



Board of Public Works MEETING AGENDA

February 20, 2023 - 4:30 PM
Council Chambers
3805 S. Casper Dr.

Published 2/17/2023

AGENDA

1. **PRIVILEGE OF THE FLOOR**
2. **CALL TO ORDER**
3. **ROLL CALL; DECLARATION OF QUORUM; PUBLIC NOTICE**
4. **APPROVAL OF MINUTES**
5. **NEW BUSINESS**
 - A. ITEM 1-23 Recommendation to Common Council for the Approval of the Lincoln Avenue Reconstruction Contract
 - B. ITEM 2-23 Recommendation to Common Council for the Approval of the Small Road Reconstruction Contract
6. **UPDATES**
 - A. 2023 Roadway Rehabilitation Contract
 - B. 2023 Roadway Maintenance Contract
7. **ADJOURN**

Supplemental Information:

- The meeting agenda and agenda packet are available online at www.NewBerlin.org. The minutes are published online and are approved at the next regularly scheduled meeting.
- It is possible that action will be taken on any of the items on the agenda and that the agenda may be discussed in any order.
- You may provide comments to the City Clerk via email at CitizenComments@NewBerlin.org. Comments will be forwarded to the Mayor and members of the governing body. Emailed comments are not read during the meeting.
- The City of New Berlin strives to host inclusive, accessible meetings that enable all individuals to engage and participate fully. Any person who has a qualifying disability under the Americans with Disabilities Act that requires that the meeting be accessible, please contact City Clerk Rubina R. Medina at (262) 786-8610 or via email at CityClerk@NewBerlinWI.gov at least 48 hours before the scheduled meeting time. Efforts will be made to accommodate the needs of disabled individuals through appropriate aids and/or services.
- It is also possible that members of and possibly a quorum of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information; no action will be taken by any governmental body at the above-stated meeting other than the governmental body specifically referred to in the above notice.

STAFF REPORT

EXECUTIVE SUMMARY

APPLICANT: City of New Berlin

PROJECT: Lincoln Avenue Reconstruction Contract

LOCATIONS: Calhoun Road to 1.6 miles west

D.R.C. RECOMMENDATION: Recommend to the Common Council the awarding of a construction contract to the lowest responsive, responsible bidder, Vinton Construction Company, for the Lincoln Avenue Reconstruction Project in an amount of \$4,599,301.20 and awarding an inspection services contract to Ruekert & Mielke, Inc. in an amount of \$316,442.00. With inspection and contingencies, the not-to-exceed total project costs are \$5,350,000.00 from account 20350000 63014 TID5.

1. Funding:
 - a. 2023 Approved Budget Account: 20350000 63014 TID5 Amount: \$6,150,000
 - b. The Contract will include widening the driving lanes from 11 feet to 12 feet, adding a 5-foot paved shoulder and a 3-foot gravel shoulder, replacing driveway culverts, cross culverts, and box culvert at Poplar Creek, ditching, bioswales, improvements at the intersection of Calhoun Road and Lincoln Avenue.
2. On February 8, 2023, The City of New Berlin received eight (8) bids from contractors for the Lincoln Avenue Reconstruction project. The apparent low bidder is Vinton Construction Company of Two Rivers, Wisconsin.
 - a. Summary of Base Bid Contracted Amounts:

Base Bid:	\$ 4,599,301.20
Contingencies (~9%):	\$ 434,256.80
<u>Inspection Contract (~7%):</u>	<u>\$ 316,442.00</u>
Total Base Bid Project Costs:	\$ 5,350,000.00
 - b. The Engineer's Base Bid estimate was \$5,436,307.00

DETAILS IN ATTACHED STAFF REPORT

CITY OF NEW BERLIN
DEPARTMENT OF COMMUNITY DEVELOPMENT
BOARD OF PUBLIC WORKS STAFF REPORT
Meeting of February 20, 2023

City of New Berlin Lincoln Avenue Reconstruction Contract

DATE STAFF REPORT CREATED: February 14, 2023

APPLICANT: City of New Berlin

REQUEST / DESCRIPTION OF PROJECT: The Lincoln Avenue reconstruction project will consist of 16,700 tons asphaltic pavement, 34,000 tons crushed aggregate base course, 30,000 CY of Common Excavation, Storm Sewer/ditching, and pavement marking.

The project design plans were presented to the BPW on December 19, 2022 and are on file in the Engineering Department.

BIDS RECEIVED: 8 Bids - A summary of the Quotes received is attached.

SELECTED CONTRACTOR: Vinton Construction Company

INSPECTION: Three (3) inspection firms were solicited for proposals. DCD received two proposals and recommends selecting Ruekert & Mielke, Inc. for construction inspection services. The proposal from Ruekert & Mielke, Inc. for this project is attached.

FISCAL IMPACT:

Base Bid:	\$ 4,599,301.20
Contingencies (~9%):	\$ 434,256.80
Inspection Contract (~6%):	<u>\$ 316,442.00</u>
Total Project Costs:	\$ 5,350,000.00

SOURCE OF FUNDS

Lincoln Ave – Calhoun to Springdale Account: 20350000 63014 TID5

TRAFFIC IMPACT: Roadways will be kept open to “local traffic only” during reconstruction. The Paving Contractor will be required to provide traffic control in accordance with the Manual on Uniform Traffic Control Devices, Current Edition.

BACKGROUND INFORMATION:

1. Lincoln Avenue is listed in 2021 as having a PASER rating of 50 from Calhoun Rd to 179th Street and 30 from 179th Street to Springdale Road. Lincoln Avenue is also classified as a Standard Arterial in the City’s Comprehensive plan. Streets that are in this range on the PASER scale and are classified as an Arterial need to be evaluated for improvements to maintain a progressive hierarchal transportation system that meets the traffic and storm water needs of the City.

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2. The roadway will be reconstructed with 2-12 foot drive lanes, 5-foot paved shoulders, and 3-foot gravel shoulders. The large diameter dual culvert at Poplar Creek will be replaced with a reinforced concrete box culvert. Lane and signal improvements will be made at the intersection of Calhoun Rd and Lincoln Ave based on the traffic counts which include projected recent area developments. Ditches will be regraded and bioswales will be constructed for stormwater management.

D.C.D. RECOMMENDATION:

Recommend to the Common Council the awarding of a construction contract to the lowest responsive, responsible bidder, Vinton Construction Company, for the Lincoln Avenue Reconstruction Project in an amount of \$4,599,301.20 and awarding an inspection services contract to Ruekert & Mielke, Inc. in an amount of \$316,442.00. With inspection and contingencies, the not-to-exceed total project costs are \$5,350,000.00 from account 20350000 63014 TID5.

Attachments:

Summary of Bids Received
Inspection Quotes Received
Contract Specifications & Plan Set

RD-21-05 Lincoln Avenue Reconstruction
 Bid Results
 February 8, 2023 @ 10:00 A.M.

BIDDER	BID BOND	PRE-QUAL STATEMENT	ADD 1	ADD 2	ADD 3	BASE BID	ALTERNATE BID	ALT & BASE BID	RANKING
Vinton Construction Company	X	X	X	X	X	\$ 4,599,301.20	\$ 2,943,950.00	\$ 5,471,261.20	1
Veit & Company, Inc.	X	X	X	X	X	\$ 4,744,154.80	\$ 3,114,000.00	\$ 5,646,454.80	2
C.W. Purpero, Inc.	X	X	X	X	X	\$ 4,845,430.30	\$ 3,163,000.00	\$ 5,792,102.30	3
New Berlin Grading, Inc.	X	X	X	X	X	\$ 5,188,190.48	\$ 3,152,165.00	\$ 5,939,476.08	4
Musson Bros., Inc.	X	X	X	X	X	\$ 5,527,425.25	\$ 3,321,000.00	\$ 6,443,860.53	5
LaLonde Contractors Inc.	X	X	X	X	X	\$ 5,552,255.89	\$ 2,802,587.75	\$ 5,904,843.22	6
A.W. Oakes & Son, Inc.	X	X	X	X	X	\$ 5,772,760.75	\$ 2,457,140.00	\$ 5,850,680.75	7
Zignego Company, Inc.	X	X	X	X	X	\$ 6,418,588.53	\$ 2,836,120.00	\$ 6,050,978.53	8
Engineer's Estimate						\$ 5,436,307.00	\$ 2,704,000.00	\$ 5,693,407.00	

RD-21-05 Lincoln Avenue Reconstruction

CONTRACT RD-21-05

Cells Highlighted in Yellow Denote Errors Found. Total Prices
Calculated from Bid Unit Cost Submitted.

Base Bid				Vinton Construction Company		Veit & Company, Inc.		C.W. Purpero, Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	Traffic Control/Detour	1	LS	\$ 205,000.00	\$ 205,000.00	\$ 16,250.00	\$ 16,250.00	\$ 63,000.00	\$ 63,000.00
2	Section Corner Monument	3	EACH	\$ 1,000.00	\$ 3,000.00	\$ 1,625.00	\$ 4,875.00	\$ 1,100.00	\$ 3,300.00
3	Construction Staking	1	LS	\$ 25,800.00	\$ 25,800.00	\$ 54,200.00	\$ 54,200.00	\$ 74,000.00	\$ 74,000.00
4	Construction Staging/Phasing with Temporary Asphalt	1	LS	\$ 10,000.00	\$ 10,000.00	\$ 15,000.00	\$ 15,000.00	\$ 8,000.00	\$ 8,000.00
5	Sawcut Pavement	1033	LF	\$ 2.00	\$ 2,066.00	\$ 2.10	\$ 2,169.30	\$ 2.00	\$ 2,066.00
6	Silt Fence, Heavy Duty	1,100	LF	\$ 3.97	\$ 4,367.00	\$ 14.00	\$ 15,400.00	\$ 12.95	\$ 14,245.00
7	Inlet Protection	10	EACH	\$ 73.00	\$ 730.00	\$ 265.00	\$ 2,650.00	\$ 55.00	\$ 550.00
8	Tree Removal	500	ID	\$ 35.00	\$ 17,500.00	\$ 25.50	\$ 12,750.00	\$ 25.30	\$ 12,650.00
9	Clearing & Grubbing	37	STA	\$ 675.00	\$ 24,975.00	\$ 630.00	\$ 23,310.00	\$ 630.00	\$ 23,310.00
10	Remove and Replace Mailbox	15	EACH	\$ 93.00	\$ 1,395.00	\$ 225.00	\$ 3,375.00	\$ 225.00	\$ 3,375.00
11	Temporary Mailbox	15	EACH	\$ 63.00	\$ 945.00	\$ 125.00	\$ 1,875.00	\$ 125.00	\$ 1,875.00
12	Pavement Removal	22,000	SY	\$ 1.50	\$ 33,000.00	\$ 5.00	\$ 110,000.00	\$ 5.15	\$ 113,300.00
13	Remove Curb & Gutter	973	LF	\$ 5.10	\$ 4,962.30	\$ 2.50	\$ 2,432.50	\$ 5.00	\$ 4,865.00
14	Common Excavation (estimated 29,700 CY)	1	LS	\$ 490,000.00	\$ 490,000.00	\$ 437,500.00	\$ 437,500.00	\$ 417,600.00	\$ 417,600.00
15	Excavation Below Subgrade	17,000	CY	\$ 20.64	\$ 350,880.00	\$ 11.00	\$ 187,000.00	\$ 16.00	\$ 272,000.00
16	Dense Graded Base, 3-Inch EBS Backfill	34,000	TON	\$ 17.10	\$ 581,400.00	\$ 16.10	\$ 547,400.00	\$ 19.10	\$ 649,400.00
17	Geotextile, Type SAS	38,000	SY	\$ 1.60	\$ 60,800.00	\$ 1.60	\$ 60,800.00	\$ 1.80	\$ 68,400.00
18	Geogrid, Tensar, Triax	10,000	SY	\$ 4.60	\$ 46,000.00	\$ 5.00	\$ 50,000.00	\$ 5.20	\$ 52,000.00
19	Geogrid, Tensar, BX1200	18,000	SY	\$ 2.00	\$ 36,000.00	\$ 2.00	\$ 36,000.00	\$ 2.50	\$ 45,000.00
20	Remove/Replace Hydrant	3	EACH	\$ 1,606.00	\$ 4,818.00	\$ 12,645.00	\$ 37,935.00	\$ 4,500.00	\$ 13,500.00
21	Bioswale	1075	LF	\$ 96.06	\$ 103,264.50	\$ 36.50	\$ 39,237.50	\$ 79.00	\$ 84,925.00
22	Bioswale Outfall Structure With Endwall	1	EACH	\$ 700.00	\$ 700.00	\$ 3,930.00	\$ 3,930.00	\$ 1,200.00	\$ 1,200.00
23	Bioswale Outfall With Riprap	3	EACH	\$ 900.00	\$ 2,700.00	\$ 3,930.00	\$ 11,790.00	\$ 1,300.00	\$ 3,900.00
24	Erosion Control for Box Culvert	1	LS	\$ 7,000.00	\$ 7,000.00	\$ 1,300.00	\$ 1,300.00	\$ 8,000.00	\$ 8,000.00
25	Remove Existing Box Culvert	1	LS	\$ 13,556.00	\$ 13,556.00	\$ 114,150.00	\$ 114,150.00	\$ 6,500.00	\$ 6,500.00
26	Concrete Box Culvert, Precast, 12'x6'	48	LF	\$ 2,100.00	\$ 100,800.00	\$ 2,265.00	\$ 108,720.00	\$ 2,883.00	\$ 138,384.00
27	Concrete Box Culvert, Precast, 10'x5'	48	LF	\$ 1,633.00	\$ 78,384.00	\$ 1,755.00	\$ 84,240.00	\$ 2,320.00	\$ 111,360.00
28	Concrete Box Culvert, End Section, 12'x6'	2	EACH	\$ 12,727.00	\$ 25,454.00	\$ 28,130.00	\$ 56,260.00	\$ 11,100.00	\$ 22,200.00
29	Concrete Box Culvert, End Section, 10'x5'	2	EACH	\$ 10,180.00	\$ 20,360.00	\$ 24,500.00	\$ 49,000.00	\$ 8,500.00	\$ 17,000.00
30	Storm Sewer, Catch Basin, 20"x30" (R-3228-BD grate)	7	EACH	\$ 3,490.00	\$ 24,430.00	\$ 4,280.00	\$ 29,960.00	\$ 2,750.00	\$ 19,250.00
31	Storm Sewer, Manhole 48-Inch	5	EACH	\$ 3,714.00	\$ 18,570.00	\$ 4,075.00	\$ 20,375.00	\$ 2,500.00	\$ 12,500.00
32	Storm Sewer, Manhole 10-Inch Nyloplast	4	EACH	\$ 1,704.00	\$ 6,816.00	\$ 2,125.00	\$ 8,500.00	\$ 1,300.00	\$ 5,200.00
33	Storm Sewer, RCP, Class IV, 12-Inch	301	LF	\$ 68.80	\$ 20,708.80	\$ 85.00	\$ 25,585.00	\$ 90.00	\$ 27,090.00
34	Storm Sewer, RCP, Class IV, 18-Inch	747	LF	\$ 70.90	\$ 52,962.30	\$ 99.00	\$ 73,953.00	\$ 95.00	\$ 70,965.00
35	Storm Sewer, RCP, Class IV, 12-Inch, Driveway/Cross Culvert	423	LF	\$ 53.30	\$ 22,545.90	\$ 85.00	\$ 35,955.00	\$ 63.00	\$ 26,649.00
36	Storm Sewer, RCP, Class IV, 15-Inch, Driveway/Cross Culvert	111	LF	\$ 68.05	\$ 7,553.55	\$ 90.00	\$ 9,990.00	\$ 70.00	\$ 7,770.00
37	Storm Sewer, RCP, Class IV, 18-Inch, Driveway/Cross Culvert	150	LF	\$ 96.50	\$ 14,475.00	\$ 99.00	\$ 14,850.00	\$ 82.00	\$ 12,300.00
38	Storm Sewer, RCP, Class IV, 23x14-Inch, Driveway/Cross Culvert	288	LF	\$ 105.65	\$ 30,427.20	\$ 130.00	\$ 37,440.00	\$ 130.00	\$ 37,440.00
39	Storm Sewer, RCP, Class IV, 38x24-Inch, Driveway/Cross Culvert	60	LF	\$ 184.15	\$ 11,049.00	\$ 204.00	\$ 12,240.00	\$ 183.00	\$ 10,980.00
40	Storm Sewer, CMP, 12-Inch, Driveway/Cross Culvert	30	LF	\$ 63.35	\$ 1,900.50	\$ 103.00	\$ 3,090.00	\$ 62.00	\$ 1,860.00
41	Storm Sewer, CMP, 15-Inch, Driveway/Cross Culvert	134	LF	\$ 65.15	\$ 8,730.10	\$ 100.00	\$ 13,400.00	\$ 63.00	\$ 8,442.00
42	Storm Sewer, CMP, 18-Inch, Driveway/Cross Culvert	40	LF	\$ 71.00	\$ 2,840.00	\$ 102.00	\$ 4,080.00	\$ 68.00	\$ 2,720.00
43	Storm Sewer, Apron Endwalls, RCP, Class IV, 12-Inch	14	EACH	\$ 940.00	\$ 13,160.00	\$ 2,195.00	\$ 30,730.00	\$ 965.00	\$ 13,510.00
44	Storm Sewer, Apron Endwalls, RCP, Class IV, 15-Inch	4	EACH	\$ 980.00	\$ 3,920.00	\$ 2,370.00	\$ 9,480.00	\$ 1,000.00	\$ 4,000.00
45	Storm Sewer, Apron Endwalls, RCP, Class IV, 18-Inch	6	EACH	\$ 1,110.00	\$ 6,660.00	\$ 2,465.00	\$ 14,790.00	\$ 1,065.00	\$ 6,390.00
46	Storm Sewer, Apron Endwalls, RCP, Class IV, 23x14-Inch	4	EACH	\$ 1,200.00	\$ 4,800.00	\$ 2,365.00	\$ 9,460.00	\$ 1,130.00	\$ 4,520.00
47	Storm Sewer, Apron Endwalls, RCP, Class IV, 38x24-Inch	2	EACH	\$ 1,600.00	\$ 3,200.00	\$ 3,100.00	\$ 6,200.00	\$ 1,510.00	\$ 3,020.00
48	Storm Sewer, Apron Endwall, CMP, 12-Inch	2	EACH	\$ 245.00	\$ 490.00	\$ 1,400.00	\$ 2,800.00	\$ 225.00	\$ 450.00
49	Storm Sewer, Apron Endwall, CMP, 15-Inch	8	EACH	\$ 346.00	\$ 2,768.00	\$ 1,425.00	\$ 11,400.00	\$ 240.00	\$ 1,920.00
50	Storm Sewer, Apron Endwall, CMP, 18-Inch	2	EACH	\$ 390.00	\$ 780.00	\$ 1,575.00	\$ 3,150.00	\$ 280.00	\$ 560.00

BID TAB

51	Storm Sewer, HDPE, 4-Inch, Underdrain	329	LF	\$ 15.25	\$ 5,017.25	\$ 21.00	\$ 6,909.00	\$ 55.00	\$ 18,095.00
52	Storm Sewer, HDPE, 6-Inch, Underdrain, Non-Perforated	211	LF	\$ 17.25	\$ 3,639.75	\$ 22.00	\$ 4,642.00	\$ 11.00	\$ 2,321.00
53	Storm Sewer, HDPE, 6-Inch, Underdrain, Perforated	840	LF	\$ 23.15	\$ 19,446.00	\$ 22.00	\$ 18,480.00	\$ 10.00	\$ 8,400.00
54	Dense Graded Base, Shouldering 3/4-Inch	1,800	TON	\$ 27.50	\$ 49,500.00	\$ 24.00	\$ 43,200.00	\$ 26.00	\$ 46,800.00
55	Dense Graded Base, 1 1/4-Inch	34,000	TON	\$ 12.97	\$ 440,980.00	\$ 16.75	\$ 569,500.00	\$ 16.85	\$ 572,900.00
56	Concrete Curb & Gutter, 30-Inch	4,050	LF	\$ 18.90	\$ 76,545.00	\$ 22.00	\$ 89,100.00	\$ 18.90	\$ 76,545.00
57	Concrete Flume	6	EACH	\$ 400.00	\$ 2,400.00	\$ 875.00	\$ 5,250.00	\$ 400.00	\$ 2,400.00
58	Concrete Driveway, 7-Inch	120	SY	\$ 97.00	\$ 11,640.00	\$ 86.00	\$ 10,320.00	\$ 97.00	\$ 11,640.00
59	HMA Pavement, 3 MT 58-28 H, (Binder)	11,600	TON	\$ 66.70	\$ 773,720.00	\$ 70.00	\$ 812,000.00	\$ 74.45	\$ 863,620.00
60	HMA Pavement, 4 MT 58-28 H, (Surface)	4,620	TON	\$ 79.50	\$ 367,290.00	\$ 85.00	\$ 392,700.00	\$ 78.40	\$ 362,208.00
61	HMA Pavement 4 MT 58-28 S, (Driveways)	500	TON	\$ 135.00	\$ 67,500.00	\$ 145.00	\$ 72,500.00	\$ 89.85	\$ 44,925.00
62	Adjust Sanitary Manhole	8	EACH	\$ 752.00	\$ 6,016.00	\$ 1,400.00	\$ 11,200.00	\$ 1,750.00	\$ 14,000.00
63	Adjust Water Valve Box	13	EACH	\$ 450.00	\$ 5,850.00	\$ 450.00	\$ 5,850.00	\$ 1,000.00	\$ 13,000.00
64	Temporary Ditch Check	100	EACH	\$ 15.00	\$ 1,500.00	\$ 80.00	\$ 8,000.00	\$ 75.00	\$ 7,500.00
65	Riprap, Medium	20	CY	\$ 75.00	\$ 1,500.00	\$ 135.00	\$ 2,700.00	\$ 132.00	\$ 2,640.00
66	Concrete Ditch Invert	110	LF	\$ 42.00	\$ 4,620.00	\$ 34.50	\$ 3,795.00	\$ 42.00	\$ 4,620.00
67	Pavement Marking, Epoxy, White, 4-Inch	17,023	LF	\$ 0.75	\$ 12,767.25	\$ 0.65	\$ 11,064.95	\$ 0.70	\$ 11,916.10
68	Pavement Marking, Epoxy, Yellow, 4-Inch	11,122	LF	\$ 0.75	\$ 8,341.50	\$ 0.65	\$ 7,229.30	\$ 0.70	\$ 7,785.40
69	Pavement Marking, Epoxy, White, 8-Inch	700	LF	\$ 2.00	\$ 1,400.00	\$ 1.80	\$ 1,260.00	\$ 1.30	\$ 910.00
70	Pavement Marking, Epoxy, White, 12-Inch	169	LF	\$ 15.00	\$ 2,535.00	\$ 9.75	\$ 1,647.75	\$ 10.90	\$ 1,842.10
71	Pavement Marking, Epoxy, Stop Bar, White, 18-Inch	72	LF	\$ 19.00	\$ 1,368.00	\$ 16.25	\$ 1,170.00	\$ 16.25	\$ 1,170.00
72	Pavement Marking, Epoxy, Arrow	8	EACH	\$ 250.00	\$ 2,000.00	\$ 280.00	\$ 2,240.00	\$ 250.00	\$ 2,000.00
73	Remove & Replace Sign, Reflective	10	EACH	\$ 272.00	\$ 2,720.00	\$ 400.00	\$ 4,000.00	\$ 385.00	\$ 3,850.00
74	Snow Pole	10	EACH	\$ 70.00	\$ 700.00	\$ 180.00	\$ 1,800.00	\$ 165.00	\$ 1,650.00
75	4" Topsoil, Seed, Fertilizer & Erosion Mat	25,000	SY	\$ 6.50	\$ 162,500.00	\$ 5.00	\$ 125,000.00	\$ 7.50	\$ 187,500.00
76	Removing Concrete Bases	3	EACH	\$ 350.00	\$ 1,050.00	\$ 700.00	\$ 2,100.00	\$ 350.00	\$ 1,050.00
77	Removing Traffic Signals	1	EACH	\$ 2,000.00	\$ 2,000.00	\$ 3,400.00	\$ 3,400.00	\$ 4,528.00	\$ 4,528.00
78	Conduit Rigid Non-Metallic Schedule 40 2-Inch	54	LF	\$ 10.00	\$ 540.00	\$ 12.00	\$ 648.00	\$ 19.30	\$ 1,042.20
79	Conduit Rigid Non-Metallic Schedule 40 3-Inch	80	LF	\$ 15.00	\$ 1,200.00	\$ 17.00	\$ 1,360.00	\$ 22.07	\$ 1,765.60
80	Conduit Special 3-Inch	316	LF	\$ 45.00	\$ 14,220.00	\$ 33.00	\$ 10,428.00	\$ 36.00	\$ 11,376.00
81	Install Conduit into Existing Item	4	EACH	\$ 250.00	\$ 1,000.00	\$ 325.00	\$ 1,300.00	\$ 778.00	\$ 3,112.00
82	Pull Boxes Steel 24 x 42-Inch	2	EACH	\$ 1,600.00	\$ 3,200.00	\$ 1,500.00	\$ 3,000.00	\$ 1,379.00	\$ 2,758.00
83	Removing Pull Boxes	2	EACH	\$ 200.00	\$ 400.00	\$ 300.00	\$ 600.00	\$ 200.00	\$ 400.00
84	Concrete Bases Type 1	1	EACH	\$ 750.00	\$ 750.00	\$ 1,100.00	\$ 1,100.00	\$ 1,638.00	\$ 1,638.00
85	Concrete Bases Type 2	2	EACH	\$ 1,000.00	\$ 2,000.00	\$ 1,700.00	\$ 3,400.00	\$ 1,820.00	\$ 3,640.00
86	Cable Traffic Signal 12-14 AWG	653	LF	\$ 2.00	\$ 1,306.00	\$ 3.50	\$ 2,285.50	\$ 3.80	\$ 2,481.40
87	Cable Type UF 2-10 AWG Grounded	350	LF	\$ 1.45	\$ 507.50	\$ 3.00	\$ 1,050.00	\$ 2.25	\$ 787.50
88	Electrical Wire Traffic Signals 10 AWG	582	LF	\$ 0.90	\$ 523.80	\$ 1.50	\$ 873.00	\$ 1.75	\$ 1,018.50
89	Traffic Signal EVP Detector Cable	515	LF	\$ 2.00	\$ 1,030.00	\$ 3.00	\$ 1,545.00	\$ 2.50	\$ 1,287.50
90	Video Detection Cable	540	LF	\$ 5.00	\$ 2,700.00	\$ 11.00	\$ 5,940.00	\$ 5.80	\$ 3,132.00
91	Pedestal Bases	1	EACH	\$ 220.00	\$ 220.00	\$ 350.00	\$ 350.00	\$ 538.00	\$ 538.00
92	Transformer Bases Breakaway 11 ½ Inch Bolt Circle	2	EACH	\$ 505.00	\$ 1,010.00	\$ 750.00	\$ 1,500.00	\$ 643.00	\$ 1,286.00
93	Poles Type 3	2	EACH	\$ 4,000.00	\$ 8,000.00	\$ 5,000.00	\$ 10,000.00	\$ 4,360.00	\$ 8,720.00
94	Traffic Signal Standards Aluminum 13-FT	1	EACH	\$ 705.00	\$ 705.00	\$ 1,100.00	\$ 1,100.00	\$ 883.00	\$ 883.00
95	Luminaire Arms Single Member 4-Inch Clamp 6-FT	1	EACH	\$ 255.00	\$ 255.00	\$ 440.00	\$ 440.00	\$ 398.00	\$ 398.00
96	Traffic Signal Face 3S 12-Inch	4	EACH	\$ 660.00	\$ 2,640.00	\$ 1,050.00	\$ 4,200.00	\$ 918.00	\$ 3,672.00
97	Signal Mounting Hardware	1	EACH	\$ 650.00	\$ 650.00	\$ 1,500.00	\$ 1,500.00	\$ 1,374.00	\$ 1,374.00
98	Luminaires Utility LED C	1	EACH	\$ 255.00	\$ 255.00	\$ 500.00	\$ 500.00	\$ 529.00	\$ 529.00
99	Remove & Reinstall Video Detection	1	EACH	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 2,355.00	\$ 2,355.00
100	Remove & Reinstall EVP Equipment	1	EACH	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 1,980.00	\$ 1,980.00
				Total	\$ 4,599,301.20	Total	\$ 4,744,154.80	Total	\$ 4,845,430.30

Alternate Bid - The Alernate bid will replace Base Bid Items 14, 55, 59 & 60				Vinton Construction Company		Veit & Company, Inc.		C.W. Purpero, Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
				PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
14A	Common Excavation (estimated 21,700CY)	1	LS	\$ 440,000.00	\$ 440,000.00	\$ 380,000.00	\$ 380,000.00	\$ 317,500.00	\$ 317,500.00
55A	Dense Graded Base, 1 1/4-Inch	14,000	TON	\$ 6.00	\$ 84,000.00	\$ 18.00	\$ 252,000.00	\$ 20.75	\$ 290,500.00
59A	Concrete Pavement, 9-Inch	36,500	SY	\$ 66.30	\$ 2,419,950.00	\$ 68.00	\$ 2,482,000.00	\$ 70.00	\$ 2,555,000.00
				Total Alt Bid	\$ 2,943,950.00	Total Alt Bid	\$ 3,114,000.00	Total Alt Bid	\$ 3,163,000.00
				Alt & Base	\$ 5,471,261.20	Alt & Base	\$ 5,646,454.80	Alt & Base	\$ 5,792,102.30

RD-21-05 Lincoln Avenue Reconstruction

CONTRACT RD-21-05

Cells Highlighted in Yellow Denote Errors Found. Total Prices
Calculated from Bid Unit Cost Submitted.

Base Bid				New Berlin Grading, Inc.		Musson Bros., Inc.		LaLonde Contractors Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	Traffic Control/Detour	1	LS	\$ 18,010.30	\$ 18,010.30	\$ 95,814.47	\$ 95,814.47	\$ 79,701.73	\$ 79,701.73
2	Section Corner Monument	3	EACH	\$ 500.00	\$ 1,500.00	\$ 2,026.38	\$ 6,079.14	\$ 1,138.00	\$ 3,414.00
3	Construction Staking	1	LS	\$ 62,000.00	\$ 62,000.00	\$ 83,182.66	\$ 83,182.66	\$ 30,199.00	\$ 30,199.00
4	Construction Staging/Phasing with Temporary Asphalt	1	LS	\$ 10,000.00	\$ 10,000.00	\$ 16,588.92	\$ 16,588.92	\$ 5,000.00	\$ 5,000.00
5	Sawcut Pavement	1033	LF	\$ 10.00	\$ 10,330.00	\$ 5.07	\$ 5,237.31	\$ 1.95	\$ 2,014.35
6	Silt Fence, Heavy Duty	1,100	LF	\$ 7.15	\$ 7,865.00	\$ 6.84	\$ 7,524.00	\$ 3.97	\$ 4,367.00
7	Inlet Protection	10	EACH	\$ 71.50	\$ 715.00	\$ 65.85	\$ 658.50	\$ 73.00	\$ 730.00
8	Tree Removal	500	ID	\$ 27.82	\$ 13,910.00	\$ 25.63	\$ 12,815.00	\$ 25.29	\$ 12,645.00
9	Clearing & Grubbing	37	STA	\$ 692.77	\$ 25,632.49	\$ 638.10	\$ 23,609.70	\$ 629.79	\$ 23,302.23
10	Remove and Replace Mailbox	15	EACH	\$ 137.50	\$ 2,062.50	\$ 128.18	\$ 1,922.70	\$ 93.00	\$ 1,395.00
11	Temporary Mailbox	15	EACH	\$ 33.00	\$ 495.00	\$ 100.63	\$ 1,509.45	\$ 63.00	\$ 945.00
12	Pavement Removal	22,000	SY	\$ 1.03	\$ 22,660.00	\$ 5.64	\$ 124,080.00	\$ 6.73	\$ 148,060.00
13	Remove Curb & Gutter	973	LF	\$ 5.00	\$ 4,865.00	\$ 8.18	\$ 7,959.14	\$ 5.74	\$ 5,585.02
14	Common Excavation (estimated 29,700 CY)	1	LS	\$ 562,649.00	\$ 562,649.00	\$ 625,955.72	\$ 625,955.72	\$ 613,214.42	\$ 613,214.42
15	Excavation Below Subgrade	17,000	CY	\$ 15.40	\$ 261,800.00	\$ 22.13	\$ 376,210.00	\$ 27.10	\$ 460,700.00
16	Dense Graded Base, 3-Inch EBS Backfill	34,000	TON	\$ 19.26	\$ 654,840.00	\$ 24.40	\$ 829,600.00	\$ 25.19	\$ 856,460.00
17	Geotextile, Type SAS	38,000	SY	\$ 1.72	\$ 65,360.00	\$ 2.53	\$ 96,140.00	\$ 1.75	\$ 66,500.00
18	Geogrid, Tensar, Triax	10,000	SY	\$ 4.80	\$ 48,000.00	\$ 6.15	\$ 61,500.00	\$ 5.15	\$ 51,500.00
19	Geogrid, Tensar, BX1200	18,000	SY	\$ 2.08	\$ 37,440.00	\$ 6.15	\$ 110,700.00	\$ 1.92	\$ 34,560.00
20	Remove/Replace Hydrant	3	EACH	\$ 4,725.00	\$ 14,175.00	\$ 3,756.12	\$ 11,268.36	\$ 7,311.00	\$ 21,933.00
21	Bioswale	1075	LF	\$ 46.78	\$ 50,288.50	\$ 91.06	\$ 97,889.50	\$ 67.65	\$ 72,723.75
22	Bioswale Outfall Structure With Endwall	1	EACH	\$ 5,250.00	\$ 5,250.00	\$ 11,451.81	\$ 11,451.81	\$ 700.00	\$ 700.00
23	Bioswale Outfall With Riprap	3	EACH	\$ 3,150.00	\$ 9,450.00	\$ 5,106.44	\$ 15,319.32	\$ 900.00	\$ 2,700.00
24	Erosion Control for Box Culvert	1	LS	\$ 10,500.00	\$ 10,500.00	\$ 5,065.93	\$ 5,065.93	\$ 5,700.00	\$ 5,700.00
25	Remove Existing Box Culvert	1	LS	\$ 31,500.00	\$ 31,500.00	\$ 5,704.29	\$ 5,704.29	\$ 11,664.00	\$ 11,664.00
26	Concrete Box Culvert, Precast, 12'x6'	48	LF	\$ 3,937.50	\$ 189,000.00	\$ 2,708.90	\$ 130,027.20	\$ 2,657.00	\$ 127,536.00
27	Concrete Box Culvert, Precast, 10'x5'	48	LF	\$ 3,570.00	\$ 171,360.00	\$ 2,116.80	\$ 101,606.40	\$ 2,086.00	\$ 100,128.00
28	Concrete Box Culvert, End Section, 12'x6'	2	EACH	\$ 18,375.00	\$ 36,750.00	\$ 9,541.54	\$ 19,083.08	\$ 23,516.00	\$ 47,032.00
29	Concrete Box Culvert, End Section, 10'x5'	2	EACH	\$ 15,750.00	\$ 31,500.00	\$ 9,276.19	\$ 18,552.38	\$ 19,736.00	\$ 39,472.00
30	Storm Sewer, Catch Basin, 20"x30" (R-3228-BD grate)	7	EACH	\$ 2,887.50	\$ 20,212.50	\$ 3,243.79	\$ 22,706.53	\$ 3,883.00	\$ 27,181.00
31	Storm Sewer, Manhole 48-Inch	5	EACH	\$ 2,625.00	\$ 13,125.00	\$ 2,947.39	\$ 14,736.95	\$ 4,417.00	\$ 22,085.00
32	Storm Sewer, Manhole 10-Inch Nyloplast	4	EACH	\$ 1,313.00	\$ 5,252.00	\$ 2,064.95	\$ 8,259.80	\$ 950.00	\$ 3,800.00
33	Storm Sewer, RCP, Class IV, 12-Inch	301	LF	\$ 94.50	\$ 28,444.50	\$ 101.39	\$ 30,518.39	\$ 110.00	\$ 33,110.00
34	Storm Sewer, RCP, Class IV, 18-Inch	747	LF	\$ 99.75	\$ 74,513.25	\$ 101.84	\$ 76,074.48	\$ 127.00	\$ 94,869.00
35	Storm Sewer, RCP, Class IV, 12-Inch, Driveway/Cross Culvert	423	LF	\$ 99.75	\$ 42,194.25	\$ 92.23	\$ 39,013.29	\$ 92.00	\$ 38,916.00
36	Storm Sewer, RCP, Class IV, 15-Inch, Driveway/Cross Culvert	111	LF	\$ 105.00	\$ 11,655.00	\$ 125.08	\$ 13,883.88	\$ 100.00	\$ 11,100.00
37	Storm Sewer, RCP, Class IV, 18-Inch, Driveway/Cross Culvert	150	LF	\$ 120.75	\$ 18,112.50	\$ 111.00	\$ 16,650.00	\$ 110.00	\$ 16,500.00
38	Storm Sewer, RCP, Class IV, 23x14-Inch, Driveway/Cross Culvert	288	LF	\$ 141.75	\$ 40,824.00	\$ 144.98	\$ 41,754.24	\$ 130.00	\$ 37,440.00
39	Storm Sewer, RCP, Class IV, 38x24-Inch, Driveway/Cross Culvert	60	LF	\$ 215.25	\$ 12,915.00	\$ 184.71	\$ 11,082.60	\$ 198.00	\$ 11,880.00
40	Storm Sewer, CMP, 12-Inch, Driveway/Cross Culvert	30	LF	\$ 105.00	\$ 3,150.00	\$ 93.76	\$ 2,812.80	\$ 88.00	\$ 2,640.00
41	Storm Sewer, CMP, 15-Inch, Driveway/Cross Culvert	134	LF	\$ 115.50	\$ 15,477.00	\$ 88.16	\$ 11,813.44	\$ 90.00	\$ 12,060.00
42	Storm Sewer, CMP, 18-Inch, Driveway/Cross Culvert	40	LF	\$ 131.25	\$ 5,250.00	\$ 105.52	\$ 4,220.80	\$ 103.00	\$ 4,120.00
43	Storm Sewer, Apron Endwalls, RCP, Class IV, 12-Inch	14	EACH	\$ 997.50	\$ 13,965.00	\$ 840.52	\$ 11,767.28	\$ 2,104.00	\$ 29,456.00
44	Storm Sewer, Apron Endwalls, RCP, Class IV, 15-Inch	4	EACH	\$ 1,050.00	\$ 4,200.00	\$ 980.71	\$ 3,922.84	\$ 2,257.00	\$ 9,028.00
45	Storm Sewer, Apron Endwalls, RCP, Class IV, 18-Inch	6	EACH	\$ 1,155.00	\$ 6,930.00	\$ 740.24	\$ 4,441.44	\$ 2,954.00	\$ 17,724.00
46	Storm Sewer, Apron Endwalls, RCP, Class IV, 23x14-Inch	4	EACH	\$ 1,102.50	\$ 4,410.00	\$ 1,338.86	\$ 5,355.44	\$ 2,938.00	\$ 11,752.00
47	Storm Sewer, Apron Endwalls, RCP, Class IV, 38x24-Inch	2	EACH	\$ 1,312.50	\$ 2,625.00	\$ 1,415.23	\$ 2,830.46	\$ 3,939.00	\$ 7,878.00
48	Storm Sewer, Apron Endwall, CMP, 12-Inch	2	EACH	\$ 262.50	\$ 525.00	\$ 412.91	\$ 825.82	\$ 530.00	\$ 1,060.00
49	Storm Sewer, Apron Endwall, CMP, 15-Inch	8	EACH	\$ 315.00	\$ 2,520.00	\$ 326.13	\$ 2,609.04	\$ 563.00	\$ 4,504.00
50	Storm Sewer, Apron Endwall, CMP, 18-Inch	2	EACH	\$ 367.50	\$ 735.00	\$ 376.75	\$ 753.50	\$ 612.00	\$ 1,224.00

BID TAB

51	Storm Sewer, HDPE, 4-Inch, Underdrain	329	LF	\$ 57.75	\$ 18,999.75	\$ 12.42	\$ 4,086.18	\$ 56.00	\$ 18,424.00
52	Storm Sewer, HDPE, 6-Inch, Underdrain, Non-Perforated	211	LF	\$ 63.00	\$ 13,293.00	\$ 12.66	\$ 2,671.26	\$ 62.00	\$ 13,082.00
53	Storm Sewer, HDPE, 6-Inch, Underdrain, Perforated	840	LF	\$ 63.00	\$ 52,920.00	\$ 12.09	\$ 10,155.60	\$ 62.00	\$ 52,080.00
54	Dense Graded Base, Shouldering 3/4-Inch	1,800	TON	\$ 26.78	\$ 48,204.00	\$ 21.42	\$ 38,556.00	\$ 28.00	\$ 50,400.00
55	Dense Graded Base, 1 1/4-Inch	34,000	TON	\$ 16.21	\$ 551,140.00	\$ 18.31	\$ 622,540.00	\$ 18.55	\$ 630,700.00
56	Concrete Curb & Gutter, 30-Inch	4,050	LF	\$ 26.67	\$ 108,013.50	\$ 19.15	\$ 77,557.50	\$ 20.60	\$ 83,430.00
57	Concrete Flume	6	EACH	\$ 735.00	\$ 4,410.00	\$ 405.28	\$ 2,431.68	\$ 939.99	\$ 5,639.94
58	Concrete Driveway, 7-Inch	120	SY	\$ 63.00	\$ 7,560.00	\$ 98.28	\$ 11,793.60	\$ 68.57	\$ 8,228.40
59	HMA Pavement, 3 MT 58-28 H, (Binder)	11,600	TON	\$ 78.17	\$ 906,772.00	\$ 67.58	\$ 783,928.00	\$ 72.31	\$ 838,796.00
60	HMA Pavement, 4 MT 58-28 H, (Surface)	4,620	TON	\$ 82.32	\$ 380,318.40	\$ 80.55	\$ 372,141.00	\$ 79.50	\$ 367,290.00
61	HMA Pavement 4 MT 58-28 S, (Driveways)	500	TON	\$ 94.34	\$ 47,170.00	\$ 136.78	\$ 68,390.00	\$ 135.00	\$ 67,500.00
62	Adjust Sanitary Manhole	8	EACH	\$ 1,837.50	\$ 14,700.00	\$ 709.71	\$ 5,677.68	\$ 1,169.00	\$ 9,352.00
63	Adjust Water Valve Box	13	EACH	\$ 1,050.00	\$ 13,650.00	\$ 424.04	\$ 5,512.52	\$ 381.00	\$ 4,953.00
64	Temporary Ditch Check	100	EACH	\$ 137.50	\$ 13,750.00	\$ 126.65	\$ 12,665.00	\$ 15.00	\$ 1,500.00
65	Riprap, Medium	20	CY	\$ 175.50	\$ 3,510.00	\$ 212.57	\$ 4,251.40	\$ 125.00	\$ 2,500.00
66	Concrete Ditch Invert	110	LF	\$ 60.90	\$ 6,699.00	\$ 42.56	\$ 4,681.60	\$ 48.64	\$ 5,350.40
67	Pavement Marking, Epoxy, White, 4-Inch	17,023	LF	\$ 0.83	\$ 14,129.09	\$ 0.63	\$ 10,724.49	\$ 0.66	\$ 11,235.18
68	Pavement Marking, Epoxy, Yellow, 4-Inch	11,122	LF	\$ 0.83	\$ 9,231.26	\$ 0.63	\$ 7,006.86	\$ 0.66	\$ 7,340.52
69	Pavement Marking, Epoxy, White, 8-Inch	700	LF	\$ 2.20	\$ 1,540.00	\$ 1.68	\$ 1,176.00	\$ 1.30	\$ 910.00
70	Pavement Marking, Epoxy, White, 12-Inch	169	LF	\$ 16.50	\$ 2,788.50	\$ 9.12	\$ 1,541.28	\$ 10.85	\$ 1,833.65
71	Pavement Marking, Epoxy, Stop Bar, White, 18-Inch	72	LF	\$ 20.90	\$ 1,504.80	\$ 15.20	\$ 1,094.40	\$ 16.25	\$ 1,170.00
72	Pavement Marking, Epoxy, Arrow	8	EACH	\$ 275.00	\$ 2,200.00	\$ 263.42	\$ 2,107.36	\$ 250.00	\$ 2,000.00
73	Remove & Replace Sign, Reflective	10	EACH	\$ 550.00	\$ 5,500.00	\$ 506.59	\$ 5,065.90	\$ 272.00	\$ 2,720.00
74	Snow Pole	10	EACH	\$ 275.00	\$ 2,750.00	\$ 253.29	\$ 2,532.90	\$ 70.00	\$ 700.00
75	4" Topsoil, Seed, Fertilizer & Erosion Mat	25,000	SY	\$ 8.10	\$ 202,500.00	\$ 7.45	\$ 186,250.00	\$ 3.35	\$ 83,750.00
76	Removing Concrete Bases	3	EACH	\$ 400.00	\$ 1,200.00	\$ 330.58	\$ 991.74	\$ 350.00	\$ 1,050.00
77	Removing Traffic Signals	1	EACH	\$ 3,535.00	\$ 3,535.00	\$ 2,026.38	\$ 2,026.38	\$ 2,000.00	\$ 2,000.00
78	Conduit Rigid Non-Metallic Schedule 40 2-Inch	54	LF	\$ 12.97	\$ 700.38	\$ 10.13	\$ 547.02	\$ 10.00	\$ 540.00
79	Conduit Rigid Non-Metallic Schedule 40 3-Inch	80	LF	\$ 18.23	\$ 1,458.40	\$ 15.20	\$ 1,216.00	\$ 15.00	\$ 1,200.00
80	Conduit Special 3-Inch	316	LF	\$ 36.17	\$ 11,429.72	\$ 45.60	\$ 14,409.60	\$ 45.00	\$ 14,220.00
81	Install Conduit into Existing Item	4	EACH	\$ 331.78	\$ 1,327.12	\$ 253.29	\$ 1,013.16	\$ 250.00	\$ 1,000.00
82	Pull Boxes Steel 24 x 42-Inch	2	EACH	\$ 1,570.69	\$ 3,141.38	\$ 1,621.10	\$ 3,242.20	\$ 1,600.00	\$ 3,200.00
83	Removing Pull Boxes	2	EACH	\$ 272.93	\$ 545.86	\$ 202.64	\$ 405.28	\$ 200.00	\$ 400.00
84	Concrete Bases Type 1	1	EACH	\$ 1,124.50	\$ 1,124.50	\$ 759.89	\$ 759.89	\$ 750.00	\$ 750.00
85	Concrete Bases Type 2	2	EACH	\$ 1,753.10	\$ 3,506.20	\$ 1,013.19	\$ 2,026.38	\$ 1,000.00	\$ 2,000.00
86	Cable Traffic Signal 12-14 AWG	653	LF	\$ 3.65	\$ 2,383.45	\$ 2.03	\$ 1,325.59	\$ 2.00	\$ 1,306.00
87	Cable Type UF 2-10 AWG Grounded	350	LF	\$ 2.96	\$ 1,036.00	\$ 1.47	\$ 514.50	\$ 1.45	\$ 507.50
88	Electrical Wire Traffic Signals 10 AWG	582	LF	\$ 1.55	\$ 902.10	\$ 0.91	\$ 529.62	\$ 0.90	\$ 523.80
89	Traffic Signal EVP Detector Cable	515	LF	\$ 3.18	\$ 1,637.70	\$ 2.03	\$ 1,045.45	\$ 2.00	\$ 1,030.00
90	Video Detection Cable	540	LF	\$ 11.56	\$ 6,242.40	\$ 5.07	\$ 2,737.80	\$ 5.00	\$ 2,700.00
91	Pedestal Bases	1	EACH	\$ 389.18	\$ 389.18	\$ 222.90	\$ 222.90	\$ 220.00	\$ 220.00
92	Transformer Bases Breakaway 11 ½ Inch Bolt Circle	2	EACH	\$ 783.62	\$ 1,567.24	\$ 511.66	\$ 1,023.32	\$ 505.00	\$ 1,010.00
93	Poles Type 3	2	EACH	\$ 5,156.94	\$ 10,313.88	\$ 4,052.75	\$ 8,105.50	\$ 4,000.00	\$ 8,000.00
94	Traffic Signal Standards Aluminum 13-FT	1	EACH	\$ 1,145.08	\$ 1,145.08	\$ 714.30	\$ 714.30	\$ 705.00	\$ 705.00
95	Luminaire Arms Single Member 4-Inch Clamp 6-FT	1	EACH	\$ 449.48	\$ 449.48	\$ 258.36	\$ 258.36	\$ 255.00	\$ 255.00
96	Traffic Signal Face 3S 12-Inch	4	EACH	\$ 1,072.71	\$ 4,290.84	\$ 668.70	\$ 2,674.80	\$ 660.00	\$ 2,640.00
97	Signal Mounting Hardware	1	EACH	\$ 1,632.29	\$ 1,632.29	\$ 658.57	\$ 658.57	\$ 650.00	\$ 650.00
98	Luminaires Utility LED C	1	EACH	\$ 511.63	\$ 511.63	\$ 258.36	\$ 258.36	\$ 255.00	\$ 255.00
99	Remove & Reinstall Video Detection	1	EACH	\$ 3,762.28	\$ 3,762.28	\$ 3,546.16	\$ 3,546.16	\$ 3,500.00	\$ 3,500.00
100	Remove & Reinstall EVP Equipment	1	EACH	\$ 3,762.28	\$ 3,762.28	\$ 3,546.16	\$ 3,546.16	\$ 3,500.00	\$ 3,500.00
				Total	\$ 5,188,190.48	Total	\$ 5,527,425.25	Total	\$ 5,552,255.89

Alternate Bid - The Alernate bid will replace Base Bid Items 14, 55, 59 & 60				New Berlin Grading, Inc.		Musson Bros., Inc.		LaLonde Contractors Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
				PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
14A	Common Excavation (estimated 21,700CY)	1	LS	\$ 496,150.00	\$ 496,150.00	\$ 486,000.00	\$ 486,000.00	\$ 466,907.75	\$ 466,907.75
55A	Dense Graded Base, 1 1/4-Inch	14,000	TON	\$ 16.21	\$ 226,940.00	\$ 20.00	\$ 280,000.00	\$ 18.54	\$ 259,560.00
59A	Concrete Pavement, 9-Inch	36,500	SY	\$ 66.55	\$ 2,429,075.00	\$ 70.00	\$ 2,555,000.00	\$ 56.88	\$ 2,076,120.00
				Total Alt Bid	\$ 3,152,165.00	Total Alt Bid	\$ 3,321,000.00	Total Alt Bid	\$ 2,802,587.75
				Alt & Base	\$ 5,939,476.08	Alt & Base	\$ 6,443,860.53	Alt & Base	\$ 5,904,843.22

RD-21-05 Lincoln Avenue Reconstruction

CONTRACT RD-21-05

Cells Highlighted in Yellow Denote Errors Found. Total Prices
Calculated from Bid Unit Cost Submitted.

Base Bid				A.W. Oakes & Son, Inc.		Zignego Company, Inc.		Engineer's Estimate	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	Traffic Control/Detour	1	LS	\$ 317,000.00	\$ 317,000.00	\$ 16,373.00	\$ 16,373.00	\$ 50,000.00	\$ 50,000.00
2	Section Corner Monument	3	EACH	\$ 1,500.00	\$ 4,500.00	\$ 1,000.00	\$ 3,000.00	\$ 500.00	\$ 1,500.00
3	Construction Staking	1	LS	\$ 50,000.00	\$ 50,000.00	\$ 83,000.00	\$ 83,000.00	\$ 25,000.00	\$ 25,000.00
4	Construction Staging/Phasing with Temporary Asphalt	1	LS	\$ 100.00	\$ 100.00	\$ 1.00	\$ 1.00	\$ 80,000.00	\$ 80,000.00
5	Sawcut Pavement	1033	LF	\$ 4.00	\$ 4,132.00	\$ 2.00	\$ 2,066.00	\$ 2.00	\$ 2,066.00
6	Silt Fence, Heavy Duty	1,100	LF	\$ 6.00	\$ 6,600.00	\$ 3.97	\$ 4,367.00	\$ 3.00	\$ 3,300.00
7	Inlet Protection	10	EACH	\$ 100.00	\$ 1,000.00	\$ 73.00	\$ 730.00	\$ 205.00	\$ 2,050.00
8	Tree Removal	500	ID	\$ 30.00	\$ 15,000.00	\$ 25.29	\$ 12,645.00	\$ 50.00	\$ 25,000.00
9	Clearing & Grubbing	37	STA	\$ 650.00	\$ 24,050.00	\$ 629.79	\$ 23,302.23	\$ 1,000.00	\$ 37,000.00
10	Remove and Replace Mailbox	15	EACH	\$ 100.00	\$ 1,500.00	\$ 93.00	\$ 1,395.00	\$ 500.00	\$ 7,500.00
11	Temporary Mailbox	15	EACH	\$ 70.00	\$ 1,050.00	\$ 63.00	\$ 945.00	\$ 100.00	\$ 1,500.00
12	Pavement Removal	22,000	SY	\$ 14.70	\$ 323,400.00	\$ 7.57	\$ 166,540.00	\$ 3.00	\$ 66,000.00
13	Remove Curb & Gutter	973	LF	\$ 11.00	\$ 10,703.00	\$ 10.00	\$ 9,730.00	\$ 10.00	\$ 9,730.00
14	Common Excavation (estimated 29,700 CY)	1	LS	\$ 552,420.00	\$ 552,420.00	\$ 1,380,000.00	\$ 1,380,000.00	\$ 250,000.00	\$ 250,000.00
15	Excavation Below Subgrade	17,000	CY	\$ 19.00	\$ 323,000.00	\$ 17.50	\$ 297,500.00	\$ 20.00	\$ 340,000.00
16	Dense Graded Base, 3-Inch EBS Backfill	34,000	TON	\$ 18.00	\$ 612,000.00	\$ 24.05	\$ 817,700.00	\$ 21.00	\$ 714,000.00
17	Geotextile, Type SAS	38,000	SY	\$ 3.00	\$ 114,000.00	\$ 3.00	\$ 114,000.00	\$ 2.00	\$ 76,000.00
18	Geogrid, Tensar, Triax	10,000	SY	\$ 6.00	\$ 60,000.00	\$ 5.50	\$ 55,000.00	\$ 5.00	\$ 50,000.00
19	Geogrid, Tensar, BX1200	18,000	SY	\$ 3.00	\$ 54,000.00	\$ 3.00	\$ 54,000.00	\$ 5.00	\$ 90,000.00
20	Remove/Replace Hydrant	3	EACH	\$ 10,400.00	\$ 31,200.00	\$ 7,311.00	\$ 21,933.00	\$ 1,000.00	\$ 3,000.00
21	Bioswale	1075	LF	\$ 100.00	\$ 107,500.00	\$ 87.65	\$ 94,223.75	\$ 80.00	\$ 86,000.00
22	Bioswale Outfall Structure With Endwall	1	EACH	\$ 700.00	\$ 700.00	\$ 700.00	\$ 700.00	\$ 2,500.00	\$ 2,500.00
23	Bioswale Outfall With Riprap	3	EACH	\$ 900.00	\$ 2,700.00	\$ 900.00	\$ 2,700.00	\$ 2,000.00	\$ 6,000.00
24	Erosion Control for Box Culvert	1	LS	\$ 20,000.00	\$ 20,000.00	\$ 30,000.00	\$ 30,000.00	\$ 25,000.00	\$ 25,000.00
25	Remove Existing Box Culvert	1	LS	\$ 12,800.00	\$ 12,800.00	\$ 11,664.00	\$ 11,664.00	\$ 25,000.00	\$ 25,000.00
26	Concrete Box Culvert, Precast, 12'x6'	48	LF	\$ 3,445.00	\$ 165,360.00	\$ 2,657.00	\$ 127,536.00	\$ 2,500.00	\$ 120,000.00
27	Concrete Box Culvert, Precast, 10'x5'	48	LF	\$ 2,835.00	\$ 136,080.00	\$ 2,086.00	\$ 100,128.00	\$ 2,200.00	\$ 105,600.00
28	Concrete Box Culvert, End Section, 12'x6'	2	EACH	\$ 12,000.00	\$ 24,000.00	\$ 23,516.00	\$ 47,032.00	\$ 20,000.00	\$ 40,000.00
29	Concrete Box Culvert, End Section, 10'x5'	2	EACH	\$ 9,000.00	\$ 18,000.00	\$ 19,736.00	\$ 39,472.00	\$ 15,000.00	\$ 30,000.00
30	Storm Sewer, Catch Basin, 20"x30" (R-3228-BD grate)	7	EACH	\$ 4,500.00	\$ 31,500.00	\$ 3,883.00	\$ 27,181.00	\$ 2,000.00	\$ 14,000.00
31	Storm Sewer, Manhole 48-Inch	5	EACH	\$ 4,300.00	\$ 21,500.00	\$ 4,417.00	\$ 22,085.00	\$ 2,500.00	\$ 12,500.00
32	Storm Sewer, Manhole 10-Inch Nyloplast	4	EACH	\$ 1,800.00	\$ 7,200.00	\$ 4,620.00	\$ 18,480.00	\$ 1,500.00	\$ 6,000.00
33	Storm Sewer, RCP, Class IV, 12-Inch	301	LF	\$ 107.00	\$ 32,207.00	\$ 110.00	\$ 33,110.00	\$ 78.00	\$ 23,478.00
34	Storm Sewer, RCP, Class IV, 18-Inch	747	LF	\$ 107.00	\$ 79,929.00	\$ 127.00	\$ 94,869.00	\$ 80.00	\$ 59,760.00
35	Storm Sewer, RCP, Class IV, 12-Inch, Driveway/Cross Culvert	423	LF	\$ 107.00	\$ 45,261.00	\$ 92.00	\$ 38,916.00	\$ 70.00	\$ 29,610.00
36	Storm Sewer, RCP, Class IV, 15-Inch, Driveway/Cross Culvert	111	LF	\$ 113.00	\$ 12,543.00	\$ 100.00	\$ 11,100.00	\$ 75.00	\$ 8,325.00
37	Storm Sewer, RCP, Class IV, 18-Inch, Driveway/Cross Culvert	150	LF	\$ 118.00	\$ 17,700.00	\$ 110.00	\$ 16,500.00	\$ 80.00	\$ 12,000.00
38	Storm Sewer, RCP, Class IV, 23x14-Inch, Driveway/Cross Culvert	288	LF	\$ 160.00	\$ 46,080.00	\$ 130.00	\$ 37,440.00	\$ 85.00	\$ 24,480.00
39	Storm Sewer, RCP, Class IV, 38x24-Inch, Driveway/Cross Culvert	60	LF	\$ 218.00	\$ 13,080.00	\$ 198.00	\$ 11,880.00	\$ 90.00	\$ 5,400.00
40	Storm Sewer, CMP, 12-Inch, Driveway/Cross Culvert	30	LF	\$ 80.00	\$ 2,400.00	\$ 88.00	\$ 2,640.00	\$ 55.00	\$ 1,650.00
41	Storm Sewer, CMP, 15-Inch, Driveway/Cross Culvert	134	LF	\$ 92.00	\$ 12,328.00	\$ 90.00	\$ 12,060.00	\$ 60.00	\$ 8,040.00
42	Storm Sewer, CMP, 18-Inch, Driveway/Cross Culvert	40	LF	\$ 97.00	\$ 3,880.00	\$ 103.00	\$ 4,120.00	\$ 65.00	\$ 2,600.00
43	Storm Sewer, Apron Endwalls, RCP, Class IV, 12-Inch	14	EACH	\$ 1,015.00	\$ 14,210.00	\$ 2,104.00	\$ 29,456.00	\$ 900.00	\$ 12,600.00
44	Storm Sewer, Apron Endwalls, RCP, Class IV, 15-Inch	4	EACH	\$ 1,060.00	\$ 4,240.00	\$ 2,257.00	\$ 9,028.00	\$ 940.00	\$ 3,760.00
45	Storm Sewer, Apron Endwalls, RCP, Class IV, 18-Inch	6	EACH	\$ 1,130.00	\$ 6,780.00	\$ 2,954.00	\$ 17,724.00	\$ 950.00	\$ 5,700.00
46	Storm Sewer, Apron Endwalls, RCP, Class IV, 23x14-Inch	4	EACH	\$ 1,070.00	\$ 4,280.00	\$ 2,938.00	\$ 11,752.00	\$ 965.00	\$ 3,860.00
47	Storm Sewer, Apron Endwalls, RCP, Class IV, 38x24-Inch	2	EACH	\$ 1,750.00	\$ 3,500.00	\$ 3,939.00	\$ 7,878.00	\$ 1,000.00	\$ 2,000.00
48	Storm Sewer, Apron Endwall, CMP, 12-Inch	2	EACH	\$ 280.00	\$ 560.00	\$ 530.00	\$ 1,060.00	\$ 165.00	\$ 330.00
49	Storm Sewer, Apron Endwall, CMP, 15-Inch	8	EACH	\$ 315.00	\$ 2,520.00	\$ 563.00	\$ 4,504.00	\$ 175.00	\$ 1,400.00
50	Storm Sewer, Apron Endwall, CMP, 18-Inch	2	EACH	\$ 365.00	\$ 730.00	\$ 612.00	\$ 1,224.00	\$ 190.00	\$ 380.00

BID TAB

51	Storm Sewer, HDPE, 4-Inch, Underdrain	329	LF	\$ 33.00	\$ 10,857.00	\$ 56.00	\$ 18,424.00	\$ 8.00	\$ 2,632.00
52	Storm Sewer, HDPE, 6-Inch, Underdrain, Non-Perforated	211	LF	\$ 42.00	\$ 8,862.00	\$ 62.00	\$ 13,082.00	\$ 10.00	\$ 2,110.00
53	Storm Sewer, HDPE, 6-Inch, Underdrain, Perforated	840	LF	\$ 7.00	\$ 5,880.00	\$ 62.00	\$ 52,080.00	\$ 10.00	\$ 8,400.00
54	Dense Graded Base, Shouldering 3/4-Inch	1,800	TON	\$ 33.00	\$ 59,400.00	\$ 50.00	\$ 90,000.00	\$ 32.00	\$ 57,600.00
55	Dense Graded Base, 1 1/4-Inch	34,000	TON	\$ 20.00	\$ 680,000.00	\$ 20.08	\$ 682,720.00	\$ 21.00	\$ 714,000.00
56	Concrete Curb & Gutter, 30-Inch	4,050	LF	\$ 21.50	\$ 87,075.00	\$ 25.00	\$ 101,250.00	\$ 22.50	\$ 91,125.00
57	Concrete Flume	6	EACH	\$ 825.00	\$ 4,950.00	\$ 1,200.00	\$ 7,200.00	\$ 500.00	\$ 3,000.00
58	Concrete Driveway, 7-Inch	120	SY	\$ 65.00	\$ 7,800.00	\$ 60.00	\$ 7,200.00	\$ 60.00	\$ 7,200.00
59	HMA Pavement, 3 MT 58-28 H, (Binder)	11,600	TON	\$ 67.00	\$ 777,200.00	\$ 66.70	\$ 773,720.00	\$ 90.00	\$ 1,044,000.00
60	HMA Pavement, 4 MT 58-28 H, (Surface)	4,620	TON	\$ 80.00	\$ 369,600.00	\$ 79.50	\$ 367,290.00	\$ 95.00	\$ 438,900.00
61	HMA Pavement 4 MT 58-28 S, (Driveways)	500	TON	\$ 170.00	\$ 85,000.00	\$ 135.00	\$ 67,500.00	\$ 140.00	\$ 70,000.00
62	Adjust Sanitary Manhole	8	EACH	\$ 1,500.00	\$ 12,000.00	\$ 1,169.00	\$ 9,352.00	\$ 600.00	\$ 4,800.00
63	Adjust Water Valve Box	13	EACH	\$ 410.00	\$ 5,330.00	\$ 381.00	\$ 4,953.00	\$ 200.00	\$ 2,600.00
64	Temporary Ditch Check	100	EACH	\$ 15.00	\$ 1,500.00	\$ 15.00	\$ 1,500.00	\$ 100.00	\$ 10,000.00
65	Riprap, Medium	20	CY	\$ 190.00	\$ 3,800.00	\$ 200.00	\$ 4,000.00	\$ 135.00	\$ 2,700.00
66	Concrete Ditch Invert	110	LF	\$ 50.00	\$ 5,500.00	\$ 100.00	\$ 11,000.00	\$ 100.00	\$ 11,000.00
67	Pavement Marking, Epoxy, White, 4-Inch	17,023	LF	\$ 1.00	\$ 17,023.00	\$ 0.80	\$ 13,618.40	\$ 3.00	\$ 51,069.00
68	Pavement Marking, Epoxy, Yellow, 4-Inch	11,122	LF	\$ 1.00	\$ 11,122.00	\$ 0.80	\$ 8,897.60	\$ 3.00	\$ 33,366.00
69	Pavement Marking, Epoxy, White, 8-Inch	700	LF	\$ 1.30	\$ 910.00	\$ 1.25	\$ 875.00	\$ 5.00	\$ 3,500.00
70	Pavement Marking, Epoxy, White, 12-Inch	169	LF	\$ 11.00	\$ 1,859.00	\$ 12.25	\$ 2,070.25	\$ 15.00	\$ 2,535.00
71	Pavement Marking, Epoxy, Stop Bar, White, 18-Inch	72	LF	\$ 20.00	\$ 1,440.00	\$ 15.75	\$ 1,134.00	\$ 20.00	\$ 1,440.00
72	Pavement Marking, Epoxy, Arrow	8	EACH	\$ 250.00	\$ 2,000.00	\$ 275.00	\$ 2,200.00	\$ 300.00	\$ 2,400.00
73	Remove & Replace Sign, Reflective	10	EACH	\$ 300.00	\$ 3,000.00	\$ 272.00	\$ 2,720.00	\$ 600.00	\$ 6,000.00
74	Snow Pole	10	EACH	\$ 70.00	\$ 700.00	\$ 70.00	\$ 700.00	\$ 50.00	\$ 500.00
75	4" Topsoil, Seed, Fertilizer & Erosion Mat	25,000	SY	\$ 8.00	\$ 200,000.00	\$ 7.65	\$ 191,250.00	\$ 10.00	\$ 250,000.00
76	Removing Concrete Bases	3	EACH	\$ 350.00	\$ 1,050.00	\$ 350.00	\$ 1,050.00	\$ 500.00	\$ 1,500.00
77	Removing Traffic Signals	1	EACH	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,500.00	\$ 2,500.00
78	Conduit Rigid Non-Metallic Schedule 40 2-Inch	54	LF	\$ 10.00	\$ 540.00	\$ 10.00	\$ 540.00	\$ 8.00	\$ 432.00
79	Conduit Rigid Non-Metallic Schedule 40 3-Inch	80	LF	\$ 15.00	\$ 1,200.00	\$ 15.00	\$ 1,200.00	\$ 14.00	\$ 1,120.00
80	Conduit Special 3-Inch	316	LF	\$ 45.00	\$ 14,220.00	\$ 45.00	\$ 14,220.00	\$ 15.00	\$ 4,740.00
81	Install Conduit into Existing Item	4	EACH	\$ 250.00	\$ 1,000.00	\$ 250.00	\$ 1,000.00	\$ 1,000.00	\$ 4,000.00
82	Pull Boxes Steel 24 x 42-Inch	2	EACH	\$ 1,600.00	\$ 3,200.00	\$ 1,600.00	\$ 3,200.00	\$ 1,500.00	\$ 3,000.00
83	Removing Pull Boxes	2	EACH	\$ 200.00	\$ 400.00	\$ 200.00	\$ 400.00	\$ 500.00	\$ 1,000.00
84	Concrete Bases Type 1	1	EACH	\$ 750.00	\$ 750.00	\$ 750.00	\$ 750.00	\$ 1,000.00	\$ 1,000.00
85	Concrete Bases Type 2	2	EACH	\$ 1,000.00	\$ 2,000.00	\$ 1,000.00	\$ 2,000.00	\$ 1,500.00	\$ 3,000.00
86	Cable Traffic Signal 12-14 AWG	653	LF	\$ 2.25	\$ 1,469.25	\$ 2.00	\$ 1,306.00	\$ 4.00	\$ 2,612.00
87	Cable Type UF 2-10 AWG Grounded	350	LF	\$ 1.45	\$ 507.50	\$ 1.45	\$ 507.50	\$ 2.00	\$ 700.00
88	Electrical Wire Traffic Signals 10 AWG	582	LF	\$ 1.50	\$ 873.00	\$ 0.90	\$ 523.80	\$ 1.00	\$ 582.00
89	Traffic Signal EVP Detector Cable	515	LF	\$ 3.00	\$ 1,545.00	\$ 2.00	\$ 1,030.00	\$ 5.00	\$ 2,575.00
90	Video Detection Cable	540	LF	\$ 6.00	\$ 3,240.00	\$ 5.00	\$ 2,700.00	\$ 5.00	\$ 2,700.00
91	Pedestal Bases	1	EACH	\$ 220.00	\$ 220.00	\$ 220.00	\$ 220.00	\$ 250.00	\$ 250.00
92	Transformer Bases Breakaway 11 ½ Inch Bolt Circle	2	EACH	\$ 505.00	\$ 1,010.00	\$ 505.00	\$ 1,010.00	\$ 500.00	\$ 1,000.00
93	Poles Type 3	2	EACH	\$ 4,000.00	\$ 8,000.00	\$ 4,000.00	\$ 8,000.00	\$ 10,000.00	\$ 20,000.00
94	Traffic Signal Standards Aluminum 13-FT	1	EACH	\$ 705.00	\$ 705.00	\$ 705.00	\$ 705.00	\$ 700.00	\$ 700.00
95	Luminaire Arms Single Member 4-Inch Clamp 6-FT	1	EACH	\$ 255.00	\$ 255.00	\$ 255.00	\$ 255.00	\$ 1,300.00	\$ 1,300.00
96	Traffic Signal Face 3S 12-Inch	4	EACH	\$ 660.00	\$ 2,640.00	\$ 660.00	\$ 2,640.00	\$ 600.00	\$ 2,400.00
97	Signal Mounting Hardware	1	EACH	\$ 650.00	\$ 650.00	\$ 650.00	\$ 650.00	\$ 5,000.00	\$ 5,000.00
98	Luminaires Utility LED C	1	EACH	\$ 255.00	\$ 255.00	\$ 255.00	\$ 255.00	\$ 1,700.00	\$ 1,700.00
99	Remove & Reinstall Video Detection	1	EACH	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 20,000.00	\$ 20,000.00
100	Remove & Reinstall EVP Equipment	1	EACH	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 20,000.00	\$ 20,000.00
				Total	\$ 5,772,760.75	Total	\$ 6,418,588.53	Total	\$ 5,436,307.00

Alternate Bid - The Alernate bid will replace Base Bid Items 14, 55, 59 & 60				A.W. Oakes & Son, Inc.		Zignego Company, Inc.		Engineer's Estimate	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
				PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
14A	Common Excavation (estimated 21,700CY)	1	LS	\$ 340,000.00	\$ 340,000.00	\$ 365,000.00	\$ 365,000.00	\$ 220,000.00	\$ 220,000.00
55A	Dense Graded Base, 1 1/4-Inch	14,000	TON	\$ 0.01	\$ 140.00	\$ 20.08	\$ 281,120.00	\$ 21.00	\$ 294,000.00
59A	Concrete Pavement, 9-Inch	36,500	SY	\$ 58.00	\$ 2,117,000.00	\$ 60.00	\$ 2,190,000.00	\$ 60.00	\$ 2,190,000.00
				Total Alt Bid	\$ 2,457,140.00	Total Alt Bid	\$ 2,836,120.00	Total Alt Bid	\$ 2,704,000.00
				Alt & Base	\$ 5,850,680.75	Alt & Base	\$ 6,050,978.53	Alt & Base	\$ 5,693,407.00

CITY OF NEW BERLIN



Quote for Construction Oversight Services Associated with the Lincoln Avenue Reconstruction Project

February 10, 2023

February 10, 2023

Ms. Tamara Simonson, P.E.
City Engineer
City of New Berlin
3805 South Casper Drive
New Berlin, WI 53151

Re: Price Quote for Construction Oversight Services Associated with the Lincoln Avenue Reconstruction Project

Dear Ms. Simonson:

Thank you for allowing Ruekert & Mielke, Inc. (R/M) the opportunity to submit a proposal for the City of New Berlin's construction oversight services associated with the Lincoln Avenue Reconstruction Project.

R/M has extensive experience with road reconstruction projects and our experienced project team understands the many challenges that these projects bring to the City. Our team is familiar with the standard specifications of the City of New Berlin and will be your eyes and ears in the field to meet every need the City has. Our goal is for an efficient and successful project completion with minimal impact to the City of New Berlin residents.

R/M is committed to the best interests of the City of New Berlin and will provide the services necessary to align with those interests. We look forward to working with you and your staff on this project and would be pleased to discuss our proposal with you further.

Sincerely,

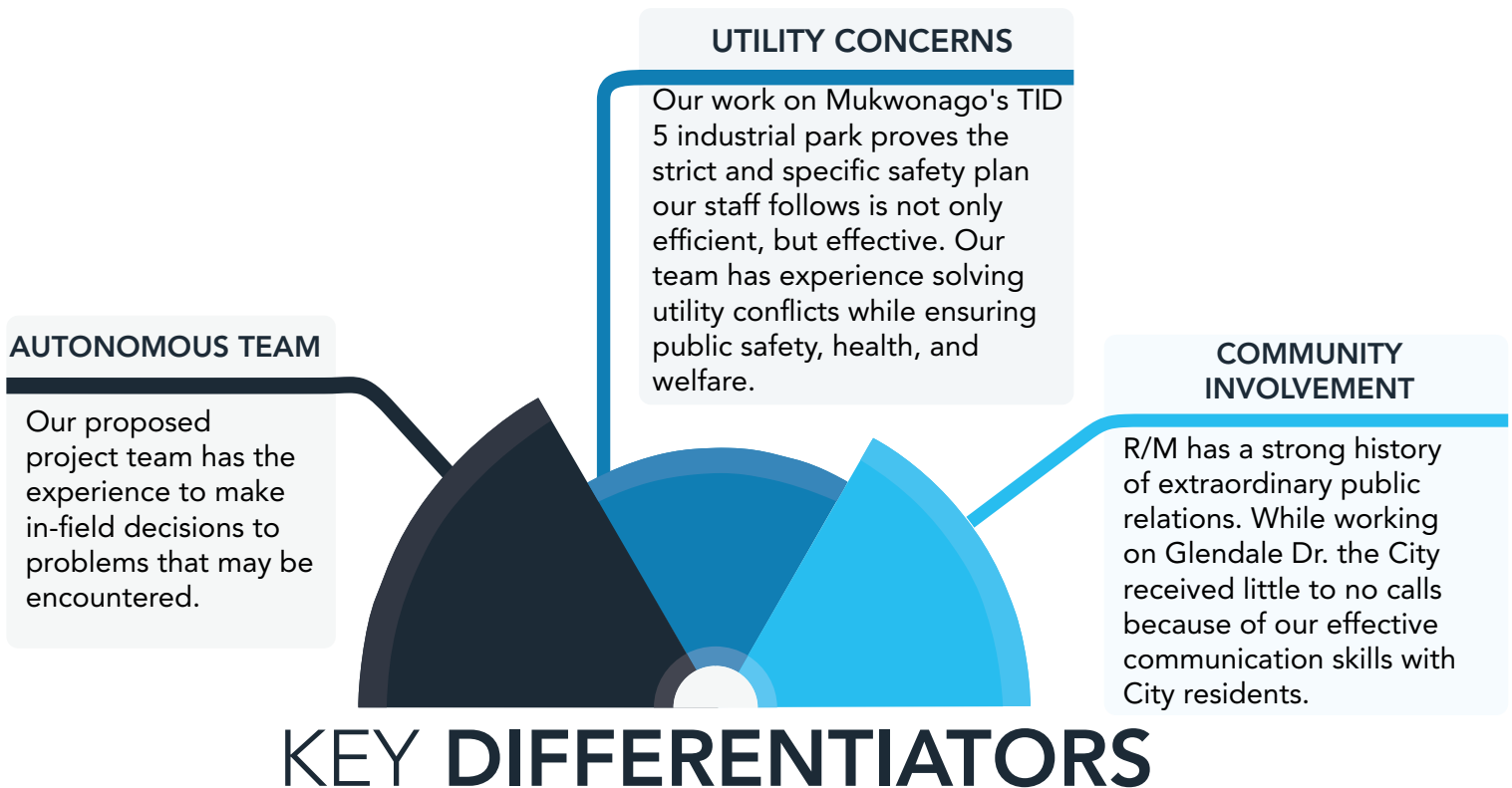
RUEKERT & MIELKE, INC.



Kenneth R. Ward, P.E.
Vice President / Office Manager
kward@ruekert-mielke.com

TABLE OF CONTENTS:

4	FIRM INFORMATION	19	PROJECT EXPERIENCE
5	PROJECT APPROACH	24	EXAMPLE CONSTRUCTION REVIEW REPORT
8	PROJECT MAP	28	FEE
11	PROJECT TEAM		





Ruekert • Mielke

YOUR INFRASTRUCTURE ALLY

Ruekert & Mielke, Inc. (R/M) is a 100% employee-owned civil engineering firm with more than 75 years of service to local communities and organizations. Our engineers, environmental scientists, agricultural experts, and technology consultants empower our clients to thrive by solving infrastructure challenges.

OUR LOCATIONS



WAUKESHA, WI KENOSHA, WI
MADISON, WI MILWAUKEE, WI
GREEN BAY, WI

100+

EMPLOYEE OWNERS

DEDICATION TO INNOVATION



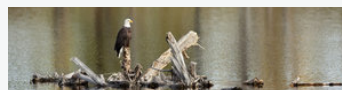
OUR SERVICES



AGRICULTURE



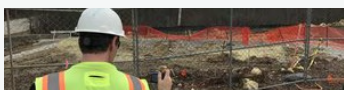
DRONE



ENVIRONMENTAL



FINANCIAL



FIELD



GIS



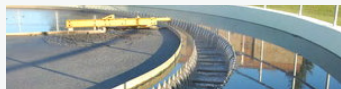
MUNICIPAL & ROADS



PAVEMENT MANAGEMENT



SITE DEVELOPMENT



WASTEWATER



WATER & SCADA



WATER RESOURCES



PROJECT APPROACH

PROJECT UNDERSTANDING

The City of New Berlin is reconstructing approximately 8,500 lineal feet of Lincoln Avenue, West of Calhoun Road. This reconstruction will assist in alleviating safety issues on an existing roadway with almost no shoulders. The subsoils in the area, along with a high groundwater table, have taken the roadway to the end of its useful service life. The existing roadway services residential areas, several heavy industries including the new ABB manufacturing and warehouse center.

The proposed road reconstruction will widen the existing roadway with a combination of rural and urban cross-sections. The type of cross-section is dictated by the surrounding land uses and adjacent grades or natural features, such as wetlands. The proposed widening will allow for safer traffic movement throughout the area, including upgrades to the signalization and turn lanes at the intersection of Lincoln Avenue and Calhoun Road. The project also removes the existing culverts which are at the end of their service life and replaces them with new concrete box culverts. Lastly, the project includes bioswale areas to assist in the treatment of runoff from the roadways prior to entering other areas of the adjacent watershed.

The completed project will enhance the overall safety of the area for the traveling public, regardless of the land use.

PROJECT APPROACH

The City of New Berlin needs a construction oversight team with the experience to complete this complex project on time and within budget. The project team needs to have experience in roadway construction in dealing with high-traffic areas, providing continuous access to all parcels during construction, and working with difficult soil conditions. The lead Construction Review Technician (CRT) needs to have worked on similar projects and be able to make on-site decisions that are in the best interests of the City, are in accordance with the contract documents, and keep the project on time and on schedule. This on-site CRT also needs a strong support team of other inspectors and a highly-accessible project manager that can assist in assessing on-site issues, but more importantly, have the foresight to anticipate any problems.

There are multiple items within this project that the lead CRT must be aware of. These include, but are not limited to:

- Traffic control and access to businesses
- Strong communication skills for interaction with the public and City staff
- Project phasing
- Erosion Control installation and inspections
- Working adjacent to three high-pressure gas mains
- Recognizing soil conditions and the proper type/depth of EBS, and the proper type of geogrid or geotextile installation
- Proper measurement of all quantities, including keeping a daily active spreadsheet of quantities
- Installation of cross culverts, in particular the box culvert and the impact on traffic
- Ongoing temporary restoration
- Both asphalt and concrete pavement installation techniques

The City of New Berlin is undertaking multiple large projects this year. All its engineering resources are going to be stretched thin. The City needs a partner for this project that they can rely on to handle every situation as it arises. Selection of the project team is critical.

We are proposing a project team that has the combined experience and communication skills that give the City the confidence that the project will run smoothly.

PROJECT TEAM

The proposed lead CRT for this project is Matt Klein. **Matt has more than 15 years of experience in roadway and utility construction.** Over the last several years, Matt has been involved in numerous high-profile projects for both the City of Franklin and the City of Oconomowoc. In particular, the City of Franklin project had extensive soil issues that had to be overcome. The project also was adjacent to a highly trafficked area, including a signalized intersection that required close coordination with traffic control and access to adjacent sites. Matt also has a communication style that can clearly explain project processes and put property owners at ease when complaints arise.

Matt will be assisted as needed by Luke Schneider. Luke has a Civil Engineering degree and his primary experience has been in roadway and utility inspection since joining R/M. **As conditions warrant, additional inspection personnel will be added to the project, dependent on the project phase and timing.**

All erosion control inspections will be handled by Mark Bruns. **Mark is considered by the WDNR an expert in erosion control inspections.** His on-site decisions and reports are rarely questioned, and he has served as an instructor in proper erosion control techniques. With the adjacent wetlands, this is of prime importance.



Assisting all the above staff as a project manager will be Ken Ward, P.E. **Ken has 45 years of experience in roadway and utility construction.** Prior projects that Ken has worked on included the first use of geogrids in Wisconsin. Ken also has been innovative in communications on difficult projects such as these to keep property owners informed of project progress.

COMMUNICATION WITH RESIDENTS

One key element of this project is access to all properties regardless of the project phase. R/M assisted the City of New Berlin in the Glendale Drive project. In that project, **R/M used a communication chain that kept the public informed while virtually eliminating calls from property owners to City staff.** This process includes two key components, early notifications via regular mail and a project email specific to the project. The project email is generated daily to all project stakeholders. This includes City staff, alderpersons as needed, EMS, and affected property owners. The property owners can also subscribe to the email service.

The daily notifications will allow people to know the contractor's operations for the current or following day. The email will highlight the best routes for access depending on the contractor's operations. **Keeping the public informed greatly reduces project complaints.**

Additionally, due to the limited number of adjoining streets, daily communication with EMS is critical should those services be needed for adjacent properties. This communication approach can be expanded to website pages or social media posts if requested by the City. There shouldn't be any concerns about gaps in distributing project information because the members of the proposed project team have previously used this communication approach.

Our project approach also includes a thorough review of the project plans and specifications prior to the preconstruction meeting. This review is essential in clearing up any items that may be a gap in the plans, specifications, or requests for information that may come from the contractor. This review also assists in the review of shop drawing submittals prior to construction, so there is no delay in the procurement of materials.

R/M will provide the City with a project team that has the experience to work on the Lincoln Avenue project. This team has the experience to make in-field decisions on construction techniques due to the variable conditions that may be encountered. The team also has the proven experience in communication with affected stakeholders to allow for a smooth project for City staff.

UNSTABLE SOILS

Based on the geotechnical report, unstable soils exist in many areas of the project, mostly west of 179th Street. These soil conditions, which consist of organic soils, will require on-site decisions to be made by the lead inspector, including the proper amount of EBS, the proper amount of geogrid installation, and compaction. Some of these soils may be water bearing which adds complexity to the process. The R/M team for this project, in particular the Lead CRT and the project manager, have extensive experience with these types of decisions. With the large number of other projects in the area, the city may not be able to be on-site when the type of remediation needs to be selected. The personnel we have selected for this project have already worked on similar projects and can make the field decisions when needed. They also know that the City needs to be kept informed of the conditions in the field and the potential costs.

GAS MAINS

In addition to the ability to make field decisions on undercuts, traffic control, and communication, the location and protection of utilities is a prime concern. Although most utilities will have been relocated prior to the start of construction, the extensive undercuts throughout the project mean that the new subgrade may come within feet or inches of existing utilities. Of high concern is the crossing of the three high-pressure gas mains at approximately station 66+50. A review of the plans indicates that grading operations over the gas main will come very close to the mains. R/M will ensure that coordination between the contractor and utility company personnel occurs so that all precautions are taken. R/M has a written safety plan and takes these types of encroachments very seriously, as an accident of any kind could result in injuries or fatalities.



PROTECTING WETLANDS

Another concern in the area are the adjacent wetland areas that occur on-site or border the edge of the right of ways. These areas must be protected, and if mitigation is to be utilized all procedures must be properly followed. The area of the box culvert crossing is of particular concern regarding the protection of upstream and downstream areas. The removal of debris for the creek must be done in a manner that is least disruptive to the surrounding banks and wetland areas. R/M has a dedicated staff of environmental professionals that can make site visits as needed when work is taking place in these areas. Additionally, Craig Webster is the WDNR contact for this project. R/M has an extensive and positive working relationship with Mr. Webster. This relationship will greatly assist us when we are working in environmentally sensitive areas.

QUANTITY TRACKING & REPORTING

An item not to be overlooked is the daily management of the project including proper tracking of quantities. We will be using our FieldAlly® software to provide detailed reports of daily site activities. **These reports include quantity tracking, a pdf markup of the day's work, notable visitors, erosion control status, work start and end times, weather conditions, location and elevation of installed utilities, a sketch of the day's activities, and multiple photographs of site work.** Our staff regularly checks grades on-site and the installation of storm sewers or utility locations is not only checked for grade, but elevations are added to the reports. The reports are then embedded into the project plans. Therefore, at the end of the project the City has a document (working plans) that then allows them to go to a location on the project, click on an icon, and the report for that location opens. This becomes an invaluable tool for the City to determine the location of buried underground items or utility conflicts long after the project is completed. **As required, these reports will be forwarded to the City by 8 am the following day of the prior day's work.**

With the FieldAlly® software we will also create a master spreadsheet of project quantities. These quantities will be entered daily. Our staff will make sure that there is concurrence with the contractor's on-site staff regarding quantities to avoid disagreements at a later date. This updated spreadsheet will be forwarded to the City and the contractor on a weekly basis.

R/M will be at all project meetings including the preconstruction conference. We will assist in the preparation of project payments, work change directives, request for information, change orders, and project closeout.

The team we have assembled will seamlessly provide all of the above items for a successful project for the City. We understand that complicated and highly visible projects such as these are challenging to manage. R/M has successfully managed large, fast-track construction projects such as this one before and will provide the City of New Berlin with the level of expertise that is required.

Sample Construction Report

Ruekert • Mielke		CONSTRUCTION REPORT		Franklin, City of																									
Road & Site Grading		Road & Site Grading																											
Waukesha Office W233 N2080 Ridgeway Pkwy Suite 300 Waukesha, WI 53188-0020 (262) 542-8733	Kenosha Office 6905 Green Bay Road Suite 204 Kenosha, WI 53142 (262) 953-2650	Madison Office 4630 S. Billmore Lane Madison, WI 53714 (608) 833-0600	Fox Valley 3400 Lombard Ave. Suite 101B Green Bay, WI 54304 (920) 876-6382	NAME 20221025 MSK																									
				PROJECT # 58-10013.310																									
				CONTRACTOR Buteyn Peterson																									
				DATE 10/25/2022																									
PROJECT NAME South Hickory Street Pavement Improv.				AM Cloudy																									
IN Hickory St SW-05				Temp 0																									
From: Oakwood Rd				PM Cloudy																									
To: Oakwood Rd				Temp 71																									
<table border="1"> <tr> <td>Crew</td> <td colspan="5">Foreman: Dave Funk / Andy Frank, Crew: Operator - 6 Laborer - 5 Top Man - 1 Pipe Layer - 1</td> </tr> <tr> <td>Equipment</td> <td colspan="5">Excavator - Komatsu - 1 Dozer - Komatsu - 2 Skid Steer - CAT - 1 Sheeps Foot - CAT - 1 Hoe Pack - Komatsu - 1 Smooth Drum Roller - CAT - 1 Dump Truck - 3</td> </tr> <tr> <td>Ground Conditions</td> <td colspan="5"></td> </tr> <tr> <td>Bedding Cover</td> <td colspan="5">Clear Stone</td> </tr> </table>						Crew	Foreman: Dave Funk / Andy Frank, Crew: Operator - 6 Laborer - 5 Top Man - 1 Pipe Layer - 1					Equipment	Excavator - Komatsu - 1 Dozer - Komatsu - 2 Skid Steer - CAT - 1 Sheeps Foot - CAT - 1 Hoe Pack - Komatsu - 1 Smooth Drum Roller - CAT - 1 Dump Truck - 3					Ground Conditions						Bedding Cover	Clear Stone				
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CRT Signature																													
Matthew Klein																													

SCOPE OF SERVICES

In addition to what was listed throughout the project approach we will do the following:

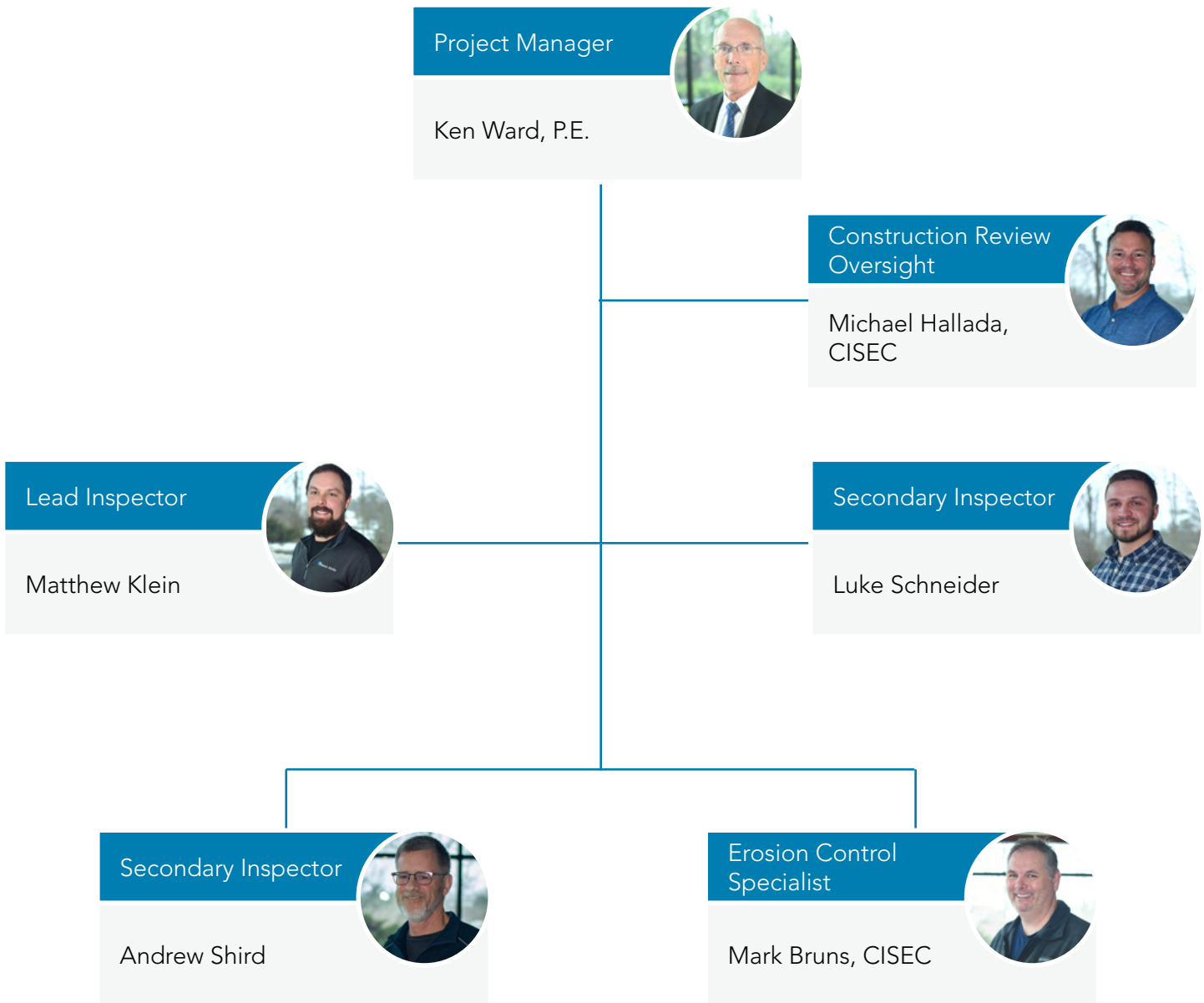
- Conduct a preconstruction meeting including invitations, agenda, and minutes
- Conduct bi-weekly progress meetings complete with agenda and meeting minutes
- Accommodating one or more inspectors being on-site
- The lead inspector proposed has minimum 10 years of project related inspection experience
- Complete Daily Event Reports that will be submitted electronically before 8:00AM of the following day
- Pictures of any significant events with a brief description will be sent by email when the events occur
- Project Inspectors will report directly to the City Engineer and Lead Inspector
- Cost and quantity tracking will be available to the City upon request, and updated weekly
- Erosion control inspections and reports after significant rain events
- Provide and maintain contact with affected property owners



PROJECT MAP



ORGANIZATIONAL CHART



RUEKERT & MIELKE, INC.



KEN WARD, P.E.
Project Manager

Ken has extensive experience in difficult road reconstruction projects that include coordination of activities between property access, extensive undercuts, and utility coordination.



ANDREW SHIRD
Secondary Inspector

Andy has over 30 years of road construction and storm water experience throughout Southeastern Wisconsin. His knowledge of construction techniques, excavation, and soils will allow this project to be successfully completed.



MATTHEW KLEIN
Lead Inspector

Matt has road construction experience with both R/M and as a roadway contractor. His experience includes oversight of major construction projects in the City of Oconomowoc and industrial areas in the City of Franklin. He also has experience with a road contractor in the construction of roadways, maintaining traffic control, and outstanding communication skills with property owners.



MICHAEL HALLADA, CISEC
Construction Review Oversight

Mike's past experience includes managing multiple construction projects at one time to ensure adherence to a project's specification and proper communication with multiple stakeholders.



LUKE SCHNEIDER
Secondary Inspector

Luke has been involved on multiple road construction and reconstruction projects including rural to urban conversions. Luke is exceptionally adept at interacting with adjacent property owners so that they have a full understanding of the project impacts.



MARK BRUNS, CISEC
Erosion and Sediment Control Specialist

Mark is considered by the Wisconsin Department of Natural Resources as an expert in erosion control design, inspection, and interpretation. Mark has acted both as an erosion control inspector and teacher of erosion control methodology.



KENNETH R. WARD, P.E.

VICE PRESIDENT/PROJECT MANAGER

Ken has been with Ruekert & Mielke, Inc. (R/M) since 1984. He has worked as a primary client contact, project manager, and project engineer on a variety of municipal infrastructure projects including streets, alleys, sewers, storm water management, bike route trails, and water mains. He has an extensive background in construction inspection, public involvement, and public assessment of municipal improvements.

CONTACT

262.542.5733
kward@ruekert-mielke.com
Waukesha
Kenosha

EDUCATION

- Bachelor of Science,
Civil Engineering
- Marquette University

REGISTRATIONS & AFFILIATIONS

- Professional Engineer- WI
- CSI - Construction Document Technologist
- National Society of Professional Engineers
- Wisconsin Society of Professional Engineers Member
- American Public Works Association
- American Council of Engineering Companies
- Citizen Participatory Certificate
-Institute for Participatory Management and Planning
- Pavement Preservation Group

45+

» years «
experience

EXPERIENCE

City of Pewaukee, WI - Oak Street and Peninsula Dr.

Project included the reconstruction of 3,000 feet of roadway and utilities. There was extensive undercut throughout the entire project which required a staged construction. Traffic control and access to the surrounding properties was extremely important. A daily communication email to property owners, bus companies, and refuse companies on road closures and alternate routes. The project was successfully completed with minimal complaints from the residents and surrounding properties.

City of Pewaukee, WI - Green Road

The 2.3 mile stretch of 22 foot wide rural roadway was converted to a 36 foot wide urban section with bike lanes.

Racine, WI Water Utility

Design and construction oversight of more than 123,000 linear feet of 24-inch to 48-inch water main and related road reconstruction. The project required on going communications with multiple stakeholder groups for access, road closures, and alternate routes.

City of New Berlin, WI - Glendale Drive

3,500 linear feet rural to urban industrial road conversion.

City of St. Francis, WI - S. Ahmedi Avenue

2,000 linear feet of urban road reconstruction including significant undercutting and base replacement.

Town of Norway, WI - Britton Road

1.0 mile rural road reconstruction and intersection realignment.

Town of Randall, WI

Long Term Road Improvement and Maintenance Program.

Kenosha County

CTH KD West End Park Entrance; Petrifying Springs Park.

City of St. Francis, WI

Lake Drive Road Reconstruction and Multi-Use Path.



MATTHEW S. KLEIN

LEAD INSPECTOR

Matt has more than a decade of experience in asphalt paving, milling, pulverizing, and roadway construction/reconstruction. His expertise spans road sub grades and finish grades, asphalt mixes, asphalt paving and grading, paving inspection, GIS final inspection, construction documentation, project preparation, and AutoCAD. Matt has paved asphalt on a number of large state projects as well as paving in nearly every municipality in Southeastern Wisconsin.

CONTACT

262.542.5733
mklein@ruekert-mielke.com
Waukesha

EDUCATION

- Operating Engineers Local 139
Journeyman Program - Fox
Valley Technical Institute -
Coloma, WI

REGISTRATIONS & AFFILIATIONS

- HAZMAT Certified
- Advanced Grade Certification
- Advanced Excavation
Certification
- Competent Person
Certification

15+
» years «
experience

EXPERIENCE

Prairie Creek Subdivision Phase 5

City of Oconomowoc, WI

Inspection of roadway subgrade, finish grade installation and asphalt paving.

Hickory Street Improvements

City of Franklin, WI

Lead inspector of construction for the Franklin Corporate Park water main, sanitary sewer, and sanitary force main. Lead inspection for ½ miles of subgrade, GeoGrid stabilization, and finish grade installation for road and asphalt walking paths. Oversaw water main tie ins, hydrant relocations, storm sewer and storm bioretention cell installation.

Pleasant View Subdivision Phase 1

City of Franklin, WI

Construction of new subdivision. Lead inspection of storm sewer, sanitary sewer, water main, subgrade and finish grade installation, asphalt paving, concrete curb installation, water service laterals, and sanitary sewer laterals.

Spring Street Phase 1

Racine Water and Wastewater Utility

Lead inspection of 36" water main transmission line with concrete curb, reinforced concrete roadway, asphalt pulverization, finish grade installation, and asphalt paving.

Road Rehabilitation Project

City of Greenfield, WI

Lead inspector on storm and sanitary structure rehab, paving, milling, ADA ramp removal, and reconstruction, concrete rubblizing, and GIS final inspection of rehabbed structures.

Road Reconstruction and Drainage Improvements

Village of Fontana-on-Geneva Lake, WI

CRT lead inspection on asphalt pavement application surface drainage issues, and curb and gutter installation.

Hall Road Extension

City of Columbus, WI

Lead inspection of road sub grade and final grade construction, paving, and concrete curb installation.



LUKE B. SCHNEIDER

SECONDARY INSPECTOR

Luke provides construction inspection, field survey, and design assistance as a Project Engineer and Lead Inspector. Luke's overall project understanding from both a design and field perspective allow him to ensure that a client's project is being constructed in compliance with contract-outlined specifications and standards. Additionally, Lukes forthcoming communication and public involvement during construction keeps community members informed while maintaining positive public relations.

CONTACT

262.225.7035
lschneider@ruekert-mielke.com
Waukesha

EDUCATION

- Bachelor of Science, Civil Engineering
- University of Wisconsin Milwaukee

REGISTRATIONS & AFFILIATIONS

- American Society of Civil Engineers
- ASTM International

EXPERIENCE

Olympia Fields Phase 2

City of Oconomowoc, WI

Lead inspector and construction oversight of the City's municipal and DOT staged Olympia Fields Infrastructure project. As Lead Inspector, Luke provided construction oversight/administrative services of completed Contractor work during and post construction. Scope of work included sensitive urban street and STH 67 reconstruction and municipal and STH 67 utility infrastructure improvements.

Construction Management Experience

- Preparing Preliminary Construction Cost Estimate
- Quantity Tracking
- Processing of Contractor Payment
- Development of Construction and Environmental Permits
- Project Manual Development
- Construction/Utility Coordination and Scheduling
- Public Engagement
- Post Construction Punch Listing

Construction Inspection Experience

- Road and Site Grading
- Pavement Base Replacement
- Asphalt/Concrete Pavement
- Concrete Curb and Gutter
- Storm Sewer
- Storm Culvert Flow By-Pass Systems
- Bioretention Facilities
- Erosion Control
- Traffic Signal Modifications
- Traffic Control
- Pavement Markings
- Restorations

Field Survey Experience

GPS/GNSS, Robotic Total Station:

- Roadway Topographic Survey
- Construction Stakeout/As-Built Survey
- Location Survey
- Site Planning Survey



ANDREW J. SHIRD

SECONDARY INSPECTOR

Andy has been employed by Ruekert & Mielke, Inc. since 1992. He has over three decades of experience with construction inspection, including large complex projects, surveying, utility layout staking, road layout staking, and technical drafting.

EXPERIENCE

Construction Review Technology

Andy has utilized Ruekert & Mielke Inc.'s FieldAlly™ construction review software for major construction projects since 2010. Andy is well-versed with utilizing this electronic reporting system to efficiently complete daily reports, add updates to record drawings, accurately document quantities, and communicate with client representatives in a timely manner.

Olympia Fields Phase 1 and 2

City of Oconomowoc, WI

Andy served as the main Senior Construction Review Technician throughout the duration of Phase 1 and the Secondary Inspector during Phase 2 of the project. During this time, Andy was responsible for coordinating multiple crews and inspection and multiple contractors from underground utilities consisting of sanitary sewer, water main, and storm sewer and road construction. Andy's organizational and communication skills were integral to the success of this project.

Construction Review/Administration (Road Projects)

- Village of Oregon: Alpine Meadows Phase 4, Bergamont Development Phase 3, Braun Road
- Village of Dousman: Main Street
- Village of Eagle: Construction Administration for Fox Chase Subdivision
- Village of Fontana-on-Geneva Lake: Arrowhead Drive, 2016 Timber Trail, S. Lakeshore Dr.
- Reconstruction; Lake St. Resurfacing, Shabbona Dr. Reconstruction, Pottawatomie Dr. Reconstruction; 2022 Street Projects
- City of New Berlin: 2016 Martin Road Reconstruction
- City of Oconomowoc: 2017 Downtown Street Reconstruction, 2017& 2018 Streets Projects, Olympia Fields Phase 1 & 2

School District Pavement Management

- Mukwonago Area School District
- Waukesha South School District
- Waterford School District
- New Berlin School District

CONTACT

262.542.5733
ashird@ruekert-mielke.com
Waukesha

EDUCATION

- Continuing Professional Development
-University of Wisconsin
- Trimble Certified in Real-Time Data Collection
- City College
- Chicago

EXPERIENCE

- Bridge Construction
- Sanitary Sewer, Water Main, Storm Sewer Construction
- Road Construction
- Construction Material Quality Control Testing
- As-Built Quantity Review
- Erosion Control Inspections
- PASER Rating for Various Communities
- Daily Reports
- Record Drawings

30+

» years «
experience



MICHAEL T. HALLADA, CISEC

CONSTRUCTION REVIEW MANAGER OVERSIGHT

Mike is a dynamic leader who oversees 26 full and part-time construction inspection and survey staff. In addition to Mike's oversight of field staff, he runs construction kickoff meetings, develops project manuals, creates bid items and quantities, develops storm water management plans, designs road and utility projects, reviews shop drawings, and verifies contractor pay requests. Through education and experience, Mike has developed a style of coordinating and communicating with contractors, municipal officials and residents, to keep them informed, their projects on task, and positioned for success.

CONTACT

262.542.5733
mhallada@ruekert-mielke.com
Waukesha

EDUCATION

- A.S., Civil Engineering
- Milwaukee Area Technical College
- B.S., Business Leadership & Organizational Studies
- University of Wisconsin, Oshkosh

REGISTRATIONS & AFFILIATIONS

- CSI, Certified Stormwater Inspector
- CISEC, Certified Inspector of Sediment and Erosion Control
- CDT, Construction Documents Technologist
- Certificate of Land Surveying
- Milwaukee Area Technical College



» Certified Inspector «
of Sediment and
Erosion Control

EXPERIENCE

PROJECT MANAGEMENT

As the Construction Services Team Leader, Mike is skilled in fielding construction questions and concerns from contractors as well as working directly with the public to understand and remedy their concerns and fears about the construction process.

Additionally, Mike has oversight on multiple projects where he develops agendas and hosts construction kickoff and weekly meetings as required.

CONSTRUCTION INSPECTION

Road Reconstruction (curb & gutter, sidewalk, paving, driveways, traffic control)

- City of Milwaukee
- City of Oak Creek
- City of Oconomowoc
- City of South Milwaukee
- Village of Sussex

Underground Utilities (storm sewer, sanitary sewer, water main, underdrain)

- Village of Mukwonago
- Village of Sussex
- City of Milwaukee
- City of South Milwaukee
- City of Oconomowoc

Water Resources (water quality planning, IDDE inspections)

- City of Watertown
- City of Oconomowoc
- Village of Mukwonago
- Town of Waukesha
- Village of Dousman
- Village of Elm Grove
- Village of Saukville
- Village of Hartland
- City of Kenosha

Erosion Control Inspection

- City of Oak Creek
- City of Oconomowoc
- City of Franklin
- Village of Mukwonago
- City of Pewaukee



MARK A. BRUNS, CISEC

EROSION AND SEDIMENT CONTROL SPECIALIST

Mark has been at Ruekert & Mielke, Inc. since 2002. He has taken on multiple roles at the firm that require him to pay attention to detail. Mark has over 15 years experience as a lead erosion and sediment control inspector. He has been part of three separate DNR Municipal Audits (2015, 2016, & 2021) where he was observed and documented by the DNR on multiple site inspections. Mark attends pre-construction meetings and DNR site meetings, where he interacts, provides recommendations, and helps problem solve with clients, other consultants, engineers, state and local officials, contractors, and developers.

CONTACT

262.542.5733
mbruns@ruekert-mielke.com
Waukesha

REGISTRATIONS & AFFILIATIONS

- Certified Inspector of Sediment and Erosion Control (CISEC)
- WI Sediment and Erosion Control Inspector (WISECI) - University of Wisconsin, Milwaukee
- Soil Erosion Inspector License by WI Department of Safety and Professional Services
- Certified Stormwater Inspector Certification by the National Stormwater Center
- Milwaukee Metropolitan Sewerage District (MMSD) Green Infrastructure Inspector Training
- North American Stormwater and Erosion Control Association (NASECA)

15+
» years «
experience

EXPERIENCE

Fall 2019 WISECI Certification Course - Instructor

Mark served as an Instructor for the Fall 2019 and Spring 2021 Wisconsin Sedimentation & Erosion Control Inspector (WISECI)™ certification course, teaching Construction Site Best Management Practices (BMPs). The course is taught through the University of Wisconsin-Milwaukee, School of Continuing Education, within the Water Technology Certificate Program. The course covered Wisconsin storm water regulations, installation and maintenance of BMPs, and required documentation for compliance.

Lead Erosion and Sediment Control Inspector

- Village of Dousman
- City of Greenfield
- Village of Hartland
- Village of Menomonee Falls
- City of Franklin
- Village of Mukwonago
- School District of New Berlin
- City of Oconomowoc
- City of Pewaukee
- Racine Water Utility

Infiltration Rate Field Study

- Village of Brown Deer
- Village of Dousman
- Village of Hartland
- Town of Norway
- City of Oconomowoc
- Village of Slinger
- City of Watertown

Post Construction Pond and Storm Water Storage Inspection

- City of New Berlin
- Menards - Waukesha Store
- Village of Menomonee Falls
- Village of Mukwonago
- Village of Slinger
- We Energies - West Allis Operations Center, Pewaukee Storage

Illicit Discharge Detection Elimination Inspection

- City of Greenfield
- City of Kenosha
- Village of Slinger
- Milwaukee County
- Village of Saukville
- Village of Brown Deer
- Village of Thiensville
- Village of Elm Grove

PROJECT EXPERIENCE





SERVICES

- Road Reconstruction
- Utility Relays/Upgrades
- Sanitary Sewer & Water Main
- Private Utility Relocation
- Storm Water Management
- Erosion Control
- Public Involvement

PROJECT TEAM

- Ken Ward, P.E.
- DeLeah Willman, E.I.T.
- Matthew Klein

CLIENT CONTACT

Thomas Koepp
Manager
Lake Pewaukee Sanitary
District
414.333.9603
tkoepp@lakepewaukee.org

OAK STREET & PENINSULA ROAD RECONSTRUCTION & WATER MAIN

Adjacent to Pewaukee Lake, the Oak Street and Peninsula Road area had a combination of poor water quality, poor soils, and a long, densely-populated road that needed to be reconstructed. With narrow right-of-ways, this made the installation of utilities and road reconstruction a significant challenge. The soft underlying soils required full-width excavation of the roads and presented a potential restriction on emergency services during construction.

Due to the design of utilities in a limited area, close coordination was needed with the WDNR to gain project approval due to the limited space in the narrow right-of-ways. Maintaining access during construction was essential for residents in the area, along with maintaining EMS services during construction. The City of Pewaukee has partnered with R/M on similar high-profile, difficult projects due to our knowledge of local conditions and our effective communication methods during construction.

R/M provided a design and construction staging plan that allowed access to most properties throughout the project. During these phases, property owners were offered to subscribe to a daily email service that highlighted where the construction crews would be, the best access route, and at what time of day the route would be available. Local school bus companies, refuse companies, and EMS services were also included on the daily email chains. **The end result of this daily email service was minimum complaints from property owners.** The unseen benefit to the property owners was the extensive undercuts of soft soils and a roadway with an anticipated life of 30 years with normal maintenance before any significant repairs will need to be made.



SERVICES

- Storm Water Hydraulic Modeling
- Culvert Assessment and Design
- Construction Review & Administrator
- Erosion Control

PROJECT TEAM

- Peter Gesch, P.E.
- Ken Ward, P.E.
- Luke Schneider
- Michael Hallada, CISEC

PAUL ROAD CULVERT REPLACEMENTS

In conjunction with a water main replacement and relay, the City of Pewaukee needed to replace four large box culverts crossing Paul Road in one of its industrial parks. The City of Pewaukee hired Ruekert & Mielke, Inc. (R/M) to assess the storm water runoff in the area and design new box culverts to be installed at each crossing.

The R/M team performed hydraulic modeling for storm water runoff flows through the box culverts and appropriately sized the culverts to carry existing and potential future flows while maintaining the existing roadway grades and limiting the ditching needed on either end of the box culverts.

The R/M team also performed construction review of the culvert installations and worked cooperatively with the City throughout the duration of the project. Inspection included utility offsets, box culvert installation and cast-in-place concrete end walls, including steel rebar inspection. Close coordination was needed with local businesses in the industrial park to insure access as each individual box culvert was replaced.

CLIENT CONTACTS

Maggie Wagner, P.E.
Director of Public Works/
City Engineer
262.691.6024
wagner@pewaukee.wi.us





SERVICES

- Road Reconstruction
- Utility Relays/Upgrades, Sanitary Sewer and Water Main
- Private Utility Relocation, Electric/ Gas/Fiber Optic
- Storm Water Management
- Public Involvement

PROJECT TEAM

- Ken Ward, P.E.
- Mike Michalski
- Dave Lipski
- Michael Hallada, CISEC

CLIENT CONTACT

Tamara Simonson, P.E.
City Engineer
tsimonson@newberlin.org
262.786.8610

GLENDALE DRIVE RECONSTRUCTION

Glendale Drive in the City of New Berlin was a rural cross section street with insufficient drainage that often flooded in a five to ten year storm. The City had a comprehensive plan to upgrade all of its major roads within the New Berlin Industrial Park to both retain existing and attract new industries and businesses.

The design solution included upgrading the road from a rural to urban section, but also handling a large amount of storm water flow that entered the project site from three distinct points. The City also charged Ruekert & Mielke, Inc. (R/M) to lower the overall cost of the project from it's initial cost of \$4.5 million to less than \$3 million.

PROJECT HIGHLIGHTS

R/M provided a design that allowed the elimination of roadside ditches and converted to an urban section while also maintaining some sediment controls with small swales behind the curbs. With an extensive use of value engineering, R/M worked with the City to eliminate any street flooding in up to a 25-year storm event, while also reducing the construction cost from \$4.5 million to \$2.7 million. R/M also provide both design and construction services.

During construction, R/M utilized an email alert system, sometimes used multiple times a day, to let business owners know of road closure, water shut offs, and contractor operations. The result was a minimum of calls to the Department of Public Works, freeing up staff time for other projects.



SERVICES

- Construction Contract Administration
- Construction Review and Staking
- Erosion Control

PROJECT TEAM

- Terry Tavera, P.E.
- Matthew Klein
- Luke Schneider
- Andrew Shird
- Michael Hallada, CISEC
- Mark Bruns, CISEC

CLIENT CONTACT

Mark Frye
City Administrator
mfrye@oconomowoc-wi.gov
262.569.2183

OLYMPIA FIELDS PUBLIC INFRASTRUCTURE

The City of Oconomowoc is redeveloping the former Olympia Resort site into a 65-acre tax incremental financing district (TID). To support the new multi-family housing units, office buildings, and retail establishments, the City needed to remove and replace the public infrastructure to accommodate the new uses.

The first phase of the project involved approximately 800 L.F. of temporary asphaltic concrete access road and 1,900 L.F. of urban street reconstruction, including clearing and grubbing, removals, grading, aggregate base course, asphaltic concrete pavements, concrete curb and gutter, concrete sidewalk and asphalt multi-use paths, sanitary sewer relay, water main relay, 12-inch to 42-inch storm sewer, bioretention facility, electric infrastructure, pavement markings, traffic control, erosion control and restoration.

To ensure the project was constructed correctly and efficiently, the City partnered with R/M to perform construction administration, staking and construction review services for the public infrastructure on this project. R/M worked through 8 plan set revisions from the design engineer during construction. We also coordinated other on-site work with private utilities for gas, phone and cable to meet tight time frames. Matt Klein is the Lead Construction Review Technician and Luke Schneider is the Secondary Construction Review Technician on the Olympia Fields project

EXAMPLE CONSTRUCTION REVIEW REPORT



Road & Site Grading

Waukesha Office
W233 N2080 Ridgeview Pkwy
Suite 300
Waukesha, WI 53188-1020
(262) 542-5733

Kenosha Office
6905 Green Bay Road
Suite 204
Kenosha, WI 53142
(262) 953-2650

Madison Office
4630 S. Biltmore Lane
Madison, WI 53174
(608) 819-2600

Fox Valley
1400 Lombardi Ave.
Suite 1018
Green Bay, WI 54304
(920) 876-6382

NAME	20221025 MSK
PROJECT #	58-10013.310
CONTRACTOR	Buteyn Peterson
DATE	10/25/2022

PROJECT NAME South Hickory Street Pavement Improv.

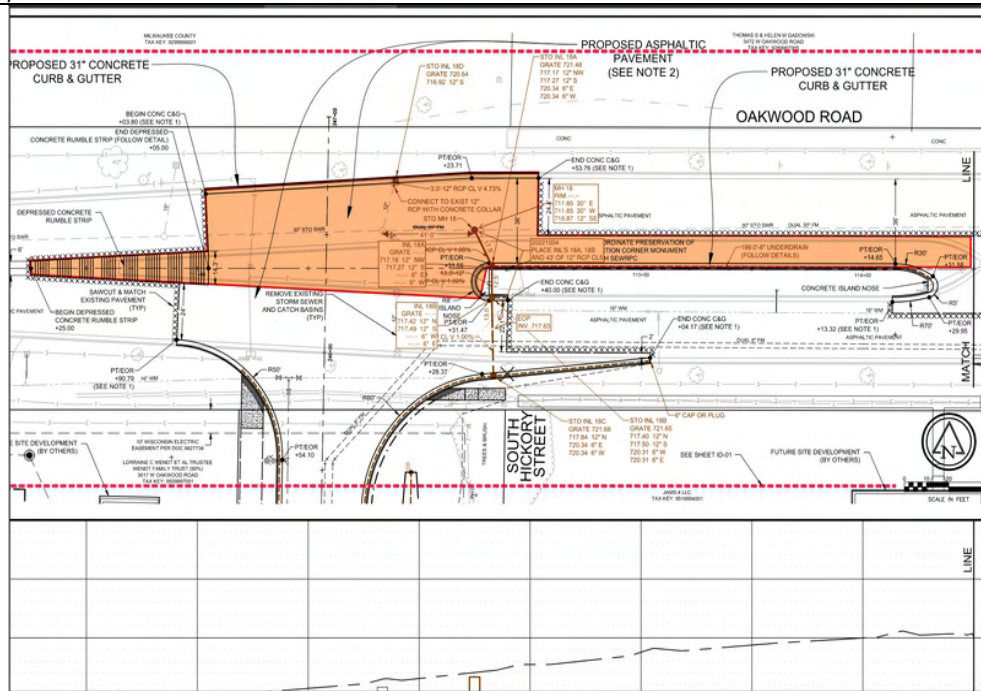
IN Hickory St SW-05

From: Oakwood Rd

To: Oakwood Rd

AM	Cloudy
Temp	0
PM	Cloudy
Temp	71

Snapshot (Not to Scale)



Crew	Foreman: Dave Funk / Andy Frank, Crew: Operator - 6 Laborer - 5 Top Man - 1 Pipe Layer - 1
Equipment	Excavator - Komatsu - 1 Dozer - Komatsu - 2 Skid Steer - CAT - 1 Sheeps Foot - CAT - 1 Hoe Pack - Komatsu - 1 Smooth Drum Roller - CAT - 1 Dump Truck - - 3
Ground Conditions	
Bedding Cover	Clear Stone

Working Time				
Worker	From	To	Hours	Notes
Contractor	6:30	2:00	7.5	Buteyn Peterson
CRT	6:30	2:00	7.5	CRT On-site

CRT Signature

Matthew Klein

NAME: 20221025 MSK PROJECT # 58-10013.310 DATE: 10/25/2022 CONTRACTOR: Buteyn Peterson

Bid Items

Item #	Description	Unit	Qty	Notes / Attributes
60	Geogrid Stabilization on Hickory Street	S.Y.	608	Oakwood Rd Median at Hickory St

Summary, Comments & Visitors

Timeline

- 06:30 - CRT arrives on-site to discuss water main leak at H-4 and grading operations on Oakwood Rd and Hickory St
- 07:00 - Contractor will build pressure in water main from V-107 to V-105 and check for leaks with a listening device on the 6" hydrant lead at H-4
- 07:30 - CRT performs proof roll of the subgrade in the Oakwood Rd median at Hickory St. The proof roll passes and the contractor will install geogrid over the subgrade and 5" - 1 1/4" TB lift
- 08:30 - Contractor continues dewatering trench at H-4
 - Light to moderate rain begins
- 08:45 - Contractor begins installing 1 1/4" TB lift in Oakwood Rd median at Hickory St
- 09:00 - Contractor continues probing for leaks at 6" hydrant valve and V-105
- 10:00 - Contractor advises CRT that they could not locate any further leaks coming from V-105 and the 6" hydrant valve. The contractor pressure tested H-4 the 6" gate valve and the pressure held at 150 PSI. The contractor will bury the pipe with existing 1 1/4" TB and compact in lifts
- 11:00 - CRT performs proof roll on the remaining section of the left turn lane to Hickory St from Oakwood Rd
- 11:30 - Proof roll passes and the contractor will begin installing Geogrid and 1 1/4" TB
- 12:30 - Contractor finishes installing TB backfill at H-4 for the day and will continue backfill and exploration for leaks at 2" flushing post North of H-5
- 13:30 - Contractor finishes installing TB in Oakwood Rd median due to rain and will continue on 10/26. CRT and foreman discuss quantities for the day.
- 14:00 - CRT leaves the site and finishes the report at home

NAME: 20221025 MSK **PROJECT #** 58-10013.310 **DATE:** 10/25/2022 **CONTRACTOR:** Buteyn Peterson

	Information
	Filename: WIN_20221025_08_03_01_MSK GRADE Excavation to subgrade in Oakwood Rd median at Hickory St.jpg Caption:

	Information
	Filename: WIN_20221025_08_04_17_MSK GRADE Geogrid installation over subgrade in turn lane.jpg Caption:

	Information
	Filename: WIN_20221025_08_44_33_MSK GRADE 1.25 inch TB installation over Geogrid.jpg Caption:

	Information
	Filename: WIN_20221025_09_59_37_MSK GRADE Compacting TB on Oakwood Rd.jpg Caption:

FEE



ESTIMATED FEE

The fee for the Lincoln Avenue Road Reconstruction Project is time and materials not-to-exceed the cost of \$305,242.00. The cost of expenses such as mileage and printing costs are included in the base hourly rate of each individual.

The City will only be charged for the actual hours of personnel to complete all tasks, thus if the overall hours are less than indicated on the attached sheet the overall cost will be lower. In addition to the above costs, record drawings/as-builts for the project can be completed for a cost not to exceed \$11,200.00.

City of New Berlin - Construction Oversight Services Associated with the Lincoln Avenue Reconstruction Project	Project Manager \$190	Lead Inspector \$122	Secondary Inspectors \$106	Erosion Control Specialist \$122	Construction Review Oversight \$152	Total Hours	Total Cost
Preconstruction Meeting and Preconstruction Photos, Plan Review, Field Ally set up	16	24	6	4	2	52	\$ 7,396
Stakeholder Communication, set up, distribution lists and updates	40	80				120	\$ 17,360
Site Visits and Field Assistance, Bi-weekly site meetings	26	32	6		26	90	\$ 13,432
Traffic Control		40	40		4	84	\$ 9,728
Clearing, Grubbing and Tree Removal		38	4			42	\$ 5,060
Pavement Removal		135	90			225	\$ 26,010
Common Excavation and EBS, GeoGrid and EBS backfill	12	464	52		12	540	\$ 66,224
Erosion Control Installation, Inspections, Ditch Checks, Miscellaneous E.C.	4	12	72	75		163	\$ 19,006
Storm Sewer, Culvert and Underdrain Installation		96	148			244	\$ 27,400
Box Culvert Removal, Installation, Headwalls, Creek Debris Removal		44	26	6		76	\$ 8,856
Curb and Gutter Remove and Replace, Concrete Ditch and Flumes, Driveways		24	22			46	\$ 5,260
Storm and Utility Structure Adjustments, Miscellaneous Utility Adjustments		6	28			34	\$ 3,700
Crushed Aggregate Base Course		110	60			170	\$ 19,780
Asphaltic Pavement Placement (Phasing considerations) including Driveways		122	44		2	168	\$ 19,852
Shoulder Placement		2	14			16	\$ 1,728
Pavement Markings		2	23			25	\$ 2,682
Bioswale installation		2	64	16		82	\$ 8,980
General Restoration		46		16		62	\$ 7,564
Traffic Signal Staging and Installation		54	32			86	\$ 9,980
Pay Requests, Work Change Directives, Change Orders, and Project Closeout	106	16	24		4	150	\$ 25,244
SUBTOTAL	204	1349	755	117	50	2475	\$ 305,242

W. LINCOLN AVE. RECONSTRUCTION

CONTRACT RD-21-05
CITY OF NEW BERLIN

City of New Berlin
Engineering Services Division
3805 S. Casper Drive
New Berlin, WI 53151
(262) 797-2445



SPECIFICATIONS
AND
CONTRACT DOCUMENTS
FOR

CONTRACT RD- 21-05

W. LINCOLN AVE. RECONSTRUCTION

CITY OF NEW BERLIN, WISCONSIN

TABLE OF CONTENTS FOR
W. LINCOLN AVE. RECONSTRUCTION

CONTRACT RD-21-05

CITY OF NEW BERLIN, WISCONSIN

ADVERTISEMENT FOR BIDS	AD-1 TO AD-2
INSTRUCTIONS TO BIDDERS	IB-1 TO IB-11
BIDDER'S QUALIFICATION STATEMENT	QS-1 TO QS-11
SUBCONTRACTOR'S QUALIFICATION STATEMENT	SQS-1 TO SQS-4
SUBCONTRACTOR LIST	SL-1
GENERAL CONDITIONS	GC-1 TO GC-62
SPECIAL PROVISIONS	SP-1 TO SP-41
PROPOSAL FORM	P-1 TO P-8
CONTRACT	C-1 TO C-5
BID BOND	BB-1
PERFORMANCE BOND	PB-1 TO PB-3
PAYMENT BOND	PA-1 TO PA-3
ATTACHMENTS:	
GEOTECHNICAL REPORT	A-1
PROJECT DRAWINGS	A-2

PROJECT NO. RD-21-05
W. LINCOLN AVE. RECONSTRUCTION
New Berlin, Wisconsin

ADVERTISEMENT FOR BIDS

BID OPENING: The City of New Berlin hereby gives notice that sealed bids will be received by the City Clerk, City Hall, 3805 S. Casper Drive, New Berlin, WI, until 10:00 a.m., local time, on Wednesday, February 8, 2023. The base bid consists of the reconstruction of approximately 8,500 feet of roadway on W. Lincoln Ave. from S. Calhoun Rd. to approximately 8,500 feet W. of S. Calhoun Rd. Bids will be opened and publicly read aloud immediately after the specified closing time. Interested parties are invited to attend. Bids submitted after this time will not be accepted.

BIDDING DOCUMENTS: Complete digital project bidding documents are available at <http://tinyurl.com/NewBerlinBids> or www.questcdn.com. You may download the digital plan documents for \$20 by inputting Quest project **#8346652** on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. No paper plan sets will be provided. Please contact Tamara Simonson at 262-797-2445 if you have any questions.

LEGAL PROVISIONS: The Contract letting shall be subject to the provisions of Sections 62.15, 66.29, 66.293, and 779.15 of the Wisconsin Statutes. Per Section 16.856 of the Wisconsin State Statutes the Prevailing Wage Rate does not apply to this project.

BIDDERS PROOF OF RESPONSIBILITY: Each Prime Contractor submitting a bid shall have on file a Bidders Proof of Responsibility Statement with the City Clerk on or before the date and time set for the Bid Opening.

BID SECURITY: Bid security in the amount of not less than 5% of the bidder's maximum bid price and in the form of a bid bond, certified check or cashiers check (payable to the City of New Berlin) is required with the bid.

RIGHT TO REJECT BIDS: The City reserves the right to reject any and all bids, the right to waive irregularities and informalities in bidding, the right to disregard all nonconforming, non-responsive, unbalanced or conditional bids, and the right to accept the bid which best serves the interests of the City.

CONTRACT SECURITY: The bidder to whom a Contract is awarded shall furnish Performance and Payment Bonds for the full amount of the Contract within 10 days of award or execution of the Contract. The Performance and Payment Bonds shall contain a provision to increase the Performance Bonds by the amount of any change orders that might increase the amount of the Contract price. If such bidder fails to execute and file such Contract, Performance and Payment Bonds, within the ten day period, the check, bond, or bank draft accompanying the bid shall be forfeited to the City of New Berlin as

liquidated damages.

BID WITHDRAWAL: The City reserves the right to postpone the award of the contract and no bids shall be withdrawn for a period not exceeding 60 days after the date and time set forth in the Bid Opening. The City further reserves the right to retain the bid security of the three (3) lowest bidders during that time.

DESCRIPTION OF WORK: The project consists of furnishing all labor, equipment, and materials necessary to perform the reconstruction of approximately 8,500 feet of roadway on W. Lincoln Ave. from S. Calhoun Rd. to the terminus approximately 8,500 feet west of S. Calhoun Rd. The reconstruction of W. Lincoln Ave. will consist of removing and replacing the existing pavement and base with ditching, curb and gutter, culvert replacements, and road widening. Approximate quantities of work are estimated as follows:

Clearing & Grubbing	38 STA
Common Excavation	26,000 CY
Pavement Removal	22,000 SY
Crushed Aggregate Base Course	31,000 TON
Concrete Curb and Gutter, 30-Inch	4,050 LF
Asphalt Pavement	15,400 TON
Storm Sewer Piping	2,600 LF
Storm Sewer Manhole	6 EA
Storm Sewer Catch Basins	10 EA
Culvert Pipes	160 LF
Apron Endwalls for Culvert Pipes	40 EA
12'X6' Precast Box Culvert	48 LF
10'X5' Precast Box Culvert	48 LF
Bioswales	1,100 LF
Pavement Marking	25,000 LF
Replace Traffic Signals	1 EA
Geogrid	28,000 SY

Published by authority of the City of New Berlin, Engineering Services Division, of the Department of Community Development, Tamara Simonson, City Engineer.

City of New Berlin
3805 S. Casper Drive
New Berlin, WI 53151
Waukesha County

Rubina Medina, City Clerk

David Ament, Mayor

PUBLISH: Wednesday, January 18, 2023
Wednesday, January 25, 2023

INSTRUCTIONS TO BIDDERS TABLE OF CONTENTS

ARTICLE 1. DEFINED TERMS	1
ARTICLE 2. COPIES OF BIDDING DOCUMENTS	1
ARTICLE 3. QUALIFICATIONS OF BIDDERS	2
ARTICLE 4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE.....	2
ARTICLE 5. AVAILABILITY OF LANDS FOR WORK, ETC.	4
ARTICLE 6. INTERPRETATIONS AND ADDENDA	5
ARTICLE 7. BID SECURITY	5
ARTICLE 8. CONTRACT TIMES	5
ARTICLE 9. LIQUIDATED DAMAGES	6
ARTICLE 10. SUBSTITUTES AND/OR “OR EQUAL” ITEMS	6
ARTICLE 11. PROPOSAL	6
ARTICLE 12. SUBMISSION OF BIDS	8
ARTICLE 13. MODIFICATION AND WITHDRAWAL OF BID.....	8
ARTICLE 14. OPENING OF BIDS	8
ARTICLE 15. AWARD OF CONTRACT	8
ARTICLE 16. CONTRACT SECURITY.....	10
ARTICLE 17. SIGNING OF CONTRACT.....	10
ARTICLE 18. WAGE RATES	10
ARTICLE 19. SALES TAX	10
ARTICLE 20. PRE-BID CONFERENCE	11

INSTRUCTIONS TO BIDDERS

ARTICLE 1. DEFINED TERMS

Terms used in these Instructions to Bidders which are defined in the “Standard General Conditions of the Construction Contract”, (EJCDC No. C-700, 2007 Edition) have the meanings assigned to them in the General Conditions.

Certain additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both singular and plural thereof.

- 1.1. Bidder: One who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to Bidder.
- 1.2. Issuing Office: The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- 1.3. Successful Bidder: The lowest responsive and responsible Bidder to whom OWNER (on the basis of OWNER’S evaluation as hereinafter provided) makes an award.

ARTICLE 2. COPIES OF BIDDING DOCUMENTS

- 2.1. Complete digital project bidding documents are available at <http://tinyurl.com/NewBerlinBids> or www.questcdn.com. You may download the digital plan documents for \$20 by inputting Quest project #8346652 on the website’s Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. No paper plan sets will be provided. Please contact Tamara Simonson at 262-797-2445 if you have any questions.
- 2.2. Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3. OWNER and ENGINEER, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the work and do not confer a license or grant for any other use.
- 2.4. All submitted Bidding Documents shall be original copies obtained directly from QuestCDN.com. Bids prepared on downloaded (internet) documents,

which cannot be verified as being obtained directly from QuestCDN.com will not be accepted.

ARTICLE 3. QUALIFICATIONS OF BIDDERS

- 3.1. To demonstrate qualifications to perform the work, each Bidder must be prepared to submit within five (5) days before Bid opening detailed written evidence, such as financial data, previous experience, present commitments, and other such data as may be requested. Each Bid must contain evidence of Bidder's qualifications to do business in the state where the project is located or covenant to obtain such qualification prior to award of the Contract.
- 3.2. The object of the request for the qualification of Bidder is not to discourage bidding or make it difficult for qualified Bidders to file Bids. Neither is it intended to discourage beginning contractors. It is intended to make it possible for OWNER to have more exact information on financial ability, equipment, and experience in order to reduce the hazards involved in awarding contracts to parties who may not be qualified to perform the Work as specified.
- 3.3. OWNER'S decision as to qualification of the Bidders shall be final.
- 3.4. Prequalification: Contractor and all subcontractors shall either submit an Annual Qualification Statement to the City or a project-specific Qualification Statement as part of the Bid Package. The City reserves the right to deny the services of any subcontractor.

ARTICLE 4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- 4.1. It is the responsibility of each Bidder before submitting a Bid:
 - 4.1.1. To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to below);
 - 4.1.2. To visit the site to become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, performance or furnishing of the Work;
 - 4.1.3. To consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work;
 - 4.1.4. To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data; and

- 4.1.5. To promptly notify ENGINEER of all conflicts, errors, ambiguities, or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.
- 4.2. Reference is made to the Supplementary Conditions for identification of:
 - 4.2.1. Those reports of explorations and tests of subsurface conditions at or contiguous to the site which have been utilized by ENGINEER in preparation of the Contract Documents.
 - 4.2.2. Those drawings of physical conditions in or relating to existing surface and subsurface conditions (except Underground Facilities) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents.
 - 4.2.3. Those reports are not part of the Contract Documents. Bidder is responsible for any interpretation or conclusion drawn from any such data, interpretations, opinions, or information.
- 4.3. Information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities or others, and OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
- 4.4. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in the General Conditions.
- 4.5. Before submitting a Bid, each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto as Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.
- 4.6. On request, OWNER will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests, and studies as each

Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests, and studies.

- 4.6.1. Bidder shall obtain permission from the OWNER and the property owner prior to entering upon the land to make explorations, investigations, and tests.
- 4.7. Reference is made to the Special Provisions for the identification of the general nature of work that is to be performed at the site by OWNER or others (such as utilities and other prime contractors) that relates to the work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.
- 4.8. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Contract Documents and written resolutions thereof by ENGINEER is acceptable to Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.
- 4.9. The provisions of IB-4.1 through 4.8, inclusive, do not apply to Asbestos, Polychlorinated biphenyls (PCBs), Petroleum, Hazardous Waste or Radioactive Material covered by the General Conditions.

ARTICLE 5. AVAILABILITY OF LANDS FOR WORK, ETC.

- 5.1. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

ARTICLE 6. INTERPRETATIONS AND ADDENDA

- 6.1. All questions about the meaning or intent of the Contract Documents are to be directed to ENGINEER. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than five (5) days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.
- 6.3. Each Bidder shall ascertain prior to submitting a Bid that Bidder has received all Addenda issued, and each Bidder shall acknowledge receipt on the Proposal.

ARTICLE 7. BID SECURITY

- 7.1. Each Bid must be accompanied by Bid security made payable to OWNER in amount of not less than 5% nor more than 10% of the Bidder's maximum Bid price and in the form of a Certified Check, Cashier's Check, Money Order or a Bid Bond (on form attached, if form is prescribed) issued by a surety meeting the requirements of the General Conditions.
- 7.2. The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract, furnished the required contract security, and met the other conditions of the Notice to Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract and furnish the required contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the 7th day after the Effective Date of the Contract, whereupon the Bid Security furnished by such Bidders will be returned. Bid security of the other Bidders who furnished certified checks will have checks returned within 7 days after the Bid opening. Bond Forms will be returned upon request.

ARTICLE 8. CONTRACT TIMES

- 8.1. The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the term "Contract Times" is defined in Paragraph 1.01 of the General

Conditions) are set forth in the Contract (or incorporated therein by reference to the attached Proposal).

ARTICLE 9. LIQUIDATED DAMAGES

- 9.1. Provisions for liquidated damages, if any, are set forth in the Contract.

ARTICLE 10. SUBSTITUTES AND/OR “OR EQUAL” ITEMS

- 10.1. Materials and equipment described in the Contract Documents by using the name of a proprietary item or name of a particular supplier is intended to establish type, function, and quality required and, unless followed by the term “or equal”, also establishes the OWNER’s established standard of such material or equipment and no substitution is allowed.

- 10.2. The CONTRACTOR may furnish alternate materials in place of those specified in the following Special Provisions where “or equal” is stated and when the following provisions have been complied with.

“If the CONTRACTOR wishes to substitute an alternate material as an ‘equal’ to the material specified, he shall first submit a written detailed description of such to the ENGINEER with additional copy for OWNER, for review and approval/disapproval. The CONTRACTOR shall not install any alternate materials prior to receiving written approval for their use. Only those materials listed in these Special Provisions or approved as alternates may be used on this project.”

- 10.3. Application for acceptance of substitutes and “or equal” items will not be considered by ENGINEER until after the Effective Date of the Contract. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the Supplementary Conditions or General Requirements.

ARTICLE 11. PROPOSAL

- 11.1. Only the Proposal included with the Bidding Documents shall be used; additional copies may be obtained from ENGINEER (or Issuing Office).
- 11.2. All blanks on the Proposal shall be completed in ink, typewriter or computer.
- 11.3. The Bidder, when signing the Bid(s) shall meet the following requirements:

- 11.3.1. The full name, telephone number, and business address of each Bidder for communications regarding the Bid must be entered on the Bid submitted. The Bid shall be signed in the space provided therefore by written signature of the person or persons properly authorized to sign it. All names must be typed or printed below the signature.
- 11.4. A Bid submitted by an individual shall be signed by the Bidder or by an authorized agent.
- 11.5. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature. If this is a limited liability partnership, such status must be indicated. Such LLP must be registered in the State in which the project is located before a Contract to do the Work embraced in the Bid can be signed.
- 11.6. Bids by limited liability companies must be executed in the limited liability company name by the manager if manager-managed or, if member managed, by any member, but in either case an Affidavit of Organization and Authority must be attached as proof of that person's authority to bind the LLC. The limited liability company address and state of organization and registration shall be shown below the signature. Such LLC must be registered in the state in which the Project is located before a Contract to do the Work embraced in the Bid can be signed.
- 11.7. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign). The corporate address and state of incorporation shall be shown below the signature. Such corporation must be licensed to do business in the state in which the Project is located before a Contract to do the Work embraced in the Bid can be signed. If a foreign corporation, the state under which it is incorporated must be named.
- 11.8. Bids which are signed by an attorney-in-fact for individuals, firms, partnerships or joint ventures shall have attached thereto a power-of-attorney evidencing authority to sign the Bid.
- 11.9. The Bid shall contain an acknowledgment of receipt of Addenda, the numbers and dates of which shall be filled in on the Proposal.
- 11.10. The Bid shall include a list of Subcontractors and Suppliers that will be used to complete the work. See Subparagraph 7.b. in the Proposal.

ARTICLE 12. SUBMISSION OF BIDS

- 12.1. Bids shall be submitted at the time and place indicated in the Official Notice to Bidders and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), name and address of the Bidder and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.
- 12.2. Bids received after the official Bid closure time will be returned to the Bidder unopened.

ARTICLE 13. MODIFICATION AND WITHDRAWAL OF BID

- 13.1. Bids may be withdrawn prior to opening of the Bids upon written request of the Bidder, or the personal appearance of the Bidder or Bidder's designated representative.

ARTICLE 14. OPENING OF BIDS

- 14.1. Bids will be opened and, unless obviously non-responsive, read aloud publicly at the place where Bids are to be submitted. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after opening of Bids. Bids received after the Bid closing time will be returned to the Bidder unopened.

ARTICLE 15. AWARD OF CONTRACT

- 15.1. OWNER reserves the right to reject any and all Bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER.
- 15.2. OWNER also reserves the right to waive all informalities not involving price, time or changes in the Work. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. (An extension may not be divided by the number of units specified to determine a unit cost, if such is omitted by the Bidder.) Discrepancies between the indicated sum of any column of figures and the

correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

- 15.3. In evaluating Bids, OWNER will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, supplemental prices and other data as may be requested in the Proposal or prior to the Notice of Award.
- 15.4. OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions.
- 15.5. OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.
- 15.6. OWNER shall have the right to reject any unit prices for additions to or deductions from the Work as given in the Bid, if the prices are considered excessive or unreasonable, or to accept any unit prices which may be considered fair and reasonable.
- 15.7. OWNER shall have the right to accept alternates in any order or combination or to not accept any, unless specifically otherwise provided.
- 15.8. A Bid which does not contain a unit price which is both adequate and reasonable for each item named in the Bid may be considered irregular and subject to rejection.
- 15.9. If the contract is to be awarded, it will be awarded to the lowest responsive, responsible Bidder(s).
- 15.10. OWNER is prohibited from knowingly soliciting Bids from, negotiating with or awarding contracts to, and approving or allowing subcontracts with a debarred contractor. If a Bidder, offeror or proposed subcontractor is listed on the consolidated list of debarred contractors compiled by Department of Workforce Development in accordance with Wisconsin Administrative Code s. DWD 294.03, it may not be awarded the contract or be allowed to participate as a subcontractor, except as otherwise provided in Wisconsin Administrative Code s. DWD 294.05.

- 15.11. For accounting purposes, if a combination bid is accepted, the accepted combination deduction will be applied to each contract proportionally to the individual bid amounts for each contract accepted in the combination. The adjusted amounts, individual contract bid minus the proportional deduction, will be the basis of the contract price included in the Agreement for each contract.

ARTICLE 16. CONTRACT SECURITY

- 16.1. The General Conditions and the Supplementary Conditions set forth OWNER'S requirements as to performance, and payment bonds. When the Successful Bidder delivers the executed Contract to ENGINEER, it shall be accompanied by the required performance and payment bonds.

ARTICLE 17. SIGNING OF CONTRACT

- 17.1. When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Contract with all other written Contract Documents attached. Within 10 days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Contract and attached documents to OWNER with the required bonds and certificates or policies of insurance as required by the Supplementary Conditions. Within 10 days thereafter OWNER will deliver one fully signed counterpart to CONTRACTOR and ENGINEER.

ARTICLE 18. WAGE RATES

- 18.1. Per Section 16.856 of the Wisconsin State Statutes the Prevailing Wage Rate does not apply to this project.

ARTICLE 19. SALES TAX

- 19.1. Bidder shall investigate the statutory requirements for payment of sales taxes and if required shall include the tax in the Bid.
- 19.2. If investigation indicates tax exempt status, CONTRACTOR(S) shall forward this information to their Suppliers in order that the sale of such materials and equipment be properly recorded as a tax-exempt sale.
- 19.3. Federal excise tax does not apply to materials or services purchased by OWNER. Should the federal excise tax be applicable to this transaction, OWNER will furnish a federal exemption certificate. The Bid prices quoted herein by Bidder shall include all other direct or indirect federal, state, and local taxes which apply.

- 19.4. CONTRACTOR(S) shall forward this information to their Suppliers in order that the sale of such materials and equipment be properly recorded as a tax-exempt sale.

ARTICLE 20. PRE-BID CONFERENCE

- 20.1. There is no pre-bid conference for this project.

BIDDER'S QUALIFICATION STATEMENT - CONFIDENTIAL

Submitted to: **City of New Berlin**

Date:

RE: SUBMISSION OF PREQUALIFICATION FORMS FOR THE YEAR

Gentlemen & Ladies:

Submitted herewith please find our statement for your consideration in determining whether our firm is qualified and capable to bid, perform and furnish the necessary labor, materials and skill on the basis of our work record, experience, equipment and staff as required to enter upon and complete those various types of projects indicated below as may be awarded by the municipality during the current year.

It is understood that the determination and decisions of the Municipality with regard to qualifications shall be final, and further, that the information herein **will** be considered confidential. A finding of "Qualified" for one project does not bind the Municipality on other projects, and that the Municipality expressly reserves the right to review and reserve its findings on later projects.

Sincerely,

Signature

Printed Name

CITY OF NEW BERLIN
PRE-QUALIFICATION STATEMENT
IDENTIFICATION SECTION

Please CHECK Type of Firm Organization:

- ☐ Corporation
☐ Partnership
☐ Individual
☐ Joint – Venture

List Principle Individual Names:

(IF Individual, Answer Below)

Sole Trader _____

(IF Partnership, Answer Below)

Partner _____

Partner _____

(IF Corporation, Answer Below)

President _____

Vice-President _____

Secretary _____

Treasurer _____

Licensed to do business in Wisconsin on _____

In what State Incorporated _____ When _____

EXPERIENCE

Tabulation of Major Contracts (over \$25,000) which the Firm has
completed during past 5 Years

Year	Class of Work	Amount	Location of Work	For Whom Performed & Contact Name/Phone

Tabulation of Construction Experience of Principle Individuals in Organization

Individual's Name	Title or Present Position	Years of Experience	Class of Work

List Below Major Pieces of Equipment Owned (or Leased) and
Available when needed for the Proposed Work

Item Description	Qty	Size/ Capacity/ Etc	Condition (Good or Fair)	Years of Service

CONTRACTUAL RESPONSIBILITY

List the trade and percentage of work normally performed with your own work force

Trade	Percentage of Work

Have you (or your Firm) ever failed to complete any work awarded to you?

☐ Yes

☐ No

If so, state: when, where, and why:

When	Where	Why

Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete on time a construction contract?

☐ Yes

☐ No

If so, state: firm name(s), when, where, and why:

Firm Name(s)	When	Where	Why

CITY OF NEW BERLIN
PRE-QUALIFICATION STATEMENT
CONTRACTUAL RESPONSIBILITY SECTION

Have you (or firm) asked to be relieved from a bid submitted by it to a public awarding authority during the past ten years?

☐ Yes

☐ No

If so, state: when, where, and why:

When	Where	Why

Have you (firm) been charged with or convicted of a violation of any wage schedule?

☐ Yes

☐ No

If so, state: when, where, and why:

When	Where	Why

List those projects that you (or firm) expect to have in progress at the time of the major performance period for this project:

Project	Location

BONDING RESPONSIBILITY

Name(s) and address of bonding company(ies) which generally execute Bid and Surety bonds:

Name	Address

Name(s) and addresses of all bonding companies other than those listed above, which have written Bid and Surety bonds for your firm during the last five (5) years:

Name	Address

Has any bonding company ever taken over a contract or make any payments, because of your firm's failure to carry out a contract?

☐ Yes

☐ No

If so, state: when, where, and why.

When	Where	Why

List current limits of bonding capacity: _____

List your current average bond premium cost: _____ %

CONTRACTOR'S FINANCIAL STATEMENT

Attach your Statement of Financial Conditions, including the latest regular dated financial statement or balance sheet, which must contain the following items:

1. Current Assets: Cash joint-venture accounts, accounts receivable, notes receivable, accrued interest on notes, deposits, materials, and prepaid expenses, net fixed assets, and other assets.

2. Current Liabilities: Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owner, accrued salaries, accrued payroll taxes, other liabilities, and capital (stock, authorized and outstanding shares par values, and earned surplus).

Name of firm preparing statement: _____

Are any of the firm's assets assigned?

☐ Yes

☐ No

If so, state which are assigned and for what purpose they are assigned:

Assigned Asset	Purpose

GENERAL DATA

List below all previous work experience with the City of New Berlin:

Project	Trade	Year

Are you familiar with the provisions of the Agreement Form used by the City's?

- ☐ Yes
☐ No

Are you familiar with its terms and conditions?

- ☐ Yes
☐ No

Are you familiar with the City's specifications?

- ☐ Yes
☐ No

Are you familiar with the regulations of the City relating to bidding and awarding of contracts'?

- ☐ Yes
☐ No

AFFIDAVIT

STATE OF WISCONSIN

_____ } ss
_____ County

_____, being duly sworn, deposes and says
that he is the _____ (Official
capacity/title) of the firm _____ and that the answers to
the foregoing questions and all statements therein contained are true and correct, and
that any Owner, Bonding Company, or other agency herein named is hereby authorized
to supply the City of New Berlin with any information deemed necessary to verify this
statement.

Subscribed and sworn to before me

This ____ day of _____, 20__

_____ Notary Public

_____ County, Wisconsin

My Commission Expires: _____

ATTACH
STATEMENT OF FINANCIAL CONDITIONS

SUBCONTRACTOR'S QUALIFICATION STATEMENT

Submitted to
The City of New Berlin

Submit one copy of qualification for each Subcontractor.

The undersigned certifies, under oath, the truth and correctness of all statements and of all answers to questions made hereinafter.

NAME OF PERSON SUBMITTING STATEMENT:

NAME OF FIRM:

ADDRESS:

TELEPHONE NUMBER: _____

LOCATION OR PRINCIPAL OFFICE:

CHECK ONE:

Corporation ____ Partnership ____ Individual ____ Jt Venture ____

Limited Liability Company _____ Other _____

Signature

TYPE OF WORK SPECIALIZATION: _____ CONSTRUCTION

1. How many years, for the type of work specialization stated above, has your organization been in business as a Contractor?
2. How many years has your organization been in business under its present business name?

3. If a corporation, provide the following information:
 - a. Date of incorporation:
 - b. State of incorporation:
4. If individual or partnership, provide the following information:
 - a. Date of organization:
 - b. Name and address of all partners (state whether general or limited partnership):
5. If Joint Venture, Limited Liability Company or other organization than a corporation or partnership, describe the organization and name principals:
6. List the percentage of work normally performed with your own work force. List those trades below:
7. Have you ever failed to complete any work awarded to you? If so, state when, where, and why:
8. Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a pool contract? If so, state the circumstances:

9a. List the names of the project, owner, architect, general contractor or construction manager, contract amount, current percent complete, and scheduled completion date of the major construction projects your organization has in progress at this time:

9b. Expects to have in progress at the time of the performance period for this project:

10. List your trade references:

11. List your banking references:

12. List your bonding references:

a. Name and address of bonding company:

b. Limits of bonding capacity:

c. Average bond premium cost:

13. Attach your Statement of Financial Conditions, including the latest regular dated financial statement or balance sheet, which must contain the following items:

a. Current Assets: Cash, joint venture accounts, accounts receivable, notes receivable, accrued interest on notes, deposits, materials, and prepaid expenses, net fixed assets, and other assets.

b. Current Liabilities: Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owner, accrued salaries, accrued payroll taxes, other liabilities, and capital (stock, authorized and outstanding shares par values, and earned surplus).

c. Date of statement or balance sheet:

d. Name of firm preparing statement:

14. List below all previous work experience with the City of New Berlin:

15. State your method for estimating your expenses for this type of work:

16. How do you pre-qualify your subcontractors and suppliers:

17. Describe your Quality Control Program:

18. How do you normally staff your projects (job-site management organization)?
What is the total number of full-time employees of your firm:

SUBCONTRACTOR LIST

The following Subcontractors will be utilized for portions of the Project Work (only list those > \$1,000). Changes shall not be made subsequent to the Bid unless the change(s) is approved by the City.

[illegible]

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
A Practice Division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
Article 1 – Definitions and Terminology	1
1.01 Defined Terms.....	1
1.02 Terminology	5
Article 2 – Preliminary Matters	6
2.01 Delivery of Bonds and Evidence of Insurance	6
2.02 Copies of Documents	6
2.03 Commencement of Contract Times; Notice to Proceed.....	6
2.04 Starting the Work	7
2.05 Before Starting Construction	7
2.06 Preconstruction Conference; Designation of Authorized Representatives.....	7
2.07 Initial Acceptance of Schedules.....	7
Article 3 – Contract Documents: Intent, Amending, Reuse	8
3.01 Intent.....	8
3.02 Reference Standards.....	8
3.03 Reporting and Resolving Discrepancies.....	9
3.04 Amending and Supplementing Contract Documents.....	9
3.05 Reuse of Documents	10
3.06 Electronic Data.....	10
Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points.....	11
4.01 Availability of Lands.....	11
4.02 Subsurface and Physical Conditions.....	11
4.03 Differing Subsurface or Physical Conditions	12
4.04 Underground Facilities.....	13
4.05 Reference Points.....	14
4.06 Hazardous Environmental Condition at Site.....	14
Article 5 – Bonds and Insurance.....	16
5.01 Performance, Payment, and Other Bonds.....	16
5.02 Licensed Sureties and Insurers.....	16
5.03 Certificates of Insurance	17
5.04 Contractor’s Insurance	17
5.05 Owner’s Liability Insurance.....	19
5.06 Property Insurance.....	19
5.07 Waiver of Rights	20
5.08 Receipt and Application of Insurance Proceeds.....	21

5.09	Acceptance of Bonds and Insurance; Option to Replace	21
5.10	Partial Utilization, Acknowledgment of Property Insurer.....	22
Article 6 – Contractor’s Responsibilities		22
6.01	Supervision and Superintendence.....	22
6.02	Labor; Working Hours	22
6.03	Services, Materials, and Equipment	22
6.04	Progress Schedule	23
6.05	Substitutes and “Or-Equals”	23
6.06	Concerning Subcontractors, Suppliers, and Others.....	25
6.07	Patent Fees and Royalties	27
6.08	Permits.....	27
6.09	Laws and Regulations	28
6.10	Taxes	28
6.11	Use of Site and Other Areas.....	28
6.12	Record Documents.....	29
6.13	Safety and Protection	29
6.14	Safety Representative.....	30
6.15	Hazard Communication Programs.....	30
6.16	Emergencies	30
6.17	Shop Drawings and Samples	31
6.18	Continuing the Work.....	32
6.19	Contractor’s General Warranty and Guarantee	33
6.20	Indemnification	33
6.21	Delegation of Professional Design Services.....	34
Article 7 – Other Work at the Site		35
7.01	Related Work at Site	35
7.02	Coordination.....	35
7.03	Legal Relationships.....	36
Article 8 – Owner’s Responsibilities.....		36
8.01	Communications to Contractor.....	36
8.02	Replacement of Engineer.....	36
8.03	Furnish Data	36
8.04	Pay When Due.....	36
8.05	Lands and Easements; Reports and Tests.....	36
8.06	Insurance.....	36
8.07	Change Orders.....	37
8.08	Inspections, Tests, and Approvals	37
8.09	Limitations on Owner’s Responsibilities	37
8.10	Undisclosed Hazardous Environmental Condition.....	37
8.11	Evidence of Financial Arrangements.....	37
8.12	Compliance with Safety Program	37
Article 9 – Engineer’s Status During Construction.....		37
9.01	Owner’s Representative	37

9.02	Visits to Site	37
9.03	Project Representative.....	38
9.04	Authorized Variations in Work	38
9.05	Rejecting Defective Work.....	38
9.06	Shop Drawings, Change Orders and Payments.....	39
9.07	Determinations for Unit Price Work	39
9.08	Decisions on Requirements of Contract Documents and Acceptability of Work	39
9.09	Limitations on Engineer's Authority and Responsibilities	39
9.10	Compliance with Safety Program	40
Article 10 –	Changes in the Work; Claims	40
10.01	Authorized Changes in the Work	40
10.02	Unauthorized Changes in the Work.....	41
10.03	Execution of Change Orders.....	41
10.04	Notification to Surety.....	41
10.05	Claims.....	41
Article 11 –	Cost of the Work; Allowances; Unit Price Work	42
11.01	Cost of the Work	42
11.02	Allowances	45
11.03	Unit Price Work	45
Article 12 –	Change of Contract Price; Change of Contract Times	46
12.01	Change of Contract Price	46
12.02	Change of Contract Times	47
12.03	Delays	47
Article 13 –	Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....	48
13.01	Notice of Defects.....	48
13.02	Access to Work	48
13.03	Tests and Inspections	49
13.04	Uncovering Work.....	49
13.05	Owner May Stop the Work.....	50
13.06	Correction or Removal of Defective Work	50
13.07	Correction Period	50
13.08	Acceptance of Defective Work.....	51
13.09	Owner May Correct Defective Work	52
Article 14 –	Payments to Contractor and Completion	52
14.01	Schedule of Values.....	52
14.02	Progress Payments	52
14.03	Contractor's Warranty of Title.....	55
14.04	Substantial Completion.....	55
14.05	Partial Utilization	56
14.06	Final Inspection.....	57
14.07	Final Payment.....	57
14.08	Final Completion Delayed	58

14.09 Waiver of Claims	58
Article 15 – Suspension of Work and Termination	59
15.01 Owner May Suspend Work.....	59
15.02 Owner May Terminate for Cause	59
15.03 Owner May Terminate For Convenience	60
15.04 Contractor May Stop Work or Terminate.....	60
Article 16 – Dispute Resolution	61
16.01 Methods and Procedures	61
Article 17 – Miscellaneous	61
17.01 Giving Notice	61
17.02 Computation of Times	62
17.03 Cumulative Remedies	62
17.04 Survival of Obligations	62
17.05 Controlling Law	62
17.06 Headings.....	62

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on

Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
- 3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

- 1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
- 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

- 1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the

consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also

meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

- a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,

members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's

interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

- c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
 - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be

required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner,

Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
- 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought

by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and

shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is

required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

- a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
- b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
- c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 - 6. any inspection, test, or approval by others; or
 - 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.

- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or

continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not

exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data

shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of

said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not

limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
 1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to

the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or

neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
 2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an

Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or

- involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
- b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before

final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying

documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 - 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 - 3. Contractor's repeated disregard of the authority of Engineer; or
 - 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
 - 1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 - 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 - 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when

so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days

to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SPECIAL PROVISIONS
CONTRACT RD-21-05
W. LINCOLN AVE
RECONSTRUCTION

I. Specifications

All work is to conform to the City of New Berlin Infrastructure Standards, adopted July 18, 2016, except as amended below. The City of New Berlin Development Handbook is available on the City website at: <http://www.newberlin.org/index.aspx?nid=773>

II. Time for Start of Work and Completion

The City of New Berlin is requesting that the work start no later than **April 17, 2023** and be completed by **October 23, 2023**. After October 23, 2023, a fee of \$1500.00 per day will be charged to the Contractor for inspection services. The anticipated Contract Award date and Notice to Proceed date for this Contract will be **March 28, 2023**. Once Contractor begins work under this Contract, the work shall continue until complete. Failure to remain on site to work on the project, excepting due to weather, will result in a forfeiture of \$1,500 per day.

III. General

The City reserves the right to accept all or part of the work as funding allows. Due to funding limitations, the City reserves the right to delete any of the work to satisfy the budget limitations. The Contractor will not receive extra compensation due to the deletion of any of the work, even if the amount deleted exceeds 15% of the original Contract amount.

The majority of the work, as indicated per these specifications and as directed by the Engineer under this Contract, shall consist of reconstructing W. Lincoln Ave. from S. Calhoun Rd. to approximately 8,500 feet west of S. Calhoun Rd in accordance with the City of New Berlin Development Handbook and these special provisions.

IV. Coordination with Private Utilities

The Contractor shall coordinate their work with private utility work being performed as part of this project. No compensation or time extension will be given to the Contractor for delays due to work performed by private contractors. See contact information for utilities below:

WE Energies – Electric	Steve King	(262) 968-5768
WE Energies – Gas (Residential)	Jacob Spencer	(262) 968-7009
TC Energy – Gas (High Pressure)	Roger Sokolosky	(262) 374-8433
Midwest Fiber Networks	Cory Schmuki	(414) 459-3561
Charter Communications	Neal Long	(414) 277-4271
Charter Communications (Mi-Tech Services)	Darrell Gore	(262) 649-5386 X2504
AT&T	Nathan Gilbert	(262) 720-8235

The contractor shall contact Roger Sokolosky prior to construction of storm sewer and road widening activities over the high pressure gas located between stations 68+50 to 69+00.

V. Prequalification

Contractor and all subcontractors shall either submit an Annual Qualification Statement to the City or a project-specific Qualification Statement as part of the Bid Package. The City reserves the right to deny the services of any subcontractor.

VI. Testing

The Contractor shall, at no cost to the City, provide for all materials to be pre-tested by a qualified private testing laboratory verifying that the materials are in conformance with the specifications. The City may have tests performed throughout the project to verify that the materials remain in conformance. If the materials are not in conformance, the testing costs and all subsequent testing costs until conformance is achieved shall be deducted from the Contractor. Contractor shall submit testing documentation for all tests performed prior to the start of Work.

Incidental to HMA Paving are nuclear density tests every 500 lineal feet at each outside wheel path and at the centerline. Sampling requirements from Section 460.2.8.2.1.3.2 of the State Standard Specification shall be followed.

Incidental to Concrete Curb and Gutter, 30-inch, are daily start-up concrete tests and 28-day cast cylinder breaks.

VII. Cleaning

Binder course shall be swept clean by the Contractor prior to placing the surface course. Additional sweeping due to material under this Contract tracking or spilling on adjacent streets shall be removed immediately and at the end of each work day. The cost for sweeping will be considered incidental to this Contract.

VIII. Traffic Control & Safety

The Contractor shall submit for approval, a traffic control schedule to the Owner at the time of the pre-construction meeting. This schedule shall be updated as work progresses.

It shall be the responsibility of the Contractor to schedule their work as necessary to minimize the inconvenience to traffic, pedestrians, and property owners within and adjacent to the project. All streets may be closed to through traffic, but shall be kept open to local traffic and emergency vehicles during construction. Maintain existing pavement at all times except as required for construction activities. Backfill trenches for utility construction activities to finished grade except as required for construction activities or as directed by engineer. Stage existing pavement removal and roadway grading to minimize disruption to traffic and access.

During the course of the project, access to local residences and businesses shall be maintained at all times. A minimum of one lane of traffic shall be maintained at all times during construction hours and two lanes of traffic during non-construction hours. Access may be restricted to being available from one end of the project or the other.

The contractor shall notify all local law enforcement and emergency services of road closures, detours, and traffic control changes.

Maintain property access within the work zone to residents, businesses, and emergency

vehicles at all times.

Following the removal of a driveway approach, and until the permanent driveway approach is in place, the Contractor shall construct a temporary gravel driveway, conforming to the spec for Crushed Limestone $\frac{3}{4}$ -Inch. Temporary gravel driveways shall be included as incidental to the base aggregate items used for the final driveways. Temporary gravel driveways will not be measured, nor tickets included, for payment.

Maintain and keep open access to all driveways and parking lots where alternative access is not available at all times by closing one driveway at a time, constructing the driveway one half at a time, or plating concrete work. Residential driveways may be closed for the duration which the concrete approaches are curing. Plating of concrete work for driveways shall be included as incidental to driveway construction.

The contractor shall notify affected property owners 48 hours in advance of restricting driveway access.

All Traffic Control devices shall conform to Section 643 of the WisDOT State Standard Specifications.

The project shall be phased in three sections as shown on the plans. The contractor shall substantially complete one phase of the project before proceeding to the next phase.

The Contractor is responsible for providing all signs, cones, barrels, barricades, flag personnel, or any other items necessary to protect the public, workers, and the work. All signage shall conform to the Wisconsin Manual on Uniform Traffic Control Devices, Current Edition. All traffic control and phasing of the project will be paid as LUMP SUM.

The traffic signal will need to be shutdown for a 48-hour weekend period (coordinate times with the City) to install traffic signal cables, reinstall salvaged traffic signal equipment, and make final connections into the proposed traffic signal equipment. Required cabinet and controller reprogramming may take place during this time. While the signal is offline, the intersection shall operate under all-way stop conditions. Temporary stop signs on each intersection approach are incidental to the work for signals.

IX. Permits and Hauling and Holiday Restrictions

The CONTRACTOR shall procure all necessary permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

All work requiring permits or licenses shall abide by the governing permit/license specifications where they exceed the requirements stated in these specifications.

Permits that will be procured by the City include the following:

1. DNR Notice of Intent Permit
2. DNR Waterway and Wetland Permit

When hauling across any public roads, provide the necessary flagging and signing to control the construction equipment movements. The flagging operations shall not impede traffic flow

on the public roads.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying Calhoun traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday and special event periods:

- From noon Friday, May 27, 2022 to 6:00 AM Tuesday, May 31, 2022 for Memorial Day;
- From noon Friday, July 1, 2022 to 6:00 AM Tuesday, July 5, 2022 for Independence Day;
- From noon Friday, September 2, 2022 to 6:00 AM Tuesday, September 6, 2022 for Labor Day.

X. Erosion Control

Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion.

Final restoration or temporary stabilization shall be in place and approved by the engineer prior to advancing construction operations to the next stage.

Temporary seed and mulch cleared and grubbed areas within 48 hours of disturbance. Temporary seed mixture shall conform to the requirements of Section 630.2.1.5.1.2 of the WisDOT State Standard Specifications. Oats shall be used in spring and summer plantings. Winter wheat or rye shall be used for fall plantings after September 1.

Re-topsoil graded areas, as designated by the engineer, immediately after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within 5 calendar days after placement of topsoil. If permanent restoration or temporary vegetative cover will not be achieved within 7 days of any disturbance to graded areas, restore those areas with temporary seed and mulch within 72-hours of disturbance. Sowing rate for temporary seeding shall be 3 pounds per 1000 square feet. Temporary seeding shall be incidental to project work.

Permanently protect or restore all disturbed stream banks and wetland areas, or implement temporary erosion control devices within 24-hours of disturbance in these areas.

When performing roadway cleaning operations, use equipment having vacuum or water spray mechanism to eliminate the dispersion of dust. If vacuum equipment is employed, it shall have suitable self-contained particulate collectors to prevent discharge from the collection bin into the atmosphere.

Material tracked onto adjacent streets shall be cleaned up the same day it occurs. Any street sweeping required shall be incidental to Work.

All saw cut slurry must be removed from the pavement before moving to the next saw cut location. Squeegee slurry onto adjacent aggregate or collect and remove from the site. Slurry may not be left on the pavement surface. Slurry removal shall be incidental to sawing asphalt and sawing concrete.

Dust control shall be provided by the contractor as required by the Owner or Engineer to

minimize the dispersion of dust caused by construction operations in accordance with WDNR Technical Standard 1068. Dust control shall be incidental to Work. Dry sweeping is not allowed and rotary broom devices shall include a water bag or vacuum device.

Stockpile excess material or spoils on upland areas away from wetlands, floodplains and waterways. Stockpiled soil shall be protected against erosion. Temporarily stabilize on-site stockpiles and windrowed material with temporary seed and mulch no later than the end of the work day or no later than the next day, for each day the stockpiles or windrows are added to. Clean up materials dropped or fallen from trucks beyond the work area before the end of each work day. Consider use of water tight end gates or liners for dump trucks hauling marsh excavation material.

Erosion control BMPs are at suggested locations—the actual locations will be determined by the engineer. Erosion Control BMPs shall be maintained until permanent vegetation is established or until the engineer determines that the BMP is no longer required.

During marsh excavation backfill operations, take measures to ensure that surge water does not leave the work area that may deposit sediment into adjacent wetlands. Management of water in marsh excavation shall be incidental to the work.

WDNR Liaison:

Craig Webster
(262) 574-2141
craig.webster@wi.gov

XI. Erosion Control Structures

Within three calendar days after completing the excavation for a substructure unit, place riprap or other permanent erosion control items required by the contract or deemed necessary by the engineer around the unit at a minimum to a height equivalent to the calculated water elevation resulting from a storm that occurs on the average of once every two years (Q2) as the engineer directs.

In the event that construction activity does not disturb the existing ground below the Q2 elevation, the above timing requirements for permanent erosion control shall be waived.

XII. Drainage During Construction

During construction, the existing streets, easement areas, ditches, navigable waterways, basins, and all graded areas shall be maintained in a well-drained condition at all times by keeping the construction areas sloped in such a manner as to maintain positive drainage. Blading or leveling operations may be required during construction in order to prevent the ponding of water.

The Contractor shall be responsible for and shall take all reasonable and necessary precautions to preserve and protect all existing tile drains, sewers, and other subsurface drains, or parts thereof, which in the judgment of the City Engineer may be continued in service without change. The Contractor shall repair at his own expense any and all damage to such facilities resulting from his operations and no additional compensation will be allowed. Any springs or seeping water encountered shall be reported to the City Engineer.

Use existing storm sewers, existing culvert pipes, existing drainage channels, temporary culvert pipes, or temporary drainage channels to maintain existing surface and pipe drainage. Pumps may be required to drain the surface, pipe, and structure discharges during construction. Costs for furnishing, operating, and maintaining the pumps is considered incidental to the project

XIII. Protection of Waterways

The Contractor shall comply with all laws prohibiting the pollution of any lake, stream, river, or wetland by the dumping of any refuse, rubbish, dredge material, or debris therein.

To limit sedimentation, the Contractor shall use appropriate erosion control practices on the site as recommended by the Army Corps of Engineers (COE) and Wisconsin Department of Natural Resources.

Special precautions shall be taken by the Contractor during all periods of heavy rainfall and at all locations where storm water, groundwater and/or mud and debris may enter the sewer systems or discharge from the site onto adjacent properties and wetlands. All mud, stones, and debris that enter the sewer systems due to the Contractor's operations or his neglect shall be cleaned from the system by the Contractor. It shall be the Contractor's responsibility to see that such storm water, groundwater and debris does not enter the sewer system. It shall be the Contractor's responsibility to see that proper precautions are taken continuously during the time of construction so problems do not develop during non-working as well as working hours.

If the Contractor is required to temporarily block the flow of the water across the work area such interruption of the flow shall be accomplished using a combination of sandbags and impervious membranes both upstream and downstream to the work area. Pumping around the work area may be required in addition to this.

All costs necessary to meet with the requirements included herein shall be considered incidental to the project and no additional compensation shall be allowed.

XIV. Water Removal

The Contractor shall provide and maintain ample means and devices to promptly remove and properly dispose of all water entering the trench excavation during the time the trench is being prepared for the pipe laying, during the laying of the pipe, and until the backfill at that pipe has been completed. Water from the trench shall be filtered or discharged to a settling basin in accordance with applicable regulations.

No ground or surface water shall be allowed to drain into any existing sanitary sewer. Water may be allowed to flow through storm sewers and sewer structures, but only if approved by the Engineer.

No units shall be constructed under water, except with the approval of the Engineer, and then only in accordance with methods prescribed by him. All costs for water removal and complying with all applicable regulations shall be merged into the unit prices bid under the contract, and no additional compensation shall be allowed.

The Contractor shall intercept and divert drainage away from the work sites by the use of dikes, cofferdams, curbwalls, ditches, pipes, sumps, or other means. The Contractor shall

design drainage systems so they do not cause erosion on or off the site. The Contractor shall remove drainage systems no longer needed and shall remove debris and restore site or sites to original condition.

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice before discharge. Guidance on dewatering can be found on the Wisconsin Department of Natural Resources website located in the Storm Water Construction Technical Standards, Dewatering Code #1061, "Dewatering". This document can be found at the WisDNR website:

http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

The cost of all work and materials associated with water treatment and/or dewatering is incidental to the bid items the work is associated.

If water enters the excavation in volumes that could adversely affect the performance of the work or has the potential to cause loss or damage to adjacent property or structures, take immediate steps to reduce or mitigate the water inflow.

Do not pump water from the construction site to a storm water conveyance without the water first passing through a temporary settling basin and/or filter bag, surrounded by Silt Fence Heavy Duty. Discharge water in a manner that will not cause soil erosion at the discharge point. Discharge shall not cause sediment accumulation or flooding in any stream, storm sewer, or on adjacent properties.

If dewatering operations require pumping of water containing sediments (sand, silt, and clay particles), the discharge will not be allowed to leave the work site or discharge to a storm water conveyance system without sediment removal treatment.

XV. Measurement

Payments shall be based on actual field measurements for unit price contracts. If contract specific bid items are lump sum, payments shall be lump sum based on bid amount.

The CITY may elect to accept measurements made by the CONTRACTOR. When the CITY agrees to accept such CONTRACTOR measurements, CONTRACTOR shall provide written evidence of such measurement (load tickets, etc.).

The CITY reserves the right to increase or decrease the quantities of work. The cost for such an increase or decrease in the quantities of work will be negotiated using the unit prices/schedule of prices for determination of reasonable cost. No allowance will be made for any increased expenses, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the CONTRACTOR resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

XVI. Final Payment

When the project has been finally accepted by the CITY, the CONTRACTOR shall submit to the CITY or their designated Representative, an invoice for final payment in accordance with the GENERAL CONDITIONS.

When the CITY has verified and accepted the quantities of work, the CONTRACTOR shall be paid the entire sum found to be due after deducting all previous payments and all amounts to be deducted under the provisions of the Contract.

All prior partial estimates and payments shall be subject to correction in the final estimate of payment.

Acceptance of the final payment by the CONTRACTOR is their acceptance of all contract conditions and their indemnification of the CITY from any future claims arising from this Contract.

XVII. Traffic Control/Detour

Materials:

The Contractor shall submit for approval, a traffic control schedule to the Owner at the time of the pre-construction meeting. This schedule shall be updated as work progresses.

Execution:

The Contractor shall be responsible for the erection and maintenance of all drums, barricades, posts for signs, lights and signs, or other traffic control devices necessary for public safety and convenience in accordance with all applicable requirements. The plan includes a general traffic detour plan that shows minimum provisions, directions and signage needed to route all thru traffic around the site. The contractor shall provide a traffic control meeting these minimum standards to complete the project as directed on the phasing and staging plan and will require the potential for relocation of traffic control devices and moving barricades and thru traffic controls all necessary to keep a access to all businesses. In general, all hazards within the limits of the Work or on detours around the Work must be marked with clean, well-maintained drums, barricades, reflectors, electric lights, flashers and warning and directional signs in sufficient quantity and size adequate to protect life and property. These safeguards shall be moved, changed, increased or removed as required during the progress of the Work to meet changing conditions. Homemade signs will not be allowed.

Barricades shall be maintained in rigidly assembled condition. All warning devices shall be kept clean and in good repair so as to be readily discernible at all times.

Whenever the Contractor's operations obstruct or endanger a traffic lane, and no marked detour has been provided, the Contractor shall furnish a flagman to direct traffic through or around the congested area. The Engineer shall have the right to require additional flagmen, as he may deem necessary.

Adequate protection shall be provided around all openings wherever required to safeguard the Work or the public. All openings and surface obstructions shall be protected with drums, barricades, signs, lights and warning devices in accordance with local requirements.

All trenches for sewer pipe, manholes, or other drainage structures shall be backfilled or covered with steel plates at the end of the work day.

Measurement and Payment:

Traffic Control/Detour will be measured and paid at the contract unit price per lump sum acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, maintenance, and incidentals necessary to complete this item of work. This item may be paid for at a partial payment upon initial installation and a final payment upon completion of one phase and relocation of devices for the next phase.

XVIII. Section Corner Monument

Materials:

SEWRPC will furnish and install a pre-cast concrete monument or brass disk to be used to mark PLSS corner.

Furnish Dense Graded Base 1 ¼" materials that conform to these specifications. Furnish asphalt pavement surface surrounding the corner.

Execution:

SEWRPC will perpetuate existing section corner monument. The contractor is responsible to coordinate with SEWRPC and the engineer throughout the perpetuation and replacement process. Construction ties have been established for this monument by SEWRPC prior to construction—regardless, the contractor is responsible and shall contact the engineer and SEWRPC at least 2 weeks before starting construction operations or the preconstruction meeting to allow for section corner monument perpetuation, and to ensure that the construction ties will remain undisturbed.

The contractor must excavate and completely remove the existing monument. The contractor is responsible for providing a backfilled 3 to 4 foot deep hole where existing monument was removed.

The contractor is responsible to coordinate the materials and methodology to complete the construction of the surface surrounding the monument. This may include but is not limited to a 2' x 2' "box out" or 24-inch diameter core hole in concrete, asphalt pavement/paving rings, coring to facilitate poured in place monuments or other materials or methodologies as agreed to by the contractor and SEWRPC. Contact SEWRPC at least 2 weeks prior to construction of the surface course of asphalt to coordinate installation of the section corner monument.

Contact Information:

Attn: Rob Merry
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607
Phone (262) 953-4289
Fax (262) 547-1103
rmerry@sewrpc.org

Attn: Andy Traeger
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive

P.O. Box 1607
Waukesha, WI 53187-1607
Phone (262) 953-4296
Fax (262) 547-1103
atraeger@sewrpc.org

Measurement and Payment:

Section Corner Monument will be measured by each individual unit acceptably completed.

Payment is full compensation for all excavating; removal of existing monument, for placing and compacting backfill material; for disposing of surplus materials; for concrete or asphalt material, finishing of roadway or other surfaces, for all coordination with SEWRPC; and for all labor, tools, equipment, and incidentals necessary to complete this item of work.

XIX. Construction Staking

This special provision describes modifying Sections 105.6 and 650 of the WisDOT Standard Specifications to define the requirements for construction staking for this contract. Conform to Sections 105.6 and 650 except as modified in this special provision.

Replace standard spec 650.1 with the following:

This section describes the contractor-performed construction staking, or automated machine guidance (AMG) methods, required to establish the horizontal and vertical position for all aspects of construction including:

Silt fence
Culverts
Centerline/alignment
subgrade
base
blue top/red top
curb and gutter
pavement
pavement markings (temporary and permanent)
supplemental control
bioswales
slope stakes
storm sewer
water main
utilities
erosion control elements
restoration elements
traffic control items

Execution:

Add the following to Section 650.3.1 of the WisDOT Standard Specifications:

(6) AMG methods will not be allowed to establish the following:
Curb, gutter, and curb and gutter vertical locations.

(7) Maintain neat, orderly, and complete survey notes, drawings, and computations used in

establishing the lines and grades. This includes:

Raw data files

Digital stakeout reports

Control check reports

Supplemental control files (along with method used to establish coordinates and elevation)

Calibration report

Make the survey notes and computations available to the engineer within twenty-four (24) hours as the work progresses unless a longer period is approved by the engineer.

Replace Section 650.3.1.2.3.1 of the WisDOT Standard Specifications with the following:

(1) The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 710. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide that information within five (5) business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

Add the following to Section 650.3.3 of the WisDOT Standard Specifications:

(2) Record all subgrade elevation checks and submit a hard copy to the engineer within twenty-four (24) hours or as requested by the engineer.

Measurement and Payment:

Construction Staking will be measured by the contract lump sum price acceptably completed, which price will be full compensation for performing all survey work required to lay out and construct all work under this contract and for adjusting stakes to ensure compatibility with existing field conditions. The Owner will not make final payment for this item until the contractor submits all survey notes and computations used to establish the required lines and grades to the engineer within twenty-four (24) hours of completing this work. Re-staking due to construction disturbance and knock-outs will be performed at no additional cost to the Owner.

XX. Construction Staging/Phasing with Temporary Asphalt

Materials:

The Contractor shall submit for approval, a Staging/Phasing Plan to the Owner at the time of the pre-construction meeting. This shall be updated as work progresses.

Temporary Asphalt shall be placed at locations as indicated on the Staging/Phasing Plan and as necessary to allow local traffic to all businesses, including allowing semi-traffic to access existing driveways, and the removal of the same. Any staging locations must be pre-approved and is the responsibility of the contractor to secure any staging locations. Any temporary lanes and use of temporary asphalt shall be approved by the owner and maintained in safe condition to allow local access.

Execution:

Stage/Phase construction activities to facilitate traffic flow and safety as directed on the staging and phasing plan.

Measurement and Payment:

Construction Staging/Phasing with Temporary Asphalt will be measured and paid at the contract unit price per lump sum acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, maintenance, and incidentals necessary to complete this item of work. This item may be paid for at a partial payment upon initial completion of phase one and a final payment upon completion of the second phase and setting up to allow for the final phase to be completed.

XXI. Sawcut Pavement

Execution:

A full depth saw cut, regardless of asphalt or concrete pavement and unknown depths, shall be made where new pavement is matching existing pavement, and as shown in the project drawings. Saw cuts shall be marked prior to the start of work by the Engineer.

Pavements shall be saw cut in neat straight lines, at right angles to the street or drive, to produce a clean joint for pavement restoration. If the saw cut edge is damaged during construction, the Contractor shall saw cut the pavement again immediately prior to paving.

All saw cut slurry must be removed from the pavement before moving to the next saw cut location. Squeegee slurry onto adjacent aggregate or collect and remove from the site. Slurry may not be left on the pavement surface.

Dry sweeping is not permitted. If used, rotary broom devices must have a water bag or a vacuum device.

Measurement & Payment:

Payment for Sawcut Pavement will be made at the Contract unit price per lineal foot, which payment shall be full compensation for all operations hereinbefore specified; for slurry removal; and for all labor, tools, equipment and incidentals necessary to saw cut the full depth of asphalt and concrete pavement.

XXII. Silt Fence Heavy Duty

Materials:

Furnish heavy duty silt fence consisting of a composite woven wire fabric, posts, geotextile fabric, and fasteners to be assembled by the contractor. Woven wire fabric shall be a standard field fence type, a minimum of 3 feet high with a maximum mesh spacing of 6-inches and minimum 14½ AWG wire. Provide metal posts with a minimum length of 6-feet, 3-inches. Posts shall be “studded tee” or “U” type with a minimum weight of 1.3 lb/ft. Provide geotextile fabric, non-woven with properties as specified in the above Silt Fence specification.

Execution:

Placed and maintain heavy duty silt fence as shown on the plans, in accordance with Subsection 628.3.4 of the WisDOT State Standard Specifications, and as follows:

Space ties and anchors adequately to resist current flow. Remove silt fence only after

construction activities have been completed. Remove trapped silt prior to removing the fence as directed by the engineer. Use heavy duty silt fence in wetland areas up to 6-inches of standing water.

Silt fence shall be removed once vegetation has been established, as determined by the Engineer. The Contractor shall also remove and dispose of accumulated silt.

Measurement and Payment:

Silt Fence Heavy Duty will be measured and paid for at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to install, maintain and remove the silt fence; and to dispose of any accumulated silt.

XXIII. Inlet Protection

Materials:

Inlet protection shall be geotextile fabric type FF as shown on the detail in the project drawings.

Execution:

The CONTRACTOR shall install inlet protection on all catch basins and storm sewer inlets, both within the construction limits and downstream of the project as noted on the Project Drawings, in accordance with Subsection 628.3.13 of the WisDOT State Standard Specifications and the Standard Detail Drawings on the project drawings.

Sediment deposits shall be removed from the inlet protection when the sediment has accumulated between $\frac{1}{3}$ and $\frac{1}{2}$ the design depth of the device, or when the device is no longer functioning as designed.

Measurement and Payment:

Inlet Protection will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, maintenance, and incidentals necessary to complete this item of work.

Inlet Protection will be paid for once per inlet. Any fabric that needs to be replaced during construction will be the responsibility of the Contractor.

XXIV. Tree Removal & Clearing & Grubbing

Execution:

- A. Clear areas required for access to site and execution of Work.
- B. Remove trees and shrubs within marked areas and within the slope intercept limits, but only as ordered by the Owner in the field. Completely remove stumps and root system.

- C. Clear undergrowth and deadwood without disturbing subsoil.
- D. Remove debris, rock and extracted plant life from site.
- E. Temporary seed and mulch cleared and grubbed areas within 48 hours of disturbance. Sowing rate for temporary seeding shall be 3 pounds per 1000 square feet.

Measurement & Payment:

The individual trees shown to be removed on the plans shall be paid for by the inch diameter with the Tree Removal Bid Item. The tree removal areas within the slope intercept limits that are not identified individually shall be paid for by the station acceptably completed and will not be measured and shall include all trees no matter the size. Each station of clearing and grubbing will equal 100 feet of tree removal parallel to the road centerline stationing. When the individual trees shown on the plans are to be removed the City will determine tree diameter by measuring the circumference approximately 4½ feet above the existing ground level, but above the ground swell, and dividing by 3. The City will include only those in-place trees or stumps with a 3-inch or greater diameter. Payment shall be full compensation for all operations hereinbefore specified; and for all labor, tools, equipment and incidentals necessary to complete this item of work; for trimming and pruning; and for temporary seeding and mulch. Include full compensation for labor, equipment and supervision to remove and dispose of trees including the stumps. Payment will include all trees, shrubs and brush removals to construct the road.

XXV. Remove and Replace Mailboxes & Temporary Mailboxes

Execution:

The Contractor shall remove and salvage existing mailboxes as necessary for construction or as shown on the project drawings. The Contractor shall provide temporary mailboxes during construction and shall reinstall the salvaged mailboxes after construction is complete. Contractor shall safely deliver the mailbox and post to the property owner for storage during construction.

The Contractor shall install all mailboxes, both temporary and permanent, to meet U.S. Postal Service Requirements. The Contractor shall contact the Postmaster regarding any disturbance to mail drop off boxes within the project limits and obtain approval of any temporary mailbox location(s). Approval and set-up of any temporary collection system shall be completed before the removal of any mailbox to ensure mail delivery is not interrupted.

Measurement and Payment:

Remove and Replace Mailboxes will be measured and paid for at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified; and for all materials, including all hardware, posts, removal and disposal; for labor, tools, equipment, and incidentals necessary to remove and provide temporary mailboxes.

XXVI. Pavement Removal & Remove Curb & Gutter

Execution:

Execution shall conform to Section 204.3 of the WisDOT State Standard Specifications,

except as detailed below.

