HANCOCK COUNTY

HMA PAVEMENT WIDENING & HMA RESURFACING

NHSX-018-4(30)--3H-41

LETTING DATE FEB. 18, 2025

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

HANCOCK COUNTY

HMA PAVEMENT WIDENING & HMA RESURFACING

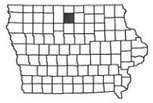
From the E. Branch of the Iowa River
to Country Club Drive in Garner

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

SEE SHEET A.2 FOR LOCATION MAP



REVISIONS

TOTAL	139
PROJECT IDENTIFICATION NUMBER	
20-41-018-010	
PROJECT NUMBER	
NHSX-018-4(30)--3H-41	
R.O.W. PROJECT NUMBER	

INDEX OF SHEETS

105-3
10-18-05

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
	Sta 966+71.00 to Sta 1042+08.44	7,537.44	1.427
	Length of Project	7,537.44	1.427

INDEX OF SEALS

Sheet No.	Name	Type
A.1	Dusten D. Rolando	Primary Signature Block - Roadway Design
N.1	Tony Boes	Primary Signature Block - Traffic Signals

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER DUSTEN D. ROLANDO 14475 IOWA

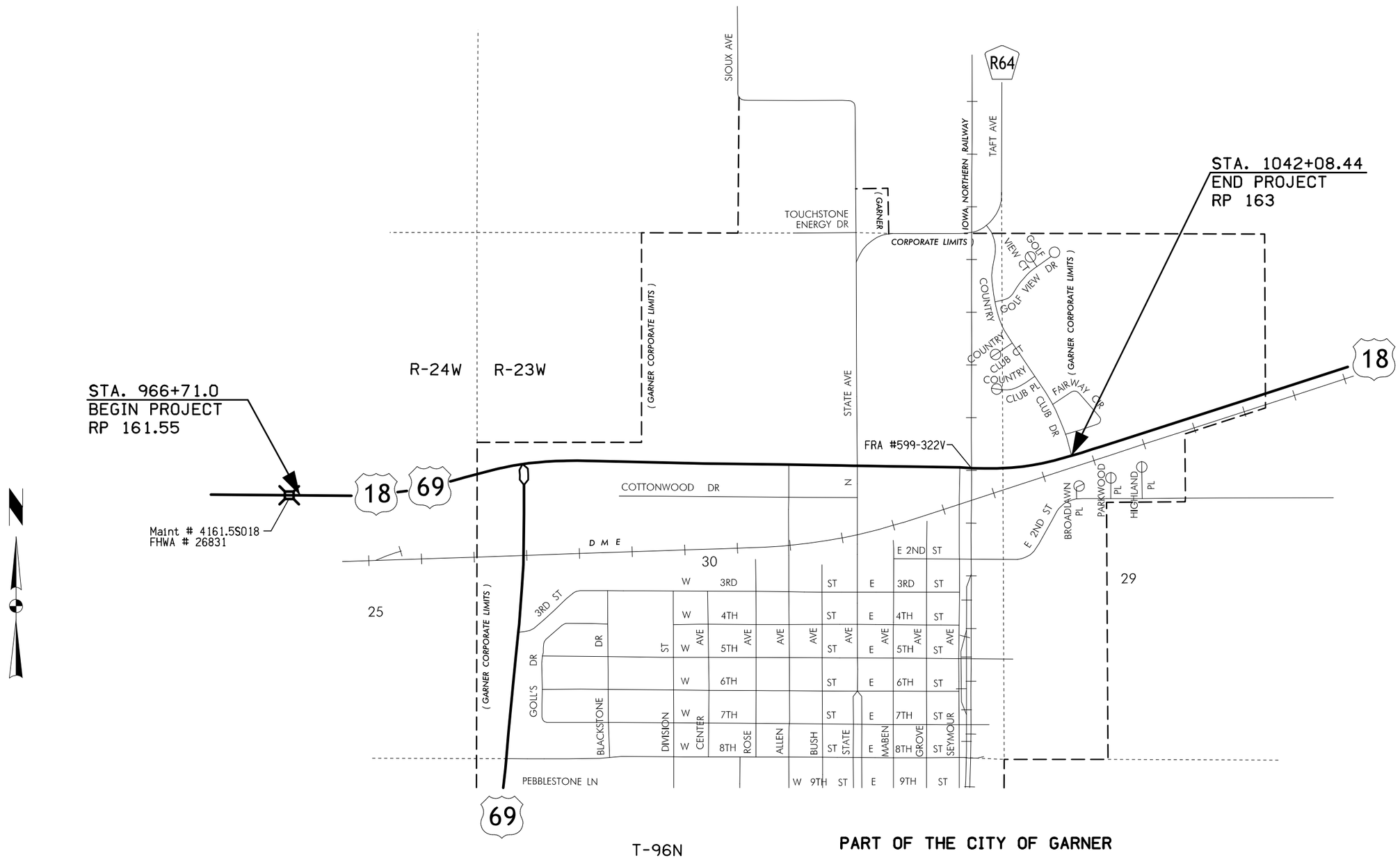
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

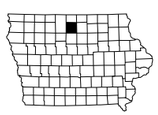
Signature 12/11/2024 Date

DUSTEN D. ROLANDO
Printed or Typed Name

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: A.1-A.3, B.1-B.4, C.1-C.33, D.1-D.6, E.1, G.1-G.4, J.1-J.5, L.1-L.5, R.1-R.6, T.1-T.8, U.1-U.5, W.1-W.52, X.1-X.2





LOCATION MAP SCALE
0 0.1 0.2 0.3
Miles

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-018-4(30)--3H-41	SHEET NUMBER A.2

8:35:01 AM 12/11/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_A01.dgn

SURVEY SYMBOLS

○	***BL, Topo Breakline***
— - — -	***BL, Topo Breakline***
○	***C, Centerline BL of Road -ML or SR***
———	***C, Centerline BL of Road -ML or SR***
○	***CON, Concrete or A/C Slab***
———	***CON, Concrete or A/C Slab***
○	***CP, Control Point***
○	***CU, Back of Curb***
———	***CU, Back of Curb***
○	***D, Centerline Draw or Stream -Down***
———>	***D, Centerline Draw or Stream -Down***
○	***Default_Chain, Default Chain Feature***
○	***DU, Centerline Draw or Stream -Up***
	DU, Centerline Draw or Stream -Up
	E-Aprons None
□ EB	***EB, Electrical Box***
○	***EL1D, Electric Line Co. 1 - Quality D***
— E1 —	***EL1D, Electric Line Co. 1 - Quality D***
○	***EL2D, Electric Line Co. 2 - Quality D***
— E2 —	***EL2D, Electric Line Co. 2 - Quality D***
○	***ENP, Edge Paved Entrance and Park Lot***
———	***ENP, Edge Paved Entrance and Park Lot***
○	***ENT, Centerline BL of Entrance***
———	***ENT, Centerline BL of Entrance***
○	***ENU, Edge Unpaved Entrance and Parking***
———	***ENU, Edge Unpaved Entrance and Parking***
○	***EP, Edge of Paved Roads -ML or SR***
———	***EP, Edge of Paved Roads -ML or SR***
═══	***Existing Circular CMP***
═══	***Existing Circular RCP***
¥	***FHD, Fire Hydrants***
○	***FO1D, Fiber Optic Co. 1 - Quality D***
— FO —	***FO1D, Fiber Optic Co. 1 - Quality D***
○	***FO2D, Fiber Optic Co. 2 - Quality D***
— FO2 —	***FO2D, Fiber Optic Co. 2 - Quality D***
○	***FO3D, Fiber Optic Co. 3 - Quality D***
— FO3 —	***FO3D, Fiber Optic Co. 3 - Quality D***
○	***FO4D, Fiber Optic Co. 4 - Quality D***
— FO4 —	***FO4D, Fiber Optic Co. 4 - Quality D***
○	***FO5D, Fiber Optic Co. 5 - Quality D***
— FO5 —	***FO5D, Fiber Optic Co. 5 - Quality D***
○	***GL1D, Gas Line Co. 1 - Quality D***
— G —	***GL1D, Gas Line Co. 1 - Quality D***
○	***GL2D, Gas Line Co. 2 - Quality D***
○	***GR, Ground Shot***
○	***GU, Gutter In Front of Curb***
———	***GU, Gutter In Front of Curb***
⊗ GV	***GV, Gas Valve***
⊠	***IN, Storm Sewer Intake***
⊗	***INB, Storm Sewer Beehive Intake***
○	***LIN, Miscellaneous Line***
———	***LIN, Miscellaneous Line***
⊖	***MH, Utility Access -Manhole***
⊙	***MIS, Miscellaneous***
⊙	***OUT, Tile Outlet***
○	***PIP, Pipe Culvert***
———	***PIP, Pipe Culvert***
♟	***PLG, Location of General Photo***
○	***PRO, Profile Shot***
○	***RIP, Rip-Rap***
△△△△△△△ ▽▽▽▽▽▽▽	***RIP, Rip-Rap***
○	***RRR, Railroad Rail***
———	***RRR, Railroad Rail***
○	***SA1D, Sanitary Sewer Co. 1- Quality D***
— SAN. —	***SA1D, Sanitary Sewer Co. 1- Quality D***
○	***SH, Paved Shoulder***
———	***SH, Paved Shoulder***
○	***SNP, Unpaved Shoulder***
———	***SNP, Unpaved Shoulder***
○	***SOP, Size of Pipe or Culvert***
○	***ST1D, Storm Sewer Co. 1 - Quality D***
— ST S —	***ST1D, Storm Sewer Co. 1 - Quality D***
═══	***Storm Sewer Corrugated HDPE1***
○	***TIL, Tile Line***
— TILE —	***TIL, Tile Line***
○	***TL1D, Telephone Line Co. 1 - Quality D***
— T1 —	***TL1D, Telephone Line Co. 1 - Quality D***
○	***TL2D, Telephone Line Co. 2 - Quality D***
— T2 —	***TL2D, Telephone Line Co. 2 - Quality D***
○	***TL4D, Telephone Line Co. 4 - Quality D***
○ TP	***TPD, Telephone Pedestal***
□ UB	***UB, Utility Box***
○	***UE, Utility Elevation***
○	***WC, Wild Card -Misc. Field Shot***
○	***WL1D, Water Line Co. 1 - Quality D***
— W —	***WL1D, Water Line Co. 1 - Quality D***
⊗ WV	***WV, Water Valve***

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

— E1 —	***EL1D, Electric Line Prairie Energy Coop- Quality D***
— E2 —	***EL2D, Electric Line Alliant Energy- Quality D***
— FO —	***FO1D, Fiber Optic Aureon Network Services- Quality D***
— FO2 —	***FO2D, Fiber Optic Communications 1 Network- Quality D***
— FO3 —	***FO3D, Fiber Optic Winnebago Telephone- Quality D***
— FO4 —	***FO4D, Fiber Optic Mediacom- Quality D***
— FO5 —	***FO5D, Fiber Optic CenturyLink- Quality D***
— G —	***GL1D, Gas Line Alliant Energy- Quality D***
— SAN. —	***SA1D, Sanitary Sewer City of Garner- Quality D***
— ST S —	***ST1D, Storm Sewer City of Garner- Quality D***
— T1 —	***TL1D, Telephone Line CenturyLink- Quality D***
— T2 —	***TL2D, Telephone Line Mediacom- Quality D***
— W —	***WL1D, Waterline,City of Garner- Quality D***

Utility Contacts

Utility contacts for Hancock County, NHSX-018-4(30)--3H-41 (HMA Pavement Widening/HMA Resurfacing)
Location: HMA Pavement Widening/HMA Resurfacing

Alliant Energy Electric Distribution
Alliant Energy Gas Distribution
Alliant Energy Gas Transmission
Alliant Energy Fiber Transmission
Billie Reid, Real Estate and ROW Representative II
200 1st St SE, Cedar Rapids, IA, 52401
ph: 3197863703
billiereid@alliantenergy.com

Aureon Network Services Fiber Distribution
Aureon Network Services Fiber Transmission
Jeff Klocko, OSP Engineer
7760 Office Plaza Drive South, West Des Moines, IA, 50266
ph: 5158300445
jeff.klocko@aureon.com

Communications 1 Network, Inc. Cable TV
Communications 1 Network, Inc. Telephone
Jayson Keiper, Plant Supervisor
105 South Main, Kanawha, IA, 50447
ph: 6417623772 cell: 6418601204
jkeiper@comm1net.net

Iowa Department of Transportation Electric Distribution
Iowa Department of Transportation Fiber Distribution
Iowa Department of Transportation Fiber Transmission
Jason Dale, ITS Maintenance Engineer
800 Lincoln Way, Ames, IA, 50010
ph: 515-239-1995
Jason.Dale@iowadot.us
CC: Tina.Greenfield@iowadot.us

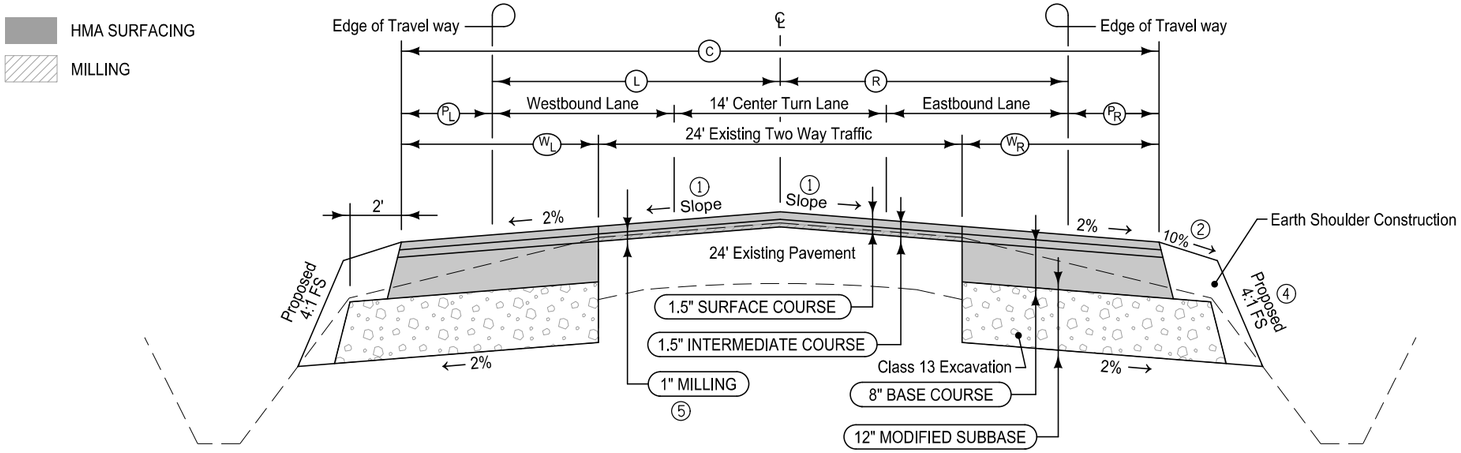
Lumen Centurylink Fiber Distribution
Lumen Centurylink Telephone
Lumen Centurylink Fiber Transmission
Steve Parker, Manager of Engineering & Construction
2103 E. University Ave., Des Moines, IA, 50317
ph: 5152650968 cell: 5073581978
Steven.Parker4@lumen.com
CC: ctl-rdmv-ia@lumen.com
CC: relocations@lumen.com

Prairie Energy Cooperative Electric Distribution
Ken Norem, Director of Operations and Engineering
2099 Hwy 3 West, Clarion, IA, 50525
ph: 8007280013 cell: 5152931356
knorem@prairieenergy.coop

Winnebago Cooperative Telecom Association Fiber Distribution
Paul Davis, Network Manager
704 East Main Street, Lake Mills, IA, 50450
ph: 6415926105 cell: 6417810059
pauldavis@wctatel.com

Mediacom Communications Corporate Cable TV
Mike Lawler, Technical Operations Manager
ph: 5155712183
mlawler@mediacomcc.com

DR-1

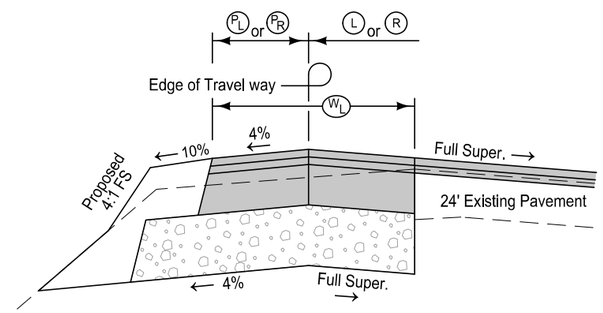


Notes:

1. Tangent section - Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. See plan and profile sheets and cross sections for areas of superelevation.
2. Earth Shoulder Slope - 2' Typical. Engineer may reduce to accommodate existing ROW or grading constraints.
3. Refer to tabulation 100-25 for HMA quantities
4. Grading contractor to shape foreslopes steeper to avoid intakes and manholes. Refer to plan and profile sheets for additional information.
5. Begin transition from 1" mill to 3" mill at Sta 995+50 (50' per inch).

HMA WIDENING & HMA RESURFACING 3

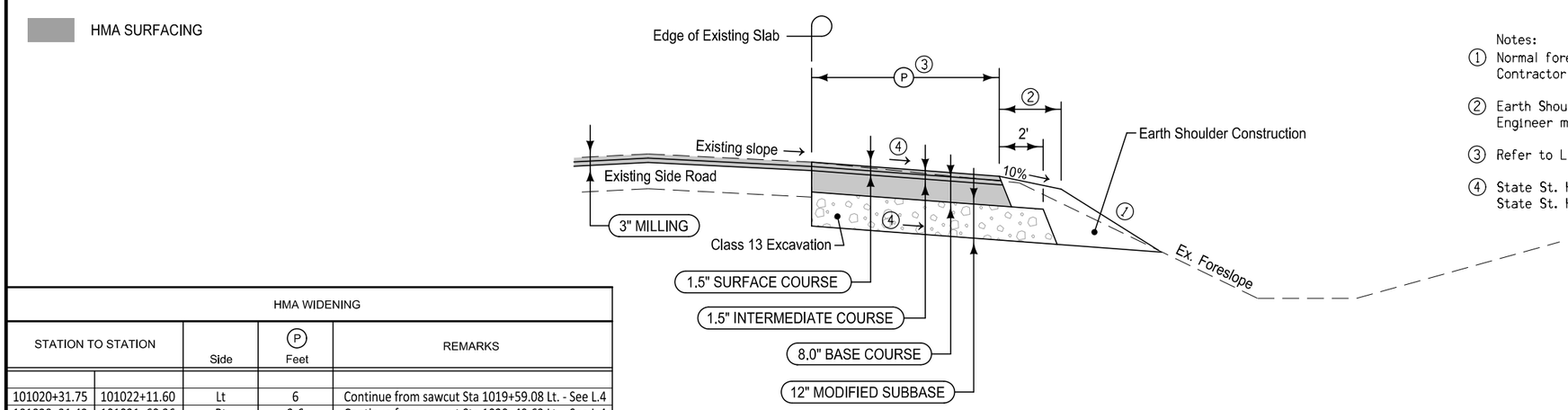
STATION TO STATION		C Feet	L Feet	R Feet	WL Feet	WR Feet	PL Feet	PR Feet	REMARKS
966+71.00	967+20.00	38	22	16	0	0	0	0	
967+20.00	967+85.00	34-35.83	12	12-16.28	0	10-11.83	0	10-7.55	
967+85.00	968+25.00	45.83-47	12-12.8	16.28-19	10	11.83-13	10-9.2	7.55-6	
968+25.00	971+35.00	47-50	12.8-19	19	10-13	13	9.2-6	6	U.A.C. Left paved shoulder
971+35.00	978+69.70	50	19	19	13	13	6	6	
978+69.70	985+26.18	50-86.77	19	19-55.76	13	13-48.53	6	6	Also see sheet L.1 for additional information
985+26.18	986+31.66	86.77-116.66	19	55.76-79.66	13	48.53-79.66	6	6	
986+31.66	987+90.30	116.66-50	19	79.66-19	13	79.66-13	6	6	
987+90.30	996+50.00	50	19	19	13	13	6	6	



HIGH SIDE SUPERELEVATION WIDENING DETAIL

US 18
TYPICAL CROSS SECTION
1" MILL, PROPOSED HMA WIDENING & HMA RESURFACING w/ PAVED SHOULDER

DR-2



Notes:

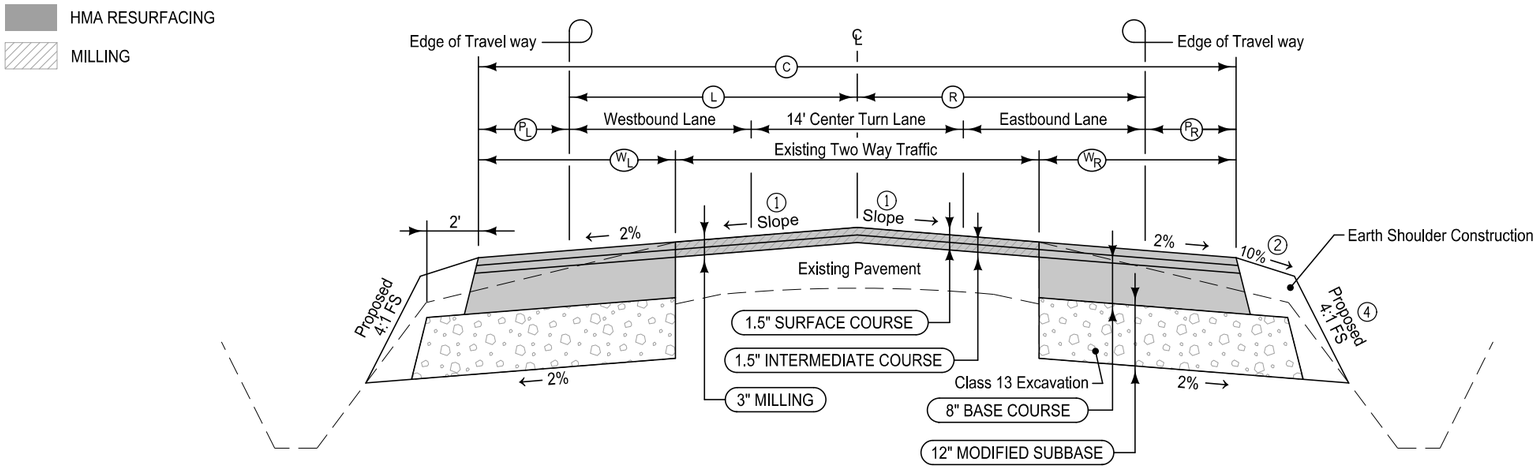
1. Normal foreslope is 4:1. Engineer shall adjust to accomidate constraints. Contractor shall grade to toe of existing foreslope.
2. Earth Shoulder Slope - Typical 2'. Engineer may adjust to accomidate existing ROW or grading constraints.
3. Refer to L-Sheets for pavement geometry.
4. State St. HMA widening adjacent to SB lane is 2% State St. HMA widening adjacent to NB lane is 4% (Transition to US 18, See sheet L,4)

HMA WIDENING

STATION TO STATION		Side	P Feet	REMARKS
101020+31.75	101022+11.60	Lt	6	Continue from sawcut Sta 1019+59.08 Lt. - See L.4
101020+31.42	101021+60.36	Rt	2-6	Continue from sawcut Sta 1020+49.63 Lt. - See L.4

TYPICAL CROSS SECTION
HMA WIDENING - STATE ST.
ADJACENT TO EXISTING PAVEMENT

DR-3



Notes:

① Tangent Section - Following milling: Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %.

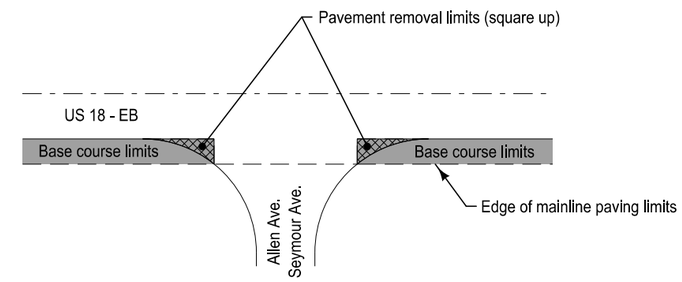
② Earth Shoulder Slope - 2' Typical.
Engineer may reduce to accomidate existing ROW or grading constraints.

③ Refer to Tabulation 100-25 for HMA quantites.

④ Grading contractor to shape foreslopes steeper to avoid intakes and manholes.
Refer to plan and profile sheets for additional information.

HMA WIDENING & HMA RESURFACING ③

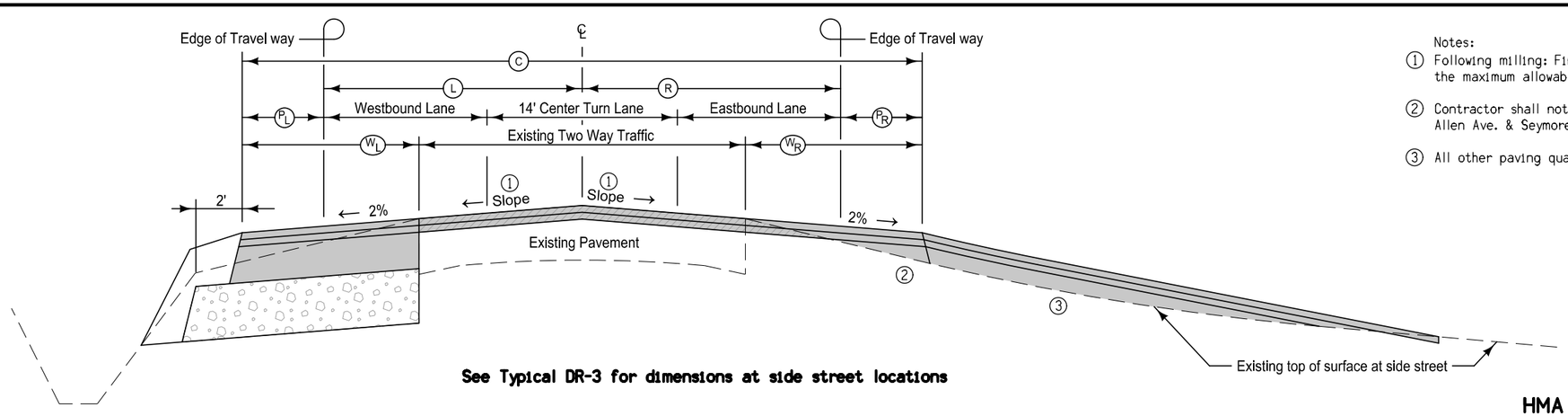
STATION TO STATION		C Feet	L Feet	R Feet	W_L Feet	W_R Feet	P_L Feet	P_R Feet	REMARKS
996+50.00	1017+88.79	50	19	19	13	13	6	6	Begin EB Rt. Turn lane taper at State St.
1017+88.79	1019+08.79	50-62	19	19-31	13	13-25	6	6	
1019+08.79	1019+22.03	62	19	31	13	25	6	6	
1019+22.03	1019+43.48	62-66.44	19-22.96	31	13-17.19	25	6	6	
1019+43.48	1019+59.08	66.44-73.9	22.96-32.22	31	17.19-24.63	25	6	6	
1019+59.08	1020+49.63								Only Mill 3" and Resurface 3" - See sheet L.4 for additional information
1020+49.63	1020+58.18	73.51-68.75	31.8-31	32.94-29.26	21.44-21	27.38-23.57	2	6	Begin WB Rt. Turn lane at State
1020+58.18	1021+12.79	68.75-58	31	29.26-19	21	13	2	6	End WB Rt. Turn lane
1021+12.79	1021+95.20	58	31	19	21	13	2	6	
1021+95.20	1023+15.20	58-50	31-19	19	21-13	13	2-6	6	
1023+15.20	1031+39.00	50	19	19	13	13	6	6	
RR X-ing									
1031+49.00	1032+57.56	50	19	19	12	13-11.5	6	6	Also see L-sheets & X-sections
1032+57.56	1032+86.75	50-50.15	19	19-19.15	12	11.5	6	6	Also see L-sheets & X-sections
1032+86.75	1034+50.00	50.15-51.79	19	19.15-20.79	12	11.5-9.3	6	6	Also see L-sheets & X-sections
1034+50.00	1038+00.00	51.79-48.08	19-12	20.79-24.08	12-5.87	9.3-3.4	6	6	Also see L-sheets & X-sections
1038+00.00	1040+73.00	48.08-50.40	12	24.08-26.40	5.87-5.28	3.4-4	6	6	Also see L-sheets & X-sections
1040+73.00	1042+08.44	44.4-45.46	12	26.40-27.21	0	4-5.52	6	6	



DETAIL - PAVEMENT REMOVAL/WIDENING AT SIDE STREETS

US 18
TYPICAL CROSS SECTION
3" MILL, PROPOSED HMA WIDENING & HMA RESURFACING w/ PAVED SHOULDER

DR-4



See Typical DR-3 for dimensions at side street locations

Notes:

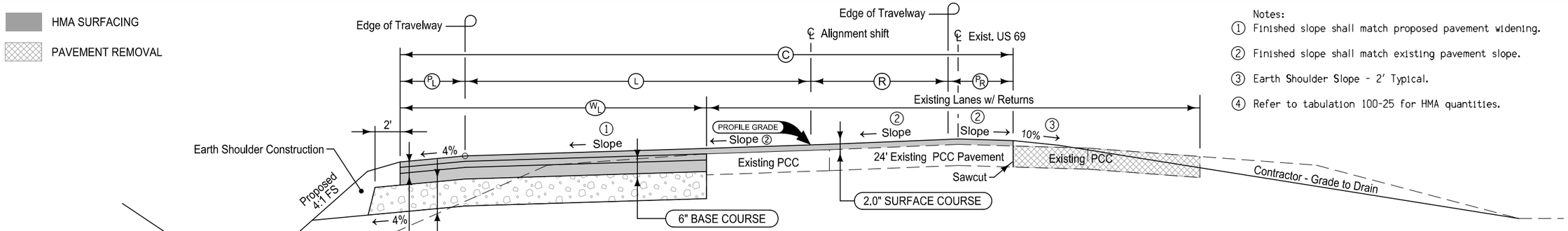
① Following milling: Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %.

② Contractor shall not HMA base widen through paved side streets at Allen Ave. & Seymore Ave. - Construct base widening as shown on Typ. DR-3

③ All other paving quantites can be found on Tabulation 100-25.

TYPICAL CROSS SECTION
PROPOSED HMA WIDENING & HMA RESURFACING THRU SIDE STREET

DR-5



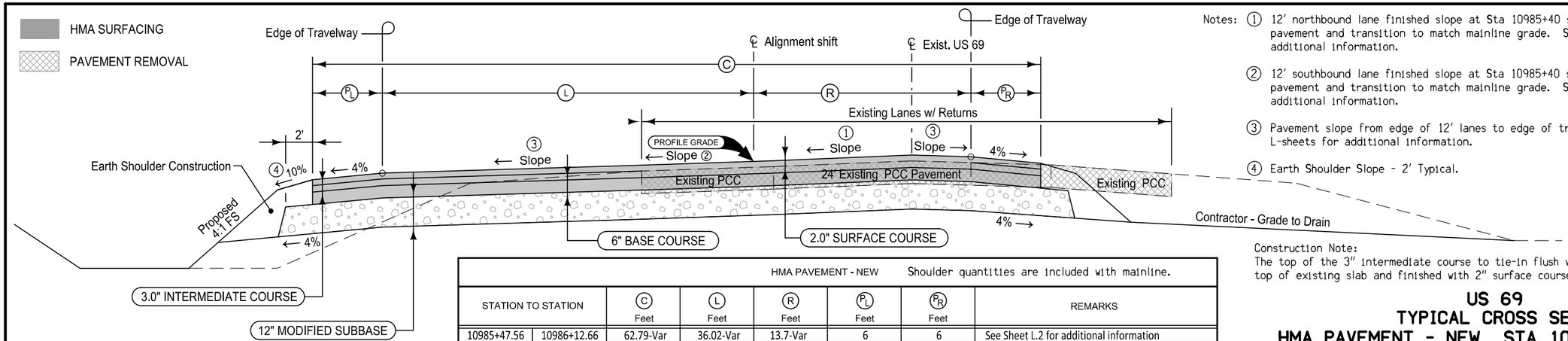
Notes:
1. Finished slope shall match proposed pavement widening.
2. Finished slope shall match existing pavement slope.
3. Earth Shoulder Slope - 2' Typical.
4. Refer to tabulation 100-25 for HMA quantities.

HMA PAVEMENT - WIDENING & SURFACING — Shoulder quantities are included with mainline.

STATION TO STATION		C Feet	L Feet	R Feet	W_L Feet	P_L Feet	P_R Feet	REMARKS
10983+58.11	10984+29.71	25.74-29.52	13.74-16.41	12	2-5.7	0	0-1.11	Type 'N1" notch at Sta 10983+58.11
10984+29.71	10984+78.95	35.6-43.53	16.41-19.47	12	11.7-16.94	6	1.11-6	See Sheets L.1 & L.2 for additional information
10984+78.95	10985+47.56	43.53-62.79	19.47-36.02	12-13.7	16.94-31.93	6	6	See Sheets L.1 & L.2 for additional information

US 69
TYPICAL CROSS SECTION
PROPOSED HMA WIDENING &
HMA RESURFACING STA 10985+47.56, BACK

DR-6



Notes:
1. 12' northbound lane finished slope at Sta 10985+40 shall match existing pavement and transition to match mainline grade. See L-sheets for additional information.
2. 12' southbound lane finished slope at Sta 10985+40 shall match existing pavement and transition to match mainline grade. See L-sheets for additional information.
3. Pavement slope from edge of 12' lanes to edge of travelway. See L-sheets for additional information.
4. Earth Shoulder Slope - 2' Typical.

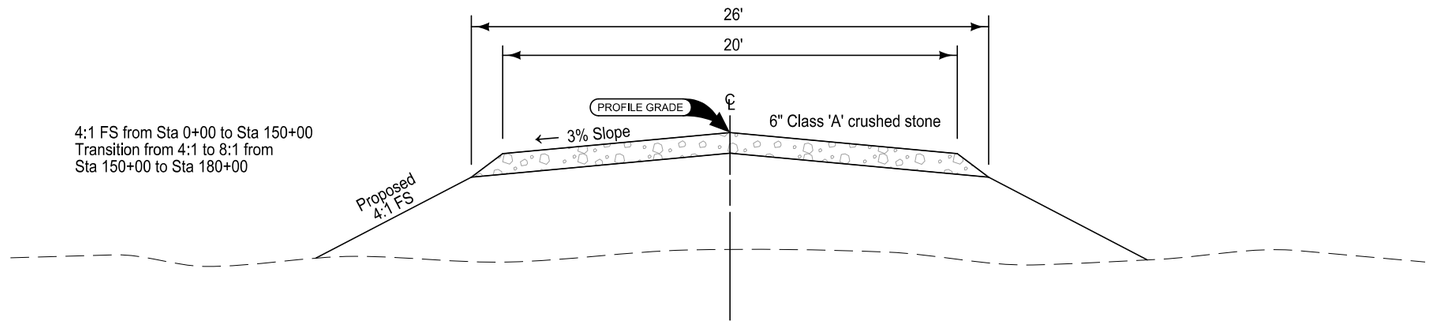
Construction Note:
The top of the 3" intermediate course to tie-in flush with top of existing slab and finished with 2" surface course.

HMA PAVEMENT - NEW — Shoulder quantities are included with mainline.

STATION TO STATION		C Feet	L Feet	R Feet	P_L Feet	P_R Feet	REMARKS
10985+47.56	10986+12.66	62.79-Var	36.02-Var	13.7-Var	6	6	See Sheet L.2 for additional information

US 69
TYPICAL CROSS SECTION
HMA PAVEMENT - NEW STA 10985+47.56, AHEAD

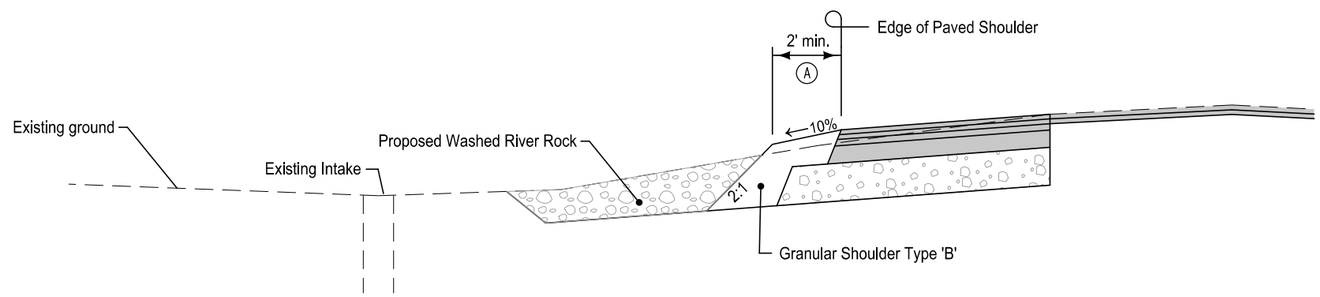
DR-7



TYPICAL CROSS SECTION
PROPOSED ENTRANCE AT STA 978+57.7

DR-8

(A) Place granular shoulder between entrances



TYPICAL CROSS SECTION
SHOULDER AND FORESLOPE RESTORATION
BETWEEN DRIVES AT CENEX GAS STATION

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Division 1 : IOWA DOT
Division 2 : City of Garner Cost

Item no.	Item Code	Item	Unit	Quantities Estimated Division 1	Quantities Estimated Division 2	Quantities Estimated Total	Estimate Reference Notes
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.2		0.2	Refer to Sheet D.2 for additional information. All material generated as a result of Clearing and Grubbing shall become the property of the contractor and must be disposed off site. All wood material must be disposed of according to Iowa Department of Agriculture and Land Stewardship Emerald Ash Borer Quarantine Order. For more information see www.iowatreepests.com.
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	16,615		16,615	Refer to T Sheets for additional information. Overhaul is incidental to roadway excavation on this project and will not be paid for separately. Includes 12,012 cu. yds. of Class 10 to be wasted, according to Article 1106.07 of the Standard Specifications. Guardrail grading is included in template quantities. New entrance at Sta. 978+57.7, Rt and obliterated entrance at Sta 979+99, Rt is included in final quantities. Shrinkage is estimated at 30%.
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	63		63	To be placed on foreslopes at new entrance, Sta 978+57.7
4	2115-0100000	MODIFIED SUBBASE	CY	9,655		9,655	Refer to Typicals DR-1, DR-2, and Tab. 100-25. An additional 420 CY has been added for base material under paved PCC entrances.
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	20		20	To be placed between the entrances at Sta 1014+42.5 and Sta 1015+41.6, Left. Refer to Typical DR-8 for additional information.
6	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	131.8		131.8	Refer to tabulation 112-9 for additional information. Requires 3418 cu. yds. of fill material adjacent to paved shoulder. Material shall be topsoil. Class 'A' crushed stone to be used at granular entrances.
7	2125-2225050	RESHAPING DITCHES	STA	6.6		6.6	Refer to tabulation 301-99 for additional information.
8	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	279.8		279.8	Refer to Tab. 102-06C.
9	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	25		25	Refer to Tab. 102-6C for additional information.

Item no.	Item Code	Item	Unit	Quantities Estimated Division 1	Quantities Estimated Division 2	Quantities Estimated Total	Estimate Reference Notes
10	2213-7100400	RELOCATION OF MAIL BOXES	EACH	14		14	Item is for the relocation, and subsequent re-relocation of mailboxes on this project. Coordinate mailbox relocation with the U.S. Postal Service. The relocation and subsequent re-relocation of all mailboxes on a single or multiple post will be measured and paid as one mailbox relocation, which payment shall be full payment for this item. Method of measurement and basis of payments shall be at the contract unit price per each mailbox assembly. A mailbox assembly is defined as a group of mailboxes assembled together on a common support which may include a single or multiple posts. For the number of mailboxes and assemblies successfully removed and reinstalled, the contractor will be paid the contract unit price per each. This payment shall be full compensation for all equipment tools, labor and materials necessary to complete the item per the contract documents.
11	2214-5145150	PAVEMENT SCARIFICATION	SY	26,937		26,937	Refer to tabulation 100-25, Typicals DR-1, DR-2, DR-3 and DR-4 for additional information. Std Road Plan PR-202, Type 'N5' joint to be used at the Begin of Project and Type 'N4' joint to be used at the end of project.
12	2303-1041750	HOT MIX ASPHALT HIGH TRAFFIC, BASE COURSE, 3/4 IN. MIX	TON	10,593.6		10,593.6	Refer to Tabulation 100-25, Typicals DR-1, DR-2, DR-3, DR-4, DR-5 and DR-6 for additional information. Item includes preparing the base prior to intermediate and surface courses.
13	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	4,014.8		4,014.8	
14	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	3,931.4		3,931.4	
15	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	1,112.4		1,112.4	
16	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1		1	
17	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LA BORATORY VOIDS (FORMULA - BY PAY FACTOR)	EACH	9,185		9,185	
18	2303-7000620	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE FI ELD VOIDS (FORMULA - BY PAY FACTOR)	EACH	9,185		9,185	
19	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	734		734	Refer to tabulation 102-03 for additional information.
20	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT S MOOTHNESS (BY SCHEDULE)	EACH	4,793		4,793	
21	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1		1	Item is for removal of entrance culvert at Sta 979+99 Rt, 2 sections of RCP @ Sta 1008+39.7, 1 section of RCP @ Sta 1019+61 Lt, 3 sections of RCP @ Sta 1019+62 Lt and 15" CMP at Sta 1020+40, Lt. Refer to note on sheet L.4. for additional information. Contractor to remove stones at end of culverts at Sta 1020+40, Lt. Stockpile and re-lay to armor drainage way between culvert flow lines. Work is considered incidental to item.
22	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EACH	1		1	Refer to tabulation 104-03 for additional information.
23	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	4		4	Refer to tabulation 104-03 for additional information.

Item no.	Item Code	Item	Unit	Quantities Estimated Division 1	Division 2	Total	Estimate Reference Notes
24	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	1		1	Refer to tabulation 104-03 for additional information.
25	2416-1165015	CULVERT, 2000D CONCRETE ENTRANCE PIPE, 15 IN. DIA.	LF	8		8	
26	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	36		36	
27	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	24		24	
28	2417-0225018	APRONS, METAL, 18 IN. DIA.	EACH	2		2	Refer to tabulation 102-03 for additional information.
29	2417-0225024	APRONS, METAL, 24 IN. DIA.	EACH	1		1	
30	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LF	4		4	Refer to 102-03 for additional information.
31	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.	LF	48		48	Refer to tabulation 102-03 for additional information.
32	2499-6000100	CLEAN OUT PIPE CULVERT	LF	327.6		327.6	Item is to remove sediment and debris within culverts. Refer to tabulations 102-03 and 104-03 for locations. Contractor shall supply all equipment and labor needed to remove sediment and debris. Sediment and debris remain property of the contractor. Any damage to culverts shall be repaired by the contractor. Verify method, prior to cleaning, with the Engineer. Contractor to prevent sediment from leaving the project in accordance with the Pollution Prevention Plan. Method of Measurement and Basis of Payment is per LF of satisfactorily cleaned culvert.
33	2502-8225010	SUBDRAIN OUTLET, 500-10	EACH	1		1	Refer to sheet D.6 for additional information. Item includes additional subdrain, if needed, connections, labor and any other items to satisfactorily install subdrain outlet. Refer to sheet U.5 for details.
34	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	134		134	Refer to tabulation 110-07A for additional information. Includes all wooden posts.
35	2505-4021030	STEEL BEAM GUARDRAIL END ANCHOR, THRIE BEAM	EACH	1		1	Refer to tabulation 108-08D for additional information.
36	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	1		1	
37	2506-4984000	FLOWABLE MORTAR	CY	1		1	To be used to fill void under pavement at Country Club Dr. Contractor to verify quantity in field. Item includes all means necessary to fill void. Refer to sheet D.6 for additional information.
38	2507-3250005	ENGINEERING FABRIC	SY	86		86	Refer to Tab. 100-23.
39	2507-8029000	EROSION STONE	TON	51		51	
40	2510-6745850	REMOVAL OF PAVEMENT	SY	8,226.4		8,226.4	Refer to tabulation 110-01, 102-05, DR-1, DR-5, DR-6 and L-sheets for additional information.
41	2515-2475008	DRIVEWAY, P.C. CONCRETE, 8 IN.	SY	1,265		1,265	Refer to tabulation 102-03 for additional information. Refer also to sheet L.2 for hotel driveway information.
42	2515-6745600	REMOVAL OF PAVED DRIVEWAY	SY	1,205		1,205	Refer to tabulation 300-99 for additional information. Requires 868 linear foot of full depth saw cut.
43	2517-4225220	RAILROAD APPROACH SECTION, HMA	SY	32		32	Refer to tabulation 112-03 for additional information.
44	2520-3350015	FIELD OFFICE	EACH	1		1	

Item no.	Item Code	Item	Unit	Quantities Estimated Division 1	Quantities Estimated Division 2	Quantities Estimated Total	Estimate Reference Notes
45	2525-0000100	TRAFFIC SIGNALIZATION	LS	0.5	0.5	1	Refer to the "N" sheets. Refer to the N-sheets for additional information.
46	2525-0000120	REMOVAL OF TRAFFIC SIGNALIZATION	LS	0.5	0.5	1	Refer to N-sheets for additional information.
47	2526-8285000	CONSTRUCTION SURVEY	LS	1		1	Refer to TC-283 for traffic control layout. DOT will be responsible for the preservation of section corners including the Public Land Survey Corner Certificates and shall not be included in bid item. All other construction survey requirements including Monument Preservation Certificate shall apply. Survey information provided in project plans is for reference only and should not be used for purposes related to construction survey. Project plans and associated electronic files are not geo-referenced to a standard coordinate system and should not be used to establish construction survey baselines. Prior to construction, perform a survey to lay out the proposed grading design per Section 2526.01. The GPS Machine Control Grading data files as listed in the current standard specifications will be made available at contractor's request. No additional files or formats will be provided. After finished grading and prior to seeding, the Contractor shall prepare a topographic survey, using the established baselines to show conformance to the proposed grades. The survey shall indicate the established baselines and the finished grades shown in 0.5 foot contours. Survey all grading areas. The Contractor shall provide the Engineer and the Office of Location and Environment with the electronic surface files in LandXML format. Provide electronic data and survey copies to Alan Beddow, Mitigation Construction Engineer Iowa Department of Transportation, 800 Lincoln Way, Ames, Iowa, 50010, phone number {515)956-7203, Alan.Beddow@iowadot.us.
48	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	2		2	2 - RTAW symbols at NB to EB turn lane at State St. Refer to sheet U.3 for additional information.
49	2527-9263155	PRE-CUT SYMBOLS AND LEGENDS, PREFORMED THERMOPLASTIC MARKING MATERIAL	EACH	40		40	Refer to tabulation 108-29 for additional information.
50	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	70.28		70.28	Refer to sheets J.4 and J.5 for additional information. Item is also for the removal of west edge line and double centerline at North State St.
51	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	2		2	Remove arrows at the NB to EB turn lane at State St.
52	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	1,443.1		1,443.1	Factored total. Refer to Tab. 108-22.
53	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	450.86		450.86	See Tab. 108-22.
54	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS	EACH	40		40	See Tab. 108-29.
55	2528-8445110	TRAFFIC CONTROL	LS	1		1	Refer to tabulation 108-23A and sheet J.2 for additional information.
56	2528-8445113	FLAGGERS	EACH	0		0	See proposal
57	2528-8445115	PILOT CARS	EACH	0		0	
58	2533-4980005	MOBILIZATION	LS	1		1	
59	2551-0000210	PERMANENT CRASH CUSHION	EACH	1		1	Item is for protecting the eastbound RR signals at Sta 1031+44.47. Contractor to install per the manufacturers instructions. Item includes all labor, hardware and materials needed to satisfactorily install.

Item no.	Item Code	Item	Unit	Quantities Estimated Division 1	Quantities Estimated Division 2	Quantities Estimated Total	Estimate Reference Notes
60	2595-0005140	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR IOWA NORTHERN RAILWAY CO.	LS	1		1	
61	2599-9999020	('TONS' ITEM) WASHED RIVER ROCK	TON	24		24	Item is for replacing aggregate between the drives at the Cenex gas station near Sta 1015+00, Lt. Material shall be a 2-3 inch river rock mix, similar in colors and size to existing stones. Material shall be furnished and placed in accordance with Section 2507, of the Standard Specifications. Method of Measurement will be in tons to the nearest 0.1 ton. Estimated at 120 lbs/cu ft Basis of Payment will be full compensation for all work, including shaping, furnishing and placing all material, excavation and placing material, and for furnishing all equipment, tools, and labor necessary to complete the work according to the contract documents. An end area of 6.3 sq ft x 62 feet was measured.
62	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.7		0.7	
63	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	4.4		4.4	
64	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	23		23	Refer to tabulation 100-22 for locations. Refer to Standard Road Plan EC-103 ---------- Prepare seedbed according to Article 2601.03, B, 4, of the Standard Specifications prior to seeding and fertilizing under the slope protection.
65	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	5.1		5.1	
66	2602-0000020	SILT FENCE	LF	363		363	Refer to tabulation 100-17 for additional information. The tabulation includes estimated locations for placement of Silt Fence to address possible erosion during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
67	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	593		593	Refer to tabulation 100-18 for additional information. The tabulation includes estimated locations for placement of Silt Fence for Ditch Checks to address possible erosion during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.
68	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	956		956	Refer to tabulations 100-17 and 100-18 for additional information. This item is included for silt fence and silt fence for ditch check removal required for staging reasons, for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.
69	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	96		96	Refer to tabulation 100-18 for additional information. This item is included for cleanout and repair of the silt fence and silt fence for ditch checks during the project.
70	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1,990		1,990	Refer to Tab. 100-19.
71	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	1,990		1,990	
72	2602-0000530	GRATE INTAKE SEDIMENT FILTER BAG, EC-604	EACH	2		2	Refer to tabulation 100-37 for additional information.
73	2602-0000540	MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	2		2	

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Division 1	Division 2	Total	
74	2602-0000550	REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	2		2	
75	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1		1	
76	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1		1	

111_25
6/18/24

INDEX OF TABULATIONS

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2.0	100_17	TABULATION OF SILT FENCES	C.8
3.0	100_18	SILT FENCES FOR DITCH CHECKS	C.9
4.0	100_19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.10
5.0	100_22	ROLLED EROSION CONTROL	C.11
6.0	100_23	ROCK EROSION CONTROL	C.12
7.0	100_25	HMA PAVEMENT	C13-14
8.0	100_37	GRATE INTAKE SEDIMENT FILTER BAG	C.15
9.0	102_03	ACCESS POINTS AND SAFETY RAMPS	C.16
10.0	102_05	EXISTING PAVEMENT	C.17
11.0	102_06C	FULL-DEPTH PATCHES	C.18
12.0	104_03	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.19
13.0	105_04	STANDARD ROAD PLANS	C.20
14.0	107_23	GRADING FOR GUARDRAIL INSTALLATIONS	C.21
15.0	108_08D	STEEL BEAM GUARDRAIL AT RAILROAD SIGNALS	C.22
16.0	108_22	PAVEMENT MARKING LINE TYPES	C23-24
17.0	108_29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.25
18.0	110_01	REMOVAL OF PAVEMENT	C.26
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20.0	110_12	POLLUTION PREVENTION PLAN	C28-29
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22.0	112_09	SHOULDERS	C.31
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262_06
9/28/22

UTILITIES (NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

100_17
8/15/22

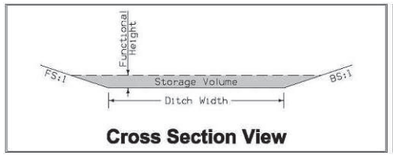
TABULATION OF SILT FENCES

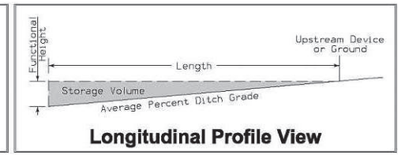
Refer to EC-201

Line No.	Station From	Station To	Side	Length (FT)	Remarks
1.0	1034+20.00	1037+10.00	Left	290.00	Install along ROW line

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201





* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Line No.	Basin No.	Type	Station	Side	Installation (LF)	Maintenance (LF)	Removal (LF)	Foreslope (FS:1)	Backslope (BS:1)	Ditch Width (FT)	Avg. % Slope Ditch Grade	Volume (CF)	Remarks
1.0		Type 1	966+30.00	Left	16.0		16.0	4.0	4.0	10.0	0.1	3250.80	
2.0		Type 1	667+75.00	Left	16.0		16.0	4.0	4.0	10.0	0.1	3250.80	
3.0		Type 1	973+50.00	Left	12.0		12.0	4.0	4.0	10.0	0.1	3250.80	
4.0		Type 1	980+42.00	Left	18.0		18.0	4.0	4.0	10.0	0.1	3250.80	
5.0		Type 1	981+40.00	Left	17.0		17.0	4.0	4.0	10.0	0.1	3250.80	
6.0		Type 1	982+90.00	Left	20.0		20.0	4.0	4.0	10.0	0.1	3250.80	
7.0		Type 1	992+40.00	Left	18.0		18.0	4.0	4.0	10.0	0.1	3250.80	
9.0		Type 1	997+90.00	Left	15.0		15.0	4.0	4.0	10.0	0.1	3250.80	
10.0		Type 1	1003+45.00	Left	20.0		20.0	4.0	4.0	10.0	0.1	3250.80	
11.0		Type 1	1019+20.00	Left	18.0		18.0	4.0	4.0	10.0	0.1	3250.80	
12.0		Type 1	1024+25.00	Left	18.0		18.0	4.0	4.0	10.0	0.1	3250.80	
13.0		Type 1	1029+00.00	Left	16.0		16.0	4.0	4.0	10.0	0.1	3250.80	
14.0		Type 1	1033+55.00	Left	24.0		24.0	4.0	4.0	10.0	0.1	3250.80	
15.0		Type 1	1036+85.00	Left	18.0		18.0	4.0	4.0	10.0	0.1	3250.80	
16.0		Type 1	1038+90.00	Left	15.0		15.0	4.0	4.0	10.0	0.1	3250.80	
17.0		Type 1	10983+50.00	Left	20.0		20.0	4.0	4.0	10.0	0.1	3250.80	
19.0		Type 1	966+30.00	Right	13.0		13.0	4.0	4.0	10.0	0.1	3250.80	
20.0		Type 1	967+50.00	Right	13.0		13.0	4.0	4.0	10.0	0.1	3250.80	
21.0		Type 1	973+35.00	Right	28.0		28.0	4.0	4.0	10.0	0.1	3250.80	
22.0		Type 1	997+55.00	Right	20.0		20.0	4.0	4.0	10.0	0.1	3250.80	
23.0		Type 1	998+55.00	Right	20.0		20.0	4.0	4.0	10.0	0.1	3250.80	
24.0		Type 1	1098+50.00	Right	20.0		20.0	4.0	4.0	10.0	0.1	3250.80	
Total:					**395**		**395**						

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1.0	985+90.00	985+90.00	Left	Perimeter and Slope	12 inch	20.00	D Lt 60 ft
2.0	995+00.00	995+00.00	Left	Perimeter and Slope	12 inch	40.00	D
3.0	1004+25.00	1004+25.00	Left	Perimeter and Slope	12 inch	20.00	D
4.0	1008+40.00	1008+40.00	Left	Perimeter and Slope	12 inch	40.00	Install around new pipe and inlet
5.0	1011+55.00	1011+55.00	Left	Perimeter and Slope	12 inch	20.00	D
6.0	1013+55.00	1013+55.00	Left	Perimeter and Slope	12 inch	20.00	D
7.0	1015+00.00	1015+00.00	Left	Perimeter and Slope	12 inch	20.00	D
8.0	1017+05.00	1017+05.00	Left	Perimeter and Slope	12 inch	60.00	Install around splash basin
9.0	1019+61.00	1019+61.00	Left	Perimeter and Slope	12 inch	50.00	NW corner of intersection
10.0	1020+30.00	1020+30.00	Left	Perimeter and Slope	12 inch	30.00	NE corner of intersection
11.0	1026+33.00	1026+33.00	Left	Perimeter and Slope	12 inch	20.00	D
12.0	1034+40.00	1034+40.00	Left	Perimeter and Slope	12 inch	20.00	D
13.0	1036+97.00	1036+97.00	Left	Perimeter and Slope	12 inch	50.00	Install following culvert end reinstallation
14.0	1041+35.00	1041+35.00	Left	Perimeter and Slope	12 inch	30.00	D
15.0	+.00	1+80.00	Right	Perimeter and Slope	12 inch	180.00	A
16.0	10985+00.00	988+00.00	Right	Perimeter and Slope	12 inch	200.00	C
17.0	979+00.00	10984+44.00	Right	Perimeter and Slope	12 inch	800.00	B
18.0	995+00.00	995+00.00	Right	Perimeter and Slope	12 inch	40.00	D
19.0	999+60.00	999+60.00	Right	Perimeter and Slope	12 inch	20.00	D
20.0	1000+90.00	1000+90.00	Right	Perimeter and Slope	12 inch	20.00	D
21.0	1004+40.00	1004+40.00	Right	Perimeter and Slope	12 inch	20.00	D
22.0	1007+93.00	10079+32.00	Right	Perimeter and Slope	12 inch	20.00	D
23.0	1008+40.00	1008+40.00	Right	Perimeter and Slope	12 inch	40.00	Install following culvert end reinstallation
24.0	1009+50.00	1009+50.00	Right	Perimeter and Slope	12 inch	20.00	D
25.0	1010+30.00	1010+30.00	Right	Perimeter and Slope	12 inch	20.00	D
26.0	1012+60.00	1012+60.00	Right	Perimeter and Slope	12 inch	20.00	D
27.0	1015+20.00	1015+20.00	Right	Perimeter and Slope	12 inch	20.00	D
28.0	1016+95.00	1016+95.00	Right	Perimeter and Slope	12 inch	20.00	D
29.0	1018+45.00	1018+45.00	Right	Perimeter and Slope	12 inch	20.00	D
30.0	1026+33.00	1026+33.00	Right	Perimeter and Slope	12 inch	20.00	D
31.0	1030+50.00	1030+50.00	Right	Perimeter and Slope	12 inch	20.00	D Rt 165 ft
32.0	1032+05.00	1032+05.00	Right	Perimeter and Slope	12 inch	20.00	D
33.0	1036+97.00	1036+97.00	Right	Perimeter and Slope	12 inch	30.00	D
Total:						**1990**	

A Install along south and west intercept point at proposed entrance, Sta 978+57. See sheet R.1
B Install along south intercept point at proposed EB to SB US 69 offset right turn lane. See sheets R.1 and R.2
C Install along east and south intercept point at NB US 69 to EB 18 (regraded foreslope). See sheet R.2.
D Protect inlet per Std Road Plan EC-204

ROLLED EROSION CONTROL

Refer to EC-101, EC-103 and EC-104.

