STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5702	1	24

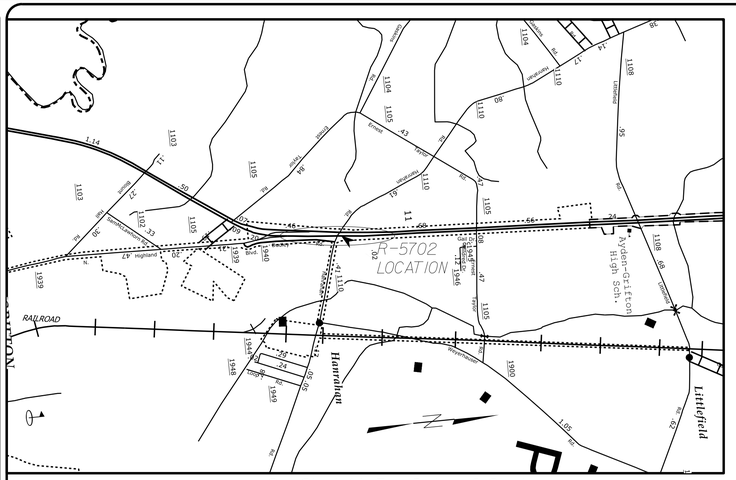
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46374.1.1	N/A	PE
46374.2.1	N/A	R/W
46374.3.1	N/A	CONST

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

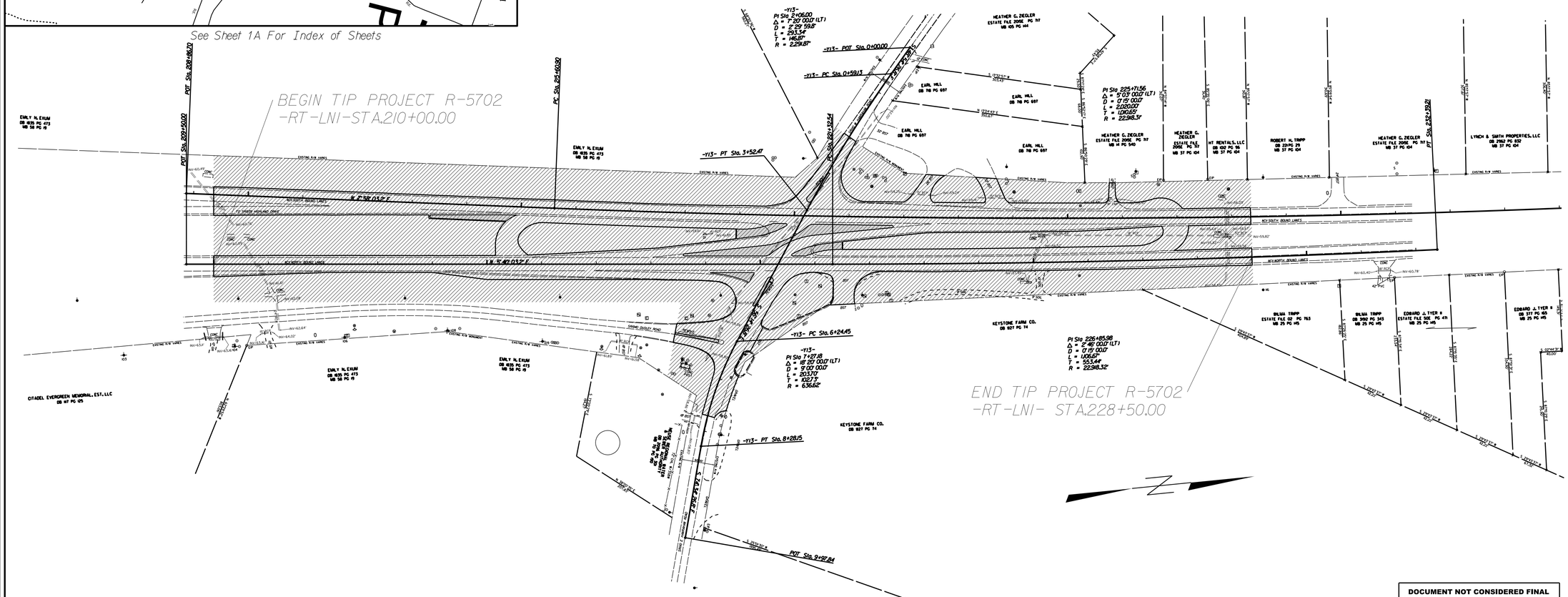
PITT COUNTY

LOCATION: NC11 AT SR1110 (HANRAHAN ROAD)

TYPE OF WORK: SAFETY IMPROVEMENTS



See Sheet 1A For Index of Sheets



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TIP PROJECT: R-5702

CONTRACT: DB00359

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH OF PROJECT R-5702 = 0.369 MILES

Prepared in the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
JULY 2017

WILLIAM C KINCANNON, PE
PROJECT ENGINEER

LANG JONES
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

DocuSigned by: William C Kincannon
P.E. 6/2/2017
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

DocuSigned by: William C Kincannon
P.E. 6/2/2017
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

06/08/99

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PROJECT REFERENCE NO.	SHEET NO.
R-5702	1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, STANDARD DRAWIINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2	TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF EARTHWORK
4-5	PLANSHEET
PMP1	PAVEMENT MARKING SHEET
EC1-EC3	EROSION CONTROL SHEETS
X1A	CROSS SECTION SUMMARY
X1-X10	CROSS SECTION SHEET

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

SUBSURFACE PLANS:

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

GRADING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED OR FUTURE 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.

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UTILITIES:

OWNERS:
TOWN OF AYDEN
TOWN OF GRIFTON
SUDDENLINK
EASTERN PINES WATER CORPORATION
CENTRYLINK
BROADPLEX
NRWASA
BAWC

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.2	METHOD OF CLEARING - METHOD II
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD FOR PIPE INSTALLATION
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - METHOD I
DIVISION 8 - INCIDENTALS	
840.15	BRICK DROP INLET
840.16	DROP INLET FRAME AND GRATES
852.01	CONCRETE ISLANDS (SURFACE MOUNTED)
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
DIVISION 12 - PAVEMENT MARKINGS, MARKERS AND DELINEATION	
1205.01	PAVEMENT MARKINGS-LINE TYPES OFFSETS
1205.02	PAVEMENT MARKINGS-DIVIDED AND UNDIVIDED ROADWAYS
1205.05	PAVEMENT MARKINGS-TURN LANES
1205.08	PAVEMENT MARKINGS-SYMBOLS AND WORD MESSAGES
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT	
1605.01	TEMPORARY SILT FENCE
1631.01	MATTING INSTALLATION
1632.03	ROCK INLET SEDIMENT TRAP TYPE C
1633.01	TEMPORARY ROCK SEDIMENT SILT CHECK TYPE A

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PROJECT REFERENCE NO.	SHEET NO.
R-5702	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

S.U.E. = *Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easment Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail — T
- Proposed Guardrail — T
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*)
- U/G Water Line LOS C (S.U.E*)
- U/G Water Line LOS D (S.U.E*)
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
R-5702	IC

-LTLN1- DESCRIPTION
Point 507 N 606,635.2292 E 2,466,020.4554 Sta 208+86.70
Course from 507 to PC LTLNC1 N 7° 58' 03.20" E Dist 674.2043

Curve Data

Curve LTLNC1
P.I. Station 225+71.56 N 608,303.8234 E 2,466,253.9976
Delta = 5° 03' 00.00" (LT)
Degree = 0° 15' 00.00"
Tangent = 1,010.6543
Length = 2,019.9998
Radius = 22,918.3100
External = 22.2732
Long Chord = 2,019.3461
Mid. Ord. = 22.2515
P.C. Station 215+60.90 N 607,302.9252 E 2,466,113.9084
P.T. Station 235+80.90 N 609,313.1676 E 2,466,305.4388
C.C. N 610,479.6856 E 2,443,416.8353
Back = N 7° 58' 03.20" E
Ahead = N 2° 55' 03.20" E
Chord Bear = N 5° 26' 33.20" E

-RTLN1- DESCRIPTION
Point 504 N 606,622.4519 E 2,466,149.2049 Sta 209+50.00
Course from 504 to PC RTLNC1 N 5° 40' 03.20" E Dist 1,182.5380

Curve Data

Curve RTLNC1
P.I. Station 226+85.98 N 608,349.9449 E 2,466,320.6437
Delta = 2° 46' 00.00" (LT)
Degree = 0° 15' 00.00"
Tangent = 553.4411
Length = 1,106.6671
Radius = 22,918.3200
External = 6.6814
Long Chord = 1,106.5595
Mid. Ord. = 6.6794
P.C. Station 221+32.54 N 607,799.2092 E 2,466,265.9879
P.T. Station 232+39.21 N 608,902.6768 E 2,466,348.6525
C.C. N 610,062.5372 E 2,443,459.7007
Back = N 5° 40' 03.20" E
Ahead = N 2° 54' 03.20" E
Chord Bear = N 4° 17' 03.20" E

-Y13- DESCRIPTION
Point 500 N 607,979.2173 E 2,465,885.5701 Sta 0+00.00
Course from 500 to PC Y13-CUR1 S 48° 54' 26.80" E Dist 59.1300

Curve Data

Curve Y13-CUR1
P.I. Station 2+06.00 N 607,843.8181 E 2,466,040.8218
Delta = 7° 20' 00.00" (LT)
Degree = 2° 29' 59.83"
Tangent = 146.8700
Length = 293.3389
Radius = 2,291.8746
External = 4.7011
Long Chord = 293.1387
Mid. Ord. = 4.6915
P.C. Station 0+59.13 N 607,940.3525 E 2,465,930.1334
P.T. Station 3+52.47 N 607,762.2019 E 2,466,162.9266
C.C. N 609,667.6210 E 2,467,436.5306
Back = S 48° 54' 26.80" E
Ahead = S 56° 14' 26.80" E
Chord Bear = S 52° 34' 26.80" E

