LETTING DATE 12/19/2023

HMA RESURFACING WITH MILLING

MARION COUNTY NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63

IOWA DOT

REVISIONS

TOTAL
--
PROJECT IDENTIFICATION NUMBER
22-63-092-020
PROJECT NUMBER
NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63
R.O.W. PROJECT NUMBER
NHSN-092-6(041)--2R-63

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

MARION COUNTY

HMA RESURFACING WITH MILLING

E of Knoxville to 0.15 W of Co Rd T25

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

For Project Location Map
Refer to Sheet No. A.2

INDEX OF SHEETS

PROJECT EVENT DATES
D7 – 10–03–2023

DESIGN DATA RURAL		
2023 AADT	3,795	V.P.D.
2043 AADT	4,843	V.P.D.
2043 DHV	500	V.P.H.
TRUCKS	16	%
Total Design ESALs	2.2 million	

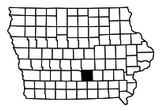
INDEX OF SEALS

SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Jonathan W. Bahr	Primary Signature Block	X
X	X	X	X

PRELIMINARY PLANS

Subject to change by final design.

DM5 PLAN–Date: 09–12–2023



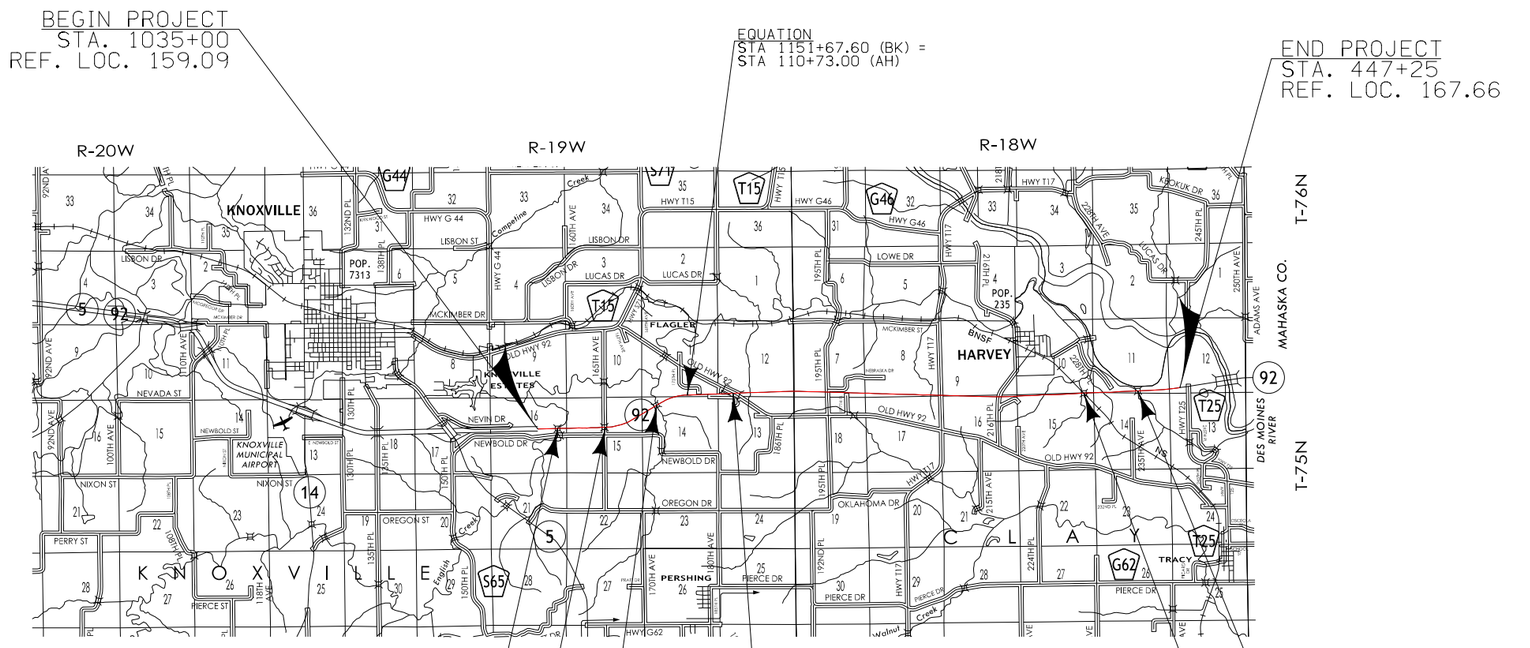
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER A.1

3:20:12 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_A01.dgn

BEGIN PROJECT
STA. 1035+00
REF. LOC. 159.09

EQUATION
STA 1151+67.60 (BK) =
STA 110+73.00 (AH)

END PROJECT
STA. 447+25
REF. LOC. 167.66



FHWA 603530
MAINT 6359.4S092
PPCB BRIDGE 205'X6" x 44'X0"

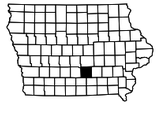
FHWA 603550
MAINT 6360.0S092
PPCB BRIDGE 151'X4" x 44'X0"

FHWA 603540
MAINT 6360.8S092
TWIN 10' X 12' X 227' RCB CULVERT

FHWA 600770
MAINT 6361.80092
CONTINUOUS WELDED GIRDER BRIDGE 575' X 32'

FHWA 602660
MAINT 6367.1S092
PPCB BRIDGE 193' x 44'

FHWA 602670
MAINT 6366.4S092
CONTINUOUS I-BEAM BRIDGE 220' X 44'
FRA 098023E



LOCATION MAP SCALE
0 1 2 3
Miles

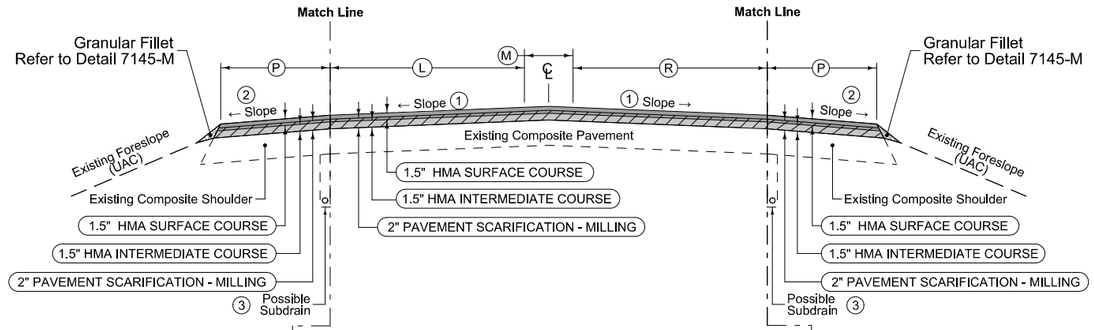
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER A.2

5:31:15 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_A01.dgn

Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

3R_Shldr_P_Milling_ Modified			
STATION TO STATION		(P) Feet	Division
1035+00	1048+55.75	10	1
1052+44.25	1081+38.24	10	1
1084+72.57	1115+67.60 (E1)	10	1
110+73.00 (E1)	127+94.09	10	1
131+49.09	271+81.86	10	1
298+35.49	379+91.47	10	1
383+87.1	416+81	10	1
422+20	447+25	10	1

STATION EQUATION (E1) 1151+67.60 (BK) = 110+73.00 (AH)

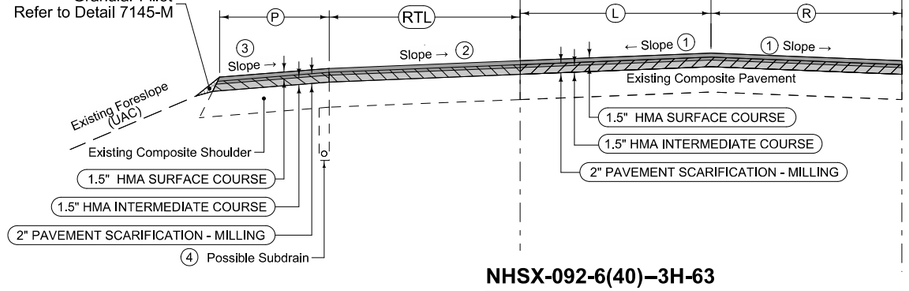


NHSX-092-6(40)--3H-63

3R_MillingOverlay_ Modified						
STATION TO STATION		(L) Feet	(M) Feet	(R) Feet	Division	Remarks
1035+00	1044+06.46	12	36-0	12	1	

Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

3R_Shldr_P_Milling_ Modified				
STATION TO STATION		(RTL) Feet	(P) Feet	Division
127+94.09	129+94.09	10	0	1
129+94.09	131+49.09	10-0	0-10	1



NHSX-092-6(40)--3H-63

3R_MillingOverlay_ Modified					
STATION TO STATION		(L) Feet	(R) Feet	Division	Remarks
1044+06.46	1048+55.75	12	12	1	
1052+44.25	1081+38.24	12	12	1	
1084+72.57	1115+67.60 (E1)	12	12	1	
110+73.00 (E1)	134+38	12	12	1	
138+86	271+81.86	12	12	1	
298+35.49	379+91.47	12	12	1	
383+87.1	416+81	12	12	1	
422+20	447+25	12	12	1	

STATION EQUATION (E1) 1151+67.60 (BK) = 110+73.00 (AH)

Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

3R_Shldr_P_Milling_ Modified			
STATION TO STATION		(P) Feet	Division
1035+00	1048+55.75	10	1
1052+44.25	1081+38.24	10	1
1084+72.57	1115+67.60 (E1)	10	1
110+73.00 (E1)	134+38	10	1
138+86	271+81.86	10	1
298+35.49	379+76.94	10	1
384+09.46	416+81	10	1
422+20	447+25	10	1

STATION EQUATION (E1) 1151+67.60 (BK) = 110+73.00 (AH)

(1) Finished slope over Thru Lanes shall match existing pavement except the minimum allowable slope is 2.0% and the maximum allowable slope is 3.0%. Section may be modified as directed by the Engineer through areas of special shaping.

(2) Finished slope over Shoulders shall match existing pavement except the minimum allowable slope is 4.0% and the maximum allowable slope is 6.0%. Section may be modified as directed by the Engineer through areas of special shaping.

(3) UAC existing subdrain. All existing subdrain shall remain functional at all times (do not plug or crush). New subdrain shall be in contact with the granular material below the existing mainline pavement (see Tab 104-9 on CS sheets for proposed locations).

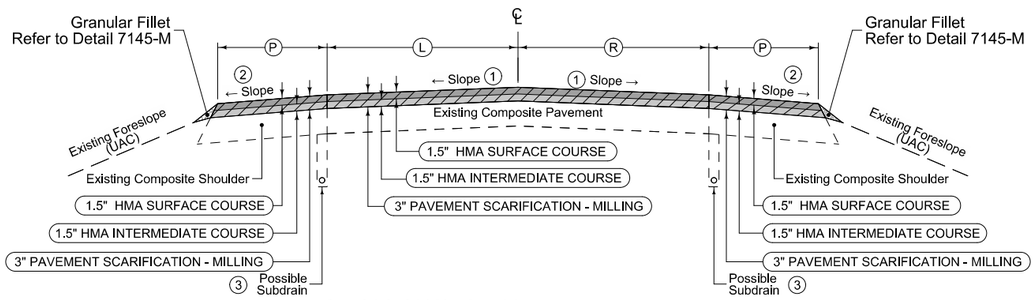
General Notes:

1. Stationing on typical sections does not include gapping for paved sideroads or paved entrances. Refer to Details.
2. See Tab 100-25 for Pavement quantities.
3. See Tab 112-9 for Granular Shoulder quantities.

IA 92 HMA RESURFACING WITH MILLING
(Beginning of Project to Co Rd T17)
(Co Rd T17 to End of Project)

Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

		3R_Shldr_P_Milling_ Modified	
STATION TO STATION		(P) Feet	Division
134+38	138+86	10	1



NHSX-092-6(40)--3H-63

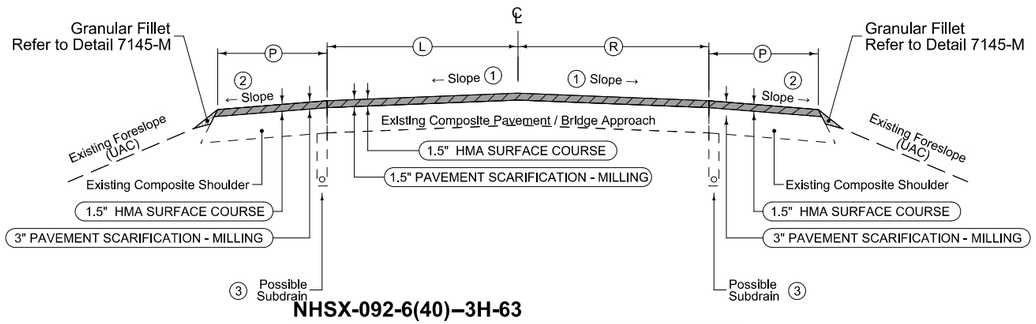
		3R_MillingOverlay_ Modified			
STATION TO STATION		(L) Feet	(R) Feet	Division	Remarks
134+38	138+86	12	12	1	

Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

		3R_Shldr_P_Milling_ Modified	
STATION TO STATION		(P) Feet	Division
134+38	138+86	10	1

Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

		3R_Shldr_P_Milling_ Modified	
STATION TO STATION		(P) Feet	Division
416+50	417+18.5	10	1
417+25.5	418+41.69	10	1
420+38.68	421+45.5	10	1
421+52.5	422+00	10	1



NHSX-092-6(40)--3H-63

		3R_MillingOverlay_ Modified			
STATION TO STATION		(L) Feet	(R) Feet	Division	Remarks
416+50	417+18.5	12	12	1	
417+25.5	418+51.5	12	12	1	
420+48.5	421+45.5	12	12	1	
421+52.5	422+00	12	12	1	

(1) Finished slope over Thru Lanes shall match existing pavement except the minimum allowable slope is 2.0% and the maximum allowable slope is 3.0%. Section may be modified as directed by the Engineer through areas of special shaping.

(2) Finished slope over Shoulders shall match existing pavement except the minimum allowable slope is 4.0% and the maximum allowable slope is 6.0%. Section may be modified as directed by the Engineer through areas of special shaping.

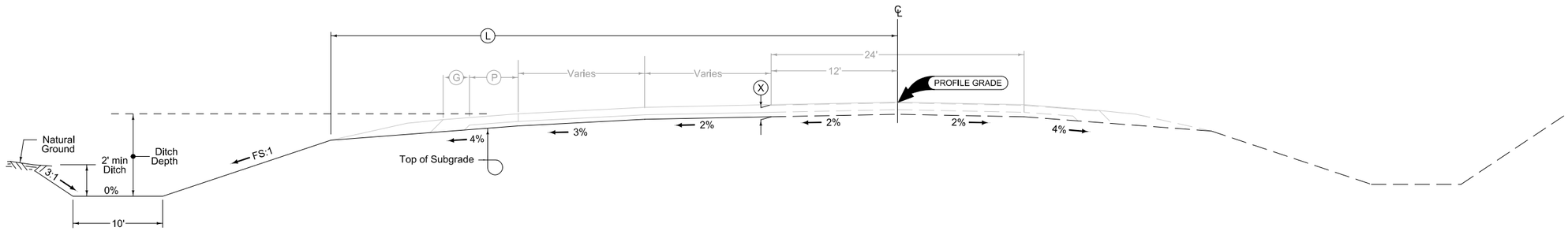
(3) UAC existing subdrain. All existing subdrain shall remain functional at all times (do not plug or crush). New subdrain shall be in contact with the granular material below the existing mainline pavement (see Tab 104-9 on CS sheets for proposed locations).

General Notes:

1. Stationing on typical sections does not include gapping for paved sideroads or paved entrances. Refer to Details.
2. See Tab 100-25 for Pavement quantities.
3. See Tab 112-9 for Granular Shoulder quantities.

IA 92 HMA RESURFACING WITH MILLING
(Beginning of Project to Co Rd T17)
(Co Rd T17 to End of Project)

G_2_Grade
MODIFIED



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

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

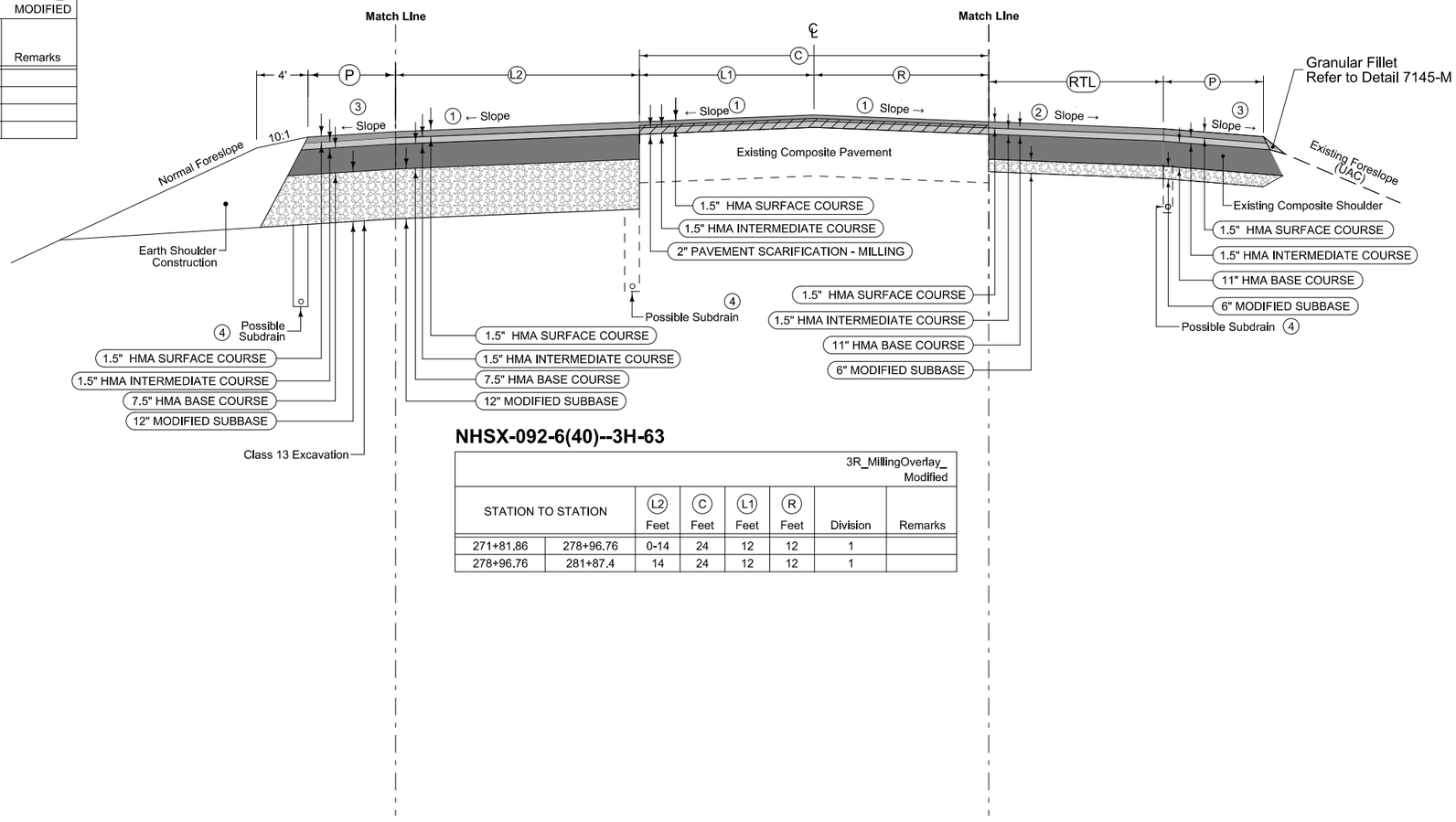
LEFT TURN LANE AND OFFSET RIGHT TURN LANE GRADING

LOCATION			DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION		Ⓛ Feet	Ⓧ Inches	FS
IA 92	271+81.86	279+81.12	Varies	22.5	3:1
IA 92	282+63.91	298+35.49	Varies	22.5	3:1

Paved Shoulder

HSIPX-092-6(42)--3L-63

				2_C MODIFIED
STATION TO STATION		(P) Feet	Division	Remarks
271+81.86	279+81.12	10	1	



NHSX-092-6(40)--3H-63

						3R_MillingOverlay_ Modified	
STATION TO STATION		(L2) Feet	(C) Feet	(L1) Feet	(R) Feet	Division	Remarks
271+81.86	278+96.76	0-14	24	12	12	1	
278+96.76	281+87.4	14	24	12	12	1	

Shoulder Strengthening

NHSX-092-6(40)–3H-63

				3R_Shldr_P_Milling_ Modified
STATION TO STATION		(RTL) Feet	(P) Feet	Division
266+41.86	278+54.69	0	10	1
278+54.75	279+74.75	0 - 10	10 - 0	1
279+74.75	281+24.74	10	0	1

(1) Finished slope over Thru Lanes shall match existing pavement except the maximum allowable slope is 3.0% and the minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.

(2) Finished slope of Turning Lanes shall match existing except the minimum allowable slope is 3% and the maximum allowable slope is 4%. Section may be modified as directed by the Engineer through areas of special shaping.

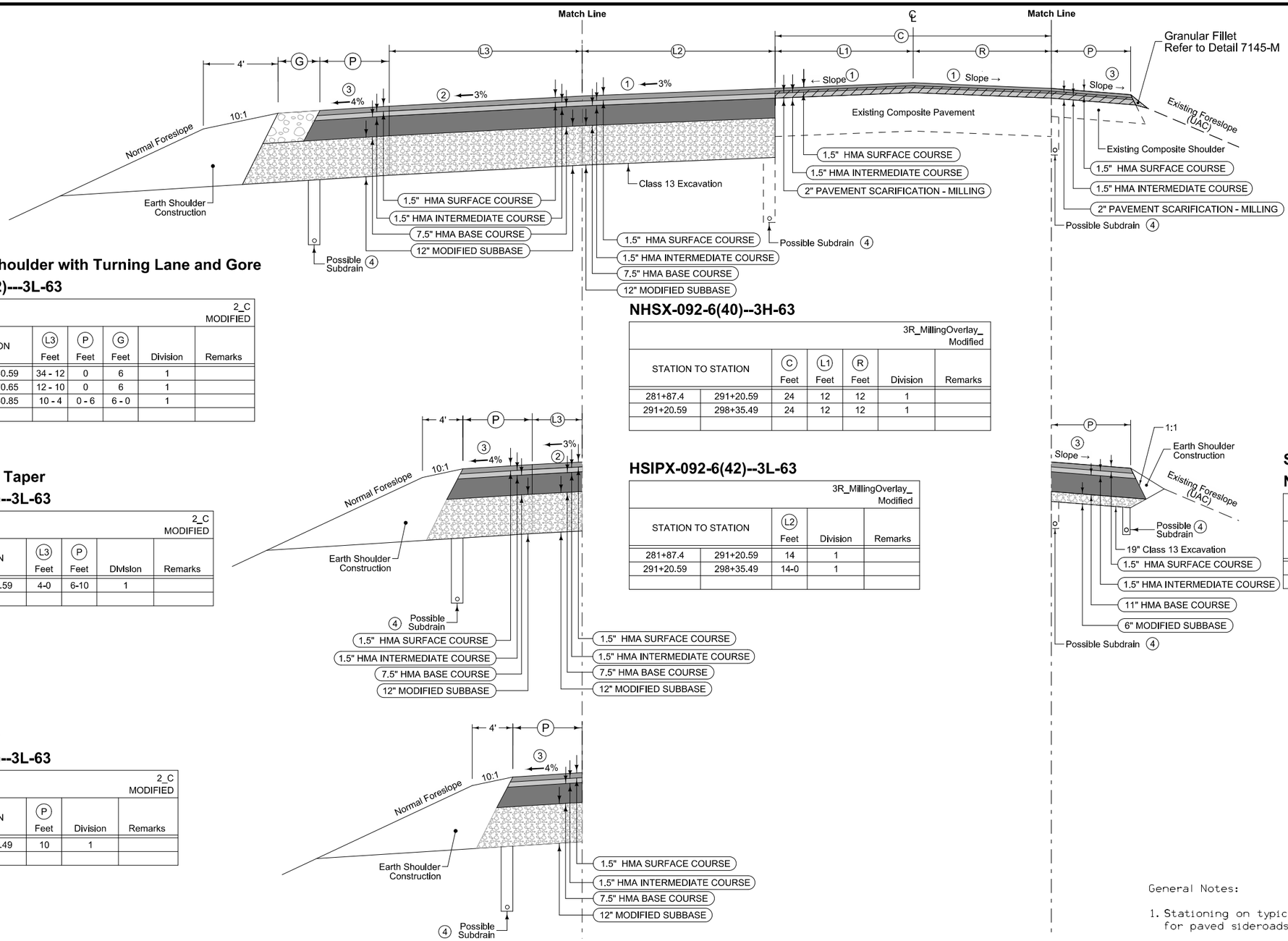
(3) Finished slope of Shoulder shall have a minimum allowable slope of 4% and a maximum allowable slope of 6%. Section may be modified as directed by the Engineer through areas of special shaping.

(4) UAC existing subdrain unless noted on CS Sheets. All existing subdrain shall remain functional at all times (do not plug or crush). New subdrain shall be located at the outside edge of the paved shoulder and shall be in contact with the granular subbase. Pavement removal is not required for the installation of new subdrain. See Tab 104-9 and Detail RLS-3 on CS Sheets for proposed locations.

General Notes:

1. Stationing on typical sections does not include gapping for paved sideroads or paved entrances. Refer to Details.
2. See Tab 100-25 for Pavement quantities.
3. See Tab 112-9 for Granular Shoulder quantities.

IA 92 HMA RESURFACING WITH MILLING AND HMA TURNING LANE (West of Co Rd T17)



Paved Shoulder and Granular Fillet
NHSX-092-6(40)--3H-63

		3R_Shldr_P_Milling_ Modified		
STATION TO STATION		(P) Feet	Division	
297+58.9	298+35.49	10	1	

Combination Shoulder with Turning Lane and Gore
HSIPX-092-6(42)---3L-63

		2_C MODIFIED				
STATION TO STATION		(L3) Feet	(P) Feet	(G) Feet	Division	Remarks
282+63.91	289+40.59	34 - 12	0	6	1	
289+40.59	289+70.65	12 - 10	0	6	1	
289+70.65	290+60.85	10 - 4	0 - 6	6 - 0	1	

NHSX-092-6(40)--3H-63

		3R_MillingOverlay_ Modified				
STATION TO STATION		(C) Feet	(L1) Feet	(R) Feet	Division	Remarks
281+87.4	291+20.59	24	12	12	1	
291+20.59	298+35.49	24	12	12	1	

Paved Shoulder Taper
HSIPX-092-6(42)--3L-63

		2_C MODIFIED			
STATION TO STATION		(L3) Feet	(P) Feet	Division	Remarks
290+60.85	291+20.59	4-0	6-10	1	

HSIPX-092-6(42)--3L-63

		3R_MillingOverlay_ Modified		
STATION TO STATION		(L2) Feet	Division	Remarks
281+87.4	291+20.59	14	1	
291+20.59	298+35.49	14-0	1	

Shoulder Strengthening
NHSX-092-6(40)--3H-63

		3R_Shldr_P_Milling_ Modified		
STATION TO STATION		(P) Feet	Division	Remarks
282+58.9	297+58.9	10	1	5

Paved Shoulder
HSIPX-092-6(42)--3L-63

		2_C MODIFIED		
STATION TO STATION		(P) Feet	Division	Remarks
291+20.59	298+35.49	10	1	

(1) Finished slope over Thru Lanes shall match existing pavement except the maximum allowable slope is 3.0% and the minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.

(2) Finished slope of Turning Lanes shall match existing except the minimum allowable slope is 3% and the maximum allowable slope is 4%. Section may be modified as directed by the Engineer through areas of special shaping.

(3) Finished slope of Shoulder shall have a minimum allowable slope of 4% and a maximum allowable slope of 6%. Section may be modified as directed by the Engineer through areas of special shaping.

(4) UAC existing subdrain unless noted on CS Sheets. All existing subdrain shall remain functional at all times (do not plug or crush). New subdrain shall be located at the outside edge of the paved shoulder and shall be in contact with the granular subbase. Pavement removal is not required for the installation of new subdrain. See Tab 104-9 and Detail RLS-3 on CS Sheets for proposed locations.

(4) Rumble Strips shall not be placed on the Right Shoulder from STA. 282+58.90 to 297+58.90.

General Notes:

1. Stationing on typical sections does not include gapping for paved sideroads or paved entrances. Refer to Details.
2. See Tab 100-25 for Pavement quantities.
3. See Tab 112-9 for Granular Shoulder quantities.

IA 92 HMA RESURFACING WITH MILLING AND HMA TURNING LANES (East of Co Rd T17)

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER B.5

1:32:47 PM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_B01.dgn

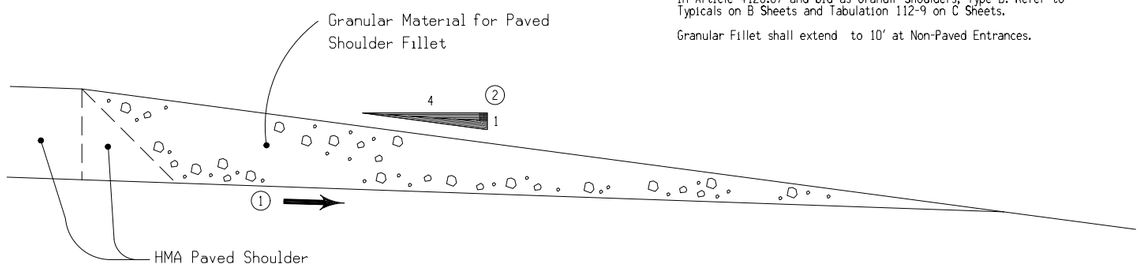
7145-M
Modified

Notes:

This typical illustrates the construction requirements for a Granular Material fillet at the edge of a paved shoulder.

