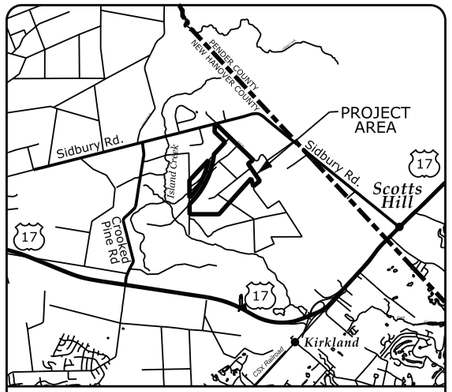
09/08/99

TIP PROJECT: R-3300

CONTRACT: DC00334

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEW HANOVER COUNTY

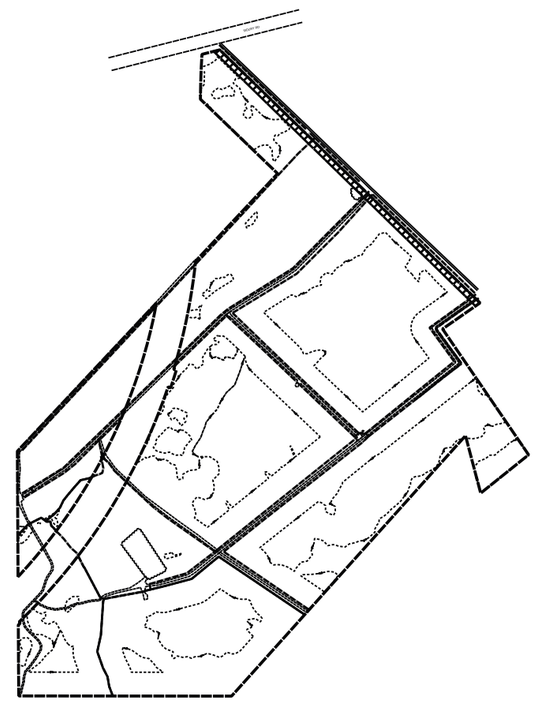
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300	OSM-1	21

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
WBS#40237.4.S1		CONSTRUCTION

LOCATION: EAST OF ISLAND CREEK AND SOUTH OF THE CAPE FEAR RIVER NEW HANOVER COUNTY, NC

TYPE OF WORK: WETLAND RESTORATION
WETLAND ENHANCEMENT
WETLAND PRESERVATION

NAD 83



AS-BUILT PLANS

NCDOT CONTACT: JASON ELLIOTT

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

PROJECT INFORMATION

TOTAL ACREAGE = 312.9 AC.
POTENTIALLY JURISDICTIONAL WETLANDS = 110.6 AC.

WETLAND RESTORATION = 79.1 AC.
WETLAND ENHANCEMENT = 78.5 AC.
WETLAND PRESERVATION = 31.5 AC.

Prepared In the Office of:
ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD
SUITE 140
CARY, NC 27511
LICENSE # P-1182

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 7, 2022

DANIEL WAUGH, PE
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER

Emmett Perdue
Digitally signed by Emmett Perdue
Date: 2022.02.10 10:56:41 -05'00'

P.E.

SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2/9/2022
R:\Projects\RDU0096_NCDOT-Calyx_BeaneSite\CADD\Plans\OI_BEAN_TSH.dgn
mkoon

CONSTRUCTION SEQUENCE

PHASE 1

MOBILIZATION AND ESTABLISHMENT OF GENERAL EROSION CONTROL MEASURES

1. LIMITS OF DISTURBANCE IS **47.0 ACRES** IN TOTAL.
2. Stockpile materials in designated staging areas.
3. Install silt fencing to the limits shown on the plans and at any other locations as directed by the Engineer. Silt fencing will be installed around the lim1its of all staging and stockpile areas.
4. Install safety fencing as shown on the plans and at all other locations as directed by the Engineer.

PHASE 2

ROAD REMOVAL, CULVERT REMOVAL, AND DITCH FILLING
(Numbered callouts and arrows on Erosion Control Sheets correspond to the following items. Arrows indicate direction of work.)

1. Remove Road 6 on northern side of FSI crossing. Remove (2) 48" CMP culverts at FSI. Regrade at 3:1 slope and stabilize banks of FSI. Remove remaining section of Road 6 on southern side of FSI.
2. Remove Road 6 and Road 3B up to FSI crossing. Remove (1) 60" CPP at FSI, regrade at 3:1 slope and stabilize banks of FSI.
3. Remove Road 3A up to the location of the (2) 48" CMP culverts located in FSI and remove the (2) 48" CMP culverts in FSI, regrade at 3:1 slope and stabilize banks of FSI. Remove the (1) 42" CMP culvert that connects T19 to FSI, regrade at 3:1 slope and stabilize banks of FSI.
4. Remove (1) 42" CMP connecting T19 and FSI, breaking any remaining connection with the upstream ditch network. Regrade and stabilize banks of FSI.
5. Remove Road 3A and fill adjacent ditch (T19) working in direction towards the intersection of Road 3A and Road 5A.
6. Remove Road 5A and fill T5 / T19 working in direction towards the intersection of Road 3A and Road 5A. Complete grading for D9.
7. Remove Road 3A and fill T17 and T18 working in direction towards the intersection of Road 3A and Road 4. Complete grading for D7 and D8.
8. Remove Road 3A and fill T13 and T18 working in direction towards the intersection of Road 3A and Road 4.
9. Remove (4) 24" CPP culverts at intersection of Roads 3a and 4 located in T13 and T17. Complete grading for D6. Remove Road 4 and fill T17 and T14/15 up to location of (1) 24" CPP culvert along T16/T17.
10. Remove (1) 24" CPP along T16/T17. Continue road removal and ditch filling of T14/T15 and T16/17 towards intersection of Roads 2 and 4. Complete grading for D3.
11. Remove the (1) 12" CPP culvert located on T16. T16 is connected to FSH, so removing this connection breaks any connection to FSH and the upstream ditch network.
12. Remove a short section of Road 2 up to the location of (1) 18" CMP connecting T11 and T20. Remove (1) 18" CMP culvert and continue filling T20, T11, and T16 to the western edge of the R-3300 corridor.
13. Starting at the eastern edge of the R-3300 corridor, begin removing Road 2 and fill T11 and T16 working in direction towards the intersection of Roads 2 and 4.
14. Remove Road 2 and fill T11 and T12 working in direction towards the intersection of Road 2 and Gas Line Easement / Farm Road.
15. Install ditch plugs in T4 starting on western edge of project and moving to the east toward the Gas Line Easement and Farm Road.
16. While performing work within each zone above ensure the following occurs:
    a. Perform required clearing and grubbing, including specified removal of dead mature trees and/or dead specimen trees.
    b. Segregate and stockpile topsoil and other soil material in accordance with the project specifications.
    c. Remove and dispose of all unused vegetation materials.
    e. All excavated soil materials not utilized will be stockpiled and maintained according to the project specifications. After the completion of construction, all unused soil materials shall be spread on site in designated areas at the direction of the Engineer. Spread soil to be stabilized using seeding per the project specifications. If any excavated soil materials need to be, are specified to, and actually are disposed of off-site by the Contractor, the Contractor is responsible for disposal of such soil materials in a permitted area, as well as for providing and implementing an erosion and sedimentation control plan and permit, or any other required permit(s), for the location(s) off site where such materials are disposed.

PHASE 3

DEMOBILIZATION

1. Complete remaining minor grading and site planting preparation work, including ripping and/or disking, as specified in the project specifications.
2. All remaining disturbed areas, including areas that have been ripped and/or disked after temporary and/or permanent seeding activities, are to be amended, seeded, matted and/or mulched according to the project specifications.sni
3. After all construction requiring heavy equipment is completed, remove silt fence, restore construction access roads, staging areas, and stockpile areas. Immediately regrade, replace topsoil, and seed, amend, and mulch as specified in the project specifications.
4. Remove temporary construction entrances. Immediately regrade, seed, amend, and mulch as specified in the project specifications.
5. Remove all tree protection fencing.
6. Remove and dispose of all trash, metal, and debris from the site according to local, state and federal regulations.

GENERAL NOTES

1. WORK IS BEING PERFORMED AS AN ENVIRONMENTAL RESTORATION PLAN. THE CONTRACTOR SHOULD MAKE ALL REASONABLE EFFORTS TO REDUCE SEDIMENT LOSS AND MINIMIZE DISTURBANCE OF THE SITE WHILE PERFORMING THE CONSTRUCTION WORK.
2. CONSTRUCTION IS SCHEDULED TO BEGIN SPRING 2022.
3. CONTRACTOR SHOULD CALL NORTH CAROLINA "ONE-CALL" BEFORE EXCAVATION STARTS. (1-800-632-4949) FOR THE ADJACENT PIEDMONT NATURAL GAS LINE.

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-1A

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

INDEX OF SHEETS

Emmett Perdue
Digitally signed by Emmett Perdue
Date: 2022.06.08 15:56:14 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

SYMBOLS

STREAM PLUG	SILT FENCE
DITCH FILL	5 — EXISTING MAJOR CONTOUR
ROAD REMOVAL	1 — EXISTING MINOR CONTOUR
EXISTING WETLAND	LIMITS OF DISTURBANCE
PORTIONS OF DEPRESSIONS TO BE GRADED	30' BUFFER
CLEARING AND GRUBBING	PROPERTY LINE
GAS EASEMENT	PROPOSED FLOW PATH
WETLAND ENHANCEMENT	
WETLAND RESTORATION	
WETLAND PRESERVATION	

**NOTE: ALL ITEMS ABOVE MAY NOT BE USED ON THIS PROJECT SUPERCEDES SHEET 1-B

8/17/99

REVISIONS

REVISION 2 – ADDED STOCKPILE / ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 42622 EMP
REVISION 3 – UPDATED ROW AND TRACT BOUNDARY 6722 EMP

6/8/2022
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eperdue

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-2

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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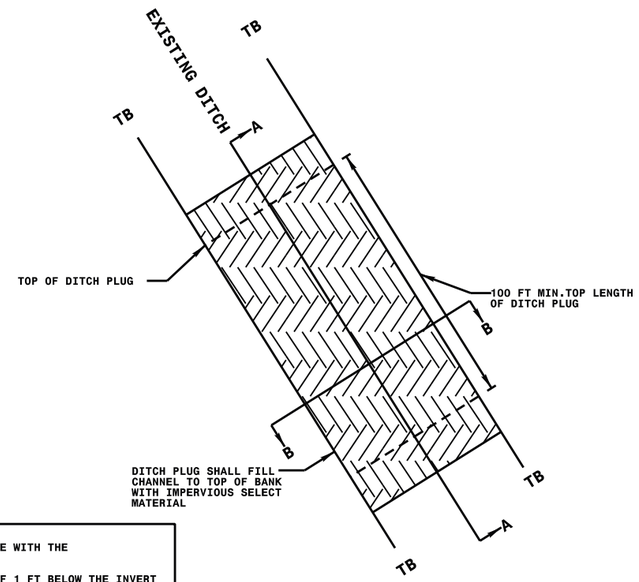
Date: 2022.01.06 13:21:12 -05'00'

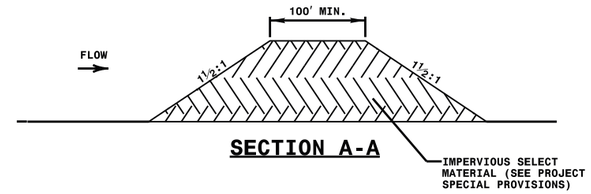
NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

DITCH PLUG

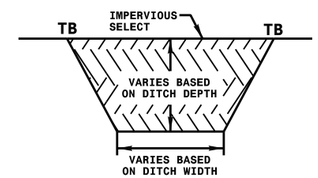
NOT TO SCALE



PLAN VIEW



SECTION A-A

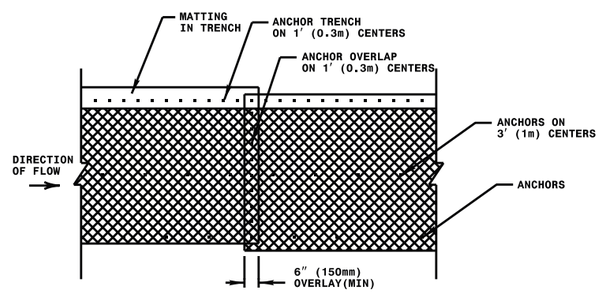


SECTION B-B

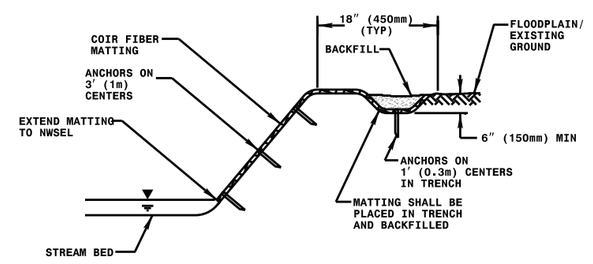
NOTES:
1. DITCH PLUG SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2.
3. BOTTOM OF DITCH PLUG SHOULD BE A MINIMUM OF 1 FT BELOW THE INVERT OF THE EXISTING CHANNEL.
4. DITCH PLUG SHOULD EXTEND A MINIMUM OF 2 FT BEYOND THE LIMITS OF THE EXISTING DITCH CHANNEL.
5. INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.
6. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

COIR FIBER MATTING DETAIL

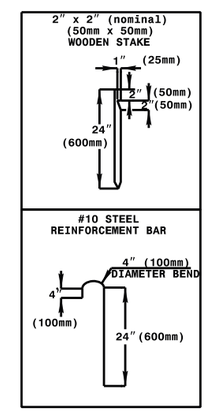
NOT TO SCALE



PLAN VIEW



TYPICAL CROSS SECTION



ANCHOR OPTIONS

NOTES:
1. IN AREAS TO BE MATTED, ALL SEEDING, SOIL AMENDMENTS, AND SOIL PREPARATION MUST BE COMPLETED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS PRIOR TO PLACEMENT OF COIR FIBER MATTING.
2. REBAR OR STAPLES MAY BE USED IN PLACE OF WOODEN STAKES AS DIRECTED BY THE ENGINEER.

REVISIONS

8/17/99

1/6/2022
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mkoon

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-2A

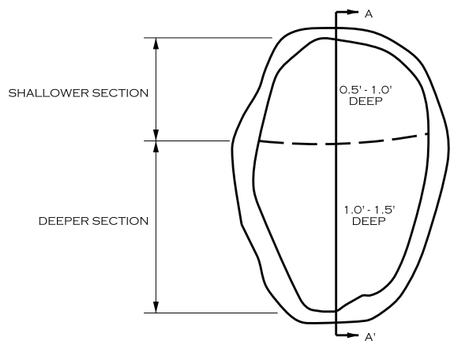
PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

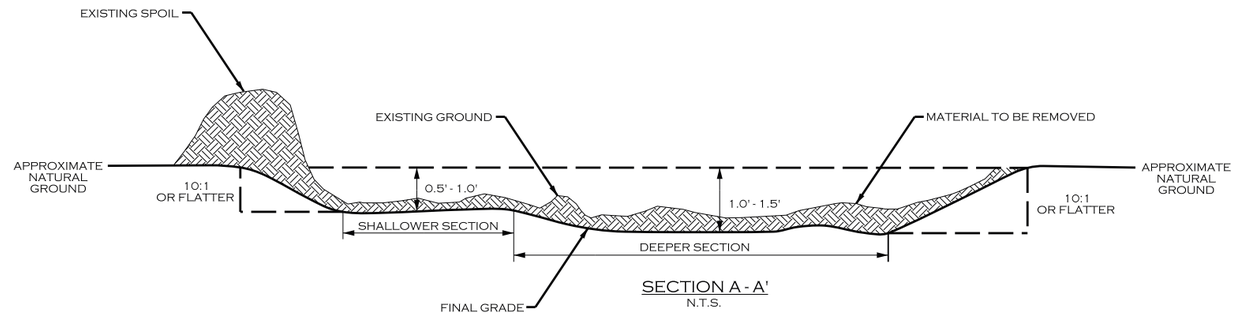
Emmett Perdue
Digitally signed by Emmett Perdue
Date: 2022.01.06 13:20:48 -05'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

DEPRESSION DETAIL



PLAN VIEW
N.T.S.



SECTION A - A'
N.T.S.

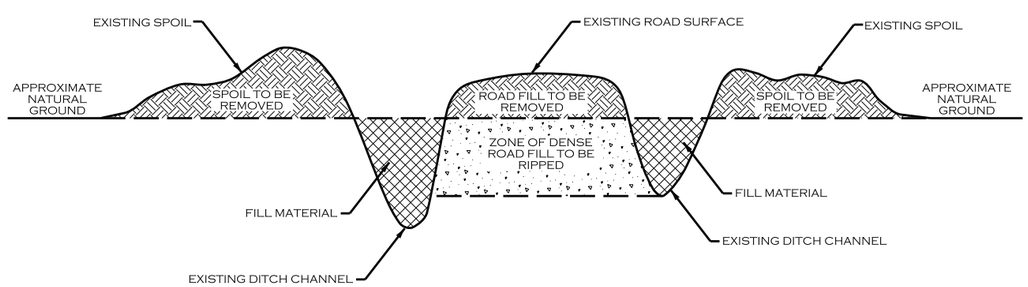
NOTES:
1. SEE PLAN SHEETS FOR SIZE, LOCATION, AND ORIENTATION.
2. GRADING NOT TO EXCEED 1.0'

Depression Grading Information

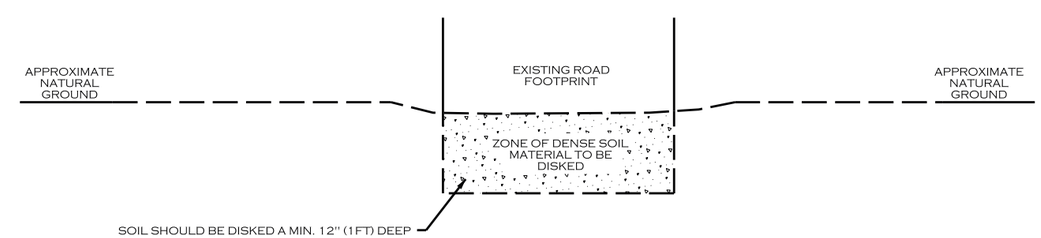
Depression	Status	Target Elevation Range (msl) [A]	Notes
D1	No grading	n/a	Do Not Disturb
D2	No grading	n/a	Do Not Disturb
D3	Grade (See Notes)	36.75 - 37.25	Grade the SW perimeter to reduce the effects of spoil along T14 and Road 4
D4	No grading	n/a	Do Not Disturb
D5	No grading	n/a	Do Not Disturb
D6	Grade (See Notes)	37.5 - 38.0	Grade the SE perimeter abutting T17 where the spoil material exists. Grade the area abutting T15 where the spoil material exists. Grade the area along Road 4 between T15 and T17 to connect the two areas.
D7	Grade (See Notes)	38.0 - 38.5	Grade the SE perimeter abutting T17 where the spoil material exists.
D8	Grade (See Notes)	37.5 - 38.0	Grade the NW perimeter abutting T18 where the spoil material exists.
D9	Grade (See Notes)	37.5 - 38.0	Grade the NE perimeter abutting T18 where the spoil material exists.

A - Target Elevations to be confirmed prior to grading activities.

DITCH FILLING AND ROAD REMOVAL TYPICAL SECTION



ROAD REMOVAL BY DISKING TYPICAL SECTION



REVISIONS

8/17/99

1/6/2022
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mkson

SUMMARY OF QUANTITIES

DESCRIPTION	SECTION	QTY.	UNIT	ITEM DESCRIPTION
0001000000-E	200	1	LS	CLEARING AND GRUBBING
0036000000-E	225	1920	CY	UNDERCUT EXCAVATION
0000100000-N	800	1	LS	MOBILIZATION
0000400000-N	801	1	LS	CONSTRUCTION SURVEYING
0043000000-N	SP	1	LS	GRADING FOR MITIGATION
6135000000-E	SP	5.52	AC	RIPPING
6135000000-E	SP	0.90	AC	DISKING
8622000000-E	876	70	SY	GEOTEXTILE FOR DRAINAGE, TYPE 2
4400000000-E	1110	64	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	128	SF	WORK ZONE SIGNS (PORTABLE)
4455000000-N	1150	30	DAY	FLAGGER
0234000000-E	SP	390	CY	IMPERVIOUS SELECT MATERIAL
6037000000-E	SP	840	SY	COIR FIBER MATTING
6071012000-E	SP	80	LF	COIR FIBER WATTLE
6029000000-E	SP	3500	LF	SAFETY FENCE
6000000000-E	1605	3610	LF	TEMPORARY SILT FENCE
6006000000-E	1610	40	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	120	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	30	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	47	AC	TEMPORARY MULCHING
6018000000-E	1620	5510	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	20	TON	FERTILIZER FOR TEMPORARY SEEDING
6030000000-E	1630	30	CY	SILT EXCAVATION
6084000000-E	1660	47	AC	SEEDING AND MULCHING
6087000000-E	1660	47	AC	MOWING
6090000000-E	1661	1410	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	5	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	80	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	41	TON	FERTILIZER TOPDRESSING

SUMMARY OF EARTHWORK FOR MITIGATION

SUMMARY OF EARTHWORK FOR MITIGATION

MITIGATION UNCLASSIFIED EXCAV. (CU.YD.)	MITIGATION BORROW (CU.YD.)	MITIGATION WASTE (CU.YD.)
38390	-20690	17700

APPROXIMATE QUANTITIES ONLY, MITIGATION UNCLASSIFIED EXCAVATION, MITIGATION BORROW EXCAVATION, AND MITIGATION FINE GRADING WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING FOR MITIGATION".

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-3

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue
Digitally signed by Emmett Perdue
Date: 2022.04.26 13:51:19 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

REVISIONS

REVISION 1 - AMENDMENT 1 - 32922 - EMP
REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 42622 EMP

8/17/99

4/26/2022
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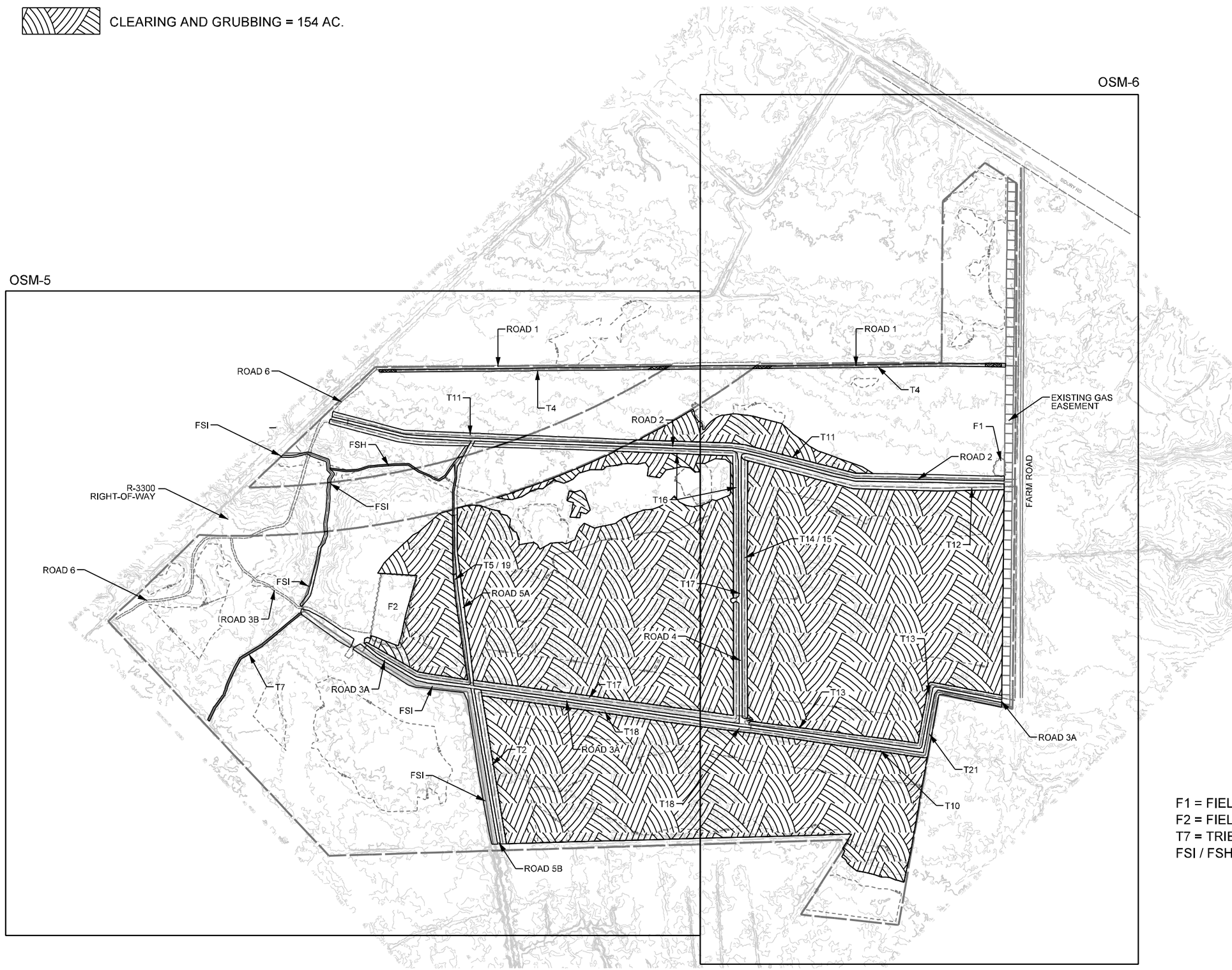
eperdue

PROPOSED CLEARING AND GRUBBING OVERVIEW

CLEARING AND GRUBBING = 154 AC.



F1 = FIELD 1
F2 = FIELD 2
T7 = TRIBUTARY 7
FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

GRAPHIC SCALE
300 150 0 300 600
PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-4

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

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Date: 2022.06.08 15:52:44 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

NAD 83

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/28/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/8/2022
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eperdue

PROPOSED CLEARING AND GRUBBING PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-5

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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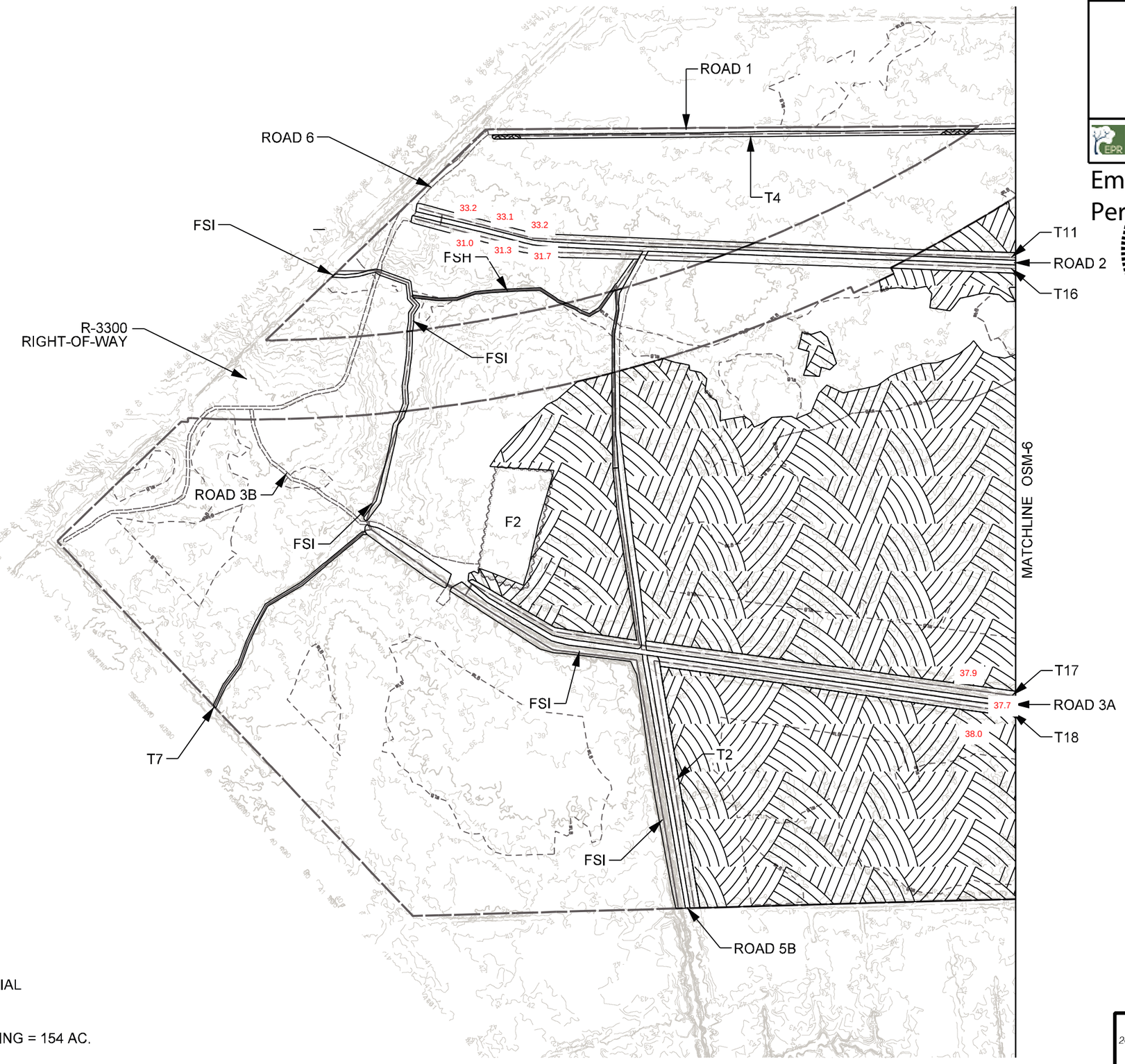
Date: 2022.04.26 13:51:27 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



F1 = FIELD 1

F2 = FIELD 2

T7 = TRIBUTARY 7

FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

CLEARING AND GRUBBING = 154 AC.

GRAPHIC SCALE
200 100 0 200 400
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE / ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP

8/17/99

4/26/2022
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perdue

PROPOSED CLEARING AND GRUBBING PLAN

CLEARING AND GRUBBING = 154 AC.

