GRADING
LETTING DATE 12/20/2016
NHS-080-3(199)128--11-77
POLK Co.

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	**Typical Cross Sections and Details**
B.1 - 8	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	Pollution Prevention Plan
C.1	General Notes
C.1	Tabulations (beg. with tab. of incidentals if needed)
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 4	I-35/80 Mainline
G Sheets	**Survey Sheets**
G.1	Survey Information and Vertical Control
G.2	Reference Ties and Bench Marks
G.3	Alignment Coordinates Table
G.4	Superelevation Table
H Sheets	**Right-of-Way Sheets**
H.1 - 3	I-35/80 Mainline
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan & Staging Notes
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3 - 4	Traffic Control Typical Sections
* J.5 - 9	Staging and Traffic Control Sheets
K Sheets	**Interchange Sheets**
* K.1 - 2	Interchange Layout Sheets
* K.3	100th St RAMP A Plan and Profile Sheets
* K.4	100th St RAMP B Plan and Profile Sheets
* K.5	100th St RAMP C Plan and Profile Sheets
* K.6	100th St RAMP D Plan and Profile Sheets
V Sheets	**Bridge and Culvert Situation Plans**
* V.1 - 3	Bridge and Culvert Situation Plans
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 54	Mainline Cross Sections
Y Sheets	**Ramp Cross Sections**
Y.1 - 20	Ramp A Cross Sections
Y.21 - 37	Ramp B Cross Sections
Y.38 - 54	Ramp C Cross Sections
Y.55 - 69	Ramp D Cross Sections
	* Color Plan Sheets

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

CITY OF URBANDALE

GRADING

100TH ST INTERCHANGE AT I-35/80
(E OF 141 INTERCHANGE TO W OF 86TH ST INTERCHANGE)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

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www.iowaonecall.com
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REVISIONS

TOTAL XX
PROJECT IDENTIFICATION NUMBER
09-77-035-020
PROJECT NUMBER
NHS-080-3(199)128--11-77
R.O.W. PROJECT NUMBER

MILEAGE SUMMARY			
Div.	Location	Lin. Ft.	Miles
1	URBAN:		
	Southbound Lanes Sta. 570+50.00 to Sta. 621+23.00	5,073.00	0.961
	Northbound Lanes Sta. 573+20.00 to Sta. 622+50.00	4,930.00	0.934
	TOTAL LENGTH OF SOUTHBOUND ROADWAY	5,073.00	0.961
	TOTAL LENGTH OF NORTHBOUND ROADWAY	4,930.00	0.934
	TOTAL:	10,003.00	1.895

For Project Location Map
Refer to Sheet A.2

DESIGN DATA URBAN		
2012 AADT	98,500	V.P.D.
2040 AADT	154,000	V.P.D.
2040 DHV	16,200	V.P.H.
TRUCKS	17	%
Total Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER A.1

2:58:29 PM 2/12/2016 IA_DOT \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199A1.sht

R-26W R-25W

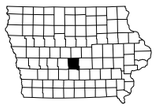
T-79N

T-79N

STA. 570+50.00
BEGIN PROJECT
BEGIN GRADING
M.P. 127.95

STA. 622+50.00
END PROJECT
END GRADING
M.P. 128.91

R-26W R-25W



LOCATION MAP SCALE
0 0.2 0.4 0.6 0.8 1.0
Miles

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER A.2

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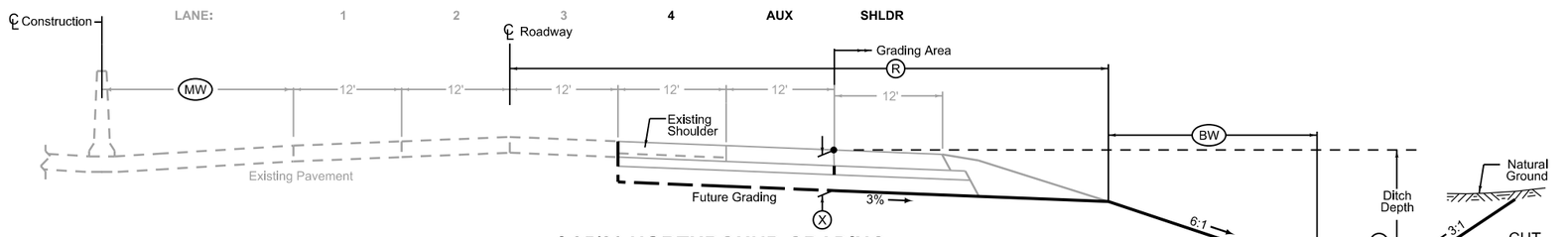
Modified



I-35/80 NORTHBOUND GRADING

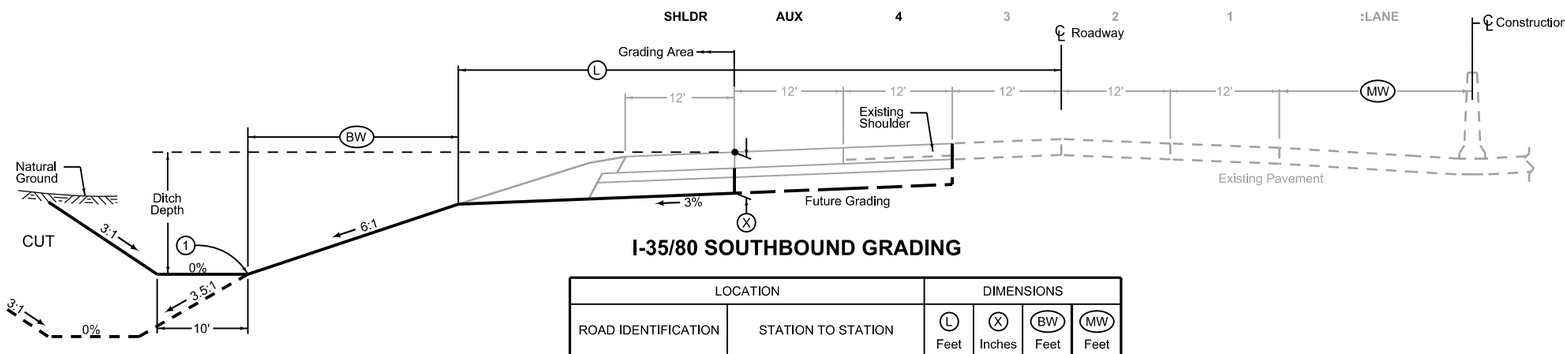
LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(R) Feet	(X) Inches	(BW) Feet	(MW) Feet
ML080	573+20.00	579+20.36	59.9	30	VARI	18
ML080	612+50.00	622+50.00	59.9	30	VARI	15.75						

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

G_4D_Grade
Modified



I-35/80 SOUTHBOUND GRADING

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(X) Inches	(BW) Feet	(MW) Feet
ML080	570+50.00	580+50.00	59.9	30	VARI	18
ML080	615+22.74	621+23.00	59.9	30	VARI	16.25						

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER B.1

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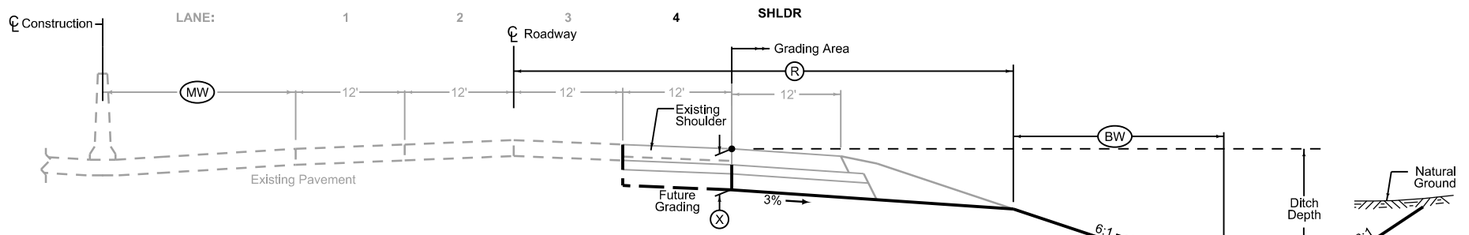


I-35/80 NORTHBOUND GRADING

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(R) Feet	(X) Inches	(BW) Feet	(MW) Feet
ML080	583+67.37	597+32.96	59.9	30	VARI	(2)
ML080	597+32.96	608+76.88	59.9	30	VARI	15.75

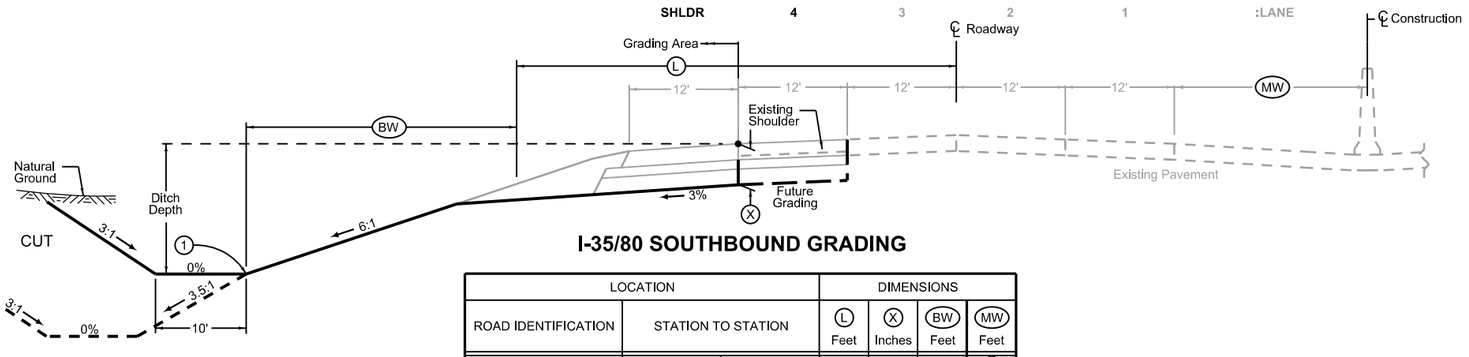
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) Varies (18' to 15.75')
Refer to Sheets D.2-D.4 and cross sections

G_4D_Grade
Modified



I-35/80 SOUTHBOUND GRADING

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(X) Inches	(BW) Feet	(MW) Feet
ML080	585+77.47	590+17.33	59.9	30	VARI	(2)
ML080	590+17.33	610+48.85	59.9	30	VARI	16.25

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

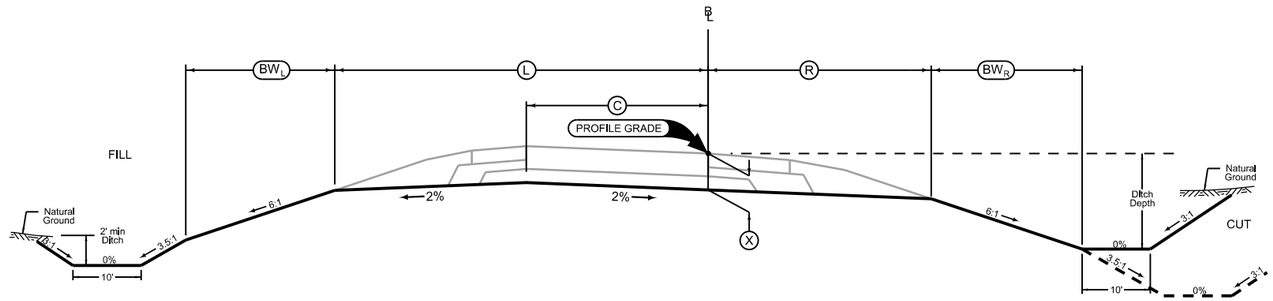
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) Varies (18' to 15.75')
Refer to Sheets D.2-D.4 and cross sections

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet
100th St	A	1503+20.00	1505+00.00	34.9	20.6	16-36	24	VARI	VARI
100th St	A	1505+00.00	1510+50.69	34.9	20.6	16	24	VARI	VARI
100th St	B	2583+66.63	2591+00.00	34.9	20.6	16	24	VARI	VARI
100th St	B	2591+00.00	2592+80.00	34.9	20.6	16-36	24	VARI	VARI
100th St	C	3585+76.84	3588+50.00	34.9	20.6	16	24	VARI	VARI
100th St	C	3588+50.00	3591+70.00	34.9	20.6	16-24	24	VARI	VARI
100th St	D	4503+80.00	4507+00.00	34.9	20.6	16-24	24	VARI	VARI
100th St	D	4507+00.00	4508+77.88	34.9	20.6	16	24	VARI	VARI

G_1R_Grade
04-15-14



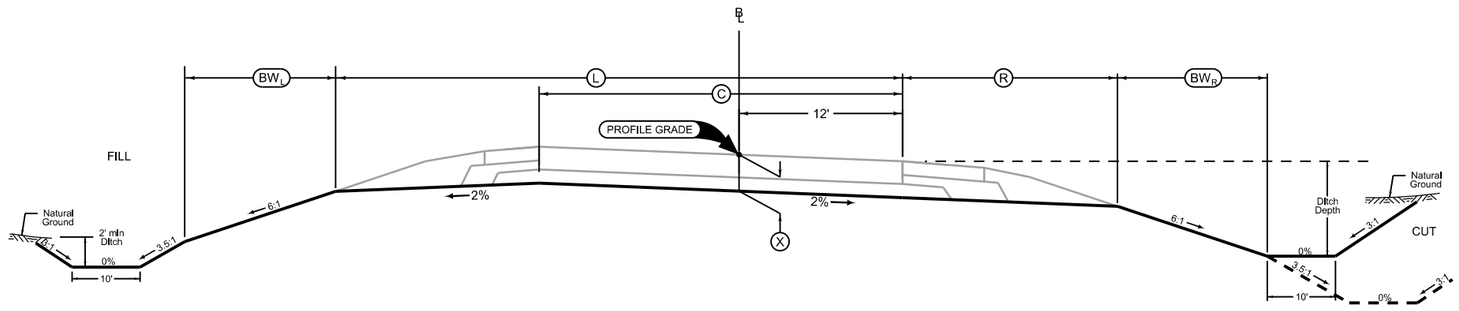
RAMP GRADING

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet
100th St	A	1498+41.82	1503+20.00	34.9	20.6	36	24	VARI	VARI

G_1R_Grade
04-15-14



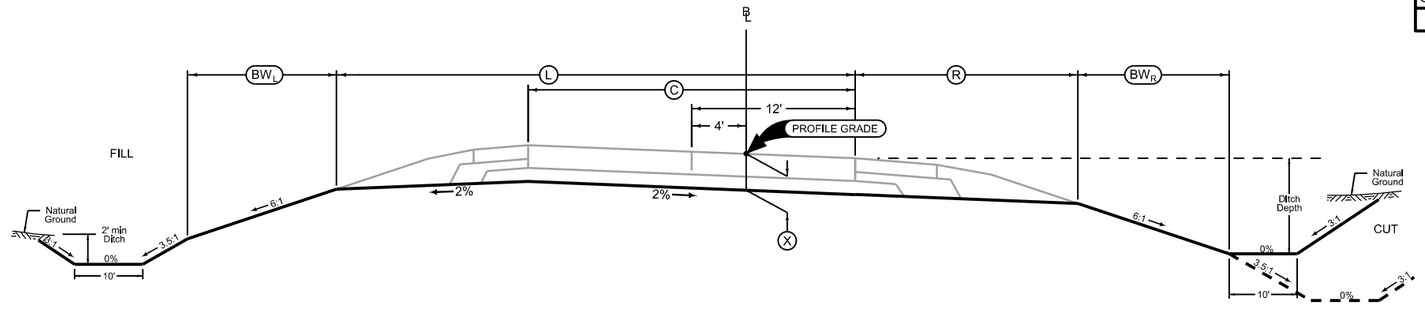
RAMP GRADING

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet
100th St	B	2592+80.00	2596+29.37	34.9	20.6	36	24	VARI	VARI
100th St	C	3591+70.00	3596+39.73	34.9	20.6	24	24	VARI	VARI
100th St	D	4497+97.08	4503+80.00	34.9	20.6	24	24	VARI	VARI

G_1R_Grade
04-15-14

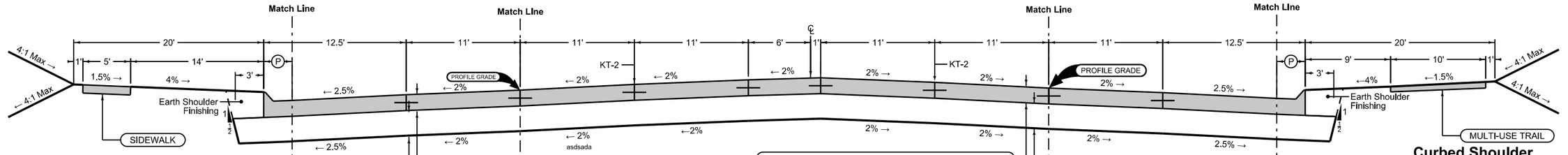


RAMP GRADING

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER B.3



Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse:C at 15' spacing

			2_Curb_ 04-19-11
STATION TO STATION		(P) Feet	Curb Type See PV-102
1215+43.06	1215+65.45	1.5	6" STD
1220+39.53	1220+52.91	Vari	6" STD

Mainline Jointing:
Transverse joints: CD at 15' spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION
1214+75.00	1215+65.45
1220+39.09	1221+26.00

Mainline Jointing:
Transverse joints: CD at 15' spacing

4UP_ 10-16-12	
STATION TO STATION	
1214+75.00	1215+65.45
1220+39.09	1221+26.00

Mainline Jointing:
Transverse joints: CD at 15' spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION
1214+75.00	1215+65.45
1220+39.09	1221+26.00

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse:C at 15' spacing

			2_Curb_ 04-19-11
STATION TO STATION		(P) Feet	Curb Type See PV-102
1215+51.18	1215+65.45	1.5	6" STD
1220+43.58	1220+58.60	Vari	6" STD

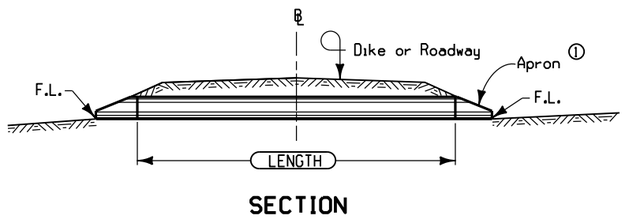
See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

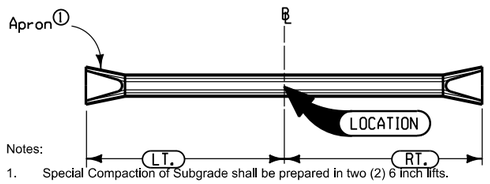
FOR INFORMATIONAL USE ONLY

100TH STREET

1101
04-30-02



SECTION



Notes:
1. Special Compaction of Subgrade shall be prepared in two (2) 6 inch lifts.

PLAN

Notes:

℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.

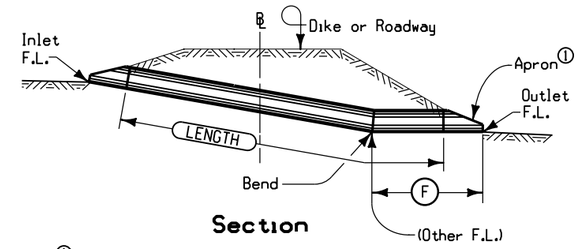
Skew angle is the angle which one end of the pipe is ahead (by stationing) of line perpendicular to the ℄ (example skew Rt. ahead 30°).

Refer to tabular listing and other plans for additional information.

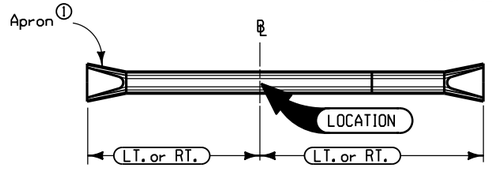
① See Standard Road Plan RF-3 For Conc. or RF-5 for Metal.

PIPE CULVERT

1201
10-16-12



Section



Plan

℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.

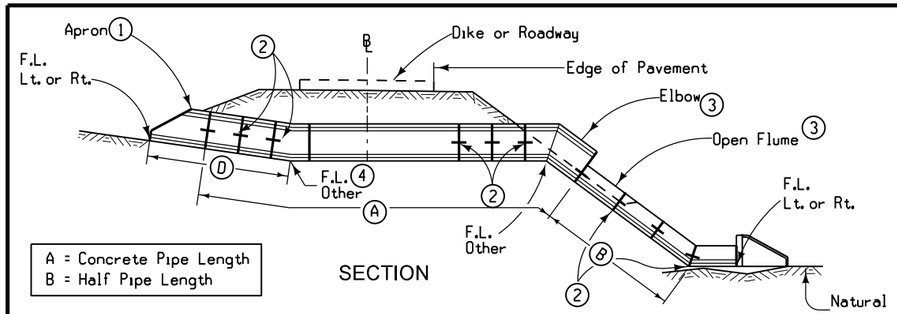
"Bend" may be accomplished by use of metal elbow, Pipe Adapter (RF-2), Type "D" Section or Concrete Elbow (RF-13) as specified.

① See Standard Road Plan RF-3 For Conc. or RF-5 for Metal.

Ⓕ is from bend to end of outlet.

PIPE CULVERT LETDOWN STRUCTURE

1501
04-20-10



A = Concrete Pipe Length
B = Half Pipe Length

SECTION

PLAN

℄ is ℄ of roadway, dike, survey, or other as detailed on plans.

Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the ℄. (Example: Skew Rt. ahead 30 degrees)

① See DR-201 for concrete or DR-203 for metal.

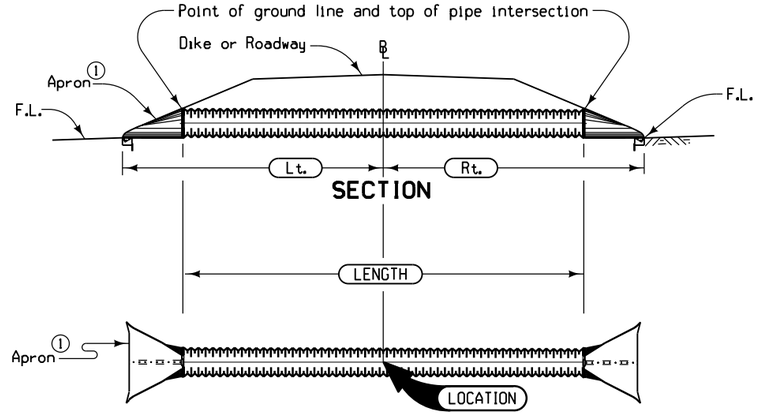
② See DR-121 for pipe connections.

③ See DR-141.

④ Optional Type "D" Section only when specified in the tabulations.

CONCRETE PIPE LETDOWN STRUCTURE

1601
10-16-12



SECTION

PLAN

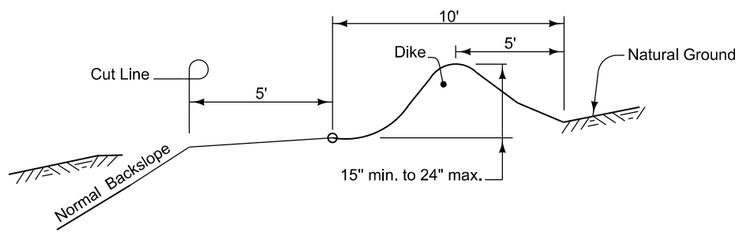
℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.

Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the ℄ (example skew Rt. ahead 30 degrees).

① See Standard Road Plan RF-3 for Concrete or RF-5 for Metal and Polyethylene.

UNCLASSIFIED PIPE CULVERT

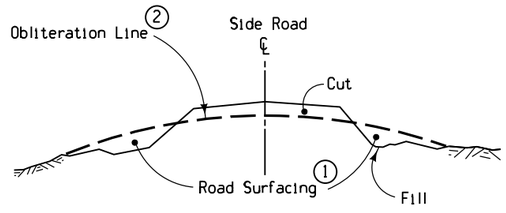
4101
04-20-10



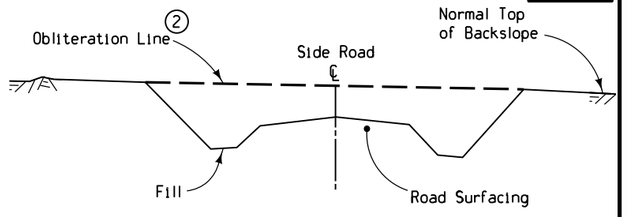
Refer to plans for locations of intercepting ditches. Dike for intercepting ditch shall be made by taking earth from roadway side. Do not excavate back of dike.

TYPICAL CROSS SECTION INTERCEPTING DITCH

4302
04-03-01



Fill Section



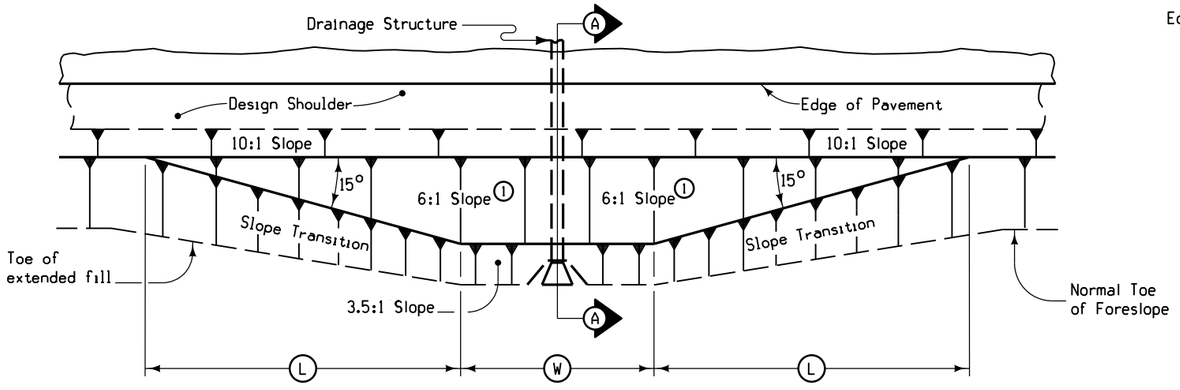
Cut Section

① Existing road surfacing (granular material) shall be placed as shown unless otherwise directed by the Engineer or provided for in the detail project plans.

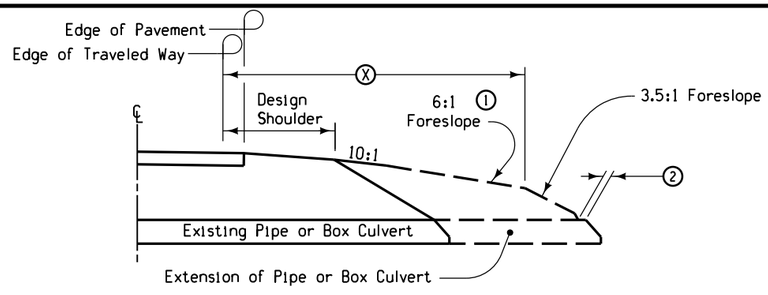
② When specified, the upper 1' to be suitable for vegetation (grass or crops).

Note:
The work of obliterating or reshaping old roadbeds shall be done at the direction of the Engineer.

TYPICAL DETAILS FOR OBLITERATION EXISTING ROADBED



PLAN VIEW



SECTION A-A

STRUCTURE LOCATION		(W)	(L)	(X)
STATION	SIDE	Feet	Feet	Feet

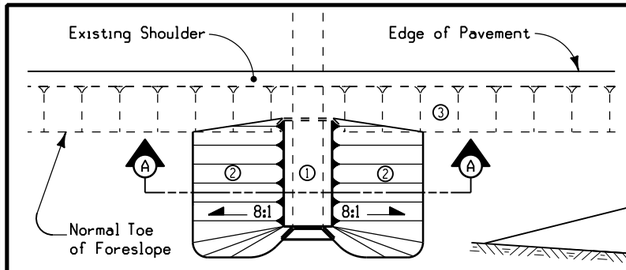
4311
04-17-12

Notes:

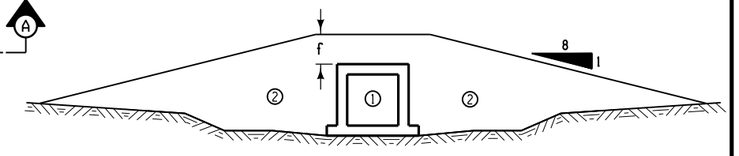
At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, the foreslope shall be flattened as indicated so as to cover the structure. Minimum earth cover is 6".

(1) 6:1 Maximum - Slope may be flatter.
(2) 6" Minimum for pipe installations or to top of headwall on R.C.B.
(W) = Pipe or R.C.B. width plus 20 feet each side.

DETAILS OF BARNROOF FORESLOPE AT DRAINAGE STRUCTURE



PLAN



SECTION A-A

STATION	SIDE	------- ------- Cu. Yds.	f

Notes:

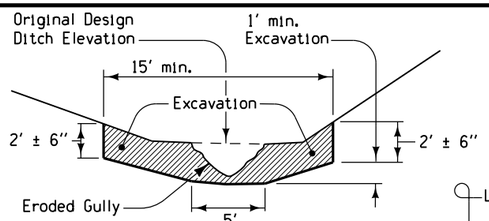
The backfilling and associated embankment construction shall be completed within 14 working days after the curing period for the culvert extension.

(1) Culvert Extension
(2) Proposed Embankment
(3) Existing Foreslope

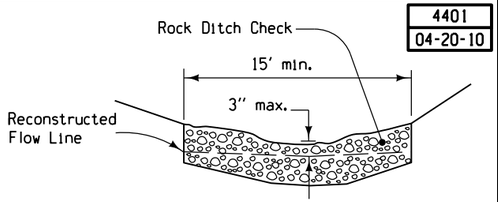
IMMEDIATE PLACEMENT OF EMBANKMENT AT CULVERT EXTENSION

4309
10-20-09

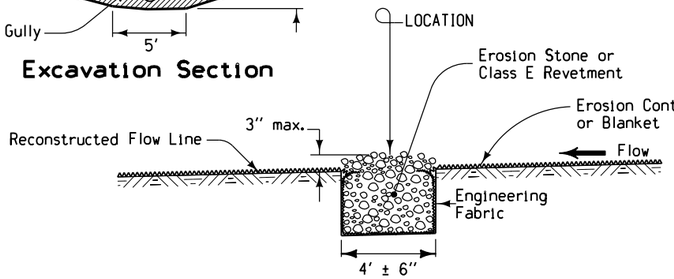
4401
04-20-10



Excavation Section



Ditch Check Section

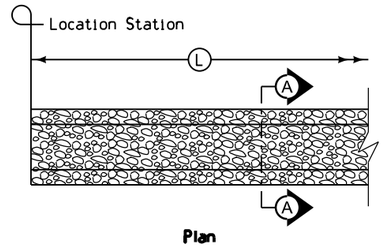


Longitudinal Section at Centerline of Ditch

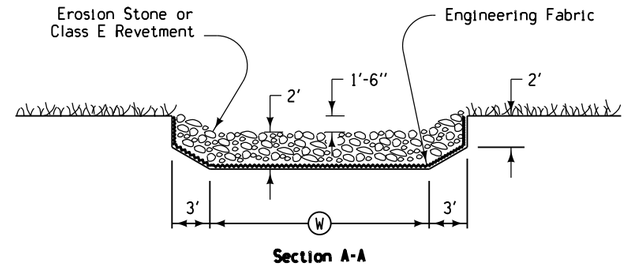
Refer to Tabulation 100-23 for additional information.

ROCK DITCH CHECK

4402
04-16-13



Plan

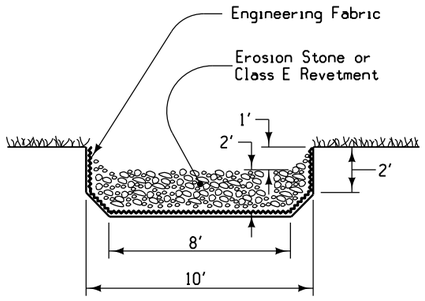


Section A-A

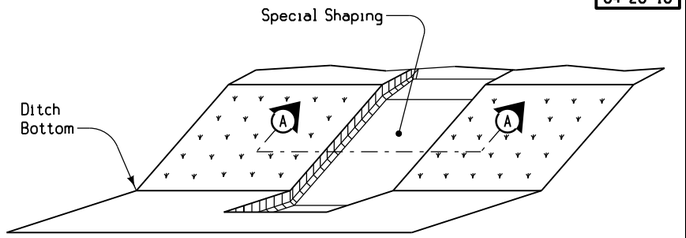
Refer to Tabulation 100-23 for additional information.

ROCK DITCH

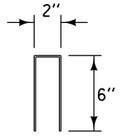
4403
04-20-10



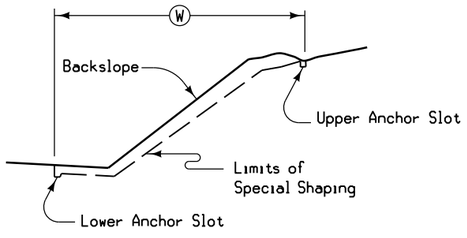
Section A-A



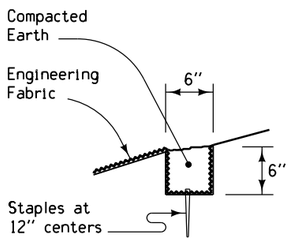
Isometric View



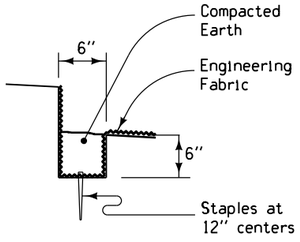
Staple
(No. 11 wire)



Typical Section



Upper Anchor Slot

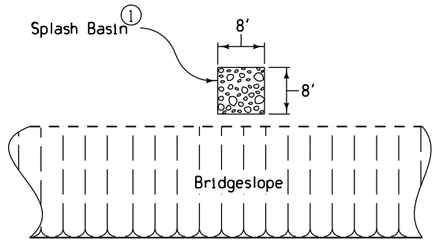


Lower Anchor Slot

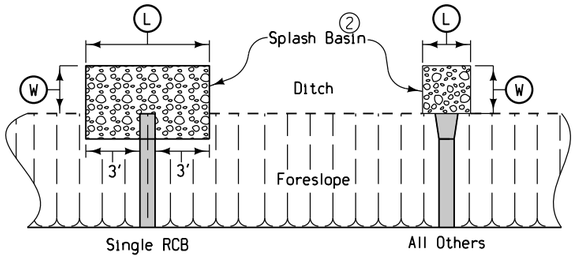
Refer to Tabulation 100-23 for additional information.

ROCK FLUME

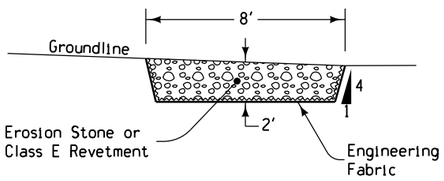
4404
10-15-13



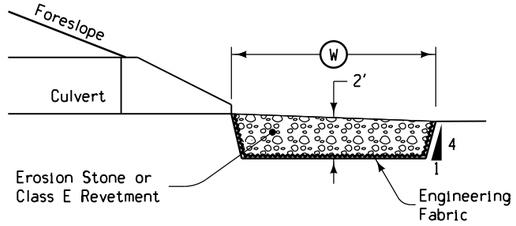
Splash Basin Under Bridge Drain
Plan View



Splash Basin at Culvert Outlet
Plan View



Splash Basin Under Bridge Drain
Typical Section



Splash Basin at Culvert Outlet
Typical Section

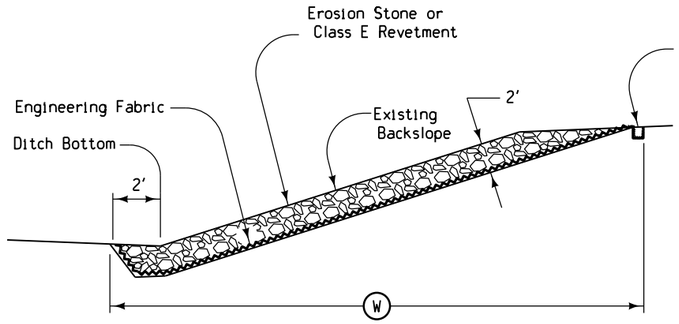
① Center splash basin directly under bridge drain.

② For single RCB, extend splash basin along the outside of the wings to the face of the parapet. Construct to a width of 3 feet and a depth of 2 feet.

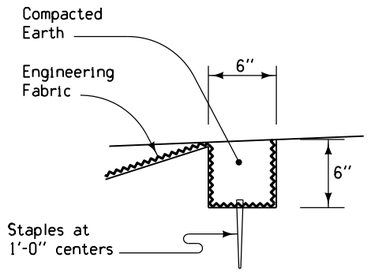
Refer to Tabulation 100-23 for additional information.

ROCK SPLASH BASIN

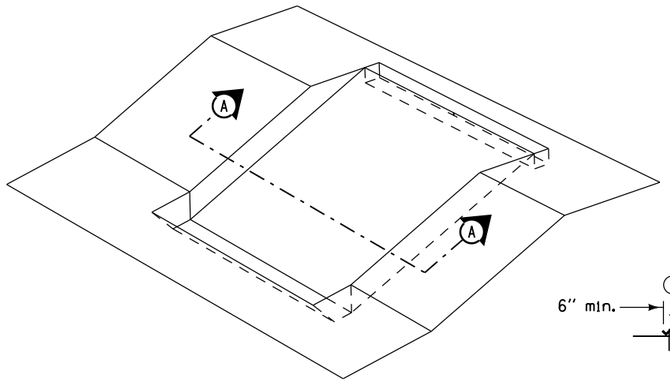
4405
04-20-10



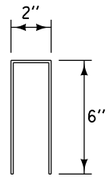
Typical Section



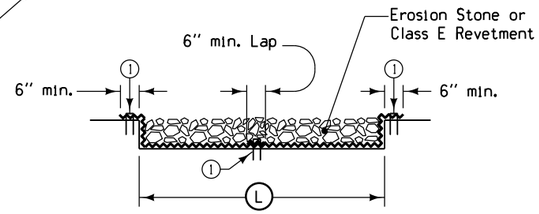
Anchor Slot



Isometric View



Staple
(No. 11 wire)



Section A-A

1 Staples at 12" centers

Refer to Tabulation 100-23 for additional information.

ROCK SLOPE PROTECTION

100-1D
10-18-05

PROJECT DESCRIPTION

This project is to provide grading for the construction of a fourth lane along I-35E/80 and NW 100th Street Ramps A, B, C, and D in Polk County, Iowa. The project begins approximately 600 feet east of IA 141 entrance Ramp D and continues east to approximately 1/2 mile west of 86th Street. The future paving project will provide a four-lane section with a 12-foot auxiliary lane and 12-foot paved shoulder from IA 141 entrance Ramp D to NW 100th Street Ramps B and C. Then, from NW 100th Street Ramps B and C to the eastern termini the future paving project will provide a four-lane section with a 12-foot paved shoulder. The existing shoulder will remain inplace until the paving project.

This project includes grading for new ditch alignment along I-35E/80 and CL culvert extensions. The infield areas (between ramps and mainline) will all be graded to culvert aprons that tie into the twin 10'x12' culvert.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE		
2	2102-2200000	INTERCEPTING DITCHES AND FLUMES	LF		
3	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY		
4	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY		
5	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY		
6	2102-4560000	LOCATING TILE LINES	STA		
7	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY		
8	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY		
9	2105-8425020	TOPSOIL, STRIP AND STOCKPILE	CY		
10	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY		
11	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY		
12	2401-6750001	REMOVALS AS PER PLAN	LS		
13	2402-2720000	EXCAVATION, CLASS 20	CY		
14	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY		
15	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY		
16	2404-7775000	REINFORCING STEEL	LB		
17	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH		
18	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH		
19	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH		
20	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH		
21	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EACH		
22	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA.	LF		
23	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF		
24	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF		
25	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF		
26	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF		
27	2502-8212212	SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. DIA.	LF		
28	2502-8212304	SUBDRAIN, STANDARD, PERFORATED, 4 IN., AS PER PLAN	LF		
29	2502-8220197	SUBDRAIN OUTLET (RF-19F)	EACH		
30	2507-3250005	ENGINEERING FABRIC	SY		
31	2507-6800061	REVETMENT, CLASS E	TON		
32	2518-6910000	SAFETY CLOSURE	EACH		
33	2520-3350010	FIELD LABORATORY	EACH		
34	2526-8285000	CONSTRUCTION SURVEY	LS		
35	2528-8445110	TRAFFIC CONTROL	LS		
36	2533-4980005	MOBILIZATION	LS		
37	2590-0000020	PROJECT MANAGEMENT	LS		
38	2590-0000020	PROJECT MANAGEMENT	LS		

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description

POLLUTION PREVENTION PLAN

This Base Pollution Prevention Plan (PPP) includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Signature authority on the Base PPP and NOI.

B. Contractor/Subcontractor:
1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Submit a detailed schedule according to Article 2602 of the Specifications and any additional plan notes.
3. Install and maintain appropriate controls.
4. Supervise and implement good housekeeping practices.
5. Conduct joint required inspections of the site with inspection staff.
6. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.

C. RCE/Inspector:
1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
2. Maintain an up-to-date list that identifies contractors and subcontractors as co-permittees.
3. Make these plans available to the DNR upon their request.
4. Conduct joint required inspections of the site with the contractor/subcontractor.
5. Complete an inspection report after each inspection.
6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the construction of interchange ramps at NW 100th Street and the widening of I-35E/80.

B. This PPP covers approximately 71.64 acres with an estimated 51.72 acres being disturbed. The portion of the PPP covered by this contract has 51.72 acres disturbed.

C. The PPP is located in an area of two soil association (Marna-Kossuth-Bode and Clarion-Nicollet-Webster). The estimated average SCS runoff curve number for this PPP after completion will be 72.

D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
1. Drainage patterns – Plan and Profile sheets and Situation plans.
2. Proposed Slopes – Cross Sections.
3. Areas of Soil Disturbance – construction limits shown on Plan and Profile sheets.
4. Location of Structural Controls – Tabulations on C sheets.
5. Locations of Non-structural Controls – Tabulations on C sheets.
6. Locations of Stabilization Practices – generally within construction limits shown on Plan and Profile sheets.
7. Surface Waters (including wetlands) – Plan and Profile sheets.
8. Locations where storm water is discharged – Plan and Profile sheets.

E. The base site map is amended by contract modifications and progress payments of completed erosion control work.

F. Runoff from this work will flow into North Walnut Creek.

III. CONTROLS

A. The contractor's work plan and sequence of operations specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Section 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized.
2) Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.
4) Stabilization measures to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional items may be found in the Inspector's Daily Reports (IDR) or Contract Modifications.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site.
2) Structural items to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plan or are referenced in the Standard Road Plans Tabulation.

c. Storm Water Management
1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

110-12A
Modified

POLLUTION PREVENTION PLAN

2. OTHER CONTROLS

a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located.
7) Vehicle and Equipment Cleaning - Employ washing practices that prevent contamination of surface and ground water from wash water.
8) Vehicle and Equipment Fueling and Maintenance - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onside fuels and proper disposal of used engine oil or other fluids on site.
9) Litter Management - Ensure employees properly dispose of litter.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
1. Date of the inspection.
2. Summary of the scope of the inspection.
3. Name and qualifications of the personnel making the inspection.
4. Rainfall amount.
5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
6. Major observations related to the implementation of the PPP.
7. Identify corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found and complete all actions within 3 calendar days of the inspection.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - May include Plan Revisions or Contract Modifications for new items and fieldbook entries made by the inspector.
C. IDR - Inspector's Daily Report – this contains the inspector's daily diary and item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials.
E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Consultant Signature	Contracting Authority Signature
Printed or Typed Name	Printed or Typed Name

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
TC-1		Work Not Affecting Traffic (Two-Lane or Multi-Lane)

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.

100-7
10-16-12

FENCING

* Bid Item

Refer to MI-101, MI-102, MI-103, MI-104, 510-3, and 510-5

Location				Side	Chain Link				Deer				Field				Channel Crossing		Remarks
From		To			Fence		Gate				Gate				Gate				
Station	Offset	Station	Offset		Length*	Type	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Length*	Type	
					LF		EACH		LF	EACH	EACH		LF	EACH	EACH		LF		

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	

100-18
04-20-10

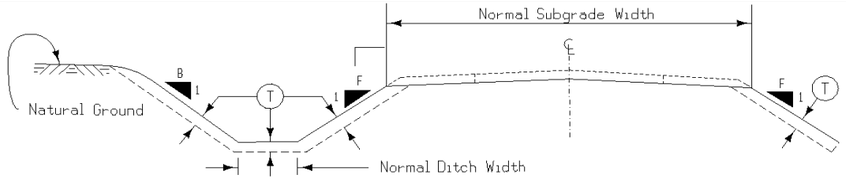
TABULATION OF SILT FENCES FOR DITCH CHECKS

Refer to EC-201

Location Station	Side	Length	Remarks
		LF	

103-4
04-19-11

TABULATION OF SPREADING TOPSOIL



Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed hereon.

Placement Description							Topsoil Excavation Available From		
Area	Quantity	Location	Side	Slope	(T)	Remarks	Amount Reserved	Station to Station	Remarks
No.	CY	Station to Station	L. or R.	B. or F.	IN		CY		

112-9
10-15-13

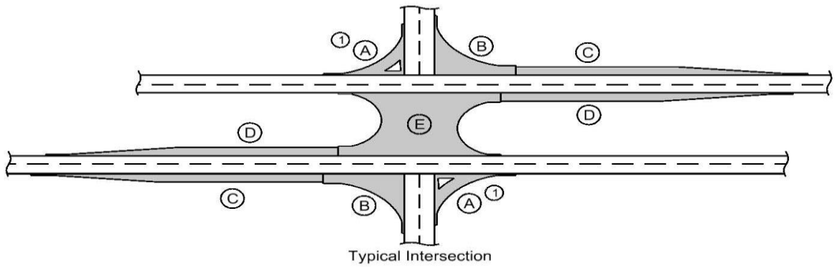
SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) Bid Item
(3) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(4) Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

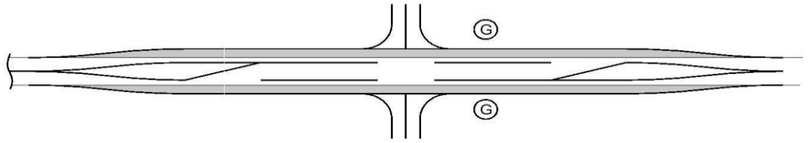
Location				Quantities																Remarks
Road Identification	(1) Direction Of Traffic	Station to Station	Side	(P) Width	(G) Width	(L) Length	(3) Class 13 Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	Reinforced Paved Shoulder	Special Backfill				Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			
													HMA Alternate		PCC Alternate							
				FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA	STA (2)	HMA CY (4)	PCC CY (4)	

PCC PAVEMENT

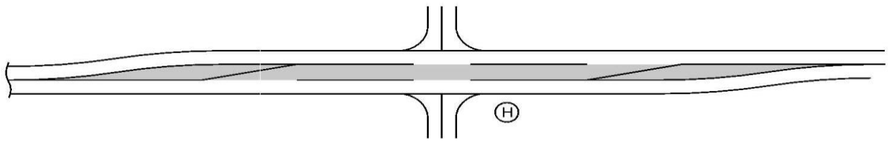


Typical Intersection

Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Location			Mainline			Area (3)								Total Area By Pavement Thickness		Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station	Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	SY					
			FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	10 IN	10½ IN	TONS	CY	SY	

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location																								Remarks
	Station	Side														SCHOOL	XING	STOP	AHEAD	ONLY	BIKE	LANE	EXIT	Groove Cuts	
			STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	EACH	

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.

**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00

ELY4: Edge Line Left (Yellow) @ 1.00

Location					Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station	Dir. of Travel	Marking Type	Side	BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4									
				L C R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft.				Skew Ahead Degrees		Dike				Class 20	Flowable Mortar	Floodable* Backfill	Porous* Backfill	Flooded Backfill	Remarks
																								Total		Extensions				Rt. \ Lt.	Location Station	Top Elevation	Type						
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	(A) CY	(B) CY	(A+B) CY	
	571+50.00 (ML080)		24	RCP	43	B											C-1	1	Type 3				943.00	942.61			81.7													
			24	RCP	33	B				1							C-1	1			934.06																		Note 1
	575+50.00 (ML080)		18	RCP	49	B				1									Type 3			936.91	937.75				54.5												
	580+50.00 (ML080)		18	RCP	42	B				1									Type 3			929.27	930.10				47.6												
	582+98.93 (ML080)		24	RCP	50	B				1									Type 3			925.65	926.37				55.7												
	586+10.83 (ML080)		48	RCP	354	B				2									Type 3		916.57	912.88																
	596+56.11 (ML080)		24	RCP	27	B				1							C-1	1	Type 3		903.49		904.19				32.5												
	596+64.06 (ML080)		24	RCP	49	B				2									Type 3		903.27	903.54	903.31	903.51			32.0	28.4											
	600+75.61 (ML080)		24	RCP	27	B				1							C-1	1	Type 3			899.34	900.21				32.2												
	1502+10.59 (SR100A)		36	RCP	38	B				1									Type 3																			
	1502+26.05 (SR100A)		36	RCP	76	B				1									Type 3																			
	1503+74.02 (SR100A)		36	RCP	51	B				1									Type 3																			
	4504+00.13 (SR100D)		36	RCP	69	B				1									Type 3																			
	4505+95.52 (SR100D)		36	RCP	50	B				1									Type 3																			
	610+94.73 (ML080)		24	RCP	35	B				1							C-1	1	Type 3			909.57	910.96				40.8												
	621+00.00 (ML080)		24	RCP	46	B											C-1	1	Type 3				923.69	922.77				112.8											
			24	RCP	60	B				1							C-1	1				907.91																	Note 1
	630+63.78 (ML080)		24	RCP	32	B				2									Type 3		936.04	933.13	935.84	933.31			22.2	20.8											
	633+00.27 (ML080)		24	RCP	31	B				1							C-1	1	Type 3			937.46	938.53				36.8												
	2538+74.17 (SR86B)		36	RCP	35	B				1									Type 3			937.29	938.02				39.3												
	3539+55.02 (SR86C)		30	RCP	16	B				1									Type 3			943.13	943.35			23.5													
	Totals:		18	RCP	91					2																												
			24	RCP	433					11																												
			30	RCP	16					1																												
			36	RCP	319					6																												
			48	RCP	354					2																												

Notes:
1. RCP Letdown Structure (which is an extension of the RCP extension listed above)
2. Existing pipe information is missing from survey file

108-8A
Modified

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Refer to BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-250, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.

Location					Layout Lengths BA-250				Long-Span System		Delineators and Object Markers					Bid Items							Remarks
No.	Direction of Traffic (1)	Side O = Outside M = Median	Station	Offset	VT1 (40.625' min.)	VF	VT2	ET (37.5' or 50.0')	BA-211		SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor	Barrier Transition Section	Steel Beam Guardrail	End Terminal		Post Adapter		
												Type 1	Type 2	Type 3					Standard	Flared			
												White	OM2-2	OM3-L	OM3-R	BA-202		BA-201	BA-200	BA-205	BA-206	BA-210	
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	EACH	EACH	EACH	EACH	TYPE	EACH	EACH	LF	EACH	EACH	EACH	

107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

(1) Lane(s) to which the installation is adjacent. Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	Direction of Traffic (1)	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	
														CY	CY	

108-30
04-16-13

CRASH CUSHIONS

* Bid Item
(1) Lane(s) to which the installation is adjacent.
(2) Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500

No.	Direction of Traffic (1)	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details (2)					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V Length	W Length	X Length	Y Length	Z Length	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use		
				FT						FT	FT	FT	FT	FT	CY	CY	EACH	EACH		

108-33
04-16-13

TEMPORARY BARRIER RAIL

Refer to BA-400 and BA-401

* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

No.	Station to Station		Length	(Select One) Steel BA-400	(Select One) Concrete BA-401	Anchored* (Y/N)	Remarks
			LF				

103-5
10-15-13

SETTLEMENT PLATES

Refer to Standard Road Plan EW-212

No.	Location		Remarks
	Station	Offset	

102-5
10-16-12

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Milepost	End Milepost				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks

SURVEY SYMBOLS

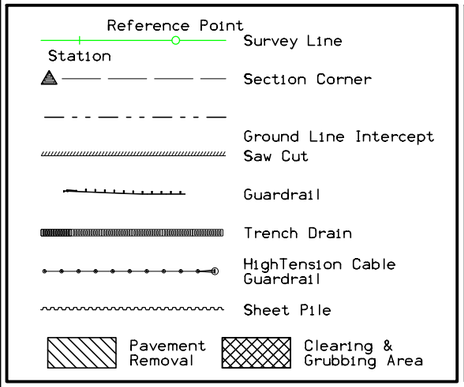
UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right



RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

FILE NO.	ENGLISH	DESIGN TEAM **CITY OF URBANDALE \ HR GREEN**	**POLK** COUNTY	PROJECT NUMBER **NHS-080-3(199)128--11-77**	SHEET NUMBER **D.1**

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STA. 570+50.00
BEGIN GRADING (SB)
BEGIN PROJECT

STA. 573+20.00
BEGIN GRADING (NB)

PT Sta 567+59.44

I-35/80

100TH RAMP C

100TH RAMP B

565 570 575 580 585 590

REMOVE & EXTEND
Sta. 571+50.00
24" X 73.08' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 24" RCP
INSTALL 43' - 24" RCP
INSTALL 33' - 24" RCP Let Down
Plus Concrete Apron
F.L. = Lt. 934.06
Ot. 943.00

REMOVE & EXTEND
Sta. 575+50.00
18" X 70.11' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 18" RCP
INSTALL 49' - 18" RCP
F.L. = Ot. 937.75
Rt. 936.91

0 100 FEET

REMOVE & EXTEND
Sta. 580+50.00
18" X 73.13' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 18" RCP
INSTALL 42' - 18" RCP
F.L. = Ot. 930.10
Rt. 929.27

REMOVE & EXTEND
Sta. 582+98.93
24" X 72.80' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 24" RCP
INSTALL 50' - 24" RCP
F.L. = Ot. 926.37
Rt. 925.65

INSTALL 358' - 48" RCP
F.L. = Lt. 912.99
Rt. 916.57

WEBSTER TWP
T-79N R-25W
SEC. 16

970 960 950 940 930 920 910

STA. 570+50.00
BEGIN GRADING (SB)
BEGIN PROJECT
EL. 950.83

STA. 573+20.00
BEGIN GRADING (NB)
EL. 946.93

+50 Lt.
942.47

-1.50% Lt. Ditch Grade

+20 Rt.
935.63

-1.16% Rt. Ditch Grade

+67 Rt.
927.69

+67 Rt.
923.43

+00 Rt.
927.69

+00 Rt.
925.29

2.40% Rt. Ditch Grade

3.50% Rt. Ditch Grade

+78 Lt.
926.16

-9.34% Lt. Ditch Grade

+78 Lt.
919.55

+00 Rt.
921.79

+00 Rt.
920.79

1.00% Rt. Ditch Grade

+00 Lt.
924.06

-2.00% Lt. Ditch Grade

-2.00% Rt.

-1.50% Rt. Ditch Grade

+00 Rt.
918.79

+00 Lt.
916.06

-1.00% Lt. Ditch Grade

Ditch Grade

Lt

Rt

565 570 575 580 585 590

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER D.2

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WEBSTER TWP.
T-79N R-25W
SEC. 16

WEBSTER TWP.
T-79N R-25W
SEC. 15

Sta. 603+85.10
TWIN 12' X 10' X 221.76' RCBC
D.A. =

100TH RAMP C

100TH RAMP A

100TH RAMP B

100TH RAMP D

I-35/80

595 600 605 610 615 620

P.I. Sta. 597+32.96

San.(C)

SIGN

REMOVE & EXTEND
Sta. 596+56.11
24" X 71.85' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 24" RCP
INSTALL 27' - 24" RCP
F.L. = Lt. 903.49
Ot. 904.19

REMOVE
Sta. 596+64.06
24" X 151.00' RCP
D.A. = 21.75 AC

REMOVE & EXTEND
Sta. 600+75.61
24" X 71.04' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 24" RCP
INSTALL 27' - 24" RCP
F.L. = Ot. 900.21
Rt. 899.34

REMOVE & EXTEND
Sta. 610+94.73
24" X 74.50' RCP
D.A. = MEDIAN ONLY
REMOVE 8' - 24" RCP
INSTALL 35' - 24" RCP
F.L. = Ot. 910.96
Rt. 909.57

0 100
FEET

WEBSTER TWP.
T-79N R-25W
SEC. 15

940 930 920 910 900 890 880

+00 Lt. 915.06
+00 Rt. 912.79
-2.00% Lt. Ditch Grade
-2.00% Rt. Ditch Grade

+00 Lt. 905.06
+00 Rt. 904.79
-1.97% Lt. Ditch Grade
-1.50% Rt. Ditch Grade

+00 Lt. 903.09
+00 Rt. 903.29
-0.50% Rt. Ditch Grade
-0.50% Lt. Dtch Grade

+00 Lt. 900.59
+00 Rt. 901.79
+00 Rt. 899.21
-2.58% Rt. Ditch Grade
-0.50% Rt. Ditch Grade

+89 Lt. 903.80
+75 Lt. 903.33
+3.60% Lt. Ditch Grade
-0.54% Lt. Ditch Grade

+20 Rt. 902.80
+69 Lt. 904.70
+1.45% Lt. Ditch Grade
+4.25% Rt. Ditch Grade
-0.73% Rt. Ditch Grade

+00 Rt. 897.71
Lt. INV. 890.80
TWIN 10' X 12' CULVERT
Rt. INV. 889.80
TWIN 10' X 12' CULVERT

+84 Rt. 911.89
+49 Lt. 914.22
+1.64% Lt. Ditch Grade
+3.52% Rt. Ditch Grade
+3.48% Rt. Ditch Grade
+3.20% Rt. Ditch Grade
+1.78% Rt. Ditch Grade
+00 Rt. 902.21
+00 Rt. 909.21
+00 Rt. 905.73
+49 Lt. 908.68
+77 Rt. 902.90

+71 Lt. 918.68
+1.39% Lt. Ditch Grade
-3.47% Rt. Ditch Grade
+00 Rt. 917.59
-4.61% Lt. Ditch Grade
+65 Lt. 909.73
+16 Rt. 906.62
+45 Rt. 906.62

Lt Ditch Grade
Rt Ditch Grade
Lt Ditch Grade
Rt Ditch Grade
Standard Ditch D.G.

595 600 605 610 615 620

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER D.3

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WEBSTER TWP.
T-79N R-25W
SEC. 15

STA. 621+23.00
END GRADING (SB)

STA. 622+50.00
END GRADING (NB)
END PROJECT

625 630 635 640 645 650

86TH RAMP C

I-35/80

86TH RAMP B

SIGN

MM

REMOVE & EXTEND
Sta. 621+00.00
24" X 30.00" RCP
24" X 34.00" CMP
D.A. = MEDIAN ONLY

Sta. 619+96.00
8' X 8' X 188' RCBC
D.A. = 350 Ac.

REMOVE 4' - 24" RCP
REMOVE 54' - 24" CMP
INSTALL 46' - 24" RCP
INSTALL 60' - 24" RCP Let Down
Plus Concrete Apron
F.L. = Ot. 923.69
Rt. 907.91

WEBSTER TWP.
T-79N R-25W
SEC. 15

970 960 950 940 930 920 910

STA. 621+23.00
END GRADING (SB)
EL. 928.94

STA. 622+50.00
END GRADING (NB)
END PROJECT
EL. 930.43

+23 Lt.
912.78

+50 Rt.
912.40

Lt
Ditch Grade

Rt
Ditch Grade

625 630 635 640 645

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER D.4

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Survey Information

General Information

Measurement units for this survey are US survey feet. This survey is for proposed interchange improvements at Rider Corner and I-35/80 intersection. This project is a complete field survey for the digital terrain model.

Vertical Control

Vertical datum for this survey is relative to NAVD88.

A digital level loop was run from IDOT monument designated as IA. D.O.T. 77-141-1(NGS PID BBCZ46) through the project benchmarks and returned to IA. D.O.T. 77-141-1. The loop error was allowable and the error was distributed proportionately among the project marks.

This survey observed 5 As-Built plan bench marks to compare to local ground control:

BM 504 Project STP-U-7875(638)--70-77 Elev. 958.58
Survey Elev. = 958.63

BM 505 Project NHSN-141-7(24)—2R-77 Elev. 963.67
Survey Elev. = 963.96

BM 509 Project NHSN-141-7(24)—2R-77 Elev. 938.22
Survey Elev. = 938.36

BM 512 Project NHSN-141-7(24)—2R-77 Elev. 962.56
Survey Elev. = 962.83

BM 601 Project STP-U-7875(638)--70-77 Elev. 1007.11
Survey Elev. = 1007.16

BM 602 Project STP-U-7875(638)--70-77 Elev. 927.50
Survey Elev. = 927.59

BM 603 Project STP-U-7875(638)--70-77 Elev. 937.76
Survey Elev. = 937.97

Horizontal Control

The project coordinate system is the Iowa Regional Coordinate System, Zone 8. Horizontal datum is NAD83 (2011) for Epoch 2010.00. The projection parameters for Zone 8 of the IaRCS is defined below:

Transverse Mercator Projection
Origin Lat: 40°15'N
Origin Central Meridian: 093°43'W
Projection Axis Scale: 1.000 033
False Northing: 7,000,000
False Easting: 18,500,000

The IaRTN base stations are the primary control for this project. The IDOT Survey Office provided secondary control for five FENO monuments in the project vicinity. The coordinates of the five FENO monuments were verified using the IaRTN with three observations with appropriate time spans between. The averaged observations were within tolerance and the provided control was accepted. Additional control points were placed throughout the project using the IaRTN with multiple observations. Observations were averaged to determine control coordinates. The horizontal standard deviation of these observations was less than 0.04 ft.

There has been design survey performed in the 100th Street area performed previously by Snyder & Associates, Inc. and Nilles Associates, Inc. The coordinate system used for these projects is a modified Iowa State Plane South Coordinate system scaled to ground. However, the scaling information is unreported and unknown. Four control points previously established for the 100th St. projects were observed and coordinates determined in Iowa RCS, Zone 8 coordinates. The results are shown below:

	Control Used for the Following Projects: STP-U-7875(638)--70-77 Urbandale 100th St Project ((S&A 106.1015 & 112.0818) 100th St Interchange Project (Nilles)		**RCS ZONE 8 AMES-DSM** (This Survey)	
CP1	602605.71	1575635.47	7511458.74	18494431.43
CP5	601914.71	1570335.87	7510754.77	18489133.66
CP9	601552.78	1565434.75	7510380.76	18484233.49
CP22	604456.85	1570496.25	7513297.28	18489287.79

Alignment Information

Interstate 80 Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. IR-35-2(204)73—12-77. Survey stationing was equated to the plan at PT at Sta. 567+59.44 (US ft.) and run back and ahead without equation throughout the survey.

Equations are as follows:

PT Sta. 475+65.42 This Survey
= PT Sta. 475+65.50 As-built Plans Project No. IR-35-2(204)73—12-77

PT Sta. 567+59.44 This Survey
= PT Sta. 567+59.44 As-built Plans Project No. IR-35-2(204)73—12-77

PI Sta. 597+32.96 This Survey
= PI Sta. 597+33.80 As-built Plans Project No. IM-35-3(70)77—13-77

PI Sta. 707+53.21 This Survey
= PI Sta. 707+53.50 As-built Plans Project No. IM-35-3(70)77—13-77

Ia 141 Alignment Information

This alignment retraces a 2000 Preliminary survey (SAP 322) alignment. The 2000 survey was related to a modified state plane coordinate system.

A 2013 survey (SAP 322.4) used SAP 322 alignment points. The 2013 alignment coordinates were scaled back to unmodified Iowa State Plane South and then transformed to IaRCS zone 8.

To check the relationship of the 2000 survey to this survey the following comparison was made:

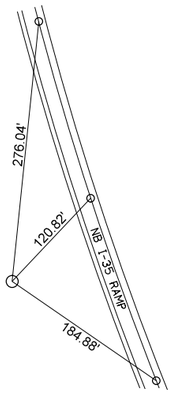
Inverse Pt. 13(2000) to Pt. 320(2000) N0°22'19" W Distance 4,240.18
Inverse Pt. RJM13(IaRCS) to Pt. RJM320(IaRCS) N0°31'04" W Distance 4,240.15

Two alignments were created in IaRCS zone 8. SUR141A begins south of I 80/35 at Station 8+59.48 and continues north to a 28.62 ft lateral offset right at 90° to the back tangent at Station 41+21.10. This retraces the alignment from metric as built ramp reconstruction plan STP-141-7(18)--2C-77 however US ft. stationing was used in place of metric stationing. US ft. stationing relates to metric stationing at PI Station 23+76.33 (US Ft.) = PI Station 4003+96.899m. SUR141B begins at Station 41+21.10 at the lateral offset and continues to PT Station 64+50.83. This retraces the alignment and stationing from as built plan Fn-141-7(7)—21-77.