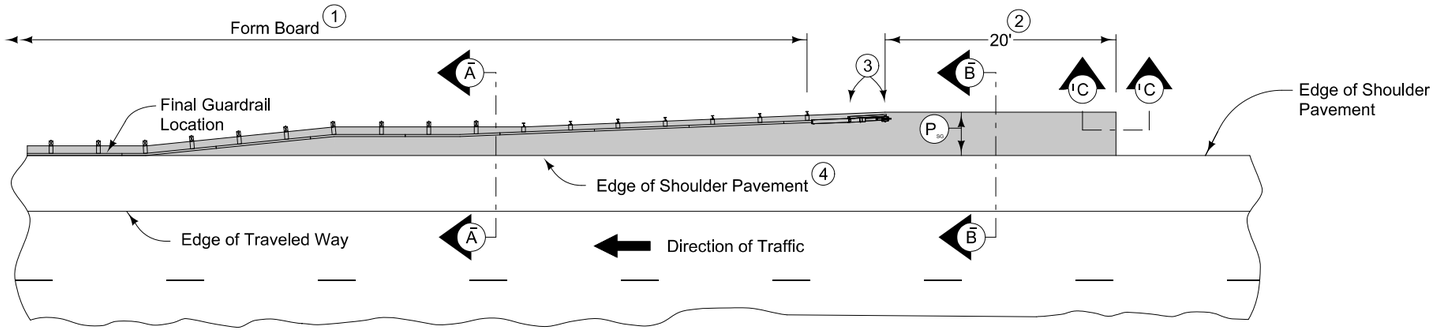
The aggregate used for the Granular Fillet shall meet the requirements of Aggregate for Paved Shoulder Fillet, as specified in Article 4120.07 and bid as Granulr Shoulders, Type B. Refer to Typicals on B Sheets and Tabulation 112-9 on C Sheets.

Granular Fillet shall extend to 10' at Non-Paved Entrances.

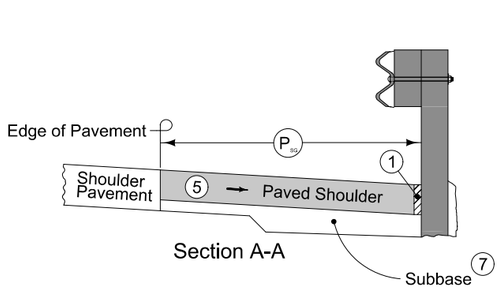


(1) Match slope of under side of shoulder pavement.
(2) A foreslope of 4:1 or flatter shall be provided.

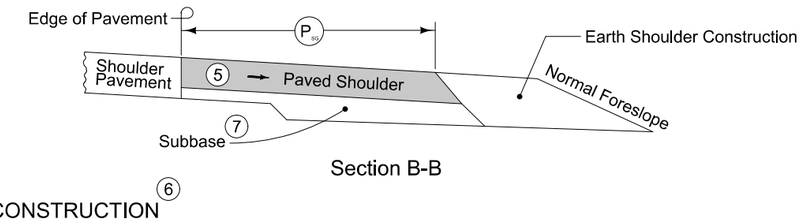
GRANULAR MATERIAL FOR PAVED SHOULDER FILLET



PLAN VIEW

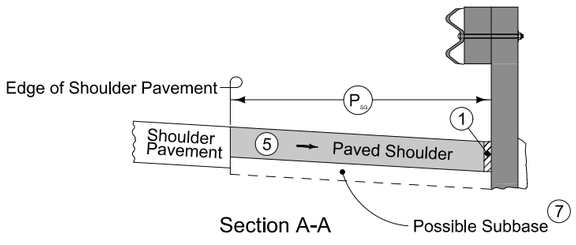


Section A-A

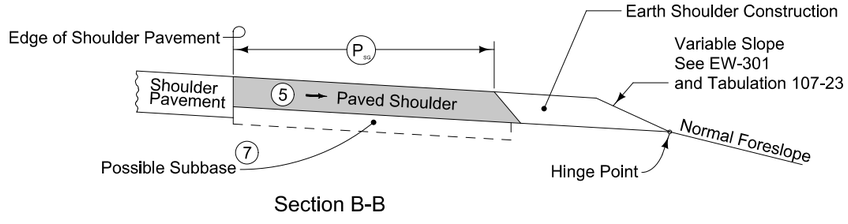


Section B-B

NEW CONSTRUCTION 6



Section A-A



Section B-B

EXISTING SHOULDER

DESIGNER INFO | 7158 | 04-19-22

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

(1) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.

(2) Continue paved shoulder 20 feet beyond the center of the first post.

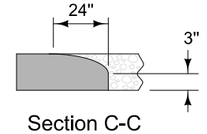
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(4) 'KT' (per PV-101) joint for PCC shoulder.
'B' (per PV-101) joint for HMA shoulder.

(5) Match shoulder slope.

(6) The Contractor has the option to pave the paved shoulder at guardrail and the full width paved shoulder as one operation.

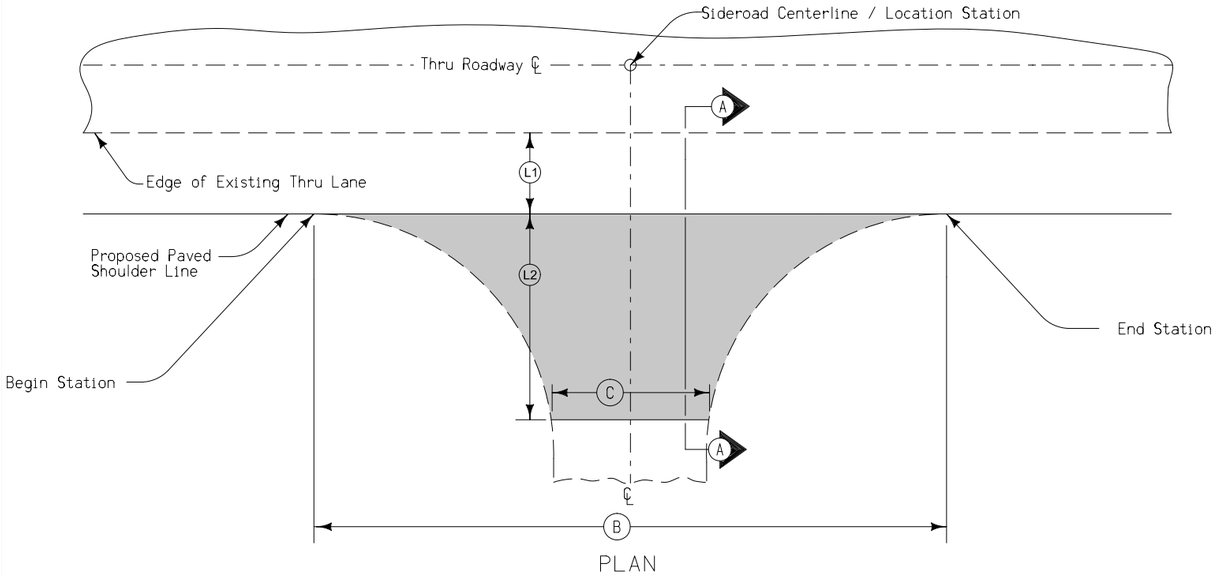
(7) Refer to other details in the plan.



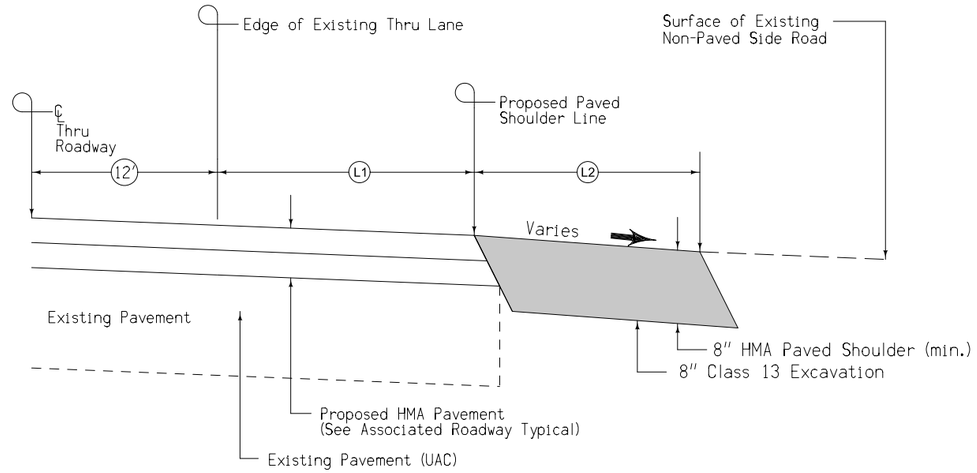
Section C-C
Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL
(ADJACENT TO FULL WIDTH PAVED SHOULDER)

7149-M1
Modified



PLAN



SECTION A-A

GENERAL NOTES:

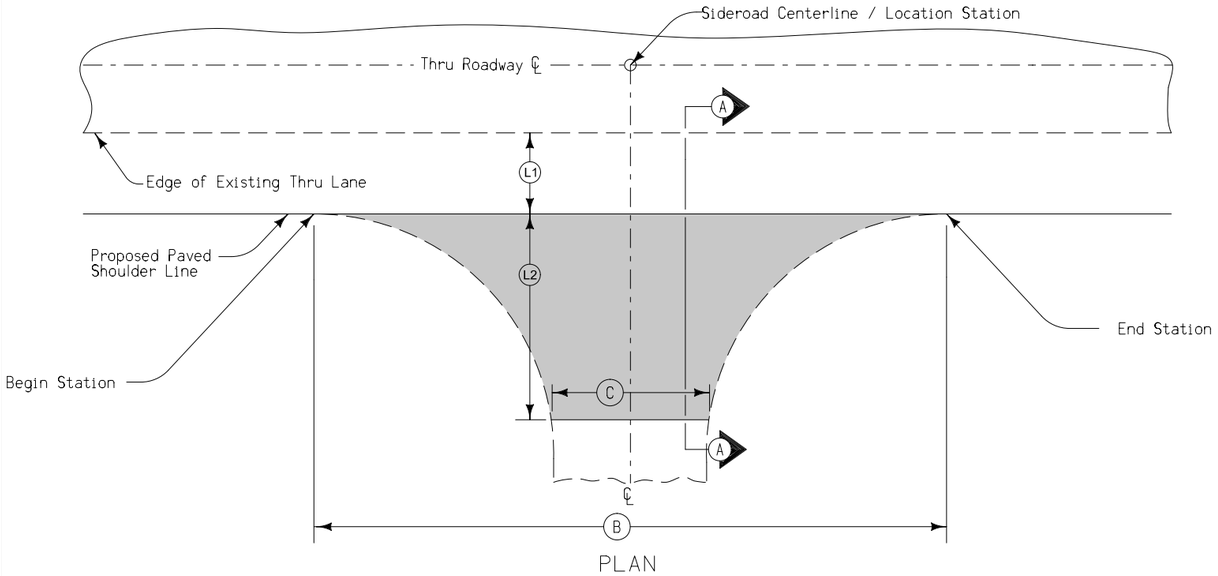
1. Refer to Tab 100-25 and 102-16 on the C Sheets for HMA Pavement and Scarification Quantities associated with Dimension L1, L2, L3, and L4. Quantities for Dimension L1 are separated from Quantities associated with Dimensions L2, L3, and L4.
2. Refer to Tab 108-22 on the C Sheets for STOP LINE (SLW2) pavement markings for Side Road locations listed on this Detail.
3. If a Dimension is not provided, then it isn't necessary for the construction of tne respective treatment.
4. Dimensions are approximate and shall match existing.

FILLET EXTENSION FOR NON-PAVED SIDE ROADS ADJACENT TO AREAS WITH PROPOSED ROADWAY PROFILE ELEVATION RISE

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER B.8

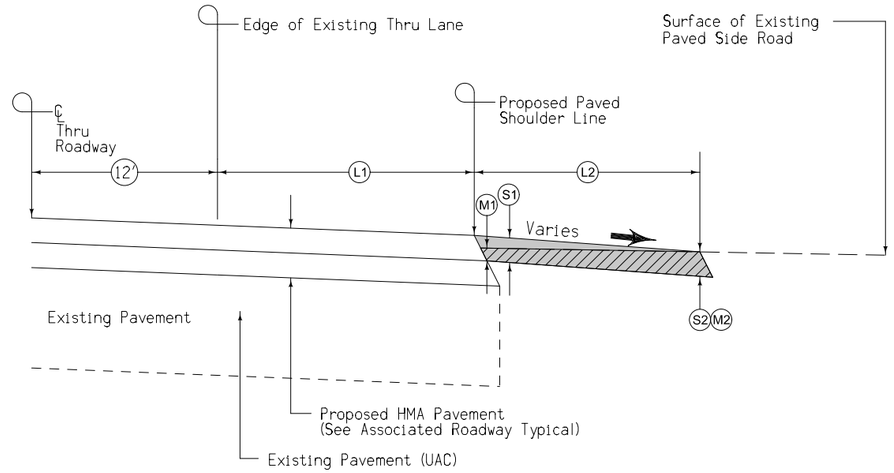
1:32:49 PM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_B01.dgn

7149-M2
Modified



PLAN

Notch Type 'N2'



SECTION A-A

GENERAL NOTES:

1. Refer to Tab 100-25 and 102-16 on the C Sheets for HMA Pavement and Scarification Quantities associated with Dimension L1, L2, L3, and L4. Quantities for Dimension L1 are separated from Quantities associated with Dimensions L2, L3, and L4.
2. Refer to Tab 108-22 on the C Sheets for STOP LINE (SLW2) pavement markings for Side Road locations listed on this Detail.
3. If a Dimension is not provided, then it isn't necessary for the construction of tne respective treatment.
4. Dimensions are approximate and shall match existing.

HMA RUNOUT FOR PAVED SIDE ROADS
ADJACENT TO AREAS WITH PROPOSED ROADWAY PROFILE ELEVATION RISE

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER B.9

1:32:49 PM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_B01.dgn

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway - DIVISION 1 : IDOT+Federal (RURAL)

Roadway - DIVISION 2 : Marion County, per Agreement Number 2022-C-103A

Roadway - DIVISION 3 : Iowa DOT (100%)

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway - DIVISION 1	Roadway - DIVISION 2	Roadway - DIVISION 3	Total	
1	2101-0850001	CLEARING AND GRUBBING	ACRE	11.7			11.7	Refer to Tab. 110-17 on C Sheets. All material generated as a result of Clearing and Grubbing shall become the property of the contractor and must be disposed off site.
2	2101-0850002	CLEARING AND GRUBBING	UNIT	195.3			195.3	
3	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY	185.8			185.8	Refer to Tab. 107-23 on C Sheets.
4	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	79.407			79.407	Refer to Tab. 112-9 on C Sheets. Tabulation includes a 5% contingency.
5	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	430.1			430.1	Refer to Tab. 112-9 on C Sheets.
6	2125-2225050	RESHAPING DITCHES	STA	5			5	Refer to Tab. 3R-CULV on C Sheets.
7	2128-0000200	CONTRACTOR STOCKPILED SHOULDER MATERIAL	TON			10,914.3	10,914.3	Refer to Tab. 110-13 on C Sheets.
8	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	8.57			8.57	This bid item includes 8.57 miles of two lane roadway.
9	2214-5145150	PAVEMENT SCARIFICATION	SY	201,067			201,067	Refer to Tab. 100-25 on C Sheets.
10	2301-0685550	BRIDGE APPROACH PAVEMENT, AS PER PLAN	SY	1,886.4			1,886.4	Refer to U Sheets for MODIFIED BR-203 and to Tab. 112-6 on C Sheets for details.
11	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	16,948.059			16,948.059	Refer to Tab. 100-25 on C Sheets. Tabulation includes a 5% contingency.
12	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	17,526.513	63.289		17,589.802	
13	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	2,068.474	3.797		2,072.271	
14	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	239.9			239.9	Refer to Tab. 3R-CULV on C Sheets.
15	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	1			1	Refer to Tab. 3R-CULV on C Sheets.
16	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	18			18	Refer to Tab. 3R-CULV on C Sheets.

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway - DIVISION 1	Roadway - DIVISION 2	Roadway - DIVISION 3	Total	
17	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN.	EACH	1			1	Refer to Tab. 3R-CULV on C Sheets.
18	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	144			144	
19	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	810			810	Refer to Tab. 110-7A on C Sheets.
20	2505-4008130	REMOVAL OF CABLE GUARDRAIL	LF	9,090			9,090	Refer to Tab. 110-7B on C Sheets.
21	2505-4008300	STEEL BEAM GUARDRAIL	LF	500			500	Refer to Tab. 108-8A on C Sheets.
22	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	13			13	
23	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	13			13	
24	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	10			10	
25	2505-4021721	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206	EACH	3			3	
26	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	9,027.5			9,027.5	Refer to Tab. 108-9A on C Sheets.
27	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	17			17	Refer to Tab. 108-9A on C Sheets and the project plans for locations and details.
28	2505-6000131	HIGH TENSION CABLE GUARDRAIL, SPARE PARTS KIT	EACH	2			2	
29	2505-6765006	REMOVE AND REINSTALL FORMED STEEL BEAM GUARDRAIL	LF	90			90	The intent of this work is to remove and reinstall only the steel beam guardrail for placement of pavement. Location is IA 92 EB, Sta. 1082+23.57; SW Quadrant of Bridge FHWA #603550. Carefully remove and stockpile steel beam guardrail for reinstallation. The Contractor has the option to leave the posts in place, or to remove and reinstall the posts at no additional cost to the Contracting Authority. Replace steel beam rail and posts damaged by the Contractor's operations at no additional cost to the Contracting Authority. Posts, delineators, and object markers are to remain in place. Replace posts, delineators, and object markers damaged by the Contractors operations at no additional cost to the Contracting Authority. Ensure that all posts are firm and plum prior to reinstalling the guardrail. Restore the area disturbed by removal and reinstallation operations to an acceptable condition. Method of Measurement: Measurement will be in linear feet, measured along the front of the rail, of steel beam guardrail (includes W-beam and Thrie-beam guardrail) removed and reinstalled. Basis of Payment: Payment will be at the contract unit price per linear foot of steel beam guardrail removed and reinstalled. Payment includes all labor, equipment, and materials required to remove and reinstall the steel beam guardrail.

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway - DIVISION 1	Roadway - DIVISION 2	Roadway - DIVISION 3	Total	
30	2507-3250005	ENGINEERING FABRIC	SY	428.7			428.7	Refer to Tab. 100-23 on C Sheets.
31	2507-6800061	REVETMENT, CLASS E	TON	22.2			22.2	Refer to Tab. 100-23 on C Sheets.
32	2507-8029000	EROSION STONE	TON	439			439	
33	2510-6745850	REMOVAL OF PAVEMENT	SY	5,906			5,906	A. Refer to Tabs.110-1 and 102-5 on C Sheets.
34	2524-9100030	OBJECT MARKER, TYPE 3	EACH	13			13	Refer to Tab. 180-8A on C Sheets.
35	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	3,756.14			3,756.14	Refer to Tab. 108-22 on C Sheets.
36	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	10			10	Refer to Tab. 108-29 on C Sheets.
37	2528-8445110	TRAFFIC CONTROL	LS	1			1	Refer to Traffic Control Plan on J Sheets.
38	2528-8445113	FLAGGERS	EACH	0			0	See Proposal.
39	2528-8445115	PILOT CARS	EACH	0			0	
40	2529-2242304	CD JOINT ASSEMBLY	EACH	3			3	Refer to Tab. 102-6C on C Sheets.
41	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	983.1			983.1	Refer to Tab. 102-6C on C Sheets. Tabulation includes a 5% contingency.
42	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	116			116	
43	2529-8201000	JOINT ASSEMBLY, EF	EACH	12			12	Refer to Tab. 102-6C on C Sheets.
44	2533-4980005	MOBILIZATION	LS	1			1	- -
45	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	891.39			891.39	Refer to Tab. 112-10 on C Sheets.
46	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	965.8			965.8	
47	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	444.13			444.13	
48	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS			1	1	Refer to Tab. 110-13 on C Sheets.

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway - DIVISION 1 : IDOT+Federal (RURAL)

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway - DIVISION 1	
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	3,660	Refer to Tab. 107-28 on T Sheets.
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	4,878	Refer to Tab 107-28 on T Sheets.
3	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	4,105	Refer to Tab. 103-10 and the T Sheets. Strip 12 inches of topsoil within the limits of grading. After excavating to the sub grade elevations, spread the stockpiled topsoil to an 8 inch depth across the grading area. Seed the disturbed topsoil stockpile area as per section 2601.05 of the standard specifications. Seeding of the stockpile areas shall be considered incidental to this bid item. See Tab 103-4 on sheet C._ for details.
4	2115-0100000	MODIFIED SUBBASE	CY	2,837.6	Refer to Tab. 100-25 on C Sheets.
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	111.093	Refer to Tab. 112-9 on C Sheets. Tabulation includes a 5% contingency.
6	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	27.8	Refer to Tab. 112-9 on C Sheets.
7	2303-1041750	HOT MIX ASPHALT HIGH TRAFFIC, BASE COURSE, 3/4 IN. MIX	TON	3,266.372	Refer to Tab. 100-25 on C Sheets. Tabulation includes a 5% contingency.
8	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	662.285	Refer to Tab. 100-25 on C Sheets. Tabulation includes a 5% contingency.
9	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	662.285	
10	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	275.456	
11	2402-0425040	FLOODED BACKFILL	CY	24	Refer to Tab. 104-3 on C Sheets.
12	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	1	Refer to Tab. 104-3 on C Sheets.
13	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	24	Refer to Tab. 104-3 on C Sheets.
14	2505-4008130	REMOVAL OF CABLE GUARDRAIL	LF	530	Refer to Tab. 110-7B on C Sheets.
15	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	630	Refer to Tab. 108-9A on C Sheets.
16	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	2	
17	2510-6745850	REMOVAL OF PAVEMENT	SY	2,922.5	Refer to Tabs. 110-1 and 102-5 on C Sheets.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway - DIVISION 1	

SEE RC SHEETS FOR ADDITIONAL BID ITEMS AND QUANTITIES.

INDEX OF TABULATIONS

STANDARD ROAD PLANS

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

Number	Date	Title
BA-200	04-20-21	Steel Beam Guardrail Components
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-205	10-17-23	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-206	10-19-21	Steel Beam Guardrail Flared End Terminal For Cable Connection
BA-250	04-20-21	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-351	10-19-21	High Tension Cable Guardrail
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	04-18-23	Connected Pipe Joints
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-201	10-17-23	Concrete Aprons
DR-303	10-17-17	Subdrains (Longitudinal)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
DR-601	04-18-17	Reinforced Concrete Pipe Culvert
DR-621	04-18-17	Pipe Extension
EW-105	04-21-15	Reshaping Slopes and Ditches
EW-301	04-20-21	Guardrail Grading
EW-503	10-20-15	Side Road Grading
PM-110	04-21-20	Line Types
PM-111	04-21-20	Symbols and Legends
PM-120	10-21-14	Stop Lines and Islands
PM-210	10-19-21	Separation in Two-Lane Roadway
PM-222	10-15-19	Passing Lane (Super Two Highway)
PM-520	10-15-19	Two-Lane Roadway with no Turn Lanes (Two-Way Stop Condition)
PM-521	10-15-19	Two-Lane Roadway with Right Turn Lanes
PR-101	04-21-15	Full Depth Patch with 'EF' Joint in PCC
PR-103	10-17-23	Full Depth PCC Patch with Dowels
PV-12	10-20-20	Milled Shoulder Rumble Strips
PV-13	10-17-17	Milled Centerline Rumble Strips
PV-101	04-19-22	Joints
SI-173	04-19-16	Object Markers
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail
SI-881	04-16-19	Special Signs for Workzones
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-81	04-18-23	Restricted Width Signing (Less Than 14.5 Feet)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-213	04-18-23	Lane Closure with Flaggers
TC-214	04-18-23	Lane Closure with Flaggers for use with Pilot Car
TC-215	04-18-23	Lane Closure with Signals (Up to Three Days)
TC-217	04-18-23	Lane Closure with Signals and TBR
TC-231	04-18-23	Slow Moving Vehicle Operating in the Traffic Lane
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-233	10-17-17	Pavement Marking Operations Two-Lane
TC-251	04-18-23	Temporary Road Closure
TC-252	04-21-20	Routes Closed to Traffic
TC-282	10-15-19	Uneven Lanes
TC-283	04-18-23	Surveying Operations

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
HMA Millings	10914.3	TONS	Iowa DOT Knoxville Maintenance Garage	Michael "Walt" Kingery (641) 218-9422	See Note (1)
Low Tension Cable Guardrail	9620	LF	Iowa DOT Knoxville Maintenance Garage	Michael "Walt" Kingery (641) 218-9422	See Note (2)
Steel Beam Guardrail	810	LF	Iowa DOT Knoxville Maintenance Garage	Michael "Walt" Kingery (641) 218-9422	See Note (2)

Note 1: Includes scarified material identified on B Sheets and C Sheets. Material Density = 145 lbs/ft3.
This work shall be bid as "Contractor Stockpiled Shoulder Material".
HMA Milling tonnage on this tab are half the millings accumulated during the scarification operation.
Reduction is to account for possible 50% Max RAP usage in Flexible Pavement per Specification 2303.02

Note 2: All steel beam guardrail and low tension cable guardrail shall be delivered and stockpiled by the Contractor.
Steel beam guardrail, end terminals, and wood posts shall remain the property of the Iowa DOT.
This work shall be bid as "Deliver and Stockpile Salvaged Materials". Contractor shall not cut guardrail for removal, they shall be unbolted only.

100-27
MODIFIED

EXISTING POSTED SPEED LIMIT

Road Identification	Begin Station	End Station	Proposed Posted Speed Limit			Remarks
			35 or less	40 - 45	over 45	
IA 92, EB Traffic	1035+00.00	1151+67.60			x	
IA 92, EB Traffic	110+73.00	447+25.00			x	
IA 92, WB Traffic	1035+00.00	1151+67.60			x	
IA 92, WB Traffic	110+73.00	447+25.00			x	

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
	Marion	IA-92	2	157.93	159.10	2007		STPN-5-3(52)-2J-63	PCC	9.5	GSB	10.5	SBF	12			DURHAM MINE	C.LST.	I		
	Marion	IA-92	1	157.95	159.78	1978		TQF-592-2(7)--29-63	PCC	9.5							DURHAM MINE	C.LST.	2		
	Marion	IA-92	1	159.78	161.32	2001		STP-92-5(35)--2C-63	AAC	1.5	AAC	2	BAC	2			DURHAM MINE	C.LST.			
	Marion	IA-92	1	159.78	161.32	1978		TQF-592-2(7)--29-63	PCC	9.5							DURHAM MINE	C.LST.	2		
	Marion	IA-92	1	161.32	165.20	2001		STP-92-6(35)--2C-63	AAC	1.5	AAC	2	BAC	2			DURHAM MINE	C.LST.			
	Marion	IA-92	1	161.32	165.20	1978		F-592-2(11)--20-63	PCC	9							DURHAM MINE	C.LST.	2		
	Marion	IA-92	1	165.20	168.59	2001		STP-92-6(35)--2C-63	AAC	1.5	AAC	2	BAC	2			DURHAM MINE	C.LST.			
	Marion	IA-92	1	165.20	168.59	1978		F-FG-592-2(8)--24-63	PCC	9							DURHAM MINE	C.LST.	2		

100-26
10-15-13

INCIDENTAL ITEMS

Special or unique items where method of measurement / basis of payment is not indicated in the specifications or other contract documents.

No.	Incidental Item	Unit	Quantity	Incidental To		Remarks
				Item Code	Item	
	Culvert Cleaning	CY	237.9	2402-2720100	Class 20 Excavation	Note 1
	Note 1: See Tab 3R_CULV, Note 1 for culvert interior flushing					

FULL-DEPTH PATCHES

Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105, and PR-140.