F1 = FIELD 1

F2 = FIELD 2

T7 = TRIBUTARY 7

FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

Emmett Perdue

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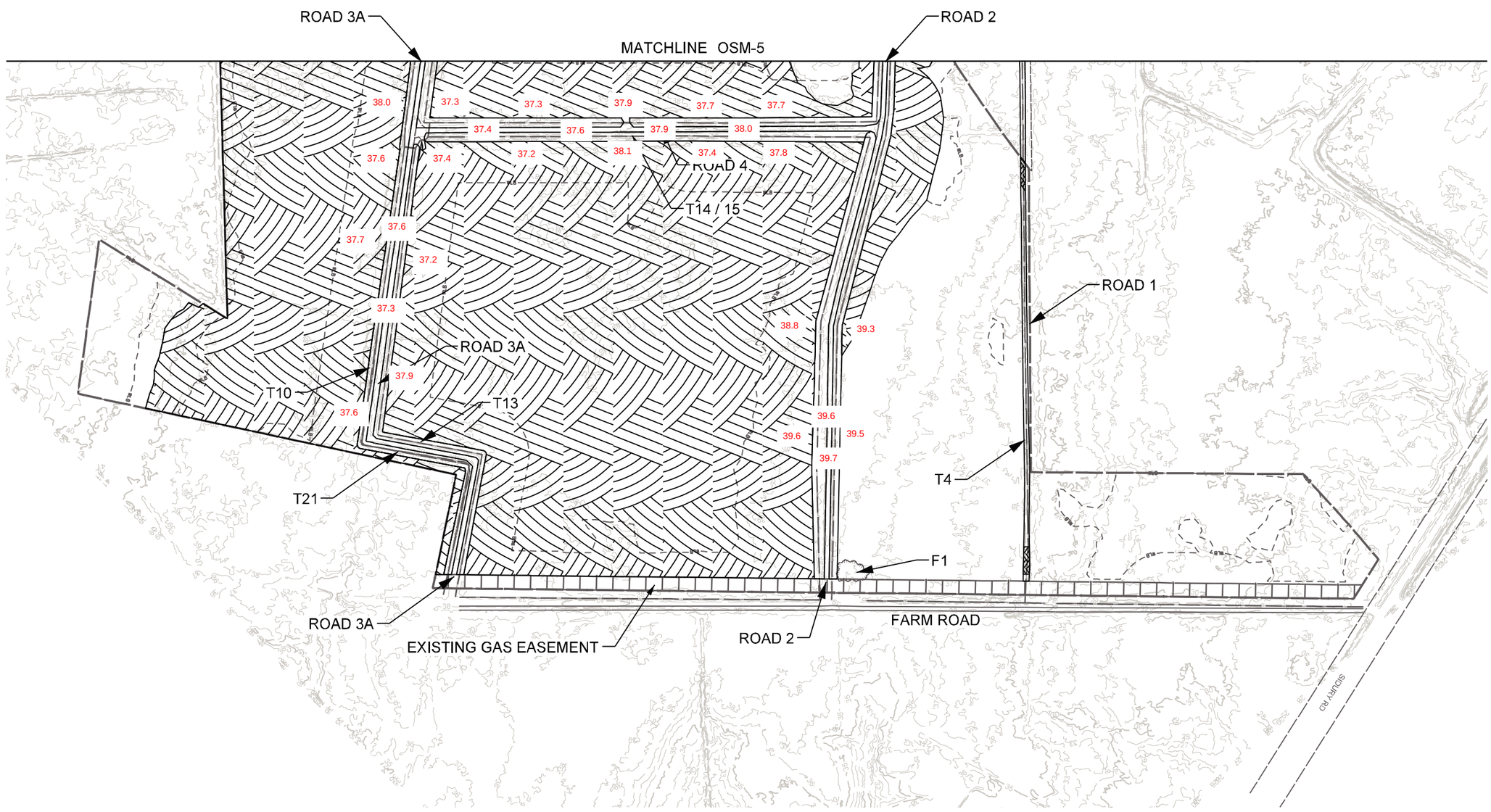
Date: 2022.04.26 15:01:46 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-6

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182



GRAPHIC SCALE
200 100 0 200 400
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE / ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP

8/17/99

4/26/2022
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perdue

PROPOSED GRADING OVERVIEW

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-7

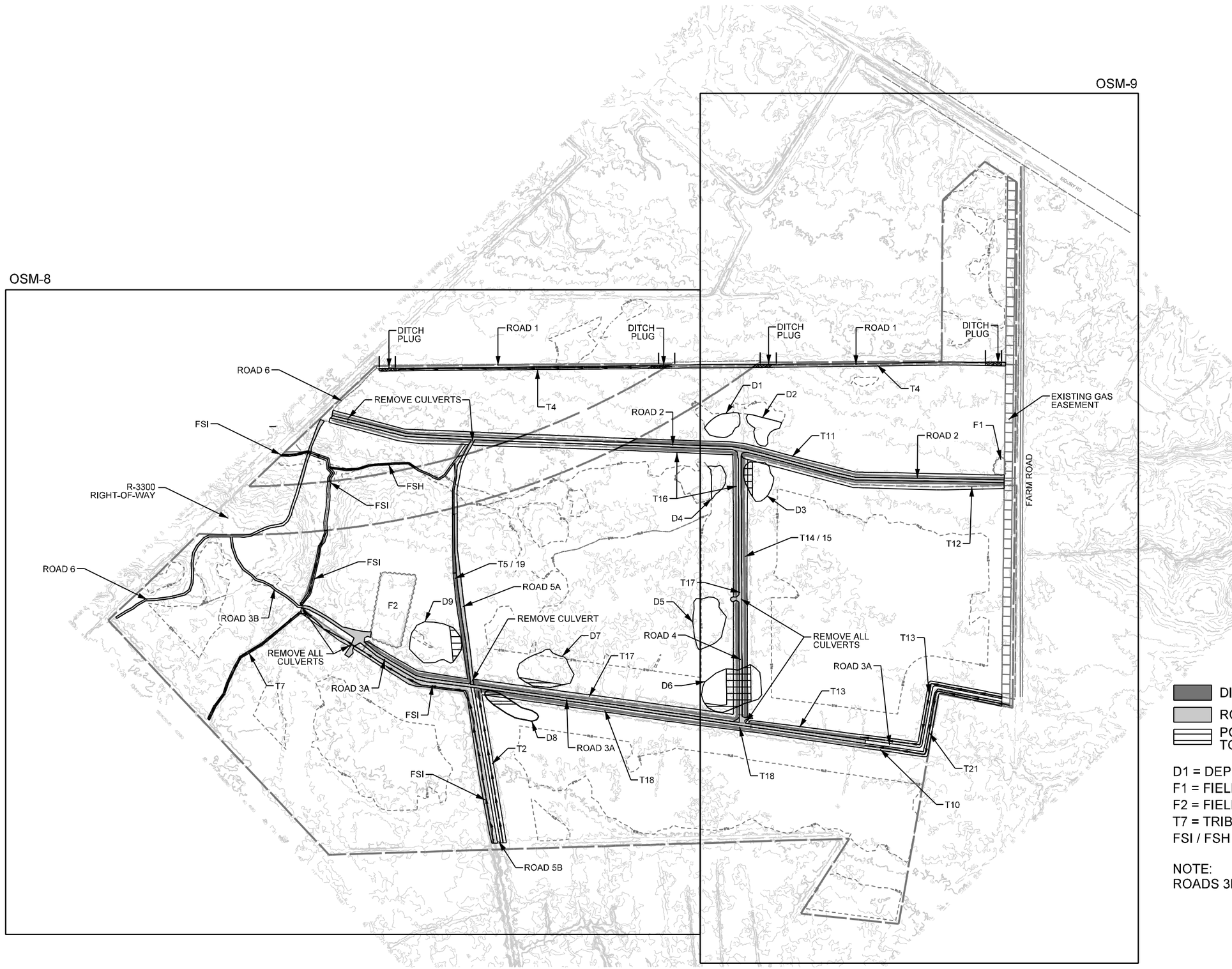
PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

Digitally signed by Emmett Perdue
Date: 2022.06.08 11:20:24 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



DITCH FILL

ROAD REMOVAL

PORTIONS OF DEPRESSIONS TO BE GRADED

D1 = DEPRESSION 1
F1 = FIELD 1
F2 = FIELD 2
T7 = TRIBUTARY 7
FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

NOTE:
ROADS 3B & 6 ONLY REQUIRE DISKING.

GRAPHIC SCALE
300 150 0 300 600
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/6/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/8/2022
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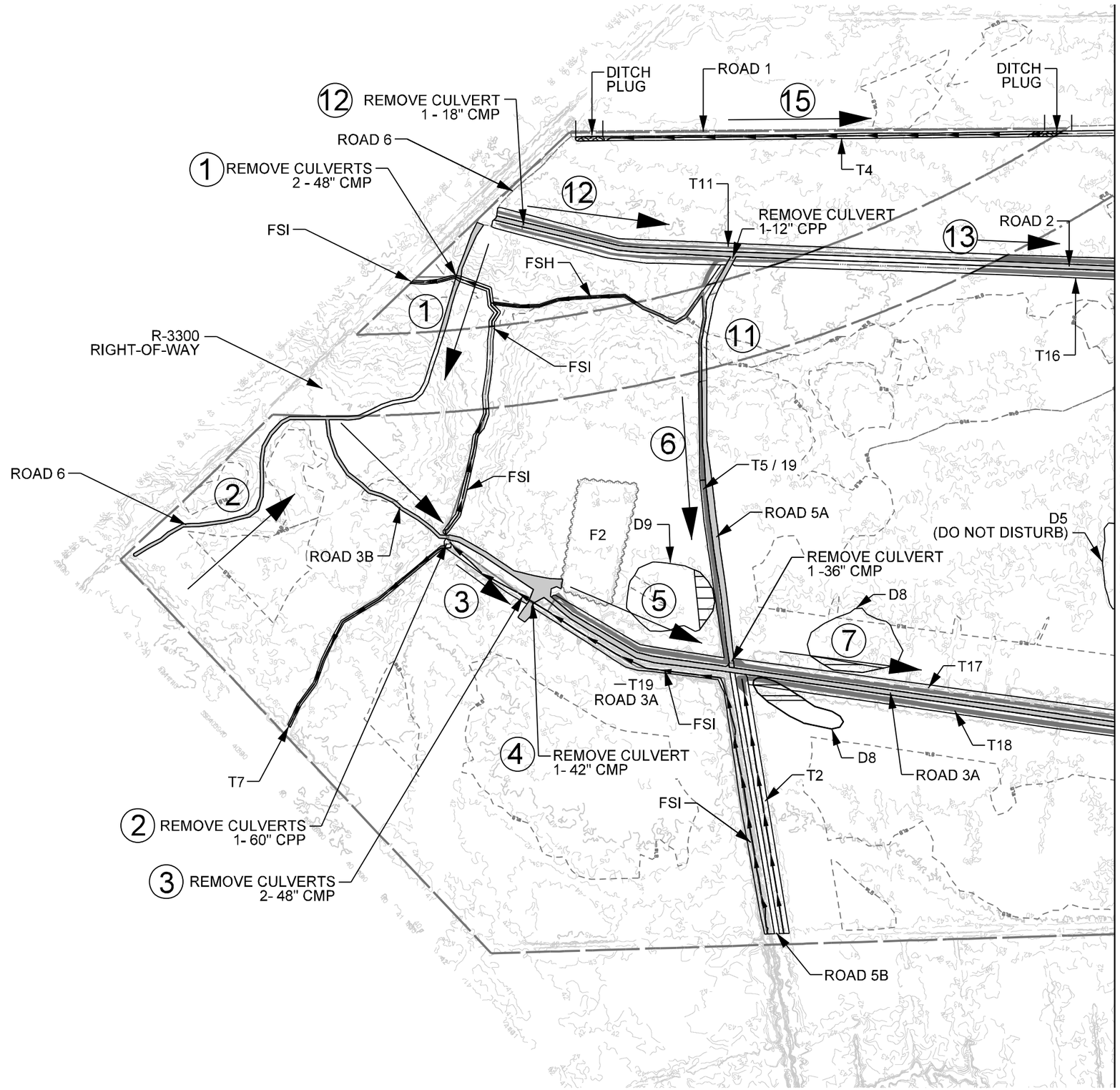
eperdue

PROPOSED GRADING PLAN



D1 = DEPRESSION 1
F2 = FIELD 2
T7 = TRIBUTARY 7
FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

ROAD REMOVAL

DITCH FILL

PORTIONS OF DEPRESSIONS TO BE GRADED

NOTE:
ROADS 3B & 6 ONLY REQUIRE DISKING.

GRAPHIC SCALE
200 100 0 200 400
PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-8

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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Date: 2022.06.08 12:01:15 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

NAD 83

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 42622 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6722 EMP

8/17/99

6/8/2022
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PROPOSED GRADING PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-9

PROJECT ENGINEER

Emmett Perdue

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Date: 2022.06.08 12:04:47 -04'00'

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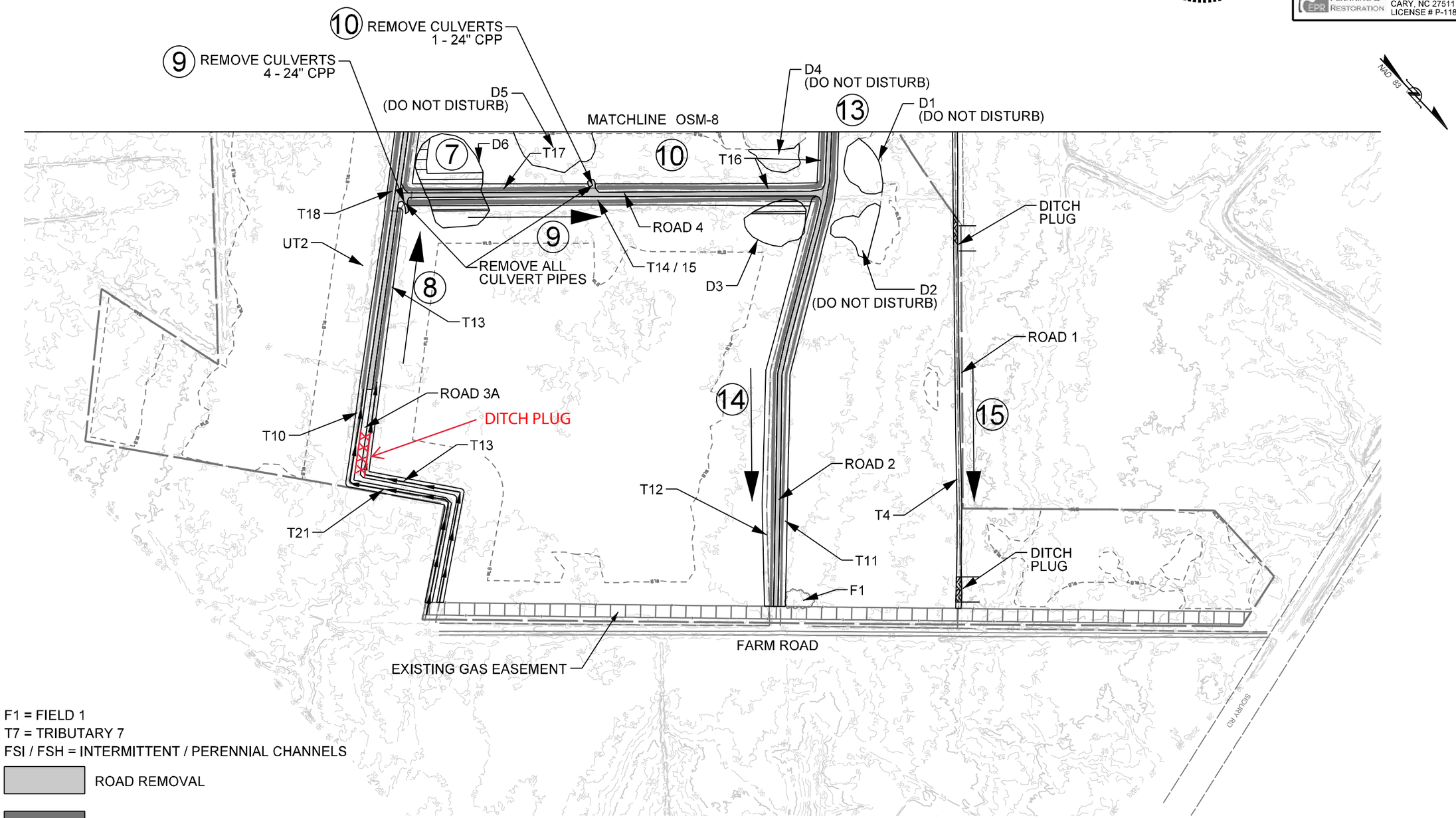
ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182



F1 = FIELD 1
T7 = TRIBUTARY 7
FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

ROAD REMOVAL

DITCH FILL

PORTIONS OF DEPRESSIONS
TO BE GRADED

NOTE:
ROADS 3B & 6 ONLY REQUIRE DISKING.

GRAPHIC SCALE
200 100 0 200 400
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/8/2022
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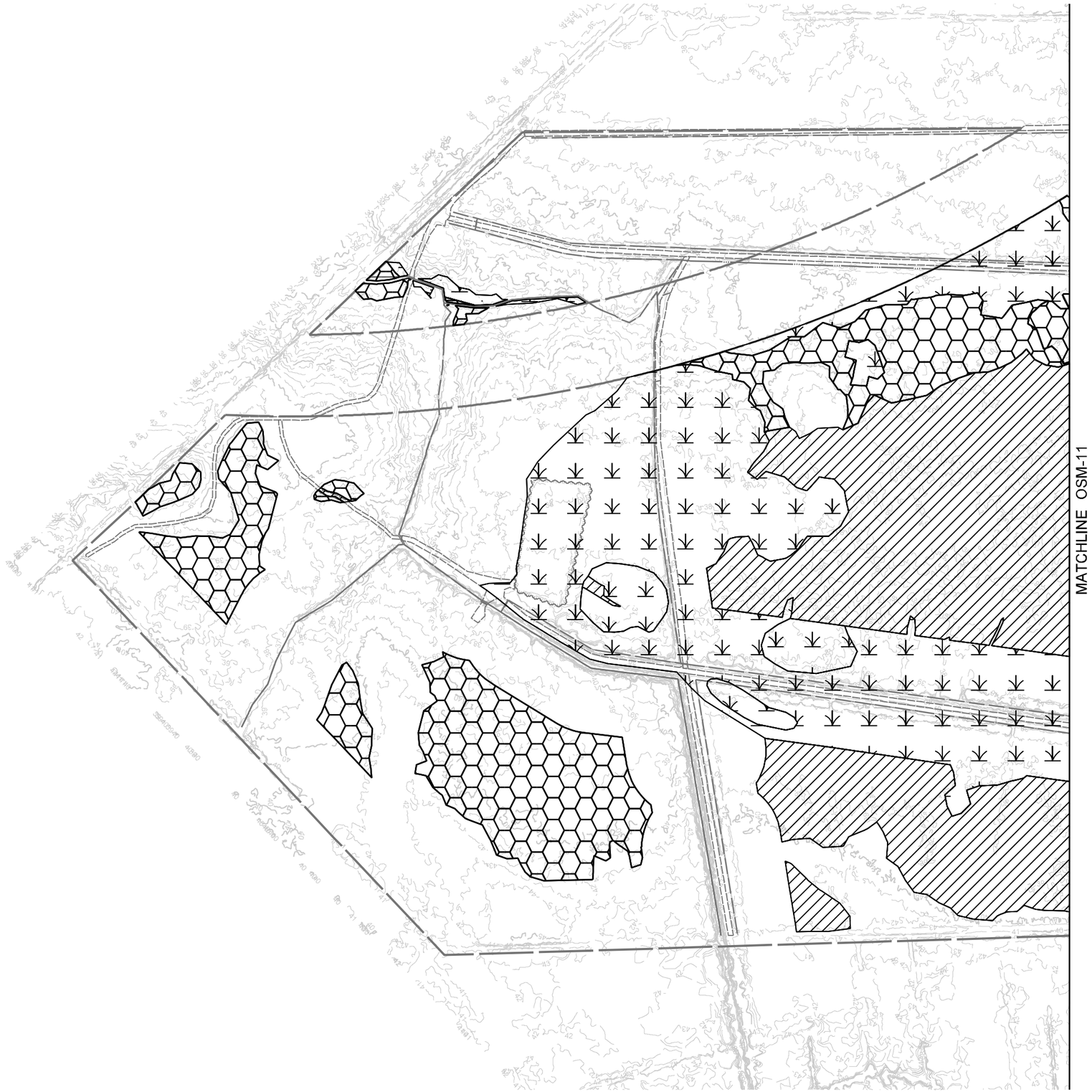
PROPOSED WETLAND MITIGATION PLAN



WETLAND RESTORATION

WETLAND ENHANCEMENT

WETLAND PRESERVATION

GRAPHIC SCALE
200 100 0 200 400
PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-10

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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Date: 2022.06.08 12:05:05 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

NAD 83

REVISIONS

REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/8/2022
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eperdue

PROPOSED WETLAND MITIGATION PLAN

WETLAND RESTORATION

WETLAND ENHANCEMENT

WETLAND PRESERVATION

Emmett Perdue

Digitally signed by Emmett Perdue
Date: 2022.06.08 12:05:26 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

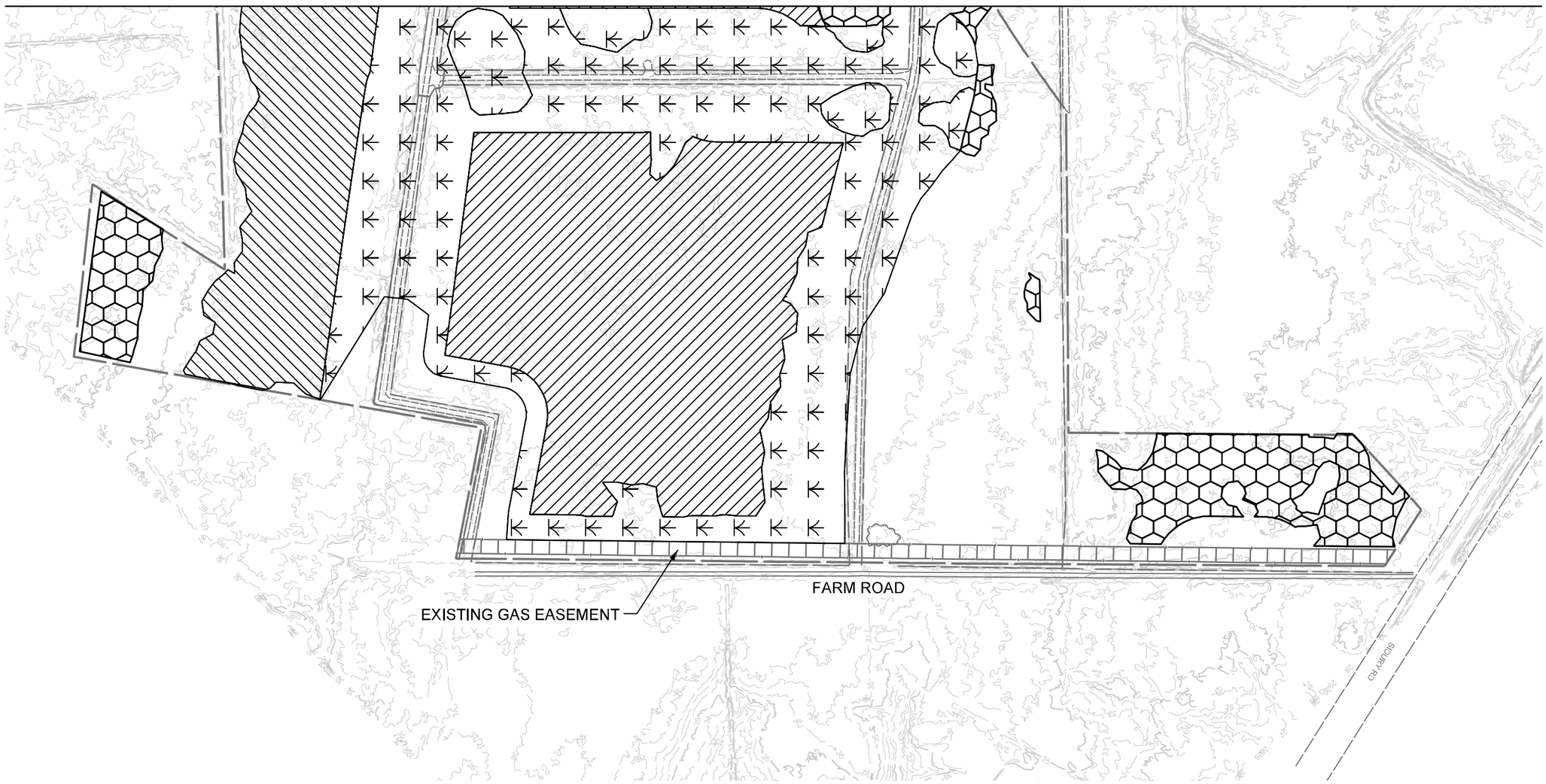
PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-11

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

NAD 83

MATCHLINE OSM-10



GRAPHIC SCALE
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PLANS

REVISIONS

REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/22 EMP

8/17/99

6/8/2022
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300	EC-1	7

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
WBS#40237.4.S1		CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

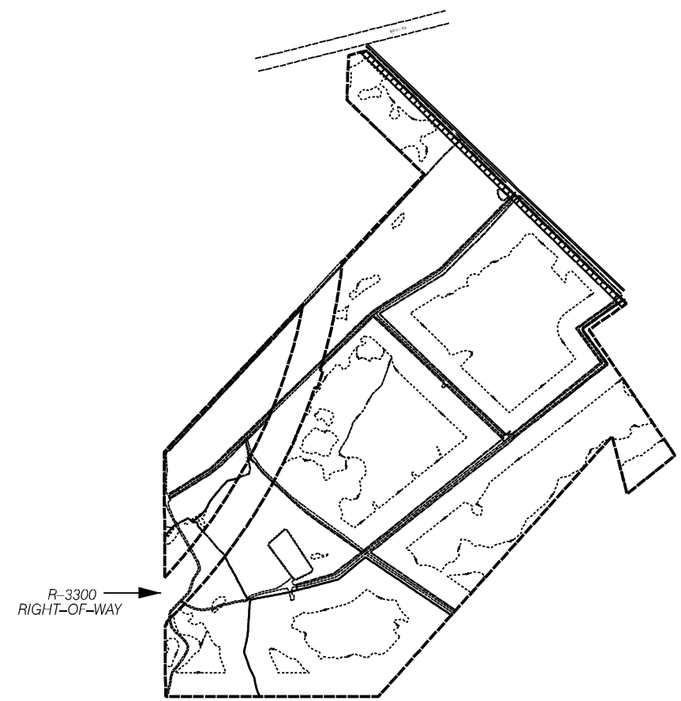
NEW HANOVER COUNTY

LOCATION: EAST OF ISLAND CREEK AND SOUTH OF THE CAPE FEAR RIVER NEW HANOVER COUNTY, NC

PLAN FOR PROPOSED EROSION CONTROL

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	
1630.01	Riser Basin	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
	Wattle	
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	
1607.01	Construction Entrance	
	Staging ◇ Stockpile Area	
	Limits of Disturbance	LOD



NAD 83

NCDOT CONTACT: JASON ELLIOTT

LEVEL III NAME

LEVEL III CERTIFCATION NO.

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-01000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019, ISSUED BY THE NORTH DEPARMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

PROJECT INFORMATION

TOTAL ACREAGE = 312.9 AC.

POTENTIALLY JURISDICTIONAL WETLANDS = 110.6 AC.

WETLAND RESTORATION = 79.1 AC.

WETLAND ENHANCEMENT = 78.5 AC.

WETLAND PRESERVATION = 31.5 AC.

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 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence
1607.01 Gravel Construction Entrance

Prepared in the Office of:

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD
SUITE 140
CARY, NC 27511
LICENSE # P-1182

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 7, 2022

DANIEL WAUGH
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

Emmett Perdue
Digitally signed by Emmett Perdue
Date: 2022.02.23 12:11:49 -05'00'

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CONTRACT: DC00334

TIP PROJECT: R-3300

09/08/99

2/23/2022
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CONSTRUCTION SEQUENCE

PHASE 1

MOBILIZATION AND ESTABLISHMENT OF GENERAL EROSION CONTROL MEASURES

1. LIMITS OF DISTURBANCE IS **47.0 ACRES** IN TOTAL.
2. Stockpile materials in designated staging areas.
3. Install silt fencing to the limits shown on the plans and at any other locations as directed by the Engineer. Silt fencing will be installed around the lim1its of all staging and stockpile areas.
4. Install safety fencing as shown on the plans and at all other locations as directed by the Engineer.

PHASE 2

ROAD REMOVAL, CULVERT REMOVAL, AND DITCH FILLING
(*Numbered callouts and arrows on Erosion Control Sheets correspond to the following items. Arrows indicate direction of work.)*

1. Remove Road 6 on northern side of FSI crossing. Remove (2) 48" CMP culverts at FSI. Regrade at 3:1 slope and stabilize banks of FSI. Remove remaining section of Road 6 on southern side of FSI.
2. Remove Road 6 and Road 3B up to FSI crossing. Remove (1) 60" CPP at FSI, regrade at 3:1 slope and stabilize banks of FSI.
3. Remove Road 3A up to the location of the (2) 48" CMP culverts located in FSI and remove the (2) 48" CMP culverts in FSI, regrade at 3:1 slope and stabilize banks of FSI. Remove the (1) 42" CMP culvert that connects T19 to FSI, regrade at 3:1 slope and stabilize banks of FSI.
4. Remove (1) 42" CMP connecting T19 and FSI, breaking any remaining connection with the upstream ditch network. Regrade and stabilize banks of FSI.
5. Remove Road 3A and fill adjacent ditch (T19) working in direction towards the intersection of Road 3A and Road 5A.
6. Remove Road 5A and fill T5 / T19 working in direction towards the intersection of Road 3A and Road 5A. Complete grading for D9.
7. Remove Road 3A and fill T17 and T18 working in direction towards the intersection of Road 3A and Road 4. Complete grading for D7 and D8.
8. Remove Road 3A and fill T13 and T18 working in direction towards the intersection of Road 3A and Road 4.
9. Remove (4) 24" CPP culverts at intersection of Roads 3a and 4 located in T13 and T17. Complete grading for D6. Remove Road 4 and fill T17 and T14/15 up to location of (1) 24" CPP culvert along T16/T17.
10. Remove (1) 24" CPP along T16/T17. Continue road removal and ditch filling of T14/T15 and T16/17 towards intersection of Roads 2 and 4. Complete grading for D3.
11. Remove the (1) 12" CPP culvert located on T16. T16 is connected to FSH, so removing this connection breaks any connection to FSH and the upstream ditch network.
12. Remove a short section of Road 2 up to the location of (1) 18" CMP connecting T11 and T20. Remove (1) 18" CMP culvert and continue filling T20, T11, and T16 to the western edge of the R-3300 corridor.
13. Starting at the eastern edge of the R-3300 corridor, begin removing Road 2 and fill T11 and T16 working in direction towards the intersection of Roads 2 and 4.
14. Remove Road 2 and fill T11 and T12 working in direction towards the intersection of Road 2 and Gas Line Easement / Farm Road.
15. Install ditch plugs in T4 starting on western edge of project and moving to the east toward the Gas Line Easement and Farm Road.
16. While performing work within each zone above ensure the following occurs:
    a. Perform required clearing and grubbing, including specified removal of dead mature trees and/or dead specimen trees.
    b. Segregate and stockpile topsoil and other soil material in accordance with the project specifications.
    c. Remove and dispose of all unused vegetation materials.
    e. All excavated soil materials not utilized will be stockpiled and maintained according to the project specifications. After the completion of construction, all unused soil materials shall be spread on site in designated areas at the direction of the Engineer. Spread soil to be stabilized using seeding per the project specifications. If any excavated soil materials need to be, are specified to, and actually are disposed of off-site by the Contractor, the Contractor is responsible for disposal of such soil materials in a permitted area, as well as for providing and implementing an erosion and sedimentation control plan and permit, or any other required permit(s), for the location(s) off site where such materials are disposed.