VERTICAL CONTROL

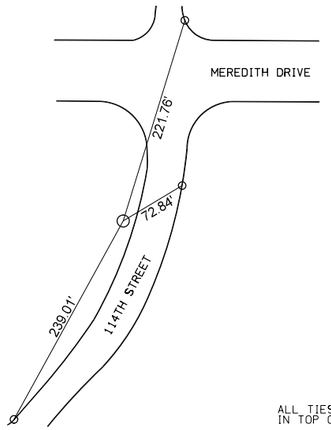
Point	North	East	Elevation	Station	Offset	Feature	Description
BM100	7510868.879	18491498.440	919.970	619+67.99	-90.831	BM	CUT TRIANGLE
BM101	7510790.388	18489824.680	903.200	602+92.46	-75.106	BM	CUT X
BM102	7510749.380	18488204.390	921.080	586+71.72	-94.214	BM	CUT TRIANGLE
BM103	7510729.339	18487383.120	929.970	578+50.27	-104.478	BM	CUT TRIANGLE
BM104	7510617.234	18485831.080	969.310	563+06.65	-85.938	BM	CUT TRIANGLE
BM105	7510664.882	18485566.550	961.260	560+71.53	-193.504	BM	ROW RAIL
BM106	7510975.912	18484163.470	961.600	551+31.34	-1078.828	BM	RR SPIKE
BM107	7510318.832	18486911.150	951.560	573+63.48	288.342	BM	GIN SPIKE
BM109	7510687.805	18491554.510	915.210	620+17.23	92.217	BM	W CORNER HEADWALL
BM110	7509532.000	18485052.000	980.210	550+33.57	613.516	BM	NW BOLT LP BASE
BM505	7512681.310	18484235.070	963.960	556+77.35	-2544.770	BM	CUT X NW COR SIGN BASE
BM509	7514208.935	18483980.970	938.360	558+33.82	-4057.446	BM	IHC HEADWALL OF RCB
BM512	7516715.972	18483979.160	962.830	561+04.68	-6449.039	BM	CUT X NW HEAD BOLT HYDRANT
BM515	7510640.576	18490003.990	902.220	604+66.03	81.319	BM	IHC HEADWALL OF RCB
BM602	7510807.616	18489283.100	927.590	597+51.91	-112.613	BM	IHCBM NE WINGWALL OF 100TH ST BRIDGE OVER INTERSTATE
BM603	7513146.583	18489305.720	937.970	598+62.14	-2449.091	BM	RR SPIKE IN PP SE QUAD 100TH ST & NW 54TH AVE

STA. 478+01.08, 158.91′ Rt.
CP No. 778001, FND FENO MONUMENT
N=7503180.88 E=18483683.68



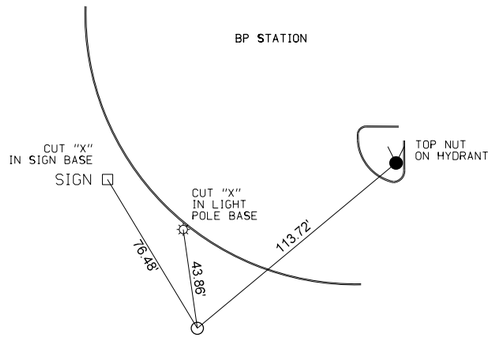
ALL TIES CUT "X" IN EDGE OF PAVEMENT

STA. 524+12.89, 717.13′ Rt.
CP No. 778002, FND FENO MONUMENT
N=7507764.25 E=18484216.78

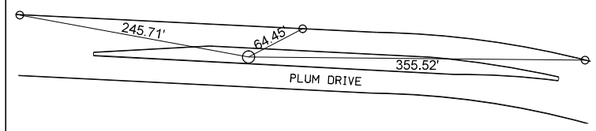


ALL TIES CUT "X" IN TOP OF CURB

STA. 557+95.30, 3115.84′ Lt.
CP No. 771411, FND FENO MONUMENT
N=7513297.91 E=18484233.98

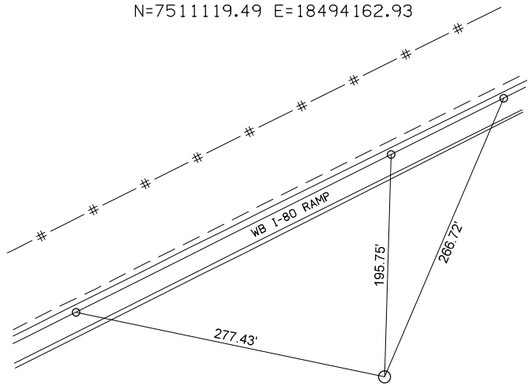


STA. 585+38.66, 698.23′ Rt.
CP No. 778003, FND FENO MONUMENT
N=7509952.56 E=18488100.65



ALL TIES CUT "X" IN TOP OF CURB

STA. 646+39.99, 241.43′ Lt.
CP No. 778004, FND FENO MONUMENT
N=7511119.49 E=18494162.93



ALL TIES CUT "X" IN EDGE OF PAVEMENT

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER G.2

ALIGNMENT COORDINATES

101-16
10-20-09

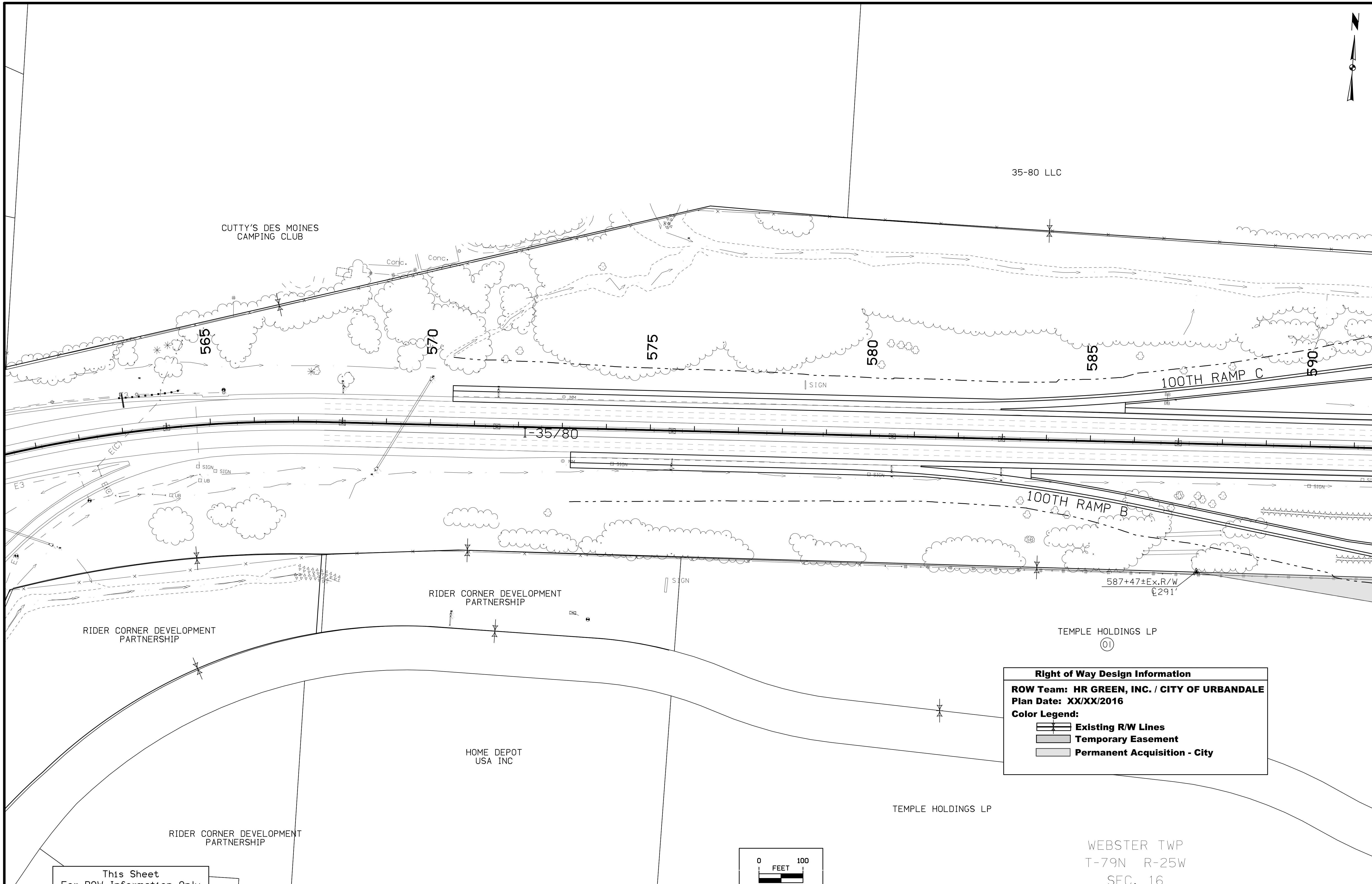
Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
I-35/80																			
20000		475+65.42	7,502,944.28	18,483,526.17															
20005								522+84.60	7,507,663.37	18,483,498.10	551+02.06	7,510,480.78	18,483,481.35	567+59.44	7,510,584.70	18,486,296.89			
20010		567+59.44	7,510,584.70	18,486,296.89															
20020		597+32.96	7,510,694.37	18,489,268.39															
20030		707+53.21	7,511,107.27	18,500,280.90															
100th ST RAMP A																			
34000		1497+32.94	7,510,949.10	18,489,267.43															
SR100A-1								1510+66.26	7,510,846.65	18,490,596.80	1512+95.30	7,510,829.04	18,490,825.17	1515+23.85	7,510,837.63	18,491,054.05			
100th ST RAMP B																			
SR100B-1								2579+20.36	7,510,549.57	18,487,459.89	2582+74.44	7,510,560.83	18,487,813.80	2586+26.68	7,510,509.74	18,488,164.17			
35001		2597+40.12	7,510,349.11	18,489,265.96															
100th ST RAMP C																			
SR100C-1								3580+50.00	7,510,710.25	18,487,583.70	3583+70.78	7,510,722.08	18,487,904.26	3586+90.69	7,510,774.78	18,488,220.68			
36001		3588+06.85	7,510,793.86	18,488,335.26															
36002		3597+51.85	7,510,949.10	18,489,267.43															
100th ST RAMP D																			
37000		4496+94.21	7,510,361.11	18,489,265.98															
SR100D-1								4507+60.64	7,510,609.21	18,490,303.15	4510+06.12	7,510,666.32	18,490,541.90	4512+50.00	7,510,675.51	18,490,787.20			

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER G.3

SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e	L	x														
		FT	%	FT	FT														
100TH STREET	SR100A-1	4000	3.6	112	62	PV-303	1510+49.86		1510+66.26	1510+99.86									
							1515+40.25		1515+23.85	1514+90.25									
100TH STREET	SR100B-1	4000	3.6	112	62	PV-303	2579+03.96		2579+20.36	2579+53.96									
							2586+43.08		2586+26.68	2585+93.08									
100TH STREET	SR100C-2	5000	3.0	93	62	PV-303	3580+46.90		3580+50.00	3580+77.90									
							3586+93.79		3586+90.69	3586+62.79									
100TH STREET	SR100D-1	2480	5.0	155	62	PV-303	4507+14.14		4507+60.64	4508+07.14						4507+76.14	4507+76.14		
							4512+96.50		4512+50.00	4512+03.50						4512+34.50	4512+34.50		
86TH STREET	35100	2480	5.0	155	62	PV-303	2528+09.68		2528+56.18	2529+02.68						2528+71.68	2528+71.68		
							2541+03.49		2540+56.99	2540+10.49						2540+41.49	2540+41.49		
86TH STREET	36100	3050	4.4	137	62	PV-303	3531+65.22		3531+99.12	3532+40.22						3532+27.77	3532+27.77		
							3545+32.98		3544+99.08	3544+57.98						3544+70.43	3544+70.43		


35-80 LLC
CUTTY'S DES MOINES CAMPING CLUB
Conc.
Conc.
565
570
575
580
585
590
100TH RAMP C
SIGN
I-35/80
100TH RAMP B
587+47±Ex.R/W
℄291'
RIDER CORNER DEVELOPMENT PARTNERSHIP
RIDER CORNER DEVELOPMENT PARTNERSHIP
TEMPLE HOLDINGS LP
01
HOME DEPOT USA INC
TEMPLE HOLDINGS LP
RIDER CORNER DEVELOPMENT PARTNERSHIP
Right of Way Design Information
ROW Team: HR GREEN, INC. / CITY OF URBANDALE
Plan Date: XX/XX/2016
Color Legend:
Existing R/W Lines
Temporary Easement
Permanent Acquisition - City
This Sheet
For ROW Information Only
0 FEET 100
WEBSTER TWP
T-79N R-25W
SEC. 16

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER H.1

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WEBSTER TWP.
T-79N R-25W
SEC. 16

100TH ST

35-80 LLC

598+46±Ex.R/W
℄440′

598+48±Ex.R/W
℄420′

MASON REALTY CO
03

600+48±Ex.R/W
℄440′

600+48±Ex.R/W
℄420′

603+00±Ex.R/W
℄420′

602+99±Ex.R/W
℄301′

602+99±Ex.R/W
℄281′

606+89±Ex.R/W
℄259′

606+89±Ex.R/W
℄239′

610+87±Ex.R/W
℄262′

610+86±Ex.R/W
℄242′

FIRST ASSEMBLY OF
GOD CHURCH

100TH RAMP C

100TH RAMP A

600+42±Ex.R/W
℄236′

595

600

605

610

615

620

I-35/80

595+70±Ex.R/W
℄296′

598+64±Ex.R/W
℄295′

100TH RAMP B

100TH RAMP D

595+65±Ex.R/W
℄409′

598+65±Ex.R/W
℄402′

597+88±Ex.R/W
℄438′

604+28±Ex.R/W
℄289′

605+34±Ex.R/W
℄288′

TEMPLE HOLDINGS LP
01

WEST URBAN DFV INC
02

LANDMARK OFFICE
PARK LLC

LAND MARK
OFFICE PARK LLC

Right of Way Design Information
ROW Team: HR GREEN, INC. / CITY OF URBANDALE
Plan Date: XX/XX/2016
Color Legend:
Existing R/W Lines
Temporary Easement
Permanent Acquisition - City

0 100
FEET

This Sheet
For ROW Information Only

WEBSTER TWP.
T-79N R-25W
SEC. 15

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER H.2

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WEBSTER TWP.
T-79N R-25W
SEC. 15

FIRST ASSEMBLY OF GOD CHURCH

MID AMERICA INVESTMENT CO

DELTA DENTAL OF IOWA

URBANDALE LAND LLC

TEXAS ROADHOUSE HOLDINGS LLC

URBANDALE INVESTORS LLC

620 625 630 635 640 645 650

86TH RAMP C

I-35/80

86TH RAMP B

HIGHLAND POINTE OFFICE PARK OWNERS ASSOCIATION

LANDMARK OFFICE PARK LLC

PARAGON BEST LLC

PARAGON BEST LLC

MIDWEST HOTEL MANAGEMENT INC

IOWA HOTEL MANAGEMENT INC

SAT KARTAR INVESTMENTS LLC

HOTEL DEVELOPMENT LLC

TATTOOS PROPERTIES LLC

WEBSTER TWP.
T-79N R-25W
SEC. 15

Right of Way Design Information

ROW Team: HR GREEN, INC. / CITY OF URBANDALE
Plan Date: XX/XX/2016
Color Legend:
Existing R/W Lines
Temporary Easement
Permanent Acquisition - City

This Sheet
For ROW Information Only

0 100
FEET

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER H.3

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

Mainline I-35/80
Maintain three lanes of traffic, both northbound/eastbound and southbound/westbound, at all times during all stages of construction.

NW 100th St Interchange
Maintain traffic on northbound and southbound 100th St mainline at all times during all stages of construction. Provide type III barricades at the terminials of each ramp at NW 100th Street.

108-26A
08-01-08

STAGING NOTES

TRAFFIC CONTROL (Refer to sheets J.5 to J.9)
Traffic:
1) NB and SB I-35/80 traffic will operate on existing mainline pavement. Existing three lanes in each direction will be used and lane channelizers will be placed along the outside edge of the existing shoulder so that traffic is not disrupted by grading work.
2) Close ramps at NW 100th Street terminals.

Construction:
1. Grade I-35/80:
SB shoulder from Sta. 570+50.00 to Sta. 580+50.00 and Sta. 615+22.74 to Sta. 621+23.00.
NB shoulder from Sta. 573+20.00 to Sta. 579+20.36 and Sta. 612+50.00 to Sta. 622+50.00.
SB auxiliary lane during night work between existing shoulder and proposed shoulder from Sta. 570+50.00 to 580+50.00 and Sta. 615+22.74 to Sta. 621+23.00.
NB auxiliary lane during night work between existing shoulder and proposed shoulder from 573+20.00 to Sta. 579+20.36 and Sta. 612+50.00 to Sta. 622+50.00.
SB shoulder during night work from Sta. 585+77.47 to Sta. 610+48.85.
NB shoulder during night work from Sta. 583+67.37 to Sta. 608+76.88.
2. Grade all ramps at NW 100th Street interchange.
3. Construct all proposed pipes and culvert extensions including twin 10'x12' box culvert.
4. Construct erosion control.

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

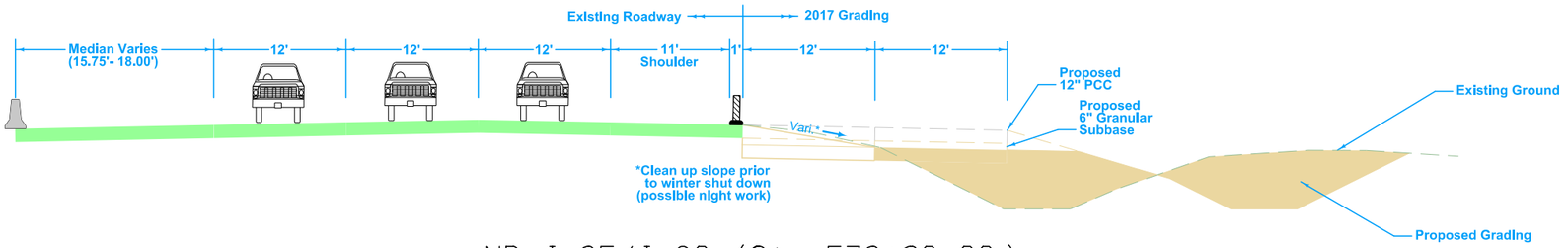
●	Channelizing Device		Crash Cushion (Temp or Perm)
X	Drum		Traffic Signal
◘	Temporary Lane Separator		Flagger
◆	Tubular Marker		Temporary Floodlighting
♦	Channelizer Marker		Traffic Sign
△	Concrete Barrier Marker		Type III Barricade
ς	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

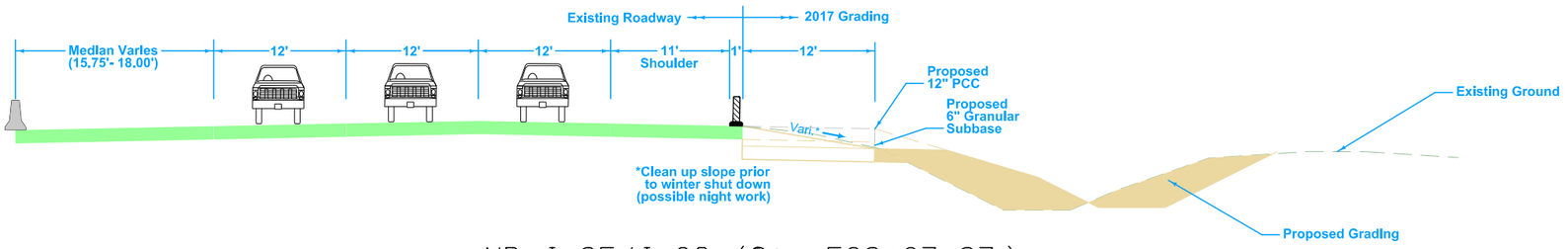
TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)

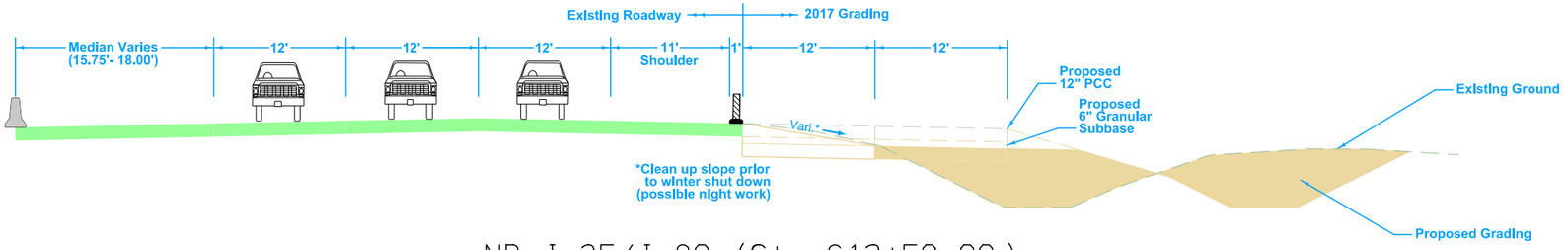
Traffic Control



NB I-35/I-80 (Sta 573+20.00)



NB I-35/I-80 (Sta 583+67.37)



NB I-35/I-80 (Sta 612+50.00)

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER J.3

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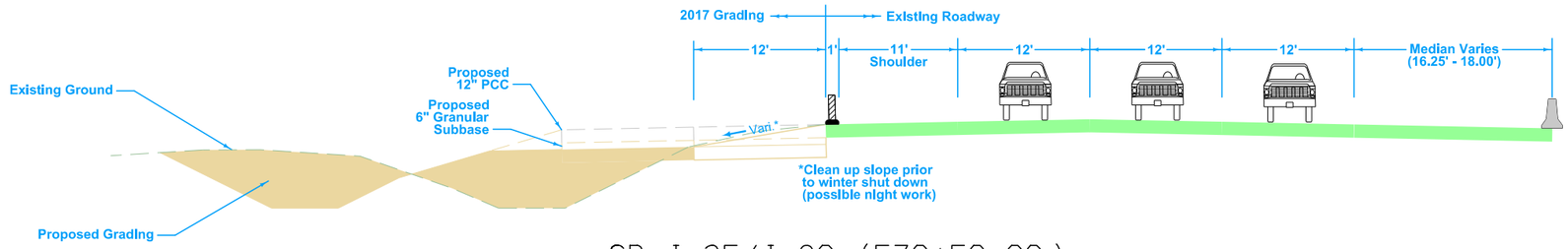
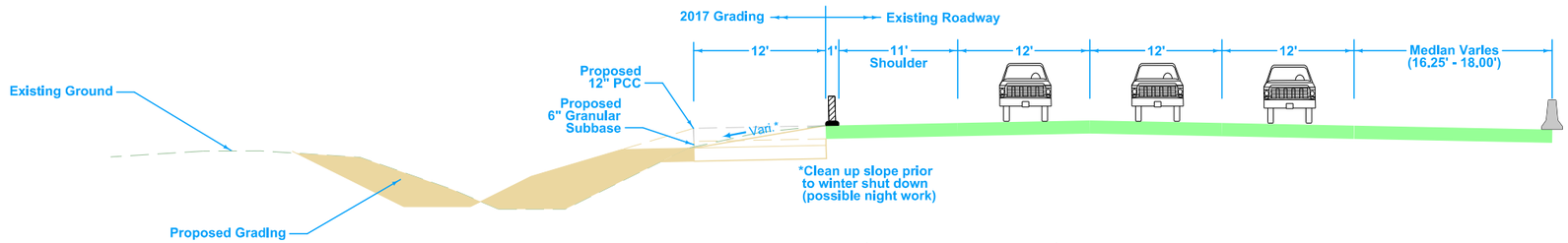
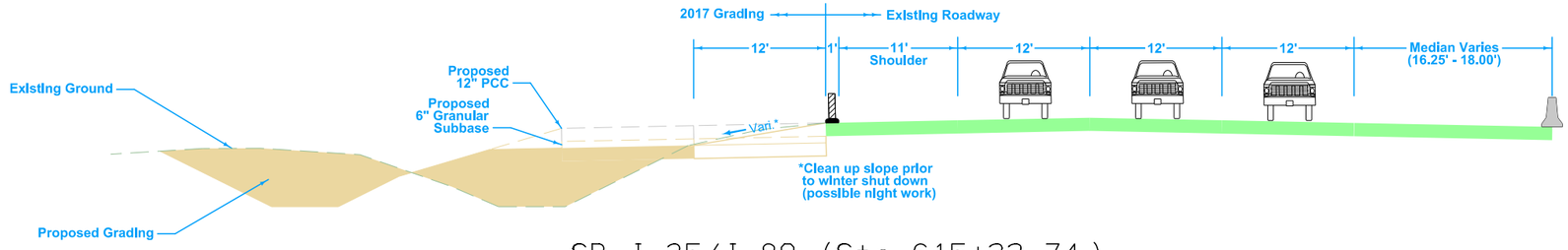
Traffic Control



SB I-35/I-80 (570+50.00)



SB I-35/I-80 (585+77.47)



SB I-35/I-80 (Sta 615+22.74)

WEBSTER TWP.
T-79N R-25W
SEC. 16

570 575 580 585

100TH RAMP C

I-35/80

100TH RAMP B

SIGN

St.S.

0 FEET 50

WEBSTER TWP.
T-79N R-25W
SEC. 16

Mainline I-35/80 Stage 1

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER J.5

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WEBSTER TWP.
T-79N R-25W
SEC. 16

100TH RAMP C

100TH RAMP B

585

590

595

600

I-35/80

PI Sta 597+32.96

W2

San.(C)

EB

WV

St.S.(C)

0 FEET 50

Mainline I-35/80
Stage 1

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER J.6

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WEBSTER TWP.
T-79N R-25W
SEC. 15

N

San.(C)

San.(C)

San.(C)

100TH RAMP A

600

605

610

615

I-35/80

100TH RAMP D

San.(C)

WEBSTER TWP.
T-79N R-25W
SEC. 15

0 FEET 50

Mainline I-35/80
Stage 1

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER J.7

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WEBSTER TWP.
T-79N R-25W
SEC. 15

615

620

625

630

I-35/80

WEBSTER TWP.
T-79N R-25W
SEC. 15

0 FEET 50

Mainline I-35/80
Stage 1

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER J.8

1:43:32 PM 2/12/2016 IA_DOT \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199J5.sht

WEBSTER TWP
T-79N R-25W
SEC. 16

RIDER CORNER INTERCHANGE
PROJECT # IM-080-3(178)127--13-77

POT Sta 580+50.00 78.00' LT =
PC Sta 3580+50.00

POT Sta 577+65.40

Curve Data
Δ = 7° 20' 30.22" (LT)
T = 320.78
L = 640.69
R = 5,000.00
E = 10.28
e = 3.0%
L = 93'
x = 62'

℄ I-35/80 (ML080)

℄ 100TH STREET (SR100)

℄ 100TH STREET RAMP C (SR100C)

℄ 100TH STREET RAMP B (SR100B)

500' TAPER 285:1

1705' TAPER 750:1

POT Sta 578+40.01

POT Sta 579+20.36 78.00' RT =
PC Sta 2579+20.36

Curve Data
Δ = 10° 07' 02.34" (RT)
T = 354.08
L = 706.32
R = 4,000.00
E = 15.64
e = 3.6%
L = 112'
x = 62'

Geometric Plan
Proposed Interchange of
Interstate 35/80 with 100th Street
Polk County

0 100
FEET

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER K.1

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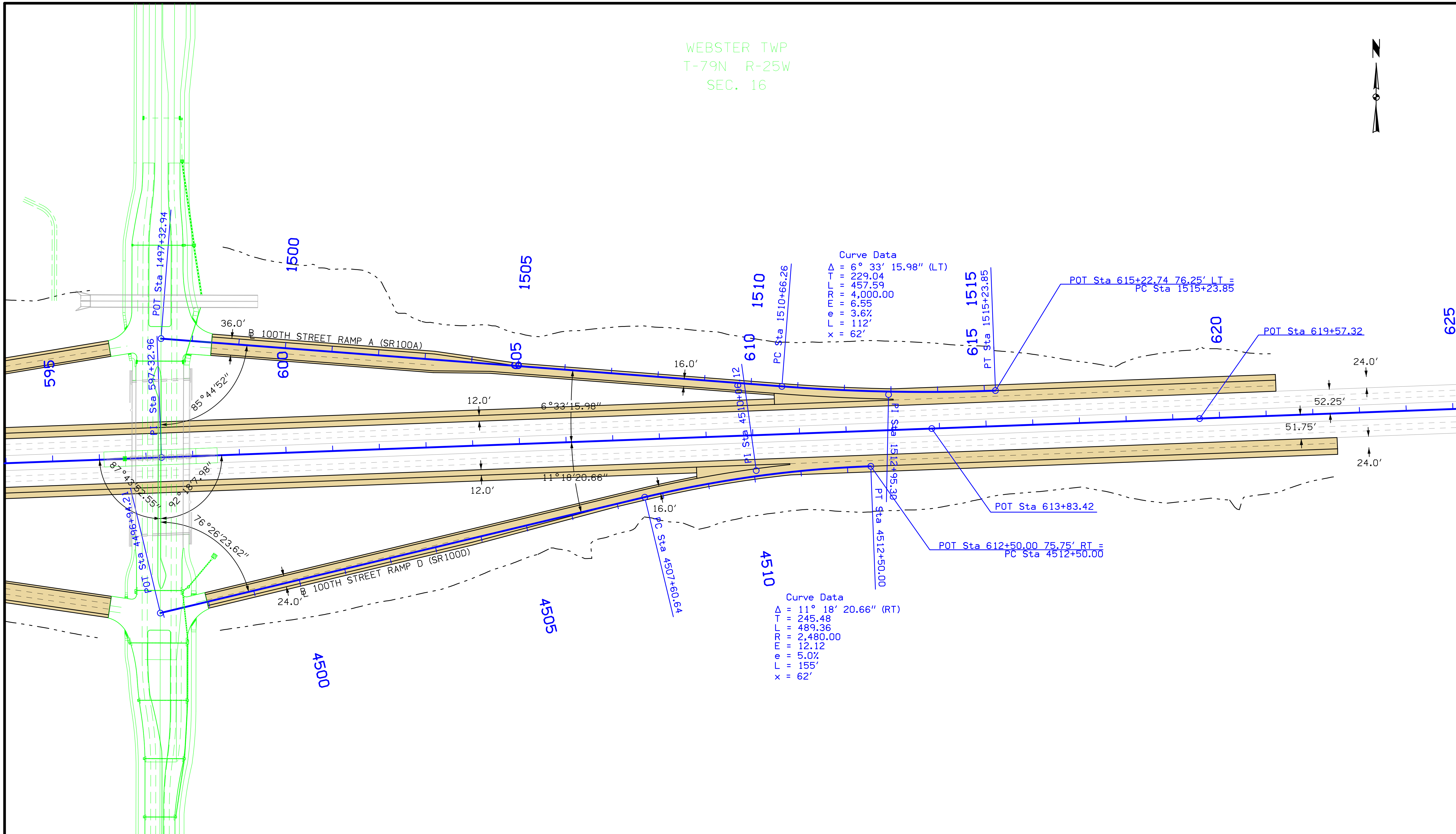
WEBSTER TWP
T-79N R-25W
SEC. 16
Curve Data
Δ = 6° 33' 15.98" (LT)
T = 229.04
L = 457.59
R = 4,000.00
E = 6.55
e = 3.6%
L = 112'
x = 62'
POT Sta 615+22.74 76.25' LT =
PC Sta 1515+23.85
POT Sta 619+57.32
POT Sta 1497+32.94
POT Sta 597+32.96
PC Sta 1510+66.26
PT Sta 1515+23.85
PI Sta 4510+06.12
PI Sta 1512+95.30
PT Sta 4512+50.00
PC Sta 4507+60.64
POT Sta 4496+94.27
POT Sta 613+83.42
POT Sta 612+50.00 75.75' RT =
PC Sta 4512+50.00
℄ 100TH STREET RAMP A (SR100A)
℄ 100TH STREET RAMP D (SR100D)
36.0'
16.0'
12.0'
24.0'
52.25'
51.75'
85°44'52"
6°33'15.98"
11°18'20.66"
87°45'52.55"
92°18'7.98"
76°26'23.62"
Curve Data
Δ = 11° 18' 20.66" (RT)
T = 245.48
L = 489.36
R = 2,480.00
E = 12.12
e = 5.0%
L = 155'
x = 62'
595
600
605
610
615
620
625
1500
1505
1510
1515
4500
4505
4510
0 FEET 100

Geometric Plan
Proposed Interchange of
Interstate 35/80 with 100th Street
Polk County

FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER K.2

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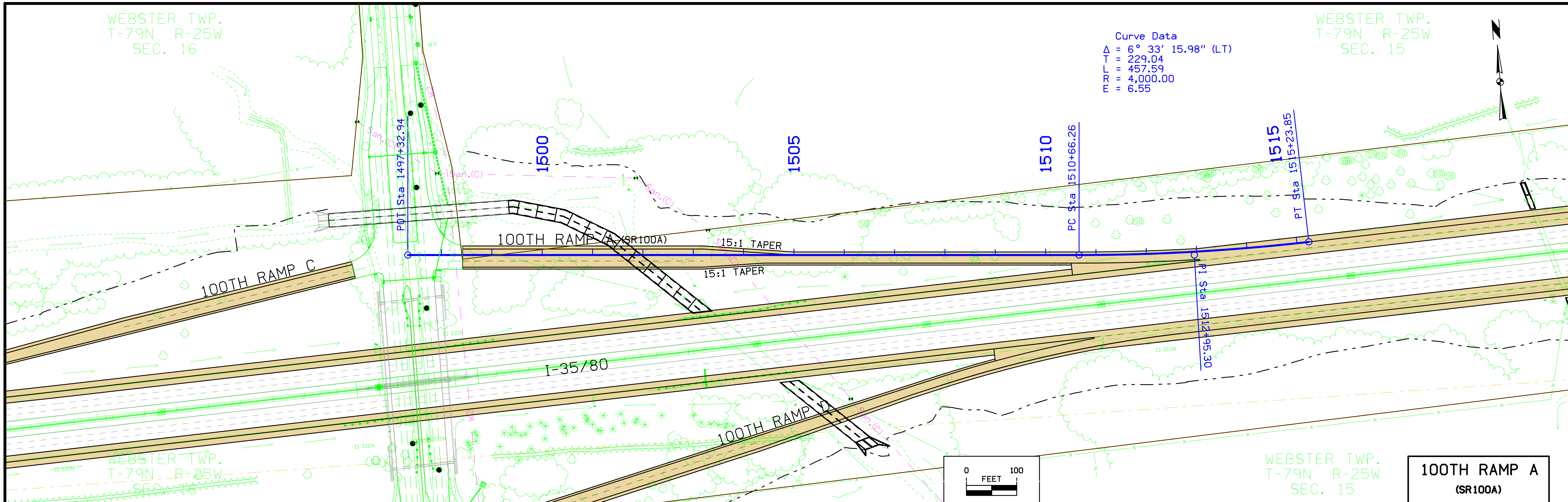
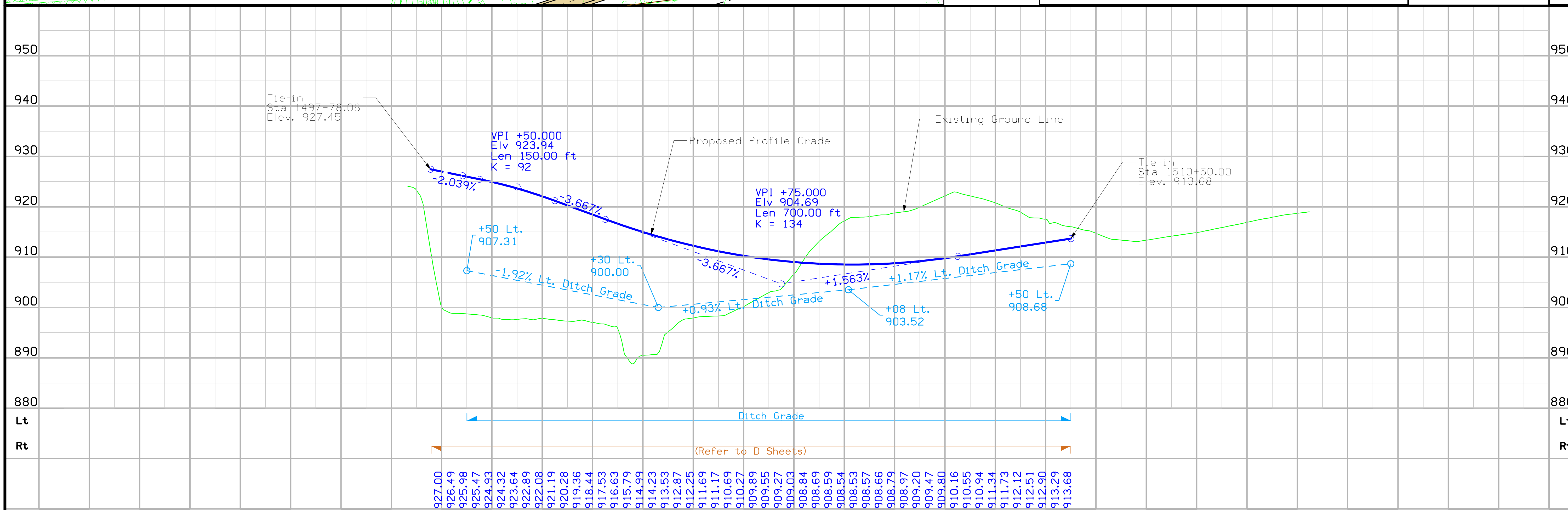

WEBSTER TWP.
T-79N R-25W
SEC. 16
WEBSTER TWP.
T-79N R-25W
SEC. 15
Curve Data
Δ = 6° 33' 15.98" (LT)
T = 229.04
L = 457.59
R = 4,000.00
E = 6.55
1500
1505
1510
1515
POT Sta 1497+32.94
PC Sta 1510+66.26
PT Sta 1515+23.85
PI Sta 1512+95.30
100TH RAMP A (SR100A)
15:1 TAPER
15:1 TAPER
100TH RAMP C
I-35/80
100TH RAMP D
WEBSTER TWP.
T-79N R-25W
SEC. 16
WEBSTER TWP.
T-79N R-25W
SEC. 15
0 FEET 100
100TH RAMP A
(SR100A)


950
940
930
920
910
900
890
880
Tie-in
Sta 1497+78.06
Elev. 927.45
VPI +50.000
Elv 923.94
Len 150.00 ft
K = 92
Proposed Profile Grade
Existing Ground Line
-2.039%
-3.667%
VPI +75.000
Elv 904.69
Len 700.00 ft
K = 134
Tie-in
Sta 1510+50.00
Elev. 913.68
+50 Lt.
907.31
+30 Lt.
900.00
-1.92% Lt. Ditch Grade
-3.667%
+1.563%
+0.93% Lt. Ditch Grade
+1.17% Lt. Ditch Grade
+08 Lt.
903.52
+50 Lt.
908.68
Lt
Rt
Ditch Grade
(Refer to D Sheets)
927.00 926.49 925.98 925.47 924.93 924.32 923.64 922.89 922.08 921.19 920.28 919.36 918.44 917.53 916.63 915.79 914.99 914.23 913.53 912.87 912.25 911.69 911.17 910.69 910.27 909.89 909.55 909.27 909.03 908.84 908.69 908.59 908.54 908.53 908.57 908.66 908.79 908.97 909.20 909.47 909.80 910.16 910.55 910.94 911.34 911.73 912.12 912.51 912.90 913.29 913.68
1500
1505
1510

FILE NO.	ENGLISH	DESIGN TEAM **CITY OF URBANDALE \ HR GREEN**	**POLK** COUNTY	PROJECT NUMBER **NHS-080-3(199)128--11-77**	SHEET NUMBER **K.3**

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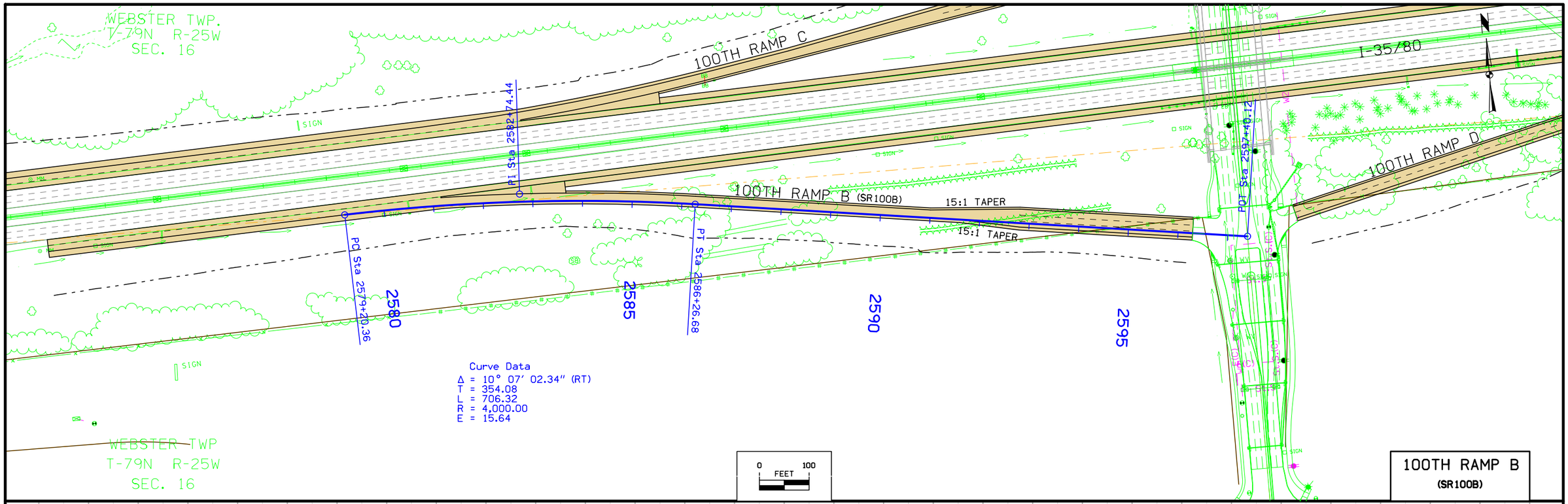
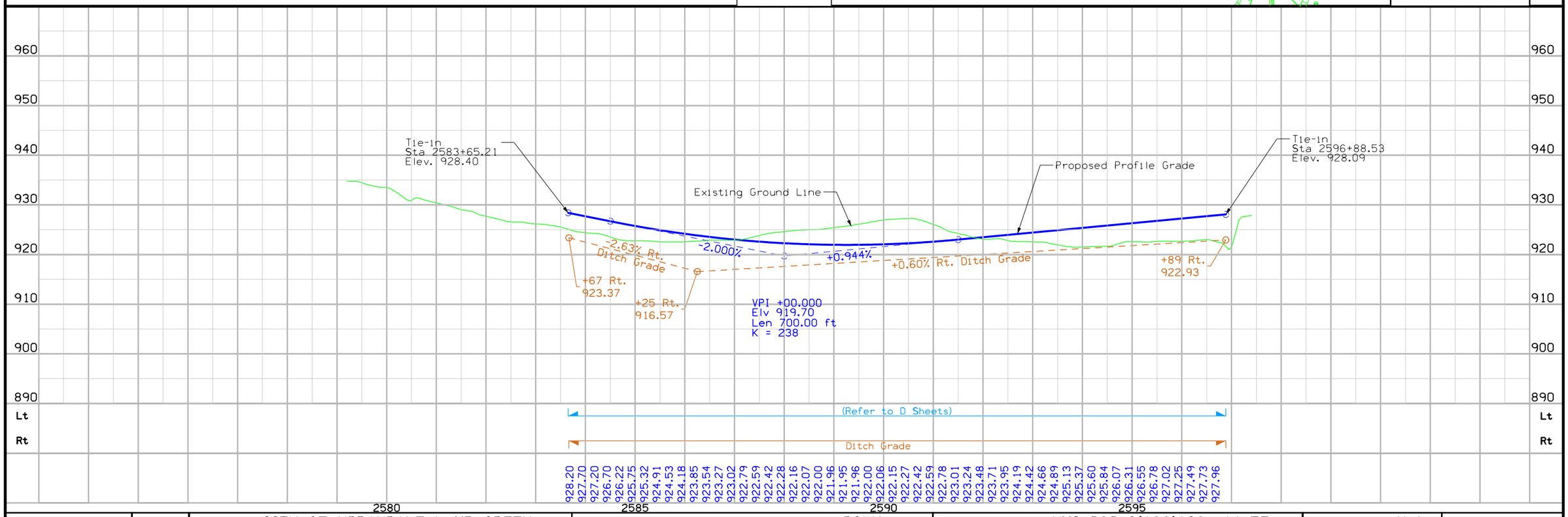
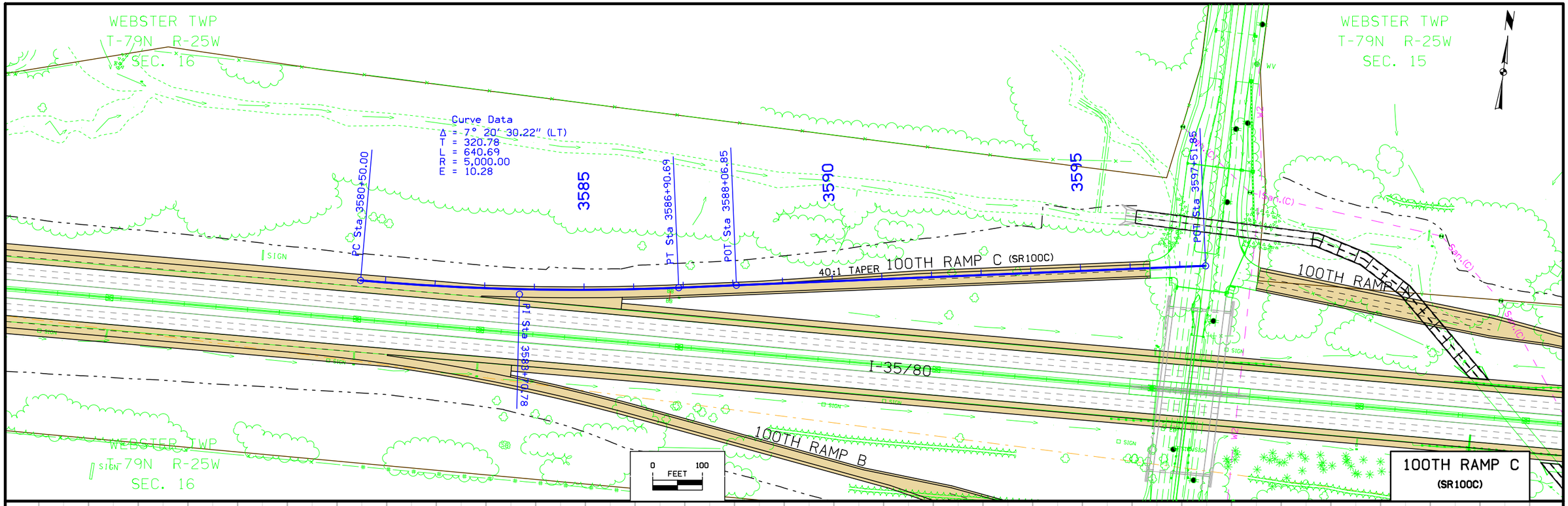
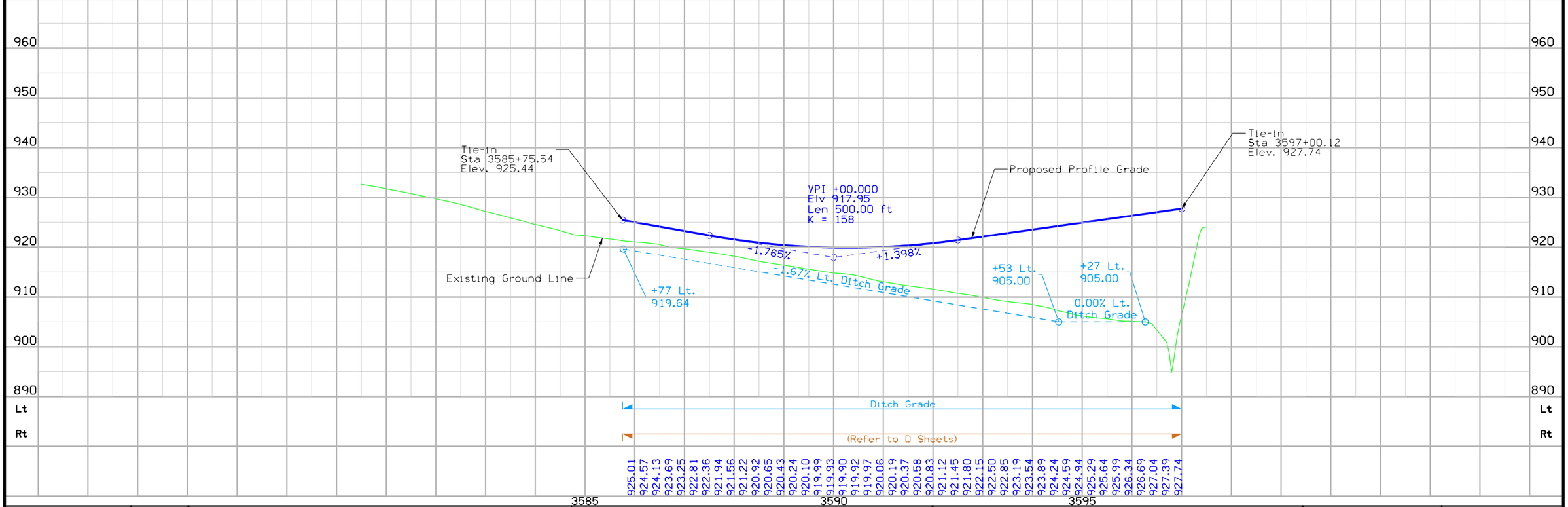




FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER K.4

1:45:07 PM 2/12/2016 IA_DOT \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199K1.sht





FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER K.5

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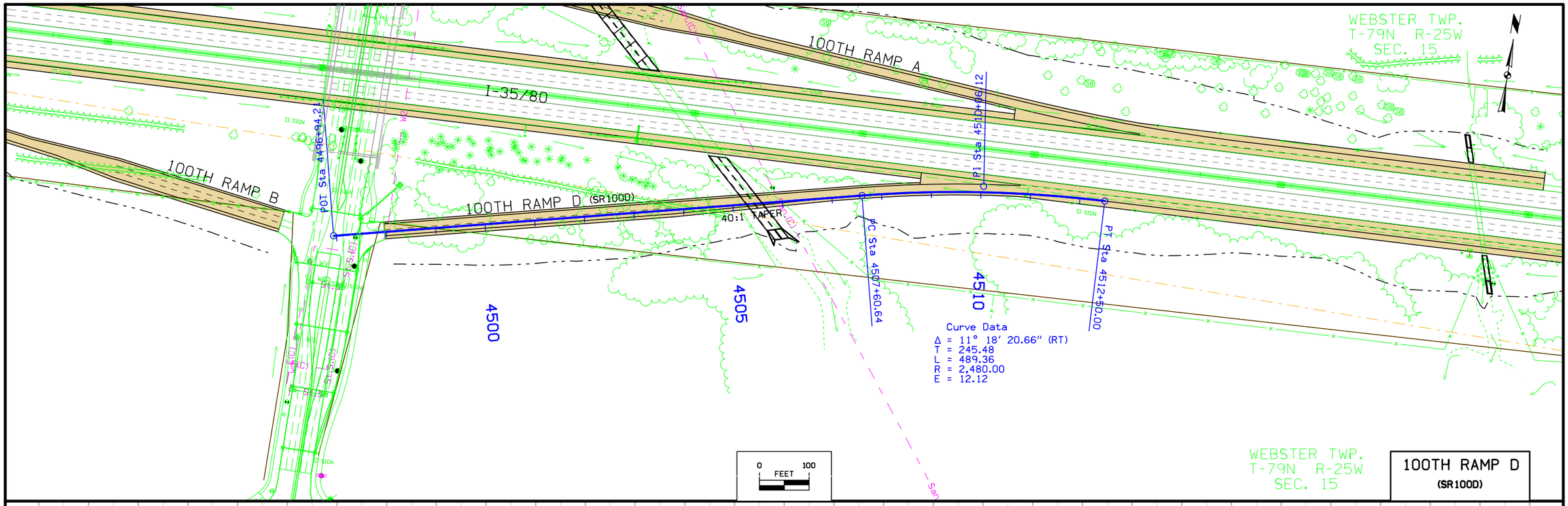
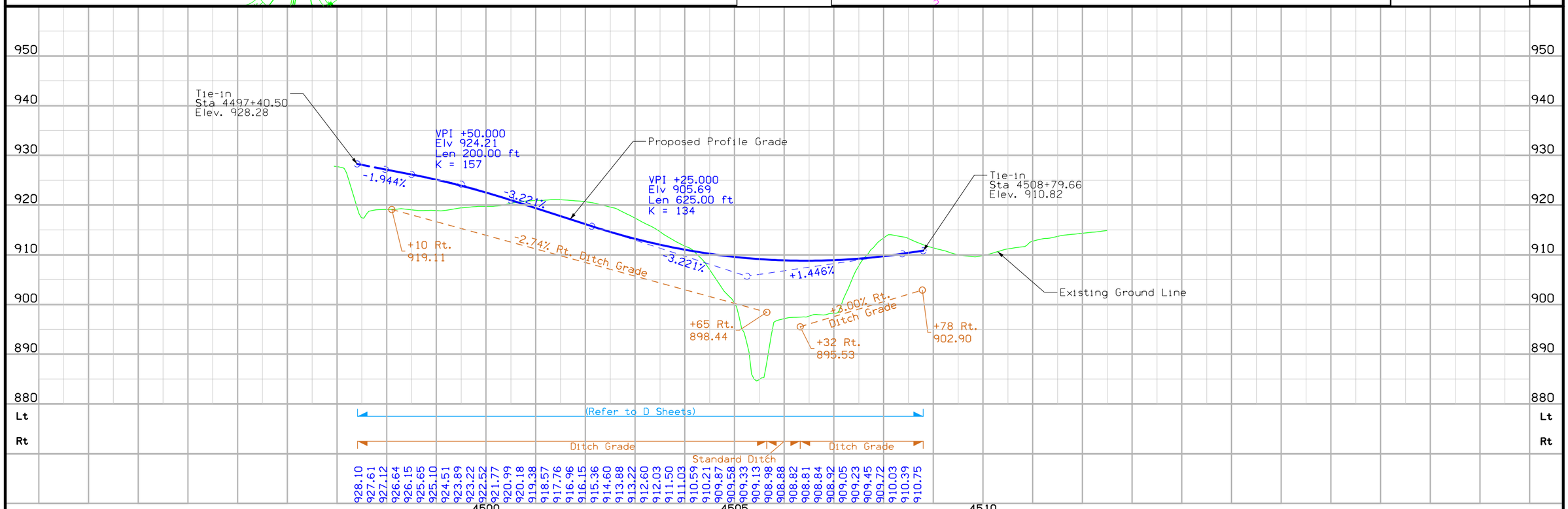
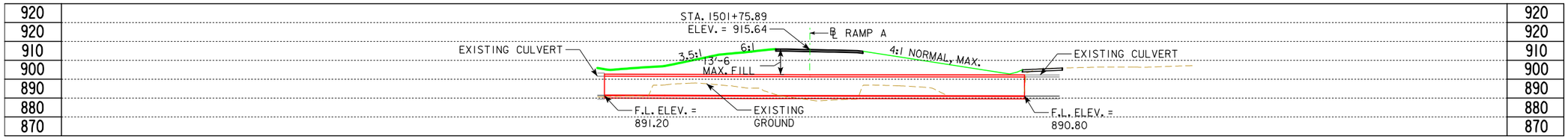




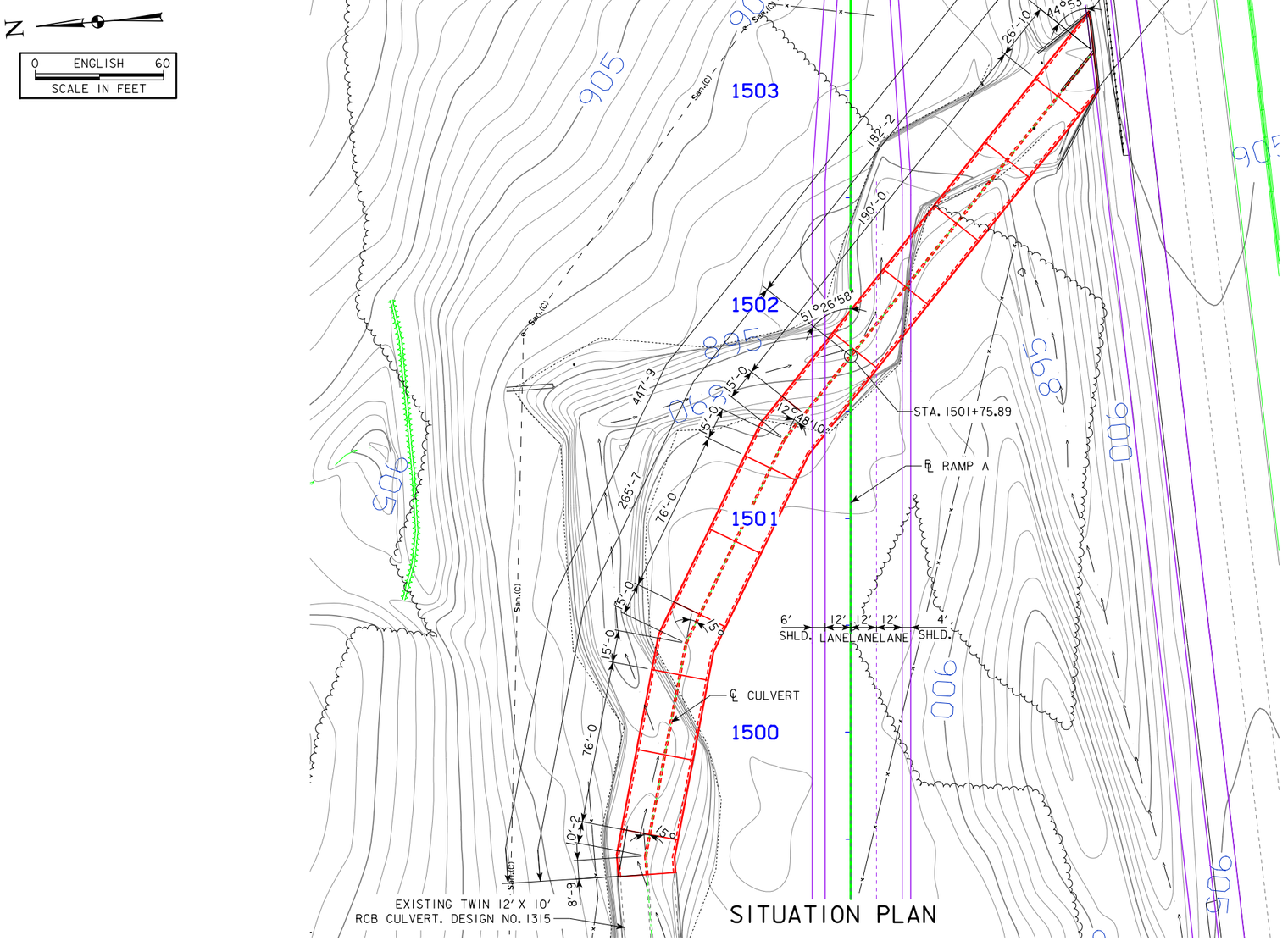
FILE NO.	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER K.6

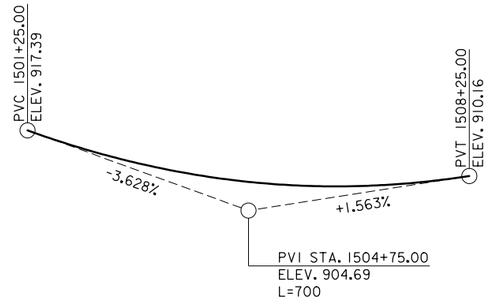
1:45:10 PM 2/12/2016 IA_DOT \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199K1.sht

BENCH MARK NO. 515 - IHC HEADWALL OF RCB. ELEV. 902.22



LONGITUDINAL SECTION ALONG ℄ CULVERT





PROPOSED PROFILE GRADE RAMP A

HYDRAULIC DATA

DRAINAGE AREA = 2600 ACRES
Q_{100} = 1,781 CFS
HW ELEV. = 901.66
STREAM SLOPE = 11.7 FT./MI.

UTILITIES LEGEND:

San. = SANITARY SEWER

LOCATION

100TH ST. RAMP A OVER N. WALNUT CREEK
T-79N R-25W
SECTION 15
WEBSTER TOWNSHIP
POLK COUNTY
FHWA NO. ?
LATITUDE 41.652225°
LONGITUDE -93.754330°

TRAFFIC ESTIMATE

2014 AADT	N/A	V.P.D.
2040 AADT	8,298	V.P.D.
2040 DHV	670	V.P.H.
TRUCKS	3	%

PRELIMINARY

DESIGN FOR 51° SKEW

TWIN 12' X 10' REINFORCED CONCRETE BOX CULVERT EXTENSION

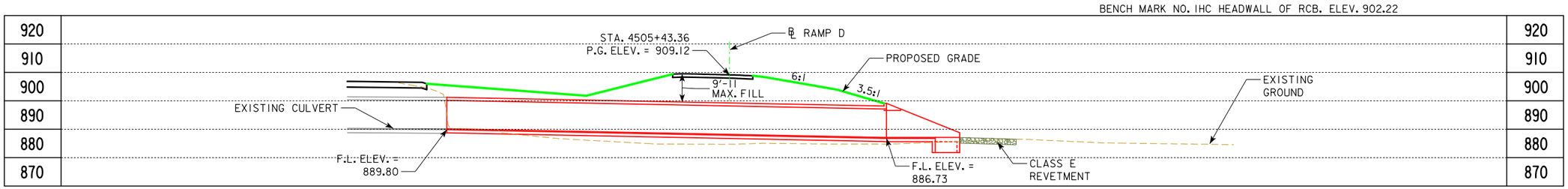
SITUATION PLAN

STATION 1501+75.89 JANUARY 2016

POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

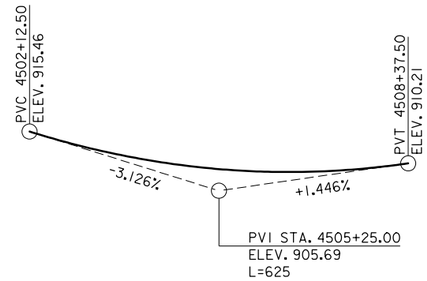
DESIGN SHEET NO. 1 OF 1 FILE NO. _____ DESIGN NO. _____

DESIGN TEAM CITY OF URBANDALE \ HR GREEN | POLK COUNTY | PROJECT NUMBER NHS-080-3(199)128--11-77 | SHEET NUMBER V.1



LONGITUDINAL SECTION ALONG ℄ CULVERT

0 ENGLISH 40
SCALE IN FEET

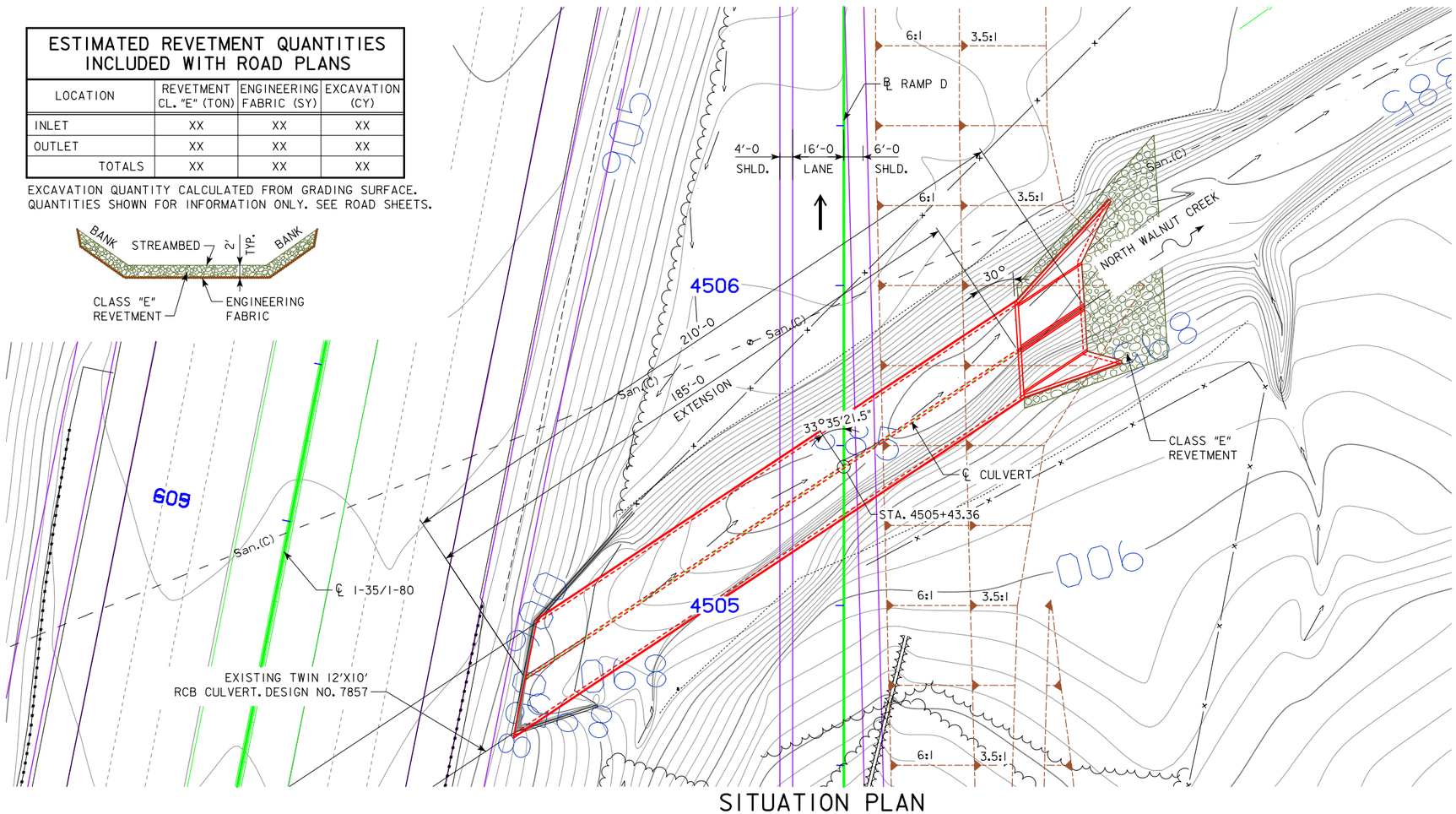


PROPOSED PROFILE GRADE RAMP D

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	XX	XX	XX
TOTALS	XX	XX	XX

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



SITUATION PLAN

HYDRAULIC DATA

DRAINAGE AREA = 2600 ACRES
Q_{100} = 1,781 CFS
HW ELEV. = 901.66
STREAM SLOPE = 11.7 FT./MI.

UTILITIES LEGEND:

San. = SANITARY SEWER

TRAFFIC ESTIMATE

2014 AADT	N/A	V.P.D.
2040 AADT	12,900	V.P.D.
2040 DHV	1,310	V.P.H.
TRUCKS	3	%

LOCATION

100TH STREET RAMP D OVER
NORTH WALNUT CREEK
T-79N R-25W
SECTION 15
WEBSTER TOWNSHIP
POLK COUNTY
FHWA NO. ?
LATITUDE 41.651224°
LONGITUDE -93.752891°

PRELIMINARY

DESIGN FOR 34° SKEW

TWIN 12'X10' REINFORCED CONCRETE BOX CULVERT EXTENSION

SITUATION PLAN

STATION 4505+43.36 JANUARY 2016

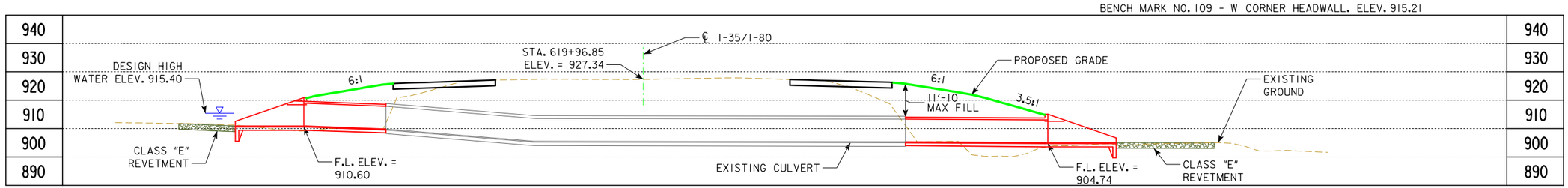
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. _____ DESIGN NO. _____

DESIGN TEAM CITY OF URBANDALE \ HR GREEN | POLK COUNTY | PROJECT NUMBER NHS-080-3(199)128--11-77 | SHEET NUMBER V.2

BENCH MARK NO. 109 - W CORNER HEADWALL. ELEV. 915.21



LONGITUDINAL SECTION ALONG ℄ CULVERT

0 ENGLISH 40
SCALE IN FEET

UTILITIES LEGEND:

NO KNOWN UTILITIES

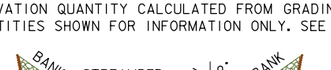
HYDRAULIC DATA

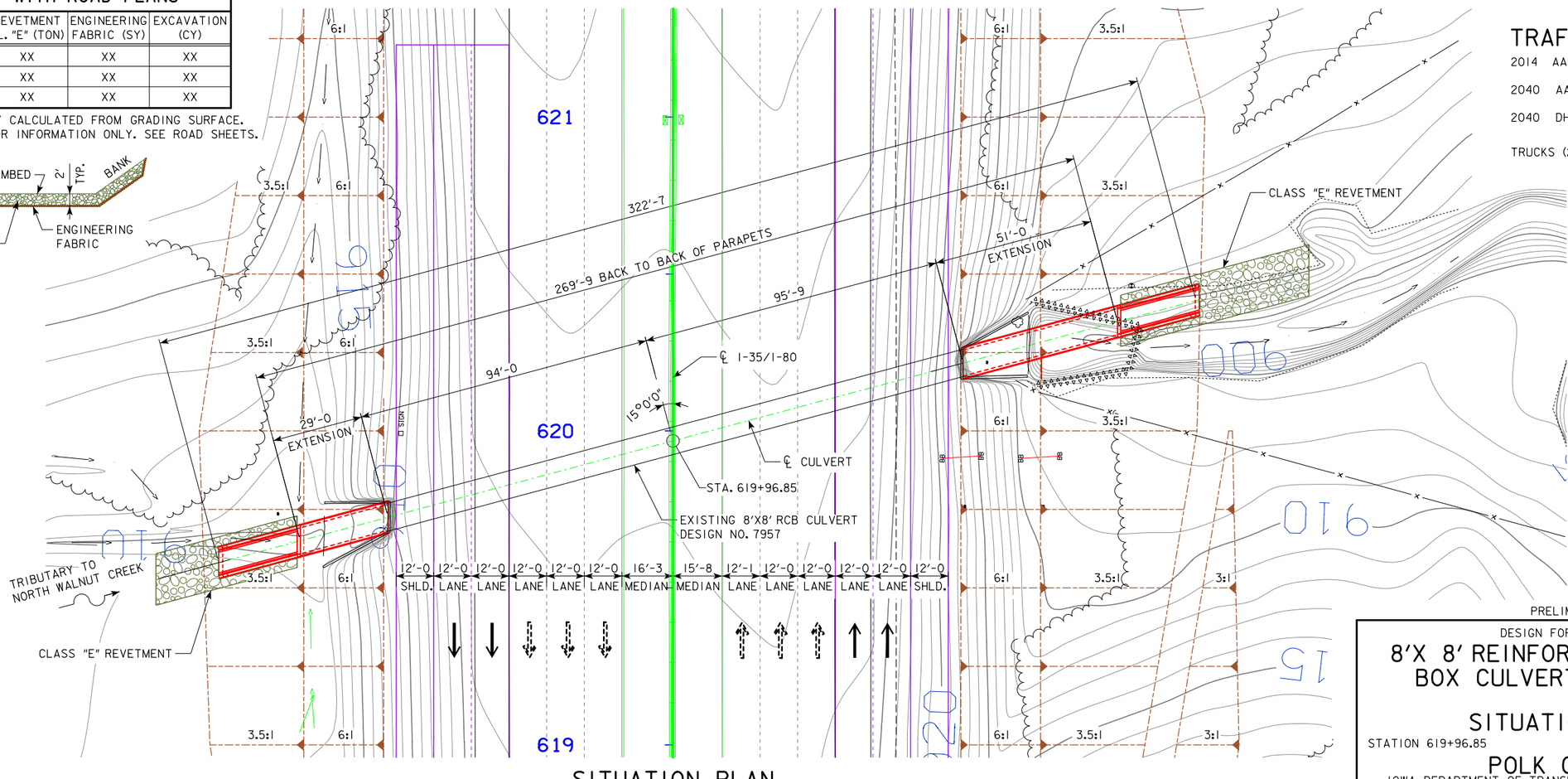
DRAINAGE AREA = 198.0 ACRES
Q_{50} = 240 CFS
HW ELEV. = 915.40
STREAM SLOPE = 73 FT./MI.

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	XX	XX	XX
TOTALS	XX	XX	XX

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.