Line No.	Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	TRM Type (EC-104)	TRM Quantity (Squares)	Slope Protection (EC-103) (Squares)	Special Ditch Control (EC-101) (Squares)	Remarks
1.0	US 18	1019+22.00	101020+01.00	Left	85.0	10.0			9.0		Install around NW return
2.0	US 18	1034+25.00	1035+50.00	Left	125.0	10.0			13.0		Install on foreslope
3.0	US 18	1041+25.00	1041+45.00	Left	20.0	5.0			1.0		Install near culvert FS
Total:									**23**		

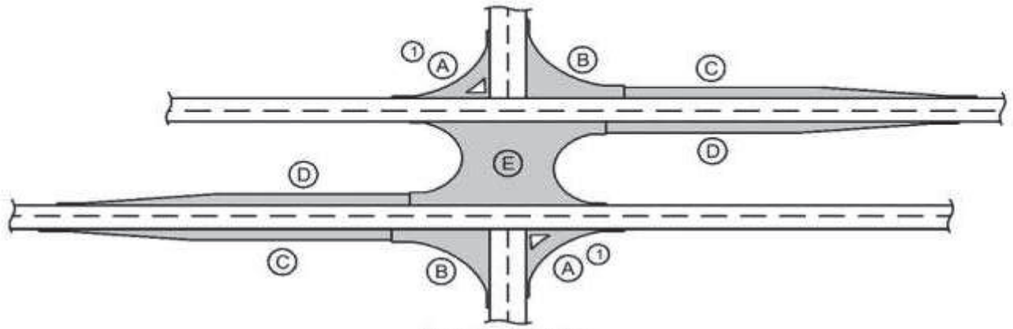
ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

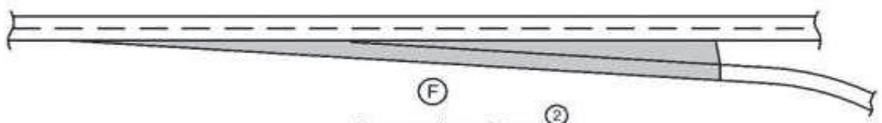
Line No.	Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	Rock Erosion Control Type	Engineering Fabric (SY)	Class E Revetment (TON)	Erosion Stone (TON)	Remarks
1.0	US 18	1016+92.00	1017+07.00	Left	15.00	12.0	Type 4 - Rock Splash Basin	34.0		21.600	Incorporate 6" metal outlet into basin
2.0	US 18	1019+45.00	1019+60.00	Left	15.00	8.0	Type 2 - Rock Ditch	35.0		21.000	See Sheet L.4
3.0	US 18	1041+33.00	1041+40.00	Left	7.00	10.0	Type 4 - Rock Splash Basin	17.0		8.400	A
Total:								**86**		**51**	

A The intention for installation of this item is to cover the limits of the current erosion limits. The Contractor shall use care when excavating as not to disturb steep foreslopes. Any means needed/used to prohibit erosion from occurring during construction of rock erosion control shall be considered
incidental to bid item.

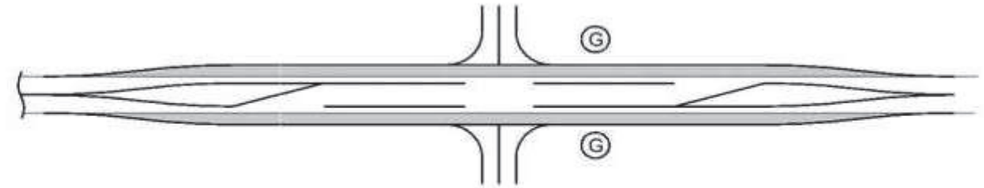
HMA PAVEMENT



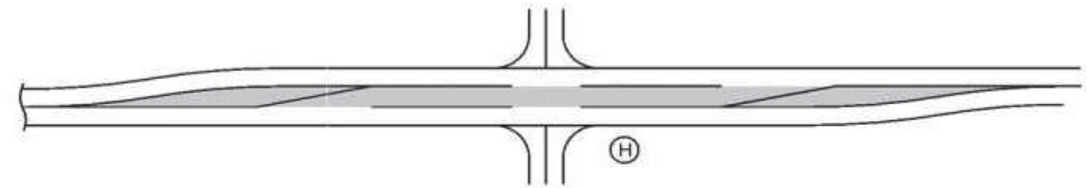
Typical Intersection



Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway

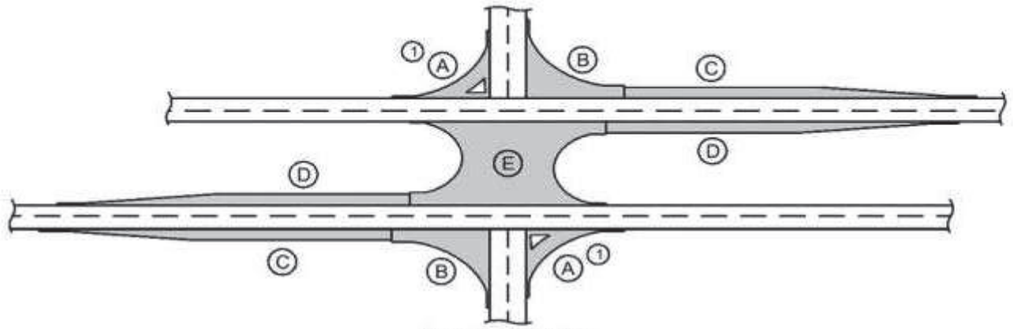


Channelized Intersection
Reconstructed Roadway

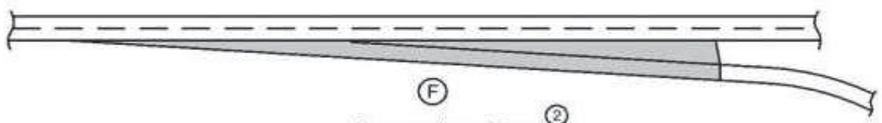
(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
(2) Refer to PV-410, PV-411, PV-412, and PV-414.
(3) Quantity includes Pavement Header.

Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Polymer Grid (SY)	Special Backfill (TONS)	Modified Subbase (CY)	Granular Subbase (SY)	Pavement Scarification (SY)	Remarks
US 18	EB	966+71.00	967+20.00	38.0	49.00	206.90				17.108	206.90	17.108	206.90		206.90	1.026	1.026						206.90	Newer HMA shoulders to be U.A.C.
US 18 incl. Rt shldr taper	EB	967+20.00	967+85.00		65.00	252.16				20.851	252.16	20.851	252.16	33.700	77.47	1.251	1.251	2.022			30.39		274.40	Type 'N4' Notch abutting PCC approach
US 18 incl. both shldrs	EB	967+85.00	968+25.00		40.00	206.29				17.058	206.29	17.058	206.29	55.047	126.54	1.023	1.023	3.303			49.65		168.90	
US 18 incl. both shldrs	EB	968+25.00	971+35.00		310.00	1670.56				138.134	1670.56	138.134	1670.56	384.772	857.67	8.288	8.288	23.086			338.70		1081.10	
US 18	EB	971+35.00	978+69.45	50.0	734.45	4080.28				337.388	4080.28	337.388	4080.28	964.847	2154.39	20.243	20.243	57.891			843.26		1958.53	
US 18	EB	978+69.45	987+90.30	37.0	920.85	3785.72				313.031	3785.72	313.031	3785.72	604.860	1350.58	18.782	18.782	36.292			528.64		3392.00	Area B combined with C
US 18 RT Turn Ln	EB	978+69.45	985+87.64		718.19	3136.51			3136.51	259.350	3136.51	259.350	3136.51	1381.700	3176.32	15.561	15.561	82.902			1109.73			
US 18 NB to EB Rtrn	EB	986+51.84	987+90.30		138.46	376.24	376.24			31.111	376.24	31.111	376.24	168.253	386.79	1.867	1.867	10.095			140.23			
US 18	EB	987+90.30	996+50.00	50.0	859.70	4776.11				394.925	4776.11	394.925	4776.11	1129.388	2521.79	23.695	23.695	67.763			987.06		2598.50	
US 18	EB	996+50.00	1017+88.79		2138.79	11882.17				982.507	11882.17	982.507	11882.17	2809.728	6273.78	58.950	58.950	168.584			2455.65		6025.00	
US 18	EB	1017+88.79	1019+59.08	50.0	170.29	946.06				78.227	946.06	78.227	946.06	218.772	499.52	4.694	4.694	13.126			179.75		871.70	
US 18 RT Turn Ln	EB	1017+88.79	1019+59.08		170.29	139.32			139.32	11.520	139.32	11.520	139.32	66.743	153.43	0.691	0.691	4.005			63.27			
US 18 State St Rtrn	EB	1019+22.03	1019+59.08		37.05	17.84	17.84			1.476	17.84	1.476	17.84	8.802	20.23	0.089	0.089	0.528			9.27			
US 18	EB	1019+59.08	1020+49.63	38.0	90.55	382.32				31.613	382.32	31.613	382.32		382.32	1.897	1.897						382.32	Center 38'
US 18	EB	1020+30.00	1021+12.79	58.0	82.79	407.03				44.100	407.03	44.100	407.03	127.200	185.27	2.646	2.646	7.632			107.50		370.40	
US 18 NB State to EB	EB	1020+49.63	1021+12.79		63.16	35.27	35.27			2.916	35.27	2.916	35.27	17.250	39.65	0.175	0.175	1.035			17.93			
US 18	EB	1021+12.79	1021+95.20	58.0	82.41	531.09				43.914	531.09	43.914	531.09	136.164	241.74	2.635	2.635	8.170			116.01		382.50	
US 18	EB	1021+95.20	1023+15.29	50.0	120.09	667.17				55.166	667.17	55.166	667.17	194.939	352.26	3.310	3.310	11.696			157.90		450.90	
US 18 RT Turn Ln	EB	1021+95.20	1023+15.29		120.09	53.90				4.500	53.90	4.500	53.90	38.100	87.70	0.300	0.300	2.286			29.20			
US 18	EB	1023+15.29	1031+39.00	50.0	823.71	4576.17				378.392	4576.17	378.392	4576.17	1082.108	2416.22	22.704	22.704	64.926			945.74		2470.50	
RR-Xing																								
US 18	EB	1031+49.00	1032+57.56	50.0	108.56	603.11				49.870	603.11	49.870	603.11	142.615	318.44	2.992	2.992	8.557			124.64		384.50	
US 18	EB	1032+57.56	1032+86.75		29.19	162.41				13.429	162.41	13.429	162.41	35.532	79.14	0.806	0.806	2.132			31.35		113.90	
US 18	EB	1032+86.75	1034+50.00		163.25	924.54				76.448	924.54	76.448	924.54	188.364	415.38	4.587	4.587	11.302			167.42		679.70	

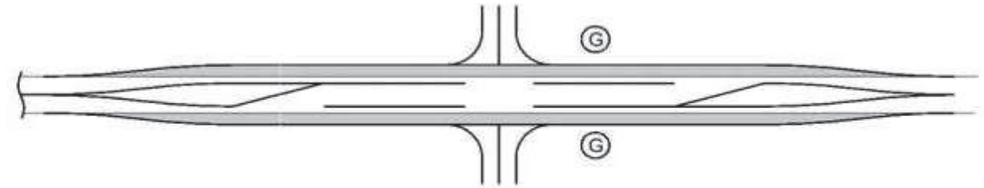
HMA PAVEMENT



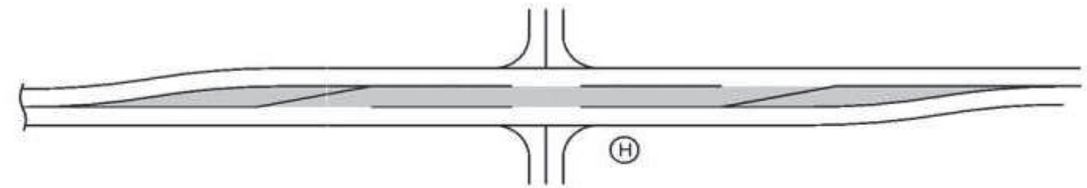
Typical Intersection



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.

Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Polymer Grid (SY)	Special Backfill (TONS)	Modified Subbase (CY)	Granular Subbase (SY)	Pavement Scarification (SY)	Remarks
US 18 incl. taper	EB	1034+50.00	1038+00.00		350.00	1941.92				160.572	1941.92	160.572	1941.92	279.506	614.44	9.634	9.634	16.770			263.34		1668.30	
US 18	EB	1038+00.00	1040+73.00		273.00	1493.61				123.503	1493.61	123.503	1493.61	138.053	296.36	7.410	7.410	8.283			144.24		1445.10	
US 18	EB	1040+73.00	1041+26.83		53.83	332.55				27.498	332.55	27.498	332.55	10.693	58.44	1.650	1.650	0.642			13.52		333.70	
US 18	EB	1041+26.83	1042+08.44		81.61	554.49				45.850	554.49	45.850	554.49	16.212	88.59	2.751	2.751	0.973			20.49		553.70	Type 'N4' Notch
US 69	NB	10983+58.11	10984+29.71		71.60	498.58				54.969	498.58	82.453	498.58	11.052	33.88	3.298	4.947	0.663			16.31		133.33	Type 'N1' Surface Notch
US 69	NB	10984+29.71	10984+78.95		49.24	383.21				42.249	383.21	63.374	383.21	26.575	81.46	2.535	3.802	1.594			30.57			
US 69	NB	10984+78.95	10985+47.56		68.61	210.52				23.210	210.52	34.815	210.52	76.173	233.48	1.393	2.089	4.570			82.83			
US 69	NB	10985+47.56	10986+18.93		71.37	498.00				54.905	498.00	82.357	498.00	162.474	498.00	3.294	4.941	9.748			166.00			
State St South side	NB	101019+35.00	101019+79.68		44.68	354.29				29.295	354.29	29.295	354.29		354.29	1.758	1.758						354.30	Type 'N4' Notch abutting PCC
State St North side	NB	101020+17.65	101020+95.00		77.35	604.20				50.000	604.20	50.000	604.20	84.000	193.10	3.000	3.000	5.000			64.40		503.00	Type 'N4' Notch
Allen Ave						84.80				7.000	84.80	7.000	84.80		84.80	0.400	0.400						84.80	Type 'N4' Notch, Rt. 42'
Seymour Ave						112.00				9.300	112.00	5.000	62.00		112.00	0.600	0.300						49.00	Type 'N3' Notch, Rt. 40' or Joint
Total:										**3931.385**		**4014.751**		**10593.622**		**235.935**	**240.894**	**635.576**			**9234.99**		**26936.98**	

100_37
4/16/24

GRATE INTAKE SEDIMENT FILTER BAG

Possible Standard Road Plan : EC-604

Line No.	Location Station	Side	Installation (Each)	Maintenance (Each)	Removal (Each)	Remarks
1.0	1019+60.00	Right	1.0	1	1.0	SW quad of intersection
2.0	1020+25.00	Right	1.0	1	1.0	SE quad of intersection
Total:			**2**	**2**	**2**	

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of Unclassified Pipe calculated is based on using Corrugated Metal Pipe.
(1) Refer to MI-210.
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

Line No.	Station	Side	Access Type	Descriptor	Case	Curb Type	Curb Length (1) (LF)	Width (FT)	PR (1) (2) (FT)	SR (2) (FT)	Pipe Culvert (H) (3) (FT)	Pipe Culvert Size (3) (IN)	Culvert Length (3) (LF)	Pipe Culvert Lt. (3) (LF)	Pipe Culvert Rt. (3) (LF)	Culvert Aprons (3) (No.)	Driveway Surface Type	Driveway Surface Area (SY)	Driveway Surfacing Material (TON)	Remarks
1.0	972+96.00	Right						50.0											82.000	A H
2.0	973+07.00	Left						65.0											57.000	A
3.0	978+57.70	Right						20.0			1.6	18.0	48.0	29.90	23.70	2			145.000	C
4.0	980+15.80	Left						24.0											23.000	A
5.0	981+16.90	Left						20.0											18.000	A
6.0	982+42.10	Left						56.0											52.000	A
7.0	985+27.00	Left			2			52.0									PCC	70.0		B
8.0	988+84.90	Right			2			60.0									PCC	88.0		B D
9.0	988+30.40	Left			1			65.0									PCC	98.0		B
10.0	988+87.10	Left			2			60.0									PCC	93.0		B
11.0	991+35.60	Right			2			37.0									PCC	25.0		B
12.0	991+32.50	Left			2			26.0									PCC	25.0		B Manhole to be U.A.C.
13.0	990+78.50	Left			2			52.0									PCC	53.0		B
14.0	992+77.30	Left			2			39.0									PCC	39.0		B
15.0	998+98.90	Right			2			40.0									PCC	60.0		B
16.0	997+96.80	Right						58.0											66.000	A
17.0	998+17.50	Left						17.0											17.000	A H
18.0	1000+20.30	Right			2			53.0									PCC	32.0		B includes SW broken corner of driveway
19.0	1001+65.80	Right			2			41.0									PCC	19.0		B
20.0	1005+01.40	Right			2			56.0									PCC	74.0		B H
21.0	1003+86.20	Left			2			90.0				24.0	4.0			1	PCC	62.0		B G
22.0	1007+96.50	Left			2			64.0									PCC	32.0		B
23.0	1009+27.90	Left			2			81.0									PCC	88.0		B
24.0	1008+20.60	Right						43.0											45.000	A F
25.0	1010+80.00	Right			2			25.0									PCC	21.0		B
26.0	1012+16.60	Right			2			32.0									PCC	15.0		B
27.0	1013+05.40	Left						55.0											69.000	A
28.0	1014+42.50	Left			2			53.0									PCC	64.0		B
29.0	1015+41.60	Left			2			55.0									PCC	63.0		B
30.0	1016+32.40	Right			2			45.0									PCC	43.0		B
31.0	1017+56.40	Right			2			64.0									PCC	83.0		B
32.0	1017+44.50	Left			2			47.0									PCC	65.0		B H
33.0	1023+69.30	Left			2			85.0									PCC	53.0		B
34.0	1028+48.80	Left						54.0											68.000	A
35.0	1033+91.40	Left						45.0											39.000	A
36.0	1038+44.80	Left						50.0											53.000	A
Total:													**52**			**3**		**1265**	**734**	

A Match existing width. Add granular surface from edge of paved shoulder to center of culvert or ditch low point.
B Taper to pavement thickness per section A-A Std Rd Plan MI-210. Proposed driveway entrance width to be no less than existing width.
C Install unclassified culvert approx. 47.5' from US 18 CL.
D PCC pavement to remain south of sawcut. Remove dilapidated HMA and pave flared from joint at approx 58 ft. See sheet L.2 for additional information.
E Runout curb per PV-102. Incorporate manhole similar to existing layout.
F Improve drainage by removing overburden near intake.
G Remove 1' of west end culvert and add 4' of pipe plus apron.
H Clean out pipe culvert

EXISTING PAVEMENT

Line No.	County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
1.0	Hancock	US 18	EB	161.38	168.04	1952		FN-888	PCC	9.0							Gilmore City	C. Lst			
2.0	Hancock	US 18	EB	161.05	168.04	1984		FN-18-4(11)--21-41	AAC	1.5	AAC	1.5					Garner	C. Lst			
3.0	Hancock	US 18	EB	160.48	162.00	1998		STPN-69-8(18)--2J-41	AAC	2.0	AAC	2.0					Fertile	C. Lst			
4.0	Hancock	US 18	EB	162.00	162.78	1995			AAC	1.5	AAC	1.5									
5.0	Hancock	US 18	EB	162.78	168.04	2006		NHSN-018-4(24)--2R-41	HMA	1.5	HMA	1.5	HMA	3.0	Mill	1.0	Riverview	C. Lst			A

A Paved Shoulders have been widened 4' both sides. 6" thick. (3" Base and 3" Intermediate/Surface course)

FULL-DEPTH PATCHES

Line No.	Count	Station	Reference Location Sign	Lane	Length (FT)	Width (FT)	Patch Thickness (IN)	Patch Repair or Finish	PCC Patch Type	PCC Patch Quantity (SY)	HMA Patches (SY)	Composite HMA (TON)	Subbase Patches (PR-140) (SY)	Subbase Patch with 'EF' Joint (PR-101) (SY)	Patch Subdrain PR-101 or PR-140 (No.)	'CD' Joints (No.)	'CT' Joints (No.)	'EF' Joints PR-101 (No.)	Anchor Lugs Removal (No.)	Remarks
0.5	1	986+79.00		Right			10.0	Repair	PCC Without Dowels (PR-102)	37.0										To remove island during
1.0	1	985+72.00		Right	10.0	12.0	16.0	Repair	PCC With Dowels (PR-103)	13.3										staged construction
2.0	1	991+09.00		Right	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
3.0	1	991+09.00		Left	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
4.0	1	992+30.00		Right	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
5.0	1	992+30.00		Left	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
6.0	1	992+84.00		Right	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
7.0	1	992+84.00		Left	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
8.0	1	999+43.00		Right	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
9.0	1	999+43.00		Left	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
10.0	1	1002+77.00		Right	10.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	13.3										
11.0	1	1002+77.00		Left	10.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	13.3										
12.0	1	1002+98.00		Right	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
13.0	1	1002+98.00		Left	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
14.0	1	1003+55.00		Right	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
15.0	1	1003+55.00		Left	6.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	8.0										
16.0	1	1005+00.00		Right	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
17.0	1	1005+55.00		Left	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
18.0	1	1007+25.00		Right	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
19.0	1	1007+25.00		Left	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
20.0	1	1009+25.00		Left	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
21.0	1	1010+64.00		Right	10.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	13.3										
22.0	1	1010+64.00		Left	10.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	13.3										
23.0	1	1014+14.00		Right	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
24.0	1	1014+14.00		Left	8.0	12.0	15.0	Repair	PCC With Dowels (PR-103)	10.7										
Total:	**25**									**279.8**										

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
(3) Backfill according to DR-101

Drainage Area (ACRE)	Location	Type	Size (IN) (1)	Pipe Classification	Kind of Pipe (2)	Length New Const. (LF)	Length of total that is Trenchless	Bedding Class	Design Cover (H) (FT)	Camber* (DR-102) (FT)	Apron No. (IN)	Apron No. (OUT)	Apron Guard* (DR-213) (No.)	Elbow* (DR-141) (No.)	Diaphragm* (DR-501) (No.)	Tee Section* (DR-142) (No.)	"D" Section* (DR-141) (No.)	Reducer* (No.)	Type 'C' Conn.* (DR-122)	Type 'C' Conn.* (No.)	Connected Pipe Joint* (DR-121)	4" Perforated Subdrain* (FT)	Flow Line Elevation LT.	Flow Line Elevation RT.	Flow Line Elevation Other	Flow Line Elevation Other	Dimensions Lineal Feet Total (Left)	Dimensions Lineal Feet Total (Right)	Dimensions Lineal Feet Extensions	Dimensions Lineal Feet Extensions	Skew Ahead Degrees (Left)	Skew Ahead Degrees (Right)	Dike Location	Dike Station	Dike Elevation	Dike Type	Class 20 (CY)	Flowable Mortar	Floodable Backfill* (A)	Porous Backfill* (B)	Flooded Backfill(A+B)	Remarks
	994+99.70	DR-621	24.0	2000D	RCP			B			1	1									Type 3						42.40	39.06													A G
	1008+39.70	DR-621	24.0	2000D	RCP	16.0		B			1										Type 3						34.94	41.23													B G
	1019+61.00	DR-621	24.0	2000D	RCP	8.0		B						1							Type 3						50.00														C
	1019+62.60	DR-621	15.0	2000D	RCP	8.0		B				1					3				Type 3		1205.20																		D
	1020+40.00	DR-621	24.0	2000D	RCP	12.0		B			1										Type 3		1205.25																		H
	1036+97.30		30.0		RCP			B													Type 3																				E
	1041+40.00		24.0		RCP			B													Type 3																				F
Total:						**44**					**3**	**2**																													

A Remove and reinstall one section on north and one section on the south and add aprons. Regrade to 3:1 FS per plan and profile sheet
B Lt side - Remove 1 section of pipe on the north and replace with 8' RCP. Maintain approx 4' dist. from intake. Grade to 3:1 FS per sheet D.3. Rt Side - Remove 1 section (6') of pipe. Contractor to fabricate DR-141 - 30 degree elbow. Saw 1'-6" from outlet end. Grade entrance FS to fit.
C Remove 6 ft section of north side RCP and install 8 ft section. No apron. Contractor to fabricate DR-141 - 30 degree elbow. Saw 1'-6" from outlet end. Grade FS to fit.
D Located Lt. 50 ft. Remove 3 sections (assumed 6') and install 4' double bevel and 4' single bevel DR-141 with apron. Grade FS to fit - See also sheet L.4.
E Remove and reinstall north apron and one section of pipe.
F Remove and reinstall one section of pipe on the west end at Country Club Drive
G Clean Out Pipe Culvert
H Remove 15" CMP and extend with 12' - 24" RCP plus apron. Contractor to verify length in field.
Flowlines to be used as constructed unless otherwise listed

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-200	04-20-21	Steel Beam Guardrail Components
BA-204	10-18-22	Steel Beam Guardrail Thrie-Beam End Anchor
BA-205	10-17-23	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-253	10-18-22	Steel Beam Guardrail Installation at Railroad Signal
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	04-18-23	Connected Pipe Joints
DR-122	10-18-16	Construction of Type 'C' Concrete Adaptors for Pipe Culvert Connections
DR-141	04-18-17	Pipe Bends
DR-201	10-17-23	Concrete Aprons
DR-203	04-21-20	Metal Pipe Aprons and Beveled Ends
DR-302	04-18-23	Subdrains Standard (Farm Tile Replacement)
DR-501	04-17-18	Corrugated Metal Type 'A' Diaphragm
DR-621	04-18-17	Pipe Extension
DR-651	04-18-17	Unclassified Pipe Culvert
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-301	10-18-22	Rock Erosion Control (REC)
EC-604	10-17-23	Grate Intake Sediment Filter Bag
EW-301	04-16-24	Guardrail Grading
EW-501	10-17-23	Rural Entrance
MI-210	04-16-24	PCC Driveways and Alleys
PM-110	10-15-24	Line Types
PM-111	04-21-20	Symbols and Legends
PM-115	10-15-24	Grooving for Line Types
PM-116	04-16-24	Grooving for Symbols and Legends
PM-120	10-15-24	Stop Lines and Islands
PM-210	10-15-24	Separation in Two-Lane Roadway
PM-240	10-15-24	Railroad Crossing on Two-Lane Roadway
PM-521	10-15-24	Two-Lane Roadway with Right Turn Lanes
PM-550	10-15-24	Two-Lane Roadway with Two-Way Left Turn Lane
PR-102	04-21-20	Full Depth PCC Patch without Dowels
PR-103	10-17-23	Full Depth PCC Patch with Dowels
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-102	04-21-20	PCC Curb Details
PV-103	04-19-22	Manhole Boxouts in PCC Pavement
PV-202	04-21-20	Hot Mix Asphalt Resurfacing
PV-204	10-17-17	HMA Railroad Approach Section
PV-301	04-21-20	Superelevation Details Two Lane Roadway
SI-172	04-19-16	Delineators
SI-173	04-19-16	Object Markers
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-213	04-18-23	Lane Closure with Flaggers
TC-214	04-18-23	Lane Closure with Flaggers for use with Pilot Car
TC-218	04-18-23	Lane Closure with Pilot Car and Flagger Operated Signals
TC-228	04-18-23	Lane Closure Involving TWLTL
TC-252	04-21-20	Routes Closed to Traffic
TC-282	10-15-19	Uneven Lanes

GRADING FOR GUARDRAIL INSTALLATIONS

Refer to EW-301.

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

Line No.	Direction of Traffic (1)	Station	Side	Foreslope at Guardrail	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	X3 (FT)	Y3 (FT)	X4 (FT)	Y4 (FT)	Z (FT)	Excavation Class 10 (CY)	Embankment-in-Place (CY)	Remarks
1.0	WB	1031+65.00	Left	4:1	24.6	7.0						9.0	54.0			Quantity within the template

108_08D
8/15/22

STEEL BEAM GUARDRAIL AT RAILROAD SIGNALS

Possible Standards BA-200, BA-204, BA-205, BA-253, LS-625, LS-633, SI-172, SI-173 and SI-211.

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

Line No.	Item No.	Lane (1)	Station	DO (FT)	VT 34.375' (LF)	ET (LF)	SI-211 (Type)	SI-172 Type 1 White (EA)	SI-173 Type 2 OM2-2 (EA)	SI-173 Type 3 OM3-L (EA)	SI-173 Type 3 OM3-R (EA)	Thrie-Beam End Anchor BA-204 (EA)	Standard End Terminal (EA)	Remarks
1.0	BA-253	WB	1031+44.50	2.0	34.4	47.7	8	3	3		1	1	BA-205	

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
CBW6: Crosswalk Bar (White) @ 10.00
CLW6: Crosswalk Line (White) @ 2.00
DLW4: Dotted Line (White) @ 0.22
ELW6: Edge Line Right (White) @ 1.00
MNY6: Median Nose (Yellow) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
SPW4: Sloped Curb 4" (White) @ 2.16
BCY6: Broken Centerline (Yellow) @ 0.25
CHW8: Channelizing Line (White) @ 1.33
DCY4: Double Centerline (Yellow) @ 1.34
DLW6: Dotted Line (White) @ 0.33
ELY4: Edge Line Left (Yellow) @ 0.67
NPY4: No Passing Zone Line (Yellow) @ 0.84
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SPW6: Sloped Curb 6" (White) @ 2.28
BLC6: Broken Line Contrast (White/Black) @ 0.50
CHW10: Channelizing Line (White) @ 1.67
DCY6: Double Centerline (Yellow) @ 2.00
DLY4: Dotted Line (Yellow) @ 0.22
ELY6: Edge Line Left (Yellow) @ 1.00
NPY6: No Passing Zone Line (Yellow) @ 1.25
SLW2: Stop Line (White) @ 4.00
SPY4: Sloped Curb 4" (Yellow) @ 2.16
BLW4: Broken Lane Line (White) @ 0.17
CHY8: Channelizing Line (Yellow) @ 1.33
DDY4: Double Dotted Line (Yellow) @ 0.44
DLY6: Dotted Line (Yellow) @ 0.33
LDW8: Lane Drop (White) @ 0.33
RLW4: Ramp Edge Line Right (White) @ 0.67
SLW4: Solid Lane Line (White) @ 0.67
SPY6: Sloped Curb 6" (Yellow) @ 2.28
BLW6: Broken Lane Line (White) @ 0.25
CHY10: Channelizing Line (Yellow) @ 1.67
DDY6: Double Dotted Line (Yellow) @ 0.67
ELW4: Edge Line Right (White) @ 0.67
LDW10: Lane Drop (White) @ 0.42
RLW6: Ramp Edge Line Right (White) @ 1.00
SLW6: Solid Lane Line (White) @ 1.00

Road ID	Station From	Station To	Line Length (STA)	Marking Type	Left	Center	Right	Groove Qty. (STA)	CHW10 (STA)	CHW10 Factored (STA)	CHY10 (STA)	CHY10 Factored (STA)	DCY4 (STA)	DCY4 Factored (STA)	DCY6 (STA)	DCY6 Factored (STA)	DLW6 (STA)	DLW6 Factored (STA)	ELW4 (STA)	ELW4 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	NPY6** (STA)	NPY6** Factored (STA)	SLW2 (STA)	SLW2 Factored (STA)	SLW6 (STA)	SLW6 Factored (STA)	Remarks
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint	x		x												149.45	100.13									A
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint		x							74.70	100.10															A
US 18	973+00.00	997+60.00	49.20	Removal of Paint	x		x												49.20	32.96									B
US 18	973+00.00	997+60.00	24.60	Removal of Paint		x							24.60	32.96															B
US 69				Removal of Paint		x							3.25	4.36															B
US 18	973+00.00	997+60.00	24.60	Waterborne/Solvent Paint	x		x												49.20	32.96									B
US 18	973+00.00	997+60.00	24.60	Waterborne/Solvent Paint		x							24.60	32.96															B
US 18/69				Waterborne/Solvent Paint																					0.36	1.44			B
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint	x		x												149.45	100.13									C
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint		x							74.70	100.10															C
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint	x		x																116.70	145.88					D
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint	x		x														153.22	153.22							D
US 18	1018+00.00	1041+65.00	6.83	Waterborne/Solvent Paint		x									6.80	13.70													D
US 18	978+69.70	980+00.00	1.31	Waterborne/Solvent Paint			x										1.30	0.43											D
US 18	966+93.00	1041+65.00	3.25	Waterborne/Solvent Paint																							3.25	3.25	D
US 18	966+93.00	1041+65.00	3.30	Waterborne/Solvent Paint																					3.30	13.20			D
US 69	10983+58.00	10985+40.00	1.82	Waterborne/Solvent Paint		x									1.82	3.64													D
US 69	10983+58.00	10985+40.00	1.82	Waterborne/Solvent Paint	x		x														3.64	3.64							D
US 18	967+20.00	971+35.00	20.97	Waterborne/Solvent Paint							20.97	35.00																	D
US 18	980+00.00	986+20.00	21.16	Waterborne/Solvent Paint					21.16	35.30																			D
US 18	1034+50.00	1039+83.10	26.07	Waterborne/Solvent Paint							26.07	43.60																	D
State St				Waterborne/Solvent Paint		x							2.45	3.28															D
US 18	966+71.00	1042+08.00	75.37	Grooves Cut for Pavement Markings	x		x	145.88															116.70	145.88					
US 18	966+71.00	1042+08.00	75.37	Grooves Cut for Pavement Markings	x		x	153.22													153.22	153.22							
US 18	1018+00.00	1041+65.00	6.83	Grooves Cut for Pavement Markings		x		13.70							6.80	13.70													
US 18	978+69.70	980+00.00	1.31	Grooves Cut for Pavement Markings			x	0.43									1.30	0.43											
US 18	966+93.00	1041+65.00	3.25	Grooves Cut for Pavement Markings				3.25																			3.25	3.25	
US 18	966+93.00	1041+65.00	3.30	Grooves Cut for Pavement Markings				13.20																	3.30	13.20			
US 69	10983+58.00	10985+40.00	1.82	Grooves Cut for Pavement Markings		x		3.64							1.82	3.64													
US 69	10983+58.00	10985+40.00	1.82	Grooves Cut for Pavement Markings	x		x	3.64													3.64	3.64							
US 18	967+20.00	971+35.00	20.97	Grooves Cut for Pavement Markings				35.00			20.97	35.00																	
US 18	980+00.00	986+20.00	21.16	Grooves Cut for Pavement Markings				35.30	21.16	35.30																			
US 18	1034+50.00	1039+83.10	26.07	Grooves Cut for Pavement Markings				43.60			26.07	43.60																	
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint	x		x																116.70	145.88					Final
US 18	966+71.00	1042+08.00	75.37	Waterborne/Solvent Paint	x		x														153.22	153.22							Final

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
CBW6: Crosswalk Bar (White) @ 10.00
CLW6: Crosswalk Line (White) @ 2.00
DLW4: Dotted Line (White) @ 0.22
ELW6: Edge Line Right (White) @ 1.00
MNY6: Median Nose (Yellow) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
SPW4: Sloped Curb 4" (White) @ 2.16
BCY6: Broken Centerline (Yellow) @ 0.25
CHW8: Channelizing Line (White) @ 1.33
DCY4: Double Centerline (Yellow) @ 1.34
DLW6: Dotted Line (White) @ 0.33
ELY4: Edge Line Left (Yellow) @ 0.67
NPY4: No Passing Zone Line (Yellow) @ 0.84
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SPW6: Sloped Curb 6" (White) @ 2.28
BLC6: Broken Line Contrast (White/Black) @ 0.50
CHW10: Channelizing Line (White) @ 1.67
DCY6: Double Centerline (Yellow) @ 2.00
DLY4: Dotted Line (Yellow) @ 0.22
ELY6: Edge Line Left (Yellow) @ 1.00
NPY6: No Passing Zone Line (Yellow) @ 1.25
SLW2: Stop Line (White) @ 4.00
SPY4: Sloped Curb 4" (Yellow) @ 2.16
BLW4: Broken Lane Line (White) @ 0.17
CHY8: Channelizing Line (Yellow) @ 1.33
DDY4: Double Dotted Line (Yellow) @ 0.44
DLY6: Dotted Line (Yellow) @ 0.33
LDW8: Lane Drop (White) @ 0.33
RLW4: Ramp Edge Line Right (White) @ 0.67
SLW4: Solid Lane Line (White) @ 0.67
SPY6: Sloped Curb 6" (Yellow) @ 2.28
BLW6: Broken Lane Line (White) @ 0.25
CHY10: Channelizing Line (Yellow) @ 1.67
DDY6: Double Dotted Line (Yellow) @ 0.67
ELW4: Edge Line Right (White) @ 0.67
LDW10: Lane Drop (White) @ 0.42
RLW6: Ramp Edge Line Right (White) @ 1.00
SLW6: Solid Lane Line (White) @ 1.00

Road ID	Station From	Station To	Line Length (STA)	Marking Type	Left	Center	Right	Groove Qty. (STA)	CHW10 (STA)	CHW10 Factored (STA)	CHY10 (STA)	CHY10 Factored (STA)	DCY4 (STA)	DCY4 Factored (STA)	DCY6 (STA)	DCY6 Factored (STA)	DLW6 (STA)	DLW6 Factored (STA)	ELW4 (STA)	ELW4 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	NPY6** (STA)	NPY6** Factored (STA)	SLW2 (STA)	SLW2 Factored (STA)	SLW6 (STA)	SLW6 Factored (STA)	Remarks
US 18	1018+00.00	1041+65.00	6.83	Waterborne/Solvent Paint		x									6.80	13.70													Final
US 18	978+69.70	980+00.00	1.31	Waterborne/Solvent Paint			x										1.30	0.43											Final
US 18	966+93.00	1041+65.00	3.25	Waterborne/Solvent Paint																							3.25	3.25	Final
US 18	966+93.00	1041+65.00	3.30	Waterborne/Solvent Paint																					3.30	13.20			Final
US 69	10983+58.00	10985+40.00	1.82	Waterborne/Solvent Paint		x									1.82	3.64													Final
US 69	10983+58.00	10985+40.00	1.82	Waterborne/Solvent Paint	x		x														3.64	3.64							Final
US 18	967+20.00	971+35.00	20.97	Waterborne/Solvent Paint							20.97	35.00																	Final
US 18	980+00.00	986+20.00	21.16	Waterborne/Solvent Paint					21.16	35.30																			Final
US 18	1034+50.00	1039+83.10	26.07	Waterborne/Solvent Paint							26.07	43.60																	Final
Total:								**450.86**		**105.9**		**235.8**		**273.76**		**52.02**		**1.29**		**266.18**		**470.58**		**437.64**		**41.04**		**9.75**	

A - Apply after Stage 1 milling
B - See Sheet J.4
C - Apply after intermediate course
D - Apply after surface course

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Line No.	Roadway Identification	Station	Side	Pavement Symbol	Quantity (EA)	Remarks
1.0	US 18	971+92.00	Median	LTAW	1	
2.0	US 18	972+08.00	Median	LTAW	1	
3.0	US 18	972+67.00	Median	LTAW	1	
4.0	US 18	973+83.00	Median	LTAW	1	
5.0	US 18	979+08.00	Median	LTAW	1	
6.0	US 18	979+23.00	Median	LTAW	1	
7.0	US 18	984+27.00	Median	LTAW	1	
8.0	US 18	984+43.00	Median	LTAW	1	
9.0	US 18	989+47.00	Median	LTAW	1	
10.0	US 18	989+63.00	Median	LTAW	1	
11.0	US 18	994+67.00	Median	LTAW	1	
12.0	US 18	994+83.00	Median	LTAW	1	
13.0	US 18	999+87.00	Median	LTAW	1	
14.0	US 18	1000+03.00	Median	LTAW	1	
15.0	US 18	1004+42.00	Median	LTAW	1	
16.0	US 18	1004+58.00	Median	LTAW	1	
17.0	US 18	1010+27.00	Median	LTAW	1	
18.0	US 18	1010+43.00	Median	LTAW	1	
19.0	US 18	1015+47.00	Median	LTAW	1	
20.0	US 18	1015+63.00	Median	LTAW	1	
21.0	US 18	1018+33.00	Median	LTAW	1	
22.0	US 18	1018+68.00	Median	ONLW	1	
23.0	US 18	1019+05.00	Median	LTAW	1	
24.0	US 18	1019+29.00	Right	RTAW	1	
25.0	US 18	1020+75.00	Left	RTAW	1	
26.0	US 18	1020+89.00	Median	LTAW	1	
27.0	US 18	1021+24.00	Median	ONLW	1	
28.0	US 18	1021+50.00	Right	RTAW	1	
29.0	US 18	1021+64.00	Median	LTAW	1	
30.0	US 18	1023+50.00	Right	RRCW	1	
31.0	US 18	1025+87.00	Median	LTAW	1	
32.0	US 18	1026+03.00	Median	LTAW	1	
33.0	US 18	1028+92.00	Median	LTAW	1	
34.0	US 18	1029+08.00	Median	LTAW	1	
35.0	US 18	1032+92.00	Median	LTAW	1	
36.0	US 18	1033+08.00	Median	LTAW	1	
37.0	US 18	1039+38.00	Left	RRCW	1	
38.0	US 18	1040+35.00	Median	LTAW	1	
39.0	US 18	1040+70.00	Median	ONLW	1	
40.0	US 18	1041+05.00	Median	LTAW	1	
Total:					**40**	

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5.

* Not a bid item.

Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
1.0	967+85.00	969+98.00	Left	HMA	227.2	213.0	Existing paved shoulder
2.0	979+80.00	980+52.00	Left	HMA	45.5	72.0	Existing fillet
3.0	980+77.00	981+49.00	Left	HMA	48.4	72.0	Existing fillet
4.0	981+75.00	982+93.00	Left	HMA	81.5	118.0	Existing fillet
5.0	983+24.00	990+12.00	Left	HMA	1067.7	688.0	B
6.0	990+34.00	991+41.00	Left	HMA	137.3	107.0	Existing fillet
7.0	992+48.00	993+08.00	Left	HMA	75.9	60.0	Garner chiropractic
8.0	1003+28.00	1004+50.00	Left	HMA	140.5	122.0	IMT Ent 1
9.0	1007+51.00	1009+92.00	Left	HMA	305.4	241.0	IMT Ent 2 and 3. HMA and PCC
10.0	1012+74.00	1015+89.00	Left	HMA	377.4	315.0	Yohn Co and Gas Station. HMA over PCC
11.0	1015+89.00	1019+59.00	Left	HMA	345.3	390.0	D Hardware Store
12.0	1020+49.60	1024+61.00	Left	HMA	461.8	427.0	D Gas Station HMA and PCC
13.0	1027+97.00	1029+01.00	Left	HMA	100.2	104.0	Existing fillet
14.0	1031+32.00	1031+39.00	Left	HMA	5.6	7.0	Remove HMA near RR panels
15.0	1031+49.00	1040+73.00	Left	HMA	335.9	931.0	E
16.0	967+20.00	970+02.00	Right	HMA	97.1	282.0	Existing paved shoulder
17.0	972+43.00	973+61.00	Right	HMA	99.8	118.0	Existing fillet
18.0	979+43.00	991+76.00	Right	HMA	2124.0	778.0	A
19.0	991+12.00	991+60.00	Right	PCC	15.7	48.0	Stellar Ent.
20.0	997+40.00	998+56.00	Right	HMA	113.4	116.0	Goodyear Ent.
21.0	998+56.00	999+37.00	Right	PCC	87.3	81.0	Co-op Ent
22.0	999+57.00	1002+16.00	Right	HMA	325.0	259.0	Hardee's Ent HMA over PCC
23.0	1004+52.00	1005+59.00	Right	HMA	118.2	107.0	Auto Dealer Ent
24.0	1007+71.00	1008+76.00	Right	HMA	94.2	105.0	Existing fillet
24.5	1010+54.00	1015+05.00	Right	PCC	53.3	65.0	Car wash
25.0	1011+90.00	1012+41.00	Right	PCC	56.0	51.0	Auto Parts Store
26.0	1012+41.00	1012+77.00	Right	HMA	22.7	43.0	C
27.0	1013+52.00	1014+07.00	Right	HMA	35.7	62.0	C
28.0	1015+74.00	1019+59.00	Right	HMA	505.6	410.0	D Grocery store and Gas Station. HMA and PCC
29.0	1020+49.60	1022+34.00	Right	HMA	160.4	206.0	D
30.0	1029+35.30	1029+79.40	Right	HMA	23.9	52.0	C HMA and PCC
31.0	1030+65.00	1031+39.00	Right	HMA	55.3	81.0	C HMA and PCC. Incl removing pav't up to RR panel
32.0	1031+49.00	1042+78.00	Right	HMA	483.2	1136.0	Refer to sheet L.5 for additional information
Total:					**8226.4**	**7867**	

Pavement removal limits at existing driveways are to the edge of proposed mainline shoulder. Additional pavement removal, for driveway reconstruction, outside of paved shoulder limits is shown on Tab. 300-99, Sheet C.30.

A EB Rt Turn lane and US 69 NB to EB return. Refer to sheet L.2 for additional information. HMA and PCC. Also remove dilapidated HMA adjacent to hotel PCC entrance.

B Auxiliary lane and shoulder. Refer to sheet L.2 for additional information. HMA over PCC.

C Street to be UAC except remove pavement per station limits to square up for full width widening unit to abut city street. See Detail Typ. DR-3.

D Refer to sheet L.4 for additional information.

E Refer to sheet L.5 for additional information. Includes HMA at RR panel and existing fillets.

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REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0	1	EB	1030+70.00	1031+37.00	Right	67.0
2.0	1	WB	1031+52.00	1032+23.00	Left	67.0
Total:						**134**

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base 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 during construction, 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 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. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.

B. Contractor:
1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. 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. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.

C. Subcontractors:
1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or perorming work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). 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. Implement good housekeeping practices according to Paragraph III, C, 2.

D. RCE/Project Engineer:
1. Is Project Storm Water Manager.
2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
7. Is familiar with the Project PPP and storm water site map.
8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
10. Is signature authority on Notice of Discontinuation.
11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
12. Makes information to determine permit compliance available to the DNR upon their request.

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POLLUTION PREVENTION PLAN

E. Inspector:
1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Makes information to determine permit compliance available to the DNR upon their request.
3. Conducts joint required inspections of the site with the contractor/subcontractor.
4. Completes an inspection report after each inspection.
5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the widening and resurfacing of a two lane highway.

B. This PPP covers approximately 24.7 acres with an estimated 10.4 acres being disturbed. The portion of the PPP covered by this contract has 10.4 acres disturbed.

C. The PPP is located in an area of Clarion - Nicollet - Webster soil association.
The estimated weighted average runoff coefficient number for this PPP after completion will be 0.5.

D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.

E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.

F. Runoff from this work will flow into the East branch of the Iowa River to the Iowa River to The Cedar River to the Mississippi.

III. CONTROLS

A. The Contractor’s ECIP specified in Article 2602.03 of the Standard Specifications 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. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site 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 of the Standard Specifications.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
a) Permanently ceased on any portion of the site, or
b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.

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. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, 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 or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.

POLLUTION PREVENTION PLAN

c. Storm Water Management
Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS
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.
a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
g. Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
j. Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

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's inspector at least once every seven calendar days. Storm water site 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.
5. Review of 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. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site 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 within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

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POLLUTION PREVENTION PLAN

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 headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

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 - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector's daily diary and bid 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. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative 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.

Signature

DUSTEN ROLANDO
Printed or Typed Name

Signature

Printed or Typed Name

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RAILROAD APPROACH SECTIONS

Line No.	Station	Angle	Pavement Type	Pavement Area (SY)	Remarks
1.0	1031+44.47		HMA	8.0	A EB approach
2.0	1031+44.47		HMA	8.0	A EB trail
3.0	1031+44.47		HMA	8.0	A WB trail
4.0	1031+44.47		HMA	8.0	A WB approach
Total:				**32**	

A Std Road Plan PV-204 applies to widened pavement only. US 18 existing 12 FT eastbound and 12 FT westbound to remain in place.

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) See Typ. 7156, 7157, or 7158.
(3) Bid Item.
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(5) Bid Item. Typ. 7156, 7157, or 7158.
(6) Does not include shrink.
(7) Paved shoulder thickness specified in Remarks.
(8) Subbase type specified in Remarks.

Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/ STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grdrail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Polymer Grid (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
US 18	WB	967+85.00	1019+59.00	Left				5174.00																51.74	1341.41		
US 18	WB	1020+19.00	1040+75.00	Left				2056.00																20.56	533.04		
US 18	EB	967+20.00	985+53.00	Right				1833.00																18.33	475.22		
US 18	EB	987+90.00	1019+59.00	Right				3169.00																31.69	821.59		
US 18	EB	1020+45.00	1042+08.00	Right				2163.00																21.63	560.78		
US 69				Left																				1.50	38.90		
US 69				Right																				2.00	51.90		
State St				Left																				1.87	48.50		
State St				Right																				1.00	25.90		
Total:																								**150.32**	**3897.24**		

Quantity on sheet C.1 has been reduced by 18.5 Sta to account for 37 entrances at an average width of 50'

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Modified

REMOVAL OF PAVED DRIVEWAYS

To be used in conjunction with Tab. 102-03

Line No.	Station	Side	Pavement Type	Area (SY)	Sawcut*	Remarks
1	985+27	Lt	PCC	70	35	Sawcut at 40 ft approx. joint location from CL
2	988+84.9	Rt	PCC and HMA	41	24	Sawcut at 34 ft approx. joint location from CL
3	988+30.4	Lt	PCC	98	30	Sawcut at 43.8 ft approx. joint location from CL
4	988+87.1	Lt	HMA	93	44	Sawcut at 41 ft approx. joint location from CL
5	991+35.6	Rt	PCC	25	28	Sawcut at 32 ft approx. joint location from CL
6	991+32.5	Lt	PCC	25	26	Sawcut at 33.4 ft approx. joint location from CL
7	990+78.5	Lt	HMA	53	43	Sawcut at 35 ft approx. joint location from CL
8	992+77.3	Lt	HMA	39	25	Sawcut at 36 ft approx. joint location from CL
9	998+98.9	Rt	PCC	60	30	Sawcut at 40 ft approx. joint location from CL
10	1000+20.3	Rt	PCC	32	39	Sawcut at 31.2 ft approx. joint location from CL
11	1001+65.8	Rt	PCC	19	31	Sawcut at 29.7 ft approx. joint location from CL
12	1005+01.4	Rt	PCC and HMA	74	36	Sawcut at 39.4 ft approx. joint location from CL
13	1003+86.2	Lt	PCC and HMA	62	68	Sawcut at 32 ft approx. joint location from CL
14	1007+96.5	Lt	HMA	32	51	Sawcut at 30 ft approx. joint location from CL
15	1009+27.9	Lt	PCC	79	57	Sawcut at 36 ft approx. joint location from CL
16	1010+80	Rt	PCC	19	25	Sawcut at 36 ft approx. joint location from CL
17	1012+16.6	Rt	PCC	13	32	Sawcut at 36 ft approx. joint location from CL
18	1014+42.5	Lt	PCC	64	33	Sawcut at 38.3 ft approx. joint location from CL
19	1015+41.6	Lt	PCC	63	32	Sawcut at 38 ft approx. joint location from CL
20	1016+32.4	Rt	HMA	43	31	Sawcut at 35 ft approx. joint location from CL
21	1017+56.4	Rt	PCC	83	46	Sawcut at 38.5 ft approx. joint location from CL
22	1017+44.5	Lt	PCC	65	36	Sawcut at 39 ft approx. joint location from CL
23	1023+69.3	Lt	PCC	53	66	Sawcut at 32 ft approx. joint location from CL
Total:				**1205**	**868**	

* Not a bid item

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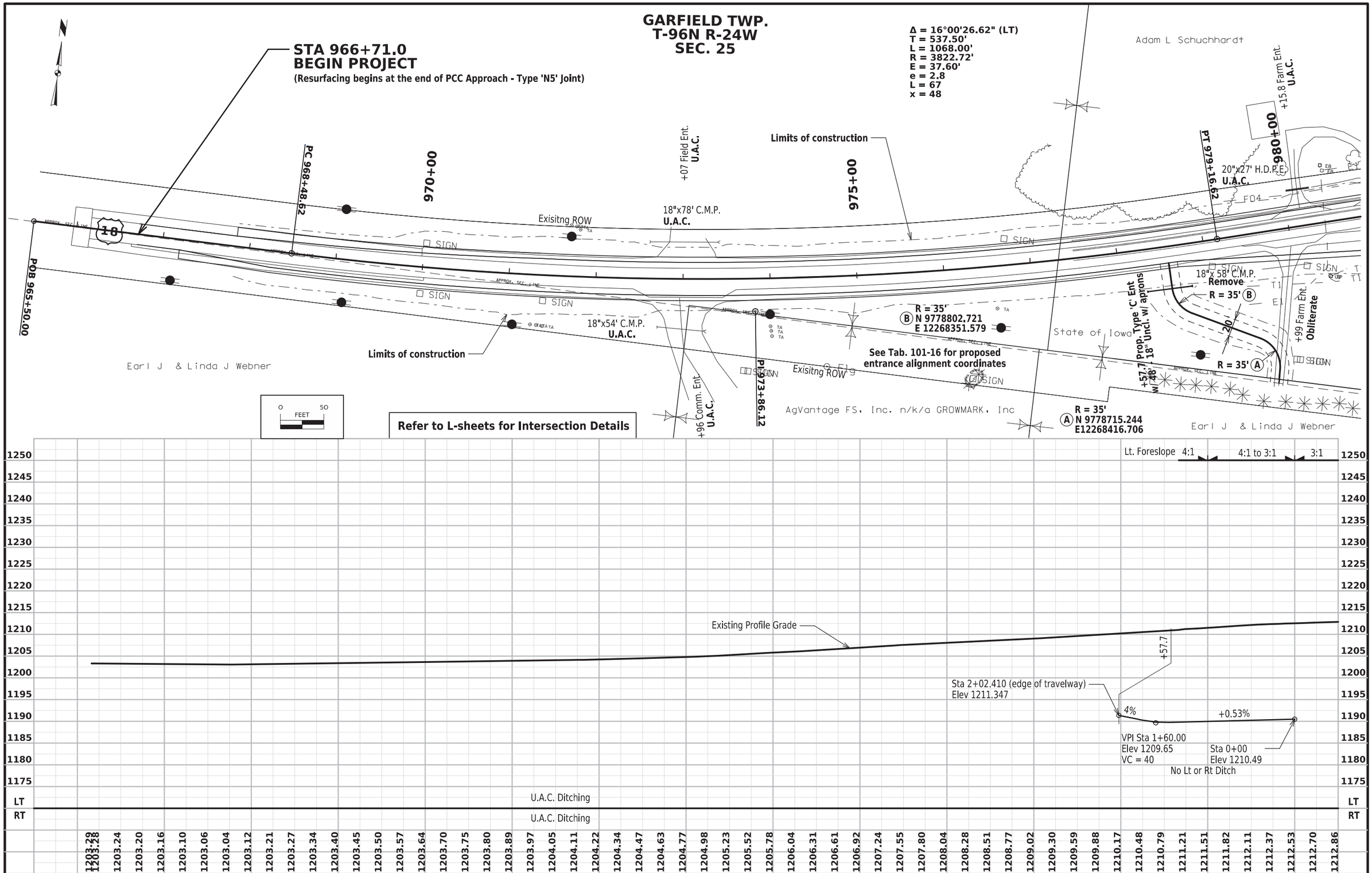
Modified

RESHAPING DITCHES

Line No.	Station	Station	Side	Length (in Sta)	Remarks
0.3	994+70	995+30	Left	.6	Daylight at ends
0.4	994+70	995+30	Right	.6	Daylight at ends
1.0	1003+20	1003+55	Left	0.35	In front of inlet. Material may be used as EW-501 grading
2.0	1010+00	1012+00	Left	2.0	Grade towards intake midway between entrances
2.5	1013+50	1014+00	Left	0.5	Shape to inlet
2.7	1015+30	1016+00	Right	0.70	Grade from inlet to culvert outlet
3.0	1017+80	1019+55	Left	1.8	Grade from entrance pipe outlet to entrance pipe inlet
Total:				**6.55**	



FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER D.1

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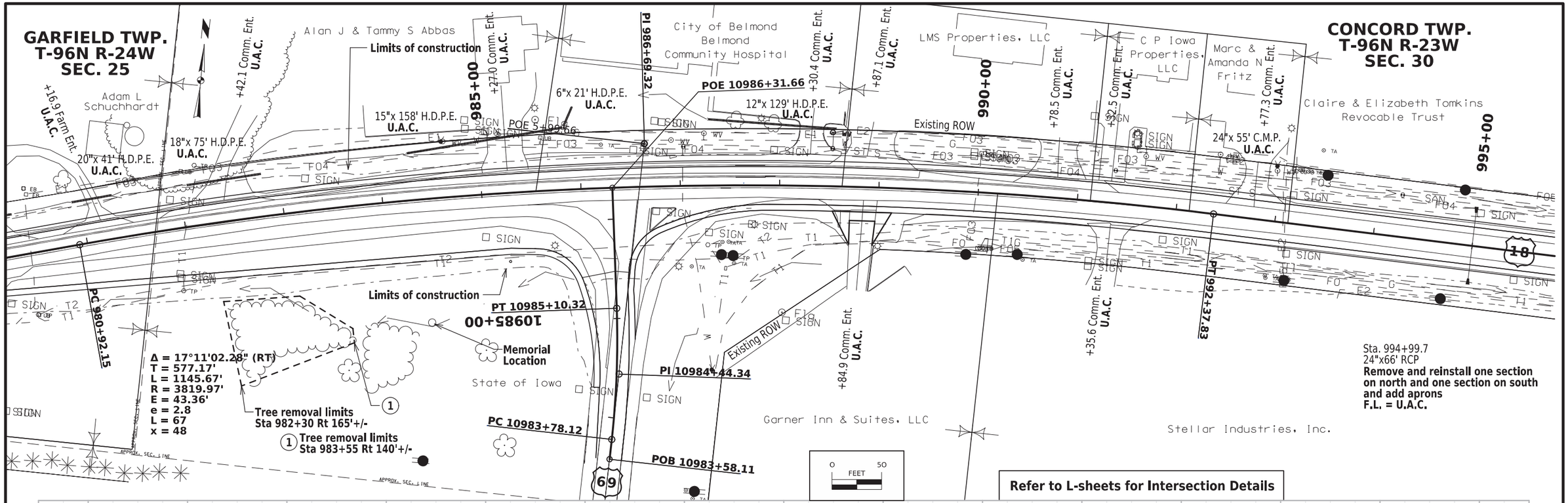

