUTLET PIPES (M)	CONCRETE PADS (EA)
-L- LT. OUTSIDE SHOULDER DRAINS				
-L- STA. 114+40 TO 119+10	470	470	81.900	3
-L- STA. 120+10 TO 122+46	236	236	9.700	
-L- STA. 140+90 TO 144+50	360	360	79.100	4
-L- STA. 156+60 TO 159+40	280	280	11.900	
-L- STA. 182+30 TO 185+00	270	270	12.200	
-L- STA. 190+20 TO 192+50	230	230	3.100	
-L- STA. 206+70 TO 208+70	200	200	23.200	1
-L- STA. 219+70 TO 222+68	298	298	44.400	1
-L- STA. 223+35 TO 225+00	165	165	9.300	
-L- STA. 254+20 TO 256+50	230	230	16.000	
-L- STA. 258+20 TO 261+00	280	280	36.100	2
-L- RT. OUTSIDE SHOULDER DRAINS				
-L- STA. 120+10 TO 122+95	285	285	44.600	1
-L- STA. 141+00 TO 144+80	380	380	56.600	4
-L- STA. 156+60 TO 159+40	280	280	12.000	
-L- STA. 182+30 TO 185+40	310	310	19.400	1
-L- STA. 190+20 TO 193+40	320	320	11.900	
-L- STA. 198+00 TO 199+00	100	100	1.600	
-L- STA. 200+40 TO 203+20	280	280	6.900	
-L- STA. 219+80 TO 222+68	288	288	33.700	1
-L- STA. 223+35 TO 225+00	165	165	9.200	
-L- STA. 238+30 TO 240+30	200	200	43.500	2
-L- STA. 246+30 TO 247+40	110	110	2.900	
-L- STA. 254+50 TO 256+40	190	190	23.500	1
-L- RT. MEDIAN SHOULDER DRAINS				
-L- STA. 114+80 TO 116+80	200	200	17.300	
-L- STA. 258+20 TO 261+00	280	280	25.900	
-L- LT. MEDIAN SHOULDER DRAINS				
-L- STA. 198+20 TO 199+00	100	100	7.800	
-L- STA. 200+40 TO 203+20	280	280	25.900	
-L- STA. 246+30 TO 247+40	110	110	8.600	
TOTAL	6897	6897	678.2	21
SAY	6950	6950	685	22

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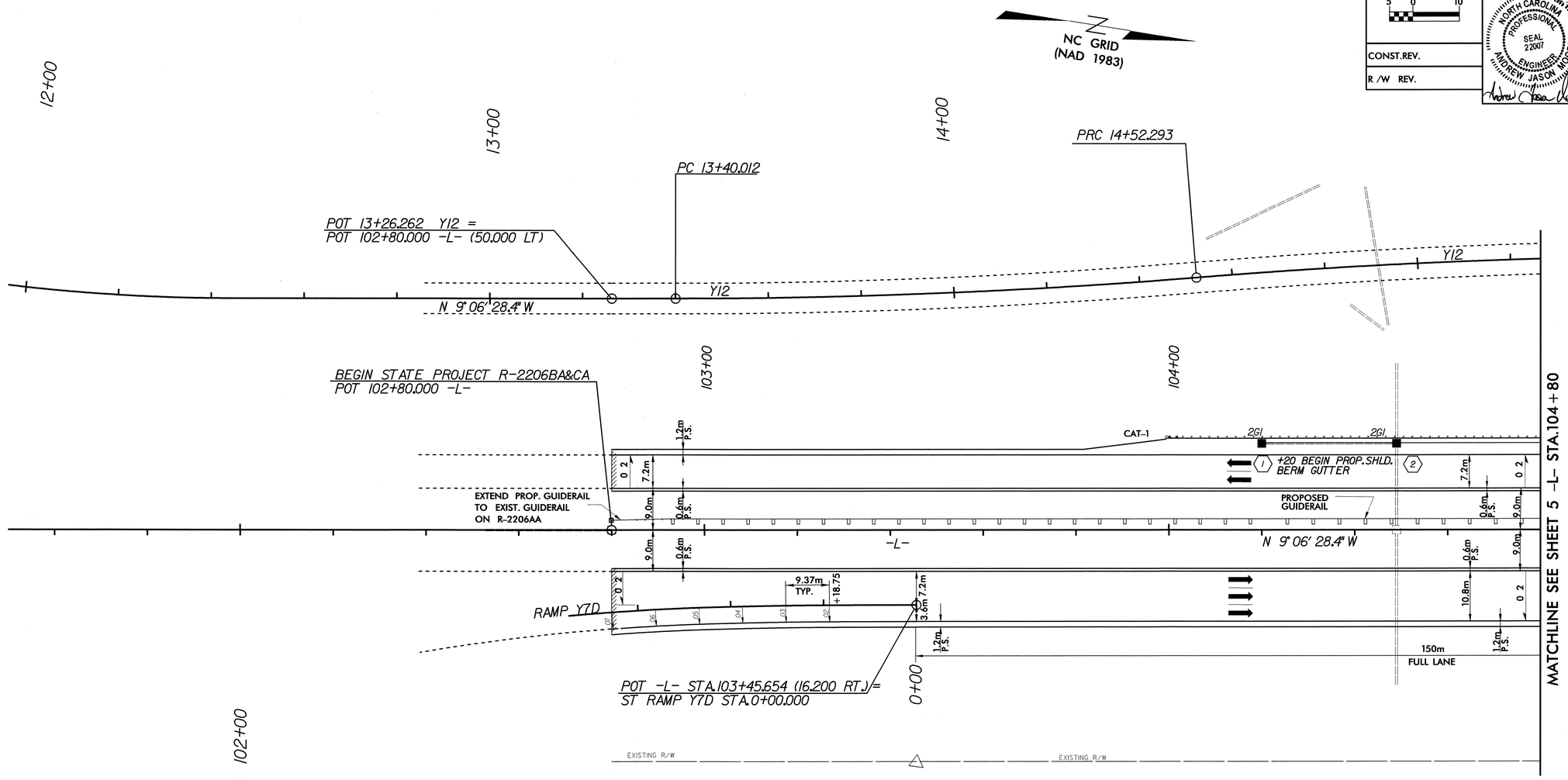
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	4
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/9/08	
R /W REV.		



DATUM DESCRIPTION

NC GPS FOR MONUMENT " R2206-12 "
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: N 193442.3400 (m) EASTING: E 426931.0780 (m)

(GROUND TO GRID) IS: 0.99981237
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
" R2206-12 " TO BLL STATION 109 46.563 (-LBL- 220) IS
S 08°37' 06.6" E 2145.7598 m

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 1929

SEE SHEET 62 FOR -L- PROFILE

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	5
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

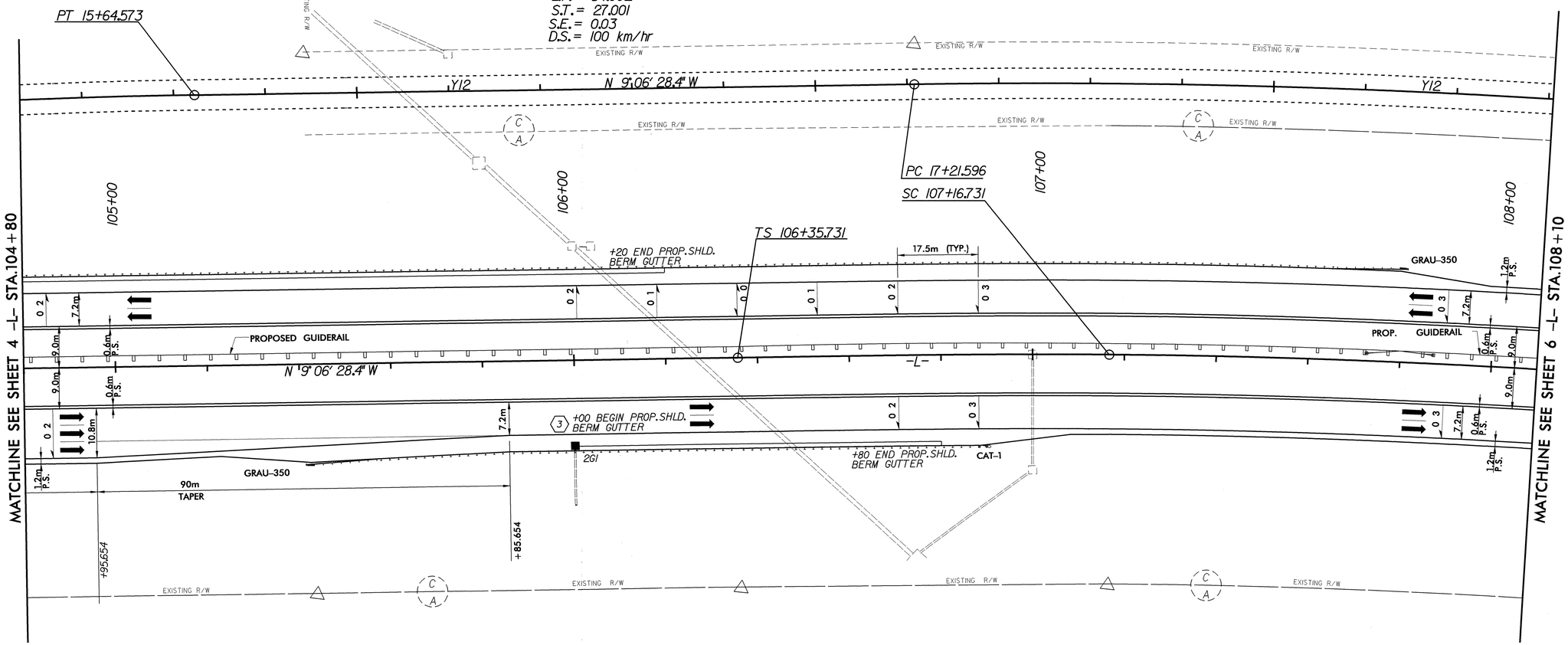
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/13/08

NC GRID (NAD 1983)



SEE SHEETS 62 & 63 FOR -L- PROFILE

REVISIONS

8/27/2007

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	6
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/13/08

REVISIONS

8/17/99

-L-

P.I. = 108+71.570
Δ_T = 12° 44' 13.8" (RT)
Δ_C = 10° 05' 06.7" (RT)
Rc = 1,750.000
Lc = 308.035
Tc = 154.416
Θs = 1° 19' 33.6"
Ls = 81.000
L.T. = 54.002
S.T. = 27.001
S.E. = 0.03
D.S. = 100 km/hr

NC GRID (NAD 1983)

POC Y12 19+65.014
POC -L- 109+10.600, 59.003 LT.

PT Y12 19+74.731

19+00

110+00

111+00

109+00

Y12

EXISTING R/W

EXIST. GUARDRAIL TERM. SECTION

MATCHLINE SEE SHEET 5 -L- STA.108+10

MATCHLINE SEE SHEET 7 -L- STA.111+40

PROPOSED GUIDERAIL

PROP. GUIDERAIL

17.5m (TYP.)

ST 111+05.766

N 3° 37' 45.4" E

CS 110+24.766

-L-

7.2m

9.0m

0.6m P.S.

1.2m P.S.

0 3

0 2

0 1

0 0

SEE SHEETS 63 & 64 FOR -L- PROFILE

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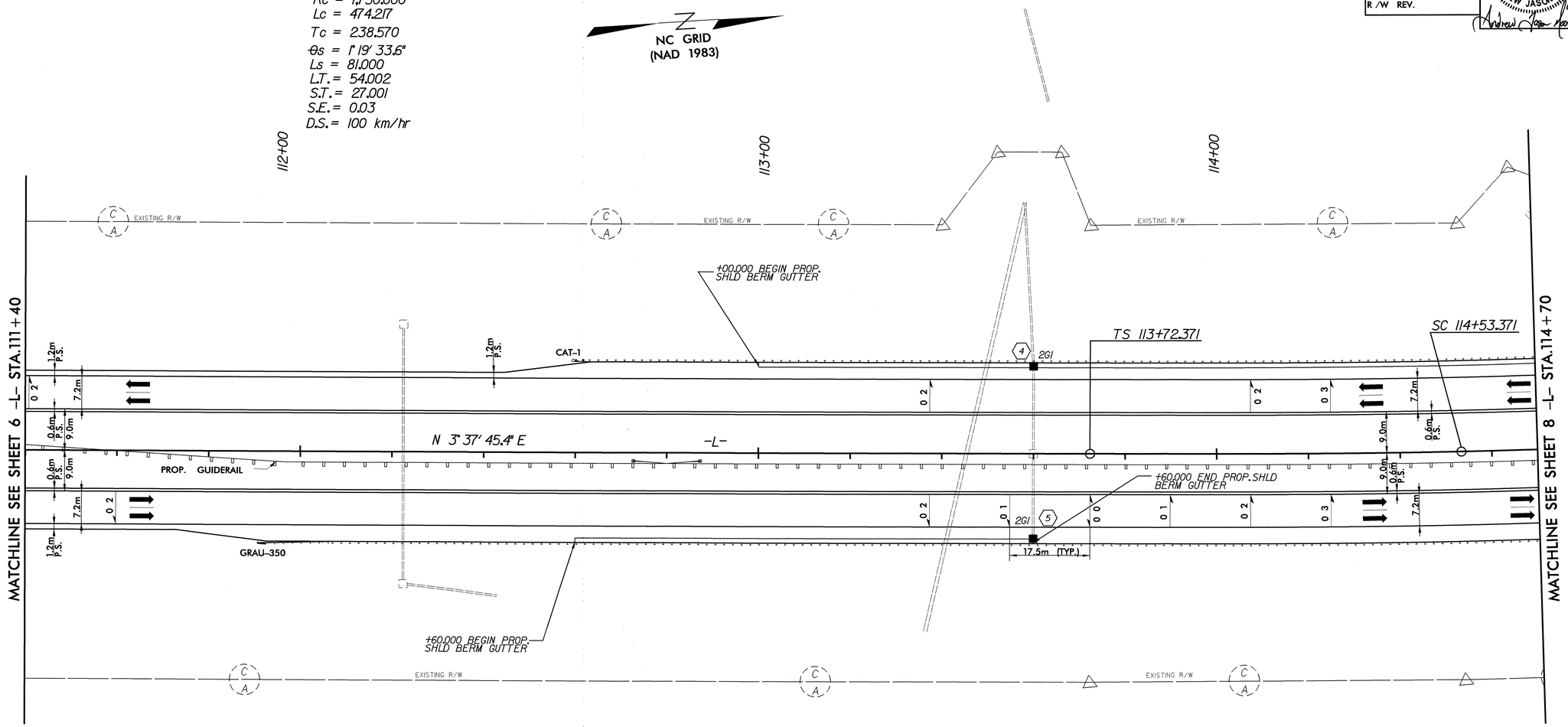
METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	7
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 5/13/08	

REVISIONS

8/17/99

-L-

P.I. = 116+92.856
Δ_T = 18° 10' 40.9" (LT)
Δ_C = 15° 31' 33.8" (LT)
Rc = 1,750.000
Lc = 474.217
Tc = 238.570
θ_s = 1° 19' 33.6"
Ls = 81.000
L.T. = 54.002
S.T. = 27.001
S.E. = 0.03
D.S. = 100 km/hr



SEE SHEETS 64 & 65 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	8
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R /W REV.	

METRIC

5 0 10

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 5/13/08

Andrew Jason Moore

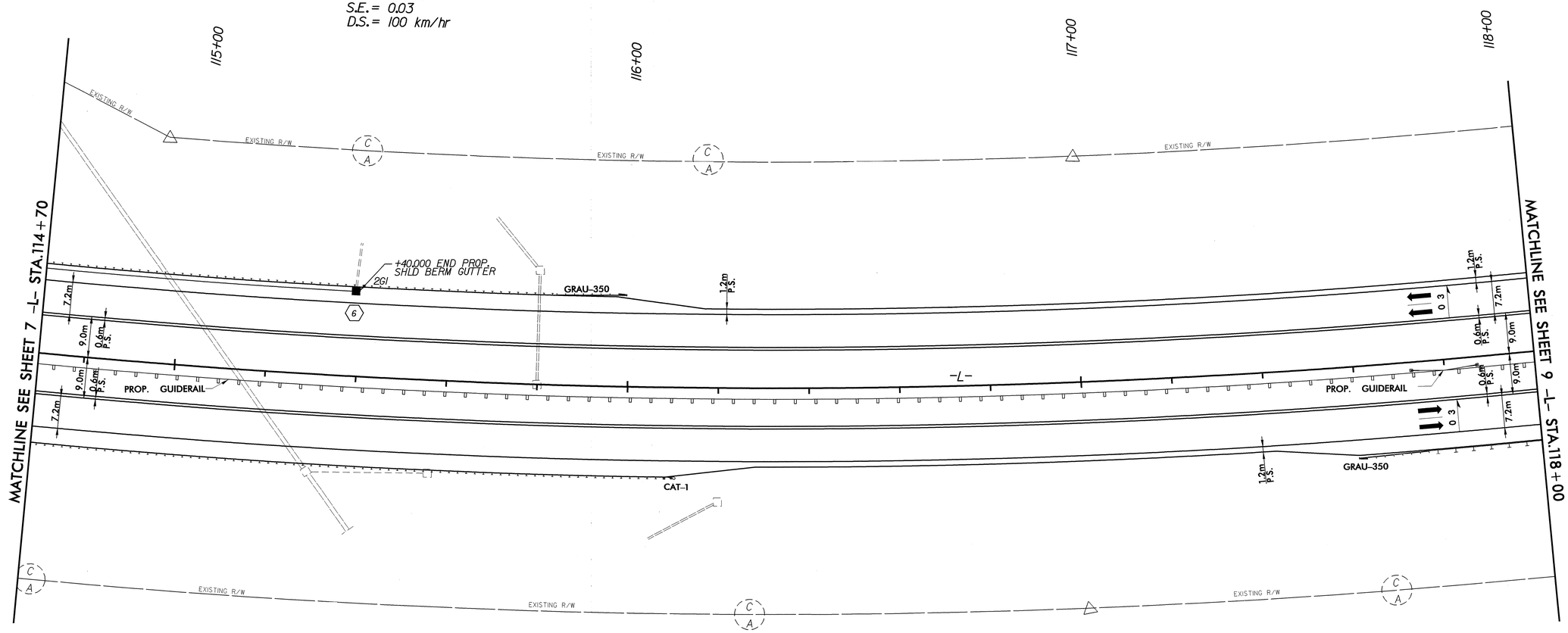
REVISIONS

8/17/00

-L-

P.I. = 116+92.856
Δ_T = 18° 10' 40.9" (LT)
Δ_c = 15° 31' 33.8" (LT)
Rc = 1,750.000
Lc = 474.217
Tc = 238.570
θ_s = 1° 19' 33.6"
Ls = 81.000
L.T. = 54.002
S.T. = 27.001
S.E. = 0.03
D.S. = 100 km/hr

NC GRID (NAD 1983)



SEE SHEETS 65 & 66 FOR -L- PROFILE

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$$USERNAME$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	9
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	

-L-
P.I.= 116+92.856
Δ_T= 18° 10' 40.9" (LT)
Δ_C= 15° 31' 33.8" (LT)
Rc = 1,750.000
Lc = 474.217
Tc = 238.570
θ_s = 1° 19' 33.6"
Ls = 81.000
L.T.= 54.002
S.T.= 27.001
S.E.= 0.03
D.S.= 100 km/hr

NC GRID (NAD 1983)

118+00 119+00 120+00 121+00

EXISTING R/W

ST 120+08.588

+15.000 BEGIN PROP. SHLD BERM GUTTER

+80.000 END PROP. SHLD BERM GUTTER

CAT-1

2GI

7

1.2m P.S.

7.2m

9.0m

0.6m P.S.

0 3 0 2 0 2

N 14° 32' 55.5" W

-L-

PROP. GUIDERAIL

0 3 0 2 0 1 0 0 0 1 0 2

17.5m (TYP.)

GRAU-350

CS 119+27.588

MATCHLINE SEE SHEET 8 -L- STA.118+00

MATCHLINE SEE SHEET 10 -L- STA.121+30

REVISIONS

SEE SHEET 66 & 67 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	10
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

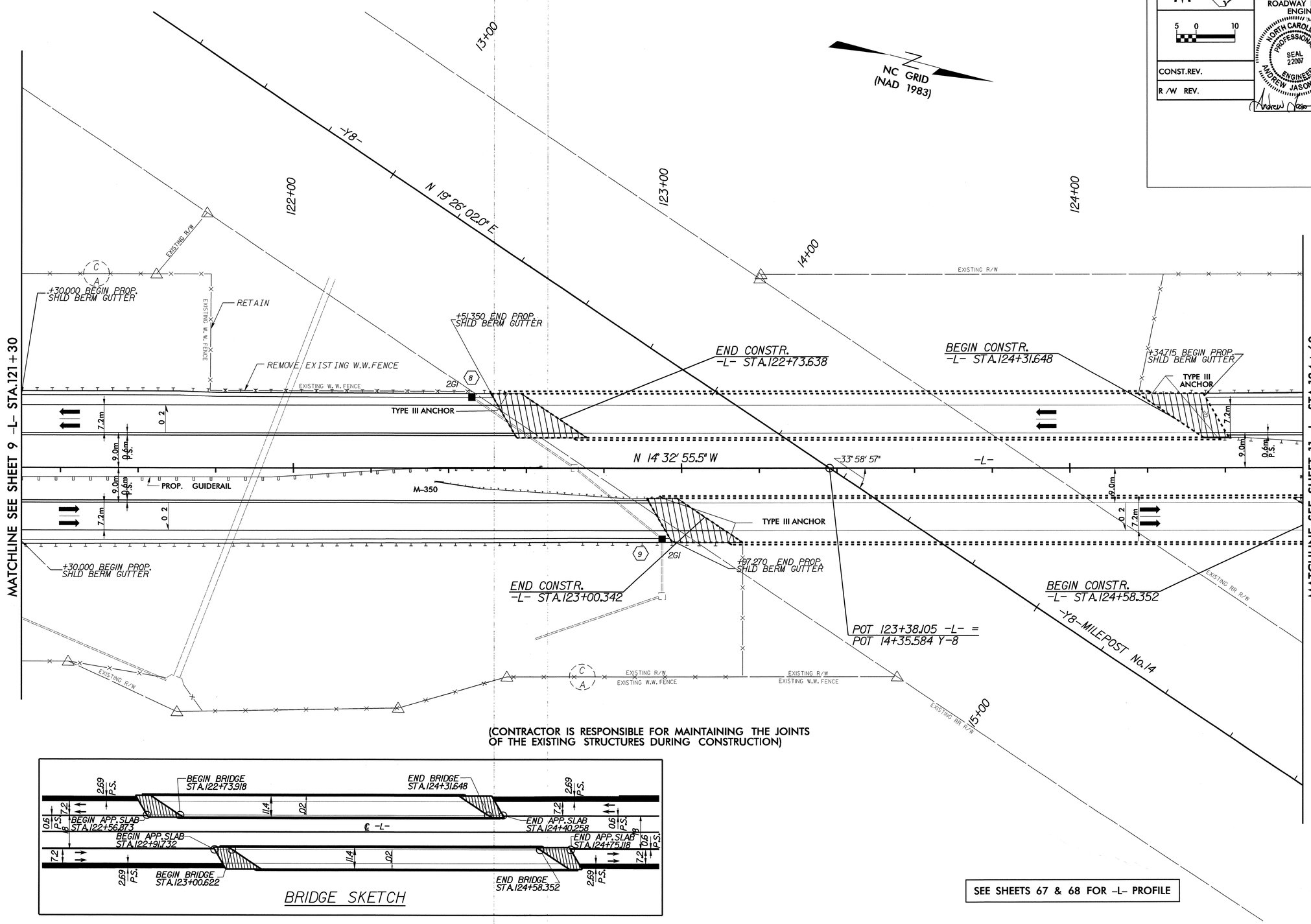
METRIC

5 0 10

CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE



(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURES DURING CONSTRUCTION)

SEE SHEETS 67 & 68 FOR -L- PROFILE

REVISIONS

29-MAY-2008 16:05
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	11
R /W SHEET NO.	

METRIC

10 0 20

CONST.REV.

R /W REV.

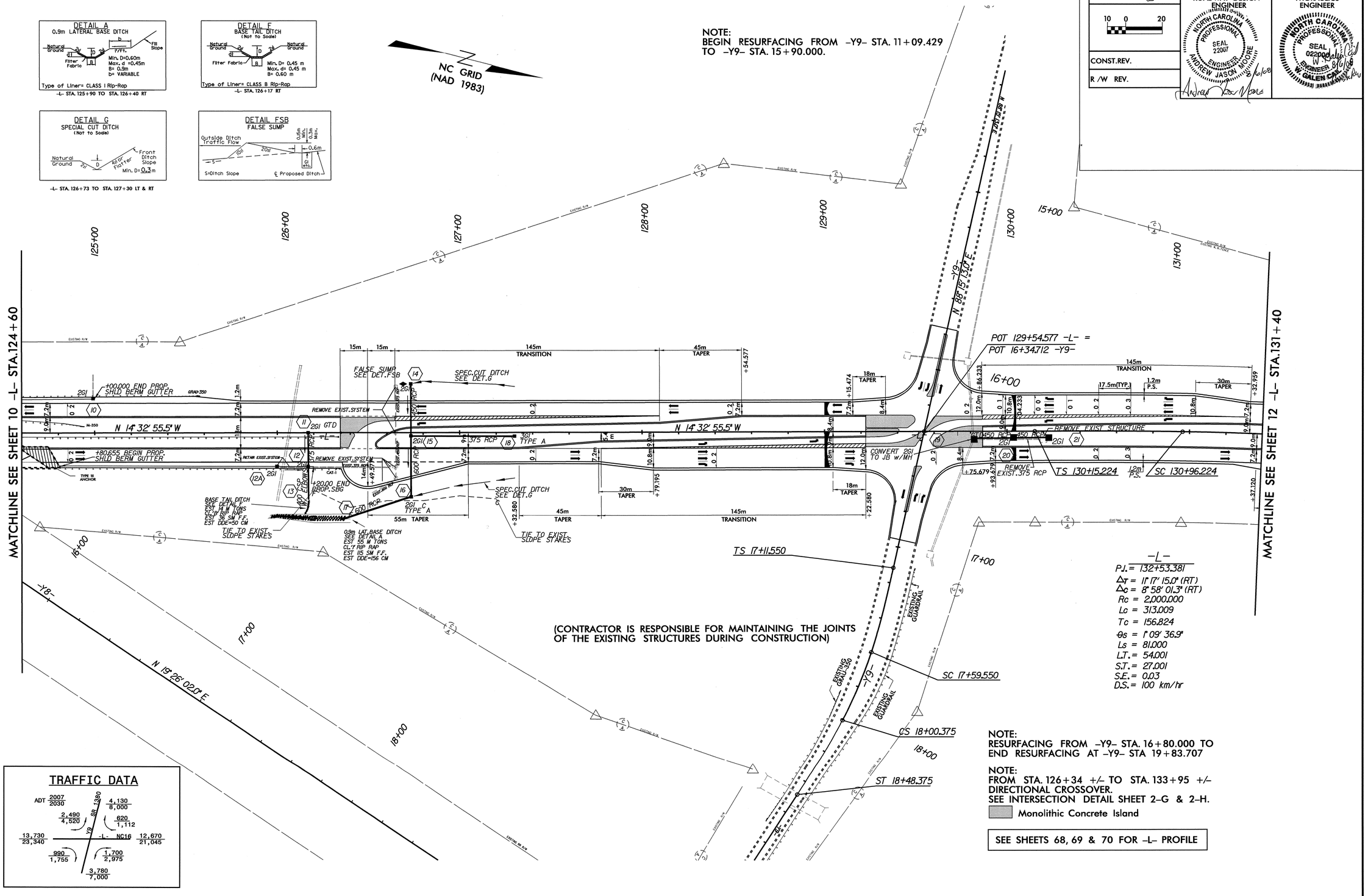
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 8/6/08

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAUDILL 8/6/08

REVISIONS



NOTE:
RESURFACING FROM -Y9- STA. 16+80.000 TO END RESURFACING AT -Y9- STA 19+83.707

NOTE:
FROM STA. 126+34 +/- TO STA. 133+95 +/-
DIRECTIONAL CROSSOVER.
SEE INTERSECTION DETAIL SHEET 2-G & 2-H.

Monolithic Concrete Island

SEE SHEETS 68, 69 & 70 FOR -L- PROFILE

06-AUG-2008 15:29
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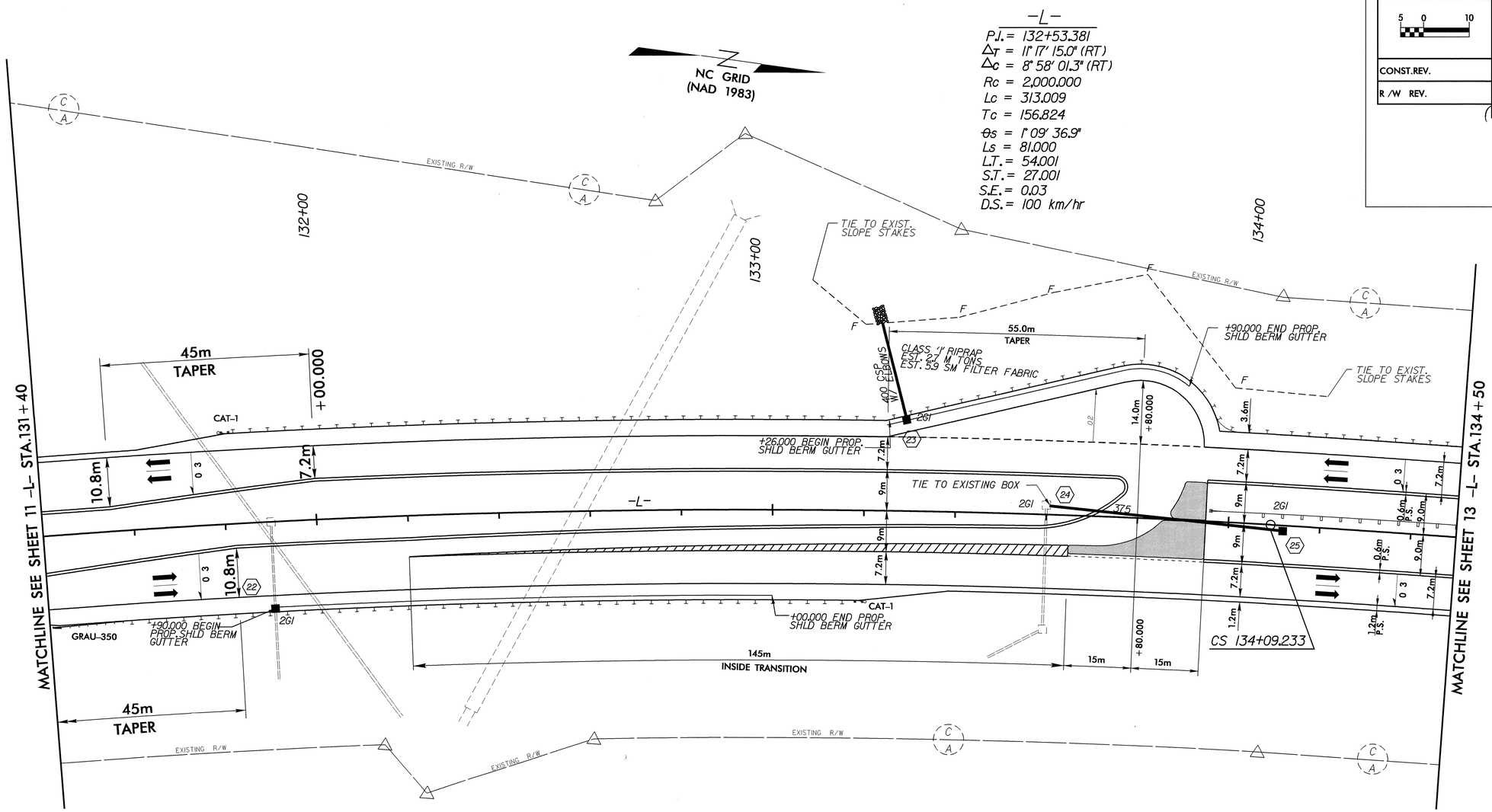
METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	12
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL 6/13/08



NOTE:
FROM STA. 126+34 +/- TO STA. 133+95 +/-
DIRECTIONAL CROSSOVER.
SEE INTERSECTION DETAIL SHEET 2-I .

Monolithic Concrete Island

SEE SHEET 70 & 71 FOR -L- PROFILE

REVISIONS

11-JUN-2008 14:32
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	13
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/13/08

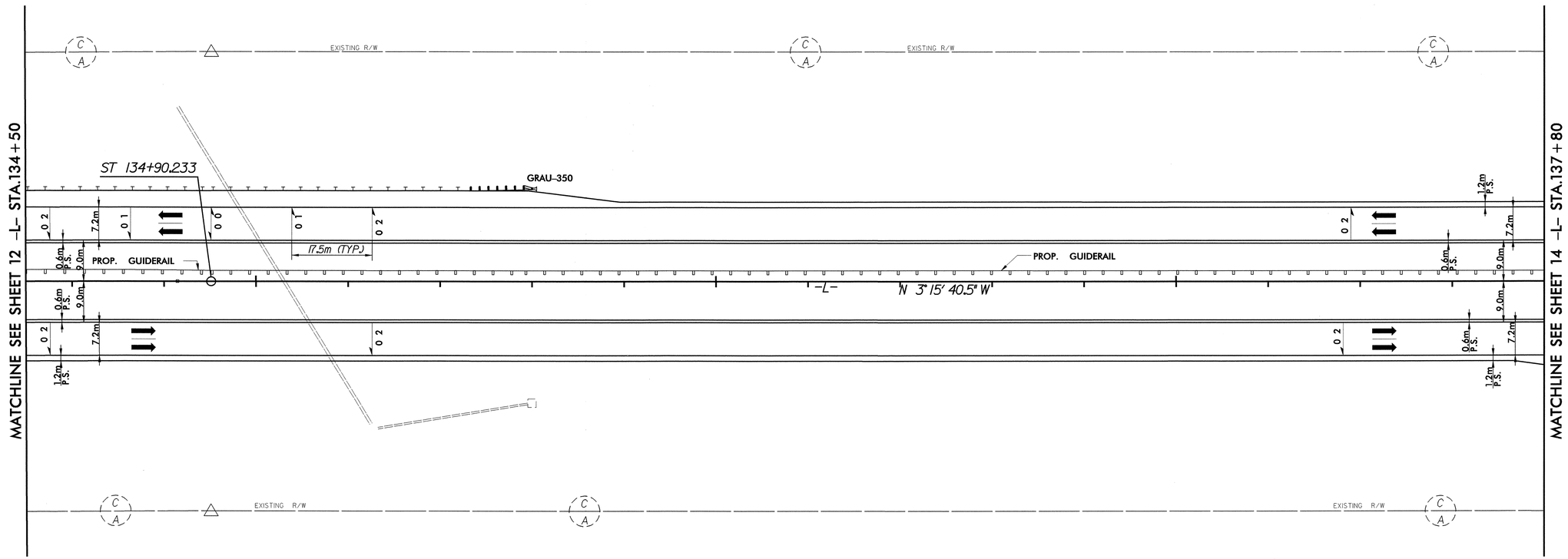
HYDRAULICS ENGINEER

REVISIONS

-L-

P.I. = 132+53.381
Δ_T = 11° 17' 15.0" (RT)
Δ_C = 8° 58' 01.3" (RT)
Rc = 2,000.000
Lc = 313.009
Tc = 156.824
θs = 1° 09' 36.9"
Ls = 81.000
L.T. = 54.001
S.T. = 27.001
S.E. = 0.03
D.S. = 100 km/hr

NC GRID (NAD 1983)



SEE SHEET 71 FOR -L- PROFILE

22-MAY-2008 17:09
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$$USERNAME$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	14
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R /W REV.	

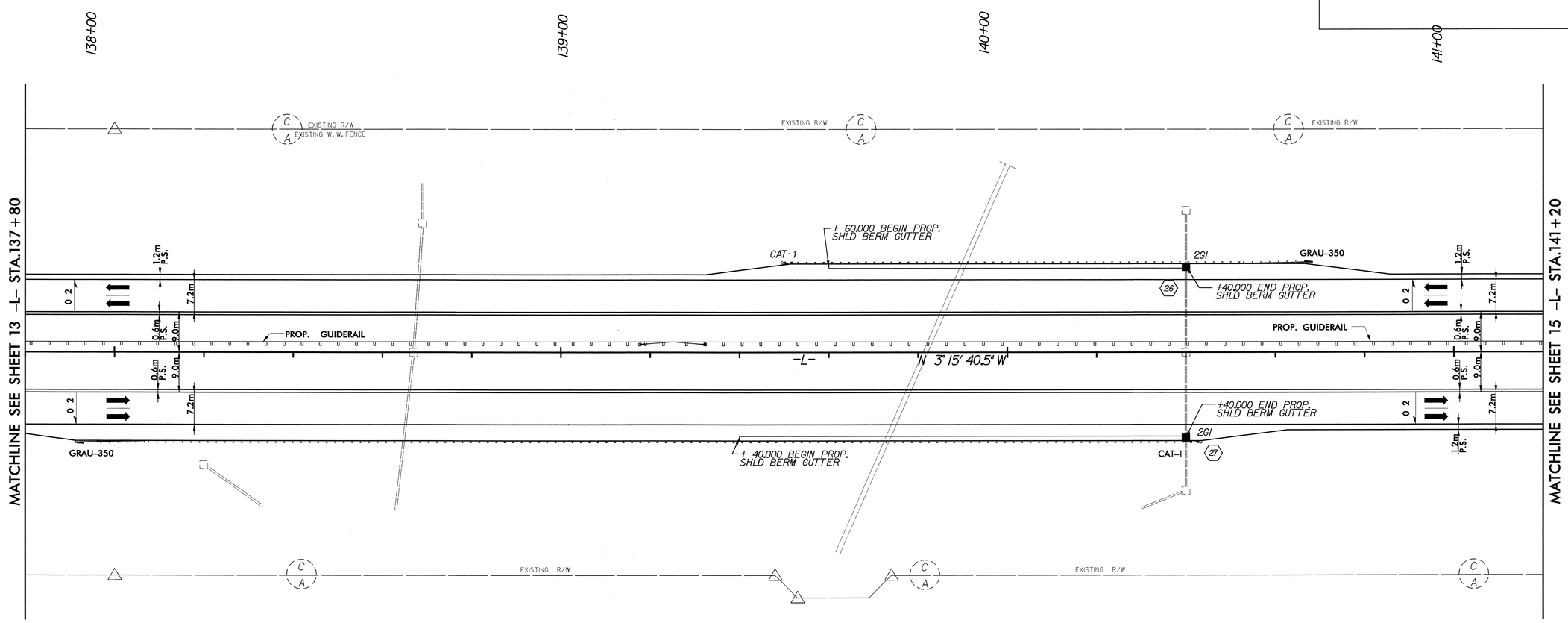
METRIC

5 0 10

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

NC GRID
(NAD 1983)



SEE SHEETS 71 & 72 FOR -L- PROFILE

REVISIONS

8/17/99

22-MAY-2008 17:09
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	15
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

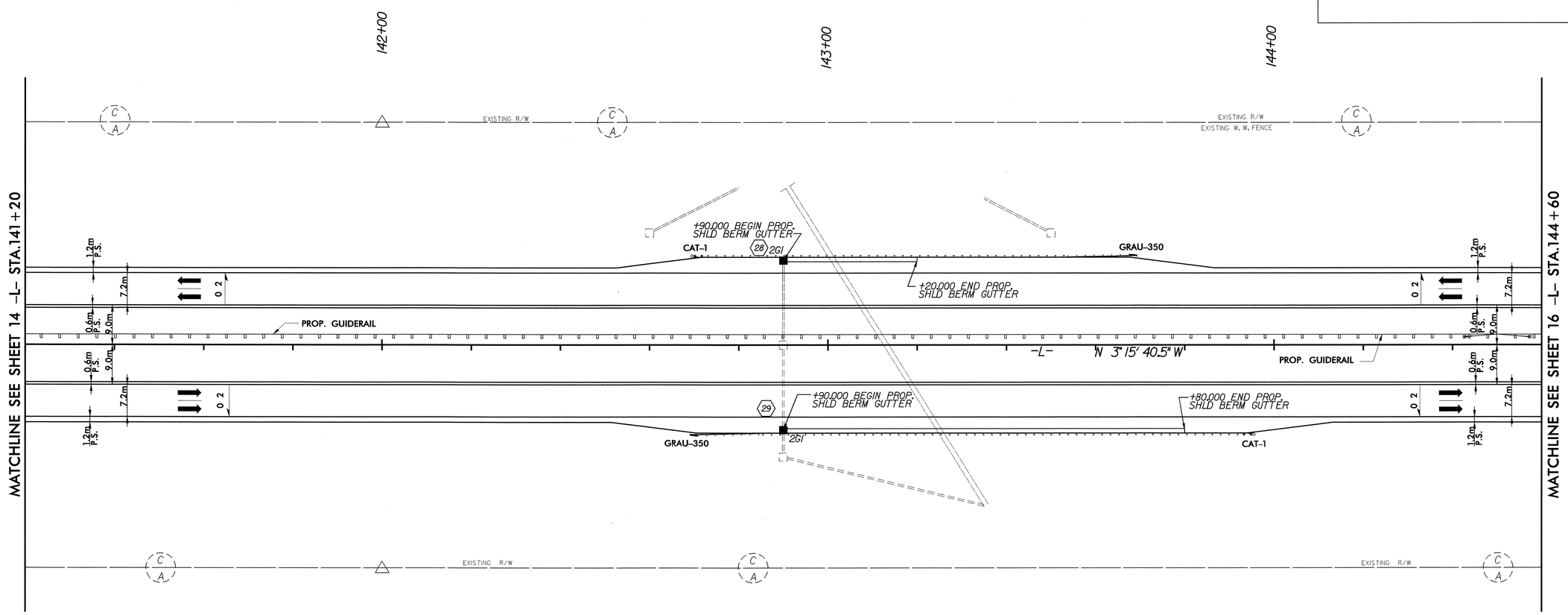
NORTH CAROLINA PROFESSIONAL SEAL 2.2007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 10/1/08

HYDRAULICS ENGINEER

REVISIONS

NC GRID (NAD 1983)



SEE SHEETS 72 & 73 FOR -L- PROFILE

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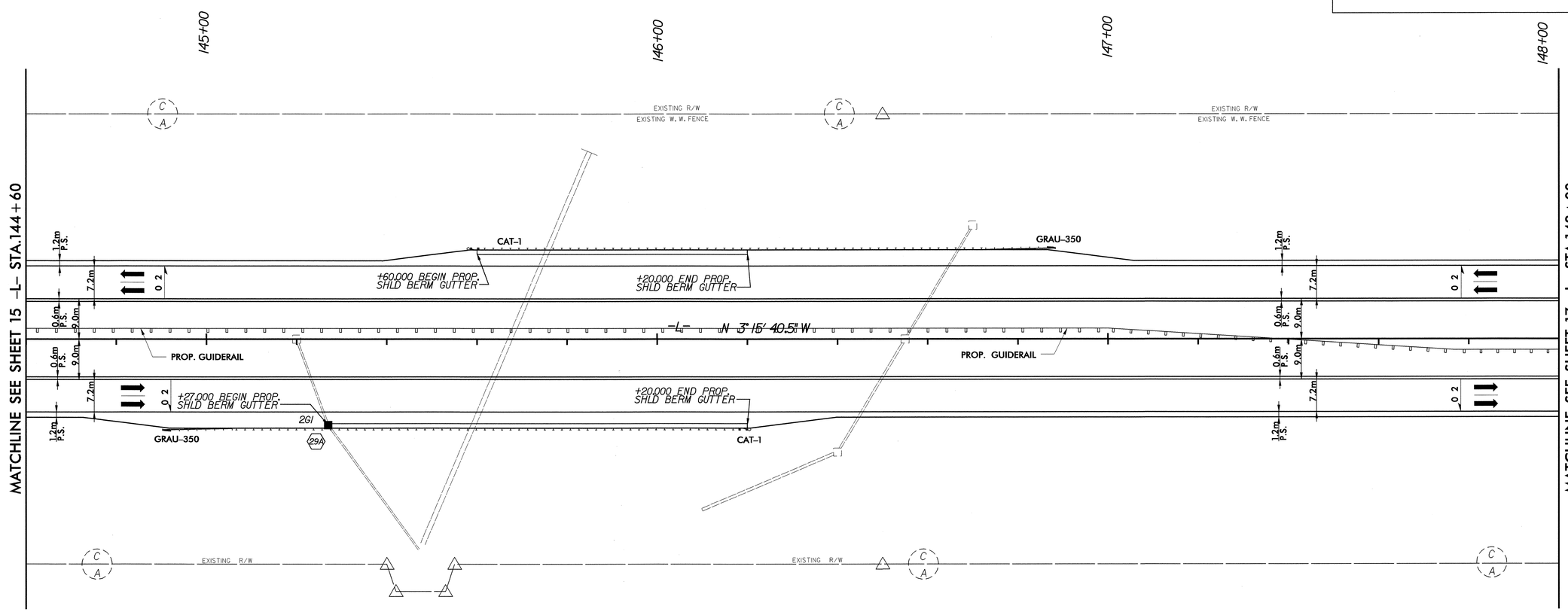
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	16
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	
R /W REV.		

NC GRID (NAD 1983)



SEE SHEETS 73 & 74 FOR -L- PROFILE

REVISIONS

12-JUN-2008 12:30
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METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	17
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/12/08	
R /W REV.		

NC GRID
(NAD 1983)

149+00

150+00

151+00

EXISTING R/W
EXISTING W. W. FENCE

MATCHLINE SEE SHEET 16 -L- STA.148+00

MATCHLINE SEE SHEET 18 -L- STA.151+30

1.2m P.S.
7.2m
0.2
0.6m P.S.
9.0m

CAT-1

+00.000 BEGIN PROP. SHLD BERM GUTTER

-L- N 3° 15' 40.5" W

PROP. GUIDERAIL

+80.000 BEGIN PROP. SHLD BERM GUTTER

GRAU-350

EXISTING R/W

SEE SHEETS 74 & 75 FOR -L- PROFILE

REVISIONS

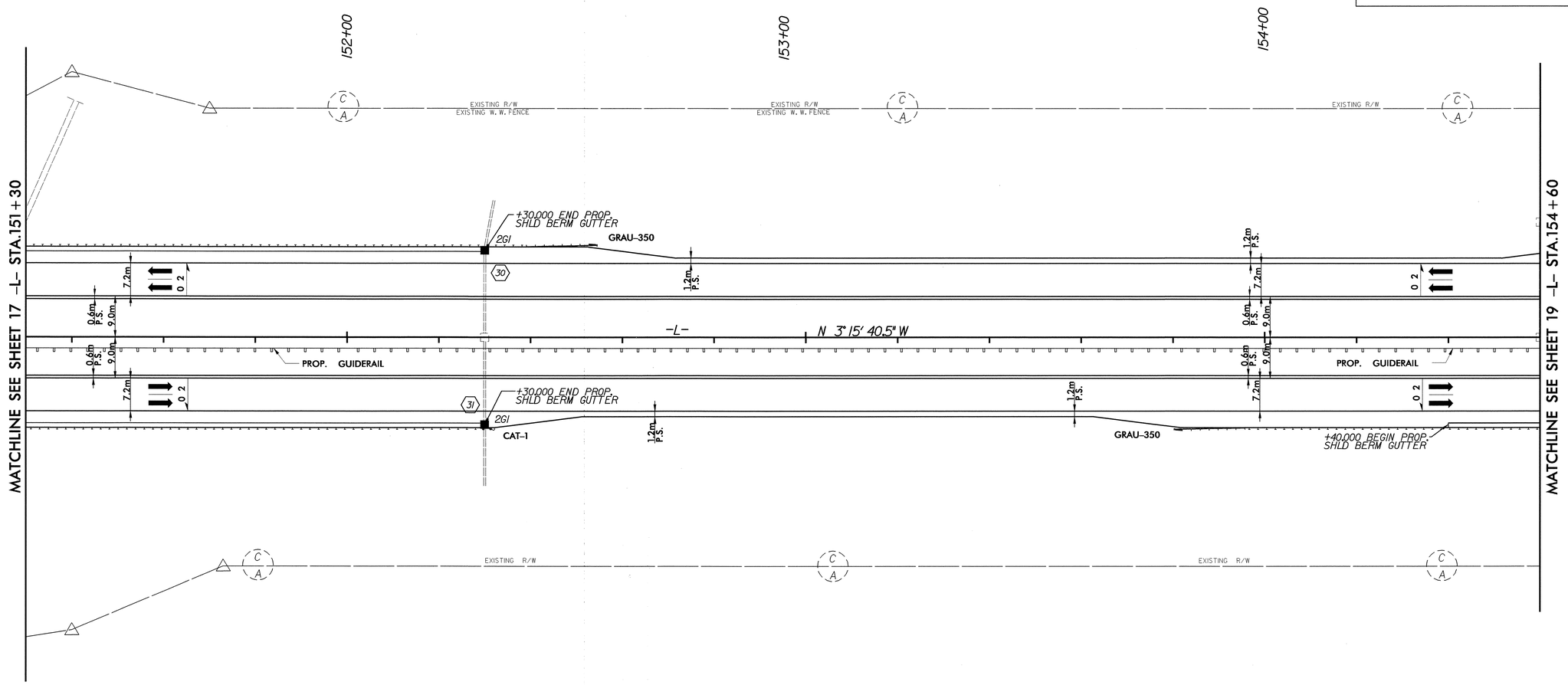
8/17/00

22-MAY-2008 17:09
R:\Roadway\Proj\r2206bc_rdy_psh_17.dgn
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	18
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	
R /W REV.		