SITUATION PLAN

TRAFFIC ESTIMATE

2014	AADT	46,000 WB 45,300 EB	V.P.D.
2040	AADT	69,000 WB 65,300 EB	V.P.D.
2040	DHV	6,725 WB 7,465 EB	V.P.H.
TRUCKS (2040)		18	%

LOCATION

I-80/I-35 OVER TRIBUTARY TO NORTH WALNUT CREEK
T-79N R-25W
SECTION 15
WEBSTER TOWNSHIP
POLK COUNTY
FHWA NO. ?
LATITUDE 41.651856°
LONGITUDE -93.747663°

PRELIMINARY

DESIGN FOR 15° SKEW

8'X 8' REINFORCED CONCRETE BOX CULVERT EXTENSION

SITUATION PLAN

STATION 619+96.85 JANUARY 2016

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. _____ DESIGN NO. _____

DESIGN TEAM CITY OF URBANDALE \ HR GREEN | POLK COUNTY | PROJECT NUMBER NHS-080-3(199)128--11-77 | SHEET NUMBER V.3

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

Pavement Removal

Proposed Granular Subbase

Proposed Special Backfill

Temporary Barrier Rail

Proposed Granular Shoulder

Temporary Shoulder

Existing Shoulder Strengthening

Permanent Barrier Rail

Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

- Channelizing Device
- Drum
- Temporary Lane Separator
- Tubular Marker
- Channelizer Marker
- Concrete Barrier Marker
- Delineator
- Temporary Barrier Rail
- Pavement Removal
- Sand Barrel Layout
- Crash Cushion (Temp or Perm)
- Traffic Signal
- Flagger
- Temporary Floodlighting
- Traffic Sign
- Type III Barricade
- Type A Warning Light
- Direction of Traffic
- Safety Closure

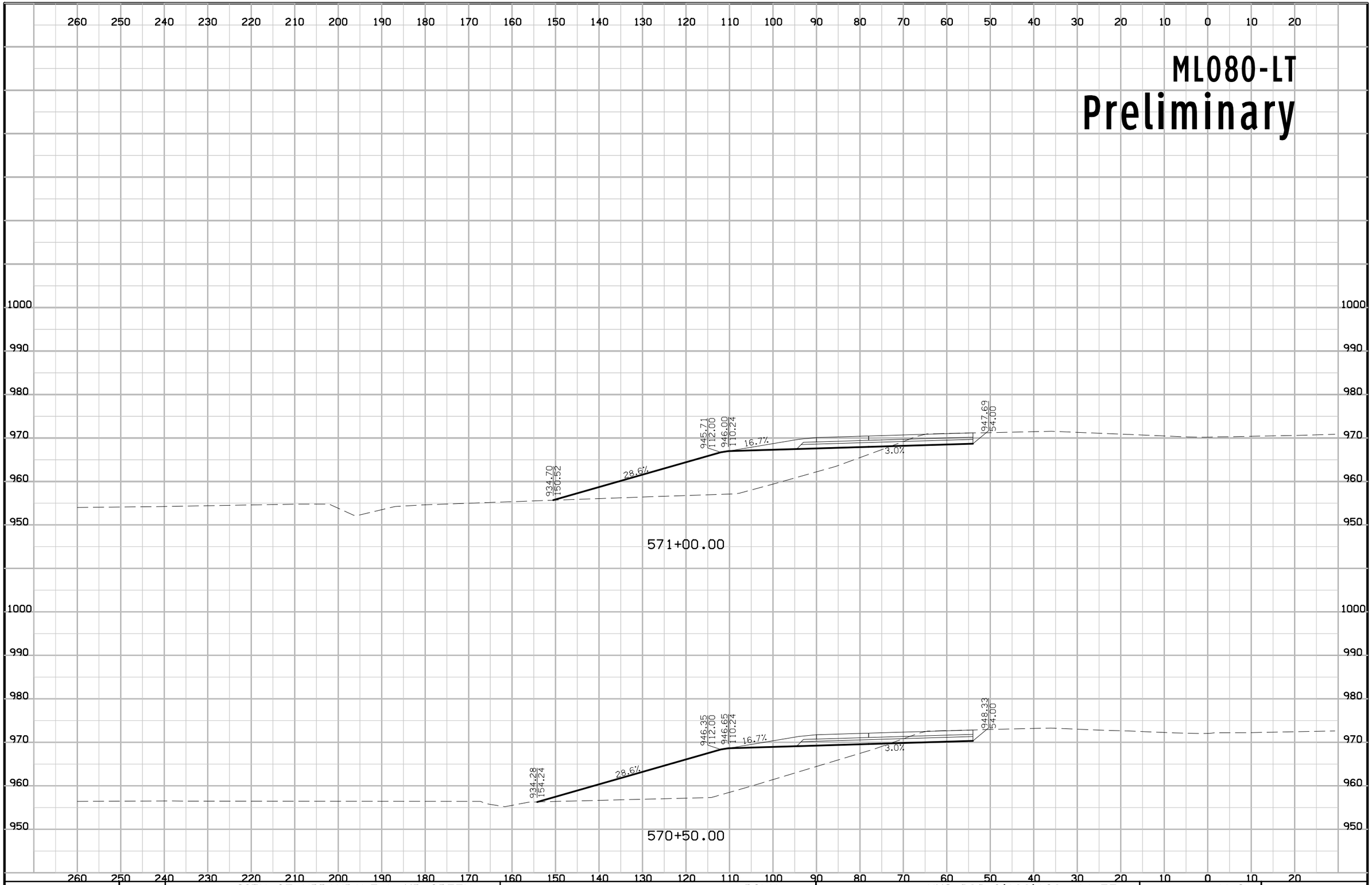
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)

ML080-LT

Preliminary

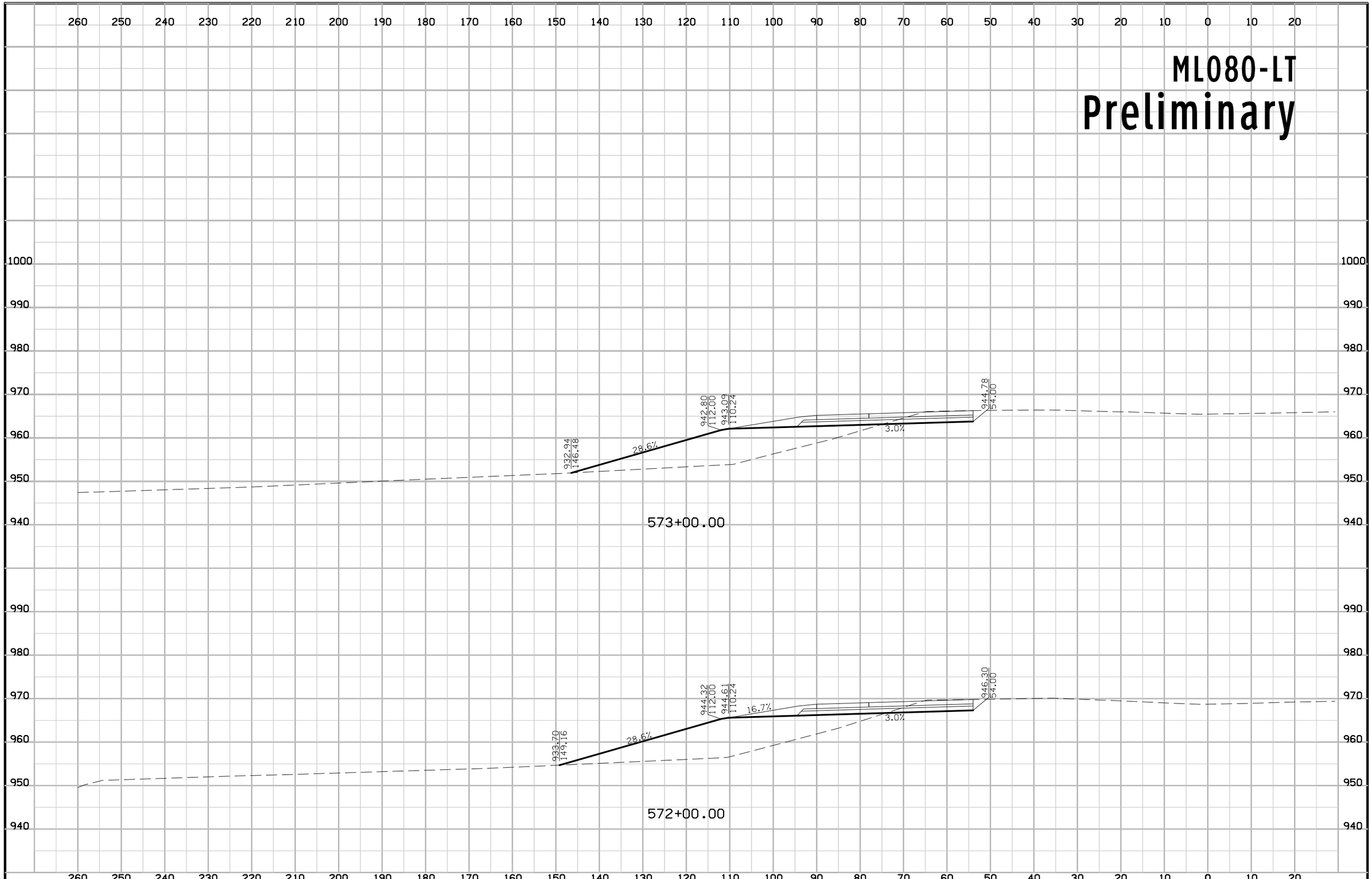


FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.2

2:28:14 PM 2/12/2016 nbuckin \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199W2.sht

ML080-LT

Preliminary

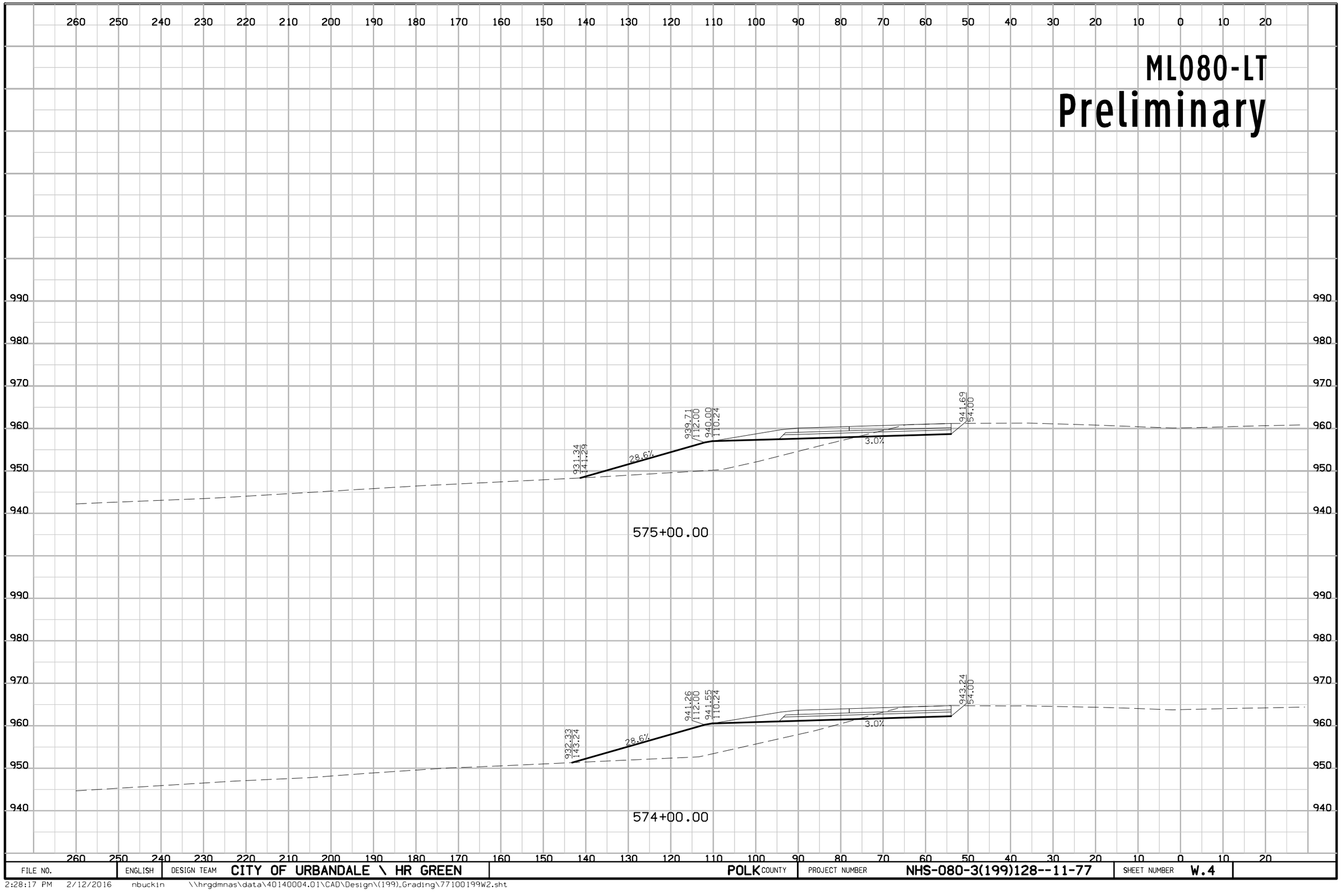


FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.3

2:28:15 PM 2/12/2016 nbuckin \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199W2.sht

ML080-LT

Preliminary

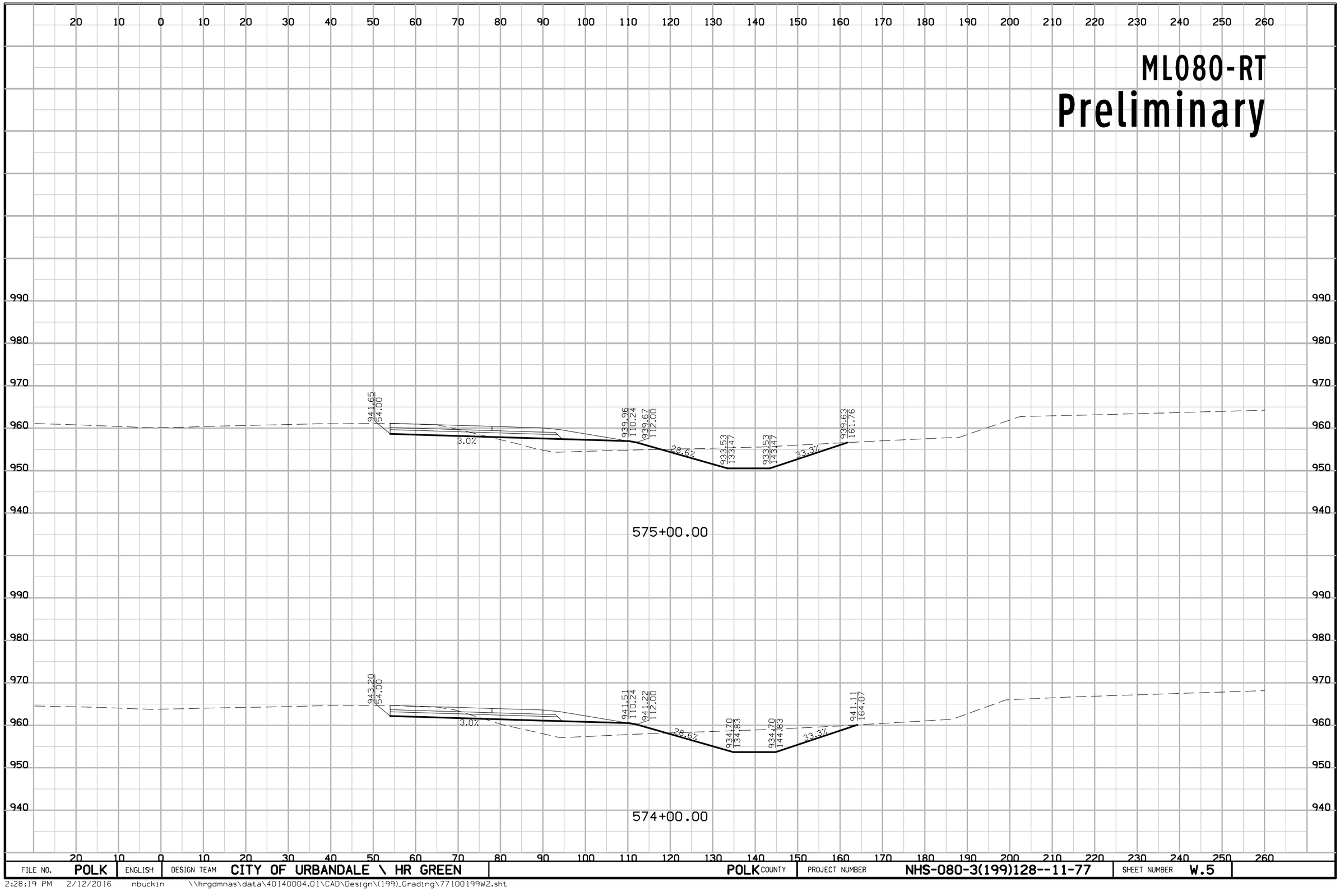


FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.4

2:28:17 PM 2/12/2016 nbuckin \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199W2.sht

ML080-RT

Preliminary

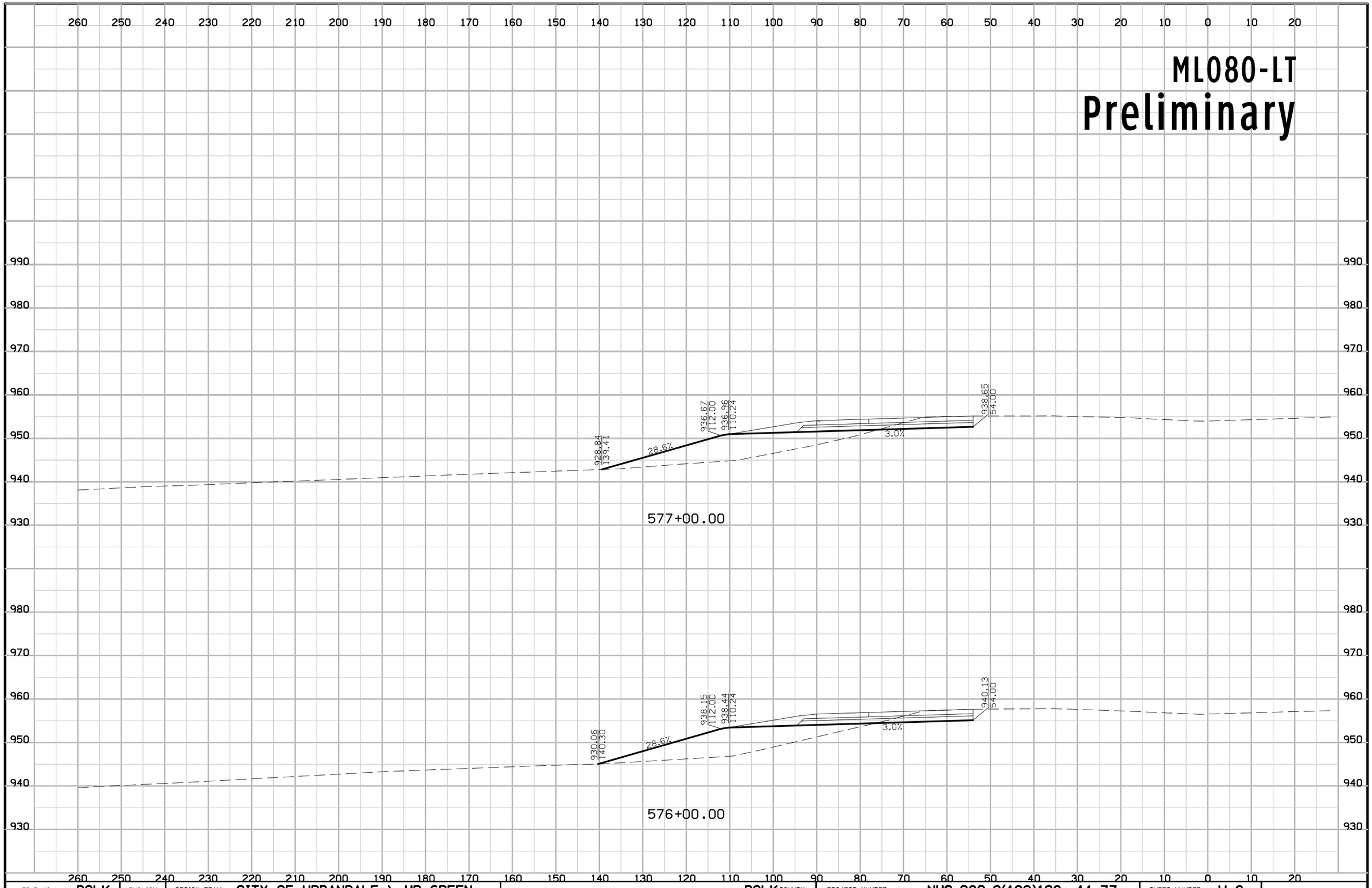


FILE NO. POLK	ENGLISH	DESIGN TEAM CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER NHS-080-3(199)128--11-77	SHEET NUMBER W.5

2:28:19 PM 2/12/2016 nbuckin \\hrgdmnas\data\40140004.01\CAD\Design\(199)_Grading\77100199W2.sht

ML080-LT

Preliminary



FILE NO.	POLK	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.6

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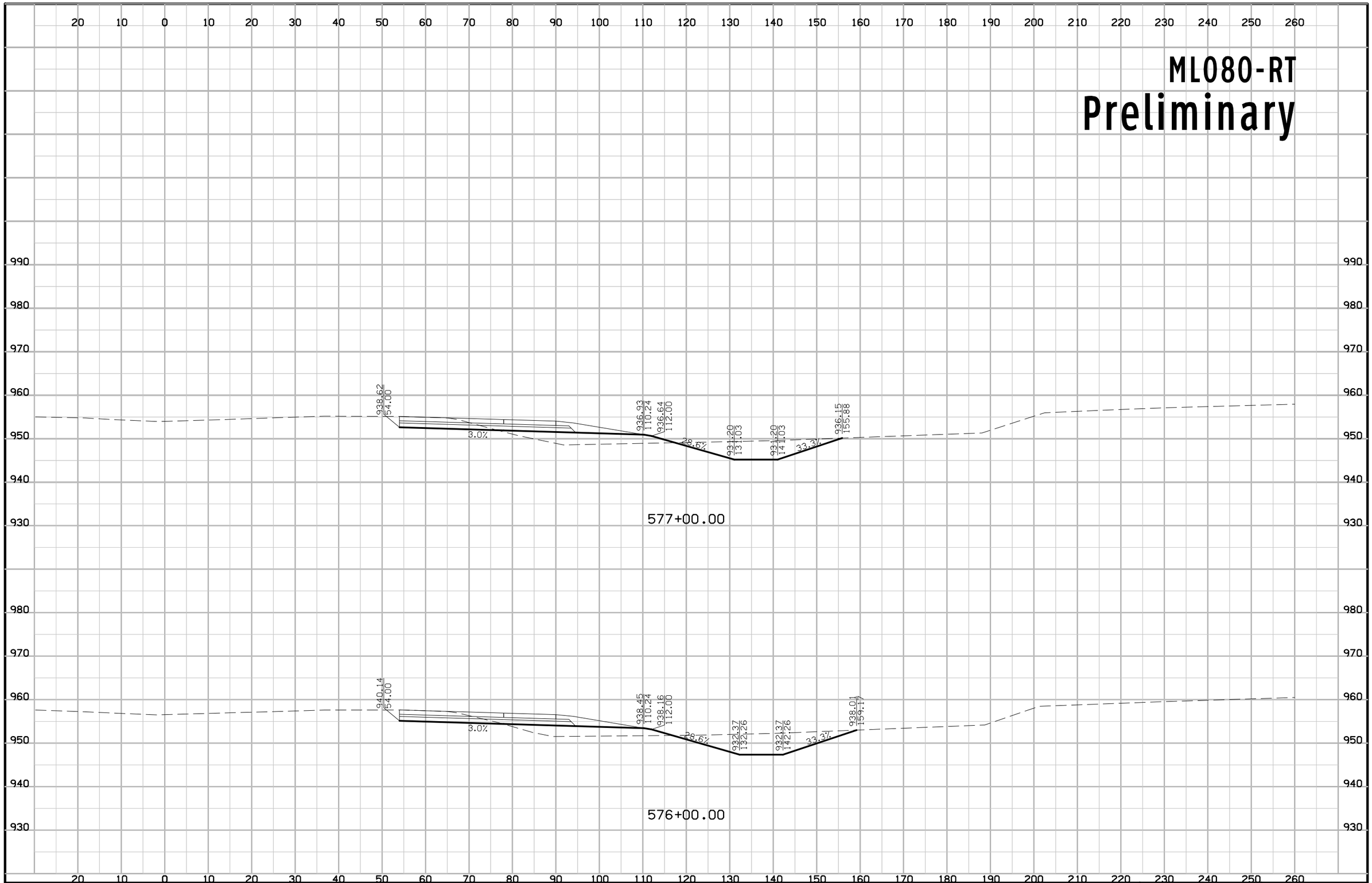
ML080-RT

Preliminary



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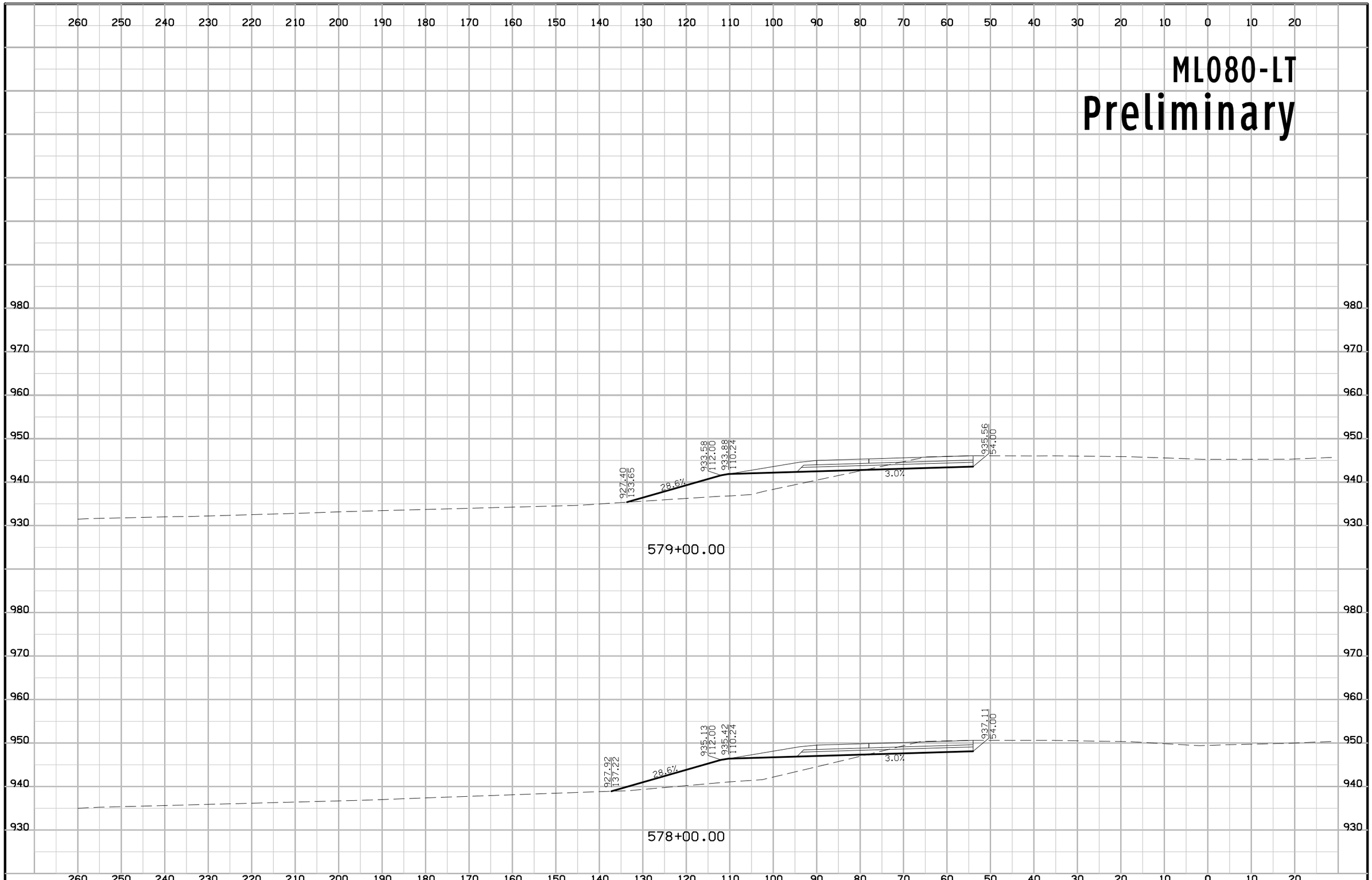
ML080-LT

Preliminary



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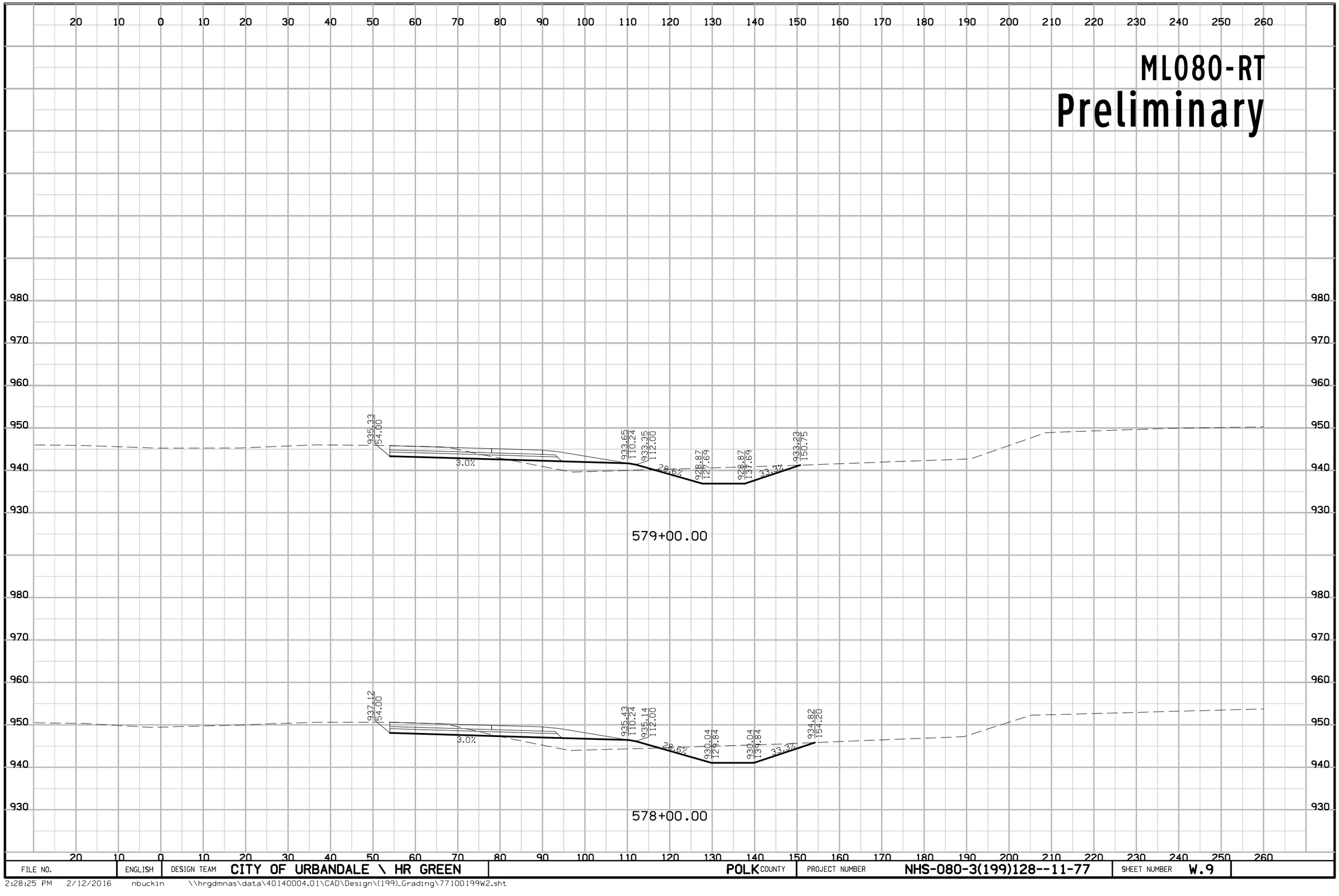
ML080-RT

Preliminary



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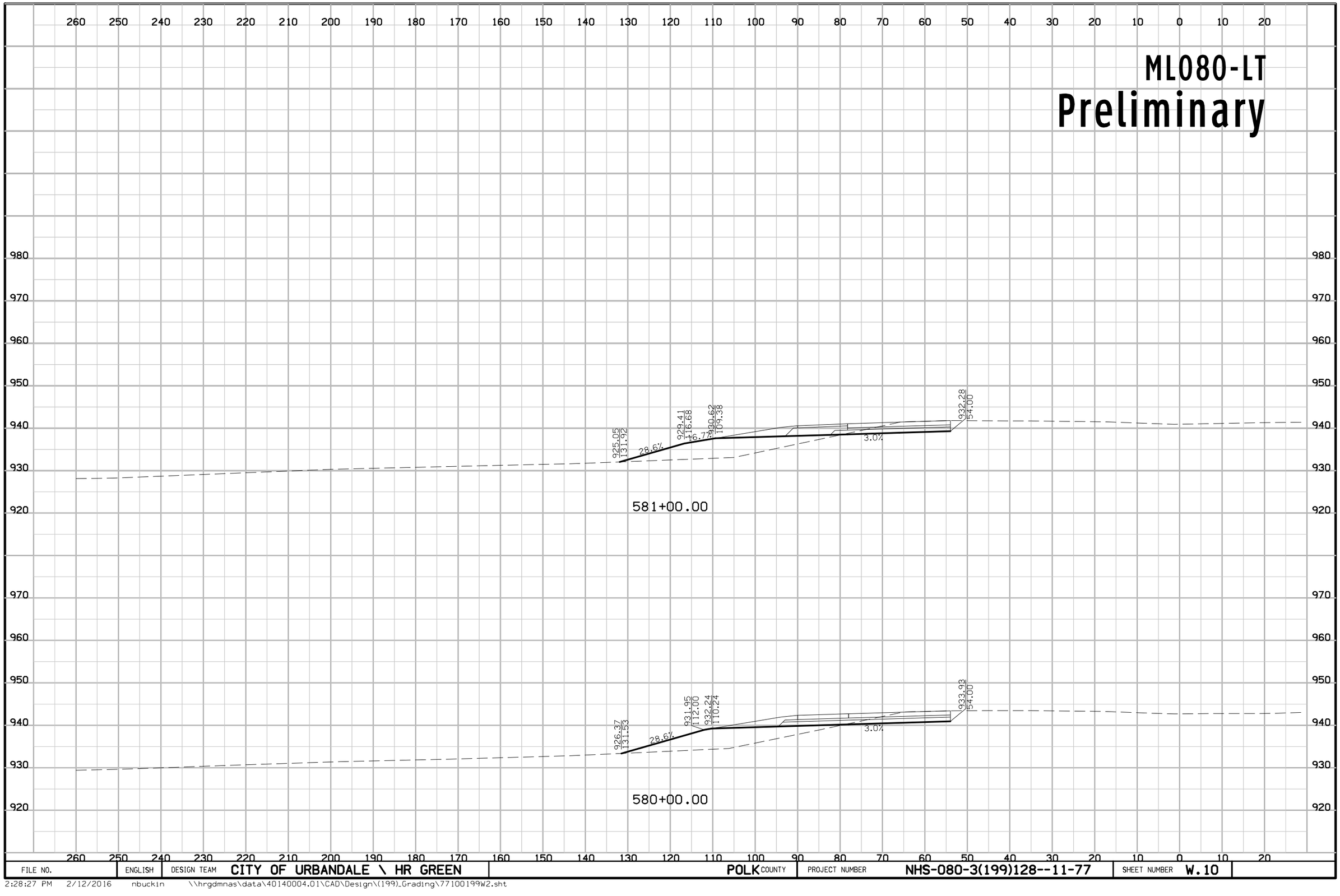
ML080-LT

Preliminary



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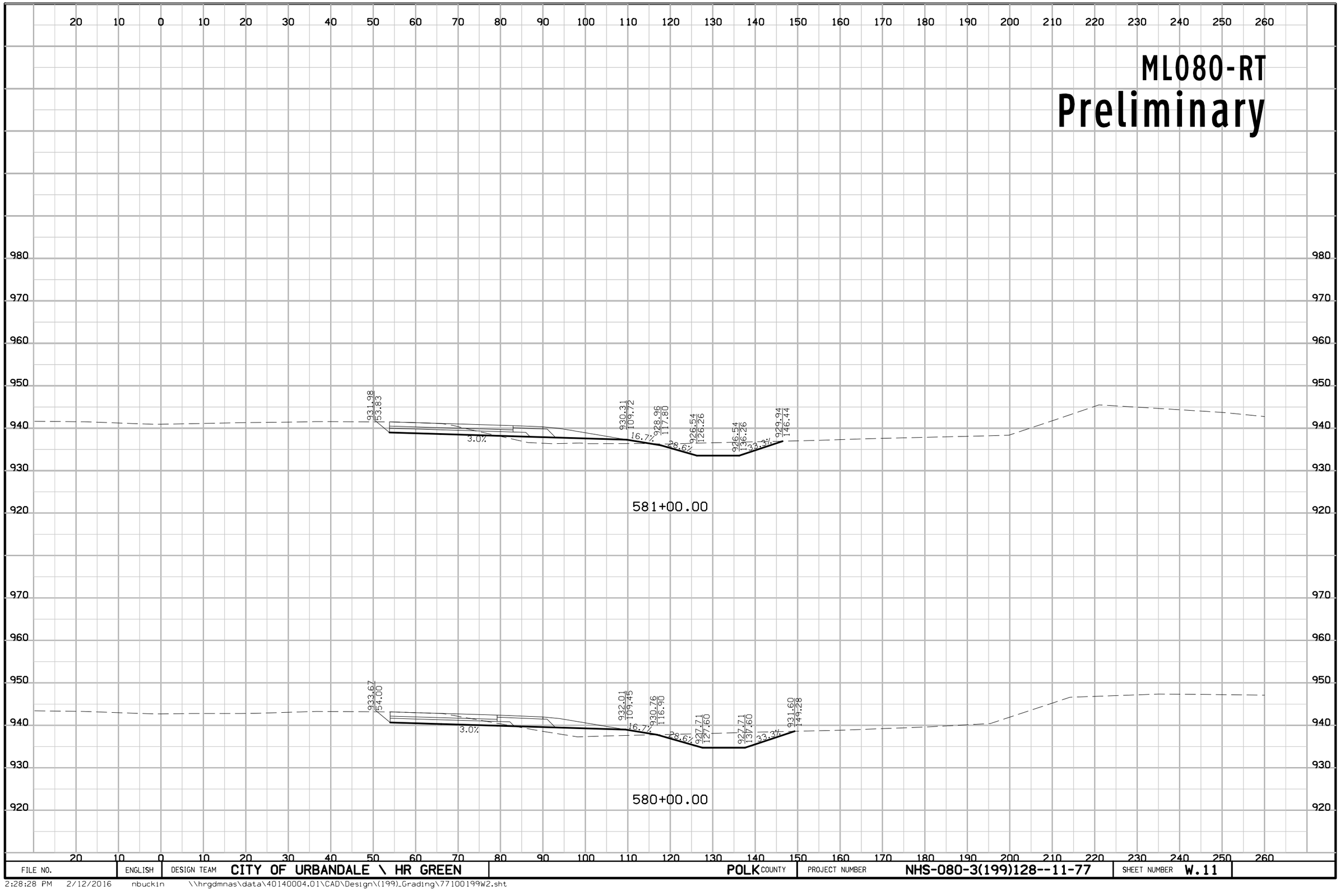
ML080-RT

Preliminary



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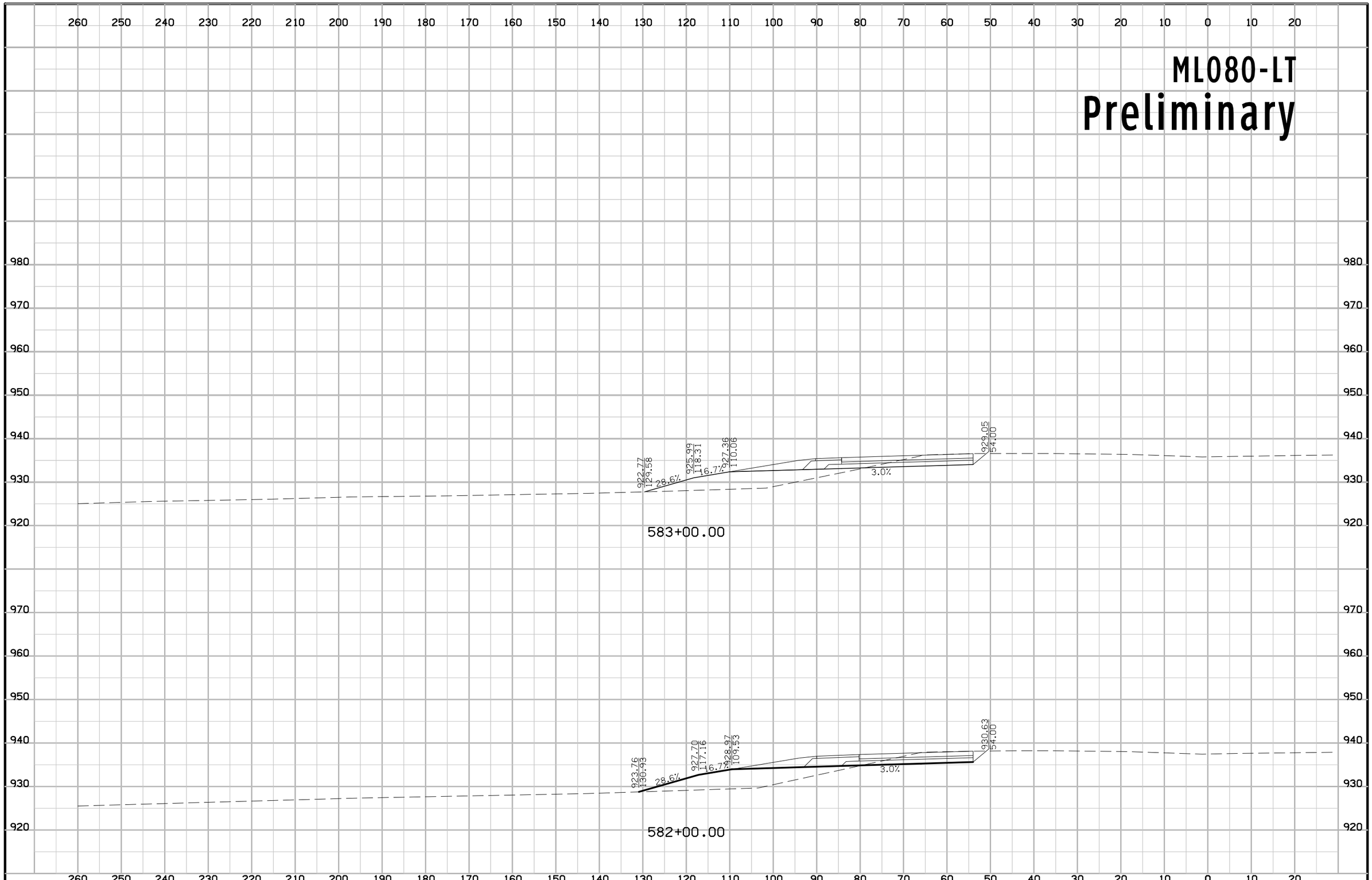
ML080-LT

Preliminary



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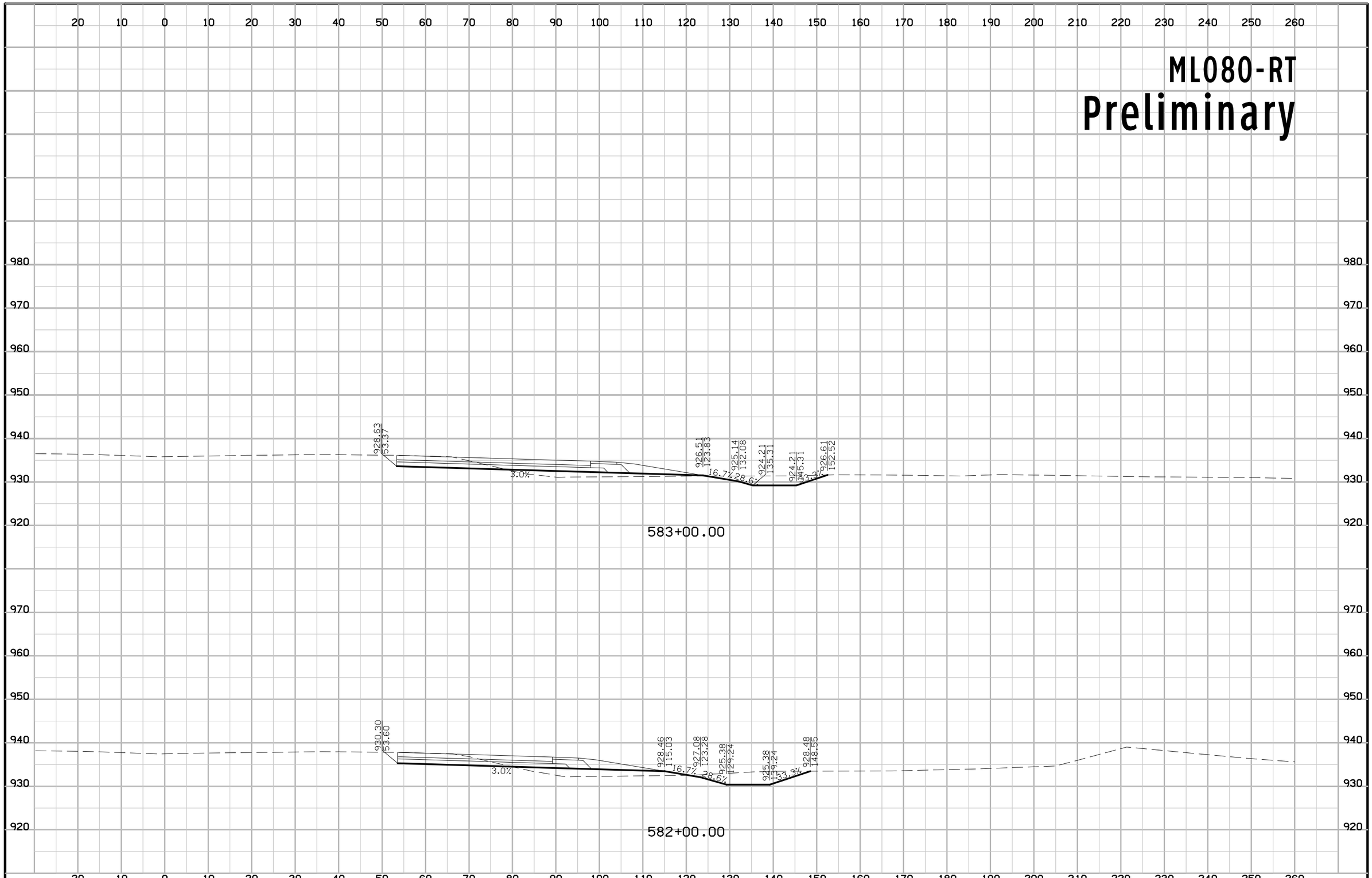
ML080-RT

Preliminary



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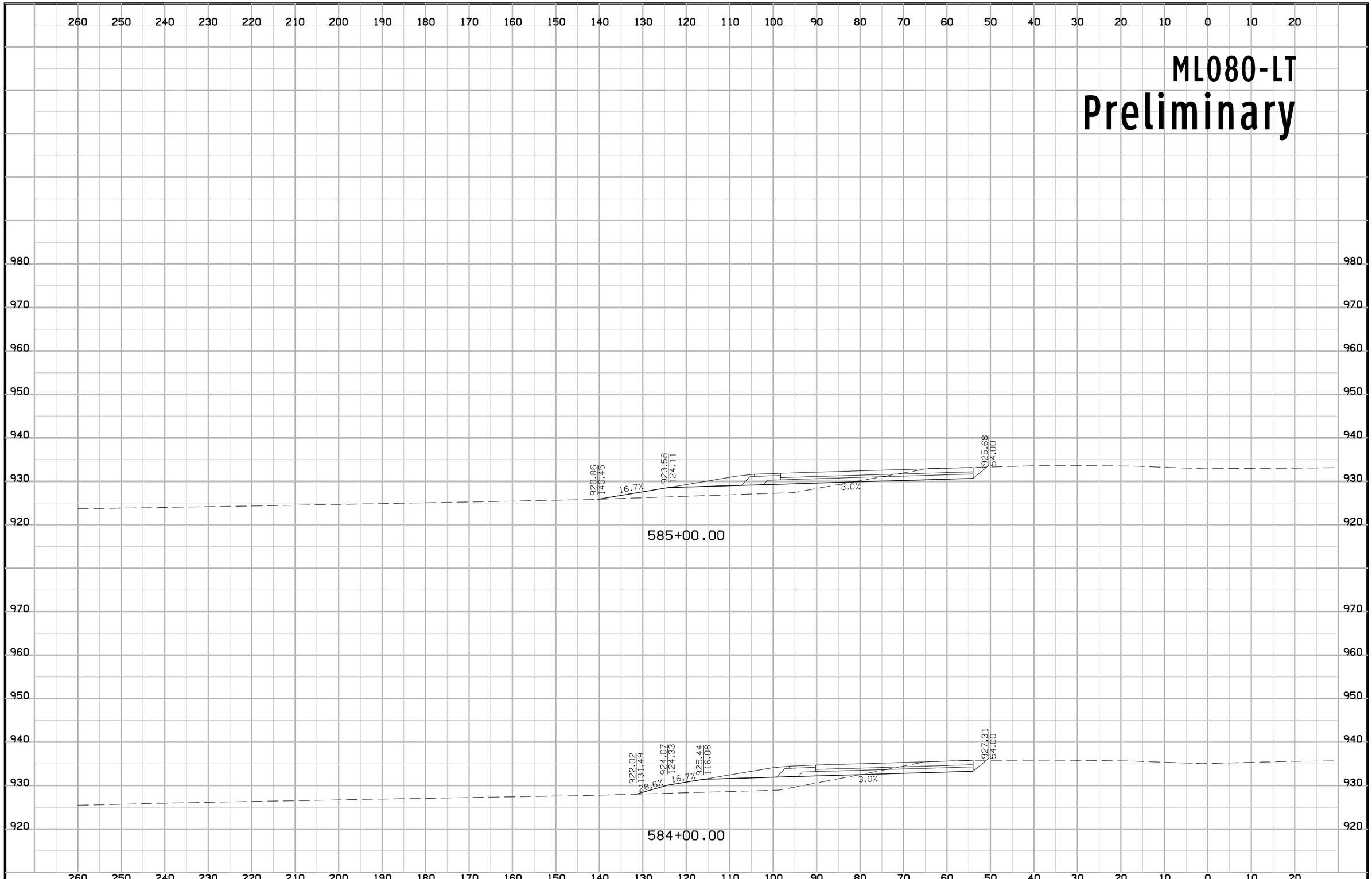
ML080-LT

Preliminary



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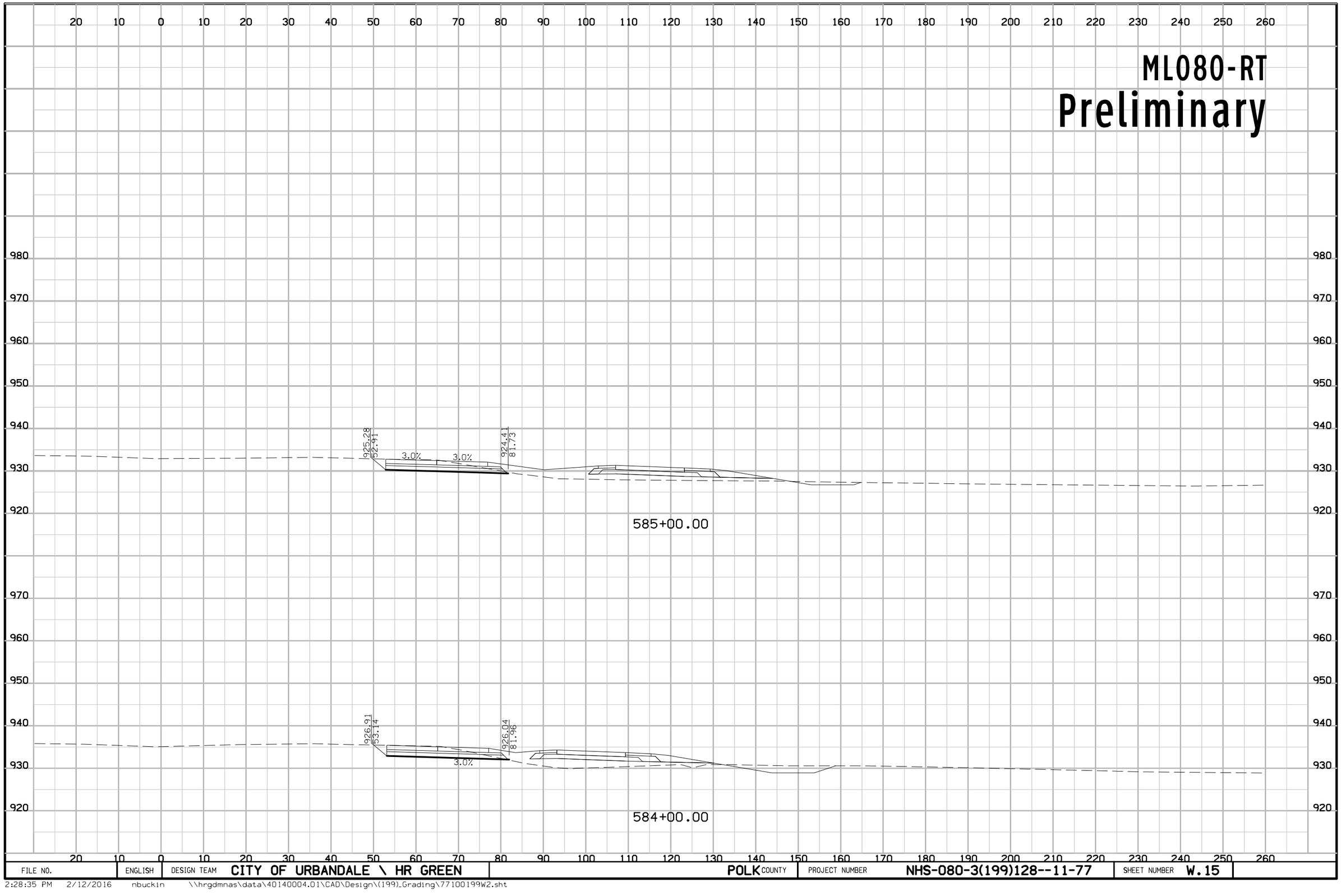
ML080-RT

Preliminary



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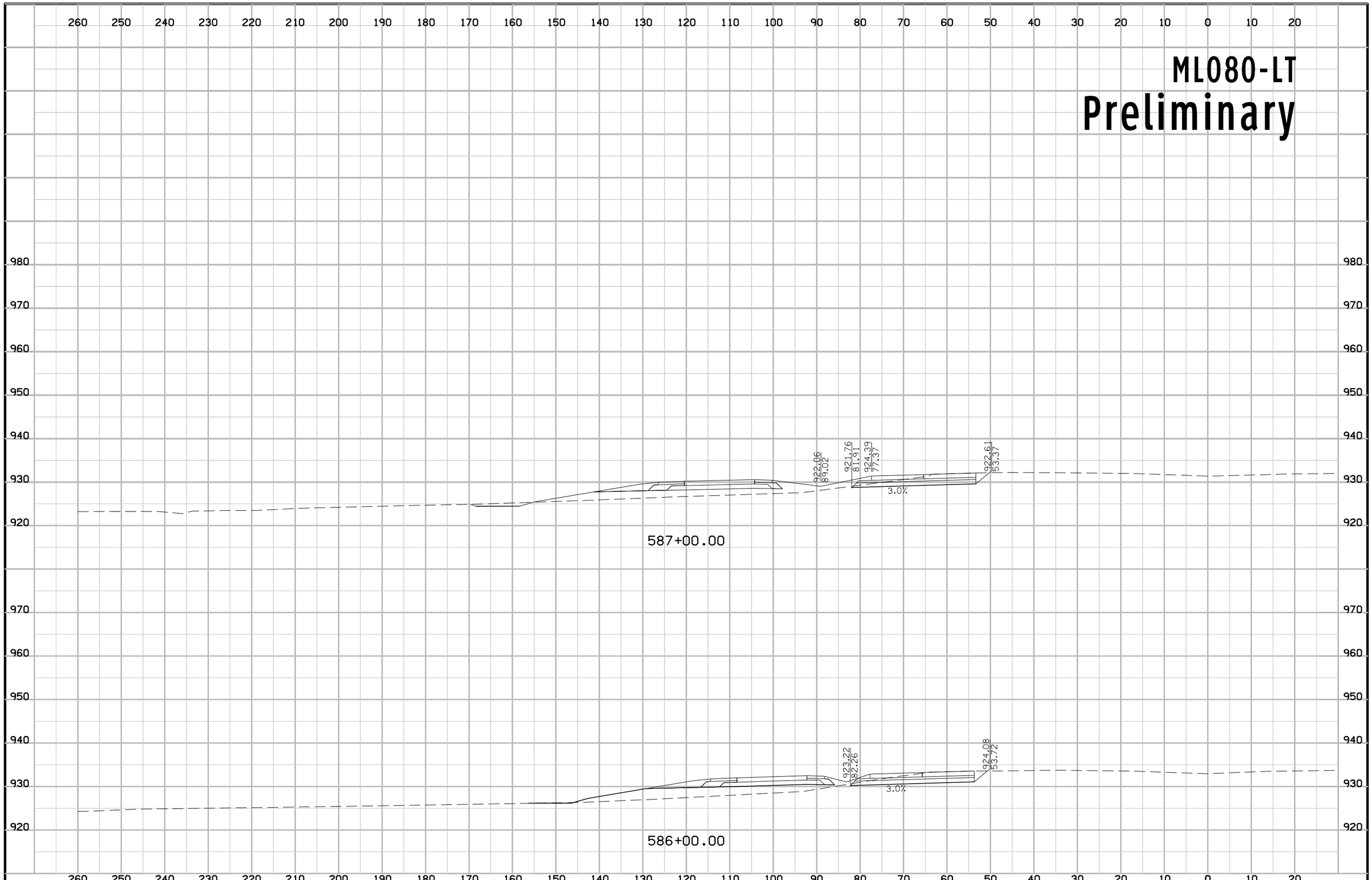
ML080-LT

Preliminary



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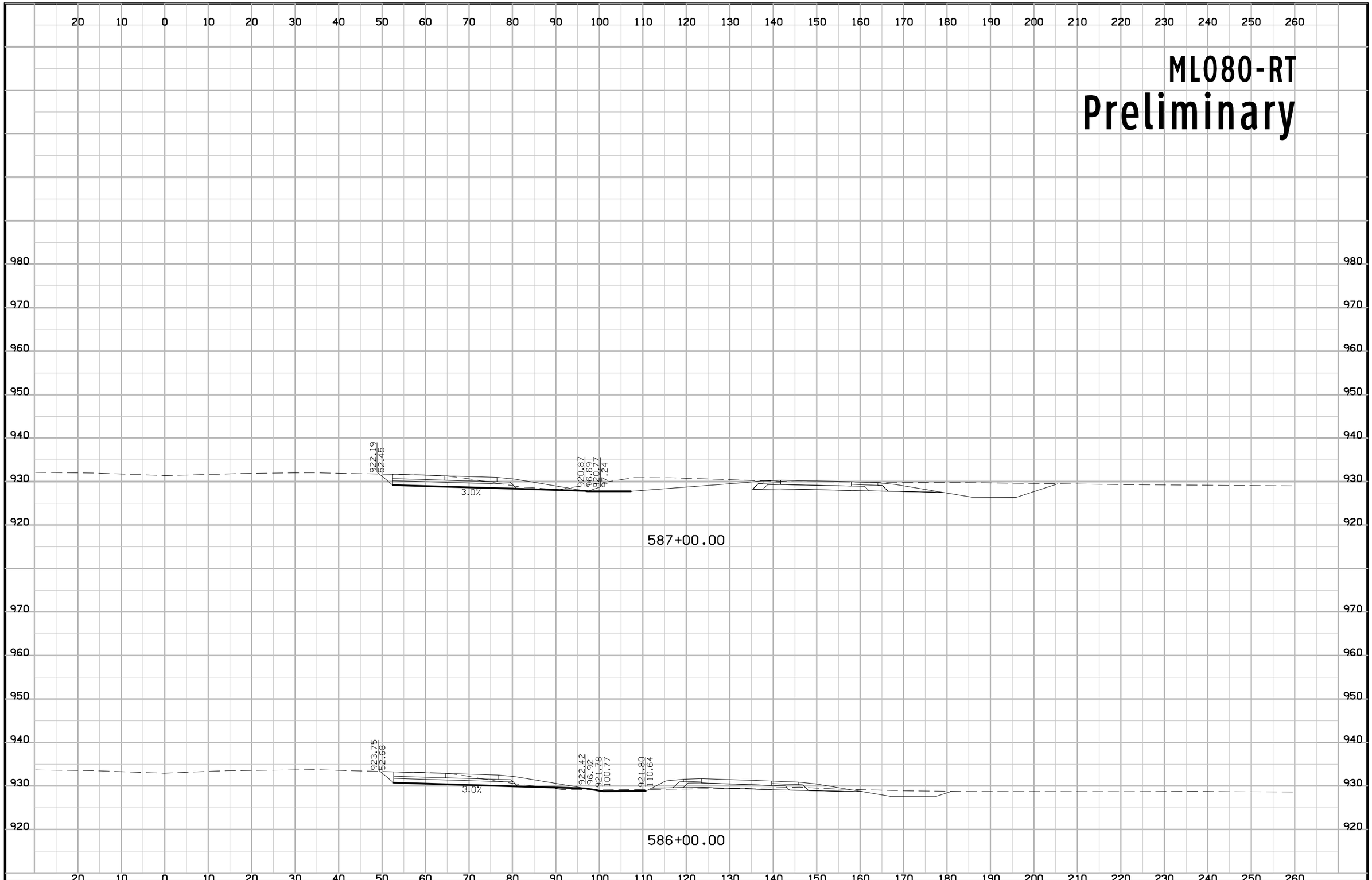
ML080-RT

Preliminary



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ML080-LT

Preliminary

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

970 960 950 940 930 920 910

918.06
107.26

918.06
97.26

16.7%

918.59
81.21

921.23
76.66

3.0%

919.45
52.66

589+00.00

920.06
104.88

920.06
94.88

16.7%

920.14
81.56

922.77
77.01

3.0%

920.99
53.01

588+00.00

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.18

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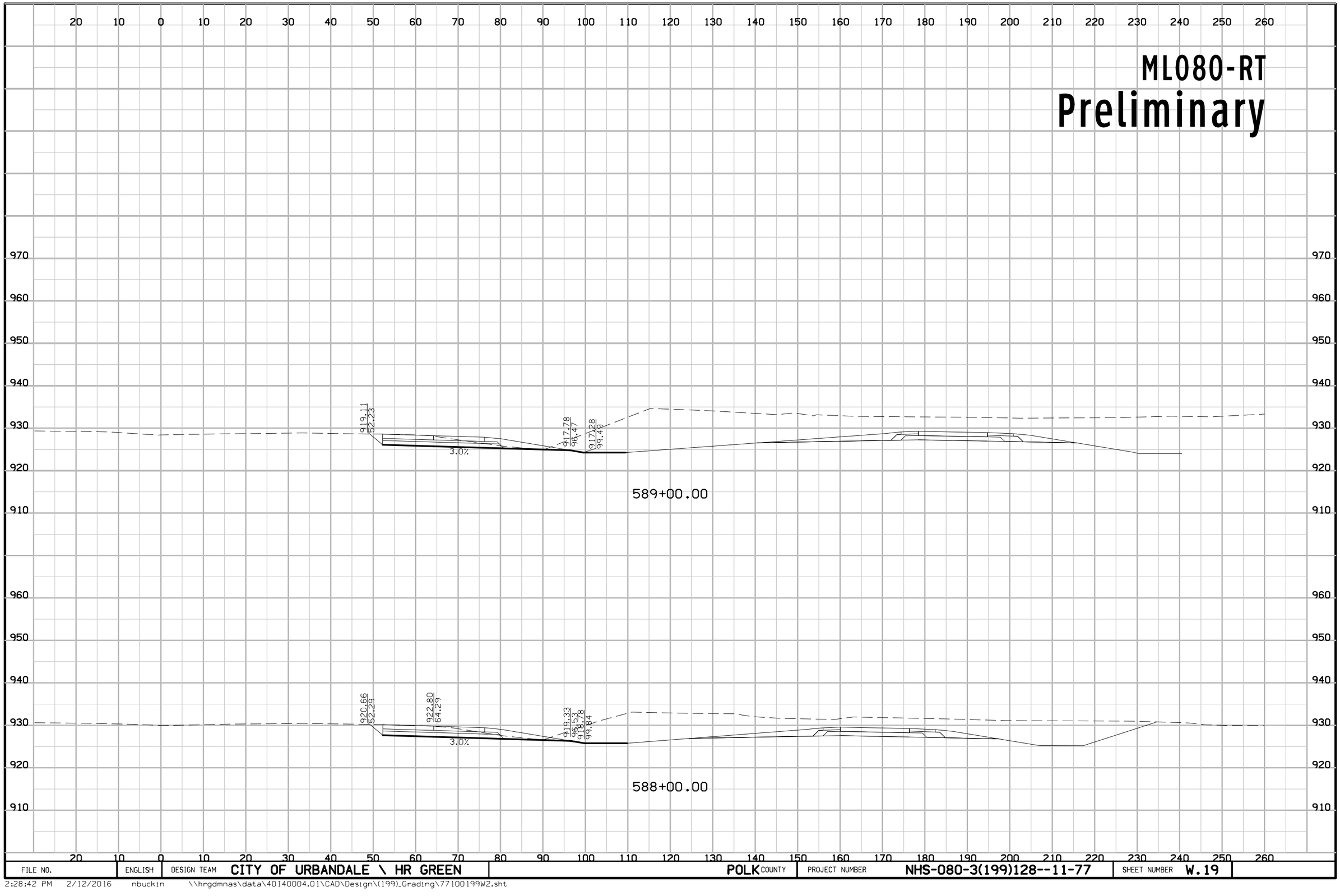
ML080-RT

Preliminary



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ML080-LT

Preliminary

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970
960
950
940
930
920
910

915.06
105.77

915.06
95.77

16.7%

915.41
80.80

918.05
76.25

3.0%

916.27
152.25

591+00.00

916.06
109.44

916.06
99.44

16.7%

917.01
80.86

919.65
76.31

3.0%

917.87
52.31

590+00.00

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.20

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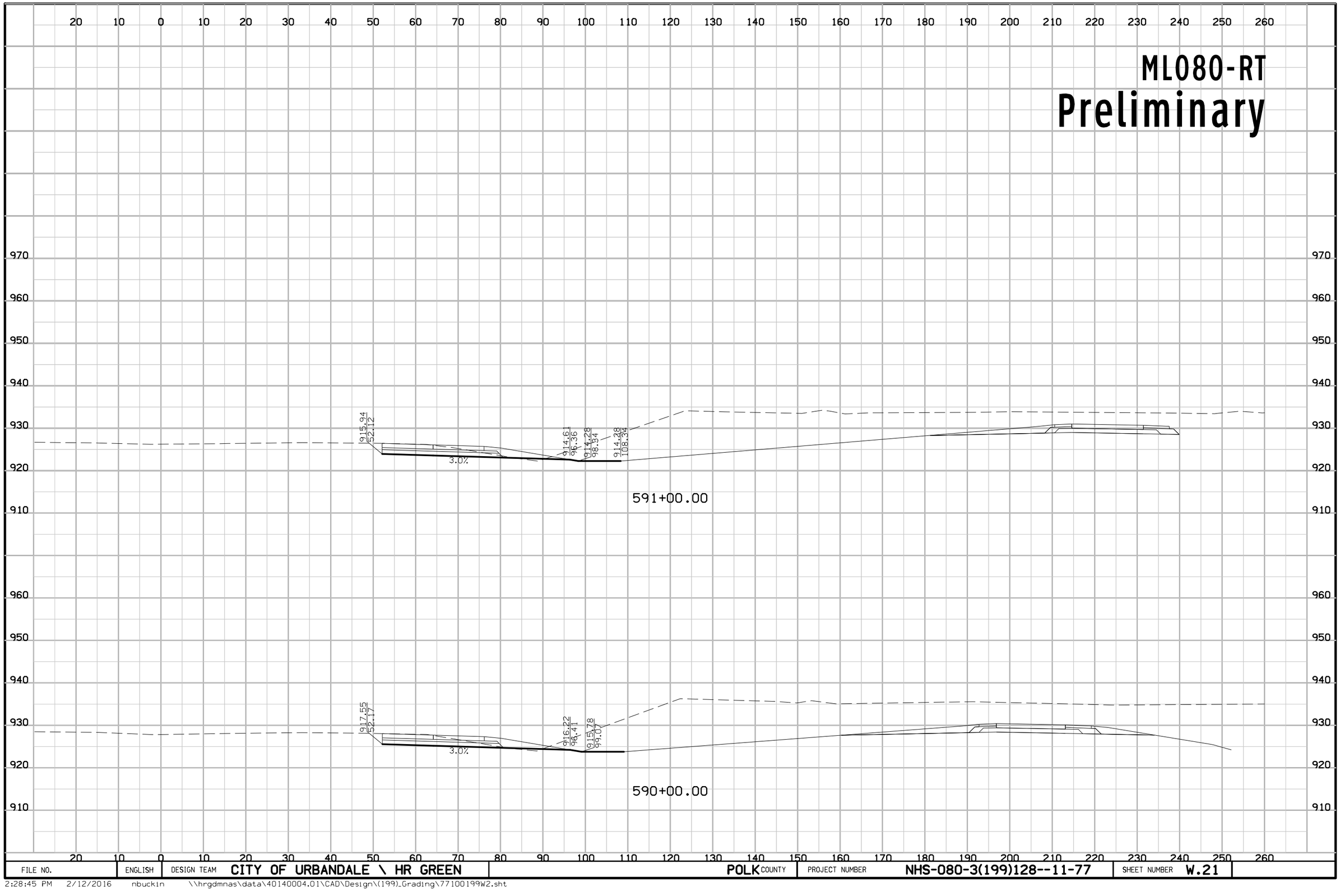
ML080-RT
Preliminary



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ML080-LT

Preliminary

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970 960 950 940 930 920 910

911.06
109.30

911.06
99.30

16.7%

912.00
80.80

914.64
76.25

912.86
152.25

3.0%

593+00.00

913.06
107.70

913.06
97.70

16.7%

913.73
80.80

916.37
76.25

914.59
152.25

3.0%

592+00.00

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.22

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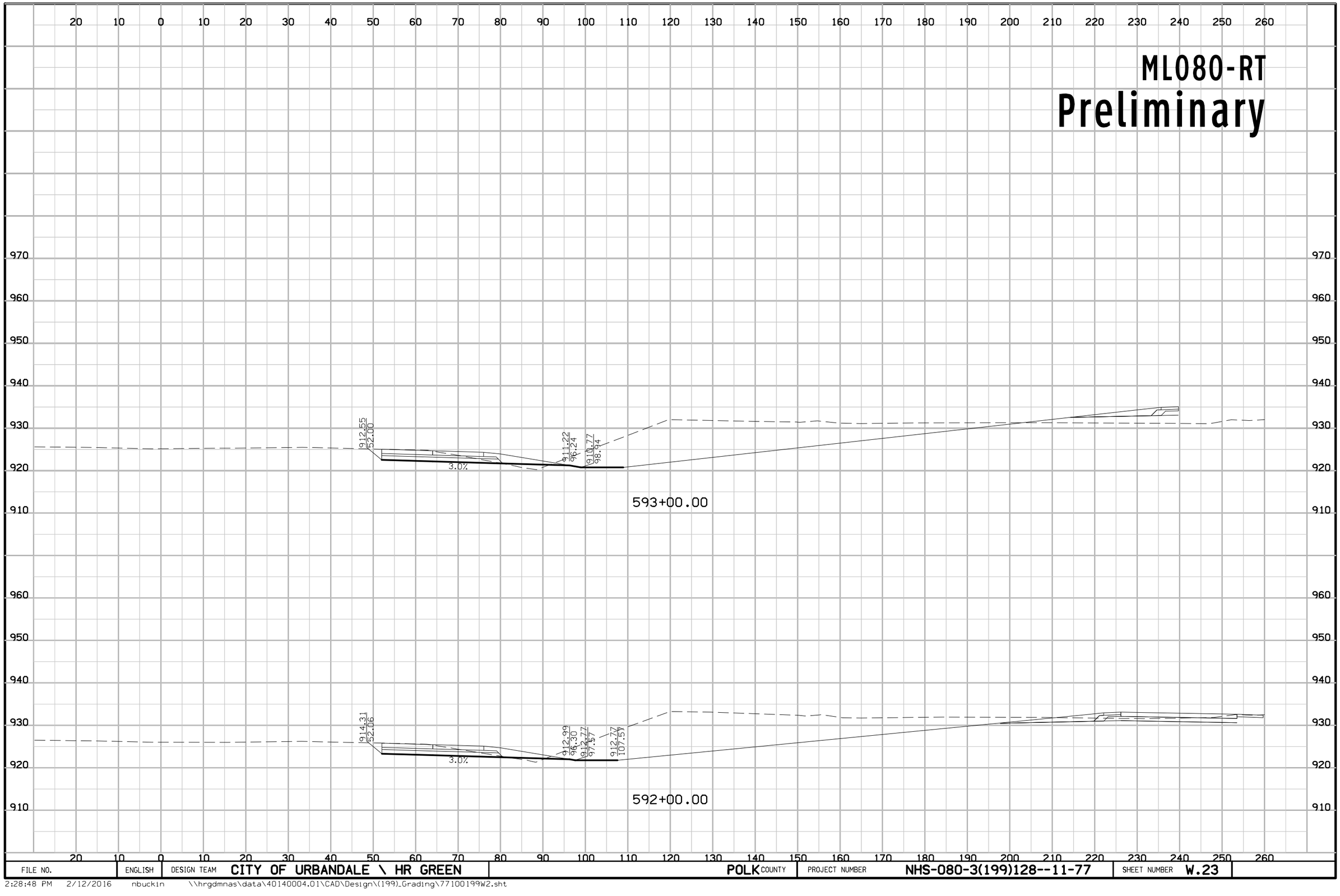
ML080-RT