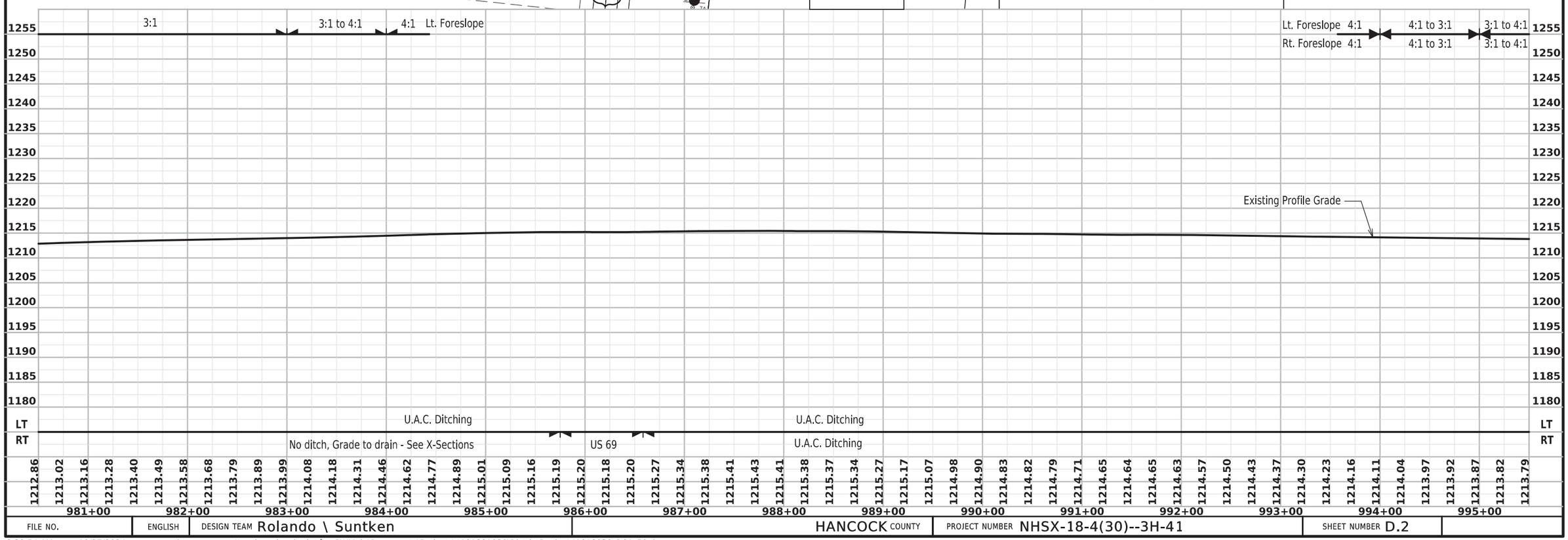

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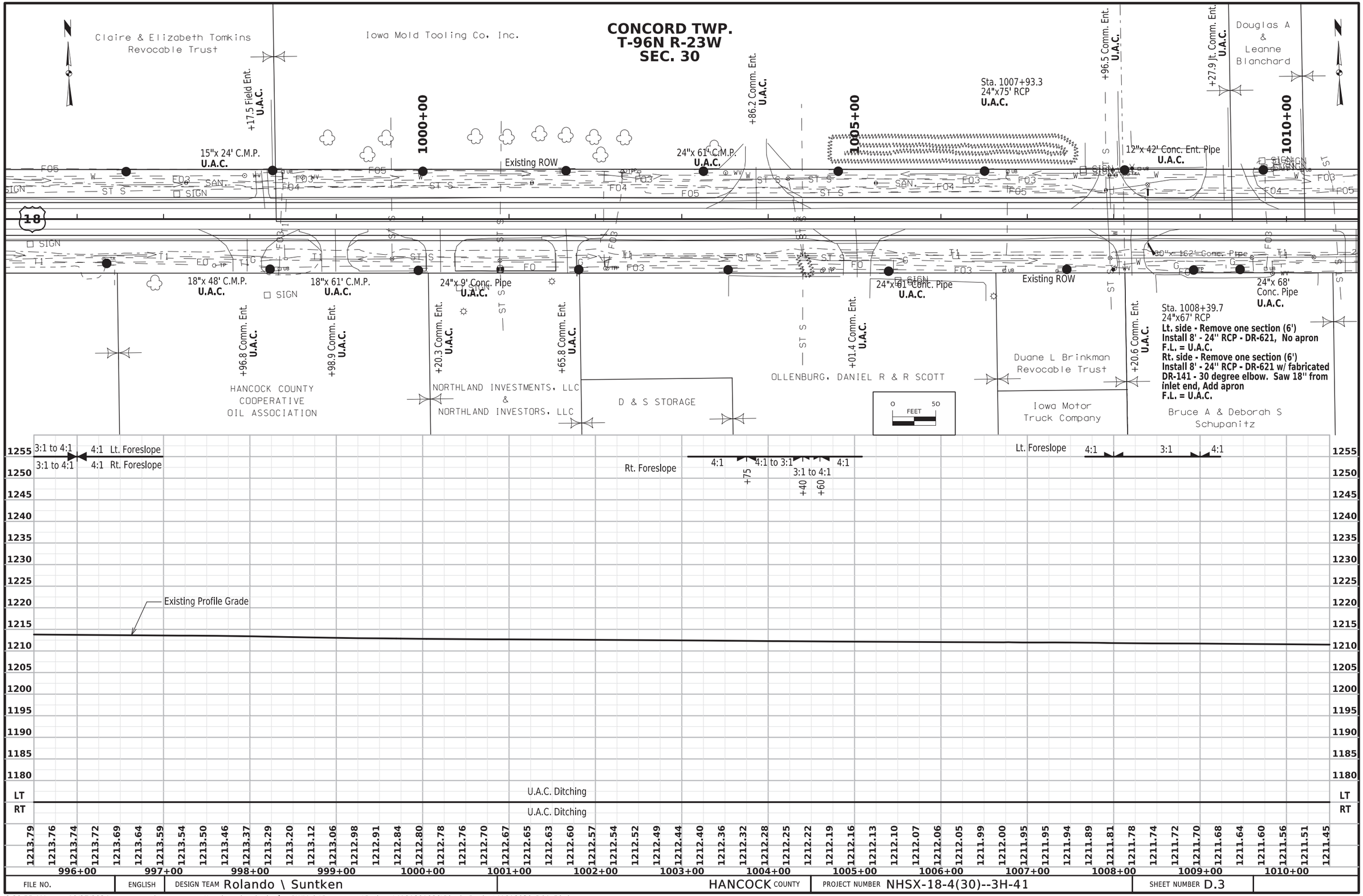

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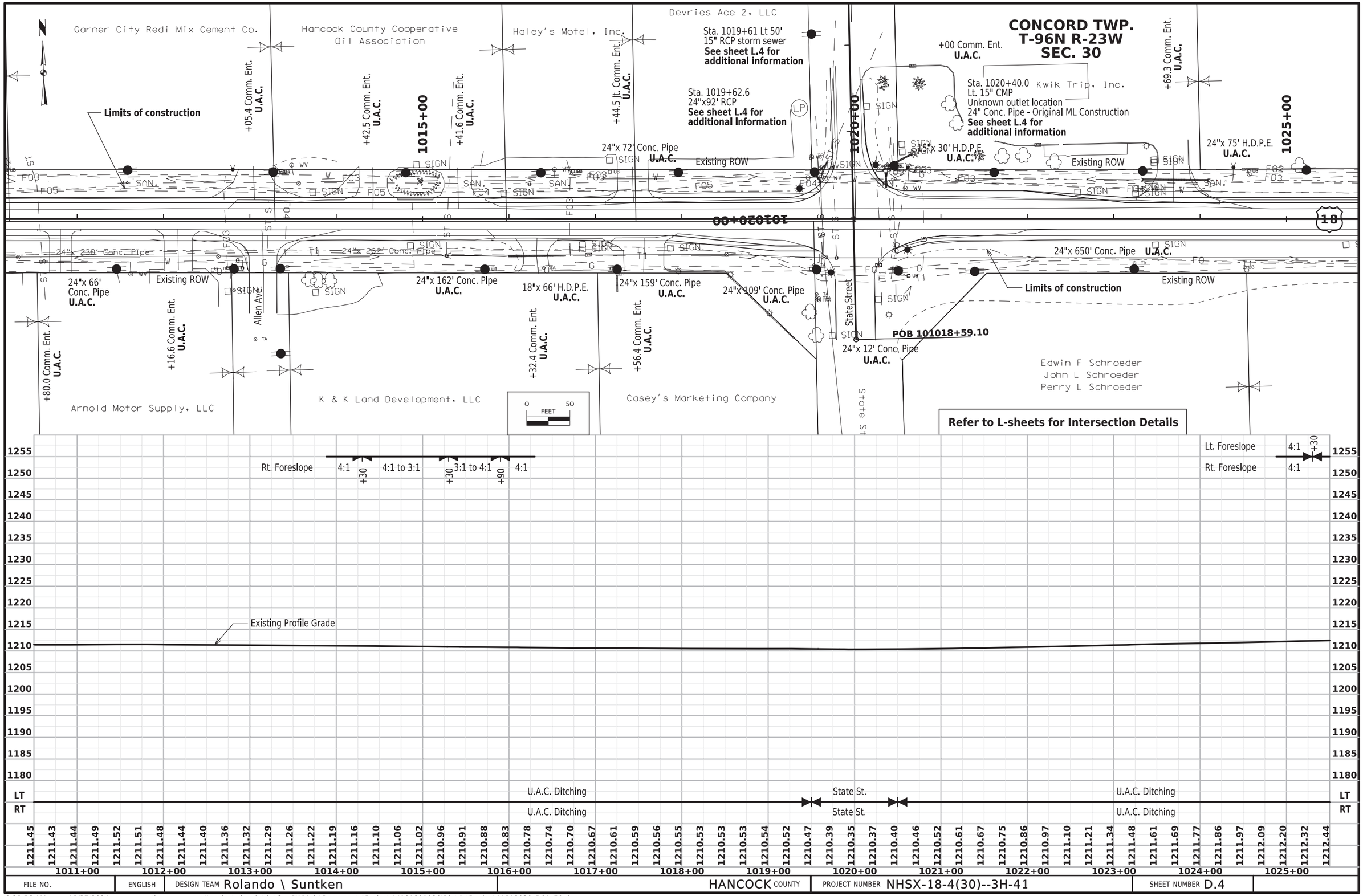

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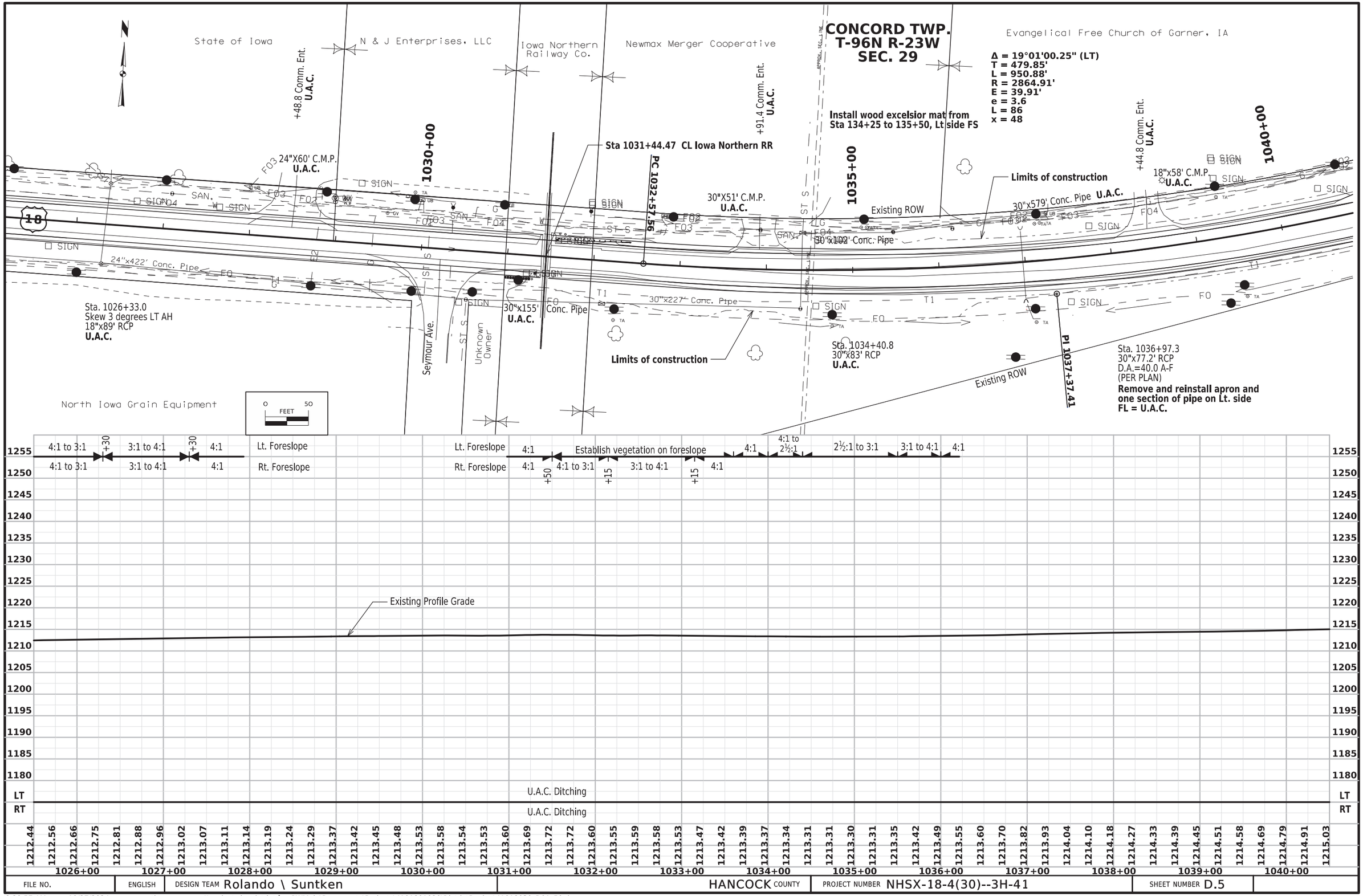

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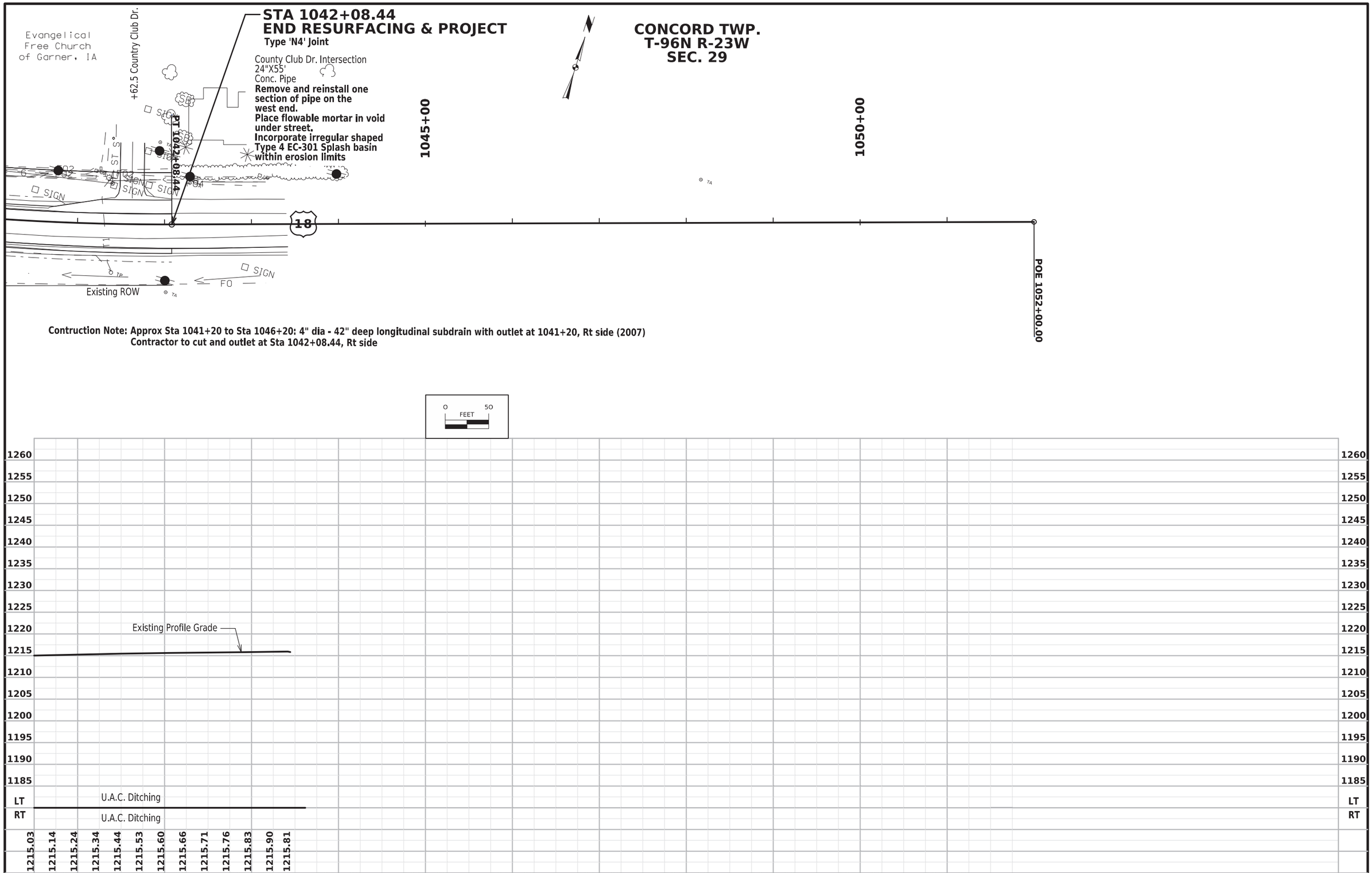

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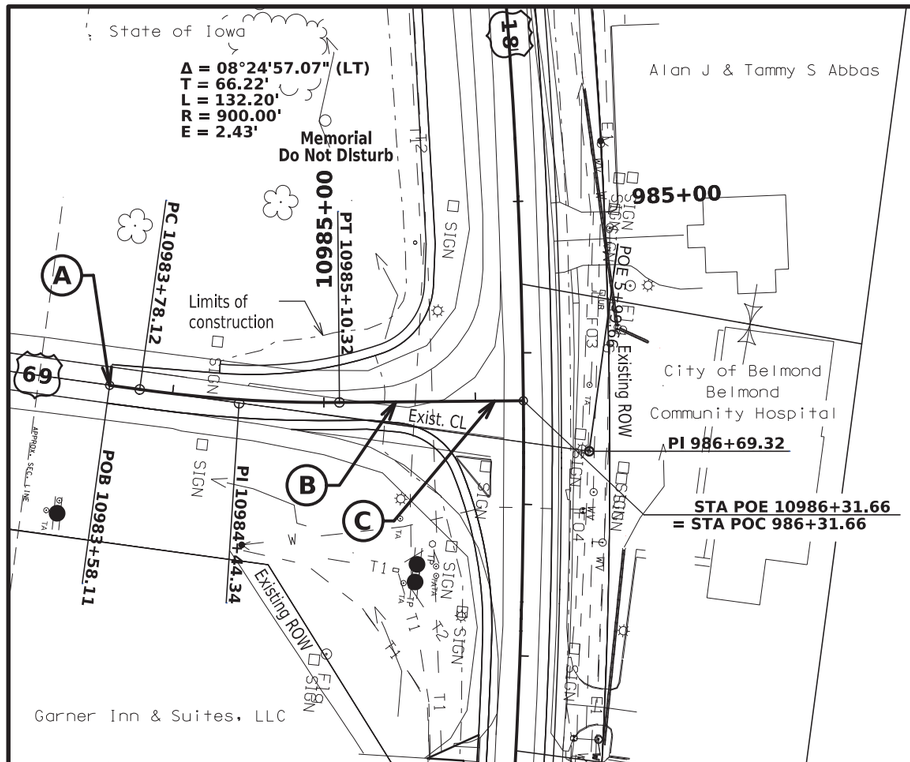

Concord TWP.
T-96N R-23W
SEC. 30

(A) STA 10983+58.11
BEGIN RESURFACING
(Type 'N1' notch at nearest joint)

(B) STA 10985+47.56
BEGIN RECONSTRUCTION

(C) STA 10986+12.66
END RECONSTRUCTION

Construction Note: US 69 top of intermediate course to tie-in flush with top of existing slab at Sta 10985+47.56
2" surface course to run out at Sta 10983+58.11

0 50 FEET

Refer to L-sheets for intersection details

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER E.1

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SURVEY INDEX

Worth County
NHSX-018-4(30)—3H-41
E Branch Iowa River to Country Club Dr in Garner
HMA Pavement Widening/HMA Resurfacing
PIN 20-41-018-010
Sap-196.1

Survey Personnel

John Hahn – Survey Party Chief
Bob Frederickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date	08/10/2021
End Date	12/07/2021

General Information

Measurement units for this survey are US survey feet. This survey is for proposed pavement widening and resurfacing of US Highway 18 in Garner. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM with Photo control. This survey request was for the US Highway 18 corridor only

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Two five-minute observations were taken with appropriate time spans between and used in a weighted average to obtain final coordinate values. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 2
VERTICAL DATUM: NAVD88
GEOID MODEL: 2012bu3

Alignments Information

The horizontal alignment for U.S. Hwy. 18 this survey is a retrace of As-built Plans No. F-888(1) Survey stationing was equated to the plan PI at Sta. 986+69.33 and run back and ahead without equation throughout the survey.

Survey stationing relates to As-built plan stationing as follows:

PI Sta. 973+84.9 As-built Plans No. F-888(1)
=Survey PI Sta. 973+86.12

PI Sta. 986+69.33 As-built Plans No. F-888(1)
= Survey PI Sta. 986+69.33
= PI Sta. 719+84.01 As-built Plans No. F-69-8(14)—20-41

PI Sta. 1037+38.7 As-built Plans No. F-888(1)
=Survey PI Sta. 1037+37.42

The horizontal alignment for U.S. Hwy. 69 this survey is a retrace of As-built Plans No. F-69-8(14)—20-41 Survey stationing was equated to the plan PI at Sta. 719+84.01 and run back without equation throughout the survey.

Survey stationing relates to As-built plan stationing as follows:

PT Sta. 713+84.35 As-built Plans No. F-69-8(14)—20-41
=Survey PT Sta. 713+84.35

PI Sta. 719+84.01 As-built Plans No. F-69-8(14)—20-41
= Survey PI Sta. 719+84.01
=PI Sta. 986+69.33 As-built Plans No. F-888(1)

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points
Primary control is for use with RTK base stations and for RTN validation.
Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00 - Ia. RCS Zone 2
VERT. DATUM: NAVD88 - Geoid Model 12b
Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00 - Ia. RCS Zone 02

VERT. DATUM: NAVD88 - Geoid Model 12b

Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Code - Description
410181619	9778928.984	12268964.247	1210.574	CP SET FENO MONUMENT IN SW QUAD OF US HWY 18 AND US HWY 69 SWLY 150 FT OF INTERSECTION OF HWYS
410181624	9779036.187	12271584.317	1208.491	CP SET 5/8 X 40 REBAR 150 FT WEST OF ALLEN AVE AND 39 FT NORTH OF CTR US HWY 18
410181629	9779145.044	12274525.912	1211.998	CP SET FENO MONUMENT 21 FT WEST OF CTR COUNTRY CLUB DRIVE AND 95 FT NWLY OF CTR US HWY 18

NOTE:
The first two digits in the control point name refer to the county number.
The next 3 digits refer to the highway number.
The next 3 digits refer to the highway milepost.
The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.

ALIGNMENT COORDINATES

Line No.	Name	Location	Poin on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
1.0	US 18	POB	965+50.00	9778716.316	12267008.4															
2.0	US 18	PC							968+48.62	9778714.569	12267307.01									
3.0	US 18	PI										973+86.12	9778711.427	12267844.5						
4.0	US 18	PT													979+16.62	9778856.625	12268362.02			
5.0	US 18	PC							980+92.15	9778904.044	12268531.03									
6.0	US 18	PI										986+69.32	9779059.958	12269086.74						
7.0	US 18	PT													992+37.83	9779044.733	12269663.71			
8.0	US 18	PC							1032+57.56	9778938.698	12273682.05									
9.0	US 18	PI										1037+37.41	9778926.04	12274161.73						
10.0	US 18	PT													1042+08.44	9779070.376	12274619.36			
11.0	US 18	POE	1052+00.00	9779368.629	12275565															
12.0																				
13.0	US 69	POB	10983+58.11	9778740.541	12269082.51															
14.0	US 69	PC							10983+78.12	9778760.55	12269082.8									
15.0	US 69	PI										10984+44.34	9778826.76	12269083.77						
16.0	US 69	PT													10985+10.32	9778892.398	12269075.03			
17.0	US 69	POE	10986+31.66	9779012.68	12269059.03															
18.0																				
19.0	State St	POB	101018+59.10	9778832.356	12272423.03															
20.0	State St	POE	101022+87.17	9779260.425	12272424.68															
21.0																				
22.0	Sta 978+57.7 Rt	POB		9778705.012	12268452.09															
23.0	Sta 978+57.7 Rt	PC							+11.46	9778716.47	12268451.68									
24.0	Sta 978+57.7 Rt	PI										+38.12	9778743.112	12268450.75						
25.0	Sta 978+57.7 Rt	PT													+57.03	9778749.291	12268424.82			
26.0	Sta 978+57.7 Rt	PC							1+40.66	9778768.674	12268343.47									
27.0	Sta 978+57.7 Rt	PI										1+61.61	9778773.53	12268323.09						
28.0	Sta 978+57.7 Rt	PT													1+78.41	9778793.786	12268317.74			
29.0	Sta 978+57.7 Rt	POE	2+08.41	9778822.792	12268310.08															

111_01
10/14/22

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
HSIPX-000-T(358)--3L-00	Milled Rumble Strips

108_23A
8/15/22

TRAFFIC CONTROL PLAN

Sign removal and reinstallation will be done by IDOT. The Contractor will need to coordinate with Garner Maintenance Garage prior to, and during construction.

Contact Kevin Rauk, Highway Maintenance Supervisor, 641-430-4608 or Rod Lang, HTS, 641-923-2305.

Traffic control plan as follows...

Stage 1:

Mill mainline pavement from BOP to EOP.

Stage 2:

Close westbound lane and widen north side of US 18 using TC-218.

Stage 3.1

Close eastbound lane and widen south side of US 18 from BOP to Sta 978+69.7 and from Sta 987+90.3 to EOP using TC-218.

Stage 3.2:

Shift US 18 traffic. Reconstruct US 18 EB to SB US 69 offset right turn lane and portion of US 69 SB lane to US 69 centerline. US 18/US 69 intersection traffic to remain open using stop bars and signals per layout on sheet J.4.

Stage 3.3:

Reconstruct from US 69 centerline to US 69 NB to US 18 EB return at Sta 987+90.3. US 18/US 69 intersection traffic to remain open using stop bars and signals per layout on sheet J.5.

Stage 4:

Shift US 18 traffic to normal movements along center 24'. Paint striping shall be painted as a two-lane highway. Offset right lane at US 69 shall be closed until final striping.

Note: Final Two-lane roadway with two-way left turn lanes (3-lane conversion) shall be painted after surface course.

User: christopher.suntken@dot.iowa.gov

511 TRAVEL RESTRICTIONS

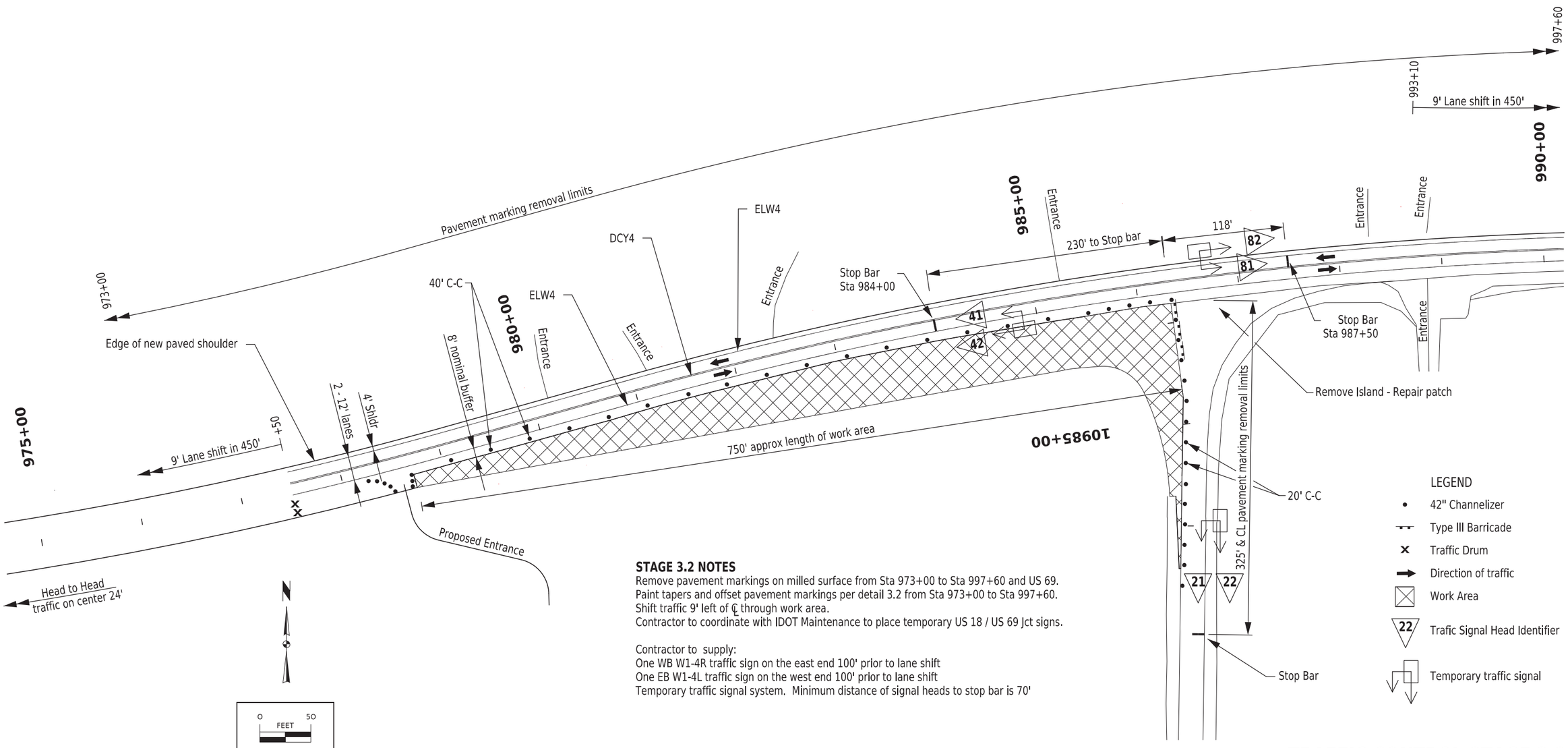
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	US 18	Both	Hancock	No travel restrictions anticipated				None					

INITIAL RECOMMENDED TIMINGS (SECONDS)

PHASE	2	4	8
MINIMUM GREEN	10	10	10
PASSAGE	3.0	3.0	3.0
MAXIMUM I	70	90	90
MAXIMUM II			
YELLOW CHANGE	7.5	7.5	7.5
RED CLEARANCE	19.0	14.5	6.3
WALK			
PEDESTRIAN CLEARANCE			
ADDED INITIAL			
TIME TO REDUCE			
TIME BEFORE REDUCTION			
MINIMUM GAP			

PHASE SEQUENCE CHART

PHASE	2			4		
NUMBER						
21, 22	G	Y	R	R	R	R
41, 42	R	R	R	G	Y	R
81, 82	R	R	R	G	Y	R



STAGE 3.2 NOTES

Remove pavement markings on milled surface from Sta 973+00 to Sta 997+60 and US 69.
Paint tapers and offset pavement markings per detail 3.2 from Sta 973+00 to Sta 997+60.
Shift traffic 9' left of ℄ through work area.
Contractor to coordinate with IDOT Maintenance to place temporary US 18 / US 69 Jct signs.

Contractor to supply:
One WB W1-4R traffic sign on the east end 100' prior to lane shift
One EB W1-4L traffic sign on the west end 100' prior to lane shift
Temporary traffic signal system. Minimum distance of signal heads to stop bar is 70'

TRAFFIC CONTROL STAGE 3.2

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **J.4**

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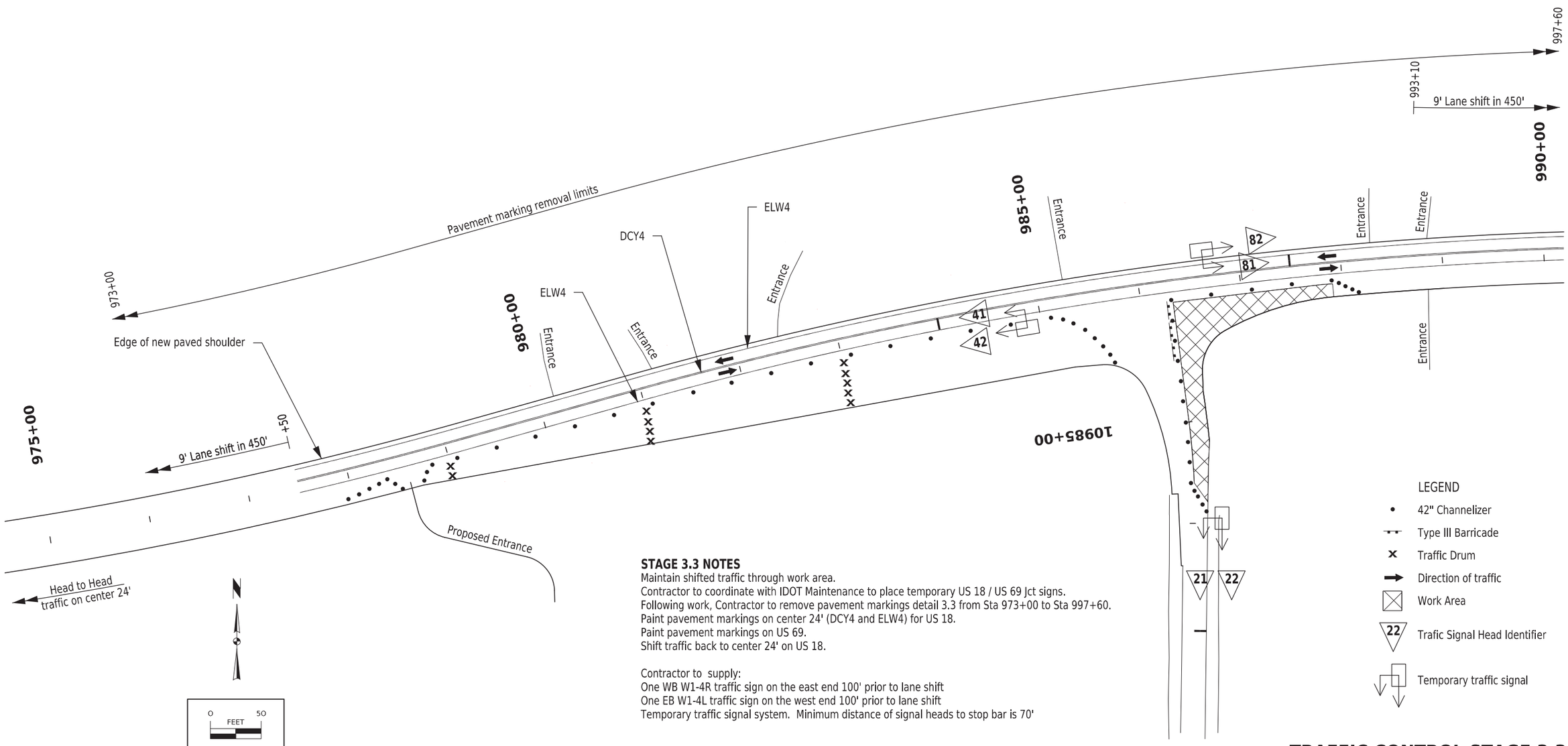
INITIAL RECOMMENDED TIMINGS (SECONDS)

PHASE	2	4	8
MINIMUM GREEN	10	10	10
PASSAGE	3.0	3.0	3.0
MAXIMUM I	70	90	90
MAXIMUM II			
YELLOW CHANGE	7.5	7.5	7.5
RED CLEARANCE	19.0	14.5	6.3
WALK			
PEDESTRIAN CLEARANCE			
ADDED INITIAL			
TIME TO REDUCE			
TIME BEFORE REDUCTION			
MINIMUM GAP			

PHASE SEQUENCE CHART

PHASE	2			4		
NUMBER						
21, 22	G	Y	R	R	R	R
41, 42	R	R	R	G	Y	R
81, 82	R	R	R	G	Y	R



STAGE 3.3 NOTES

Maintain shifted traffic through work area.
Contractor to coordinate with IDOT Maintenance to place temporary US 18 / US 69 Jct signs.
Following work, Contractor to remove pavement markings detail 3.3 from Sta 973+00 to Sta 997+60.
Paint pavement markings on center 24' (DCY4 and ELW4) for US 18.
Paint pavement markings on US 69.
Shift traffic back to center 24' on US 18.

Contractor to supply:
One WB W1-4R traffic sign on the east end 100' prior to lane shift
One EB W1-4L traffic sign on the west end 100' prior to lane shift
Temporary traffic signal system. Minimum distance of signal heads to stop bar is 70'

TRAFFIC CONTROL STAGE 3.3

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **J.5**

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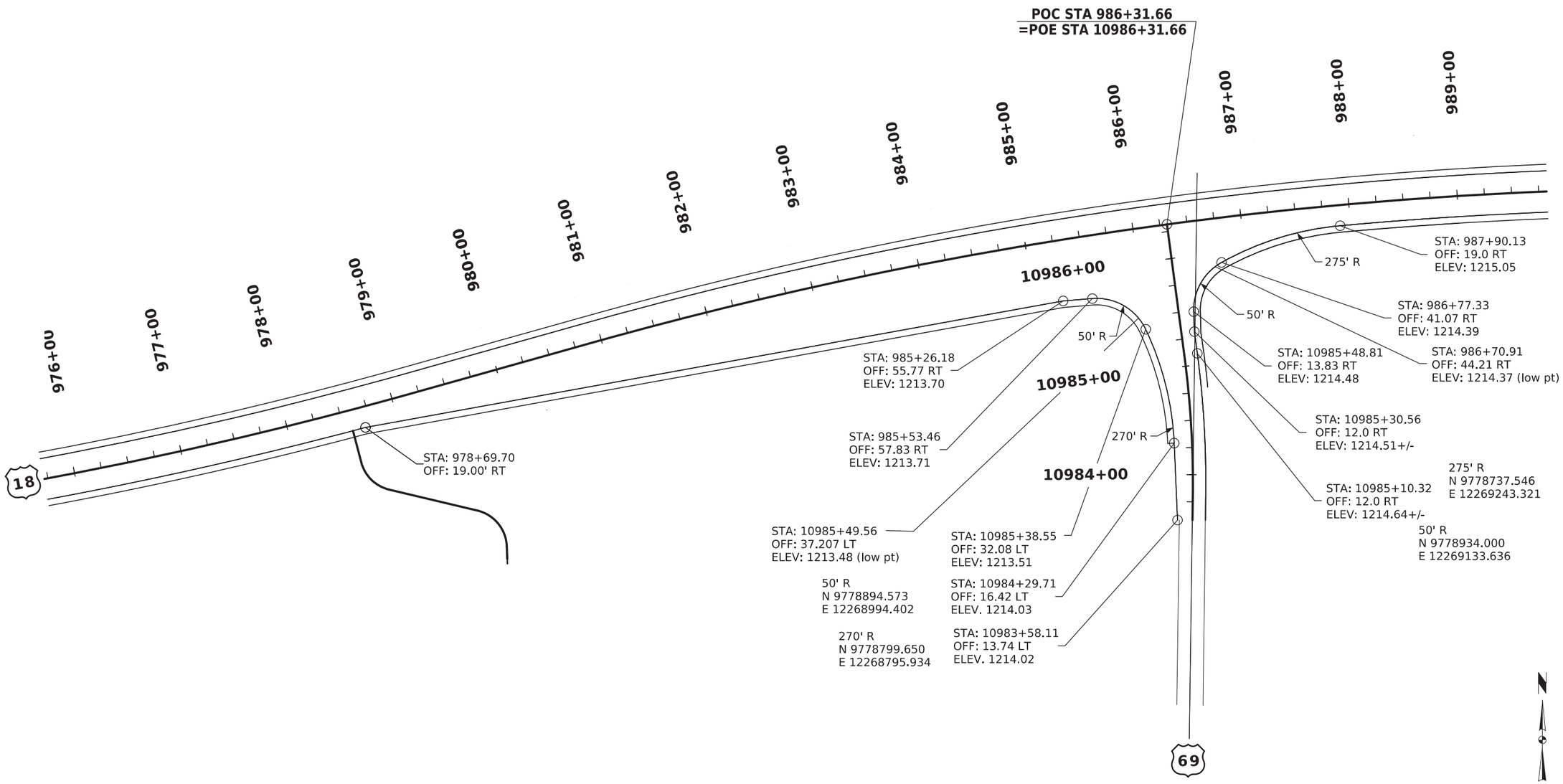

US 18 & US 69 INTERSECTION

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **L.1**

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985+00

986+00

Edge of travelway

Edge of paving

Saw cut

Edge of widening

18

-2.8%

-2.8%

-2.8%

Edge of widening

Saw cut

Proposed PCC

U.A.C. PCC

Existing joint

Motel Entrance

10986+00

Saw cut

Tie-in Sta 10986+12.66

CL Existing US 69

Edge of paving

Edge of travelway

-2.8%

10:1

10:1

Remove PCC Pavement

18'

Saw cut

Edge of paving

Edge of travelway

10985+00

Sta 10984+78.95

STA 10985+47.56

BEGIN RECONSTRUCTION

Existing PCC pavement to remain

Edge of existing pavement

Construct widening unit

10984+00

Existing gran. shoulder

Existing gran. shoulder

STA 10983+58.11

BEGIN RESURFACING

Type 'N1' Notch at nearest joint (back)

0 FEET 20

Existing pavement to remain

69

CONSTRUCTION NOTE: US 69 Intermediate course to tie-in flush with top of existing slab at Sta 10985+47.56

POE 10986+31.66

CL US 18

18

Match Proposed Widening

Match Proposed Widening

Edge of travelway

Slope 1

Edge of travelway

Slope 1

Slope 1

10986+00

CL Realigned US 69

CL Existing US 69

Slope 1

Edge of travelway

Slope 1

Edge of paving

12'

12'

Elev. after 2" HMA surf. 1214.48 +-/

Match Exist. Slab

Match Exist. Slab

Saw cut (on joint)

Edge of paving

Edge of travelway

1 Slope set based on edge profile

Slope 1

STA 10985+47.56

PCC Return U.A.C.

24' Exist. PCC U.A.C.

Edge of existing pavement

Construct widening unit

69

0 FEET 10

US 18 & US 69 INTERSECTION

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **L.2**

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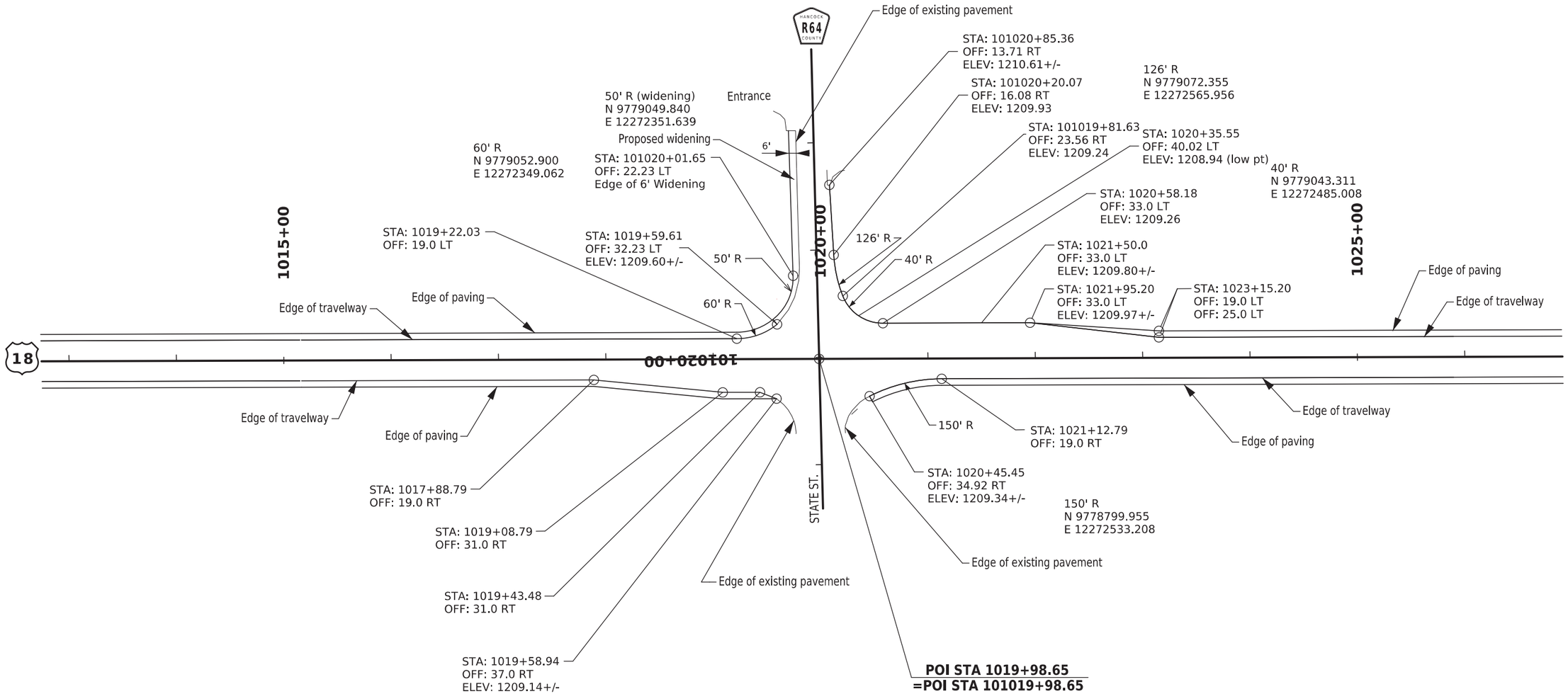

US 18 & STATE STREET INTERSECTION

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **L.3**

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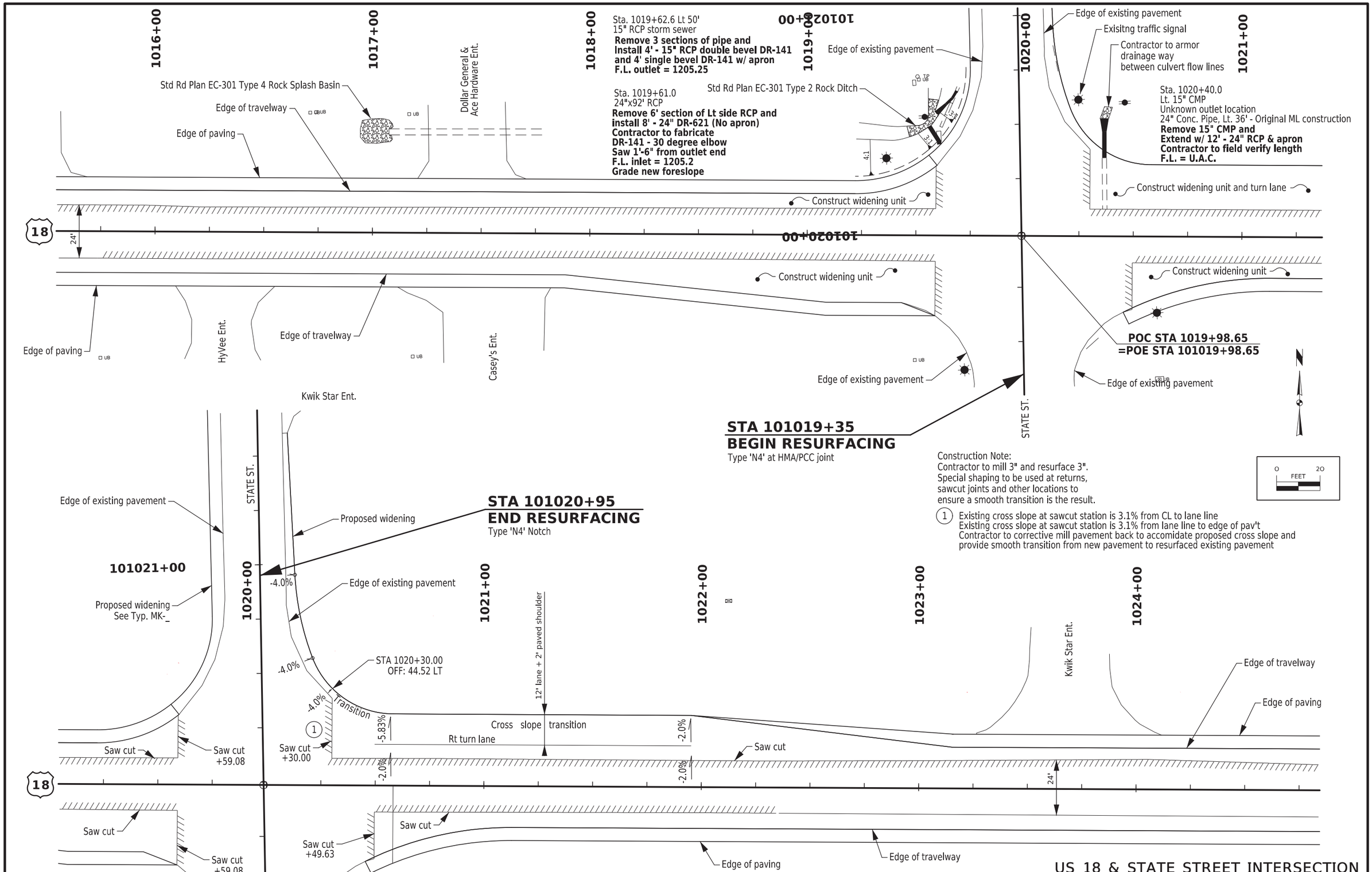

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **L.4**

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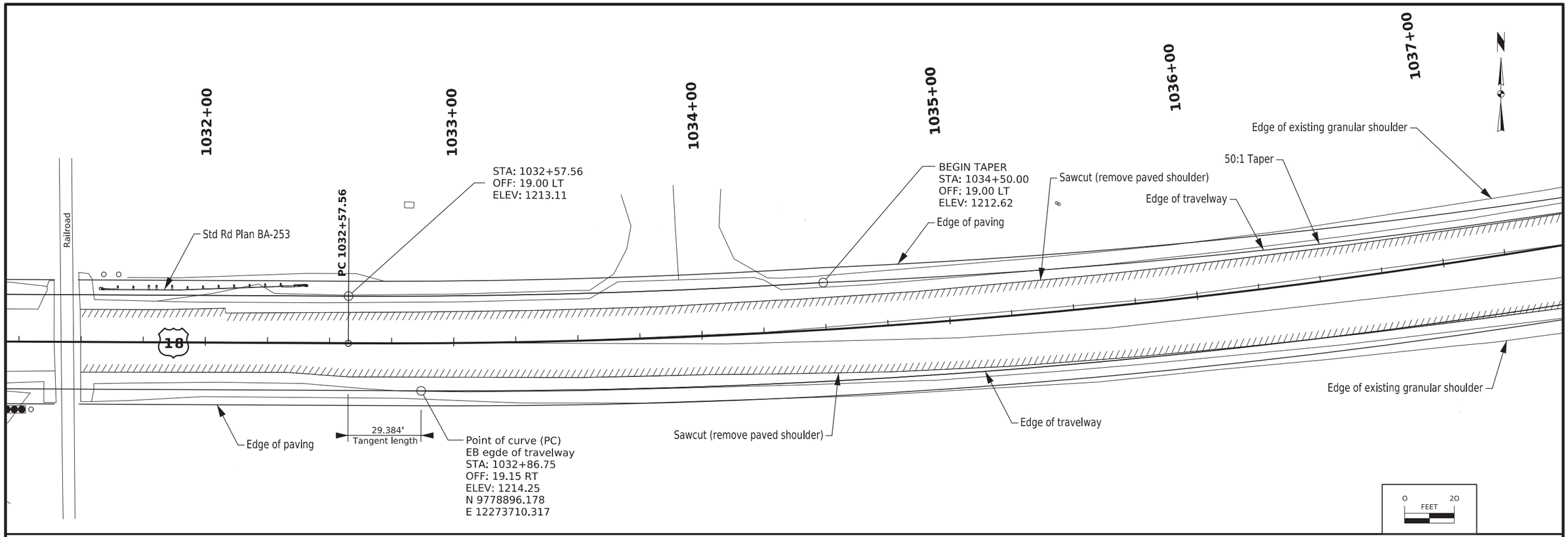

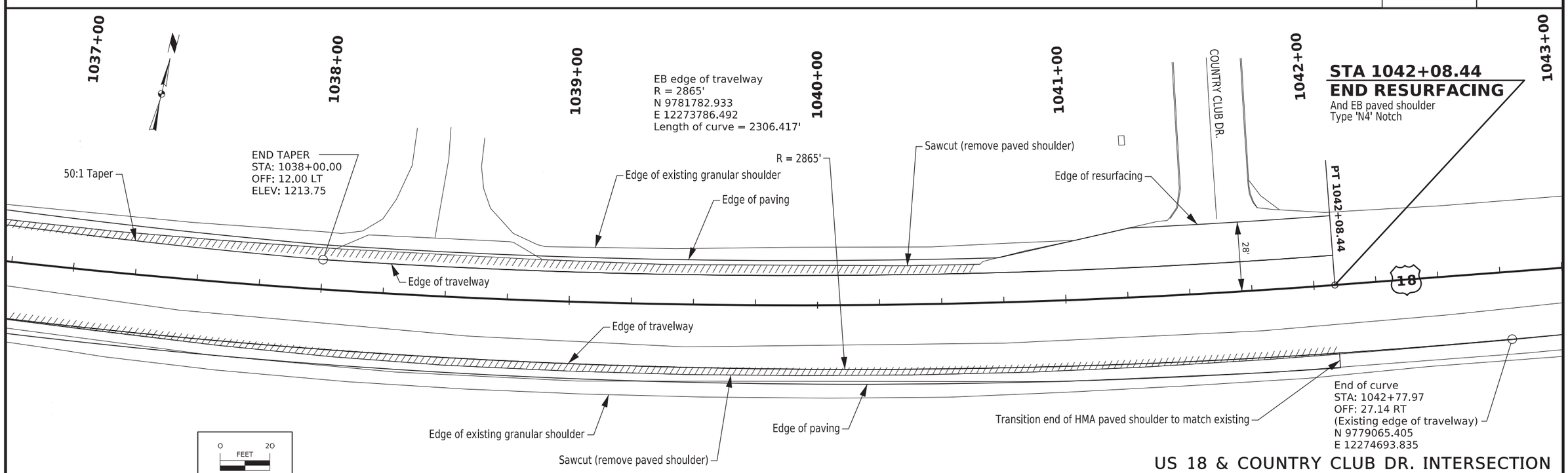

US 18 & COUNTRY CLUB DR. INTERSECTION

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **L.5**

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ESTIMATE OF TRAFFIC SIGNAL QUANTITIES

ITEM	DESCRIPTION	UNITS	TOTAL
CONTROLLER AND CABINET	ATC OR NEMA CONTROLLER, CABINET, 18" RISER, AND ACCESSORIES	LS	1
	UNINTERRUPTABLE POWER SUPPLY (BATTERY BACK-UP)	LS	1
DETECTION	VIDEO DETECTION SYSTEM	LS	1
	EMERGENCY VEHICLE PREEMPTION SYSTEM	LS	1
	APS PEDESTRIAN PUSHBUTTON WITH SIGN	EACH	2
TRAFFIC SIGNAL HEADS	12" <R,<Y,<FY,<G (ALL LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	2
	12" R,Y,G (ALL LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	6
	12" R,Y,G (ALL LED), SIDE-OF-POLE MOUNTED	EACH	3
	12" R,Y,G,Y>,G>, (ALL LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	1
	12" R,Y,G,Y>,G>, (ALL LED), SIDE-OF-POLE MOUNTED	EACH	1
	16" PEDESTRIAN HEAD, HAND/PERSON, COUNTDOWN, SIDE-OF-POLE MOUNTED	EACH	2
POWER SUPPLY	POWER SUPPLY	EACH	1
HANDHOLES	TYPE I - PRE-CAST CONCRETE HANDHOLE, 24" DIAMETER	EACH	3
	TYPE III - 24" X 36" PRE-CAST POLYMER-CONCRETE HANDHOLE	EACH	1
WIRE AND CABLE	SIGNAL CABLE - 12c #14 AWG	LIN FT	530
	SIGNAL CABLE - 7c #14 AWG	LIN FT	70
	SIGNAL CABLE - 5c #14 AWG	LIN FT	580
	SIGNAL CABLE - 2c #14 AWG	LIN FT	170
	EMERGENCY VEHICLE PREEMPTION CABLE	LIN FT	70
	VIDEO DETECTION CABLE(S)	LIN FT	780
	LUMINAIRE CABLE - 1c #8 AWG	LIN FT	60
	LUMINAIRE CABLE - 1c #10 AWG	LIN FT	120
	POWER CABLE - 1c #6 AWG	LIN FT	130
	GROUND WIRE - 1c #6 BARE	LIN FT	430
	TRACER WIRE - 1c #10	LIN FT	430
	PULL TAPE	LIN FT	430
CONDUIT	2" PVC, TRENCHED / BORED	LIN FT	20
	3" PVC, TRENCHED / BORED	LIN FT	370
CONCRETE FOOTINGS	CONTROLLER FOOTING	EACH	1
	POLE FOOTING, 3' DIA x 14' DEPTH	EACH	2
	POLE FOOTING, 3' DIA x 12' DEPTH	EACH	2
	POLE FOOTING, 2' DIA x 4' DEPTH	EACH	1
TRAFFIC SIGNAL POLES	ALUMINUM PEDESTAL POLE - HEIGHT 5'	EACH	1
	STEEL COMBINATION SIGNAL/DUAL LIGHTING POLE - 42' MAST ARM	EACH	1
	STEEL SIGNAL POLE - 45' MAST ARM - BLACK	EACH	1
	STEEL SIGNAL POLE - 28' MAST ARM - BLACK	EACH	1
	STEEL SIGNAL POLE - 24' MAST ARM - BLACK	EACH	1
LUMINAIRE	LUMINAIRE FIXTURE	EACH	1
	CONNECTOR - L-1, FUSED	EACH	2
MISC.	STREETNAME SIGN - 78" x 18", MAST-ARM MOUNTED	EACH	2
	STREETNAME SIGN - 72" x 18", MAST-ARM MOUNTED	EACH	2
	STREETNAME SIGN - 54" x 18", MAST-ARM MOUNTED	EACH	2
	TRAFFIC SIGN - R3-5L, 30" x 36", MAST-ARM MOUNTED	EACH	4
	TRAFFIC SIGN - R3-5R, 30" x 36", MAST-ARM MOUNTED	EACH	3

GENERAL NOTES:

1. ALL QUANTITIES SHOWN IN THE TRAFFIC SIGNAL PLANS ARE FOR INFORMATIONAL AND ESTIMATING PURPOSES ONLY. THE CONTRACTOR'S LUMP SUM BID SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PROVIDE A COMPLETE AND FUNCTIONAL TRAFFIC SIGNAL INSTALLATION IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
2. PROVIDE TRAFFIC CONTROL DEVICES (INCLUDING THOSE REQUIRED TO FACILITATE CONSTRUCTION OF TRAFFIC SIGNALS) IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR THE STREETS AND HIGHWAYS, AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC), CHAPTER 130.
3. TRAFFIC SIGNAL SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT IOWA DOT STANDARD SPECIFICATIONS 8, EXCEPT AS MODIFIED BY THE PLANS.
4. THE CONTRACTOR SHALL HAVE AN EMPLOYEE ON THE PROJECT WITH A LEVEL II INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) TRAFFIC SIGNAL TECHNICIAN CERTIFICATION.
5. THE CONTRACTOR SHALL FURNISH A SCHEDULE OF UNIT PRICES FOR ESTIMATED TRAFFIC SIGNAL QUANTITIES. PAYMENT WILL BE BASED ON PLAN QUANTITIES. QUANTITIES WILL NOT BE FIELD MEASURED.
6. ROADWAY GEOMETRICS REPRESENT PROPOSED FEATURES.
7. THE PLAN LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION ON THE PROJECT TO ESTABLISH LOCATIONS.
8. SECONDARY SERVICE LOCATION IS APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING POWER SERVICE LOCATIONS WITH POWER SERVICE PROVIDER PRIOR TO CONDUIT/CIRCUIT INSTALLATION. CONTRACTOR SHALL COIL 50 FEET OF POWER SERVICE CABLE AT THE BASE OF THE SECONDARY SERVICE POLE. POWER SERVICE PROVIDER TO INSTALL SECONDARY SERVICE RISER.
9. THE PLAN LOCATIONS OF ALL HANDHOLES ARE APPROXIMATE ONLY AND ARE SUBJECT TO ADJUSTMENT IN THE FIELD BY THE ENGINEER. OBTAIN ENGINEER'S APPROVAL PRIOR TO PLACING HANDHOLES AND CONSTRUCTING FOOTINGS.
10. PROVIDE ONE WEEK NOTICE TO IOWA DOT DISTRICT OFFICE BEFORE PLACING THE TRAFFIC SIGNAL INTO OPERATION.
11. RELOCATE AND REINSTALL EXISTING MCCAIN ATC TRAFFIC SIGNAL CONTROLLER IN NEW CABINET. CABINET SHALL BE A 16 CHANNEL HV ATC CABINET WITH 16 CHANNEL CMU, SWITCHPACKS, AND AUXILIARY EQUIPMENT. CABINET AND CABINET EQUIPMENT SHALL BE FULLY-COMPATIBLE WITH THE EXISTING CONTROLLER.
12. INSTALL ONE SIGNAL CABLE FROM EACH SIGNAL HEAD TO THE BASE OF THE POLE. A 7-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH 5-SECTION VEHICLE SIGNAL HEAD, AND A 5-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH 3-SECTION OR 4-SECTION VEHICLE SIGNAL HEAD AND EACH PEDESTRIAN SIGNAL HEAD. ALL SIGNAL CABLE SHALL BE #14 AWG UNLESS OTHERWISE NOTED ON THE PLANS.
13. IN COMBINATION SIGNAL/ LIGHTING POLES, INSTALL TWO 1-CONDUCTOR #10 CABLES FROM THE LUMINAIRE TO THE BASE OF THE POLE. UTILIZE Y AND L CONNECTORS AS NEEDED.
14. PROVIDE A GROUND ROD IN EACH HANDHOLE. PROVIDE TWO GROUND RODS IN THE HANDHOLE NEAREST THE SIGNAL CABINET. INSTALL A #6 BARE COPPER GROUND WIRE BETWEEN THE GROUND RODS IN THE SIGNAL FOOTINGS AND HANDHOLES TO FORM A CONTINUOUSLY GROUNDED SYSTEM. PROVIDE SEPARATE GROUNDING SYSTEM FOR THE SIGNAL CABINET.
15. ABOVE GROUND RISERS SHALL BE RIGID STEEL CONDUIT. ALL OTHER CONDUIT SHALL BE RIGID P.V.C. CONDUIT OR DIRECTIONAL BORED HDPE CONDUIT.
16. UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH LANES. APPROXIMATE LOCATIONS ARE AS SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.
17. TRAFFIC SIGNAL MOUNTING BRACKETS SHALL UTILIZE STAINLESS STEEL BANDING FOR SIDE OF POLE MOUNTING AND GALVANIZED STEEL CABLE FOR MAST ARM MOUNTING.
18. SIGNAL HEADS SHALL HAVE BLACK FACES, VISORS, BACKPLATES (WHERE INDICATED) AND BODIES.
19. PEDESTRIAN PUSHBUTTONS SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) COMPLIANT. INSTALL PEDESTRIAN PUSHBUTTON SIGN ABOVE EACH PEDESTRIAN PUSHBUTTON.
20. STREET NAME SIGNS SHALL BE GREEN WITH WHITE LETTERING AND BORDER. LETTERING SHALL BE SERIES C WITH 12-INCH UPPER CASE AND LOWER CASE LETTERS.
21. PULL TAPE SHALL BE FLAT WOVEN POLYESTER TAPE WITH MINIMUM TENSILE STRENGTH OF 1,250 POUNDS AND WIDTH OF 0.5 INCH.
22. DETECTION SYSTEM SHALL BE HYBRID VIDEO/RADAR TO PROVIDE RELIABLE ADVANCE AND STOP LINE DETECTION. DETECTION SYSTEM SHALL INCLUDE 5 YEARS OF REMOTE ACCESS AND A 5-YEAR WARRANTY.
23. EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM SHALL BE SIREN-ACTIVATED.
24. THE SIGNAL CABINET ADDRESS WILL BE THE SAME AS THE CURRENT SIGNAL CABINET.
25. UNINTERRUPTABLE POWER SUPPLY (UPS) SYSTEM SHALL BE HOUSED IN THE SIGNAL CABINET OR AN EXTERNAL CABINET MOUNTED TO THE SIGNAL CABINET. UPS SHALL PROVIDE AT LEAST 4 HOURS OF NORMAL SIGNAL OPERATION AND 8 HOURS OF FLASHING OPERATION.
26. LUMINAIRES SHALL BE LED, 18,000 LUMENS (+/- 5%), 100 LUMENS/WATT EFFICACY, 4000 K COLOR TEMPERATURE, TYPE III DISTRIBUTION, MEDIUM, B3-U0-G3, L70 > 70,000 HOURS WITH AT LEAST 5-YEAR WARRANTY, GRAY FINISH AND PHOTOCELL CONTROL.
27. TRAFFIC SIGNAL REMOVAL INCLUDES REMOVAL OF EXISTING TRAFFIC SIGNAL HEADS, POLES, CABINET AND EQUIPMENT, AND CABLE IN CONDUITS. CONTRACTOR TO SALVAGE ALL EQUIPMENT AND CABLE. ABANDON CONDUITS IN PLACE. COMPLETELY REMOVE EXISTING SIGNAL POLE AND CABINET FOOTINGS AND HANDHOLES.