REVISIONS

NC GRID
(NAD 1983)



SEE SHEETS 75 & 76 FOR -L- PROFILE

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METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	19
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	
R /W REV.	Andrew Jason Moore	

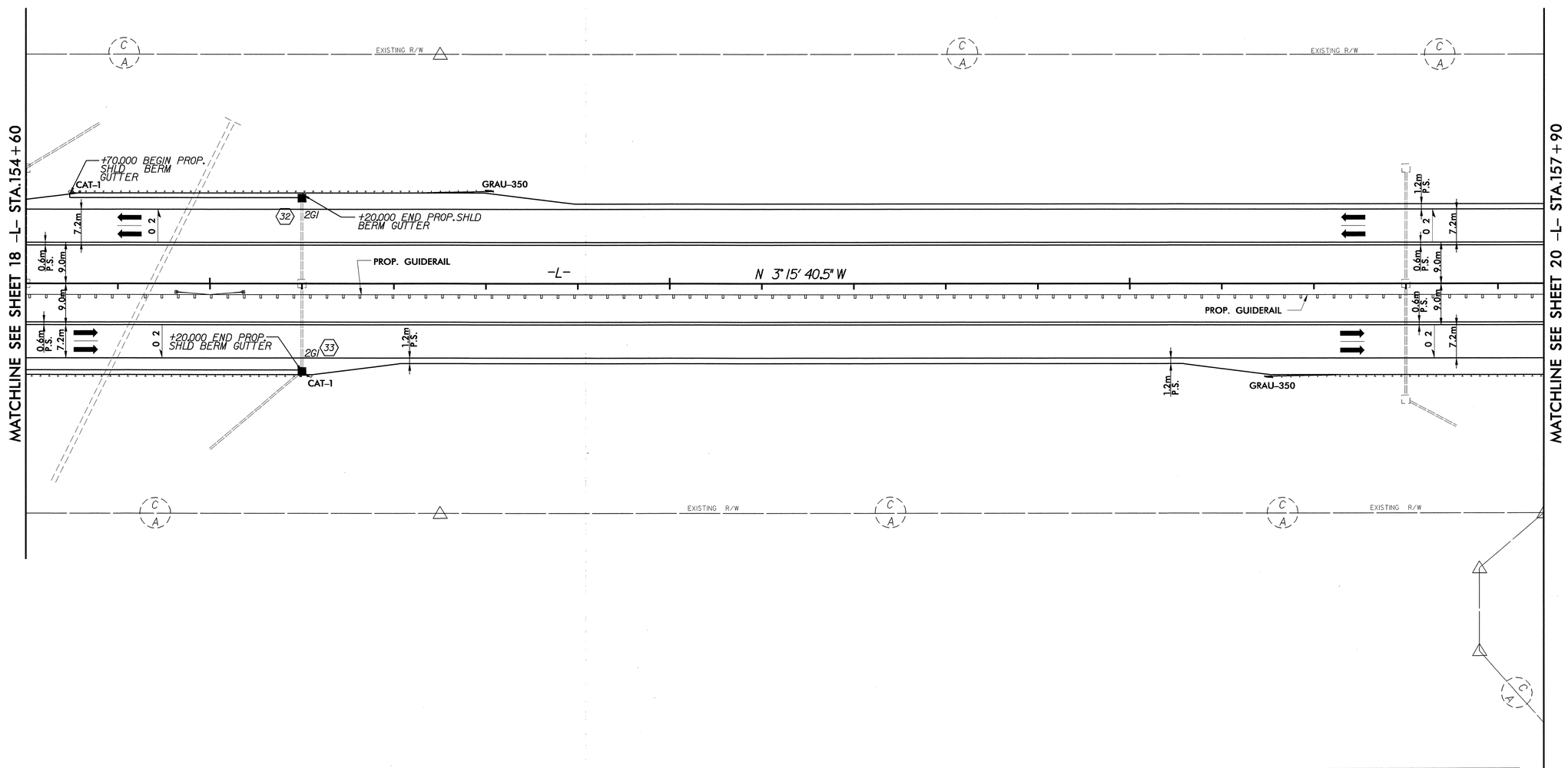
REVISIONS

NC GRID
(NAD 1983)

155+00

156+00

157+00



SEE SHEETS 76 & 77 FOR -L- PROFILE

22-MAY-2008 17:08
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	20
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

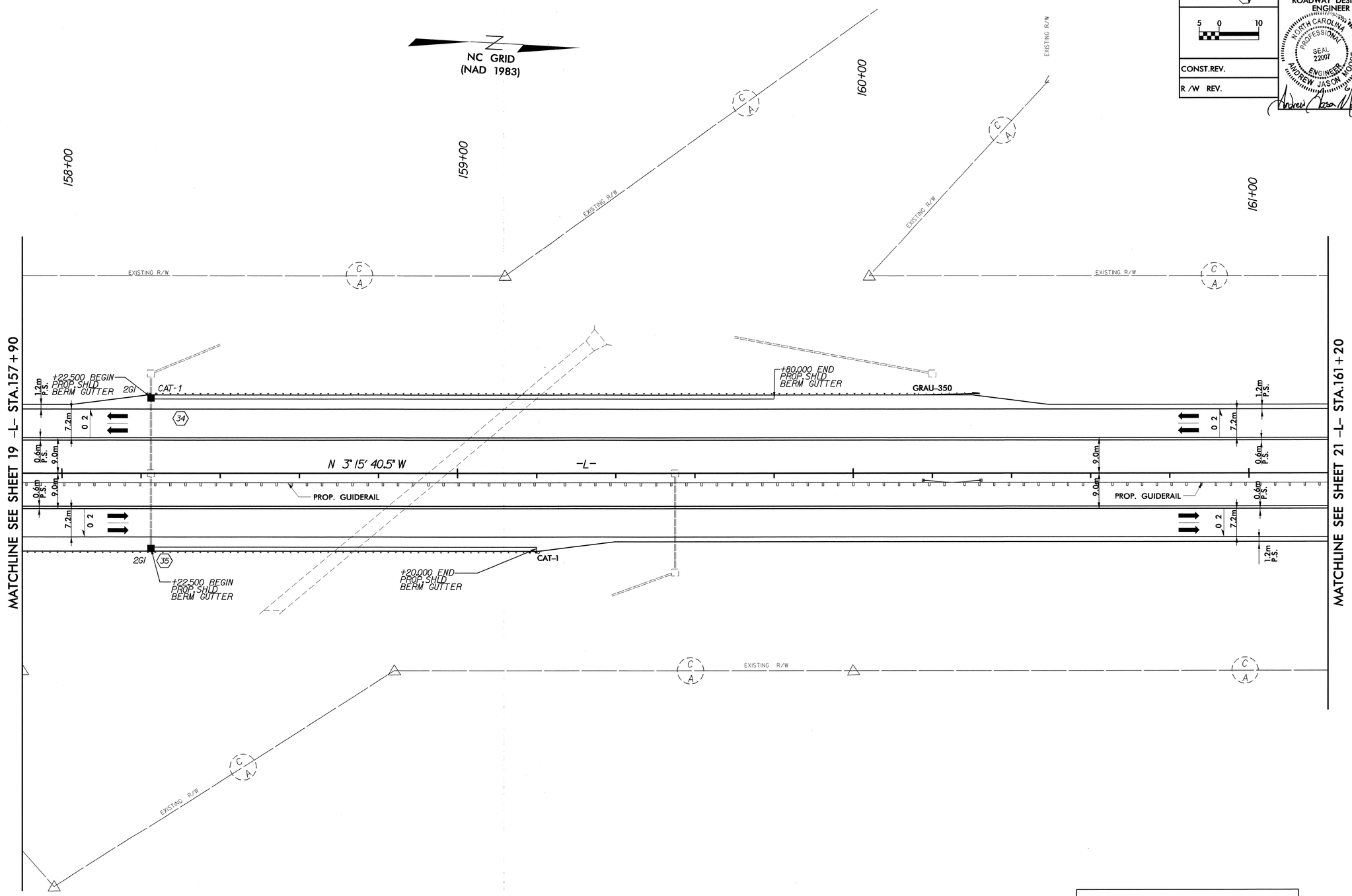
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/13/08

REVISIONS



SEE SHEETS 77 & 78 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	21
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

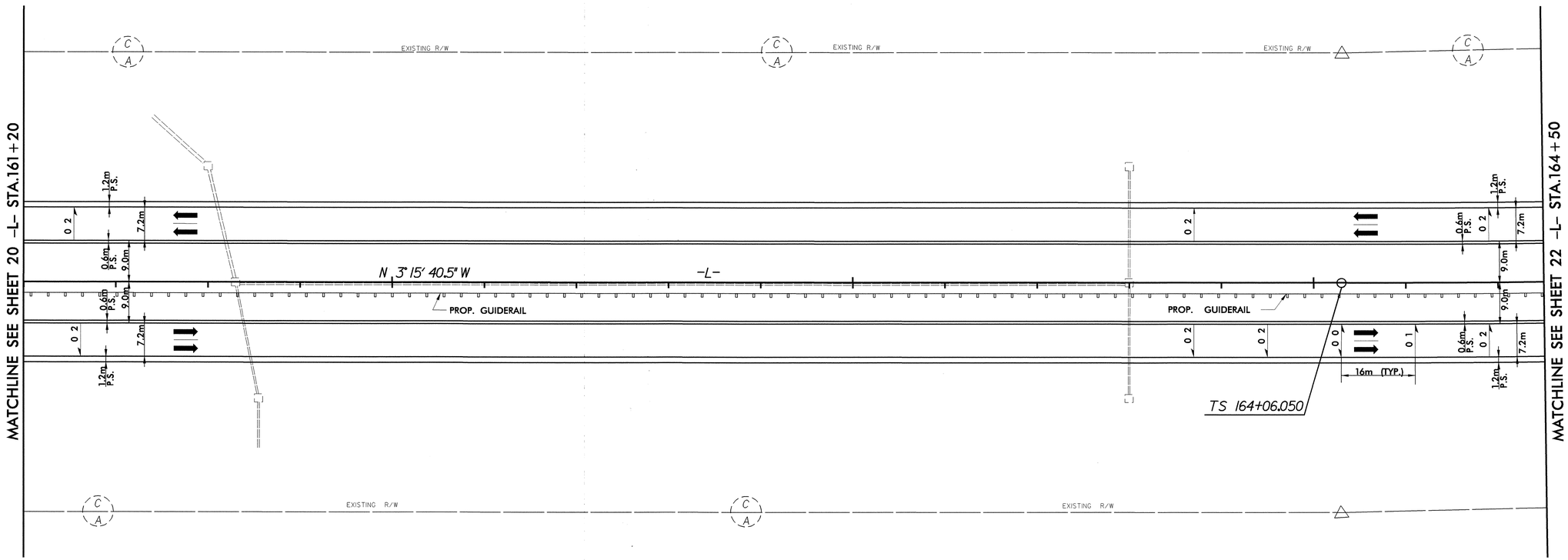
Andrew Jason Moore 6/13/08

REVISIONS

-L-

P.I. = 168+18.486
Δ_T = 54° 58' 09.4" (LT)
Δ_C = 47° 06' 41.6" (LT)
Rc = 700.000
Lc = 575.576
Tc = 305.179
θs = 3° 55' 43.9"
Ls = 96.000
L.T. = 64.016
S.T. = 32.014
S.E. = 0.06
D.S. = 100 km/hr

NC GRID (NAD 1983)



SEE SHEETS 78 & 79 FOR -L- PROFILE

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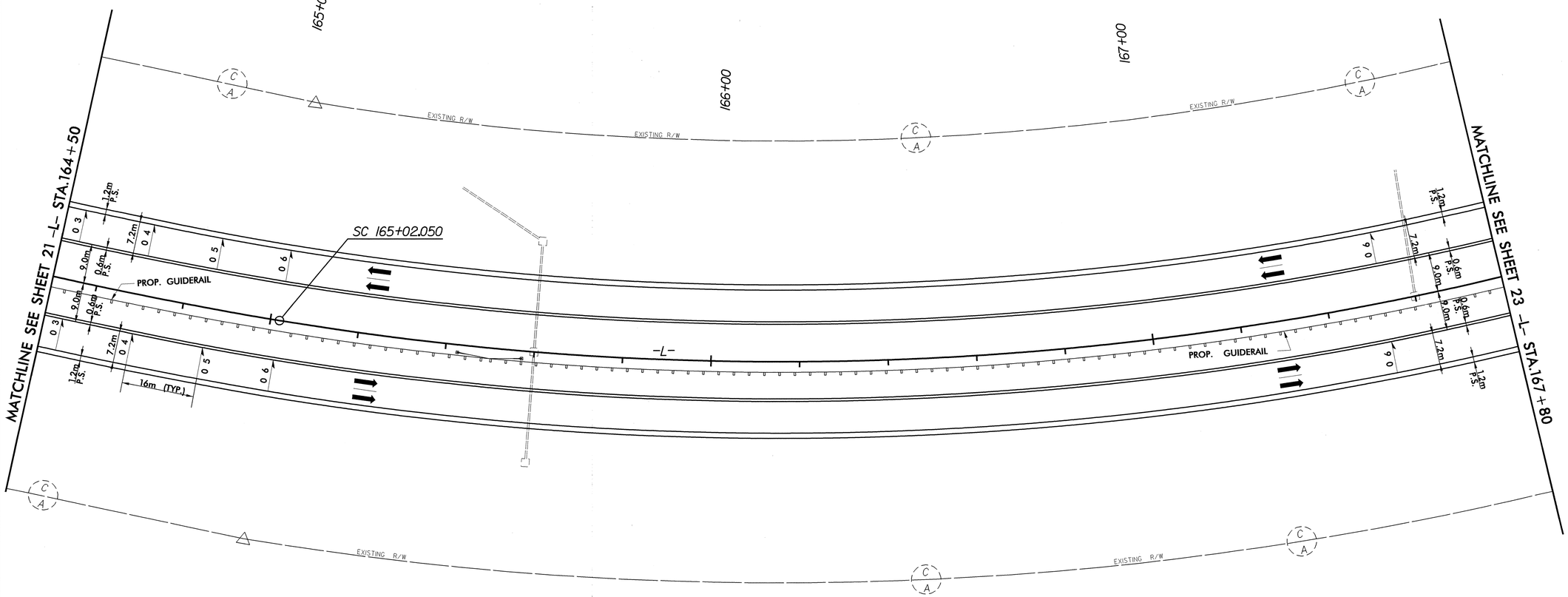
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	22
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE	
R /W REV.	Andrew Jason Moore 5/13/08	

REVISIONS

-L-

P.I. = 168+18.486
Δ_T = 54° 58' 09.4" (LT)
Δ_C = 47° 06' 41.6" (LT)
Rc = 700.000
Lc = 575.576
Tc = 305.179
θ_s = 3° 55' 43.9"
Ls = 96.000
L.T. = 64.016
S.T. = 32.014
S.E. = 0.06
D.S. = 100 km/hr

NC GRID (NAD 1983)



SEE SHEETS 79 & 80 FOR -L- PROFILE

22-MAY-2008 17:08
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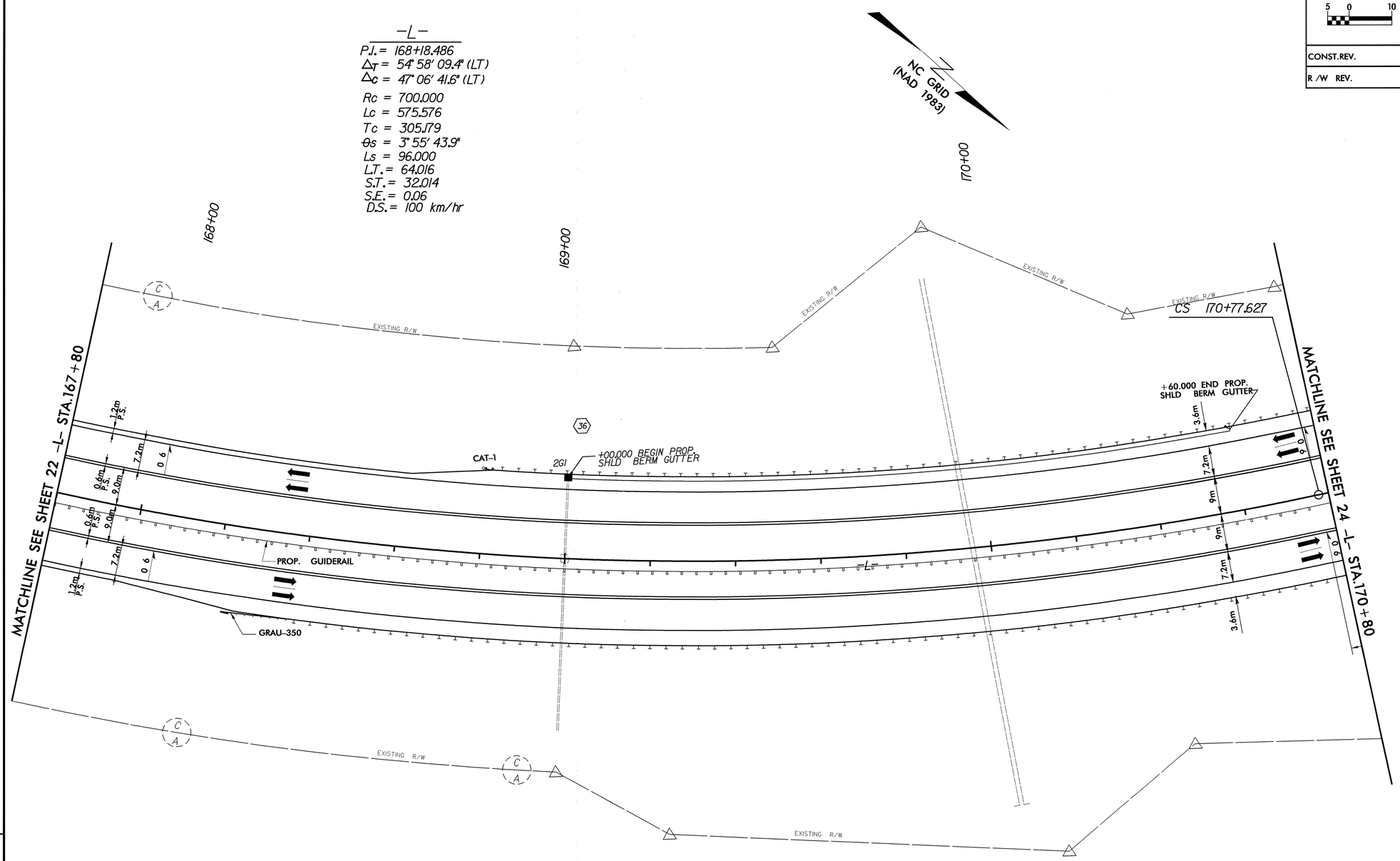
$USERNAME$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	23
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE	

REVISIONS

-L-

P.I. = 168+18.486
Δ_T = 54° 58' 09.4" (LT)
Δ_c = 47° 06' 41.6" (LT)
Rc = 700.000
Lc = 575.576
Tc = 305.179
θs = 3° 55' 43.9"
Ls = 96.000
L.T. = 64.016
S.T. = 32.014
S.E. = 0.06
D.S. = 100 km/hr



SEE SHEETS 80 & 81 FOR -L- PROFILE

22-MAY-2008 17:08
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	24
R /W SHEET NO.	

METRIC

10 0 20

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 2.2007 ENGINEER ANDREW JASON MOORE

6/13/08

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CALDWELL

REVISIONS

TRAFFIC DATA

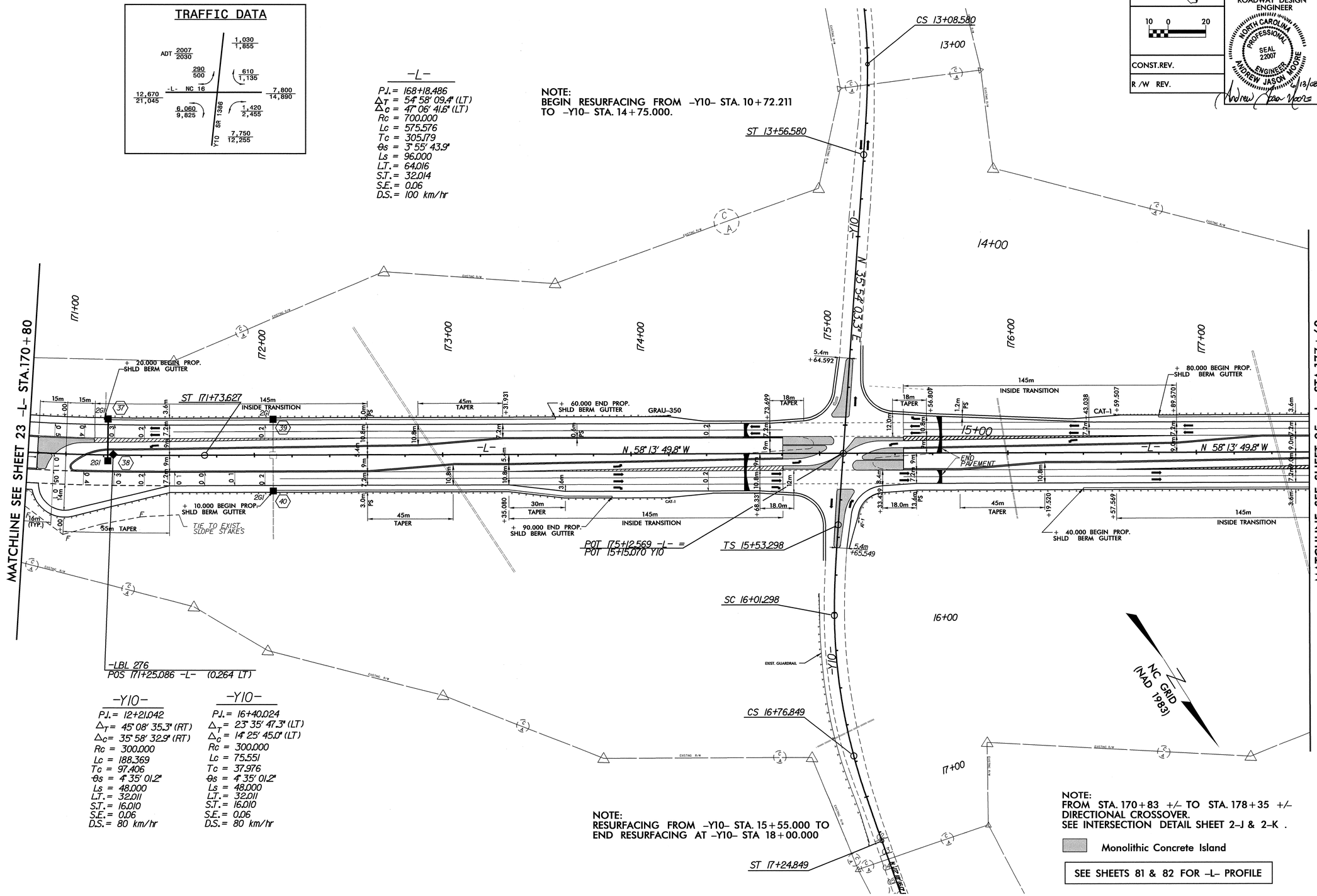
ADT 2007/2030

-L- NC 16 — SR 1386 — Y10

12,670 / 21,045	290 / 500	1,030 / 1,855
	6,060 / 9,825	610 / 1,135
		1,420 / 2,455
		7,750 / 12,255
		7,800 / 14,890

NOTE:
BEGIN RESURFACING FROM -Y10- STA. 10+72.211
TO -Y10- STA. 14+75.000.

-L-
PJ. = 168+18.486
Δ_T = 54° 58' 09.4" (LT)
Δ_c = 47° 06' 41.6" (LT)
Rc = 700.000
Lc = 575.576
Tc = 305.179
θs = 3° 55' 43.9"
Ls = 96.000
L.T. = 64.016
S.T. = 32.014
S.E. = 0.06
D.S. = 100 km/hr



-LBL 276
POS 171+25.086 -L- (0.264 LT)

-Y10-
PJ. = 12+21.042
Δ_T = 45° 08' 35.3" (RT)
Δ_c = 35° 58' 32.9" (RT)
Rc = 300.000
Lc = 188.369
Tc = 97.406
θs = 4° 35' 01.2"
Ls = 48.000
L.T. = 32.011
S.T. = 16.010
S.E. = 0.06
D.S. = 80 km/hr

-Y10-
PJ. = 16+40.024
Δ_T = 23° 35' 47.3" (LT)
Δ_c = 14° 25' 45.0" (LT)
Rc = 300.000
Lc = 75.551
Tc = 37.976
θs = 4° 35' 01.2"
Ls = 48.000
L.T. = 32.011
S.T. = 16.010
S.E. = 0.06
D.S. = 80 km/hr

NOTE:
RESURFACING FROM -Y10- STA. 15+55.000 TO
END RESURFACING AT -Y10- STA 18+00.000

NOTE:
FROM STA. 170+83 +/- TO STA. 178+35 +/-
DIRECTIONAL CROSSOVER.
SEE INTERSECTION DETAIL SHEET 2-J & 2-K .

Monolithic Concrete Island

SEE SHEETS 81 & 82 FOR -L- PROFILE

12-JUN-2008 12:25
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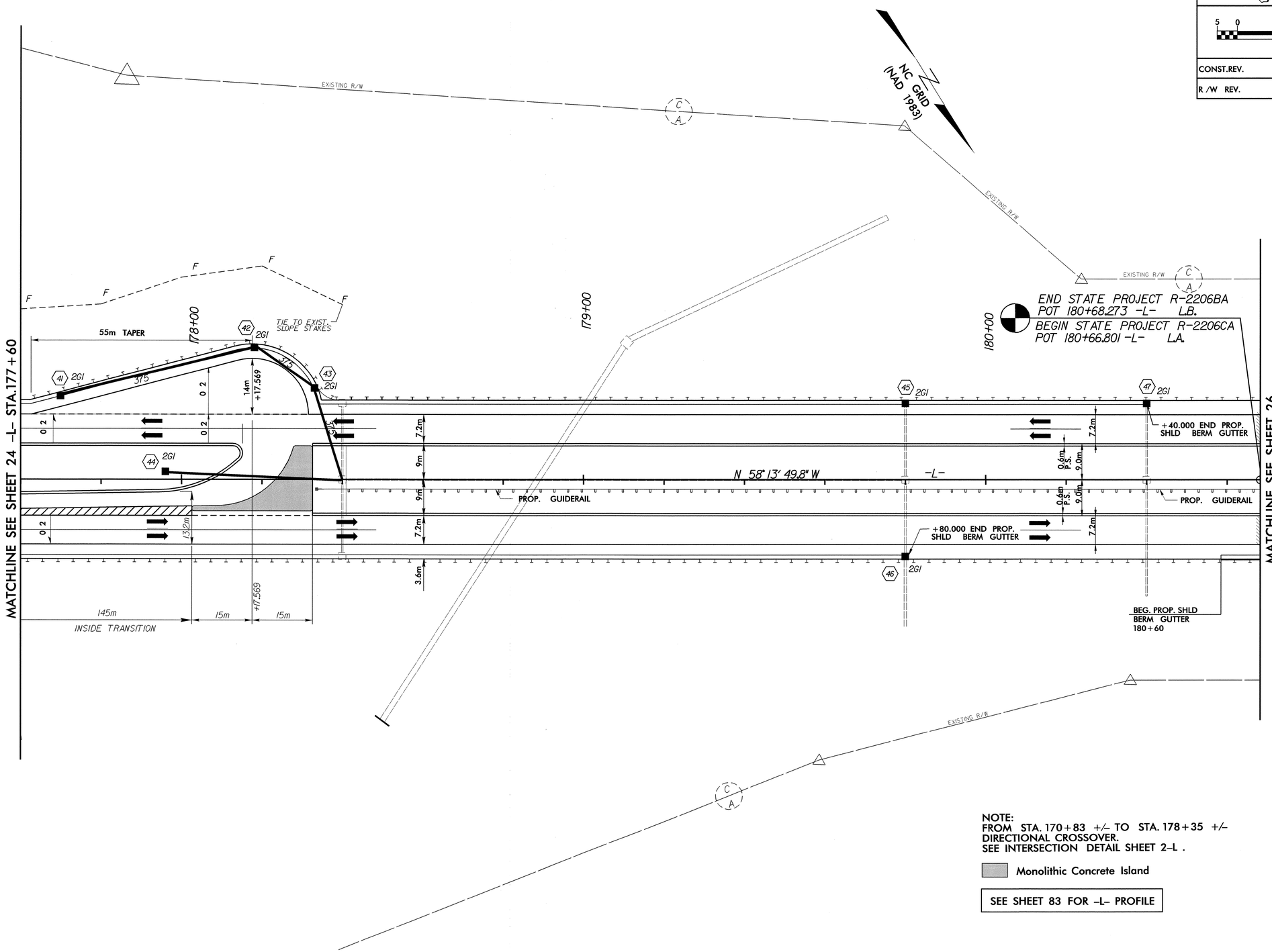
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	25
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL 6/13/08



NOTE:
FROM STA. 170+83 +/- TO STA. 178+35 +/-
DIRECTIONAL CROSSOVER.
SEE INTERSECTION DETAIL SHEET 2-L .

Monolithic Concrete Island

SEE SHEET 83 FOR -L- PROFILE

REVISIONS

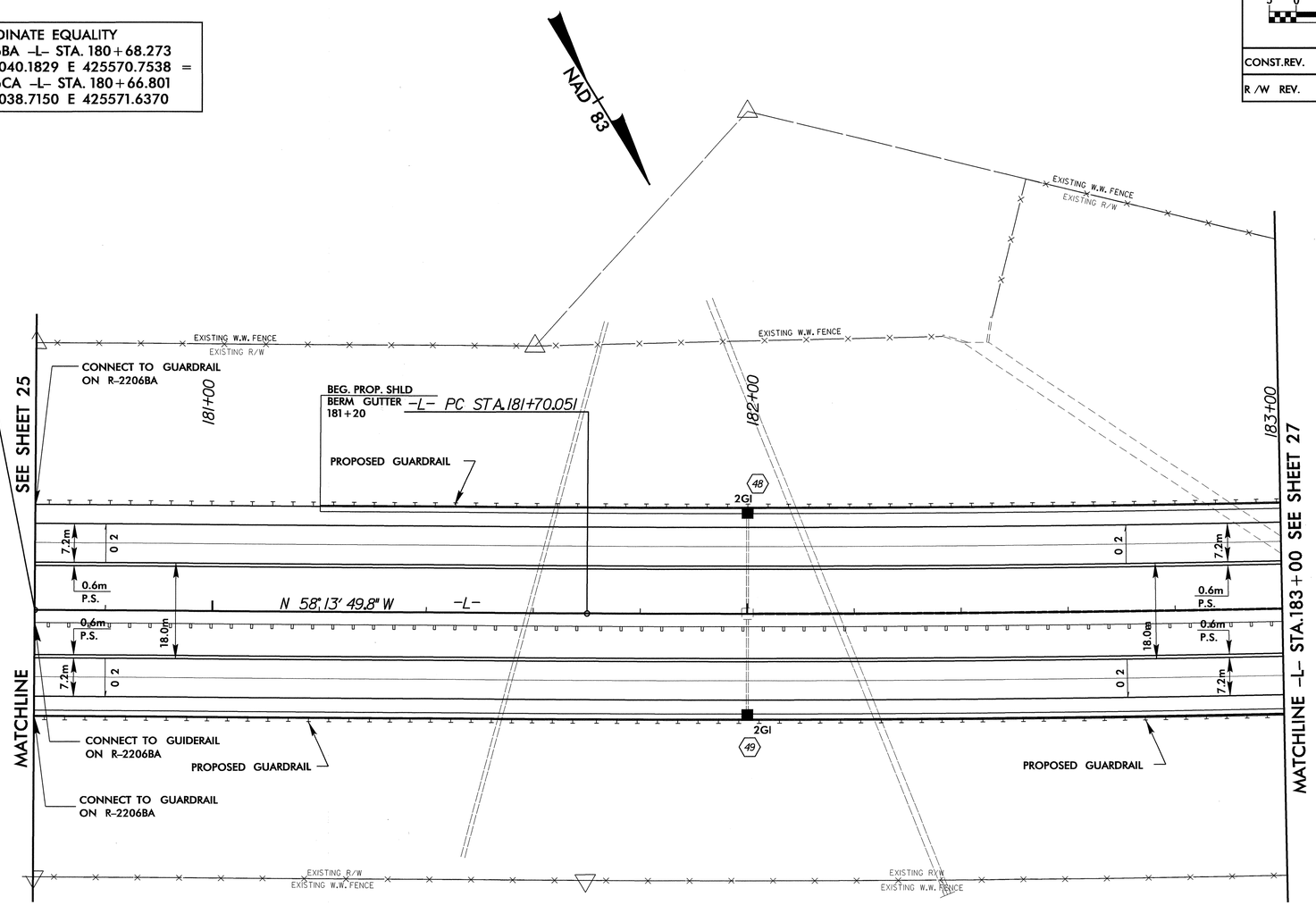
8/17/99

22-MAY-2008 17:08
r2206bc_rdy_psh_25.dgn

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	26
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	

COORDINATE EQUALITY
R-2206BA -L- STA. 180+68.273
N 198040.1829 E 425570.7538 =
R-2206CA -L- STA. 180+66.801
N 198038.7150 E 425571.6370

-L- STA.180+68.273 LB
END PROJECT R-2206BA
END CONST.
-L- STA.180+66.801 LA
BEGIN PROJECT R-2206CA
BEGIN CONST.



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "R-2206C"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 201911.707(m) EASTING: 421559.554(m)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999843471
THE N.C. LAMBERT GRID BEARING
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"R-2206C" TO -L- STATION 180+66.801 IS
S 46 00 38.1 E 5,576.457m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

-L-
PI Sta 185+00.623
Δ = 7° 33' 54.5" (LT)
L = 660.183
T = 330.572
R = 5,000.000
e = NC

SEE SHEET 84 FOR -L- PROFILE

REVISIONS

8/17/99

22-MAY-2008 17:08
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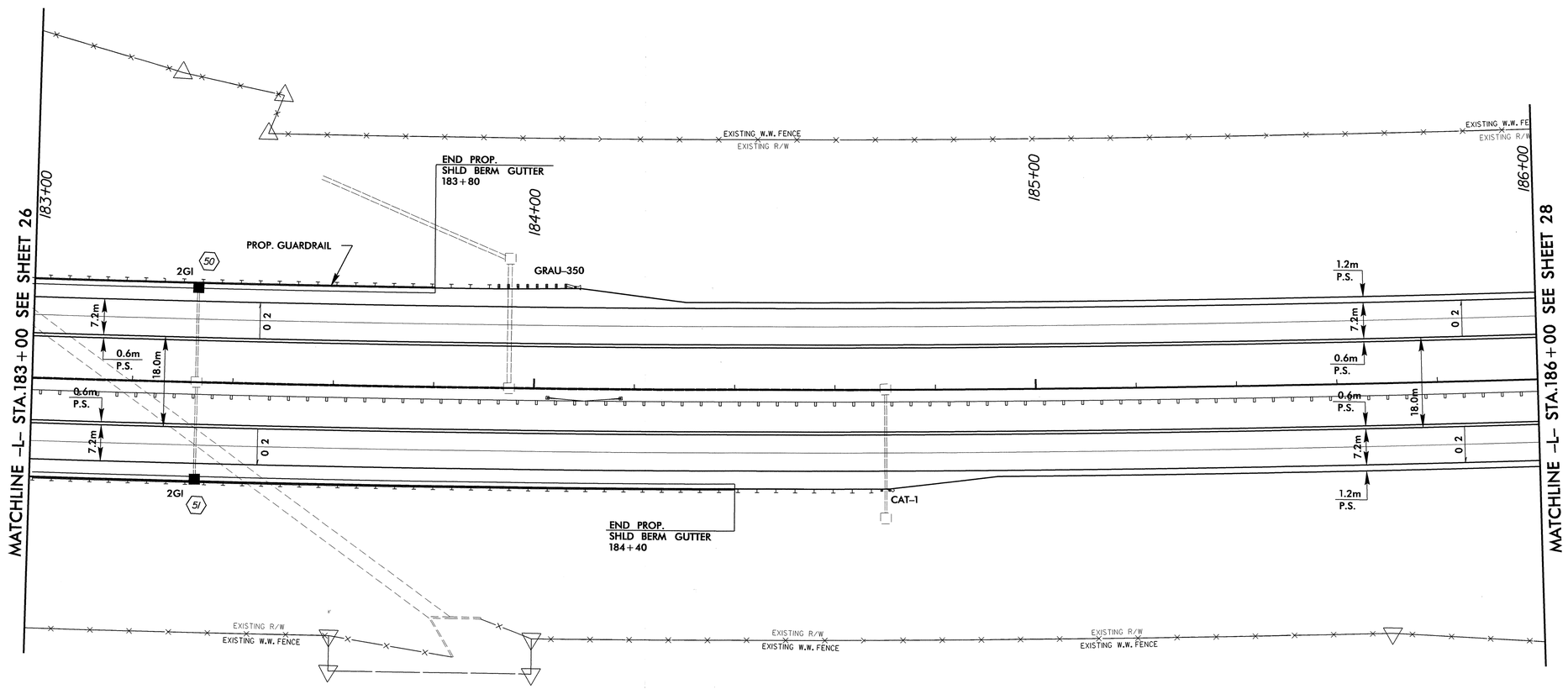
METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	27
	R/W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	



-L-

PI Sta 185+00.623
Δ = 7° 33' 54.5" (LT)
L = 660.183
T = 330.572
R = 5,000.000
e = NC

SEE SHEETS 84 & 85 FOR -L- PROFILE

REVISIONS

8/17/99

22-MAY-2008 17:08
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	28
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

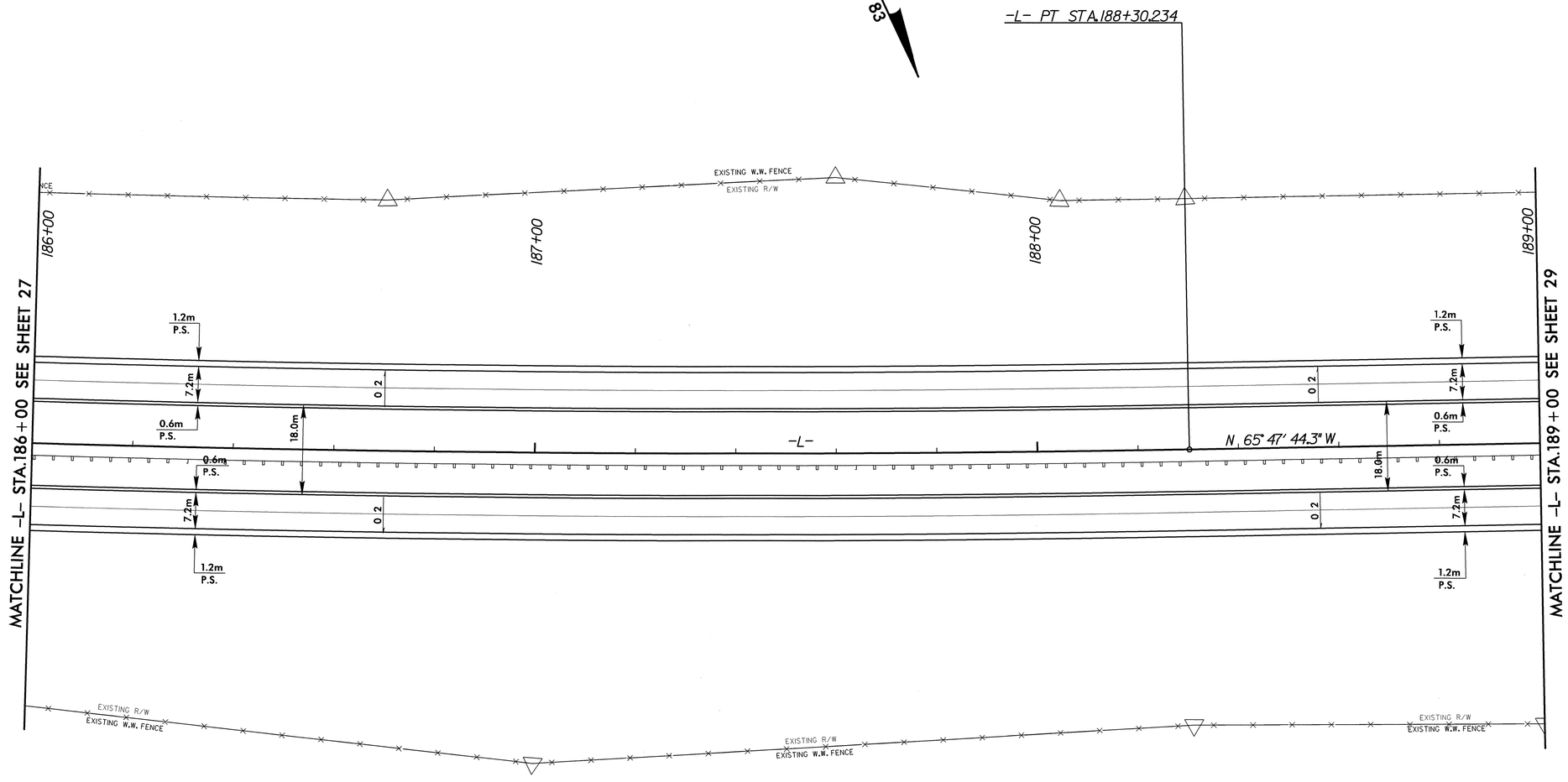
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER

REVISIONS

8/17/00



SEE SHEETS 85 & 86 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	29
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

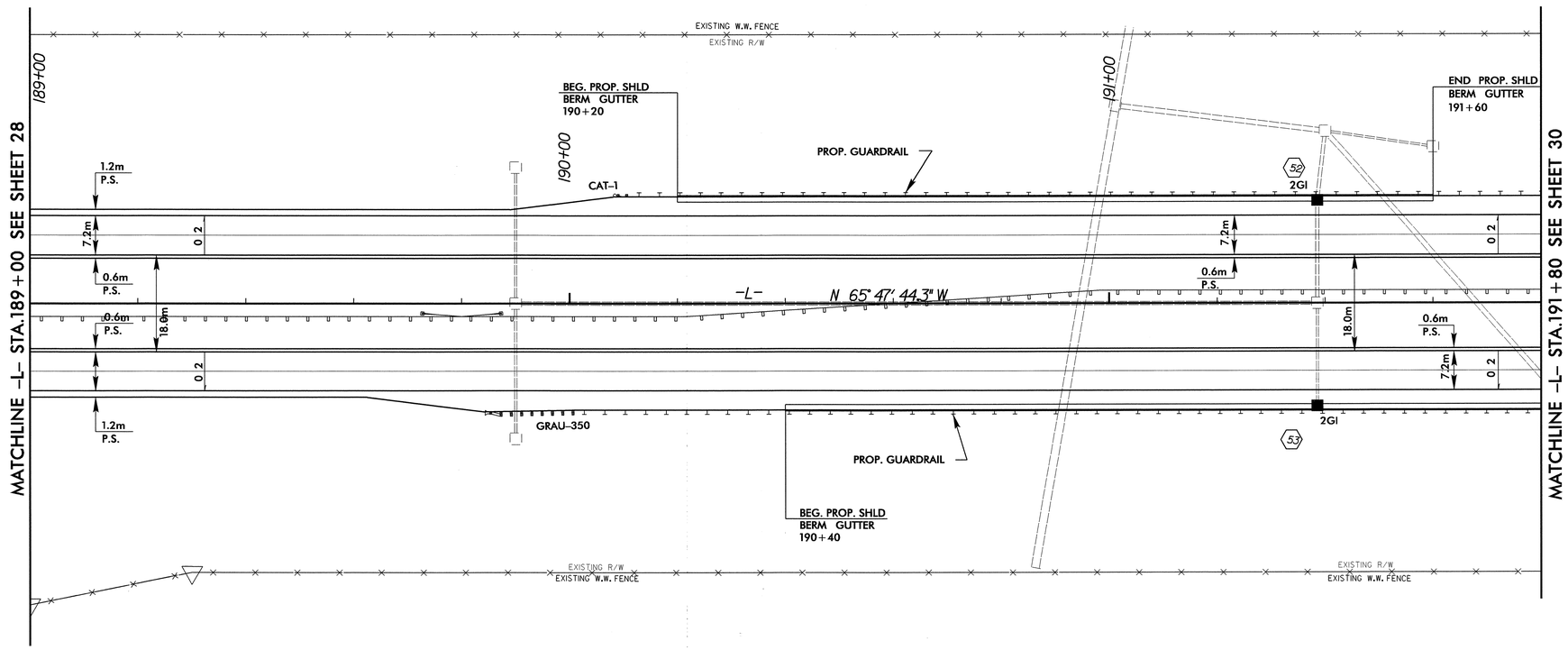
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/13/08

HYDRAULICS ENGINEER

REVISIONS

NAD 83



SEE SHEET 86 FOR -L- PROFILE

22-MAY-2008 17:07
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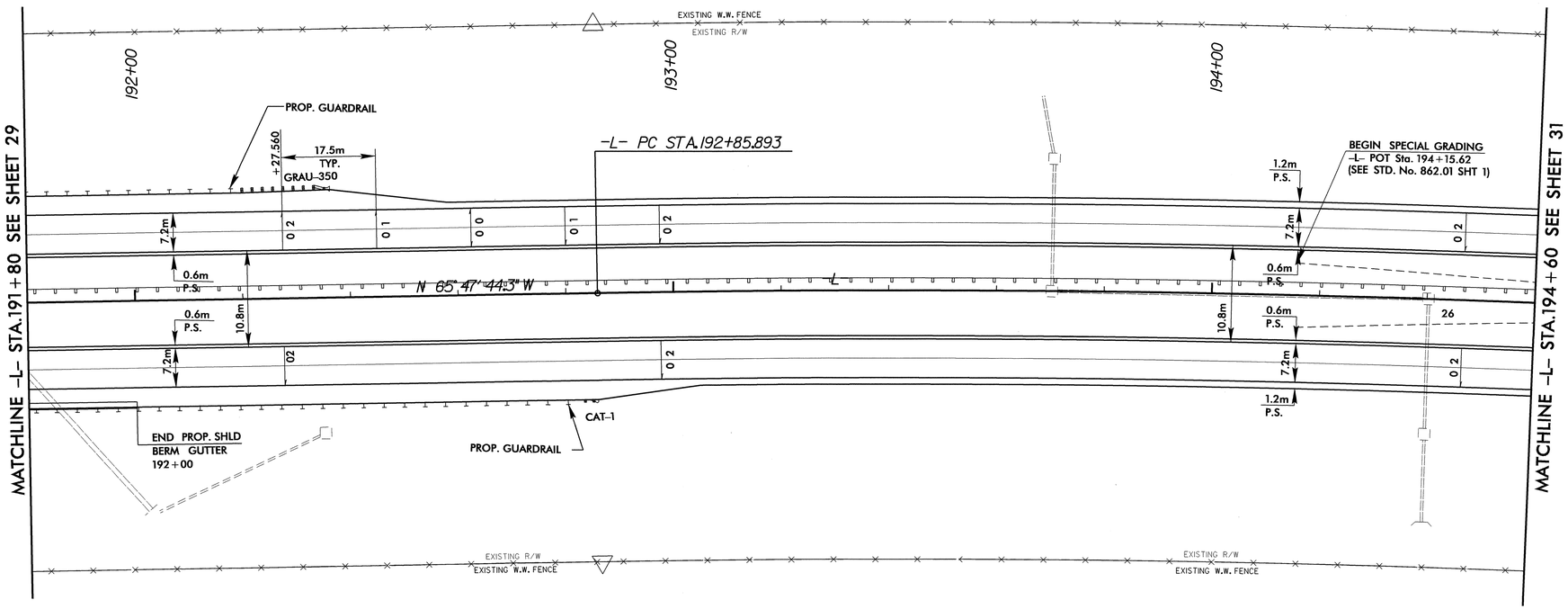
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	30
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	
R /W REV.		

-L-

PI Sta 199+75.908
Δ = 25° 54' 22.0" (RT)
L = 1,356.440
T = 690.016
R = 3,000.000
e = 0.02
RO = 35m

NAD 83



SEE SHEETS 86 & 87 FOR -L- PROFILE

REVISIONS

22-MAY-2008 17:07
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	31
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/13/08

Andrew Jason Moore

HYDRAULICS ENGINEER

REVISIONS

8/17/99

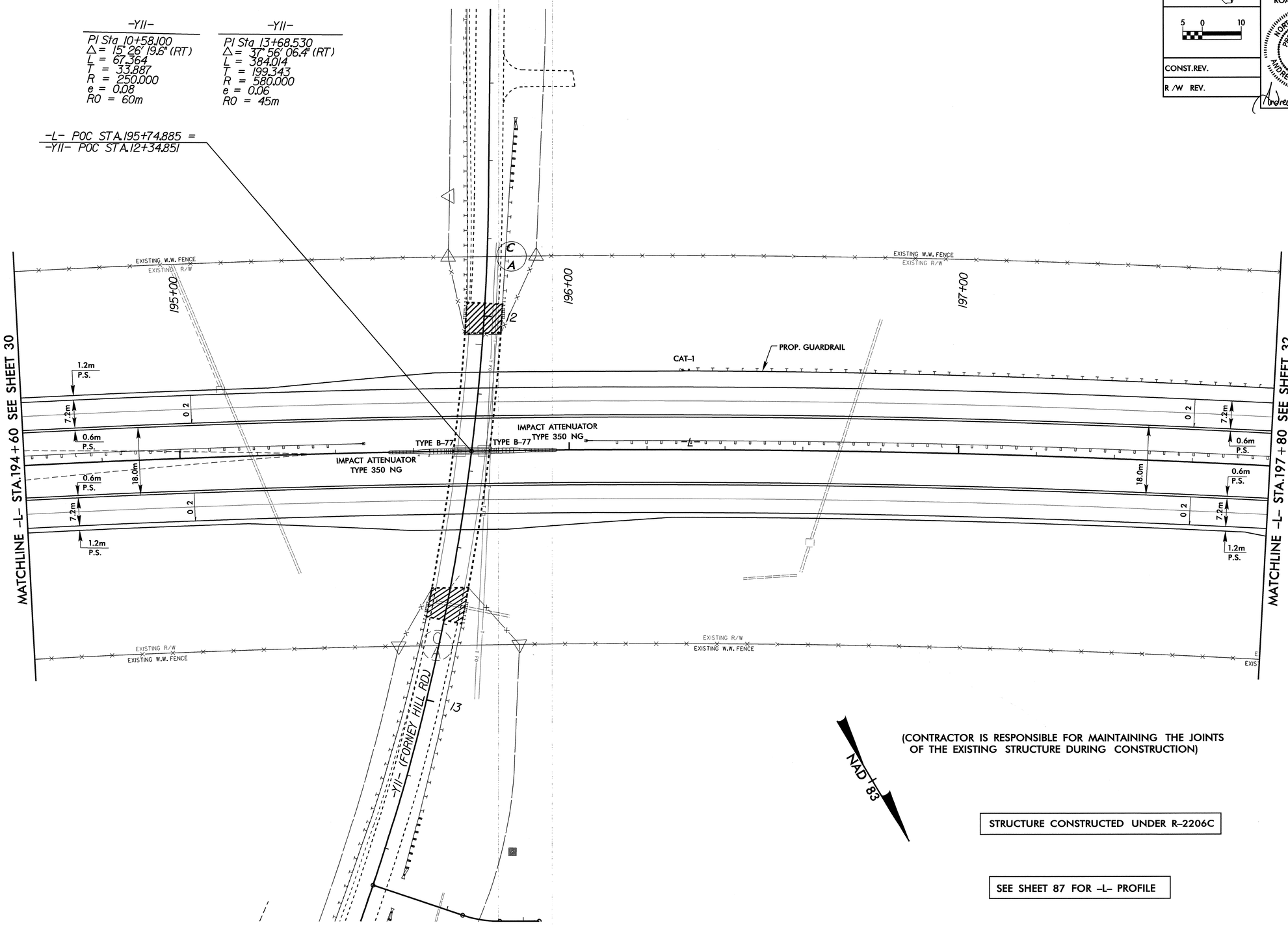
-Y11-

PI Sta 10+58.100
Δ = 15° 26' 19.6" (RT)
L = 67.364
T = 33.887
R = 250.000
e = 0.08
RO = 60m

-Y11-

PI Sta 13+68.530
Δ = 37° 56' 06.4" (RT)
L = 384.014
T = 199.343
R = 580.000
e = 0.06
RO = 45m

-L- POC STA.195+74.885 =
-Y11- POC STA.12+34.851



(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURE DURING CONSTRUCTION)

STRUCTURE CONSTRUCTED UNDER R-2206C

SEE SHEET 87 FOR -L- PROFILE

29-MAY-2008 16:05
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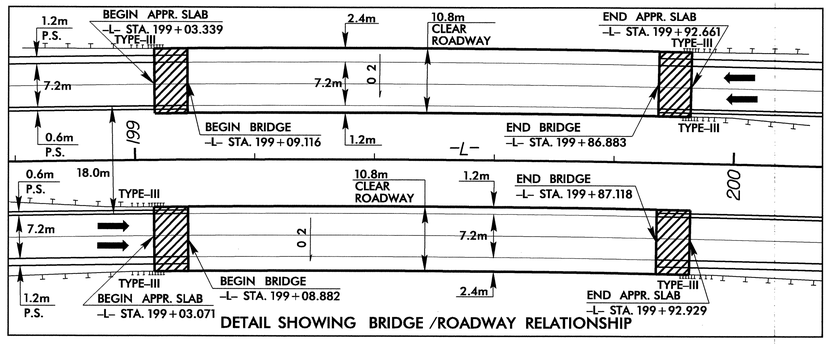
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	32
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R /W REV.	

METRIC 5 0 10

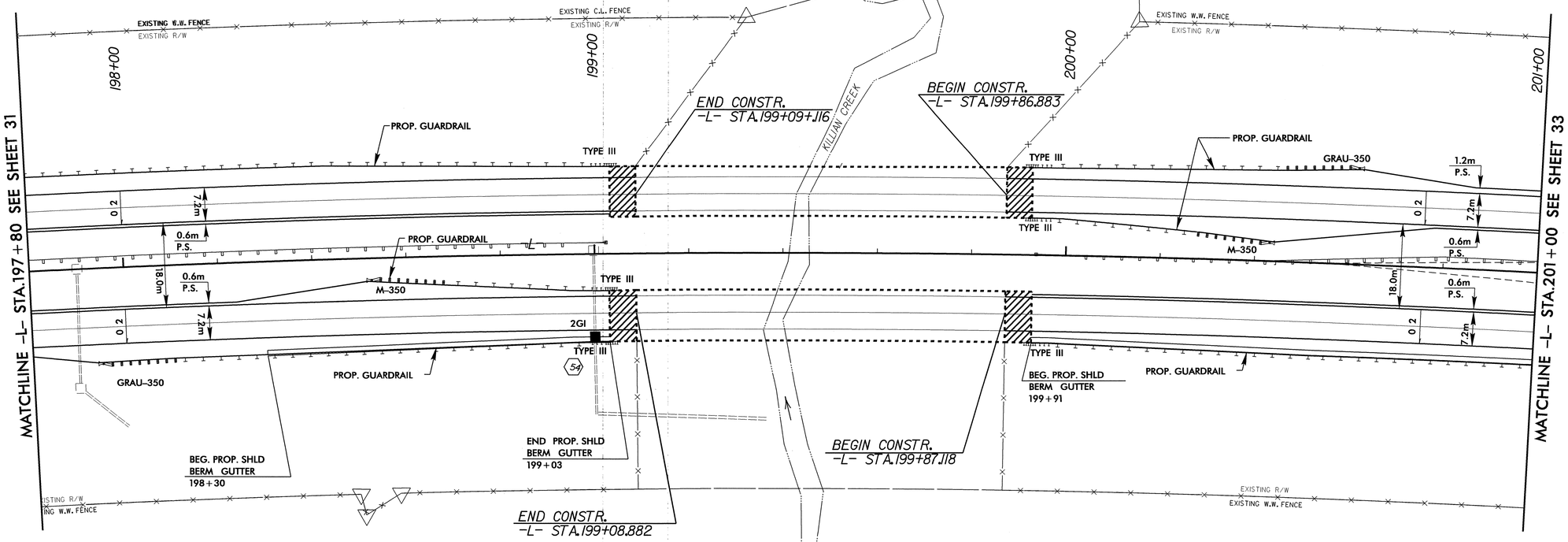
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08



DETAIL SHOWING BRIDGE /ROADWAY RELATIONSHIP

-L-
PI Sta 199+75.908
Δ = 25° 54' 22.0" (RT)
L = 1,356.441
T = 690.016
R = 3,000.000
e = 0.02
RO = 35m

NAD 83



(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURES DURING CONSTRUCTION)

STRUCTURES CONSTRUCTED UNDER R-2206C

SEE SHEETS 87 & 88 FOR -L- PROFILE

REVISIONS

8/17/99

29-MAY-2008 16:05
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	33
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R /W REV.	