PHASE 3

DEMOBILIZATION

1. Complete remaining minor grading and site planting preparation work, including ripping and/or disking, as specified in the project specifications.
2. All remaining disturbed areas, including areas that have been ripped and/or disked after temporary and/or permanent seeding activities, are to be amended, seeded, matted and/or mulched according to the project specifications.sni
3. After all construction requiring heavy equipment is completed, remove silt fence, restore construction access roads, staging areas, and stockpile areas. Immediately regrade, replace topsoil, and seed, amend, and mulch as specified in the project specifications.
4. Remove temporary construction entrances. Immediately regrade, seed, amend, and mulch as specified in the project specifications.
5. Remove all tree protection fencing.
6. Remove and dispose of all trash, metal, and debris from the site according to local, state and federal regulations.

PROJECT REFERENCE NO.	SHEET NO.
R-3300	EC-2

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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Date: 2022.06.08 12:06:45 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

SOIL STABILIZATION TIMELINES

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.

8/17/99

REVISIONS

REVISION 2 – ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/28/22 EMP
REVISION 3 – UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

6/8/2022
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eperdue

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3300	EC-3

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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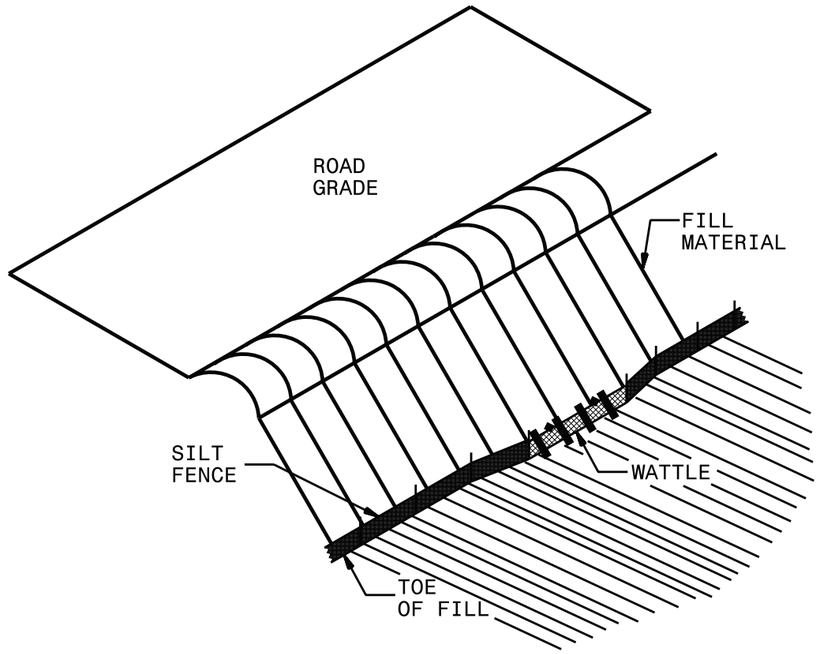


ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

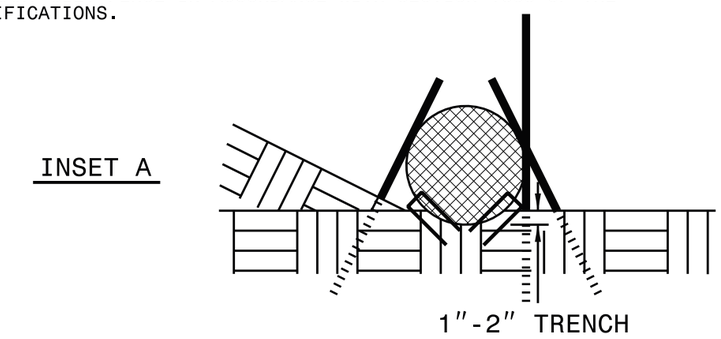
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

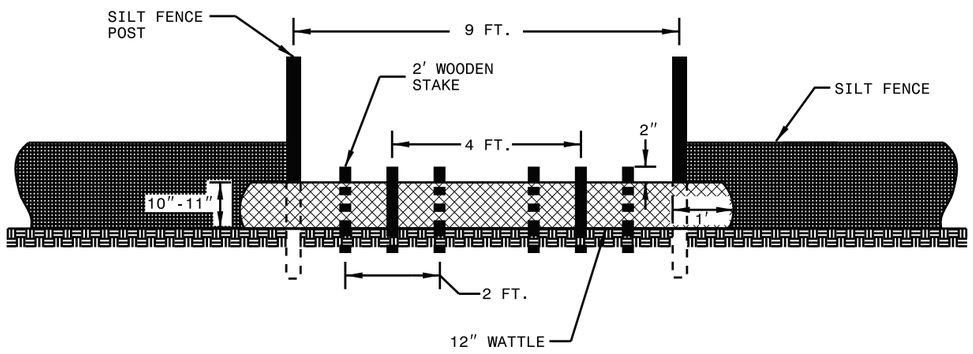
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

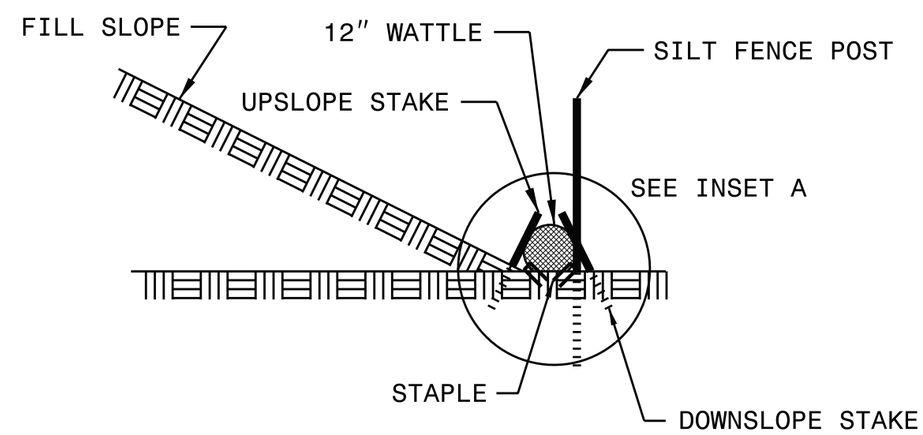
WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.





VIEW FROM SLOPE



SIDE VIEW

REVISIONS

8/17/99

1/6/2022
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mkoon

COIR FIBER WATTLE DETAIL

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3300	EC-4

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue
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Date: 2022.01.06 14:08:31 -05'00'

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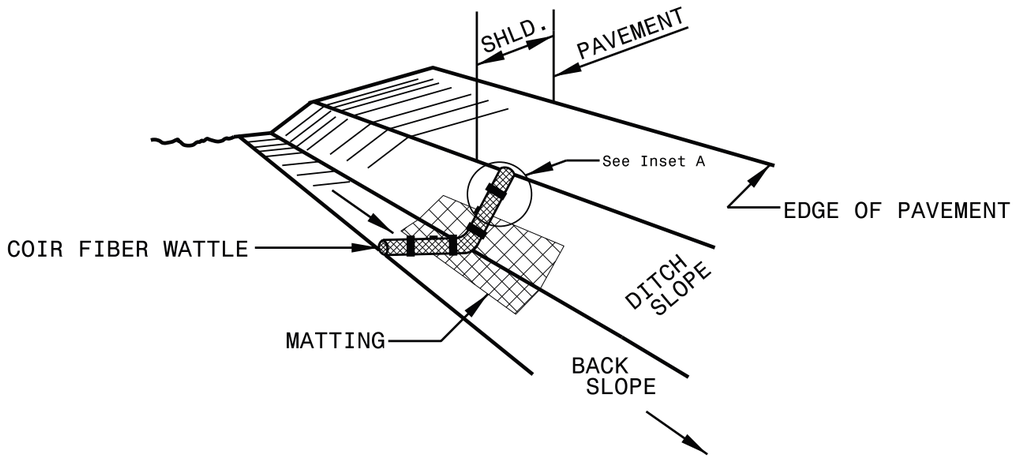


ISOMETRIC VIEW

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.

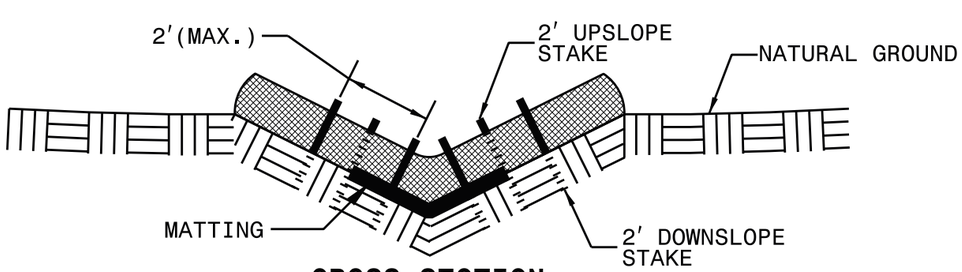
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

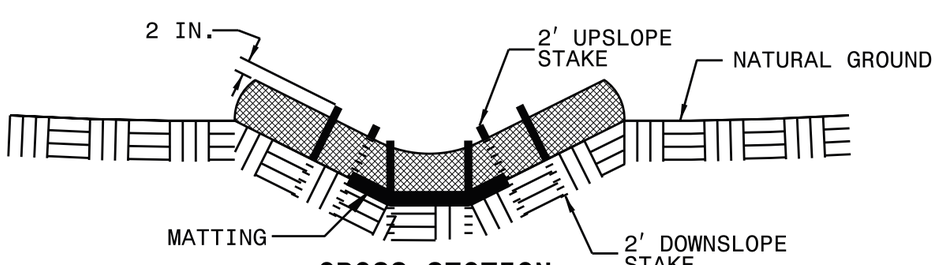
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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.

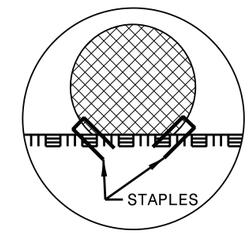


CROSS SECTION VEE DITCH

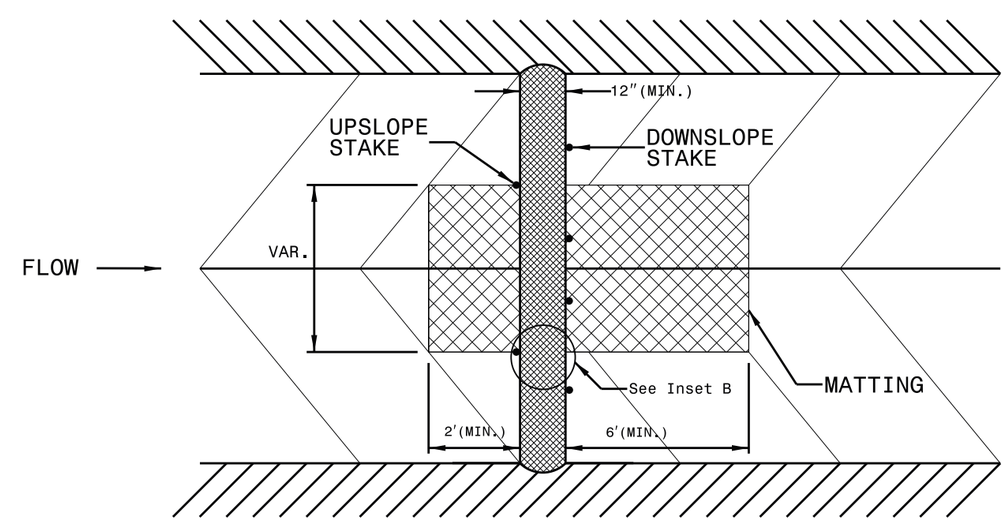


CROSS SECTION TRAPEZOIDAL DITCH

INSET A



INSET B



TOP VIEW

REVISIONS

8/17/99

1/6/2022
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mkagn

EROSION AND SEDIMENT CONTROL OVERVIEW

PROJECT REFERENCE NO.	SHEET NO.
R-3300	EC-5

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

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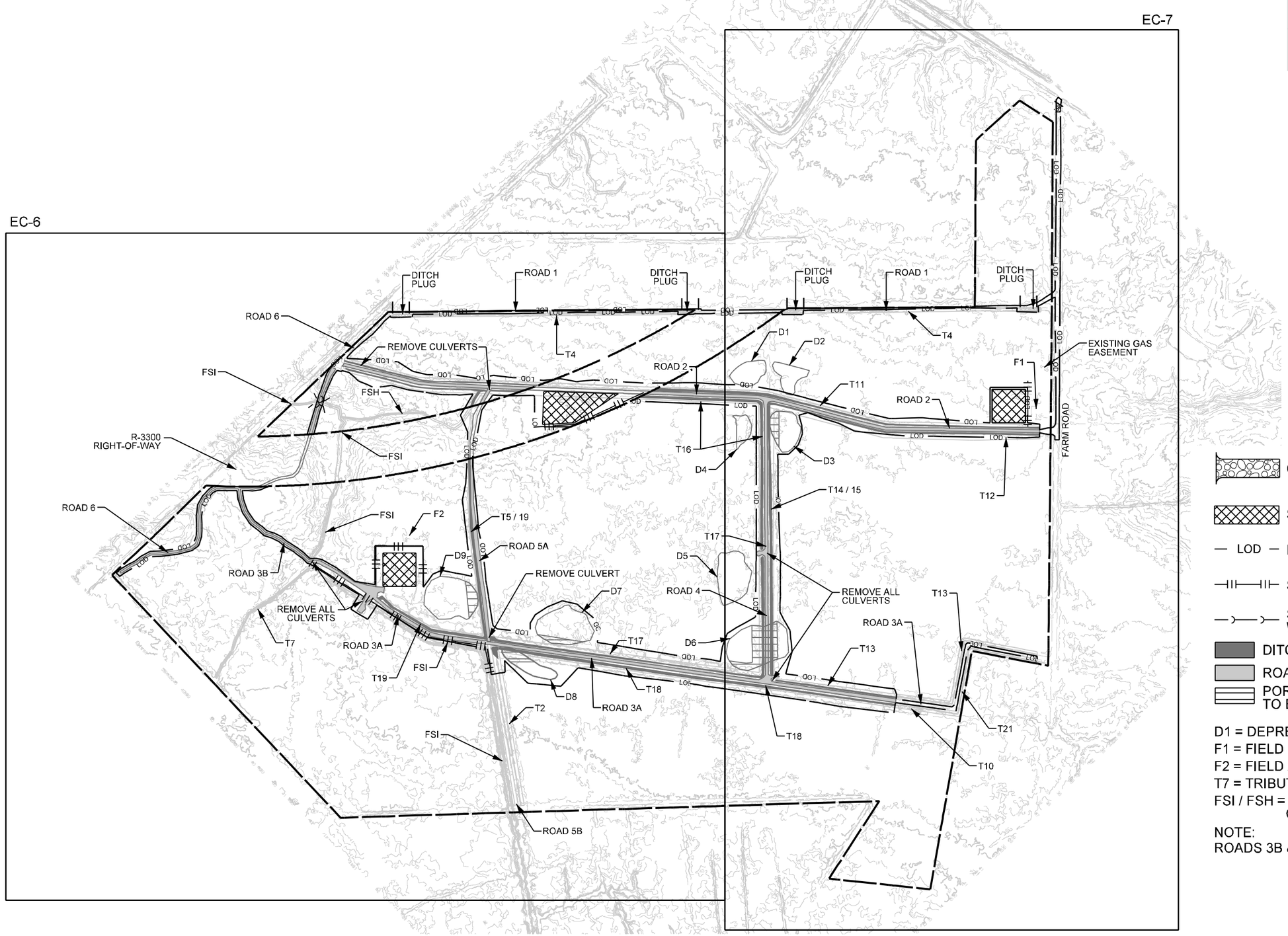
Date: 2022.06.08 12:06:00 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



CONSTRUCTION ENTRANCE

STAGING

LOD — LIMITS OF DISTURBANCE

SILT FENCE

SILT FENCE COIR FIBER WATTLE BREAK

DITCH FILL

ROAD REMOVAL

PORTIONS OF DEPRESSIONS TO BE GRADED

D1 = DEPRESSION 1
F1 = FIELD 1
F2 = FIELD 2
T7 = TRIBUTARY 7
FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

NOTE:
ROADS 3B & 6 ONLY REQUIRE DISKING.

GRAPHIC SCALE
300 150 0 300 600
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE / ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/8/2022
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EROSION AND SEDIMENT CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-3300	EC-6

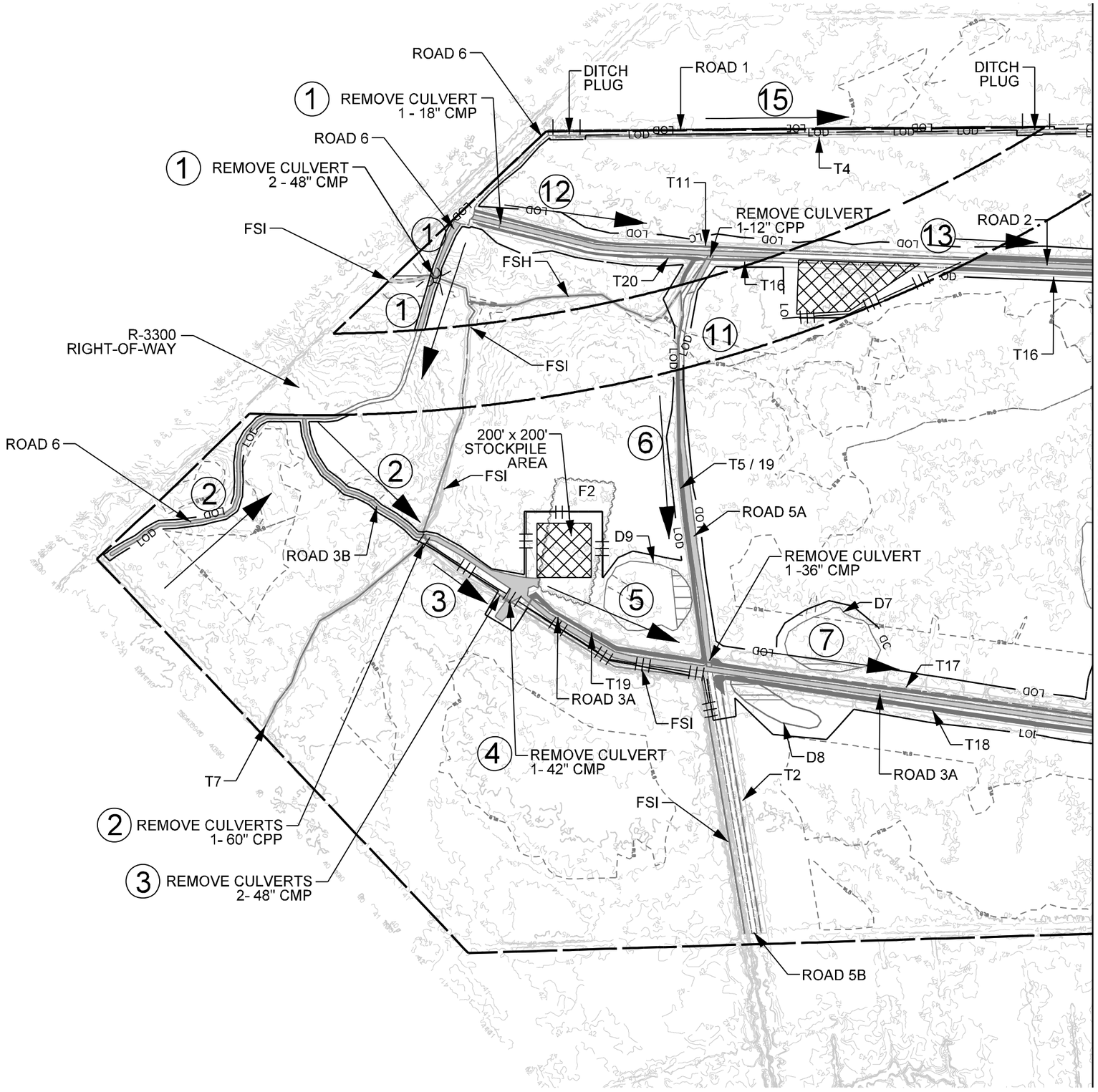
PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

Emmett Perdue

Digitally signed by Emmett Perdue
Date: 2022.06.08 12:06:17 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



CONSTRUCTION ENTRANCE

STAGING

— LOD — LIMITS OF DISTURBANCE

SILT FENCE

SILT FENCE COIR FIBER WATTLE BREAK

F2 = FIELD 2
T7 = TRIBUTARY 7
FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

ROAD REMOVAL

DITCH FILL

PORTIONS OF DEPRESSIONS TO BE GRADED

NOTE:
ROADS 3B & 6 ONLY REQUIRE DISKING.

GRAPHIC SCALE
200 100 0 200 400
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/29/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/22 EMP

8/17/99

6/8/2022
R:\Projects\RDU0096_NCDOT-Calyx_BeanSite\CADD\Plans\17_BEAN_EC_PSH.DGN
perdue

EROSION AND SEDIMENT CONTROL PLAN

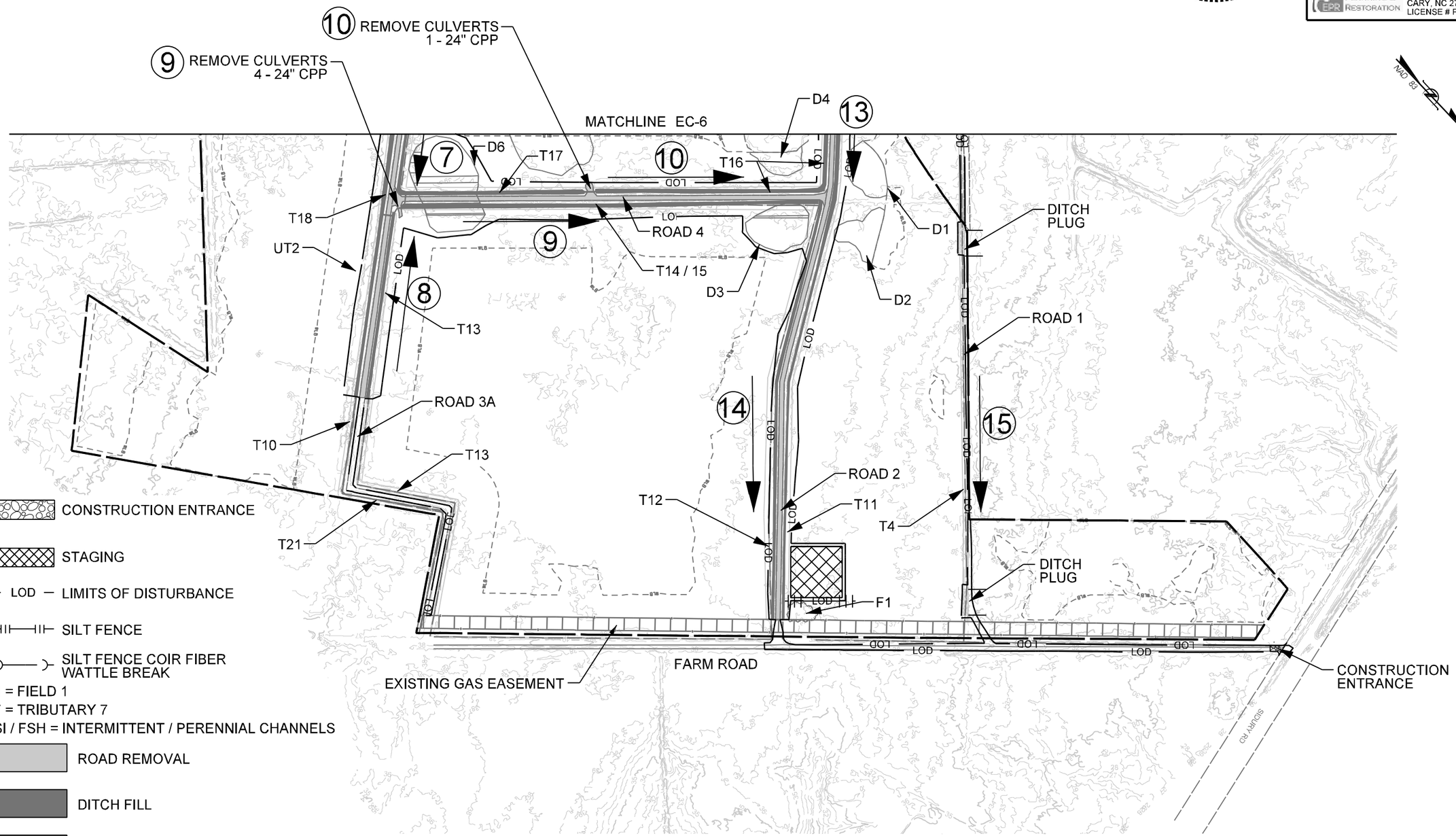
Emmett Digitally signed by Emmett Perdue
Perdue Date: 2022.06.08 12:06:23 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

PROJECT REFERENCE NO.	SHEET NO.
R-3300	EC-7

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182



CONSTRUCTION ENTRANCE

STAGING

— LOD — LIMITS OF DISTURBANCE

SILT FENCE

SILT FENCE COIR FIBER WATTLE BREAK

F1 = FIELD 1

T7 = TRIBUTARY 7

FSI / FSH = INTERMITTENT / PERENNIAL CHANNELS

ROAD REMOVAL

DITCH FILL

PORTIONS OF DEPRESSIONS TO BE GRADED

NOTE:
ROADS 3B & 6 ONLY REQUIRE DISKING.

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/29/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/8/2022
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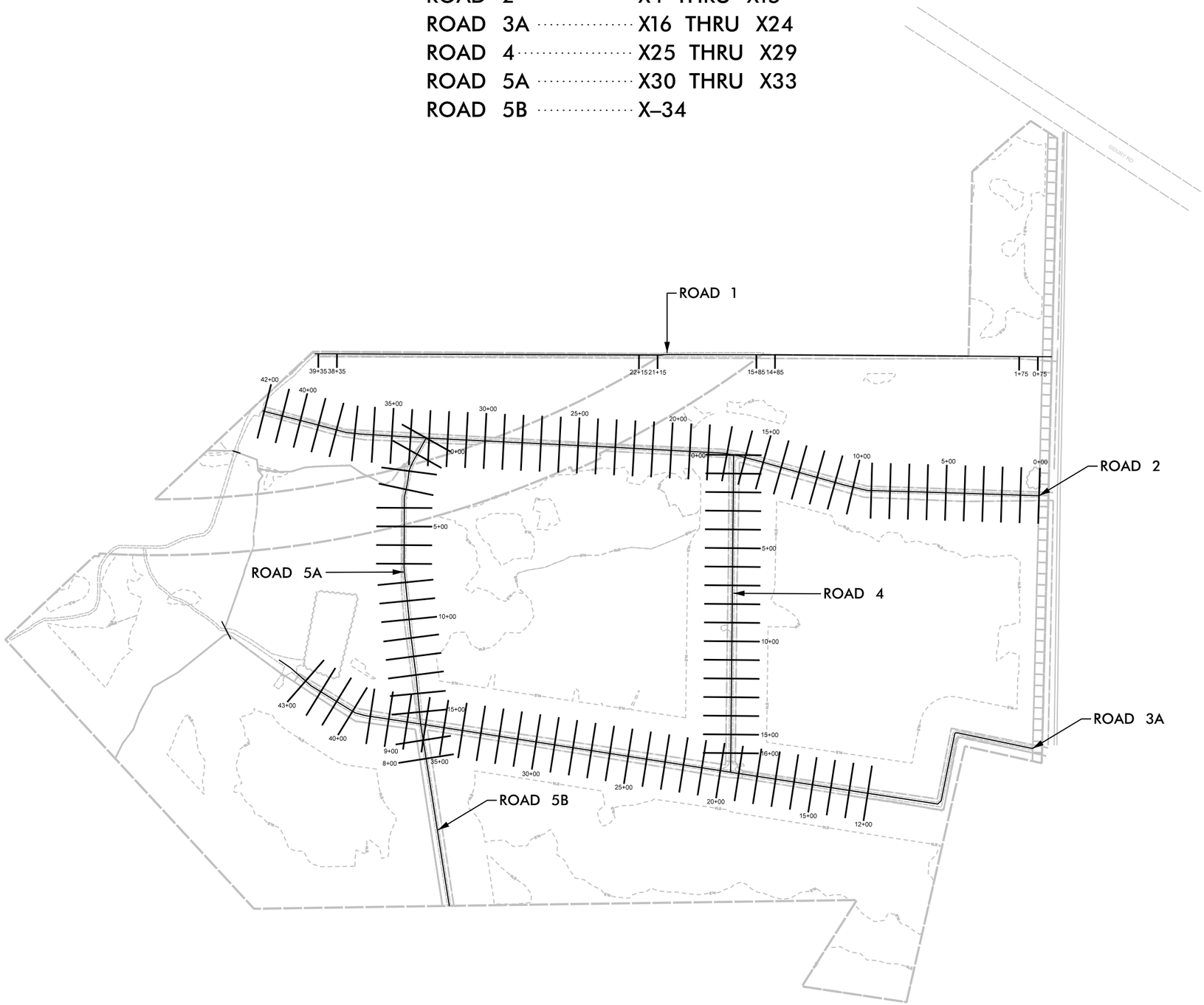
eperdue

PROJ. REFERENCE NO.	SHEET NO.
R-3300	X-1

CROSS–SECTIONS INDEX OF SHEETS

ROAD 1 ..... X2 THRU X3
ROAD 2 ..... X4 THRU X15
ROAD 3A ..... X16 THRU X24
ROAD 4 ..... X25 THRU X29
ROAD 5A ..... X30 THRU X33
ROAD 5B X–34



6/23/16

1/6/2022
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mkson

PROJ. REFERENCE NO.	SHEET NO.
R-3300	1-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station Road_1	Imp. Sel. (cu. yd.)	
0+75.00	0	
1+75.00	130	
SKIP		
14+85.00	0	
15+85.00	110	
SKIP		
21+15.00	0	
22+15.00	70	
SKIP		
38+35.00	0	
39+35.00	40	