Preliminary



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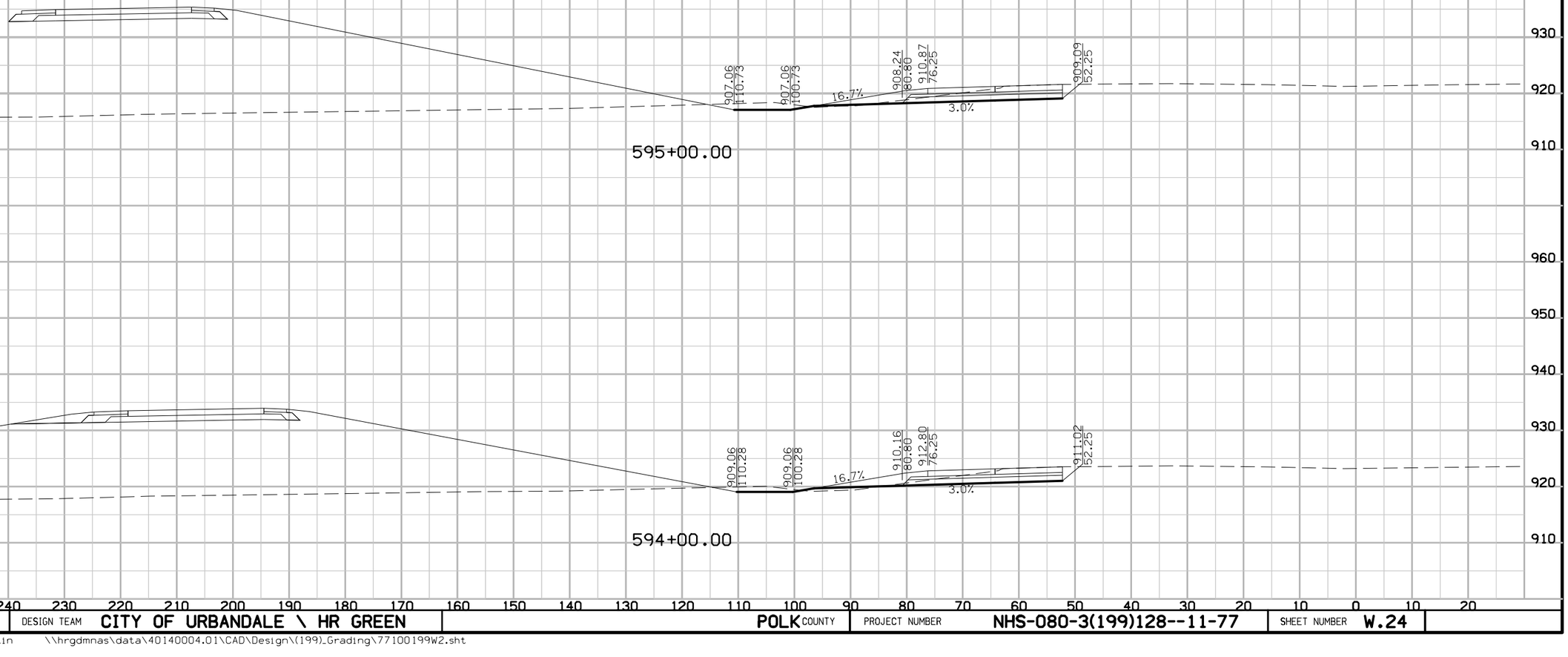
ML080-LT

Preliminary



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ML080-RT
Preliminary

595+00.00

908.80
51.88
907.48
96.12
906.77
100.34
3.0%

594+00.00

910.74
51.94
909.41
96.18
908.77
100.01
908.77
110.01
3.0%

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.25

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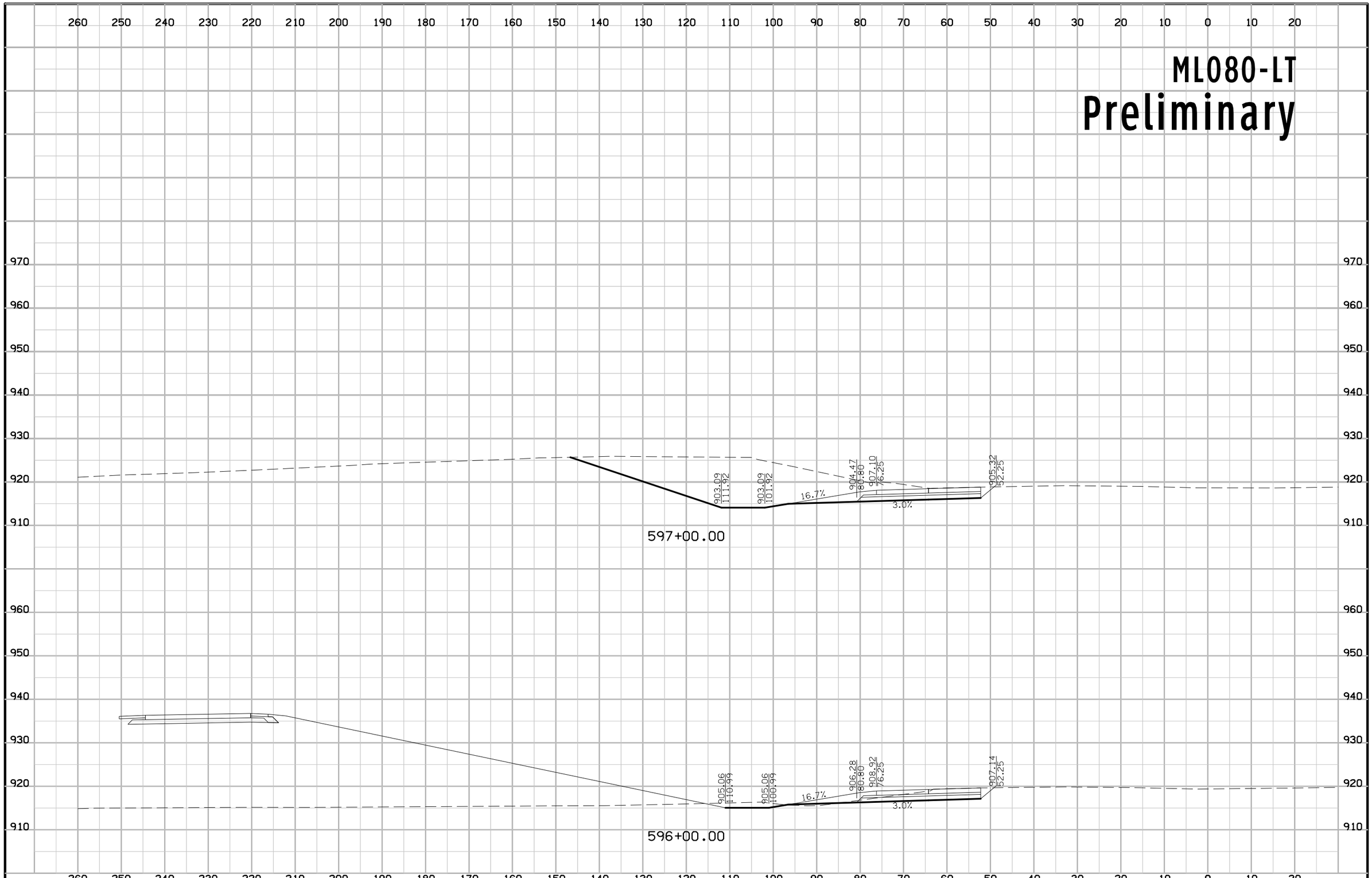
ML080-LT

Preliminary



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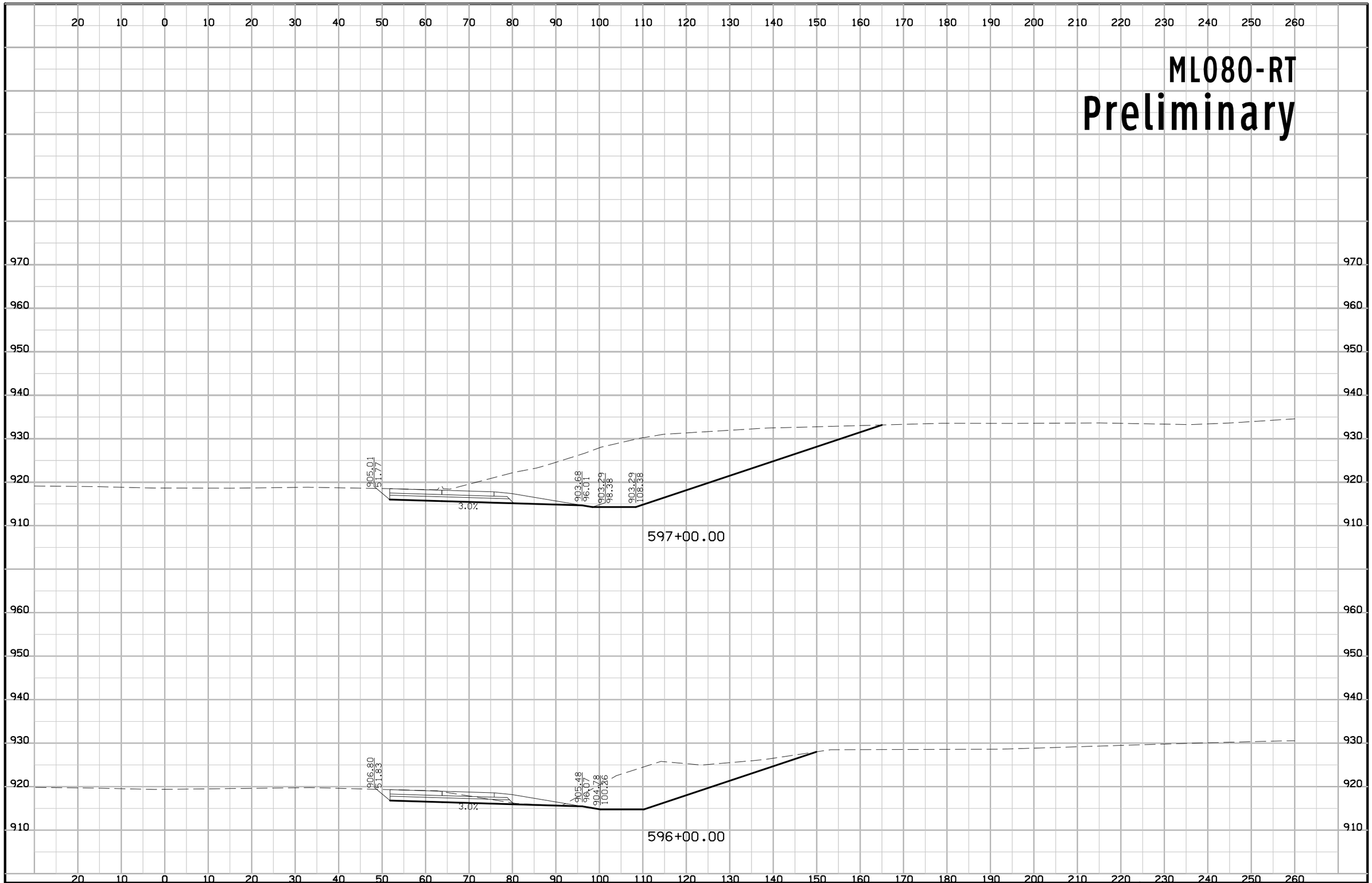
ML080-RT
Preliminary



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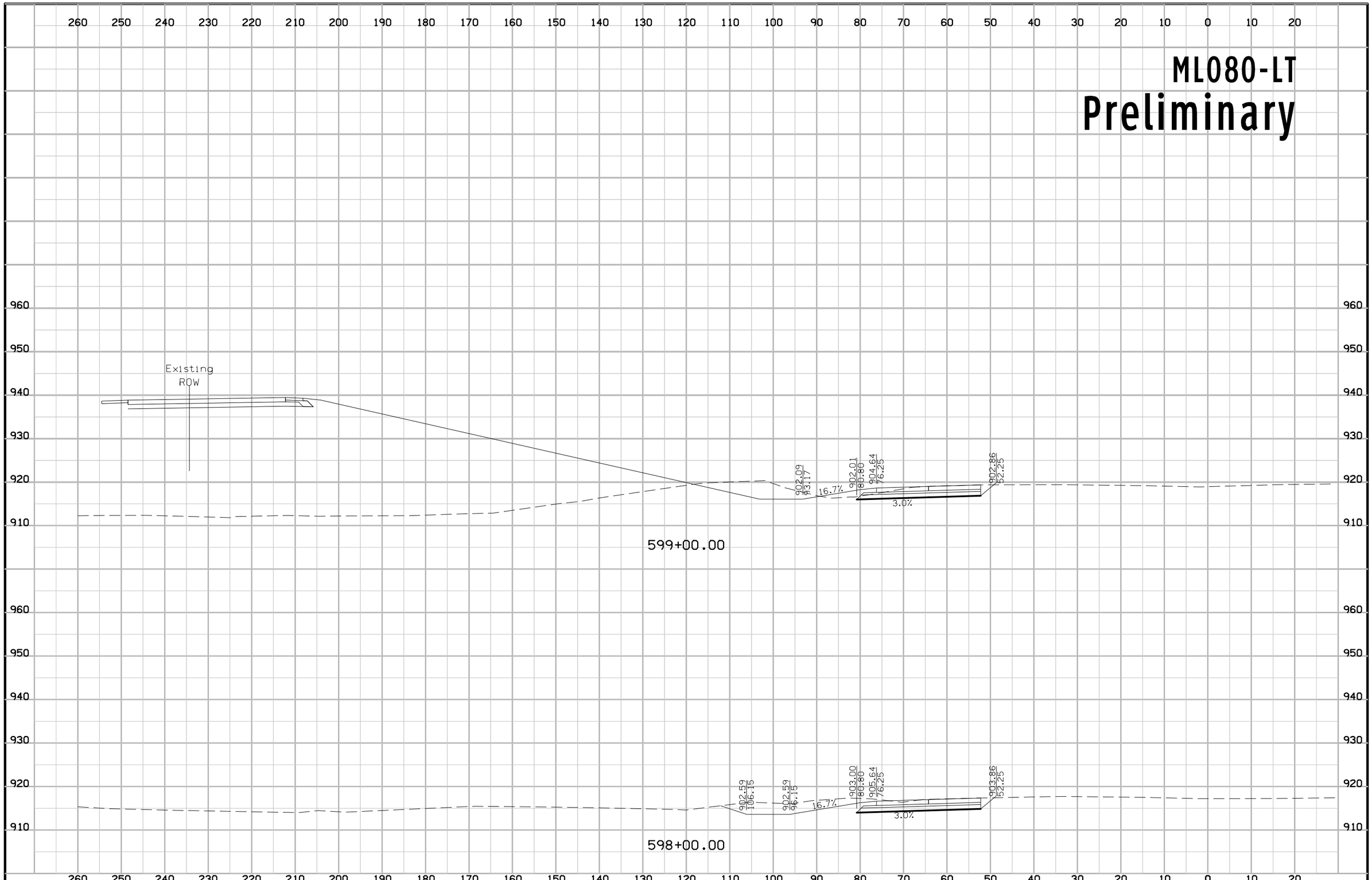
ML080-LT

Preliminary



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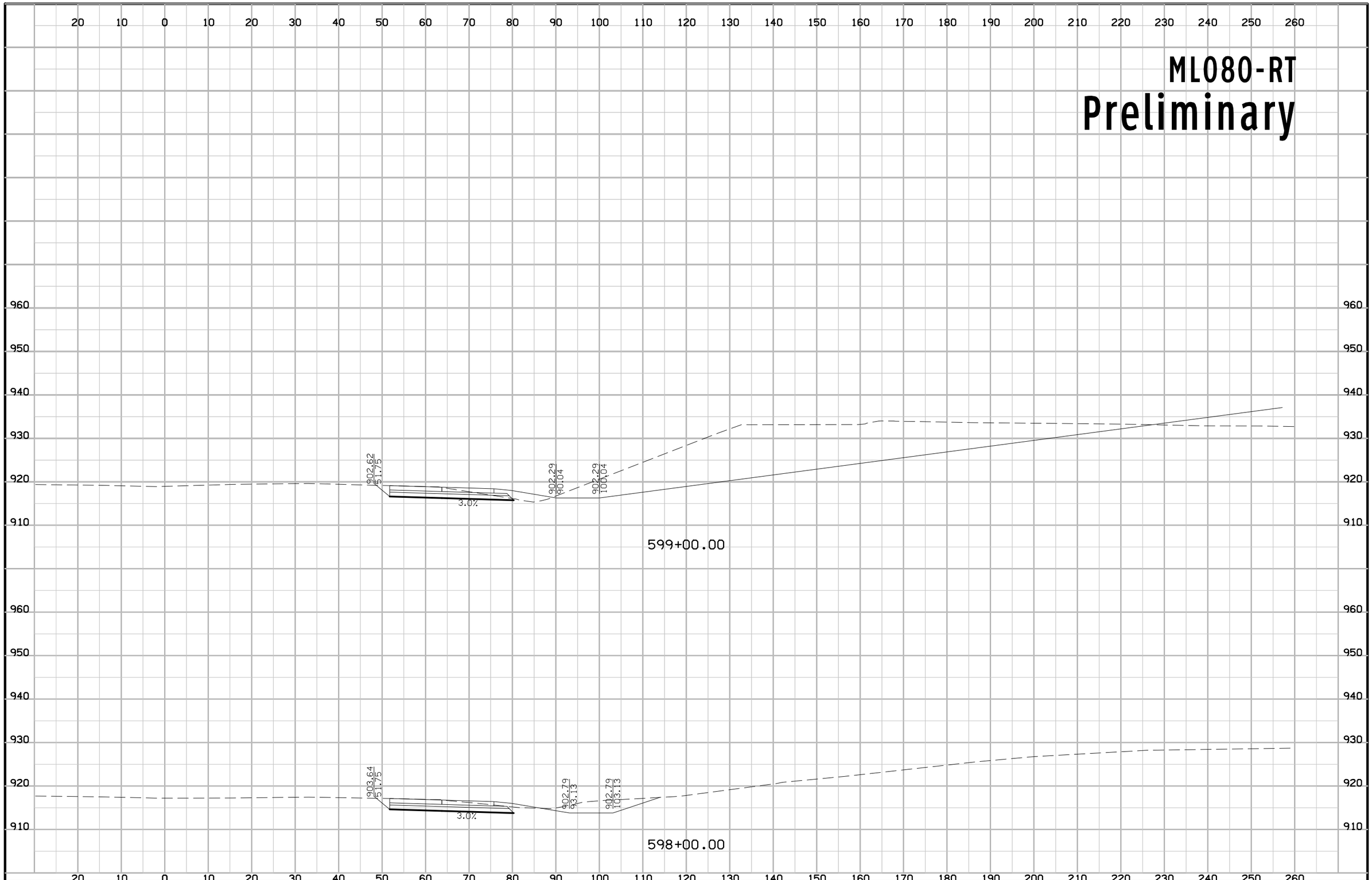
ML080-RT

Preliminary



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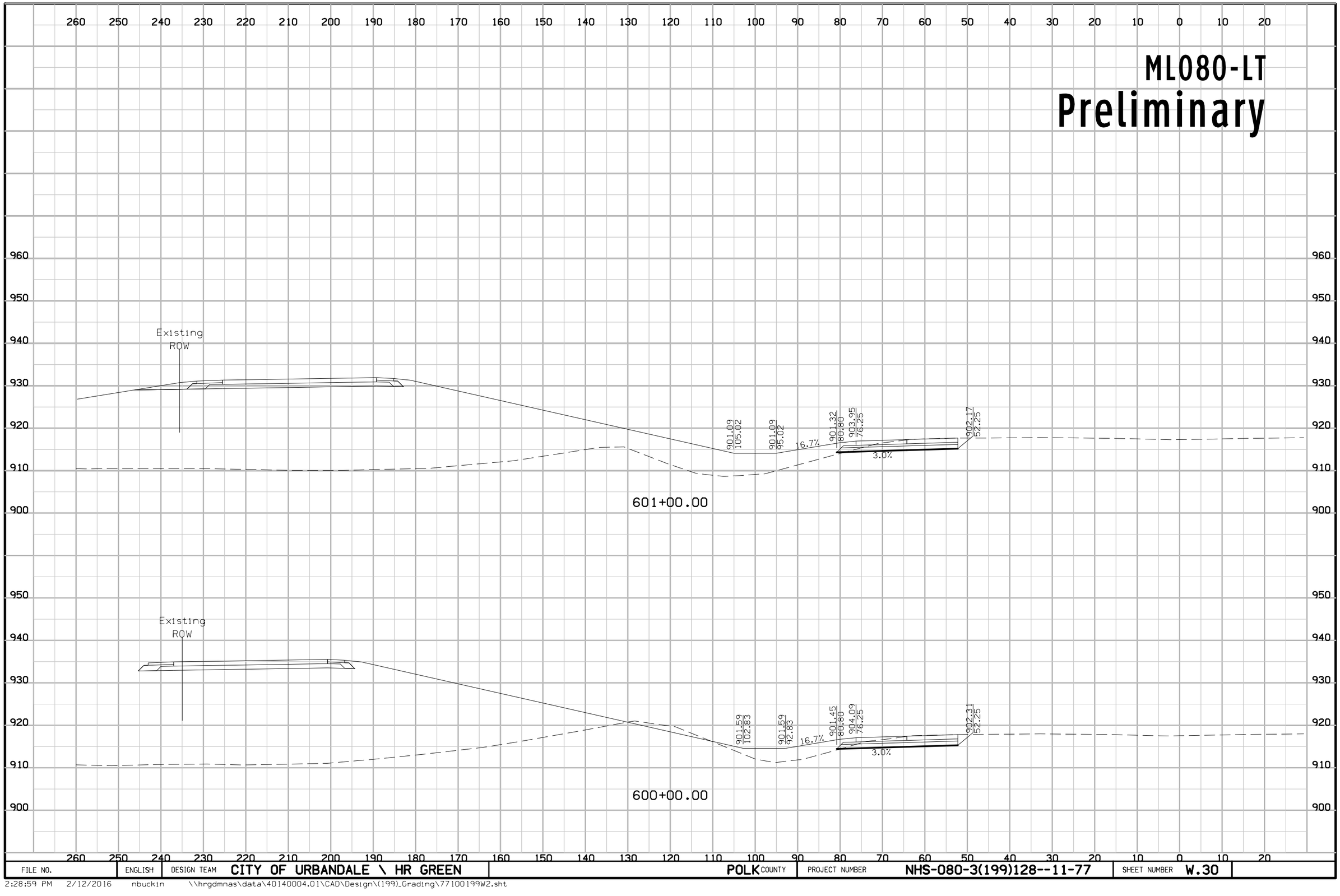
ML080-LT

Preliminary



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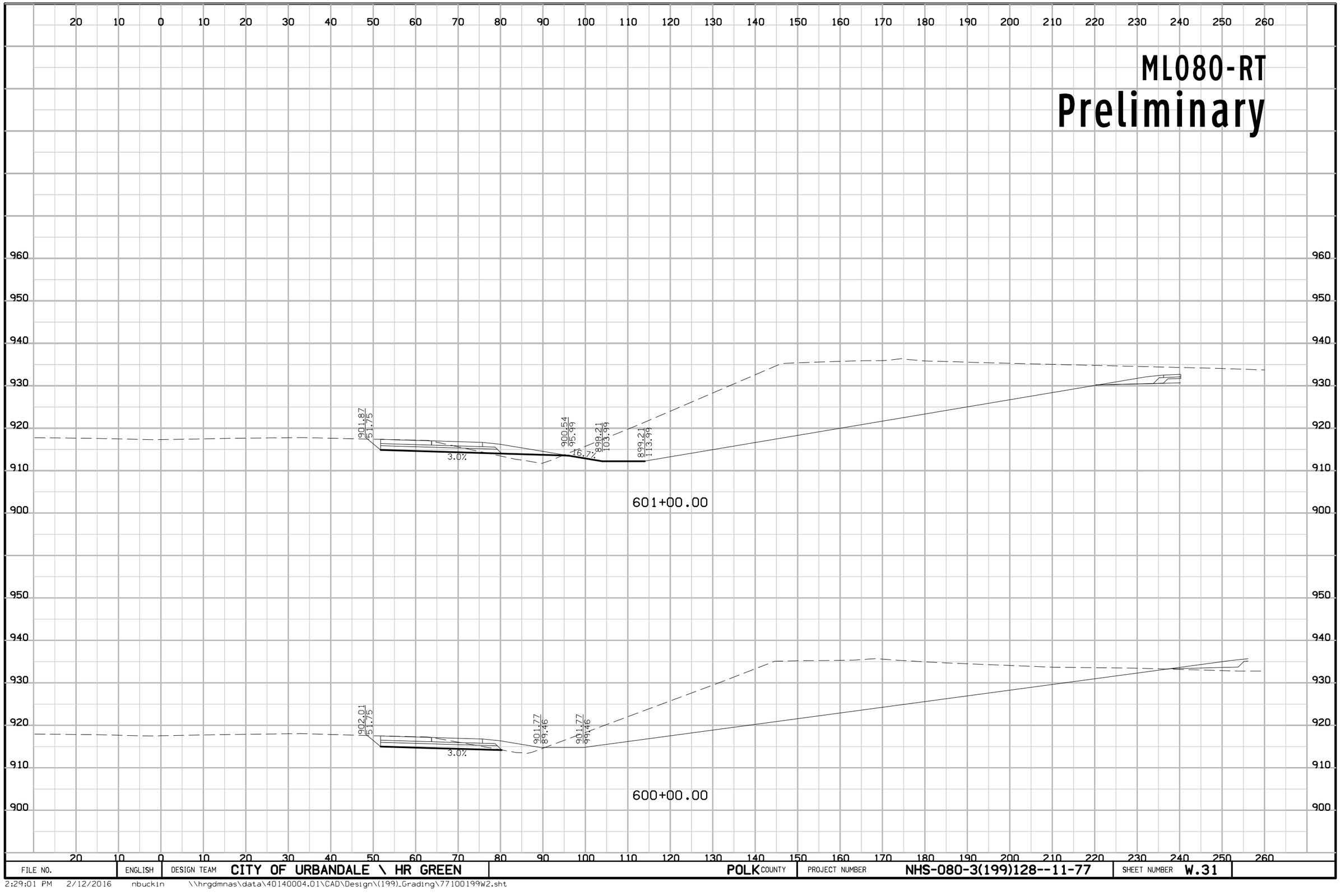
ML080-RT

Preliminary



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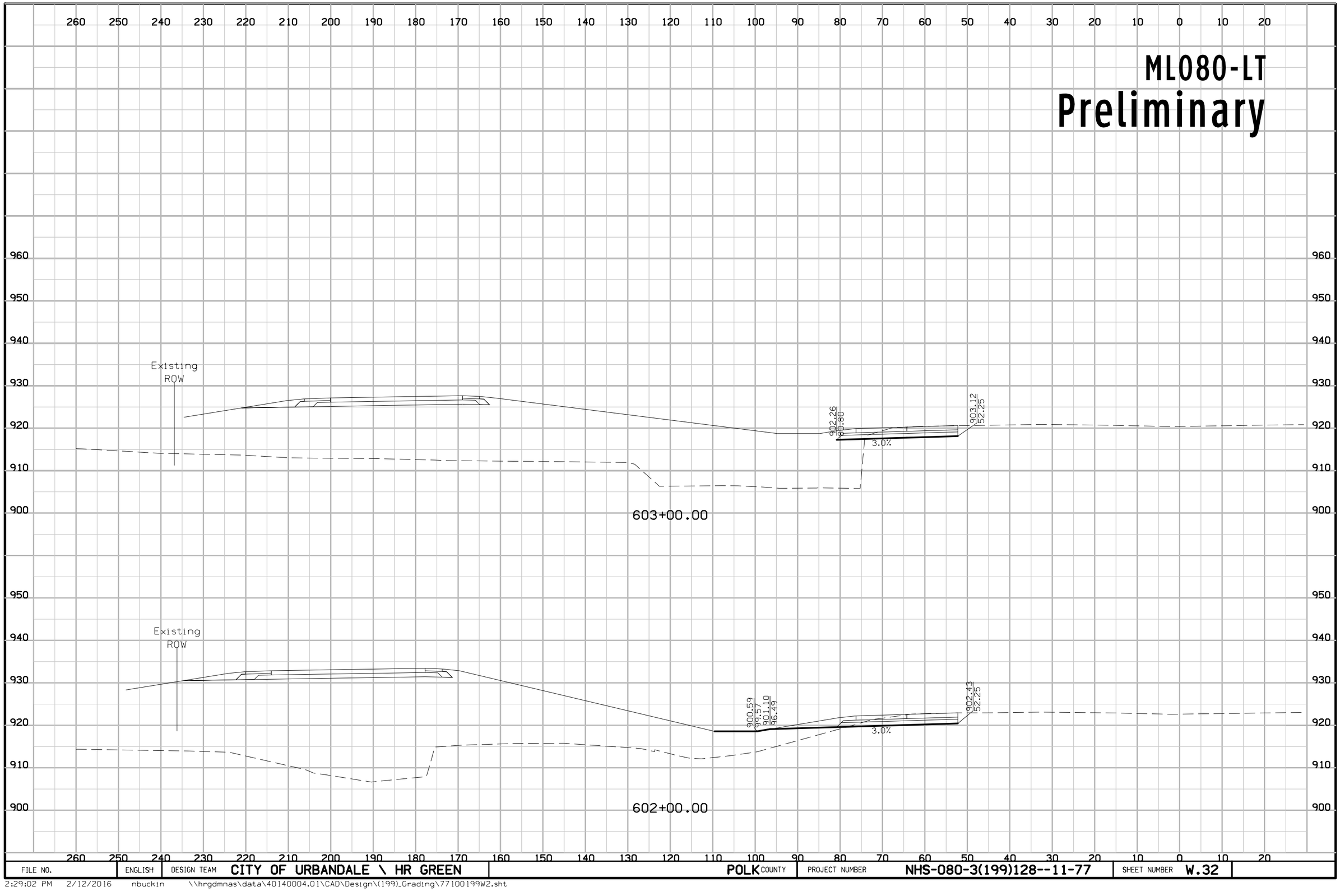
ML080-LT
Preliminary



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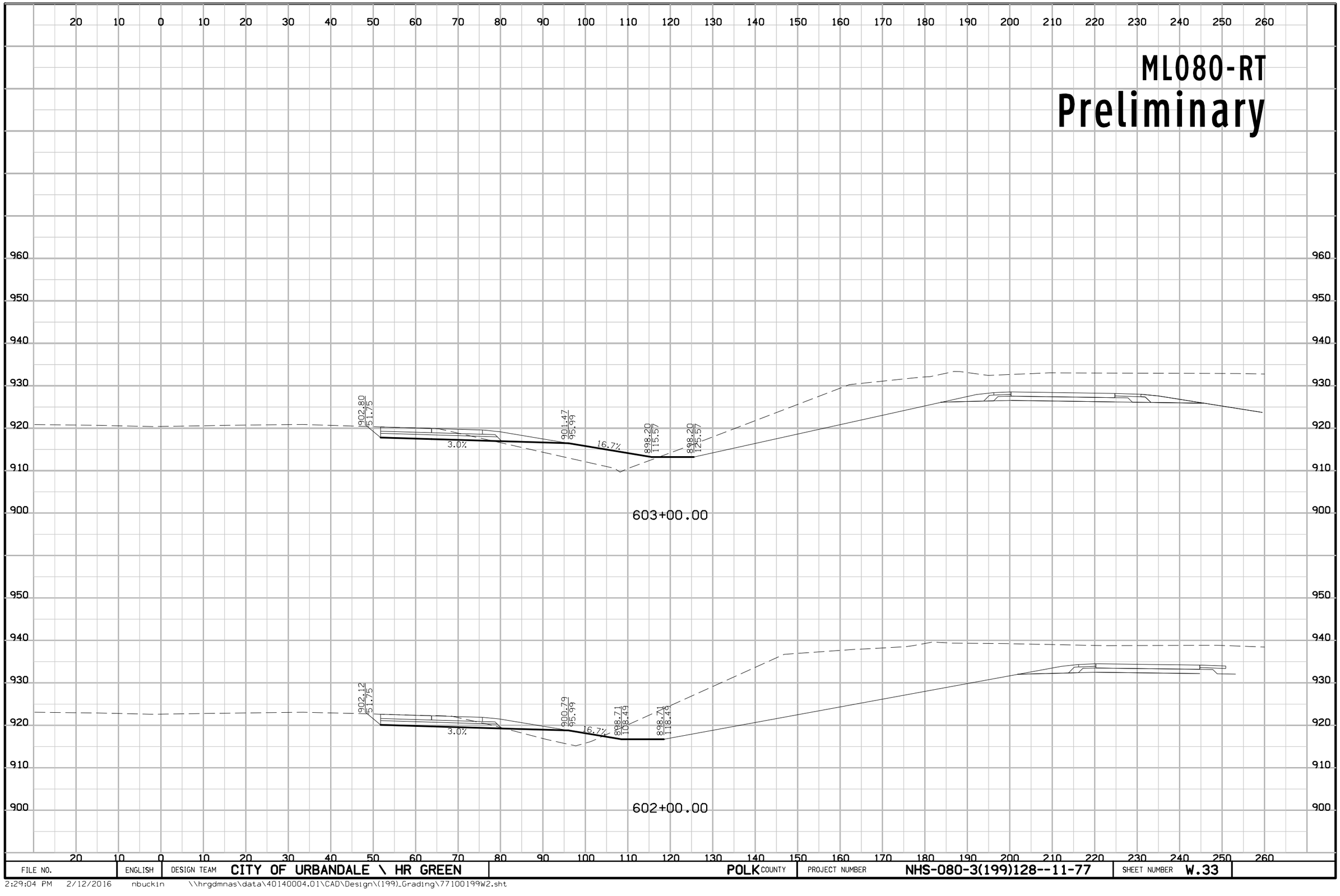
ML080-RT

Preliminary



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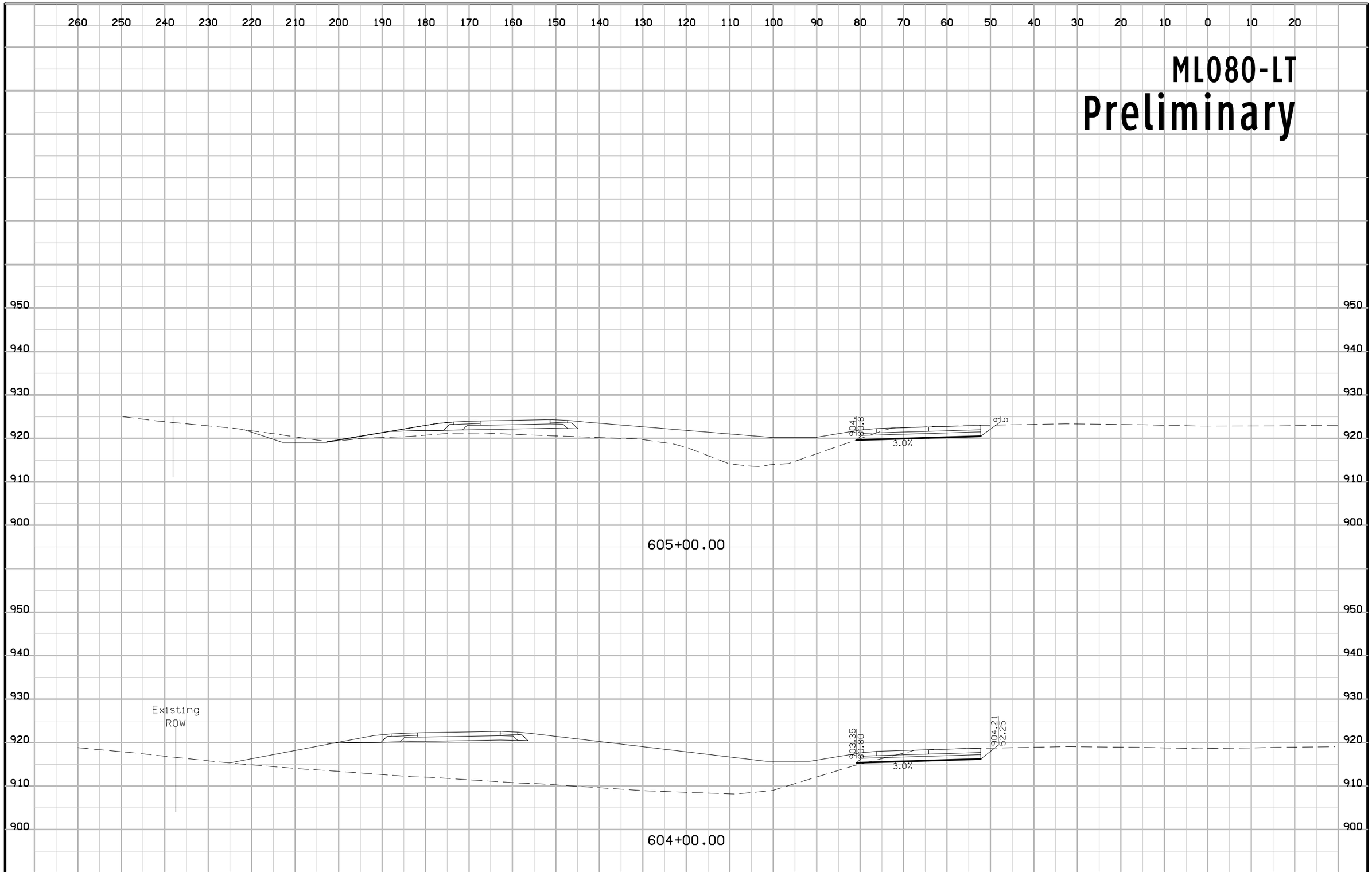
ML080-LT

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.34

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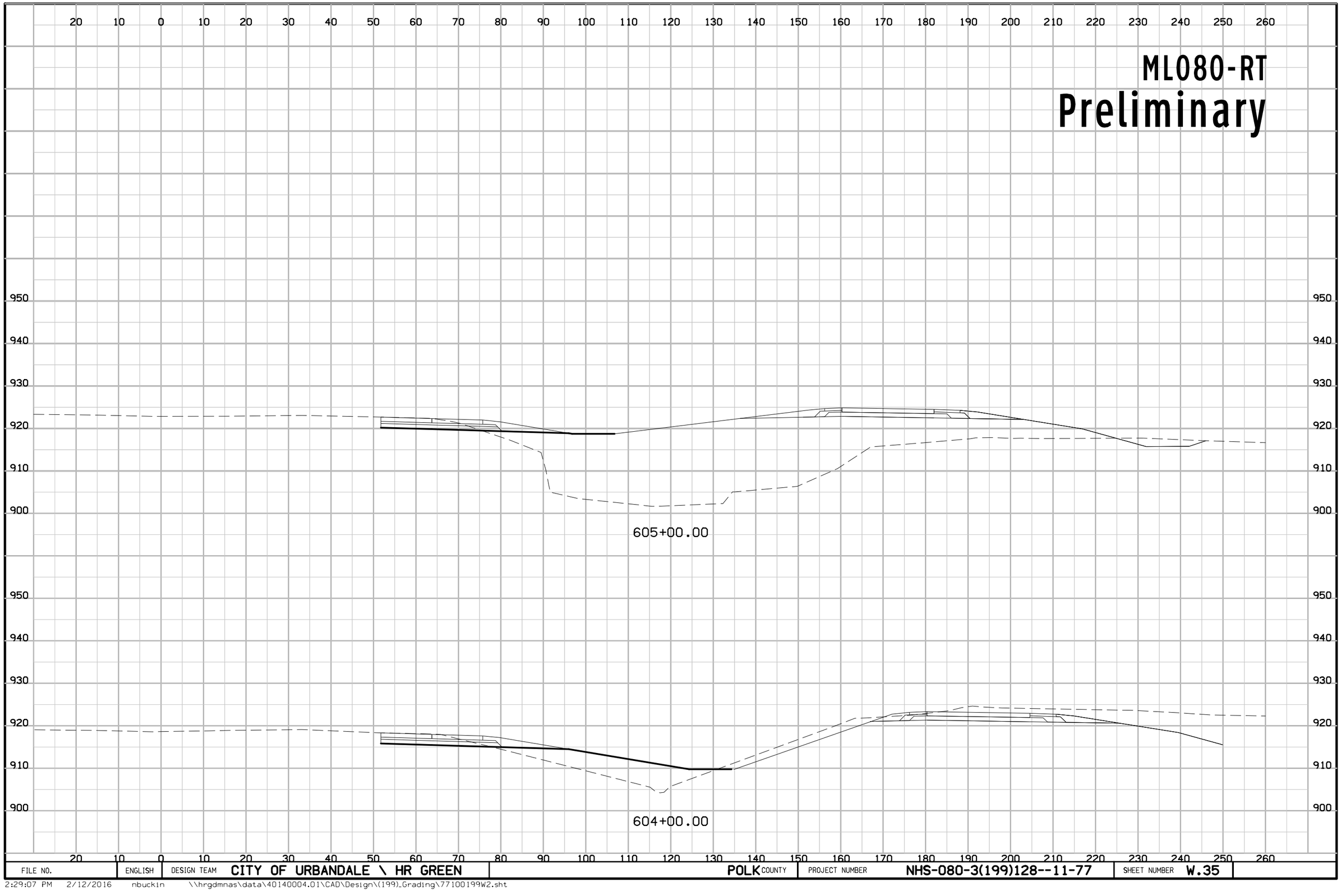
ML080-RT

Preliminary



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ML080-LT

Preliminary

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

950 940 930 920 910 900 890

Existing ROW

907.25
80.80

908.11
52.25

3.0%

607+00.00

Existing ROW

905.94
80.80

906.80
52.25

3.0%

606+00.00

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.36

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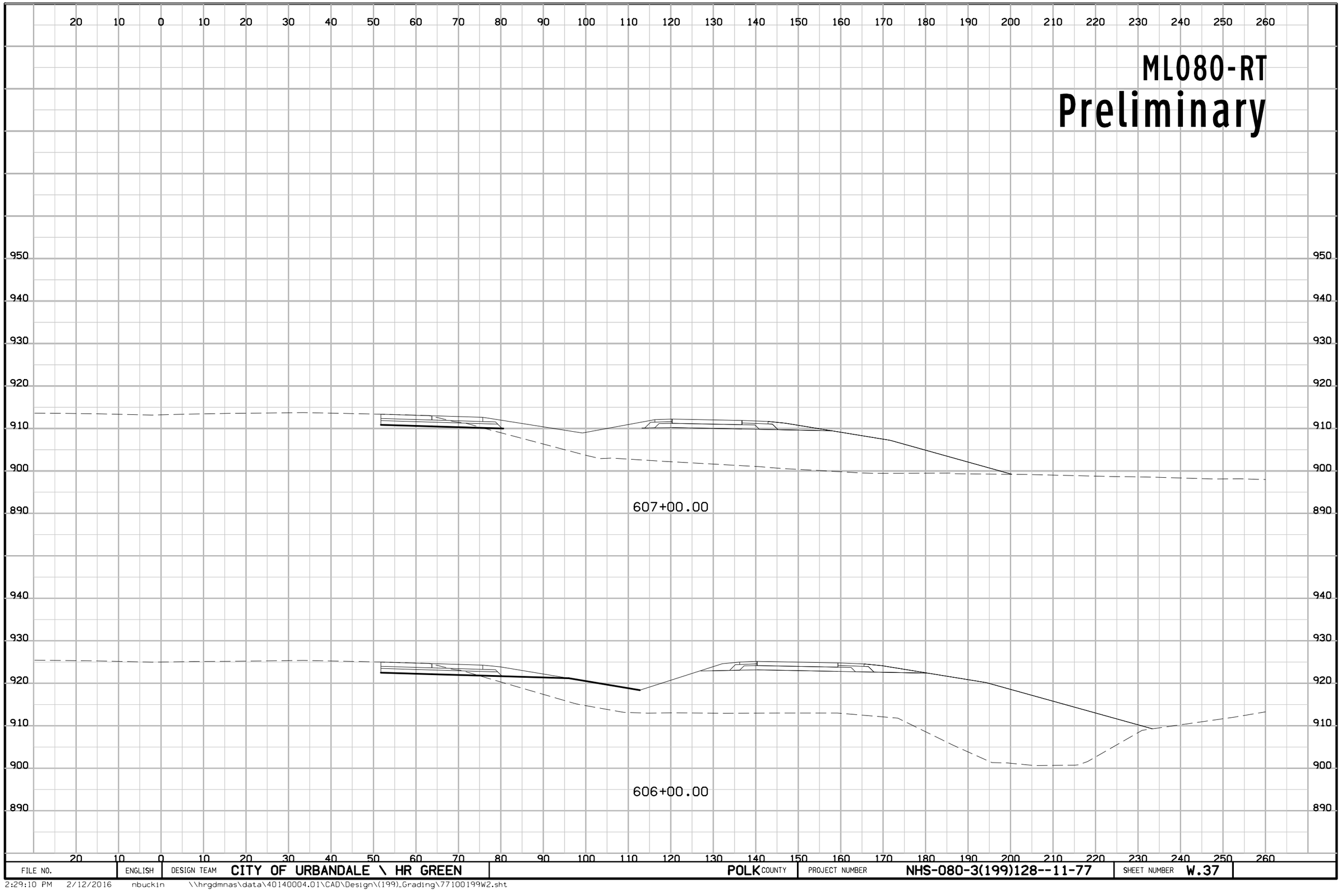
ML080-RT

Preliminary



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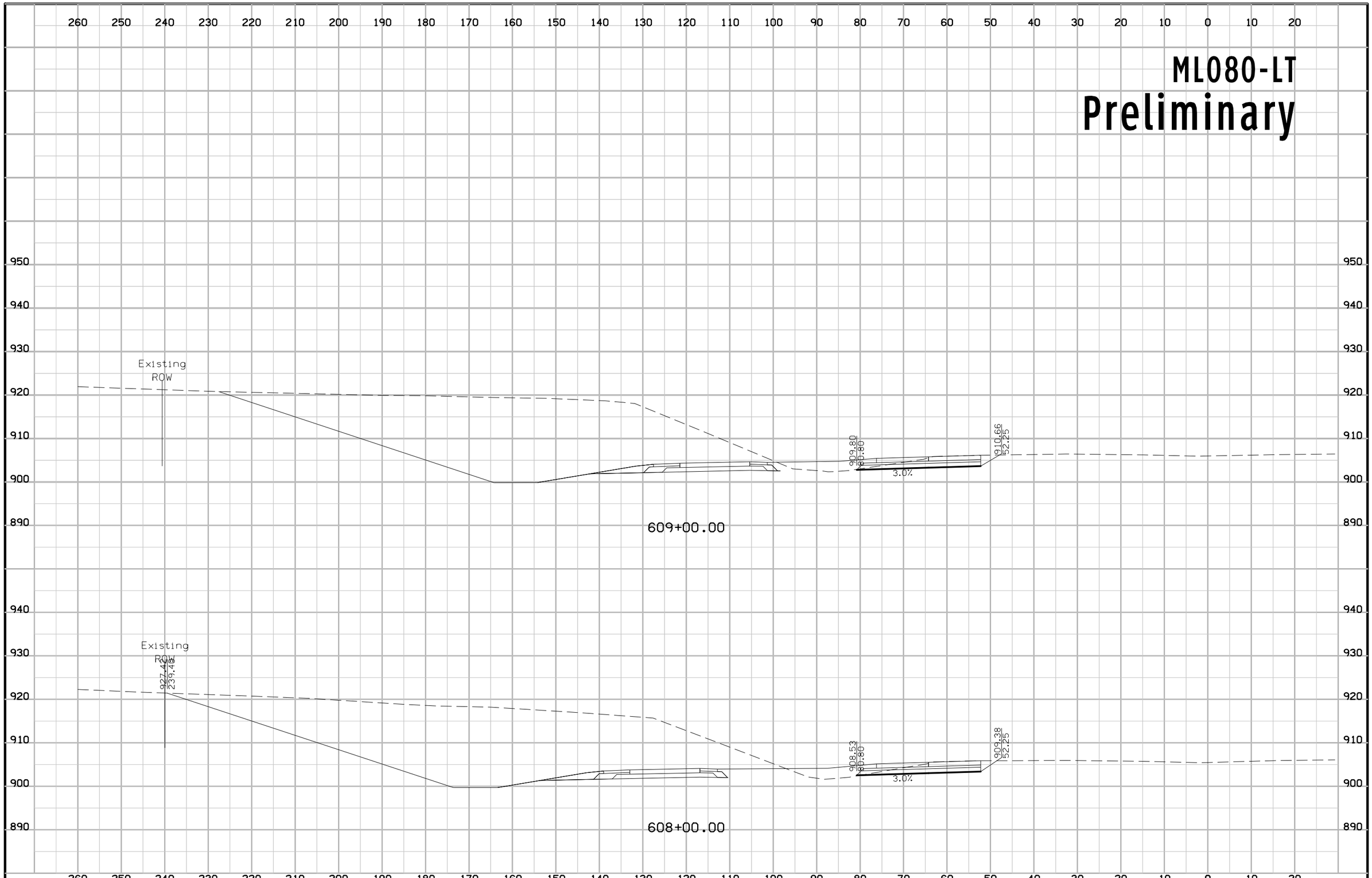
ML080-LT

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.38

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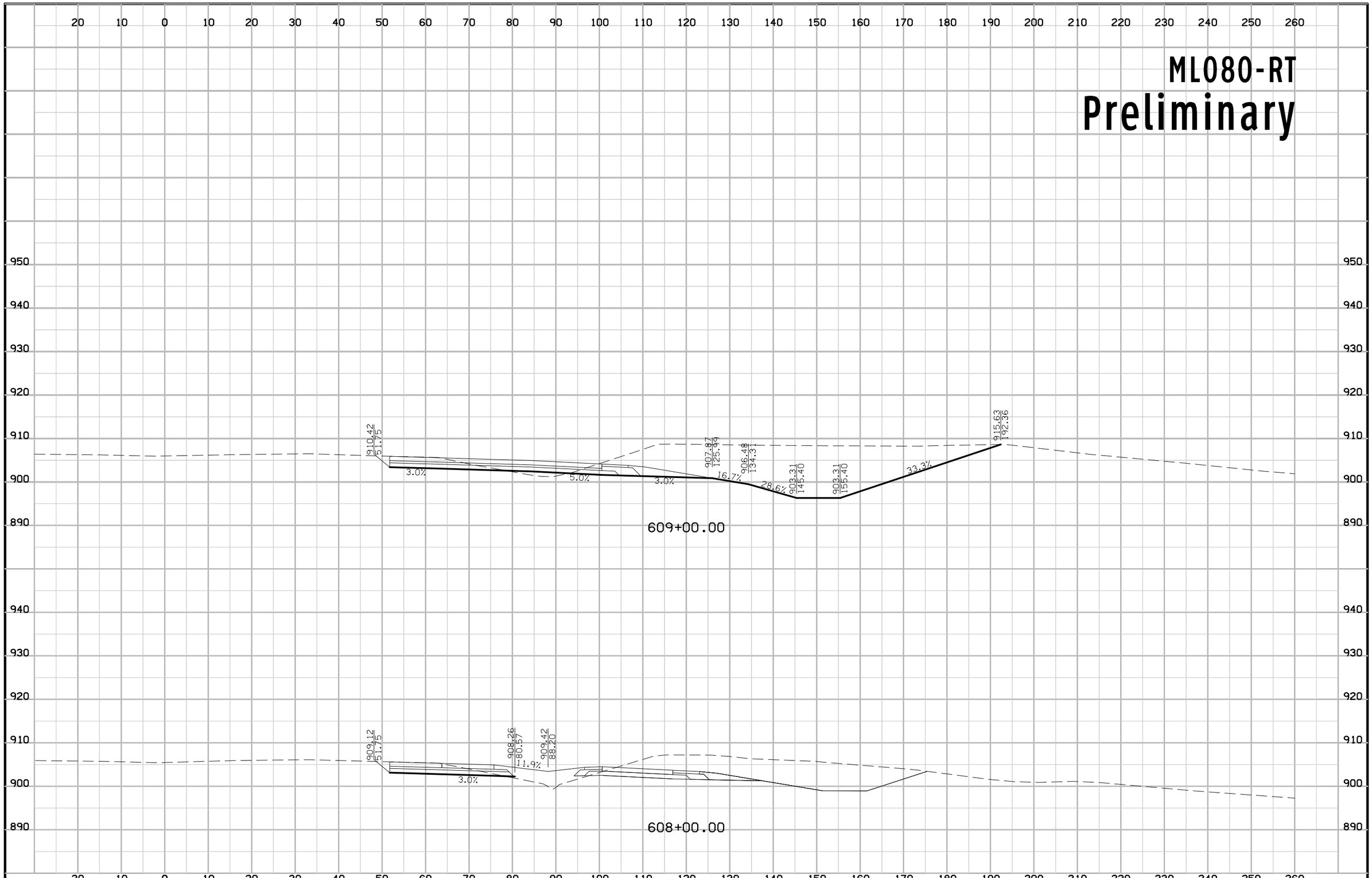
ML080-RT

Preliminary



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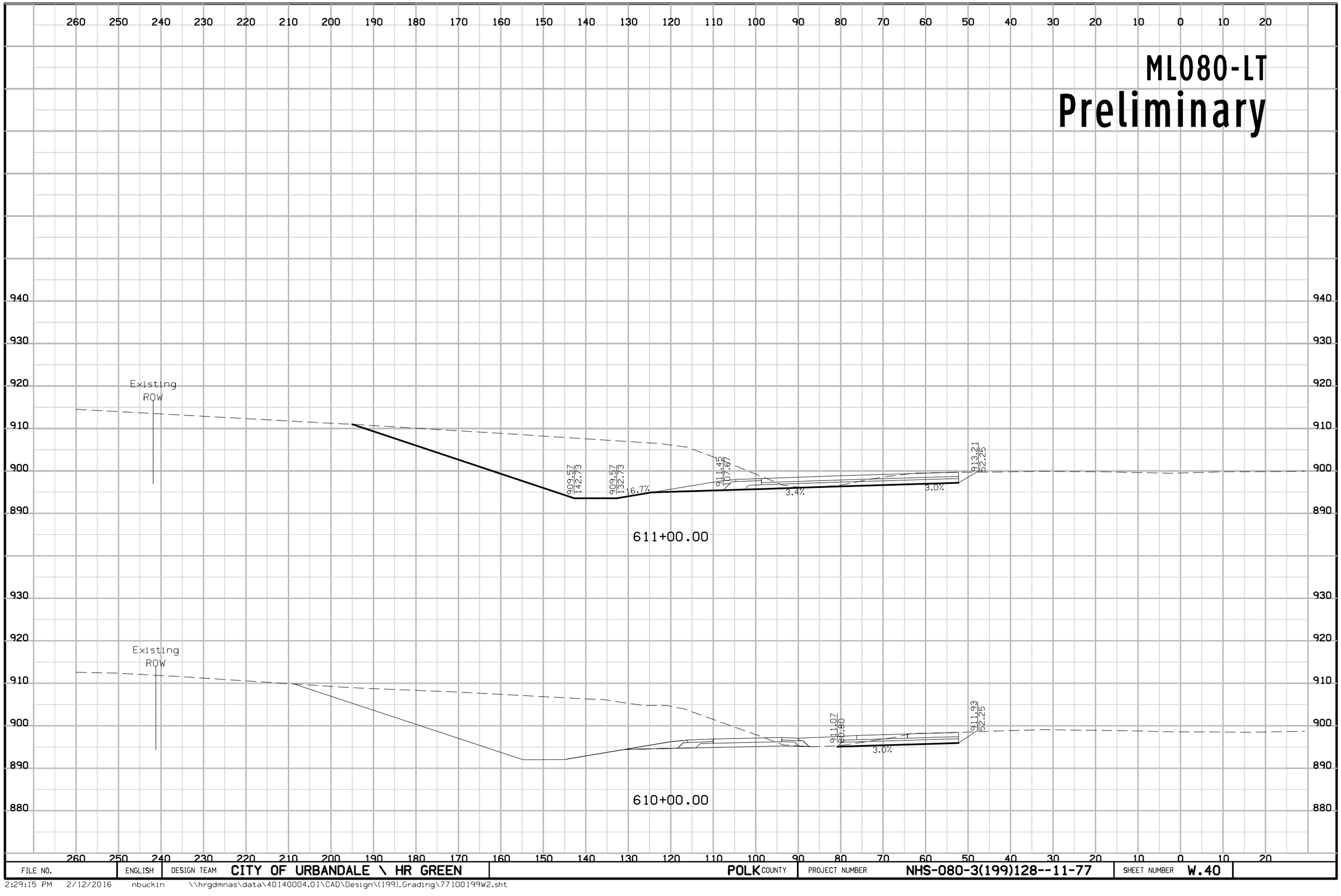
ML080-LT

Preliminary



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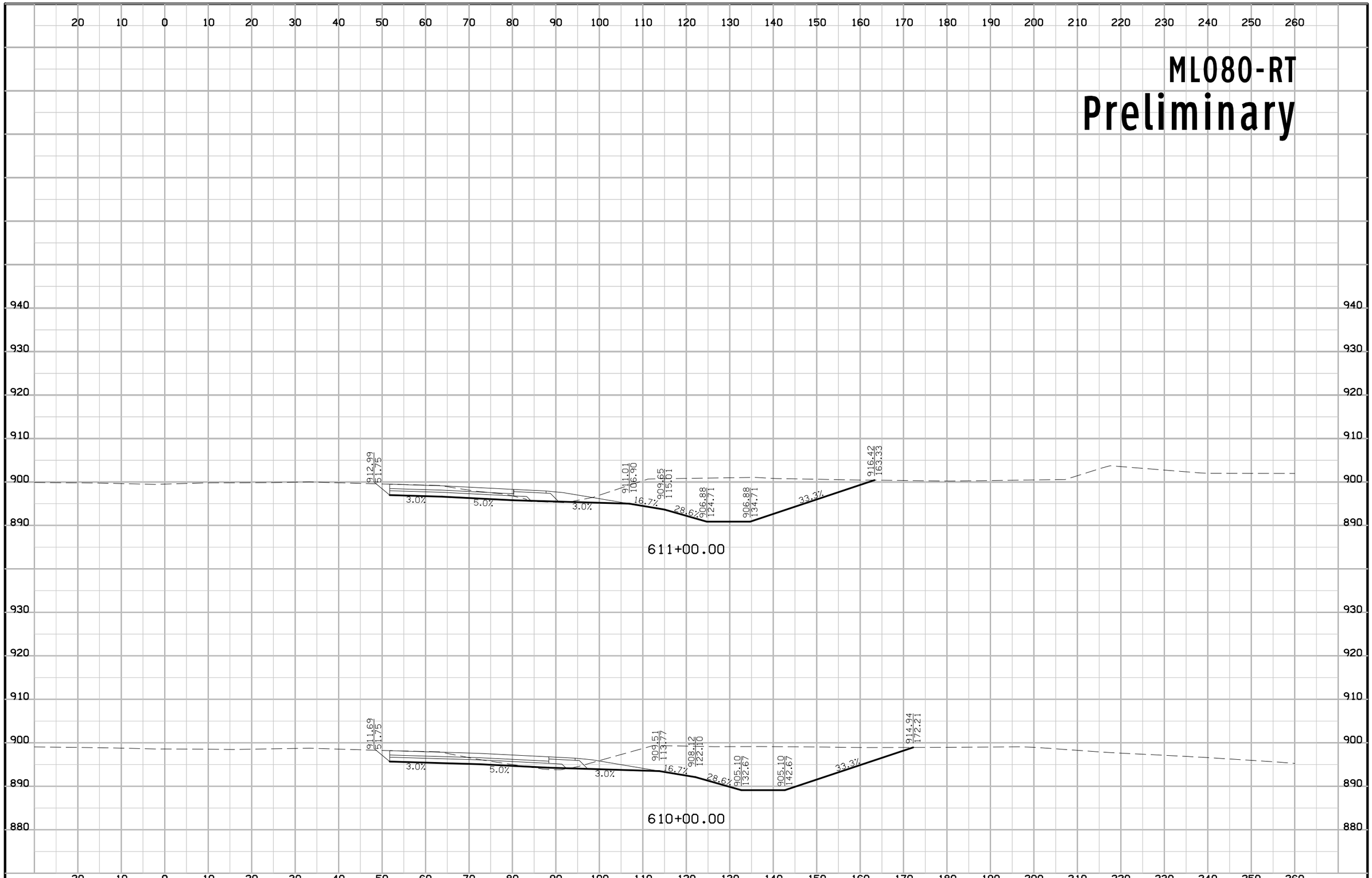
ML080-RT

Preliminary



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ML080-LT

Preliminary

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

940 930 920 910 900 890 880

Existing ROW

933.97
190.44

33.3%

912.66
126.52

912.66
116.52

16.7%

914.04
108.27

3.5%

3.0%

915.82
52.25

613+00.00

930 920 910 900 890 880

Existing ROW

931.18
193.87

33.3%

911.18
133.96

911.18
123.36

912.55
115.11

16.7%

3.4%

3.0%

914.53
52.25

612+00.00

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.43

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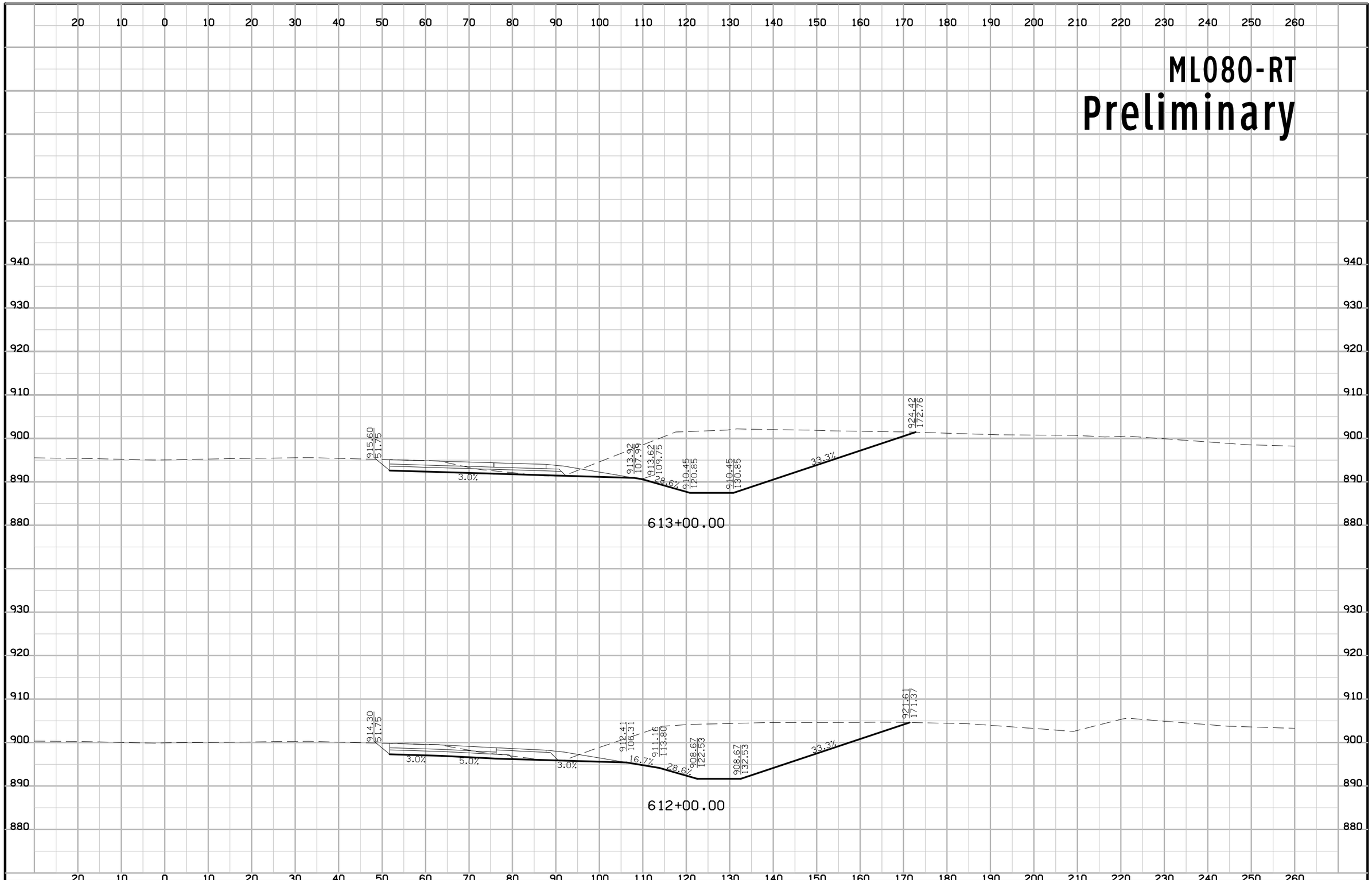
ML080-RT
Preliminary



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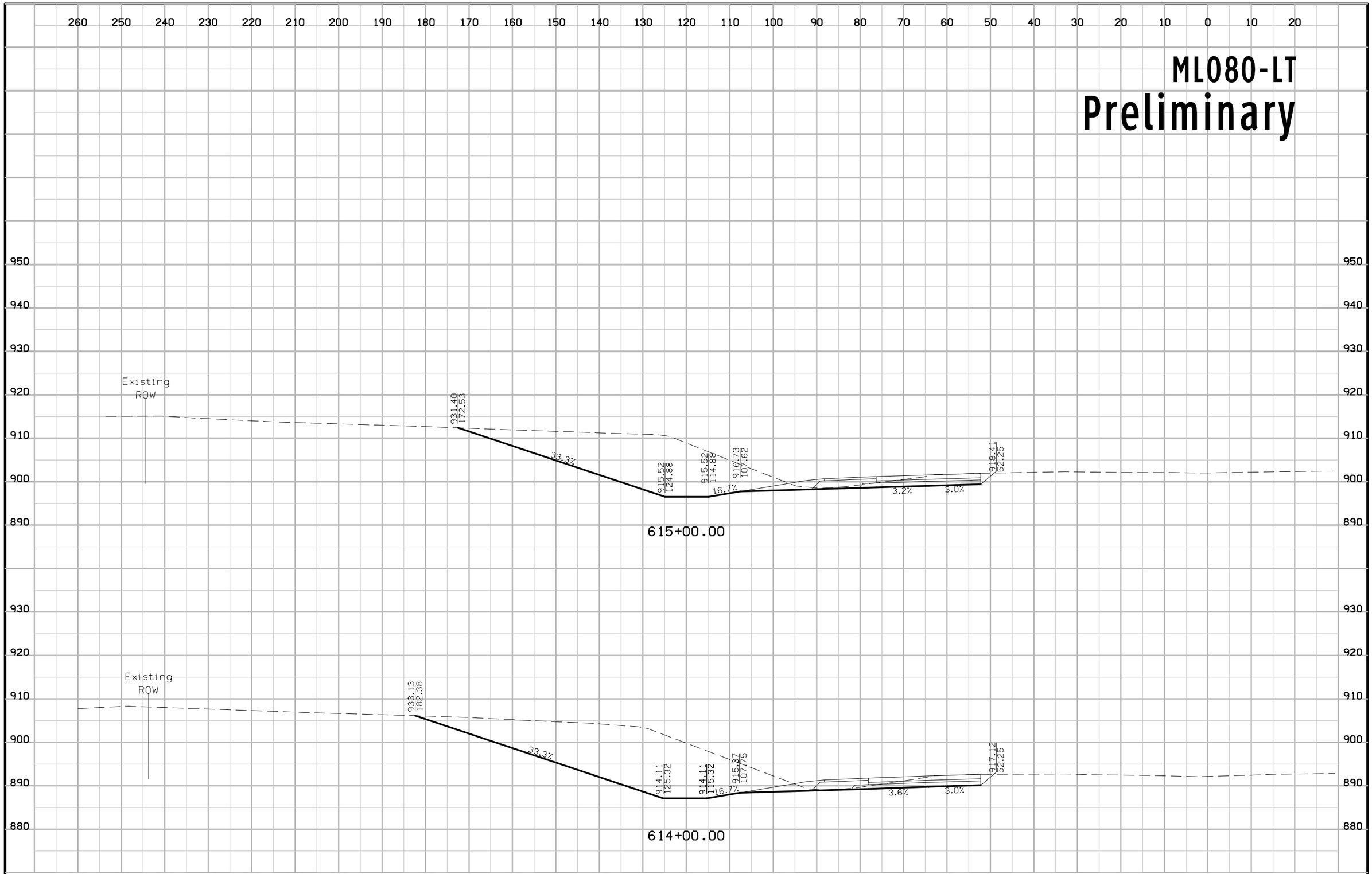
ML080-LT

Preliminary



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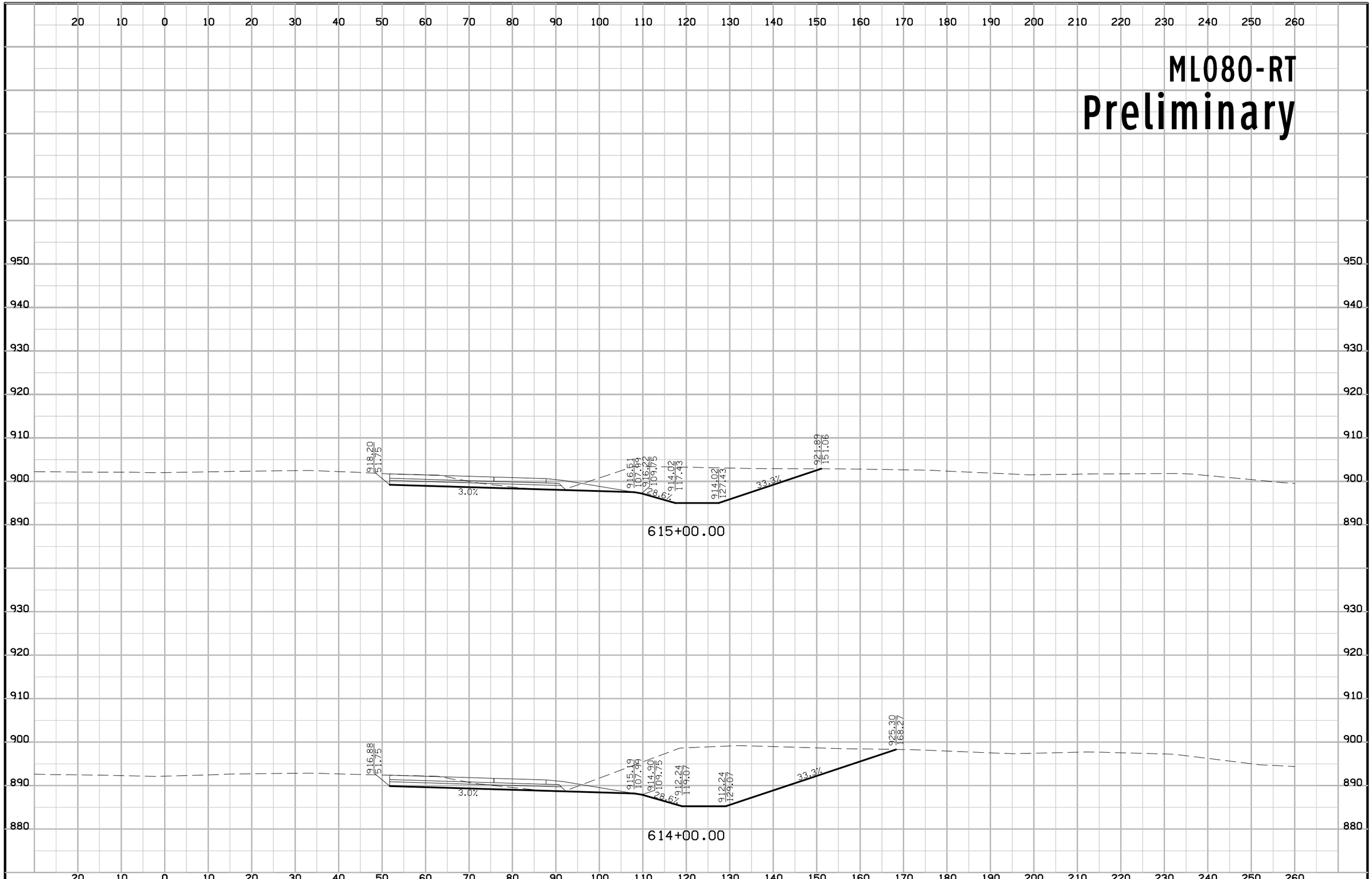
ML080-RT