TRAFFIC SIGNAL LEGEND

EXISTING	PROPOSED		EXISTING	PROPOSED	
		TRAFFIC SIGNAL			CONTROLLER CABINET WITH FOOTING
		TRAFFIC SIGNAL WITH BACKPLATE			SECONDARY SERVICE POINT
		PEDESTRIAN SIGNAL	XX	XX	INDUCTIVE LOOP DETECTOR (XX = NUMBER DESIGNATION)
	(XX)	MAST ARM SUSPENDED TRAFFIC SIGNAL (XX = LENGTH OF MAST ARM)		XX	DETECTION ZONE (XX = NUMBER DESIGNATION)
		METAL TRAFFIC SIGNAL PEDESTAL			VIDEO DETECTION CAMERA
		TRAFFIC SIGNAL HEAD NUMBER			EMERGENCY VEHICLE DETECTOR
		POLE NUMBER			POLE MOUNTED SIGN
		STREET LIGHT ON SIGNAL POLE			
		CONDUIT TRENCHED, PUSHED, JACKED, OR BORED			
		HANDHOLE			

IOWA DOT STANDARD ROAD PLANS	
NUMBER	IDENTIFICATION
LI - 103	Conduit and Precast Handholes
TS - 102	Traffic Signal Pole Foundation

LICENSED PROFESSIONAL ENGINEER
ANTHONY J. BOES
P12387
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Anthony J. Boes 1/29/25

Anthony J. Boes, P.E. Date

License Number P12387

My License Renewal Date is December 31, 2025

Pages or sheets covered by this seal:
N.1 - N.5

FILE NO.	ENGLISH	DESIGN TEAM Snyder & Associates, Inc.	Hancock COUNTY	PROJECT NUMBER NHSX-018-4(30)--3H-41	SHEET NUMBER N.1	REVISED

ESTIMATE OF TRAFFIC SIGNAL QUANTITIES

ITEM	DESCRIPTION	UNITS	TOTAL
CONTROLLER AND CABINET	ATC OR NEMA CONTROLLER, CABINET, 18" RISER, AND ACCESSORIES	LS	1
	UNINTERRUPTABLE POWER SUPPLY (BATTERY BACK-UP)	LS	1
DETECTION	VIDEO DETECTION SYSTEM	LS	1
	EMERGENCY VEHICLE PREEMPTION SYSTEM	LS	1
	APS PEDESTRIAN PUSHBUTTON WITH SIGN	EACH	2
TRAFFIC SIGNAL HEADS	12" <R,<Y,<FY,<G (ALL LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	2
	12" R,Y,G (ALL LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	6
	12" R,Y,G (ALL LED), SIDE-OF-POLE MOUNTED	EACH	3
	12" R,Y,G,Y>,G>, (ALL LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	1
	12" R,Y,G,Y>,G>, (ALL LED), SIDE-OF-POLE MOUNTED	EACH	1
	16" PEDESTRIAN HEAD, HAND/PERSON, COUNTDOWN, SIDE-OF-POLE MOUNTED	EACH	2
POWER SUPPLY	POWER SUPPLY	EACH	1
HANDHOLES	TYPE I - PRE-CAST CONCRETE HANDHOLE, 24" DIAMETER	EACH	3
	TYPE III - 24" X 36" PRE-CAST POLYMER-CONCRETE HANDHOLE	EACH	1
WIRE AND CABLE	SIGNAL CABLE - 12c #14 AWG	LIN FT	530
	SIGNAL CABLE - 7c #14 AWG	LIN FT	70
	SIGNAL CABLE - 5c #14 AWG	LIN FT	580
	SIGNAL CABLE - 2c #14 AWG	LIN FT	170
	EMERGENCY VEHICLE PREEMPTION CABLE	LIN FT	70
	VIDEO DETECTION CABLE(S)	LIN FT	780
	LUMINAIRE CABLE - 1c #8 AWG	LIN FT	60
	LUMINAIRE CABLE - 1c #10 AWG	LIN FT	120
	POWER CABLE - 1c #6 AWG	LIN FT	130
	GROUND WIRE - 1c #6 BARE	LIN FT	430
	TRACER WIRE - 1c #10	LIN FT	430
	PULL TAPE	LIN FT	430
CONDUIT	2" PVC, TRENCHED / BORED	LIN FT	20
	3" PVC, TRENCHED / BORED	LIN FT	370
CONCRETE FOOTINGS	CONTROLLER FOOTING	EACH	1
	POLE FOOTING, 3' DIA x 14' DEPTH	EACH	2
	POLE FOOTING, 3' DIA x 12' DEPTH	EACH	2
	POLE FOOTING, 2' DIA x 4' DEPTH	EACH	1
TRAFFIC SIGNAL POLES	ALUMINUM PEDESTAL POLE - HEIGHT 5'	EACH	1
	STEEL COMBINATION SIGNAL/DUAL LIGHTING POLE - 42' MAST ARM	EACH	1
	STEEL SIGNAL POLE - 45' MAST ARM - BLACK	EACH	1
	STEEL SIGNAL POLE - 28' MAST ARM - BLACK	EACH	1
	STEEL SIGNAL POLE - 24' MAST ARM - BLACK	EACH	1
LUMINAIRE	LUMINAIRE FIXTURE	EACH	1
	CONNECTOR - L-1, FUSED	EACH	2
MISC.	STREETNAME SIGN - 78" x 18", MAST-ARM MOUNTED	EACH	2
	STREETNAME SIGN - 72" x 18", MAST-ARM MOUNTED	EACH	2
	STREETNAME SIGN - 54" x 18", MAST-ARM MOUNTED	EACH	2
	TRAFFIC SIGN - R3-5L, 30" x 36", MAST-ARM MOUNTED	EACH	4
	TRAFFIC SIGN - R3-5R, 30" x 36", MAST-ARM MOUNTED	EACH	3

GENERAL NOTES:

1. ALL QUANTITIES SHOWN IN THE TRAFFIC SIGNAL PLANS ARE FOR INFORMATIONAL AND ESTIMATING PURPOSES ONLY. THE CONTRACTOR'S LUMP SUM BID SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PROVIDE A COMPLETE AND FUNCTIONAL TRAFFIC SIGNAL INSTALLATION IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
2. PROVIDE TRAFFIC CONTROL DEVICES (INCLUDING THOSE REQUIRED TO FACILITATE CONSTRUCTION OF TRAFFIC SIGNALS) IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR THE STREETS AND HIGHWAYS, AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC), CHAPTER 130.
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5. THE CONTRACTOR SHALL FURNISH A SCHEDULE OF UNIT PRICES FOR ESTMATED TRAFFIC SIGNAL QUANTITIES. PAYMENT WILL BE BASED ON PLAN QUANTITIES. QUANTITIES WILL NOT BE FIELD MEASURED.
6. ROADWAY GEOMETRICS REPRESENT PROPOSED FEATURES.
7. THE PLAN LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION ON THE PROJECT TO ESTABLISH LOCATIONS.
8. SECONDARY SERVICE LOCATION IS APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING POWER SERVICE LOCATIONS WITH POWER SERVICE PROVIDER PRIOR TO CONDUIT/CIRCUIT INSTALLATION. CONTRACTOR SHALL COIL 50 FEET OF POWER SERVICE CABLE AT THE BASE OF THE SECONDARY SERVICE POLE. POWER SERVICE PROVIDER TO INSTALL SECONDARY SERVICE RISER.
9. THE PLAN LOCATIONS OF ALL HANDHOLES ARE APPROXIMATE ONLY AND ARE SUBJECT TO ADJUSTMENT IN THE FIELD BY THE ENGINEER. OBTAIN ENGINEER'S APPROVAL PRIOR TO PLACING HANDHOLES AND CONSTRUCTING FOOTINGS.
10. PROVIDE ONE WEEK NOTICE TO IOWA DOT DISTRICT OFFICE BEFORE PLACING THE TRAFFIC SIGNAL INTO OPERATION.
11. TRAFFIC SIGNAL CONTROLLER, CABINET AND CABINET EQUIPMENT SHALL BE ATC OR NEMA TS2. FURNISH AND INSTALL ALUMINUM CABINET RISER.
12. INSTALL ONE SIGNAL CABLE FROM EACH SIGNAL HEAD TO THE BASE OF THE POLE. A 7-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH 5-SECTION VEHICLE SIGNAL HEAD, AND A 5-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH 3-SECTION OR 4-SECTION VEHICLE SIGNAL HEAD AND EACH PEDESTRIAN SIGNAL HEAD. ALL SIGNAL CABLE SHALL BE #14 AWG UNLESS OTHERWISE NOTED ON THE PLANS.
13. IN COMBINATION SIGNAL/ LIGHTING POLES, INSTALL TWO 1-CONDUCTOR #10 CABLES FROM THE LUMINAIRE TO THE BASE OF THE POLE. UTILIZE Y AND L CONNECTORS AS NEEDED.
14. PROVIDE A GROUND ROD IN EACH HANDHOLE. PROVIDE TWO GROUND RODS IN THE HANDHOLE NEAREST THE SIGNAL CABINET. INSTALL A #6 BARE COPPER GROUND WIRE BETWEEN THE GROUND RODS IN THE SIGNAL FOOTINGS AND HANDHOLES TO FORM A CONTINUOUSLY GROUNDED SYSTEM. PROVIDE SEPARATE GROUNDING SYSTEM FOR THE SIGNAL CABINET.
15. ABOVE GROUND RISERS SHALL BE RIGID STEEL CONDUIT. ALL OTHER CONDUIT SHALL BE RIGID P.V.C. CONDUIT OR DIRECTIONAL BORED HDPE CONDUIT.
16. UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH LANES. APPROXIMATE LOCATIONS ARE AS SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.
17. TRAFFIC SIGNAL MOUNTING BRACKETS SHALL UTILIZE STAINLESS STEEL BANDING FOR SIDE OF POLE MOUNTING AND GALVANIZED STEEL CABLE FOR MAST ARM MOUNTING.
18. SIGNAL HEADS SHALL HAVE BLACK FACES, VISORS, BACKPLATES (WHERE INDICATED) AND BODIES.
19. PEDESTRIAN PUSHBUTTONS SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) COMPLIANT. INTALL PEDESTRIAN PUSHBUTTON SIGN ABOVE EACH PEDESTRIAN PUSHBUTTON.
20. STREET NAME SIGNS SHALL BE GREEN WITH WHITE LETTERING AND BORDER. LETTERING SHALL BE SERIES C WITH 12-INCH UPPER CASE AND LOWER CASE LETTERS.
21. PULL TAPE SHALL BE FLAT WOVEN POLYESTER TAPE WITH MINIMUM TENSILE STRENGTH OF 1,250 POUNDS AND WIDTH OF 0.5 INCH.
22. DETECTION SYSTEM SHALL VIDEO OR HYBRID VIDEO/RADAR TO PROVIDE RELIABLE ADVANCE AND STOP LINE DETECTION.
23. EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM SHALL BE OPTICOM GPS.
24. THE SIGNAL CABINET ADDRESS WILL BE THE SAME AS THE CURRENT SIGNAL CABINET.
25. UNINTERRUPTABLE POWER SUPPLY (UPS) SYSTEM SHALL BE HOUSED IN THE SIGNAL CABINET OR AN EXTERNAL CABINET MOUNTED TO THE SIGNAL CABINET. UPS SHALL PROVIDE AT LEAST 4 HOURS OF NORMAL SIGNAL OPERATION AND 8 HOURS OF FLASHING OPERATION.
26. LUMINAIRES SHALL BE LED, 18,000 LUMENS (+/- 5%), 100 LUMENS/WATT EFFICACY, 4000 K COLOR TEMPERATURE, TYPE III DISTRIBUTION, MEDIUM, B3-U0-G3, L70 > 70,000 HOURS WITH AT LEAST 5-YEAR WARRANTY, GRAY FINISH AND PHOTOCELL CONTROL.
27. TRAFFIC SIGNAL REMOVAL INCLUDES REMOVAL OF EXISTING TRAFFIC SIGNAL HEADS, POLES, CABINET AND EQUIPMENT, AND CABLE IN CONDUITS. CONTRACTOR TO SALVAGE ALL EQUIPMENT AND CABLE. ABANDON CONDUITS IN PLACE. COMPLETELY REMOVE EXISTING SIGNAL POLE AND CABINET FOOTINGS AND HANDHOLES.

TRAFFIC SIGNAL LEGEND

EXISTING	PROPOSED	
		TRAFFIC SIGNAL
		TRAFFIC SIGNAL WITH BACKPLATE
		PEDESTRIAN SIGNAL
	(XX)	MAST ARM SUSPENDED TRAFFIC SIGNAL (XX = LENGTH OF MAST ARM)
		METAL TRAFFIC SIGNAL PEDESTAL
		TRAFFIC SIGNAL HEAD NUMBER
		POLE NUMBER
		STREET LIGHT ON SIGNAL POLE
		CONDUIT TRENCHED, PUSHED, JACKED, OR BORED
		HANDHOLE

EXISTING	PROPOSED	
		CONTROLLER CABINET WITH FOOTING
		SECONDARY SERVICE POINT
XX	XX	INDUCTIVE LOOP DETECTOR (XX = NUMBER DESIGNATION)
	XX	DETECTION ZONE (XX = NUMBER DESIGNATION)
		VIDEO DETECTION CAMERA
		EMERGENCY VEHICLE DETECTOR
		POLE MOUNTED SIGN

IOWA DOT STANDARD ROAD PLANS	
NUMBER	IDENTIFICATION
LI - 103	Conduit and Precast Handholes
TS - 102	Traffic Signal Pole Foundation

LICENSED PROFESSIONAL ENGINEER
ANTHONY J. BOES
P12387
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Anthony J. Boes Digitally signed by Anthony J. Boes Date: 2024.11.26 10:51:44 -06'00'

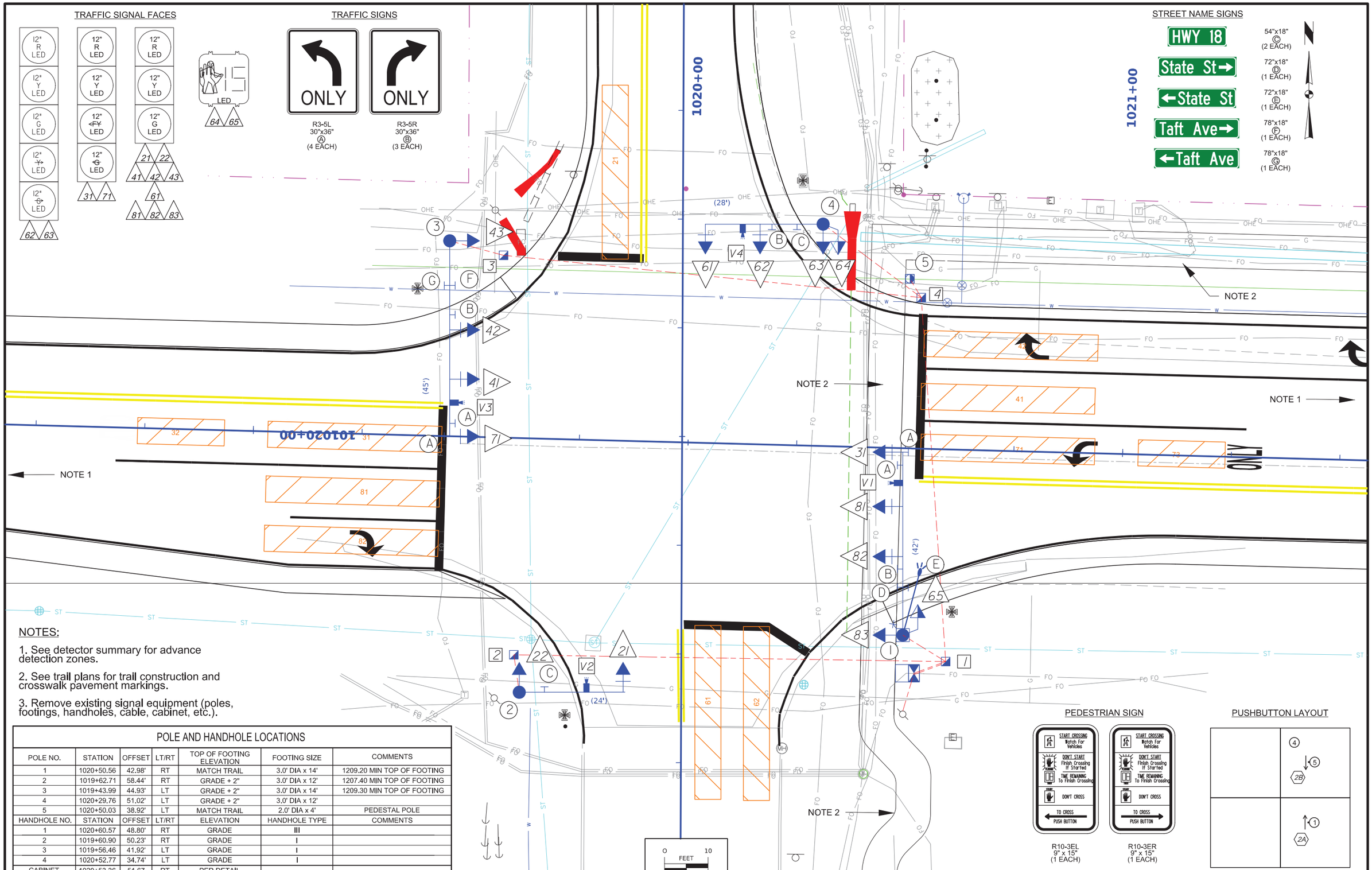
Anthony J. Boes, P.E. Date

License Number P12387

My License Renewal Date is December 31, 2025

Pages or sheets covered by this seal:
N.1 - N.5

FILE NO.	ENGLISH	DESIGN TEAM Snyder & Associates, Inc.	Hancock COUNTY	PROJECT NUMBER NHSX-018-4(30)--3H-41	SHEET NUMBER N.1	REVISED



NOTES:

1. See detector summary for advance detection zones.
2. See trail plans for trail construction and crosswalk pavement markings.
3. Remove existing signal equipment (poles, footings, handholes, cable, cabinet, etc.).

POLE AND HANDHOLE LOCATIONS

POLE NO.	STATION	OFFSET	LT/RT	TOP OF FOOTING ELEVATION	FOOTING SIZE	COMMENTS
1	1020+50.56	42.98'	RT	MATCH TRAIL	3.0' DIA x 14'	1209.20 MIN TOP OF FOOTING
2	1019+62.71	58.44'	RT	GRADE + 2"	3.0' DIA x 12'	1207.40 MIN TOP OF FOOTING
3	1019+43.99	44.93'	LT	GRADE + 2"	3.0' DIA x 14'	1209.30 MIN TOP OF FOOTING
4	1020+29.76	51.02'	LT	GRADE + 2"	3.0' DIA x 12'	
5	1020+50.03	38.92'	LT	MATCH TRAIL	2.0' DIA x 4'	PEDESTAL POLE
HANDHOLE NO.	STATION	OFFSET	LT/RT	ELEVATION	HANDHOLE TYPE	COMMENTS
1	1020+60.57	48.80'	RT	GRADE	III	
2	1019+60.90	50.23'	RT	GRADE	I	
3	1019+56.46	41.92'	LT	GRADE	I	
4	1020+52.77	34.74'	LT	GRADE	I	
CABINET	1020+53.36	51.67	RT	PER DETAIL		

FILE NO.	ENGLISH	DESIGN TEAM Snyder & Associates, Inc.	Hancock COUNTY	PROJECT NUMBER NHSX-018-4(30)--3H-41	SHEET NUMBER N.2	REVISED

TRAFFIC SIGNAL POLE DATA

POLE NO.	POLE TYPE	MAST ARM LENGTH/ PEDESTAL HEIGHT (ft.)	TRAFFIC SIGNAL ① HEADS		①TRAFFIC SIGNS		②LUMINAIRE ARM			FOOTING DIMENSIONS		MISCELLANEOUS	TOTAL QUANTITY
			QTY.	LOCATION ON ARM (ft.)	QTY.	LOCATION ON ARM (ft.)	SPREAD (ft.)	MOUNTING HEIGHT (ft.)	ORIENTATION (degrees)	DIA. (ft.)	DEPTH (ft.)		
1	COMBINATION SIGNAL / LIGHTING	42	3	42, 30, 18	5	42, 39, 15, 8, 8	15	35	0	3	14		1
2	SIGNAL	24	1	24	2	6				3	12		1
3	SIGNAL	45	3	45, 33, 21	5	45, 42, 18, 10, 10				3	14		1
4	SIGNAL	28	2	28, 16	2	13, 6				3	12		1
5	PEDESTAL	5								2	4		1

INITIAL RECOMMENDED TIMING (SECONDS)

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN		10	5	10		10	5	10
PASSAGE		2.0	2.0	2.0		2.0	2.0	2.0
MAXIMUM I		30	15	40		30	15	40
MAXIMUM II								
YELLOW CHANGE		3.4	3.9	4.8		3.4	3.9	4.8
RED CLEARANCE		1.1	2.3	1.4		1.1	2.3	1.4
WALK		7						
PEDESTRIAN CLEARANCE		17						
PED RECALL								

NOT TO SCALE

NOTES:

① LOCATION REPRESENTS APPROXIMATE LINEAR DISTANCE FROM POLE MEASURED OUTWARD TO END OF ARM.

② ORIENTATION OF LUMINAIRE ARM REPRESENTS A CLOCKWISE ANGLE MEASURED FROM THE CENTERLINE OF THE MAST ARM.

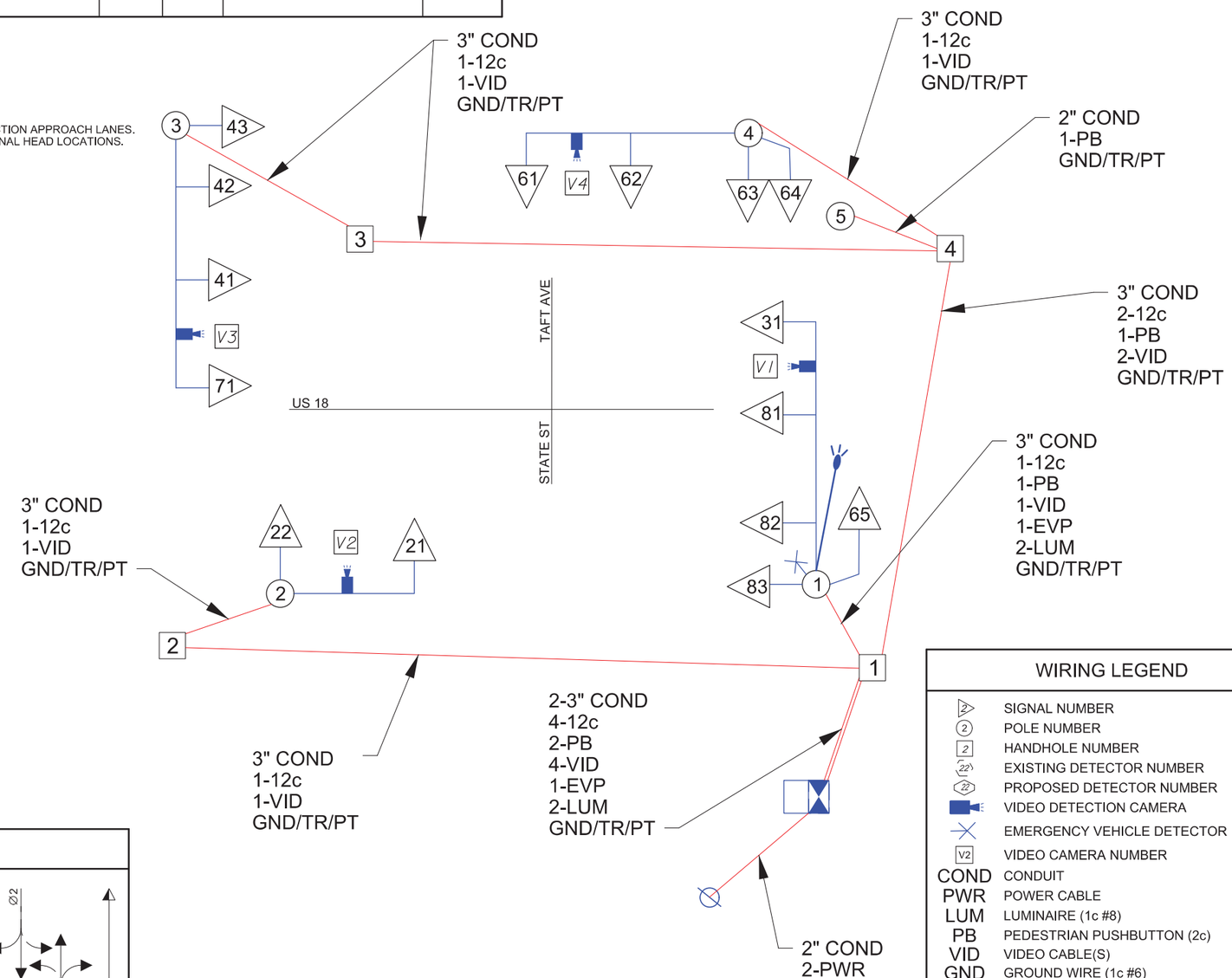
③ POLES SHALL BE DESIGNED AS PER IOWA DOT SPECIFICATIONS.

④ UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH LANES. APPROXIMATE LOCATIONS ARE AS SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.

DETECTOR SUMMARY

CAMERA NUMBER	DETECTION ZONE	ZONE LIMITS (DISTANCE FROM STOP LINE)	PHASE CALLED	PHASE EXTENDED	COMMENTS
V1	31	0' - 40'	3	3/8	MOUNTED ON MAST ARM
	32	50' - 70'	3	3/8	
	81	0' - 40'	8	8	
	82	0' - 40'	8	8	
	83	210' - 320'	8	8	
V2	21	0' - 40'	6	6	MOUNTED ON MAST ARM
V3	71	0' - 40'	7	7/4	MOUNTED ON MAST ARM
	72	50' - 70'	7	7/4	
	41	0' - 40'	4	4	
	42	0' - 40'	4	4	
	43	210' - 320'	4	4	
V4	61	0' - 40'	6	6	MOUNTED ON MAST ARM
	62	0' - 40'	6	6	
2A, 2B			2		PED PUSHBUTTON

NOTE: ZONE LIMITS ARE FOR DETECTION LIMITS ONLY. ACTUAL DETECTION AREAS FOR EACH ZONE WILL BE DETERMINED IN THE FIELD.

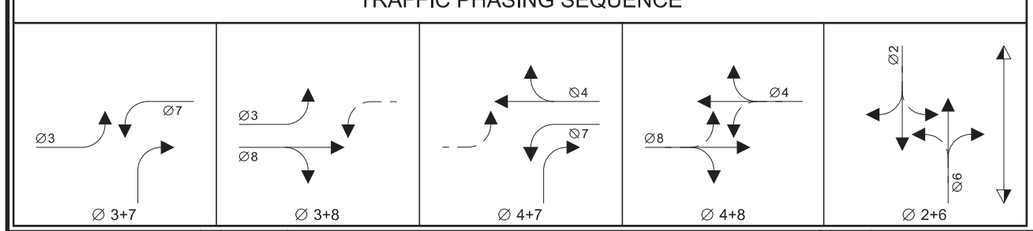


TRAFFIC SIGNAL WIRING

WIRING LEGEND

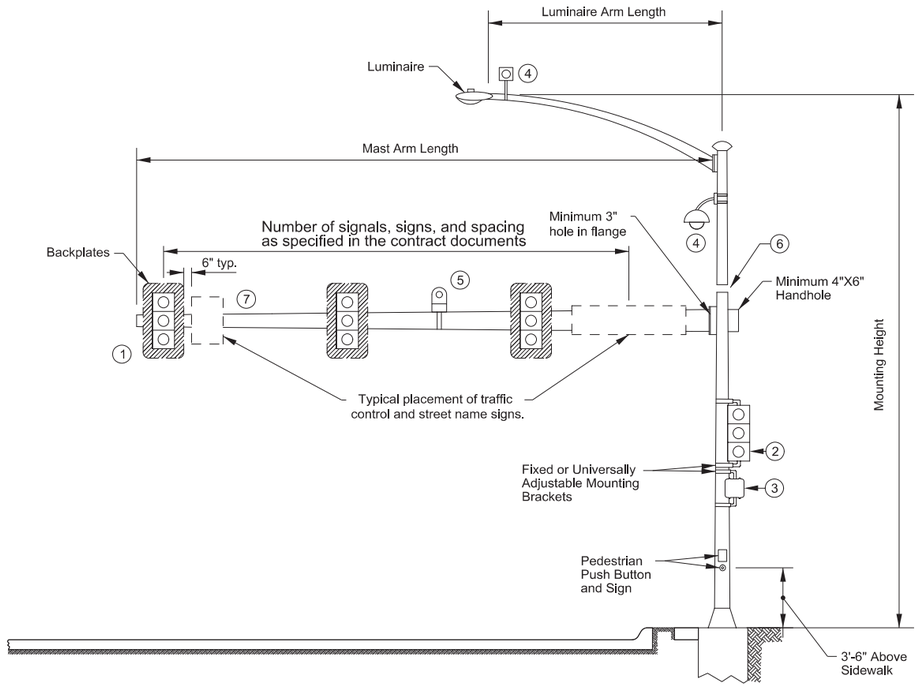
	SIGNAL NUMBER
	POLE NUMBER
	HANDHOLE NUMBER
	EXISTING DETECTOR NUMBER
	PROPOSED DETECTOR NUMBER
	VIDEO DETECTION CAMERA
	EMERGENCY VEHICLE DETECTOR
	VIDEO CAMERA NUMBER
COND	CONDUIT
PWR	POWER CABLE
LUM	LUMINAIRE (1c #8)
PB	PEDESTRIAN PUSHBUTTON (2c)
VID	VIDEO CABLE(S)
GND	GROUND WIRE (1c #6)
TR	TRACER WIRE (1c #10)
PT	PULL TAPE
EVP	EMERGENCY VEHICLE PREEMPTION CABLE

TRAFFIC PHASING SEQUENCE



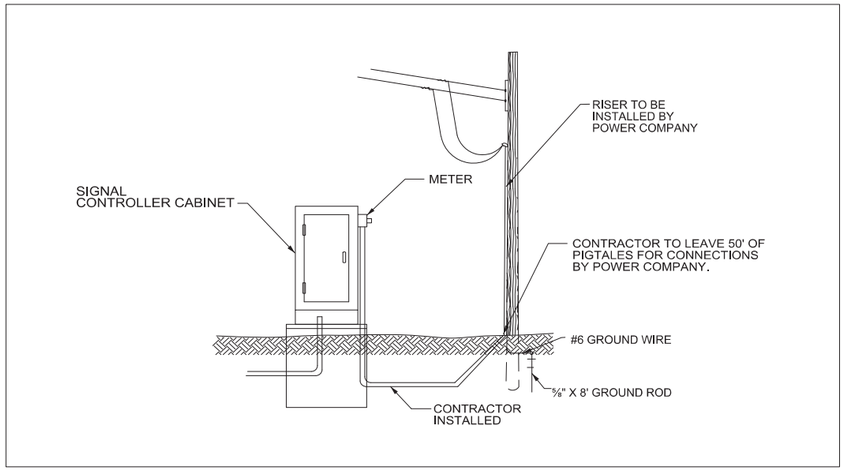
FILE NO.	ENGLISH	DESIGN TEAM Snyder & Associates, Inc.	Hancock COUNTY	PROJECT NUMBER NHSX-018-4(30)--3H-41	SHEET NUMBER N.3	REVISED

10:16:08 AM 10/29/2024 jfrederiksen pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\TrafficAndSafety\TrafficEngineering\030_Signals\CADD Files\SHT_41018030Z02_N03_Wiring.dgn

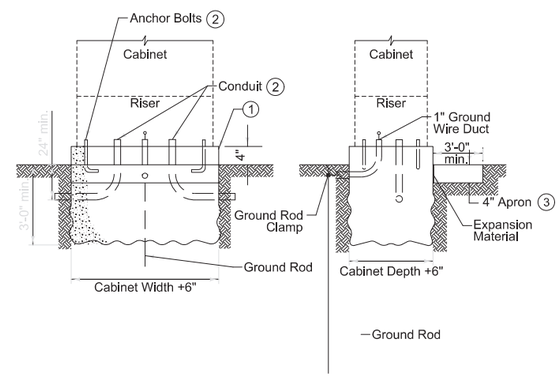


1. Ensure the top of the signal housing is no more than 25.6 feet above the pavement. Ensure the bottom of the signal housing and related attachments are at least 15 feet above the pavement.
2. Ensure the bottom of the signal housing (including brackets) that is not located over a roadway is a minimum of 10 feet and a maximum of 19 feet above the sidewalk or, if there is no sidewalk, above the pavement grade at the center of the roadway.
3. Mount pedestrian signal heads with the bottom of the signal housing (including brackets) no less than 7 feet or more than 10 feet above the sidewalk level. Position and adjust heads to provide maximum visibility at the beginning of the controlled crosswalk.
4. Possible video camera location.
5. Possible EVP detector.
6. Pole cap if no luminaire extension.
7. Install wind vibration dampening device on mast arms greater than 60 feet in length. Locaton and mounting method as specified by manufacturer.

1 / N.4 MAST ARM POLE
NO SCALE

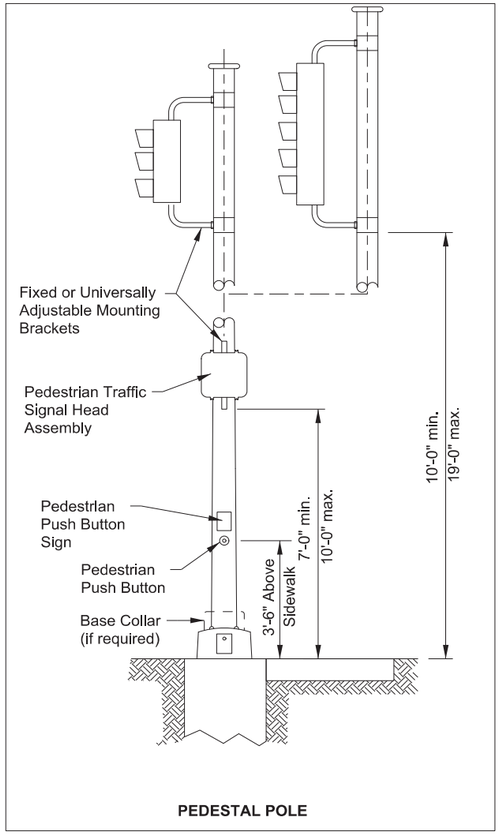


3 / N.4 POWER SERVICE
NO SCALE



1. Shape top 11 inches with forms.
2. Bolt spacing and conduit locations as specified by the manufacturer.
3. Provide apron on three sides of cabinet if cabinet has front and back doors.

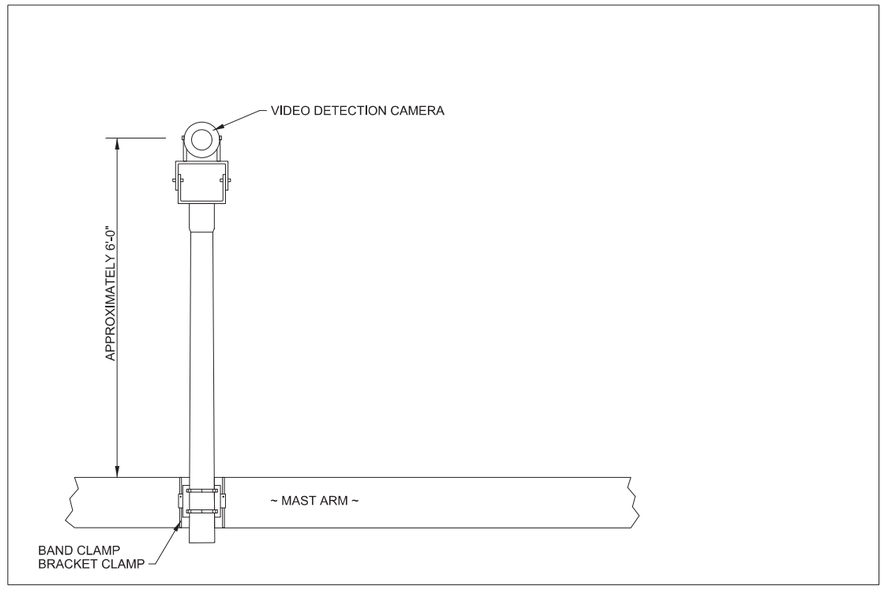
2 / N.4 CONTROLLER CABINET FOUNDATION
NO SCALE



4
N.5

PEDESTAL POLE

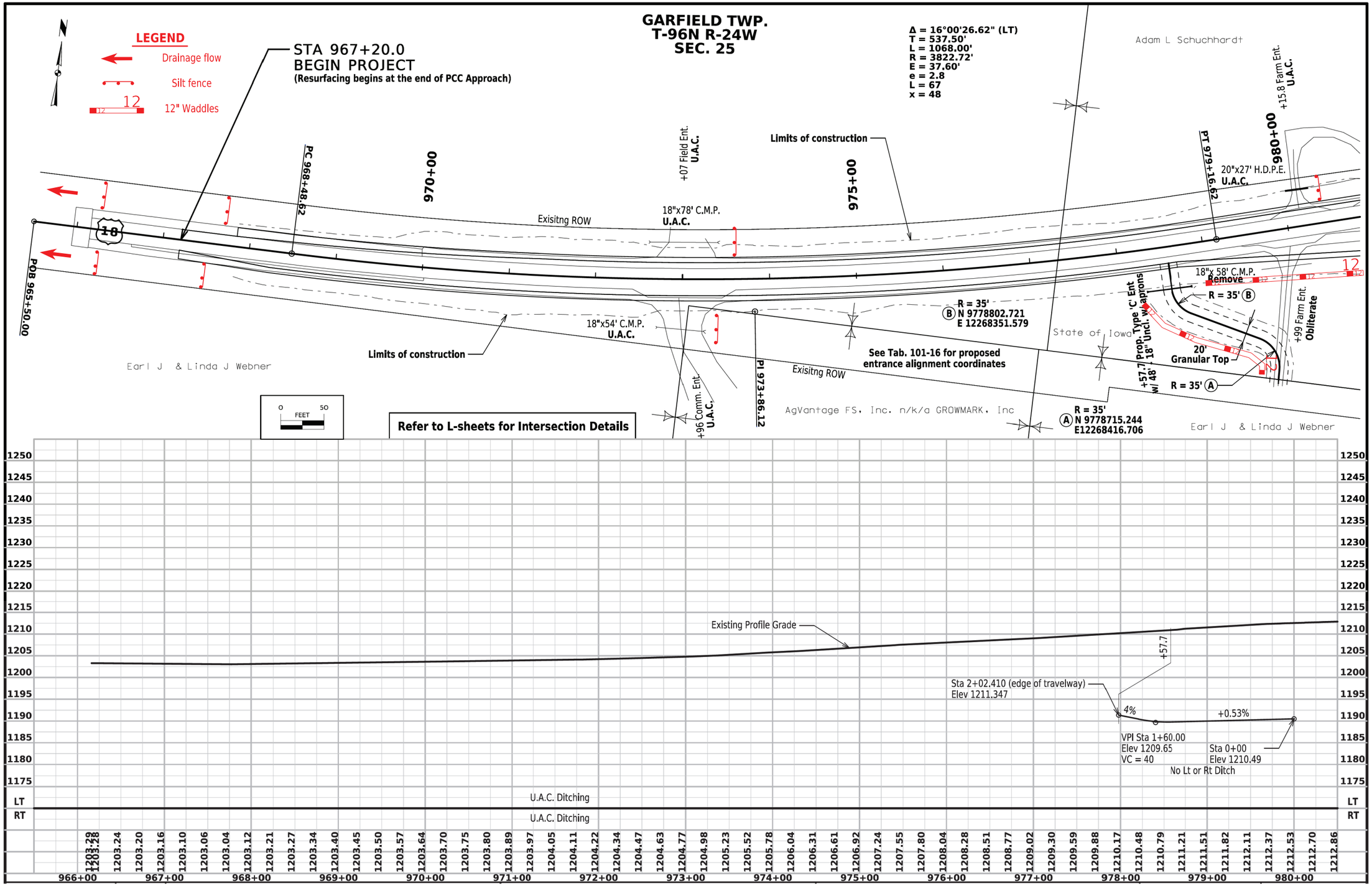
NO SCALE



5
N.5

VIDEO DETECTION CAMERA MOUNTING ON TRAFFIC SIGNAL MAST ARM

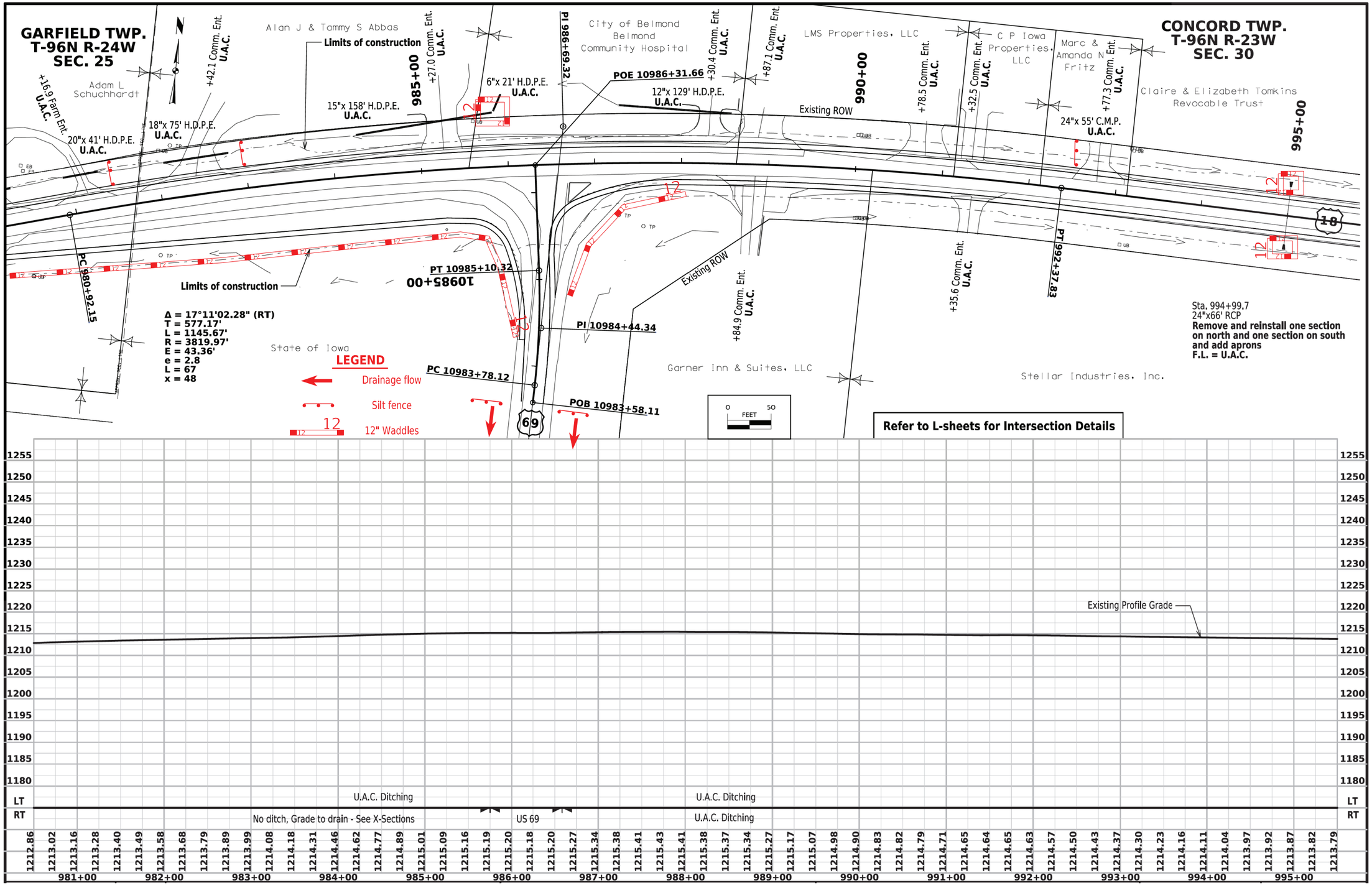
NO SCALE



EROSION CONTROL DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER R.1

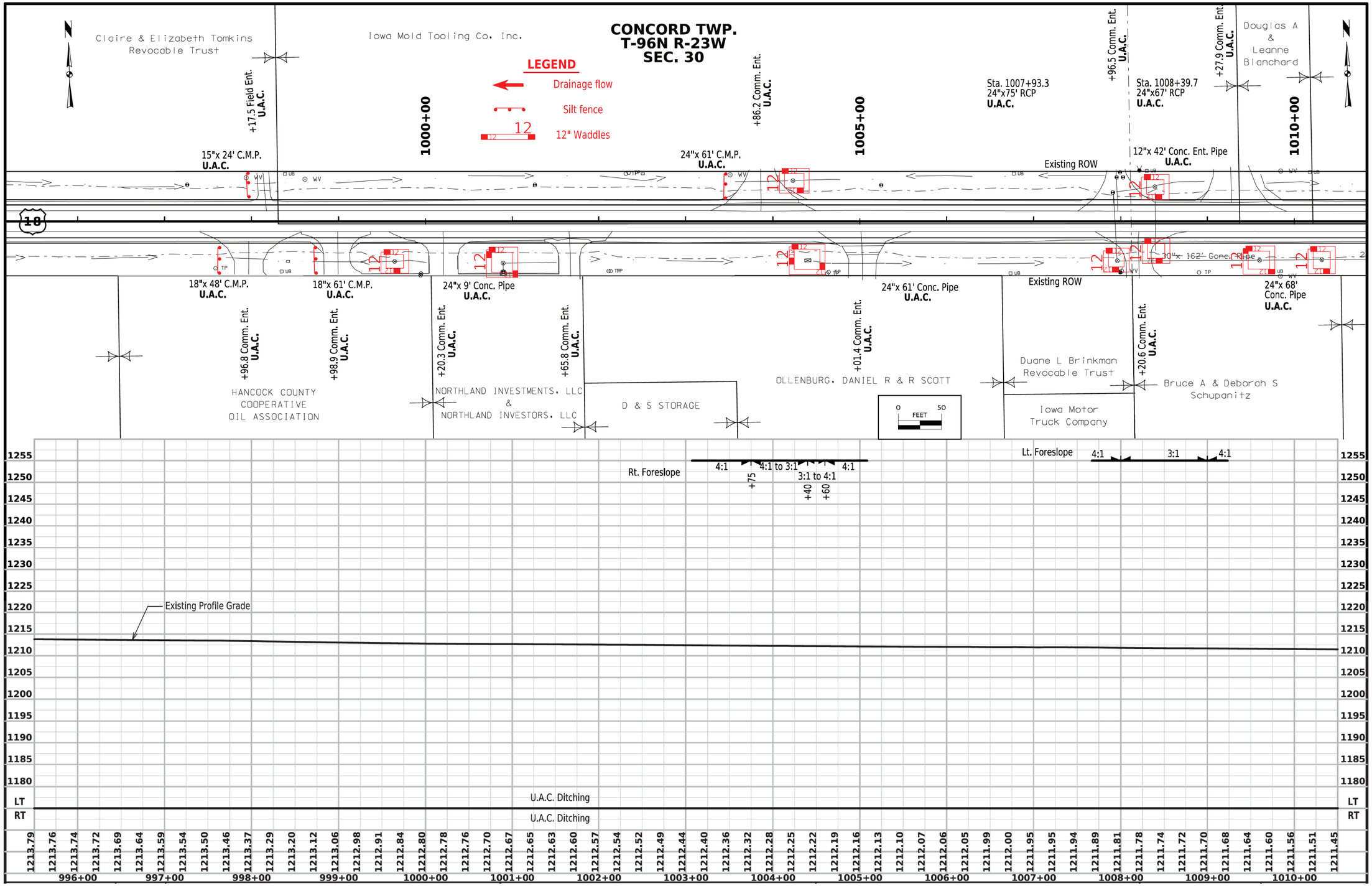
11:04:43 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_R01.dgn



EROSION CONTROL DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER R.2

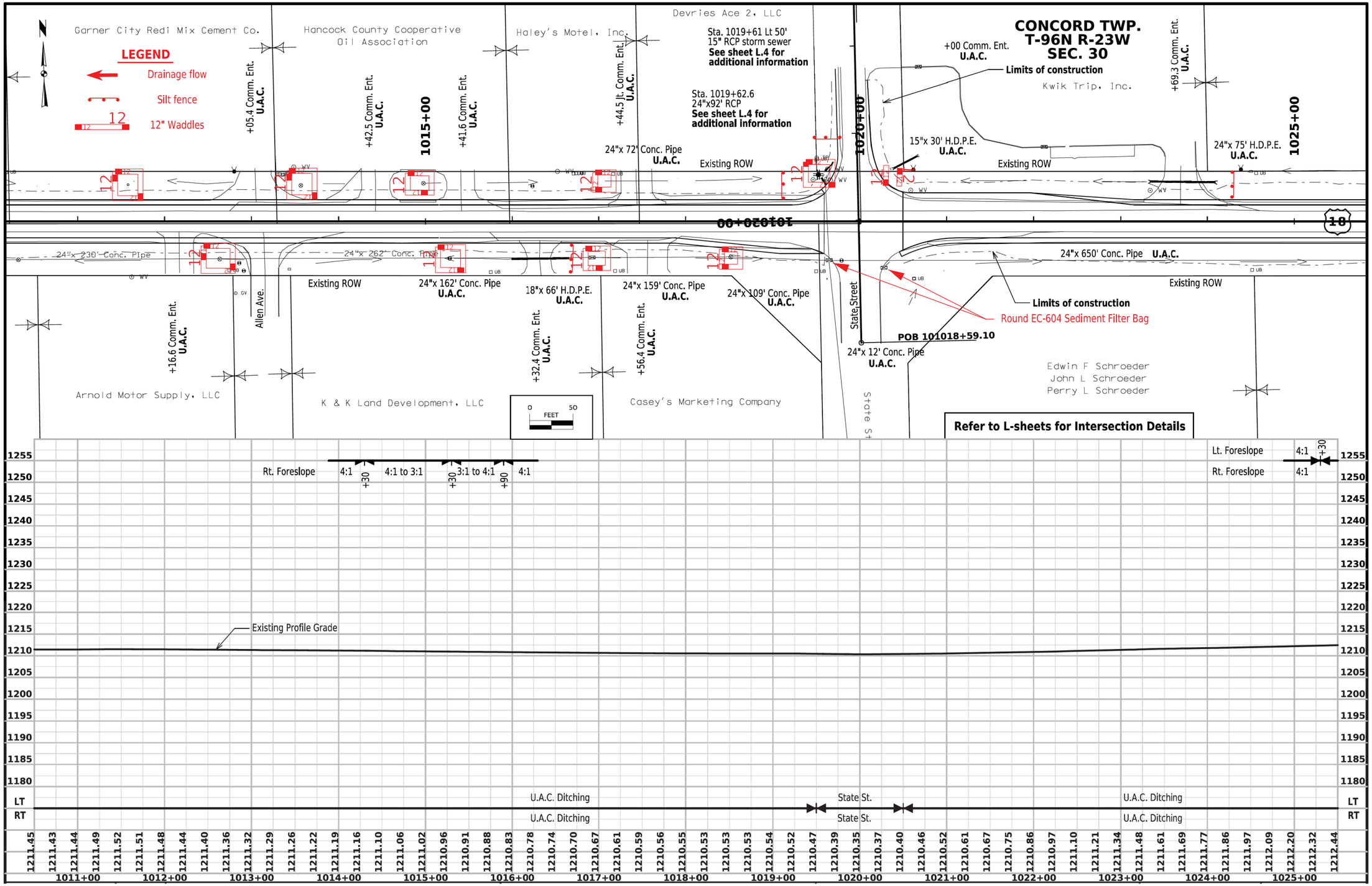
11:04:47 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_R01.dgn