Station Road_2	Mit. Uncl. Exc. (cu. yd.)	Mit. Borrow (cu. yd.)
0+00.00	0	0
1+00.00	147	111
2+00.00	195	107
3+00.00	231	119
4+00.00	220	181
5+00.00	215	220
6+00.00	235	184
7+00.00	234	214
8+00.00	193	267
9+00.00	209	208
10+00.00	216	242
11+00.00	251	325
12+00.00	254	287
13+00.00	179	254
14+00.00	220	172
15+00.00	313	109
16+00.00	236	162
17+00.00	128	183
18+00.00	279	140
19+00.00	325	196
20+00.00	210	226
21+00.00	207	217
22+00.00	275	181
23+00.00	270	126
24+00.00	259	164
25+00.00	288	167
26+00.00	260	164
27+00.00	223	181
28+00.00	218	172
29+00.00	222	182
30+00.00	181	176
31+00.00	133	182
32+00.00	183	224
33+00.00	182	214
34+00.00	118	219
35+00.00	172	259
36+00.00	217	208
37+00.00	165	100

Station Road_2	Mit. Uncl. Exc. (cu. yd.)	Mit. Borrow (cu. yd.)
38+00.00	176	60
39+00.00	163	125
40+00.00	186	124
41+00.00	217	56
42+00.00	102	75

Station Road_3A	Mit. Uncl. Exc. (cu. yd.)	Mit. Borrow (cu. yd.)
12+00.00	0	0
13+00.00	338	215
14+00.00	459	148
15+00.00	503	143
16+00.00	466	191
17+00.00	578	189
18+00.00	673	148
19+00.00	475	249
20+00.00	556	257
21+00.00	683	226
22+00.00	567	319
23+00.00	681	300
24+00.00	828	208
25+00.00	729	251
26+00.00	620	261
27+00.00	580	256
28+00.00	716	268
29+00.00	847	192
30+00.00	825	290
31+00.00	594	515
32+00.00	369	561
33+00.00	469	435
35+00.00	1416	634
36+00.00	432	475
37+00.00	139	508
38+00.00	230	418
39+00.00	525	347
40+00.00	817	237
41+00.00	859	246
42+00.00	786	107
43+00.00	661	84

Station Road_4	Mit. Uncl. Exc. (cu. yd.)	Mit. Borrow (cu. yd.)
1+00.00	0	0
2+00.00	222	150
3+00.00	376	151
4+00.00	572	170
5+00.00	682	184
6+00.00	735	208
7+00.00	676	230
8+00.00	692	222
9+00.00	682	182
10+00.00	621	144
11+00.00	680	172
12+00.00	712	192
13+00.00	700	152
14+00.00	846	124
15+00.00	790	152
16+00.00	528	158

Station Road_5A	Mit. Uncl. Exc. (cu. yd.)	Mit. Borrow (cu. yd.)
1+00.00	0	0
2+00.00	62	312
3+00.00	74	215
4+00.00	68	33
5+00.00	22	22
6+00.00	18	53
7+00.00	64	87
8+00.00	86	95
9+00.00	55	103
10+00.00	110	121
11+00.00	130	169
12+00.00	90	191
13+00.00	183	152
14+00.00	182	156
15+00.00	134	181

Station Road_5B	Mit. Uncl. Exc. (cu. yd.)	Mit. Borrow (cu. yd.)
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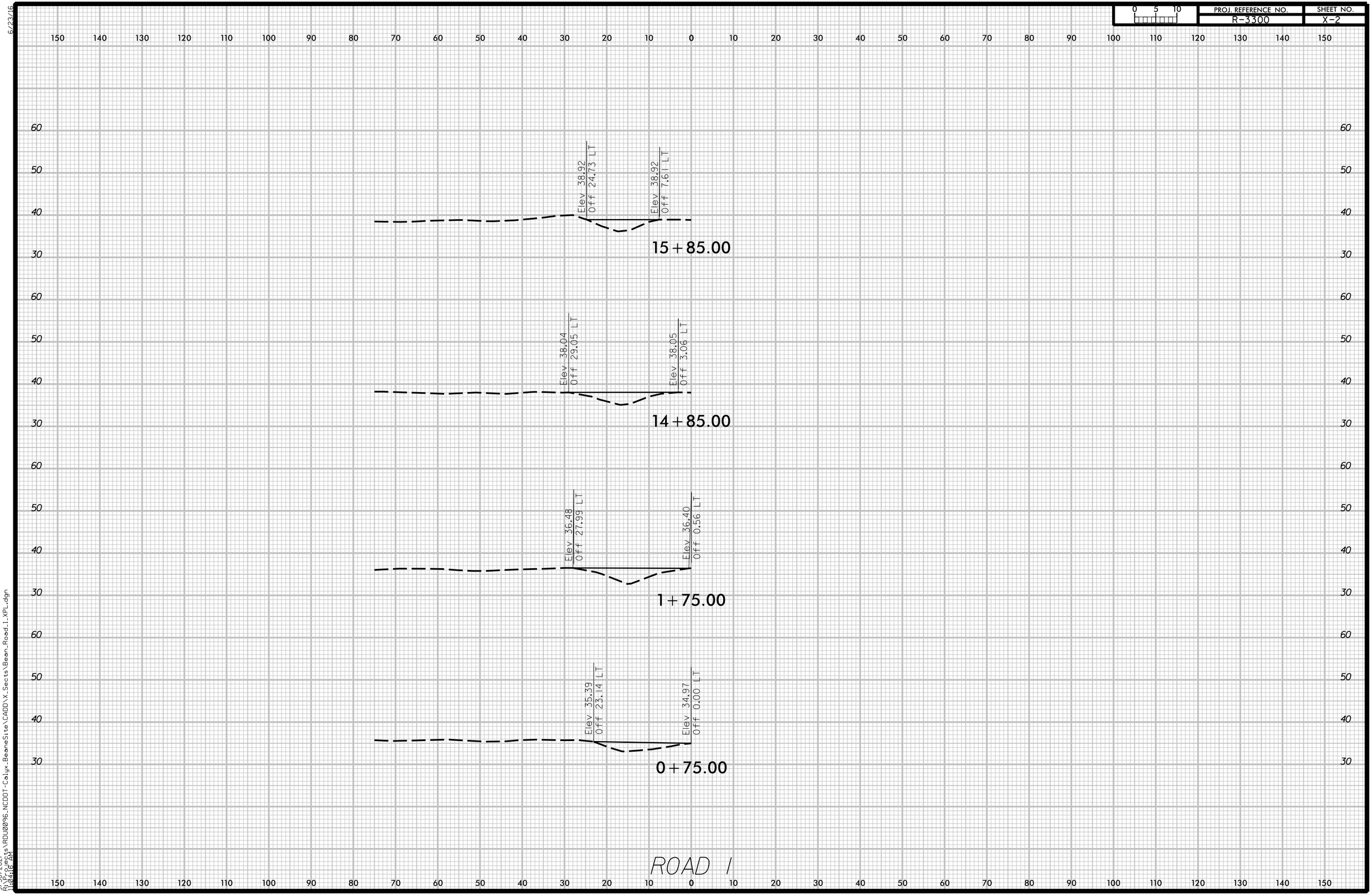
9+00.00	272	52

PROJ. REFERENCE NO.	SHEET NO.
R-3300	X-2



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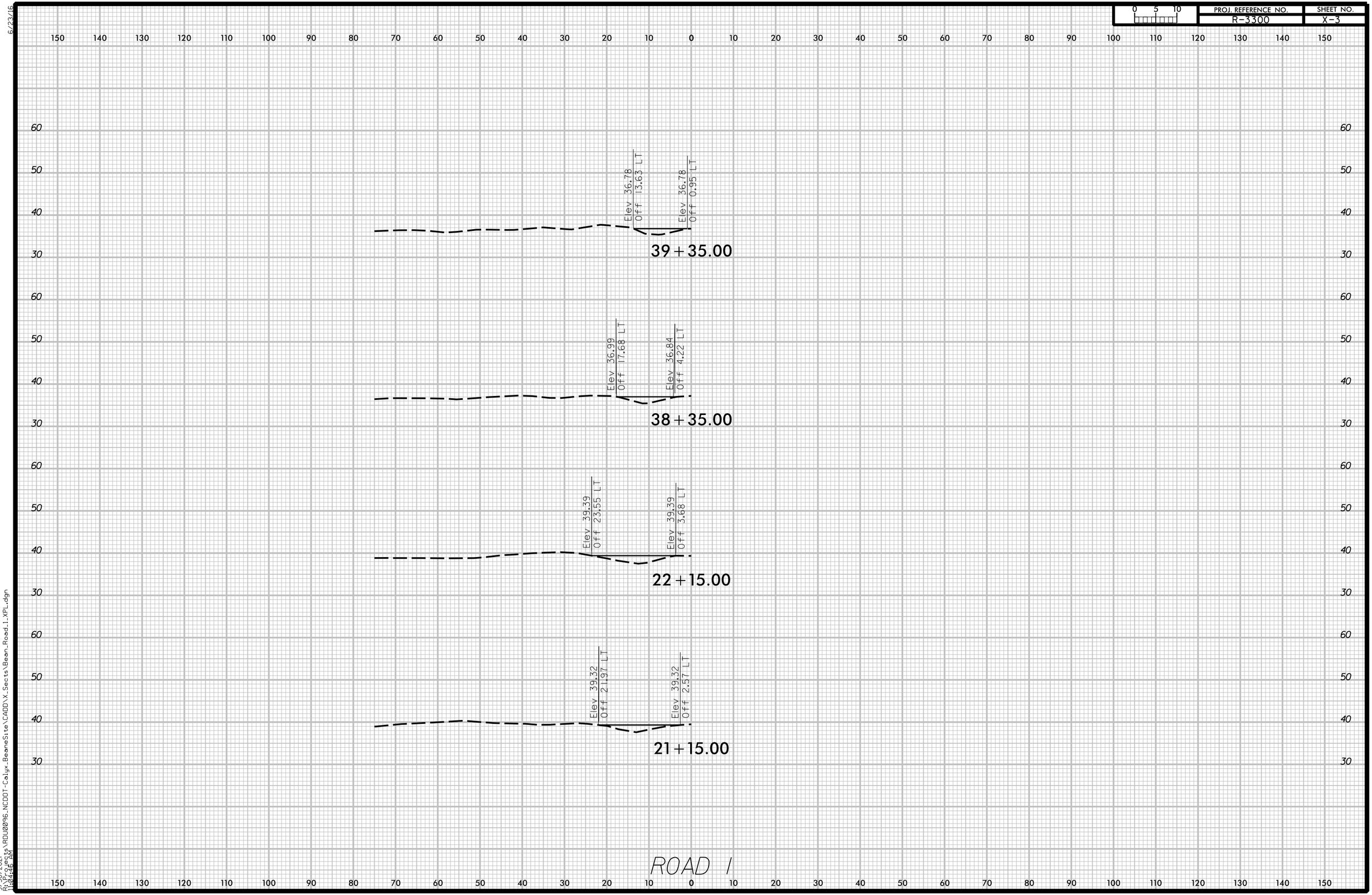

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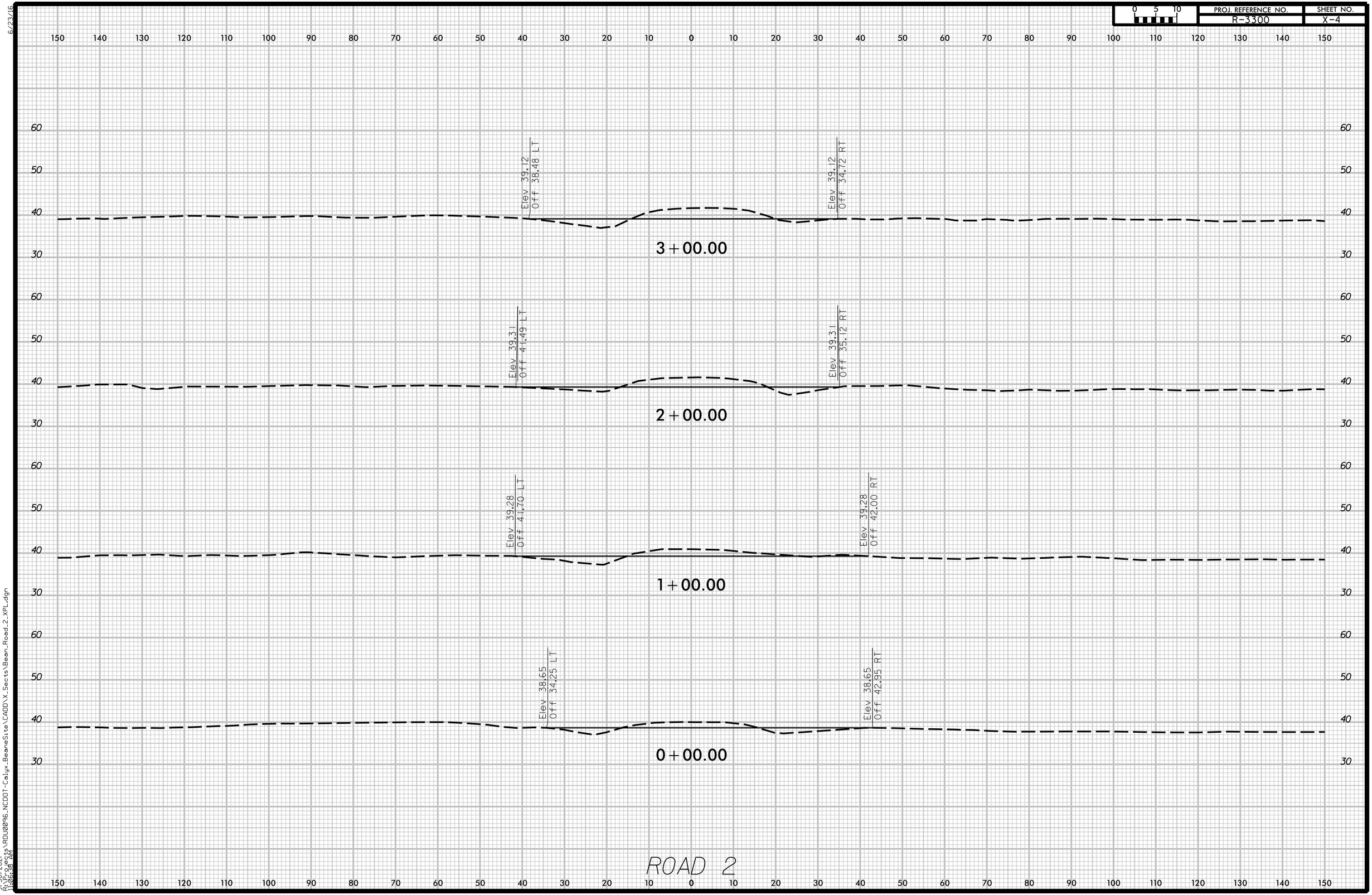

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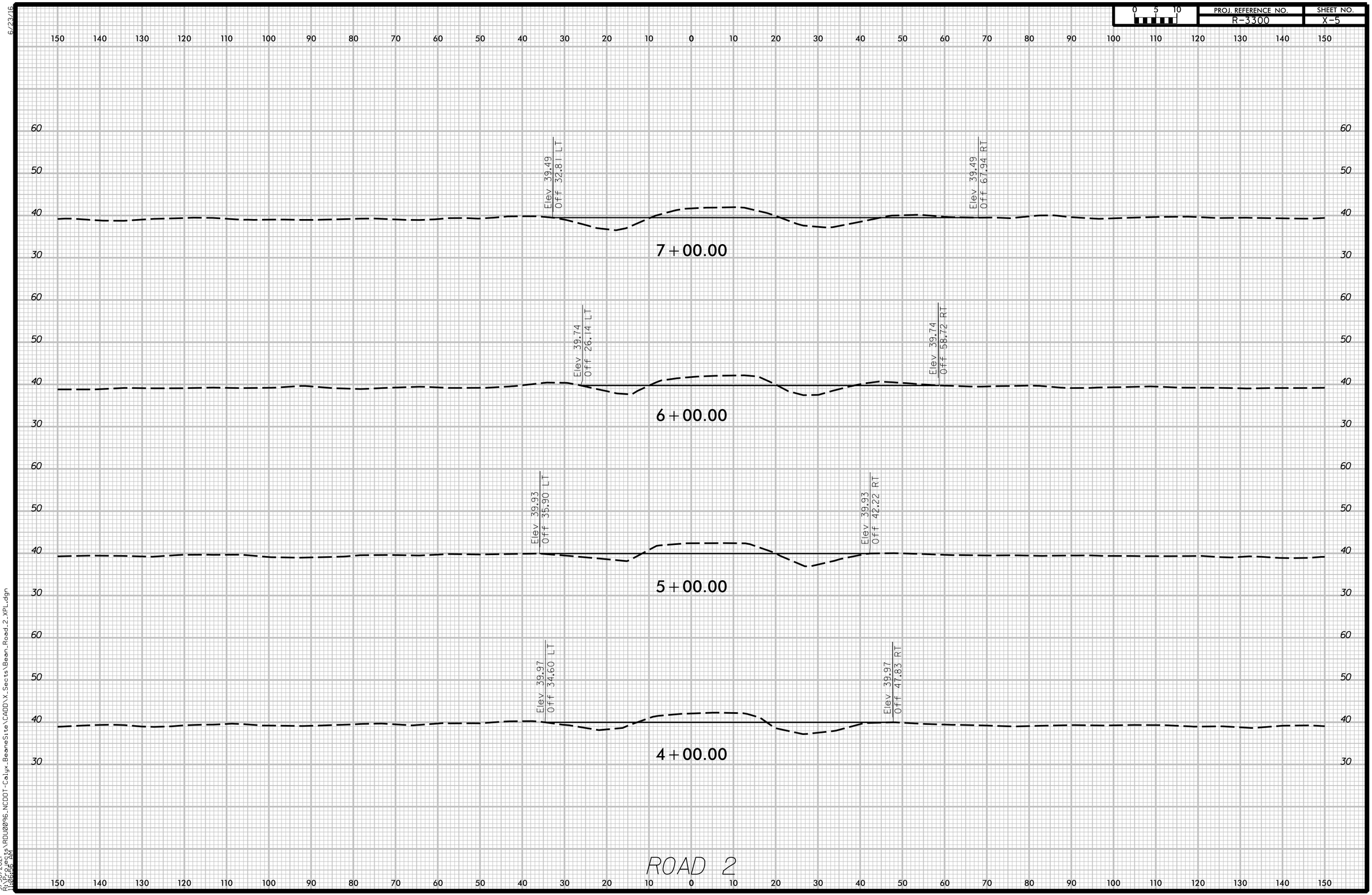

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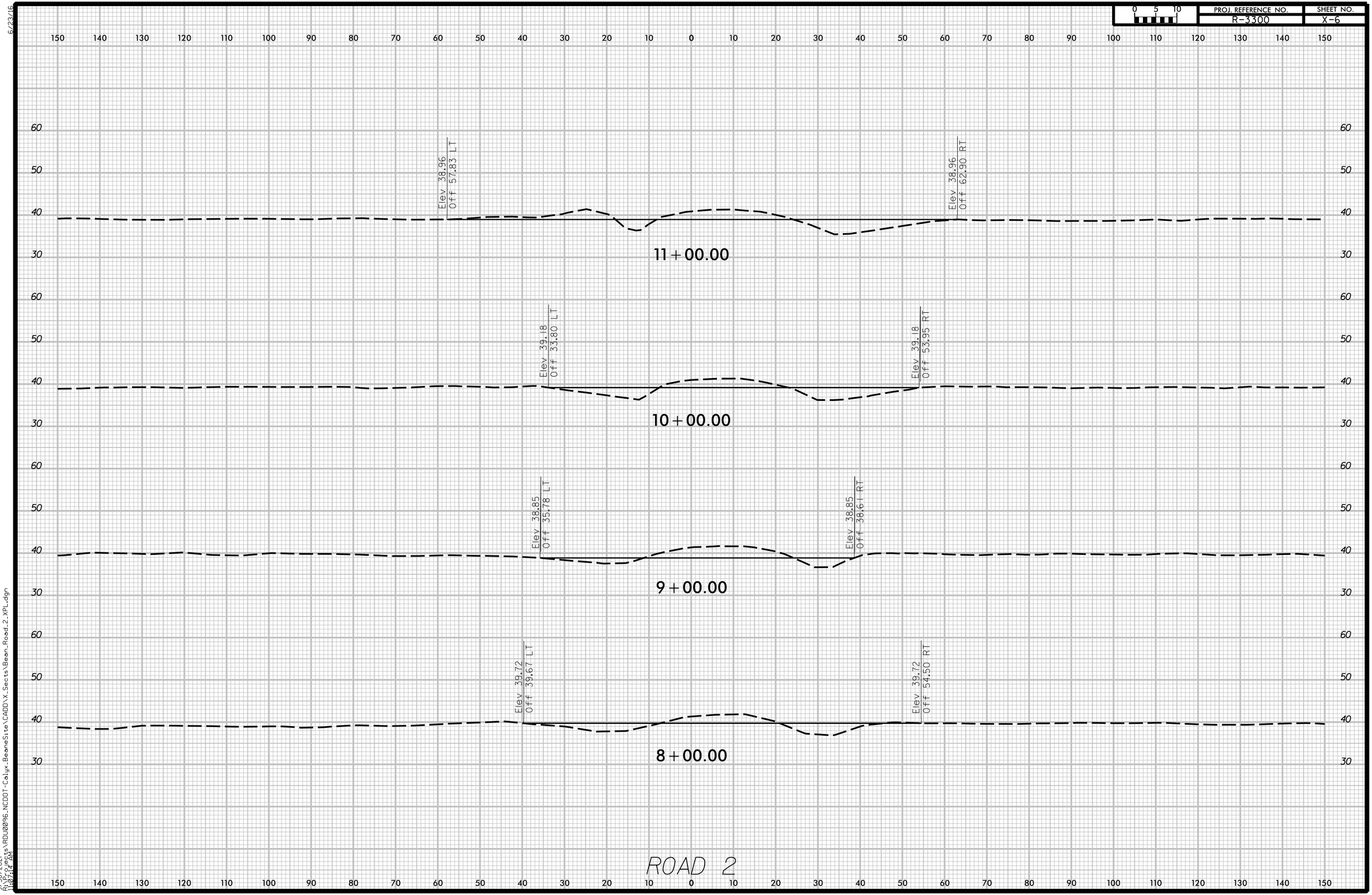

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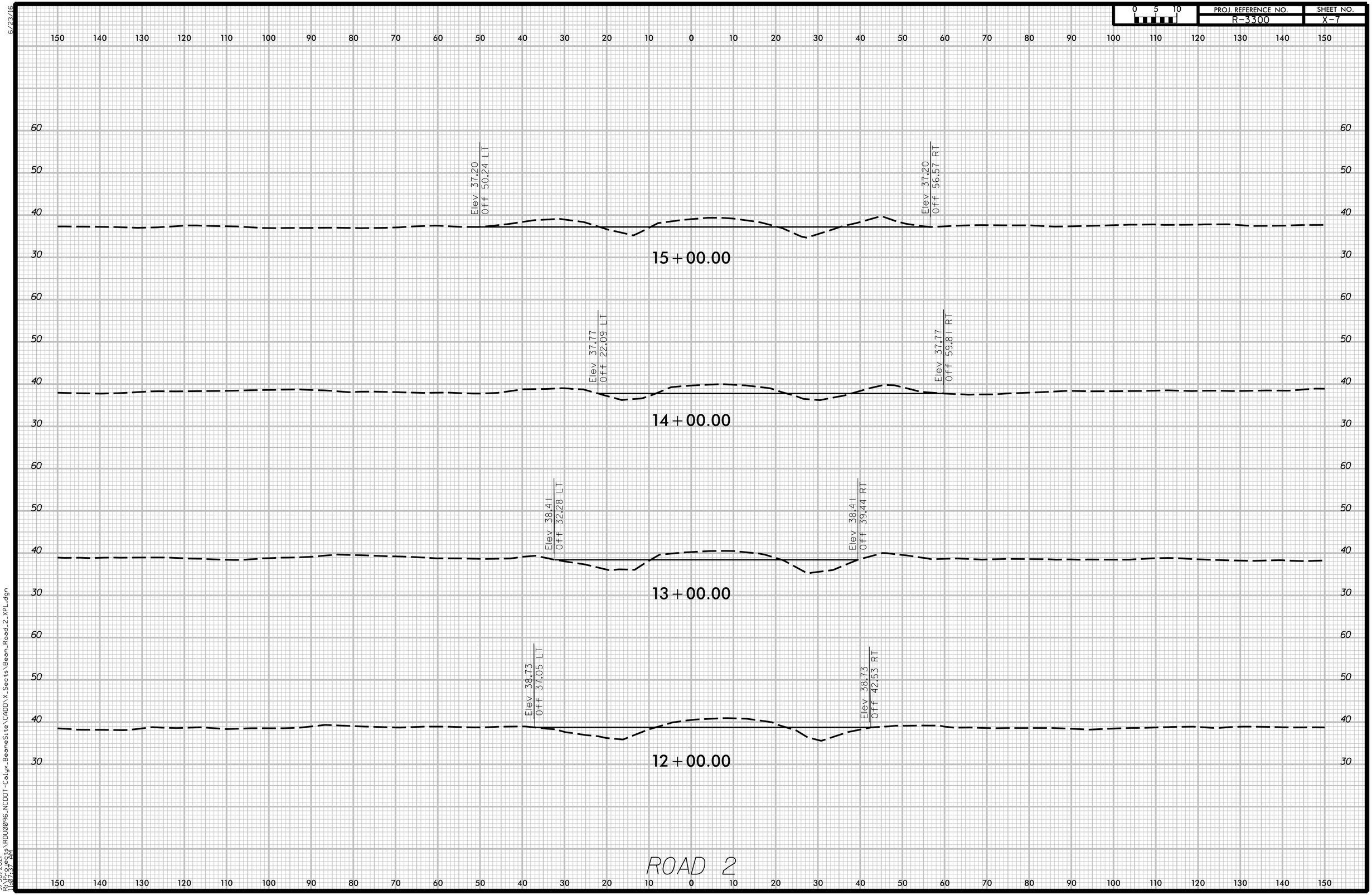

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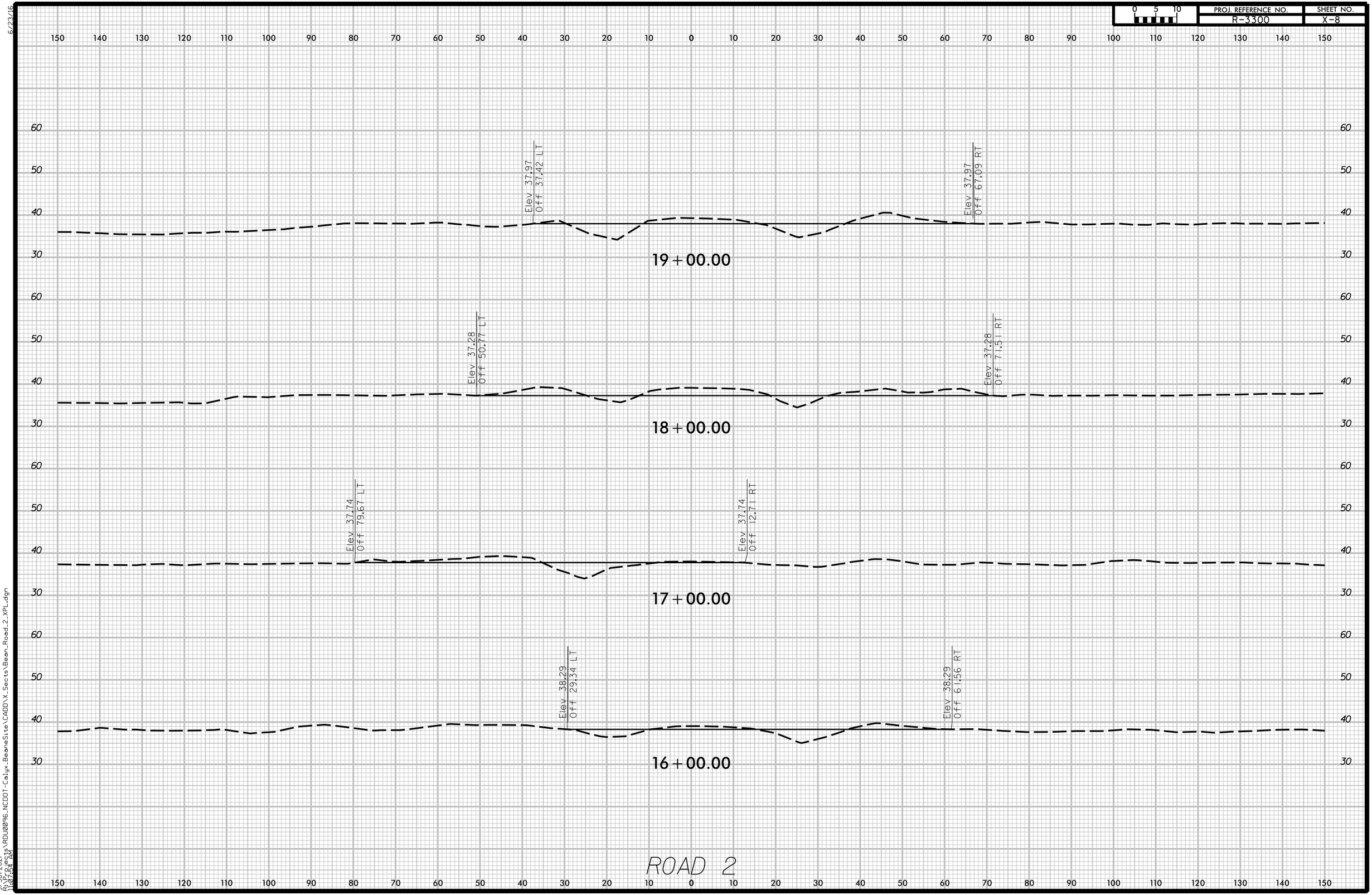