METRIC

5 0 10

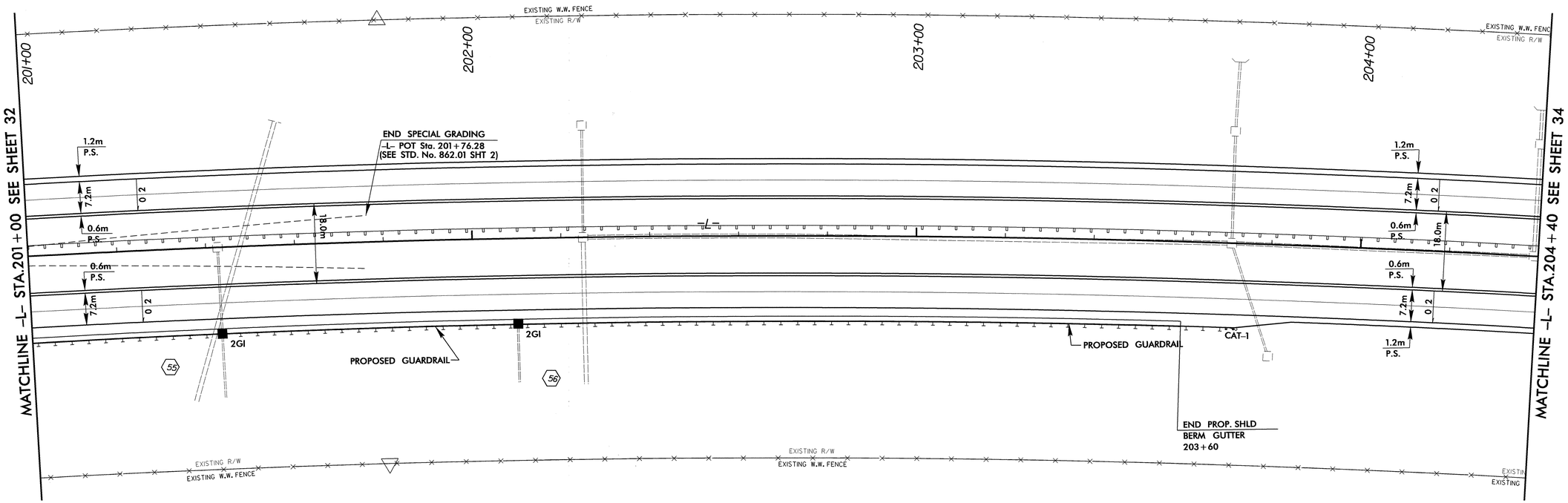
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

-L-

PI Sta 199+75.908
Δ = 25° 54' 22.0" (RT)
L = 1,356.441
T = 690.016
R = 3,000.000
e = 0.02
RO = 35m

NAD 83



SEE SHEET 88 FOR -L- PROFILE

REVISIONS

22-MAY-2008 17:07
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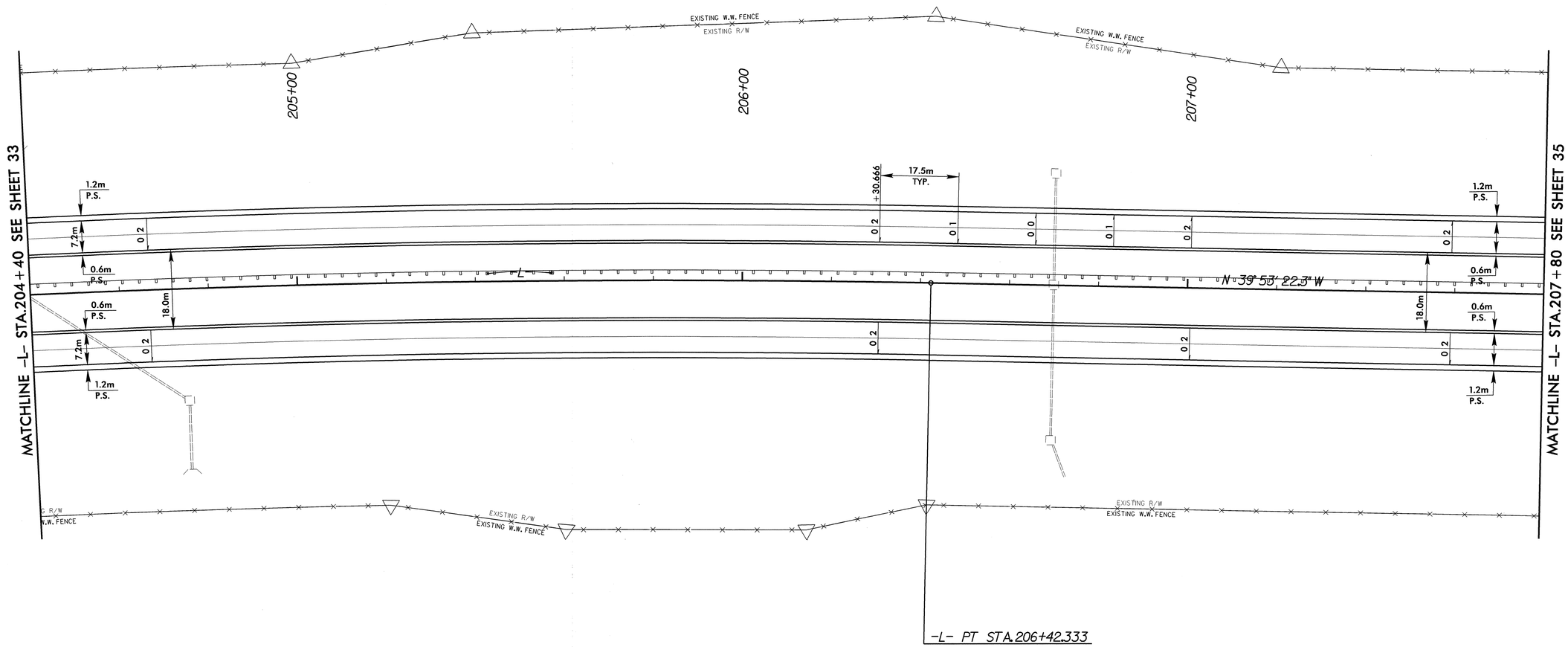
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	34
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/10/08 Andrew Jason Moore	
R /W REV.		

-L-
PI Sta 199+75.908
△ = 25° 54' 22.0" (RT)
L = 1,356.441
T = 690.016
R = 3,000.000
e = 0.02
RO = 35m

NAD 83



SEE SHEETS 88 & 89 FOR -L- PROFILE

REVISIONS

8/17/99

22-MAY-2008 17:07
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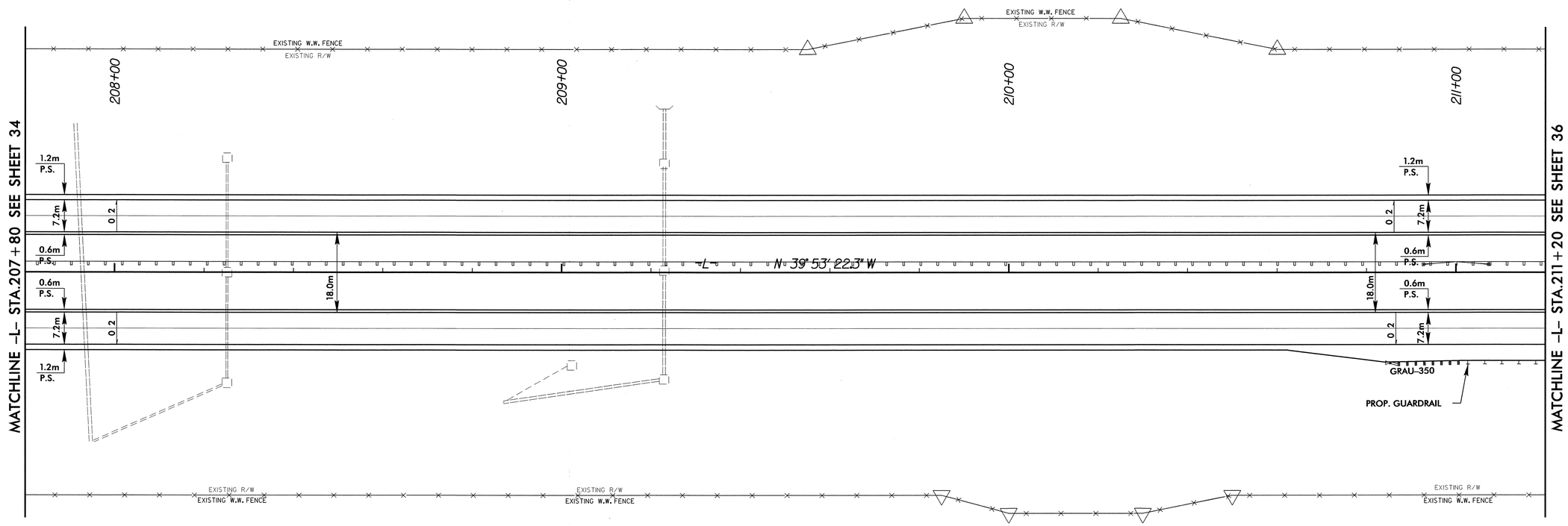
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	35
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/12/08	
R /W REV.		

REVISIONS

8/17/99



SEE SHEETS 89 & 90 FOR -L- PROFILE

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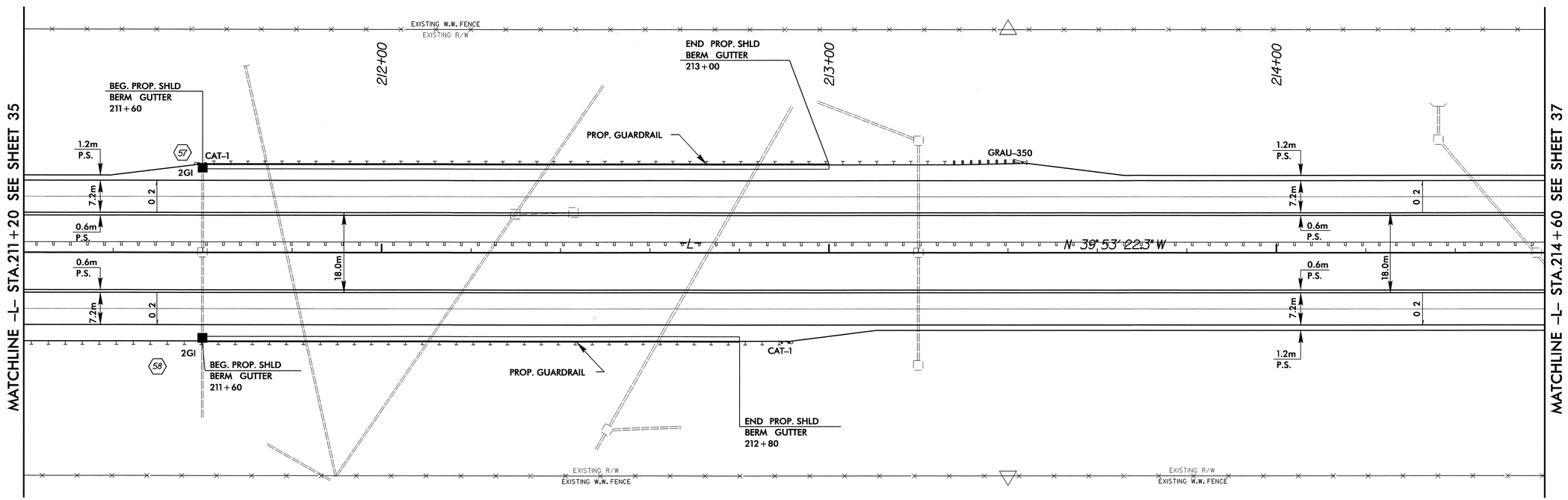
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	36
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE	
R /W REV.	Andrew Jason Moore 6/13/08	

REVISIONS



SEE SHEETS 90 & 91 FOR -L- PROFILE

11-JUN-2008 13:51
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	37
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R /W REV.	

METRIC 5 0 10

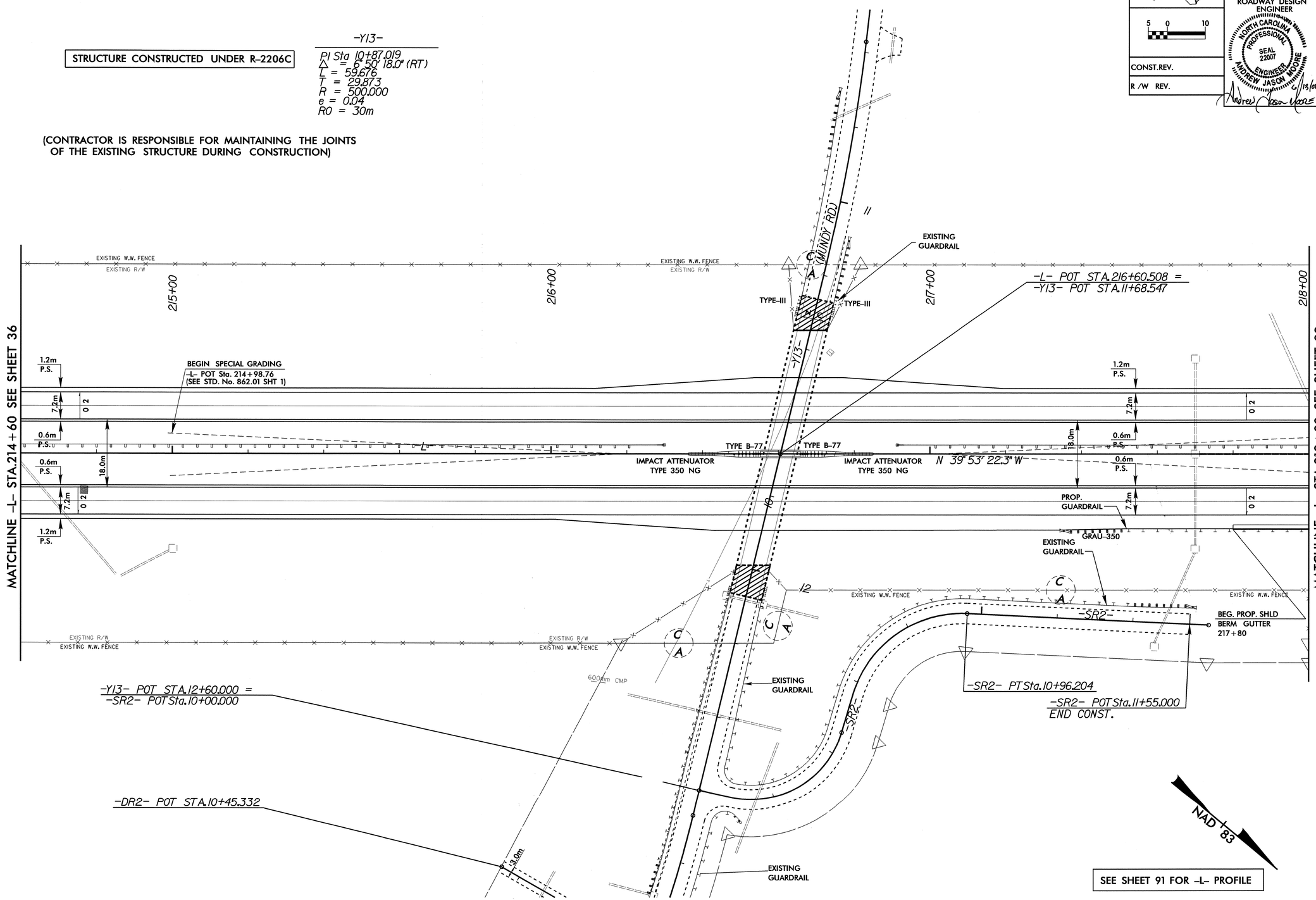
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

STRUCTURE CONSTRUCTED UNDER R-2206C

-Y13-
PI Sta 10+87.019
Δ = 6°50' 18.0" (RT)
L = 59.676
T = 29.873
R = 500.000
e = 0.04
R0 = 30m

(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURE DURING CONSTRUCTION)



SEE SHEET 91 FOR -L- PROFILE

REVISIONS

22-MAY-2008 17:07
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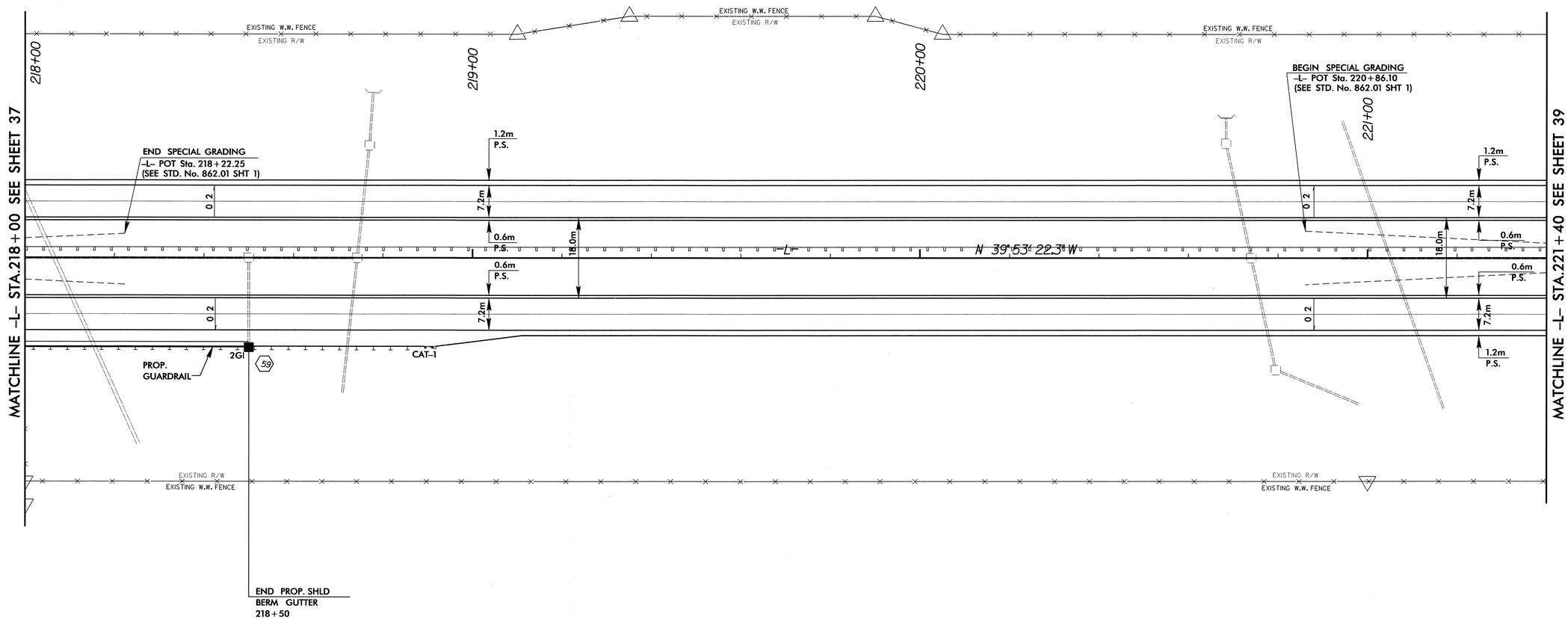
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	38
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 5/12/08	
R /W REV.	Andrew Jason Moore	

NAD 83



SEE SHEETS 91 & 92 FOR -L- PROFILE

REVISIONS

22-MAY-2008 17:07
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	39
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

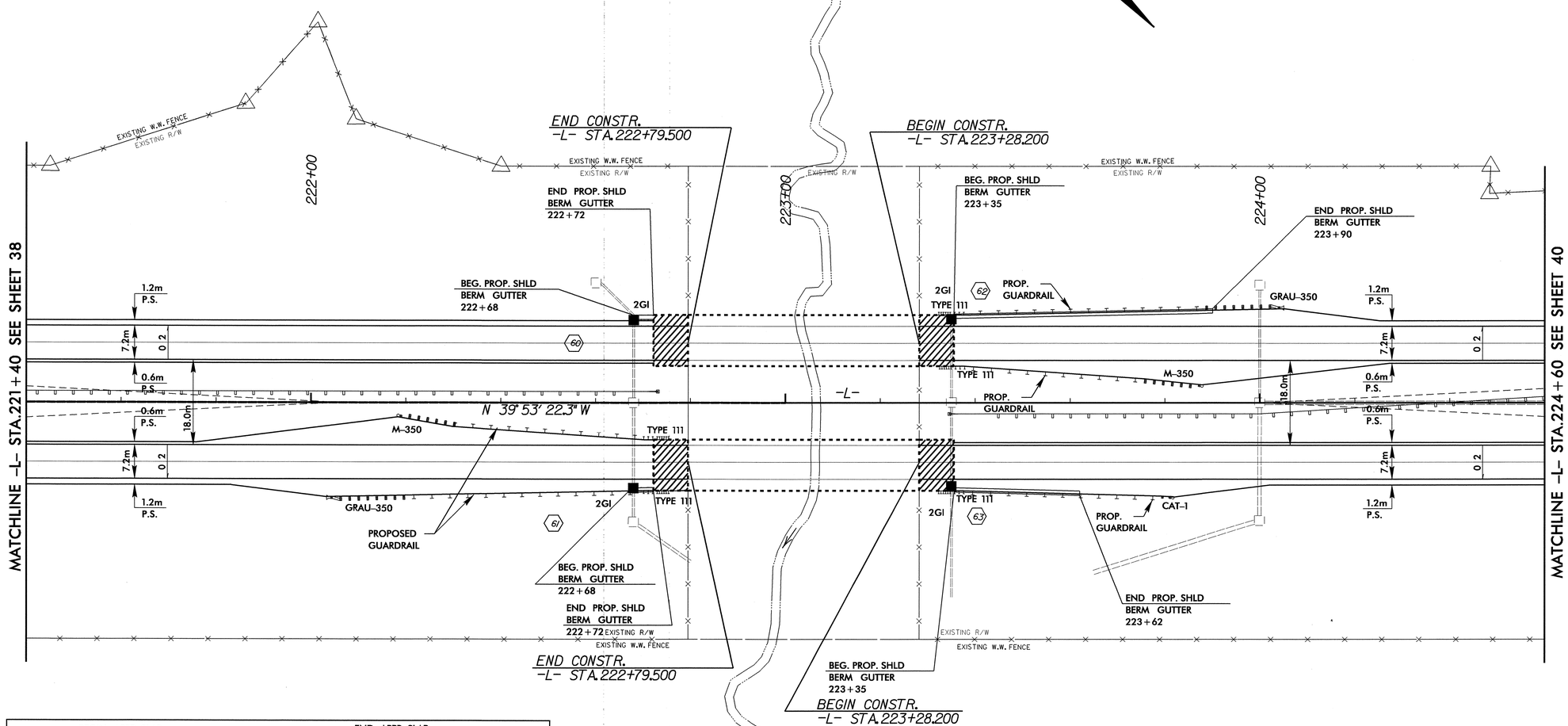
CONST.REV.

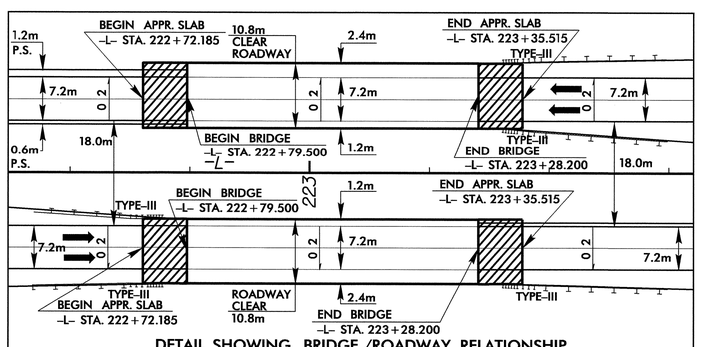
R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

REVISIONS





DETAIL SHOWING BRIDGE /ROADWAY RELATIONSHIP

(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURES DURING CONSTRUCTION)

STRUCTURE CONSTRUCTED UNDER R-2206C

SEE SHEET 92 FOR -L- PROFILE

29-MAY-2008 16:05
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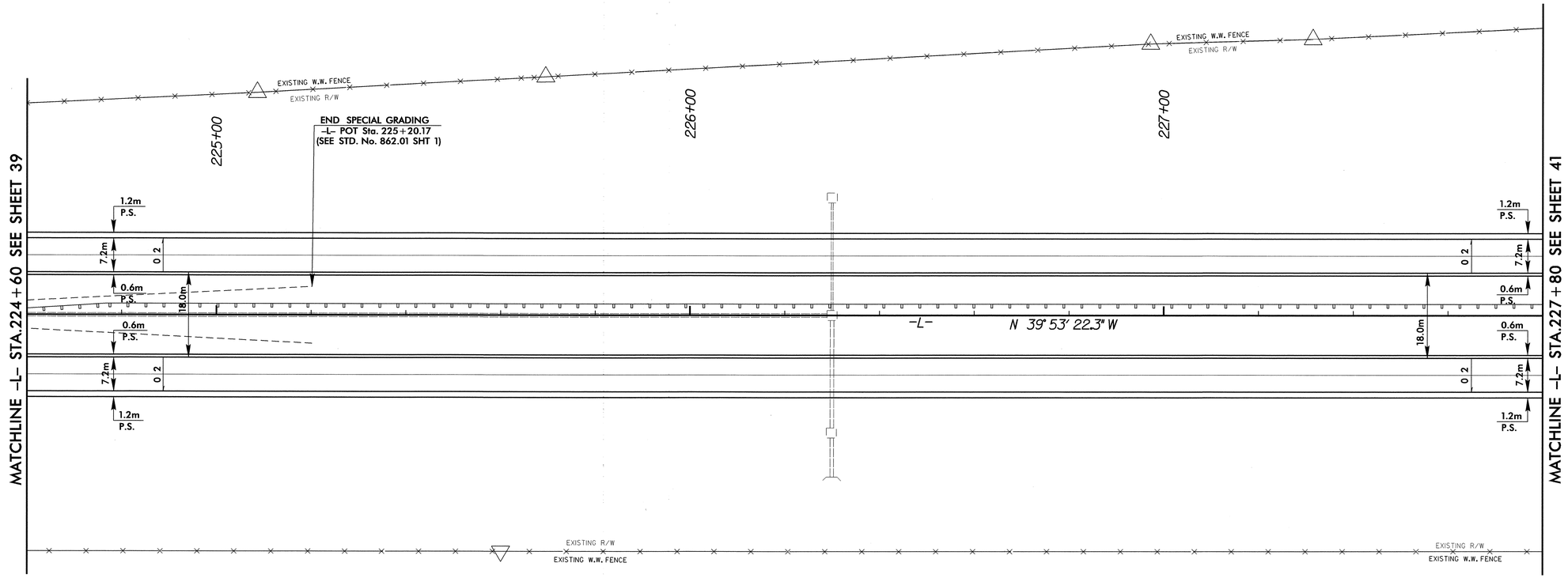
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	40
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/06	
R /W REV.	Andrew Jason Moore	

REVISIONS

NAD 83



SEE SHEETS 92 & 93 FOR -L- PROFILE

22-MAY-2008 17:06
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	41
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

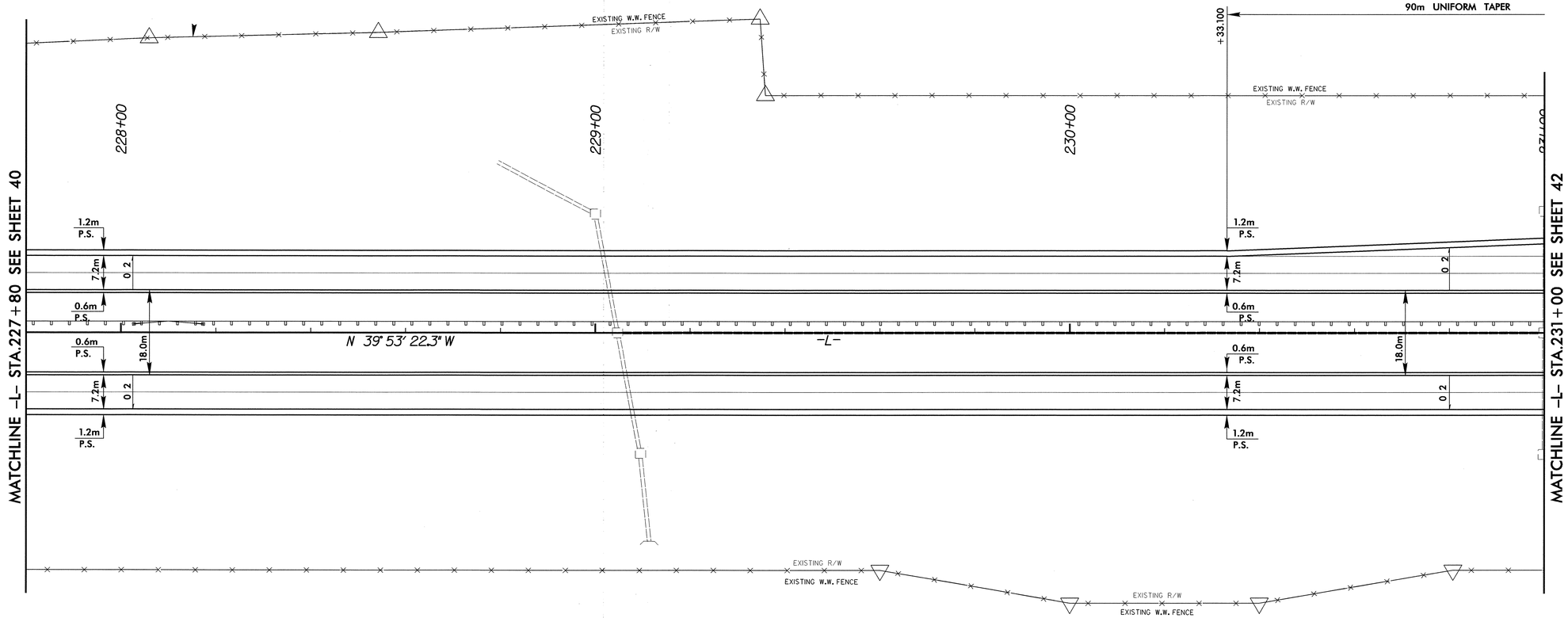
R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/13/08

Andrew Jason Moore

NAD 83



SEE SHEET 93 FOR -L- PROFILE

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	42
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER

REVISIONS

-L-

PIs Sta 233+49.768	PI Sta 241+32.719	PIs Sta 248+14.847
Θs = 1° 15' 12.0"	Δ = 50° 47' 35.4" (RT)	Θs = 1° 15' 12.0"
Ls = 70.000	L = 1,418.413	Ls = 70.000
LT = 46.668	T = 759.619	LT = 46.668
ST = 23.334	R = 1,600.000	ST = 23.334
	e = 0.04	

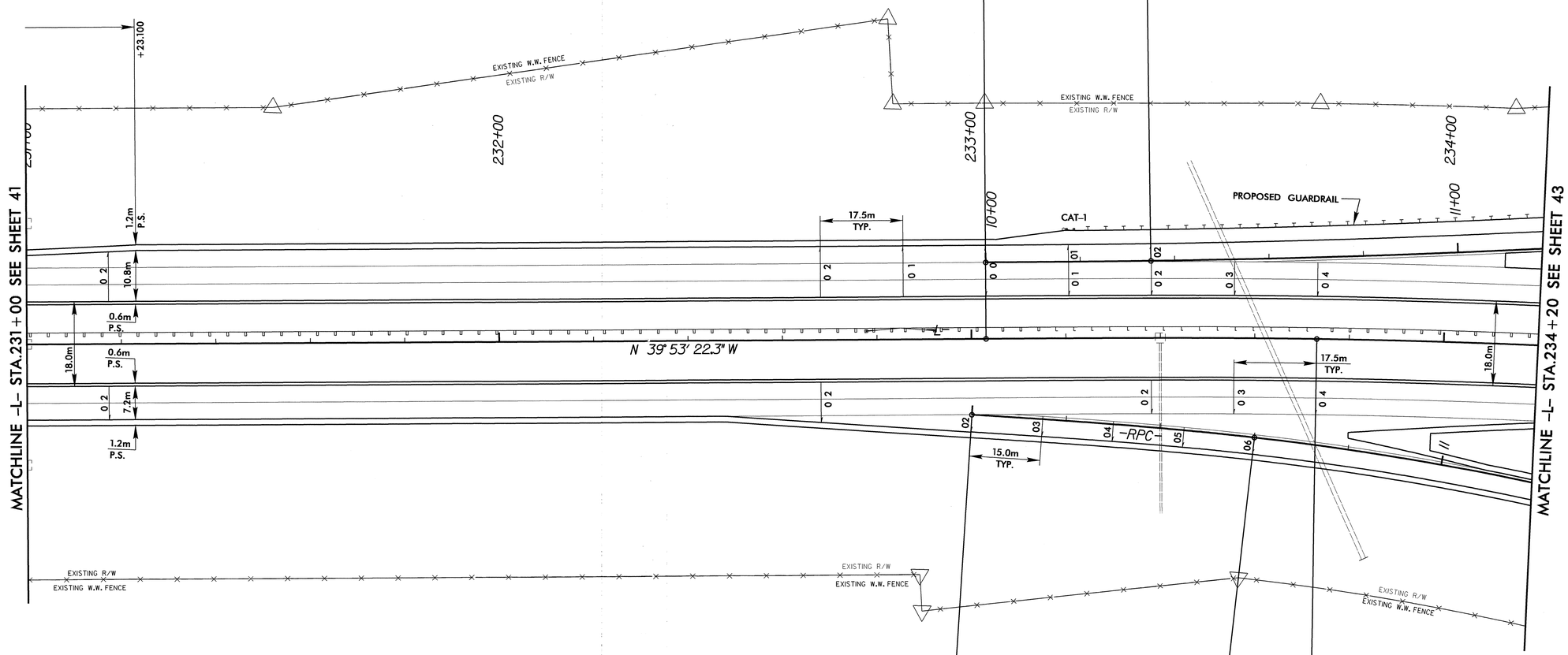
-RPB-

PIs Sta 10+23.333	PI Sta 11+84.898
Θs = 0° 24' 03.9"	Δ = 6° 51' 45.3" (LT)
Ls = 35.000	L = 299.437
LT = 23.333	T = 149.898
ST = 11.667	R = 2,500.000
	e = 0.02

NAD 83

-L- TS STA.233+03.00 =
-RPB- TS STA.10+00.000
(16.200m LT.)

-RPB- SC STA.10+35.000



-L- POT STA.233+00.000 =
-RPC- TS STA.10+00.000
(16.200m RT.)
Δ = 4° 00' 00.0"

-RPC- SC STA.10+60.000

-L- SC STA.233+73.100

-RPC-

PIs Sta 10+40.005	PI Sta 11+53.032	PIs Sta 12+64.599
Θs = 2° 51' 53.2"	Δ = 17° 37' 38.9" (RT)	Θs = 2° 51' 53.2"
Ls = 60.000	L = 184.594	Ls = 60.000
LT = 40.005	T = 93.032	LT = 40.005
ST = 20.005	R = 600.000	ST = 20.005
	e = 0.06	

SEE SHEET 93 FOR -L- PROFILE
SEE SHEET 103 FOR -RPB- PROFILE
SEE SHEET 104 FOR -RPC- PROFILE

22-MAY-2008 17:06
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	43
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

10 0 20

CONST.REV.

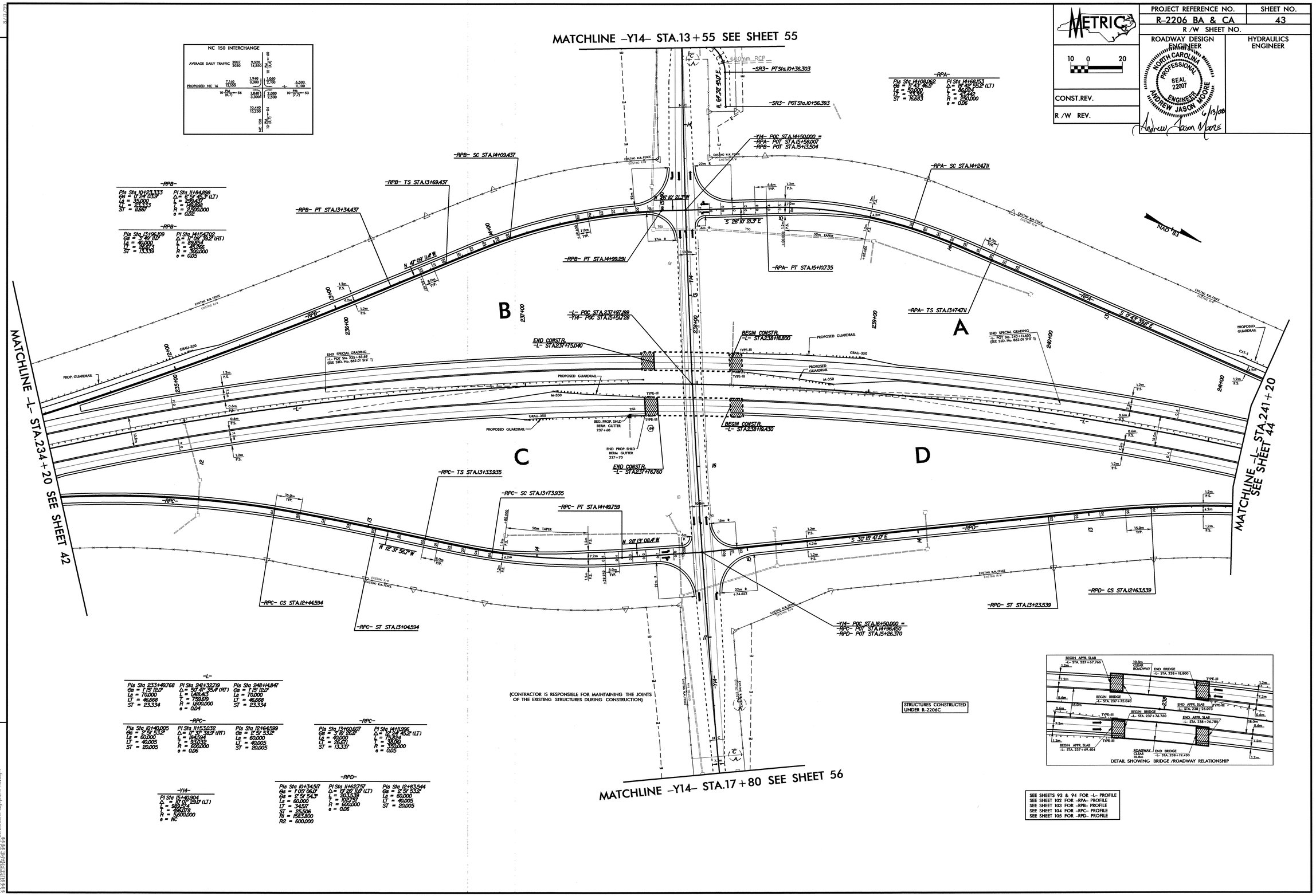
R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

REVISIONS

8/17/99



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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	44
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/13/08

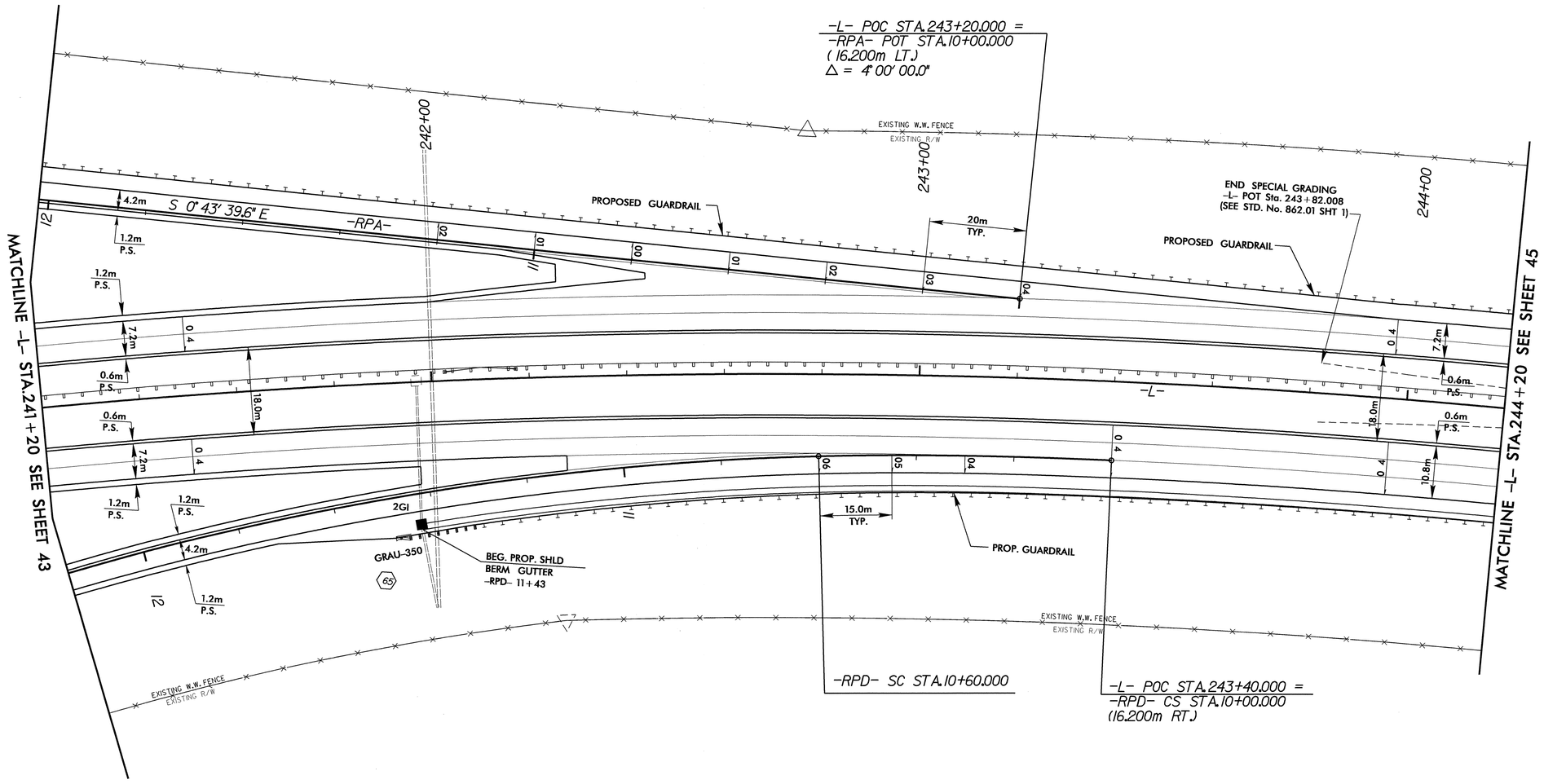
HYDRAULICS ENGINEER

REVISIONS

-L-

PIs Sta 233+49.768	PI Sta 241+32.719	PIs Sta 248+14.847
Θs = 1° 15' 12.0"	Δ = 50° 47' 35.4" (RT)	Θs = 1° 15' 12.0"
Ls = 70.000	L = 1,418.413	Ls = 70.000
LT = 46.668	T = 759.619	LT = 46.668
ST = 23.334	R = 1,600.000	ST = 23.334
	e = 0.04	

NAD 83



-RPD-

PIs Sta 10+34.517	PI Sta 11+62.757	PIs Sta 12+83.544
Θs = 1° 05' 06.0"	Δ = 19° 26' 11.6" (LT)	Θs = 2° 51' 53.2"
Θs = 2° 51' 54.3"	L = 203.539	Ls = 60.000
Ls = 60.000	T = 102.757	LT = 40.005
LT = 34.517	R = 600.000	ST = 20.005
ST = 25.506	e = 0.06	
R1 = 1583.800		
R2 = 600.000		

SEE SHEET 95 FOR -L- PROFILE
SEE SHEET 102 FOR -RPA- PROFILE
SEE SHEET 105 FOR -RPD- PROFILE

22-MAY-2008 17:06
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	45
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R /W REV.

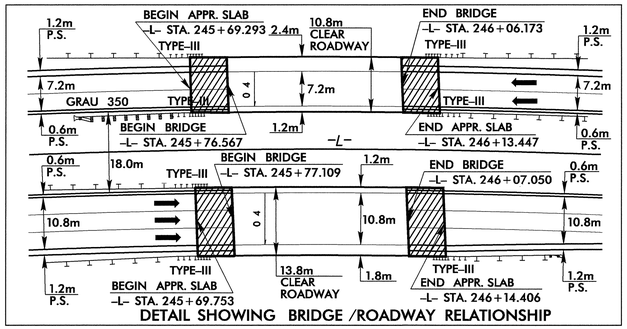
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

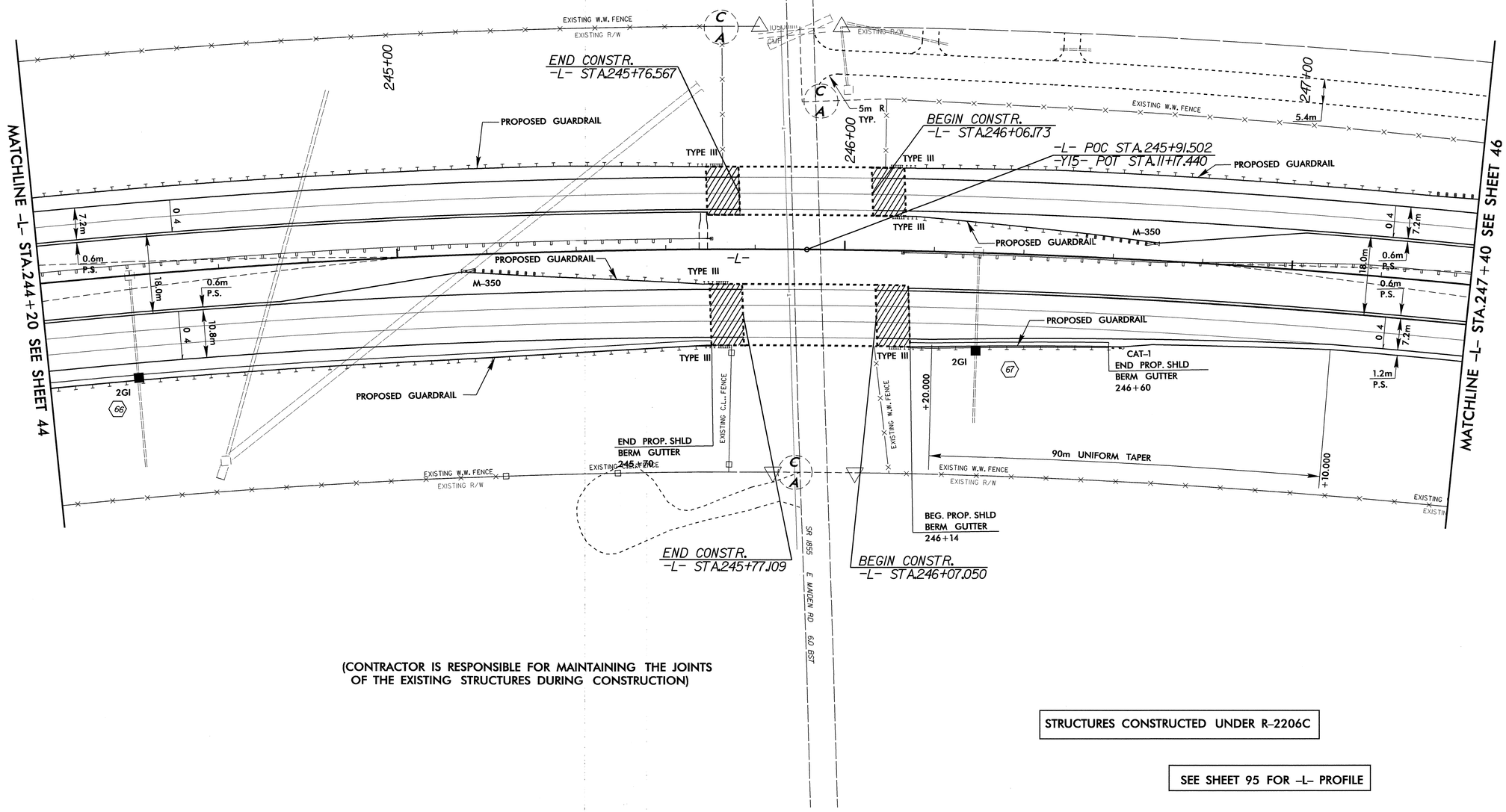
-L-

PIs Sta 233+49.768	PI Sta 241+32.719	PIs Sta 248+14.847
θs = 1° 15' 12.0"	Δ = 50° 47' 35.4" (RT)	θs = 1° 15' 12.0"
Ls = 70.000	L = 1,418.413	Ls = 70.000
LT = 46.668	T = 759.619	LT = 46.668
ST = 23.334	R = 1,600.000	ST = 23.334
	e = 0.04	

NAD 83



DETAIL SHOWING BRIDGE /ROADWAY RELATIONSHIP



(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURES DURING CONSTRUCTION)

STRUCTURES CONSTRUCTED UNDER R-2206C

SEE SHEET 95 FOR -L- PROFILE

REVISIONS

29-MAY-2008 16:04
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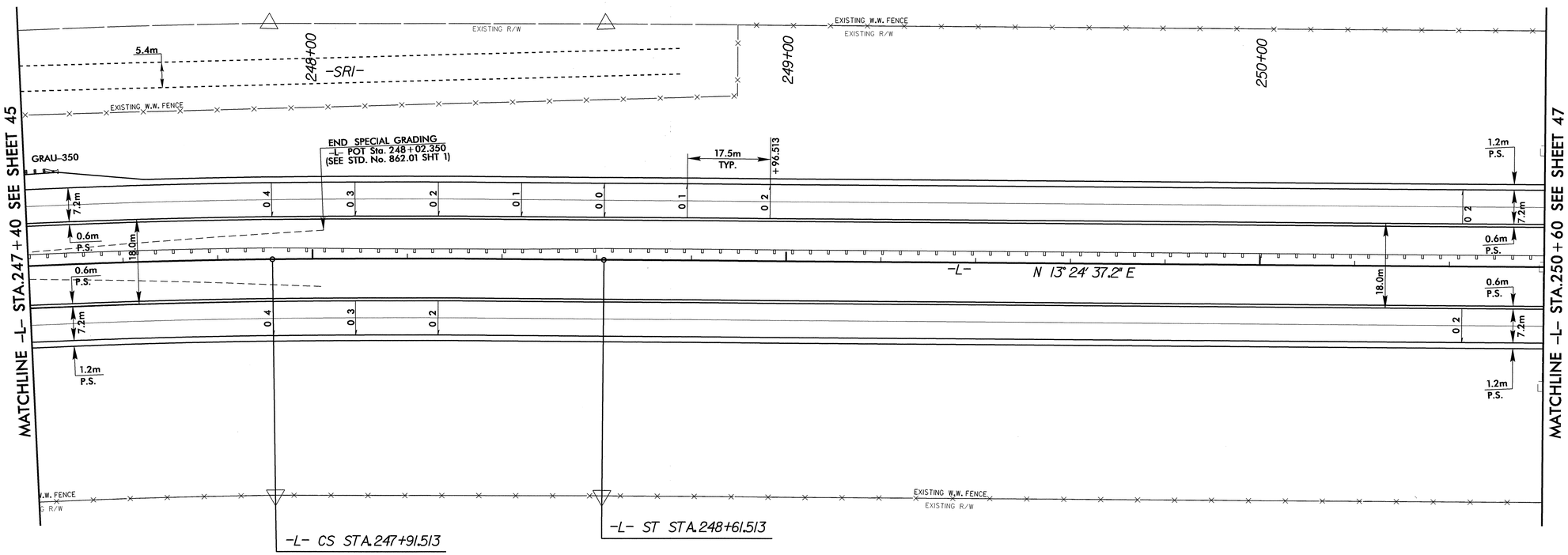
METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2206 BA & CA	46
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE	

NAD 83



-L-

PIs Sta 233+49.768	PI Sta 241+32.719	PIs Sta 248+14.847
Θs = 1° 15' 12.0"	Δ = 50° 47' 35.4" (RT)	Θs = 1° 15' 12.0"
Ls = 70.000	L = 1,418.413	Ls = 70.000
LT = 46.668	T = 759.619	LT = 46.668
ST = 23.334	R = 1,600.000	ST = 23.334
	e = 0.04	

SEE SHEETS 95 & 96 FOR -L- PROFILE

REVISIONS

8/17/99

22-MAY-2008 17:06
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	47
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