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER W.46

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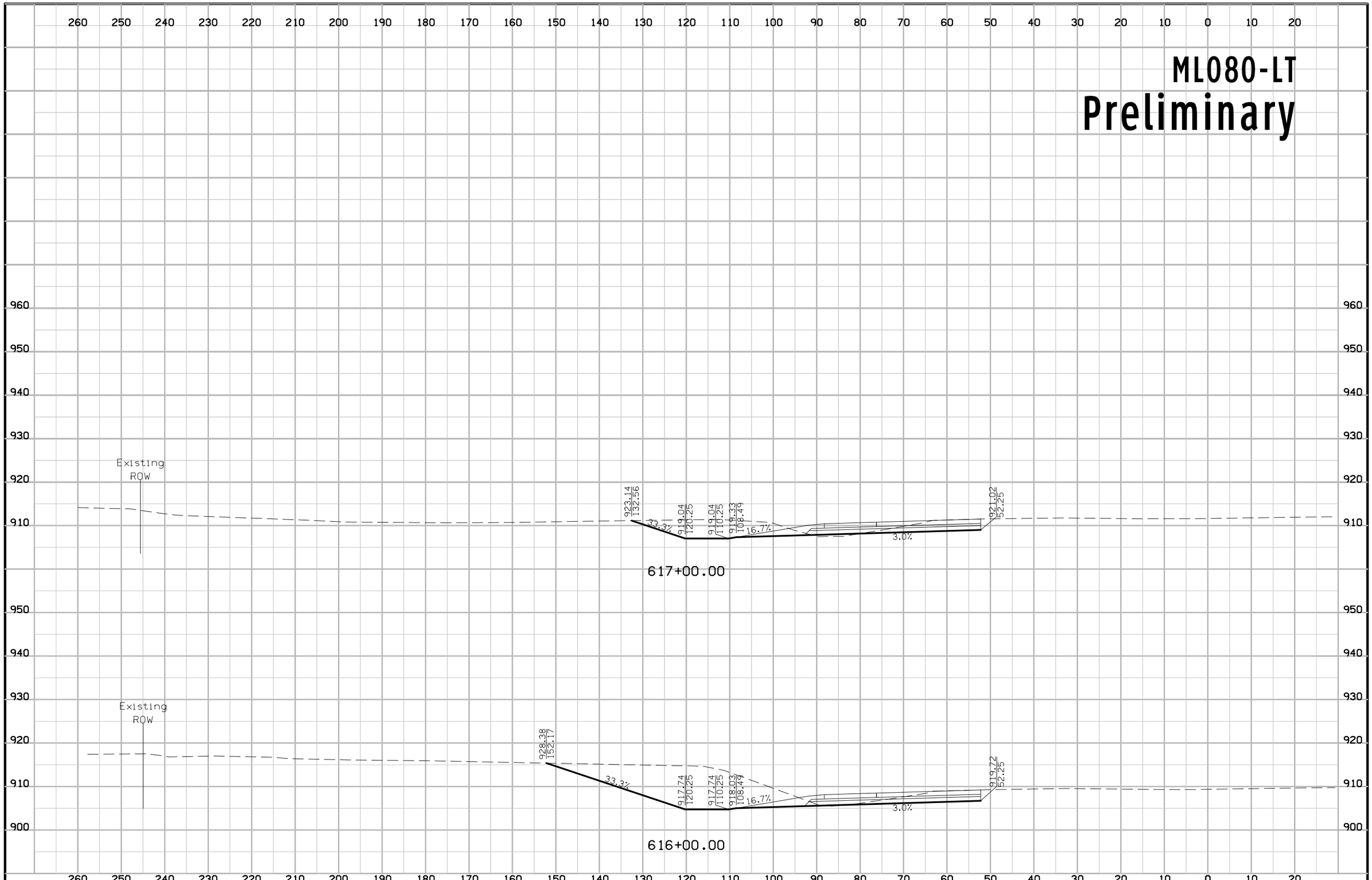
ML080-LT

Preliminary



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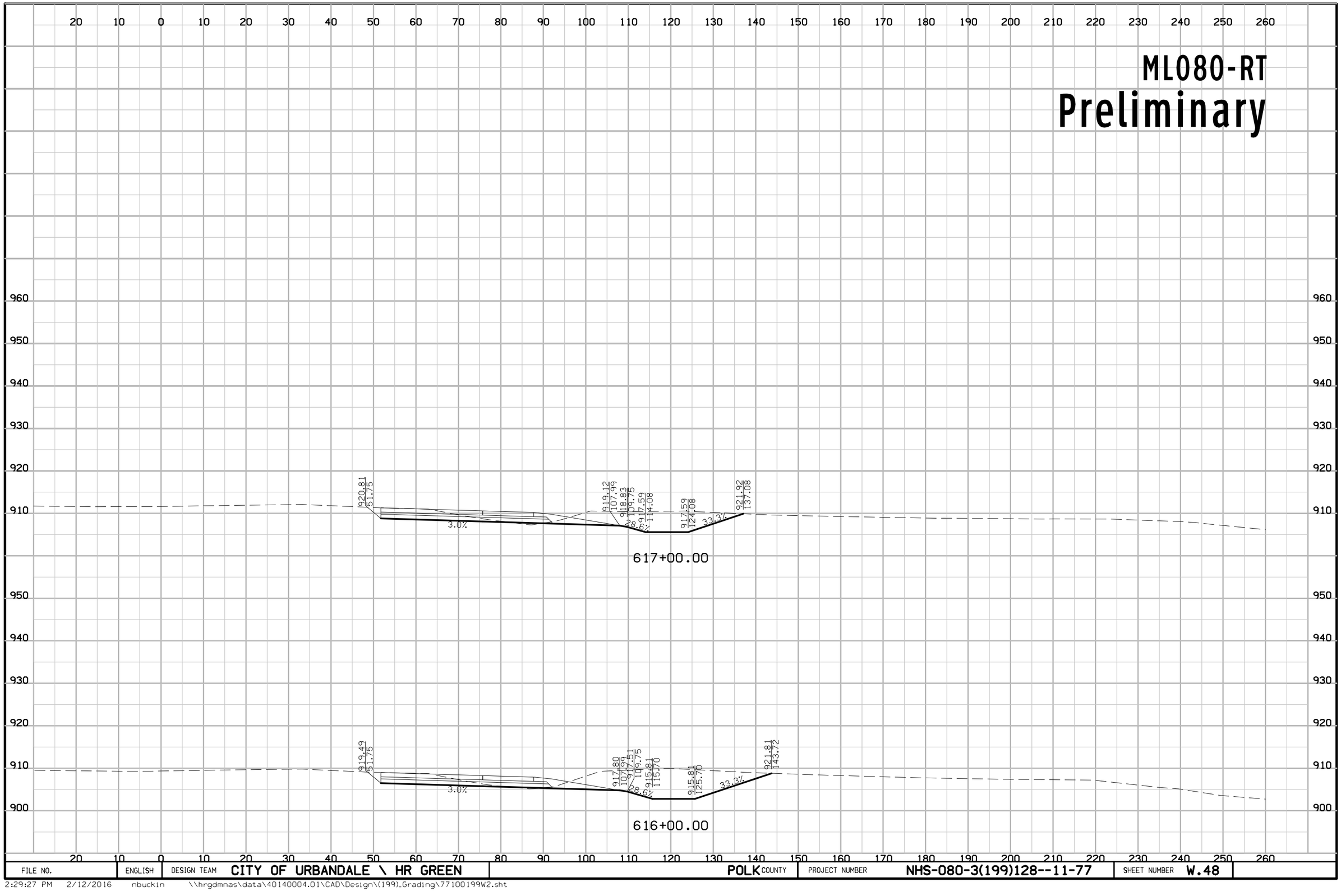
ML080-RT

Preliminary



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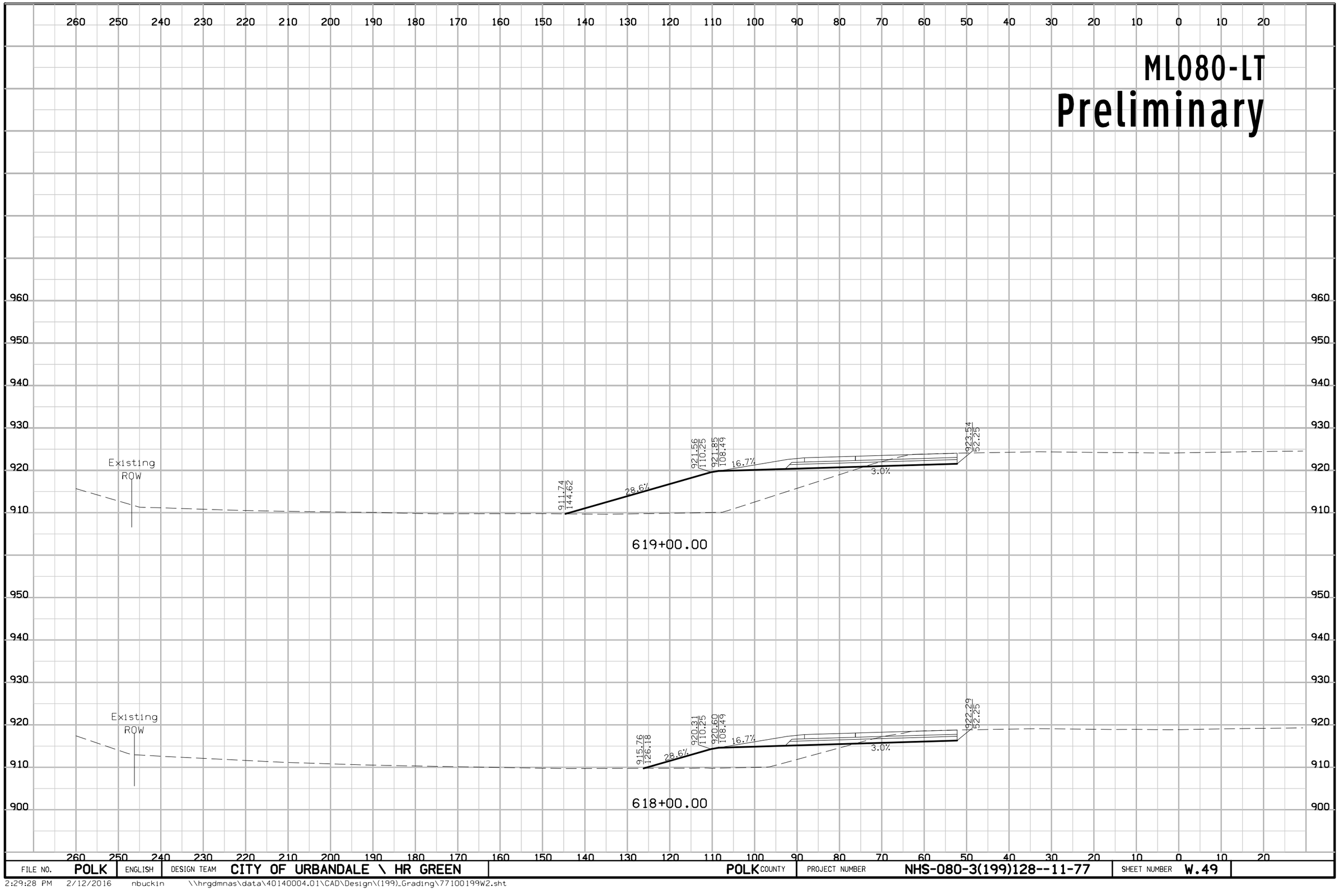
ML080-LT

Preliminary



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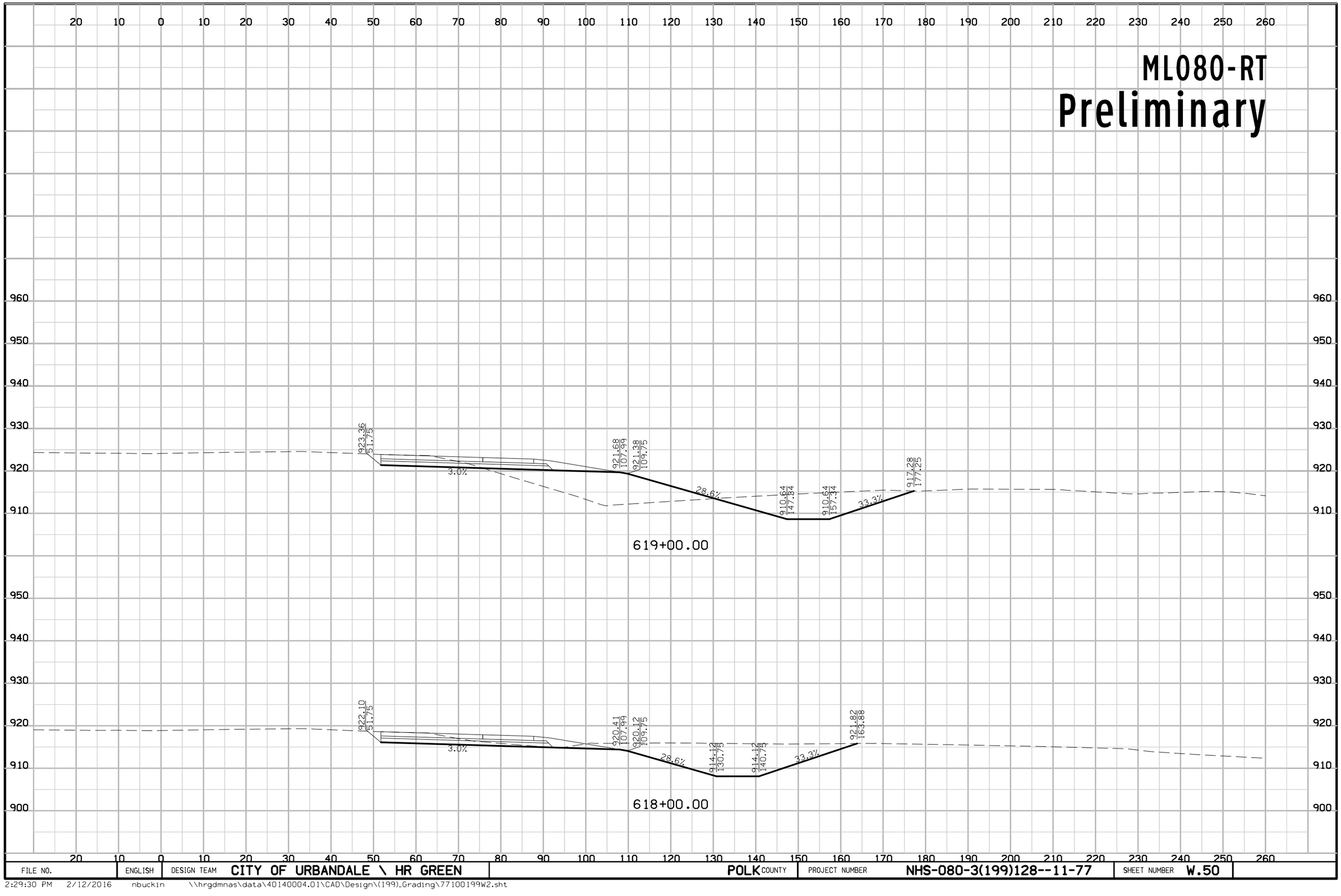
ML080-RT

Preliminary



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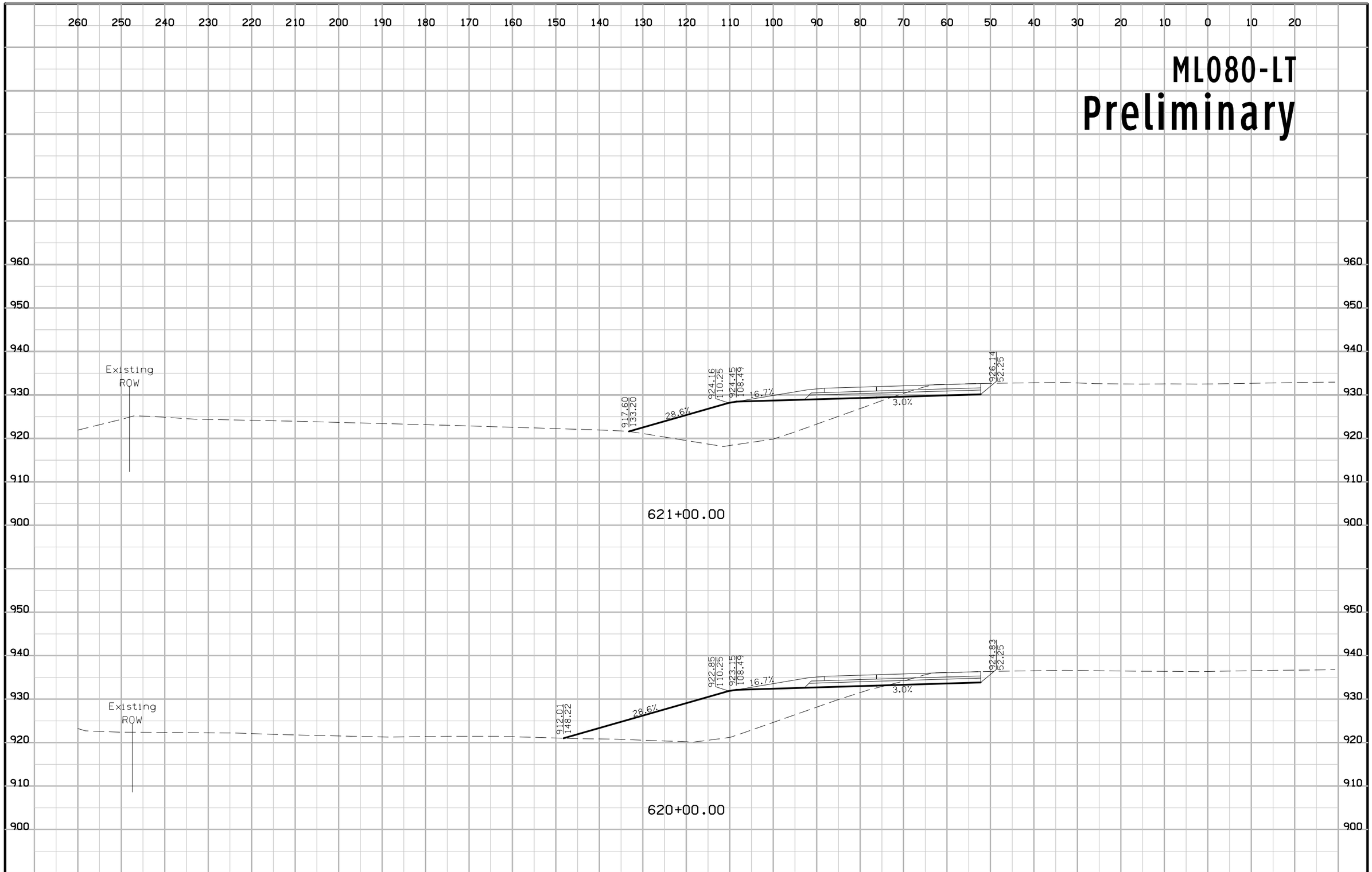
ML080-LT
Preliminary



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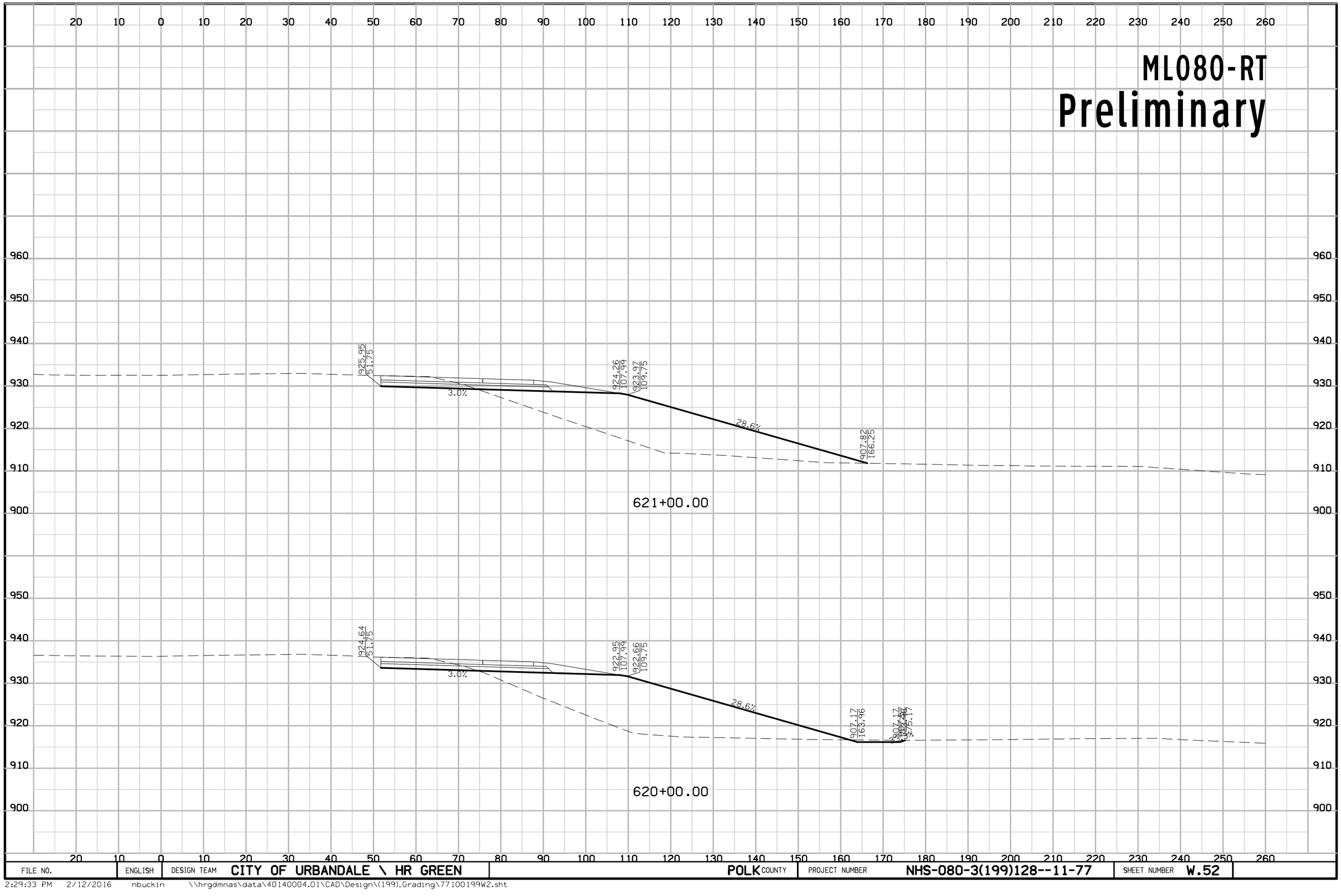
ML080-RT

Preliminary



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ML080-LT

Preliminary

260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

960 950 940 930 920 910 900

622+50.00

622+00.00

Existing
ROW

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	W.53

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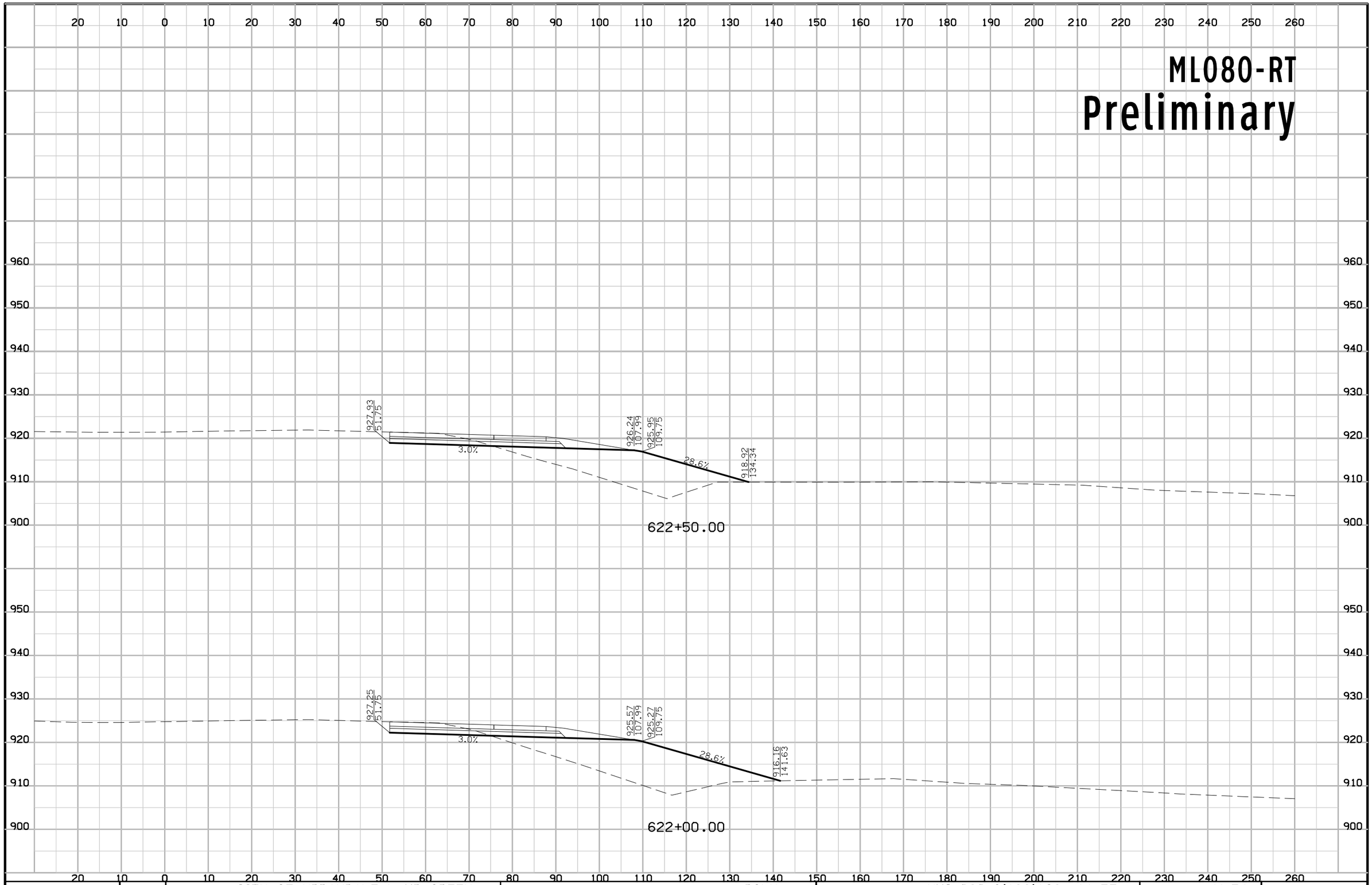
ML080-RT

Preliminary



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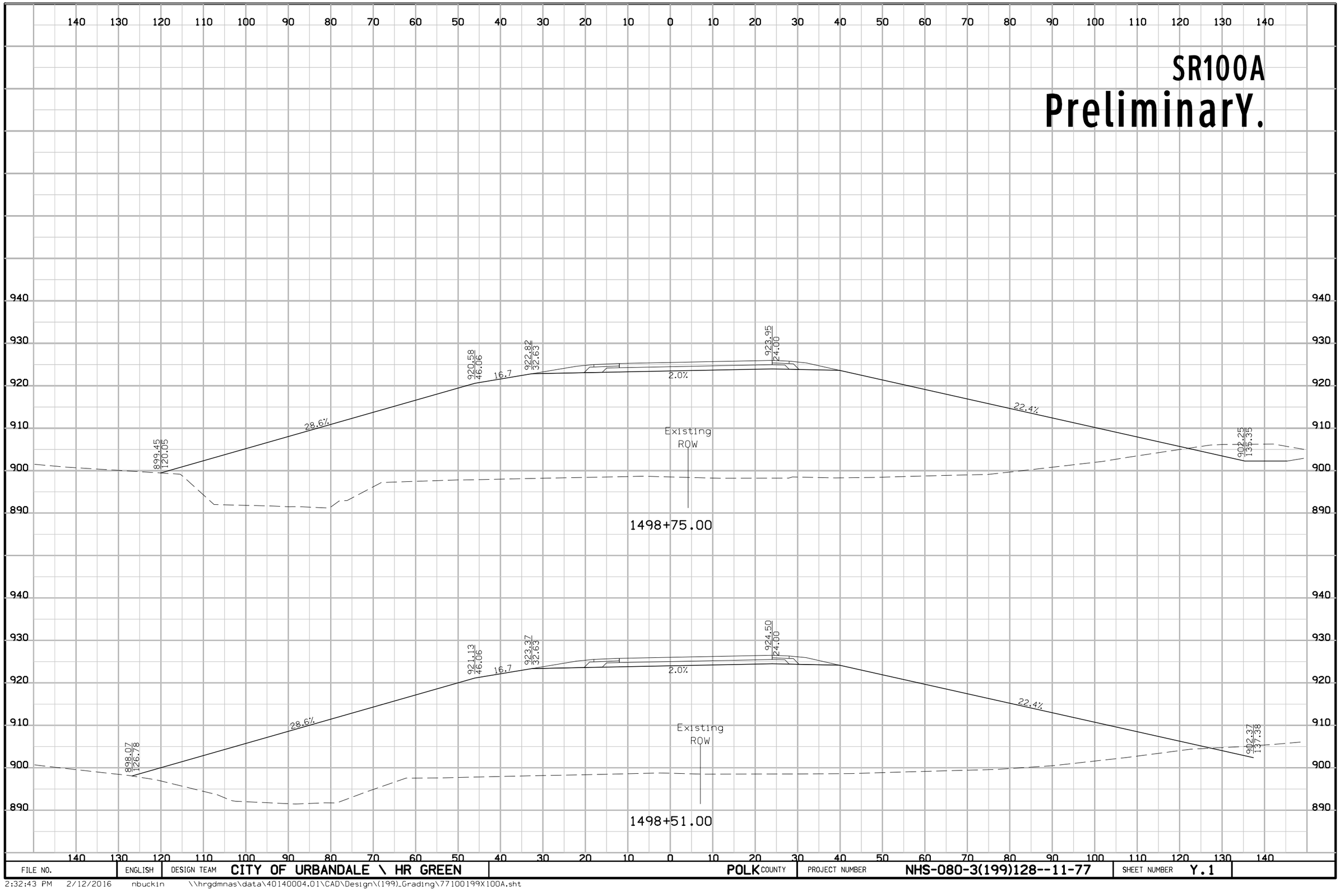
SR100A
PreliminarY.



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.1

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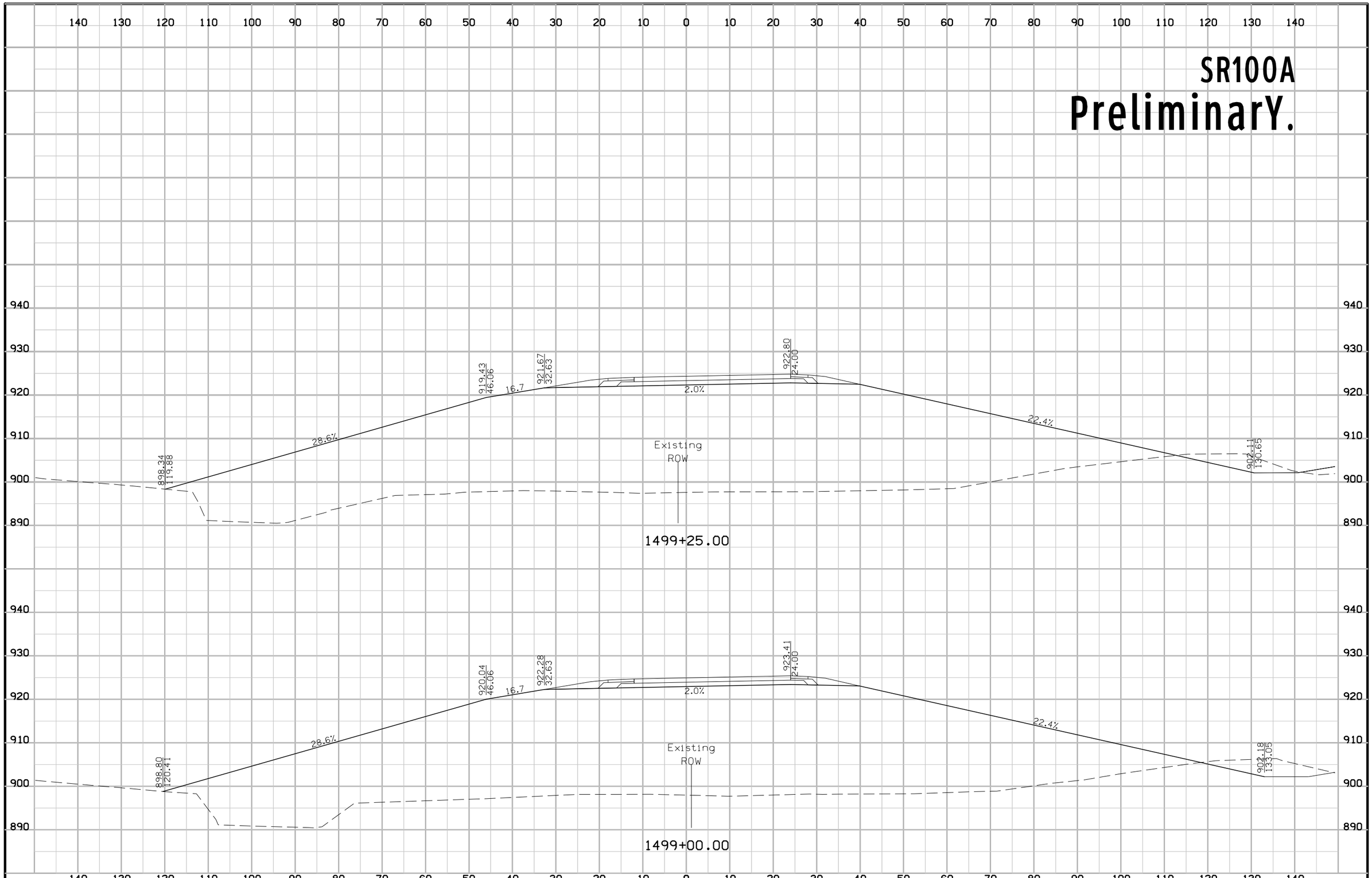
SR100A

PreliminarY.



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.2

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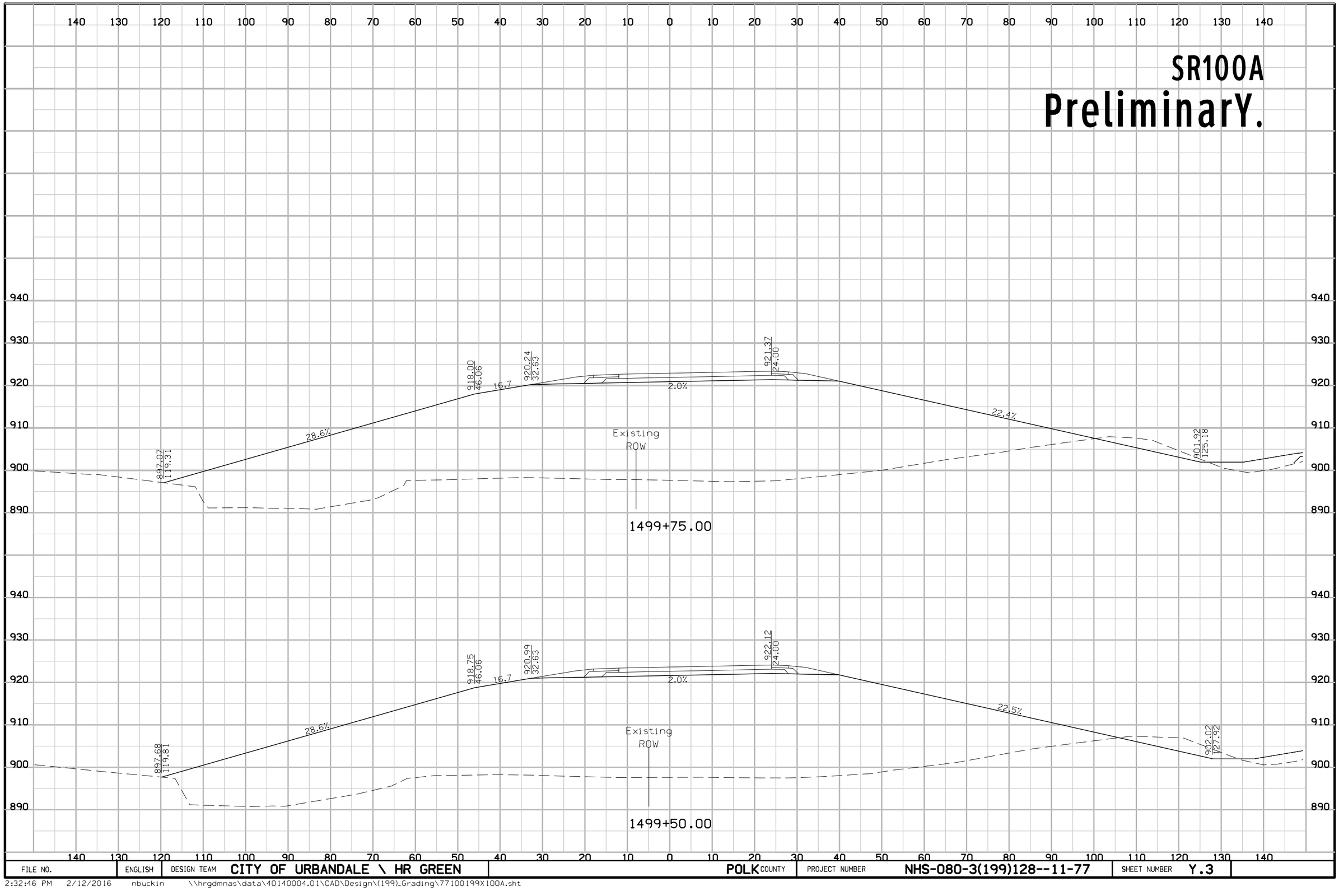
SR100A

PreliminarY.



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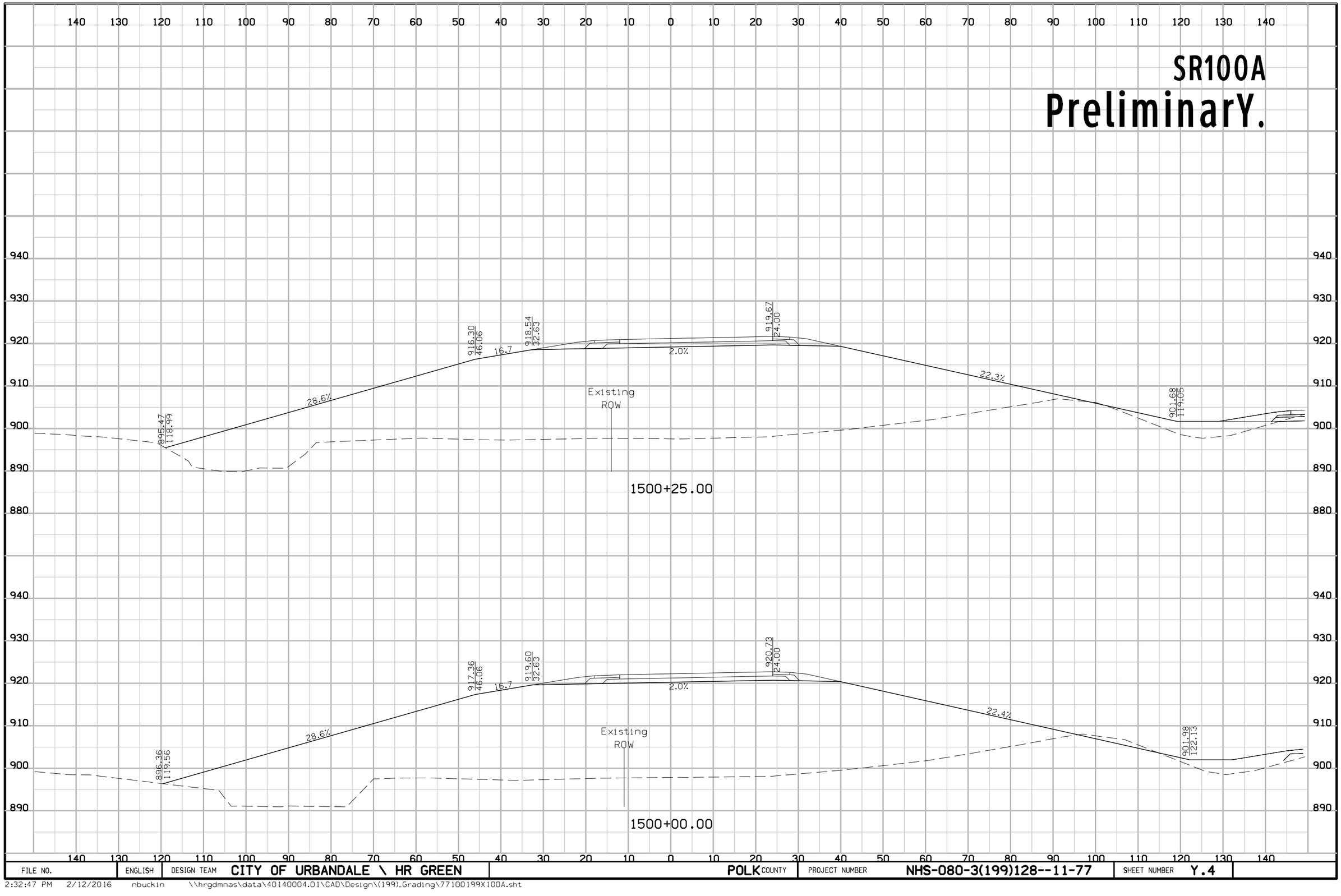
SR100A

PreliminarY.



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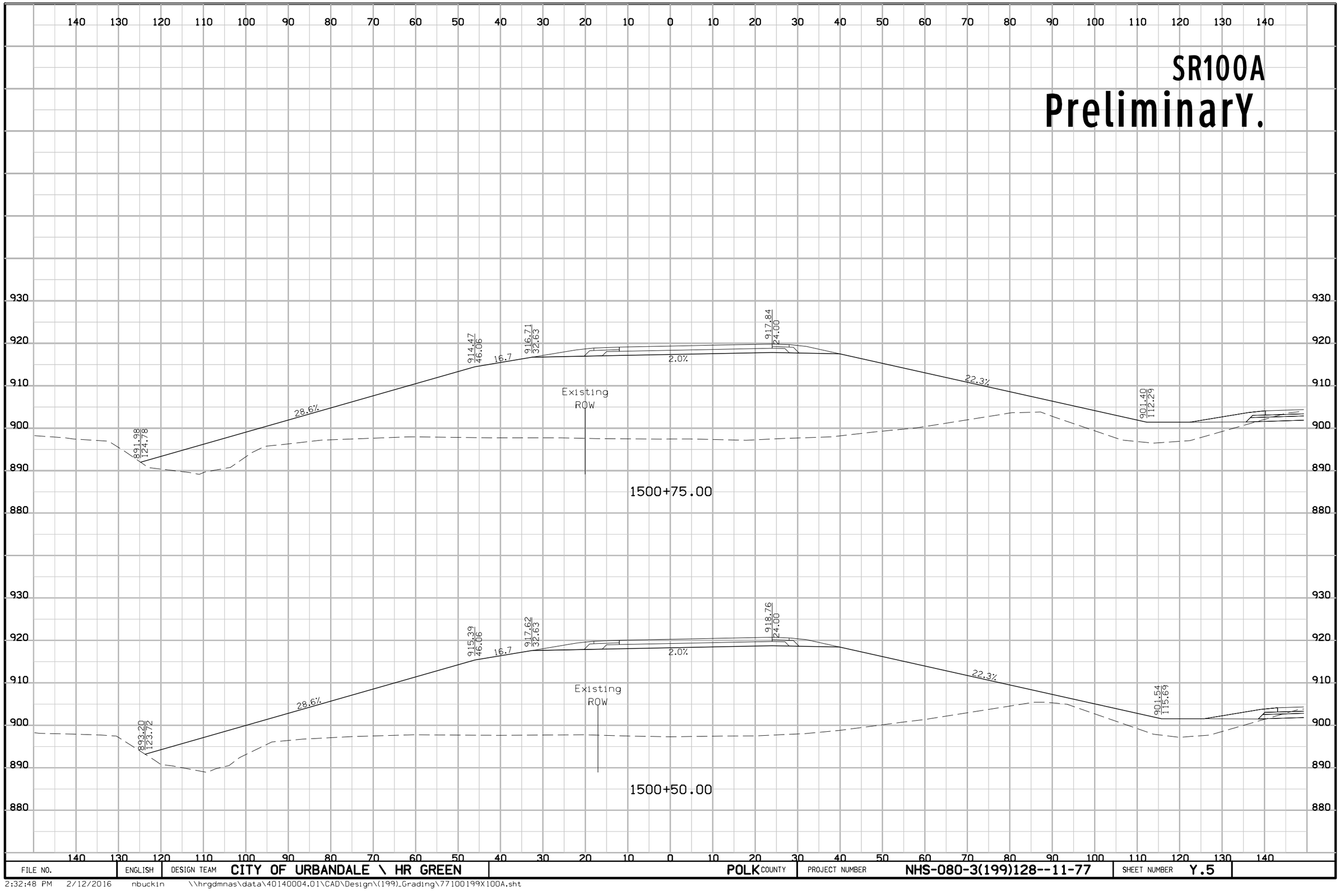
SR100A

PreliminarY.



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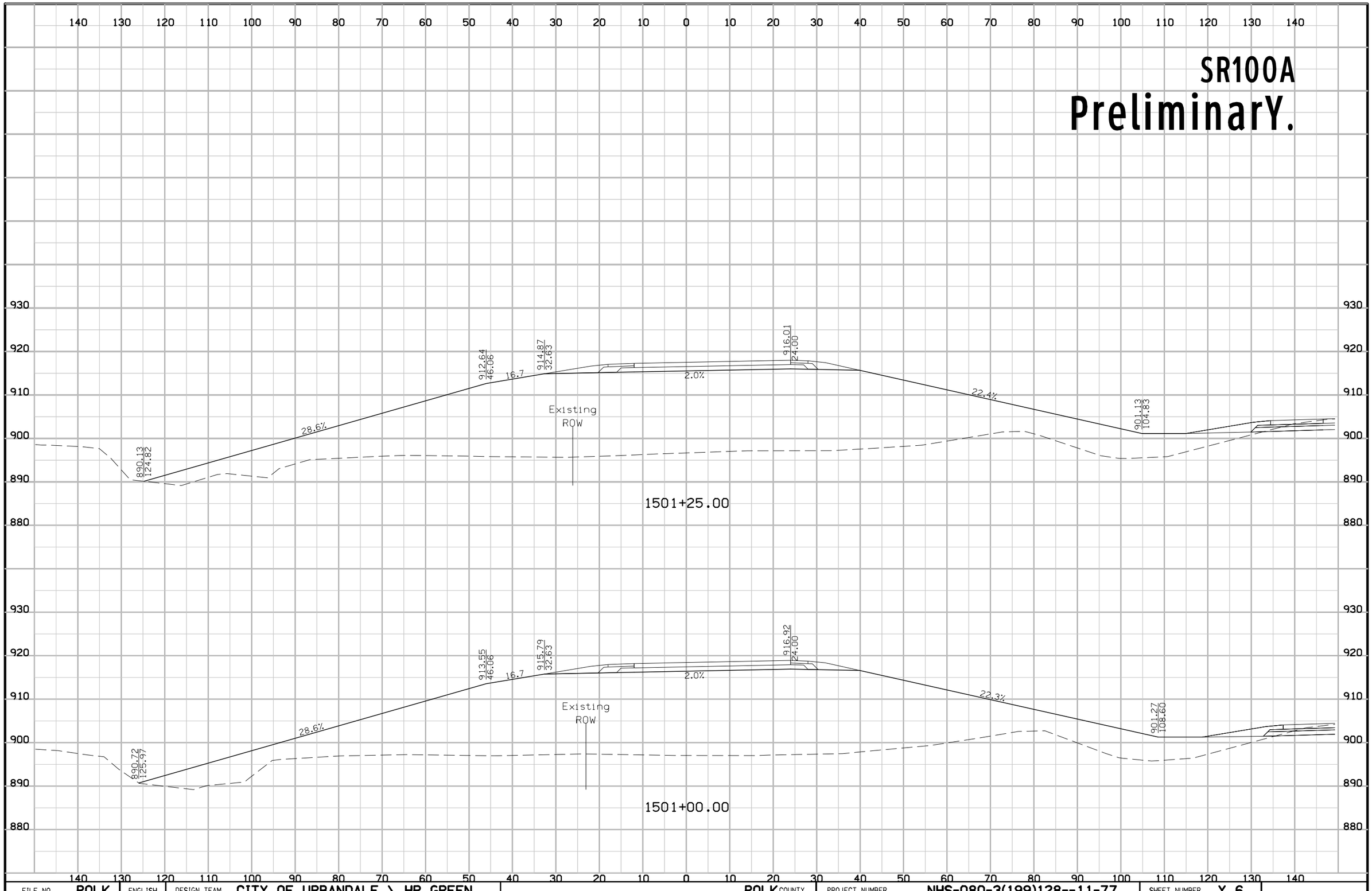
SR100A
PreliminarY.



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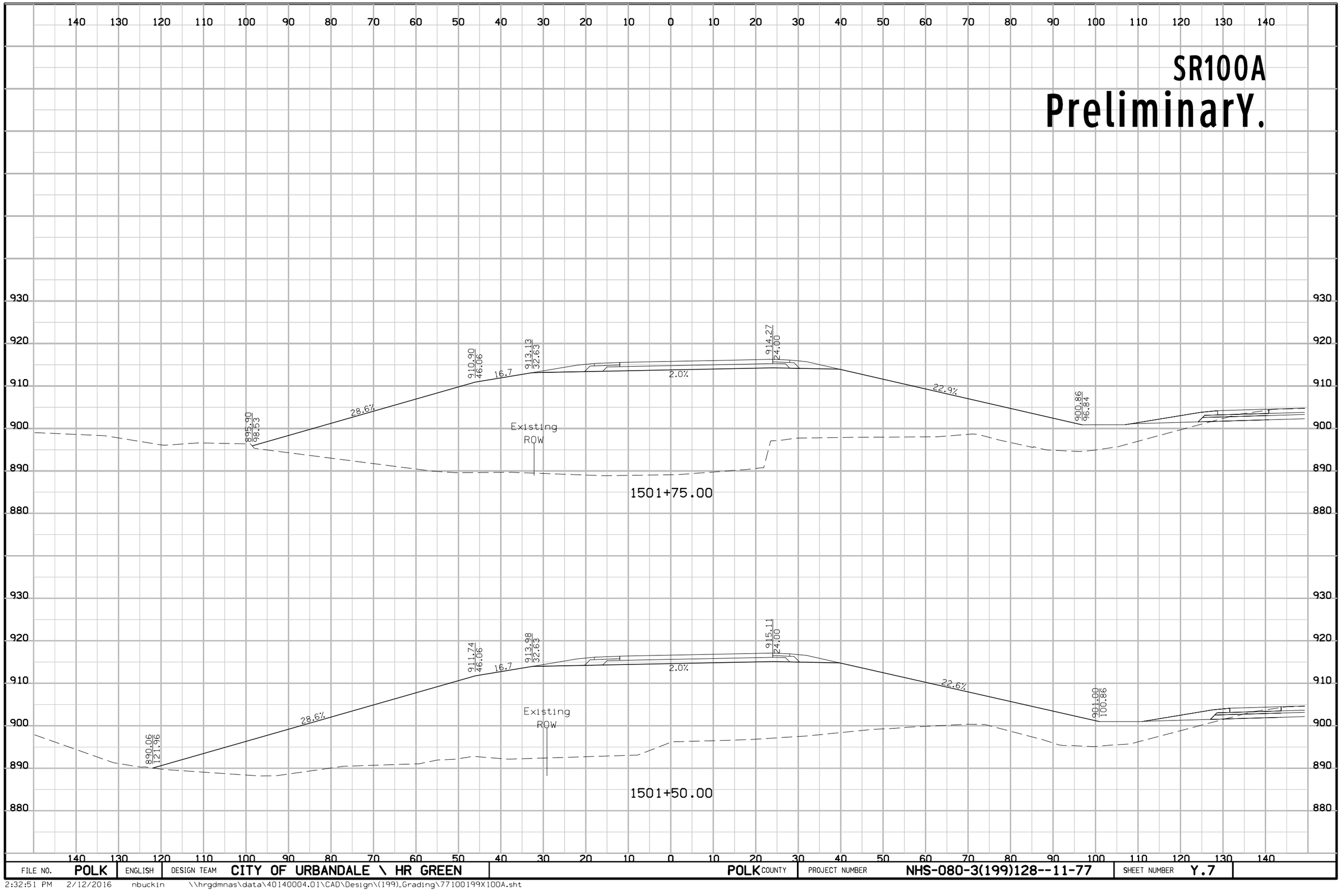
SR100A
PreliminarY.



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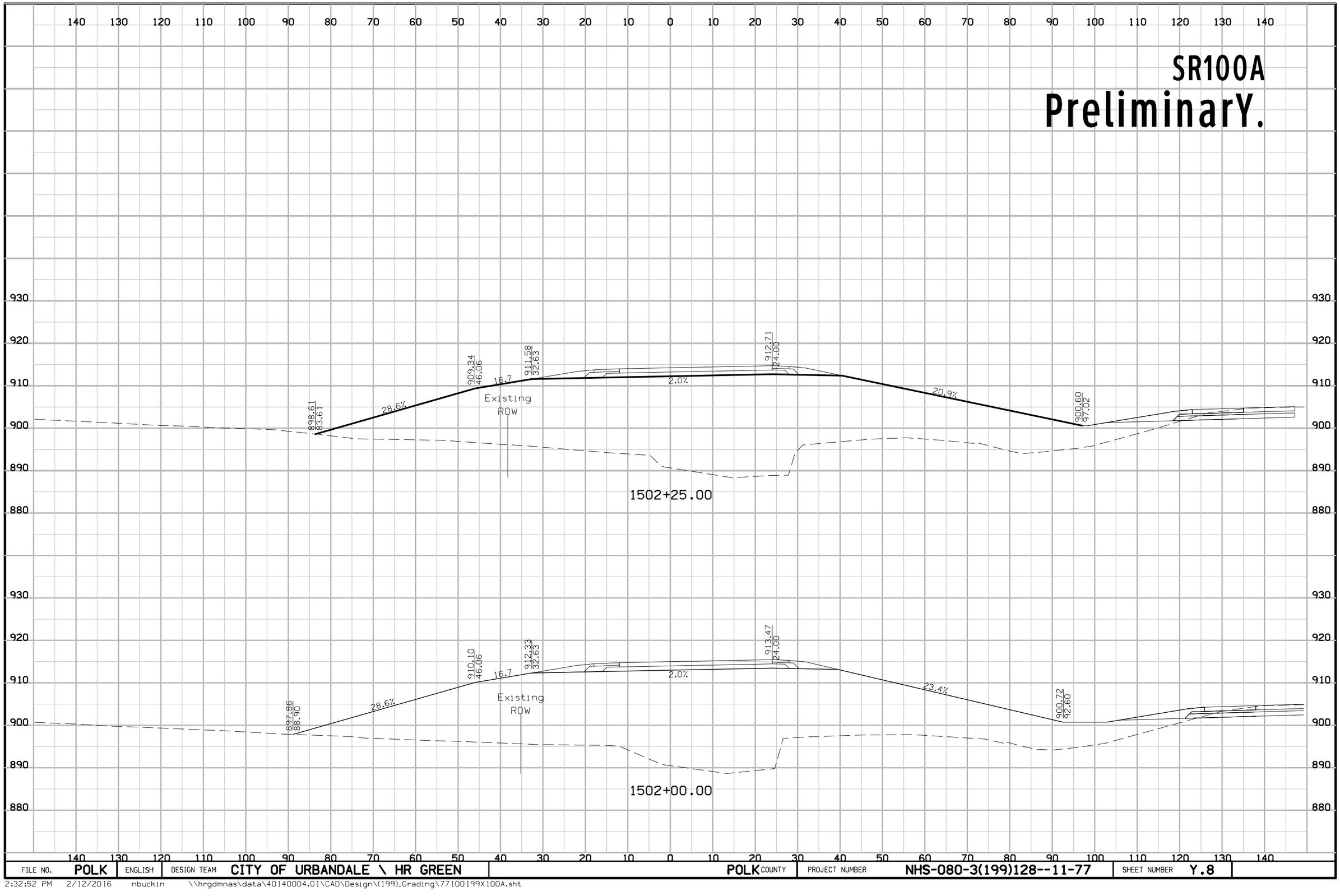
SR100A
PreliminarY.



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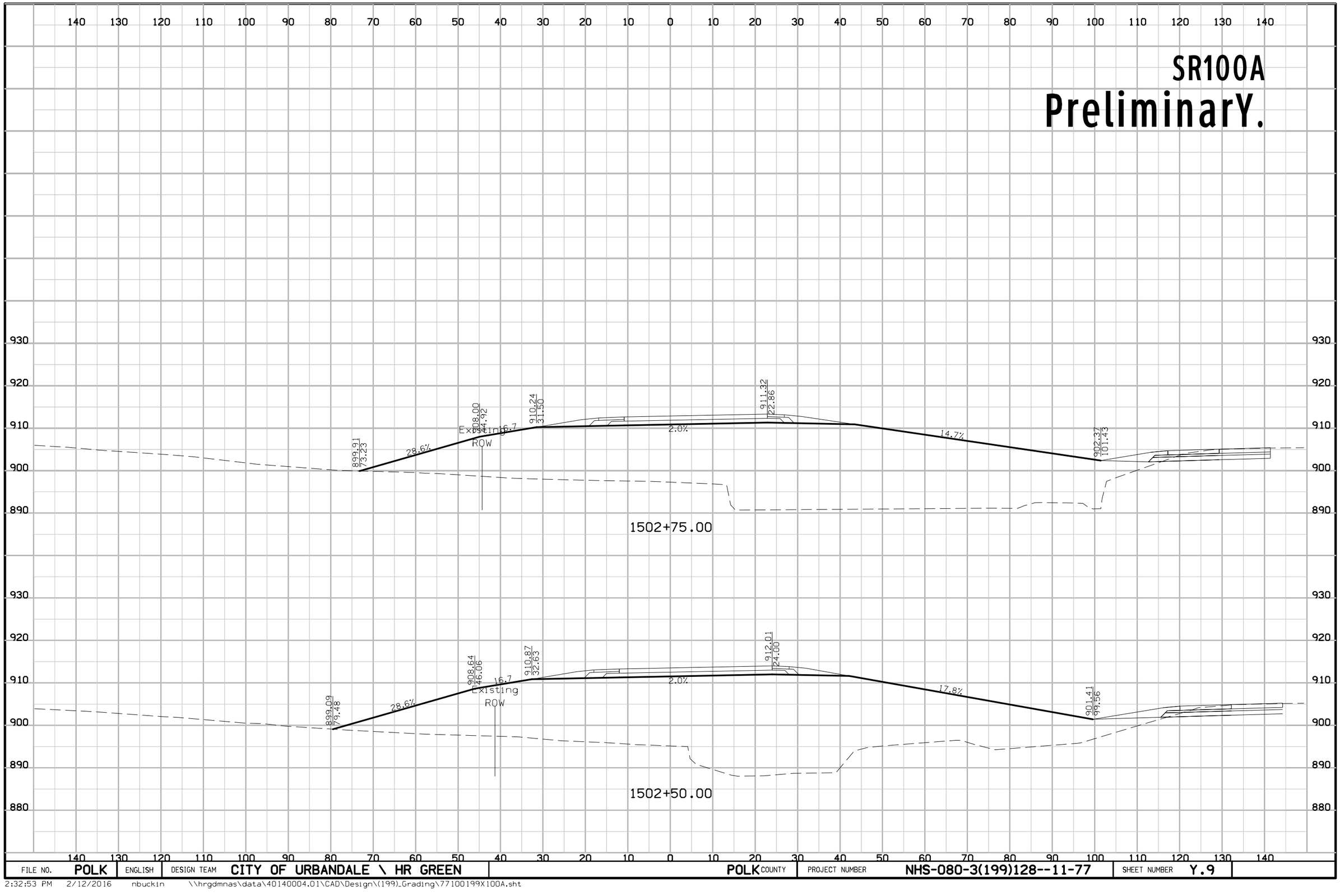
SR100A
PreliminarY.



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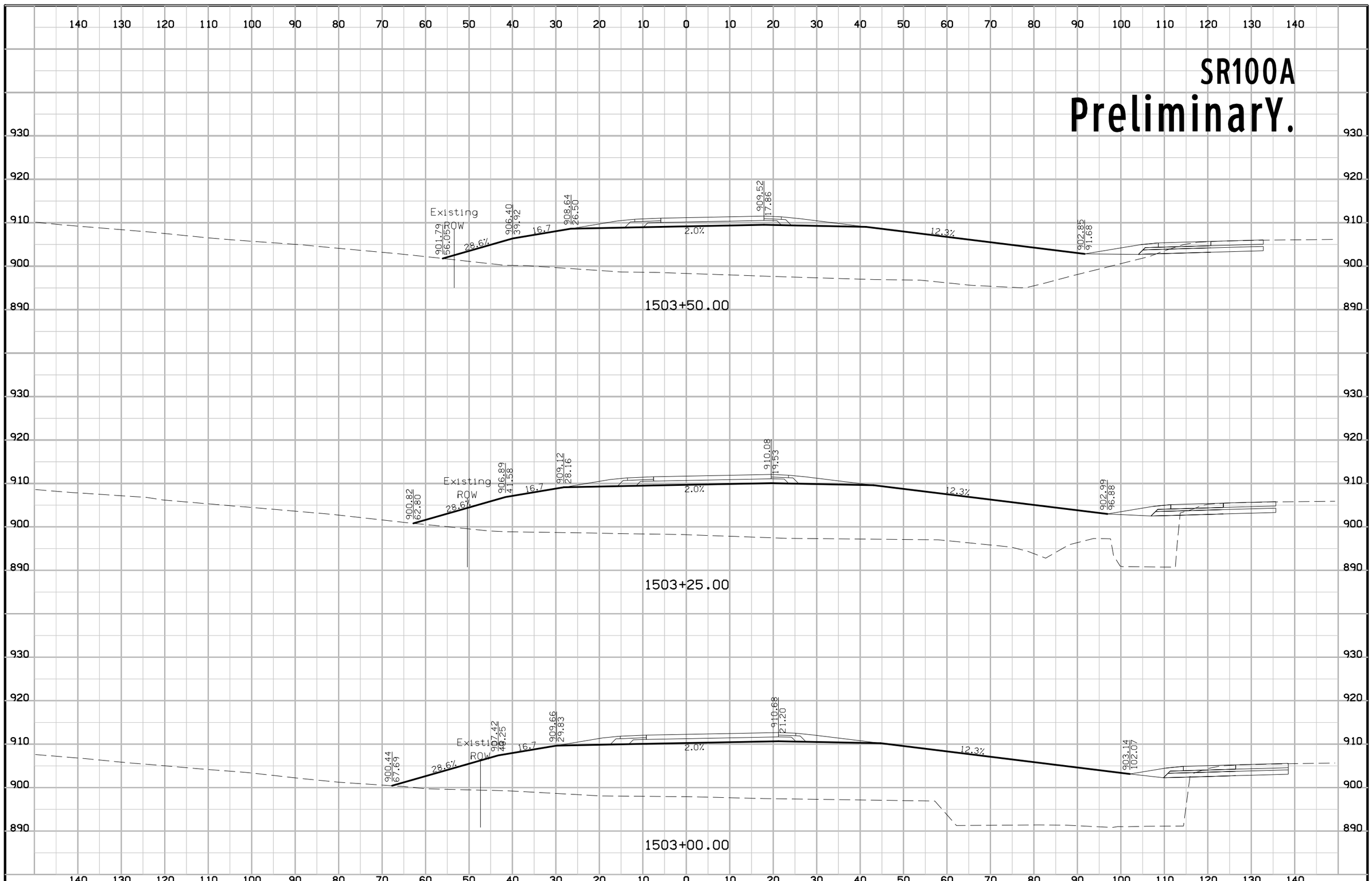
SR100A
PreliminarY.



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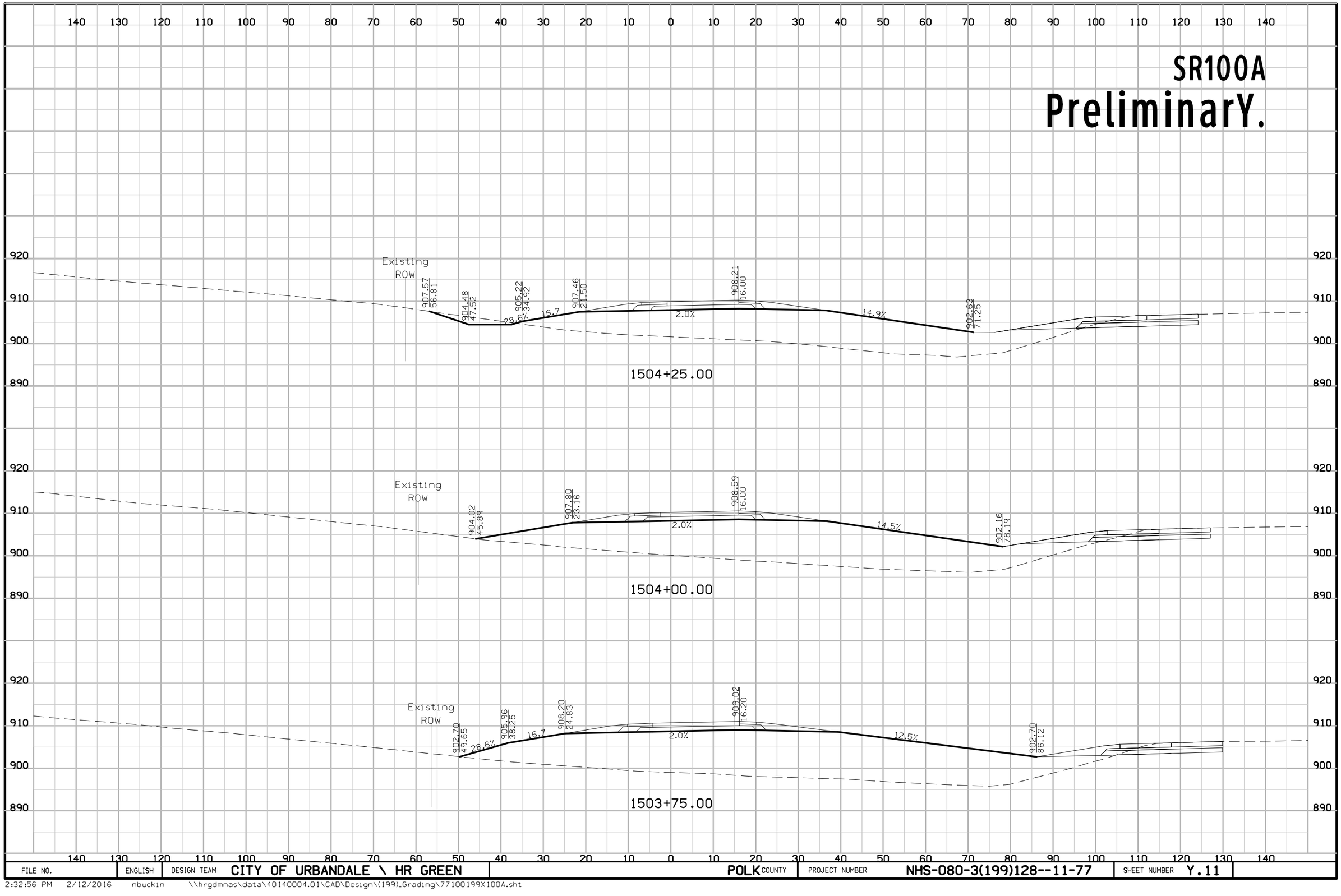
SR100A

PreliminarY.



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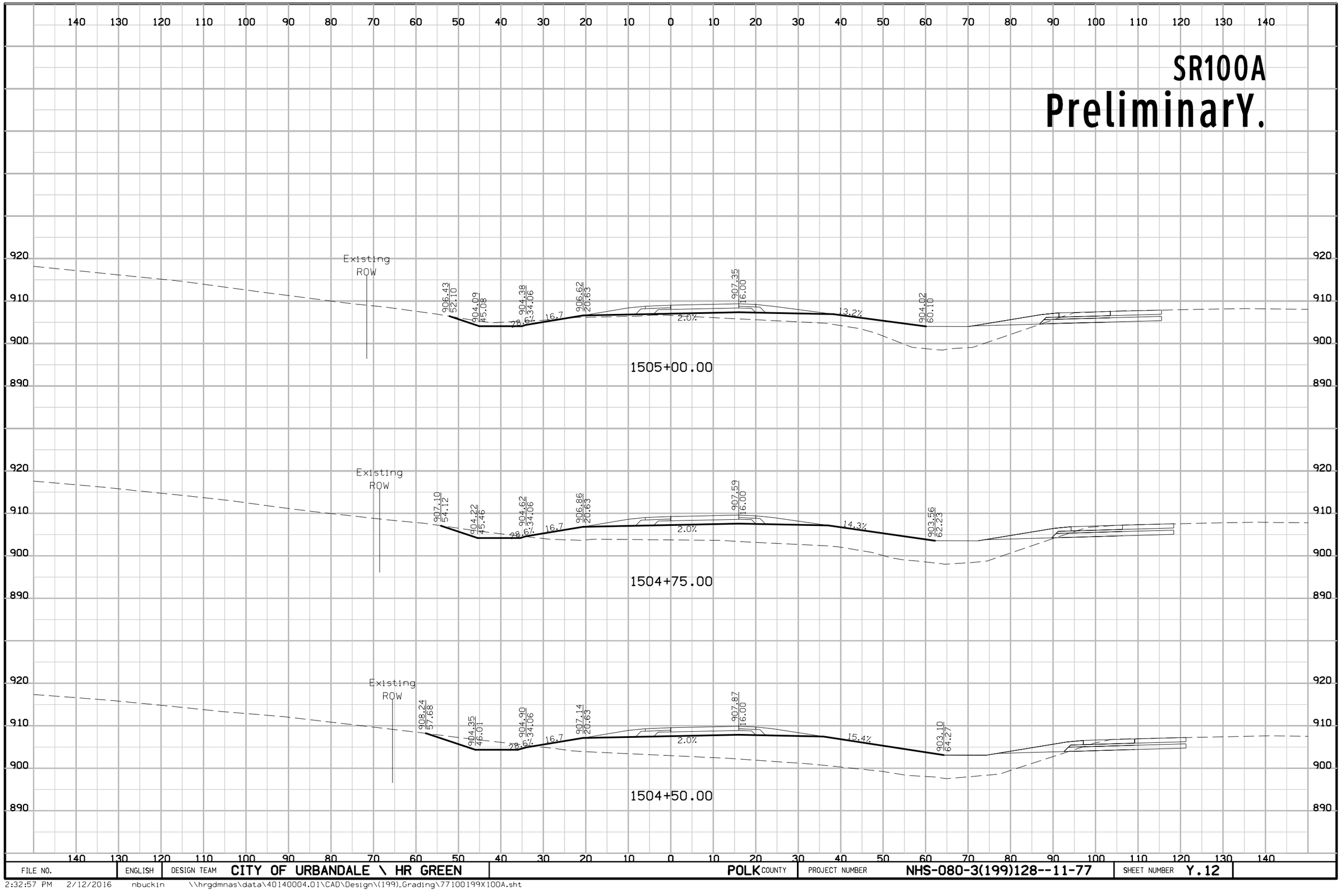
SR100A
PreliminarY.