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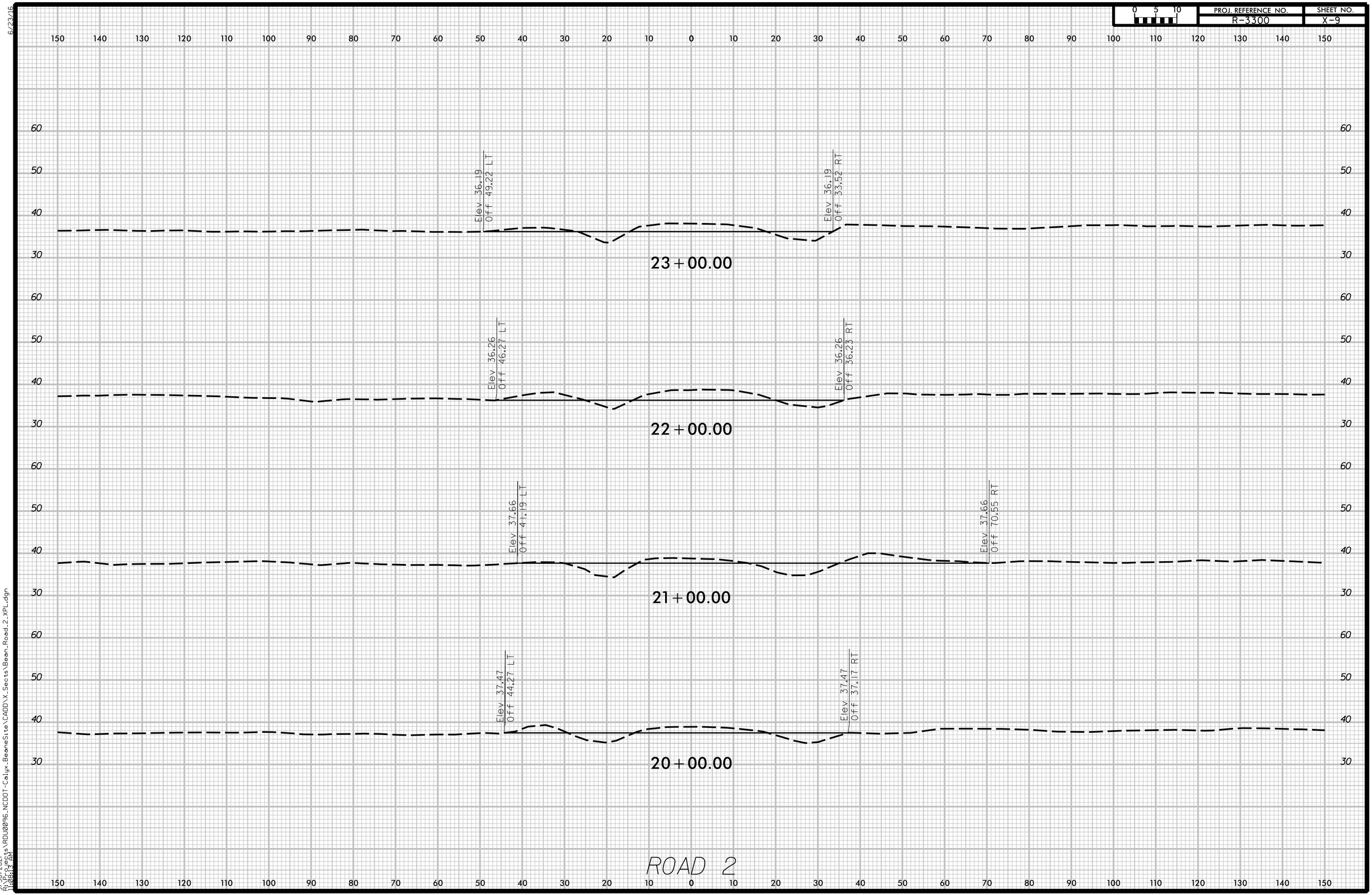

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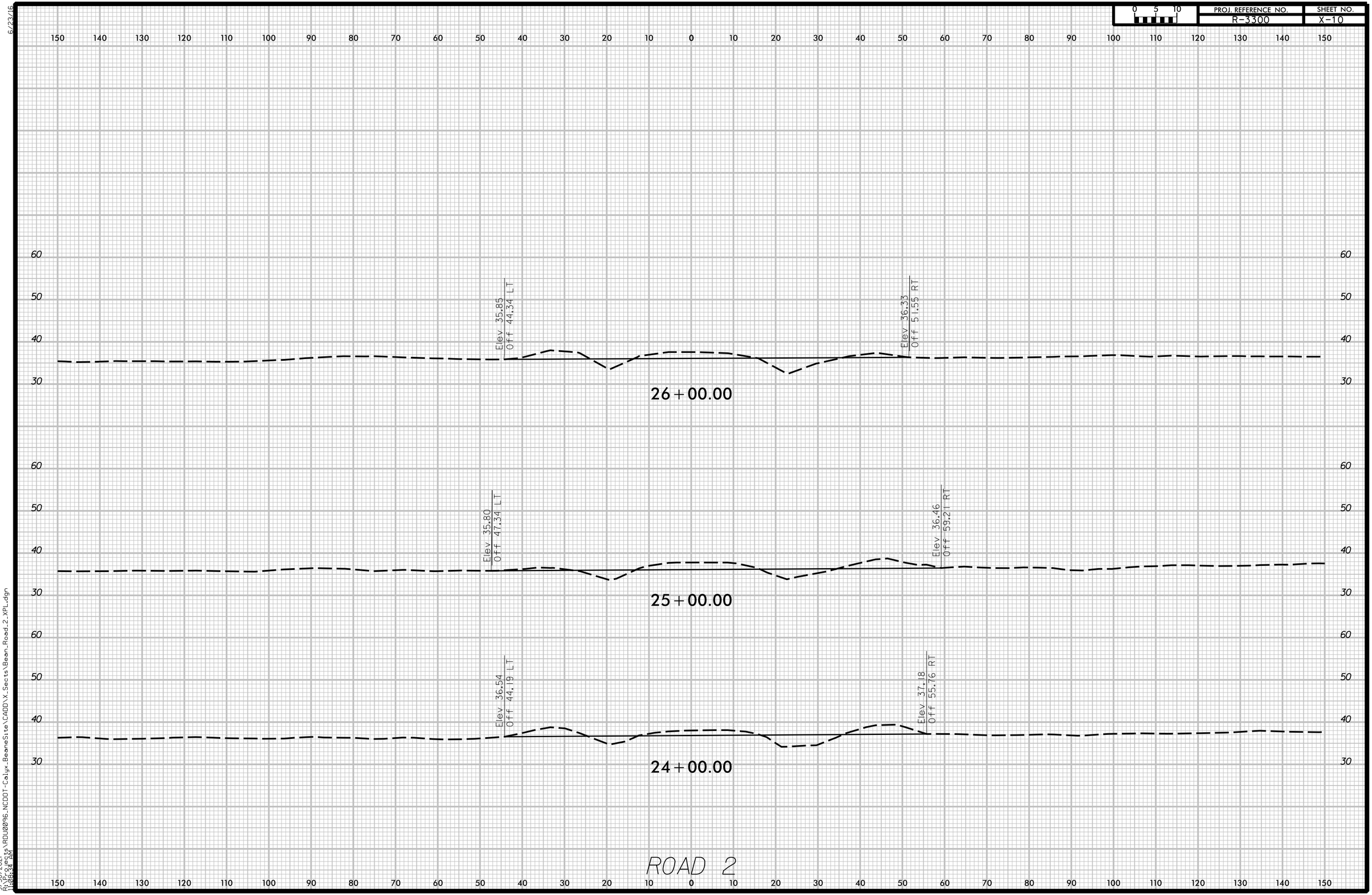

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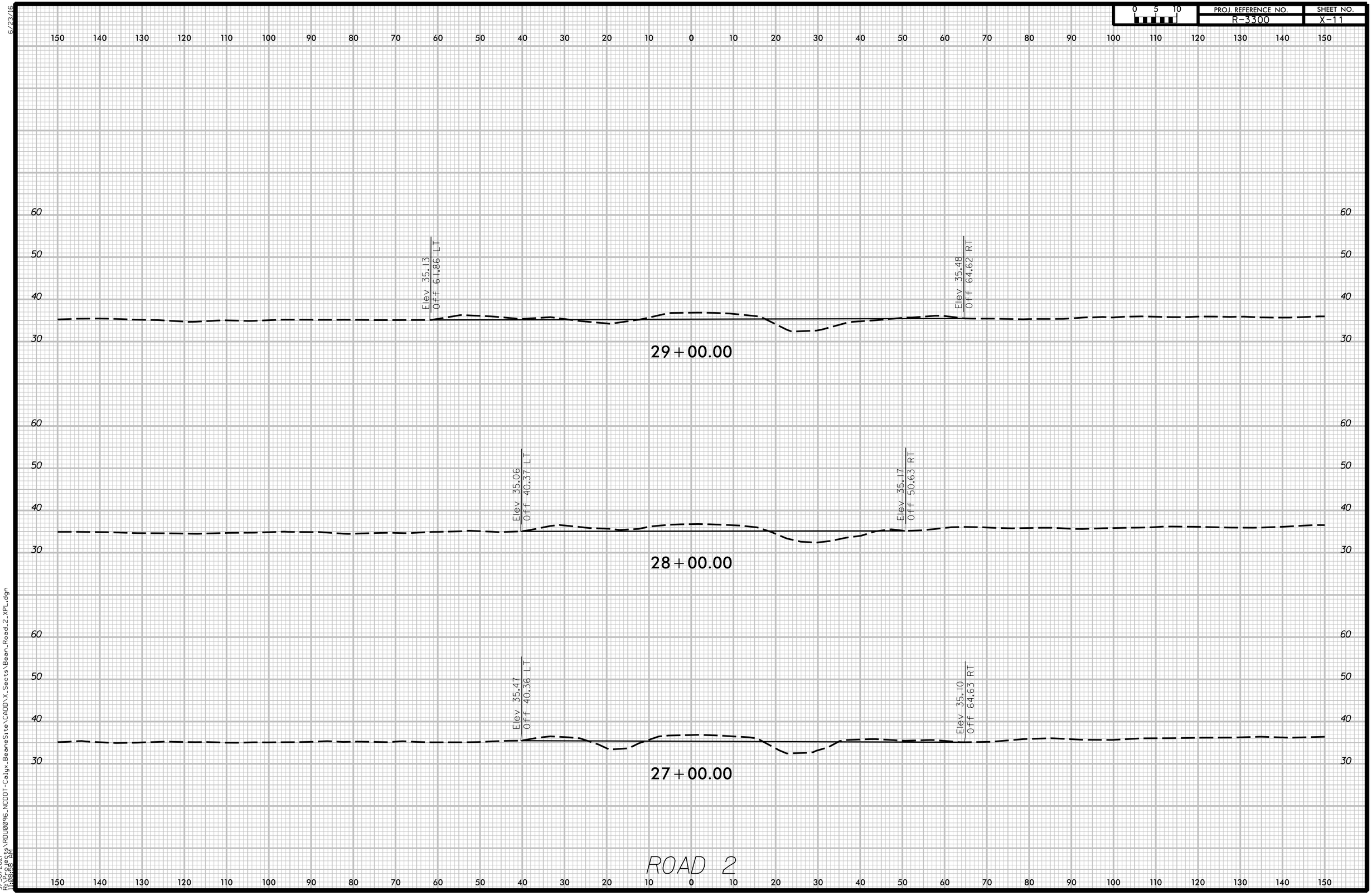

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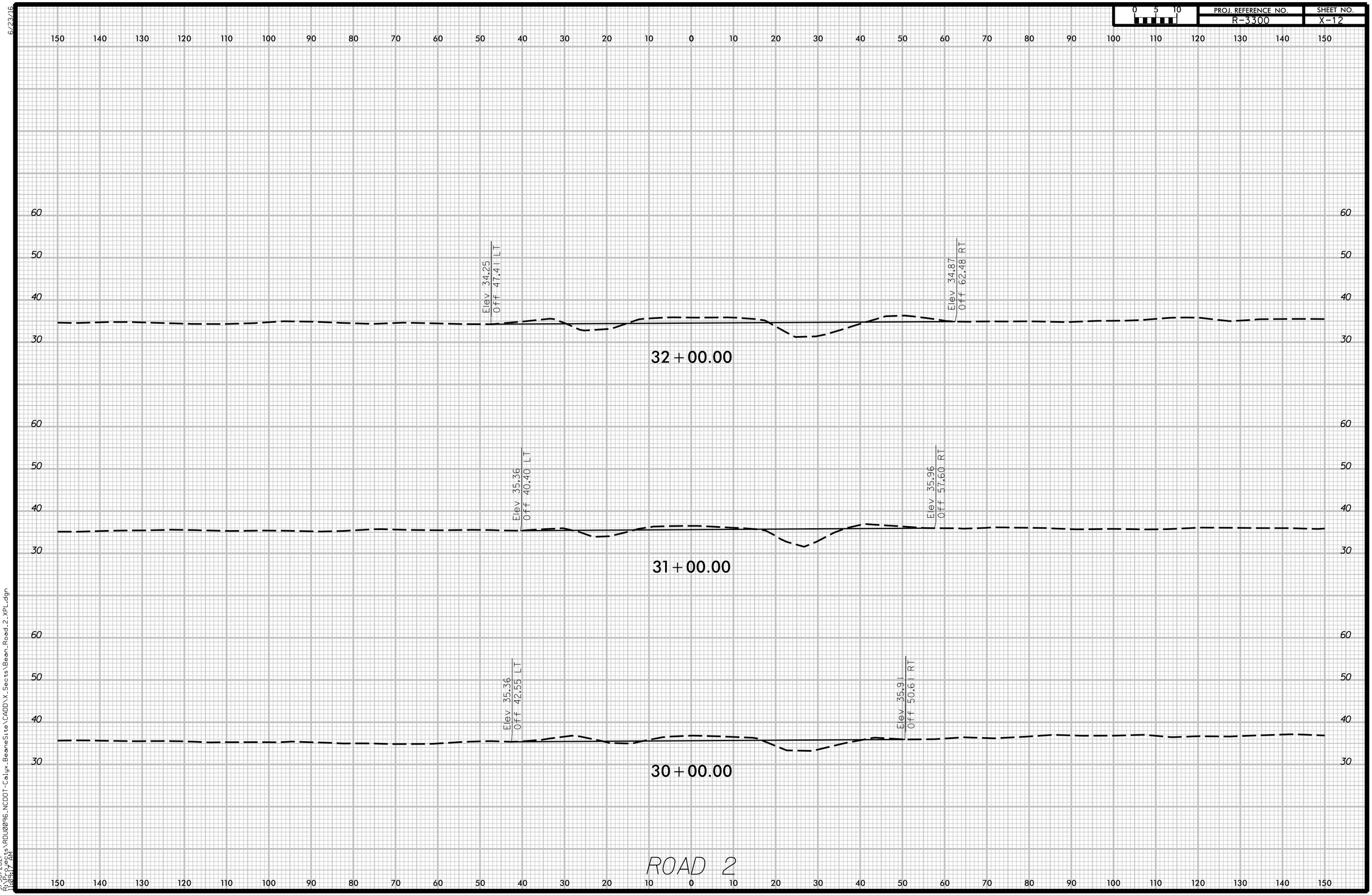

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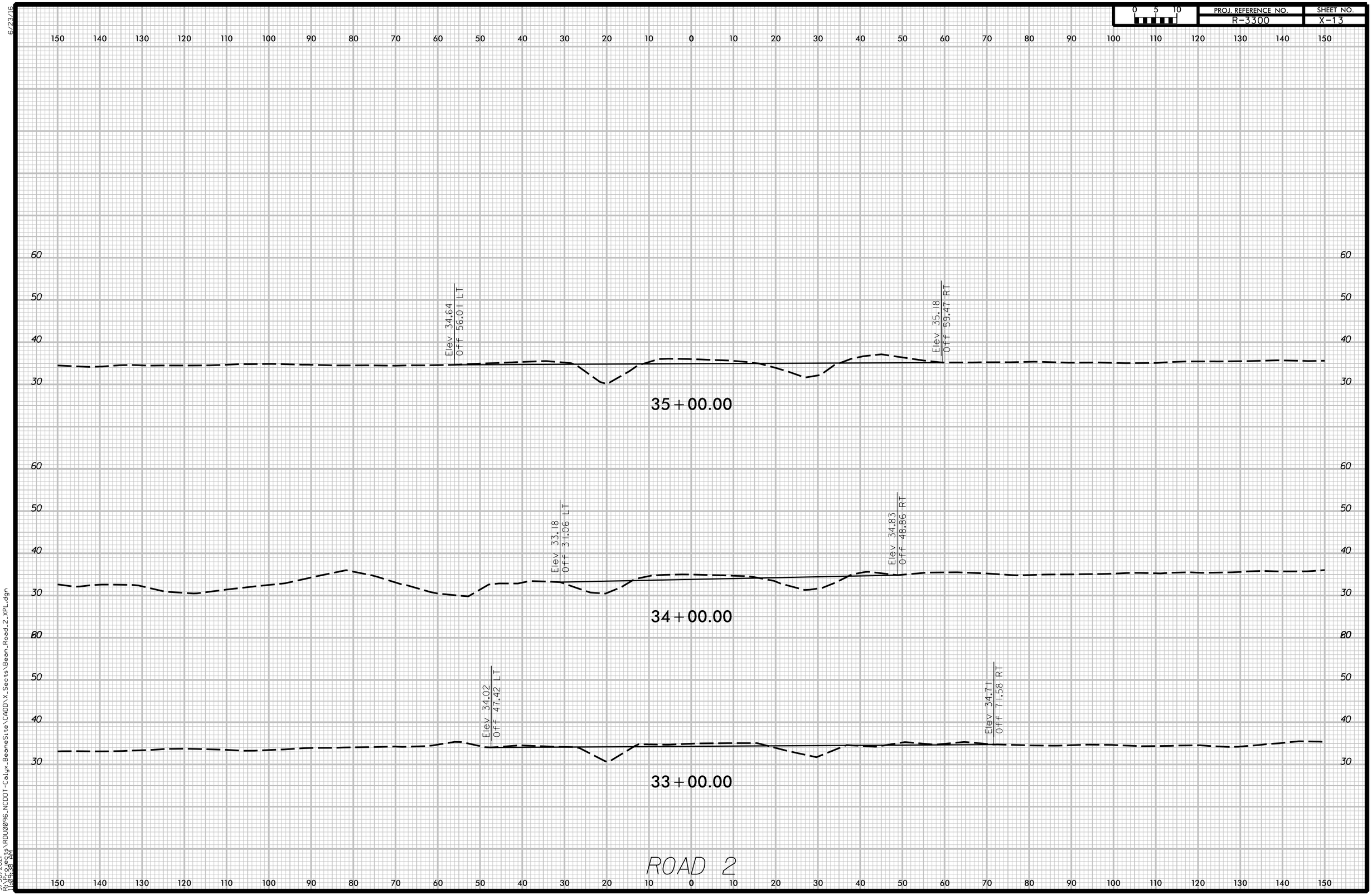

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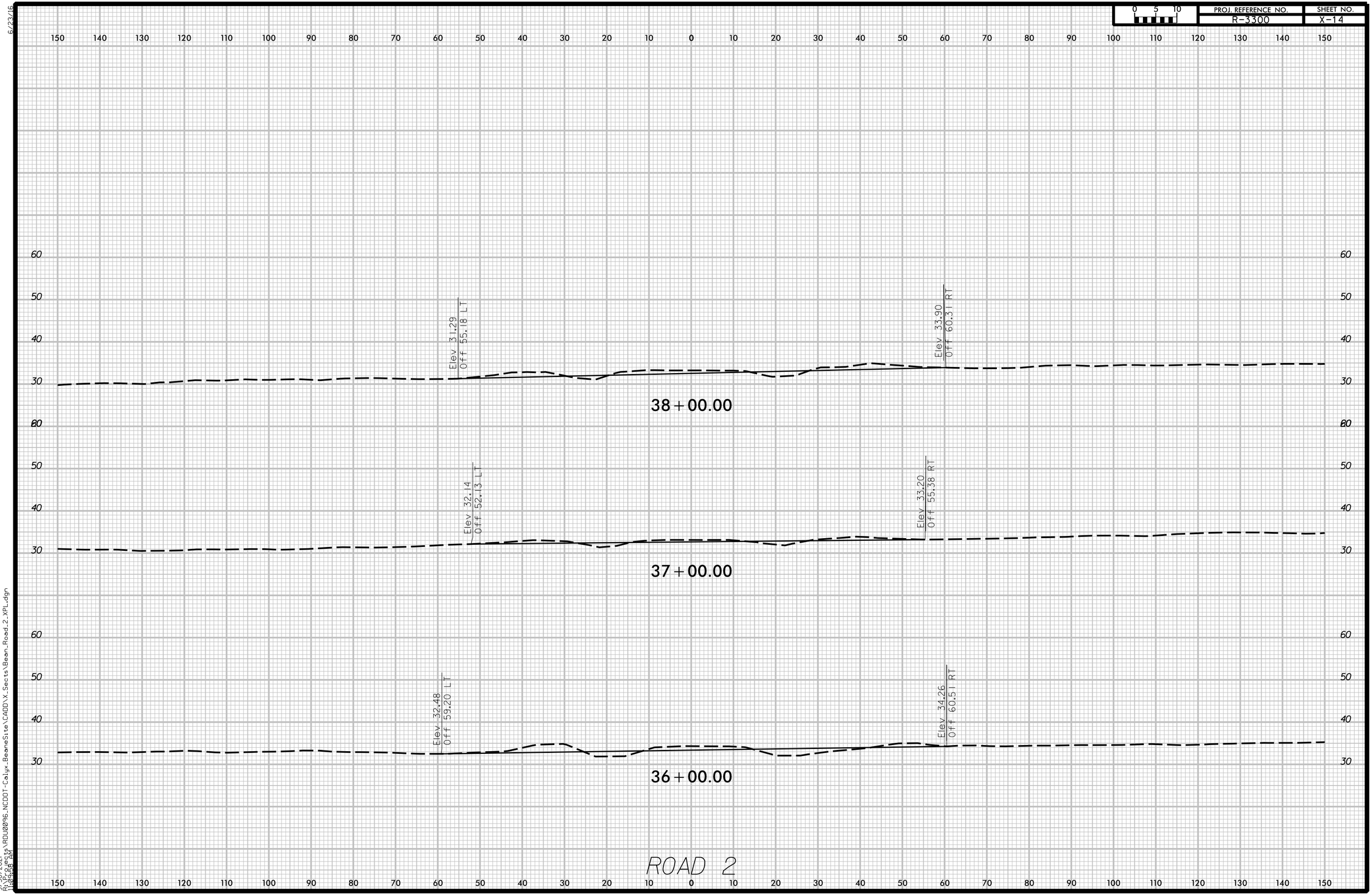

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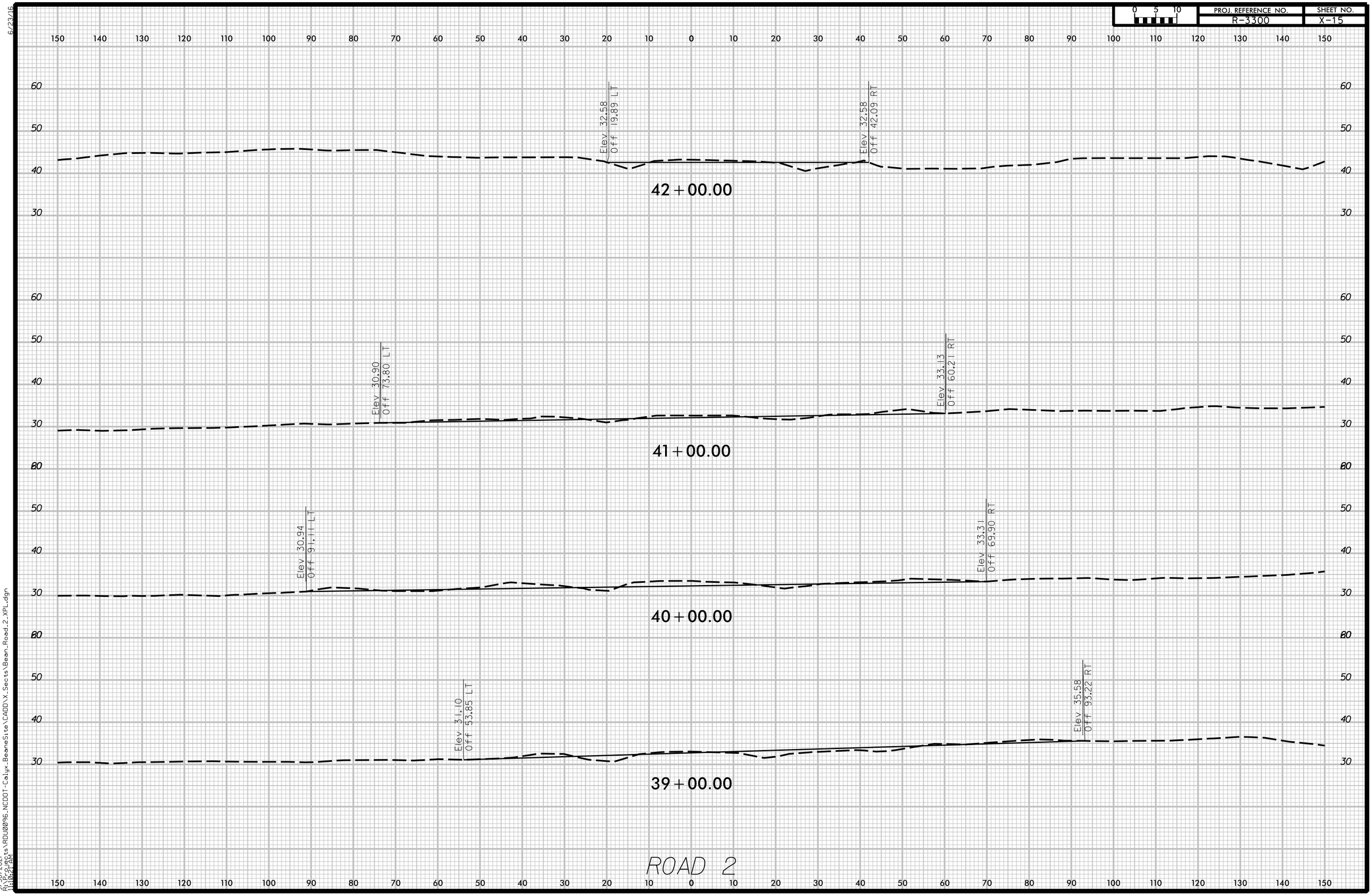

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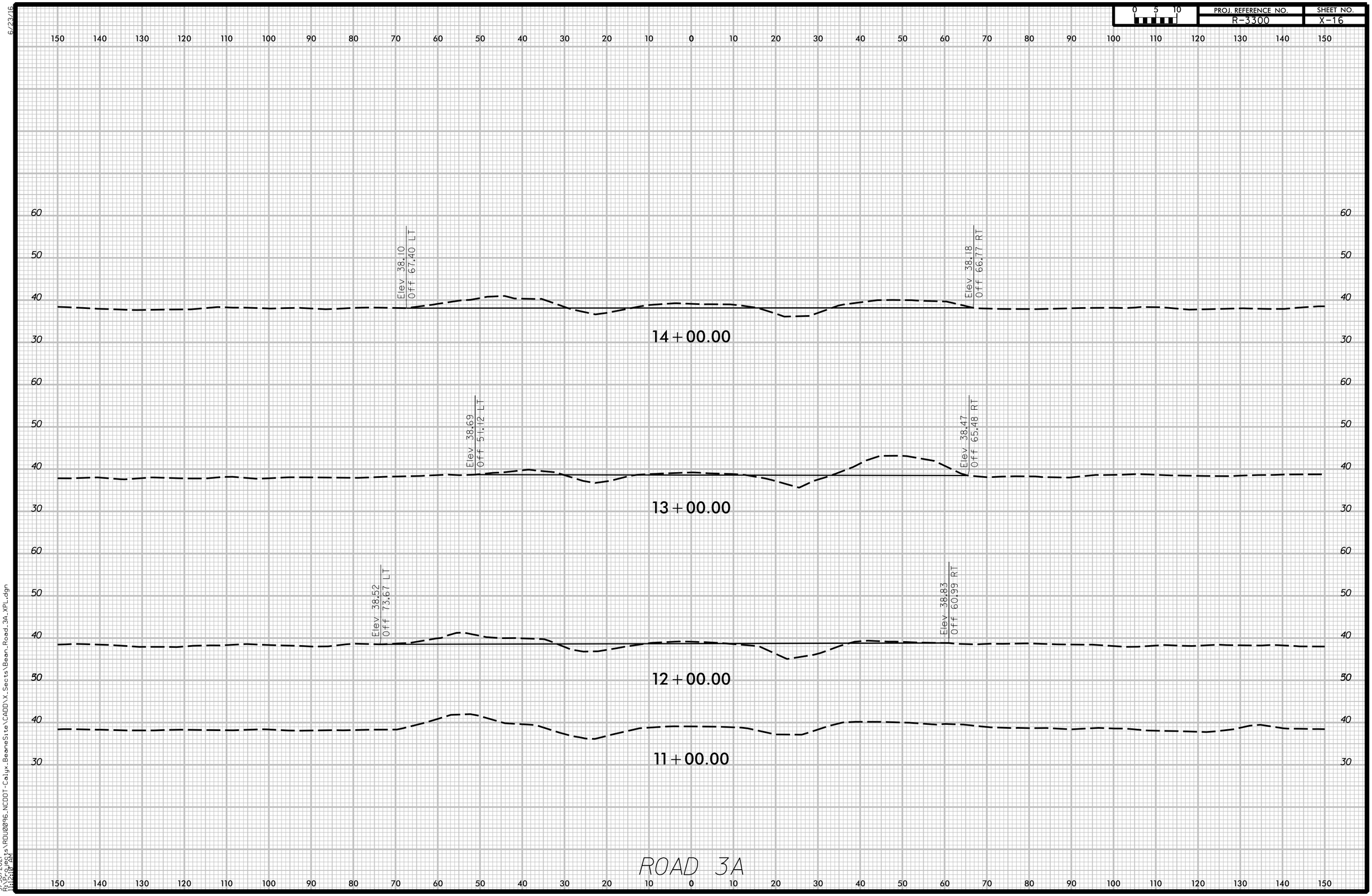