All concrete pavements (including driveways), asphaltic surface and curb & gutters shall be saw cut full depth prior to being shattered and removed. Where concrete pavements are covered with an asphalt overlay, or when a concrete base is below asphalt, both the asphalt and concrete shall be saw cut (excepting where only the asphalt is to be removed) and both layers removed.

A milled butt joint is not required to be a saw cut if it is neat and straight.

All sawing shall conform to the Sawcut Pavement section of this specification.

Measurement & Payment:

Payment for removing concrete pavement, asphaltic pavement and curb & gutter items will be measured one time and made at the Contract unit price per square yard or linear feet, which price will be full compensation for all operations specified; for breaking down and removing all asphalt and concrete pavements including sidewalk and driveways regardless of depth or layers or materials encountered; and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. Removal of existing CMP, concrete headwalls, glasgrid and guard rails shall be incidental to Common Excavation.

All sawing will be paid under the Sawcut Pavement bid item.

XXVII. Common Excavation

Execution:

This item shall include all roadway, site grading, ditching, culvert removal, endwall removal, removal of timbers, subsurface materials, ties and any other materials encountered during excavation and drainage excavation necessary to complete this project, including removing existing base course as specified herein and as shown on the project drawings. The contractor shall remove all topsoil from within the proposed roadway or as shown on the Project Drawings. Remove all topsoil within 1:1 slopes extending downward and out from the proposed edges of the base or subbase material. All excavation and grading work shall comply with the provisions of Sections 205, 207, 211, and 213 of the WisDOT State Standard Specifications.

Finished subgrade elevations shall be accepted by the Engineer and the Owner prior to placement of base course.

Measurement & Payment:

Payment for Common Excavation will be made at the lump sum bid price, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work

Removal of existing CMP, culvert pipes, endwalls, concrete or asphalt headwalls, glas grid (or equal) and guard rails shall be incidental to Common Excavation. Unless specifically bid as a separate item, any removals not mentioned but required to obtain subgrade elevations (roadway and ditching) and maintaining drainage will be included in common excavation.

XXVIII. Excavation Below Subgrade

Materials:

Place Geogrid Tensar Triax or Tensar BX1200 within EBS as shown on details in plans in subgrade areas with extremely poor soils as directed by the engineer.

Execution:

Deposits of frost-heave material, unstable silty soils, water-bearing soil, topsoil or other undesirable foundation materials shall be removed from the area within the existing roadway slopes to such depths as directed by the Engineer. This work shall be done in accordance with Subsection 205.3.4 of the WisDOT State Standard Specifications. Remove unsuitable materials to a minimum depth of 24 inches to 36 inches below existing subgrade in accordance to the details shown in the plans as directed by the Engineer. There are three EBS alternatives that shall be used based on the subgrade condition and groundwater conditions encountered. The engineer will direct the contractor on which alternative to use when field conditions are observed.

Measurement & Payment:

Payment for Excavation Below Subgrade will be made at the Contract unit price per cubic yard, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. The contractor will also be paid for any geogrid material used. Geotextile Type SAS fabric shall be placed in all areas with Dense Graded Base, 1 1/4-inch and paid for separately. Geogrid Tensar Triax or Tensar BX1200 shall be paid for at the unit price bid for those items.

Topsoil removal within the roadway, including topsoil removal below subgrade within the grading limits shown on the Project drawings, is included in the base bid quantity of Common Excavation. This bid item includes an estimated quantity of excavation, however, the Contractor will be paid for the actual volume of Excavation Below Subgrade as measured in the field.

XXIX. Geotextile, SAS & Geogrid

This section describes providing geotextiles for subgrade separation and stabilization, drainage filtration, subgrade reinforcement, and under culverts and riprap.

This section also describes providing geogrid for subgrade.

Materials:

Furnish Geotextiles as according to Section 645.2 of the WisDOT Standard Specifications for Geotextiles Type SAS, and Geogrid Tensar, Triax or Geogrid, Tensar, BX1200.

Execution:

Install geosynthetics in compliance with Section 645.3 of the WisDOT Standard Specifications.

Measurement & Payment:

Payment for Geotxtile SAS, or Geogrid items will be measured and paid at their respective contract unit price per square yard acceptably completed, which price will be full compensation for all operations specified, for providing the geosynthetic.

XXX. Dense Graded Base, 3-Inch, EBS Backfill

Materials:

Furnish Breaker Run as conforming to Section 311.2 of the WisDOT State Standard Specifications. Crushed concrete will not be accepted.

Execution:

Place Dense Graded Base, 3-Inch in areas where soils were removed as Excavation Below Subgrade, as conforming to Section 311.3 of the WisDOT State Standard Specifications.

Measurement and Payment:

Dense Graded Base 3-Inch will be measured and paid for at the contract unit price per ton acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. If the contractor substitutes select crushed material for breaker run as allowed under 311.2, the department will pay for that material at the Dense Graded Base 3-Inch unit price.

XXXI. Remove/Replace Hydrant

Materials:

Includes all fittings pipe or other items necessary for relocating the existing hydrants.

The existing hydrant shall be salvaged and used for the hydrant relocation.

Hydrant leads shall be six (6) inch, Class 52 ductile iron pipe.

Execution:

Remove, salvage and re-install hydrants as shown on plans or as directed in field. Any shutdown of existing mains shall be pre-approved by the owner and all valve operations shall be completed by the owner.

All hydrants and valves shall be restrained by Mega-lugs or pre-approved equal from the main to the hydrant. Any push on joints in hydrant leads need to be harness restrained.

Wrap all ductile iron pipe, valves, fittings and valve boxes with polyethylene film. When wrapping valve boxes, only wrap the bell portion and the bottom of the first section.

Measurement and Payment:

Hydrant replacement, including Water Main, 6-Inch and valves/fittings, will be measured and paid at the contract unit price per each acceptably completed, which price will be full

compensation for all operations specified, and for all materials; for backfill, bedding, frames, and covers; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

XXXII. Bioswale

Materials:

Furnish Geotextile Type DF Schedule B, as conforming to Section 645.2 of the WisDOT State Standard Specifications.

Furnish perforated Pipe Underdrain 6-Inch as conforming to the above Pipe Underdrain 6-Inch article. The underdrain pipe shall be paid at the unit price bid for 6-inch HDPE underdrain.

½-inch to 1½-inch Washed Stone shall conform to Coarse Aggregate #2, as defined in Section 501.2.5 of the WisDOT State Standard Specifications. Gravel shall be double-washed (note: inadequate washing of aggregate may lead to clogging at the native soil interface).

Pea Gravel shall be double-washed before placement.

Bioswale Planting Soil shall consist of a mixture of sand, compost, and topsoil. The mix shall be designed to the following approximate percentages (by volume):

Silica sand – 40%

Topsoil – 30%

Compost – 30%

The silica sand component shall be USDA coarse sand (0.02 to 0.04 inch diameter) pre washed to remove clay and silt particles, and well-drained or dry prior to mixing. Calcium carbonated, dolomitic sand, and other substitutions are not allowed.

The topsoil component shall be a USDA classified sandy loam, or loamy sand mixture.

The compost component shall meet the requirements of the Wisconsin Department of Natural Resources Specifications S100 Compost.

The bioswale planting soil mix shall be free of rocks, stumps, roots, brush, or other material over 1-inch in diameter. No other materials shall be mixed that may be harmful to plant growth or prove a hindrance to planting or maintenance.

The bioswale planting soil mix shall have a pH between 5.5 and 6.5.

Seed shall be WisDOT seed mixture No. 40.

Erosion mat shall be Erosion Mat Urban Class I Type B, or approved alternate.

Execution:

The Contractor shall construct the bioswale as shown on the plans and the details including:

1. Excavation of and disposal of existing soils (paid for as part of Excavation Common).
2. Installing geotextile fabric, 1/2-inch to 1 1/2-inch washed stone, washed pea gravel and bioswale planting soil.
 - a. The clean washed depth will vary based upon the finished surface elevation.
3. Installing underdrain system and inlet/outlet structures.
4. Re-vegetation as specified on the plans.
5. Site Restoration

Construction shall be suspended during periods of rainfall. Construction shall remain suspended if ponded water is present or residual soil moisture contributes significantly to the potential for soil smearing, clumping, or other forms of compaction.

Compaction and smearing of soils on the bottom and side slopes of the infiltration basin and the compaction of the soils used for backfill in the soil planting bed shall be avoided.

Washed stone, pea gravel and engineered soil shall not be compacted after placement. Geotextile fabric conforming to Section 645.2.4 of the WisDOT State Standard Specifications shall be used to separate soil layers as shown on the plans.

Installation of geotextile fabric shall be Type DF and conform to Section 645.3.4 of the WisDOT State Standard Specifications.

Installation of perforated Pipe Underdrain 6-Inch along the entire length of the bioswales shall conform to Section 612.3 of the WisDOT State Standard Specifications. Underdrain shall have a pipe end cap with 1-inch x 3-inch opening O.C. on the upstream end.

Install bioswale driveway crossing as shown in the details.

Prior to placement in the bioswale, the engineered soil shall be pre-mixed and the moisture content shall be low enough to prevent clumping and compaction during placement.

Plant seed mix 40 conforming to Section 630 of the WisDOT State Standard Specifications. Cover with erosion mat.

Measurement and Payment:

Bioswale will be by measured and paid for at the contract unit price per linear foot acceptably completed, measured parallel to the roadway centerline regardless of width and depth as in the plans or as directed by the Engineer in the field; which price will be full compensation for all operations specified, and for all materials; for placement of geotextile, washed stone, washed pea gravel, planting soil, seeding, and erosion mat; for labor, tools, equipment, grading, hauling, and incidentals necessary to complete this item of work.

XXXIII. Bioswale Outfall Structure

Materials:

Furnish 6-inch unperforated underdrain made of the flexible pipe conforming to Section 612.2.6 of the WisDOT State Standard Specifications, or approved equal.

Furnish unperforated Pipe Underdrain 6-Inch as conforming to the above Pipe Underdrain 6-Inch article.

Furnish Riprap Medium as conforming to the Riprap Medium specification contained in these special provisions.

Clay materials shall contain no sod, brush, roots, frozen soil, or other perishable materials. Rock particles larger than 3 inches shall be removed prior to compaction of the clay.

Execution:

Construct Bioswale Outfall Structures at the downstream end of the bioswale, as according to the plans, details, and this specification.

Prepare sound and compacted base, free of organic topsoils.

Lay underdrain pipe as conforming to Section 612.3.3 of the WisDOT State Standard Specifications, or as shown in the plan details.

Compact clay dam around pipe to prevent flow through stone. Ensure that clay dam is free of voids, that it provides a resilient barrier to water flow.

Measurement and Payment:

Bioswale Outfall Structures will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials; for underdrain, underdrain rodent guard, riprap, geotextile, and clay dam; for labor, tools, equipment, and incidentals necessary to complete this item of work.

XXXIV. Concrete Box Culvert (Erosion Control, Removal and Structures)

Materials:

Place Erosion Control as indicated on the plan and as required in the field. Concrete Box Culvert structures shall be constructed to the size as according to the bid item name and per the plan details.

Execution:

Place all required erosion control and remove existing Box Culvert. Install new concrete box culvert structures with end sections according to the bid item name and as shown on the plan.

Measurement and Payment:

Concrete Box Culvert will be measured and paid at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials; for backfill, bedding; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

Erosion Control for Concrete Box Culvert & Remove Existing Box Culvert will be measured and paid at the contract unit price per lump sum acceptably completed, which price will be

full compensation for all operations specified, and for all materials, labor, tools, equipment, maintenance, and incidentals necessary to complete this item of work.

XXXV. Storm Sewer Catch Basins and Storm Sewer Manholes

Materials:

All catch basins and manholes shall be constructed to the size as according to the bid item name.

All storm catch basins and manholes shall be pre-cast concrete with integral base unless otherwise stated on the plans, with pre-cast flattops (slab or deck) with an opening for the casting. Where field conditions allow, the manhole shall be constructed with an offset cone. Nyloplast (or approved equal) manholes shall be used for the 6-inch underdrain pipe where shown on the plans.

All chimney joints, including the frame-chimney joint, and all barrel & cone section lifting holes shall be sealed with a cementitious grout with a struck joint. Grout shall be premixed, non-metallic, high-strength, non-shrink, Pennegrout by IPA Systems, or approved equal, which meets requirements of ASTM C-1-91 and C-827 as well as CRD C-588 and C-621. When mixed to a mortar or "plastic" consistency, the grout shall have a minimum 1-day and 28-day compressive strength of 6,000 and 9,000 psi, respectively.

Dry stacking of riser rings or flat decks shall not be permitted. They shall be laid in a bed of grout as described above.

Steps meeting the requirements of SWS, Section 6.40.1 shall be installed in all manholes or junction chambers deeper than 4', from floor to rim.

Drop pipes or other energy-dissipating structures shall be provided for all sewers entering a manhole with their invert at an elevation more than 24-inch above the invert of the sewer leaving the manhole.

Storm Sewer Catch Basin frame and grate shall be Neenah R-3228-BD, or as otherwise detailed on the plans, or equal as approved by the City Engineer.

Storm Sewer Manhole frame and cover shall be Neenah R-1661, or equal as approved by the City Engineer.

Execution:

Catch Basin and Manhole depths shown on the Project drawings are approximate only, unless the cover elevation is indicated. Catch Basin and Manhole covers shall be placed to match the existing grade or at the elevation shown on the Project drawings. Place manhole covers 1/4 inch below the pavement grade in streets. At low points, curb pan shall be pitched a 1/2 inch five feet on both side of catch basins.

A minimum of 4 inches to a maximum of 16 inches of adjusting rings shall be furnished for each catch basin or manhole, unless shown otherwise on the Project drawings. Concrete adjusting rings shall meet the requirements of Subsection 8.39.11 of the SWS

Measurement and Payment:

Storm Sewer Catch Basins and Manholes will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials; for backfill, bedding, frames, and covers; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

XXXVI. Storm Sewer, Reinforced Concrete Pipe, (Includes H.E. Pipe & RCP Driveway Culverts)

Materials:

All reinforced concrete pipe shall be constructed per SWS, Section 8.6.0 or as approved by City Engineer. All reinforced concrete pipe shall be of the class and size as according to the bid item name.

- Reinforced Concrete Pipe – ASTM C76
- Horizontal Elliptical Reinforced Concrete Pipe – ASTM C507.
- Joints for concrete storm sewer pipe shall have rubber gaskets conforming to SWS, Section 8.41.2.

Execution:

Culverts shall be manufactured and installed in accordance with the requirements of the WisDOT State Standard Specifications. Reinforced concrete pipe shall be installed using Class "B" Bedding. Place bedding material to the springline of the pipe and compact prior to placing cover material. Compaction of bedding material at the level of the pipe springline shall include working bedding material under the haunches of the pipe using shovels or other suitable methods. The Contractor shall take care to completely work bedding material under the haunches of the pipe to provide adequate side support. Place and compact cover material in one or more lifts after compacting bedding material.

Measurement and Payment:

Reinforced Concrete Pipe Class IV shall be measured and paid at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XXXVII. Storm Sewer, CMP, 12-Inch, 15-Inch & 18-Inch, & Apron Endwalls, CMP (Includes Driveway Culverts)

Materials:

Corrugated steel pipe shall be furnished for the following minimum gages/thicknesses.

12 and 15-inch CMP	16 gage (0.064 in.)
18-inch CMP	16 gage (0.064 in.)

Execution:

The installation of culverts shall comply with Section 521 of the WisDOT State Standard Specifications. The trench shall be wide enough to permit thorough compaction of backfill material. The bottom of the trench shall be shaped by means of a template so that at least 10% of the outside diameter of the pipe will be in contact with the bottom of the trench. Backfill the trench with selected excavated material placed in 6-inch maximum lifts and mechanically compacted to a minimum of 90% Standard Proctor Density. Backfill material shall be brought up simultaneously on both sides of the pipe.

Steel end sections, complying with Sections 520 and 521 of the WisDOT State Standard Specifications and the Standard Detail Drawings shall be installed at the ends of culverts where shown on the project drawings.

Measurement and Payment:

Corrugated Metal Culvert Pipe shall be measured and paid at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

Apron Endwalls for Culvert Pipe Steel, and Apron Endwalls for Pipe Arch Sloped Side Drains Steel shall be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XXXVIII. Storm Sewer Apron Endwalls, Reinforced Concrete (Includes Driveway Culverts)

Materials:

All apron end sections shall be constructed with a minimum Class III reinforced concrete pipe per SWS, Section 8.6.0 or as approved by City Engineer.

- Reinforced Concrete Pipe – ASTM C76
- Horizontal Elliptical Reinforced Concrete Pipe – ASTM C507.
- Joints for concrete storm sewer pipe shall have rubber gaskets conforming to SWS, Section 8.41.2.

Execution:

The end sections shall be manufactured and installed in accordance with the requirements of the WisDOT State Standard Specifications, Section 521 or Section 522 as applicable.

Measurement and Payment:

Reinforced Concrete Pipe Class IV Apron End Section shall be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XXXIX. Storm Sewer, HDPE, (4-Inch & 6-Inch) Underdrain

Materials:

Provide underdrain pipe 4-inch and 6-Inch with, or without perforations. All underdrains within bioswales and located under curb and gutter shall be perforated.

The underdrain shall be constructed with High Density Polyethylene Pipe (HDPE) with a corrugated exterior and smooth interior and provided with watertight bell and spigot joints with rubber gaskets. The pipe shall meet the requirements of AASHTO M-252.

Pipe perforations may be holes or slots and may be in 3 or 4 lines spaced around the circumference of the pipe at 120° or 90° respectively.

Execution:

The underdrain pipe shall outfall into the ditch or at catch basins at locations shown on the project drawings; and in accordance to the typical sections and details shown on project drawings.

Backfill unperforated pipe with grade 1 granular backfill conforming to Section 209.2 of the WisDOT State Standard Specifications.

Measurement and Payment:

Pipe Underdrain 4-inch and 6-inch will be measured and paid at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, underdrain end cap, fittings, and incidentals necessary to complete this item of work. Pipe underdrain that is perforated will be paid at the same price as non-perforated pipe.

All excavation, geotextiles, pipe, fittings and granular backfill are considered incidental to this item of work.

XL. Dense Graded Base, Shouldering ¾-Inch

Materials:

This work shall consist of constructing or restoring crushed aggregate shoulders adjacent to pavement. The shoulder material shall consist of crushed limestone having the properties in accordance with Section 305.2.2.1 of the WisDOT State Standard Specifications for ¾-inch crushed aggregate. Crushed Concrete will not be accepted.

Execution:

The shoulder material shall be placed and graded from the edge of the new pavement to the proposed granular shoulder limits. A pneumatic or vibratory roller shall be used to compact the material, including the foreslope. A walk-behind or other approved compaction device may be used to achieve sufficient compaction on the foreslope as determined by the Engineer. Excess material beyond the proposed shoulder limits shall be removed.

Gravel driveways adjacent to the project limits shall be blended using this material to achieve a smooth transition to the new pavement.

The shouldering method shall be discussed with the Engineer and City Staff prior to the start of shouldering work.

Measurement and Payment:

Material haul tickets shall be provided to the Engineer by the end of each working day. Payment for shouldering will be made at the Contract unit price per ton, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLI. Dense Graded Base, 1½-Inch

Materials:

Base course for the roadway shall consist of Dense Graded Base, 1 ¼" conforming to WisDOT State Standard Specification Section 305. Crushed Concrete will not be accepted.

Where Dense-Graded Base 1½-Inch base course layers specified in the plans, always use 1½-inch Dense Graded Base in the top 4 inches of base. The contractor may substitute 3-inch crushed limestone—as conforming to WisDOT State Standard Specification Section 305.2.2.1—for Dense Graded Base 1 ¼" in lower base zones.

Geotextile Type SAS shall conform to Section 645.2 of the WisDOT State Standard Specification. Select the schedule of Geotextile Type SAS used as appropriate to the immediate overlying materials used.

Execution:

Place Geotextile Type SAS as conforming to Section 645.3.1 of the WisDOT State Standard Specification, except as modified below.

Place Geotextile Type SAS on all roadway subgrade areas that will receive Dense Graded Base course material.

Geotextile fabric shall have a minimum 24-inch overlap for longitudinal seams, and minimum 36-inch overlap for transverse seams.

The base shall be spread, shaped, compacted, and proof-rolled to produce stabilized base which conforms to the required cross-sections. The base shall be placed on geotextile type SAS.

Special compaction testing may be required dependent on site conditions in accordance with 301.3.4.3 of the WisDOT State Standard Specifications.

Subsequent open cuts of the pavement requiring excavations below the subgrade of roadways having geotextile fabric in place shall be backfilled with approved compacted granular fill up to the original subgrade elevation. Pavement and base shall be removed a minimum of 6-inch on each side of excavation or extent of damaged fabric to allow new geotextile repair fabric to be installed with a minimum 6-inch overlap on all sides.

Measurement and Payment:

Material haul tickets shall be provided to the Engineer by the end of each working day. Payment will be made at the Contract unit price per ton, which price will be full compensation

for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. Include material delivered or salvaged from on-site and placed at the job site per Section 301.4.1 of the WisDOT State Standard Specifications. Geotextile type SAS paid for separately. Contractor testing for department approved aggregate sources is not required.

If the contractor substitutes 3-inch in base course as allowed above, 3-inch will be paid at the bid price of Dense Graded Base, 1½-Inch.

XLII. Concrete Curb and Gutter, 30-Inch

Materials:

Concrete for curbs shall be air entrained, Grade A, conforming to WisDOT Standard Specification Section 501, and in particular, meet the following requirements:

- Minimum concrete content: 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Size of coarse aggregates required: No. 1;
- Slump: 1-inch- 3-inch; and
- Air content: 4.5% - 7.5%.

Concrete that is rejected on the work site for any reason shall not be re-tempered and used in the work without specific approval of the City Engineer.

Place Concrete Curb & Gutter 30-Inch as matching the bid item names and as accordingly detailed in the plans.

Execution:

Before the concrete is placed, the crushed aggregate base course under the curb, gutter, and curb & gutter shall be checked for correct elevation. The concrete shall be placed in as nearly a continuous operation as possible. The concrete surface shall be sealed, directly after finishing operations, by spraying a uniform coating of white curing material meeting the requirements of WisDOT State Standard Specifications Section 415.2.4, in such a manner as to provide a continuous water-impermeable film on the entire concrete surface.

Transverse contraction joints for curbs shall be cut or sawed at a maximum 10-foot intervals. One inch expansion joints shall be provided at ends of radii, points of considerable change in grade and alignment, at intervals not to exceed 300 feet and where abutting existing curb and gutter.

Concrete curb and gutter shall cure a minimum of 4 days prior to backfilling and crushed limestone base installation.

Where driveways are concerned, pour half the driveway at a time where possible or coordinate with the resident for alternative parking location while it cures.

Measurement and Payment:

Curb & gutter bid items shall be measured at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all

materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, finish and cure the concrete curb & gutter.

Maintain a minimum of three inches (3-inch) of crushed limestone base under the curb & gutter. Base material under concrete curb & gutter shall be furnished and placed under the Dense Graded Base 1¼-inch bid item. Curb head & Gutter at 18900 will be paid for as 30-Inch.

XLIII. Concrete Flume

Materials:

Portland Cement used in all concrete mixes shall conform to WisDOT State Standard Specifications Section 501. Aggregates used in concrete shall conform to the requirements of WisDOT State Standard Specifications Section 501. Concrete shall be air entrained, Grade A, conforming to WisDOT State Standard Specifications Section 501, and in particular, meet the following requirements:

- Minimum concrete content, 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Maximum amount of water per bag of cement: 6.0 gallons;
- Size of coarse aggregates required: No. 1 plus No. 2;
- Slump: 1-inch-3-inch; and
- Air content: 4.5% - 7.5%.

Execution:

Contractor must submit a mix design and receive the approval of the City Engineer prior to paving. A pre-pour meeting must be scheduled with the Engineering Division prior to paving to discuss materials and joint locations. Water used shall conform to WisDOT Specification Section 501.2.4. If City water is used, it will be charged at the current rates for such use; a PERMIT IS REQUIRED from the Water Utility for any City water use. The consistency of the freshly mixed concrete shall be such that when measured by means of a 4-inch x 8-inch x 12-inch slump cone, the slump shall not exceed 3-inch. Test cylinders shall be required meeting AASHTO standards, stored under site conditions and then tested at Contractor expense. Concrete pavement shall be constructed in accordance with WisDOT Standards Specifications, Section 415. The Contractor shall clean the area of all forms, lumber, dirt and other debris to the satisfaction of the City Engineer.

Concrete Placement During Cold Weather

Concrete shall not be placed on a frozen subgrade. The Contractor shall remove and replace at his expense any concrete damaged by frost or freezing. When placing concrete during cold weather, the water and the aggregates in the concrete mixture may be heated. When specifically allowed by the City Engineer, the Contractor may use magnesium free calcium chloride as an admixture in the concrete. The maximum quantity to be used shall not exceed 1% of the cement content of the mix. When the air temperature is expected to drop below freezing, the Contractor shall cover the surface of the concrete with straw or hay to a sufficient depth to prevent freezing and such protection shall be furnished for at least 5 days after the concrete has been poured. Other methods of protection from freezing may be used when approved by the City Engineer.

Measurement and Payment:

Concrete Flume will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, finish and cure the Concrete Flume.

XLIV. Concrete Driveway, 7-Inch

Materials:

Portland Cement used in all concrete mixes shall conform to WisDOT State Standard Specifications Section 501. Aggregates used in concrete shall conform to the requirements of WisDOT State Standard Specifications Section 501. Concrete shall be air entrained, Grade A, conforming to WisDOT State Standard Specifications Section 501, and in particular, meet the following requirements:

- Minimum concrete content, 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Maximum amount of water per bag of cement: 6.0 gallons;
- Size of course aggregates required: No. 1 plus No. 2;
- Slump: 1-inch-3-inch; and
- Air content: 4.5% - 7.5%.
- High Early Strength concrete may be used.

Execution:

Contractor must submit a mix design and receive the approval of the City Engineer prior to paving. A pre-pour meeting must be scheduled with the Engineering Division prior to paving to discuss materials and joint locations. Water used shall conform to WisDOT Specification Section 501.2.4. If City water is used, it will be charged at the current rates for such use; a PERMIT IS REQUIRED from the Water Utility for any City water use. The consistency of the freshly mixed concrete shall be such that when measured by means of a 4-inch x 8-inch x 12-inch slump cone, the slump shall not exceed 3-inch. Test cylinders shall be required meeting AASHTO standards, stored under site conditions and then tested at Contractor expense. Concrete pavement shall be constructed in accordance with WisDOT Standards Specifications, Section 415.

Curing Time and Cleanup

Concrete driveways shall be allowed to cure for 7 days unless otherwise directed by the City Engineer. When directed to open the driveway to vehicular traffic, the Contractor shall clean the area of all forms, lumber, dirt and other debris to the satisfaction of the Engineer. The Contractor shall then flush and sweep the driveway. When a concrete saw has been utilized to cut joints, the Contractor will be required to flush the pavement with water, removing all residual materials of the sawing operation, prior to opening the driveway to vehicular traffic.

Concrete Placement During Cold Weather

Concrete shall not be placed on a frozen subgrade. The Contractor shall remove and replace

at his expense any concrete damaged by frost or freezing. When placing concrete during cold weather, the water and the aggregates in the concrete mixture may be heated. When specifically allowed by the Engineer, the Contractor may use magnesium free calcium chloride as an admixture in the concrete. The maximum quantity to be used shall not exceed 1% of the cement content of the mix. When the air temperature is expected to drop below freezing, the Contractor shall cover the surface of the concrete with straw or hay to a sufficient depth to prevent freezing and such protection shall be furnished for at least 5 days after the concrete has been poured. Other methods of protection from freezing may be used when approved by the Engineer.

Measurement and Payment:

Payment for Concrete Driveway 7-Inch shall be measured and paid at the contract unit price per square yard acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, finish and cure the concrete driveway.

XLV. HMA Pavement, (Binder, Surface & Driveways)

Materials:

The asphalt surface and binder courses shall be in conformance with Sections 450, 455, and 460 of the latest edition of the WisDOT State Standard Specifications. Inclusive is the regression of air voids from 4.0% to 3.0% with asphalt cement.

3-inch Asphaltic Surface Driveways and Field Entrances shall be 4 MT 58-28 S
2-inch Surface Course on the Roadway shall be HMA Pavement 4 MT 58-28 H
5-inch Binder Course shall be HMA Pavement 3 MT 58-28 H

Omitted from the specifications will be Ride Quality requirements and testing (Section 440), safety edge (Section 450.3.2.11), and disincentive and incentive for HMA pavement density (Section 460.5.2.2 and 460.5.2.3).

Execution:

The asphalt binder course shall be tacked at the rate of 0.05 gallons per square yard with an allowable variation of +/- 0.02 gallons per square yard prior to surfacing, unless otherwise directed by the Engineer.

Daily application of the tack coat shall be limited to approximately that area of surface that can reasonably be expected to be paved during the same day. The Contractor shall provide proper traffic control signage to alert motorists of where the tack coat is present.

The bituminous concrete pavement to be placed on the roadway shall conform to the City of New Berlin Infrastructure Standards 5.2.6.

Compaction shall be in accordance with Section 450.3.2.6 of the WisDOT State Standard Specifications.

The minimum thickness to be applied in any area shall not be less than those specified in Section 460.3.2 of the State Standard Specifications.

The Contractor shall submit, for the Engineer's verification, an asphaltic mix design meeting all necessary criteria. The asphaltic mix design shall consist of aggregate gradation, aggregate blend percentages, Job Mix Formula (JMF), recommended asphalt content, recommended plant mix temperature range and shall be signed by a professional engineer.

Measurement & Payment:

The Engineer shall be provided with daily tack tickets. These tickets for each day's work shall be provided to the Engineer no later than the following day. The tack coat shall be incidental to the unit price bid for asphalt pavement.

The Engineer shall be provided with proper trip tickets for each load of asphalt material delivered and placed, noting time, truck number, origin, destination, gross, net and tare weights, and type of material. These tickets for each day's work shall be provided to the Engineer no later than the following day. The Owner will measure hot mix asphalt surface and binder at the contract unit price per ton acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLVI. Adjust Sanitary Manhole

Materials:

Make adjustments using concrete adjusting rings and mortar, as according to the above Storm Sewer Catch Basins and Manholes specification.

All frame/casting adjusting rings shall be reinforced concrete rings having 26-inch I.D. The minimum height for a chimney section shall be the height associated with the proper placement of one 2-inch adjusting ring. Paving rings which have an adjustable diameter are not allowed.

Frame/cone internal rubber seals shall conform to SWS 8.42.0 and the following:

- Cretex 26-inch LSS 0-6 Internal Chimney Seal Part No. 092845; or
- Cretex 26-inch LSS 6-12 Internal Chimney Seal Part No. 092855, or
- Cretex 26-inch LSS 12-18 Internal Chimney Seal Part No. 092865; or
- Pre-approved equal.

External joint seals shall be MacWrap, as manufactured by Mar-Mac Manufacturing Co. Inc., or pre-approved equal.

Execution:

Perform work in accordance to the Standard Specifications for Sewer and Water Construction in Wisconsin, 6th Edition and all amendments. Rim elevations for manholes located in paved areas shall be set 3/8-inch – 1/2-inch below the asphalt binder grade elevation. Ramping of manholes will not be allowed.

All chimney joints, including the frame-chimney joint, and all barrel & cone section lifting holes shall be sealed with a cementitious grout with a struck joint. Grout shall be premixed, non-metallic, high-strength, non-shrink, Pennegrout® by IPA Systems, or approved equal, which meets requirements of ASTM C-1-91 and C-827 as well as CRD C-588 and C-621. When mixed to a mortar or "plastic" consistency, the grout shall have a minimum 1-day and 28-day compressive strength of 6,000 and 9,000 psi, respectively. Dry stacking of riser rings or flat decks shall not be permitted. They shall be laid in a bed of grout as described above.

The maximum height of adjusting rings above the cone as measured from the top of the cone or slab top shall be 22-inch. If more than 22-inch of adjusting rings are needed to adjust the casting to finished grade, then the sanitary manhole must be reconstructed.

Final adjustments to raise rim elevations to 3/8-inch – 1/2-inch below the grades shown on the final paving plans shall be made by installing adjusting reinforced concrete rings as needed just prior to placement of the final lift of the pavement (surface course).

Internal rubber frame-cone seals shall be installed within 5 working days after the binder pavement course has been placed, or the finished grading completed for the project or site on non-pavement area manholes. The internal seal bands shall be lubricated per manufacturer's recommendations prior to installation and tightening.

A sanitary manhole seal shall be installed upon completion of the work performed. Only one rubber sleeve and one additional extension shall be allowed in a newly constructed manhole. The internal seal and extension, if needed, shall overlap a minimum of 2-inch with the frame and cone for proper sealing.

External seals shall be marked on the asbuilt.

An external sealing wrap shall be placed at all joints between pre-cast manhole sections. The external sealing wrap shall meet, or exceed, the requirements of ASTM C-877, Type II.

Contact the City Engineer to schedule an inspection three (3) days prior to work being performed.

Measurement and Payment:

Adjust Sanitary Manhole will be paid and measured at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified; for adjusting existing manhole frame and casting to finish grade from the top of existing cone to the top of manhole frame and casting; and for the furnishing and installation of new sanitary manhole seals; for necessary removals, excavation, and backfilling; and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

Multiple adjustments required to perform this work or additional adjustments as directed by the Engineer shall be considered incidental.

XLVII. Adjust Water Valve Box

Materials:

Existing water valve boxes.

Execution:

All water valve boxes within the project limits shall be adjusted to proposed elevations by the Contractor using materials meeting City specifications.

Throughout the duration of the project, the Contractor must ensure that all water valve boxes are adequately located and identified by blue paint, and that at all times, all water appurtenances remain accessible for operation by City forces. Exercise caution working

adjacent to water facilities to avoid damage and ensure accessibility.

The proposed curb line shall be verified for any water valve boxes located near the curb line. The curb and gutter shall be field adjusted as necessary to minimize any water valve box conflicts.

Upon completion of the contract, the City will inspect all water facilities to ensure the water valve boxes are clean, properly aligned, and accessible. The Contractor shall be responsible to make identified repairs and adjustments.

Measurement and Payment:

Adjust Water Valve Box will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, including all excavation, backfilling, disposal of surplus materials, and restoration of the work site; and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLVIII. Temporary Ditch Check

Materials:

The Contractor shall place erosion bales of straw, hay or other suitable baled material to form checks or dikes as required to control erosion, including at locations shown on the project drawings.

Execution:

Temporary Ditch Checks shall be placed and maintained in accordance with Subsection 628.3.3 and 628.3.14 of the WisDOT State Standard Specifications and the Standard Detail Drawings shown on the project drawings.

Measurement and Payment:

Temporary Ditch Checks will be measured and paid for at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to install, maintain and remove the ditch checks.

XLIX. Riprap, Medium

Materials:

Riprap shall comply with Subsection 606.2 of the "WisDOT State Standard Specifications," except that concrete slabs may not be substituted for stone. Riprap dimensions shall be as specified in Subsection 606.2(2) and will be to the approximate sizes and thicknesses listed below.

Type	Stone Sizes (Inches)	Thickness (Inches)
Medium Riprap	5 to 20	18

Execution:

May be placed by mechanical means, not dumping, that produces work within reasonable tolerances of the typical section(s). Fill voids with smaller pieces. Riprap shall be placed on a layer of geotextile fabric as indicated on the Project drawings, incidental to rip-rap. Place the fabric in accordance with Subsections of 645.3.6 and 645.3.7 of the WisDOT State Standard Specifications.

Measurement and Payment:

Rip Rap Medium will be measured and paid at the contract unit price per cubic yard acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

L. Concrete Ditch Invert

Materials:

Concrete for curbs shall be air entrained, Grade A, conforming to WisDOT Standard Specification Section 501, and in particular, meet the following requirements:

- Minimum concrete content: 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Size of course aggregates required: No. 1;
- Slump: 1-inch- 3-inch; and
- Air content: 4.5% - 7.5%.
- Tie Bars (connecting to existing concrete ditch): Three No. 6 placed 6-inch C-C in accordance to Section 505 of Standard Specifications.

Concrete that is rejected on the work site for any reason shall not be re-tempered and used in the work without specific approval of the City Engineer.

Place Concrete Ditch Invert as detailed in the plans or directed in the field.

Execution:

Excavate and grade to provide adequate base and concrete depth for concrete ditch invert.

Measurement and Payment:

Concrete Ditch Invert bid item shall be measured at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, tie into existing concrete ditch invert, finish and cure the concrete Ditch Invert.

Maintain a minimum of three inches (3-inch) of crushed limestone base under the concrete ditch invert. Base material under concrete ditch invert shall be furnished and placed under the

Dense Graded Base 1½-inch bid item.

LI. Pavement Marking

Materials:

Use materials conforming to Section 646.2 of the WisDOT State Standard Specifications for epoxy pavement marking with glass beads.

Execution:

Apply pavement marking at the location, color, and size as shown in the Project Drawings in conformance with Section 646.3 of the WisDOT State Standard Specifications.

Measurement & Payment:

Pavement marking items will be measured and paid at their respective contract unit price per contract unit acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LII. Remove & Replace Sign, Reflective

Materials:

The bid item for Signs shall consist of furnishing and installing signs and supports in accordance with Section 637 of the WisDOT State Standard Specifications, and as shown on the Project drawings. Installation shall consist of attaching all signs to new or existing supports at the required locations as shown on the Project drawings. All hardware required for sign installation shall be supplied by the Contractor and conform to Section 637 of the WisDOT State Standard Specifications, and shall be approved by the Owner prior to installation.

Sign base material shall be sheet aluminum.

The City will create and install street name signs. Contact the City of New Berlin Streets Department to pick up old street name signs at 262-780-4609.

All signs shall be mounted on 1 ¾-inch x 1 ¾-inch telespar posts.

Execution:

All hardware for all sign installation shall be mounted to the support in a manner to prevent rotation of the sign. All hardware for signs shall be mounted to the sign by use of tamper proof fastener as approved by the Owner and the Engineer.

Removing Signs shall be incidental to the project, and shall consist of removing existing signs and hardware from poles as shown on the Project drawings or directed by the Engineer. Sign removal shall be in accordance with the requirements of Subsections 638.3.4, 638.3.5, and 638.3.6 of the WisDOT State Standard Specifications. All removed signs shall be salvaged and delivered to a location as directed by the Owner.

Measurement and Payment:

Signs will be measured and paid for at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified; for all materials, including all signs, hardware, supports, existing sign removal and disposal; for all labor, tools, equipment, and incidentals necessary to complete this item of work. Removing and salvaging street signs to City shall be incidental to construction.

LIII. Snow Pole

Materials:

Snow Poles will be city supplied 6-inch diameter painted wood posts.

Contact the City Engineer, Tamara Simonson, 7 days in advance of pickup up of Snow Poles at 262-797-2445, or tsimonson@newberlin.org.

Execution:

Contractor is responsible to take possession of the snow poles from the city, and to transport them to the site.

The Snow Poles shall be installed where shown on the project drawings in accordance to the detail shown on the project drawings. The existing snow poles shall be removed where shown on the project drawings.

Measurement and Payment:

Snow Pole will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LIV. 4" Topsoil, Seed, Fertilizer & Erosion Mat

Materials:

Topsoil restoration shall be imported, humus-bearing, and loam type. Topsoil shall be mechanically screened of roots, sticks, branches, and stones larger than ½-inch diameter.

Seed shall be WisDOT seed mixture No. 40.

Fertilizer shall be granular or liquid marked with content analysis, shall have a nitrogen-phosphorous-potassium ratio of 1-2-1, and shall have at least 50 percent of nitrogen content in organic, slow-release form.

Erosion mat shall be Non-channel Erosion Mat Urban Class I Type B, or approved alternate.

Execution:

Staple erosion stapled onto the restored area. The restored area shall be watered initially with 1 ½ inches of water using a 1000 gallon capacity water truck with hoses, nozzles, or

arms capable of watering the restored areas while driving in the center of the road, as to not damage the new pavement edge.

Continued watering is to be included in this bid item. On days 2-14 (or until complete germination, whichever comes last), following the seeding, the restored areas shall be watered ½ inch every other day. Natural rain events may substitute for watering, but perform additional watering on rain event days to achieve specified water amounts.

Measurement and Payment:

4-inch Topsoil, Seed, Fertilizer, & Erosion Mat will be measured and paid at the contract unit price per square yard acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LV. Removing Concrete Bases

Materials:

(None)

Execution:

Dispose of concrete bases off site in an appropriate manner. Backfill holes left by removal.

Measurement & Payment:

Removing concrete bases will be measured and paid at their respective contract unit price per contract unit acceptably removed and disposed of, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LVI. Removing Traffic Signals

Materials:

(None)

Execution:

The City assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the City.

Remove all standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the transformer bases from each pole. Remove the signal heads, mast arms, luminaires, wiring / cabling and traffic signal mounting devices from each signal standard, arm or pole. Ensure that access handhole doors and all associated hardware remain intact. Remove the traffic signal cabinet from the concrete footing. Remove and dispose of the underground signal, internal wires, and street lighting cable. Arrange to deliver the remaining materials to the City of New Berlin Public Works Facility. Contact the

City of New Berlin Public Works Department at (262) 797-2445 at least five (5) working days prior to delivery to make arrangements.

Measurement & Payment:

Removing Traffic Signals as measured per each intersection, is full compensation for removing and disposing of existing traffic signal equipment as shown on the plans; and for all labor, tools, equipment and incidentals necessary to complete the work.

- LVII. Conduit Rigid Non-Metallic Schedule 40 2-Inch
- LVIII. Conduit Rigid Non-Metallic Schedule 40 3-Inch
- LIX. Conduit Special 3-Inch

Materials:

The conduit shall comply with DOT Specification Section 652.

Execution:

The conduit shall be installed in accordance with Section 652.

Conduit shall be installed between 24" to 36" below grade.

Measurement & Payment:

Conduit as measured by the linear foot, is full compensation for furnishing and installing all materials, including fittings, couplings, supports, for excavating trenches, and for placing conduit; for backfilling; for restoring disturbed or damaged areas, including seeding and sodding; for disposing of surplus material; for all labor, tools, equipment, and incidentals necessary to complete this item of work.

- LX. Install Conduit into Existing Item

Materials:

(None)

Execution:

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for the entering conduit(s) at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

Measurement & Payment:

Install Conduit Into Existing item, measured as each unit (up to 5 conduits per unit) is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

LXI. Pull Boxes Steel 24 x 42-Inch

Materials:

The pull boxes shall comply with DOT Specification Section 653.

Execution:

The pull boxes shall be installed in accordance with Section 653.

Measurement & Payment:

Pull Boxes as measured by each unit, is full compensation for furnishing and installing all materials; for backfilling; for restoring disturbed or damaged areas, including seeding and sodding; for disposing of surplus material; for all labor, tools, equipment, and incidentals necessary to complete this item of work.

LXII. Removing Pull Boxes

Materials:

(None)

Execution:

The pull boxes shall be removed in accordance with Section 653.

Dispose of pull boxes off site in an appropriate manner. Backfill holes left by removal.

Measurement & Payment:

Pull Boxes as measured by each unit, is full compensation for furnishing and installing all materials; for backfilling; for restoring disturbed or damaged areas, including seeding and sodding; for disposing of surplus material; for all labor, tools, equipment, and incidentals necessary to complete this item of work.

LXIII. Concrete Bases Type 1

LXIV. Concrete Bases Type 2

Materials:

The bases shall comply with DOT Specification Section 654.

Execution:

The bases shall be installed in accordance with Section 654.

Measurement & Payment:

Concrete bases as measured by each unit, is full compensation for furnishing and installing all materials; for backfilling; for restoring disturbed or damaged areas, including seeding and sodding; for disposing of surplus material; for all labor, tools, equipment, and incidentals necessary to complete this item of work.

- LXV. Cable Traffic Signal 12-14 AWG
- LXVI. Cable Type UF 2-10 AWG Grounded
- LXVII. Electrical Wire Traffic Signals 10 AWG
- LXVIII. Traffic Signal EVP Detector Cable
- LXIX. Video Detection Cable

Materials:

The traffic signal cables and electrical wire shall comply with DOT Specification Section 655.

Execution:

The traffic signal cables and electrical wire shall be installed in accordance with Section 655.

Measurement & Payment:

Traffic Signal Cable and Electrical Wire, as measured by the linear foot, is full compensation for furnishing and installing all materials, for making connections and testing installed cable system, splicing, and for all labor, equipment, and incidentals necessary to complete this item of work.

- LXX. Pedestal Bases
- LXXI. Transformer Bases Breakaway 11 ½ Inch Bolt Circle

Materials:

Bases shall comply with DOT Specification Section 657.

Execution:

Bases shall be installed in accordance with Section 657.

Measurement & Payment:

Bases, as measured by each item, is full compensation for furnishing and installing all materials, and for all labor, equipment, and incidentals necessary to complete this item of work.

- LXXII. Poles Type 3
- LXXIII. Traffic Signal Standards Aluminum 13-FT
- LXXIV. Luminaire Arms Single Member 4-Inch Clamp 6-FT

Materials:

Poles and arms shall comply with DOT Specification Section 657.

Execution:

Poles and arms shall be installed in accordance with Section 657.

Measurement & Payment:

Poles and arms, as measured by each item, is full compensation for furnishing and installing all materials, and for all labor, equipment, and incidentals necessary to complete this item of work.

LXXV. Traffic Signal Face 3S 12-Inch

Materials:

Traffic Signal Faces shall comply with DOT Specification Section 658.

Execution:

Traffic Signal Faces shall be installed in accordance with Section 658.

Measurement & Payment:

Traffic Signal Faces, as measured by each item, is full compensation for furnishing and installing all materials, and for all labor, equipment, and incidentals necessary to complete this item of work.

LXXVI. Signal Mounting Hardware

Materials:

Traffic Signal Mounting Hardware shall comply with DOT Specification Section 658.

Execution:

Traffic Signal Mounting Hardware shall be installed in accordance with Section 658.

Measurement & Payment:

Traffic Signal Mounting Hardware, as measured by each intersection, is full compensation for furnishing and installing all materials, and for all labor, equipment, and incidentals necessary to complete this item of work.

LXXVII. Luminaires Utility LED C

Materials:

Luminaires Utility LED C shall comply with DOT Specification Section 659.

Execution:

Luminaires Utility LED C shall be installed in accordance with Section 659.

Measurement & Payment:

Luminaires Utility LED C, as measured by each item, is full compensation for furnishing and

installing all materials, and for all labor, equipment, and incidentals necessary to complete this item of work.

LXXVIII. Remove & Reinstall Video Detection

LXXIX. Remove & Reinstall EVP Equipment

Materials:

(None)

Execution:

The City assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working emergency vehicle preemption equipment to the engineer. Replace any equipment not identified as damaged or not working, prior to removal at no cost to the City.

Notify the City at least five (5) working days prior to the removal of the emergency vehicle preemption equipment.

Remove the impacted equipment, including, but not limited to: cabling, detector units, and mounting brackets. Safety store equipment in an approved storage area undisturbed by construction.

Upon direction from the engineer, reinstall the salvaged equipment on the proposed traffic signal. Perform all work in accordance with section 658 of the standard specifications. The equipment shall be installed and function in the same manner as the existing permanent traffic signal unless noted otherwise on the plans. Additional cabling required for reinstallation will be paid as a separate item.

Traffic signal controller and cabinet modifications may be required to maintain operation of the signal while the video detection is inoperable.

Measurement & Payment:

Remove & Reinstall Video Detection & EVP Equipment, as measured by each intersection, is full compensation for furnishing and installing all materials, controller & cabinet modifications as needed, and for all labor, equipment, and incidentals necessary to complete this item of work.

**CITY OF NEW BERLIN
RD-21-05**

W. LINCOLN AVE. RECONSTRUCTION

PROPOSAL

To the City of New Berlin
New Berlin, WI 53151

(hereinafter called OWNER)

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Advertisement for Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for the Bid withdrawal time period specified in the Advertisement for Bidders after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Contract with the Bonds, evidence of insurance coverage, policy and endorsement and other documents required by the Bidding Requirements within 10 days after the date of OWNER's Notice of Award.
3. In submitting this Bid, Bidder represents, as more fully set forth in the Contract, that:
 - a. Bidder has examined and carefully studied the Bidding Documents and the following Addenda receipt of all which is hereby acknowledged:

<u>Addendum Date</u>	<u>Addendum Number</u>
_____	_____
_____	_____
_____	_____

- b. Bidder has visited the site and become familiar with and satisfied itself as to the general, local, and site conditions that may affect cost, progress, performance, and furnishing of the Work;
 - c. Bidder is familiar with and has satisfied itself as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.
 - d. Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities). Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes. Bidder acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect

of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.

- e. Bidder is aware of the general nature of Work to be performed by OWNER and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
- f. Bidder has correlated the information known to Bidder from information and observations obtained from visits to the site, reports, and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- g. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to Bidder, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which the Bid is submitted.
- h. This Bid is genuine and not made in the interest or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

UNIT PRICE SCHEDULE

Having become familiar with the local conditions affecting the cost of the work and with the Contract Documents, including Advertisement for Bids, Form of Bonds, etc., Plans, Specifications, any Addenda and Exhibits issued and attached to the Contract Documents on file in the Office of the City Engineer of New Berlin, Wisconsin, the undersigned hereby proposes to perform everything required to be performed and to provide and furnish all the labor, materials, necessary tools, expendable equipment and all utility and transportation services necessary to perform and complete in a workmanlike manner all of the work required for and the work described in the following Bidding Schedule, all in accordance with the Plans and Specifications for the sum set forth in the following Bidding Schedule.

W. Lincoln Ave. Reconstruction

Item Number	Description	Quantity	Unit	Unit Cost	Cost
1	Traffic Control/Detour	1	LS		
2	Section Corner Monument	3	EACH		
3	Construction Staking	1	LS		
4	Construction Staging/Phasing with Temporary Asphalt	1	LS		
5	Sawcut Pavement	1033	LF		
6	Silt Fence, Heavy Duty	1,100	LF		
7	Inlet Protection	10	EACH		
8	Tree Removal	500	ID		
9	Clearing & Grubbing	37	STA		
10	Remove and Replace Mailbox	15	EACH		
11	Temporary Mailbox	15	EACH		
12	Pavement Removal	22,000	SY		
13	Remove Curb & Gutter	973	LF		
14	Common Excavation (estimated 26,000 CY)	1	LS		
15	Excavation Below Subgrade	17,000	CY		
16	Dense Graded Base, 3-Inch EBS Backfill	34,000	TON		
17	Geotextile, Type SAS	38,000	SY		
18	Geogrid, Tensar, Triax	10,000	SY		
19	Geogrid, Tensar, BX1200	18,000	SY		
20	Remove/Replace Hydrant	3	EACH		
21	Bioswale	1075	LF		
22	Bioswale Outfall Structure With Endwall	1	EACH		
23	Bioswale Outfall With Riprap	3	EACH		
24	Erosion Control for Box Culvert	1	LS		
25	Remove Existing Box Culvert	1	LS		
26	Concrete Box Culvert, Precast, 12'x6'	48	LF		
27	Concrete Box Culvert, Precast, 10'x5'	48	LF		
28	Concrete Box Culvert, End Section, 12'x6'	2	EACH		
29	Concrete Box Culvert, End Section, 10'x5'	2	EACH		
30	Storm Sewer, Catch Basin, 20"x30" (R-3228-BD grate)	10	EACH		
31	Storm Sewer, Manhole 48-Inch	6	EACH		
32	Storm Sewer, Manhole 10-Inch Nyloplast	4	EACH		
33	Storm Sewer, RCP, Class IV, 12-Inch	301	LF		
34	Storm Sewer, RCP, Class IV, 18-Inch	747	LF		
35	Storm Sewer, RCP, Class IV, 12-Inch, Driveway/Cross Culvert	423	LF		
36	Storm Sewer, RCP, Class IV, 15-Inch, Driveway/Cross Culvert	111	LF		
37	Storm Sewer, RCP, Class IV, 18-Inch, Driveway/Cross Culvert	150	LF		

38	Storm Sewer, RCP, Class IV, 23x14-Inch, Driveway/Cross Culvert	124	LF		
39	Storm Sewer, RCP, Class IV, 38x24-Inch, Driveway/Cross Culvert	60	LF		
40	Storm Sewer, CMP, 12-Inch, Driveway/Cross Culvert	30	LF		
41	Storm Sewer, CMP, 15-Inch, Driveway/Cross Culvert	134	LF		
42	Storm Sewer, CMP, 18-Inch, Driveway/Cross Culvert	40	LF		
43	Storm Sewer, Apron Endwalls, RCP, Class IV, 12-Inch	14	EACH		
44	Storm Sewer, Apron Endwalls, RCP, Class IV, 15-Inch	4	EACH		
45	Storm Sewer, Apron Endwalls, RCP, Class IV, 18-Inch	6	EACH		
46	Storm Sewer, Apron Endwalls, RCP, Class IV, 23x14-Inch	4	EACH		
47	Storm Sewer, Apron Endwalls, RCP, Class IV, 38x24-Inch	2	EACH		
48	Storm Sewer, Apron Endwall, CMP, 12-Inch	2	EACH		
49	Storm Sewer, Apron Endwall, CMP, 15-Inch	8	EACH		
50	Storm Sewer, Apron Endwall, CMP, 18-Inch	2	EACH		
51	Storm Sewer, HDPE, 4-Inch, Underdrain	329	LF		
52	Storm Sewer, HDPE, 6-Inch, Underdrain, Non-Perforated	211	LF		
53	Storm Sewer, HDPE, 6-Inch, Underdrain, Perforated	840	LF		
54	Dense Graded Base, Shouldering 3/4-Inch	1,800	TON		
55	Dense Graded Base, 1 1/4-Inch	34,000	TON		
56	Concrete Curb & Gutter, 30-Inch	4,050	LF		
57	Concrete Flume	6	EACH		
58	Concrete Driveway, 7-Inch	120	SY		
59	HMA Pavement, 3 MT 58-28 H, (Binder)	11,600	TON		
60	HMA Pavement, 4 MT 58-28 H, (Surface)	4,620	TON		
61	HMA Pavement 4 MT 58-28 S, (Driveways)	500	TON		
62	Adjust Sanitary Manhole	8	EACH		
63	Adjust Water Valve Box	13	EACH		
64	Temporary Ditch Check	100	EACH		
65	Riprap, Medium	20	CY		
66	Concrete Ditch Invert	110	LF		
67	Pavement Marking, Epoxy, White, 4-Inch	17,023	LF		
68	Pavement Marking, Epoxy, Yellow, 4-Inch	11,122	LF		
69	Pavement Marking, Epoxy, White, 8-Inch	700	LF		
70	Pavement Marking, Epoxy, White, 12-Inch	169	LF		
71	Pavement Marking, Epoxy, Stop Bar, White, 18-Inch	72	LF		
72	Pavement Marking, Epoxy, Arrow	8	EACH		
73	Remove & Replace Sign, Reflective	10	EACH		
74	Snow Pole	10	EACH		
75	4" Topsoil, Seed, Fertilizer & Erosion Mat	25,000	SY		
76	Removing Concrete Bases	3	EACH		
77	Removing Traffic Signals	1	EACH		
78	Conduit Rigid Non-Metallic Schedule 40 2-Inch	54	LF		
79	Conduit Rigid Non-Metallic Schedule 40 3-Inch	80	LF		

80	Conduit Special 3-Inch	316	LF		
81	Install Conduit into Existing Item	4	EACH		
82	Pull Boxes Steel 24 x 42-Inch	2	EACH		
83	Removing Pull Boxes	2	EACH		
84	Concrete Bases Type 1	1	EACH		
85	Concrete Bases Type 2	2	EACH		
86	Cable Traffic Signal 12-14 AWG	653	LF		
87	Cable Type UF 2-10 AWG Grounded	350	LF		
88	Electrical Wire Traffic Signals 10 AWG	582	LF		
89	Traffic Signal EVP Detector Cable	515	LF		
90	Video Detection Cable	540	LF		
91	Pedestal Bases	1	EACH		
92	Transformer Bases Breakaway 11 ½ Inch Bolt Circle	2	EACH		
93	Poles Type 3	2	EACH		
94	Traffic Signal Standards Aluminum 13-FT	1	EACH		
95	Luminaire Arms Single Member 4-Inch Clamp 6-FT	1	EACH		
96	Traffic Signal Face 3S 12-Inch	4	EACH		
97	Signal Mounting Hardware	1	EACH		
98	Luminaires Utility LED C	1	EACH		
99	Remove & Reinstall Video Detection	1	EACH		
100	Remove & Reinstall EVP Equipment	1	EACH		
				Total Items 1-100:	

Write Out Total of Items 1-100:

ALTERNATE BID

The bidder **may** submit the following Alternate Bid Item to replace base bid items 14, 55, 59 and 60 but is not required. The Alternate Bid items 14A, 55A and 59A would replace base bid items 14, 55, 59 and 60. The intent of the alternate bid is to compare the cost of the project with concrete pavement being used in lieu of asphalt pavement. Any and all additional cost, whether known or unexpected, due to using concrete pavement, shall be included in these unit prices for the alternate bid. The OWNER will award one single contract to the lowest responsive bidder of the Base Bid, Alternate Bid or any combination of the Base Bid and the Alternate Bid. The OWNER reserves the right to select the low Bid of the Base, the Alternate Bid or any combination of the Base Bid and the Alternate Bid (and items thereof) as best serves their interest without affecting the remaining bid items or costs.

Alternate Bid - The Alternate bid will replace Base Bid Items 14, 55, 59 & 60

Item Number	Description	Quantity	Unit	Unit Cost	Cost
14A	Common Excavation (estimated 18,000 CY)	1	LS		
55A	Dense Graded Base, 1 1/4-Inch	14,000	TON		
59A	Concrete Pavement, 9-Inch	36,500	SY		

Write Out Total of Items 14A, 55A and 59A:

The preceding Unit Price Schedule is divided into bid items for the work. It is OWNER's intent to receive bids on all bid items and to award a single Contract for the entire project. The Owner reserves the right to delete one or more individual bid items as are determined to be in the Owner's best interest without affecting the unit prices. OWNER will award a single Contract for all Work included in the Bid Schedule and will modify the Contract by Change Order as the Owner determines appropriate.

Accompanying this Proposal is a (Certified Check) (Bid Bond) (Bank Draft) in the amount of Five Percent (5%) of amount bid payable to the City of New Berlin, Wisconsin, which (protects) it is agreed will be forfeited to said City of New Berlin if the Undersigned failed to execute the Contract in conformity with the Form of Contract incorporated in the Contract Document, and furnish bond as specified within ten days from the notifications of the award of the Contract to the undersigned.

In submitting this Proposal, it is understood and agreed by the undersigned that the right is reserved by the Owner to reject any or all proposals. It is further understood and agreed that this Proposal may not be withdrawn for a period of (60) sixty days from the opening thereof.

If awarded a Contract under this Proposal the undersigned agrees to start work within ten (10) calendar days after the receipt from the Owner of a formal Notice to Proceed. The undersigned further agrees to commence work at the site on a date to be specified in a written order from the Owner, which date will not be prior to that established by the calendar days stated above, except by mutual agreement between the undersigned and the Owner, and agrees to fully complete all work covered by October 23, 2023. The undersigned understands and agrees that the Owner reserves the right to defer issuance of a written order to commence work for a period not to exceed thirty (30) days after the date herein established by the undersigned as a proposed starting date.

The Contractor hereby declares that he has read each and every stipulation within the "Specifications" including all Codes referred to, and that he fully understands them and that he hereby agrees to faithfully comply therewith.

It is agreed that if the Contractor is permitted to finish the work after the time stated in this Proposal, the City of New Berlin may deduct from any money due the Contractor a sum of 1,500.00 dollars for every calendar day beyond the above specified time which shall elapse before the work is satisfactorily completed unless a written extension is approved by the Board of Public Works.

DATE

FIRM NAME

BY: _____

TITLE

BY: _____

TITLE

OFFICIAL ADDRESS

NOTE: Bidders should not add any conditions or qualifying statements to this bid as otherwise the bid may be declared irregular as being not responsive to the Advertisement for Bids.

**CONTRACT
RD-21-05**

This Contract made this _____ day of _____, 2023, by and between _____, herein called the "Contractor", and the City of New Berlin, a municipal corporation, located in Waukesha County, Wisconsin, herein called the "Owner".

WITNESSETH: That the Contractor and the Owner for the consideration stated herein, agree as follows:

ARTICLE I. SCOPE OF WORK

The Contractor shall perform everything required to be performed and shall provide and furnish all the labor, materials, equipment, necessary tools, expendable equipment, insurance provided by the specifications, contributions to social security and all utility and transportation service required to perform and complete in a workmanlike manner the projects as defined in these Contract documents, all in strict accordance with the specifications and in strict compliance with the Contractor's proposal and other Contract documents, herein mentioned as component parts of this Contract. The Contractor shall do everything required by this Contract and other documents constituting a part thereof and in the manner specified therein.

The anticipated Contract Award date and Notice to Proceed date for this Contract will be **March 28, 2023**. The City of New Berlin is requesting that the work start no later than **April 17, 2023** and be completed by **October 23, 2023**.

ARTICLE II. CONTRACT PRICE

Owner shall pay to the Contractor for the performance of this Contract, subject to any additions or deductions provided therein, in current funds, the approved not to exceed Contract price of: _____.

The above total shall be the basis for establishing the amount of the performance bond and is not to be construed to be a lump sum contract price. The foregoing quantities of the unit price items are approximately only and it is understood and agreed that payment will be made only on the actual quantities of work completed in place, measured on the basis defined in the Contract documents and at the unit prices stated above.

PAYMENT

The Contractor shall review pay quantities with the Engineer on a minimum bi-weekly basis. No more than two weeks shall pass between when the work has taken place and the quantity verification between the Engineer and Contractor. If more than two weeks pass, the quantities as measured by the inspector and confirmed by the Engineer shall be conclusive.

The Owner will retain 5% of the estimate of the value of the Work or Contract until 50% of the Work is completed. If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100 percent of the Work completed less the aggregate of payments previously made and the retainage calculated. If the Work is certified as unsatisfactory by the Engineer, Owner will continue to retain part of the payments up to 10% of the value of the Work completed.

Owner, in case the work under this Contract is not completed within the time required, or within an extended time approved in writing by the Owner, is authorized to take charge of the work and finish it at the expense of the Contractor and his sureties and to apply the amounts retained from estimates to the completion of the work.

The final payment shall be made within 60 days after completion and acceptance of the work included in this Contract and all payments shall be due when certificates are issued for them. However, the owner may withhold payments prior to final acceptance of the work for reasons set forth in the general or special specifications.

ARTICLE III. COMPONENT PARTS OF THIS CONTRACT

This Contract consists of the following component parts, all of which are as fully a part of it as if set out verbatim herein, or, if not attached, as if the same were hereto attached.

- Advertisement for Bids
- Subcontractor List
- Bidder's Qualification Statement
- Subcontractor's Qualification Statement
- Special Provisions
- Bid Proposal
- Contract
- Bid Bond
- Project Drawings
- City of New Berlin Infrastructure Standards

The Contract Documents form a complete unit and requirements called for by one as binding as if called for by all. In case of conflict between project drawings and specifications, the specifications shall govern. Special provisions shall control over general conditions.

ARTICLE IV. PAYMENT FOR LABOR AND MATERIAL

Per Section 16.856 of the Wisconsin State Statutes the Prevailing Wage Rate does not apply to this project.

ARTICLE V. LIQUIDATED DAMAGES

In the event that the services to be provided by Contractor under this Contract are not completed by the date of final completion set forth herein, then, in that event Contractor shall be responsible to pay to City as liquidated damages the sum of \$15000.00 per day for each day or portion of a day that the work remains uncompleted thereafter. The parties acknowledge that the City shall have the right to offset said liquidated damages as against any sums which might otherwise be due Contractor under this Contract. The liquidated damages provided for herein shall not be in lieu of any other claims or damages which the City may otherwise be entitled to. The City shall make the final determination of whether Contractor has completed its Contract responsibilities.

ARTICLE VI. OBSTRUCTION OF STREETS

If the Contractor shall in any manner obstruct a street or sidewalk, he shall put up and maintain barriers and lights to prevent accidents, and shall be liable for all damages caused by failure to do so; and such Contractor shall further be liable for all damages caused by the negligent digging up of the streets, alleys, or public grounds or which may result from his carelessness in the execution of such work (Section 62.15 (11), Wisconsin Statutes). The Contractor shall also be bound by any further requirements of the specifications on this point.

ARTICLE VII. HOLD HARMLESS CLAUSE

And the Contractor covenants and agrees that he will indemnify and save harmless the owner and defend the same against any and all liability, claims, loss, damages, interest, actions, suits, judgements, costs, expenses, attorney's fees, and the like, to whomsoever owned or by whomsoever brought or obtained which may in any manner result from, or arise out of the performance of the work herein mentioned, expressly including the negligence of the Contractor and/or the owner (or the negligence of the agents, servants, employees, workmen or independent Contractors of either of them) in carrying out and supervising the said work in any respect whatever.

ARTICLE VIII. CONTRACT BOND

At the time that the Contract is executed, the Contractor shall furnish to the Owner a performance/labor and material payment bond in the amount of 100% of the Contract price issued by a surety company licensed to do business in this state conditioned for the faithful performance of the Contract and the payment to every person entitled thereto of all claims for labor performed and materials furnished under the Contract to be used or consumed in making the public improvement or performing the public work as provided in the Contract and as specified in the Contract all as required by Section 289.14 (1),

Wisconsin Statutes.

ARTICLE IX. INSURANCE & ENDORSEMENT

Personal income tax payments, social security contributions, insurance and all other governmental reporting and contributions required as a consequence of the Contractor receiving payment under this Contract shall be the sole responsibility of the Contractor. The Contractor shall be required to carry insurance coverage of the type and with the minimum limits set forth below. The Contractor shall be solely responsible to meet Contractor insurance needs as specified below during the terms of this Contract or any extension thereof.

General Liability:

General Aggregate	\$ 2,000,000
Products Comp/Ops Aggregate	\$ 2,000,000
Personal/Advertising Injury	\$ 1,000,000
Each occurrence	\$ 1,000,000
Fire Damage (Any One Fire)	\$ 50,000
Medical Expense (Any One Person)	\$ 5,000

Automobile Liability:

CSL	\$ 1,000,000
Bodily Injury (Per Accident)	\$ 1,000,000
Property Damage (Per Accident)	\$ 1,000,000

Umbrella Liability:

Umbrella Form – Each Occurrence	\$ 2,000,000
Umbrella Form – Aggregate	\$ 2,000,000
Self-Insured Retention	\$ 10,000

Workers' Compensation and Employers' Liability

Each Accident	\$ 500,000
Disease Policy Limit	\$ 1,000,000
Disease Each Employee	\$ 500,000

The Contractor shall not commence work until he has obtained all insurance required by the City of New Berlin. A Policy Endorsement shall be signed by an authorized Principal of the Insurer and provided to the City Engineer as evidence thereof naming the City as an additional insured and showing the Contractor is covered by the above required types and amount of insurance, providing for a thirty (30) day written notice to the City prior to change, termination or cancellation. Such notice provisions shall be stated in the unconditional affirmative. Phrases such as "shall endeavor to notify" are unacceptable and shall be rejected. The additional insurance must be on a primary and noncontributory basis.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in three original counterparts the day and year first above written.

Contractor

Address

(SEAL)
ATTEST:

By: _____

By: _____

Title

By: _____

Mayor

(SEAL)
ATTEST:

By: _____

Clerk

Provision has been made to pay the liability that will accrue under this Contract.

Approved as to form:

By: _____

Treasurer

Attorney

Date: _____

Date: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as principal, and
_____ as Surety, are hereby
held and firmly bound unto City of New Berlin as Owner in the penal sum of
_____ for the payment of which, well and truly to be made, we hereby jointly and
severally bind ourselves, successors and assigns. Signed, this _____ day of _____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to City of New Berlin a
certain bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the
Lincoln Ave. Reconstruction, Contract RD-21-05, City of New Berlin.

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish bonds for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void otherwise, the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal (L.S.)

Surety

By:

IMPORTANT - Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 amended) and be authorized to transact business in the state where the project is located.

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
Business):

SURETY (Name and Address of Principal Place of

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.
2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, of the Default. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
 - 3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract; and
 - 3.3. Owner has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract; or
 2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
 - 4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
 - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
 - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
 2. **Deny liability in whole or in part and notify Owner citing reasons therefor.**
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
 - 6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;
 - 6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and
 - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.
7. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.
8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
of Business):

SURETY (Name and Address of Principal Place

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
 - 6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

- 15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms there

APPENDIX 1

Geotechnical Report



Geotechnical Engineering Report

**West Lincoln Avenue Reconstruction
South Calhoun Road to South Johnson Road
City of New Berlin, Wisconsin**

December 16, 2021
Terracon Project No. 58215217

Prepared for:
RA Smith, Inc.
Cedarburg, WI

Prepared by:
Terracon Consultants, Inc.
Franklin, Wisconsin

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

December 16, 2021



RA Smith, Inc.
W62 N588 Washington Avenue
Cedarburg, WI 53012

Attn: Mr. Troy Hartjes, P.E.
P: (262) 317-3305
E: troy.hartjes@raSmith.com

Re: Geotechnical Engineering Report
West Lincoln Avenue Reconstruction
S Calhoun Rd to S Johnson Rd
City of New Berlin, Wisconsin
Terracon Project No. 58215217

Dear Mr. Hartjes:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P58215217 dated September 30, 2021. This report presents the findings of the subsurface exploration and provides geotechnical recommendations regarding earthwork and pavement design and construction.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Tyler J. Fugar, E.I.T.
Field Engineer

Paul J. Koszarek, P.E.
Geotechnical Department Manager



REPORT TOPICS

INTRODUCTION.....	1
SITE CONDITIONS.....	1
PROJECT DESCRIPTION	2
GEOTECHNICAL CHARACTERIZATION.....	2
GEOTECHNICAL OVERVIEW	6
EARTHWORK.....	7
PAVEMENT RECOMMENDATIONS	12
GENERAL COMMENTS	13

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the  logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

SITE LOCATION AND EXPLORATION PLANS

EXPLORATION RESULTS (GeoModel and Boring Logs)

SUPPORTING INFORMATION (General Notes and Unified Soil Classification System)

Geotechnical Engineering Report

West Lincoln Avenue Reconstruction South Calhoun Road to South Johnson Road City of New Berlin, Wisconsin Terracon Project No. 58215217 December 16, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the West Lincoln Avenue Reconstruction from South Calhoun Road to approximately 0.5 miles east of South Johnson Road, in the City of New Berlin, Wisconsin. A total of twenty-six (26) borings were performed to a depth of approximately 10 feet below existing ground surface. This report describes the subsurface conditions encountered at the boring locations, presents the test data, and provides geotechnical engineering recommendations regarding earthwork, pavement design, and construction.

Maps showing the site and boring locations are shown in the [Site Location](#) and [Exploration Plan](#) sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in the [Exploration Results](#) section of this report.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration.

Item	Description
Location	The segment of West Lincoln Avenue is 1.5 miles in length, which begins at South Calhoun Road and extends to about 0.5 miles east of South Johnson Road in the City of New Berlin, Wisconsin. (See Site Location)
Existing Conditions	From South Calhoun road to about 0.5 miles west of South Calhoun road, the section of roadway is an urban roadway with commercial buildings to the south and residential buildings to the north. The remain 1 mile of roadway is rural. The entire section of roadway is two lanes with a s
Existing Topography	We have not been provided a topographic survey of the site; however, based on the Google aerial imagery the topography is relatively flat.

PROJECT DESCRIPTION

Item	Description
Information Provided	An aerial site plan and email correspondence with R.A. Smith.
Project Description	It is our understanding that a future development is planned along this section of roadway. The roadway is planned to be reconstructed and widened to meet the needs of the future development.
Grading/Slopes	Final elevations of the roadway have not been finalized at the time of this report, but it is anticipated that finished grades of the roadway will be within 1 foot of the existing roadway surface.

GEOTECHNICAL CHARACTERIZATION

A total of twenty-six (26) borings were performed for this project to a planned depth of about 10 feet below existing ground surface. The following table depicts, the station, offset and elevations of the borings. The station, offset, and elevations of the borings were provided by R.A. Smith based on the post drilling survey and rounded to the nearest 0.1 foot.

Boring Number	Approximate Ground Surface Elevation-MSL (ft)	Approximate Stationing (ft)	Approximate Offset (ft)
B-1	867.6	93+79	6.2' RT
B-2	872.7	90+57	16.2' LT
B-3	879.1	87+42	18.9' LT
B-4	873.4	84+63	5.9' RT
B-5	855.8	80+27	6.1' LT
B-6	853.6	78+47	13.2' LT
B-7	851.4	75+13	14.1 RT
B-8	846.2	71+02	30.1' RT
B-9	847.0	68+23	37.1' LT
B-10	846.3	65+82	5.5' RT
B-11	841.0	62+70	5.5' LT
B-12	839.4	57+60	13.4' RT
B-13	841.3	55+58	5.0' RT
B-14	843.7	53+18	5.5' LT
B-15	847.7	49+99	20.6' LT
B-16	859.7	47+24	UNKNOWN
B-17	863.0	44+69	UNKNOWN
B-18	858.2	40+95	5.8' LT
B-19	848.1	37+75	5.1' RT
B-20	838.9	34+45	UNKNOWN

Geotechnical Engineering Report

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin

December 16, 2021 ■ Terracon Project No. 58215217



Boring Number	Approximate Ground Surface Elevation-MSL (ft)	Approximate Stationing (ft)	Approximate Offset (ft)
B-21	835.0	31+81	UNKNOWN
B-22	832.5	28+65	5.3' RT
B-23	833.9	25+15	4.7' LT
B-24	833.5	22+74	5.3' RT
B-25	837.6	19+57	5.7' RT
B-26	846.5	16+25	UNKNOWN

Subsurface conditions at each boring location are described on the individual boring logs in the appendix. The stratification boundaries shown on the boring logs represent the approximate depths where changes in material types occur. In-situ, transitions between material types can be more gradual. The pavement thickness observations and soil conditions are described in the following sections.

Pavement Thickness Observations

The surficial materials consisted of topsoil, crushed stone, and pavement sections. The asphalt was measured to the nearest ¼ inch, the base course and topsoil to the nearest inch. The type and thicknesses of the surficial materials encountered at the borings are shown in the table below:

Boring Number	General Location	Approximate Asphalt Thickness (in)	Approximate Aggregate Base Thickness (in)	Approximate Topsoil Thickness (in.)
B-1	Road	10±	4±	---
B-2	Shoulder	---	14±	---
B-3	Road	14±	14±	---
B-4	Road	9±	24±	---
B-5	Road	6±	8±	---
B-6	Shoulder	---	20±	---
B-7	Off Road	---	---	10±
B-8	Off Road	---	---	5±
B-9	Off Road	---	---	5±
B-10	Road	11.5±	16±	---
B-11	Road	14±	6±	---
B-12	Shoulder	---	7±	---
B-13	Road	15±	3±	---
B-14	Road	7.5±	4±	---
B-15	Off Road	---	---	8±
B-16	Off Road	---	---	4±
B-17	Off Road	---	---	6±
B-18	Road	11.5±	3±	---

Geotechnical Engineering Report

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin

December 16, 2021 ■ Terracon Project No. 58215217



Boring Number	General Location	Approximate Asphalt Thickness (in)	Approximate Aggregate Base Thickness (in)	Approximate Topsoil Thickness (in.)
B-19	Road	12.5±	3±	---
B-20	Shoulder	---	6±	---
B-21	Road	12.5±	---	---
B-22	Road	17±	5±	---
B-23	Road	12±	2±	---
B-24	Road	11.5±	3±	---
B-25	Road	13.5±	3±	---
B-26	Off Road	---	---	8±

Subsurface Profile

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. A pictorial depiction of the subsurface soil profile is included in the **Exploration Results** section of this report and is referred to as the GeoModel. This model depicts the soils observed within the boring in alphabetical order and graphically are equally spaced for presentation purposes.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at the boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Surficial Materials	Pavement Sections – about 6 to 17 inches of asphalt and about 2 to 24 inches of base course Topsoil – about 4 to 10 inches Crushed Stone – about 6 to 20 inches thick
2	Existing Fill	Fill consisting of Sandy Lean Clay, Silty Clay, Organic Clay, Clayey Sand, Silty Sand, and Sand with varying gravel contents.
3	Organic Soils	Organic Clay. Typically, dark gray to bluish gray. Often observed with roots.
4	Native Cohesive Soils	Stiff to hard Lean Clays and Sandy Lean Clays with varying sand, gravel, and silt contents.
5	Native Non-Cohesive Soils	Clayey Sand, Silty Sand, Sandy Silt, and Silt with varying sand and gravel contents. Often water bearing. Very loose to very dense.

The surficial materials consisted of the existing pavement sections, crushed stone, or topsoil. The surficial materials underlain by existing fill soils or native soils. This existing fill consisted of Sandy

Geotechnical Engineering Report

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217



Lean Clay, Silty Clay, Organic Clay, Clayey Sand, Silty Sand, and Sand all with varying gravel contents extending to depths ranging from about 3 feet below ground surface to the depth of boring termination. The non-organic clay fill had moisture contents ranging from about 12 to 24 percent while the organic clay fills at borings B-11, B-12, and B-21 had moisture contents ranging from about 46 to 49 percent. The sand fill had moisture contents ranging from about 2 to 12 percent.

The native cohesive soils consisted of stiff to hard Lean Clay, Silty Clay, and Sandy Lean Clay with varying sand and gravel contents. Hand penetrometer values of the clay soils ranged from 1.5 tons per square foot (tsf) to over 4.5 tsf. Moisture contents ranged from about 11 percent to 26 percent.

Native non-cohesive soils consisted of Clayey Sand, Silty Sand, Sandy Silt, and Silt with varying sand and gravel contents. N-Values of the granular soils ranged from 2 to 30 blows per foot (bpf) indicating very loose to dense relative densities. Often, the granular soils were observed to be water bearing and had moisture contents ranging from about 10 to 21 percent.

Organic soils were observed in borings B-12, B-13, B-20, B-21, B-24, and B-25 extending to depths of about 5.5 feet below ground surface. These organic soils were often observed with roots or wood particles and were dark gray and bluish gray in color. The moisture contents ranged from about 25 percent to 92 percent.

Conditions encountered at each boring location are indicated on the individual boring logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

Groundwater Conditions

The boreholes were observed during drilling and after completion for the presence and level of groundwater. The boreholes were observed while drilling and after completion for the presence and level of groundwater. The water levels observed in the boreholes during and upon completion of drilling can be found on the boring logs in **Exploration Results**, and are summarized below.

Boring Number	Approximate Depth to Free Groundwater During Drilling Operations (feet) ¹	Approximate Elevation of Groundwater During Drilling Operations (feet)
B-1	3	864.5
B-7	8	843.5
B-8	5.5	840.5
B-9	8	839

Boring Number	Approximate Depth to Free Groundwater During Drilling Operations (feet) ¹	Approximate Elevation of Groundwater During Drilling Operations (feet)
B-10	5.5	841
B-11	3	838
B-12	8	831.5
B-13	5.5	836
B-14	8	835.5
B-17	8	855
B-19	5.5	842.5
B-20	8	831
B-23	5.5	828.5
B-25	5.5	832

Free groundwater was not observed in borings B-2 through B-6, B-15, B-16, B-18, B-21, B-22, B-24 and B-26 while drilling, or for the short duration the borings could remain open. However, this does not necessarily mean the borings terminated above groundwater. At these borings, clay and/or silt soils were observed, which have a low permeability. Long term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type. Another method to estimate the long-term level of the water table in fine grained soils is to observe the change of the color from brown to gray. The fine-grained soils in this area are typically brown above the water table where they have been oxidized, and gray below. In these borings, the soils turned from brown to gray at about 5.5 to 8 feet below ground surface.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

The near surface clay soils could become unstable with typical earthwork and construction traffic, especially after precipitation events. If possible, the grading should be performed during the warmer and drier times of the year. If grading is performed during the wetter months, an increased risk for possible undercutting and replacement of unstable subgrade will persist. Additional site preparation recommendations are provided in the **Earthwork** section.

Based on the elevated moisture contents (above 20 percent) of the near surface native clay soils

and existing fill clay soils, it is likely that these soils will be unstable in their current condition. Stabilization can be accomplished by proofrolling and selectively undercutting the unstable clay soils. If overexcavation and replacement with stone and geogrid is chosen, then draitile should be inserted in the overexcavated areas to prevent the buildup of water. The following recommendations are based on using an undercut and replacement technique for stabilization of the subgrade soils.

Organic clay was observed within borings B-12, B-13, B-20, B-21, B-24, and B-25 to a depth of about 5.5 feet below ground surface. We have provided recommendations to provide near surface stabilization of the unstable soils; however, if a portion of the organic soils are left in place, it is likely that long term settlement will be experienced along this section of the roadway. If long term settlement is not desired, then the organic soils should be removed in their entirety and replaced with engineered fill.

Water levels were observed to be as high as 3 feet. Utilities will likely require dewatering in order to excavate into the water levels.

The following geotechnical related recommendations have been developed on the basis of the subsurface conditions encountered and Terracon's understanding of the proposed project. The soil test borings are widely spaced and the soil profile between the borings has been estimated by interpolation. Anomalies and unanticipated conditions may require the field determination of construction procedures. Should changes in the project criteria occur, a review must be made by Terracon to determine if modification to our recommendations will be required.

EARTHWORK

The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered in our geotechnical engineering evaluation for pavements.

Site Preparation

Site preparation for the reconstruction will require the complete removal of the existing pavement section (asphalt and base course materials) and replacement. Complete removal the surficial topsoil within in the proposed roadway widening area will also be required. The removal of the existing pavement section (asphalt and base course materials), should be performed in accordance with the methods and procedures outlined in Section 204 of the WisDOT Standard Specifications. The removal of vegetation and topsoil in the realignment area should be performed in accordance with Section 201 of the WisDOT Standard Specifications.

Following the removal of the materials described above, the existing pavement subgrades should

Geotechnical Engineering Report

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217



be proofrolled in the presence of a Terracon representative. Proofrolling should be conducted by observing a fully-loaded tandem-axle dump truck with a minimum gross weight of 25 ton moving over the clay soils. Soils that rut or pump more than 1 inch should be further stabilized as follows:

If existing grade is at or near final subgrade elevation, then we recommend these areas be undercut and stabilized using a combination of geogrid, stone and draitile. The EBS should include a partial overexcavation of the upper 2 feet of the subgrade (below the bottom of base course elevation) and placement of a geogrid at the bottom of the overexcavation that meets the WisDOT Section 645.2.3 requirements. The EBS areas would be sloped to a subgrade draitile that is in turn sloped to the nearest storm sewers or is daylighted. Once the drains are placed, the EBS areas can be backfilled with pit run materials that meet the WisDOT Section 313 requirements. If desired, pit run can be substituted with a select 3-inch dense graded base material (crushed stone or crushed concrete) that meet the WISDOT Section 305 requirements.

If the existing grade is two feet or more below the planned final subgrade elevation, then once the topsoil is stripped, the geogrid should be placed on the exposed unstable soils and then stabilized with at least 2 feet of pit run material or 3" dense graded base.

We have not been provided with plan and profile for this section of roadway and therefore do not know what planned final grade is at the boring locations. The near surface soils where EBS is currently recommended, based on the results of the borings is listed in the table below.

Recommended EBS Areas	
Boring Number	Approximate Stations
Halfway between B-16 and B-17 to halfway between B-17 and B-18	42+82 to 45+97
Halfway between B-14 and B-15 to halfway between B-15 and B-16	48+61 to 51+59
Halfway between B-10 and B-11 to halfway between B-11 and B-12	60+15 to 64+26
Halfway between B-7 and B-8 to halfway between B-8 and B-9	67+02 to 73+08
Halfway between B-3 and B-4 to halfway between B-4 and B-5	82+45 to 86+03
Eastern project limits to halfway between B-2 and B-3	88+99 to Eastern project limits

It should be noted that some borings with lower moisture near surface clays (below 20 percent) were underlain by higher moisture clays. If final grades are lowered two feet or more, additional areas of EBS will likely be required.

If overexcavations are completed in clay soils, water will have a tendency to accumulate in the dense graded base layer, as the underlying clay soils are relatively impermeable. Therefore, in the partial overexcavation areas, we recommend installation of a perforated drain tile at the bottom of the overexcavation. The draitile should be sloped to gravity drain to the nearest storm

sewer, and then hard connected to the manhole, or daylighted to adjacent drainage ditches in areas where nearby storm sewers are not present. To permit gravity drainage of the drain tile, we recommend that it be sloped at a minimum ½ percent.

Organic Soils

Organic clay was observed within borings B-12, B-13, B-20, B-21, B-24, and B-25. Buried organic soils will likely undergo long term settlement throughout the lifespan of the roadway. Therefore, there is a risk long term settlement that must be accepted by the owner. Where this risk of settlement cannot be accepted, the existing organic soils should be removed in its entirety and replaced with engineered fill. We understand that the complete removal of organic soils may not be economically feasible. If the organic soils are not removed in their entirety, the organic soils should be stabilized as follows:

Existing surficial material and the existing organic soils should be removed using an excavator to a depth of 3 feet below finished subgrade (bottom of base course elevation). Construction equipment and haul trucks should not be allowed to drive directly on the exposed organic soils. A layer of BX1200 should be placed at the bottom of the excavation. Next, a 12-inch layer of 3-inch dense graded stone should be walked in. This first layer of fill is recommended to be statically rolled, not vibrated. Another layer of BX1200 geogrid should be placed and covered with another 12-inch layer of 3-inch dense graded stone. This layer of stone can be compacted using light vibration. While compacting, the second layer of stone should be monitored for stability. If the second layer of stone is observed to be stable during compaction efforts, then 3-inch dense graded stone should be used to reach finished subgrade elevation and should be compacted per WISDOT Specifications Section 207.3.6.3. If the second layer of stone is not stable, then another layer of geogrid should be placed, and 3-inch dense graded stone should be used to reach finished subgrade elevation.

Based on the results of the borings, recommended areas for additional stabilization due to organic soils is listed in the table below.

Recommended Stabilization for Organic Soils	
Boring Number	Approximate Stations
Halfway between B-23 and B-24 to halfway between B-25 and B-26	17+91 to 21+16
Halfway between B-19 and B-20 to halfway between B-21 and B-22	30+23 to 36+10
Halfway between B-11 and B-12 to halfway between B-13 and B-14	54+53 to 60+15

Fill Material Types

In areas where filling is required to raise grades or to replace unsuitable soils, structural fill under the pavement section will be needed. Structural fill is material used below pavements or constructed slopes outside of curb lines of the roadway where overlying structures are planned, such as sidewalks. General fill is material used to achieve grade outside of these areas where no structures are planned. Earthen materials used for structural and general fill should meet the following material property requirements:

Soil Type ^{1, 2}	USCS Classification	Acceptable Locations for Placement
Cohesive	CL, CL/ML (LL ≤ 45 and PI ≤ 20)	Below/adjacent to pavements, not in undercut or organic stabilization areas, used for mass grading only
Granular	GW, GM, GC SW, SP, SM, SC	Below/adjacent to pavements, not in undercut areas, used for mass grading only. If these soils are placed over clay soils, draitile should be used to drain ponding water.
Granular	WISDOT Section 304 1 ¼" dense graded base or 3" dense graded base)	Undercut areas and organic stabilization areas per recommendations in subsequent section of report
Unsuitable	CH, ML, MH, OL, OH, PT	Non-structural locations

1. Structural fill should consist of approved materials that are free of organic matter and debris. Cohesive fill materials should have a liquid limit less than 45 and a plasticity index less than 20; cohesive soils that do not meet these criteria should be considered "unsuitable." Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to Terracon for evaluation prior to use on this site.
2. Any soils with greater than 5% organic content, rock fragments larger than 3 inches, and other unsuitable materials should be removed prior to use of the existing fill materials in new fill sections.

Fill Compaction Requirements

Structural fill should meet the following compaction requirements:

Item	Description
Maximum fill lift thickness	9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used
Minimum compaction requirements ^{1, 2}	Special Compaction per WISDOT Specifications Section 207.3.6.3.

Item	Description
Moisture content range ³	■ within 2% below to 3% above the modified Proctor optimum moisture content at the time of placement and compaction for cohesive fill ■ granular materials should be compacted within workable moisture levels
1. We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved. 2. If the granular material is a coarse sand, crushed stone or gravel, is of a uniform size, or has a low fines content, compaction comparison to relative density (ASTM D 4253/4254) may be more appropriate. In this case, granular materials should be compacted to at least 65% relative density, respectively. 3. Specifically, moisture levels should be maintained to achieved compaction without bulking during placement or pumping when proofrolled.	

Grading and Drainage

During construction, grades should be developed to direct surface water flow away from or around the site. Exposed subgrades should be sloped to provide positive drainage so that saturation of subgrades is avoided. Surface water should not be permitted to accumulate on the site. The granular base course should be protected from water inflow along drainage paths.

Earthwork Construction Considerations

Terracon should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation, placement and compaction of engineered fills, and backfilling of excavations.

Care should be taken to avoid disturbance of prepared subgrade soils. The native soils can be easily disturbed, especially by construction traffic. Construction traffic should not operate directly on saturated or low strength soils. If the subgrade becomes saturated, desiccated, or disturbed, the affected materials should either be scarified and compacted or be removed and replaced as previously discussed. Subgrades should be observed and tested by Terracon prior to construction.

Groundwater was encountered at depths of about 3 to 8 feet below existing grades while drilling and after completion of drilling. Thus, deeper excavations to construct utilities will likely intercept the local groundwater table and the Contractor should be prepared to dewater the excavations as necessary. Higher groundwater levels than what was observed in our borings may be possible depending on the season and amount of precipitation in the weeks leading up to and during construction. For this reason, we recommend that construction occur in the drier later summer or fall months as opposed to early spring, if possible.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, as well as other applicable codes, and in accordance with any applicable local, state, and federal safety regulations. The contractor should be aware that slope height, slope inclination, and excavation depth should in no instance exceed those specified by these safety regulations.

Flatter slopes than those dictated by these regulations may be required depending upon the soil conditions encountered and other external factors. These regulations are strictly enforced and if they are not followed, the owner, the contractor, and/or earthwork subcontractor could be liable and subject to substantial penalties. Under no circumstances should the information provided in this report be interpreted to mean that Terracon is responsible for construction site safety or the contractor's activities. Construction site safety is the sole responsibility of the contractor who shall also be solely responsible for the means, methods, and sequencing of the construction operations.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proofrolling and mitigation of areas delineated by the proofroll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 5,000 square feet in pavement areas. One density and water content test for every 50 linear feet of compacted utility trench backfill if part of the project.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

PAVEMENT RECOMMENDATIONS

Pavement Subgrade Recommendations

Prior to placement fill to raise grades and paving, the pavement subgrade should be prepared as outlined in the **Earthwork** section of this report.

Pavement Design Parameters

Terracon recommends using the following parameters for the design, assuming that the subgrade will consist of the described soils that have been prepared and compacted as stated in the previous sections discussing site preparation.

Material	AASHTO	SSV	DGI	Subgrade Modulus, K	Resilient Modulus, M _R	Frost Index
Poorly Sorted-II	A-6	4.1	13	125	2,800	F-3

Asphaltic binder and surface courses should meet the requirements from Section 460 of the Standard Specifications.

GENERAL COMMENTS

Terracon also should be retained to provide observation and testing services during grading and other earth-related and pavement construction phases of the project.

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through the GeoReport system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not

Geotechnical Engineering Report

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217



intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Boring Depth (feet) ¹	Planned Location
26	10	Pavement Reconstruction and Widening Area

1. Below ground surface.

Boring Layout and Elevations: The borings were performed at the approximate locations indicated on the attached Exploration Plan. The boring locations were marked in the field by Terracon personnel using a consumer grade handheld GPS unit (estimated horizontal accuracy of about ±20 feet. Ground surface elevations and stationing were provided by RA Smith.

Subsurface Exploration Procedures: We advanced the soil borings with a track-mounted rotary drill rig using hollow stem augers. The borings were sampled every 2½ feet within the upper 10 feet. Soil sampling was performed using split-barrel sampling procedures. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observed and recorded groundwater levels during drilling and sampling. Upon completion, each of the borings were backfilled with a mixture of soil cuttings and bentonite, and were patched with quick set concrete.

The sampling depths, penetration distances, and other sampling information were recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs include visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil and rock strata, as necessary, for this project. Moisture contents of each sample were obtained and a hand penetrometer was used to help estimate the consistency of cohesive samples. The laboratory test program included visual examination of the soil samples by the project engineer. Based on the texture and plasticity, we described and classified the soil samples in general accordance with the Unified Soil Classification System (USCS).

SITE LOCATION AND EXPLORATION PLANS

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217

EXPLORATION PLAN

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217

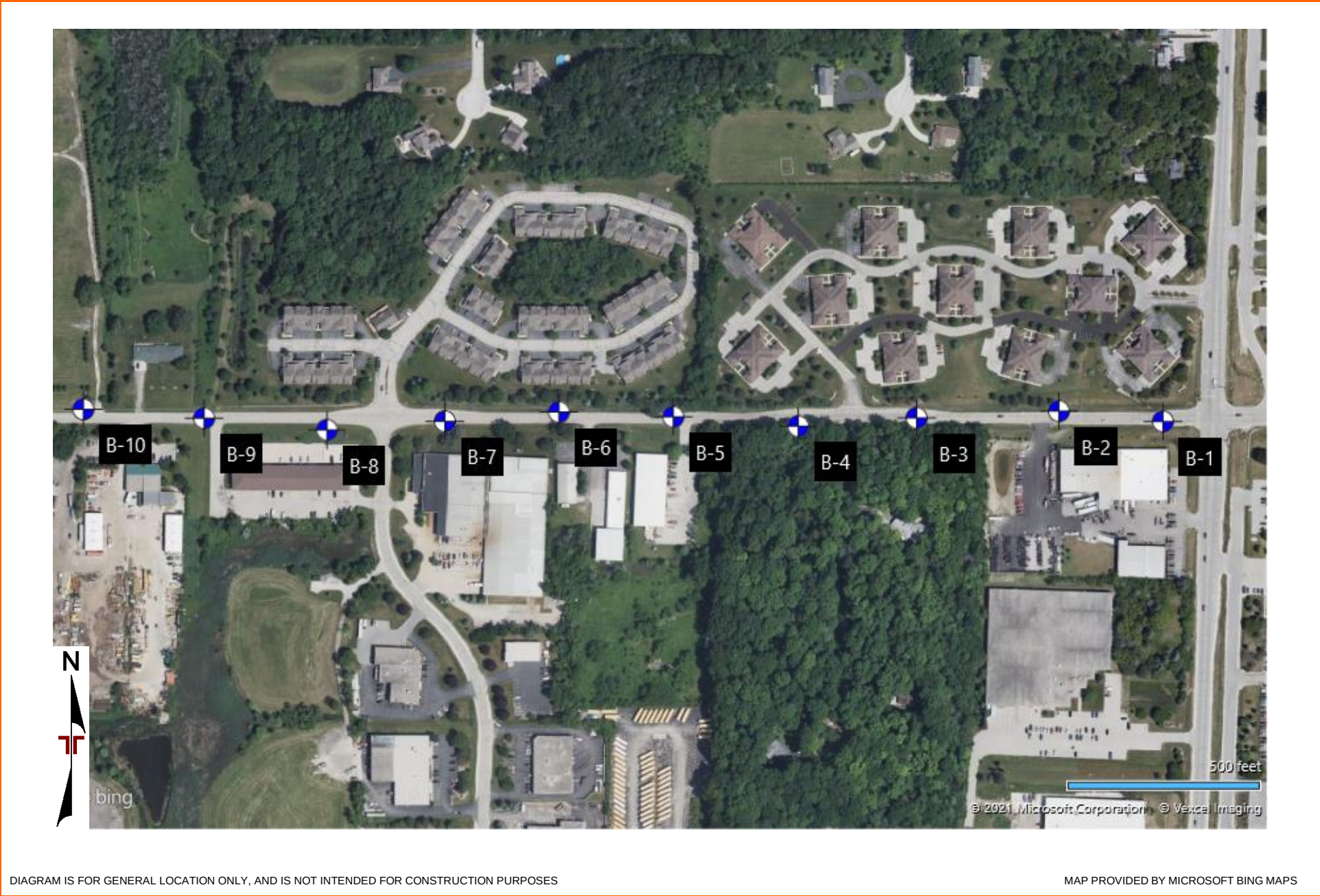


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217



EXPLORATION PLAN

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217

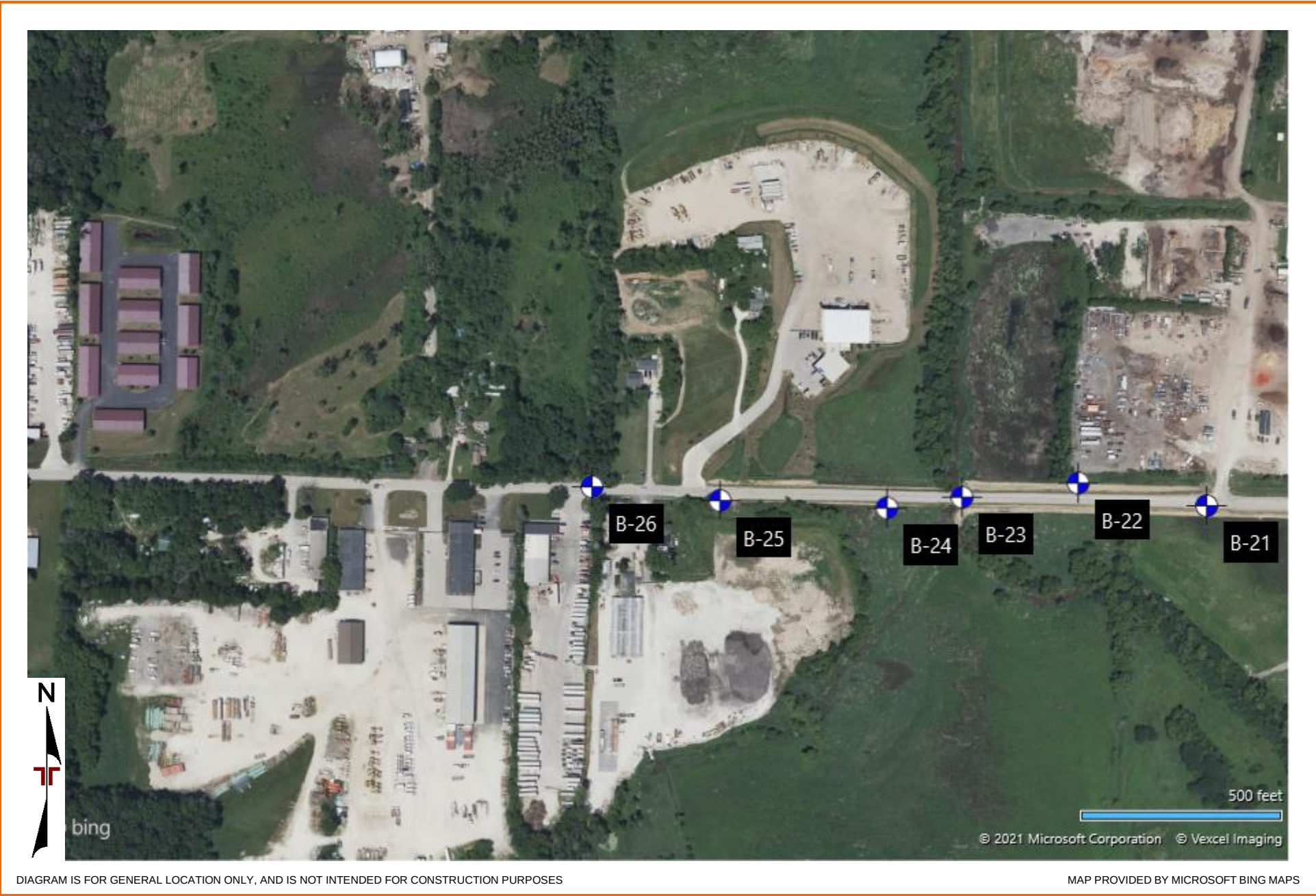


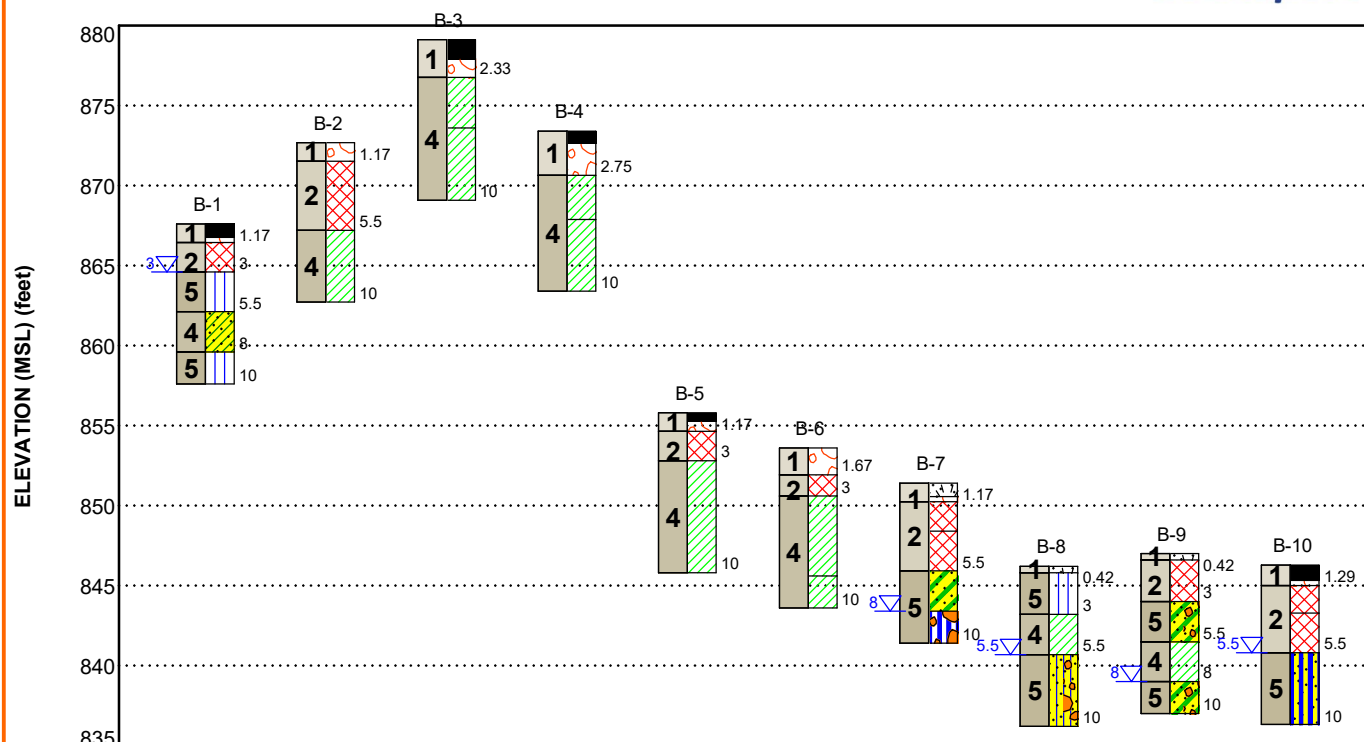
DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

GEOMODEL

W. Lincoln Avenue Reconstruction ■ City of New Berlin, WI
Terracon Project No. 58215217



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Surficial Materials	Pavement Section - 6 to 17 inches of asphalt over 2 to 15.5 inches of base course; Topsoil - 4 to 10 inches thick; Crushed Stone - 6 to 20 inches thick
2	Existing Fill	Sandy Lean Clay, Silty Clay, Organic Clay, Silty Sand, Clayey Sand, and Sand with varying gravel contents.
3	Organic Soils	Organic Clay. Typically dark gray to bluish gray in color. Often observed with roots or wood fibers.
4	Native Cohesive Soils	Lean Clays and Sandy Lean Clays with varying sand, gravel, and silt contents. Typically stiff to hard.
5	Native Non-Cohesive Soils	Clayey Sand, Silty Sand, Sandy Silt, and Silt with varying sand and gravel contents. Often water bearing. Very loose to very dense.

LEGEND

Asphalt	Silt	Topsoil	Silty Sand with Gravel
Aggregate Base Course	Sandy Lean Clay	Clayey Sand	Clayey Sand with Gravel
Fill	Lean Clay	Gravelly Silt	Sandy Silt

First Water Observation

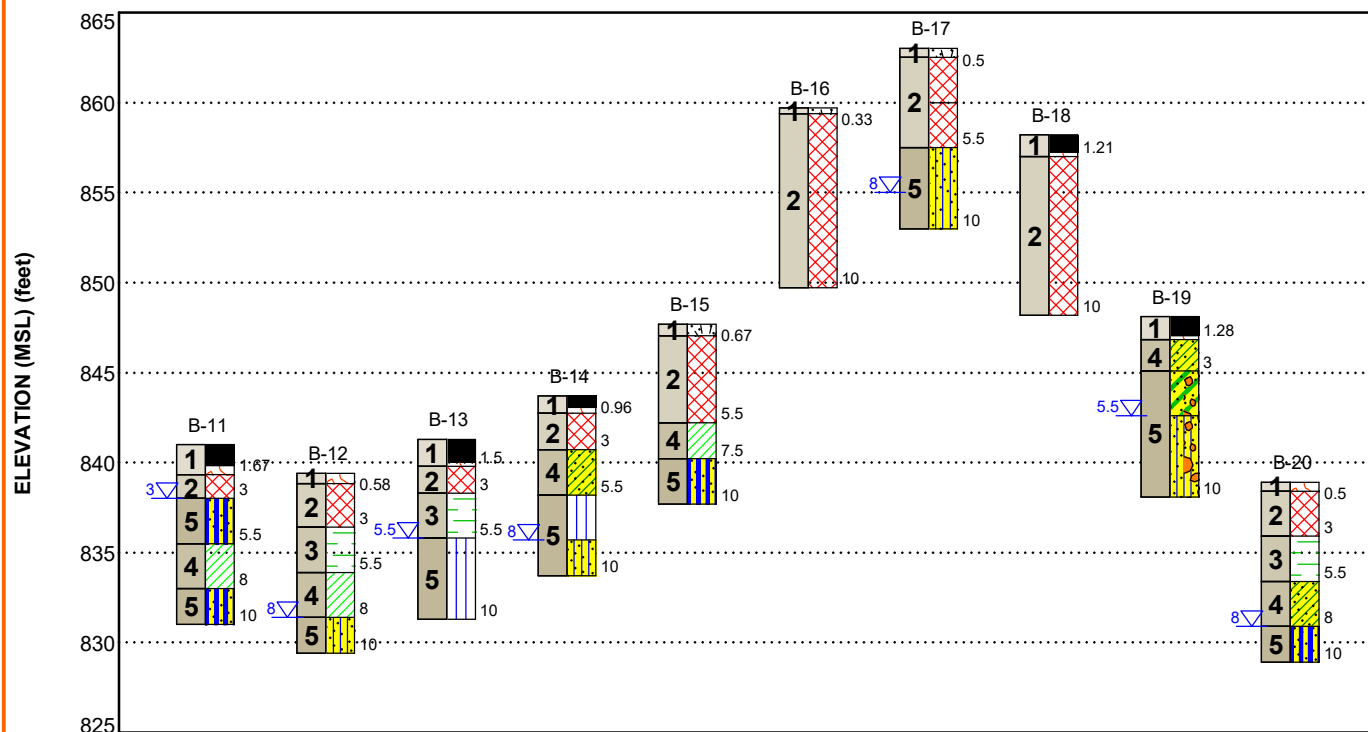
NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

GEOMODEL

W. Lincoln Avenue Reconstruction ■ City of New Berlin, WI
Terracon Project No. 58215217



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Surficial Materials	Pavement Section - 6 to 17 inches of asphalt over 2 to 15.5 inches of base course; Topsoil - 4 to 10 inches thick; Crushed Stone - 6 to 20 inches thick
2	Existing Fill	Sandy Lean Clay, Silty Clay, Organic Clay, Silty Sand, Clayey Sand, and Sand with varying gravel contents.
3	Organic Soils	Organic Clay. Typically dark gray to bluish gray in color. Often observed with roots or wood fibers.
4	Native Cohesive Soils	Lean Clays and Sandy Lean Clays with varying sand, gravel, and silt contents. Typically stiff to hard.
5	Native Non-Cohesive Soils	Clayey Sand, Silty Sand, Sandy Silt, and Silt with varying sand and gravel contents. Often water bearing. Very loose to very dense.

LEGEND

Asphalt	Sandy Silt	Silty Sand	Topsoil
Aggregate Base Course	Lean Clay	Silt	Clayey Sand with Gravel
Fill	Organic Silt	Sandy Lean Clay	Silty Sand with Gravel

First Water Observation

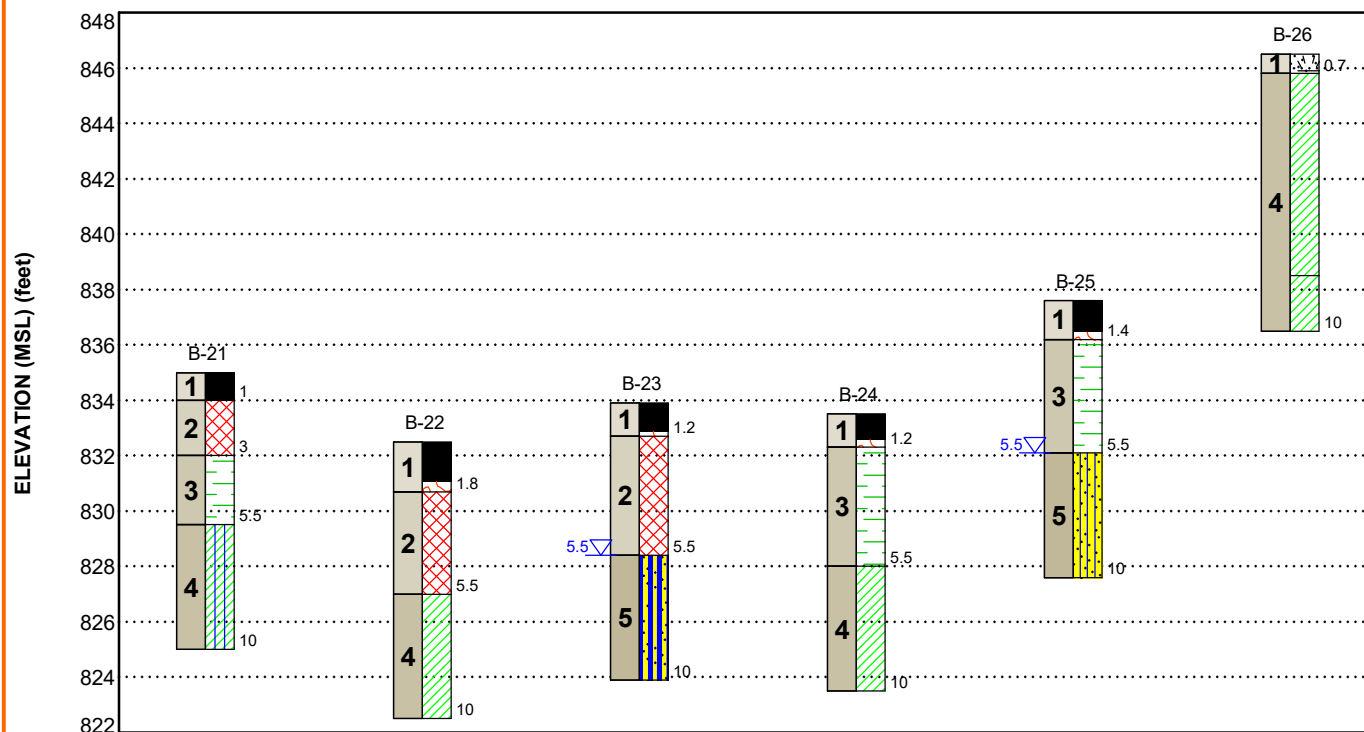
NOTES:

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Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

GEOMODEL

W. Lincoln Avenue Reconstruction ■ City of New Berlin, WI
Terracon Project No. 58215217



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Surficial Materials	Pavement Section - 6 to 17 inches of asphalt over 2 to 15.5 inches of base course; Topsoil - 4 to 10 inches thick; Crushed Stone - 6 to 20 inches thick
2	Existing Fill	Sandy Lean Clay, Silty Clay, Organic Clay, Silty Sand, Clayey Sand, and Sand with varying gravel contents.
3	Organic Soils	Organic Clay. Typically dark gray to bluish gray in color. Often observed with roots or wood fibers.
4	Native Cohesive Soils	Lean Clays and Sandy Lean Clays with varying sand, gravel, and silt contents. Typically stiff to hard.
5	Native Non-Cohesive Soils	Clayey Sand, Silty Sand, Sandy Silt, and Silt with varying sand and gravel contents. Often water bearing. Very loose to very dense.

LEGEND

Asphalt	Silty Clay	Sandy Silt
Fill	Aggregate Base Course	Silty Sand
Organic Silt	Lean Clay	Topsoil

First Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

BORING LOG NO. B-1

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1281° Station: 93+79 Offset: 6.2' RT Surface Elev.: 867.6 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.8 ASPHALT , (10 inches thick) 1.2 867							
2		1.2 AGGREGATE BASE COURSE , (4 inches thick) 3.0 866.5							
		FILL - SILTY CLAY , trace sand and gravel, dark gray and brown				16	0-0-2 N=2	1.0 (HP)	17.2
5		5.5 SILT (ML) , with clay, gray mottled brown, wet, medium dense 862	5			18	5-7-12 N=19		19.3
4		8.0 SANDY CLAY (CL) , with silt and sand seams, grayish brown, very stiff 859.5				17	2-4-5 N=9	2.75 (HP)	13.7
5		10.0 SILT (ML) , trace silt, grayish brown, wet, medium dense 857.5	10			18	4-8-7 N=15		20.8
		Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 3 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-06-2021

Boring Completed: 10-06-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

Page 1 of 1

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION	See Exploration Plan	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		Latitude: 43.0025° Longitude: -88.1293° Station: 90+57 Offset: 16.2' LT Surface Elev.: 872.7 (Ft.)								
		DEPTH	ELEVATION (Ft.)							
1		AGGREGATE BASE COURSE , (14 inches thick)		1.2	871.5					
2		FILL - SILTY CLAY , with gravel and silt seams, dark brown and dark gray		5.5	867	X	8	1-1-2 N=3	2.75 (HP)	23.8
4		LEAN CLAY (CL) , with gravel, grayish brown, hard		10.0	862.5	X	14	2-2-3 N=5	3.25 (HP)	15.6
		LEAN CLAY (CL) , with gravel, grayish brown, hard				X	15	7-9-11 N=20	4.5+ (HP)	13.6
		Boring Terminated at 10 Feet				X		4-6-12 N=18	4.5+ (HP)	14.0

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

Notes:

WATER LEVEL OBSERVATIONS
No water observed while drilling



Boring Started: 10-04-2021

Drill Rig: CME55

Project No.: 58215217

Boring Completed: 10-04-2021

Driller: MS/PTS

BORING LOG NO. B-3

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1305° Station: 87+42 Offset: 18.9' LT Surface Elev.: 879.1 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		1.2 ASPHALT , (14 inches thick) 878							
		2.3 AGGREGATE BASE COURSE , (14 inches thick) 877			X	13	2-7-12 N=19	4.5+ (HP)	14.6
		5.5 LEAN CLAY (CL) , with gravel, and trace sand, grayish brown, very stiff to hard 873.5	5		X	10	7-10-12 N=22	2.75 (HP)	13.3
4		10.0 LEAN CLAY (CL) , trace sand and gravel, gray, very stiff 869	10		X	12	6-8-9 N=17	3.5 (HP)	10.7
		Boring Terminated at 10 Feet			X	18	3-3-4 N=7	3.5 (HP)	15.8

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-04-2021

Boring Completed: 10-04-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-4

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1316° Station: 84+63 Offset: 5.9' RT Surface Elev.: 873.4 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.8 ASPHALT , (9 inches thick) 872.5							
		AGGREGATE BASE COURSE , (2 feet thick)							
		2.8 870.5							
		LEAN CLAY (CL) , trace sand and gravel, grayish brown, very stiff							
		5.5 868	5						
4		LEAN CLAY (CL) , trace sand and gravel, gray, hard							
		10.0 863.5	10						
		Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-06-2021

Boring Completed: 10-06-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-5

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1327° Station: 80+27 Offset: 6.1' LT Surface Elev.: 855.8 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.5 ASPHALT , (6 inches thick) 855.5							
		1.2 AGGREGATE BASE COURSE , (8 inches thick) 854.5							
2		FILL - SILTY SAND WITH GRAVEL , light gray				6	5-11-5 N=16		6.1
		3.0 853							
		LEAN CLAY (CL) , trace sand and gravel, grayish brown, hard				12	2-4-5 N=9	4.5+ (HP)	13.9
4						6	4-7-10 N=17	4.5+ (HP)	13.0
		10.0 846				17	4-5-10 N=15	4.5+ (HP)	13.6
		Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

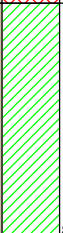
BORING LOG NO. B-6

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1340° Station: 78+47 Offset: 13.2' LT Surface Elev.: 853.6 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		AGGREGATE BASE COURSE , (20 inches thick) 1.7 852							
2		FILL - SANDY CLAY , with silt, gray and grayish brown 3.0 850.5				8	2-2-3 N=5	2.0 (HP)	17.0
		LEAN CLAY (CL) , with gravel, and trace silt, grayish brown, very stiff to hard 8.0 845.5	5						
4		LEAN CLAY (CL) , trace silt and gravel, gray, very stiff 10.0 843.5				10	2-5-8 N=13	4.5+ (HP)	13.0
		LEAN CLAY (CL) , trace silt and gravel, gray, very stiff 8.0 845.5				7	21-5-10 N=15	3.75 (HP)	14.4
		LEAN CLAY (CL) , trace silt and gravel, gray, very stiff 10.0 843.5				15	2-3-5 N=8	3.75 (HP)	8.8
		Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-7

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1351° Station: 75+13 Offset: 14.1 RT Surface Elev.: 851.4 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.8 TOPSOIL , (10 inches thick)	850.5						
		1.2 AGGREGATE BASE COURSE , (4 inches thick)	850						
		FILL - CLAYEY SAND WITH GRAVEL , medium grained, dark brown				2	2-2-2 N=4		
2		3.0 FILL - SANDY LEAN CLAY , with gravel, dark brown	848.5						
		5.5 CLAYEY SAND WITH GRAVEL , medium grained, dark brown, moist, medium dense	846			13	1-1-1 N=2	1.0 (HP)	23.1
5		8.0 CLAYEY SAND WITH GRAVEL , medium grained, dark brown, moist, medium dense	843.5			16	5-13-14 N=27		9.9
		10.0 GRAVELLY SILT (ML) , with clay, brown, wet, dense	841.5			7	10-14-16 N=30		11.4
		Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 8 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-06-2021

Boring Completed: 10-06-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

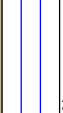
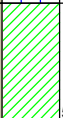
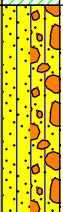
BORING LOG NO. B-8

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1366° Station: 71+02 Offset: 30.1' RT Surface Elev.: 846.2 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		0.4 TOPSOIL , (5 inches thick)	846						
5		SILT (ML) , trace sand, gray and brown, very moist, very loose	843		X	5	0-1-2 N=3		19.8
4		LEAN CLAY (CL) , trace silt and gravel, grayish brown, very stiff	840.5		X	7	5-2-3 N=5	3.5 (HP)	23.2
5		SILTY SAND WITH GRAVEL (SM) , fine to coarse grained, wet, medium dense	836		X		6-9-12 N=21		8.5
					X		14-10-10 N=20		11.1
		Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 5.5 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-01-2021

Boring Completed: 10-01-2021

Drill Rig: Geoprobe 7822 DT

Driller: C.A.

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

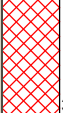
BORING LOG NO. B-9

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0026° Longitude: -88.1377° Station: 68+23 Offset: 37.1' LT DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		0.4 TOPSOIL , (5 inches thick)	846.5						
2		FILL - SILTY SAND , fine to medium grained, dark brown	844		X	9	3-4-7 N=11		12.2
5		CLAYEY SAND WITH GRAVEL (SC) , medium to coarse grained, light brown, very moist to wet, medium dense	841.5		X	6	13-12-14 N=26		8.7
4		LEAN CLAY (CL) , with silt, gray, stiff	839		X	15	6-5-3 N=8	1.5 (HP)	14.2
5		CLAYEY SAND WITH GRAVEL (SC) , medium to coarse grained, gray, wet, very dense	837		X	8	6-39-17 N=56		14.9
Boring Terminated at 10 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 8 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-01-2021

Boring Completed: 10-01-2021

Drill Rig: Geoprobe 7822 DT

Driller: C.A.

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-10

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1386° Station: 65+82 Offset: 5.5' RT Surface Elev.: 846.3 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		1.0 ASPHALT , (11.5 inches thick) 1.3 845.5							
		1.3 AGGREGATE BASE COURSE , (15.5 inches thick) 845							
		FILL - SANDY LEAN CLAY , trace gravel, dark brown				5	4-4-2 N=6	2.5 (HP)	12.2
2		3.0 843.5 FILL - SANDY LEAN CLAY , with gravel, brown and dark brown							
		5.5 841 SANDY SILT (ML) , with clay, brown, wet, very loose to loose	5				2-1-1 N=2	Dist.	31.6
									
5						15	2-2-7 N=9		13.1
									
						18	1-1-1 N=2		11.8
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 5.5 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-01-2021

Boring Completed: 10-01-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-11

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1397° Station: 62+70 Offset: 5.5' LT DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		ASPHALT , (14 inches thick)	840							
2		AGGREGATE BASE COURSE , (6 inches thick)	839.5							
2		FILL - ORGANIC CLAY , dark brown and black	838				7	1-1-1 N=2	3.25 (HP)	24.7
5		SANDY SILT (ML) , gray, wet, very loose	835.5	5			14	1-1-2 N=3		25.5
4		LEAN CLAY (CL) , trace silt and gravel, gray, hard	833				15	3-5-8 N=13	4.5+ (HP)	21.9
5		SANDY SILT (ML) , with gravel and clay, gray, wet, medium dense	831	10			17	4-5-9 N=14		12.2
Boring Terminated at 10 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 3 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-12

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1415° Station: 57+60 Offset: 13.4' RT Surface Elev.: 839.4 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.6 AGGREGATE BASE COURSE , (7 inches thick) FILL - ORGANIC CLAY , dark brown	839						
2		3.0 ORGANIC CLAY (OL) , with roots, bluish gray	836.5			4	0-1-1 N=2		46.6
3		5.5 LEAN CLAY (CL) , trace sand and gravel, grayish brown, very stiff	834			18	0-0-1 N=1	1.0 (HP)	44.8
4		8.0 SILTY SAND (SM) , wet, medium dense	831.5			16	1-2-4 N=6	2.5 (HP)	16.8
5		10.0 Boring Terminated at 10 Feet	829.5			6	2-4-7 N=11		8.9

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

Water observed at 8 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-06-2021

Boring Completed: 10-06-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-13

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0024° Longitude: -88.1424° Station: 55+58 Offset: 5.0' RT DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		ASPHALT , (15 inches thick)	840							
2		AGGREGATE BASE COURSE , (3 inches thick)	840							
		FILL - SANDY LEAN CLAY , with gravel, dark gray	838.5				7	1-2-1 N=3	2.5 (HP)	13.9
3		ORGANIC CLAY (OL) , with roots, bluish gray	836				18	0-1-2 N=3	1.0 (HP)	33.4
5		SILT (ML) , gray, loose	831.5				10	2-3-2 N=5		22.8
							15	2-3-3 N=6		22.4
		Boring Terminated at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 5.5 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-06-2021

Boring Completed: 10-06-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-14

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1433° Station: 53+18 Offset: 5.5' LT Surface Elev.: 843.7 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.6 ASPHALT , (7.5 inches thick)	843						
		1.0 AGGREGATE BASE COURSE , (4 inches thick)	842.5						
2		FILL - SANDY CLAY , with gravel, dark brown				14	4-5-2 N=7	3.5 (HP)	11.6
		3.0 SANDY LEAN CLAY (CL) , with gravel, brown mottled gray, very stiff	840.5						
4		5.5 SILT (ML) , with sand seams, gray mottled brown, very moist, medium dense	838			10	1-2-2 N=4	2.0 (HP)	19.1
		8.0 SILTY SAND (SM) , with gravel, medium to coarse grained, gray, wet, loose	835.5			11	4-5-7 N=12		13.8
5		10.0 Boring Terminated at 10 Feet	833.5			14	3-3-5 N=8		17.2

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

Water observed at 8 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-15

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1443° Station: 49+99 Offset: 20.6' LT DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		TOPSOIL , (8 inches thick) FILL - LEAN CLAY , with sand and gravel, dark brown	0.7 847						
2		LEAN CLAY (CL) , trace sand and gravel, grayish brown and brown, very stiff	5.5 842		X	15	4-4-4 N=8	2.75 (HP)	24.1
4		SANDY SILT (ML) , trace clay, light brown, very moist, medium dense	7.5 840		X	2	2-2-2 N=4	Dist.	19.8
5		Boring Terminated at 10 Feet	10.0 837.5		X	17	2-1-3 N=4	2.75 (HP)	25.6
					X	17	2-8-12 N=20		15.8

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon
9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-16

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1457° Station: 47+24 Offset: UNKNOWN Surface Elev.: 859.7 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		0.3 TOPSOIL , (4 inches thick) ELEVATION (Ft.) 859.5							
2		FILL - SILTY SAND WITH GRAVEL , fine to coarse grained, light brown, moist							
					X	6	2-4-3 N=7		11.2
					X	8	4-8-10 N=18		4.3
					X	11	7-14-21 N=35		5.5
					X	10	11-12-18 N=30		6.3
		10.0 Boring Terminated at 10 Feet ELEVATION (Ft.) 849.5	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

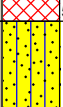
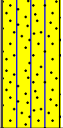
BORING LOG NO. B-17

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1465° Station: 44+69 Offset: UNKNOWN Surface Elev.: 863.0 (Ft.) DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		0.5 TOPSOIL , (6 inches thick)	862.5						
		FILL - SANDY LEAN CLAY , with gravel, brown							
2		3.0 FILL - SILTY SAND WITH GRAVEL , fine to coarse grained, light brown, moist	860						
		5.5 SILTY SAND (SM) , fine grained, light brown, moist to wet, medium dense	857.5						
5		10.0 Boring Terminated at 10 Feet	853						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 8 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-18

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1478° Station: 40+95 Offset: 5.8' LT Surface Elev.: 858.2 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		1.0 ASPHALT , (11.5 inches thick) 857.5							
		1.2 AGGREGATE BASE COURSE , (3 inches thick) 857							
		FILL - SAND WITH GRAVEL , trace silt, medium grained							
2			5						
				X	12		3-5-9 N=14		2.8
				X	14		4-6-7 N=13		2.0
				X	15		2-4-4 N=8		2.5
				X	16		3-4-7 N=11		2.4
		10.0 Boring Terminated at 10 Feet 848	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

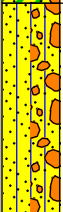
BORING LOG NO. B-19

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1490° Station: 37+75 Offset: 5.1' RT Surface Elev.: 848.1 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		ASPHALT , (12.5 inches thick) 1.0 847							
2		AGGREGATE BASE COURSE , (3 inches thick) 1.3 847							
4		SANDY LEAN CLAY (CL) , with gravel, brown, very stiff 3.0 845			X	12	2-2-2 N=4	2.5 (HP)	14.8
		CLAYEY SAND WITH GRAVEL (SC) , brown, moist, very loose 5.5 842.5	5		X	18	3-2-1 N=3		8.9
5		SILTY SAND WITH GRAVEL (SM) , fine to medium grained, light brown, wet, very loose to medium dense 10.0 838			X	18	1-1-1 N=2		23.5
		Boring Terminated at 10 Feet	10		X	14	2-3-3 N=6		21.5

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 5.5 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-06-2021

Boring Completed: 10-06-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

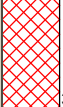
BORING LOG NO. B-20

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1505° Station: 34+45 Offset: UNKNOWN Surface Elev.: 838.9 (Ft.) DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		0.5 AGGREGATE BASE COURSE , (6 inches thick)	838.5						
2		FILL - SANDY LEAN CLAY , trace gravel, dark brown				10	2-2-3 N=5	2.25 (HP)	18.9
3		ORGANIC CLAY (OL) , dark grayish brown	836			12	2-2-3 N=5	1.25 (HP)	24.8
4		SANDY LEAN CLAY (CL) , with gravel, brown, very stiff	833.5			14	2-6-8 N=14	3.25 (HP)	18.9
5		SANDY SILT (ML) , gray, wet, medium dense	831			16	3-5-9 N=14		21.9
		Boring Terminated at 10 Feet	829						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 8 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-04-2021

Boring Completed: 10-04-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-21

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1514° Station: 31+81 Offset: UNKNOWN Surface Elev.: 835.0 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		ASPHALT , (12.5 inches thick), no aggregate base course observed 1.0 834							
2		FILL - ORGANIC CLAY , with roots, black 3.0 832			X	1	0-1-1 N=2		49.0
3		ORGANIC CLAY (OL) , with roots, bluish gray and grayish brown 5.5 829.5	5		X	14	0-0-1 N=1	1.5 (HP)	41.1
4		SILTY CLAY (CL-ML) , trace gravel, gray, very stiff 10.0 825	10		X	15	1-2-5 N=7	3.5 (HP)	20.3
		Boring Terminated at 10 Feet			X	18	3-3-3 N=6	2.0 (HP)	22.4

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-22

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0025° Longitude: -88.1526° Station: 28+65 Offset: 5.3' RT Surface Elev.: 832.5 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		ASPHALT , (17 inches thick) 1.4 1.8	831 830.5						
		AGGREGATE BASE COURSE , (5 inches thick)		X	10		2-3-2 N=5	2.0 (HP)	9.6
2		FILL - SANDY LEAN CLAY , with gravel and wood particles, dark brown							
				X	1		2-2-4 N=6	Dist.	
			5						
4		LEAN CLAY (CL) , trace sand and gravel, gray, very stiff to hard	827						
				X	15		1-2-2 N=4	3.75 (HP)	37.2
				X	14		2-2-5 N=7	4.5+ (HP)	14.6
			10						
		Boring Terminated at 10 Feet	822.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-04-2021

Boring Completed: 10-04-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

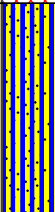
BORING LOG NO. B-23

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0026° Longitude: -88.1534° Station: 25+15 Offset: 4.7' LT Surface Elev.: 833.9 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		1.0 ASPHALT , (12 inches thick) 1.2 AGGREGATE BASE COURSE , (2 inches thick) FILL - LEAN CLAY , with sand seams, with organics, dark brown and black	833 832.5						
2		5.5 SANDY SILT (ML) , trace gravel, gray, wet, very loose to loose	828.5						
5			824						
		Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 5.5 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-24

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0026° Longitude: -88.1546° Station: 22+74 Offset: 5.3' RT Surface Elev.: 833.5 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.9 ASPHALT , (11.5 inches thick) 832.5							
		1.2 AGGREGATE BASE COURSE , (3 inches thick) 832.5							
		ORGANIC CLAY (OL) , trace gravel, dark bluish gray							
3		5.5 LEAN CLAY (CL) , trace sand and gravel, grayish brown, very stiff to hard 828	5						
		LEAN CLAY (CL) , trace sand and gravel, grayish brown, very stiff to hard							
4		10.0 Boring Terminated at 10 Feet 823.5	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-04-2021

Boring Completed: 10-04-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

BORING LOG NO. B-25

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0026° Longitude: -88.1559° Station: 19+57 Offset: 5.7' RT Surface Elev.: 837.6 (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		ASPHALT , (13.5 inches thick) 1.1 1.4	836.5 836						
3		AGGREGATE BASE COURSE , (3 inches thick) ORGANIC CLAY (OL) , trace gravel, dark gray and bluish gray			X	3	1-2-3 N=5	2.0 (HP)	36.4
5		SILTY SAND (SM) , with clay seams, medium grained, brown, wet, loose	832		X	10	1-2-2 N=4	1.5 (HP)	25.0
					X	12	1-2-4 N=6		14.0
					X	18	2-3-4 N=7		16.5
		Boring Terminated at 10 Feet	827.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

 Water observed at 5.5 feet while drilling.

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-04-2021

Boring Completed: 10-04-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

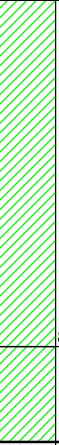
BORING LOG NO. B-26

Page 1 of 1

PROJECT: W. Lincoln Avenue Reconstruction

CLIENT: RA Smith Inc
Cedarburg, WI

SITE: West Lincoln Avenue
City of New Berlin, WI

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 43.0027° Longitude: -88.1568° Station: 16+25 Offset: UNKNOWN DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)
1		0.7 TOPSOIL , (8 inches thick)	846						
4		LEAN CLAY (CL) , trace sand and gravel, with silt seams, light brown, stiff to very stiff			X	3	1-1-2 N=3	1.0 (HP)	13.3
					X	14	2-2-4 N=6	3.0 (HP)	14.1
					X	16	10-15-18 N=33	2.0 (HP)	22.4
		8.0 LEAN CLAY (CL) , trace sand and gravel, with silt seams, gray, hard	838.5		X	15	4-9-12 N=21	4.25 (HP)	12.6
		10.0 Boring Terminated at 10 Feet	836.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
HSA 2 1/4"

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite
Surface capped with concrete

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by RA Smith.

WATER LEVEL OBSERVATIONS

No water observed while drilling

Terracon

9856 S 57th St
Franklin, WI

Boring Started: 10-05-2021

Boring Completed: 10-05-2021

Drill Rig: CME55

Driller: MS/PTS

Project No.: 58215217

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL_58215217 W. LINCOLN AVENUE.GPJ TERRACON_DATATEMPLATE.GDT 12/15/21

SUPPORTING INFORMATION

GENERAL NOTES

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS		
SAMPLING	WATER LEVEL	FIELD TESTS
 Auger  Split Spoon  Shelby Tube  Macro Core  Ring Sampler  Rock Core  Grab Sample  No Recovery	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Subsurface water level variations will occur over time. In low permeability soils, accurate determination of subsurface water levels is not possible with short term water level observations.	(HP) Hand Penetrometer (T) Torvane (b/f) Standard Penetration Test (blows per foot) (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer (DCP) Dynamic Cone Penetrometer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve) Consistency determined by laboratory shear strength testing, field visual-manual procedures, or standard penetration resistance		
Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength, Q_u , tsf	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 – 3	Very Soft	Less than 0.25	0 – 1
Loose	4 – 9	Soft	0.25 to 0.50	2 – 4
Medium Dense	10 – 29	Medium Stiff	0.50 to 1.00	4 – 8
Dense	30 – 50	Stiff	1.00 to 2.00	8 – 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 – 30
		Hard	> 4.00	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive term(s) of other constituents	Percent (%) of dry weight
Trace	< 15
With	15 – 29
Modifier	> 30

RELATIVE PROPORTIONS OF FINES

Descriptive term(s) of other constituents	Percent (%) of dry weight
Trace	< 5
With	5 – 12
Modifier	> 12

GRAIN SIZE TERMINOLOGY

Major component of sample	Particle size
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non plastic	0
Low	1 – 10
Medium	11 – 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

West Lincoln Avenue Reconstruction ■ City of New Berlin, Wisconsin
December 16, 2021 ■ Terracon Project No. 58215217

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A					Soil Classification	
					Group Symbol	Group Name ^B
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels:	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E		GW	Well-graded gravel ^F
		Less than 5% fines ^C	Cu < 4 and/or 1 > Cc > 3 ^E		GP	Poorly graded gravel ^F
		Gravels with Fines:	Fines classify as ML or MH		GM	Silty gravel ^{F, G, H}
		More than 12% fines ^C	Fines classify as CL or CH		GC	Clayey gravel ^{F, G, H}
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands:	Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E		SW	Well-graded sand ^I
		Less than 5% fines ^D	Cu < 6 and/or 1 > Cc > 3 ^E		SP	Poorly graded sand ^I
		Sands with Fines:	Fines classify as ML or MH		SM	Silty sand ^{G, H, I}
		More than 12% fines ^D	Fines classify as CL or CH		SC	Clayey sand ^{G, H, I}
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above “A”		CL	Lean clay ^{K, L, M}
			PI < 4 or plots below “A” line ^J		ML	Silt ^{K, L, M}
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K, L, M, N}
			Liquid limit - not dried		Organic silt ^{K, L, M, O}	
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above “A” line		CH	Fat clay ^{K, L, M}
			PI plots below “A” line		MH	Elastic Silt ^{K, L, M}
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K, L, M, P}
			Liquid limit - not dried		Organic silt ^{K, L, M, Q}	
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

^A Based on the material passing the 3-inch (75-mm) sieve

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

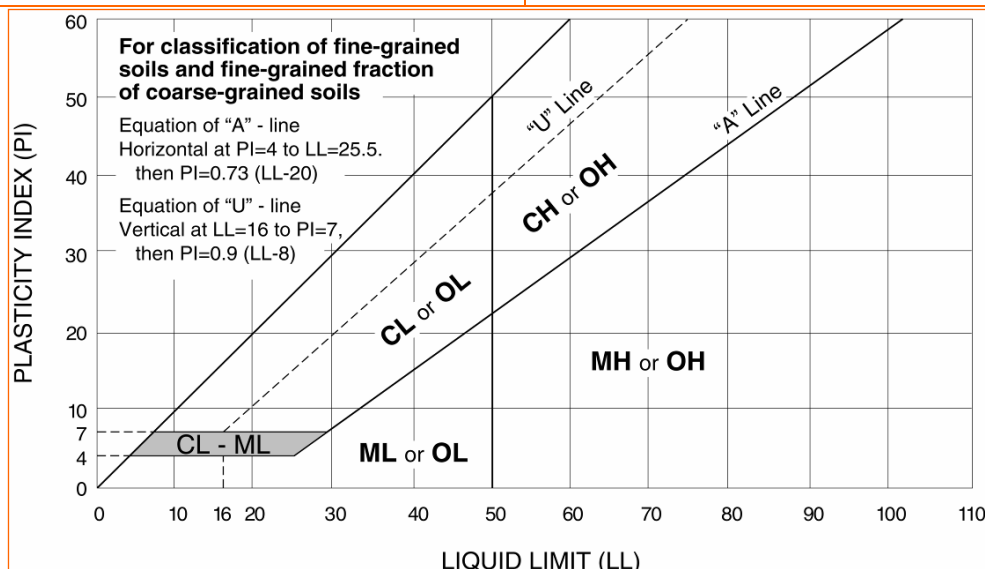
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



APPENDIX 2
W. Lincoln Ave. Reconstruction
Plan Set

S. CALHOUN ROAD TO 8,500'± WEST OF S. CALHOUN ROAD
NEW BERLIN, WISCONSIN

SPRINGDALE RD

W GREENFIELD AVE

W LINCOLN AVE

S JOHNSON RD

PROJECT LOCATION

W CLEVELAND AVE

S CALHOUN RD

W COFFEE RD

S MOORLAND RD

61 - 64

65 - 91

N

GRAPHIC SCALE

1000 0 1000 2000 4000

(IN FEET)

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
01	TITLE SHEET
2 - 4	TYPICAL SECTIONS
5 - 20	ROAD PLAN & PROFILE
21 - 36	DITCH PLAN & PROFILE
37 - 45	PAVEMENT MARKING
46 - 48	BOX CULVERT DETAILS
49 - 50	PHASING AND DETOUR PLAN
51 - 53	INTERSECTION DETAILS
54 - 60	CONSTRUCTION DETAILS
61 - 64	TRAFFIC SIGNAL PLANS
65 - 91	CROSS SECTIONS

	TREE REMOVAL
	EXISTING CONCRETE PAVEMENT TO BE REMOVED
	EXISTING ASPHALT PAVEMENT TO BE REMOVED
	EXISTING GRAVEL TO BE REMOVED
	EXISTING BUILDING/STRUCTURE TO BE REMOVED
	SAWCUT LINE
	STANDARD PROPERTY LINE
	SIGN
	STANDARD-DUTY ASPHALT PAVEMENT
	PROPOSED 30" STANDARD CURB & GUTTER (AS SHOWN ON PLAN)
	PROPOSED SPOT GRADE
	PROPOSED TOP OF CURB
	PROPOSED EROSION CONTROL BALE
	TEMPORARY DITCH CHECK
	PROPOSED INLET PROTECTION
	PROPOSED SILT FENCE
	PROPOSED DITCH
	PROPOSED RIPRAP
	PROPOSED GAS LINE
	PROPOSED ELECTRIC LINE
	PROPOSED TELEPHONE LINE
	PROPOSED WATER MAIN
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
	PROPOSED FIRE DEPARTMENT CONNECTION
	PROPOSED WATER VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED INLET/ CB
	PROPOSED STORM MANHOLE
	PROPOSED AREA DRAIN

1) INDICATES RECORDED DIMENSION WHERE DIFFERENT FROM ACTUAL MEASUREMENT

OR SECTION OR 1/4 SECTION CORNER AS DESCRIBED

1" DIA. IRON PIPE FOUND (UNLESS OTHERWISE NOTED)

18" DIA. IRON PIPE, 18" LONG-SECT (UNLESS OTHERWISE NOTED)

BOLLARD

SOIL BORING/MONITORING WELL

FLAGPOLE

MAILBOX

SIGN

BILLBOARD

AIR CONDITIONER

CONTROL BOX

TRAFFIC SIGNAL

RAILROAD CROSSING SIGNAL

CABLE PEDESTAL

POWER POLE

GUY POLE

GUY WIRE

LIGHT POLE

SPOT VARY/PEDESTAL LIGHT

HANDICAPPED PARKING

ELECTRIC MANHOLE

ELECTRIC PEDESTAL

ELECTRIC METER

ELECTRIC TRANSFORMER

TELEPHONE MANHOLE

TELEPHONE PEDESTAL

MARKED FIBER OPTIC

WAS VALVE

GAS METER

GAS WARNING SIGN

SEPTIC SANITARY MANHOLE

ROUND INLET

SQUARE INLET

STORM SEWER END SECTION

SANITARY MANHOLE

SANITARY CLEANOUT OR SEPTIC VENT

SANITARY INTERCEPTOR MANHOLE

MISCELLANEOUS MANHOLE

WATER VALVE

HYDRANT

WATER SERVICE CURB STOP

WATER MANHOLE

WELL

WATER SURFACE

WETLANDS FLAG

MARSH

CONIFEROUS TREE

DECIDUOUS TREE

SHRUB

EDGE OF TREES

SANITARY SEWER

STORM SEWER

WATERMAIN

MARKED GAS MAIN

MARKED ELECTRIC

OVERHEAD WIRES

BUREAU ELEC. SERV.

MARKED TELEPHONE

MARKED CABLE TV LINE

MARKED FIBER OPTIC

INDICATES EXISTING CONTOUR ELEVATION

780

x 780.50

INDICATES EXISTING SLOP ELEVATION

EXISTING PROPERTY LINE

EXISTING EASEMENT LINE

CITY OF NEW BERLIN - DEPARTMENT OF COMMUNITY DEVELOPMENT
3805 S. CASPER DRIVE
NEW BERLIN, WISCONSIN 53151
PH.:262/797-2445
FAX:262/780-4612, E-MAIL:tsimonson@newberlin.org



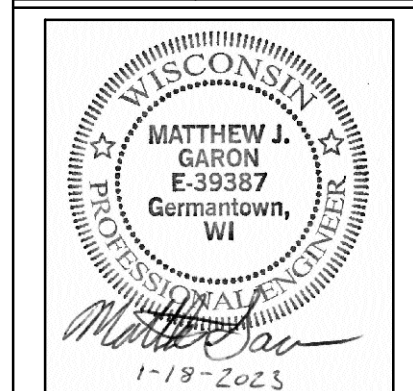
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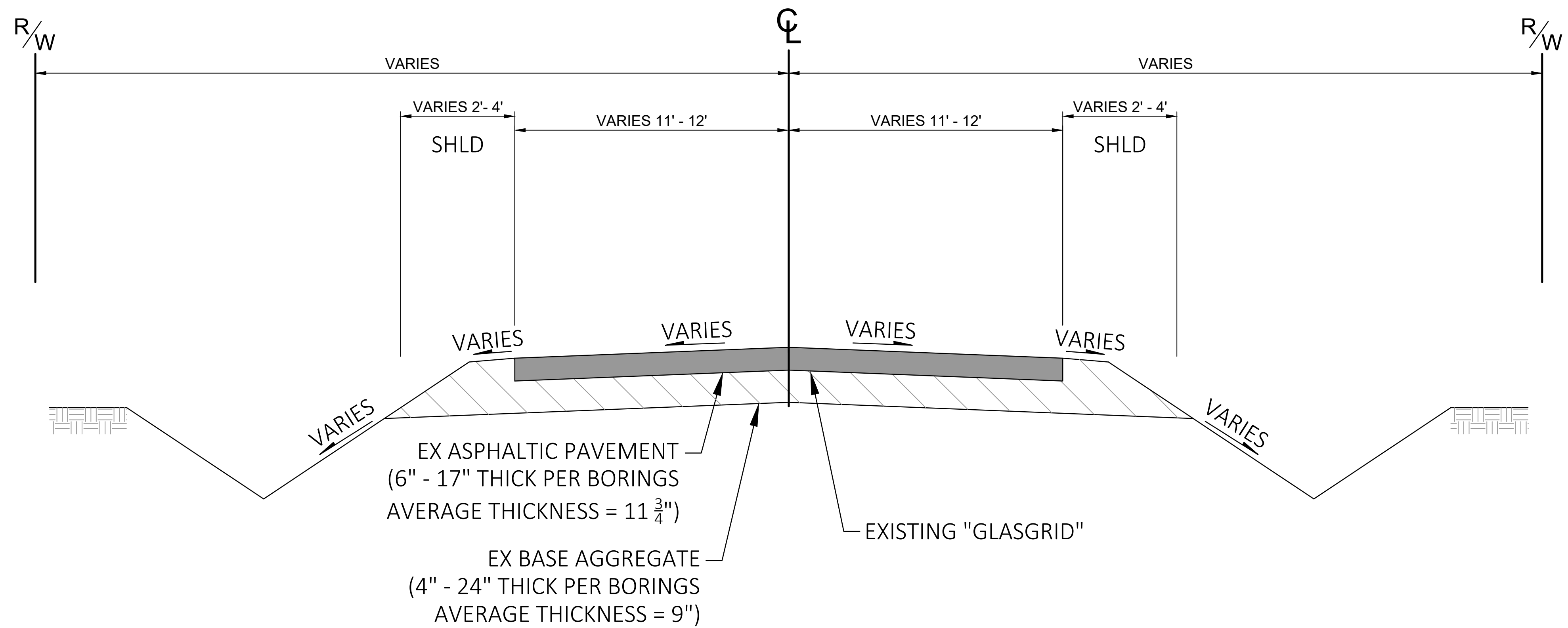
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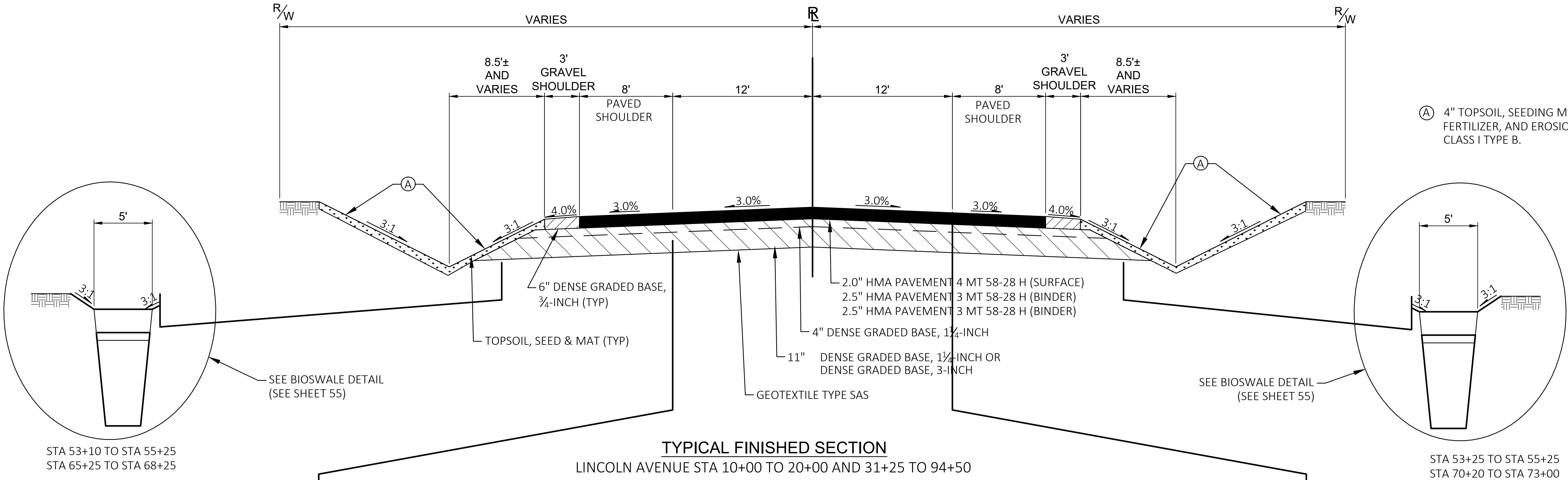
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PROJECT MANAGER: TROY T. HARTJES, P.E.
DESIGNED BY: MTG
CHECKED BY: TTH

SHEET NUMBER

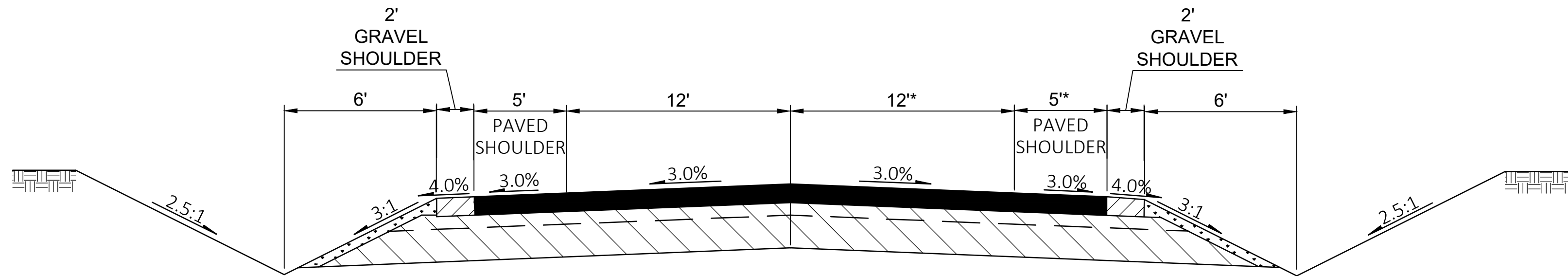
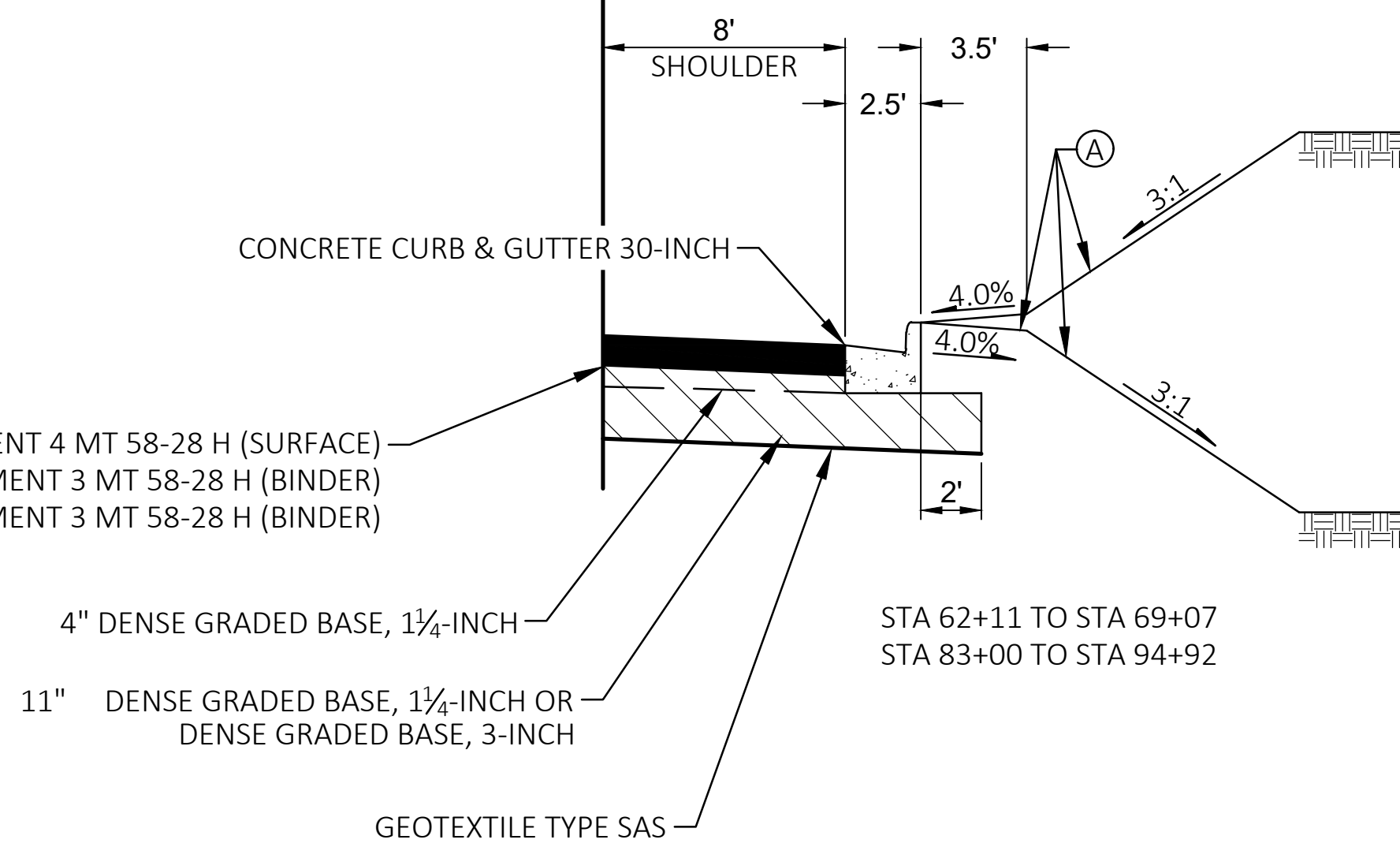
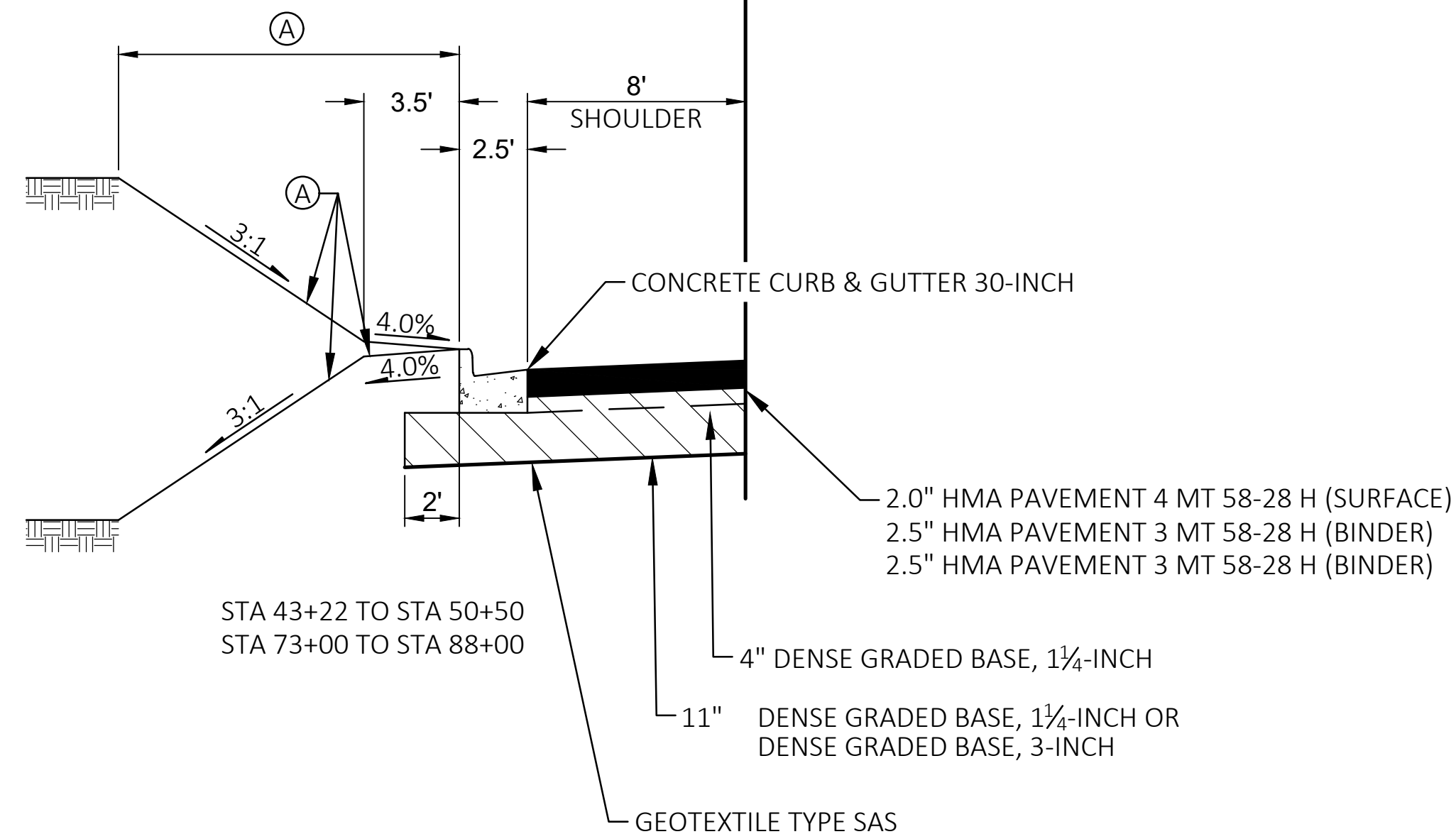
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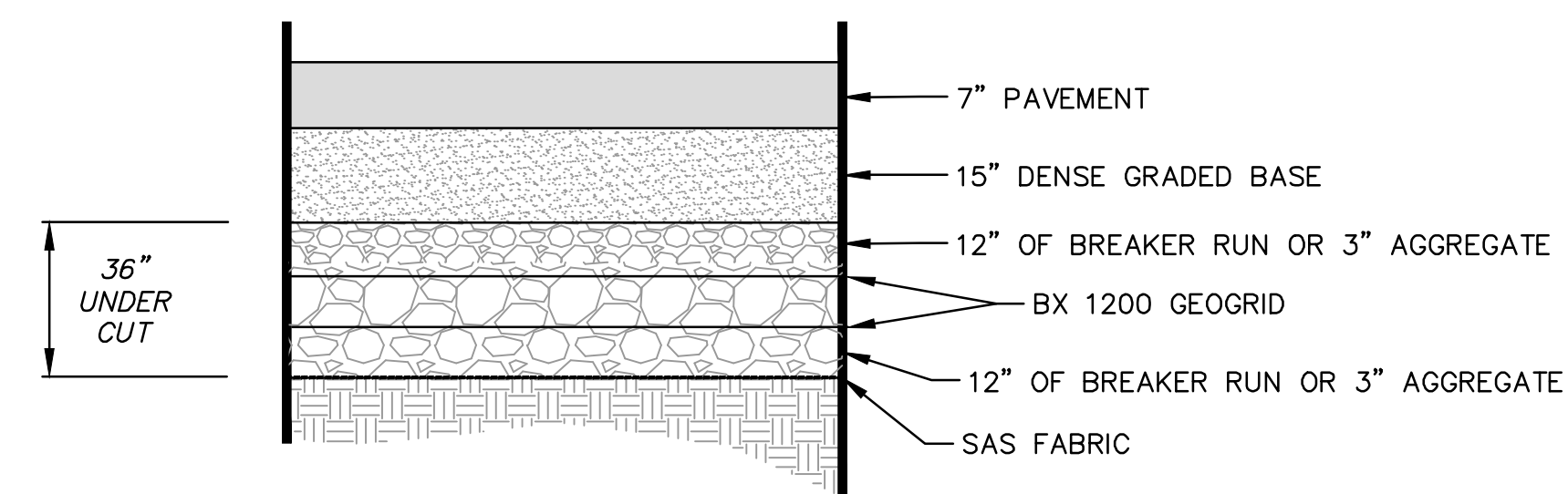
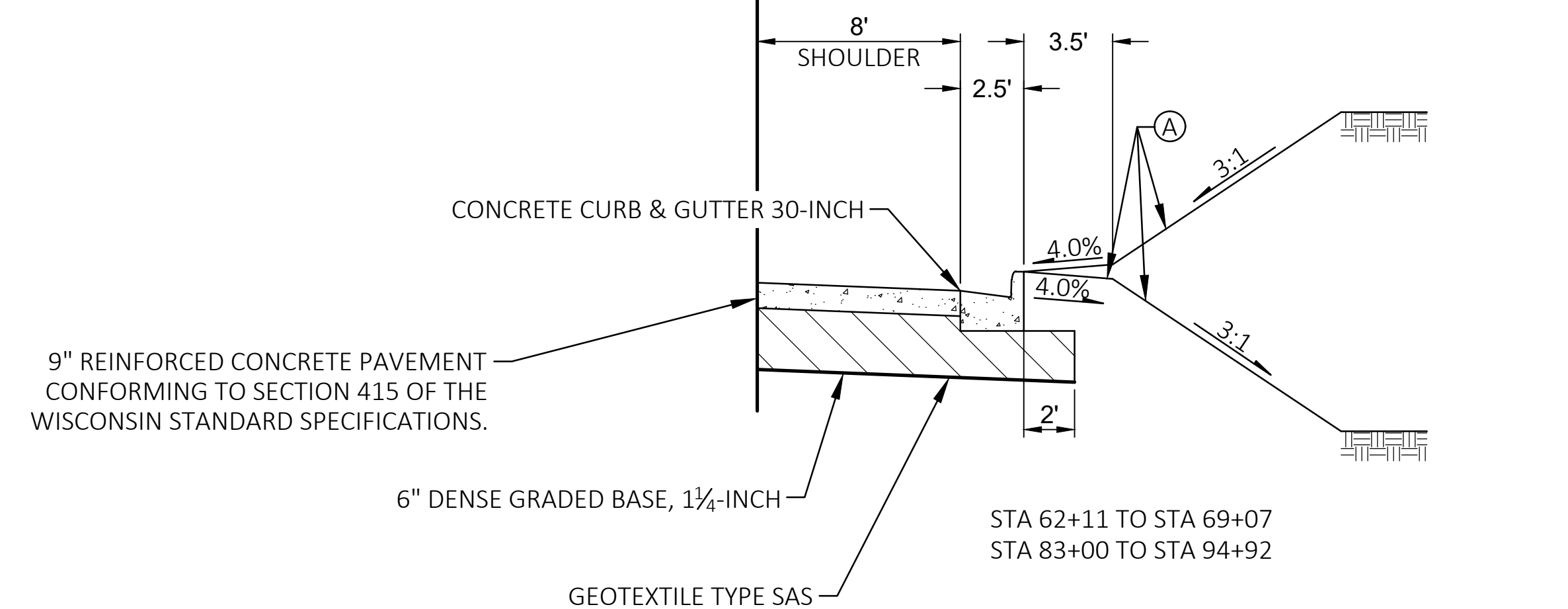
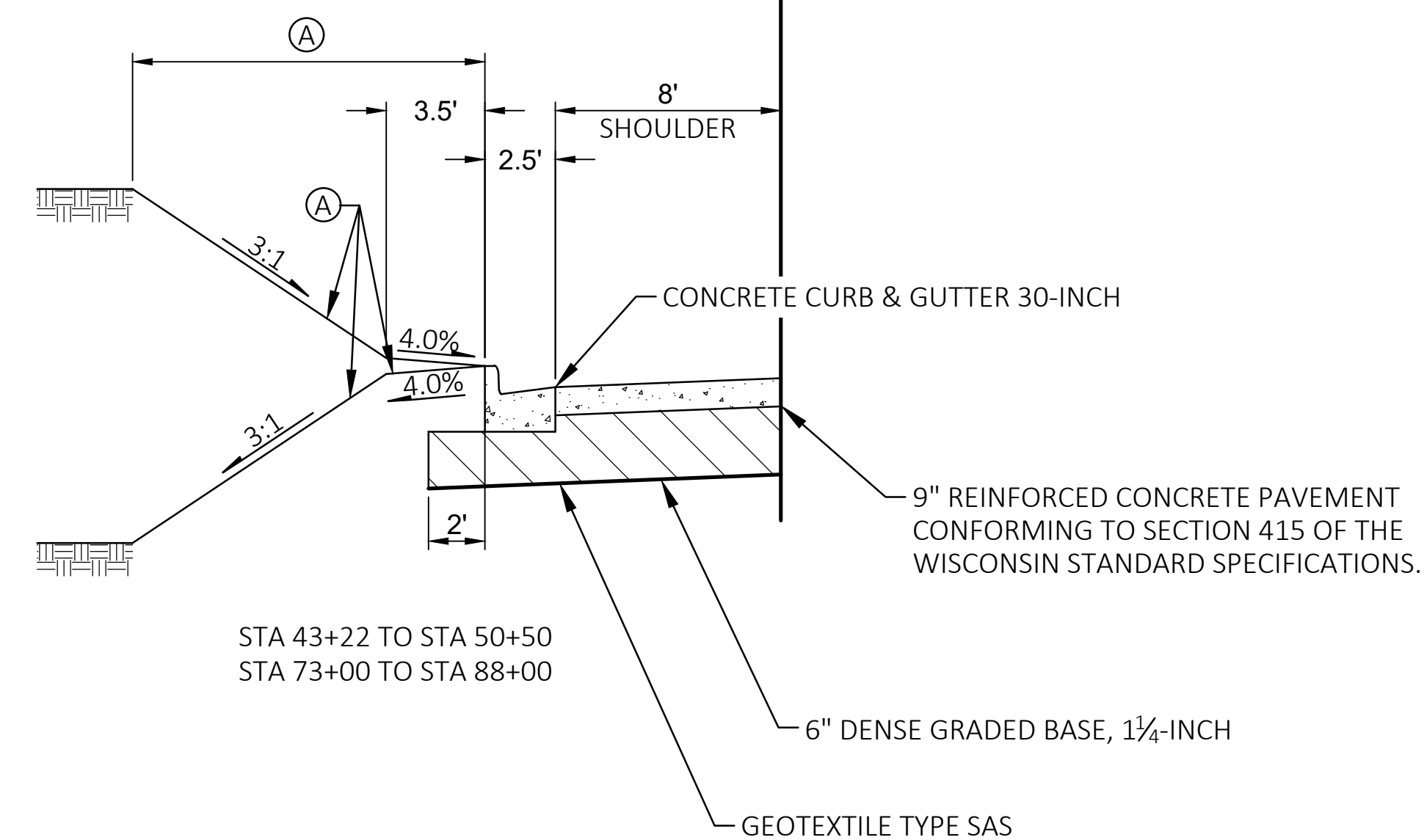
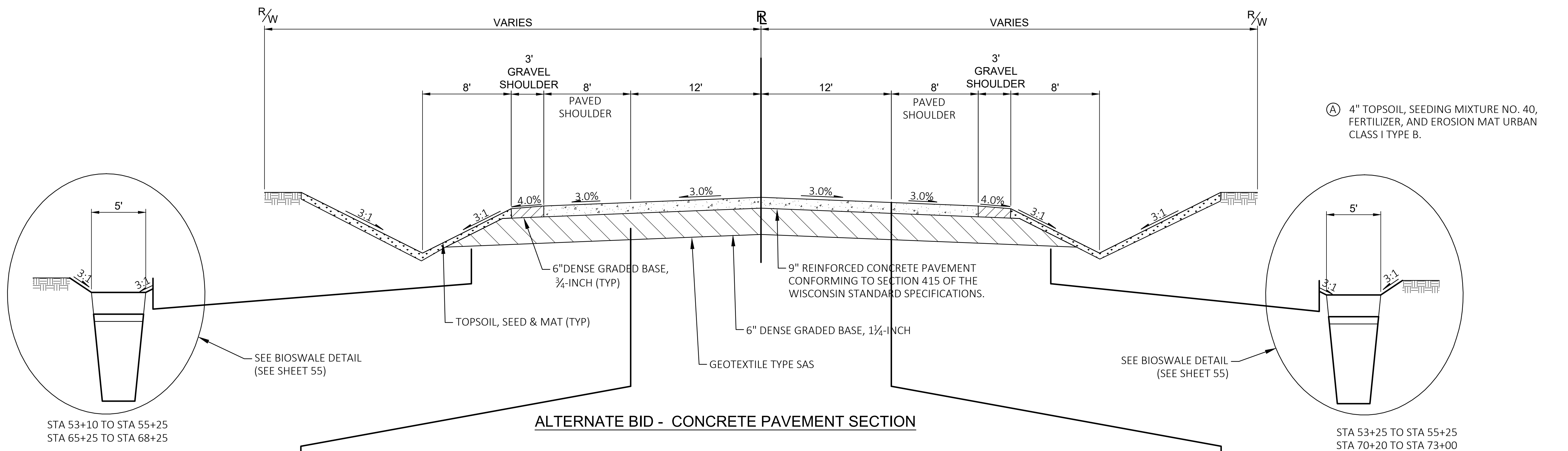
TYPICAL FINISHED SECTION
LINCOLN AVENUE STA 10+00 TO 20+00 AND 31+25 TO 94+50



TYPICAL FINISHED SECTION
5' PAVED SHOULDER WITH 2' GRAVEL SHOULDER AND 3:1 DITCH FORESLOPE; 2.5:1 BACKSLOPE FROM STA 20+00 TO 31+25
*STA 58+65 RT TO 61+80 RT

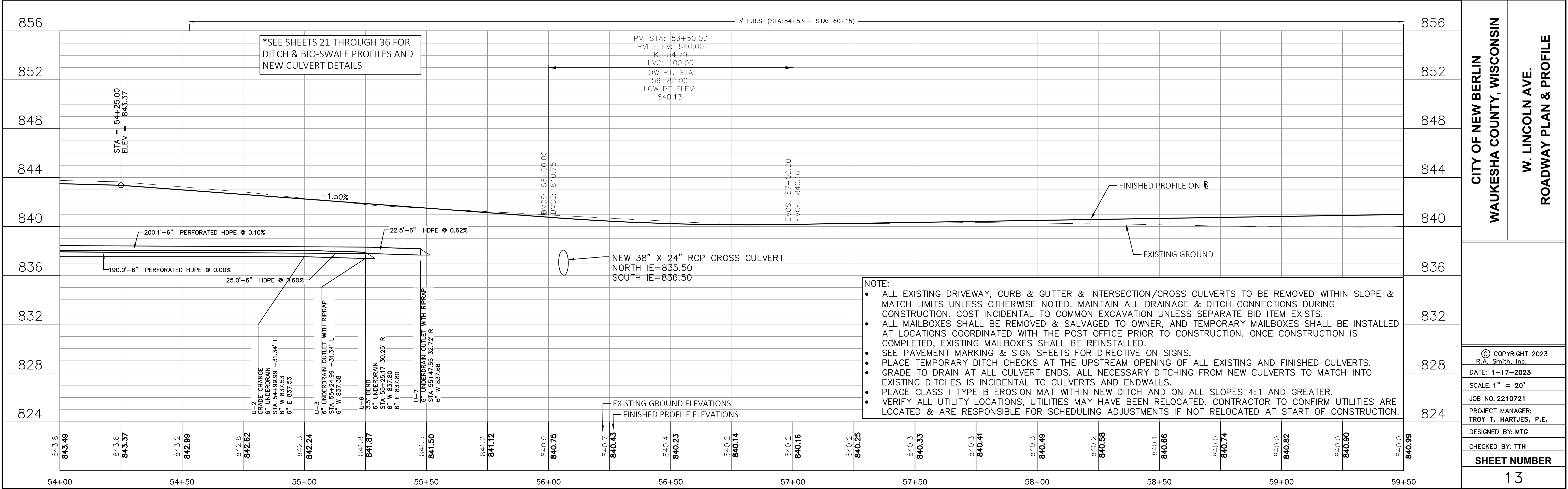
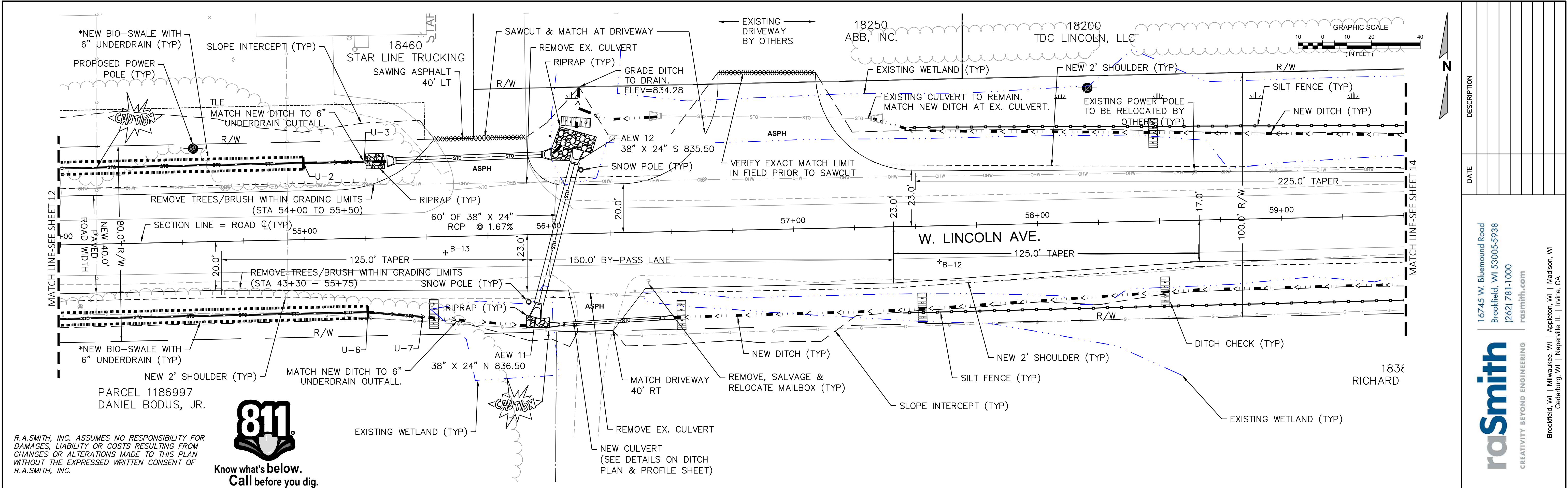
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						SCALE: #####		JOB NO. 2210721	
						PROJECT MANAGER: TROY T. HARTJES, P.E.		DESIGNED BY: MTG	
						CHECKED BY: TTH		SHEET NUMBER	
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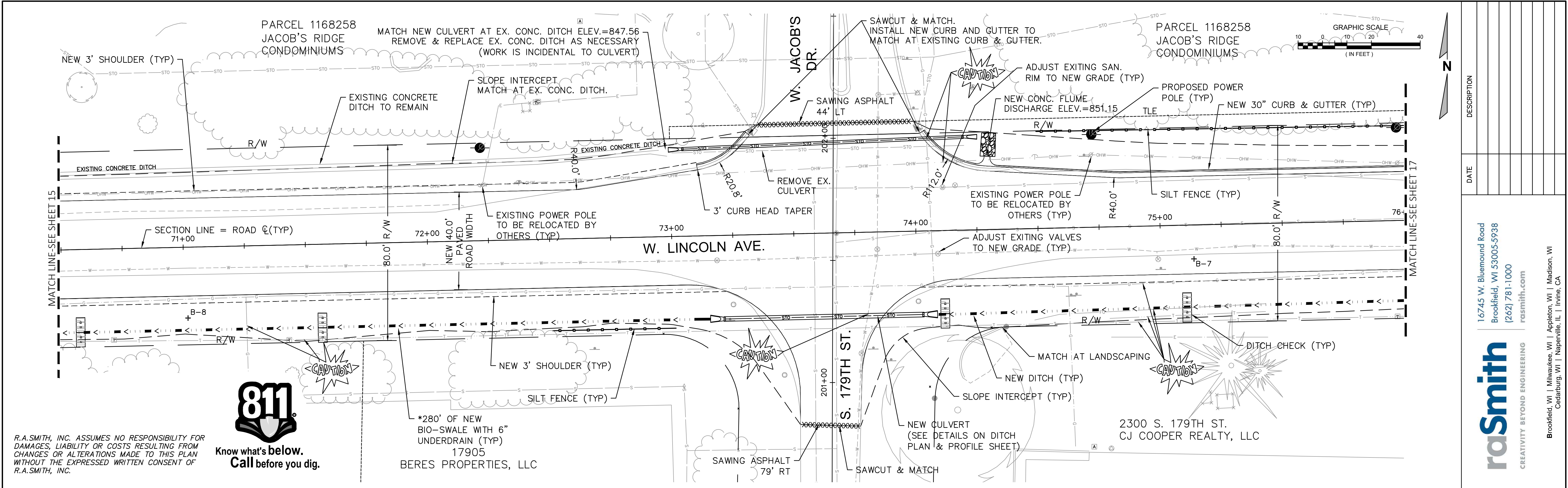
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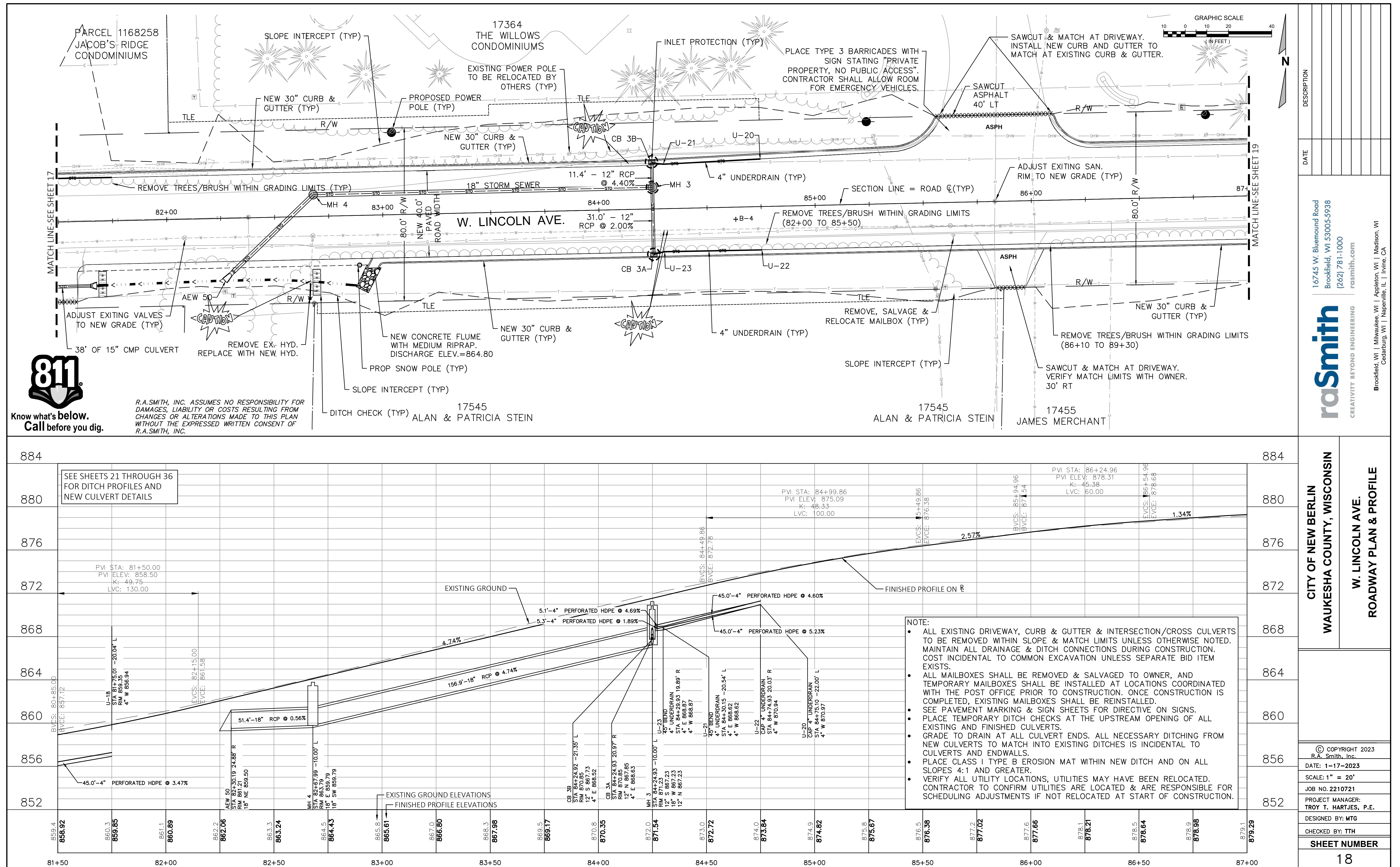
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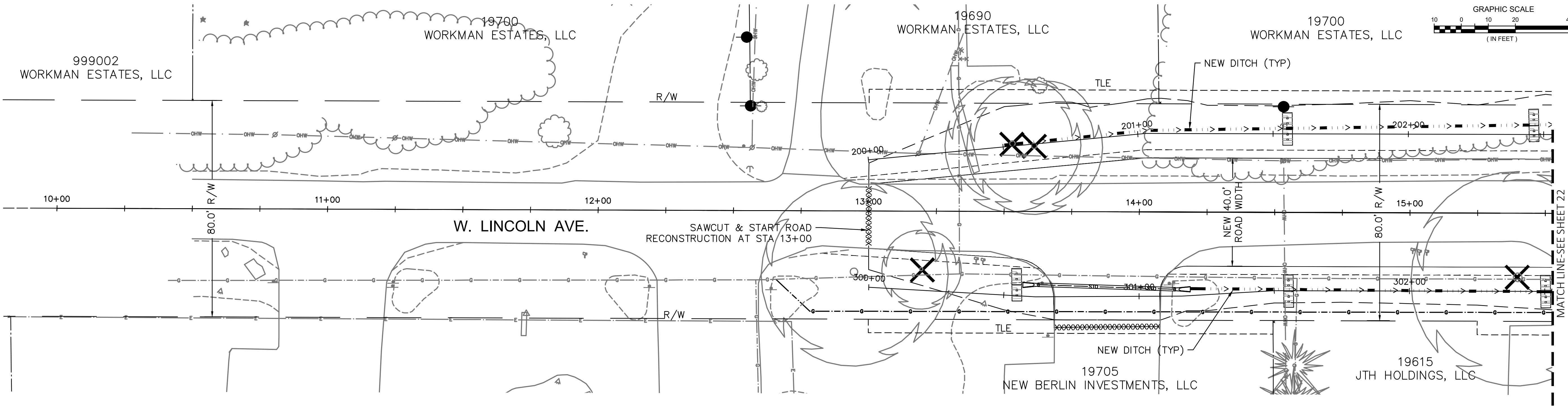




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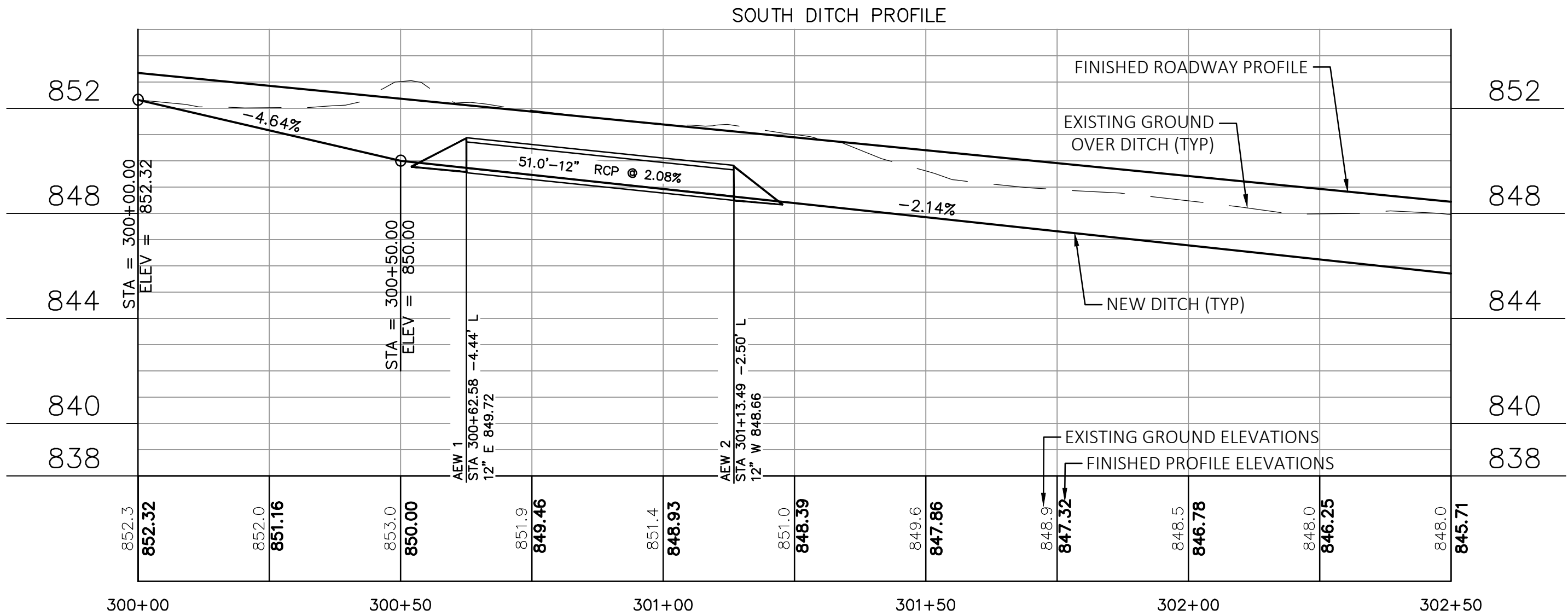
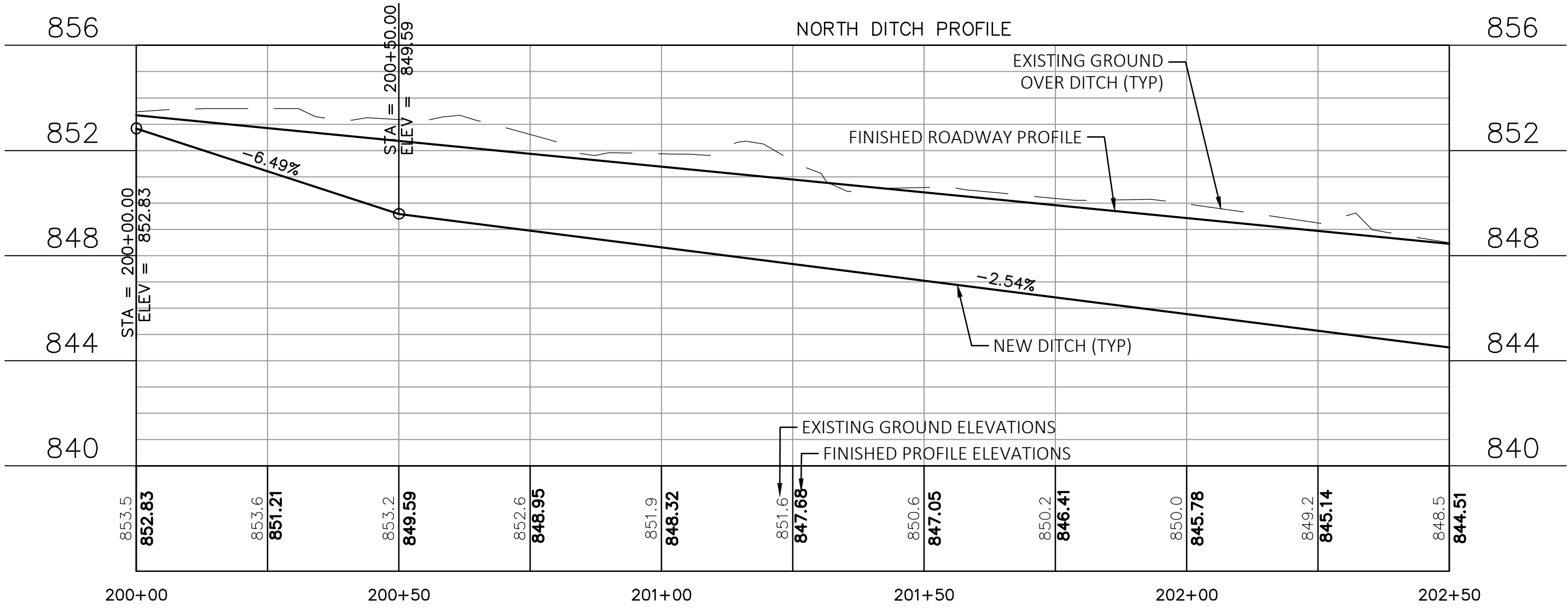
Know what's below.
Call before you dig.