EROSION CONTROL DETAILS

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **R.3**

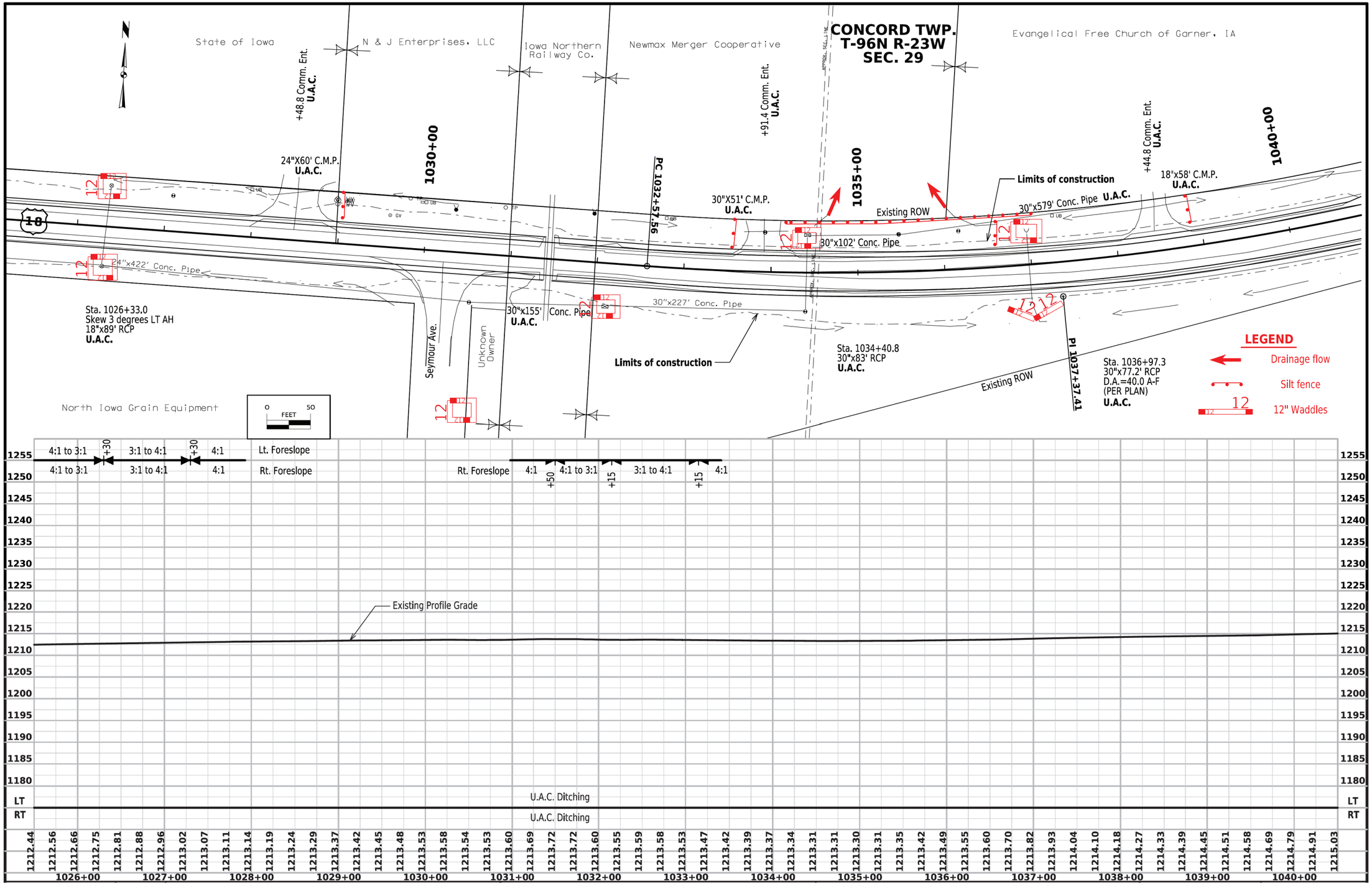
11:04:50 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_R01.dgn



EROSION CONTROL DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER R.4

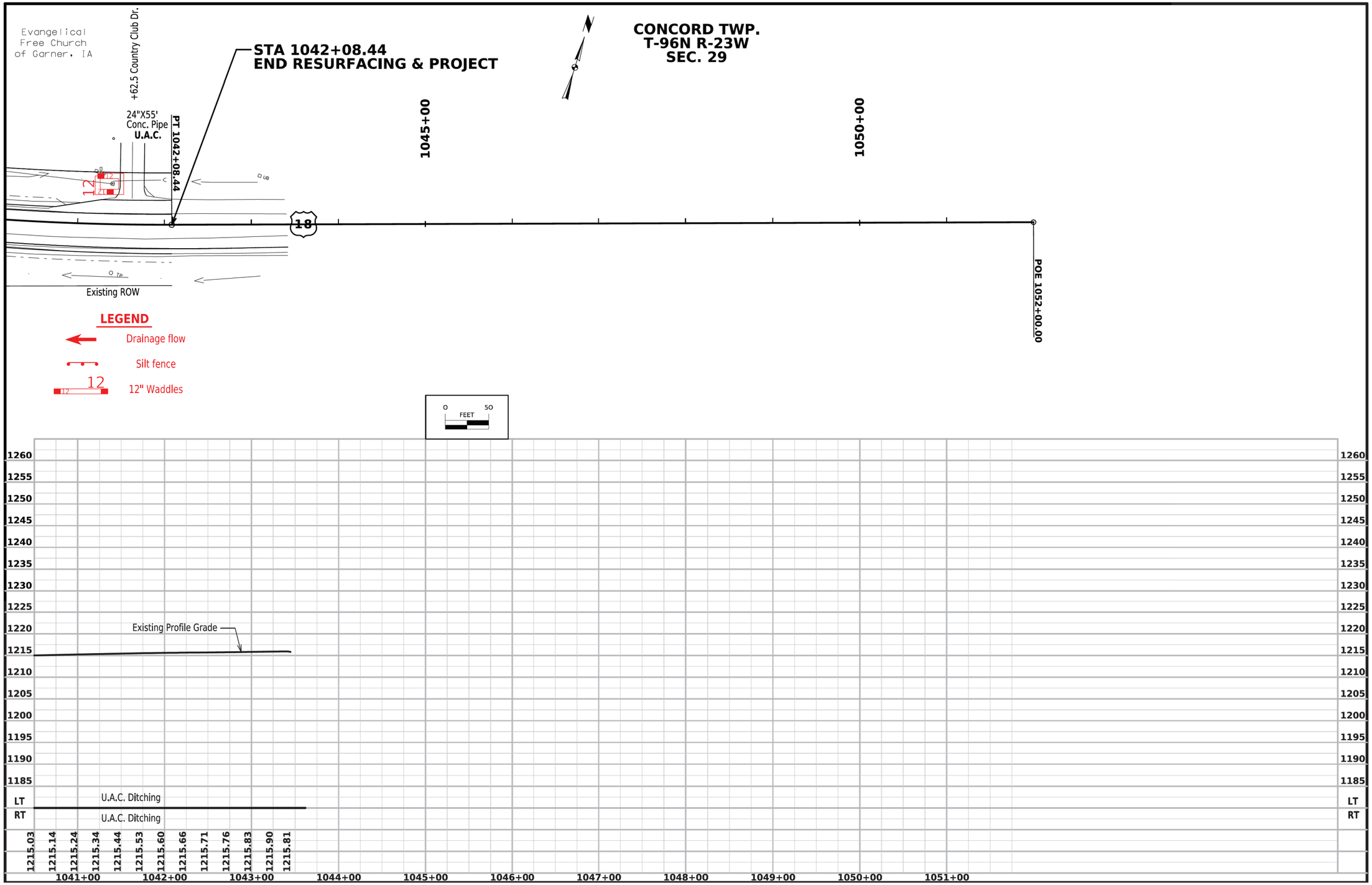
11:04:53 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_R01.dgn



EROSION CONTROL DETAILS

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **R.5**

11:04:56 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_R01.dgn



EROSION CONTROL DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER R.6

11:04:59 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_R01.dgn

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

	Cut			Fill				Checks (EW-102)		Topsoil												
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
Station	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US18_ML_W_of_US69																						
968+00.00																						
968+50.00	81	81	81	10	10	13	68	0	0	0	0	0	0									
969+00.00	81	81	81	13	13	17	64	0	0	0	0	0	0									
969+50.00	83	83	83	14	14	19	65	0	0	0	0	0	0									
970+00.00	83	83	83	16	16	21	62	0	0	0	0	0	0									
970+50.00	79	79	79	23	23	30	49	0	0	0	0	0	0									
971+00.00	80	80	80	29	29	37	42	0	0	0	0	0	0									
971+50.00	80	80	80	33	33	43	37	0	0	0	0	0	0									
972+00.00	82	82	82	33	33	43	39	0	0	0	0	0	0									
972+50.00	89	89	89	20	20	26	63	0	0	0	0	0	0									
973+00.00	107	107	107	7	7	9	98	0	0	0	0	0	0									
973+50.00	106	106	106	4	4	5	101	0	0	0	0	0	0									
974+00.00	89	89	89	3	3	4	85	0	0	0	0	0	0									
974+50.00	89	89	89	1	1	1	88	0	0	0	0	0	0									
975+00.00	84	84	84	7	7	10	74	0	0	0	0	0	0									
975+50.00	82	82	82	8	8	11	71	0	0	0	0	0	0									
976+00.00	87	87	87	4	4	5	82	0	0	0	0	0	0									
976+50.00	88	88	88	8	8	11	78	0	0	0	0	0	0									
977+00.00	89	89	89	16	16	21	68	0	0	0	0	0	0									
977+50.00	86	86	86	19	19	25	62	0	0	0	0	0	0									
978+00.00	86	86	86	23	23	30	56	0	0	0	0	0	0									
978+50.00	89	89	89	28	28	37	52	0	0	0	0	0	0									
US18_ML_W_of_US69																						
Totals:	1,819	1,819	1,819	320	320	417	1,403	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut			Fill				Checks (EW-102)		Topsoil												
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US18_US69																						
978+00.00																						
978+50.00	90	90	90	28	28	37	54	0	0	0	0	0	0									
979+00.00	86	86	86	32	32	41	45	0	0	0	0	0	0									
979+50.00	75	75	75	53	53	69	6	0	0	0	0	0	0									
980+00.00	87	87	87	36	36	47	40	0	0	0	0	0	0									
980+50.00	88	88	88	64	64	83	5	0	0	0	0	0	0									
981+00.00	85	85	85	100	100	130	-46	0	0	0	0	0	0									
981+50.00	96	96	96	93	93	121	-25	0	0	0	0	0	0									
982+00.00	100	100	100	106	106	138	-37	0	0	0	0	0	0									
982+50.00	117	117	117	99	99	129	-11	0	0	0	0	0	0									
983+00.00	123	123	123	112	112	146	-24	0	0	0	0	0	0									
983+50.00	125	125	125	103	103	134	-9	0	0	0	0	0	0									
984+00.00	135	135	135	79	79	103	32	0	0	0	0	0	0									
984+50.00	136	136	136	79	79	103	33	0	0	0	0	0	0									
985+00.00	143	143	143	59	59	77	66	0	0	0	0	0	0									
985+50.00	157	157	157	30	30	39	118	0	0	0	0	0	0									
987+00.00	545	545	545	30	30	39	506	0	0	0	0	0	0									
987+50.00	169	169	169	0	0	1	168	0	0	0	0	0	0									
988+00.00	129	129	129	0	0	1	128	0	0	0	0	0	0									
988+50.00	115	115	115	0	0	0	115	0	0	0	0	0	0									
989+00.00	130	130	130	0	0	0	130	0	0	0	0	0	0									
989+50.00	131	131	131	1	1	2	130	0	0	0	0	0	0									
990+00.00	118	118	118	2	2	2	116	0	0	0	0	0	0									
990+50.00	117	117	117	1	1	1	116	0	0	0	0	0	0									
991+00.00	110	110	110	1	1	1	109	0	0	0	0	0	0									
991+50.00	106	106	106	1	1	2	104	0	0	0	0	0	0									
992+00.00	86	86	86	4	4	5	82	0	0	0	0	0	0									
992+50.00	77	77	77	5	5	7	70	0	0	0	0	0	0									
993+00.00	90	90	90	6	6	8	81	0	0	0	0	0	0									
993+50.00	94	94	94	9	9	12	81	0	0	0	0	0	0									
994+00.00	93	93	93	11	11	14	79	0	0	0	0	0	0									
994+50.00	89	89	89	12	12	16	73	0	0	0	0	0	0									
995+00.00	84	84	84	22	22	28	56	0	0	0	0	0	0									
995+50.00	82	82	82	25	25	33	49	0	0	0	0	0	0									
996+00.00	82	82	82	23	23	30	53	0	0	0	0	0	0									
996+50.00	86	86	86	20	20	26	61	0	0	0	0	0	0									
US18_US69																						
Totals:	4,177	4,177	4,177	1,248	1,248	1,624	2,555	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut			Fill				Checks (EW-102)		Topsoil												
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US18_ML_E_of_US69																						
996+50.00																						
997+00.00	108	108	108	8	8	10	98	0	0	0	0	0	0									
997+50.00	107	107	107	8	8	10	97	0	0	0	0	0	0									
998+00.00	120	120	120	5	5	6	114	0	0	0	0	0	0									
998+50.00	124	124	124	1	1	1	123	0	0	0	0	0	0									
999+00.00	127	127	127	2	2	3	124	0	0	0	0	0	0									
999+50.00	127	127	127	6	6	8	119	0	0	0	0	0	0									
1000+00.00	123	123	123	7	7	9	114	0	0	0	0	0	0									
1000+50.00	134	134	134	2	2	3	131	0	0	0	0	0	0									
1001+00.00	133	133	133	1	1	1	132	0	0	0	0	0	0									
1001+50.00	133	133	133	3	3	4	130	0	0	0	0	0	0									
1002+00.00	125	125	125	5	5	7	118	0	0	0	0	0	0									
1002+50.00	108	108	108	13	13	18	90	0	0	0	0	0	0									
1003+00.00	100	100	100	22	22	29	71	0	0	0	0	0	0									
1003+50.00	107	107	107	17	17	23	85	0	0	0	0	0	0									
1004+00.00	126	126	126	10	10	13	113	0	0	0	0	0	0									
1004+50.00	132	132	132	4	4	6	127	0	0	0	0	0	0									
1005+00.00	126	126	126	1	1	2	125	0	0	0	0	0	0									
1005+50.00	115	115	115	2	2	3	112	0	0	0	0	0	0									
1006+00.00	106	106	106	9	9	12	94	0	0	0	0	0	0									
1006+50.00	104	104	104	17	17	22	82	0	0	0	0	0	0									
1007+00.00	106	106	106	16	16	21	85	0	0	0	0	0	0									
1007+50.00	105	105	105	16	16	21	85	0	0	0	0	0	0									
1008+00.00	115	115	115	10	10	13	102	0	0	0	0	0	0									
1008+50.00	122	122	122	3	3	5	118	0	0	0	0	0	0									
1009+00.00	119	119	119	8	8	11	108	0	0	0	0	0	0									
1009+50.00	122	122	122	11	11	14	108	0	0	0	0	0	0									
1010+00.00	125	125	125	11	11	15	110	0	0	0	0	0	0									
1010+50.00	131	131	131	8	8	10	121	0	0	0	0	0	0									
1011+00.00	136	136	136	2	2	3	134	0	0	0	0	0	0									
1011+50.00	131	131	131	0	0	0	131	0	0	0	0	0	0									
1012+00.00	136	136	136	1	1	1	136	0	0	0	0	0	0									
1012+50.00	145	145	145	1	1	1	145	0	0	0	0	0	0									
1013+00.00	147	147	147	0	0	0	147	0	0	0	0	0	0									
1013+50.00	146	146	146	0	0	0	146	0	0	0	0	0	0									
1014+00.00	148	148	148	0	0	0	148	0	0	0	0	0	0									
1014+50.00	153	153	153	0	0	0	153	0	0	0	0	0	0									
1015+00.00	147	147	147	0	0	0	148	0	0	0	0	0	0									
1015+50.00	145	145	145	0	0	1	145	0	0	0	0	0	0									
1016+00.00	140	140	140	0	0	1	140	0	0	0	0	0	0									
1016+50.00	141	141	141	0	0	0	141	0	0	0	0	0	0									
1017+00.00	131	131	131	0	0	0	131	0	0	0	0	0	0									
US18_ML_E_of_US69 Totals:	5,179	5,179	5,179	232	232	304	4,878	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut			Fill				Checks (EW-102)		Topsoil													
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US18_W_of_State_St																						
1017+00.00																						
1017+50.00	136	136	136	0	0	0	136	0	0	0	0	0	0									
1018+00.00	146	146	146	0	0	0	146	0	0	0	0	0	0									
1018+50.00	154	154	154	0	0	0	154	0	0	0	0	0	0									
1019+00.00	173	173	173	0	0	0	174	0	0	0	0	0	0									
1019+50.00	197	197	197	0	0	1	197	0	0	0	0	0	0									
US18_W_of_State_St																						
Totals:	807	807	807	1	1	1	806	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut			Fill				Checks (EW-102)		Topsoil													
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US18_E_of_State_St																						
1020+50.00																						
1021+00.00	165	165	165	1	1	2	163	0	0	0	0	0	0									
1021+50.00	152	152	152	4	4	5	146	0	0	0	0	0	0									
1022+00.00	134	134	134	14	14	18	116	0	0	0	0	0	0									
1022+50.00	117	117	117	30	30	39	78	0	0	0	0	0	0									
1023+00.00	105	105	105	43	43	55	50	0	0	0	0	0	0									
1023+50.00	120	120	120	39	39	51	69	0	0	0	0	0	0									
1024+00.00	135	135	135	33	33	43	92	0	0	0	0	0	0									
US18_E_of_State_St																						
Totals:	928	928	928	164	164	214	715	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut			Fill				Checks (EW-102)		Topsoil												
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US18_KS_to_CC_Dr																						
1024+00.00																						
1024+50.00	116	116	116	52	52	68	48	0	0	0	0	0	0									
1025+00.00	100	100	100	67	67	88	12	0	0	0	0	0	0									
1025+50.00	96	96	96	73	73	95	1	0	0	0	0	0	0									
1026+00.00	93	93	93	85	85	110	-17	0	0	0	0	0	0									
1026+50.00	93	93	93	102	102	133	-40	0	0	0	0	0	0									
1027+00.00	92	92	92	115	115	149	-58	0	0	0	0	0	0									
1027+50.00	94	94	94	102	102	132	-38	0	0	0	0	0	0									
1028+00.00	100	100	100	81	81	105	-5	0	0	0	0	0	0									
1028+50.00	118	118	118	59	59	77	41	0	0	0	0	0	0									
1029+00.00	120	120	120	63	63	81	39	0	0	0	0	0	0									
1029+50.00	110	110	110	56	56	73	37	0	0	0	0	0	0									
1030+00.00	114	114	114	30	30	39	76	0	0	0	0	0	0									
1030+50.00	119	119	119	23	23	30	89	0	0	0	0	0	0									
1031+00.00	119	119	119	14	14	18	101	0	0	0	0	0	0									
1031+50.00	148	148	148	4	4	6	142	0	0	0	0	0	0									
1032+00.00	132	132	132	32	32	42	91	0	0	0	0	0	0									
1032+50.00	82	82	82	70	70	91	-9	0	0	0	0	0	0									
1033+00.00	80	80	80	64	64	83	-3	0	0	0	0	0	0									
1033+50.00	83	83	83	46	46	60	24	0	0	0	0	0	0									
1034+00.00	102	102	102	24	24	32	70	0	0	0	0	0	0									
1034+50.00	105	105	105	50	50	65	40	0	0	0	0	0	0									
1035+00.00	91	91	91	78	78	102	-11	0	0	0	0	0	0									
1035+50.00	90	90	90	57	57	74	16	0	0	0	0	0	0									
1036+00.00	89	89	89	35	35	45	44	0	0	0	0	0	0									
1036+50.00	90	90	90	11	11	14	76	0	0	0	0	0	0									
1037+00.00	92	92	92	0	0	1	91	0	0	0	0	0	0									
1037+50.00	93	93	93	0	0	0	93	0	0	0	0	0	0									
1038+00.00	94	94	94	0	0	0	94	0	0	0	0	0	0									
1038+50.00	98	98	98	0	0	0	98	0	0	0	0	0	0									
1039+00.00	97	97	97	0	0	0	97	0	0	0	0	0	0									
1039+50.00	92	92	92	0	0	0	92	0	0	0	0	0	0									
1040+00.00	91	91	91	0	0	0	91	0	0	0	0	0	0									
1040+50.00	88	88	88	0	0	0	88	0	0	0	0	0	0									
1041+00.00	68	68	68	0	0	0	68	0	0	0	0	0	0									
1041+50.00	50	50	50	0	0	0	50	0	0	0	0	0	0									
1042+00.00	52	52	52	0	0	0	52	0	0	0	0	0	0									
US18_KS_to_CC_Dr																						
Totals:	3,493	3,493	3,493	1,394	1,394	1,814	1,681	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

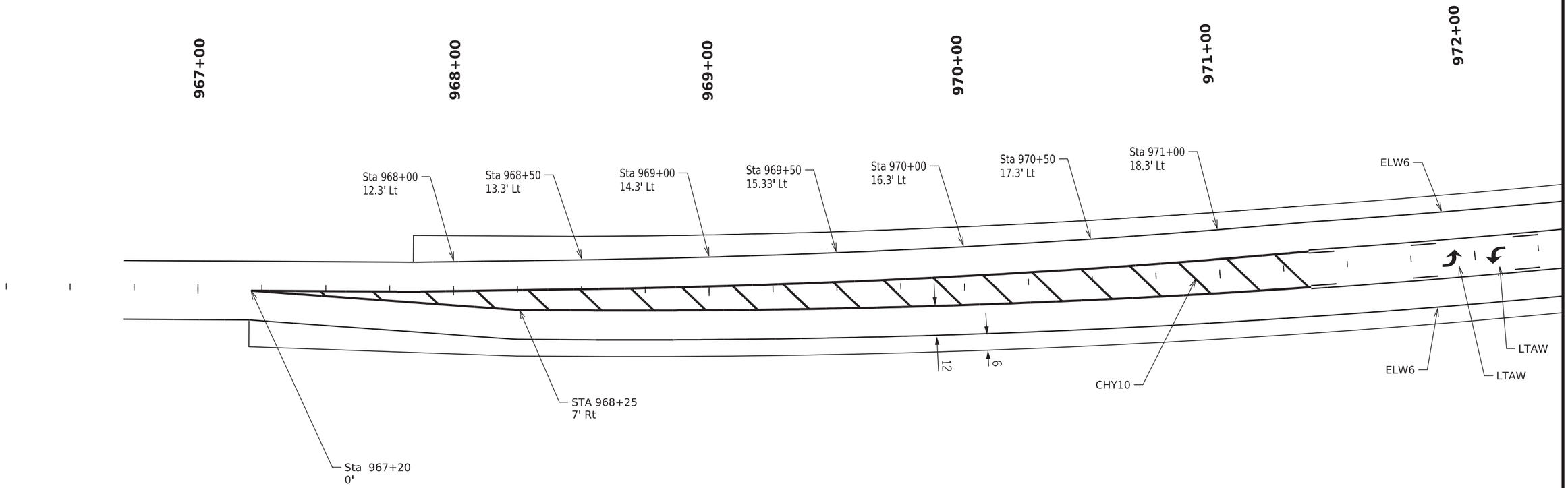
Station	Cut			Fill				Checks (EW-102)		Topsoil													
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
US69																						
10984+50.00																						
10985+00.00	64	64	64	8	8	10	54	0	0	0	0	0	0									
10985+50.00	148	148	148	12	12	16	132			0	0	0	0									
US69																						
Totals:	212	212	212	20	20	27	186	0	0	0	0	0	0									

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut			Fill				Checks (EW-102)		Topsoil													
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
Summary:																						
US18_ML_W_of_US69	1,819	1,819	1,819	320	320	417	1,403	0	0	0	0	0	0									
US18_US69	4,177	4,177	4,177	1,248	1,248	1,624	2,555	0	0	0	0	0	0									
US18_ML_E_of_US69	5,179	5,179	5,179	232	232	304	4,878	0	0	0	0	0	0									
US18_W_of_State_St	807	807	807	1	1	1	806	0	0	0	0	0	0									
US18_E_of_State_St	928	928	928	164	164	214	715	0	0	0	0	0	0									
US18_KS_to_CC_Dr	3,493	3,493	3,493	1,394	1,394	1,814	1,681	0	0	0	0	0	0									
US69	212	212	212	20	20	27	186	0	0	0	0	0	0									
Project Totals:	16,615	16,615	16,615	3,379	3,379	4,401	12,224	0	0	0	0	0	0									



No Scale

PAVEMENT MARKINGS

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **U.1**

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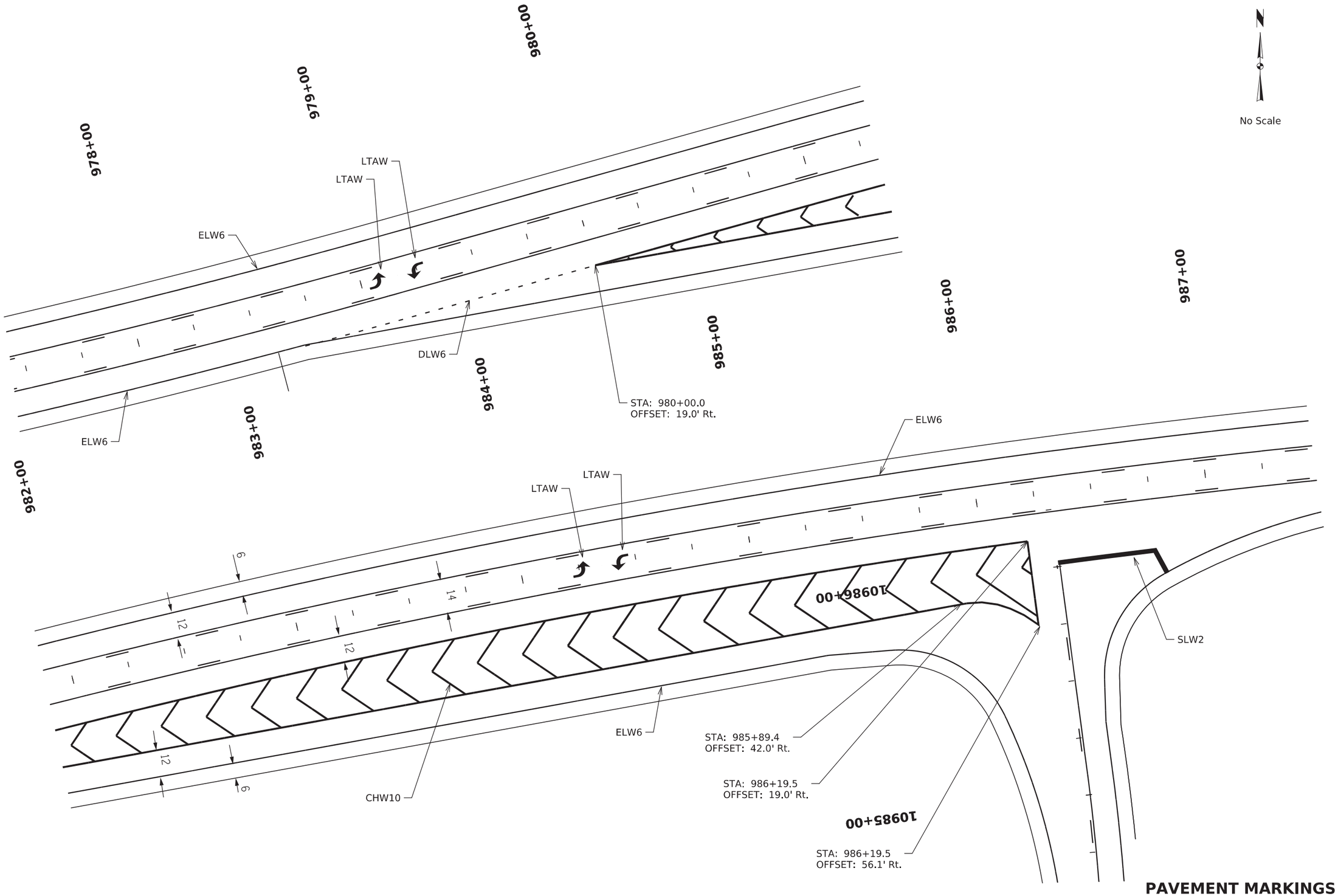

PAVEMENT MARKINGS

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **U.2**

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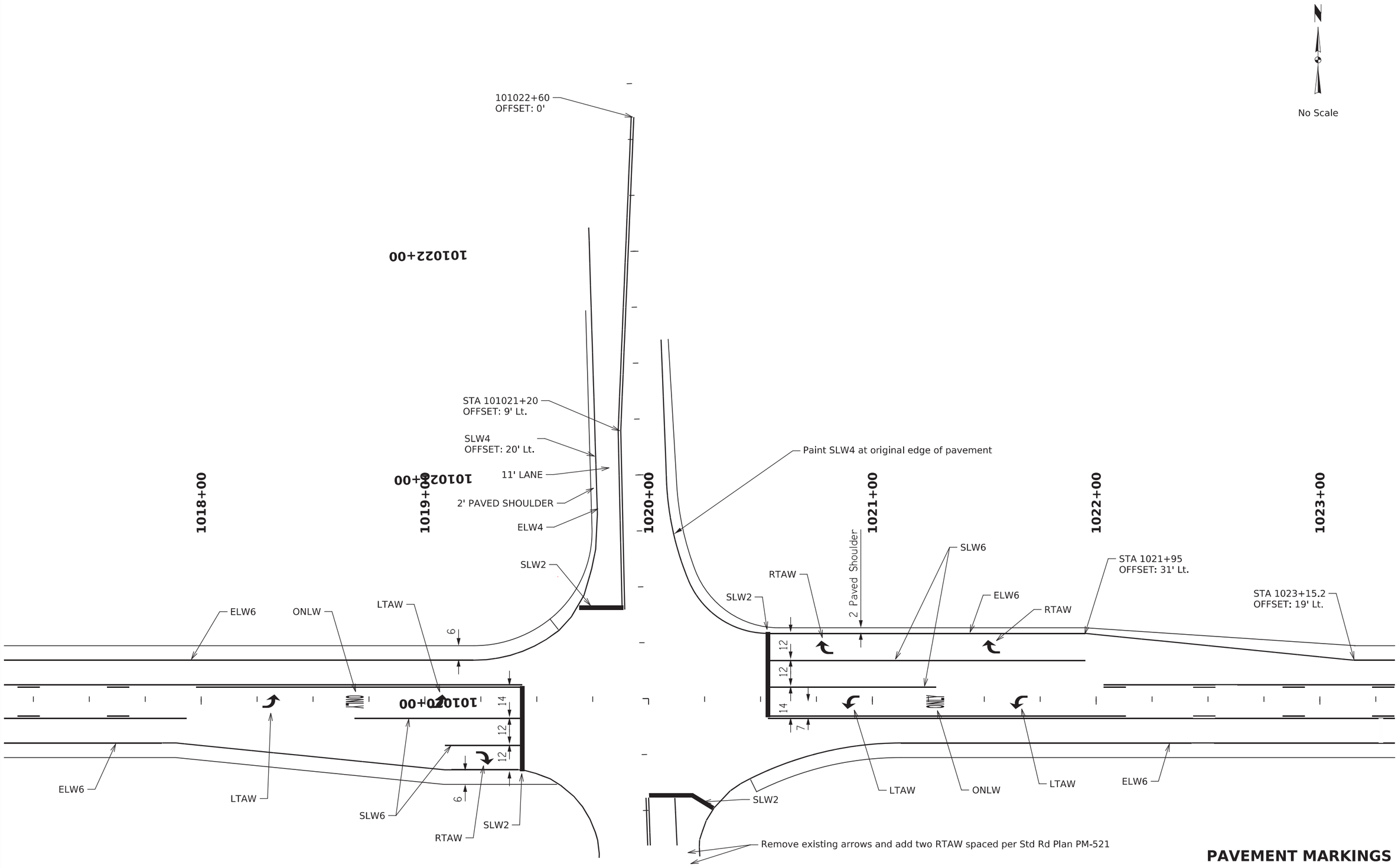

PAVEMENT MARKINGS

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **U.3**

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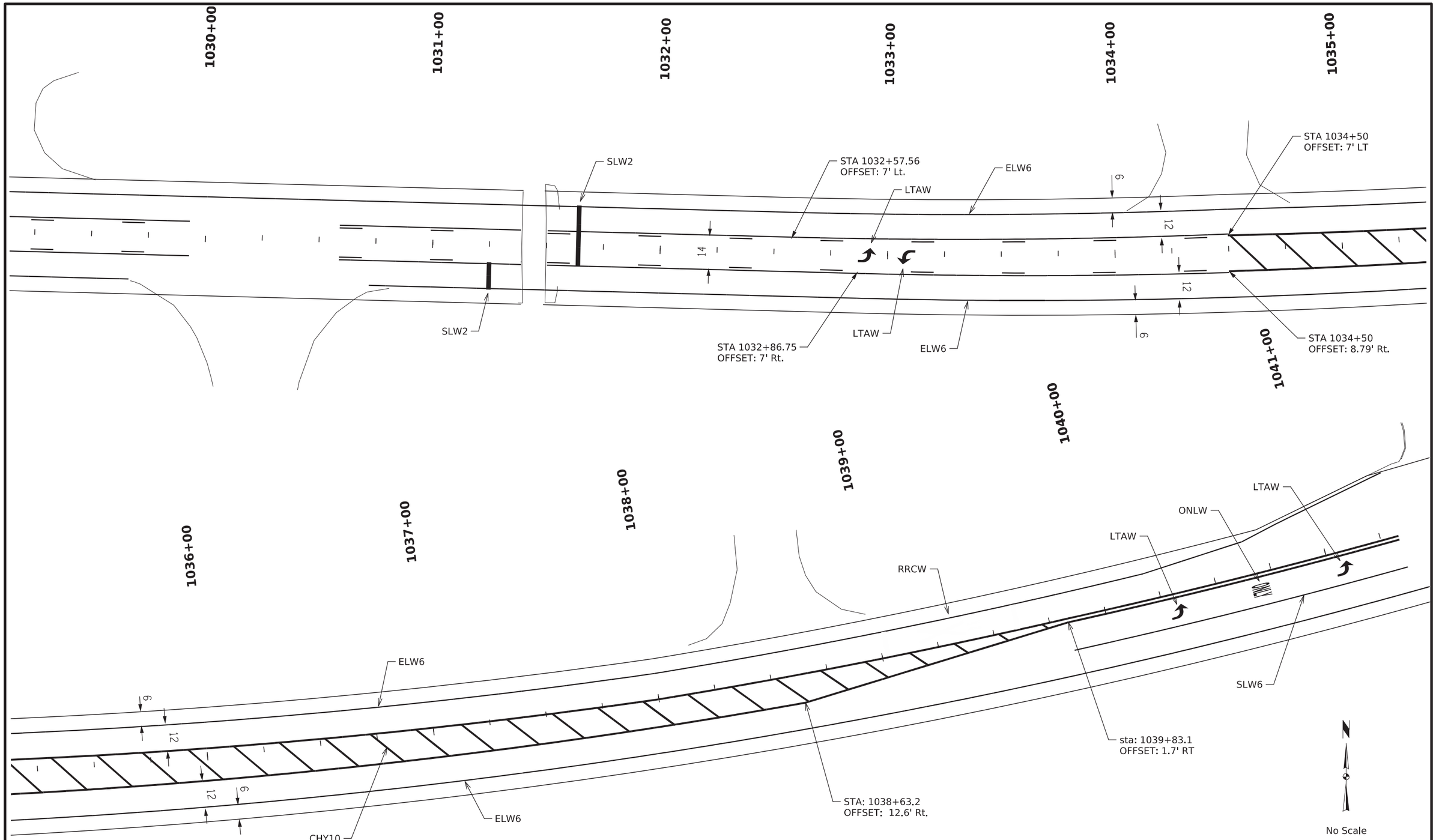

PAVEMENT MARKINGS

FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **U.4**

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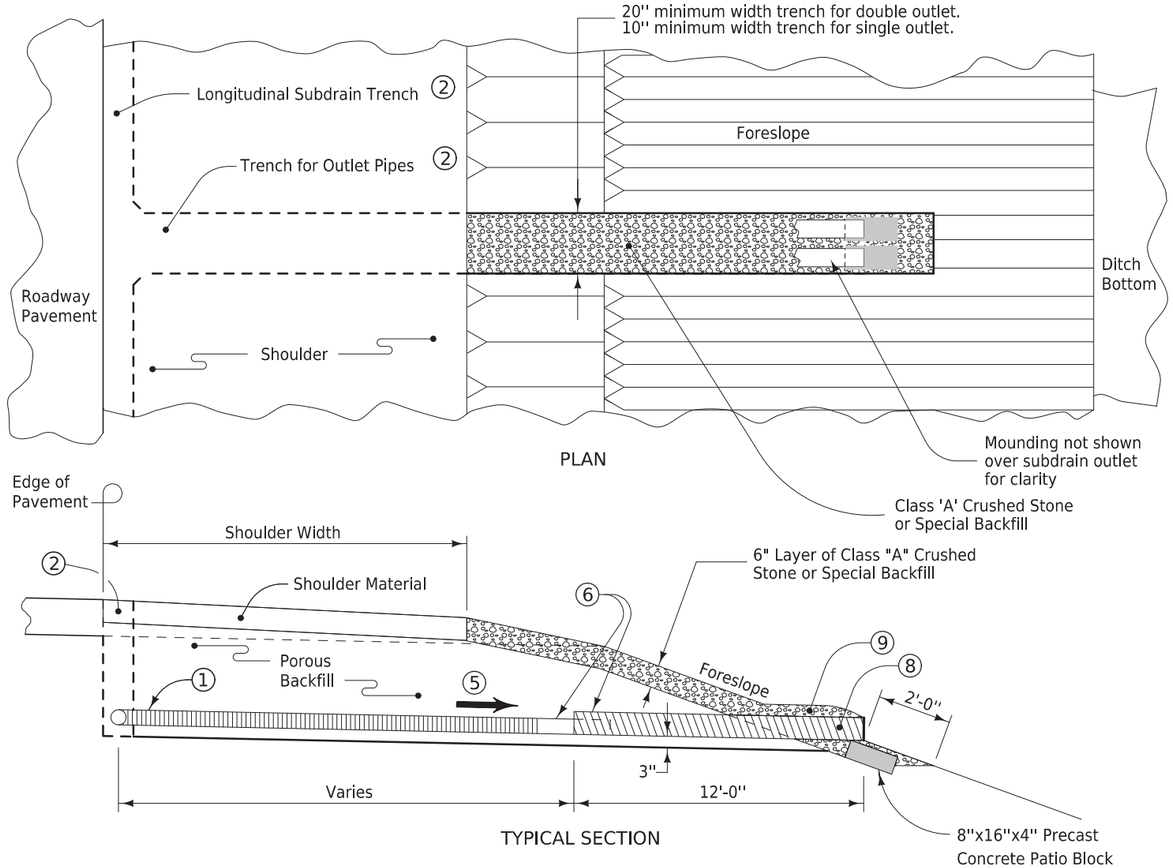
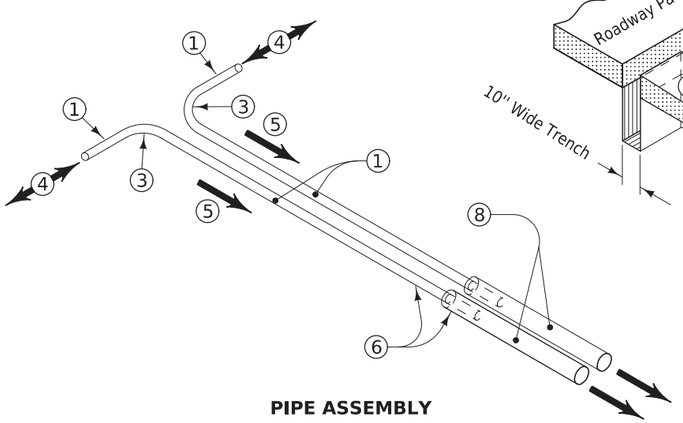
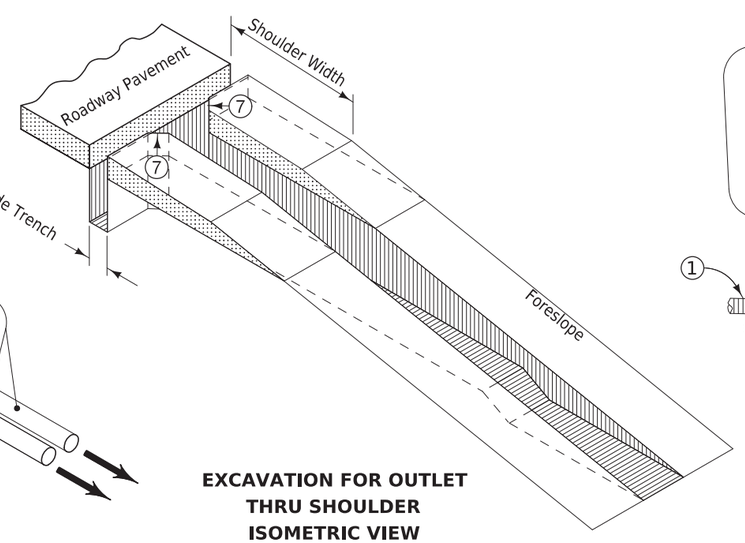


TYPICAL SECTION

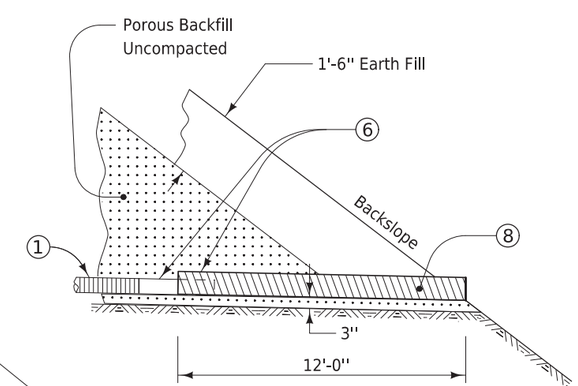
LONGITUDINAL AND TRANSVERSE OUTLETS



PIPE ASSEMBLY ISOMETRIC VIEW



EXCAVATION FOR OUTLET THRU SHOULDER ISOMETRIC VIEW



BACKSLOPE OUTLET TYPICAL SECTION

1. Perforated Subdrain (Polyethylene Corrugated Tubing).
2. On projects where existing shoulder material is removed, replace the shoulder material according to Article 2502.03, C of the Standard Specifications.
3. 'Y' or 'T' connection will not be allowed. Place subdrain on 1 foot minimum radius.
4. Direction of flow.
5. 6 inch minimum drop in elevation between longitudinal subdrain and outlet. 12 inch minimum drop for projects using recycled PCC subbase.
6. Corrugated metal pipe outlet 2 inches larger than subdrain pipe or corrugated double-walled PE or PVC pipe of the same diameter as the subdrain pipe with an appropriate coupler. If metal pipe is used, the pipes should be coupled in one of the following ways: (1) Use an inside fit reducer coupler (insert coupler a minimum of 12 inches into CMP); or (2) Insert 1 inch of the 4 inch subdrain into the 6 inch metal outlet pipe, then fully seal the entire opening with grout.
7. Bevel the trench to provide a minimum of 3 inches of porous backfill surrounding all portions of subdrain pipe.
8. Corrugated metal pipe outlet 2 inches larger than existing subdrain pipe, or corrugated double-walled PE or PVC pipe of the same diameter as the existing subdrain pipe.
9. Place class 'A' crushed stone or Special Backfill over outlet and carefully compact to avoid damaging outlet pipe.

Possible Contract Item:
Subdrain Outlet, 500-10

Possible Tabulations:
104-5C
104-6

IOWA DOT

REVISION
NEW 10-17-17

ROAD DESIGN DETAIL

500-10

SHEET 1 of 1

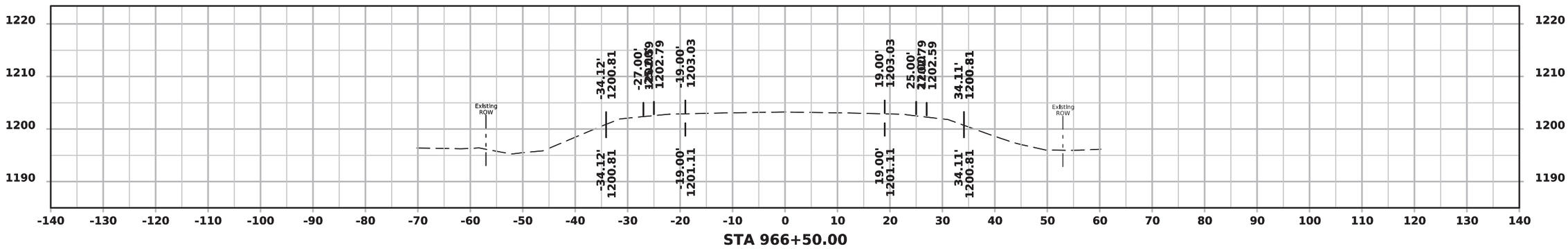
REVISIONS: New, replaced DR-304

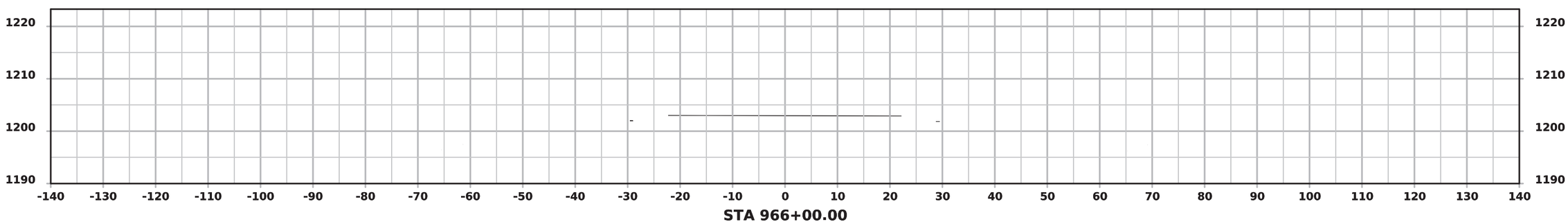
OUTLETS FOR LONGITUDINAL, TRANSVERSE AND BACKSLOPE SUBDRAINS

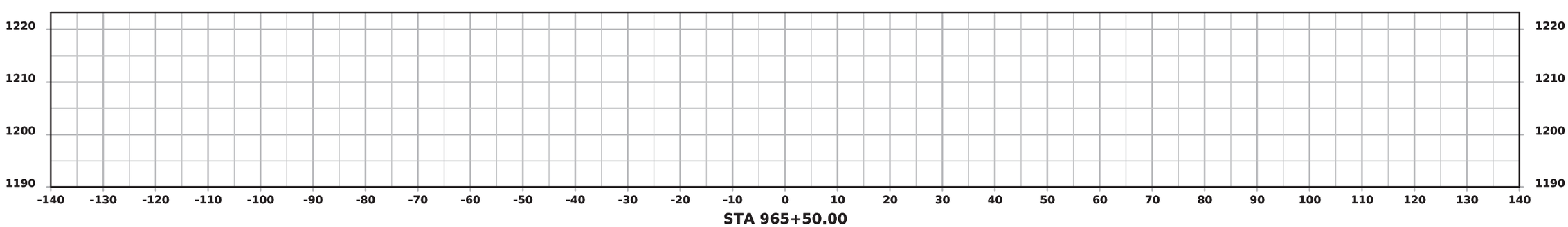
FILE NO.	ENGLISH	DESIGN TEAM **Rolando \ Suntken**	**HANCOCK** COUNTY	PROJECT NUMBER **NHSX-18-4(30)--3H-41**	SHEET NUMBER **U.5**

11:24:56 AM 11/26/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\41018030_U01.dgn

US 18







FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.1

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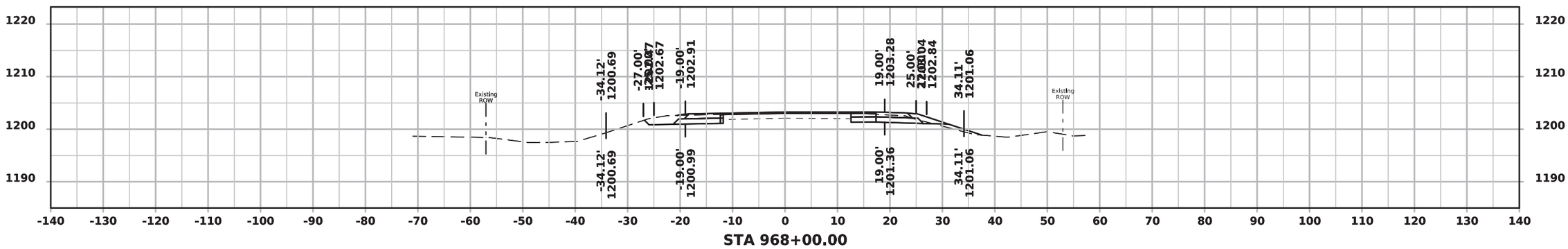
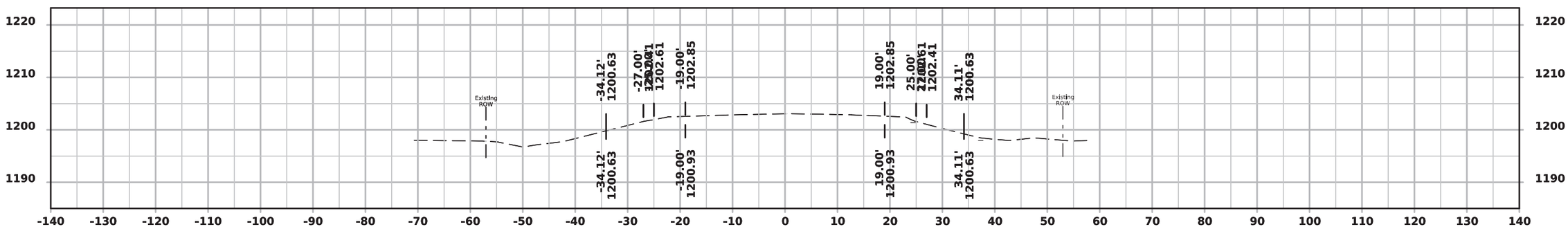
US 18



STA 968+00.00



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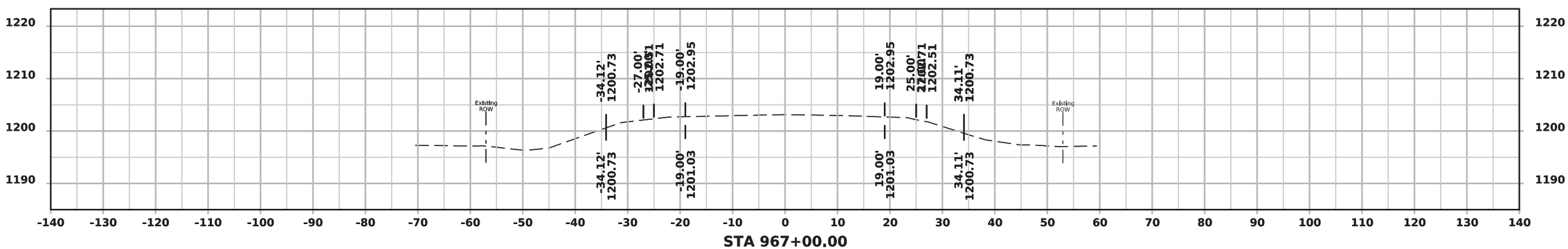

STA 967+00.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.2

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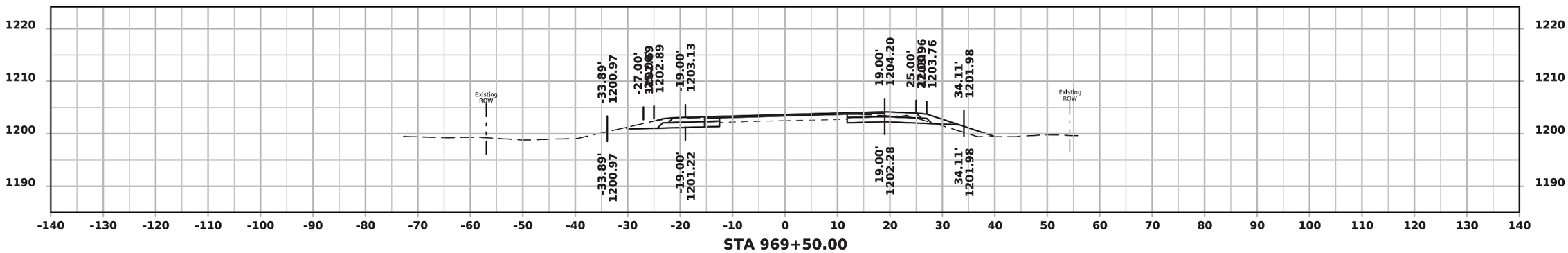
US 18



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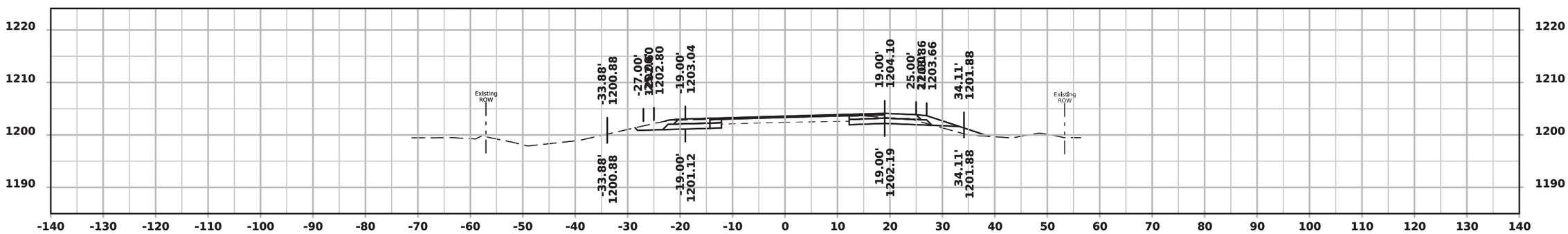
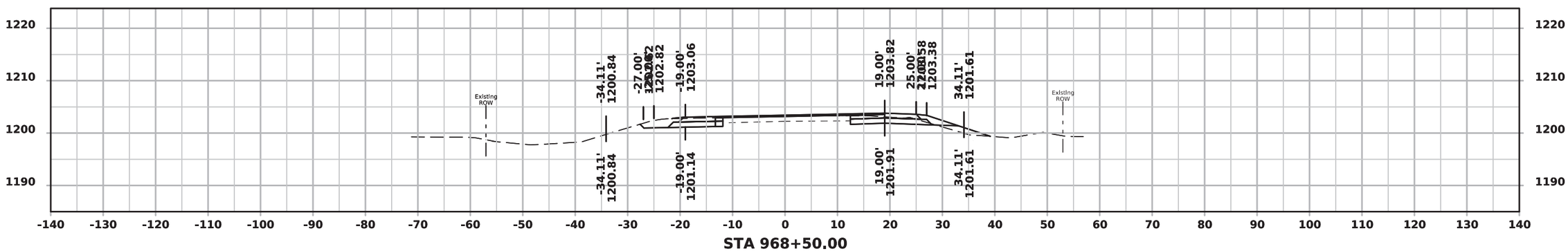


STA 969+00.00

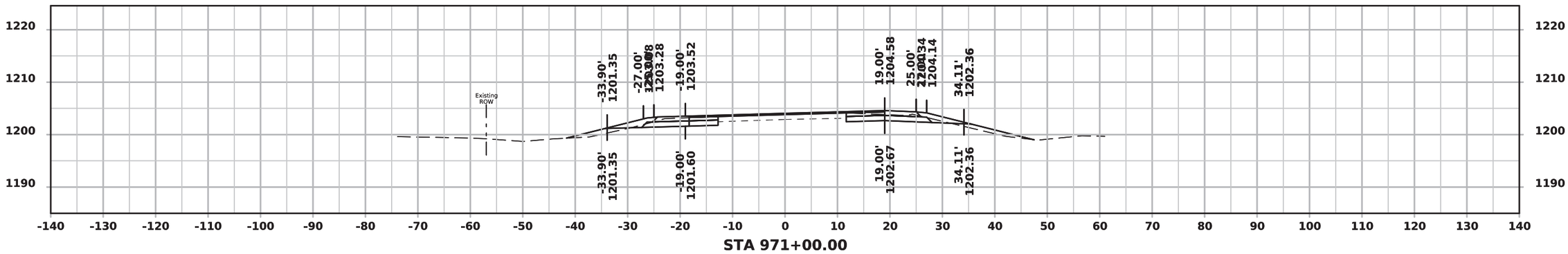


STA 968+50.00

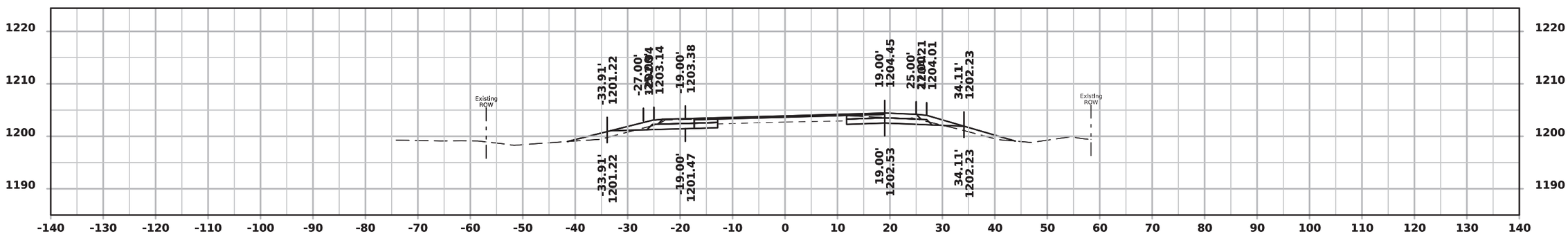
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.3

6:34:06 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_W_of_US69.dgn

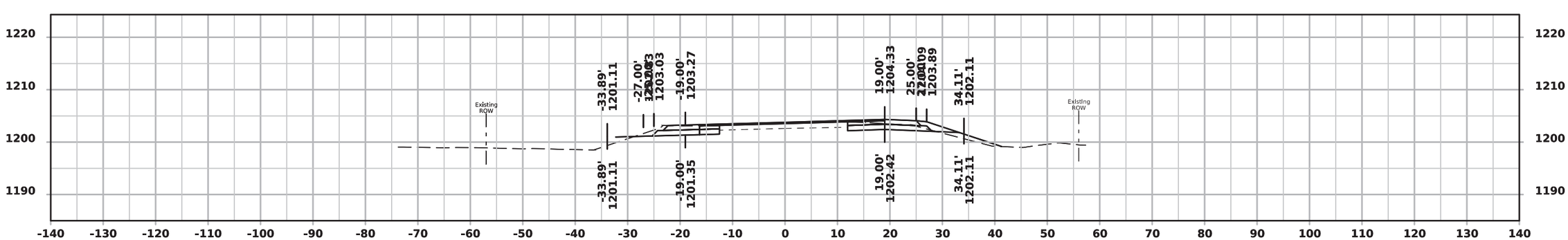
US 18



STA 971+00.00



STA 970+50.00

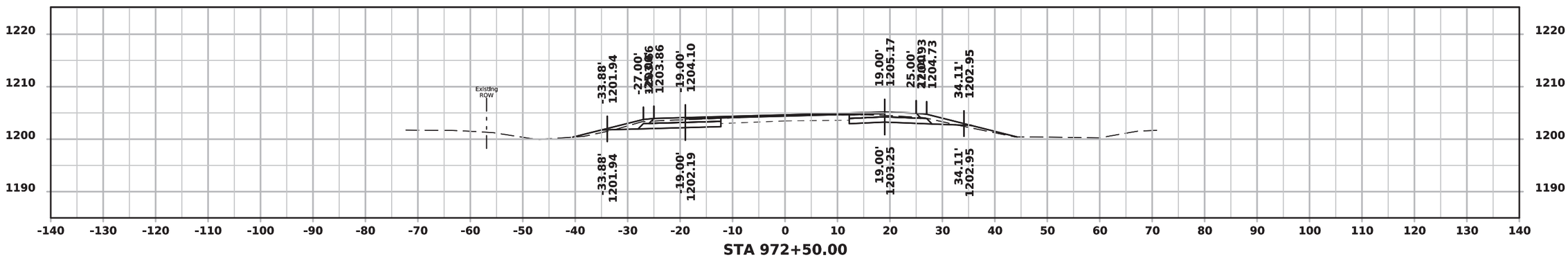


STA 970+00.00

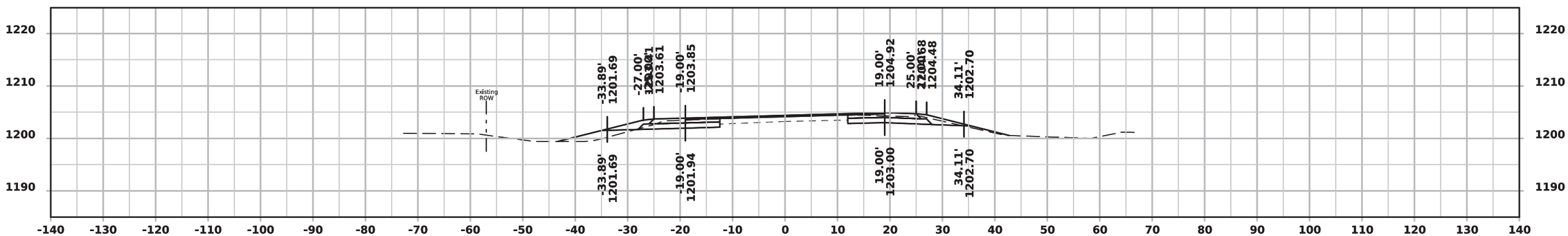
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.4