Course from PT Y13-CUR1 to PC Y13-CUR2 S 56° 14' 26.80" E Dist 271.9800

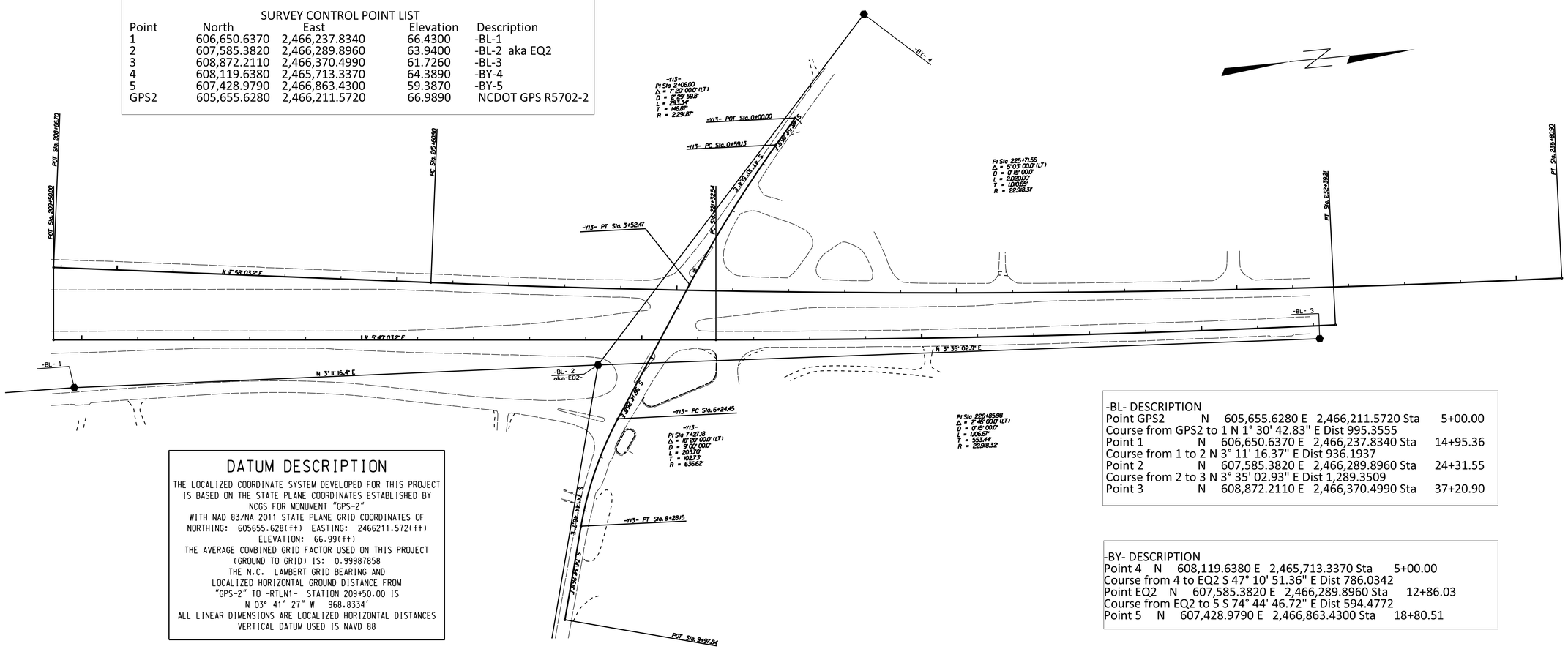
Curve Data

Curve Y13-CUR2
P.I. Station 7+27.18 N 607,553.9740 E 2,466,474.4530
Delta = 18° 20' 00.00" (LT)
Degree = 8° 59' 59.95"
Tangent = 102.7300
Length = 203.7040
Radius = 636.6207
External = 8.2354
Long Chord = 202.8361
Mid. Ord. = 8.1302
P.C. Station 6+24.45 N 607,611.0615 E 2,466,389.0453
P.T. Station 8+28.15 N 607,526.6487 E 2,466,573.4822
C.C. N 608,140.3353 E 2,466,742.8180
Back = S 56° 14' 26.80" E
Ahead = S 74° 34' 26.80" E
Chord Bear = S 65° 24' 26.80" E

Course from PT Y13-CUR2 to 503 S 74° 34' 26.80" E Dist 169.6900
Point 503 N 607,481.5125 E 2,466,737.0592 Sta 9+97.84

SURVEY CONTROL POINT LIST

Point	North	East	Elevation	Description
1	606,650.6370	2,466,237.8340	66.4300	-BL-1
2	607,585.3820	2,466,289.8960	63.9400	-BL-2 aka EQ2
3	608,872.2110	2,466,370.4990	61.7260	-BL-3
4	608,119.6380	2,465,713.3370	64.3890	-BY-4
5	607,428.9790	2,466,863.4300	59.3870	-BY-5
GPS2	605,655.6280	2,466,211.5720	66.9890	NCDOT GPS R5702-2



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GPS-2"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 605655.628(ft) EASTING: 2466211.572(ft)
ELEVATION: 66.99(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987858
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -RTLN1- STATION 209+50.00 IS
N 03° 41' 27" W 968.8334'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-BL- DESCRIPTION
Point GPS2 N 605,655.6280 E 2,466,211.5720 Sta 5+00.00
Course from GPS2 to 1 N 1° 30' 42.83" E Dist 995.3555
Point 1 N 606,650.6370 E 2,466,237.8340 Sta 14+95.36
Course from 1 to 2 N 3° 11' 16.37" E Dist 936.1937
Point 2 N 607,585.3820 E 2,466,289.8960 Sta 24+31.55
Course from 2 to 3 N 3° 35' 02.93" E Dist 1,289.3509
Point 3 N 608,872.2110 E 2,466,370.4990 Sta 37+20.90

-BY- DESCRIPTION
Point 4 N 608,119.6380 E 2,465,713.3370 Sta 5+00.00
Course from 4 to EQ2 S 47° 10' 51.36" E Dist 786.0342
Point EQ2 N 607,585.3820 E 2,466,289.8960 Sta 12+86.03
Course from EQ2 to 5 S 74° 44' 46.72" E Dist 594.4772
Point 5 N 607,428.9790 E 2,466,863.4300 Sta 18+80.51

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PROJECT REFERENCE NO.	SHEET NO.
R-5702	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
6/14/2017	6/14/2017

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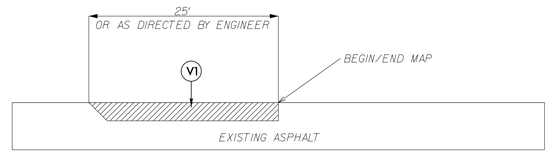
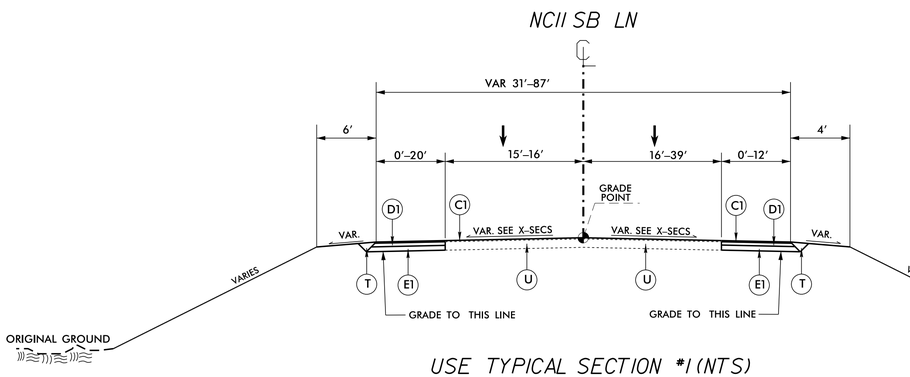
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
D1	PROP. APPROX. 2.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	INCIDENTAL MILLING.

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



INCIDENTAL MILLING DETAIL



USE TYPICAL SECTION #1 (NTS)

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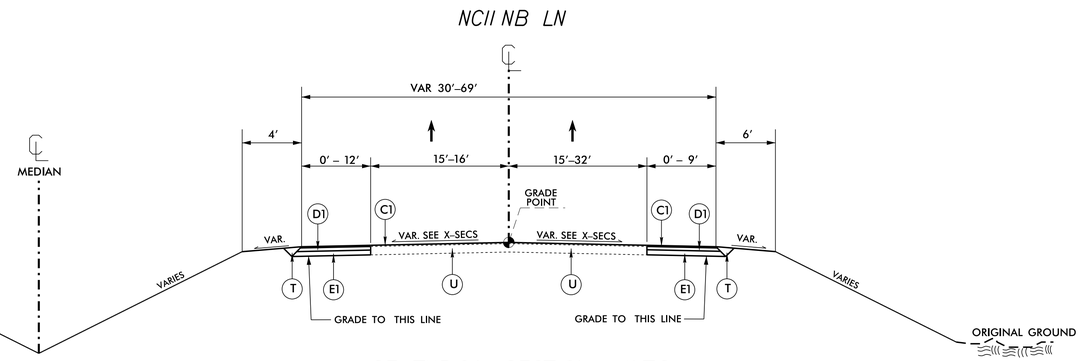

USE TYPICAL SECTION #1 (NTS)

-RT-LN1- STA.210+00.00 - 229+00.00

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

SECT	QUANTITY	UNIT	ITEM DESCRIPTION
800	1	LS	MOBILIZATION
801	1	LS	CONSTRUCTION SURVEYING
226	1	LS	GRADING
230	2477	CY	BORROW EXCAVATION
300	60	TON	FOUNDATION CONDITIONING MATERIAL,MINOR STRUCTURES
300	190	SY	FOUNDATION CONDITIONING GEOTEXTILE
310	296	LF	15" DRAINAGE PIPE
310	246	LF	18" DRAINAGE PIPE
310	4	LF	18" RC PIPE CULVERTS,CLASS III
340	40	LF	PIPE REMOVAL
SP	10	TON	#57 STONE
545	20	TON	INCIDENTAL STONE BASE
607	1000	SY	INCIDENTAL MILLING
610	840	TON	ASPHALT CONCRETE BASE COURSE,TYPE B25.0B
610	340	TON	ASPHALT CONCRETE INTERMEDIATE COURSE,TYPE I19.0B
610	2000	TON	ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5B
620	175	TON	ASPHALT BINDER FOR PLANT MIX,GRADE PG64-22
840	4	EA	MASONRY DRAINAGE STRUCTURES
840	4	EA	FRAME WITH GRATE,STD 840J6
840	1	EA	FRAME WITH TWO GRATES,STD 840.22
852	1140	SY	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)
858	4	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
859	1	EA	CONVERT EXISITNG DROP INLET TO JUNCTION BOX
SP	216	SF	WORK ZONE ADVANCE/GENERAL WARNING SIGNING

SECT	QUANTITY	UNIT	ITEM DESCRIPTION
SP	1	LS	TEMPORARY TRAFFIC CONTROL
1205	8871	LF	THERMOPLASTIC PAVEMENT MARKING LINES (6",90MILS)
1205	7950	LF	THERMOPLASTIC PAVEMENT MARKING LINES (6",120MILS)
1205	734	LF	THERMOPLASTIC PAVEMENT MARKING LINES (12",90MILS)
1205	160	LF	THERMOPLASTIC PAVEMENT MARKING LINES (12",120MILS)
1205	72	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24",120MILS)
1205	4	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120MILS)
1205	15	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90MILS)
SP	250	LF	ADJUSTMENT OF EXISITNG 4" WATERLINE
1605	500	LF	TEMPORARY SILT FENCE
1610	10	TON	STONE FOR EROSION CONTROL,CLASS B
1615	4	ACRE	TEMPORARY MULCHING
1620	200	LB	SEED FOR TEMPORARY SEEDING
1620	1	TON	FERTILIZER FOR TEMPORARY SEEDING
1631	365	SY	MATTING FOR EROSION CONTROL
1632	160	LF	1/4" HARDWARE CLOTH
1660	4	ACRE	SEEDING AND MULCHING
1661	200	LB	SEED FOR REPAIR SEEDING
1661	1	TON	FERTILIZER FOR REPAIR SEEDING
SP	4	EA	RESPONSE FOR EROSION CONTROL
SP	60	LF	COIR FIBER WATTLE
SP	3	LB	POLYACRYLAMIDE
SP	1	EA	CONCRETE WASHOUT STRUCTURE

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COMPUTED BY: RG DATE:
CHECKED BY: LJ DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-5702	3A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

SUB-REGIONAL & REGIONAL LIST OF PIPES, ENDWALLS, ETC.