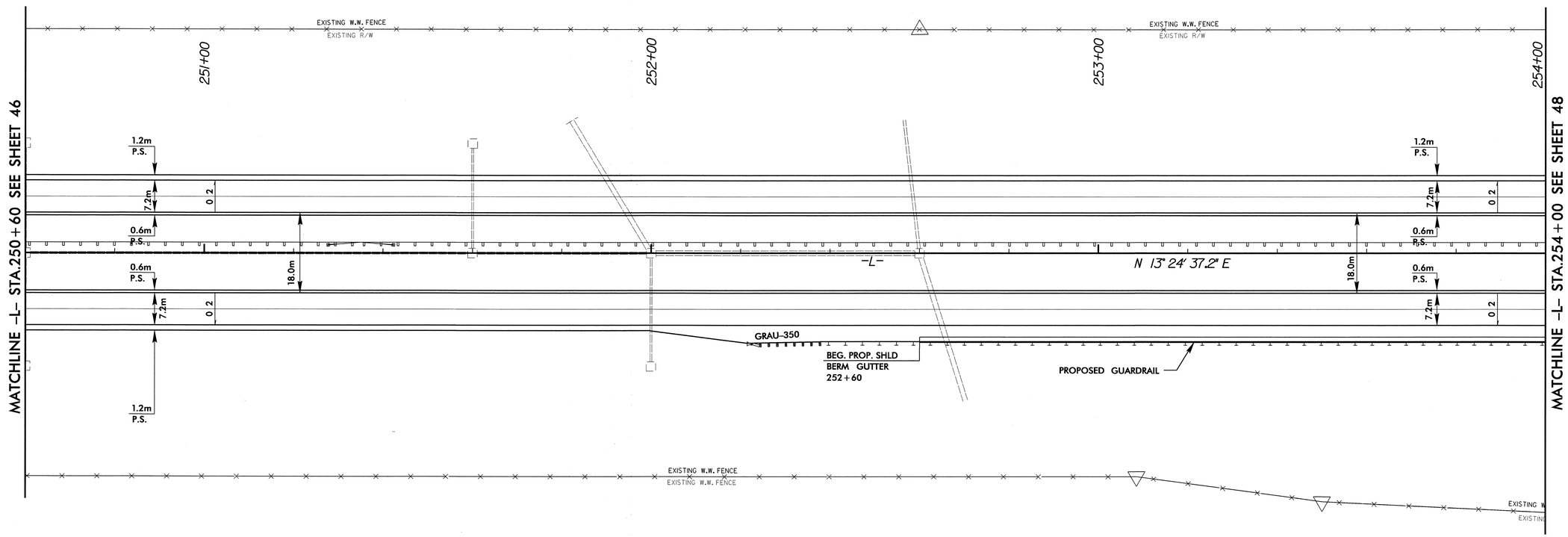
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 12/8/08

HYDRAULICS ENGINEER

REVISIONS

NAD 83



SEE SHEET 96 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	48
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

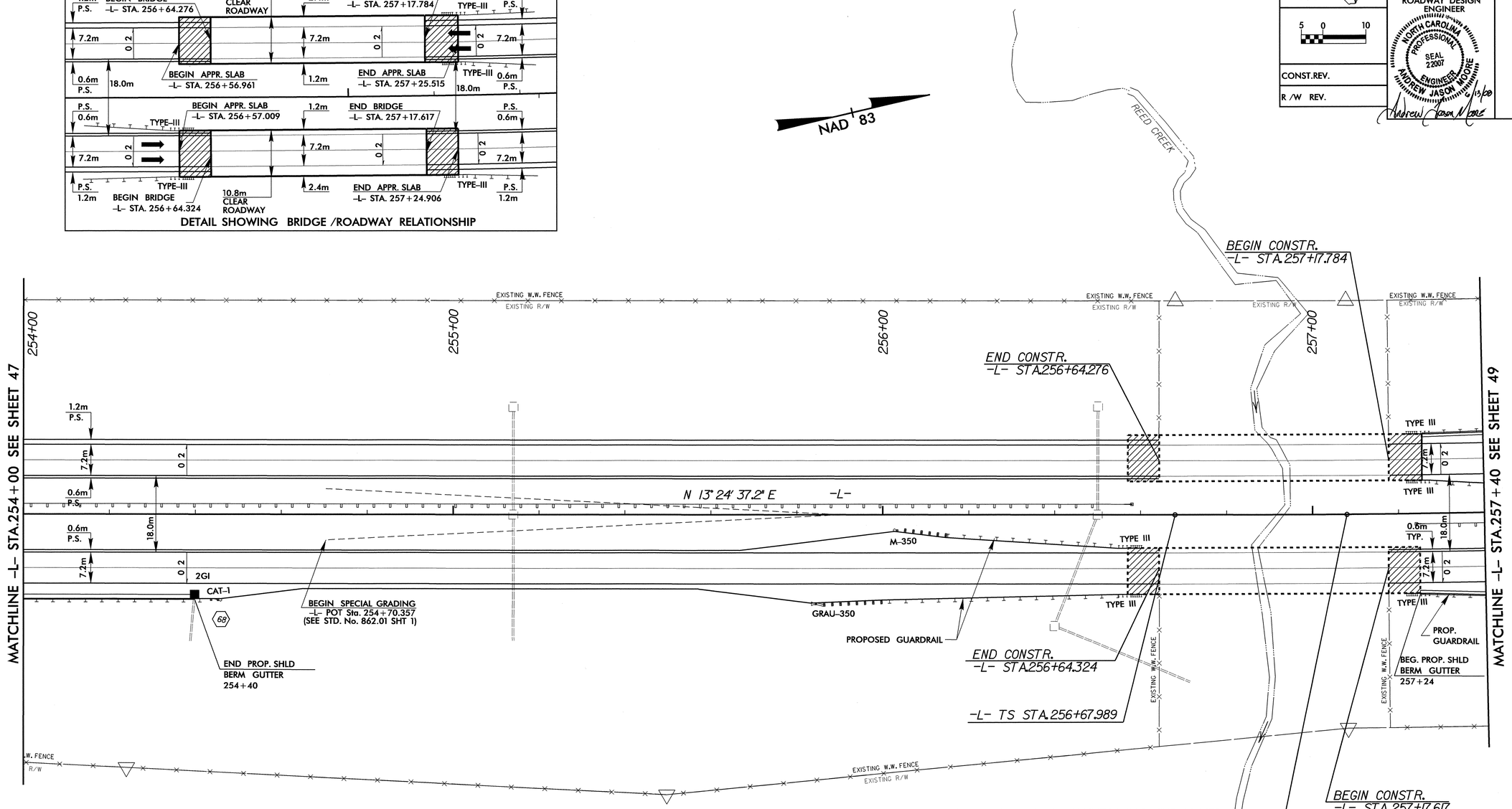
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/15/08

DETAIL SHOWING BRIDGE /ROADWAY RELATIONSHIP



(CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE JOINTS OF THE EXISTING STRUCTURES DURING CONSTRUCTION)

-L-

PIs Sta 256+94.656	PI Sta 260+42.049
Θs = 0° 27' 30.1"	Δ = 15° 13' 19.3" (LT)
Ls = 40.000	L = 664.186
LT = 26.667	T = 334.060
ST = 13.333	R = 2,500.000
	e = 0.02
	(SEE PLANS FOR SUPER LOCATION)

STRUCTURES CONSTRUCTED UNDER R-2206C

SEE SHEETS 96 & 97 FOR -L- PROFILE

REVISIONS

8/27/99

29-MAY-2008 16:04
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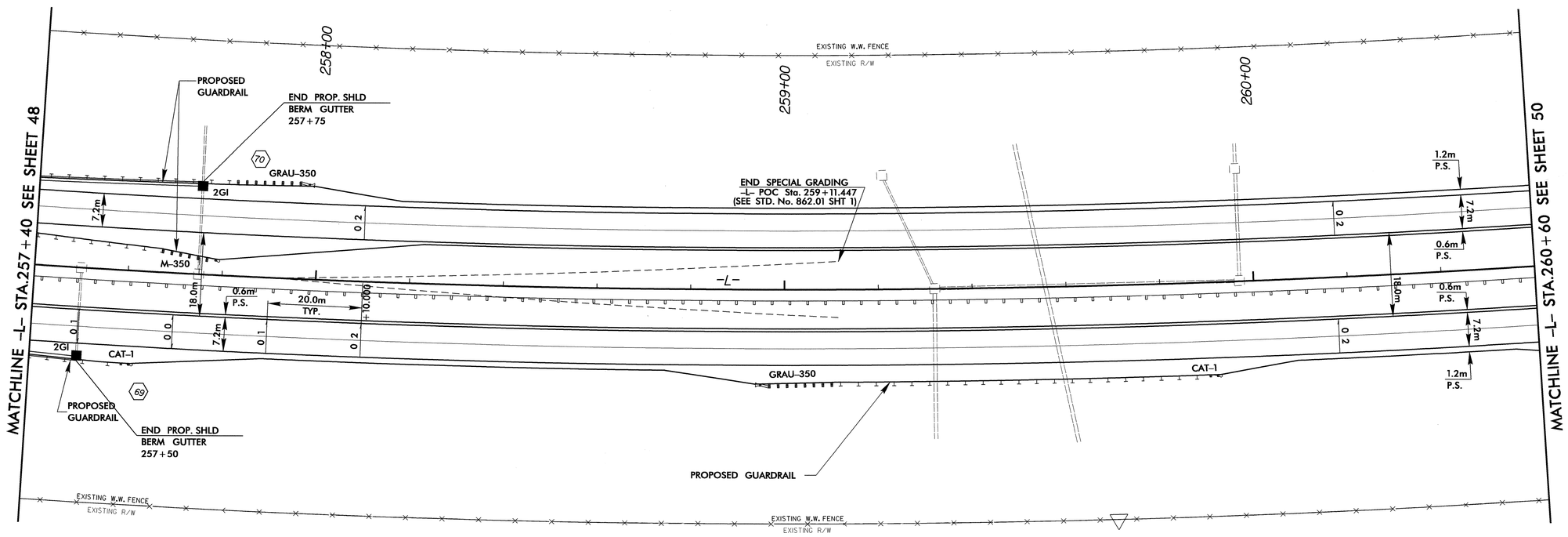
METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 5 10	R-2206 BA & CA	49
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	NORTH CAROLINA PROFESSIONAL SEAL 2 2007 ENGINEER ANDREW JASON MOORE 6/13/08	

NAD 83



-L-

PIs Sta 256+94.656	PI Sta 260+42.049
Θs = 0° 27' 30.1"	Δ = 15° 13' 19.3" (LT)
Ls = 40.000	L = 664.186
LT = 26.667	T = 334.060
ST = 13.333	R = 2,500.000
	e = 0.02

SEE SHEETS 97 FOR -L- PROFILE

REVISIONS

22-MAY-2008 17:06
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	50
R /W SHEET NO.	

METRIC

5 0 10

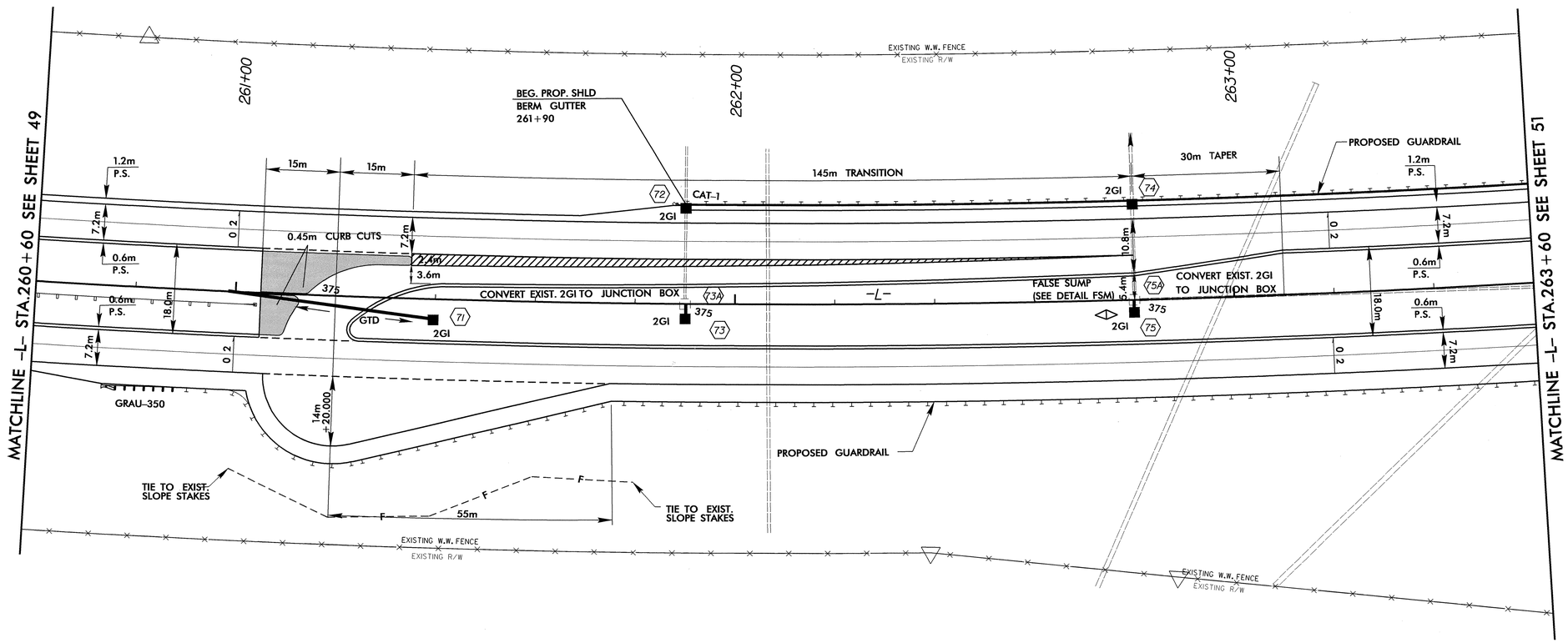
CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
6/13/08
Andrew Jason Moore

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL
6/13/08
W. Galen Cail

REVISIONS



FROM -L- STA. 261+05 +/- TO -SBL- STA. 268+90 +/- DIRECTIONAL CROSSOVER. SEE INTERSECTION DETAIL SHEET 2-M.

Monolithic Concrete Island

SEE SHEET 97 FOR -L- PROFILE

-L-

Pls Sta 256+94.656	PI Sta 260+42.049
Θs = 0° 27' 30.1"	Δ = 15° 13' 19.3" (LT)
Ls = 40.000	L = 664.186
LT = 26.667	T = 334.060
ST = 13.333	R = 2,500.000
	e = 0.02

11:WIN-2008 13:24
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	51
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R /W REV.

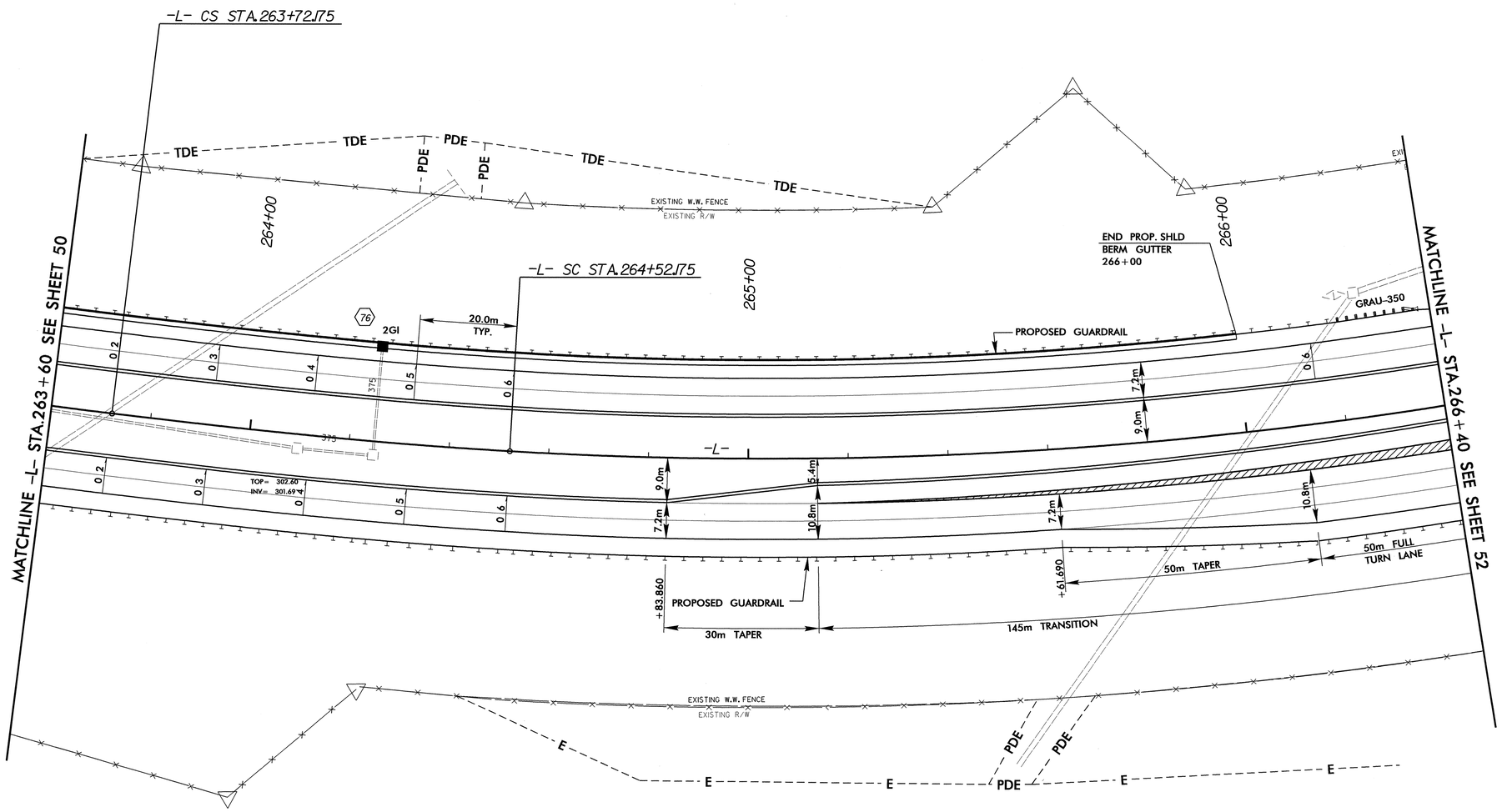
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/9/08

-L-

PIs Sta 256+94.656	PI Sta 260+42.049	PIs Sta 264+18.607	PI Sta 265+95.400
Θs = 0° 27' 30.1"	Δ = 15° 13' 19.3" (LT)	Θs = 0° 54' 59.9"	Δ = 18° 35' 31.4" (LT)
Ls = 40.000	L = 664.186	Θs = 2° 37' 09.5"	L = 283.931
LT = 26.667	T = 334.060	Ls = 80.000	T = 143.224
ST = 13.333	R = 2,500.000	LT = 46.432	R = 875.000
	e = 0.02	ST = 33.592	e = 0.06

NAD 83



SEE SHEETS 97 & 98 FOR -L- PROFILE

REVISIONS

22-MAY-2008 17:05
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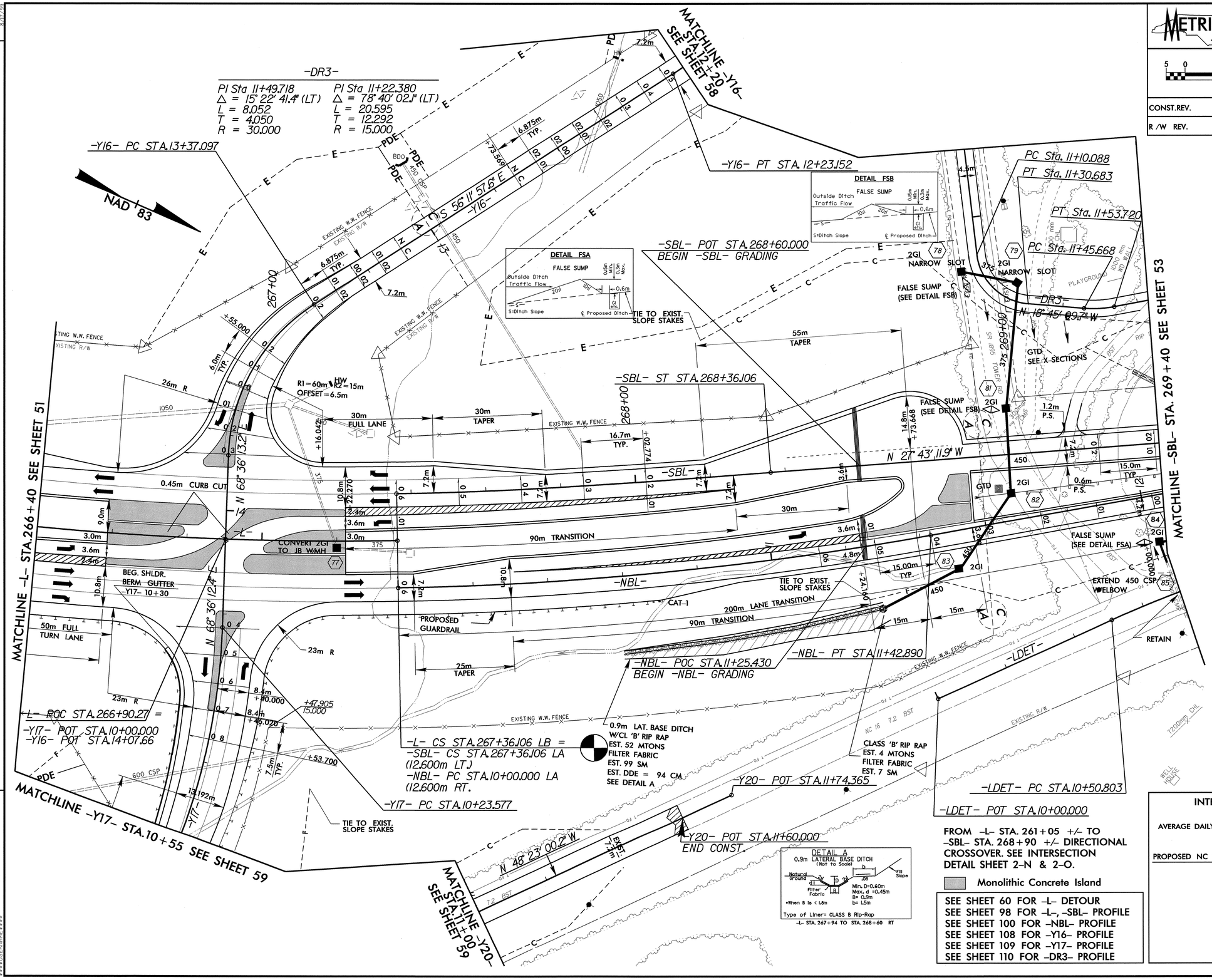
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	52
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R /W REV.	

METRIC 5 0 10



FROM -L- STA. 261+05 +/- TO -SBL- STA. 268+90 +/- DIRECTIONAL CROSSOVER. SEE INTERSECTION DETAIL SHEET 2-N & 2-O.

Monolithic Concrete Island

SEE SHEET 60 FOR -L- DETOUR
SEE SHEET 98 FOR -L-, -SBL- PROFILE
SEE SHEET 100 FOR -NBL- PROFILE
SEE SHEET 108 FOR -Y16- PROFILE
SEE SHEET 109 FOR -Y17- PROFILE
SEE SHEET 110 FOR -DR3- PROFILE

INTERSECTION WITH EXISTING NC 16

AVERAGE DAILY TRAFFIC 2007/2030

PROPOSED NC 16 6,500/11,100

-L- 12,840/21,100

10 PM (7,7) → 53

140/350

6,480/10,350 10 PM (6,6) → 52

6,620/10,700

EXISTING NC 16

10 PM (5,5) → 51

REVISIONS

8/17/99

06-AUG-2008 15:29
r2206bc_rdy_psh_52.dgn
$$$$USERNAME$$$$

D244219 8/6/2008 r2206bc_rdy_psh_52 scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	53
R /W SHEET NO.	

METRIC 5 0 10

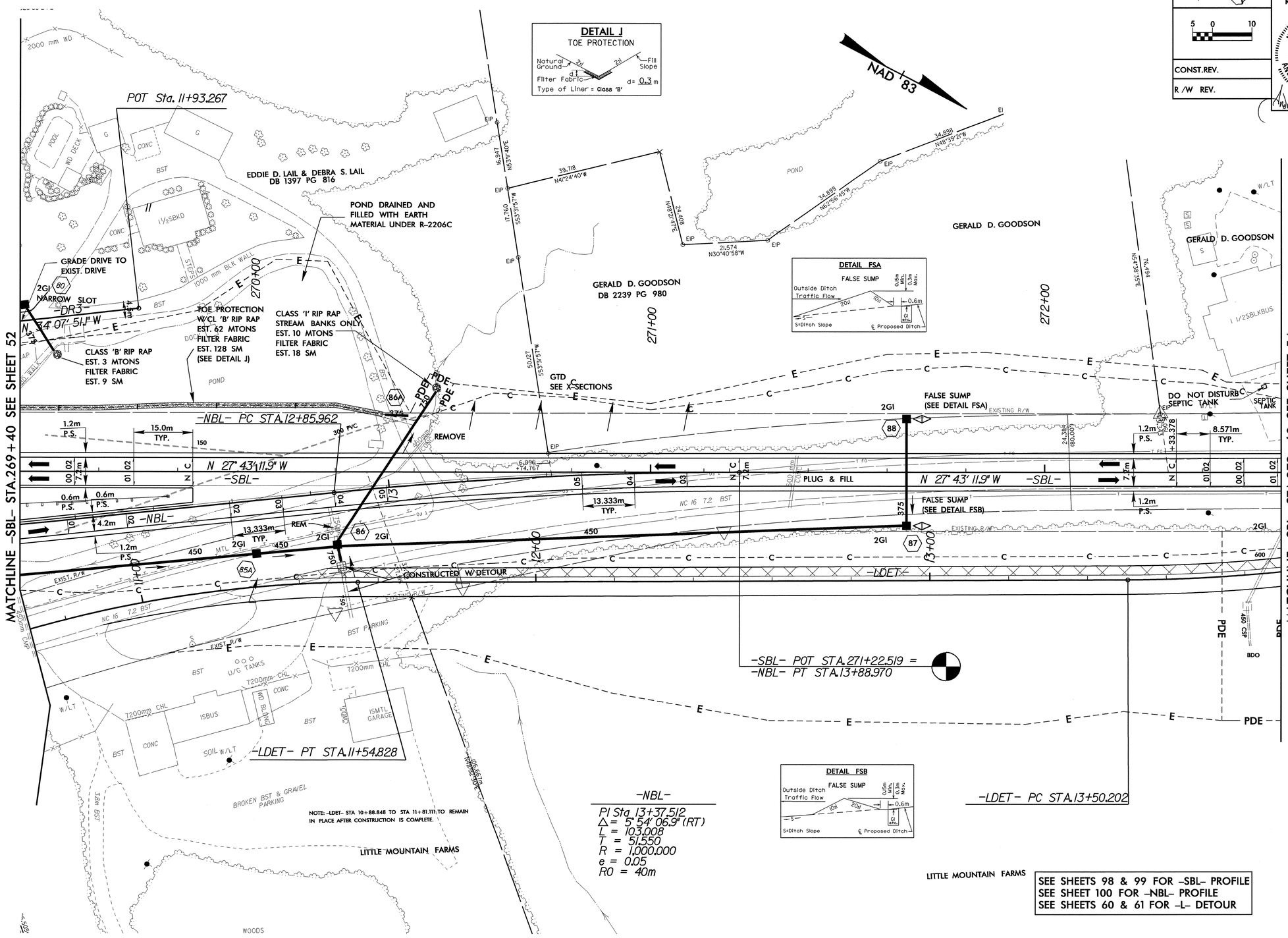
CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 032090 ENGINEER W. GALEN CAUDILL

REVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	54
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

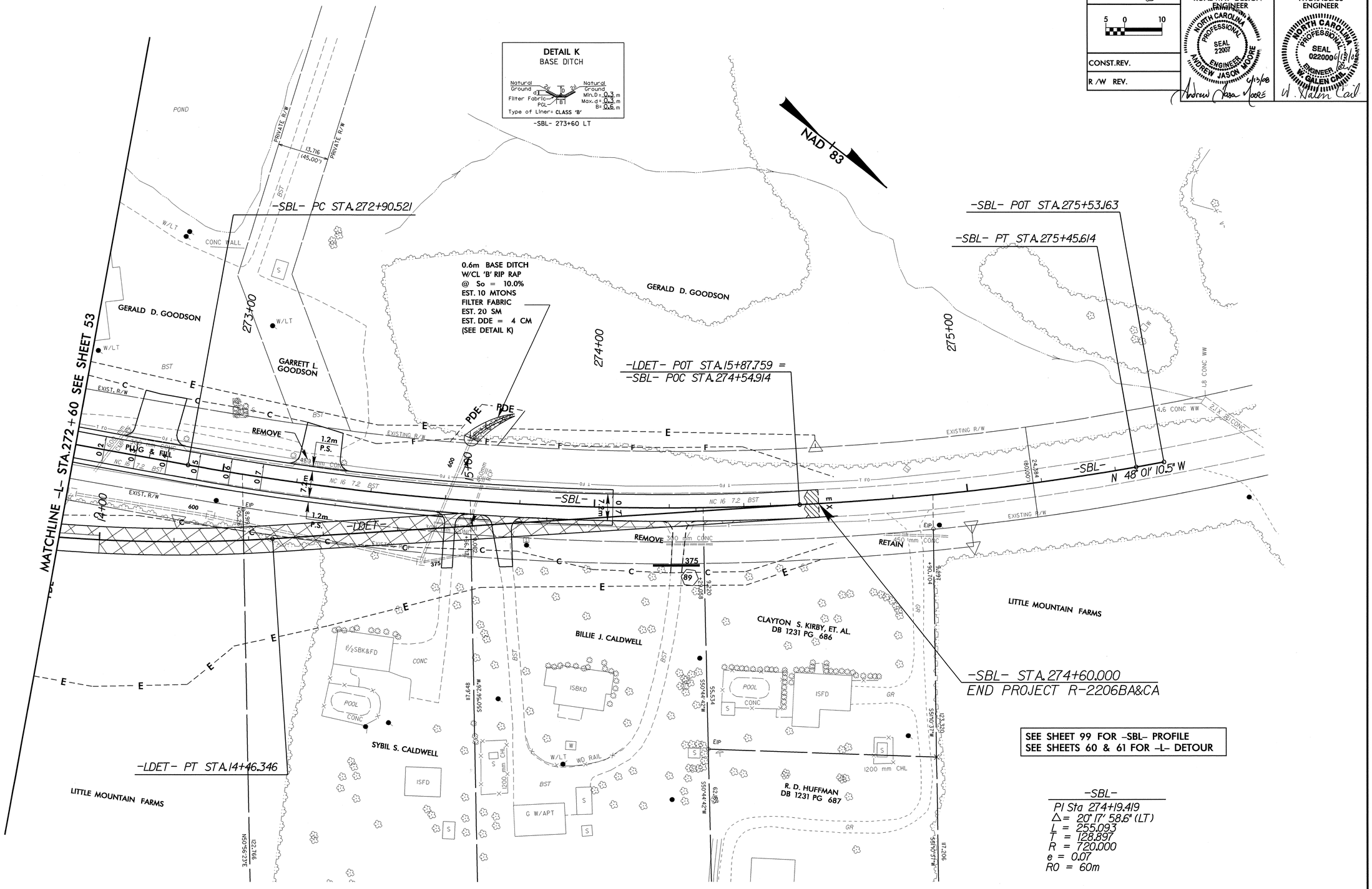
Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL 6/13/08

W. Galen Cail

REVISIONS

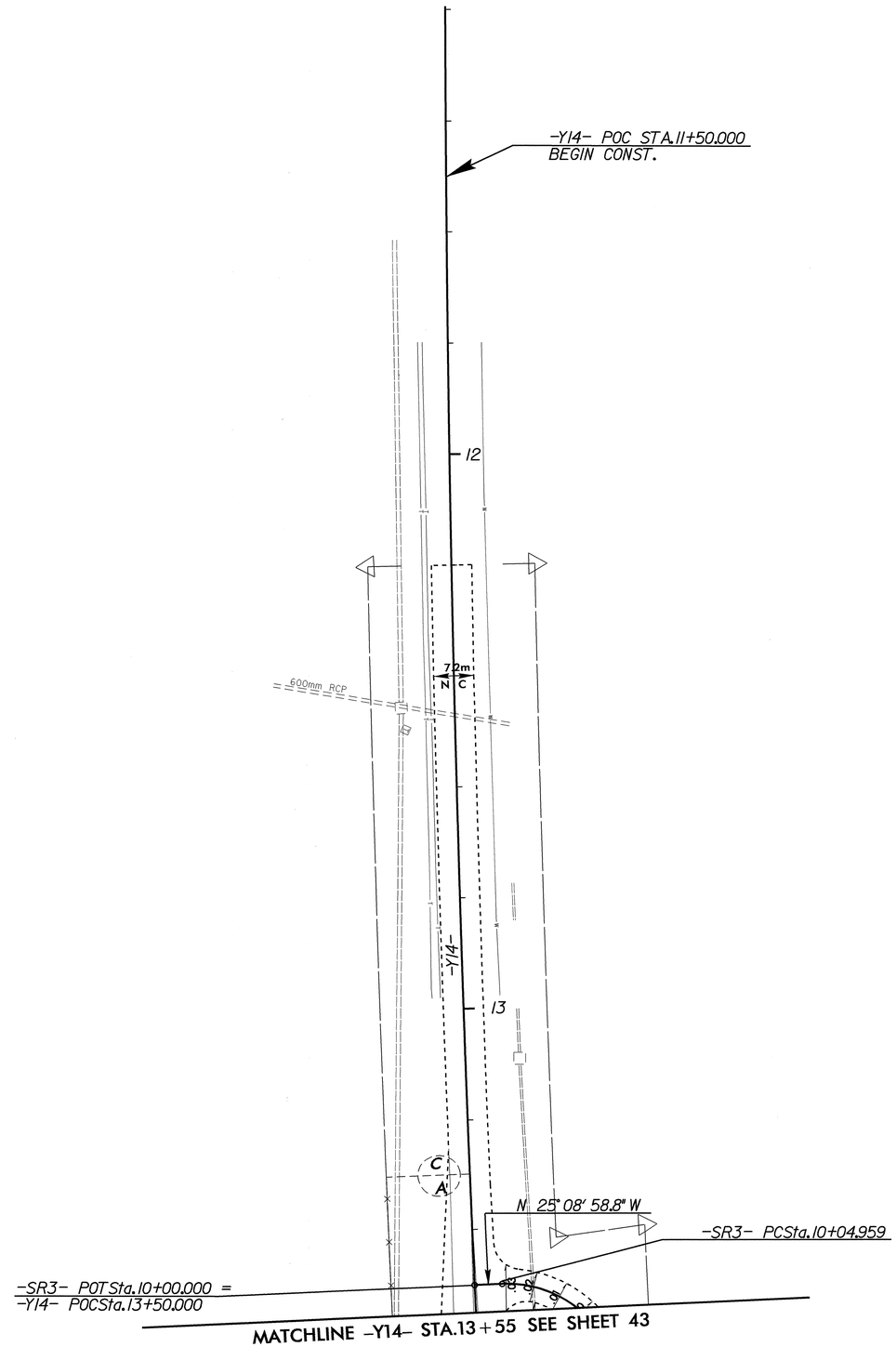


-SBL-

PI Sta 274+19.419
Δ = 20° 17' 58.6" (LT)
L = 255.093
T = 128.897
R = 720.000
e = 0.07
RO = 60m

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	55
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08	
R /W REV.		

REVISIONS



NAD 83

-Y14-

PI Sta 15+40.904
△ = 10° 07' 29.0" (LT)
L = 989.574
T = 496.078
R = 5,600.000
e = NC

-SR3-

PI Sta 10+24.888
△ = 89° 47' 43.8" (RT)
L = 31.345
T = 19.929
R = 20.000
SE = RC

-SR3A-

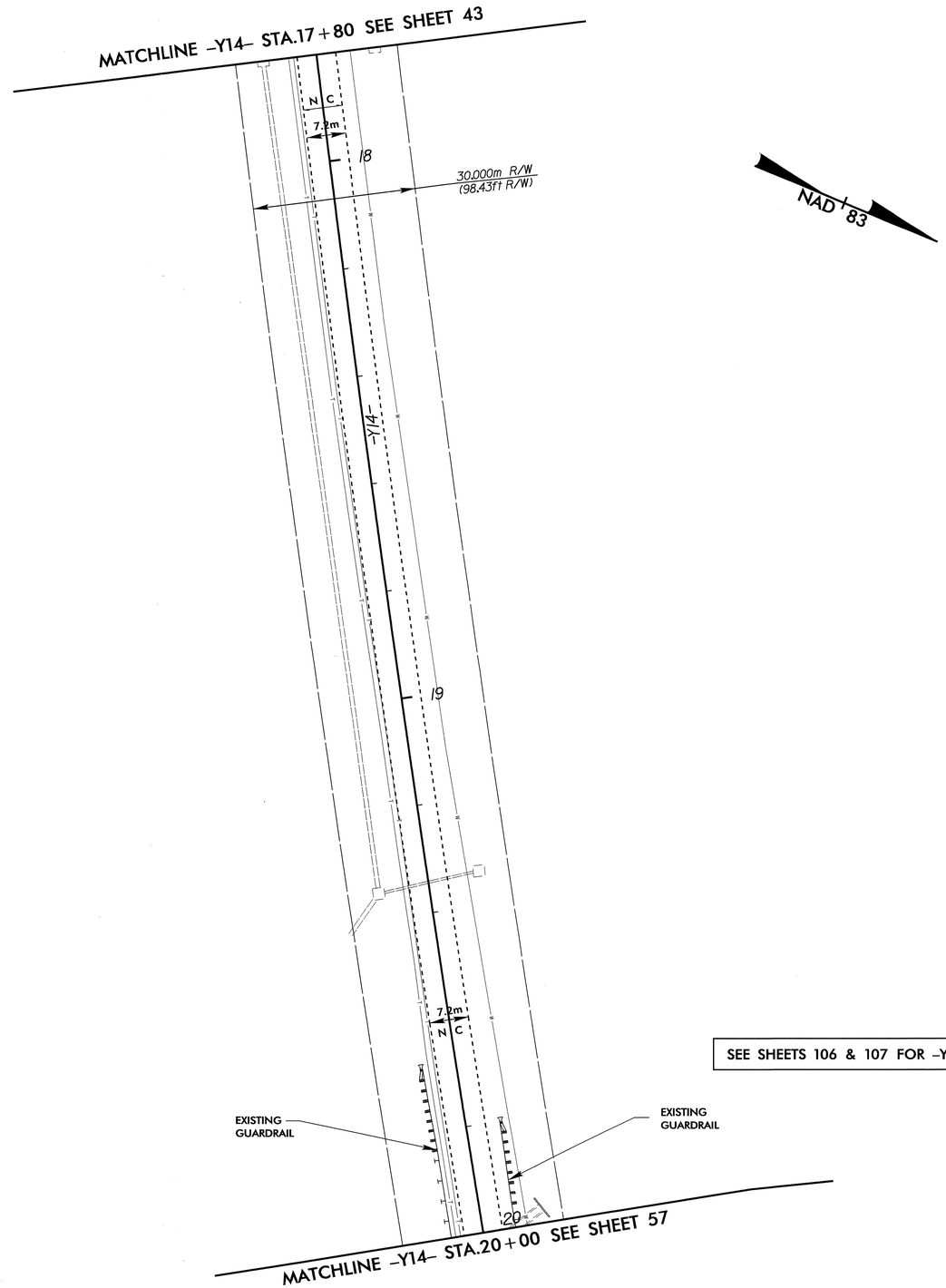
PI Sta 10+24.969
△ = 26° 58' 49.9" (RT)
L = 14.127
T = 7.197
R = 30.000
SE = RC

SEE SHEET 106 FOR -Y14- PROFILE

22-MAY-2008 17:05
R:\Roadway\Proj\r2206bc_rdy_psh_55.dgn
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	56
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08 Andrew Jason Moore	
R /W REV.		

REVISIONS



-Y14-

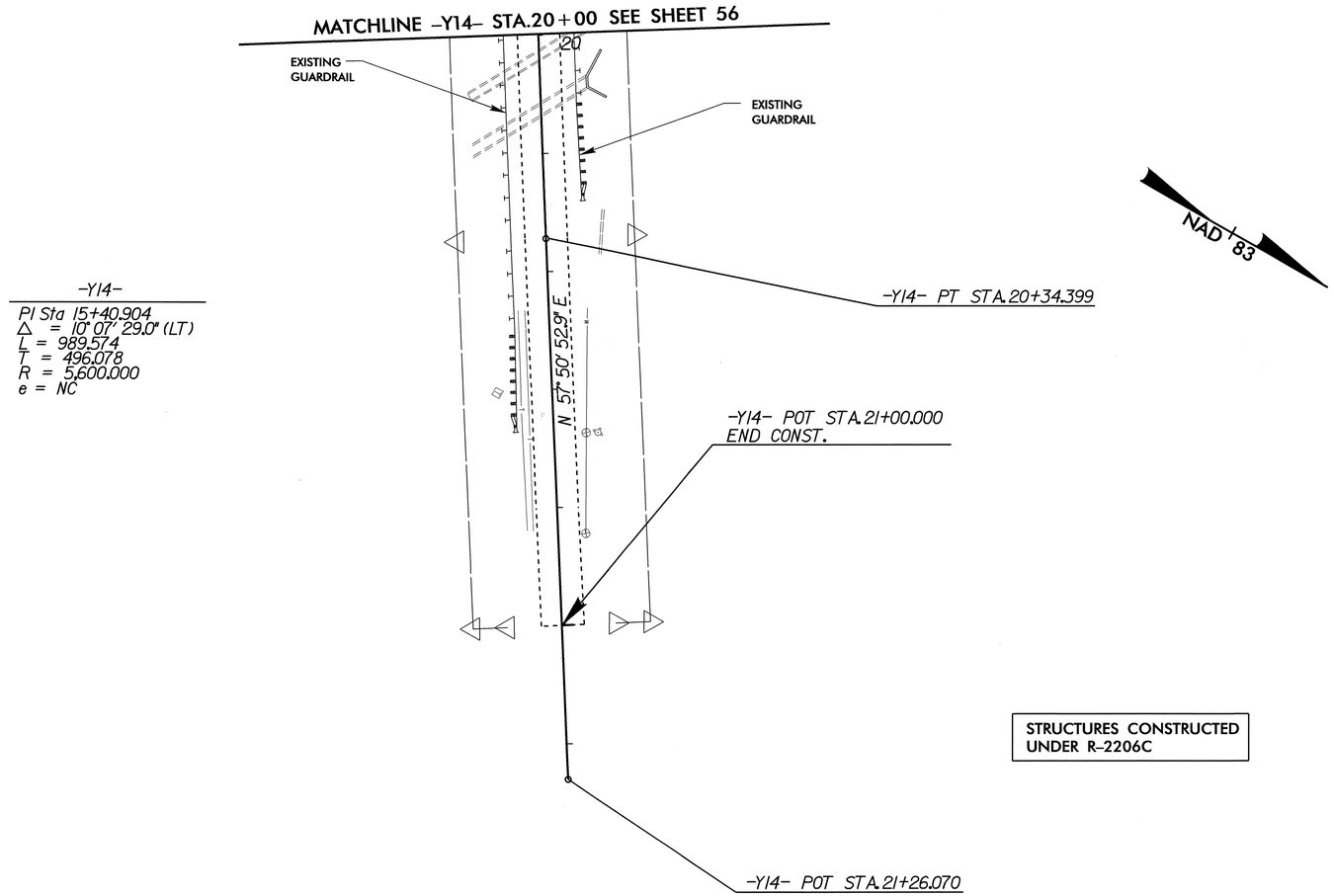
PI Sta 15+40.904
Δ = 10° 07' 29.0" (LT)
L = 989.574
T = 496.078
R = 5,600.000
e = NC

SEE SHEETS 106 & 107 FOR -Y14- PROFILE

22-MAY-2008 17:05
R:\Roadway\Proj\r2206bc_rdy_psh_56.dgn
$$$$USERNAME$$$$

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2206 BA & CA	57
	R /W SHEET NO.	
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE	
R /W REV.	Andrew Jason Moore 6/13/08	

REVISIONS



STRUCTURES CONSTRUCTED UNDER R-2206C

SEE SHEET 107 FOR -Y14- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	58
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
Andrew Jason Moore 6/19/08

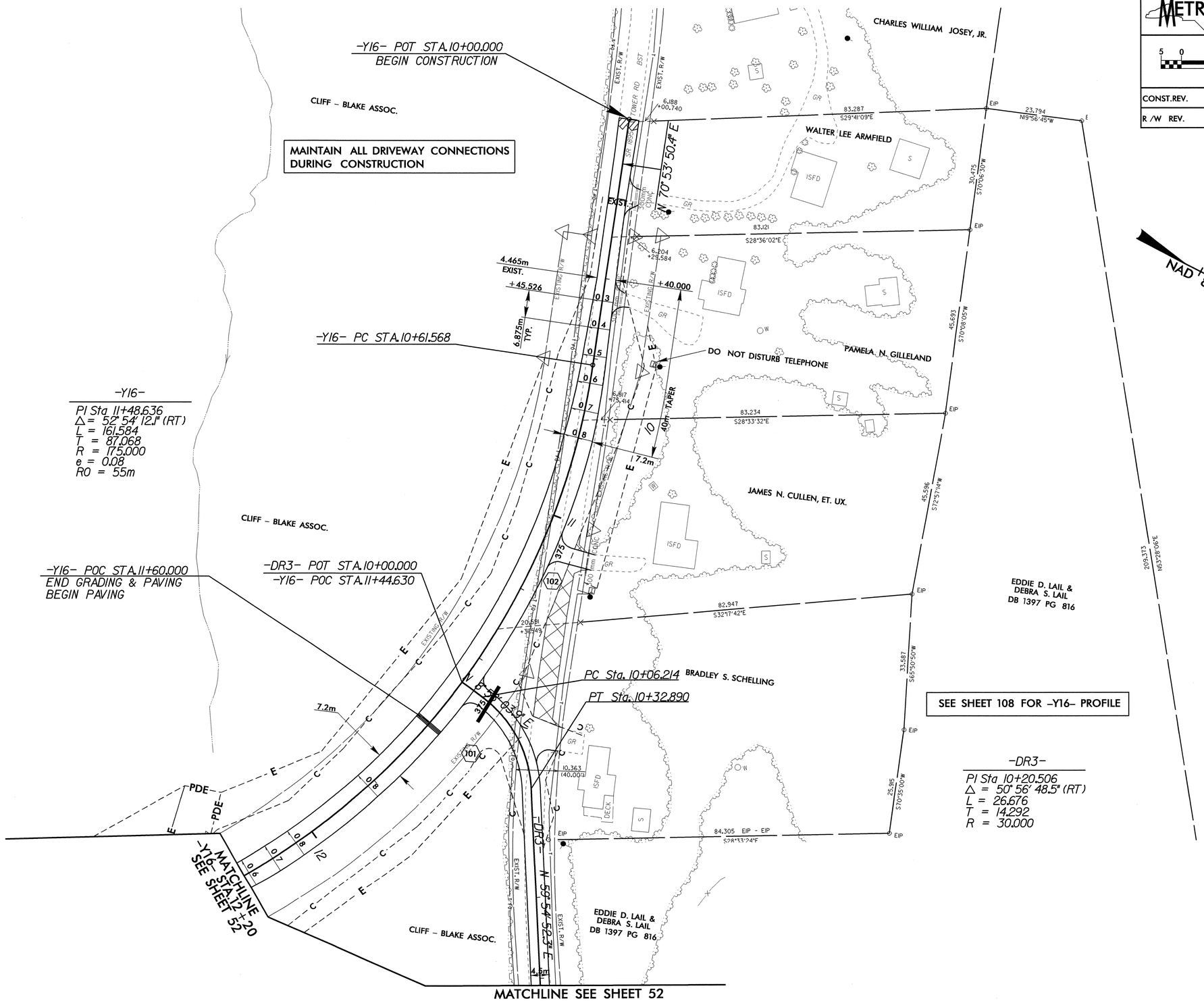
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL
W. Galen Cail 6/19/08

5 0 10

CONST.REV.

R /W REV.

REVISIONS



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RD223186 5/30/2008 r2206bc_rdy_psh_58 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	59
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CALDWELL
W. Galen Caldwell 6/13/08

REVISIONS

-Y20-
PI Sta 10+40.435
Δ = 55° 50' 26.2" (LT)
L = 43.857
T = 23.847
R = 45.000

-Y17-
PI Sta 11+37.112
Δ = 65° 56' 55.1" (RT)
L = 201.429
T = 113.535
R = 175.000
e = 0.08
R0 = 60m

PI Sta 13+81.112
Δ = 10° 11' 41.9" (RT)
L = 311.388
T = 156.106
R = 1,750.000
e = 0.03
R0 = 60m

DETAIL J
LATERAL "V" DITCH
(Not to Scale)
Natural Ground, 2:1, b, 1'/Ft., Fill Slope
Min. D=0.3 m
Max. d= 0.3 m
b= 1.5 m
Type of Liner= CLASS B RIP RAP
-Y17- STA. 11+52 TO STA. 11+73 RT

DETAIL L
SPECIAL CUT DITCH
Natural Ground, 2:1, D, PGL, 60 m Filter, Front Ditch Slope
Min. D=0.45m
-Y17- STA. 12+60 to 13+60 RT

DETAIL M
SPECIAL CUT DITCH
Natural Ground, 2:1, D, Filter Fabric, 60 m Filter, Front Ditch Slope
Min. D=0.45m
Max. d= 0.3 m
Type of Liner = Class 'B'
-Y17- STA. 12+60 to 13+75 LT

-Y17- POC STA.11+10.000 =
-Y20- POT STA.10+00.000

LAT. V DITCH
W/CLASS B RIP RAP
EST. 17 MTONS
FILTER FABRIC
EST. 50 SM
EST. DDE= 47 CM
SEE DETAIL I

CLASS 'I' RIP RAP
EST. 3 MTONS
FILTER FABRIC
EST. 6 SM

HOMECOMINGS FINANCIAL NETWORK, INC.

AMOS BROWN, ET. AL.