Location				Dimension			PCC Patches													
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
NSHX-092-6(40)--3H-63 (Division 1)																				
1	1035+05		RT	6.0	12.0	9.5	8.0													
1	1036+04		RT	6.0	12.0	9.5	8.0													
1	1039+82		RT	6.0	12.0	9.5	8.0													
1	1039+82		LT	6.0	12.0	9.5	8.0													
1	1043+76		RT	6.0	12.0	9.5	8.0													
1	1048+42		RT	6.0	12.0	9.5	8.0													
1	1048+62		RT	6.0	12.0	9.5	8.0											1		
1	1048+62		RT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1048+62		LT	6.0	12.0	9.5	8.0											1		
1	1048+62		LT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1052+20		RT	6.0	12.0	9.5	8.0											1		
1	1052+20		RT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1052+20		LT	6.0	12.0	9.5	8.0											1		
1	1052+20		LT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1057+74		RT	6.0	12.0	9.5	8.0													
1	1057+74		LT	6.0	12.0	9.5	8.0													
1	1058+13		RT	6.0	12.0	9.5	8.0													
1	1058+52		RT	6.0	12.0	9.5	8.0													
1	1061+52		RT	6.0	12.0	9.5	8.0													
1	1061+52		LT	6.0	12.0	9.5	8.0													
1	1076+93		RT	6.0	12.0	9.5	8.0													
1	1077+12		LT	6.0	12.0	9.5	8.0													
1	1081+36		RT	6.0	12.0	9.5	8.0													
1	1081+36		LT	6.0	12.0	9.5	8.0													
1	1081+54		RT	6.0	12.0	9.5	8.0											1		
1	1081+54		RT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1081+54		LT	6.0	12.0	9.5	8.0											1		
1	1081+54		LT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1084+69		RT	6.0	12.0	9.5	8.0											1		
1	1084+69		RT SHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1084+69		LT	6.0	12.0	9.5	8.0											1		
1	1084+69		LTSHLD	6.0	10.0	9.5	6.7													6" shoulder
1	1089+71		RT	6.0	12.0	9.5	8.0													
1	1091+31		RT	6.0	12.0	9.5	8.0													
1	1091+31		LT	6.0	12.0	9.5	8.0													
1	1096+92		RT	6.0	12.0	9.5	8.0													
1	1097+50		LT	6.0	12.0	9.5	8.0													
1	1110+47		RT	6.0	12.0	9.5	8.0													
1	1119+28		RT	6.0	12.0	9.5	8.0													
1	1119+28		LT	6.0	12.0	9.5	8.0													
1	1127+33		LT	6.0	12.0	9.5	8.0													
1	1148+73		RT	6.0	12.0	9.5	8.0													
1	1148+73		LT	6.0	12.0	9.5	8.0													
1	199+79		RT	6.0	12.0	9.0	8.0													
1	199+97		LT	6.0	12.0	9.0	8.0													
1	199+97		RT	6.0	12.0	9.0	8.0													
1	200+93		RT	6.0	12.0	9.0	8.0													
1	201+13		RT	8.0	12.0	9.0	10.7													
1	253+33		RT	6.0	12.0	9.0	8.0													
1	253+92		RT	6.0	12.0	9.0	8.0													
1	253+92		LT	6.0	12.0	9.0	8.0													
1	254+60		RT	8.0	12.0	9.0	10.7													
1	255+03		RT	6.0	12.0	9.0	8.0													
1	255+03		LT	6.0	12.0	9.0	8.0													
1	255+21		RT	6.0	12.0	9.0	8.0													
1	255+79		RT	6.0	12.0	9.0	8.0													
1	256+99		RT	6.0	12.0	9.0	8.0													
1	258+78		RT	6.0	12.0	9.0	8.0													
1	259+73		RT	6.0	12.0	9.0	8.0													
1	260+70		RT	6.0	12.0	9.0	8.0													
1	263+73		RT	8.0	12.0	9.0	10.7													
1	263+82		RT	6.0	12.0	9.0	8.0													
1	264+37		LT	6.0	12.0	9.0	8.0													
1	264+56		LT	6.0	12.0	9.0	8.0													
1	272+67		RT	6.0	12.0	9.0	8.0													
1	274+07		RT	6.0	12.0	9.0	8.0													
1	275+84		RT	6.0	12.0	9.0	8.0													
1	276+00		RT	6.0	12.0	9.0	8.0													
1	276+00		LT	6.0	12.0	9.0	8.0													
1	277+38		RT	6.0	12.0	9.0	8.0													
1	277+38		LT	6.0	12.0	9.0	8.0													
1	277+97		RT	6.0	12.0	9.0	8.0													
1	277+97		LT	6.0	12.0	9.0	8.0													
1	298+28		RT	6.0	12.0	9.0	8.0													
1	309+87		RT	6.0	12.0	9.0	8.0													
1	319+17		RT	8.0	12.0	9.0	10.7													
1	319+36		LT	6.0	12.0	9.0	8.0													

FULL-DEPTH PATCHES

Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105, and PR-140.

Location				Dimension			PCC Patches													
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
1	319+36		RT	6.0	12.0	9.0	8.0													
1	319+53		RT	6.0	12.0	9.0	8.0													
1	319+70		RT	8.0	12.0	9.0	10.7													
1	319+70		LT	8.0	12.0	9.0	10.7													
1	320+25		RT	6.0	12.0	9.0	8.0													
1	320+44		RT	6.0	12.0	9.0	8.0													
1	320+66		RT	6.0	12.0	9.0	8.0													
1	329+11		RT	6.0	12.0	9.0	8.0													
1	329+50		RT	6.0	12.0	9.0	8.0													
1	372+55		RT	8.0	12.0	9.0	10.7													
1	384+42		RT	16.0	12.0	9.0	21.3									1				
1	384+50		LT	8.0	12.0	9.0	10.7													
1	384+62		RT	16.0	12.0	9.0	21.3									1				
1	412+42		RT	6.0	12.0	9.0	8.0													
1	412+42		LT	6.0	12.0	9.0	8.0													
1	413+62		RT	6.0	12.0	9.0	8.0													
1	413+62		LT	6.0	12.0	9.0	8.0													
1	415+97		LT	6.0	12.0	9.0	8.0													
1	417+23		RT	6.0	12.0	9.0	8.0											1		
1	417+23		RT SHLD	6.0	10.0	9.0	6.7													6" shoulder
1	417+23		LT	6.0	12.0	9.0	8.0											1		
1	41+23		LT SHLD	6.0	10.0	9.0	6.7													6" shoulder
1	417+68		RT	16.0	12.0	9.0	21.3									1				
1	421+21		RT	6.0	12.0	9.0	8.0											1		
1	421+21		RT SHLD	6.0	10.0	9.0	6.7													6" shoulder
1	421+21		LT	6.0	12.0	9.0	8.0											1		
1	421+21		LT SHLD	6.0	10.0	9.0	6.7													6" shoulder
1	445+24		LT	6.0	12.0	9.0	8.0													
1	417+50		RT	6.0	12.0	9.0	8.0													
1	417+50		LT	6.0	12.0	9.0	8.0													
1	MP 161.661		LT	14.0	12.0	9.0	9.4													See Note (1)
1	MP 165.343 WB		LT	13.0	11.0	9.0	8.0													See Note (1)
1	MP 165.351 EB		RT	19.0	16.0	9.0	16.9													See Note (1)
110				Subtotal:			936.2									3		12		
6				5% Contingency:			46.9													
116				**NSHX-092-6(40)--3H-63 (Division 1) TOTALS:**			**983.1**													
1	MP 165.351 EB		RT	19.0	16.0	9.0	16.9													See Note (1)

Note (1): Remove Raised Traffic Island. Existing hole at Stop Sign shall not be patched. Maintenance to place traffic barrel w/ stop sign.

100-23
04-17-18

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Location						Rock Erosion Control (REC)					Material Bid Quantities			
Road Identification	Begin Station	End Station	Side	L	W	Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Eng. Fabric	Class E Revetment	Erosion Stone	Remarks
			Lt./Rt.	FT	FT						SY	TON	TON	
NSHX-092-6(40)--3H-63 (Division 1)														
IA 92, MP 160.71 24" CMP 90' Rt, 2 ft deep	1120+58.00	1121+60.00	Rt.	102	4						45.3		49.0	See Tab 3R-CULV
IA 92, MP 160.71 24" CMP 90' Rt, 2 ft deep	1121+60.00	1122+49.00	Rt.	100	20						222.2		240.0	See Tab 3R-CULV
IA 92, MP 160.71 24" CMP 90' Rt, 2 ft deep		1122+49.00	Rt.	20	10						22.2	22.2		CMP outlet
Station 1151+68 Bk = Sta 110+73 Ah														
IA 92, 42" RCP, 2 ft deep	138+30.00		Rt.	150	5						83.3		90.0	See Tab 3R-CULV
IA 92, 42" RCP, 2 ft deep	317+60.00		Rt.	50	5						27.8		30.0	See Tab 3R-CULV
IA 92, 30" RCP, 2 ft deep	370+17.00		Rt.	50	5						27.8		30.0	See Tab 3R-CULV
NSHX-092-6(40)--3H-63 (Division 1) TOTALS											**428.7**	**22.2**	**439.0**	

103-10
04-18-17

TOPSOIL STRIPPING AND PLACEMENT

Location				Topsoil Stripping Thickness	Topsoil Placement Thickness	Remarks
Road Identification	Dir. of Traffic	Begin Station	End Station	IN	IN	
IA 92	WB	271+81.86	298+35.49	12.0	6.0	Refer to T Sheets.

CLEARING AND GRUBBING

Location		Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters													All Other Materials		Estimated Quantities			Remarks
Station to Station or Ref. Loc. Sign to Ref. Loc. Sign or Description	Direction of Travel		3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Length	Width	Units	Area	Herbicide Application	
																FT	FT	Units	Acres	Each	
1034+83- 1036+90	EB	Trees - Clearing and Grubbing														207.0	60.0		0.30		SEE PIC 1034+83
1068+07	WB	Trees - Clearing	5			1												5.3			
1069+34	WB	Trees - Clearing	1															0.5			
1070+00-1070+75	WB	Trees - Clearing and Grubbing														75.0	20.0		0.10		
1073+39-1074+16	WB	Trees - Clearing and Grubbing														77.0	20.0		0.10		
1077+09-1079+56	WB	Trees - Clearing and Grubbing														247.0	20.0		0.10		
1097+95	WB	Trees - Clearing									1							30.0			
1098+91	WB	Trees - Clearing		1							1							31.1			
1098+91	EB	Trees - Clearing				1												2.8			
1099+46	EB	Trees - Clearing									1							30.0			
1099+15	WB	Trees - Clearing		1							1							31.1			
1099+80	WB	Trees - Clearing								1								22.0			
1100+63-1101+76	EB	Trees - Clearing and Grubbing														113.0	20.0		0.05		
1111+50	WB	Trees - Clearing							1									11.4			
1118+76	EB	Trees - Clearing						1										8.4			
MP 160.7 1120+58-1122+49	EB	Trees - Clearing and Grubbing														190.0	40.0		0.20		SEE PIC 1120+58
1131+28-1131+60	WB	Trees - Clearing and Grubbing														32.0	20.0		0.10		
1138+00-1147+10	EB	Trees - Clearing and Grubbing														910.0	30.0		0.60		
1147+28-1149+26	WB	Trees - Clearing and Grubbing														198.0	20.0		0.10		
Sta 1151+68 Bk = Sta 110+73 Ah																					
110+73-111+83	WB	Trees - Clearing and Grubbing														110.0	20.0		0.10		
112+56	EB	Trees - Clearing and Grubbing														30.0	30.0		0.10		SEE PIC 112+56
116+42-117+75	WB	Trees - Clearing and Grubbing														143.0	30.0		0.10		
117+91-119+36	EB	Trees - Clearing and Grubbing														145.0	20.0		0.10		
120+19-130+80	EB	Trees - Clearing and Grubbing														1061.0	20.0		0.50		
130+80-134+38	EB	Trees - Clearing and Grubbing														358.0	20.0		0.20		
134+38-137+78	EB	Trees - Clearing and Grubbing														340.0	20.0		0.20		SEE PIC 134+38
130+80-135+00	WB	Trees - Clearing and Grubbing														420.0	20.0		0.20		
141+09	EB	Trees - Clearing	3															1.5			
143+00-144+33	WB	Trees - Clearing and Grubbing														143.0	30.0		0.10		
144+36	EB	Trees - Clearing	2															1.0			
152+06-152+82	WB	Trees - Clearing and Grubbing														76.0	20.0		0.10		
209+80-210+55	EB	SLIDE AREA														75.0	26.0				SEE PIC 209+80
246+66-260+56	WB	Trees - Clearing and Grubbing														1390.0	20.0		0.60		
246+80-210+52	EB	Trees - Clearing and Grubbing														1390.0	20.0		0.60		
269+08	WB	Trees - Clearing							1									11.4			
271+81.86-280+71	WB	Trees - Clearing and Grubbing														889.1	45.0		0.90		100' from CL
279+68-281+32	EB	Trees - Clearing and Grubbing														164.0	20.0		0.10		
286+14	EB	Trees - Clearing			1													1.9			
287+70-288+70	EB	Trees - Clearing and Grubbing														100.0	40.0		0.10		
282+81-298+40	WB	Trees - Clearing and Grubbing														1559.0	75.0		2.70		125' from CL
298+75-299+23	EB	Trees - Clearing and Grubbing														48.0	30.0		0.10		
301+28-309+55	EB	Trees - Clearing and Grubbing														827.0	40.0		0.80		
304+40-309+55	WB	Trees - Clearing and Grubbing														515.0	30.0		0.40		
318+15	WB	Trees - Clearing and Grubbing														30.0	20.0		0.10		SEE PIC 318+15
332+00	WB	Trees - Clearing		2														2.2			
332+75	WB	Trees - Clearing					1											4.7			
335+44-336+22	WB	Trees - Clearing and Grubbing														78.0	20.0		0.10		
344+00-351+56	EB	Trees - Clearing and Grubbing														756.0	30.0		0.50		SEE PIC 344+00
350+00-352+50	WB	Trees - Clearing and Grubbing														250.0	30.0		0.20		SEE PIC 350+00
370+17	EB	Trees - Clearing and Grubbing														36.0	30.0		0.10		SEE PIC 370+17
403+50-407+70	WB	Trees - Clearing and Grubbing														420.0	30.0		0.30		
407+21-408+60	EB	Trees - Clearing and Grubbing														139.0	30.0		0.10		
410+00-419+00	WB	Trees - Clearing and Grubbing														900.0	30.0		0.60		
Totals																		195.3	11.65		

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
NHSX-092-6(040)--3H-63 (Division 1)						
1048+55.75	1049+45.75	Both	composite	440.0	44.0	For new Bridge Approach, see Tab. 112-6
1051+54.25	1052+44.25	Both	composite	440.0	44.0	For new Bridge Approach, see Tab. 112-6
1081+38.24	1082+28.24	Both	composite	440.0	44.0	For new Bridge Approach, see Tab. 112-6
1083+52.57	1084+72.57	Both	composite	586.7	44.0	For new Bridge Approach, see Tab. 112-6
266+41.86	281+24.69	RT	composite	1647.6	1503.0	Removal of Shoulder for Base Widening under shoulder
282+58.90	303+75.49	RT	composite	2351.8	2137.0	Removal of Shoulder for Base Widening under shoulder
NHSX-092-6(040)--3H-63 (Division 1) TOTALS				**5906.0**	**3816.0**	
HSIPX-092-6(042)--3L-63 (Division 1)						
271+81.86	281+74.76	LT	composite	1103.2	1013.0	Removal of Shoulder for Pavement Widening
281+98.16	298+35.49	LT	composite	1819.3	1658.0	Removal of Shoulder for Pavement Widening
HSIPX-092-6(042)--3L-63 (Division 1) TOTALS				**2922.5**	**2671.0**	

REMOVAL OF STEEL BEAM GUARDRAIL

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

Location					Removal of Guardrail (2) LF
No.	Direction of Traffic (1)	Station to Station		Side	
1	EB	1048+85.75	1049+45.75	RT	60.0
2	WB	1048+75.75	1049+45.75	LT	70.0
3	EB	1051+54.25	1052+24.25	RT	70.0
4	WB	1051+54.25	1052+24.25	LT	70.0
5	WB	1081+68.24	1082+28.24	LT	60.0
6	EB	1083+82.57	1084+42.57	RT	60.0
7	WB	1083+82.57	1084+42.57	LT	60.0
8	WB	382+91.50	383+51.50	LT	60.0
9	EB	383+34.55	383+94.55	RT	60.0
10	WB	417+81.69	418+41.69	LT	60.0
11	EB	418+01.32	418+61.32	RT	60.0
12	WB	420+41.61	421+01.61	LT	60.0
13	EB	420+68.85	421+28.85	RT	60.0
			TOTAL:		**810.0**

REMOVAL OF CABLE GUARDRAIL

* Not a bid item
(1) Lane(s) to which the installation is adjacent

Location					Type (High/Low Tension)	Cable Remove LF	Post * Footings, Concrete Remove Yes/No	End Terminal* Remove No.	Remarks
No.	Direction of Traffic (1)	Station to Station		Side					
NHSX-092-6(040)--3H-63 (DIVISION 1)									
1	EB	1036+40.46	1048+50.46	RT	Low Tension	1210.0		1	Attached to BA-206
2	EB	1052+49.54	1059+79.54	RT	Low Tension	730.0		1	Attached to BA-206
3	WB	1052+49.54	1061+59.54	LT	Low Tension	910.0		1	Attached to BA-206
4	EB	1119+58.00	1128+98.00	RT	Low Tension	940.0		2	
5	EB	1131+52.00	1143+52.00	RT	Low Tension	1200.0		2	
6	EB	144+10.00	155+10.00	RT	Low Tension	1100.0		2	
7	EB	204+00.00	213+00.00	RT	Low Tension	900.0		2	
8	EB	272+00.00	279+00.00	RT	Low Tension	700.0		2	
10	EB	348+00.00	355+00.00	RT	Low Tension	700.0		2	
11	WB	350+00.00	357+00.00	LT	Low Tension	700.0		2	
NHSX-092-6(040)--3H-63 (DIVISION 1) TOTALS:						**9090.0**		**17**	
HSIPX-092-6(042)--3L-63 (DIVISION 1)									
9	WB	273+23.00	278+53.00	LT	Low Tension	530.0		2	
HSIPX-092-6(042)--3L-63 (DIVISION 1) TOTALS:						**530.0**		**2**	

NOTCHES AND RUNOUTS FOR RESURFACING

Refer to MODIFIED STANDARD ROAD PLANS PR-201 and PR-202 (ON U SHEETS).

(1) Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

Location Station	Type of Notch or Runout	S1 IN	I1 IN	S2 IN	I2 IN	L FT	M1 IN	M2 FT	Pavement Scarification (1) SY	Remarks
1035+00.00	N5-M1	1.5	1.5			50.0	2.0	3.0		Beginning of Project
1047+25.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout West of Bridge FHWA# 603530
1048+55.75	N2	1.5				0.0	2.0	1.5		Notch at Bridge FHWA# 603530
1052+44.25	N2	1.5				0.0	1.5			Notch at Bridge FHWA# 603530
1053+75.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout East of Bridge FHWA# 603530
1080+00.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout West of Bridge FHWA# 603550
1081+38.24	N2	1.5				0.0	1.5			Notch at Bridge FHWA# 603550
1084+72.57	N2	1.5				0.0	1.5			Notch at Bridge FHWA# 603550
1086+50.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout East of Bridge FHWA# 603550
Equation Station 1151+67.60 (BK) = 110+73 (AH)										
134+38.00	R6-M1	1.5	1.5	1.5	1.5	50.0	2.0	3.0		Runout West of Bridge FHWA# 600770
138+86.00	R6-M1	1.5	1.5	1.5	1.5	50.0	2.0	3.0		Runout East of Bridge FHWA# 600770
378+25.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout West of Bridge FHWA# 602670
379+33.80	N2	1.5				0.0	1.5			Notch at Limit of Existing PCC WB Shoulder West of Bridge FHWA# 602670
379+76.94	N2	1.5				0.0	1.5			Notch at Limit of Existing PCC EB Shoulder West of Bridge FHWA# 602670
379+91.47	N2	1.5				0.0	1.5			Notch at Limit of Existing PCC Traveled Way West of Bridge FHWA# 602670
383+87.10	N2	1.5				0.0	1.5			Notch at Limit of Exst. PCC WB SHLDR and TRVLD Way E. of Bridge FHWA# 602
384+09.46	N2	1.5				0.0	1.5			Notch at Limit of Existing PCC WB Shoulder East of Bridge FHWA# 602670
384+25.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout at East limit of Existing Bridge FHWA# 602670
416+00.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout West of Bridge FHWA# 602660
417+18.50	N2	1.5				0.0	1.5			Notch at West Limit of Existing EF Joint West of Bridge FHWA# 602660
417+25.50	N2	1.5				0.0	1.5			Notch at East Limit of Existing EF Joint West of Bridge FHWA# 602660
418+51.50	N2	1.5				0.0	1.5			Notch at West limit of Existing Bridge FHWA# 602660
420+48.50	N2	1.5				0.0	1.5			Notch at East limit of Existing Bridge FHWA# 602660
421+45.50	N2	1.5				0.0	1.5			Notch at West Limit of Existing EF Joint East of Bridge FHWA# 602660
421+52.50	N2	1.5				0.0	1.5			Notch at East Limit of Existing EF Joint East of Bridge FHWA# 602660
422+50.00	R5-M1	1.5	1.5	1.5		50.0	2.0	1.5		Runout East of Bridge FHWA# 602660
447+25.00	N4	1.5	1.5			0.0	2.0			End of Project

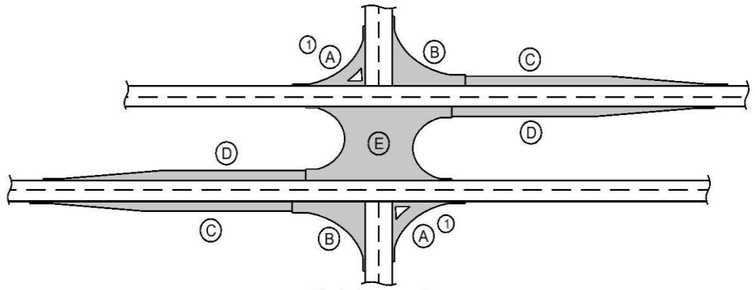
BRIDGE APPROACH SECTION

Refer to the Series.

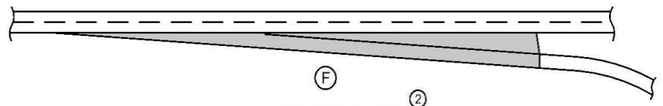
* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain					* Modified Subbase	* Polymer Grid	* Special Backfill	Remarks
Bridge Station	End	Skew Ahead Degrees LEFT	Skew Ahead Degrees RIGHT	T Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet STA	* Subdrain Outlet Side	* Porous Backfill	* Class 'A' Crushed Stone Backfill				
				Inches	FT	SY	SY	SY				LF			CY	CY	TON	SY	TON	
NHSX-092-6(040)--3H-63 (Division 1)																				
1050+50.00	West	-	-	12.0	90.0	262.0	104.8	104.8	MOD BR203	Movable	BR-211	60.0	1048+85.75	LT	1.3		366.520	481.2		Refer to U Sheet for Modified BR-203
1050+50.00	East	-	-	12.0	90.0	262.0	104.8	104.8	MOD BR203	Movable	BR-211	60.0	1052+14.25	LT	1.3		366.520	481.2		Refer to U Sheet for Modified BR-203
1083+05.44	West	-	-	12.0	90.0	262.0	104.8	104.8	MOD BR203	Movable	BR-211	60.0	1081+68.24	LT	1.3		366.520	481.2		Refer to U Sheet for Modified BR-203
1083+05.44	East	-	-	12.0	90.0	262.0	104.8	104.8	MOD BR203	Movable	BR-211	60.0	1084+42.57	LT	1.3		366.520	481.2		Refer to U Sheet for Modified BR-203
NHSX-092-6(040)--3H-63 (Division 1) TOTALS						**1048.0**	**419.2**	**419.2**												

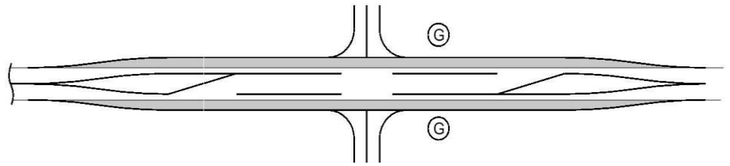
HMA PAVEMENT



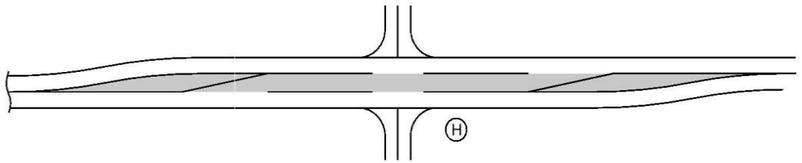
Typical Intersection



Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

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

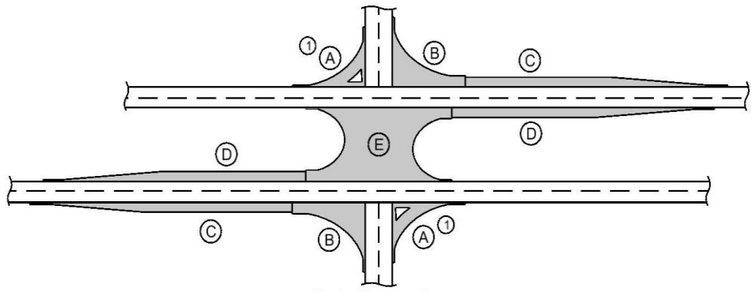
(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

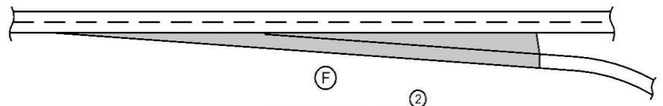
Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145, and a special backfill unit weight (lbs/cf) of 140.

Location				Mainline			Area (3)								Bid Items												
															Hot Mix Asphalt Pavement						Binder						
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	Surface Course, High Traffic, 1/2 in. Mix, Friction L-3		Intermediate Course, High Traffic, 1/2 in. Mix		Base Course, High Traffic, 3/4 in. Mix		Surface PG 58-28H 6% / Ton HMA	Intermediate PG 58-28H 6% / Ton HMA	Base PG 58-28H 6% / Ton HMA	Special Backfill	Modified Subbase	Pavement Scarification (HMA Millings)		Remarks
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	TONS	
NSHX-092-6(40)--3																											
IA 92 Mainline Pavement																											
	BOTH	1035+00.00	1044+06.46	Varies	906.5	0.0								3623.3	299.602	3623.3	299.602	3623.3			17.976	17.976				3623.3	394.1	
	BOTH	1044+06.46	1047+25.00	24.0	318.5	849.4									70.238	849.4	70.238	849.4			4.214	4.214				849.4	92.4	
	BOTH	1047+25.00	1048+55.75	24.0	130.8	348.7									28.830	348.7					1.730					348.7	28.5	
	BOTH	1052+44.25	1053+75.00	24.0	130.8	348.7									28.830	348.7					1.730					348.7	28.5	
	BOTH	1053+75.00	1080+00.00	24.0	2625.0	7000.0									578.813	7000.0	578.813	7000.0			34.729	34.729				7000.0	761.3	
	BOTH	1080+00.00	1081+38.24	24.0	138.2	368.6									30.482	368.6					1.829					368.6	30.1	
	BOTH	1084+72.57	1086+50.00	24.0	177.4	473.1									39.123	473.1					2.347					473.1	38.6	
	BOTH	1086+50.00	1151+67.60	24.0	6517.6	17380.3									1437.131	17380.3	1437.131	17380.3			86.228	86.228				17380.3	1890.2	
Equation Station 1151+67.60 (BK) = 110+73 (AH)																											
	BOTH	110+73.00	134+38.00	24.0	2365.0	6306.7									521.483	6306.7	521.483	6306.7			31.289	31.289				6306.7	685.9	
	BOTH	134+38.00	138+86.00	24.0	448.0	1194.7									98.784	1194.7	98.784	1194.7			5.927	5.927				1194.7	194.9	
	BOTH	138+86.00	266+41.86	24.0	12755.9	34015.6									2812.667	34015.6	2812.667	34015.6			168.760	168.760				34015.6	3699.2	
	BOTH	266+41.86	303+75.49	24.0	3733.6	9956.3									823.265	9956.3	823.265	9956.3			49.396	49.396				9956.3	1082.8	
	BOTH	303+75.49	378+25.00	24.0	7449.5	19865.4									1642.617	19865.4	1642.617	19865.4			98.557	98.557				19865.4	2160.4	
	BOTH	378+25.00	379+91.47	24.0	166.5	443.9									36.707	443.9					2.202					443.9	36.3	
	BOTH	383+87.10	384+25.00	24.0	37.9	101.1									8.357	101.1					0.501					101.1	8.3	
	BOTH	384+25.00	416+00.00	24.0	3175.0	8466.7									700.088	8466.7	700.088	8466.7			42.005	42.005				8466.7	920.8	
	BOTH	416+00.00	417+18.50	24.0	118.5	316.0									26.129	316.0					1.568					316.0	25.8	
	BOTH	417+25.50	418+51.50	24.0	126.0	336.0									27.783	336.0					1.667					336.0	27.5	
	BOTH	420+48.50	421+45.50	24.0	97.0	258.7									21.389	258.7					1.283					258.7	21.1	
	BOTH	421+52.50	422+50.00	24.0	97.5	260.0									21.499	260.0					1.290					260.0	21.3	
	BOTH	422+50.00	447+25.00	24.0	2475.0	6600.0									545.738	6600.0	545.738	6600.0			32.744	32.744				6600.0	717.8	
IA 92 Shoulder																											
	EB	1035+00.00	1047+25.00	10.0	1225.0	1361.1									112.547	1361.1	112.547	1361.1			6.753	6.753				1361.1	148.1	
	EB	1047+25.00	1048+55.75	10.0	130.8	145.3									12.013	145.3					0.721					145.3	11.9	
	EB	1052+44.25	1053+75.00	10.0	130.8	145.3									12.013	145.3					0.721					145.3	11.9	
	EB	1053+75.00	1080+00.00	10.0	2625.0	2916.7									241.172	2916.7	241.172	2916.7			14.470	14.470				2916.7	317.2	
	EB	1080+00.00	1081+38.24	10.0	138.2	153.6									12.701	153.6					0.762					153.6	12.6	
	EB	1084+72.57	1086+50.00	10.0	177.4	197.1									16.301	197.1					0.978					197.1	16.1	
	EB	1086+50.00	1115+67.60	10.0	2917.6	3241.8									268.055	3241.8	268.055	3241.8			16.083	16.083				3241.8	352.6	
Equation Station 1151+67.60 (BK) = 110+73 (AH)																											
	EB	110+73.00	134+38.00	10.0	2365.0	2627.8									217.284	2627.8	217.284	2627.8			13.037	13.037				2627.8	285.8	
	EB	134+38.00	138+86.00	10.0	448.0	497.8									41.160	497.8	41.160	497.8			2.470	2.470				497.8	81.2	
	EB	138+86.00	266+41.86	10.0	12755.9	14173.2									1171.945	14173.2	1171.945	14173.2			70.317	70.317				14173.2	1541.4	
	EB	303+75.49	378+25.00	10.0	7449.5	8277.2									684.424	8277.2	684.424	8277.2			41.065	41.065				8277.2	900.2	
	EB	378+25.00	379+76.94	10.0	151.9	168.8									13.959	168.8					0.838					168.8	13.8	
	EB	384+09.46	384+25.00	10.0	15.5	17.3									1.428	17.3					0.086					17.3	1.5	
	EB	384+25.00	416+00.00	10.0	3175.0	3527.8									291.703	3527.8	291.703	3527.8			17.502	17.502				3527.8	383.7	
	EB	416+00.00	417+18.50	10.0	118.5	131.7									10.887	131.7					0.653					131.7	10.8	
	EB	417+25.50	418+61.32	10.0	135.8	150.9									12.478	150.9					0.749					150.9	12.4	
	EB	420+58.31	421+45.50	10.0	87.2	96.9									8.011	96.9					0.481					96.9	8.0	

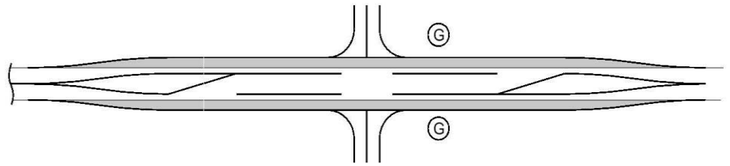
HMA PAVEMENT



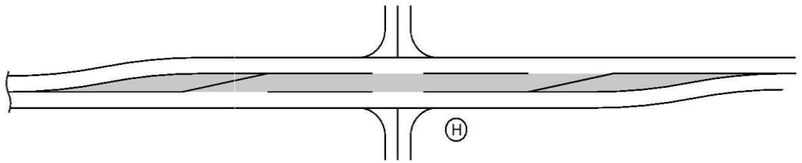
Typical Intersection



Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

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

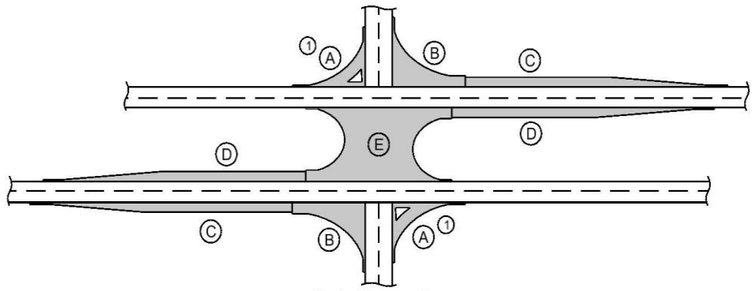
(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

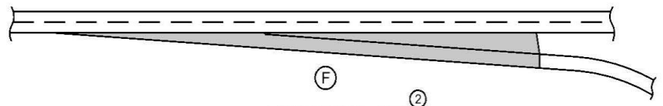
Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145, and a special backfill unit weight (lbs/cf) of 140.