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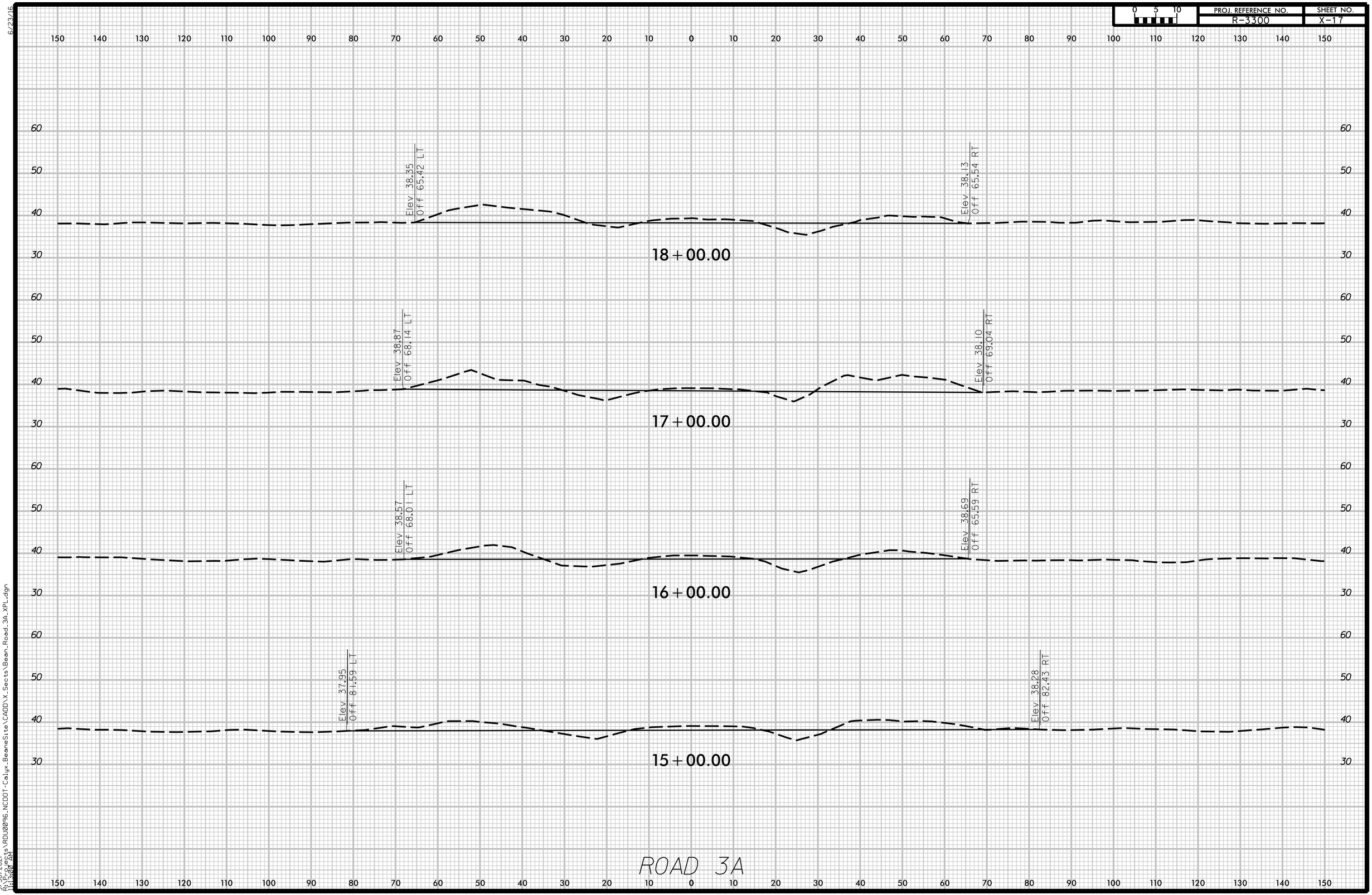

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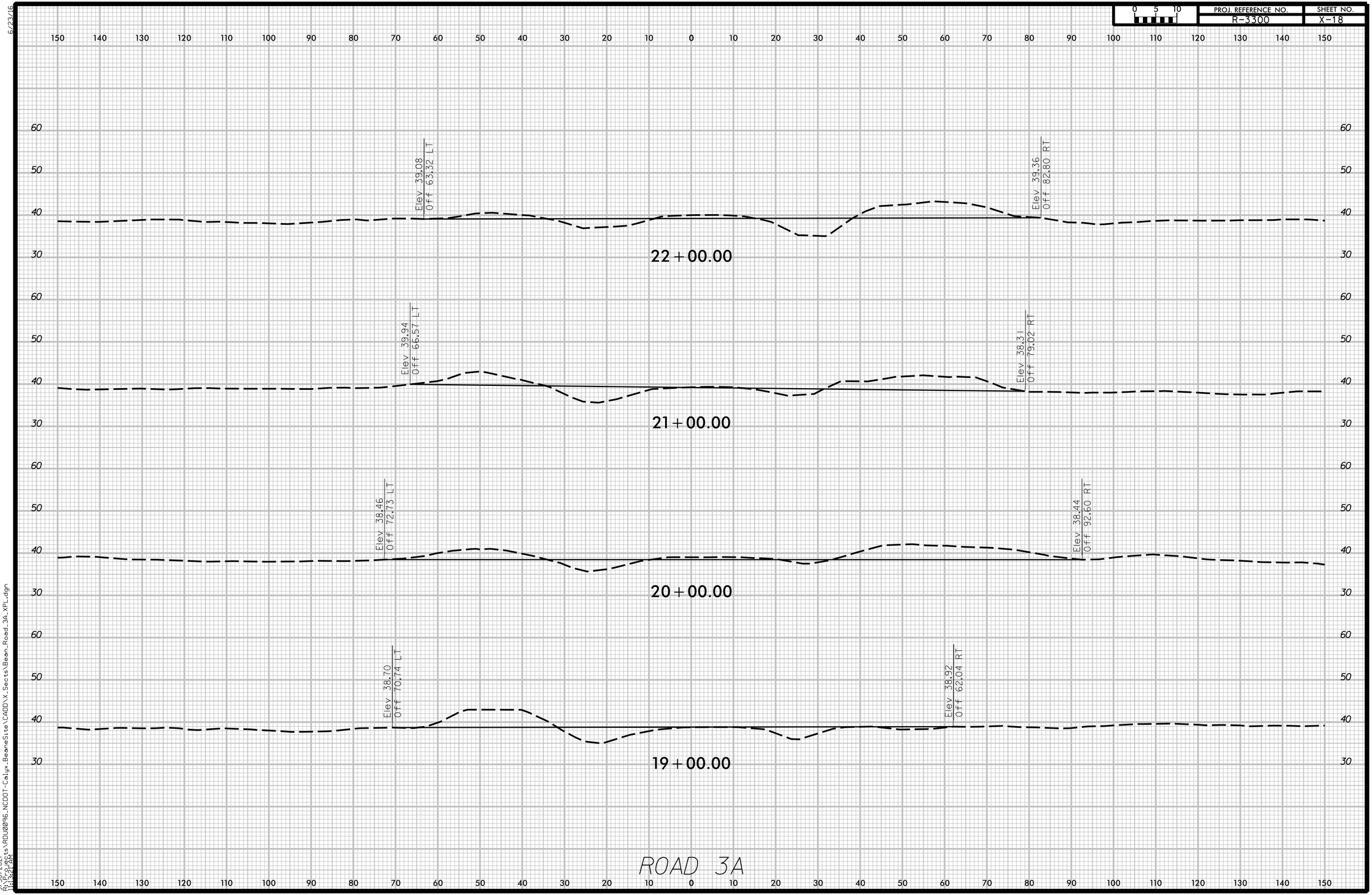

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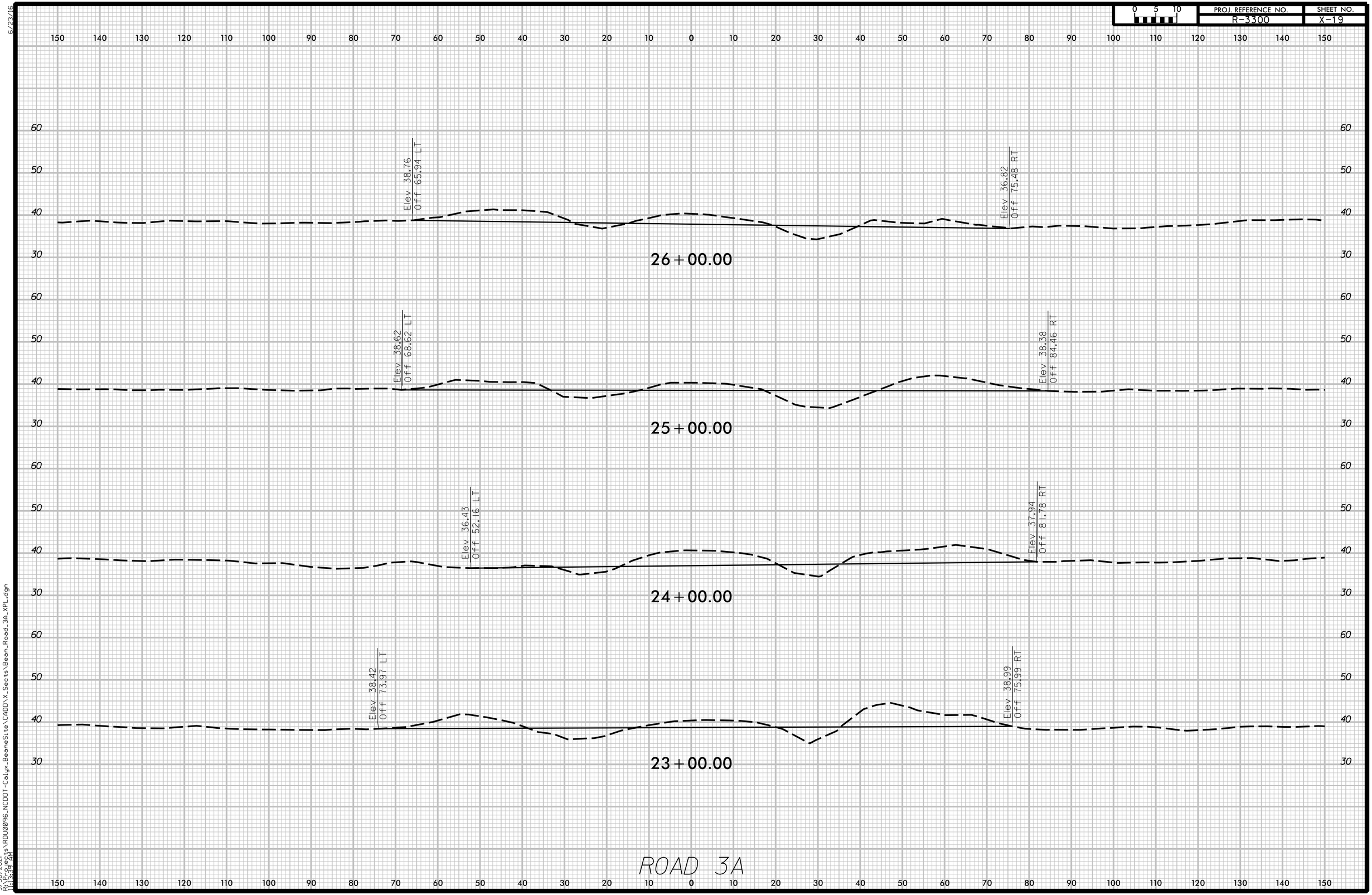

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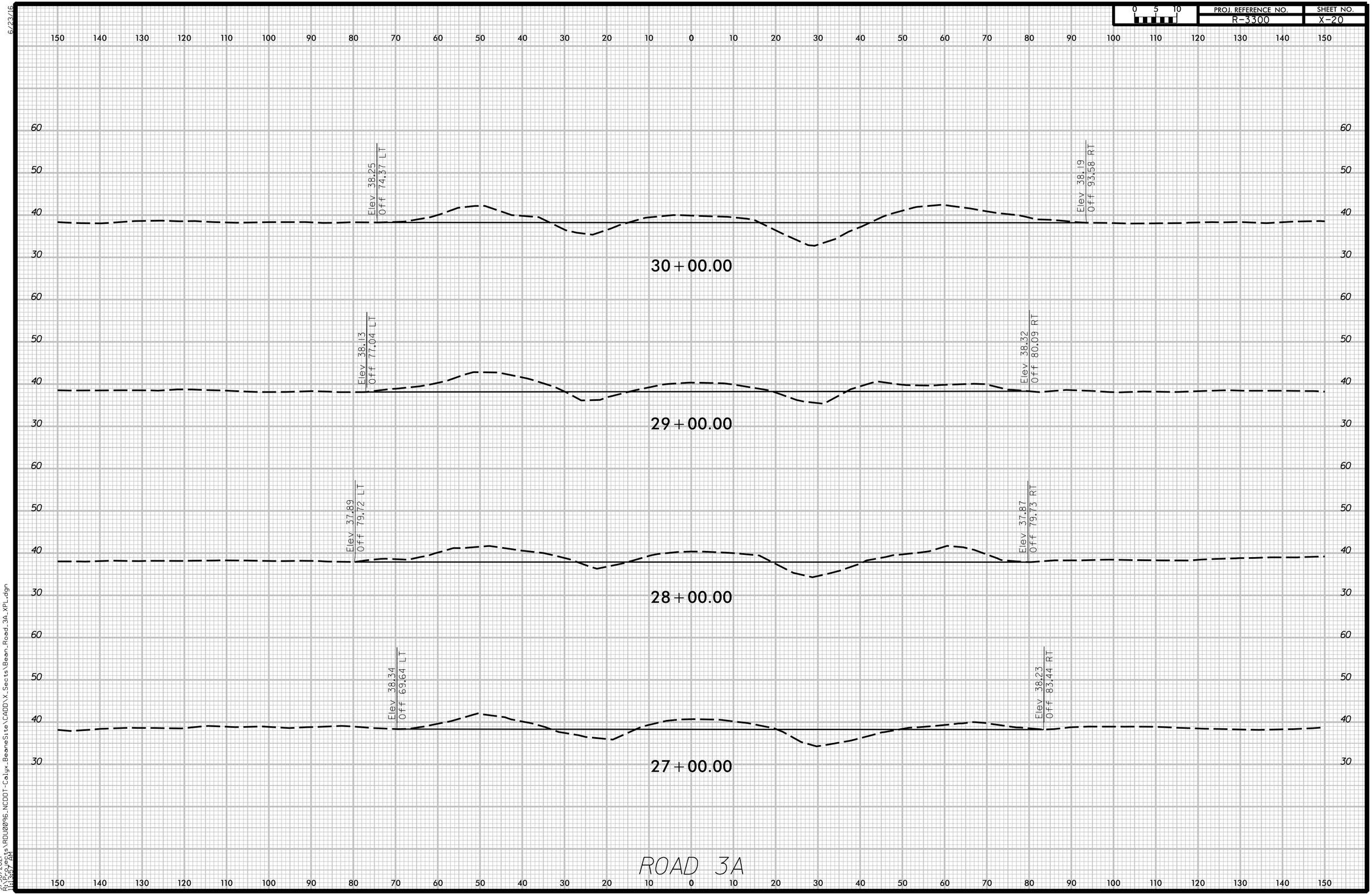

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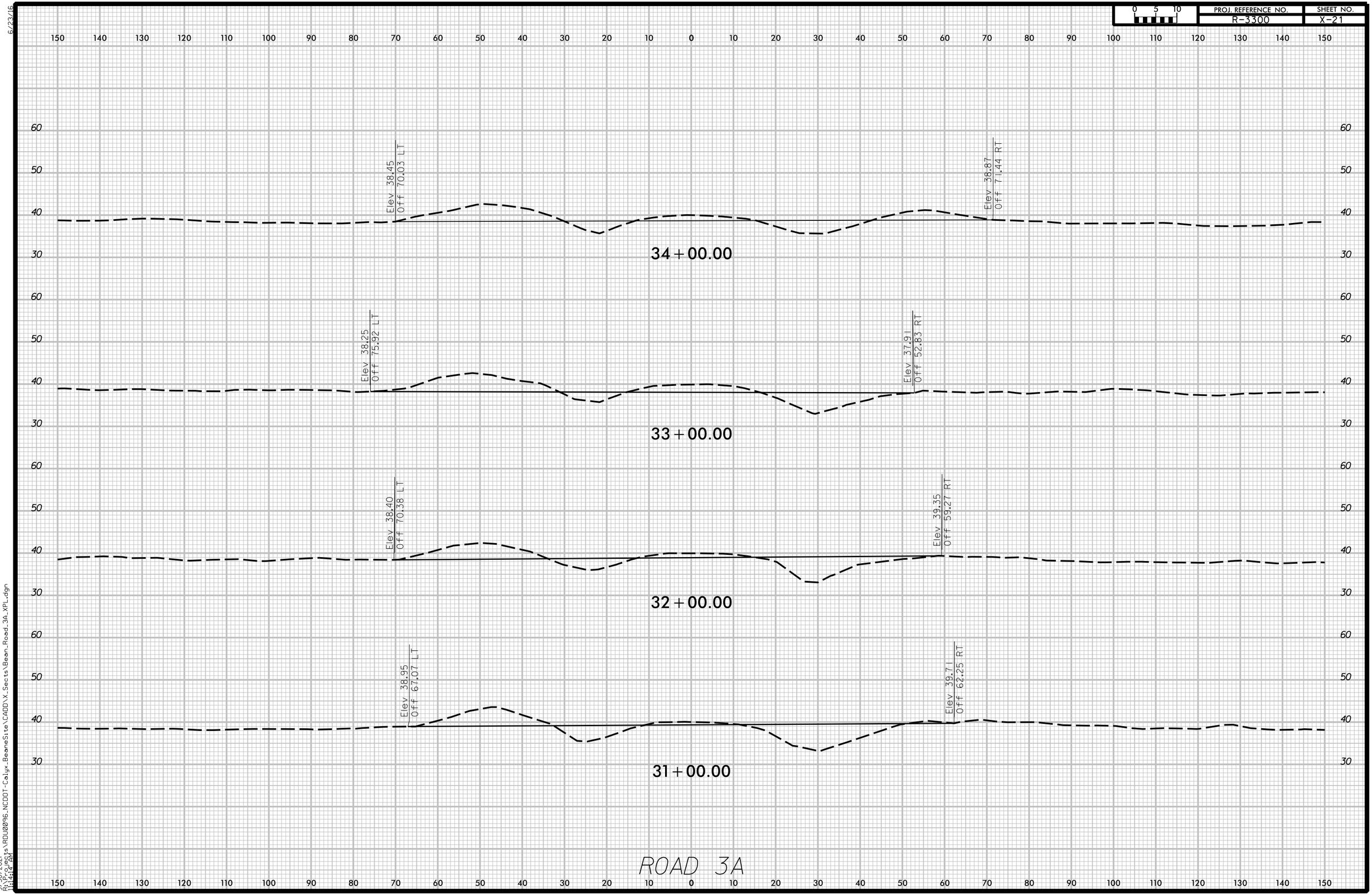

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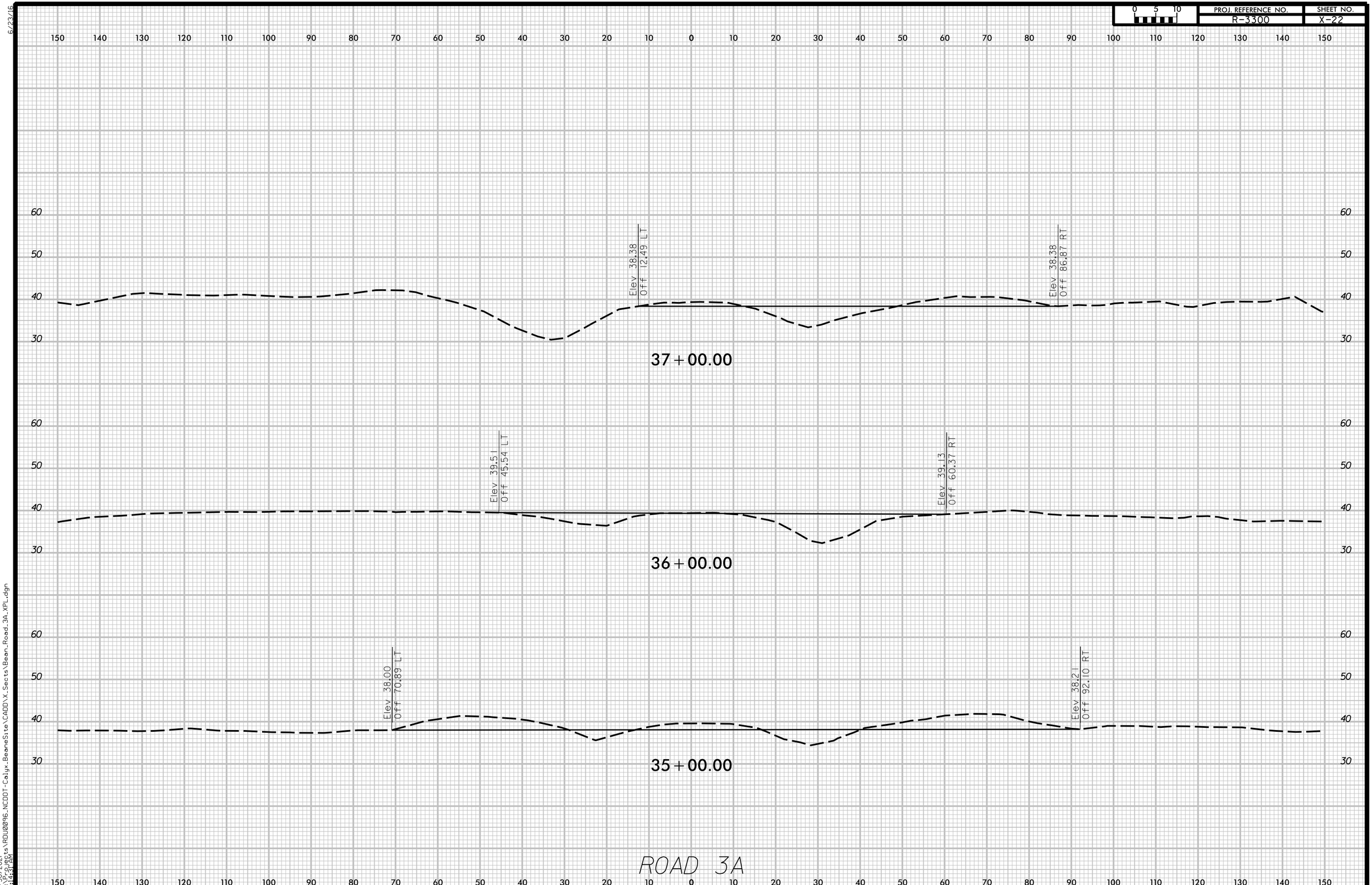

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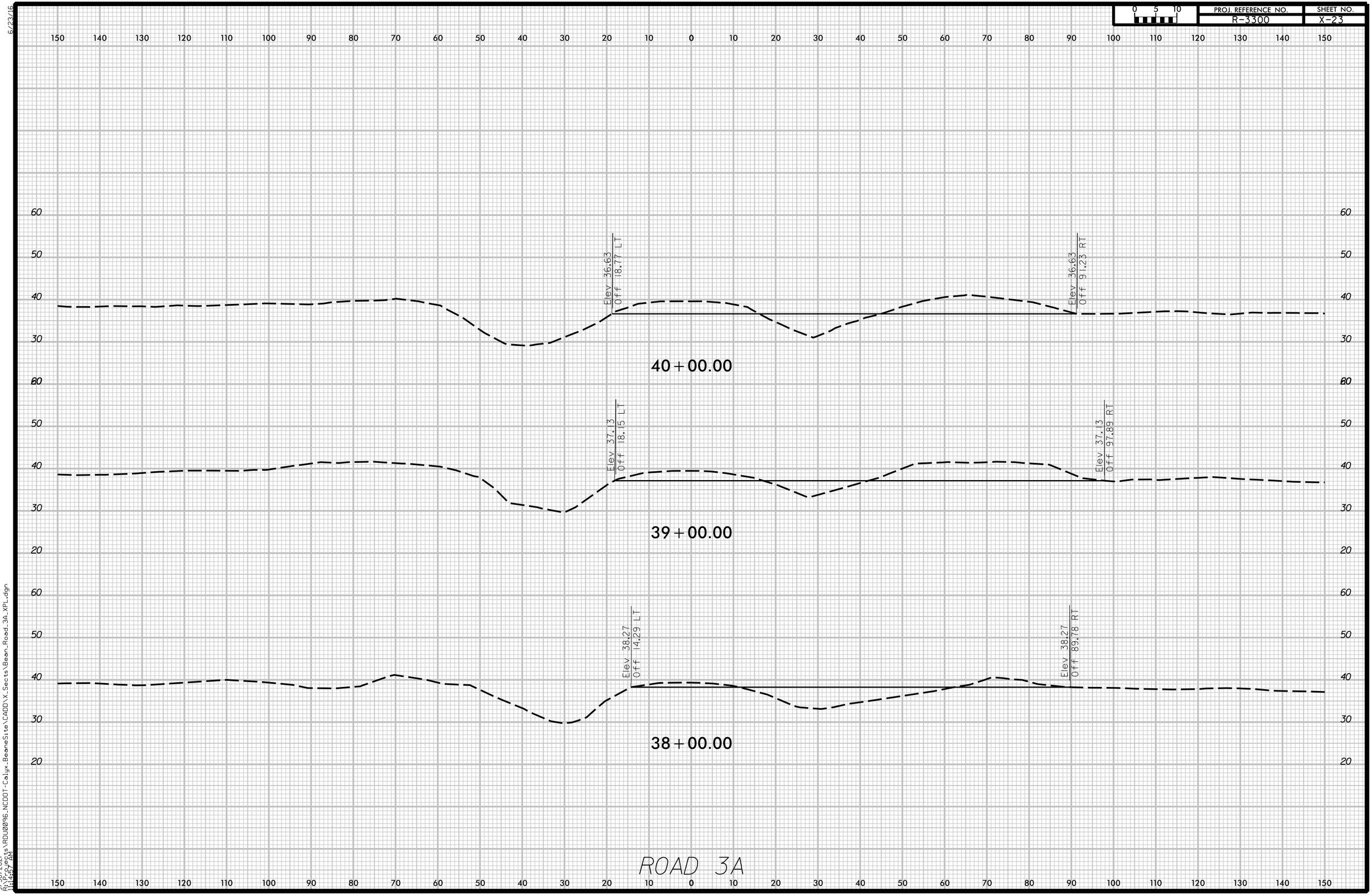

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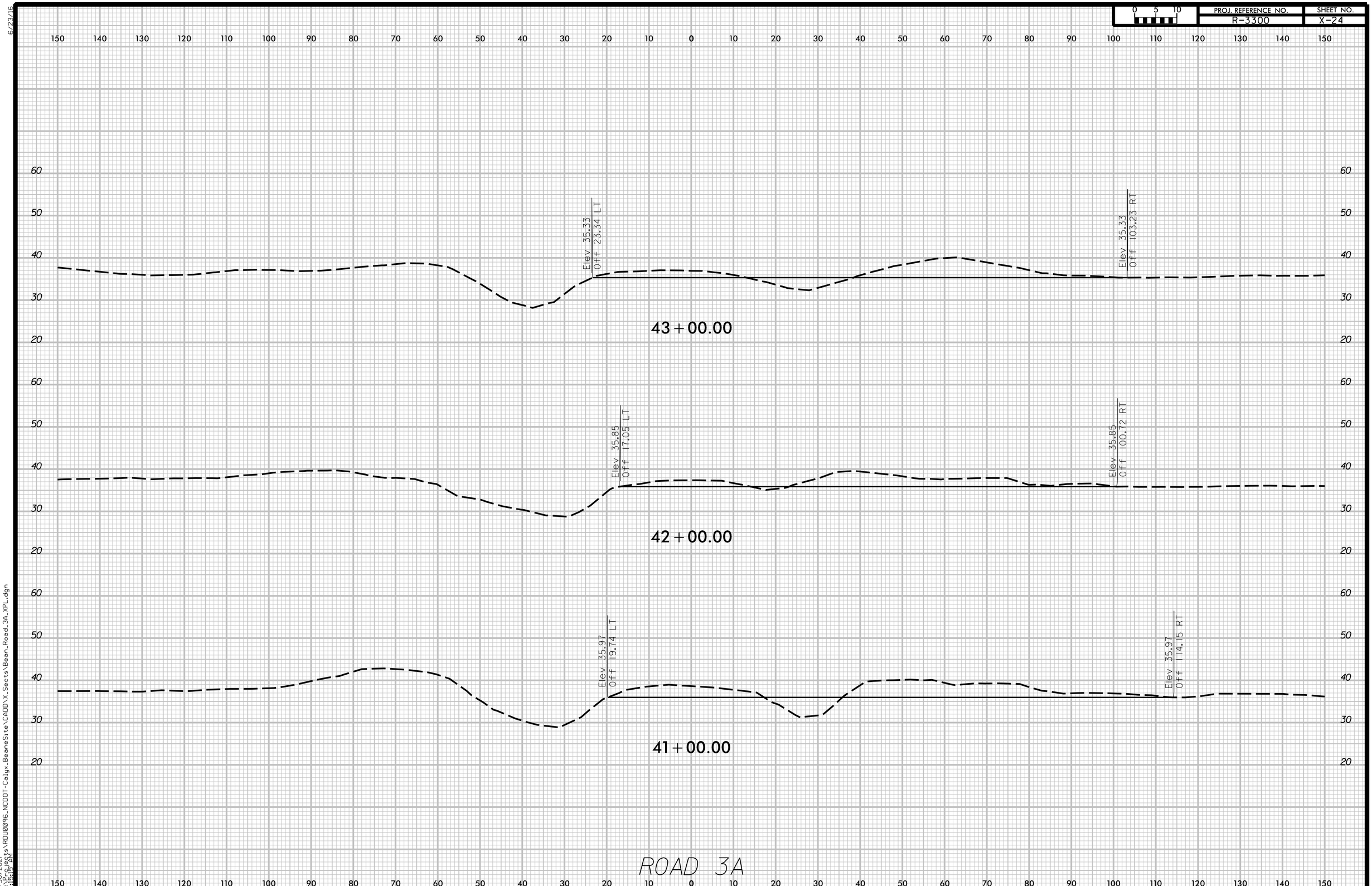

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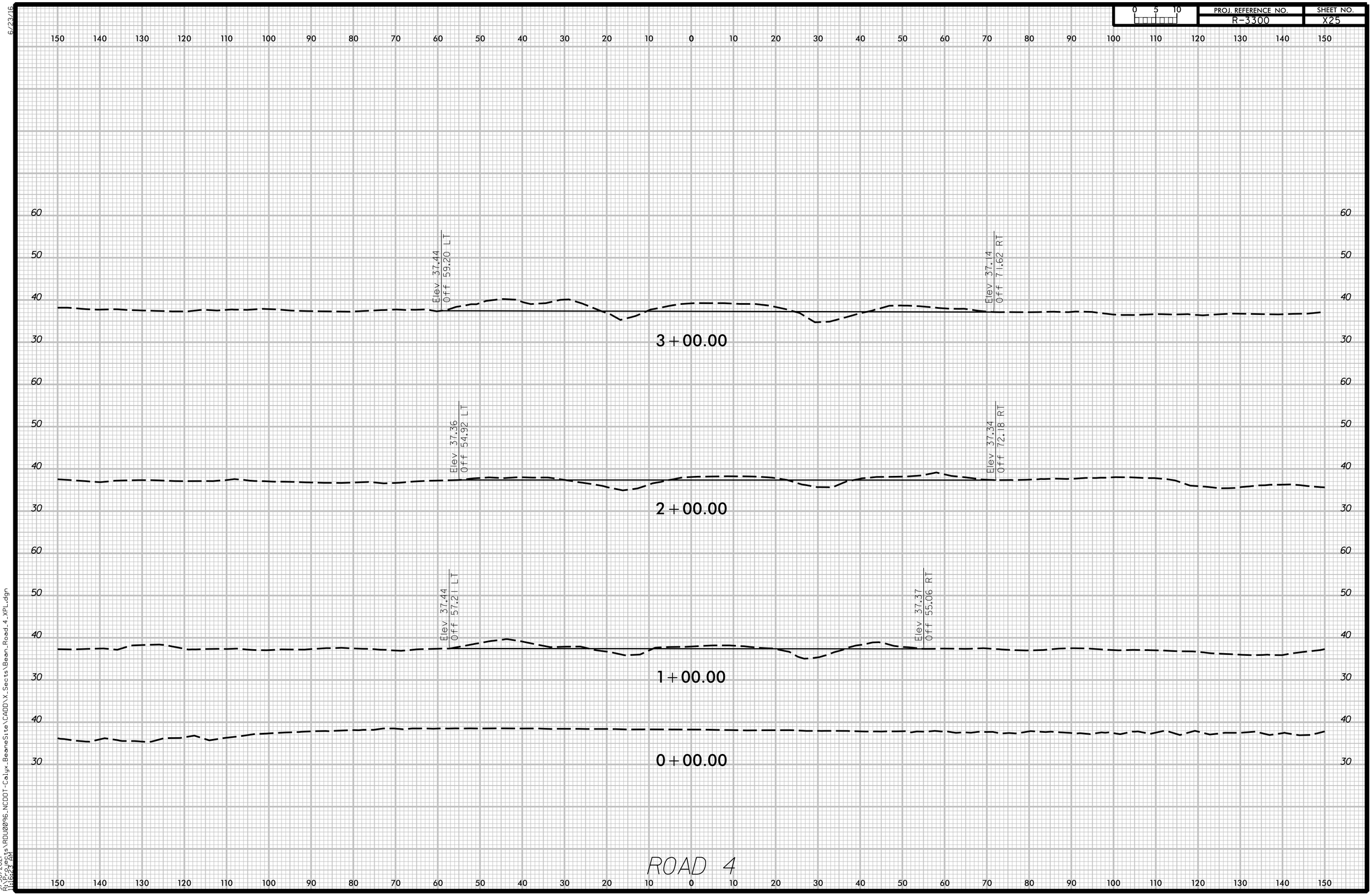