6:34:07 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_W_of_US69.dgn

US 18



STA 972+50.00



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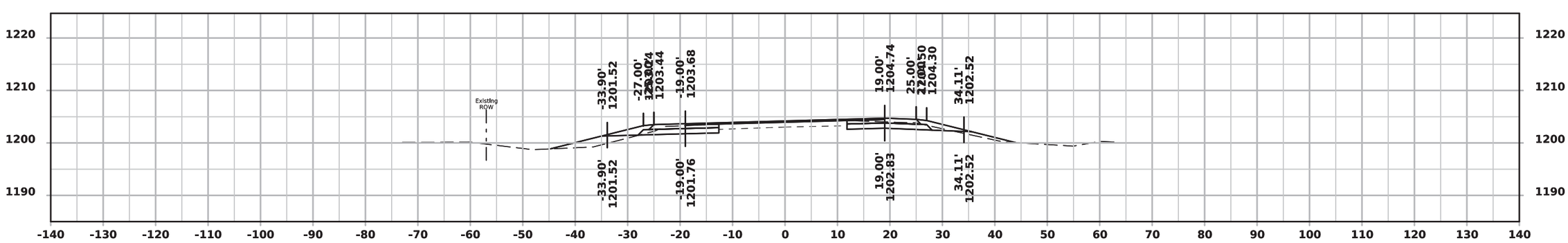
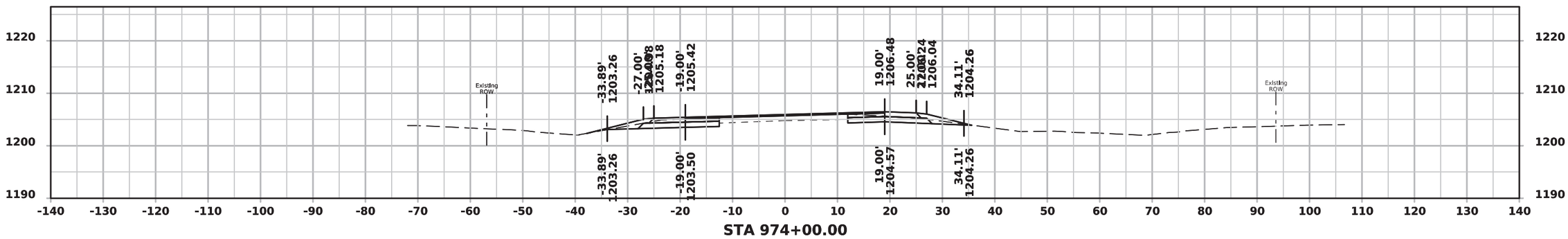
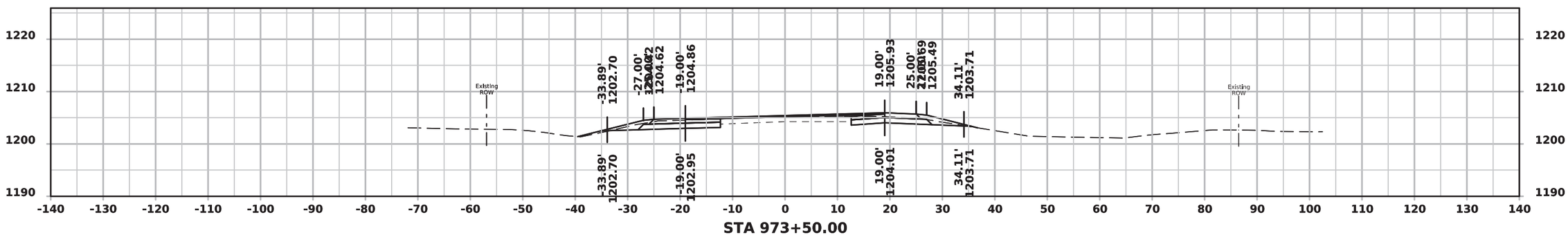


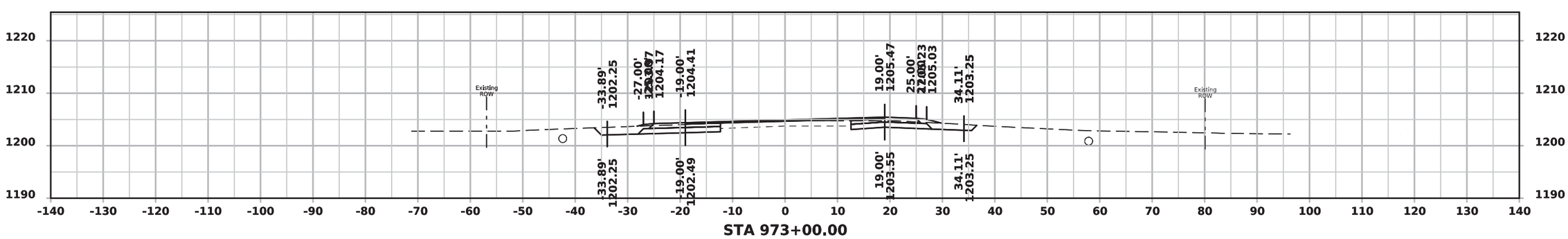
STA 971+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.5

US 18







FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.6

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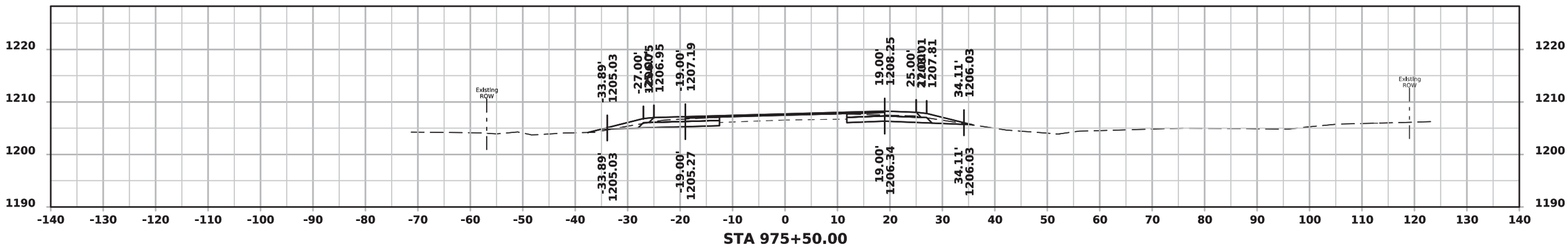
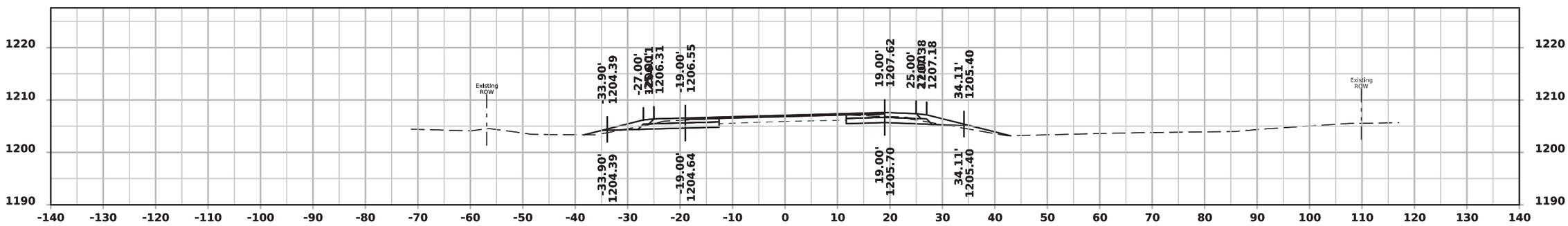
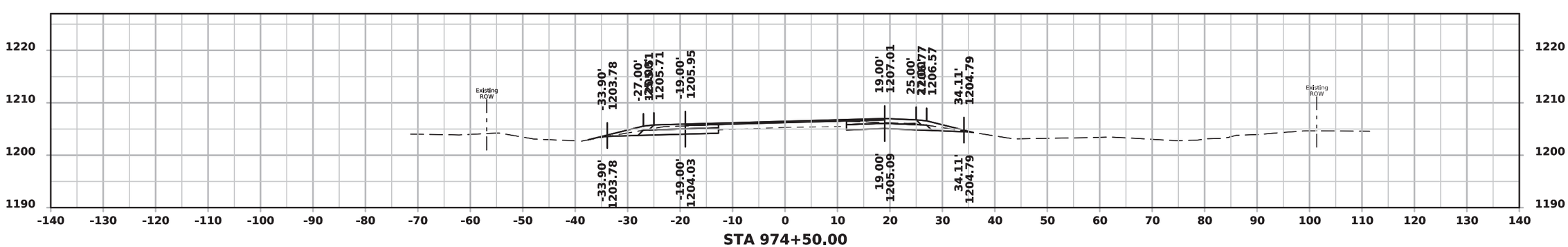
US 18



STA 975+50.00



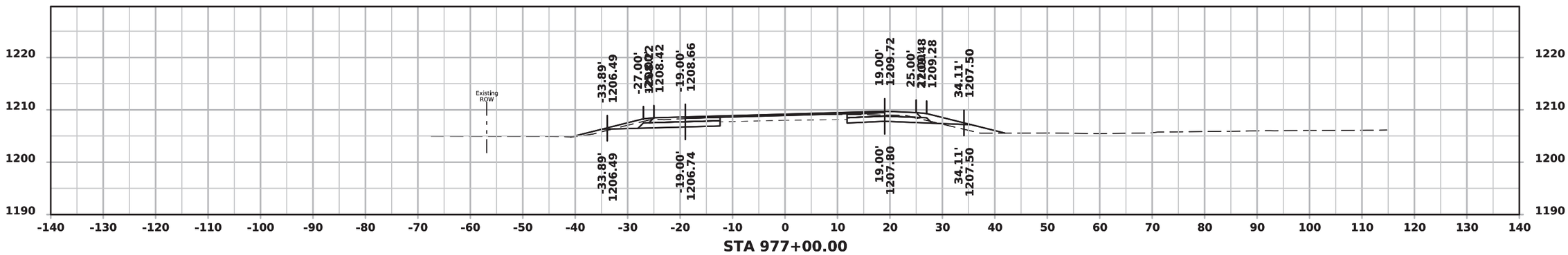
STA 975+00.00



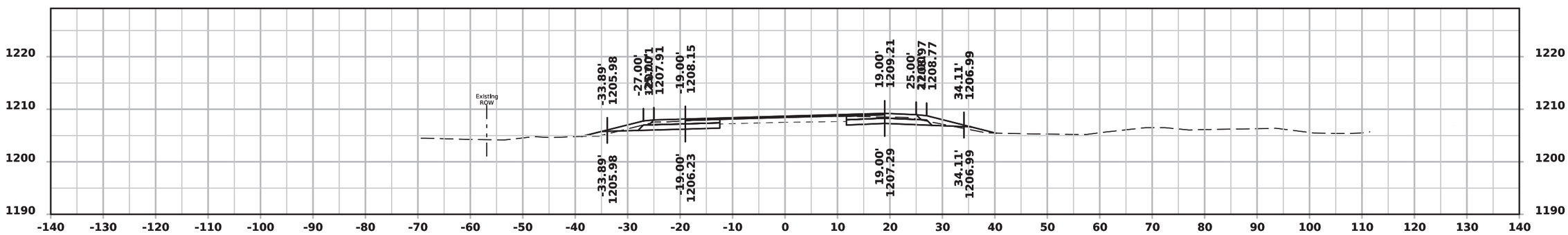
STA 974+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.7

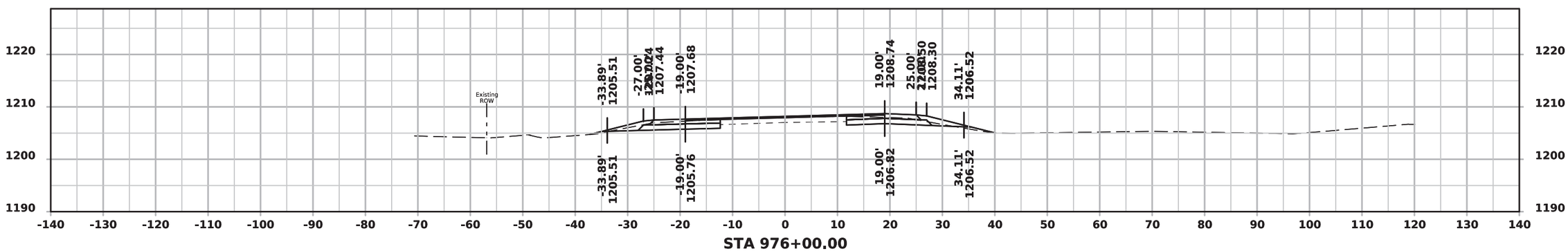
US 18



STA 977+00.00



STA 976+50.00

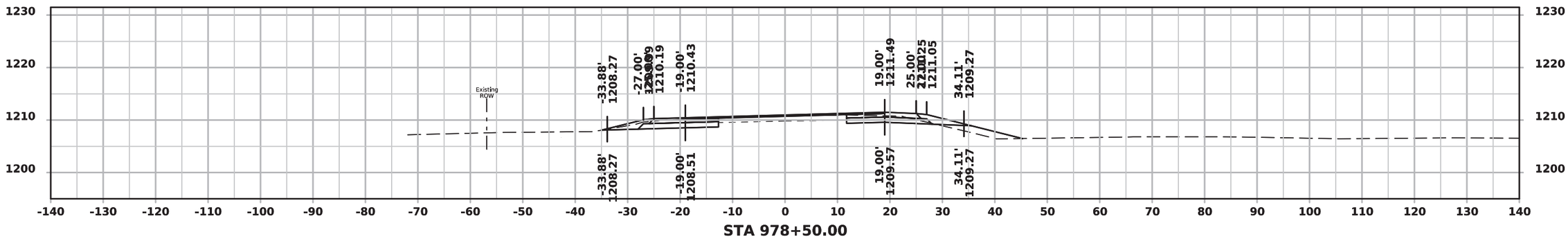


STA 976+00.00

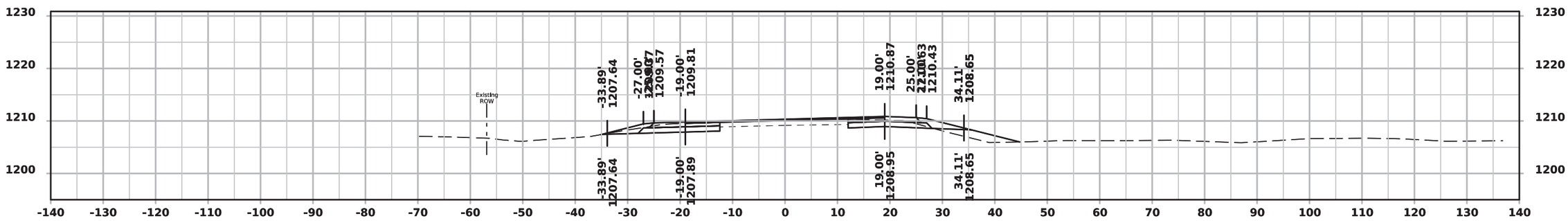
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.8

6:34:14 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_W_of_US69.dgn

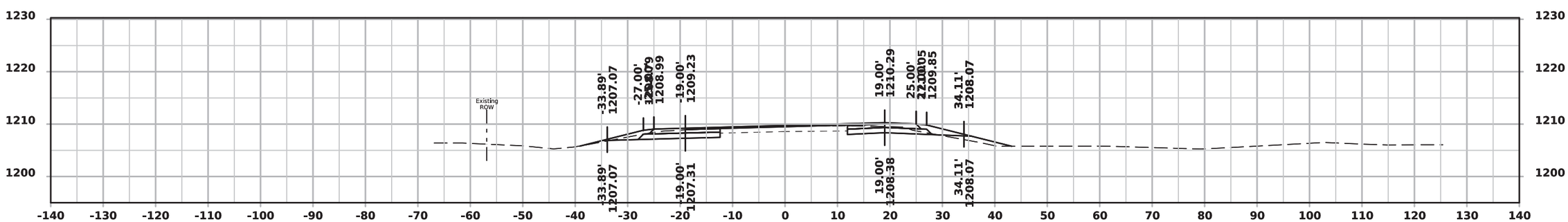
US 18



STA 978+50.00



STA 978+00.00



STA 977+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.9

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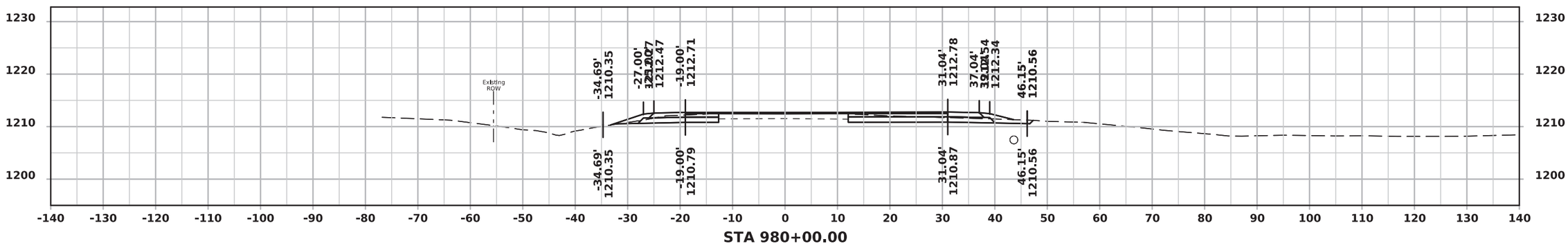
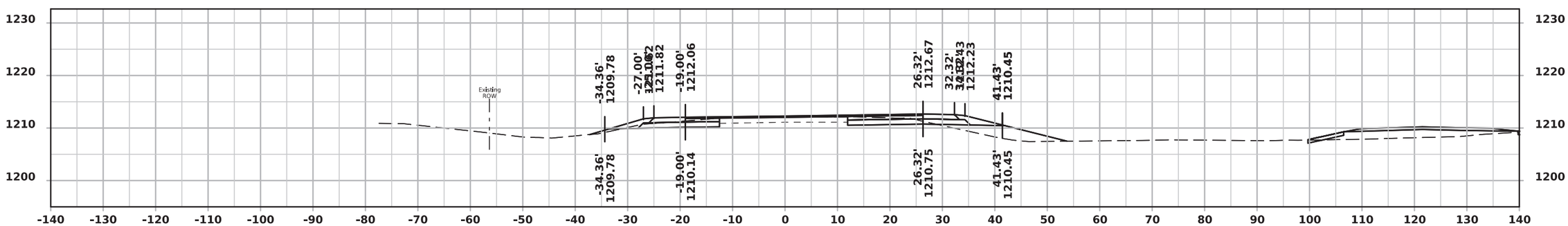
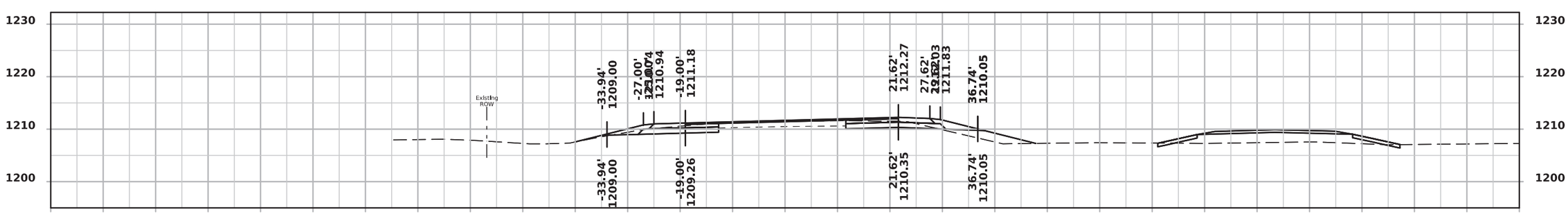
US 18



STA 980+00.00



STA 979+50.00

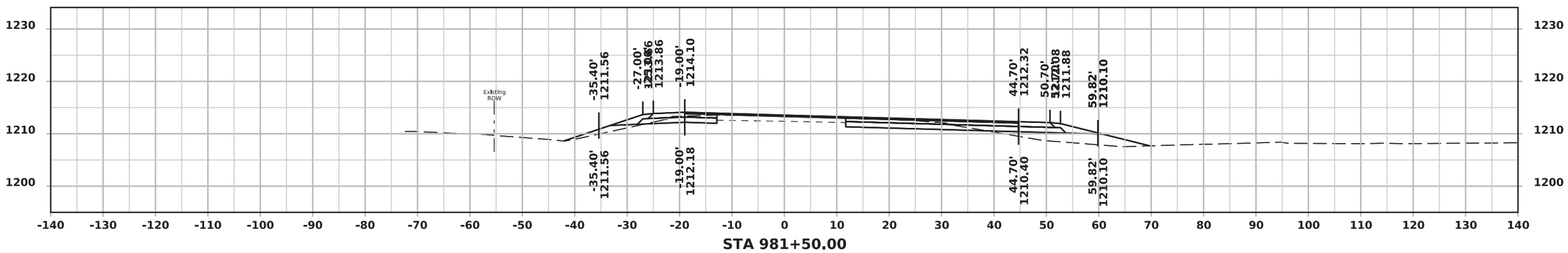


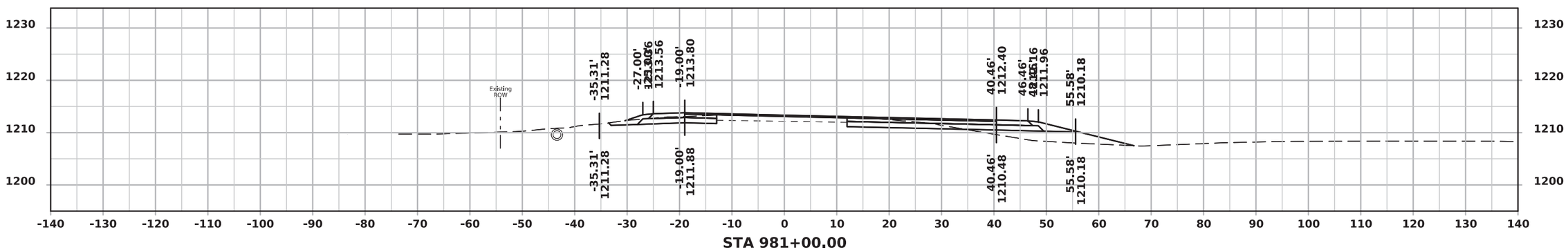
STA 979+00.00

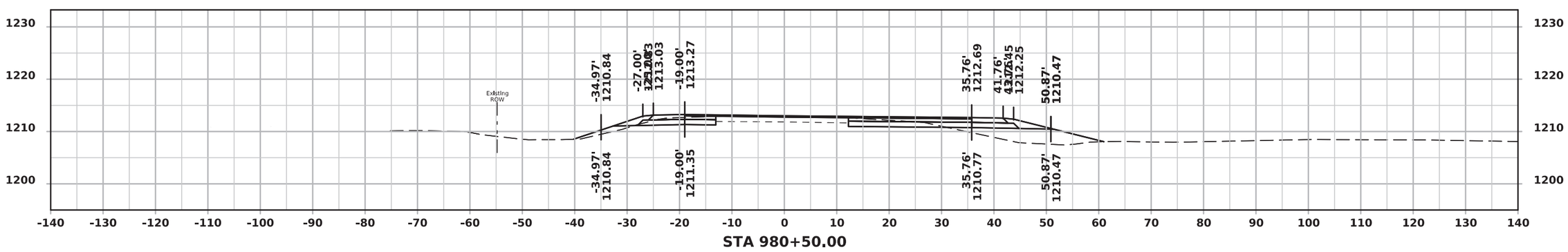
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.10

6:34:23 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_US69.dgn

US 18







FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.11

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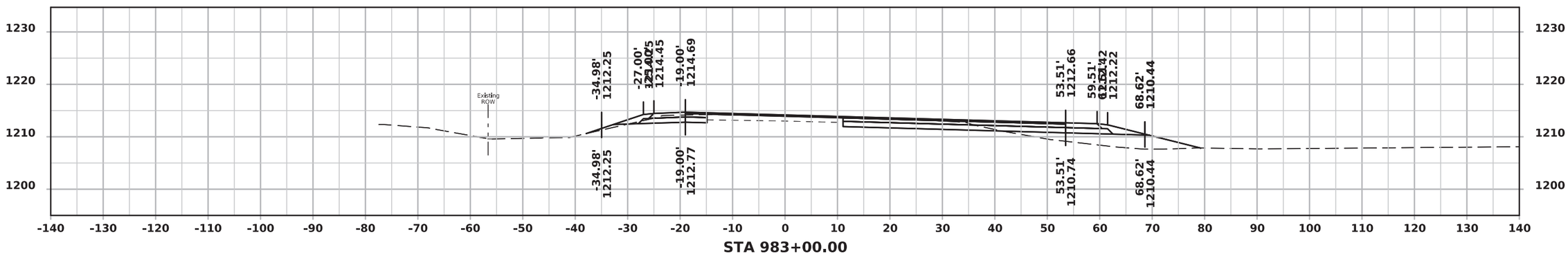
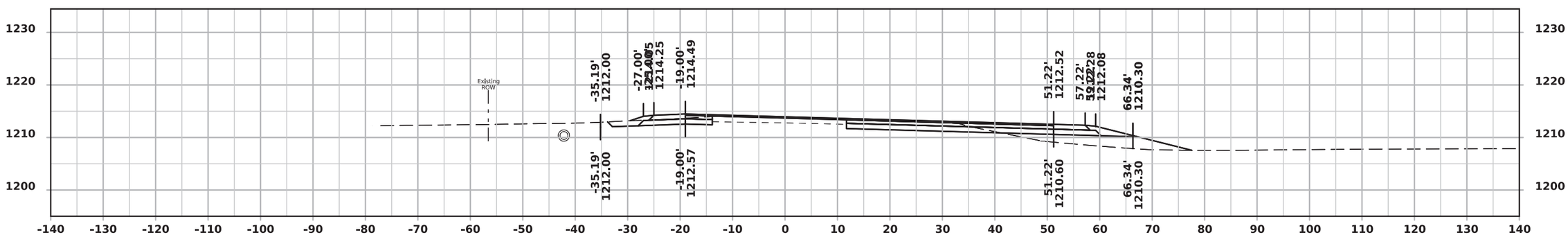
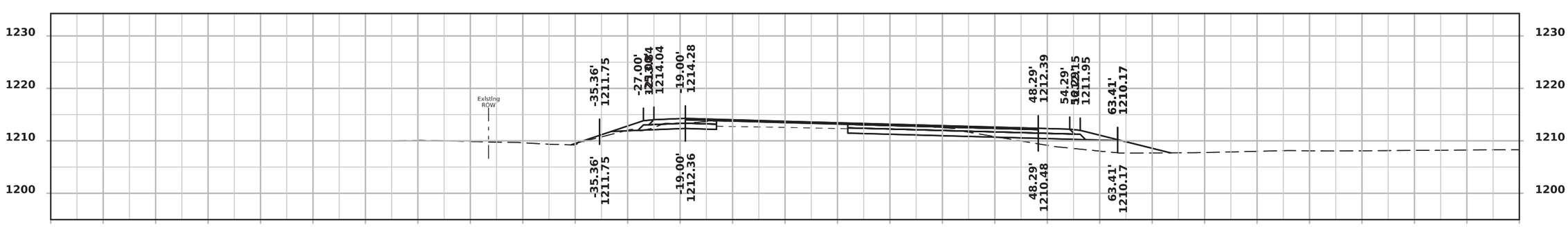
US 18



STA 983+00.00



STA 982+50.00

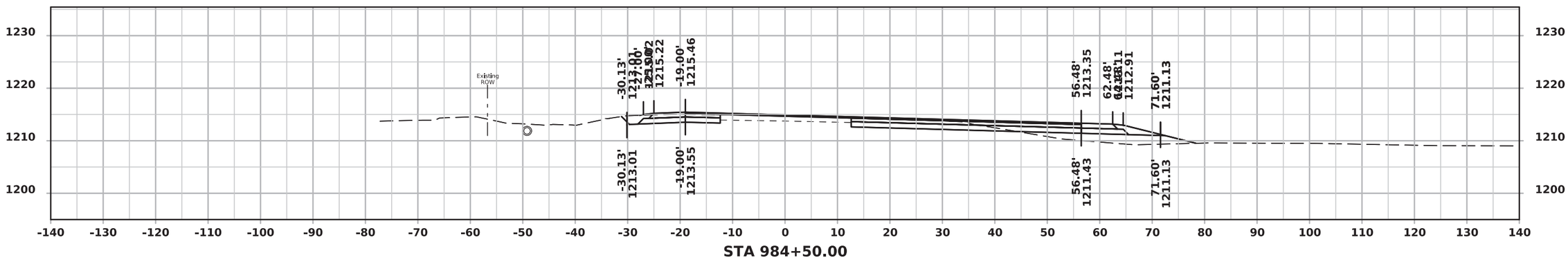


STA 982+00.00

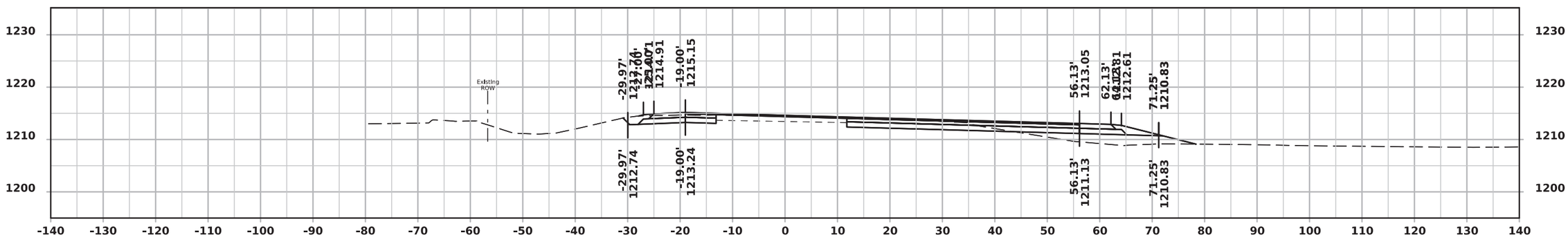
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.12

6:34:26 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_US69.dgn

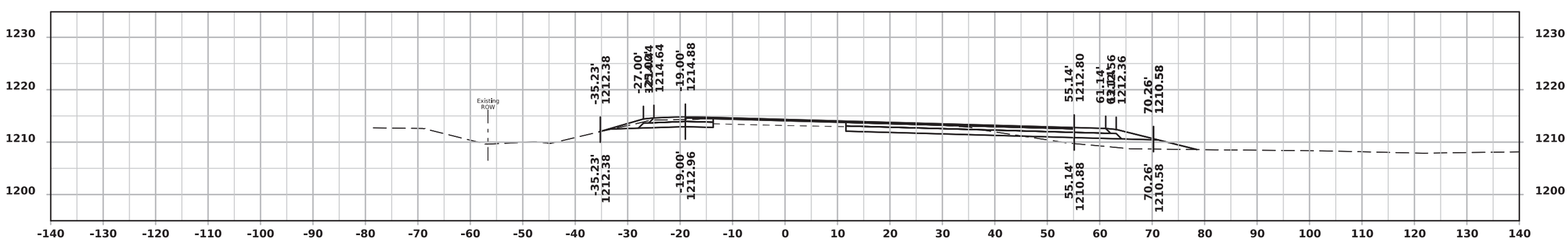
US 18



STA 984+50.00



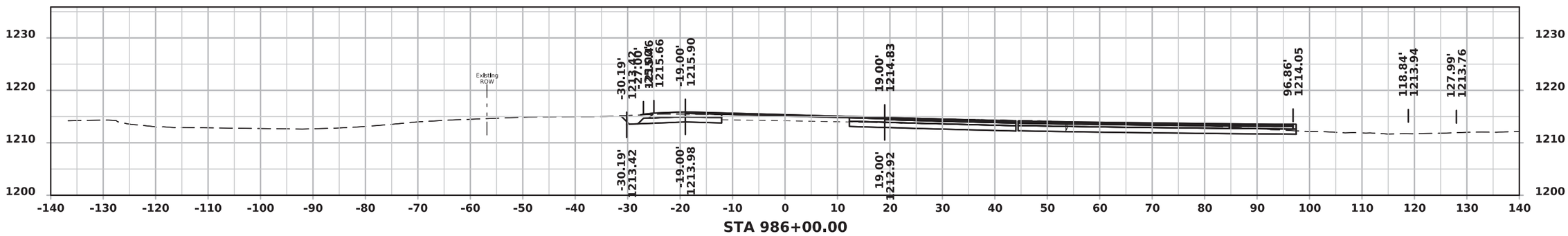
STA 984+00.00

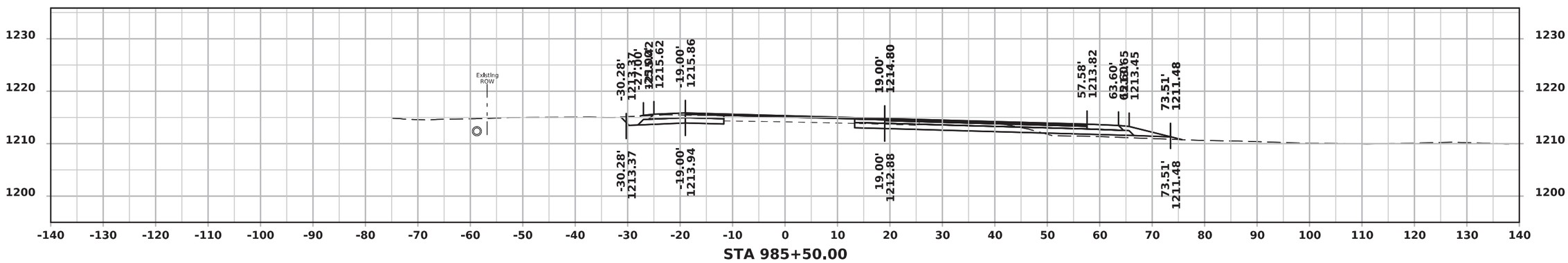


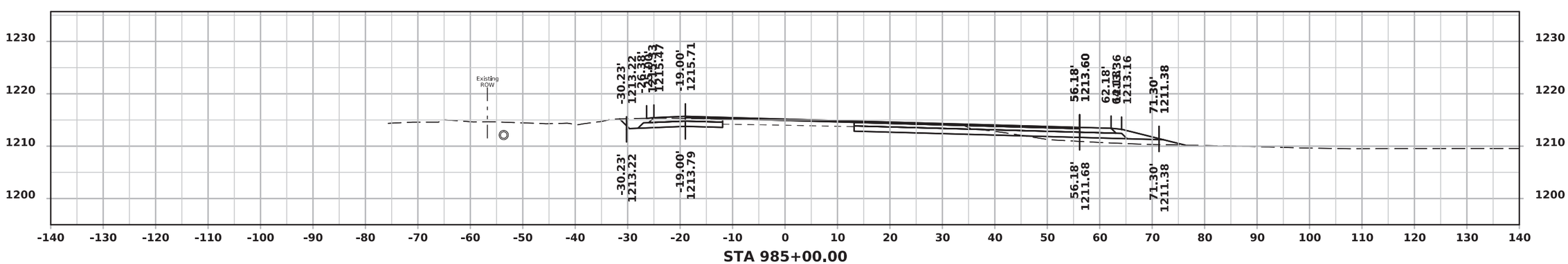
STA 983+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.13

US 18







FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.14

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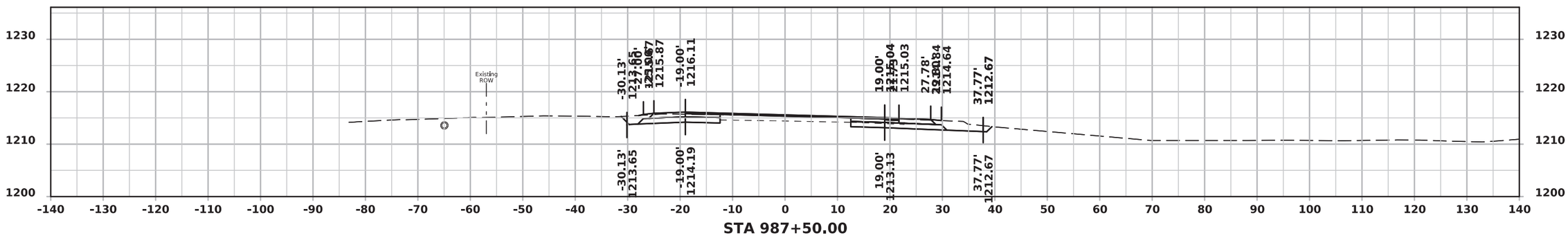
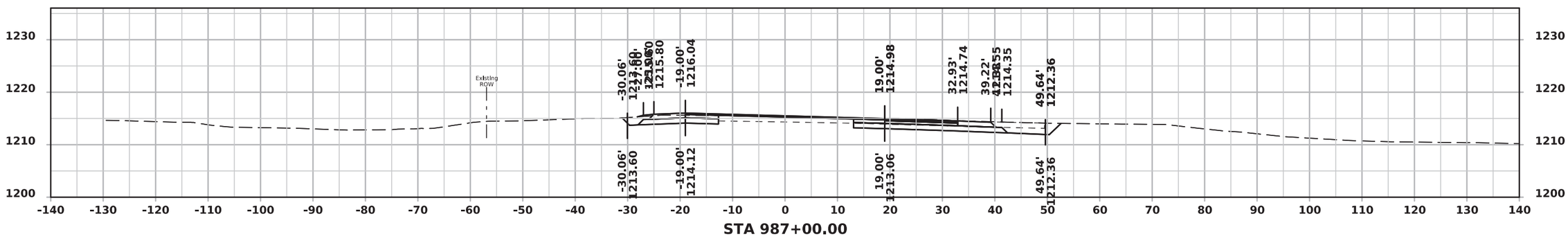
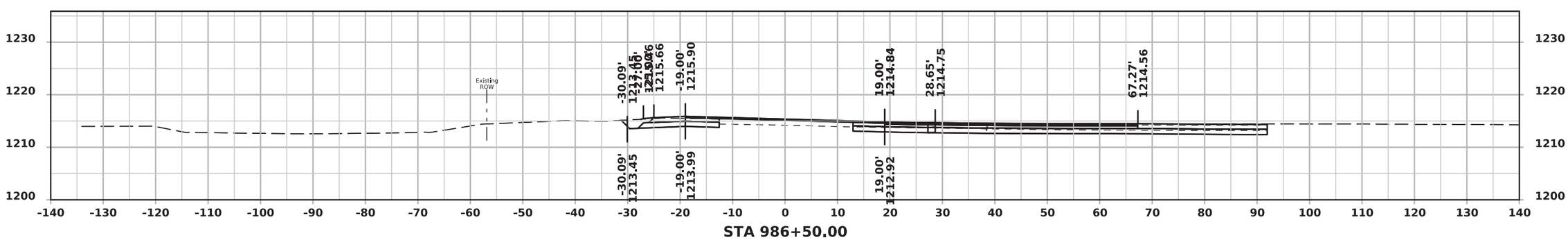
US 18







FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.15

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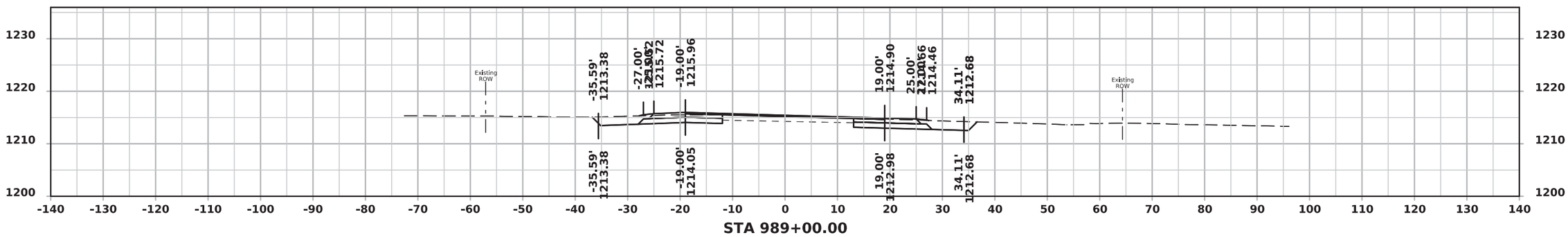
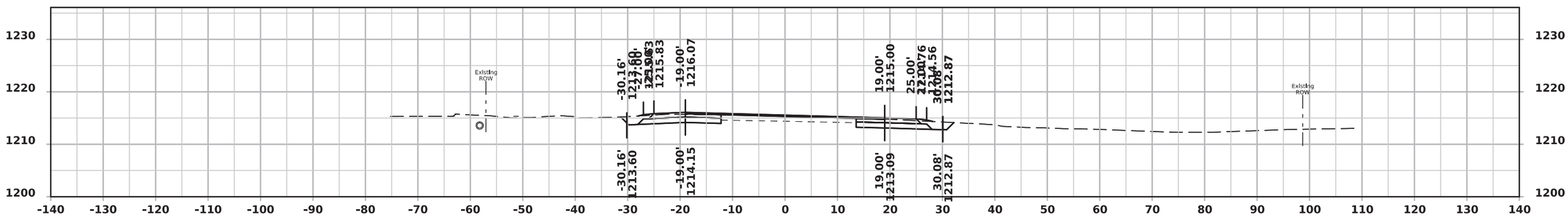
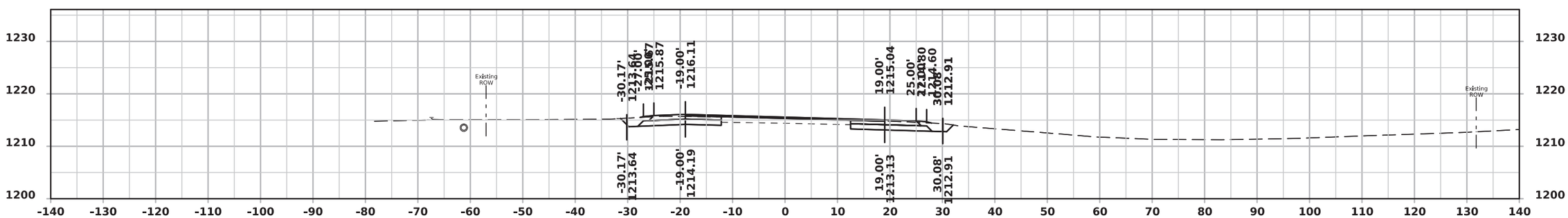
US 18



STA 989+00.00



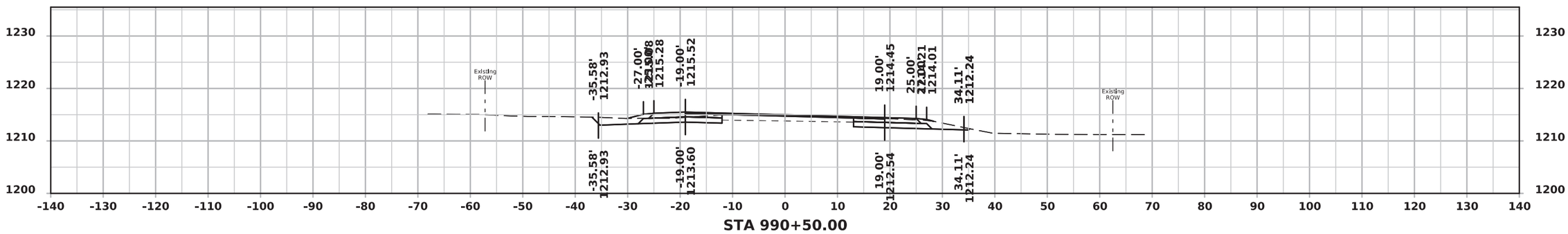
STA 988+50.00



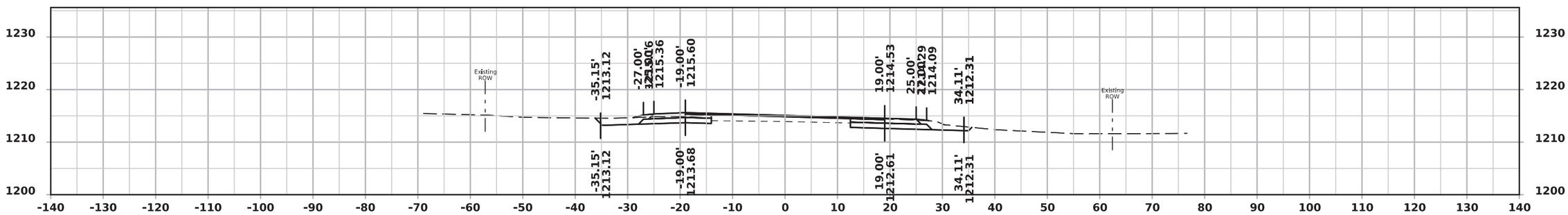
STA 988+00.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.16

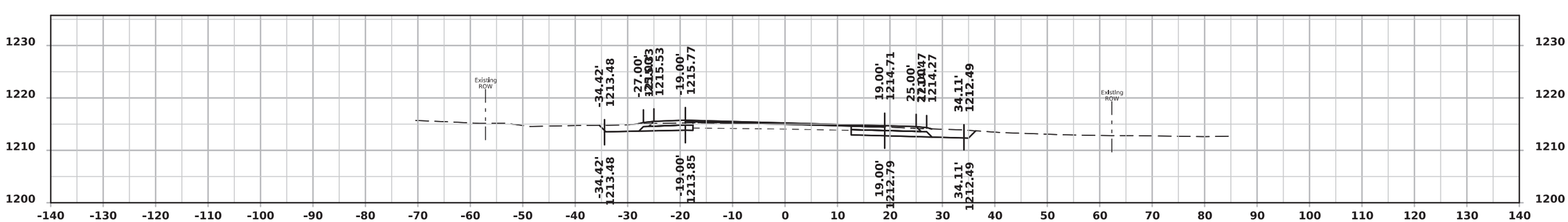
US 18



STA 990+50.00



STA 990+00.00

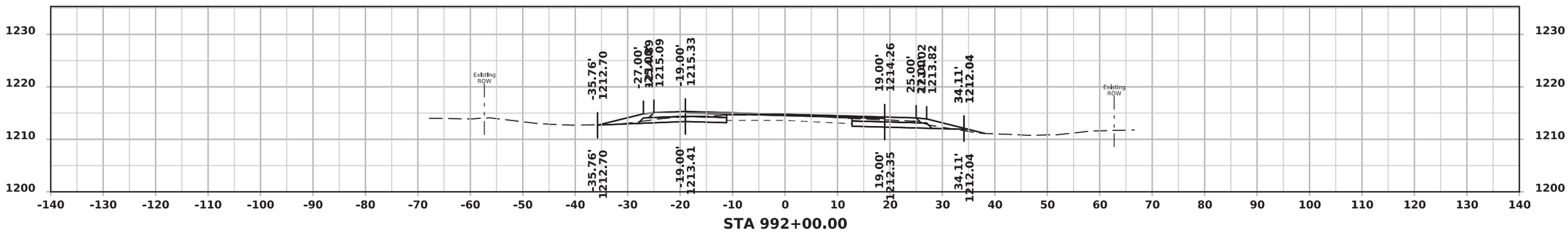


STA 989+50.00

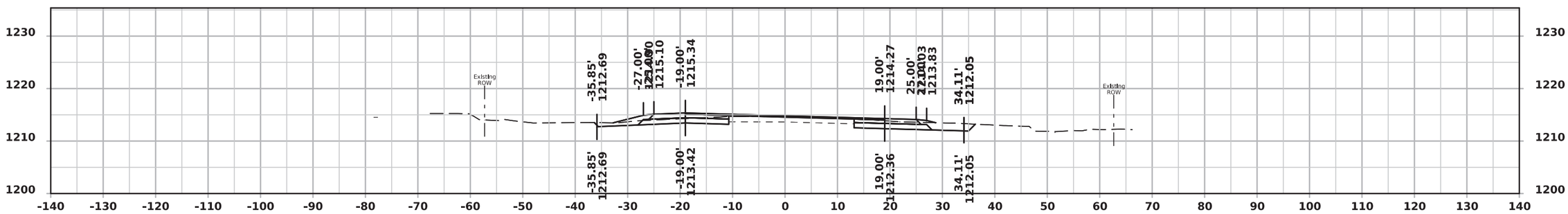
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.17

6:34:34 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_US69.dgn

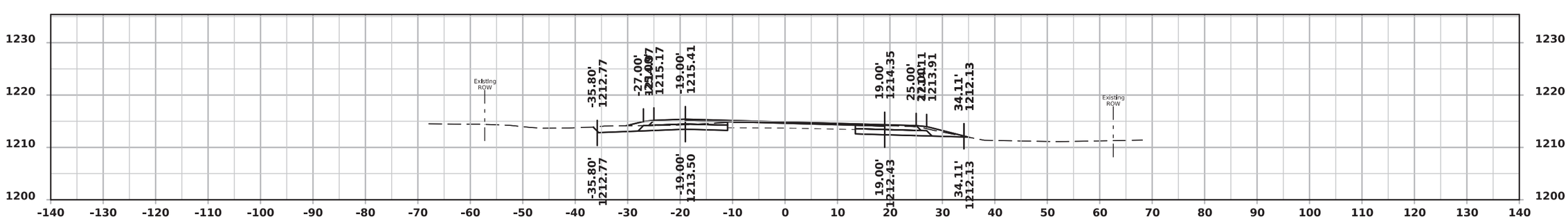
US 18



STA 992+00.00



STA 991+50.00



STA 991+00.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.18

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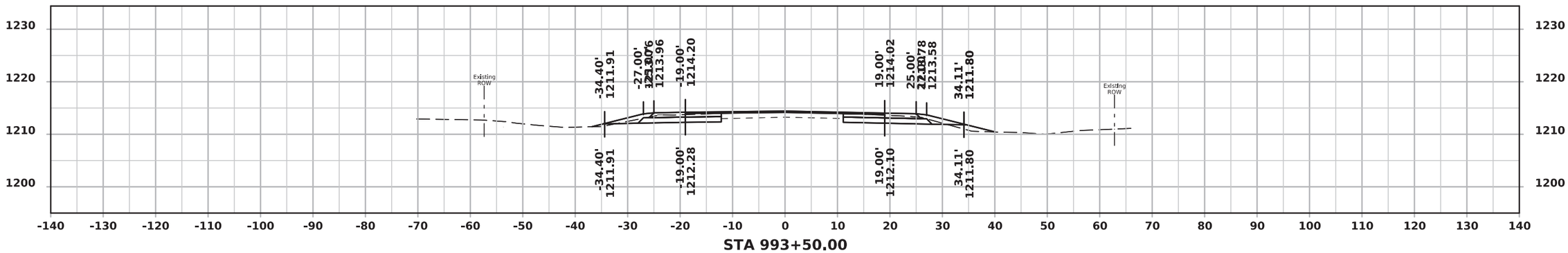
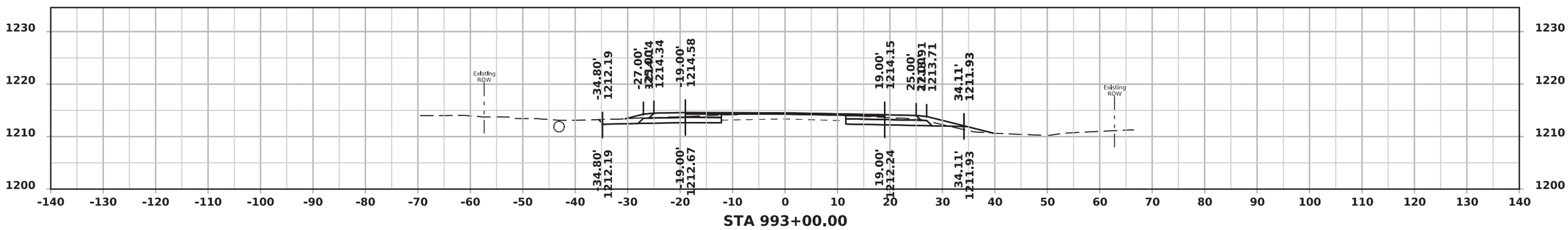
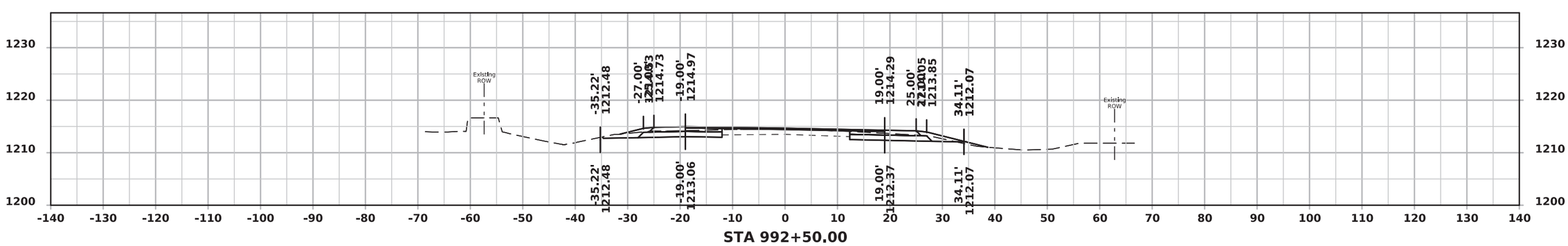
US 18



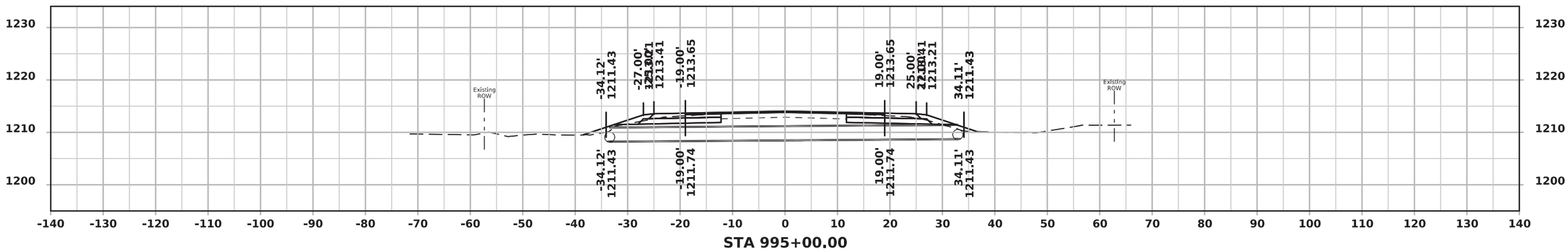




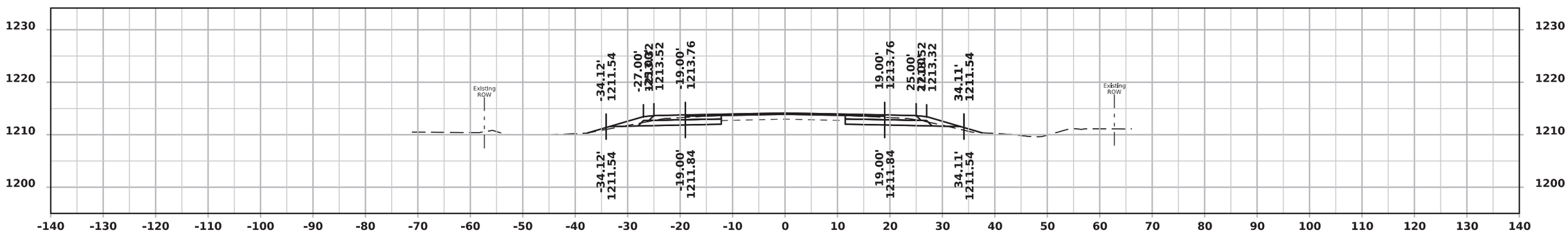
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.19

6:34:37 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_US69.dgn

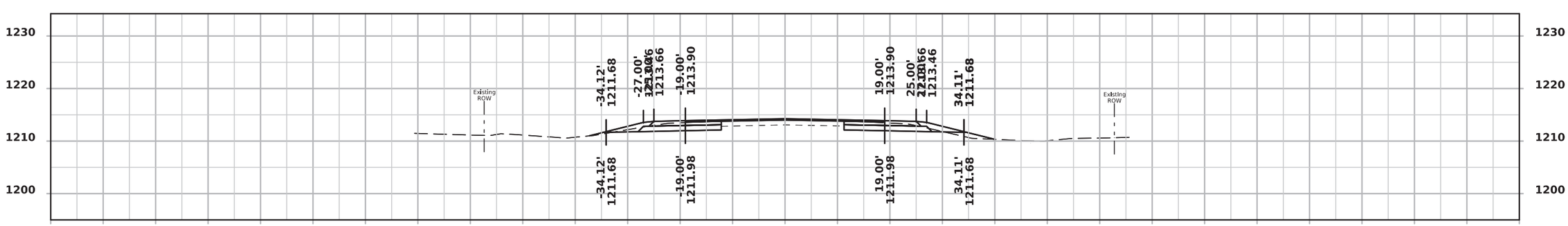
US 18



STA 995+00.00



STA 994+50.00

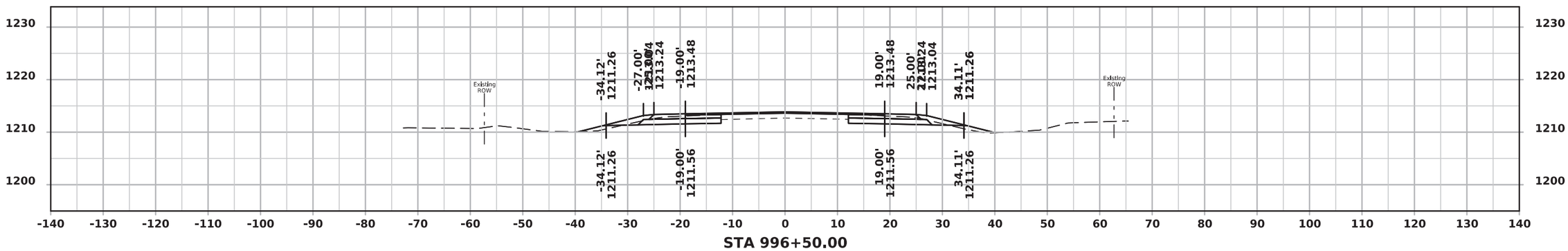


STA 994+00.00

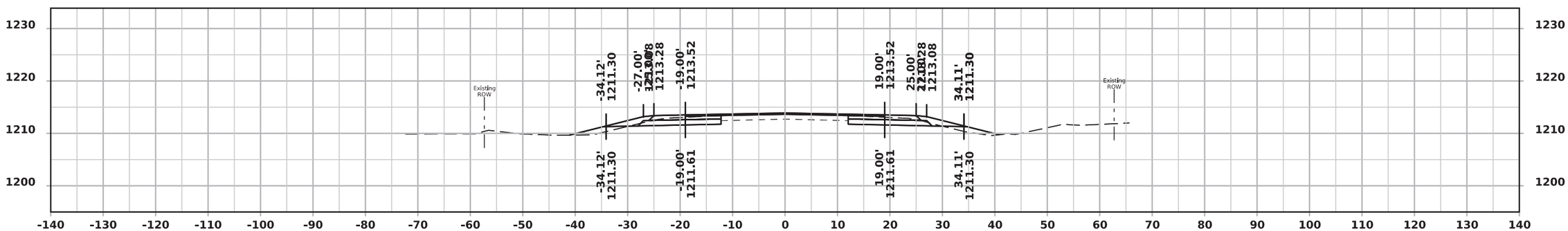
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.20