Location				Mainline			Area (3)								Bid Items: Hot Mix Asphalt Pavement						Bid Items: Binder			Special Backfill	Modified Subbase	Pavement Scarification (HMA Millings)		Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	Surface Course, High Traffic, 1/2 in. Mix, Friction L-3		Intermediate Course, High Traffic, 1/2 in. Mix		Base Course, High Traffic, 3/4 in. Mix		Surface PG 58-28H 6% / Ton HMA	Intermediate PG 58-28H 6% / Ton HMA	Base PG 58-28H 6% / Ton HMA					
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	TONS	
	EB	421+52.50	422+50.00	10.0	97.5	108.3									8.958	108.3					0.537					108.3	8.9	
	EB	422+50.00	447+25.00	10.0	2475.0	2750.0									227.391	2750.0	227.391	2750.0			13.643	13.643				2750.0	299.1	
	WB	1035+00.00	1047+25.00	10.0	1225.0	1361.1									112.547	1361.1	112.547	1361.1			6.753	6.753				1361.1	148.1	
	WB	1047+25.00	1048+55.75	10.0	130.8	145.3									12.013	145.3					0.721					145.3	11.9	
	WB	1052+44.25	1053+75.00	10.0	130.8	145.3									12.013	145.3					0.721					145.3	11.9	
	WB	1053+75.00	1080+00.00	10.0	2625.0	2916.7									241.172	2916.7	241.172	2916.7			14.470	14.470				2916.7	317.2	
	WB	1080+00.00	1081+38.24	10.0	138.2	153.6									12.701	153.6					0.762					153.6	12.6	
	WB	1084+72.57	1086+50.00	10.0	177.4	197.1									16.301	197.1					0.978					197.1	16.1	
	WB	1086+50.00	1115+67.60	10.0	2917.6	3241.8									268.055	3241.8	268.055	3241.8			16.083	16.083				3241.8	352.6	
Equation Station 1151+67.60 (BK) = 110+73 (AH)																												
	WB	110+73.00	134+38.00	10.0	2365.0	2627.8									217.284	2627.8	217.284	2627.8			13.037	13.037				2627.8	285.8	
	WB	134+38.00	138+86.00	10.0	448.0	497.8									41.160	497.8	41.160	497.8			2.470	2.470				497.8	81.2	
	WB	138+86.00	271+81.86	10.0	13295.9	14773.2									1221.557	14773.2	1221.557	14773.2			73.293	73.293				14773.2	1606.6	
	WB	298+35.49	378+25.00	10.0	7989.5	8877.2									734.036	8877.2	734.036	8877.2			44.042	44.042				8877.2	965.4	
	WB	378+25.00	379+33.80	10.0	108.8	120.9									9.996	120.9					0.600					120.9	9.9	
	WB	383+87.10	384+25.00	10.0	37.9	42.1									3.482	42.1					0.209					42.1	3.5	
	WB	384+25.00	416+00.00	10.0	3175.0	3527.8									291.703	3527.8	291.703	3527.8			17.502	17.502				3527.8	383.7	
	WB	416+00.00	417+18.50	10.0	118.5	131.7									10.887	131.7					0.653					131.7	10.8	
	WB	417+25.50	418+41.69	10.0	116.2	129.1									10.675	129.1					0.640					129.1	10.6	
	WB	420+38.68	421+45.50	10.0	106.8	118.7									9.814	118.7					0.589					118.7	9.7	
	WB	421+52.50	422+50.00	10.0	97.5	108.3									8.958	108.3					0.537					108.3	8.9	
	WB	422+50.00	447+25.00	10.0	2475.0	2750.0									227.391	2750.0	227.391	2750.0			13.643	13.643				2750.0	299.1	
IA 92 E To County of Marion			DET 7149-M2								154.3				12.759	154.3					0.766							
216th Pl. North			DET 7149-M2								263.9				21.821	263.9					1.309							
216th Pl. South			DET 7149-M2								382.3				31.611	382.3					1.897							
				UBTOTAL											16691.917	201867.5	16141.008	195204.9			1001.515	968.461				201067.0	21828.6	
				INGENCY											834.596		807.050				50.076	48.423						
				TOTALS											**17526.513**	**201867.5**	**16948.059**	**195204.9**			**1051.591**	**1016.884**				**201067.0**	**21828.6**	
NSHX-092-6(40)--3H-63 (Division 2, Marion County)																												
T17 North		6281+50.94	6283+10.82	24.0	159.9	426.3									35.254	426.3					2.115							
T17 South			DET 7149-M2								302.6				25.021	302.6					1.501							
				UBTOTAL											60.275	728.9					3.616							
				INGENCY											3.014						0.181							
NSHX-092-6(40)--3H-63 (Division 2, Marion Co.)				**TOTALS**											**63.289**	**728.9**					**3.797**							

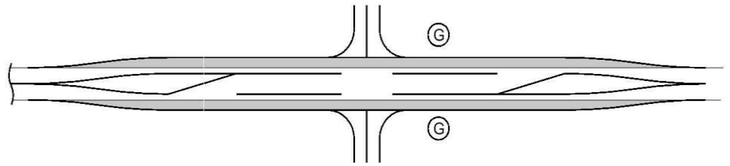
HMA PAVEMENT



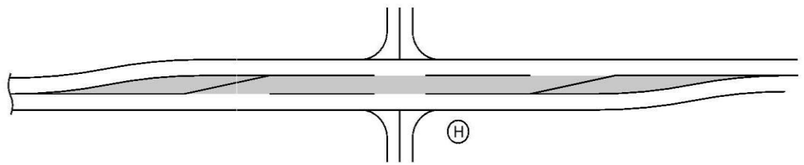
Typical Intersection



Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

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

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

(3) Quantity includes Pavement Header.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145, and a special backfill unit weight (lbs/cf) of 140.

Location				Mainline			Area (3)								Bid Items												Remarks
															Hot Mix Asphalt Pavement						Binder						
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	Surface Course, High Traffic, 1/2 in. Mix, Friction L-3		Intermediate Course, High Traffic, 1/2 in. Mix		Base Course, High Traffic, 3/4 in. Mix		Surface PG 58-28H 6% / Ton HMA	Intermediate PG 58-28H 6% / Ton HMA	Base PG 58-28H 6% / Ton HMA	Special Backfill	Modified Subbase	Pavement Scarification (HMA Millings)		
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	TONS	
HSIPX-092-6(042)--																											
IA 92 Mainline Pavement																											
Widening	WB	271+81.86	298+35.49	Varies	2653.6								3015.9		249.377	3015.9	249.377	3015.9	1229.922	3015.9	14.963	14.963	73.795		1300.1		
Offset RT	WB	282+64.31	291+20.59	Varies	856.3						1851.4				153.088	1851.4	153.088	1851.4	755.024	1851.4	9.185	9.185	45.301		617.1		
RETAT17								518.7							42.890	518.7	42.890	518.7	211.532	518.7	2.573	2.573	12.692		172.9		
RETBT17							409.6								33.869	409.6	33.869	409.6	167.040	409.6	2.032	2.032	10.022		136.5		
IA 92 Shoulder																											
	EB	271+81.86	279+71.03	10.0	789.2	876.9	78.3								78.979	955.2	78.979	955.2	389.524	955.2	4.739	4.739	23.371		318.4		
	EB	291+20.59	298+35.49	10.0	714.9	794.3	83.0								72.545	877.3	72.545	877.3	357.788	877.3	4.353	4.353	21.467		292.4		
				UBTOTAL											630.748	7628.1	630.748	7628.1	3110.830	7628.1	37.845	37.845	186.650		2837.6		
				INGENCY											31.537		31.537		155.542		1.892	1.892	9.332				
				TOTALS											**662.285**	**7628.1**	**662.285**	**7628.1**	**3266.372**	**7628.1**	**39.737**	**39.737**	**195.982**		**2837.6**		

SHOULDERS

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

Calculations assume a HMA unit weight (lbs/cf) of 145, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																			
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(P_{SG}) Width	(G) Width	(L) Length	Class 13 (4) Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	9" Paved Shoulder at Guardrail	Reinforced Paved Shoulder	Special Backfill				Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
																HMA Alternate		PCC Alternate					STA (3)	HMA	PCC	
					FT	FT (2)	FT	FT	CY (3)	TON	TON/STA	TONS	SY (3)	SY (5)	SY (3)	TON (3)	TON/STA	TON (3)	TON/STA	CY (3)	TON (3)	TON/STA		CY (6)	CY (6)	
NSHX-092-6(40)--3H-63 (Division 1)																										
IA 92	EB	1047+93.30	1048+13.30	RT		5.6		20.0						12.4												(1)
	EB	1048+13.30	1048+50.52	RT		5.6 - 1.6		37.2						14.8												(1)
	EB	1048+50.52	1048+55.75	RT		1.6		5.2						0.9												(1)
	EB	1052+44.25	1052+49.54	RT		1.6		5.3						0.9												(1)
	EB	1052+49.54	1052+86.70	RT		1.6 - 5.6		37.2						14.8												(1)
	EB	1052+86.70	1053+06.70	RT		5.6		20.0						12.4												(1)
	WB	1047+82.84	1048+02.84	LT		5.6		20.0						12.4												(1)
	WB	1048+02.84	1048+50.49	LT		5.6 - 1.6		47.7						19.0												(1)
	WB	1048+50.49	1048+55.75	LT		1.6		5.3						0.9												(1)
	WB	1052+44.25	1052+49.48	LT		1.6		5.2						0.9												(1)
	WB	1052+49.48	1052+86.70	LT		1.6 - 5.6		37.2						14.8												(1)
	WB	1052+86.70	1053+06.70	LT		5.6		20.0						12.4												(1)
	EB	1084+72.57	1084+76.70	RT		1.6		4.1						0.7												(1)
	EB	1084+76.70	1085+23.47	RT		1.6 - 5.6		46.8						18.6												(1)
	EB	1085+23.47	1085+43.47	RT		5.6		20.0						12.4												(1)
	WB	1080+65.33	1080+85.33	LT		5.6		20.0						12.4												(1)
	WB	1080+85.33	1081+32.98	LT		5.6 - 1.6		47.6						19.0												(1)
	WB	1081+32.98	1081+38.24	LT		1.6		5.3						0.9												(1)
	WB	1084+72.57	1084+76.66	LT		1.6		4.1						0.7												(1)
	WB	1084+76.66	1085+24.86	LT		1.6 - 5.6		48.2						19.2												(1)
	WB	1085+24.86	1085+44.86	LT		5.6		20.0						12.4												(1)
	EB	384+09.46	384+32.96	RT		2.6 - 3.5		23.5						8.0												(1)
	EB	384+32.96	384+52.96	RT		3.5		20.0						7.8												(1)
	WB	383+66.08	383+67.26	LT		1.6		1.2						0.2												(1)
	WB	383+67.26	384+14.91	LT		1.6 - 5.6		47.7						19.0												(1)
	WB	384+14.91	384+34.91	LT		5.6		20.0						12.4												(1)
	EB	417+14.97	417+34.97	RT		5.6		20.0						12.4												(1)
	EB	417+34.97	417+82.63	RT		5.6 - 1.6		47.7						19.0												(1)
	EB	417+82.63	418+58.39	RT		1.6		75.8						13.3												(1)
	EB	420+68.85	421+19.61	RT		1.6		50.8						8.9												(1)
	EB	421+19.61	421+67.27	RT		1.6 - 5.6		47.7						19.0												(1)
	EB	421+67.27	421+87.27	RT		5.6		20.0						12.4												(1)
	WB	417+12.73	417+32.73	LT		5.6		20.0						12.4												(1)
	WB	417+32.73	417+80.10	LT		5.6 - 1.6		47.4						18.8												(1)
	WB	417+80.10	418+31.15	LT		1.6		51.1						9.0												(1)
	WB	420+41.61	421+17.37	LT		1.6		75.8						13.3												(1)
	WB	421+17.37	421+65.03	LT		1.6 - 5.6		47.7						19.0												(1)
	WB	421+65.03	421+85.03	LT		5.6		20.0						12.4												(1)
IA 92																										
	EB	1035+00.00	1047+75.00	RT				1275.0													1.151	0.090				(2)
	EB	1053+25.00	1080+50.00	RT				2725.0													2.461	0.090				(2)
	EB	1086+00.00	1151+67.60	RT				6567.6													5.931	0.090				(2)
Equation Station 1151+67.60 (BK) = 110+73 (AH)																										
	EB	110+73.00	379+76.94	RT				26903.9													24.294	0.090				(2)
	EB	384+09.46	416+50.00	RT				3240.5													2.926	0.090				(2)
	EB	422+00.00	447+25.00	RT				2525.0													2.280	0.090				(2)
	WB	1035+00.00	1047+25.00	LT				1225.0													1.106	0.090				(2)
	WB	1053+25.00	1080+50.00	LT				2725.0													2.461	0.090				(2)
	WB	1086+00.00	1151+67.60	LT				6567.6													5.931	0.090				(2)
Equation Station 1151+67.60 (BK) = 110+73 (AH)																										
	WB	110+73.00	271+81.86	LT				16108.9													14.546	0.090				(2)
	WB	298+35.49	379+33.80	LT				8098.3													7.313	0.090				(2)
	WB	383+87.10	416+50.00	LT				3262.9													2.946	0.090				(2)
	WB	422+00.00	447+25.00	LT				2525.0													2.280	0.090				(2)
			Subtotal:											430.1							75.626					
			5% Contingency:																		3.781					
NSHX-092-6(40)--3H-63 (Division 1) TOTALS:														**430.1**							**79.407**					

SHOULDERS

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

Calculations assume a HMA unit weight (lbs/cf) of 145, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																		
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(P_{SG}) Width	(G) Width	(L) Length	Class 13 (4) Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	9" Paved Shoulder at Guardrail	Reinforced Paved Shoulder	Special Backfill				_____ Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
																HMA Alternate		PCC Alternate					(3) STA	HMA	PCC	
					FT	FT (2)	FT	FT	CY (3)	TON	TON/STA	TONS	SY (3)	SY (5)	SY (3)	TON (3)	TON/STA	TON (3)	TON/STA	CY (3)	TON (3)	TON/STA		CY (6)	CY (6)	
HSIPX-092-6(042)--3L-63 (Division 1)																										
IA 92																										
	WB	271+81.86	279+81.12					799.3															8.0	331.2		
	WB	282+64.31	290+60.79				6.0	796.5													74.152	9.310	8.0	340.7		
	WB	290+60.79	291+20.59					59.8															0.6	25.2		
	WB	291+20.59	298+35.49					714.9															7.1	296.3		
T17 RETA	NB	+00.00	1+11.03	LT			6.0	111.0													10.337	9.310	1.1	47.5		
T17 RETB	SB	+00.00	+72.48	LT				72.5															0.7	30.5		
T17 RETB	SB	+72.48	3+01.41	LT			6.0	228.9													21.313	9.310	2.3	97.9		
			Subtotal:																		105.803		27.8			
			5% Contingency:																		5.290					
			HSIPX-092-6(042)--3L-63 (Division 1) TOTALS:																		**111.093**		**27.8**			

(1) Refer to Detail 7158 on B Sheets
(2) Refer to Detail 7145-M on B Sheets

GRADING FOR GUARDRAIL INSTALLATIONS

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

Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	(1) Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	
														CY	CY	
1	EB	1049+38.75		2.5:1	88.3	5.5					125.5	9.5	55.4		27.6	Connects to proposed cable guardrail
2	WB	1049+38.75		3:1	79.9	5.5					135.9	7.4	47.7		10.3	
3	EB	1051+61.35		2.5:1	88.3	5.5					125.5	9.5	55.4		27.6	Connects to proposed cable guardrail
4	WB	1051+61.35		2.5:1	88.3	5.5					125.5	9.5	55.4		27.6	Connects to proposed cable guardrail
5	WB	1082+21.24		3:1	79.9	5.5					135.9	7.4	47.7		10.3	
6	EB	1083+89.57		3:1	79.9	5.5					135.9	7.4	47.7		10.3	
7	WB	1083+89.57		3:1	79.9	5.5					135.9	7.4	47.7		10.3	
8	WB	382+91.50		3:1	67.4	5.5					123.5	7.4	47.7		10.3	
9	EB	383+34.55		3:1	42.4	5.5					98.5	7.4	47.7		10.3	
10	WB	418+31.15		3:1	42.4	5.5					98.5	7.4	47.7		10.3	
11	EB	418+58.39		3:1	67.4	5.5					123.5	7.4	47.7		10.3	
12	WB	420+41.61		3:1	67.4	5.5					123.5	7.4	47.7		10.3	
13	EB	420+58.31		3:1	42.4	5.5					98.5	7.4	47.7		10.3	
		Totals													**185.8**	

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Location				Layout Lengths				Long-Span System		Delineators and Object Markers (2)					Bid Items											
				BA-250, BA-260, LS-630, or LS-635														BA-250 or LS-630					BA-260 or LS-635		
No.	(1) Direction of Traffic	(1) Side (O = Outside, M = Median)	Station	Offset	VT1	VF	VT2	ET	BA-211 STATION	BA-211 TYPE	SI-211	Delineator SI-172 Type 1	Object Marker SI-173 Type 2	Object Marker SI-173 Type 3		Bolted End Anchor		Post Adapter	Steel Beam Guardrail	Barrier Transition Section	End Terminal				Barrier Transition Section	End Terminal	Remarks
																					Tangent	Flared	Tangent	Flared		Tangent	
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	White EACH	OM2-2 EACH	OM3-L EACH	OM3-R EACH	TYPE	EACH	BA-210 EACH	BA-200 LF	BA-201 EACH	BA-205 EACH	BA-206 EACH	LS-625 EACH	LS-626 EACH	BA-221 EACH	BA-225 EACH	
1	EB		1049+38.75		90.625			37.5			3				1	C	1		50.0	1		1					
2	WB		1049+38.75		90.625			47.7			3			1		C	1		50.0	1	1						
3	EB		1051+61.35		90.625			37.5			3				1	C	1		50.0	1		1					
4	WB		1051+61.35		90.625			37.5			3			1		C	1		50.0	1		1					
5	WB		1082+21.24		90.625			47.7			3			1		C	1		50.0	1	1						
6	EB		1083+89.57		90.625			47.7			3				1	C	1		50.0	1	1						
7	WB		1083+89.57		90.625			47.7			3			1		C	1		50.0	1	1						
8	WB		382+91.50		78.125			47.7			3			1		C	1		37.5	1	1						
9	EB		383+34.55		53.125			47.7			3				1	C	1		12.5	1	1						
10	WB		418+31.15		53.125			47.7			3			1		C	1		12.5	1	1						
11	EB		418+58.39		78.125			47.7			3				1	C	1		37.5	1	1						
12	WB		420+41.61		78.125			47.7			3			1		C	1		37.5	1	1						
13	EB		420+58.31		53.125			47.7			3				1	C	1		12.5	1	1						
				) **TOTALS**										**7**	**6**		**13**		**500.0**	**13**	**10**	**3**					

108-9A
04-20-10

HIGH TENSION CABLE GUARDRAIL

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

Refer to BA-351.

Location					Dimensions			Bid Items		
No.	Direction of (1) Traffic	Station	Side	Offset D_θ	Approach C_A	Obstacle C_O	Trailing C_T	Protection Length (C_A+C_θ+C_T)	End Anchor	Remarks
				FT	FT	FT	FT	FT	No.	
NSHX-092-6(40)--3H-63 (Division 1)										
1	EB	1036+62.96				1187.5		1187.5	1	Attaches to BA-206
2	EB	1052+49.54				732.5		732.5	1	Attaches to BA-206
3	WB	1052+49.54				907.5		907.5	1	Attaches to BA-206
4	EB	1119+58.00				900.0		900.0	2	
5	EB	1131+52.00				1200.0		1200.0	2	
6	EB	144+10.00				1100.0		1100.0	2	
7	EB	204+00.00				900.0		900.0	2	
8	EB	272+00.00				700.0		700.0	2	
10	EB	348+00.00				700.0		700.0	2	
11	WB	350+00.00				700.0		700.0	2	
NSHX-092-6(40)--3H-63 (Division 1) TOTALS:								**9027.5**	**17**	
NSHX-092-6(40)--3H-63 (Division 1)										
9	WB	272+23.00				630.0		630.0	2	
HSIPX-092-6(042)--3L-63 (Division 1) TOTALS:								**630.0**	**2**	

112-10
10-20-20

MILLED RUMBLE STRIPS

See PV-12 and PV-13

* Calculated at 18" width for Shoulder.

Location						Installation Length		Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
Road Identification	Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)	(L)	PCC	HMA	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
					IN	STA	STA	GAL	FT	FT	FT	
DIVISION 1 - RURAL												
IA 92	1044+06.46	1151+67.60	HMA	Centerline			107.61	0.0				
Equation Station 1151+67.60 (BK) = 110+73.00 (AH)												
IA 92	110+73.00	447+25.00	HMA	Centerline			336.52	0.0				
IA 92	1035+00.00	1151+67.60	HMA	Left Shoulder	12"		116.68	126.4		10.0		
Equation Station 1151+67.60 (BK) = 110+73.00 (AH)												
IA 92	110+73.00	447+25.00	HMA	Left Shoulder	12"		336.52	364.6		10.0		
IA 92	1035+00.00	1151+67.60	HMA	Right Shoulder	12"		116.68	126.4		10.0		
Equation Station 1151+67.60 (BK) = 110+73.00 (AH)												
IA 92	110+73.00	282+58.90	HMA	Right Shoulder	12"		171.86	186.2		10.0		
IA 92	297+58.90	447+25.00	HMA	Right Shoulder	12"		149.66	162.2		10.0		
				Totals		**PCC**	**HMA**	**Fog Seal**				
				HMA Shoulders			**891.39**	**965.8**				
				PCC Shoulders		**0.00**						
				PCC or HMA Shoulders		**0.00**	**0.00**	**0.0**				
				HMA Centerlines			**444.13**					
				PCC Centerlines		**0.00**						
				PCC or HMA Centerlines		**0.00**	**0.00**					

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 ELW4: Edge Line Right (White) @ 1.00 CHY8: Channelizing Line (Yellow) @ 2.00
SLW4: Solid Lane Line (White) @ 1.00

Location								Length by Line Type (Unfactored)													Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side L	Side C	Side R	BCY4* STA	DCY4 STA	NPY4** STA	ELW4 STA	CHY8 STA	SLW4 STA							APPLICATIO	TOTAL STA	
NHSX-092-6(040)--3H-63 (DIVISION 1)																						
IA 92	1035+00.00	1151+67.60	WB	Waterborne/Solvent Paint	X						116.68									3.00	350.03	
IA 92	1035+00.00	1151+67.60	EB	Waterborne/Solvent Paint			X				116.68									3.00	350.03	
IA 92	1035+00.00	1042+00.00	WB	Waterborne/Solvent Paint			X					7.00								3.00	21.00	
IA 92	1035+00.00	1042+00.00	EB	Waterborne/Solvent Paint	X							7.00								3.00	21.00	
IA 92	1035+00.00	1042+00.00	BOTH	Waterborne/Solvent Paint		X						5.94								3.00	17.82	
IA 92	1042+00.00	1044+05.00	BOTH	Waterborne/Solvent Paint		X			2.05											4.00	8.20	
IA 92	1044+05.00	1072+00.00	BOTH	Waterborne/Solvent Paint		X		27.95												4.00	111.80	
IA 92	1072+00.00	1073+65.00	WB	Waterborne/Solvent Paint		X				1.65										4.00	6.60	
IA 92	1073+65.00	1079+10.00	EB	Waterborne/Solvent Paint		X				5.45										4.00	21.80	
IA 92	1079+10.00	1089+50.00	BOTH	Waterborne/Solvent Paint		X			10.40											4.00	41.60	
IA 92	1089+50.00	1095+00.00	WB	Waterborne/Solvent Paint		X				5.50										4.00	22.00	
IA 92	1095+00.00	1146+95.00	BOTH	Waterborne/Solvent Paint		X		51.95												4.00	207.80	
IA 92	1146+95.00	1151+67.60	EB	Waterborne/Solvent Paint		X				4.73										4.00	18.90	
Equation Station 1151+67.60 (BK) = 110+73 (AH)																						
IA 92	110+73.00	265+81.86	WB	Waterborne/Solvent Paint	X						155.09									4.00	620.35	
IA 92	110+73.00	265+81.86	EB	Waterborne/Solvent Paint			X				155.09									4.00	620.35	
IA 92	110+73.00	115+85.00	EB	Waterborne/Solvent Paint		X				5.12										4.00	20.48	
IA 92	115+85.00	127+35.00	BOTH	Waterborne/Solvent Paint		X			11.50											4.00	46.00	
IA 92	127+35.00	133+35.00	WB	Waterborne/Solvent Paint		X				6.00										4.00	24.00	
IA 92	127+70.00	130+00.00	WB	Waterborne/Solvent Paint	X								2.30							4.00	9.20	
IA 92	133+35.00	233+85.00	BOTH	Waterborne/Solvent Paint		X		100.50												4.00	402.00	
IA 92	233+85.00	242+35.00	EB	Waterborne/Solvent Paint		X				8.50										4.00	34.00	
IA 92	242+35.00	246+20.00	BOTH	Waterborne/Solvent Paint		X			3.85											4.00	15.40	
IA 92	246+20.00	254+25.00	WB	Waterborne/Solvent Paint		X				8.05										4.00	32.20	
IA 92	254+25.00	265+81.86	BOTH	Waterborne/Solvent Paint		X		11.57												4.00	46.27	
IA 92	304+35.49	416+50.00	WB	Waterborne/Solvent Paint	X						112.15									3.00	336.44	
IA 92	304+35.49	416+50.00	EB	Waterborne/Solvent Paint			X				112.15									3.00	336.44	
IA 92	304+35.49	315+85.00	BOTH	Waterborne/Solvent Paint		X		11.50												4.00	45.98	
IA 92	315+85.00	321+15.00	EB	Waterborne/Solvent Paint		X				5.30										4.00	21.20	
IA 92	321+15.00	322+85.00	BOTH	Waterborne/Solvent Paint		X			1.70											4.00	6.80	
IA 92	322+85.00	329+40.00	WB	Waterborne/Solvent Paint		X				6.55										4.00	26.20	
IA 92	329+40.00	416+50.00	BOTH	Waterborne/Solvent Paint		X		87.10												4.00	348.40	
IA 92	416+50.00	422+00.00	WB	Waterborne/Solvent Paint	X						5.50									2.00	11.00	
IA 92	416+50.00	422+00.00	EB	Waterborne/Solvent Paint			X				5.50									2.00	11.00	
IA 92	416+50.00	422+00.00	BOTH	Waterborne/Solvent Paint		X		5.50												3.00	16.50	
IA 92	422+00.00	447+25.00	WB	Waterborne/Solvent Paint	X						25.25									3.00	75.75	
IA 92	422+00.00	447+25.00	EB	Waterborne/Solvent Paint			X				25.25									3.00	75.75	
IA 92	422+00.00	447+25.00	BOTH	Waterborne/Solvent Paint		X		25.25												4.00	101.00	
NHSX-092-6(040)--3H-63 (DIVISION 1)																						
				NHSX-092-6(040)--3H-63 (DIVISION 1)																		
				Factored Total: Waterborne/Solvent Paint				319.94	236.00	284.23	2787.14	119.64	9.20	-	-	-	-	-	-	-	-	Includes Temp+Final Applics.
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							3756.14											DIVISION 1: IDOT RURAL
				NHSX-092-6(040)--3H-63 (DIVISION 2, Marion County)																		
				Factored Total: Waterborne/Solvent Paint				-	-	-	-	-	-	-	-	-	-	-	-	-	-	Includes Temp+Final Applics.
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							0.00											DIVISION 2: MARION COUNTY