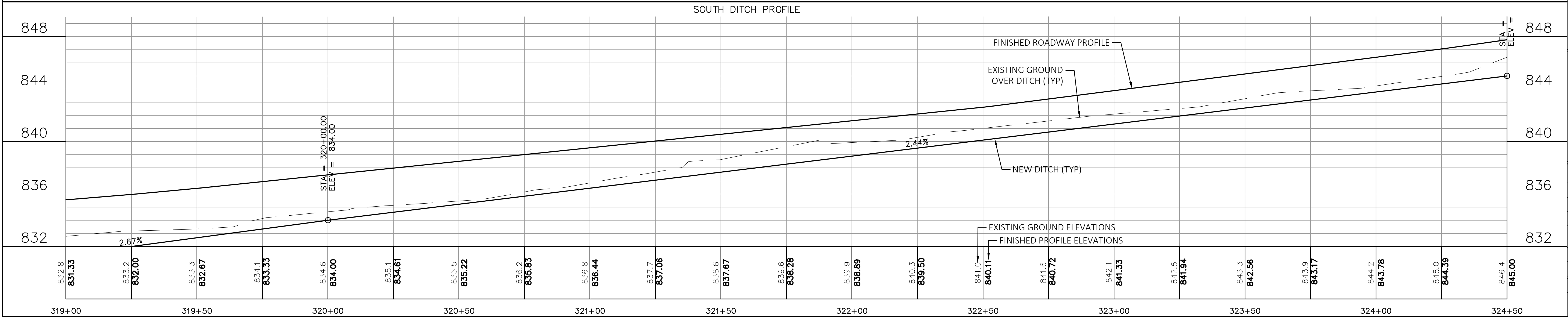
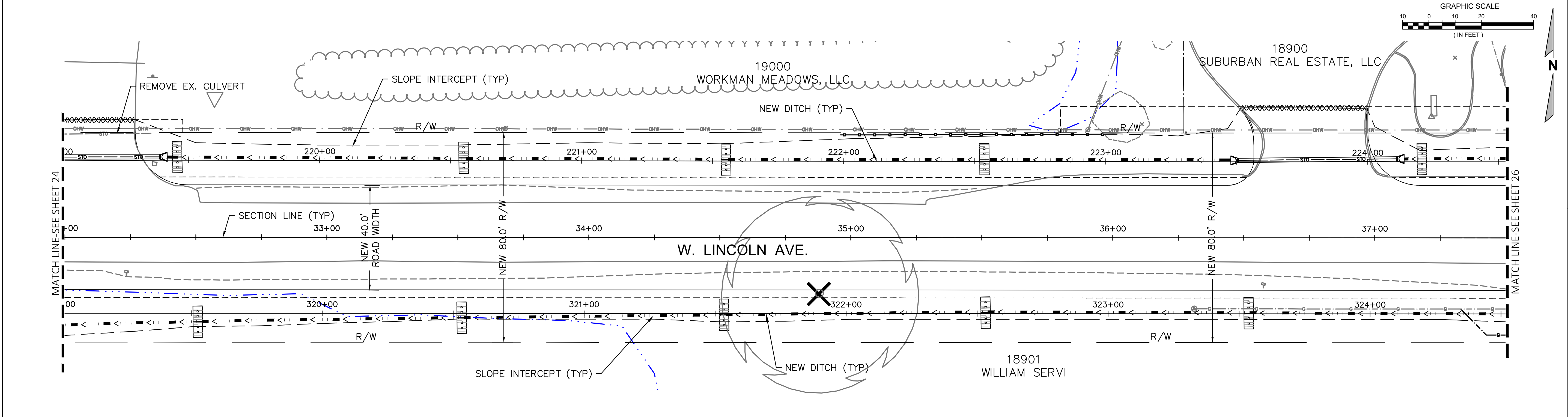
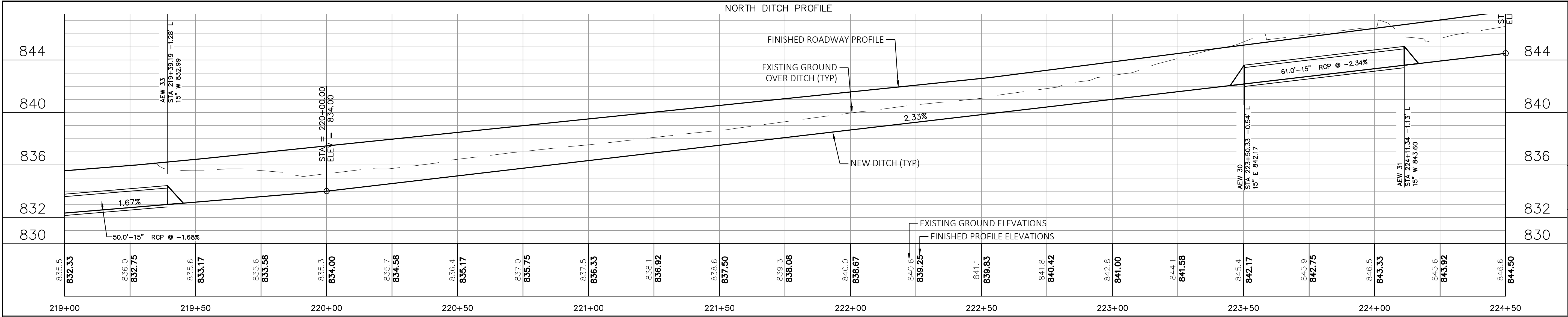
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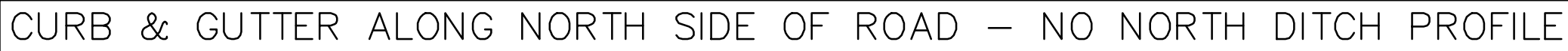
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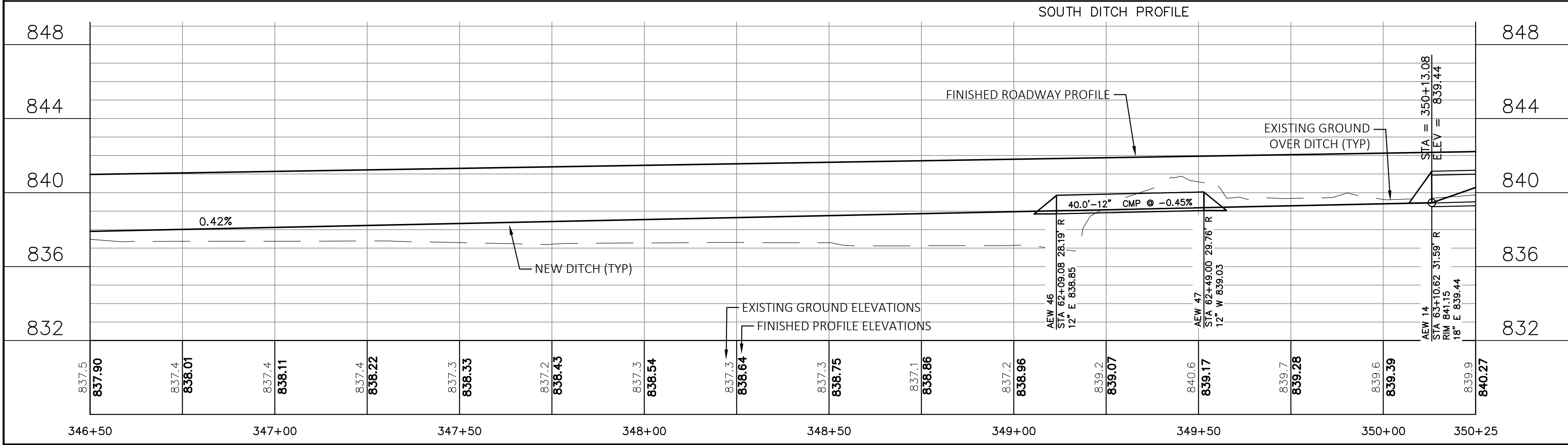
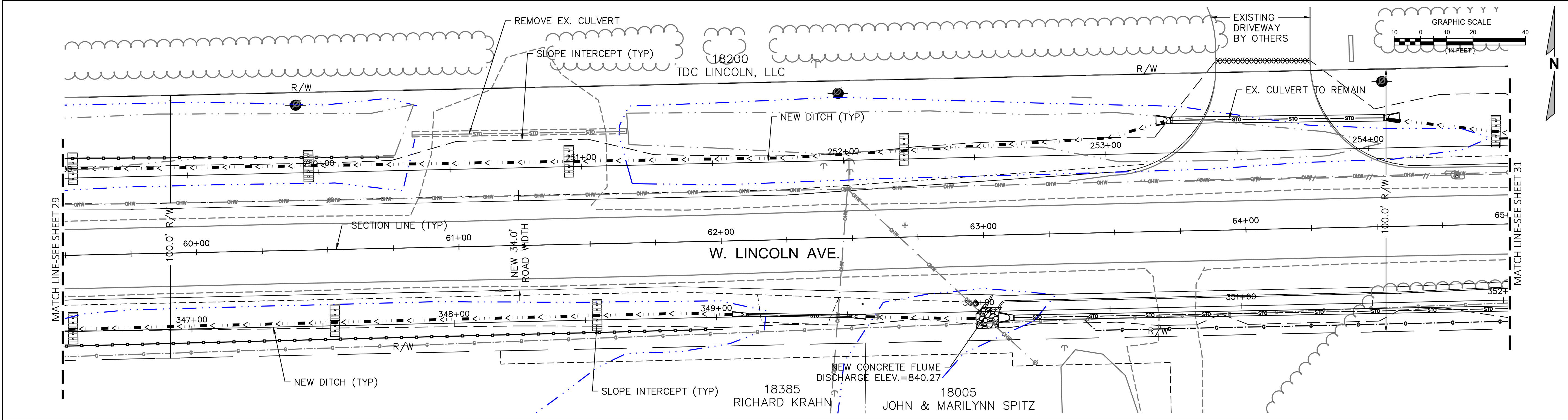
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						25	



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Cedarburg, WI | Naperville, IL | Irvine, CA



CURB & GUTTER ALONG SOUTH SIDE OF ROAD – NO NORTH DITCH PROFILE

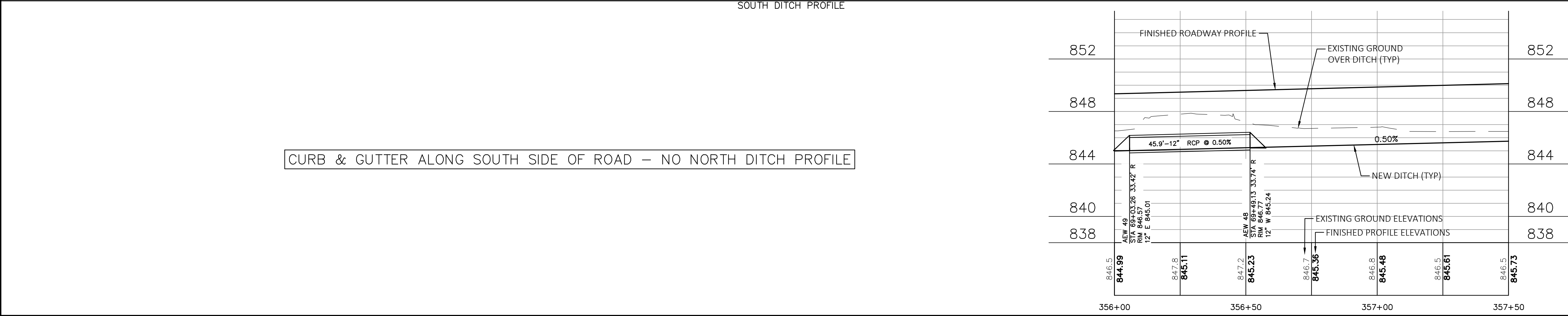
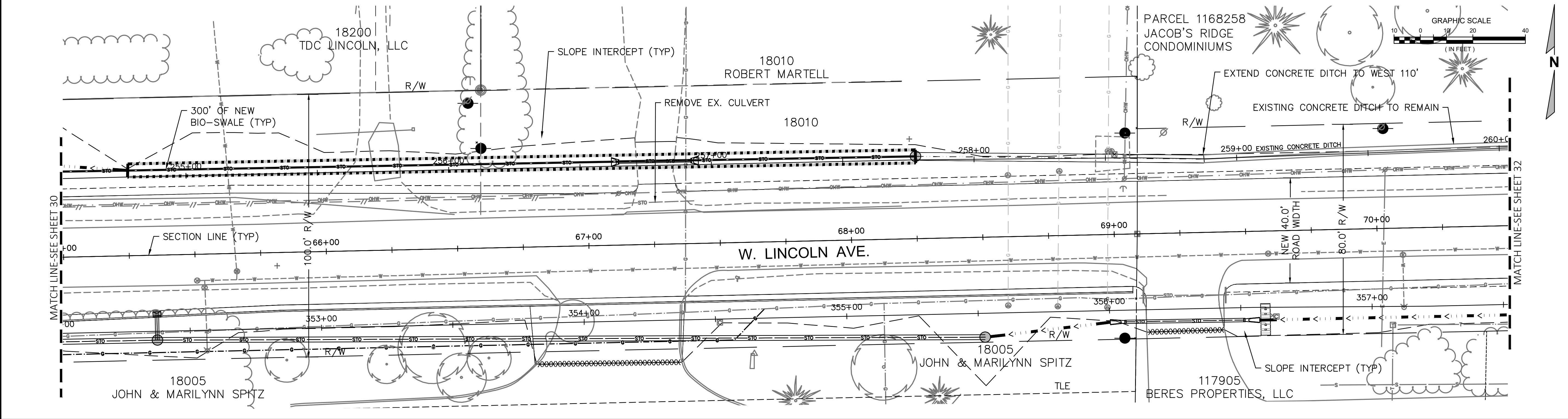
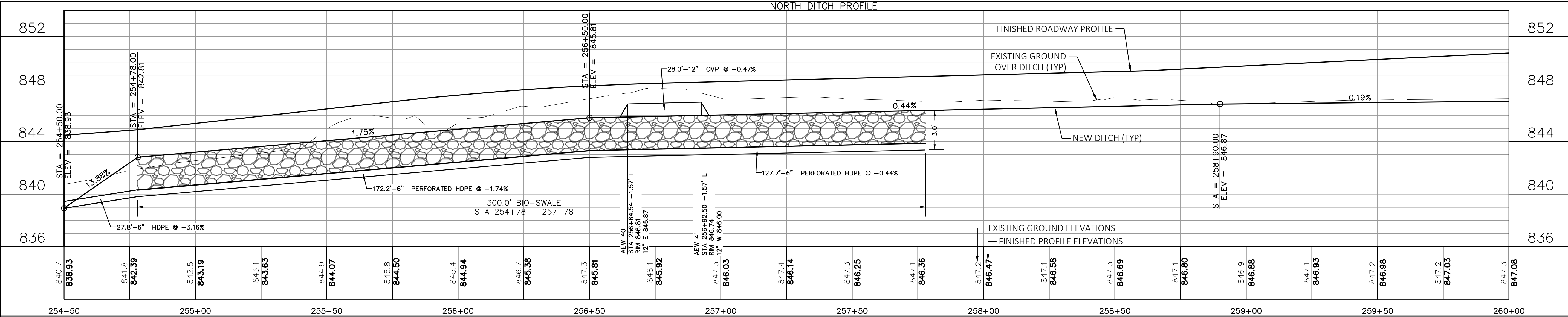
DESCRIPTION	DATE

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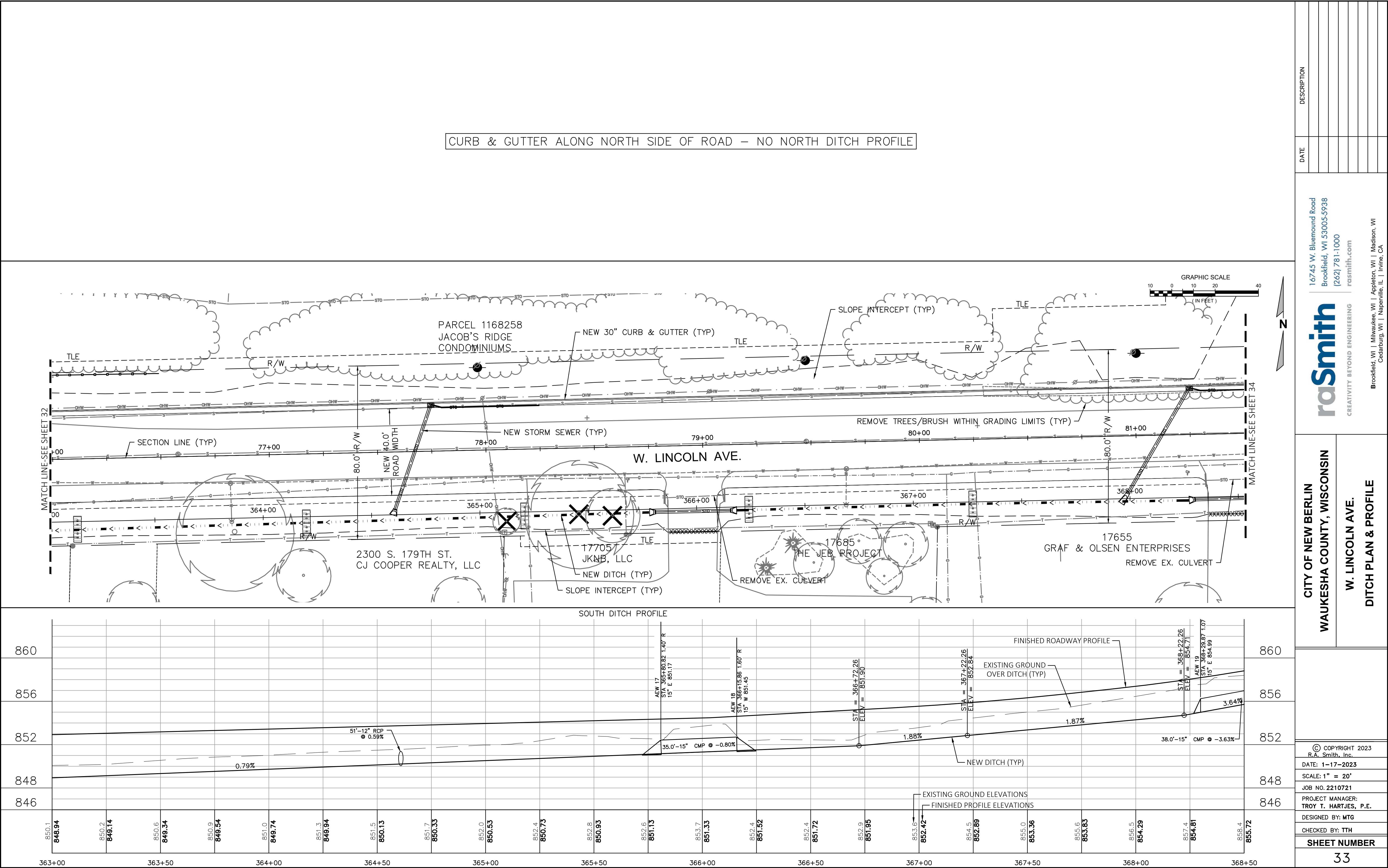
CITY OF NEW BERLIN
WAUKESHA COUNTY, WISCONSIN
W. LINCOLN AVE.
DITCH PLAN & PROFILE

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DATE: 1-17-2023
SCALE: 1" = 20'
JOB NO. 2210721
PROJECT MANAGER:
TROY T. HARTJES, P.E.
DESIGNED BY: MTG
CHECKED BY: TTH
SHEET NUMBER
30

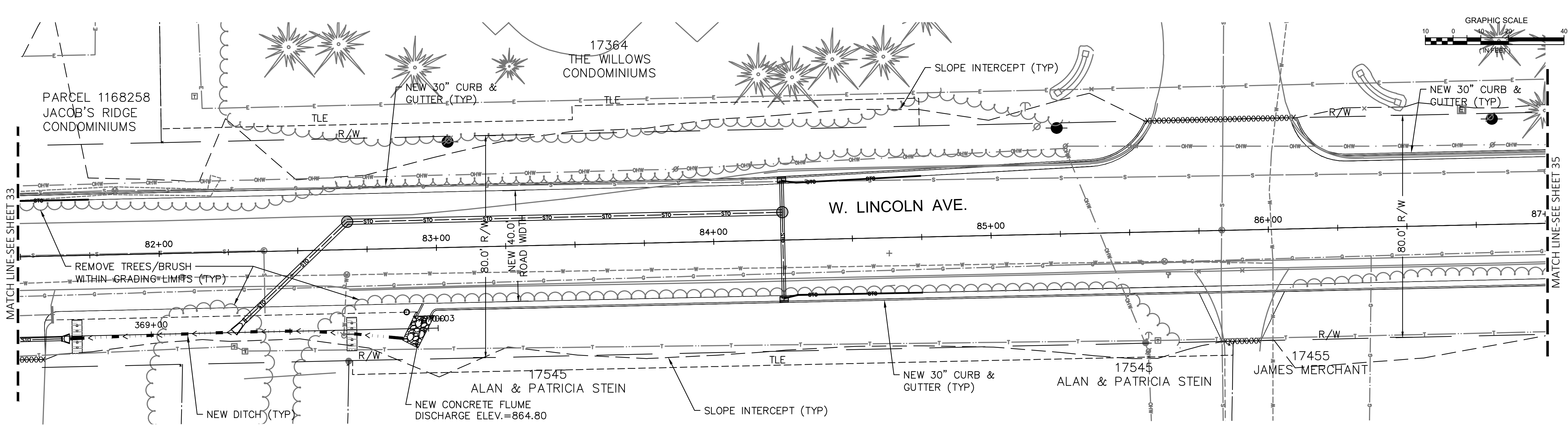


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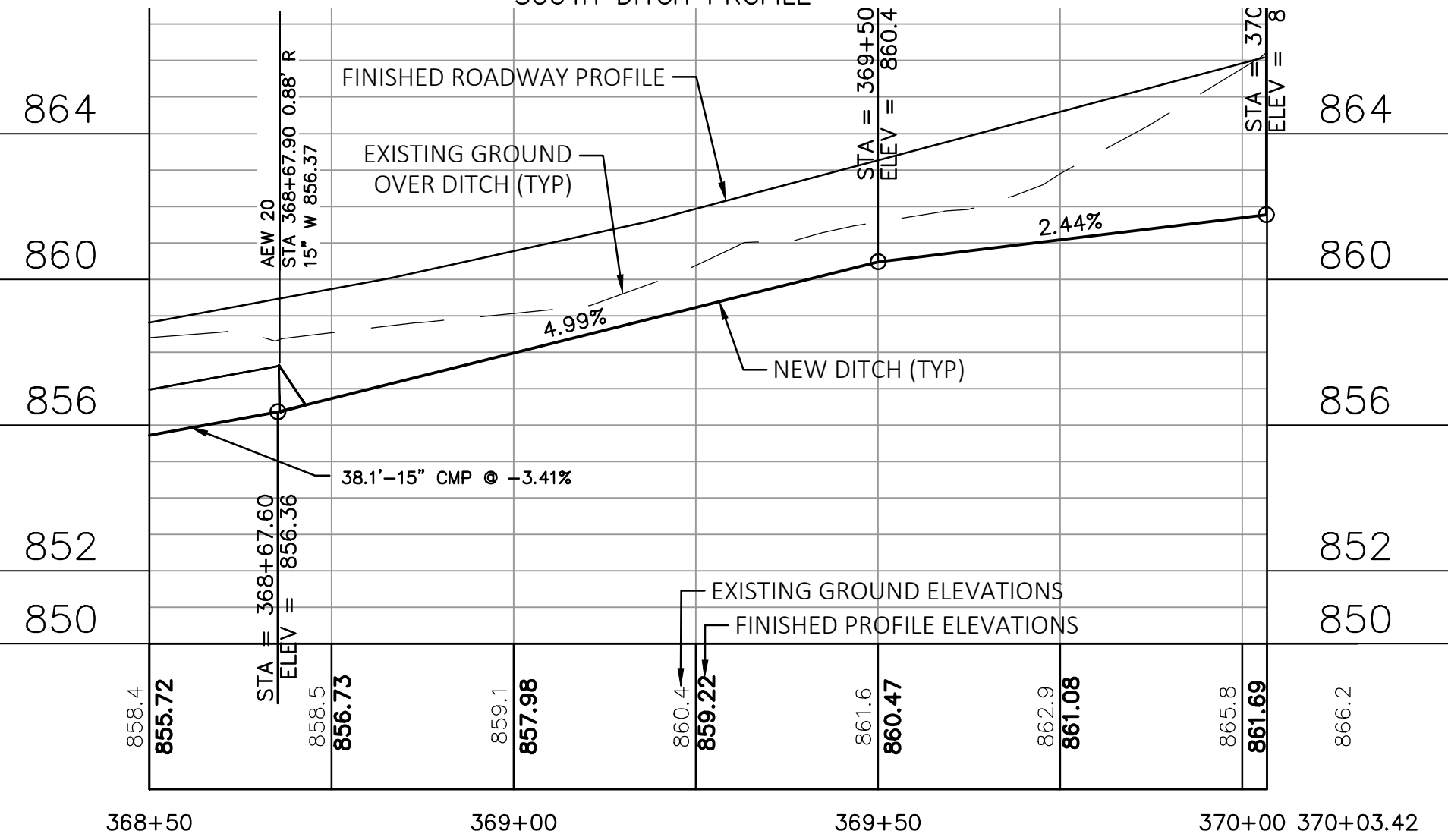
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CURB & GUTTER ALONG NORTH SIDE OF ROAD – NO NORTH DITCH PROFILE



SOUTH DITCH PROFILE



CURB & GUTTER ALONG SOUTH SIDE OF ROAD – NO SOUTH DITCH PROFILE

DESCRIPTION

DATE

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Brookfield, WI 53005-5938
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CITY OF NEW BERLIN
WAUKESHA COUNTY, WISCONSIN

W. LINCOLN AVE.
DITCH PLAN & PROFILE

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DATE: 1-17-2023

SCALE: 1" = 20'

JOB NO. 2210721

PROJECT MANAGER:
TROY T. HARTJES, P.E.

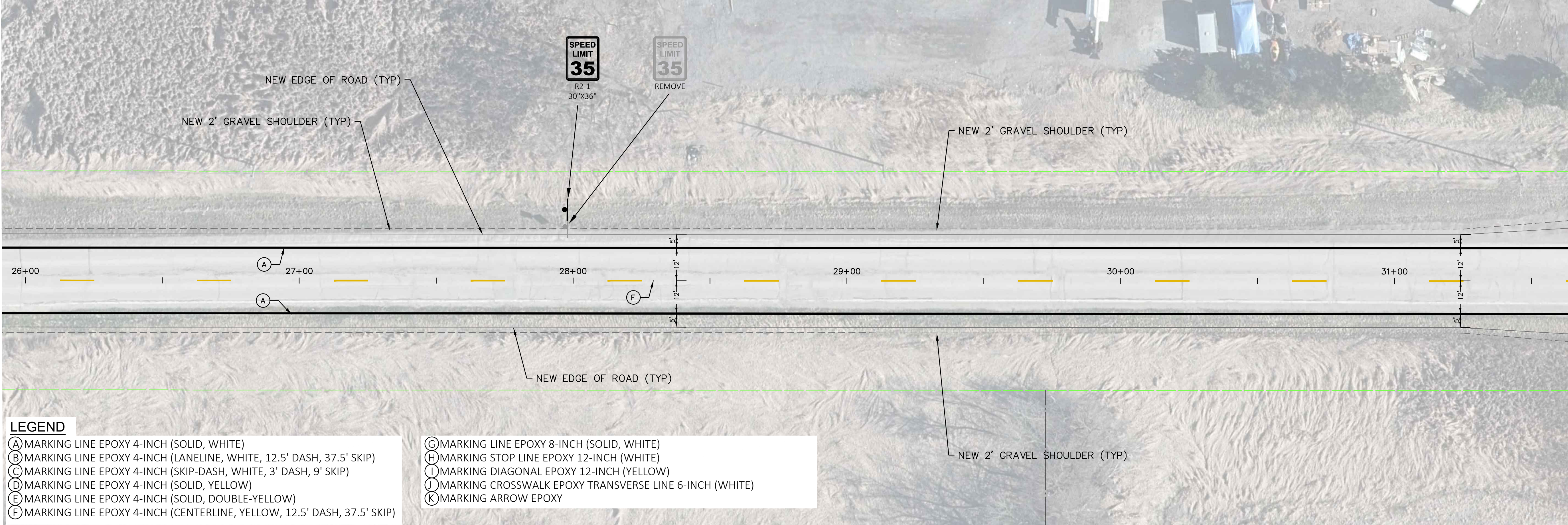
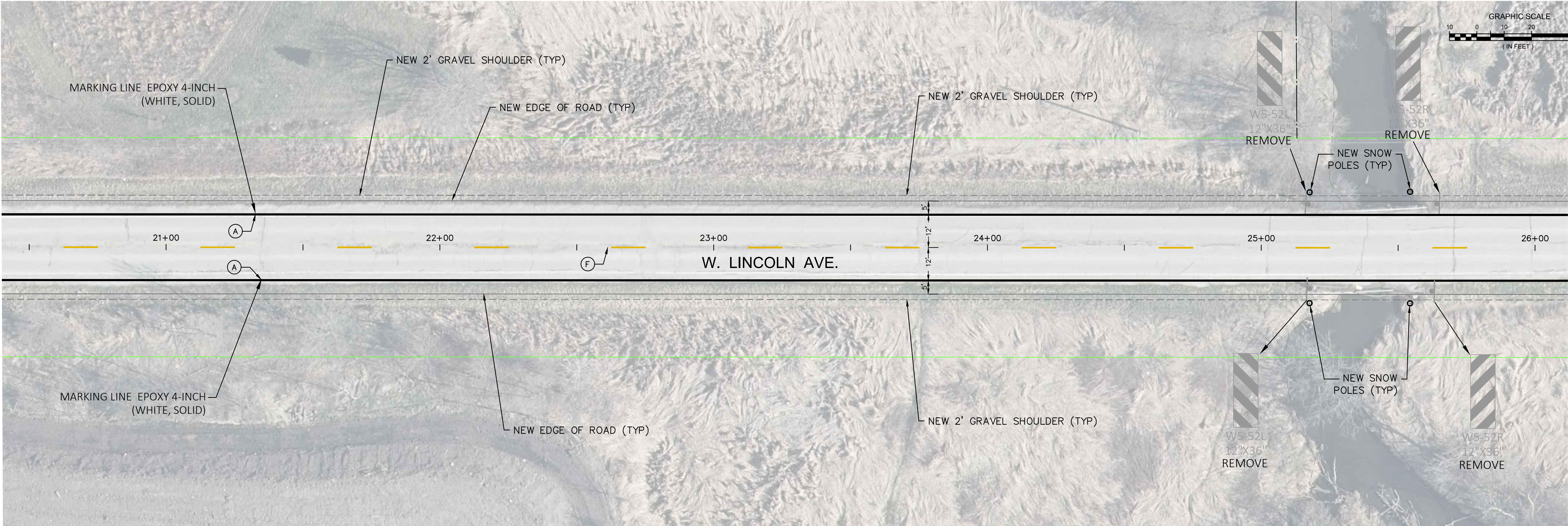
DESIGNED BY: MTG

CHECKED BY: TTH

SHEET NUMBER

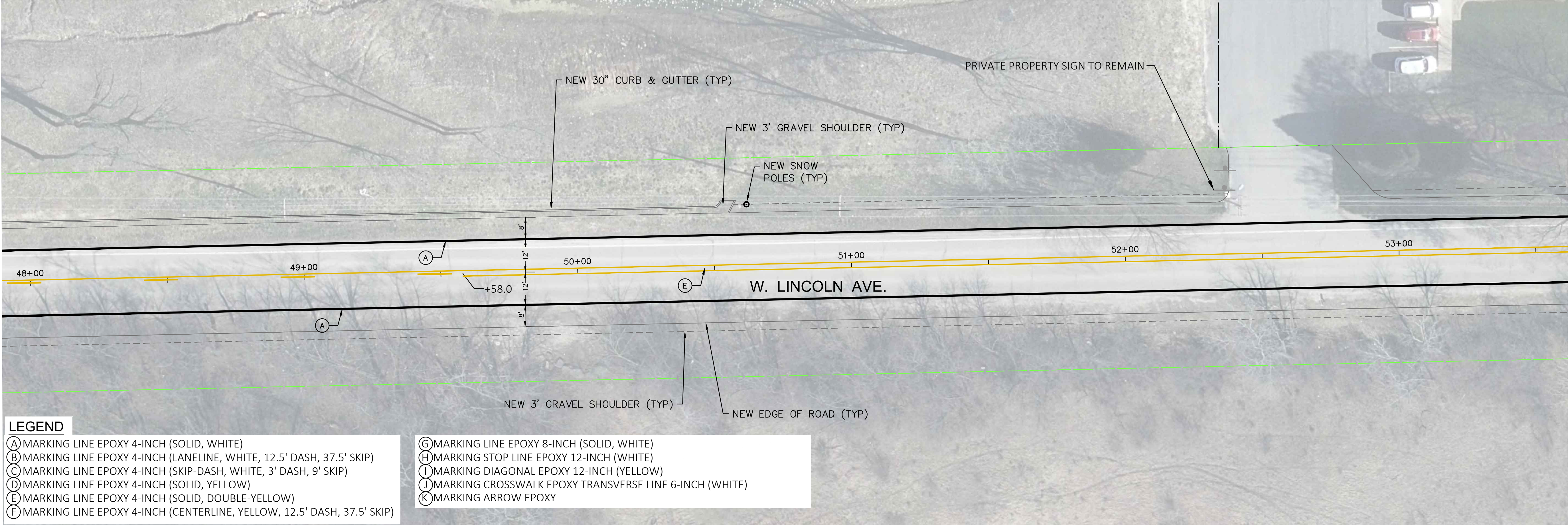
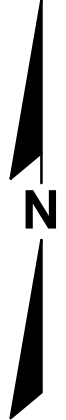
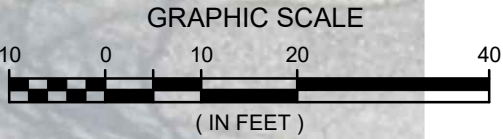
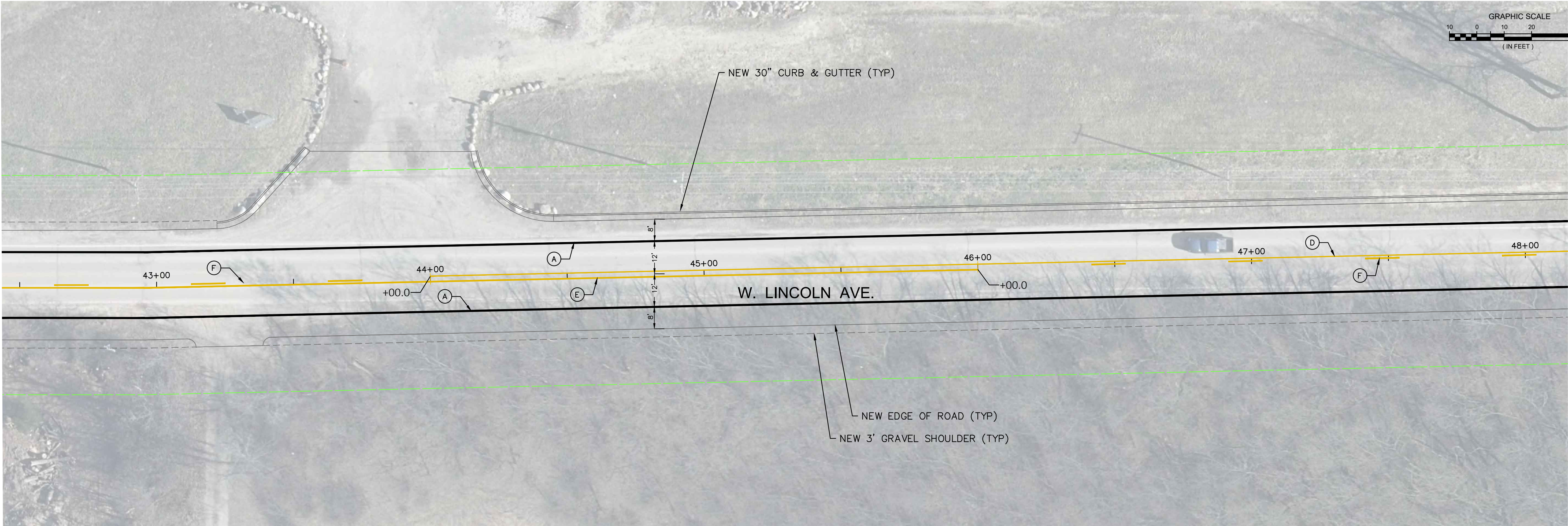
34

J:\2210721\Draw\Plan Set\2210721-PW01.dwg, 2 W Lincoln Ave., 1/17/2023 10:49:07 AM, mjs



DESCRIPTION	
DATE	
16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com	
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WAUKESHA COUNTY, WISCONSIN	
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DATE: 1-17-2023	
SCALE: 1" = 20'	
JOB NO. 2210721	
PROJECT MANAGER: TROY T. HARTJES, P.E.	
DESIGNED BY: MTG	
CHECKED BY: TTH	
SHEET NUMBER	
38	



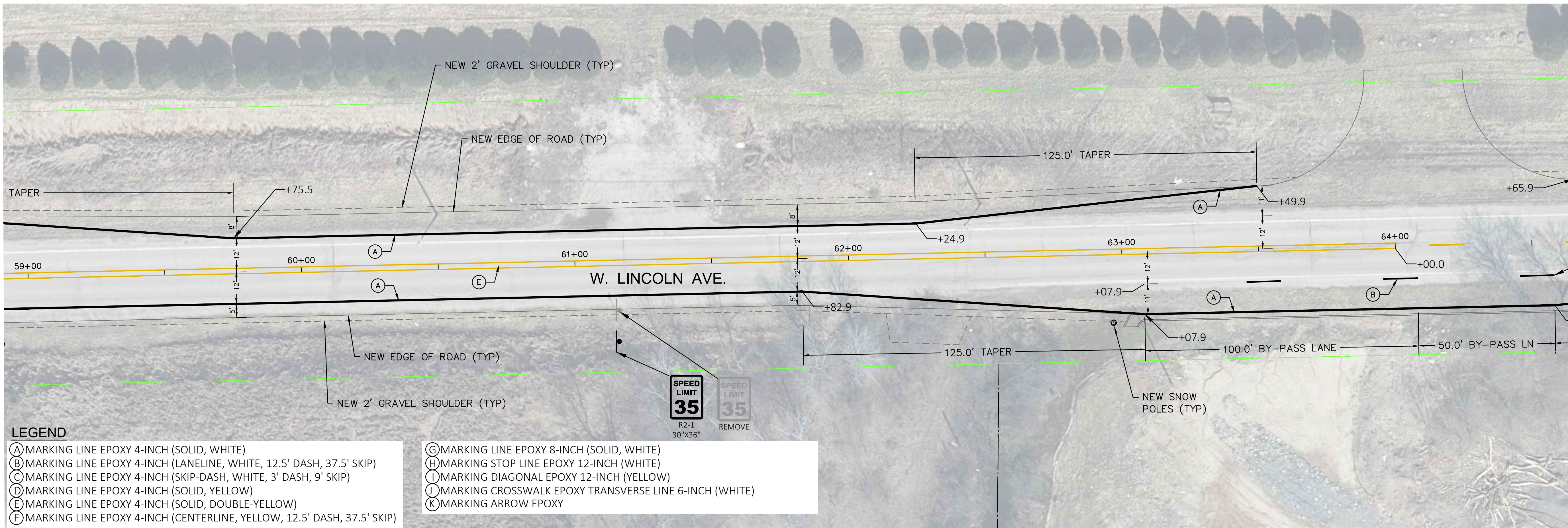
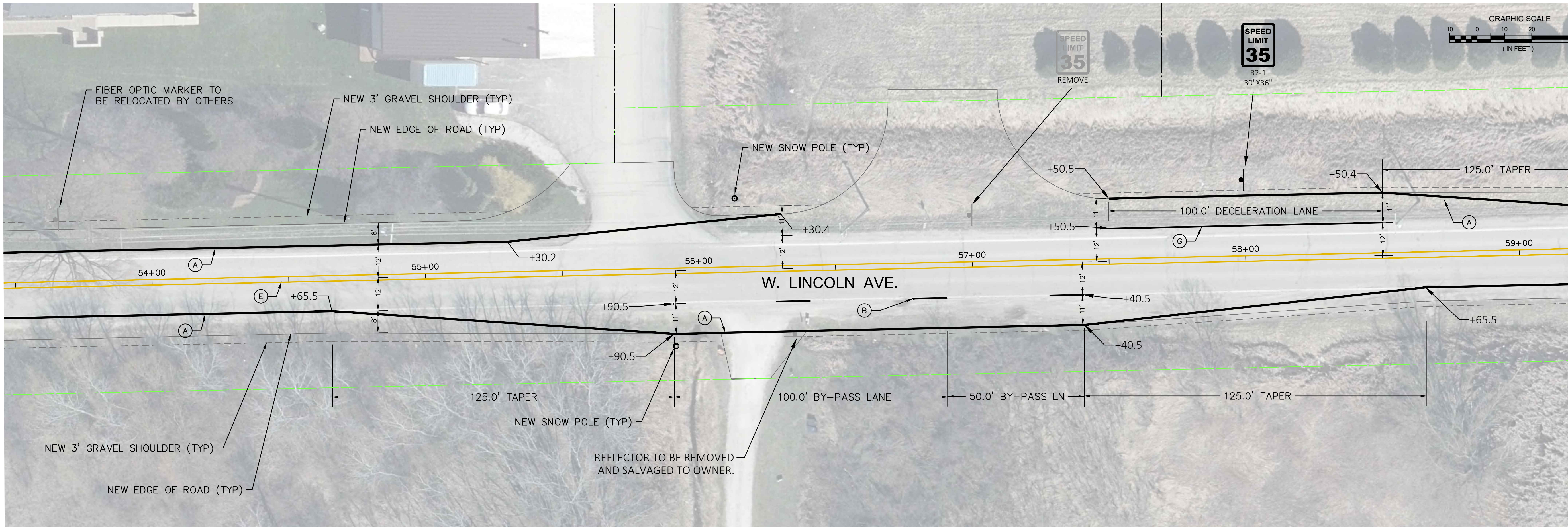
- LEGEND**
- (A) MARKING LINE EPOXY 4-INCH (SOLID, WHITE)
 - (B) MARKING LINE EPOXY 4-INCH (LANELINE, WHITE, 12.5' DASH, 37.5' SKIP)
 - (C) MARKING LINE EPOXY 4-INCH (SKIP-DASH, WHITE, 3' DASH, 9' SKIP)
 - (D) MARKING LINE EPOXY 4-INCH (SOLID, YELLOW)
 - (E) MARKING LINE EPOXY 4-INCH (SOLID, DOUBLE-YELLOW)
 - (F) MARKING LINE EPOXY 4-INCH (CENTERLINE, YELLOW, 12.5' DASH, 37.5' SKIP)

- (G) MARKING LINE EPOXY 8-INCH (SOLID, WHITE)
- (H) MARKING STOP LINE EPOXY 12-INCH (WHITE)
- (I) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
- (J) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- (K) MARKING ARROW EPOXY

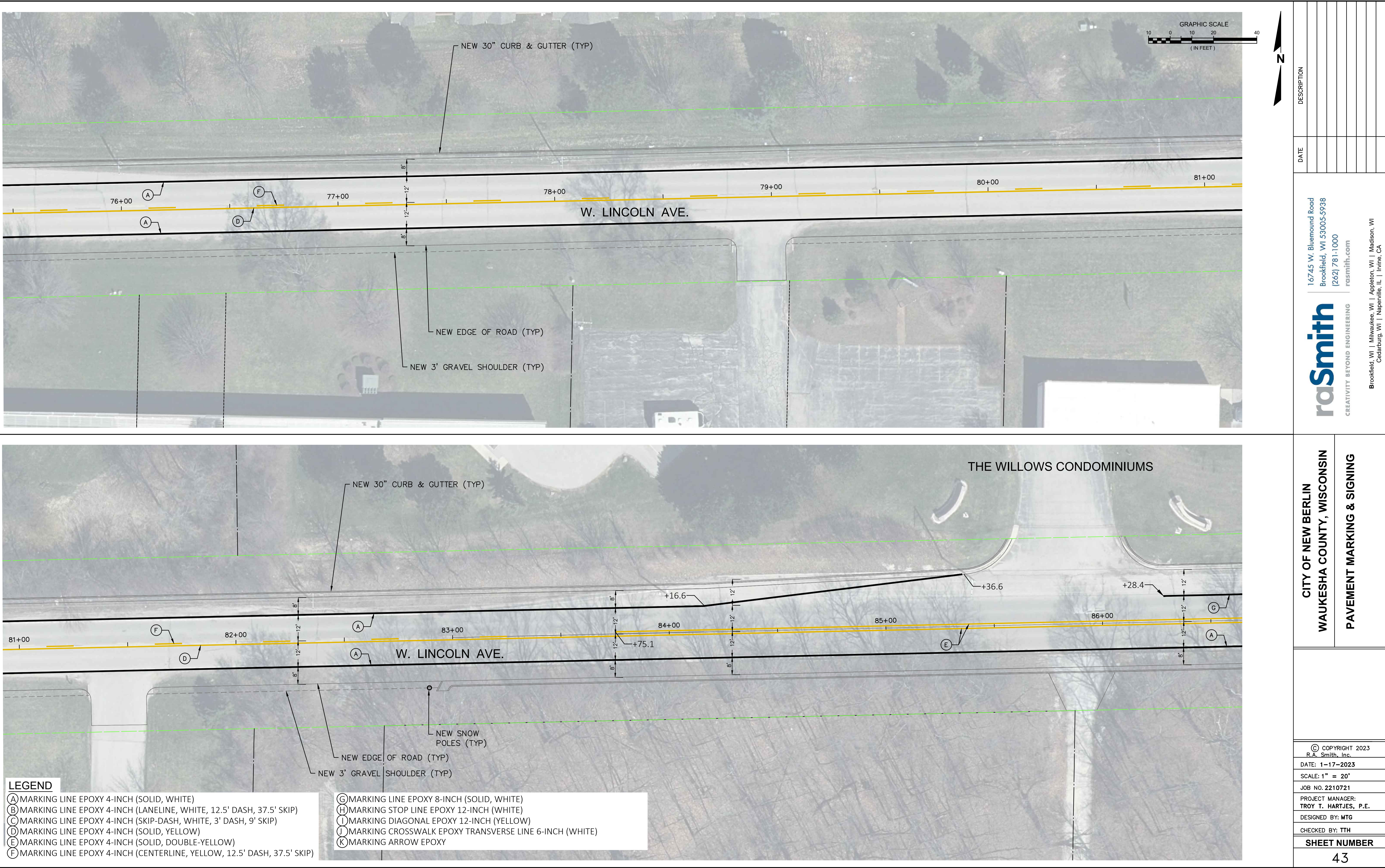
DESCRIPTION	
DATE	
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DESIGNED BY: MTG	
CHECKED BY: TTH	
SHEET NUMBER	
40	

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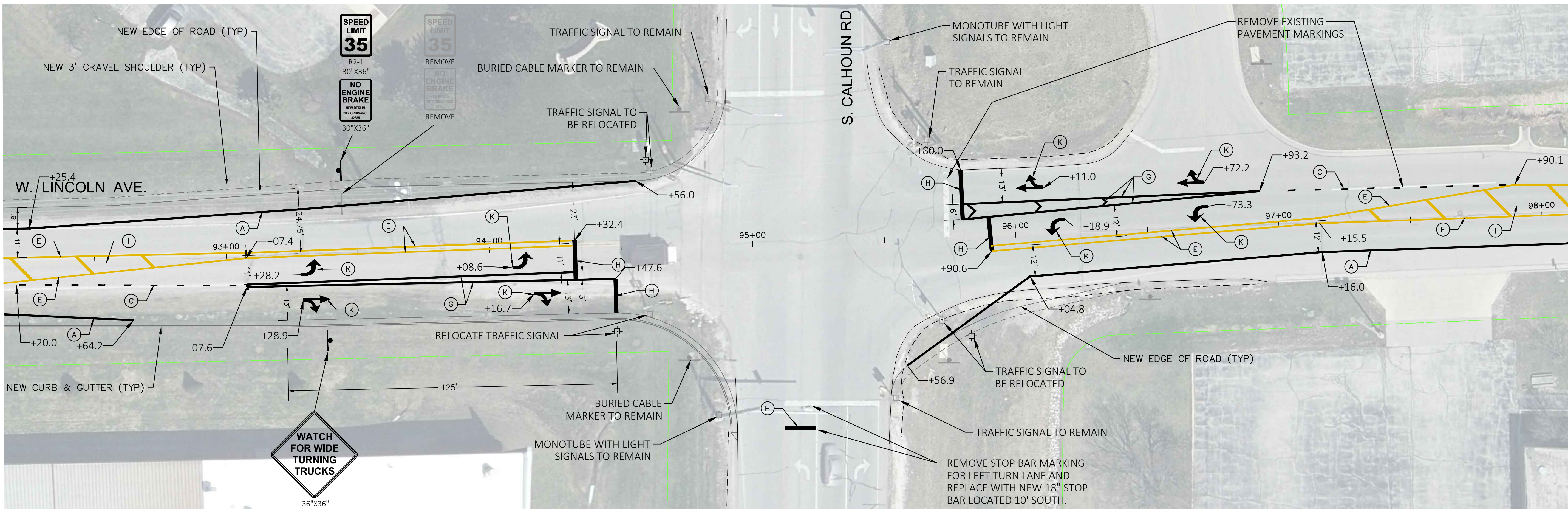
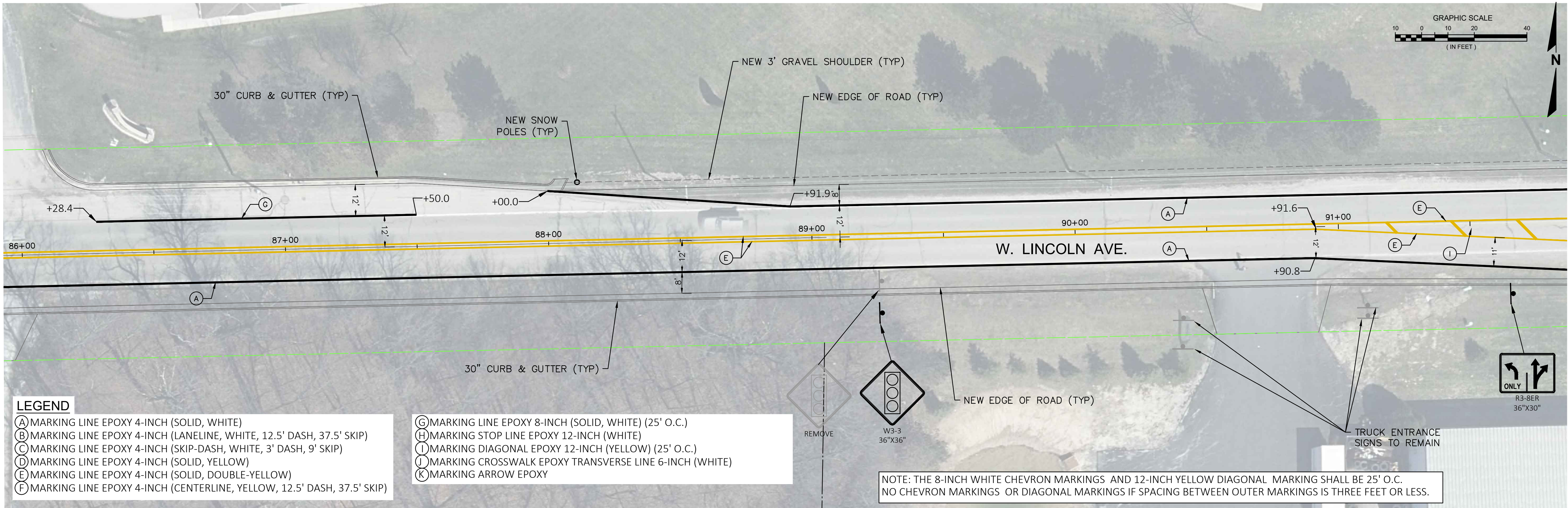


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CHECKED BY: TTH	
SHEET NUMBER	
41	



CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN PAVEMENT MARKING & SIGNING		16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com raSmith CREATIVITY BEYOND ENGINEERING Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA		DATE	DESCRIPTION

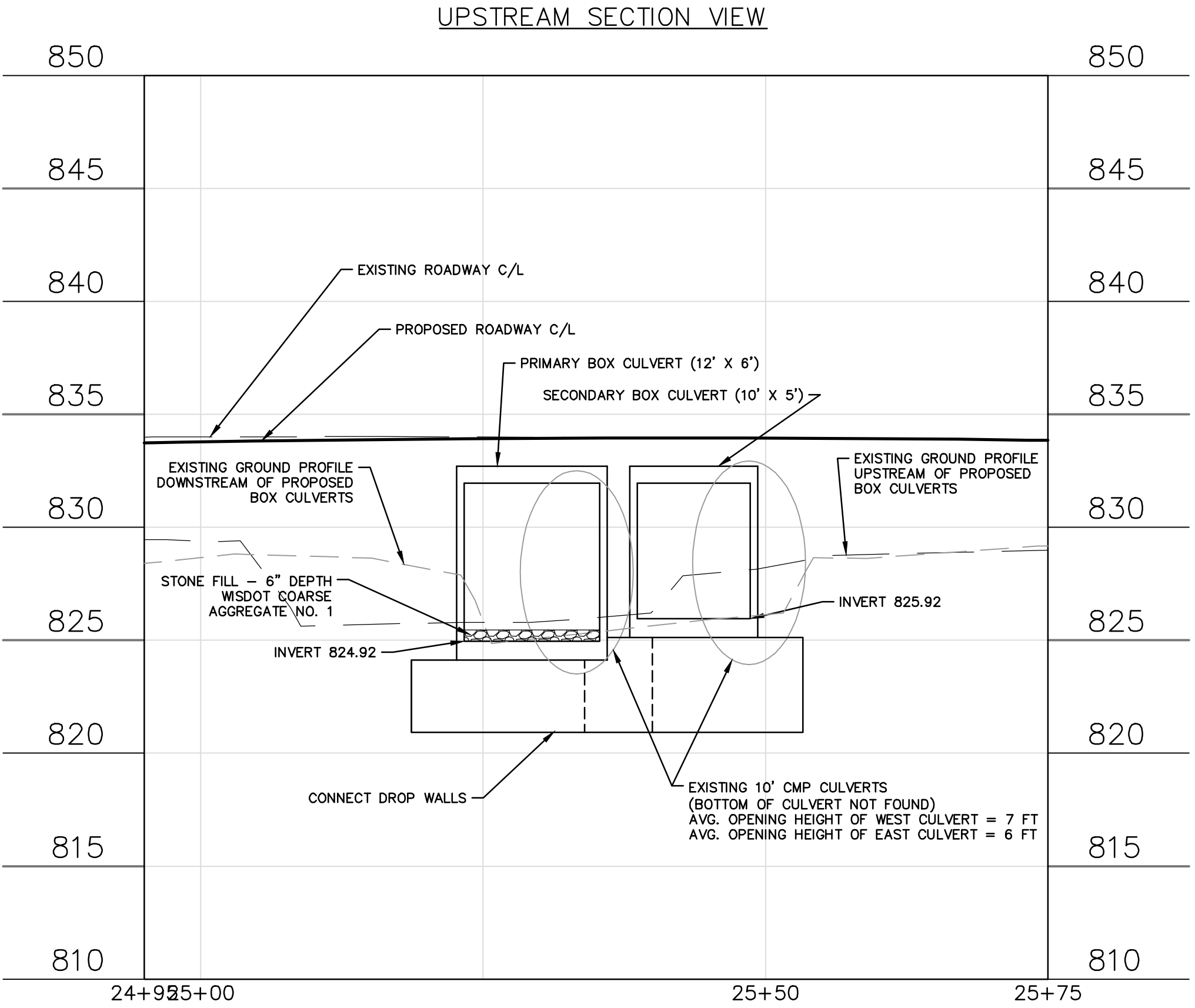
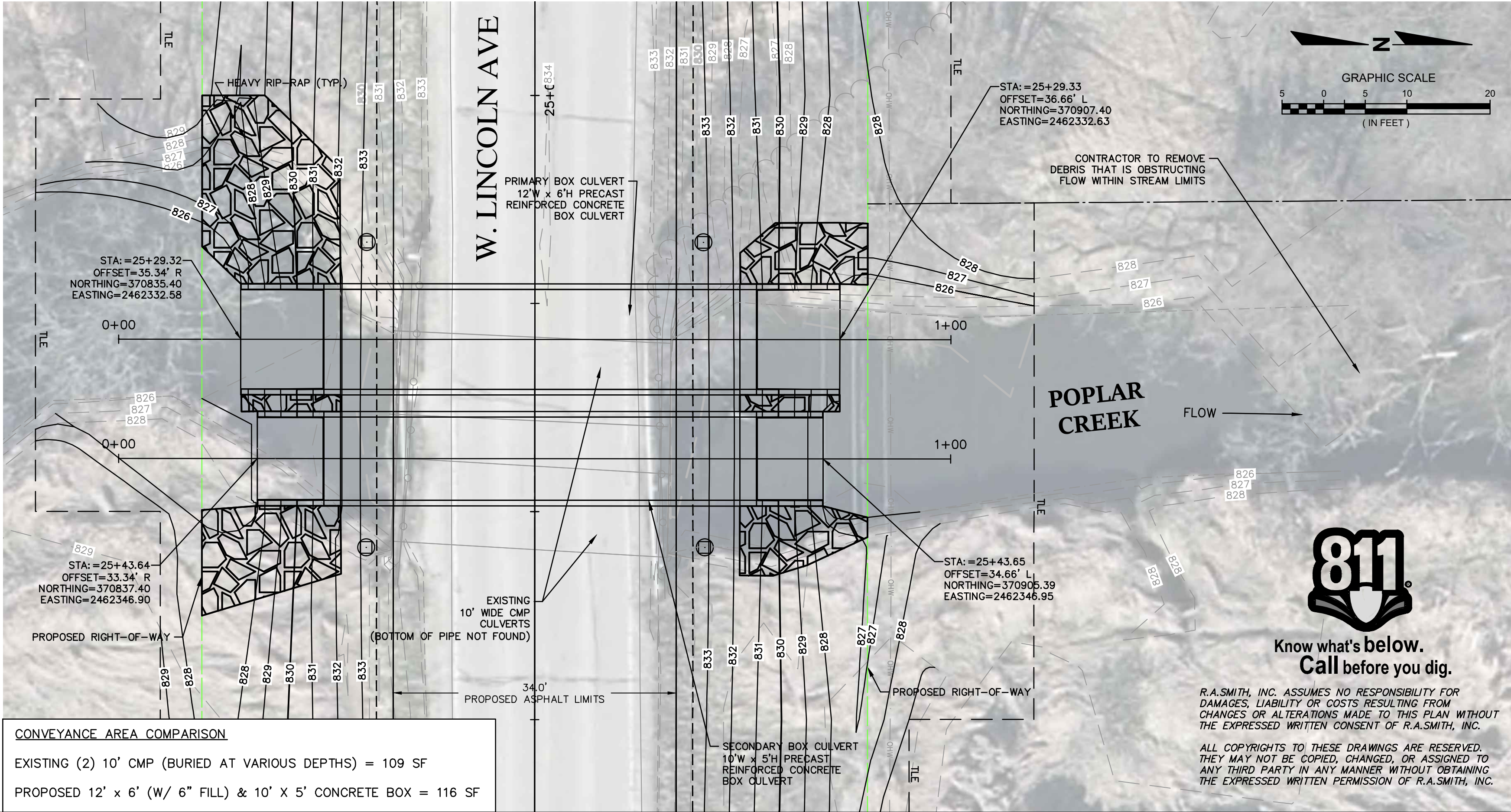
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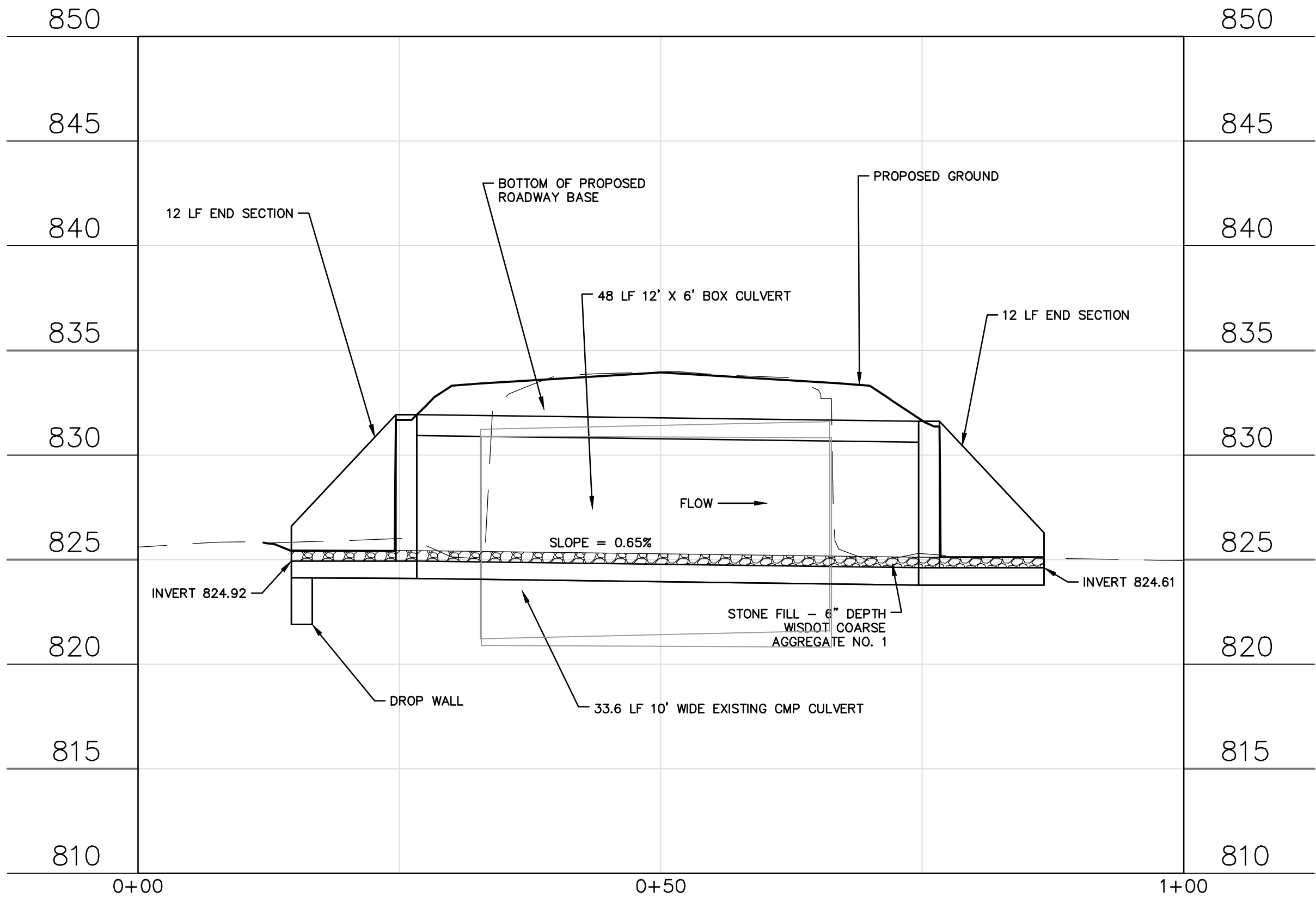
DESCRIPTION	
DATE	
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raSmith CREATIVITY BEYOND ENGINEERING	
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© COPYRIGHT 2023 R.A. Smith, Inc. DATE: 1-17-2023 SCALE: 1" = 20' JOB NO. 2210721 PROJECT MANAGER: TROY T. HARTJES, P.E. DESIGNED BY: MTG CHECKED BY: TTH SHEET NUMBER 44

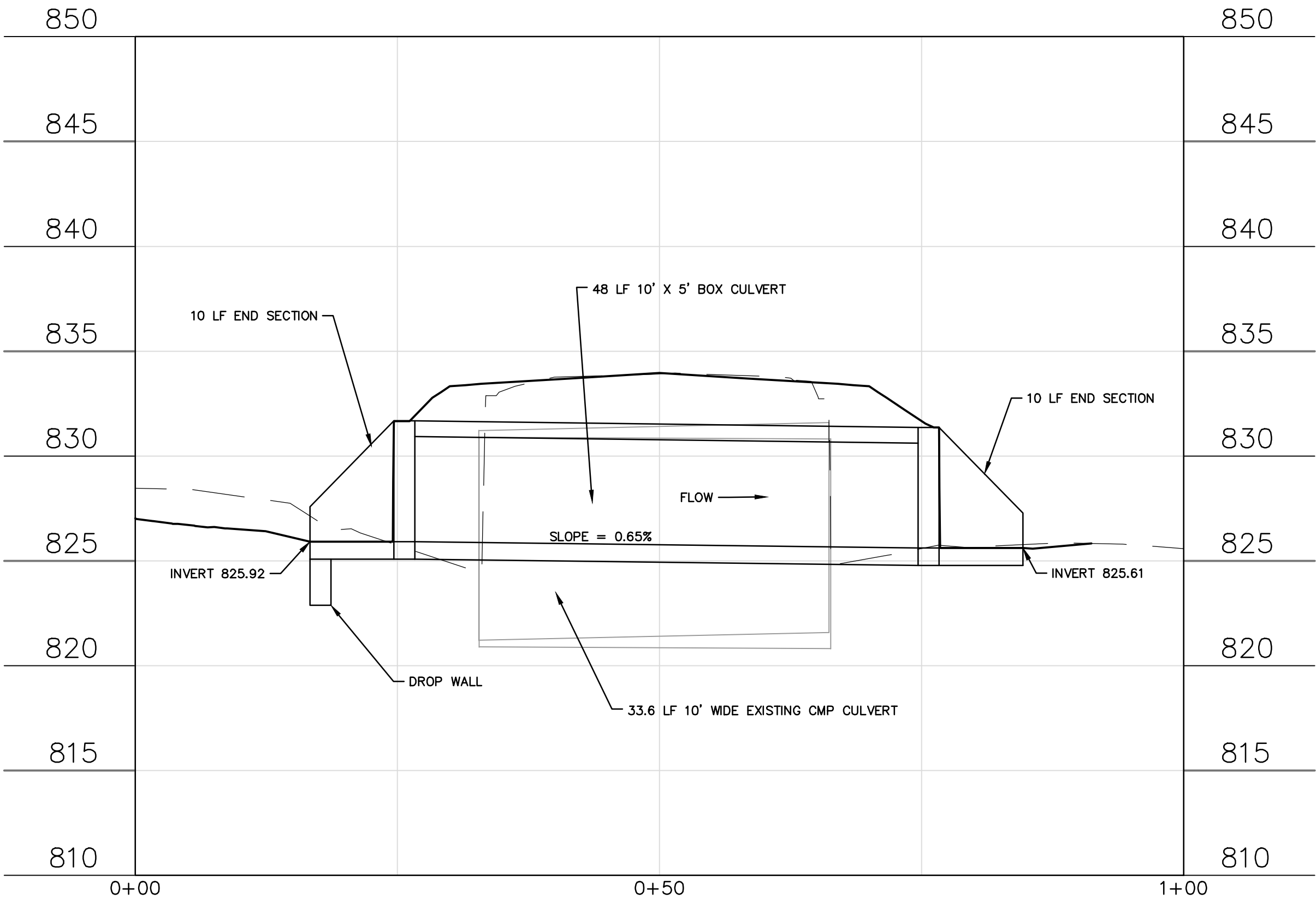
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PRIMARY BOX CULVERT C/L PROFILE



SECONDARY BOX CULVERT C/L PROFILE



DESCRIPTION

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WAUKESHA COUNTY, WISCONSIN

CULVERT PLAN & PROFILE

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DATE: 1-17-2023

SCALE: 1" = 10'

JOB NO. 2210721

PROJECT MANAGER:
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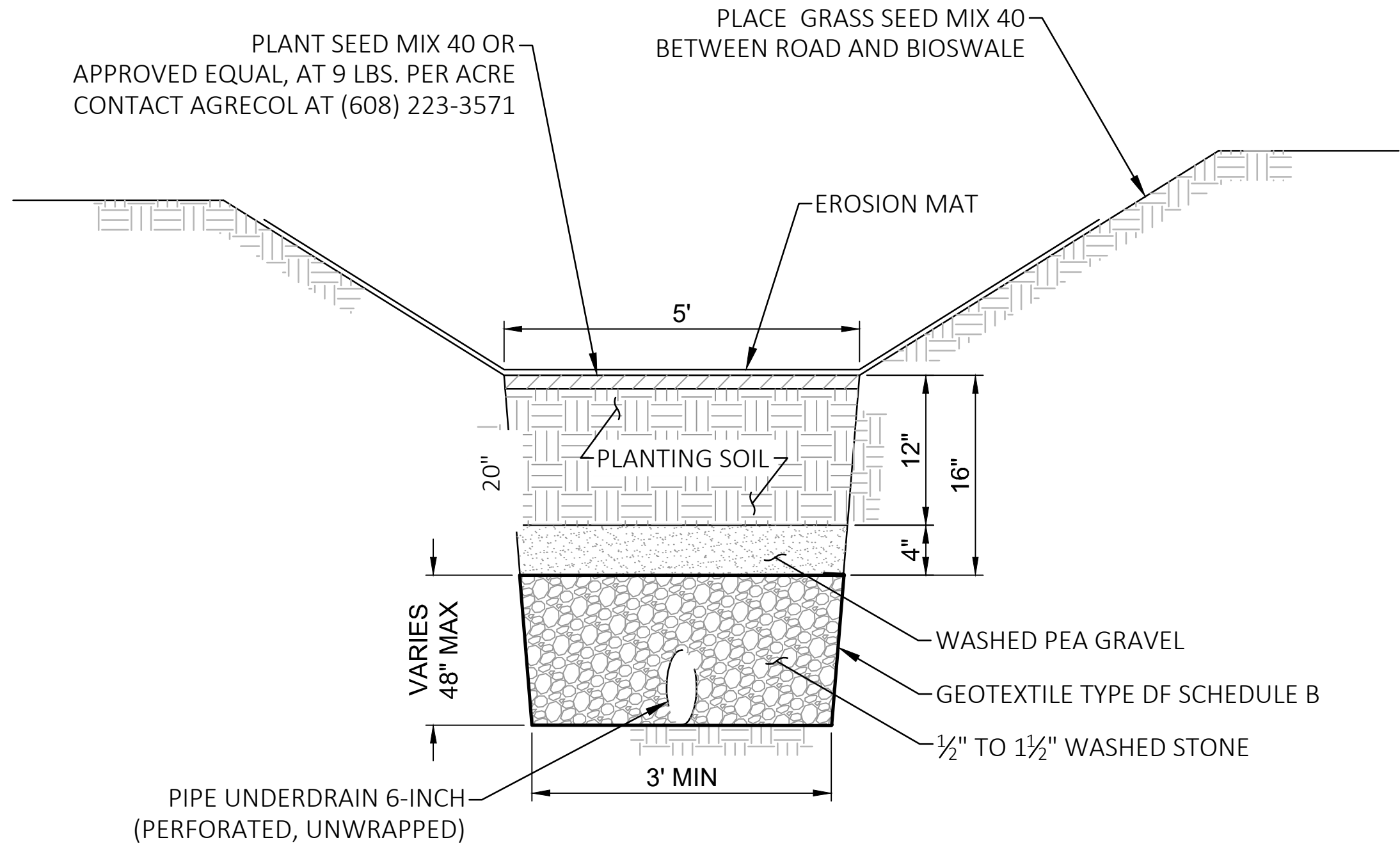
DESIGNED BY: RRS

CHECKED BY: GER

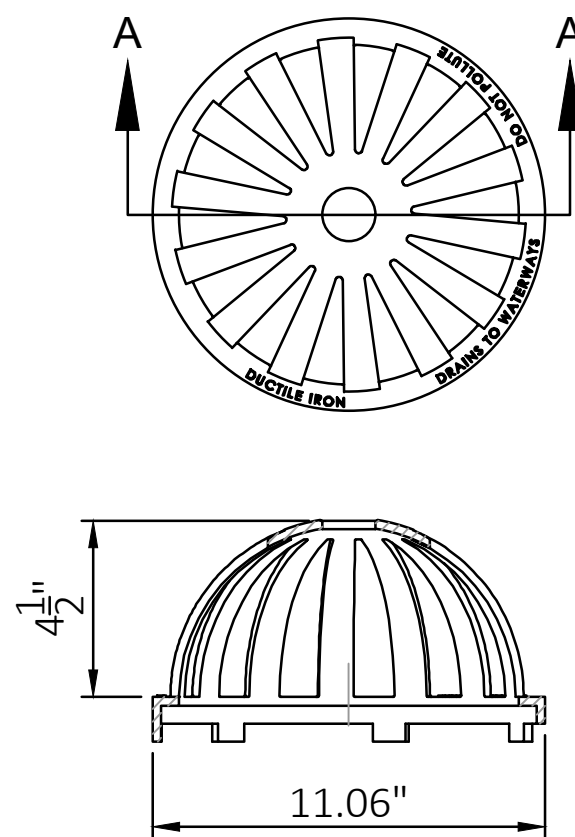
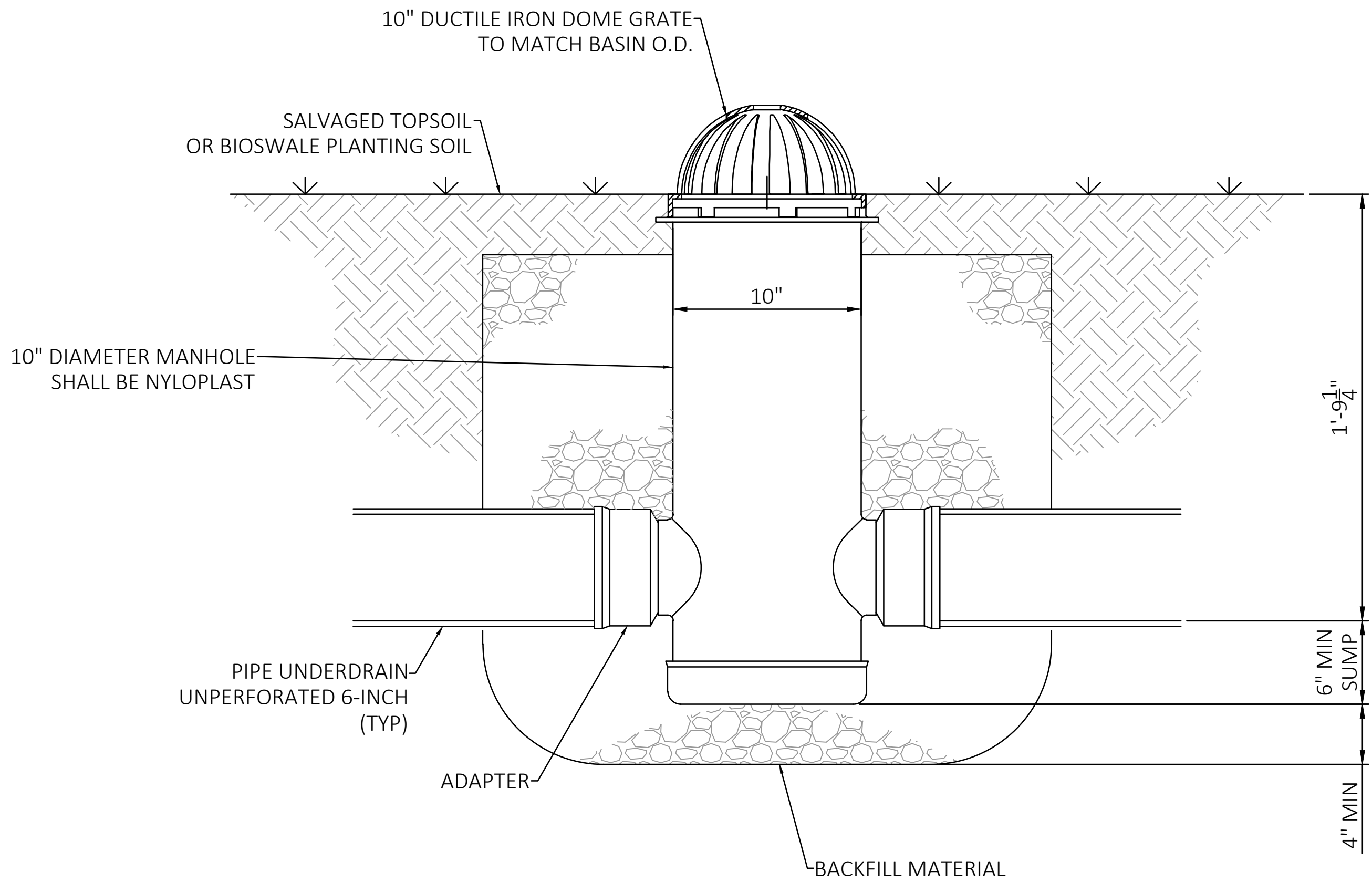
SHEET NUMBER

46

DROP WALL CONNECTION DETAIL

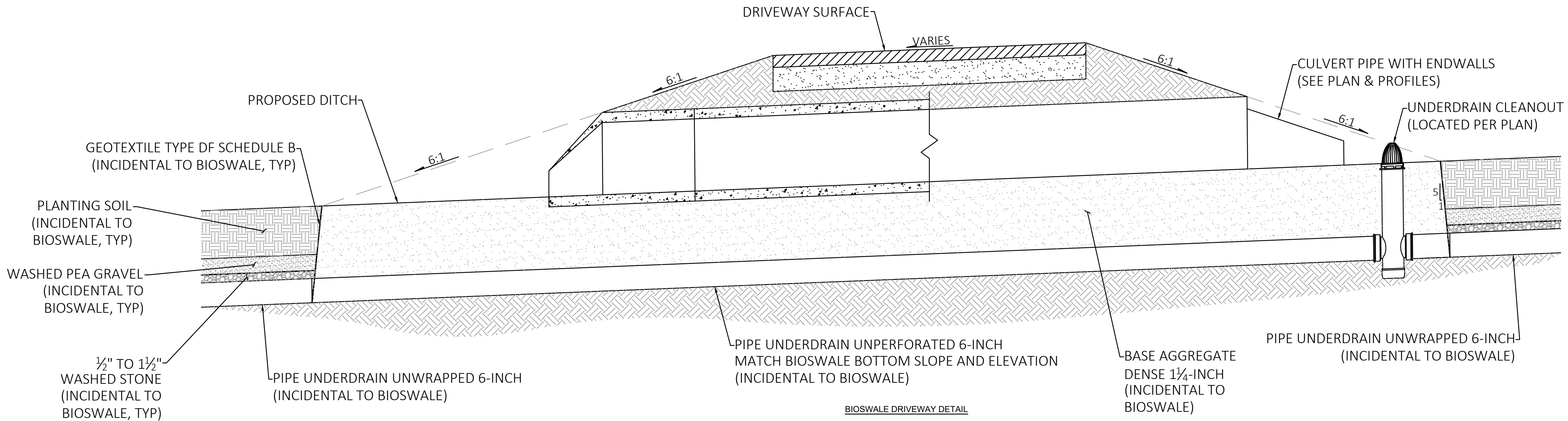


BIOSWALE DETAIL



SECTION A-A

10" DUCTILE IRON DOME GRATE



BIOSWALE DRIVEWAY DETAIL

DESCRIPTION

DATE

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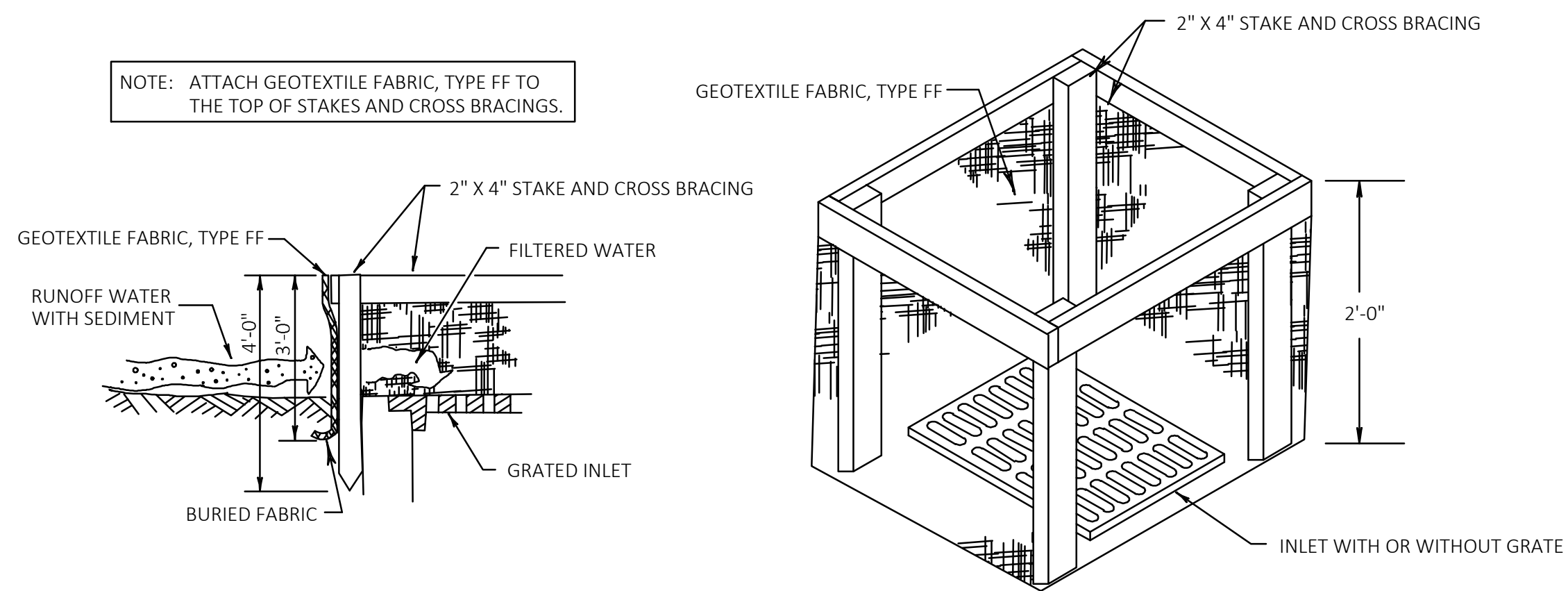
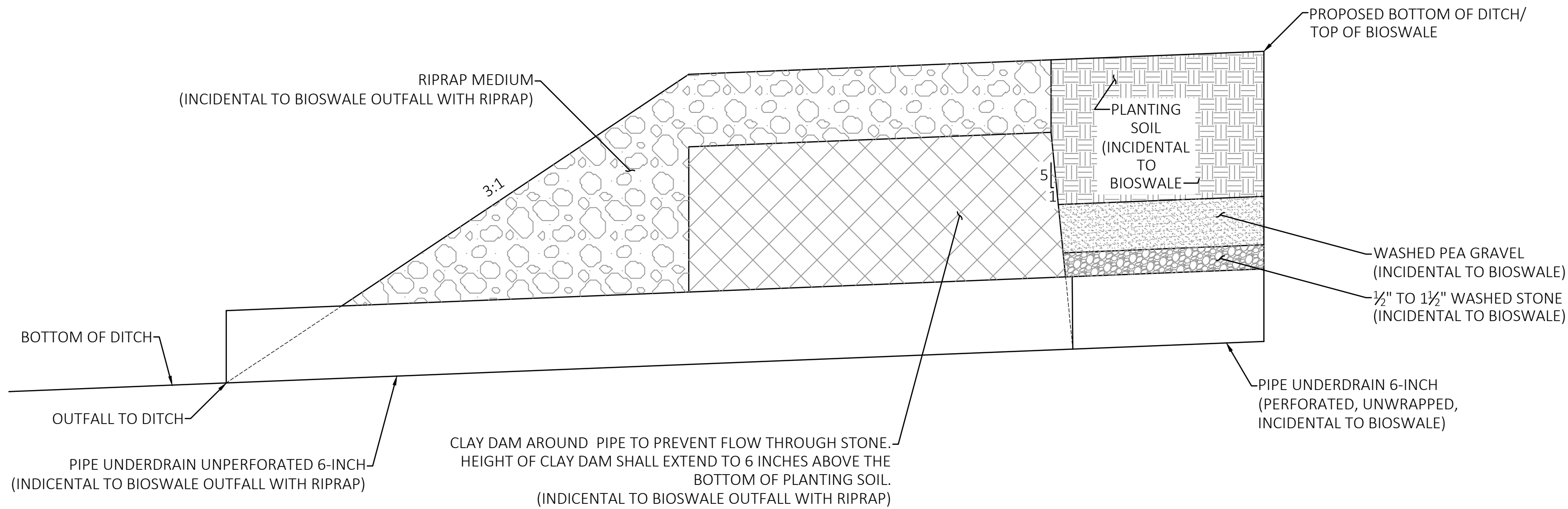
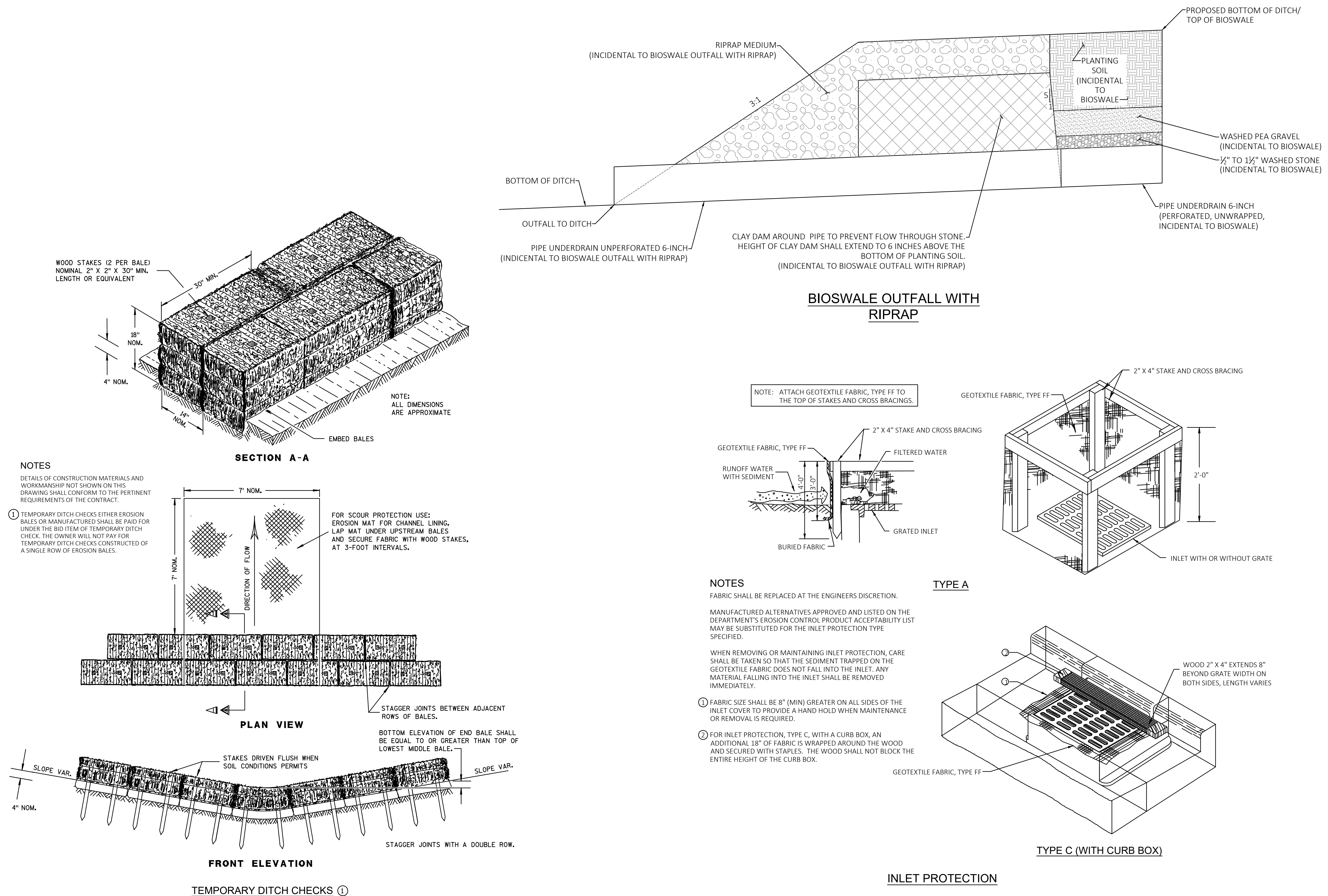
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

CITY OF NEW BERLIN
WAUKESHA COUNTY, WISCONSIN

CONSTRUCTION DETAILS

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JOB NO. 2210721
PROJECT MANAGER:
TROY T. HARTJES, P.E.
DESIGNED BY: MJG
CHECKED BY: TTH
SHEET NUMBER

55



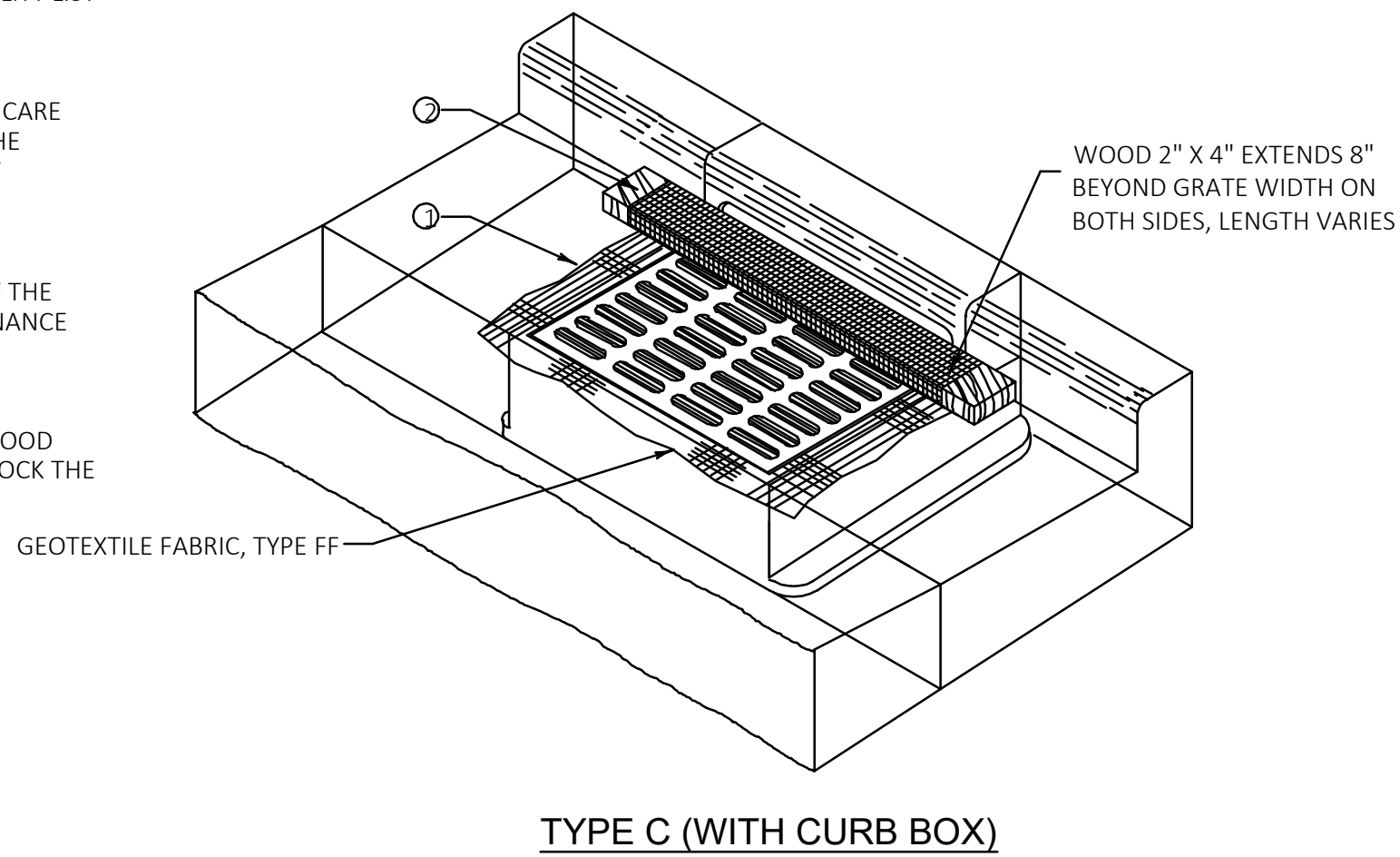
NOTES

FABRIC SHALL BE REPLACED AT THE ENGINEERS DISCRETION.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED FOR THE INLET PROTECTION TYPE SPECIFIED.

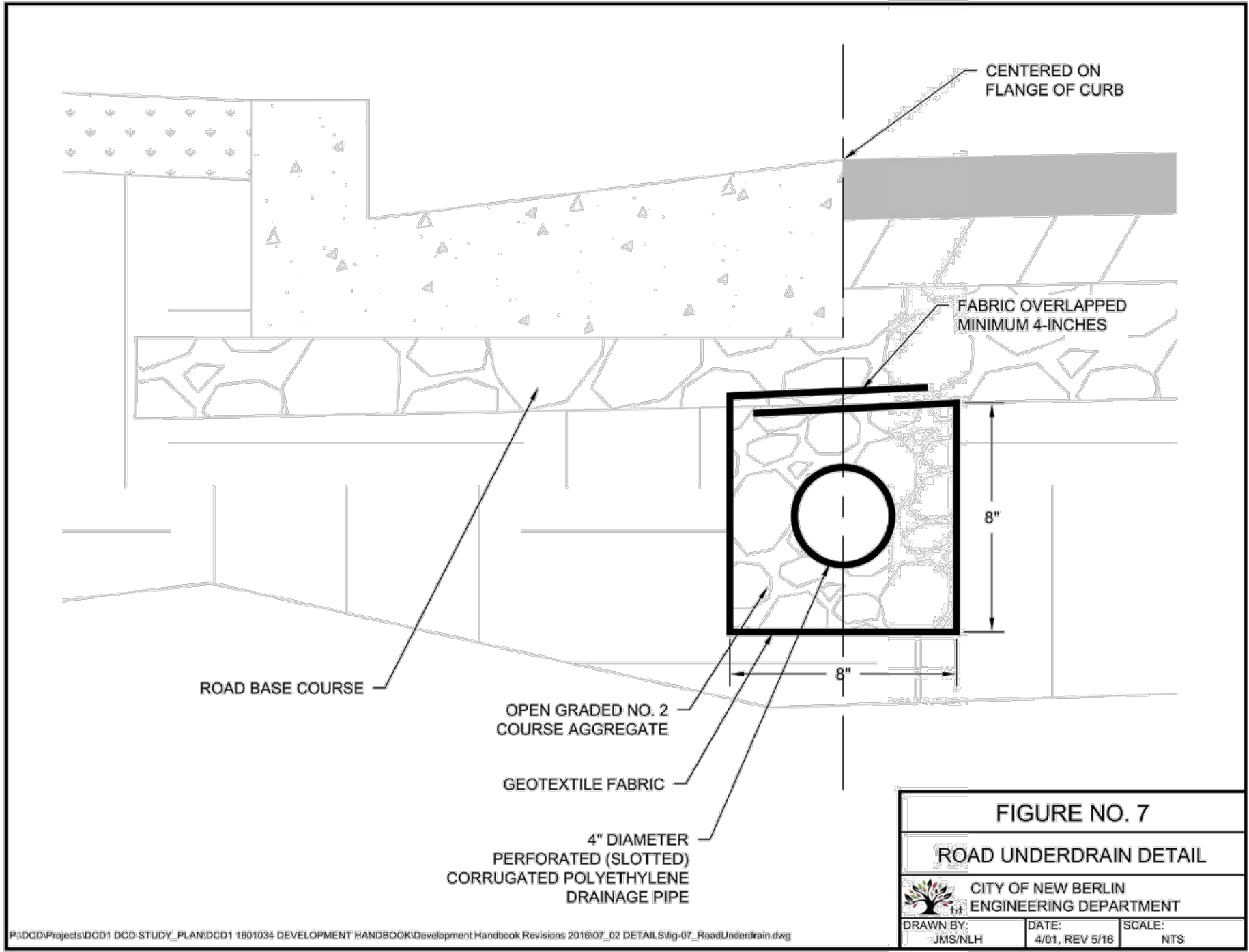
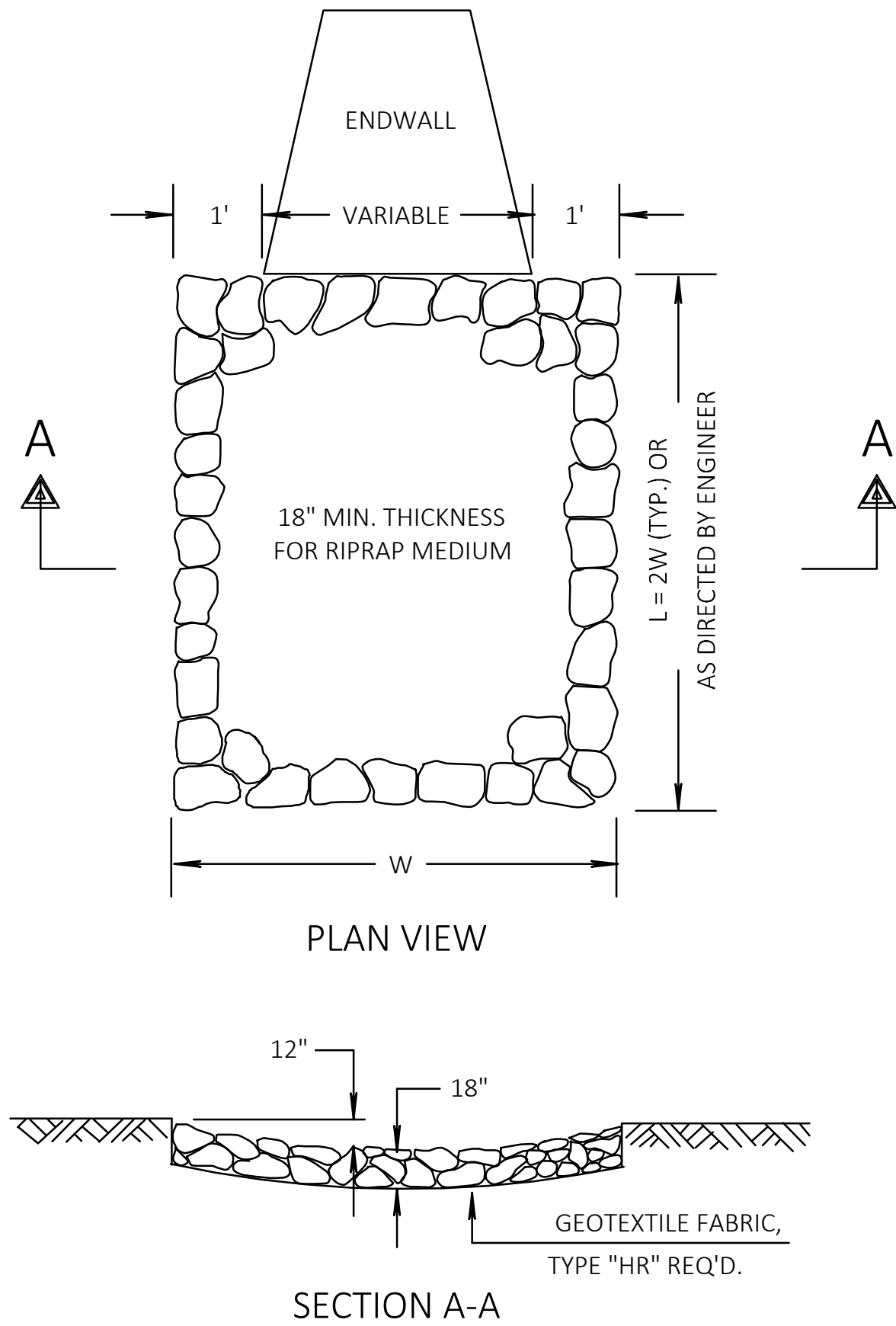
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FABRIC SIZE SHALL BE 8" (MIN) GREATER ON ALL SIDES OF THE INLET COVER TO PROVIDE A HAND HOLD WHEN MAINTENANCE OR REMOVAL IS REQUIRED.
- ② FOR INLET PROTECTION, TYPE C, WITH A CURB BOX, AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX.



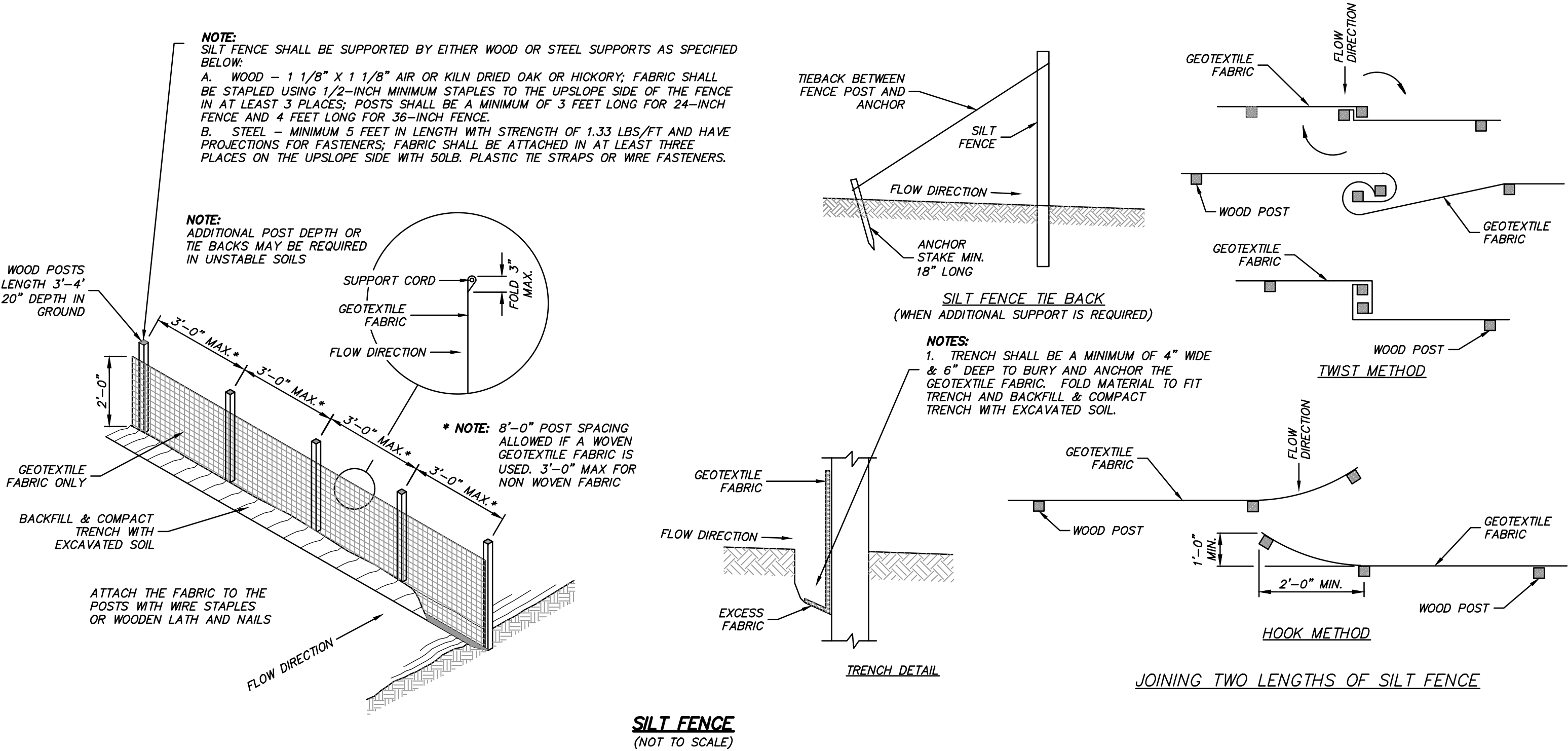
INLET PROTECTION

	CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN	 raSmith CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com	DATE	DESCRIPTION
	CONSTRUCTION DETAILS			
		Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA		
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DATE: 1-17-2023				
SCALE: N.T.S.				
JOB NO. 2210721				
PROJECT MANAGER: TROY T. HARTJES, P.E.				
DESIGNED BY: MJG				
CHECKED BY: TTH				
SHEET NUMBER				
56				



RIPRAP MEDIUM TREATMENT AT CULVERTS

- NOTES:**
- SILT FENCE INSTALLATION AND MATERIALS SHALL CONFORM TO WDNR CONSERVATION STANDARD 1056
 - SILT FENCE SHALL BE PLACED ON THE CONTOUR AND NOT PERPENDICULAR TO THE CONTOUR. THE ENDS SHALL BE EXTENDED UPSLOPE TO PREVENT WATER FROM FLOWING AROUND THE ENDS OF THE FENCE.
 - WHEN SILT FENCE IS INSTALLED ON A SLOPE, THE PARALLEL SPACING SHALL NOT EXCEED THE REQUIREMENTS IN THE TABLE BELOW:
- | SLOPE | FENCE SPACING |
|-----------|---------------|
| < 2% | 100 FEET |
| 2 TO 5% | 75 FEET |
| 5 TO 10% | 50 FEET |
| 10 TO 33% | 25 FEET |
| > 33% | 20 FEET |
- INSTALLED SILT FENCES SHALL BE MINIMUM 14 INCHES HIGH AND A MAXIMUM OF 28 INCHES IN HEIGHT MEASURED FROM THE INSTALLED GROUND ELEVATION.
 - A MINIMUM OF 20 INCHES OF THE POST SHALL EXTEND INTO THE GROUND AFTER INSTALLATION.
 - SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8 INCHES OF THE FABRIC IN A 4-INCH TRENCH WIDE BY 6-INCH DEEP TRENCH, OR 6-INCH V-TRENCH ON THE UPSLOPE SIDE OF THE FENCE. TRENCH SHALL BE BACKFILLED AND COMPACTED. TRENCHES SHALL NOT BE EXCAVATED WIDER THAN NECESSARY FOR PROPER INSTALLATION.
 - CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS:
 - TWIST METHOD—OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES.
 - HOOK METHOD—HOOK THE END OF EACH SILT FENCE LENGTH.
 - SILT FENCE SHALL AT A MINIMUM BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EACH PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24-HOUR PERIOD.
 - DAMAGED OR DECOMPOSED FENCES, UNDERCUTTING, OR FLOW CHANNELS AROUND THE END OF BARRIERS SHALL BE REPAIRED OR CORRECTED.
 - SEDIMENT SHALL BE PROPERLY DISPOSED OF ONCE THE DEPOSITS REACH ONE HALF THE HEIGHT OF THE FENCE.
 - SILT FENCES SHALL BE REMOVED ONCE THE DISTURBED AREA IS PERMANENTLY STABILIZED AND IS NO LONGER SUSCEPTIBLE TO EROSION.



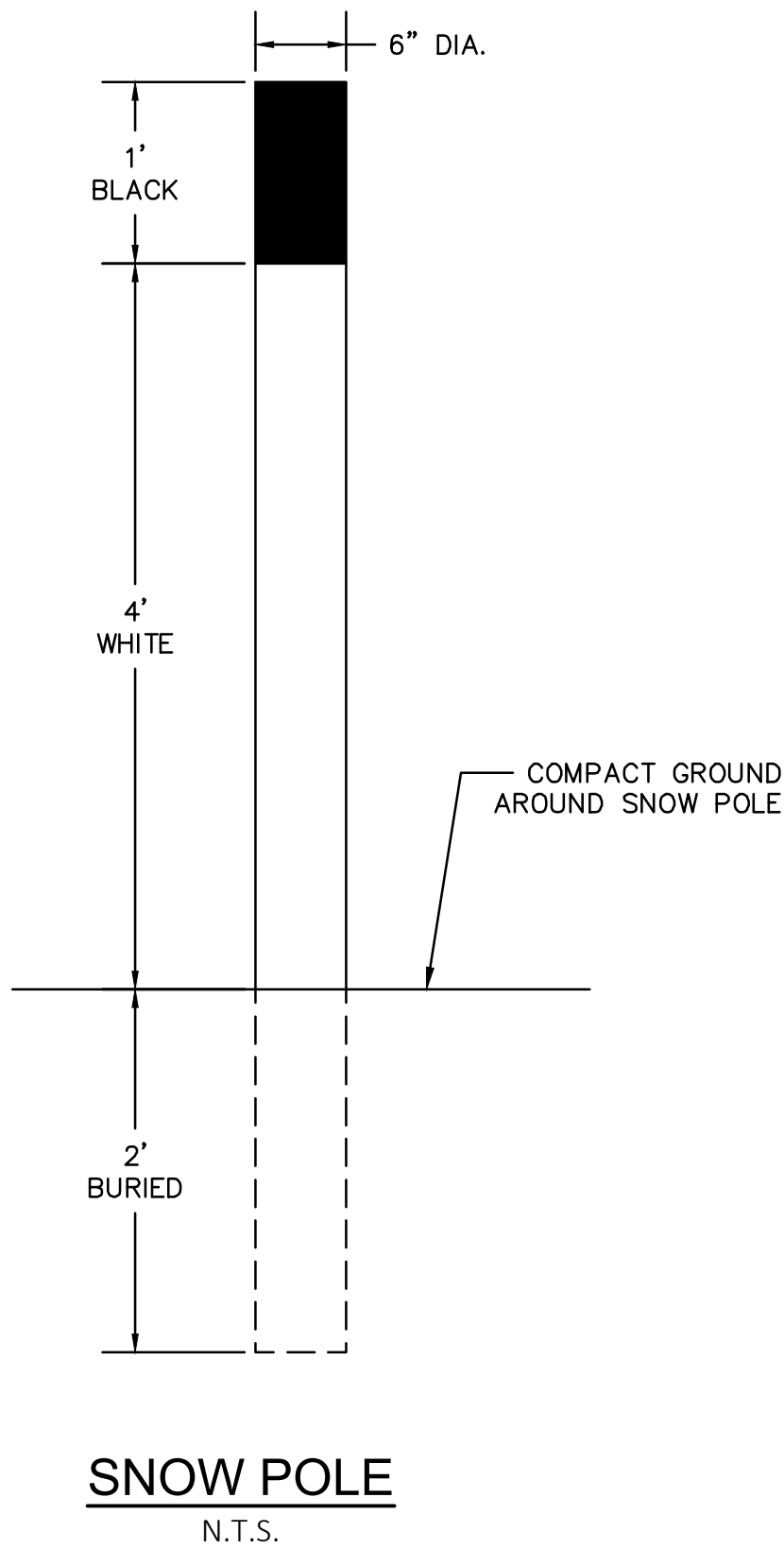
CITY OF NEW BERLIN
WAUKESHA COUNTY, WISCONSIN
CONSTRUCTION DETAILS

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JOB NO. 2210721
PROJECT MANAGER:
TROY T. HARTJES, P.E.
DESIGNED BY: MJG
CHECKED BY: TTH
SHEET NUMBER
57



REINFORCED CONCRETE ELLIPTICAL PIPE									
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
18	23	14	2 3/4	7 1/2	27	45	72	36	3 to 1
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 3/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

GENERAL NOTES

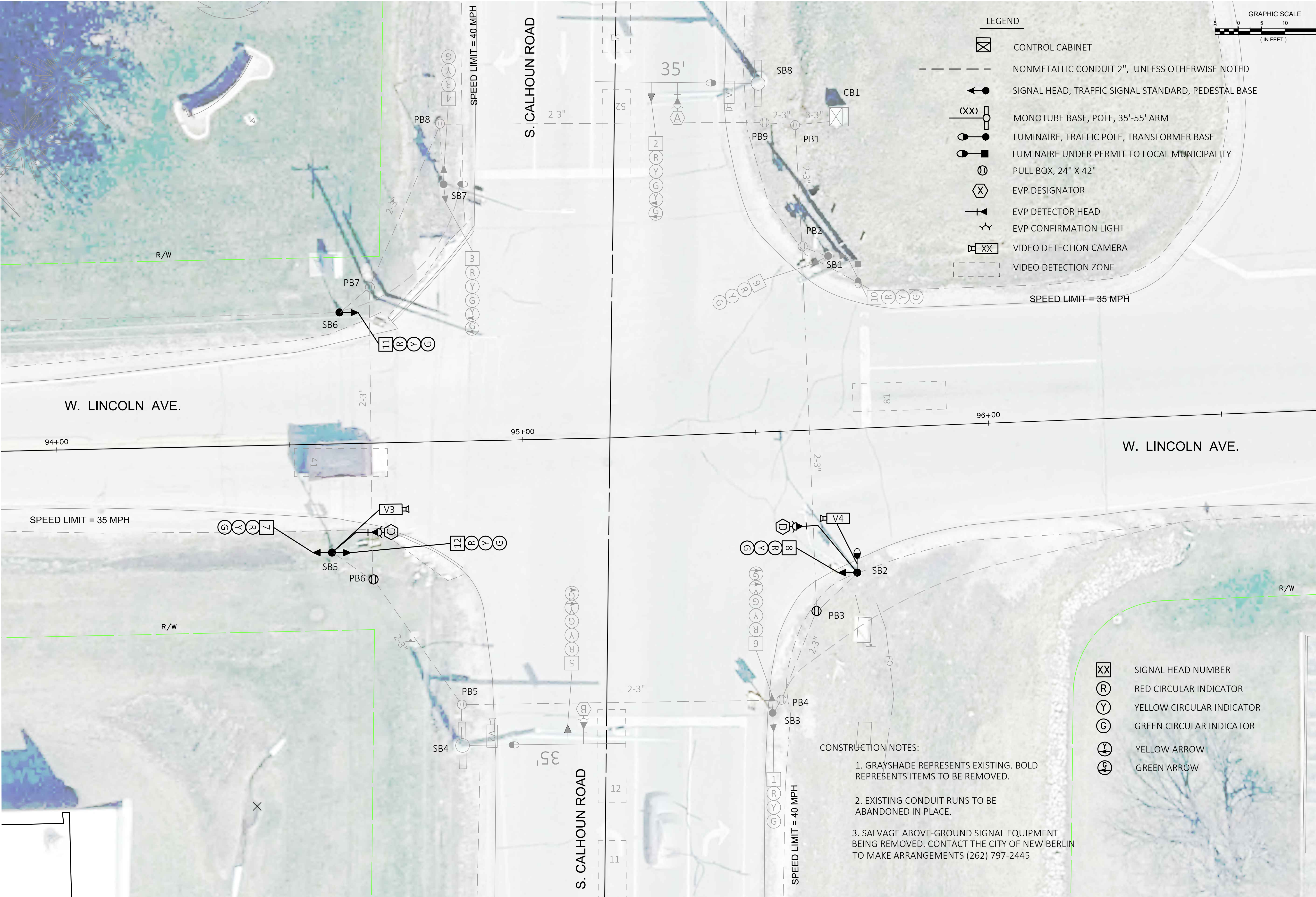
DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISA VERSA.

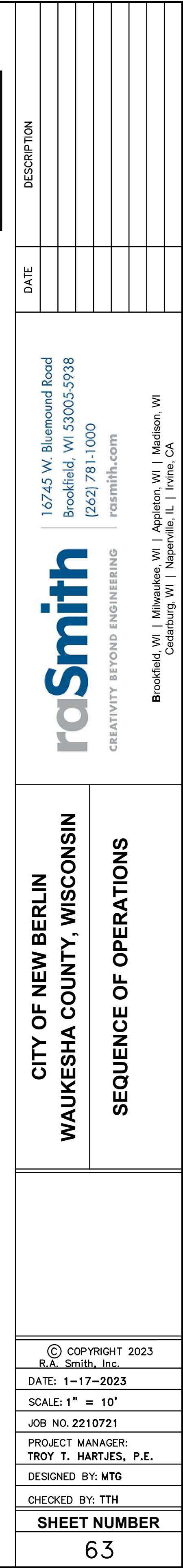
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN THE ENDWALLS.

APRON ENDWALLS FOR REINFORCED CONCRETE ELLIPTICAL PIPE

CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN		 CREATIVITY BEYOND ENGINEERING	W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com	DATE	DESCRIPTION
CONSTRUCTION DETAILS		Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA			
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JOB NO. 2210721					
PROJECT MANAGER: TROY T. HARTJES, P.E.					
DESIGNED BY: MJG					
CHECKED BY: TTH					
SHEET NUMBER					
60					



DESCRIPTION		DATE	
16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com		CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN TRAFFIC SIGNAL REMOVAL PLAN	
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PROJECT ID:	
INTERSECTION:	S. CALHOUN RD/W. LINCOLN AVE

Signal Wire Color Coding	BLK - black	RED - red	GRN - green
	WHT - white	BLU - blue	ORG - orange

DATE	01/23
------	-------

CB1 TO	AWG14 # OF CONDUCTORS	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR						D/WALK	WALK	PED BUTTON	OTHER
				RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>				
SB1	12	9	4	RED	ORG	GRN							
		10	8	RED/BLK	ORG/BLK	GRN/BLK							
SB2	12	8	4	RED	ORG	GRN							
SB3	12	1	6	RED	ORG	GRN							
		6	5	RED/BLK	ORG/BLK	GRN/BLK		BLK	BLU				
SB4	12	5	5	RED	ORG	GRN		BLK	BLU				
SB5	12	7	4	RED	ORG	GRN							
		12	8	RED/BLK	ORG/BLK	GRN/BLK							
SB6	12	11	8	RED	ORG	GRN							
SB7	12	3	1	RED	ORG	GRN		BLK	BLU				
		4	2	RED/BLK	ORG/BLK	GRN/BLK							
SB8	12	2	1	RED	ORG	GRN		BLK	BLU				

Equipment grounding conductor 10 AWG Green XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	CB1

Pull Box Bonding Jumper 10 AWG Green XLP	
FROM	TO
CB1	PB1
SB1	PB2
SB2	PB3
SB3	PB4
SB4	PB5
SB5	PB6
SB6	PB7
SB7	PB8
SB8	PB9

Lighting UF #12-2 w/ground	
FROM	TO
CB1	SB8
SB8	SB7
CB1	SB2
SB2	SB4

EVP Cable	
FROM	TO
CB1	HEAD A (SB8)
CB1	HEAD B (SB4)
CB1	HEAD C (SB5)
CB1	HEAD D (SB2)

Video Senor Cable	
FROM	TO
CB1	V1 (SB8)
CB1	V2 (SB4)
CB1	V3 (SB5)
CB1	V4 (SB2)

- *GRAYSHADE REPRESENTS EXISTING. **BOLD** REPRESENTS NEW CABLE.
- *Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
- *Ensure the grounded conductor in the feeder cable and the pole cables are both 12" longer than the ungrounded conductors.
- *The number of conductors from the signal base to the signal head to match the number of conductors from the control

S. CALHOUN ROAD / W. LINCOLN AVENUE		
CITY OF NEW BERLIN		
WAUKESHA COUNTY		
SIGNAL NO: 09		
DATE:	01/23	PAGE NO. 3 OF 3

PROJECT NO:	HWY: LINCOLN AVE	COUNTY: WAUKESHA	CABLE ROUTING	SHEET NO:	E
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FILE NAME : T:\(Project #)\Cadd\Quants\030201_mq-signals.ppt PLOT DATE : 1/9/2023 11:24 AM PLOT BY : PLOT NAME : 030201_mq PLOT SCALE : 1.000000:1.000000 WISDOT / CADDs SHEET 42

DESCRIPTION

DATE

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(262) 781-1000
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CITY OF NEW BERLIN
WAUKESHA COUNTY, WISCONSIN

CABLE ROUTING

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JOB NO. 2210721

PROJECT MANAGER:
TROY T. HARTJES, P.E.

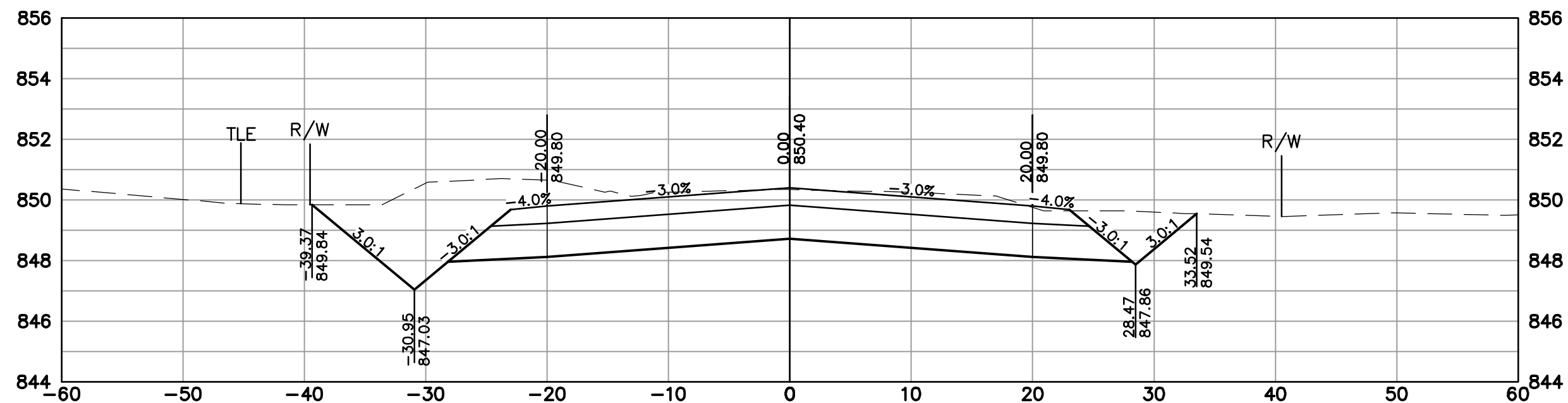
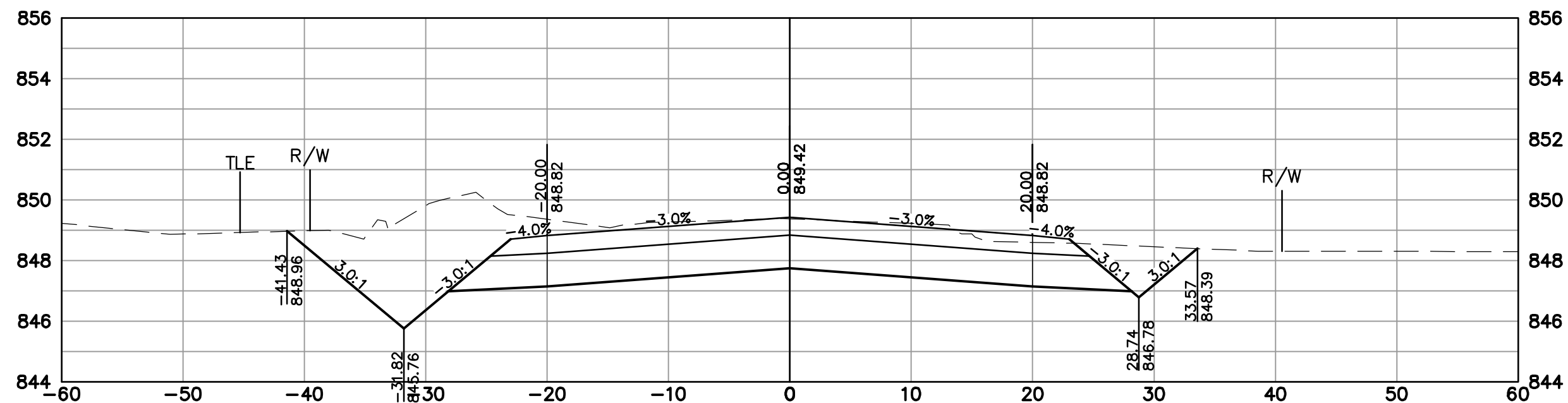
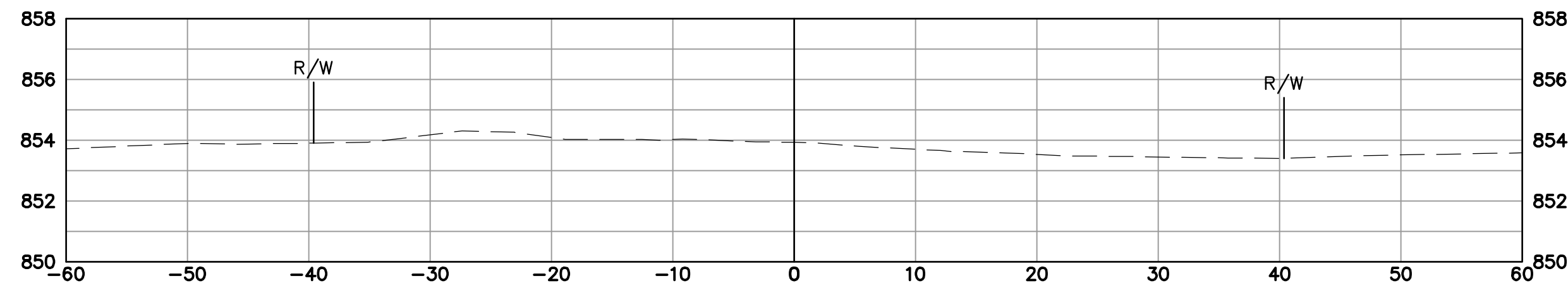
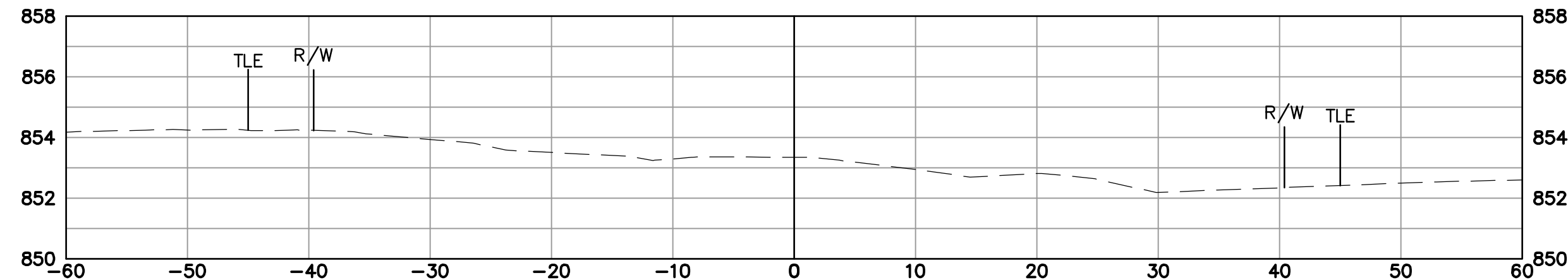
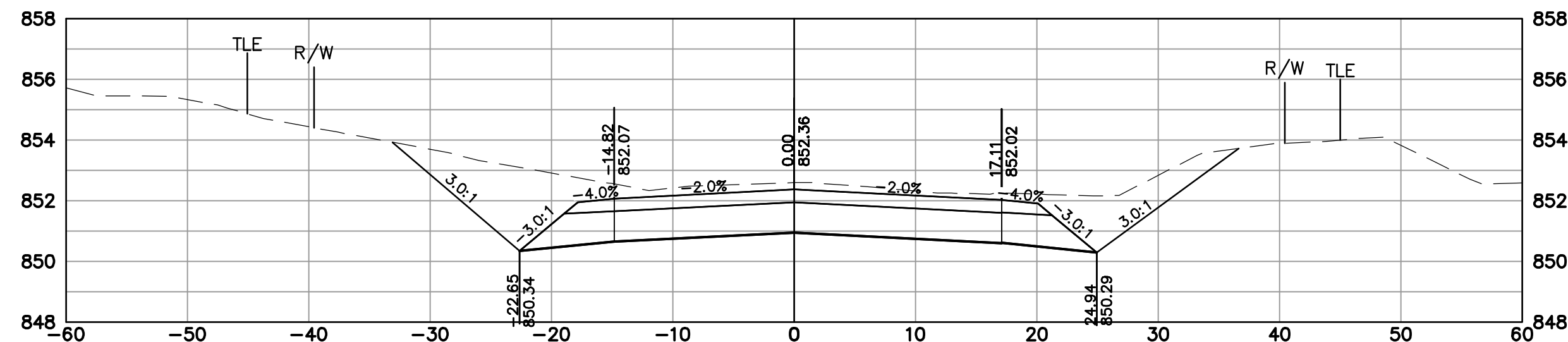
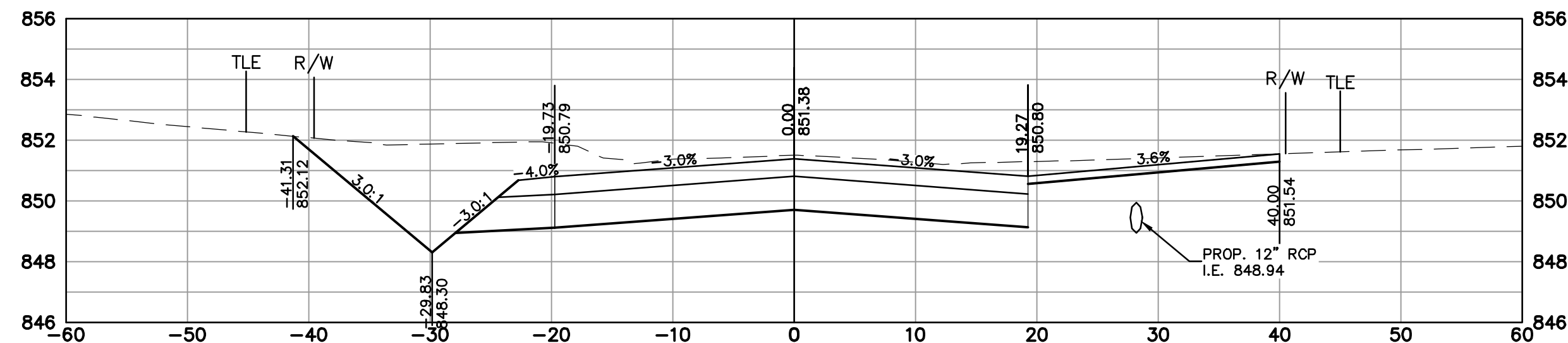
DESIGNED BY: MTG

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SHEET NUMBER

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Page 331 of 644

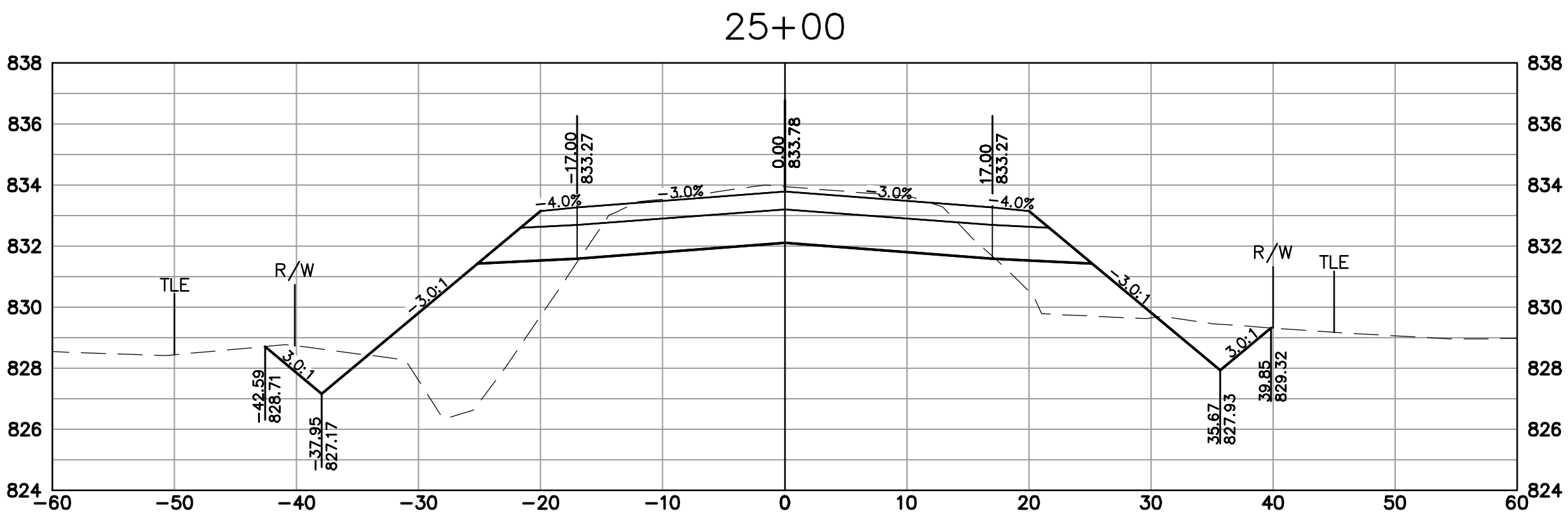
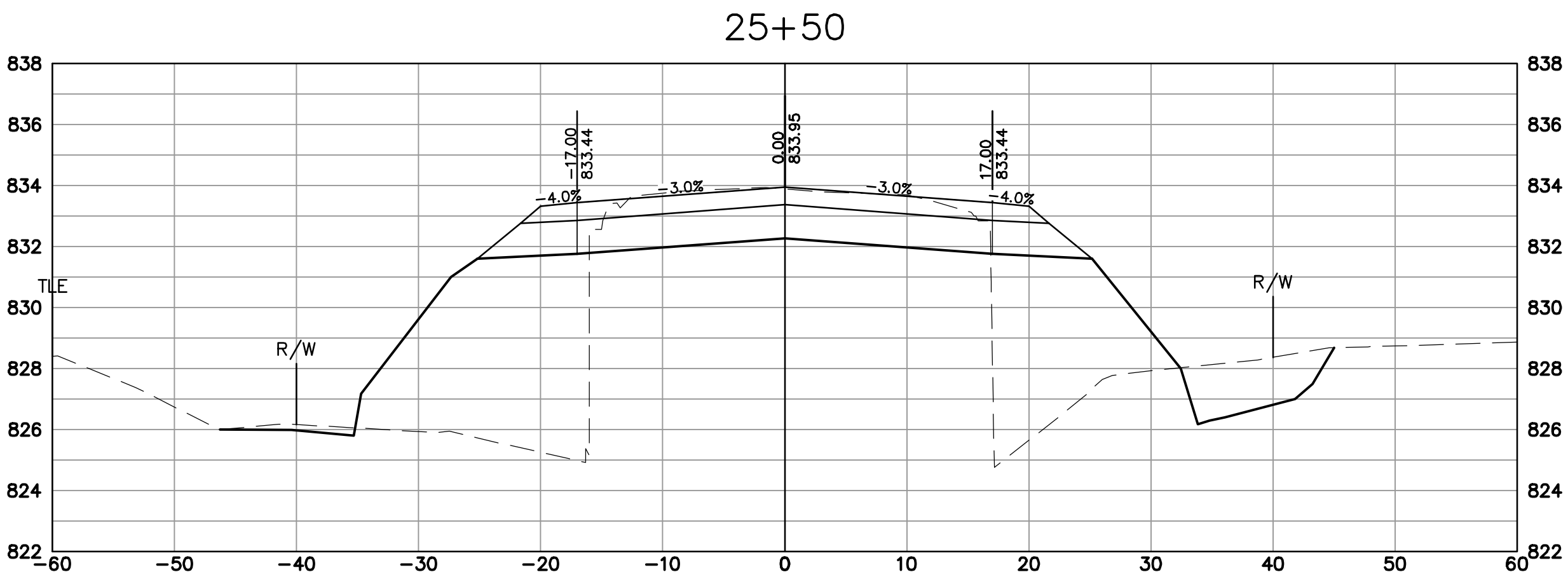
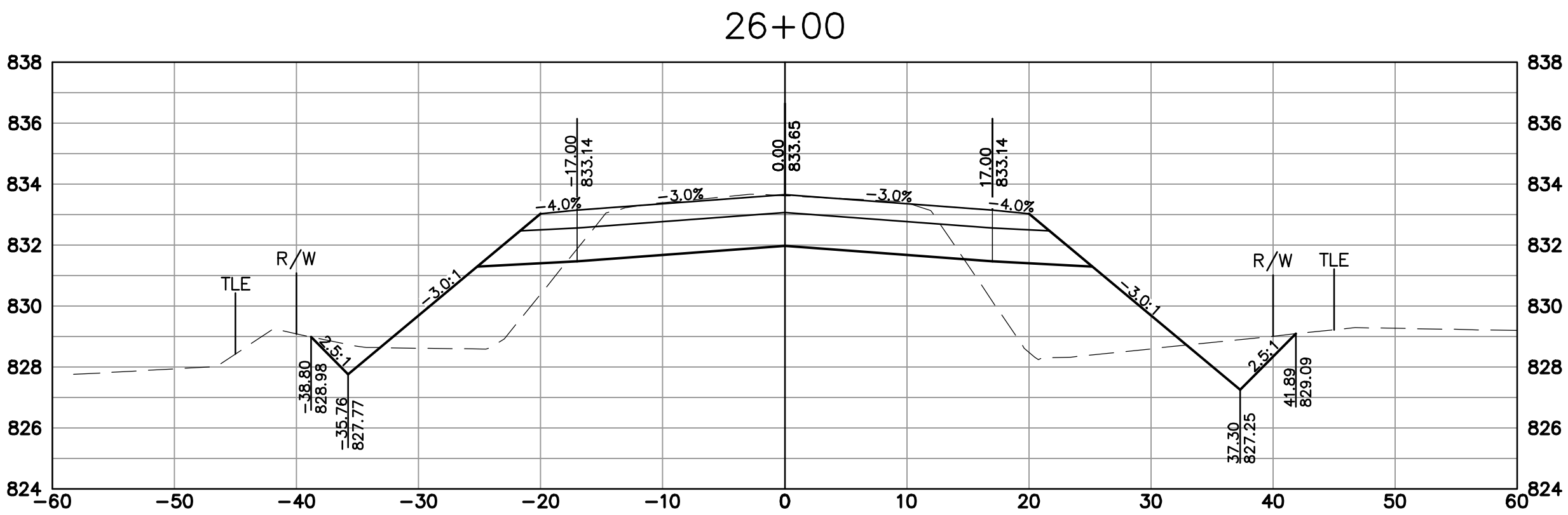
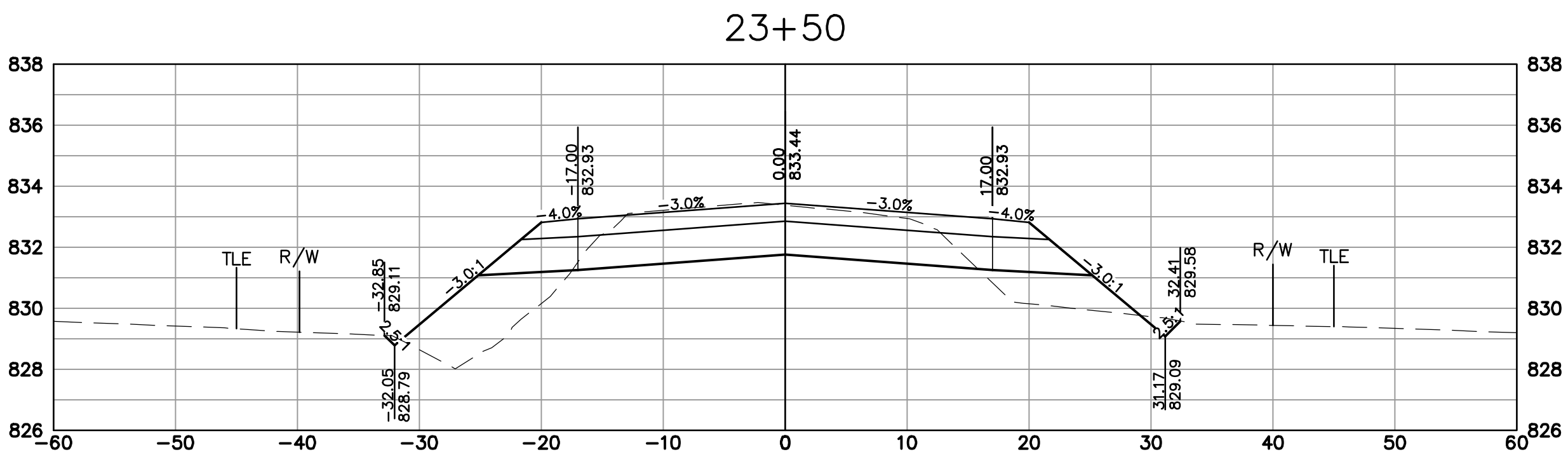
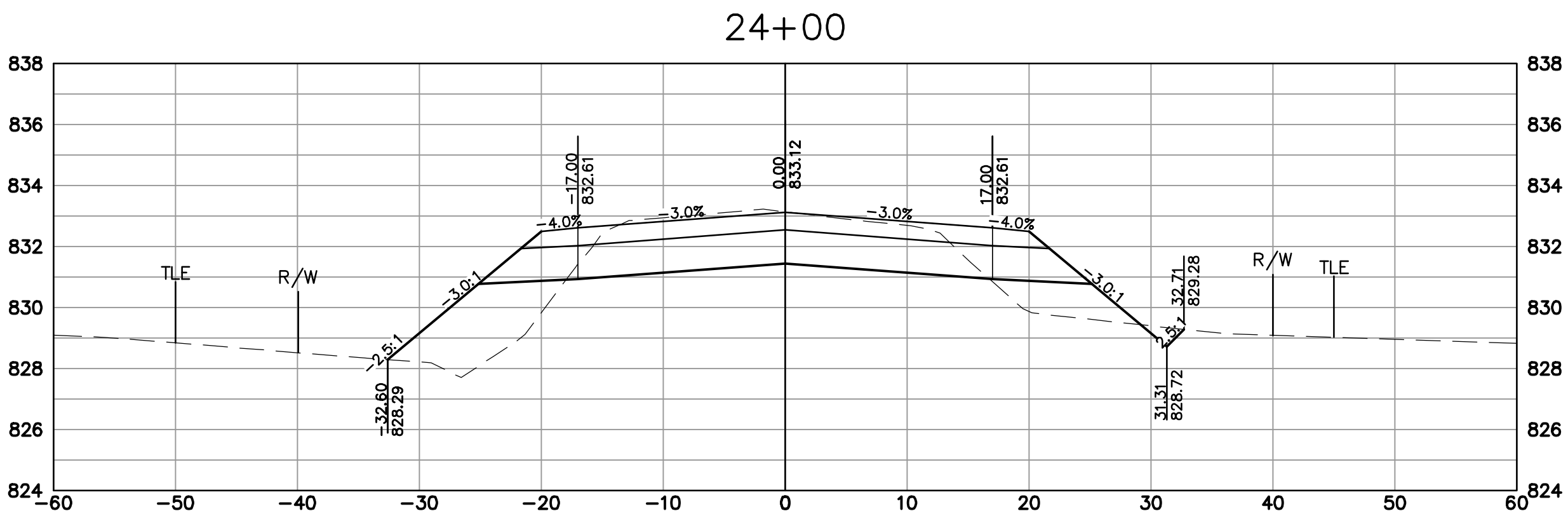
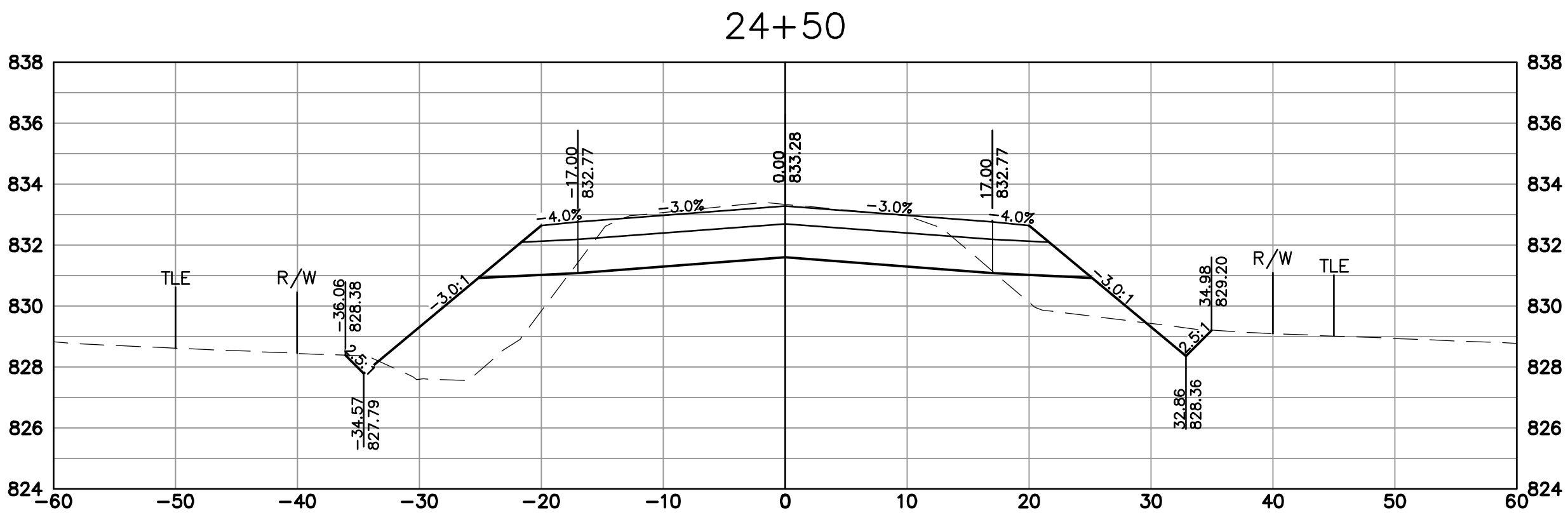
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SCALE: 1" = 10'

JOB NO. 2210721

PROJECT MANAGER:
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DESIGNED BY: MTG

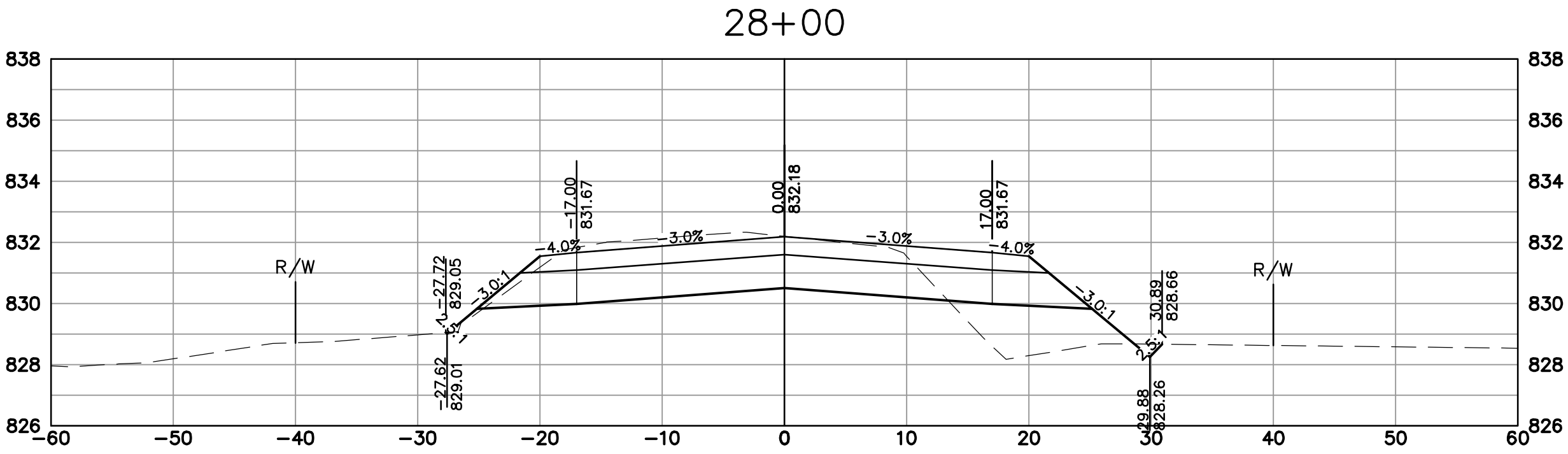
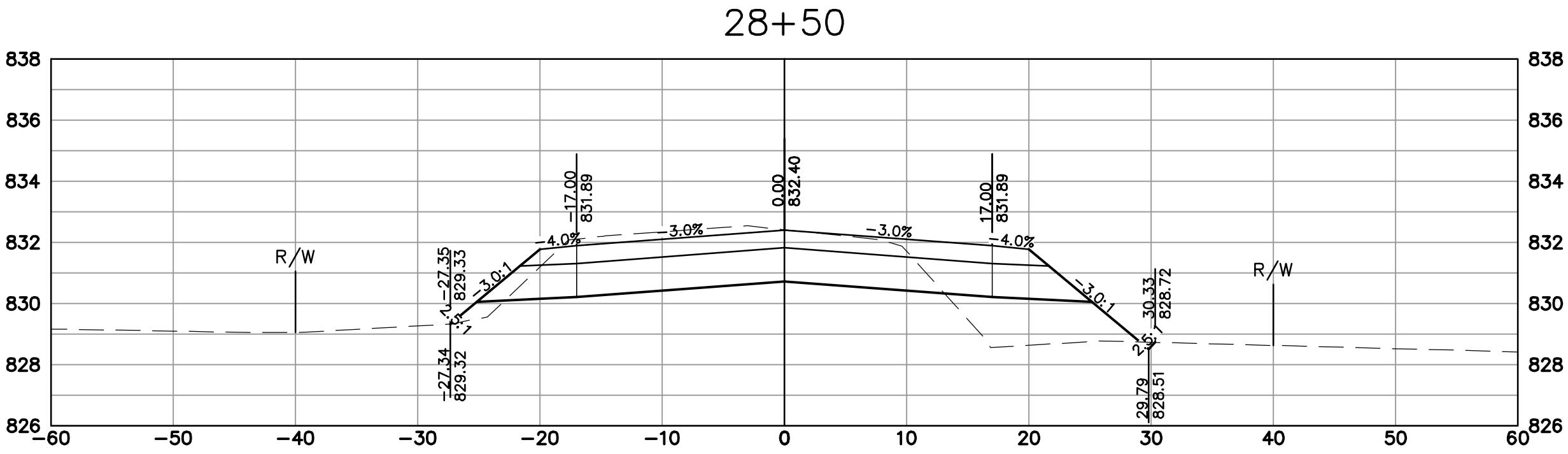
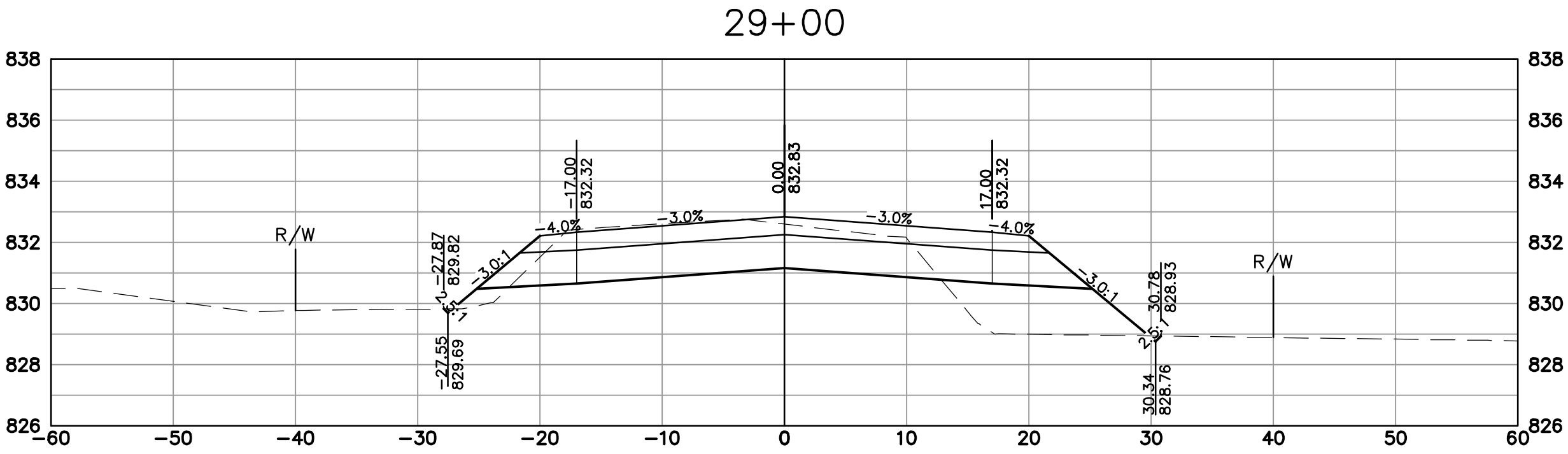
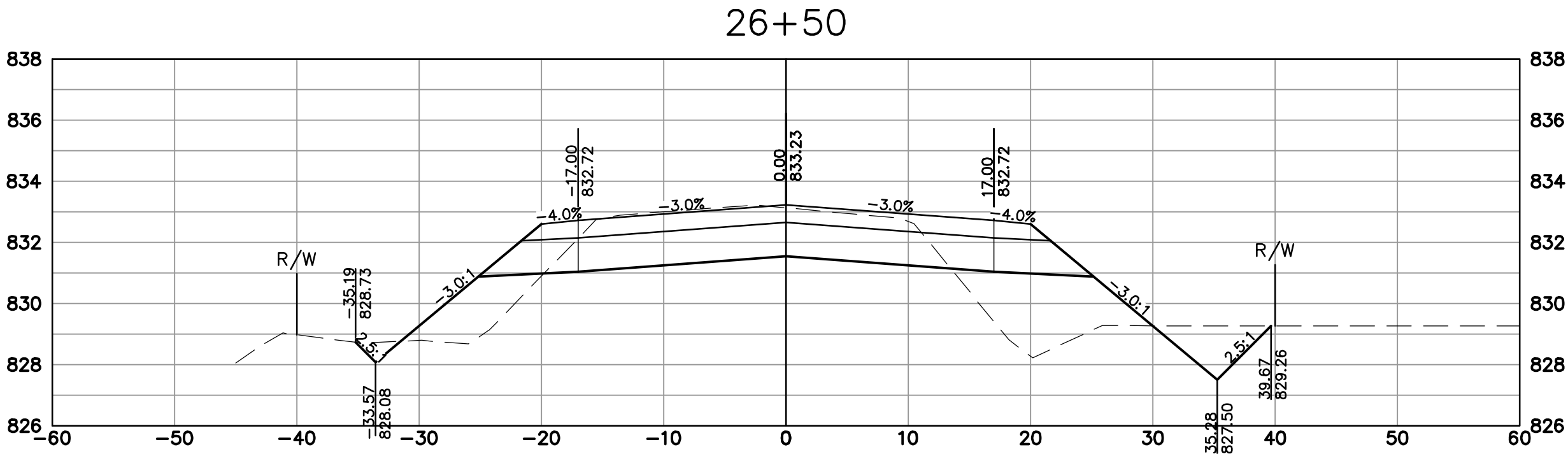
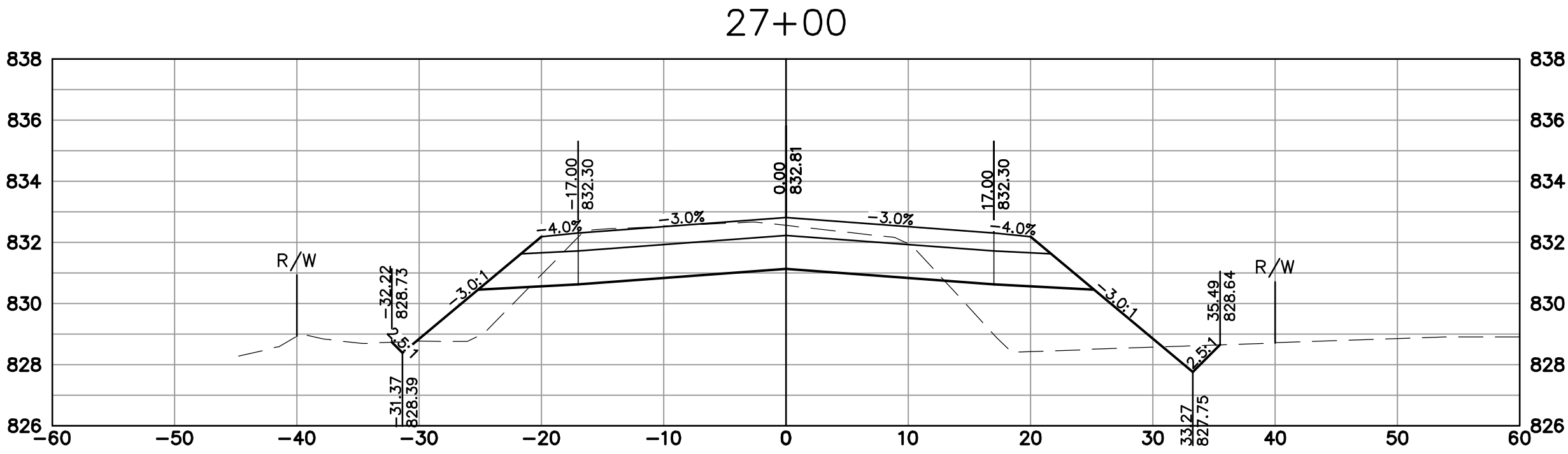
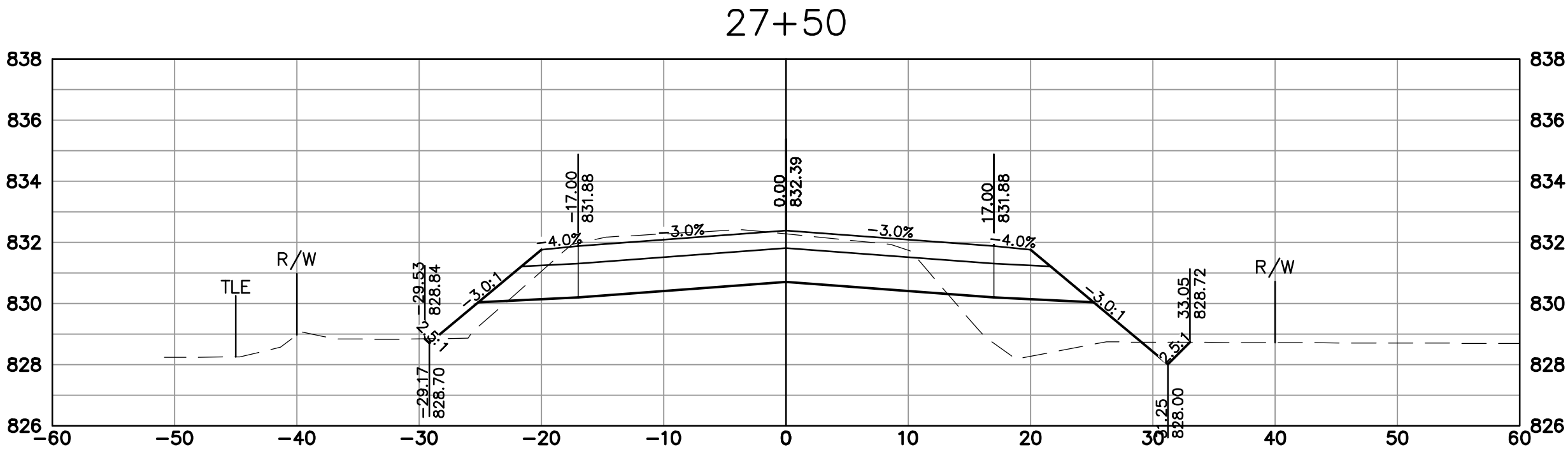
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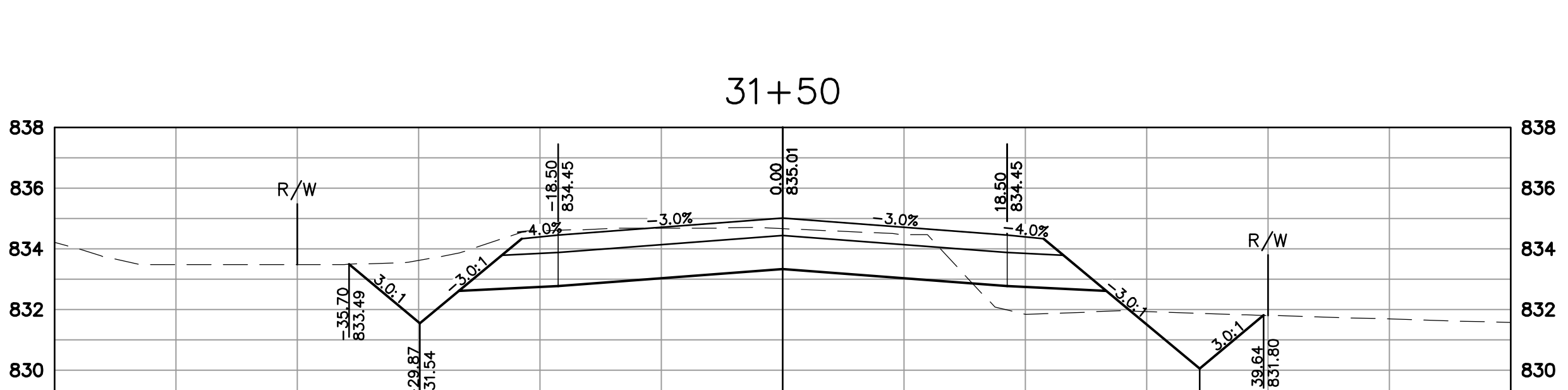
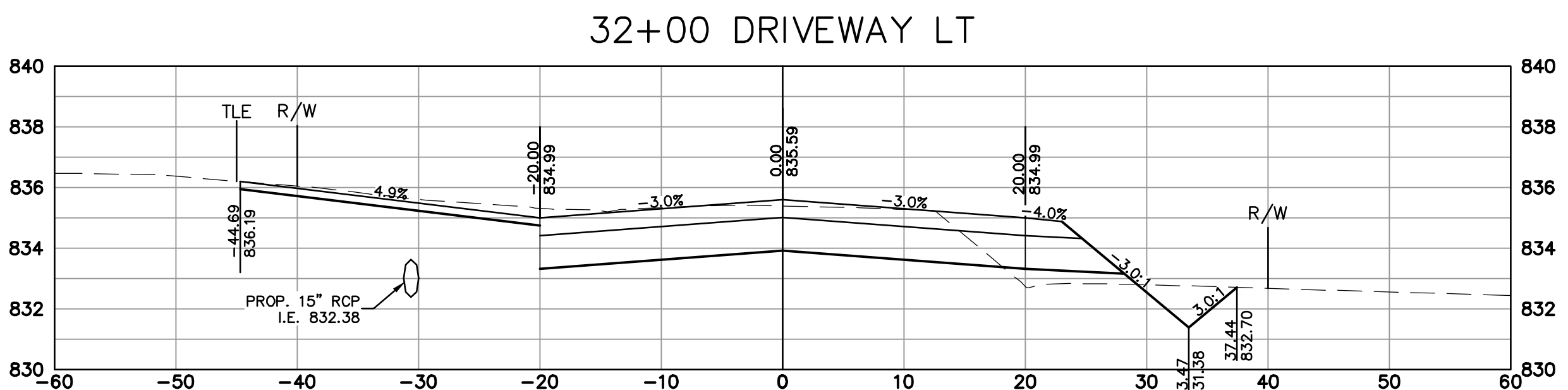
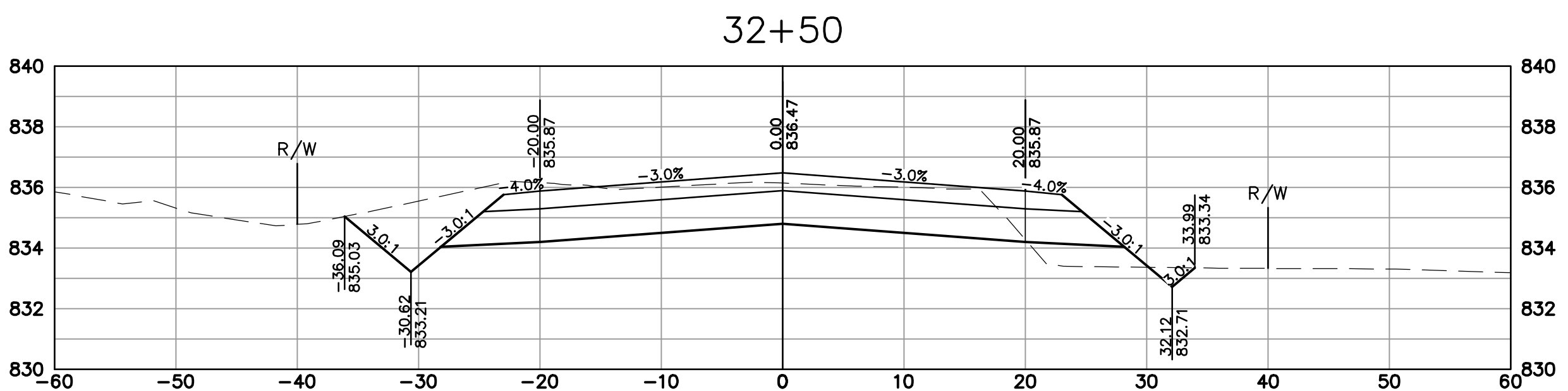
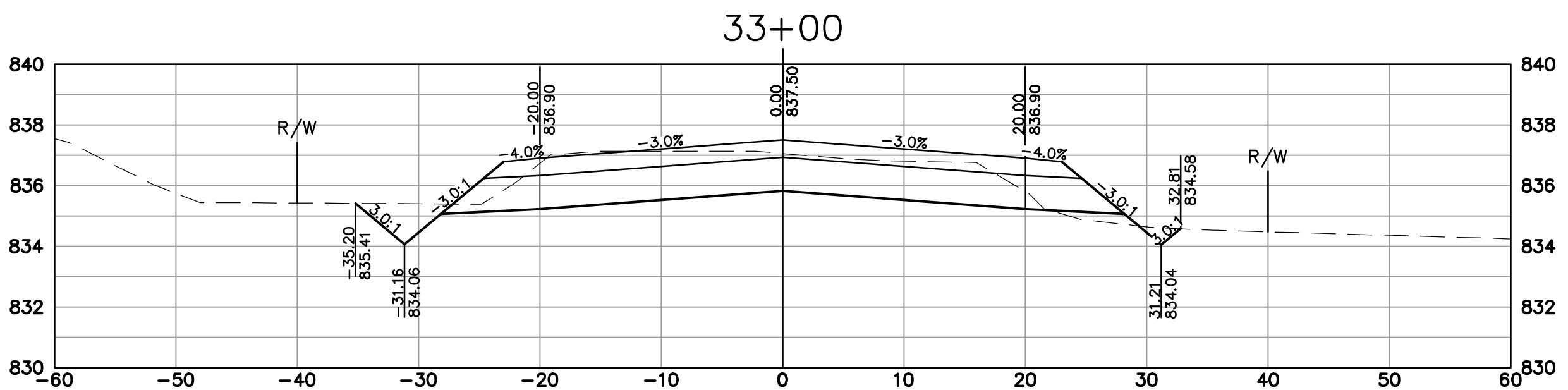
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JOB NO. 2210721
PROJECT MANAGER: TROY T. HARTJES, P.E.
DESIGNED BY: MTG
CHECKED BY: TTH
SHEET NUMBER 70

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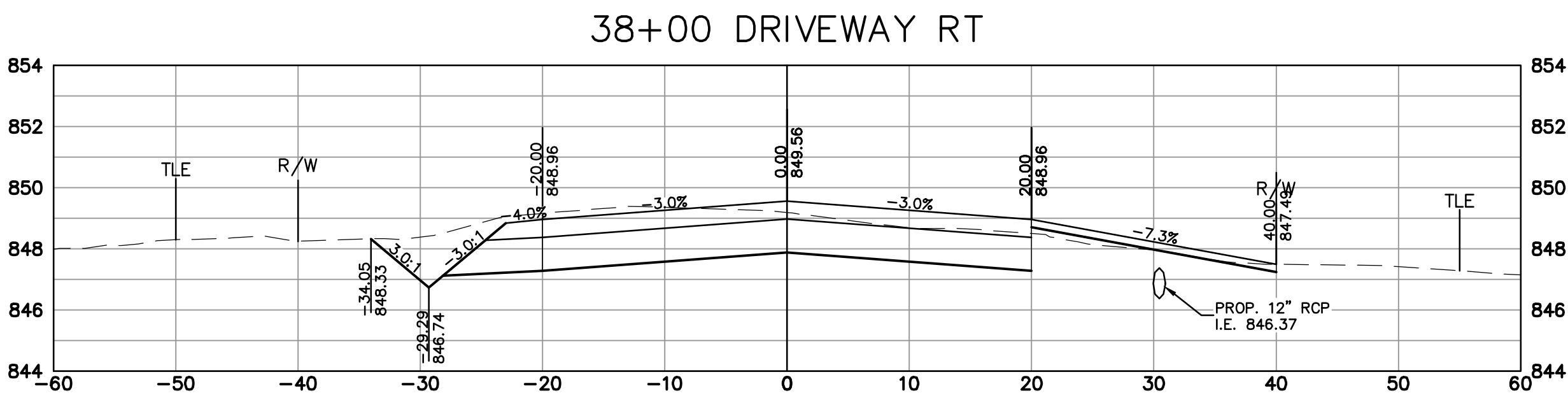
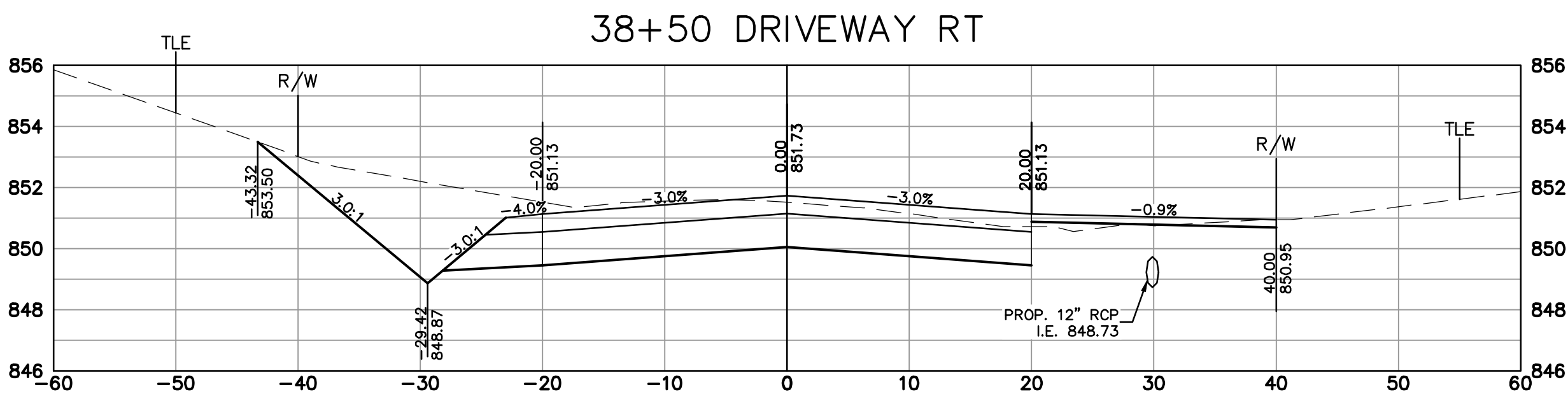
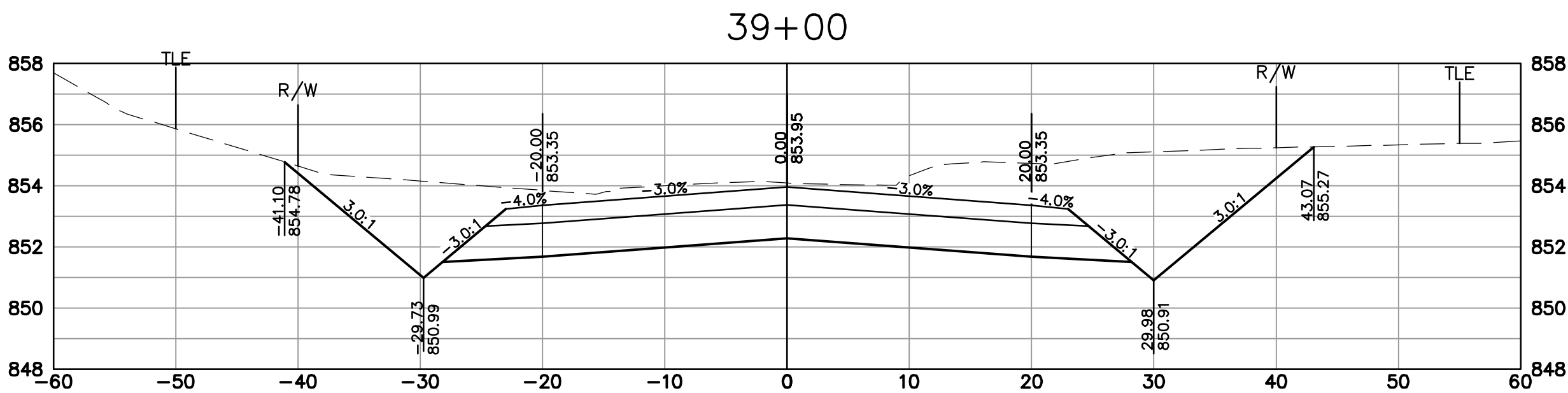
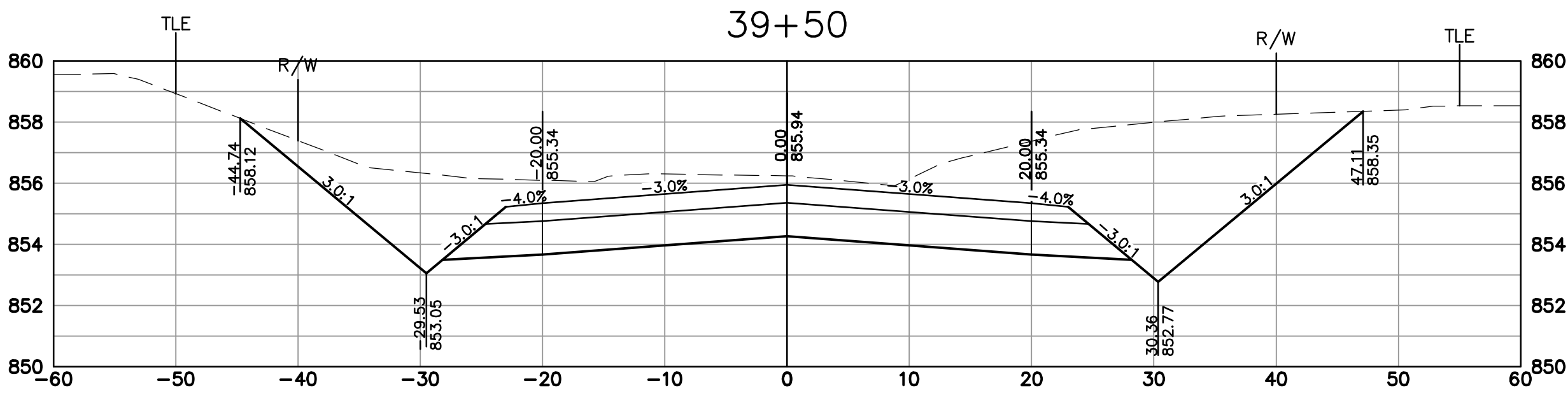
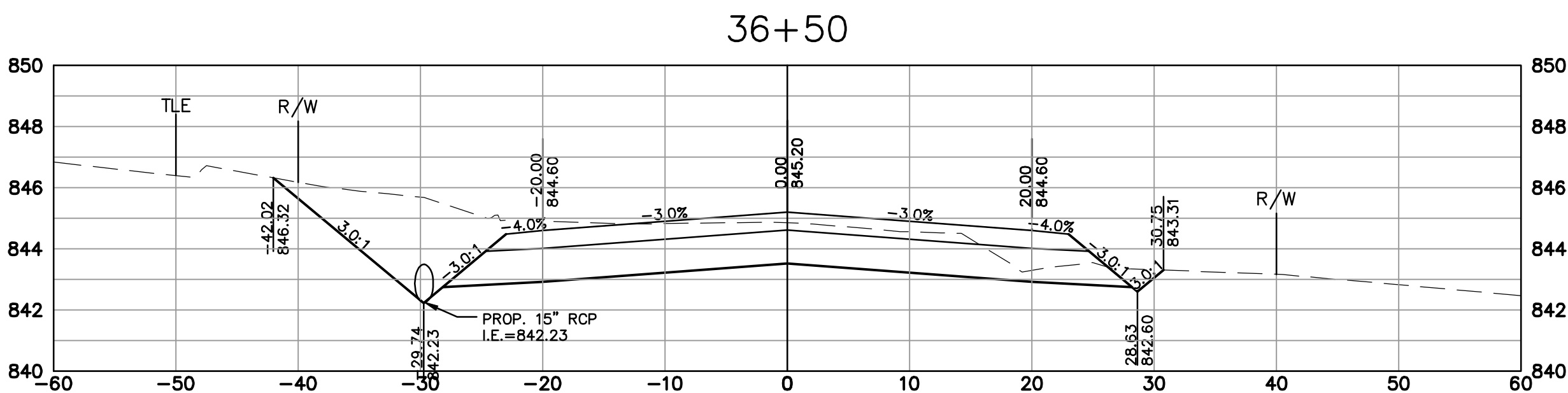
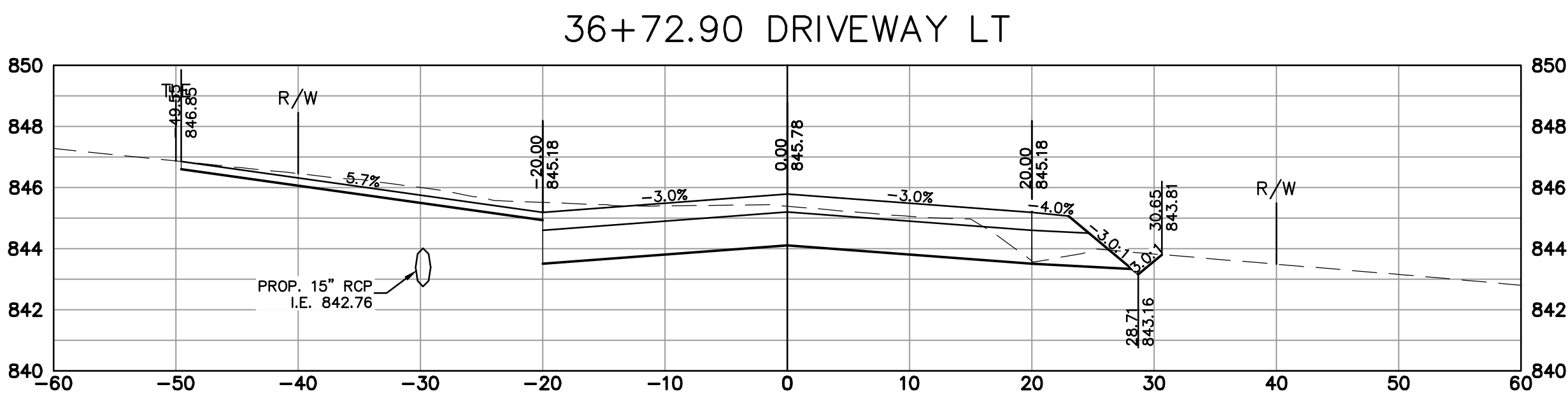
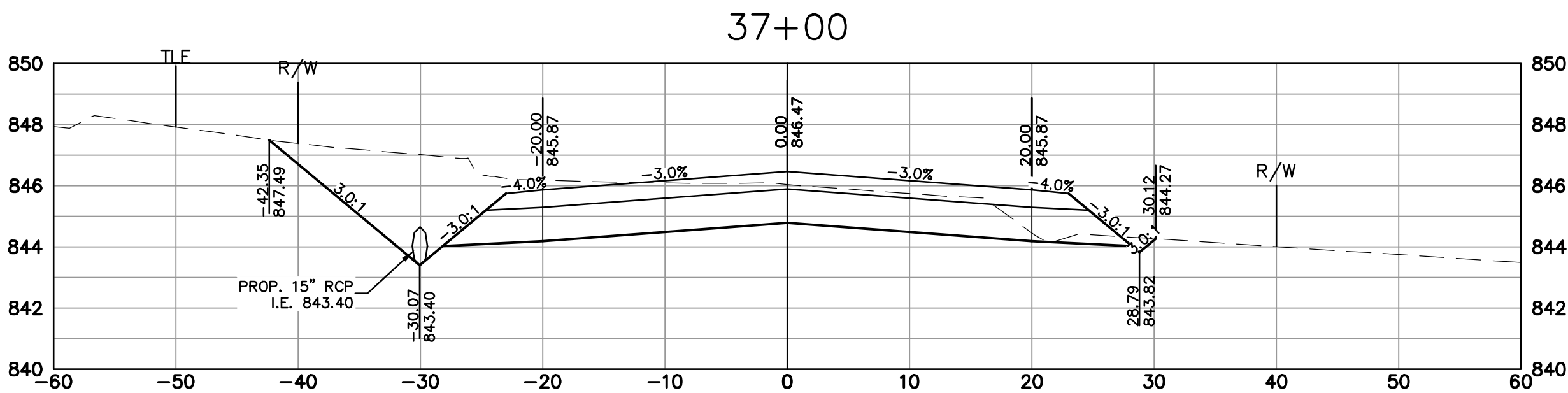
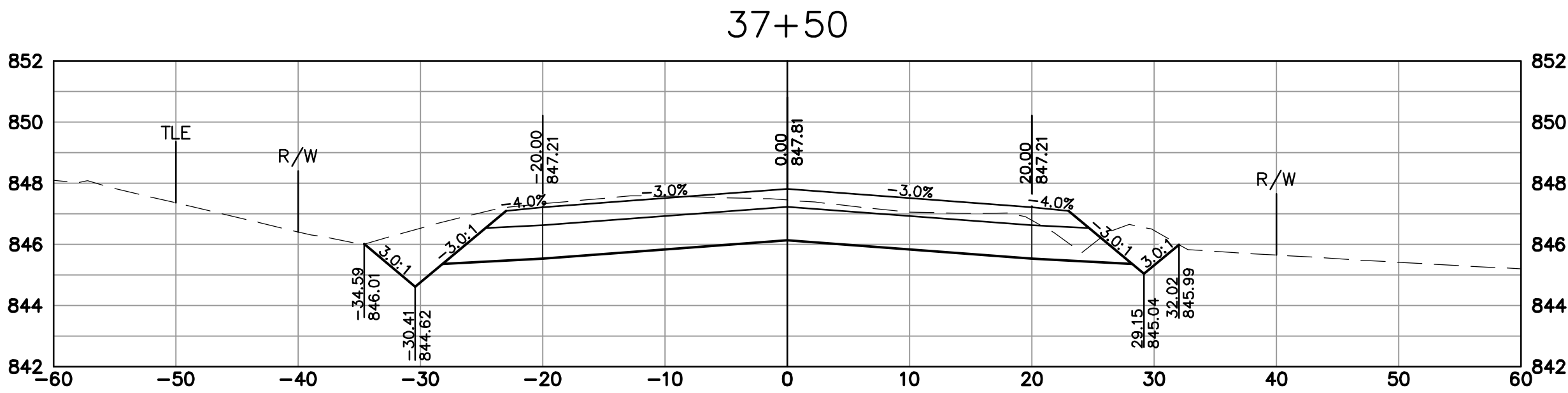