PROP. GUARDRAIL

MATCHLINE -Y17- STA 10+80 SEE SHEET 52

ANTHONY L. DRUM

-Y17- PCC STA.12+25.006

162m LANE TRANSITION

END SHLDR. BERM GUTTER 11+73

400 CSP W/ 2 ELBOWS

N 7° 27' 26.1" E

-Y17- POC STA.10+96.832
END CONSTRUCTION

PROP. GUARDRAIL

MATCHLINE SEE SHEET 52
-Y20- STA 11+00

N 48° 23' 00.2" W

N 60° 00' 34.9" E

RETAIN & EXTEND

-Y20- PT STA.10+60.446

-Y20- PC STA.10+16.589

-Y20- POC STA.10+46.000 =
-Y21- POT STA.10+00.000

N 32° 48' 24.0" E

CONC. COLLAR

-Y21- PC STA.10+11.539

-Y21- PT STA.10+25.783

-Y21- POT STA.10+37.805

TEMPORARY WIDENING OF EXIST. NC16 FOR CONSTRUCTION OF -Y17-

SPECIAL CUT DITCH SEE DITCH GRADE (SEE DETAIL L)

TIE TO EXIST. DITCH

DO NOT DISTURB

RETAIN

-Y17- POC STA.13+60.000

TIE TO EXIST. 600mm CONC. PIPE

SPECIAL CUT DITCH W/CL 'B' RIP RAP
EST. 276 MTONS
FILTER FABRIC
EST. 574 SM
(SEE DETAIL M)

TADELUSZ A. SZYMCZYK

RONNY GENE CARSWELL

WILLIAM H. LEWIS

TONY R. AUSTIN

-Y21-
PI Sta 10+18.798
Δ = 27° 12' 11.0" (LT)
L = 14.243
T = 7.259
R = 30.000

BEAM TRUST
DB 2329 PG 120

LEONARD McALISTER

RUGGED HILL RD

NAD 83

SEE SHEET 109 FOR -Y17- PROFILE
SEE SHEET 110 FOR -Y20- & -Y21- PROFILES

MAINTAIN ALL DRIVEWAY CONNECTIONS DURING CONSTRUCTION

11-JUN-2008 15:50
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	60
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

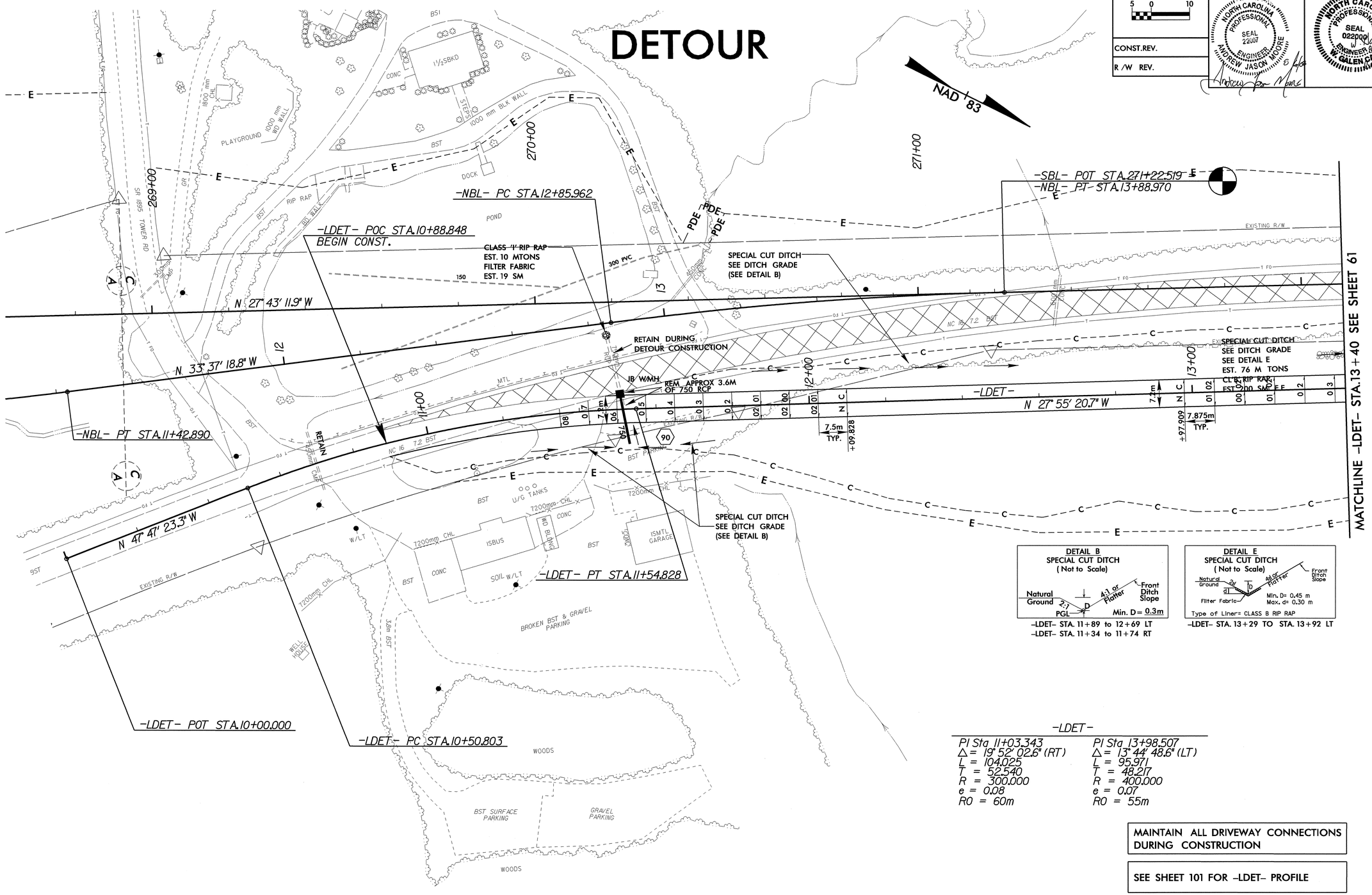
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAUDILL

REVISIONS

DETOUR



-LDET-

PI Sta 11+03.343	PI Sta 13+98.507
Δ = 19° 52' 02.6" (RT)	Δ = 13° 44' 48.6" (LT)
L = 104.025	L = 95.971
T = 52.540	T = 48.217
R = 300.000	R = 400.000
e = 0.08	e = 0.07
RO = 60m	RO = 55m

MAINTAIN ALL DRIVEWAY CONNECTIONS DURING CONSTRUCTION

SEE SHEET 101 FOR -LDET- PROFILE

06-AUG-2008 15:29
R:\Roadway\Proj\r2206bc_rdy_psh_60.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	61
R /W SHEET NO.	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

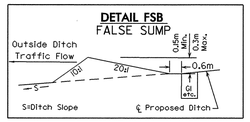
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAMPBELL

REVISIONS

8/17/08

DETAIL FSB
FALSE SUMP



REMOVE –LDET– STA 14+00 TO PROPOSED –SBL– EOP ONCE DETOUR IS NO LONGER NEEDED.
ESTIMATED AREA = 952 SQ. METERS

NAD '83

DETOUR

MATCHLINE –LDET– STA.13+40 SEE SHEET 60

–SBL– POT STA.275+53.163
–SBL– PT STA.275+45.614

–SBL– POC STA.274+64.914 =
–LDET– POT STA.15+97.762
END CONST.

–SBL– PC STA.272+90.521

N 48° 01' 10.5"

N 41° 40' 09.2" W

–LDET–

–LDET– PC STA.13+50.290

–LDET– PT STA.14+46.261

–LDET–
PI Sta. 13+98.507
Δ = 13° 44' 48.6" (LT)
L = 95.971
T = 48.217
R = 400.000
e = 0.07
R0 = 55m

GERALD D. GOODSON
GARRETT L. GOODSON
CLAYTON S. KIRBY, ET. AL.
DB 1231 PG 686
BILLIE J. CALDWELL
SYBIL S. CALDWELL
R. D. HUFFMAN
DB 1231 PG 687
LITTLE MOUNTAIN FARMS

CLASS 'B' RIP RAP
EST. 3 MTONS
FILTER FABRIC
EST. 10 SM

PLUG & FILL

RETAIN

REMOVE EXIST. DI

FALSE SUMP (SEE DETAIL FSB)

450 CSP

BERM 'V' DITCH
EST. DDE=203.20 CM
(SEE DETAIL D)

BERM 'V' DITCH
W/CL 'B' RIP RAP
EST. 13 MTONS
FILTER FABRIC
EST. 27 SM
EST. DDE=239 CM
(SEE DETAIL C)

DETAIL D
BERM 'V' DITCH
Natural Ground, 2V, D, 3H, b, Natural Ground, 2V, RDWY, PGL
b = 1.5 m
Min. D = 0.3 m

–LDET– STA 14+00 TO 14+20

DETAIL C
BERM 'V' DITCH
Natural Ground, 2V, D, 3H, b, Natural Ground, 2V, RDWY, PGL
Filter Fabric
b = 1.5 m
Min. D = 0.3 m Max. d = 0.3 m
Type of Liner = CLASS 'B'

–LDET– STA 13+60 TO 14+00

MAINTAIN ALL DRIVEWAY CONNECTIONS DURING CONSTRUCTION

SEE SHEET 101 FOR –LDET– PROFILE

06-AUG-2008 15:29
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$$$$USERNAME$$$$

RD244219 8/6/2008 r2206bc_rdy_psh_61 scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	62
R-2206B SHEET NO. 32	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

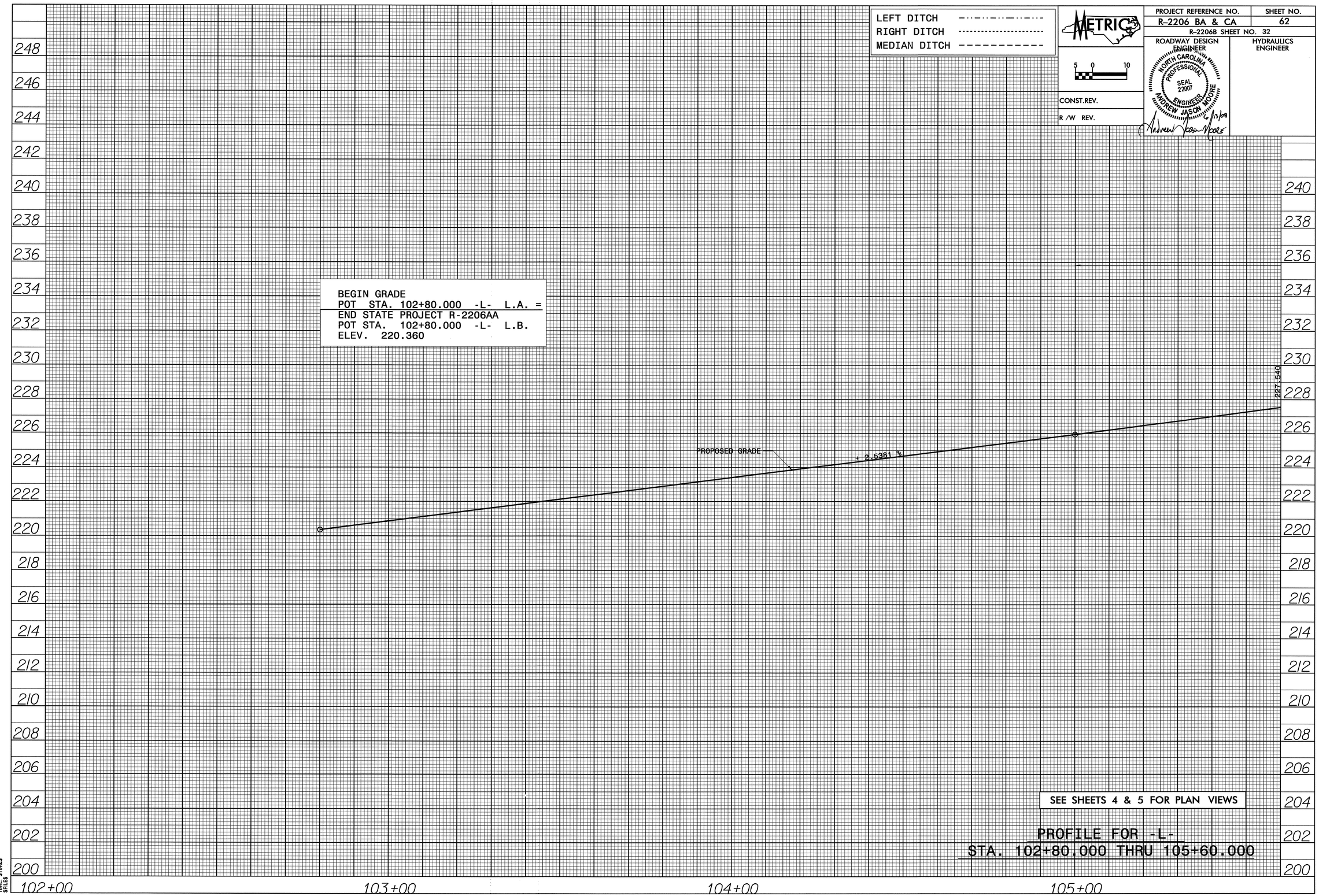
METRIC

5 0 10

CONST.REV.

R/W REV.

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH



SEE SHEETS 4 & 5 FOR PLAN VIEWS

PROFILE FOR -L-
STA. 102+80.000 THRU 105+60.000

DATE: $DATE$
TIME: $TIME$
$FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	63
R-2206B SHEET NO. 33	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

METRIC

5 0 10

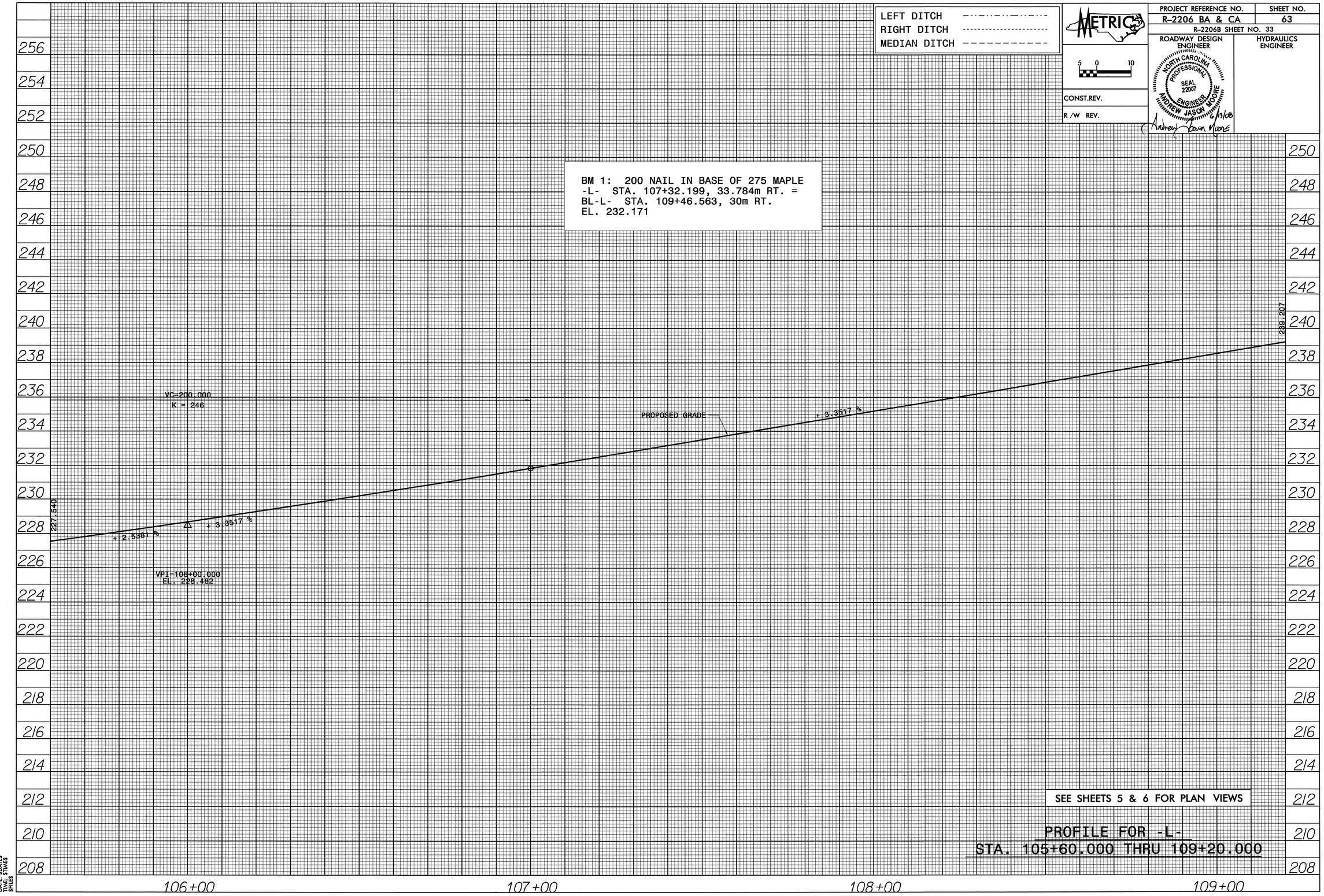
CONST.REV.

R /W REV.

LEFT DITCH

RIGHT DITCH

MEDIAN DITCH



SEE SHEETS 5 & 6 FOR PLAN VIEWS

PROFILE FOR -L-
STA. 105+60.000 THRU 109+20.000

DATE: $DATE$
TIME: $TIME$
$FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	64
R-2206B SHEET NO. 34	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE 6/13/08

Andrew Jason Moore

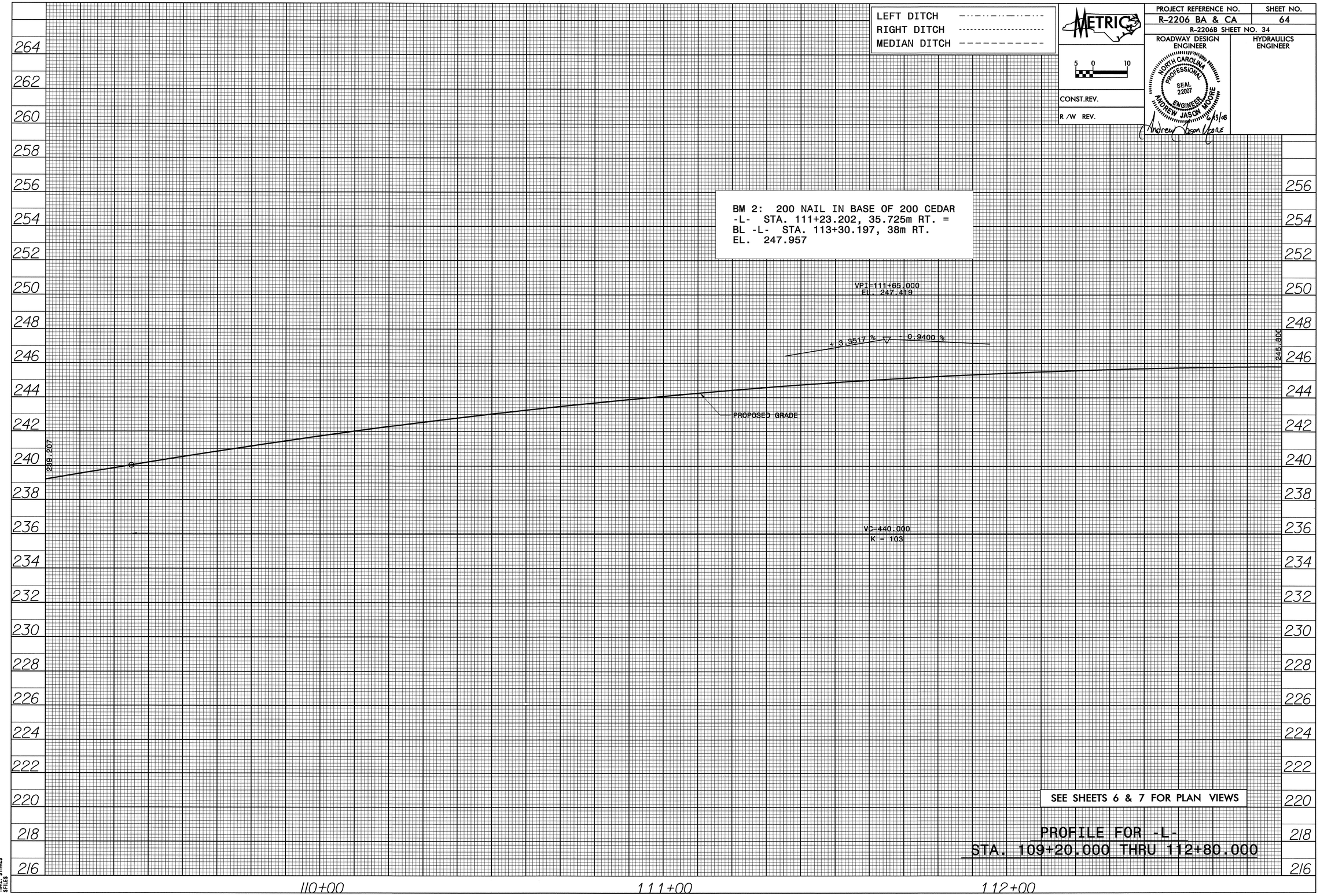
METRIC

5 0 10

CONST.REV.

R /W REV.

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH



SEE SHEETS 6 & 7 FOR PLAN VIEWS

PROFILE FOR -L-
STA. 109+20.000 THRU 112+80.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_64 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	65
R-2206B SHEET NO. 35	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

METRIC

5 0 10

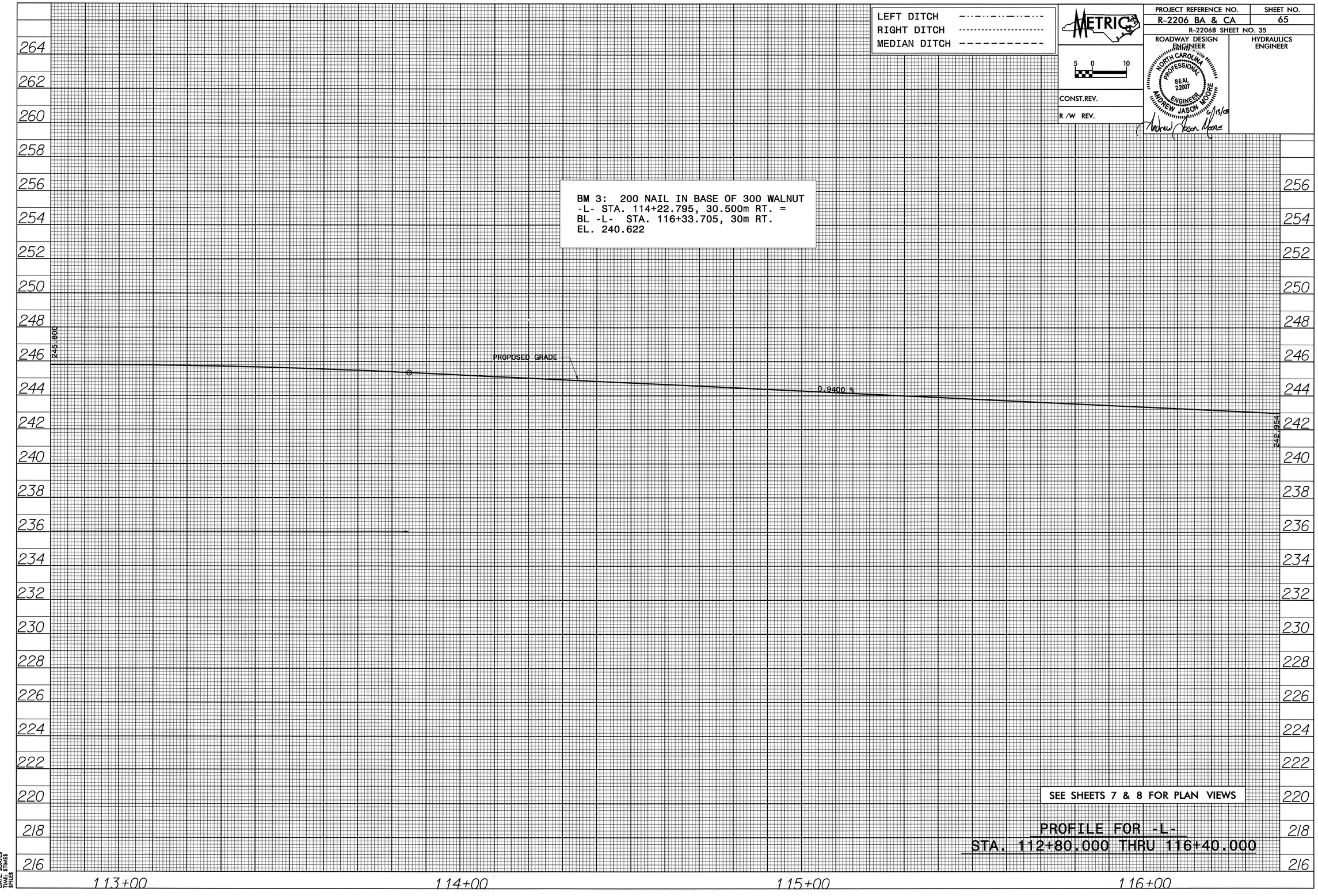
CONST.REV.

R /W REV.

LEFT DITCH

RIGHT DITCH

MEDIAN DITCH



PROFILE FOR -L-
STA. 112+80.000 THRU 116+40.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_65 rpshires RD-Oce34

LEFT DITCH	-·-·-·-·-·-·-
RIGHT DITCH	----------
MEDIAN DITCH	- - - - - - - - - -

METRIC

5 0 10

CONST.REV.

R /W REV.

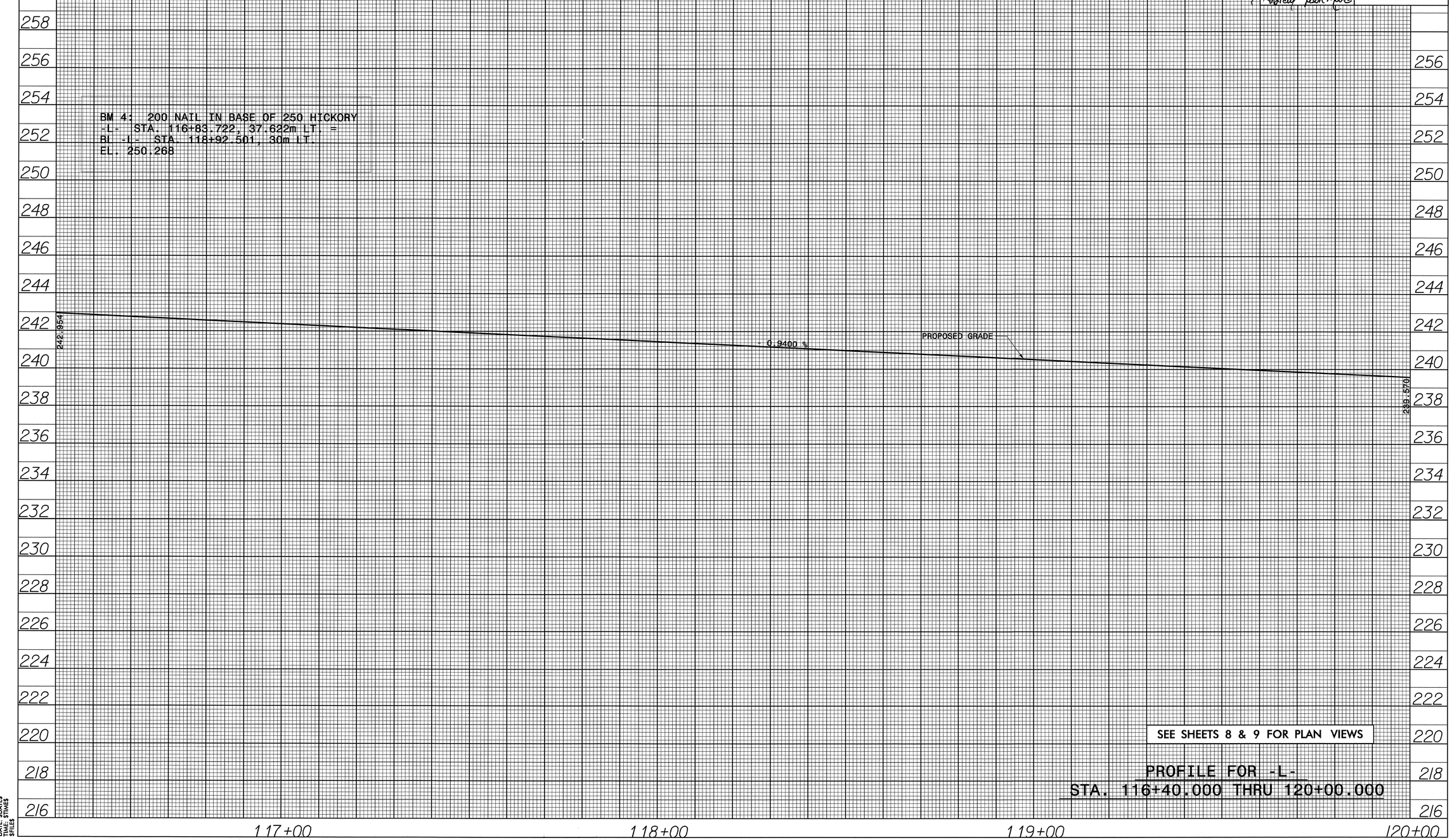
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	66
R-2206B SHEET NO. 36	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08

HYDRAULICS ENGINEER



SEE SHEETS 8 & 9 FOR PLAN VIEWS

PROFILE FOR -L-
STA. 116+40.000 THRU 120+00.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_66 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	67
R-2206B SHEET NO. 37	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

5/29/08

Andrew Jason Moore

METRIC

5 0 10

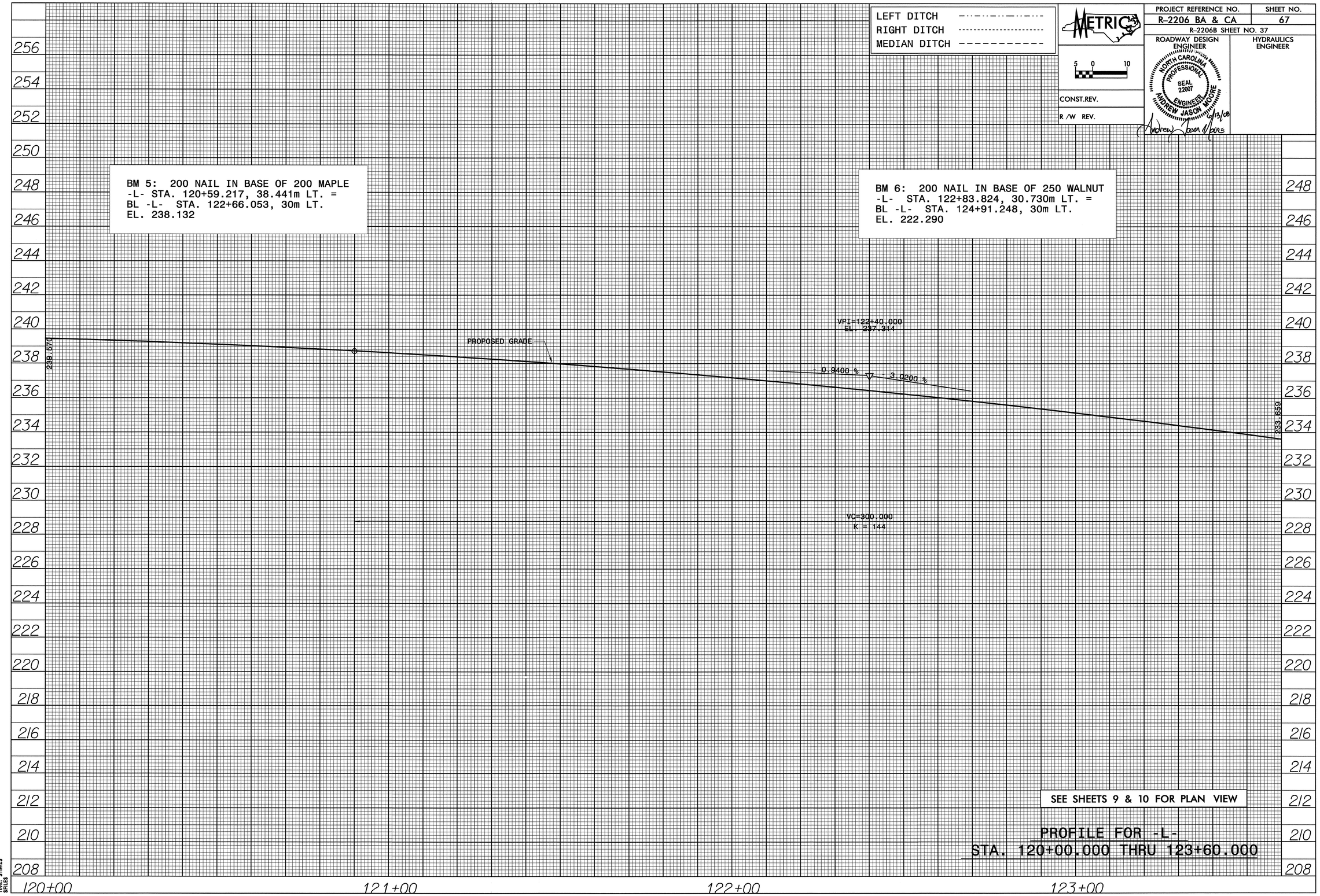
CONST.REV.

R /W REV.

LEFT DITCH

RIGHT DITCH

MEDIAN DITCH



SEE SHEETS 9 & 10 FOR PLAN VIEW

PROFILE FOR -L-
STA. 120+00.000 THRU 123+60.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_67 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	68
R-2206B SHEET NO. 38	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE — 6/3/08

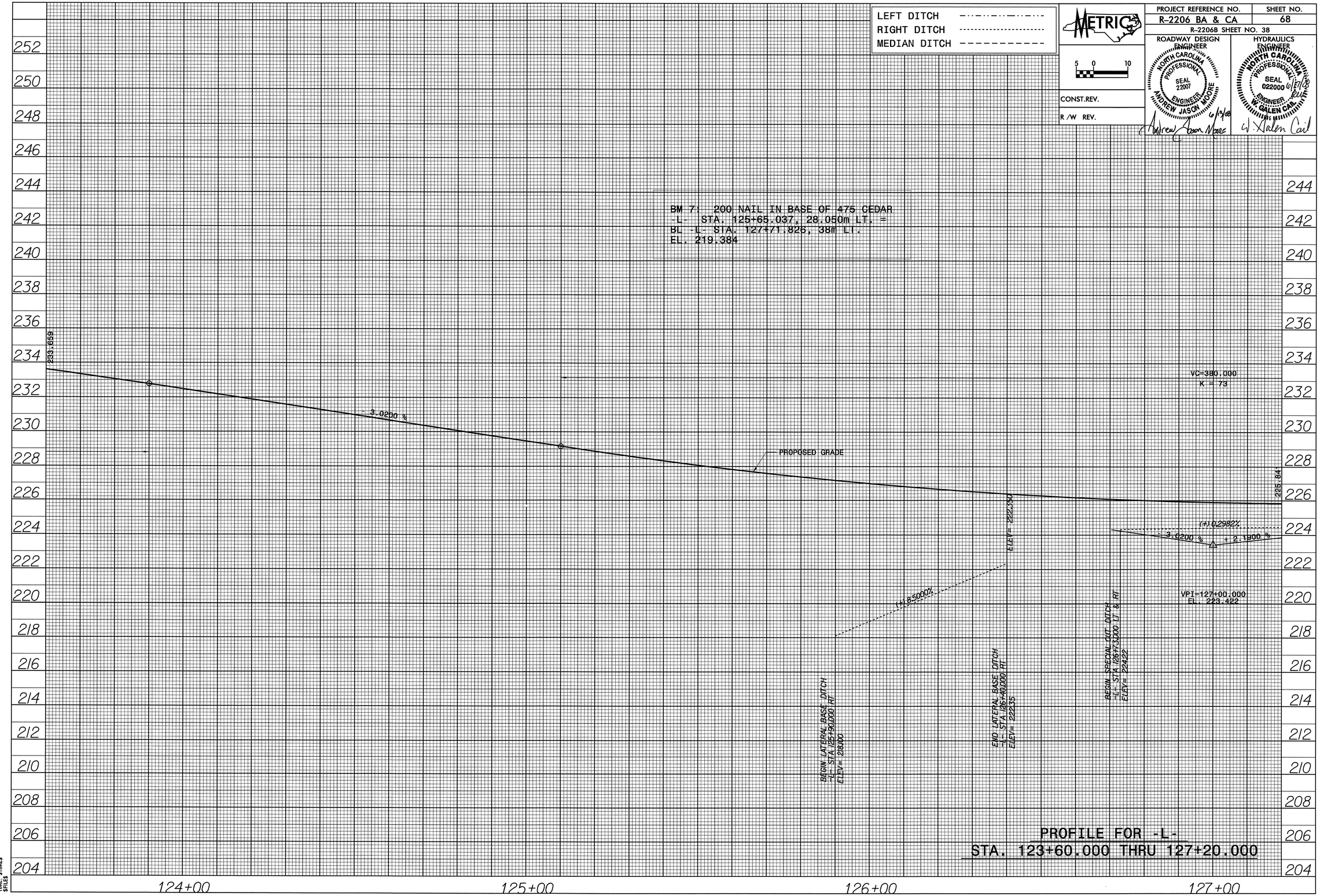
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER GALEN CAIL — 6/27/08

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC 5 0 10

CONST.REV.

R /W REV.



PROFILE FOR -L-
STA. 123+60.000 THRU 127+20.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_68 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	69
R-2206B SHEET NO. 39	

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

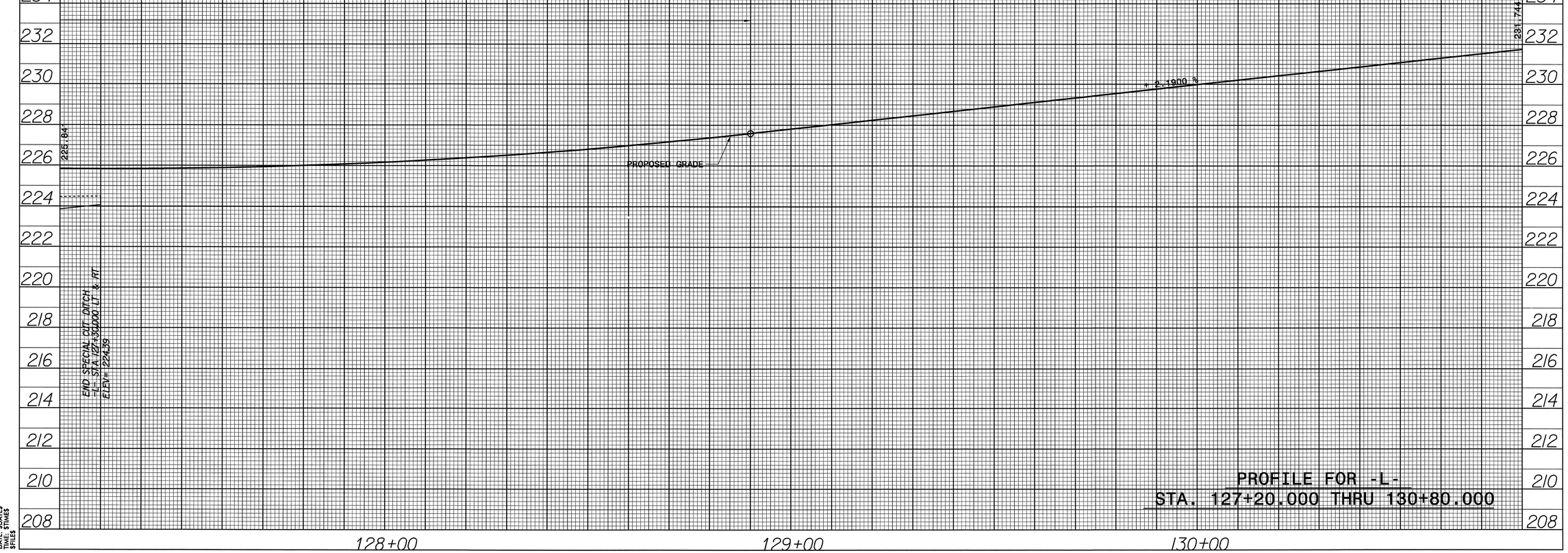
METRIC

5 0 10

CONST.REV.

R /W REV.

BM 10: 200 NAIL IN BASE OF 375 WHITE OAK
-L- STA. 129+74.868, 21.675m LT. =
BL -L- STA. 131+81.960, 48m LT.
EL. 242.643



PROFILE FOR -L-
STA. 127+20.000 THRU 130+80.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_69 rpshires RD-Oce34

LEFT DITCH	-·-·-·-·-·-·-
RIGHT DITCH	----------
MEDIAN DITCH	----------

METRIC

5 0 10

CONST.REV.

R /W REV.

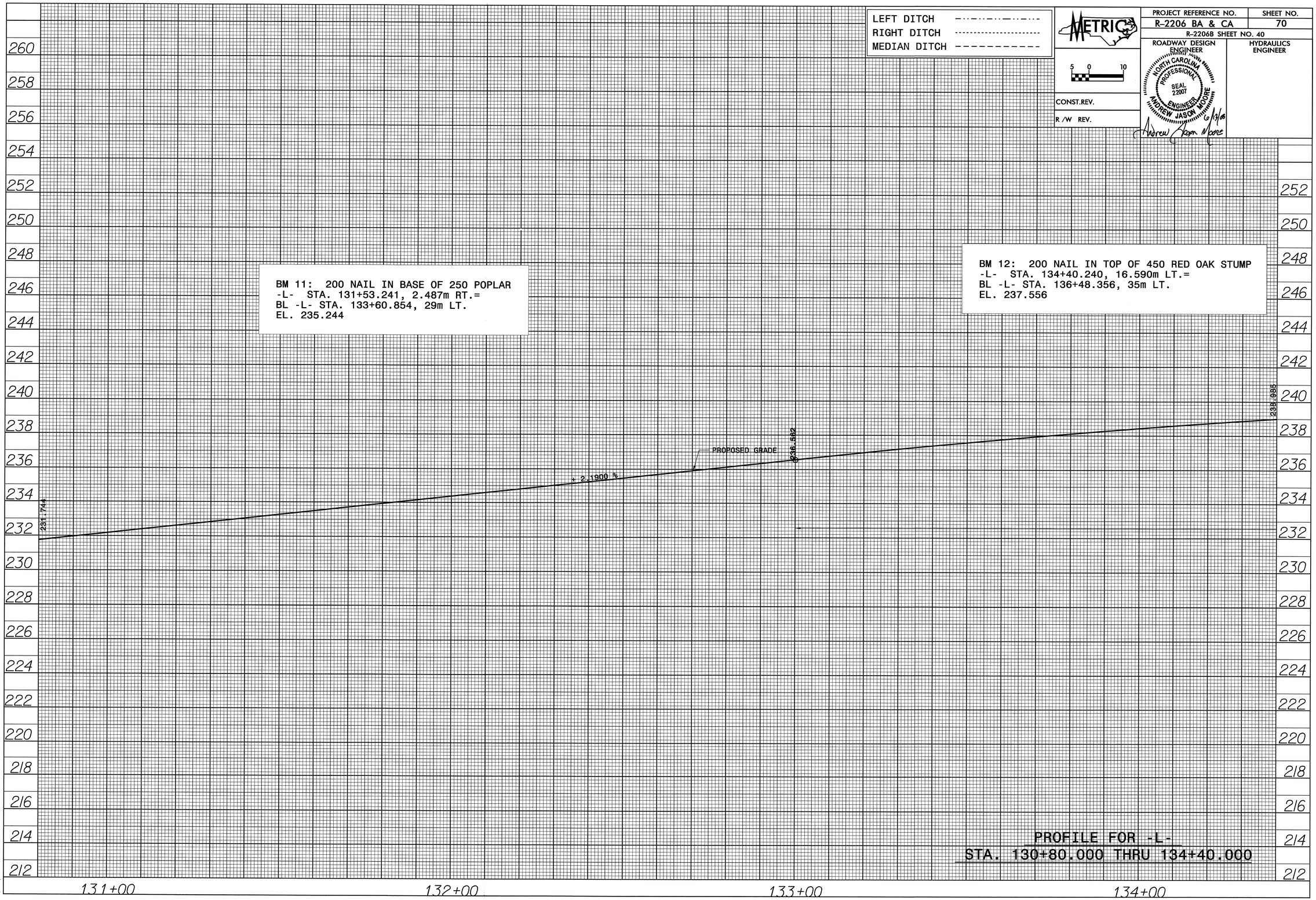
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	70
R-2206B SHEET NO. 40	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER



DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_70 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	71
R-2206B SHEET NO. 41	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/5/08

METRIC

5 0 10

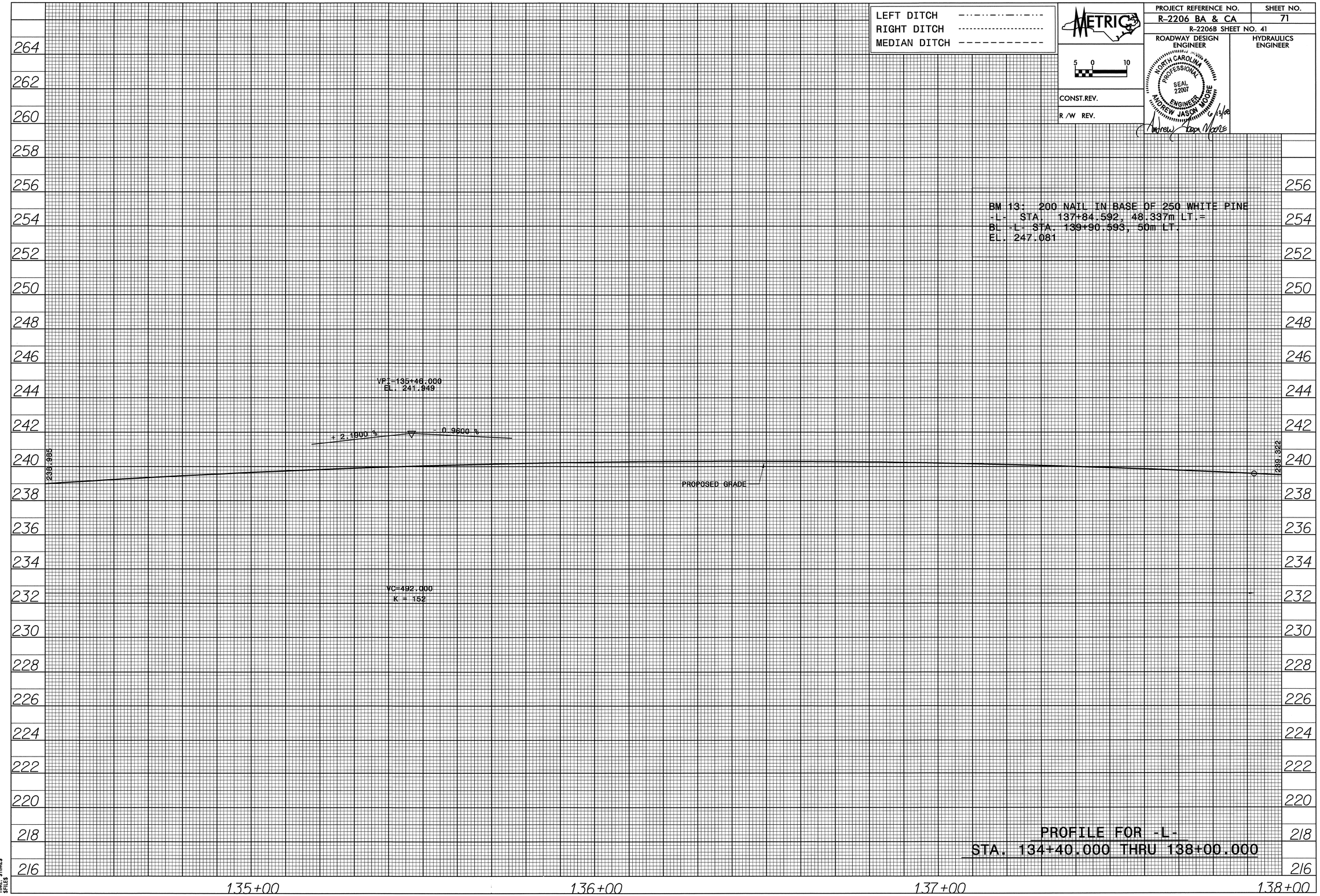
CONST.REV.

R /W REV.

LEFT DITCH

RIGHT DITCH

MEDIAN DITCH



PROFILE FOR -L-
STA. 134+40.000 THRU 138+00.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_71 rpshires RD-Oce34

LEFT DITCH	-·-·-·-·-·-·-
RIGHT DITCH	----------
MEDIAN DITCH	----------

METRIC

5 0 10

CONST.REV.

R /W REV.

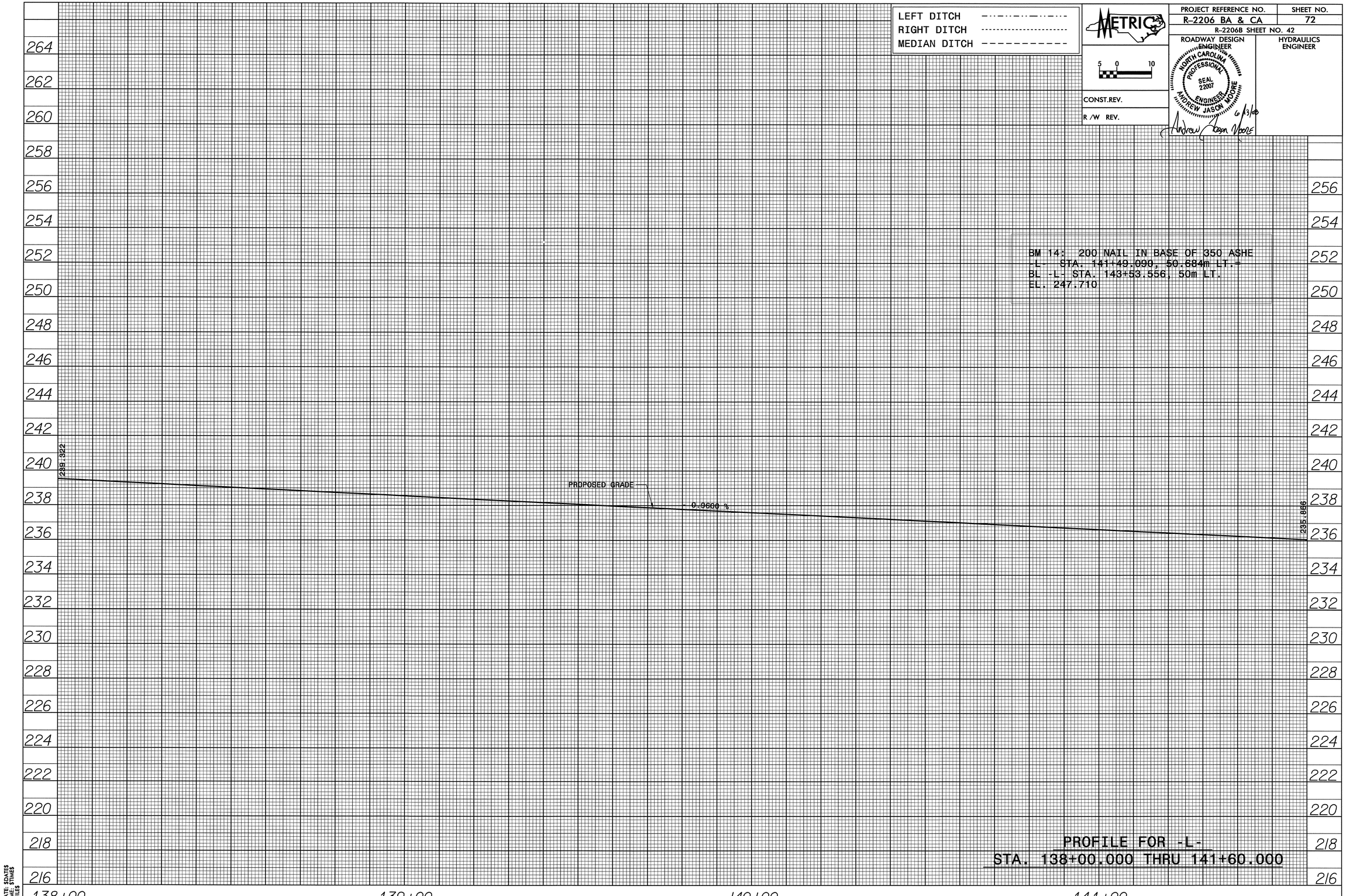
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	72
R-2206B SHEET NO. 42	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08



PROFILE FOR -L-
STA. 138+00.000 THRU 141+60.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_72 rpshires RD-Oce34

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	73
R-2206B SHEET NO. 43	

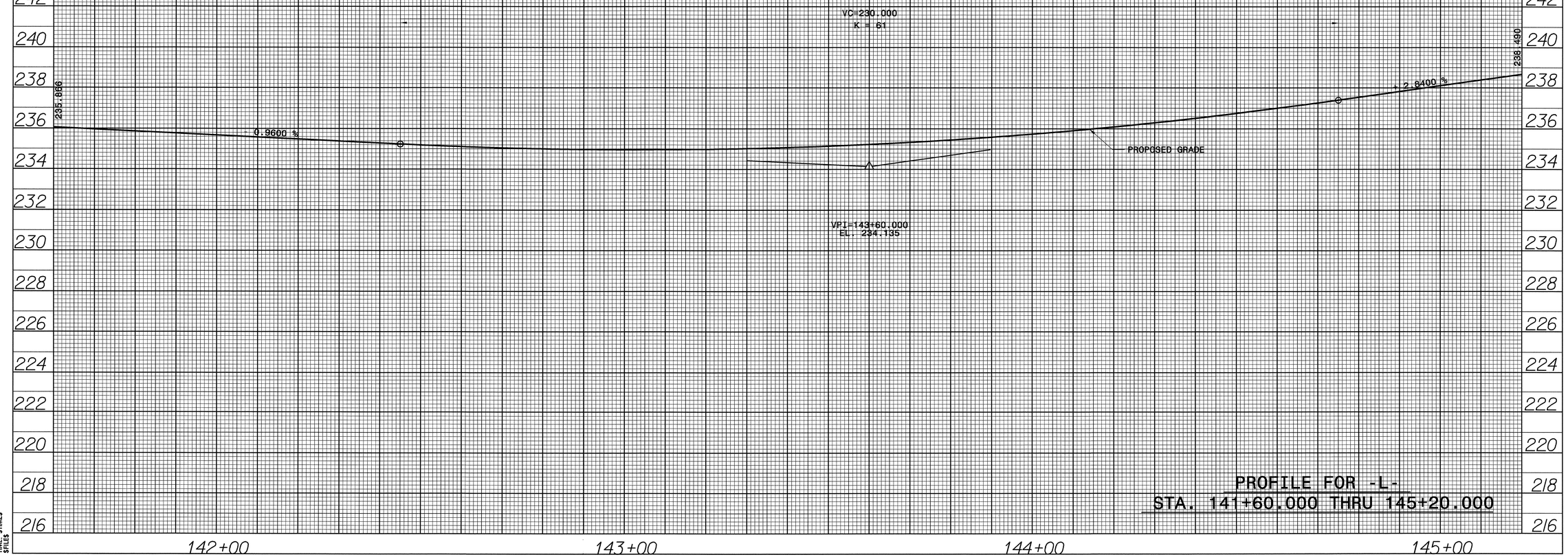
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

BM 15: 200 NAIL IN BASE OF 450 WHITE OAK
-L- STA. 145+07.750, 32.846m LT. =
BL -L- STA. 147+11.834, 30m LT.
EL. 248.482



PROFILE FOR -L-
STA. 141+60.000 THRU 145+20.000

DATE: $DATE$
TIME: $TIME$
$FILE$

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

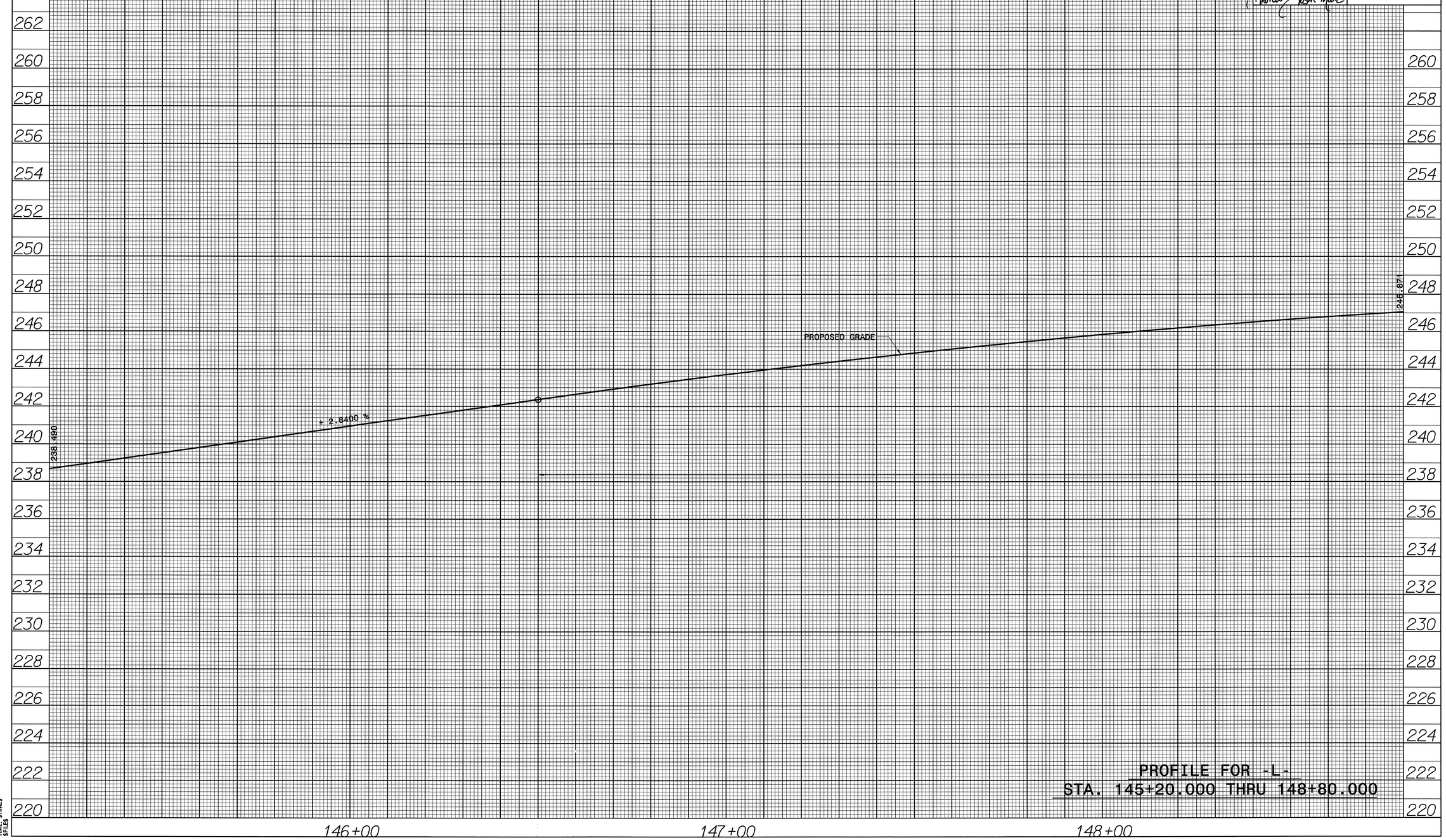
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	74
R-2206B SHEET NO. 44	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER



PROFILE FOR -L-
STA. 145+20.000 THRU 148+80.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_74 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	75
R-2206B SHEET NO. 45	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

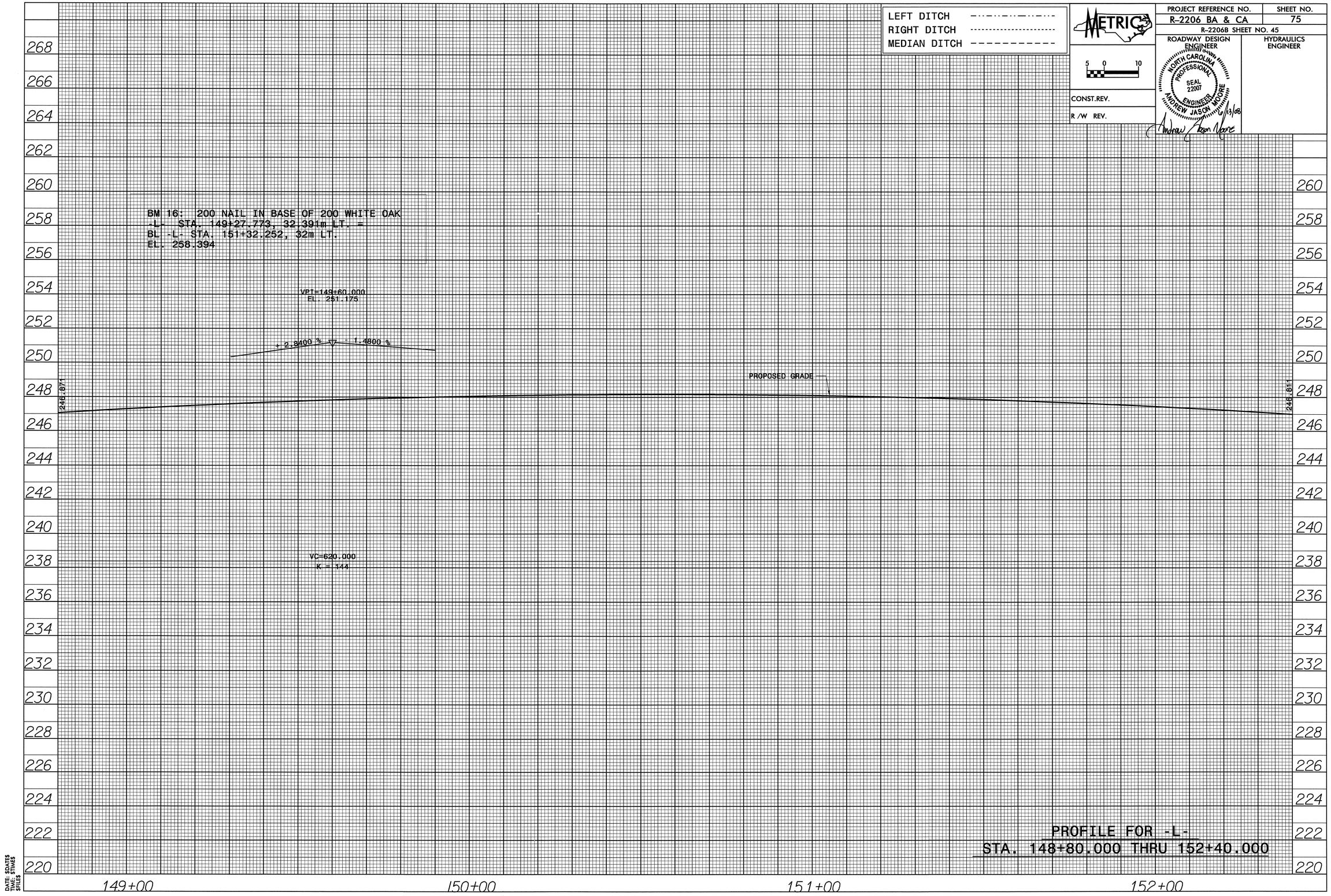
LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.