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location		STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCHOOL	XING	STOP	AHEAD	ONLY	BIKE	LANE	EXIT	Groove Cuts	Remarks
	Station	Side																							EACH	
NHSX-092-6(040)--3H-63 (DIVISION 1)																										
IA 92	128+19.09	WB		1																						
	128+94.09	WB		1																						
IA 92	280+17.24	EB			1																					
	280+24.24	EB		1																						
	280+54.74	EB																			1					
	280+93.24	EB			1																					
	280+99.24	EB		1																						
IA 92	282+82.49	WB			1																					
	283+19.99	WB																			1					
	283+57.49	WB			1																					
	TOTALS:			4	4																2					
PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED:						**10**																				

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
(3) Backfill according to DR-101

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft. Total		Dimensions Lin. Ft. Extensions		Skew Ahead Degrees		Dike Rt./Lt.	Dike Location Station	Dike Top Elevation	Dike Type	Class 20	Flowable Mortar	Floodable* Backfill (A)	Porous* Backfill (B)	Flooded Backfill (3) (A+B)	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
HSIPX-092-6(042)--3L-63																																						
	285+37.20	DR-621	24	RCP	24	B				1									Type 3								24.0			30					21.9	2.1	24.0	Note (1).
HSIPX-092-6(042)--3L-63 (DIVISION 1) TOTALS:																																						
																	2416-0100024	**APRONS, CONCRETE, 24 IN. DIA**									**1.0**	**Each**										
																	2416-1180024	**CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.**									**24.0**	**LF**										
																	2402-0425040	**FLOODED BACKFILL**									**24.0**	**CY**										
Note (1): See Record Drawing F-592-2(11)--20-63 for Flow Lines.																																						

DRAINAGE STRUCTURE REPAIR WORK

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
(3) Backfill according to DR-101

No.	Station	Size (1)	Kind Of Pipe (2)	Length EXISTING Const. Lin. Ft.		New Apron Each		Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Flow Line Elevations Note 5		Remove and Reinstall Pipe Culvert Note 4				Remove and Reinstall Apron Note 4				Class 20 Excavation (Culvert Cleaning) Note 1 CY		Class 20 Excavation CY		Granular Shoulder Note 3 TON		Reshaping Ditch Std Rd. Plan EW-105 STA		Flowable Backfill Note 2	Flowable Mortar Note 2	Tile Repair	Remarks NOTE 9
													Left Side		Right Side		Left Side		Right Side													
		IN		Lt.	Rt.	Lt.	Rt.	Type	No.	Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	C.Y.	C.Y.	LF	
				Existing length, not new length																												
Ia 92 Marion Phase 2 (40)																																
1	1074+80	24	RCP	238													1		1		27.7											CLEAN PIPE, SEE NOTE 1, NOTE 7
2	MP 160.7, 1120+58	24	CMP																									1.0				Sta 1120+58 to 1121+60, ditch reshape and place Erosion stone.
																													520.0			Station 1121+60 to 1122+49, fill in eroded toe of right
																																slope by Placing Flowable backfill. Transition
																																backfill over 90 ft from
																																5 ft deep x 2 ft wide at west end of cmp
																																to 15 ft deep x 20 ft wide at east end of cmp.
																																Top off flowable backfill, and top of cmp with Erosion stone
																																and place revetment at the cmp outlet, east end, Tab 100-23
	Station 1151+68 Bk = Sta 110+73 Ah																															
3	112+60	24	RCP	142				C-2	1						8		1		1		16.5											SEE PIC 112+56, CLEAN PIPE, SEE NOTE 1 AND 8
4	133+25	36	RCP	72													1				18.8											CLEAN PIPE, SEE NOTE 1 AND 8
5	138+30	42	RCP	240																1												SEE PIC 137+71, EROSION, SEE TAB 100-23, SEE NOTE 8
6	155+00	30	RCP	82															1		14.9											CLEAN PIPE, SEE NOTE 1 AND 8
7	164+13	24	RCP	80																	9.3						1.0	1.0				CLEAN PIPE EXPOSE INLET/OUTLET, SEE NOTE 1 AND 8
	Station 200+00 = MP 163.00																															
8	225+68	30	RCP	104				C-2	1				8				1				18.9											CLEAN PIPE, SEE NOTE 1 AND 8
9	244+68	24	RCP	122													1		1		14.2						1.0	1.0				CLEAN PIPE EXPOSE INLET/OUTLET, SEE NOTE 1 AND 8
10	285+40	24	RCP	174															1		20.2											CLEAN PIPE, SEE NOTE 1 AND 8
11	292+00	24	RCP	158				C-2	8				48						1		18.4											CLEAN PIPE, SEE NOTE 1 AND 8
12	294+00	30	RCP	216															1		39.3											CLEAN PIPE, SEE NOTE 1 AND 8
13	300+00	30	RCP	118		1											1				21.5		2.0									CLEAN PIPE, SEE NOTE 1 AND 8
14	317+60	42	RCP					C-2	8				48				1		1													SEE PIC 318+15, PIPE SEPARATED/EROSION, SEE TAB 100-23
15	342+36	30	RCP	100													1				18.2											CLEAN PIPE, SEE NOTE 1
16	370+17	30	RCP	100				C-2	5						32		1		1													SEE PIC 370+17, PIPE SEPARATED/EROSION, SEE TAB 100-23
	Sta 591+34 = Sta 1591+34																															
	Phse 1, (39) FU '23 MP 167.66 = Sta 447+25																															
	Totals					1							144				18	1			237.9		2.0				5.0					

Note 1: Class 20 Excavation for cleaning is approximated to equal to the volume of the culvert that is partly or wholly plugged. The interior of the culvert is to be flushed clean with water. Flushing of the culvert will be considered incidental to Class 20 Exc., See Tab 100-26.
Note 2: Not Applicable - Iowa 92 to be closed to one lane. Pipe to be installed 1/2 at a time. Other bid Items and tabs apply for Rd. Std. TC-217 bid items, flowable mortar backfill for pipe backfill, Std. DR-101, subbase patch, PCC patch Tab 102-6C.
Note 3: Not Applicable - Pipe trenching through Entrances are to replace granular shoulder.
Note 4: Not Applicable - Remove and Replace. Bid Item is to remove the existing pipe or apron and is to replace with new pipe or apron, if pipe is also itemized as Length New Construction or New Apron. Otherwise, reset the existing pipe or apron to grade by using the existing pipe and/or apron.
Note 5: For pipe flowlines, see Record Drawings.
Note 6: Not Applicable - New pipe to be Polyethylene, 2417-1140012 CULV, CORR POLYETHYLENE RDWY PIPE 12 IN
Note 7: Rec Dwg 1977 RF-592-2(2)--35-63
Note 8: Rec Dwg 1976 RF-592-2(10)--16-63
NOTE 9: Refer to D Sheets.

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

- Reference Point / Station — Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

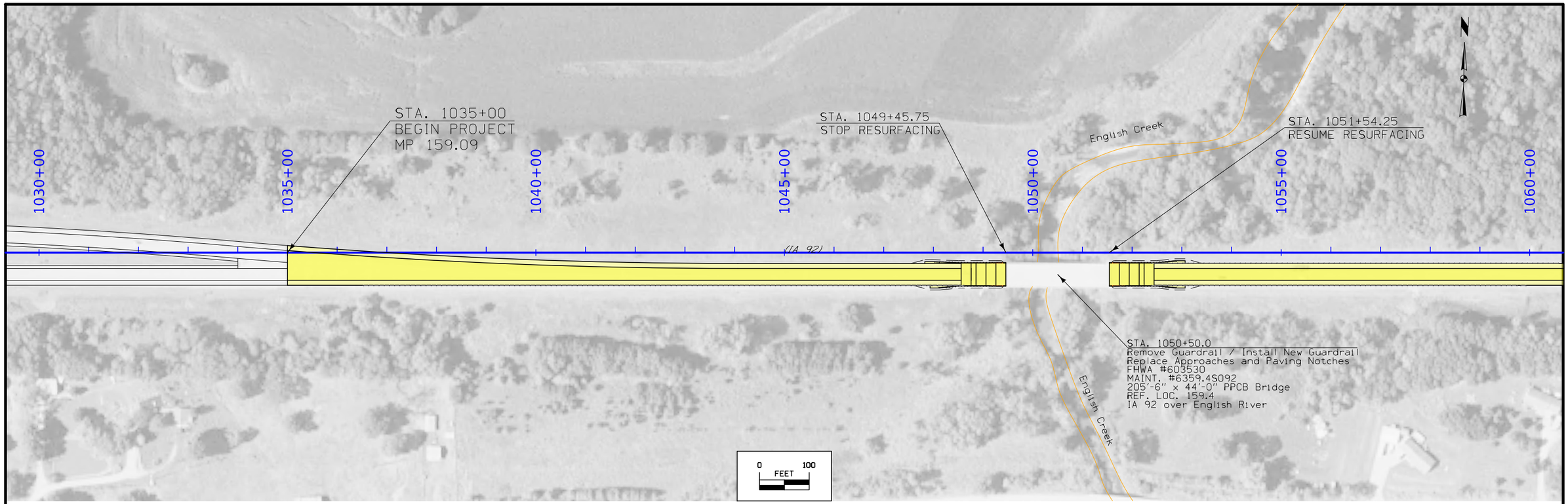
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

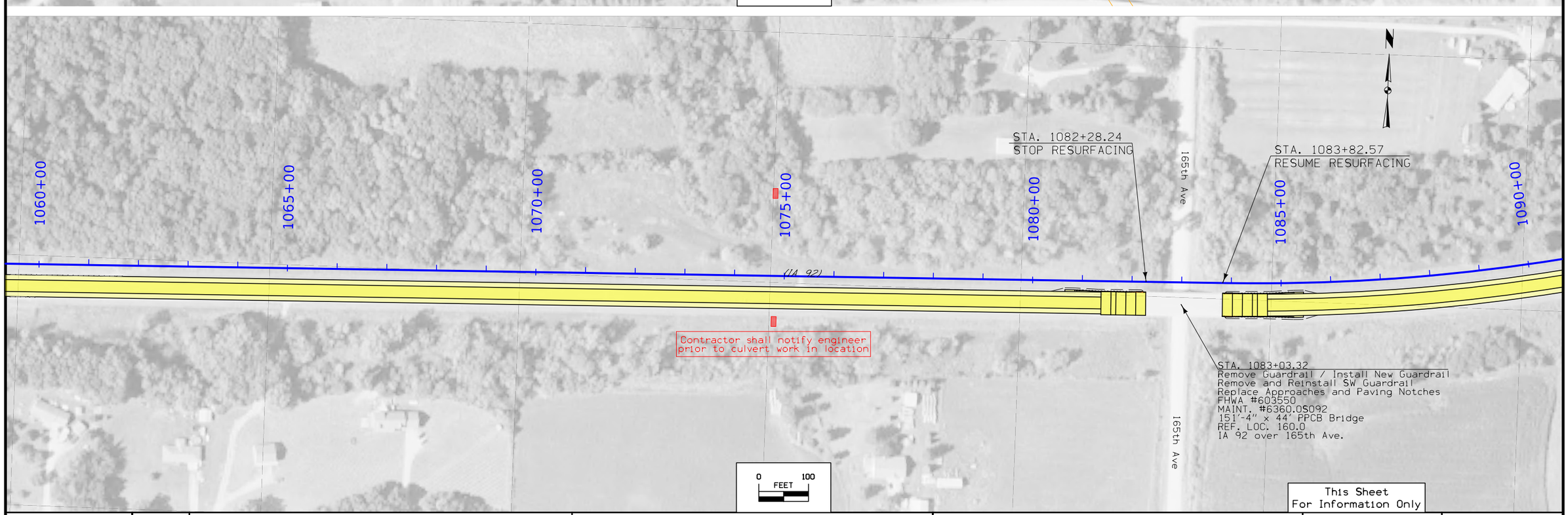
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.1

1:08:34 PM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_LGD.dgn





This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.2

3:45:48 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

1090+00
1095+00
1100+00
1105+00
1110+00
1115+00
1120+00
(IA 92)
Contr
prior t
0 100
FEET
1120+00
1125+00
1130+00
1135+00
1140+00
1145+00
1150+00
(IA 92)
Contractor shall notify engineer
prior to ditch reshaping in location
STA. 1123+00
UAC
FHWA #603540
MAINT. #6360.8S092
Twin 10' x 12' x 227' RCB
REF. LOC. 160.8
IA 92 over Drainage Ditch
0 100
FEET
This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.3	

3:47:04 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

EQUATION STA. 1151+67.60 (BK)
STA. 110+73.00 (AH)

1150+00

115+00

120+00

125+00

IA 92 E To County of Marion

Old Hwy 92

130+00

STA. 136+12.1
UAC
FHWA #600770
MAINT. #6361.8S092
575' x 32' CWG Bridge
REF. LOC. 161.8
Old IA 92 over IA 92

135+00

(IA 92)

Contractor shall notify engineer prior to culvert work in location

Contractor shall notify engineer prior to culvert work in location

Nevada Dr

Old Hwy 92

0 FEET 100

140+00

145+00

150+00

155+00

160+00

165+00

(IA 92)

Old Hwy 92

Contractor shall notify engineer prior to culvert work in location

Contractor shall notify engineer prior to ditch reshpaing in location

0 FEET 100

This Sheet For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.4

3:48:33 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

170+00
175+00
180+00
185+00
190+00
195+00
(IA 92)
0 100 FEET

200+00
205+00
210+00
215+00
220+00
225+00
195th PL
Nebraska Dr
(IA 92)
Contractor shall notify engineer prior to culvert work in location
195th PL
197th PL
0 100 FEET
This Sheet For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.5

3:49:55 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

230+00
235+00
240+00
245+00
250+00
255+00
(IA 92)
44'
(Survey IA 92)
Contractor shall notify engineer prior to culvert work and ditch reshaping in location
0 100 FEET
Clay TWP.
T-75N R-18W
SEC. 8
Existing Right-of-Way
Existing Right-of-Way
Sta. 285+37.2
Skew 30° RT AH
24"x149' RCP
D.A.=3 Ac-R (plans)
Sect. No. 9
260+00
265+00
270+00
275+00
280+00
285+00
(IA 92)
44'
(Survey IA 92)
SIGN
APPROX. SEC. LINE
Contractor shall notify engineer prior to culvert work in location
Sta. 275+36.4
Skew 5° LT AH
4.0'x4.0'x233.0' RCB
D.A.=21Ac-H (plans)
U.A.C.
Sta. 6279+21.9
30"x150' CMP
D.A.=13 Ac-H (plans)
U.A.C.
0 100 FEET
Sect. No. 17
Refer to E Sheet For Additional Information
This Sheet For Information Only
Sect. No. 16

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.6

3:51:17 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

t. No. 9

Sta. 291+98.2
24"x234' RCP
D.A.=4Ac-R (plans)
U.A.C.

Sta. 293+97.5
30"x180' RCP
D.A.=14Ac-R (plans)
U.A.C.

290+00

+25 Exist. Type "D" Ent. CLOSE

295+00

300+00

Contractor shall notify engineer prior to culvert work in location

305+00

310+00

((A 92)

(Survey (A 92)

44'

315+00

Contractor shall notify engineer prior to culvert work in location

0 100 FEET

t. No. 16

320+00

216th PL

325+00

330+00

335+00

340+00

Contractor shall notify engineer prior to culvert work in location

345+00

((A 92)

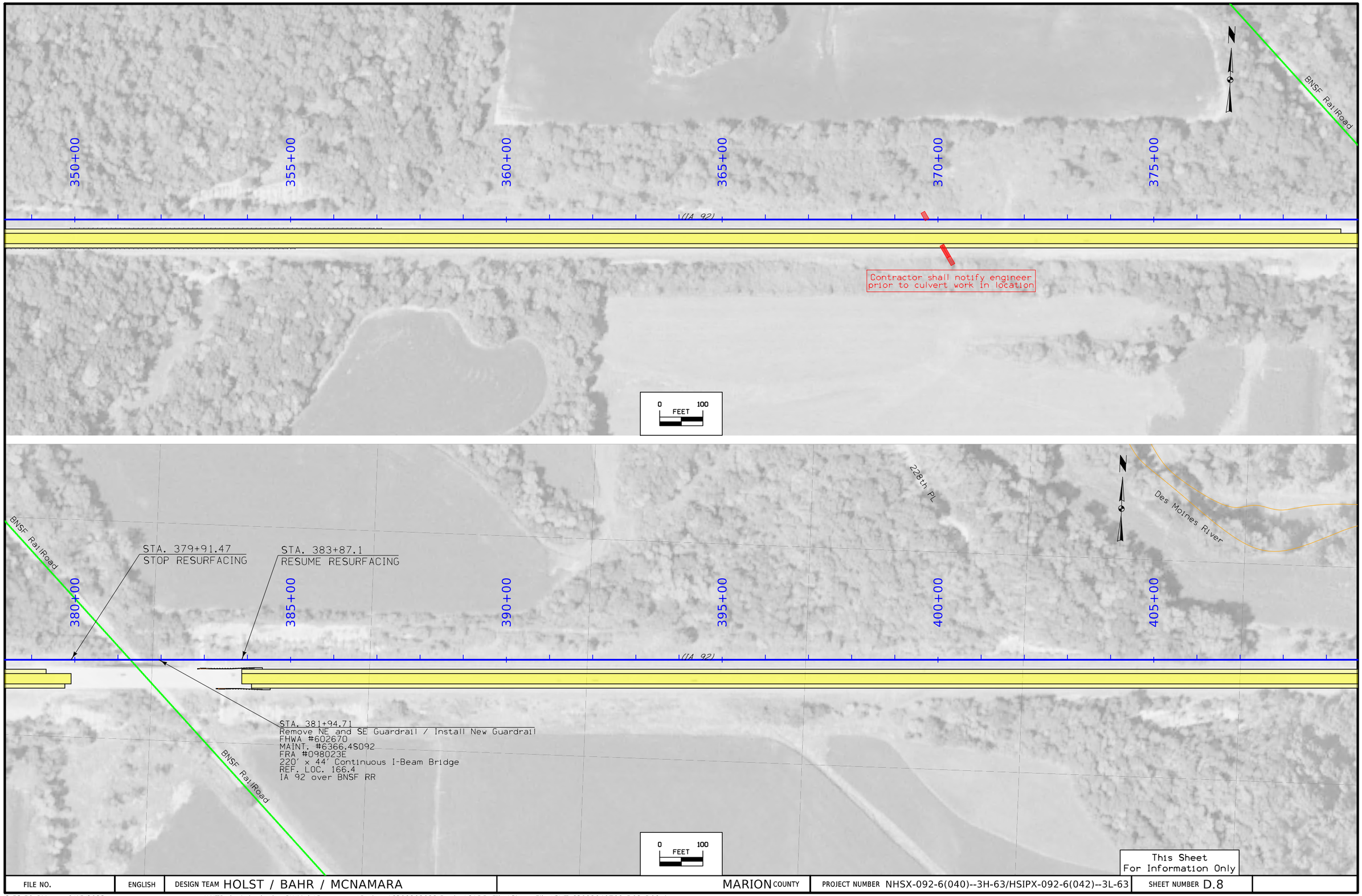
216th PL

0 100 FEET

This Sheet For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.7	

3:52:31 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn



FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.8

3:53:50 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

STA. 418+51.5
STOP RESURFACING

STA. 420+48.5
RESUME RESURFACING

STA. 421+45.5
STOP RESURFACING AT EF JOINT

STA. 417+25.5
RESUME RESURFACING AFTER EF JOINT

STA. 421+52.5
RESUME RESURFACING AFTER EF JOINT

Des Moines River

STA. 417+18.5
STOP RESUFACING AT EF JOINT

410+00 415+00 420+00 425+00 430+00 435+00

(IA 92)

STA. 419+50
Remove Guardrail / Install New Guardrail
FHWA #602660
MAINT. #6367.1S092
193' x 44' type Bridge
REF. LOC. 167.1
IA 92 over Old Des Moines River Channel

Des Moines River

0 100
FEET

STA. 447+25
END PROJECT
MP 167.66

440+00 445+00 450+00 455+00 460+00 465+00

(IA 92)

T25

0 100
FEET

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER D.9

3:55:12 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_D02_D09.dgn

Clay TWP.
T-75N R-18W
SEC. 8

Sta. 275+36.4
Skew 5° LT AH
4.0'x4.0'x233.0' RCB
D.A.=21Ac-H (plans)

U.A.C.

275+00

(IA 92)

44'

(Survey IA 92)

SIGN

SIGN

SIGN

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

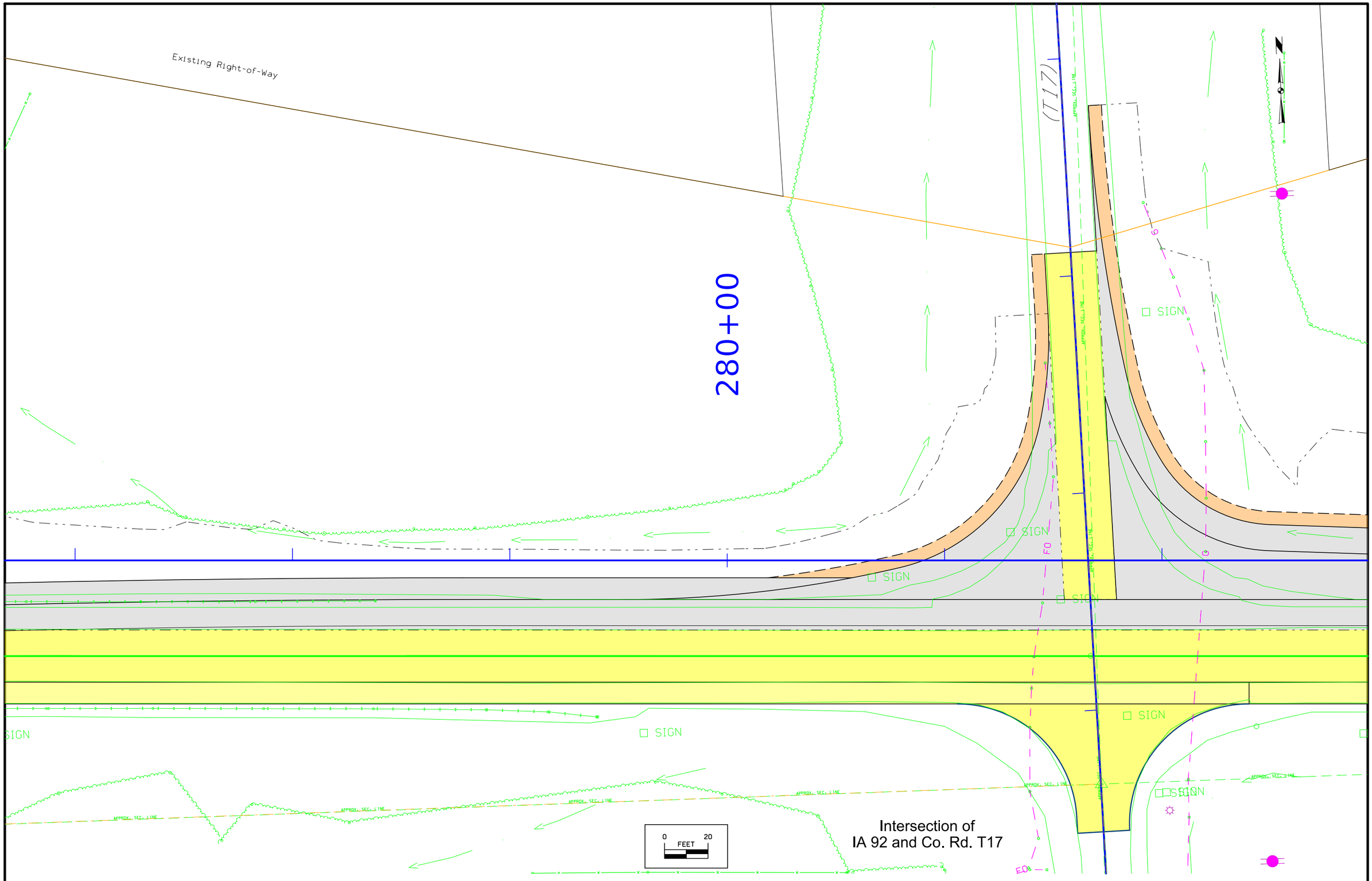
APPROX. SEC. LINE

0 20
FEET

Intersection of
IA 92 and Co. Rd. T17

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER E.1

2:52:28 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_E01.dgn



FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER E.2

2:52:29 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_E01.dgn

Existing Right-of-Way

Sta. 285+37.2
Skew 30° RT AH
24"x149' RCP
D.A.=3 Ac-R (plans)

285+00

SIGN

TILE

TILE

SIGN

SIGN

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

TILE

TILE

Contractor shall notify engineer prior to culvert work in location

0 20
FEET

Intersection of
IA 92 and Co. Rd. T17

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER E.3

2:52:30 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_E01.dgn

Sect. No. 9

Existing Right-of-Way

Sta. 291+98.2
24"x234' RCP
D.A.=4Ac-R (plans)
U.A.C.

Sta. 293+97.5
30"x180' RCP
D.A.=14Ac-R (plans)
U.A.C.

290+00

SIGN

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

Contractor shall notify engineer prior to culvert work in location

TILE

Intersection of
IA 92 and Co. Rd. T17

Sect. No. 16

0 20
FEET

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER E.4	

2:52:31 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_E01.dgn

295+00

300+00

Contractor shall notify engineer prior to culvert work in location

(IA 92)

44'

(Survey/IA 92)

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

APPROX. SEC. LINE

0 20
FEET

Intersection of
IA 92 and Co. Rd. T17

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER E.5

2:52:31 PM 9/15/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_E01.dgn

SURVEY INDEX

County: Marion
PIN: 22-63-092-020
Project Number: NHSN-092-6(41)—2R-63
Location: E of Knoxville to 0.15mi E of Co Rd T25
Type of Work: HMA Paving Unspecified
Project Directory: 6309202022

Survey Personnel

Paul Harry – Survey Party Chief
Bob Fredrickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date	03/14/2022
End Date	05/09/2022

General Information

Measurement units for this survey are US survey feet. This survey is for State Hwy 92 HMA resurfacing and widening at the intersection of Hwy 92 and County Road T17. This survey was Full DTM.

Project Control

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

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
VERTICAL DATUM: NAVD88
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 09
GEOID MODEL: 2012bu3

Alignments Information

Alignment for Hwy 92 begins at POT Sta 251+02.7 and runs through the project without equation.

Survey stationing relates to As-built plan RF-592-2(10)—16-63 stationing as follows:

POT Sta. 251+02.7 Plan
= Survey POT Sta. 251+02.7

POT Sta. 281+87.4 Plan
= Survey POT Sta. 281+86.0

POT Sta 295+35.69 Plan
= Survey POT Sta. 295+33.89

PC Sta 312+48.0 Plan
= Survey PC Sta 312+45.17

Alignment for County Road T17 begins at POT Sta 6281+24.9 and runs ahead and back through the project without equation.