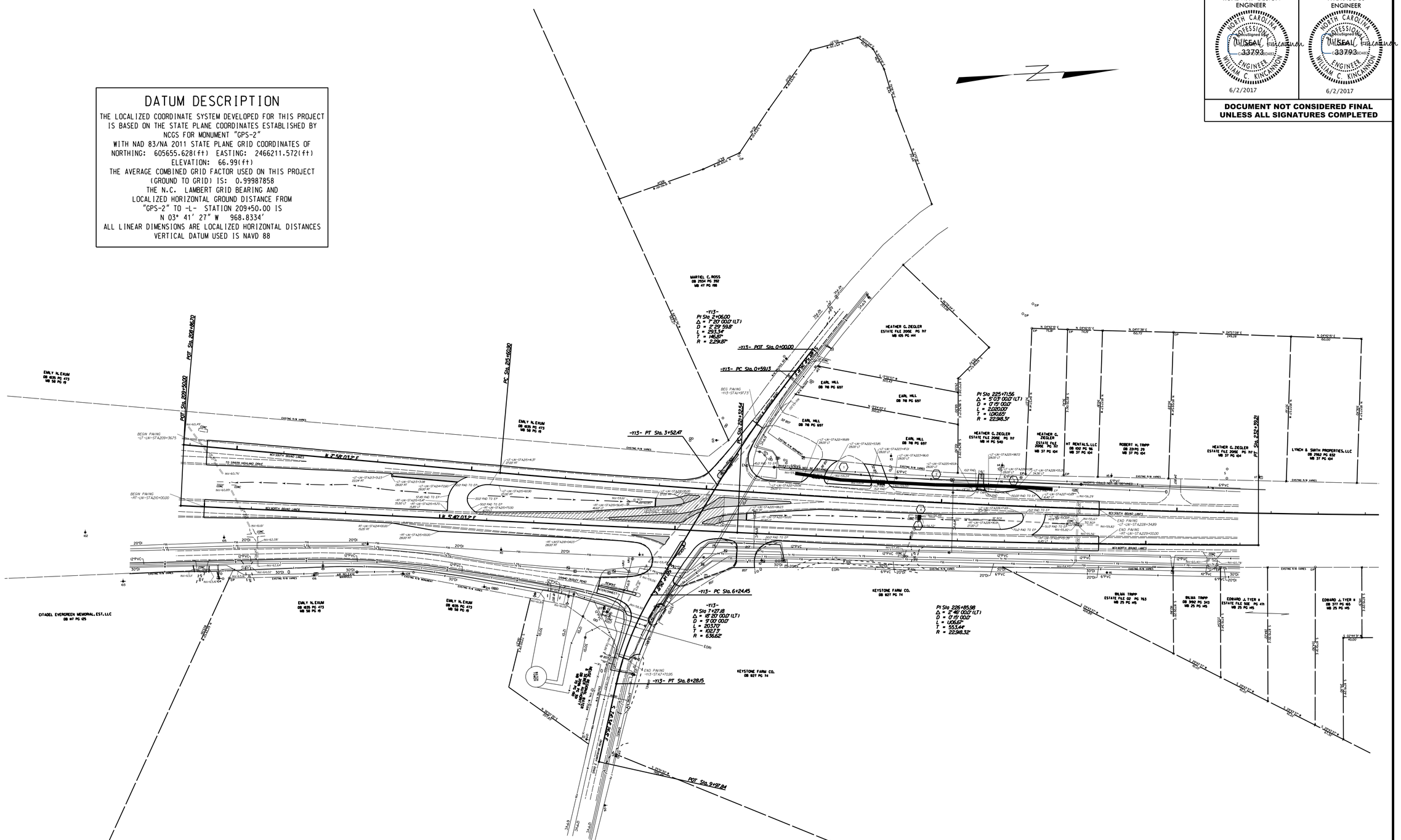
| STATION | LOCATION (LT,RT, OR CL) | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | C.S. PIPE 12" | 15" | 18" | 24" | 36" | 42" | 48" | R.C. PIPE (CLASS III) 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE (CLASS IV) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | *** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | *** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | *** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. 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") LIN. "FT." PER EACH (0' THRU 5.0') | A (5.0' THRU 10.0') | B (10.0' AND ABOVE) | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E | F | G | CONCRETE TRANSITIONAL SECTION CATCH BASIN | DROP INLET (840.15) | DROP INLET FRAME AND GRATES (840.16) | G.D.I. FRAME WITH GRATE STD. 840.22 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | CONV. EXIST. D.I. TO J.B. | CORR. STEEL ELBOWS NO. & SIZE | CONC. COLLARS CL. "B" C.Y. STD 840.72 | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | PIPE REMOVAL LIN.FT. | REMARKS |
|---|---|---

PROJECT REFERENCE NO.	SHEET NO.
R-5702	4
R/W SHEET NO.	N/A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
6/2/2017	6/2/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

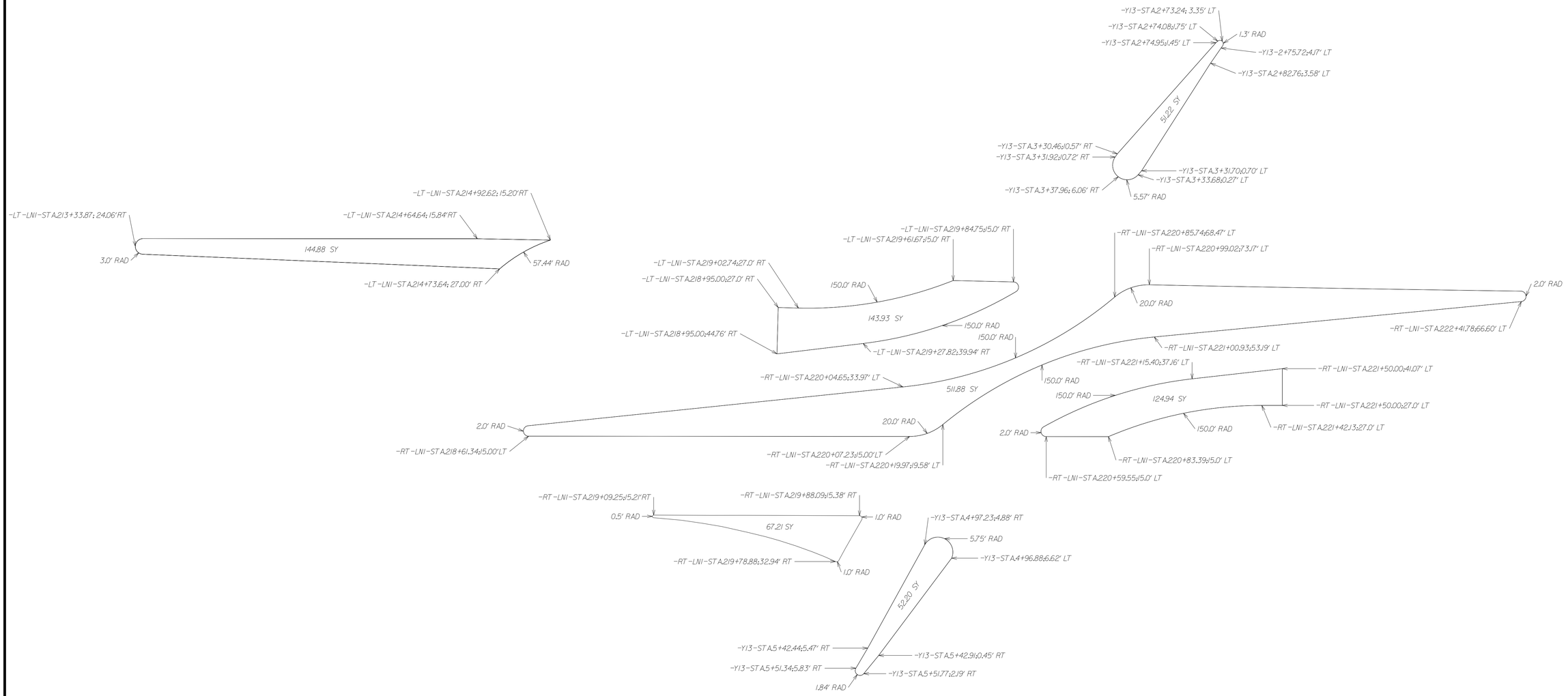
DATUM DESCRIPTION

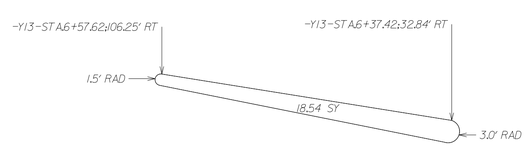
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GPS-2"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 605655.628(ft) EASTING: 2466211.572(ft)
ELEVATION: 66.99(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987858
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 209+50.00 IS
N 03° 41' 27" W 968.8334'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88


-Y13-
PI Sta 2+06.00
Δ = 7° 20' 00.0" (LT)
D = 2° 29' 59.8"
L = 293.54'
T = 146.87'
R = 2,291.81'
-Y13- POT Sta. 0+00.00
-Y13- PC Sta. 0+59.13
-Y13- PT Sta. 3+52.47
-Y13- PC Sta. 6+24.45
-Y13- PT Sta. 8+28.15
POT Sta. 9+97.84
PI Sta. 225+71.56
Δ = 5° 03' 00.0" (LT)
D = 0° 15' 00.0"
L = 2,020.00'
T = 1,010.65'
R = 22,918.31'
PI Sta. 226+85.98
Δ = 2° 46' 00.0" (LT)
D = 0° 15' 00.0"
L = 1,106.67'
T = 553.44'
R = 22,918.32'
-Y13-
PI Sta 7+27.18
Δ = 18° 23' 00.0" (LT)
D = 5° 00' 00.0"
L = 203.70'
T = 102.73'
R = 636.62'
N 7° 58' 03.2" E
N 5° 47' 03.2" E
MARTIEL C. ROSS
DB 2934 PG 392
MB 41 PG 198
HEATHER G. ZIEGLER
ESTATE FILE 2006E PG 717
MB 105 PG 144
EARL HILL
DB 748 PG 697
HEATHER G. ZIEGLER
ESTATE FILE 2006E PG 717
MB 41 PG 540
HEATHER G. ZIEGLER
ESTATE FILE 2006E PG 717
MB 37 PG 104
HT RENTALS, LLC
DB 1912 PG 76
MB 37 PG 104
ROBERT H. TRIPP
DB 2241 PG 25
MB 37 PG 104
HEATHER G. ZIEGLER
ESTATE FILE 2006E PG 717
MB 37 PG 104
LYNCH & SMITH PROPERTIES, LLC
DB 2962 PG 832
MB 37 PG 104
EMILY H. ERWIN
DB 1835 PG 473
MB 58 PG 19
CITADEL EVERGREEN MEMORIAL, EST, LLC
DB 817 PG 125
KEYSTONE FARM CO.
DB 827 PG 74
BILMA TRIPP
ESTATE FILE 02 PG 763
MB 25 PG 145
EDWARD J. TYER II
ESTATE FILE 92E PG 411
MB 25 PG 145
EDWARD J. TYER II
DB 377 PG 160
MB 25 PG 145
BEGIN PAVING
-LT-LN1-STA209+36.75
BEGIN PAVING
-RT-LN1-STA210+00.00
TO SMITH HIGHLAND DRIVE
NC 91 NORTH BOUND LANES
EXISTING R/W VARIES
END PAVING
-Y13-STA7+70.95
END PAVING
-LT-LN1-STA228+34.89
-RT-LN1-STA229+00.00
INVERTS COULD BE OBTAINED
SEMAQ DUCKY ROAD
SEMAQ DUCKY ROAD
EXISTING R/W BOUNDARY
AIR RELEASE VALVE
EXISTING R-4 AREA
DOG CABIN
EXISTING R/W VARIES
EXISTING R/W VARIES
EXISTING R/W VARIES

PROJECT REFERENCE NO.	SHEET NO.
R-5702	5

CONCRETE ISLANDS DETAIL SHEET





NOTE:
IN THE CONCRETE MONOLITHIC ISLANDS PLACE 12" OPENINGS THROUGH ISLANDS AT 30.0' INTERVALS.
LINE UP THE OPENINGS IN THE CONCRETE MONOLITHIC
ISLANDS TO ALLOW FOR SURFACE WATER TO DRAIN.