6:34:39 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_US69.dgn

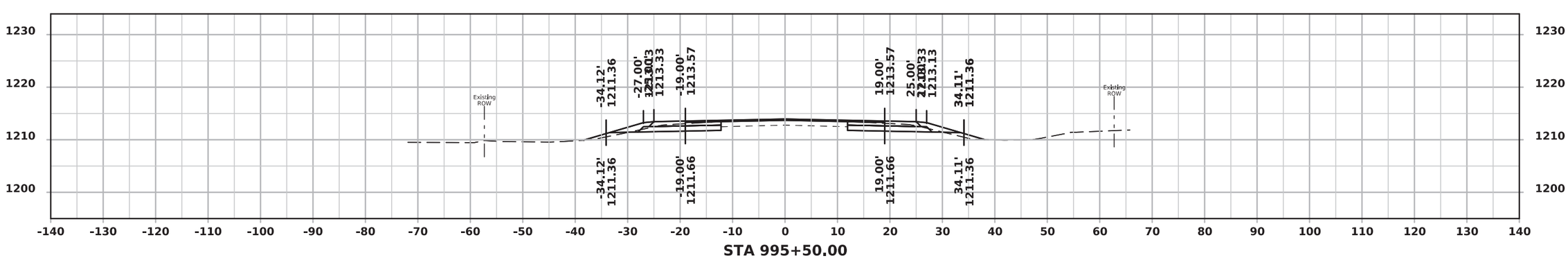
US 18



STA 996+50.00



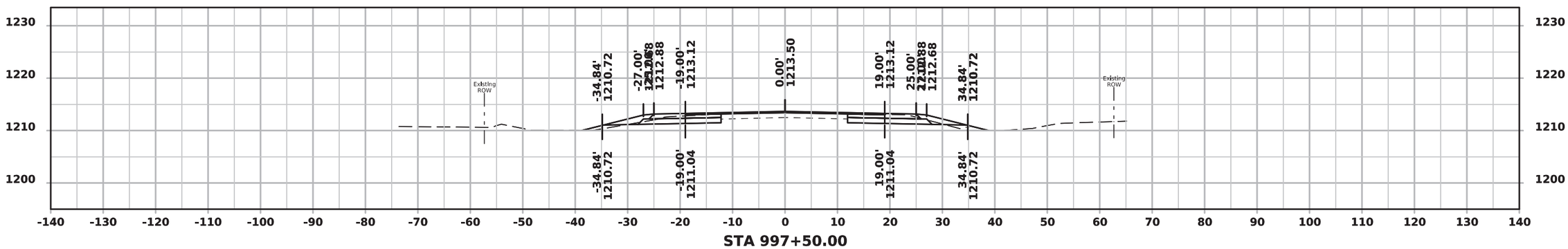
STA 996+00.00



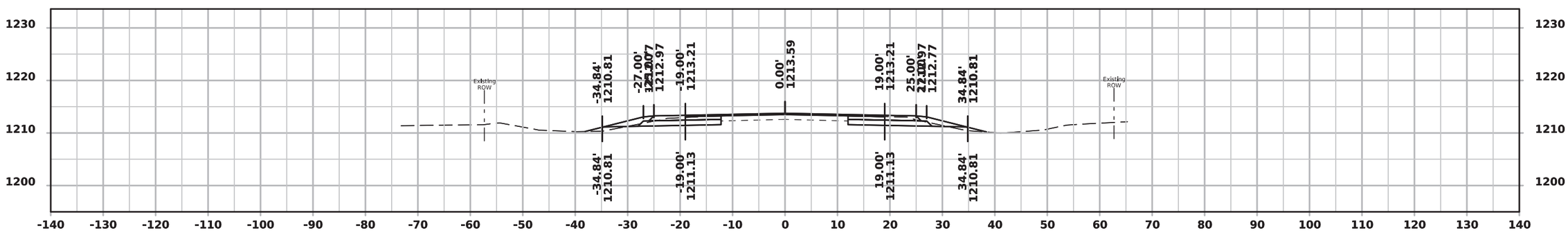
STA 995+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.21

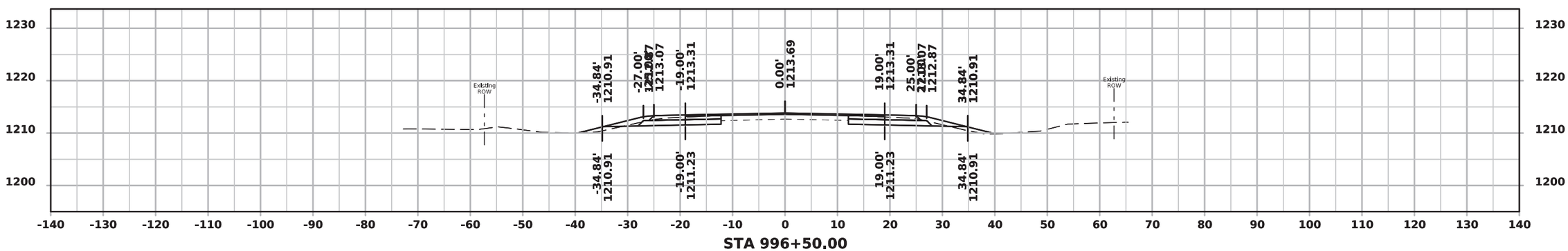
US 18



STA 997+50.00



STA 997+00.00

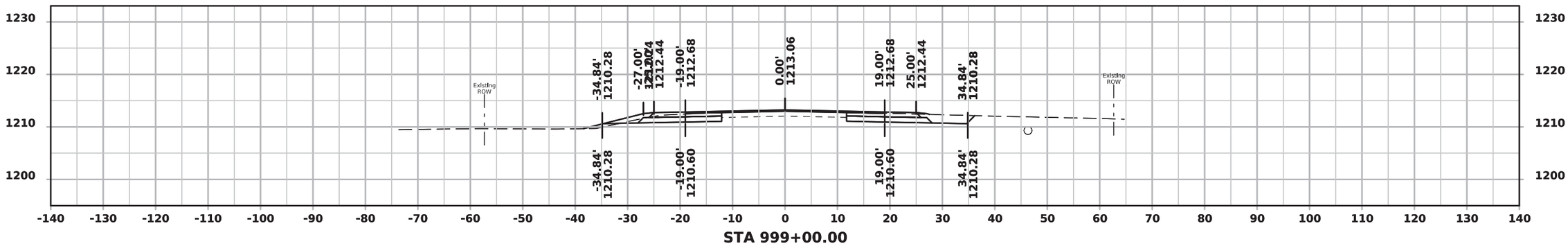


STA 996+50.00

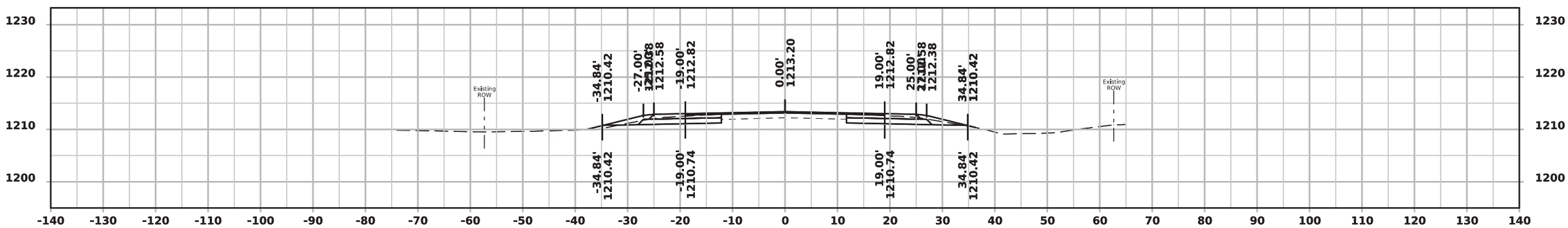
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.22

6:34:48 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

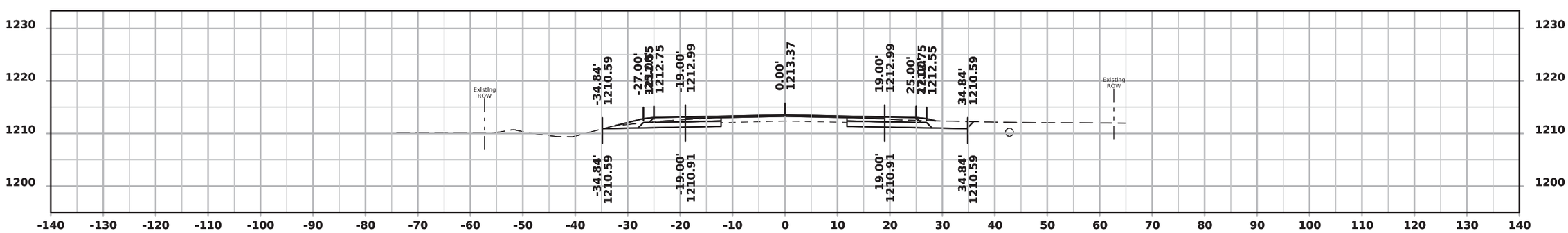
US 18



STA 999+00.00



STA 998+50.00

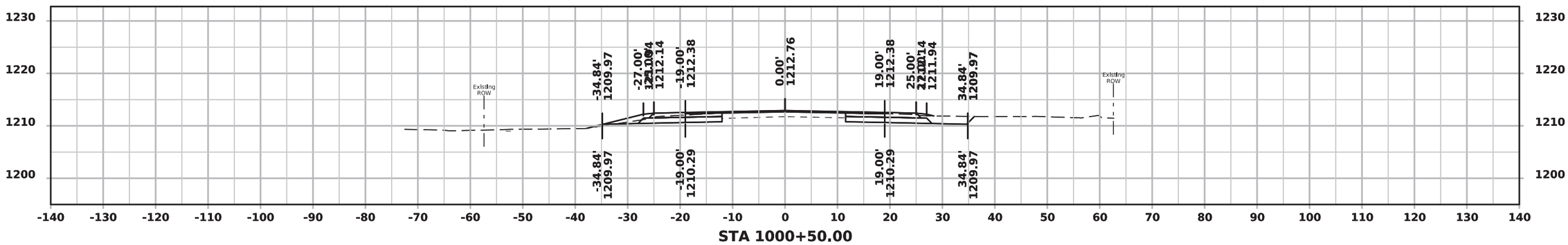


STA 998+00.00

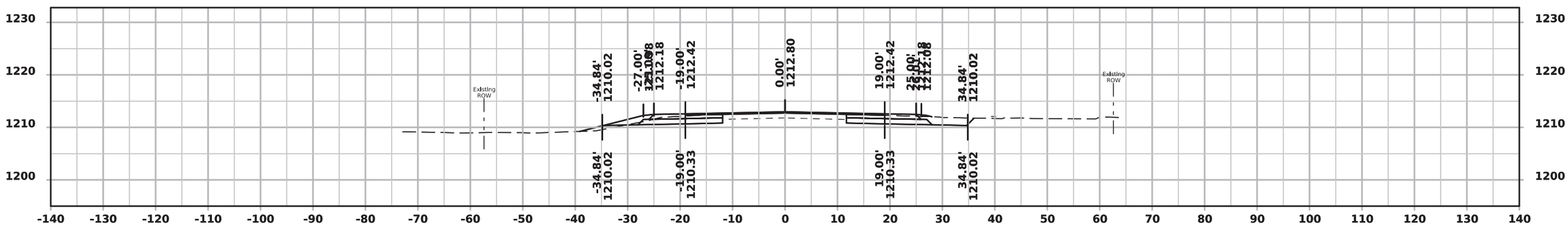
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.23

6:34:49 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

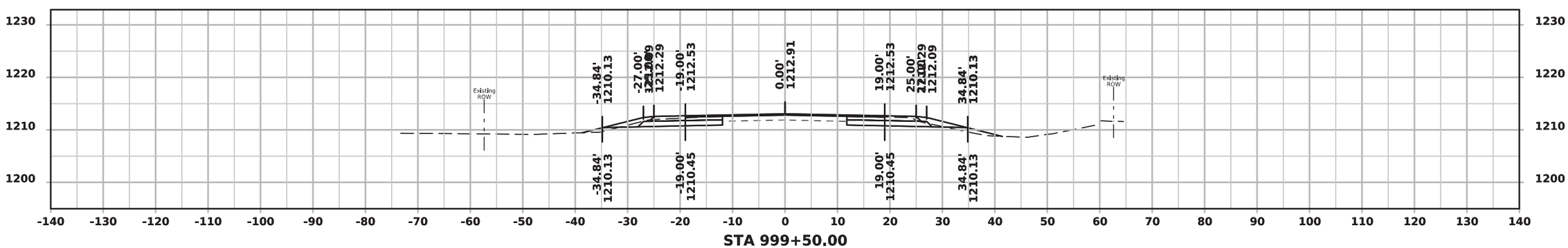
US 18



STA 1000+50.00



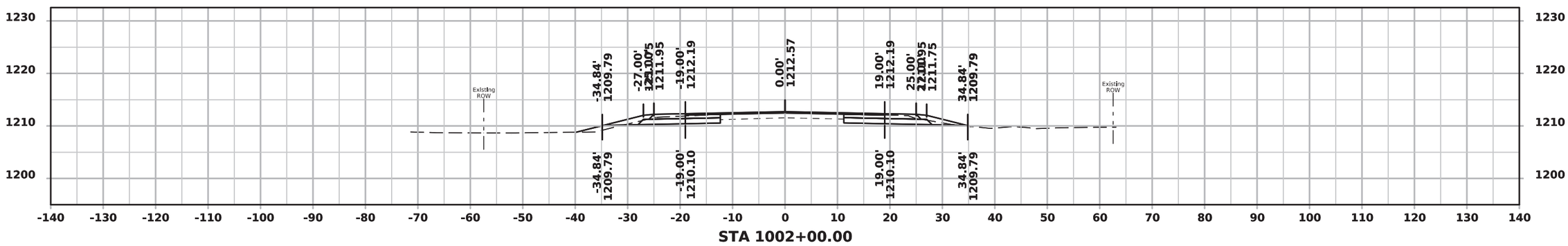
STA 1000+00.00



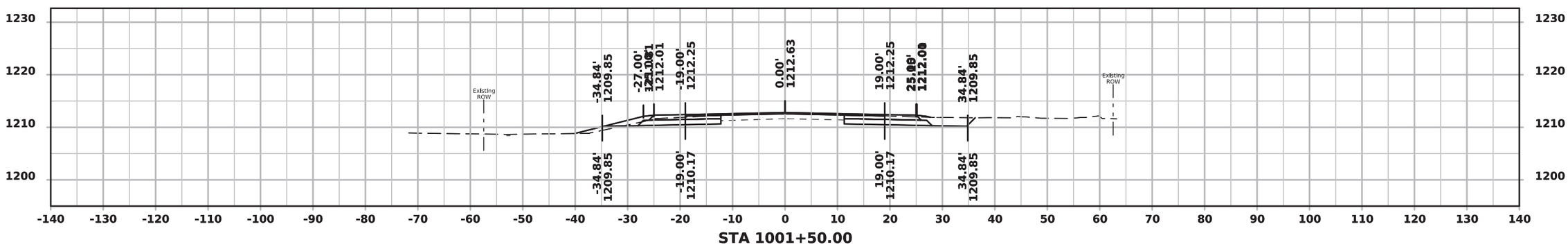
STA 999+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.24

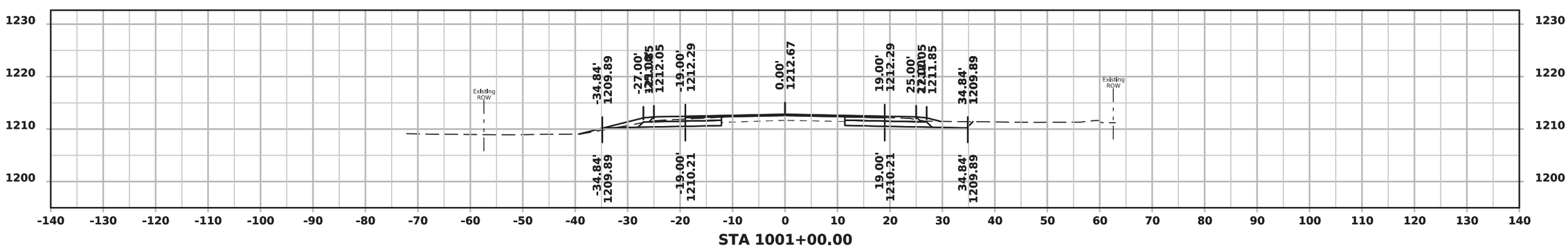
US 18



STA 1002+00.00



STA 1001+50.00

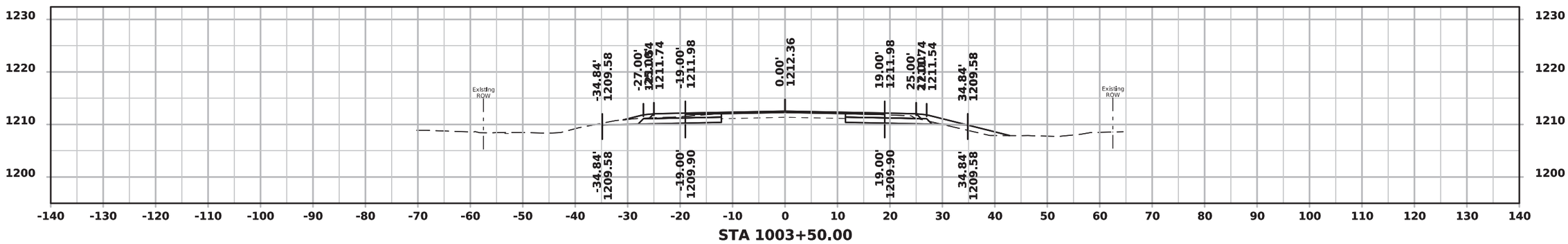


STA 1001+00.00

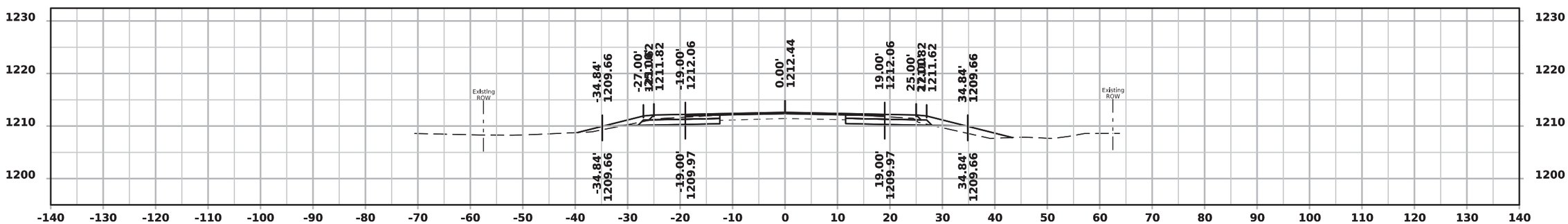
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.25

6:34:52 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

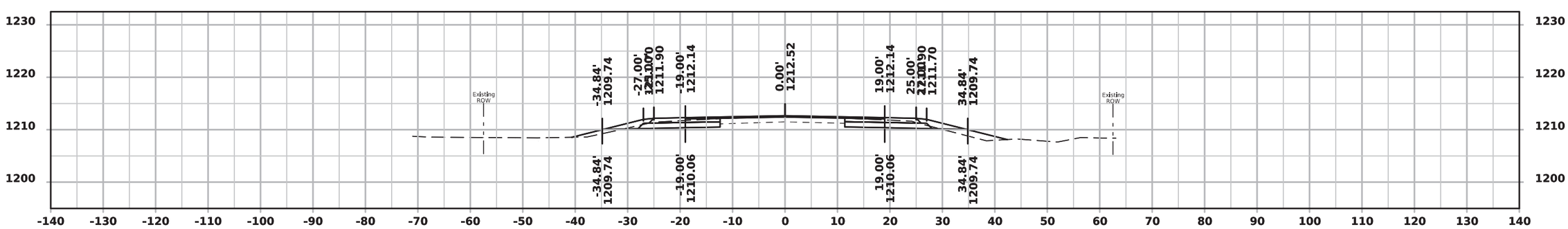
US 18



STA 1003+50.00



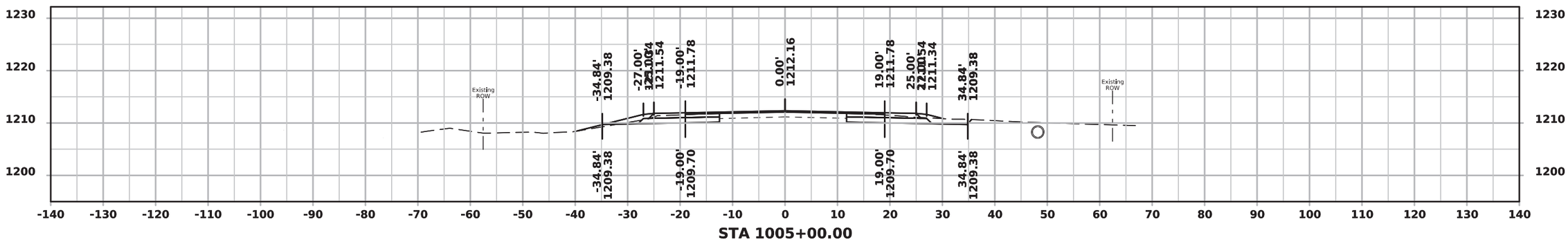
STA 1003+00.00



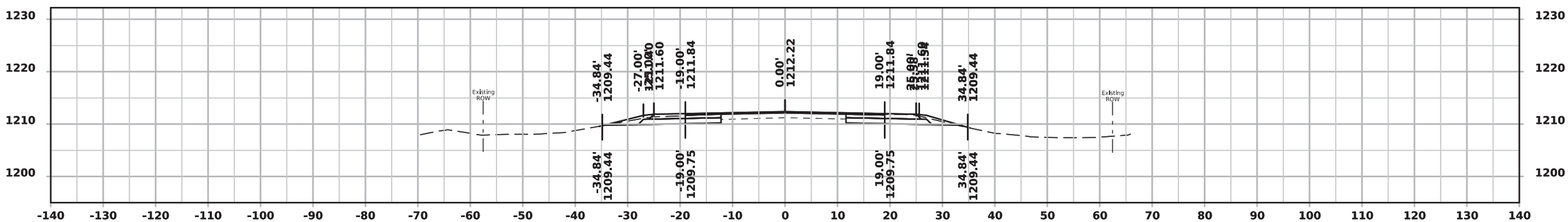
STA 1002+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.26

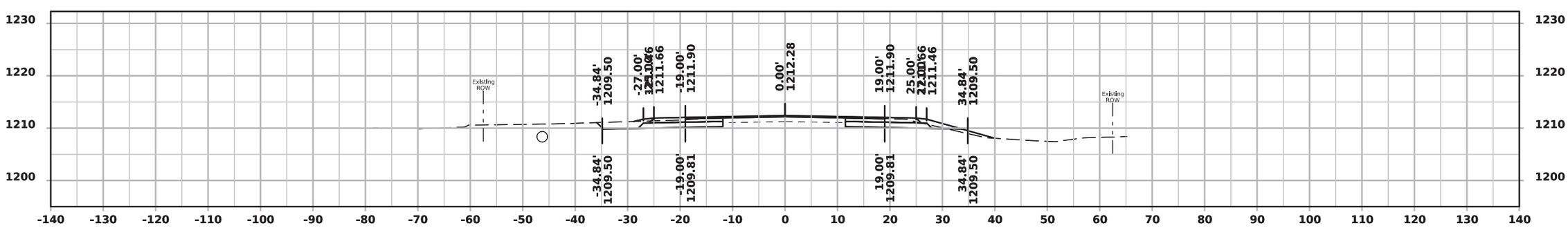
US 18



STA 1005+00.00



STA 1004+50.00

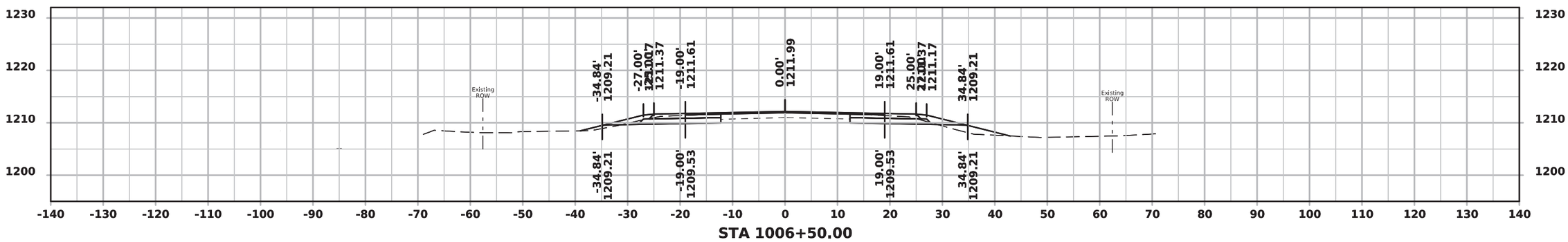


STA 1004+00.00

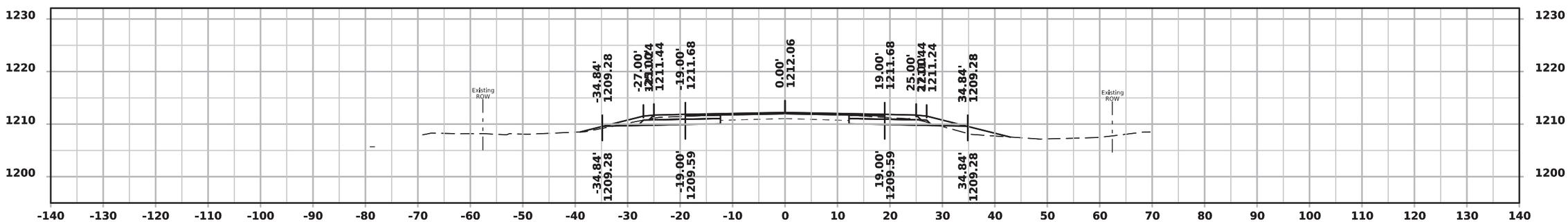
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.27

6:34:56 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

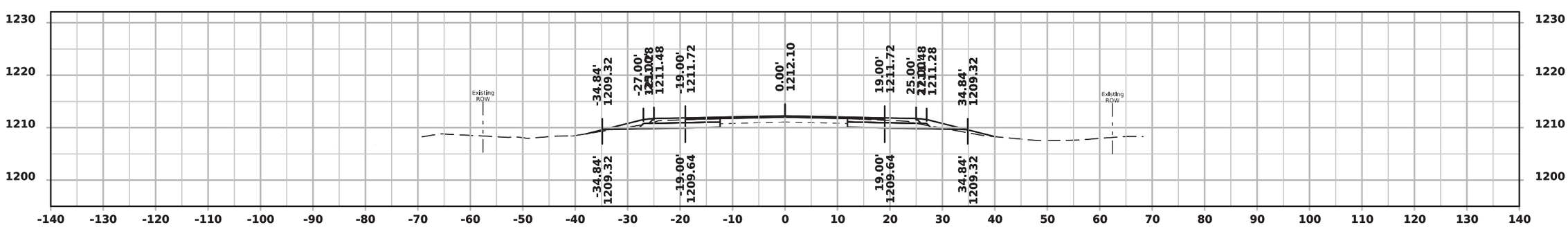
US 18



STA 1006+50.00

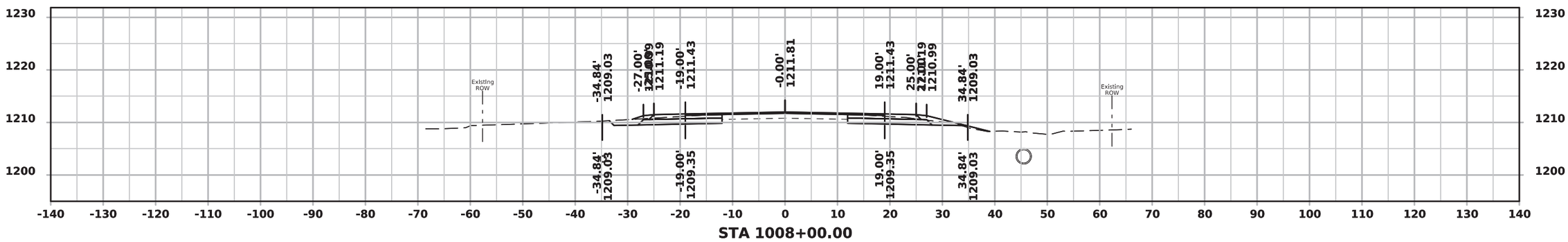


STA 1006+00.00

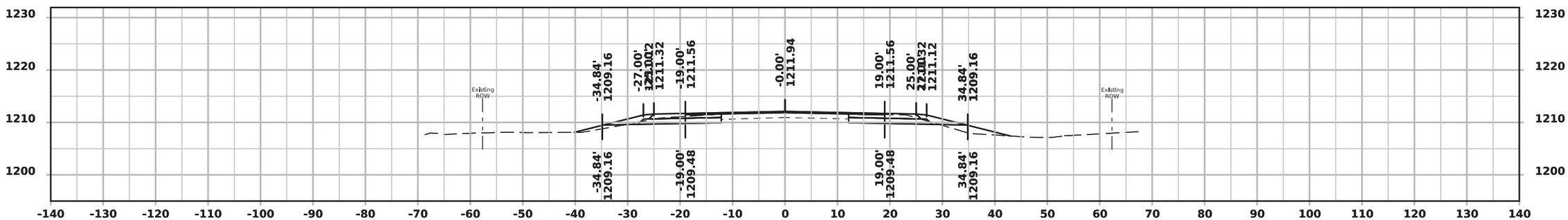


STA 1005+50.00

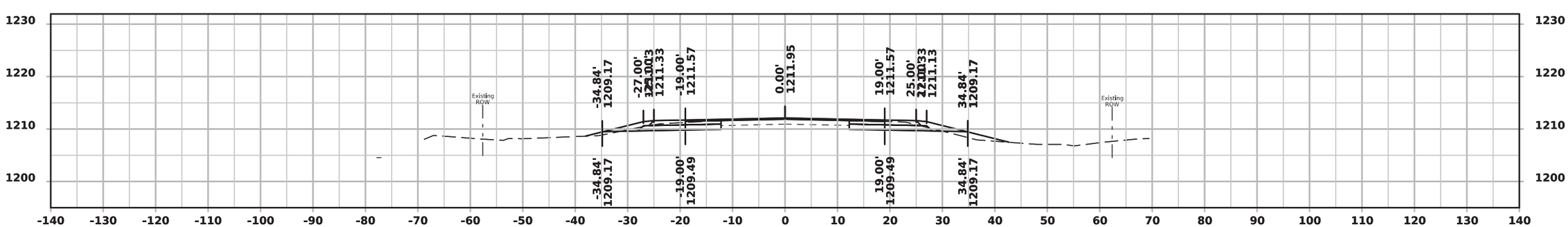
US 18



STA 1008+00.00



STA 1007+50.00

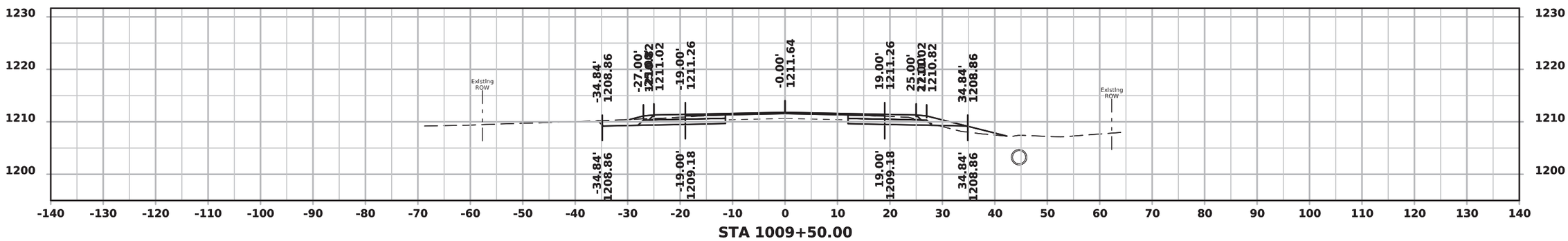


STA 1007+00.00

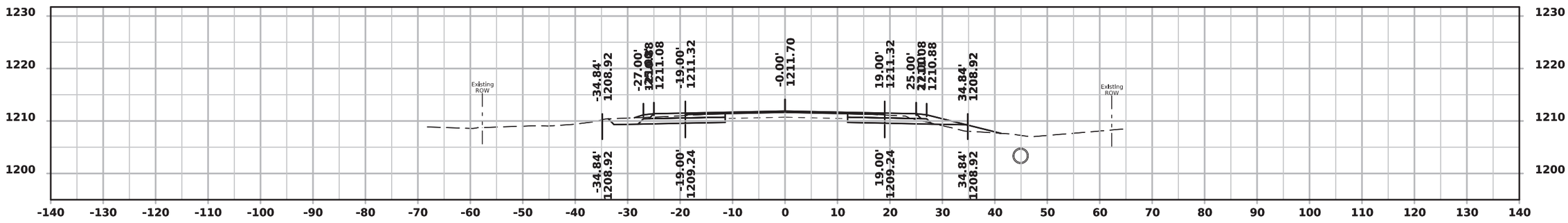
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.29

6:34:59 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

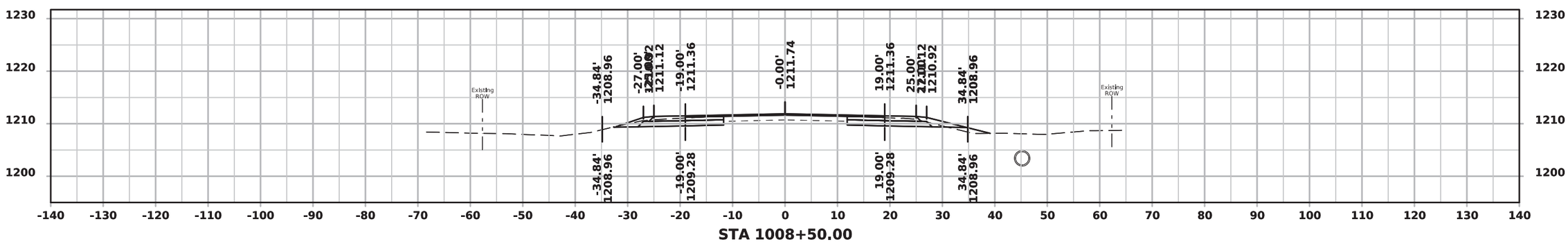
US 18



STA 1009+50.00



STA 1009+00.00

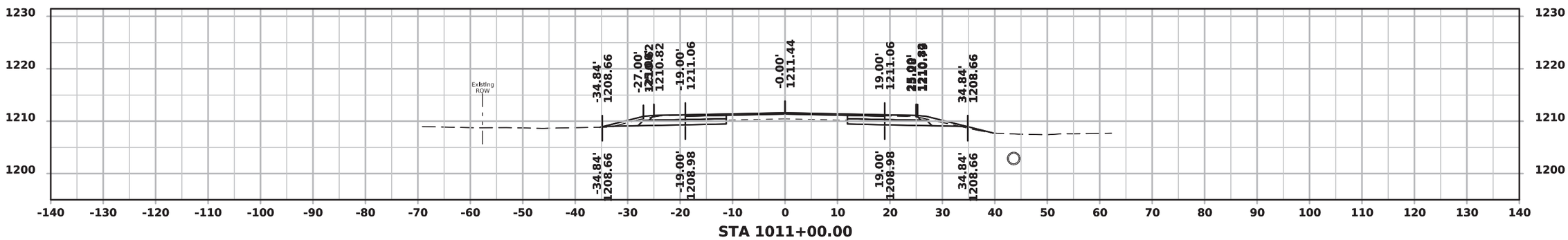


STA 1008+50.00

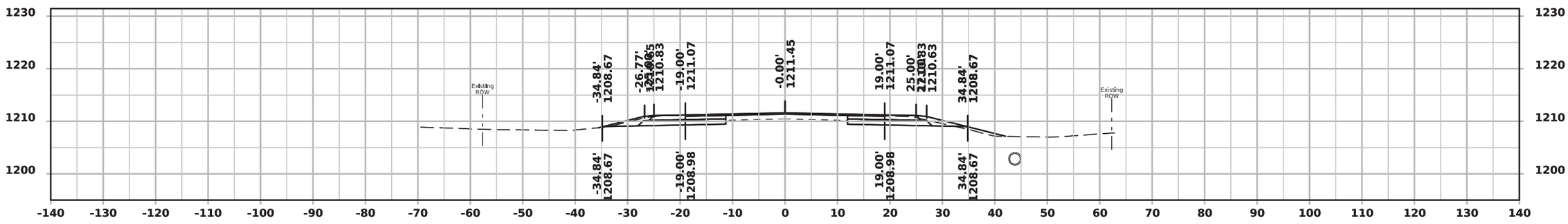
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.30

6:35:00 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

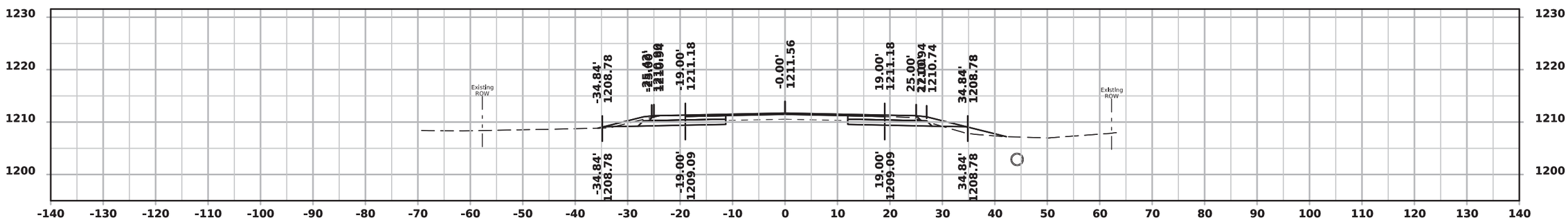
US 18



STA 1011+00.00



STA 1010+50.00

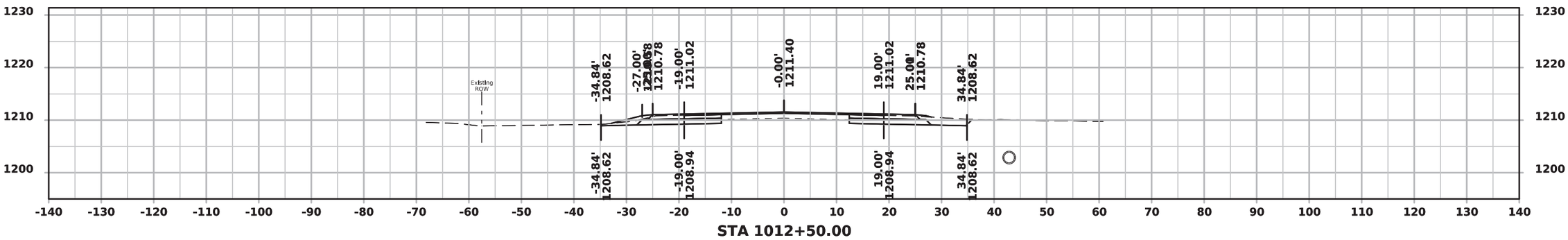


STA 1010+00.00

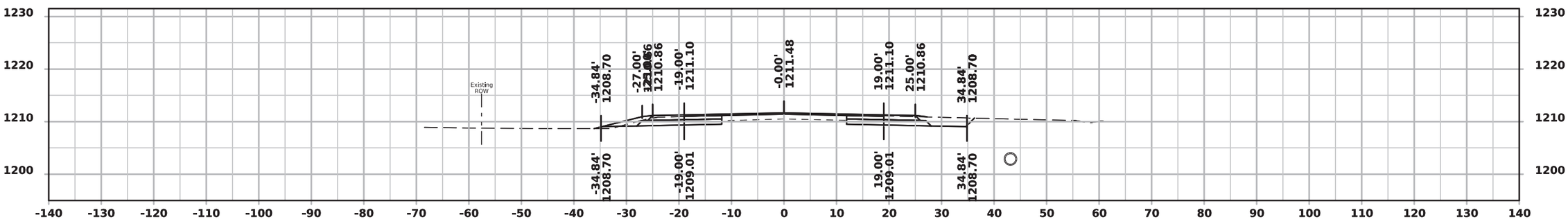
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.31

6:35:02 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

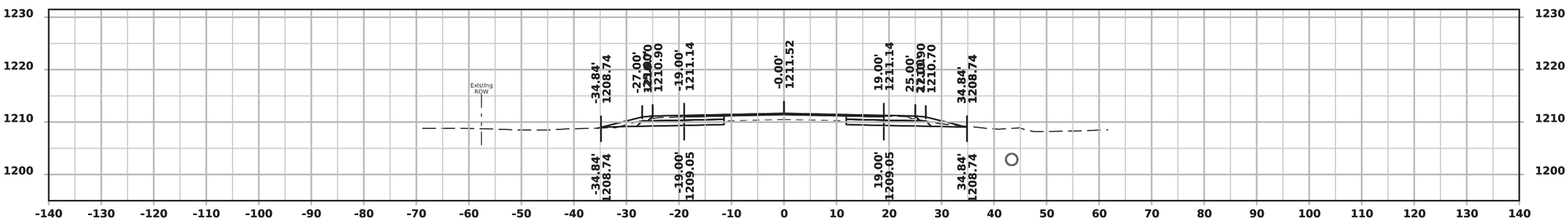
US 18



STA 1012+50.00



STA 1012+00.00

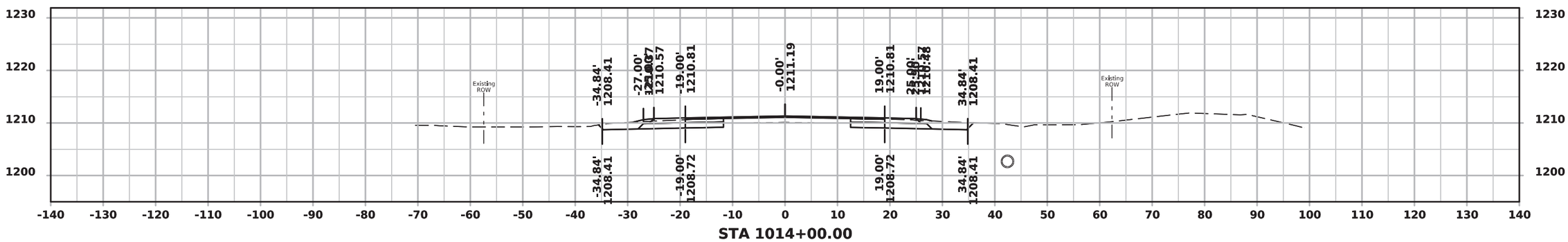


STA 1011+50.00

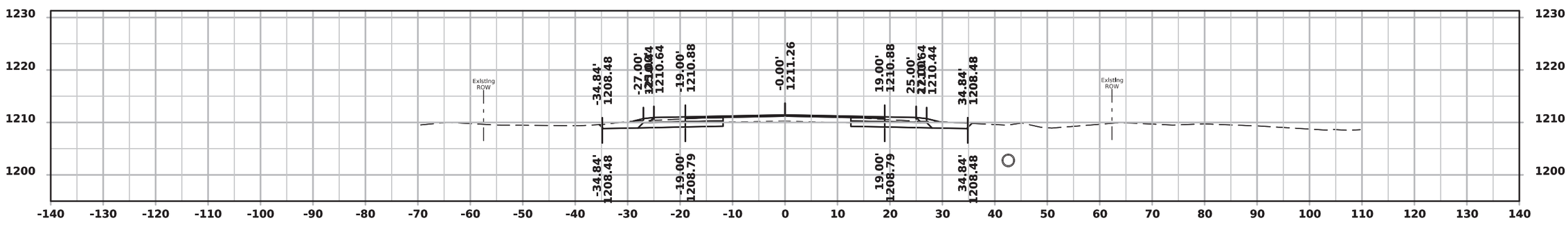
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.32

6:35:04 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

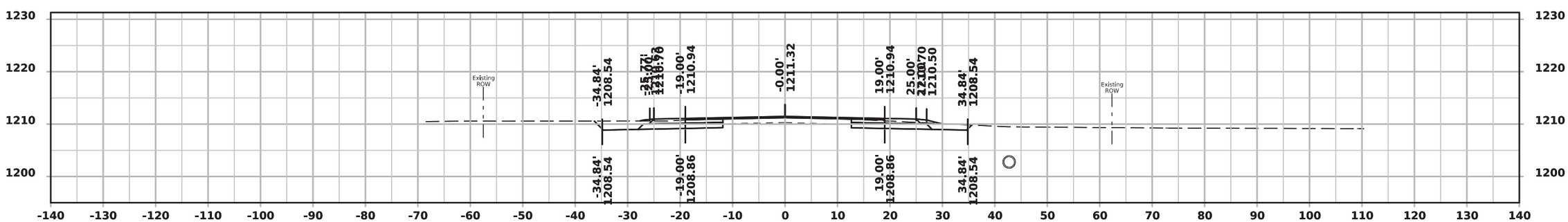
US 18



STA 1014+00.00



STA 1013+50.00

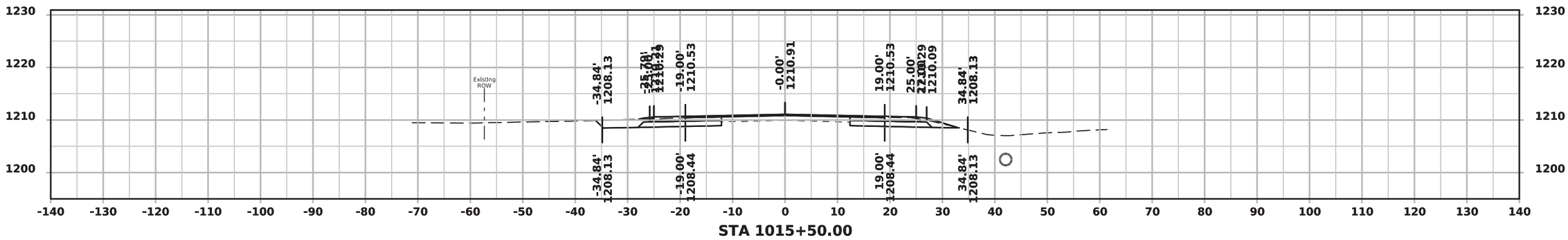


STA 1013+00.00

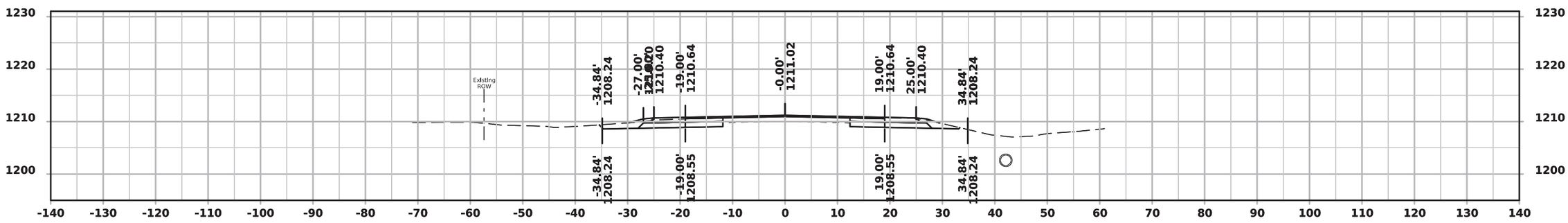
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.33

6:35:06 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

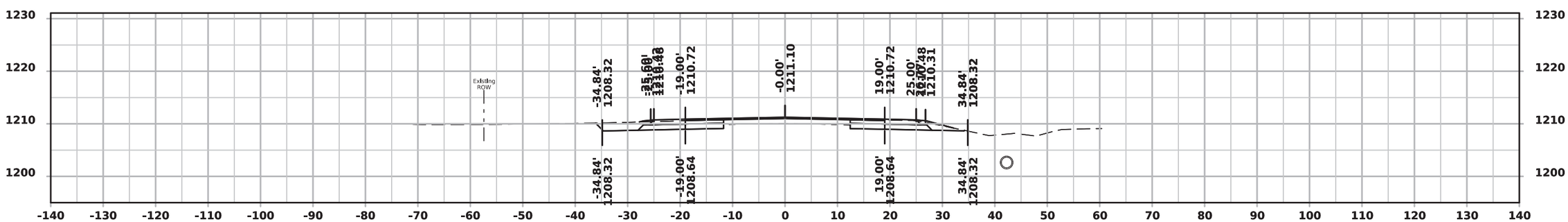
US 18



STA 1015+50.00



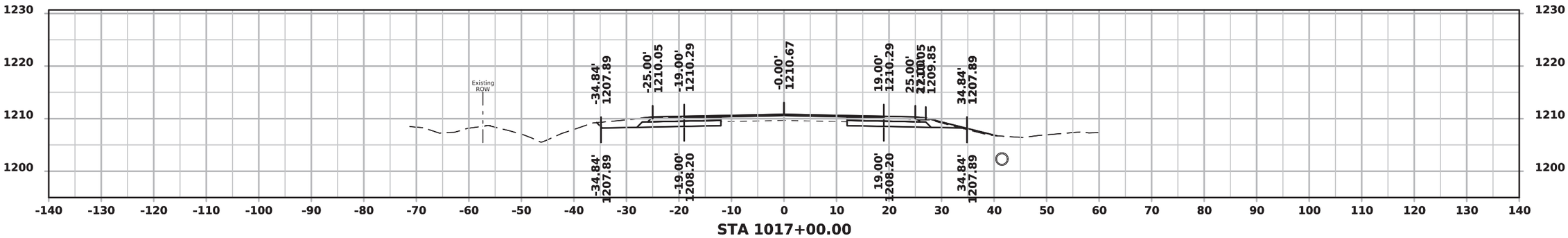
STA 1015+00.00



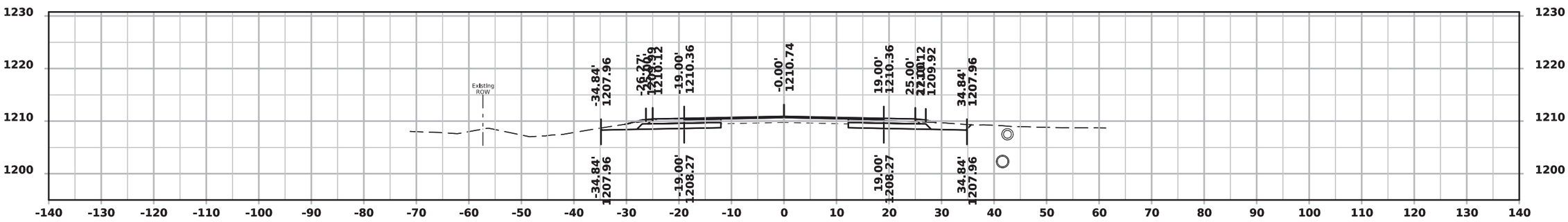
STA 1014+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.34

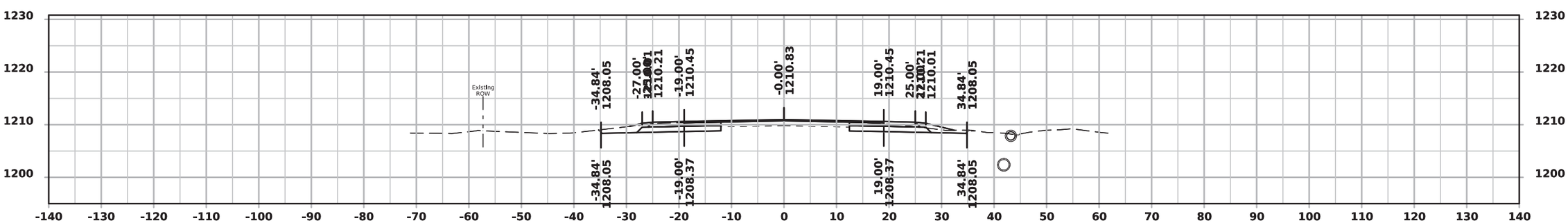
US 18



STA 1017+00.00



STA 1016+50.00

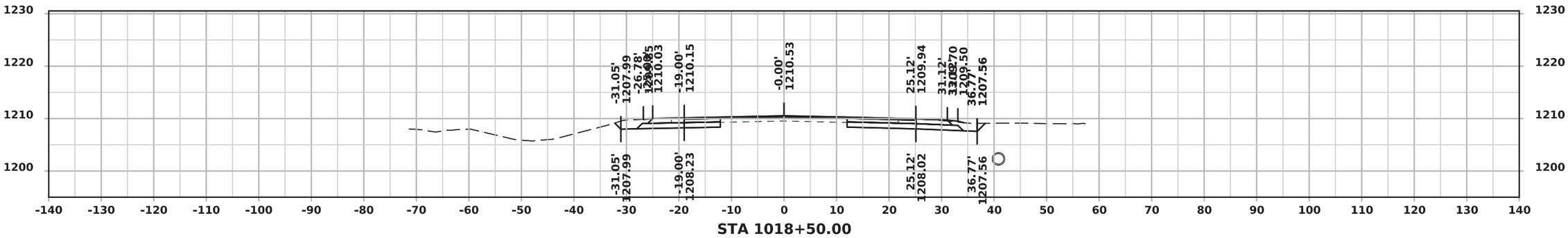


STA 1016+00.00

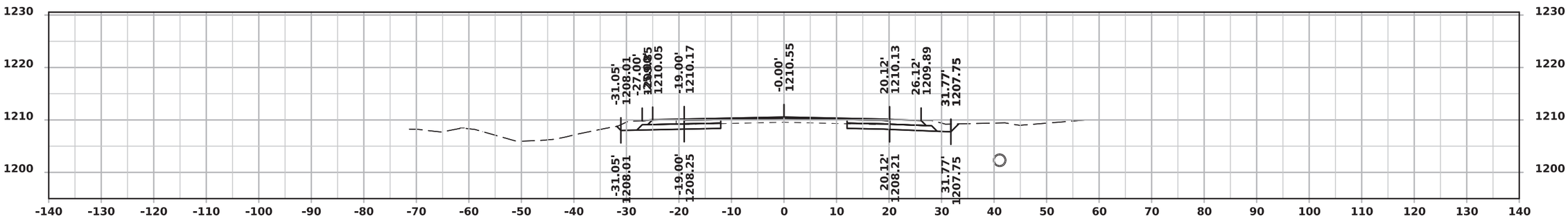
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.35

6:35:09 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_ML_E_of_US69.dgn

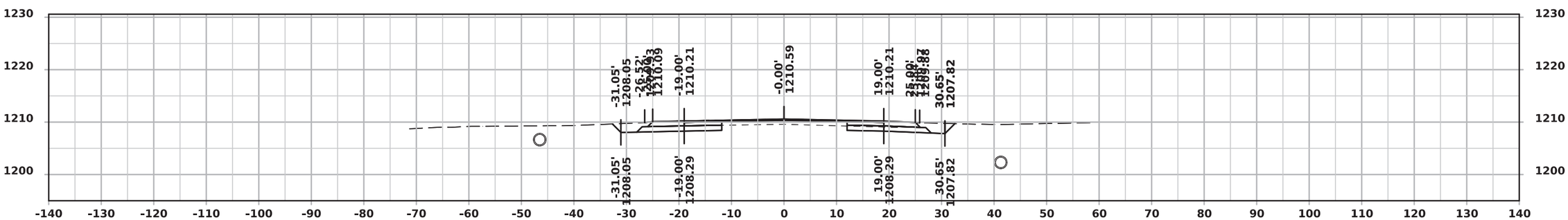
US 18



STA 1018+50.00



STA 1018+00.00

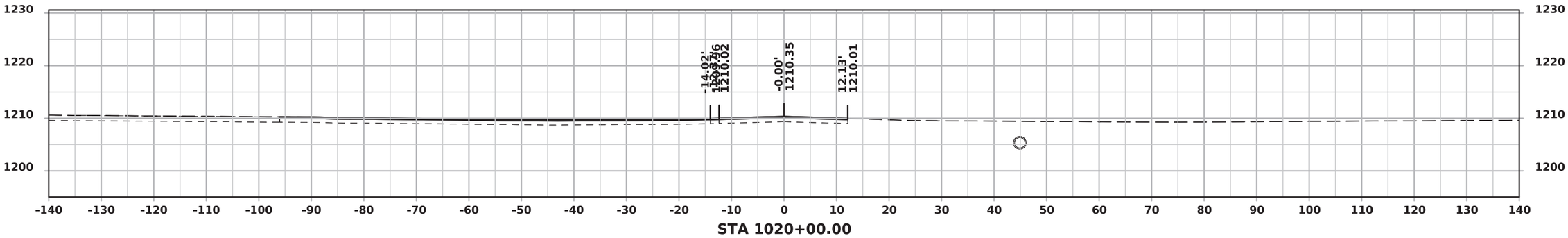


STA 1017+50.00

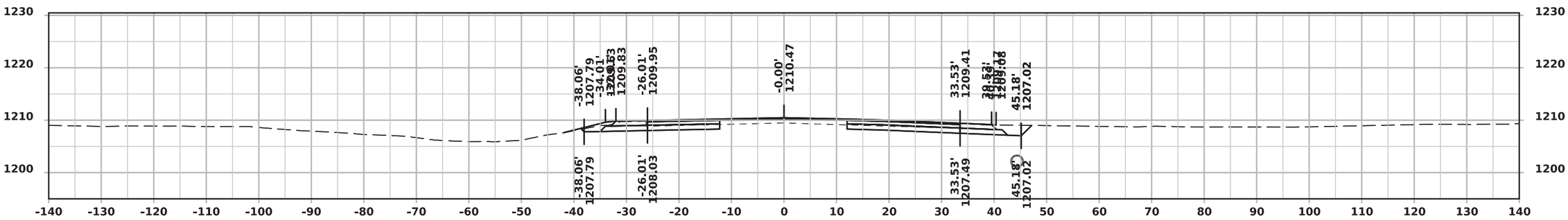
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.36