PROFILE FOR -L-
STA. 148+80.000 THRU 152+40.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_75 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	76
R-2206B SHEET NO. 46	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/13/08

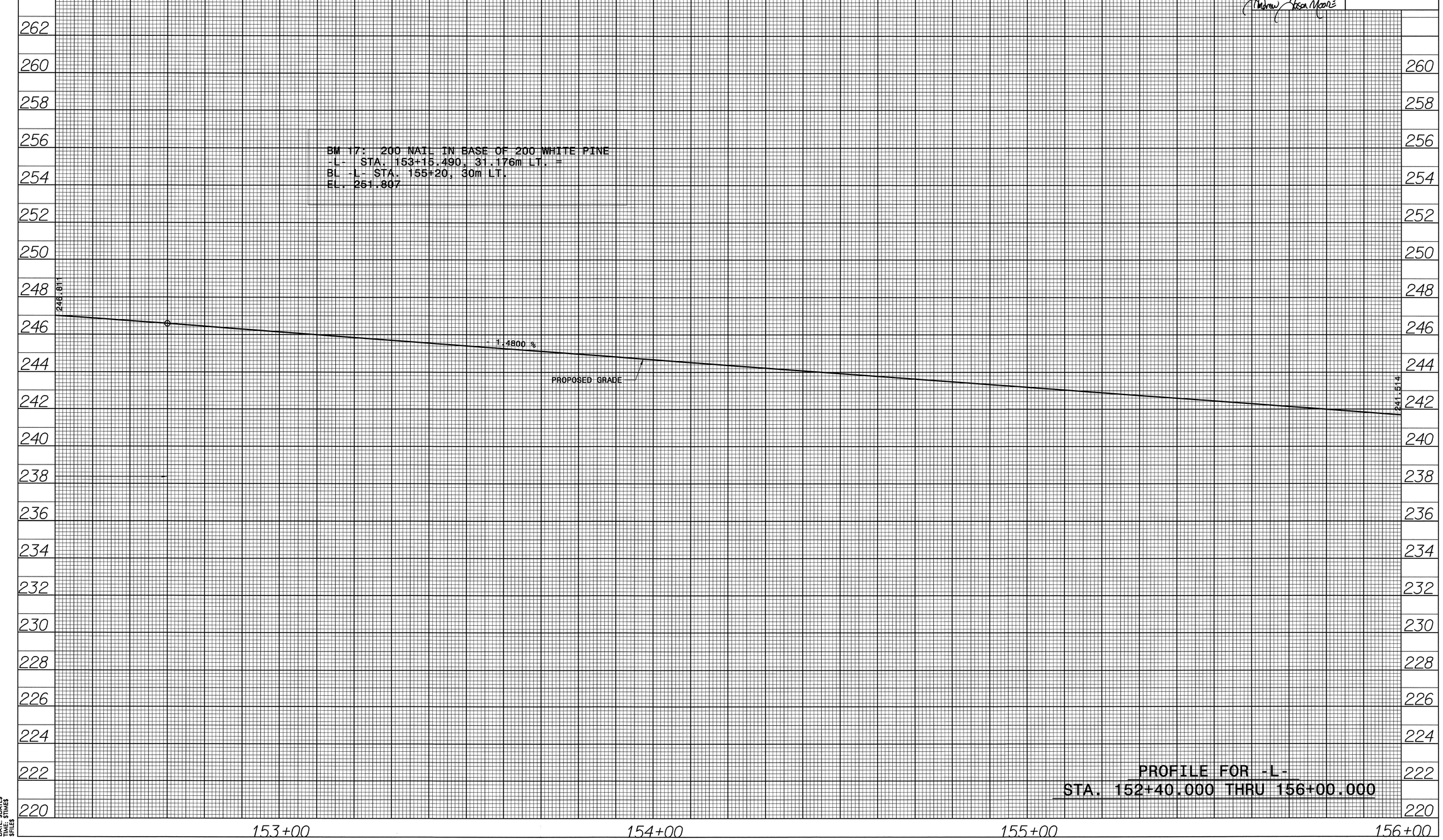
LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.



PROFILE FOR -L-
STA. 152+40.000 THRU 156+00.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_76 rpshires RD-Oce34

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

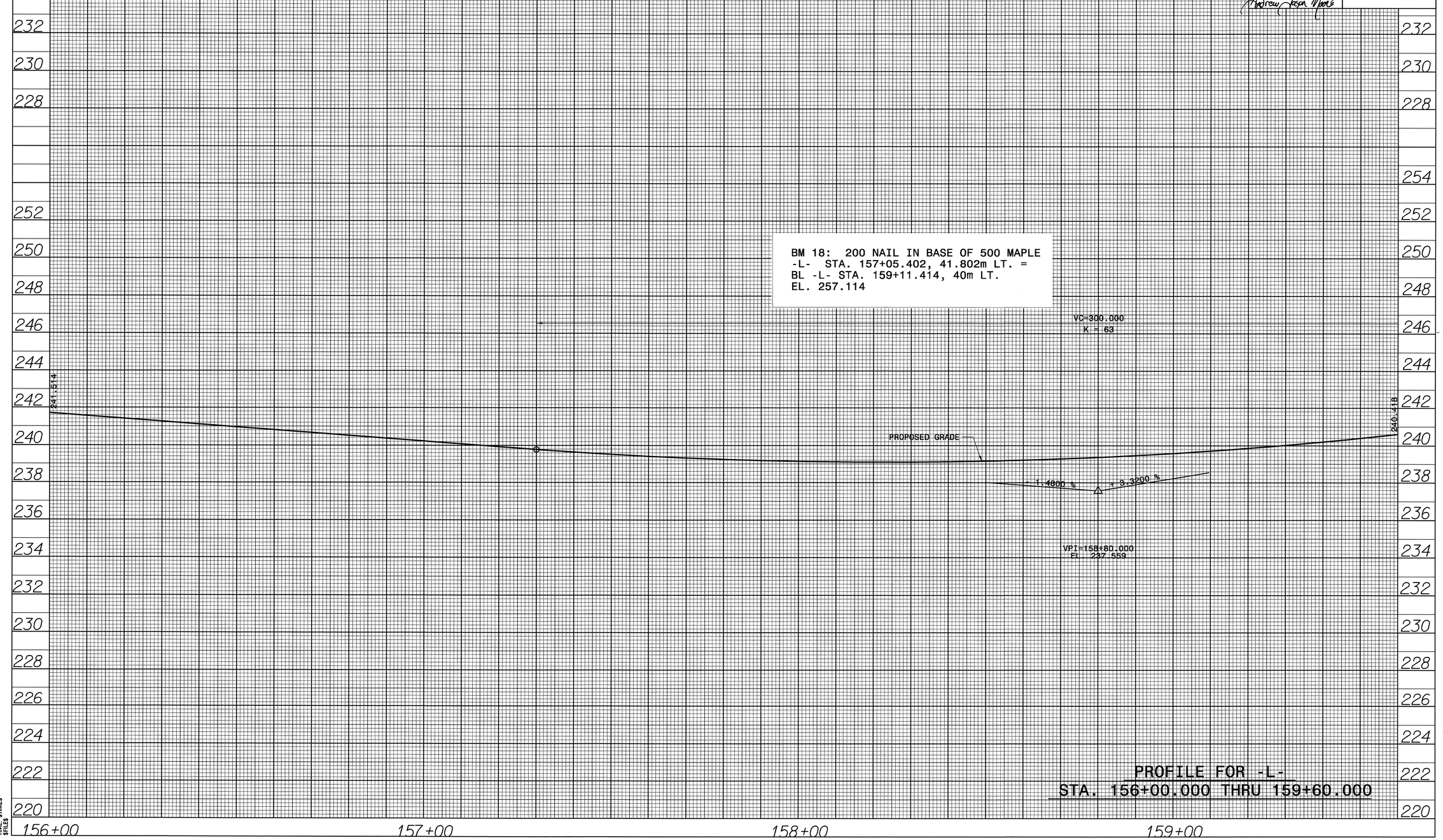
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	77
R-2206B SHEET NO. 47	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

HYDRAULICS ENGINEER



PROFILE FOR -L-
STA. 156+00.000 THRU 159+60.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_77 rpshires RD-Oce34

LEFT DITCH	-·-·-·-·-·-
RIGHT DITCH	----------
MEDIAN DITCH	- - - - - - - - - -

METRIC

5 0 10

CONST.REV.

R /W REV.

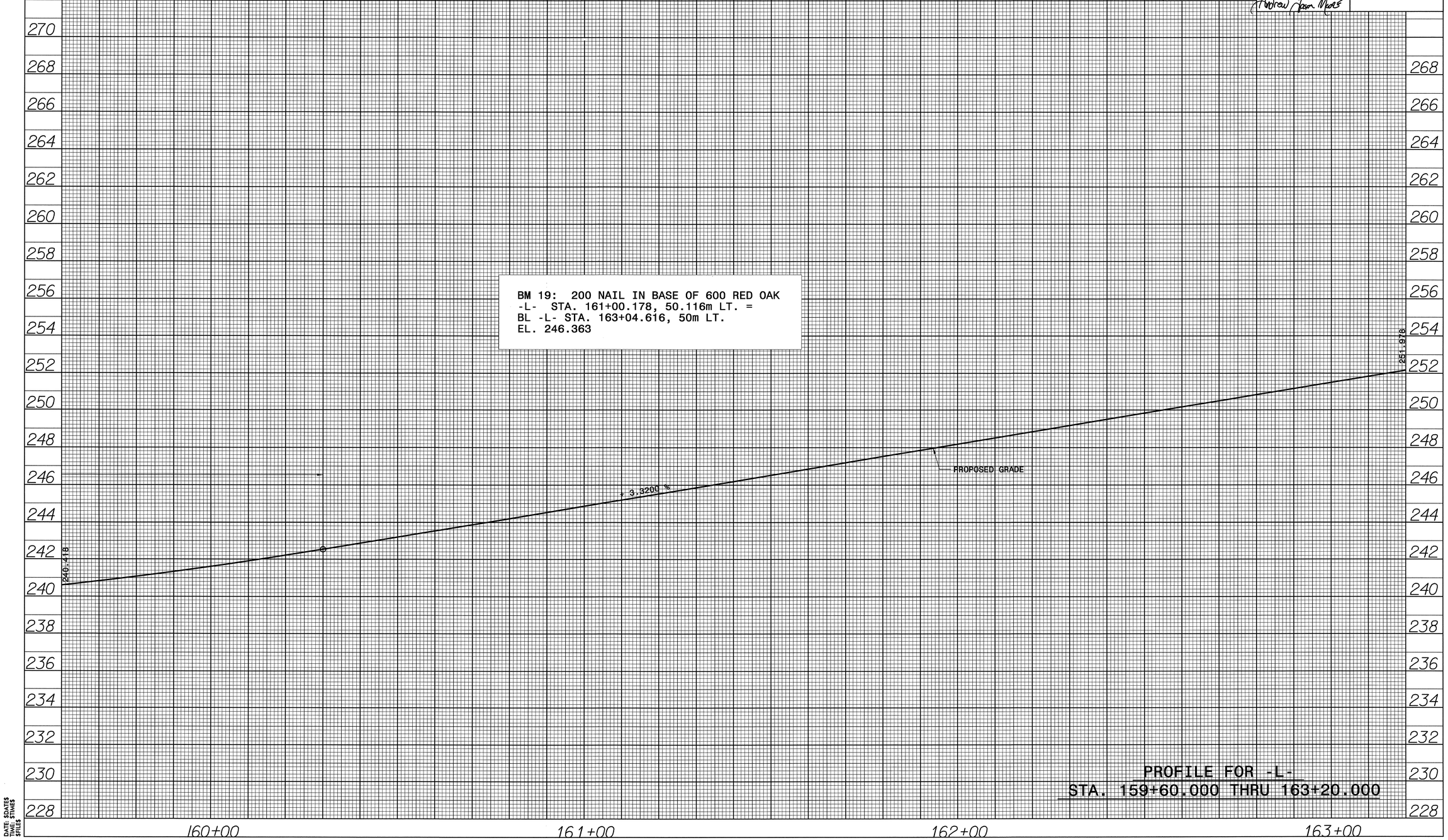
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	78
R-2206B SHEET NO. 48	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08



PROFILE FOR -L-
STA. 159+60.000 THRU 163+20.000

DATE: $DATE$
TIME: $TIME$
$FILE$

RD223186 5/29/2008 r2206bc_rdy_pfl_78 rpshires RD-Oce34

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

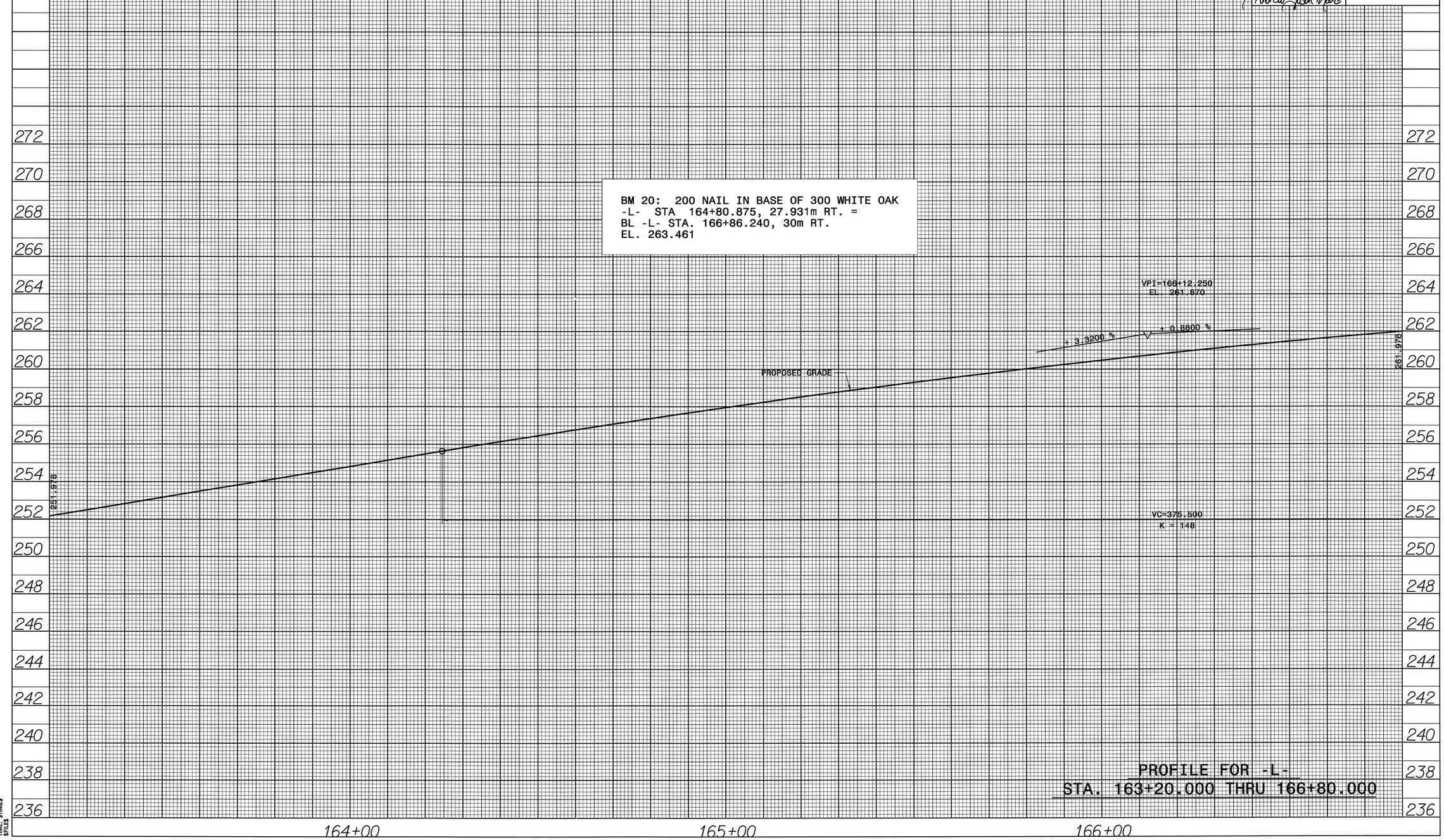
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	79
R-2206B SHEET NO. 49	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/9/08

HYDRAULICS ENGINEER



PROFILE FOR -L-
STA. 163+20.000 THRU 166+80.000

DATE: $DATE$
TIME: $TIME$
SFILE: $FILE$

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

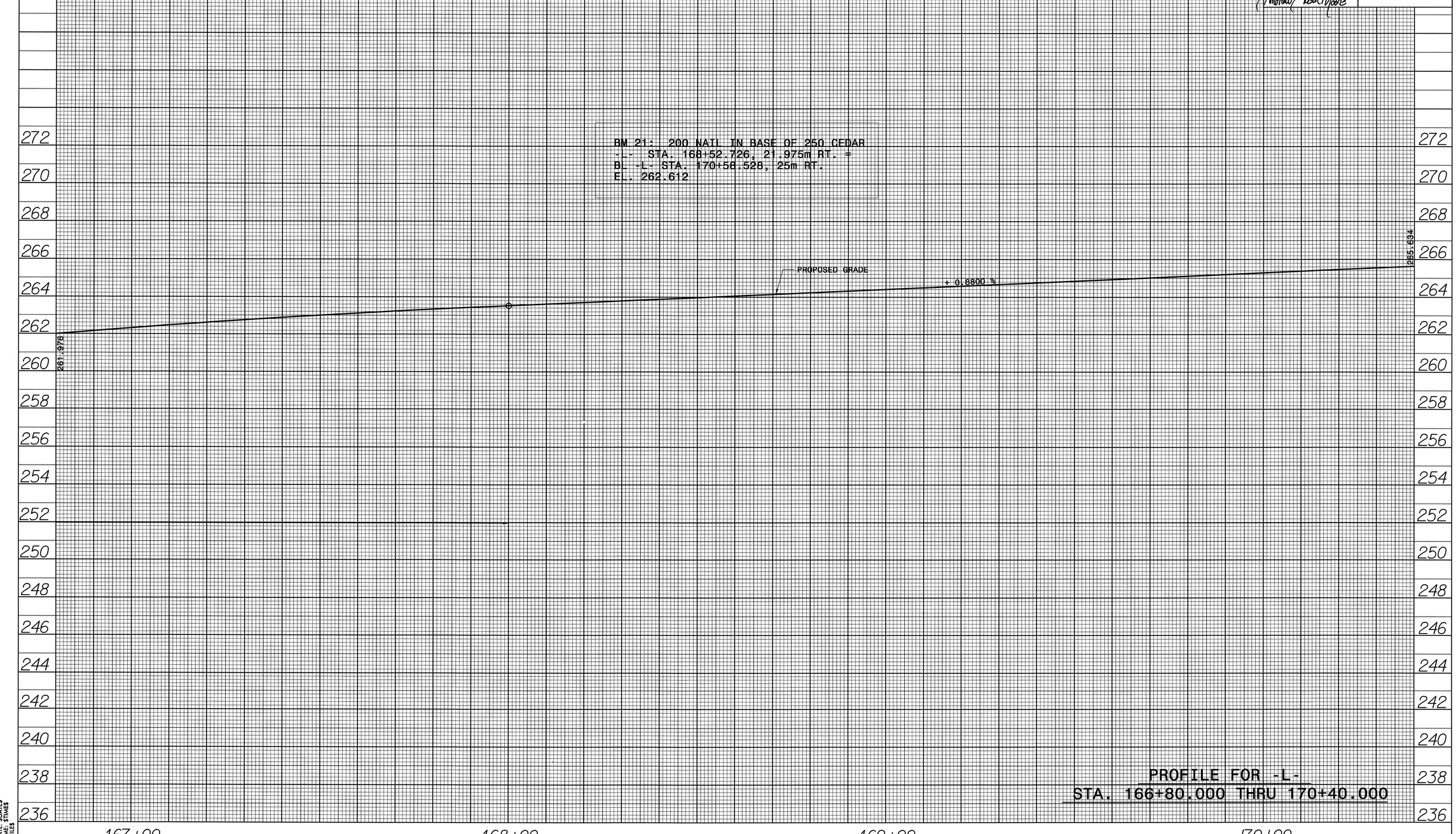
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	80
R-2206B SHEET NO. 50	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08

HYDRAULICS ENGINEER



PROFILE FOR -L-
STA. 166+80.000 THRU 170+40.000

DATE: $DATE$
TIME: $TIME$
$FILE$

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	81
R-2206B SHEET NO. 51	

ROADWAY DESIGN ENGINEER

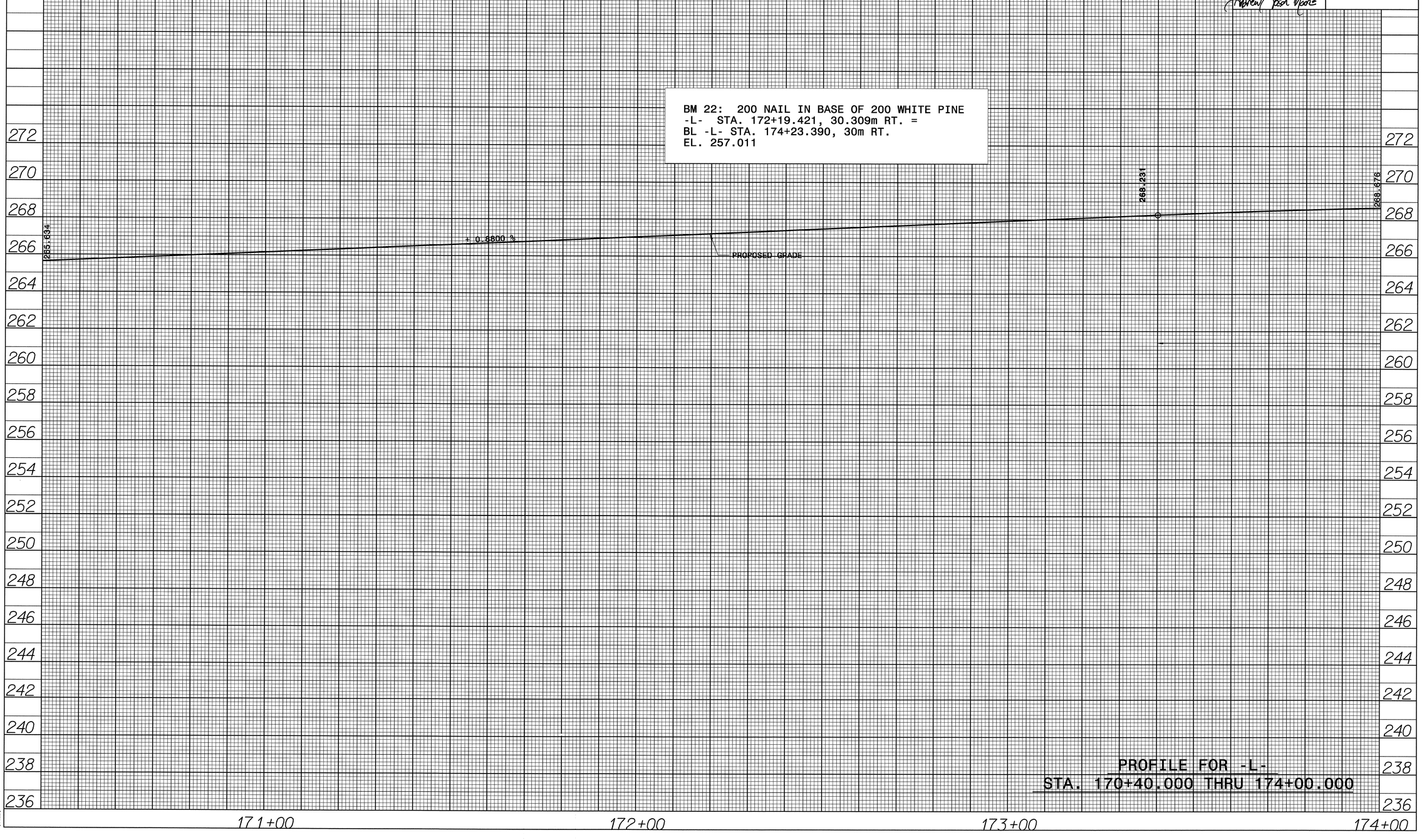
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

5/3/08

Andrew Jason Moore

HYDRAULICS ENGINEER

BM 22: 200 NAIL IN BASE OF 200 WHITE PINE
-L- STA. 172+19.421, 30.309m RT. =
BL -L- STA. 174+23.390, 30m RT.
EL. 257.011



PROFILE FOR -L-
STA. 170+40.000 THRU 174+00.000

DATE: $DATE$
TIME: $TIME$
$FILE$

223186 5/29/2008 r2206bc_rdy_pfl_81 rpshires RD-Oce34

LEFT DITCH	-·-·-·-·-·-·-
RIGHT DITCH	----------
MEDIAN DITCH	- - - - - - - - - -

METRIC

5 0 10

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	82
R-2206B SHEET NO. 52	

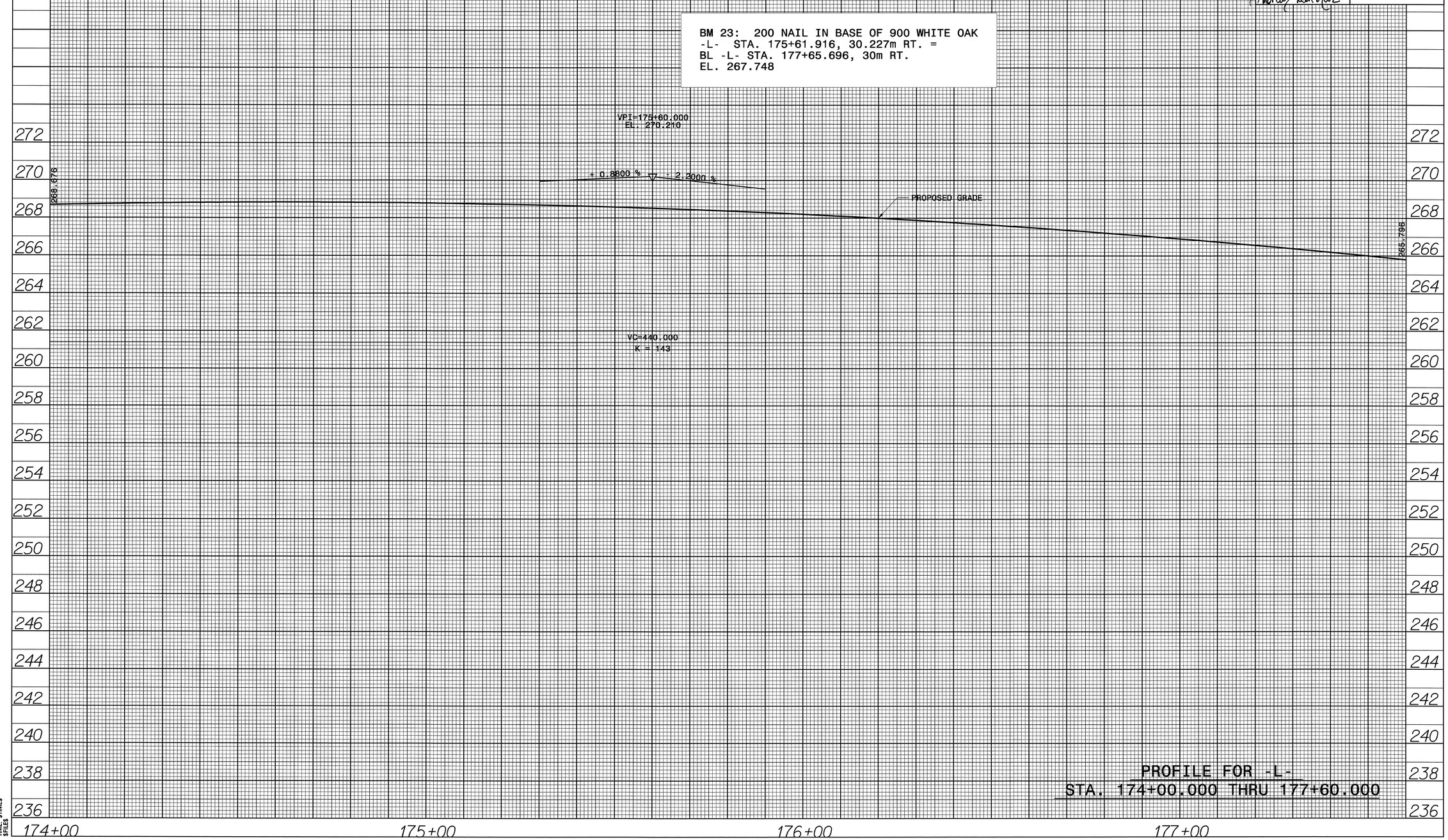
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08

BM 23: 200 NAIL IN BASE OF 900 WHITE OAK
-L- STA. 175+61.916, 30.227m RT. =
BL -L- STA. 177+65.696, 30m RT.
EL. 267.748



PROFILE FOR -L-
STA. 174+00.000 THRU 177+60.000

DATE: $DATE$
TIME: $TIME$
$FILES

LEFT DITCH
RIGHT DITCH
MEDIAN DITCH

METRIC

5 0 10

CONST.REV.

R /W REV.

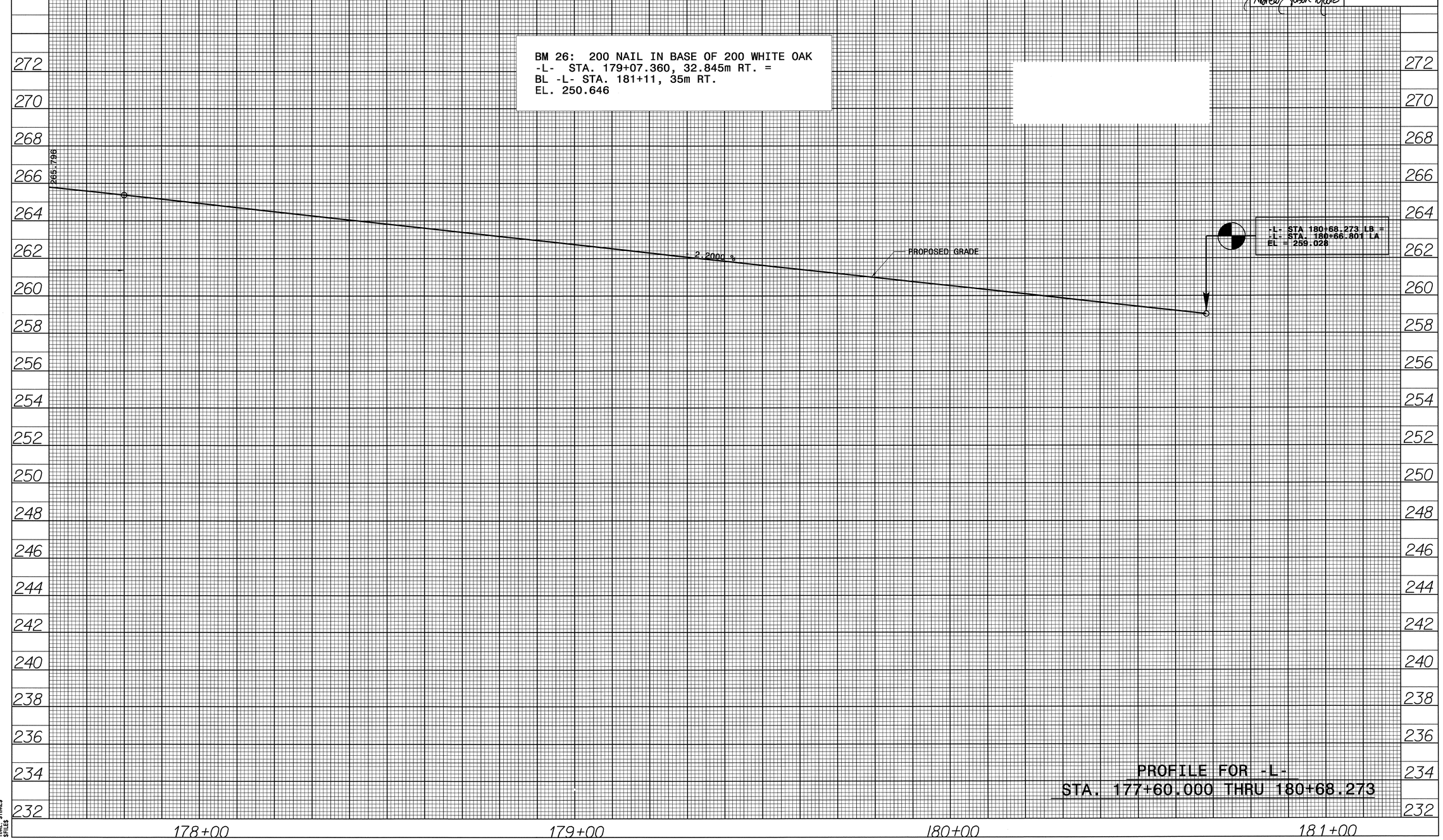
PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	83
R-2206B SHEET NO. 53	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER



PROFILE FOR -L-
STA. 177+60.000 THRU 180+68.273

DATE: $DATE$
TIME: $TIME$
$FILE$

D223186 5/29/2008 r2206bc_rdy_pfl_83 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	84
R-2206C SHEET NO. 50	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/3/08

CONST.REV.

R /W REV.

METRIC

5 0 10

(NC 16)

-L-

-L- STA 180+68.273 LB =
-L- STA. 180+66.801 LA
EL = 259.028

-2.2000%

PI = 183+20.000
EL = 253.458 m
VC = 200 m
K = 52
V = 100 km/h +

254.414

-2.2000%

+1.6767%

EXIST.750mm

EXIST.1200mm

EXIST.RCBC
1@ 2.1m x 2.1m
w/ BAFFLES

SEE SHEETS 26 & 27 FOR PLAN VIEW

180 181 182 183

29-MAY-2008 14:06
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r2206ba_r2206bc_rdy_pfl_84.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	85
R-2206C SHEET NO. 51	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 2,2007 ENGINEER ANDREW JASON MOORE

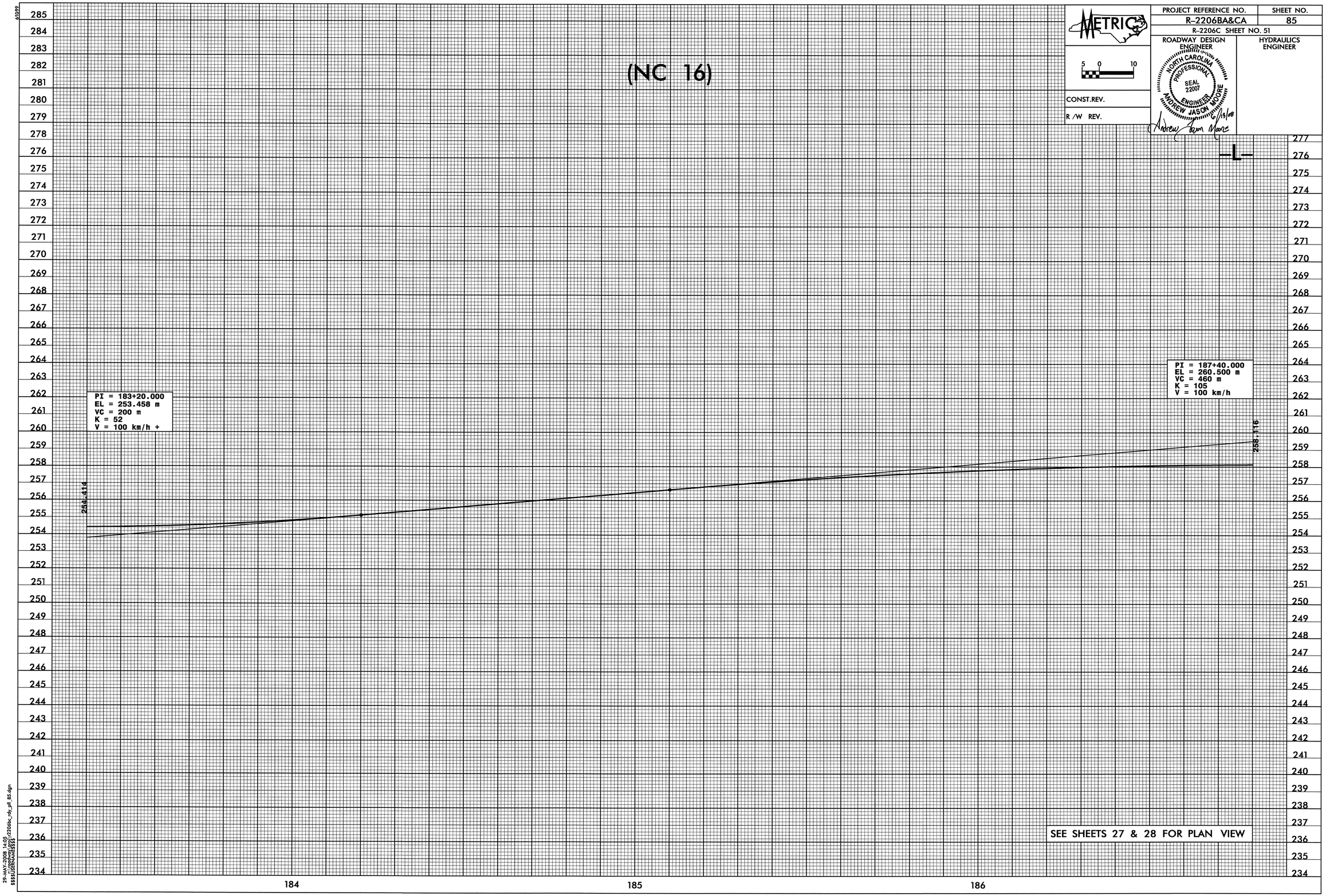
Andrew Jason Moore 6/13/08

METRIC

5 0 10

CONST.REV.

R /W REV.



SEE SHEETS 27 & 28 FOR PLAN VIEW

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61099

223186 5/29/2008 r2206bc_rdy_pfl_85 rpshires RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	86
R-2206C SHEET NO. 52	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

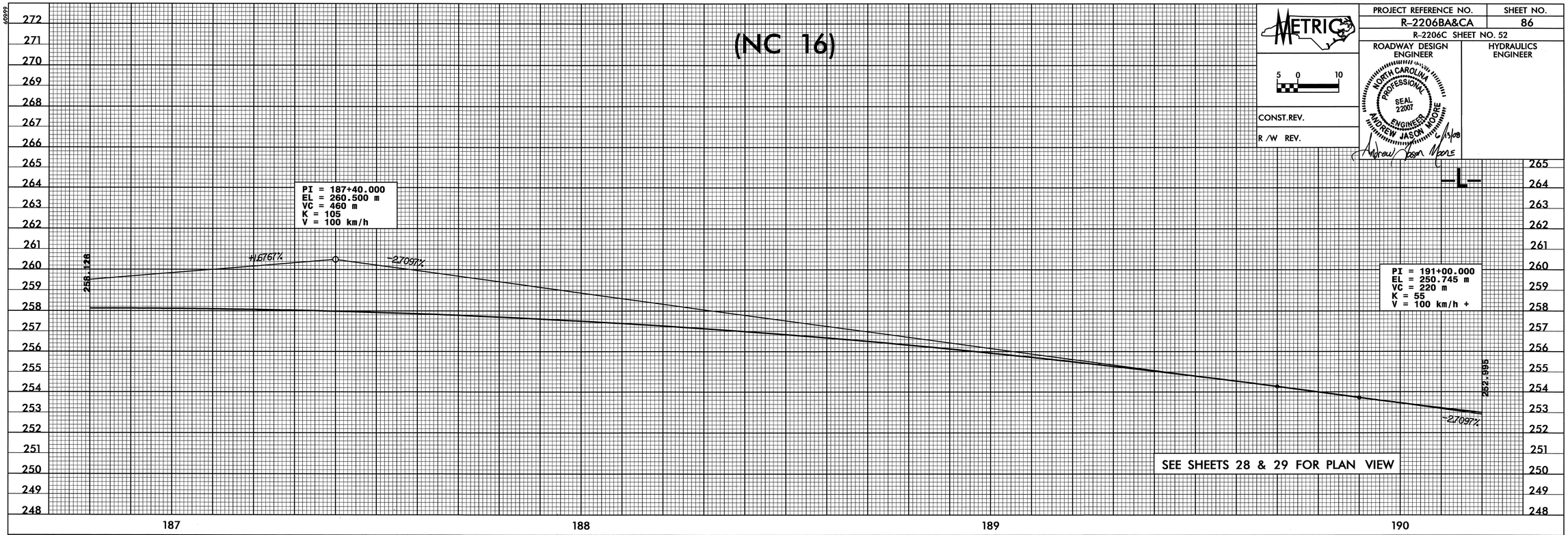
5 0 10

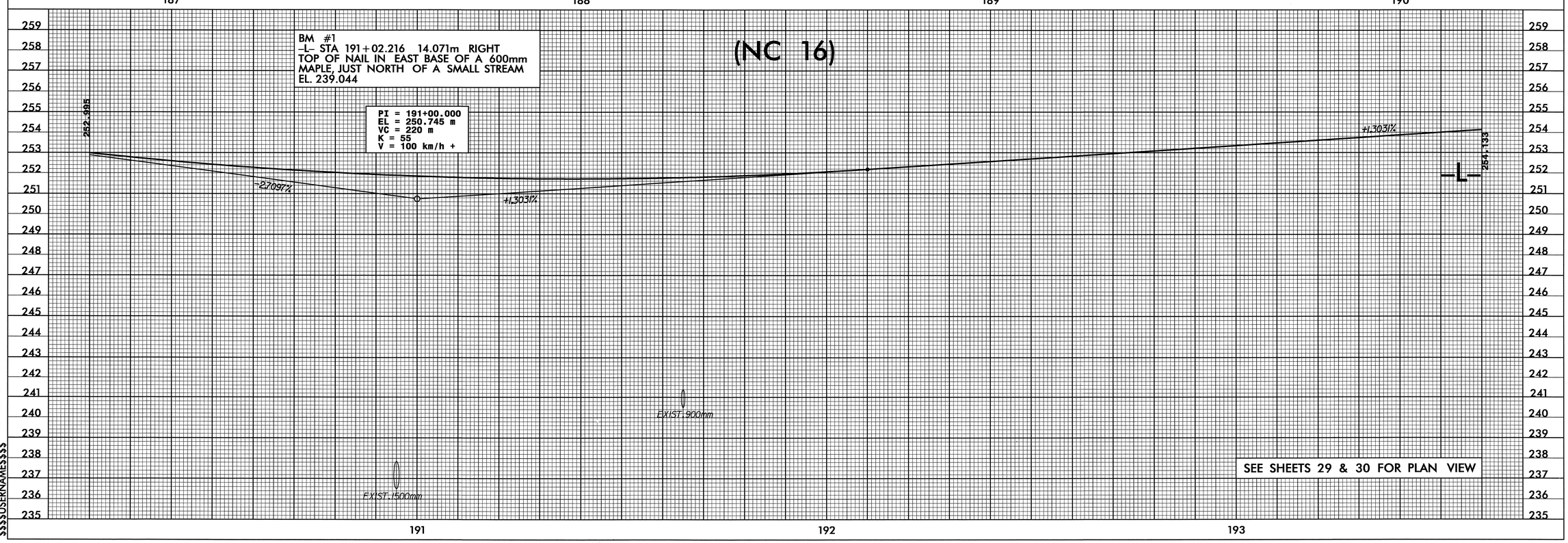
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	87
R-2206C SHEET NO. 53	

METRIC

5 0 10

CONST.REV.