REVISIONS

8/17/99

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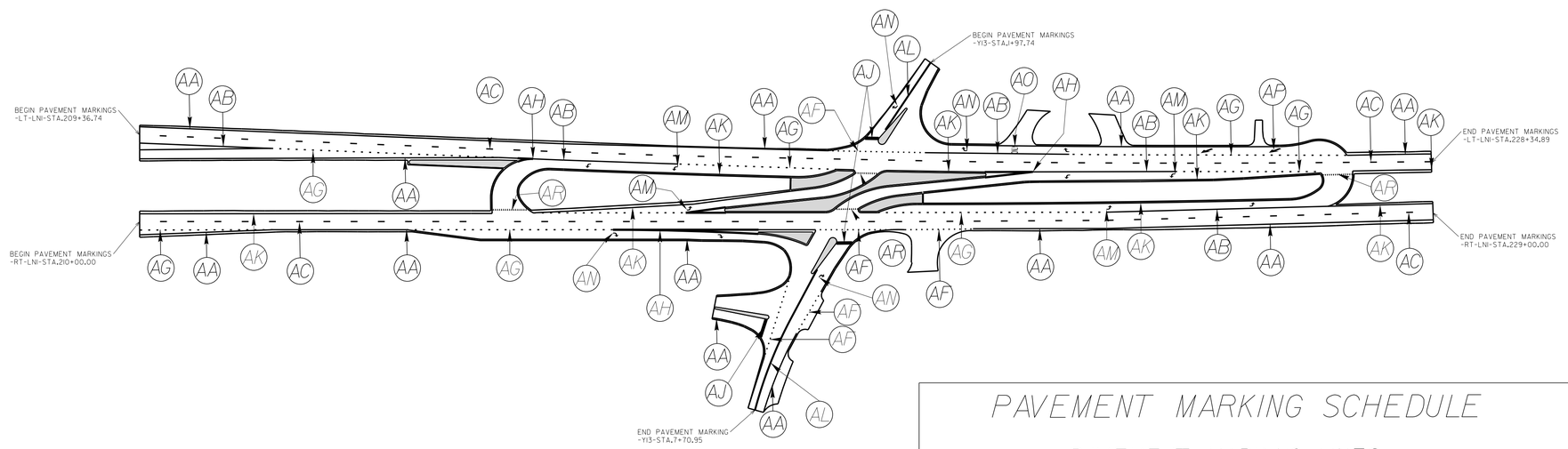
PROJECT REFERENCE NO.	SHEET NO.
R-5702	PMP-1



NOTE

THERMOPLASTIC MARKINGS AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, NCDOT ROADWAY STANDARD DRAWINGS, AND THE CURRENT EDITON OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). QUANTITIES FOR THESE ITEMS HAVE BEEN ACCOUNTED FOR IN THE CONTRACT BID FORM. ALL EDGE LINES SHALL BE A MINIMUN OF 2' OFF EOP.

FINAL SIGNAGE WILL BE PREFORMED BY NCDOT TRAFFIC SERVICES

PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

AA - THERMOPLASTIC PAVEMENT MARKING (6" WHITE, 90MILS) SOLID EDGE LINE
AB - THERMOPLASTIC PAVEMENT MARKING (6" WHITE, 120MILS) SOLID LANE LINE
AC - THERMOPLASTIC PAVEMENT MARKING (6" WHITE, 120MILS) 10'-30'/SP SKIP LINE
AF - THERMOPLASTIC PAVEMENT MARKING (6" WHITE, 120MILS) 2'-6'/SP MINI SKIP LINE
AG - THERMOPLASTIC PAVEMENT MARKING (6" WHITE, 120MILS) 3'-9'/SP MINI SKIP LINE
AH - THERMOPLASTIC PAVEMENT MARKING (12" WHITE, 90MILS) SOLID GORE LINE
AJ - THERMOPLASTIC PAVEMENT MARKING (24" WHITE, 120MILS) STOP BAR
AK - THERMOPLASTIC PAVEMENT MARKING (6" YELLOW, 90MILS) SOLID EDGE LINE
AL - THERMOPLASTIC PAVEMENT MARKING (6" YELLOW, 120MILS) SOLID DOUBLE LINE
AM - THERMOPLASTIC PAVEMENT SYMBOL (WHITE, 90MILS) LEFT ARROW
AN - THERMOPLASTIC PAVEMENT SYMBOL (WHITE, 90MILS) RIGHT ARROW
AO - THERMOPLASTIC PAVEMENT CHARACTER (WHITE, 120MILS) "ONLY"
AP - THERMOPLASTIC PAVEMENT SYMBOL (WHITE, 90MILS) MERGE ARROW
AR - THERMOPLASTIC PAVEMENT MARKING (12" WHITE, 120MILS) YIELD BAR 6" GAP

REVISIONS

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TIP PROJECT: R-5702

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5702	1	3

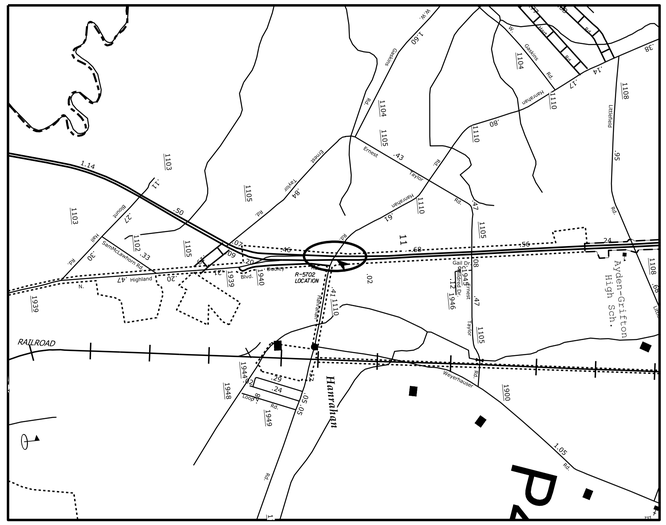
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46374.1.1		PE
46374.2.1		R/W
46374.3.1		CONST

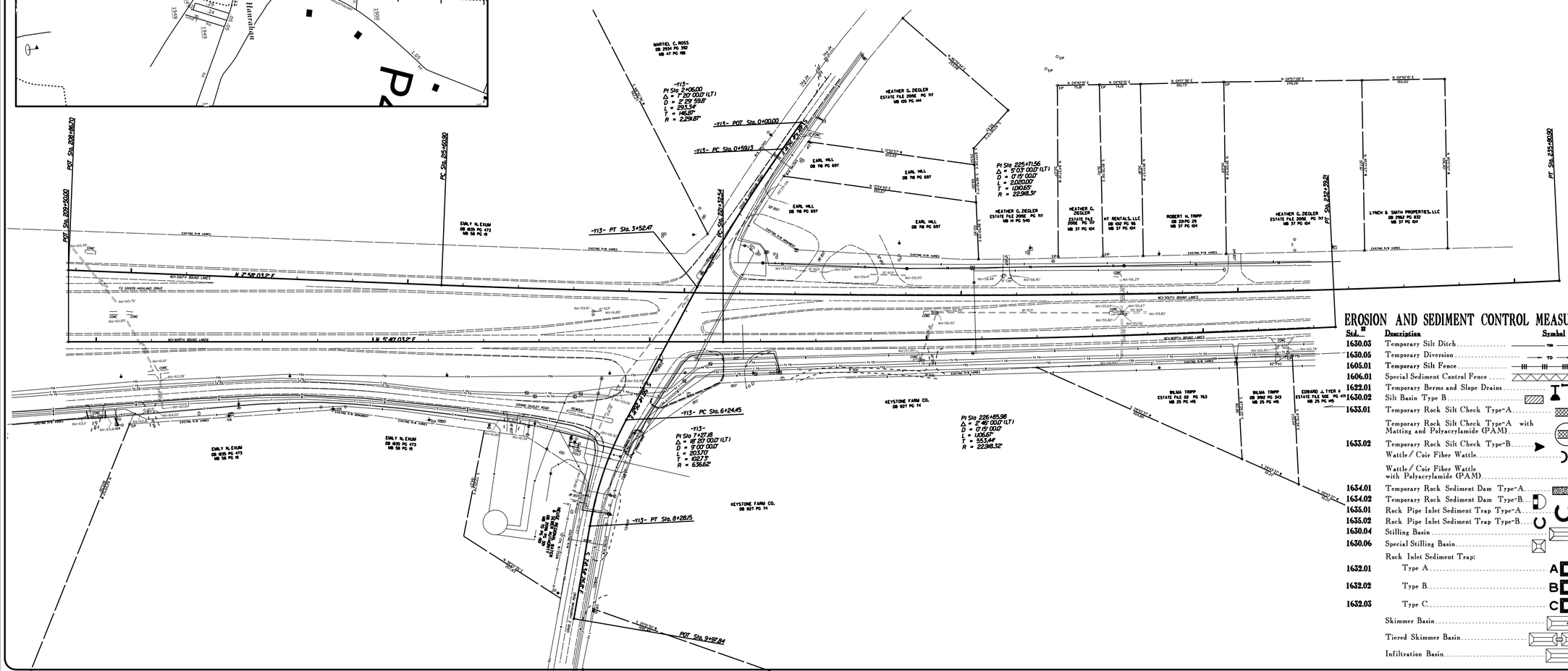
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EROSION CONTROL PLANS

LOCATION: NC 11 AT SR1110 (HANARAHAN ROAD)

TYPE OF WORK: INTERSECTION IMPROVEMENTS





EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

GRAPHIC SCALES

50 25 0 50 100
PLANS

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

2012 STANDARD SPECIFICATIONS

Prepared In the Office of:

DIVISION 2 DDC
1704 NORTH GREENE STREET
GREENVILLE, NC 27835

Timothy Pinkham
Level III
Certification #3510

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

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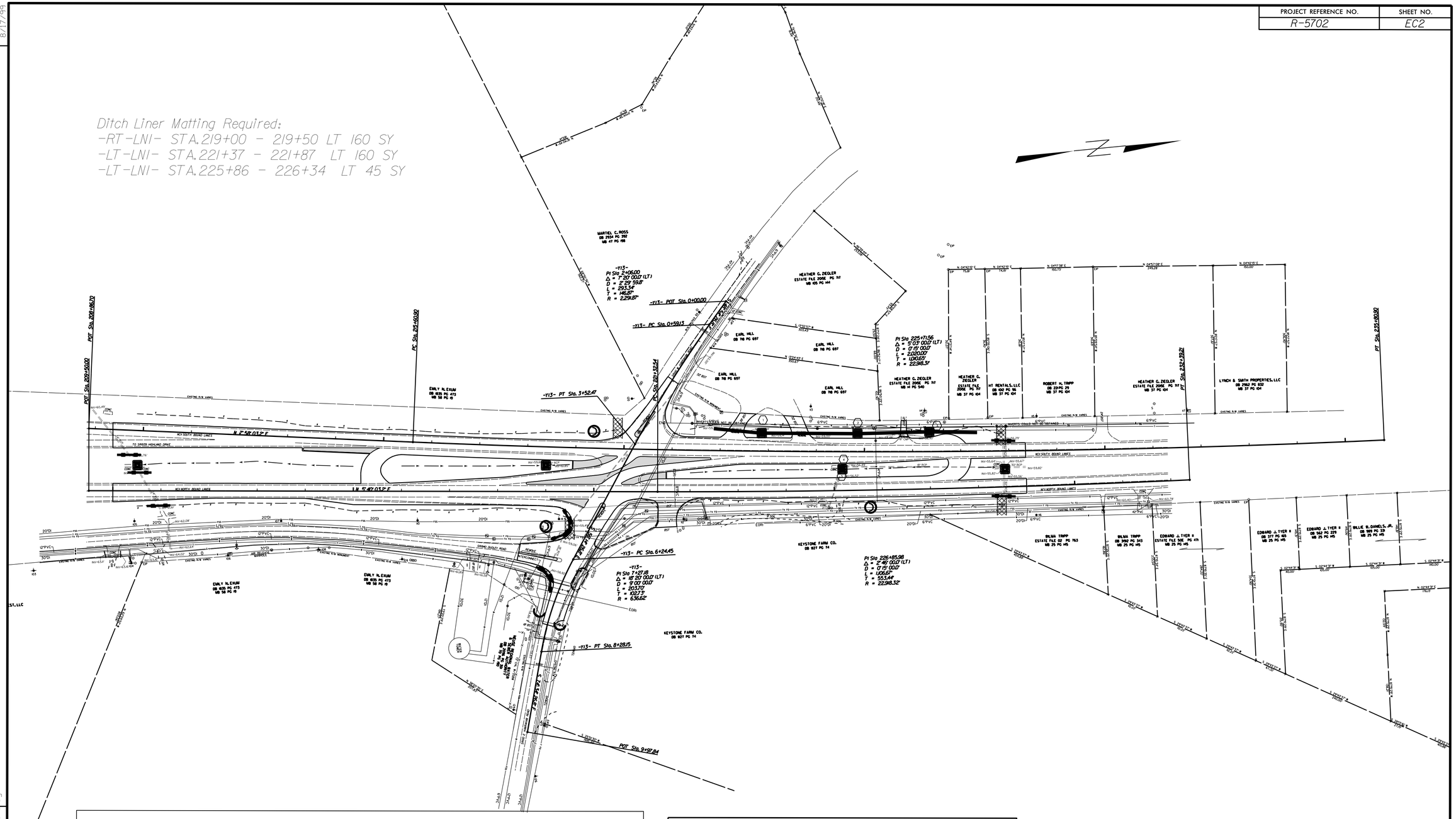
PROJECT REFERENCE NO.	SHEET NO.
R-5702	EC2