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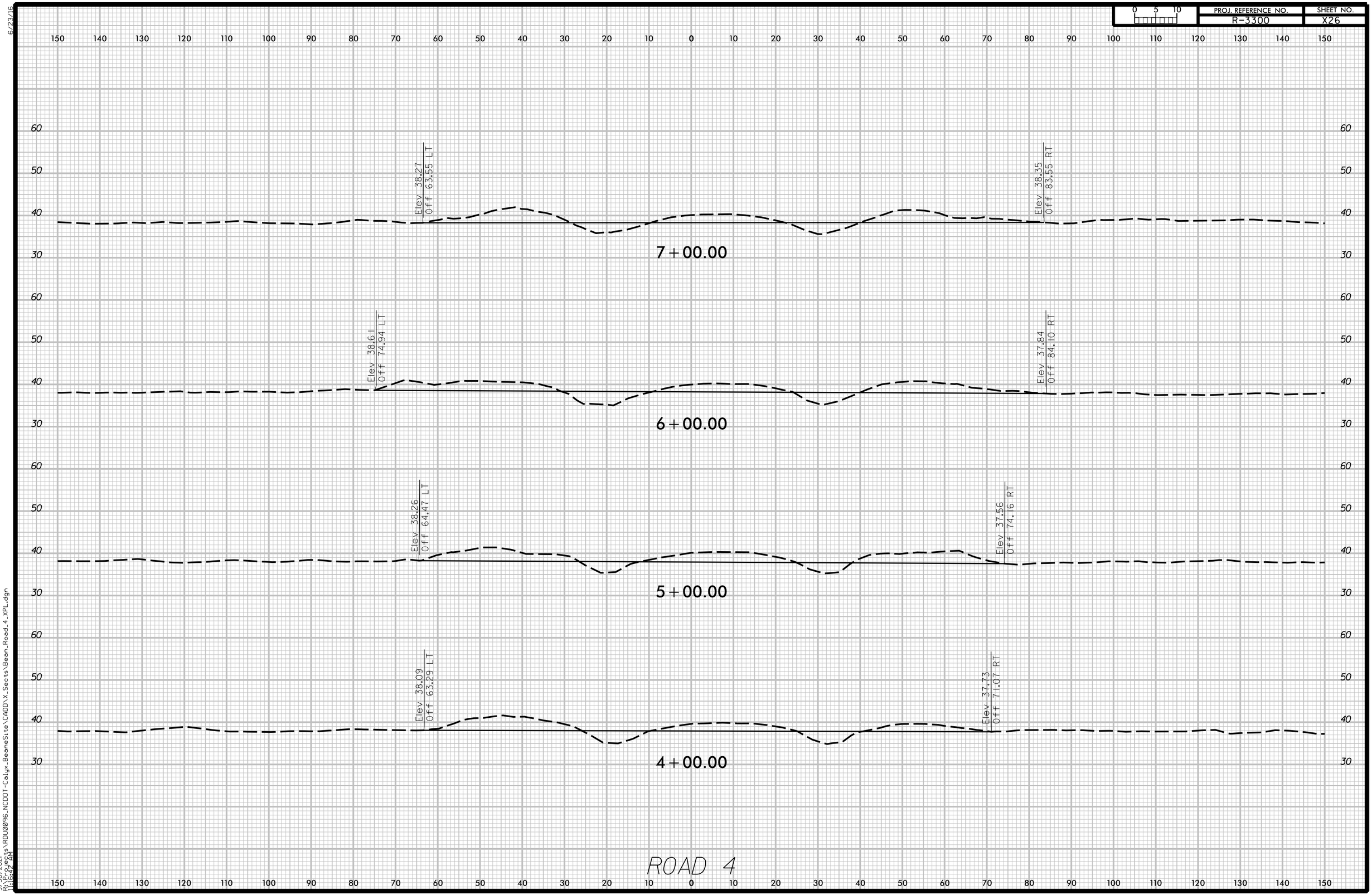

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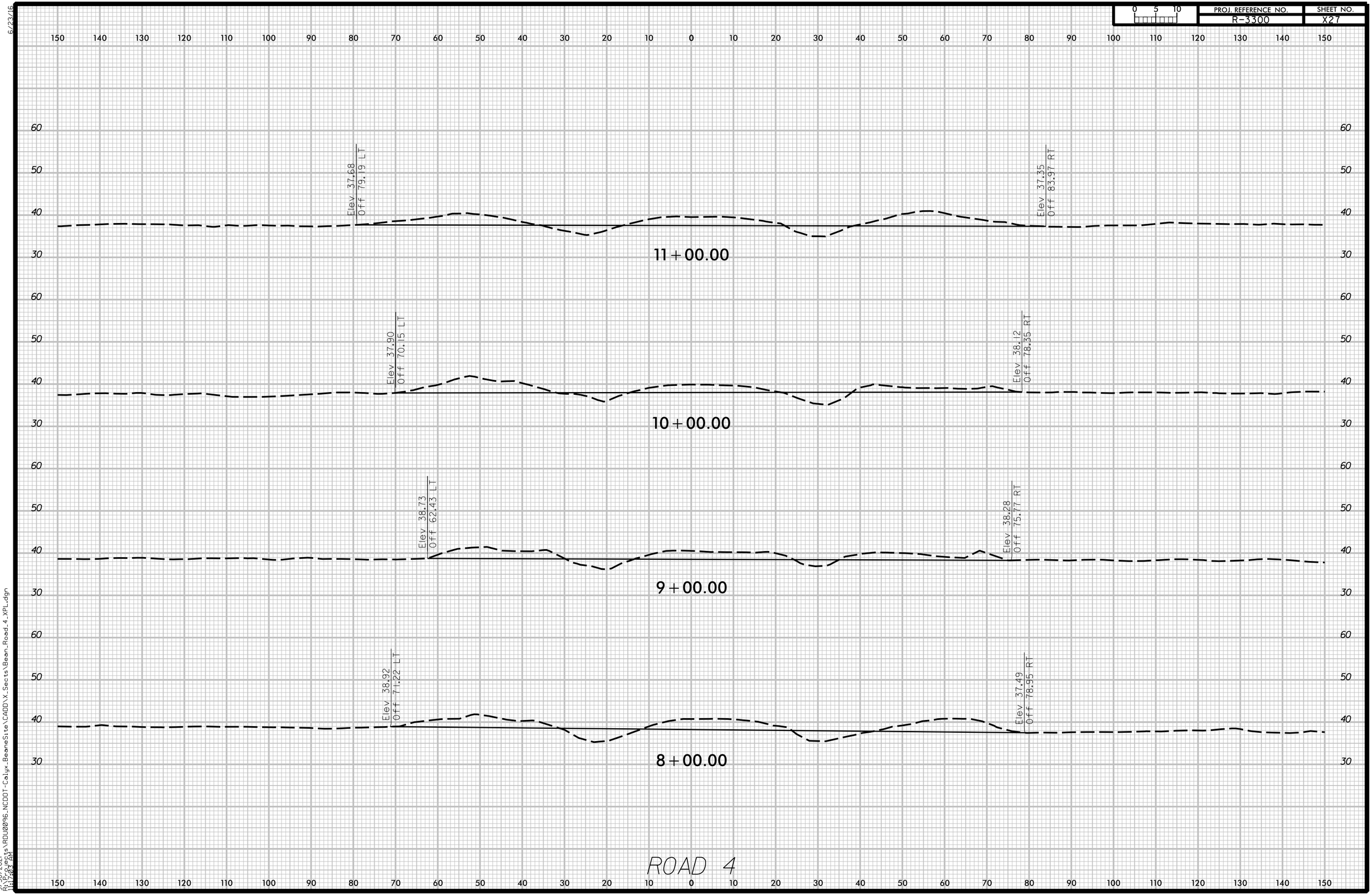

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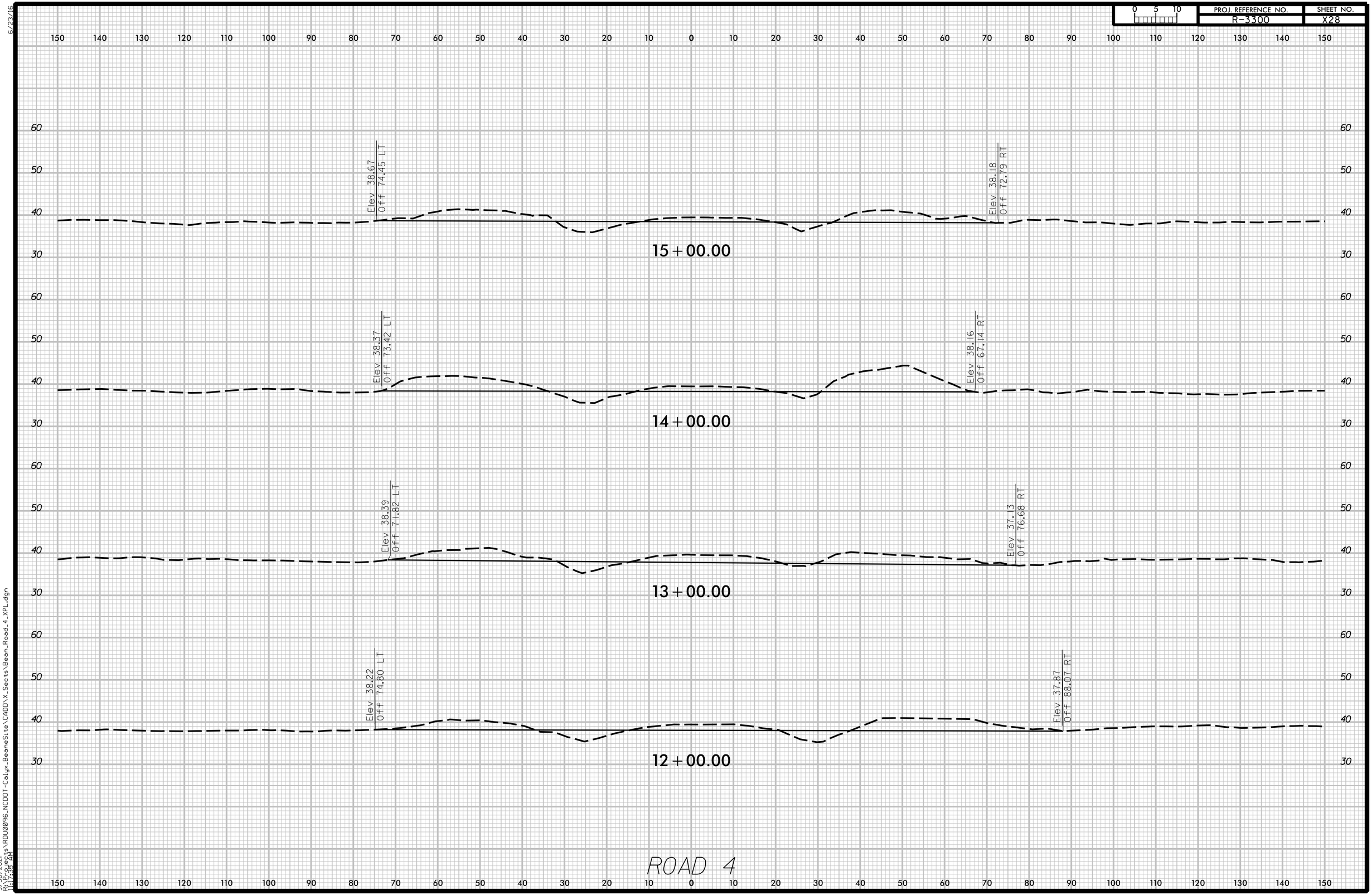

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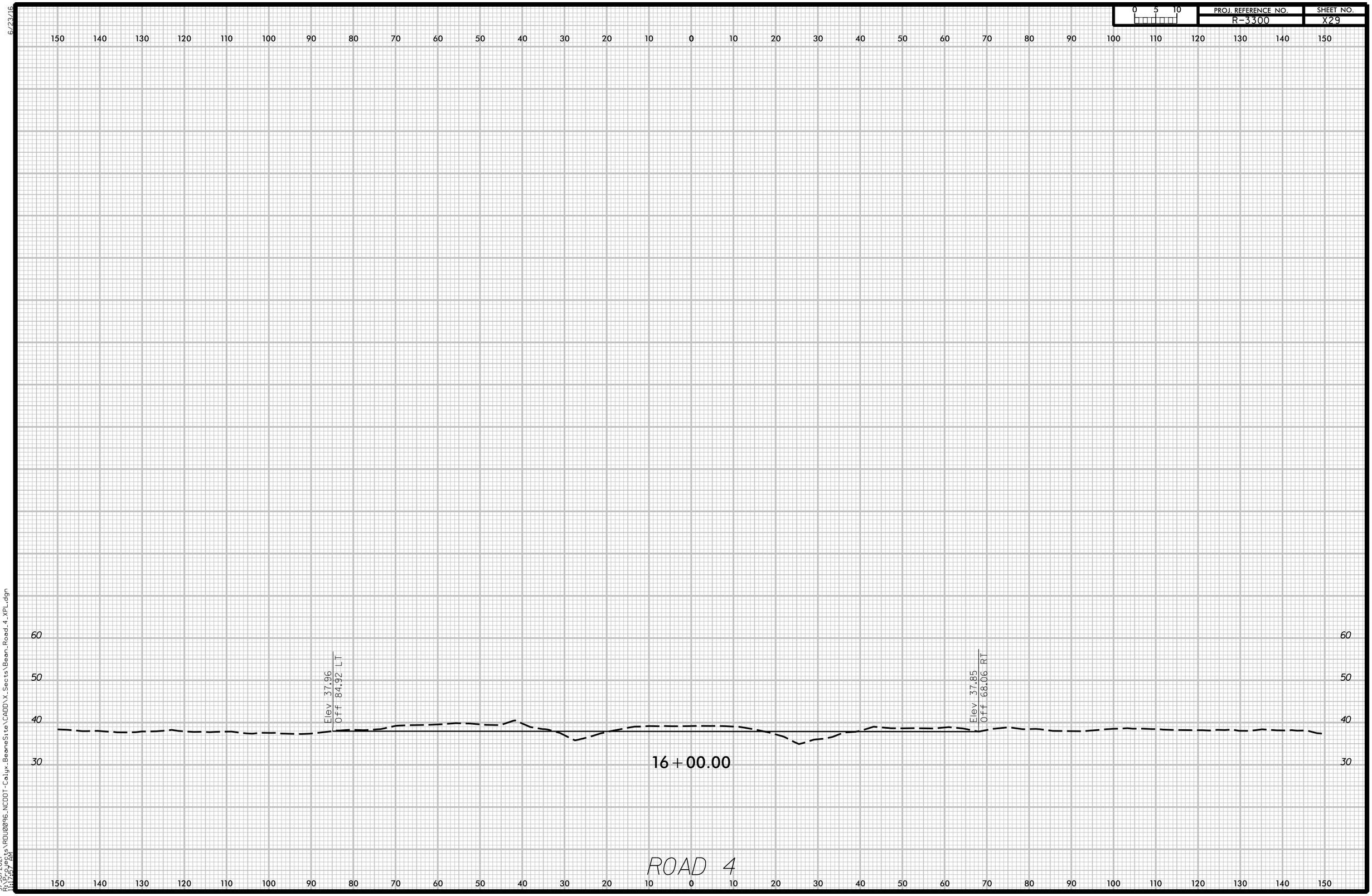

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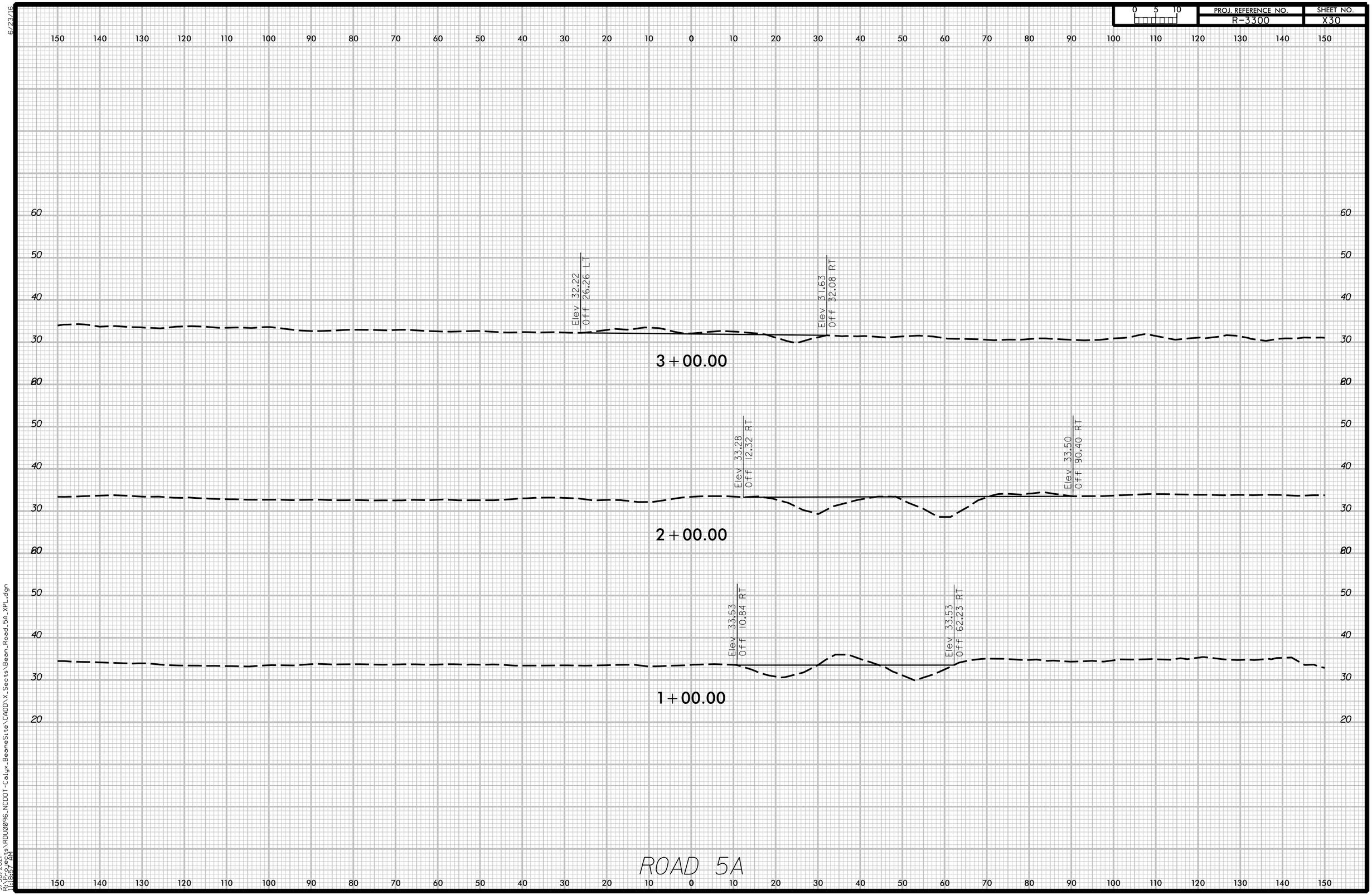

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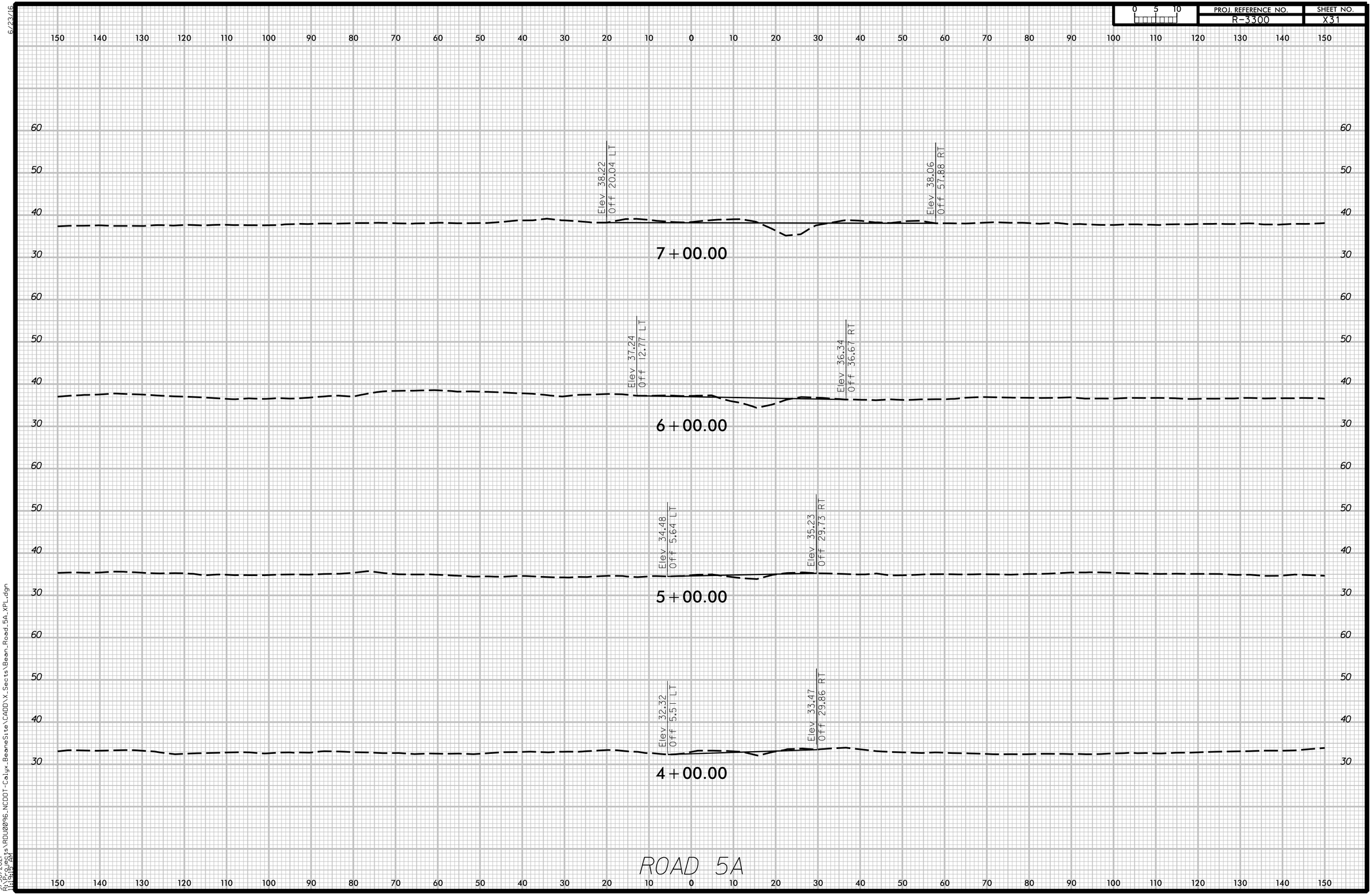

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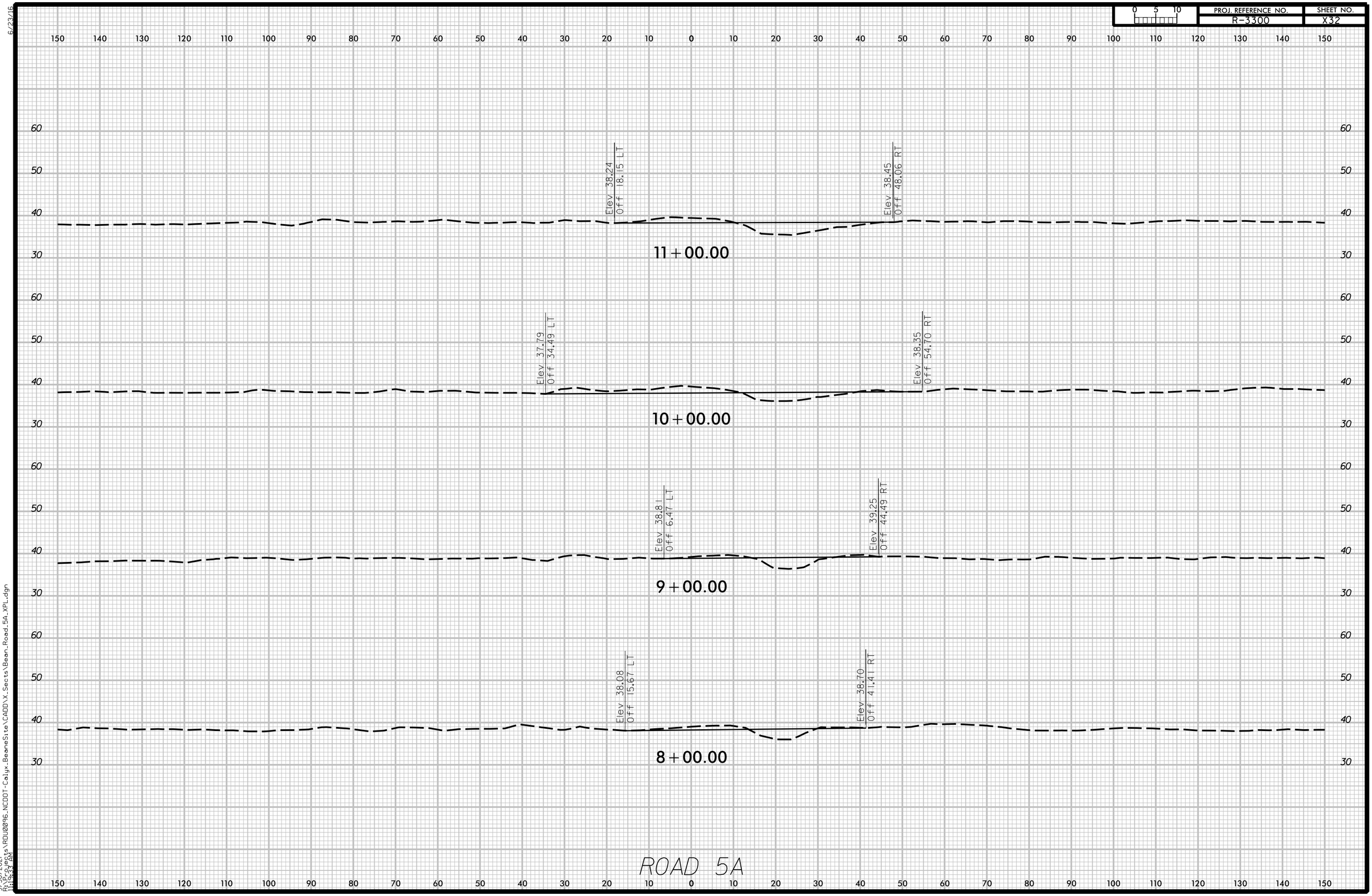

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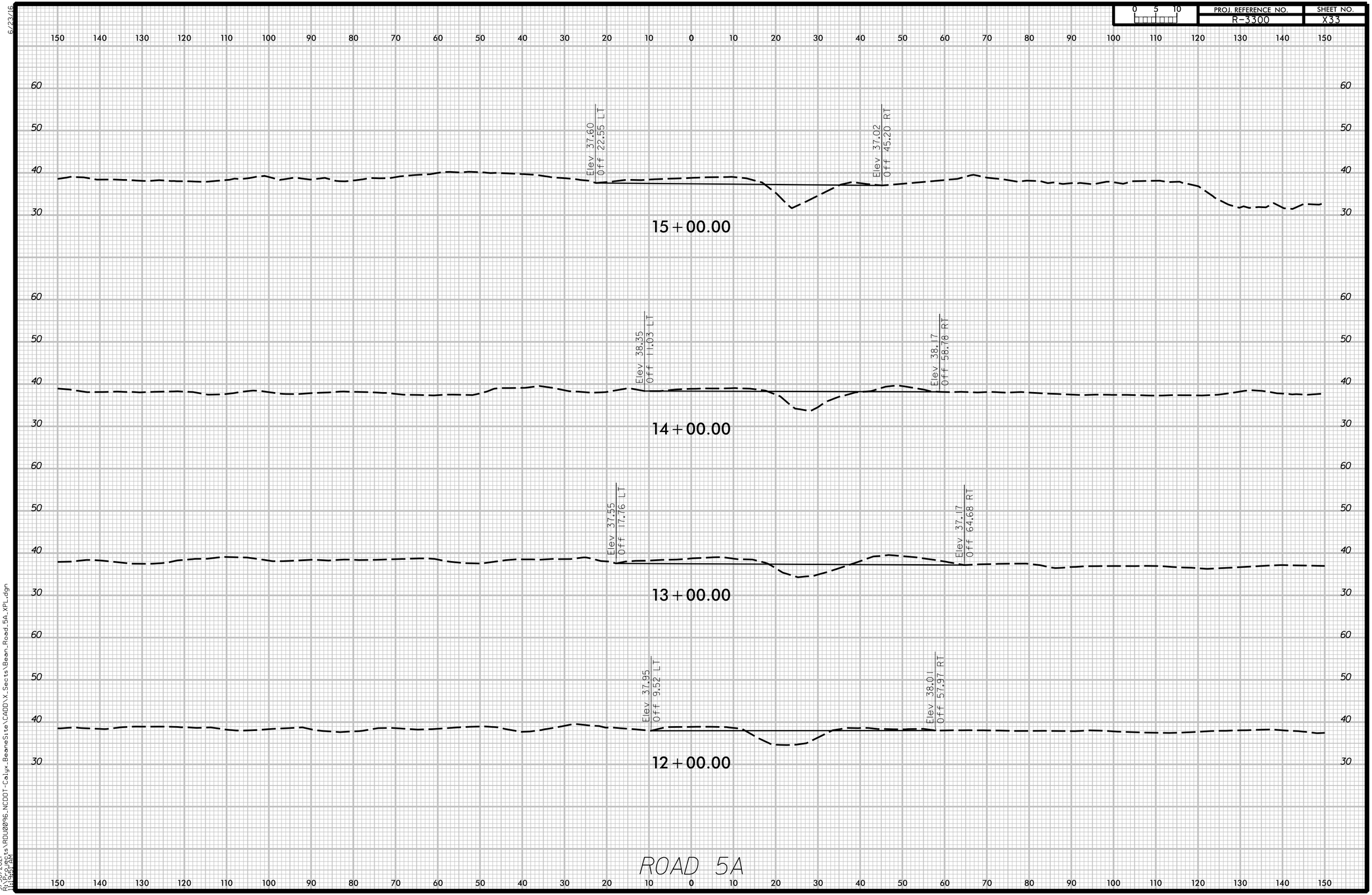