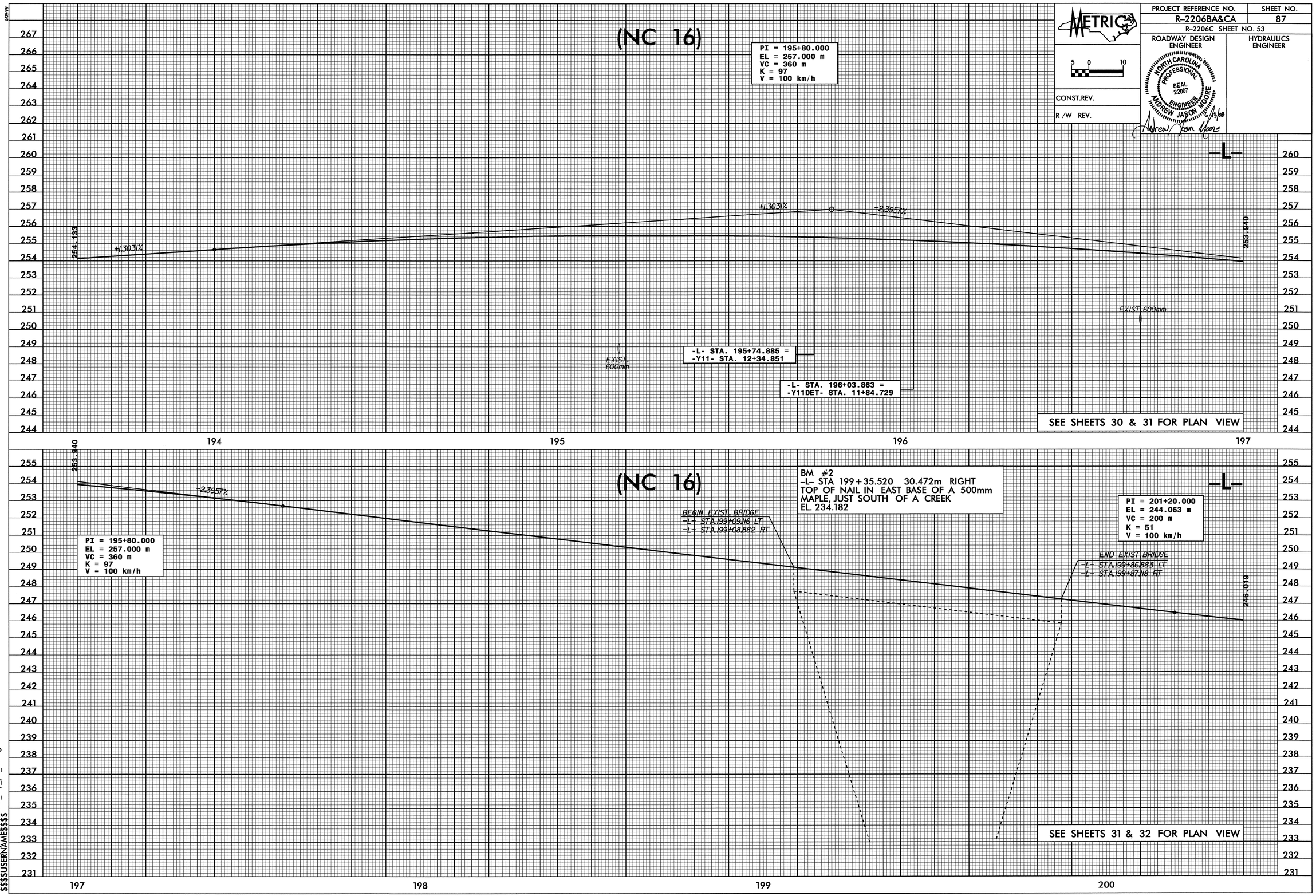
R /W REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

HYDRAULICS ENGINEER



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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	88
R-2206C SHEET NO. 54	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

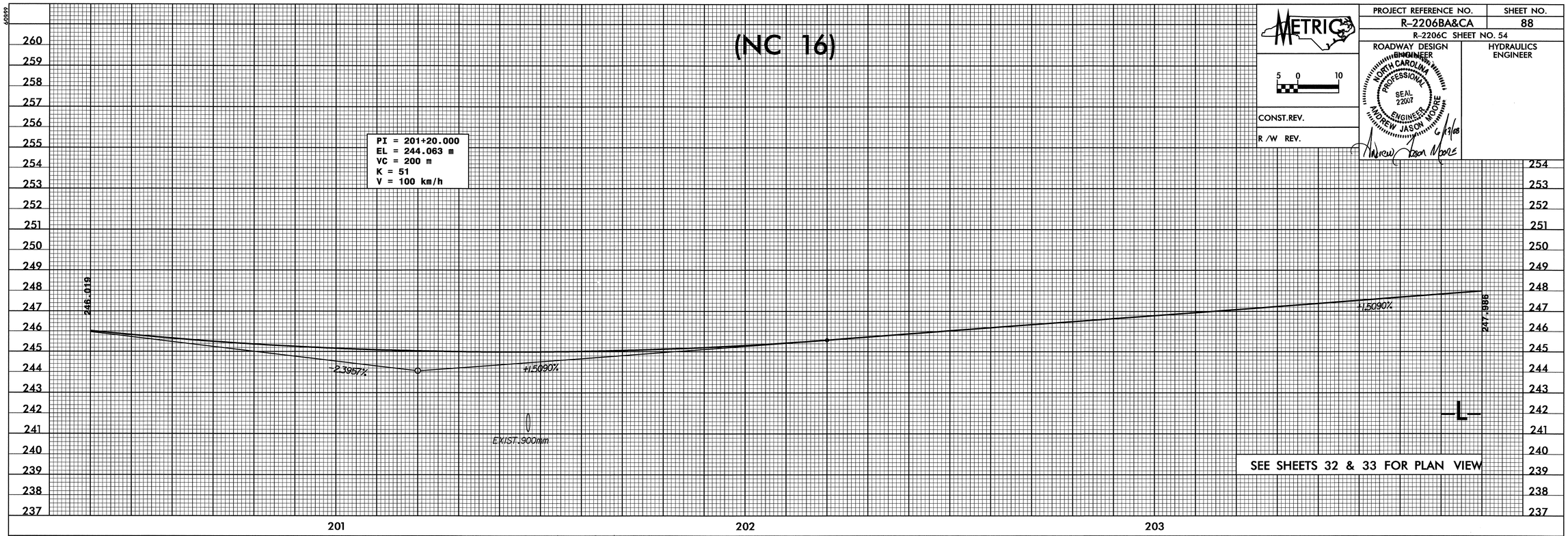
5 0 10

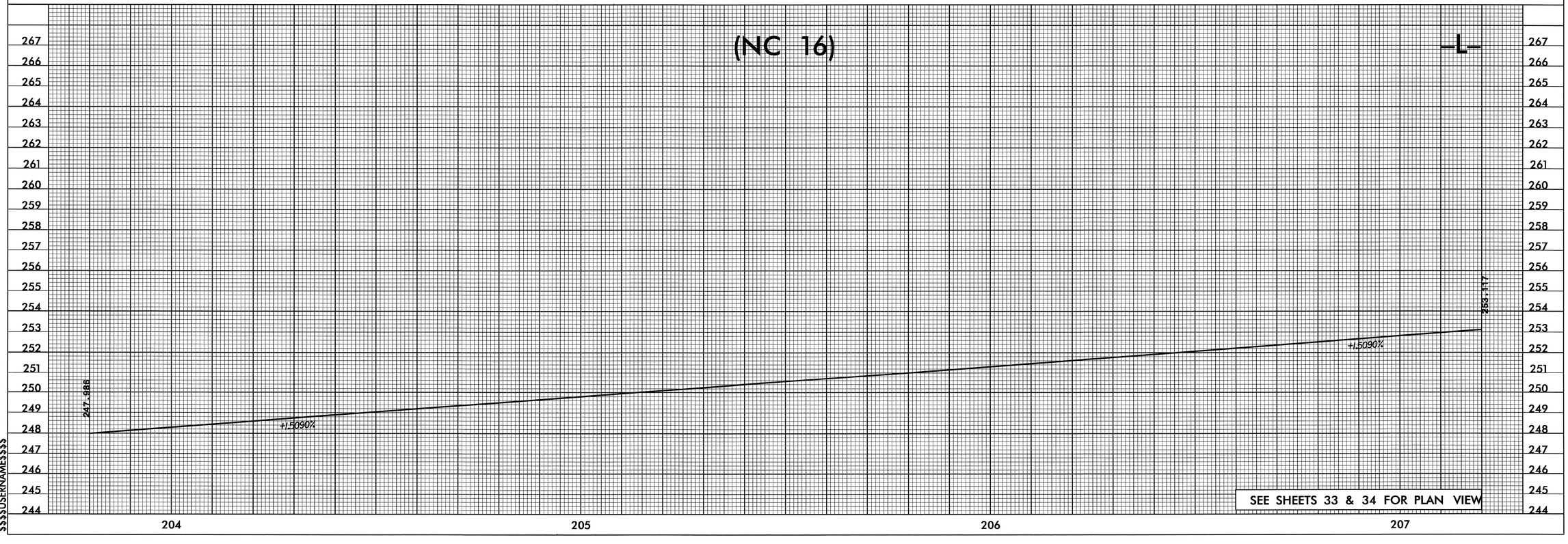
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	89
R-2206C SHEET NO. 55	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

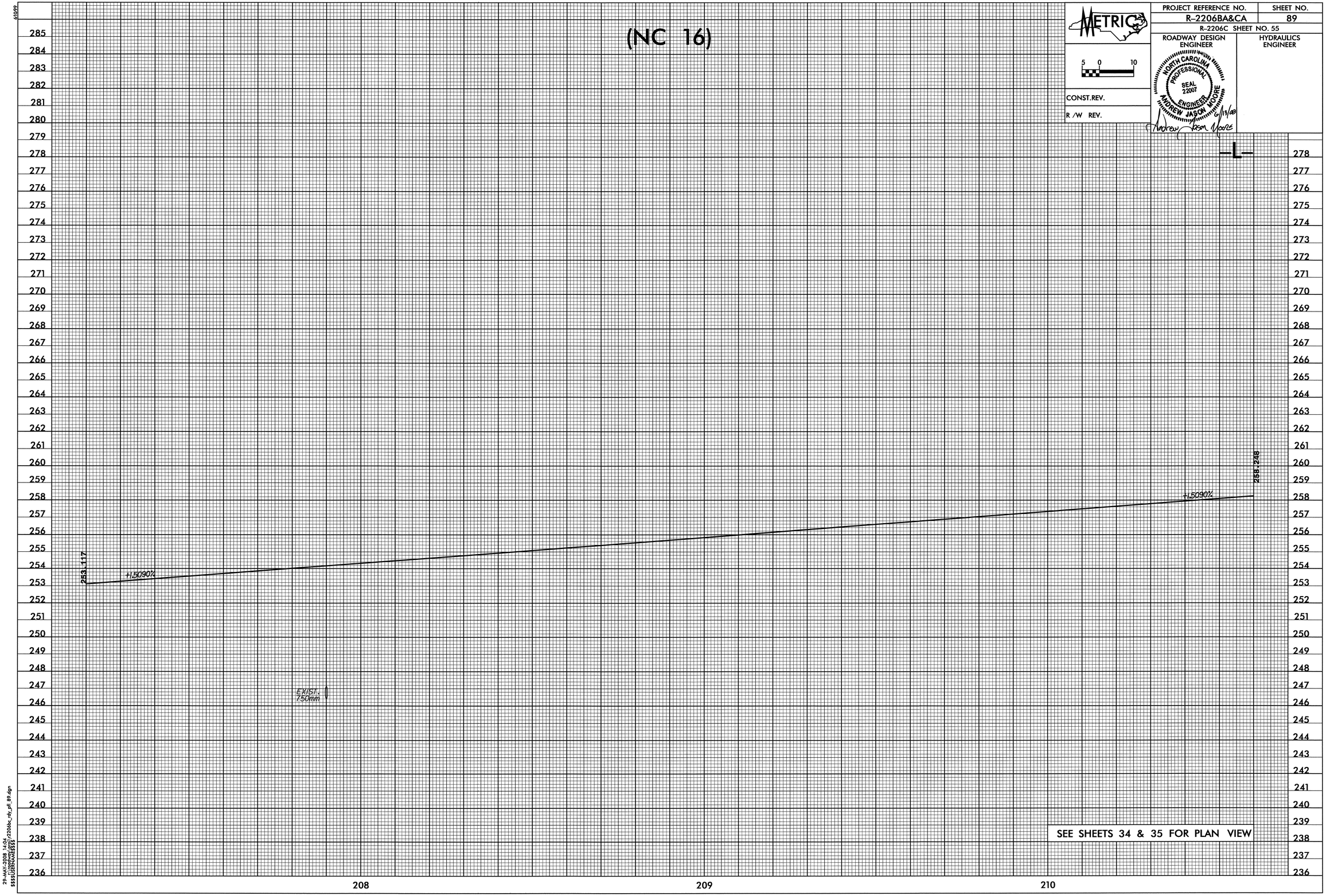
Andrew Jason Moore 6/13/08

METRIC

5 0 10

CONST.REV.

R /W REV.



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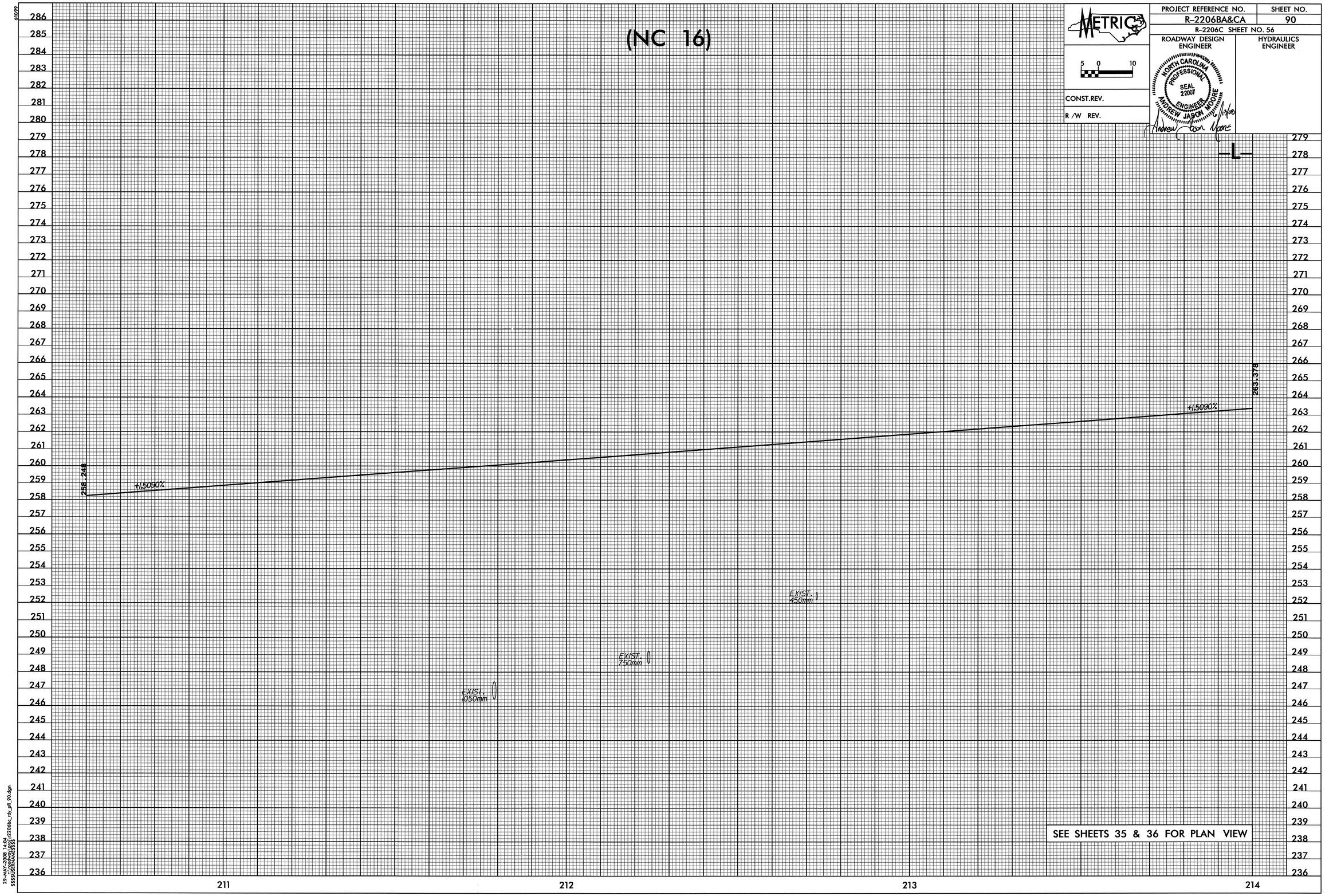
0223186 5/29/2008 r2206bc_rdy_pfl_89 rpshires RD-Oce34



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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	91
R-2206C SHEET NO. 57	

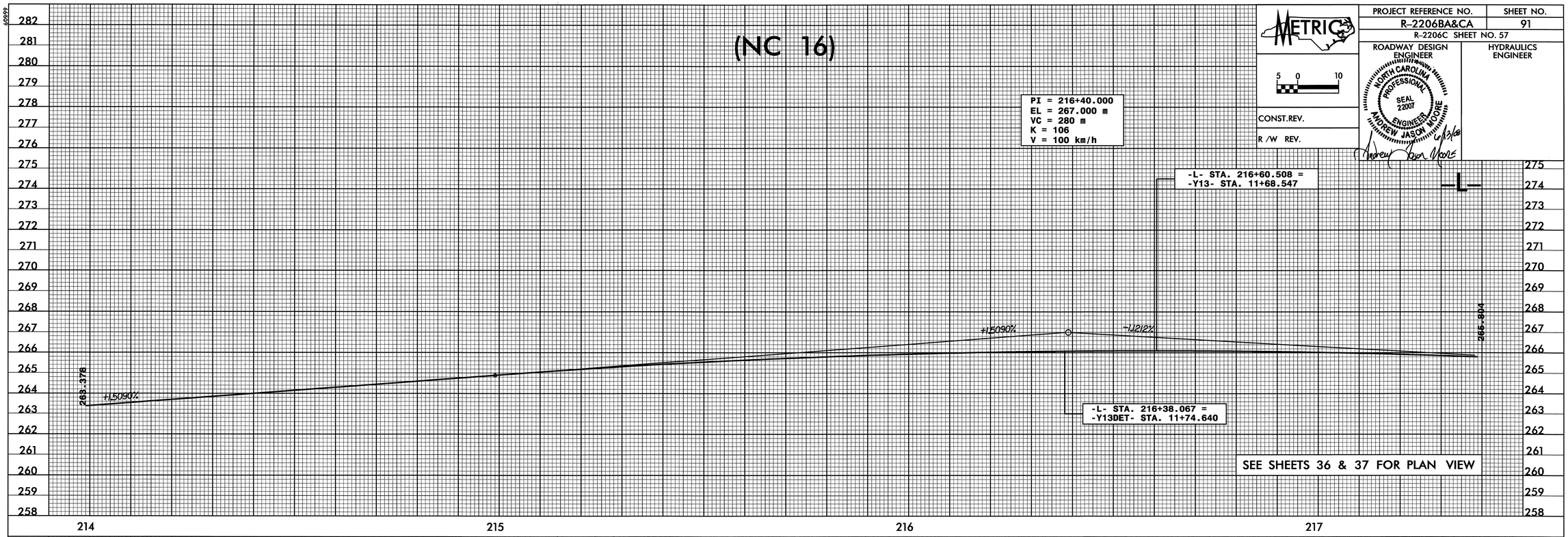
ROADWAY DESIGN ENGINEER

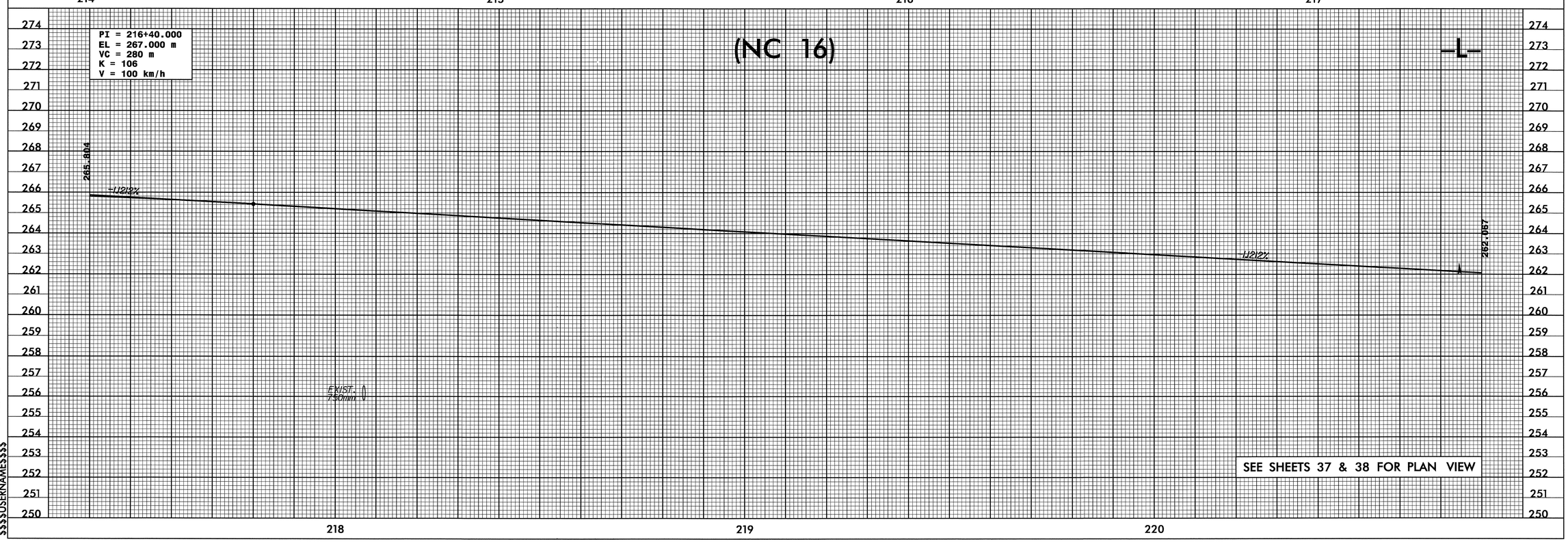
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 2007 ENGINEER ANDREW JASON MOORE

CONST.REV.

R /W REV.





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	92
R-2206C SHEET NO. 58	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

METRIC

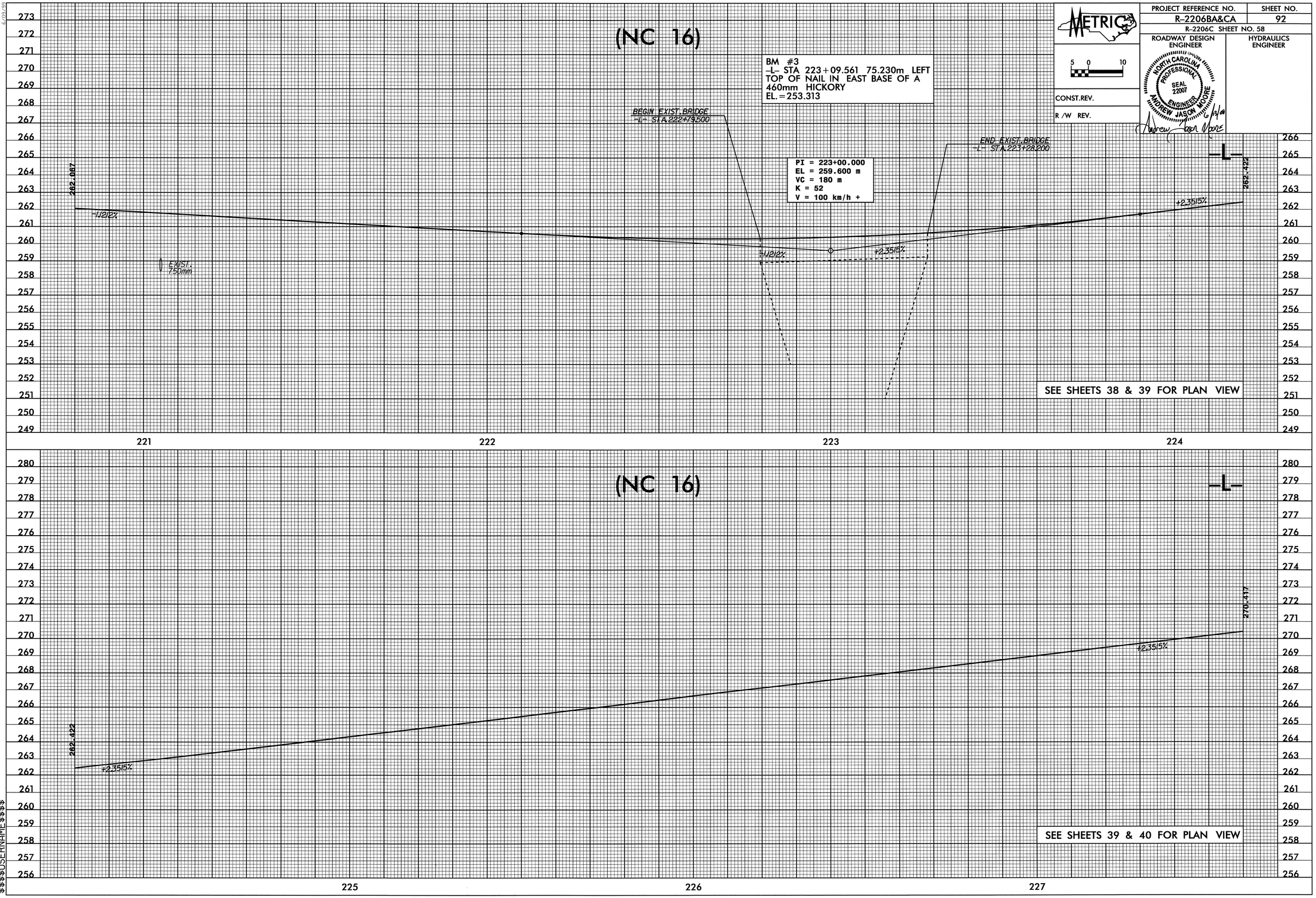
5 0 10

CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/9/08



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$$$$USERNAME$$$$

6/09/95

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	93
R-2206C SHEET NO. 59	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

METRIC

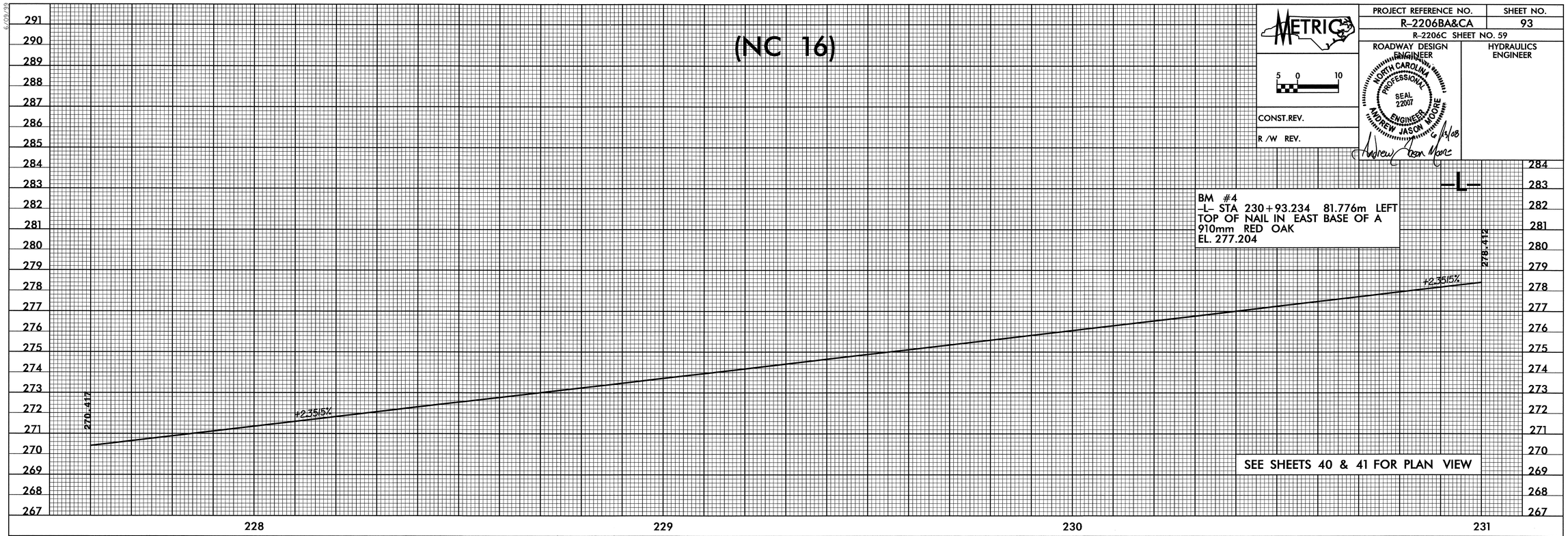
5 0 10

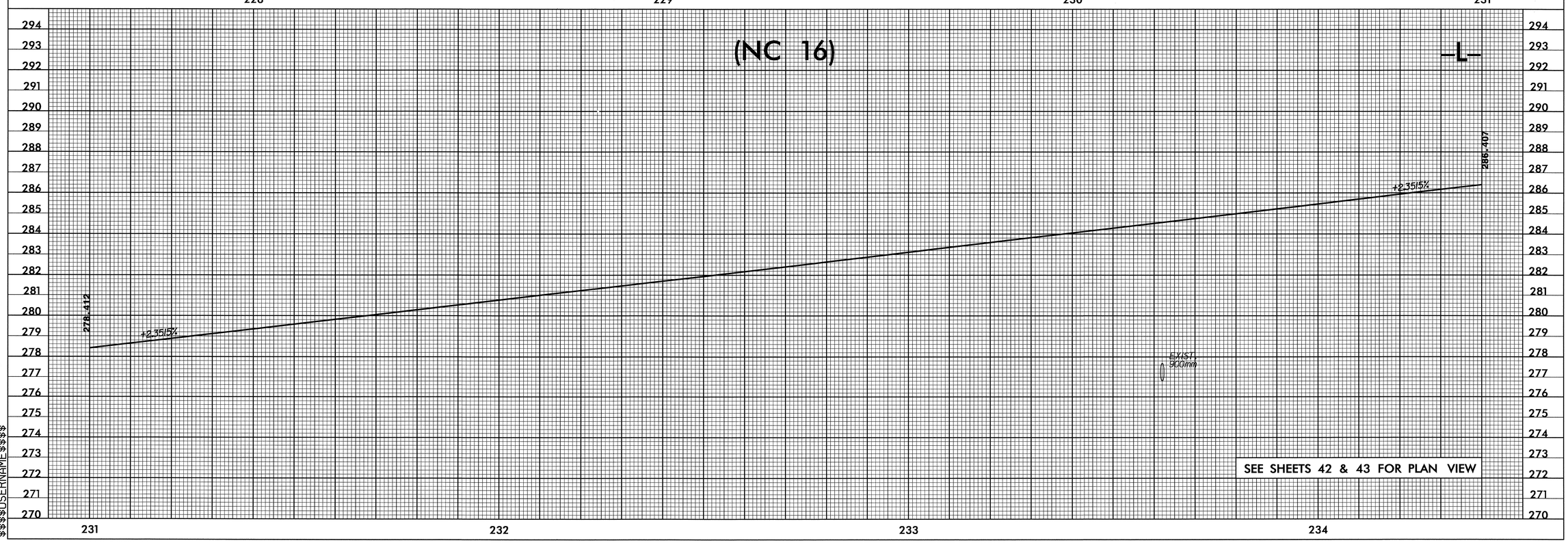
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/5/08





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	94
R-2206C SHEET NO. 60	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

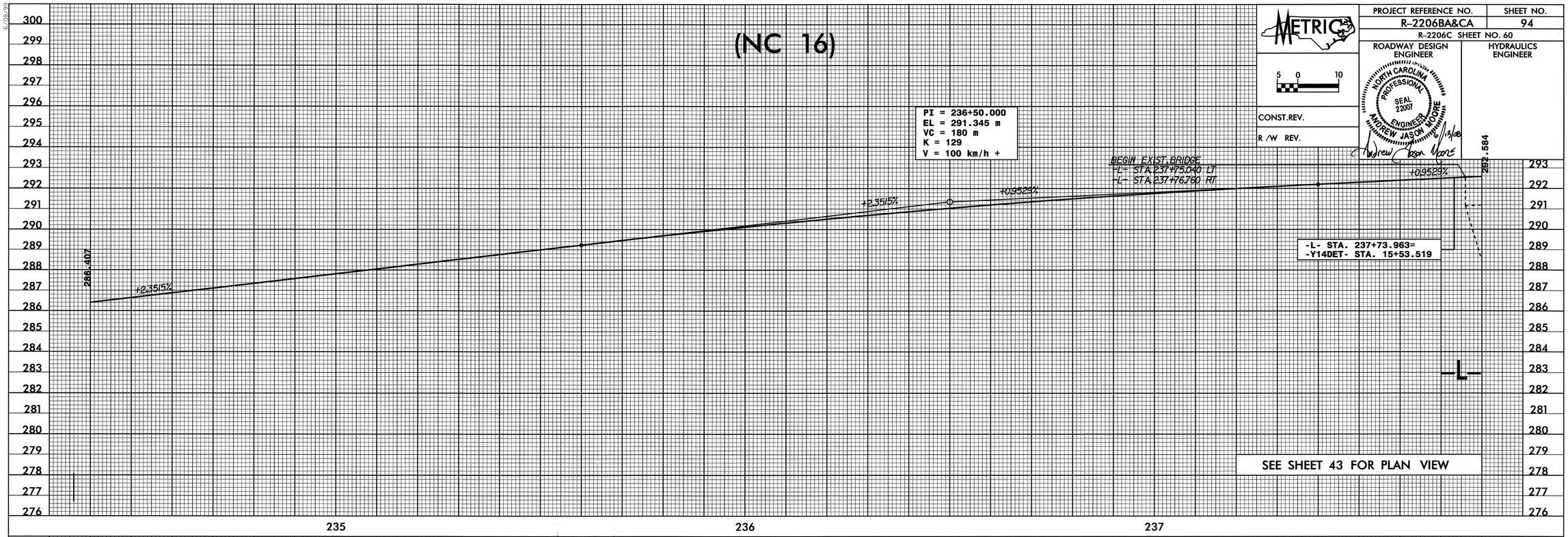
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

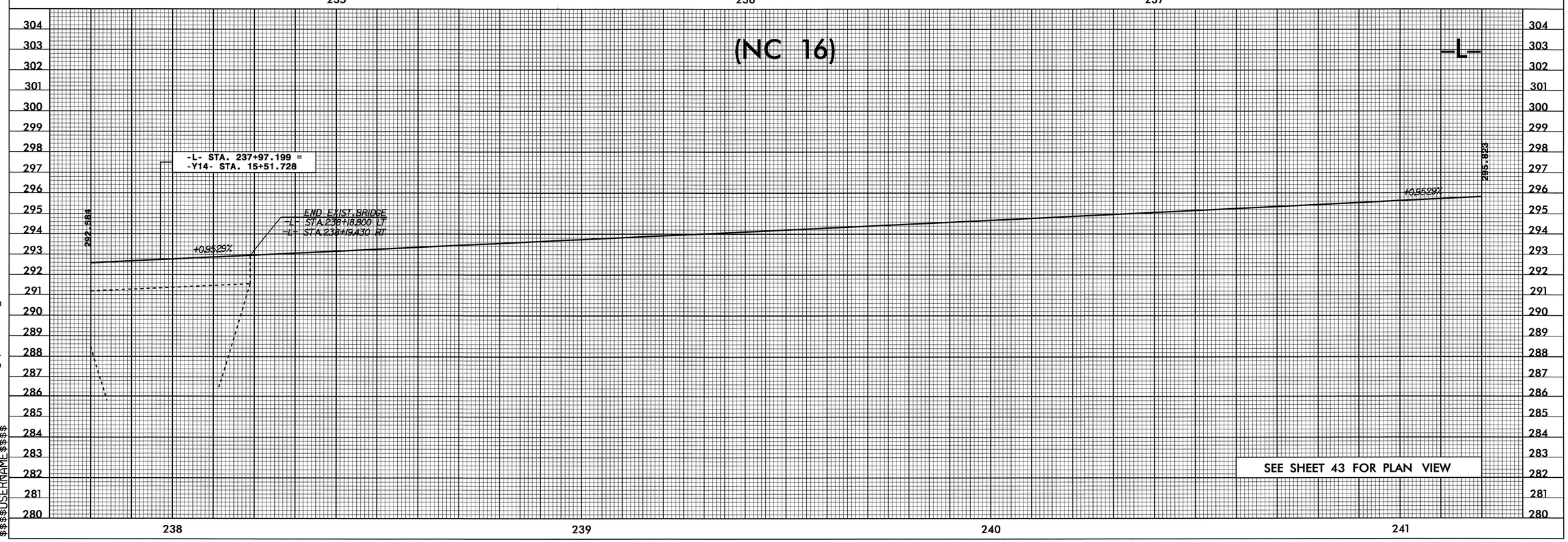
CONST.REV.

R/W REV.

METRIC

5 0 10





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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	95
R-2206C SHEET NO. 61	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

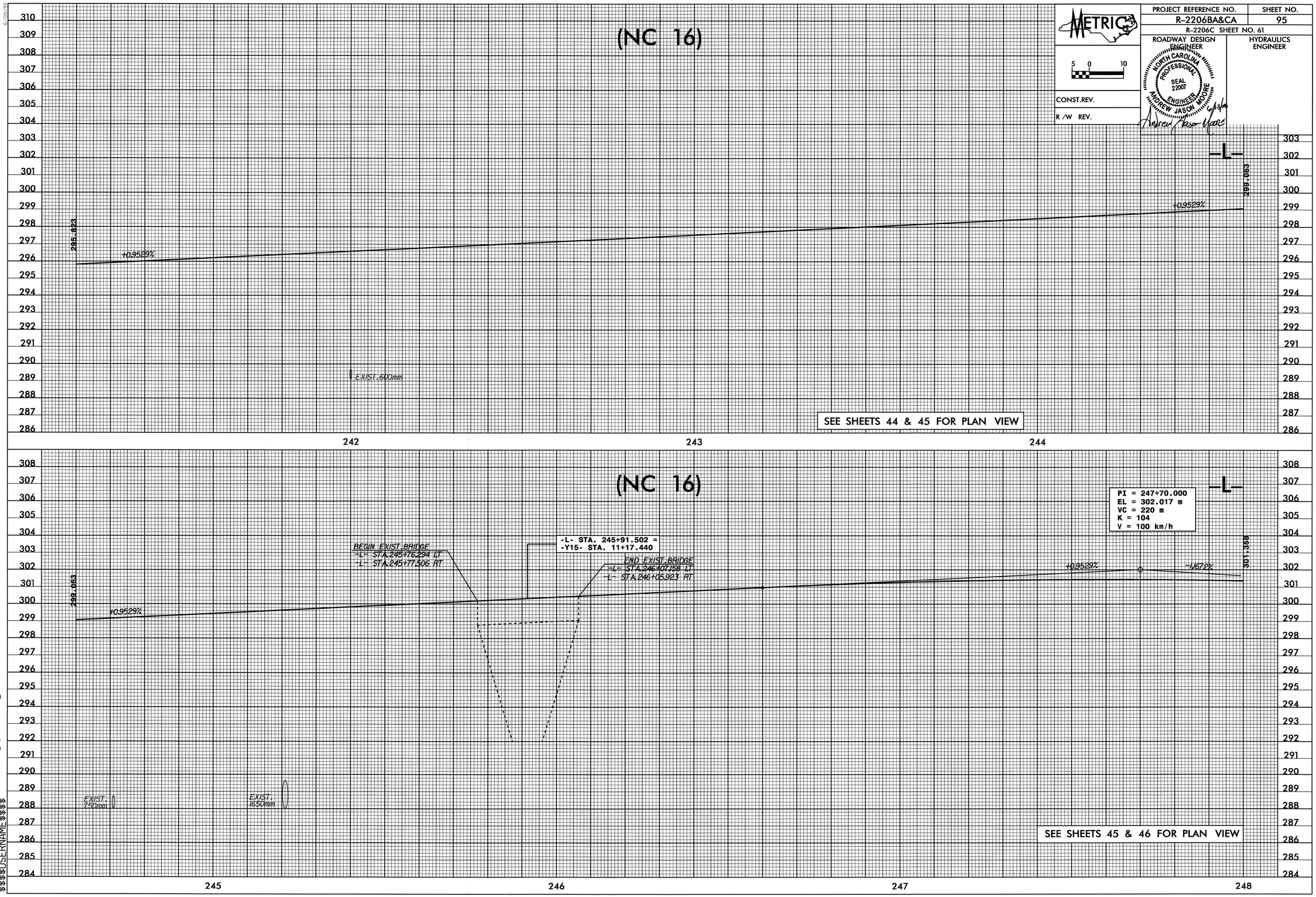
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

METRIC

5 0 10

CONST.REV.

R /W REV.



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6/09/95

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	96
R-2206C SHEET NO. 62	

ROADWAY DESIGN ENGINEER

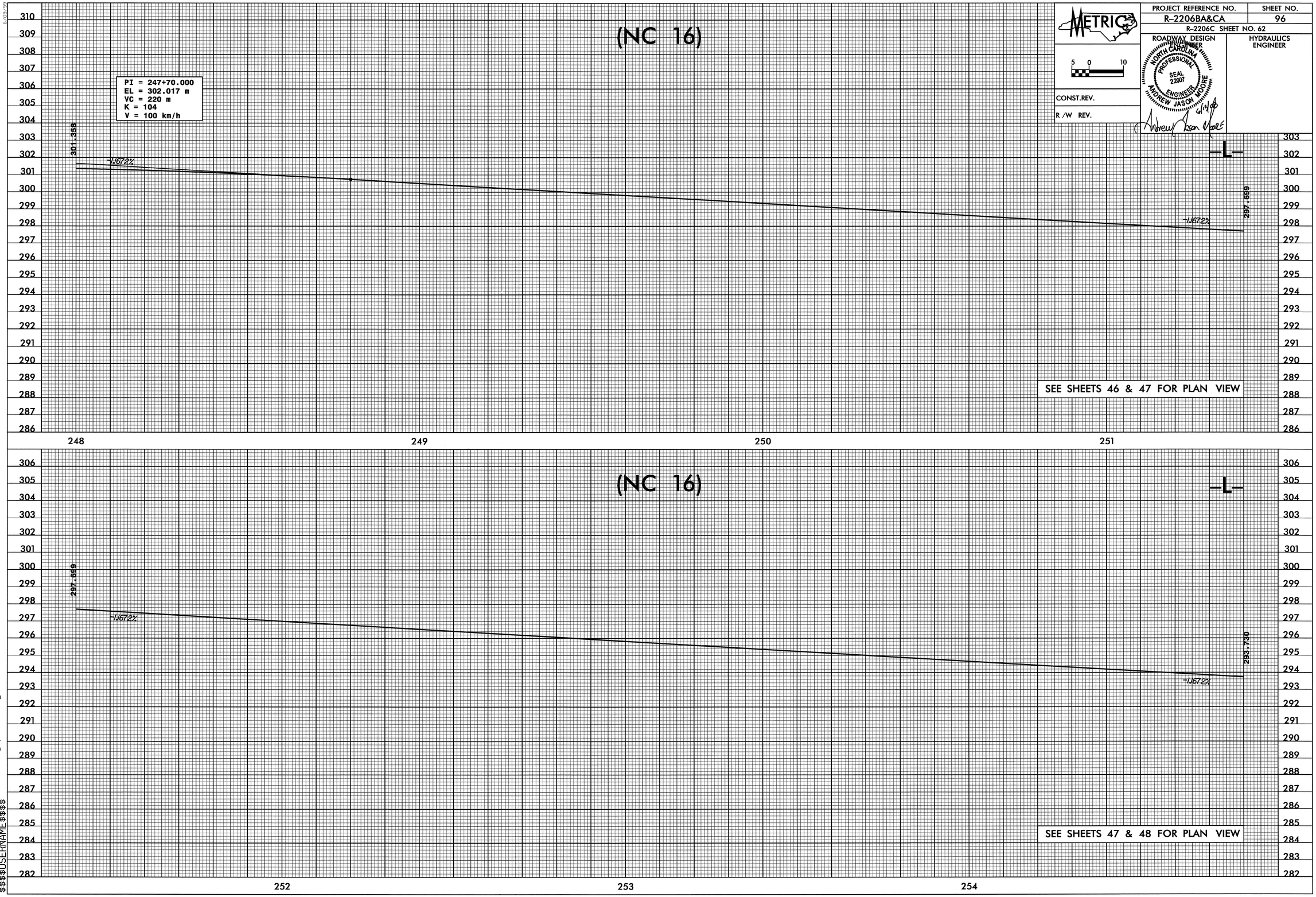
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

6/9/08

CONST.REV.

R /W REV.



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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	97
R-2206C SHEET NO. 63	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

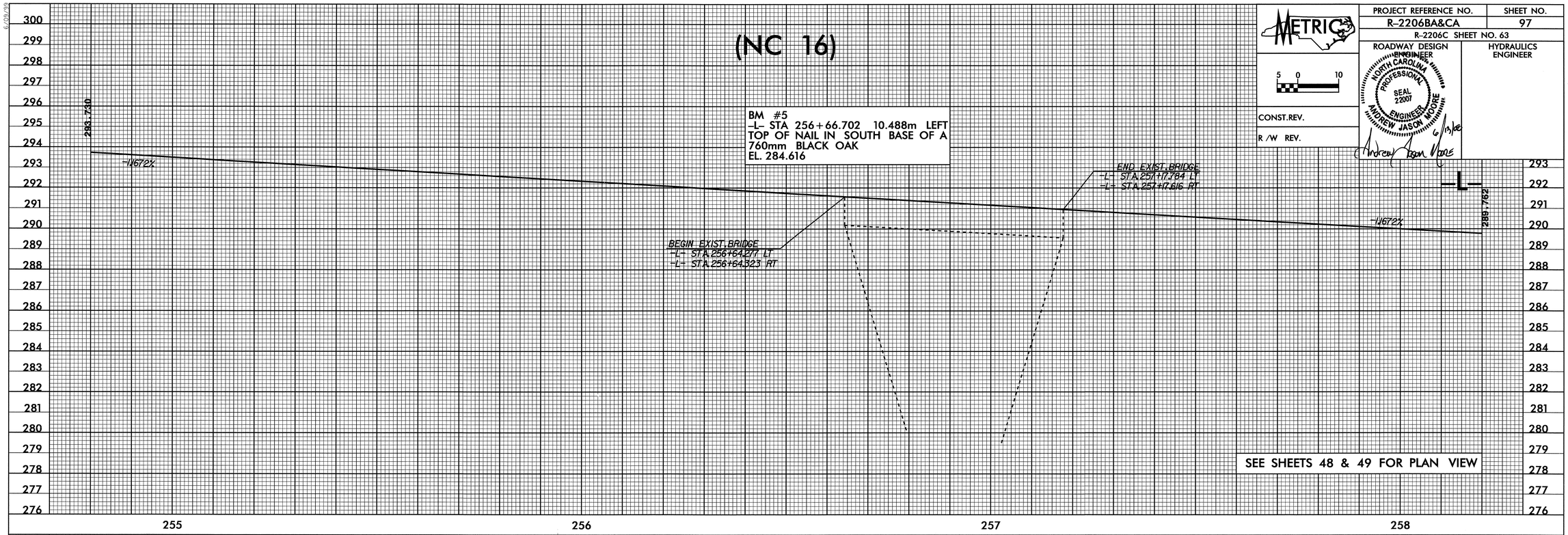
5 0 10

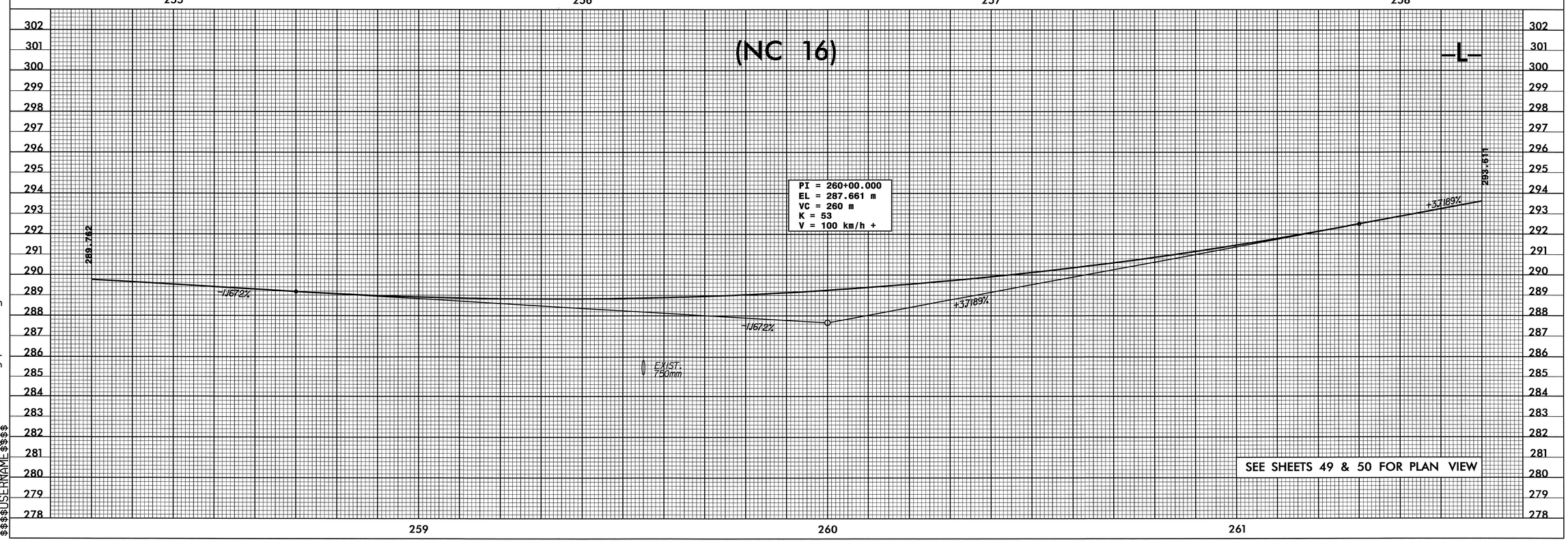
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	98
R-2206C SHEET NO. 65	

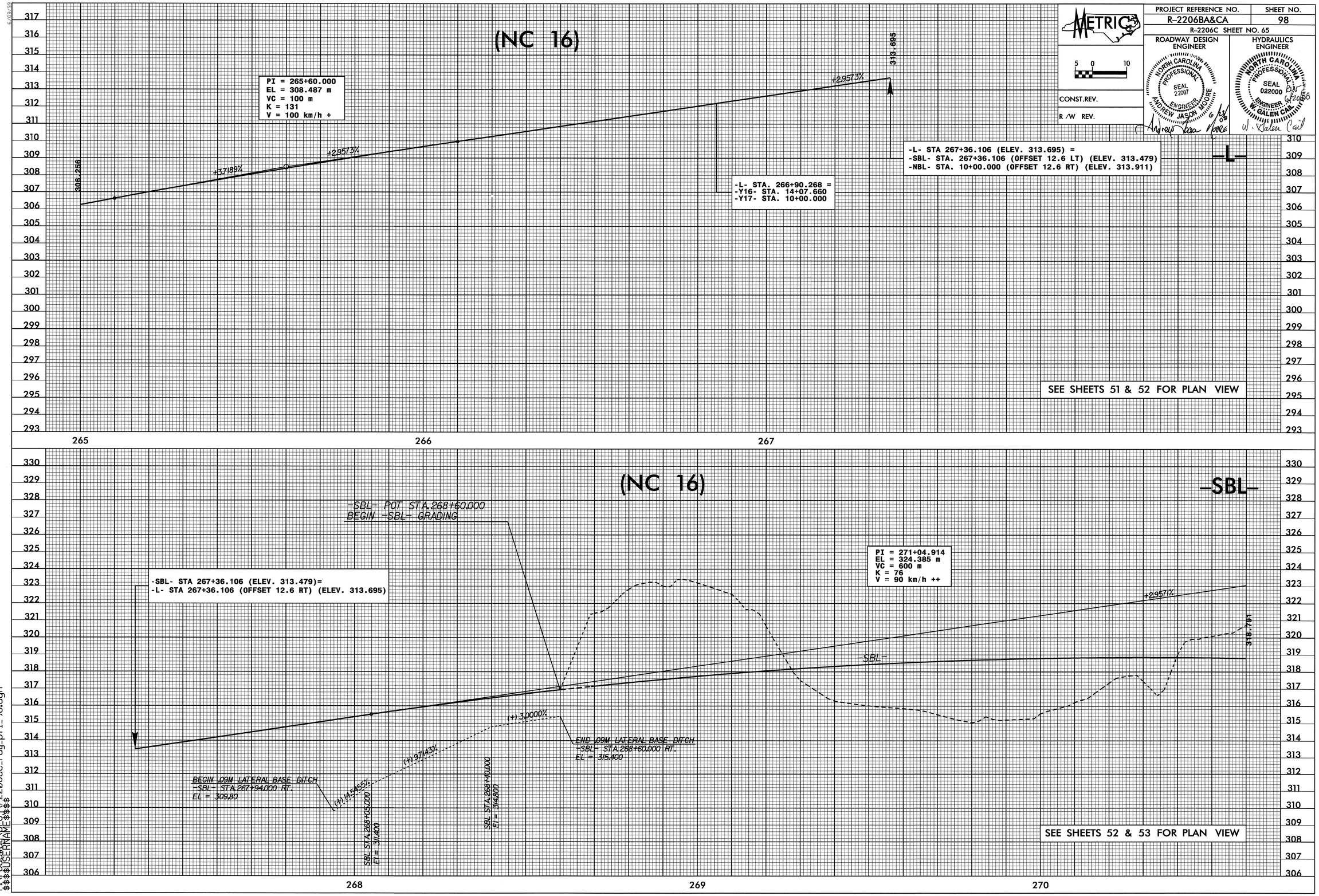
ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL

METRIC 5 0 10

CONST.REV.

R /W REV.