Ditch Liner Matting Required:
-RT-LNI- STA.219+00 - 219+50 LT 160 SY
-LT-LNI- STA.221+37 - 221+87 LT 160 SY
-LT-LNI- STA.225+86 - 226+34 LT 45 SY



SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
SP	Wattle with Polyacrylamide	
SP	Wattle	
	Ditch Flow Line	

NOTE: THE CONTRACTOR SHALL INSTALL WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR DIRECTED BY THE ENGINEER.

8/17/99

REVISIONS

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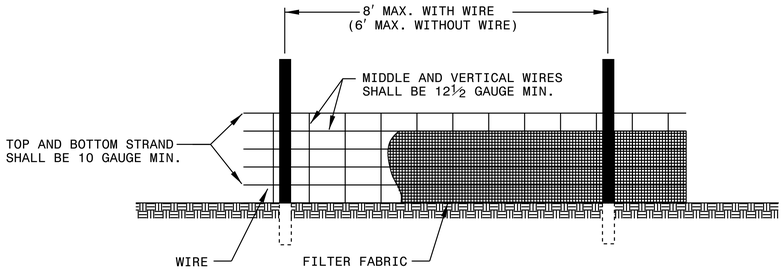
8/17/99

REVISIONS

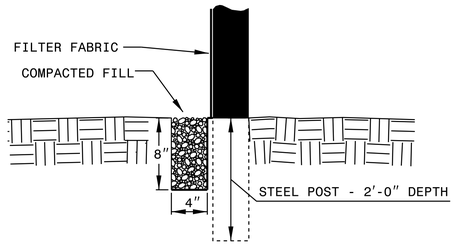
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

TEMPORARY SILT FENCE



NOTES
USE WIRE A MINIMUM OF 32″ IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12″ STAY SPACING.
USE FILTER FABRIC A MINIMUM OF 36″ IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.
PROVIDE 5′-0″ STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.



EXTENSION OF FABRIC AND WIRE INTO TRENCH

SHEET 1 OF 1
1605.01

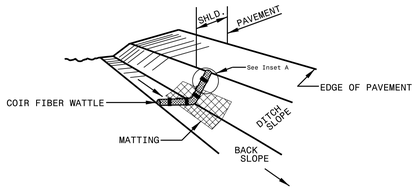
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

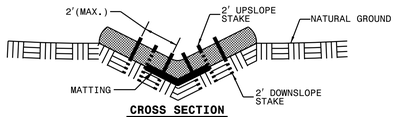
TEMPORARY SILT FENCE

SHEET 1 OF 1
1605.01

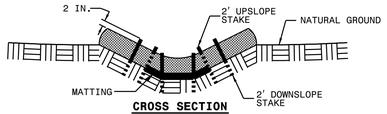
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

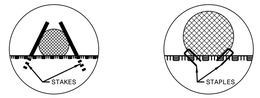
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

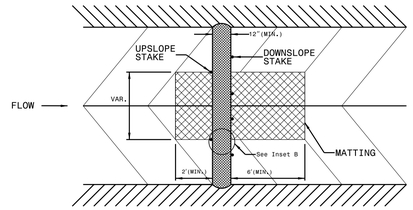
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A INSET B

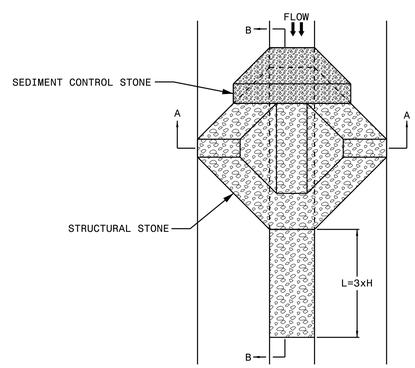


TOP VIEW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

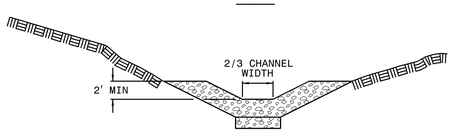
ENGLISH STANDARD DRAWING FOR

TEMPORARY ROCK SILT CHECK TYPE 'A'

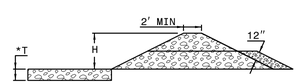


PLAN

NOTE
USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.



SECTION A-A



SECTION B-B
*T = 12″ MIN., 18″ MAX.

SHEET 1 OF 1
1633.01

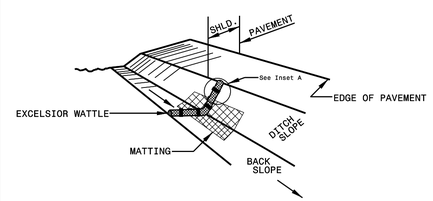
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

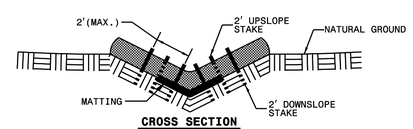
TEMPORARY ROCK SILT CHECK TYPE 'A'

SHEET 1 OF 1
1633.01

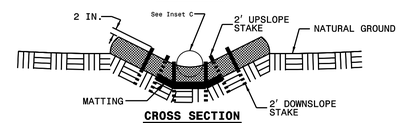
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

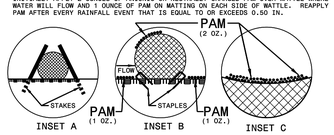
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

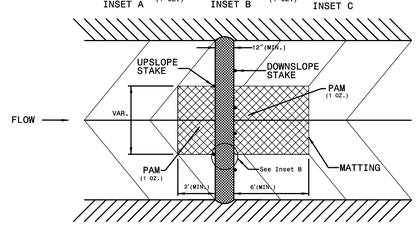
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



INSET A INSET B INSET C



TOP VIEW

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
R-5702	XIA

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS-SECTION SUMMARY

IN CUBIC YARDS

LOCATION (-RT-LN1)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
210+50.00	0		0
211+00.00	20		68
211+50.00	38		63
212+00.00	33		63
212+50.00	29		68
213+00.00	26		71
213+50.00	20		76
214+00.00	11		83
214+50.00	4		96
215+00.00	5		120
215+50.00	7		203
216+00.00	10		197
216+50.00	12		115
217+00.00	16		104
217+50.00	20		89
218+00.00	24		71
218+50.00	26		63
219+00.00	36		62
219+50.00	45		65
220+00.00	51		40
220+50.00	60		14
221+00.00	58		9
221+50.00	44		13
222+00.00	31		48
222+50.00	33		70
223+00.00	30		67
223+50.00	22		105
224+00.00	23		124
224+50.00	23		93
225+00.00	23		120
225+50.00	21		169
226+00.00	19		163
226+50.00	20		109
227+00.00	12		123
227+50.00	4		189
228+00.00	19		150
228+50.00	17		86
229+00.00	0		0

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

NOTE:

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

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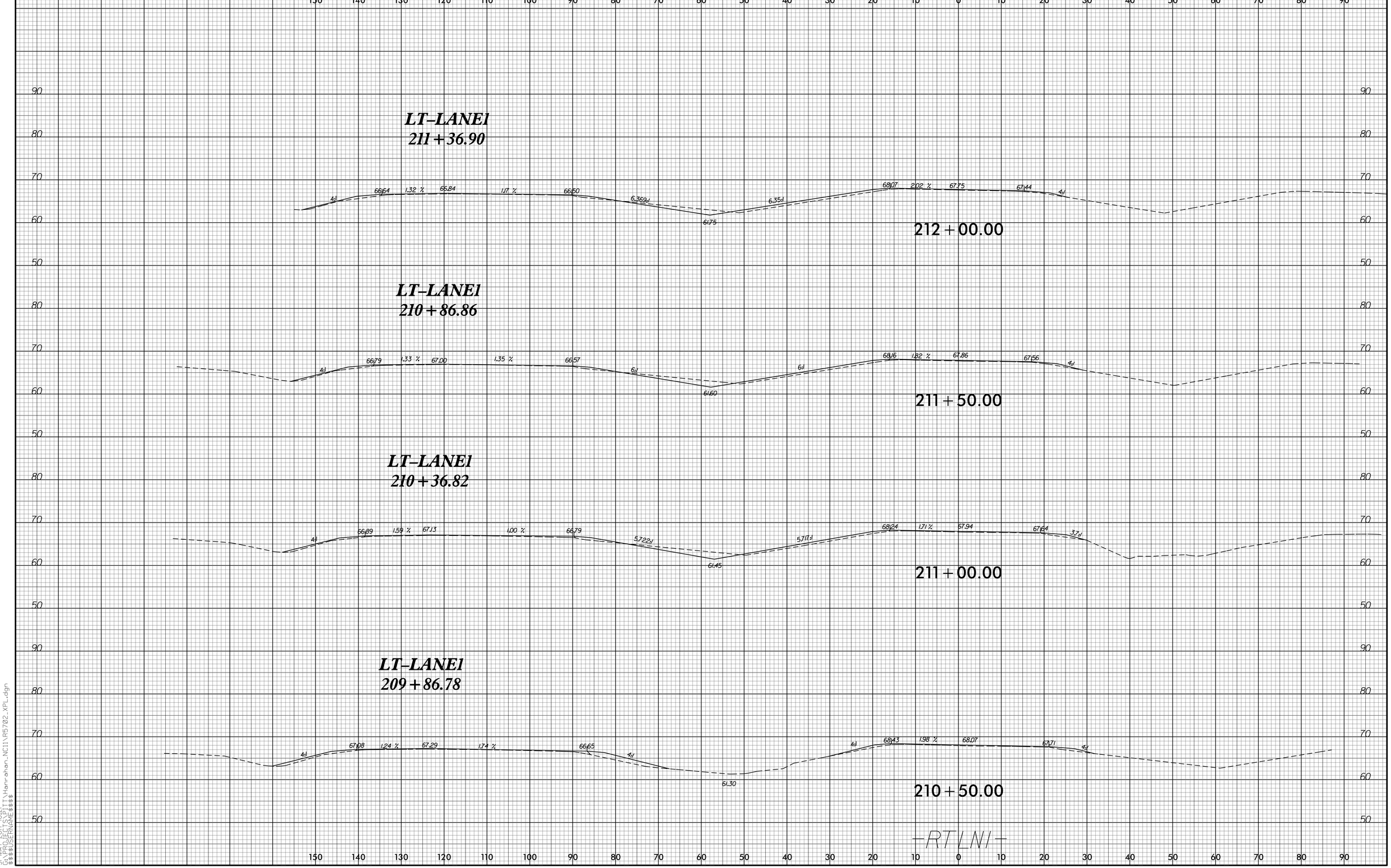