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JOB NO. 2210721				
PROJECT MANAGER: TROY T. HARTJES, P.E.				
DESIGNED BY: MTG				
CHECKED BY: TTH				
SHEET NUMBER				
71				

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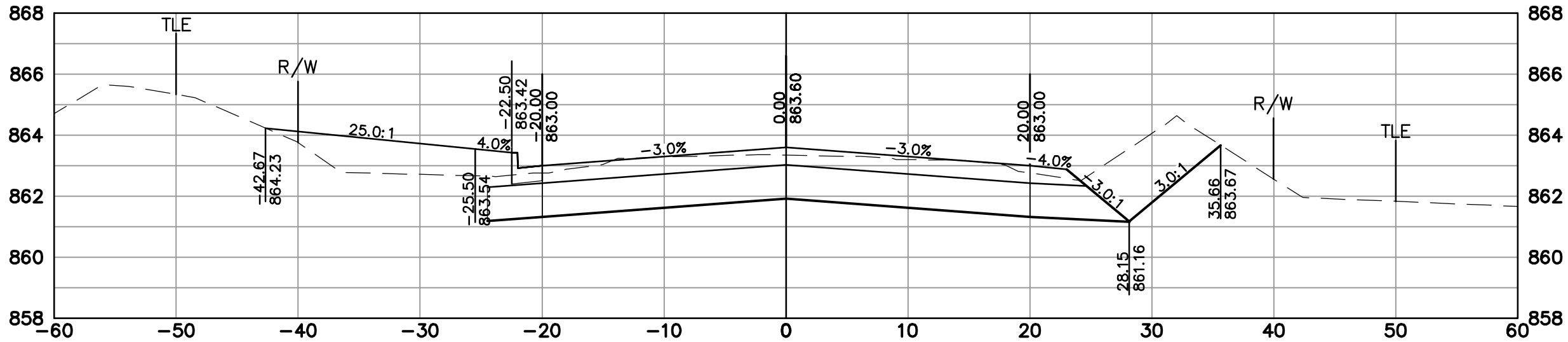
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JOB NO. 2210721
PROJECT MANAGER: TROY T. HARTJES, P.E.
DESIGNED BY: MTG
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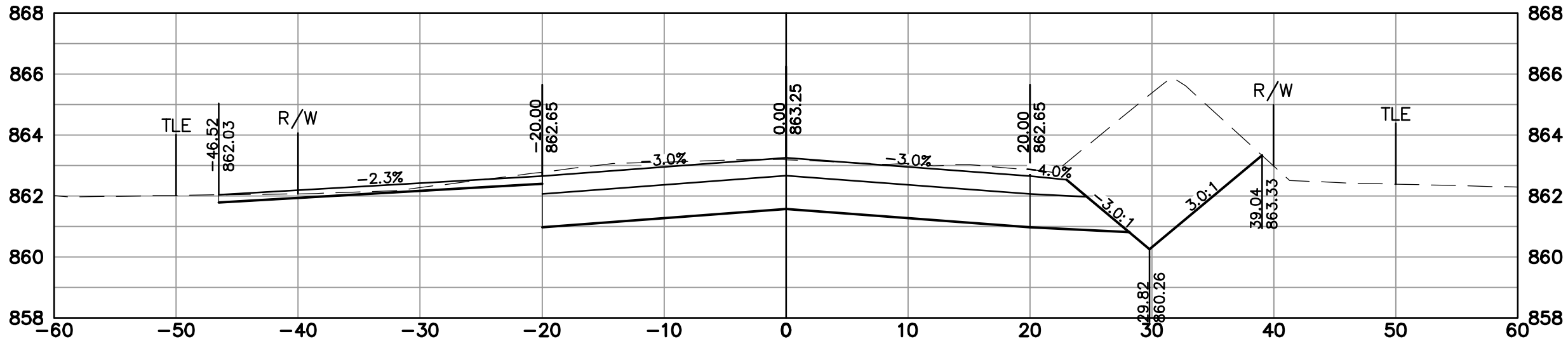
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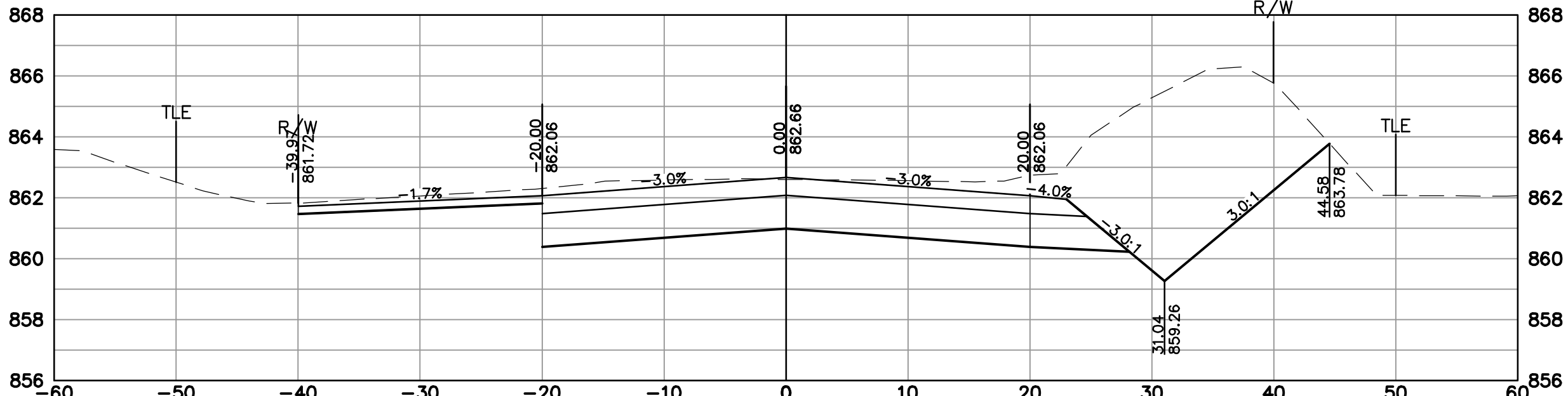
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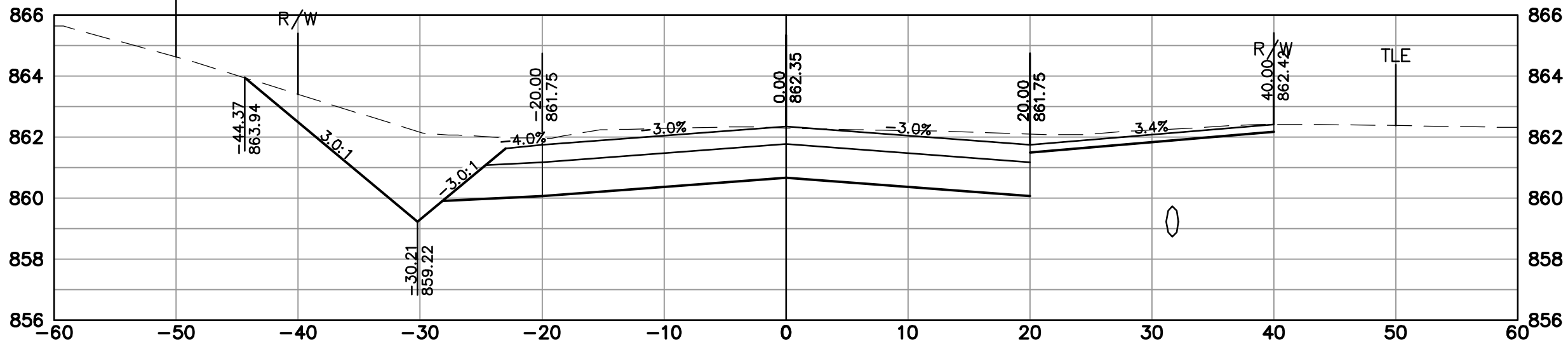
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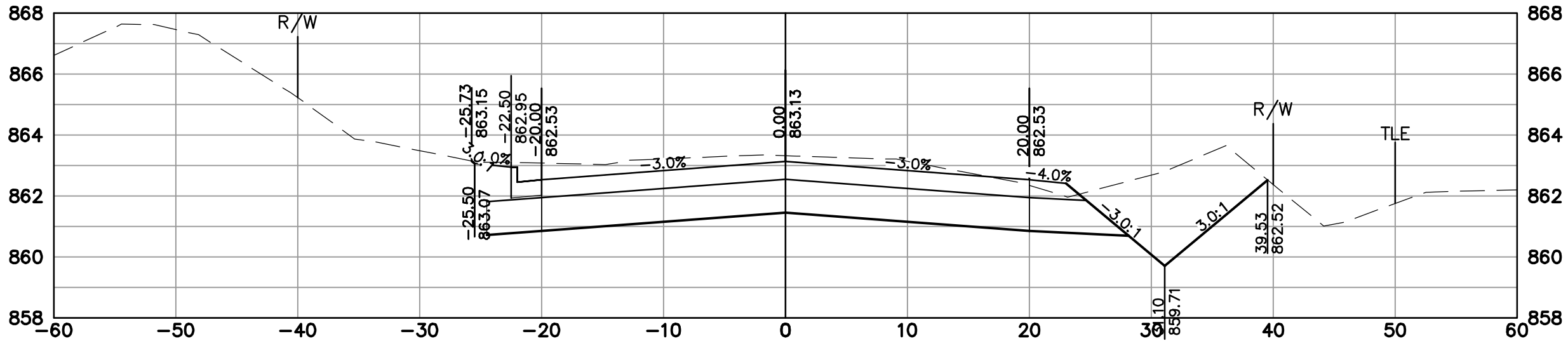
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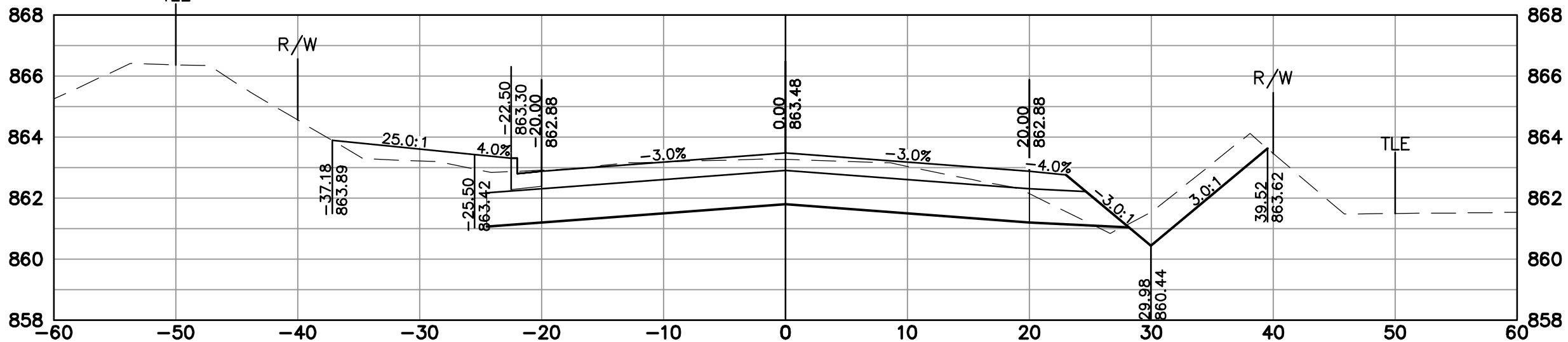
43+23.08 DRIVEWAY RT



45+50



45+00



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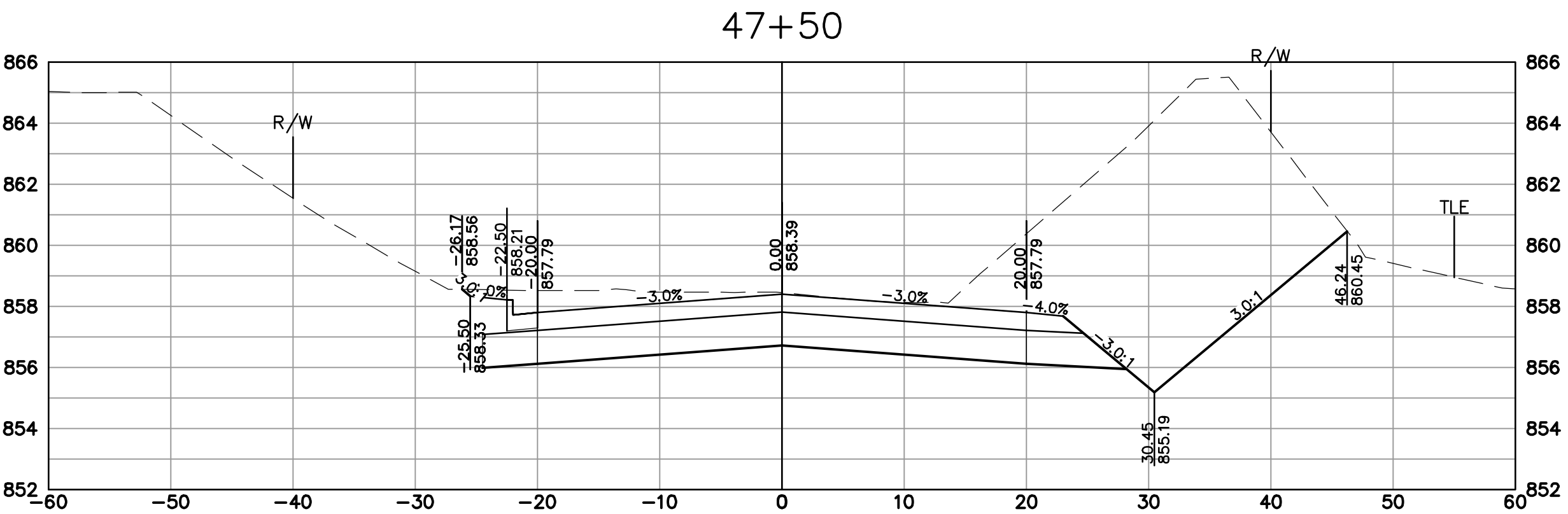
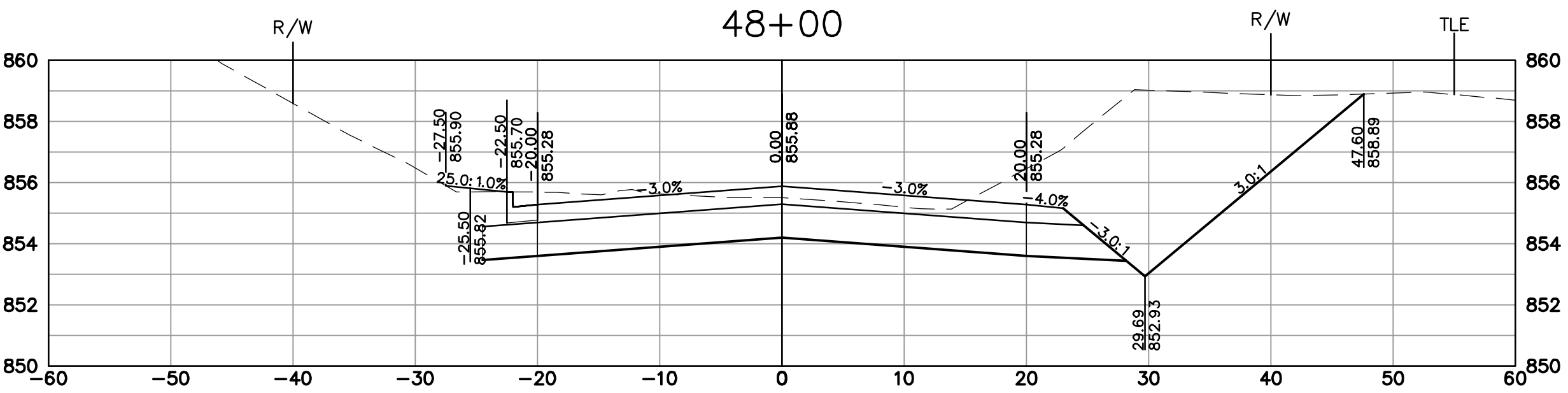
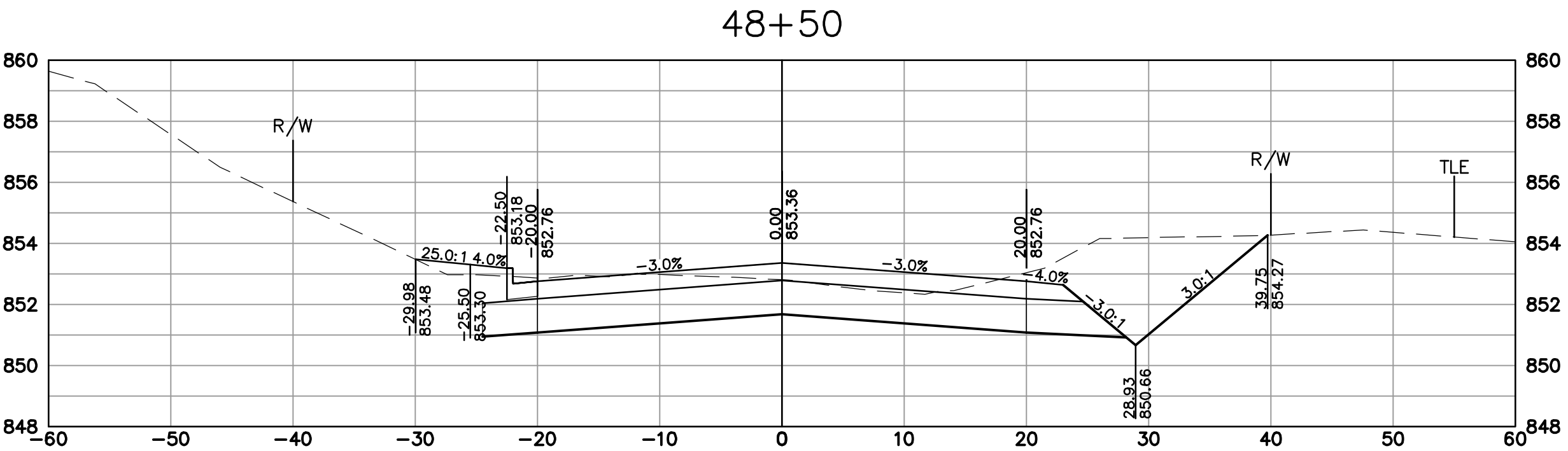
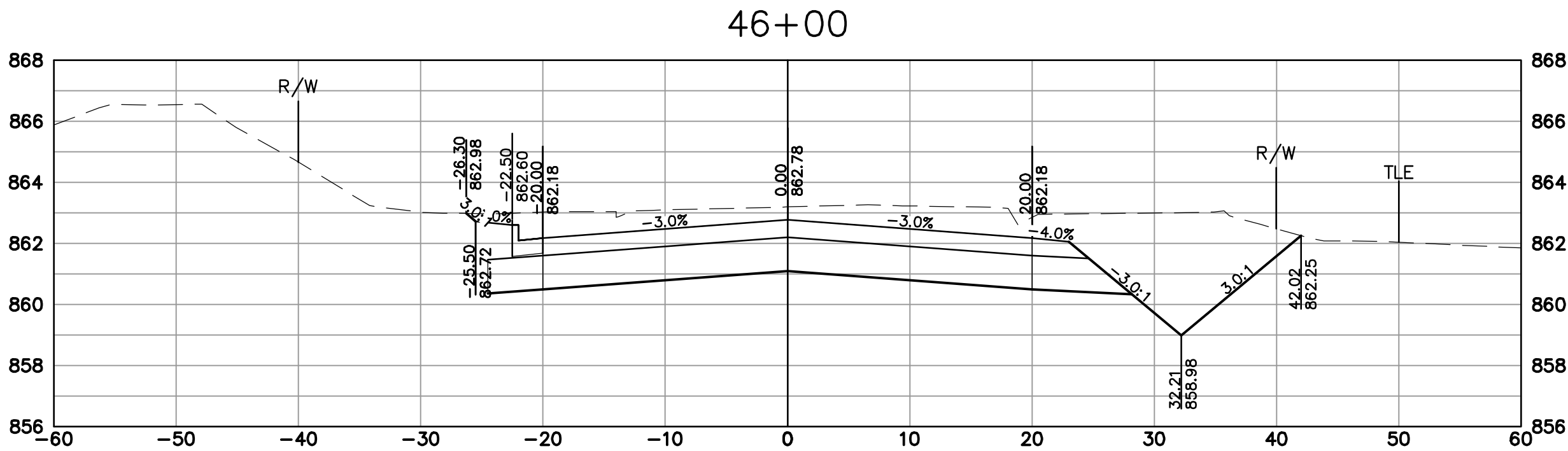
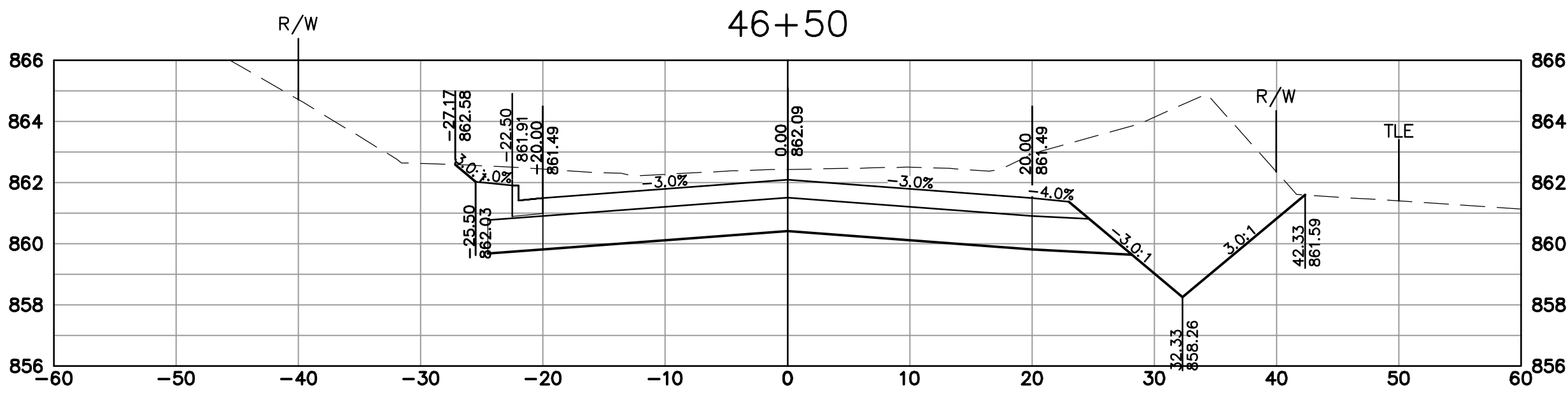
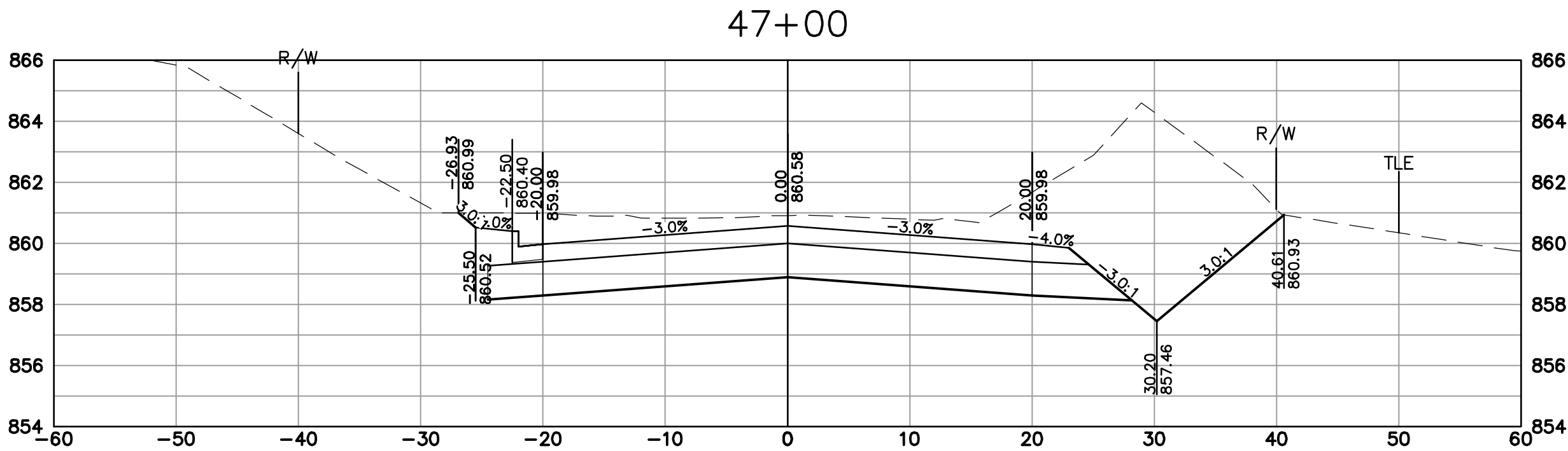
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CHECKED BY: TTH
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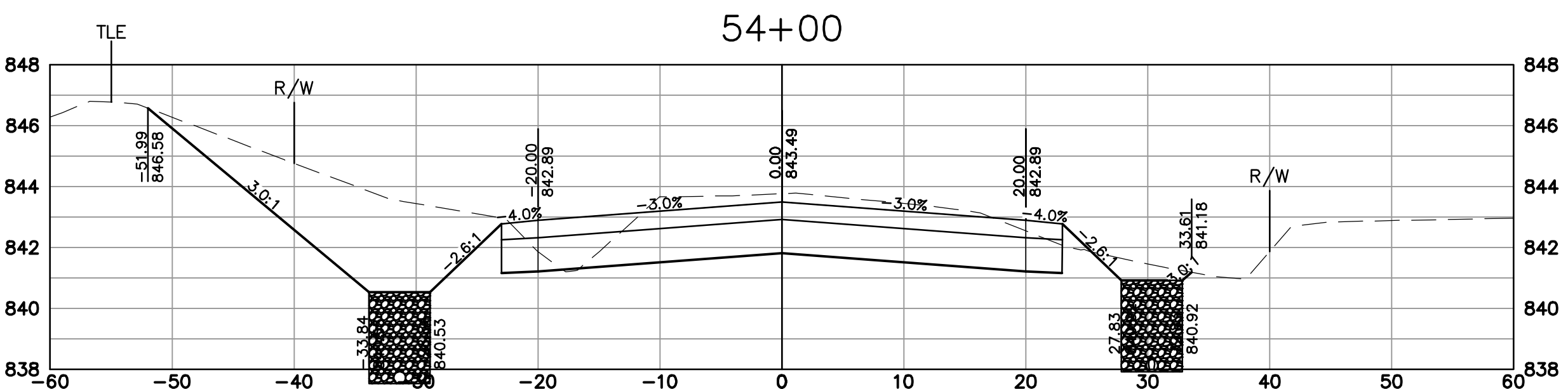
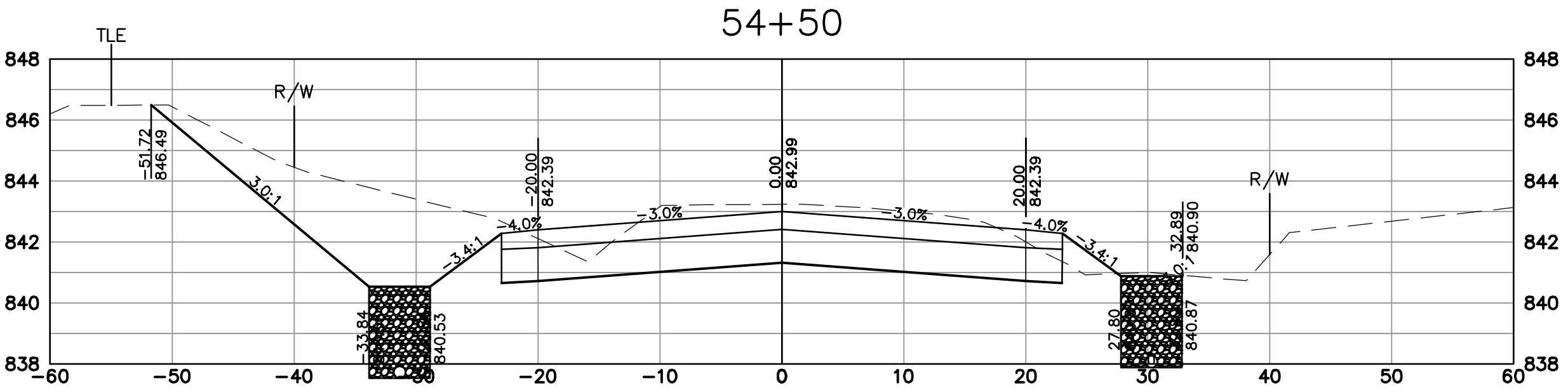
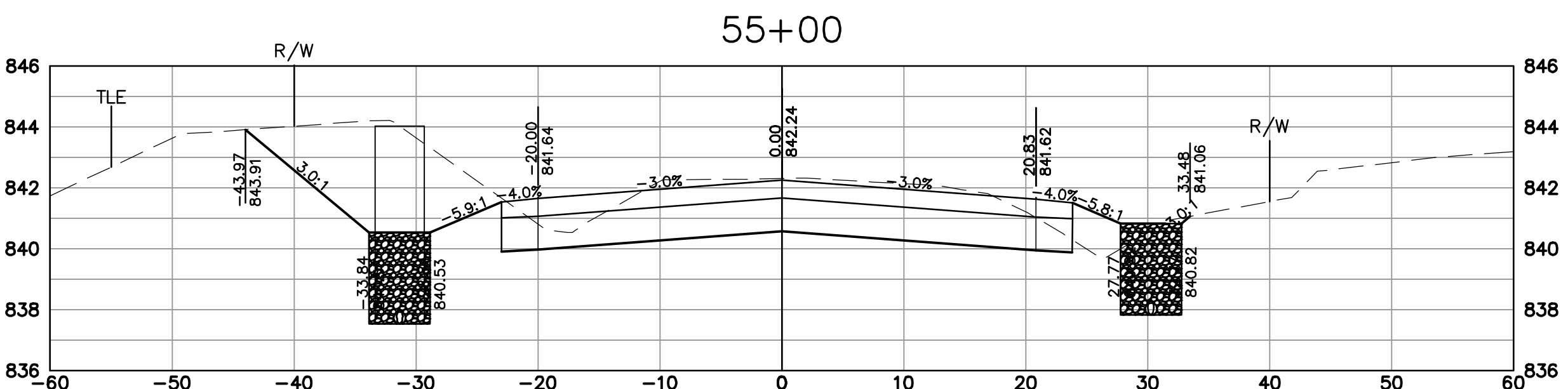
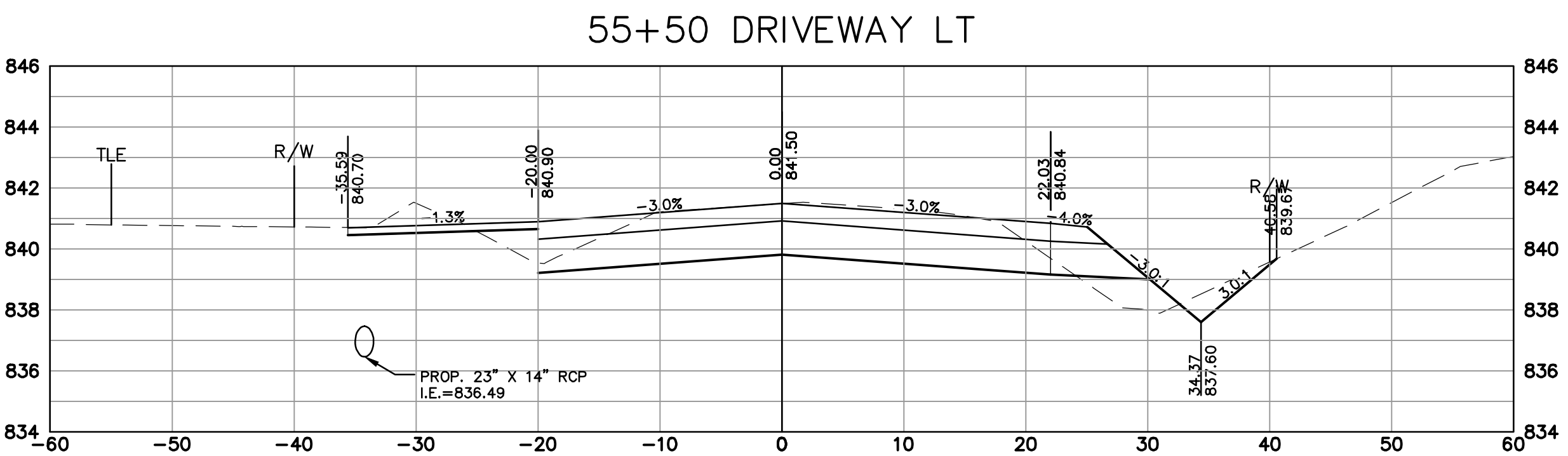
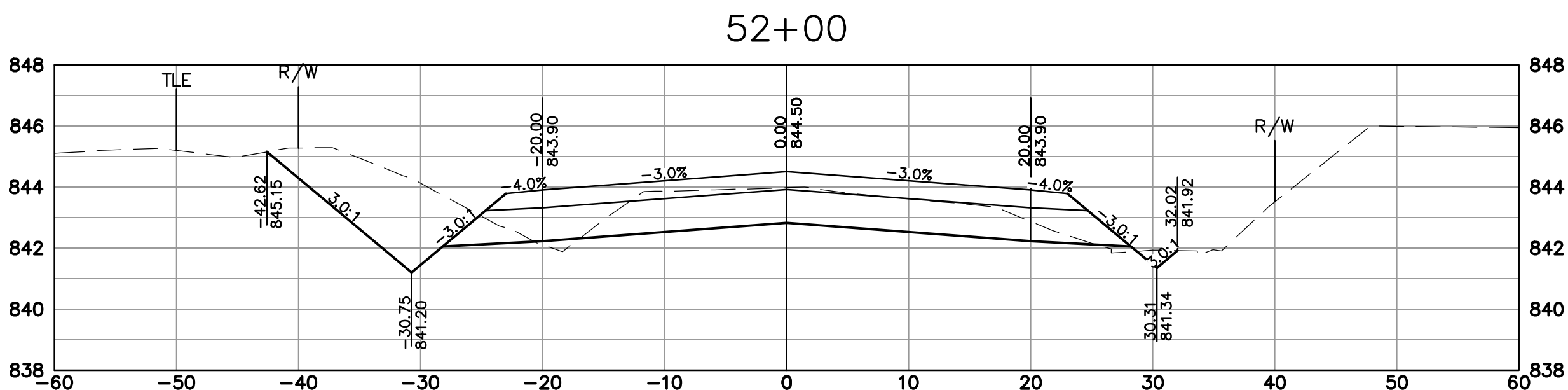
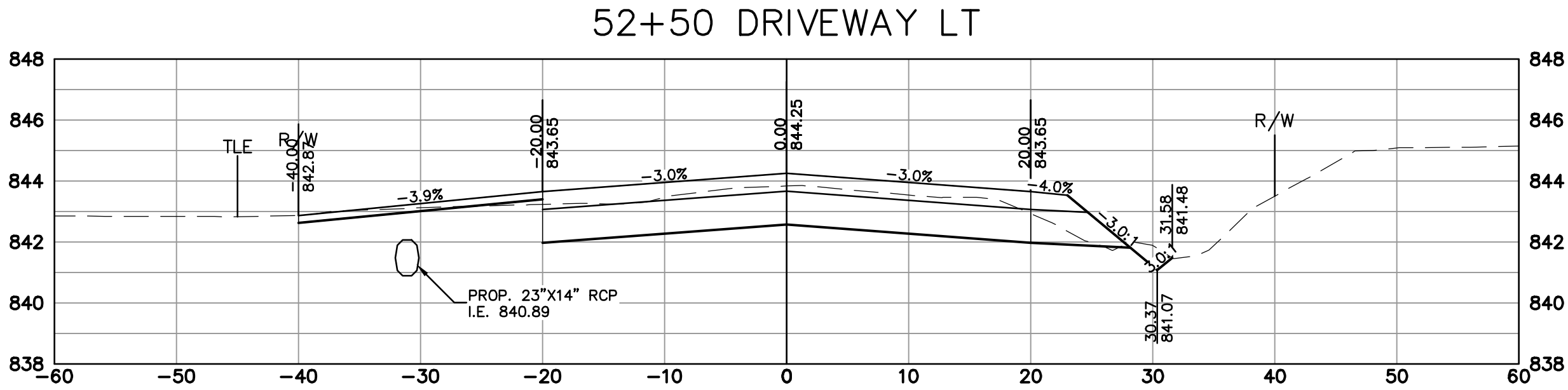
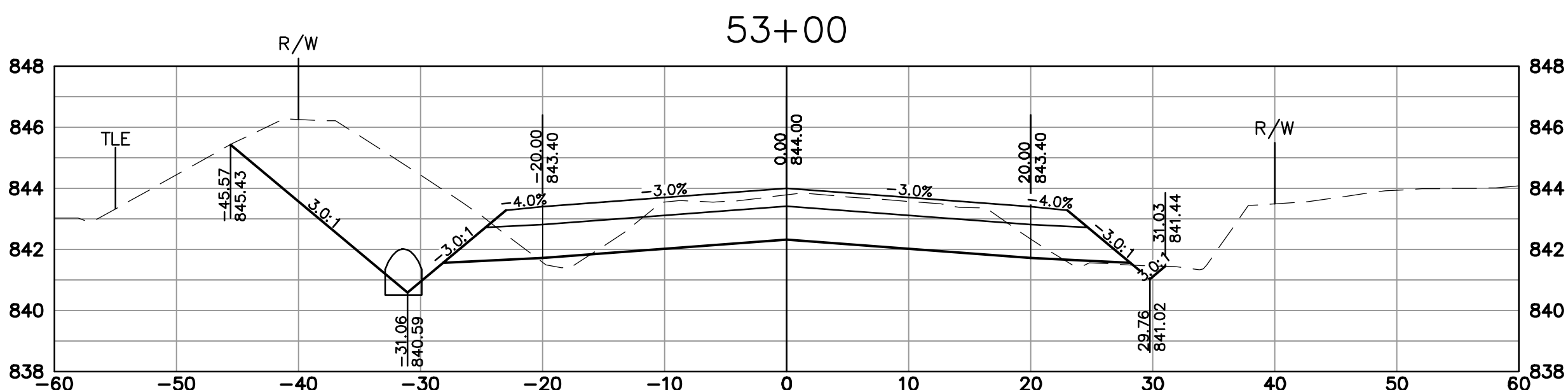
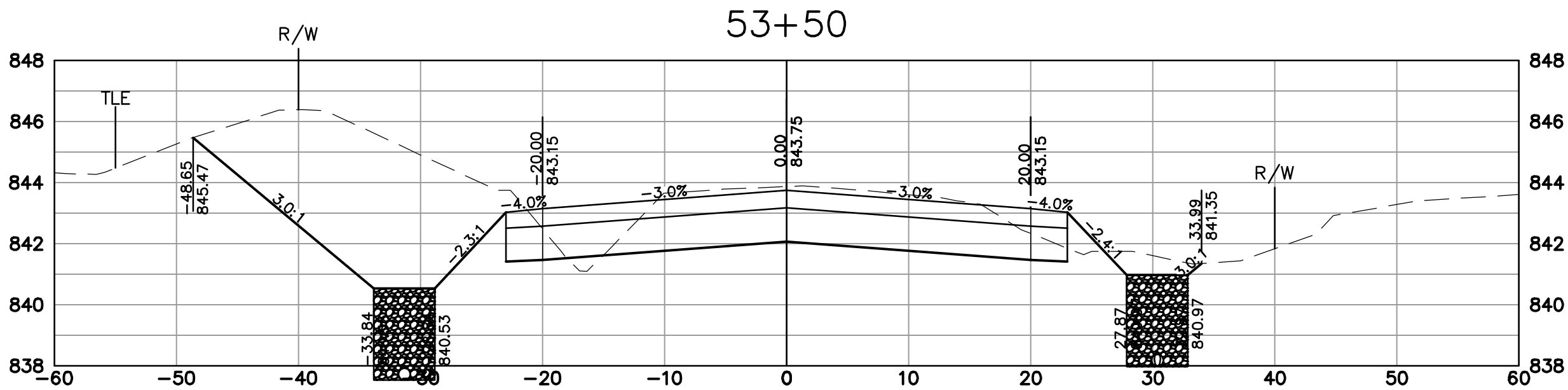
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DESIGNED BY: MTG
CHECKED BY: TTH
SHEET NUMBER
76

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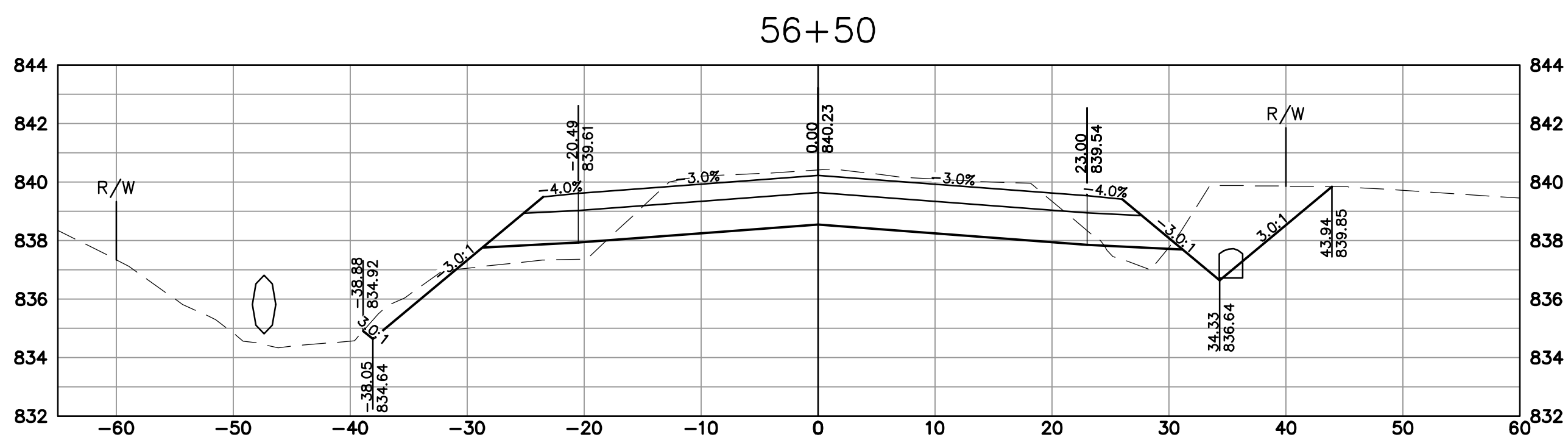
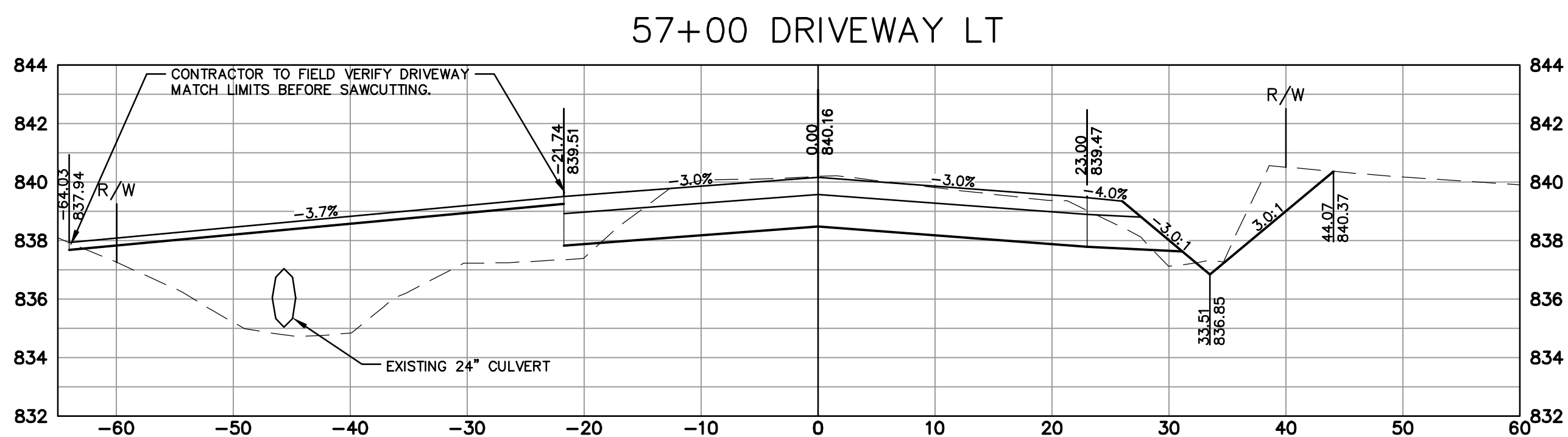
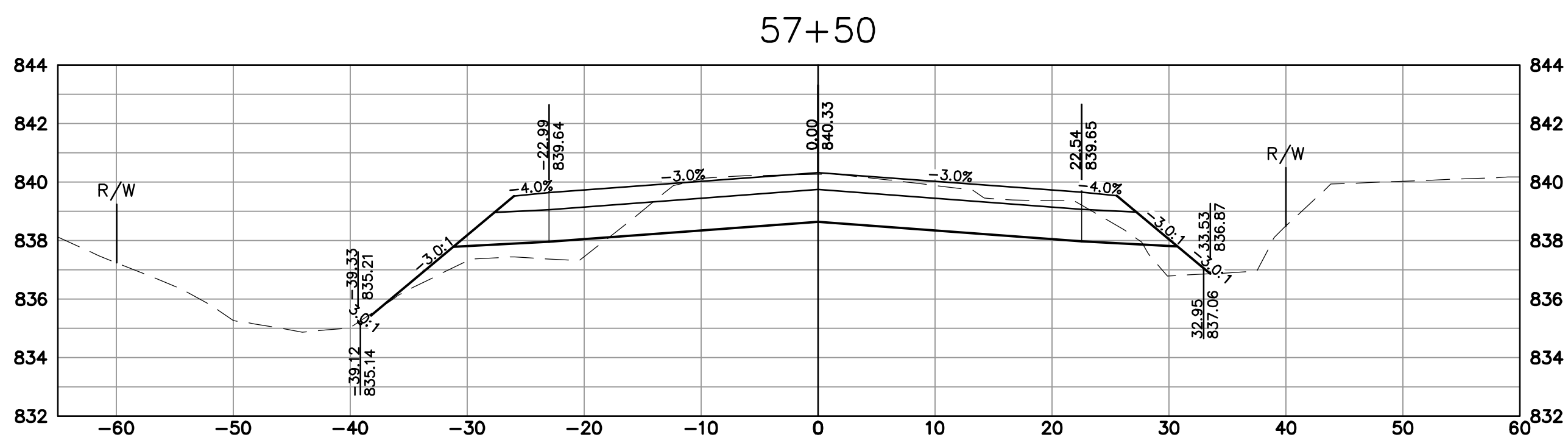
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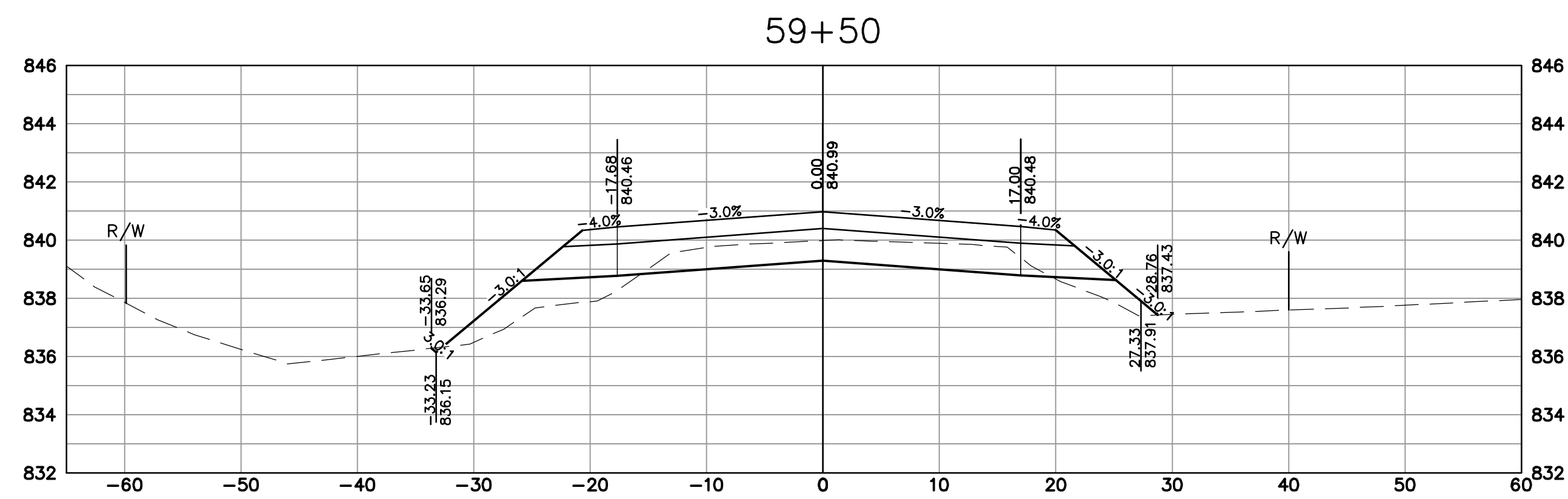
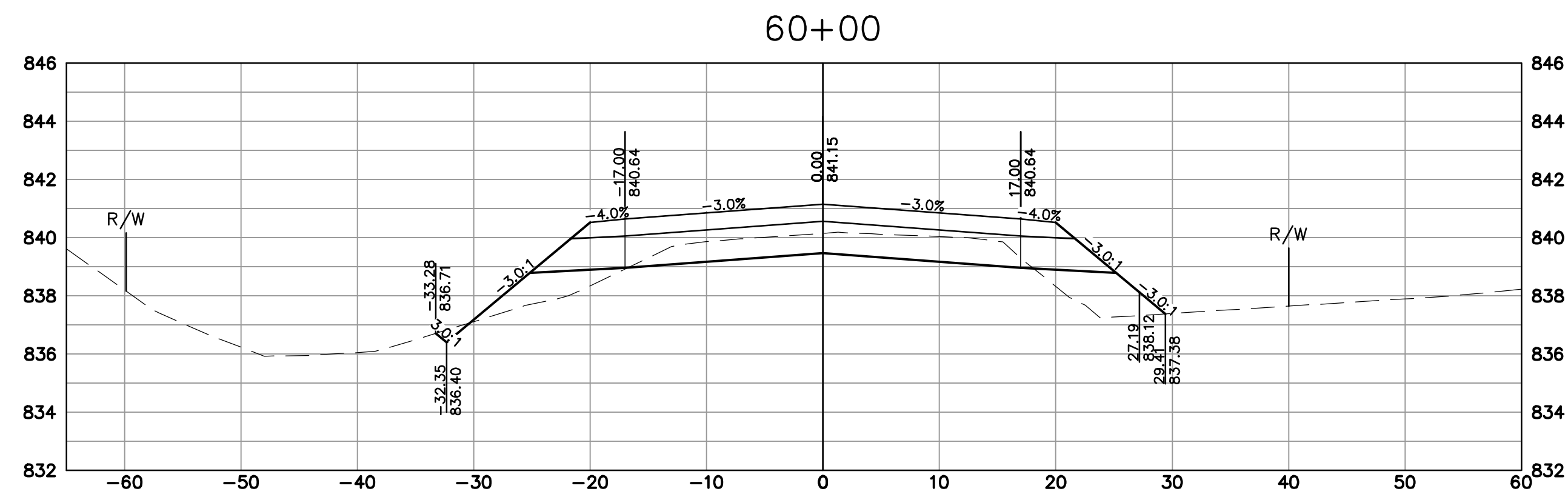
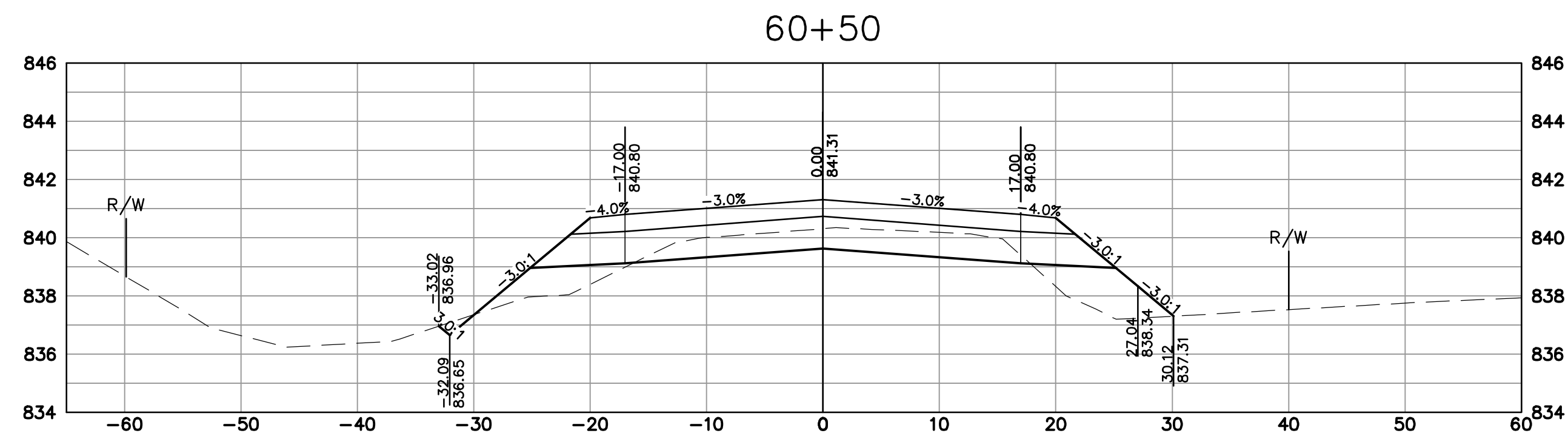
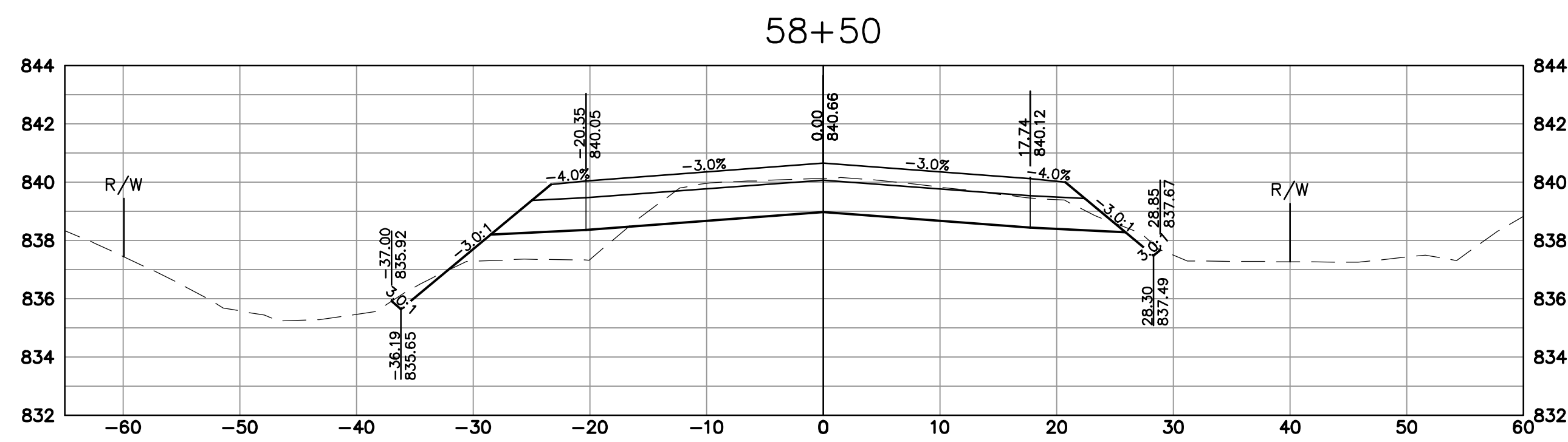


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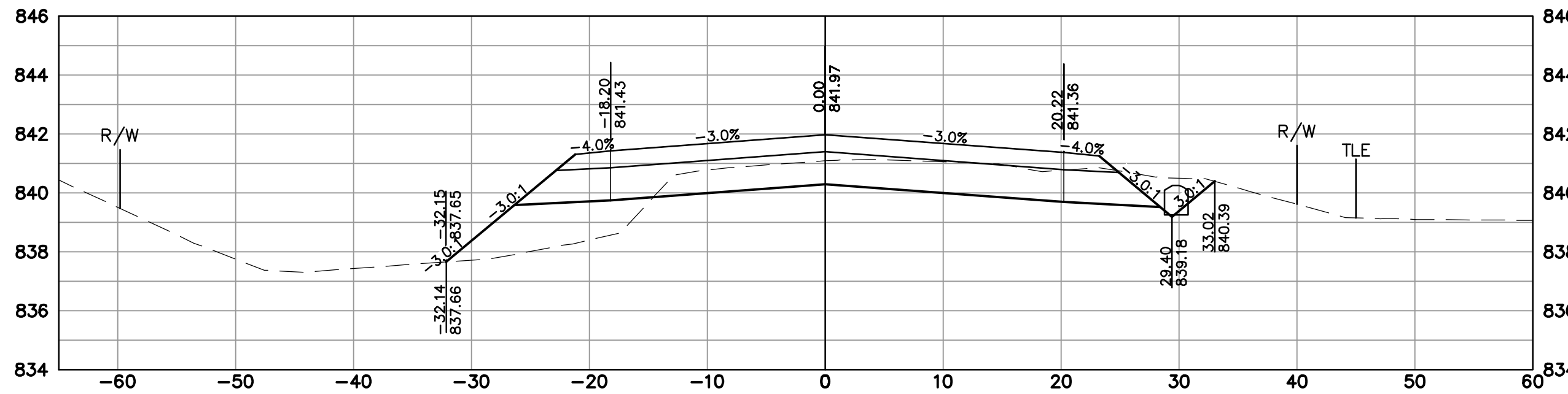
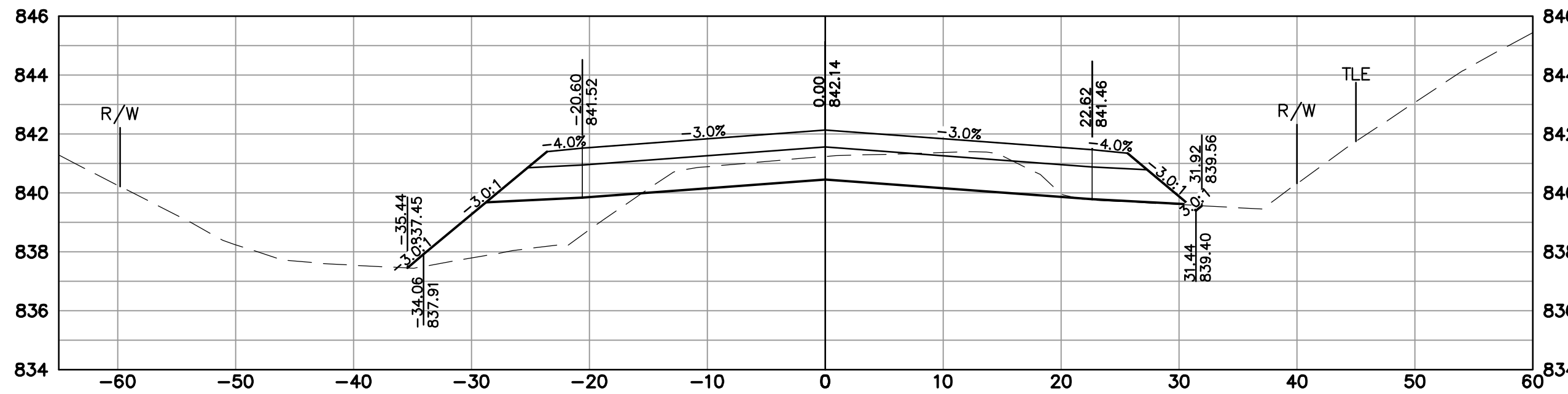
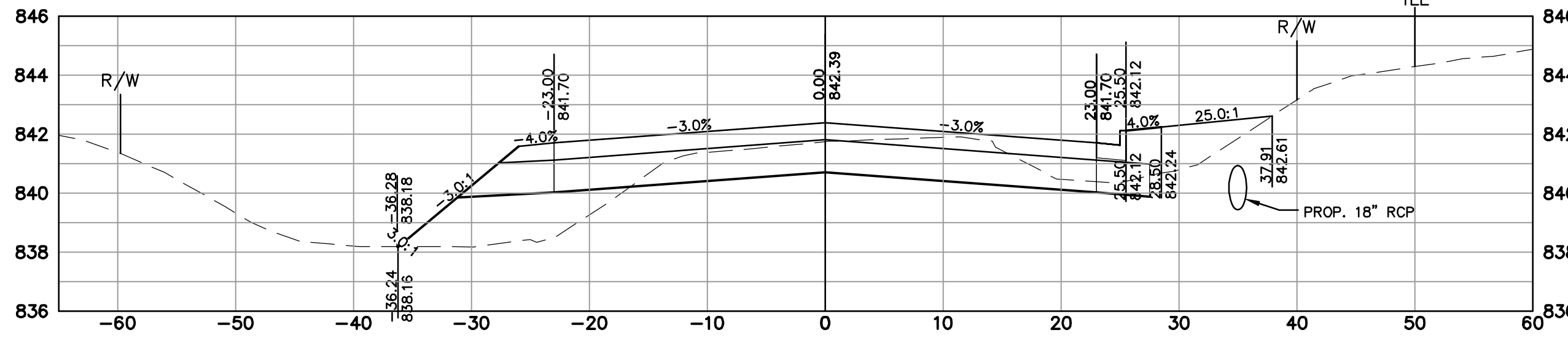
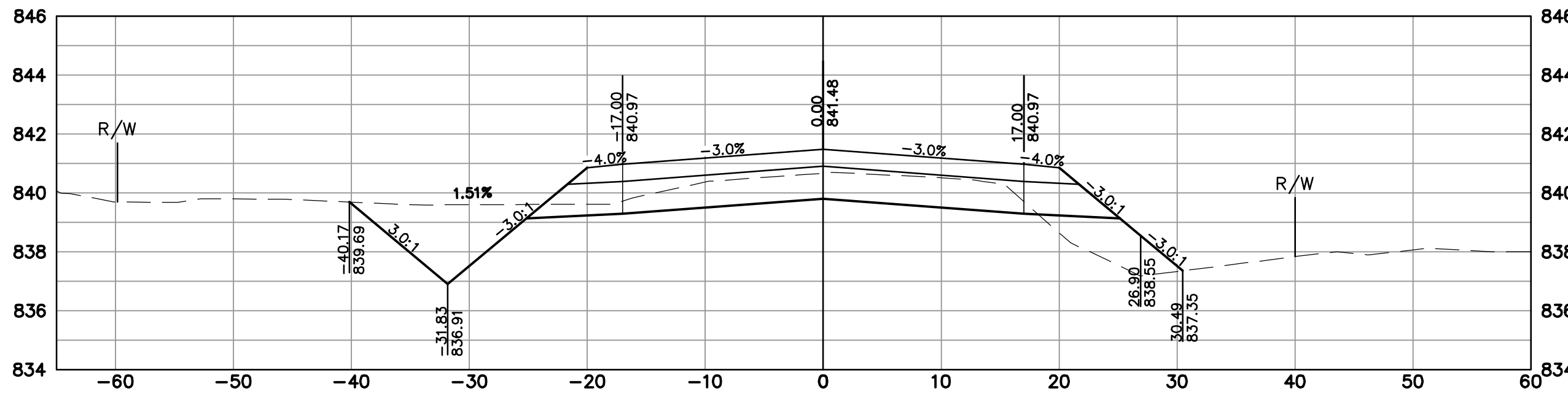
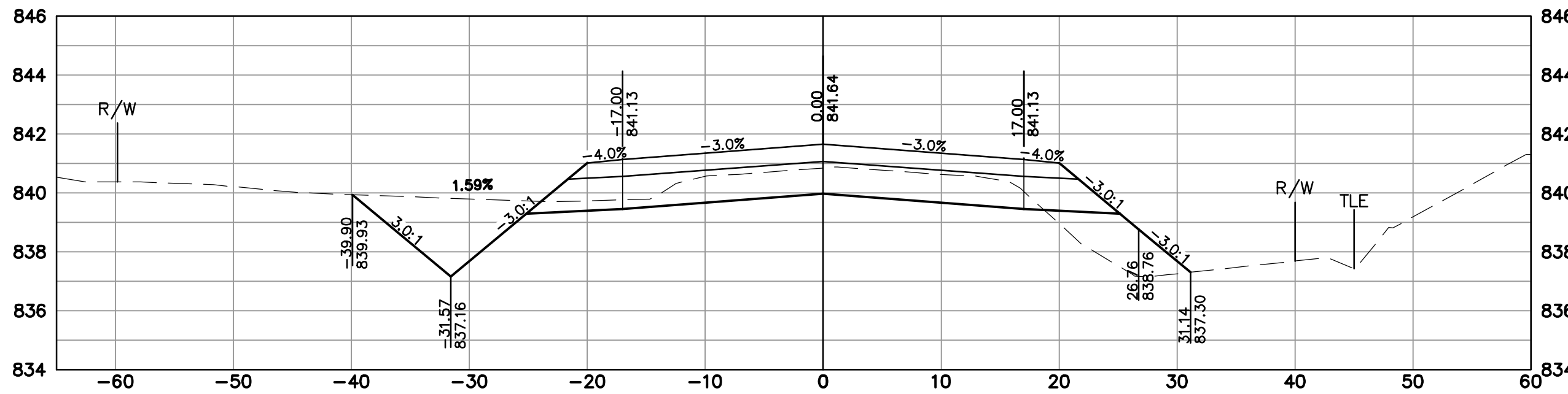
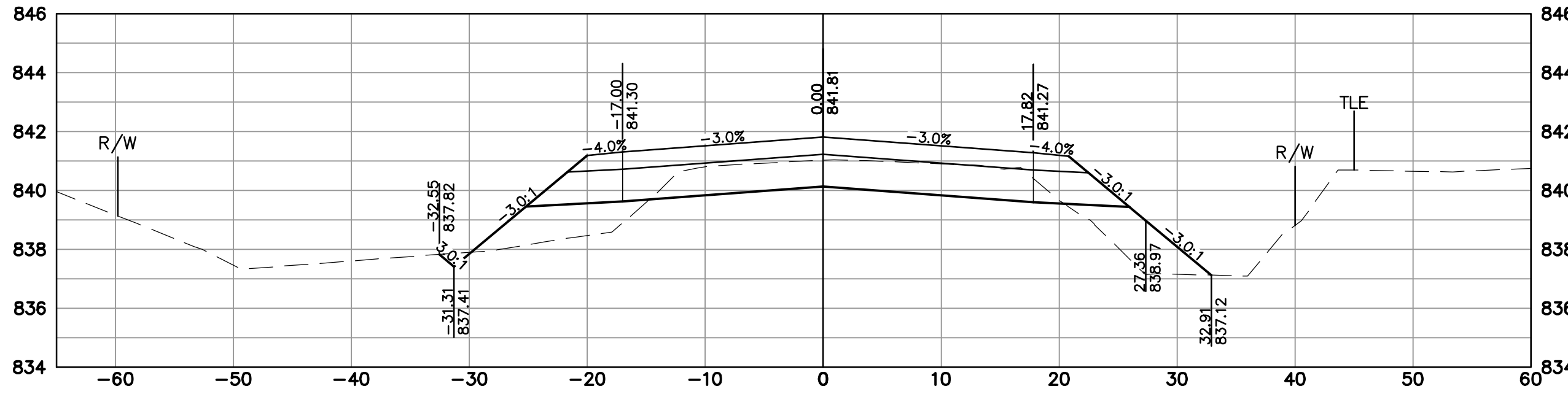
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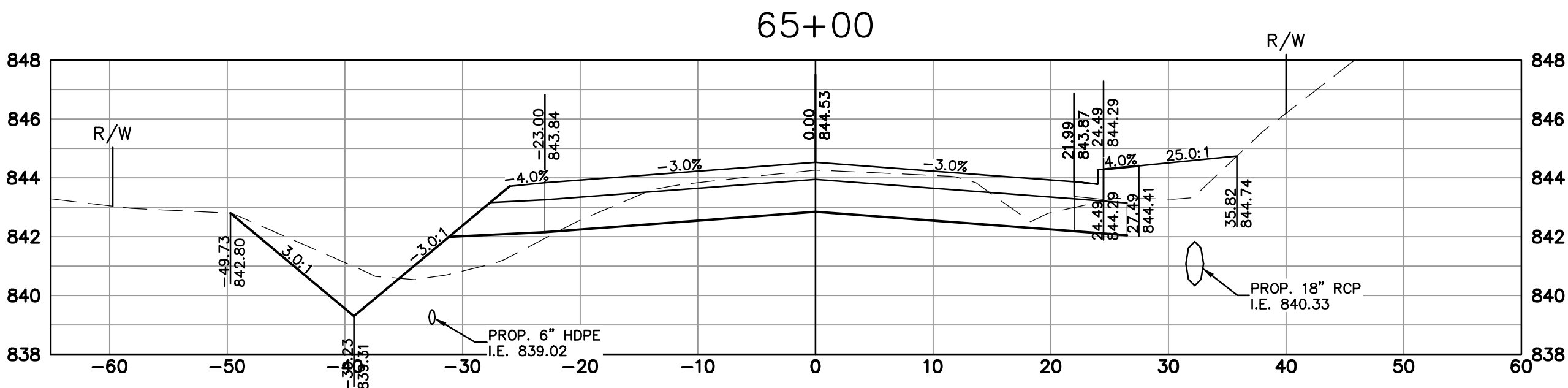
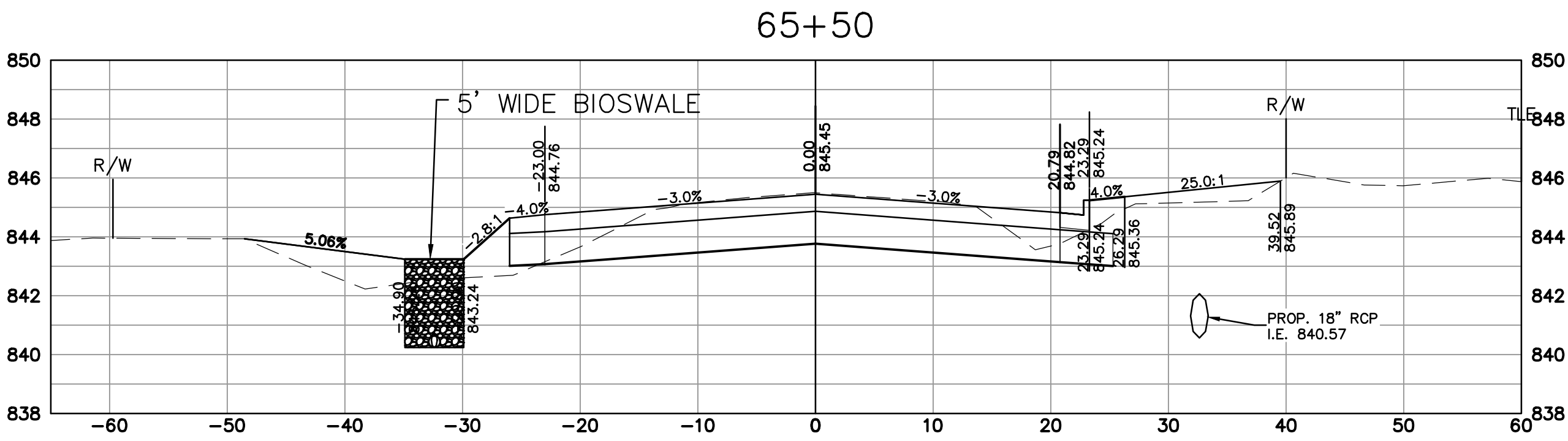
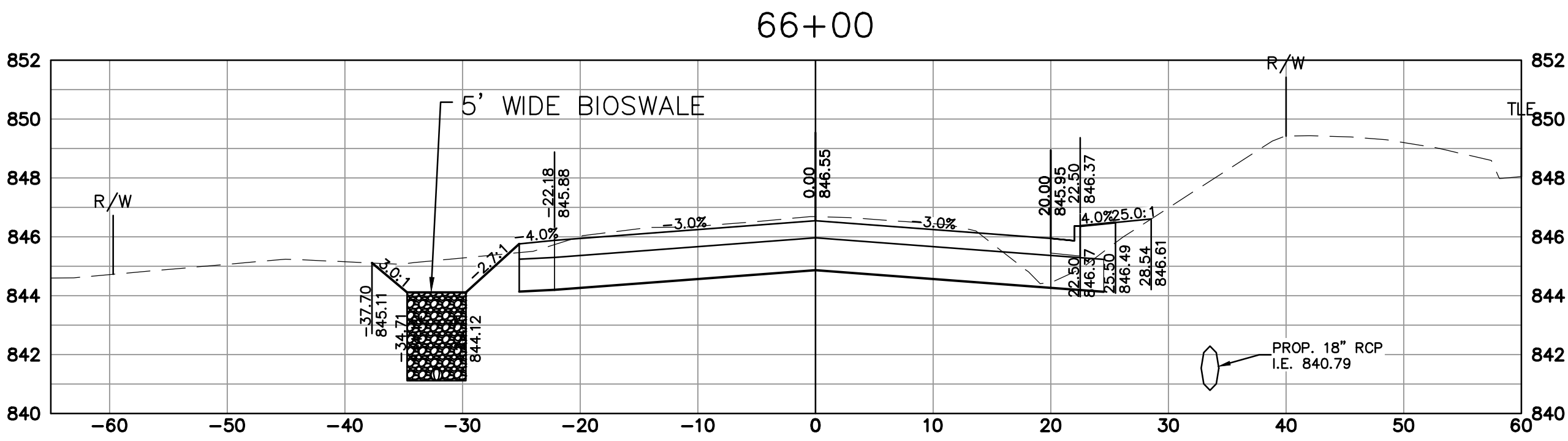
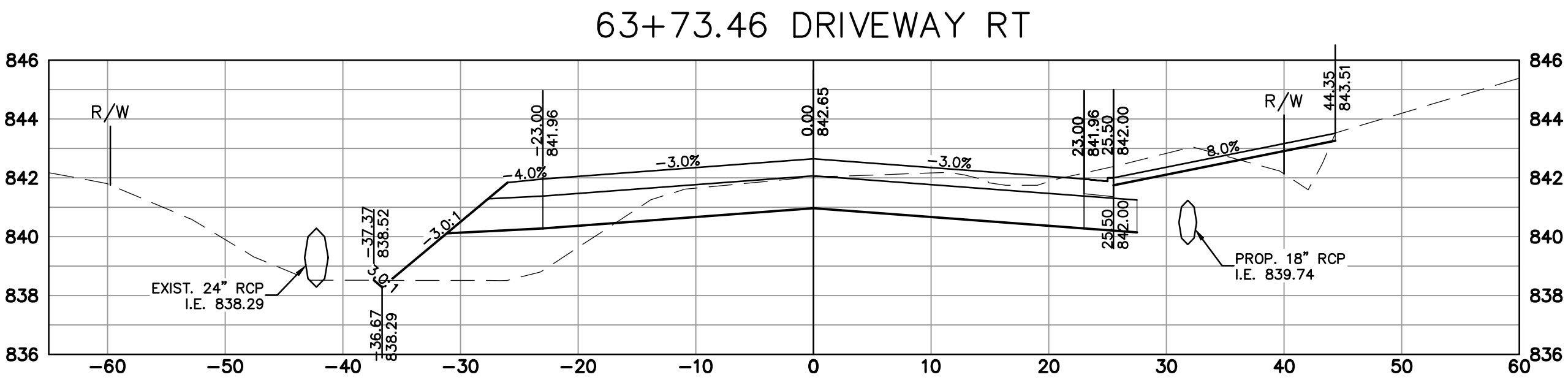
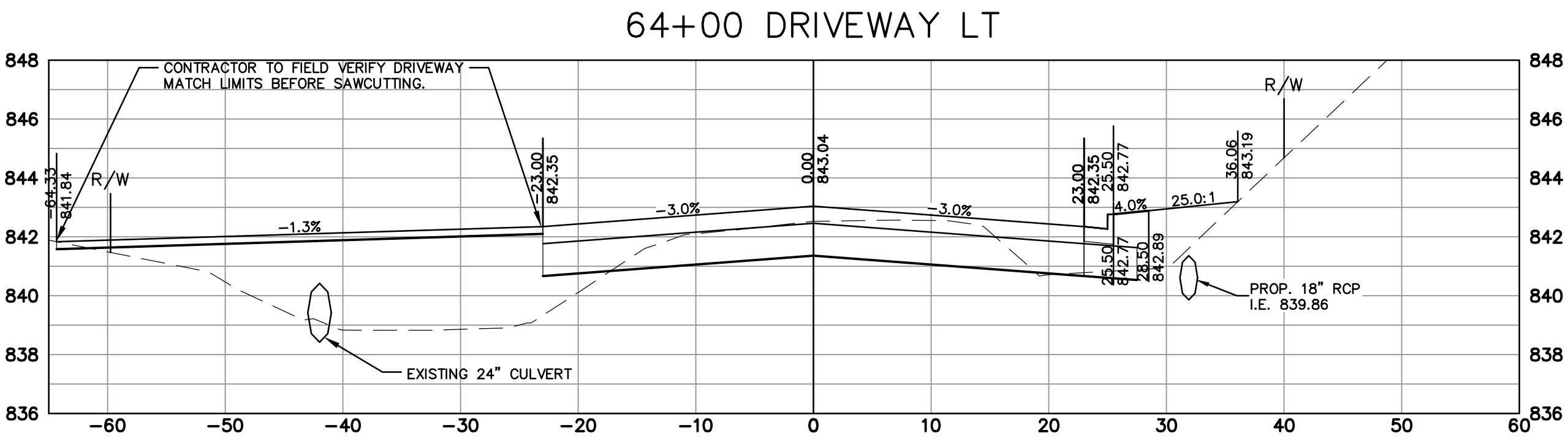
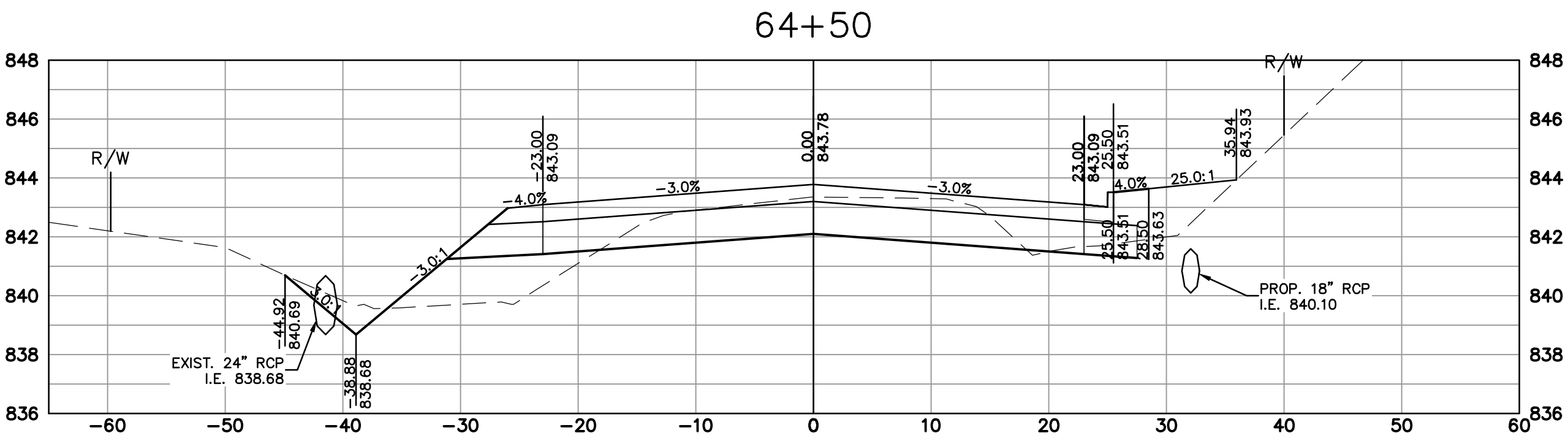
	CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN	 raSmith CREATIVITY BEYOND ENGINEERING 16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cadarsburg, WI Naperville, IL Irvine, CA	DATE	DESCRIPTION
	LINCOLN AVE. CROSS SECTIONS			
© COPYRIGHT 2023 R.A. Smith, Inc.				
DATE: 1-17-2023				
SCALE: 1" = 10'				
JOB NO. 2210721				
PROJECT MANAGER: TROY T. HARTJES, P.E.				
DESIGNED BY: MTG				
CHECKED BY: TTH				
SHEET NUMBER				
80				

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CHECKED BY: TTH				
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81				

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DATE	DESCRIPTION

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(262) 781-1000
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raSmith
CREATIVITY BEYOND ENGINEERING

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

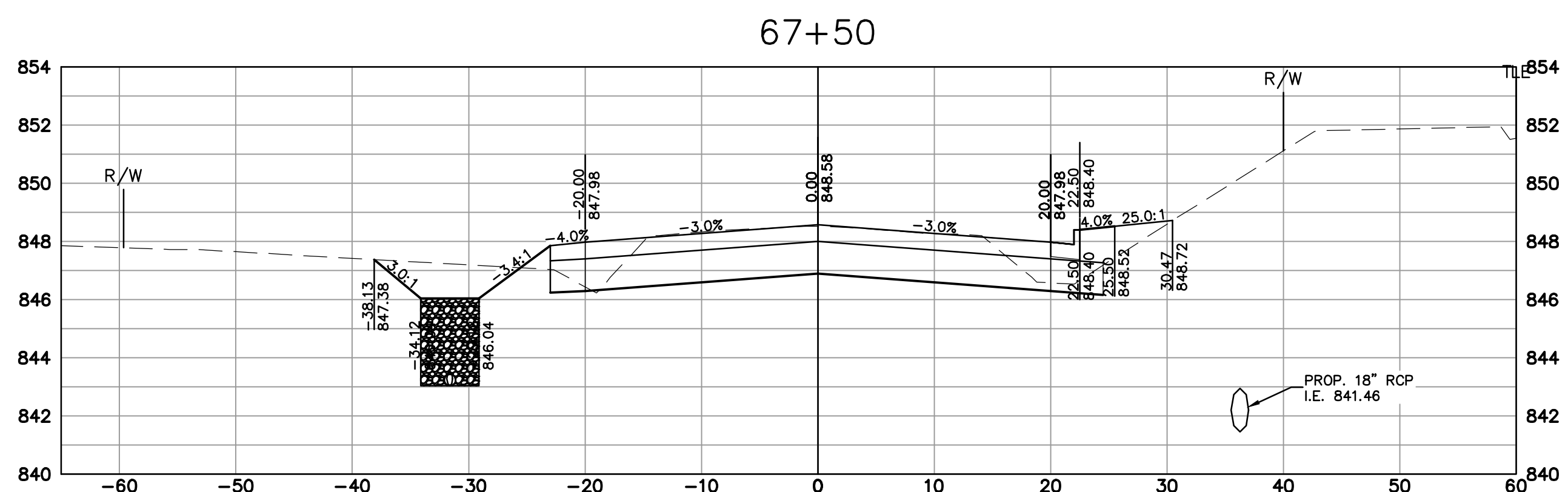
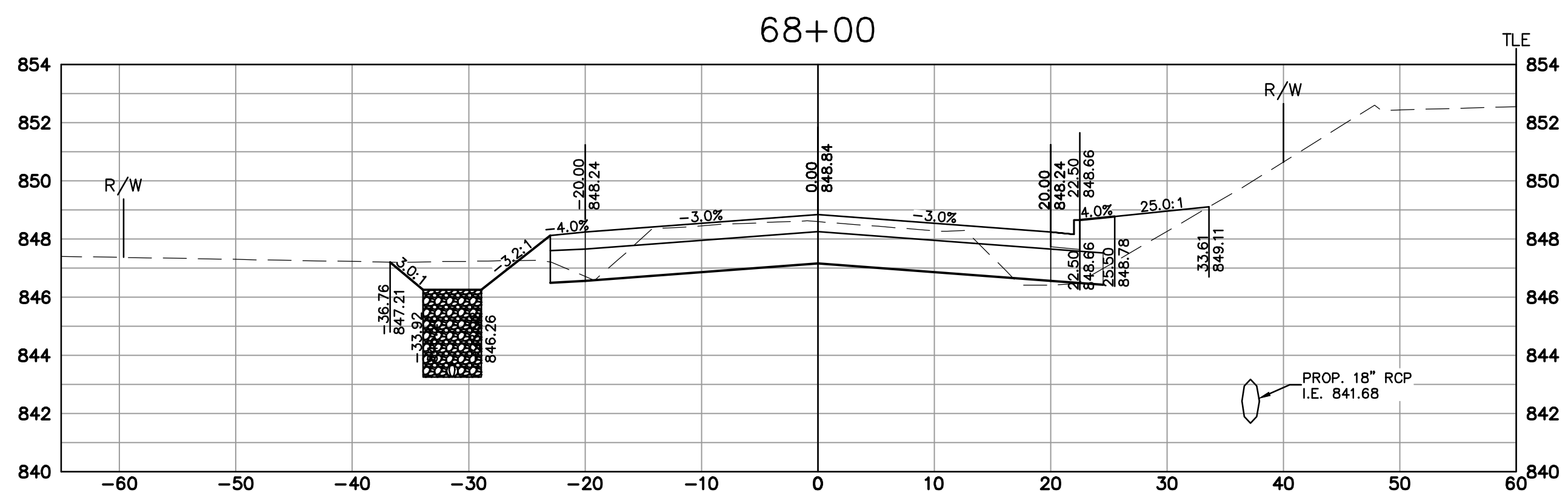
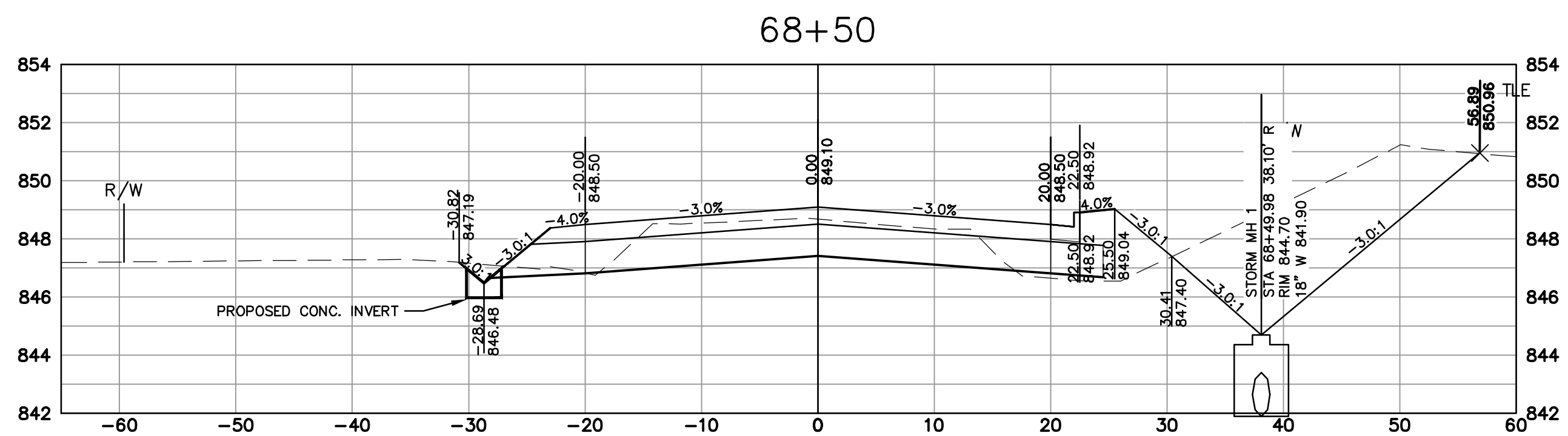
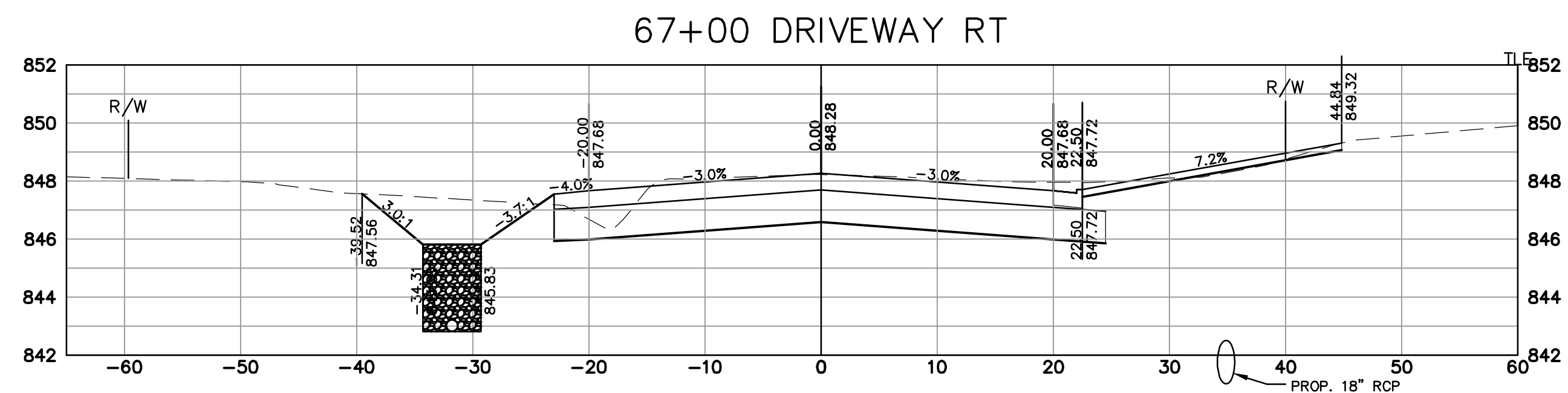
CITY OF NEW BERLIN

WAUKESHA COUNTY, WISCONSIN

LINCOLN AVE. CROSS SECTIONS

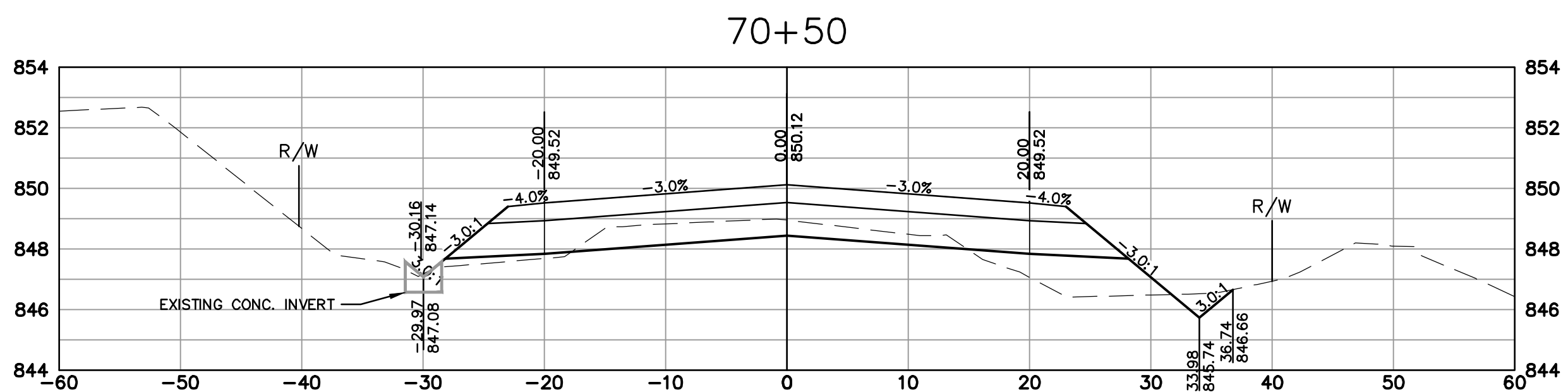
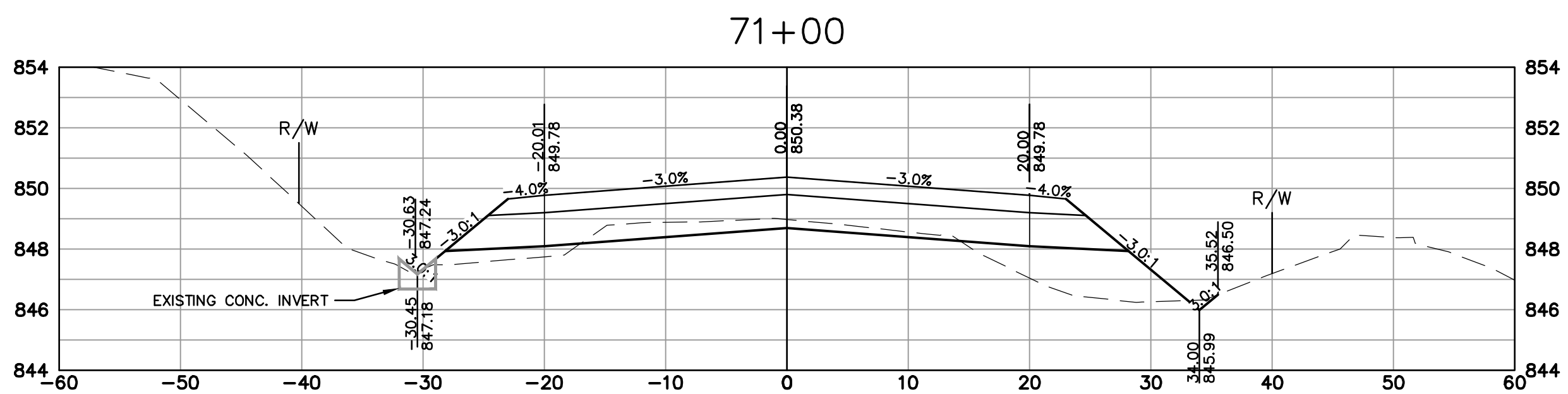
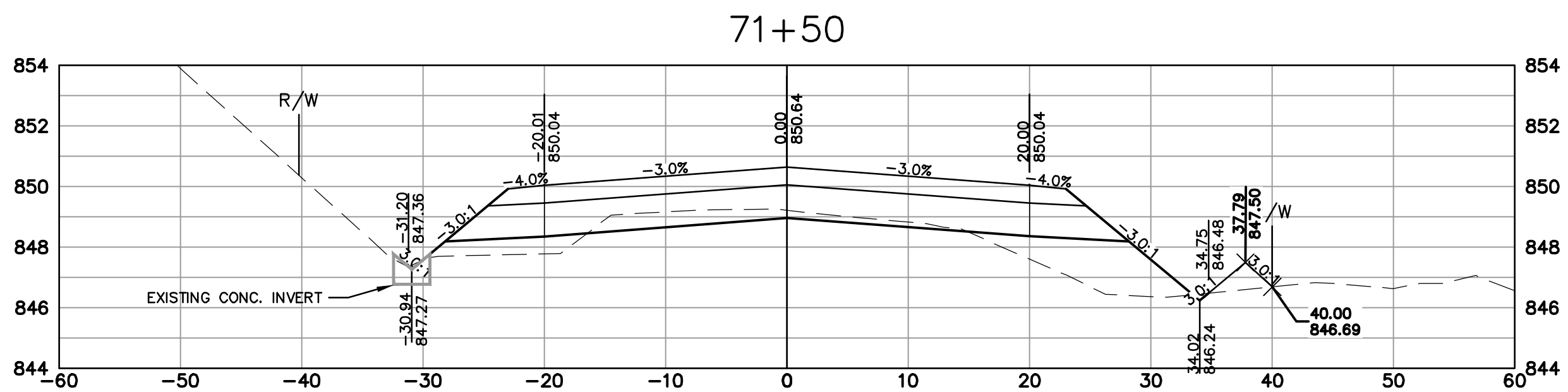
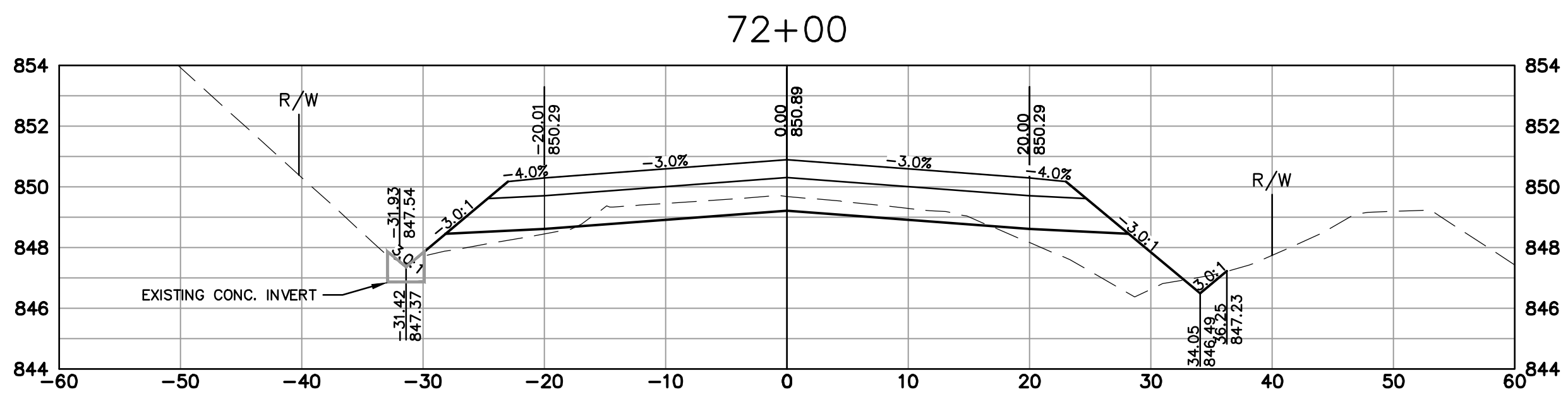
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JOB NO. 2210721
PROJECT MANAGER: TROY T. HARTJES, P.E.
DESIGNED BY: MTG
CHECKED BY: TTH
SHEET NUMBER
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	CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN	 CREATIVITY BEYOND ENGINEERING 16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	DATE	DESCRIPTION
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© COPYRIGHT 2023 R.A. Smith, Inc.				
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JOB NO. 2210721				
PROJECT MANAGER: TROY T. HARTJES, P.E.				
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SHEET NUMBER				
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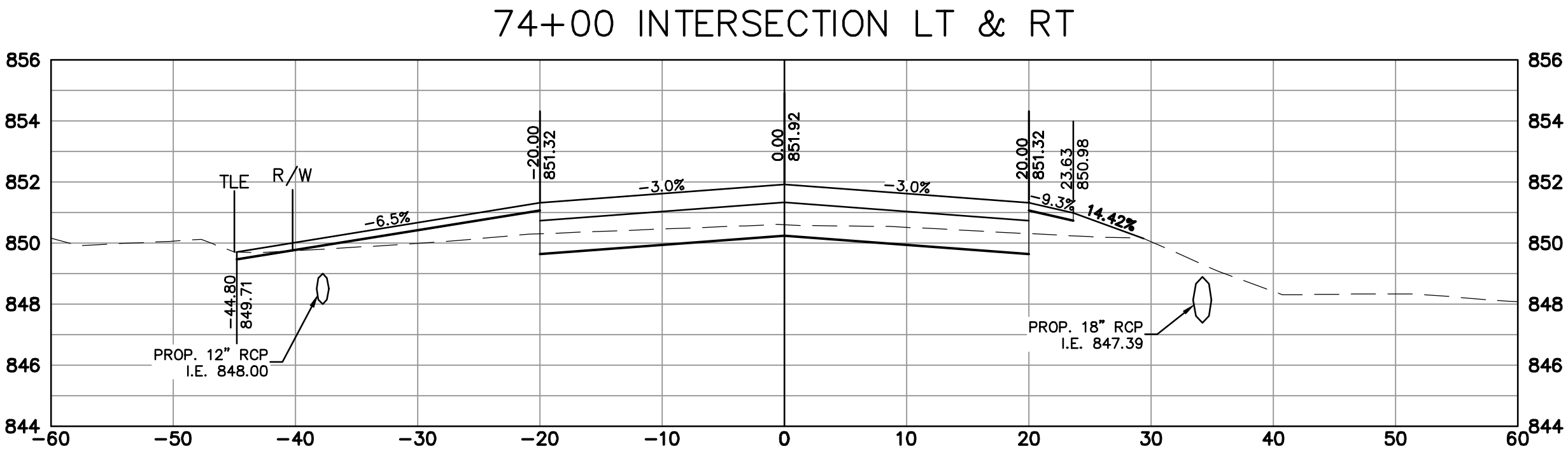
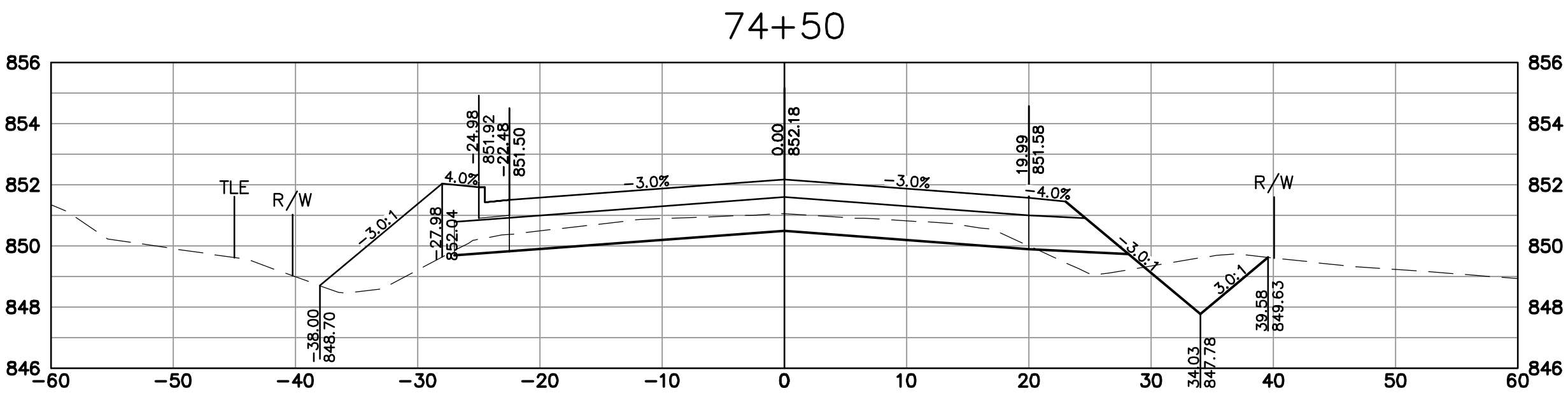
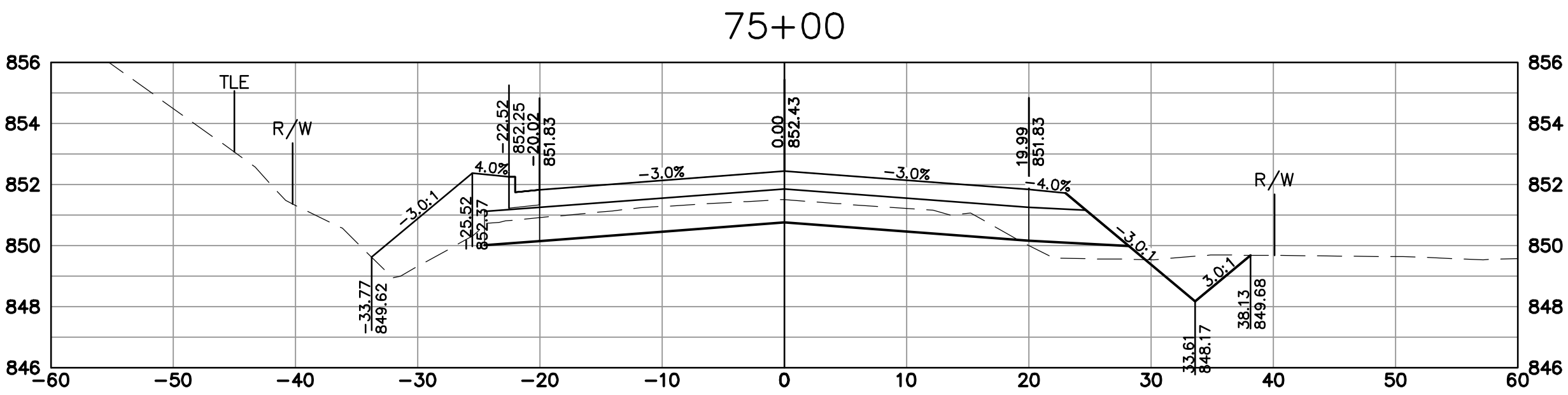
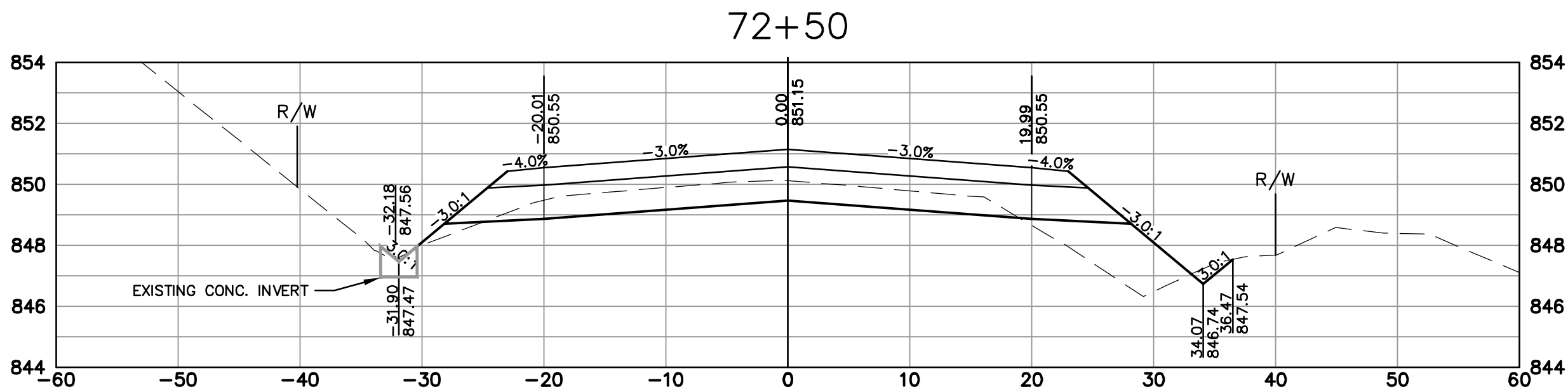
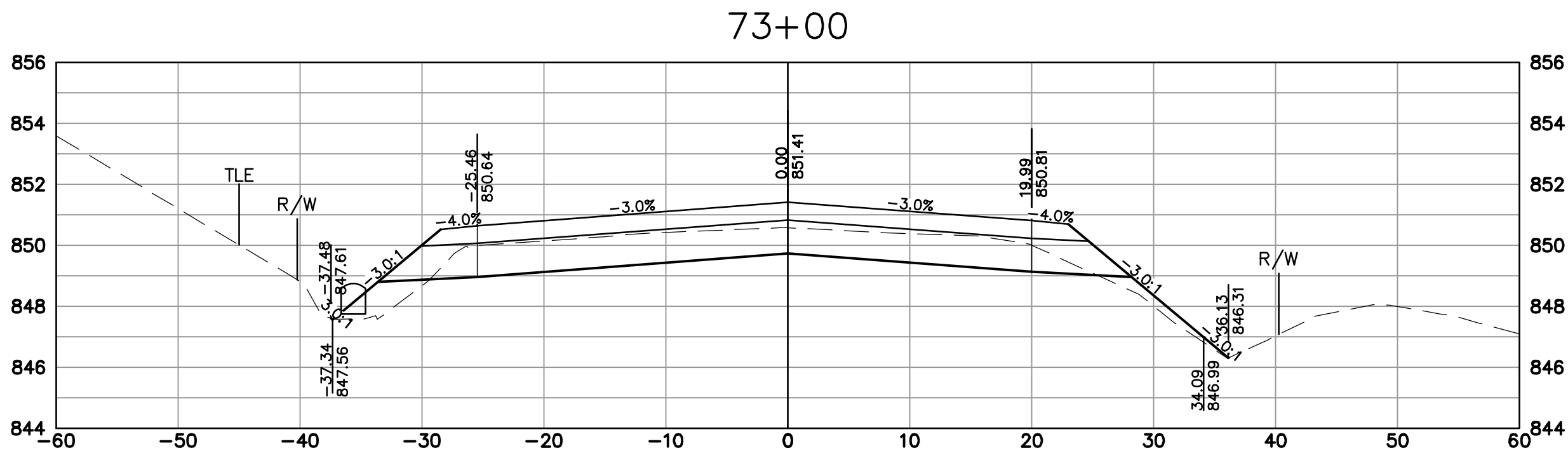
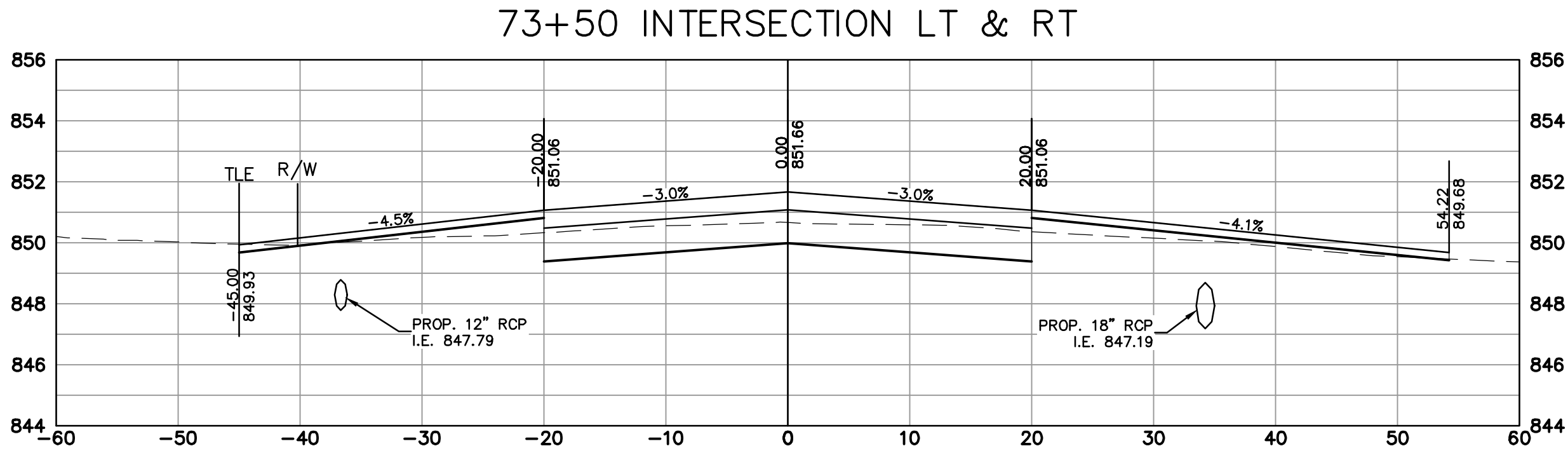
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			CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN	 raSmith CREATIVITY BEYOND ENGINEERING	16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com		DATE	DESCRIPTION
			LINCOLN AVE. CROSS SECTIONS					
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DATE: 1-17-2023								
SCALE: 1" = 10'								
JOB NO. 2210721								
PROJECT MANAGER: TROY T. HARTJES, P.E.								
DESIGNED BY: MTG								
CHECKED BY: TTH								
SHEET NUMBER								
84								

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raSmith CREATIVITY BEYOND ENGINEERING	
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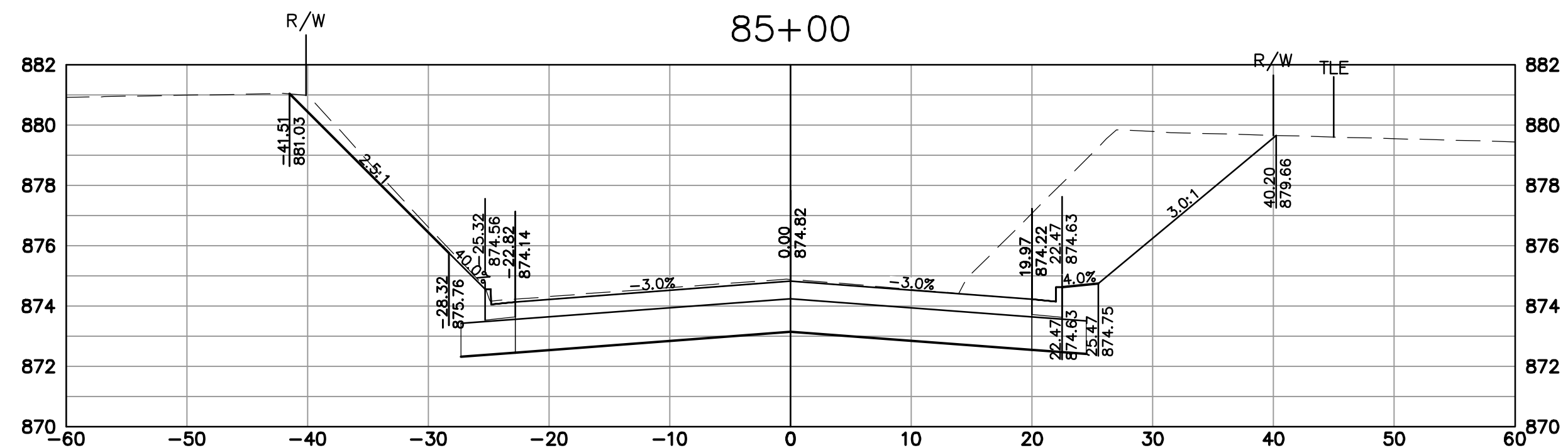
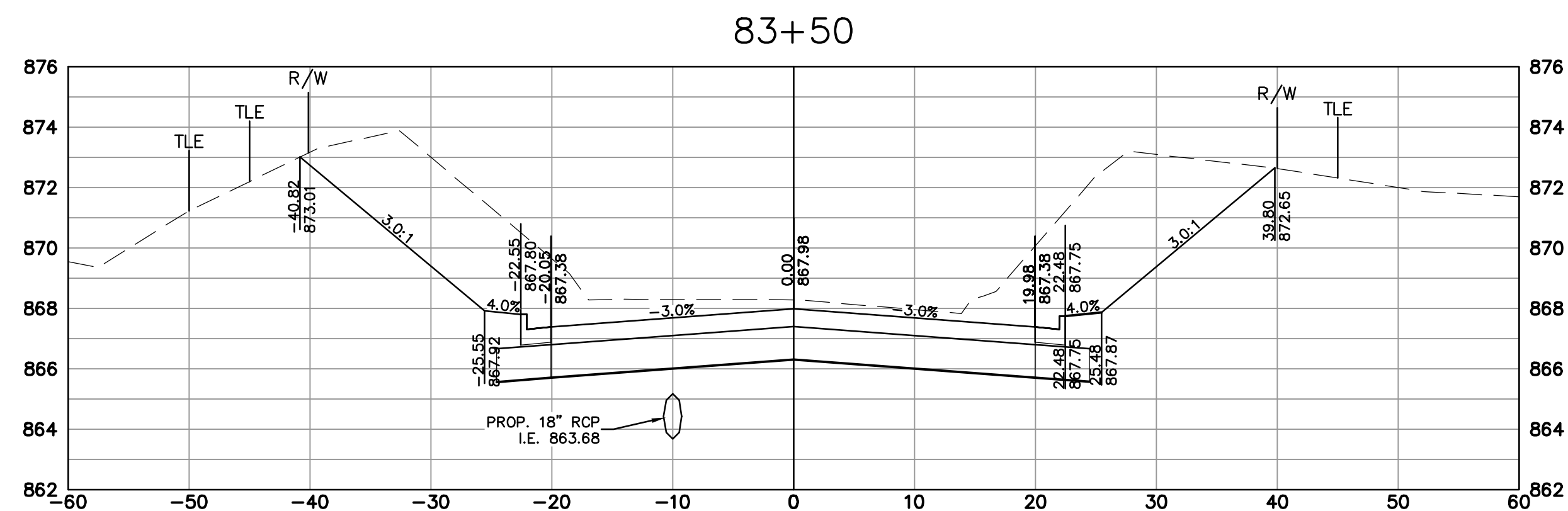
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	CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN	raSmith CREATIVITY BEYOND ENGINEERING 16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com	DATE	DESCRIPTION
	LINCOLN AVE. CROSS SECTIONS			
		Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA		
© COPYRIGHT 2023 R.A. Smith, Inc.				
DATE: 1-17-2023				
SCALE: 1" = 10'				
JOB NO. 2210721				
PROJECT MANAGER: TROY T. HARTJES, P.E.				
DESIGNED BY: MTG				
CHECKED BY: TTH				
SHEET NUMBER				
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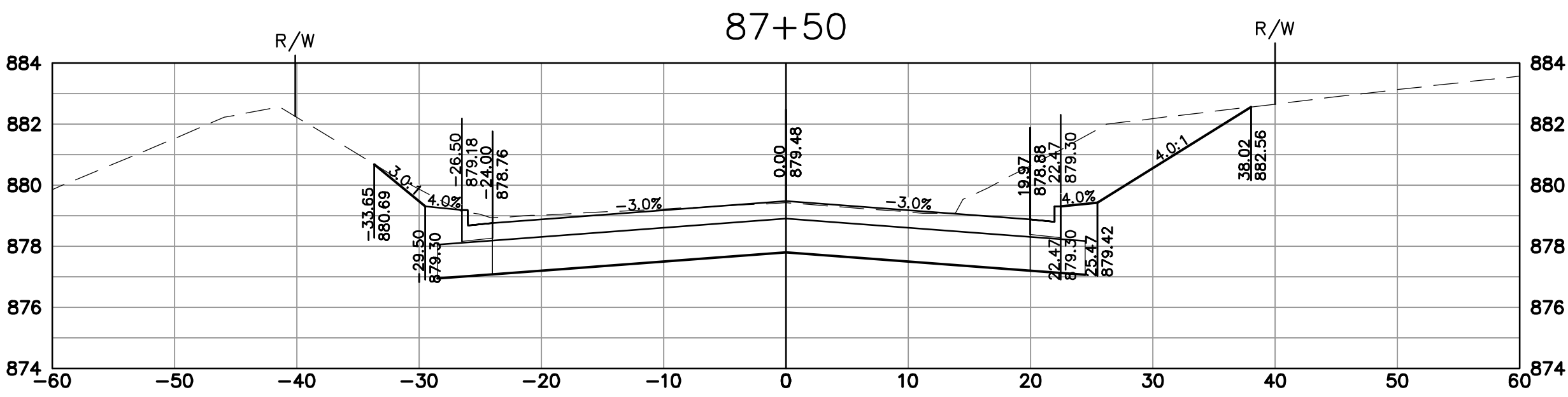
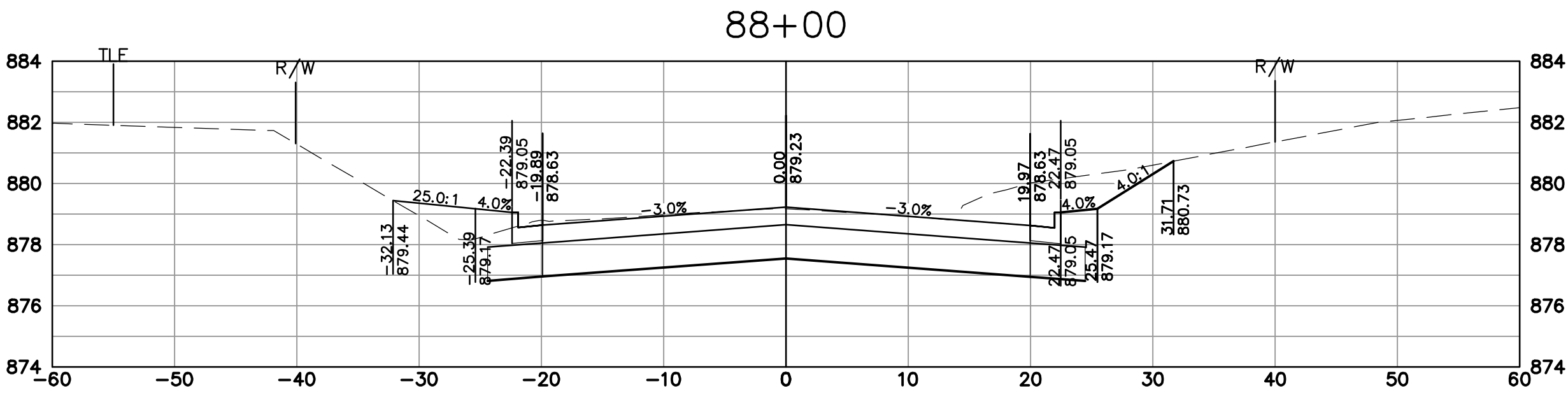
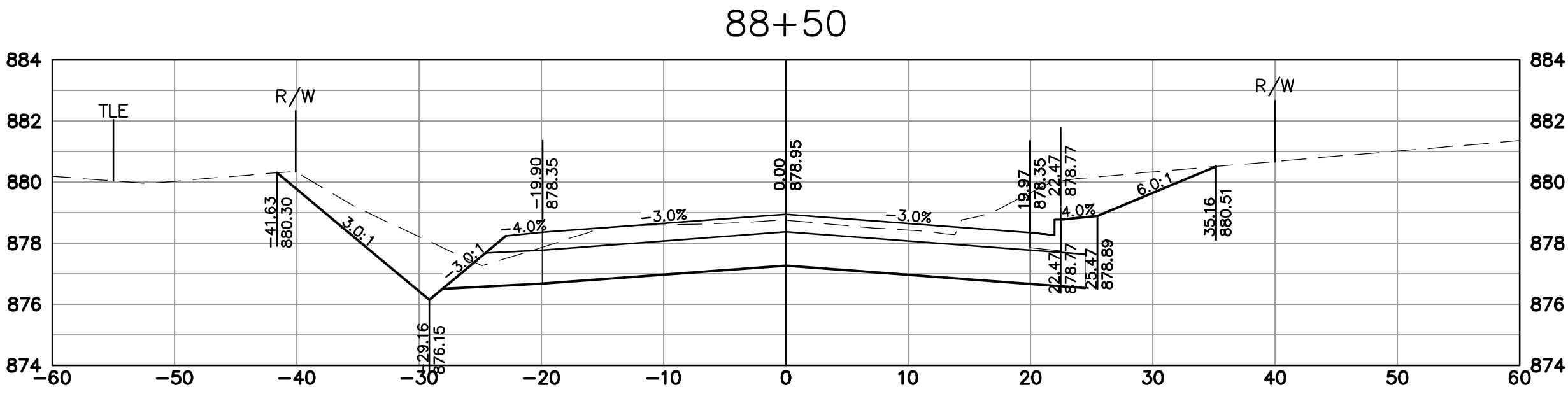
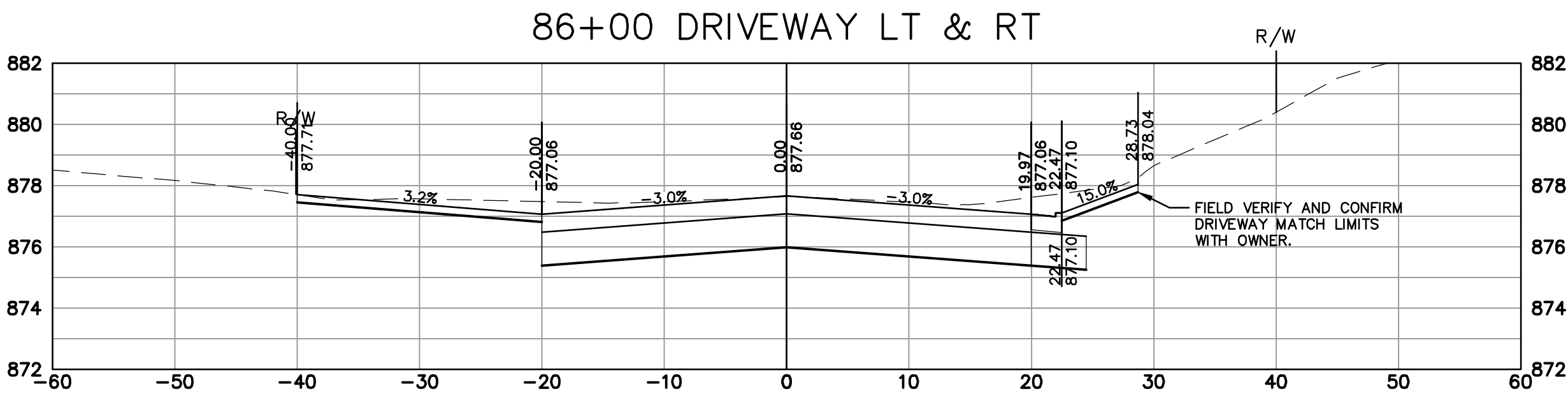
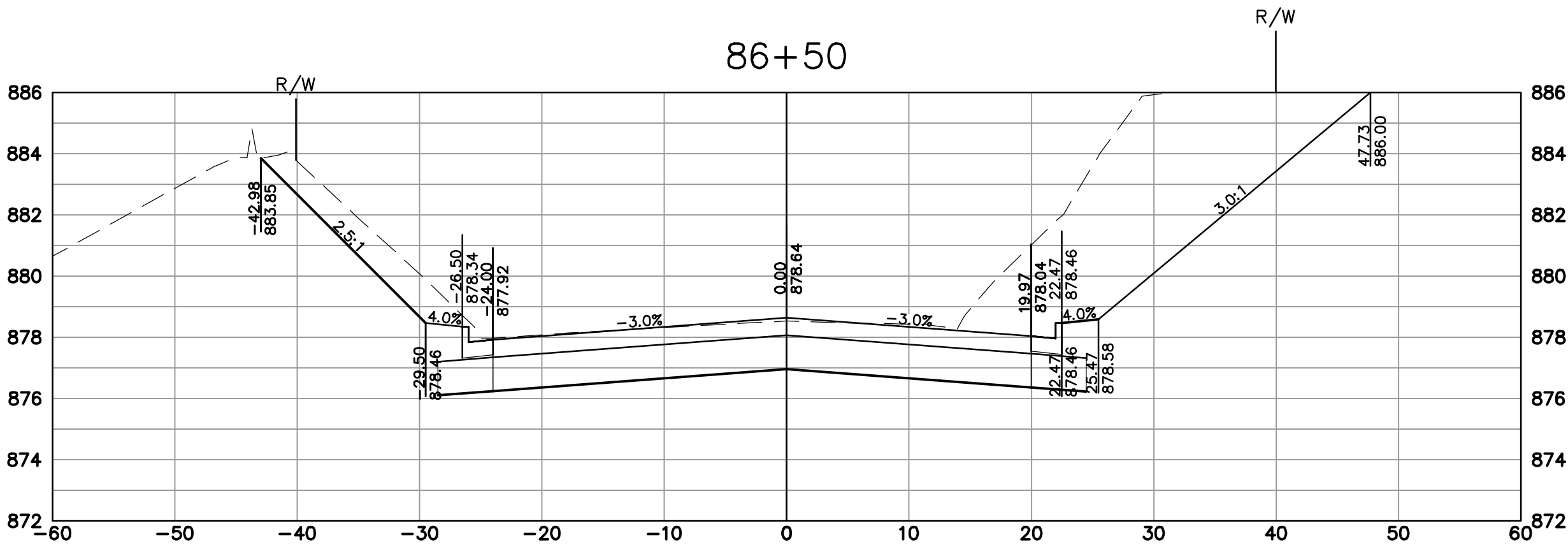
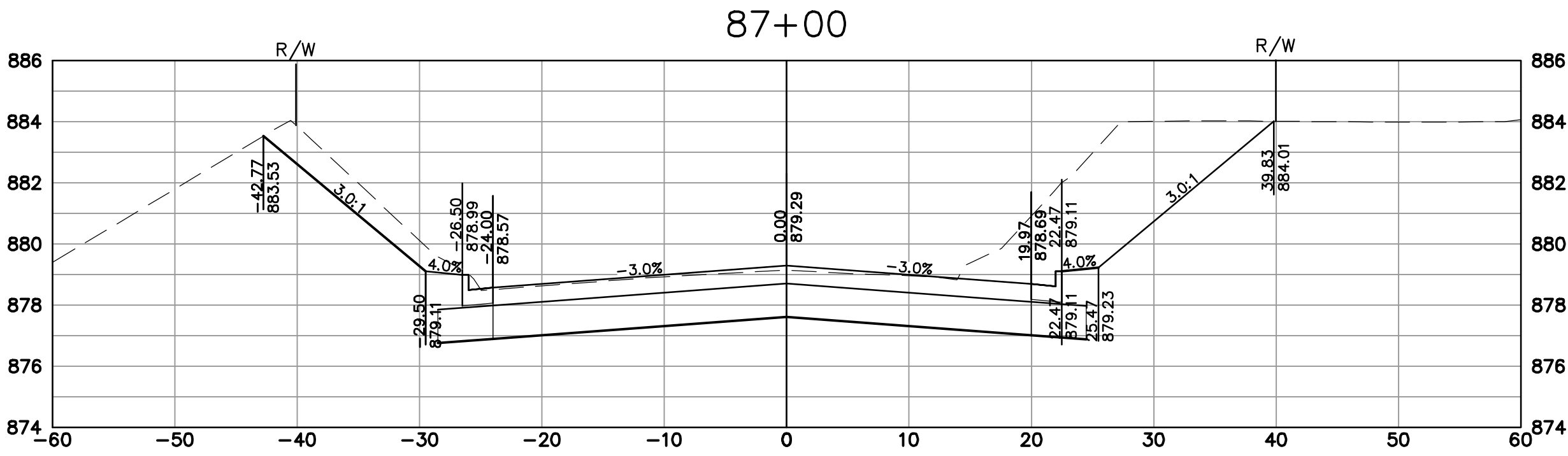
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DATE: 1-17-2023				
SCALE: 1" = 10'				
JOB NO. 2210721				
PROJECT MANAGER: TROY T. HARTJES, P.E.				
DESIGNED BY: MTG				
CHECKED BY: TTH				
SHEET NUMBER				
88				

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DATE	DESCRIPTION

raSmith

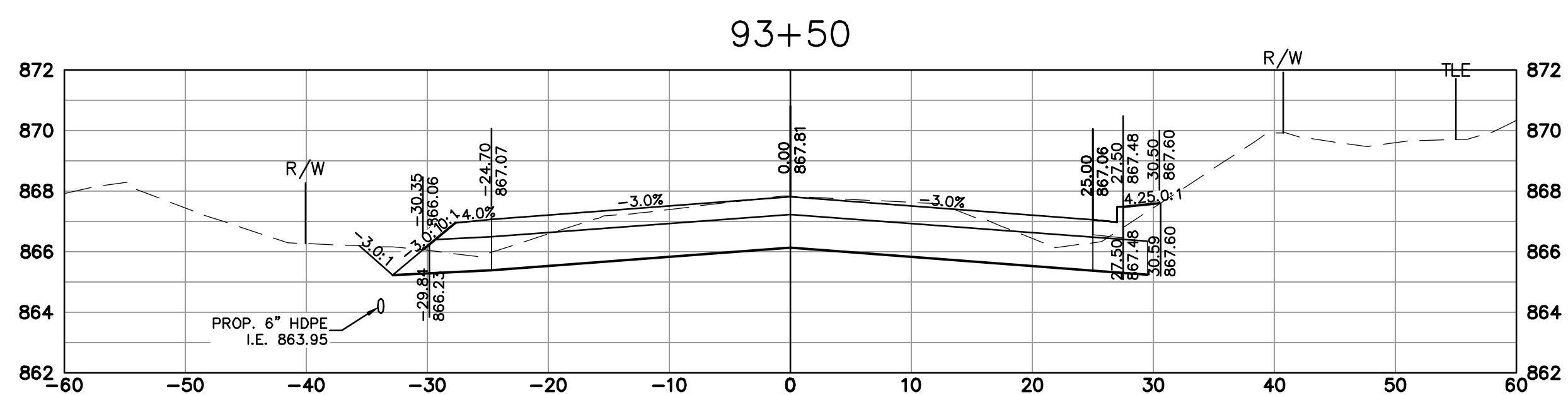
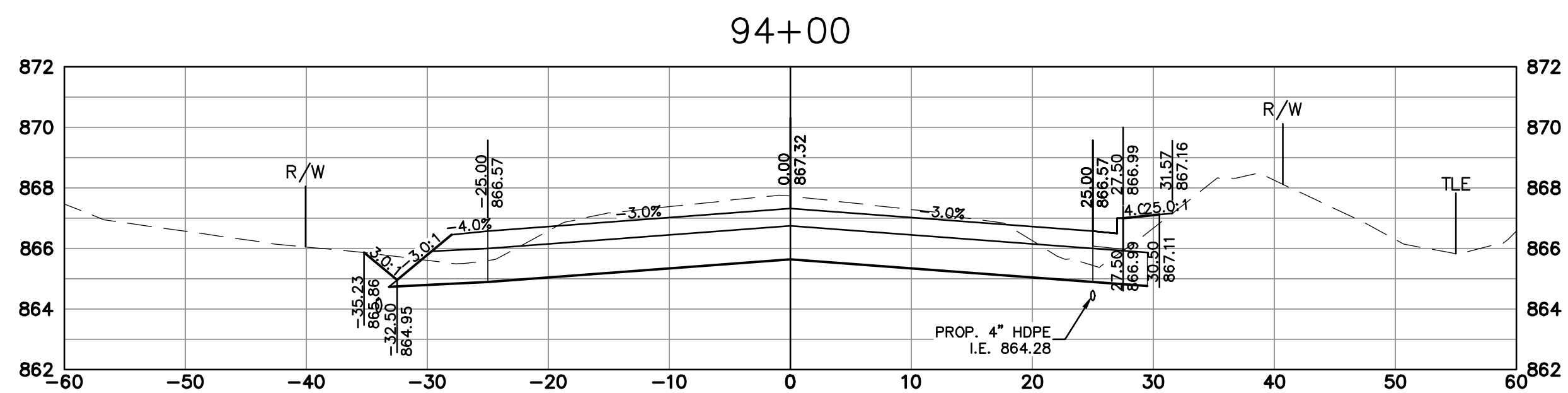
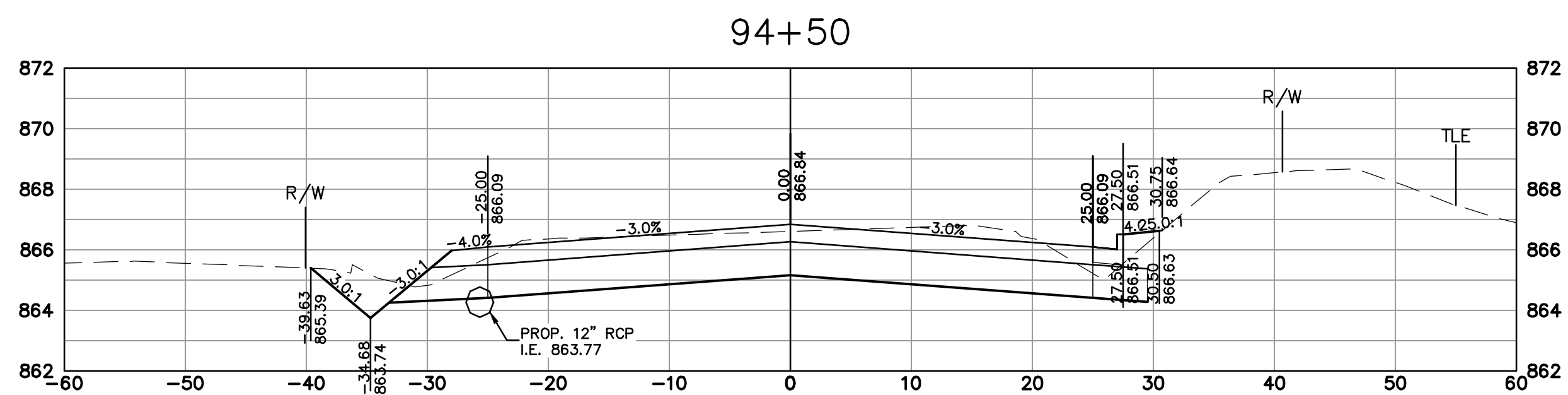
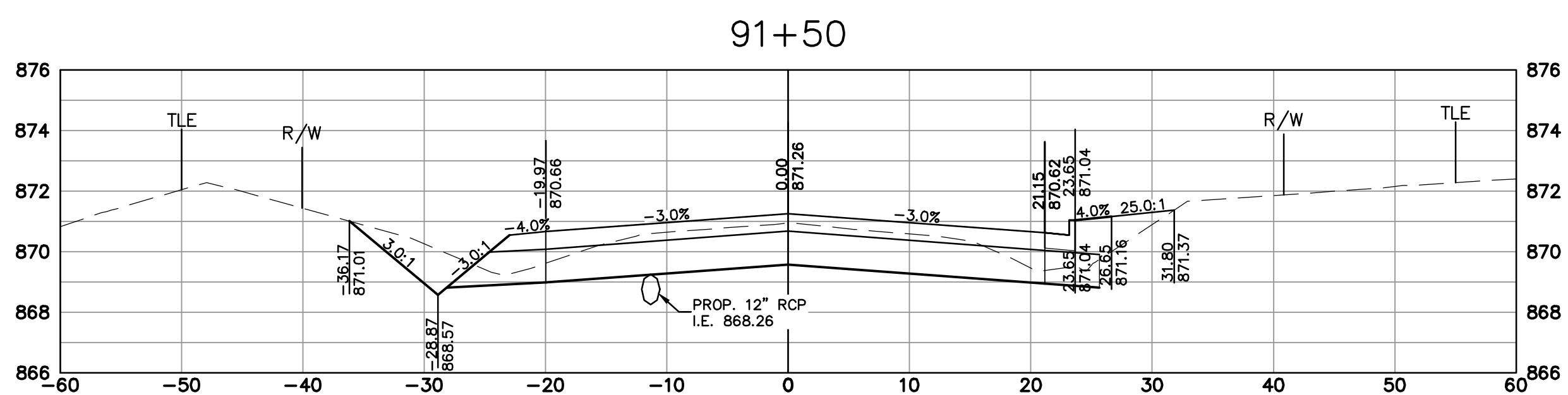
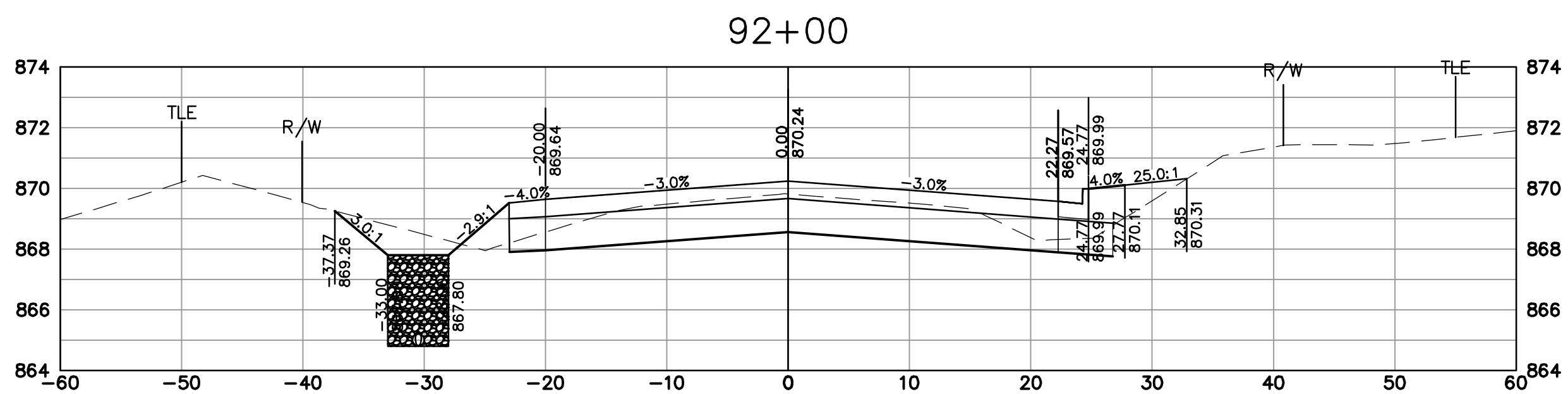
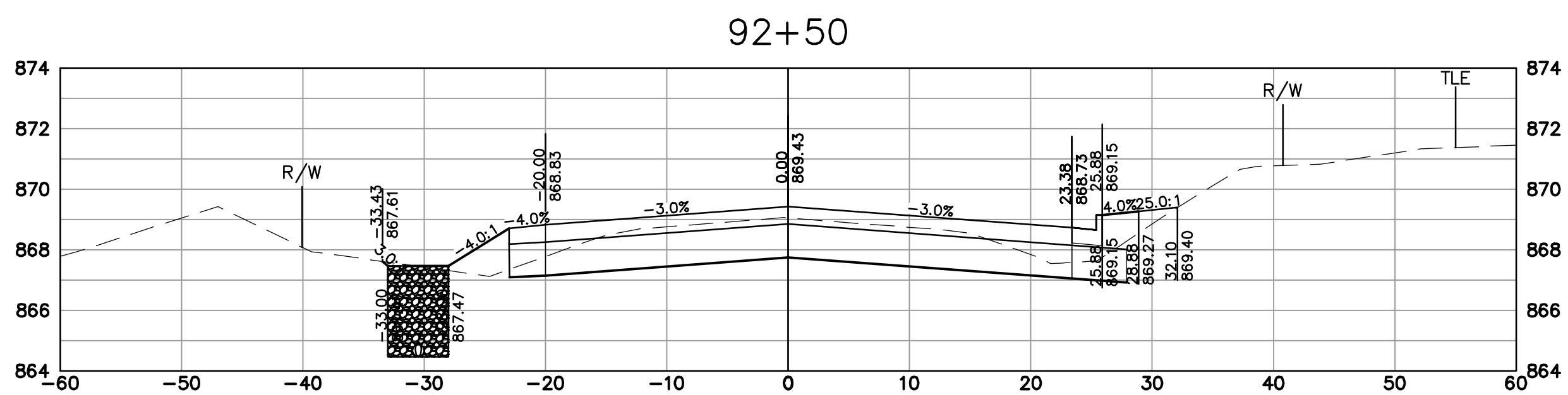
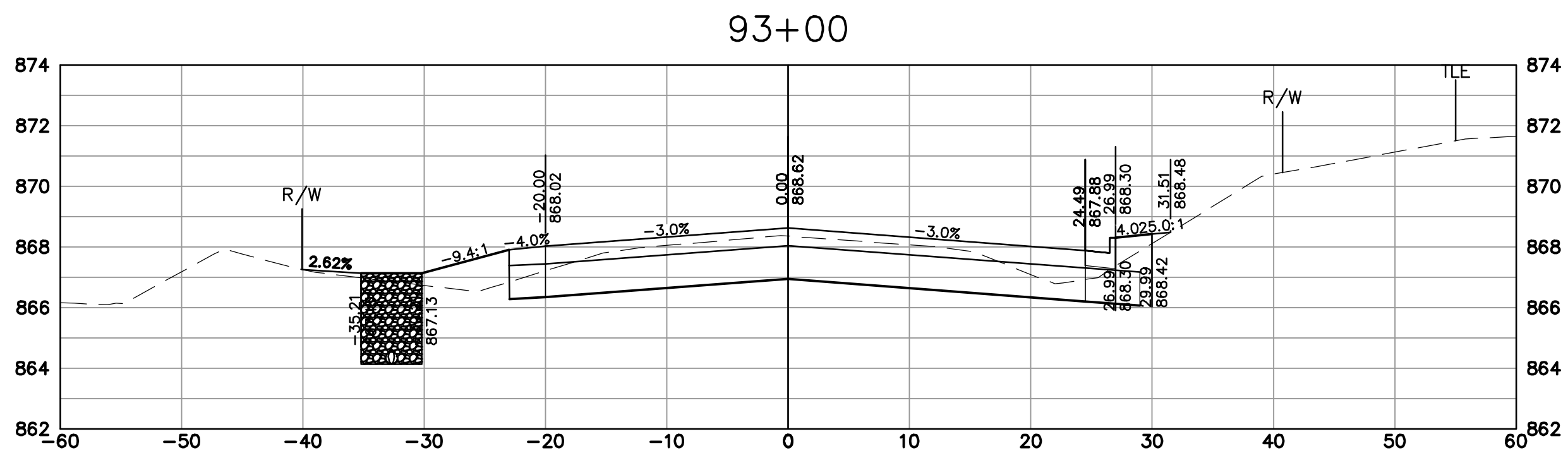
CREATIVITY BEYOND ENGINEERING

16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

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CITY OF NEW BERLIN
WAUKESHA COUNTY, WISCONSIN
LINCOLN AVE. CROSS SECTIONS

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DATE: 1-17-2023
SCALE: 1" = 10'
JOB NO. 2210721
PROJECT MANAGER: TROY T. HARTJES, P.E.
DESIGNED BY: MTG
CHECKED BY: TTH
SHEET NUMBER
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CITY OF NEW BERLIN WAUKESHA COUNTY, WISCONSIN LINCOLN AVE. CROSS SECTIONS  16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com CREATIVITY BEYOND ENGINEERING Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA		DATE DESCRIPTION
© COPYRIGHT 2023 R.A. Smith, Inc. DATE: 1-17-2023 SCALE: 1" = 10' JOB NO. 2210721 PROJECT MANAGER: TROY T. HARTJES, P.E. DESIGNED BY: MTG CHECKED BY: TTH SHEET NUMBER 91		

STAFF REPORT

EXECUTIVE SUMMARY

APPLICANT: City of New Berlin

PROJECT: Small Road Reconstruction Contract

LOCATIONS: Moorland Road to College Avenue

D.R.C. RECOMMENDATION: Recommend to the Common Council the awarding of a construction contract to the lowest responsive, responsible bidder, Super Western, Inc., for the Small Road Reconstruction Project in an amount of \$3,462,053.49 and awarding an inspection services contract to raSmith, Inc in the amount of \$179,543.00. With inspection and contingencies, the not-to-exceed total project costs are \$3,900,000.00 from account 20350000 63025 TID3 and 04251100 63025 C2023.

1. Funding:
 - a. 2023 Approved Budget Account: 04251100 63025 C2023 Amount: \$1,600,000
 TIF District #3 Account: 20350000 63025 TID3 Amount: \$3,700,000
 Waukesha County Reimbursement Amount: \$ 100,000
 - b. The Contract will include widening the driving lanes from 11 feet to 12 feet, adding a 5-foot paved shoulder and a 3-foot gravel shoulder, replacing driveway culverts, cross culverts, ditching, bioswales, curb and gutter, and water main extension. The intersection of Small Road and College Avenue will be re-aligned. The existing urban cross section will include removal and replacement of the existing asphalt pavement with spot repairs of curb and gutter.
2. On February 8, 2023, The City of New Berlin received ten (10) bids from contractors for the Small Road Reconstruction Project. The apparent low bidder is Super Western, Inc. of Menomonee Falls, Wisconsin.
 - a. Summary of Base Bid Contracted Amounts:

Base Bid:	\$ 3,462,053.49
Contingencies (~7%):	\$ 258,402.80
Inspection Contract (~5%):	\$ 179,543.00
Total Base Bid Project Costs:	\$ 3,900,000.00
 - b. The Engineer's Base Bid estimate was \$3,635,538.15

DETAILS IN ATTACHED STAFF REPORT

CITY OF NEW BERLIN
DEPARTMENT OF COMMUNITY DEVELOPMENT
BOARD OF PUBLIC WORKS STAFF REPORT
Meeting of February 20, 2023

City of New Berlin Small Road Reconstruction Contract

DATE STAFF REPORT CREATED: February 15, 2023

APPLICANT: City of New Berlin

REQUEST / DESCRIPTION OF PROJECT: The Small Road Road reconstruction project will consist of 11,400 tons asphaltic pavement, 27,000 tons crushed aggregate base course, 31,000 CY of Common Excavation, Storm Sewer/ditching, 830 feet of water main extension, and pavement marking.

The project design plans were presented to the BPW on December 19, 2022 and are on file in the Engineering Department.

BIDS RECEIVED: 10 Bids - A summary of the Quotes received is attached.

SELECTED CONTRACTOR: Super Western, Inc.

INSPECTION: Three (3) inspection firms were solicited for proposals. DCD received two proposals and recommends selecting raSmith, Inc. for construction inspection services. The proposal from raSmith, Inc. for this project is attached.

FISCAL IMPACT:

Base Bid:	\$ 3,462,053.49
Contingencies (~7%):	\$ 258,402.80
Inspection Contract (~5%):	<u>\$ 179,543.00</u>
Total Project Costs:	\$ 3,900,000.00

SOURCE OF FUNDS

Small Road – College to Westridge	Account:	20350000 63025 TID5
Small Road – College to Westridge	Account:	04251100 63025 C2023

TRAFFIC IMPACT: Roadways will be kept open to “local traffic only” during reconstruction. The Paving Contractor will be required to provide traffic control in accordance with the Manual on Uniform Traffic Control Devices, Current Edition.

BACKGROUND INFORMATION:

1. Small Road is listed in 2021 as having a PASER rating of 50. Small Road is also classified as a Standard Arterial in the City’s Comprehensive plan. Streets that are in this range on the PASER scale and are classified as an Arterial need to be evaluated for improvements to maintain a

progressive hierarchical transportation system that meets the traffic and storm water needs of the City.

2. The roadway will be reconstructed with 2-12 foot drive lanes, 5-foot paved shoulders, and 3-foot gravel shoulders. Ditches will be regraded and bioswales will be constructed for stormwater management. The intersection of Small Road and College Avenue will be re-aligned to provide better sight distance. Water main will be extended to complete a water main loop for the development at 16505 W. Small Road.
3. The intersection of Small Road and Calhoun Road was awarded a HSIP Grant, and is being let by WisDOT. The let date for this project is March 14, 2023.

D.C.D. RECOMMENDATION:

Recommend to the Common Council the awarding of a construction contract to the lowest responsive, responsible bidder, Super Western, Inc., for the Small Road Reconstruction Project in an amount of \$3,462,053.49 and awarding an inspection services contract to raSmith, Inc in the amount of \$179,543.00. With inspection and contingencies, the not-to-exceed total project costs are \$3,900,000.00 from account 20350000 63025 TID3 and 04251100 63025 C2023.

Attachments:

Summary of Bids Received
Inspection Quotes Received
Contract Specifications & Plan Set

RD-20-04 Small Road Reconstruction
 Bid Results
 February 8, 2023 @ 10:00 A.M.

BIDDER	BID BOND	PRE-QUAL STATEMENT	ADD 1	ADD 2	ADD 3	SECTION 1	SECTION 2	TOTAL	RANKING
Super Western, Inc.	X	X	X	X	X	\$ 3,215,720.44	\$ 246,333.05	\$ 3,462,053.49	1
Vinton Construction Company	X	X	X	X	X	\$ 3,300,576.99	\$ 196,893.23	\$ 3,497,470.22	2
All-Ways Contractors, Inc.	X	X	X	X	X	\$ 3,372,342.55	\$ 192,786.85	\$ 3,565,129.40	3
C.W. Purpero, Inc.	X	X	X	X	X	\$ 3,531,597.20	\$ 213,833.80	\$ 3,745,431.00	4
Willkomm Excavating & Grading, Inc.	X	X	X	X	X	\$ 3,536,257.66	\$ 211,523.78	\$ 3,747,781.44	5
Musson Bros., Inc.	X	X	X	X	X	\$ 3,649,223.89	\$ 234,063.83	\$ 3,883,287.72	6
Veit & Company, Inc.	X	X	X	X	X	\$ 3,715,394.50	\$ 251,160.50	\$ 3,966,555.00	7
Buteyn-Peterson Construction Co., Inc.	X	X	X	X	X	\$ 3,796,253.90	\$ 214,266.08	\$ 4,010,519.98	8
LaLonde Contractors, Inc.	X	X	X	X	X	\$ 3,852,368.09	\$ 250,922.59	\$ 4,103,290.68	9
Rock Road Companies, Inc.	X	X	X	X	X	\$ 4,027,252.04	\$ 216,394.40	\$ 4,243,646.44	10
Engineer's Estimate						\$ 3,435,412.50	\$ 200,125.65	\$ 3,635,538.15	

RD-20-04 Small Road Reconstruction

CONTRACT RD-20-04

Cells Highlighted in Yellow Denote Errors Found. Total Prices Calculated from Bid Unit Cost Submitted.

Section 1: Small Road (STA 96+00 to East Project Limits)				Super Western, Inc.		Vinton Construction Company		All-Ways Contractors, Inc.		C.W. Purpero, Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	Traffic Control/Detour	1	LS	\$ 18,771.00	\$ 18,771.00	\$ 18,771.00	\$ 18,771.00	\$ 23,240.00	\$ 23,240.00	\$ 42,000.00	\$ 42,000.00
2	Construction Staking	1	LS	\$ 34,800.00	\$ 34,800.00	\$ 27,300.00	\$ 27,300.00	\$ 37,715.00	\$ 37,715.00	\$ 76,500.00	\$ 76,500.00
3	Private Septic System Evaluation and Repair	2	EACH	\$ 1,000.00	\$ 2,000.00	\$ 4,613.00	\$ 9,226.00	\$ 750.00	\$ 1,500.00	\$ 2,000.00	\$ 4,000.00
4	Sawcut Pavement	1100	LF	\$ 2.00	\$ 2,200.00	\$ 3.00	\$ 3,300.00	\$ 1.85	\$ 2,035.00	\$ 1.95	\$ 2,145.00
5	Silt Fence	4200	LF	\$ 1.68	\$ 7,056.00	\$ 2.00	\$ 8,400.00	\$ 1.45	\$ 6,090.00	\$ 1.70	\$ 7,140.00
6	Silt Fence, Heavy Duty	200	LF	\$ 12.95	\$ 2,590.00	\$ 4.10	\$ 820.00	\$ 8.85	\$ 1,770.00	\$ 12.95	\$ 2,590.00
7	Inlet Protection	20	EACH	\$ 55.00	\$ 1,100.00	\$ 70.00	\$ 1,400.00	\$ 65.00	\$ 1,300.00	\$ 55.00	\$ 1,100.00
8	Clearing & Grubbing	4	STA	\$ 392.98	\$ 1,571.92	\$ 392.98	\$ 1,571.92	\$ 395.00	\$ 1,580.00	\$ 393.00	\$ 1,572.00
9	Tree Removal	1090	ID	\$ 26.17	\$ 28,525.30	\$ 26.17	\$ 28,525.30	\$ 26.20	\$ 28,558.00	\$ 26.20	\$ 28,558.00
10	Remove and Replace Mailboxes	36	EACH	\$ 225.00	\$ 8,100.00	\$ 99.50	\$ 3,582.00	\$ 100.00	\$ 3,600.00	\$ 95.00	\$ 3,420.00
11	Temporary Mailbox	36	EACH	\$ 77.82	\$ 2,801.52	\$ 63.00	\$ 2,268.00	\$ 100.00	\$ 3,600.00	\$ 13.00	\$ 468.00
12	Remove & Salvage Private Light Poles	3	EACH	\$ 2,000.00	\$ 6,000.00	\$ 1,100.00	\$ 3,300.00	\$ 890.00	\$ 2,670.00	\$ 1,100.00	\$ 3,300.00
13	Remove Fence	600	LF	\$ 5.00	\$ 3,000.00	\$ 2.25	\$ 1,350.00	\$ 2.80	\$ 1,680.00	\$ 7.50	\$ 4,500.00
14	Temporary Electric Fence	280	LF	\$ 12.28	\$ 3,438.40	\$ 7.14	\$ 1,999.20	\$ 9.00	\$ 2,520.00	\$ 8.00	\$ 2,240.00
15	Removing Small Pipe Culverts	37	EACH	\$ 263.16	\$ 9,736.92	\$ 422.00	\$ 15,614.00	\$ 178.00	\$ 6,586.00	\$ 310.00	\$ 11,470.00
16	Pavement Removal	22,000	SY	\$ 2.85	\$ 62,700.00	\$ 1.63	\$ 35,860.00	\$ 2.95	\$ 64,900.00	\$ 2.95	\$ 64,900.00
17	Removing Curb & Gutter	600	LF	\$ 2.20	\$ 1,320.00	\$ 3.00	\$ 1,800.00	\$ 3.45	\$ 2,070.00	\$ 5.00	\$ 3,000.00
18	Removing Concrete Sidewalk	3	SY	\$ 219.81	\$ 659.43	\$ 50.00	\$ 150.00	\$ 30.00	\$ 90.00	\$ 41.00	\$ 123.00
19	Removing Storm Structure	2	EACH	\$ 183.92	\$ 367.84	\$ 353.00	\$ 706.00	\$ 540.00	\$ 1,080.00	\$ 300.00	\$ 600.00
20	Remove Storm Sewer	10	LF	\$ 11.12	\$ 111.20	\$ 31.40	\$ 314.00	\$ 38.00	\$ 380.00	\$ 51.00	\$ 510.00
21	Common Excavation (27,500 CY)	1	LS	\$ 355,959.15	\$ 355,959.15	\$ 541,000.00	\$ 541,000.00	\$ 369,570.00	\$ 369,570.00	\$ 449,000.00	\$ 449,000.00
22	Excavation Below Subgrade	3930	CY	\$ 11.66	\$ 45,823.80	\$ 24.53	\$ 96,402.90	\$ 13.40	\$ 52,662.00	\$ 16.50	\$ 64,845.00
23	Dense Graded Base, 3-Inch EBS Backfill	7100	TON	\$ 17.53	\$ 124,463.00	\$ 17.65	\$ 125,315.00	\$ 17.95	\$ 127,445.00	\$ 18.50	\$ 131,350.00
24	Geotextile Type SAS	36100	SY	\$ 1.69	\$ 61,009.00	\$ 1.66	\$ 59,926.00	\$ 1.39	\$ 50,179.00	\$ 1.80	\$ 64,980.00
25	12" C900 PVC Water Main	57	LF	\$ 350.00	\$ 19,950.00	\$ 237.60	\$ 13,543.20	\$ 226.00	\$ 12,882.00	\$ 350.00	\$ 19,950.00
26	16" C900 PVC Water Main	774	LF	\$ 250.00	\$ 193,500.00	\$ 202.30	\$ 156,580.20	\$ 275.60	\$ 213,314.40	\$ 250.00	\$ 193,500.00
27	16" Butterfly Valve with Valve Box	1	EACH	\$ 5,000.00	\$ 5,000.00	\$ 4,977.00	\$ 4,977.00	\$ 5,991.00	\$ 5,991.00	\$ 5,000.00	\$ 5,000.00
28	Hydrant Assembly	2	EACH	\$ 14,000.00	\$ 28,000.00	\$ 8,866.00	\$ 17,732.00	\$ 14,375.00	\$ 28,750.00	\$ 14,000.00	\$ 28,000.00
29	Bioswales	1650	LF	\$ 46.17	\$ 76,180.50	\$ 35.00	\$ 57,750.00	\$ 58.40	\$ 96,360.00	\$ 49.00	\$ 80,850.00
30	Bioswale Outfall with Rip-Rap	2	EACH	\$ 3,500.00	\$ 7,000.00	\$ 900.00	\$ 1,800.00	\$ 1,330.00	\$ 2,660.00	\$ 320.00	\$ 640.00
31	Storm Sewer, Catch Basins, 48-Inch (R-3228-BD)	2	EACH	\$ 3,000.00	\$ 6,000.00	\$ 4,035.00	\$ 8,070.00	\$ 3,980.00	\$ 7,960.00	\$ 3,000.00	\$ 6,000.00
32	Storm Sewer, Catch Basins, 20"x30" (R-3228-BD)	15	EACH	\$ 2,750.00	\$ 41,250.00	\$ 3,360.00	\$ 50,400.00	\$ 3,820.00	\$ 57,300.00	\$ 2,750.00	\$ 41,250.00
33	Storm Sewer, Manhole 36-Inch (R-1661)	3	EACH	\$ 2,250.00	\$ 6,750.00	\$ 3,816.00	\$ 11,448.00	\$ 3,150.00	\$ 9,450.00	\$ 2,250.00	\$ 6,750.00
34	Storm Sewer, Manhole 48-Inch (R-1661)	3	EACH	\$ 2,600.00	\$ 7,800.00	\$ 4,327.00	\$ 12,981.00	\$ 3,720.00	\$ 11,160.00	\$ 2,600.00	\$ 7,800.00
35	Storm Sewer, Manhole 60-Inch (R-1661)	1	EACH	\$ 3,850.00	\$ 3,850.00	\$ 6,650.00	\$ 6,650.00	\$ 5,450.00	\$ 5,450.00	\$ 3,850.00	\$ 3,850.00
36	Storm Sewer, Manhole 84-Inch (R-1661)	1	EACH	\$ 7,250.00	\$ 7,250.00	\$ 8,416.00	\$ 8,416.00	\$ 8,750.00	\$ 8,750.00	\$ 7,250.00	\$ 7,250.00
37	Storm Sewer, Inlets Median 1 Grate (R-4882)	1	EACH	\$ 1,650.00	\$ 1,650.00	\$ 3,429.00	\$ 3,429.00	\$ 3,495.00	\$ 3,495.00	\$ 1,650.00	\$ 1,650.00
38	Storm Sewer, Inlets Median 3 Grate (R-4882)	1	EACH	\$ 7,500.00	\$ 7,500.00	\$ 7,090.00	\$ 7,090.00	\$ 8,630.00	\$ 8,630.00	\$ 7,500.00	\$ 7,500.00
39	Storm Sewer, RCP, Class IV, 12-Inch	254	LF	\$ 115.00	\$ 29,210.00	\$ 91.35	\$ 23,202.90	\$ 96.30	\$ 24,460.20	\$ 115.00	\$ 29,210.00
40	Storm Sewer, RCP, Class IV, 15-Inch	472	LF	\$ 120.00	\$ 56,640.00	\$ 82.65	\$ 39,010.80	\$ 99.40	\$ 46,916.80	\$ 120.00	\$ 56,640.00
41	Storm Sewer, RCP, Class III, 18-Inch	427	LF	\$ 125.00	\$ 53,375.00	\$ 98.90	\$ 42,230.30	\$ 103.40	\$ 44,151.80	\$ 125.00	\$ 53,375.00
42	Storm Sewer, RCP, Class IV, 24-Inch	181	LF	\$ 150.00	\$ 27,150.00	\$ 119.70	\$ 21,665.70	\$ 127.00	\$ 22,987.00	\$ 150.00	\$ 27,150.00
43	Storm Sewer, RCP, Class III, 30-Inch	38	LF	\$ 250.00	\$ 9,500.00	\$ 175.50	\$ 6,669.00	\$ 142.30	\$ 5,407.40	\$ 250.00	\$ 9,500.00
44	Storm Sewer, RCP, Class IV, 15-Inch, Driveway Culvert	44	LF	\$ 90.00	\$ 3,960.00	\$ 88.00	\$ 3,872.00	\$ 82.80	\$ 3,643.20	\$ 72.00	\$ 3,168.00
45	Storm Sewer, RCP, Class IV, 18-Inch, Driveway Culvert	114	LF	\$ 95.00	\$ 10,830.00	\$ 89.30	\$ 10,180.20	\$ 89.25	\$ 10,174.50	\$ 81.00	\$ 9,234.00
46	Storm Sewer, RCP, Class IV, 21-Inch, Driveway Culvert	48	LF	\$ 125.00	\$ 6,000.00	\$ 116.00	\$ 5,568.00	\$ 98.70	\$ 4,737.60	\$ 105.00	\$ 5,040.00
47	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 19x30-Inch, Driveway Culvert	92	LF	\$ 150.00	\$ 13,800.00	\$ 158.60	\$ 14,591.20	\$ 142.30	\$ 13,091.60	\$ 148.00	\$ 13,616.00
48	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 29x45-Inch	74	LF	\$ 265.00	\$ 19,610.00	\$ 212.00	\$ 15,688.00	\$ 206.40	\$ 15,273.60	\$ 219.00	\$ 16,206.00
49	Storm Sewer, CMP, 12-Inch, Driveway Culvert	269	LF	\$ 80.00	\$ 21,520.00	\$ 53.60	\$ 14,418.40	\$ 74.30	\$ 19,986.70	\$ 60.00	\$ 16,140.00
50	Storm Sewer, CMP, 15-Inch, Driveway Culvert	173	LF	\$ 85.00	\$ 14,705.00	\$ 59.25	\$ 10,250.25	\$ 78.10	\$ 13,511.30	\$ 66.00	\$ 11,418.00

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51	Storm Sewer, CMP, 18-Inch, Driveway Culvert	208	LF	\$ 90.00	\$ 18,720.00	\$ 66.80	\$ 13,894.40	\$ 84.00	\$ 17,472.00	\$ 72.00	\$ 14,976.00
52	Storm Sewer, CMP, 21-Inch, Driveway Culvert	257	LF	\$ 100.00	\$ 25,700.00	\$ 60.36	\$ 15,512.52	\$ 87.85	\$ 22,577.45	\$ 73.00	\$ 18,761.00
53	Storm Sewer, CMP, 24-Inch, Driveway Culvert	36	LF	\$ 105.00	\$ 3,780.00	\$ 77.85	\$ 2,802.60	\$ 91.75	\$ 3,303.00	\$ 80.00	\$ 2,880.00
54	Storm Sewer Pipe Arch, CMP, 28x20-Inch, Driveway Culvert	30	LF	\$ 125.00	\$ 3,750.00	\$ 88.00	\$ 2,640.00	\$ 94.75	\$ 2,842.50	\$ 91.00	\$ 2,730.00
55	Storm Sewer Pipe Arch, CMP, 35x24-Inch, Driveway Culvert	192	LF	\$ 150.00	\$ 28,800.00	\$ 110.35	\$ 21,187.20	\$ 117.75	\$ 22,608.00	\$ 114.00	\$ 21,888.00
56	Storm Sewer, Apron Endwalls, RCP, 15-Inch	4	EACH	\$ 950.00	\$ 3,800.00	\$ 945.10	\$ 3,780.40	\$ 1,223.00	\$ 4,892.00	\$ 980.00	\$ 3,920.00
57	Storm Sewer, Apron Endwalls, RCP, 18-Inch	4	EACH	\$ 1,000.00	\$ 4,000.00	\$ 1,072.00	\$ 4,288.00	\$ 1,288.00	\$ 5,152.00	\$ 1,095.00	\$ 4,380.00
58	Storm Sewer, Apron Endwalls, RCP, 21-Inch	1	EACH	\$ 1,150.00	\$ 1,150.00	\$ 1,267.00	\$ 1,267.00	\$ 1,344.00	\$ 1,344.00	\$ 1,320.00	\$ 1,320.00
59	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 19x30-Inch	6	EACH	\$ 1,200.00	\$ 7,200.00	\$ 1,425.00	\$ 8,550.00	\$ 1,362.00	\$ 8,172.00	\$ 1,220.00	\$ 7,320.00
60	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 29x45-Inch	4	EACH	\$ 2,500.00	\$ 10,000.00	\$ 2,048.00	\$ 8,192.00	\$ 1,737.00	\$ 6,948.00	\$ 1,735.00	\$ 6,940.00
61	Storm Sewer, Apron Endwalls, CMP, 12-Inch, Driveway Culvert	12	EACH	\$ 200.00	\$ 2,400.00	\$ 250.00	\$ 3,000.00	\$ 192.00	\$ 2,304.00	\$ 225.00	\$ 2,700.00
62	Storm Sewer, Apron Endwalls, CMP, 15-Inch	10	EACH	\$ 225.00	\$ 2,250.00	\$ 310.00	\$ 3,100.00	\$ 217.00	\$ 2,170.00	\$ 250.00	\$ 2,500.00
63	Storm Sewer, Apron Endwalls, CMP, 18-Inch	10	EACH	\$ 275.00	\$ 2,750.00	\$ 400.00	\$ 4,000.00	\$ 254.00	\$ 2,540.00	\$ 290.00	\$ 2,900.00
64	Storm Sewer, Apron Endwalls, CMP, 21-Inch	14	EACH	\$ 350.00	\$ 4,900.00	\$ 541.00	\$ 7,574.00	\$ 282.00	\$ 3,948.00	\$ 380.00	\$ 5,320.00
65	Storm Sewer, Apron Endwalls, CMP, 24-Inch	2	EACH	\$ 425.00	\$ 850.00	\$ 558.00	\$ 1,116.00	\$ 324.00	\$ 648.00	\$ 430.00	\$ 860.00
66	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 28x20-Inch	2	EACH	\$ 500.00	\$ 1,000.00	\$ 524.00	\$ 1,048.00	\$ 316.00	\$ 632.00	\$ 395.00	\$ 790.00
67	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 35x24-Inch	8	EACH	\$ 725.00	\$ 5,800.00	\$ 720.00	\$ 5,760.00	\$ 449.00	\$ 3,592.00	\$ 600.00	\$ 4,800.00
68	Storm Sewer, 6-Inch, Underdrain, Perforated	500	LF	\$ 7.80	\$ 3,900.00	\$ 15.75	\$ 7,875.00	\$ 24.30	\$ 12,150.00	\$ 40.00	\$ 20,000.00
69	Storm Sewer, Underdrain, Cleanouts	12	EA	\$ 914.22	\$ 10,970.64	\$ 100.00	\$ 1,200.00	\$ 1,445.00	\$ 17,340.00	\$ 1,260.00	\$ 15,120.00
70	Dense Graded Base, 3/4-Inch	1580	TON	\$ 18.54	\$ 29,293.20	\$ 23.24	\$ 36,719.20	\$ 26.80	\$ 42,344.00	\$ 26.00	\$ 41,080.00
71	Dense Graded Base 1 1/4-Inch	25500	TON	\$ 12.73	\$ 324,615.00	\$ 14.15	\$ 360,825.00	\$ 18.70	\$ 476,850.00	\$ 18.65	\$ 475,575.00
72	Concrete Sidewalk 5-Inch	30	SF	\$ 20.00	\$ 600.00	\$ 20.00	\$ 600.00	\$ 10.00	\$ 300.00	\$ 20.00	\$ 600.00
73	Concrete Curb & Gutter 30-Inch	6100	LF	\$ 19.95	\$ 121,695.00	\$ 19.95	\$ 121,695.00	\$ 18.00	\$ 109,800.00	\$ 19.95	\$ 121,695.00
74	Concrete Curb & Gutter Spot Replacement	300	LF	\$ 36.75	\$ 11,025.00	\$ 36.75	\$ 11,025.00	\$ 50.00	\$ 15,000.00	\$ 52.00	\$ 15,600.00
75	Concrete Flume	2	EA	\$ 500.00	\$ 1,000.00	\$ 500.00	\$ 1,000.00	\$ 1,500.00	\$ 3,000.00	\$ 500.00	\$ 1,000.00
76	Concrete Driveway 7-Inch	250	SY	\$ 93.00	\$ 23,250.00	\$ 93.00	\$ 23,250.00	\$ 77.00	\$ 19,250.00	\$ 93.00	\$ 23,250.00
77	HMA Pavement 3 MT 58-28 H (Binder)	6100	TON	\$ 65.00	\$ 396,500.00	\$ 71.30	\$ 434,930.00	\$ 65.00	\$ 396,500.00	\$ 71.30	\$ 434,930.00
78	HMA Pavement 3 LT 58-28 S (Binder-Sundown)	66	TON	\$ 74.00	\$ 4,884.00	\$ 66.75	\$ 4,405.50	\$ 74.00	\$ 4,884.00	\$ 66.75	\$ 4,405.50
79	HMA Pavement 4 MT 58-28 H (Surface)	4370	TON	\$ 75.00	\$ 327,750.00	\$ 78.00	\$ 340,860.00	\$ 75.00	\$ 327,750.00	\$ 78.00	\$ 340,860.00
80	HMA Pavement 4 LT 58-28 S (Surface-Sundown)	44	TON	\$ 85.00	\$ 3,740.00	\$ 69.05	\$ 3,038.20	\$ 85.00	\$ 3,740.00	\$ 69.05	\$ 3,038.20
81	HMA Pavement 4 MT 58-28 S (Driveways)	380	TON	\$ 205.00	\$ 77,900.00	\$ 95.35	\$ 36,233.00	\$ 205.00	\$ 77,900.00	\$ 95.35	\$ 36,233.00
82	Adjust Storm Manhole	9	EACH	\$ 1,500.00	\$ 13,500.00	\$ 400.00	\$ 3,600.00	\$ 1,155.00	\$ 10,395.00	\$ 1,500.00	\$ 13,500.00
83	Adjusting Water Valve Box	9	EACH	\$ 1,000.00	\$ 9,000.00	\$ 366.00	\$ 3,294.00	\$ 650.00	\$ 5,850.00	\$ 1,000.00	\$ 9,000.00
84	Temporary Ditch Checks	276	EACH	\$ 65.00	\$ 17,940.00	\$ 70.00	\$ 19,320.00	\$ 59.00	\$ 16,284.00	\$ 65.00	\$ 17,940.00
85	Riprap Medium	16	CY	\$ 90.32	\$ 1,445.12	\$ 72.00	\$ 1,152.00	\$ 132.00	\$ 2,112.00	\$ 150.00	\$ 2,400.00
86	Pavement Marking, Epoxy, White, 4-Inch	15000	LF	\$ 0.65	\$ 9,750.00	\$ 0.65	\$ 9,750.00	\$ 0.65	\$ 9,750.00	\$ 0.65	\$ 9,750.00
87	Pavement Marking, Epoxy, Yellow, 4-Inch	5450	LF	\$ 0.65	\$ 3,542.50	\$ 0.65	\$ 3,542.50	\$ 0.65	\$ 3,542.50	\$ 0.65	\$ 3,542.50
88	Pavement Marking, Epoxy, Stop Bar, 18-Inch	85	LF	\$ 16.00	\$ 1,360.00	\$ 16.00	\$ 1,360.00	\$ 16.00	\$ 1,360.00	\$ 16.00	\$ 1,360.00
89	Remove & Replace Sign, Reflective	33	EACH	\$ 385.00	\$ 12,705.00	\$ 272.00	\$ 8,976.00	\$ 494.00	\$ 16,302.00	\$ 385.00	\$ 12,705.00
90	Snow Pole	10	EACH	\$ 165.00	\$ 1,650.00	\$ 70.00	\$ 700.00	\$ 75.00	\$ 750.00	\$ 165.00	\$ 1,650.00
91	4" Topsoil, Seed, Fertilizer, and Erosion Mat	33400	SY	\$ 6.55	\$ 218,770.00	\$ 6.00	\$ 200,400.00	\$ 5.95	\$ 198,730.00	\$ 5.70	\$ 190,380.00
				Total	\$ 3,215,720.44	Total	\$ 3,300,576.99	Total	\$ 3,372,342.55	Total	\$ 3,531,597.20

RD-20-04 Small Road Reconstruction

CONTRACT RD-20-04

Cells Highlighted in Yellow Denote Errors Found. Total Prices Calculated from Bid Unit Cost Submitted.