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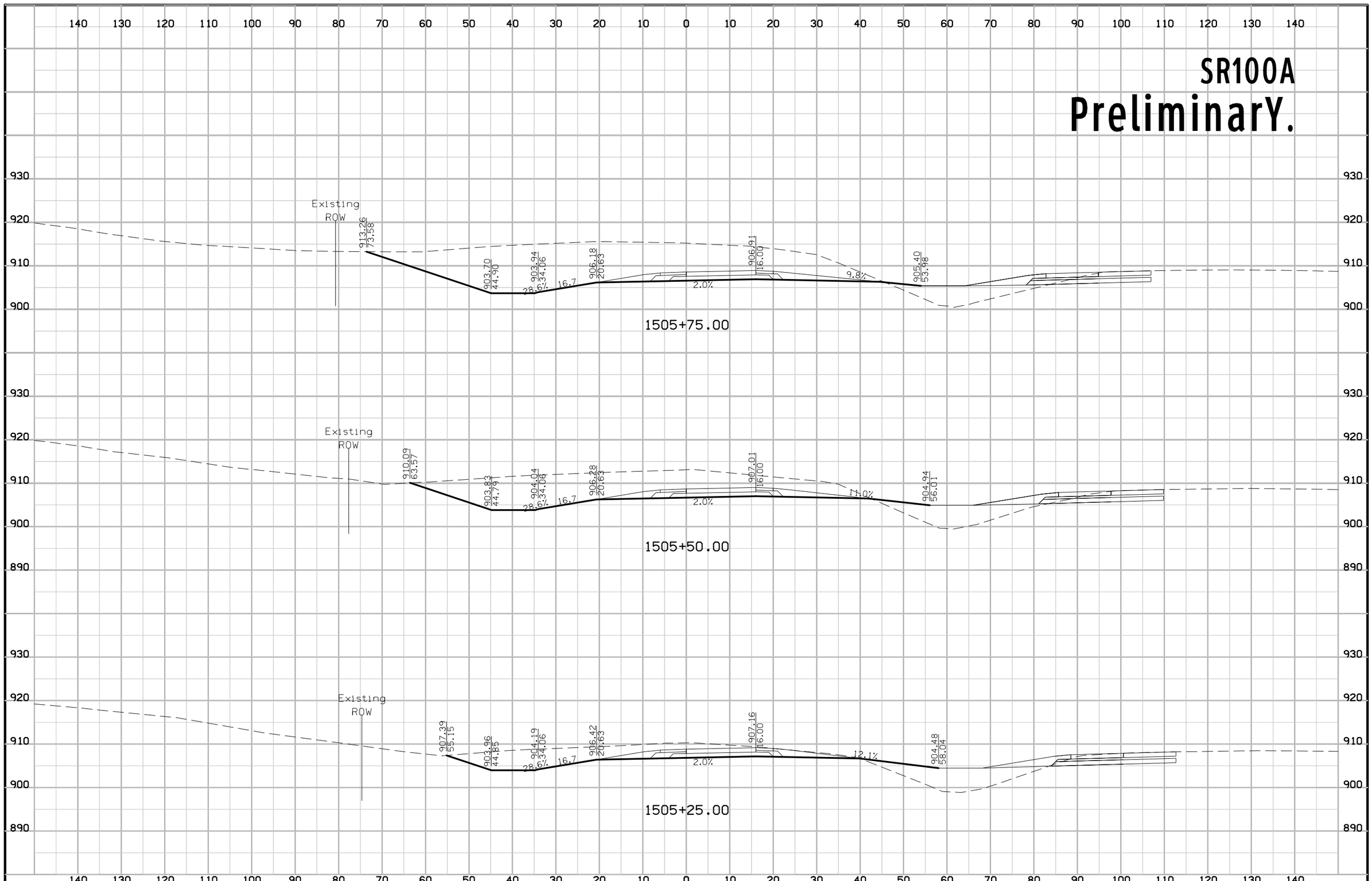
SR100A

PreliminarY.



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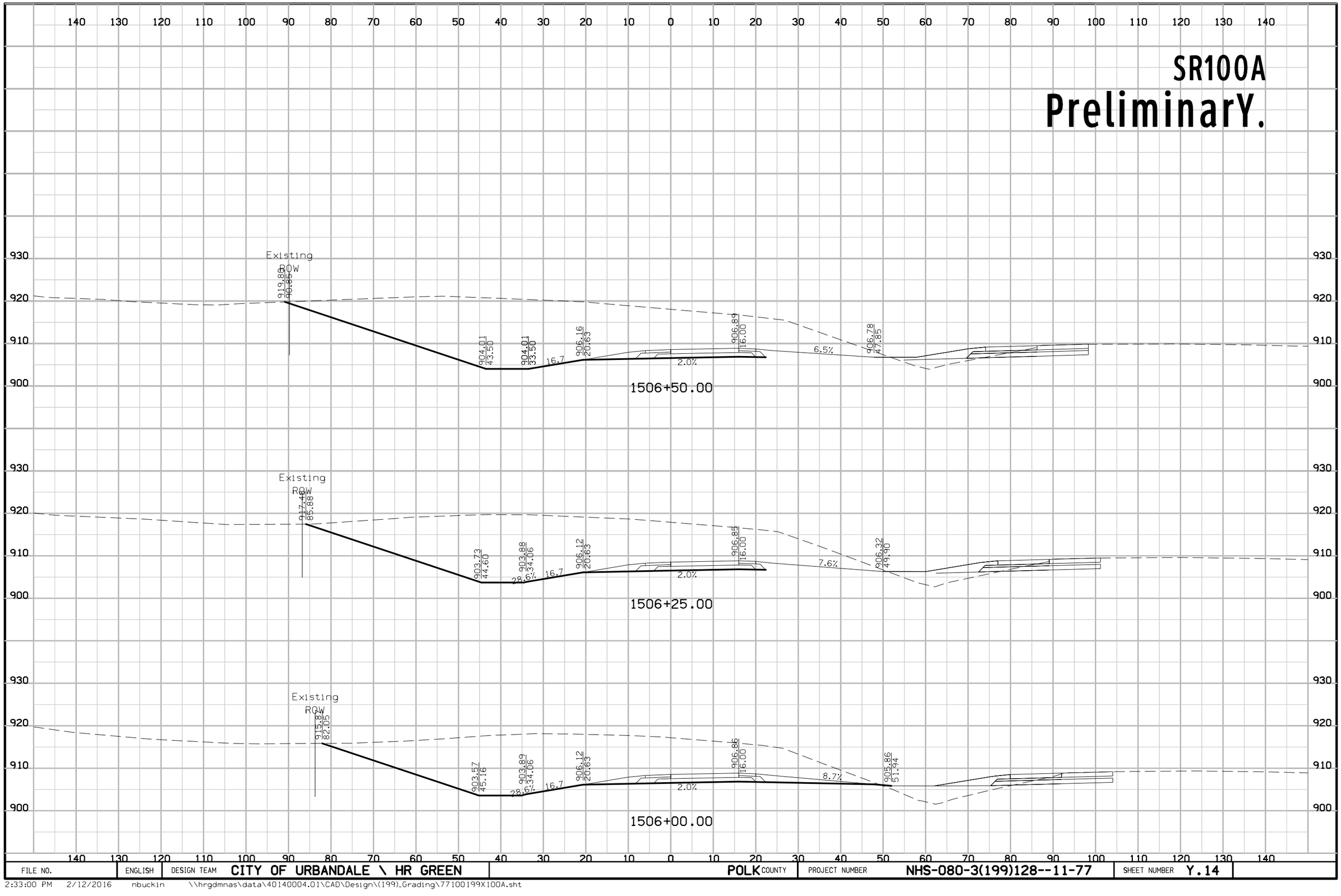
SR100A
PreliminarY.



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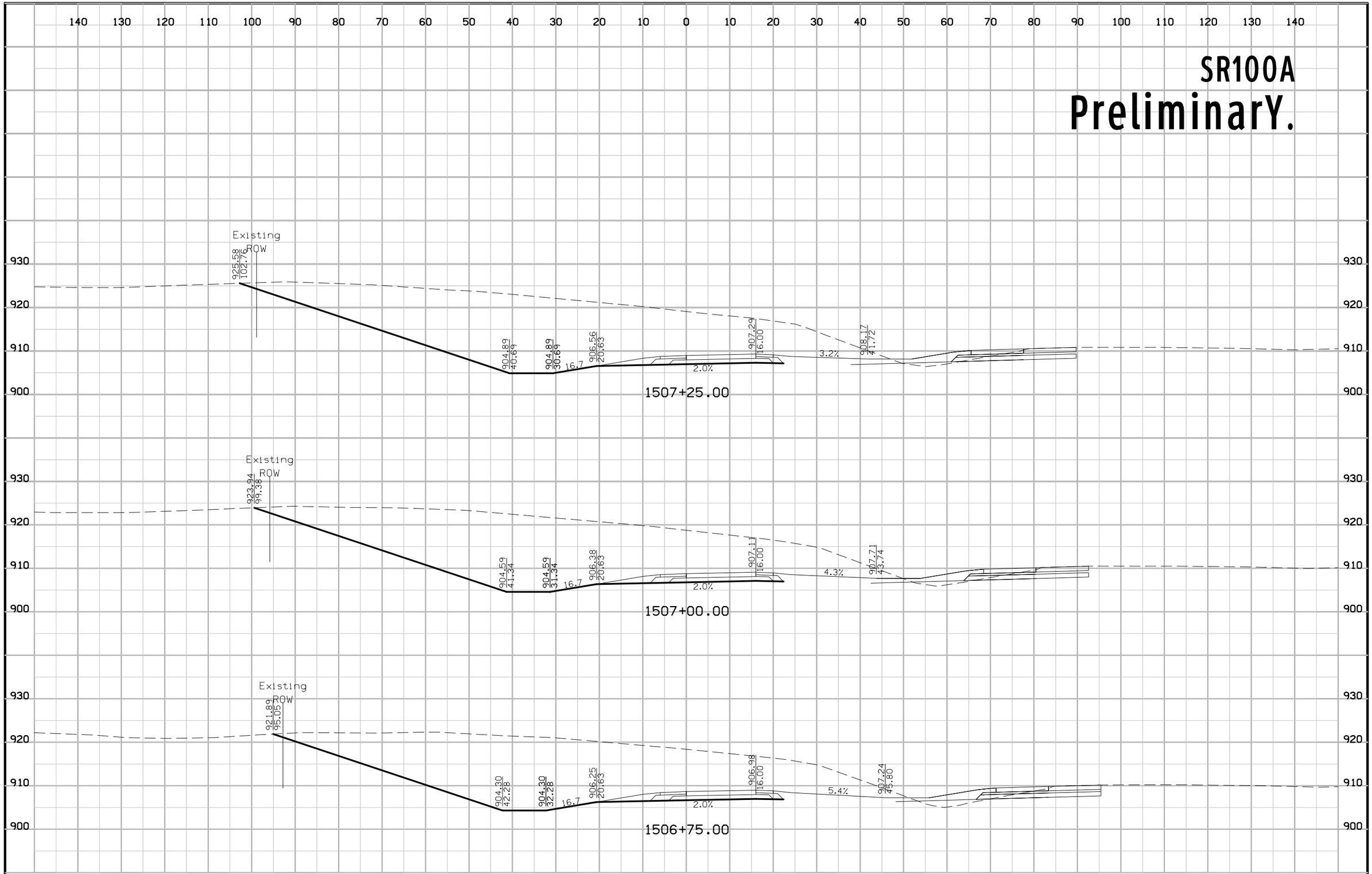
SR100A
PreliminarY.



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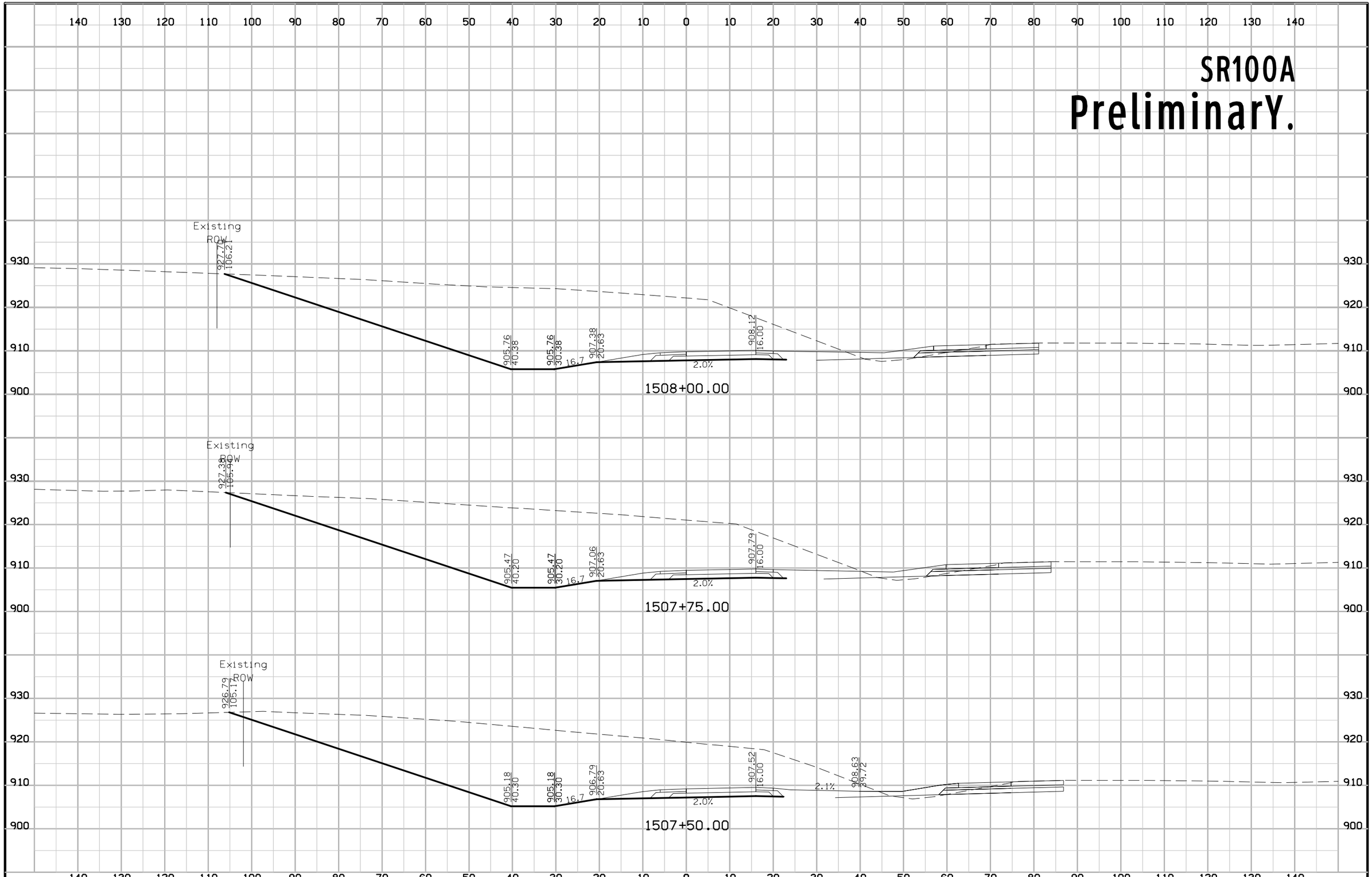
SR100A
PreliminarY.



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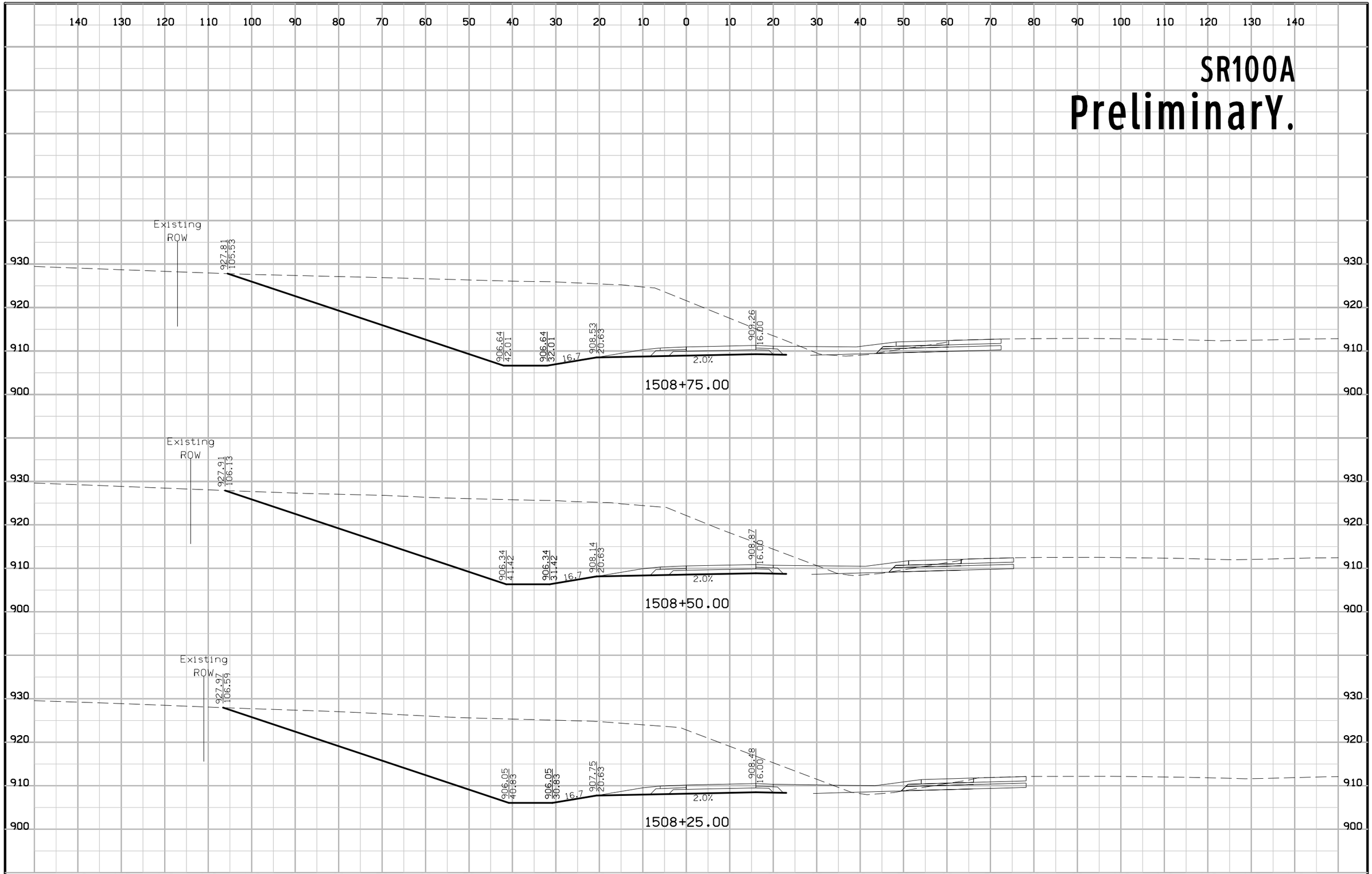
PreliminarY.



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SR100A
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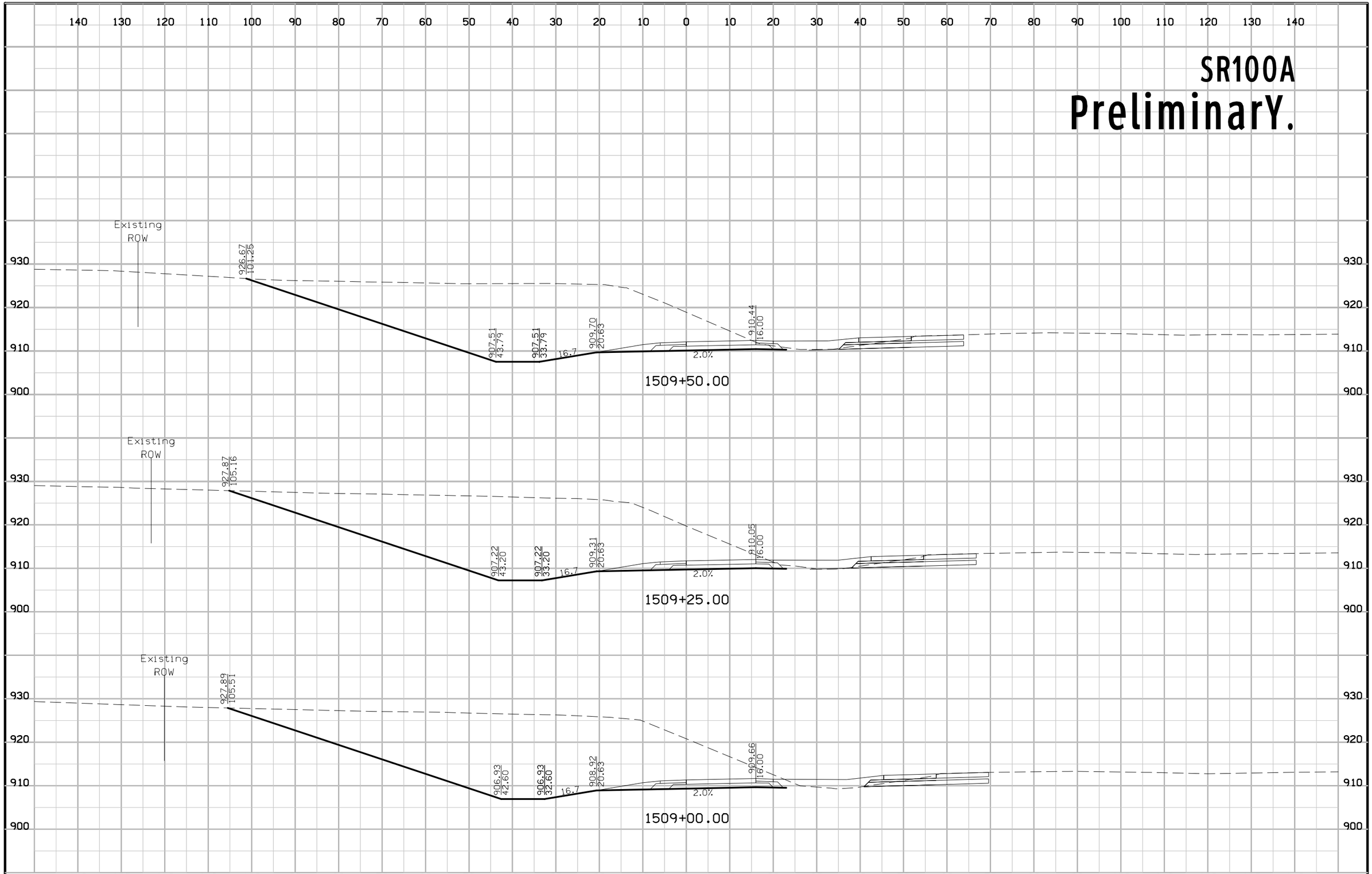

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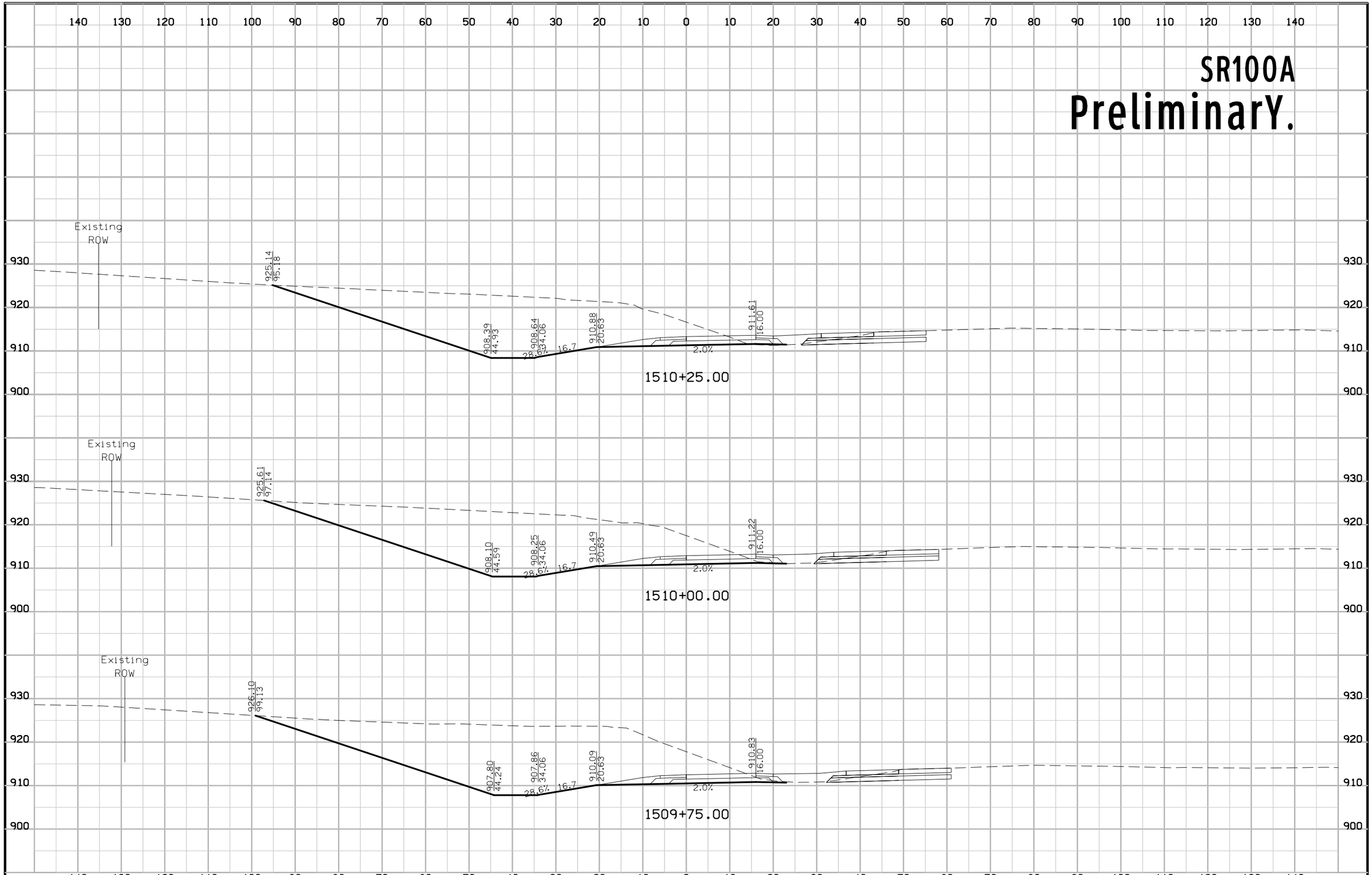

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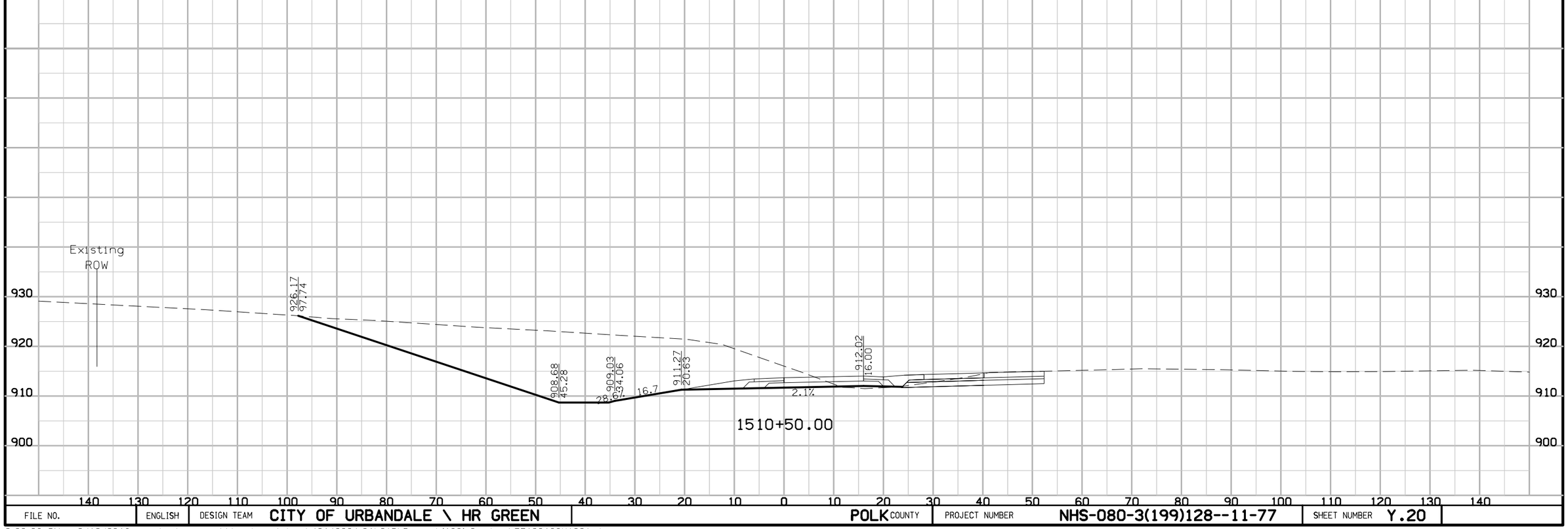

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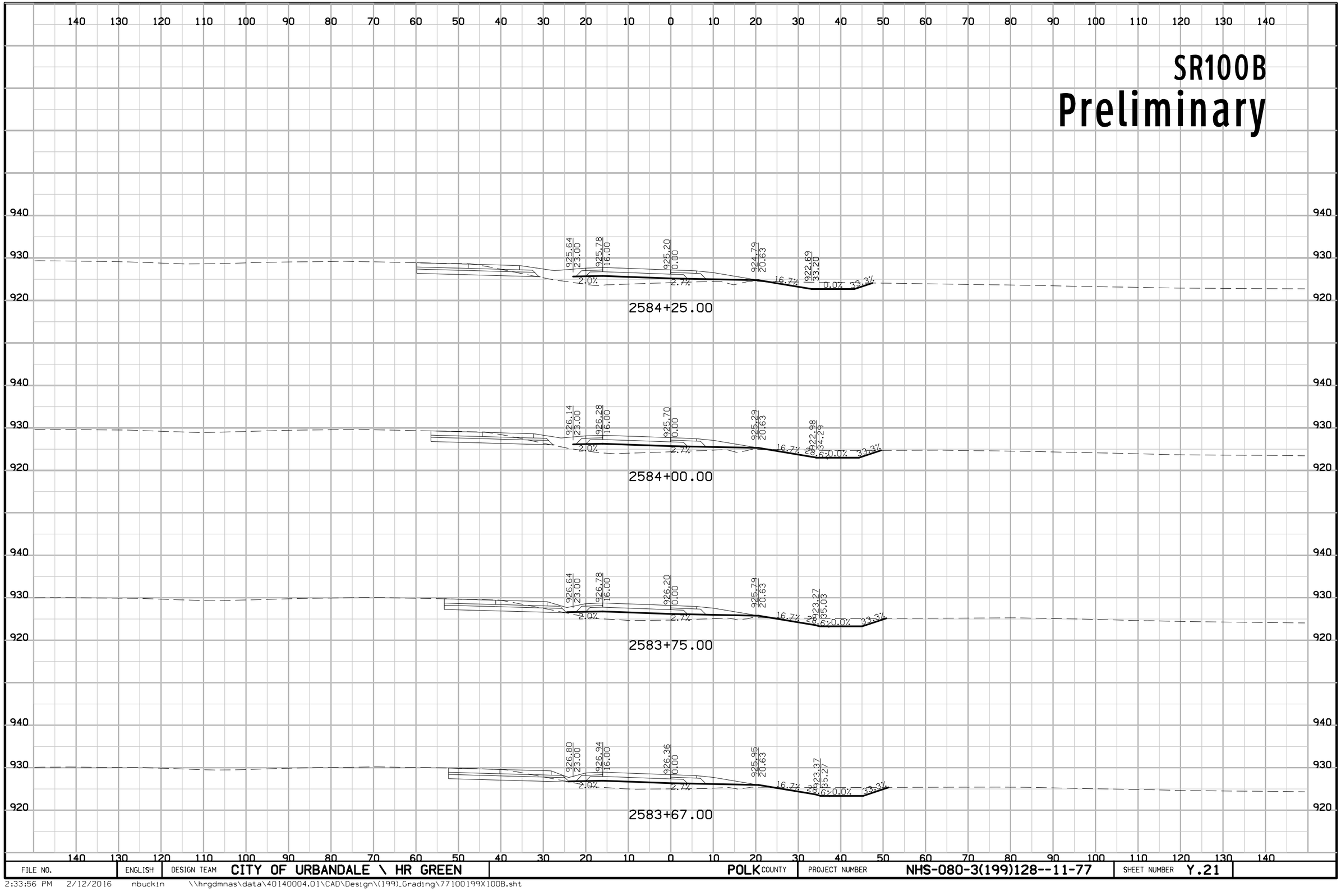

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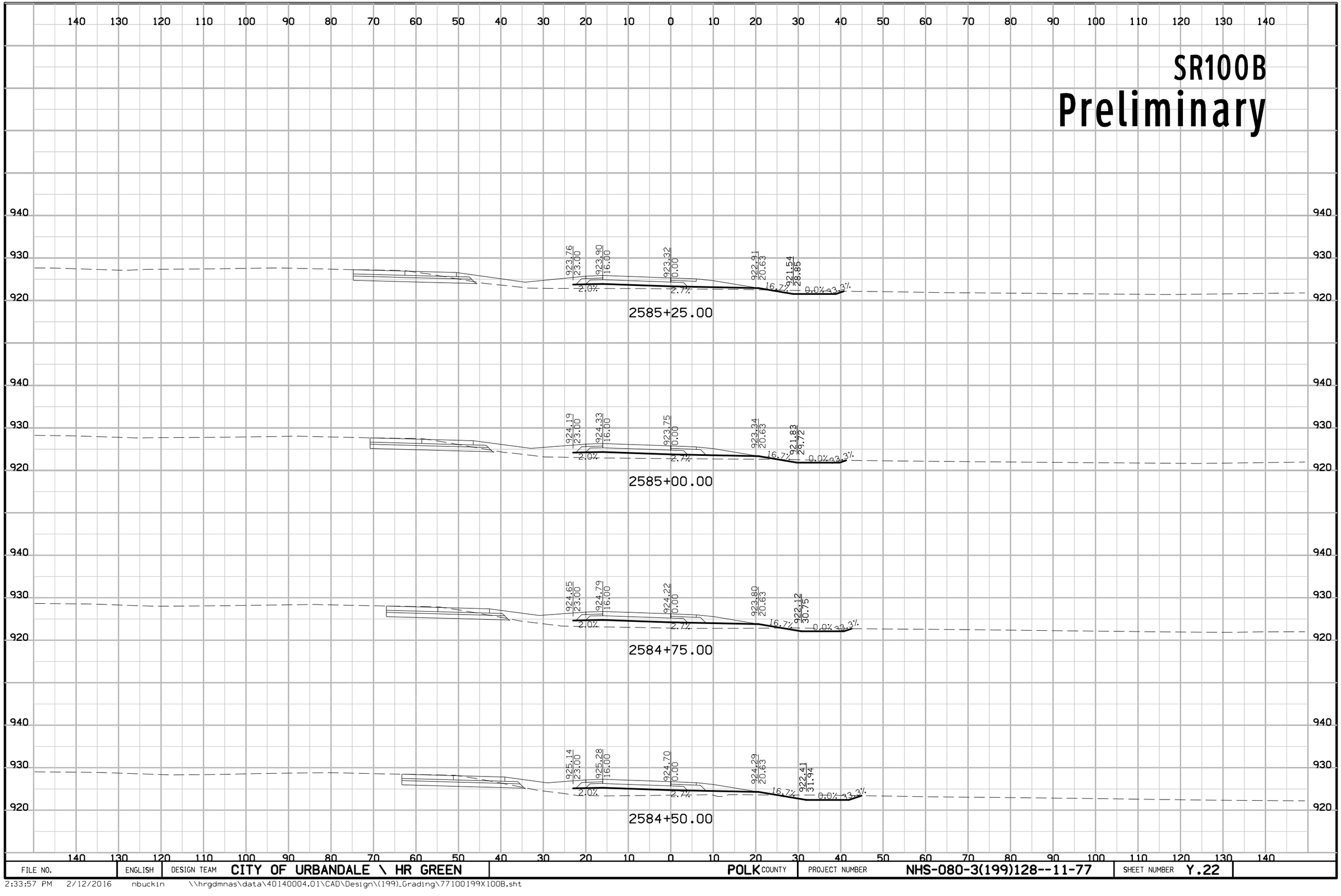

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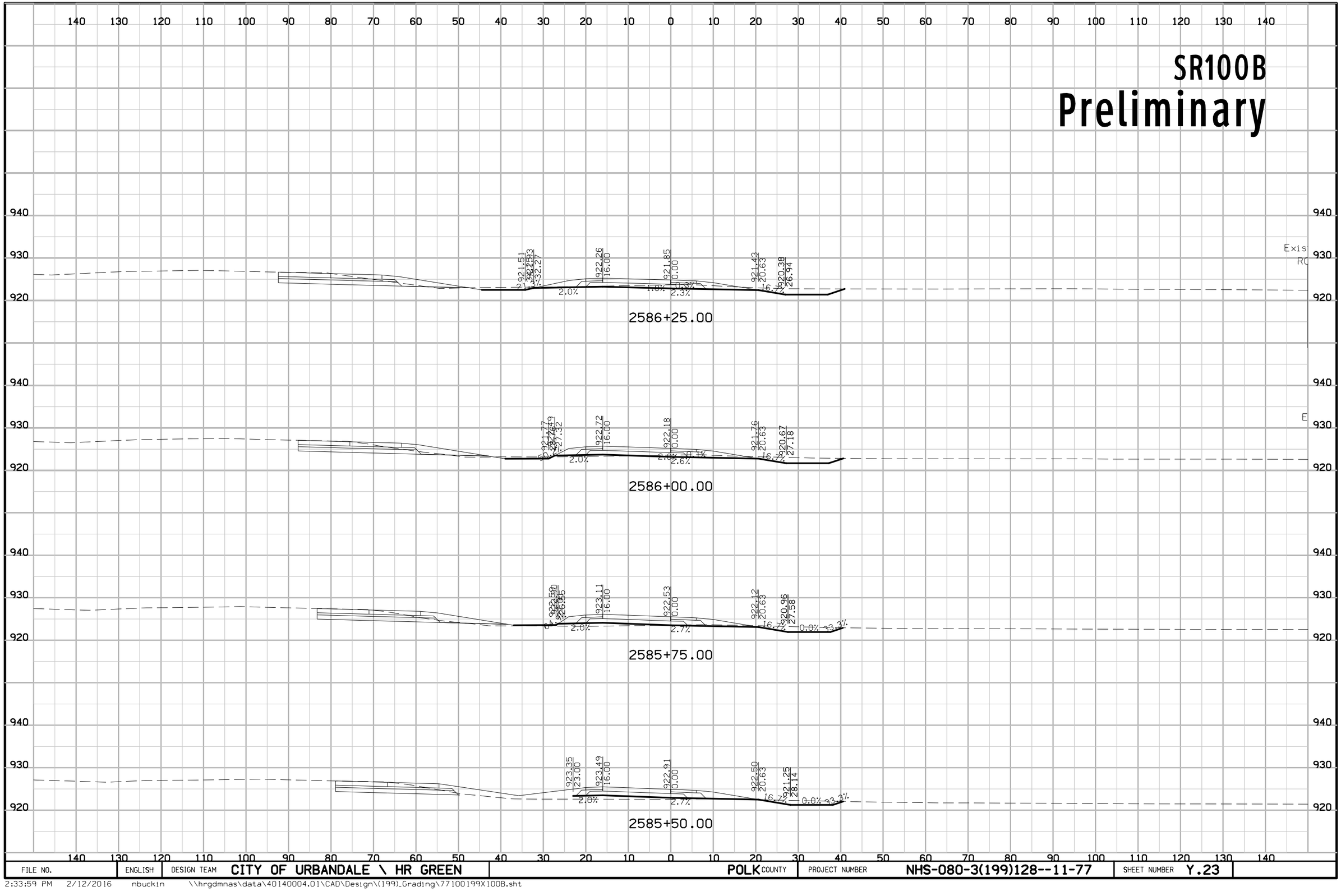

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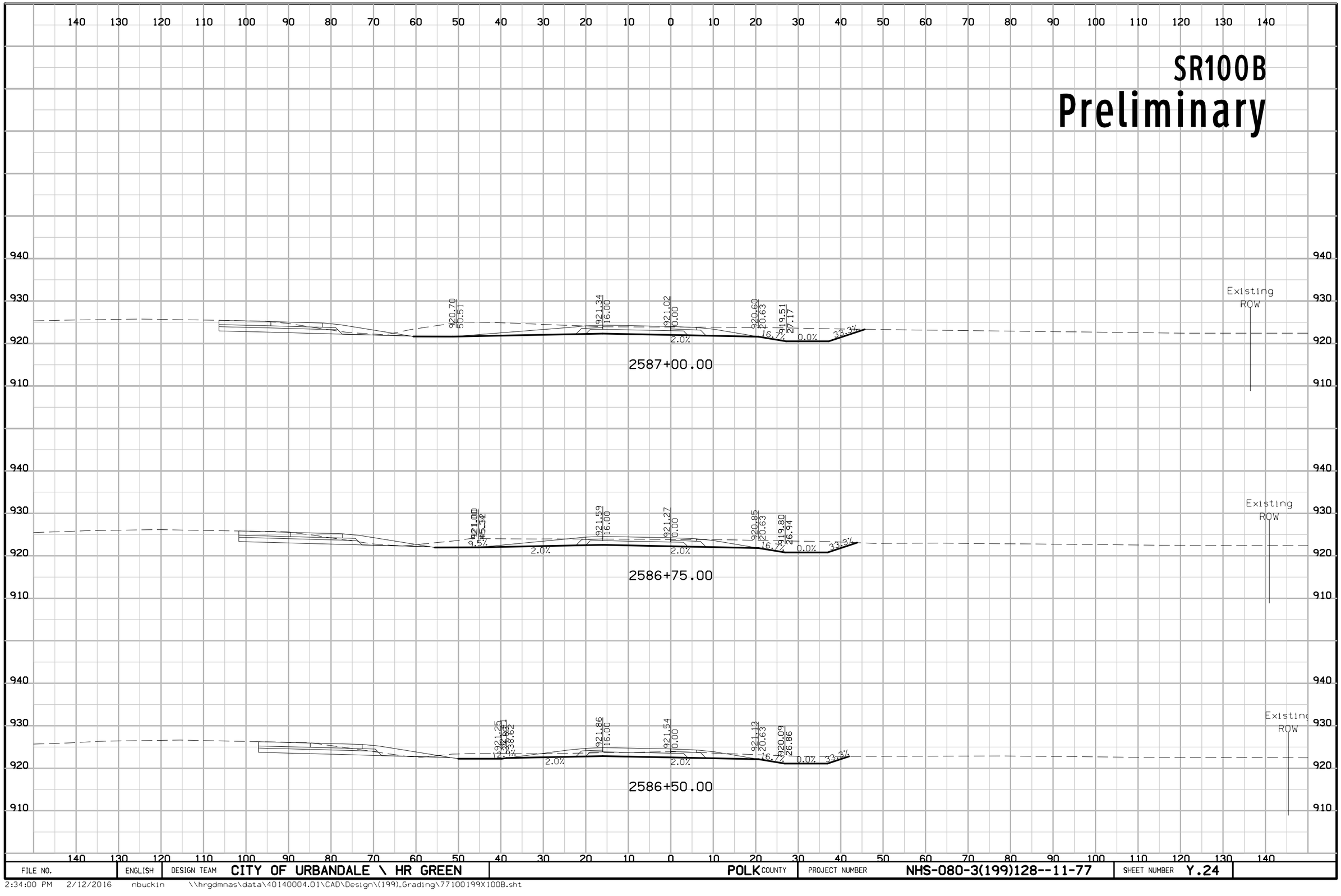

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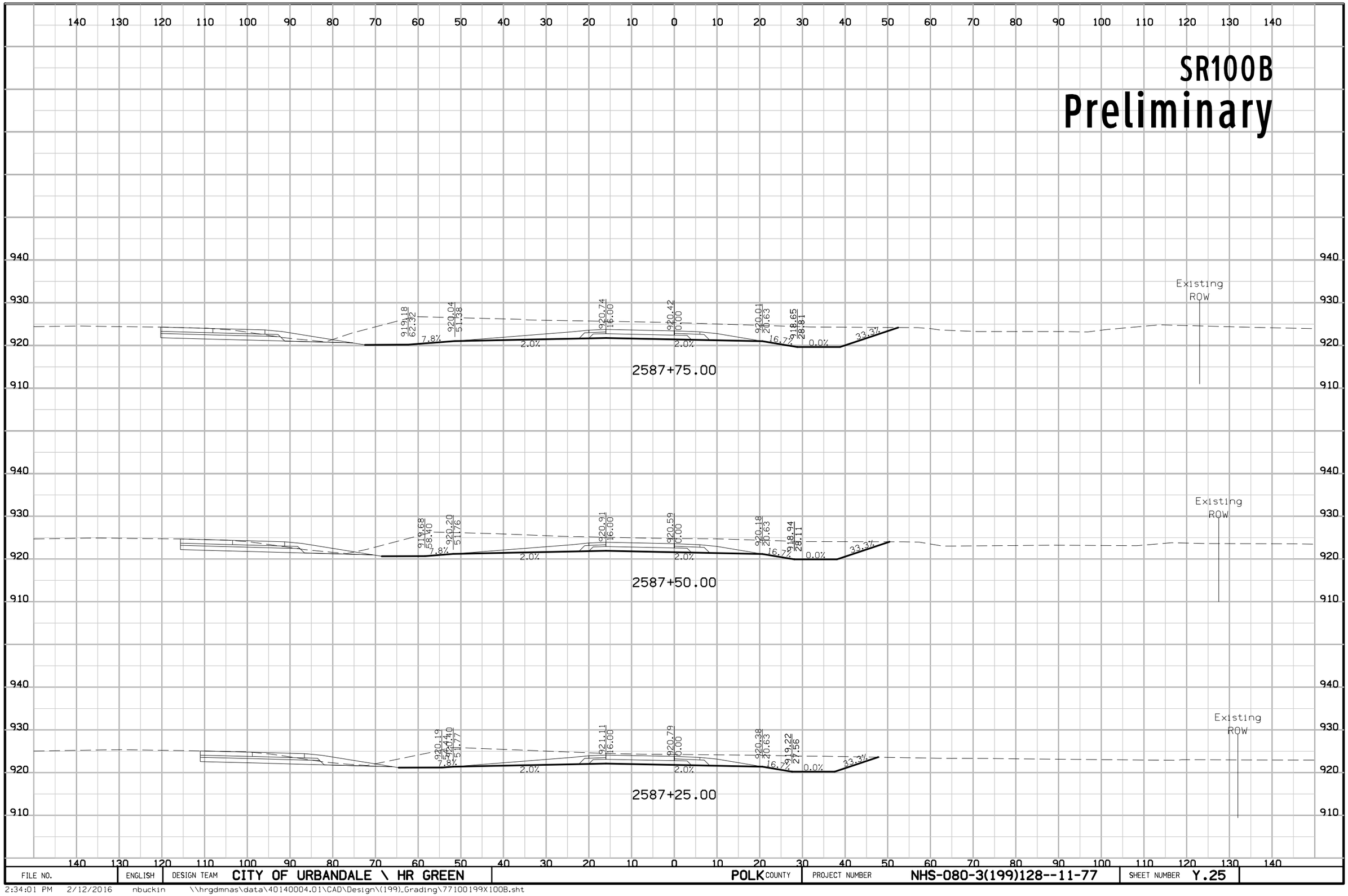

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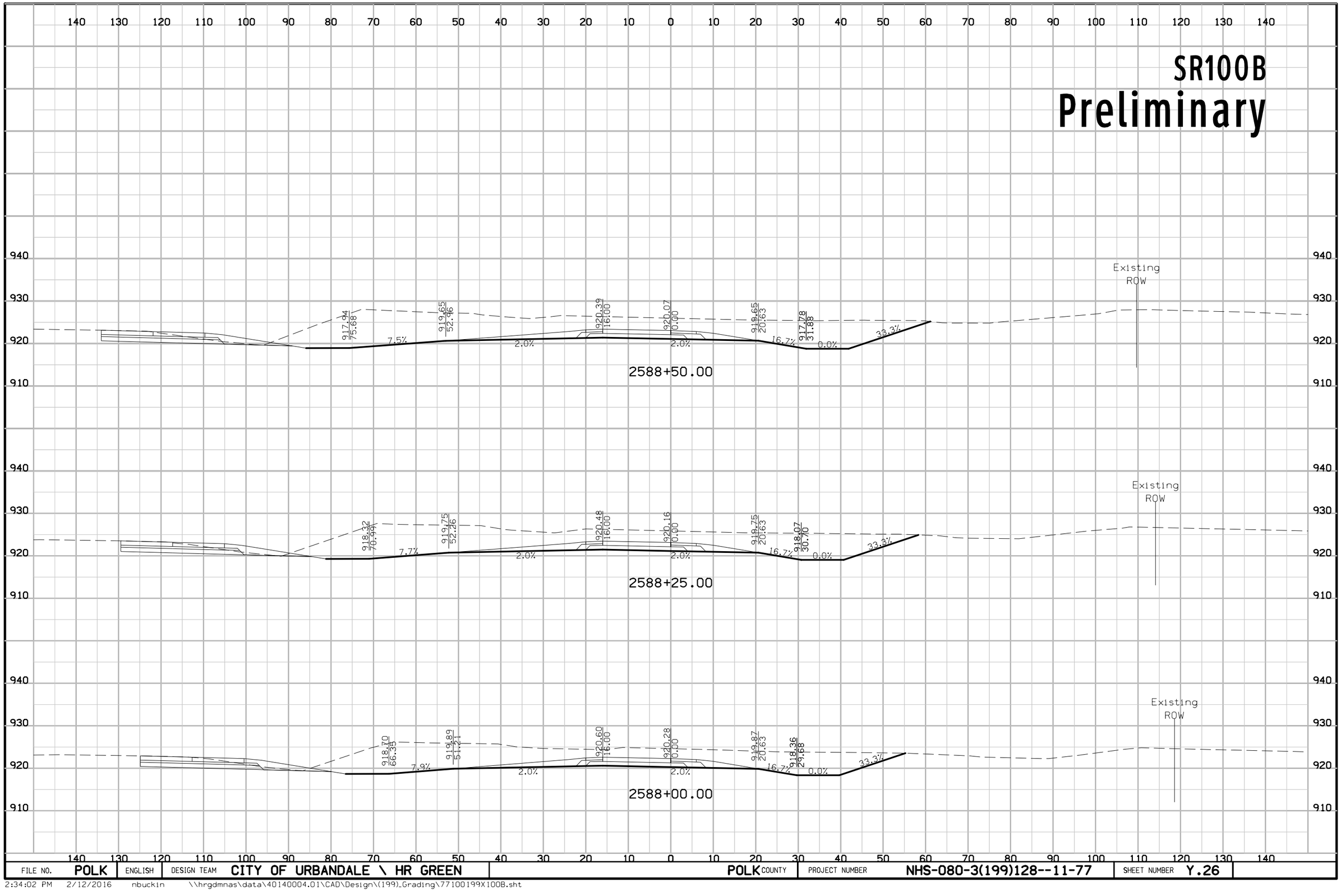

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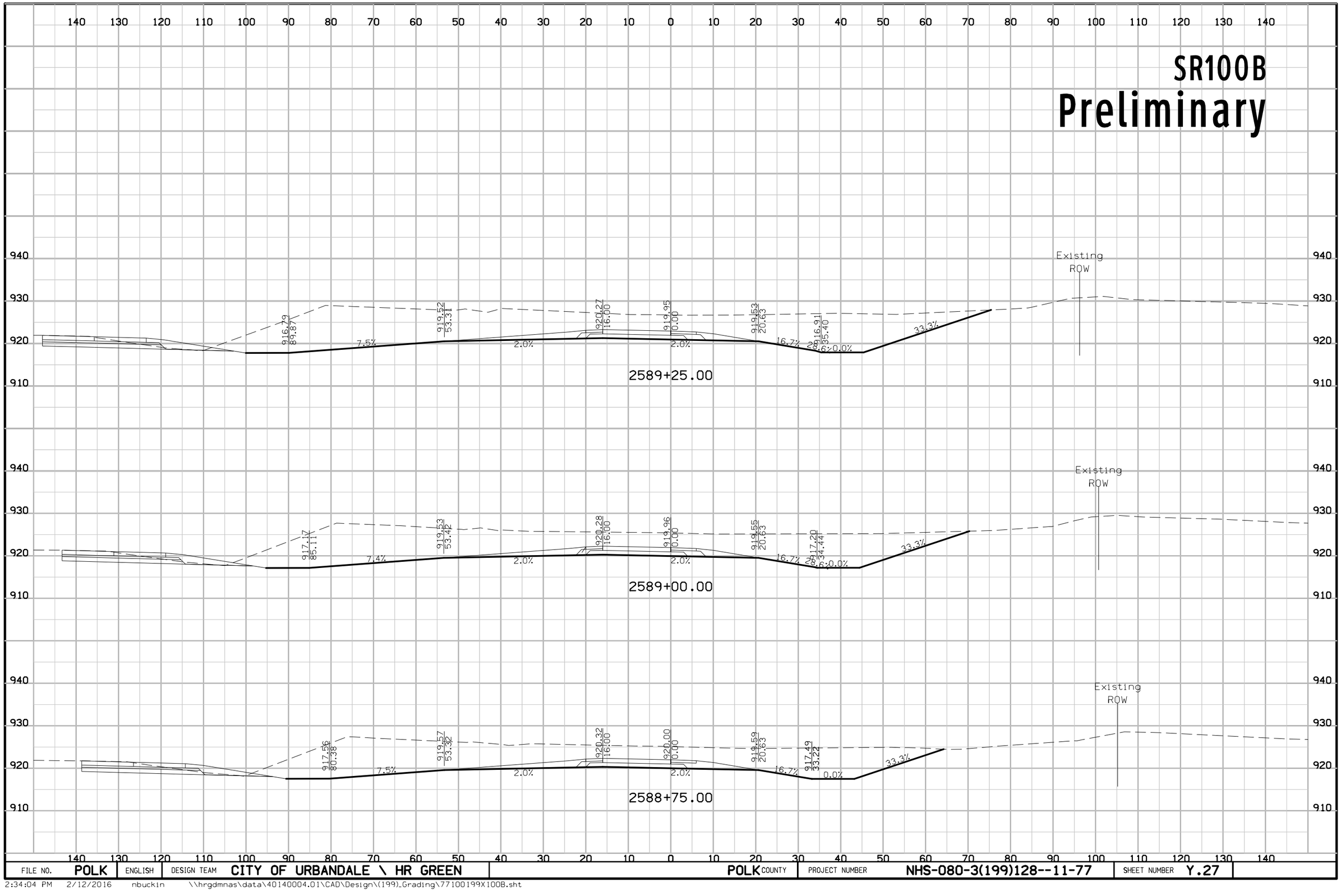

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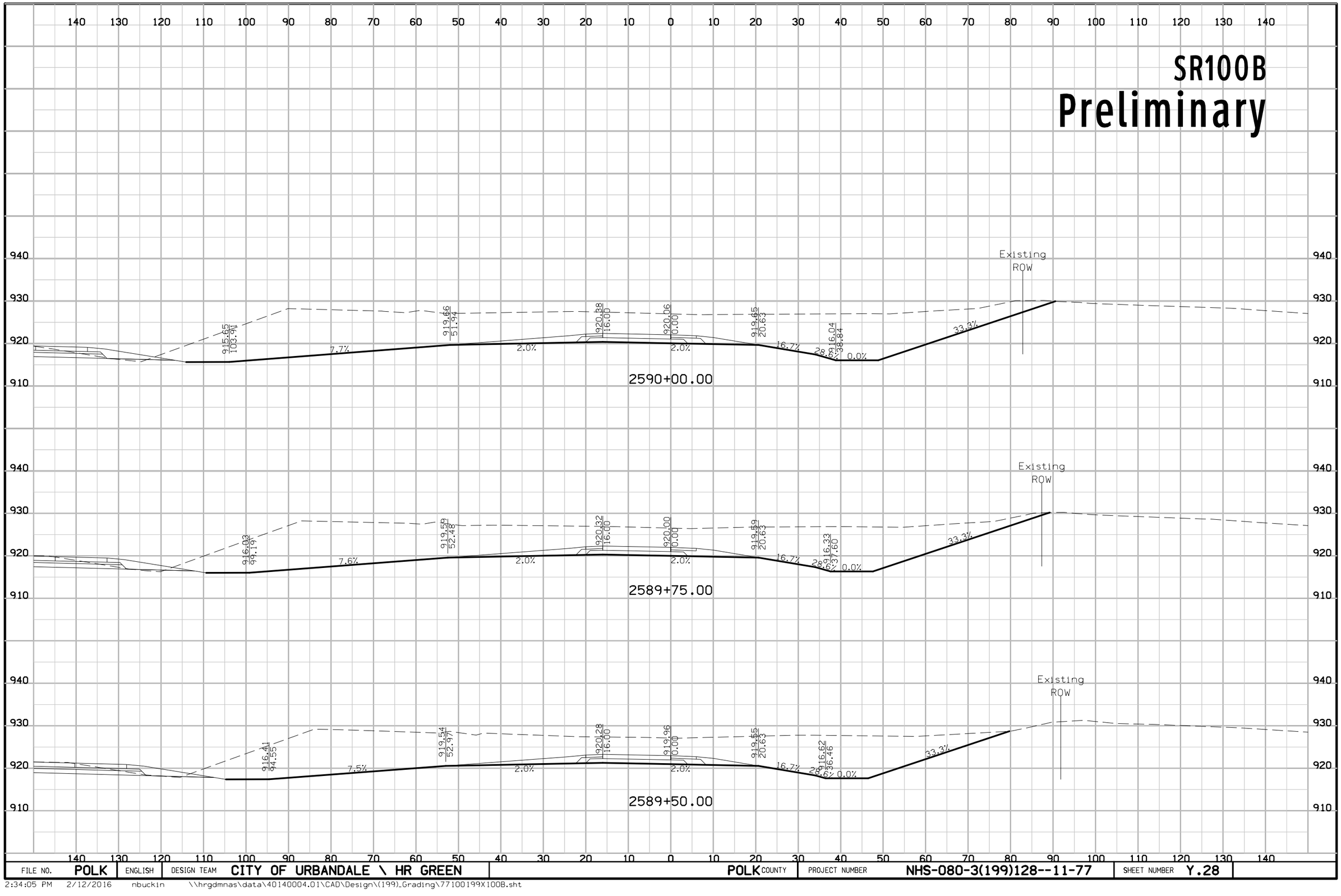

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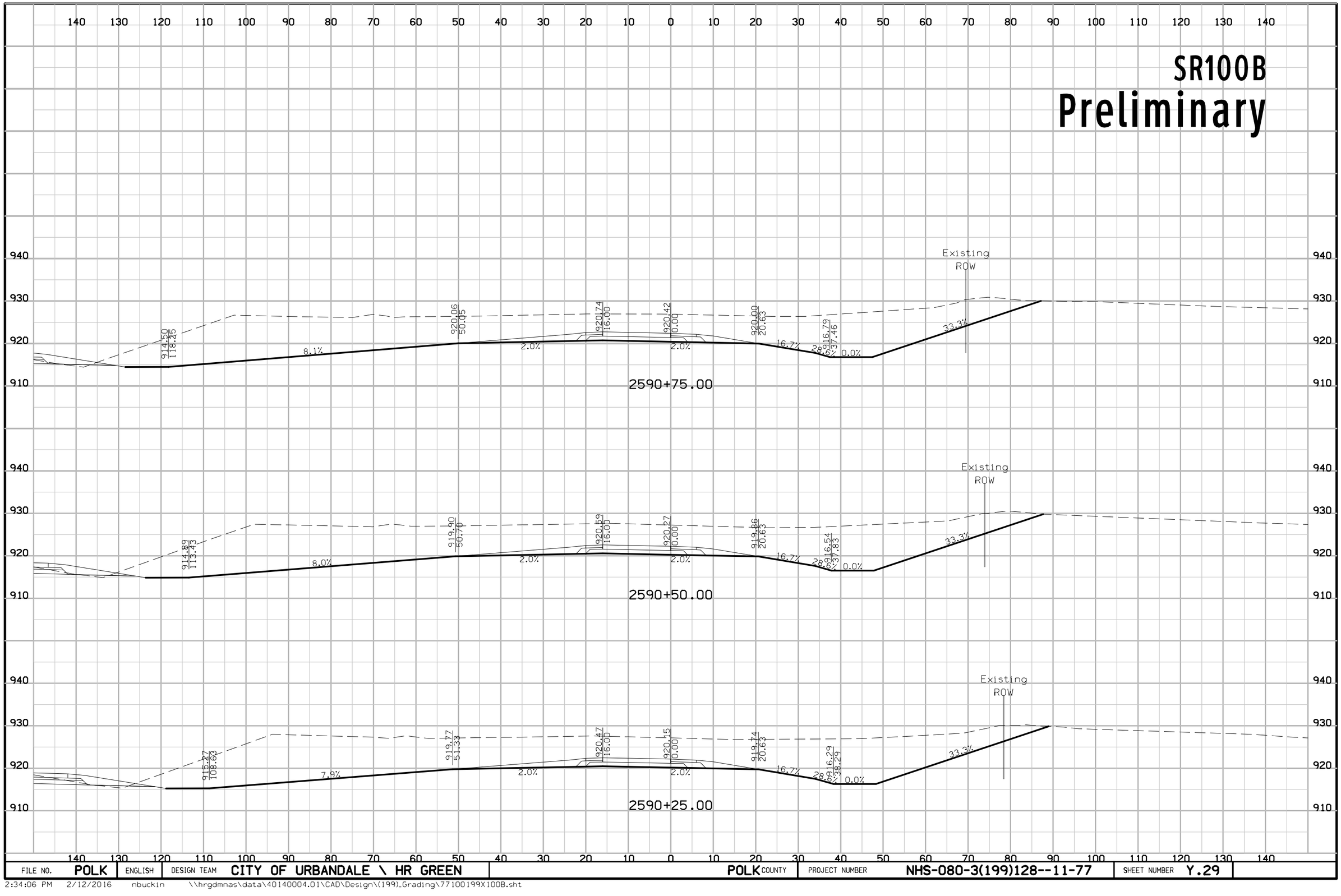

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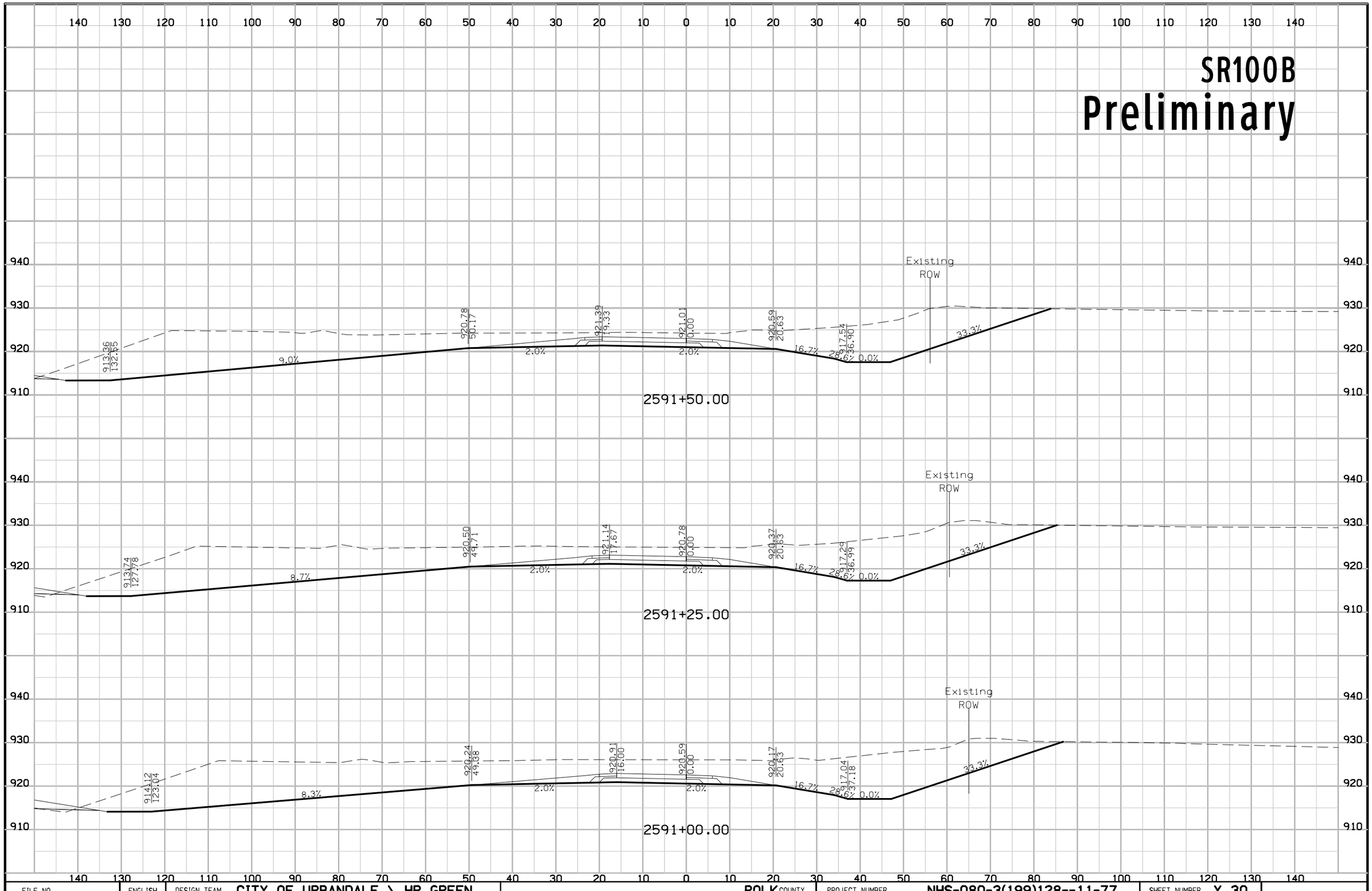

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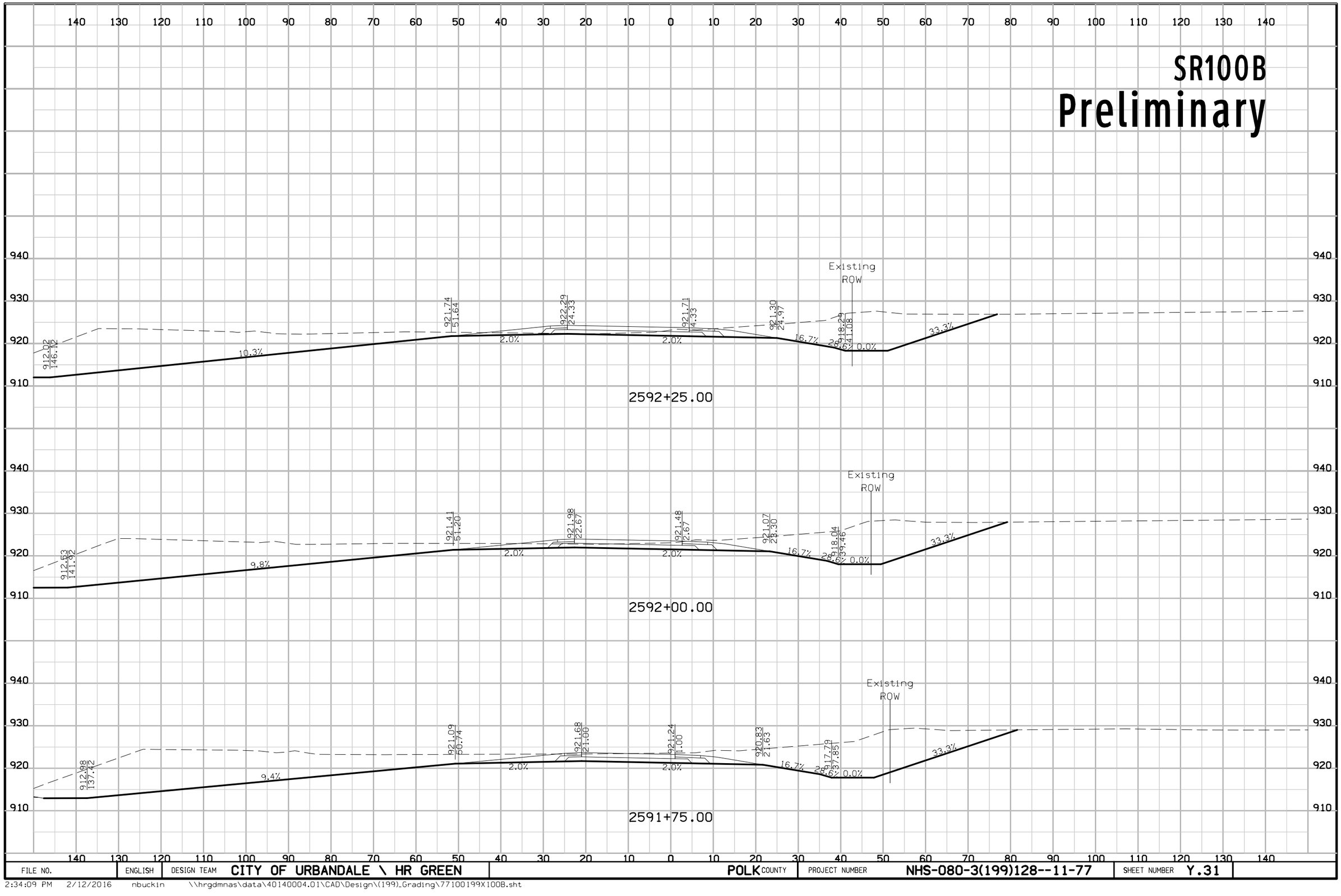