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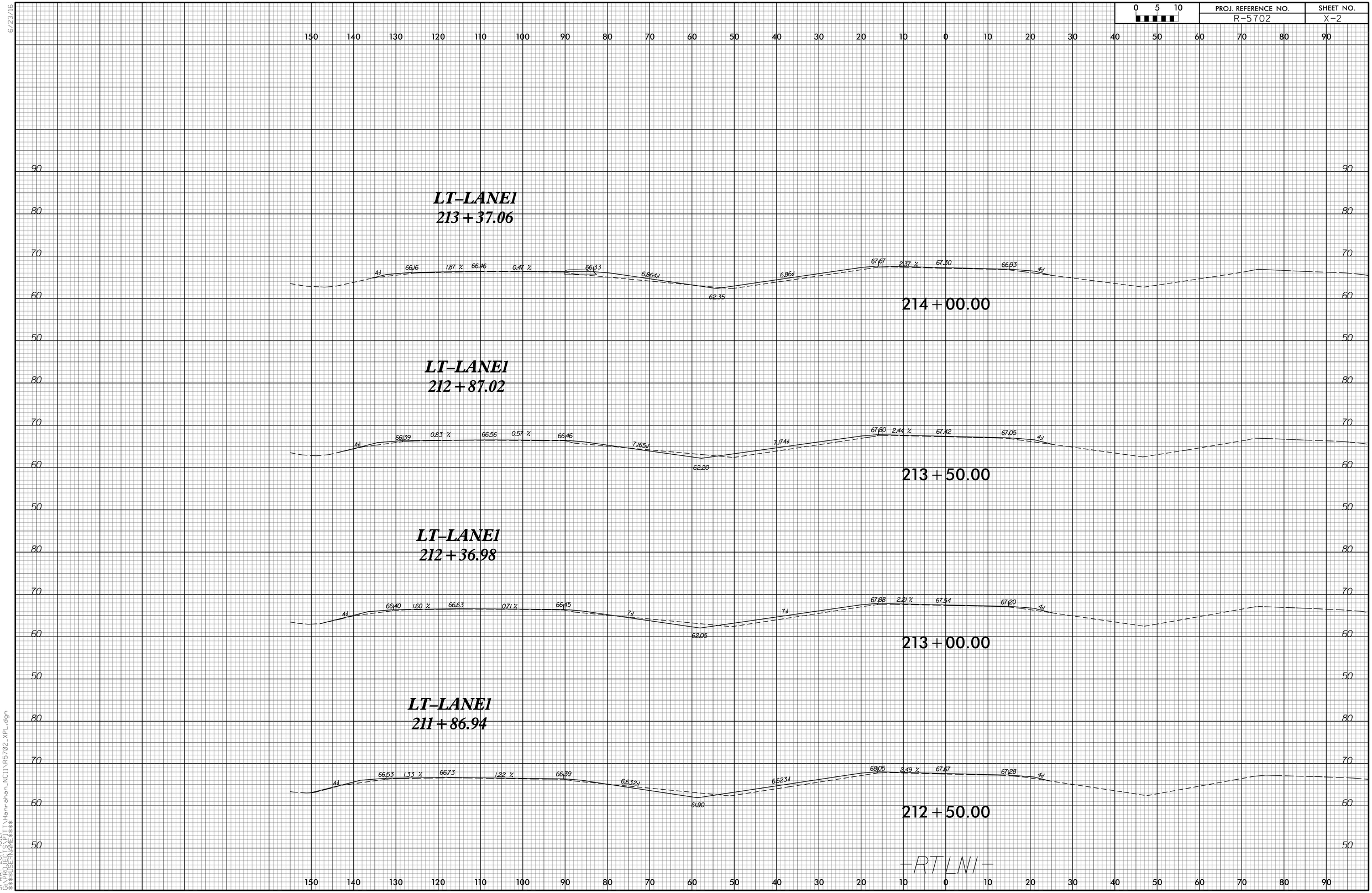

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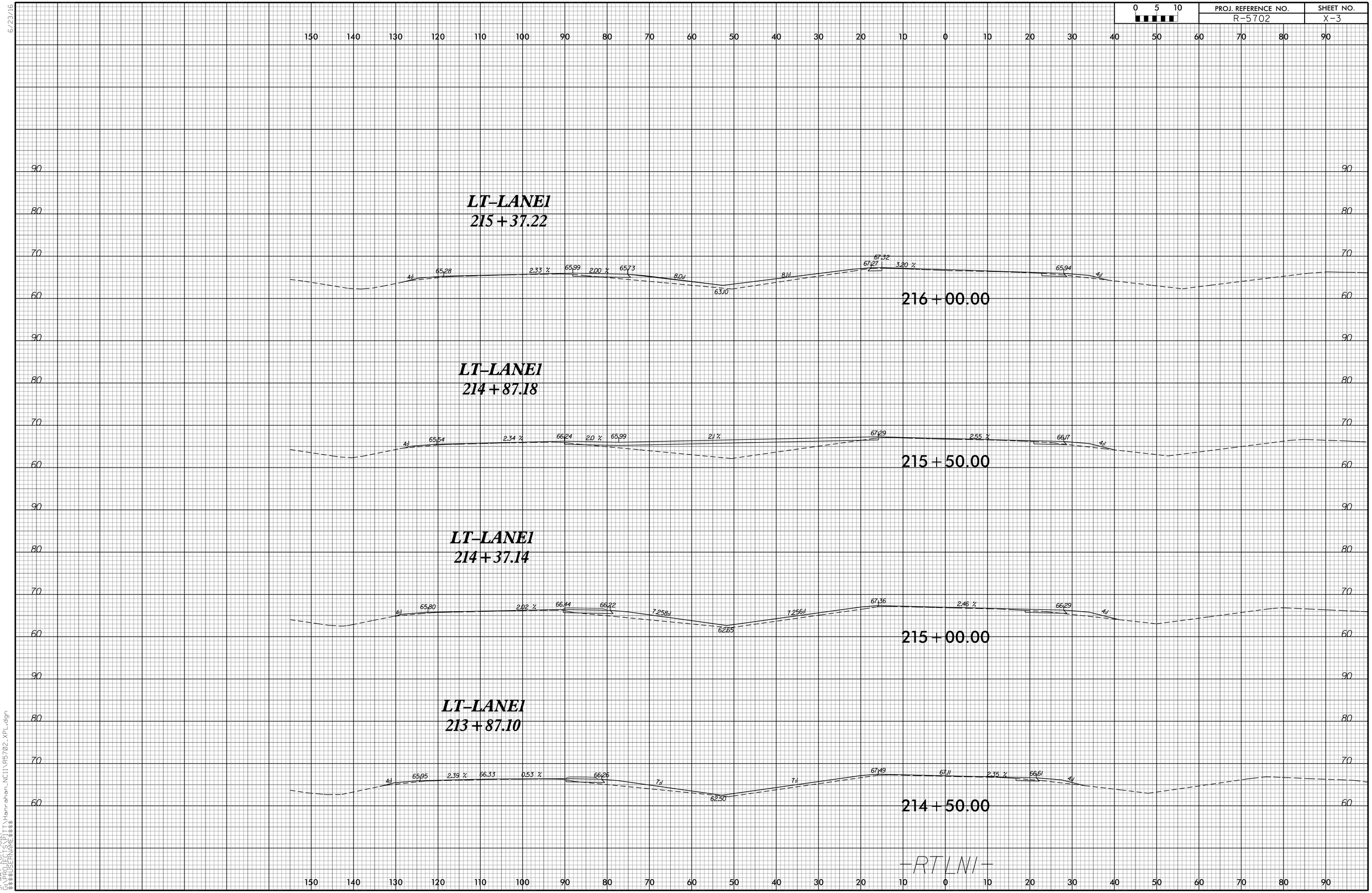

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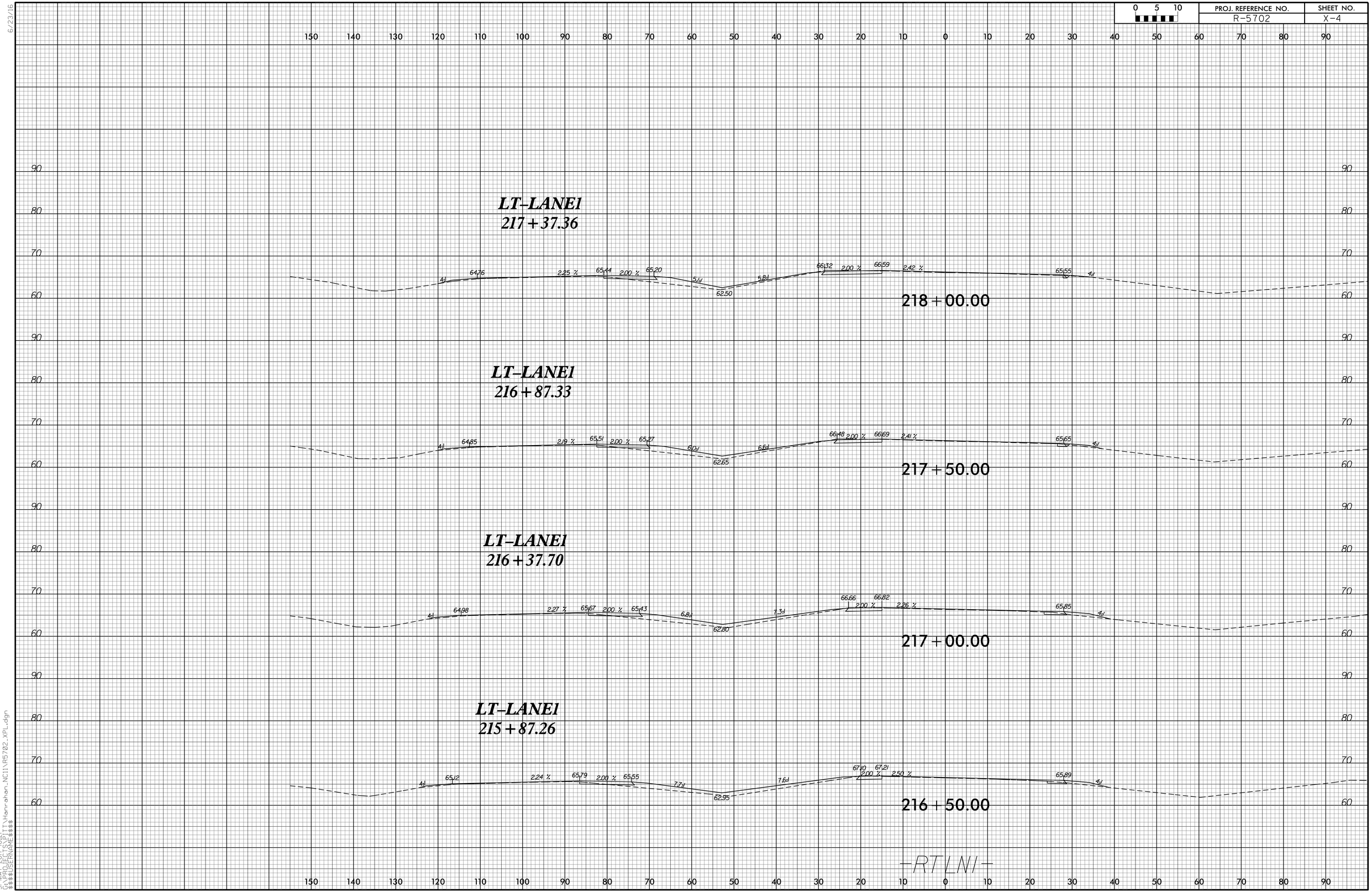