Section 1: Small Road (STA 96+00 to East Project Limits)				Willkomm Excavating & Grading, Inc.		Musson Bros., Inc.		Veit & Company, Inc.		Buteyn-Peterson Construction Co., Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	Traffic Control/Detour	1	LS	\$ 20,197.80	\$ 20,197.80	\$ 35,022.54	\$ 35,022.54	\$ 25,000.00	\$ 25,000.00	\$ 29,000.00	\$ 29,000.00
2	Construction Staking	1	LS	\$ 81,246.36	\$ 81,246.36	\$ 76,375.40	\$ 76,375.40	\$ 84,133.50	\$ 84,133.50	\$ 60,000.00	\$ 60,000.00
3	Private Septic System Evaluation and Repair	2	EACH	\$ 1,850.74	\$ 3,701.48	\$ 2,378.62	\$ 4,757.24	\$ 5,571.50	\$ 11,143.00	\$ 4,000.00	\$ 8,000.00
4	Sawcut Pavement	1100	LF	\$ 2.15	\$ 2,365.00	\$ 6.09	\$ 6,699.00	\$ 2.00	\$ 2,200.00	\$ 2.00	\$ 2,200.00
5	Silt Fence	4200	LF	\$ 1.81	\$ 7,602.00	\$ 1.57	\$ 6,594.00	\$ 2.00	\$ 8,400.00	\$ 2.00	\$ 8,400.00
6	Silt Fence, Heavy Duty	200	LF	\$ 13.93	\$ 2,786.00	\$ 8.95	\$ 1,790.00	\$ 14.50	\$ 2,900.00	\$ 12.95	\$ 2,590.00
7	Inlet Protection	20	EACH	\$ 59.18	\$ 1,183.60	\$ 65.75	\$ 1,315.00	\$ 61.50	\$ 1,230.00	\$ 55.00	\$ 1,100.00
8	Clearing & Grubbing	4	STA	\$ 444.00	\$ 1,776.00	\$ 397.50	\$ 1,590.00	\$ 438.00	\$ 1,752.00	\$ 400.00	\$ 1,600.00
9	Tree Removal	1090	ID	\$ 28.16	\$ 30,694.40	\$ 26.47	\$ 28,852.30	\$ 29.00	\$ 31,610.00	\$ 26.17	\$ 28,525.30
10	Remove and Replace Mailboxes	36	EACH	\$ 242.10	\$ 8,715.60	\$ 127.86	\$ 4,602.96	\$ 250.50	\$ 9,018.00	\$ 225.00	\$ 8,100.00
11	Temporary Mailbox	36	EACH	\$ 134.50	\$ 4,842.00	\$ 63.93	\$ 2,301.48	\$ 139.50	\$ 5,022.00	\$ 125.00	\$ 4,500.00
12	Remove & Salvage Private Light Poles	3	EACH	\$ 1,183.60	\$ 3,550.80	\$ 2,536.32	\$ 7,608.96	\$ 1,225.50	\$ 3,676.50	\$ 1,100.00	\$ 3,300.00
13	Remove Fence	600	LF	\$ 3.77	\$ 2,262.00	\$ 3.18	\$ 1,908.00	\$ 2.50	\$ 1,500.00	\$ 10.00	\$ 6,000.00
14	Temporary Electric Fence	280	LF	\$ 5.41	\$ 1,514.80	\$ 5.07	\$ 1,419.60	\$ 8.00	\$ 2,240.00	\$ 10.00	\$ 2,800.00
15	Removing Small Pipe Culverts	37	EACH	\$ 665.04	\$ 24,606.48	\$ 346.68	\$ 12,827.16	\$ 547.50	\$ 20,257.50	\$ 640.00	\$ 23,680.00
16	Pavement Removal	22,000	SY	\$ 1.67	\$ 36,740.00	\$ 2.72	\$ 59,840.00	\$ 3.00	\$ 66,000.00	\$ 3.90	\$ 85,800.00
17	Removing Curb & Gutter	600	LF	\$ 3.02	\$ 1,812.00	\$ 16.61	\$ 9,966.00	\$ 5.00	\$ 3,000.00	\$ 8.00	\$ 4,800.00
18	Removing Concrete Sidewalk	3	SY	\$ 106.82	\$ 320.46	\$ 81.70	\$ 245.10	\$ 373.00	\$ 1,119.00	\$ 35.00	\$ 105.00
19	Removing Storm Structure	2	EACH	\$ 540.16	\$ 1,080.32	\$ 718.02	\$ 1,436.04	\$ 1,213.50	\$ 2,427.00	\$ 650.00	\$ 1,300.00
20	Remove Storm Sewer	10	LF	\$ 72.09	\$ 720.90	\$ 81.70	\$ 817.00	\$ 120.50	\$ 1,205.00	\$ 75.00	\$ 750.00
21	Common Excavation (27,500 CY)	1	LS	\$ 496,262.30	\$ 496,262.30	\$ 391,772.71	\$ 391,772.71	\$ 448,187.50	\$ 448,187.50	\$ 515,000.00	\$ 515,000.00
22	Excavation Below Subgrade	3930	CY	\$ 15.65	\$ 61,504.50	\$ 14.65	\$ 57,574.50	\$ 16.00	\$ 62,880.00	\$ 18.00	\$ 70,740.00
23	Dense Graded Base, 3-Inch EBS Backfill	7100	TON	\$ 23.91	\$ 169,761.00	\$ 19.87	\$ 141,077.00	\$ 21.00	\$ 149,100.00	\$ 19.14	\$ 135,894.00
24	Geotextile Type SAS	36100	SY	\$ 1.34	\$ 48,374.00	\$ 3.57	\$ 128,877.00	\$ 1.50	\$ 54,150.00	\$ 2.10	\$ 75,810.00
25	12" C900 PVC Water Main	57	LF	\$ 293.75	\$ 16,743.75	\$ 311.95	\$ 17,781.15	\$ 272.00	\$ 15,504.00	\$ 350.00	\$ 19,950.00
26	16" C900 PVC Water Main	774	LF	\$ 233.49	\$ 180,721.26	\$ 238.02	\$ 184,227.48	\$ 212.00	\$ 164,088.00	\$ 290.00	\$ 224,460.00
27	16" Butterfly Valve with Valve Box	1	EACH	\$ 5,093.83	\$ 5,093.83	\$ 9,034.54	\$ 9,034.54	\$ 7,108.50	\$ 7,108.50	\$ 7,500.00	\$ 7,500.00
28	Hydrant Assembly	2	EACH	\$ 10,100.52	\$ 20,201.04	\$ 11,658.52	\$ 23,317.04	\$ 13,485.50	\$ 26,971.00	\$ 13,000.00	\$ 26,000.00
29	Bioswales	1650	LF	\$ 41.08	\$ 67,782.00	\$ 81.61	\$ 134,656.50	\$ 43.00	\$ 70,950.00	\$ 43.00	\$ 70,950.00
30	Bioswale Outfall with Rip-Rap	2	EACH	\$ 705.92	\$ 1,411.84	\$ 5,072.64	\$ 10,145.28	\$ 2,935.50	\$ 5,871.00	\$ 5,000.00	\$ 10,000.00
31	Storm Sewer, Catch Basins, 48-Inch (R-3228-BD)	2	EACH	\$ 3,834.91	\$ 7,669.82	\$ 4,231.97	\$ 8,463.94	\$ 4,315.00	\$ 8,630.00	\$ 4,125.00	\$ 8,250.00
32	Storm Sewer, Catch Basins, 20"x30" (R-3228-BD)	15	EACH	\$ 3,413.11	\$ 51,196.65	\$ 2,889.04	\$ 43,335.60	\$ 4,078.00	\$ 61,170.00	\$ 3,850.00	\$ 57,750.00
33	Storm Sewer, Manhole 36-Inch (R-1661)	3	EACH	\$ 4,842.05	\$ 14,526.15	\$ 2,678.88	\$ 8,036.64	\$ 2,987.00	\$ 8,961.00	\$ 3,435.00	\$ 10,305.00
34	Storm Sewer, Manhole 48-Inch (R-1661)	3	EACH	\$ 4,750.59	\$ 14,251.77	\$ 3,861.54	\$ 11,584.62	\$ 4,027.50	\$ 12,082.50	\$ 4,350.00	\$ 13,050.00
35	Storm Sewer, Manhole 60-Inch (R-1661)	1	EACH	\$ 6,464.67	\$ 6,464.67	\$ 5,165.61	\$ 5,165.61	\$ 5,468.00	\$ 5,468.00	\$ 7,000.00	\$ 7,000.00
36	Storm Sewer, Manhole 84-Inch (R-1661)	1	EACH	\$ 10,847.29	\$ 10,847.29	\$ 10,710.52	\$ 10,710.52	\$ 9,661.50	\$ 9,661.50	\$ 11,250.00	\$ 11,250.00
37	Storm Sewer, Inlets Median 1 Grate (R-4882)	1	EACH	\$ 2,894.47	\$ 2,894.47	\$ 4,490.62	\$ 4,490.62	\$ 2,522.00	\$ 2,522.00	\$ 3,175.00	\$ 3,175.00
38	Storm Sewer, Inlets Median 3 Grate (R-4882)	1	EACH	\$ 9,978.93	\$ 9,978.93	\$ 8,951.81	\$ 8,951.81	\$ 10,616.50	\$ 10,616.50	\$ 9,150.00	\$ 9,150.00
39	Storm Sewer, RCP, Class IV, 12-Inch	254	LF	\$ 63.48	\$ 16,123.92	\$ 93.58	\$ 23,769.32	\$ 112.50	\$ 28,575.00	\$ 140.00	\$ 35,560.00
40	Storm Sewer, RCP, Class IV, 15-Inch	472	LF	\$ 89.31	\$ 42,154.32	\$ 97.11	\$ 45,835.92	\$ 105.50	\$ 49,796.00	\$ 110.00	\$ 51,920.00
41	Storm Sewer, RCP, Class III, 18-Inch	427	LF	\$ 97.92	\$ 41,811.84	\$ 101.10	\$ 43,169.70	\$ 118.50	\$ 50,599.50	\$ 120.00	\$ 51,240.00
42	Storm Sewer, RCP, Class IV, 24-Inch	181	LF	\$ 135.58	\$ 24,539.98	\$ 129.68	\$ 23,472.08	\$ 155.00	\$ 28,055.00	\$ 135.00	\$ 24,435.00
43	Storm Sewer, RCP, Class III, 30-Inch	38	LF	\$ 179.69	\$ 6,828.22	\$ 142.91	\$ 5,430.58	\$ 325.50	\$ 12,369.00	\$ 200.00	\$ 7,600.00
44	Storm Sewer, RCP, Class IV, 15-Inch, Driveway Culvert	44	LF	\$ 75.32	\$ 3,314.08	\$ 97.11	\$ 4,272.84	\$ 75.00	\$ 3,300.00	\$ 85.00	\$ 3,740.00
45	Storm Sewer, RCP, Class IV, 18-Inch, Driveway Culvert	114	LF	\$ 87.16	\$ 9,936.24	\$ 112.07	\$ 12,775.98	\$ 85.50	\$ 9,747.00	\$ 110.00	\$ 12,540.00
46	Storm Sewer, RCP, Class IV, 21-Inch, Driveway Culvert	48	LF	\$ 103.30	\$ 4,958.40	\$ 121.92	\$ 5,852.16	\$ 97.00	\$ 4,656.00	\$ 155.00	\$ 7,440.00
47	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 19x30-Inch, Driveway Culvert	92	LF	\$ 147.41	\$ 13,561.72	\$ 158.26	\$ 14,559.92	\$ 159.50	\$ 14,674.00	\$ 160.00	\$ 14,720.00
48	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 29x45-Inch	74	LF	\$ 246.41	\$ 18,234.34	\$ 209.64	\$ 15,513.36	\$ 250.00	\$ 18,500.00	\$ 280.00	\$ 20,720.00
49	Storm Sewer, CMP, 12-Inch, Driveway Culvert	269	LF	\$ 73.17	\$ 19,682.73	\$ 101.98	\$ 27,432.62	\$ 69.00	\$ 18,561.00	\$ 67.00	\$ 18,023.00
50	Storm Sewer, CMP, 15-Inch, Driveway Culvert	173	LF	\$ 79.62	\$ 13,774.26	\$ 106.58	\$ 18,438.34	\$ 74.00	\$ 12,802.00	\$ 74.00	\$ 12,802.00

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51	Storm Sewer, CMP, 18-Inch, Driveway Culvert	208	LF	\$ 87.16	\$ 18,129.28	\$ 113.48	\$ 23,603.84	\$ 81.00	\$ 16,848.00	\$ 86.00	\$ 17,888.00
52	Storm Sewer, CMP, 21-Inch, Driveway Culvert	257	LF	\$ 92.54	\$ 23,782.78	\$ 105.87	\$ 27,208.59	\$ 91.50	\$ 23,515.50	\$ 105.00	\$ 26,985.00
53	Storm Sewer, CMP, 24-Inch, Driveway Culvert	36	LF	\$ 102.22	\$ 3,679.92	\$ 131.33	\$ 4,727.88	\$ 96.50	\$ 3,474.00	\$ 115.00	\$ 4,140.00
54	Storm Sewer Pipe Arch, CMP, 28x20-Inch, Driveway Culvert	30	LF	\$ 118.36	\$ 3,550.80	\$ 137.75	\$ 4,132.50	\$ 101.00	\$ 3,030.00	\$ 115.00	\$ 3,450.00
55	Storm Sewer Pipe Arch, CMP, 35x24-Inch, Driveway Culvert	192	LF	\$ 128.05	\$ 24,585.60	\$ 159.93	\$ 30,706.56	\$ 138.50	\$ 26,592.00	\$ 145.00	\$ 27,840.00
56	Storm Sewer, Apron Endwalls, RCP, 15-Inch	4	EACH	\$ 1,010.38	\$ 4,041.52	\$ 920.45	\$ 3,681.80	\$ 1,495.50	\$ 5,982.00	\$ 1,205.00	\$ 4,820.00
57	Storm Sewer, Apron Endwalls, RCP, 18-Inch	4	EACH	\$ 1,537.62	\$ 6,150.48	\$ 984.87	\$ 3,939.48	\$ 2,799.50	\$ 11,198.00	\$ 1,285.00	\$ 5,140.00
58	Storm Sewer, Apron Endwalls, RCP, 21-Inch	1	EACH	\$ 1,293.37	\$ 1,293.37	\$ 1,428.31	\$ 1,428.31	\$ 3,832.50	\$ 3,832.50	\$ 2,330.00	\$ 2,330.00
59	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 19x30-Inch	6	EACH	\$ 1,829.22	\$ 10,975.32	\$ 1,061.37	\$ 6,368.22	\$ 3,688.50	\$ 22,131.00	\$ 1,400.00	\$ 8,400.00
60	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 29x45-Inch	4	EACH	\$ 3,572.36	\$ 14,289.44	\$ 1,477.21	\$ 5,908.84	\$ 6,207.50	\$ 24,830.00	\$ 2,950.00	\$ 11,800.00
61	Storm Sewer, Apron Endwalls, CMP, 12-Inch, Driveway Culvert	12	EACH	\$ 177.54	\$ 2,130.48	\$ 483.92	\$ 5,807.04	\$ 985.50	\$ 11,826.00	\$ 285.00	\$ 3,420.00
62	Storm Sewer, Apron Endwalls, CMP, 15-Inch	10	EACH	\$ 202.29	\$ 2,022.90	\$ 517.27	\$ 5,172.70	\$ 1,193.50	\$ 11,935.00	\$ 310.00	\$ 3,100.00
63	Storm Sewer, Apron Endwalls, CMP, 18-Inch	10	EACH	\$ 590.73	\$ 5,907.30	\$ 2,410.69	\$ 24,106.90	\$ 1,239.50	\$ 12,395.00	\$ 350.00	\$ 3,500.00
64	Storm Sewer, Apron Endwalls, CMP, 21-Inch	14	EACH	\$ 713.40	\$ 9,987.60	\$ 607.00	\$ 8,498.00	\$ 1,151.50	\$ 16,121.00	\$ 410.00	\$ 5,740.00
65	Storm Sewer, Apron Endwalls, CMP, 24-Inch	2	EACH	\$ 775.81	\$ 1,551.62	\$ 662.21	\$ 1,324.42	\$ 1,348.50	\$ 2,697.00	\$ 475.00	\$ 950.00
66	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 28x20-Inch	2	EACH	\$ 805.94	\$ 1,611.88	\$ 625.40	\$ 1,250.80	\$ 2,194.50	\$ 4,389.00	\$ 450.00	\$ 900.00
67	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 35x24-Inch	8	EACH	\$ 1,113.67	\$ 8,909.36	\$ 802.55	\$ 6,420.40	\$ 2,044.50	\$ 16,356.00	\$ 615.00	\$ 4,920.00
68	Storm Sewer, 6-Inch, Underdrain, Perforated	500	LF	\$ 20.44	\$ 10,220.00	\$ 12.10	\$ 6,050.00	\$ 22.50	\$ 11,250.00	\$ 25.00	\$ 12,500.00
69	Storm Sewer, Underdrain, Cleanouts	12	EA	\$ 997.46	\$ 11,969.52	\$ 1,133.91	\$ 13,606.92	\$ 880.00	\$ 10,560.00	\$ 1,200.00	\$ 14,400.00
70	Dense Graded Base, 3/4-Inch	1580	TON	\$ 43.04	\$ 68,003.20	\$ 21.63	\$ 34,175.40	\$ 21.00	\$ 33,180.00	\$ 23.58	\$ 37,256.40
71	Dense Graded Base 1 1/4-Inch	25500	TON	\$ 17.75	\$ 452,625.00	\$ 19.97	\$ 509,235.00	\$ 19.00	\$ 484,500.00	\$ 21.64	\$ 551,820.00
72	Concrete Sidewalk 5-Inch	30	SF	\$ 10.76	\$ 322.80	\$ 20.29	\$ 608.70	\$ 22.50	\$ 675.00	\$ 20.00	\$ 600.00
73	Concrete Curb & Gutter 30-Inch	6100	LF	\$ 20.80	\$ 126,880.00	\$ 20.24	\$ 123,464.00	\$ 22.50	\$ 137,250.00	\$ 19.95	\$ 121,695.00
74	Concrete Curb & Gutter Spot Replacement	300	LF	\$ 63.76	\$ 19,128.00	\$ 37.28	\$ 11,184.00	\$ 62.00	\$ 18,600.00	\$ 36.75	\$ 11,025.00
75	Concrete Flume	2	EA	\$ 2,289.07	\$ 4,578.14	\$ 507.26	\$ 1,014.52	\$ 2,014.00	\$ 4,028.00	\$ 500.00	\$ 1,000.00
76	Concrete Driveway 7-Inch	250	SY	\$ 81.54	\$ 20,385.00	\$ 94.35	\$ 23,587.50	\$ 91.00	\$ 22,750.00	\$ 93.00	\$ 23,250.00
77	HMA Pavement 3 MT 58-28 H (Binder)	6100	TON	\$ 76.72	\$ 467,992.00	\$ 65.94	\$ 402,234.00	\$ 72.50	\$ 442,250.00	\$ 71.30	\$ 434,930.00
78	HMA Pavement 3 LT 58-28 S (Binder-Sundown)	66	TON	\$ 71.82	\$ 4,740.12	\$ 75.08	\$ 4,955.28	\$ 82.50	\$ 5,445.00	\$ 66.75	\$ 4,405.50
79	HMA Pavement 4 MT 58-28 H (Surface)	4370	TON	\$ 83.93	\$ 366,774.10	\$ 76.09	\$ 332,513.30	\$ 83.50	\$ 364,895.00	\$ 78.00	\$ 340,860.00
80	HMA Pavement 4 LT 58-28 S (Surface-Sundown)	44	TON	\$ 74.30	\$ 3,269.20	\$ 86.23	\$ 3,794.12	\$ 94.50	\$ 4,158.00	\$ 69.05	\$ 3,038.20
81	HMA Pavement 4 MT 58-28 S (Driveways)	380	TON	\$ 100.45	\$ 38,171.00	\$ 207.98	\$ 79,032.40	\$ 228.50	\$ 86,830.00	\$ 95.35	\$ 36,233.00
82	Adjust Storm Manhole	9	EACH	\$ 1,342.86	\$ 12,085.74	\$ 283.15	\$ 2,548.35	\$ 499.00	\$ 4,491.00	\$ 650.00	\$ 5,850.00
83	Adjusting Water Valve Box	9	EACH	\$ 370.15	\$ 3,331.35	\$ 283.15	\$ 2,548.35	\$ 447.00	\$ 4,023.00	\$ 350.00	\$ 3,150.00
84	Temporary Ditch Checks	276	EACH	\$ 69.94	\$ 19,303.44	\$ 85.22	\$ 23,520.72	\$ 72.50	\$ 20,010.00	\$ 65.00	\$ 17,940.00
85	Riprap Medium	16	CY	\$ 154.95	\$ 2,479.20	\$ 224.60	\$ 3,593.60	\$ 113.50	\$ 1,816.00	\$ 150.00	\$ 2,400.00
86	Pavement Marking, Epoxy, White, 4-Inch	15000	LF	\$ 0.70	\$ 10,500.00	\$ 0.68	\$ 10,200.00	\$ 0.70	\$ 10,500.00	\$ 0.65	\$ 9,750.00
87	Pavement Marking, Epoxy, Yellow, 4-Inch	5450	LF	\$ 0.70	\$ 3,815.00	\$ 0.68	\$ 3,706.00	\$ 0.70	\$ 3,815.00	\$ 0.65	\$ 3,542.50
88	Pavement Marking, Epoxy, Stop Bar, 18-Inch	85	LF	\$ 17.22	\$ 1,463.70	\$ 12.17	\$ 1,034.45	\$ 18.00	\$ 1,530.00	\$ 16.00	\$ 1,360.00
89	Remove & Replace Sign, Reflective	33	EACH	\$ 414.26	\$ 13,670.58	\$ 501.18	\$ 16,538.94	\$ 429.00	\$ 14,157.00	\$ 385.00	\$ 12,705.00
90	Snow Pole	10	EACH	\$ 10.76	\$ 107.60	\$ 76.09	\$ 760.90	\$ 184.00	\$ 1,840.00	\$ 165.00	\$ 1,650.00
91	4" Topsoil, Seed, Fertilizer, and Erosion Mat	33400	SY	\$ 2.80	\$ 93,520.00	\$ 5.07	\$ 169,338.00	\$ 4.50	\$ 150,300.00	\$ 5.69	\$ 190,046.00
				Total	\$ 3,536,257.66	Total	\$ 3,649,223.89	Total	\$ 3,715,394.50	Total	\$ 3,796,253.90

Section 2: Small Road (College Avenue to STA 96+00)				Willkomm Excavating & Grading, Inc.		Musson Bros., Inc.		Veit & Company, Inc.		Buteyn-Peterson Construction Co., Inc.	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
92	Construction Staking	1	LS	\$ 16,489.87	\$ 16,489.87	\$ 15,547.65	\$ 15,547.65	\$ 17,076.00	\$ 17,076.00	\$ 5,000.00	\$ 5,000.00
93	Sawcut Pavement	392	LF	\$ 2.15	\$ 842.80	\$ 5.07	\$ 1,987.44	\$ 2.00	\$ 784.00	\$ 2.00	\$ 784.00
94	Clearing & Grubbing	1	STA	\$ 422.85	\$ 422.85	\$ 398.69	\$ 398.69	\$ 438.00	\$ 438.00	\$ 400.00	\$ 400.00
95	Pavement Removal	1,410	SY	\$ 2.51	\$ 3,539.10	\$ 10.60	\$ 14,946.00	\$ 5.00	\$ 7,050.00	\$ 3.90	\$ 5,499.00
96	Common Excavation (3,726 CY)	1	LS	\$ 52,508.16	\$ 52,508.16	\$ 52,540.64	\$ 52,540.64	\$ 59,784.50	\$ 59,784.50	\$ 65,000.00	\$ 65,000.00
97	Geogrid Type SR	1108	SY	\$ 2.15	\$ 2,382.20	\$ 3.99	\$ 4,420.92	\$ 2.50	\$ 2,770.00	\$ 3.00	\$ 3,324.00
98	Dense Graded Base, 3-Inch EBS Backfill	1275	TON	\$ 18.84	\$ 24,021.00	\$ 19.50	\$ 24,862.50	\$ 27.50	\$ 35,062.50	\$ 19.14	\$ 24,403.50
99	Storm Sewer, CMP, 15-Inch, Driveway Culvert	39	LF	\$ 165.71	\$ 6,462.69	\$ 121.14	\$ 4,724.46	\$ 91.00	\$ 3,549.00	\$ 74.00	\$ 2,886.00
100	Storm Sewer, CMP, Pipe Arch, 28x20-Inch, Driveway Culvert	15	LF	\$ 224.89	\$ 3,373.35	\$ 137.75	\$ 2,066.25	\$ 118.50	\$ 1,777.50	\$ 150.00	\$ 2,250.00
101	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 14x23-Inch, Driveway Culvert	102	LF	\$ 116.21	\$ 11,853.42	\$ 144.84	\$ 14,773.68	\$ 133.50	\$ 13,617.00	\$ 135.00	\$ 13,770.00
102	Storm Sewer, Apron Endwalls, CMP, 15-Inch	2	EACH	\$ 202.29	\$ 404.58	\$ 517.27	\$ 1,034.54	\$ 1,311.00	\$ 2,622.00	\$ 310.00	\$ 620.00
103	Storm Sewer, Apron Endwalls, CMP, Pipe Arch, 28x20-Inch	1	EACH	\$ 366.91	\$ 366.91	\$ 625.40	\$ 625.40	\$ 1,340.00	\$ 1,340.00	\$ 450.00	\$ 450.00
104	Storm Sewer, Apron Endwalls, RCP, 14x23-Inch	4	EACH	\$ 1,267.54	\$ 5,070.16	\$ 975.67	\$ 3,902.68	\$ 3,418.00	\$ 13,672.00	\$ 1,250.00	\$ 5,000.00
105	Dense Graded Base 3/4-Inch	63	TON	\$ 43.04	\$ 2,711.52	\$ 31.56	\$ 1,988.28	\$ 51.00	\$ 3,213.00	\$ 23.58	\$ 1,485.54
106	Dense Graded Base 1 1/4-Inch	1,305	TON	\$ 17.74	\$ 23,150.70	\$ 25.50	\$ 33,277.50	\$ 21.00	\$ 27,405.00	\$ 21.64	\$ 28,240.20
107	Concrete Curb & Gutter 30-Inch	99	LF	\$ 59.47	\$ 5,887.53	\$ 37.28	\$ 3,690.72	\$ 23.50	\$ 2,326.50	\$ 36.75	\$ 3,638.25
108	Concrete Flume	2	EA	\$ 2,289.07	\$ 4,578.14	\$ 507.26	\$ 1,014.52	\$ 1,993.50	\$ 3,987.00	\$ 500.00	\$ 1,000.00
109	HMA Pavement 3 MT 58-28 H (Binder)	231	TON	\$ 76.72	\$ 17,722.32	\$ 65.94	\$ 15,232.14	\$ 72.50	\$ 16,747.50	\$ 71.30	\$ 16,470.30
110	HMA Pavement 4 MT 58-28 H (Surface)	165	TON	\$ 83.93	\$ 13,848.45	\$ 76.09	\$ 12,554.85	\$ 83.50	\$ 13,777.50	\$ 78.00	\$ 12,870.00
111	HMA Pavement 4 MT 58-28 S (Driveways)	36	TON	\$ 102.60	\$ 3,693.60	\$ 207.98	\$ 7,487.28	\$ 228.50	\$ 8,226.00	\$ 95.35	\$ 3,432.60
112	Temporary Ditch Checks	6	EACH	\$ 69.94	\$ 419.64	\$ 85.22	\$ 511.32	\$ 72.50	\$ 435.00	\$ 65.00	\$ 390.00
113	Remove & Replace Sign, Reflective	9	EACH	\$ 414.27	\$ 3,728.43	\$ 507.26	\$ 4,565.34	\$ 429.00	\$ 3,861.00	\$ 385.00	\$ 3,465.00
114	Pavement Marking, Epoxy, White, 4-Inch	400	LF	\$ 0.70	\$ 280.00	\$ 0.68	\$ 272.00	\$ 0.70	\$ 280.00	\$ 0.65	\$ 260.00
115	Pavement Marking, Epoxy, Yellow, 4-Inch	425	LF	\$ 0.70	\$ 297.50	\$ 0.68	\$ 289.00	\$ 0.70	\$ 297.50	\$ 0.65	\$ 276.25
116	Pavement Marking, Epoxy, Stop Bar, 18-Inch	24	LF	\$ 17.22	\$ 413.28	\$ 12.17	\$ 292.08	\$ 18.00	\$ 432.00	\$ 16.00	\$ 384.00
117	Snow Pole	7	EACH	\$ 177.54	\$ 1,242.78	\$ 76.09	\$ 532.63	\$ 184.00	\$ 1,288.00	\$ 165.00	\$ 1,155.00
118	4" Topsoil, Seed, Fertilizer, and Erosion Mat	2076	SY	\$ 2.80	\$ 5,812.80	\$ 5.07	\$ 10,525.32	\$ 4.50	\$ 9,342.00	\$ 5.69	\$ 11,812.44
				Total	\$ 211,523.78	Total	\$ 234,063.83	Total	\$ 251,160.50	Total	\$ 214,266.08

RD-20-04 Small Road Reconstruction

CONTRACT RD-20-04

Cells Highlighted in Yellow Denote Errors Found. Total Prices Calculated from Bid Unit Cost Submitted.

Section 1: Small Road (STA 96+00 to East Project Limits)				LaLonde Contractors, Inc.		Rock Road Companies, Inc.		Engineer's Estimate	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	Traffic Control/Detour	1	LS	\$ 46,289.77	\$ 46,289.77	\$ 34,452.95	\$ 34,452.95	\$ 15,000.00	\$ 15,000.00
2	Construction Staking	1	LS	\$ 34,800.00	\$ 34,800.00	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00
3	Private Septic System Evaluation and Repair	2	EACH	\$ 2,000.00	\$ 4,000.00	\$ 1,500.00	\$ 3,000.00	\$ 1,000.00	\$ 2,000.00
4	Sawcut Pavement	1100	LF	\$ 1.95	\$ 2,145.00	\$ 1.49	\$ 1,639.00	\$ 1.50	\$ 1,650.00
5	Silt Fence	4200	LF	\$ 2.00	\$ 8,400.00	\$ 2.15	\$ 9,030.00	\$ 2.65	\$ 11,130.00
6	Silt Fence, Heavy Duty	200	LF	\$ 4.10	\$ 820.00	\$ 17.75	\$ 3,550.00	\$ 5.00	\$ 1,000.00
7	Inlet Protection	20	EACH	\$ 70.00	\$ 1,400.00	\$ 75.00	\$ 1,500.00	\$ 65.00	\$ 1,300.00
8	Clearing & Grubbing	4	STA	\$ 392.98	\$ 1,571.92	\$ 392.98	\$ 1,571.92	\$ 1,025.00	\$ 4,100.00
9	Tree Removal	1090	ID	\$ 26.17	\$ 28,525.30	\$ 26.17	\$ 28,525.30	\$ 35.00	\$ 38,150.00
10	Remove and Replace Mailboxes	36	EACH	\$ 99.50	\$ 3,582.00	\$ 195.00	\$ 7,020.00	\$ 400.00	\$ 14,400.00
11	Temporary Mailbox	36	EACH	\$ 63.00	\$ 2,268.00	\$ 175.00	\$ 6,300.00	\$ 400.00	\$ 14,400.00
12	Remove & Salvage Private Light Poles	3	EACH	\$ 1,100.00	\$ 3,300.00	\$ 1,100.00	\$ 3,300.00	\$ 500.00	\$ 1,500.00
13	Remove Fence	600	LF	\$ 2.25	\$ 1,350.00	\$ 6.30	\$ 3,780.00	\$ 10.00	\$ 6,000.00
14	Temporary Electric Fence	280	LF	\$ 7.14	\$ 1,999.20	\$ 25.39	\$ 7,109.20	\$ 5.00	\$ 1,400.00
15	Removing Small Pipe Culverts	37	EACH	\$ 551.28	\$ 20,397.36	\$ 374.08	\$ 13,840.96	\$ 530.00	\$ 19,610.00
16	Pavement Removal	22,000	SY	\$ 4.46	\$ 98,120.00	\$ 3.60	\$ 79,200.00	\$ 3.50	\$ 77,000.00
17	Removing Curb & Gutter	600	LF	\$ 6.16	\$ 3,696.00	\$ 8.99	\$ 5,394.00	\$ 9.00	\$ 5,400.00
18	Removing Concrete Sidewalk	3	SY	\$ 98.21	\$ 294.63	\$ 15.29	\$ 45.87	\$ 35.00	\$ 105.00
19	Removing Storm Structure	2	EACH	\$ 816.00	\$ 1,632.00	\$ 536.69	\$ 1,073.38	\$ 585.00	\$ 1,170.00
20	Remove Storm Sewer	10	LF	\$ 86.00	\$ 860.00	\$ 22.45	\$ 224.50	\$ 30.00	\$ 300.00
21	Common Excavation (27,500 CY)	1	LS	\$ 635,393.03	\$ 635,393.03	\$ 789,000.00	\$ 789,000.00	\$ 365,000.00	\$ 365,000.00
22	Excavation Below Subgrade	3930	CY	\$ 25.24	\$ 99,193.20	\$ 22.68	\$ 89,132.40	\$ 20.00	\$ 78,600.00
23	Dense Graded Base, 3-Inch EBS Backfill	7100	TON	\$ 21.73	\$ 154,283.00	\$ 22.62	\$ 160,602.00	\$ 22.00	\$ 156,200.00
24	Geotextile Type SAS	36100	SY	\$ 2.02	\$ 72,922.00	\$ 1.53	\$ 55,233.00	\$ 1.95	\$ 70,395.00
25	12" C900 PVC Water Main	57	LF	\$ 226.00	\$ 12,882.00	\$ 220.24	\$ 12,553.68	\$ 180.00	\$ 10,260.00
26	16" C900 PVC Water Main	774	LF	\$ 271.00	\$ 209,754.00	\$ 203.23	\$ 157,300.02	\$ 200.00	\$ 154,800.00
27	16" Butterfly Valve with Valve Box	1	EACH	\$ 5,991.00	\$ 5,991.00	\$ 5,147.81	\$ 5,147.81	\$ 2,000.00	\$ 2,000.00
28	Hydrant Assembly	2	EACH	\$ 14,375.00	\$ 28,750.00	\$ 10,151.91	\$ 20,303.82	\$ 8,000.00	\$ 16,000.00
29	Bioswales	1650	LF	\$ 26.94	\$ 44,451.00	\$ 75.11	\$ 123,931.50	\$ 40.00	\$ 66,000.00
30	Bioswale Outfall with Rip-Rap	2	EACH	\$ 900.00	\$ 1,800.00	\$ 3,000.00	\$ 6,000.00	\$ 3,000.00	\$ 6,000.00
31	Storm Sewer, Catch Basins, 48-Inch (R-3228-BD)	2	EACH	\$ 3,977.00	\$ 7,954.00	\$ 4,826.87	\$ 9,653.74	\$ 3,400.00	\$ 6,800.00
32	Storm Sewer, Catch Basins, 20"x30" (R-3228-BD)	15	EACH	\$ 3,804.00	\$ 57,060.00	\$ 4,475.43	\$ 67,131.45	\$ 2,500.00	\$ 37,500.00
33	Storm Sewer, Manhole 36-Inch (R-1661)	3	EACH	\$ 3,347.00	\$ 10,041.00	\$ 4,395.62	\$ 13,186.86	\$ 3,000.00	\$ 9,000.00
34	Storm Sewer, Manhole 48-Inch (R-1661)	3	EACH	\$ 3,816.00	\$ 11,448.00	\$ 4,971.14	\$ 14,913.42	\$ 3,900.00	\$ 11,700.00
35	Storm Sewer, Manhole 60-Inch (R-1661)	1	EACH	\$ 5,665.00	\$ 5,665.00	\$ 6,746.26	\$ 6,746.26	\$ 5,475.00	\$ 5,475.00
36	Storm Sewer, Manhole 84-Inch (R-1661)	1	EACH	\$ 9,353.00	\$ 9,353.00	\$ 8,875.05	\$ 8,875.05	\$ 6,550.00	\$ 6,550.00
37	Storm Sewer, Inlets Median 1 Grate (R-4882)	1	EACH	\$ 2,783.00	\$ 2,783.00	\$ 4,087.48	\$ 4,087.48	\$ 3,350.00	\$ 3,350.00
38	Storm Sewer, Inlets Median 3 Grate (R-4882)	1	EACH	\$ 8,251.00	\$ 8,251.00	\$ 8,681.31	\$ 8,681.31	\$ 4,000.00	\$ 4,000.00
39	Storm Sewer, RCP, Class IV, 12-Inch	254	LF	\$ 113.00	\$ 28,702.00	\$ 123.00	\$ 31,242.00	\$ 85.00	\$ 21,590.00
40	Storm Sewer, RCP, Class IV, 15-Inch	472	LF	\$ 104.00	\$ 49,088.00	\$ 103.92	\$ 49,050.24	\$ 90.00	\$ 42,480.00
41	Storm Sewer, RCP, Class III, 18-Inch	427	LF	\$ 143.00	\$ 61,061.00	\$ 107.05	\$ 45,710.35	\$ 96.00	\$ 40,992.00
42	Storm Sewer, RCP, Class IV, 24-Inch	181	LF	\$ 148.00	\$ 26,788.00	\$ 139.03	\$ 25,164.43	\$ 123.00	\$ 22,263.00
43	Storm Sewer, RCP, Class III, 30-Inch	38	LF	\$ 270.00	\$ 10,260.00	\$ 193.32	\$ 7,346.16	\$ 140.00	\$ 5,320.00
44	Storm Sewer, RCP, Class IV, 15-Inch, Driveway Culvert	44	LF	\$ 93.00	\$ 4,092.00	\$ 97.59	\$ 4,293.96	\$ 75.00	\$ 3,300.00
45	Storm Sewer, RCP, Class IV, 18-Inch, Driveway Culvert	114	LF	\$ 111.00	\$ 12,654.00	\$ 104.22	\$ 11,881.08	\$ 80.00	\$ 9,120.00
46	Storm Sewer, RCP, Class IV, 21-Inch, Driveway Culvert	48	LF	\$ 115.00	\$ 5,520.00	\$ 115.83	\$ 5,559.84	\$ 130.00	\$ 6,240.00
47	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 19x30-Inch, Driveway Culvert	92	LF	\$ 135.00	\$ 12,420.00	\$ 158.59	\$ 14,590.28	\$ 175.00	\$ 16,100.00
48	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 29x45-Inch	74	LF	\$ 228.00	\$ 16,872.00	\$ 219.06	\$ 16,210.44	\$ 285.00	\$ 21,090.00
49	Storm Sewer, CMP, 12-Inch, Driveway Culvert	269	LF	\$ 77.00	\$ 20,713.00	\$ 94.34	\$ 25,377.46	\$ 60.00	\$ 16,140.00
50	Storm Sewer, CMP, 15-Inch, Driveway Culvert	173	LF	\$ 82.00	\$ 14,186.00	\$ 98.40	\$ 17,023.20	\$ 84.00	\$ 14,532.00

BID TAB

51	Storm Sewer, CMP, 18-Inch, Driveway Culvert	208	LF	\$ 96.00	\$ 19,968.00	\$ 104.67	\$ 21,771.36	\$ 94.00	\$ 19,552.00
52	Storm Sewer, CMP, 21-Inch, Driveway Culvert	257	LF	\$ 84.00	\$ 21,588.00	\$ 108.73	\$ 27,943.61	\$ 110.00	\$ 28,270.00
53	Storm Sewer, CMP, 24-Inch, Driveway Culvert	36	LF	\$ 126.00	\$ 4,536.00	\$ 112.92	\$ 4,065.12	\$ 133.00	\$ 4,788.00
54	Storm Sewer Pipe Arch, CMP, 28x20-Inch, Driveway Culvert	30	LF	\$ 132.00	\$ 3,960.00	\$ 116.12	\$ 3,483.60	\$ 100.00	\$ 3,000.00
55	Storm Sewer Pipe Arch, CMP, 35x24-Inch, Driveway Culvert	192	LF	\$ 143.00	\$ 27,456.00	\$ 164.36	\$ 31,557.12	\$ 130.00	\$ 24,960.00
56	Storm Sewer, Apron Endwalls, RCP, 15-Inch	4	EACH	\$ 1,187.00	\$ 4,748.00	\$ 1,233.00	\$ 4,932.00	\$ 920.00	\$ 3,680.00
57	Storm Sewer, Apron Endwalls, RCP, 18-Inch	4	EACH	\$ 1,761.00	\$ 7,044.00	\$ 1,663.56	\$ 6,654.24	\$ 1,215.00	\$ 4,860.00
58	Storm Sewer, Apron Endwalls, RCP, 21-Inch	1	EACH	\$ 1,798.00	\$ 1,798.00	\$ 1,915.85	\$ 1,915.85	\$ 1,300.00	\$ 1,300.00
59	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 19x30-Inch	6	EACH	\$ 1,408.00	\$ 8,448.00	\$ 1,872.61	\$ 11,235.66	\$ 1,200.00	\$ 7,200.00
60	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 29x45-Inch	4	EACH	\$ 4,052.00	\$ 16,208.00	\$ 2,706.49	\$ 10,825.96	\$ 1,900.00	\$ 7,600.00
61	Storm Sewer, Apron Endwalls, CMP, 12-Inch, Driveway Culvert	12	EACH	\$ 420.00	\$ 5,040.00	\$ 471.29	\$ 5,655.48	\$ 330.00	\$ 3,960.00
62	Storm Sewer, Apron Endwalls, CMP, 15-Inch	10	EACH	\$ 452.00	\$ 4,520.00	\$ 497.63	\$ 4,976.30	\$ 385.00	\$ 3,850.00
63	Storm Sewer, Apron Endwalls, CMP, 18-Inch	10	EACH	\$ 502.00	\$ 5,020.00	\$ 1,280.33	\$ 12,803.30	\$ 430.00	\$ 4,300.00
64	Storm Sewer, Apron Endwalls, CMP, 21-Inch	14	EACH	\$ 799.00	\$ 11,186.00	\$ 1,508.83	\$ 21,123.62	\$ 500.00	\$ 7,000.00
65	Storm Sewer, Apron Endwalls, CMP, 24-Inch	2	EACH	\$ 853.00	\$ 1,706.00	\$ 1,596.57	\$ 3,193.14	\$ 565.00	\$ 1,130.00
66	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 28x20-Inch	2	EACH	\$ 843.00	\$ 1,686.00	\$ 1,689.84	\$ 3,379.68	\$ 430.00	\$ 860.00
67	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 35x24-Inch	8	EACH	\$ 1,135.00	\$ 9,080.00	\$ 2,058.98	\$ 16,471.84	\$ 605.00	\$ 4,840.00
68	Storm Sewer, 6-Inch, Underdrain, Perforated	500	LF	\$ 48.00	\$ 24,000.00	\$ 21.12	\$ 10,560.00	\$ 11.00	\$ 5,500.00
69	Storm Sewer, Underdrain, Cleanouts	12	EA	\$ 2,416.00	\$ 28,992.00	\$ 1,235.42	\$ 14,825.04	\$ 1,500.00	\$ 18,000.00
70	Dense Graded Base, 3/4-Inch	1580	TON	\$ 28.44	\$ 44,935.20	\$ 25.61	\$ 40,463.80	\$ 29.00	\$ 45,820.00
71	Dense Graded Base 1 1/4-Inch	25500	TON	\$ 20.63	\$ 526,065.00	\$ 19.49	\$ 496,995.00	\$ 15.00	\$ 382,500.00
72	Concrete Sidewalk 5-Inch	30	SF	\$ 10.74	\$ 322.20	\$ 17.00	\$ 510.00	\$ 18.00	\$ 540.00
73	Concrete Curb & Gutter 30-Inch	6100	LF	\$ 20.63	\$ 125,843.00	\$ 18.50	\$ 112,850.00	\$ 21.00	\$ 128,100.00
74	Concrete Curb & Gutter Spot Replacement	300	LF	\$ 48.21	\$ 14,463.00	\$ 42.00	\$ 12,600.00	\$ 21.00	\$ 6,300.00
75	Concrete Flume	2	EA	\$ 1,337.79	\$ 2,675.58	\$ 750.00	\$ 1,500.00	\$ 2,500.00	\$ 5,000.00
76	Concrete Driveway 7-Inch	250	SY	\$ 60.35	\$ 15,087.50	\$ 75.00	\$ 18,750.00	\$ 55.00	\$ 13,750.00
77	HMA Pavement 3 MT 58-28 H (Binder)	6100	TON	\$ 77.70	\$ 473,970.00	\$ 73.00	\$ 445,300.00	\$ 87.00	\$ 530,700.00
78	HMA Pavement 3 LT 58-28 S (Binder-Sundown)	66	TON	\$ 66.75	\$ 4,405.50	\$ 85.00	\$ 5,610.00	\$ 75.00	\$ 4,950.00
79	HMA Pavement 4 MT 58-28 H (Surface)	4370	TON	\$ 78.00	\$ 340,860.00	\$ 78.00	\$ 340,860.00	\$ 96.00	\$ 419,520.00
80	HMA Pavement 4 LT 58-28 S (Surface-Sundown)	44	TON	\$ 69.05	\$ 3,038.20	\$ 105.00	\$ 4,620.00	\$ 84.00	\$ 3,696.00
81	HMA Pavement 4 MT 58-28 S (Driveways)	380	TON	\$ 95.35	\$ 36,233.00	\$ 99.80	\$ 37,924.00	\$ 150.00	\$ 57,000.00
82	Adjust Storm Manhole	9	EACH	\$ 997.00	\$ 8,973.00	\$ 718.97	\$ 6,470.73	\$ 650.00	\$ 5,850.00
83	Adjusting Water Valve Box	9	EACH	\$ 307.00	\$ 2,763.00	\$ 335.08	\$ 3,015.72	\$ 200.00	\$ 1,800.00
84	Temporary Ditch Checks	276	EACH	\$ 15.00	\$ 4,140.00	\$ 70.00	\$ 19,320.00	\$ 77.00	\$ 21,252.00
85	Riprap Medium	16	CY	\$ 80.00	\$ 1,280.00	\$ 135.00	\$ 2,160.00	\$ 300.00	\$ 4,800.00
86	Pavement Marking, Epoxy, White, 4-Inch	15000	LF	\$ 0.65	\$ 9,750.00	\$ 0.65	\$ 9,750.00	\$ 0.85	\$ 12,750.00
87	Pavement Marking, Epoxy, Yellow, 4-Inch	5450	LF	\$ 0.65	\$ 3,542.50	\$ 0.65	\$ 3,542.50	\$ 0.85	\$ 4,632.50
88	Pavement Marking, Epoxy, Stop Bar, 18-Inch	85	LF	\$ 16.00	\$ 1,360.00	\$ 16.00	\$ 1,360.00	\$ 16.00	\$ 1,360.00
89	Remove & Replace Sign, Reflective	33	EACH	\$ 272.00	\$ 8,976.00	\$ 195.85	\$ 6,463.05	\$ 310.00	\$ 10,230.00
90	Snow Pole	10	EACH	\$ 70.00	\$ 700.00	\$ 60.00	\$ 600.00	\$ 50.00	\$ 500.00
91	4" Topsoil, Seed, Fertilizer, and Erosion Mat	33400	SY	\$ 3.30	\$ 110,220.00	\$ 5.92	\$ 197,728.00	\$ 4.50	\$ 150,300.00
				Total	\$ 3,852,368.09	Total	\$ 4,027,252.04	Total	\$ 3,435,412.50

Section 2: Small Road (College Avenue to STA 96+00)				LaLonde Contractors, Inc.		Rock Road Companies, Inc.		Engineer's Estimate	
ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
92	Construction Staking	1	LS	\$ 8,000.00	\$ 8,000.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00
93	Sawcut Pavement	392	LF	\$ 1.95	\$ 764.40	\$ 1.49	\$ 584.08	\$ 1.50	\$ 588.00
94	Clearing & Grubbing	1	STA	\$ 392.98	\$ 392.98	\$ 392.98	\$ 392.98	\$ 1,025.00	\$ 1,025.00
95	Pavement Removal	1,410	SY	\$ 6.84	\$ 9,644.40	\$ 4.61	\$ 6,500.10	\$ 3.50	\$ 4,935.00
96	Common Excavation (3,726 CY)	1	LS	\$ 94,138.83	\$ 94,138.83	\$ 64,702.42	\$ 64,702.42	\$ 50,700.00	\$ 50,700.00
97	Geogrid Type SR	1108	SY	\$ 2.02	\$ 2,238.16	\$ 1.32	\$ 1,462.56	\$ 5.30	\$ 5,872.40
98	Dense Graded Base, 3-Inch EBS Backfill	1275	TON	\$ 21.90	\$ 27,922.50	\$ 22.62	\$ 28,840.50	\$ 22.00	\$ 28,050.00
99	Storm Sewer, CMP, 15-Inch, Driveway Culvert	39	LF	\$ 86.00	\$ 3,354.00	\$ 98.40	\$ 3,837.60	\$ 80.00	\$ 3,120.00
100	Storm Sewer, CMP, Pipe Arch, 28x20-Inch, Driveway Culvert	15	LF	\$ 113.00	\$ 1,695.00	\$ 116.12	\$ 1,741.80	\$ 100.00	\$ 1,500.00
101	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 14x23-Inch, Driveway Culvert	102	LF	\$ 130.00	\$ 13,260.00	\$ 142.79	\$ 14,564.58	\$ 134.00	\$ 13,668.00
102	Storm Sewer, Apron Endwalls, CMP, 15-Inch	2	EACH	\$ 379.00	\$ 758.00	\$ 497.63	\$ 995.26	\$ 385.00	\$ 770.00
103	Storm Sewer, Apron Endwalls, CMP, Pipe Arch, 28x20-Inch	1	EACH	\$ 466.00	\$ 466.00	\$ 374.08	\$ 374.08	\$ 430.00	\$ 430.00
104	Storm Sewer, Apron Endwalls, RCP, 14x23-Inch	4	EACH	\$ 1,100.00	\$ 4,400.00	\$ 871.56	\$ 3,486.24	\$ 1,030.00	\$ 4,120.00
105	Dense Graded Base 3/4-Inch	63	TON	\$ 52.66	\$ 3,317.58	\$ 26.52	\$ 1,670.76	\$ 29.00	\$ 1,827.00
106	Dense Graded Base 1 1/4-Inch	1,305	TON	\$ 22.31	\$ 29,114.55	\$ 19.98	\$ 26,073.90	\$ 15.00	\$ 19,575.00
107	Concrete Curb & Gutter 30-Inch	99	LF	\$ 38.54	\$ 3,815.46	\$ 32.00	\$ 3,168.00	\$ 21.00	\$ 2,079.00
108	Concrete Flume	2	EA	\$ 1,337.79	\$ 2,675.58	\$ 750.00	\$ 1,500.00	\$ 2,500.00	\$ 5,000.00
109	HMA Pavement 3 MT 58-28 H (Binder)	231	TON	\$ 77.70	\$ 17,948.70	\$ 74.20	\$ 17,140.20	\$ 87.00	\$ 20,097.00
110	HMA Pavement 4 MT 58-28 H (Surface)	165	TON	\$ 78.00	\$ 12,870.00	\$ 80.20	\$ 13,233.00	\$ 96.00	\$ 15,840.00
111	HMA Pavement 4 MT 58-28 S (Driveways)	36	TON	\$ 95.35	\$ 3,432.60	\$ 125.00	\$ 4,500.00	\$ 150.00	\$ 5,400.00
112	Temporary Ditch Checks	6	EACH	\$ 70.00	\$ 420.00	\$ 90.00	\$ 540.00	\$ 77.00	\$ 462.00
113	Remove & Replace Sign, Reflective	9	EACH	\$ 272.00	\$ 2,448.00	\$ 195.85	\$ 1,762.65	\$ 310.00	\$ 2,790.00
114	Pavement Marking, Epoxy, White, 4-Inch	400	LF	\$ 0.65	\$ 260.00	\$ 0.65	\$ 260.00	\$ 0.85	\$ 340.00
115	Pavement Marking, Epoxy, Yellow, 4-Inch	425	LF	\$ 0.65	\$ 276.25	\$ 0.65	\$ 276.25	\$ 0.85	\$ 361.25
116	Pavement Marking, Epoxy, Stop Bar, 18-Inch	24	LF	\$ 16.00	\$ 384.00	\$ 16.00	\$ 384.00	\$ 16.00	\$ 384.00
117	Snow Pole	7	EACH	\$ 70.00	\$ 490.00	\$ 60.00	\$ 420.00	\$ 50.00	\$ 350.00
118	4" Topsoil, Seed, Fertilizer, and Erosion Mat	2076	SY	\$ 3.10	\$ 6,435.60	\$ 7.94	\$ 16,483.44	\$ 4.50	\$ 9,342.00
Total				\$	250,922.59	Total	\$	216,394.40	Total \$ 200,125.65

February 10, 2023



CREATIVITY BEYOND ENGINEERING

Construction Oversight Services:
City of New Berlin
**Small Road (Moorland Road to
College Avenue) Reconstruction**

(262) 781-1000
rasmith.com

16745 West Bluemound Road
Brookfield, WI 53005-5938



Table of Contents

01	Cover Letter
02	Firm Qualifications
03	Project Team
08	Project Approach
12	Cost Quotation

Cover Letter

February 10, 2023

Ms. Tamara Simonson, P.E.
City Engineer
City of New Berlin
3805 South Casper Drive
New Berlin, WI 53151

raSmith

CREATIVITY BEYOND ENGINEERING

16745 West Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000

RE: Request for Quote (RFQ)
Construction Oversight Services for Small Road Reconstruction

Dear Ms. Simonson,

raSmith is pleased to be considered to provide construction oversight on the Small Road reconstruction project. Our partnership with the City has made us acutely aware of the challenges of this project and the long-term benefits that improved infrastructure will have for the City of New Berlin.

The services we will provide during this project are founded not only on the construction background and technical expertise of our entire construction services staff, but also on the belief of our staff that aspiring for success is what motivates us. Success for each staff member through a job performed to high standards, success for you as the owner in achieving the project you envisioned—on budget, on time and with no unwanted issues—and success for the residents of New Berlin through an improved transportation system with minimal disruption to their daily routines during construction. When all stakeholders are proud of the project when it is finished, then we have succeeded in our primary goal of providing you, the owner, and the traveling public with a project they can be honored to have been associated with and one they can look to with pride.

Based on the City's request for a price quote for construction oversight services, dated January 20, 2023, we have included a breakdown of hours by individuals including manager coordination, a not-to-exceed cost quotation, a list of proposed inspectors with resumes, and our project approach.

raSmith's project team have a personal interest in the successful completion of this project and are committed to continuing our strong relationship with the City of New Berlin and the members of your community. We appreciate your consideration of raSmith for the construction oversight of this project and look forward to the successful completion of the Small Road reconstruction project.

Sincerely,
raSmith



Paul Schafer, P.E.
Director of Construction Services / Project Manager
(262) 317-3381
paul.schafer@rasmith.com

Firm Qualifications

raSmith is a multi-disciplinary consulting firm comprising civil engineers, structural engineers, traffic engineers, land surveyors, development managers, landscape architects, and ecologists. Our services are focused on our public and private sector clients' needs in design and construction including site design, structural engineering, municipal engineering, transportation and traffic, surveying, construction services, and geographic information systems (GIS). We work on projects nationwide from our seven locations. Richard A. Smith, M.S., P.E., F.ASCE, founded raSmith in 1978. Richard A. Smith Jr., P.E., (Ricky) leads the firm as president. The firm currently employs a staff of 220.



Casper Drive, New Berlin

Construction Services

raSmith's construction inspection and construction management expertise extends from deep sewers to local roads, state highways and residential subdivisions. Our resident engineers, construction managers and inspectors bring their breadth of know-how and foresight to every project. We view a project through the owner's eyes and consider details that are critical to a successful outcome. We're more than service providers for a specific project; we're our client's eyes and ears. Importantly, we communicate regularly with the public and other project stakeholders and work with the contractor toward completing the project on time and within budget.

Services Offered

- Construction oversight
- Automated reporting
- Change order management
- Project administration/management
- GPS data collection
- Public relations
- Project closeouts
- Quality verifications

Project Team



Paul Schafer, P.E.

Project Manager

Paul has more than 23 years of experience in construction management for large development projects, street reconstructions, utilities, subdivisions, water towers, and water and wastewater facilities. His knowledge in construction management also includes preparing contracts, pay requests, cost estimating, performing quality control reviews on plans and specifications, daily project management, scheduling inspectors and surveyors, and as-built drawings and quantities.

As director of construction services at raSmith, Paul is in charge of coordinating and overseeing both municipal and private construction projects. He also manages and schedules more than 30 staff members in different construction services.

Education

B.S. Civil Engineering, University of Wisconsin-Platteville, 1999

Professional Registrations

Professional Engineer: WI

Professional Certification

PCCTec-1

Awards

"Associated Builders and Contractors Gold Award," 2010 Edwards Boulevard Project, Lake Geneva

Municipal/Utilities Industry Advancement Program Fund Scholarship, Associated General Contractors of Wisconsin, 1999

Project Experience

Calhoun Road Reconstruction, City of New Berlin, Waukesha County, WI: Performed construction management for this \$1.5 million, 0.75-mile reconstruction project including complete roadway excavation, storm sewer installation, wetland crossing, bioswales, traffic control, and asphalt paving.

Rogers Drive Road Reconstruction, City of New Berlin, WI: Performed construction management for this \$2 million one-mile-long roadway reconstruction project. Project consisted of a complete reconstruction of a 24-inch thick roadway section including a clear stone layer and drain tile, storm sewer improvements, limited wetland disturbance, and coordination with a 24-hour Fed-Ex facility.

New Berlin Paving Program (2018-2021), New Berlin, WI: Performed construction management on this project. Work included milling and resurfacing more than 20 miles of roadway in various areas in the City including both rural and urban communities. A special reinforcement grid was placed between the two layers of new pavement to help stop reflective cracking and reduce the need for binder repairs.

Beres Road Reconstruction, City of New Berlin, WI: Performed construction management for this \$1.1 million one-mile-long roadway reconstruction project. Project consisted of a complete reconstruction of a 24-inch thick roadway section including a clear stone layer and drain tile, storm sewer improvements, and water way crossing.

16th Street Reconstruction and Round-a-bout, Village of Mt. Pleasant, Racine County, WI: Performed construction management for this \$10 million roadway reconstruction project including water main adjustments, storm sewer installation, bioswales, traffic control, roadway excavation and stone placement, concrete pavement, traffic, and decorative hardscape.

Project Team

Paul Schafer, P.E.

Project Manager

Emmertsen Road Reconstruction, Village of Mt. Pleasant, Racine County, WI: Performed construction management for this \$2.2 million road reconstruction converting a rural road to urban concrete pavement. This 1,500-foot-long section of roadway has an adjacent school requiring coordination, detention basin, 72-inch storm sewer, drain tile, and WisDOT signal coordination.

Prairie Highlands Corporate Park, Village of Pleasant Prairie, WI: Construction management and services for this \$17 million project consisting of clearing and grubbing, erosion control, approximately 300 acres of mass grading with six retention ponds, soil stabilization, 7,700 linear feet of water main, 7,000 linear feet of sanitary sewer, 9,600 linear feet of storm sewer, excavation below subgrade, base aggregate pavement, HMA and PCC composite pavement, concrete curb and gutter, underdrain, concrete sidewalk, HMA pedestrian path, Conspan bridge, traffic control, pavement marking, signage, irrigation, and restoration.

Prairie Highlands Corporate Park Water Tower, Village of Pleasant Prairie, WI: Construction services manager for this \$2.7 million new water tower. The project consisted of a 750,000-gallon, 110-foot tall spherical steel tank with 64 piles and pile cap, backup generator, and pressure-reducing valve.

WIS 165 Lift Station, Village of Pleasant Prairie, WI: Construction services manager for this \$4.9 million new lift station project. This project consisted of a three-cell, 35-foot deep diversion structure and wet well, four 1,500 GPM pumps, generator, building, and chemical feed. The new building was adjacent to the old facility located on a very small site.

Drexel Town Square, City of Oak Creek, WI: Construction services manager on this \$10 million-plus redevelopment project. This new city center development consisted of Drexel Avenue improvements, signaled intersections, wetland improvements, permeable pavements, complete utility infrastructure, complicated staging around the new City Hall construction during the infrastructure installation, and tabletop intersections. Work was completed with close coordination with City staff.

2016-2020 Mount Pleasant Paving Programs, Mount Pleasant, WI: Construction services manager for several years of roadway improvement projects. Projects ranged from \$700,000 to \$1.1 million, and consisted of pulverized pavements, base patching, mill and overlay, parking lot construction, path construction, and subdivision final pavements.

Village Redevelopment Project, City of Wauwatosa, WI: Performed construction management on the first and fourth stages of the Village revitalization project. These \$6 million and \$4.5 million projects consisted of replacing the 12-inch water main, sanitary sewer relay, and new storm sewer infrastructure. Roadwork improvements consisted of roadway and sidewalk pavers, Silva Cell tree infrastructure, limestone benches, a water feature, and overhead string lights. The project also involved the rehabilitation of the expansion joints on Harmonee Bridge, structural rehabilitation on an adjacent pedestrian bridge, and railroad pedestrian crossings. In addition to oversight of the work, coordination of the work around business and residential deliveries and foot traffic constantly provided an additional dimension to this project.

RecPlex Park & Ride Service Lot, Village of Pleasant Prairie, WI: Construction services manager for this \$1.8 million project. The project was completed with funding from WisDOT and in coordination with the Village of Pleasant Prairie. Consisted of two Conspan bridges installed with Village staff and a 320-stall parking lot. The parking lot posed challenges because of several wetlands that were filled in and a new one installed. Received a project award from the American Public Works Association (APWA).

Prairie View Water Main, Village of Pleasant Prairie, WI: Construction services manager for this \$1.7 million project that consisted of 7,000 feet of 20-inch water main, casing under I-94, and four directional drills under pavement. The project crossed through the parking lot of a hotel and restaurant; restoration was coordinated with other on-site pavement repairs previously planned. Completed to extend water service to areas not currently served.

Project Team



Jennifer Starr, CISEC

Assistant Director of Construction Services

Jennifer has more than 17 years of combined experience in the construction services and surveying industries. Her experience includes contract management, quantity tracking, preparing change orders and pay applications, proposals, constructability, quality control reviews on plans and specifications, inspection of roadways and underground utilities, CIPP lining inspection, erosion control inspections, electronic daily reporting, as-built drawings, preparation of documents for design and paving programs, and construction staking layout. She is well versed in using GPS technology for as-builts and quantity verification. Additionally, she has experience in using AutoCad Civil 3D for record drawings, drafting, quantities, and design.

Education

B.S. Civil Engineering, University of Wisconsin–Milwaukee, 2000

Professional Certifications

CISEC Level 3

PCC Tech I

OSHA 10-Hour Certification

Project Experience

The Glen at Pewaukee Lake, Village of Pewaukee, WI: Construction management and services for this single-family, 46-unit development with a clubhouse including erosion control, water main and laterals installation, sanitary sewer main and laterals installation, storm sewer, proofrolls and EBS, stone base placement, manhole adjustments, concrete curb and gutter, asphalt pavement, site grading, and restoration. Also record drawing and as-built requirement submittals per Village standards.

2021 Butler Paving Program, Village of Butler, WI: Construction management and services for this \$1.1 million project consisting of: water main installation and abandonment, pavement removal, curb and gutter replacements, HMA pavement, concrete pavement, concrete driveways, manhole adjustments, CIPP sanitary lining, pavement markings, and restoration.

2020 Butler Paving Program, Village of Butler, WI: Construction management and services for this \$1 million project consisting of storm sewer removal and installation, water main rehabilitation, pavement removal, curb and gutter replacements, HMA pavement, manhole adjustments, CIPP sanitary lining, pavement markings, and restoration.

Hidden Lake Greenway Trail, City of Brookfield, WI: Construction management and services for this \$670,000 project consisting of clearing and grubbing, erosion control, grading and site/slope stabilization, HMA trail pavement, and hydroseed/restoration.

2019 Butler Paving Program, Village of Butler, WI: Construction management and services for this \$1.2 million project consisting of water main installation, pavement removal, curb and gutter replacement, concrete and HMA pavement, manhole adjustments, CIPP storm lining, pavement markings, and restoration.

Prairie Highlands Corporate Park, Village of Pleasant Prairie, WI: Construction management and services for this \$17 million project consisting

raSmith
CREATIVITY BEYOND ENGINEERING

Project Team

Jennifer Starr, CISEC

Assistant Director of Construction Services

of clearing and grubbing, erosion control, approximately 300 acres of mass grading with six retention ponds, soil stabilization, 7,700 linear feet of water main, 7,000 linear feet of sanitary sewer, 9,600 linear feet of storm sewer, excavation below subgrade, base aggregate placement, HMA and PCC composite pavement, concrete curb and gutter, underdrain, concrete sidewalk, HMA pedestrian path, Conspan bridge, traffic control, pavement marking, signage, irrigation, and restoration.

2018 Butler Paving Program, Village of Butler,

WI: Construction management and services for this \$1.1 million project consisted of existing pavement removal, excavation of roadway base, spot removal and replacement of concrete curb and gutter, utility structure adjustments, storm sewer, water main, placement of concrete pavement, erosion control, restoration, pavement marking, and CIPP lining.

2017 Butler Paving Program, Village of Butler, WI:

Construction services for this \$770,000 project consisted of approximately 2,200 lineal feet of new water main installation, abandonment of existing water main, storm sewer installation, erosion control, existing pavement removal, excavation of roadway base, spot removal and replacements of concrete curb and gutter, utility structure adjustments, placement of concrete pavement, restoration and pavement marking.

Pewaukee Sports Complex, City of Pewaukee,

WI: Construction services for this \$2.5 million project consisted of site clearing, erosion control, mass grading with four ponds, rock excavation, EBS, storm sewer, water main, private on-site wastewater treatment system, sanitary force main, electrical, base aggregate placement, asphalt parking and roadway, ball field construction and amenities, lighting, irrigation, and restoration.

County L (Lannon Drive to County Y), Waukesha County, and County L (Lannon Drive to County OO) DOT, City of Muskego, WI: Construction services for these \$7.5 million and \$9.3 million two-mile-long projects consisted of excavation, placement of base aggregate and breaker run, HMA pavement, traffic control, box culvert, concrete curb and gutter, concrete sidewalk and pavement, storm sewer installation, utility adjustments, removal of contaminated soils, underdrain, signing, pavement marking, electrical conduit, traffic

signals, street lighting, erosion control, landscaping and streetscaping. These projects also included installation of water main and utility adjustments for the City of Muskego. For DOT portion, entered daily reports into field manager software and quantities into IRA.

North Cape Road Multi Use Trail, City of Muskego,

WI: Construction services for this \$330,000 one-mile-long project consisted of storm sewer installation, excavation and grading, stone base placement, concrete curb and gutter and handicap ramps, erosion control, asphalt paving, and landscaping.

Main Street Phases 1 and 2, Village of Sussex, WI:

Construction services for these \$5.5 million and \$2.7 million projects consisted of excavation, grading, base aggregate placement, box culvert, Conspan bridge, sanitary sewer, water main, storm sewer, pulverizing, traffic control, erosion control, concrete pavement, concrete curb and gutter, concrete sidewalk, asphalt pavement, restoration, traffic signals, pavement marking and CIPP lining.

2014 Road Program, Village of Genoa City, WI:

Construction services for this \$1.4 million project consisted of excavation, grading, removals, concrete curb and gutter, driveways and sidewalk, storm sewer installation, manhole and catch basin construction, sanitary sewer reconstruction, water main installation, HMA pavement, traffic control, erosion control, and restoration.

Sussex Preserve Phase 1, Village of Sussex, WI:

Construction services for this \$2 million project consisted of grading, subgrade preparation, base aggregate placement, erosion control, storm sewer, sanitary sewer, water main, HMA pavement, concrete curb and gutter, concrete sidewalks, traffic control, and restoration.

Elm Grove Road and Wall Street Water Main

Extension, Village of Elm Grove, WI: Construction services for this \$750,000 project consisted of water main installation with both open cut and directional drilling, valve vaults, traffic control with detour, erosion control, milling, HMA pavement, pavement marking, and restoration.

raSmith

CREATIVITY BEYOND ENGINEERING

Project Team



Genevieve Stollenwerk

Lead Construction Representative

As a member of the municipal services team for six years, Genevieve has led multiple project designs for the Village of Sturtevant, including: 2017–2022 paving programs and the 2022 Greendale Street Improvements Program.

Genevieve also has experience in construction services, inspecting roadway, and underground utility projects. Genevieve has led and assisted with multiple construction projects for the City of New Berlin, including: 2019–2020, 2022 paving programs, and the Calhoun Road Reconstruction.

Education

B.S. Civil Engineering, University of Wisconsin–Milwaukee, 2016

Professional Affiliations

American Public Works Association (APWA) —Diversity and Inclusion Committee Chair

American Society of Civil Engineers (ASCE)

Software Proficiency

AutoCAD Civil 3D

EsriArcGIS suite

Microsoft Office

Project Experience

Calhoun Road Reconstruction, City of New Berlin, WI: Construction services for this \$1.5M project consisted of 14,300 square yards of pavement removal, common excavation, 2,200 linear feet of curb and gutter repair, 2,500 linear feet of bioswale, 250 linear feet of storm sewer, and 6,100 tons of asphalt replacement.

2022 Roadway Rehabilitation, City of New Berlin, WI: Construction services for this \$3.1M project consisted of 88,500 square yards of pavement removal by milling and pulverizing, base repair, 6,300 linear feet of curb and gutter repair, utility structure adjustments, and 21,000 tons of asphalt replacement.

2020 Roadway Rehabilitation, City of New Berlin, WI: Construction services for this \$2.9M project consisted of 173,000 square yards of pavement removal by milling and pulverizing, base repair, 5,200 linear feet of curb and gutter repair, utility structure adjustments, and 23,000 tons of asphalt replacement.

Biwer and Lions Park Improvements, City of New Berlin, WI: Construction services for this \$300K project consisted of parking lot improvements, playground equipment, and basketball court installations.

97th Street Reconstruction Project, Village of Pleasant Prairie, WI: This project involved 6,450 square yards of concrete pavement removal, 3,300 linear feet of curb & gutter replacement, 2,000 tons of asphaltic pavement, and utility adjustments. Genevieve was one of the design engineers for the project and was responsible for roadway redesign and plan preparation.

Paving Program, Village of Sturtevant, WI: This project involved 18,700 square yards of pavement removal by milling and pulverizing, 350 linear feet of sanitary sewer, additional storm sewer, 4,500 tons of asphaltic pavement, and utility adjustments. Genevieve was one of the design engineers for the project and was responsible for sanitary sewer design, pavement design, and plan preparation.

Project Approach

Project Understanding

The Small Road rehabilitation project has many characteristics beyond a standard project. In the pages to follow, you will see why our preparation, attention to detail, and commitment to success are what the City needs for this project to be successful. Our preparation for this project started years ago when the City was in the planning phases for improving this section of Small Road. Our staff has driven this stretch of roadway countless times, making us well aware of the challenges, safety, and stormwater concerns of the City. We have discussed the project with City staff, studied the plans and specifications, and conducted a constructability review with the designers.

We are confident that the experience raSmith has gained through the successful completion of past City of New Berlin projects, as well as other similar projects, will be carried forward to this project. This experience, project understanding, and use of technology will allow us to exceed your goals for a successful project.



The Small Road project has long-term benefits for the City.

This section of Small Road has two distinctive areas. The eastern section off of Moorland is primarily a mix of industrial and commercial properties. Although trucking can typically be a problem, this area falls mainly in the mill and overlay section of the project, which is a much less disruptive process and easier to keep traffic moving.

The section of the roadway from the new Briohn building west is a residential area and will be fully reconstructed. Similar to our work on Calhoun Road, this section will be closed with access to local traffic only. The residents are aware of the project, and we will work with the City to distribute mailer communications to all of them including the adjacent subdivision. This communication, along with in-person meetings, will start the coordination of any of their landscaping removals or access requirements.

Within the reconstruction section, there is also a WisDOT project at Calhoun Road including a new signalized intersection. We will work with WisDOT and its consultant to coordinate work efforts and timing of our work on either side of the project.

Storm sewer mitigation is also a challenge with this project. An increase in impervious surface requires a need to treat or retain the additional water as to not adversely affect the environment. The bio-infiltration incorporated into this project is a great solution to help retain and treat the additional water.

We plan to utilize our technical capabilities with the on-site GPS and pre-construction virtual video. The design surface will be incorporated to, in real time, check subgrade and match points, eliminating the need for survey and the delays associated with it. The GPS will also be used to document removals and final quantities. We have found that this is the best way to streamline record keeping and the closeout process.



Watch an interactive example of our 360-degree video capabilities in action: bit.ly/raSmith360

Our understanding of City specifications; past, ongoing, and future communication with City staff and residents; and the uncommon technical ability of our staff that will allow us to provide a successful project.

Traffic & Safety Considerations

The Small Road project consists of a complete reconstruction of 7,000 feet of roadway and an additional 2,000 feet of mill and overlay. This section of Small Road is split with residential to the west and commercial on the east. We will work with the contractor to coordinate the staging of the work so at least one of the access points to College, Calhoun, or Moorland is available. Constant communication with the property owners and businesses during the

Project Approach

reconstruction process is essential to keep the public safe and stress levels to a minimum. Our process of utilizing our GPS will be able to check subgrade in real time and not delay the contractor and their work.

Constant monitoring of traffic control will be a major point of emphasis with the on-site staff. The importance of staging their operations and equipment in a safe manner to minimize congestion and eliminate blind spots will be stressed to the contractors on a continual basis. The monitoring of these issues by our staff on a daily, if not hourly, basis will help keep the project running smoothly. We will communicate consistently with the contractors and the City to address any special needs that may arise during the project.

Communication & Coordination

Our communication effort with the City starts when we are selected to manage the project. The project specification and City's goals for the project will be addressed at the pre-construction meeting, which our project manager Paul Schafer will coordinate and conduct. Paul has been shown on other New Berlin projects to be a great communicator and a favorite with residents. Communication will continue throughout the project with biweekly meetings in which schedule, coordination, and issues will be discussed with meeting minutes and daily electronic reporting distributed. These reports will help keep you up to speed on the project on a daily basis and the residents up to speed on project progress. Additionally, the report will provide you with daily pictures of the work and any potential issues to support the project communication. raSmith will communicate daily, and more often if necessary, with the City and all stakeholders to assure that any and all concerns related to the project are addressed and resolved in a timely manner.

Project Sequencing

Working with the City and contractor to lay out the best construction schedule is key to a successful project. Before the start of construction, we will review and comment on the contractor's proposed schedule. We will work with all stakeholders to minimize disruption and obtain a finalized schedule. Due to the scope of grading operations, the full width of the roadway will need to be worked on through the entire project limits. As work passes by a given area, the resulting surface will need to be in a condition that allows the residents on each end to travel safely.

Coordination with the businesses and residents will be crucial to a smooth project. We will also contact each of the residents and business groups at the beginning of the

project to make sure they know who to contact if there is an issue or immediate need to be addressed, and we will send emails with project updates. Upon our selection as the preferred consultant, we will start our coordination with WisDOT to figure out the timing of its project and how we can gain access, if needed.

Advanced planning will assure that the schedule will be completed within the contractually stated timeframe, the impact to the traveling public will be minimized, and that the contractor will provide sufficient forces to complete the project in the timeliest manner possible.

On-Site Inspection

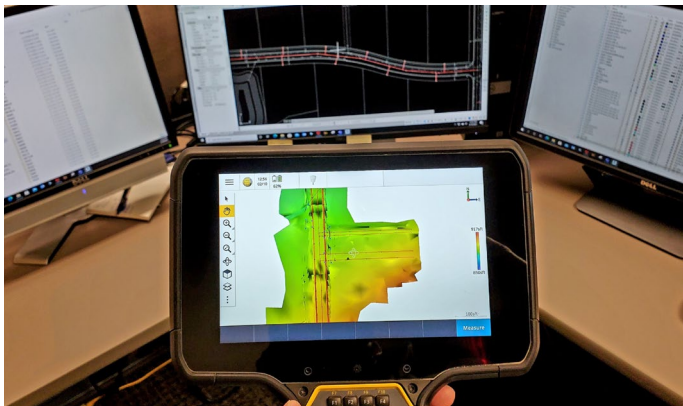
The scope of this project requires an on-site representative who is well versed in the New Berlin construction processes, procedures, and survey; is effective at communicating with the residents, business, and the City; and is well versed in the latest technology available to monitor the construction process, protect the waterways, and properly communicate with all stakeholders. We have included the resumes of Paul and Genevieve who are highly qualified for the project. raSmith instills a philosophy of constant training and education as demonstrated with our practice of conducting a week-long in-house training session with our entire project team before the start of the construction season. These sessions allow for cross training of staff, sharing of experiences from the prior year, and getting up to speed on new technology. This dedication to constant training helps to provide the best understanding of upcoming projects and provide the best project for the client.



raSmith's industry experience and know-how has resulted in the successful completion of numerous complex and award-winning projects throughout southeastern Wisconsin.

Project Approach

As the project requires contractor stakeout of all improvements, our site representative and construction manager will have a survey-grade GPS unit available. This unit will enable our staff to check that contractor staking matches the design project information and will be used to measure project quantities in the field. This method is the only way we can verify that the contractor's surveyor is properly staking the locations of the utility and roadway improvements. As we have done on several past projects with the City locating match points, measuring restoration, checking grades, and completing record drawings, we will use these same practices on Small Road.



Survey-grade GPS enables our staff to check that contractor staking matches the design project information.

During the project, our representative will be in close communication with the City engineers regarding the progress of each section of work. When operations commence, the inspector will determine the acceptability of the material based on approved shop drawings, delivery ticket information, visual observations, and regular asphalt temperature measurements on both the mat and any center joints required. Proof rolls will involve City staff, as needed, prior to any base stone placement. In addition, we will consult with the contractor's materials and density testing subcontractor to ensure the quality of the material is maintained.

It is conceivable there may be days when multiple operations on the project warrant more than one inspector. As it is our intention to maintain a consistent team throughout the project, the lead representative will remain constant throughout the entire project, and every effort will be made to use the same staff when additional help may be required. This will provide continuity throughout the project. All on-site representatives will monitor the work performed by the contractor, confirm plan compliance, track daily quantities, and report directly to management staff in the event issues arise. Project

management will resolve issues directly and communicate to the City the situation and resolution, or consult with City personnel for a resolution if warranted.

Project Reporting & Documentation

raSmith understands the significance of timely and accurate documentation. All staff will utilize raSmith's Construction Operation Management Project Automation System (COMPAS) during this project to provide report documentation, accurately document quantities, provide project updates in a timely manner, and provide updates as needed to City staff during construction. All storm sewer improvements and new water main construction made as a part of this project will be submitted as record drawings to the City at the end of the project.

Item No.	Item Description (drop down)	Units	Qty	Comments
1	1" Standby Street Sign	EA	15	15 per spec item (24.5M to 24.5M)
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raSmith provides timely, accurate project reporting.

Our representatives will be equipped with smartphones and laptops for completion and submission of their daily reports per the Development Handbook using COMPAS. Each day, a daily project report will be generated and emailed to City staff, as deemed appropriate. This email will contain a PDF copy of the report for the day and reference any issues that occurred the previous day. The inspector's report will include all typical project weather, personnel, equipment and comments, and will include a location map of the work completed, bid items used and pictures, as needed.

Upon completion of the project, the City of New Berlin will be provided with an electronic file containing the materials included in the final project binder as well as pre-construction photos, construction photos, and other pertinent project information.

Schedule & Budgeting

raSmith is very cognizant of the construction timeline and has developed a construction estimate based on our

Project Approach

familiarity with previous projects of this type and historical data from previous reconstruction projects. This estimate will assist us in reviewing the contractor's construction schedule when it is presented for review. We pride ourselves on holding to our estimate, as you have seen over the past years, and attempt to staff the project in the most cost-effective manner.

We are also very sensitive to the construction dollars and the City's budget. If the contractor has any cost-saving alternate methods, we will review them on behalf of the City. We will also look for the most cost-effective resolution to any conflicts that may arise during construction without diminishing the final product. A successful project is not only how it looks at the end, but also that it came in on time and within budget.

Quality Control & Material Inspections

In recent years, the Wisconsin Department of Transportation (WisDOT) has made several changes to the mix designs. The largest modifications came with the change to mix nomenclature and 3% air-void regression mix design. The raSmith project team is on the leading edge of these changes and holds multiple certifications through the Highway Technician Certification Program, which is a requirement of WisDOT for their projects. These certifications are a result of hands-on training in sampling, testing, and visual verifications. With these certifications and years of experience, raSmith's staff has the capacity to accept or reject materials, review all material submittals, provide recommendations for corrective measures, and properly document all materials built into the project.

Contract Administration

raSmith is well versed in our understanding of the City of New Berlin's policies and procedures. The project manager will be in constant contact with the field representative, contractor, and the City engineer or her designee throughout the project and will utilize COMPAS for weekly quantity updates, project progress, and the administration of contractor payment. The automation of this system reduces errors and saves time and money by reducing the hand entries of quantities and automatically enters them into an IRA when reports are submitted. After a quick review of the entries, a pay request can be produced with a couple of clicks. This also provides a quick update of the to-date quantities and is invaluable in contractor disputes.

The project manager will run the pre-construction meeting and progress meetings, along with attending any proof rolls during the project and visiting the site from time to time. He will work with on-site staff and the contractor to resolve any and all payment disputes, and investigate and make recommendations to the City concerning any potential contract change orders. The project manager will provide the City with all required signed and notarized documents in a timely manner to assure that contractors' requests for payment are handled in accordance with City policies and procedures. At the completion of the project, the manager will compile all the final project paperwork for final payment and will provide the City with the project manual. This manual will, at a minimum, include material submittals, inspection reports, test results/reports, pre-construction minutes, and the final record set of construction documents.



Our experience, project understanding, and use of technology will allow us to exceed your goals for a successful project.

Cost Quotation

City of New Berlin - Small Road Reconstruction Professional Services and Fees by Paul Schafer 2/10/23

	Project Manager	Lead Representative	Additional Representatives TBD	CADD Technician		
Phase/Task by Hour/Personnel	\$150	\$99	\$94	\$120	Total Hours	Total Dollars
Precon Meeting/Weekly Meetings	30	35			65	\$7,965
Resident Communication		30			30	\$2,970
Project Measurements/Preconstruction Photos		60			60	\$5,940
Erosion Inspections		38			38	\$3,762
Removals and Common Ex	20	240			260	\$26,760
Pay Requests and Change Orders	30				30	\$4,500
Site Visits / Admin.	100				100	\$15,000
Traffic Control Inspection		60			60	\$5,940
Base Course and SAS Fabric	20	220			240	\$24,780
Concrete Curb and Gutter Inspection		80			80	\$7,920
Paving Inspection	10	70			80	\$8,430
Driveway Approaches	10	60			70	\$7,440
Utilities (water, storm)	20	150	200		370	\$36,650
Restoration	10	60			70	\$7,440
Striping	5	24			29	\$3,126
Record Drawings	5			60	65	\$7,950
Survey QC/GPS Work		30			30	\$2,970
Total	260	1157	200	60	1677	\$179,543

SMALL ROAD RECONSTRUCTION

CONTRACT RD-20-04
CITY OF NEW BERLIN

City of New Berlin
Engineering Services Division
3805 S. Casper Drive
New Berlin, WI 53151
(262) 797-2445



SPECIFICATIONS
AND
CONTRACT DOCUMENTS
FOR

CONTRACT RD- 20-04

SMALL ROAD RECONSTRUCTION

CITY OF NEW BERLIN, WISCONSIN

TABLE OF CONTENTS FOR
SMALL ROAD RECONSTRUCTION

CONTRACT RD-20-04

CITY OF NEW BERLIN, WISCONSIN

ADVERTISEMENT FOR BIDS	AD-1 TO AD-2
INSTRUCTIONS TO BIDDERS	IB-1 TO IB-11
BIDDER'S QUALIFICATION STATEMENT	QS-1 TO QS-11
SUBCONTRACTOR'S QUALIFICATION STATEMENT	SQS-1 TO SQS-4
SUBCONTRACTOR LIST	SL-1
GENERAL CONDITIONS	GC-1 TO GC-62
SPECIAL PROVISIONS	SP-1 TO SP-31
PROPOSAL FORM	P-1 TO P-7
CONTRACT	C-1 TO C-5
BID BOND	BB-1
PERFORMANCE BOND	PB-1 TO PB-3
PAYMENT BOND	PA-1 TO PA-3
ATTACHMENTS:	
PROJECT DRAWINGS	A-1

PROJECT NO. RD-20-04
W. SMALL RD. RECONSTRUCTION
New Berlin, Wisconsin

ADVERTISEMENT FOR BIDS

BID OPENING: The City of New Berlin hereby gives notice that sealed bids will be received by the City Clerk, City Hall, 3805 S. Casper Drive, New Berlin, WI, until 10:00 a.m., local time, on Wednesday, February 8, 2023. The base bid consists of the reconstruction of approximately 8,200 feet of roadway on W. Small Rd. from W. College Ave. to approximately 500 feet west of S. Moorland Rd. Bids will be opened and publicly read aloud immediately after the specified closing time. Interested parties are invited to attend. Bids submitted after this time will not be accepted.

BIDDING DOCUMENTS: Complete digital project bidding documents are available at <http://tinyurl.com/NewBerlinBids> or www.questcdn.com. You may download the digital plan documents for \$20 by inputting Quest project **#8363115** on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. No paper plan sets will be provided. Please contact Tamara Simonson at 262-797-2445 if you have any questions.

LEGAL PROVISIONS: The Contract letting shall be subject to the provisions of Sections 62.15, 66.29, 66.293, and 779.15 of the Wisconsin Statutes. Per Section 16.856 of the Wisconsin State Statutes the Prevailing Wage Rate does not apply to this project.

BIDDERS PROOF OF RESPONSIBILITY: Each Prime Contractor submitting a bid shall have on file a Bidders Proof of Responsibility Statement with the City Clerk on or before the date and time set for the Bid Opening.

BID SECURITY: Bid security in the amount of not less than 5% of the bidder's maximum bid price and in the form of a bid bond, certified check or cashiers check (payable to the City of New Berlin) is required with the bid.

RIGHT TO REJECT BIDS: The City reserves the right to reject any and all bids, the right to waive irregularities and informalities in bidding, the right to disregard all nonconforming, non-responsive, unbalanced or conditional bids, and the right to accept the bid which best serves the interests of the City.

CONTRACT SECURITY: The bidder to whom a Contract is awarded shall furnish Performance and Payment Bonds for the full amount of the Contract within 10 days of award or execution of the Contract. The Performance and Payment Bonds shall contain a provision to increase the Performance Bonds by the amount of any change orders that might increase the amount of the Contract price. If such bidder fails to execute and file such Contract, Performance and Payment Bonds, within the ten-day period, the check, bond, or bank draft accompanying the bid shall be forfeited to the City of New Berlin as

liquidated damages.

BID WITHDRAWAL: The City reserves the right to postpone the award of the contract and no bids shall be withdrawn for a period not exceeding 60 days after the date and time set forth in the Bid Opening. The City further reserves the right to retain the bid security of the three (3) lowest bidders during that time.

DESCRIPTION OF WORK: The project consists of furnishing all labor, equipment, and materials necessary to perform the reconstruction of approximately 8,200 feet of roadway on W. Small Rd. from W. College Ave. to the terminus approximately 500 feet west of S. Moorland Rd. The reconstruction of W. Small Rd. will consist of removing and replacing the existing pavement and base with ditching, curb and gutter, culvert replacements, road widening, storm sewer, and water main. Approximate quantities of work are estimated as follows:

Clearing & Grubbing	1,090 ID+2 STA
Common Excavation	33,800 CY
Pavement Removal	8,250 SY
Crushed Aggregate Base Course	28,500 TON
Breaker Run	8,400 TON
Concrete Curb and Gutter	5,800 LF
Asphalt Pavement	11,200 TON
Storm Sewer Piping	1,300 LF
Storm Sewer Manhole & Catch Basins	21 EA
Culvert Pipes	1,480 LF
Apron Endwalls for Culvert Pipes	84 EA
Bioswales	1,800 LF
Pavement Marking	16,000 LF
Traffic Control / Detour	1 EA

Published by authority of the City of New Berlin, Engineering Services Division, of the Department of Community Development, Tamara Simonson, City Engineer.

City of New Berlin
3805 S. Casper Drive
New Berlin, WI 53151
Waukesha County

Rubina Medina, City Clerk

David Ament, Mayor

PUBLISH: Wednesday, January 18, 2023
Wednesday, January 25, 2023

INSTRUCTIONS TO BIDDERS TABLE OF CONTENTS

ARTICLE 1. DEFINED TERMS	1
ARTICLE 2. COPIES OF BIDDING DOCUMENTS	1
ARTICLE 3. QUALIFICATIONS OF BIDDERS	2
ARTICLE 4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE.....	2
ARTICLE 5. AVAILABILITY OF LANDS FOR WORK, ETC.	4
ARTICLE 6. INTERPRETATIONS AND ADDENDA	5
ARTICLE 7. BID SECURITY	5
ARTICLE 8. CONTRACT TIMES	6
ARTICLE 9. LIQUIDATED DAMAGES	6
ARTICLE 10. SUBSTITUTES AND/OR “OR EQUAL” ITEMS	6
ARTICLE 11. PROPOSAL	7
ARTICLE 12. SUBMISSION OF BIDS	8
ARTICLE 13. MODIFICATION AND WITHDRAWAL OF BID.....	8
ARTICLE 14. OPENING OF BIDS	8
ARTICLE 15. AWARD OF CONTRACT	9
ARTICLE 16. CONTRACT SECURITY.....	10
ARTICLE 17. SIGNING OF CONTRACT.....	10
ARTICLE 18. WAGE RATES	11
ARTICLE 19. SALES TAX	11
ARTICLE 20. PRE-BID CONFERENCE	11

INSTRUCTIONS TO BIDDERS

ARTICLE 1. DEFINED TERMS

Terms used in these Instructions to Bidders which are defined in the “Standard General Conditions of the Construction Contract”, (EJCDC No. C-700, 2007 Edition) have the meanings assigned to them in the General Conditions.

Certain additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both singular and plural thereof.

- 1.1. Bidder: One who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to Bidder.
- 1.2. Issuing Office: The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- 1.3. Successful Bidder: The lowest responsive and responsible Bidder to whom OWNER (on the basis of OWNER’S evaluation as hereinafter provided) makes an award.

ARTICLE 2. COPIES OF BIDDING DOCUMENTS

- 2.1. Complete digital project bidding documents are available at <http://tinyurl.com/NewBerlinBids> or www.questcdn.com. You may download the digital plan documents for \$20 by inputting Quest project #8363115 on the website’s Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. No paper plan sets will be provided. Please contact Tamara Simonson at 262-797-2445 if you have any questions.
- 2.2. Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3. OWNER and ENGINEER, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the work and do not confer a license or grant for any other use.

- 2.4. All submitted Bidding Documents shall be original copies obtained directly from QuestCDN.com. Bids prepared on downloaded (internet) documents, which cannot be verified as being obtained directly from QuestCDN.com will not be accepted.

ARTICLE 3. QUALIFICATIONS OF BIDDERS

- 3.1. To demonstrate qualifications to perform the work, each Bidder must be prepared to submit within five (5) days before Bid opening detailed written evidence, such as financial data, previous experience, present commitments, and other such data as may be requested. Each Bid must contain evidence of Bidder's qualifications to do business in the state where the project is located or covenant to obtain such qualification prior to award of the Contract.
- 3.2. The object of the request for the qualification of Bidder is not to discourage bidding or make it difficult for qualified Bidders to file Bids. Neither is it intended to discourage beginning contractors. It is intended to make it possible for OWNER to have more exact information on financial ability, equipment, and experience in order to reduce the hazards involved in awarding contracts to parties who may not be qualified to perform the Work as specified.
- 3.3. OWNER'S decision as to qualification of the Bidders shall be final.

ARTICLE 4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- 4.1. It is the responsibility of each Bidder before submitting a Bid:
- 4.1.1. To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to below);
- 4.1.2. To visit the site to become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, performance or furnishing of the Work;
- 4.1.3. To consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work;
- 4.1.4. To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data; and

- 4.1.5. To promptly notify ENGINEER of all conflicts, errors, ambiguities, or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.
- 4.2. Reference is made to the Supplementary Conditions for identification of:
 - 4.2.1. Those reports of explorations and tests of subsurface conditions at or contiguous to the site which have been utilized by ENGINEER in preparation of the Contract Documents.
 - 4.2.2. Those drawings of physical conditions in or relating to existing surface and subsurface conditions (except Underground Facilities) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents.
 - 4.2.3. Those reports are not part of the Contract Documents. Bidder is responsible for any interpretation or conclusion drawn from any such data, interpretations, opinions, or information.
- 4.3. Information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities or others, and OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
- 4.4. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in the General Conditions.
- 4.5. Before submitting a Bid, each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto as Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.

- 4.6. On request, OWNER will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests, and studies.
- 4.6.1. Bidder shall obtain permission from the OWNER and the property owner prior to entering upon the land to make explorations, investigations, and tests.
- 4.7. Reference is made to the Special Provisions for the identification of the general nature of work that is to be performed at the site by OWNER or others (such as utilities and other prime contractors) that relates to the work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.
- 4.8. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Contract Documents and written resolutions thereof by ENGINEER is acceptable to Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.
- 4.9. The provisions of IB-4.1 through 4.8, inclusive, do not apply to Asbestos, Polychlorinated biphenyls (PCBs), Petroleum, Hazardous Waste or Radioactive Material covered by the General Conditions.

ARTICLE 5. AVAILABILITY OF LANDS FOR WORK, ETC.

- 5.1. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be

obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

ARTICLE 6. INTERPRETATIONS AND ADDENDA

- 6.1. All questions about the meaning or intent of the Contract Documents are to be directed to ENGINEER. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than five (5) days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.
- 6.3. Each Bidder shall ascertain prior to submitting a Bid that Bidder has received all Addenda issued, and each Bidder shall acknowledge receipt on the Proposal.

ARTICLE 7. BID SECURITY

- 7.1. Each Bid must be accompanied by Bid security made payable to OWNER in amount of not less than 5% nor more than 10% of the Bidder's maximum Bid price and in the form of a Certified Check, Cashier's Check, Money Order or a Bid Bond (on form attached, if form is prescribed) issued by a surety meeting the requirements of the General Conditions.
- 7.2. The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract, furnished the required contract security, and met the other conditions of the Notice to Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract and furnish the required contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the 7th day after the Effective Date of the Contract, whereupon the Bid Security furnished by such Bidders will be returned. Bid security of the other Bidders who furnished certified

checks will have checks returned within 7 days after the Bid opening. Bond Forms will be returned upon request.

ARTICLE 8. CONTRACT TIMES

- 8.1. The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the term "Contract Times" is defined in Paragraph 1.01 of the General Conditions) are set forth in the Contract (or incorporated therein by reference to the attached Proposal).

ARTICLE 9. LIQUIDATED DAMAGES

- 9.1. Provisions for liquidated damages, if any, are set forth in the Contract.

ARTICLE 10. SUBSTITUTES AND/OR "OR EQUAL" ITEMS

- 10.1. Materials and equipment described in the Contract Documents by using the name of a proprietary item or name of a particular supplier is intended to establish type, function, and quality required and, unless followed by the term "or equal", also establishes the OWNER's established standard of such material or equipment and no substitution is allowed.
- 10.2. The CONTRACTOR may furnish alternate materials in place of those specified in the following Special Provisions where "or equal" is stated and when the following provisions have been complied with.
- "If the CONTRACTOR wishes to substitute an alternate material as an 'equal' to the material specified, he shall first submit a written detailed description of such to the ENGINEER with additional copy for OWNER, for review and approval/disapproval. The CONTRACTOR shall not install any alternate materials prior to receiving written approval for their use. Only those materials listed in these Special Provisions or approved as alternates may be used on this project."
- 10.3. Application for acceptance of substitutes and "or equal" items will not be considered by ENGINEER until after the Effective Date of the Contract. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the Supplementary Conditions or General Requirements.

ARTICLE 11. PROPOSAL

- 11.1. Only the Proposal included with the Bidding Documents shall be used; additional copies may be obtained from ENGINEER (or Issuing Office).
- 11.2. All blanks on the Proposal shall be completed in ink, typewriter or computer.
- 11.3. The Bidder, when signing the Bid(s) shall meet the following requirements:
 - 11.3.1. The full name, telephone number, and business address of each Bidder for communications regarding the Bid must be entered on the Bid submitted. The Bid shall be signed in the space provided therefore by written signature of the person or persons properly authorized to sign it. All names must be typed or printed below the signature.
- 11.4. A Bid submitted by an individual shall be signed by the Bidder or by an authorized agent.
- 11.5. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature. If this is a limited liability partnership, such status must be indicated. Such LLP must be registered in the State in which the project is located before a Contract to do the Work embraced in the Bid can be signed.
- 11.6. Bids by limited liability companies must be executed in the limited liability company name by the manager if manager-managed or, if member managed, by any member, but in either case an Affidavit of Organization and Authority must be attached as proof of that person's authority to bind the LLC. The limited liability company address and state of organization and registration shall be shown below the signature. Such LLC must be registered in the state in which the Project is located before a Contract to do the Work embraced in the Bid can be signed.
- 11.7. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign). The corporate address and state of incorporation shall be shown below the signature. Such corporation must be licensed to do business in the state in which the Project is located before a Contract to do the Work embraced in the Bid can be

signed. If a foreign corporation, the state under which it is incorporated must be named.

- 11.8. Bids which are signed by an attorney-in-fact for individuals, firms, partnerships or joint ventures shall have attached thereto a power-of-attorney evidencing authority to sign the Bid.
- 11.9. The Bid shall contain an acknowledgment of receipt of Addenda, the numbers and dates of which shall be filled in on the Proposal.
- 11.10. The Bid shall include a list of Subcontractors and Suppliers that will be used to complete the work. See Subparagraph 7.b. in the Proposal.

ARTICLE 12. SUBMISSION OF BIDS

- 12.1. Bids shall be submitted at the time and place indicated in the Official Notice to Bidders and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), name and address of the Bidder and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.
- 12.2. Bids received after the official Bid closure time will be returned to the Bidder unopened.

ARTICLE 13. MODIFICATION AND WITHDRAWAL OF BID

- 13.1. Bids may be withdrawn prior to opening of the Bids upon written request of the Bidder, or the personal appearance of the Bidder or Bidder's designated representative.

ARTICLE 14. OPENING OF BIDS

- 14.1. Bids will be opened and, unless obviously non-responsive, read aloud publicly at the place where Bids are to be submitted. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after opening of Bids. Bids received after the Bid closing time will be returned to the Bidder unopened.

ARTICLE 15. AWARD OF CONTRACT

- 15.1. OWNER reserves the right to reject any and all Bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER.
- 15.2. OWNER also reserves the right to waive all informalities not involving price, time or changes in the Work. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. (An extension may not be divided by the number of units specified to determine a unit cost, if such is omitted by the Bidder.) Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.
- 15.3. In evaluating Bids, OWNER will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, supplemental prices and other data as may be requested in the Proposal or prior to the Notice of Award.
- 15.4. OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions.
- 15.5. OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.
- 15.6. OWNER shall have the right to reject any unit prices for additions to or deductions from the Work as given in the Bid, if the prices are considered excessive or unreasonable, or to accept any unit prices which may be considered fair and reasonable.

- 15.7. OWNER shall have the right to accept alternates in any order or combination or to not accept any, unless specifically otherwise provided.
- 15.8. A Bid which does not contain a unit price which is both adequate and reasonable for each item named in the Bid may be considered irregular and subject to rejection.
- 15.9. If the contract is to be awarded, it will be awarded to the lowest responsive, responsible Bidder(s).
- 15.10. OWNER is prohibited from knowingly soliciting Bids from, negotiating with or awarding contracts to, and approving or allowing subcontracts with a debarred contractor. If a Bidder, offeror or proposed subcontractor is listed on the consolidated list of debarred contractors compiled by Department of Workforce Development in accordance with Wisconsin Administrative Code s. DWD 294.03, it may not be awarded the contract or be allowed to participate as a subcontractor, except as otherwise provided in Wisconsin Administrative Code s. DWD 294.05.
- 15.11. For accounting purposes, if a combination bid is accepted, the accepted combination deduction will be applied to each contract proportionally to the individual bid amounts for each contract accepted in the combination. The adjusted amounts, individual contract bid minus the proportional deduction, will be the basis of the contract price included in the Agreement for each contract.

ARTICLE 16. CONTRACT SECURITY

- 16.1. The General Conditions and the Supplementary Conditions set forth OWNER'S requirements as to performance, and payment bonds. When the Successful Bidder delivers the executed Contract to ENGINEER, it shall be accompanied by the required performance and payment bonds.

ARTICLE 17. SIGNING OF CONTRACT

- 17.1. When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Contract with all other written Contract Documents attached. Within 10 days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Contract and attached documents to OWNER with the required bonds and certificates or policies of insurance as required by the Supplementary Conditions.

Within 10 days thereafter OWNER will deliver one fully signed counterpart to CONTRACTOR and ENGINEER.

ARTICLE 18. WAGE RATES

- 18.1. Per Section 16.856 of the Wisconsin State Statutes the Prevailing Wage Rate does not apply to this project.

ARTICLE 19. SALES TAX

- 19.1. Bidder shall investigate the statutory requirements for payment of sales taxes and if required shall include the tax in the Bid.
- 19.2. If investigation indicates tax exempt status, CONTRACTOR(S) shall forward this information to their Suppliers in order that the sale of such materials and equipment be properly recorded as a tax-exempt sale.
- 19.3. Federal excise tax does not apply to materials or services purchased by OWNER. Should the federal excise tax be applicable to this transaction, OWNER will furnish a federal exemption certificate. The Bid prices quoted herein by Bidder shall include all other direct or indirect federal, state, and local taxes which apply.
- 19.4. CONTRACTOR(S) shall forward this information to their Suppliers in order that the sale of such materials and equipment be properly recorded as a tax-exempt sale.

ARTICLE 20. PRE-BID CONFERENCE

- 20.1. There is no pre-bid conference for this project.

BIDDER'S QUALIFICATION STATEMENT - CONFIDENTIAL

Submitted to: **City of New Berlin**

Date:

RE: SUBMISSION OF PREQUALIFICATION FORMS FOR THE YEAR

Gentlemen & Ladies:

Submitted herewith please find our statement for your consideration in determining whether our firm is qualified and capable to bid, perform and furnish the necessary labor, materials and skill on the basis of our work record, experience, equipment and staff as required to enter upon and complete those various types of projects indicated below as may be awarded by the municipality during the current year.

It is understood that the determination and decisions of the Municipality with regard to qualifications shall be final, and further, that the information herein **will** be considered confidential. A finding of "Qualified" for one project does not bind the Municipality on other projects, and that the Municipality expressly reserves the right to review and reserve its findings on later projects.

Sincerely,

Signature

Printed Name

CITY OF NEW BERLIN
PRE-QUALIFICATION STATEMENT
IDENTIFICATION SECTION

Please CHECK Type of Firm Organization:

- ☐ Corporation
☐ Partnership
☐ Individual
☐ Joint – Venture

List Principle Individual Names:

(IF Individual, Answer Below)

Sole Trader _____

(IF Partnership, Answer Below)

Partner _____

Partner _____

(IF Corporation, Answer Below)

President _____

Vice-President _____

Secretary _____

Treasurer _____

Licensed to do business in Wisconsin on _____

In what State Incorporated _____ When _____

EXPERIENCE

Tabulation of Major Contracts (over \$25,000) which the Firm has completed during past 5 Years

Year	Class of Work	Amount	Location of Work	For Whom Performed & Contact Name/Phone

Tabulation of Construction Experience of Principle Individuals in Organization

Individual's Name	Title or Present Position	Years of Experience	Class of Work

List Below Major Pieces of Equipment Owned (or Leased) and
Available when needed for the Proposed Work

Item Description	Qty	Size/ Capacity/ Etc	Condition (Good or Fair)	Years of Service

CONTRACTUAL RESPONSIBILITY

List the trade and percentage of work normally performed with your own work force

Trade	Percentage of Work

Have you (or your Firm) ever failed to complete any work awarded to you?

☐ Yes

☐ No

If so, state: when, where, and why:

When	Where	Why

Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete on time a construction contract?

☐ Yes

☐ No

If so, state: firm name(s), when, where, and why:

Firm Name(s)	When	Where	Why

CITY OF NEW BERLIN
PRE-QUALIFICATION STATEMENT
CONTRACTUAL RESPONSIBILITY SECTION

Have you (or firm) asked to be relieved from a bid submitted by it to a public awarding authority during the past ten years?

☐ Yes

☐ No

If so, state: when, where, and why:

When	Where	Why

Have you (firm) been charged with or convicted of a violation of any wage schedule?

☐ Yes

☐ No

If so, state: when, where, and why:

When	Where	Why

List those projects that you (or firm) expect to have in progress at the time of the major performance period for this project:

Project	Location

BONDING RESPONSIBILITY

Name(s) and address of bonding company(ies) which generally execute Bid and Surety bonds:

Name	Address

Name(s) and addresses of all bonding companies other than those listed above, which have written Bid and Surety bonds for your firm during the last five (5) years:

Name	Address

Has any bonding company ever taken over a contract or make any payments, because of your firm's failure to carry out a contract?

☐ Yes

☐ No

If so, state: when, where, and why.

When	Where	Why

List current limits of bonding capacity: _____

List your current average bond premium cost: _____ %

CONTRACTOR'S FINANCIAL STATEMENT

Attach your Statement of Financial Conditions, including the latest regular dated financial statement or balance sheet, which must contain the following items:

1. Current Assets: Cash joint-venture accounts, accounts receivable, notes receivable, accrued interest on notes, deposits, materials, and prepaid expenses, net fixed assets, and other assets.

2. Current Liabilities: Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owner, accrued salaries, accrued payroll taxes, other liabilities, and capital (stock, authorized and outstanding shares par values, and earned surplus).

Name of firm preparing statement: _____

Are any of the firm's assets assigned?

☐ Yes

☐ No

If so, state which are assigned and for what purpose they are assigned:

Assigned Asset	Purpose

GENERAL DATA

List below all previous work experience with the City of New Berlin:

Project	Trade	Year

Are you familiar with the provisions of the Agreement Form used by the City's?

- ☐ Yes
☐ No

Are you familiar with its terms and conditions?

- ☐ Yes
☐ No

Are you familiar with the City's specifications?

- ☐ Yes
☐ No

Are you familiar with the regulations of the City relating to bidding and awarding of contracts'?

- ☐ Yes
☐ No

AFFIDAVIT

STATE OF WISCONSIN

_____ } ss
_____ County

_____, being duly sworn, deposes and says
that he is the _____ (Official
capacity/title) of the firm _____ and that the answers to
the foregoing questions and all statements therein contained are true and correct, and
that any Owner, Bonding Company, or other agency herein named is hereby authorized
to supply the City of New Berlin with any information deemed necessary to verify this
statement.

Subscribed and sworn to before me

This ____ day of _____, 20__

_____ Notary Public

_____ County, Wisconsin

My Commission Expires: _____

ATTACH
STATEMENT OF FINANCIAL CONDITIONS

SUBCONTRACTOR'S QUALIFICATION STATEMENT

Submitted to
The City of New Berlin

Submit one copy of qualification for each Subcontractor.

The undersigned certifies, under oath, the truth and correctness of all statements and of all answers to questions made hereinafter.

NAME OF PERSON SUBMITTING STATEMENT:

NAME OF FIRM:

ADDRESS:

TELEPHONE NUMBER: _____

LOCATION OR PRINCIPAL OFFICE:

CHECK ONE:

Corporation ____ Partnership ____ Individual ____ Jt Venture ____

Limited Liability Company _____ Other _____

Signature

TYPE OF WORK SPECIALIZATION: _____ CONSTRUCTION

1. How many years, for the type of work specialization stated above, has your organization been in business as a Contractor?
2. How many years has your organization been in business under its present business name?

3. If a corporation, provide the following information:
 - a. Date of incorporation:
 - b. State of incorporation:
4. If individual or partnership, provide the following information:
 - a. Date of organization:
 - b. Name and address of all partners (state whether general or limited partnership):
5. If Joint Venture, Limited Liability Company or other organization than a corporation or partnership, describe the organization and name principals:
6. List the percentage of work normally performed with your own work force. List those trades below:
7. Have you ever failed to complete any work awarded to you? If so, state when, where, and why:
8. Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a pool contract? If so, state the circumstances:

9a. List the names of the project, owner, architect, general contractor or construction manager, contract amount, current percent complete, and scheduled completion date of the major construction projects your organization has in progress at this time:

9b. Expects to have in progress at the time of the performance period for this project:

10. List your trade references:

11. List your banking references:

12. List your bonding references:

a. Name and address of bonding company:

b. Limits of bonding capacity:

c. Average bond premium cost:

13. Attach your Statement of Financial Conditions, including the latest regular dated financial statement or balance sheet, which must contain the following items:

a. Current Assets: Cash, joint venture accounts, accounts receivable, notes receivable, accrued interest on notes, deposits, materials, and prepaid expenses, net fixed assets, and other assets.

b. Current Liabilities: Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owner, accrued salaries, accrued payroll taxes, other liabilities, and capital (stock, authorized and outstanding shares par values, and earned surplus).

c. Date of statement or balance sheet:

d. Name of firm preparing statement:

14. List below all previous work experience with the City of New Berlin:

15. State your method for estimating your expenses for this type of work:

16. How do you pre-qualify your subcontractors and suppliers:

17. Describe your Quality Control Program:

18. How do you normally staff your projects (job-site management organization)?
What is the total number of full-time employees of your firm:

SUBCONTRACTOR LIST

The following Subcontractors will be utilized for portions of the Project Work (only list those > \$1,000). Changes shall not be made subsequent to the Bid unless the change(s) is approved by the City.

[illegible]

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
A Practice Division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
Article 1 – Definitions and Terminology	1
1.01 Defined Terms.....	1
1.02 Terminology	5
Article 2 – Preliminary Matters	6
2.01 Delivery of Bonds and Evidence of Insurance	6
2.02 Copies of Documents	6
2.03 Commencement of Contract Times; Notice to Proceed.....	6
2.04 Starting the Work	7
2.05 Before Starting Construction	7
2.06 Preconstruction Conference; Designation of Authorized Representatives.....	7
2.07 Initial Acceptance of Schedules.....	7
Article 3 – Contract Documents: Intent, Amending, Reuse	8
3.01 Intent.....	8
3.02 Reference Standards.....	8
3.03 Reporting and Resolving Discrepancies.....	9
3.04 Amending and Supplementing Contract Documents.....	9
3.05 Reuse of Documents	10
3.06 Electronic Data.....	10
Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points.....	11
4.01 Availability of Lands.....	11
4.02 Subsurface and Physical Conditions.....	11
4.03 Differing Subsurface or Physical Conditions	12
4.04 Underground Facilities.....	13
4.05 Reference Points.....	14
4.06 Hazardous Environmental Condition at Site.....	14
Article 5 – Bonds and Insurance.....	16
5.01 Performance, Payment, and Other Bonds.....	16
5.02 Licensed Sureties and Insurers.....	16
5.03 Certificates of Insurance	17
5.04 Contractor’s Insurance	17
5.05 Owner’s Liability Insurance.....	19
5.06 Property Insurance.....	19
5.07 Waiver of Rights	20
5.08 Receipt and Application of Insurance Proceeds.....	21

5.09	Acceptance of Bonds and Insurance; Option to Replace	21
5.10	Partial Utilization, Acknowledgment of Property Insurer.....	22
Article 6 – Contractor’s Responsibilities		22
6.01	Supervision and Superintendence.....	22
6.02	Labor; Working Hours	22
6.03	Services, Materials, and Equipment	22
6.04	Progress Schedule	23
6.05	Substitutes and “Or-Equals”	23
6.06	Concerning Subcontractors, Suppliers, and Others.....	25
6.07	Patent Fees and Royalties	27
6.08	Permits.....	27
6.09	Laws and Regulations	28
6.10	Taxes	28
6.11	Use of Site and Other Areas.....	28
6.12	Record Documents.....	29
6.13	Safety and Protection	29
6.14	Safety Representative.....	30
6.15	Hazard Communication Programs.....	30
6.16	Emergencies	30
6.17	Shop Drawings and Samples	31
6.18	Continuing the Work.....	32
6.19	Contractor’s General Warranty and Guarantee	33
6.20	Indemnification	33
6.21	Delegation of Professional Design Services.....	34
Article 7 – Other Work at the Site		35
7.01	Related Work at Site	35
7.02	Coordination.....	35
7.03	Legal Relationships.....	36
Article 8 – Owner’s Responsibilities.....		36
8.01	Communications to Contractor.....	36
8.02	Replacement of Engineer.....	36
8.03	Furnish Data	36
8.04	Pay When Due.....	36
8.05	Lands and Easements; Reports and Tests.....	36
8.06	Insurance.....	36
8.07	Change Orders.....	37
8.08	Inspections, Tests, and Approvals	37
8.09	Limitations on Owner’s Responsibilities	37
8.10	Undisclosed Hazardous Environmental Condition.....	37
8.11	Evidence of Financial Arrangements.....	37
8.12	Compliance with Safety Program	37
Article 9 – Engineer’s Status During Construction.....		37
9.01	Owner’s Representative	37

9.02	Visits to Site	37
9.03	Project Representative.....	38
9.04	Authorized Variations in Work	38
9.05	Rejecting Defective Work.....	38
9.06	Shop Drawings, Change Orders and Payments.....	39
9.07	Determinations for Unit Price Work	39
9.08	Decisions on Requirements of Contract Documents and Acceptability of Work	39
9.09	Limitations on Engineer's Authority and Responsibilities	39
9.10	Compliance with Safety Program	40
Article 10 –	Changes in the Work; Claims	40
10.01	Authorized Changes in the Work	40
10.02	Unauthorized Changes in the Work.....	41
10.03	Execution of Change Orders.....	41
10.04	Notification to Surety.....	41
10.05	Claims.....	41
Article 11 –	Cost of the Work; Allowances; Unit Price Work	42
11.01	Cost of the Work	42
11.02	Allowances	45
11.03	Unit Price Work	45
Article 12 –	Change of Contract Price; Change of Contract Times	46
12.01	Change of Contract Price	46
12.02	Change of Contract Times	47
12.03	Delays	47
Article 13 –	Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....	48
13.01	Notice of Defects.....	48
13.02	Access to Work	48
13.03	Tests and Inspections	49
13.04	Uncovering Work.....	49
13.05	Owner May Stop the Work.....	50
13.06	Correction or Removal of Defective Work	50
13.07	Correction Period	50
13.08	Acceptance of Defective Work.....	51
13.09	Owner May Correct Defective Work	52
Article 14 –	Payments to Contractor and Completion	52
14.01	Schedule of Values.....	52
14.02	Progress Payments	52
14.03	Contractor's Warranty of Title.....	55
14.04	Substantial Completion.....	55
14.05	Partial Utilization	56
14.06	Final Inspection.....	57
14.07	Final Payment.....	57
14.08	Final Completion Delayed	58

14.09 Waiver of Claims	58
Article 15 – Suspension of Work and Termination	59
15.01 Owner May Suspend Work.....	59
15.02 Owner May Terminate for Cause	59
15.03 Owner May Terminate For Convenience	60
15.04 Contractor May Stop Work or Terminate.....	60
Article 16 – Dispute Resolution	61
16.01 Methods and Procedures	61
Article 17 – Miscellaneous	61
17.01 Giving Notice	61
17.02 Computation of Times	62
17.03 Cumulative Remedies	62
17.04 Survival of Obligations	62
17.05 Controlling Law	62
17.06 Headings.....	62

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on

Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
- 3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

- 1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
- 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

- 1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the

consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also

meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

- a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,

members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's

interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

- c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
 - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be

required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner,

Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
- 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought

by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and

shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is

required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

- a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
- b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
- c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 - 6. any inspection, test, or approval by others; or
 - 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
1. written notice thereof will be given to Contractor prior to starting any such other work; and
 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 3. the extent of such authority and responsibilities will be provided.

- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or

continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not

exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data

shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of

said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not

limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
 1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to

the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or

neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
 2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an

Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or

- involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
- b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before

final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying

documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 - 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 - 3. Contractor's repeated disregard of the authority of Engineer; or
 - 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
 - 1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 - 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 - 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when

so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days

to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SPECIAL PROVISIONS
CONTRACT RD-20-04
SMALL ROAD RECONSTRUCTION

I. Specifications

All work is to conform to the City of New Berlin Infrastructure Standards, adopted July 18, 2016, except as amended below. The City of New Berlin Development Handbook is available on the City website at: <http://www.newberlin.org/index.aspx?nid=773>

II. Time for Start of Work and Completion

The City of New Berlin is requesting that the work start no later than **April 17, 2023** and be completed by **October 23, 2023**. After October 23, 2023, a fee of \$1500.00 per day will be charged to the Contractor for inspection services. The anticipated Contract Award date and Notice to Proceed date for this Contract will be **March 28, 2023**. Once Contractor begins work under this Contract, the work shall continue until complete. Failure to remain on site to work on the project, excepting due to weather, will result in a forfeiture of \$1,500 per day.

III. General

The City reserves the right to accept all or part of the work as funding allows. Due to funding limitations, the City reserves the right to delete any of the work to satisfy the budget limitations. The Contractor will not receive extra compensation due to the deletion of any of the work, even if the amount deleted exceeds 15% of the original Contract amount.

The majority of the work, as indicated per these specifications and as directed by the Engineer under this Contract, shall consist of reconstructing Small Road from College Avenue to approximately 500 feet west of Moorland Road in accordance with the City of New Berlin Infrastructure Standards and these special provisions.

IV. Coordination with Private Utilities

The Contractor shall coordinate their work with private utility work being performed as part of this project. No compensation or time extension will be given to the Contractor for delays due to work performed by private contractors. See contact information for utilities below:

WE Energies – Electric	Jason T. Dodge	(414) 944-5507
WE Energies – Gas (Residential)	Jacob Spencer	(262) 968-7009
Midwest Fiber Networks	Cory Schmuki	(414) 459-3561
MCI	Randy Cikatello	(262) 782-9836
Charter Communications	Beau Abuya	(414) 758-9241
AT&T	Nathan Gilbert	(262) 720-8235

V. Prequalification

Contractor and all subcontractors shall either submit an Annual Qualification Statement to the City or a project-specific Qualification Statement as part of the Bid Package. The City reserves the right to deny the services of any subcontractor.

VI. Testing

The Contractor shall, at no cost to the City, provide for all materials to be pre-tested by a qualified private testing laboratory verifying that the materials are in conformance with the specifications. The City may have tests performed throughout the project to verify that the materials remain in conformance. If the materials are not in conformance, the testing costs and all subsequent testing costs until conformance is achieved shall be deducted from the Contractor. Contractor shall submit testing documentation for all tests performed prior to the start of Work.

Incidental to HMA Paving are nuclear density tests every 500 lineal feet at each outside wheel path and at the centerline. Sampling requirements from Section 460.2.8.2.1.3.2 of the State Standard Specification shall be followed.

Incidental to concrete Curb and Gutter 30-inch items, are daily start-up concrete tests and 28-day cast cylinder breaks.

VII. Cleaning

Binder course shall be swept clean by the Contractor prior to placing the surface course. Additional sweeping due to material under this Contract tracking or spilling on adjacent streets shall be removed immediately and at the end of each work day. The cost for sweeping will be considered incidental to this Contract.

VIII. Traffic Control, Detour, & Safety

The Contractor shall submit for approval, a traffic control schedule to the Owner at the time of the pre-construction meeting. This schedule shall be updated as work progresses.

It shall be the responsibility of the Contractor to schedule their work as necessary to minimize the inconvenience to traffic, pedestrians, and property owners within and adjacent to the project. All streets may be closed to through traffic, but shall be kept open to local traffic and emergency vehicles during construction. Maintain existing pavement at all times except as required for construction activities. Backfill trenches for utility construction activities to finished grade except as required for construction activities or as directed by engineer. Stage existing pavement removal and roadway grading to minimize disruption to traffic and access.

During the course of the project, access to local residences and businesses shall be maintained at all times. A minimum of one lane of traffic shall be maintained at all times during construction hours and two lanes of traffic during non-construction hours. Access may be restricted to being available from one end of the project or the other.

The contractor shall notify all local law enforcement and emergency services of road closures, detours, and traffic control changes.

Maintain property access within the work zone to residents, businesses, and emergency vehicles at all times.

Following the removal of a driveway approach, and until the permanent driveway approach is in place, the Contractor shall construct a temporary gravel driveway, conforming to the spec for Base Aggregate Dense $\frac{3}{4}$ -Inch. Temporary gravel driveways shall be included as

incidental to the base aggregate items used for the final driveways. Temporary gravel driveways will not be measured, nor tickets included, for payment.

Maintain and keep open access to all driveways and parking lots where alternative access is not available at all times by closing one driveway at a time, constructing the driveway one half at a time, or plating concrete work. Residential driveways may be closed for the duration which the concrete approaches are curing. Plating of concrete work for driveways shall be included as incidental to driveway construction.

Maintain access from the west project limits to one of the driveways to Peace Lutheran Church, 17651 W Small Road (STA 101+00 and STA 113+70) at all times.

Maintain truck access from the east project limits to the west driveway of 16515 W Small Road (STA 155+00) at all times.

Coordinate the use of any traffic control devices and the access to the site with the DOT contractor that will be working at the same time on the Calhoun Intersection.

The contractor shall notify affected property owners 48 hours in advance of restricting driveway access.

All Traffic Control devices shall conform to Section 643 of the WisDOT State Standard Specifications. WisDOT traffic control shall be coordinated with is project as well to maintain access to truck for this project.

The Contractor shall establish the detour and alternative routes, as shown in the plan, prior to closures along the Small Road corridor.

Maintain a single 11-foot lane in each direction along CTH HH (College Avenue) at all times unless noted otherwise here. Close the CTH HH (College Avenue) westbound shoulder. CTH HH (College Avenue) may be reduced to a single 11-foot lane during off-peak hours. Flaggers shall be used when CTH HH (College Avenue) is reduced to a single lane.

The Contractor is responsible for providing all signs, cones, barrels, barricades, flag personnel, or any other items necessary to protect the public, workers, and the work. All signage shall conform to the Wisconsin Manual on Uniform Traffic Control Devices, Current Edition. All traffic control and phasing of the project will be paid as LUMP SUM.

IX. Hauling Restrictions

Conduct operations in a manner that will cause a minimum of inconvenience to the free flow of vehicles on roadways carrying CTH HH, Small Rd, and local street traffic. The contractor will be allowed access to these roads at locations approved by the engineer.

When hauling across any public roads, provide the necessary flagging and signing to control the construction equipment movements. The flagging operations shall not impede traffic flow on the public roads.

X. Holiday and Special Event Work Restrictions

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying CTH HH traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday and special event periods:

- From noon Friday, May 26, 2023 to 6:00 AM Tuesday, May 30, 2023 for Memorial Day;
- From noon Monday, July 3, 2023 to 6:00 AM Wednesday, July 5, 2023 for Independence Day;
- From noon Friday, September 1, 2023 to 6:00 AM Tuesday, September 5, 2023 for Labor Day.

XI. Permits

The CONTRACTOR shall procure all necessary permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

All work requiring permits or licenses shall abide by the governing permit/license specifications where they exceed the requirements stated in these specifications.

Permits that will be procured by the City include the following:

1. DNR Notice of Intent Permit
2. DNR Waterway and Wetland Permit

XII. Information to Bidders, Waukesha County ECIP Approval Process

The Waukesha County Department of Parks and Land Use (PLU), Land Resources Division storm water and erosion control permit for the project is pending. The contractor shall prepare an Erosion Control Implementation Plan in accordance with the Wisconsin DOT Construction and Materials Manual (CMM) using Form WS1073. Waukesha County PLU shall serve as the department and Wisconsin DNR under the Authorized Local Program agreement with the Wisconsin Department of Natural Resources.

The Waukesha County Stormwater and Erosion Control permitting process shall be followed for all borrow/waste sites not having a current NR 216 or NR 135 permit and located within Waukesha County.

XIII. Notice to Contractor, Concrete Washout Containment

All concrete trucks shall wash out into a containment system located sufficiently away from the work area to prevent runoff into wetlands and drainage courses. A construction detail and location of the containment system shall be included in the Erosion Control Implementation Plan and reviewed with the project leader prior to use. Costs associated with concrete washout containment devices shall be incidental to other items within this contract.

XIV. Erosion Control

Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion.

Final restoration or temporary stabilization shall be in place and approved by the engineer prior to advancing construction operations to the next stage.

Temporary seed and mulch cleared and grubbed areas within 48 hours of disturbance. Temporary seed mixture shall conform to the requirements of Section 630.2.1.5.1.2 of the WisDOT State Standard Specifications. Oats shall be used in spring and summer plantings. Winter wheat or rye shall be used for fall plantings after September 1.

Re-topsoil graded areas, as designated by the engineer, immediately after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within 5 calendar days after placement of topsoil. If permanent restoration or temporary vegetative cover will not be achieved within 7 days of any disturbance to graded areas, restore those areas with temporary seed and mulch within 72-hours of disturbance. Sowing rate for temporary seeding shall be 3 pounds per 1000 square feet. Temporary seeding shall be incidental to project work.

Permanently protect or restore all disturbed stream banks and wetland areas, or implement temporary erosion control devices within 24-hours of disturbance in these areas.

This project involves work that may involve cutting or wounding of oak trees. To prevent the spread of oak wilt disease, avoid cutting or pruning of oaks from April through September.

When performing roadway cleaning operations, use equipment having vacuum or water spray mechanism to eliminate the dispersion of dust. If vacuum equipment is employed, it shall have suitable self-contained particulate collectors to prevent discharge from the collection bin into the atmosphere.

Material tracked onto adjacent streets shall be cleaned up the same day it occurs. Any street sweeping required shall be incidental to Work.

All saw cut slurry must be removed from the pavement before moving to the next saw cut location. Squeegee slurry onto adjacent aggregate or collect and remove from the site. Slurry may not be left on the pavement surface. Slurry removal shall be incidental to sawing asphalt and sawing concrete.

Dust control shall be provided by the contractor as required by the Owner or Engineer to minimize the dispersion of dust caused by construction operations in accordance with WDNR Technical Standard 1068. Dust control shall be incidental to Work. Dry sweeping is not allowed and rotary broom devices shall include a water bag or vacuum device.

Stockpile excess material or spoils on upland areas away from wetlands, floodplains and waterways. Stockpiled soil shall be protected against erosion. Temporarily stabilize on-site stockpiles and windrowed material with temporary seed and mulch no later than the end of the work day or no later than the next day, for each day the stockpiles or windrows are added to. Clean up materials dropped or fallen from trucks beyond the work area before the end of each work day. Consider use of water tight end gates or liners for dump trucks hauling marsh excavation material.

Erosion control BMPs are at suggested locations—the actual locations will be determined by the engineer. Erosion Control BMPs shall be maintained until permanent vegetation is established or until the engineer determines that the BMP is no longer required.

During marsh excavation backfill operations, take measures to ensure that surge water does not leave the work area that may deposit sediment into adjacent wetlands. Management of water in marsh excavation shall be incidental to the work.

WDNR Liaison:

Craig Webster
(262) 574-2141
craig.webster@wi.gov

XV. Erosion Control Structures

Within three calendar days after completing the excavation for a substructure unit, place riprap or other permanent erosion control items required by the contract or deemed necessary by the engineer around the unit at a minimum to a height equivalent to the calculated water elevation resulting from a storm that occurs on the average of once every two years (Q2) as shown on the plan, or as the engineer directs.

In the event that construction activity does not disturb the existing ground below the Q2 elevation, the above timing requirements for permanent erosion control shall be waived.

XVI. Drainage During Construction

During construction, the existing streets, easement areas, ditches, navigable waterways, basins, and all graded areas shall be maintained in a well-drained condition at all times by keeping the construction areas sloped in such a manner as to maintain positive drainage. Blading or leveling operations may be required during construction in order to prevent the ponding of water.

The Contractor shall be responsible for and shall take all reasonable and necessary precautions to preserve and protect all existing tile drains, sewers, and other subsurface drains, or parts thereof, which in the judgment of the City Engineer may be continued in service without change. The Contractor shall repair at his own expense any and all damage to such facilities resulting from his operations and no additional compensation will be allowed. Any springs or seeping water encountered shall be reported to the City Engineer.

Use existing storm sewers, existing culvert pipes, existing drainage channels, temporary culvert pipes, or temporary drainage channels to maintain existing surface and pipe drainage. Pumps may be required to drain the surface, pipe, and structure discharges during construction. Costs for furnishing, operating, and maintaining the pumps is considered incidental to the project

XVII. Protection of Waterways

The Contractor shall comply with all laws prohibiting the pollution of any lake, stream, river, or wetland by the dumping of any refuse, rubbish, dredge material, or debris therein.

To limit sedimentation, the Contractor shall use appropriate erosion control practices on the site as recommended by the Army Corps of Engineers (COE) and Wisconsin Department of Natural Resources.

Special precautions shall be taken by the Contractor during all periods of heavy rainfall and at all locations where storm water, groundwater and/or mud and debris may enter the sewer systems or discharge from the site onto adjacent properties and wetlands. All mud, stones, and debris that enter the sewer systems due to the Contractor's operations or his neglect shall be cleaned from the system by the Contractor. It shall be the Contractor's responsibility to see that such storm water, groundwater and debris does not enter the sewer system. It shall be the Contractor's responsibility to see that proper precautions are taken continuously during the time of construction so problems do not develop during non-working as well as working hours.

If the Contractor is required to temporarily block the flow of the water across the work area such interruption of the flow shall be accomplished using a combination of sandbags and impervious membranes both upstream and downstream to the work area. Pumping around the work area may be required in addition to this.

All costs necessary to meet with the requirements included herein shall be considered incidental to the project and no additional compensation shall be allowed.

XVIII. Water Removal

The Contractor shall provide and maintain ample means and devices to promptly remove and properly dispose of all water entering the trench excavation during the time the trench is being prepared for the pipe laying, during the laying of the pipe, and until the backfill at that pipe has been completed. Water from the trench shall be filtered or discharged to a settling basin in accordance with applicable regulations.

No ground or surface water shall be allowed to drain into any existing sanitary sewer. Water may be allowed to flow through storm sewers and sewer structures, but only if approved by the Engineer.

No units shall be constructed under water, except with the approval of the Engineer, and then only in accordance with methods prescribed by him. All costs for water removal and complying with all applicable regulations shall be merged into the unit prices bid under the contract, and no additional compensation shall be allowed.

The Contractor shall intercept and divert drainage away from the work sites by the use of dikes, cofferdams, curbwalls, ditches, pipes, sumps, or other means. The Contractor shall design drainage systems so they do not cause erosion on or off the site. The Contractor shall remove drainage systems no longer needed and shall remove debris and restore site or sites to original condition.

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice before discharge. Guidance on dewatering can be found on the Wisconsin Department of Natural Resources website located in the Storm Water Construction Technical Standards, Dewatering Code #1061, "Dewatering". This document can be found at the WisDNR website:

http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

The cost of all work and materials associated with water treatment and/or dewatering is incidental to the bid items the work is associated.

If water enters the excavation in volumes that could adversely affect the performance of the work or has the potential to cause loss or damage to adjacent property or structures, take immediate steps to reduce or mitigate the water inflow.

Do not pump water from the construction site to a storm water conveyance without the water first passing through a temporary settling basin and/or filter bag, surrounded by Silt Fence Heavy Duty. Discharge water in a manner that will not cause soil erosion at the discharge point. Discharge shall not cause sediment accumulation or flooding in any stream, storm sewer, or on adjacent properties.

If dewatering operations require pumping of water containing sediments (sand, silt, and clay particles), the discharge will not be allowed to leave the work site or discharge to a storm water conveyance system without sediment removal treatment.

XIX. Measurement

Payments shall be based on actual field measurements for unit price contracts. If contract specific bid items are lump sum, payments shall be lump sum based on bid amount.

The CITY may elect to accept measurements made by the CONTRACTOR. When the CITY agrees to accept such CONTRACTOR measurements, CONTRACTOR shall provide written evidence of such measurement (load tickets, etc.).

The CITY reserves the right to increase or decrease the quantities of work. The cost for such an increase or decrease in the quantities of work will be negotiated using the unit prices/schedule of prices for determination of reasonable cost. No allowance will be made for any increased expenses, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the CONTRACTOR resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

XX. Final Payment

When the project has been finally accepted by the CITY, the CONTRACTOR shall submit to the CITY or their designated Representative, an invoice for final payment in accordance with the GENERAL CONDITIONS.

When the CITY has verified and accepted the quantities of work, the CONTRACTOR shall be paid the entire sum found to be due after deducting all previous payments and all amounts to be deducted under the provisions of the Contract.

All prior partial estimates and payments shall be subject to correction in the final estimate of payment.

Acceptance of the final payment by the CONTRACTOR is their acceptance of all contract conditions and their indemnification of the CITY from any future claims arising from this Contract.

XXI. Traffic Control/Detour

Materials:

The Contractor shall submit for approval, a traffic control schedule to the Owner at the time of the pre-construction meeting. This schedule shall be updated as work progresses.

Execution:

WisDOT project traffic control shall be coordinated with the C New Berlin S Calhoun Road, Project ID 2722-09-70 as well. Maintain access to trucks for this project.

The Contractor shall be responsible for the erection and maintenance of all drums, barricades, posts for signs, lights and signs, or other traffic control devices necessary for public safety and convenience in accordance with all applicable requirements. The plan includes a general traffic detour plan that shows minimum provisions, directions and signage needed to route all thru traffic around the site. The contractor shall provide a traffic control meeting these minimum standards to complete the project as directed on the phasing and staging plan and will require the potential for relocation of traffic control devices and moving barricades and thru traffic controls all necessary to keep a access to all businesses. In general, all hazards within the limits of the Work or on detours around the Work must be marked with clean, well-maintained drums, barricades, reflectors, electric lights, flashers and warning and directional signs in sufficient quantity and size adequate to protect life and property. These safeguards shall be moved, changed, increased or removed as required during the progress of the Work to meet changing conditions. Homemade signs will not be allowed.

Barricades shall be maintained in rigidly assembled condition. All warning devices shall be kept clean and in good repair so as to be readily discernible at all times.

Whenever the Contractor's operations obstruct or endanger a traffic lane, and no marked detour has been provided, the Contractor shall furnish a flagman to direct traffic through or around the congested area. The Engineer shall have the right to require additional flagmen, as he may deem necessary.

Adequate protection shall be provided around all openings wherever required to safeguard the Work or the public. All openings and surface obstructions shall be protected with drums, barricades, signs, lights and warning devices in accordance with local requirements.

All trenches for sewer pipe, manholes, or other drainage structures shall be backfilled or covered with steel plates at the end of the work day.

Measurement and Payment:

Traffic Control/Detour will be measured and paid at the contract unit price per lump sum acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, maintenance, and incidentals necessary to complete this item of work. This item may be paid for at a partial payment upon initial installation and a final payment upon completion of one phase and relocation of devices for the next phase.

XXII. Construction Staking

This special provision describes modifying Sections 105.6 and 650 of the WisDOT Standard Specifications to define the requirements for construction staking for this contract. Conform to Sections 105.6 and 650 except as modified in this special provision.

Replace standard spec 650.1 with the following:

This section describes the contractor-performed construction staking, or automated machine guidance (AMG) methods, required to establish the horizontal and vertical position for all aspects of construction including:

- Silt fence
- culverts
- subgrade
- blue/red top
- base
- curb and gutter
- pavement
- pavement markings (temporary and permanent)
- supplemental control
- bioswales
- slope stakes
- storm sewer
- water main
- utilities
- erosion control elements
- restoration elements
- traffic control items

Execution:

Add the following to Section 650.3.1 of the WisDOT Standard Specifications:

(6) AMG methods will not be allowed to establish the following:

Curb, gutter, and curb and gutter vertical locations.

(7) Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. This includes:

- Raw data files
- Digital stakeout reports
- Control check reports
- Supplemental control files (along with method used to establish coordinates and elevation)
- Calibration report

Make the survey notes and computations available to the engineer within twenty-four (24) hours as the work progresses unless a longer period is approved by the engineer.

Replace Section 650.3.1.2.3.1 of the WisDOT Standard Specifications with the following:

(1) The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 710. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide

that information within five (5) business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

Add the following to Section 650.3.3 of the WisDOT Standard Specifications:

(2) Record all subgrade elevation checks and submit a hard copy to the engineer within twenty-four (24) hours or as requested by the engineer.

Measurement and Payment:

Construction Staking will be measured by the contract lump sum price acceptably completed, which price will be full compensation for performing all survey work required to lay out and construct all work under this contract and for adjusting stakes to ensure compatibility with existing field conditions. The Owner will not make final payment for this item until the contractor submits all survey notes and computations used to establish the required lines and grades to the engineer within twenty-four (24) hours of completing this work. Re-staking due to construction disturbance and knock-outs will be performed at no additional cost to the Owner.

XXIII. Private Septic System Evaluation and Repair

Execution:

Prior to construction, evaluate the following private septic systems and document their current states of operation:

- 17230 W Small Road
- 17455 W Small Road

The contractor inspection may conduct the inspection or contact Waukesha County Environmental Health department to arrange for an inspection. See <https://www.waukeshacounty.gov/landandparks/environmental-health/water-wells/well-and-septic-evaluation/>. A "Private Water System and/or Private Sewage System Evaluation Application" can be found at: <https://www.waukeshacounty.gov/globalassets/parks--land-use/environmental-health/eh-forms/well-and-septic-application-evaluation-arsenic-and-nitrates.pdf>.

The contractor shall be responsible for all costs to conduct the inspection.

Contact the property owner and arrange for permission to access the property to conduct the inspection.

The inspection, at a minimum, shall consist of the following:

1. A visual inspection to determine if all water carried waste enters the septic tank, that no sewage effluent is visibly being discharged onto the surface of the ground, and to determine if minimum isolation distances are maintained.
2. Determine the operating condition of the soil absorption system, check the observation pipe or fresh air vent to determine the operating status of the soil absorption system.
3. Provide an evaluation that is representative of the operating condition of the existing sewage disposal system, do not pump the septic tank before the inspection is made.

4. Conduct a structural evaluation of the septic tank. (This must be conducted by a licensed pumper or plumber.)

Contact the property owner with any concerns or required repairs. Any immediate repairs uncovered by the inspection are the responsibility of the property owner.

After construction operations on Small Road are concluded, repeat the inspection. Any damage or reduction in service that can be reasonably assumed to be due to the roadway construction shall be repaired by the contractor.

Measurement & Payment:

Private Septic System Evaluation and Repair will be paid and measured at the Contract unit price by each acceptably completed, which payment shall be full compensation for all operations hereinbefore specified; for all inspections, fees, permits as required; for all coordination and administrative costs; as well as all labor, tools, equipment, and incidentals necessary to complete this item of work. No additional compensation shall be provided for any damages or subsequent repairs to the septic system due to neglect of the contractor.

XXIV. Sawcut Pavement

Execution:

A full depth saw cut, regardless if asphalt or concrete pavement or unknown depth, shall be made where new pavement is matching existing pavement, and as shown in the project drawings. Saw cuts shall be marked prior to the start of work by the Engineer.

Pavements shall be saw cut in neat straight lines, at right angles to the street or drive, to produce a clean joint for pavement restoration. If the saw cut edge is damaged during construction, the Contractor shall saw cut the pavement again immediately prior to paving.

All saw cut slurry must be removed from the pavement before moving to the next saw cut location. Squeegee slurry onto adjacent aggregate or collect and remove from the site. Slurry may not be left on the pavement surface.

Dry sweeping is not permitted. If used, rotary broom devices must have a water bag or a vacuum device.

Measurement & Payment:

Payment for Sawcut Pavement will be made at the Contract unit price per lineal foot, which payment shall be full compensation for all operations hereinbefore specified; for slurry removal; and for all labor, tools, equipment and incidentals necessary to saw cut the full depth of asphalt and concrete pavement.

XXV. Silt Fence

Materials:

The geotextile fabric shall consist of either woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene or polyvinylidene chloride. For woven fabric, the CONTRACTOR may use needle punched, heat bonded, resin bonded, or combination of

all three. Submit a certificate of compliance certifying that the geotextile conforms to the following minimum requirements:

Test Requirement

Minimum Grab Tensile Strength
(machine direction) 120 lb.

Minimum Grab Tensile Strength
(cross machine direction) 100 lb.

Maximum Apparent Opening Size No. 30
(equivalent standard sieve size)

Minimum Permittivity 0.05 s^{-1}

Minimum Ultra Violet Radiation
Stability (at 500 Hours) 70%

Fabric shall be reinforced with an industrial polypropylene netting with a maximum mesh spacing of $\frac{3}{4}$ -inch.

A heavy-duty nylon top support cord or equivalent is required.

Execution:

Silt fence shall be placed and maintained in accordance with Subsection 628.3.4 of the WisDOT State Standard Specifications and the Standard Detail Drawings shown on the project drawings.

Silt fence shall be removed once vegetation has been established, as determined by the Engineer. The Contractor shall also remove and dispose of accumulated silt.

Measurement and Payment:

Silt Fence will be measured paid for at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to install, maintain and remove the silt fence; and to dispose of any accumulated silt.

XXVI. Silt Fence Heavy Duty

Materials:

Furnish heavy duty silt fence consisting of a composite woven wire fabric, posts, geotextile fabric, and fasteners to be assembled by the contractor. Woven wire fabric shall be a standard field fence type, a minimum of 3 feet high with a maximum mesh spacing of 6-inches and minimum 14½ AWG wire. Provide metal posts with a minimum length of 6-feet, 3-inches. Posts shall be “studded tee” or “U” type with a minimum weight of 1.3 lb/ft. Provide geotextile fabric, non-woven with properties as specified in the above Silt Fence specification.

Execution:

Placed and maintain heavy duty silt fence as shown on the plans, in accordance with Subsection 628.3.4 of the WisDOT State Standard Specifications, and as follows:

Space ties and anchors adequately to resist current flow. Remove silt fence only after construction activities have been completed. Remove trapped silt prior to removing the fence as directed by the engineer. Use heavy duty silt fence in wetland areas up to 6-inches of standing water.

Silt fence shall be removed once vegetation has been established, as determined by the Engineer. The Contractor shall also remove and dispose of accumulated silt.

Measurement and Payment:

Silt Fence Heavy Duty will be measured and paid for at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to install, maintain and remove the silt fence; and to dispose of any accumulated silt.

XXVII. Inlet Protection

Materials:

Inlet protection shall be geotextile fabric type FF as shown on the detail in the project drawings.

Execution:

The CONTRACTOR shall install inlet protection on all catch basins and storm sewer inlets, both within the construction limits and downstream of the project as noted on the Project Drawings, in accordance with Subsection 628.3.13 of the WisDOT State Standard Specifications and the Standard Detail Drawings on the project drawings.

Sediment deposits shall be removed from the inlet protection when the sediment has accumulated between $\frac{1}{3}$ and $\frac{1}{2}$ the design depth of the device, or when the device is no longer functioning as designed.

Measurement and Payment:

Inlet Protection will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, maintenance, and incidentals necessary to complete this item of work.

Inlet Protection will be paid for once per inlet. Any fabric that needs to be replaced during construction will be the responsibility of the Contractor.

XXVIII. Tree Removal & Clearing & Grubbing

Execution:

- A. Clear areas required for access to site and execution of Work.
- B. Remove trees and shrubs within marked areas and within the slope intercept limits, but only as ordered by the Owner in the field. Completely remove stumps and root system.
- C. Clear undergrowth and deadwood without disturbing subsoil.
- D. Remove debris, rock and extracted plant life from site.
- E. Temporary seed and mulch cleared and grubbed areas within 48 hours of disturbance. Sowing rate for temporary seeding shall be 3 pounds per 1000 square feet.

Measurement & Payment:

The individual trees shown to be removed on the plans shall be paid for by the inch diameter with the Tree Removal Bid Item. The tree removal areas within the slope intercept limits that are not identified individually shall be paid for by the station acceptably completed and will not be measured and shall include all trees no matter the size. The City will determine tree diameter by measuring the circumference approximately 4½ feet above the existing ground level, but above the ground swell, and dividing by 3. The City will include only those in-place trees or stumps with a 3-inch or greater diameter. Payment shall be full compensation for all operations hereinbefore specified; and for all labor, tools, equipment and incidentals necessary to complete this item of work; for trimming and pruning; and for temporary seeding and mulch. Include full compensation for labor, equipment and supervision to remove and dispose of trees including the stumps. Payment will include all trees, shrubs and brush removals to construct the road.

XXIX. Remove and Replace Mailboxes & Temporary Mailboxes

Execution:

The Contractor shall remove and salvage existing mailboxes as necessary for construction or as shown on the project drawings. The Contractor shall provide temporary mailboxes during construction and shall reinstall the salvaged mailboxes after construction is complete. Contractor shall safely deliver the mailbox and post to the property owner for storage during construction.

The Contractor shall install all mailboxes, both temporary and permanent, to meet U.S. Postal Service Requirements. The Contractor shall contact the Postmaster regarding any disturbance to mail drop off boxes within the project limits and obtain approval of any temporary mailbox location(s). Approval and set-up of any temporary collection system shall be completed before the removal of any mailbox to ensure mail delivery is not interrupted.

Measurement and Payment:

Remove and Replace Mailboxes will be measured and paid for at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified; and for all materials, including all hardware, posts, removal and disposal; for labor, tools, equipment, and incidentals necessary to remove and provide temporary mailboxes.

XXX. Remove & Salvage Private Light Poles

Materials:

This special provision describes removing privately owned light poles, concrete bases, and all electrical wires within the right of way conforming to standard spec 204. Detachment and packaging of lamps, ballasts, LEDs, and mercury containing switches (e.g., overhead roadway lighting, underdeck bridge, wall packs, pedestrian signals, traffic control stop lights and warning flashers, fluorescent bulbs, and thermostats) removed under this contract for disposal as hazardous materials.

Execution:

Remove and salvage the light pole, taking care as to not damage the unit and deliver it to the adjacent property owner from whence it is encroaching into the right of way. Remove and dispose of the concrete base, and all associate wiring within the right of way according to local electrical code. Packaging and disposal of any hazardous materials to the appropriate vendor is included with this bid item.

Coordinate with the adjacent property owner if access to property is needed to terminate the electrical wiring according to local electrical code.

If the adjacent owner does not wish to take possession of the light pole, remove the luminaire for separate disposal to be done under the item Lamp, Ballast, LED, Switch Disposal by Contractor.

Additional work, if needed, to maintain proper operation of other light poles on the property is not included with this bid item. Additional work shall be the responsibility of the property owner. Additional work necessary to maintain proper operation of other privately owned light poles on the same circuit shall be included under this item.

Measurement and Payment:

The department will measure Removing and Salvaging Private Light Poles as each individual light post, acceptably completed including any hazardous waste disposal.

XXXI. Remove Fence

Execution:

Coordinate with property owner to de-energize (if necessary), remove and salvage any type of fence and all fence items including posts to property owner as shown on plans or as directed in field.

Measurement and Payment:

Remove Fence will be measured and paid for at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified; and for all materials, including all hardware, posts, and other materials; including labor, tools, equipment, and incidentals necessary to remove and salvage fence to owner.

XXXII. Removing Small Pipe Culverts

Execution:

Remove or close all or parts of existing culverts withing the roadway, or as directed on the plans, that are replaced by or interfere with new construction, as conforming to Section 203 of the WisDOT State Standard Specifications, except as described in this article.

Measurement & Payment:

Payment for Removing Small Pipe Culverts will be made as each individual removal acceptably completed, which will be full compensation for breaking down and removing the culvert, headwall, end sections, etc...associated with the culvert; costs associated with contractor-caused damage, required salvaging, storing, and disposing of materials; and, unless the contract specified granular backfill, for backfilling.

The Owner will pay for each individual pipe in a multi-pipe cluster at the contract price each. Associated precast components are incidental to this bid item.

If a culvert removal the engineer directs conforms to the classification criteria for the Removing Small Pipe Culverts bid item, but the contract does not show that removal, the Owner will pay for that removal at the contract price each.

XXXIII. Pavement Removal & Remove Curb & Gutter & Remove Concrete Sidewalk

Execution:

Execution shall conform to Section 204.3 of the WisDOT State Standard Specifications, except as detailed below.

All concrete pavements (including driveways), asphaltic surface and curb & gutters shall be saw cut full depth prior to being shattered and removed. Where concrete pavements are covered with an asphalt overlay, or when a concrete base is below asphalt, both the asphalt and concrete shall be saw cut (excepting where only the asphalt is to be removed) and both layers removed.

A milled butt joint is not required to be a saw cut if it is neat and straight.

All sawing shall conform to the Sawcut Pavement section of this specification.

Measurement & Payment:

Payment for removing concrete pavement, asphaltic pavement and curb & gutter items will be made at the Contract unit price per square yard and linear feet, respectively, which price will be full compensation for all operations specified; for breaking down and removing all asphalt and concrete pavements including sidewalk and driveways regardless of depth or layers or materials encountered; and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. Removal of concrete headwalls, rip-rap, glasgrid and guard rails shall be incidental to Common Excavation.

All sawing will be paid under the Sawcut Pavement bid item.

XXXIV. Removing Inlets & Storm Sewer

Execution:

This item shall include removing storm inlets and sewer; excavating, disposing of resulting materials, backfilling, and salvaging of inlet grates in accordance with Section 204.3 of the WisDOT State Standard Specifications.

Measurement & Payment:

Payment for Removing Inlets will be made as each individual inlet acceptably completed, including attached parts and connections, which will be full compensation for all operations specified, and for breaking down, removing, closing, plugging, or sealing; for removing endwalls, headwalls; for obtaining any required work permits; for providing any required bentonite, soil, brick, concrete block, or concrete; for restoring the roadway cross-section; and for backfilling.

Payment for Removing Storm Sewer will be made by the lineal foot acceptably completed, measured along the centerline of the pipe, which will be full compensation for all operations specified, and for breaking down, removing, closing, plugging, or sealing; for removing endwalls, headwalls; for obtaining any required work permits; for providing any required bentonite, soil, brick, concrete block, or concrete; for restoring the roadway cross-section; and for backfilling. Culvert removal shall be paid for separately by the removing small culvert bid item unit price.

XXXV. Common Excavation

Execution:

This item shall include all roadway, site grading, ditching, culvert removal, endwall removal, removal of timbers, subsurface materials, ties and any other materials encountered during excavation and drainage excavation necessary to complete this project, including removing existing base course as specified herein and as shown on the project drawings. The contractor shall remove all topsoil from within the proposed roadway or as shown on the Project Drawings. Remove all topsoil within 1:1 slopes extending downward and out from the proposed edges of the base or subbase material. All excavation and grading work shall comply with the provisions of Sections 205, 207, 211, and 213 of the WisDOT State Standard Specifications.

Finished subgrade elevations shall be accepted by the Engineer and the Owner prior to placement of base course.

Measurement & Payment:

Payment for Common Excavation will be made at the lump sum bid price, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work

Removal of existing storm sewer, and culvert pipes shall be measured and paid by their bid items. Unless specifically bid as a separate item, any removals not mentioned but required to obtain subgrade elevations (roadway and ditching) and maintain drainage will be included in common excavation.

XXXVI. Excavation Below Subgrade

Materials:

Geotextile Type SAS fabric shall be placed on the subgrade regardless of EBS.

Execution:

Deposits of frost-heave material, unstable silty soils, water-bearing soil, topsoil or other undesirable foundation materials shall be removed from the area within the existing roadway slopes to such depths as directed by the Engineer. This work shall be done in accordance with Subsection 205.3.4 of the WisDOT State Standard Specifications. Remove unsuitable materials to a minimum depth of 18 inches below existing subgrade in accordance to the details shown in the plans as directed by the Engineer.

Measurement & Payment:

Payment for Excavation Below Subgrade will be made at the Contract unit price per cubic yard, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. Geotextile Type SAS or SR fabric shall be measured and paid separately.

Topsoil removal within the roadway, including topsoil removal below subgrade within the grading limits shown on the Project drawings, is included in the base bid quantity of Common Excavation. This bid item includes an estimated quantity of excavation, however, the Contractor will be paid for the actual volume of Excavation Below Subgrade as measured in the field.

XXXVII. Dense Graded Base, 3-Inch EBS Backfill

Materials:

Furnish Breaker Run as conforming to Section 311.2 of the WisDOT State Standard Specifications. Crushed Concrete will not be accepted.

Execution:

Place Dense Graded Base, 3-Inch in areas where soils were removed as Excavation Below Subgrade, as conforming to Section 311.3 of the WisDOT State Standard Specifications.

Measurement and Payment:

Dense Graded Base 3-Inch will be measured and paid for at the contract unit price per ton acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. If the contractor substitutes select crushed material for breaker run as allowed under 311.2, the department will pay for that material at the Dense Graded Base 3-Inch unit price.

XXXVIII. Geotextile Type SAS

This section describes providing geotextiles for subgrade separation and stabilization, drainage filtration, subgrade reinforcement, and under culverts and riprap.

Materials:

Furnish Geotextiles as according to Section 645 of the WisDOT Standard Specifications for Geotextiles Type SAS.

Execution:

Install geosynthetics in compliance with Section 645.3 of the WisDOT Standard Specifications.

Measurement & Payment:

Payment for Geotextile Type SAS items will be measured and paid at their respective contract unit price per square yard acceptably completed, which price will be full compensation for all operations specified, for providing the geosynthetic.

XXXIX. Water Main, Pipe & Fittings

Materials:

12" and 16" water main shall be PVC or Ductile iron.

All Ductile Iron pipe shall be pressure Class 350 or greater unless otherwise noted on the plans approved by the City Engineer. Each Ductile Iron pipe shall be manufactured in the USA, subject to a hydrostatic pressure test of at least 500 psi at point of manufacture. All pipe shall be furnished with Push-On type joints such as "Tyton" or "Fastite" complete with all necessary accessories. Acceptable Manufacturers of Ductile Iron pipe include the following: American Cast Iron Pipe Co., Clow Water Systems, Co., U. S. Pipe & Foundry Co., or Pre-approved equal.

PVC or PVCO water main for sizes 4" through 16" diameter, excepting service laterals, shall conform to the OD of Ductile Iron pipe and be AWWA C-900 or AWWA C-909, Class 150 or 200, DR-18 or -14. All pipe shall be furnished with Push-On type integral elastomeric bell-spigot joints. Acceptable Manufacturers of PVC/PVCO Water pipe include the following: J. M. Eagle, National Pipe, Diamond Plastics, Northern Pipe Company or Pre-approved equal.

Acceptable Manufacturers of Ductile Iron pipe fittings include the following: American Cast Iron Pipe Co., Clow Water Systems, Co., Tyler Union All fittings shall be Ductile Iron and be Class 350 or greater, conforming to the current ANSI/AWWA C-153/A21.53. All pipe fittings used for water main shall comply with SWS and be manufactured in the USA.

Copperhead high strength Tracer Wire or pre-approved equal. Tracer wire shall be a #12 AWG fully annealed, high carbon 1055 grade steel, high strength solid copper clad steel conductor, insulated with a 30 mil, high-density, high molecular weight polyethylene insulation, and rated for direct burial use at 30 volts.

Execution:

All pipe shall be clean and free from all foreign material before being installed. Tracer wire is required on all water main. Tracer wire shall be laid parallel with and above centerline of the main, fittings and service line, and taped at maximum of 10-foot intervals.

Wrap all ductile iron pipe, valves, fittings and valve boxes with polyethylene film.

Measurement and Payment:

Water Main, Pipe & Fittings will be measured and paid at the contract unit price per each or linear feet acceptably completed, which price will be full compensation for all operations specified, and for all materials; for backfill, bedding, frames, and covers; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

XL. Water Main, Butterfly Valve with Valve Box

Materials:

Butterfly Valves - for 12" and larger diameters, conforming to AWWA C504-94, stems sealed by at least two O-Rings, and worm gear operators for 2" square valve key operation from above, turn left (CCW) to open. Install with operating nut on North or East side of water main. Acceptable valves include: M & H 4500, Pratt Groundhog, Mueller LineSeal III-3211-20 or XP-5227-20, or Pre-approved equal.

All exposed and non-epoxy coated bolts and nuts on hydrants and valves shall be stainless steel; T-Bolts shall be Cor-Blue or have a fluoropolymer coating as preapproved by the City Engineer.

All valves shall be furnished with interior and exterior epoxy coatings per AWWA C-550-90. All valves not installed in vaults or manholes shall be installed per SWS File No. 37, and shall be wrapped with polyethylene.

Valve boxes shall be cast iron, manufactured in the USA, and shall properly accommodate the selected valves. Acceptable manufacturers are: Tyler Series 6860 US Domestic or Pre-approved equal.

Execution:

Butterfly and Gate valves shall comply with the Wisconsin Standard Specifications and the following requirements:

All valve body nuts, bolts, and operating nut fasteners shall be stainless steel.

All valves shall be epoxy coated and wrapped in polyethylene film as specified in Chapters 4.4.4 and 8.21.0 of the Wisconsin Standard Specifications.

Lead tipped gaskets will not be allowed.

Valves are to be set on hardwood blocking per File No. 37 of the Wisconsin Standard Specifications.

An approved valve stem extender shall be provided for any valve which is installed 8 feet or more below the proposed finish grade. The length of the valve stem extender shall be such that the top of the extension is 6 feet (plus or minus 3 inches) below finish grade. Extenders shall be securely attached to the valve operator with stainless steel pins or bolts.

Extenders shall have a solid epoxy coated iron shaft with a spacer ring at 3 inches below the operating nut.

Valve boxes shall comply with Chapter 8.29.0 of the Wisconsin Standard Specifications and the following requirements:

All valve boxes furnished and installed shall be Tyler "DD" three-piece, or East Jordan "DD" cast iron three-piece valve boxes with 5-1/4" drop lids.

Valve boxes are to be set over all gate valves per File No. 37 of the Wisconsin Standard Specifications and wrapped with polyethylene. When wrapping valve boxes, only wrap the bell portion and the bottom of the first section.

To prevent settling and shifting of valve boxes, the Contractor shall provide and install a valve box adaptor of a type, size and method required by the manufacturer (Adaptor, Inc., 3642 East American Ave., Oak Creek, WI 53154, Tel: (414) 764-6733, Fax: (414) 764-1494). The valve box adaptor is composed of 1/4 inch steel with protective coating valve adaptor and a 1/2 inch rubber gasket installed between the valve and the valve adaptor. The adaptor shall be placed on all valves installed by the Contractor.

Valve boxes shall be set straight and plumb with the top of the valve box set after curb and gutter installation to a grade 3/8"– 1/2" below the asphalt surface elevation. No ramping of valve boxes will be allowed.

Measurement and Payment:

Water Main, Valves will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials; for backfill, bedding, frames, and covers; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

XLI. Water Main, Hydrant Assembly

Materials:

Clow Medallion, Kennedy Guardian, Mueller Super Centurion 250, Model A423, Waterous 5.25" Pacer or Pre-approved equal.

Hydrant leads shall be six (6) inch, Class 52 ductile iron pipe.

Execution:

Hydrants shall be connected to watermain with a Clow F1217 Anchoring Tee or pre-approved equal, a branch RW Gate Valve at main, a valve box and adaptor base.

All hydrants and valves shall be restrained by Mega-lugs or pre-approved equal from the main to the hydrant. Any push on joints in hydrant leads need to be harness restrained.

Contractor shall provide for a 6.5' burial depth for all hydrant leads shown on plans. If a water main burial depth is greater than 6.5', Contractor shall install fitting(s) to raise the hydrant lead to meet the required burial depth.

Hydrants that are not placed in service shall have a "Not in Service" tag attached to the pumper nozzle.

Wrap all ductile iron pipe, valves, fittings and valve boxes with polyethylene film. When wrapping valve boxes, only wrap the bell portion and the bottom of the first section.

Measurement and Payment:

Hydrant Assembly will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials; for backfill, bedding, frames, and covers; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

XLII. Bioswale

Materials:

Furnish Geotextile Type DF Schedule B, as conforming to Section 645.2 of the WisDOT State Standard Specifications.

Furnish perforated Pipe Underdrain 6-Inch as conforming to the above Pipe Underdrain 6-Inch article. The underdrain pipe shall be paid at the unit price bid for 6-inch HDPE underdrain.

½-inch to 1½-inch Washed Stone shall conform to Coarse Aggregate #2, as defined in Section 501.2.5 of the WisDOT State Standard Specifications. Gravel shall be double-washed (note: inadequate washing of aggregate may lead to clogging at the native soil interface).

Pea Gravel shall be double-washed before placement.

Bioswale Planting Soil shall consist of a mixture of sand, compost, and topsoil. The mix shall be designed to the following approximate percentages (by volume):

Silica sand – 40%

Topsoil – 30%

Compost – 30%

The silica sand component shall be USDA coarse sand (0.02 to 0.04 inch diameter) pre washed to remove clay and silt particles, and well-drained or dry prior to mixing. Calcium carbonated, dolomitic sand, and other substitutions are not allowed.

The topsoil component shall be a USDA classified sandy loam, or loamy sand mixture.

The compost component shall meet the requirements of the Wisconsin Department of Natural Resources Specifications S100 Compost.

The bioswale planting soil mix shall be free of rocks, stumps, roots, brush, or other material over 1-inch in diameter. No other materials shall be mixed that may be harmful to plant growth or prove a hindrance to planting or maintenance.

The bioswale planting soil mix shall have a pH between 5.5 and 6.5.

Furnish Seed Mixture No. 40, as according to Section 630.2 the WisDOT State Standard Specifications.

Erosion mat shall be Erosion Mat Urban Class I Type B, or approved alternate.

Execution:

The Contractor shall construct the bioswale as shown on the plans and the details including:

1. Excavation of and disposal of existing soils (paid for as part of Excavation Common).
2. Installing geotextile fabric, 1/2-inch to 1 1/2-inch washed stone, washed pea gravel and bioswale planting soil.
 - a. The clean washed depth will vary based upon the finished surface elevation.
3. Installing underdrain system and inlet/outlet structures.
4. Re-vegetation as specified on the plans.
5. Site Restoration

Construction shall be suspended during periods of rainfall. Construction shall remain suspended if ponded water is present or residual soil moisture contributes significantly to the potential for soil smearing, clumping, or other forms of compaction.

Compaction and smearing of soils on the bottom and side slopes of the infiltration basin and the compaction of the soils used for backfill in the soil planting bed shall be avoided.

Washed stone, pea gravel and engineered soil shall not be compacted after placement. Geotextile fabric conforming to Section 645.2.4 of the WisDOT State Standard Specifications shall be used to separate soil layers as shown on the plans.

Installation of geotextile fabric shall be Type DF and conform to Section 645.3.4 of the WisDOT State Standard Specifications.

Installation of perforated Pipe Underdrain 6-Inch along the entire length of the bioswales shall conform to Section 612.3 of the WisDOT State Standard Specifications. Underdrain shall have a pipe end cap with 1-inch x 3-inch opening O.C. on the upstream end.

Install bioswale driveway crossing as shown in the details.

Prior to placement in the bioswale, the engineered soil shall be pre-mixed and the moisture content shall be low enough to prevent clumping and compaction during placement.

Furnish Seed Mixture No. 40, as according to Section 630.2 the WisDOT State Standard Specifications. Cover with erosion mat.

Measurement and Payment:

Bioswale will be by measured and paid for at the contract unit price per linear foot acceptably completed, measured parallel to the roadway centerline regardless of width and depth as in the plans or as directed by the Engineer in the field; which price will be full compensation for

all operations specified, and for all materials; for placement of geotextile, washed stone, washed pea gravel, planting soil, seeding, and erosion mat; for labor, tools, equipment, grading, hauling, and incidentals necessary to complete this item of work.

XLIII. Bioswale Outfall with Riprap

Materials:

Furnish 6-inch unperforated underdrain made of the flexible pipe conforming to Section 612.2.6 of the WisDOT State Standard Specifications, or approved equal.

Furnish unperforated Pipe Underdrain 6-Inch as conforming to the above Pipe Underdrain 6-Inch article.

Furnish Riprap Medium as conforming to the Riprap Medium specification contained in these special provisions.

Clay materials shall contain no sod, brush, roots, frozen soil, or other perishable materials. Rock particles larger than 3 inches shall be removed prior to compaction of the clay.

Execution:

Construct Bioswale Outfall Structures at the downstream end of the bioswale, as according to the plans, details, and this specification.

Prepare sound and compacted base, free of organic topsoils.

Lay underdrain pipe as conforming to Section 612.3.3 of the WisDOT State Standard Specifications, or as shown in the plan details.

Compact clay dam around pipe to prevent flow through stone. Ensure that clay dam is free of voids, that it provides a resilient barrier to water flow.

Measurement and Payment:

Bioswale Outfall Structures will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials; for underdrain, underdrain rodent guard, riprap, geotextile, and clay dam; for labor, tools, equipment, and incidentals necessary to complete this item of work.

XLIV. Storm Sewer Catch Basins, Inlets, and Manholes

Materials:

All catch basins and manholes shall be constructed to the size as according to the bid item name.

All storm catch basins and manholes shall be pre-cast concrete with integral base, with pre-cast flattops (slab or deck) with an opening for the casting. Where field conditions allow, the manhole shall be constructed with an offset cone.

All chimney joints, including the frame-chimney joint, and all barrel & cone section lifting holes shall be sealed with a cementitious grout with a struck joint. Grout shall be premixed, non-metallic, high-strength, non-shrink, Pennegrout by IPA Systems, or approved equal, which meets requirements of ASTM C-1-91 and C-827 as well as CRD C-588 and C-621. When mixed to a mortar or "plastic" consistency, the grout shall have a minimum 1-day and 28-day compressive strength of 6,000 and 9,000 psi, respectively.

Dry stacking of riser rings or flat decks shall not be permitted. They shall be laid in a bed of grout as described above.

Steps meeting the requirements of SWS, Section 6.40.1 shall be installed in all manholes or junction chambers deeper than 4', from floor to rim.

Drop pipes or other energy-dissipating structures shall be provided for all sewers entering a manhole with their invert at an elevation more than 24-inch above the invert of the sewer leaving the manhole.

Storm Sewer Catch Basin frame and grate shall be Neenah R-3228-BD, or as otherwise detailed on the plans, or equal as approved by the City Engineer.

Storm Sewer Manhole frame and cover shall be Neenah R-1661, or equal as approved by the City Engineer.

Inlets Median 3 Grate grates shall be three Neenah R-4882, or as otherwise detailed on the plans, or equal as approved by the City Engineer.

Execution:

Catch Basin and Manhole depths shown on the Project drawings are approximate only, unless the cover elevation is indicated. Catch Basin and Manhole covers shall be placed to match the existing grade or at the elevation shown on the Project drawings. Place manhole covers 1/4 inch below the pavement grade in streets. At low points, curb pan shall be pitched a 1/2 inch five feet on both side of catch basins.

A minimum of 4 inches to a maximum of 19 inches of adjusting rings shall be furnished for each catch basin or manhole, unless shown otherwise on the Project drawings. Concrete adjusting rings shall meet the requirements of Subsection 8.39.11 of the SWS

Measurement and Payment:

Storm Sewer Catch Basins, Inlets, and Manholes will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials; for backfill, bedding, frames, and covers; for labor, excavating, tools, equipment, and incidentals necessary to complete this item of work.

XLV. Storm Sewer Reinforced Concrete Pipe (Includes H.E. Pipe & Driveway Culverts)

Materials:

All reinforced concrete pipe shall be constructed per SWS, Section 8.6.0 or as approved by City Engineer. All reinforced concrete pipe shall be of the class and size as according to the bid item name.

- Reinforced Concrete Pipe – ASTM C76
- Horizontal Elliptical Reinforced Concrete Pipe – ASTM C507.
- Joints for concrete storm sewer pipe shall have rubber gaskets conforming to SWS, Section 8.41.2.

Execution:

Reinforced concrete culverts and storm sewer shall be manufactured and installed in accordance with the requirements of the WisDOT State Standard Specifications. Reinforced concrete pipe shall be installed using Class “B” Bedding. Place bedding material to the springline of the pipe and compact prior to placing cover material. Compaction of bedding material at the level of the pipe springline shall include working bedding material under the haunches of the pipe using shovels or other suitable methods. The Contractor shall take care to completely work bedding material under the haunches of the pipe to provide adequate side support. Place and compact cover material in one or more lifts after compacting bedding material.

Measurement and Payment:

Reinforced Concrete Pipe items shall be measured and paid at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLVI. Storm Sewer, Corrugated Metal Pipe & CMP Apron Endwalls (Includes Driveway Culverts)

Materials:

Corrugated steel pipe shall be furnished for the following minimum gages/thicknesses.

12-inch CMP	16 gage (0.064 in.)
15-inch CMP	16 gage (0.064 in.)
18-inch CMP	16 gage (0.064 in.)
21-inch CMP	16 gage (0.064 in.)
24-inch CMP	16 gage (0.064 in.)
28x20-inch CMP Arch	16 gage (0.064 in.)

Execution:

The installation of culverts shall comply with Section 521 of the WisDOT State Standard Specifications. The trench shall be wide enough to permit thorough compaction of backfill material. The bottom of the trench shall be shaped by means of a template so that at least 10% of the outside diameter of the pipe will be in contact with the bottom of the trench. Backfill the trench with selected excavated material placed in 6-inch maximum lifts and mechanically compacted to a minimum of 90% Standard Proctor Density. Backfill material shall be brought up simultaneously on both sides of the pipe.

Steel end sections, complying with Sections 520 and 521 of the WisDOT State Standard Specifications and the Standard Detail Drawings shall be installed at the ends of culverts where shown on the project drawings.

Measurement and Payment:

Corrugated Metal Culvert Pipe shall be measured and paid at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

Apron Endwalls for Culvert Pipe Steel, Apron Endwalls for Culvert Pipe Sloped Side Drains Steel, and Apron Endwalls for Pipe Arch Sloped Side Drains Steel shall be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLVII. Storm Sewer, Apron Endwalls, Reinforced Concrete (Includes Driveway Culverts)

Materials:

All apron end sections shall be constructed with a minimum Class III reinforced concrete pipe per SWS, Section 8.6.0 or as approved by City Engineer.

- Reinforced Concrete Pipe – ASTM C76
- Horizontal Elliptical Reinforced Concrete Pipe – ASTM C507.
- Joints for concrete storm sewer pipe shall have rubber gaskets conforming to SWS, Section 8.41.2.

Execution:

The apron endwalls shall be manufactured and installed in accordance with the requirements of the WisDOT State Standard Specifications, Section 521 or Section 522 as applicable.

Measurement and Payment:

Apron Endwalls for Culvert Pipe Reinforced Concrete items shall be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLVIII. Storm Sewer, Apron Endwalls, Reinforced Concrete, 6-Inch Underdrain

Materials:

The bid items for Apron Endwalls for Underdrain Reinforced Concrete 6-Inch shall be in accordance to the details in the project drawings.

Execution:

Install Apron Endwalls for Underdrain Reinforced Concrete 6-Inch at the locations shown on the project drawings and in accordance to the detail in the plans.

Measurement and Payment:

Apron Endwalls for Underdrain Reinforced Concrete 6-Inch will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

XLIX. Storm Sewer, HDPE, (4-Inch & 6-Inch) Underdrain

Materials:

Provide underdrain pipe 4-inch and 6-Inch with, or without perforations, unwrapped. All underdrains within bioswales and located under curb and gutter shall be perforated.

The underdrain shall be constructed with High Density Polyethylene Pipe (HDPE) with a corrugated exterior and smooth interior and provided with watertight bell and spigot joints with rubber gaskets. The pipe shall meet the requirements of AASHTO M-252.

Pipe perforations may be holes or slots and may be in 3 or 4 lines spaced around the circumference of the pipe at 120° or 90° respectively.

Wrapped pipe underdrain shall include geotextile wrap conforming to Section 612.2.8 of the WisDOT State Standard Specifications.

Execution:

The underdrain pipe shall outfall into the ditch or at catch basins at locations shown on the project drawings; and in accordance with the typical sections and details shown on project drawings, and as conforming to Section 612.3 of the WisDOT State Standard Specifications.

Backfill unperforated pipe with grade 1 granular backfill conforming to Section 209.2 of the WisDOT State Standard Specifications.

Measurement and Payment:

Pipe Underdrain items will be measured and paid at the contract unit price per linear foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, underdrain end cap, fittings, and incidentals necessary to complete this item of work.

All excavation, geotextiles, pipe, fittings and granular backfill are considered incidental to this item of work.

L. Storm Sewer, Underdrain, Cleanouts

This special provision describes providing PVC underdrain basin cleanout structures and ductile iron grates.

Materials:

Furnish drain basins manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron dome grates for structure sized 10" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

Drain Basin, grates, and frames shall be Nyloplast or approved equal.

Execution:

The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321.

The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height.

For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

Drainage connection joints shall conform to ASTM D3212.

Measurement and Payment:

Underdrain Cleanouts will be measured at the contract unit price for each acceptably completed. Payment is full compensation for furnishing and installing PVC underdrain cleanout structure and ductile iron grate; for providing materials, including masonry, conduit and sewer connections, and other fittings; for excavating and backfilling, for cleaning out and restoring the site; and for all incidentals required.

LI. Dense Graded Base, ¾-Inch

Materials:

This work shall consist of constructing or restoring crushed aggregate shoulders adjacent to pavement. The shoulder material shall consist of crushed limestone having the properties in accordance with Section 305.2.2.1 of the WisDOT State Standard Specifications for ¾-inch crushed aggregate. Crushed concrete will not be accepted.

Execution:

The shoulder material shall be placed and graded from the edge of the new pavement to the proposed granular shoulder limits. A pneumatic or vibratory roller shall be used to compact the material, including the foreslope. A walk-behind or other approved compaction device may be used to achieve sufficient compaction on the foreslope as determined by the Engineer. Excess material beyond the proposed shoulder limits shall be removed.

Gravel driveways adjacent to the project limits shall be blended using this material to achieve a smooth transition to the new pavement.

The shouldering method shall be discussed with the Engineer and City Staff prior to the start of shouldering work.

Apply water to maintain adequate moisture in base aggregate to prevent segregation and ensure proper compaction as according to Section 624 of the WisDOT Standard Specifications.

Measurement and Payment:

Material haul tickets shall be provided to the Engineer by the end of each working day. Payment for shouldering will be made at the Contract unit price per ton, which price will be full compensation for all operations specified, and for all materials, for water, labor, tools, equipment, and incidentals necessary to complete this item of work.

LII. Dense Graded Base, 1½-Inch

Materials:

Base course for the roadway shall consist of Dense Graded Base, 1 ¼" conforming to WisDOT State Standard Specification Section 305. Crushed Concrete will not be accepted.

Where Dense-Graded Base 1½-Inch base course layers specified in the plans, always use 1½-inch Dense Graded Base in the top 4 inches of base. The contractor may substitute 3-inch crushed limestone—as conforming to WisDOT State Standard Specification Section 305.2.2.1—for Dense Graded Base 1 ¼" in lower base zones.

Geotextile Type SAS shall conform to Section 645.2 of the WisDOT State Standard Specification. Select the schedule of Geotextile Type SAS used as appropriate to the immediate overlying materials used.

Execution:

Place Geotextile Type SAS as conforming to Section 645.3.1 of the WisDOT State Standard Specification, except as modified below.

Place Geotextile Type SAS on all roadway subgrade areas that will receive Dense Graded Base course material.

Geotextile fabric shall have a minimum 24-inch overlap for longitudinal seams, and minimum 36-inch overlap for transverse seams.

The base shall be spread, shaped, compacted, and proof-rolled to produce stabilized base which conforms to the required cross-sections. The base shall be placed on geotextile type SAS.

Special compaction testing may be required dependent on site conditions in accordance with 301.3.4.3 of the WisDOT State Standard Specifications.

Subsequent open cuts of the pavement requiring excavations below the subgrade of roadways having geotextile fabric in place shall be backfilled with approved compacted granular fill up to the original subgrade elevation. Pavement and base shall be removed a minimum of 6-inch on each side of excavation or extent of damaged fabric to allow new geotextile repair fabric to be installed with a minimum 6-inch overlap on all sides.

Measurement and Payment:

Material haul tickets shall be provided to the Engineer by the end of each working day. Payment will be made at the Contract unit price per ton, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. Include material delivered or salvaged from on-site and placed at the job site per Section 301.4.1 of the WisDOT State Standard Specifications. Geotextile type SAS paid for separately. Contractor testing for department approved aggregate sources is not required.

If the contractor substitutes 3-inch in base course as allowed above, 3-inch will be paid at the bid price of Dense Graded Base, 1½-Inch.

LIII. Concrete Sidewalk, 5-Inch

Materials:

Portland cement used in all concrete mixes shall conform to WisDOT State Standard Specifications Section 501. Aggregates used in concrete shall conform to the requirements of WisDOT State Standard Specifications Section 501. Concrete shall be air entrained, Grade A, conforming to WisDOT State Standard Specifications Section 501, and in particular, meet the following requirements:

- Minimum concrete content, 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Maximum amount of water per bag of cement: 6.0 gallons;
- Size of course aggregates required: No. 1 plus No. 2;
- Slump: 1"-3"; and
- Air content: 4.5% - 7.5%.

Concrete that is rejected on the work site for any reason shall not be re-tempered and used in the work without specific approval of the City Engineer.

Furnish expansion joint filler as conforming to Section 415.2.3 of the WisDOT State Standard Specifications.

Place Concrete Sidewalk as matching the bid item names and as accordingly detailed in the plans.

Execution:

Construct Sidewalks as conforming to Section 602.3 of the WisDOT State Standard Specifications.

Measurement and Payment:

Concrete Sidewalk 5-Inch, including the area of the curb ramp, and including landings will be measured and paid for at the contract unit price per square foot acceptably completed; which price will be full compensation for providing materials, including concrete, reinforcement, and expansion joints; for backfilling; for placing, finishing, protecting, and curing; and for restoring the site. Payment also includes providing tie bars and dowel bars in unhardened concrete, and for tie bars, dowel bars, and drilling provided in concrete not placed under the contract; and for Concrete Curb Pedestrian. Base material under sidewalk shall be furnished and paid under the Base Aggregate Dense 1¼-Inch.

LIV. Concrete Curb and Gutter, 30-Inch

Materials:

Concrete for curbs shall be air entrained, Grade A, conforming to WisDOT Standard Specification Section 501, and in particular, meet the following requirements:

- Minimum concrete content: 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Size of coarse aggregates required: No. 1;
- Slump: 1-inch- 3-inch; and
- Air content: 4.5% - 7.5%.

Concrete that is rejected on the work site for any reason shall not be re-tempered and used in the work without specific approval of the City Engineer.

Place Concrete Curb & Gutter 30-Inch as matching the bid item names and as accordingly detailed in the plans.

Execution:

Before the concrete is placed, the crushed aggregate base course under the curb, gutter, and curb & gutter shall be checked for correct elevation. The concrete shall be placed in as nearly a continuous operation as possible. The concrete surface shall be sealed, directly after finishing operations, by spraying a uniform coating of white curing material meeting the requirements of WisDOT State Standard Specifications Section 415.2.4, in such a manner as to provide a continuous water-impermeable film on the entire concrete surface.

Transverse contraction joints for curbs shall be cut or sawed at a maximum 10-foot intervals. One inch expansion joints shall be provided at ends of radii, points of considerable change in grade and alignment, at intervals not to exceed 300 feet and where abutting existing curb and gutter.

Concrete curb and gutter shall cure a minimum of 4 days prior to backfilling and crushed limestone base installation.

Where driveways are concerned, pour half the driveway at a time where possible or coordinate with the resident for alternative parking location while it cures.

Measurement and Payment:

Curb & gutter bid items shall be measured at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, finish and cure the concrete curb & gutter.

Maintain a minimum of three inches (3-inch) of crushed limestone base under the curb & gutter. Base material under concrete curb & gutter shall be furnished and placed under the 1¼-inch Crushed Limestone bid item.

LV. Concrete Curb and Gutter Spot Replacement

Materials:

Concrete for curbs shall be air entrained, Grade A, conforming to WisDOT Standard Specification Section 501, and in particular, meet the following requirements:

- Minimum concrete content: 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Size of course aggregates required: No. 1;
- Slump: 1-inch- 3-inch; and
- Air content: 4.5% - 7.5%.

Concrete that is rejected on the work site for any reason shall not be re-tempered and used in the work without specific approval of the City Engineer.

Remove existing curb and gutter & replace with new Concrete Curb & Gutter. Match existing size or as detailed in the plans.

Execution:

Before the concrete is placed, the crushed aggregate base course under the curb, gutter, and curb & gutter shall be checked for correct elevation. The concrete shall be placed in as nearly a continuous operation as possible. The concrete surface shall be sealed, directly after finishing operations, by spraying a uniform coating of white curing material meeting the requirements of WisDOT State Standard Specifications Section 415.2.4, in such a manner as to provide a continuous water-impermeable film on the entire concrete surface.

Transverse contraction joints for curbs shall be cut or sawed at a maximum 10-foot intervals. One inch expansion joints shall be provided at ends of radii, points of considerable change in grade and alignment, at intervals not to exceed 300 feet and where abutting existing curb and gutter.

Concrete curb and gutter shall cure a minimum of 4 days prior to backfilling and crushed limestone base installation.

Where driveways are concerned, pour half the driveway at a time where possible or coordinate with the resident for alternative parking location while it cures.

Measurement and Payment:

Curb & gutter bid items shall be measured at the contract unit price per lineal foot acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to sawcut, remove existing curb and gutter, install tie bars, prepare the subgrade, form, place, finish and cure the concrete curb & gutter.

Maintain a minimum of three inches (3-inch) of crushed limestone base under the curb & gutter. Base material under concrete curb & gutter shall be furnished and placed under the 1¼-inch Crushed Limestone bid item.

LVI. Concrete Flume

Materials:

Portland Cement used in all concrete mixes shall conform to WisDOT State Standard Specifications Section 501. Aggregates used in concrete shall conform to the requirements of WisDOT State Standard Specifications Section 501. Concrete shall be air entrained, Grade A, conforming to WisDOT State Standard Specifications Section 501, and in particular, meet the following requirements:

- Minimum concrete content, 6.0 sacks per cubic yard;
- Compressive strength after 28 days cured: 3,500 psi;
- Maximum amount of water per bag of cement: 6.0 gallons;
- Size of coarse aggregates required: No. 1 plus No. 2;
- Slump: 1-inch-3-inch; and
- Air content: 4.5% - 7.5%.

Execution:

Contractor must submit a mix design and receive the approval of the City Engineer prior to paving. A pre-pour meeting must be scheduled with the Engineering Division prior to paving to discuss materials and joint locations. Water used shall conform to WisDOT Specification Section 501.2.4. If City water is used, it will be charged at the current rates for such use; a PERMIT IS REQUIRED from the Water Utility for any City water use. The consistency of the freshly mixed concrete shall be such that when measured by means of a 4-inch x 8-inch x 12-inch slump cone, the slump shall not exceed 3-inch. Test cylinders shall be required meeting AASHTO standards, stored under site conditions and then tested at Contractor expense. Concrete pavement shall be constructed in accordance with WisDOT Standards Specifications, Section 415. The Contractor shall clean the area of all forms, lumber, dirt and other debris to the satisfaction of the City Engineer.

Concrete Placement During Cold Weather

Concrete shall not be placed on a frozen subgrade. The Contractor shall remove and replace at his expense any concrete damaged by frost or freezing. When placing concrete during cold weather, the water and the aggregates in the concrete mixture may be heated. When specifically allowed by the City Engineer, the Contractor may use magnesium free calcium chloride as an admixture in the concrete. The maximum quantity to be used shall not exceed 1% of the cement content of the mix. When the air temperature is expected to drop below freezing, the Contractor shall cover the surface of the concrete with straw or hay to a sufficient depth to prevent freezing and such protection shall be furnished for at least 5 days after the

concrete has been poured. Other methods of protection from freezing may be used when approved by the City Engineer.

Measurement and Payment:

Concrete Flume will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, finish and cure the Concrete Flume.

LVII. Concrete Driveway, 7-Inch

Materials:

Portland Cement used in all concrete mixes shall conform to WisDOT State Standard Specifications Section 501. Aggregates used in concrete shall conform to the requirements of WisDOT State Standard Specifications Section 501. Concrete shall be air entrained, Grade A, conforming to WisDOT State Standard Specifications Section 501, and in particular, meet the following requirements:

- Minimum concrete content, 6.0 sacks per cubic yard;
 - Compressive strength after 28 days cured: 3,500 psi;
 - Maximum amount of water per bag of cement: 6.0 gallons;
 - Size of coarse aggregates required: No. 1 plus No. 2;
 - Slump: 1-inch-3-inch; and
 - Air content: 4.5% - 7.5%.
- High Early Strength concrete may be used.

Execution:

Contractor must submit a mix design and receive the approval of the City Engineer prior to paving. A pre-pour meeting must be scheduled with the Engineering Division prior to paving to discuss materials and joint locations. Water used shall conform to WisDOT Specification Section 501.2.4. If City water is used, it will be charged at the current rates for such use; a PERMIT IS REQUIRED from the Water Utility for any City water use. The consistency of the freshly mixed concrete shall be such that when measured by means of a 4-inch x 8-inch x 12-inch slump cone, the slump shall not exceed 3-inch. Test cylinders shall be required meeting AASHTO standards, stored under site conditions and then tested at Contractor expense. Concrete pavement shall be constructed in accordance with WisDOT Standards Specifications, Section 415.

Curing Time and Cleanup

Concrete driveways shall be allowed to cure for 7 days unless otherwise directed by the City Engineer. When directed to open the driveway to vehicular traffic, the Contractor shall clean the area of all forms, lumber, dirt and other debris to the satisfaction of the Engineer. The Contractor shall then flush and sweep the driveway. When a concrete saw has been utilized to cut joints, the Contractor will be required to flush the pavement with water, removing all residual materials of the sawing operation, prior to opening the driveway to vehicular traffic.

Concrete Placement During Cold Weather

Concrete shall not be placed on a frozen subgrade. The Contractor shall remove and replace at his expense any concrete damaged by frost or freezing. When placing concrete during cold weather, the water and the aggregates in the concrete mixture may be heated. When specifically allowed by the Engineer, the Contractor may use magnesium free calcium chloride as an admixture in the concrete. The maximum quantity to be used shall not exceed 1% of the cement content of the mix. When the air temperature is expected to drop below freezing, the Contractor shall cover the surface of the concrete with straw or hay to a sufficient depth to prevent freezing and such protection shall be furnished for at least 5 days after the concrete has been poured. Other methods of protection from freezing may be used when approved by the Engineer.

Measurement and Payment:

Payment for Concrete Driveway 7-Inch shall be measured and paid at the contract unit price per square yard acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work; and for material and supervision necessary to prepare the subgrade, form, place, finish and cure the concrete driveway.

LVIII. HMA Pavement (Binder, Surface & Driveways)

Materials:

The asphalt surface and binder courses shall be in conformance with Sections 450, 455, and 460 of the latest edition of the WisDOT State Standard Specifications. Inclusive is the regression of air voids from 4.0% to 3.0% with asphalt cement.

3-inch Asphaltic Surface Driveways and Field Entrances shall be 4 MT 58-28 S

2-inch Surface Course on the Roadway shall be HMA Pavement 4 MT 58-28 H

4-inch Binder Course shall be HMA Pavement 3 MT 58-28 H

Omitted from the specifications will be Ride Quality requirements and testing (Section 440), safety edge (Section 450.3.2.11), and disincentive and incentive for HMA pavement density (Section 460.5.2.2 and 460.5.2.3).

Execution:

The asphalt binder course shall be tacked at the rate of 0.05 gallons per square yard with an allowable variation of +/- 0.02 gallons per square yard prior to surfacing, unless otherwise directed by the Engineer.

Daily application of the tack coat shall be limited to approximately that area of surface that can reasonably be expected to be paved during the same day. The Contractor shall provide proper traffic control signage to alert motorists of where the tack coat is present.

The bituminous concrete pavement to be placed on the roadway shall conform to the City of New Berlin Infrastructure Standards 5.2.6.

Compaction shall be in accordance with Section 450.3.2.6 of the WisDOT State Standard Specifications.

The minimum thickness to be applied in any area shall not be less than those specified in

Section 460.3.2 of the State Standard Specifications.

The Contractor shall submit, for the Engineer's verification, an asphaltic mix design meeting all necessary criteria. The asphaltic mix design shall consist of aggregate gradation, aggregate blend percentages, Job Mix Formula (JMF), recommended asphalt content, recommended plant mix temperature range and shall be signed by a professional engineer.

Measurement & Payment:

The Engineer shall be provided with daily tack tickets. These tickets for each day's work shall be provided to the Engineer no later than the following day. The tack coat shall be incidental to the unit price bid for asphalt pavement.

The Engineer shall be provided with proper trip tickets for each load of asphalt material delivered and placed, noting time, truck number, origin, destination, gross, net and tare weights, and type of material. These tickets for each day's work shall be provided to the Engineer no later than the following day. The Owner will measure hot mix asphalt surface and binder at the contract unit price per ton acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LIX. Adjust Storm Manhole

Materials:

Make adjustments using concrete adjusting rings and mortar, as according to the above Storm Sewer Catch Basins and Manholes specification, and WisDOT Specifications Section 611.2.

Execution:

Adjust storm sewer manhole covers as according to WisDOT Specifications Section 611.3.

Measurement and Payment:

Adjusting Manhole Covers will be paid and measured at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified; for providing required materials, exclusive of frames, grates, or lids available and designated for adjusting; and for removing, reinstalling, and adjusting the covers; for necessary removals, excavation, and backfilling; and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work. Replace covers rendered unusable by the contractor's operations.

Multiple adjustments required to perform this work or additional adjustments as directed by the Engineer shall be considered incidental.

LX. Adjust Water Valve Box

Materials:

Existing water valve boxes.

Execution:

All water valve boxes within the project limits shall be adjusted to proposed elevations by the Contractor using materials meeting City specifications.

Throughout the duration of the project, the Contractor must ensure that all water valve boxes are adequately located and identified by blue paint, and that at all times, all water appurtenances remain accessible for operation by City forces. Exercise caution working adjacent to water facilities to avoid damage and ensure accessibility.

The proposed curb line shall be verified for any water valve boxes located near the curb line. The curb and gutter shall be field adjusted as necessary to minimize any water valve box conflicts.

Upon completion of the contract, the City will inspect all water facilities to ensure the water valve boxes are clean, properly aligned, and accessible. The Contractor shall be responsible to make identified repairs and adjustments.

Measurement and Payment:

Adjust Water Valve Box will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, including all excavation, backfilling, disposal of surplus materials, and restoration of the work site; and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LXI. Temporary Ditch Check

Materials:

The Contractor shall place erosion bales of straw, hay or other suitable baled material to form checks or dikes as required to control erosion, including at locations shown on the project drawings.

Execution:

Temporary Ditch Checks shall be placed and maintained in accordance with Subsection 628.3.3 and 628.3.14 of the WisDOT State Standard Specifications and the Standard Detail Drawings shown on the project drawings.

Measurement and Payment:

Temporary Ditch Checks will be measured and paid for at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to install, maintain and remove the ditch checks.

LXII. Riprap, Medium

Materials:

Riprap shall comply with Subsection 606.2 of the "WisDOT State Standard Specifications," except that concrete slabs may not be substituted for stone. Riprap dimensions shall be as

specified in Subsection 606.2(2) and will be to the approximate sizes and thicknesses listed below.

Type	Stone Sizes (Inches)	Thickness (Inches)
Medium Riprap	5 to 20	18

Execution:

May be placed by mechanical means, not dumping, that produces work within reasonable tolerances of the typical section(s). Fill voids with smaller pieces. Riprap shall be placed on a layer of geotextile fabric as indicated on the Project drawings, incidental to rip-rap. Place the fabric in accordance with Subsections of 645.3.6 and 645.3.7 of the WisDOT State Standard Specifications.