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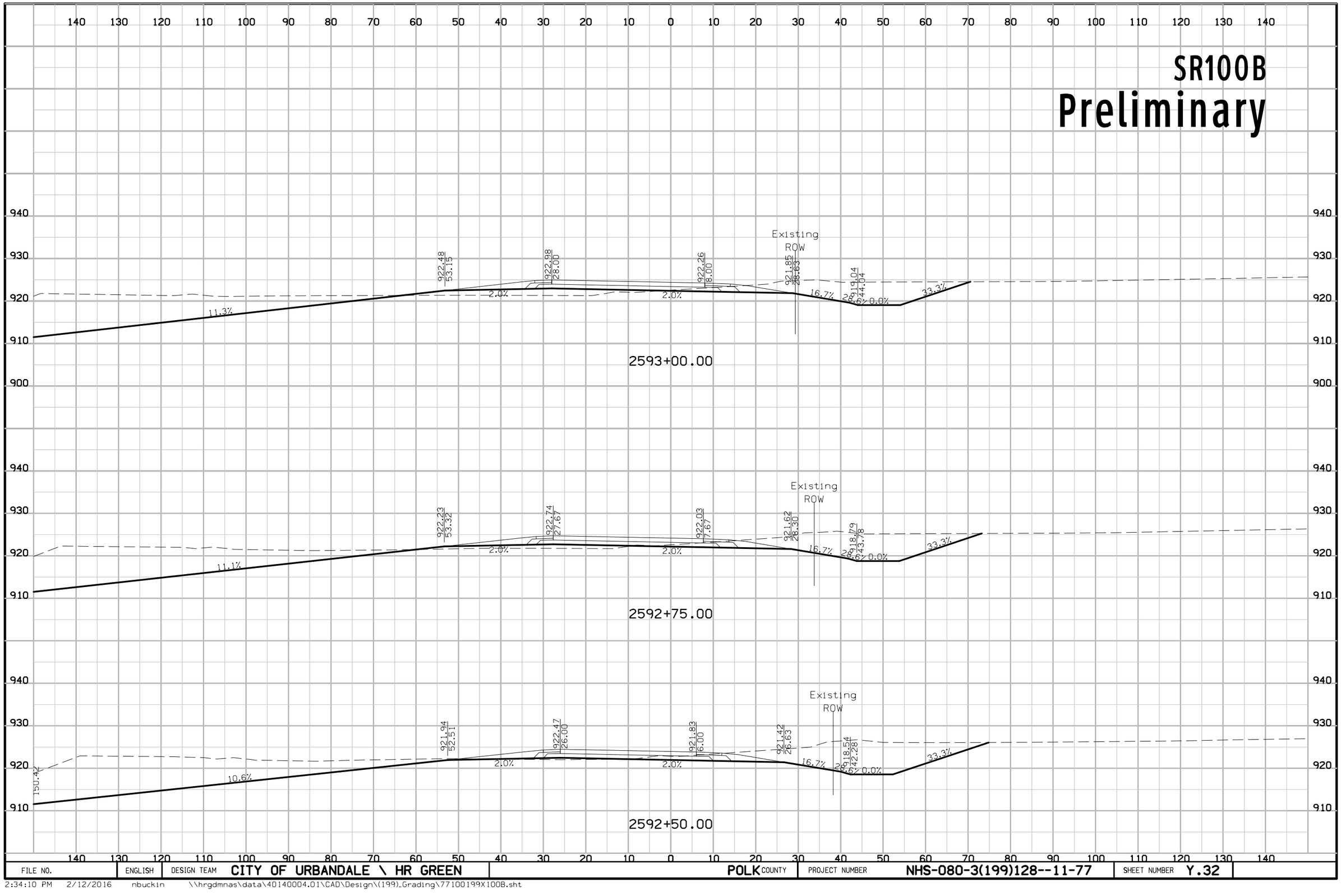

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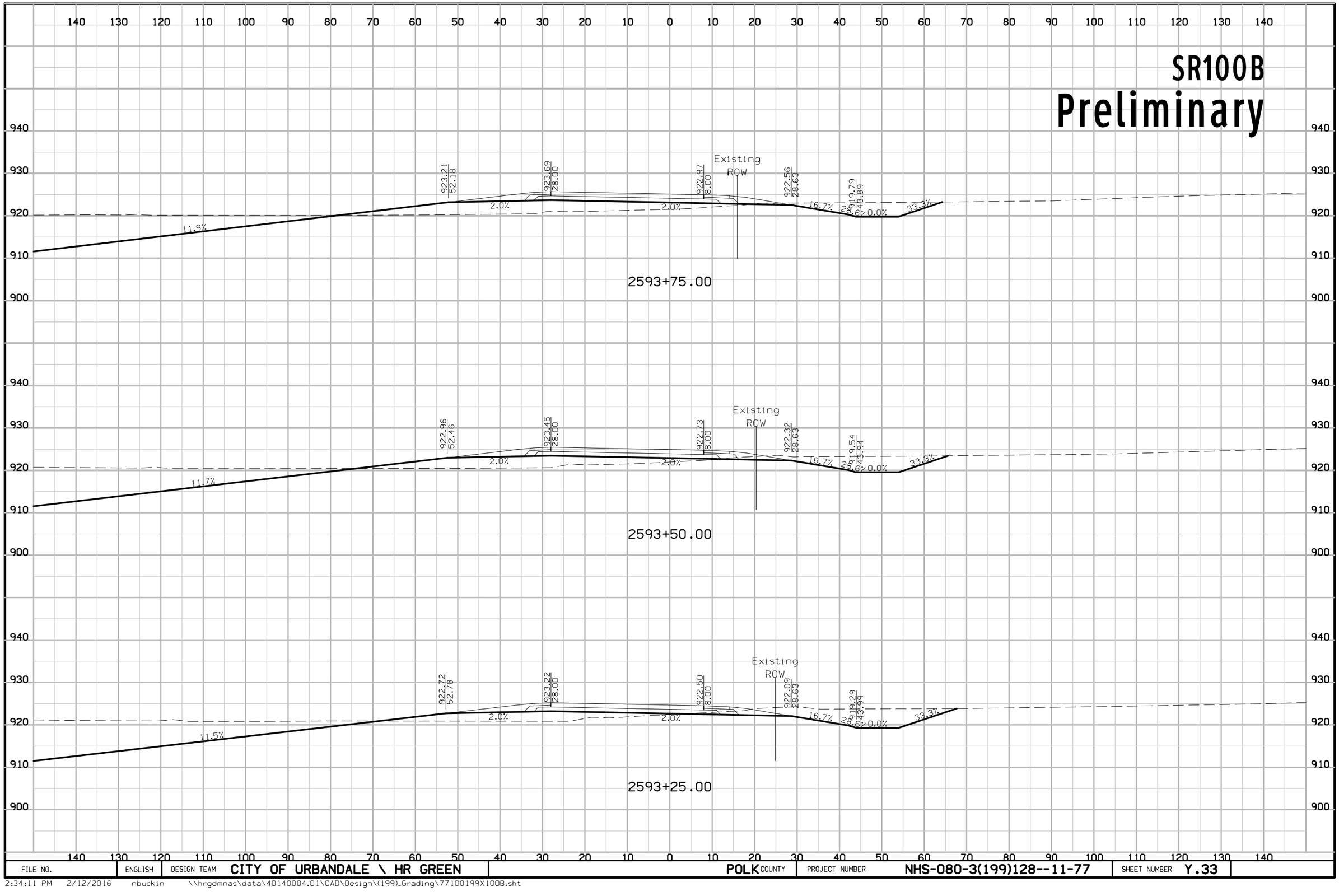

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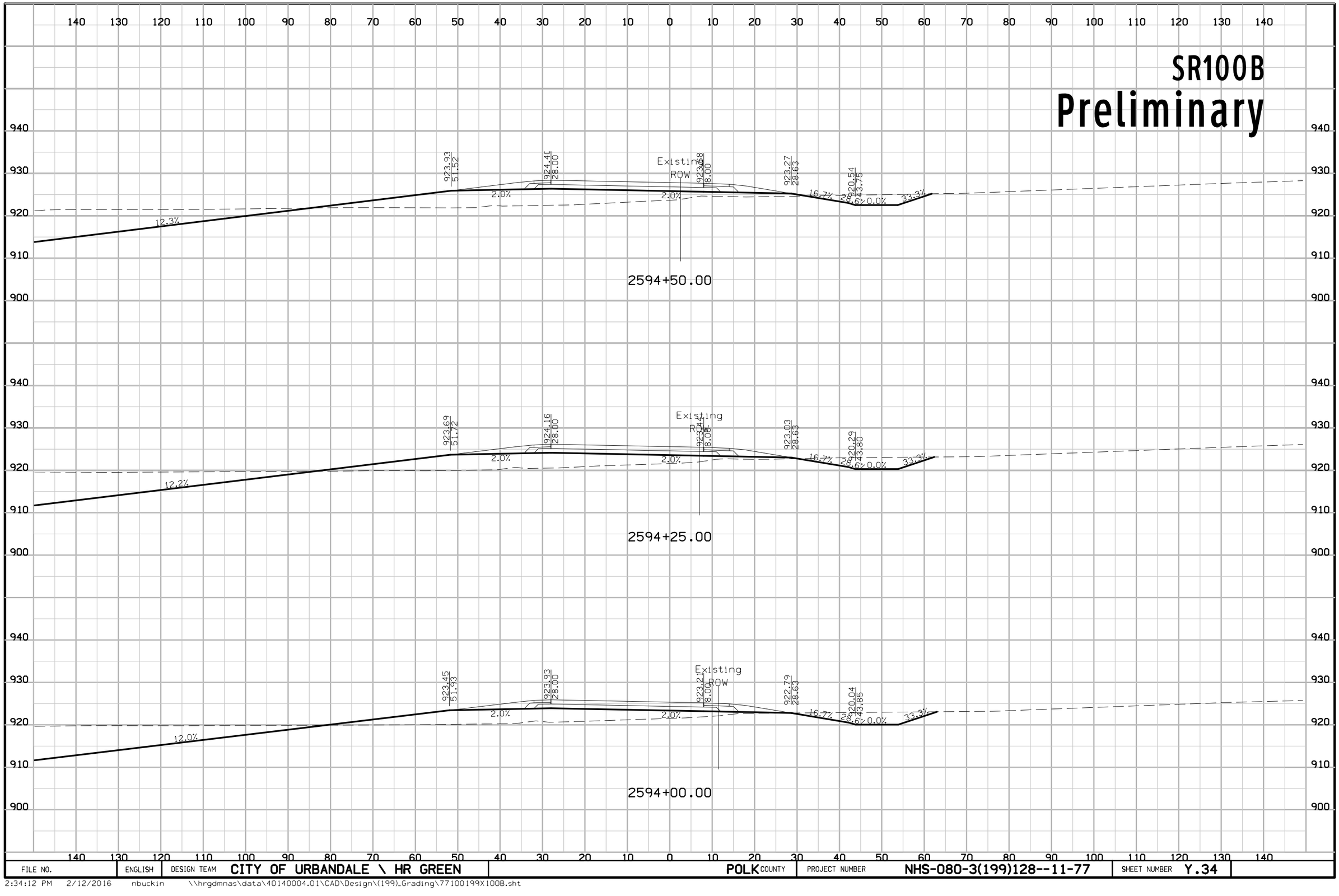

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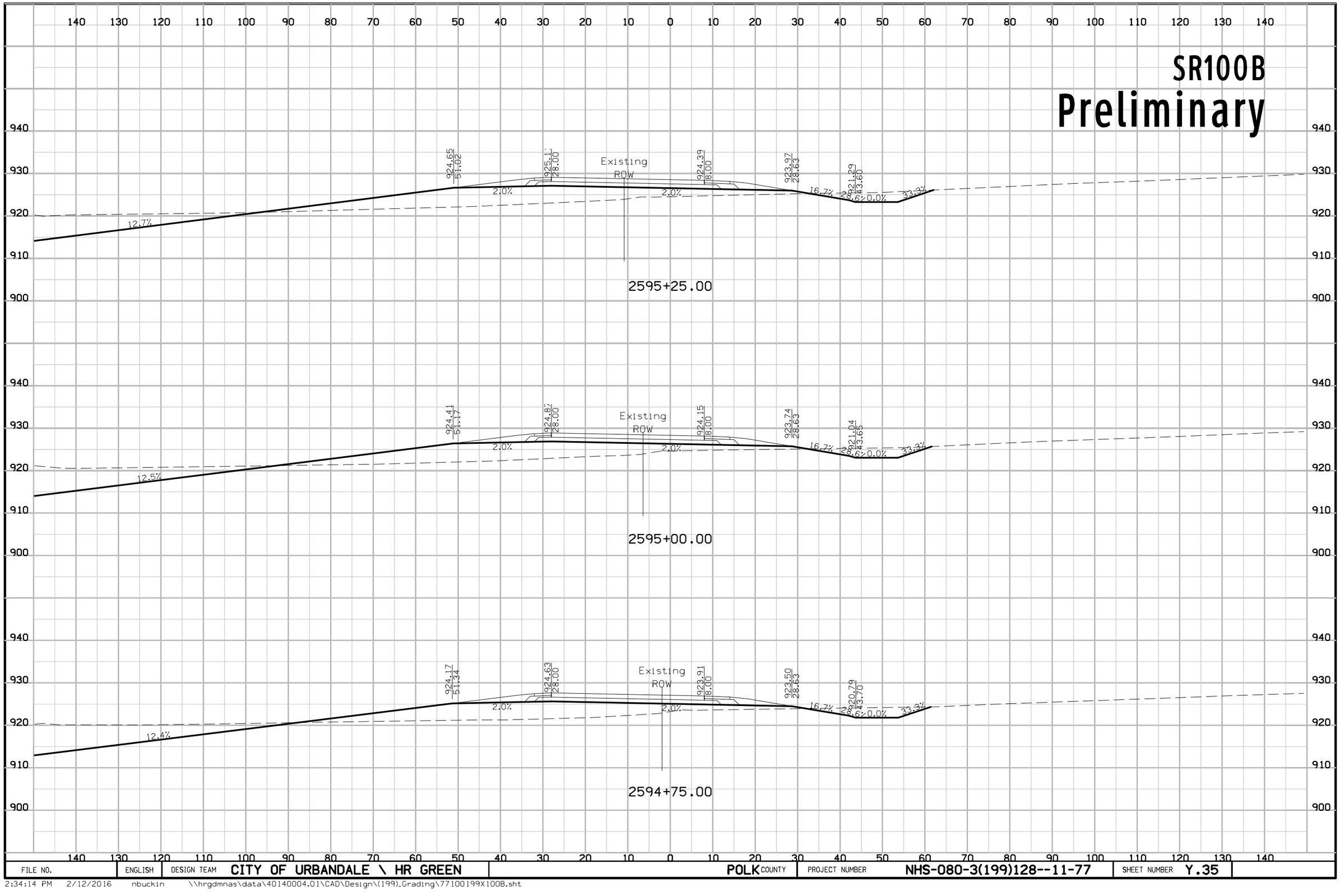
Preliminary



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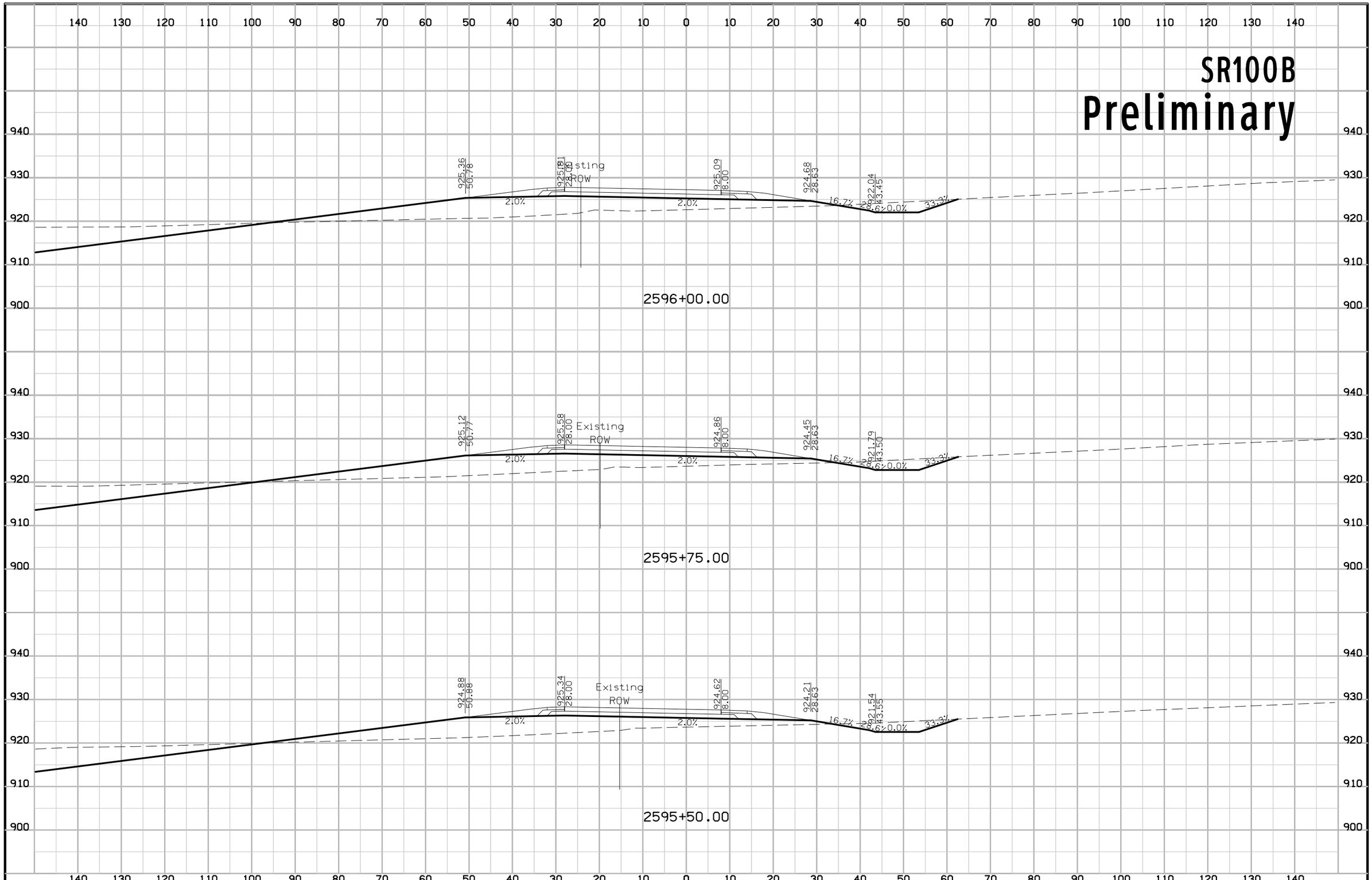

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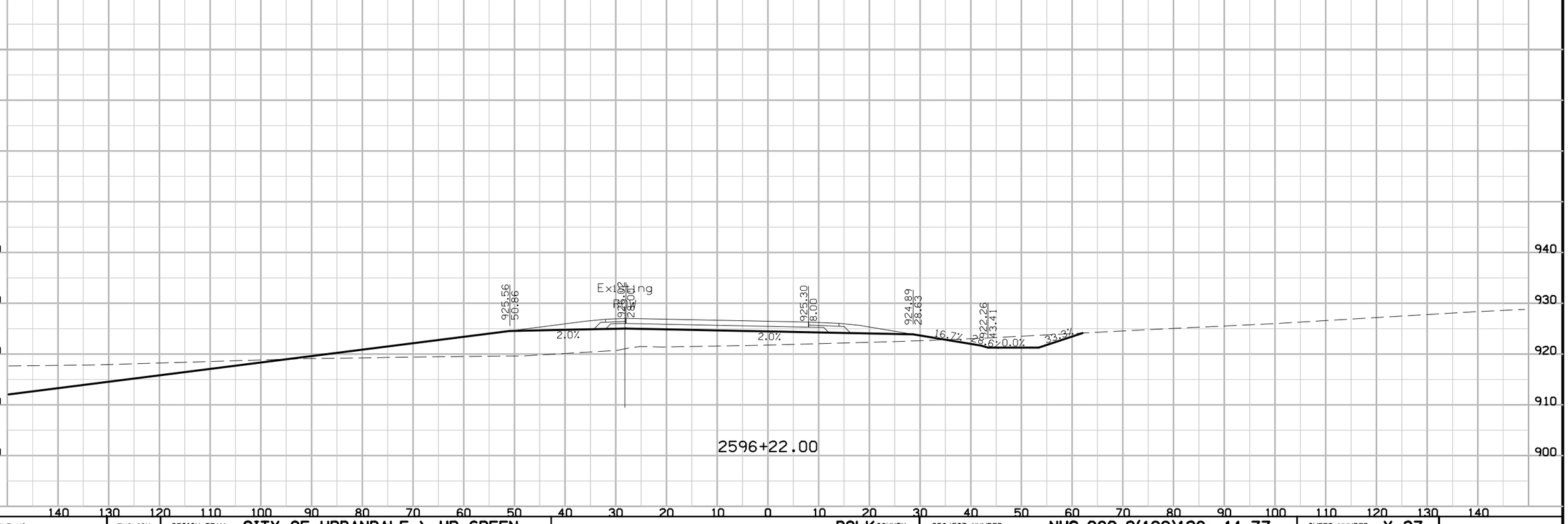

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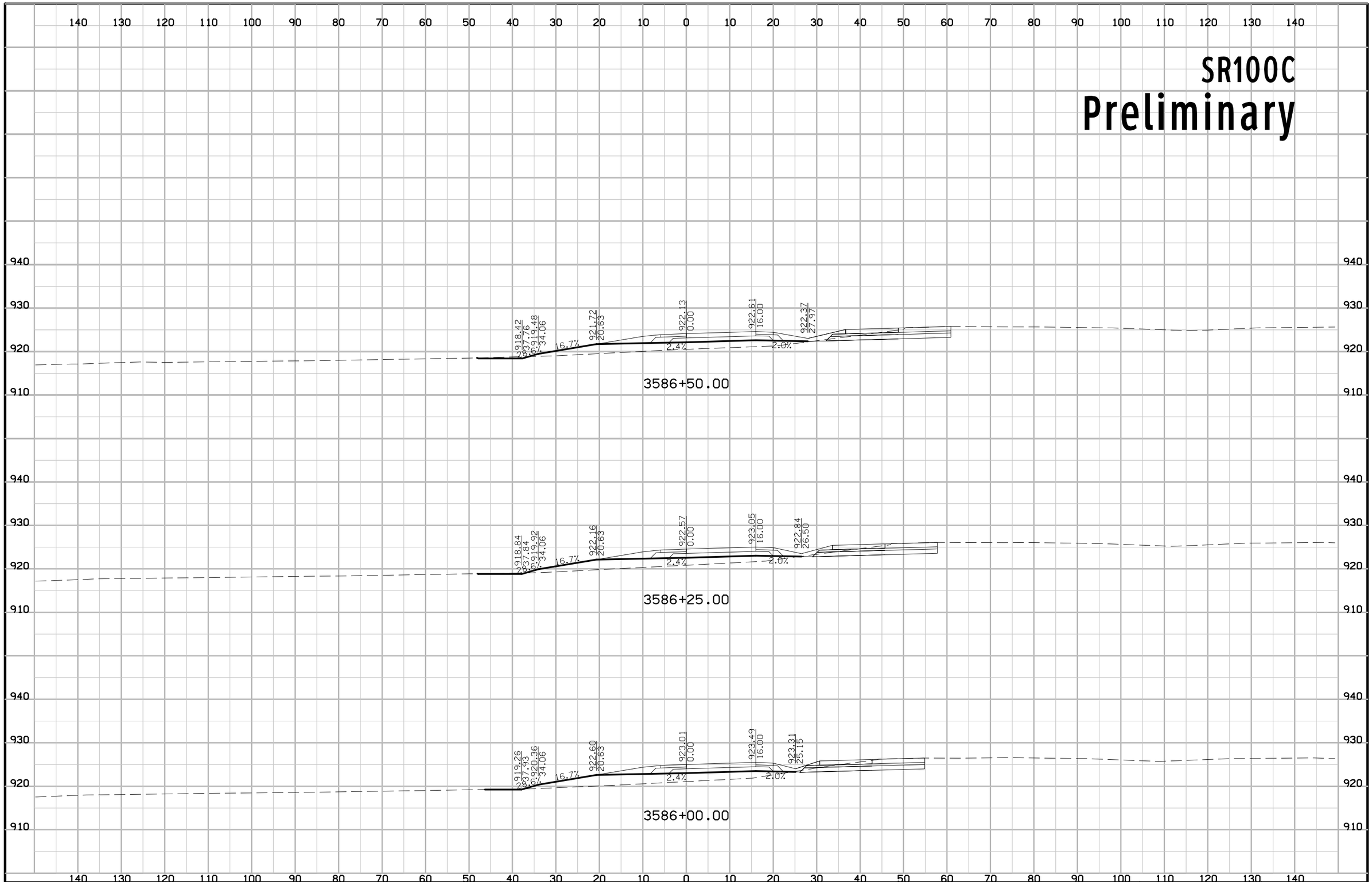
Preliminary



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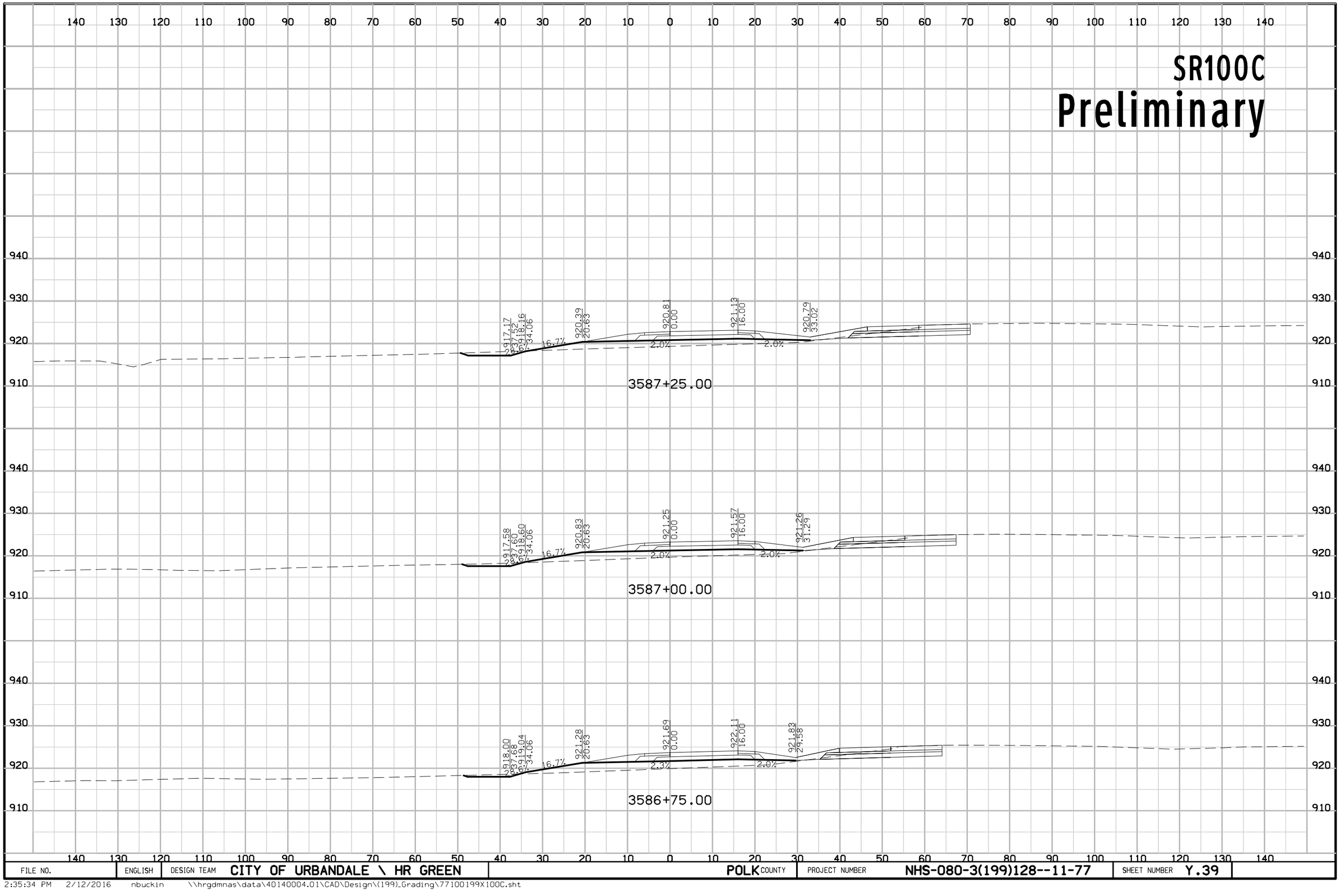

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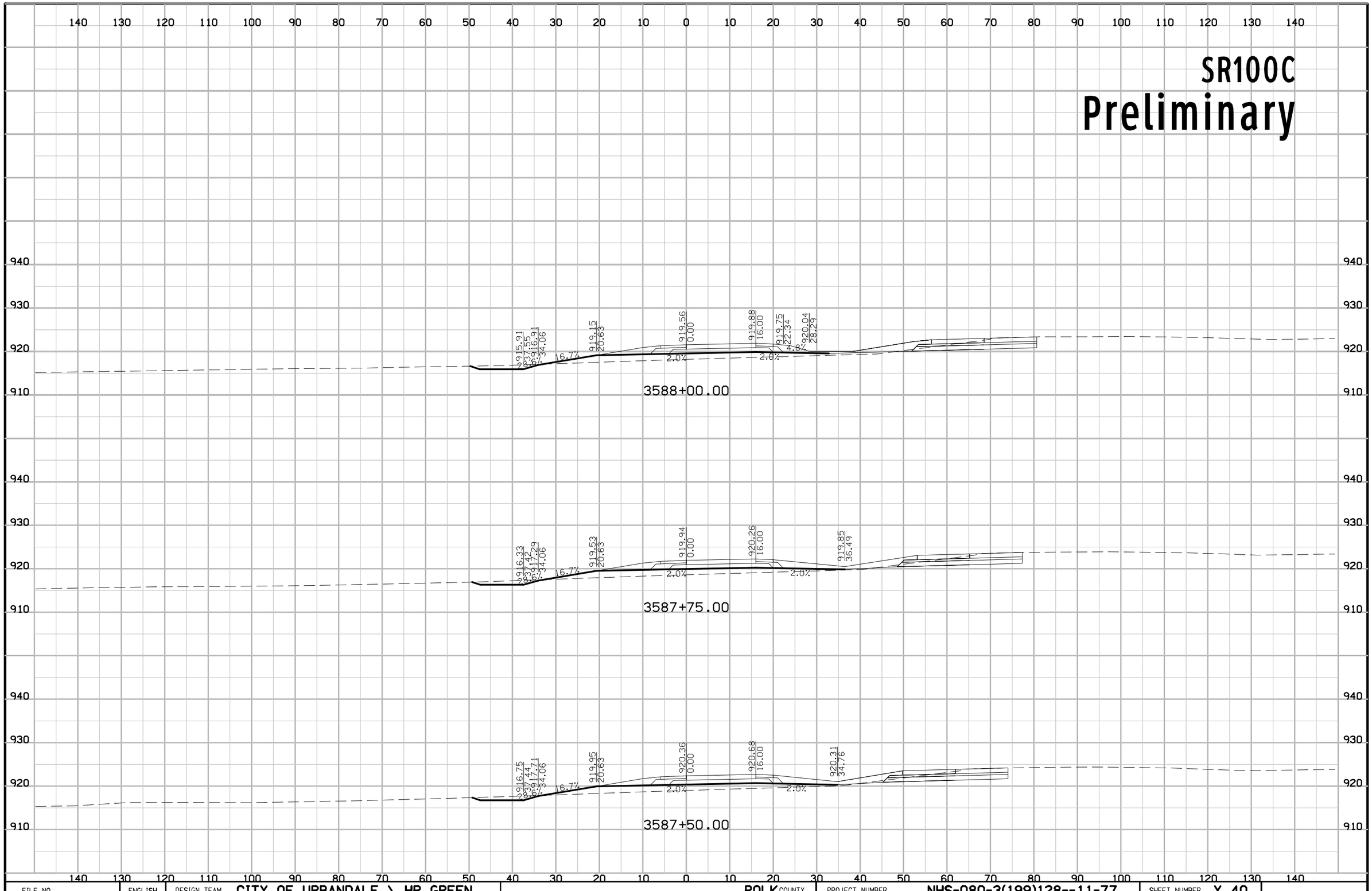

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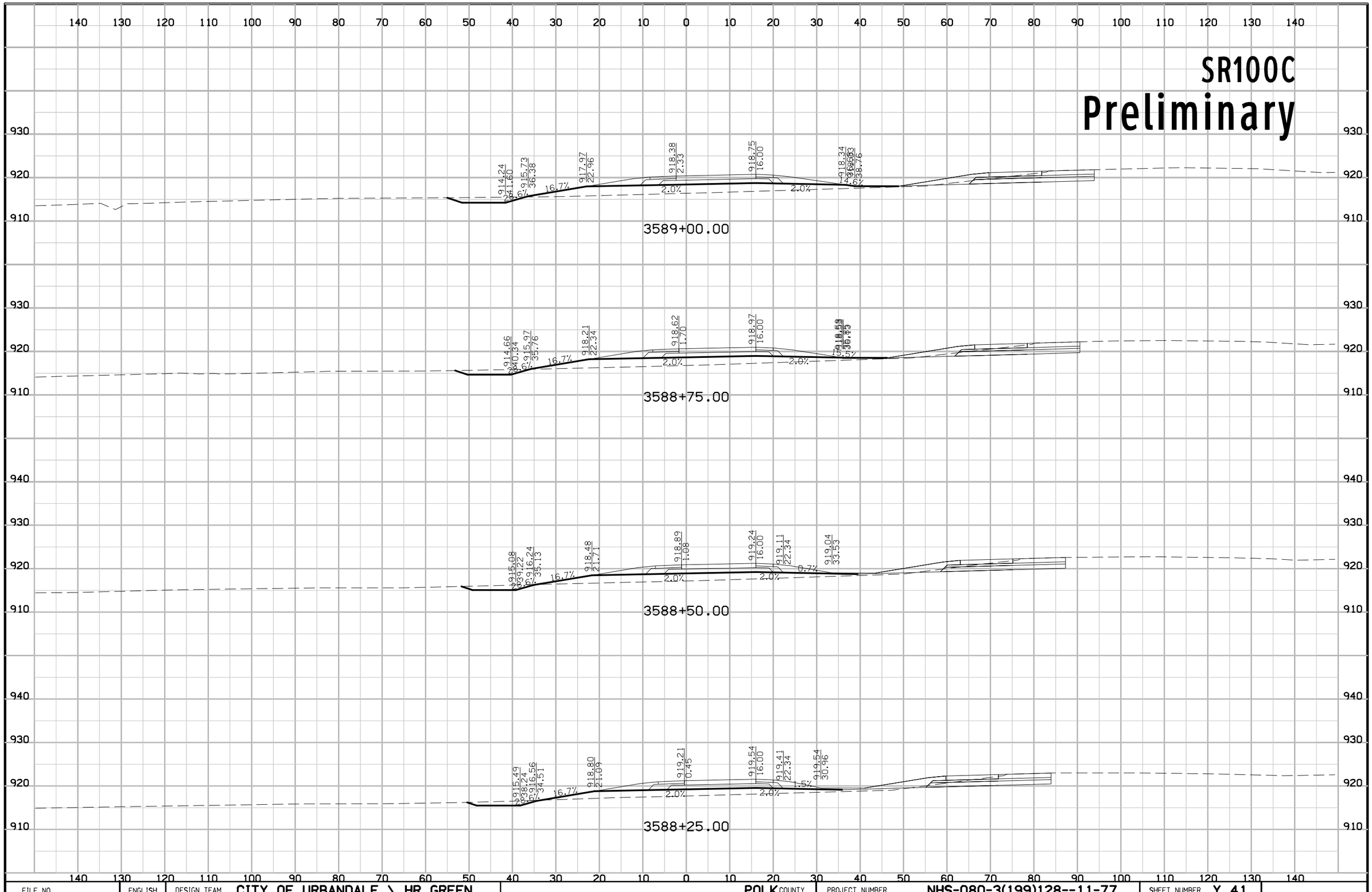

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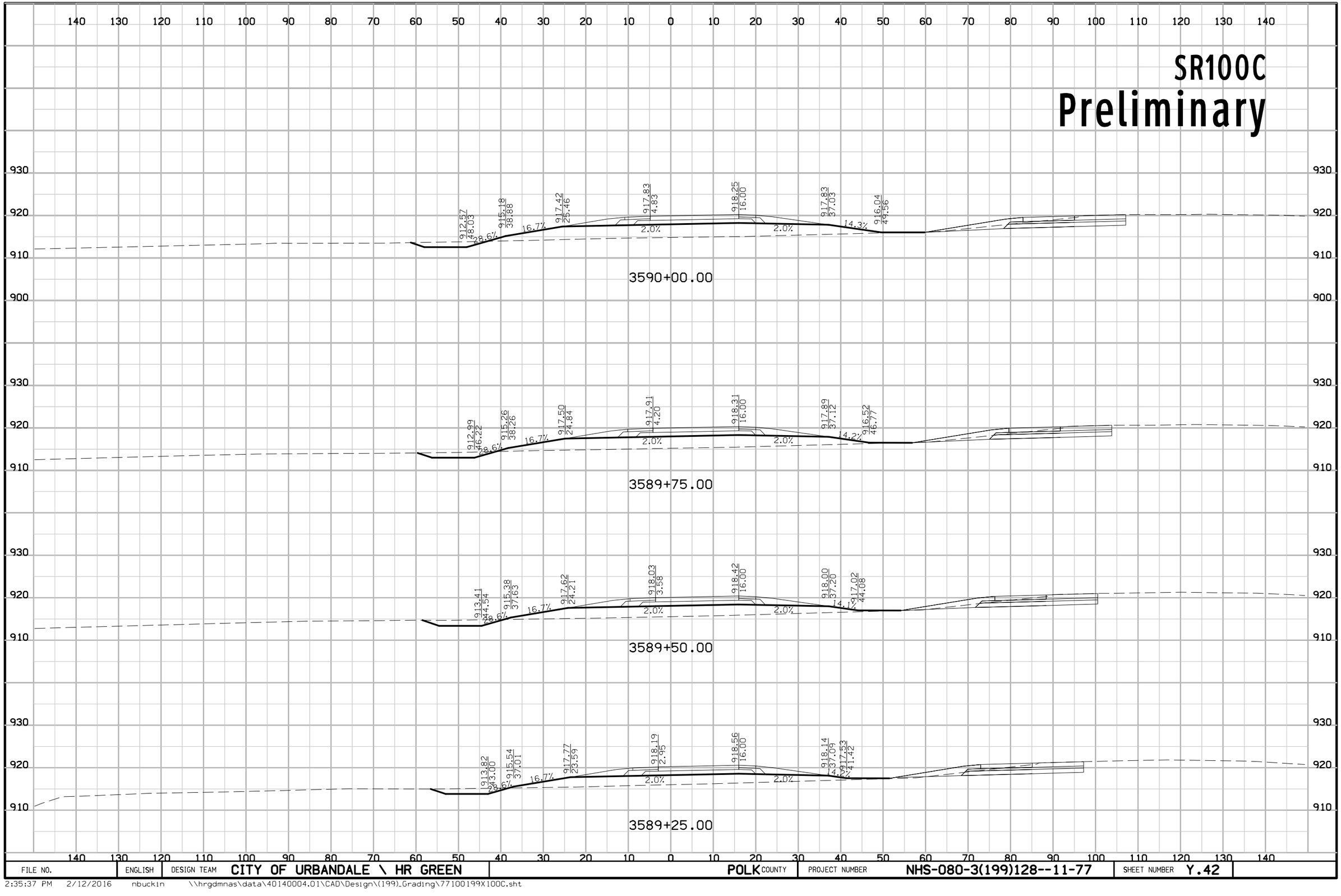

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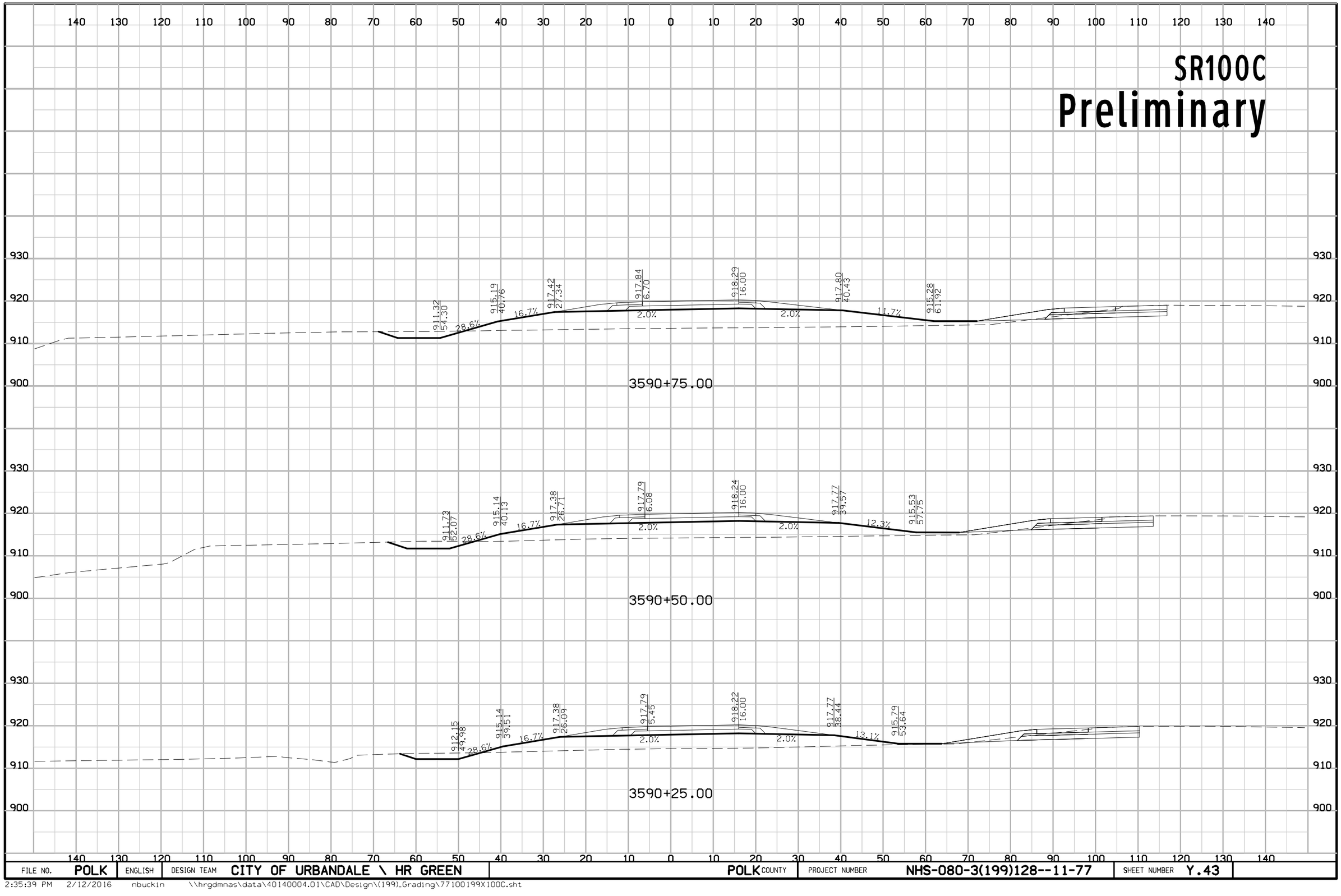

FILE NO.	POLK	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.43

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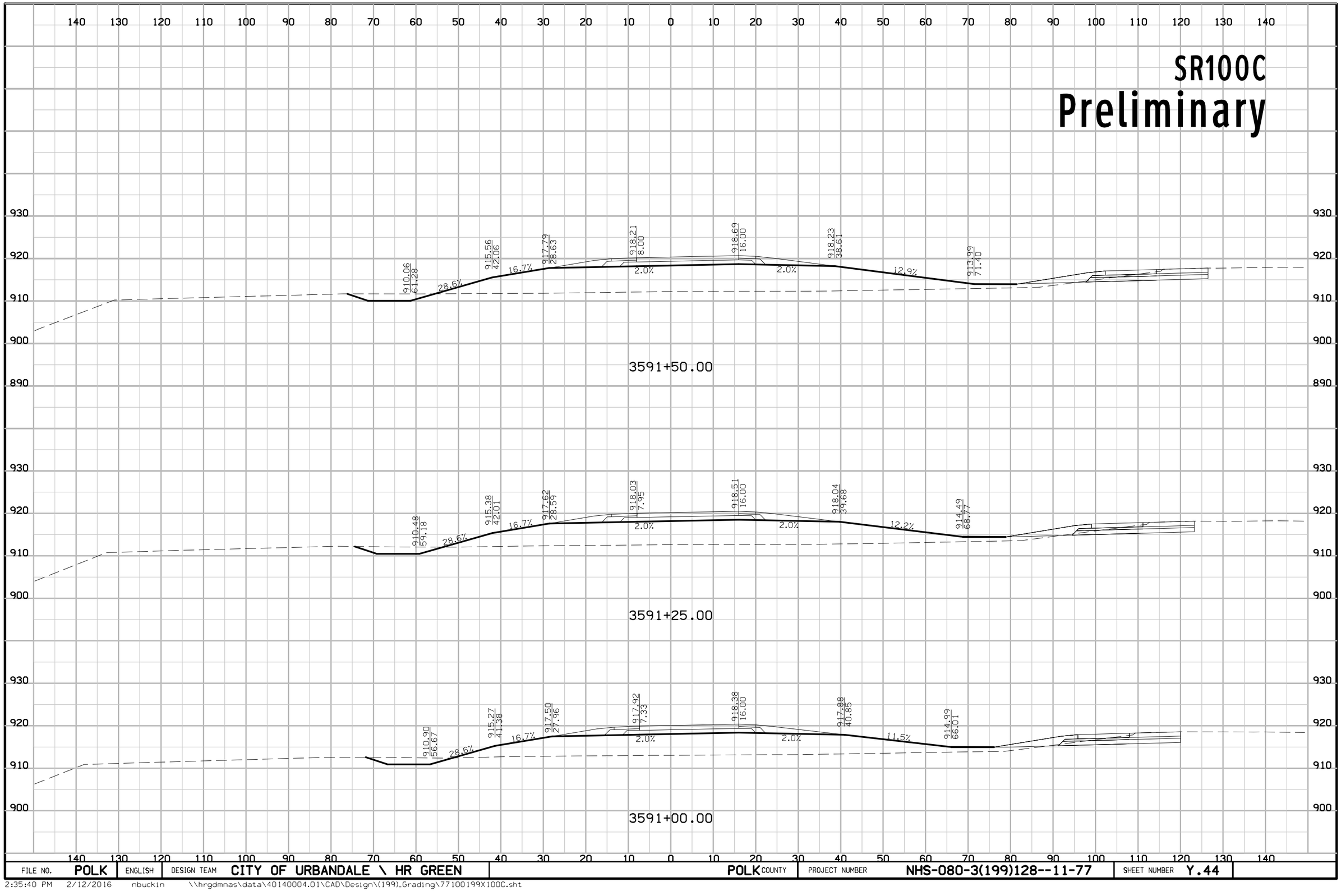

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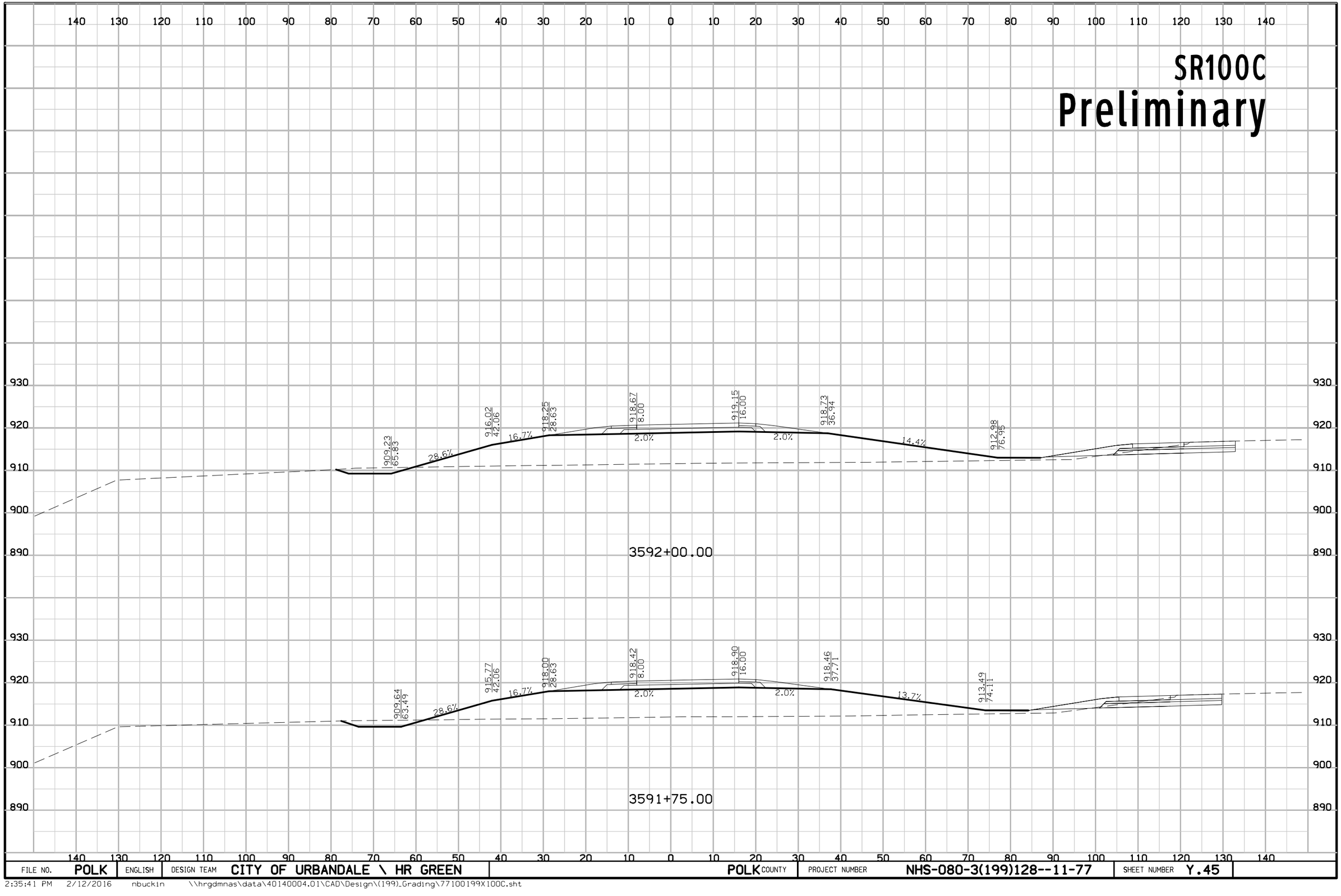
Preliminary



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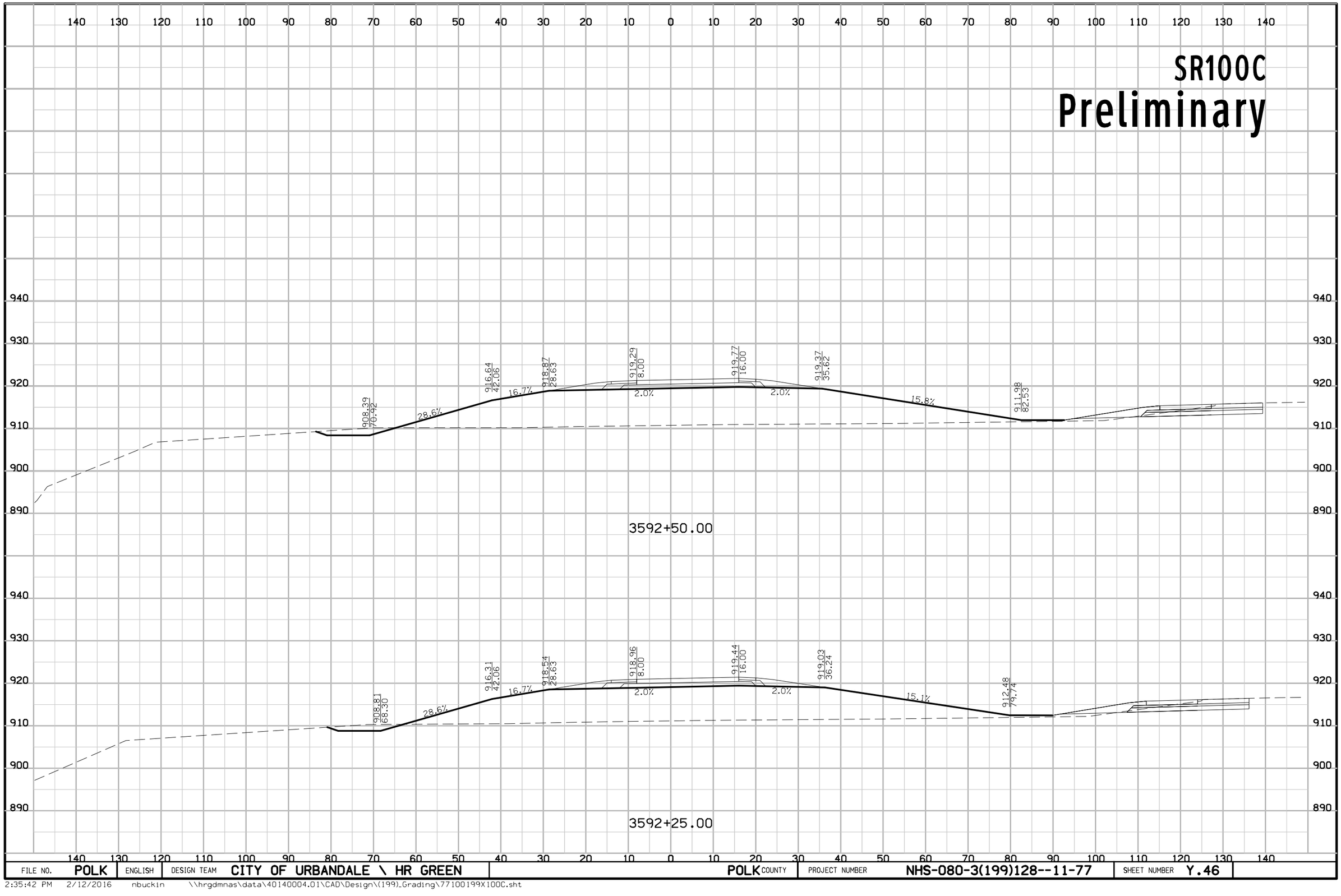

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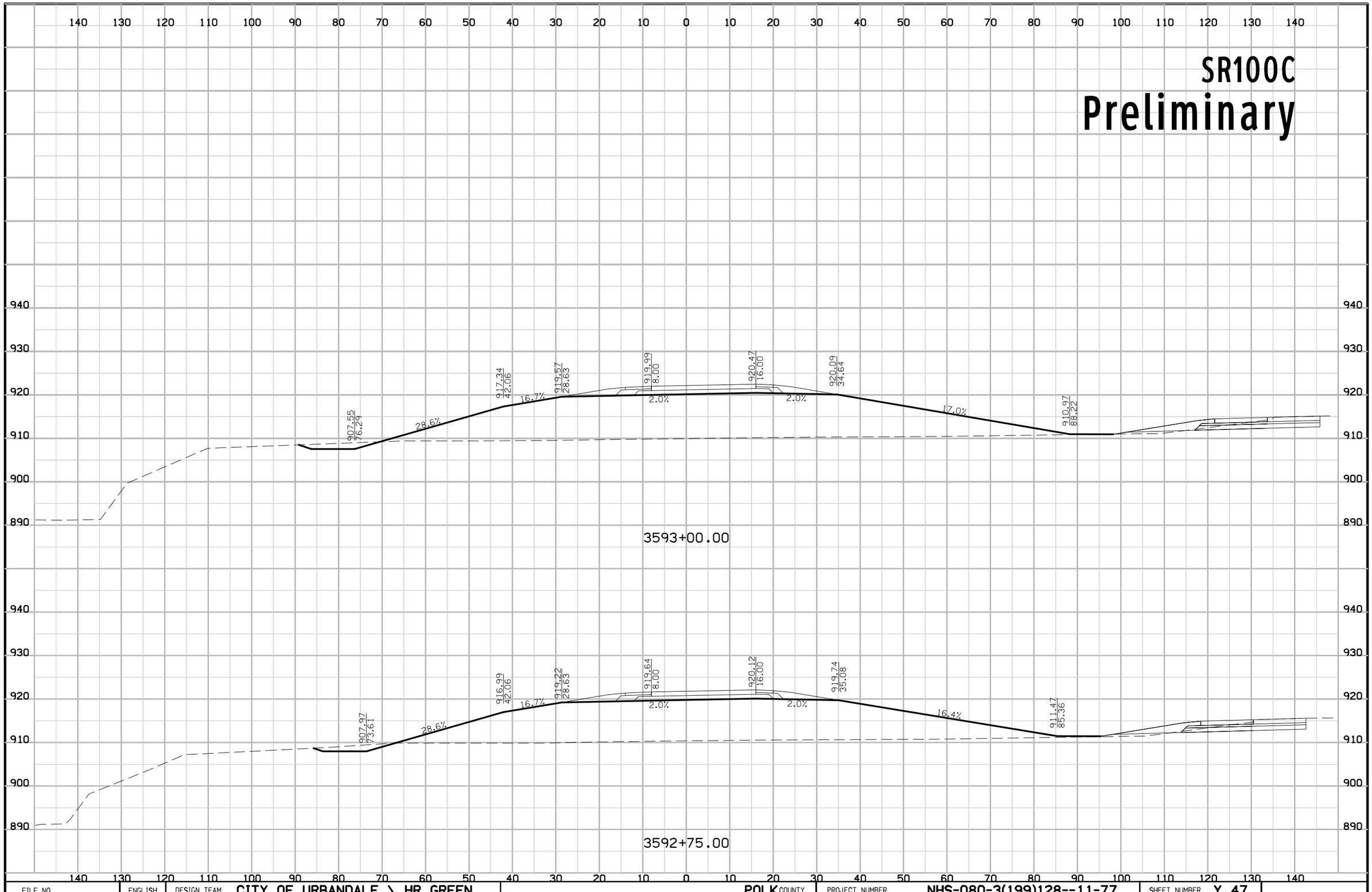

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.47

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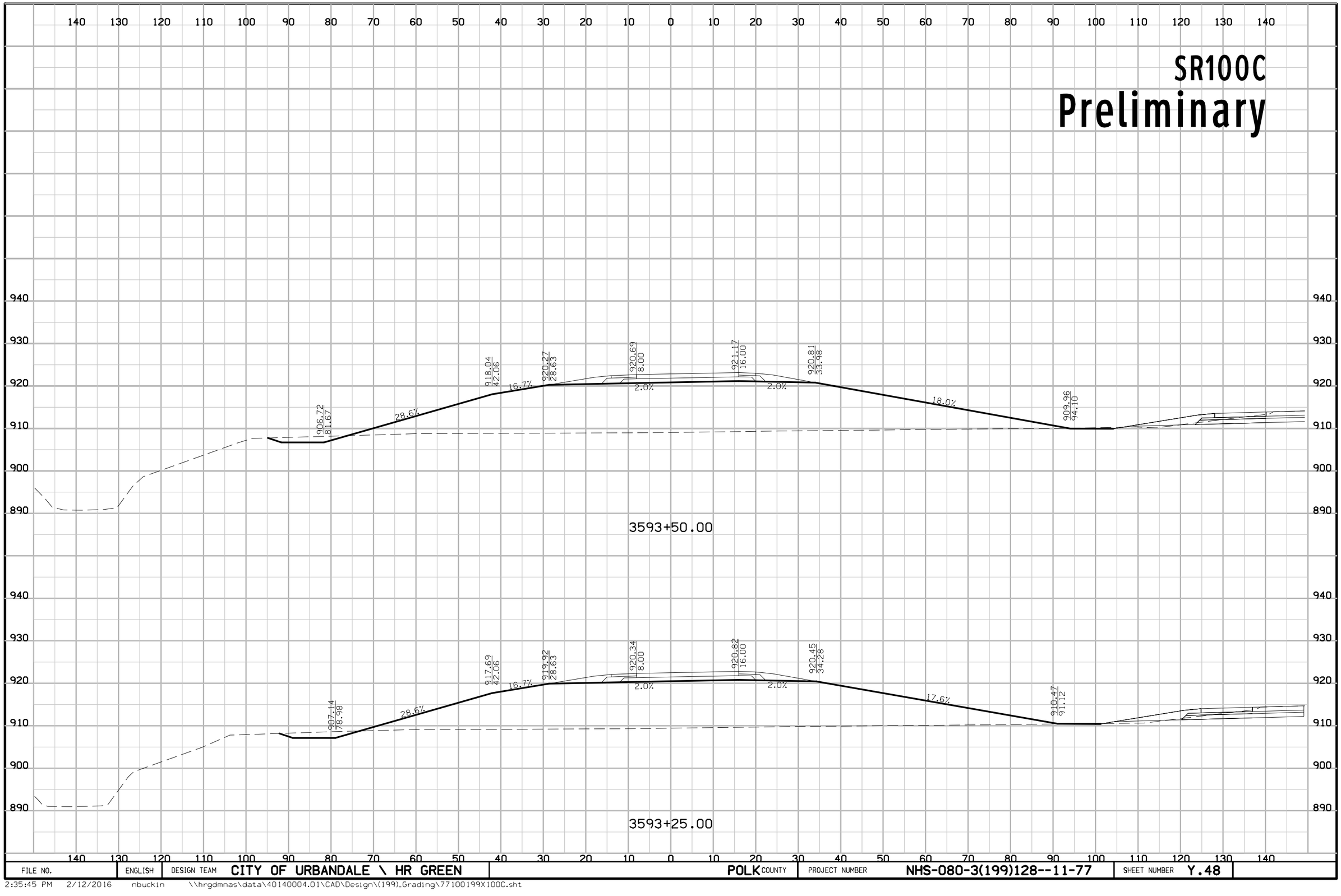

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.48

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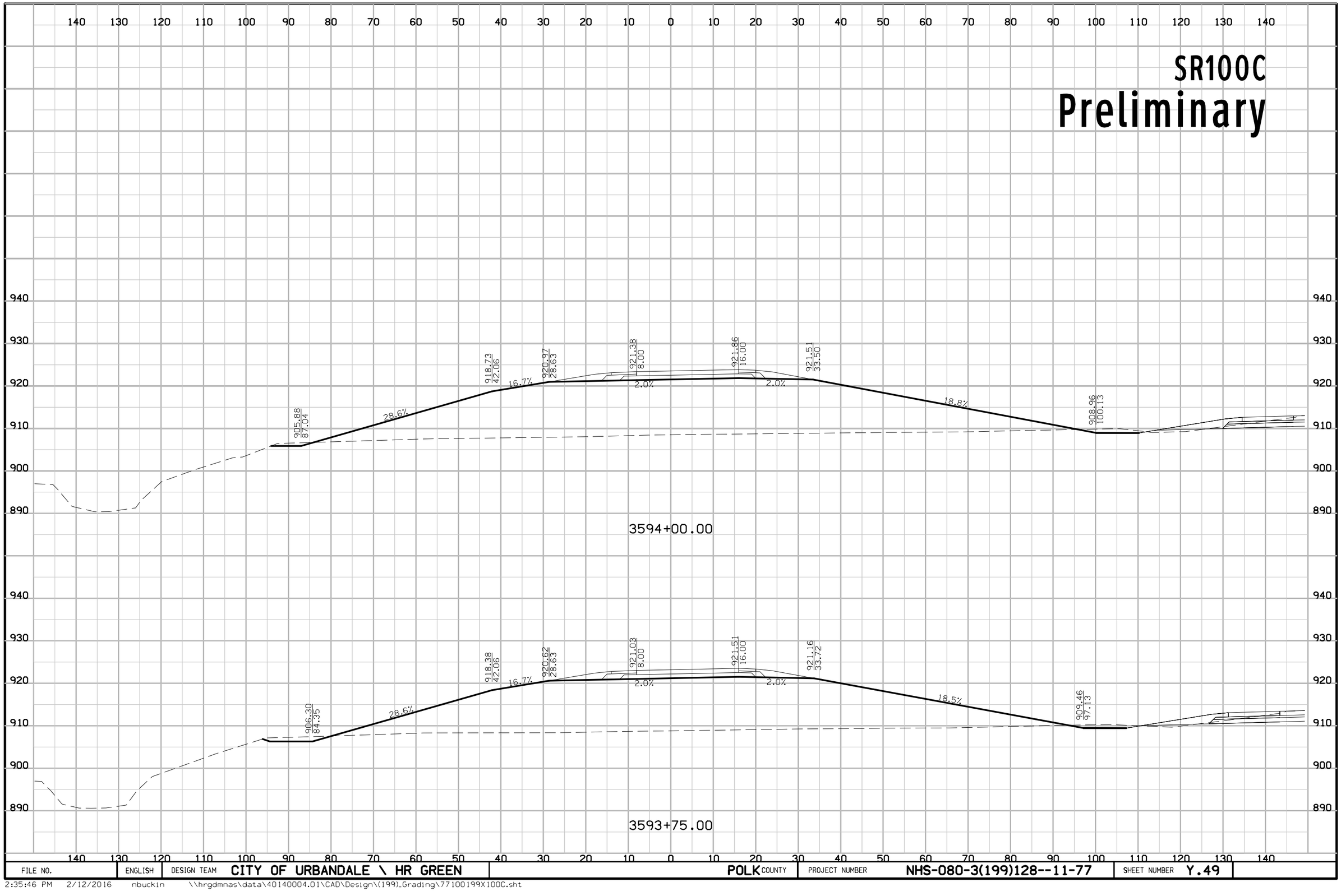

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.49

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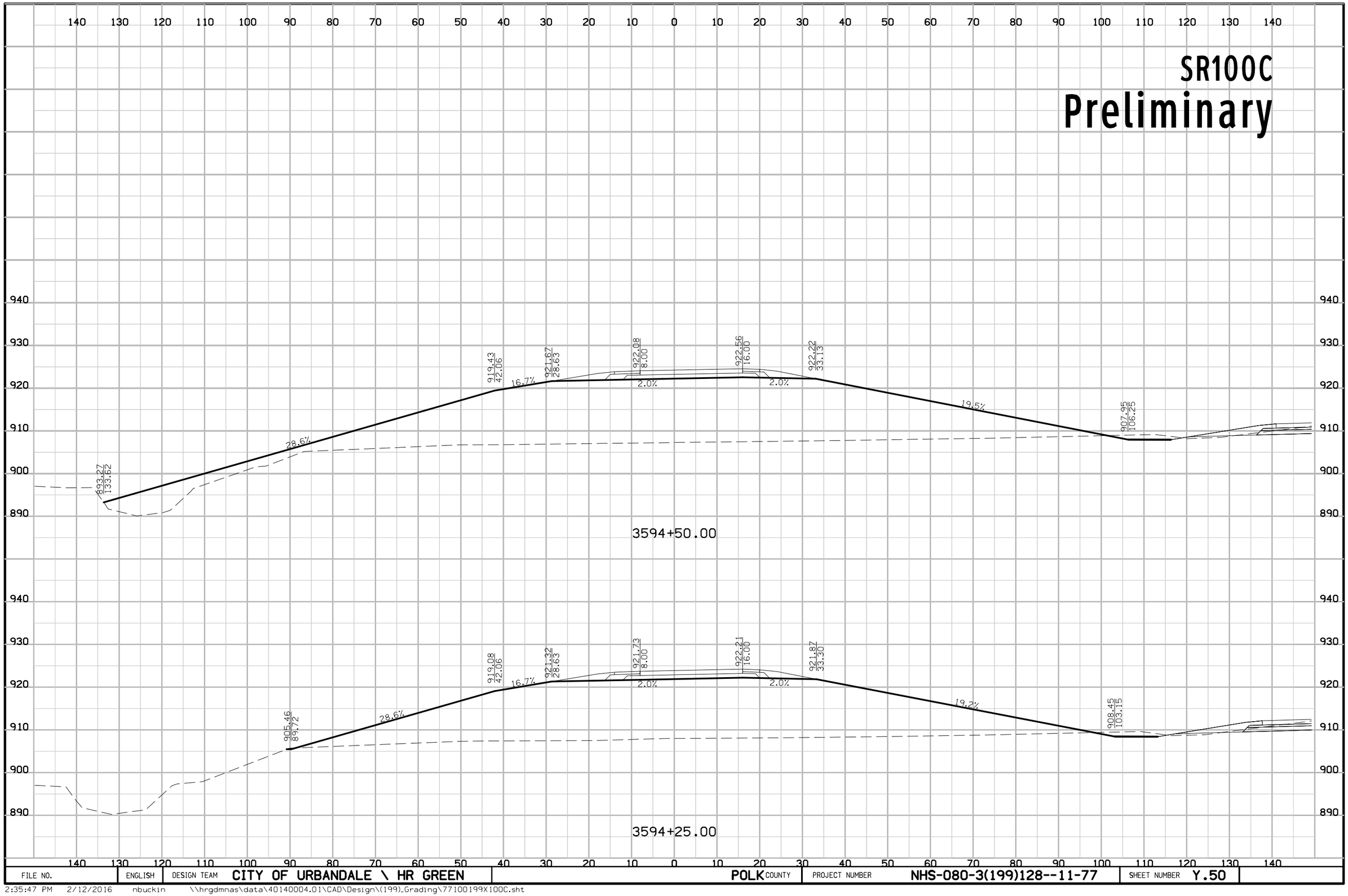

FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.50

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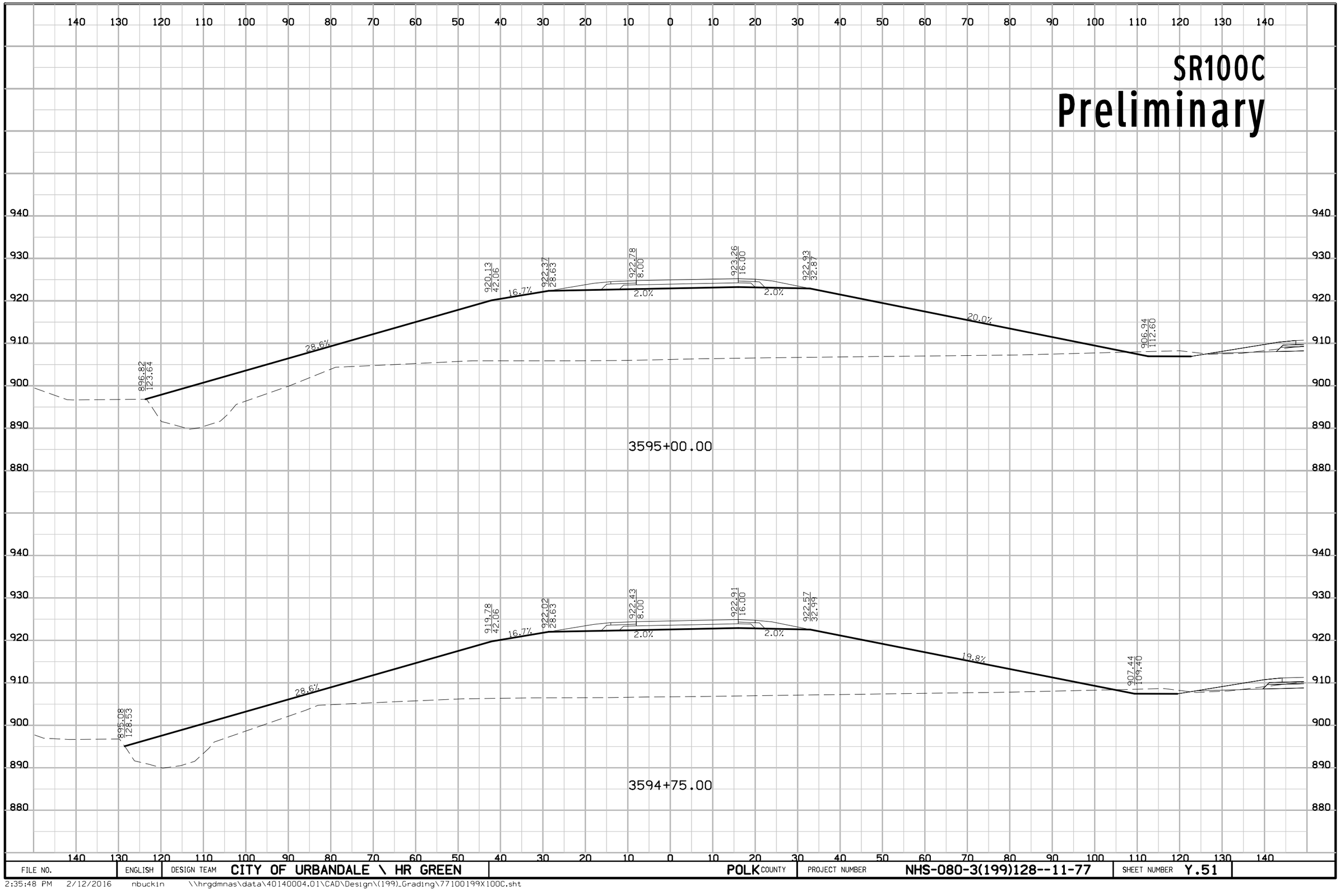
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.51

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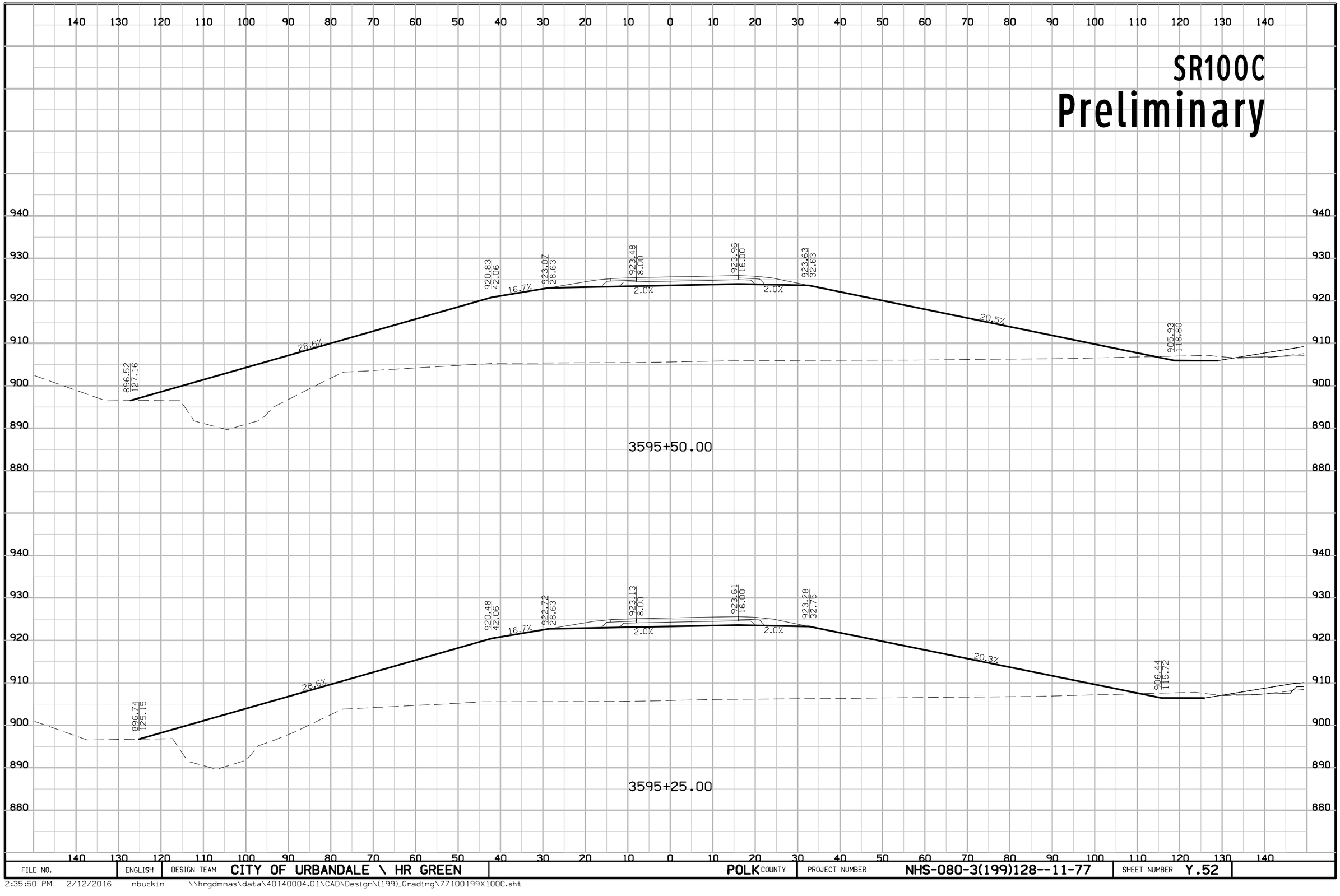
SR100C
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.52

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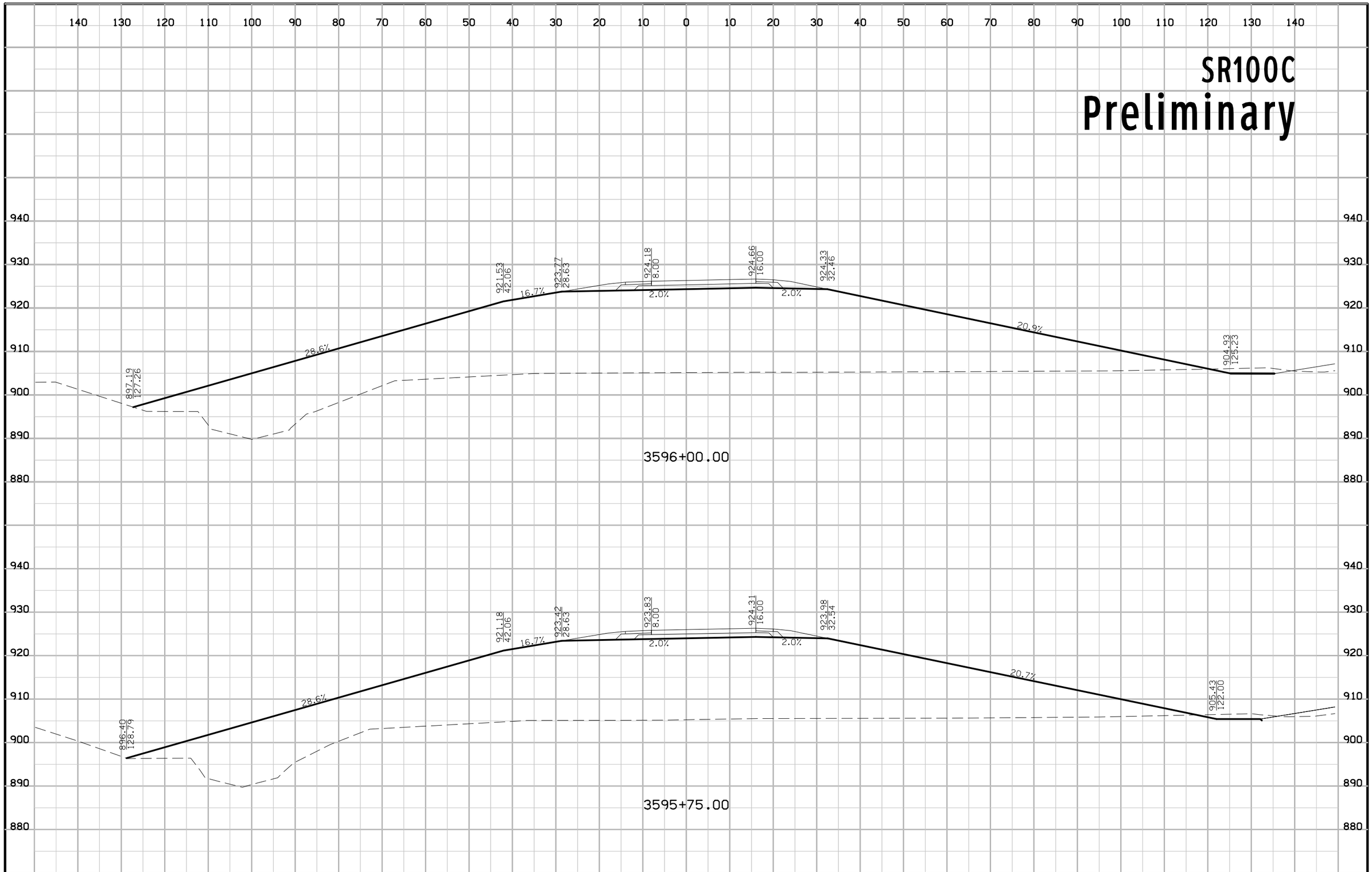
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.53

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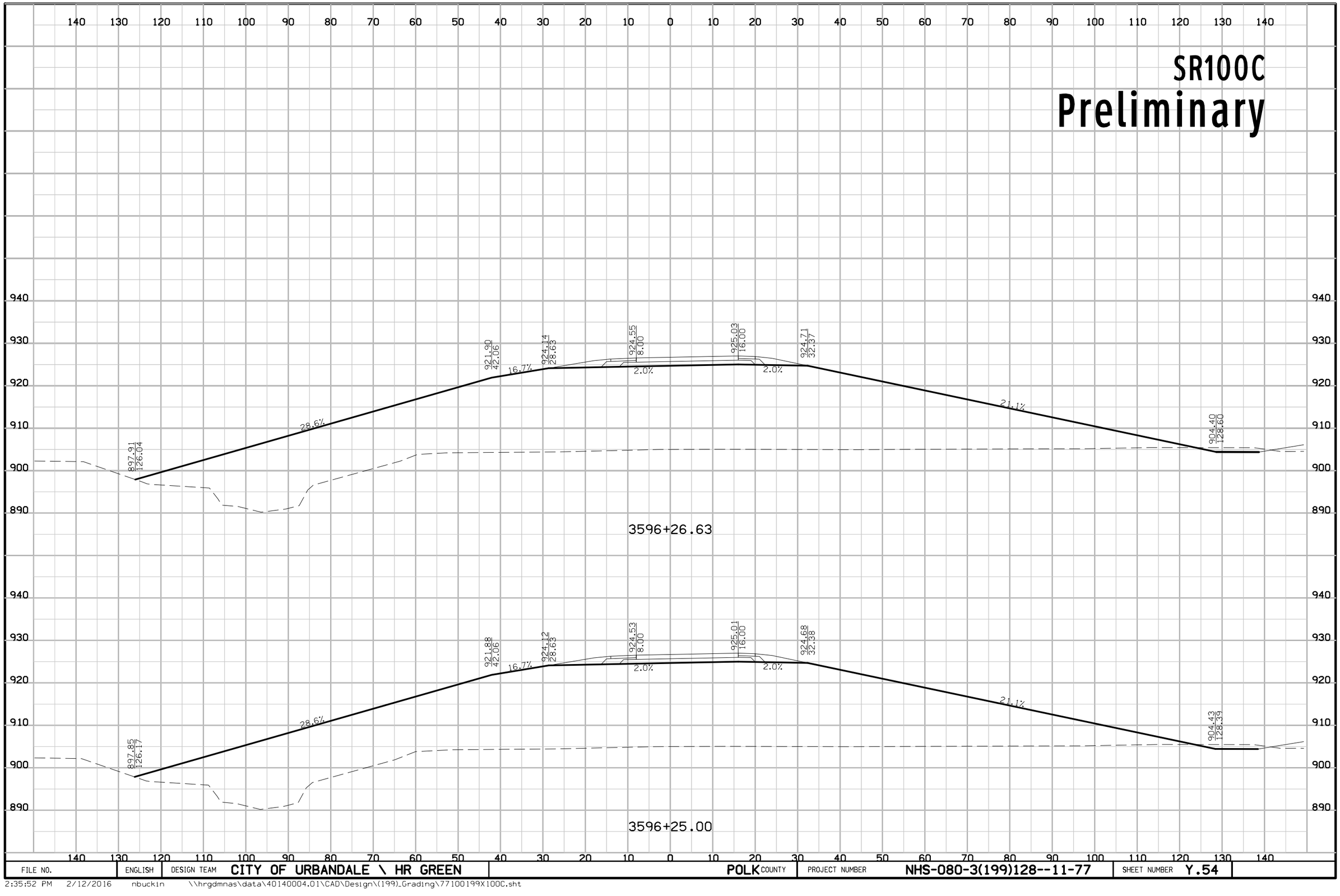
SR100C
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.54

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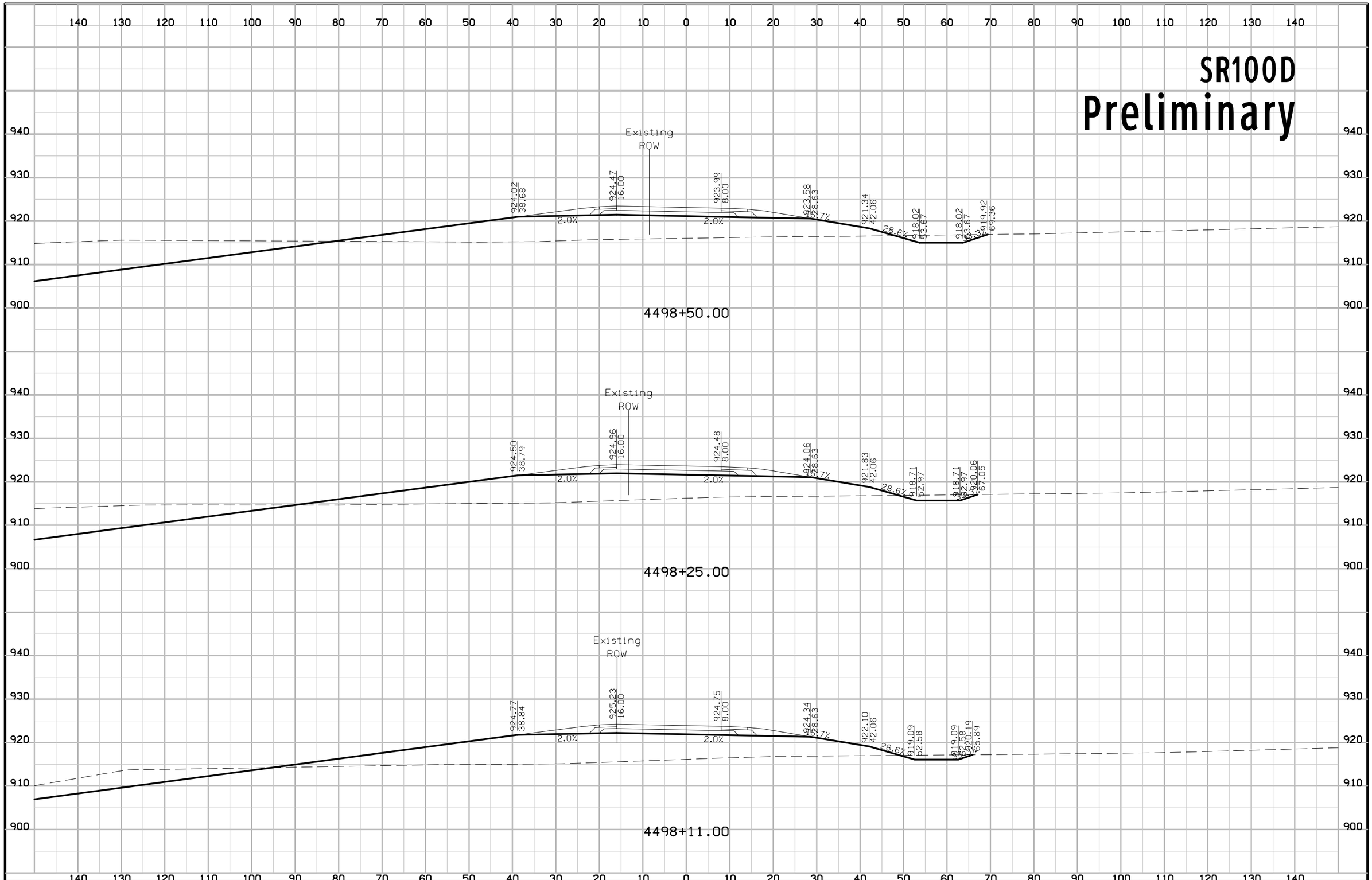
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.55

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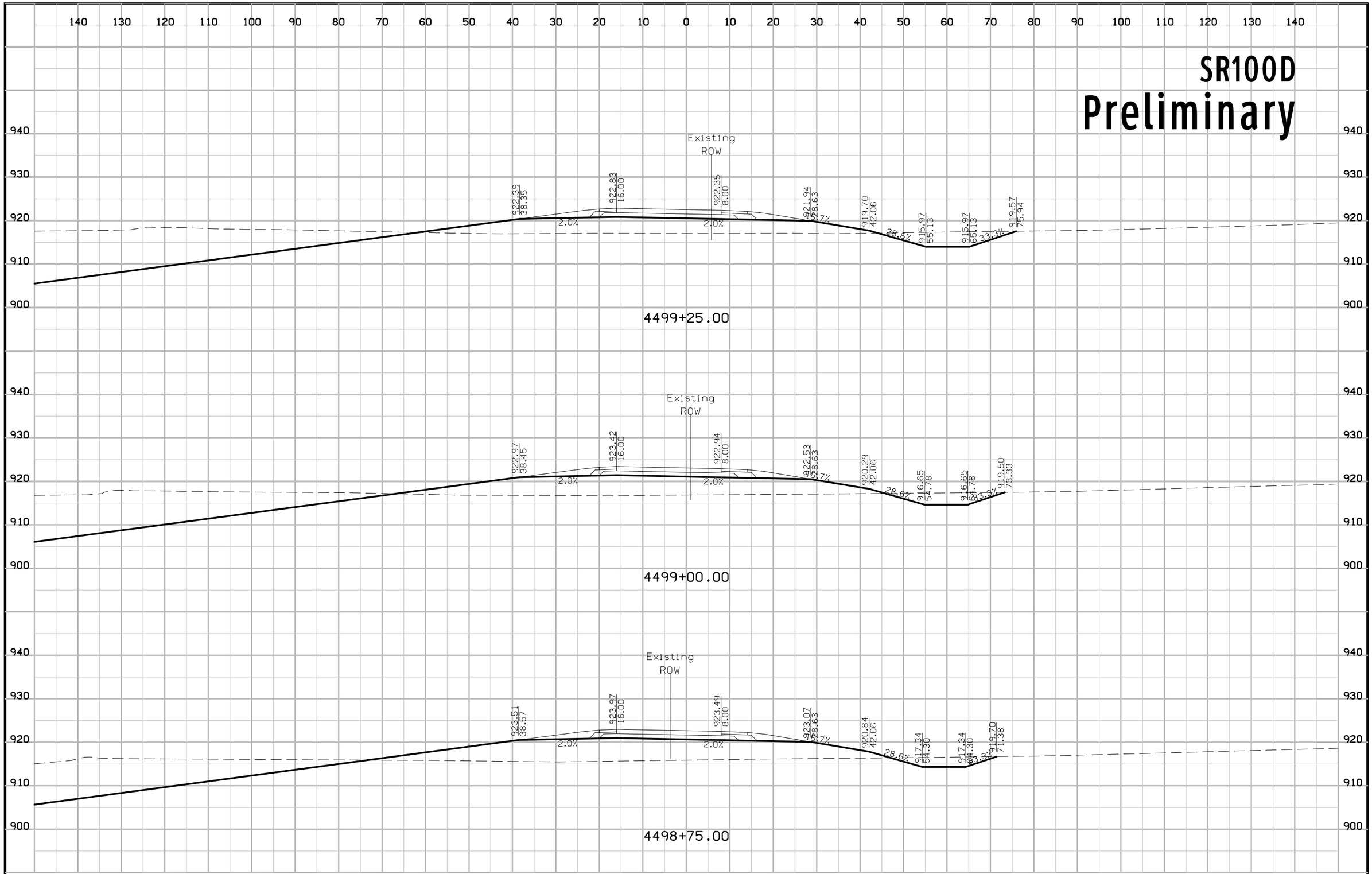
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.56

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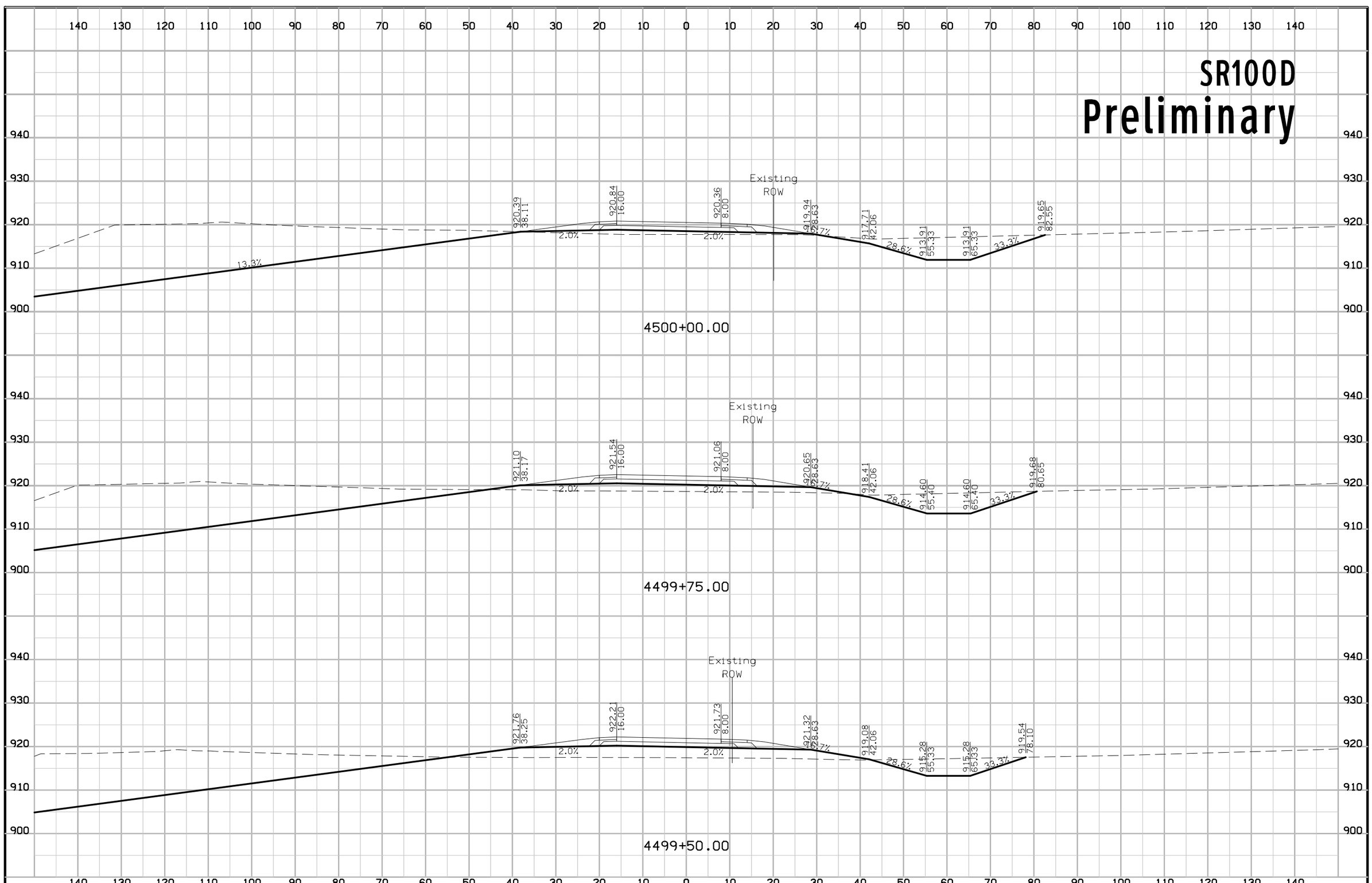
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.57

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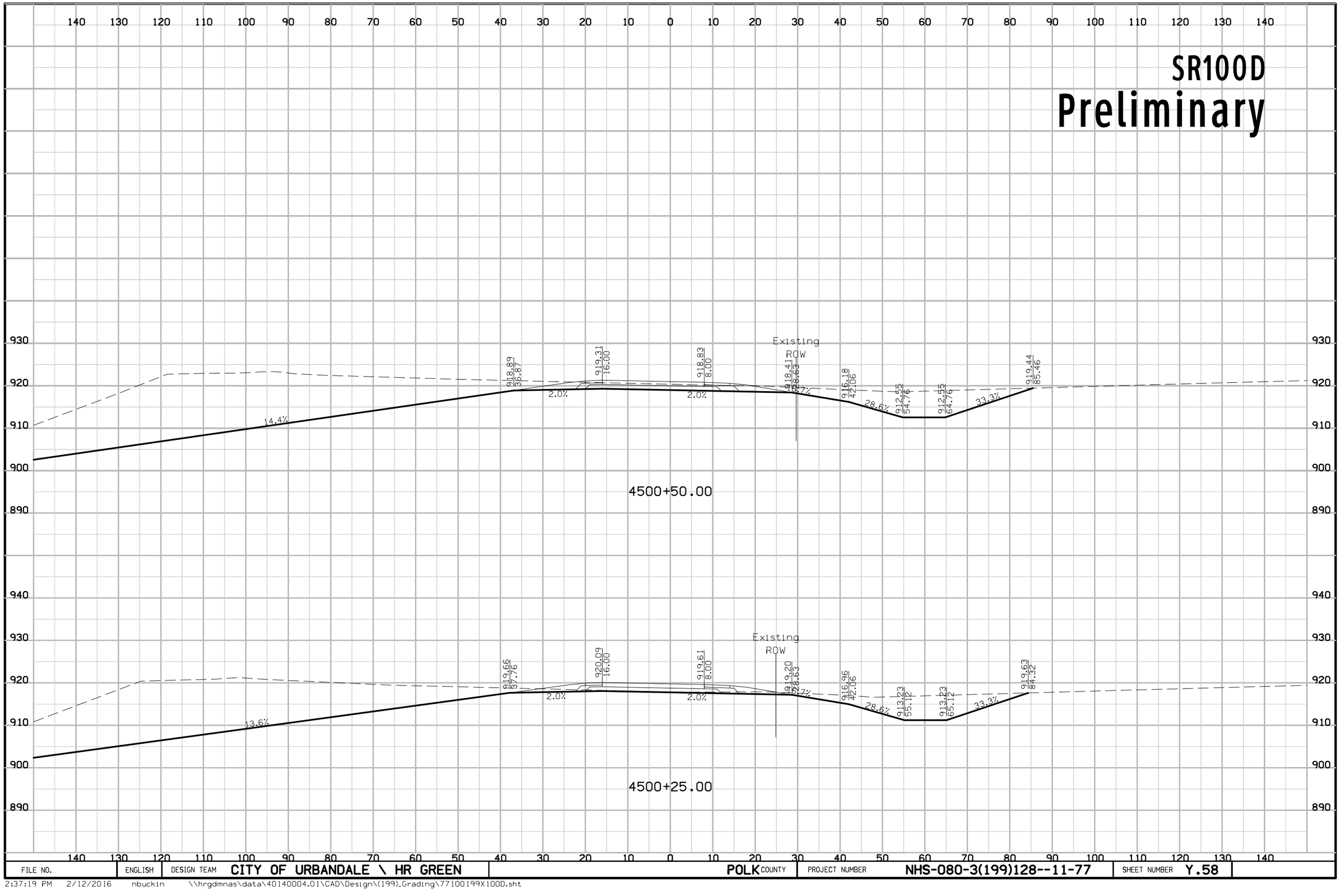
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.58

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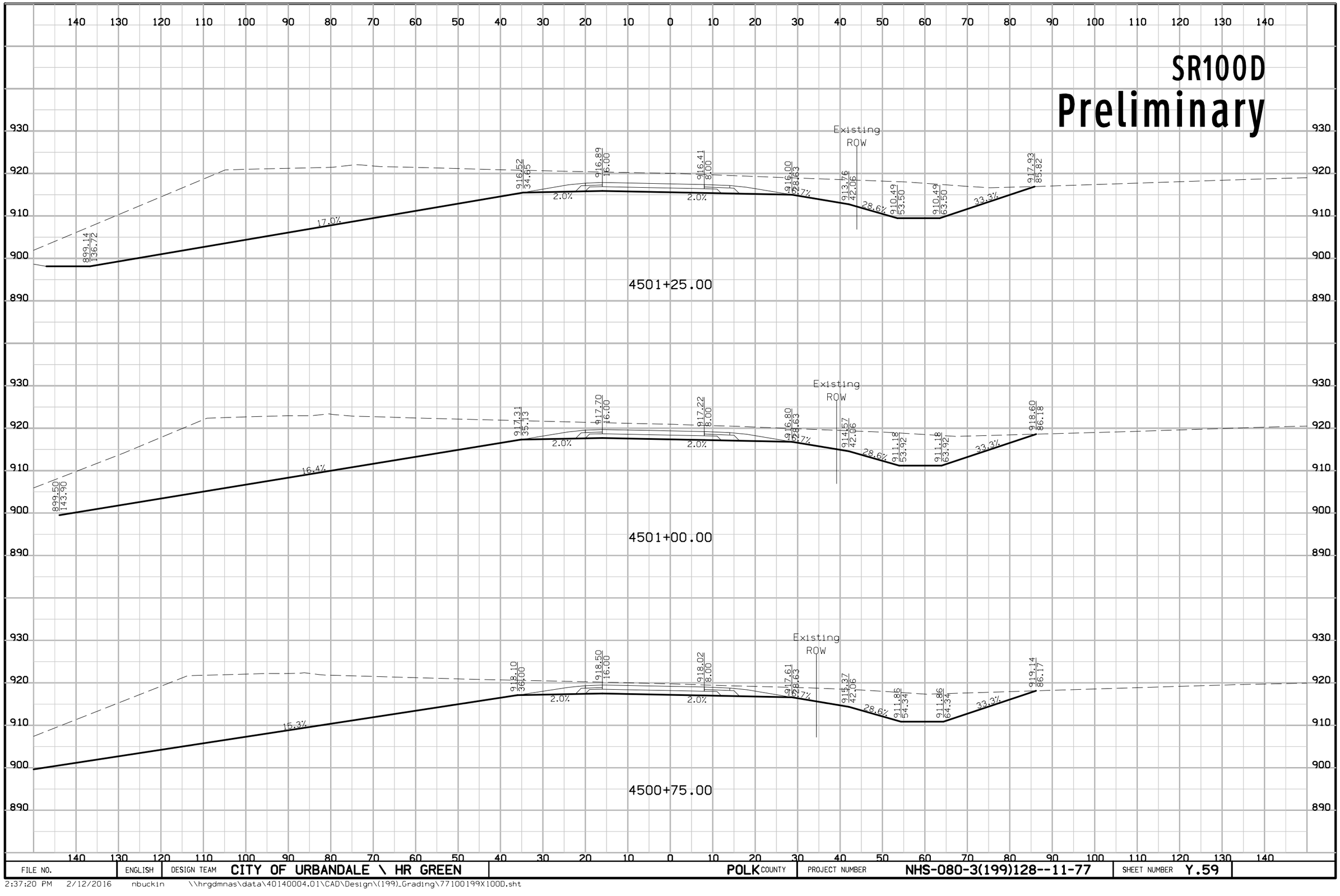
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.59

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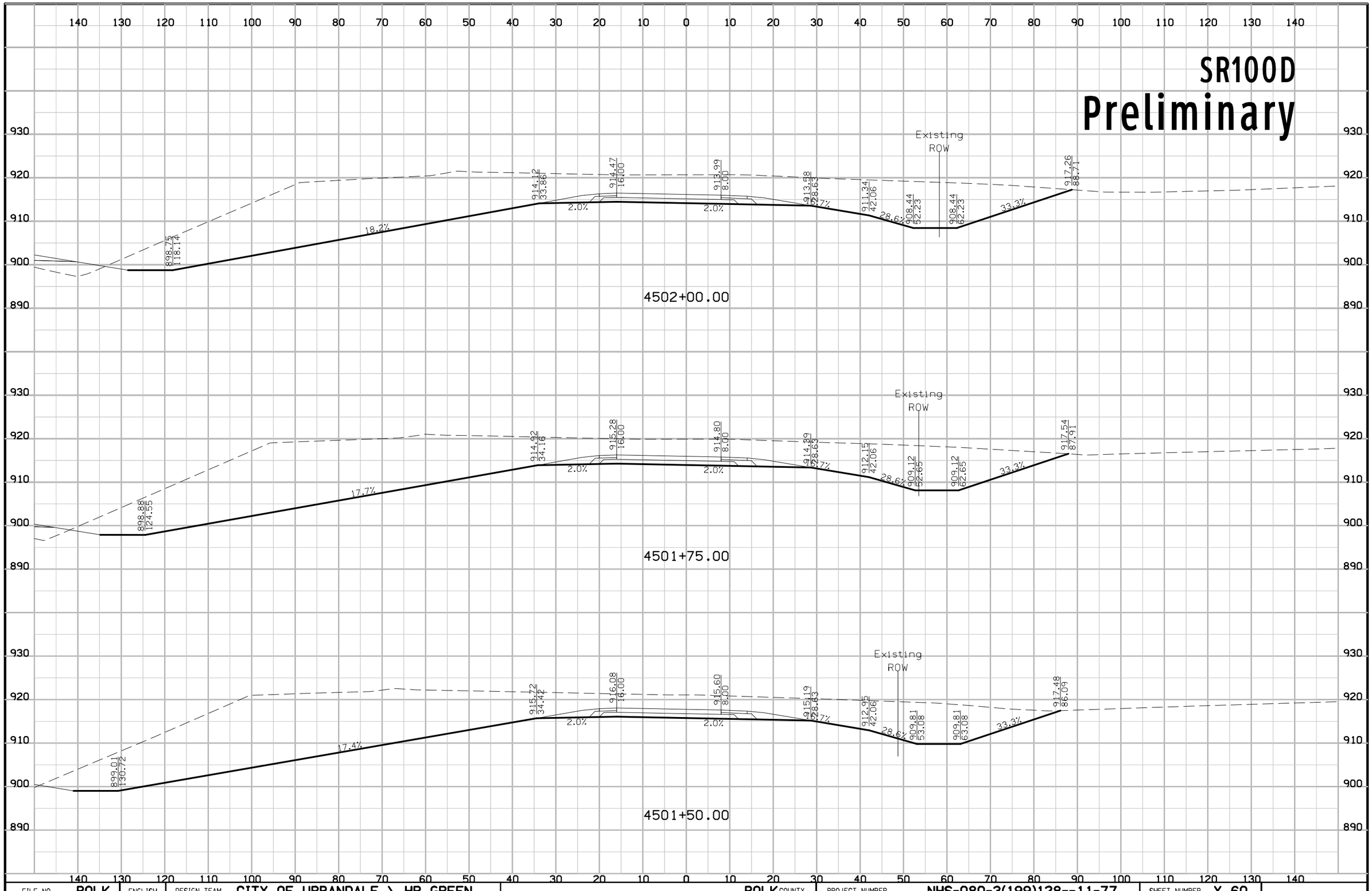
SR100D
Preliminary



FILE NO.	POLK	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.60

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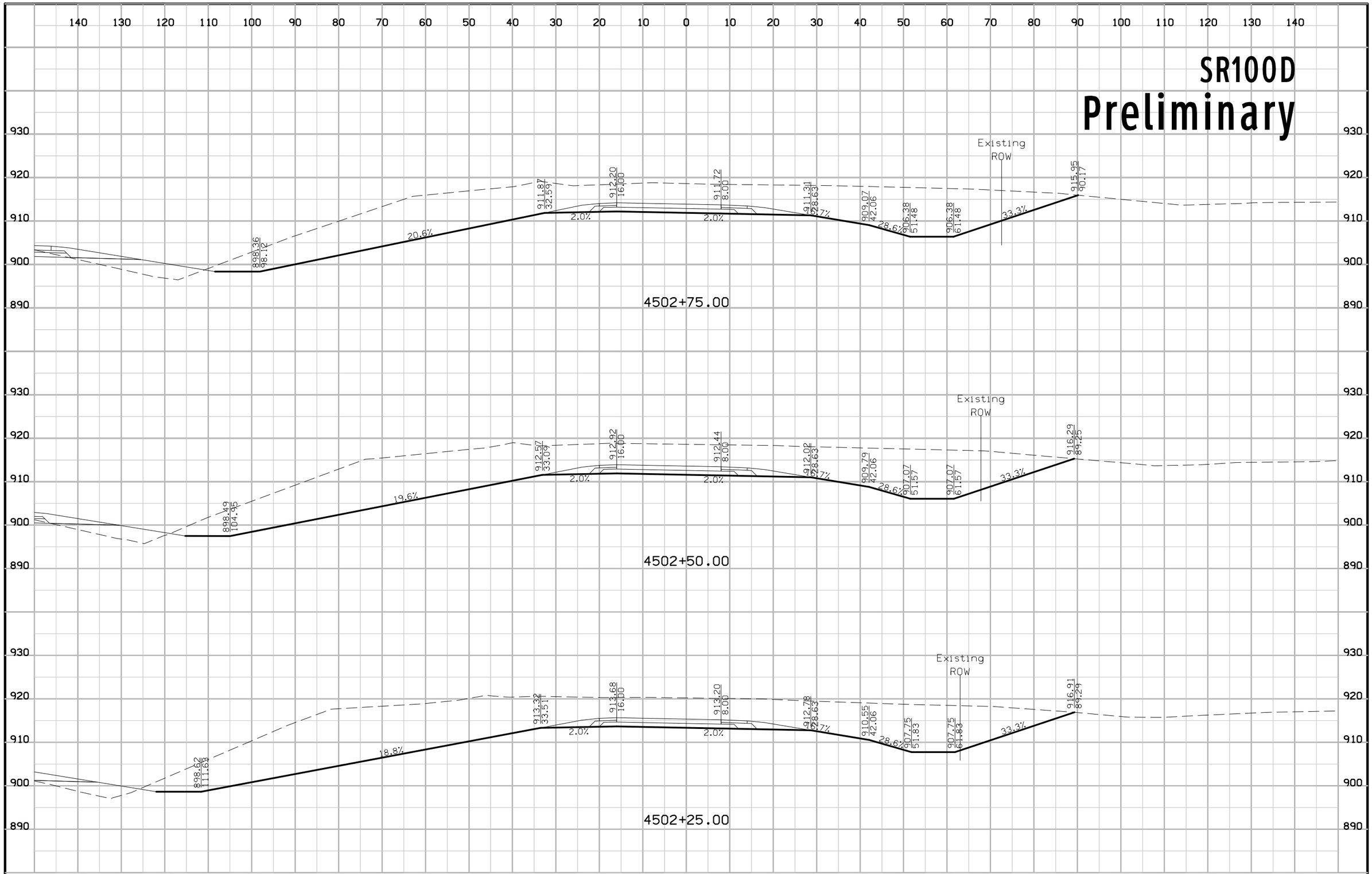
SR100D
Preliminary



FILE NO.	POLK	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.61

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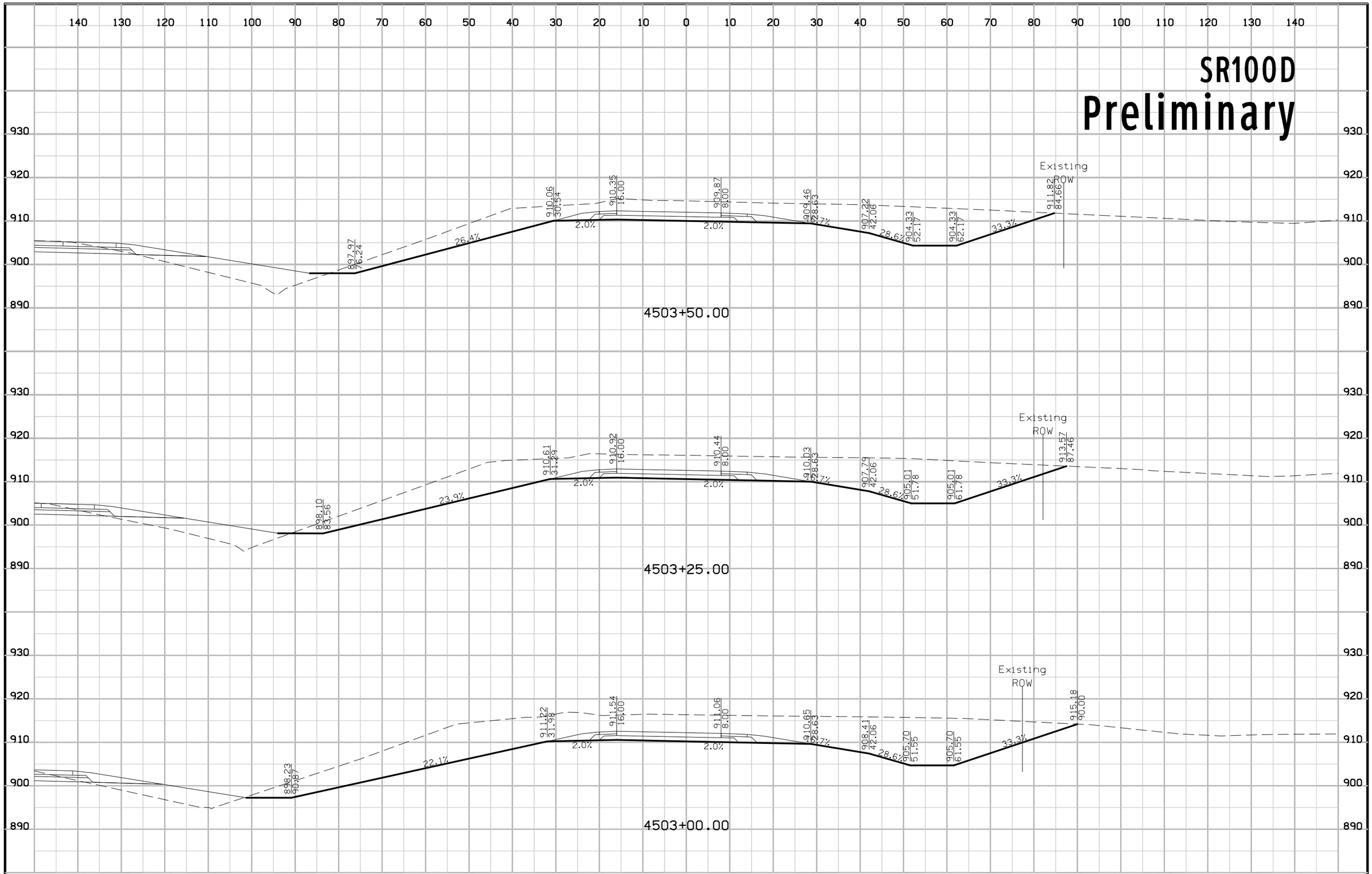
SR100D
Preliminary



FILE NO.	POLK	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.62

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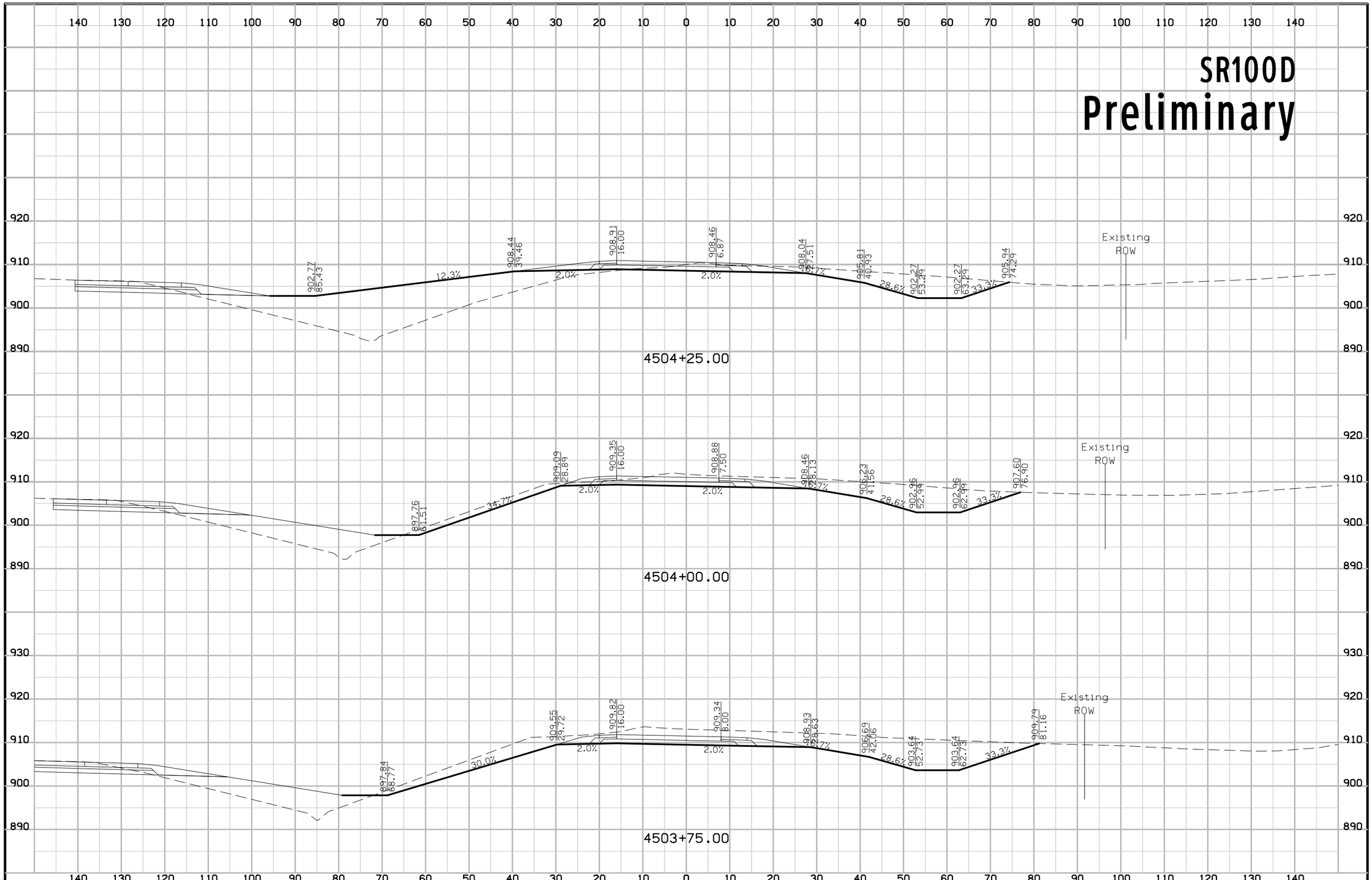
SR100D
Preliminary



FILE NO.	POLK	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.63

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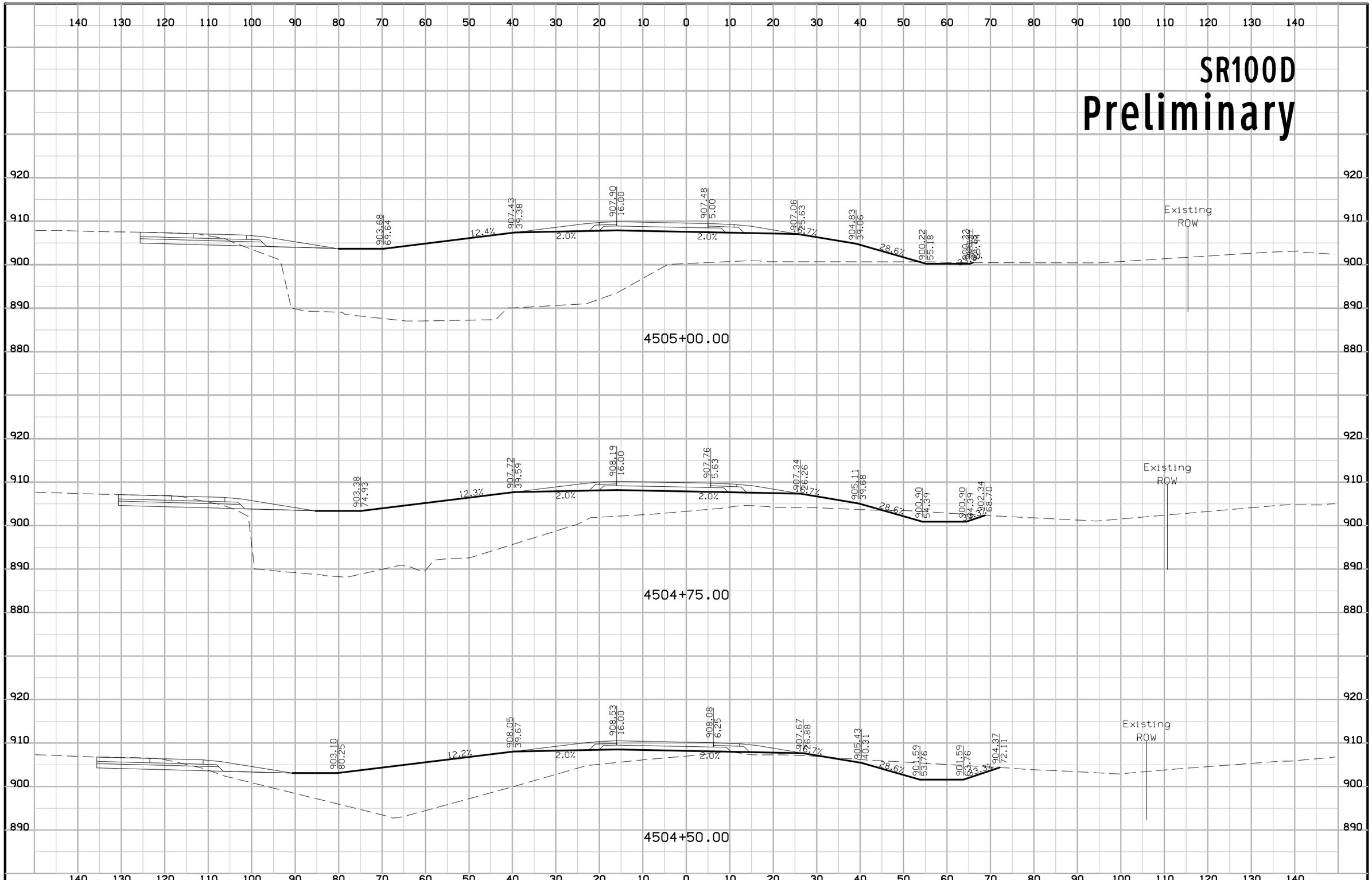
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER Y.64

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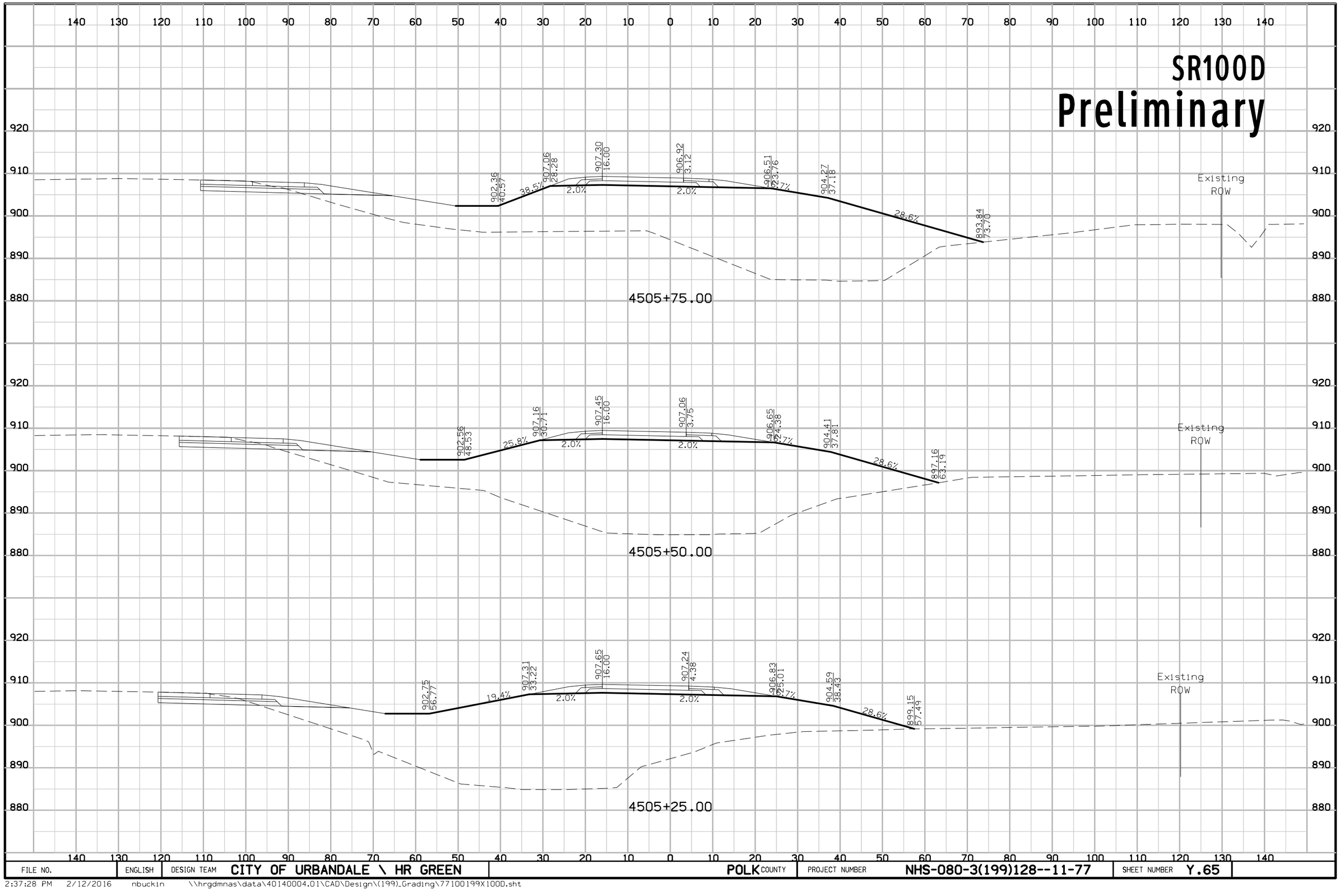
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.65

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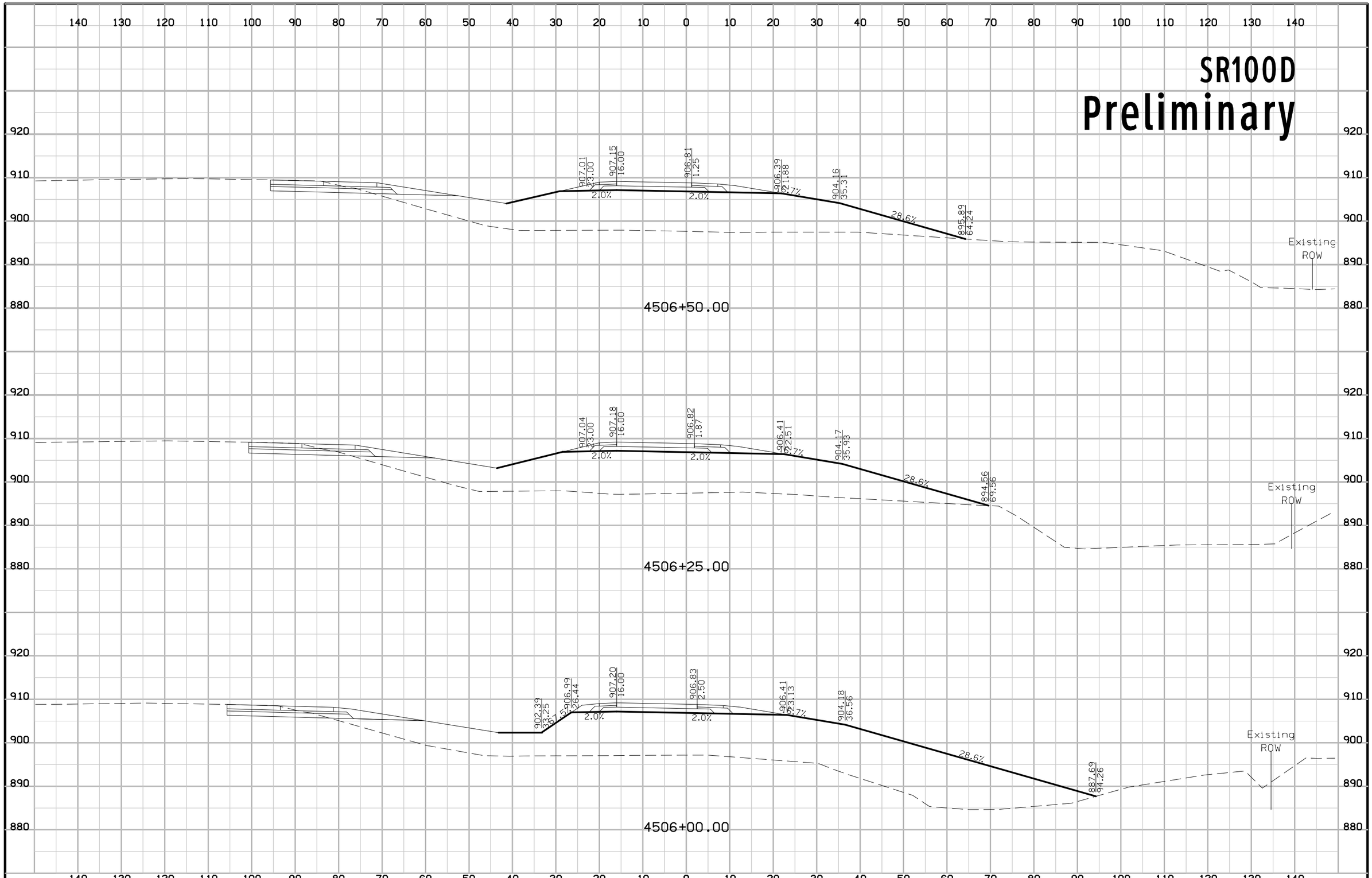
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.66

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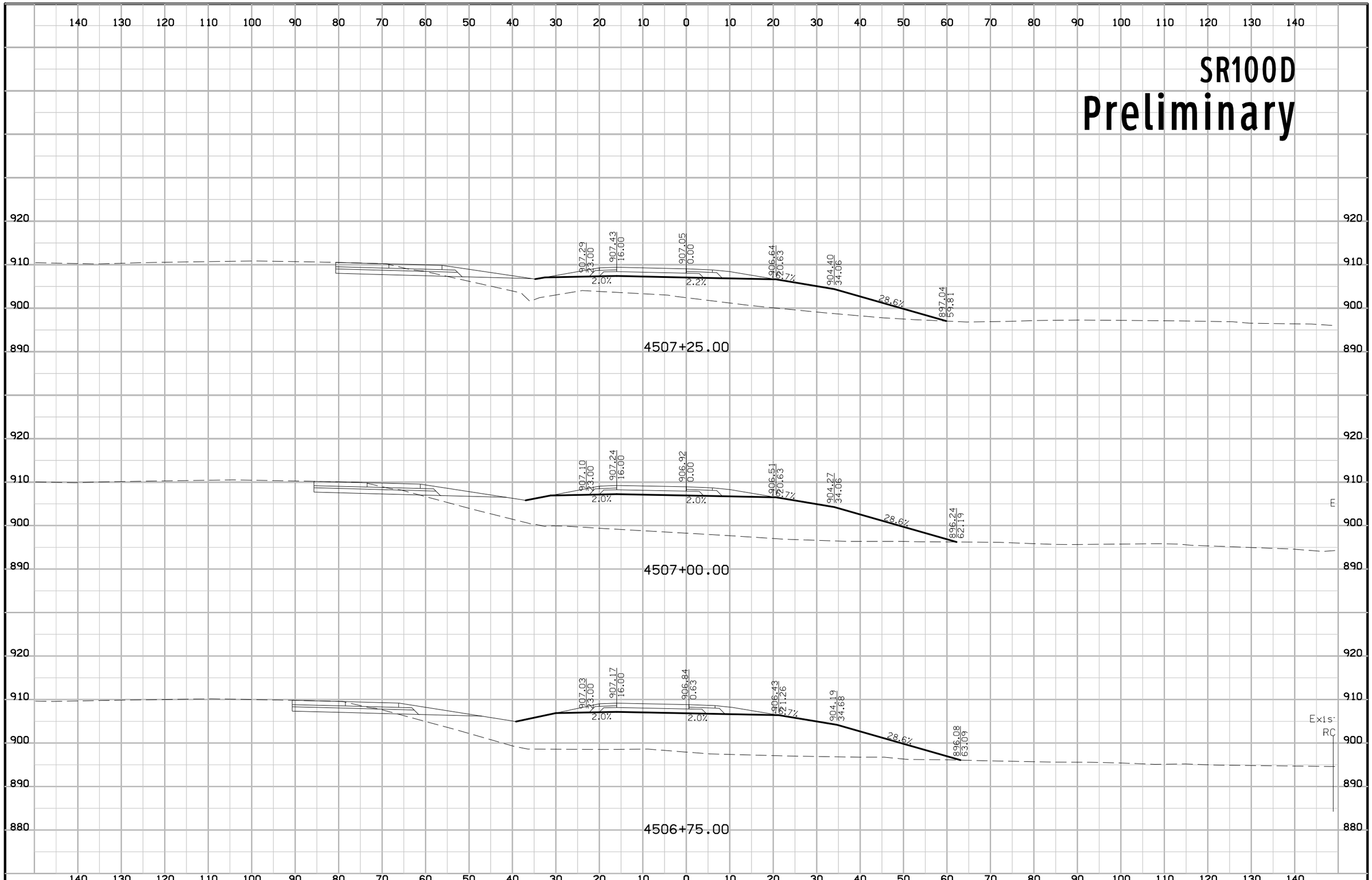
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.67

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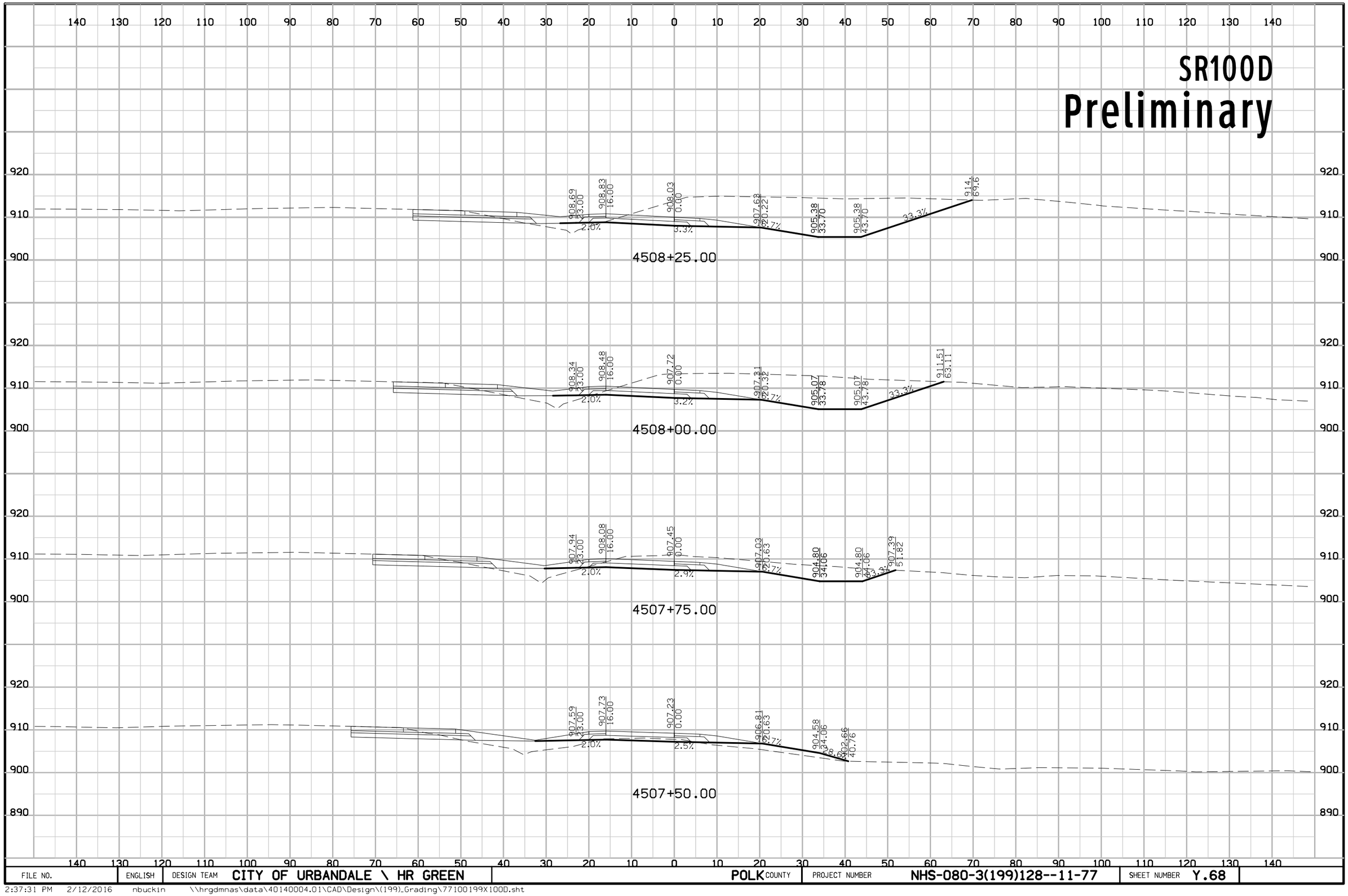
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.68

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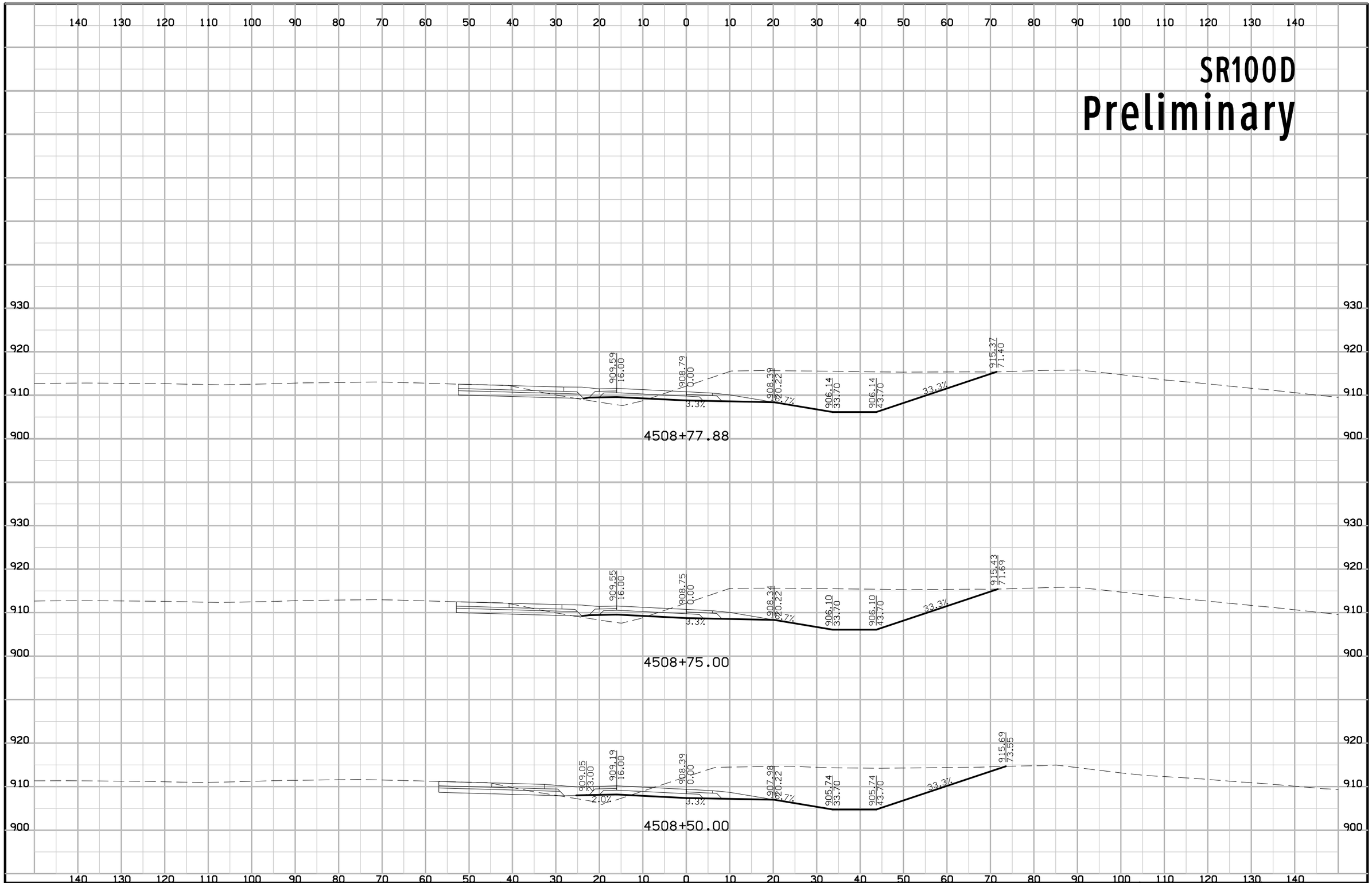
SR100D
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	CITY OF URBANDALE \ HR GREEN	POLK COUNTY	PROJECT NUMBER	NHS-080-3(199)128--11-77	SHEET NUMBER	Y.69

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