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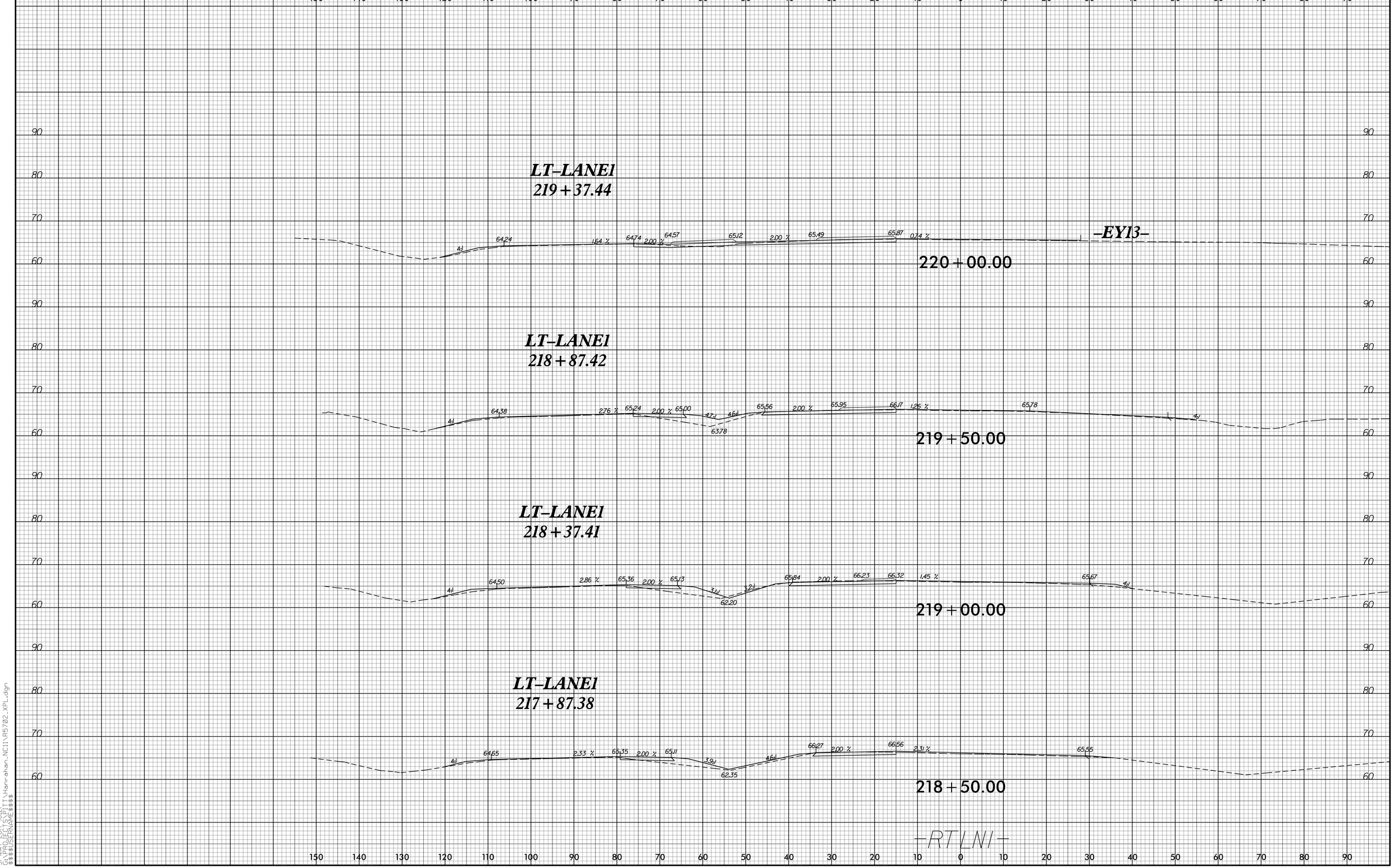

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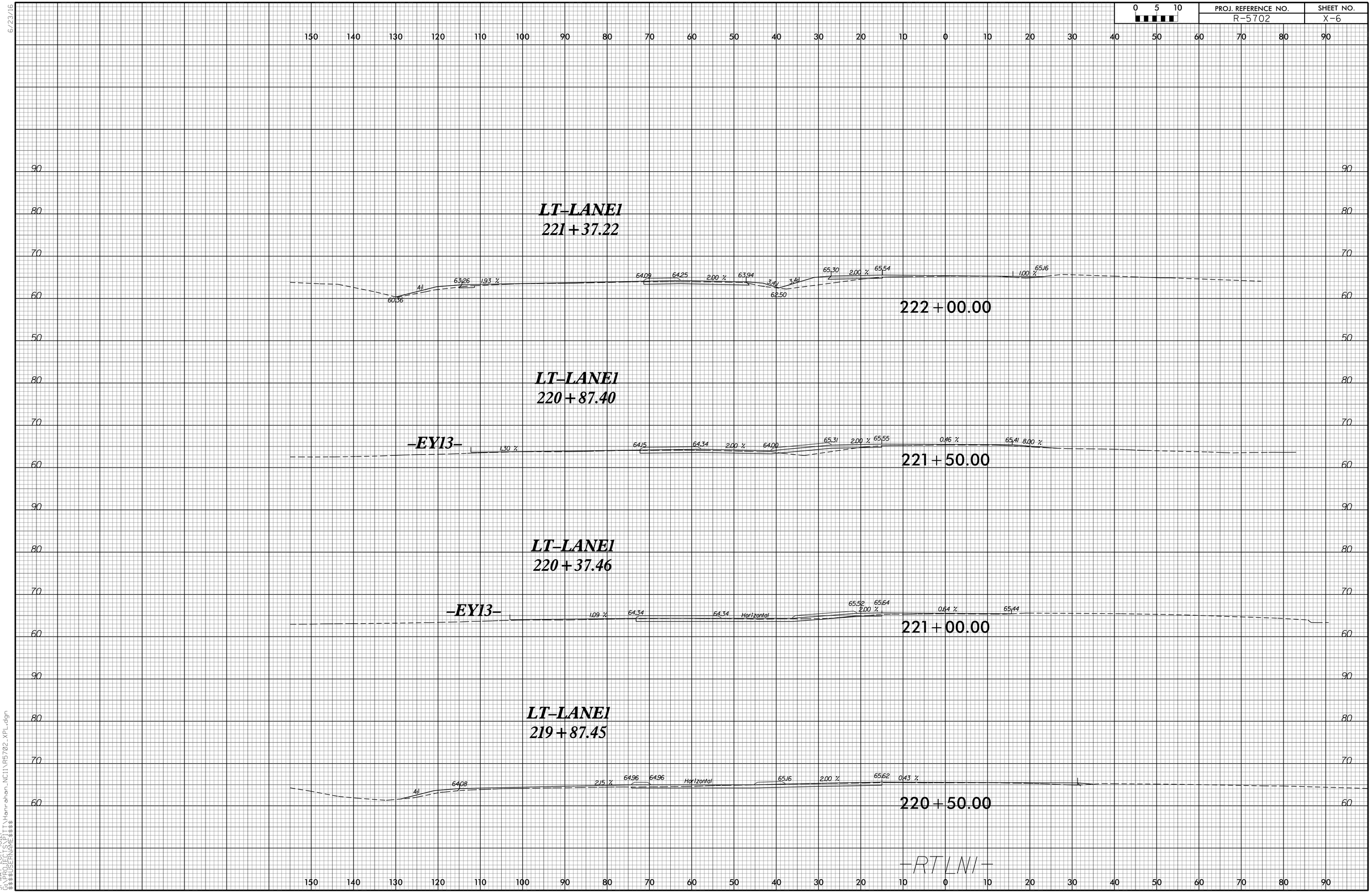

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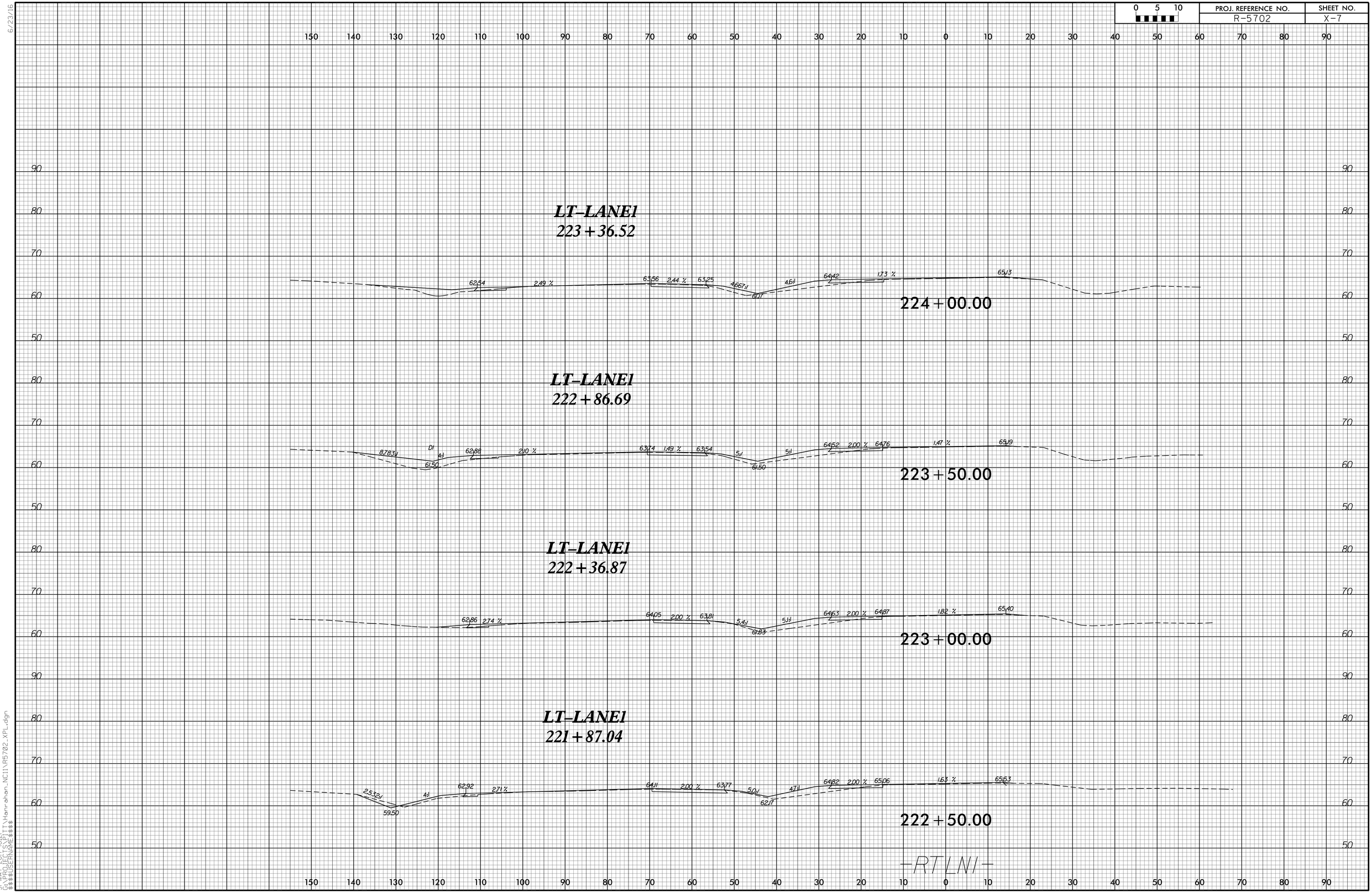