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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	99
R-2206C SHEET NO. 66	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

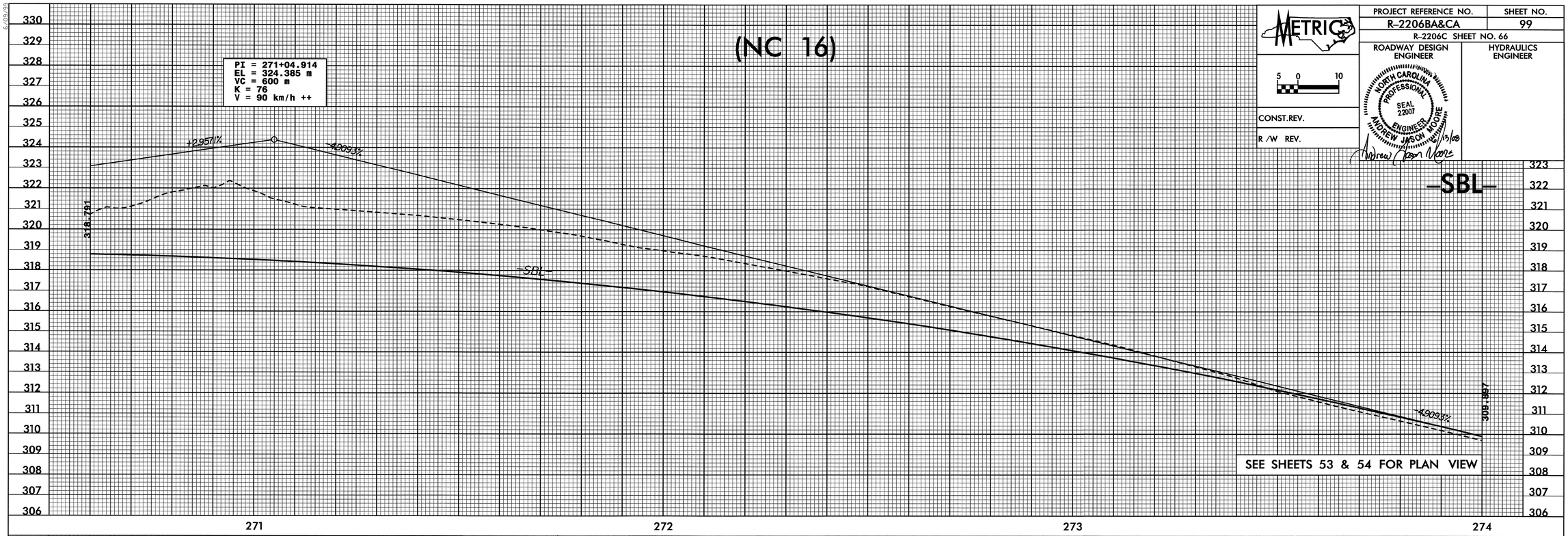
5 0 10

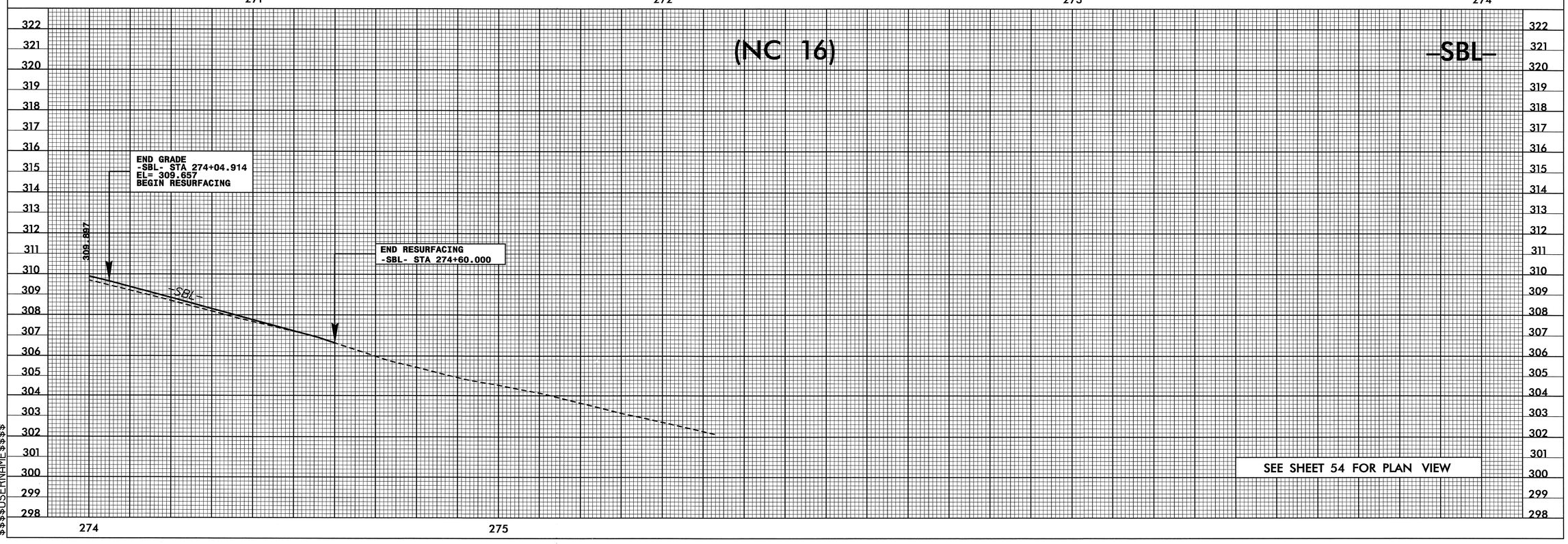
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/13/08





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	100
R-2206C SHEET NO. 67	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

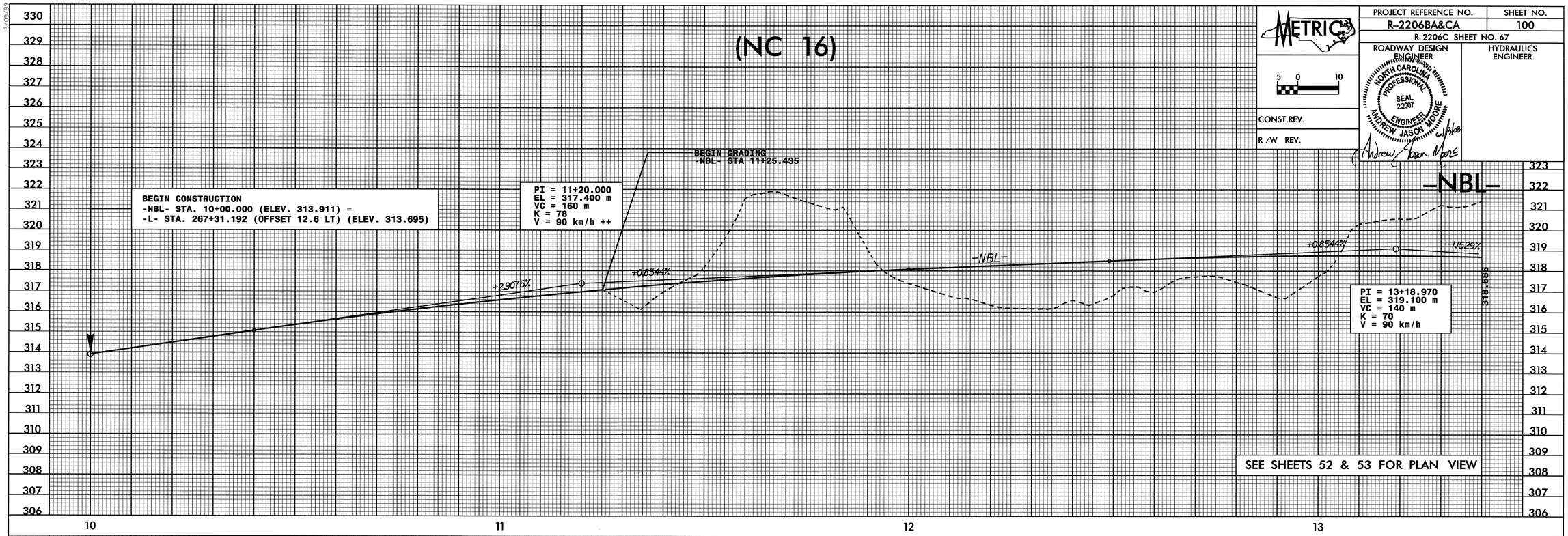
Andrew Jason Moore

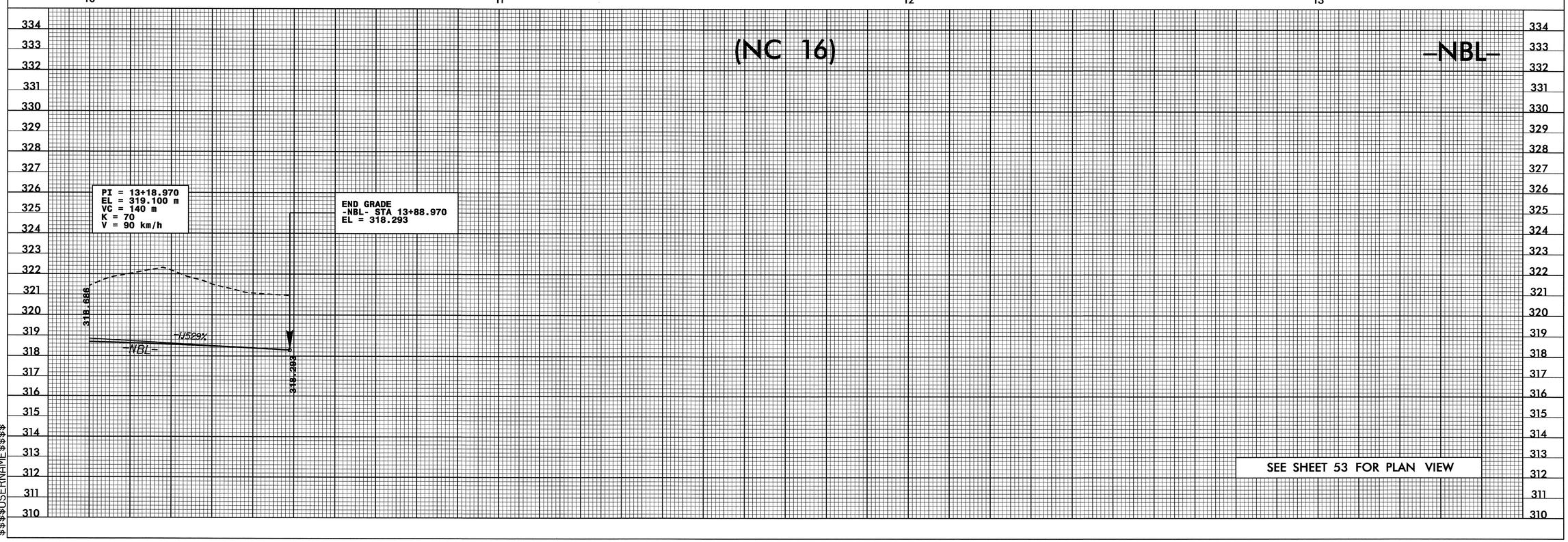
METRIC

5 0 10

CONST.REV.

R /W REV.





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	101
R-2206C SHEET NO. 68	

METRIC

5 0 10

CONST.REV.

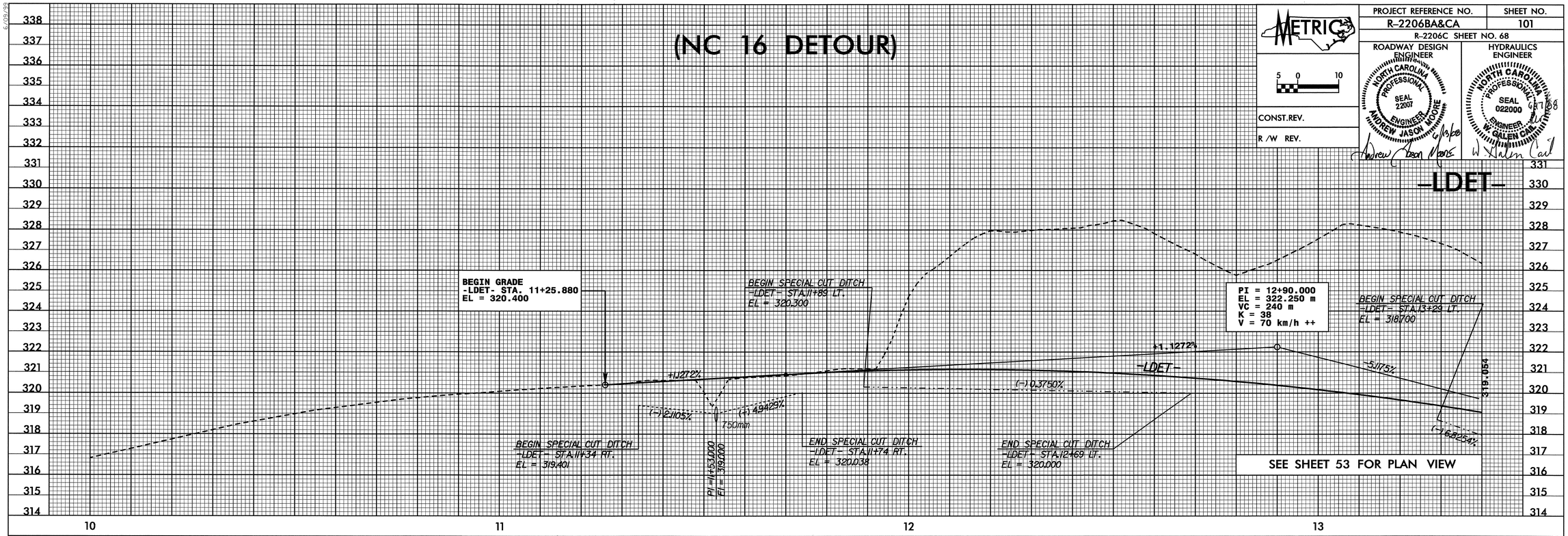
R /W REV.

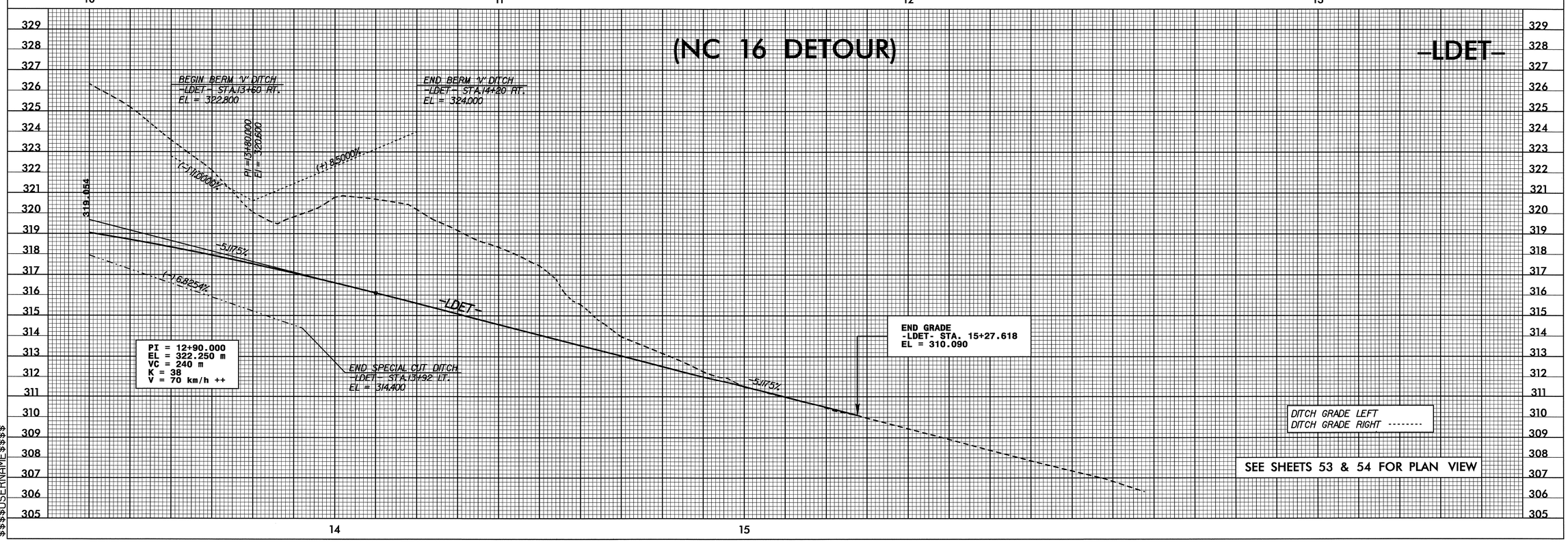
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 2007 ENGINEER ANDREW JASON MOORE

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL





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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	102
R-2206C SHEET NO. 69	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

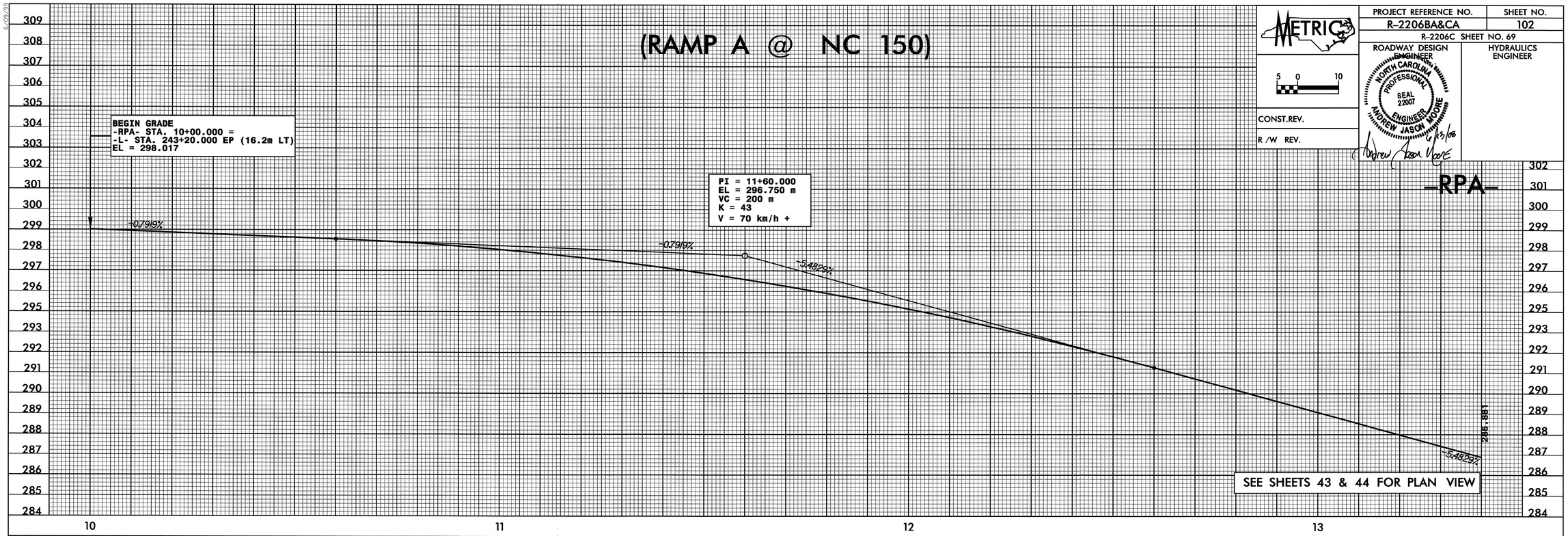
5 0 10

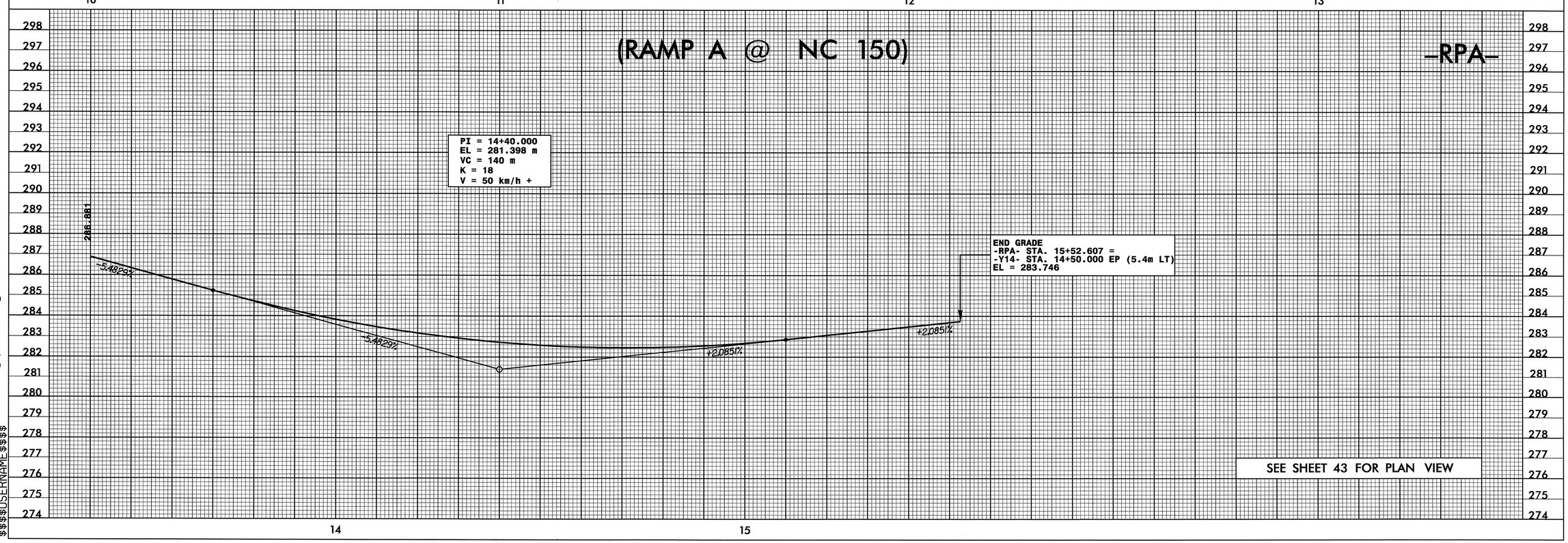
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08





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6/09/99

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	103
R-2206C SHEET NO. 70	

METRIC

5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER

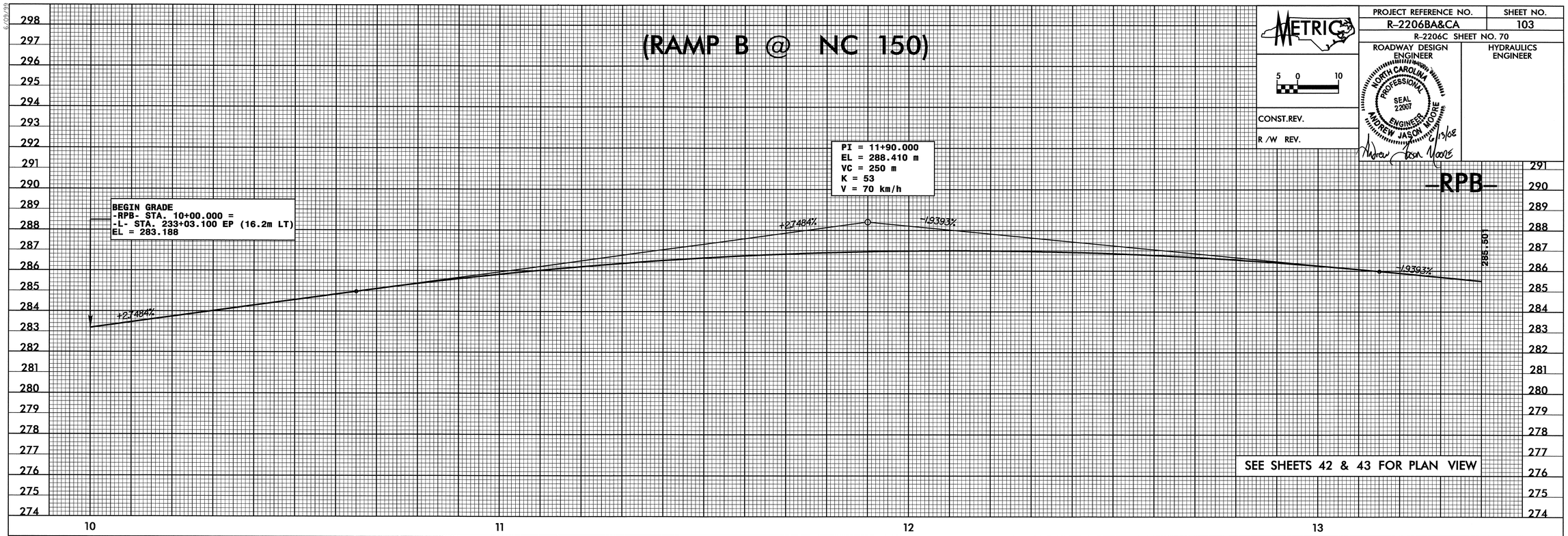
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/13/08

HYDRAULICS ENGINEER

(RAMP B @ NC 150)

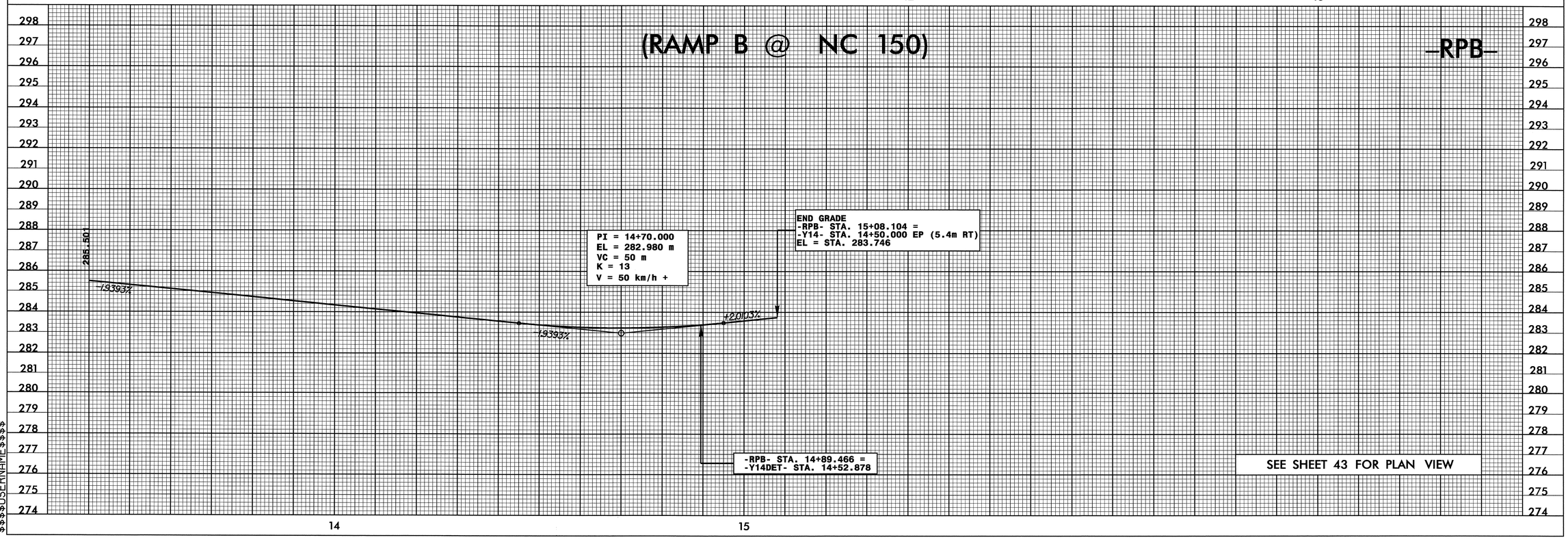
-RPB-



SEE SHEETS 42 & 43 FOR PLAN VIEW

(RAMP B @ NC 150)

-RPB-



SEE SHEET 43 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	104
R-2206C SHEET NO. 71	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

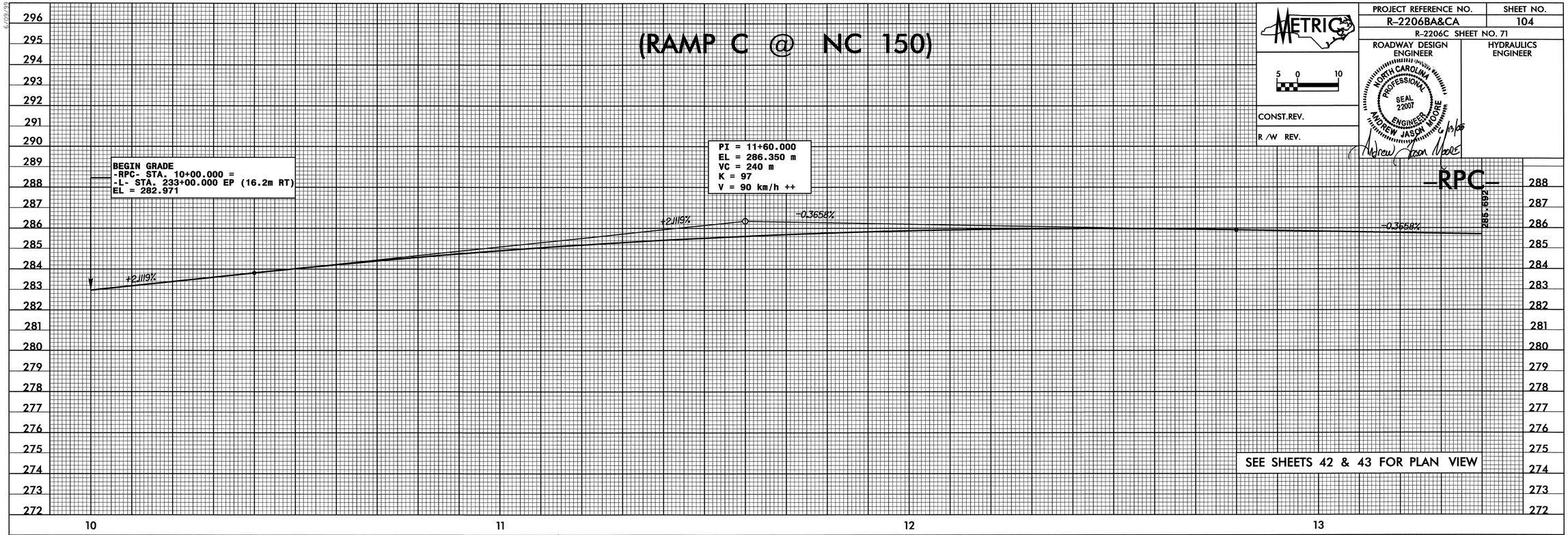
R/W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

(RAMP C @ NC 150)

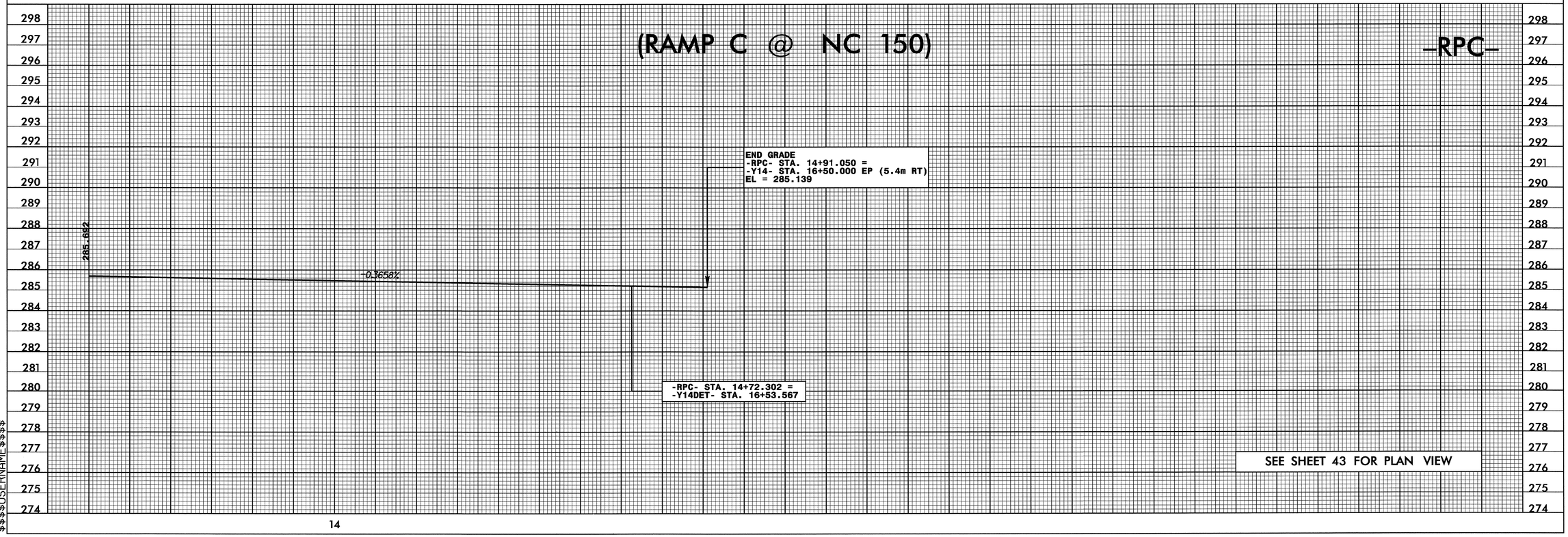
-RPC-



SEE SHEETS 42 & 43 FOR PLAN VIEW

(RAMP C @ NC 150)

-RPC-



SEE SHEET 43 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	105
R-2206C SHEET NO. 72	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

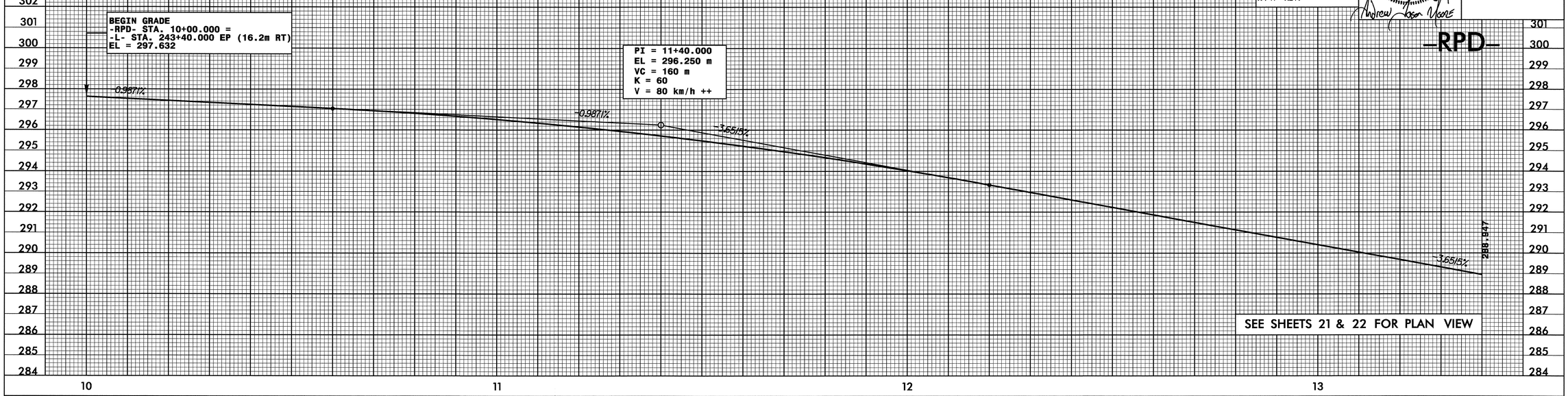
R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

(RAMP D @ NC 150)

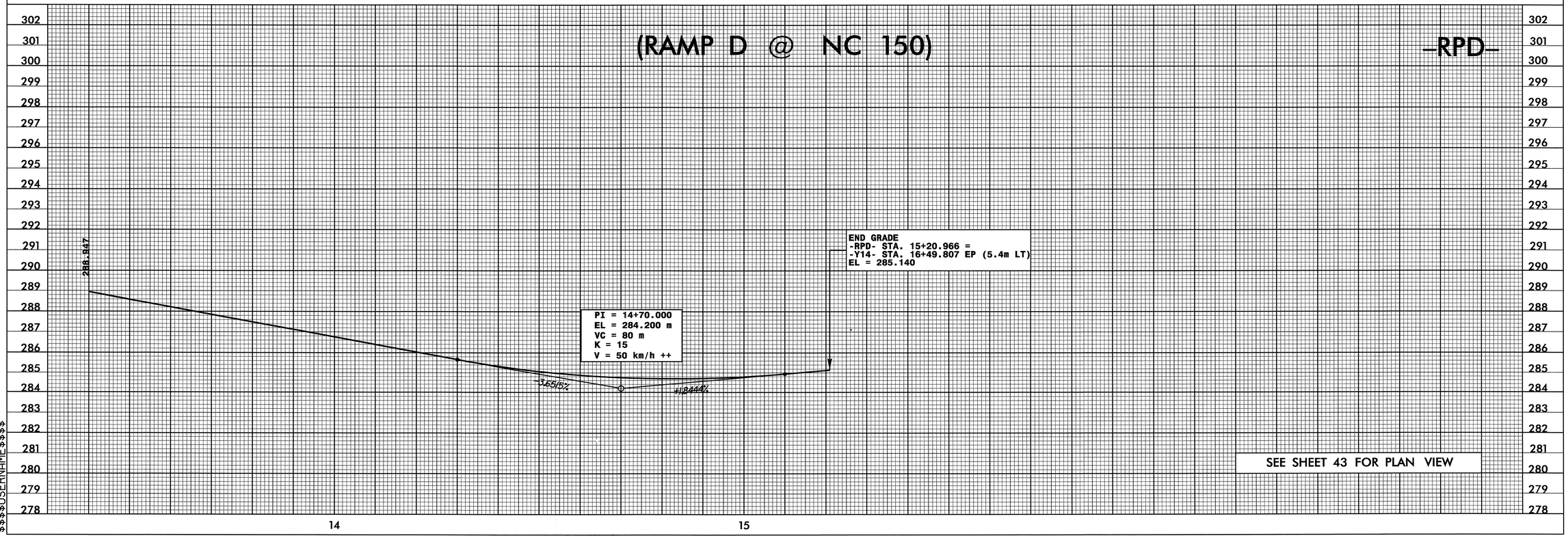
—RPD—



SEE SHEETS 21 & 22 FOR PLAN VIEW

(RAMP D @ NC 150)

—RPD—



SEE SHEET 43 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	106
R-2206C SHEET NO. 76	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

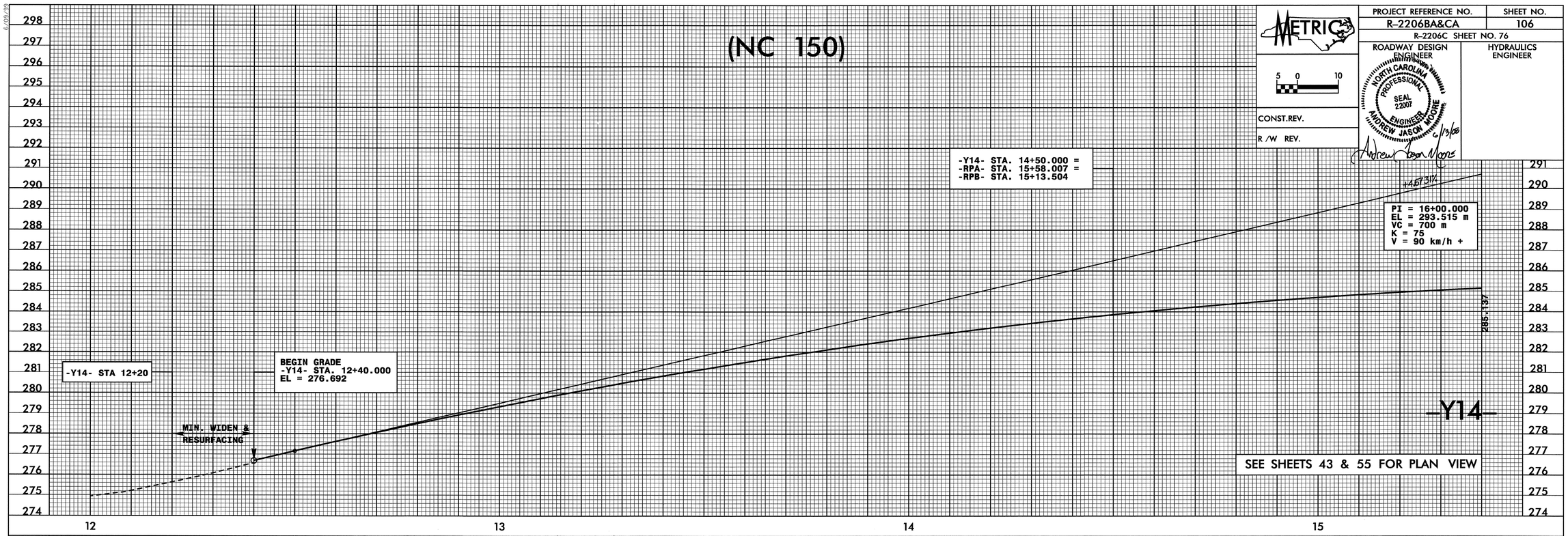
5 0 10

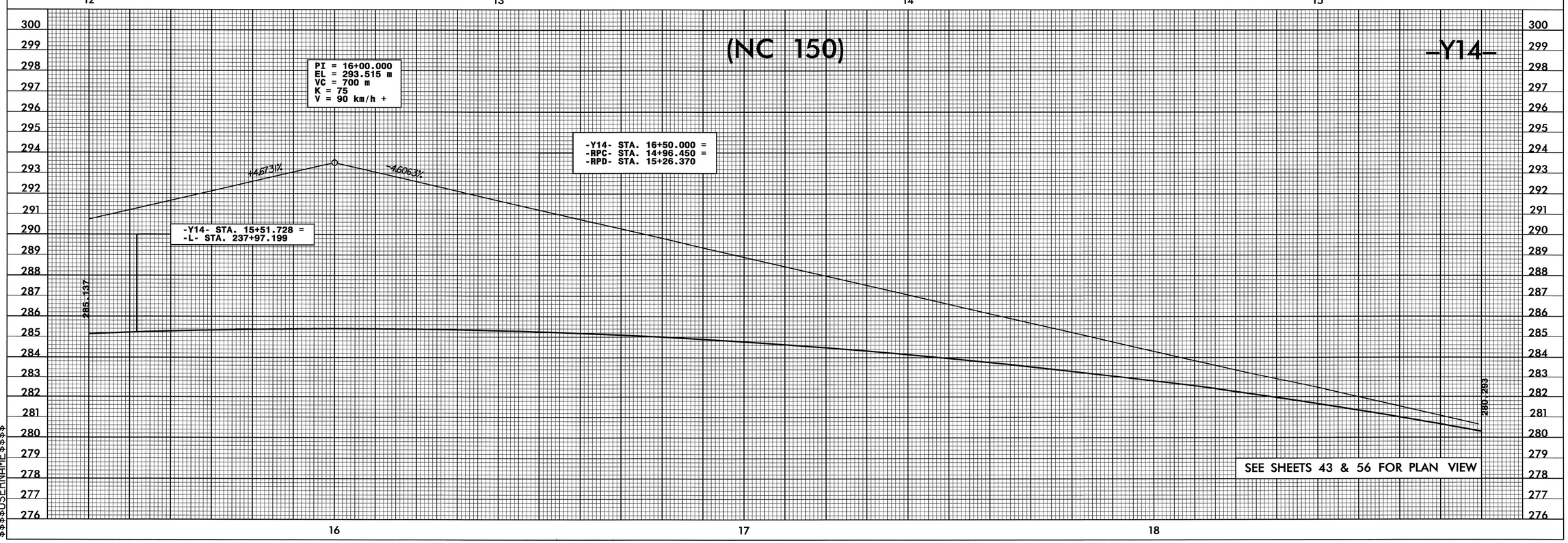
CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 2007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08





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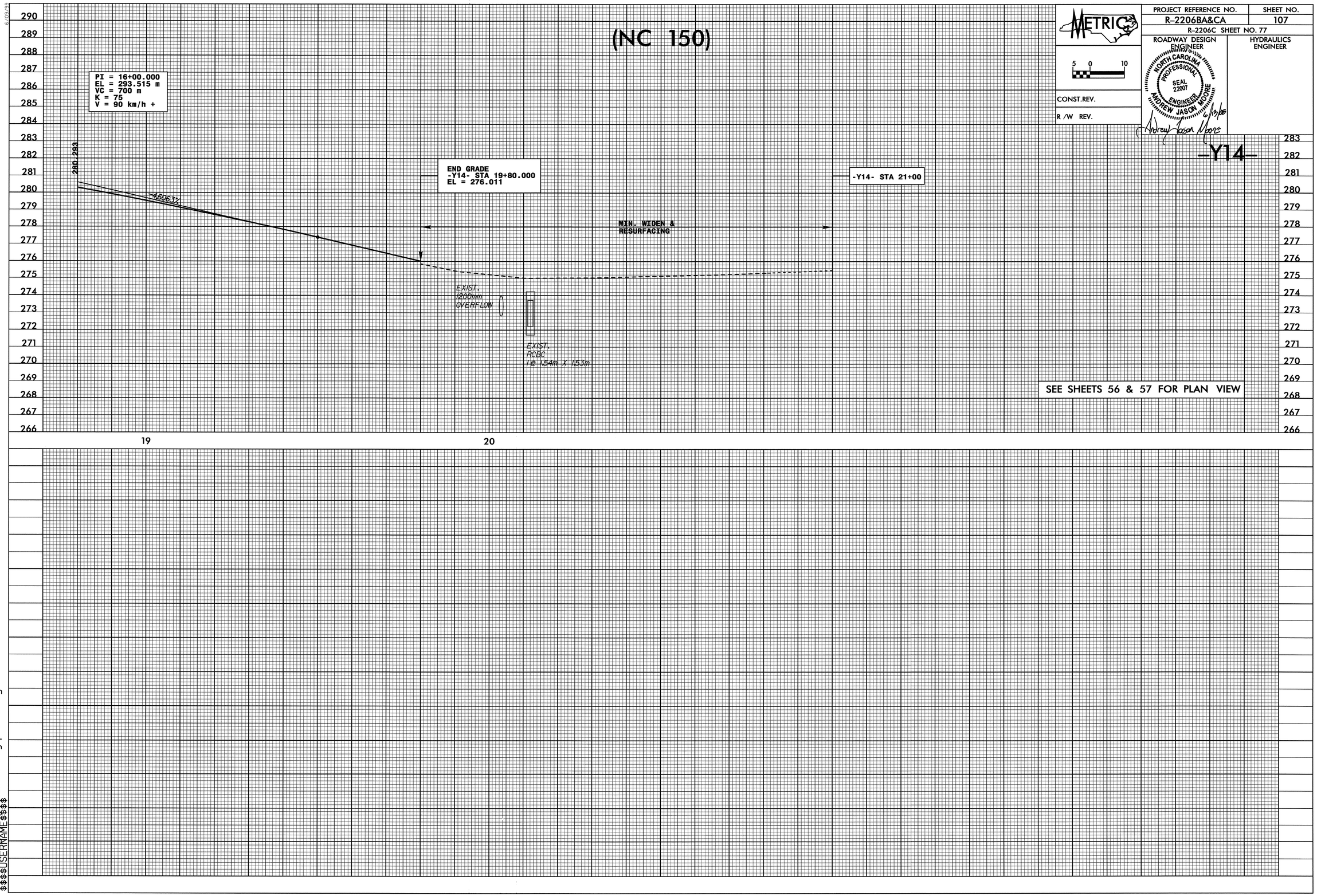

METRIC

5 0 10

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2206BA&CA	107
R-2206C SHEET NO. 77	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/3/08

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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	108
R-2206C SHEET NO. 79	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 6/9/08

METRIC

5 0 10

CONST.REV.

R /W REV.

(TOWER RD.)

-Y16-

-Y16- STA 10+00

BEGIN PROPOSED GRADE
-Y16- STA. 10+40.000
EL = 340.484

MIN. WIDEN & RESURFACING

PI = 11+40.000
EL = 333.650 m
VC = 180 m
K = 56
V = 80 km/h +

BEGIN EXISTING
END PROPOSED GRADE
-Y16- STA. 11+60.000

-6.0340%

-1.0025%

PI = 13+60.000
EL = 311.595 m
VC = 60 m
K = 5
V = 30 km/h +

EXIST. 1050mm

-1.0025%

313.652

SEE SHEETS 52 & 58 FOR PLAN VIEW

10 11 12 13

29-MAY-2008 14:02
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PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	109
R-2206C SHEET NO. 80	

METRIC

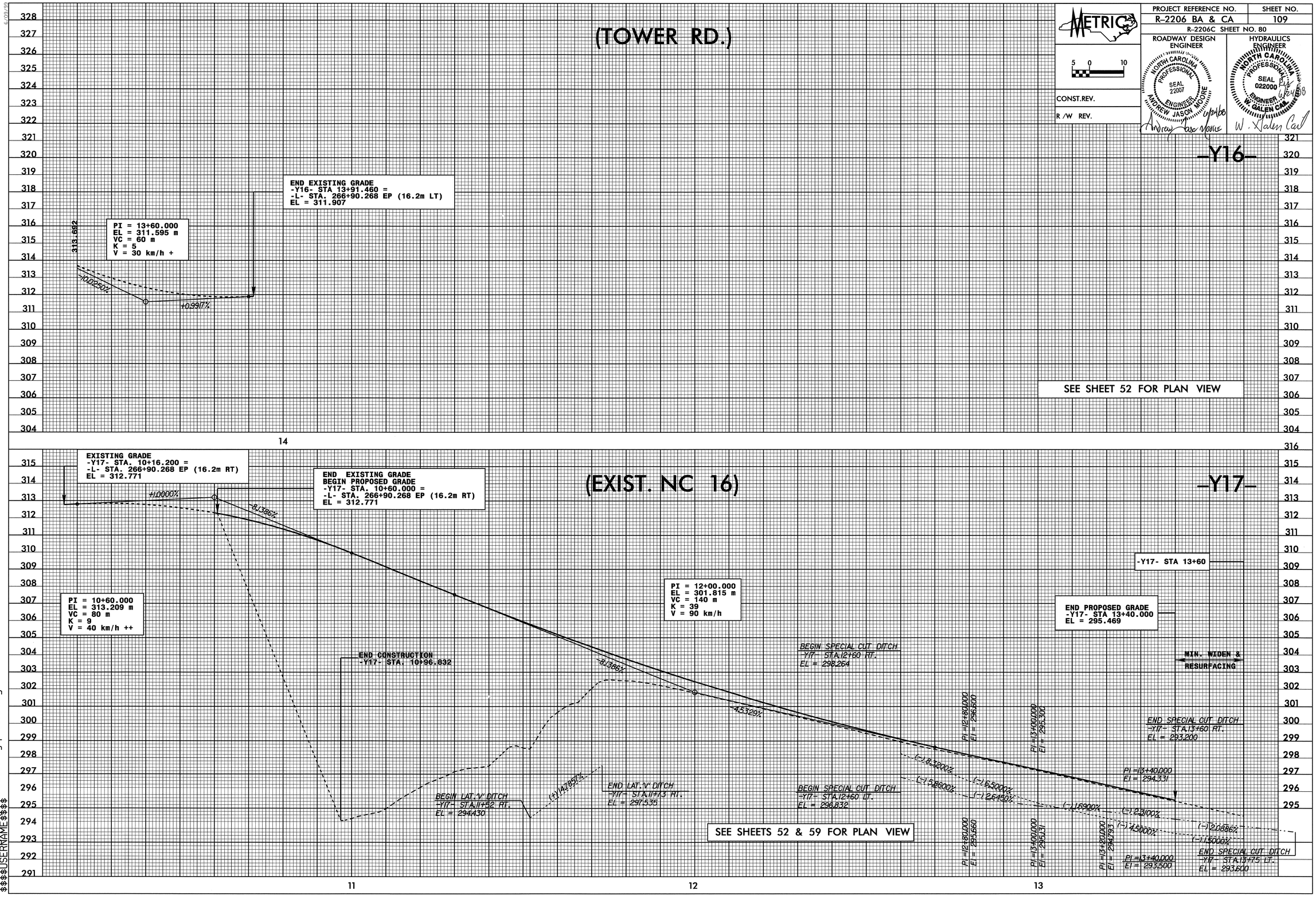
5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE
Andrew Jason Moore 6/24/08

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIN
W. Galen Cain 6/24/08



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0244219 6/24/2008 r2206bc_rdy_pfl_109 scalhoun RD-Oce34

PROJECT REFERENCE NO.	SHEET NO.
R-2206 BA & CA	110
R-2206C SHEET NO. 81	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

CONST.REV.

R /W REV.

NORTH CAROLINA PROFESSIONAL SEAL 22007 ENGINEER ANDREW JASON MOORE

Andrew Jason Moore 5/29/08

METRIC 5 0 10

-DR3-

PI = 10+25.000
EL = 335.039 m
K = 5
VC = 43 m

+2.0000%

-6.6938%

BEGIN PROP. GRADE
-DR3- STA 10+03.600
EL = 334.611

END PROP. GRADE
-DR3- STA 10+46.620
EL = 333.591
TIE TO EXIST TOWER RD

PI = 11+20.588
EL = 328.328 m
K = 1.2
VC = 10.25 m

-9.6601%

-18.5000%

-18.5000%

BEGIN PROP. GRADE
-DR3- STA 11+15.00
EL = 328.868
TIE TO EXIST TOWER RD

END PROP. GRADE
-DR3- STA 11+68.40
EL = 320.538

PI = 11+62.500
EL = 320.574 m
K = 0.5
VC = 8.5 m

-0.6140%

SEE SHEETS 52, 53, 58 FOR PLAN VIEW

(EXIST. NC 16)

BEGIN PROP. GRADE
-Y20- STA. 10+07.215 =
-Y17- 11+10.067 EP (7.214m LT)
EL = 309.711

PI = 10+30.000
EL = 310.167 m
K = 10
VC = 30 m

+2.0013%

-0.8617%

-0.8617%

PI = 10+90.000
EL = 309.650 m
K = 13
VC = 80 m

+5.2240%

MIN. WIDEN & RESURFACING

END PROP. GRADE
-Y20- STA 11+40.000
EL = 312.262

SEE SHEET 52 & 59 FOR PLAN VIEW

(RUGGED HILL RD.)

-Y20-
-Y21-

PI = 10+10.000
EL = 309.466 m
VC = 10 m

BEGIN PROP. GRADE
-Y21- STA. 10+03.600 =
-Y20- 10+46.000 EP (3.600m LT)
EL = 309.914

-7.0000%

-11.3000%

+0.6600%

307.239

END PROP. GRADE
-Y21- STA 10+35.000
EL = 307.239

PI = 10+30.000
EL = 307.206 m
VC = 10 m

SEE SHEET 59 FOR PLAN VIEW

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