6:35:17 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_State_St.dgn

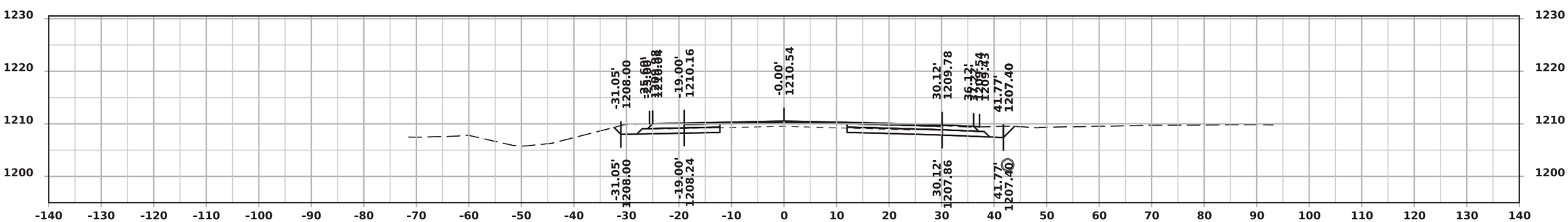
US 18



STA 1020+00.00



STA 1019+50.00

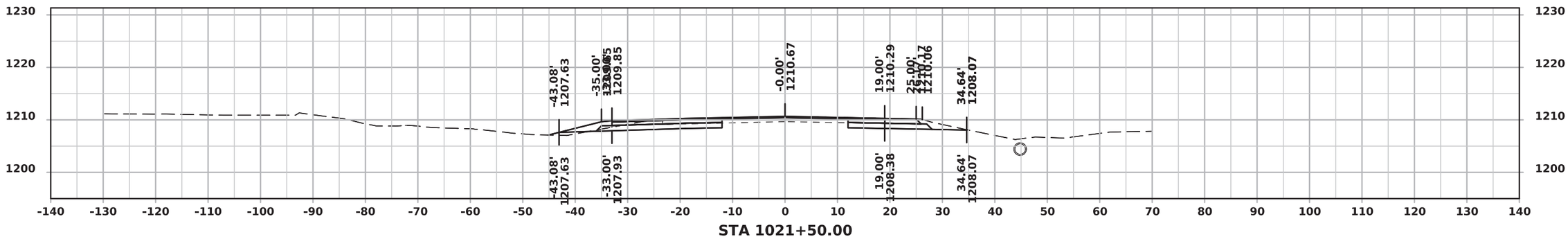


STA 1019+00.00

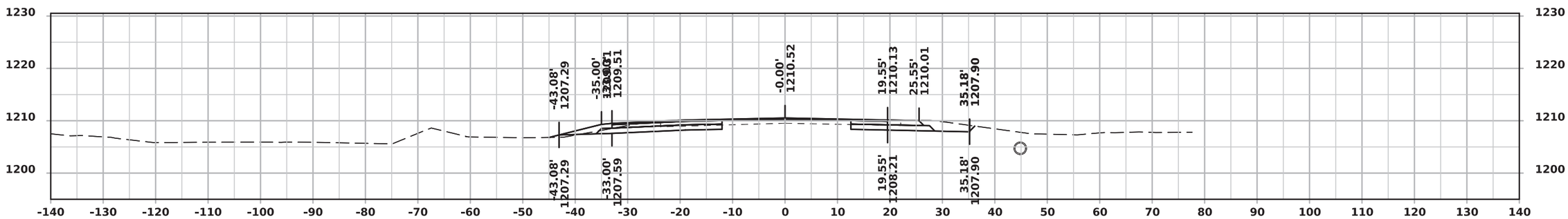
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.37

6:35:18 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_State_St.dgn

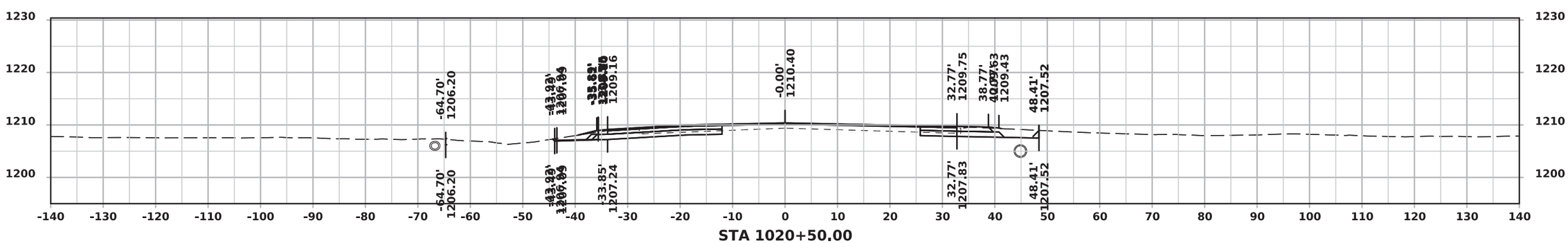
US 18



STA 1021+50.00



STA 1021+00.00

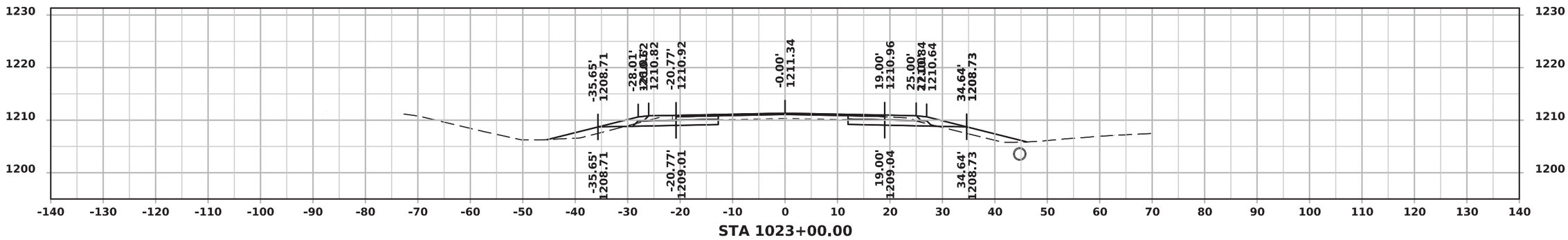


STA 1020+50.00

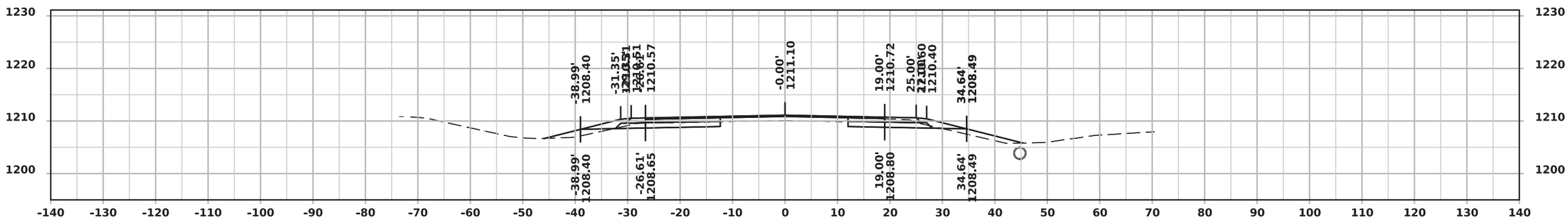
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.38

6:35:20 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_State_St.dgn

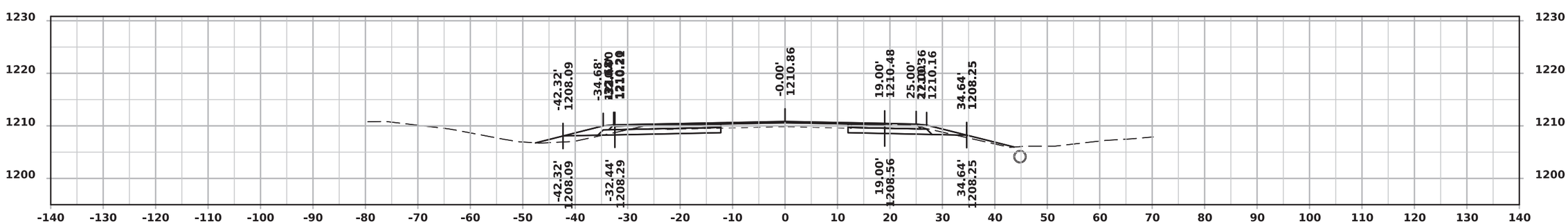
US 18



STA 1023+00.00



STA 1022+50.00

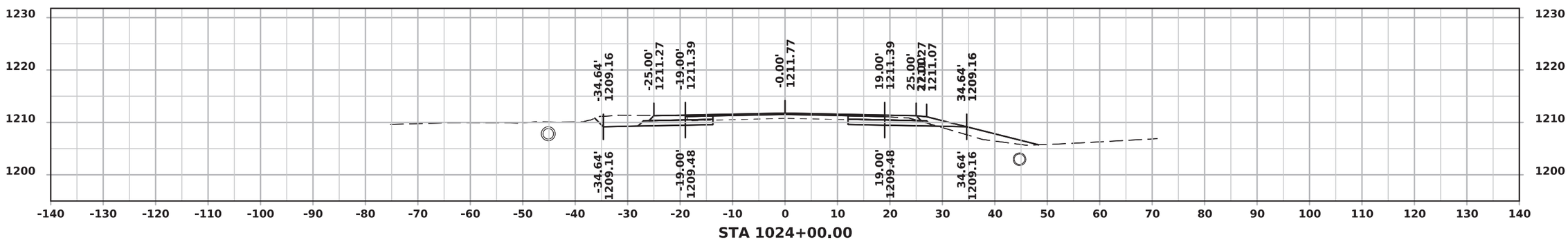


STA 1022+00.00

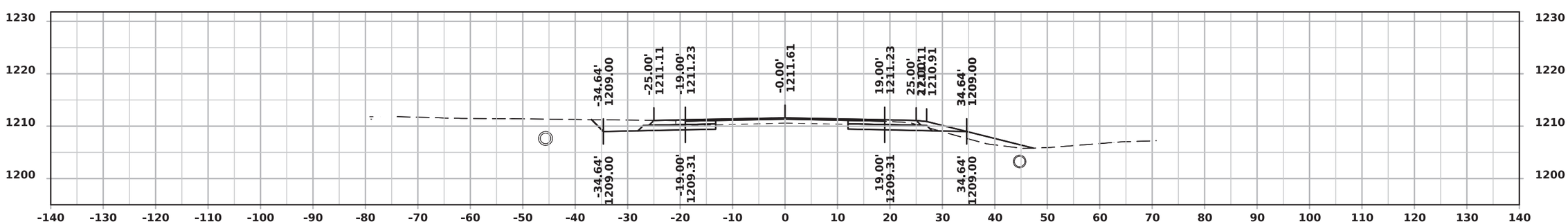
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.39

6:35:21 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_State_St.dgn

US 18



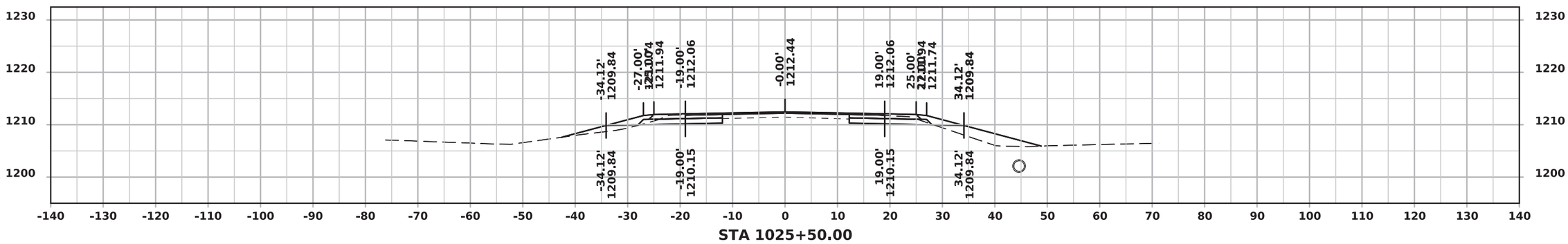
STA 1024+00.00



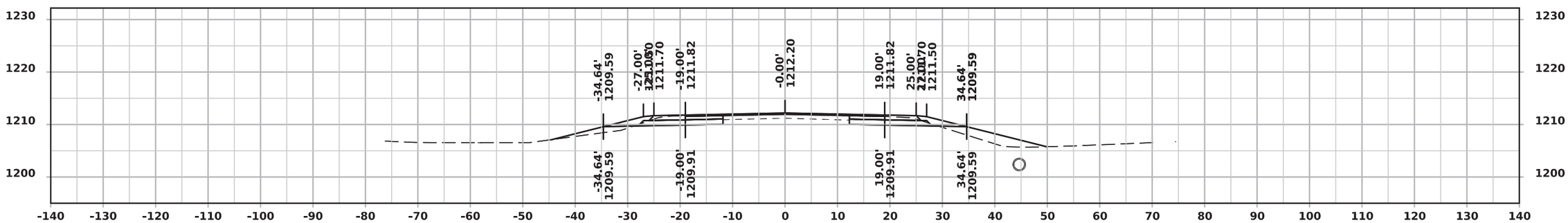
STA 1023+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.40

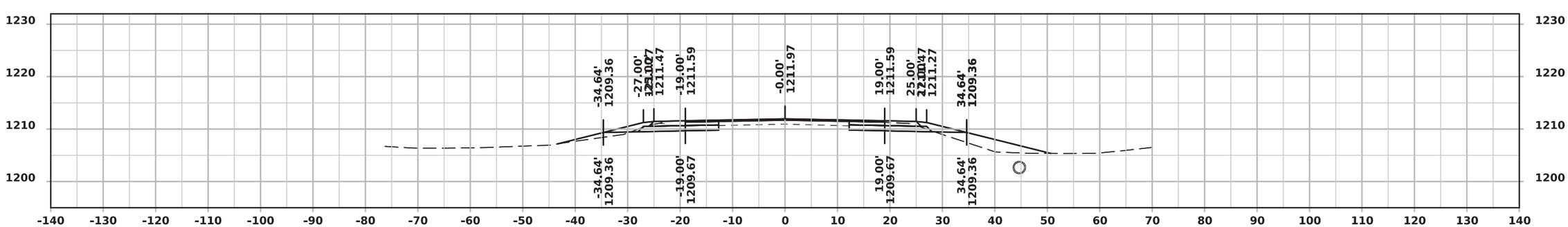
US 18



STA 1025+50.00



STA 1025+00.00

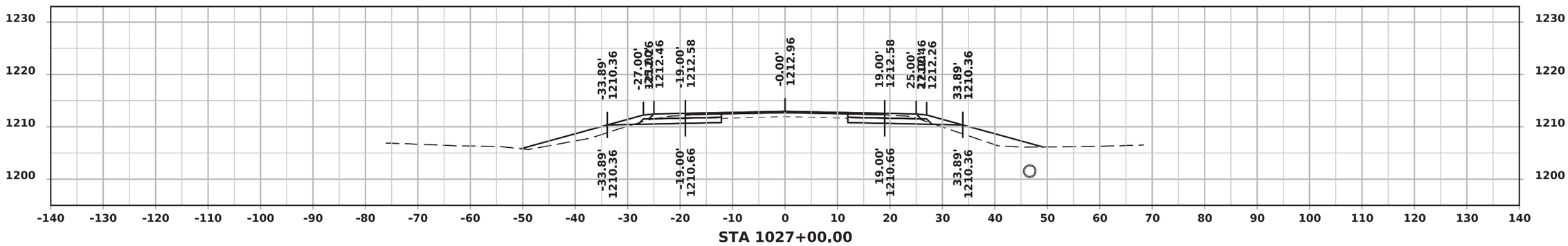


STA 1024+50.00

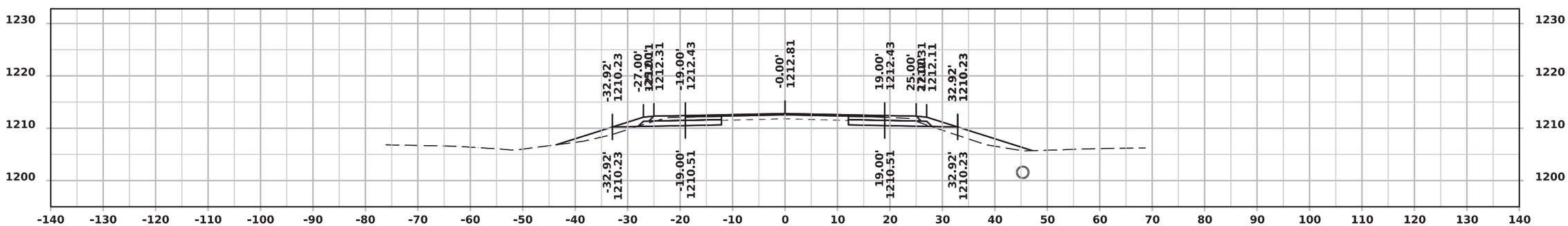
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.41

6:35:33 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

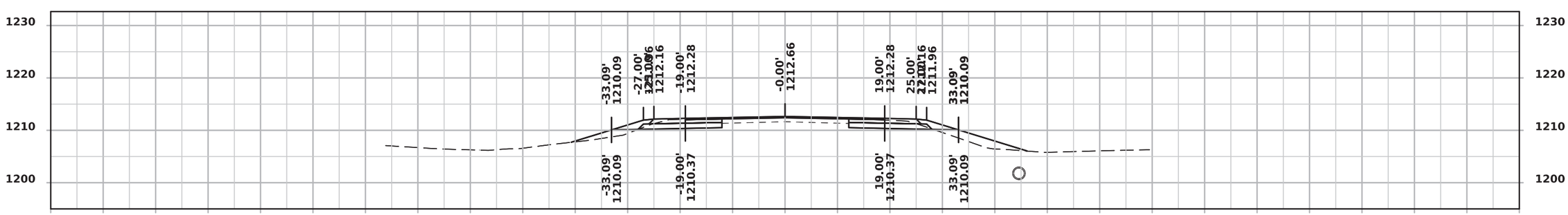
US 18



STA 1027+00.00

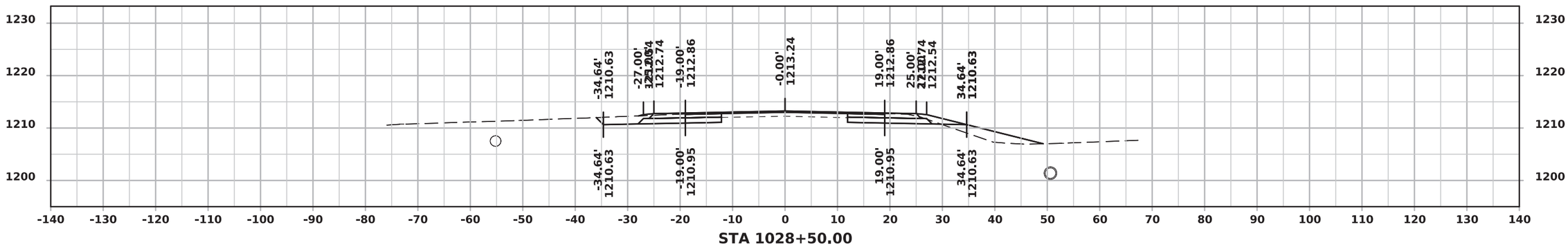


STA 1026+50.00

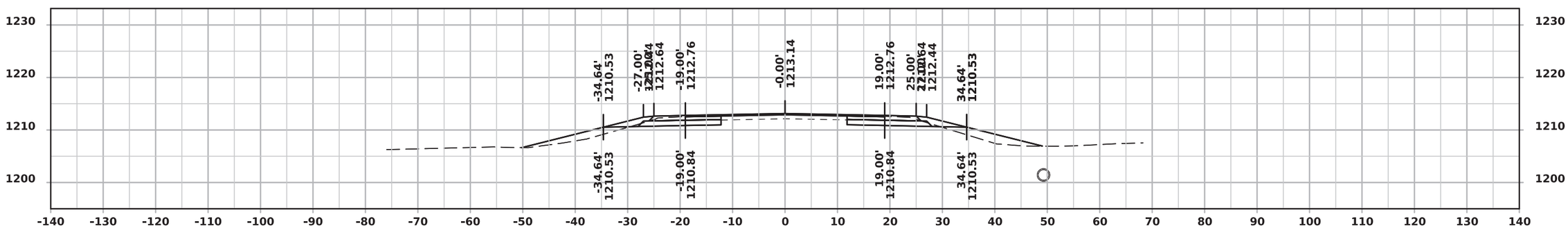


STA 1026+00.00

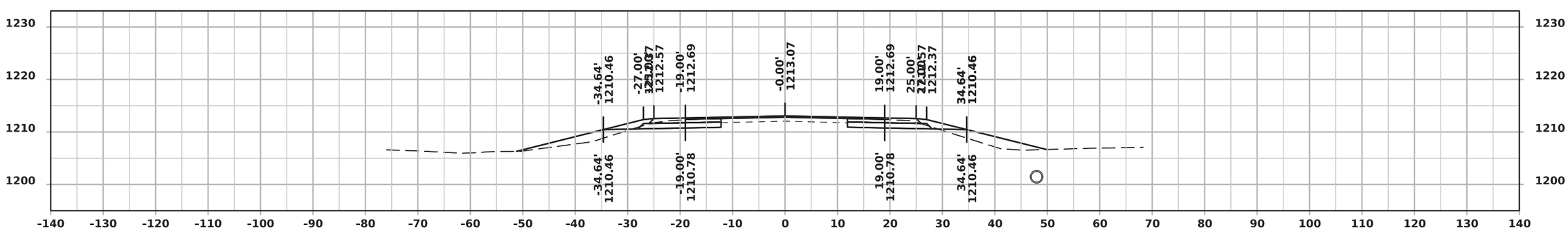
US 18



STA 1028+50.00



STA 1028+00.00

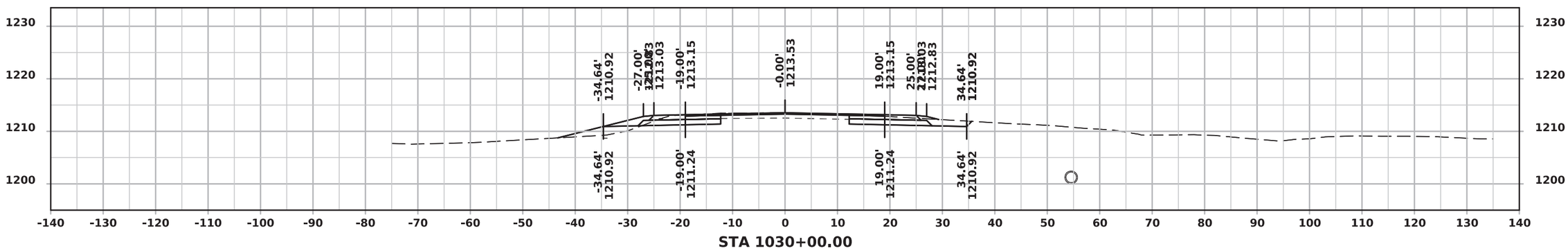


STA 1027+50.00

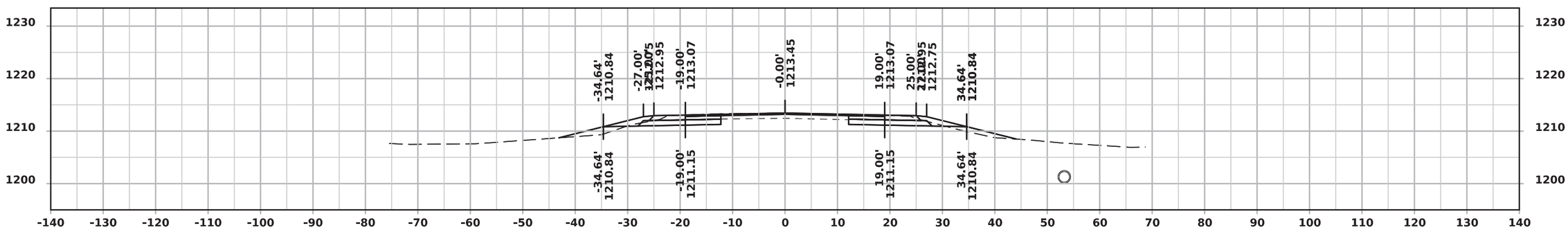
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.43

6:35:36 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

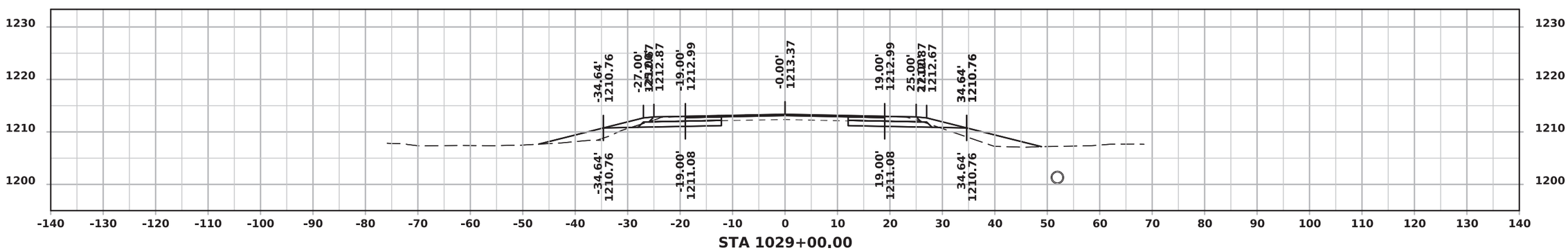
US 18



STA 1030+00.00



STA 1029+50.00

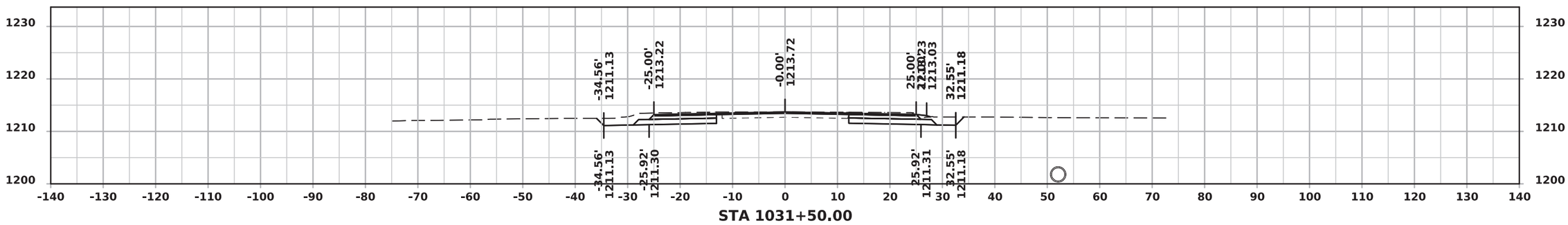


STA 1029+00.00

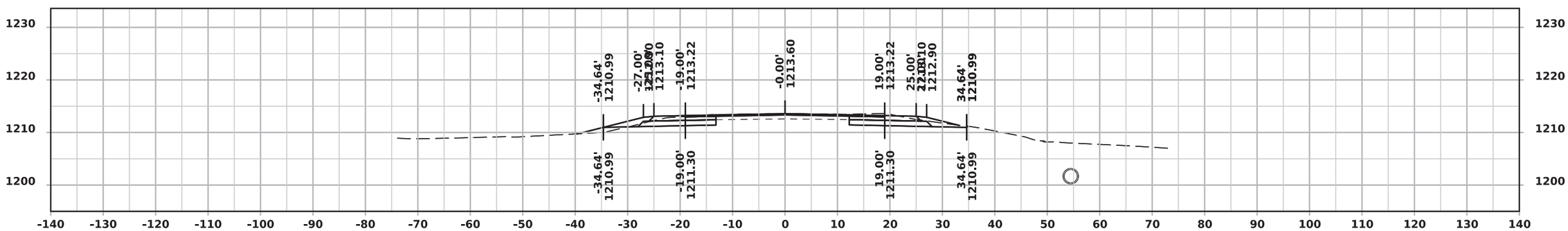
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.44

6:35:37 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

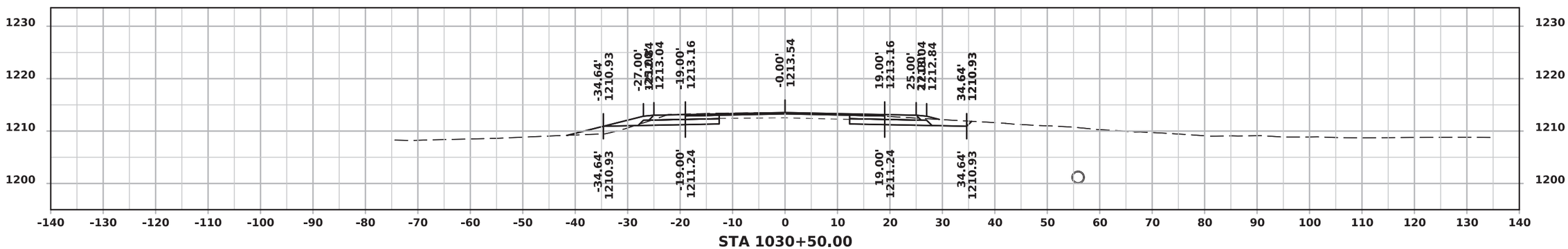
US 18



STA 1031+50.00



STA 1031+00.00

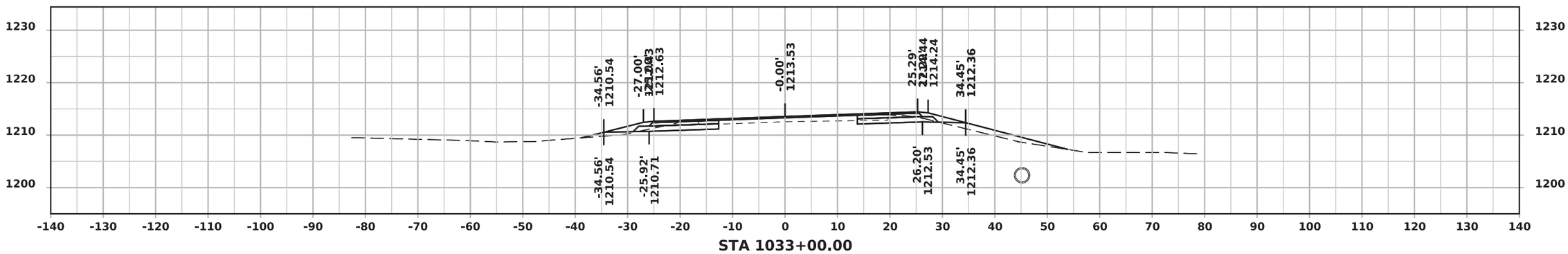


STA 1030+50.00

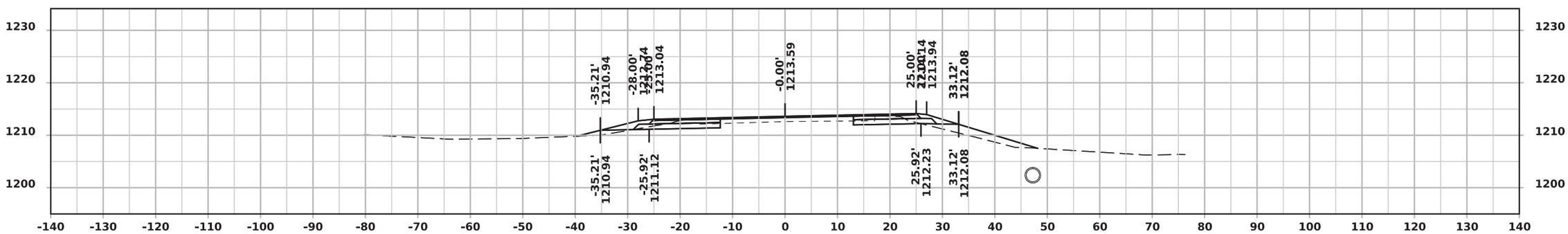
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.45

6:35:39 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

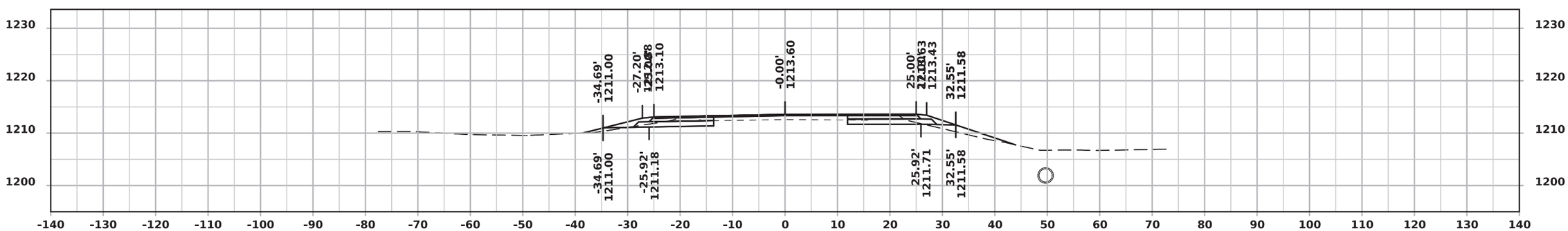
US 18



STA 1033+00.00



STA 1032+50.00

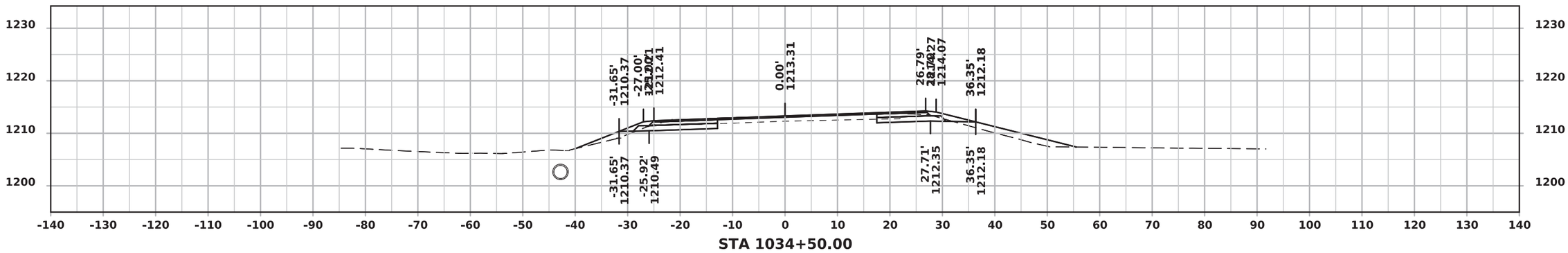


STA 1032+00.00

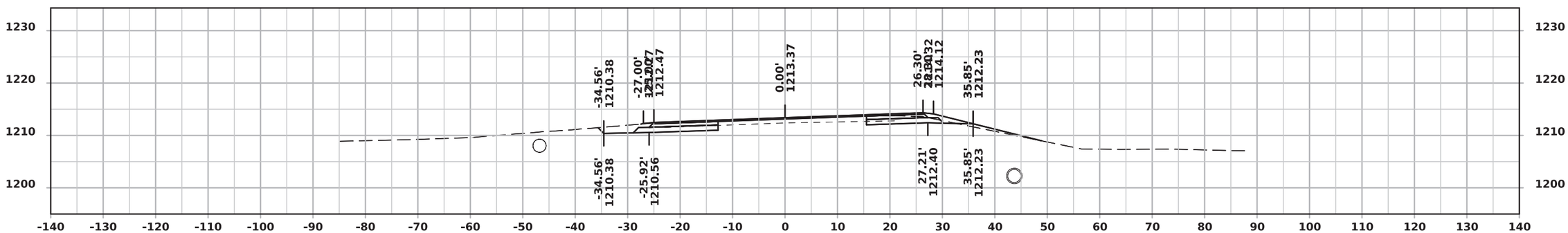
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.46

6:35:40 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

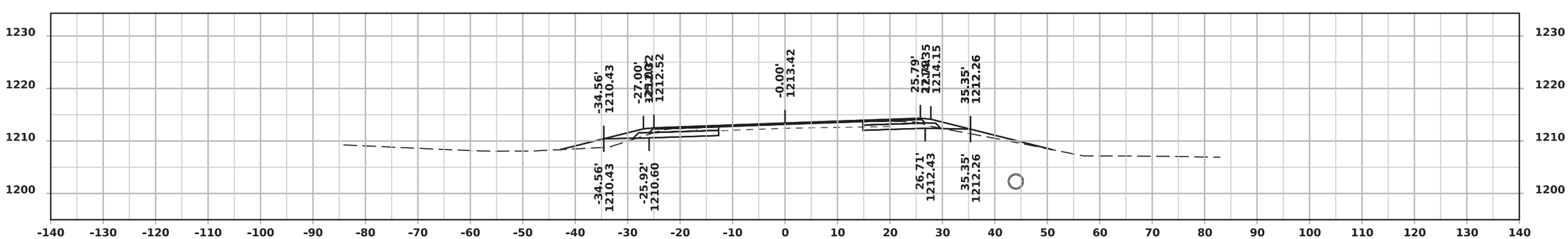
US 18



STA 1034+50.00



STA 1034+00.00

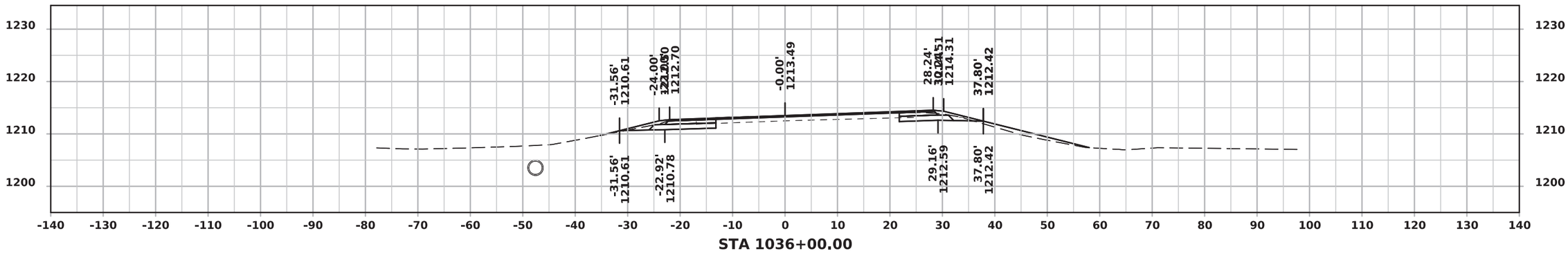


STA 1033+50.00

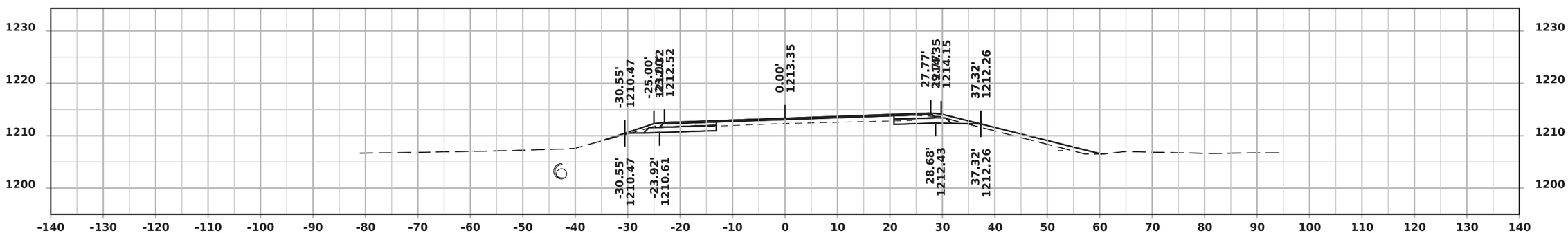
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.47

6:35:42 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

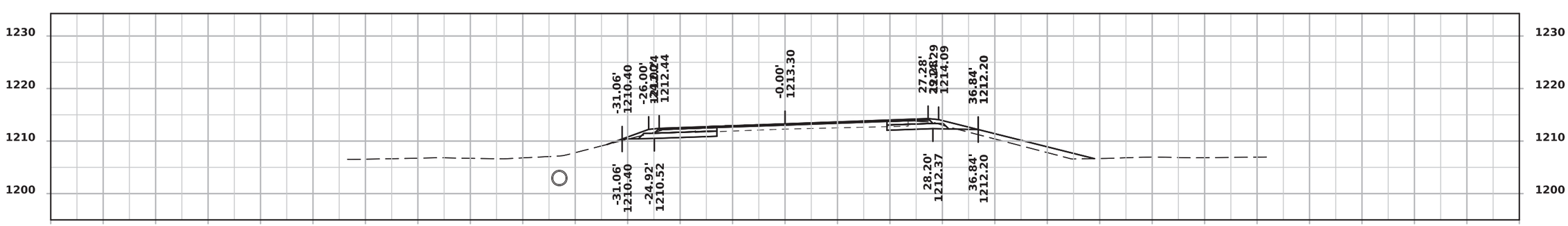
US 18



STA 1036+00.00



STA 1035+50.00

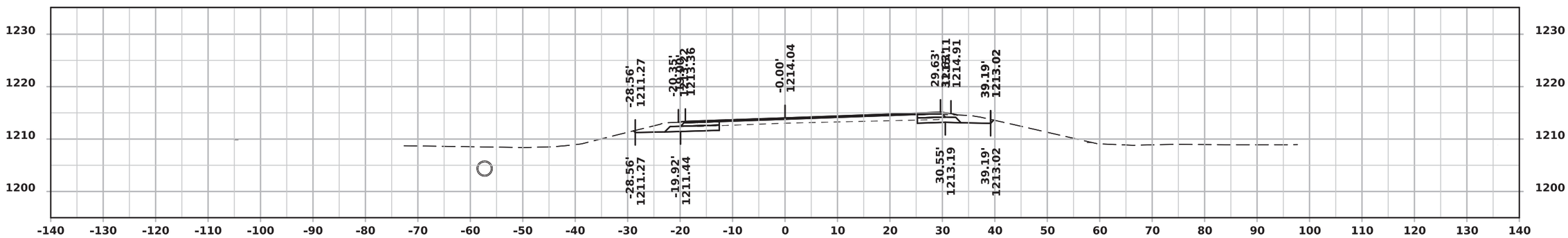


STA 1035+00.00

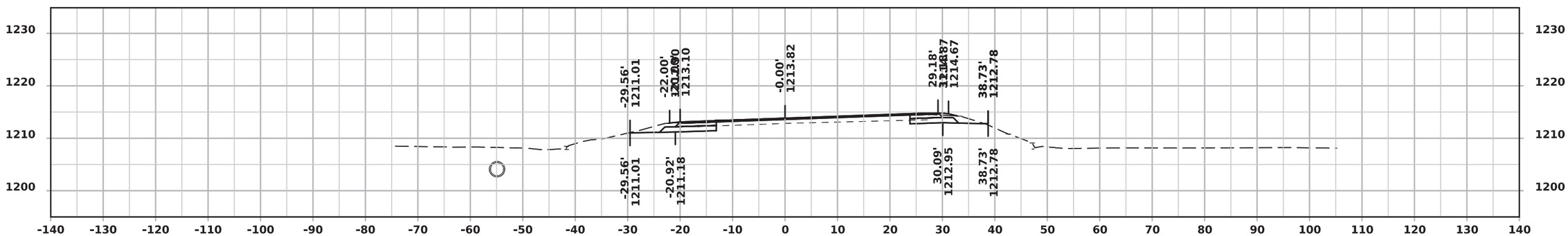
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.48

6:35:44 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

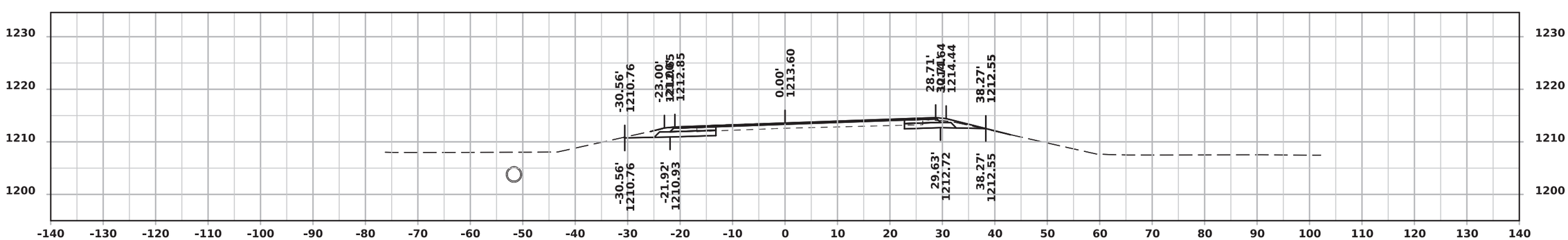
US 18



STA 1037+50.00



STA 1037+00.00

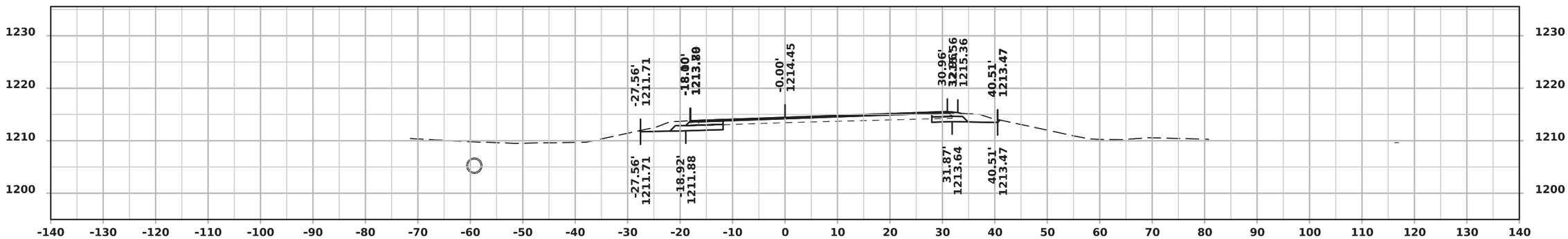


STA 1036+50.00

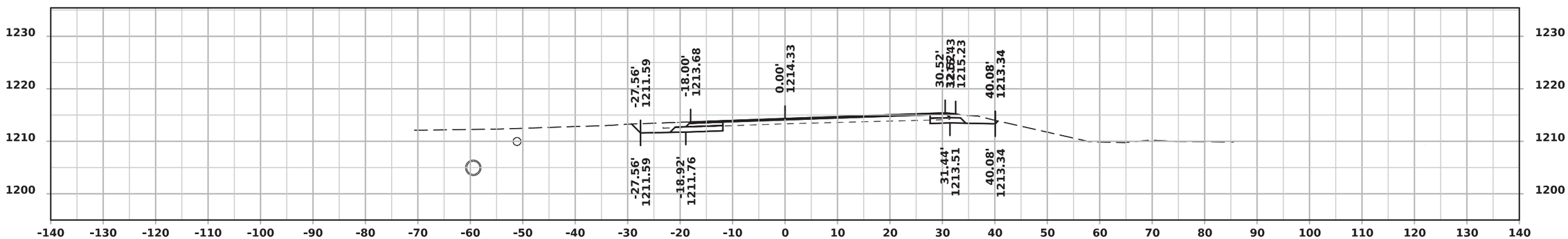
FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.49

6:35:45 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

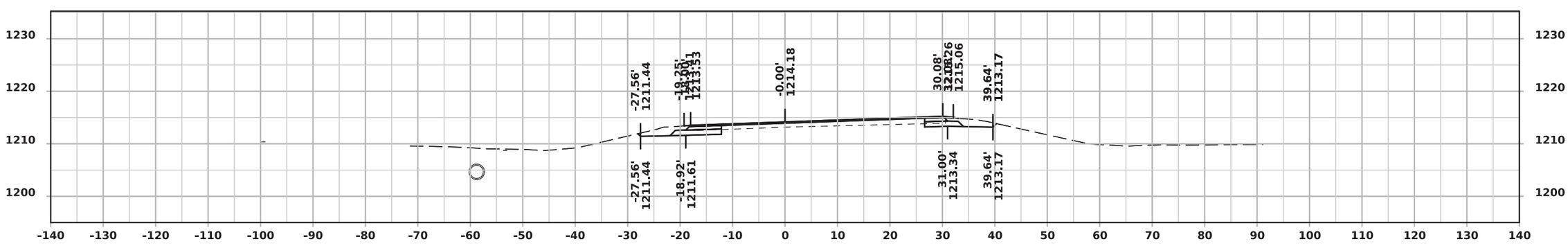
US 18



STA 1039+00.00



STA 1038+50.00

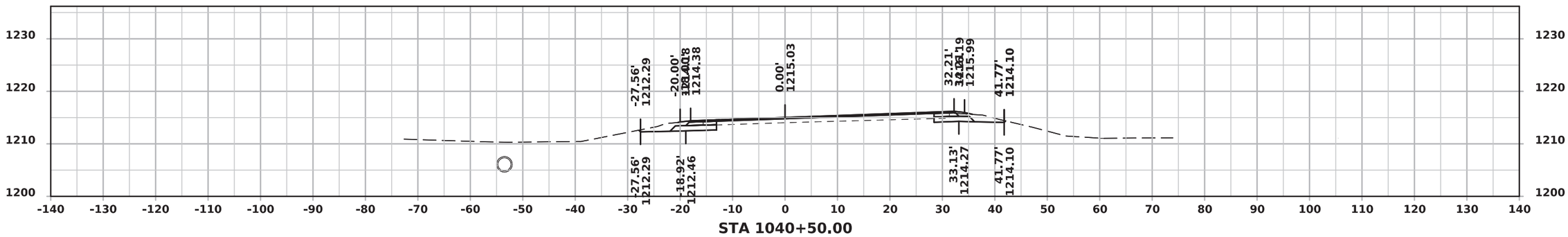


STA 1038+00.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.50

6:35:47 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

US 18



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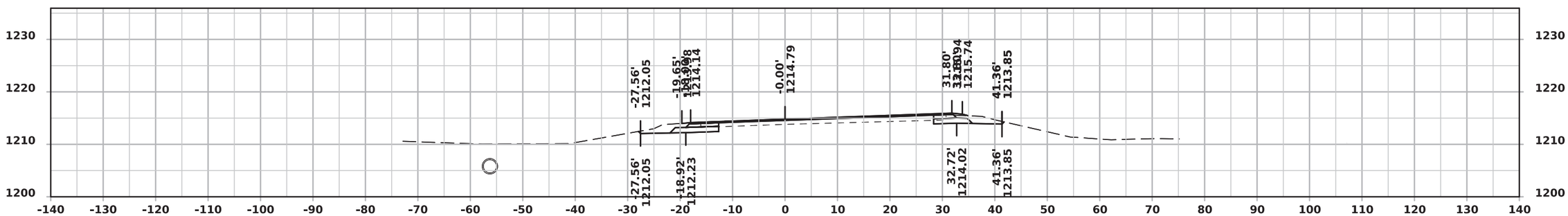

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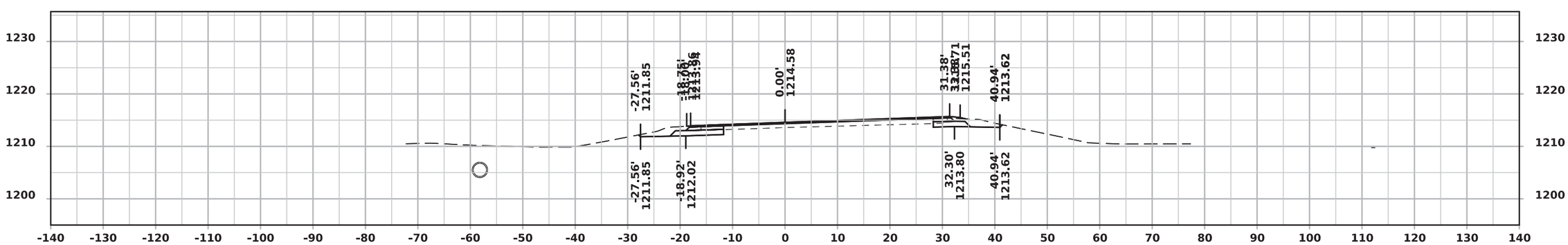
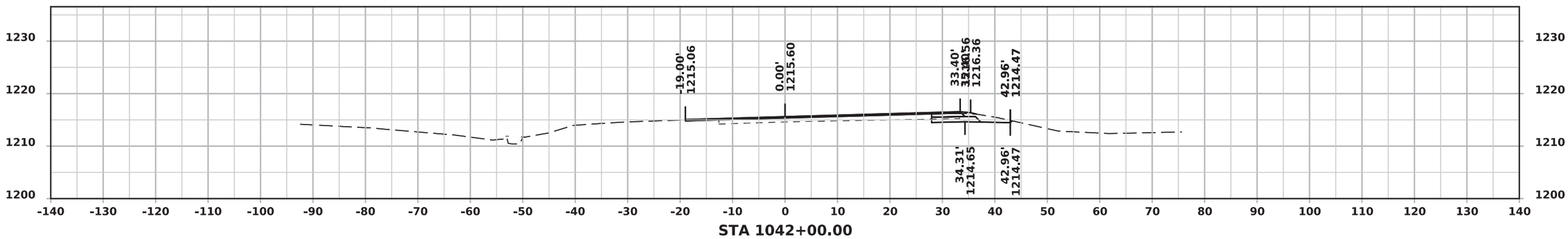


STA 1039+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.51

6:35:49 AM 10/22/2024 csuntke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\4101801020\DistrictDesign\CADD Files\Cross_sections\XS_US18_KS_to_CC_Dr.dgn

US 18



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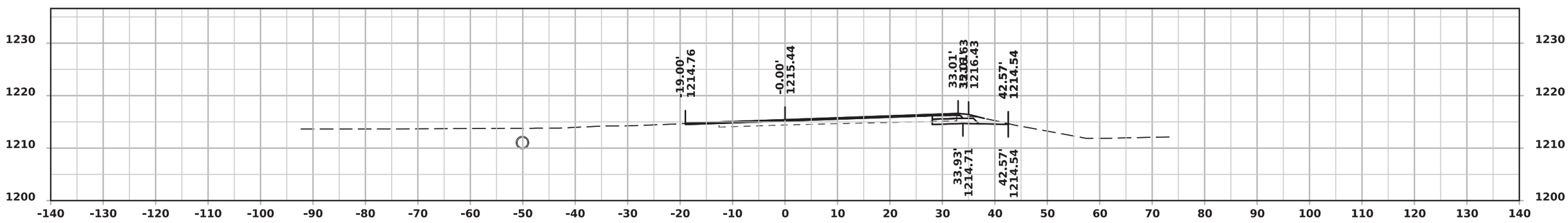
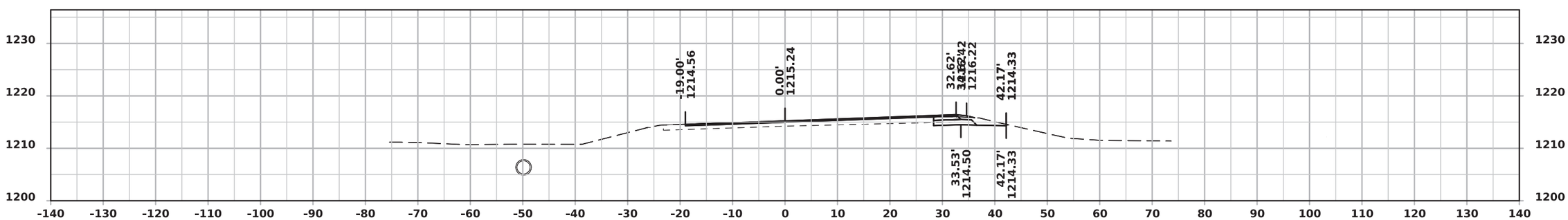


STA 1041+50.00



STA 1041+00.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER W.52

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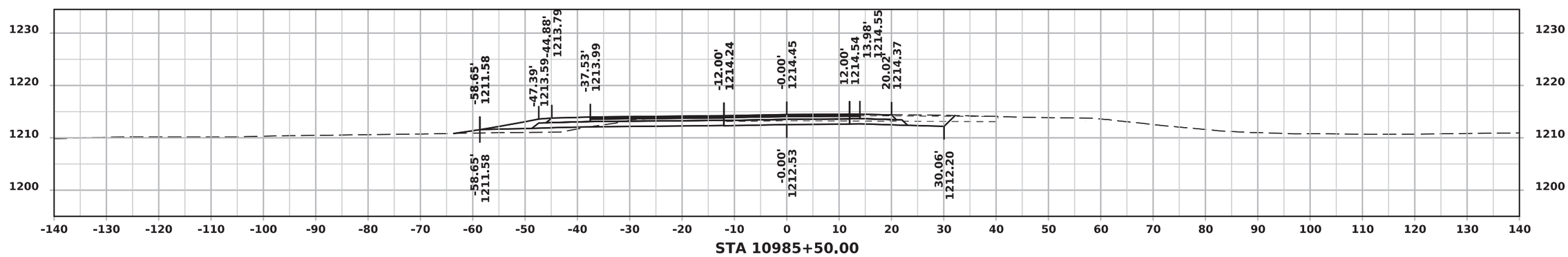
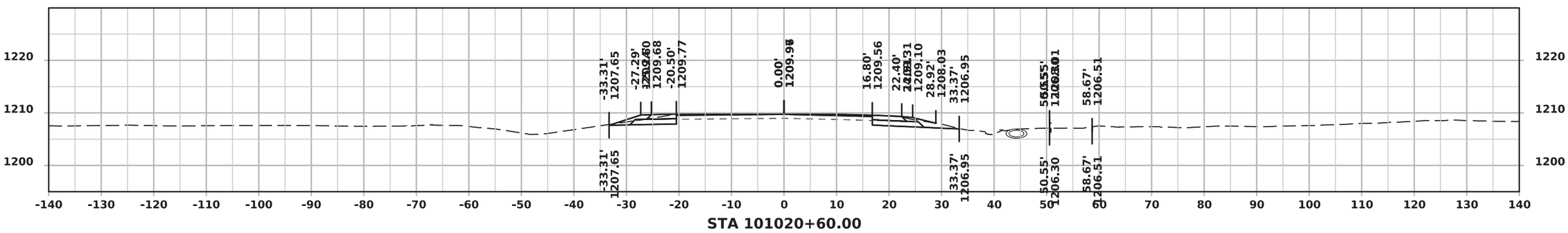
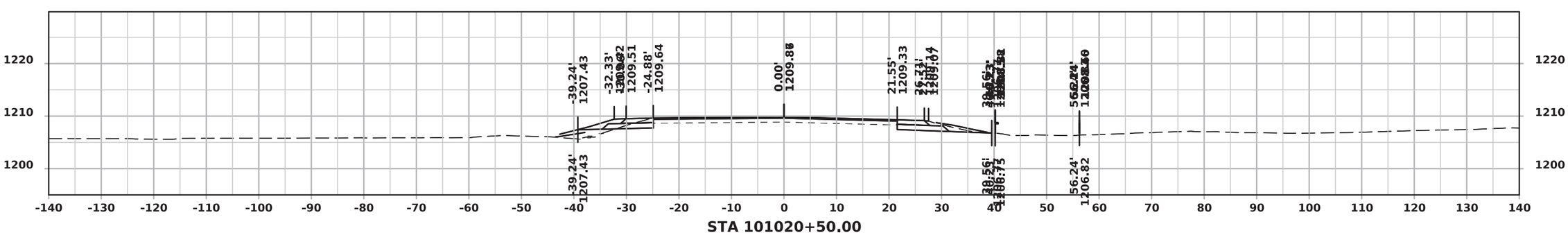


FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER X.1

State St.



STA 101020+60.00



STA 101020+50.00

FILE NO.	ENGLISH	DESIGN TEAM Rolando \ Suntken	HANCOCK COUNTY	PROJECT NUMBER NHSX-18-4(30)--3H-41	SHEET NUMBER X.2