Survey stationing relates to As-built plan RF-592-2(10)—16-63 stationing as follows:

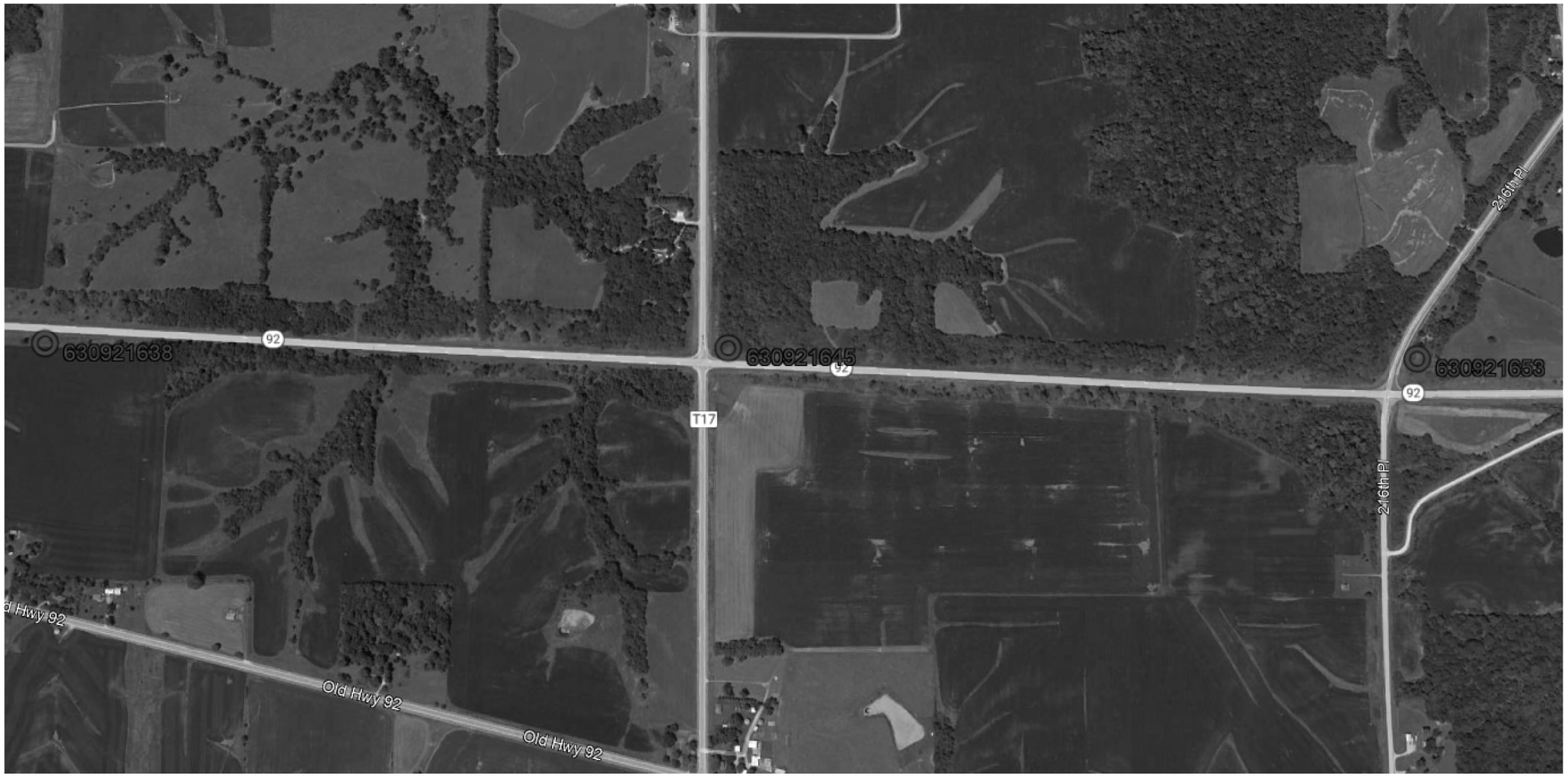
POT Sta 6281+24.9 Plan
= Survey POT Sta 6281+24.9

Utility Information

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

CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00 - Ia. RCS Zone 09
VERT. DATUM: NAVD88 - Geoid Model 2012bu3

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER G.2

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
Ia. Regional Coordinate System Zone 09

VERT. DATUM: NAVD88
Geoid Model 2012bu3
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Feature Definition-Description
630921638	7584939.55	19459960.27	862.84	CP FD 4IN X 4IN CM 0.7MI W ALONG HWY 92 FROM THE INTERSECTION OF HWY 92 AND CO RD T17 MONUMENT IS 112FT S OF CL HWY 92 78FT E OF CM 33FT E OF ROW SIGN POST AND 2.5FT N OF FENCE
630921645	7584985.45	19464025.50	837.20	FENO SET FENO MON 3IN DEEP NEAR THE INTERSECTION OF HWY 92 AND CO RD T17 MONUMENT IS 82FT N OF CL HWY 92 150FT E OF CL T17 AND 143FT SE OF POWER POLE
630921653	7584975.98	19468151.83	837.43	CP FD 4IN X 4IN CM NEAR THE INTERSECTION OF HWY 92 AND 216TH PL MONUMENT IS 198FT N OF CL HWY 92 118FT E OF CL 216TH PL 127 FT NW OF POWER POLE AND 82FT NW OF ROW RAIL

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

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Through traffic on IA 92 shall be maintained at all times.

2. Access to all properties shall be maintained at all times.

Tabulation Work in Progress

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
BRFN-092-6(38)--39-63	Bridge Deck Overlay
NHSX-092-6(39)--3H-63	HMA Resurfacing with Milling

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			Tabulation Work in Progress									

108-26A
08-01-08

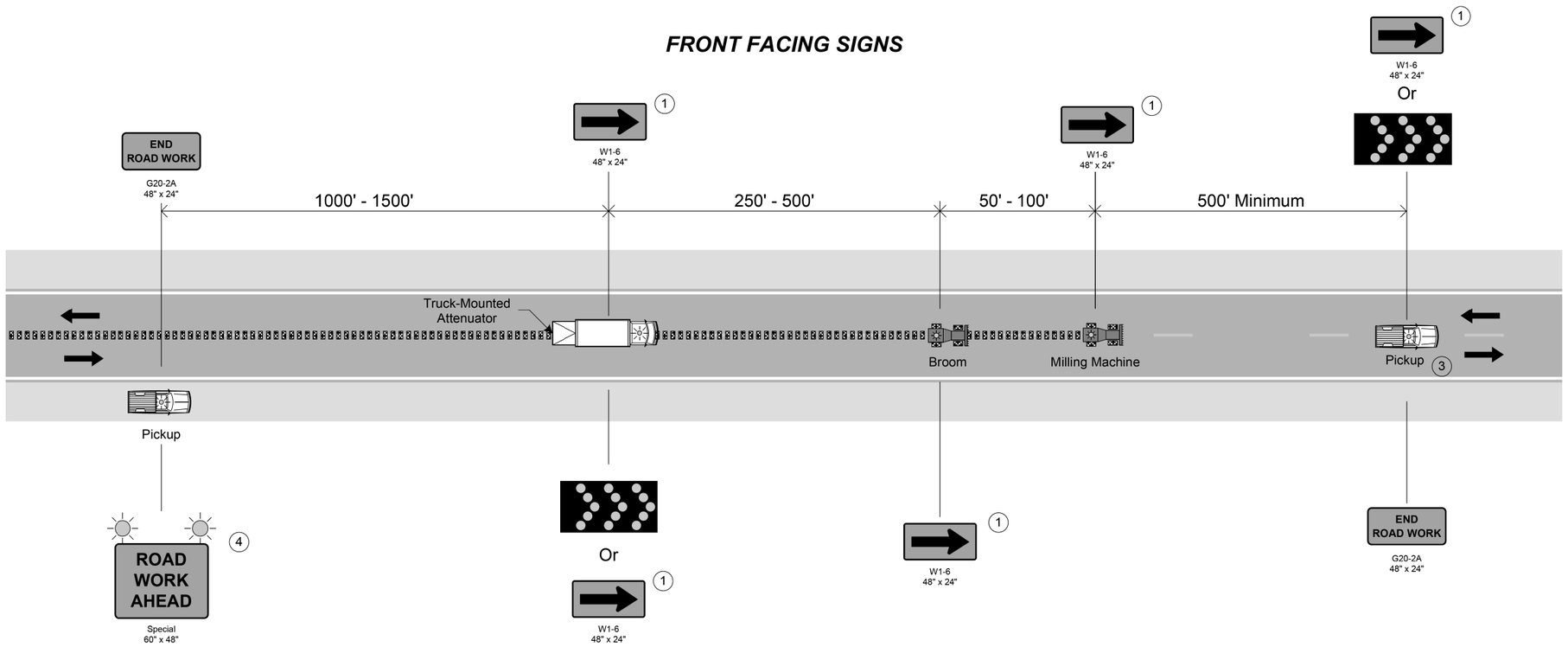
STAGING NOTES

Suggested Sequence of Construction:
1. Patching shall be performed prior to other work on this project.

Notet: Pavement Markings shall be placed on each driveale surface as construction progresses.

Tabulation Work in Progress

FRONT FACING SIGNS



REAR FACING SIGNS

All vehicles shall be equipped with an amber revolving light or an amber strobe light.

(1) Optional SYG sign background

(2) This arrow display may be operated in a four-corner caution mode.

(3) This vehicle should move to the shoulder to accommodate passing traffic.

(4) A vehicle-mounted CMS may be used in lieu of this sign.

01-17-19

CENTERLINE
RUMBLE STRIPS
TWO-LANE

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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

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

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

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

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

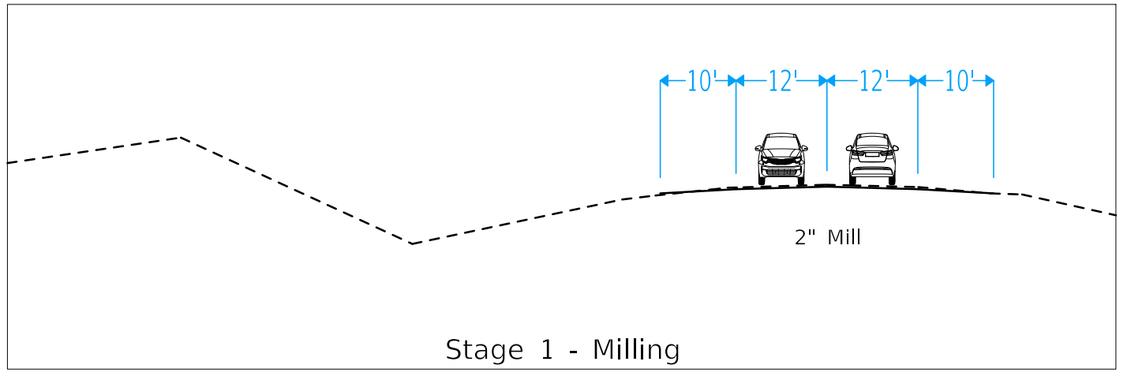
- Channelizing Device
- Drum
- Temporary Lane Separator
- Tubular Marker
- Channelizer Marker
- Concrete Barrier Marker
- Delineator
- Temporary Barrier Rail
- Pavement Removal
- Sand Barrel Layout
- Crash Cushion (Temp or Perm)
- Traffic Signal
- Flagger
- Temporary Floodlighting
- Traffic Sign
- Type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

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

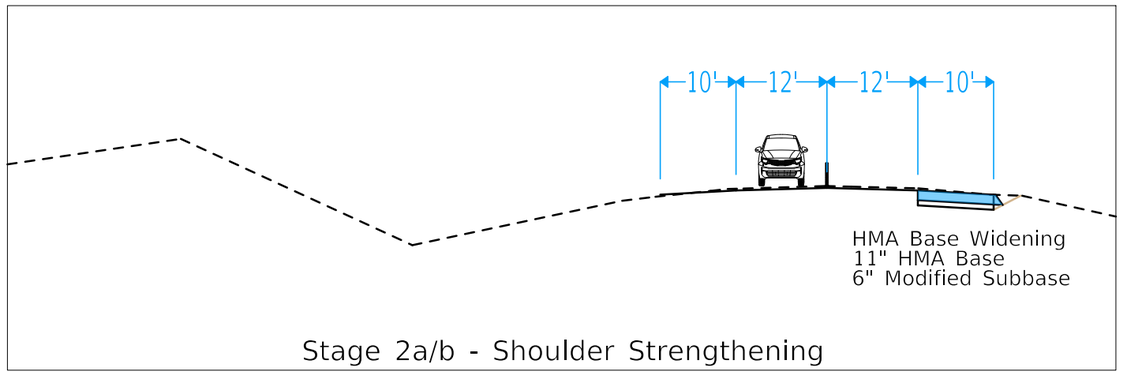
TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)

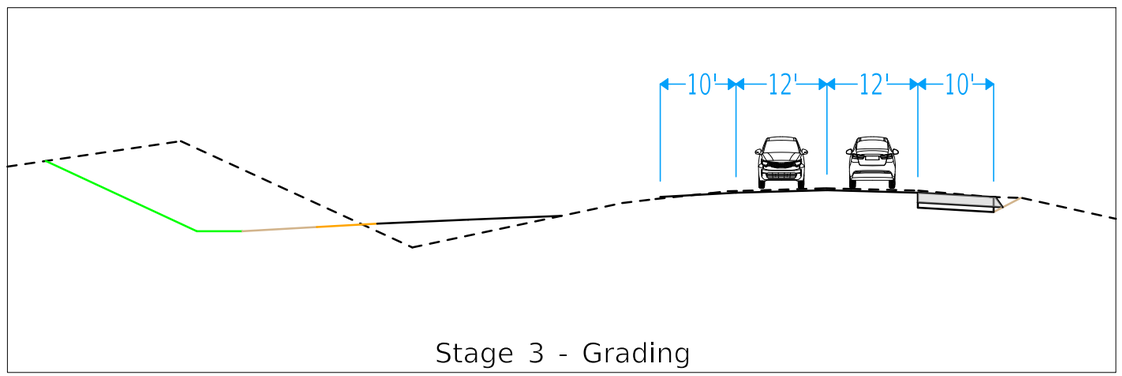
IA92



Stage 1 - Milling

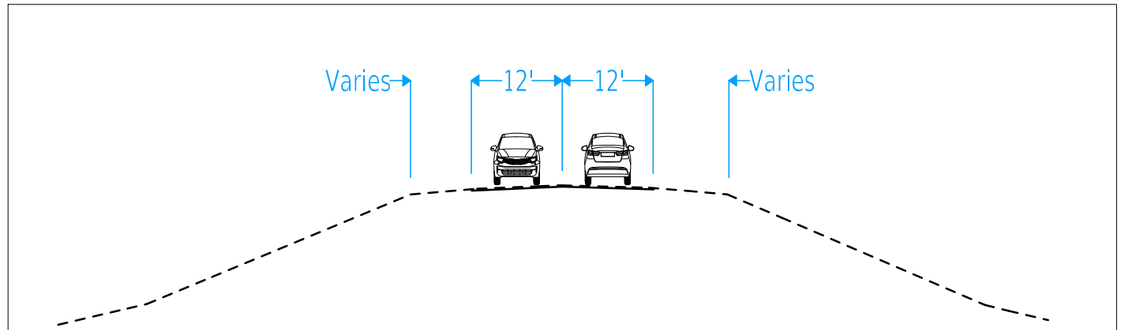


Stage 2a/b - Shoulder Strengthening

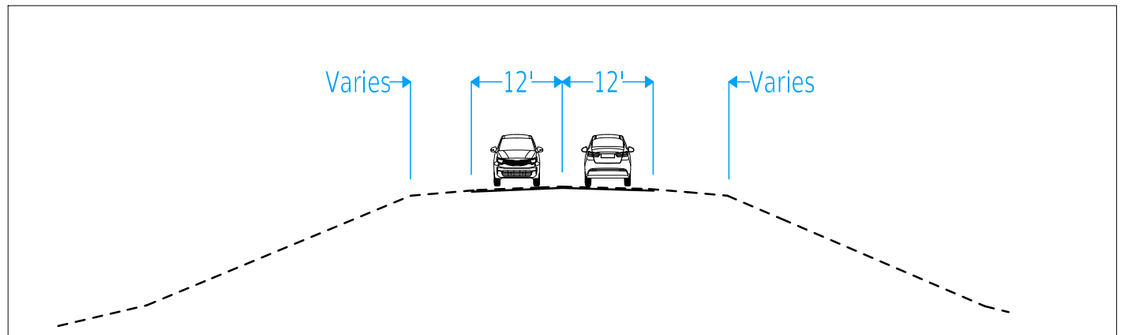


Stage 3 - Grading

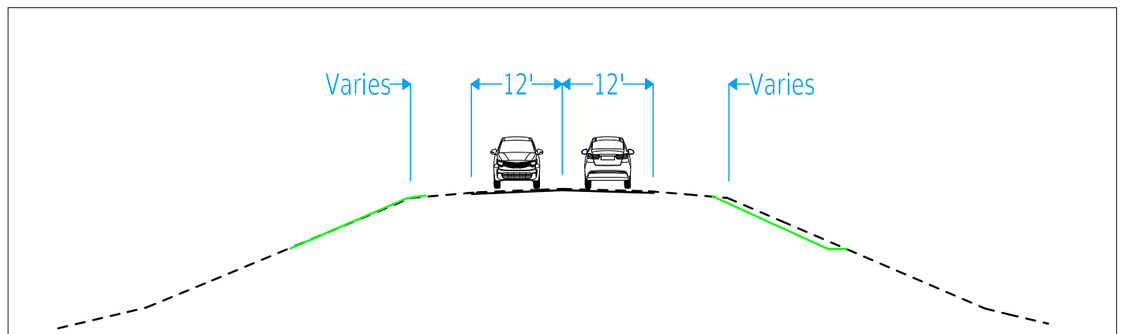
T17



Stage 1 - Milling at Intersection



Stage 2a/b

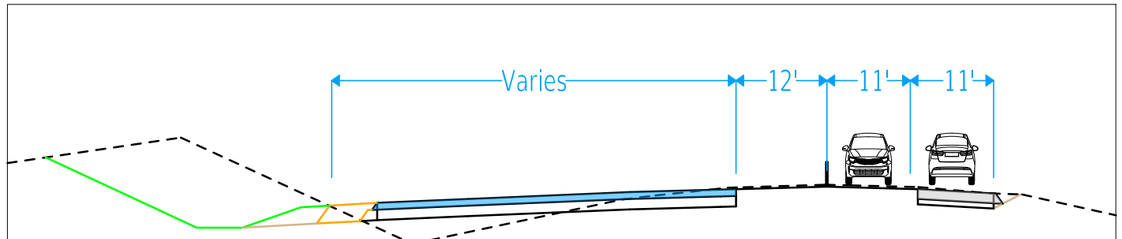


Stage 3 - Grading

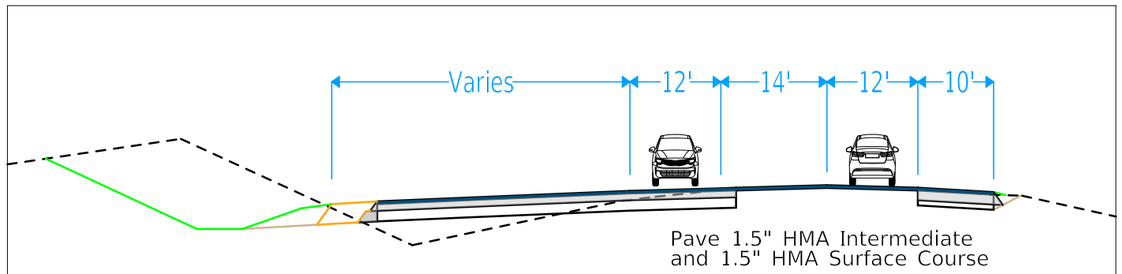
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)–3L-63	SHEET NUMBER J.4

5:08:52 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_J03.dgn

IA92

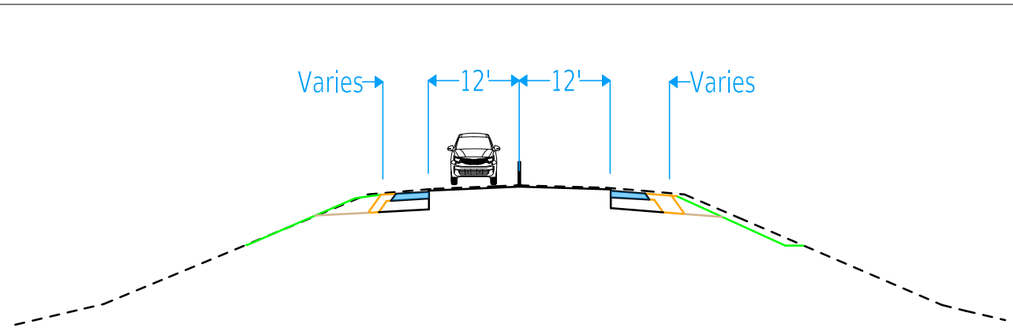


Stage 4a/b - Grading and Paving HMA Base Course

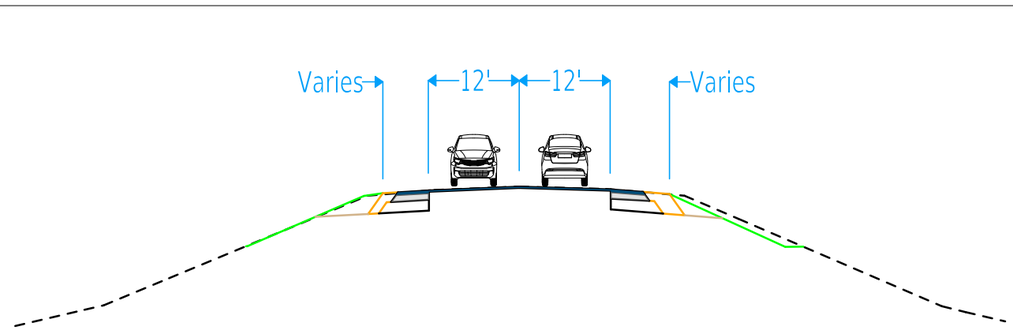


Stage 5 - Paving HMA Intermediate and Surface Courses

T17



Stage 4a/b - Grading and Paving HMA Base Course



Stage 5 - Paving HMA Intermediate and Surface Courses

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.6	

5:08:53 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_J03.dgn

265+00

270+00

92

275+00

12'
12'

1582.8'

0 FEET 50

STAGE 1

(IA 92 / T17 Interersection)
Milling

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.6

5:10:04 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG1.dgn

MARION
T17
COUNTY

92

6285+00

280+00

285+00

290+00

173.9'

52.68.9'

58.2'

6280+00

MARION
T17
COUNTY

0 FEET 50

STAGE 1

(IA 92 / T17 Interersection)
Milling

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.7

5:10:05 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG1.dgn

295+00

300+00

92

305+00

2216.6'

0 FEET 50

STAGE 1

(IA 92 / T17 Interersection)
Milling

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.8

5:10:06 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG1.dgn

265+00

270+00

92

275+00

12'
12'

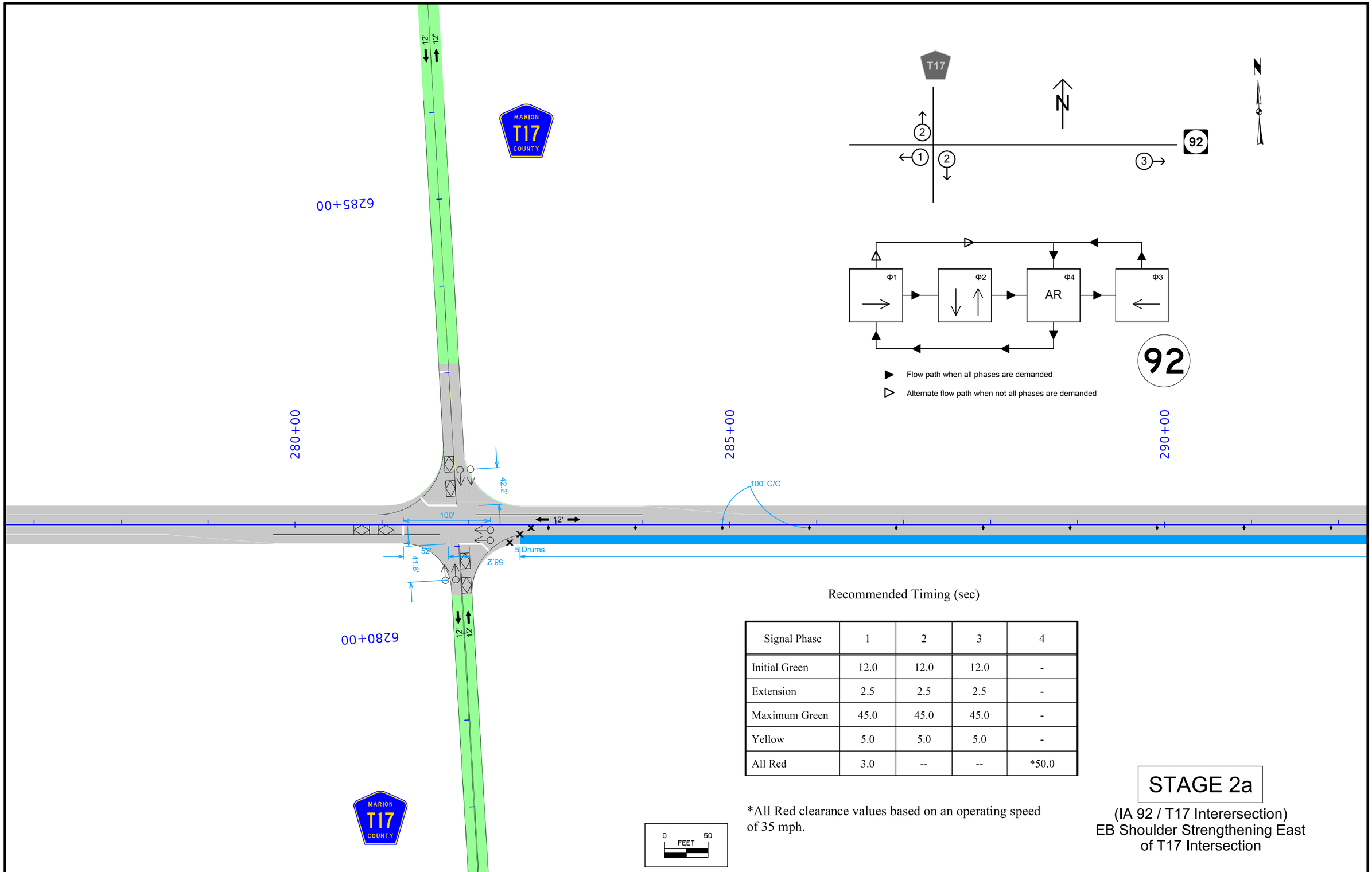
0 FEET 50

STAGE 2a

(IA 92 / T17 Interersection)
EB Shoulder Strengthening East
of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.9

5:10:21 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG2a.dgn



92

▶ Flow path when all phases are demanded

▷ Alternate flow path when not all phases are demanded

Recommended Timing (sec)

Signal Phase	1	2	3	4
Initial Green	12.0	12.0	12.0	-
Extension	2.5	2.5	2.5	-
Maximum Green	45.0	45.0	45.0	-
Yellow	5.0	5.0	5.0	-
All Red	3.0	--	--	*50.0

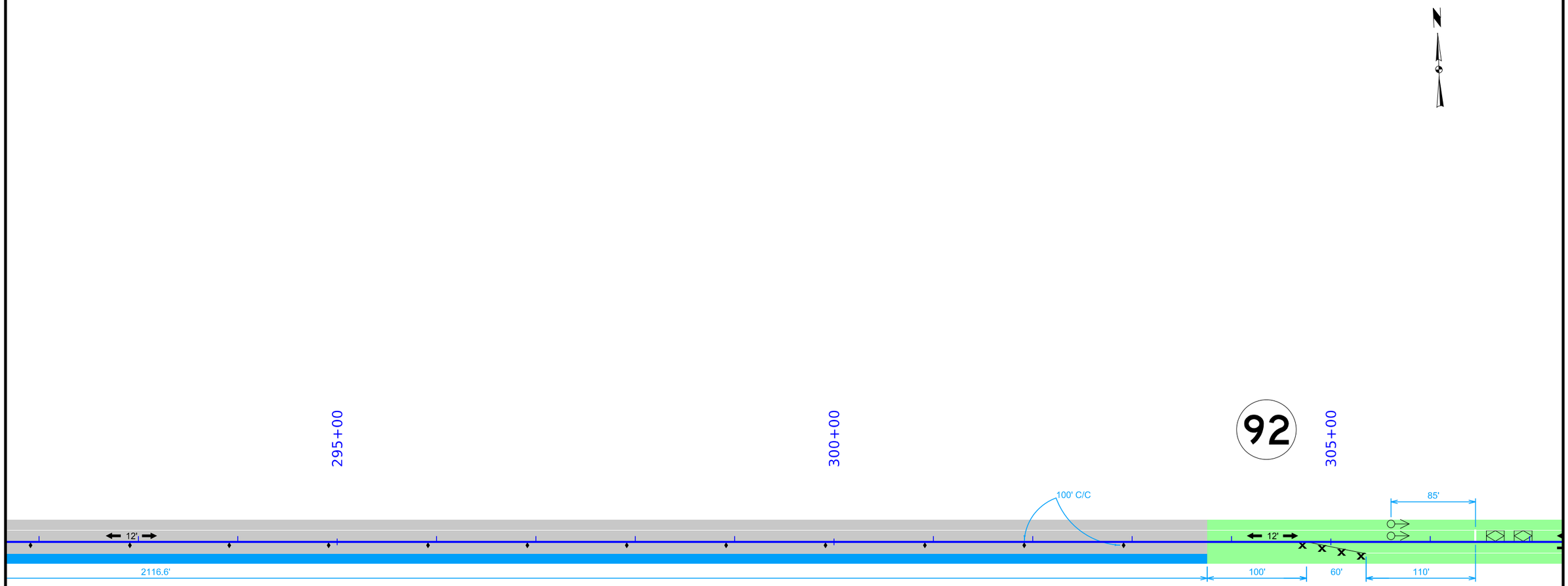
*All Red clearance values based on an operating speed of 35 mph.