Measurement and Payment:

Rip Rap Medium will be measured and paid at the contract unit price per cubic yard acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LXIII. Pavement Marking

Materials:

Use materials conforming to Section 646.2 of the WisDOT State Standard Specifications for epoxy pavement marking with glass beads.

Execution:

Apply pavement marking at the location, color, and size as shown in the Project Drawings in conformance with Section 646.3 of the WisDOT State Standard Specifications.

Measurement & Payment:

Pavement marking items will be measured and paid by lineal foot at their respective contract unit price per contract unit acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LXIV. Remove & Replace Sign, Reflective

Materials:

The bid item for Signs shall consist of furnishing and installing signs and supports in accordance with Section 637 of the WisDOT State Standard Specifications, as according to the WisDOT Sign Plate Manual, and as shown on the Project drawings. Installation shall consist of attaching all signs to new or existing supports at the required locations as shown on the Project drawings. All hardware required for sign installation shall be supplied by the

Contractor and conform to Section 637 of the WisDOT State Standard Specifications, and shall be approved by the Owner prior to installation.

Sign base material shall be sheet aluminum.

The City will install street name signs. Contact the City of New Berlin Streets Department to pick up old street name signs at 262-780-4609.

All signs shall be mounted on 1 3/4-inch x 1 3/4-inch telespar posts.

Execution:

All hardware for all sign installation shall be mounted to the support in a manner to prevent rotation of the sign. All hardware for signs shall be mounted to the sign by use of tamper proof fastener as approved by the Owner and the Engineer.

Removing Signs shall be incidental to the project, and shall consist of removing existing signs and hardware from poles as shown on the Project drawings or directed by the Engineer. Sign removal shall be in accordance with the requirements of Subsections 638.3.4, 638.3.5, and 638.3.6 of the WisDOT State Standard Specifications. All removed signs shall be salvaged and delivered to a location as directed by the Owner.

Measurement and Payment:

Signs will be measured and paid for at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified; for all materials, including all signs, hardware, supports, existing sign removal and deliver to the City; for all labor, tools, equipment, and incidentals necessary to complete this item of work.

LXV. Snow Pole

Materials:

Snow Poles will be city supplied 6-inch diameter painted wood posts.

Contact the City Engineer, Tamara Simonson, 7 days in advance of pickup up of Snow Poles at 262-797-2445, or tsimonson@newberlin.org.

Execution:

Contractor is responsible to take possession of the snow poles from the city, and to transport them to the site.

The Snow Poles shall be installed where shown on the project drawings in accordance to the detail shown on the project drawings. The existing snow poles shall be removed where shown on the project drawings.

Measurement and Payment:

Snow Pole will be measured and paid at the contract unit price per each acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

LXVI. 4-inch Topsoil, Seed, Fertilizer, & Erosion Mat

Materials:

Topsoil used for shoulder restoration shall be imported, humus-bearing, and loam type. Topsoil shall be mechanically screened of roots, sticks, branches, and stones larger than ½-inch diameter.

Seed shall be WisDOT seed mixture No. 40, furnished and applied as conforming to Section 630 of the WisDOT Standard Specifications.

Fertilizer shall be Fertilizer Type B, furnished and applied as conforming Section 629 of the WisDOT Standard Specifications.

Erosion mat shall be Non-channel Erosion Mat Urban Class I Type B, or approved alternate.

Execution:

Staple erosion stapled onto the restored area. The restored area shall be watered initially with 1 ½ inches of water using a 1000 gallon capacity water truck with hoses, nozzles, or arms capable of watering the restored areas while driving in the center of the road, as to not damage the new pavement edge.

Continued watering is to be included in this bid item. On days 2-14 (or until complete germination, whichever comes last), following the seeding, the restored areas shall be watered ½ inch every other day. Natural rain events may substitute for watering, but perform additional watering on rain event days to achieve specified water amounts.

Measurement and Payment:

4-inch Topsoil, Seed, Fertilizer, & Erosion Mat will be measured and paid at the contract unit price per square yard acceptably completed, which price will be full compensation for all operations specified, and for all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

**CITY OF NEW BERLIN
RD-20-04**

SMALL ROAD RECONSTRUCTION

PROPOSAL

To the City of New Berlin
New Berlin, WI 53151

(hereinafter called OWNER)

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Advertisement for Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for the Bid withdrawal time period specified in the Advertisement for Bidders after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Contract with the Bonds, evidence of insurance coverage, policy and endorsement and other documents required by the Bidding Requirements within 10 days after the date of OWNER's Notice of Award.
3. In submitting this Bid, Bidder represents, as more fully set forth in the Contract, that:
 - a. Bidder has examined and carefully studied the Bidding Documents and the following Addenda receipt of all which is hereby acknowledged:

<u>Addendum Date</u>	<u>Addendum Number</u>
_____	_____
_____	_____
_____	_____

- b. Bidder has visited the site and become familiar with and satisfied itself as to the general, local, and site conditions that may affect cost, progress, performance, and furnishing of the Work;
 - c. Bidder is familiar with and has satisfied itself as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.
 - d. Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities). Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes. Bidder acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect

of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.

- e. Bidder is aware of the general nature of Work to be performed by OWNER and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
- f. Bidder has correlated the information known to Bidder from information and observations obtained from visits to the site, reports, and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- g. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to Bidder, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which the Bid is submitted.
- h. This Bid is genuine and not made in the interest or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

UNIT PRICE SCHEDULE

Having become familiar with the local conditions affecting the cost of the work and with the Contract Documents, including Advertisement for Bids, Form of Bonds, etc., Plans, Specifications, any Addenda and Exhibits issued and attached to the Contract Documents on file in the Office of the City Engineer of New Berlin, Wisconsin, the undersigned hereby proposes to perform everything required to be performed and to provide and furnish all the labor, materials, necessary tools, expendable equipment and all utility and transportation services necessary to perform and complete in a workmanlike manner all of the work required for and the work described in the following Bidding Schedule, all in accordance with the Plans and Specifications for the sum set forth in the following Bidding Schedule.

Small Road Reconstruction

Item Number	Description	Quantity	Unit	Unit Cost	Cost
Section 1: Small Road (STA 96+00 to East Project Limits)					
1	Traffic Control/Detour	1	LS		
2	Construction Staking	1	LS		
3	Private Septic System Evaluation and Repair	2	EACH		
4	Sawcut Pavement	1,100	LF		
5	Silt Fence	4,200	LF		
6	Silt Fence, Heavy Duty	200	LF		
7	Inlet Protection	20	EACH		
8	Clearing & Grubbing	4	STA		
9	Tree Removal	1,090	ID		
10	Remove and Replace Mailboxes	36	EACH		
11	Temporary Mailbox	36	EACH		
12	Remove & Salvage Private Light Poles	3	EACH		
13	Remove Fence	600	LF		
14	Temporary Electric Fence	280	LF		
15	Removing Small Pipe Culverts	37	EACH		
16	Pavement Removal	22,000	SY		
17	Removing Curb & Gutter	600	LF		
18	Removing Concrete Sidewalk	3	SY		
19	Removing Storm Structure	2	EACH		
20	Remove Storm Sewer	10	LF		
21	Common Excavation (27,500 CY)	1	LS		
22	Excavation Below Subgrade	3,930	CY		
23	Dense Graded Base, 3-Inch EBS Backfill	7,100	TON		
24	Geotextile Type SAS	36,100	SY		
25	12" C900 PVC Water Main	57	LF		
26	16" C900 PVC Water Main	774	LF		
27	16" Butterfly Valve with Valve Box	1	EACH		
28	Hydrant Assembly	2	EACH		
29	Bioswales	1,650	LF		
30	Bioswale Outfall with Rip-Rap	2	EACH		
31	Storm Sewer, Catch Basins, 48-Inch (R-3228-BD)	2	EACH		
32	Storm Sewer, Catch Basins, 20"x30" (R-3228-BD)	15	EACH		
33	Storm Sewer, Manhole 36-Inch (R-1661)	3	EACH		
34	Storm Sewer, Manhole 48-Inch (R-1661)	3	EACH		
35	Storm Sewer, Manhole 60-Inch (R-1661)	1	EACH		
36	Storm Sewer, Manhole 84-Inch (R-1661)	1	EACH		
37	Storm Sewer, Inlets Median 1 Grate (R-4882)	1	EACH		
38	Storm Sewer, Inlets Median 3 Grate (R-4882)	1	EACH		
39	Storm Sewer, RCP, Class IV, 12-Inch	254	LF		

40	Storm Sewer, RCP, Class IV, 15-Inch	472	LF		
41	Storm Sewer, RCP, Class III, 18-Inch	427	LF		
42	Storm Sewer, RCP, Class IV, 24-Inch	181	LF		
43	Storm Sewer, RCP, Class III, 30-Inch	38	LF		
44	Storm Sewer, RCP, Class IV, 15-Inch, Driveway Culvert	44	LF		
45	Storm Sewer, RCP, Class IV, 18-Inch, Driveway Culvert	114	LF		
46	Storm Sewer, RCP, Class IV, 21-Inch, Driveway Culvert	48	LF		
47	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 19x30-Inch, Driveway Culvert	92	LF		
48	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 29x45-Inch	74	LF		
49	Storm Sewer, CMP, 12-Inch, Driveway Culvert	269	LF		
50	Storm Sewer, CMP, 15-Inch, Driveway Culvert	173	LF		
51	Storm Sewer, CMP, 18-Inch, Driveway Culvert	208	LF		
52	Storm Sewer, CMP, 21-Inch, Driveway Culvert	257	LF		
53	Storm Sewer, CMP, 24-Inch, Driveway Culvert	36	LF		
54	Storm Sewer Pipe Arch, CMP, 28x20-Inch, Driveway Culvert	30	LF		
55	Storm Sewer Pipe Arch, CMP, 35x24-Inch, Driveway Culvert	192	LF		
56	Storm Sewer, Apron Endwalls, RCP, 15-Inch	4	EACH		
57	Storm Sewer, Apron Endwalls, RCP, 18-Inch	4	EACH		
58	Storm Sewer, Apron Endwalls, RCP, 21-Inch	1	EACH		
59	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 19x30-Inch	6	EACH		
60	Storm Sewer, Apron Endwalls Horizontal Elliptical, RCP, 29x45-Inch	4	EACH		
61	Storm Sewer, Apron Endwalls, CMP, 12-Inch, Driveway Culvert	12	EACH		
62	Storm Sewer, Apron Endwalls, CMP, 15-Inch	10	EACH		
63	Storm Sewer, Apron Endwalls, CMP, 18-Inch	10	EACH		
64	Storm Sewer, Apron Endwalls, CMP, 21-Inch	14	EACH		
65	Storm Sewer, Apron Endwalls, CMP, 24-Inch	2	EACH		
66	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 28x20-Inch	2	EACH		
67	Storm Sewer, Apron Endwalls Pipe Arch, CMP, 35x24-Inch	8	EACH		
68	Storm Sewer, 6-Inch, Underdrain, Perforated	500	LF		
69	Storm Sewer, Underdrain, Cleanouts	12	EA		
70	Dense Graded Base, 3/4-Inch	1,580	TON		
71	Dense Graded Base 1 1/4-Inch	25,500	TON		
72	Concrete Sidewalk 5-Inch	30	SF		
73	Concrete Curb & Gutter 30-Inch	6,100	LF		
74	Concrete Curb & Gutter Spot Replacement	300	LF		
75	Concrete Flume	2	EA		
76	Concrete Driveway 7-Inch	250	SY		
77	HMA Pavement 3 MT 58-28 H (Binder)	6,100	TON		
78	HMA Pavement 3 LT 58-28 S (Binder-Sundown)	66	TON		
79	HMA Pavement 4 MT 58-28 H (Surface)	4,370	TON		
80	HMA Pavement 4 LT 58-28 S (Surface-Sundown)	44	TON		
81	HMA Pavement 4 MT 58-28 S (Driveways)	380	TON		
82	Adjust Storm Manhole	9	EACH		

83	Adjusting Water Valve Box	9	EACH		
84	Temporary Ditch Checks	276	EACH		
85	Riprap Medium	16	CY		
86	Pavement Marking, Epoxy, White, 4-Inch	15,000	LF		
87	Pavement Marking, Epoxy, Yellow, 4-Inch	5,450	LF		
88	Pavement Marking, Epoxy, Stop Bar, 18-Inch	85	LF		
89	Remove & Replace Sign, Reflective	33	EACH		
90	Snow Pole	10	EACH		
91	4" Topsoil, Seed, Fertilizer, and Erosion Mat	33,400	SY		
				Total Items 1-91:	

Write Out Total of Items 1-91:

Small Road Reconstruction

Item Number	Description	Quantity	Unit	Unit Cost	Cost
Section 2: Small Road (College Avenue to STA 96+00)					
92	Construction Staking	1	LS		
93	Sawcut Pavement	392	LF		
94	Clearing & Grubbing	1	STA		
95	Pavement Removal	1,100	SY		
96	Common Excavation (3,726 CY)	1	LS		
97	Geotextile Type SR	1,108	SY		
98	Dense Graded Base, 3-Inch EBS Backfill	7,100	TON		
99	Storm Sewer, CMP, 15-Inch, Driveway Culvert	29	LF		
100	Storm Sewer, CMP, Pipe Arch, 28x20-Inch, Driveway Culvert	29	LF		
101	Storm Sewer, Horizontal Elliptical, RCP, Class HE-IV, 14x23-Inch, Driveway Culvert	50	LF		
102	Storm Sewer, Apron Endwalls, CMP, 15-Inch	2	EACH		
103	Storm Sewer, Apron Endwalls, CMP, Pipe Arch, 28x20-Inch	2	EACH		
104	Storm Sewer, Apron Endwalls, RCP, 14x23-Inch	4	EACH		
105	Dense Graded Base 3/4-Inch	1,580	TON		
106	Dense Graded Base 1 1/4-Inch	37	TON		
107	Concrete Curb & Gutter 30-Inch	5,700	LF		
108	Concrete Flume	600	EA		
109	HMA Pavement 3 MT 58-28 H (Binder)	6,160	TON		
110	HMA Pavement 4 MT 58-28 H (Surface)	4,410	TON		
111	HMA Pavement 4 MT 58-28 S (Driveways)	276	TON		
112	Temporary Ditch Checks	6	EACH		
113	Remove & Replace Sign, Reflective	9	EACH		
114	Pavement Marking, Epoxy, White, 4-Inch	7,550	LF		
115	Pavement Marking, Epoxy, Yellow, 4-Inch	7,550	LF		
116	Pavement Marking, Epoxy, Stop Bar, 18-Inch	12	LF		
117	Snow Pole	7	EACH		
118	4" Topsoil, Seed, Fertilizer, and Erosion Mat	2,076	SY		
Total Items 92-118:					

Write Out Total of Items 92-118:

The preceding Unit Price Schedule is divided into bid items for the work. It is OWNER's intent to receive bids on all bid items and to award a single Contract for the entire project. The Owner reserves the right to delete one or more individual bid items as are determined to be in the Owner's best interest without affecting the unit prices. OWNER will award a single Contract for all Work included in the Bid Schedule and will modify the Contract by Change Order as the Owner determines appropriate.

Accompanying this Proposal is a (Certified Check) (Bid Bond) (Bank Draft) in the amount of Five Percent (5%) of amount bid payable to the City of New Berlin, Wisconsin, which (protects) it is agreed will be forfeited to said City of New Berlin if the Undersigned failed to execute the Contract in conformity with the Form of Contract incorporated in the Contract Document, and furnish bond as specified within ten days from the notifications of the award of the Contract to the undersigned.

In submitting this Proposal, it is understood and agreed by the undersigned that the right is reserved by the Owner to reject any or all proposals. It is further understood and agreed that this Proposal may not be withdrawn for a period of (60) sixty days from the opening thereof.

If awarded a Contract under this Proposal the undersigned agrees to start work within ten (10) calendar days after the receipt from the Owner of a formal Notice to Proceed. The undersigned further agrees to commence work at the site on a date to be specified in a written order from the Owner, which date will not be prior to that established by the calendar days stated above, except by mutual agreement between the undersigned and the Owner, and agrees to fully complete all work covered by October 23, 2023. The undersigned understands and agrees that the Owner reserves the right to defer issuance of a written order to commence work for a period not to exceed thirty (30) days after the date herein established by the undersigned as a proposed starting date.

The Contractor hereby declares that he has read each and every stipulation within the "Specifications" including all Codes referred to, and that he fully understands them and that he hereby agrees to faithfully comply therewith.

It is agreed that if the Contractor is permitted to finish the work after the time stated in this Proposal, the City of New Berlin may deduct from any money due the Contractor a sum of 1,500.00 dollars for every calendar day beyond the above specified time which shall elapse before the work is satisfactorily completed unless a written extension is approved by the Board of Public Works.

DATE

FIRM NAME

BY: _____

TITLE

BY: _____

TITLE

OFFICIAL ADDRESS

NOTE: Bidders should not add any conditions or qualifying statements to this bid as otherwise the bid may be declared irregular as being not responsive to the Advertisement for Bids.

**CONTRACT
RD-20-04**

This Contract made this _____ day of _____, 2023, by and between _____, herein called the "Contractor", and the City of New Berlin, a municipal corporation, located in Waukesha County, Wisconsin, herein called the "Owner".

WITNESSETH: That the Contractor and the Owner for the consideration stated herein, agree as follows:

ARTICLE I. SCOPE OF WORK

The Contractor shall perform everything required to be performed and shall provide and furnish all the labor, materials, equipment, necessary tools, expendable equipment, insurance provided by the specifications, contributions to social security and all utility and transportation service required to perform and complete in a workmanlike manner the projects as defined in these Contract documents, all in strict accordance with the specifications and in strict compliance with the Contractor's proposal and other Contract documents, herein mentioned as component parts of this Contract. The Contractor shall do everything required by this Contract and other documents constituting a part thereof and in the manner specified therein.

The anticipated Contract Award date and Notice to Proceed date for this Contract will be **March 28, 2023**. The City of New Berlin is requesting that the work start no later than **April 1, 2023** and be completed by **October 23, 2023**.

ARTICLE II. CONTRACT PRICE

Owner shall pay to the Contractor for the performance of this Contract, subject to any additions or deductions provided therein, in current funds, the approved not to exceed Contract price of: _____.

The above total shall be the basis for establishing the amount of the performance bond and is not to be construed to be a lump sum contract price. The foregoing quantities of the unit price items are approximately only and it is understood and agreed that payment will be made only on the actual quantities of work completed in place, measured on the basis defined in the Contract documents and at the unit prices stated above.

PAYMENT

The Contractor shall review pay quantities with the Engineer on a minimum bi-weekly basis. No more than two weeks shall pass between when the work has taken place and the quantity verification between the Engineer and Contractor. If more than two weeks pass, the quantities as measured by the inspector and confirmed by the Engineer shall be conclusive.

The Owner will retain 5% of the estimate of the value of the Work or Contract until 50% of the Work is completed. If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100 percent of the Work completed less the aggregate of payments previously made and the retainage calculated. If the Work is certified as unsatisfactory by the Engineer, Owner will continue to retain part of the payments up to 10% of the value of the Work completed.

Owner, in case the work under this Contract is not completed within the time required, or within an extended time approved in writing by the Owner, is authorized to take charge of the work and finish it at the expense of the Contractor and his sureties and to apply the amounts retained from estimates to the completion of the work.

The final payment shall be made within 60 days after completion and acceptance of the work included in this Contract and all payments shall be due when certificates are issued for them. However, the owner may withhold payments prior to final acceptance of the work for reasons set forth in the general or special specifications.

ARTICLE III. COMPONENT PARTS OF THIS CONTRACT

This Contract consists of the following component parts, all of which are as fully a part of it as if set out verbatim herein, or, if not attached, as if the same were hereto attached.

- Advertisement for Bids
- Subcontractor List
- Bidder's Qualification Statement
- Subcontractor's Qualification Statement
- Special Provisions
- Bid Proposal
- Contract
- Bid Bond
- Project Drawings
- City of New Berlin Infrastructure Standards

The Contract Documents form a complete unit and requirements called for by one as binding as if called for by all. In case of conflict between project drawings and specifications, the specifications shall govern. Special provisions shall control over general conditions.

ARTICLE IV. PAYMENT FOR LABOR AND MATERIAL

Per Section 16.856 of the Wisconsin State Statutes the Prevailing Wage Rate does not apply to this project.

ARTICLE V. LIQUIDATED DAMAGES

In the event that the services to be provided by Contractor under this Contract are not completed by the date of final completion set forth herein, then, in that event Contractor shall be responsible to pay to City as liquidated damages the sum of \$15000.00 per day for each day or portion of a day that the work remains uncompleted thereafter. The parties acknowledge that the City shall have the right to offset said liquidated damages as against any sums which might otherwise be due Contractor under this Contract. The liquidated damages provided for herein shall not be in lieu of any other claims or damages which the City may otherwise be entitled to. The City shall make the final determination of whether Contractor has completed its Contract responsibilities.

ARTICLE VI. OBSTRUCTION OF STREETS

If the Contractor shall in any manner obstruct a street or sidewalk, he shall put up and maintain barriers and lights to prevent accidents, and shall be liable for all damages caused by failure to do so; and such Contractor shall further be liable for all damages caused by the negligent digging up of the streets, alleys, or public grounds or which may result from his carelessness in the execution of such work (Section 62.15 (11), Wisconsin Statutes). The Contractor shall also be bound by any further requirements of the specifications on this point.

ARTICLE VII. HOLD HARMLESS CLAUSE

And the Contractor covenants and agrees that he will indemnify and save harmless the owner and defend the same against any and all liability, claims, loss, damages, interest, actions, suits, judgements, costs, expenses, attorney's fees, and the like, to whomsoever owned or by whomsoever brought or obtained which may in any manner result from, or arise out of the performance of the work herein mentioned, expressly including the negligence of the Contractor and/or the owner (or the negligence of the agents, servants, employees, workmen or independent Contractors of either of them) in carrying out and supervising the said work in any respect whatever.

ARTICLE VIII. CONTRACT BOND

At the time that the Contract is executed, the Contractor shall furnish to the Owner a performance/labor and material payment bond in the amount of 100% of the Contract price issued by a surety company licensed to do business in this state conditioned for the faithful performance of the Contract and the payment to every person entitled thereto of all claims for labor performed and materials furnished under the Contract to be used or consumed in making the public improvement or performing the public work as provided in the Contract and as specified in the Contract all as required by Section 289.14 (1),

Wisconsin Statutes.

ARTICLE IX. INSURANCE & ENDORSEMENT

Personal income tax payments, social security contributions, insurance and all other governmental reporting and contributions required as a consequence of the Contractor receiving payment under this Contract shall be the sole responsibility of the Contractor. The Contractor shall be required to carry insurance coverage of the type and with the minimum limits set forth below. The Contractor shall be solely responsible to meet Contractor insurance needs as specified below during the terms of this Contract or any extension thereof.

General Liability:

General Aggregate	\$ 2,000,000
Products Comp/Ops Aggregate	\$ 2,000,000
Personal/Advertising Injury	\$ 1,000,000
Each occurrence	\$ 1,000,000
Fire Damage (Any One Fire)	\$ 50,000
Medical Expense (Any One Person)	\$ 5,000

Automobile Liability:

CSL	\$ 1,000,000
Bodily Injury (Per Accident)	\$ 1,000,000
Property Damage (Per Accident)	\$ 1,000,000

Umbrella Liability:

Umbrella Form – Each Occurrence	\$ 2,000,000
Umbrella Form – Aggregate	\$ 2,000,000
Self-Insured Retention	\$ 10,000

Workers' Compensation and Employers' Liability

Each Accident	\$ 500,000
Disease Policy Limit	\$ 1,000,000
Disease Each Employee	\$ 500,000

The Contractor shall not commence work until he has obtained all insurance required by the City of New Berlin. A Policy Endorsement shall be signed by an authorized Principal of the Insurer and provided to the City Engineer as evidence thereof naming the City as an additional insured and showing the Contractor is covered by the above required types and amount of insurance, providing for a thirty (30) day written notice to the City prior to change, termination or cancellation. Such notice provisions shall be stated in the unconditional affirmative. Phrases such as "shall endeavor to notify" are unacceptable and shall be rejected. The additional insurance must be on a primary and noncontributory basis.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in three original counterparts the day and year first above written.

Contractor

Address

(SEAL)
ATTEST:

By: _____

By: _____

Title

By: _____

Mayor

(SEAL)
ATTEST:

By: _____

Clerk

Provision has been made to pay the liability that will accrue under this Contract.

Approved as to form:

By: _____

Treasurer

Attorney

Date: _____

Date: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as principal, and
_____ as Surety, are hereby
held and firmly bound unto City of New Berlin as Owner in the penal sum of
_____ for the payment of which, well and truly to be made, we hereby jointly and
severally bind ourselves, successors and assigns. Signed, this _____ day of _____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to City of New Berlin a
certain bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the
Small Road Reconstruction, Contract RD-20-04, City of New Berlin.

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish bonds for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void otherwise, the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal (L.S.)

Surety

By:

IMPORTANT - Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 amended) and be authorized to transact business in the state where the project is located.

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
Business):

SURETY (Name and Address of Principal Place of

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.
2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, of the Default. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
 - 3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract.; and
 - 3.3. Owner has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract; or
 2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
 - 4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
 - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
 - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
 2. **Deny liability in whole or in part and notify Owner citing reasons therefor.**
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
 - 6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;
 - 6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and
 - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.
7. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.
8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
of Business):

SURETY (Name and Address of Principal Place

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:

SURETY

Signature: _____ (Seal)
Name and Title:

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
 - 6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

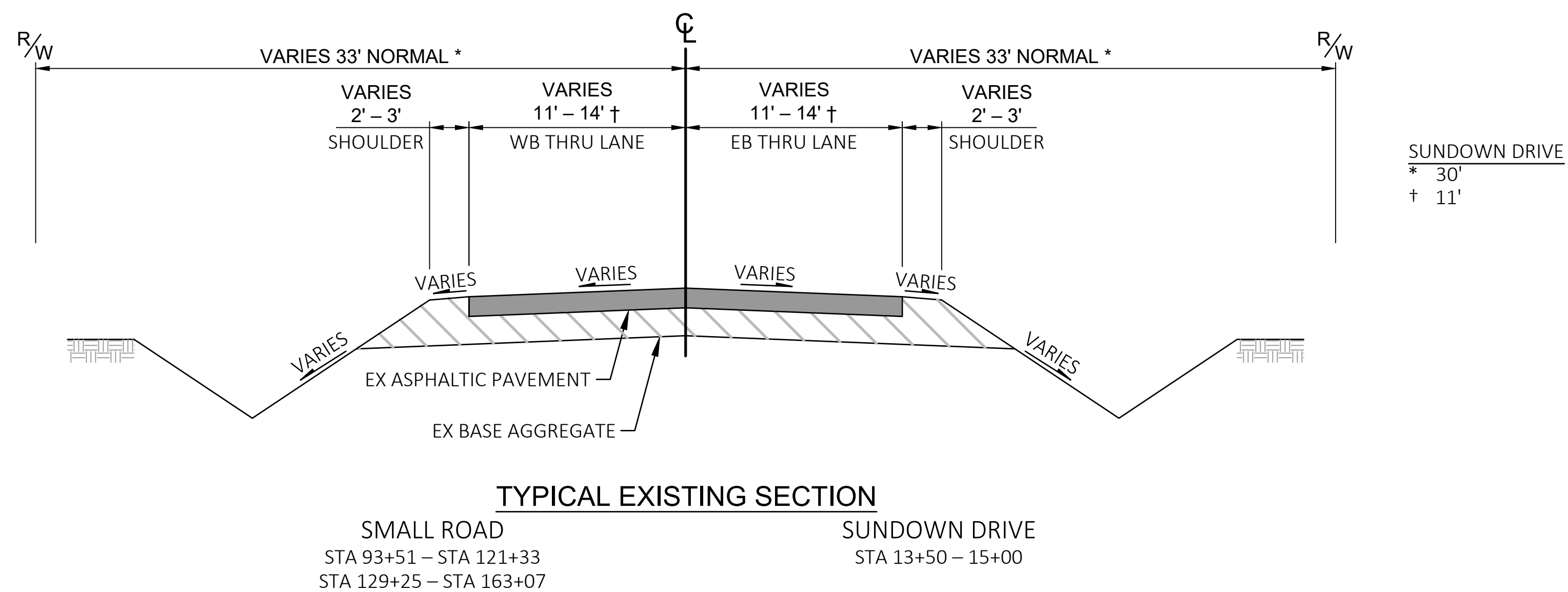
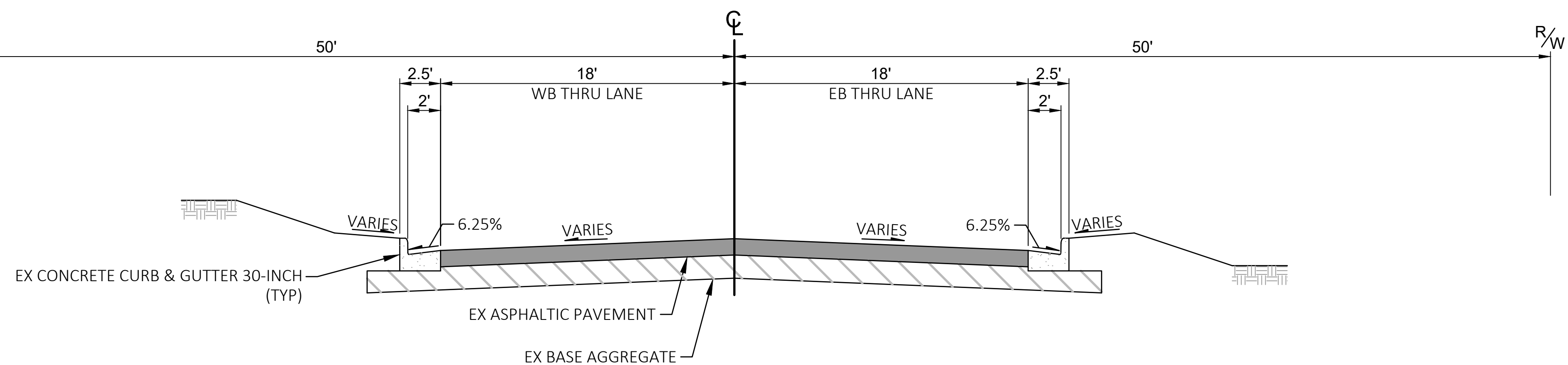
- 15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms there

APPENDIX 1

Small Road Reconstruction Plan Set

COLLEGE AVENUE TO MOORLAND ROAD
NEW BERLIN, WISCONSIN

A topographic map of the area around Tess Corners, showing roads, contours, and a proposed road alignment. The map includes labels for roads such as W BELLOIT RD, W GRANGE AVE, and WOODLAND PL. It also shows contour lines and a proposed road alignment marked with a thick black line. The map is overlaid with a grid of letters (Y, I, O, ES, HH, Y, HH, L, O) and numbers (29, 28, 27, 26, 32, 33, 34, 35, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).



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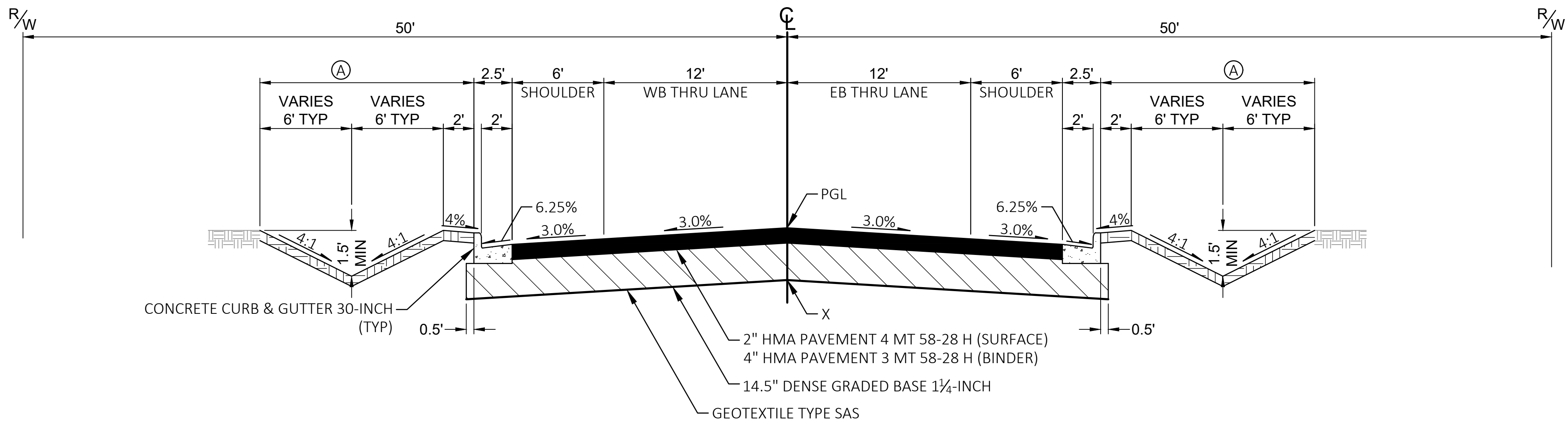
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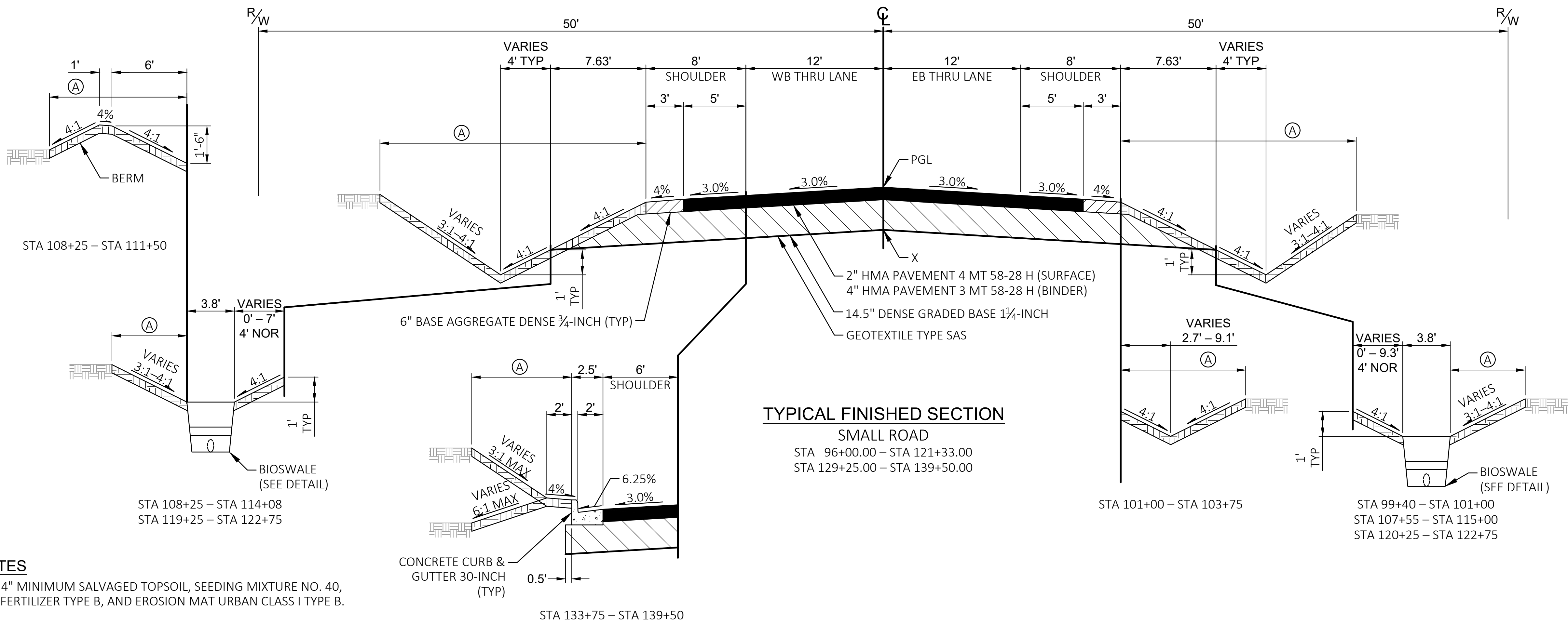
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[illegible]



TYPICAL FINISHED SECTION
SMALL ROAD
 STA 139+50.00 – STA 163+05.11



NOTES

- (A) 4" MINIMUM SALVAGED TOPSOIL, SEEDING MIXTURE NO. 40, FERTILIZER TYPE B, AND EROSION MAT URBAN CLASS I TYPE B.

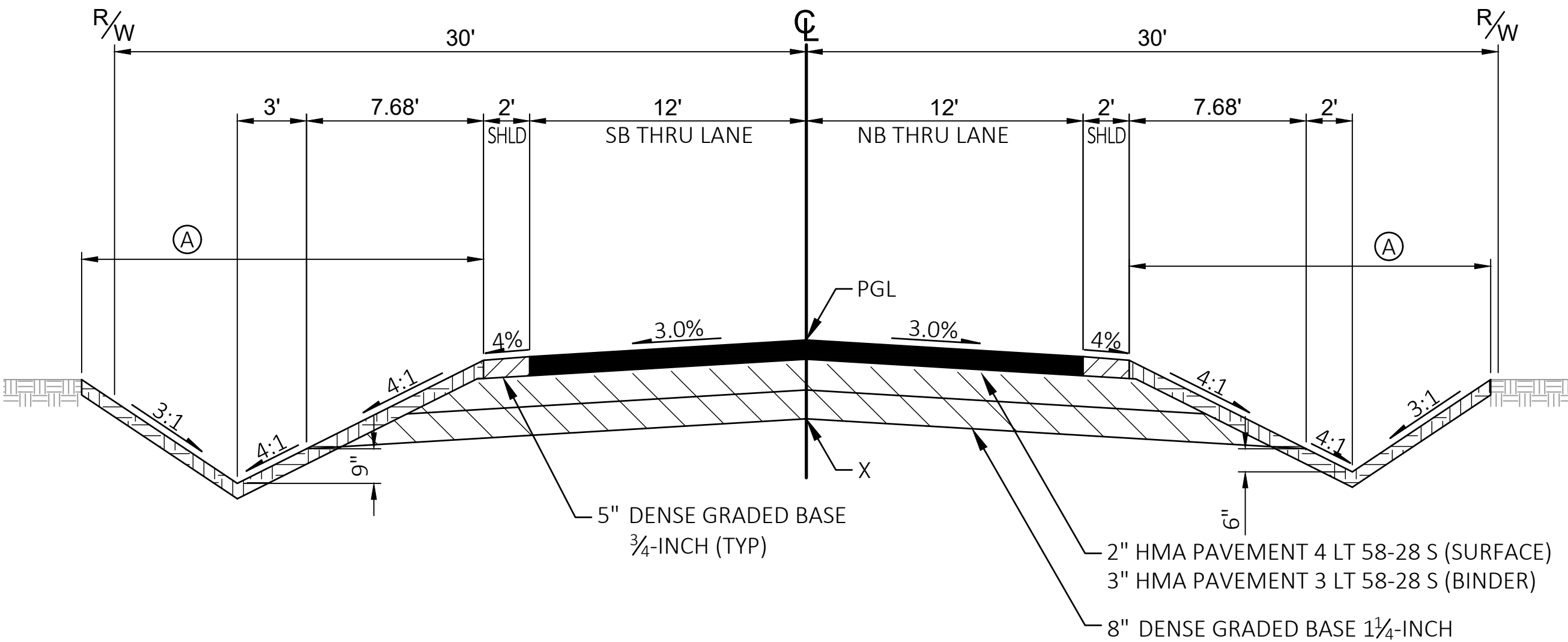
SEE CROSS SECTIONS FOR SUPERELEVATION & DITCH SECTIONS.

- PGL = POINT REFERRED TO ON PROFILE
 X = POINT REFERRED TO ON CROSS SECTIONS
 * = PAID FOR AS BASE AGGREGATE DENSE 1½-INCH

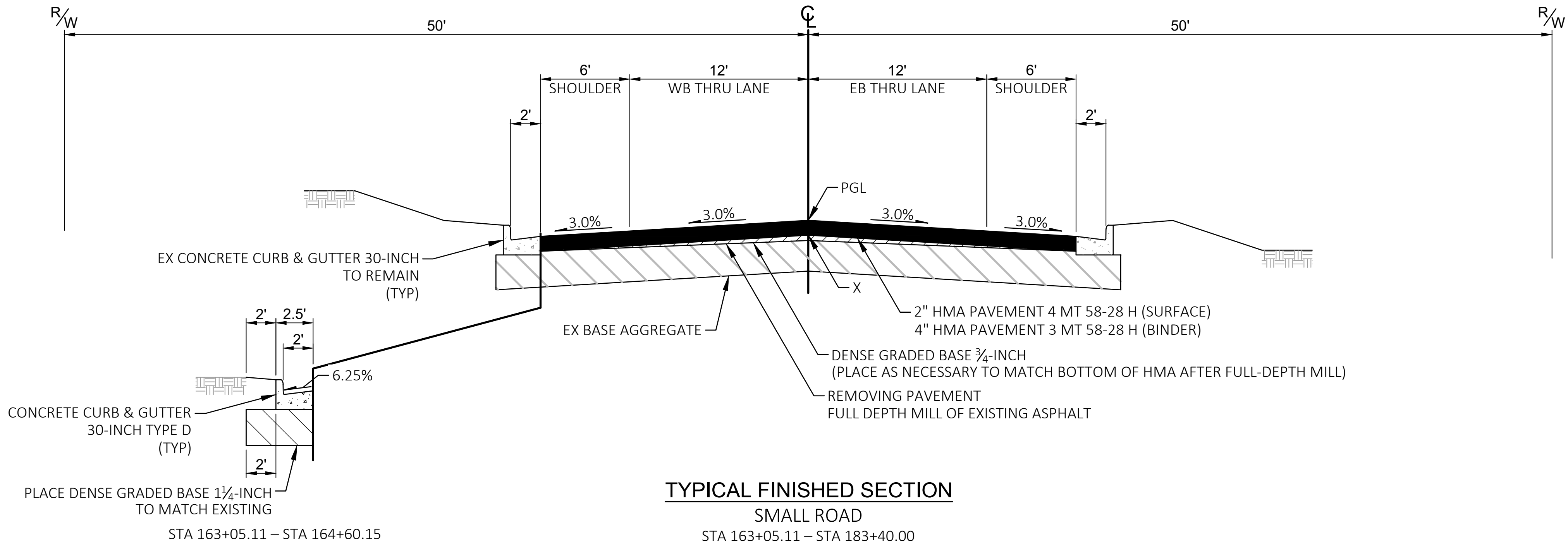


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raSmith CREATIVITY BEYOND ENGINEERING	
Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	
SMALL ROAD NEW BERLIN, WISCONSIN	TYPICAL SECTIONS FINISHED SECTIONS
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TYPICAL FINISHED SECTION
SUNDOWN DRIVE
STA 13+50 TO STA 15+00



TYPICAL FINISHED SECTION
SMALL ROAD
STA 163+05.11 – STA 183+40.00
MILL & OVERLAY

NOTES

(A) 4" MINIMUM SALVAGED TOPSOIL, SEEDING MIXTURE NO. 40, FERTILIZER TYPE B, AND EROSION MAT URBAN CLASS I TYPE B.

SEE CROSS SECTIONS FOR SUPERELEVATION & DITCH SECTIONS.

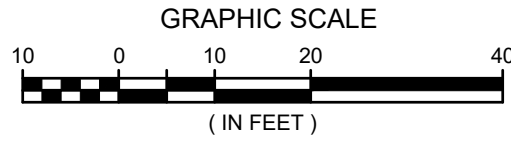
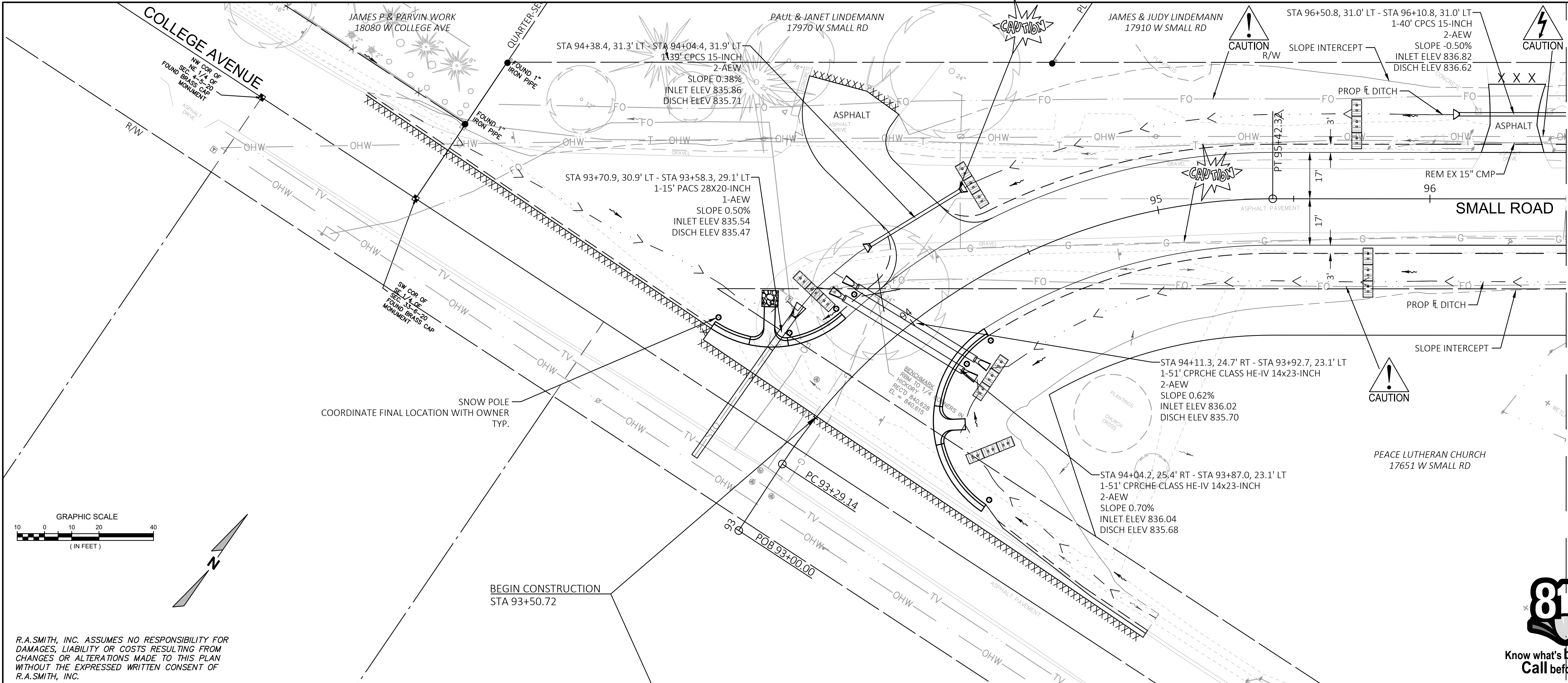
PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS SECTIONS
* = PAID FOR AS BASE AGGREGATE DENSE 1 1/4-INCH



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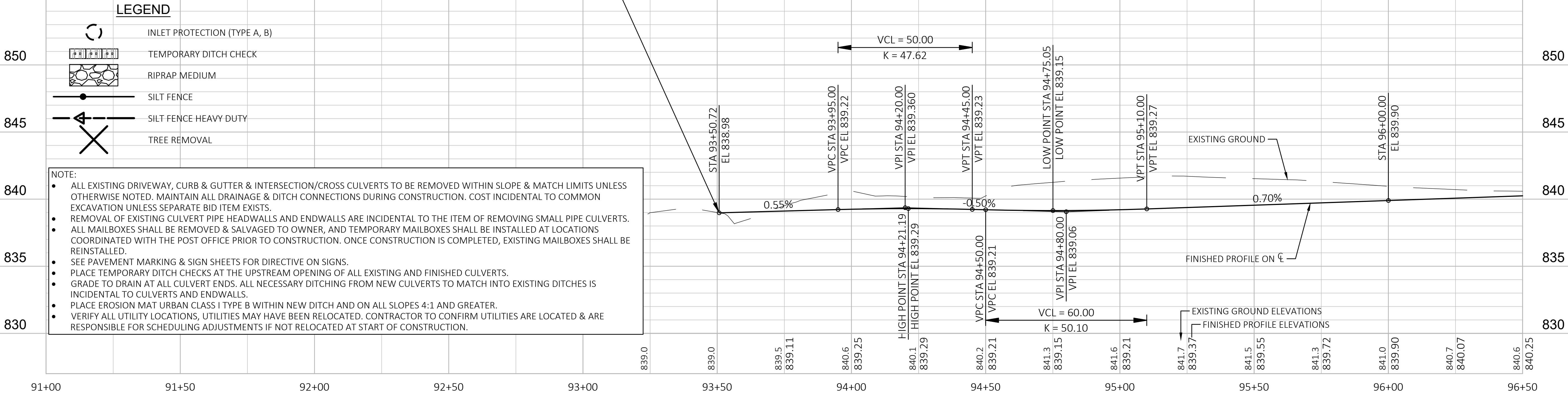


LEGEND

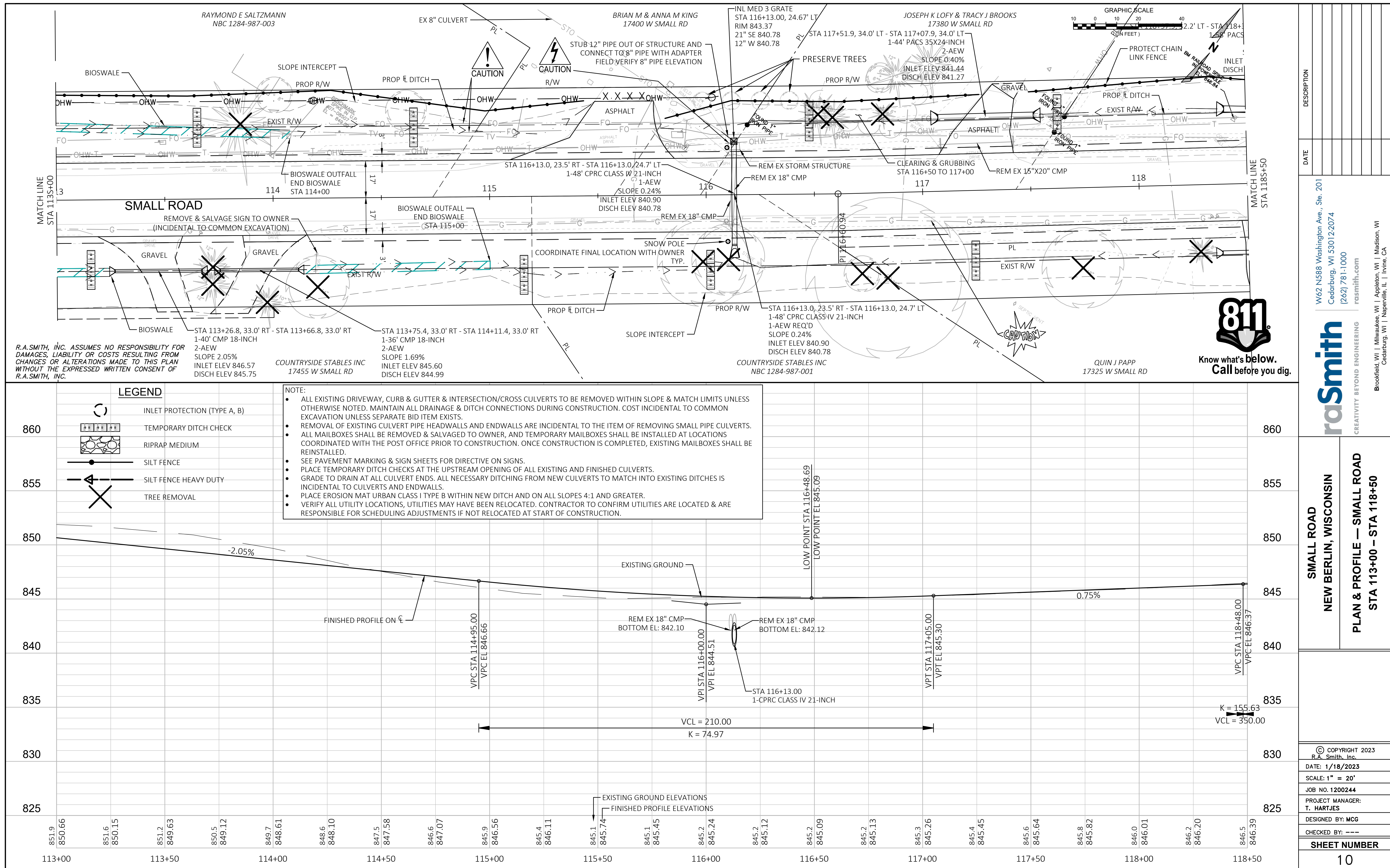
- INLET PROTECTION (TYPE A, B)
- TEMPORARY DITCH CHECK
- RIPRAP MEDIUM
- SILT FENCE
- SILT FENCE HEAVY DUTY
- TREE REMOVAL

NOTE:

- ALL EXISTING DRIVEWAY, CURB & GUTTER & INTERSECTION/CROSS CULVERTS TO BE REMOVED WITHIN SLOPE & MATCH LIMITS UNLESS OTHERWISE NOTED. MAINTAIN ALL DRAINAGE & DITCH CONNECTIONS DURING CONSTRUCTION. COST INCIDENTAL TO COMMON EXCAVATION UNLESS SEPARATE BID ITEM EXISTS.
- REMOVAL OF EXISTING CULVERT PIPE HEADWALLS AND ENDWALLS ARE INCIDENTAL TO THE ITEM OF REMOVING SMALL PIPE CULVERTS.
- ALL MAILBOXES SHALL BE REMOVED & SALVAGED TO OWNER, AND TEMPORARY MAILBOXES SHALL BE INSTALLED AT LOCATIONS COORDINATED WITH THE POST OFFICE PRIOR TO CONSTRUCTION. ONCE CONSTRUCTION IS COMPLETED, EXISTING MAILBOXES SHALL BE REINSTALLED.
- SEE PAVEMENT MARKING & SIGN SHEETS FOR DIRECTIVE ON SIGNS.
- PLACE TEMPORARY DITCH CHECKS AT THE UPSTREAM OPENING OF ALL EXISTING AND FINISHED CULVERTS.
- GRADE TO DRAIN AT ALL CULVERT ENDS. ALL NECESSARY DITCHING FROM NEW CULVERTS TO MATCH INTO EXISTING DITCHES IS INCIDENTAL TO CULVERTS AND ENDWALLS.
- PLACE EROSION MAT URBAN CLASS I TYPE B WITHIN NEW DITCH AND ON ALL SLOPES 4:1 AND GREATER.
- VERIFY ALL UTILITY LOCATIONS, UTILITIES MAY HAVE BEEN RELOCATED. CONTRACTOR TO CONFIRM UTILITIES ARE LOCATED & ARE RESPONSIBLE FOR SCHEDULING ADJUSTMENTS IF NOT RELOCATED AT START OF CONSTRUCTION.



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raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING		raSmith CREATIVITY BEYOND ENGINEERING	
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SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN		SMALL ROAD NEW BERLIN, WISCONSIN	
PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50		PLAN & PROFILE — SMALL ROAD STA 96+00 — STA 96+50	
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PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES		PROJECT MANAGER: T. HARTJES	
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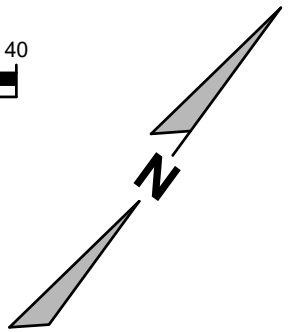
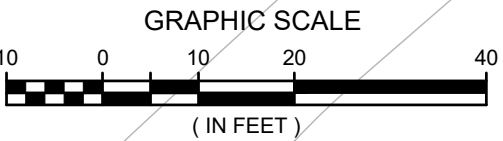
CONTRACT BY OTHERS
SEE WISDOT PROJECT ID
#2722-09-70

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DENNIS J & BEVERLY J McLAIN
17155 W SMALL RD

NATALIE A McDONALD
17032 W SMALL RD

ANTHONY G & CHRISTINE A GIBART
17035 W SMALL RD



NOTE
WISDOT PROJECT ID 2722-09-70 TO BE LET 3/14/2023.
CONTRACTOR TO WORK WITH WISDOT CONTRACTOR TO
COORDINATE SCHEDULE, ACCESS, AND EXACT MATCH POINT.
ALL COORDINATION COSTS ARE INCIDENTAL TO THE ITEM OF
TRAFFIC CONTROL/DETOUR.

VCL = 120.00
K = 141.61

VCL = 256.00
K = 66.49

880
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870
865
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855
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880
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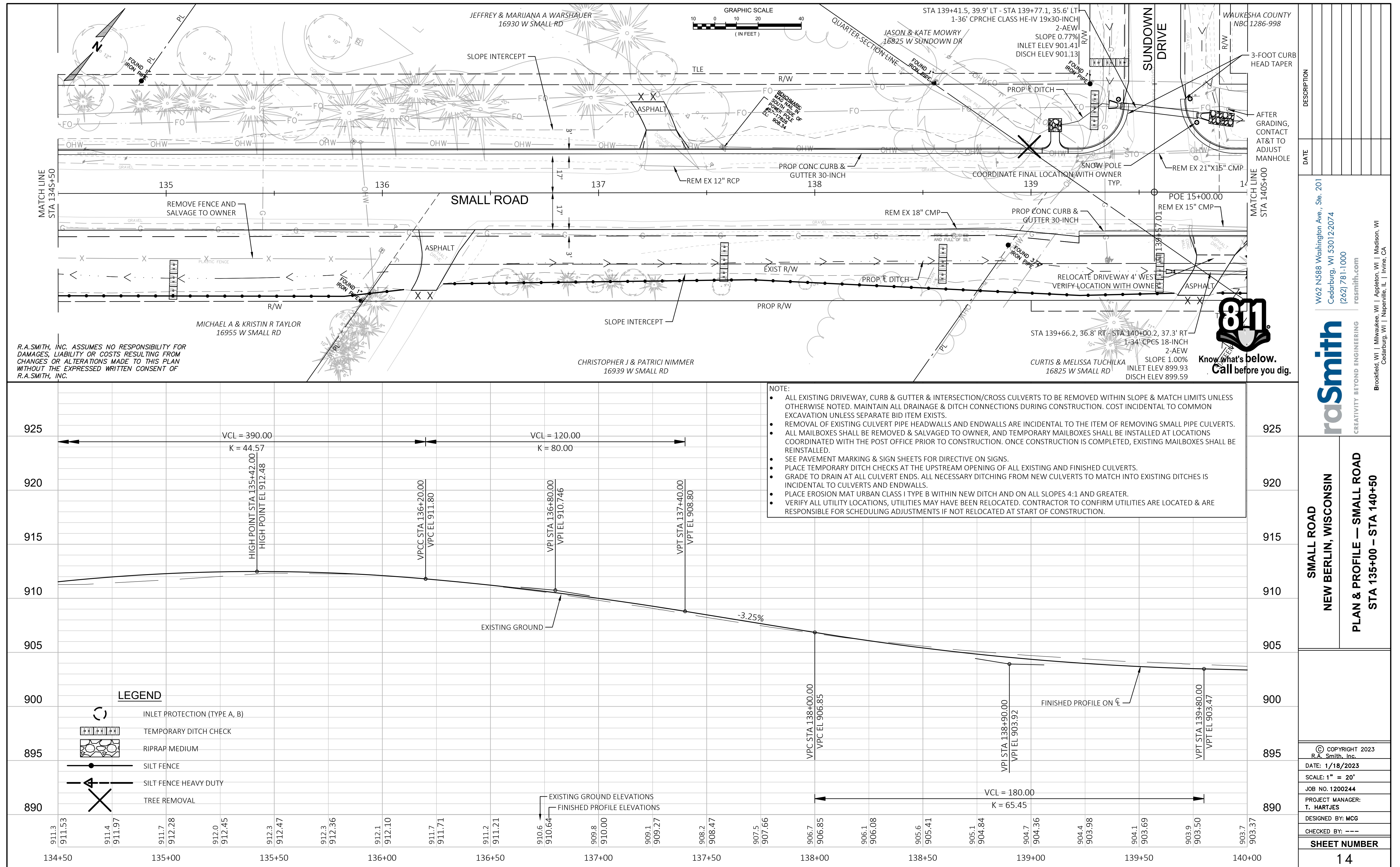
EXISTING GROUND

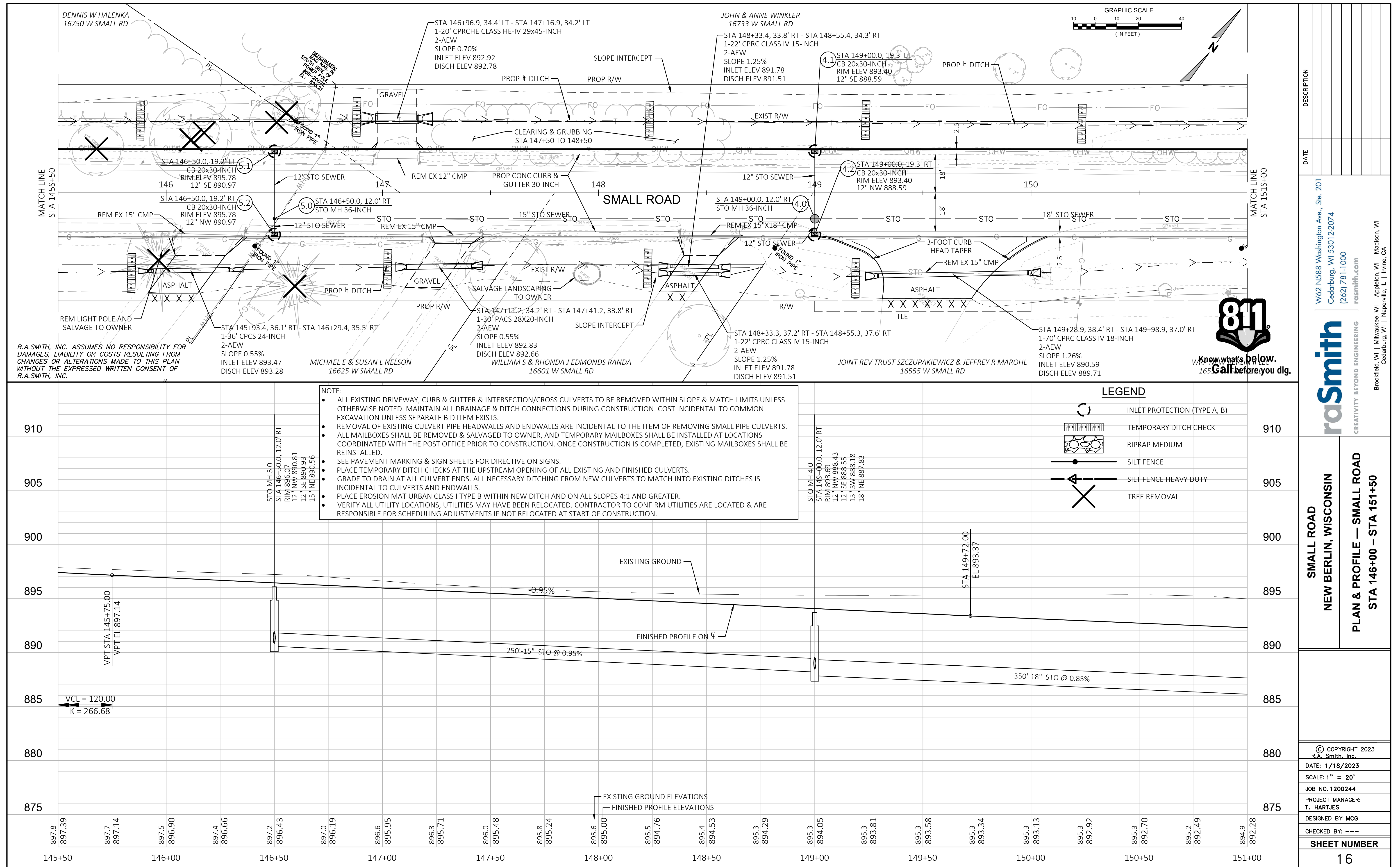
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(BY OTHERS)

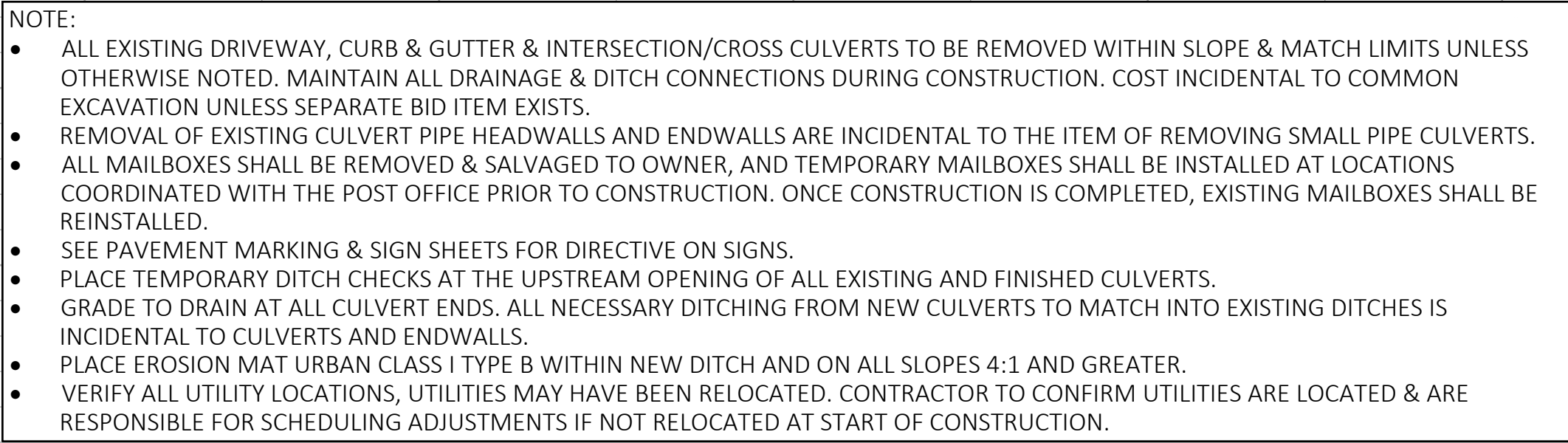
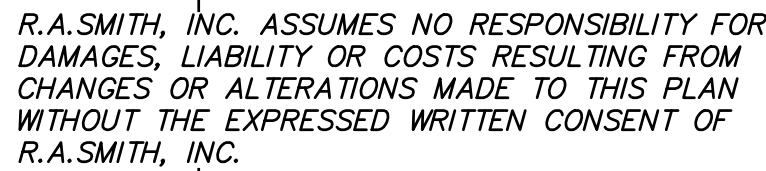
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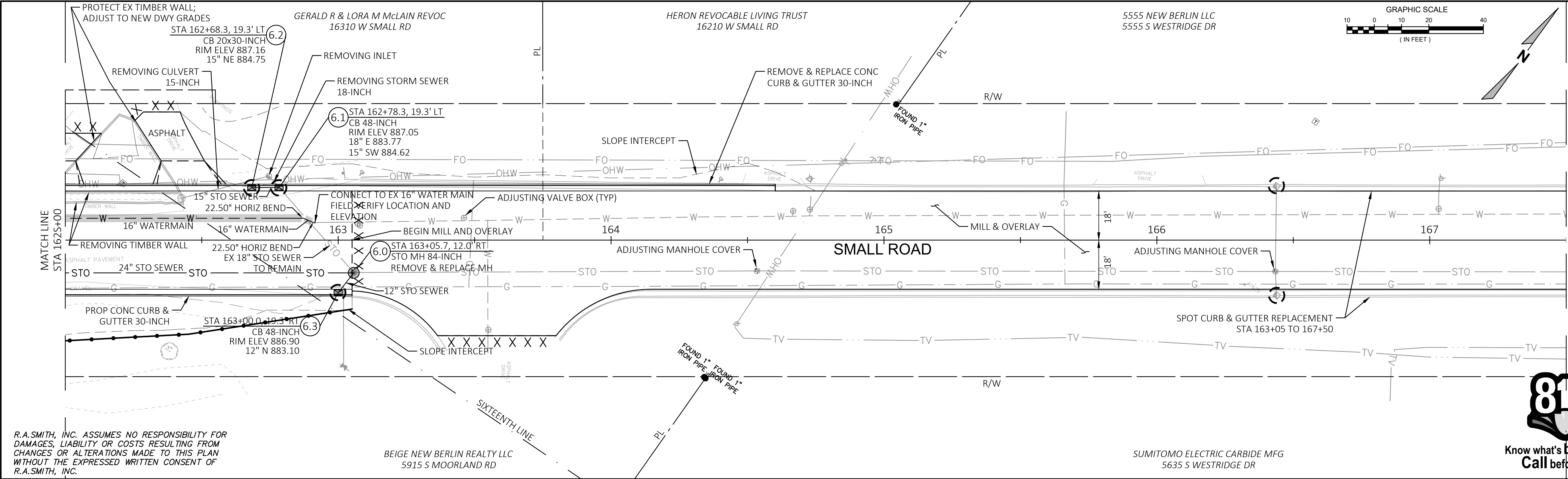
124+00 124+50 125+00 125+50 126+00 126+50 127+00 127+50 128+00 128+50 129+00 129+50

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PLAN & PROFILE — SMALL ROAD STA 121+33 — STA 129+50	
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SCALE: 1" = 20'	
JOB NO. 1200244	
PROJECT MANAGER: T. HARTJES	
DESIGNED BY: MCG	
CHECKED BY: ---	
SHEET NUMBER	
12	





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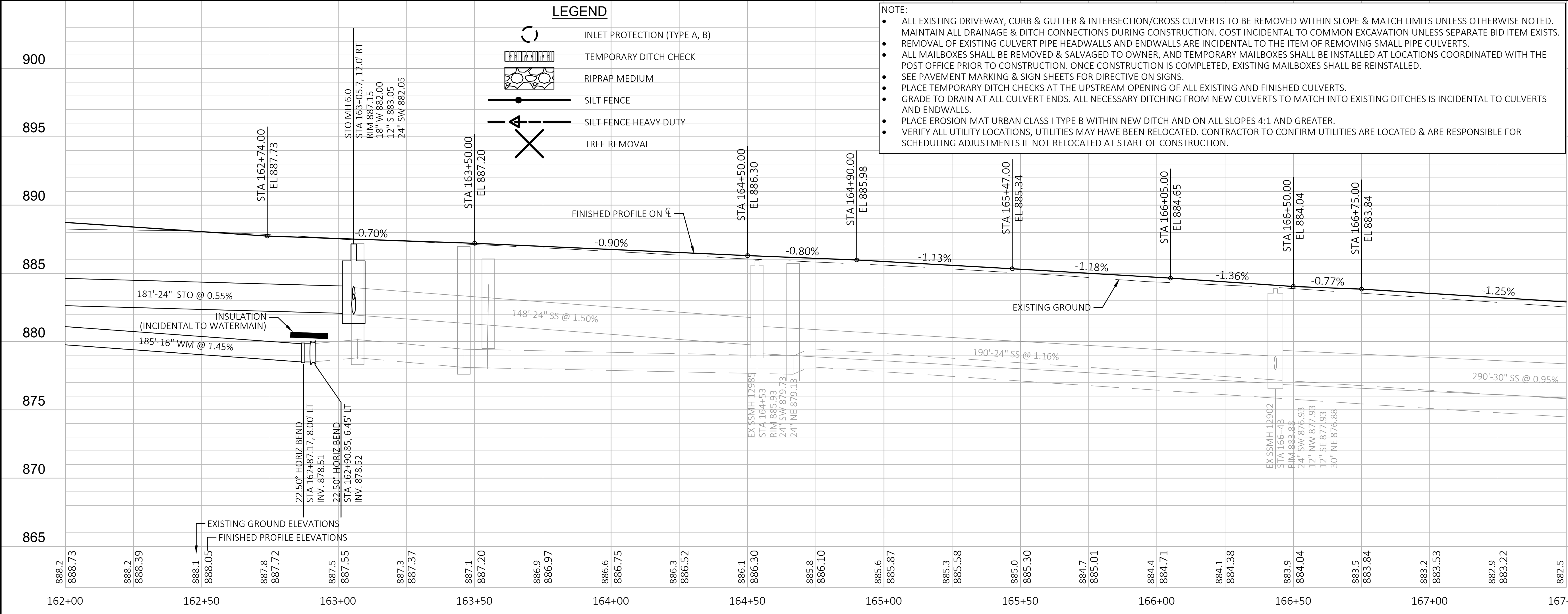


LEGEND

- INLET PROTECTION (TYPE A, B)
- TEMPORARY DITCH CHECK
- RIPRAP MEDIUM
- SILT FENCE
- SILT FENCE HEAVY DUTY
- TREE REMOVAL

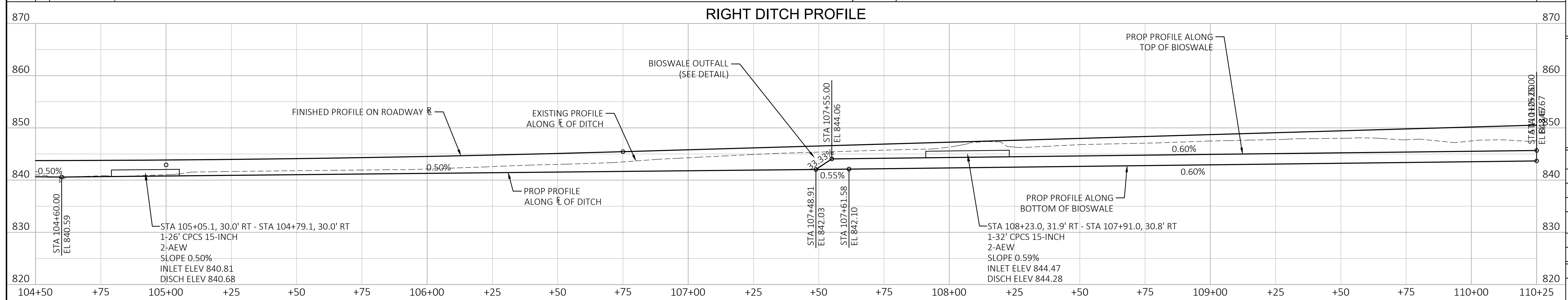
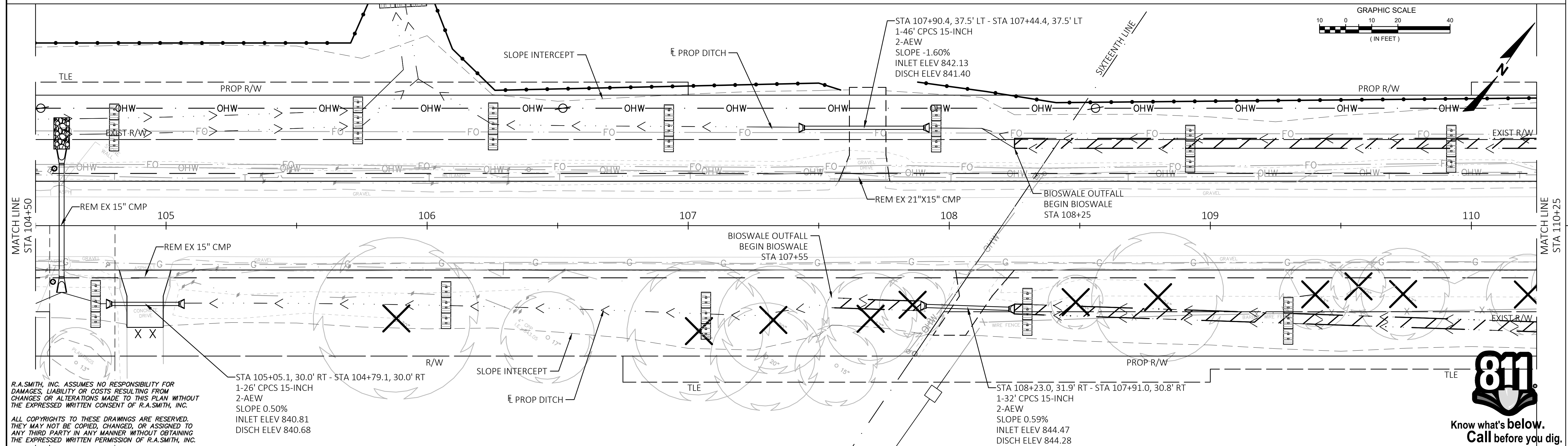
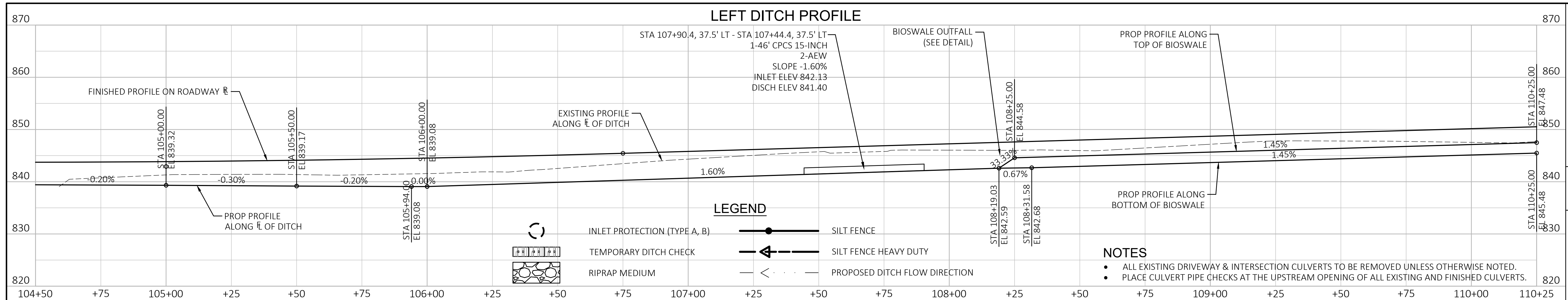
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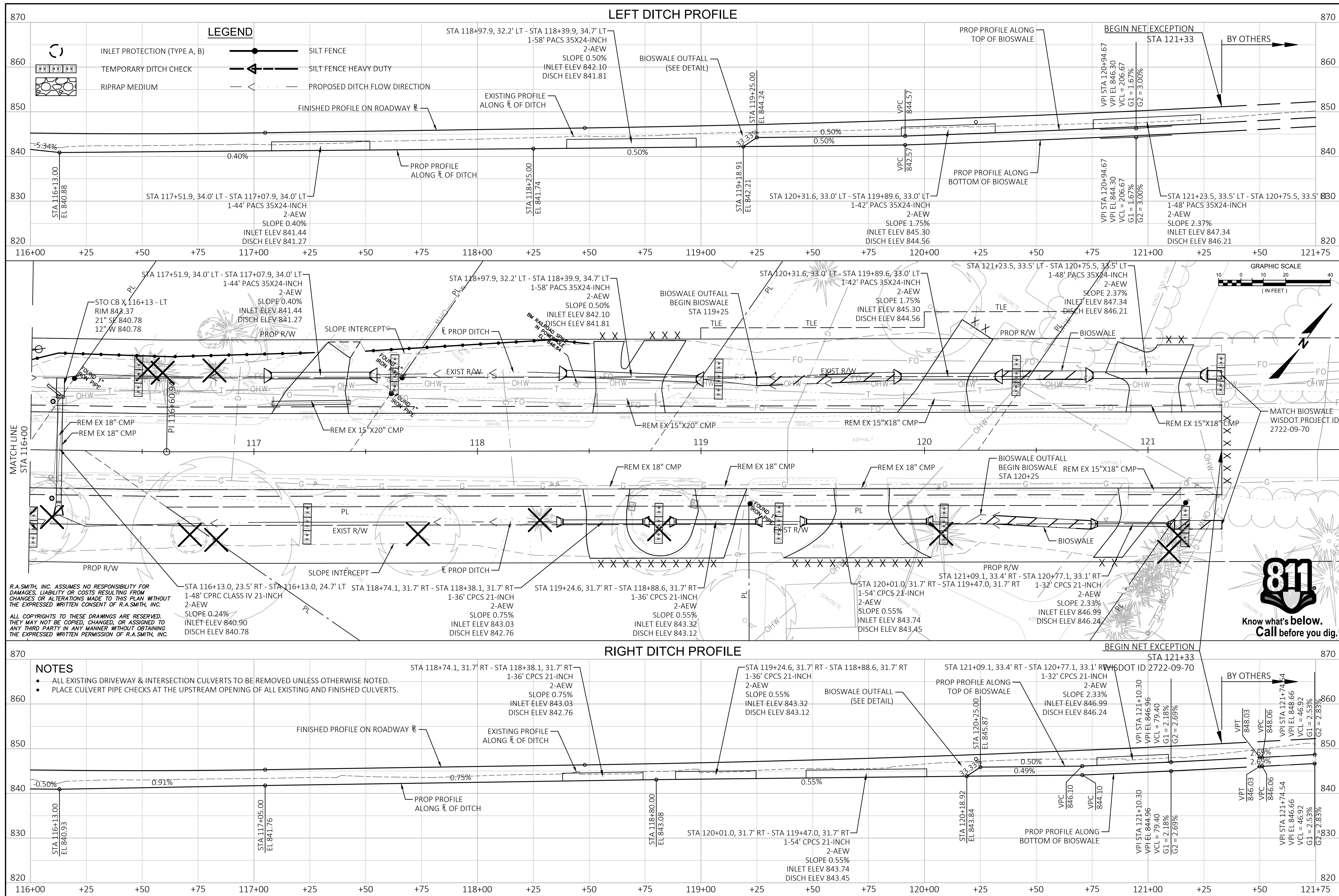
- ALL EXISTING DRIVEWAY, CURB & GUTTER & INTERSECTION/CROSS CULVERTS TO BE REMOVED WITHIN SLOPE & MATCH LIMITS UNLESS OTHERWISE NOTED.
- MAINTAIN ALL DRAINAGE & DITCH CONNECTIONS DURING CONSTRUCTION. COST INCIDENTAL TO COMMON EXCAVATION UNLESS SEPARATE BID ITEM EXISTS.
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Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	

SMALL ROAD NEW BERLIN, WISCONSIN	PLAN & PROFILE — SMALL ROAD STA 162+50 — STA 168+00
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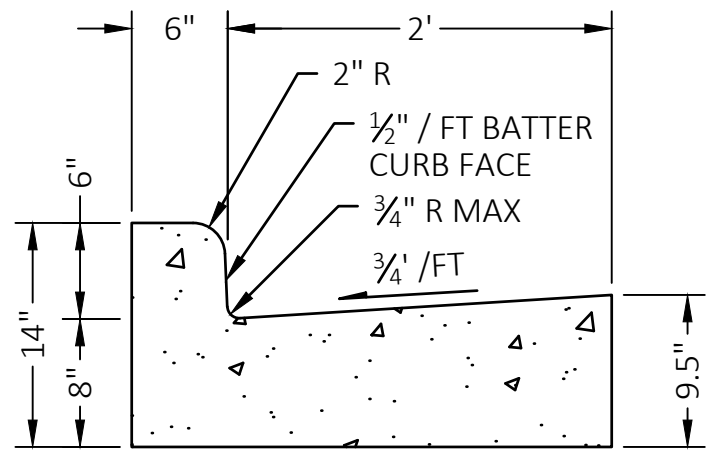
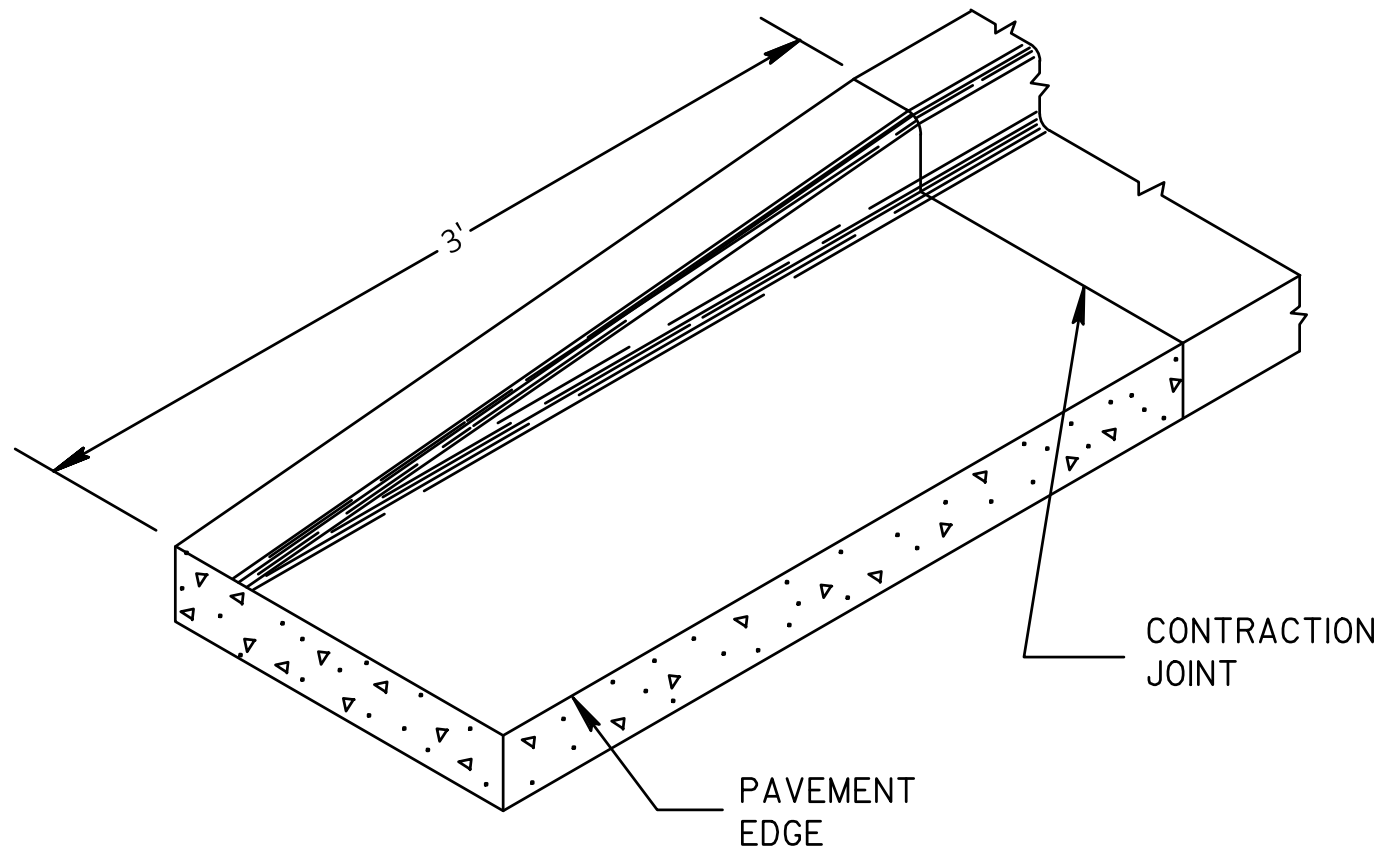
NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

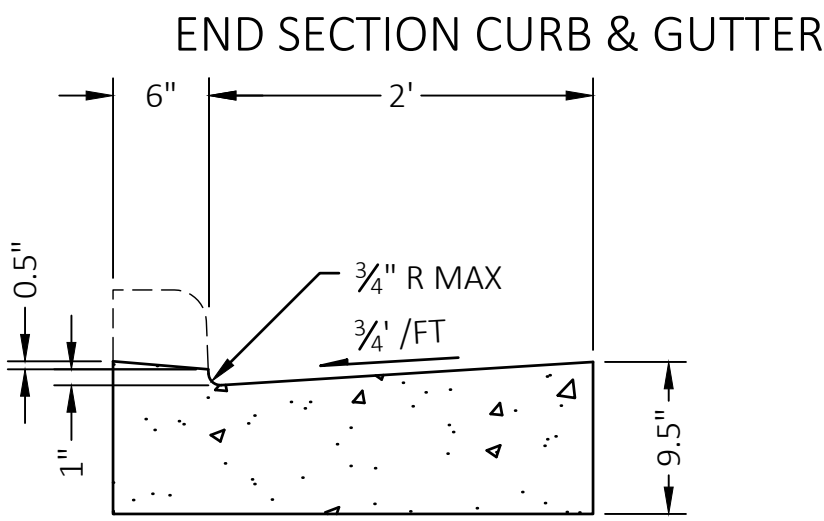
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE WISDOT SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

③ REFER TO DRIVEWAY DETAILS FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

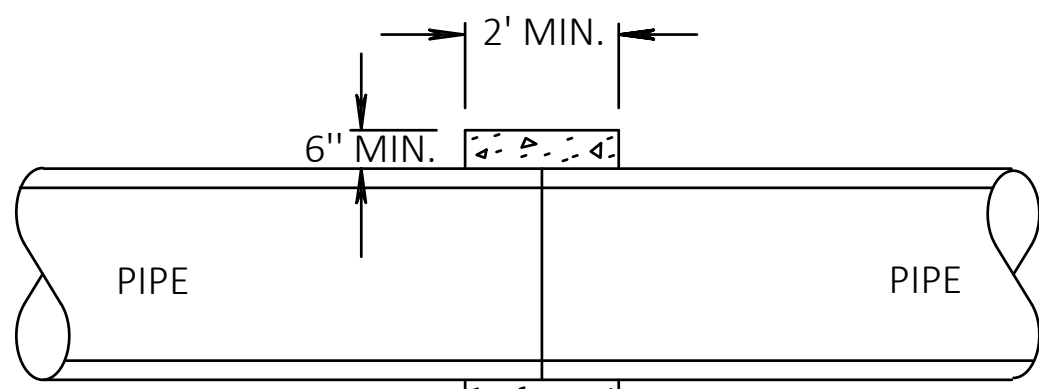


TYPICAL SECTION

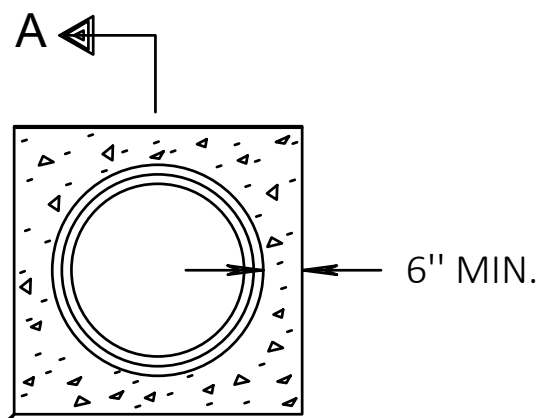


END SECTION CURB & GUTTER
DRIVEWAY ENTRANCE CURB^③
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB & GUTTER 30-INCH



CONCRETE MASONRY COLLAR WHERE REQ'D. TO SEAL PIPE



SECTION A-A

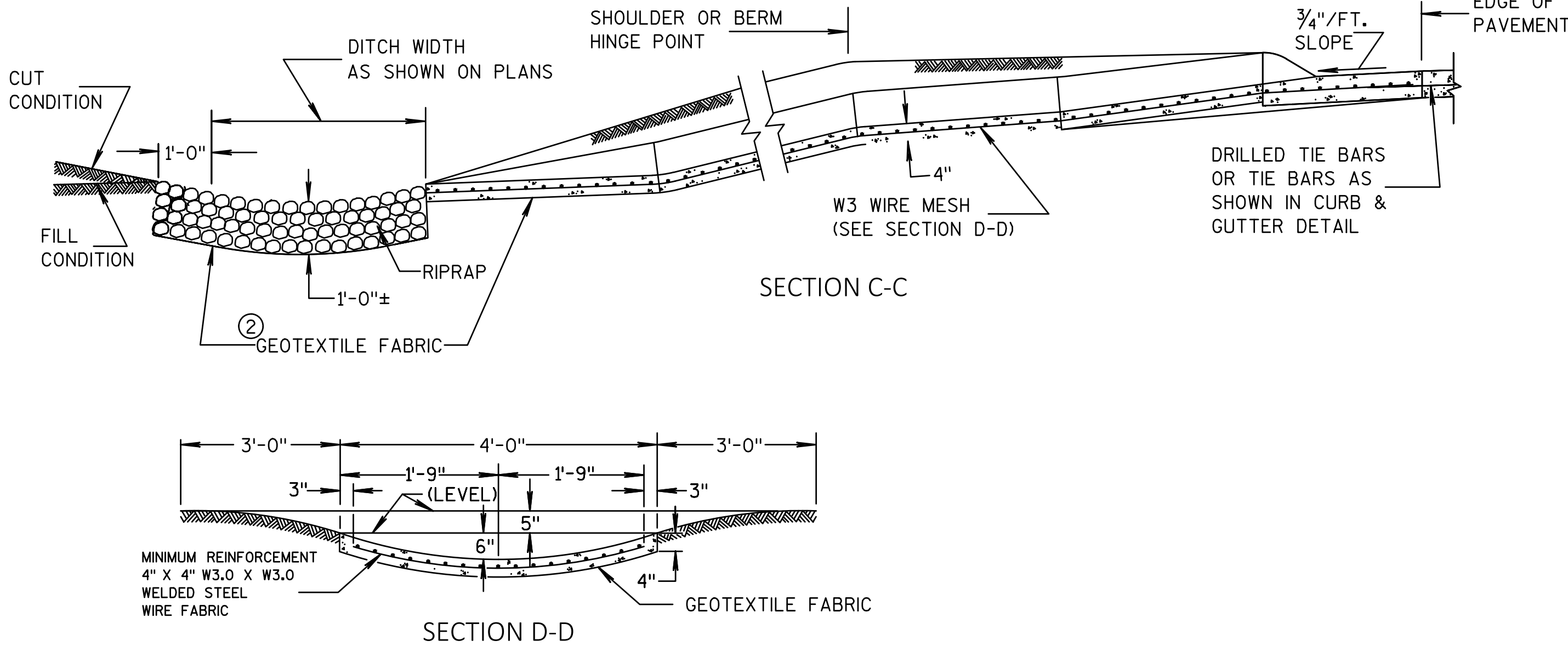
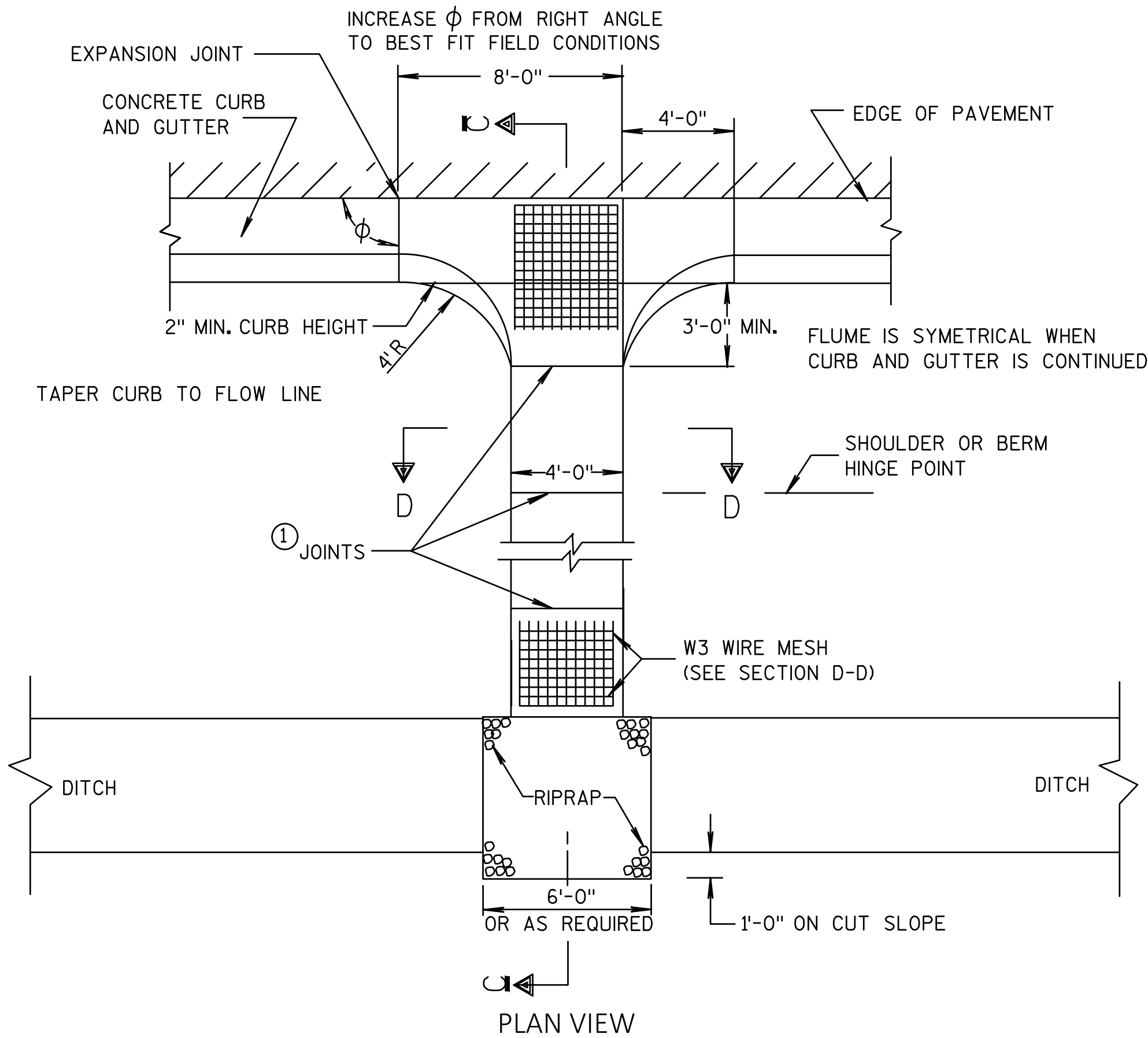
CONCRETE COLLAR DETAIL

NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AAQSHO SPECIFICATION M55.

- ① JOINTS SHALL BE 3/8 TO 1/2-INCH WIDE BY 1 1/2 INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE R SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.



CONCRETE FLUME



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DESCRIPTION	DATE	W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com
SMALL ROAD NEW BERLIN, WISCONSIN	CONSTRUCTION DETAILS CURB & GUTTER AND SURFACE DRAIN	© COPYRIGHT 2023 R.A. Smith, Inc. DATE: 1/18/2023 SCALE: ##### JOB NO. 1200244 PROJECT MANAGER: T. HARTJES DESIGNED BY: MCG CHECKED BY: --- SHEET NUMBER 35



10" DUCTILE IRON DOME GRATE



(A) 6" SALVAGED TOPSOIL, SEEDING MIXTURE NO. 40, FERTILIZER TYPE B, AND EROSION MAT URBAN CLASS I TYPE B.

[illegible]



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NOTES

PLACE UNDERDRAIN 50' UPSTREAM OF EACH INLET. PLACE 50' ON EITHER SIDE OF INLETS LOCATED AT SAGS.



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GENERAL NOTES:

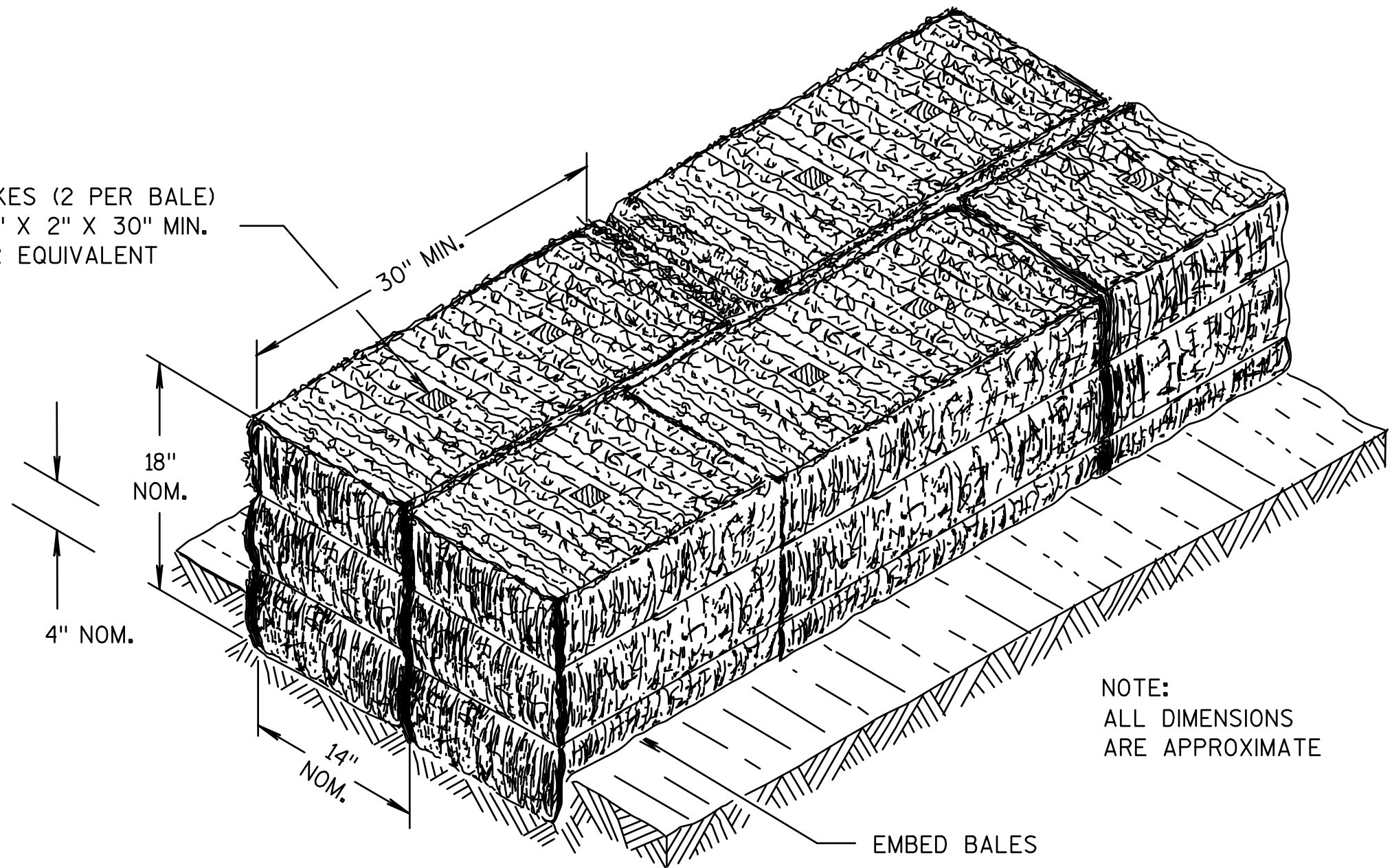
1. ATTACH FENCE FABRIC TO POSTS A MINIMUM OF 3 TIES PER POST (TOP, MIDDLE, BOTTOM)
2. ATTACH GEOTEXTILE FABRIC TO FENCE FABRIC AND/OR POSTS AT A MAXIMUM SPACING OF EVERY 2 FEET ALONG THE TOP AND ADDITIONALLY AS NECESSARY TO PREVENT DISPLACEMENT BY WIND AND WAVE ACTIONS.



Know what's **below**.
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[illegible]

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

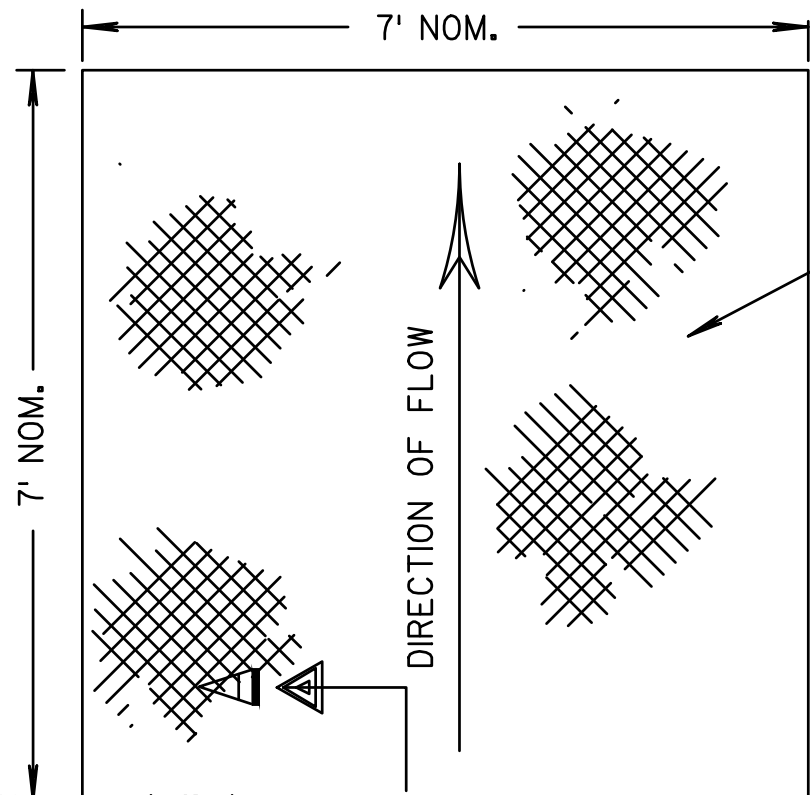
EMBED BALES

SECTION A-A

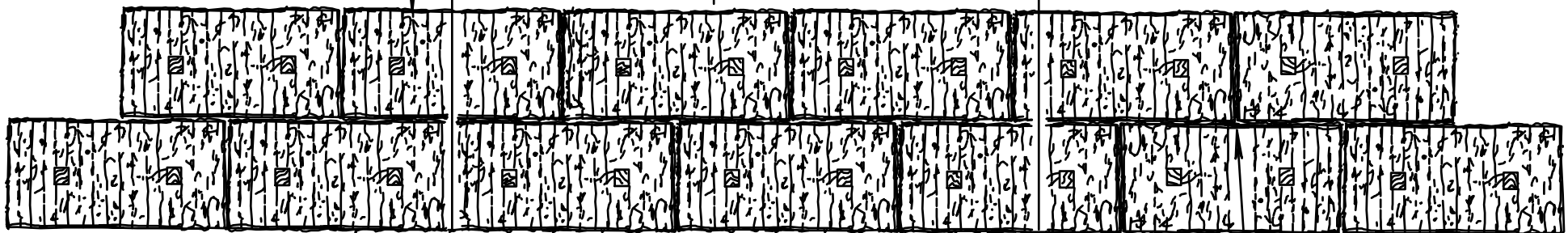
NOTES

DETAILS OF CONSTRUCTION MATERIALS AND
WORKMANSHIP NOT SHOWN ON THIS
DRAWING SHALL CONFORM TO THE PERTINENT
REQUIREMENTS OF THE CONTRACT.

- ① TEMPORARY DITCH CHECKS EITHER EROSION
BALES OR MANUFACTURED SHALL BE PAID FOR
UNDER THE BID ITEM OF TEMPORARY DITCH
CHECK. THE OWNER WILL NOT PAY FOR
TEMPORARY DITCH CHECKS CONSTRUCTED OF
A SINGLE ROW OF EROSION BALES.



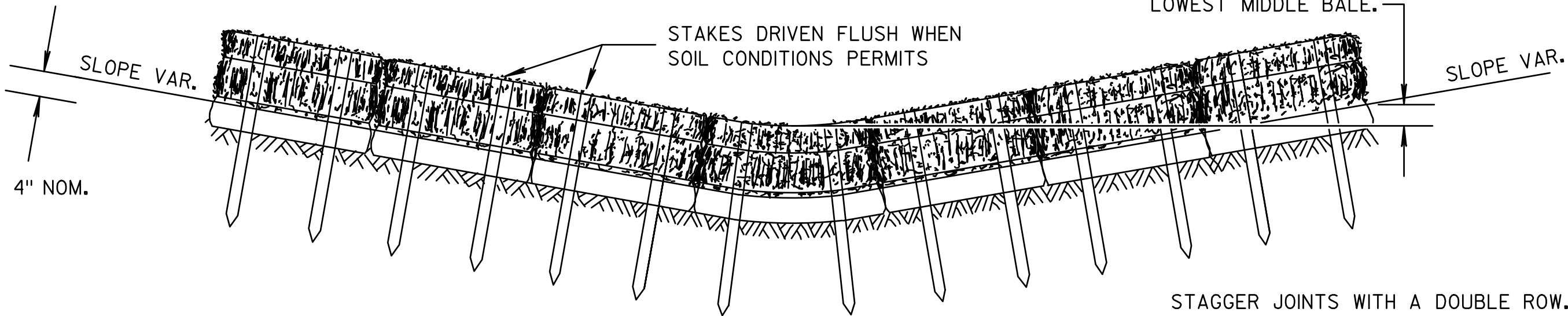
FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

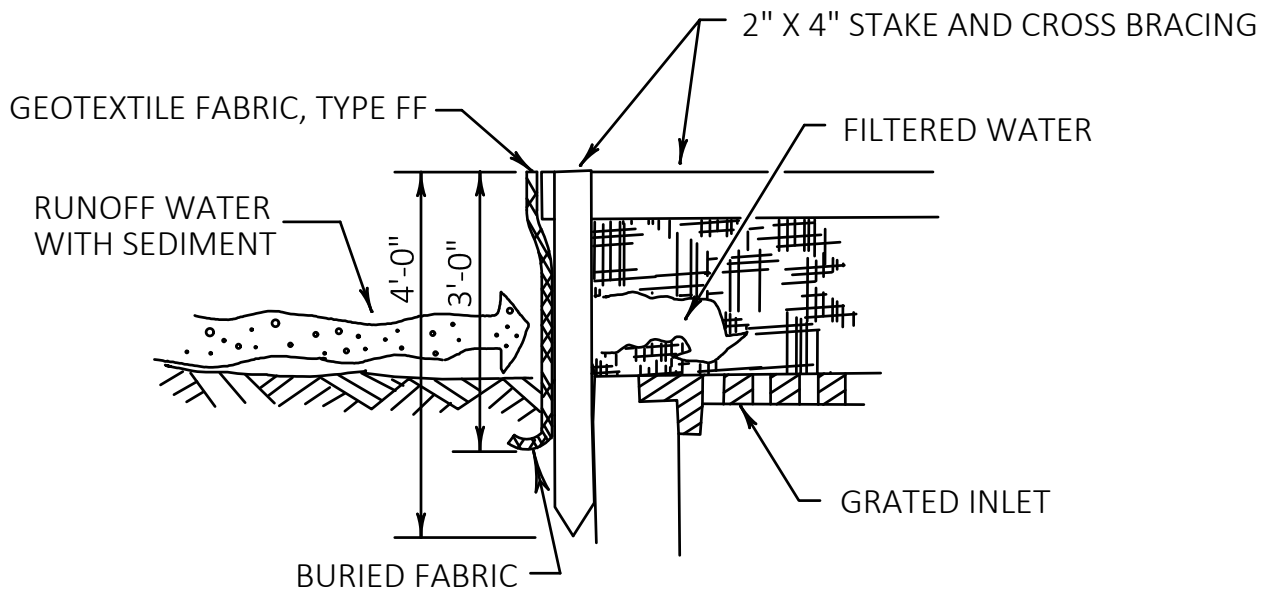
BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



FRONT ELEVATION

TEMPORARY DITCH CHECKS ①

NOTE: ATTACH GEOTEXTILE FABRIC, TYPE FF TO
THE TOP OF STAKES AND CROSS BRACINGS.



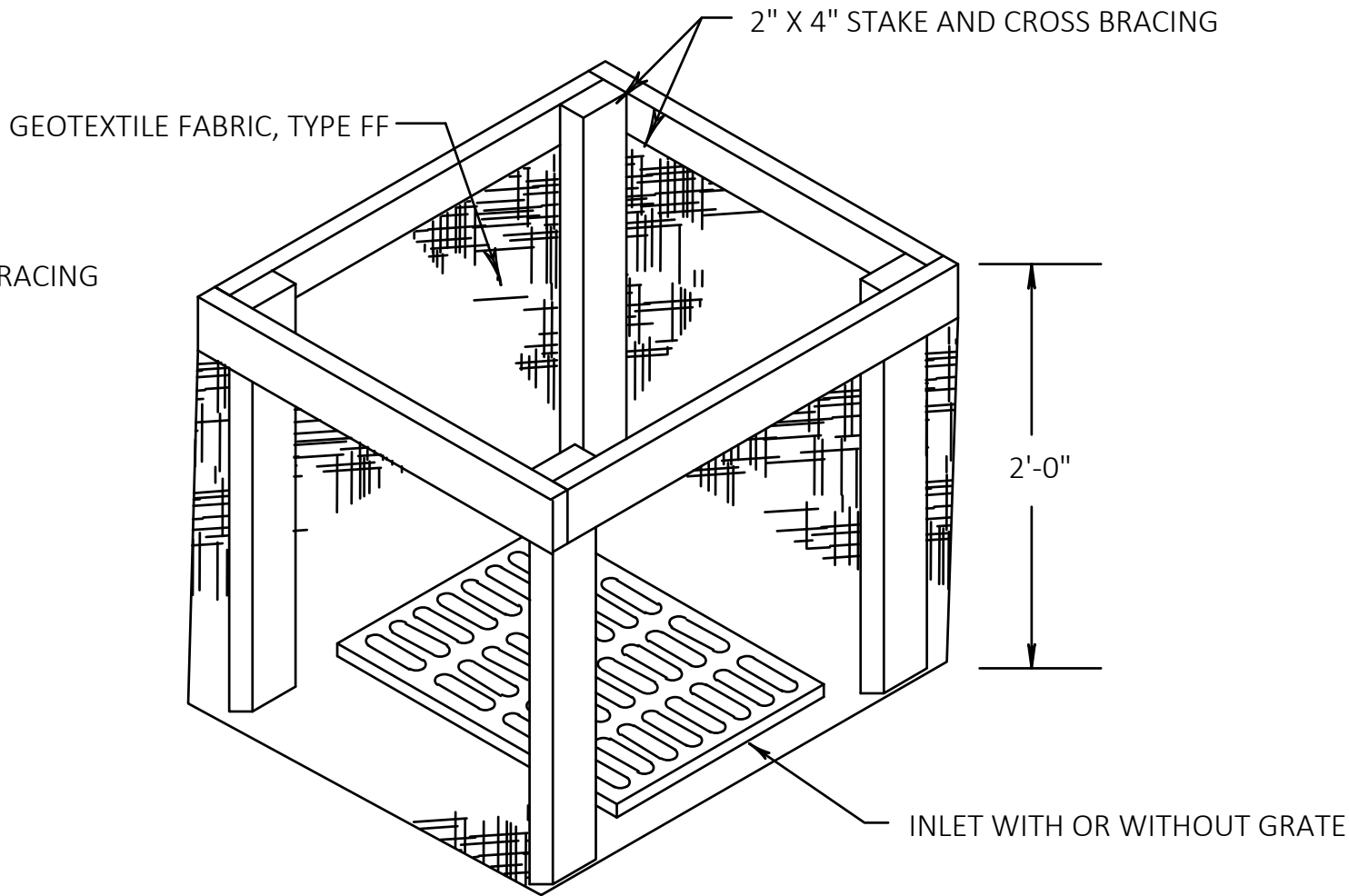
NOTES

FABRIC SHALL BE REPLACED AT THE ENGINEERS DISCRETION.

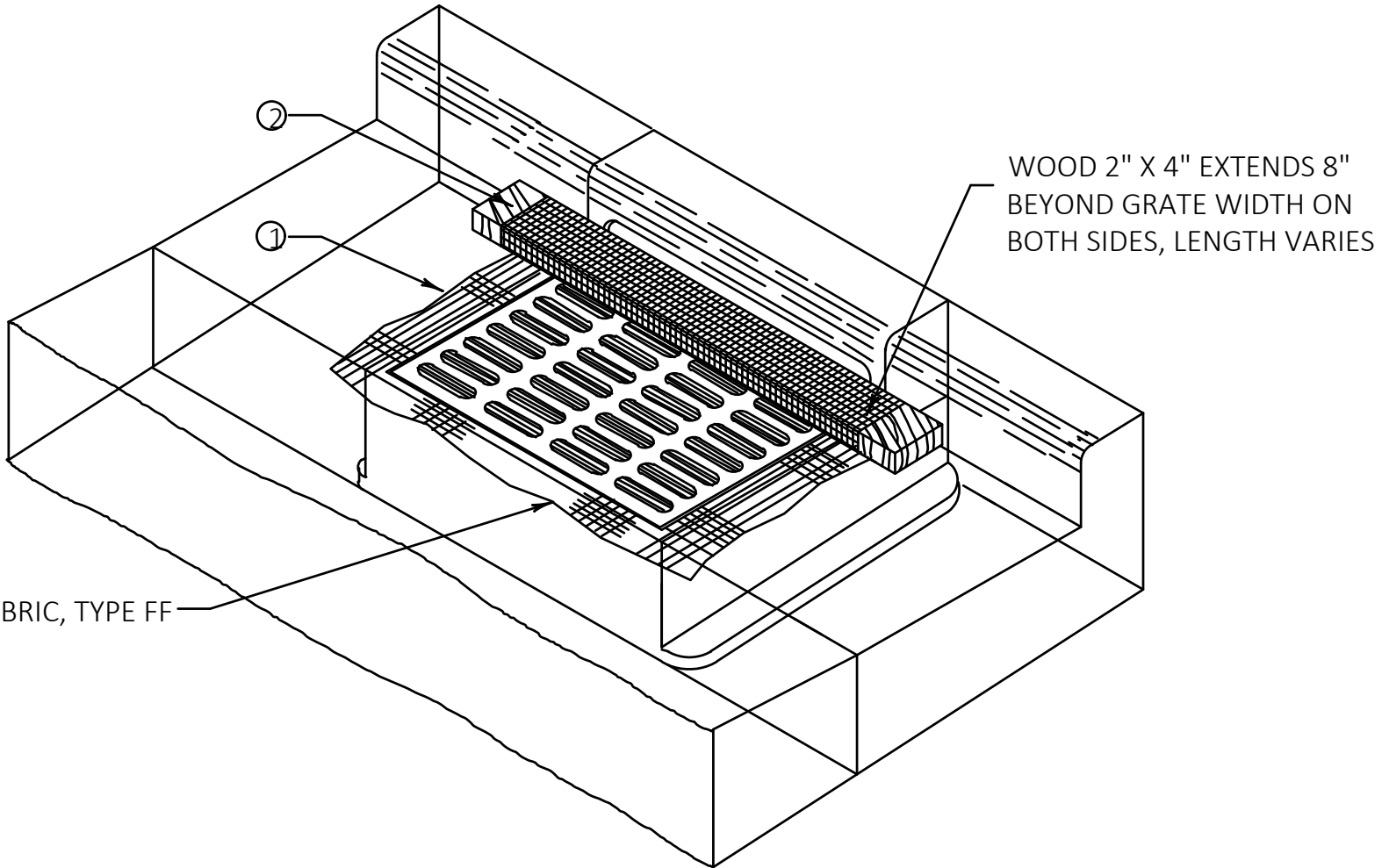
MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE
DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST
MAY BE SUBSTITUTED FOR THE INLET PROTECTION TYPE
SPECIFIED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE
SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE
GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY
MATERIAL FALLING INTO THE INLET SHALL BE REMOVED
IMMEDIATELY.

- ① FABRIC SIZE SHALL BE 8" (MIN) GREATER ON ALL SIDES OF THE
INLET COVER TO PROVIDE A HAND HOLD WHEN MAINTENANCE
OR REMOVAL IS REQUIRED.
- ② FOR INLET PROTECTION, TYPE C, WITH A CURB BOX, AN
ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD
AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE
ENTIRE HEIGHT OF THE CURB BOX.



TYPE A



TYPE C (WITH CURB BOX)

INLET PROTECTION

DESCRIPTION

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SMALL ROAD
NEW BERLIN, WISCONSIN

CONSTRUCTION DETAILS
EROSION CONTROL

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DATE: 1/18/2023

SCALE: #####

JOB NO. 1200244

PROJECT MANAGER:
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EYE BOLTS AND TIE ROD

**(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS**

GENERAL NOTES

DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATIVE 1, 2, OR 3 FOR DRAINAGE STRUCTURES. UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION, AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① $\varnothing$ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM $\varnothing$ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1-INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ -INCH OF THE INNER SURFACE OF THE PIPE.

(TONGUE & GROOVE PIPE)

(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.

JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/8

DIMENSIONS SHOWN ARE IN INCHES

**TAPERED PLAIN
RIGHT AND LEFT THREADS
SLEEVE NUTS**

**LONGITUDINAL SECTION
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)**

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

TRANSVERSE SECTION

PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

811
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SMALL ROAD
NEW BERLIN, WISCONSIN

CONSTRUCTION DETAILS
TIE RODS

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SCALE: #####
JOB NO. 1200244
PROJECT MANAGER:
T. HARTJES
DESIGNED BY: MCG
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Page 590 of 644

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT. BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

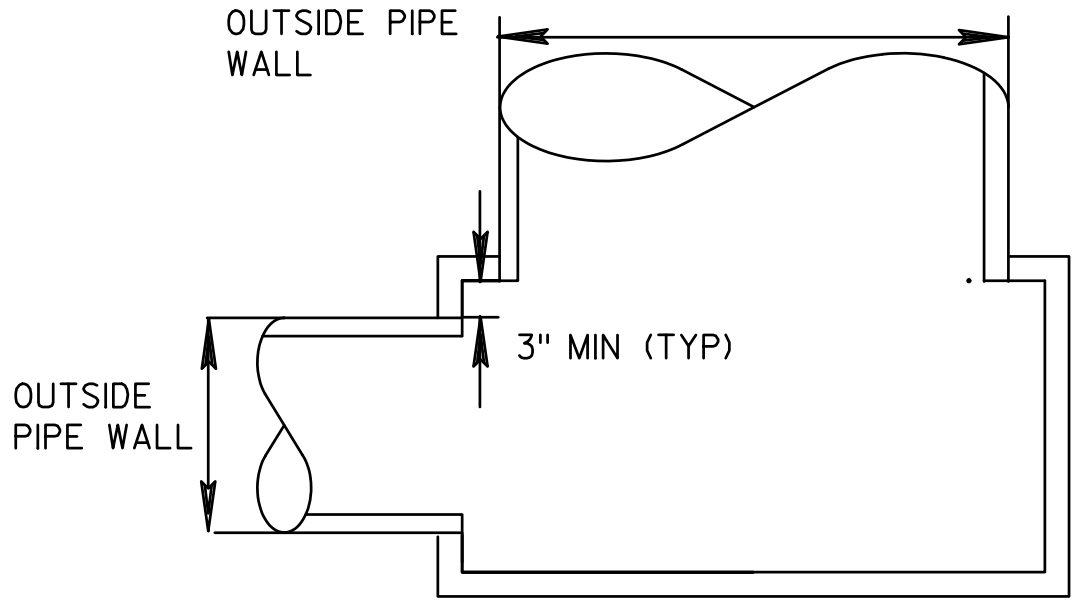
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

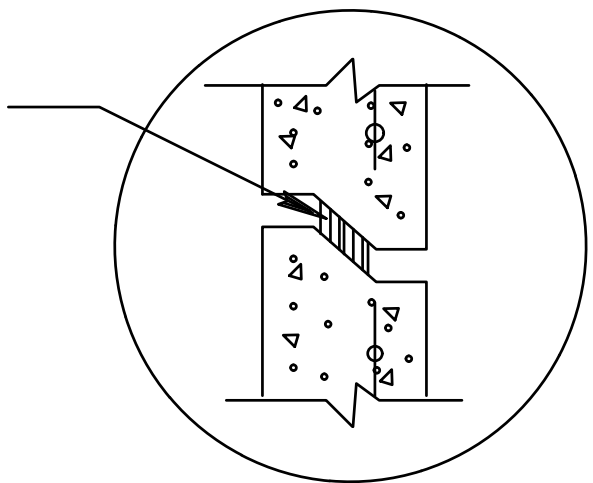
PIPE MATRIX

	MAXIMUM INSIDE PIPE DIAMETER	
INLET SIZE	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18

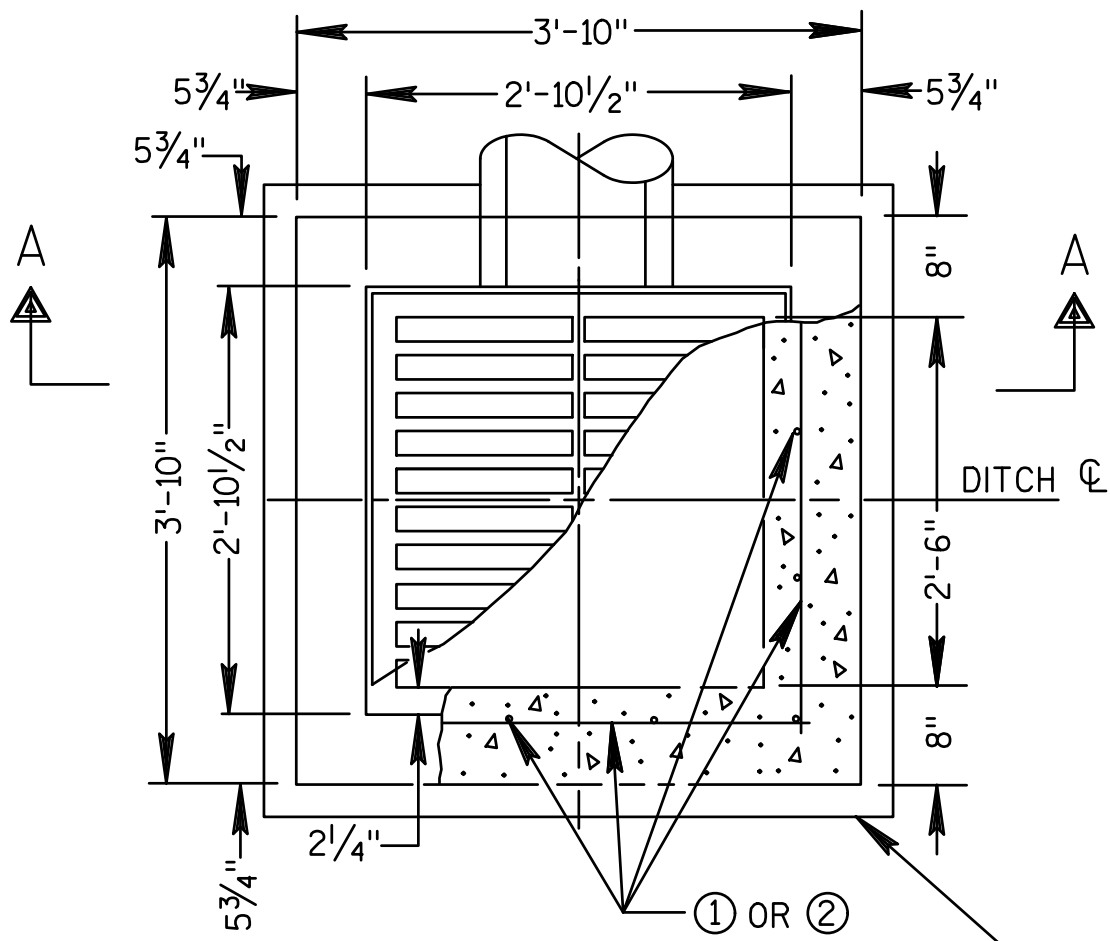


DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)

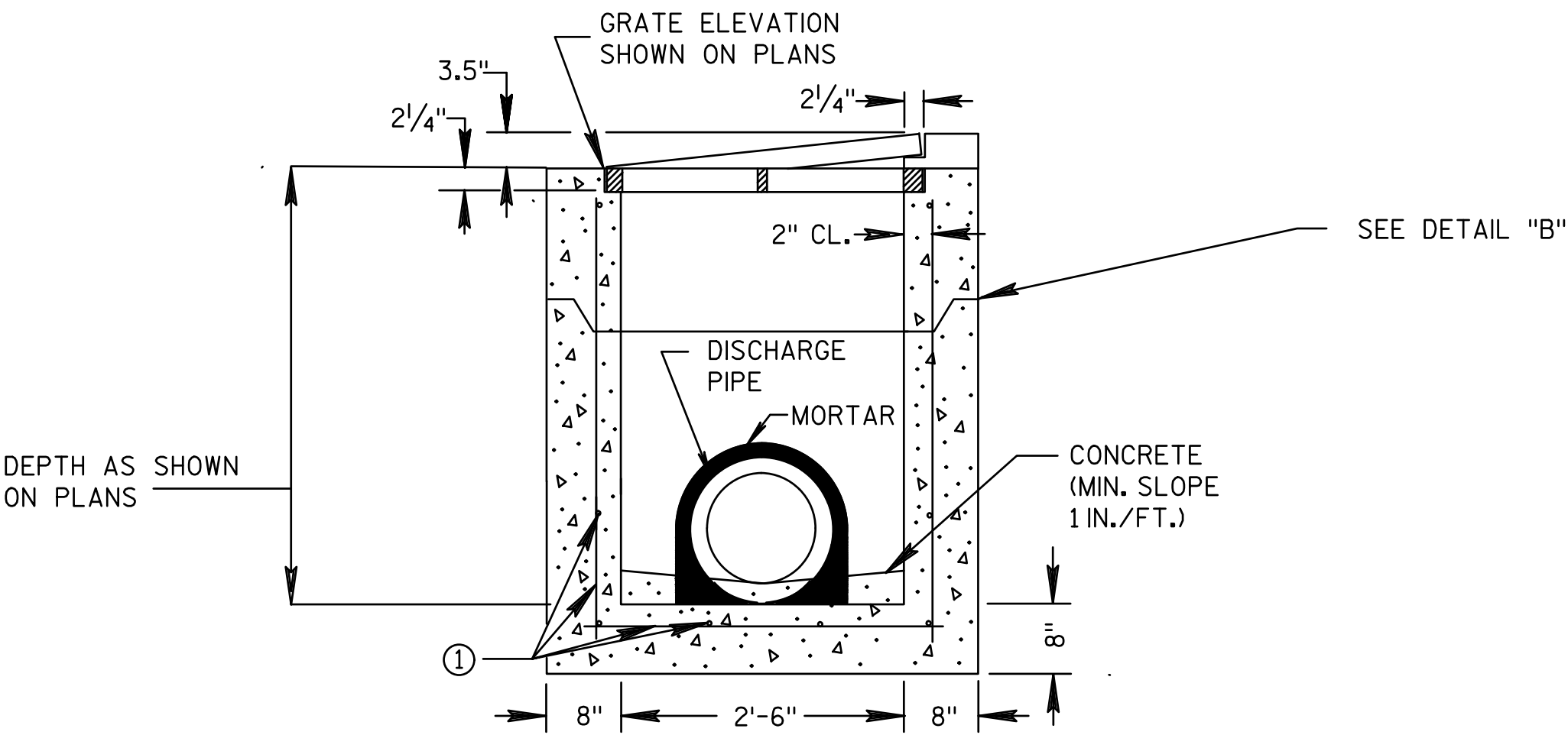


DETAIL "B"

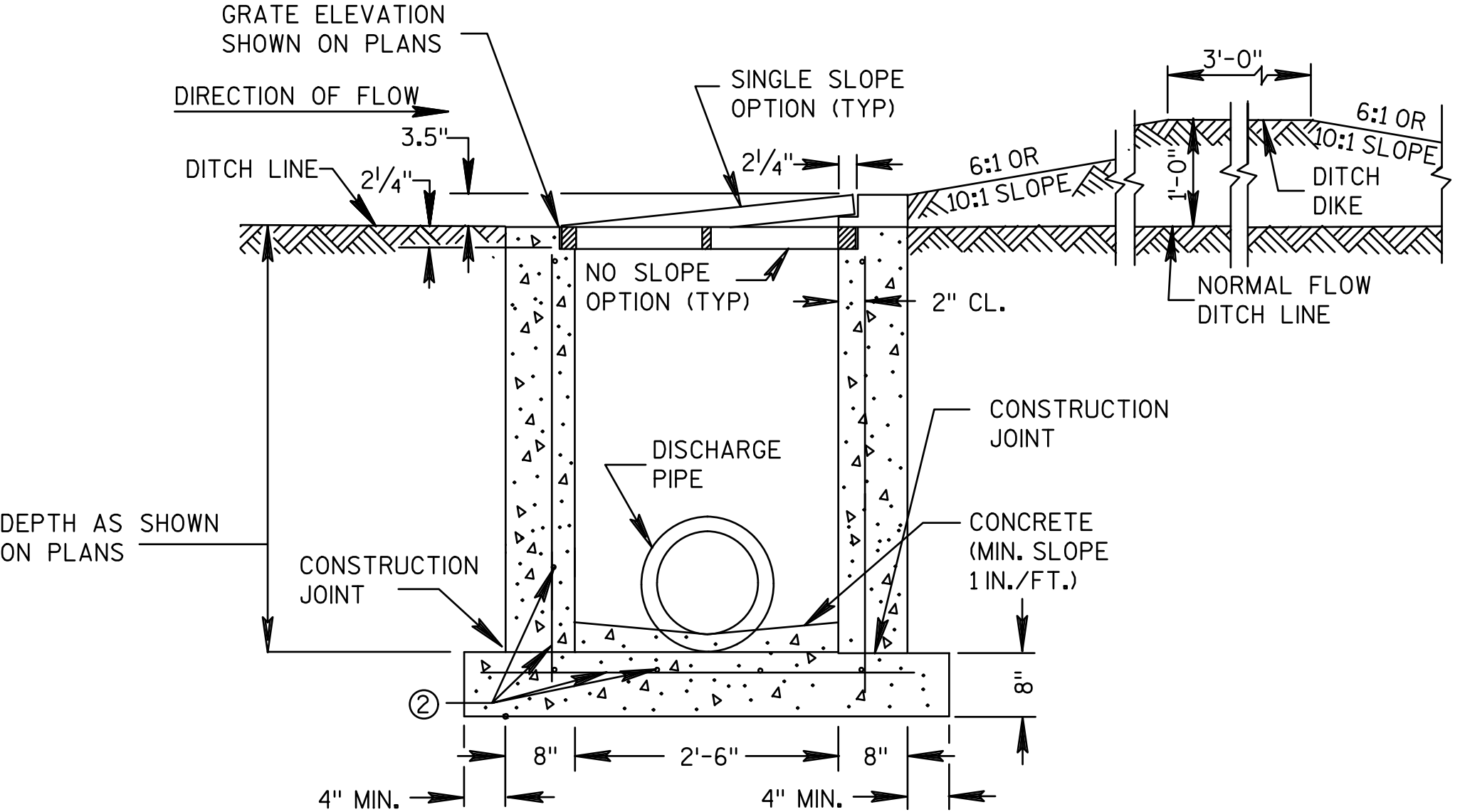


PLAN VIEW

4" OVERHANGING BASE ON REINFORCE
CAST-IN-PLACE CONCRETE INLETS



PRECAST REINFORCED CONCRETE
SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE
SECTION A-A

INLETS MEDIAN 1 GRATE

DESCRIPTION

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CONSTRUCTION DETAILS
INLETS MEDIAN 1 GRATE

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INLETS MEDIAN 3 GRATE

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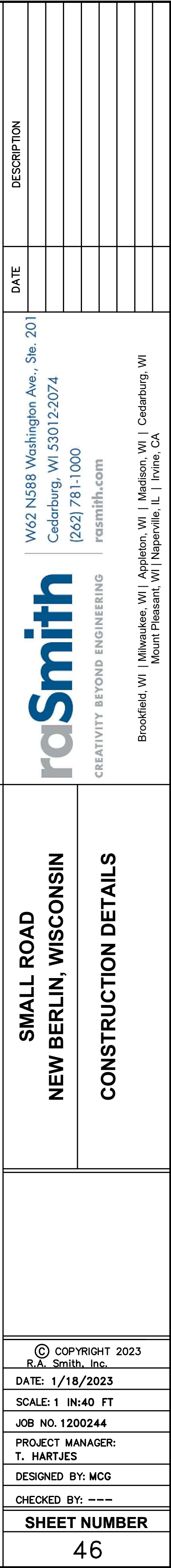
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CONSTRUCTION DETAILS INLETS MEDIAN 3 GRATE



45





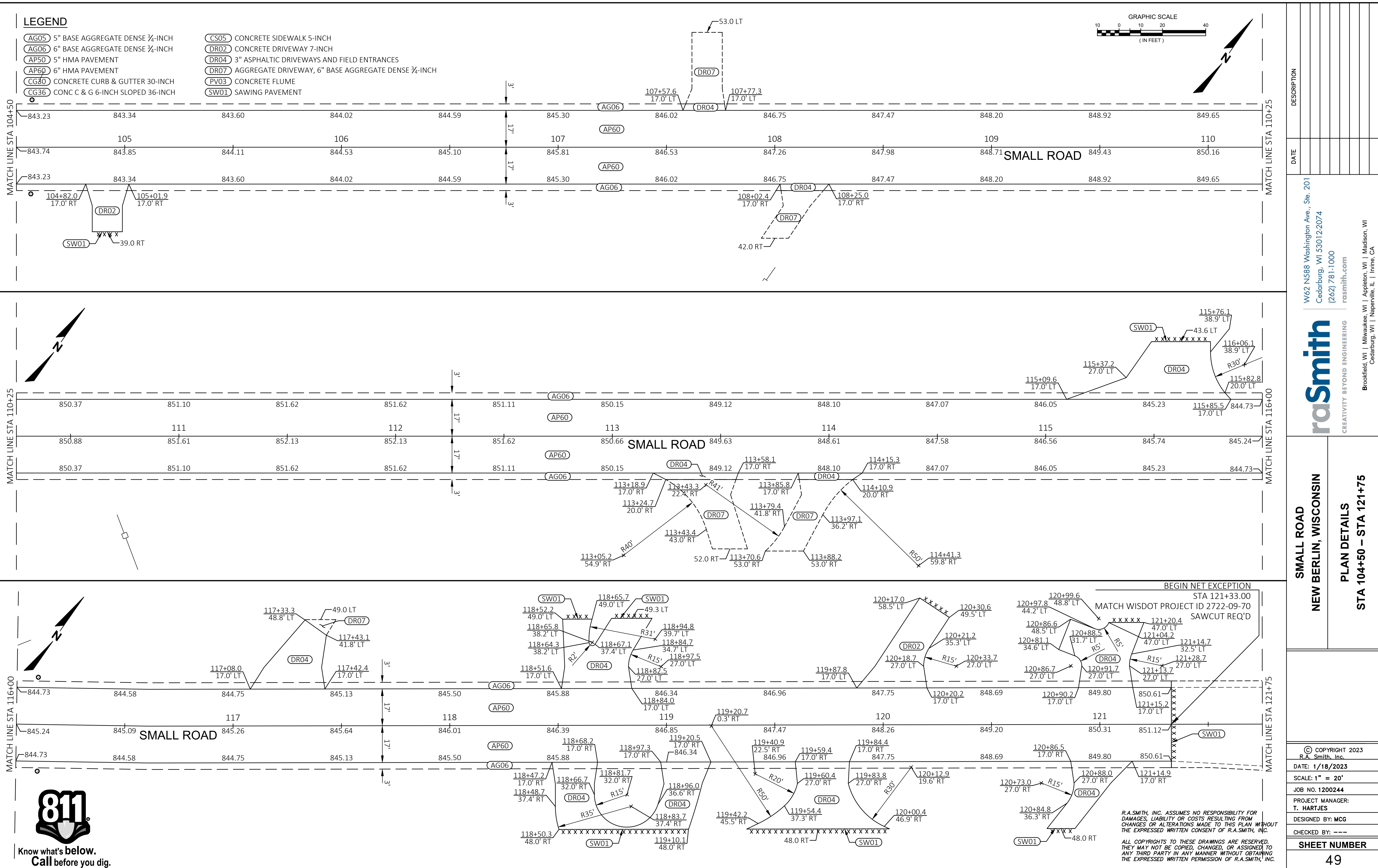
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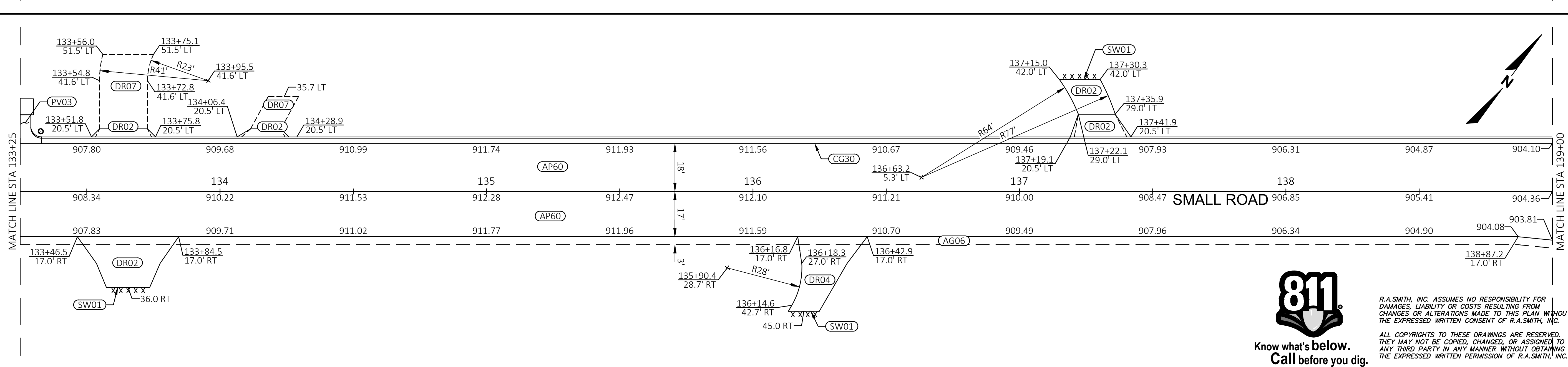
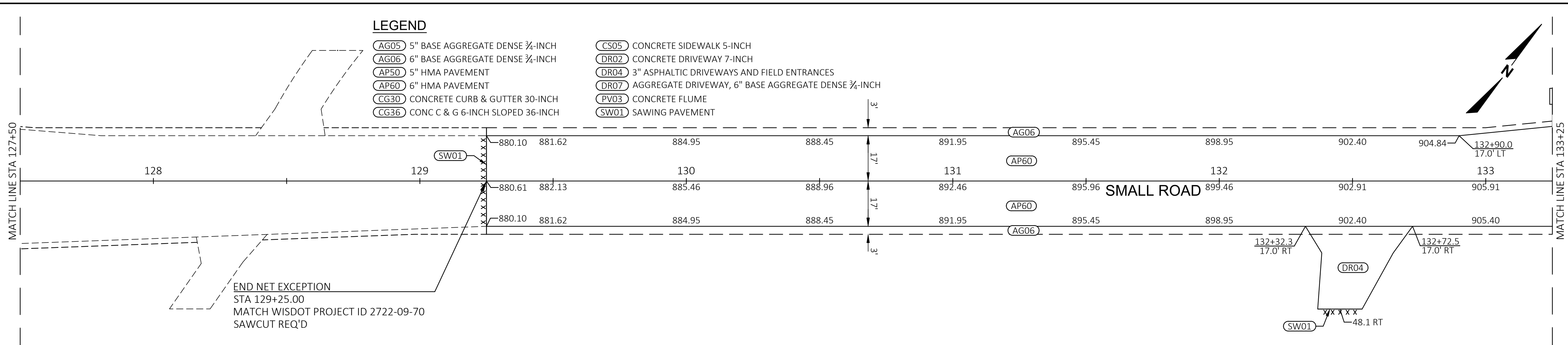
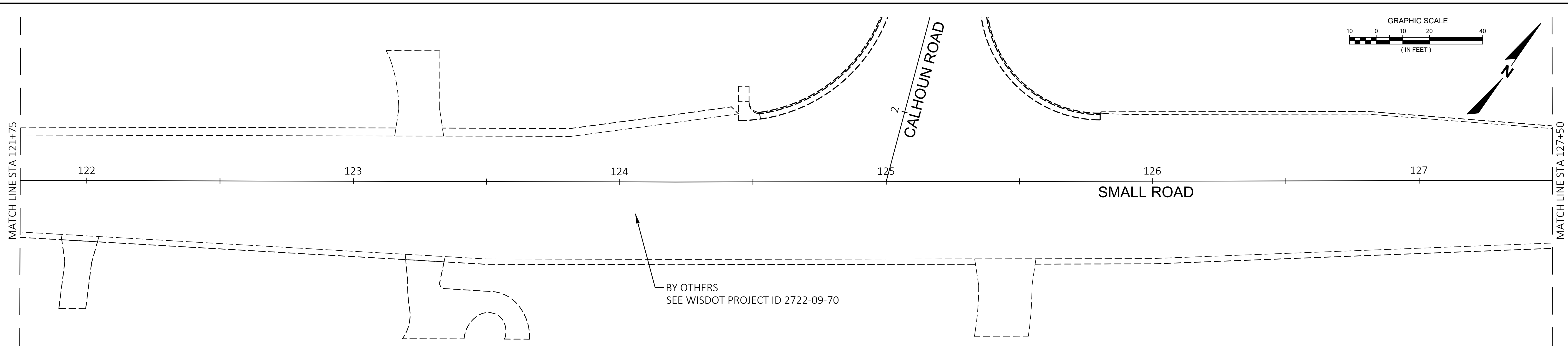
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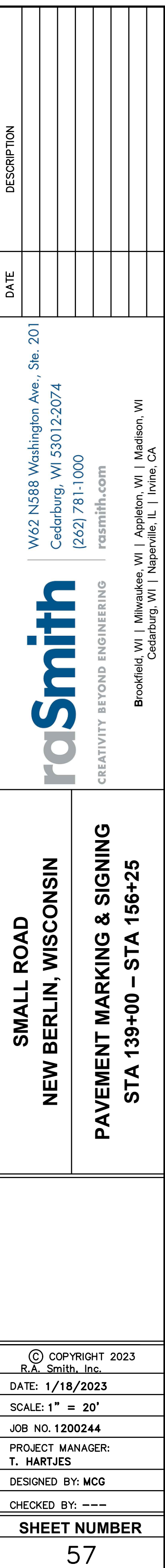
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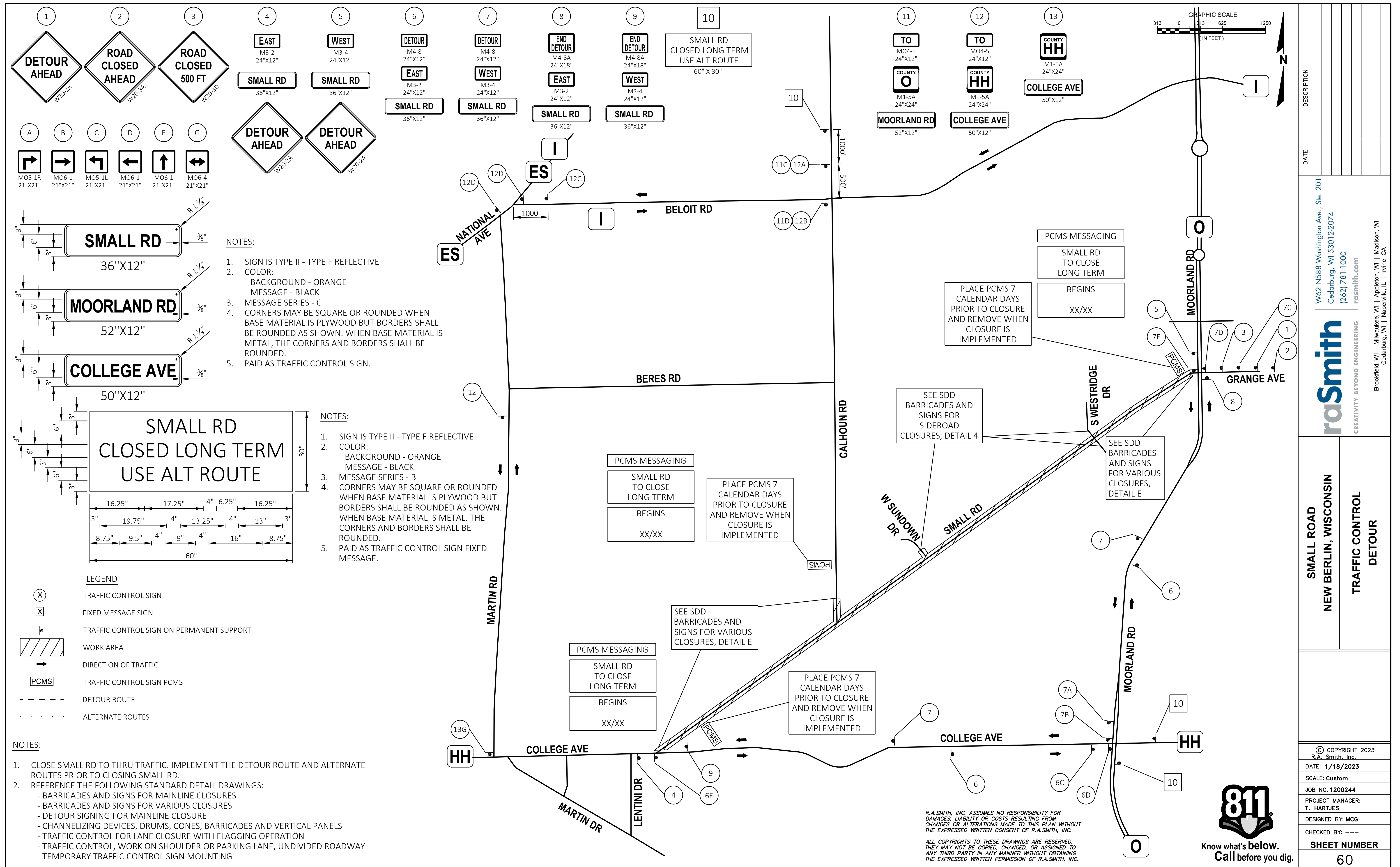
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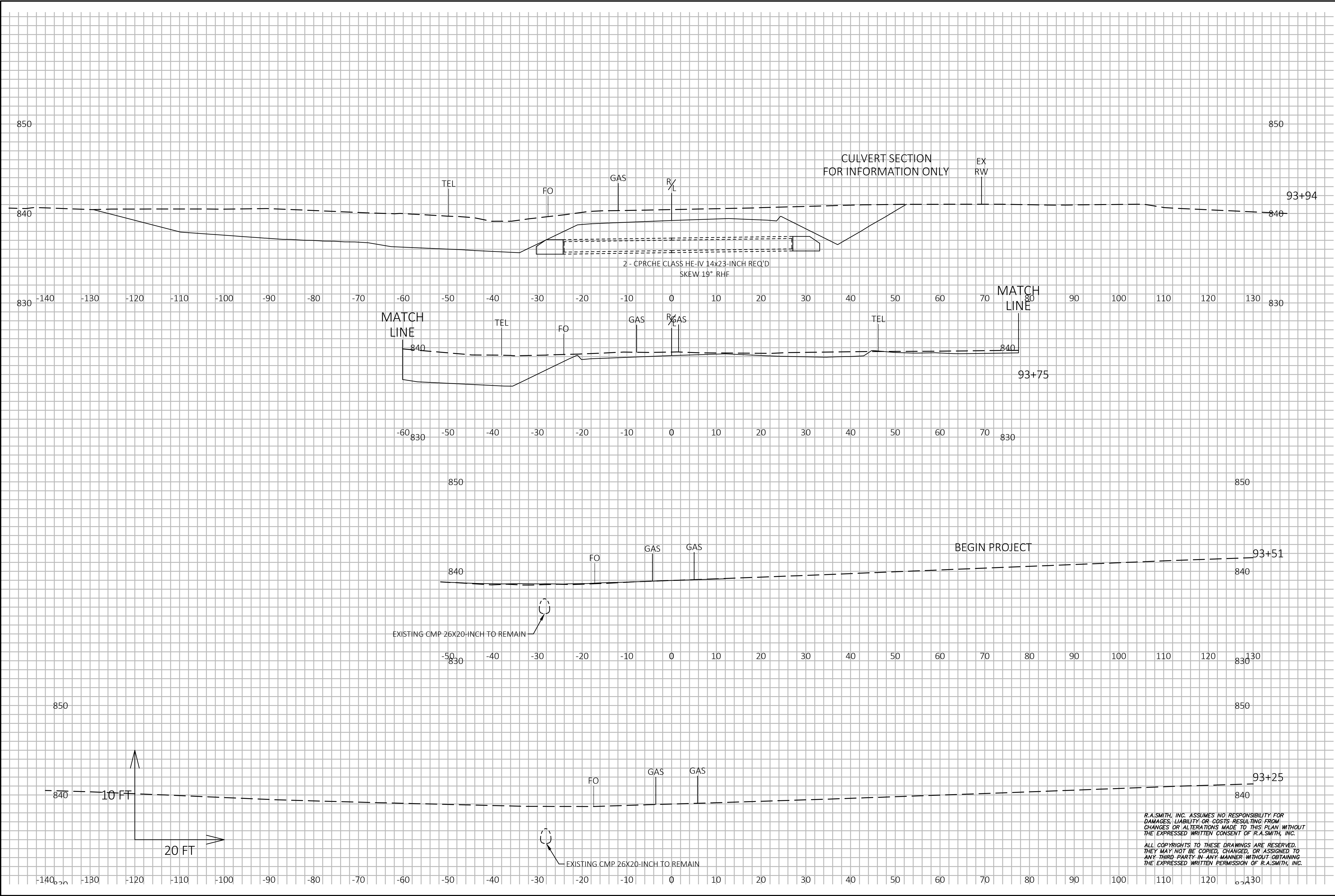


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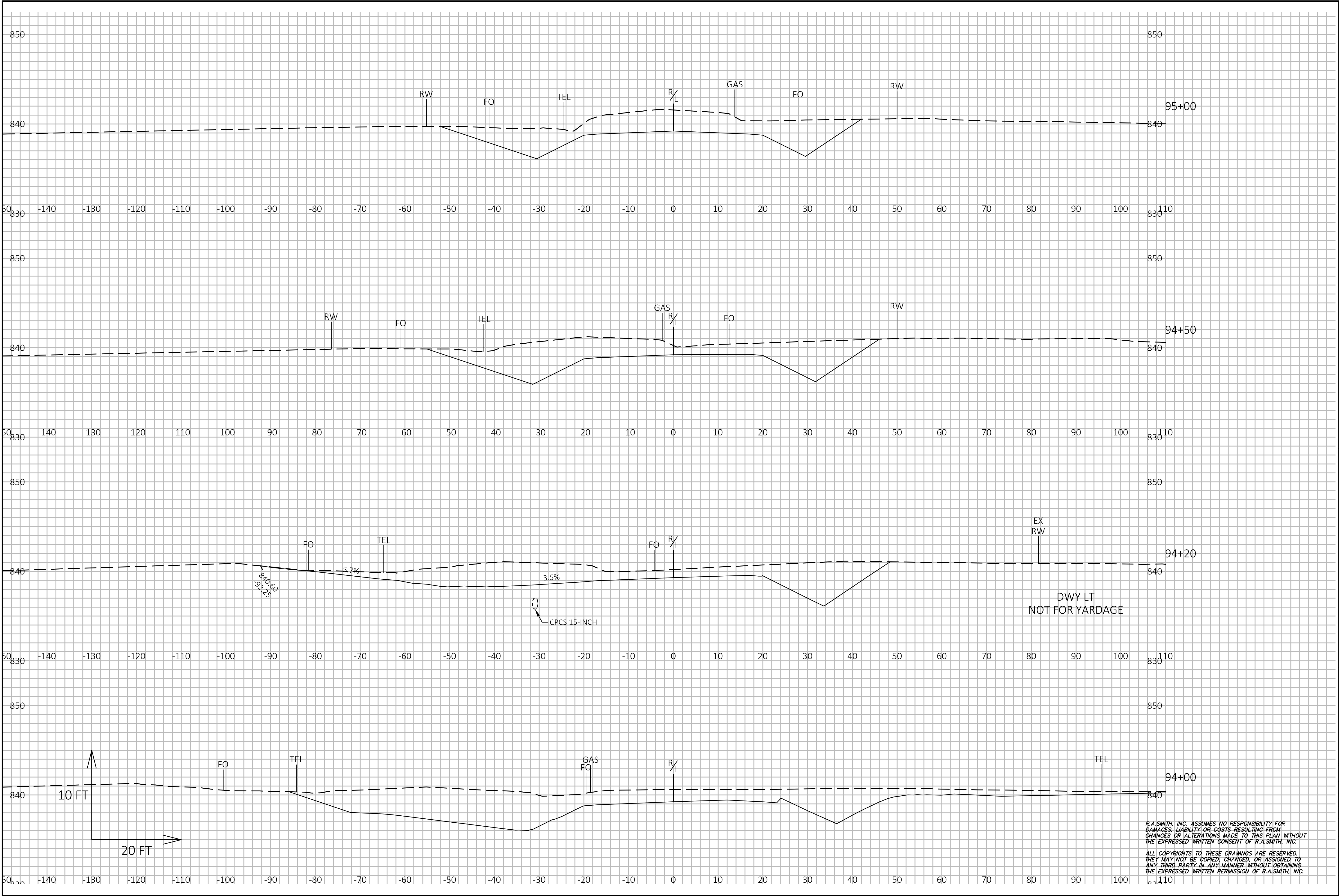




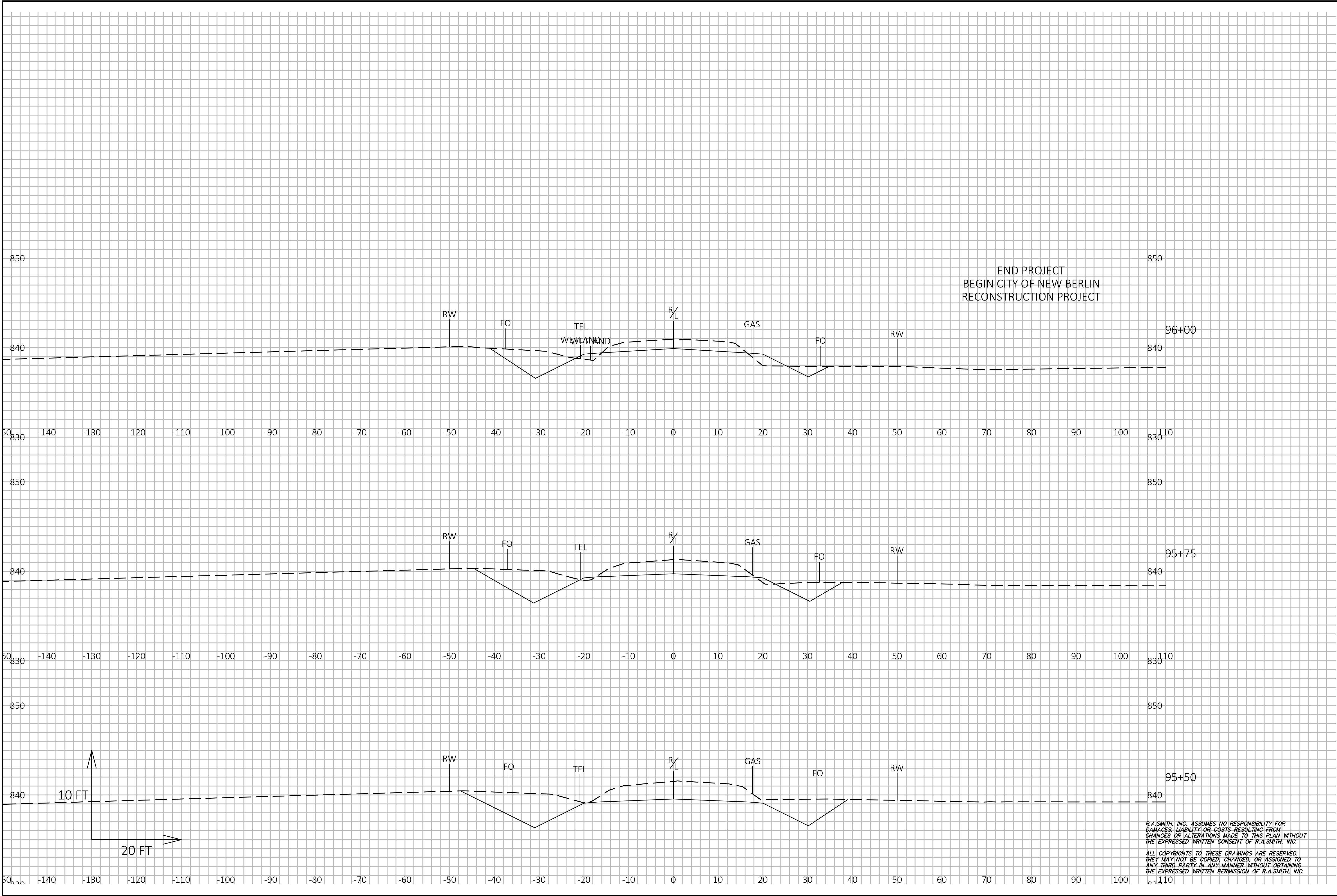
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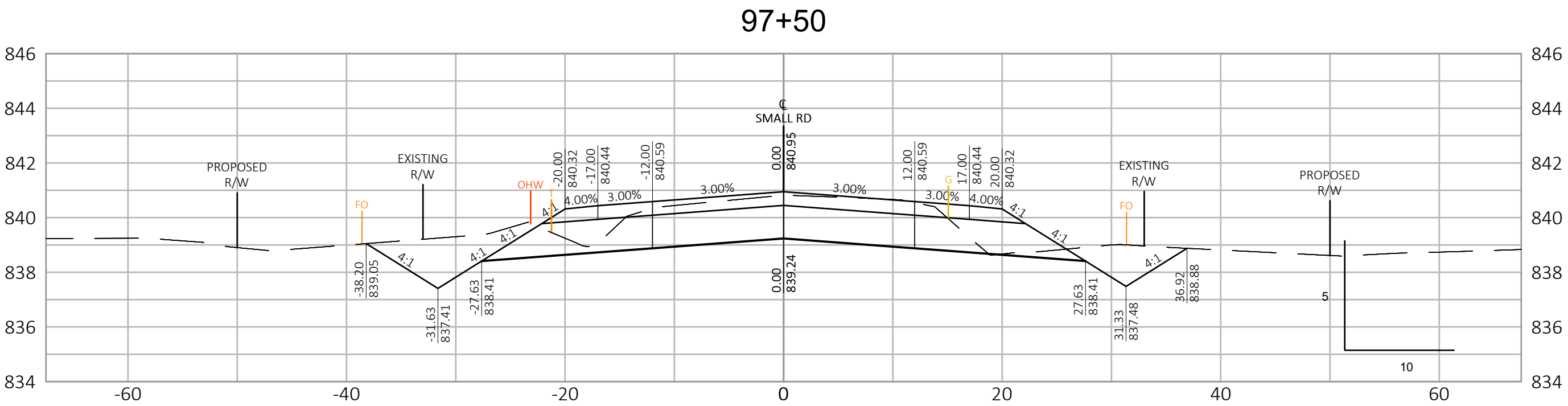
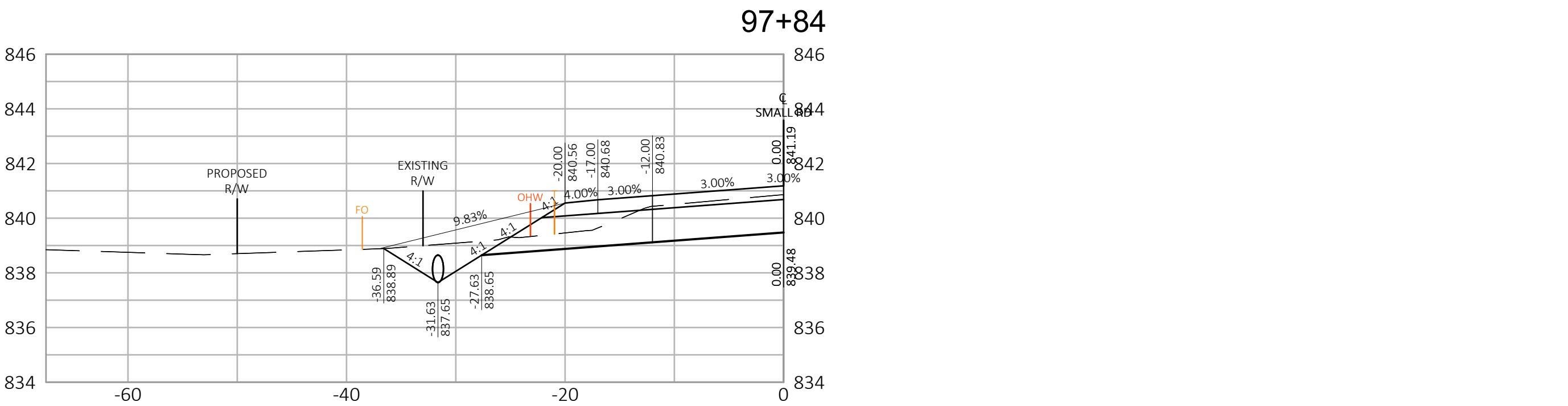
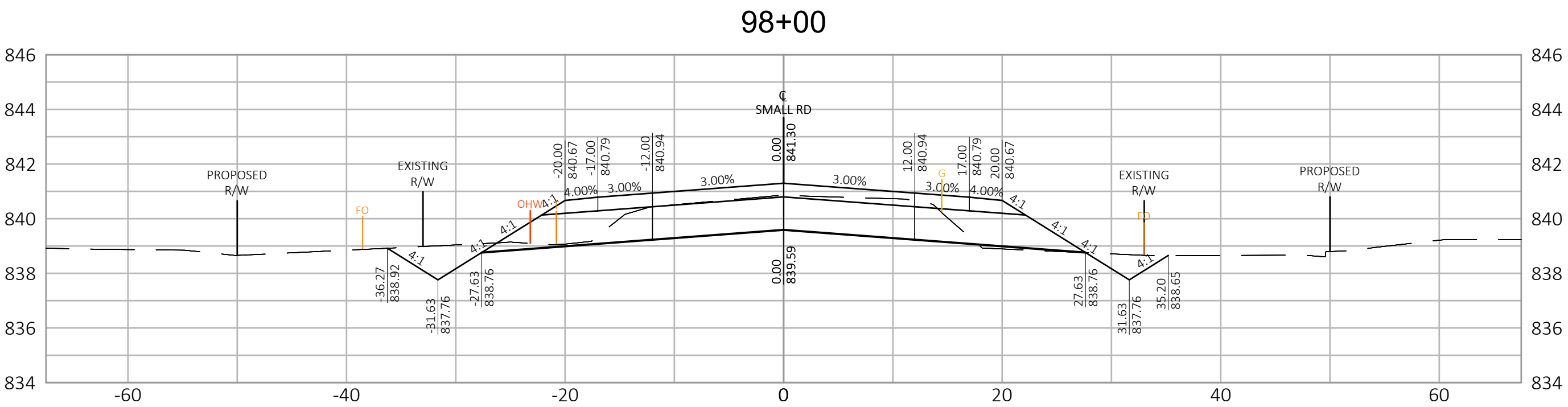
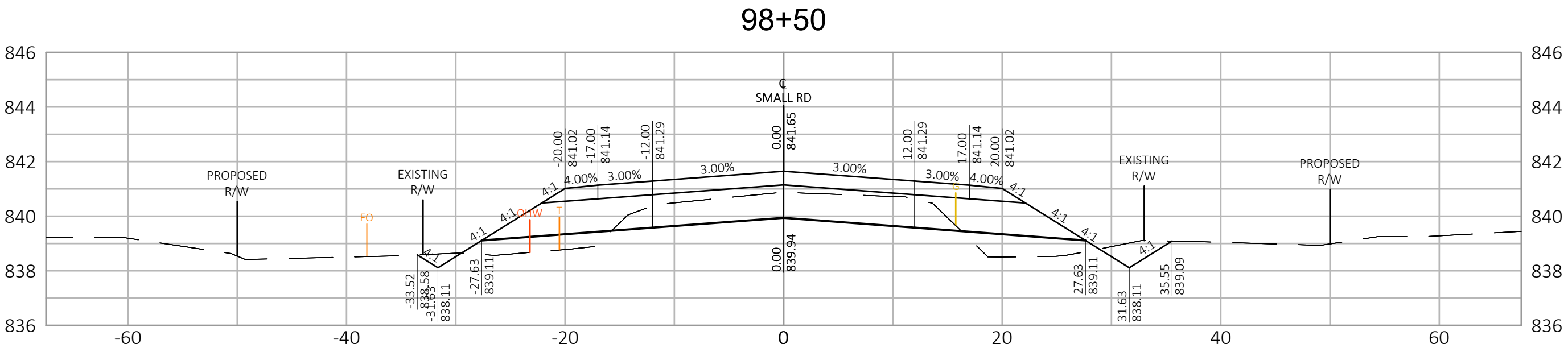
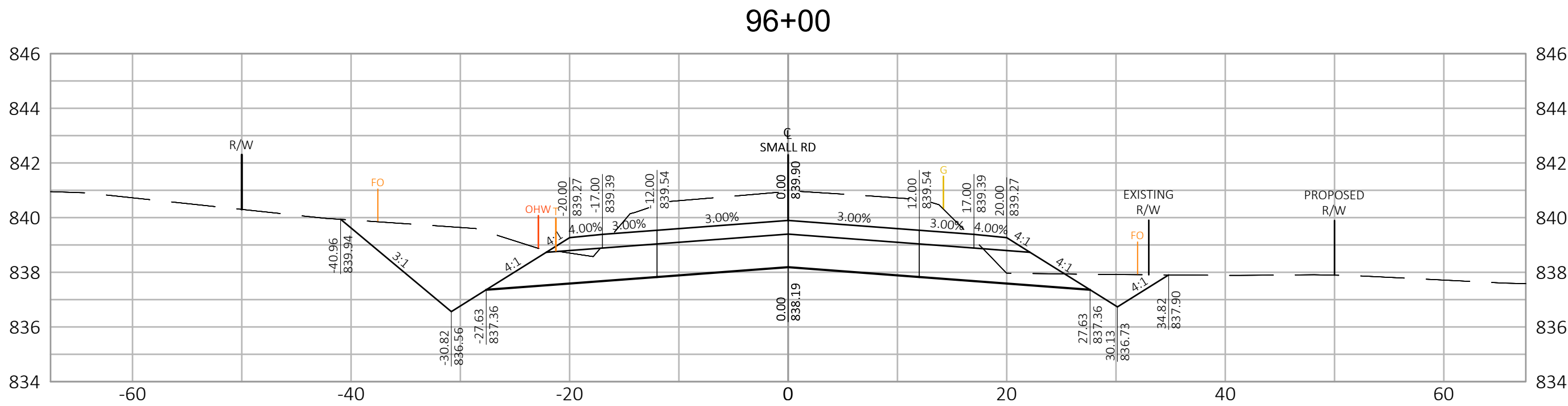
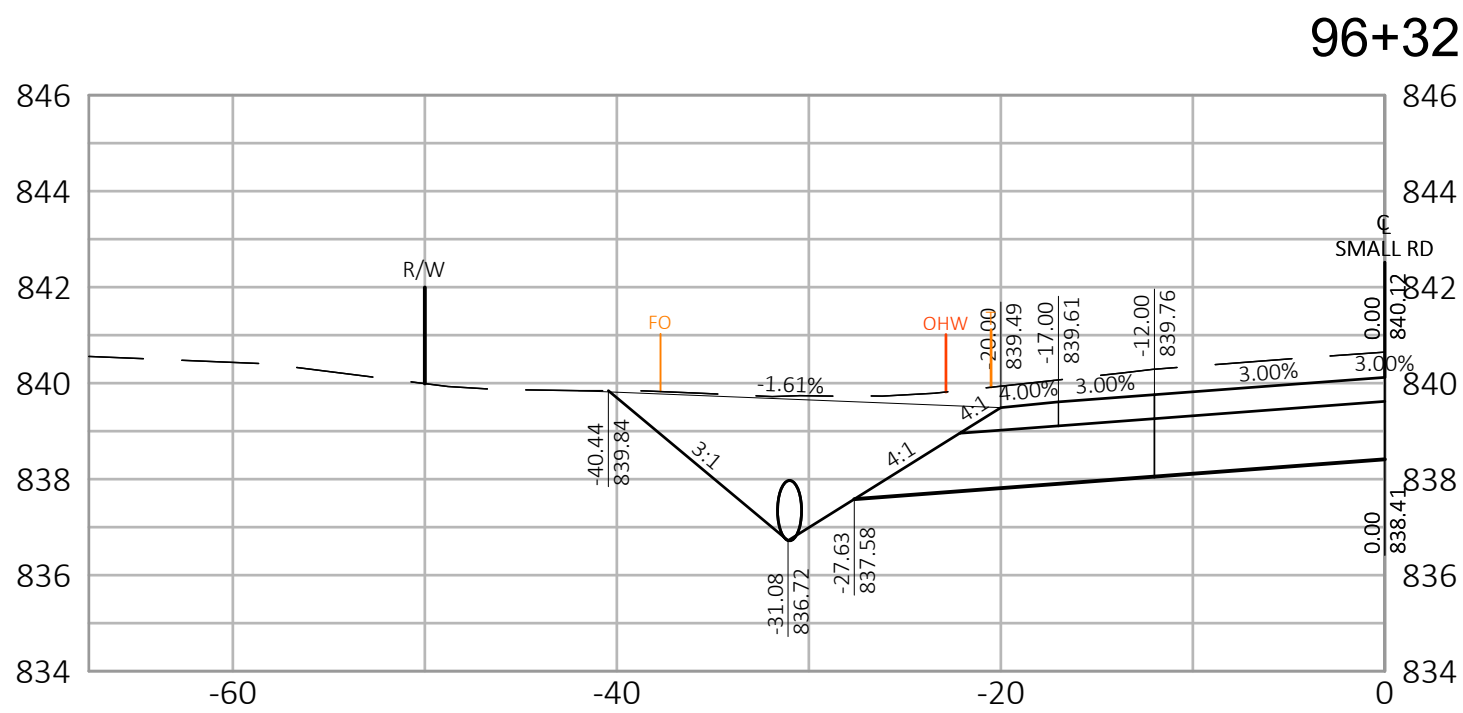
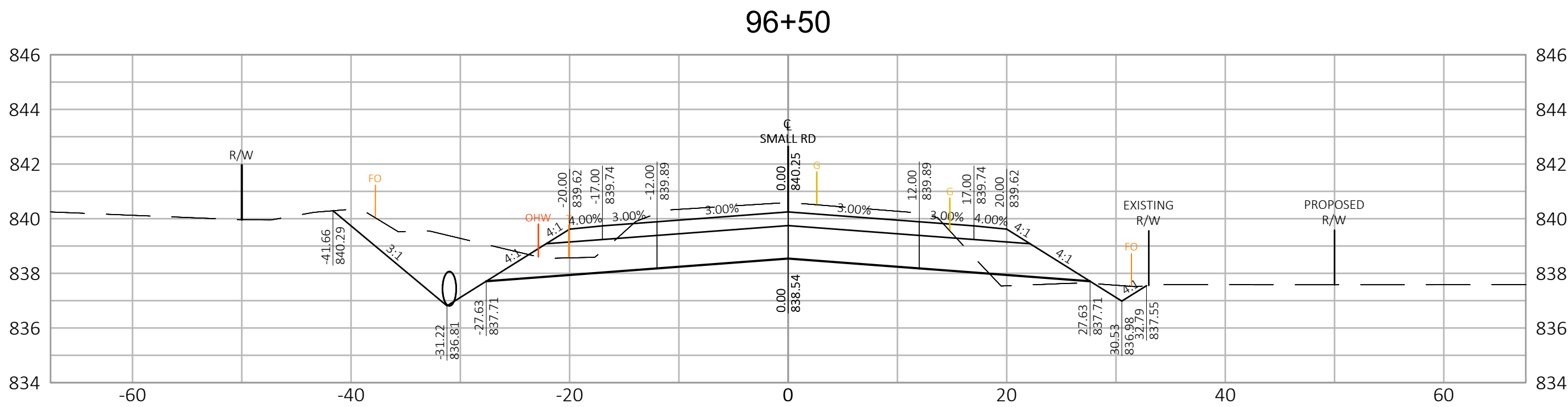
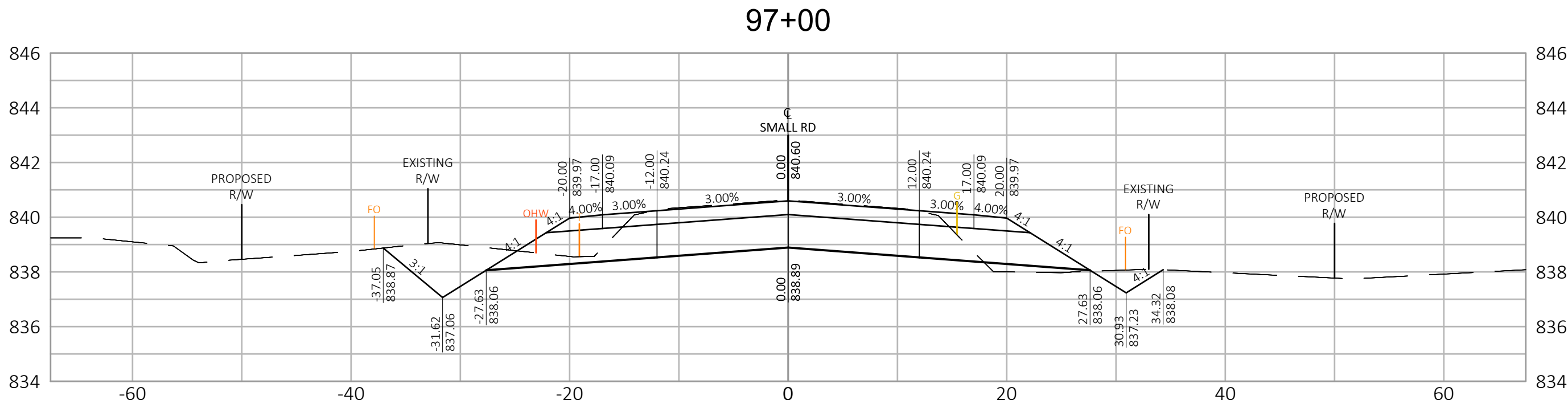


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						SCALE: 1 IN:20 FT	
						JOB NO. 1200244	
						PROJECT MANAGER: T. HARTJES	
						DESIGNED BY: MCG	
						CHECKED BY: ---	
						SHEET NUMBER	
						62	



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DATE	
W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com	
raSmith CREATIVITY BEYOND ENGINEERING	
Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Mount Pleasant, WI Naperville, IL Irvine, CA	
SMALL ROAD NEW BERLIN, WISCONSIN	
SMALL ROAD	
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SCALE: 1 IN=20 FT	
JOB NO. 1200244	
PROJECT MANAGER: T. HARTJES	
DESIGNED BY: MCG	
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SHEET NUMBER	
63	