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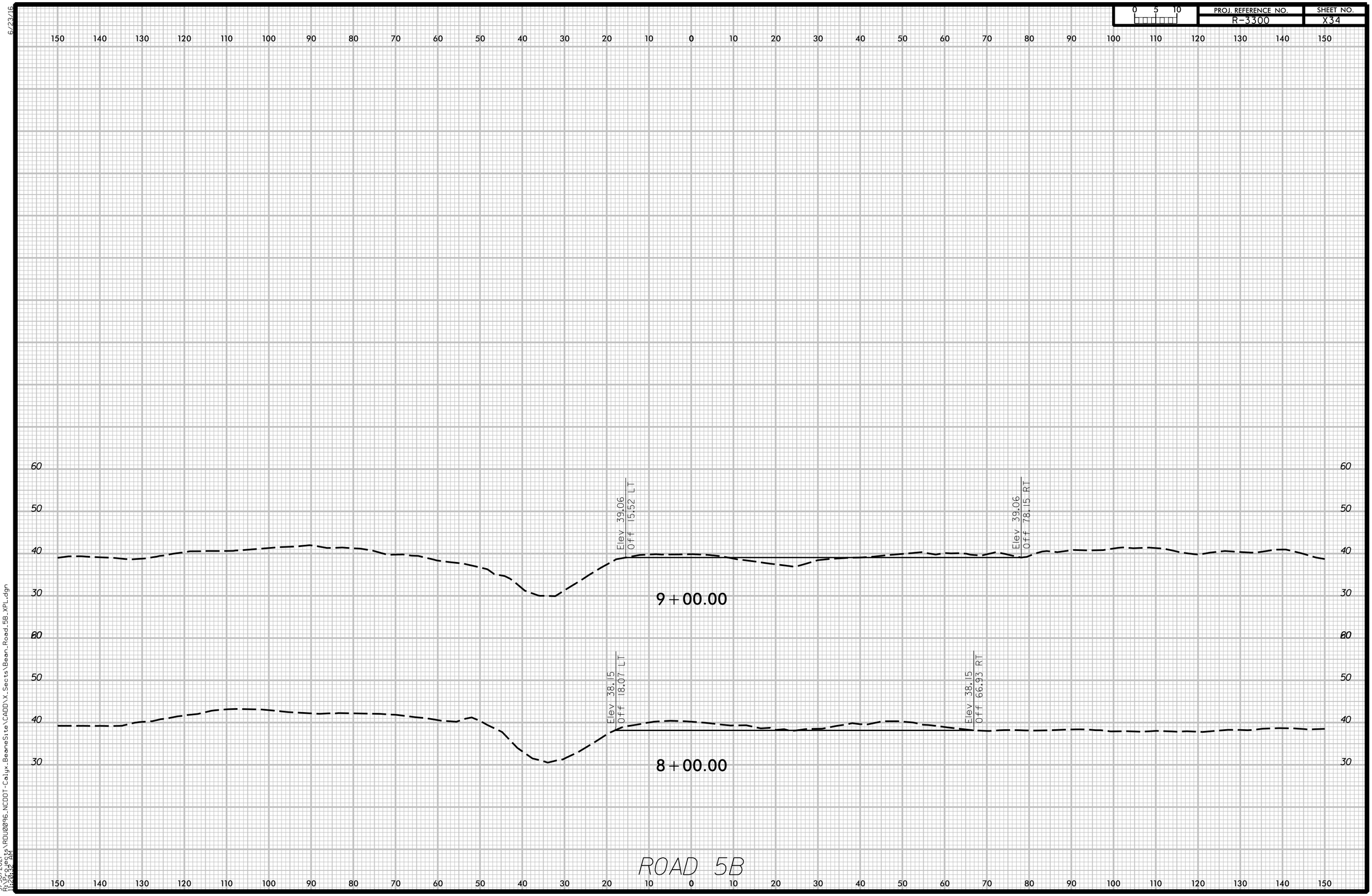

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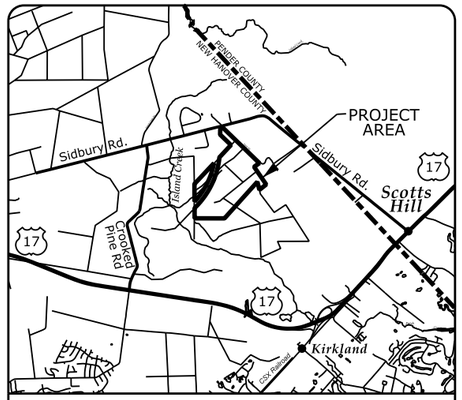
09/08/99

TIP PROJECT: R-3300

CONTRACT: DC00334

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEW HANOVER COUNTY

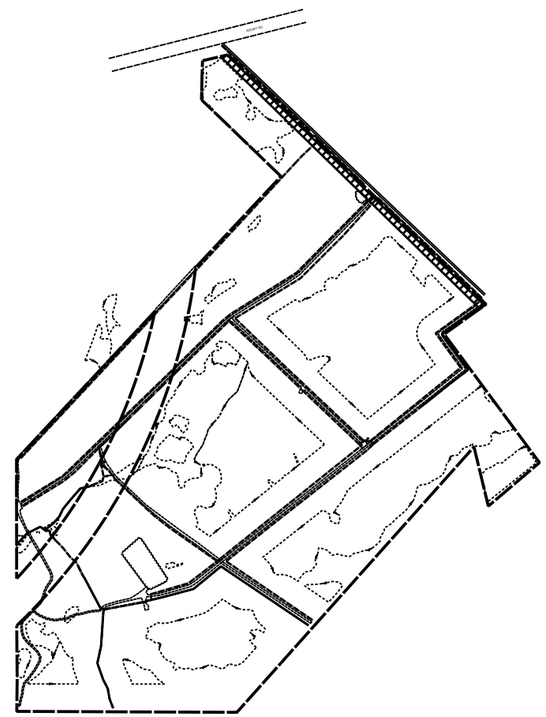
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300	OSM-1	5

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
WBS#40237.4.S1		MONITORING

LOCATION: EAST OF ISLAND CREEK AND SOUTH OF THE CAPE FEAR RIVER NEW HANOVER COUNTY, NC

TYPE OF WORK: MONITORING AS-BUILT DRAWINGS

NAD 83



NCDOT CONTACT: JASON ELLIOTT

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

PROJECT INFORMATION

TOTAL ACREAGE = 312.9 AC.
POTENTIALLY JURISDICTIONAL WETLANDS = 110.6 AC.

WETLAND RESTORATION = 79.1 AC.
WETLAND ENHANCEMENT = 78.5 AC.
WETLAND PRESERVATION = 31.5 AC.

Prepared in the Office of:

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD
SUITE 140
CARY, NC 27511
LICENSE # P-1182

2012 STANDARD SPECIFICATIONS

DANIEL WAUGH, PE
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

P.E.

SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

6/29/2023
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mkoon

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-1A

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE

INDEX OF SHEETS

SYMBOLS

- DITCH PLUG
- GAS EASEMENT
- WETLAND ENHANCEMENT
- WETLAND RESTORATION
- WETLAND PRESERVATION
- 5 — EXISTING MAJOR CONTOUR
- 1 — EXISTING MINOR CONTOUR
- LIMITS OF DISTURBANCE
- 30' BUFFER
- PROPERTY LINE
- PHOTO POINT
- RAIN GAUGE
- PERMANENT VEGETATION PLOT
- WETLAND GAUGES

**NOTE: ALL ITEMS ABOVE MAY NOT BE USED ON THIS PROJECT
SUPERCEDES SHEET 1-B

8/17/99

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND
EAST PROPERTY 4/2022 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/22 EMP

6/29/2023
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mkain

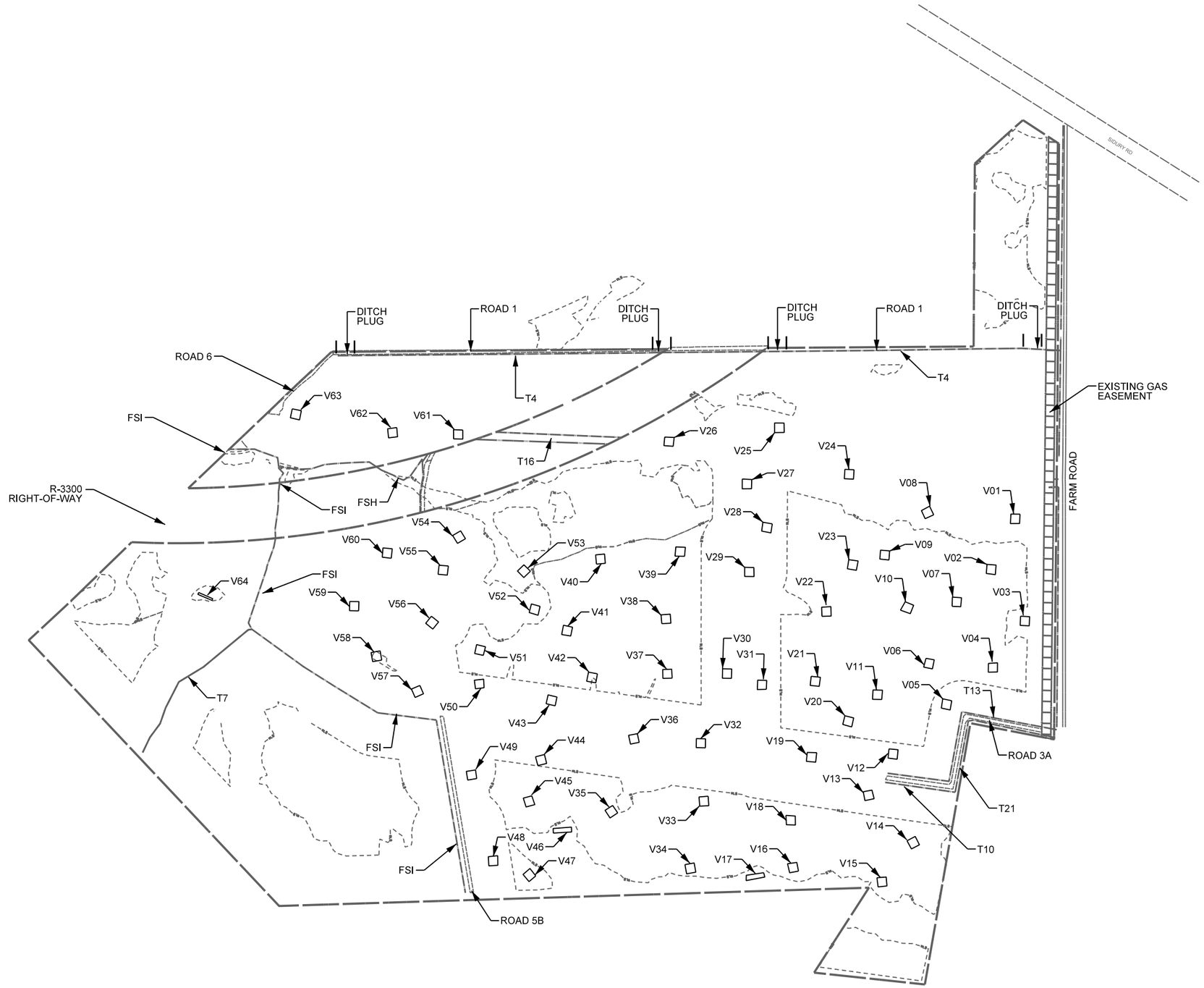
PERMANENT VEGETATION PLOTS

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-2

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



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PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/29/2023
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mkain

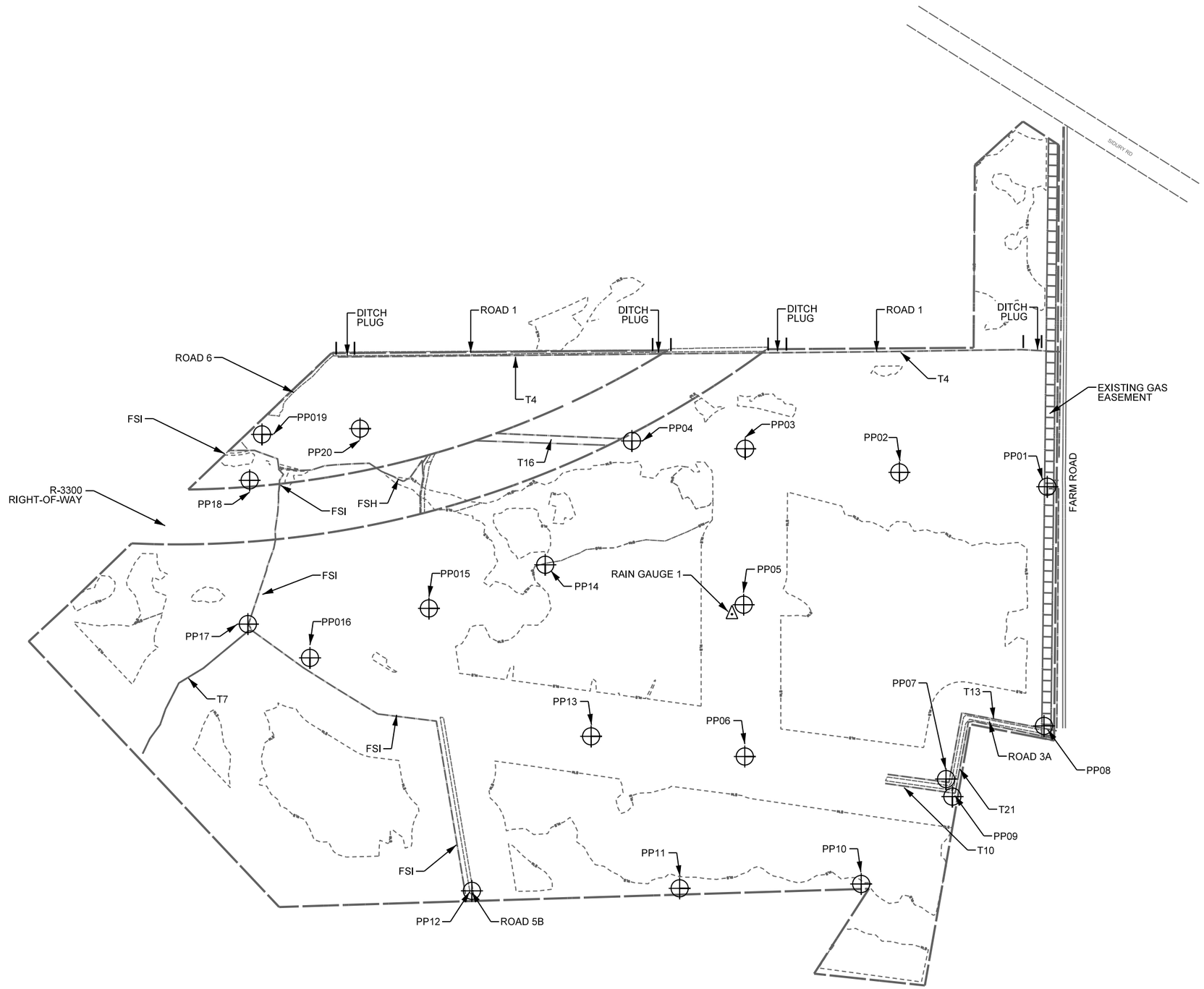
PHOTO POINTS AND RAIN GAUGE

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-3

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



GRAPHIC SCALE
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PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/29/2023
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mkoon

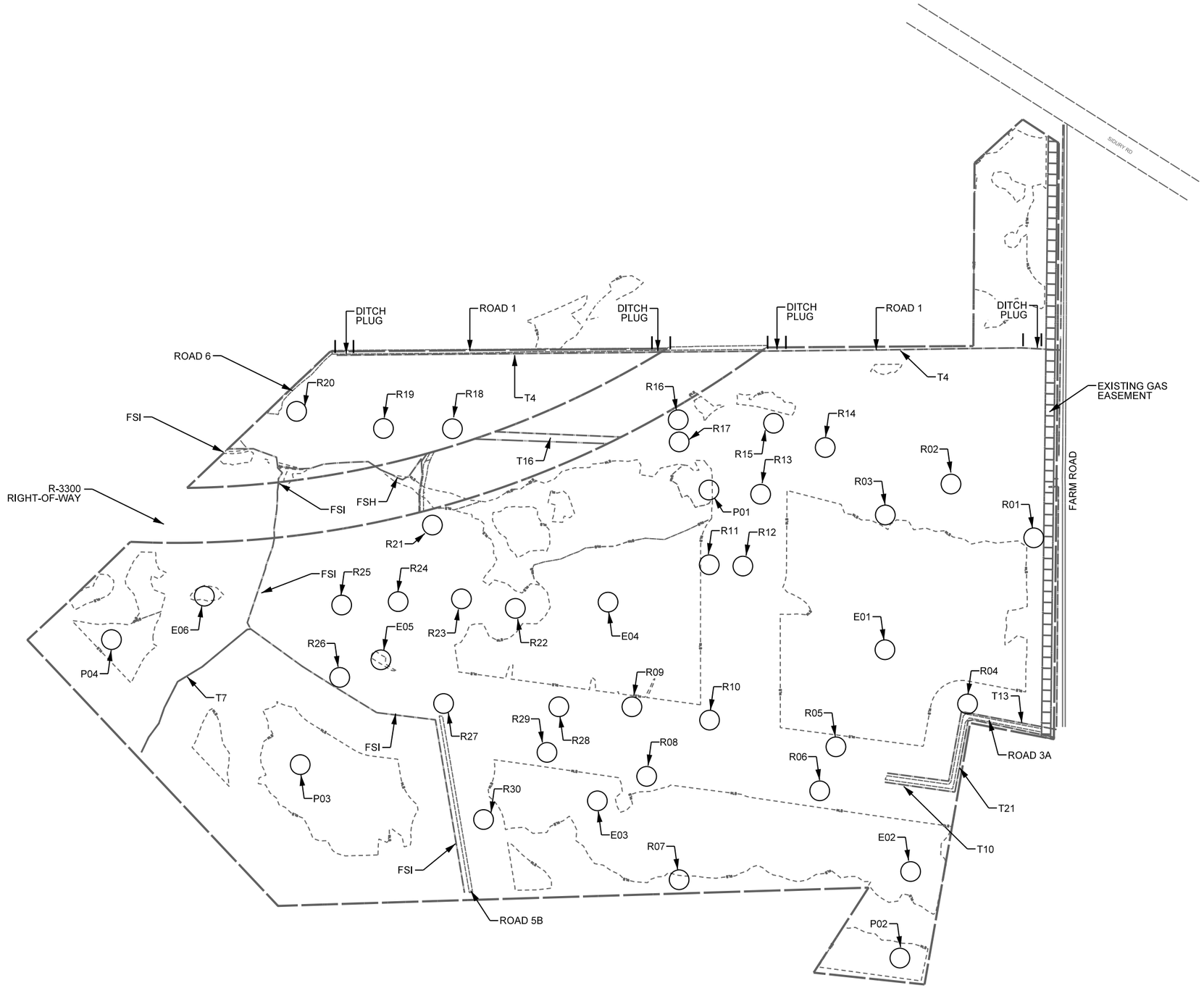
WETLAND GAUGES

PROJECT REFERENCE NO.	SHEET NO.
R-3300	OSM-4

PROJECT ENGINEER

ECOSYSTEM PLANNING & RESTORATION
1150 SE MAYNARD RD.
SUITE 140
CARY, NC 27511
LICENSE # P-1182

NORTH CAROLINA PROFESSIONAL SEAL 036254 ENGINEER EMMETT PERDUE



GRAPHIC SCALE
300 150 0 300 600
PLANS

REVISIONS

REVISION 2 - ADDED STOCKPILE /ADDED JS FEATURES TO ROAD CORRIDOR AND EAST PROPERTY 4/26/22 EMP
REVISION 3 - UPDATED ROW AND TRACT BOUNDARY 6/7/22 EMP

8/17/99

6/29/2023
R:\Projects\RDU0096_NCDOT-Calyx_BeaneSite\CADD\Plans\As-built\03_BEAN_PSH_WETLAND_GAUGES.DGN
mkagn

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300WM	RF-1	
STATE FED.RD.NO.	F.A.FED.RD.NO.	DESCRIPTION	

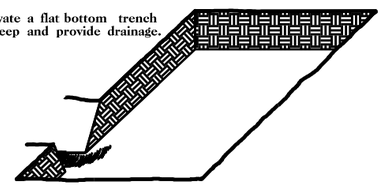
PLANTING DETAILS

SEEDLING / LINER BAREROOT PLANTING DETAIL

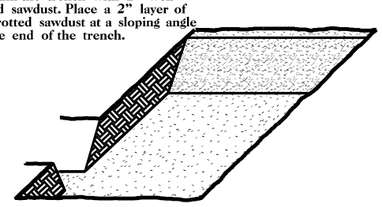
HEALING IN

1. Locate a healing-in site in a shady, well protected area.

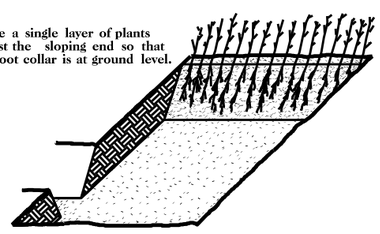
2. Excavate a flat bottom trench 12" deep and provide drainage.



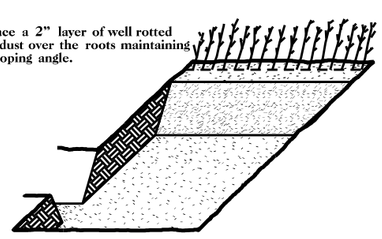
3. Backfill the trench with 2" well rotted sawdust. Place a 2" layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

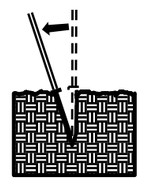


5. Place a 2" layer of well rotted sawdust over the roots maintaining a sloping angle.



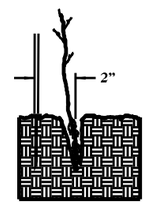
6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.

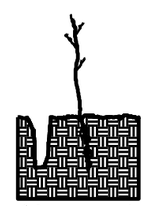
2. Remove planting bar and place seedling at correct depth.



3. Insert planting bar 2" toward planter from seedling.

4. Pull handle of bar toward planter, firming soil at bottom.

5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12" long, 4" wide and 1" thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches (10") below the root collar.

WETLAND TREE REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

ZONE 1 – NON-RIVERINE WET HARDWOOD FOREST OAK FLAT SUBTYPE
NON-RIVERINE SWAMP FOREST (CYPRESS-GUM SUBTYPE)

1.6%	MAGNOLIA VIRGINIANA	SWEET BAY	12 – 18" SEEDLING
14.2%	NYSSA AQUATICA	WATER TUPELO	12 – 18" SEEDLING
14.0%	QUERCUS LYRATA	OVERCUP OAK	12 – 18" SEEDLING
19.6%	QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	12 – 18" SEEDLING
8.1%	QUERCUS NIGRA	WATER OAK	12 – 18" SEEDLING
16.9%	QUERCUS PHELLOS	WILLOW OAK	12 – 18" SEEDLING
21.7%	TAXODIUM DISTICHUM	BALD CYPRESS	12 – 18" SEEDLING
3.9%	NYSSA BIFLORA	SWAMP BLACKGUM	12 – 18" SEEDLING

ZONE 2 – COASTAL PLAIN DEPRESSION SWAMP (MIXED SUBTYPE)

13.6%	CHAMAECYPARIS THYOIDES	ATLANTIC WHITE CEDAR	12 – 18" SEEDLING
14.1%	NYSSA AQUATICA	WATER TUPELO	12 – 18" SEEDLING
7.1%	TAXODIUM ASCENDENS	POND CYPRESS	12 – 18" SEEDLING
48.8%	TAXODIUM DISTICHUM	BALD CYPRESS	12 – 18" SEEDLING
16.3%	NYSSA BIFLORA	SWAMP BLACKGUM	12 – 18" SEEDLING

ZONE 3 – BLACKWATER BOTTOMLAND HARDWOODS

14.3%	CYRILLA RACEMIFLORA	TITI	12 – 18" SEEDLING
14.2%	MAGNOLIA VIRGINIANA	SWEET BAY	12 – 18" SEEDLING
14.3%	NYSSA AQUATICA	WATER TUPELO	12 – 18" SEEDLING
14.3%	QUERCUS LYRATA	OVERCUP OAK	12 – 18" SEEDLING
14.3%	QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	12 – 18" SEEDLING
14.3%	QUERCUS PHELLOS	WILLOW OAK	12 – 18" SEEDLING
14.3%	TAXODIUM DISTICHUM	BALD CYPRESS	12 – 18" SEEDLING

ZONE 4 – PLANTINGS ALONG ROADS (UPLAND AREAS)

15.0%	CYRILLA RACEMIFLORA	TITI	12 – 18" SEEDLING
20.0%	MAGNOLIA VIRGINIANA	SWEET BAY	12 – 18" SEEDLING
50.0%	QUERCUS NIGRA	WATER OAK	12 – 18" SEEDLING
15.0%	QUERCUS PHELLOS	WILLOW OAK	12 – 18" SEEDLING

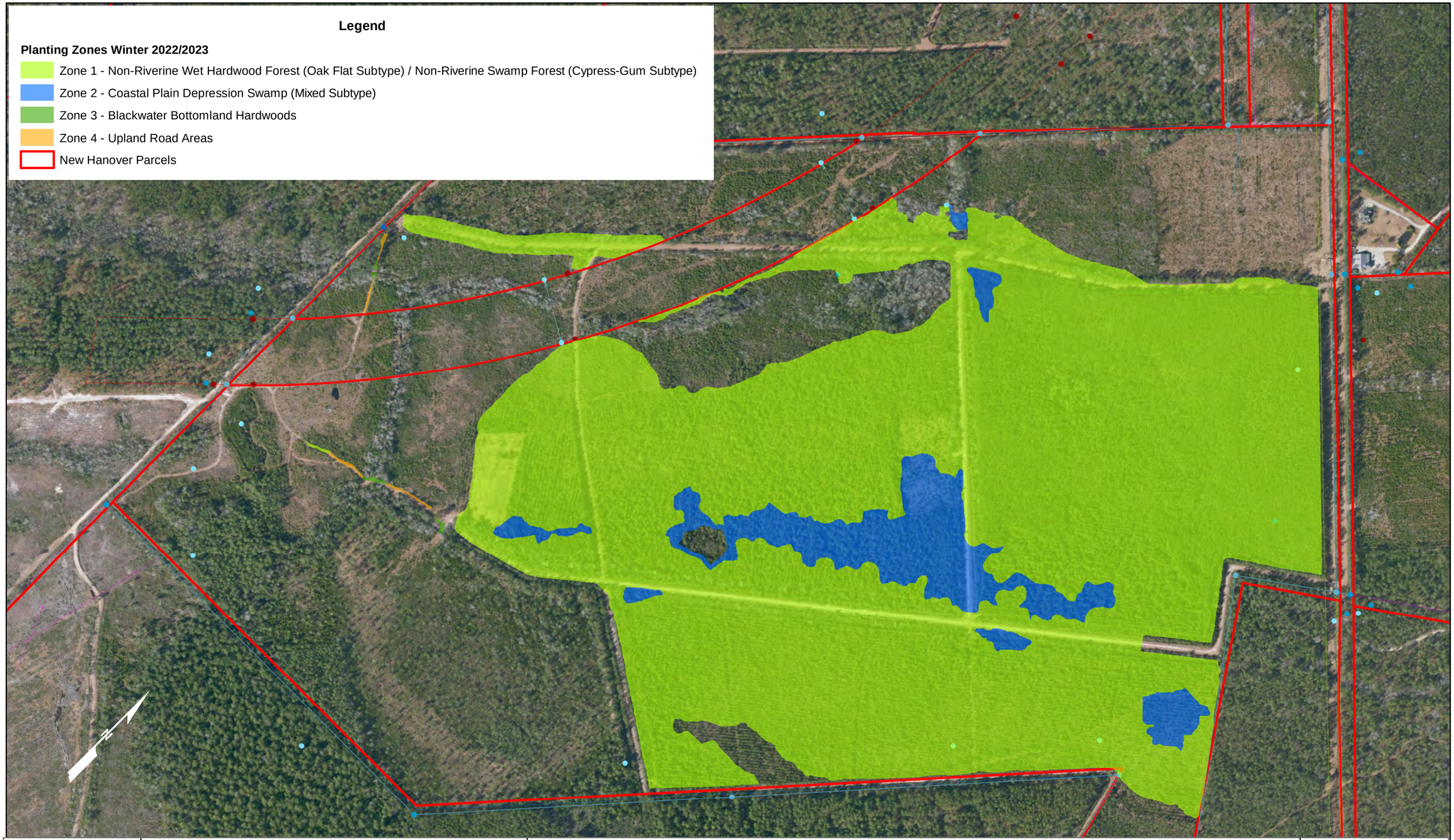
SEE PLAN SHEETS FOR AREAS TO BE PLANTED

TREE REFORESTATION SHALL BE PLANTED 6' TO 10' ON CENTER, RANDOM SPACING, AVERAGING 8' ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

WETLAND REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$IISFRNAMF$$$$



1 inch = 400 feet

0 200 400 800 1,200 Feet

Beane Wetland Mitigation Site

Target Plant Communities (11/9/22)

New Hanover County, NC

Figure 1

1 inch = 150 feet

0 75 150 300 450 Feet

Beane Wetland Mitigation Site

Target Plant Communities (11/9/22)

New Hanover County, NC

Figure 1A