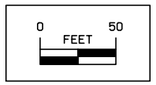
STAGE 2a

(IA 92 / T17 Interersection)
EB Shoulder Strengthening East of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.10

5:10:22 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG2a.dgn



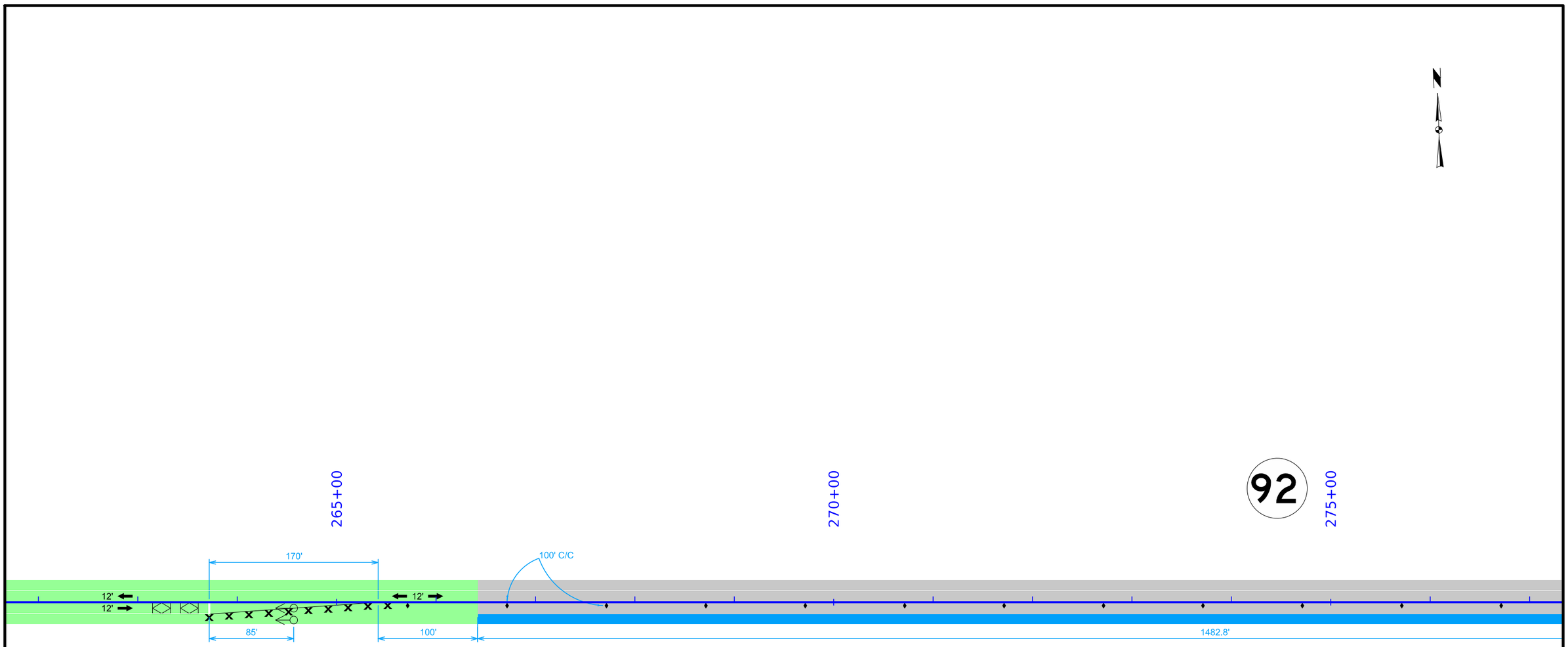


STAGE 2a

(IA 92 / T17 Interersection)
EB Shoulder Strengthening East
of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.11

5:10:32 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG2a.dgn



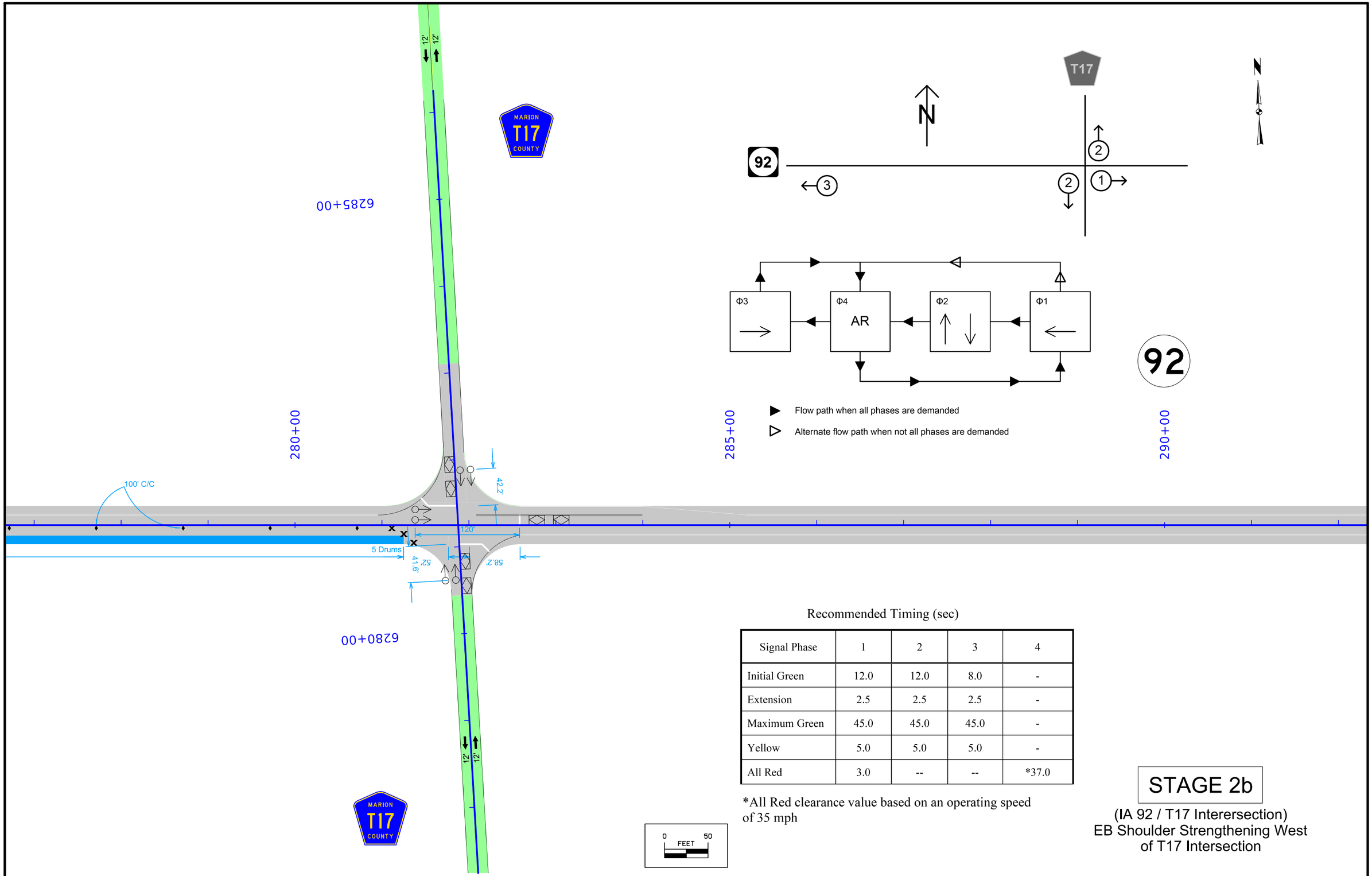
STAGE 2b

(IA 92 / T17 Interersection)
EB Shoulder Strengthening West
of T17 Intersection

0 50
FEET

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.12

5:10:51 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG2b.dgn



Recommended Timing (sec)

Signal Phase	1	2	3	4
Initial Green	12.0	12.0	8.0	-
Extension	2.5	2.5	2.5	-
Maximum Green	45.0	45.0	45.0	-
Yellow	5.0	5.0	5.0	-
All Red	3.0	--	--	*37.0

*All Red clearance value based on an operating speed of 35 mph

STAGE 2b

(IA 92 / T17 Interersection)
EB Shoulder Strengthening West of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.13

5:10:51 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG2b.dgn

295+00

300+00

92

305+00

12'
12'

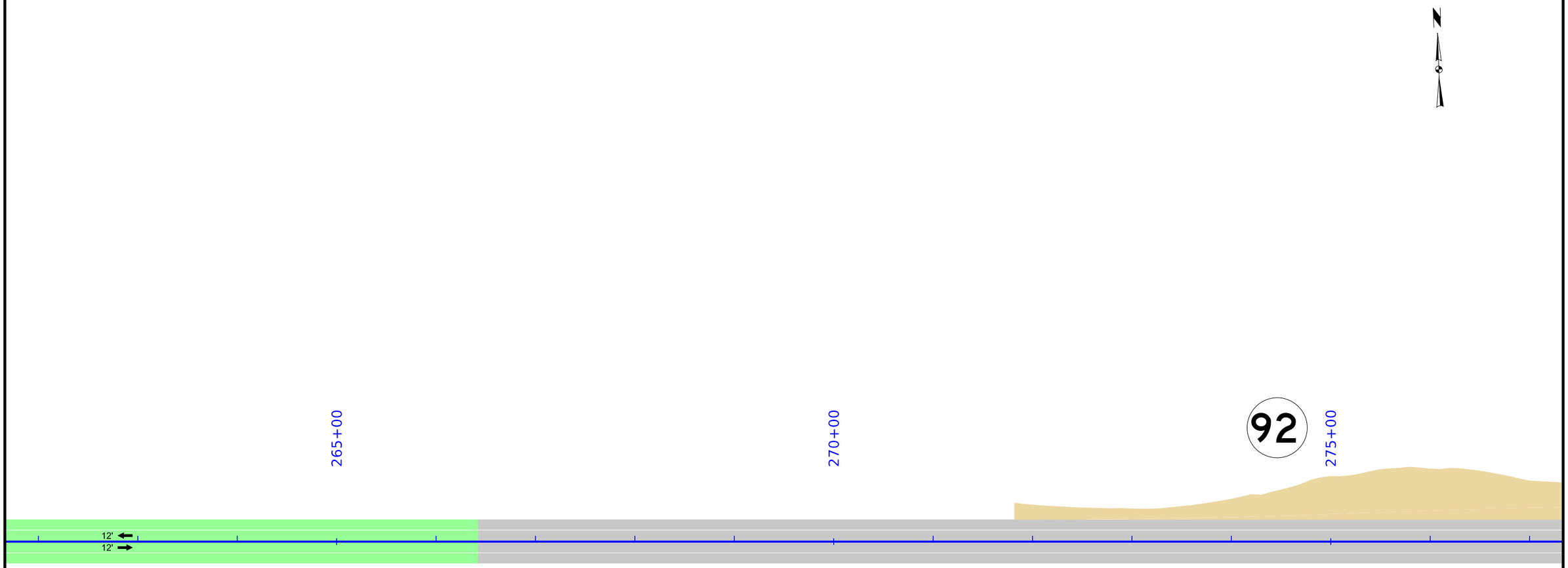
0 FEET 50

STAGE 2b

(IA 92 / T17 Interersection)
EB Shoulder Strengthening West
of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.14

5:11:00 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG2b.dgn



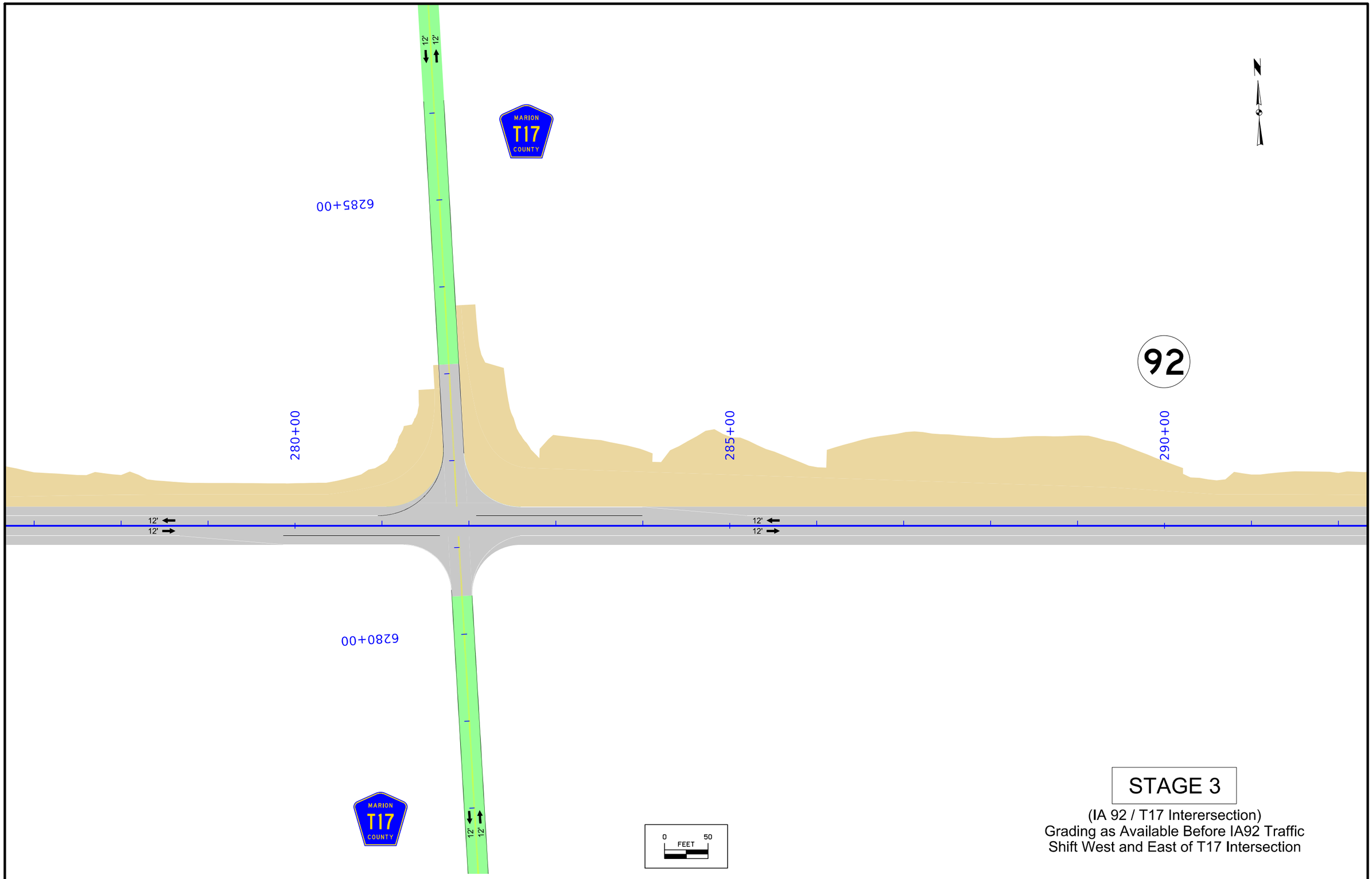
0 50
FEET

STAGE 3

(IA 92 / T17 Interersection)
Grading as Available Before IA92 Traffic
Shift West and East of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.15

5:11:17 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG3.dgn



STAGE 3

(IA 92 / T17 Interersection)
Grading as Available Before IA92 Traffic
Shift West and East of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.16

5:11:18 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG3.dgn

295+00

300+00

92

305+00

12'
12'

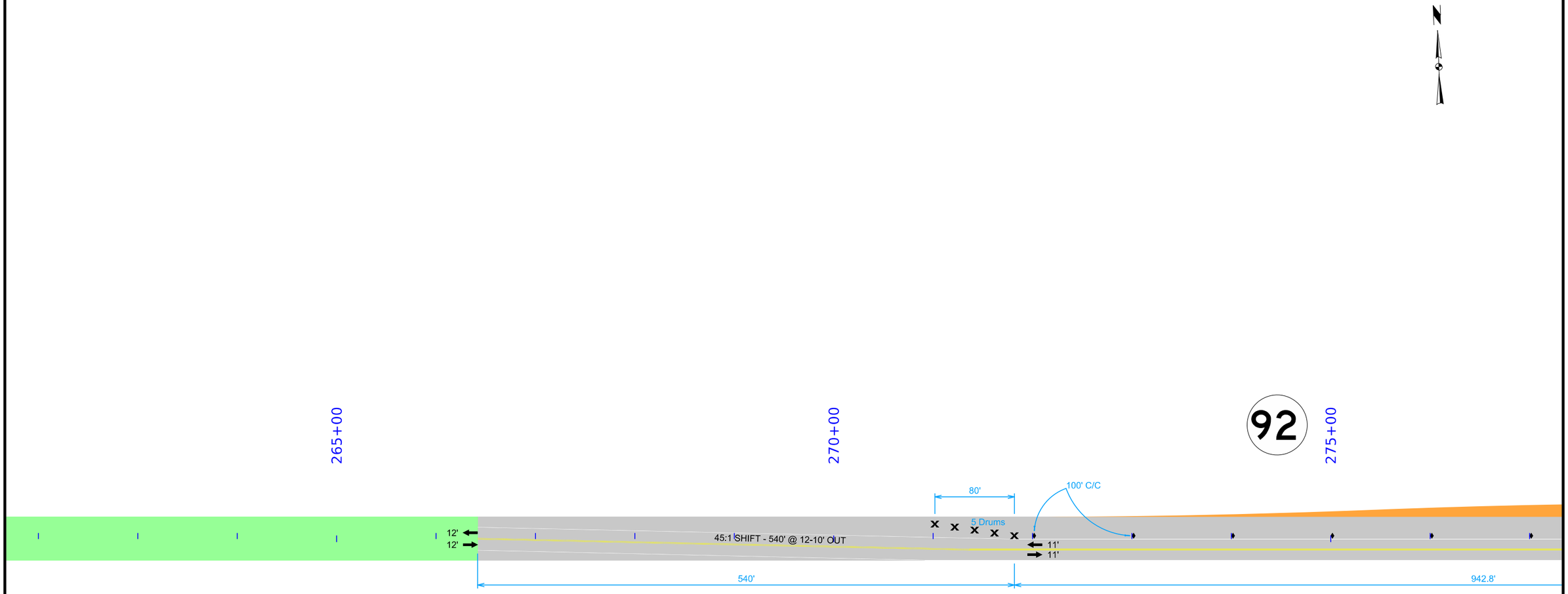
0 FEET 50

STAGE 3

(IA 92 / T17 Interersection)
Grading as Available Before IA92 Traffic
Shift West and East of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.17

5:11:18 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG3.dgn



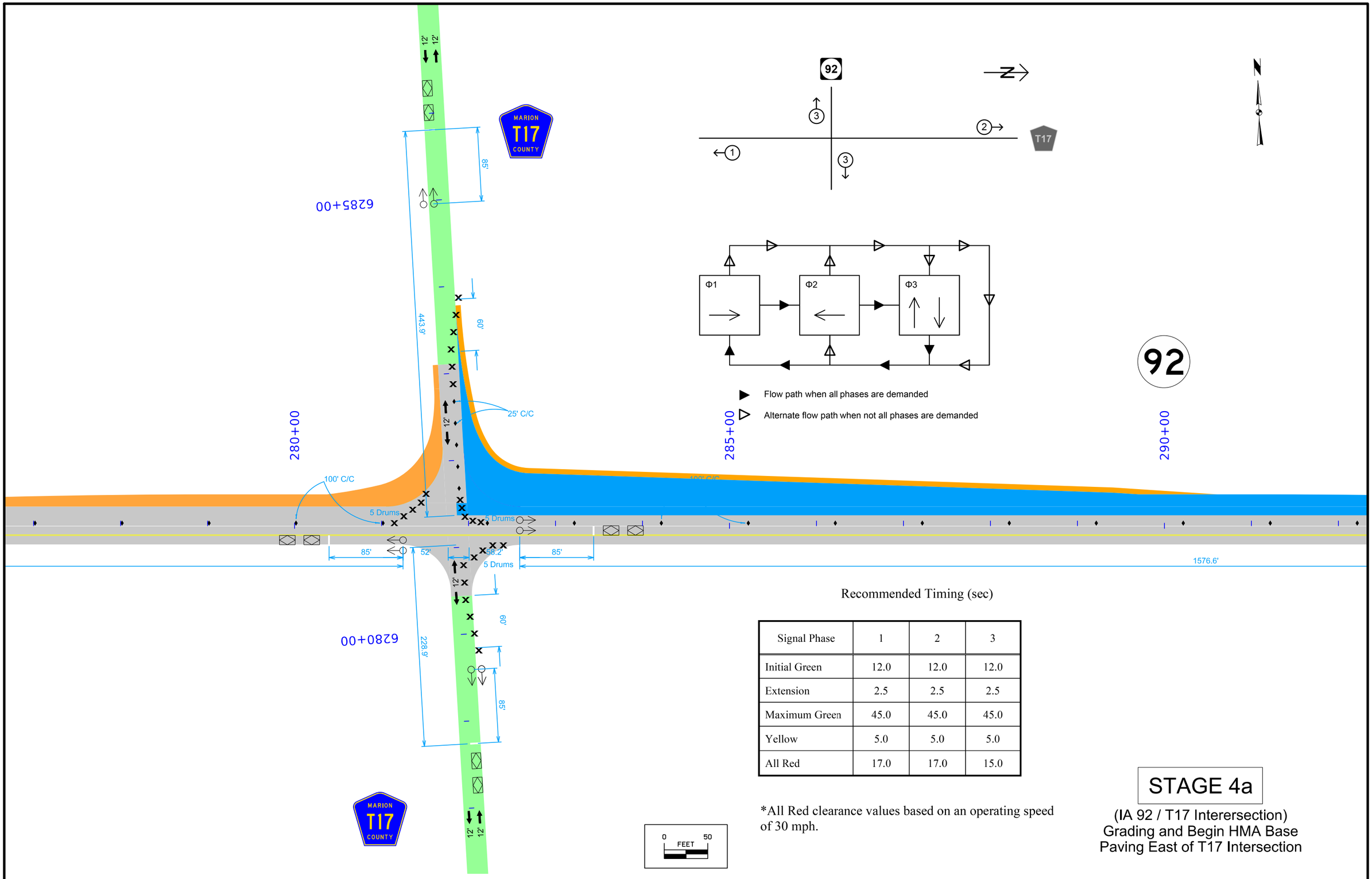
0 50 FEET

STAGE 4a

(IA 92 / T17 Interersection)
Grading and Begin HMA Base
Paving East of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.18

5:11:34 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG4a.dgn



▶ Flow path when all phases are demanded

▷ Alternate flow path when not all phases are demanded

92

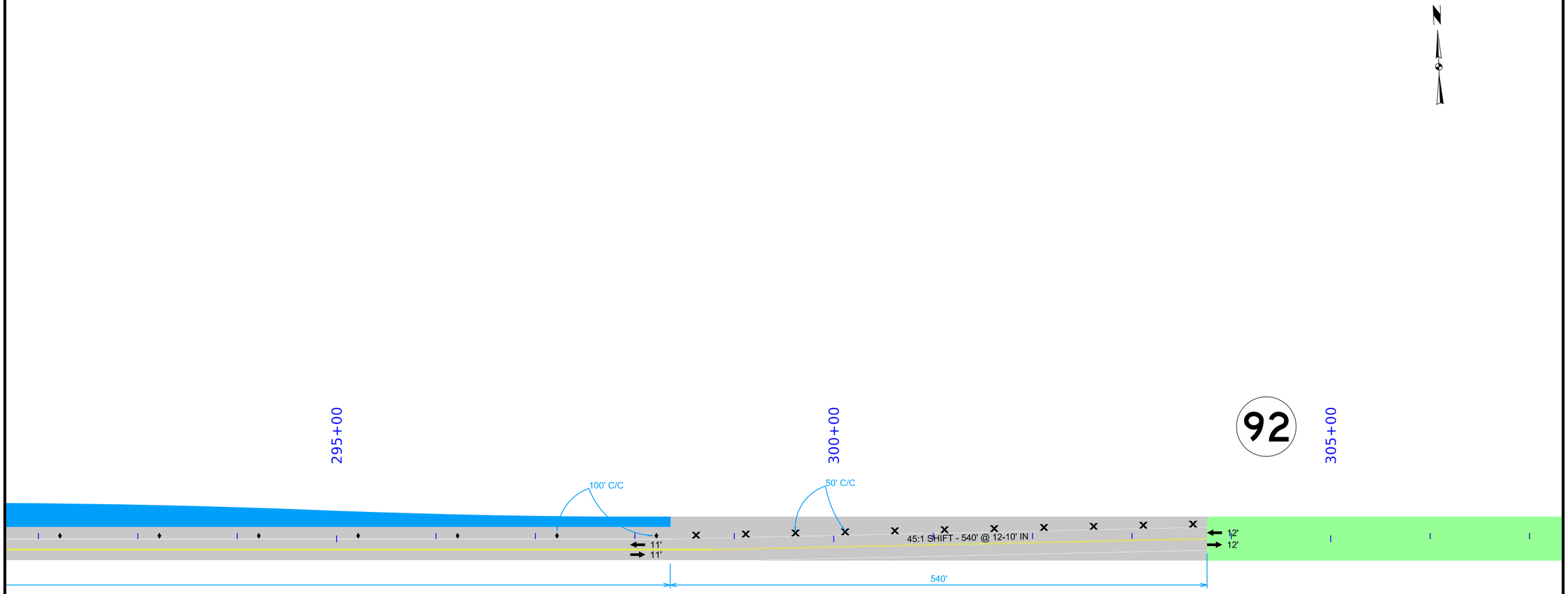
Recommended Timing (sec)

Signal Phase	1	2	3
Initial Green	12.0	12.0	12.0
Extension	2.5	2.5	2.5
Maximum Green	45.0	45.0	45.0
Yellow	5.0	5.0	5.0
All Red	17.0	17.0	15.0

*All Red clearance values based on an operating speed of 30 mph.

STAGE 4a

(IA 92 / T17 Interersection)
Grading and Begin HMA Base
Paving East of T17 Intersection



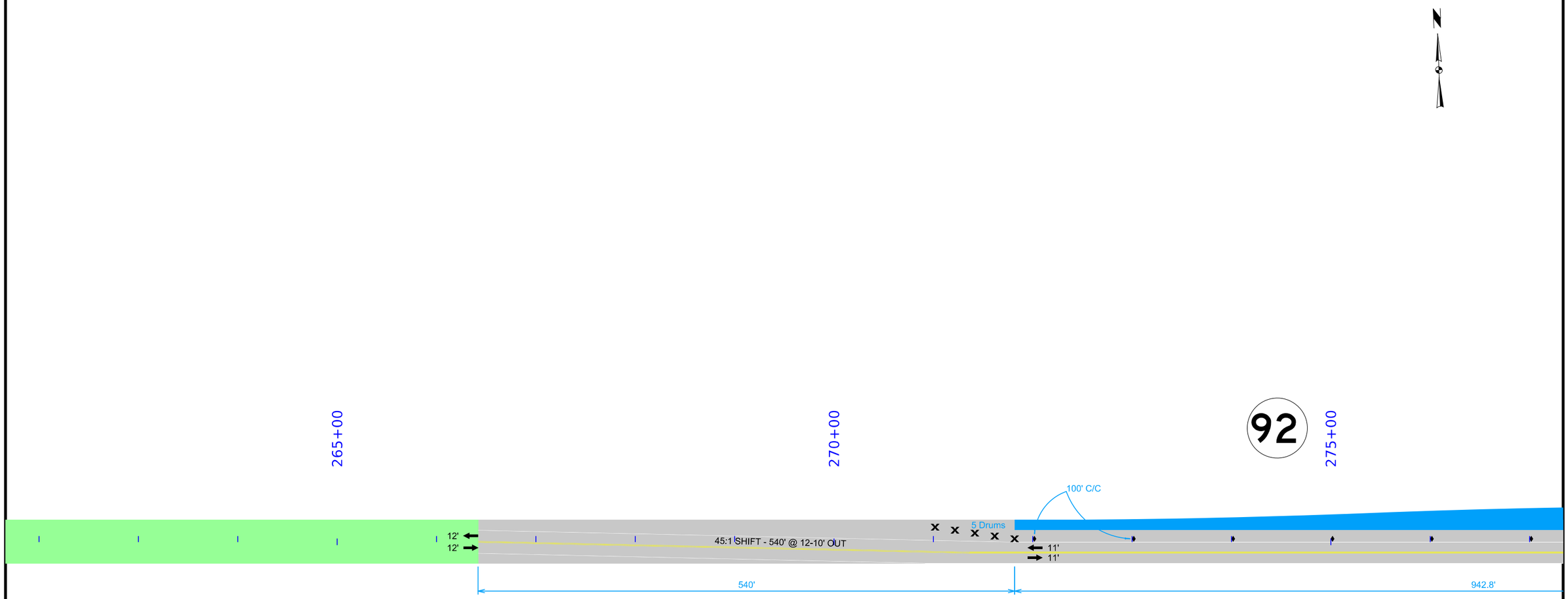
0 50 FEET

STAGE 4a

(IA 92 / T17 Interersection)
Grading and Begin HMA Base
Paving East of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.20

5:11:43 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG4a.dgn

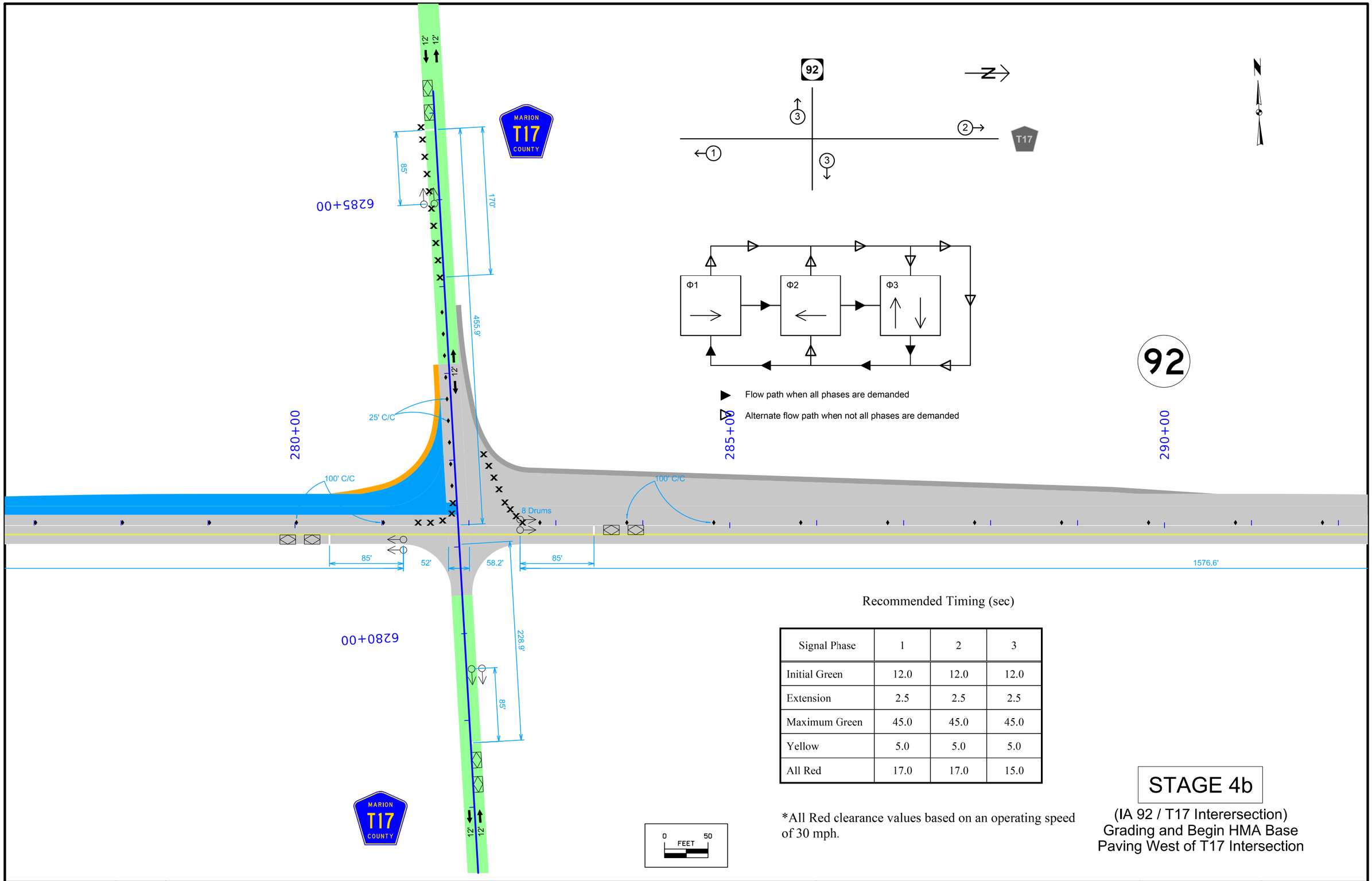


0 FEET 50

STAGE 4b

(IA 92 / T17 Interersection)
Grading and Begin HMA Base
Paving West of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.21