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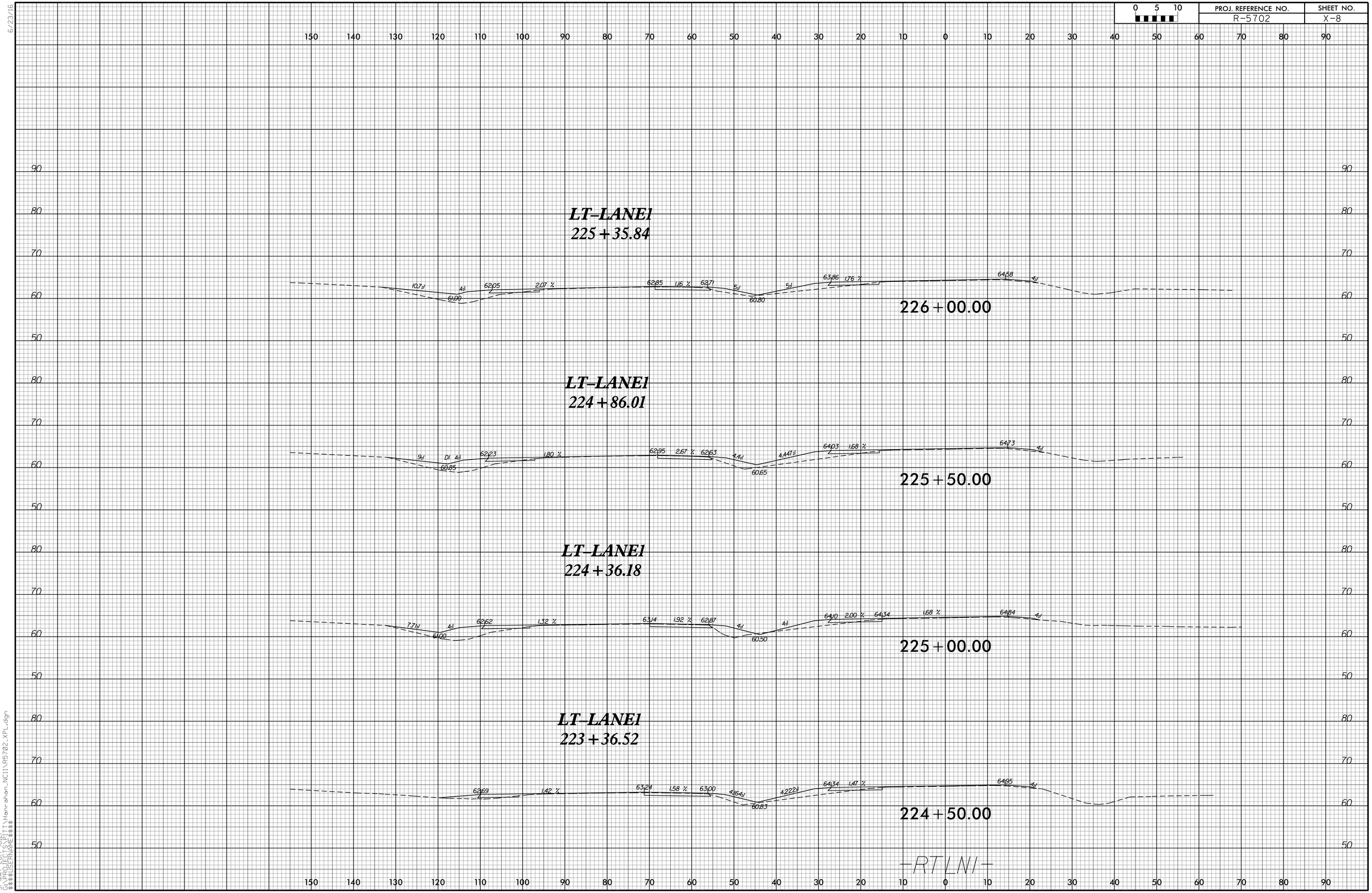

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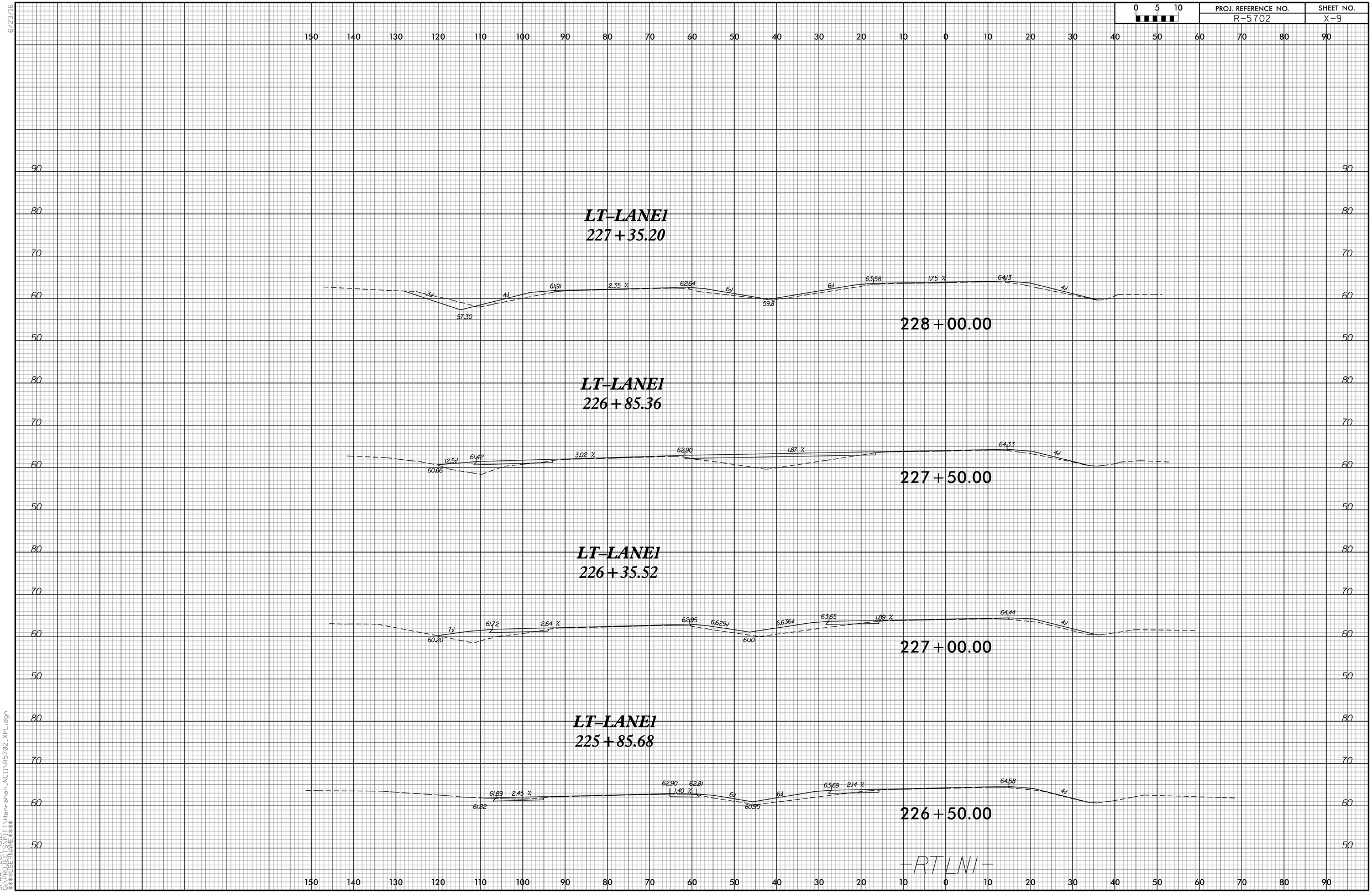

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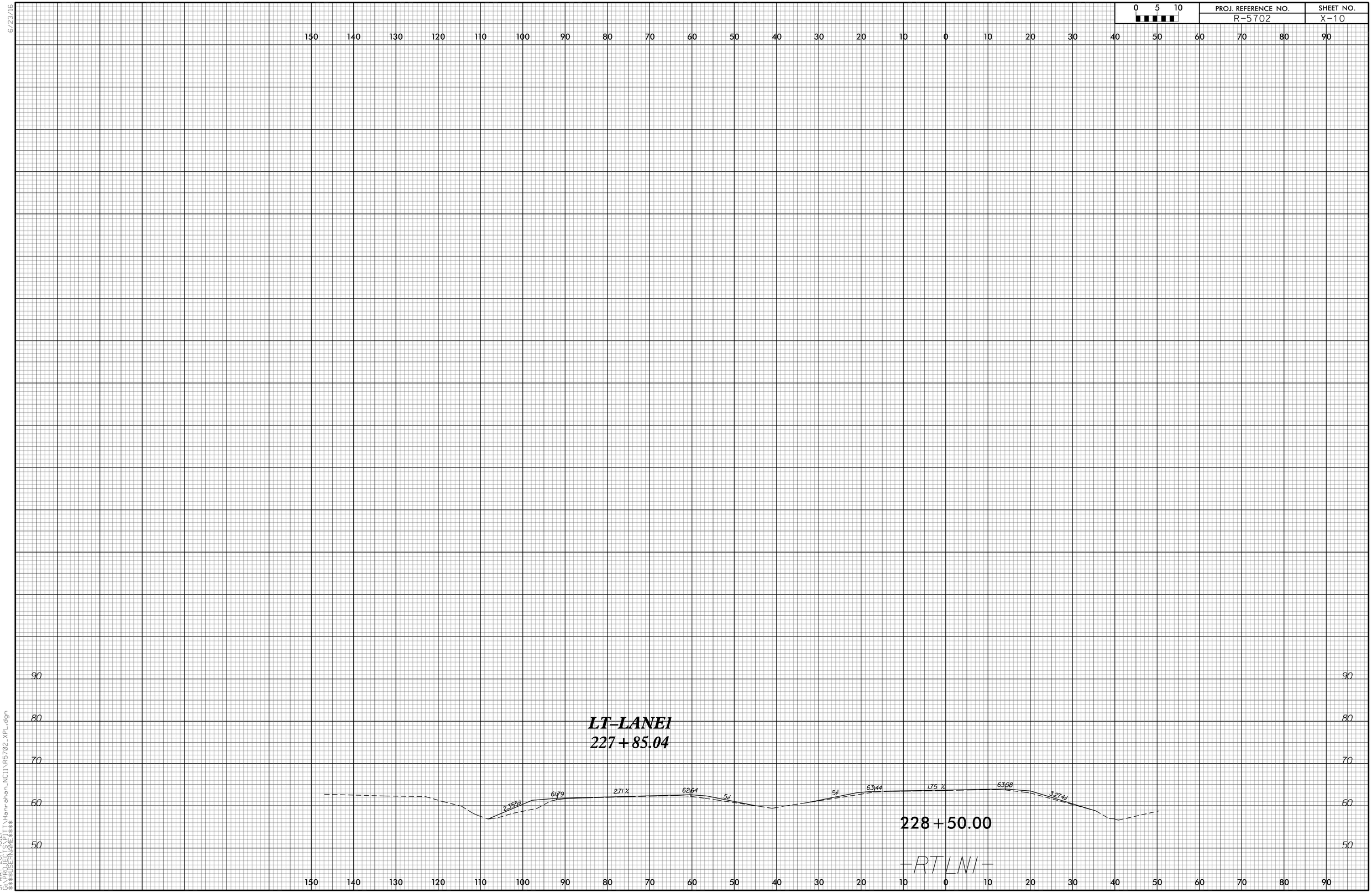

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