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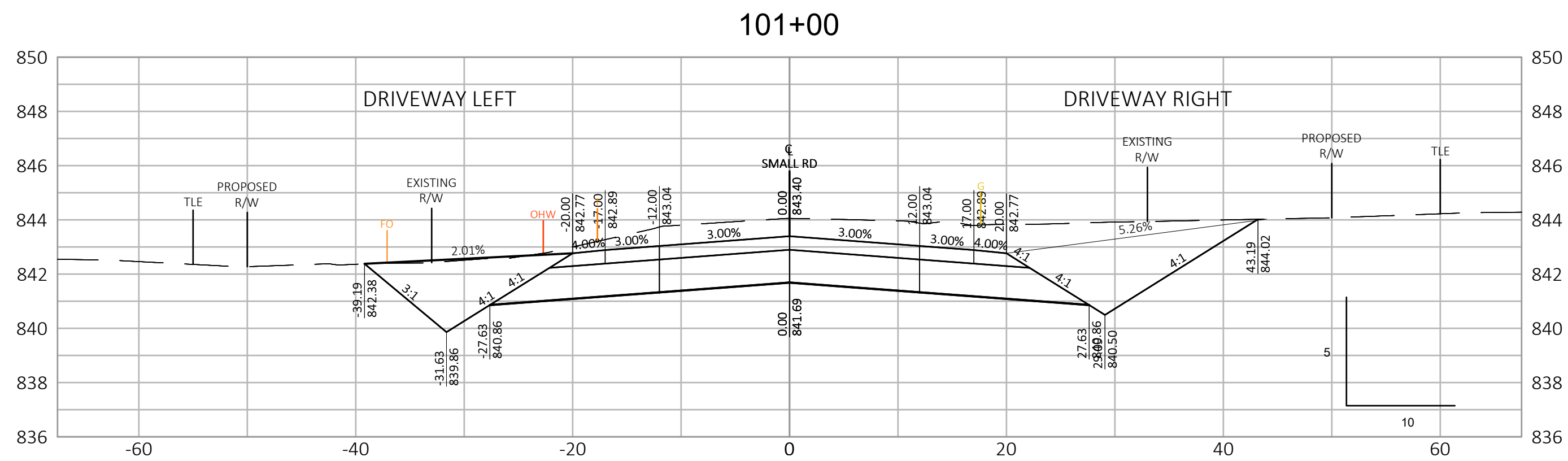
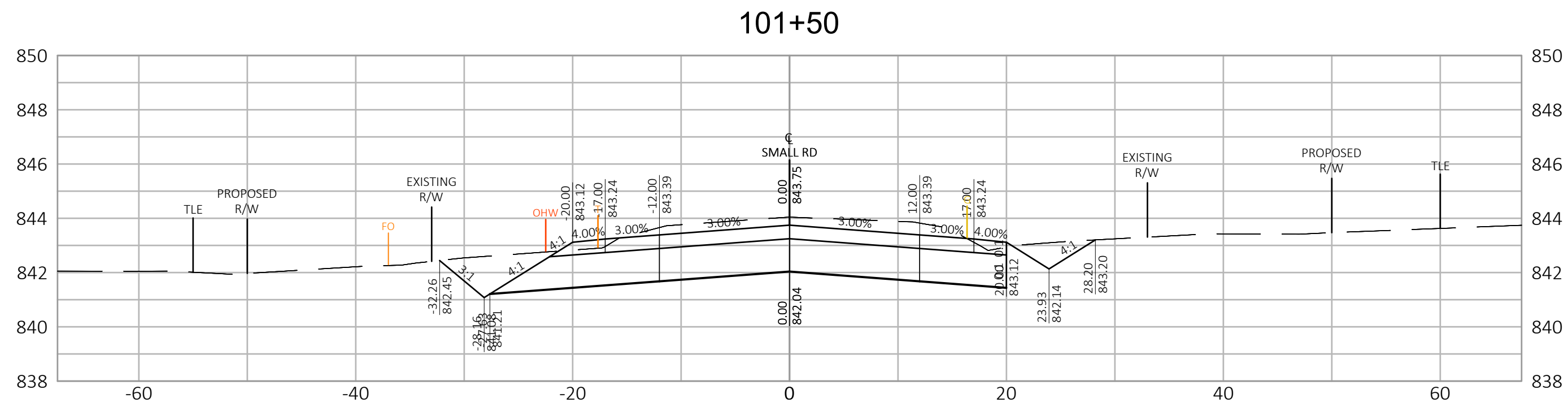
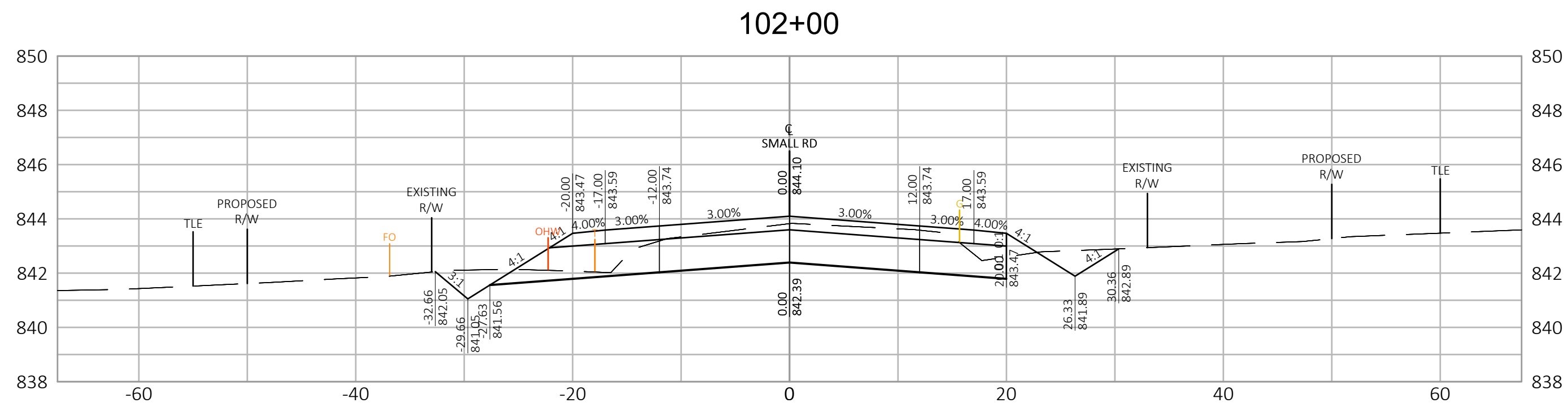
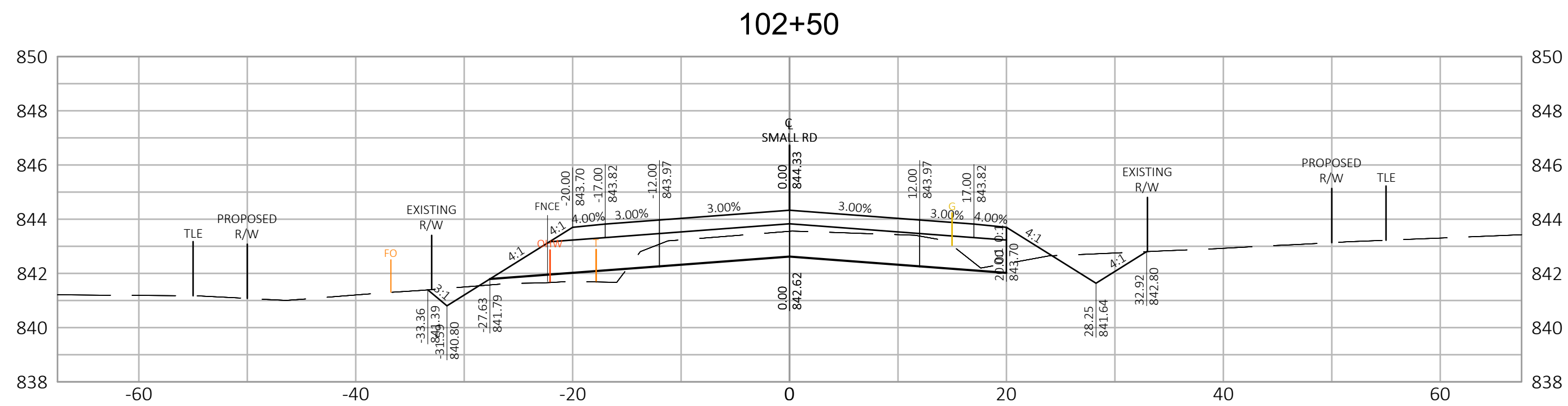
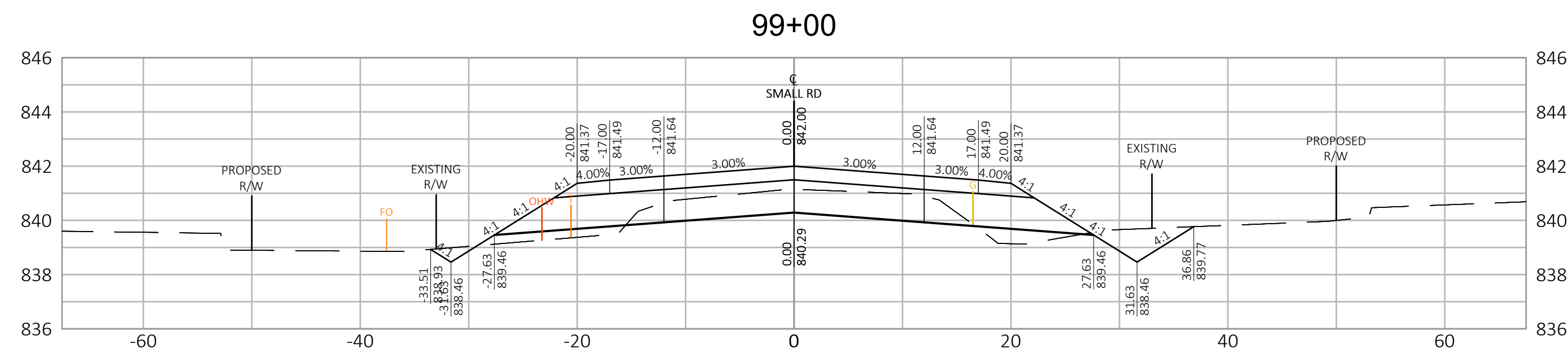
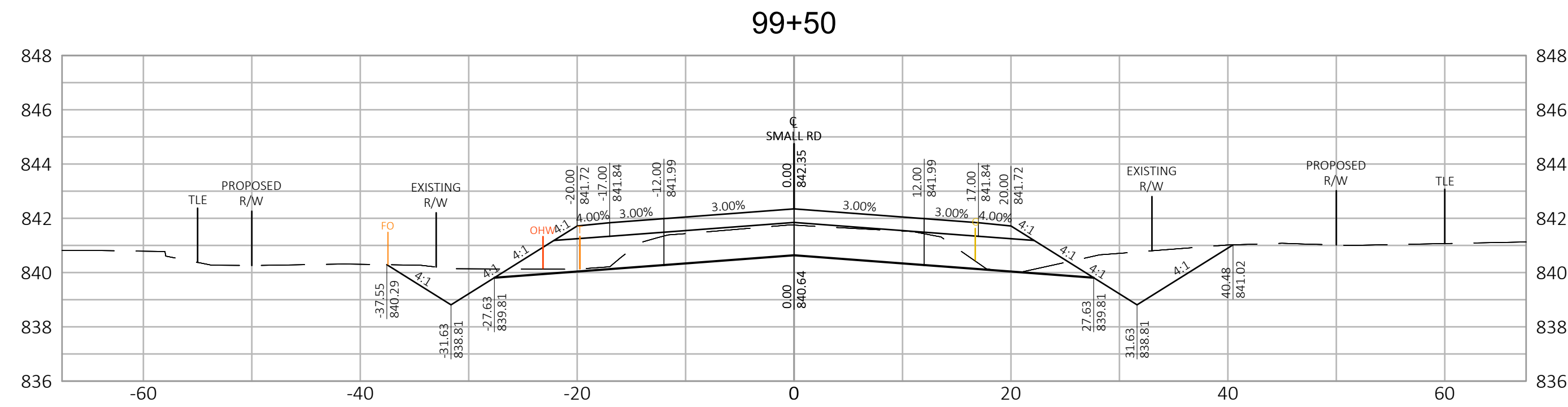
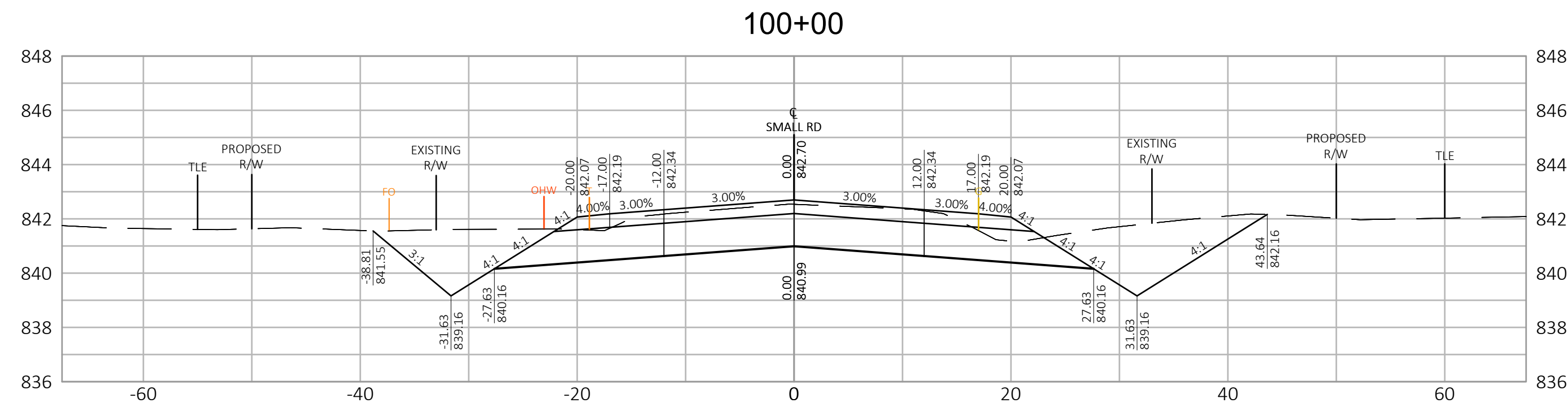
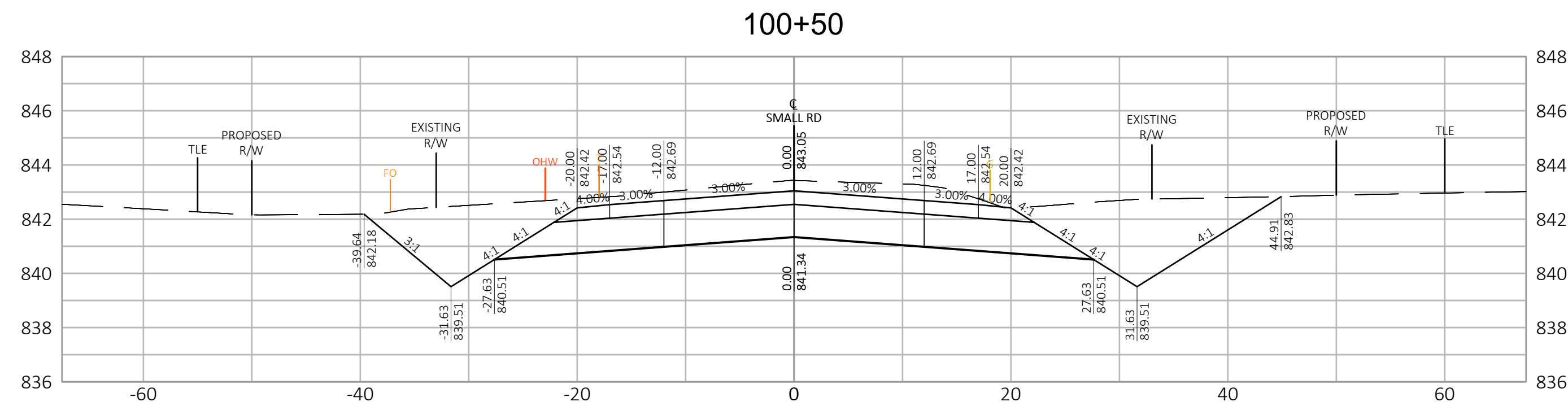
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SMALL ROAD
NEW BERLIN, WISCONSIN

CROSS SECTIONS
SMALL ROAD

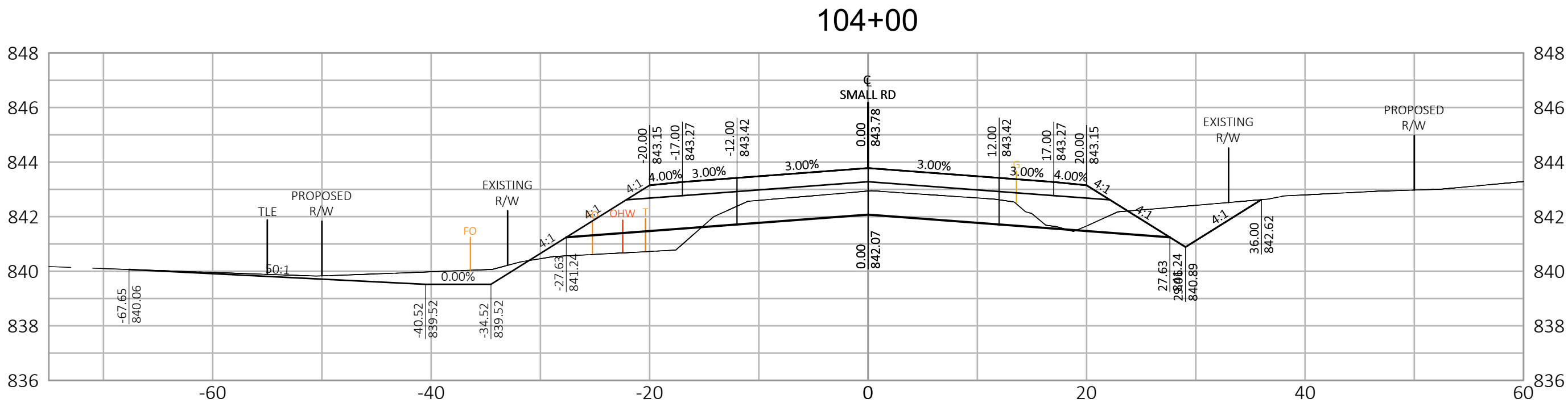
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DATE: 1/18/2023
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JOB NO. 1200244
PROJECT MANAGER: T. HARTJES
DESIGNED BY: MCG
CHECKED BY: ---
SHEET NUMBER 64

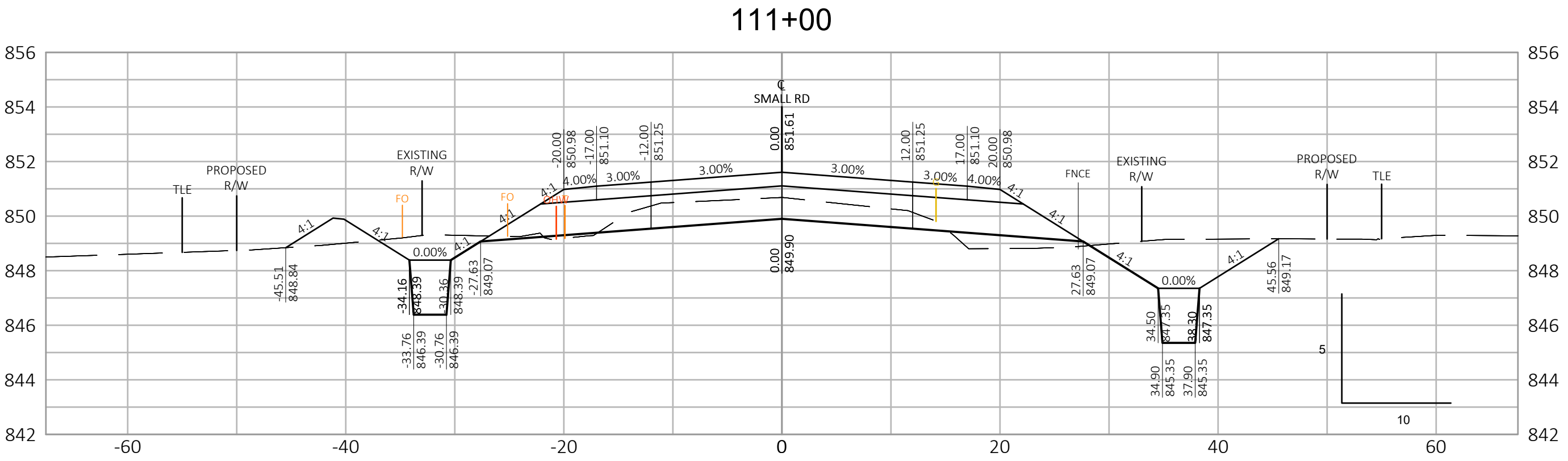
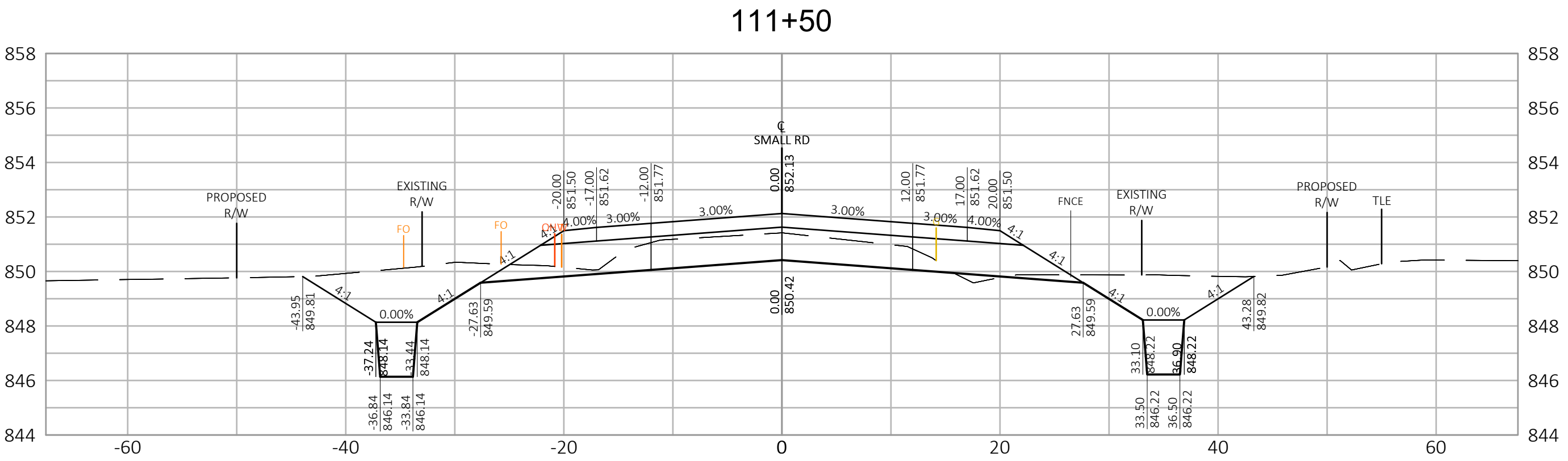
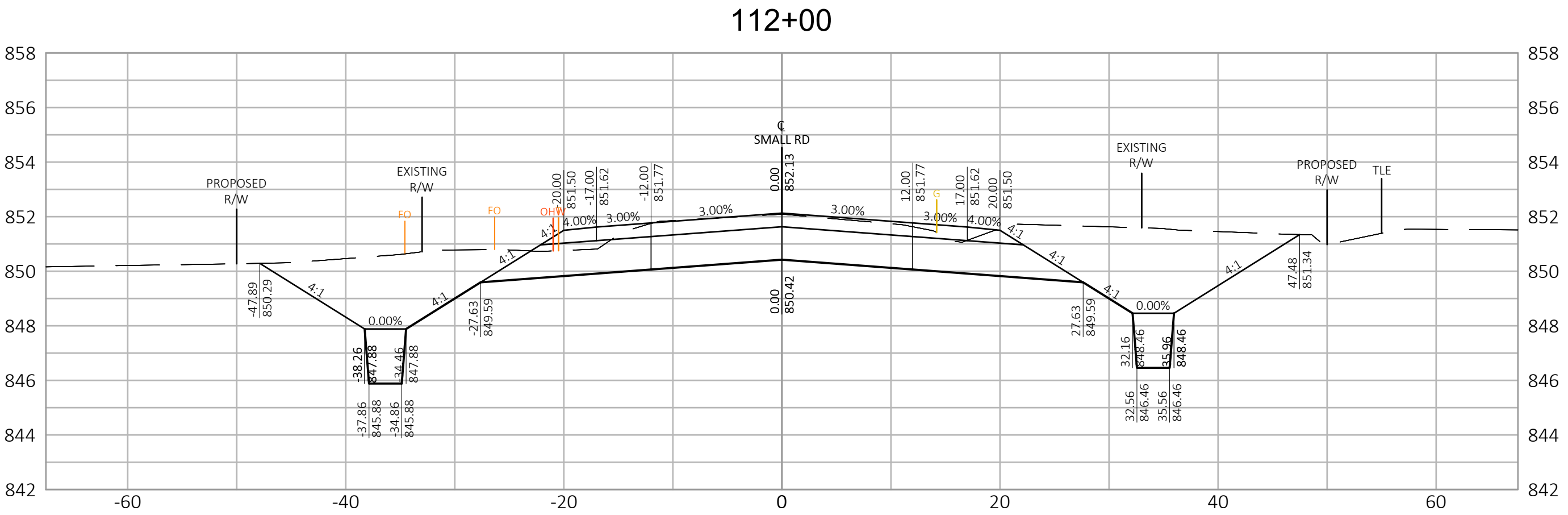
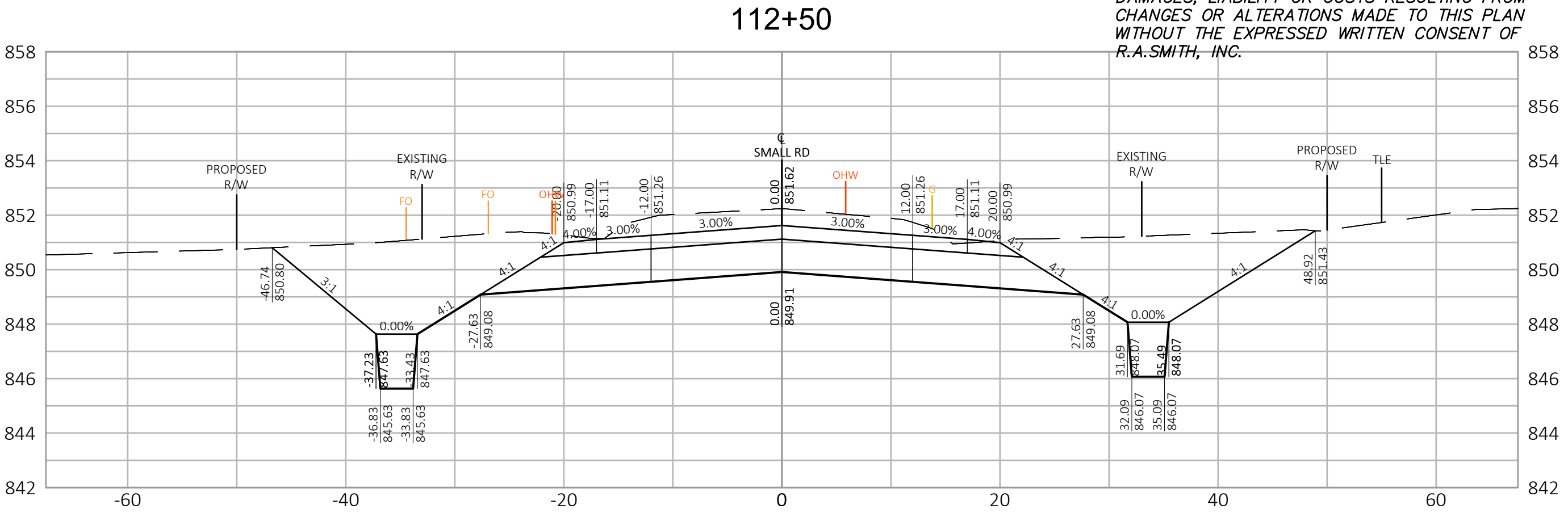
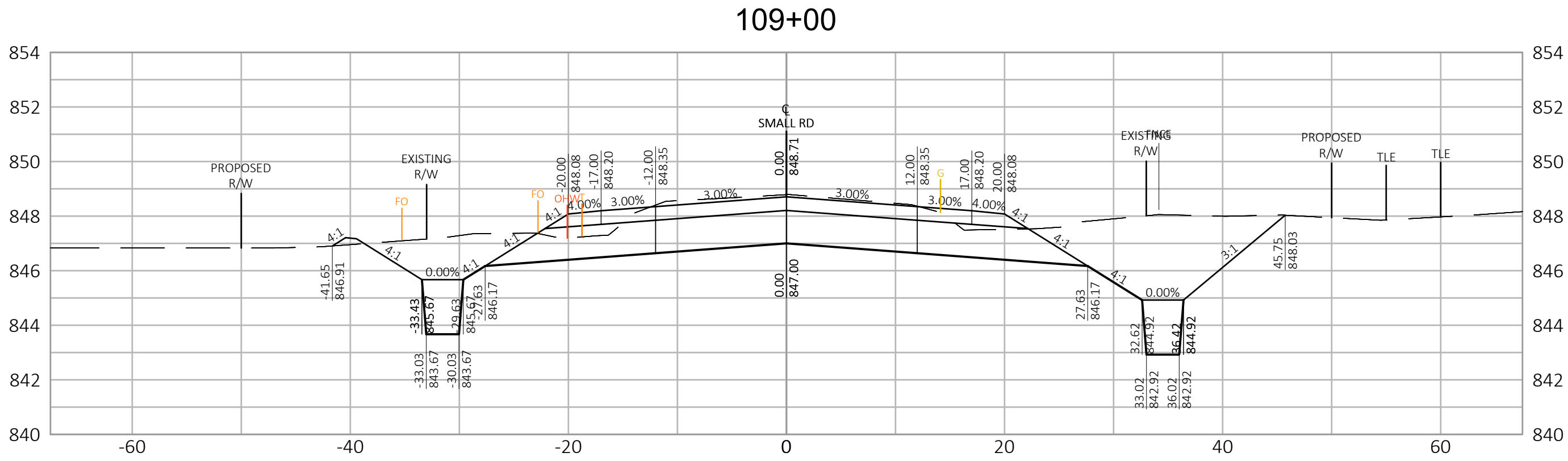
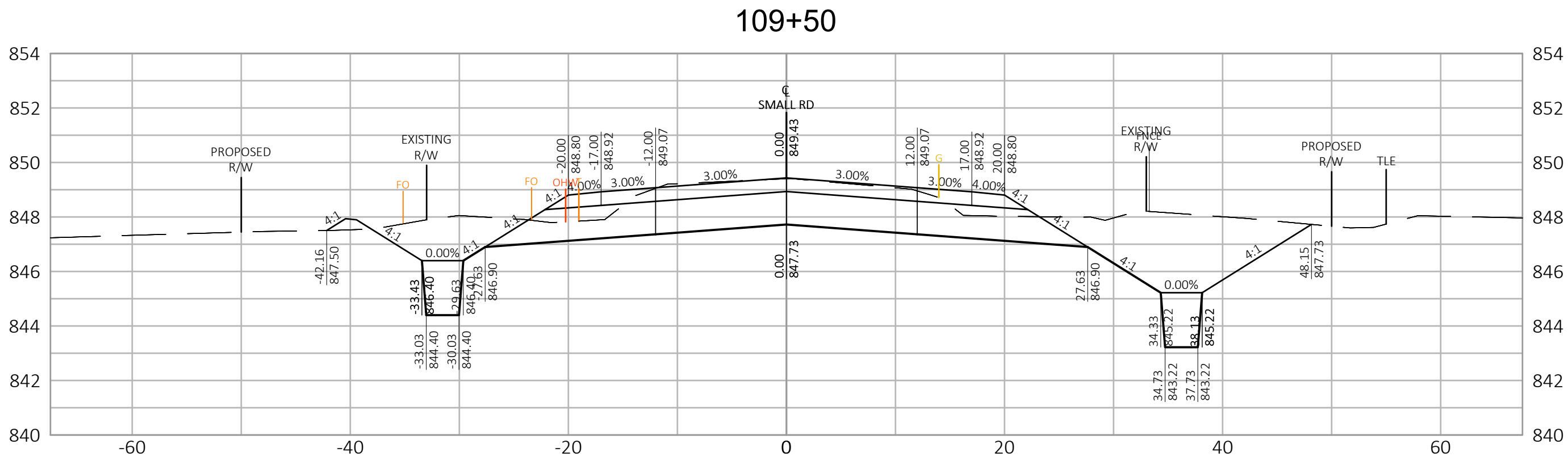
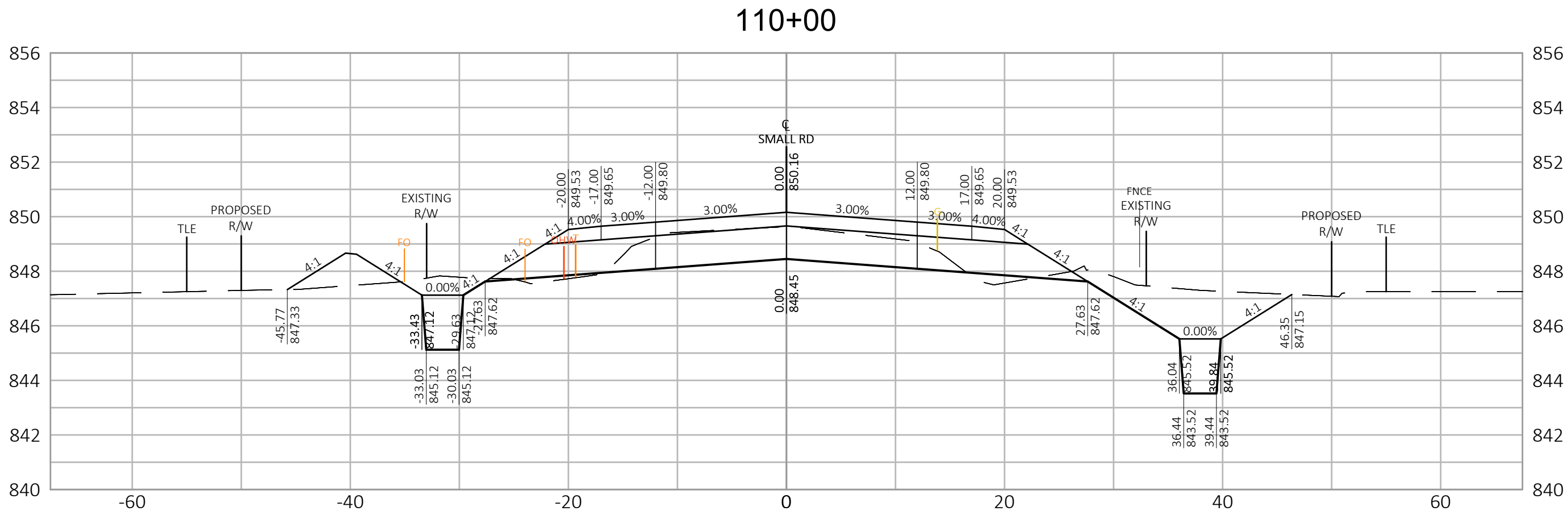
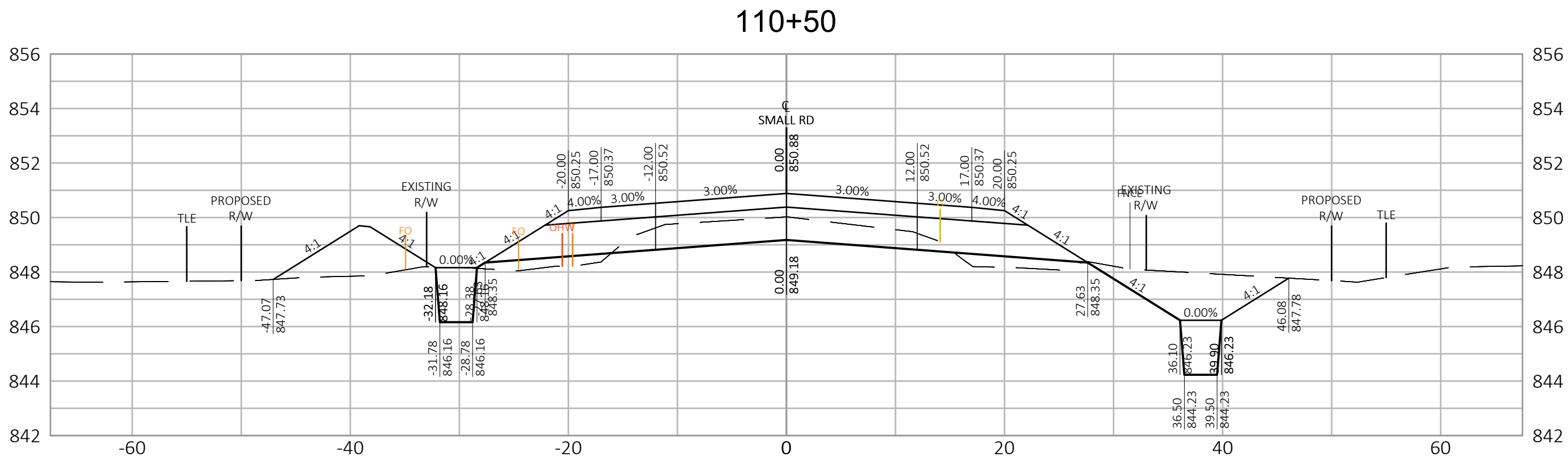


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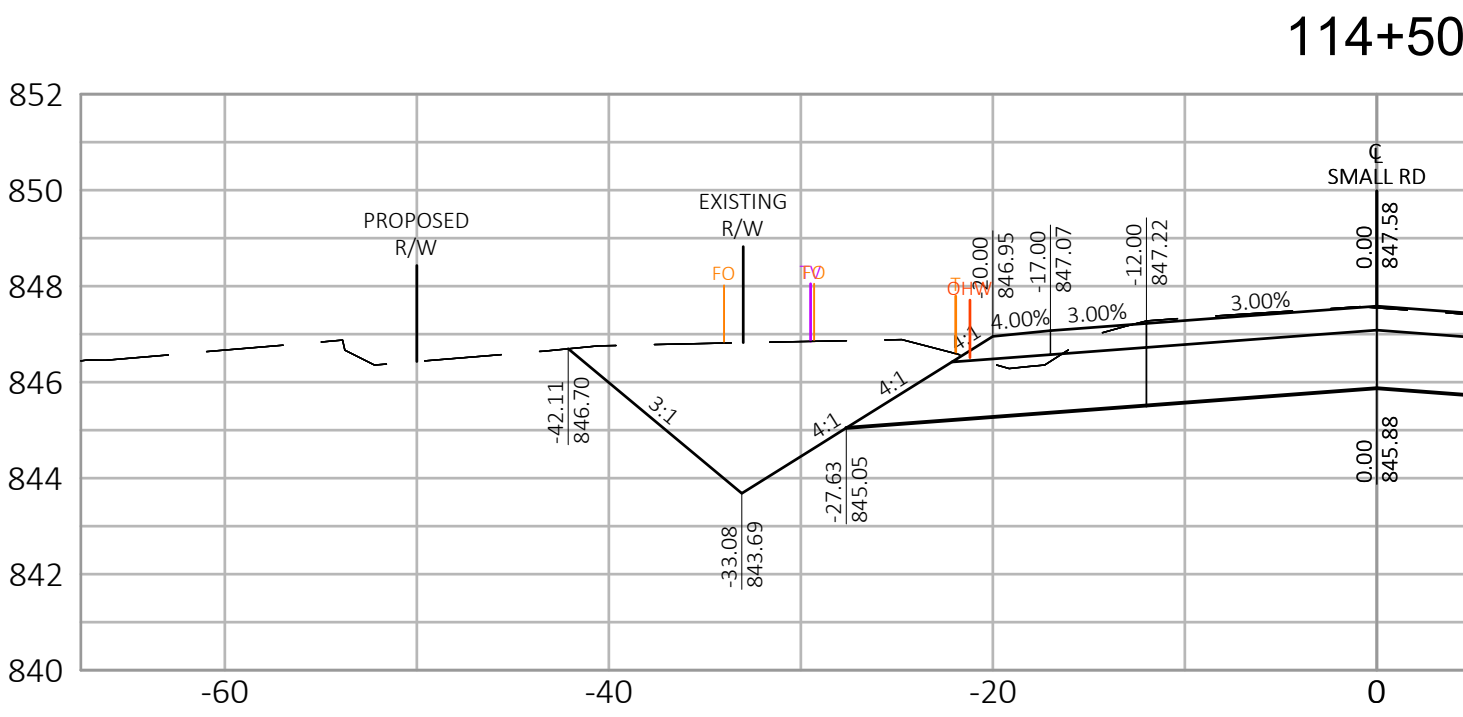
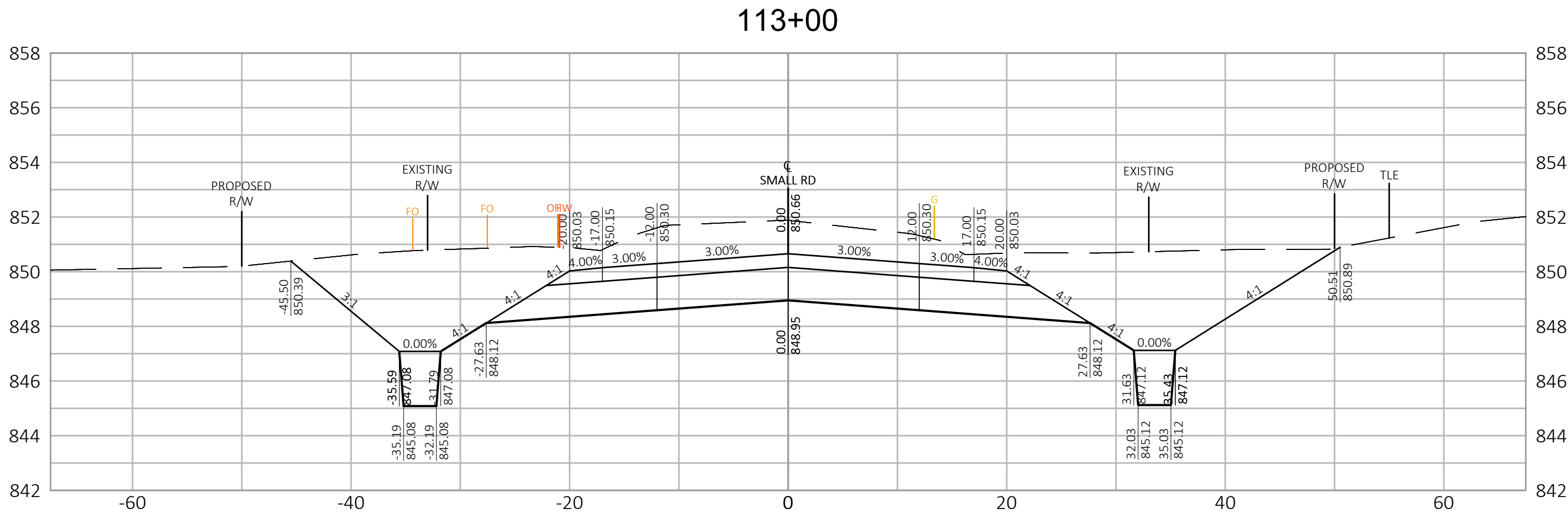
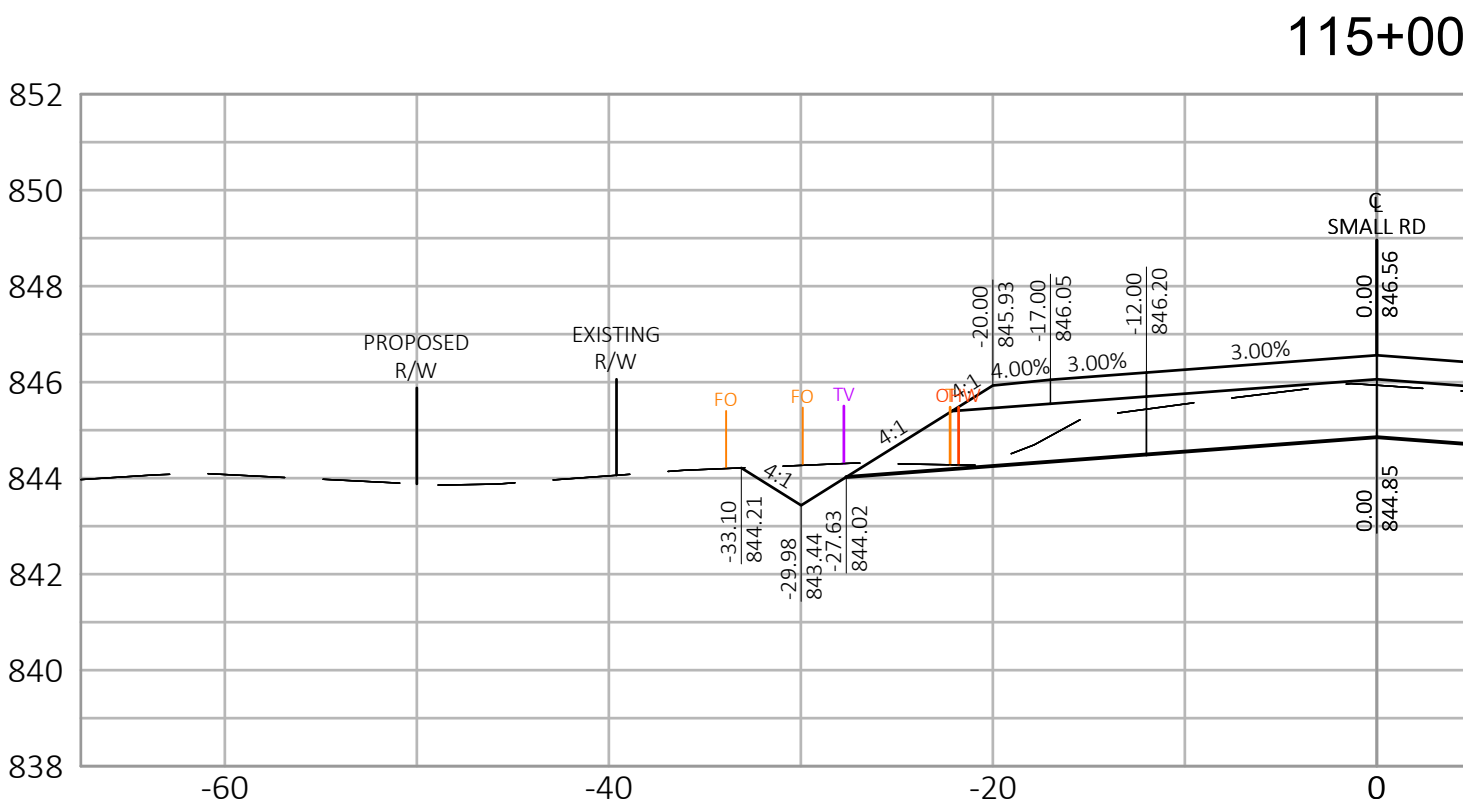
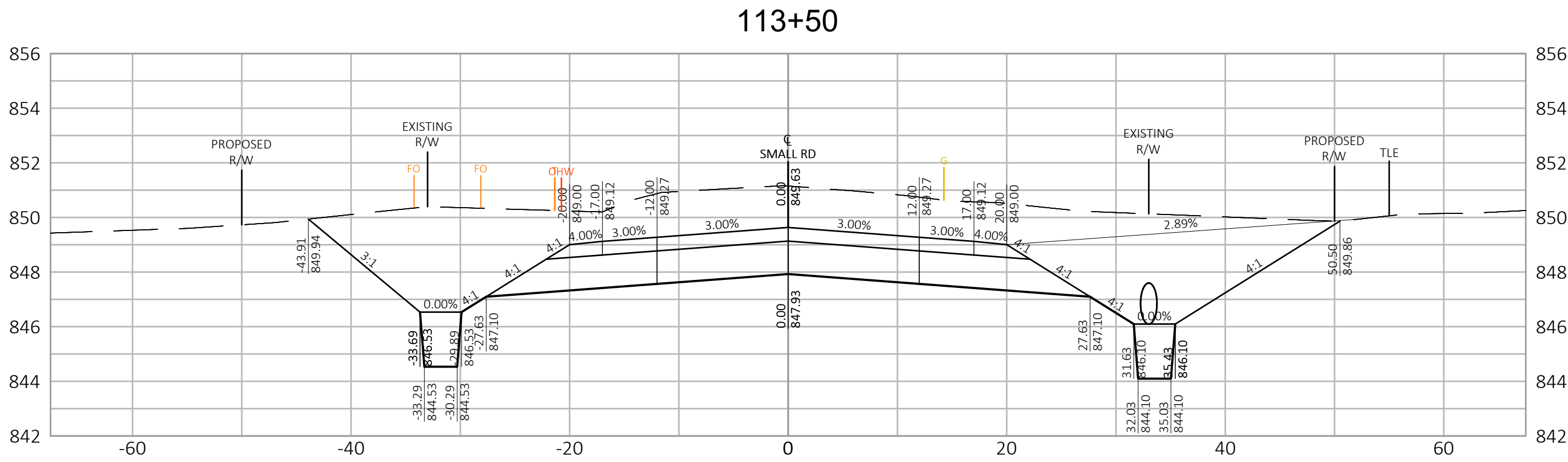
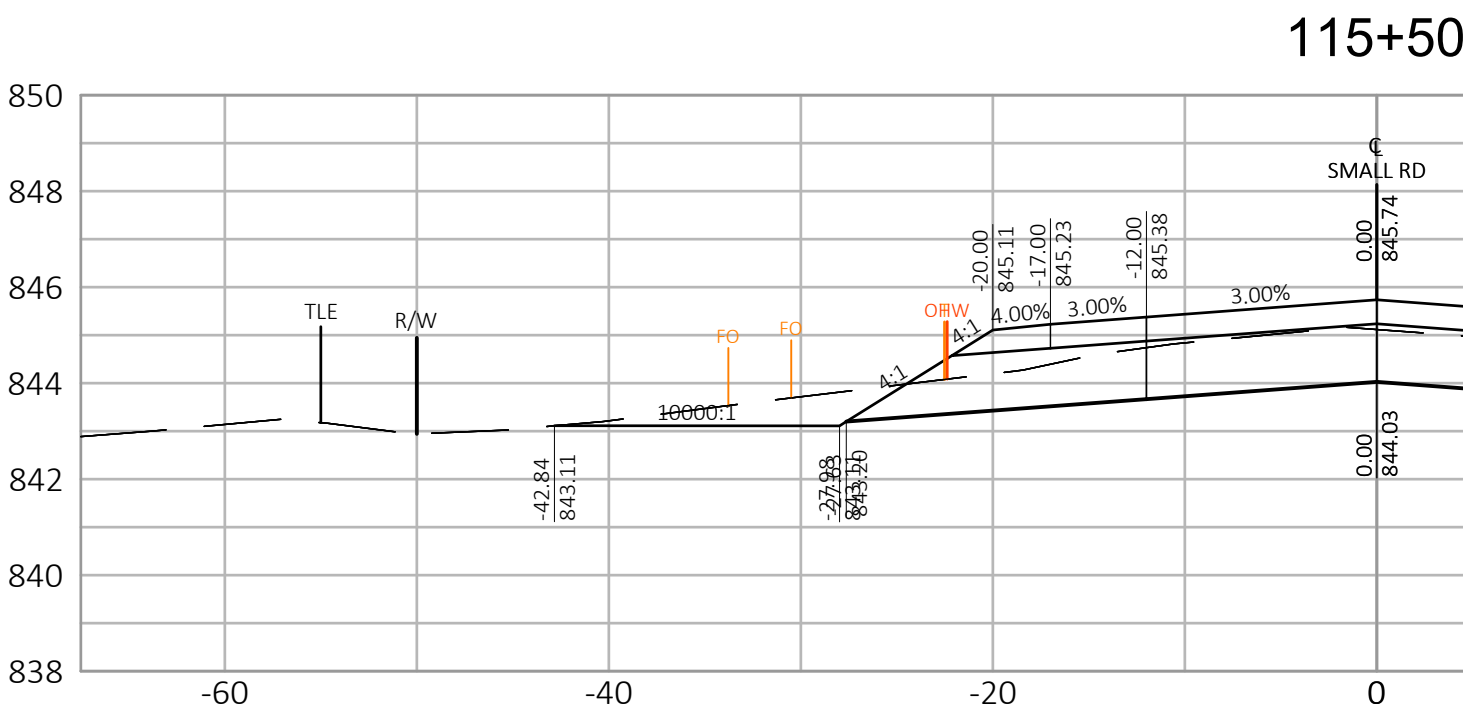
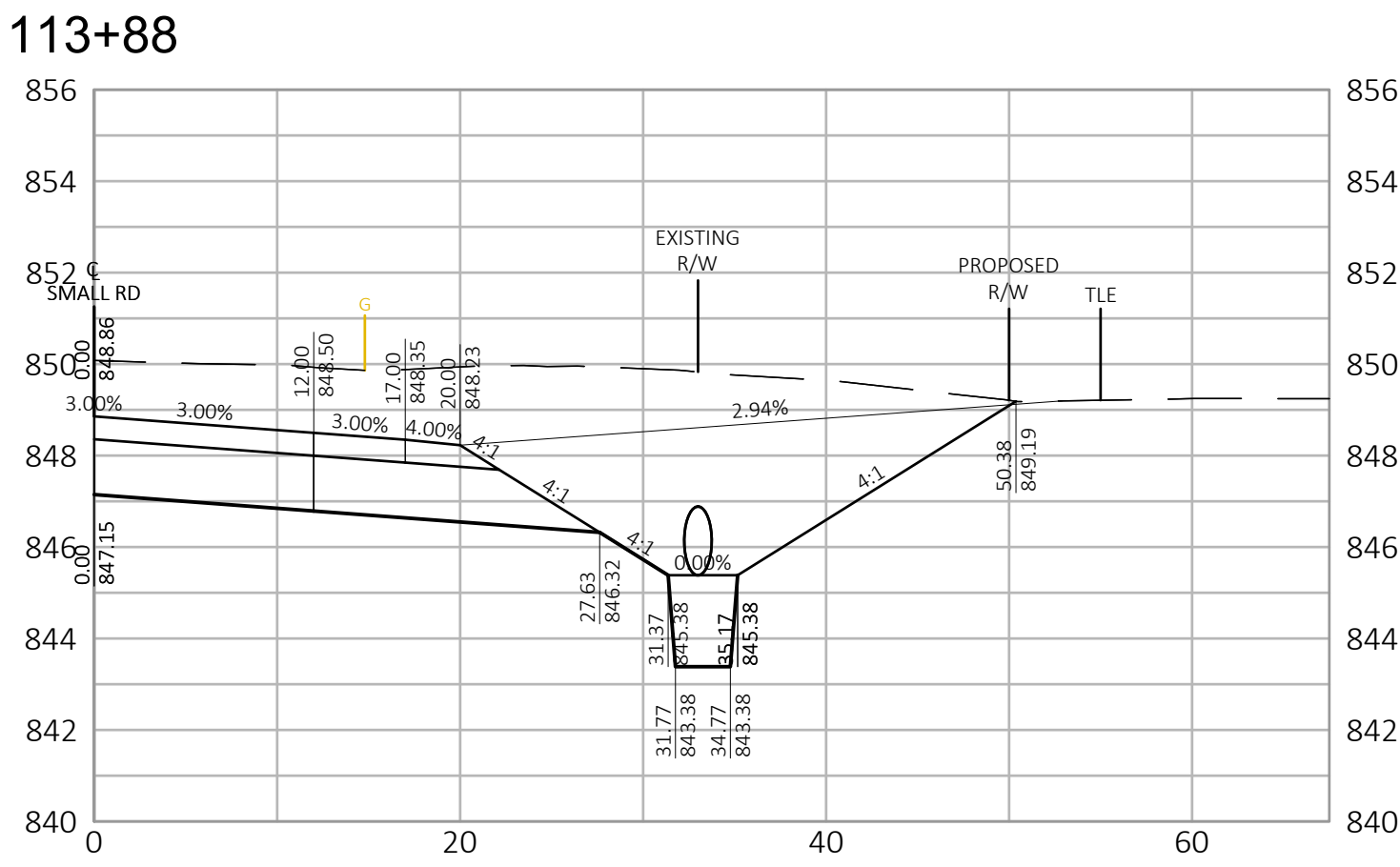
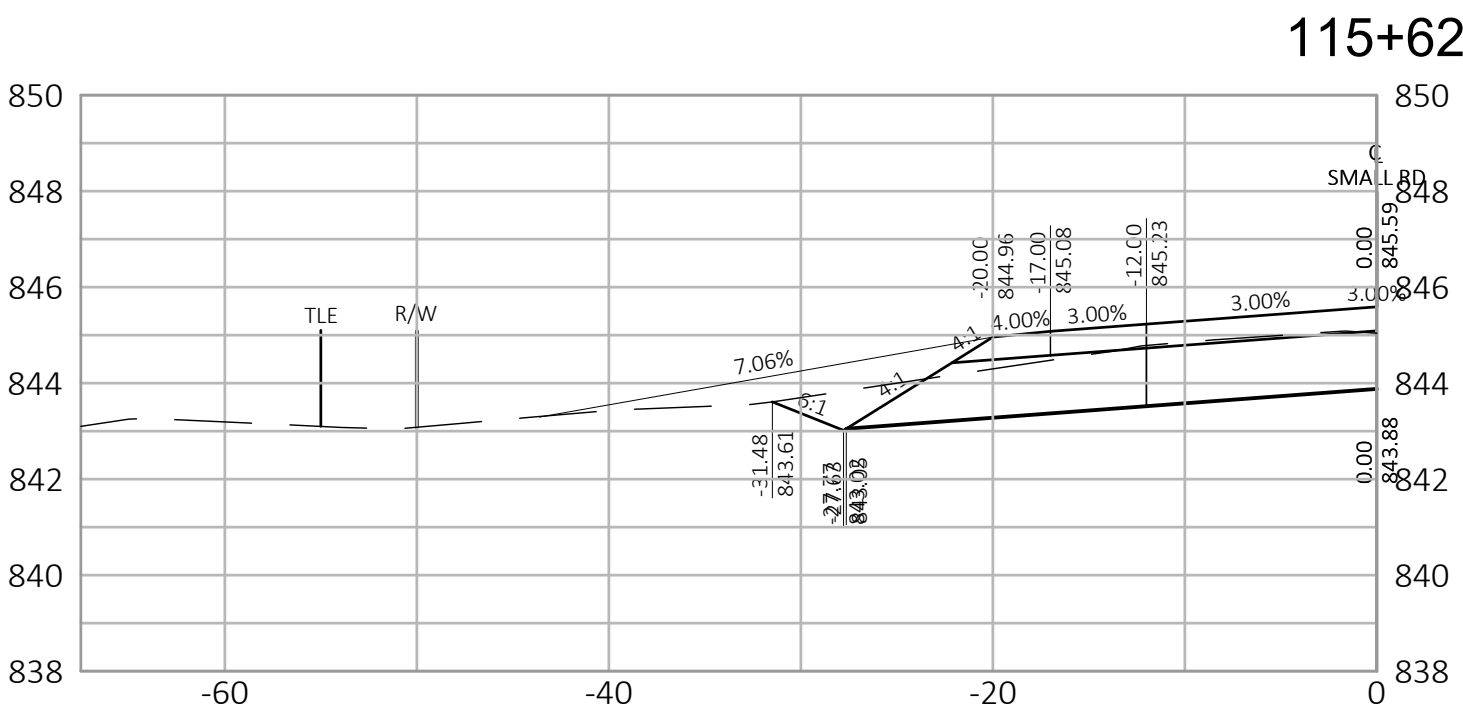
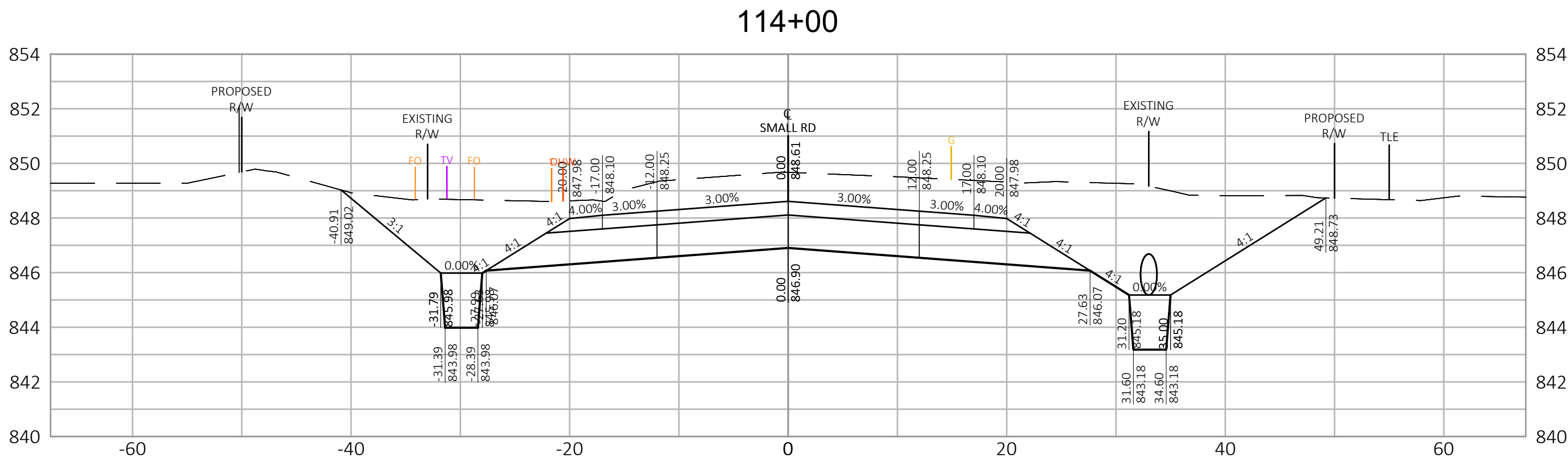
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SMALL ROAD

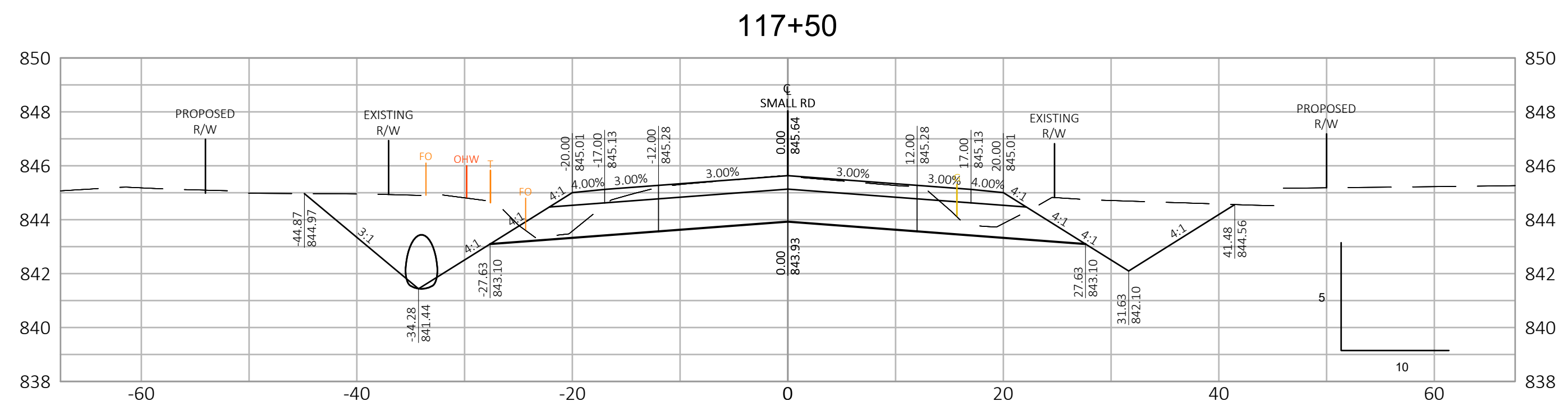
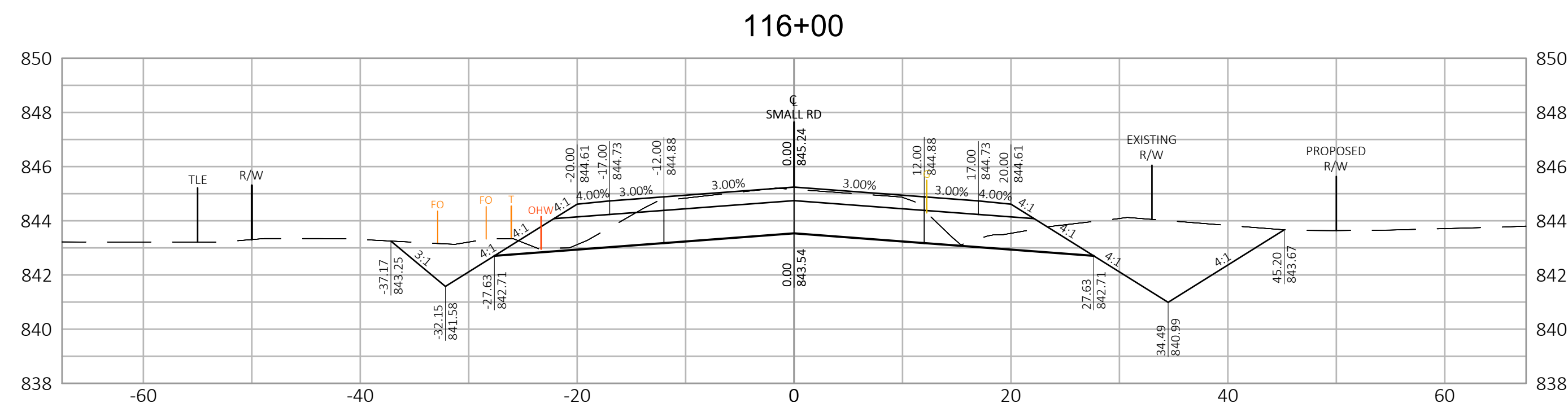
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DATE: 1/18/2023
SCALE: 1" = 10'
JOB NO. 1200244
PROJECT MANAGER:
T. HARTJES
DESIGNED BY: MCG
CHECKED BY: ---

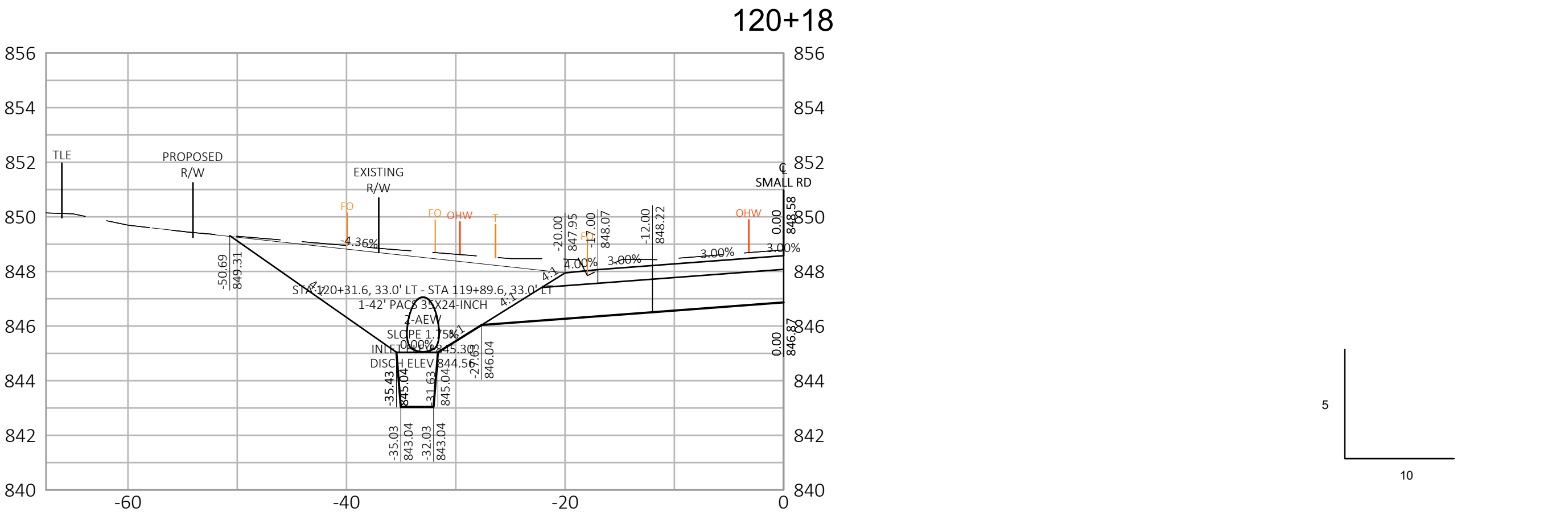
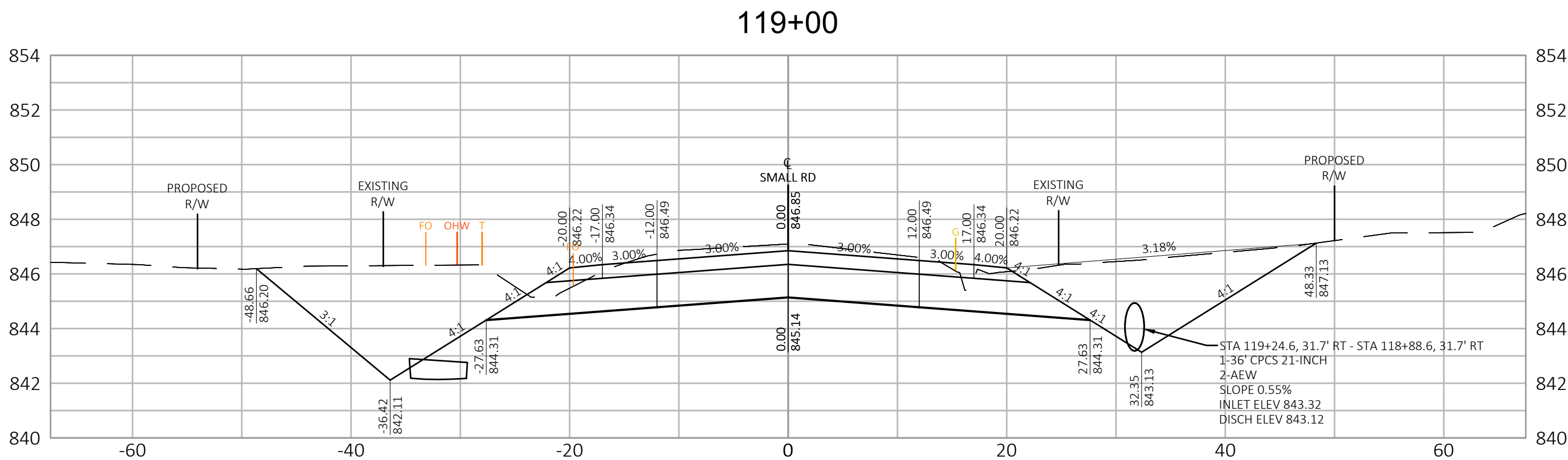
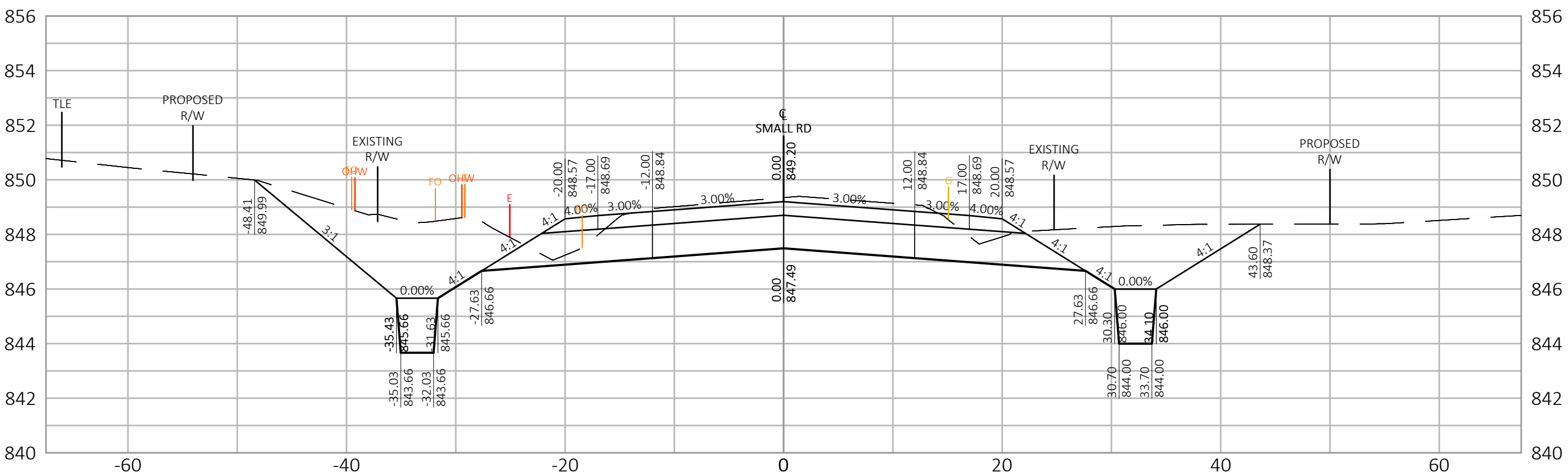
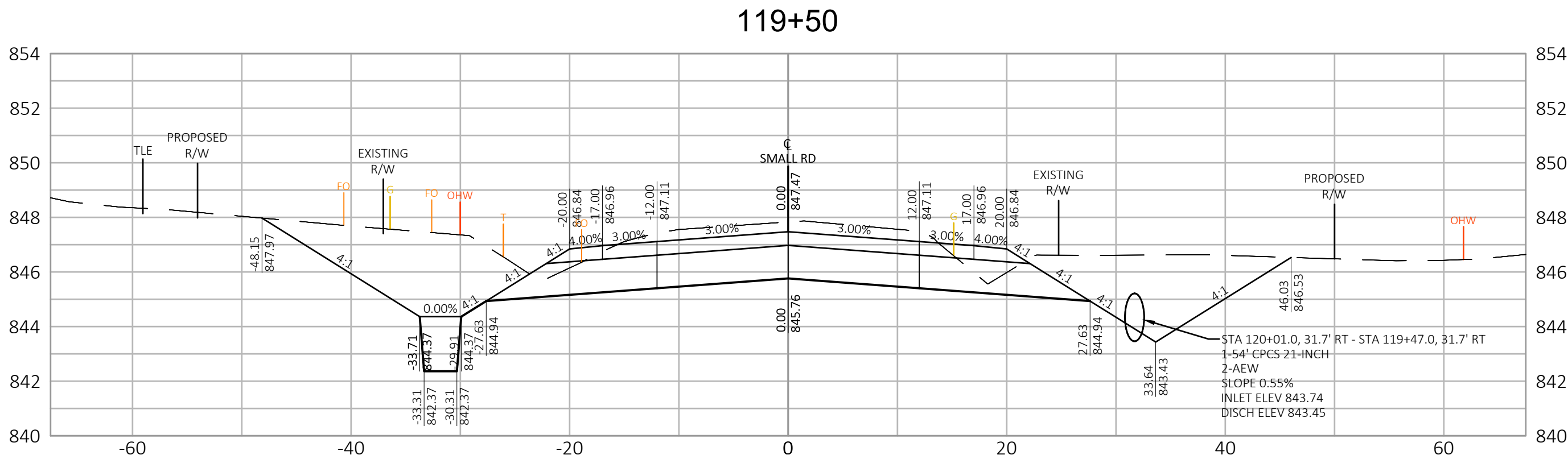
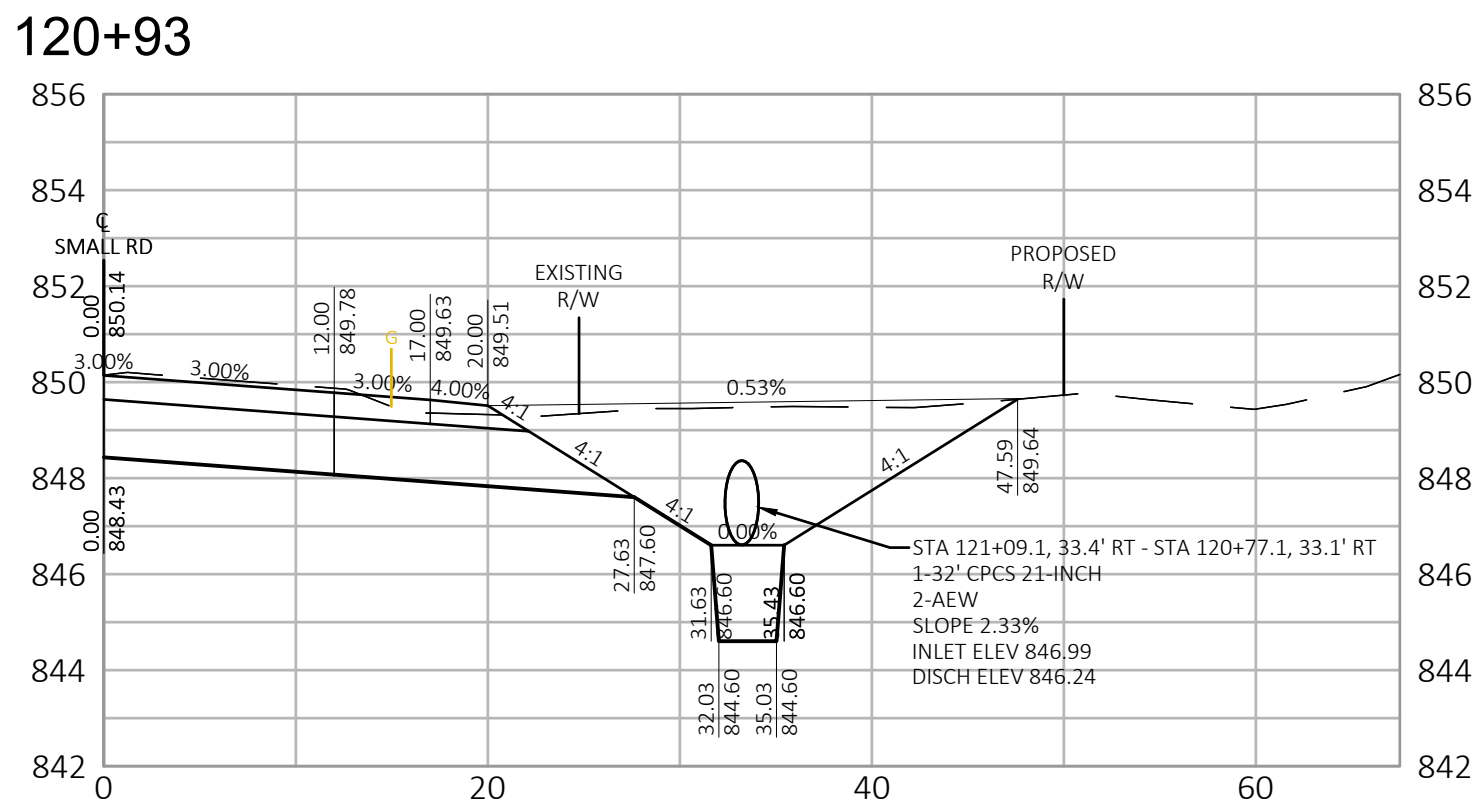
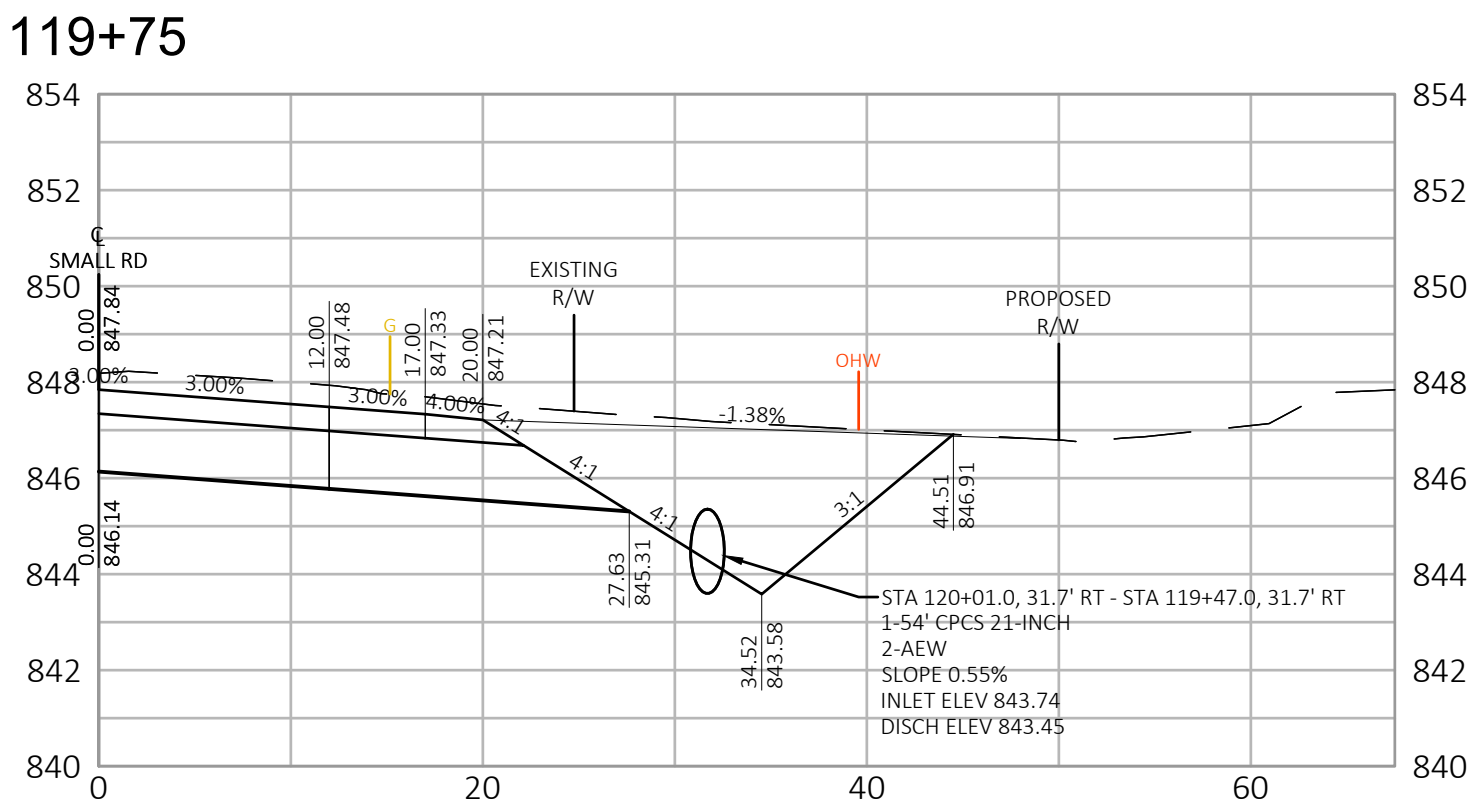
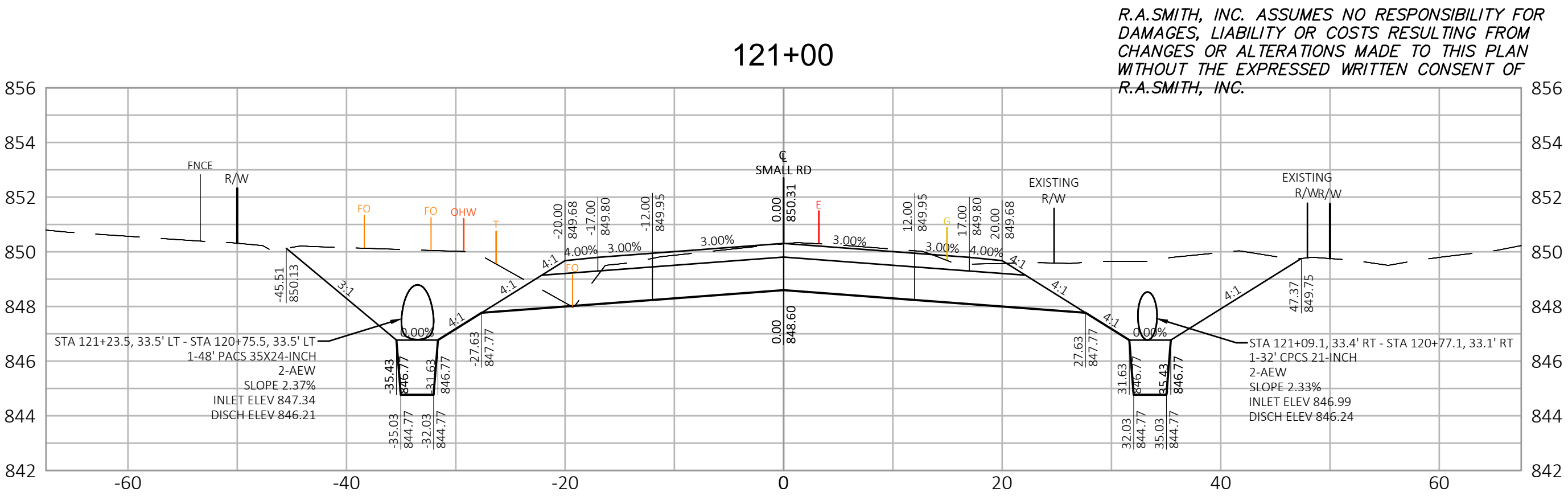
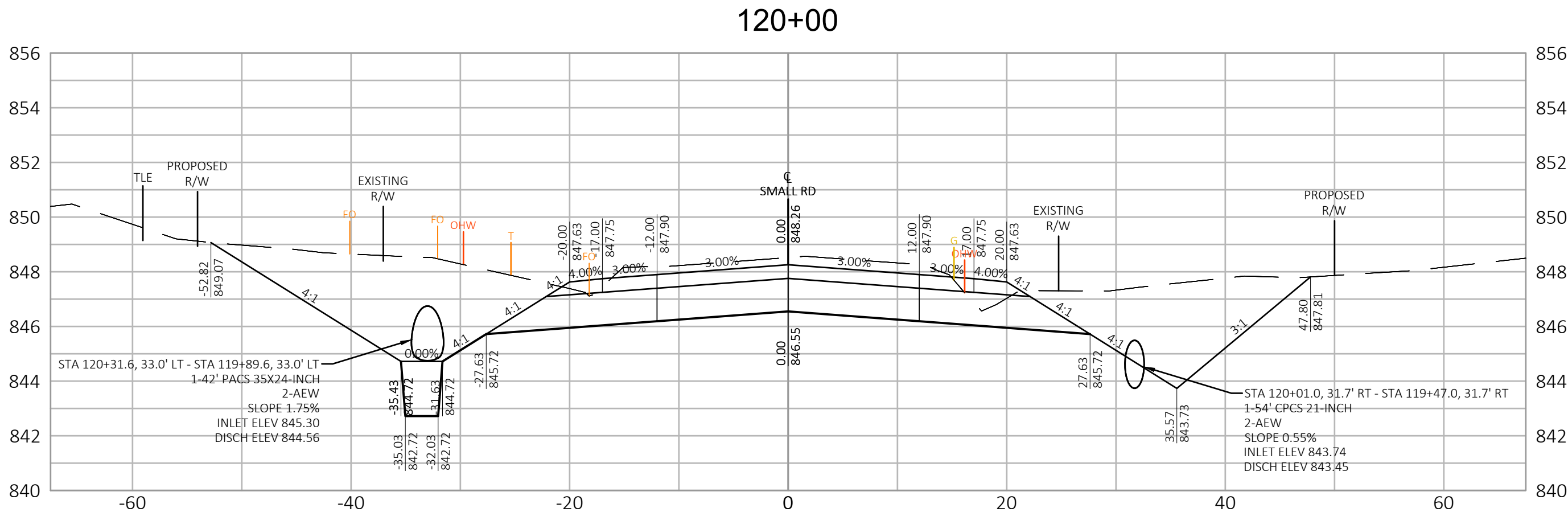
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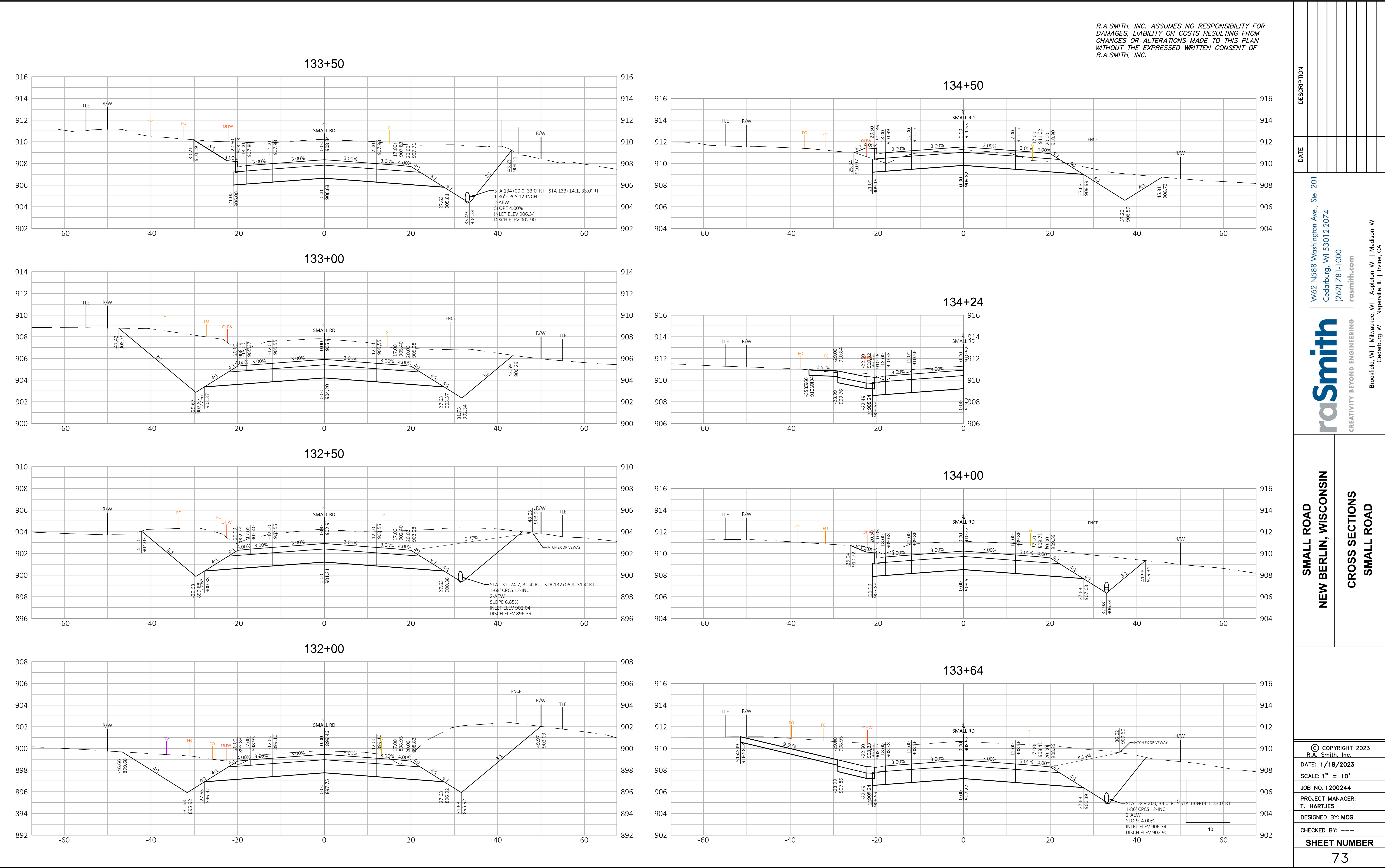
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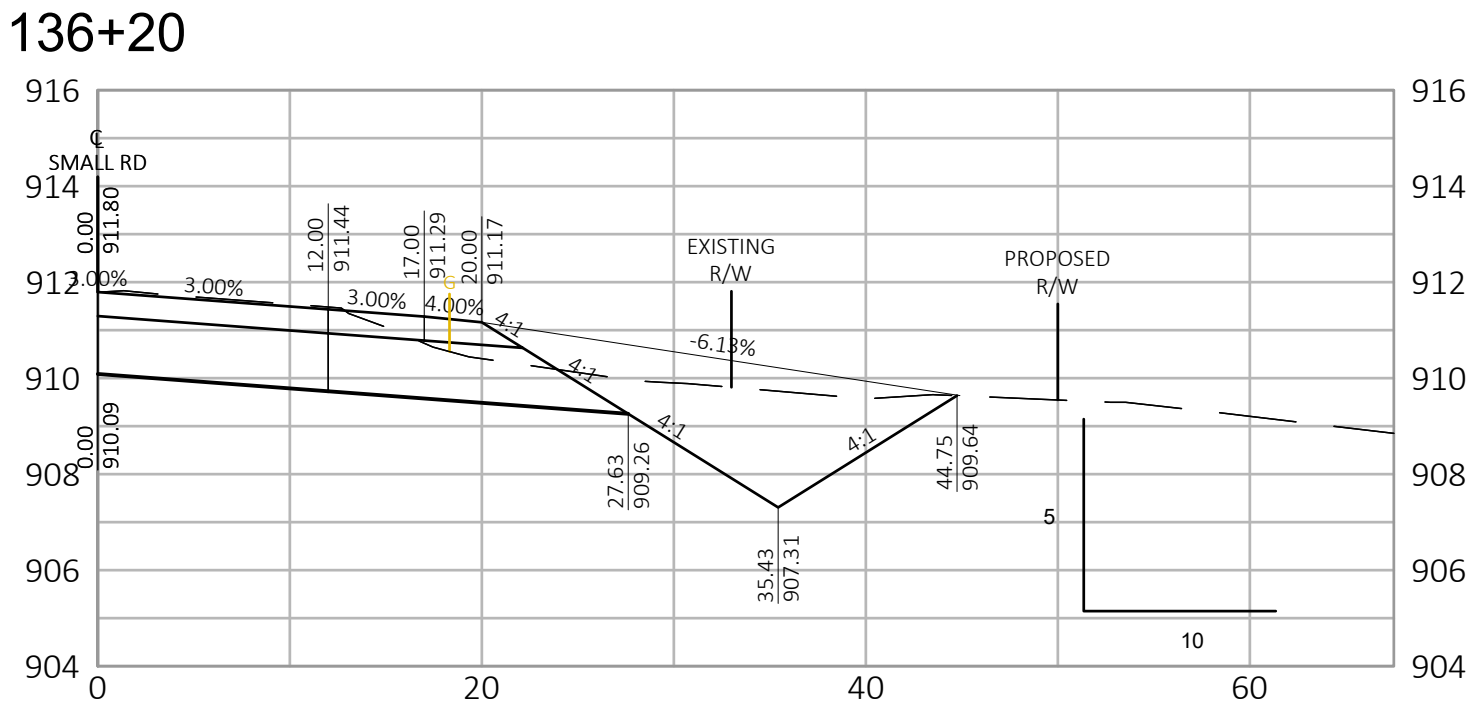
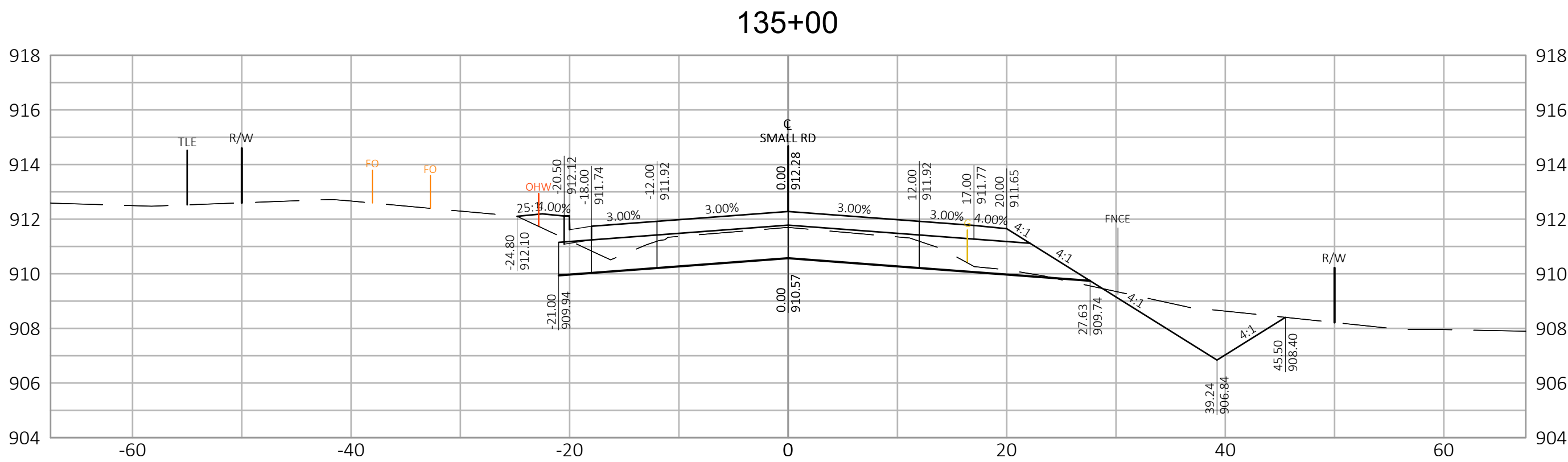
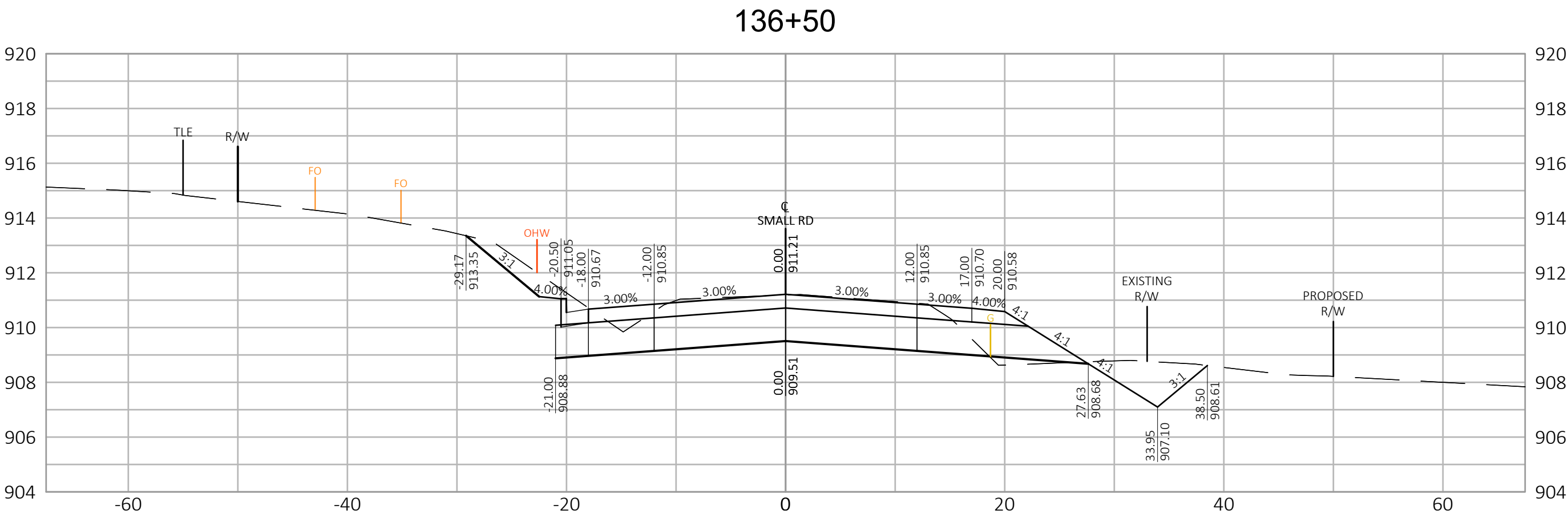
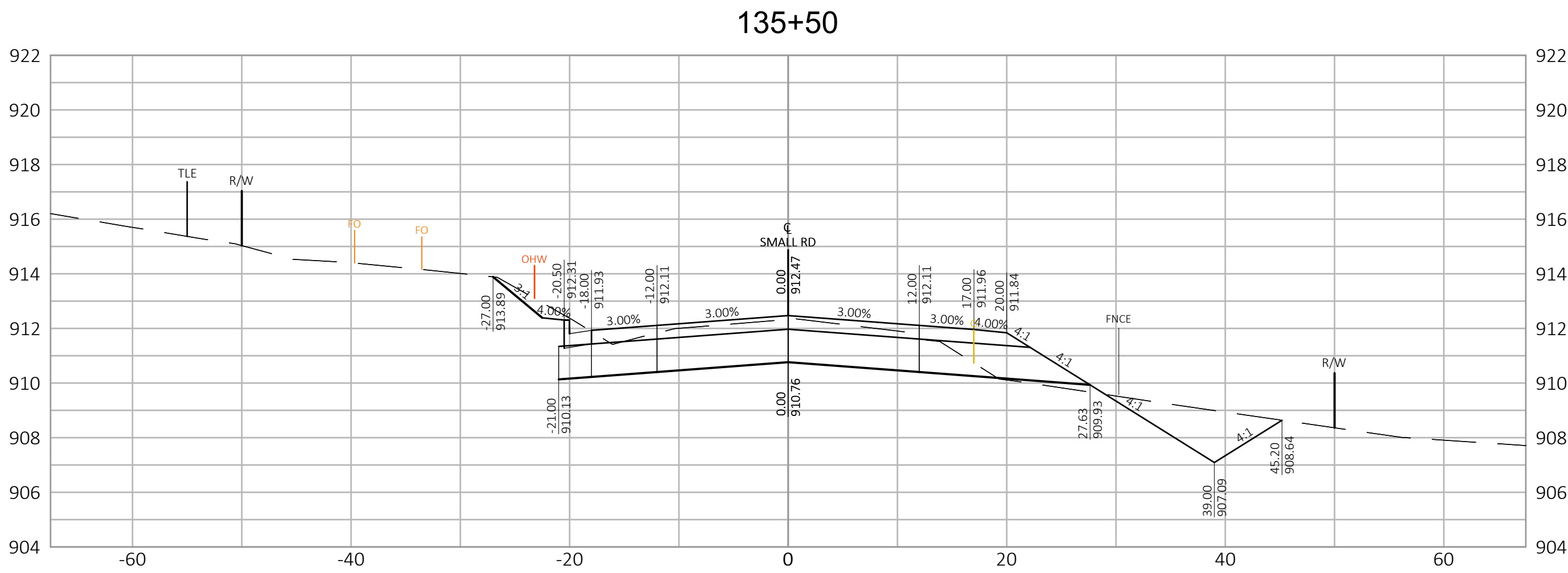
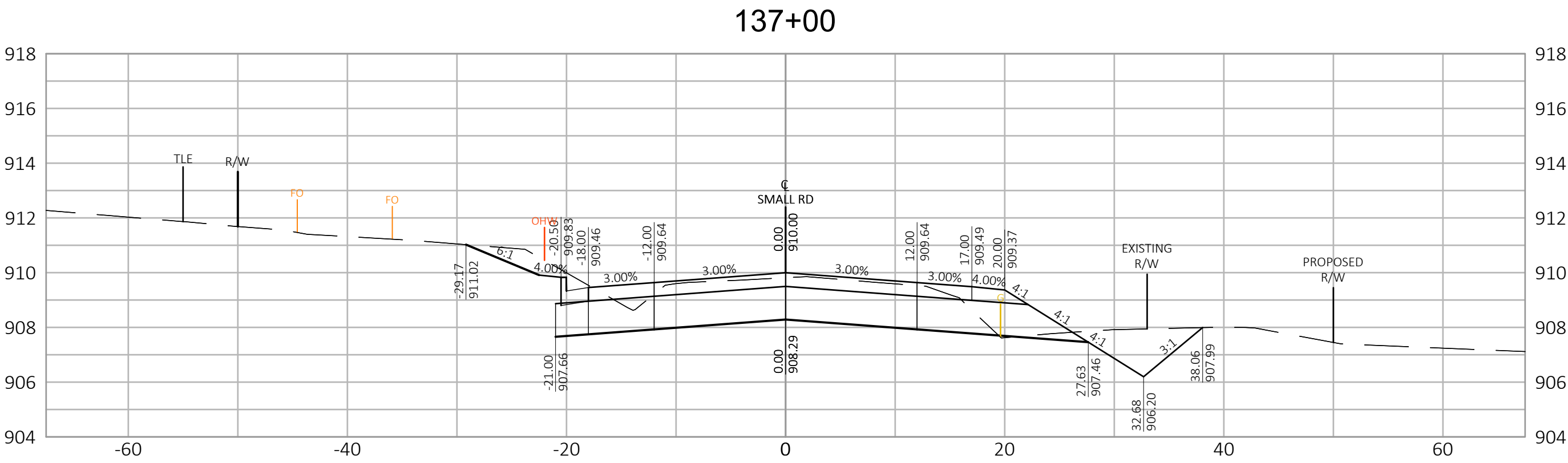
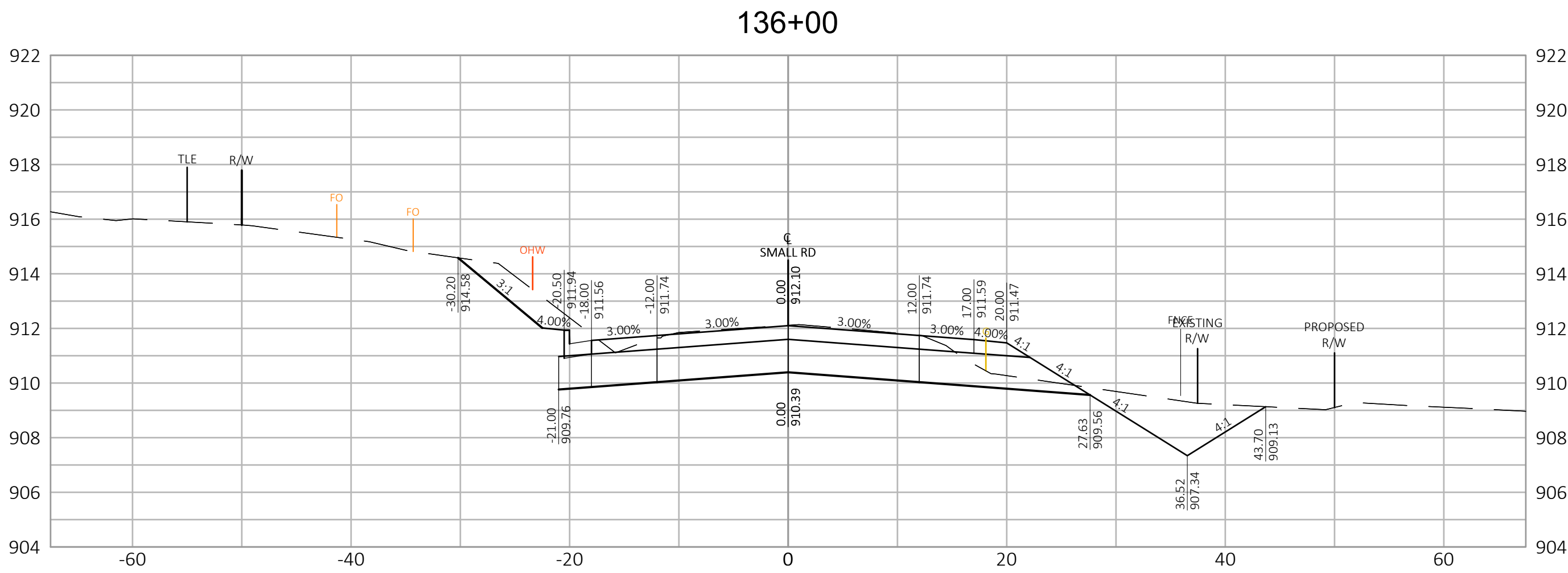


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DESCRIPTION	
DATE	
W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com	
raSmith CREATIVITY BEYOND ENGINEERING	
Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	
SMALL ROAD NEW BERLIN, WISCONSIN	CROSS SECTIONS SMALL ROAD
© COPYRIGHT 2023 R.A. Smith, Inc. DATE: 1/18/2023 SCALE: 1" = 10' JOB NO. 1200244 PROJECT MANAGER: T. HARTJES DESIGNED BY: MCG CHECKED BY: --- SHEET NUMBER 71	



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W62 N588 Washington Ave., Ste. 201
Cedarburg, WI 53012-2074
(262) 781-1000
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raSmith
CREATIVITY BEYOND ENGINEERING

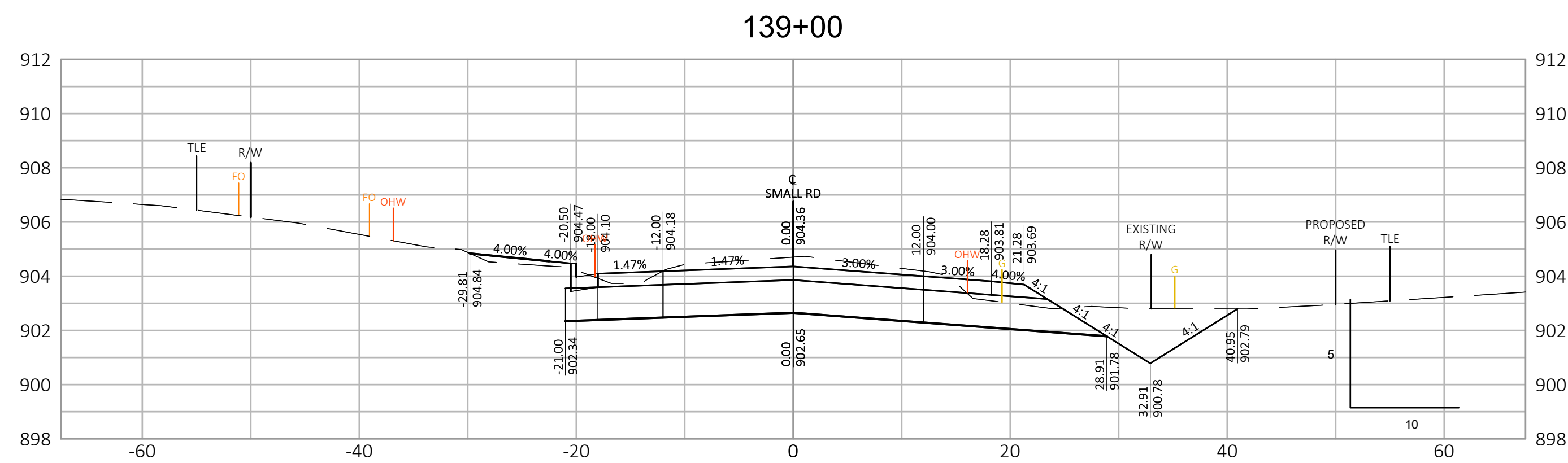
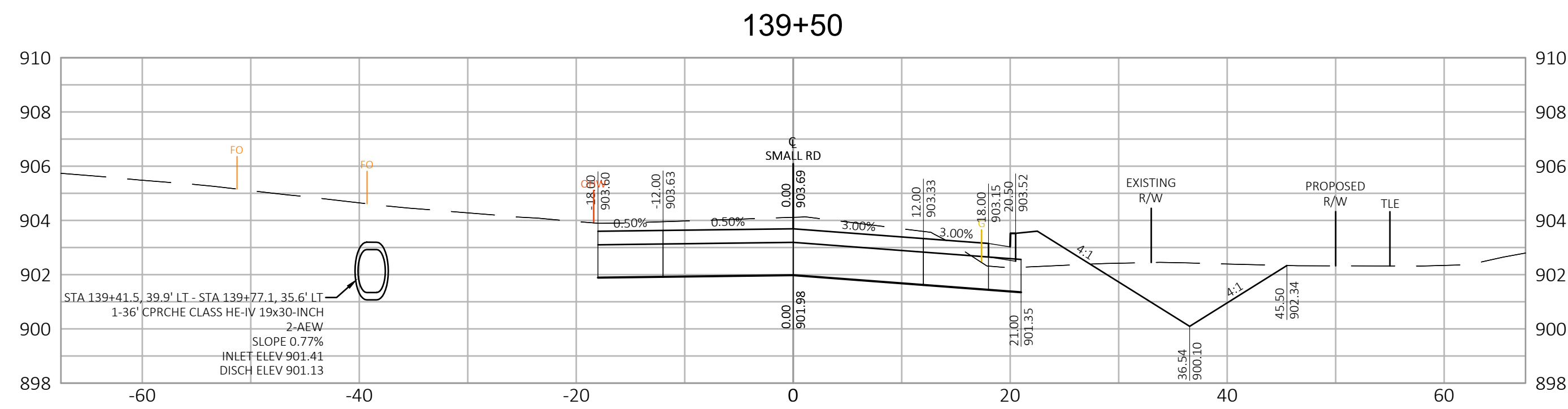
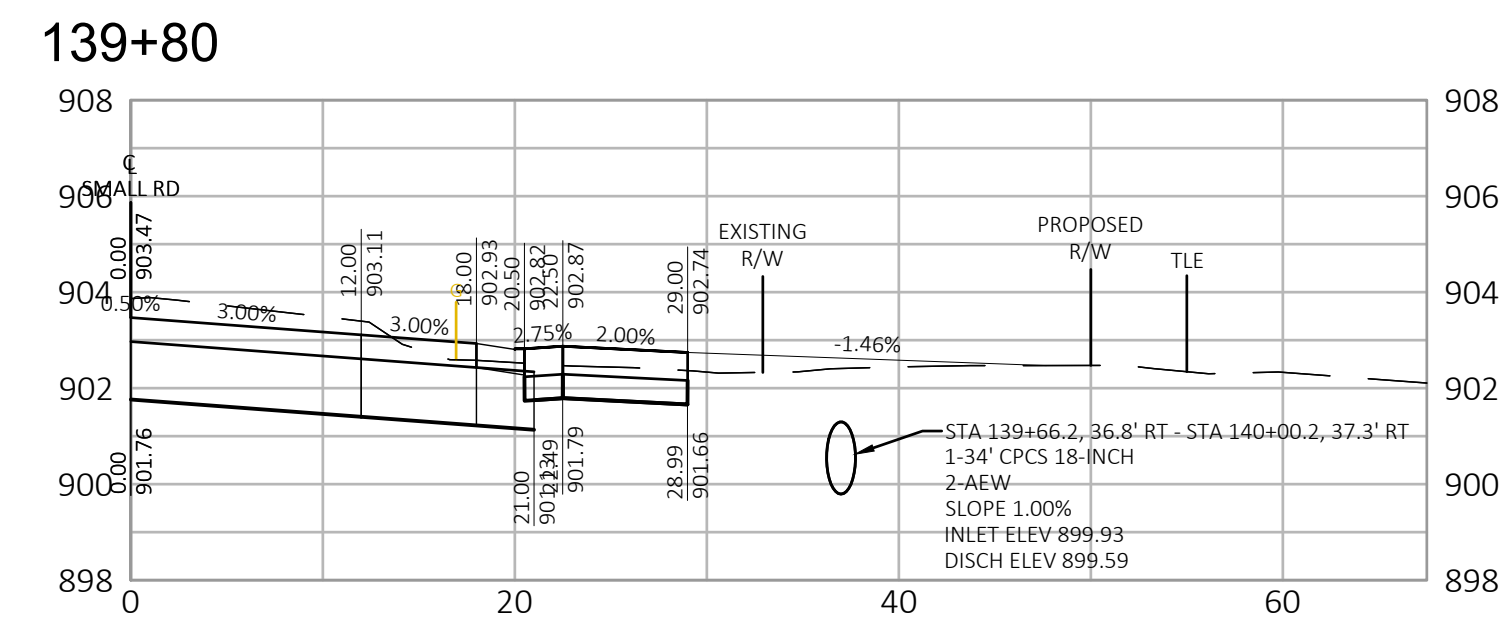
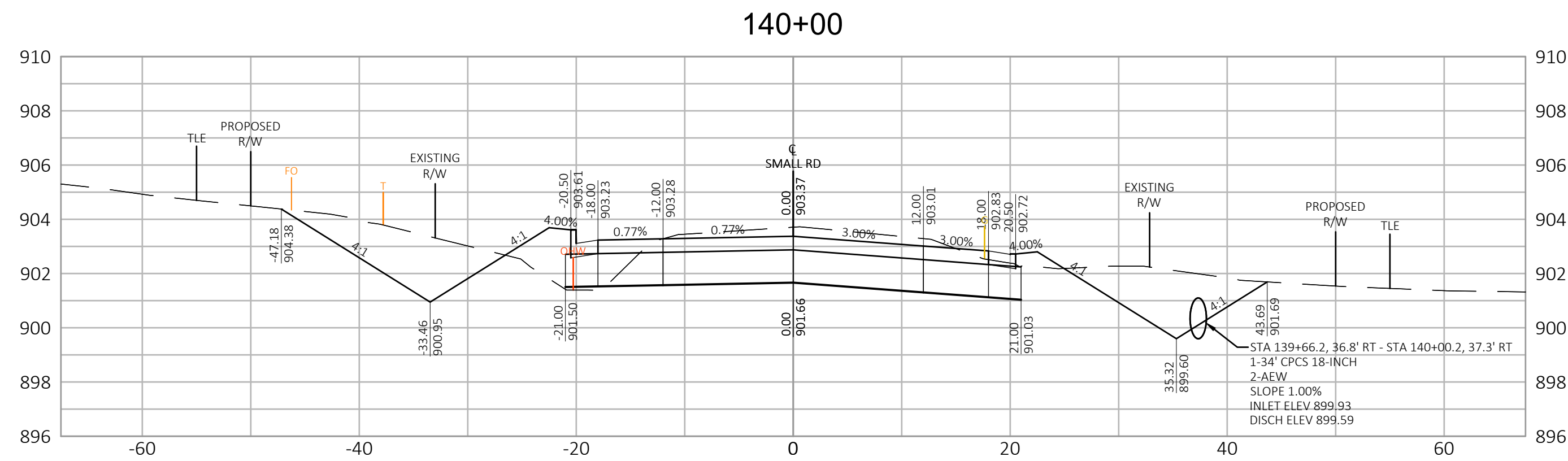
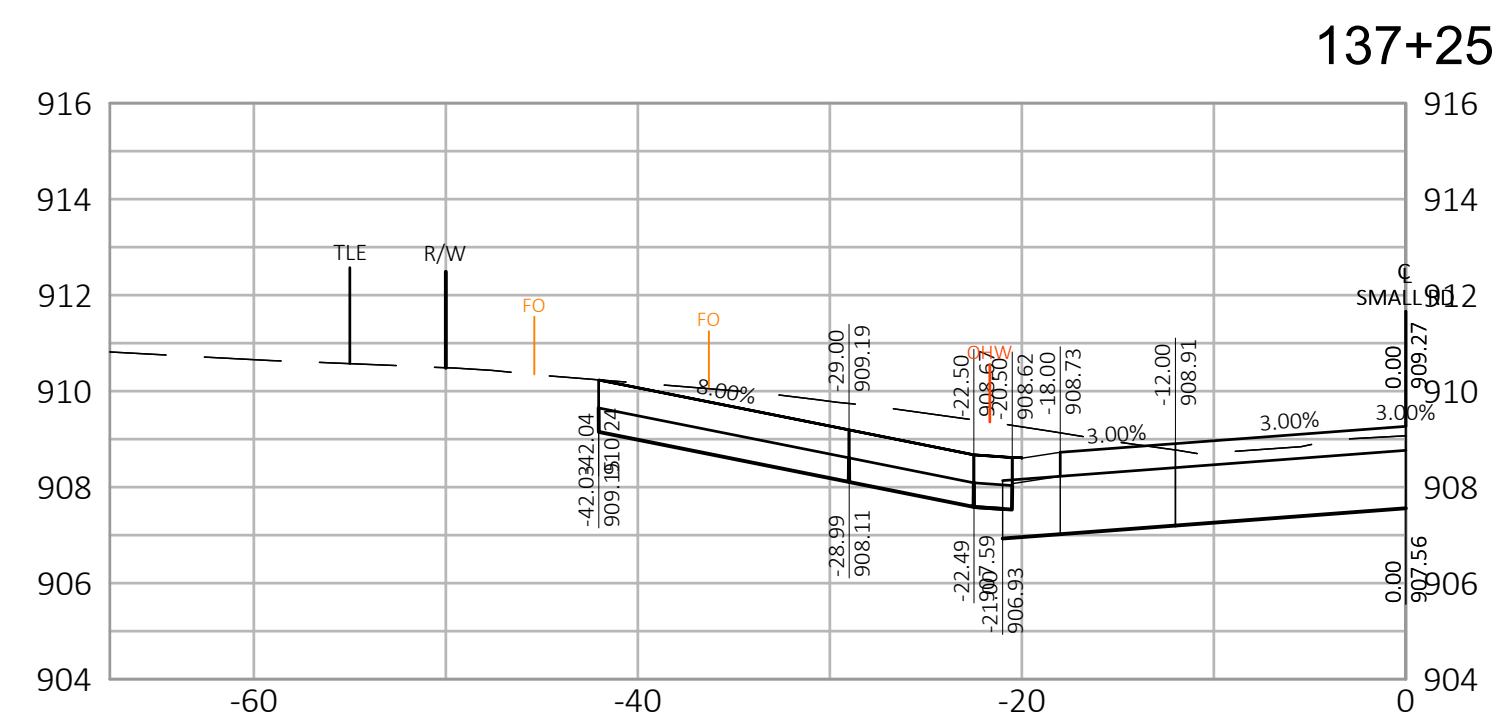
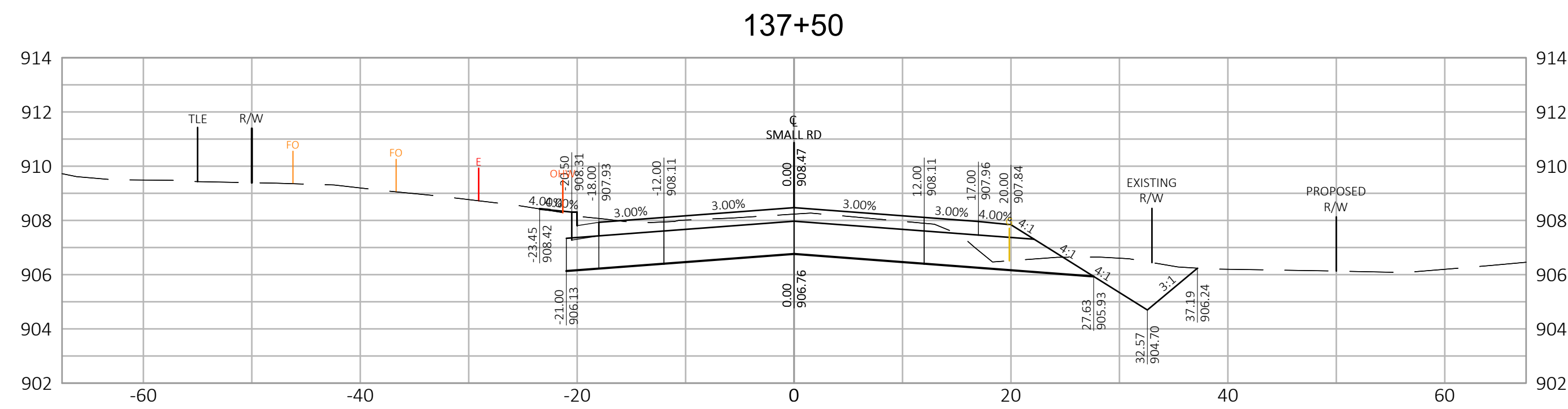
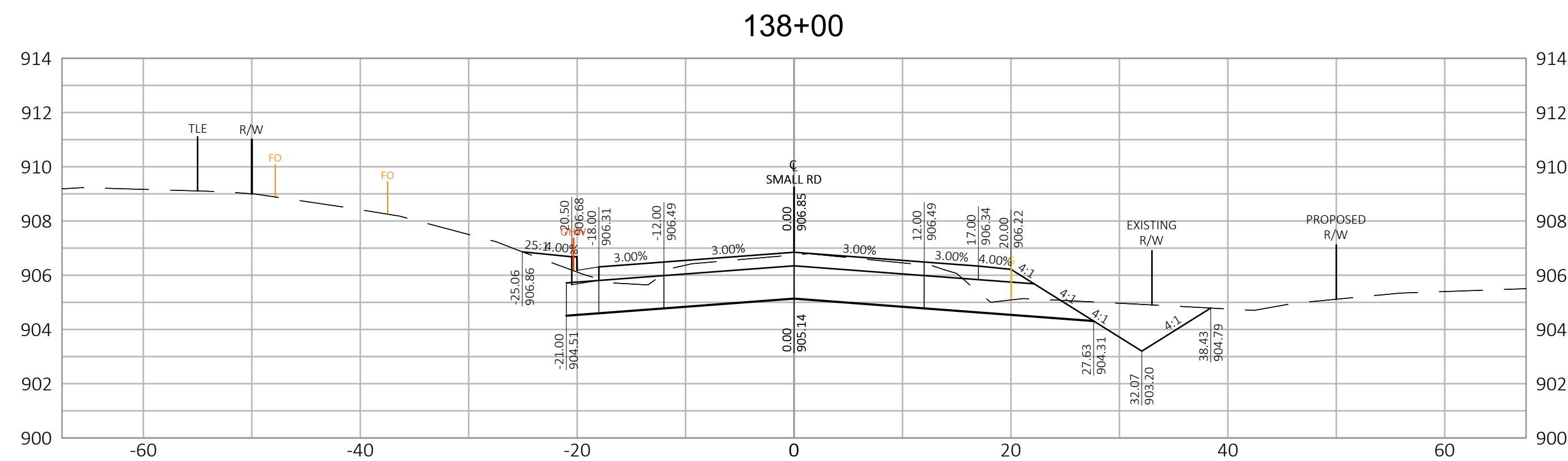
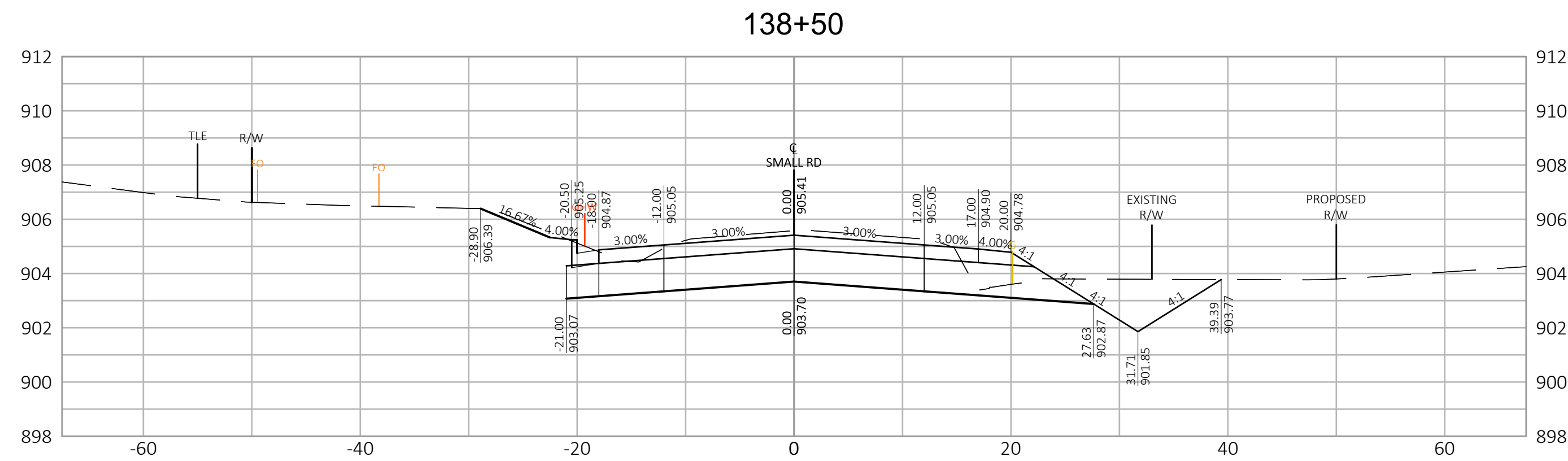
Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

SMALL ROAD
NEW BERLIN, WISCONSIN

CROSS SECTIONS
SMALL ROAD

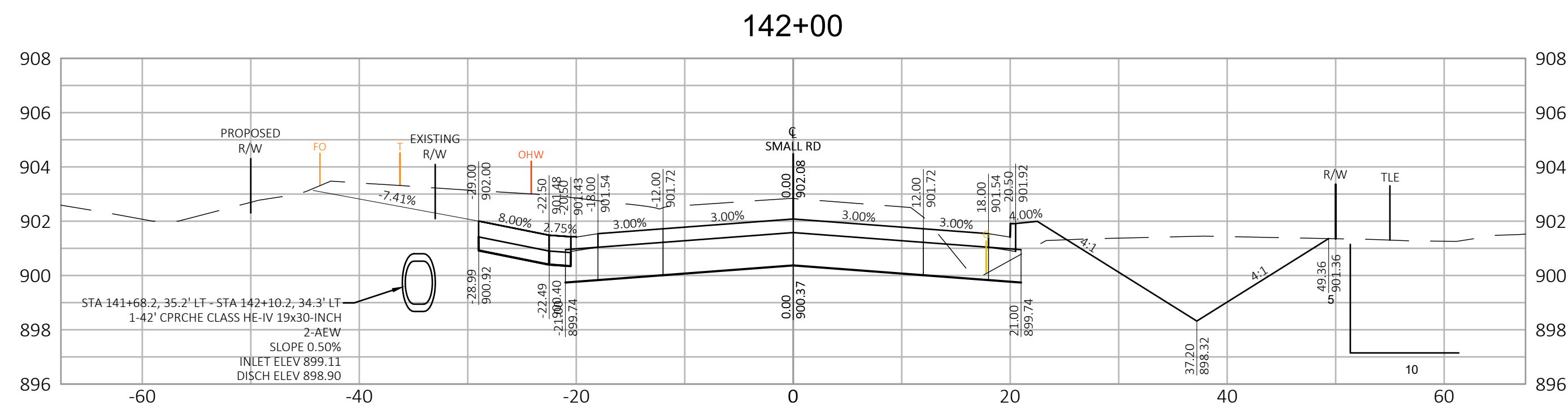
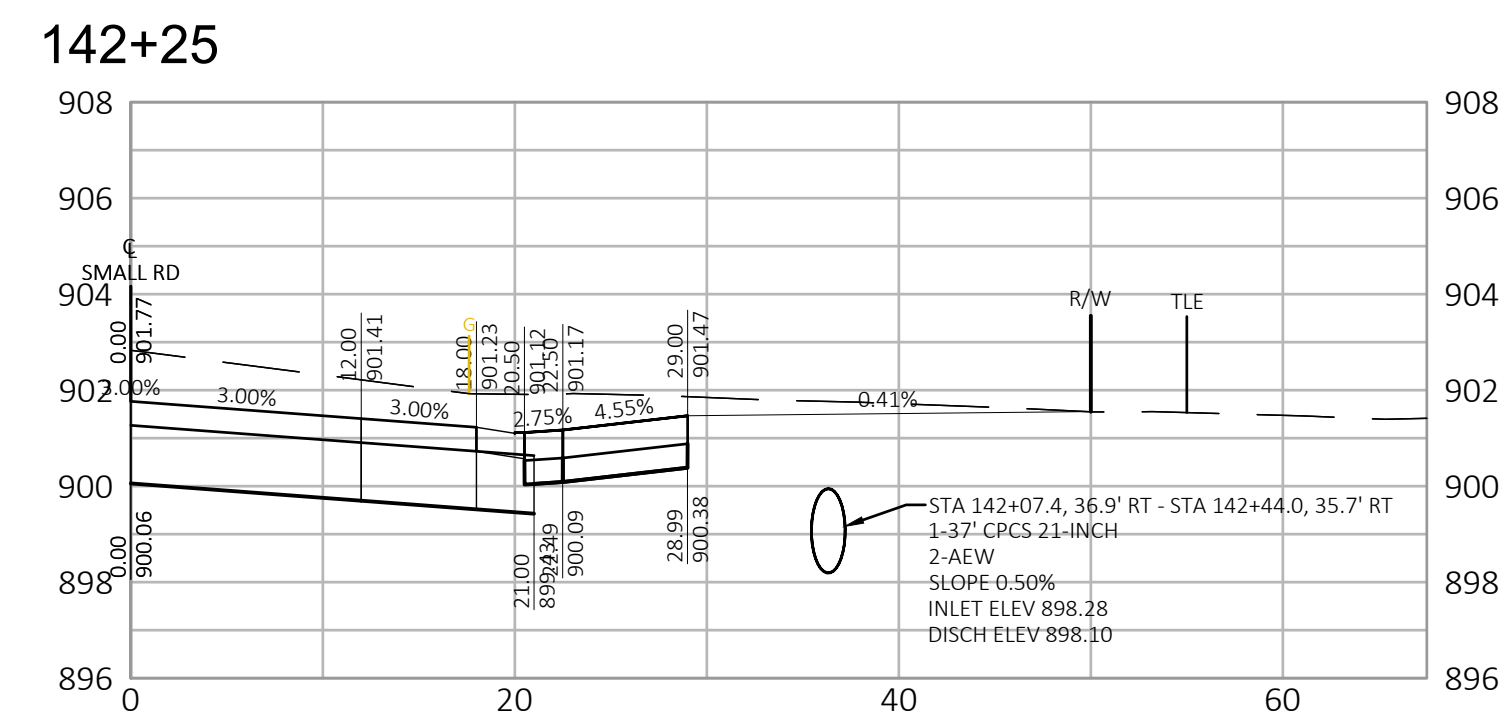
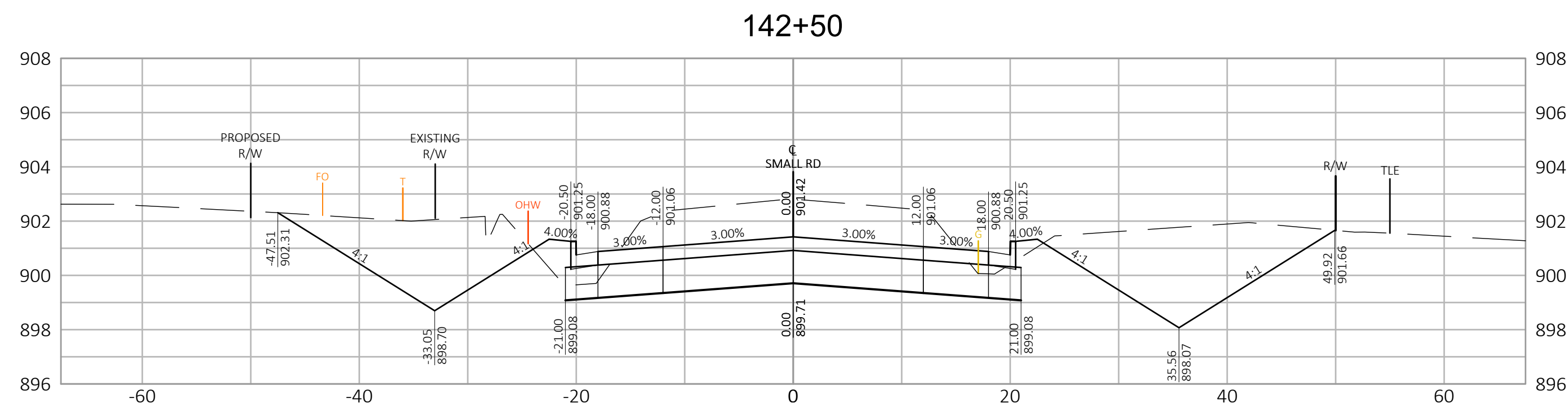
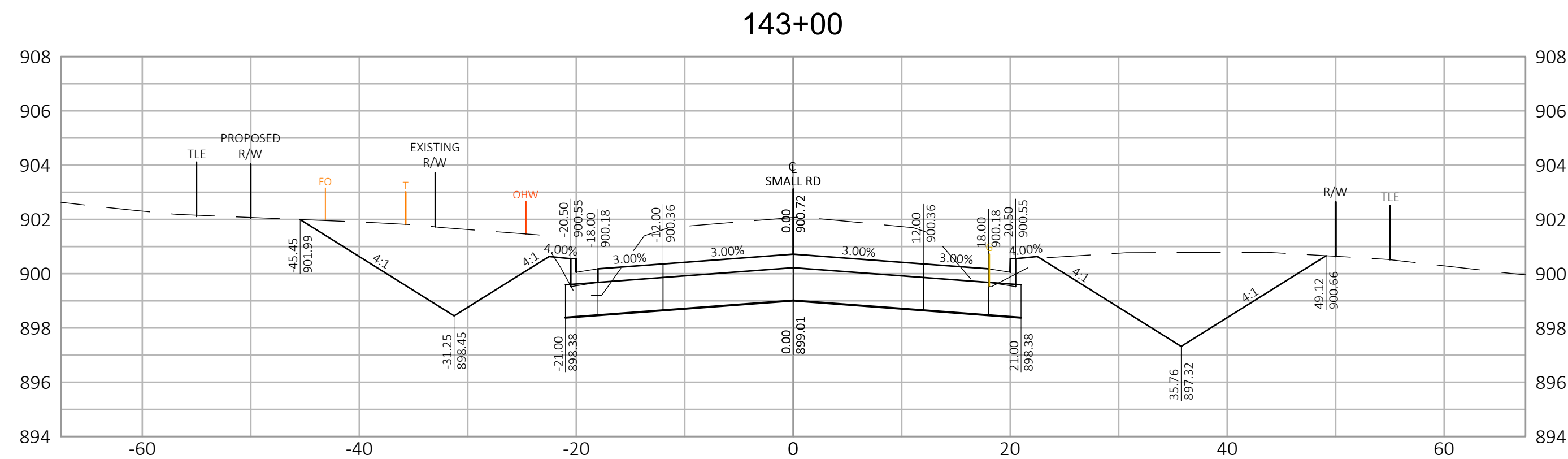
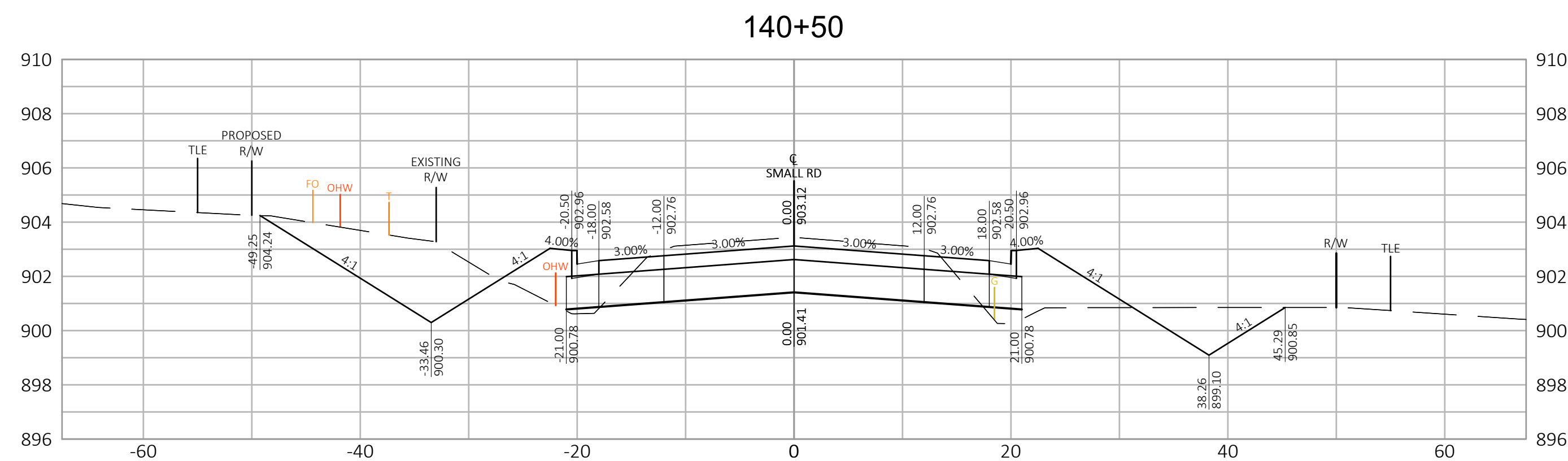
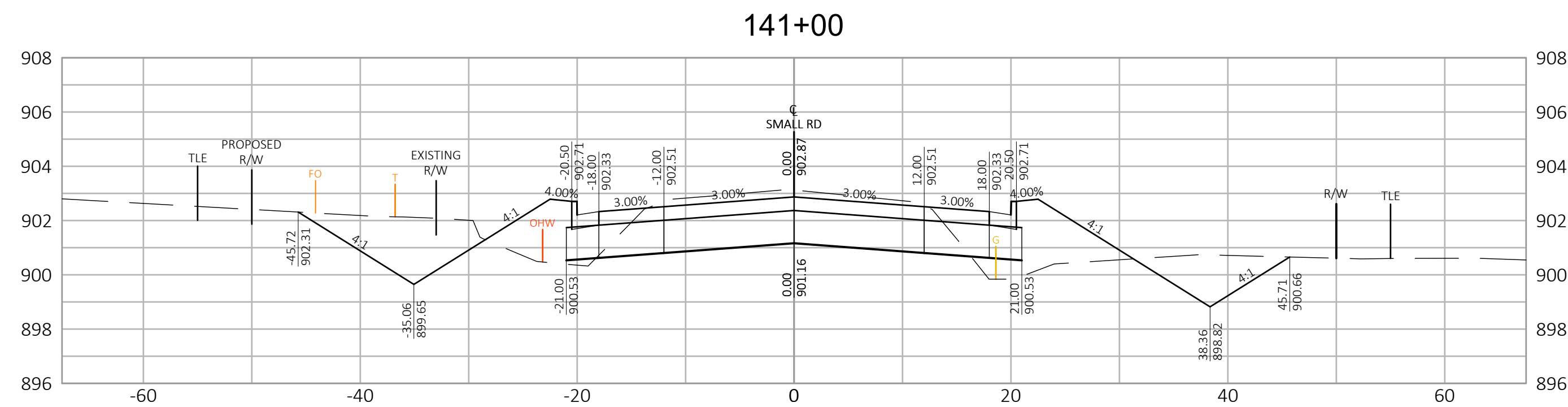
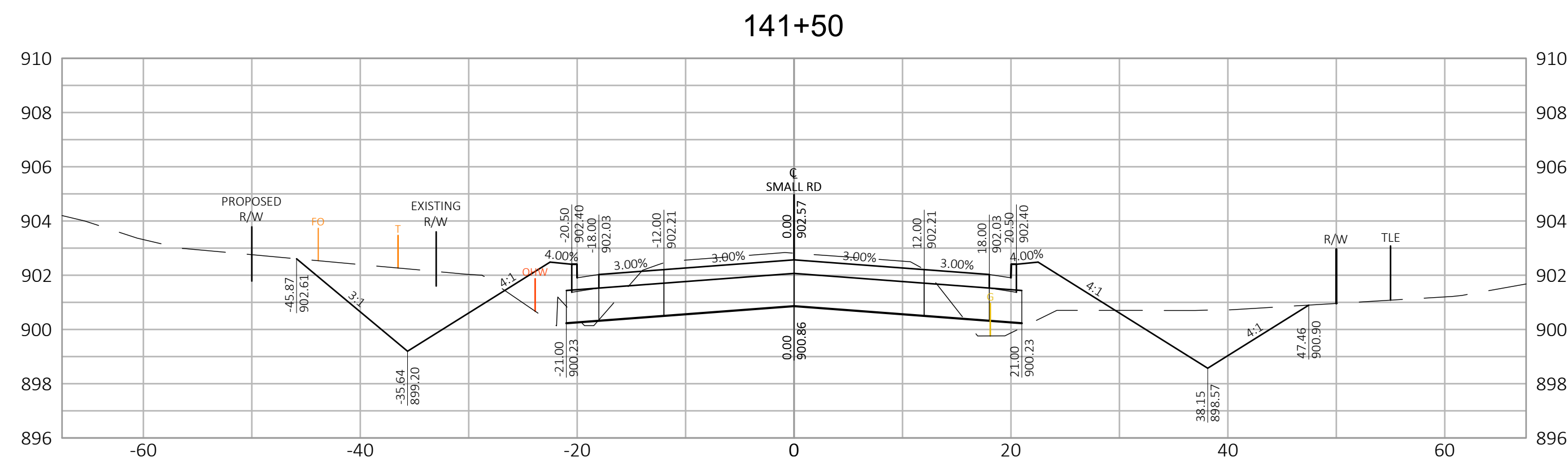
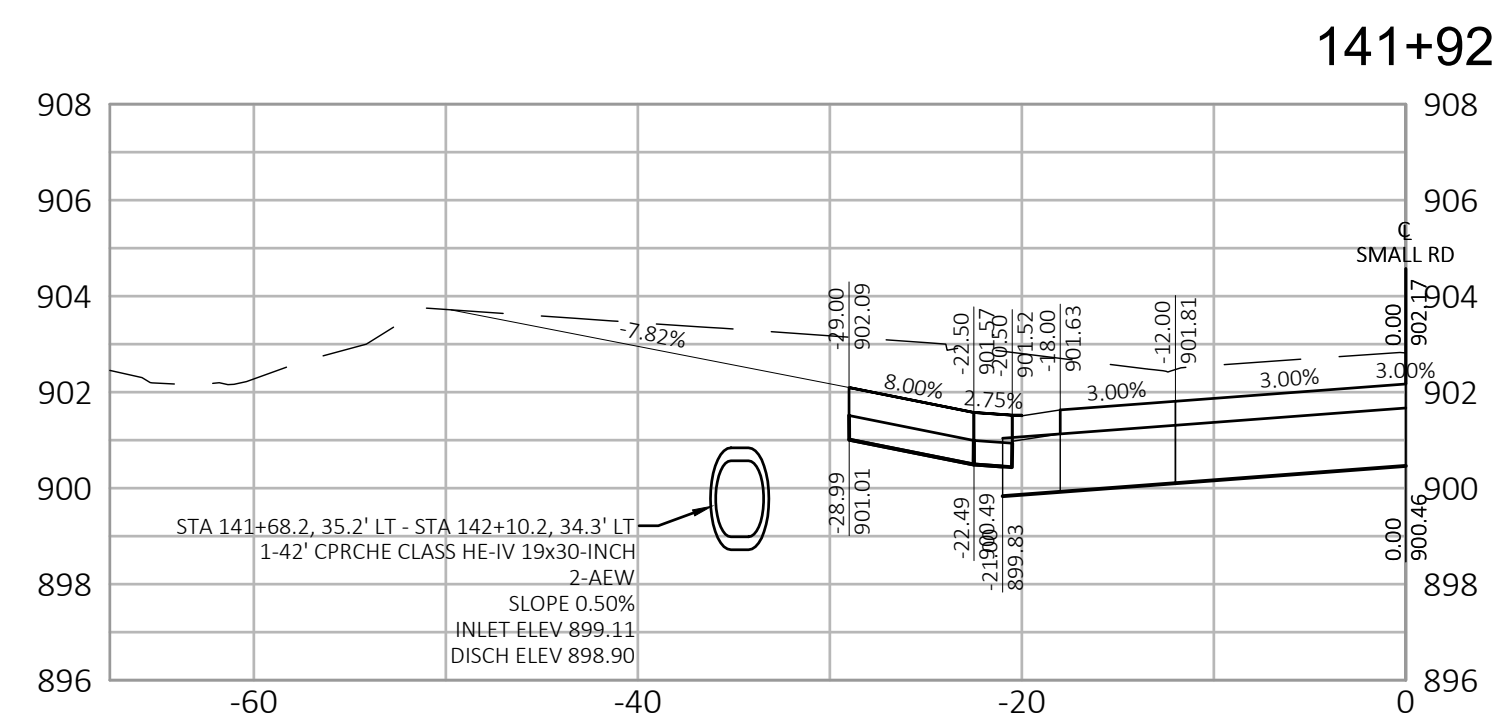
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SCALE: 1" = 10'
JOB NO. 1200244
PROJECT MANAGER:
T. HARTJES
DESIGNED BY: MCG
CHECKED BY: ---

SHEET NUMBER
74



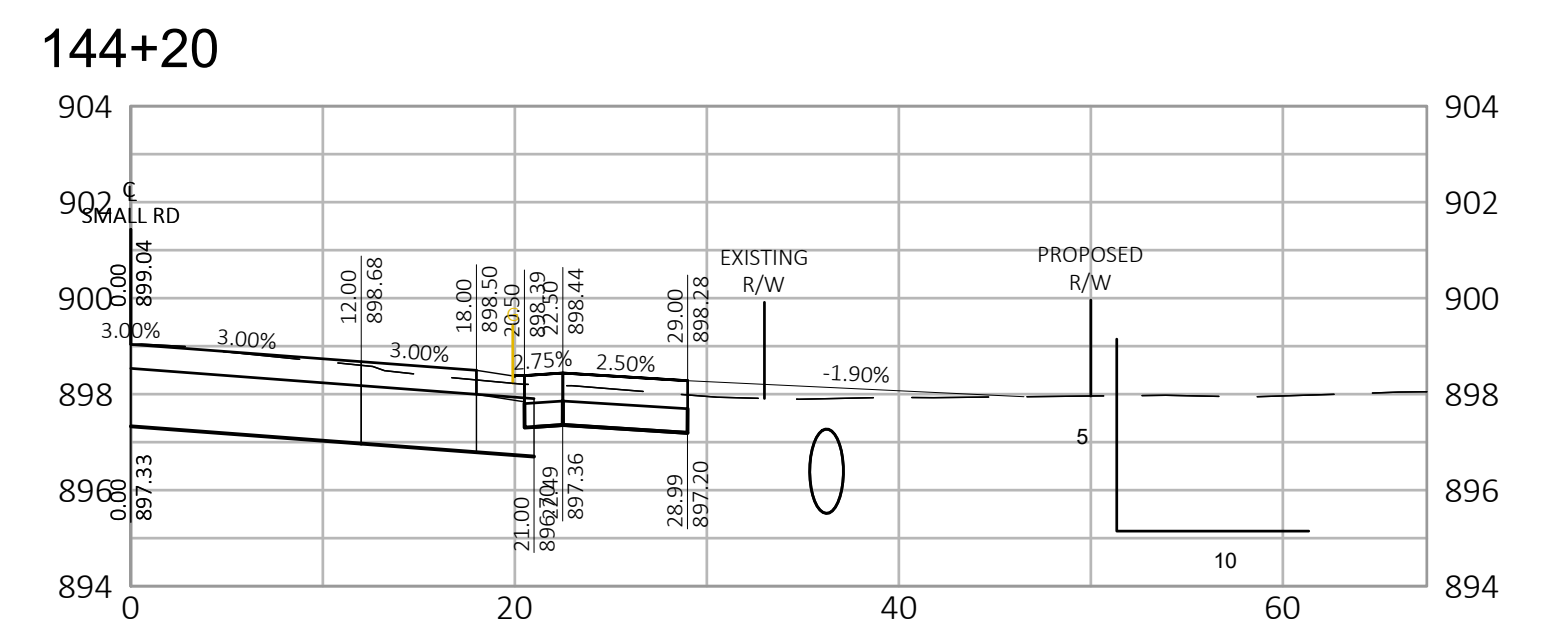
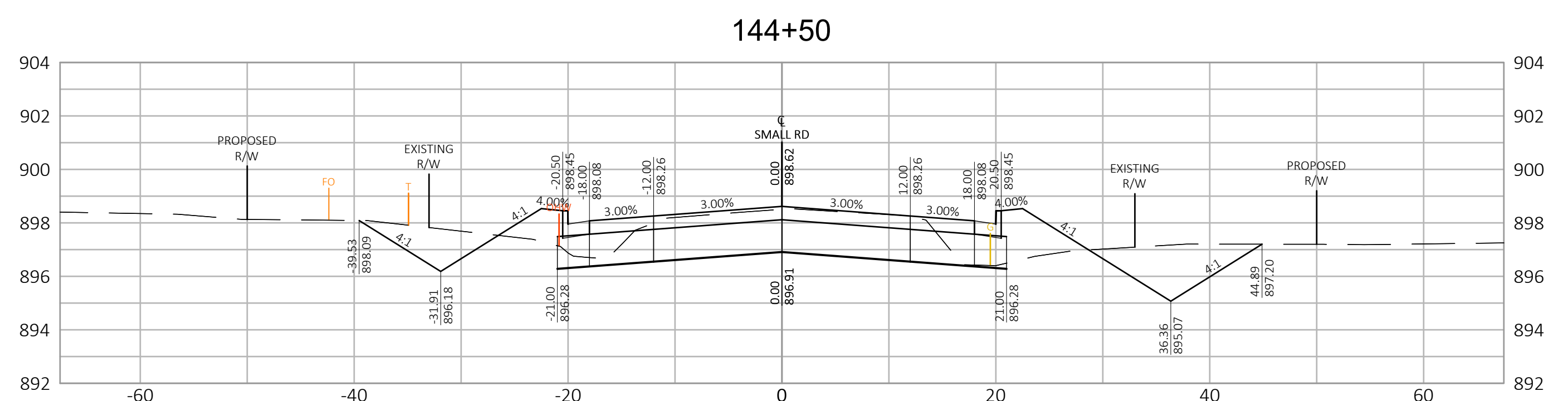
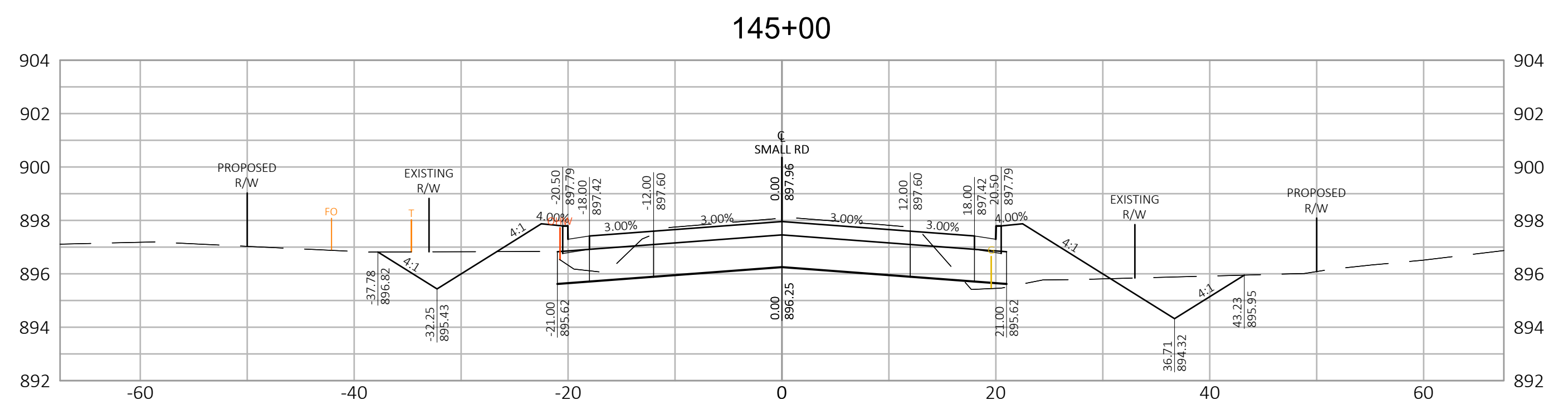
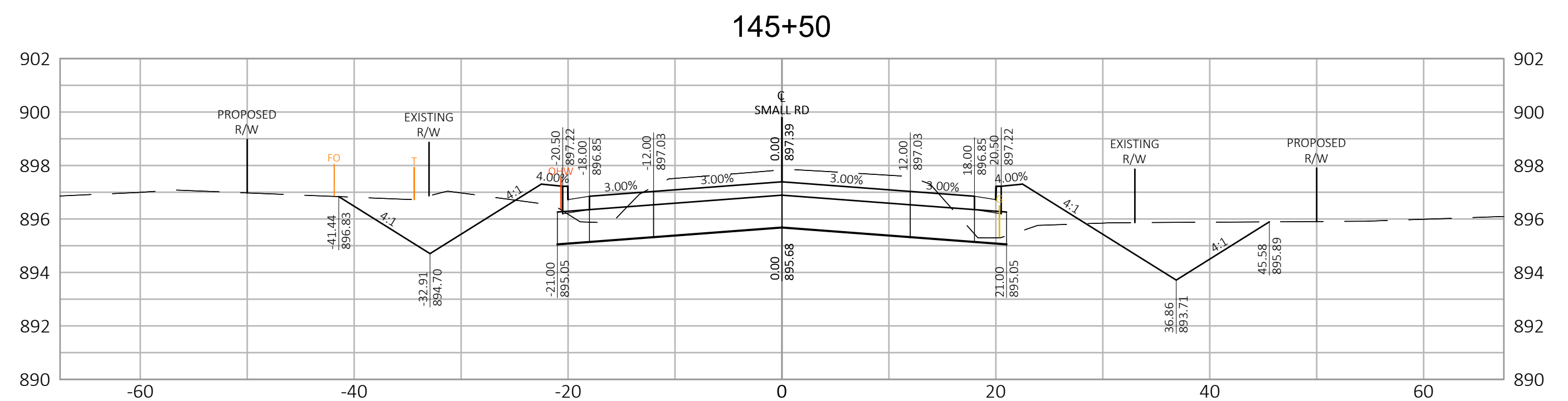
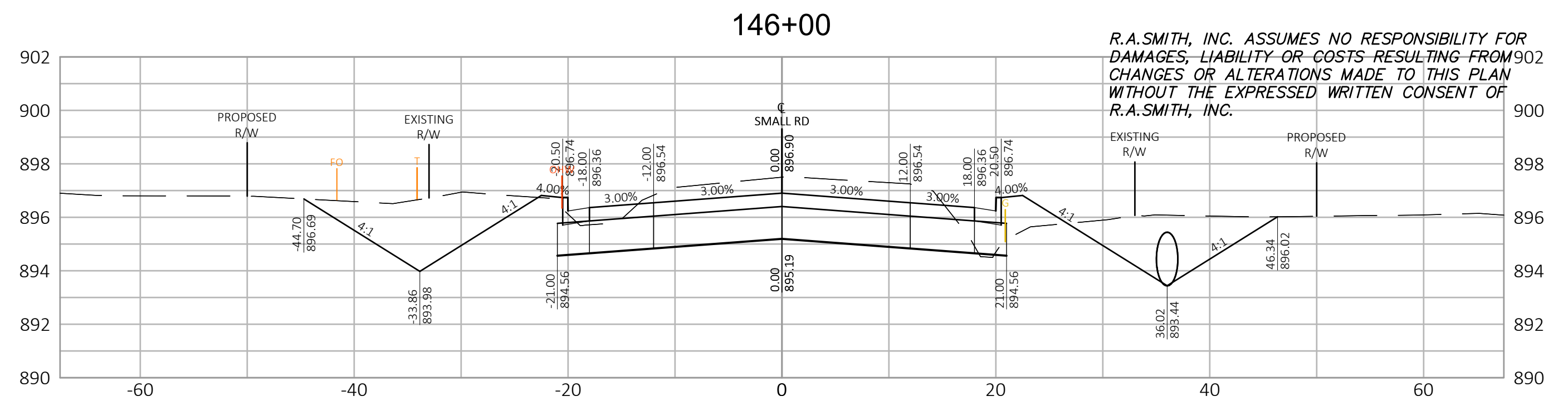
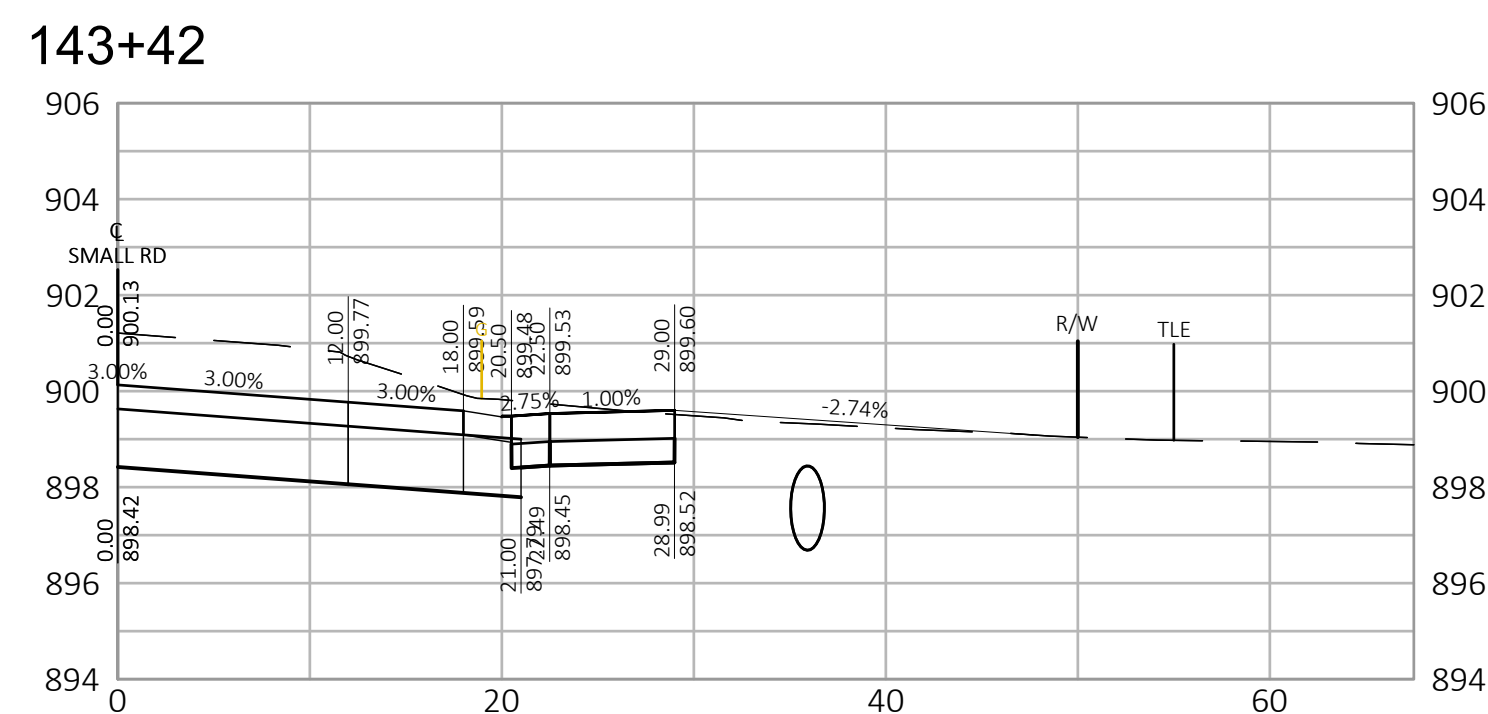
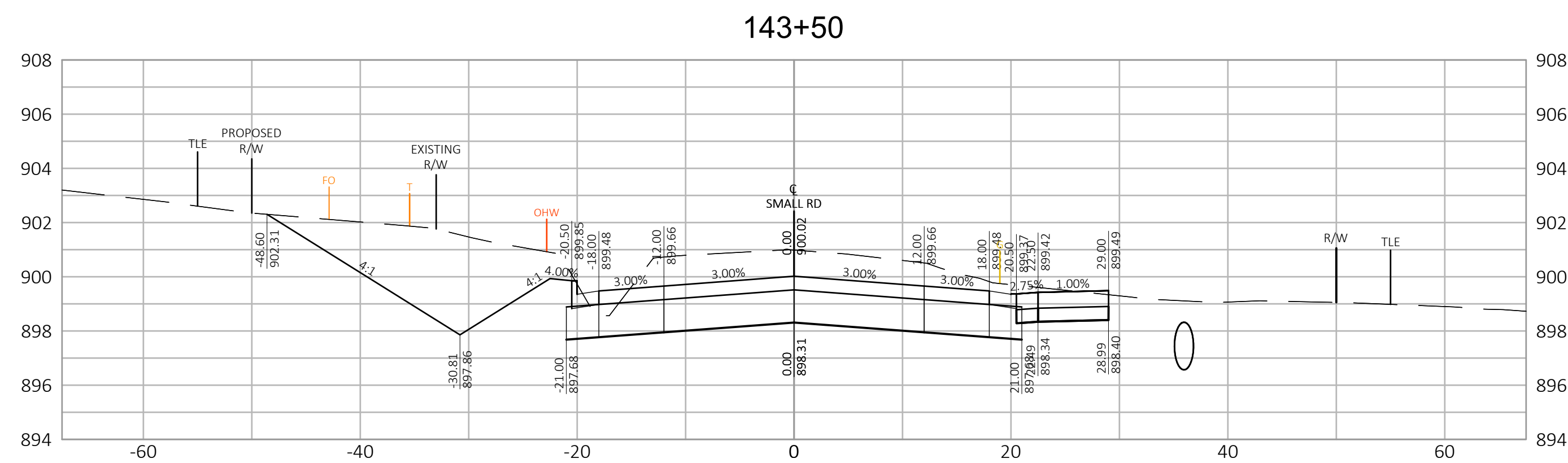
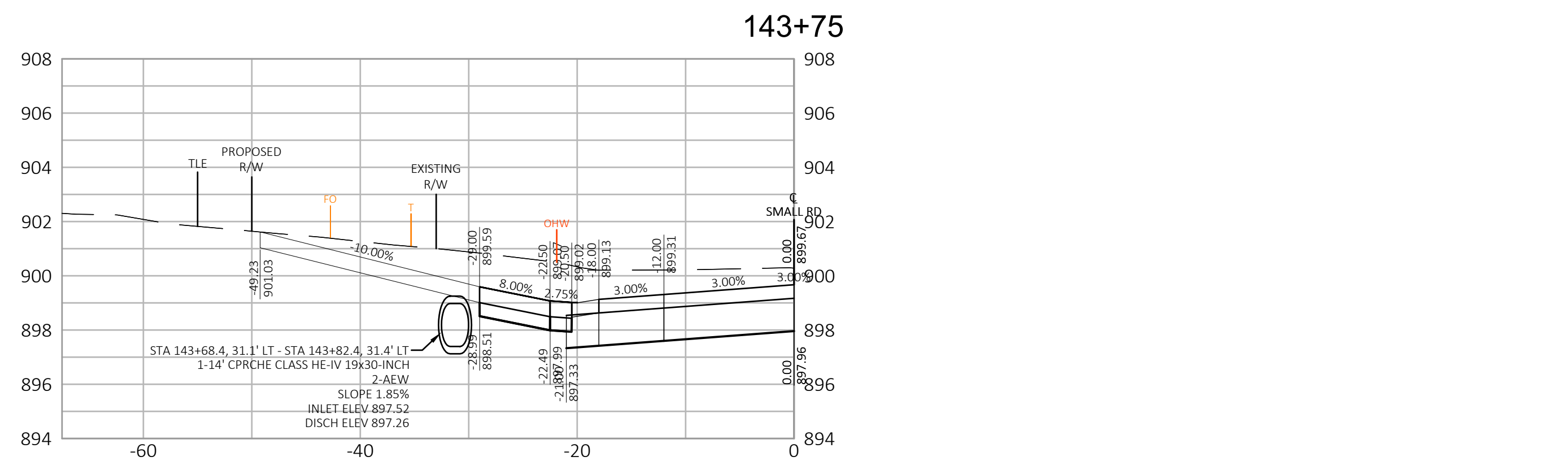
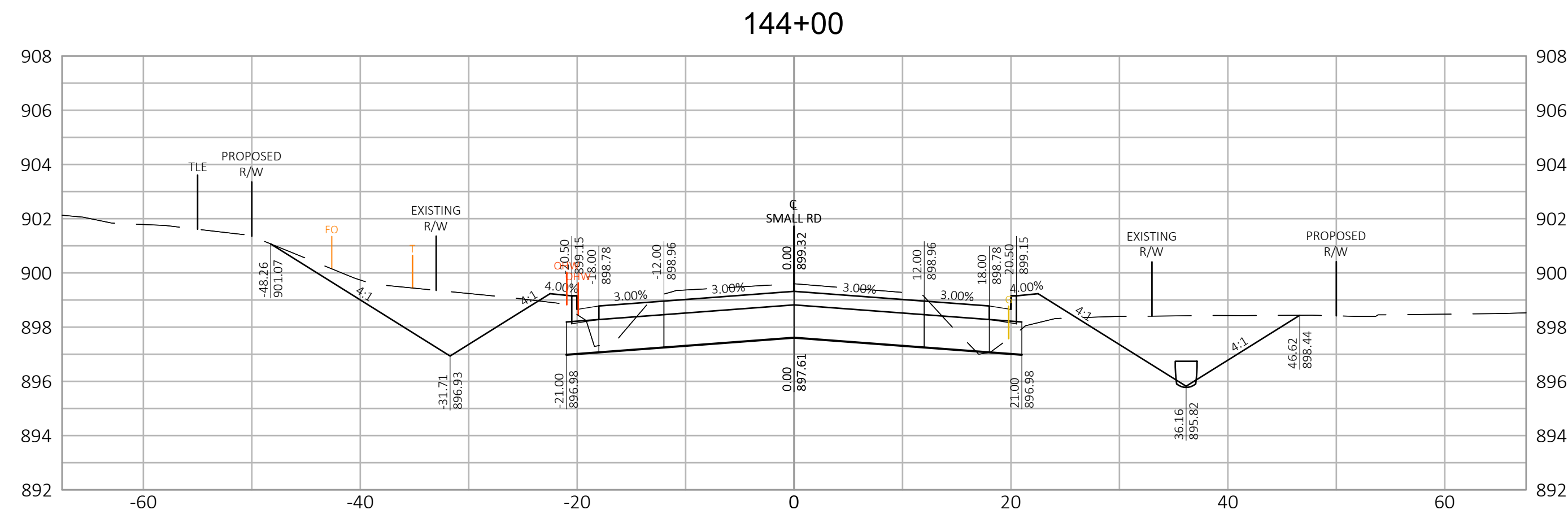
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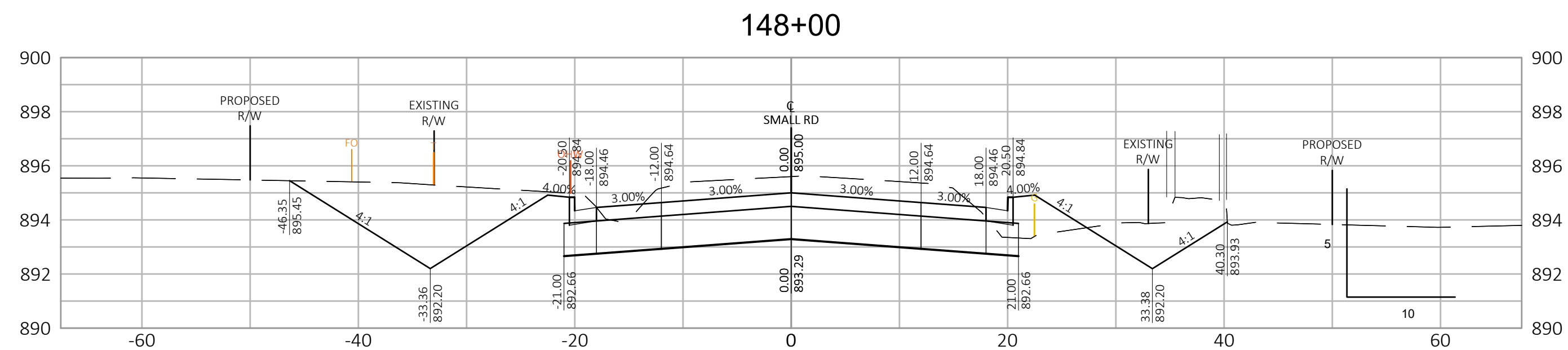
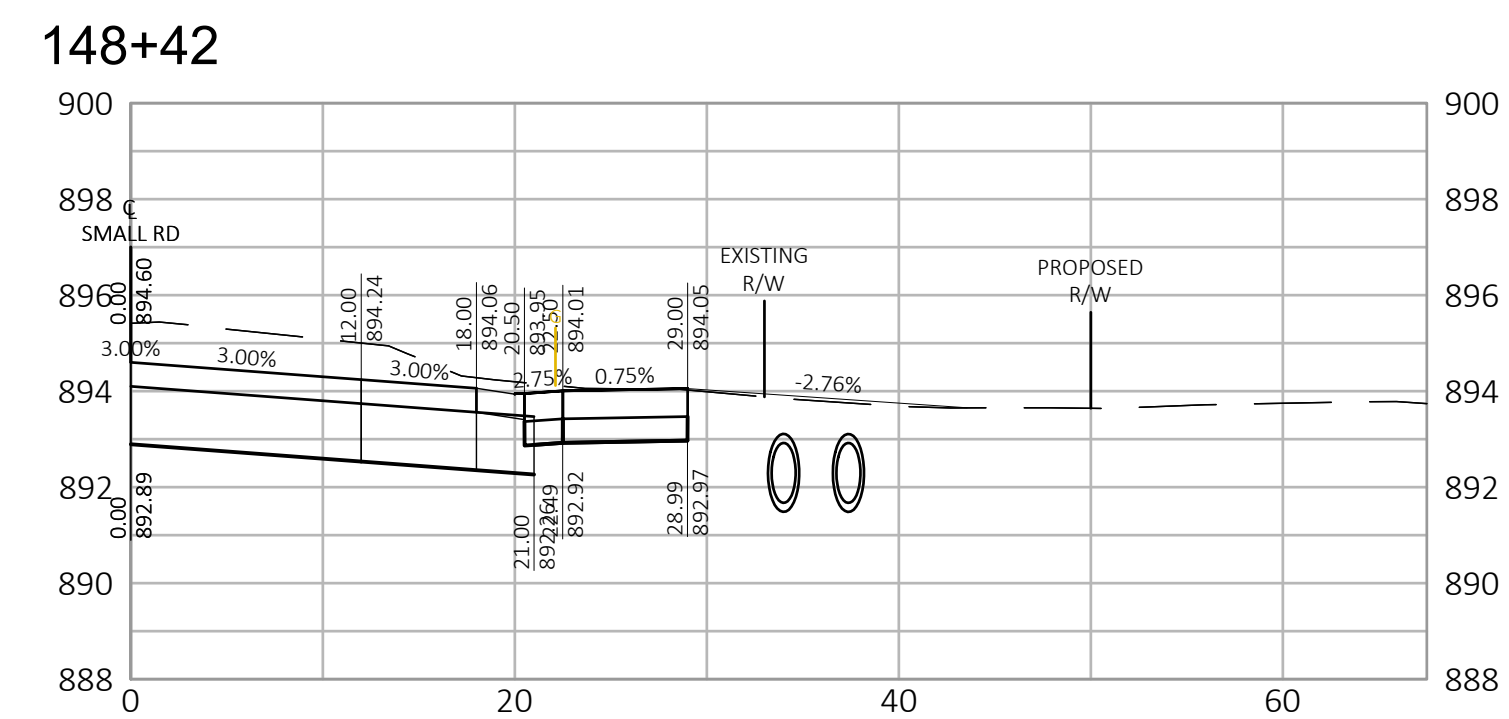
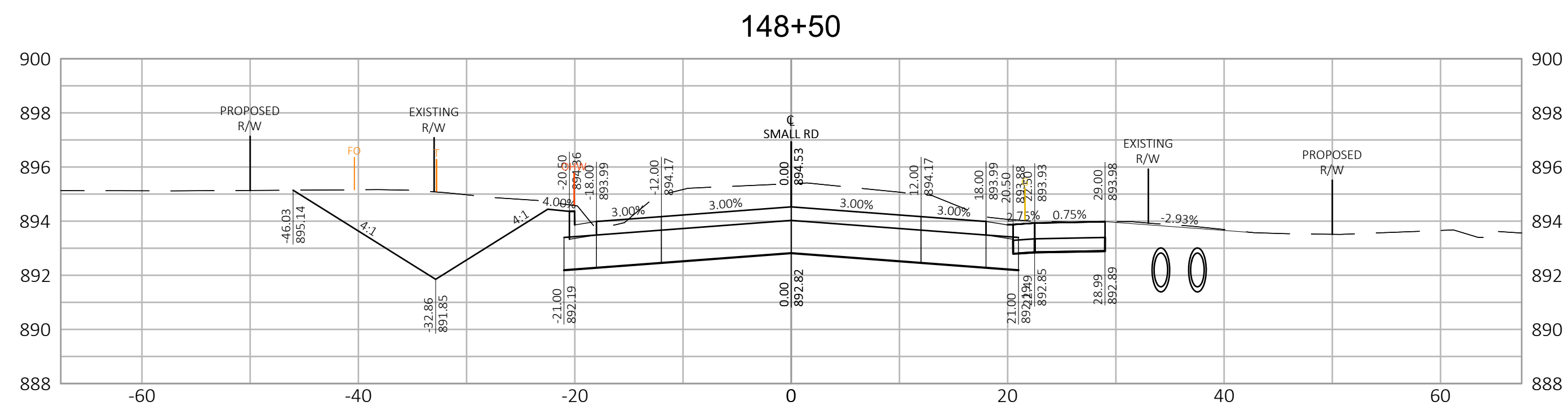
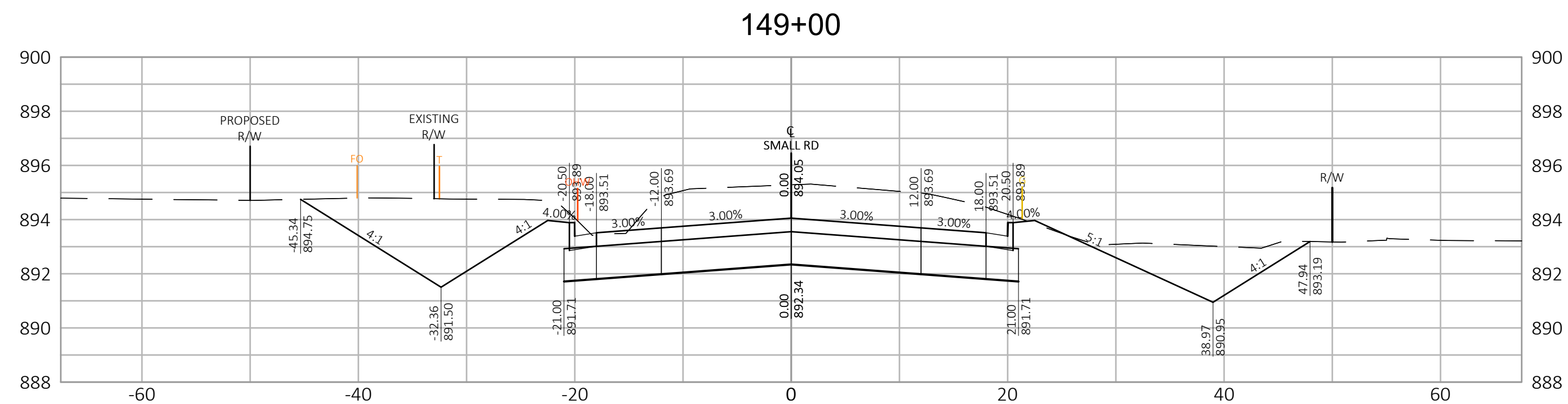
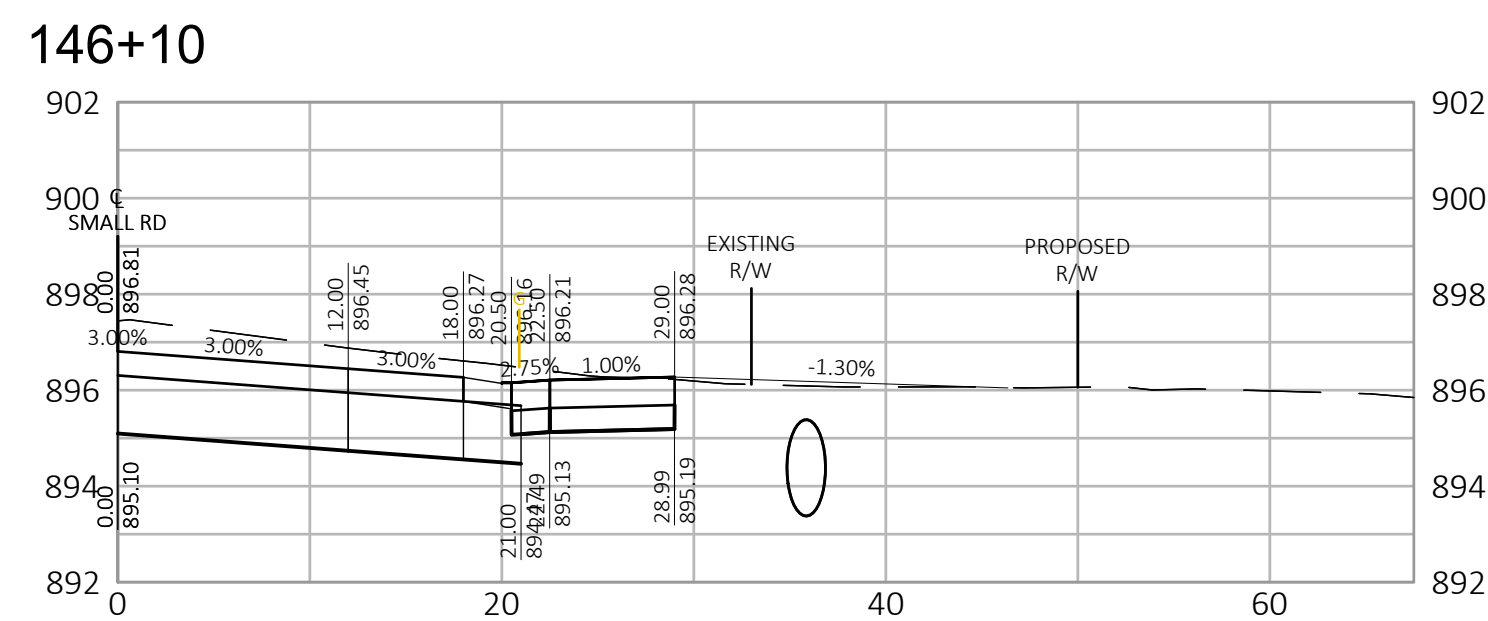
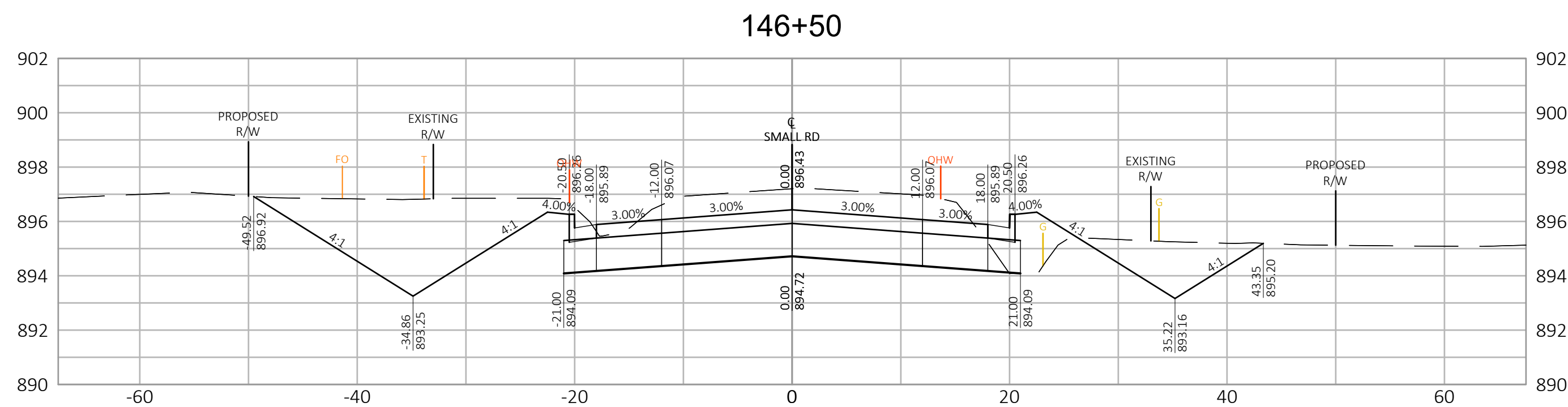
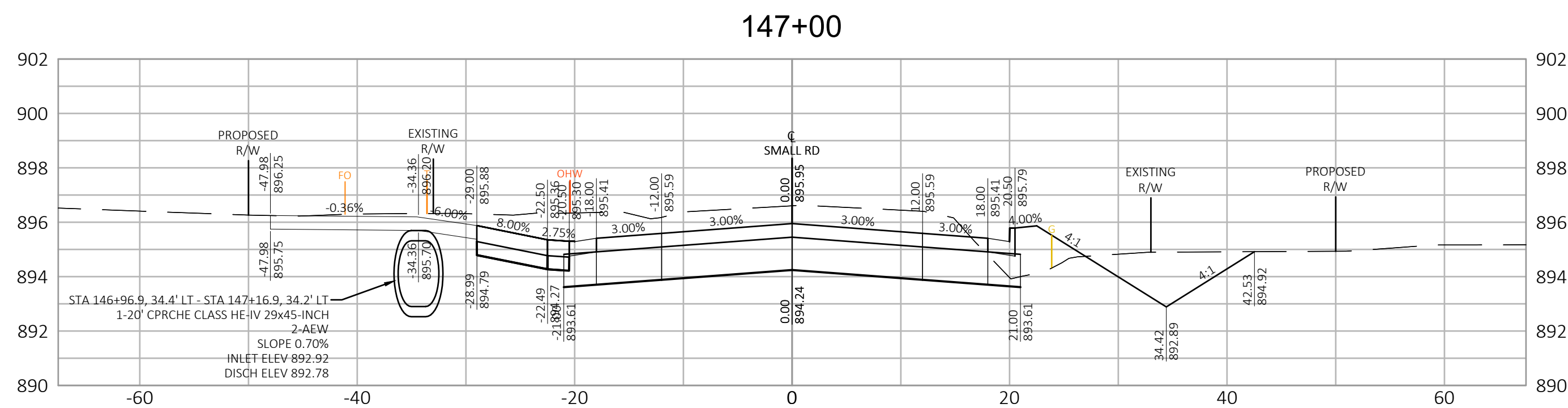
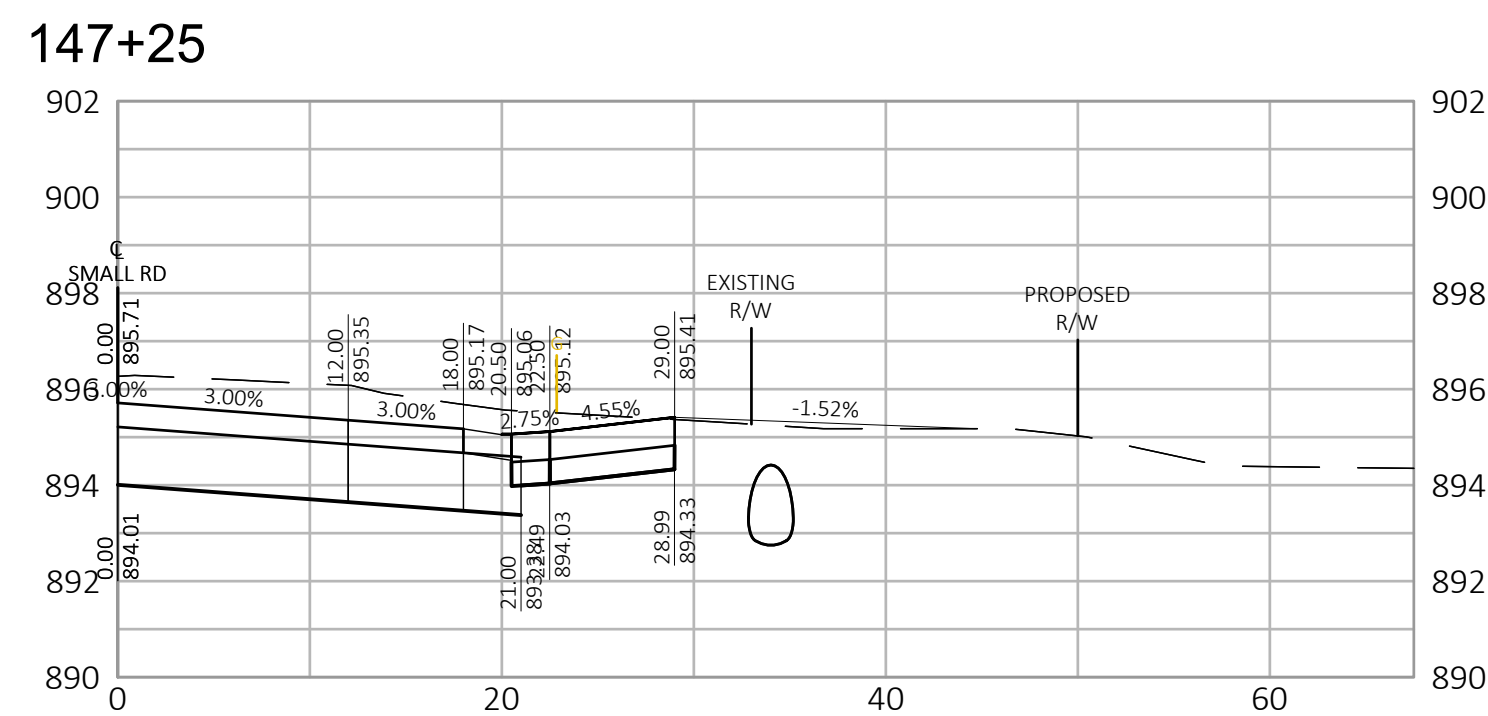
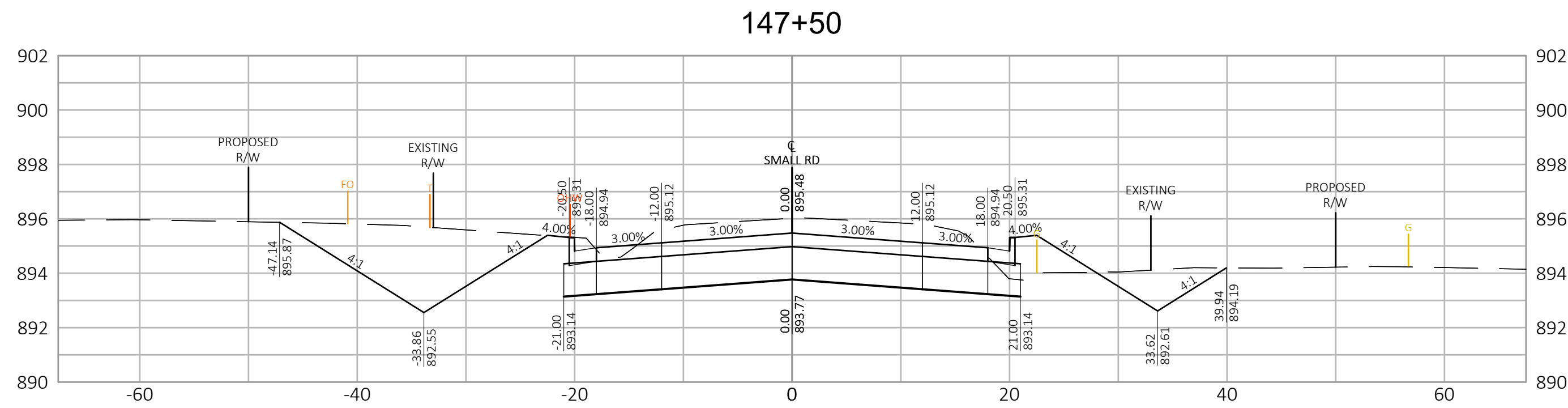
SMALL ROAD NEW BERLIN, WISCONSIN		raSmith CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-0774 (262) 781-1000 rasmith.com Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	DATE	DESCRIPTION
CROSS SECTIONS SMALL ROAD				
© COPYRIGHT 2023 R.A. Smith, Inc.				
DATE: 1/18/2023				
SCALE: 1" = 10'				
JOB NO. 1200244				
PROJECT MANAGER: T. HARTJES				
DESIGNED BY: MCG				
CHECKED BY: ---				
SHEET NUMBER				
75				



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

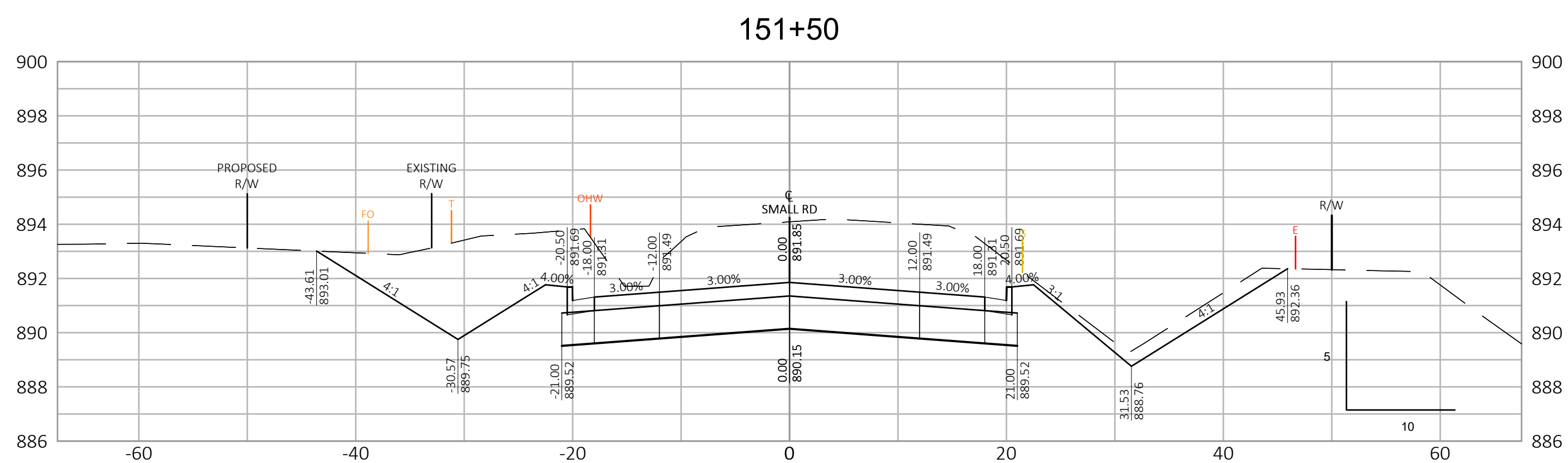
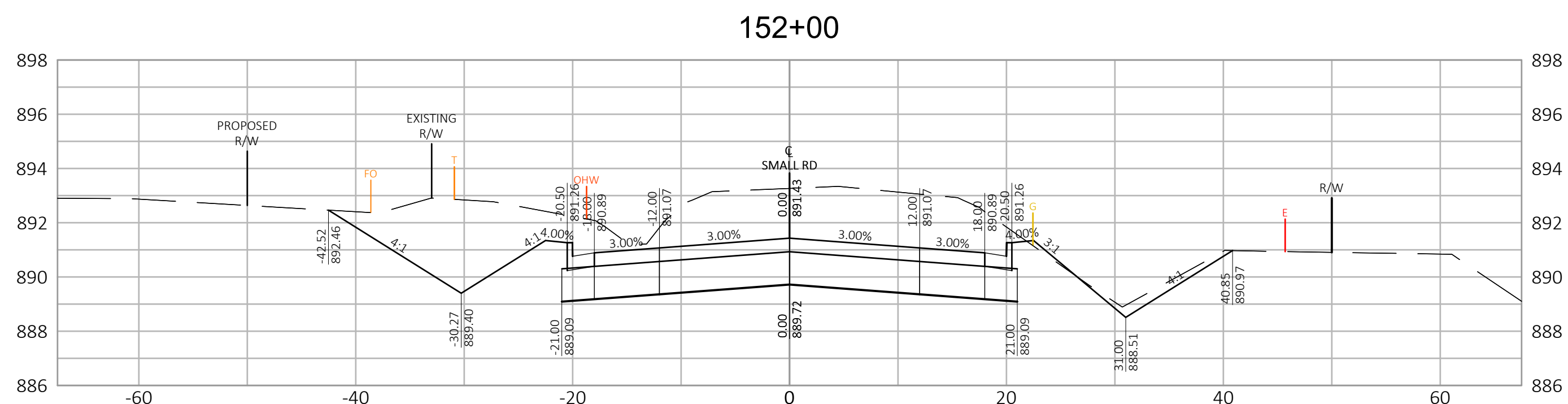
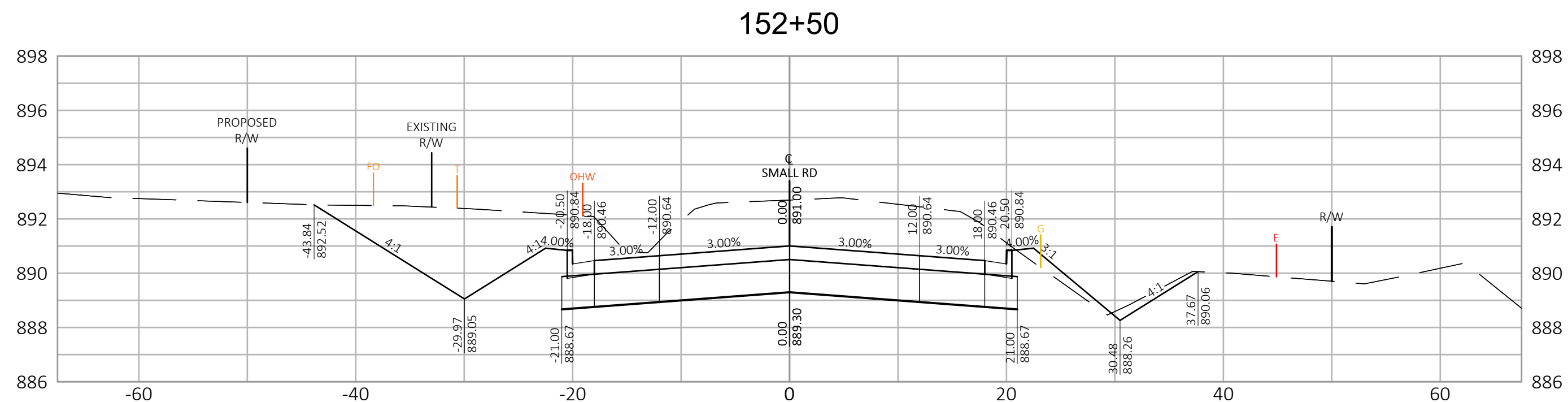
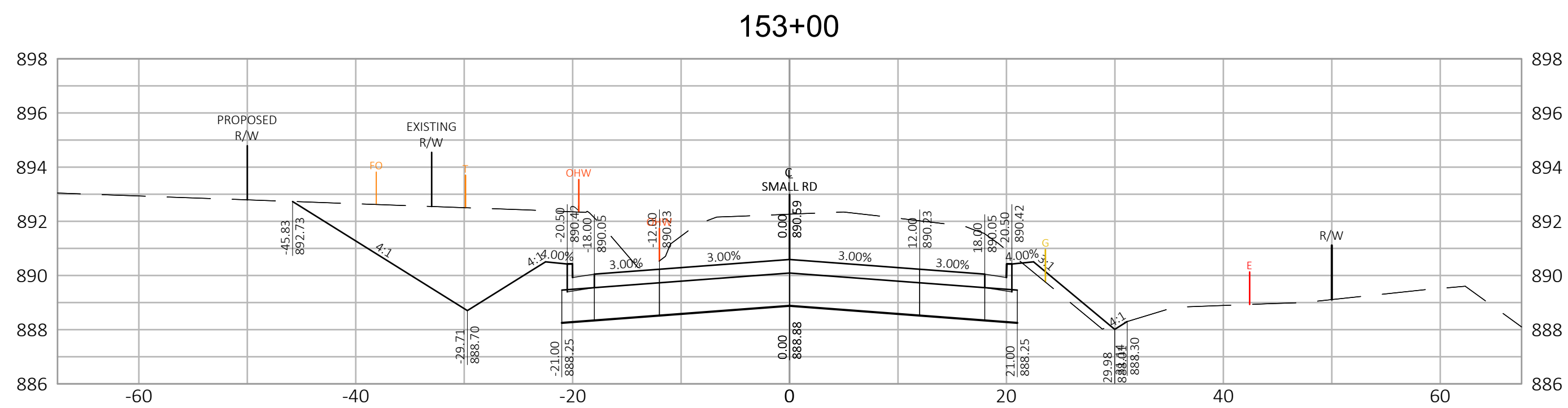
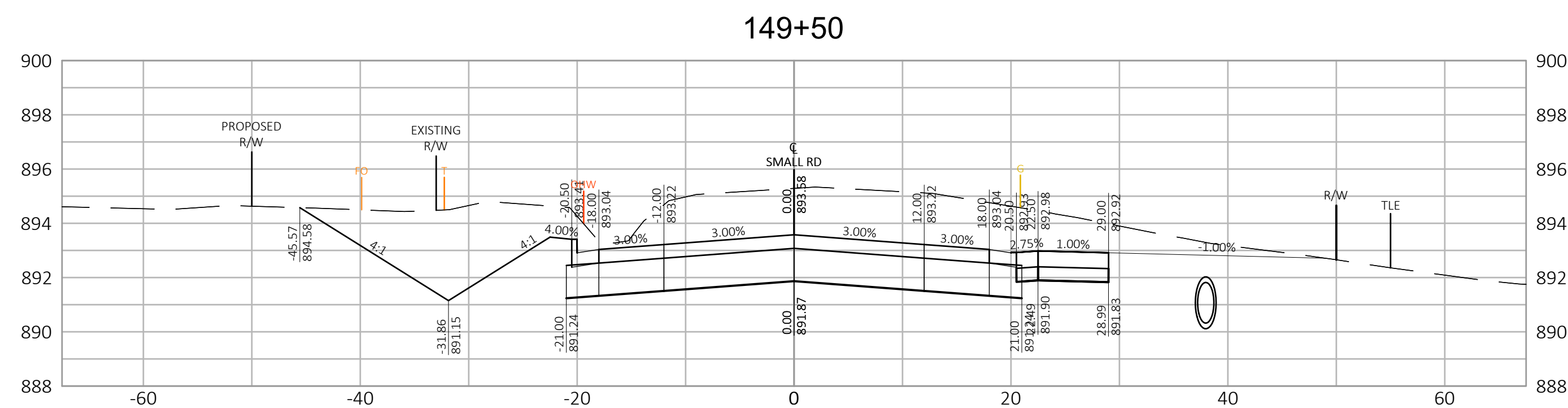
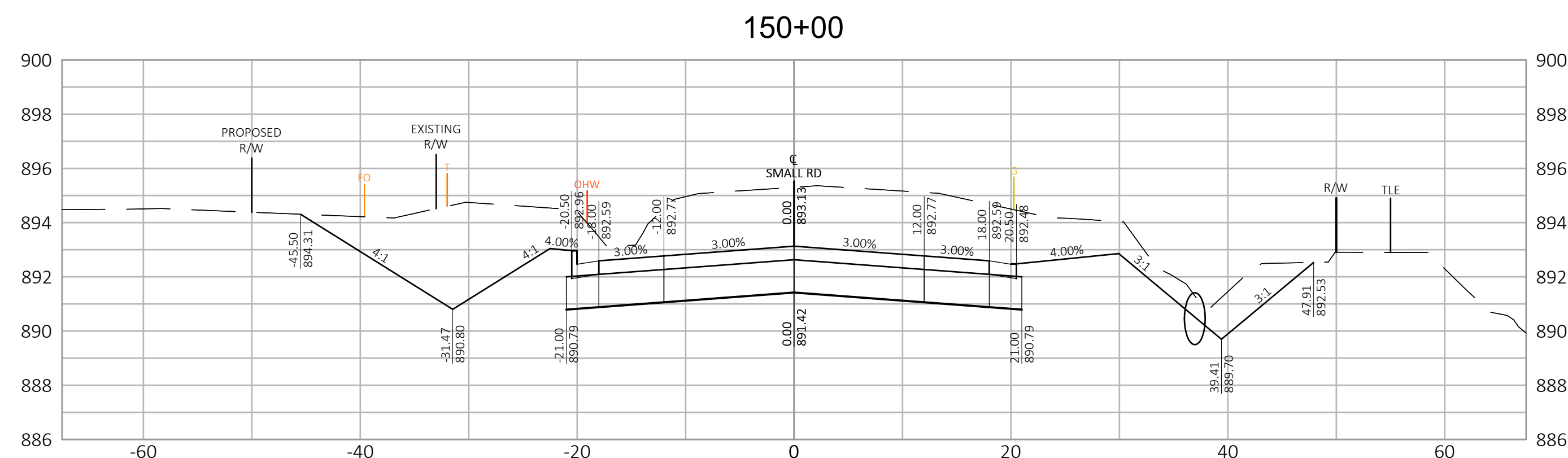
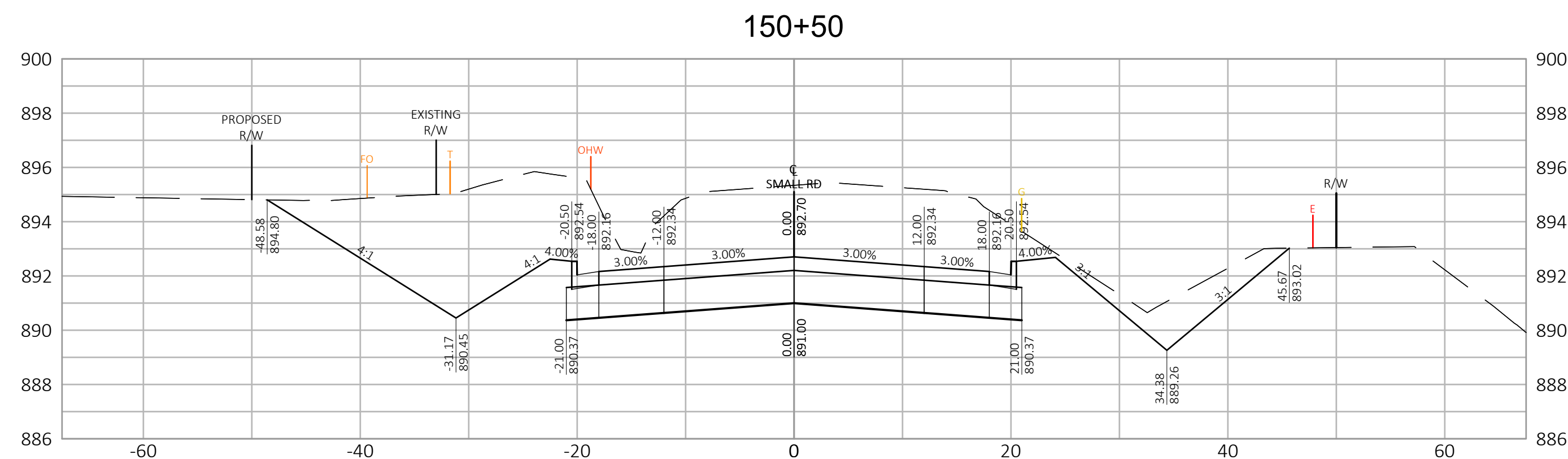
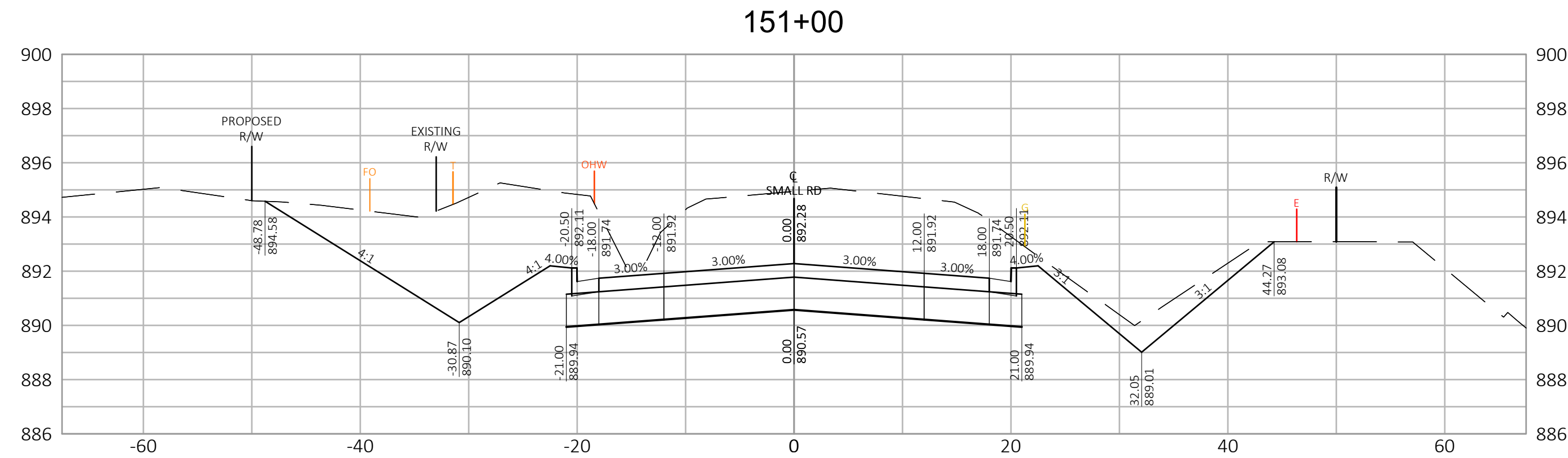
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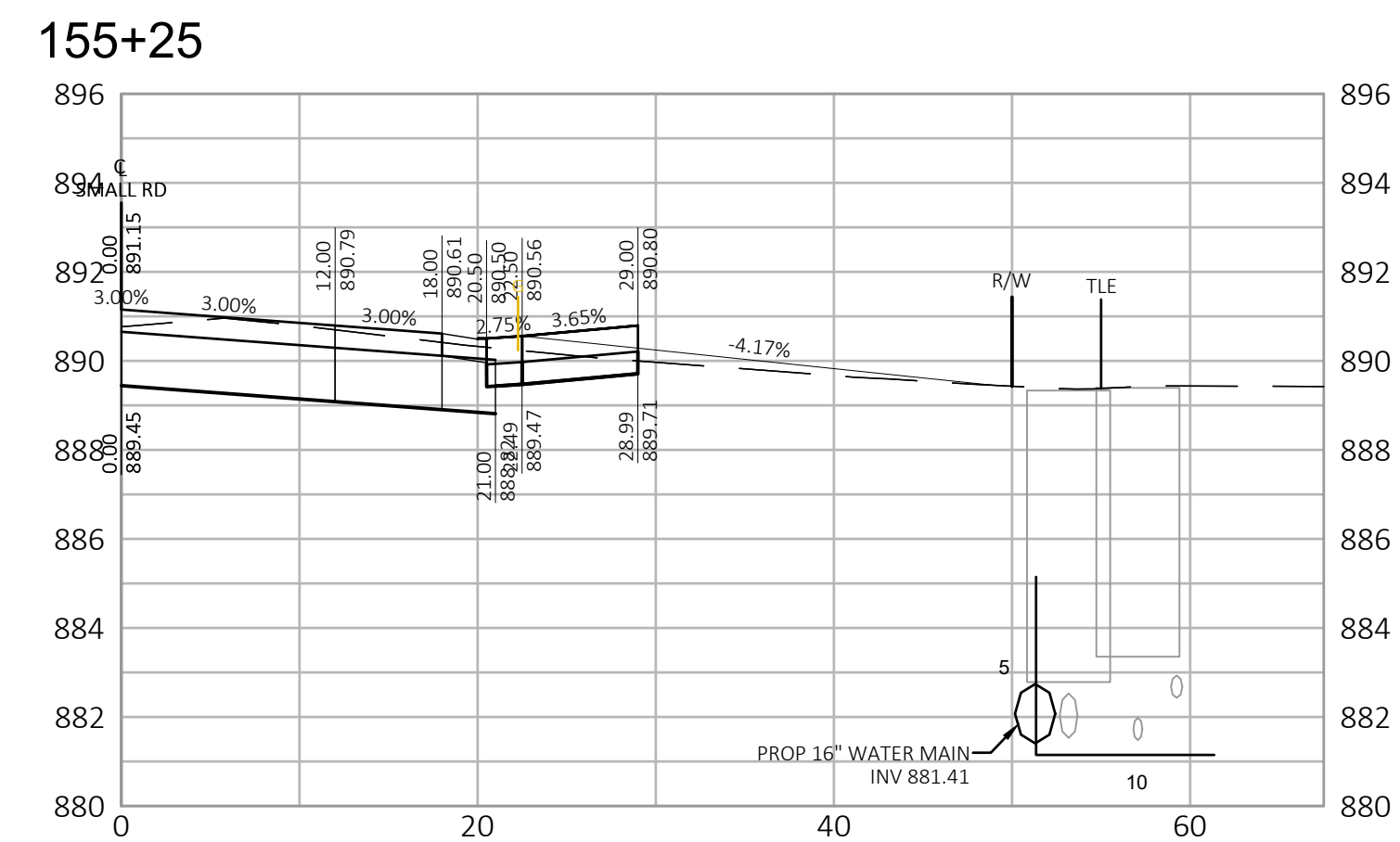
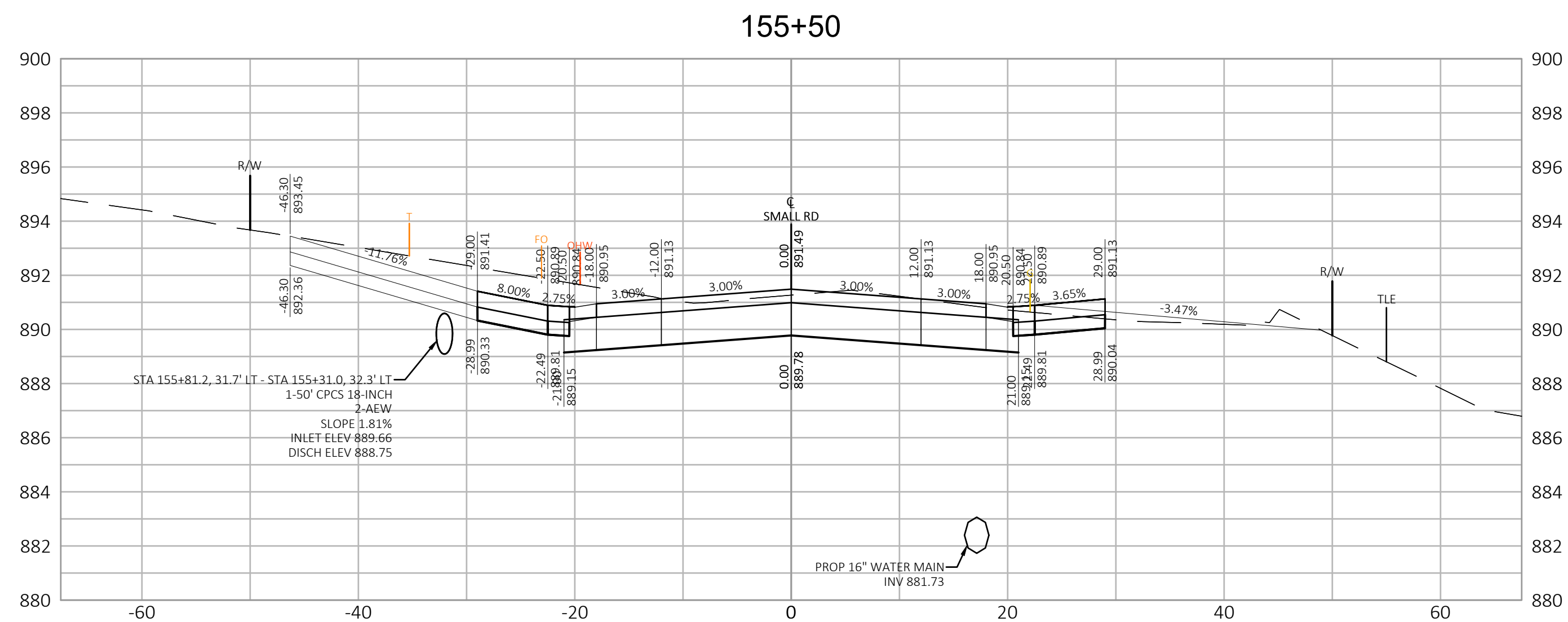
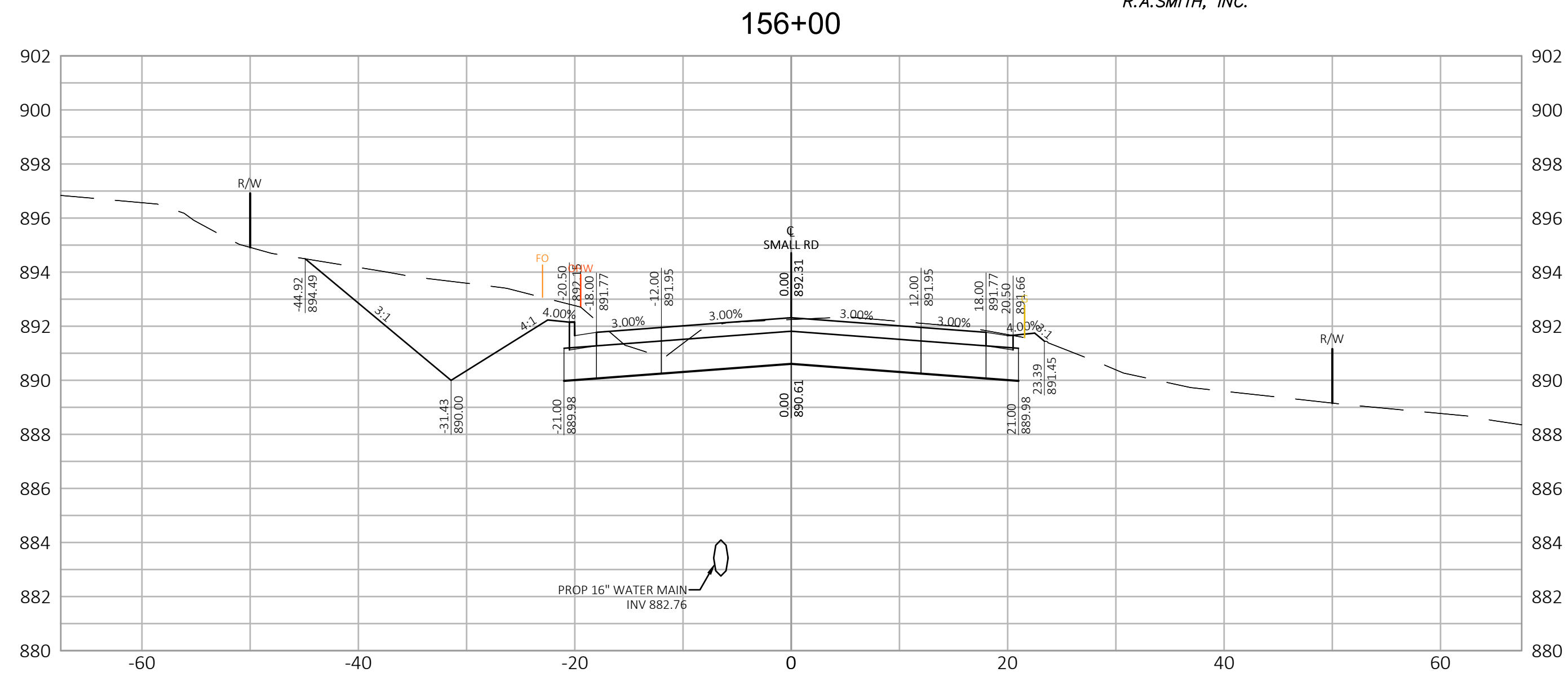
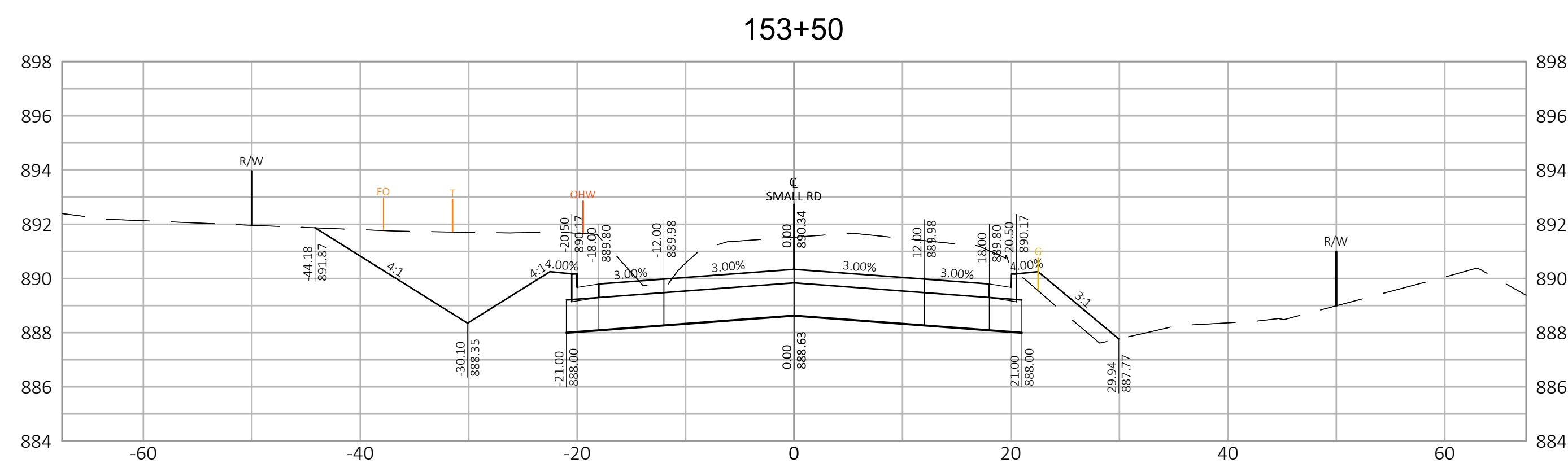
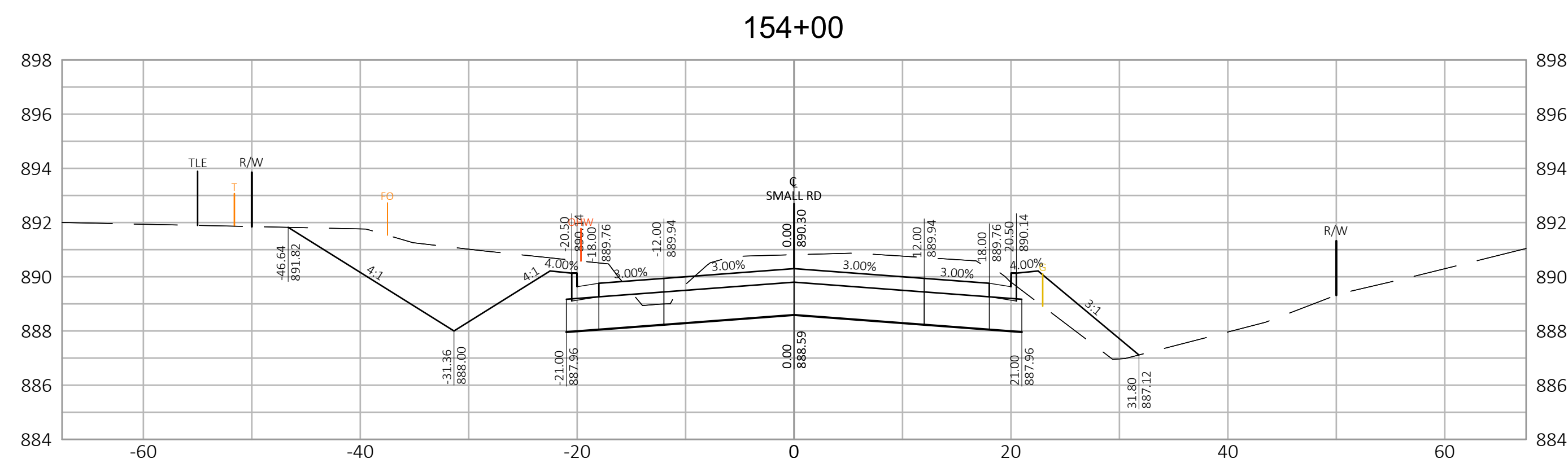
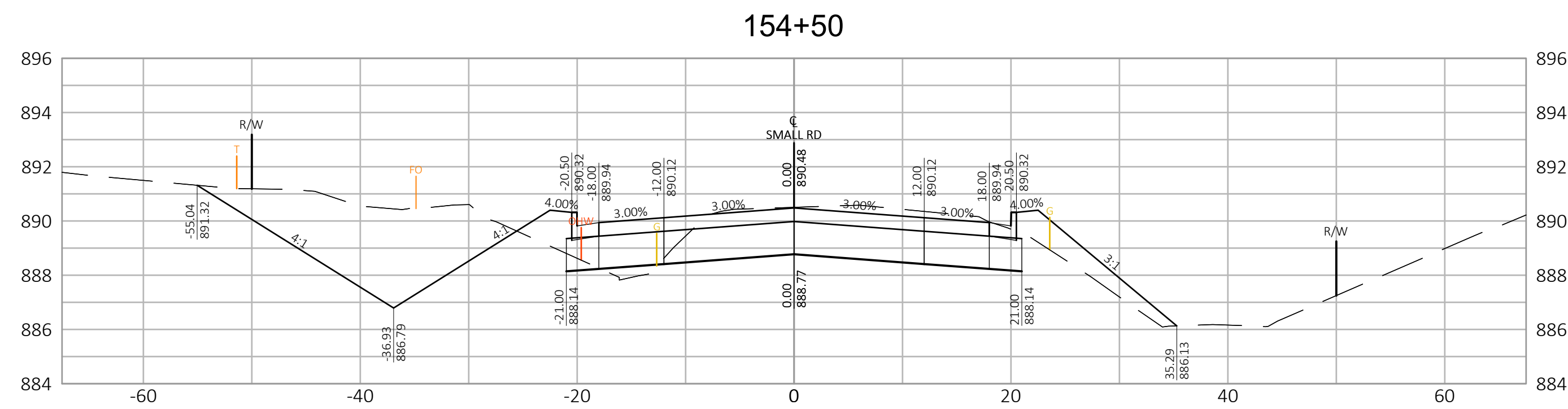
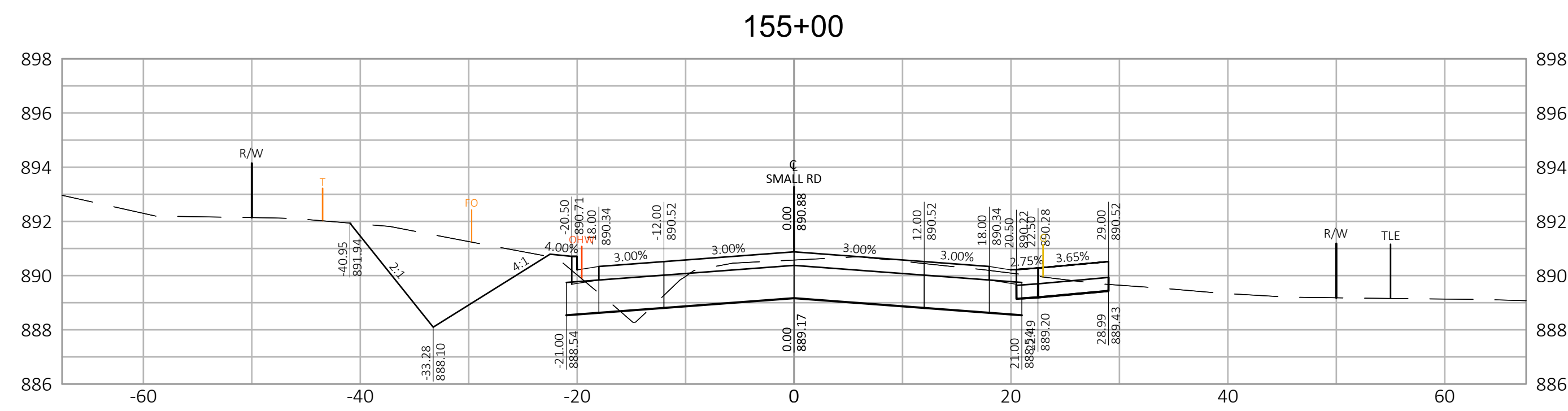
R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

SMALL ROAD NEW BERLIN, WISCONSIN		raSmith CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	DATE	DESCRIPTION
CROSS SECTIONS SMALL ROAD				
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DATE: 1/18/2023				
SCALE: 1" = 10'				
JOB NO. 1200244				
PROJECT MANAGER: T. HARTJES				
DESIGNED BY: MCG				
CHECKED BY: ---				
SHEET NUMBER				
78				



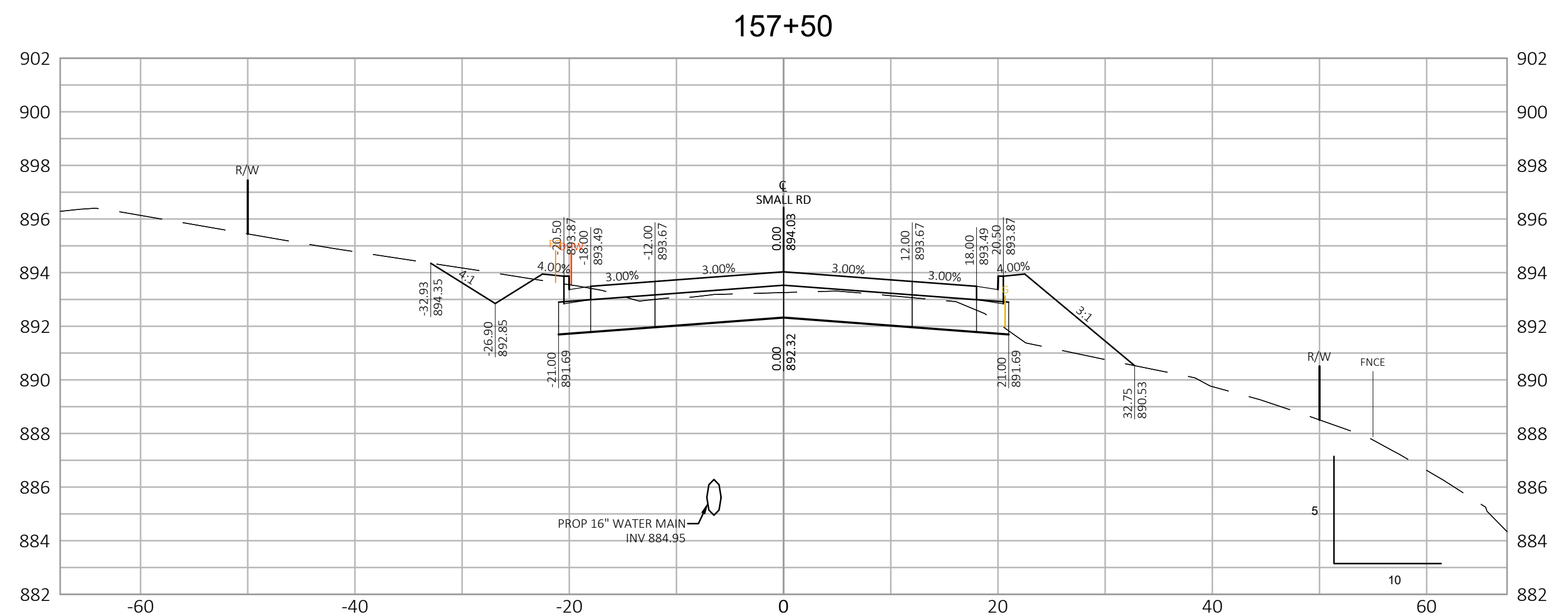
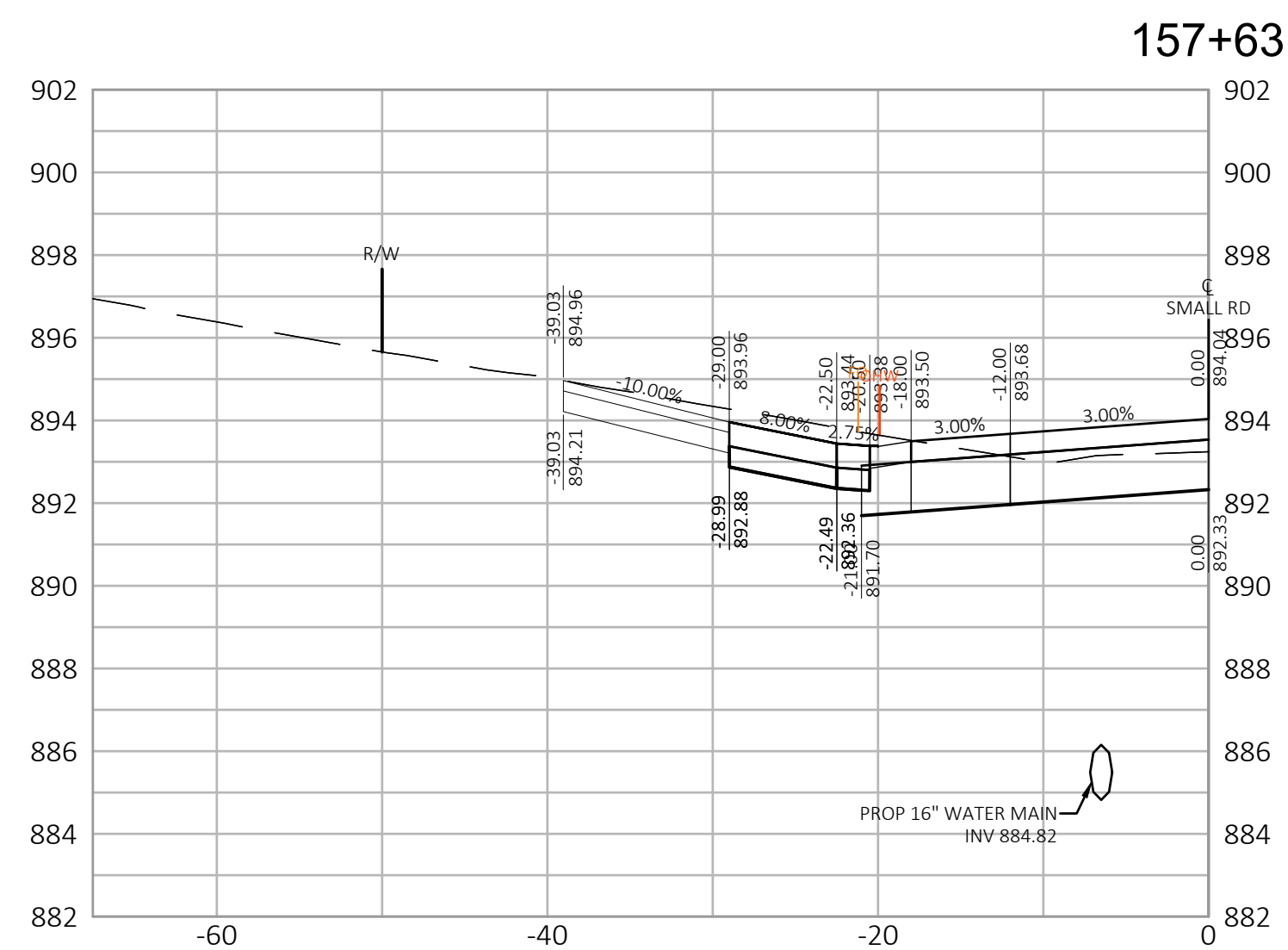
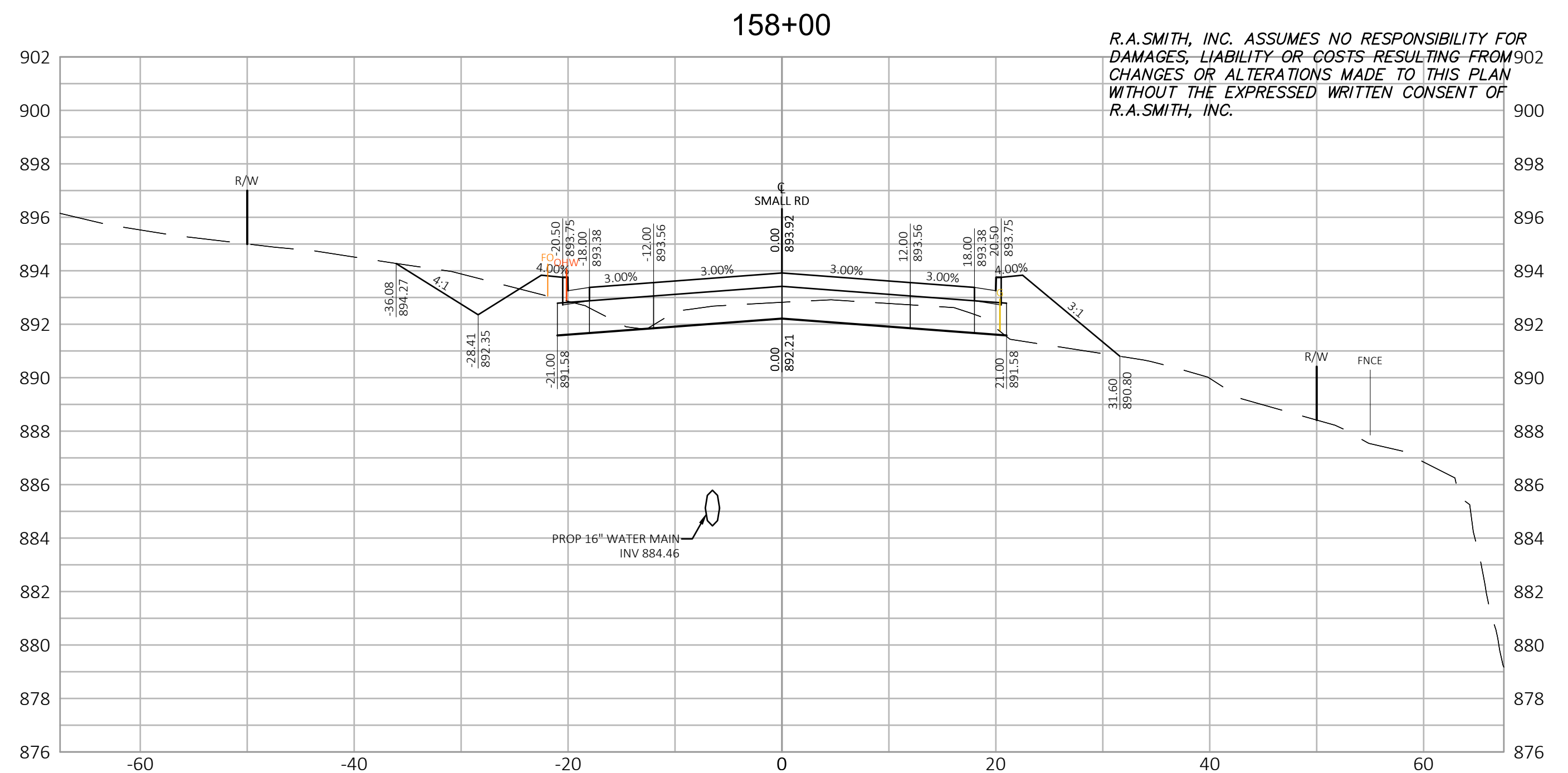
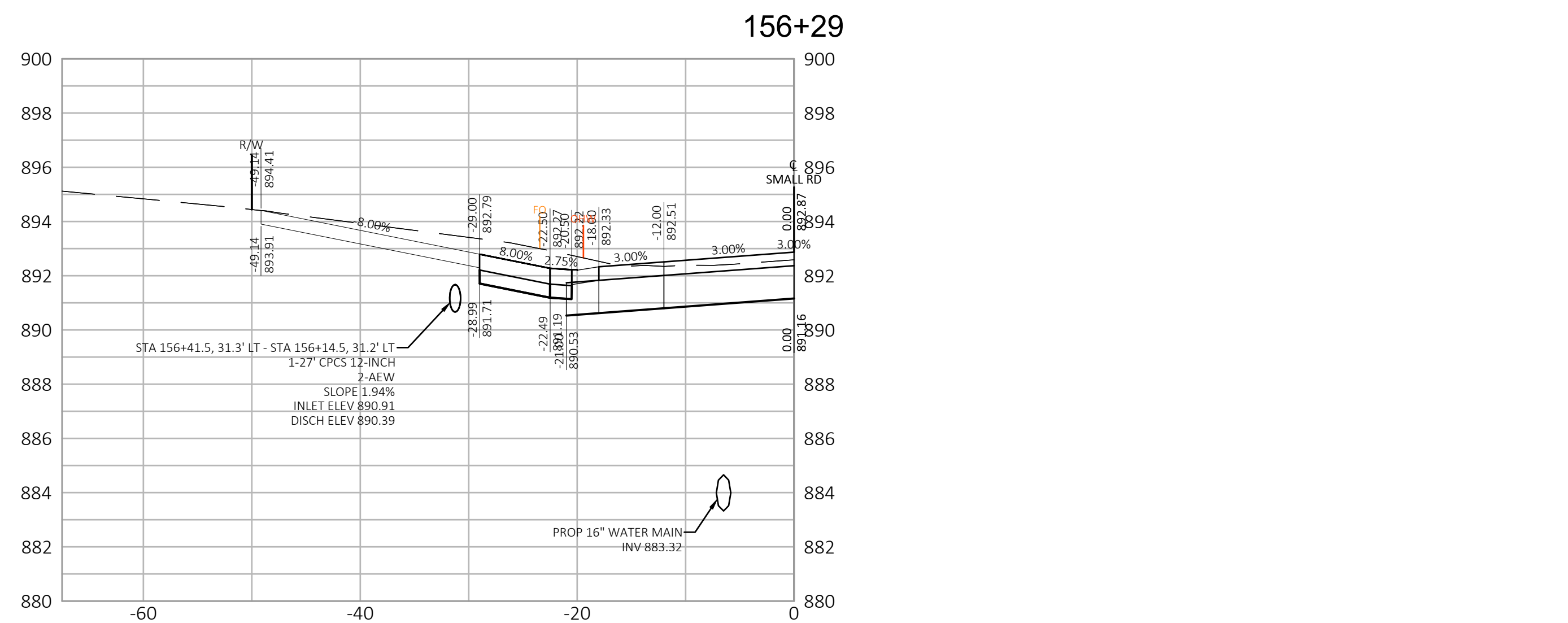
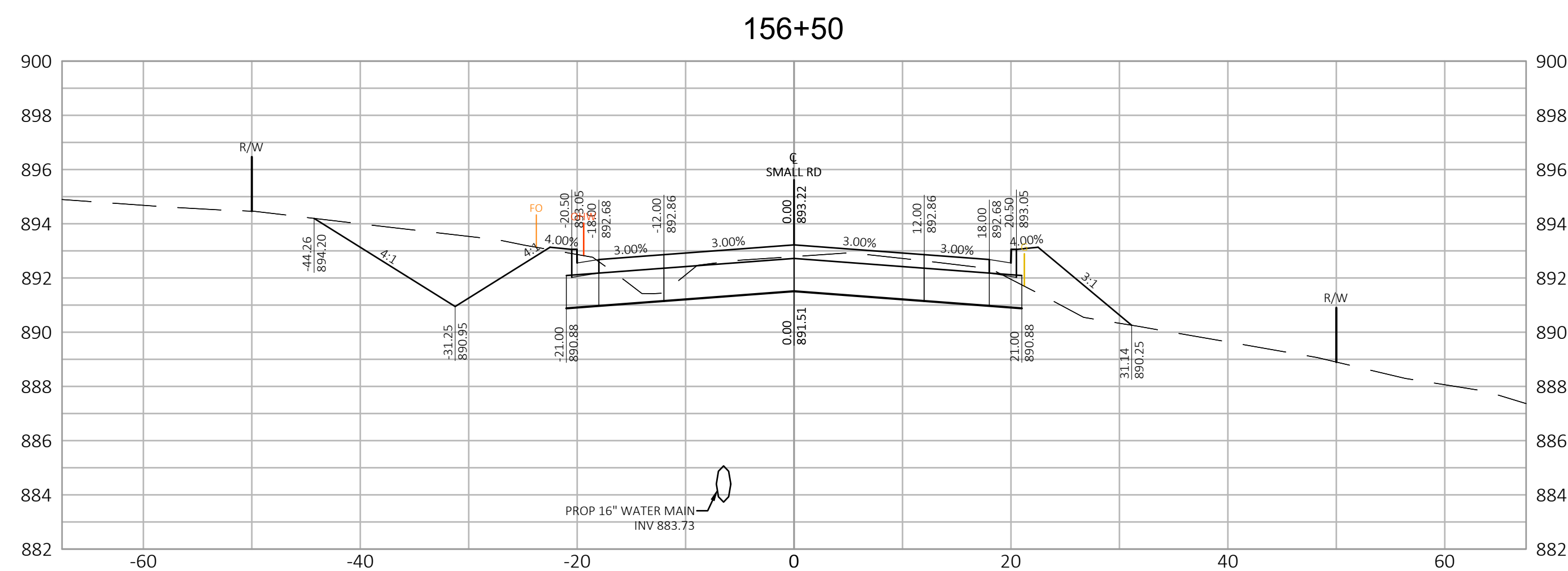
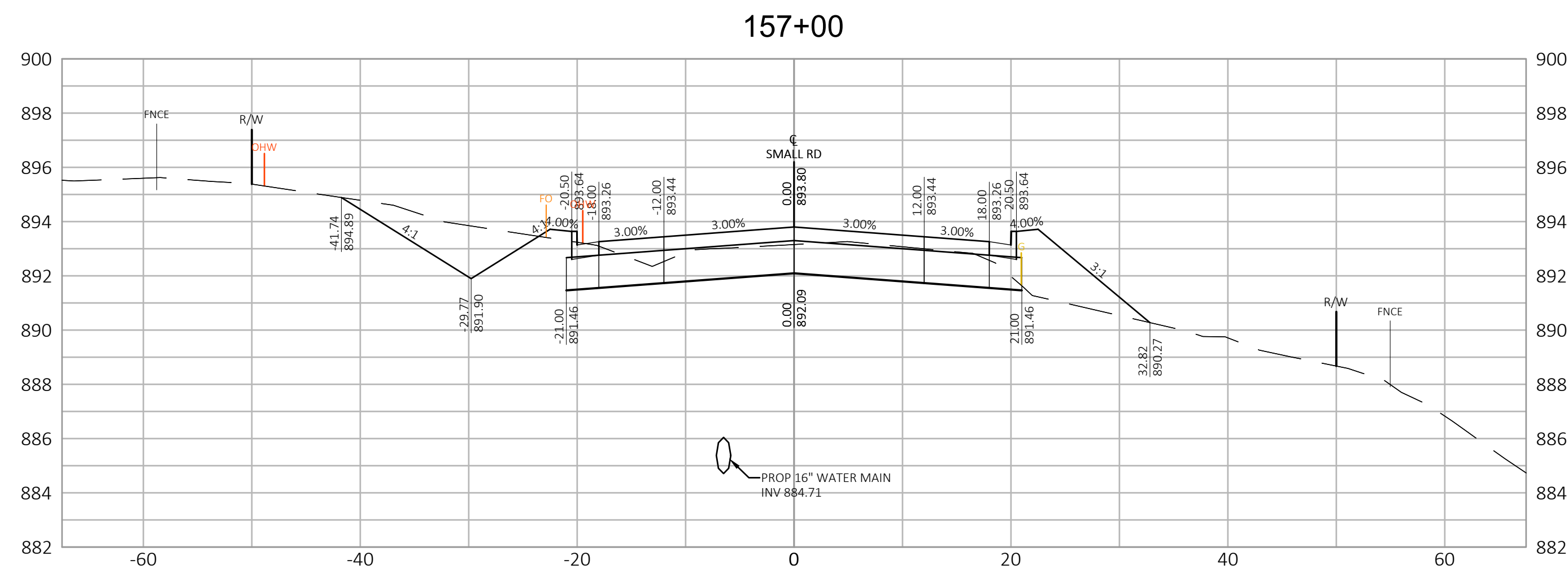
R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

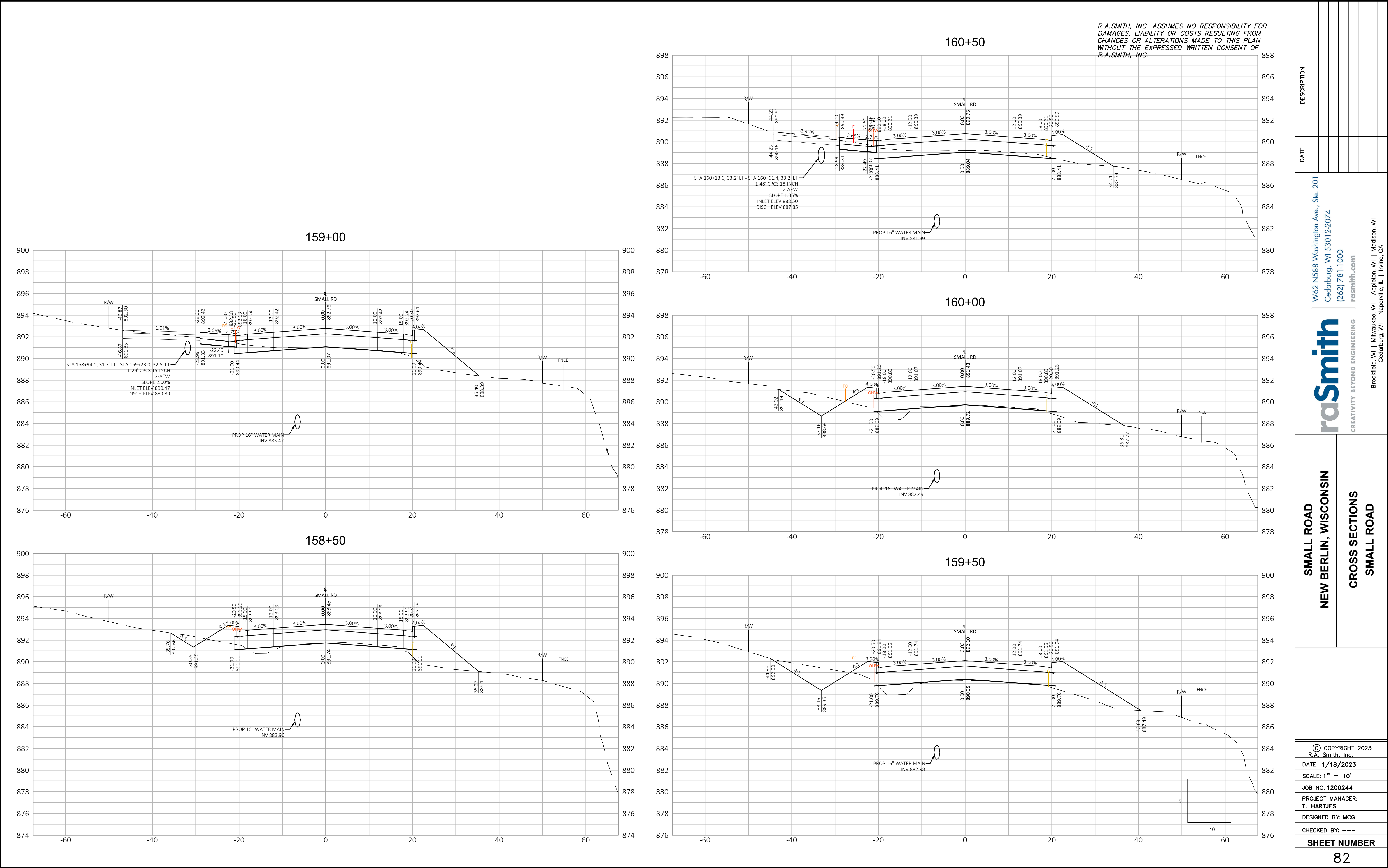
SMALL ROAD NEW BERLIN, WISCONSIN CROSS SECTIONS SMALL ROAD		 CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com	DATE	DESCRIPTION
		Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA		
© COPYRIGHT 2023 R.A. Smith, Inc. DATE: 1/18/2023 SCALE: 1" = 10' JOB NO. 1200244 PROJECT MANAGER: T. HARTJES DESIGNED BY: MCG CHECKED BY: --- SHEET NUMBER 79				



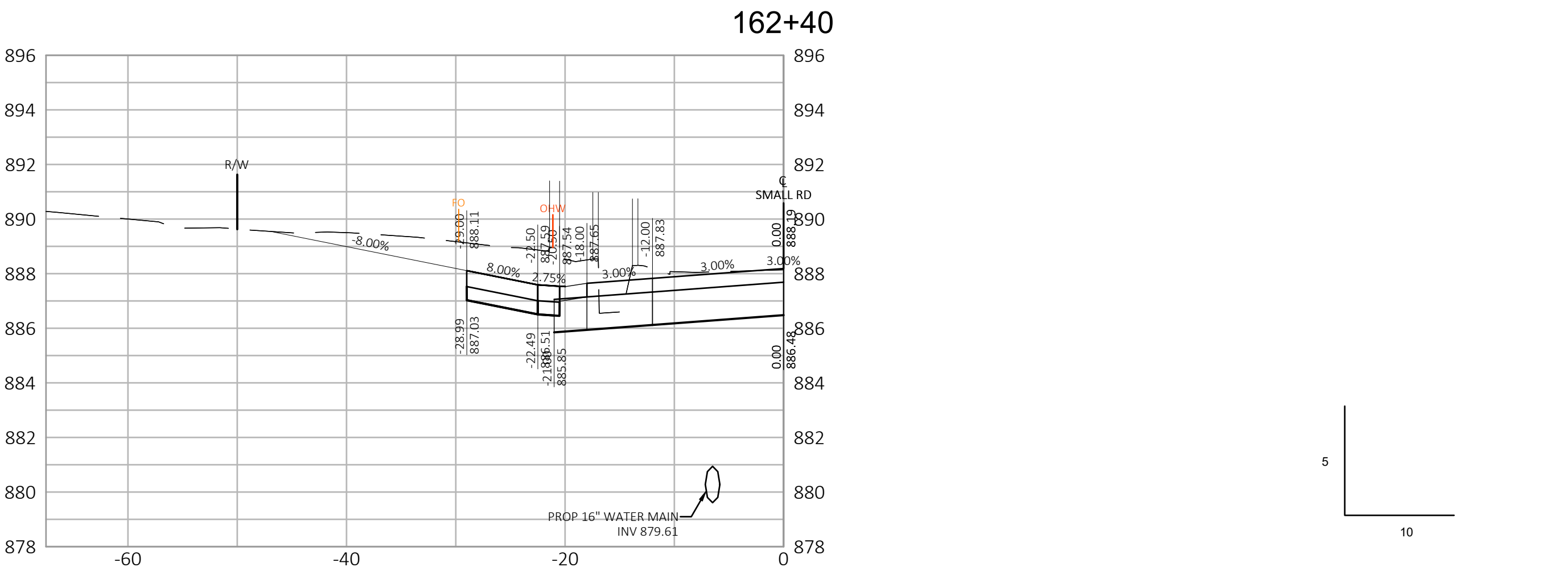
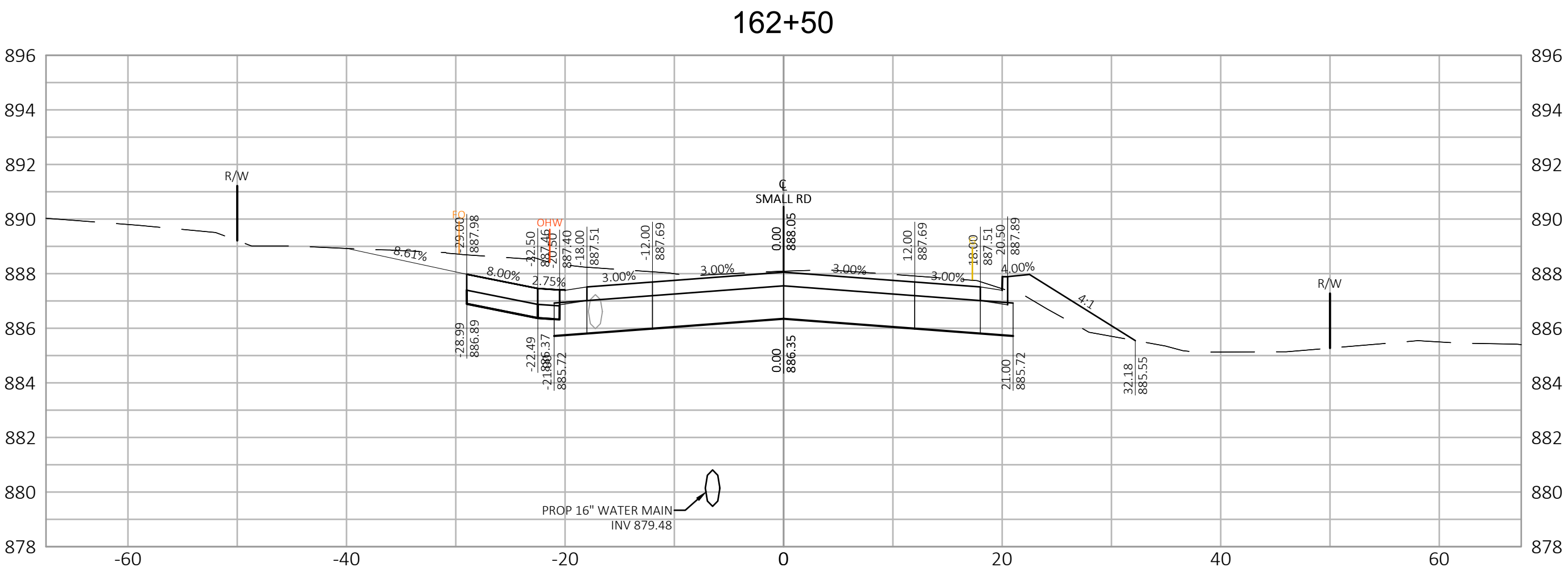
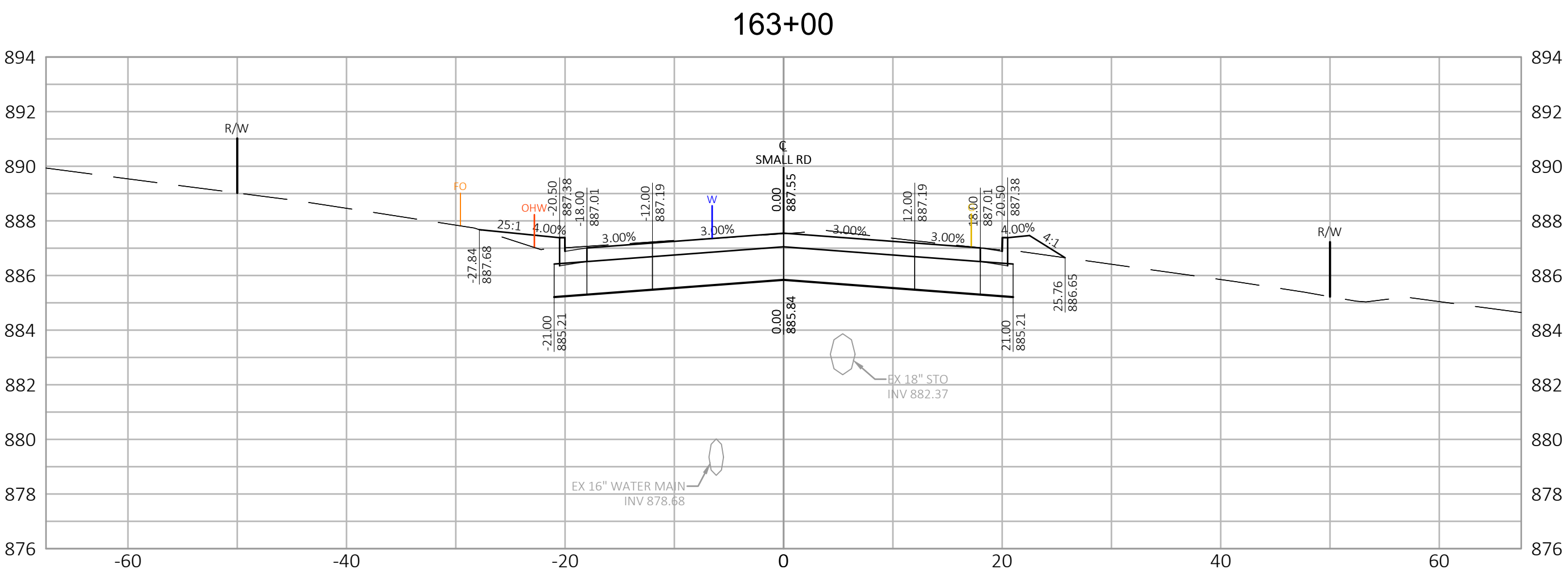
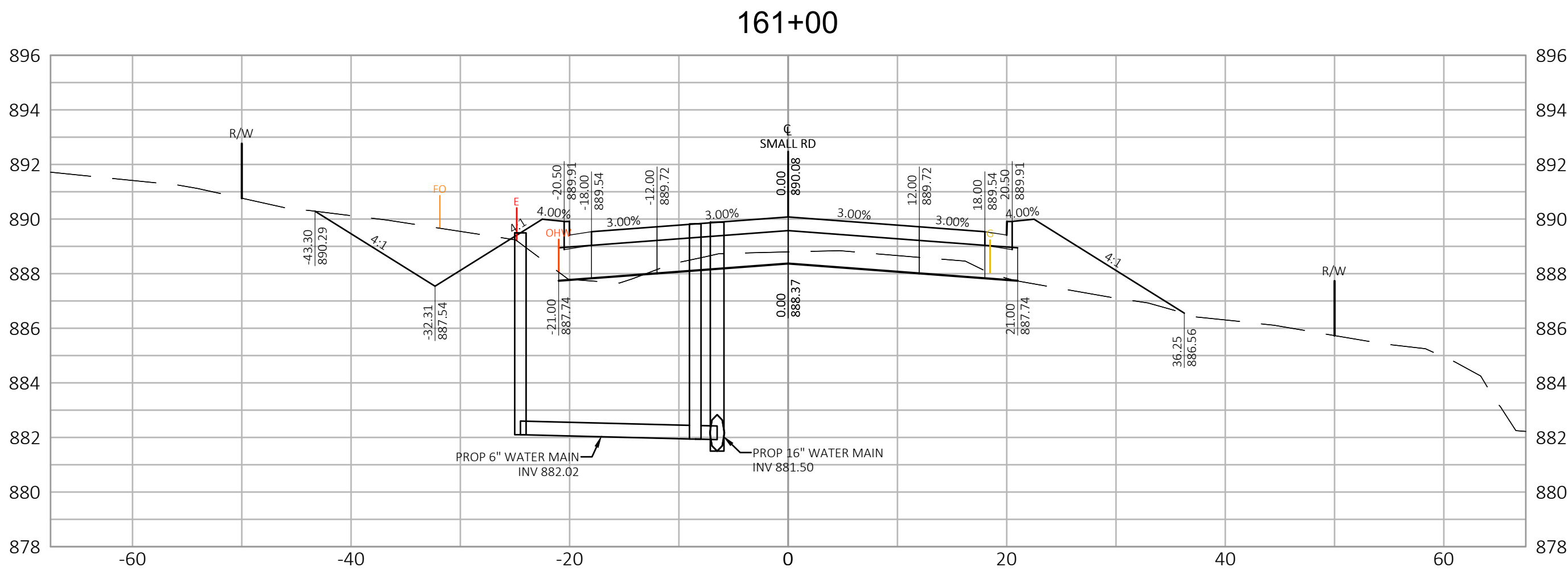
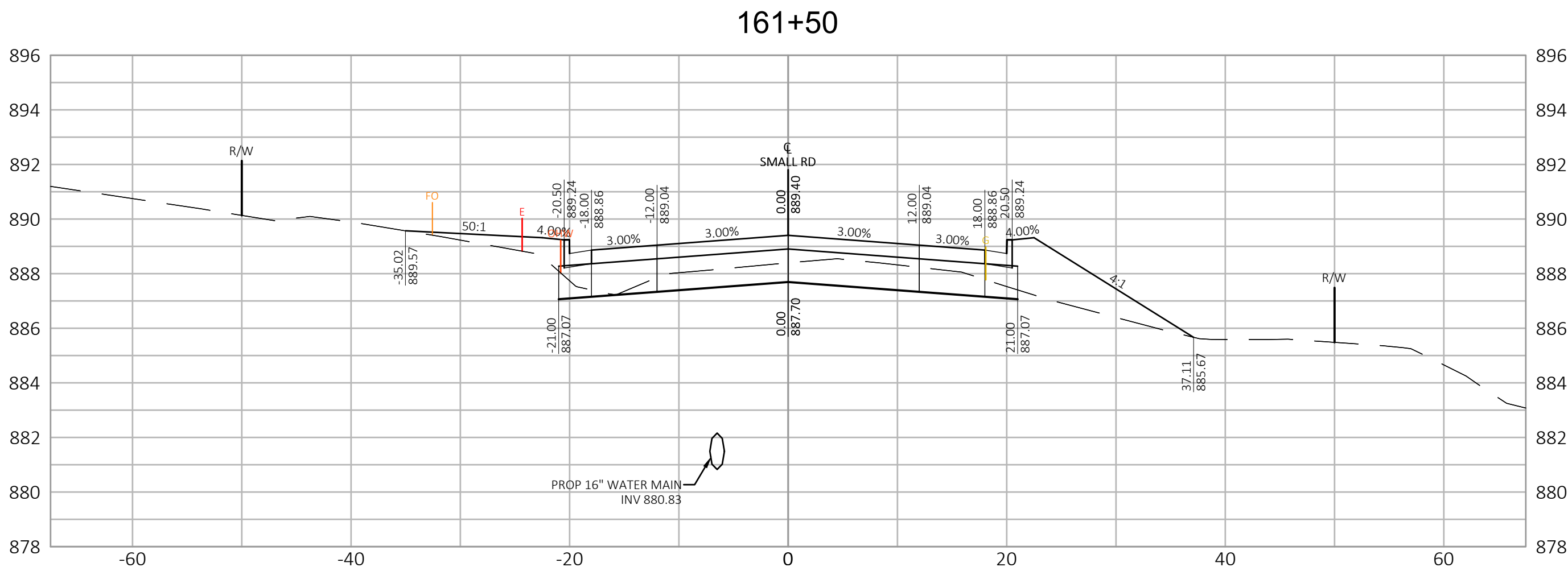
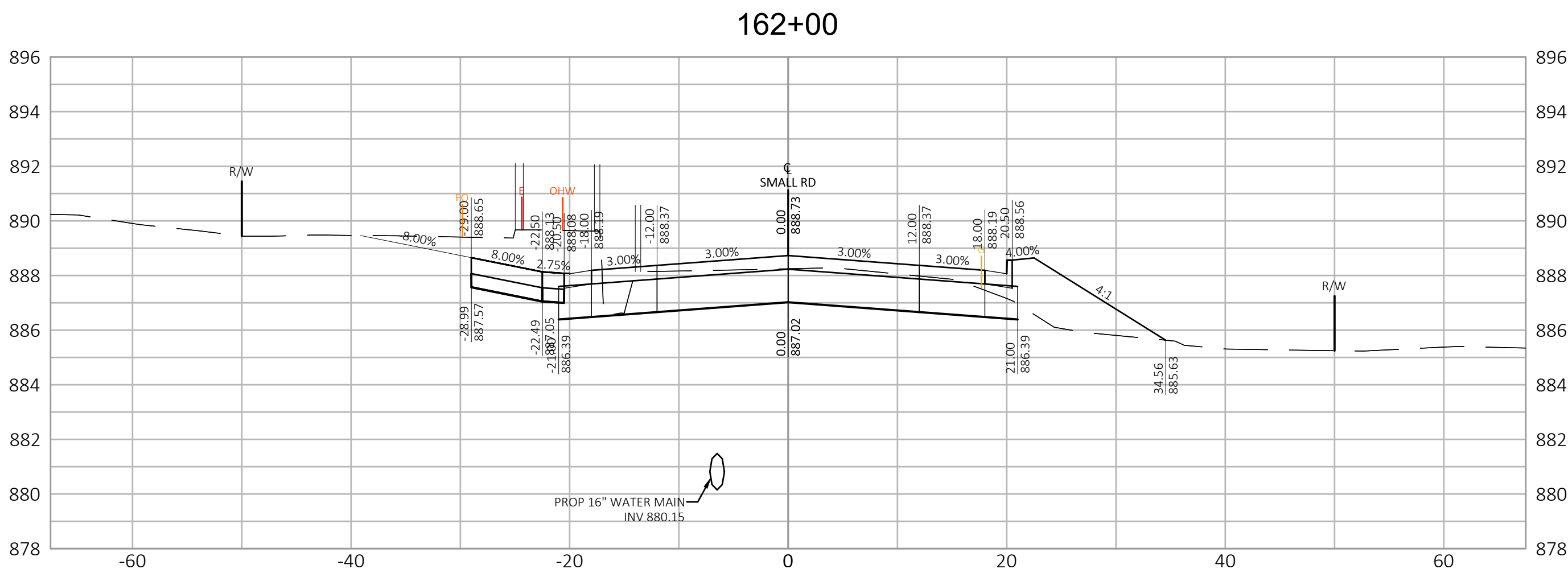
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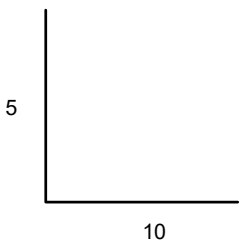
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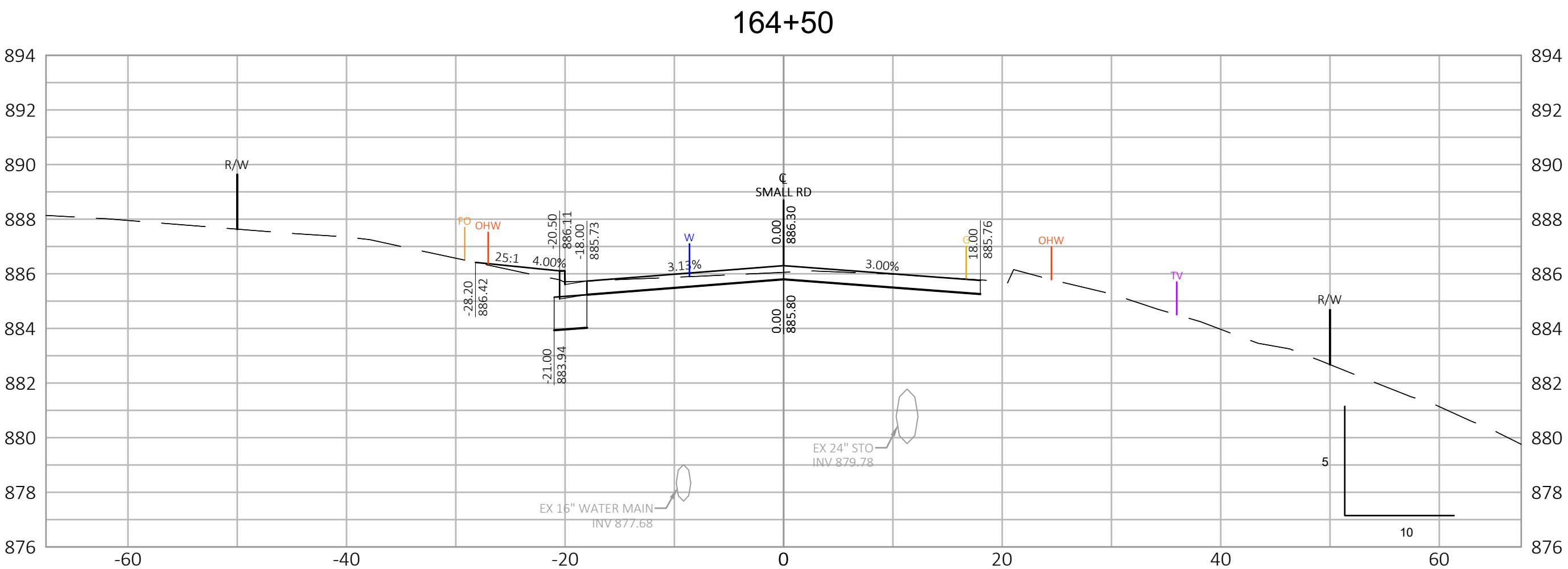
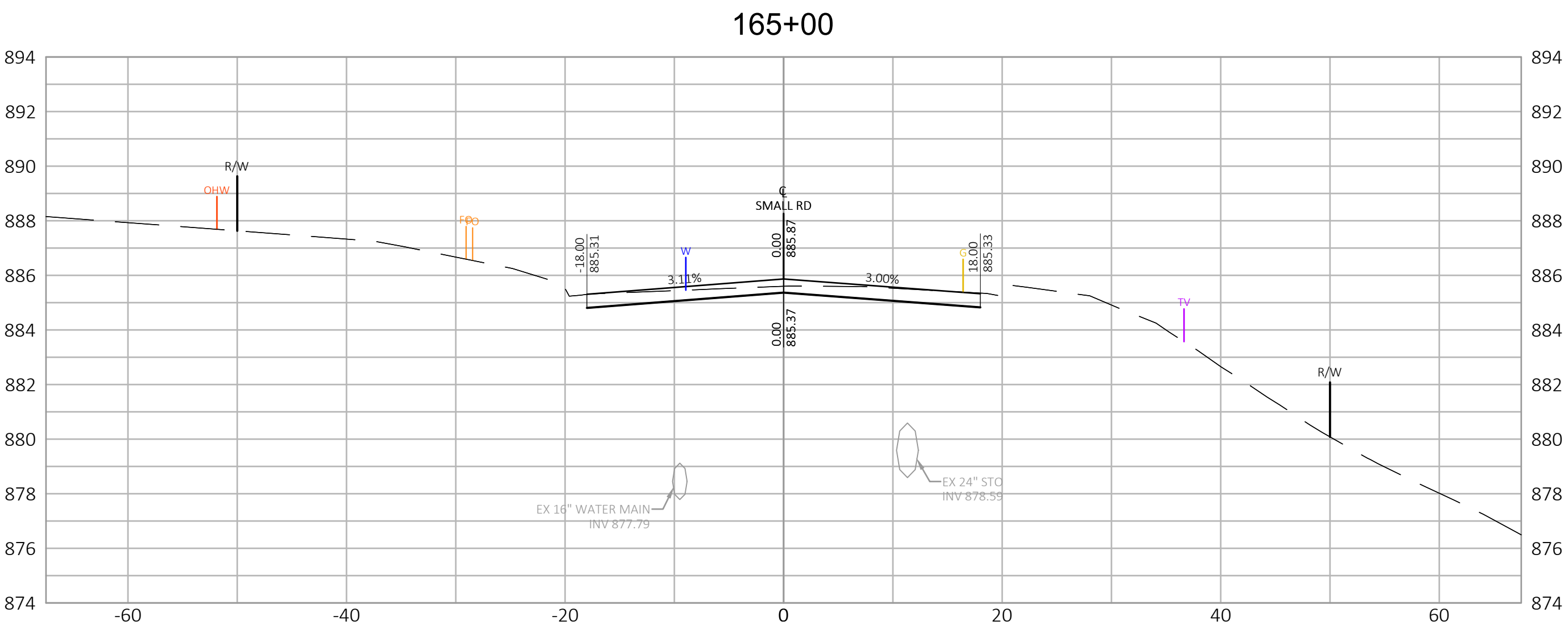
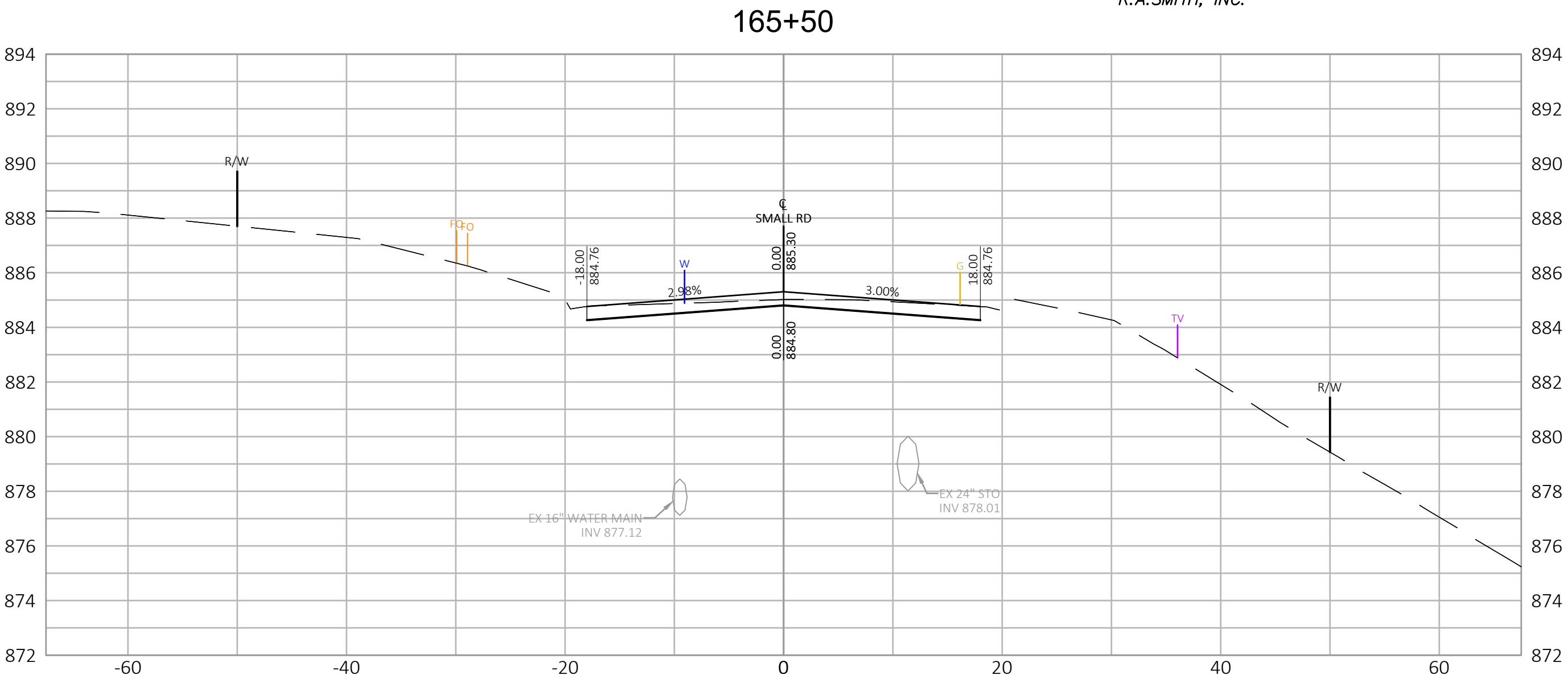
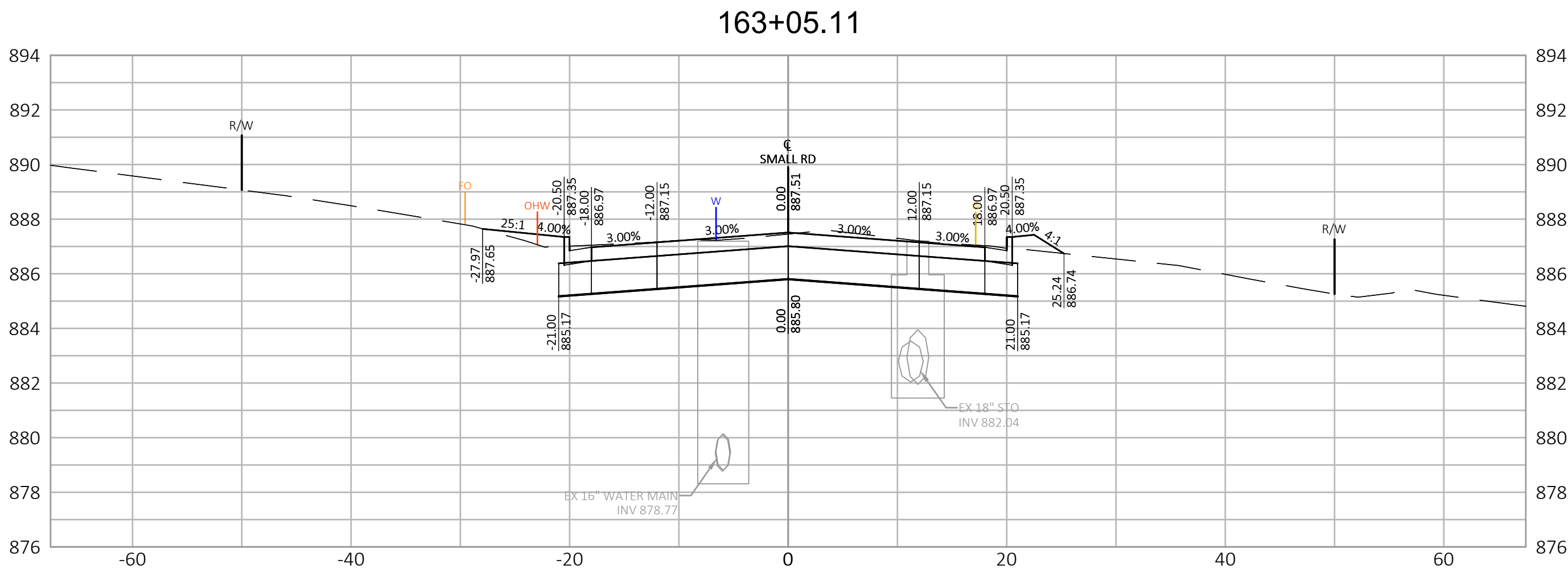
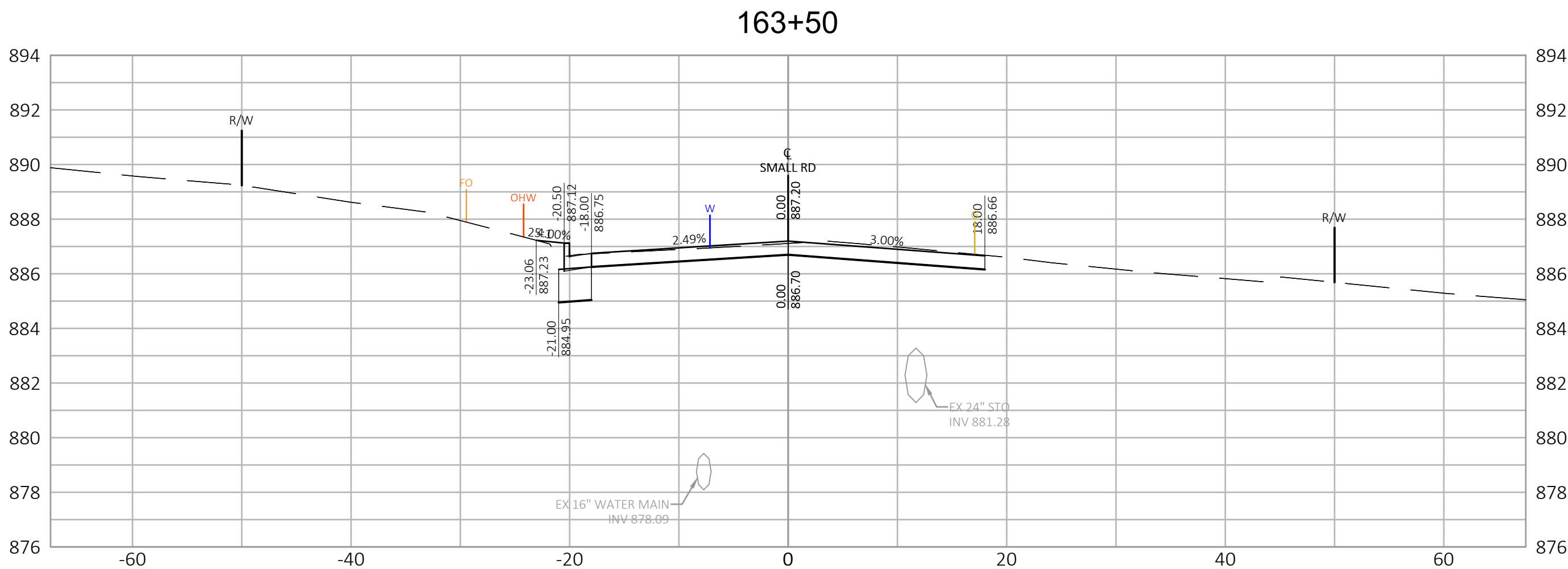
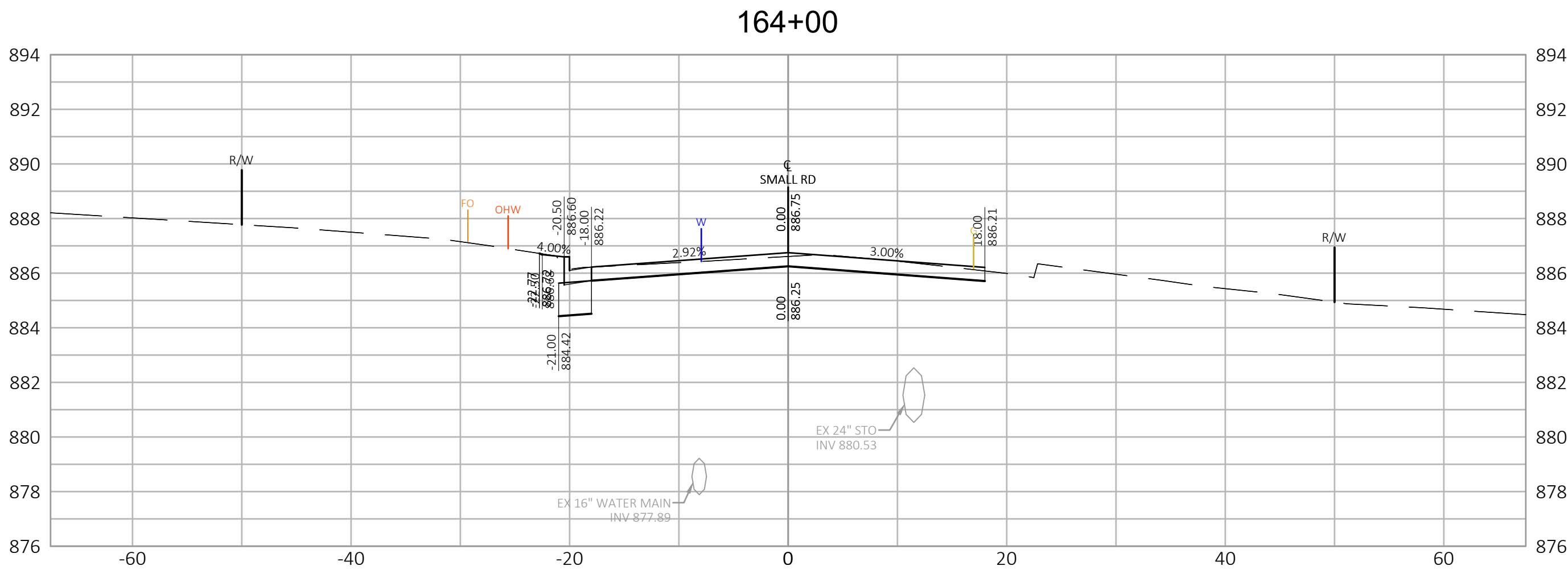


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DESCRIPTION	
DATE	
W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com	
raSmith CREATIVITY BEYOND ENGINEERING	
Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	
SMALL ROAD NEW BERLIN, WISCONSIN	
CROSS SECTIONS SMALL ROAD	
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DATE: 1/18/2023	
SCALE: 1" = 10'	
JOB NO. 1200244	
PROJECT MANAGER: T. HARTJES	
DESIGNED BY: MCG	
CHECKED BY: ---	
SHEET NUMBER	
83	

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DESCRIPTION
DATE

W62 N588 Washington Ave., Ste. 201
Cedarburg, WI 53012-2074
(262) 781-1000
rasmith.com

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CREATIVITY BEYOND ENGINEERING

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA

SMALL ROAD
NEW BERLIN, WISCONSIN

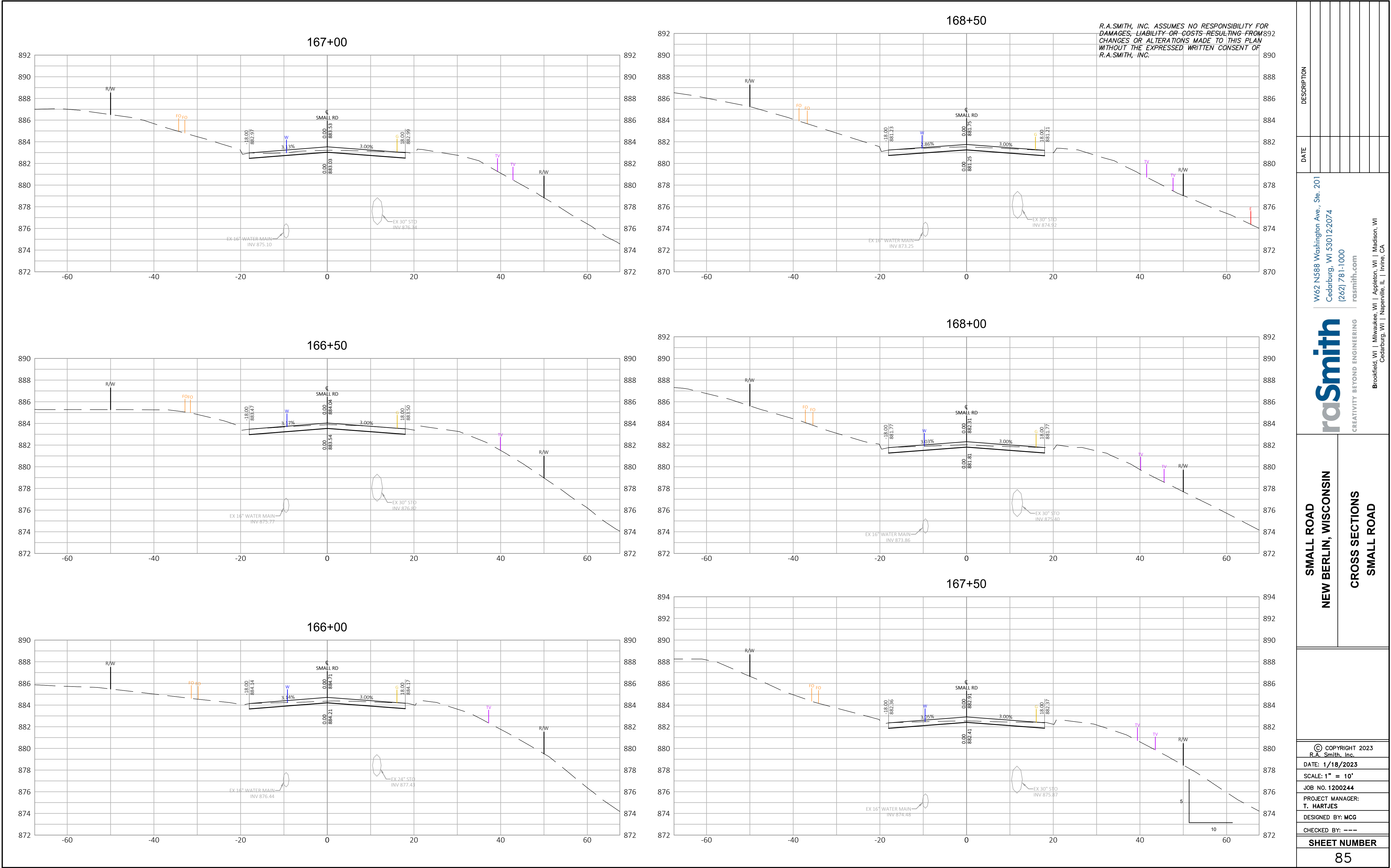
CROSS SECTIONS
SMALL ROAD

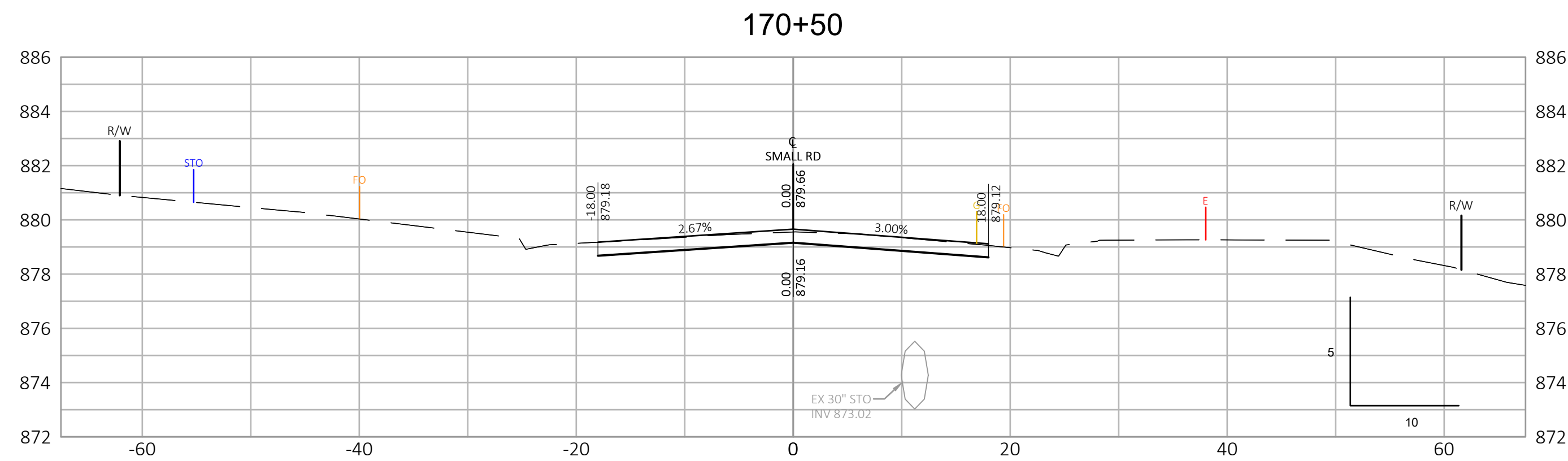
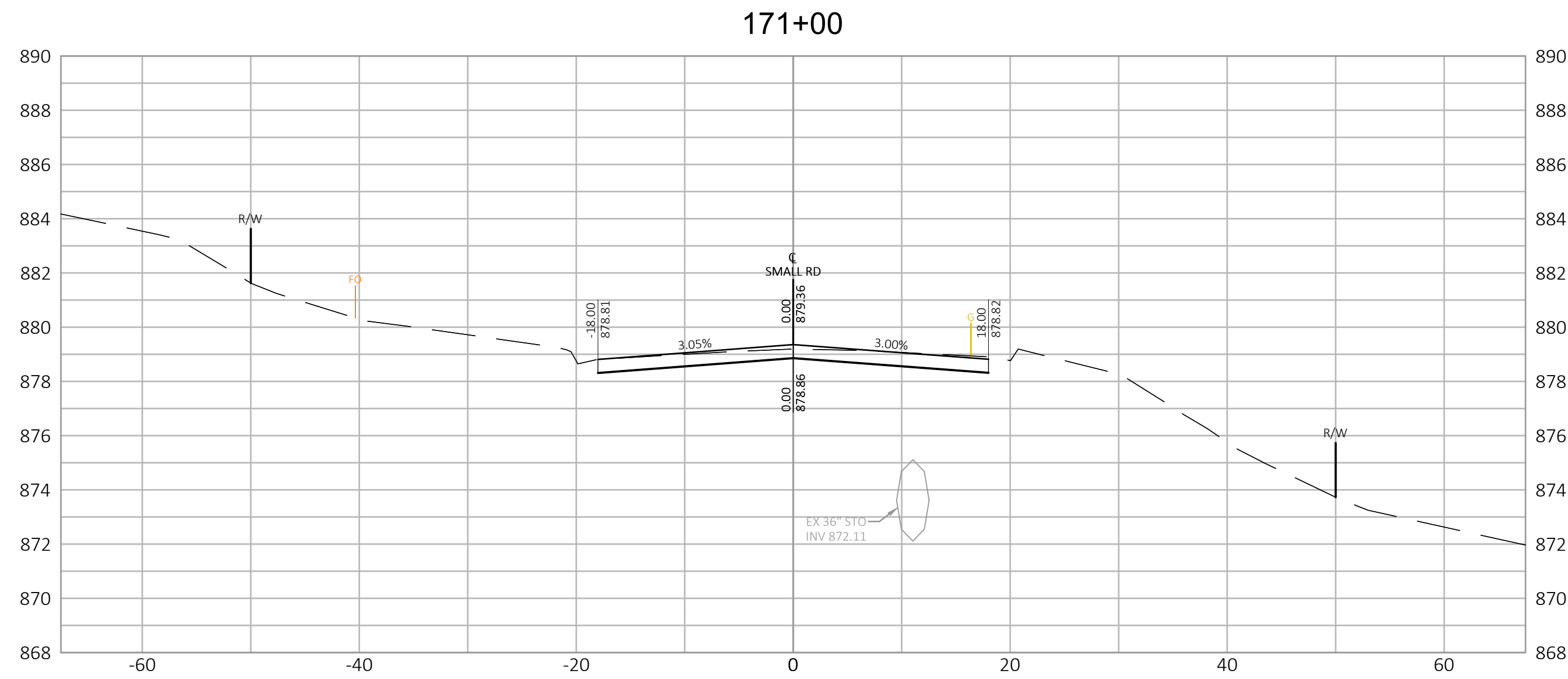
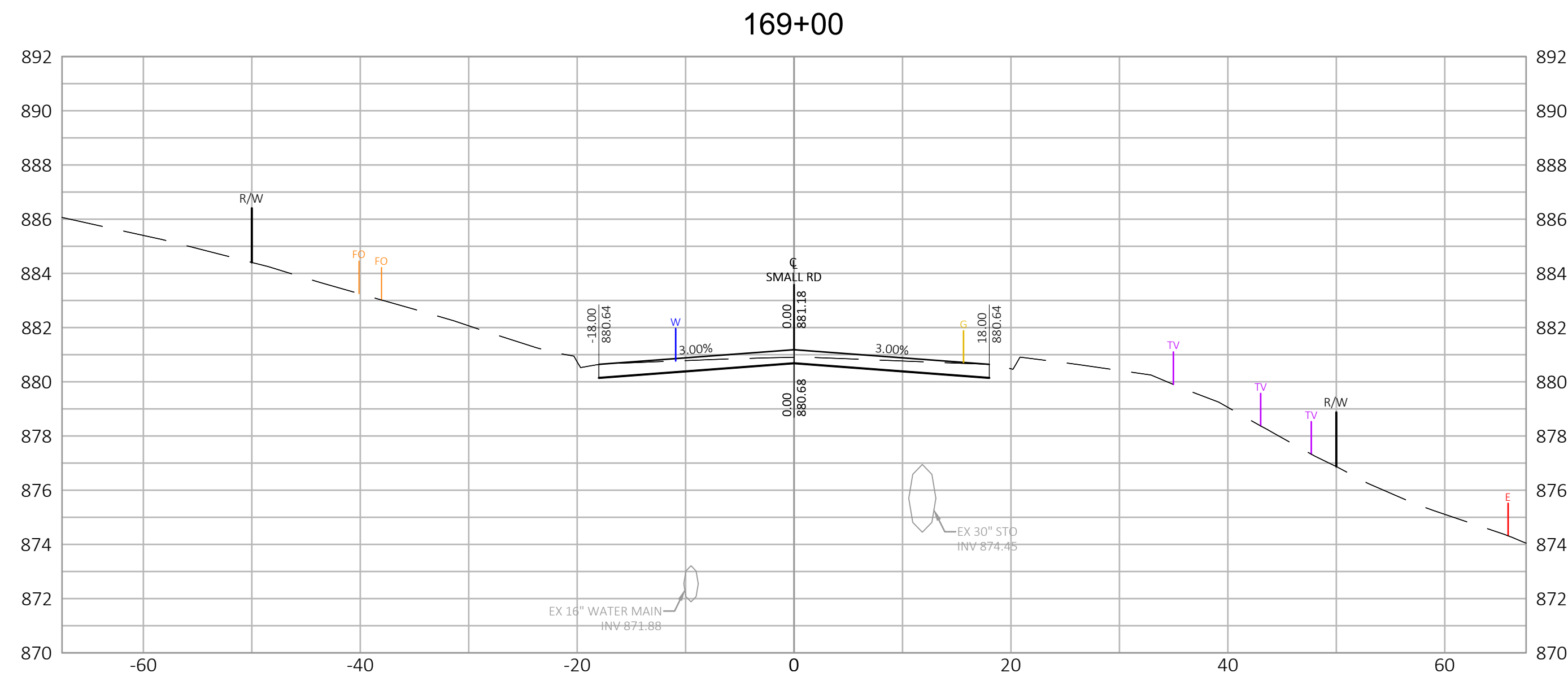
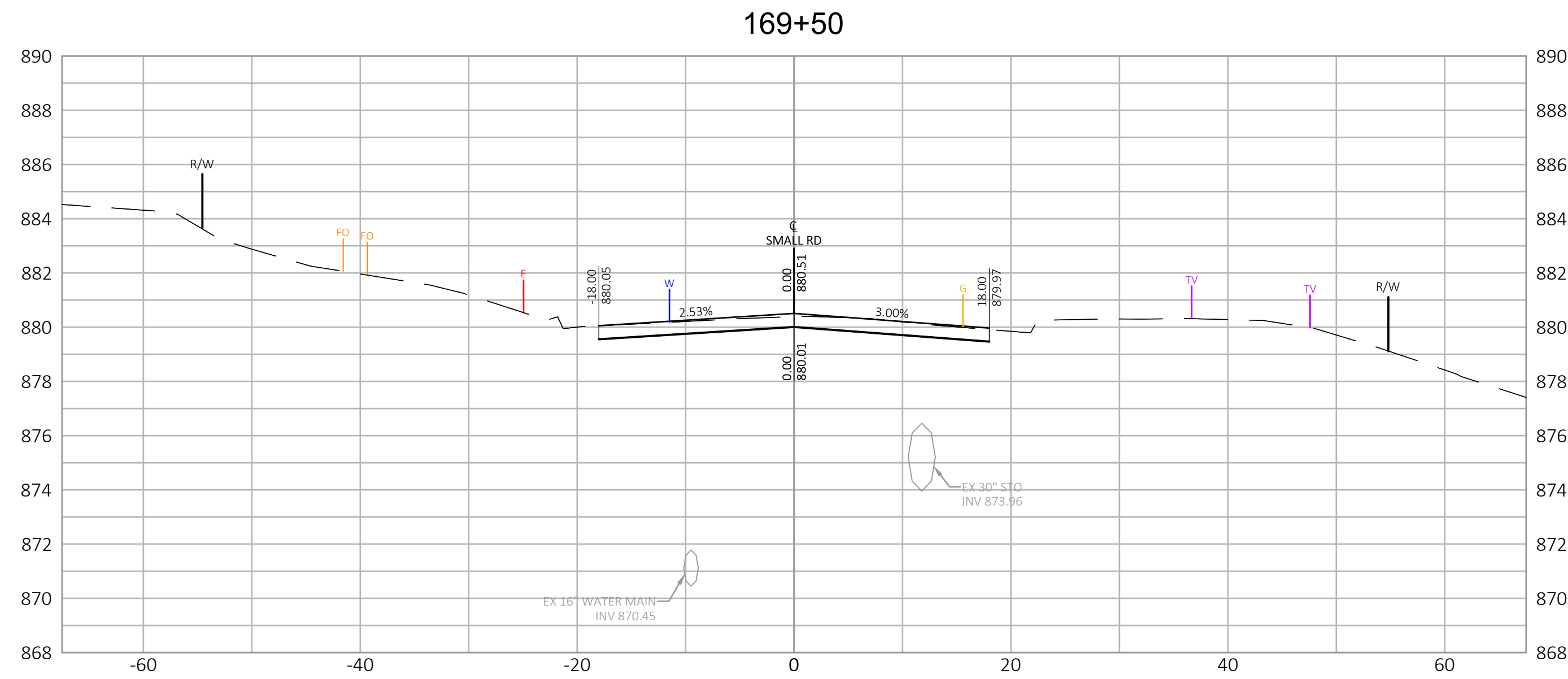
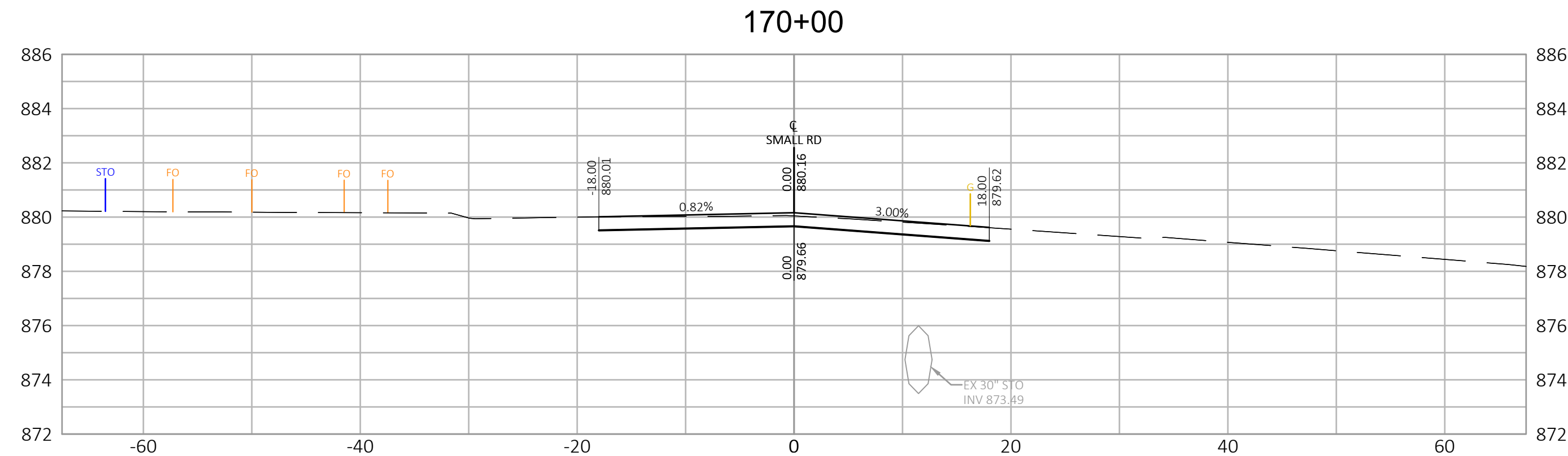
© COPYRIGHT 2023
R.A. Smith, Inc.
DATE: 1/18/2023
SCALE: 1" = 10'
JOB NO. 1200244
PROJECT MANAGER:
T. HARTJES
DESIGNED BY: MCG
CHECKED BY: ---

SHEET NUMBER

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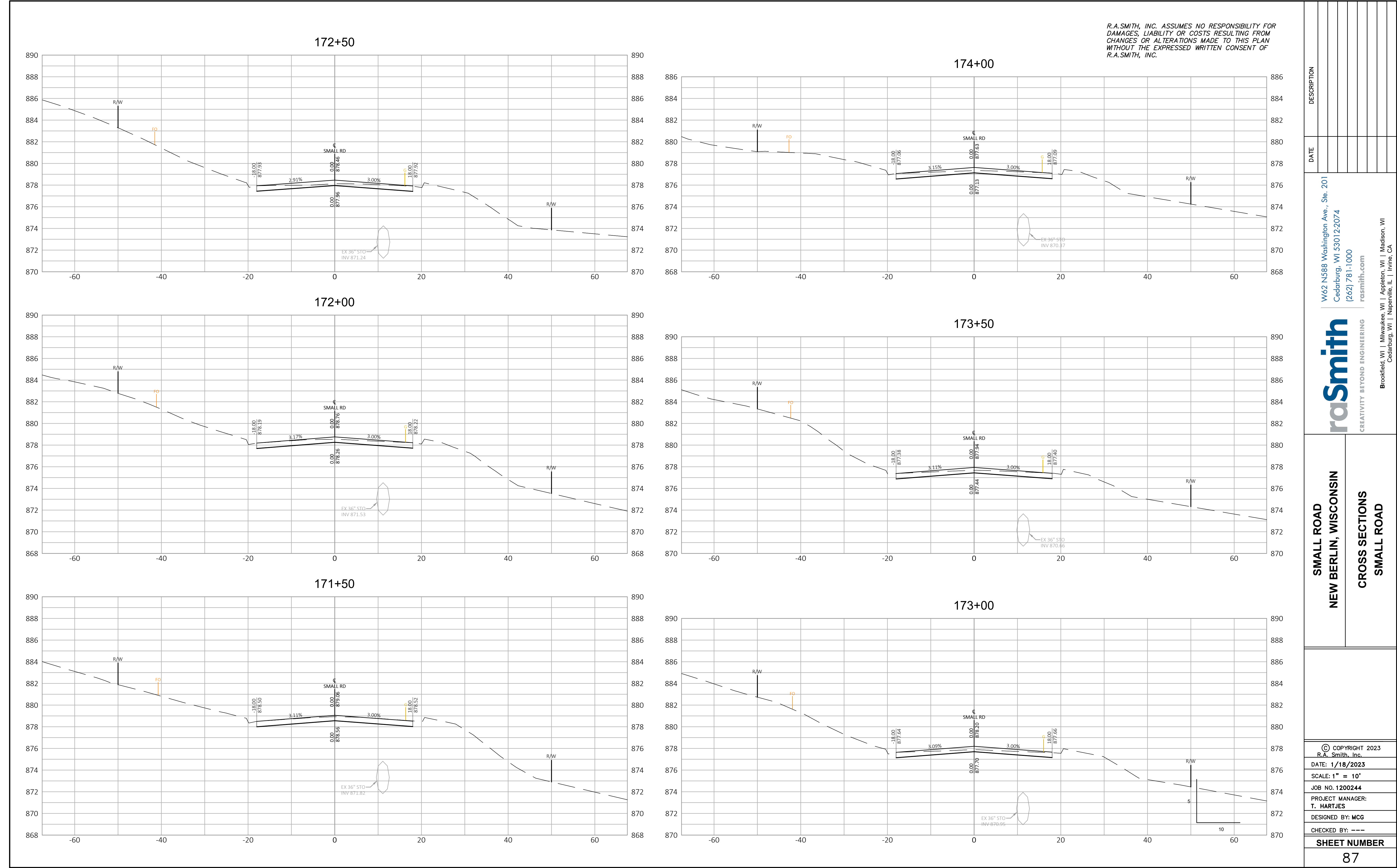


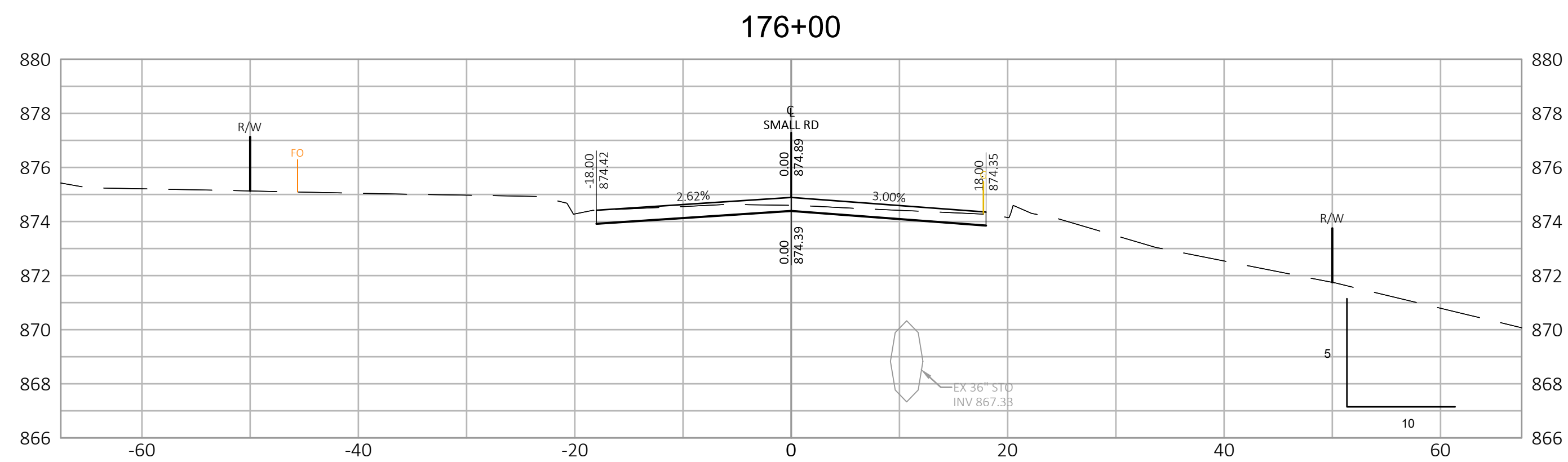
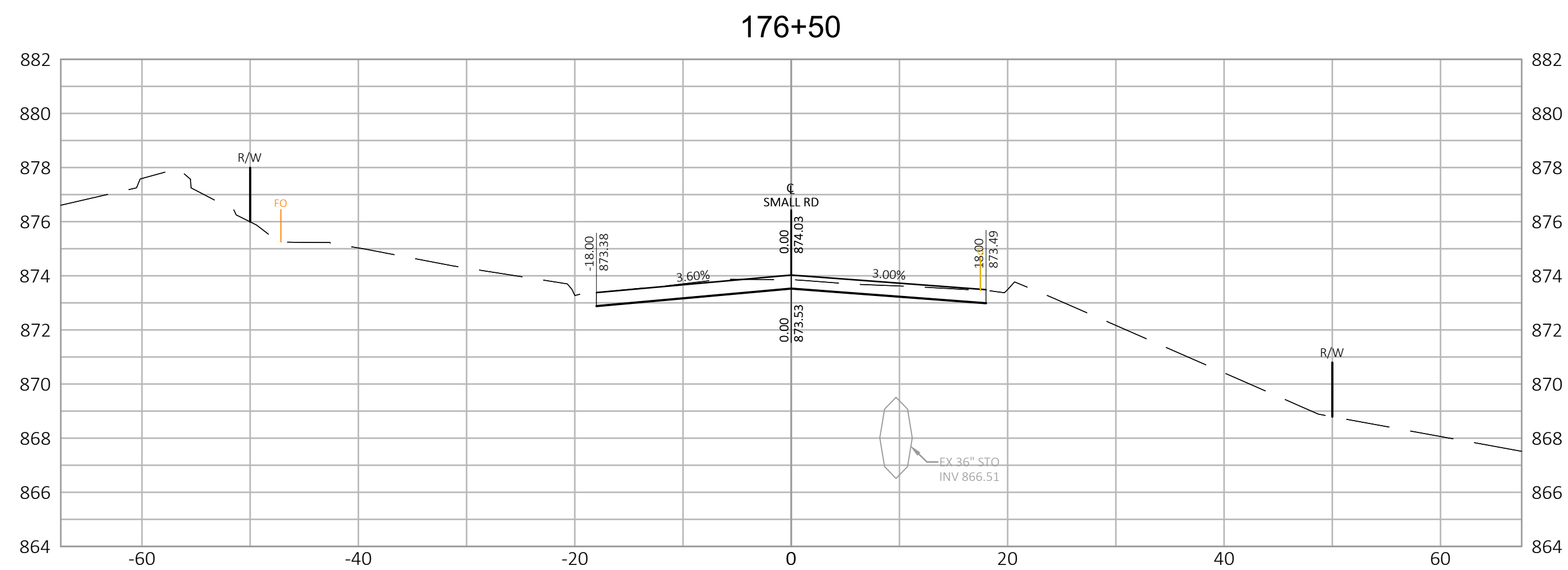
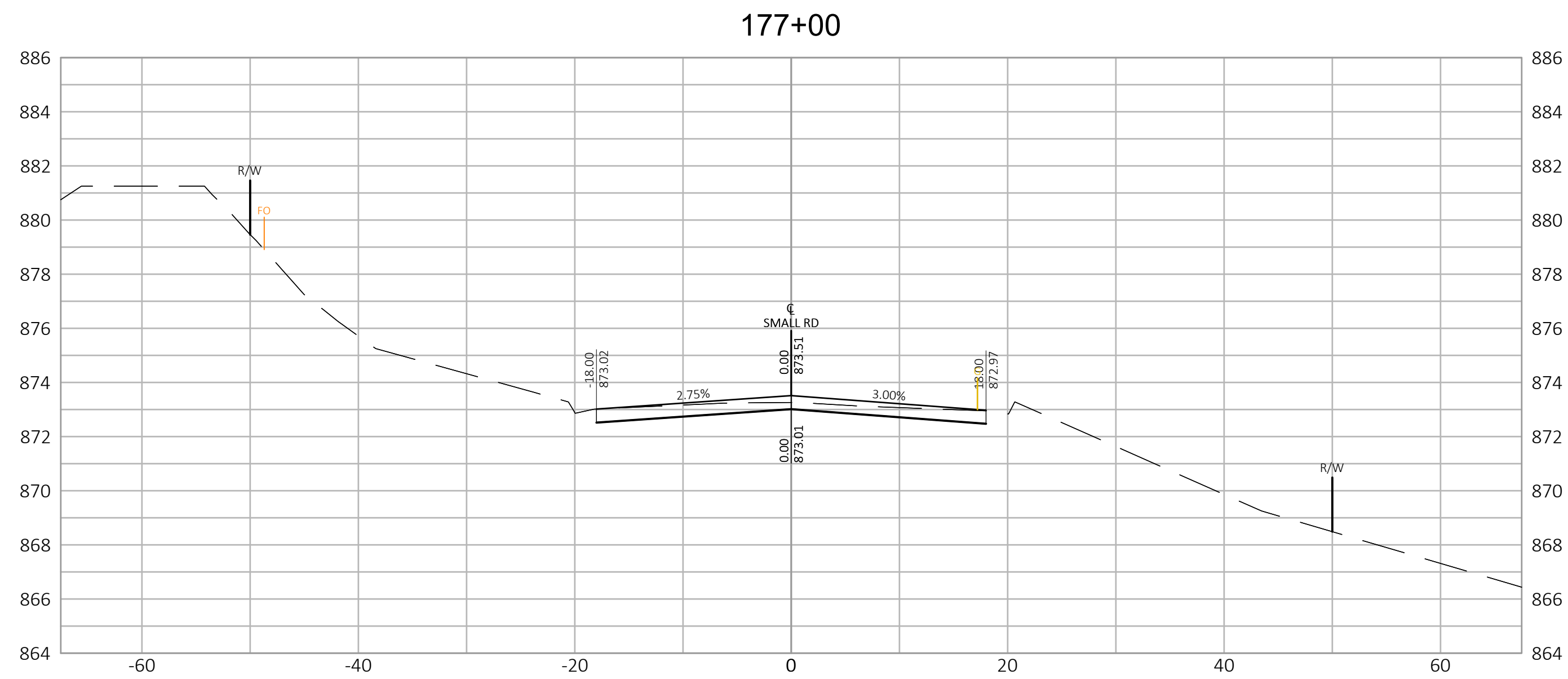
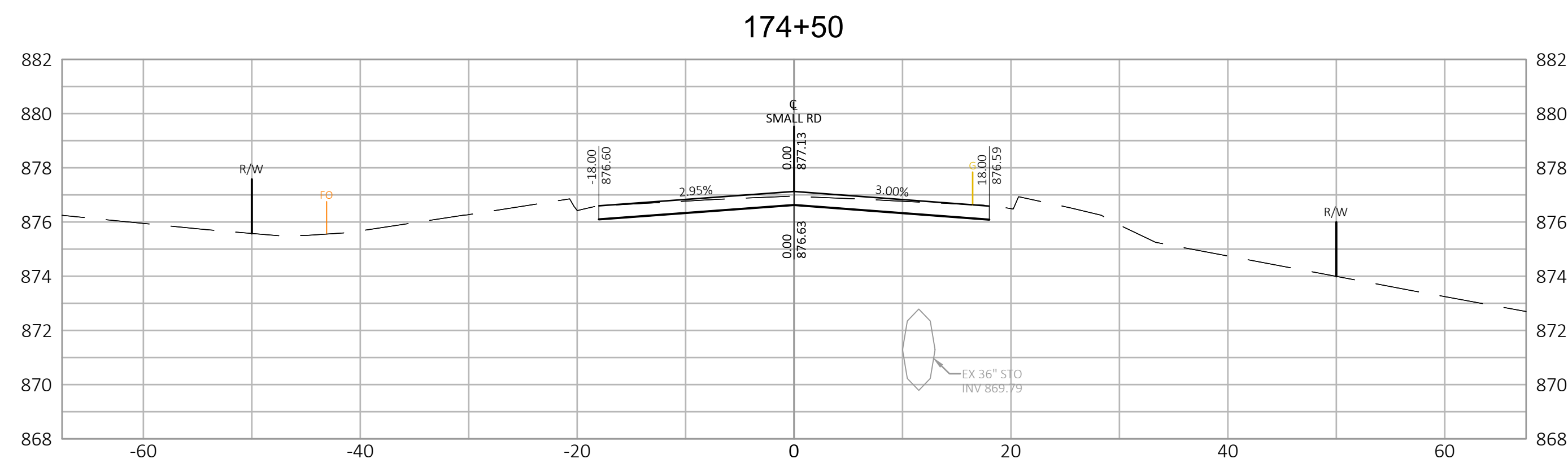
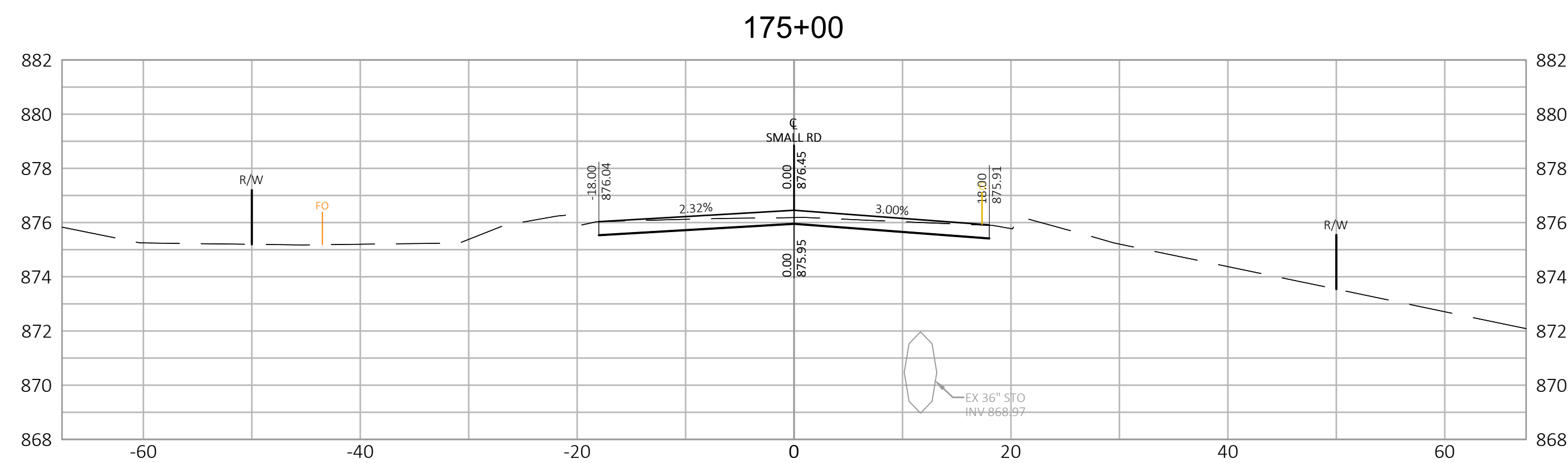
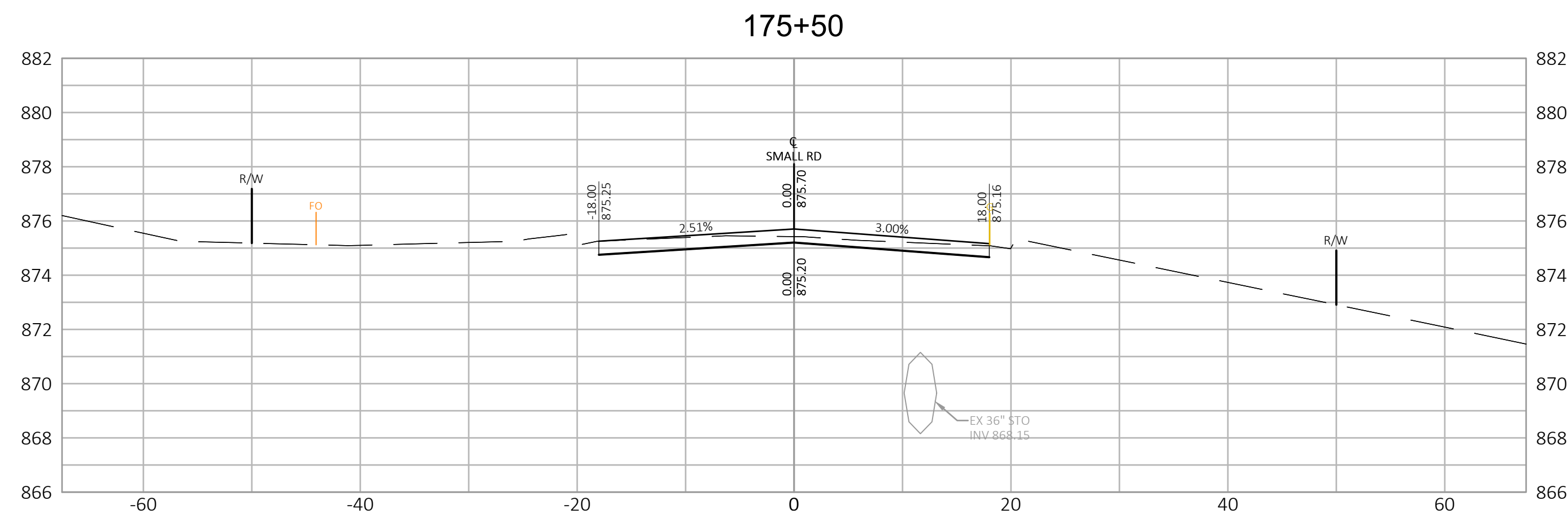


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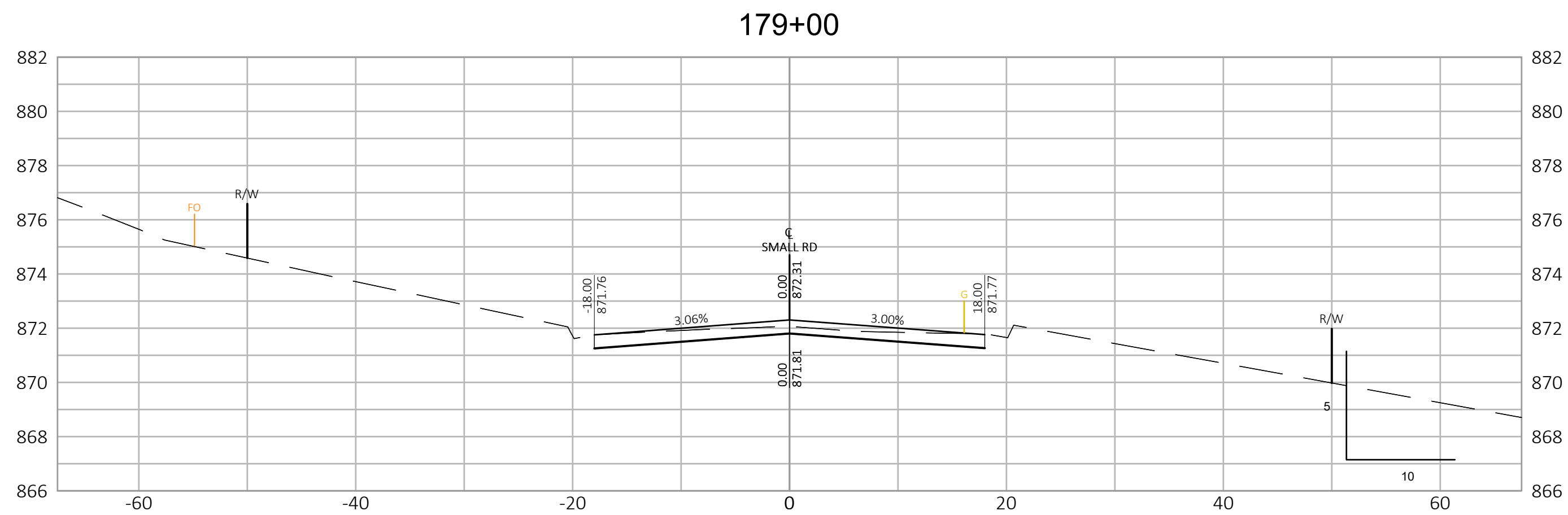
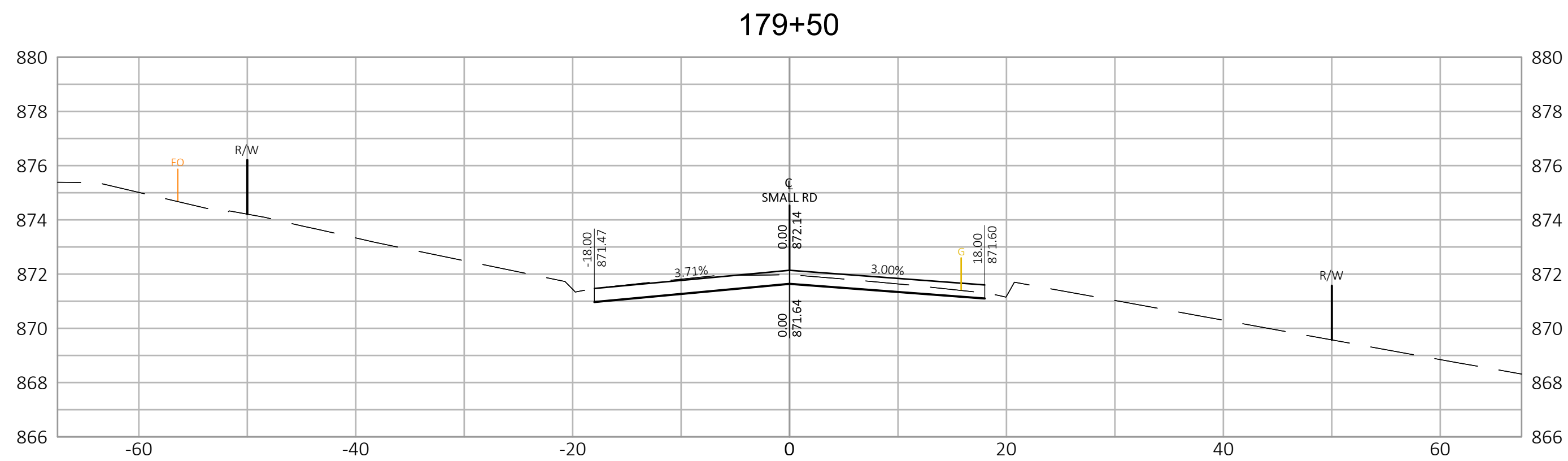
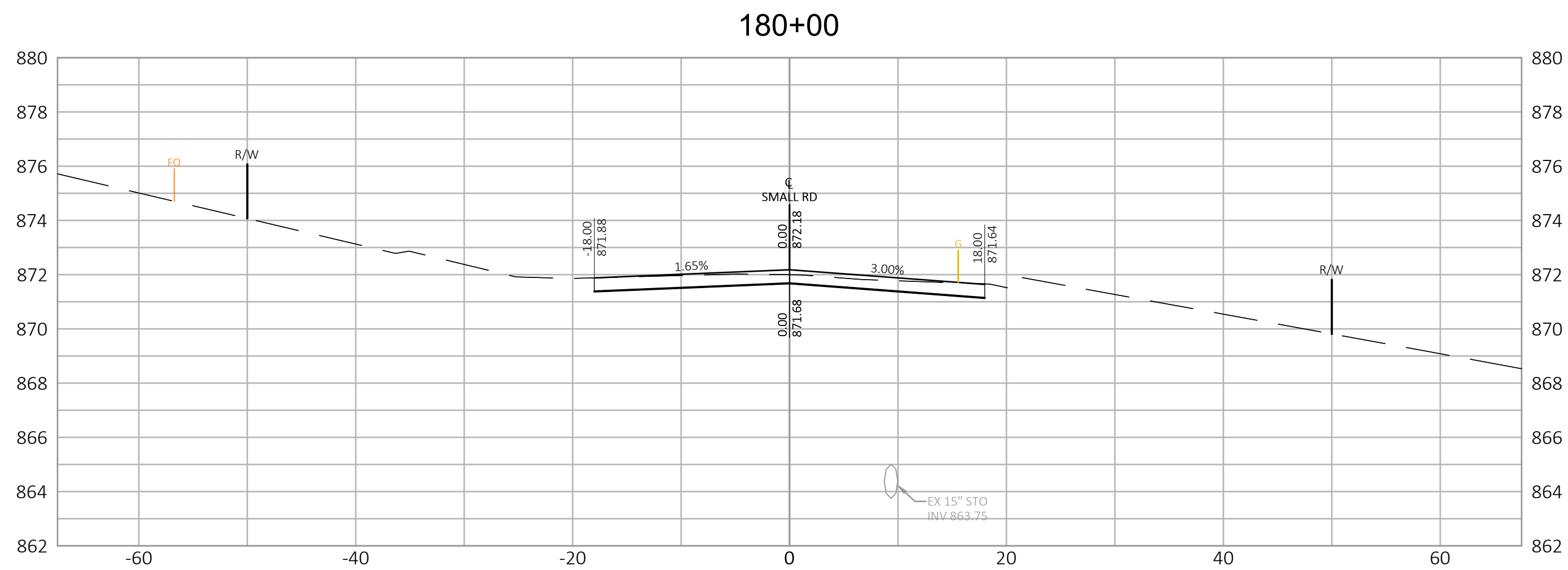
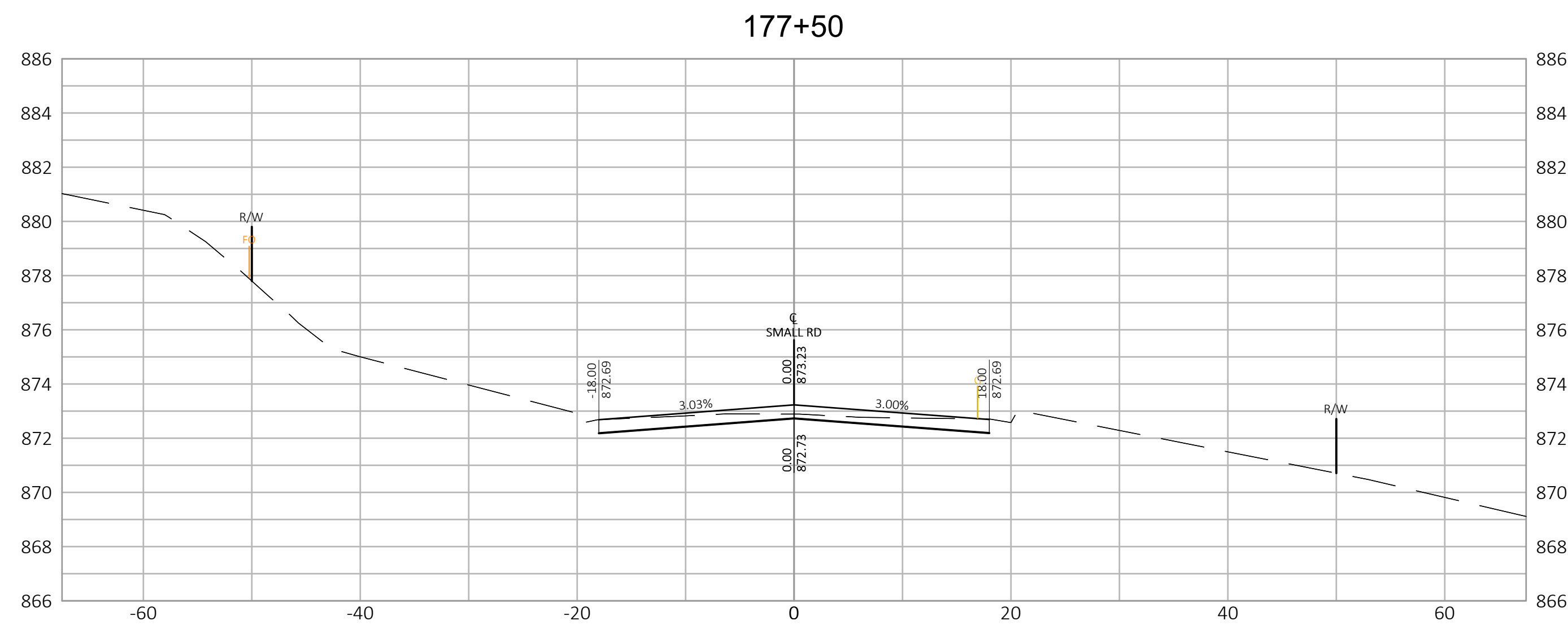
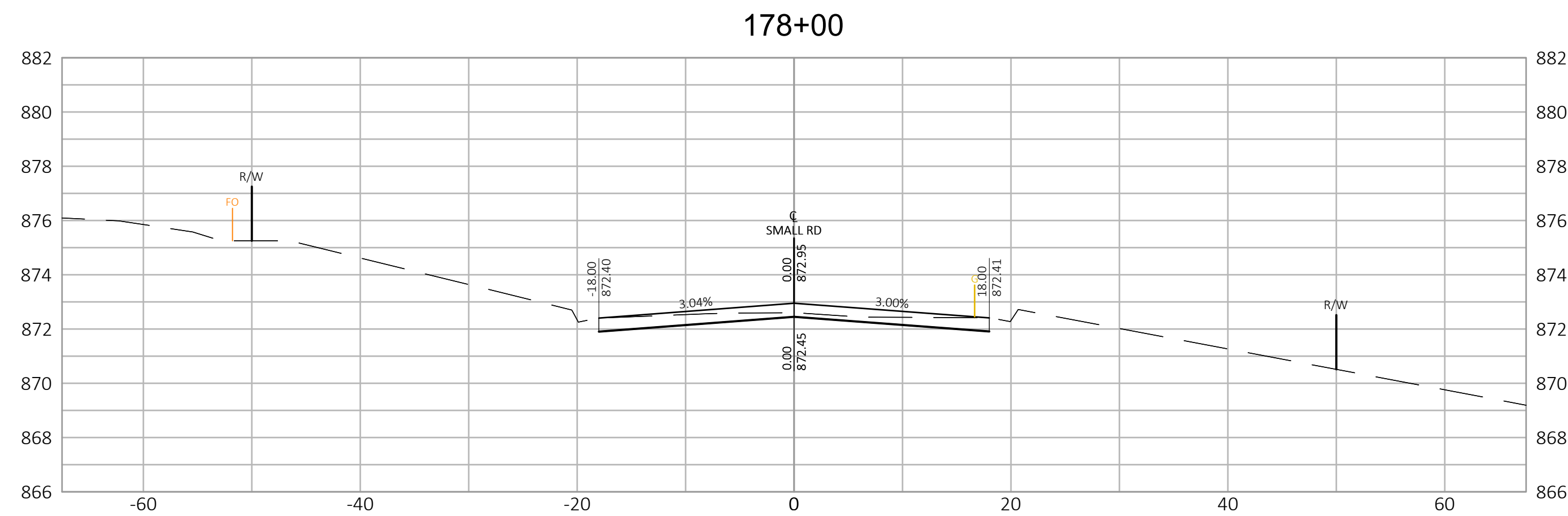
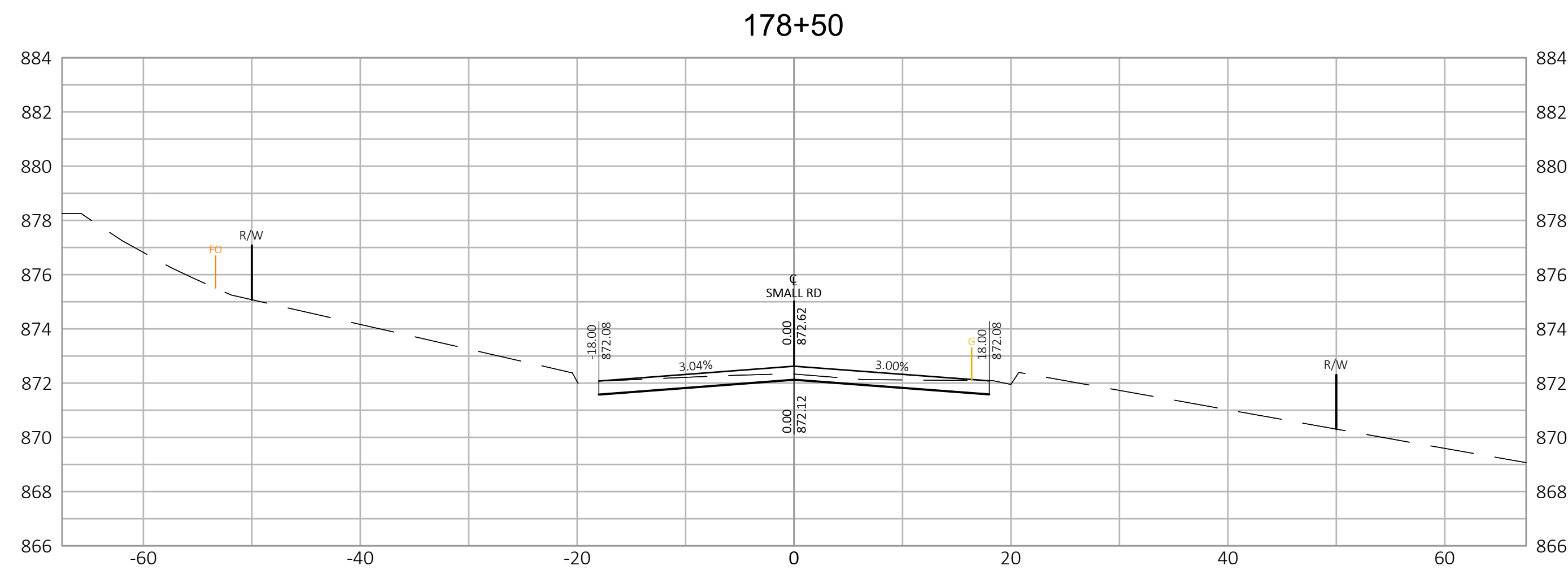
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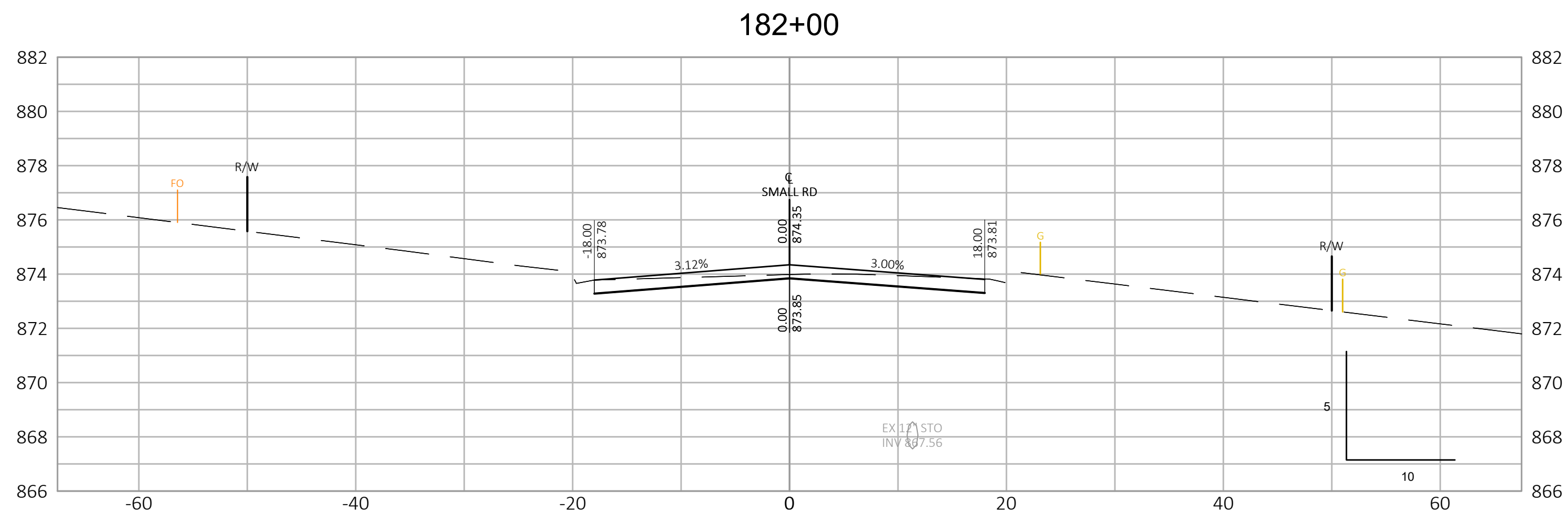
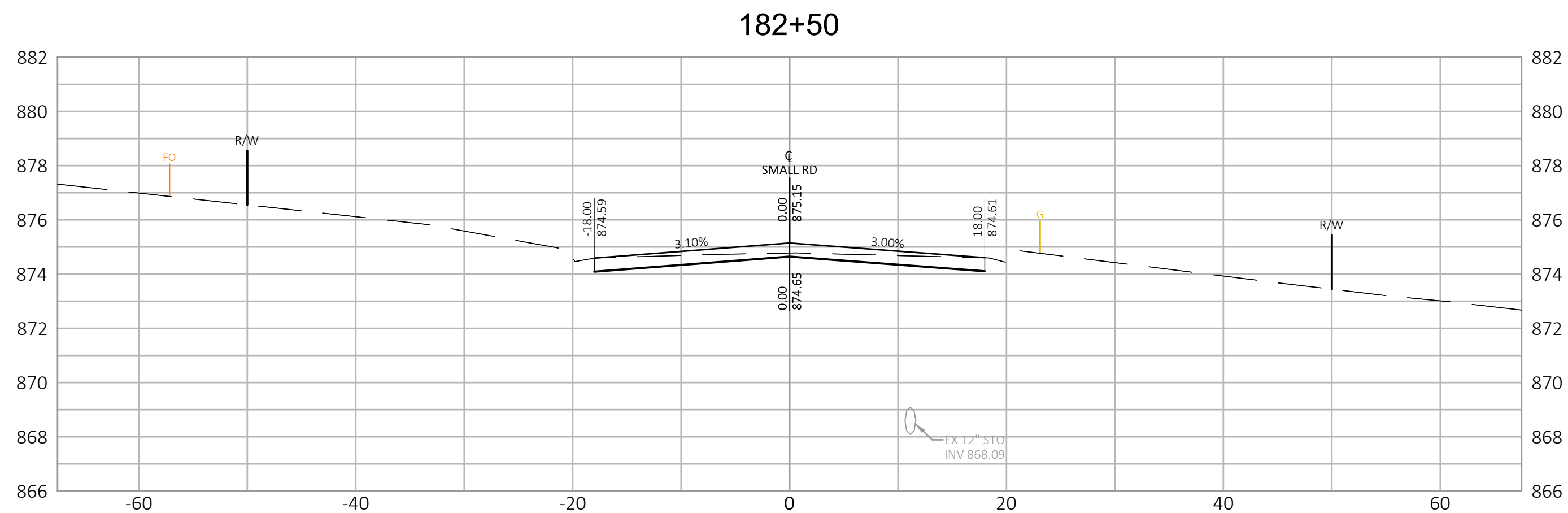
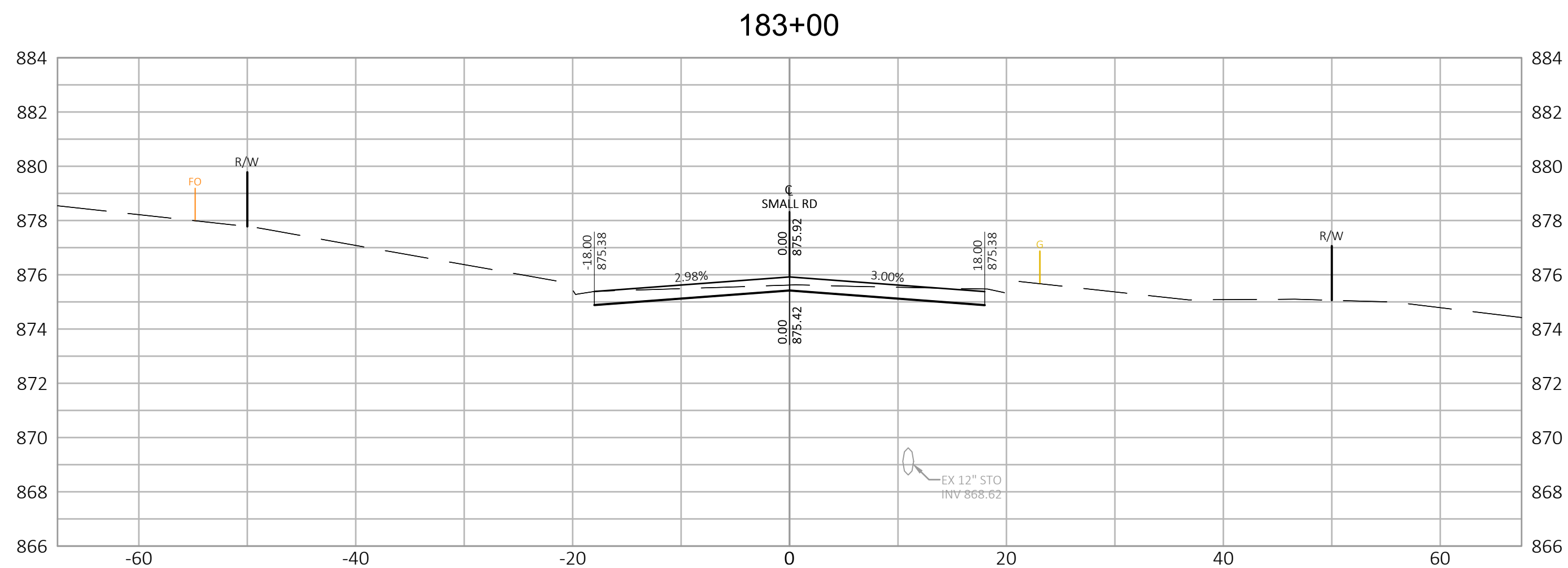
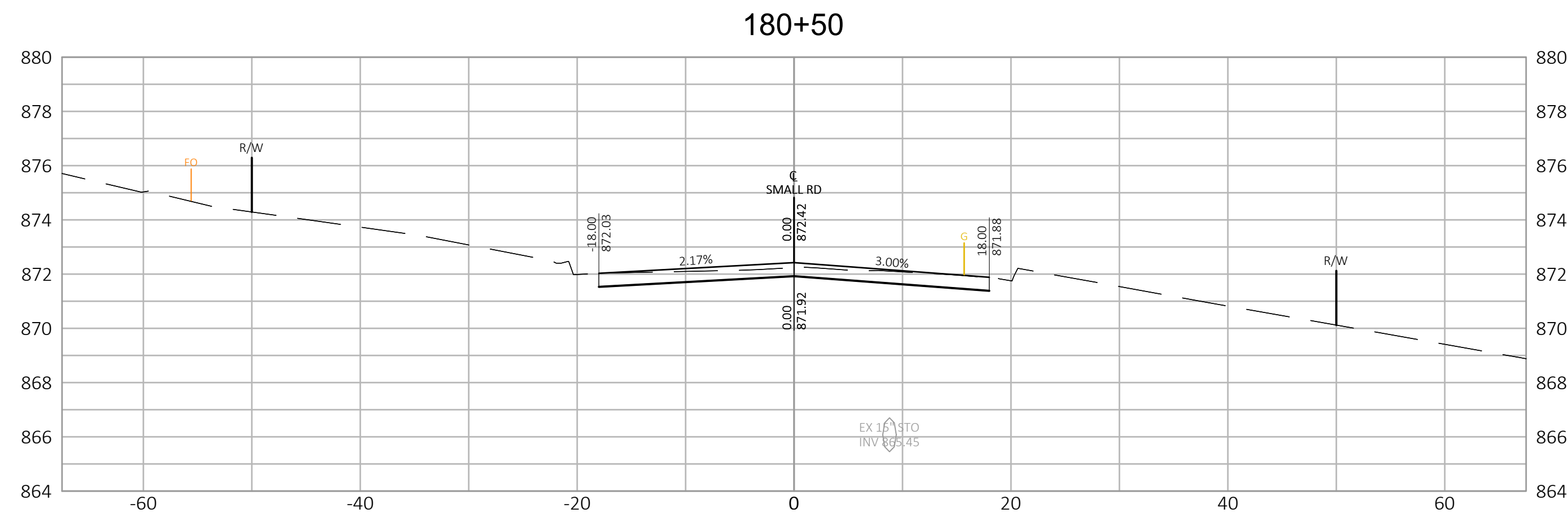
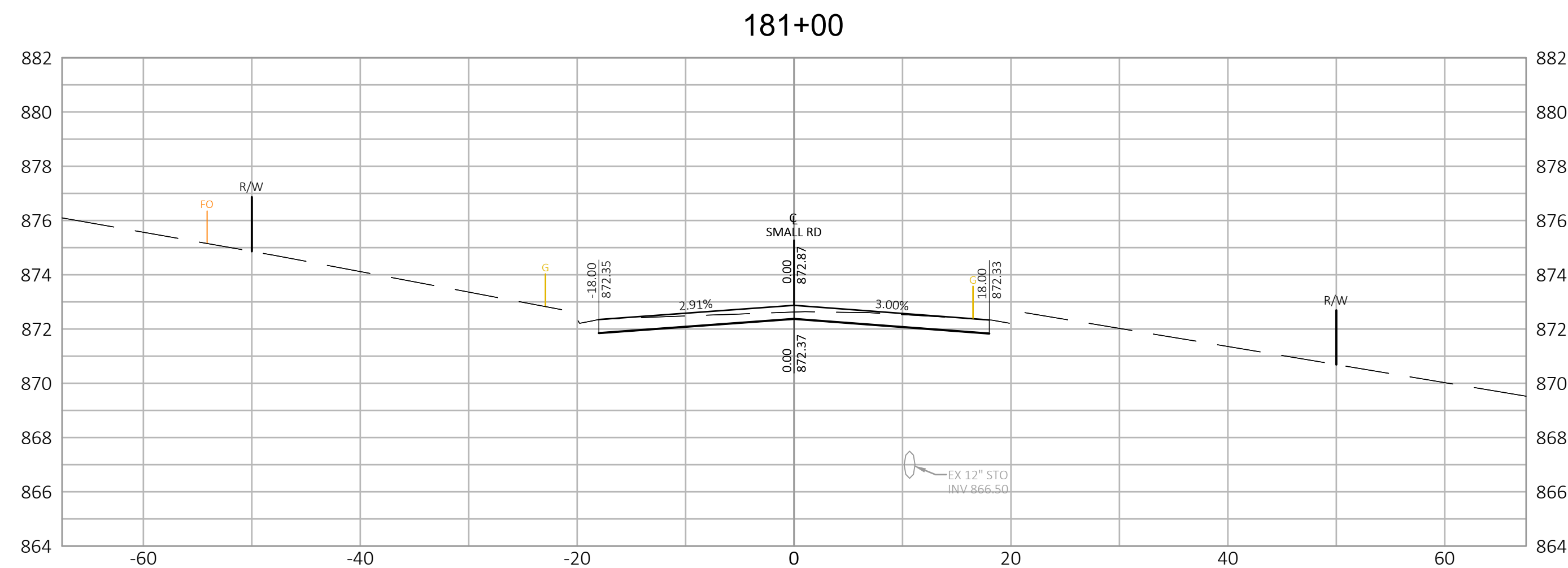
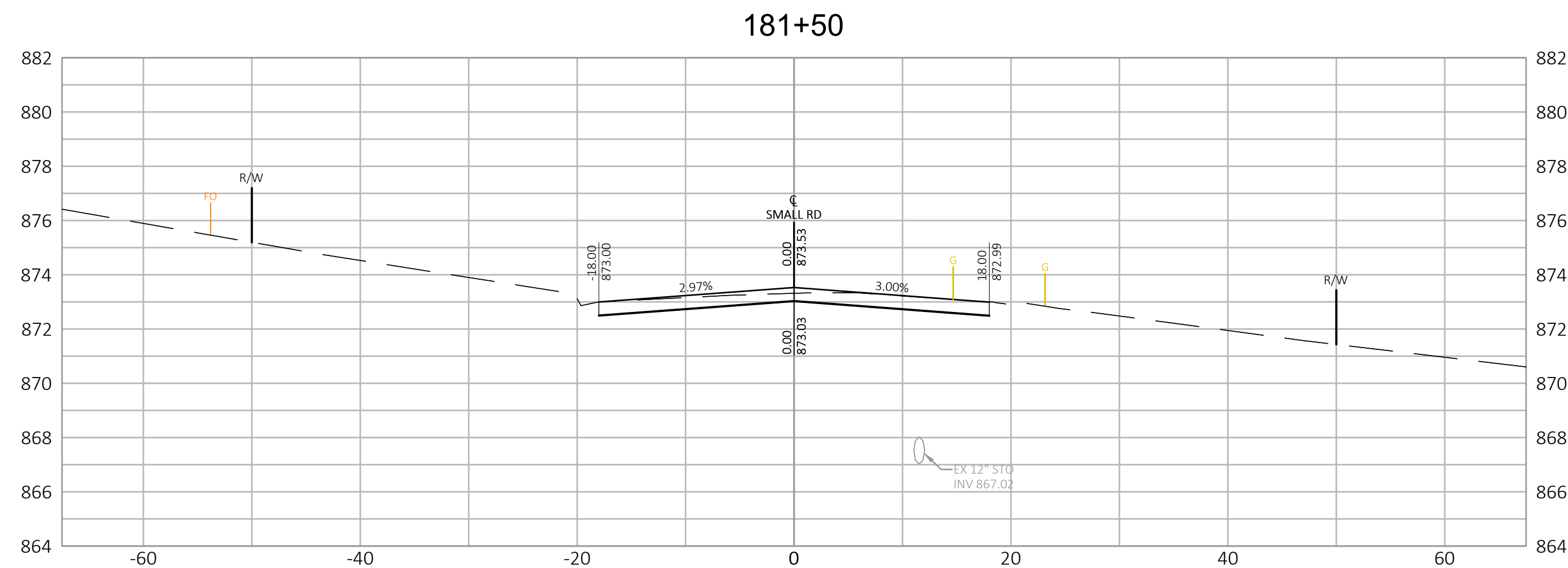
R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

SMALL ROAD NEW BERLIN, WISCONSIN CROSS SECTIONS SMALL ROAD		 CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-2074 (262) 781-1000 rasmith.com		DATE	DESCRIPTION
				Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	
© COPYRIGHT 2023 R.A. Smith, Inc.					
DATE: 1/18/2023					
SCALE: 1" = 10'					
JOB NO. 1200244					
PROJECT MANAGER: T. HARTJES					
DESIGNED BY: MCG					
CHECKED BY: ---					
SHEET NUMBER					
88					



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

SMALL ROAD NEW BERLIN, WISCONSIN		 CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-074 (262) 781-1000 rasmith.com	DATE	DESCRIPTION
CROSS SECTIONS SMALL ROAD				
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DATE: 1/18/2023				
SCALE: 1" = 10'				
JOB NO. 1200244				
PROJECT MANAGER: T. HARTJES				
DESIGNED BY: MCG				
CHECKED BY: ---				
SHEET NUMBER				
89				



R.A.SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A.SMITH, INC.

SMALL ROAD NEW BERLIN, WISCONSIN CROSS SECTIONS SMALL ROAD		raSmith CREATIVITY BEYOND ENGINEERING W62 N588 Washington Ave., Ste. 201 Cedarburg, WI 53012-074 (262) 781-1000 rasmith.com Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	DATE	DESCRIPTION
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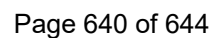
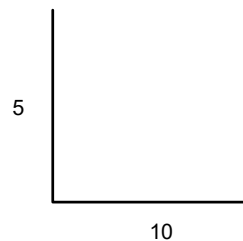
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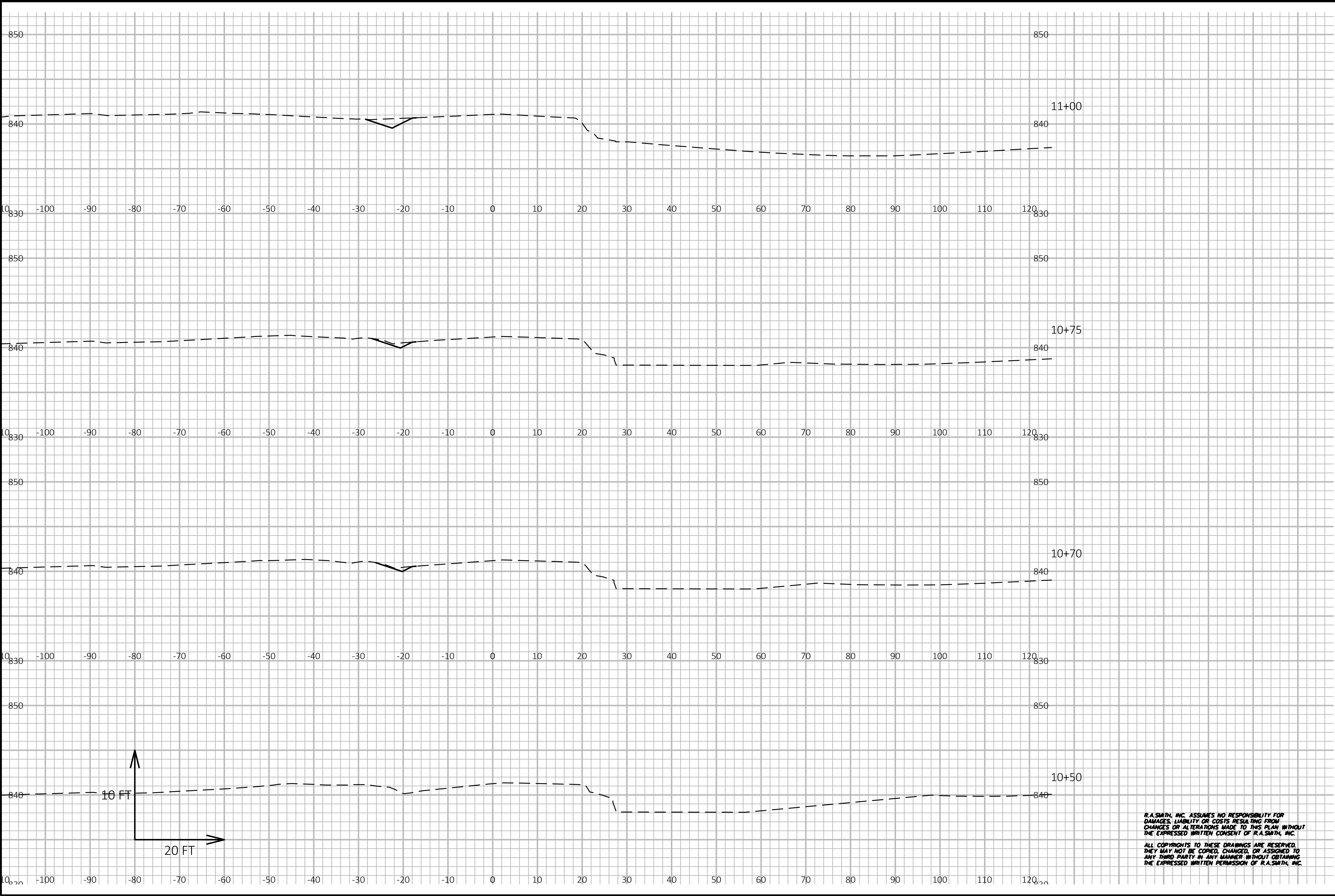
raSmith
CREATIVITY BEYOND ENGINEERING

**Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Naperville, IL | Irvine, CA**

CROSS SECTIONS SMALL ROAD

91

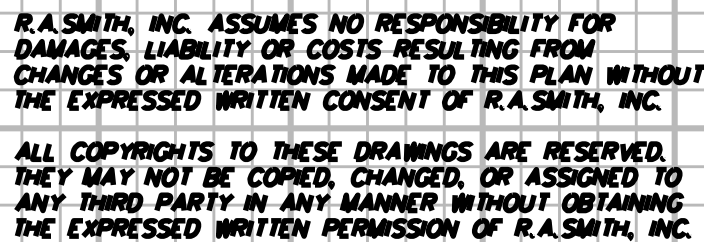




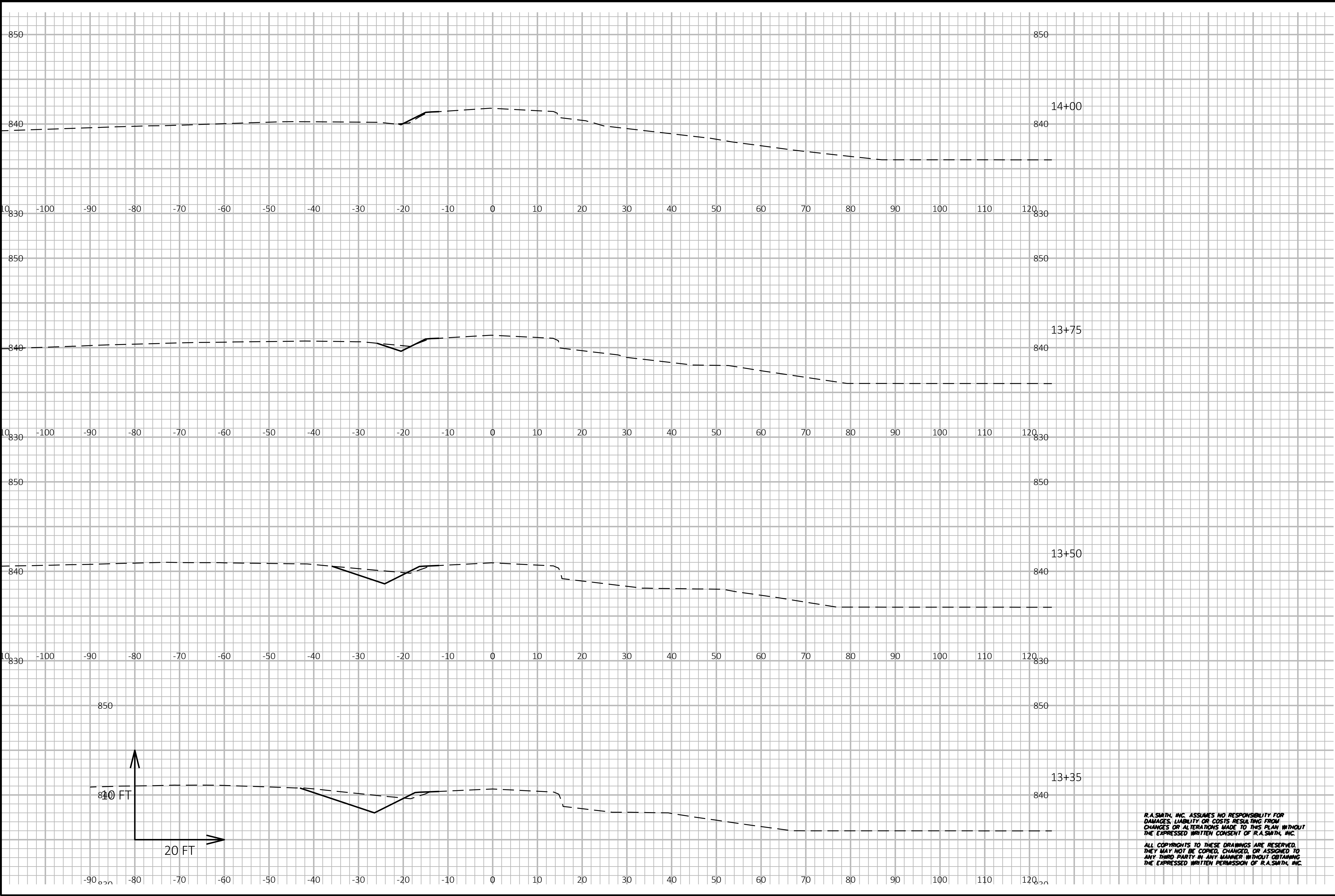
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JOB NO. 1200244	
PROJECT MANAGER: T. HARTJES	
DESIGNED BY: MCG	
CHECKED BY: ---	
SHEET NUMBER	
92	

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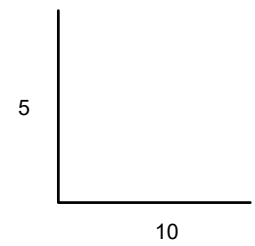
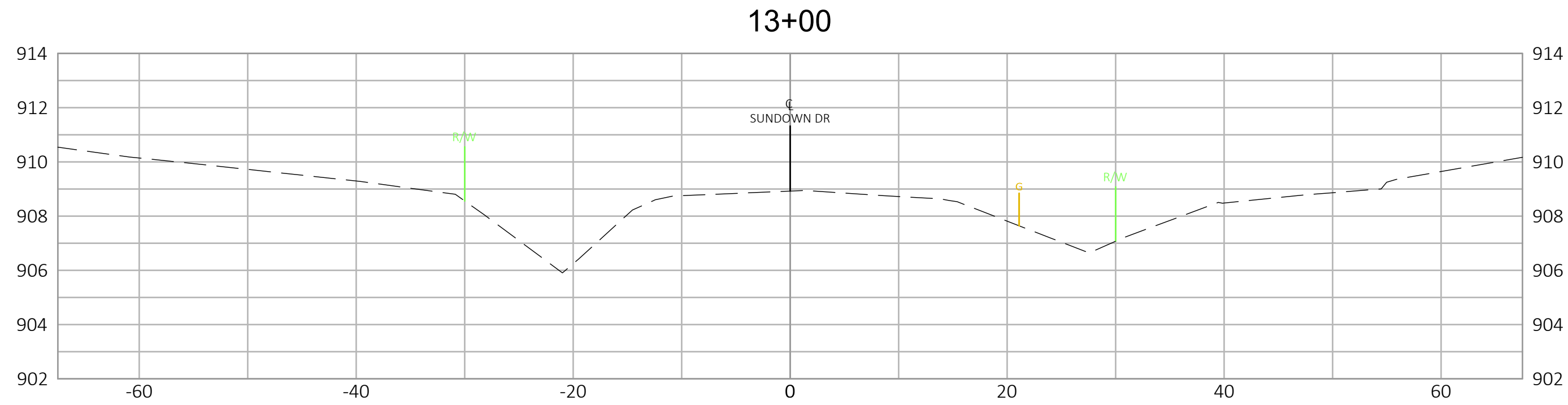
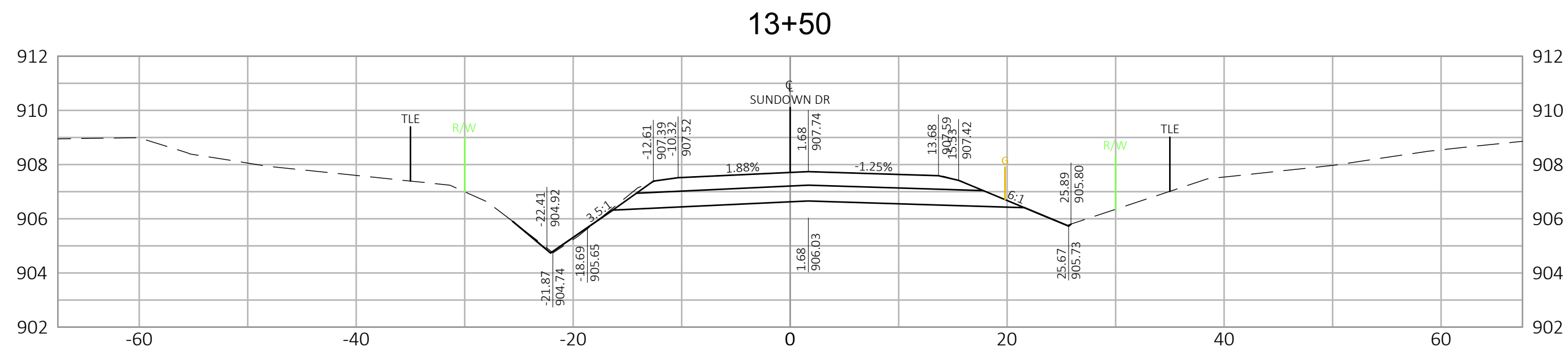
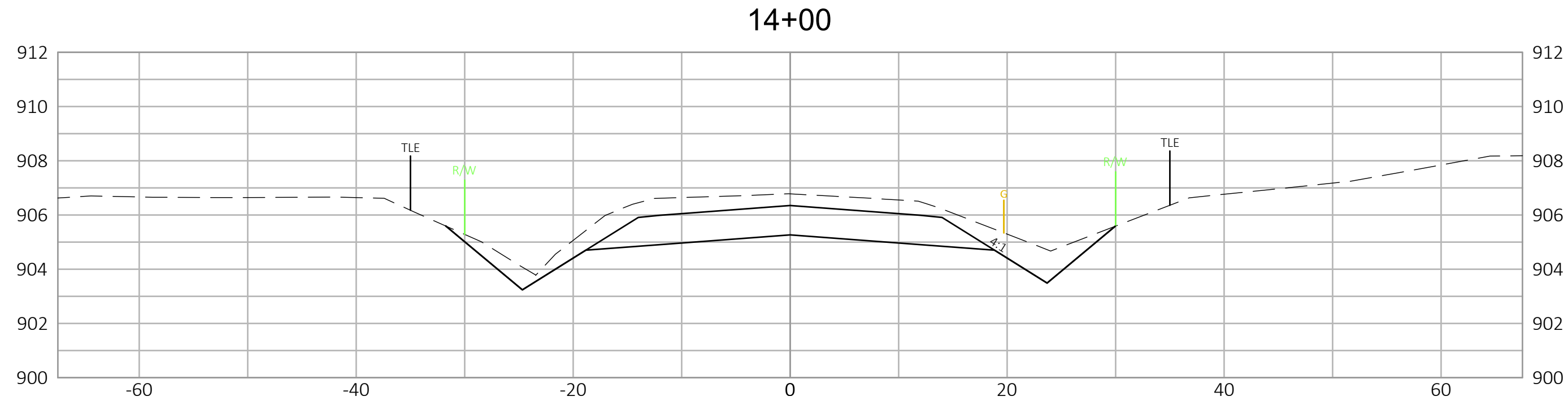
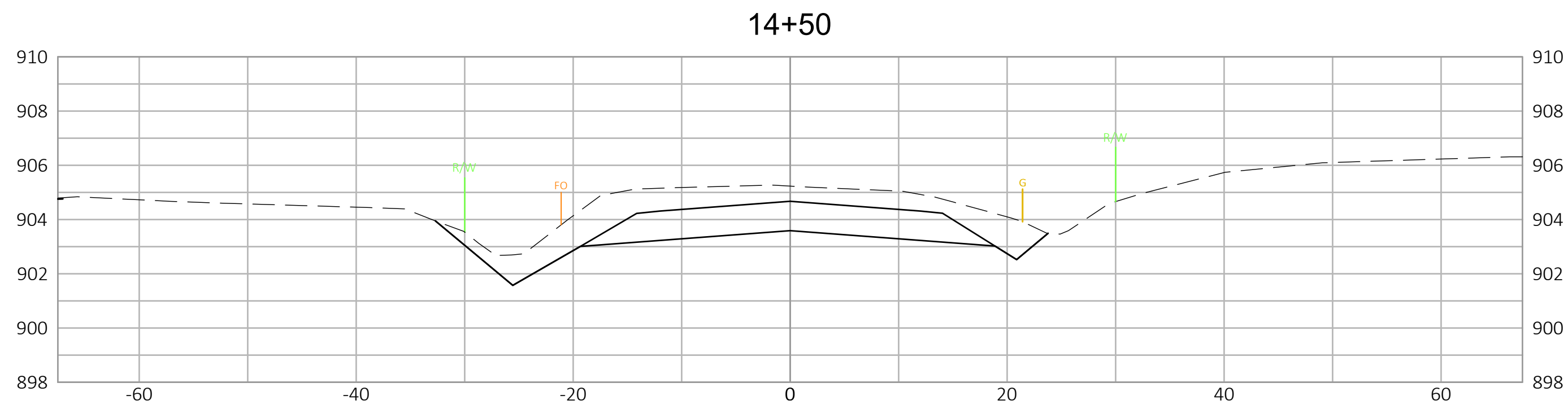


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