▶ Flow path when all phases are demanded

▷ Alternate flow path when not all phases are demanded

285+00

290+00

92

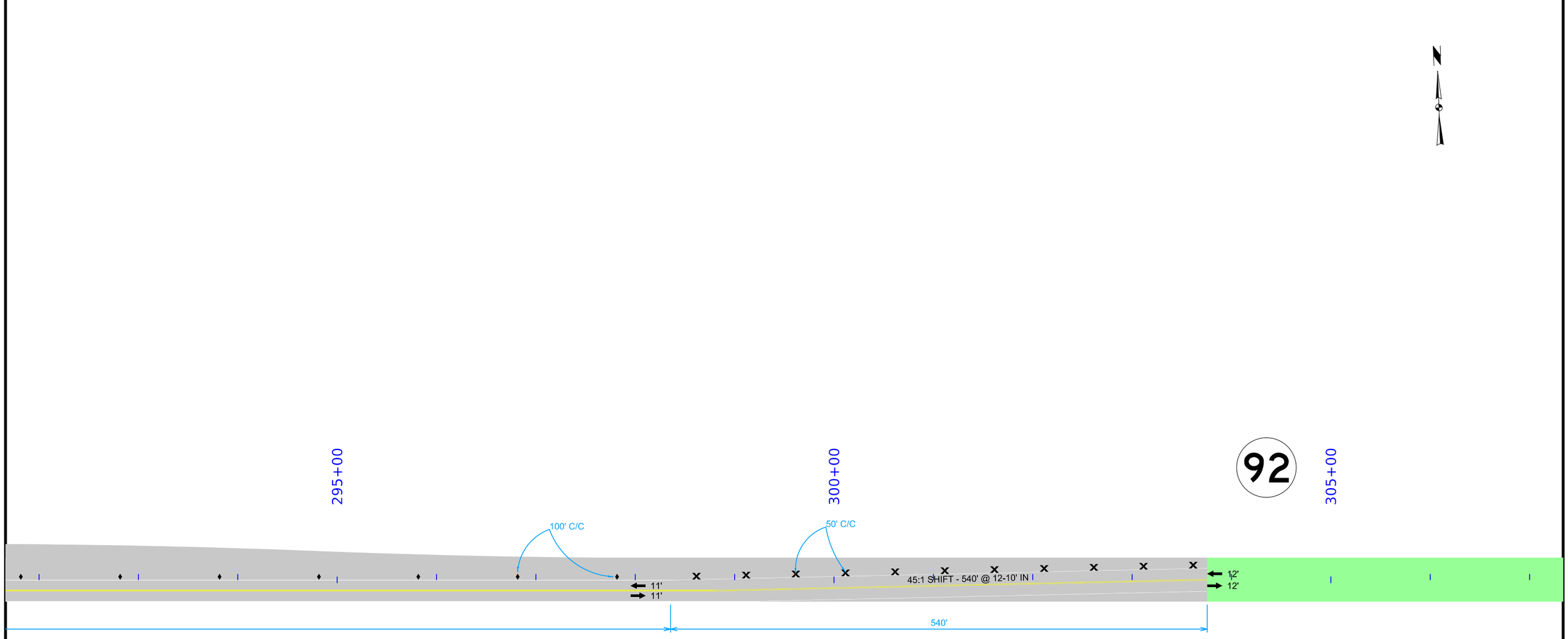
Recommended Timing (sec)

Signal Phase	1	2	3
Initial Green	12.0	12.0	12.0
Extension	2.5	2.5	2.5
Maximum Green	45.0	45.0	45.0
Yellow	5.0	5.0	5.0
All Red	17.0	17.0	15.0

*All Red clearance values based on an operating speed of 30 mph.

STAGE 4b

(IA 92 / T17 Interersection)
Grading and Begin HMA Base
Paving West of T17 Intersection

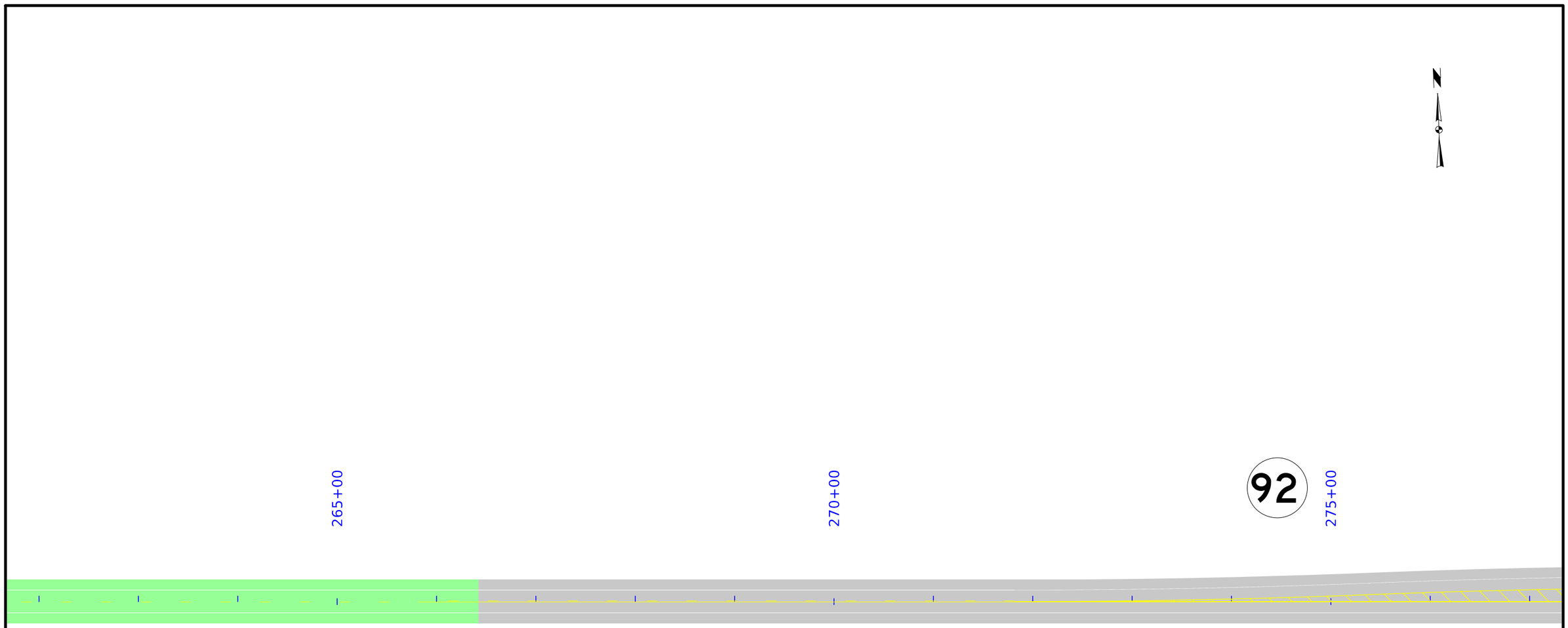


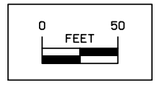
STAGE 4b

(IA 92 / T17 Interersection)
Grading and Begin HMA Base
Paving West of T17 Intersection

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.23

5:12:10 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG4b.dgn



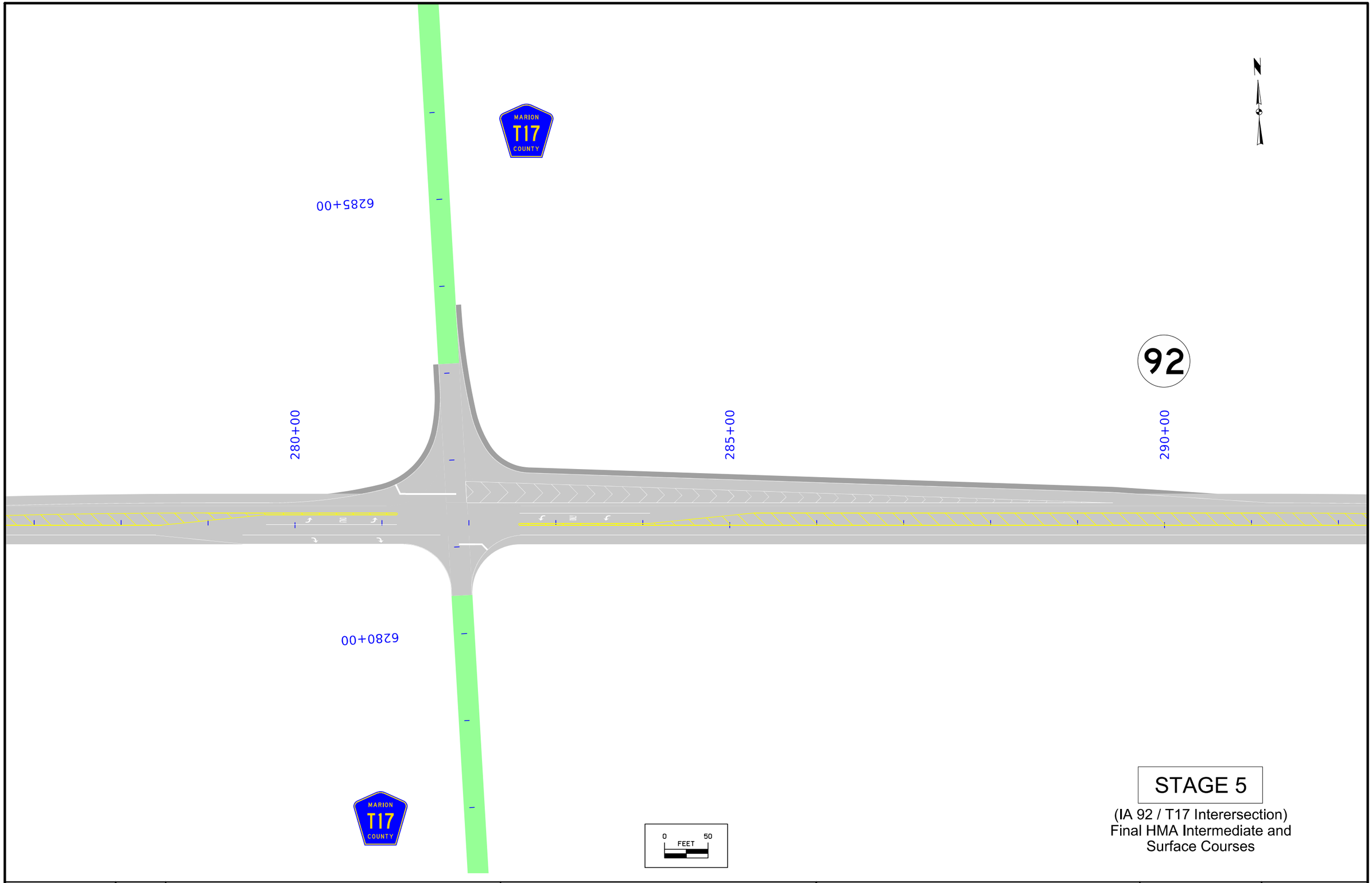


STAGE 5

(IA 92 / T17 Interersection)
Final HMA Intermediate and
Surface Courses

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.24

5:12:27 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG5.dgn

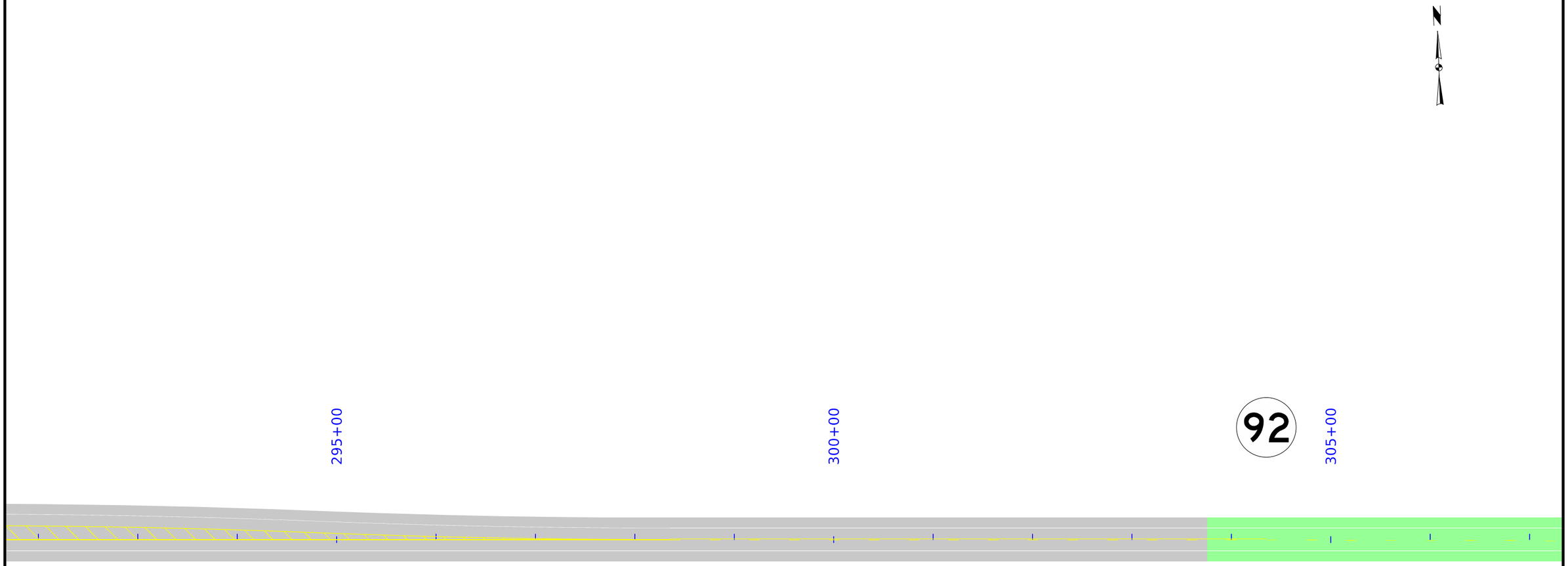


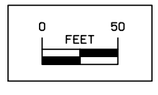
STAGE 5

(IA 92 / T17 Interersection)
Final HMA Intermediate and
Surface Courses

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.25

5:12:28 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG5.dgn



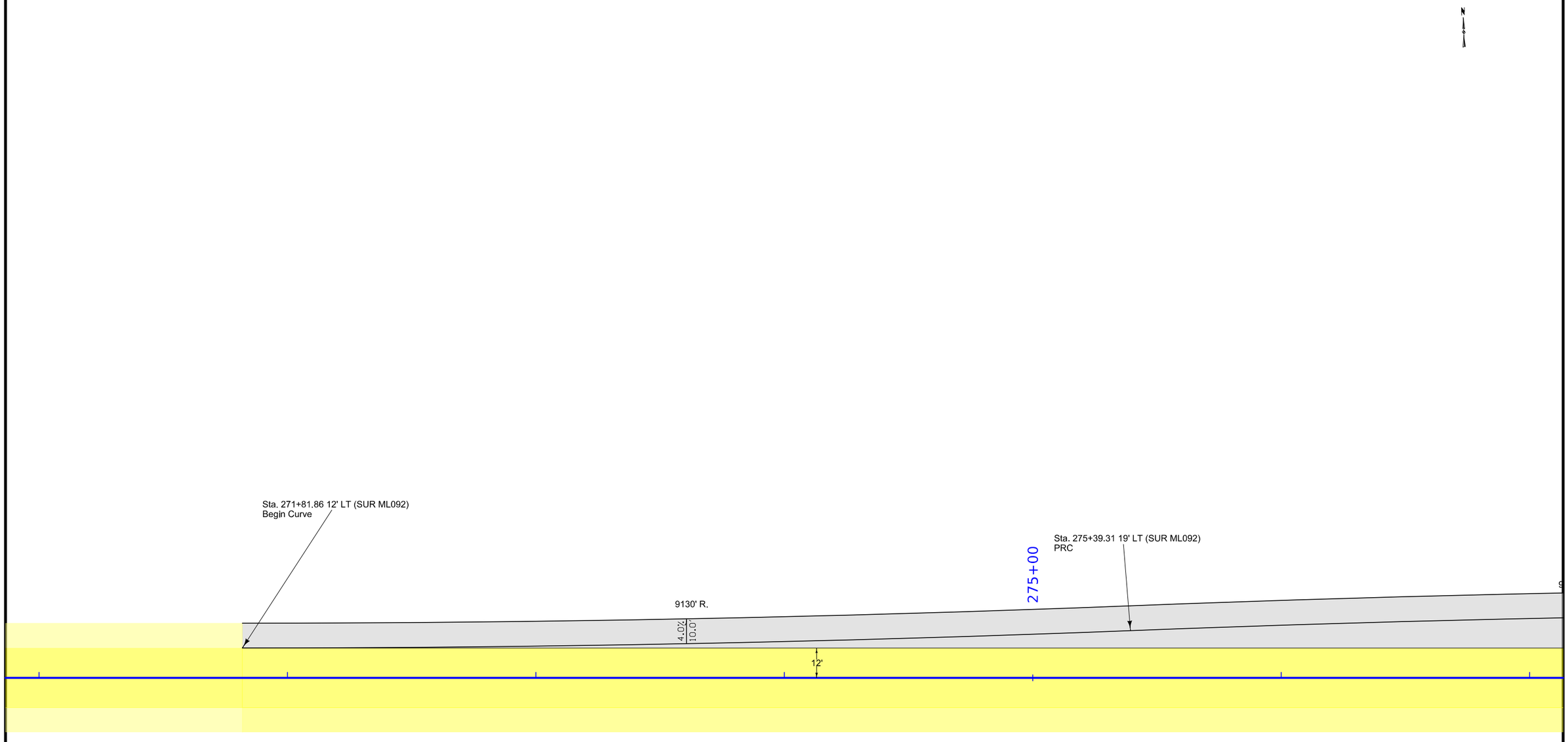


STAGE 5

(IA 92 / T17 Interersection)
Final HMA Intermediate and
Surface Courses

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER J.26

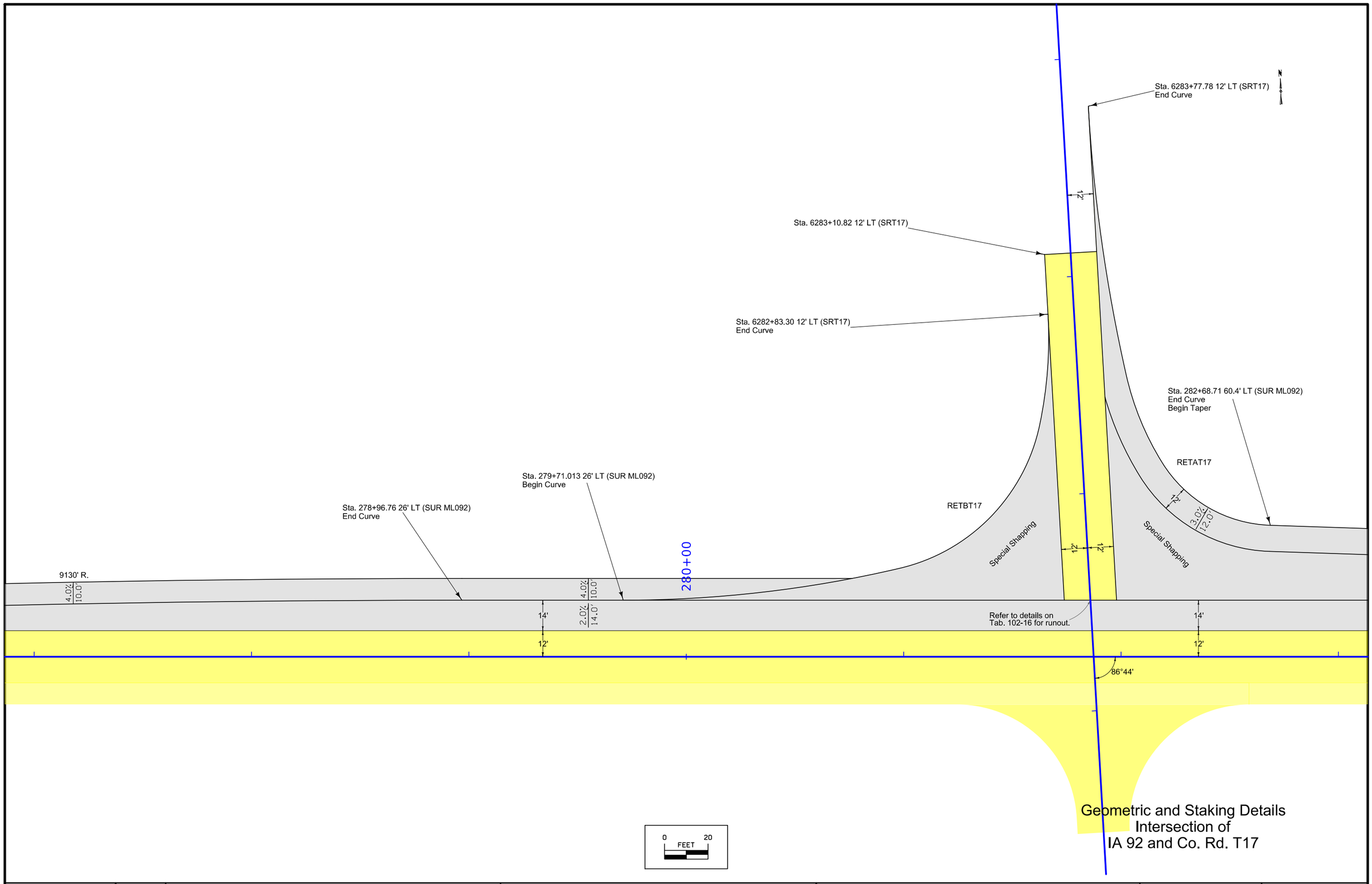
5:12:28 PM 9/12/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Staging\STG_63092040Z09_SHT_STG5.dgn



Geometric and Staking Details
Intersection of
IA 92 and Co. Rd. T17

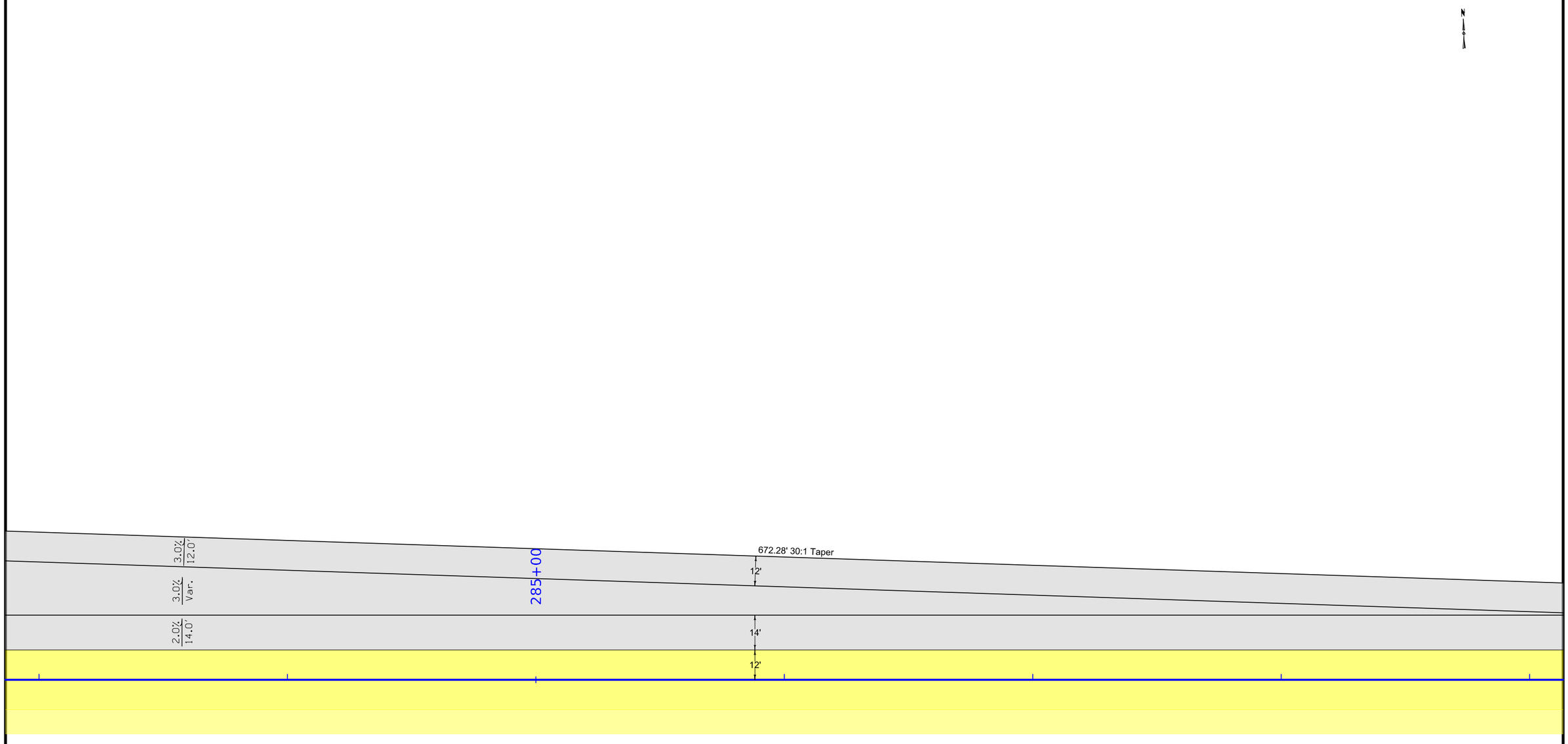
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER L.1

9:25:27 AM 9/14/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_L01.dgn



FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER L.2

9:25:28 AM 9/14/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_L01.dgn



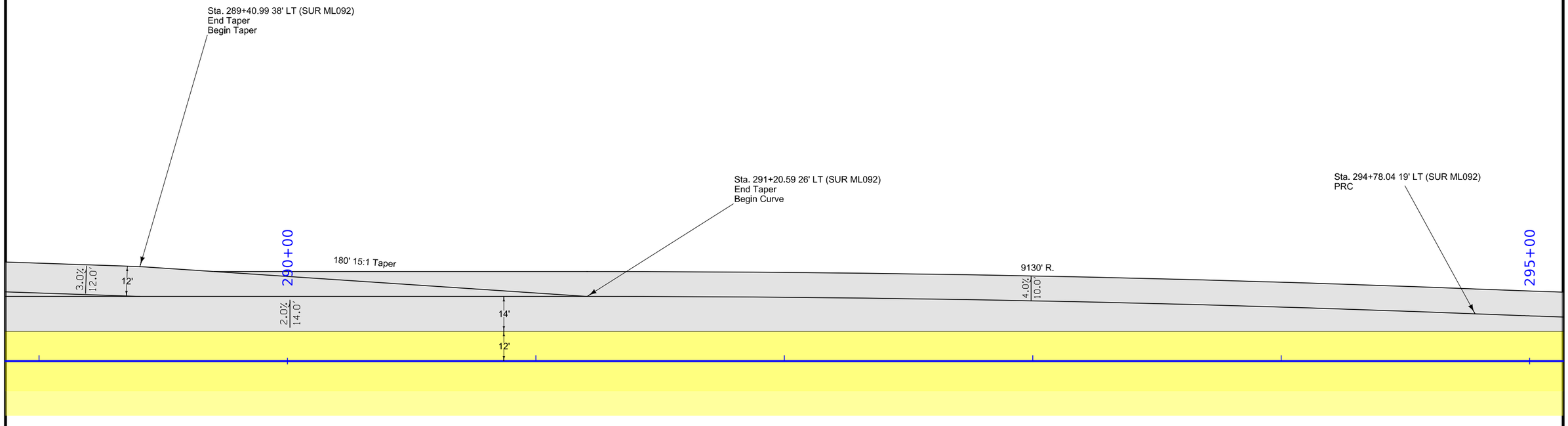
0 FEET 20

Geometric and Staking Details
Intersection of
IA 92 and Co. Rd. T17

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER L.3

9:25:28 AM 9/14/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_L01.dgn

N

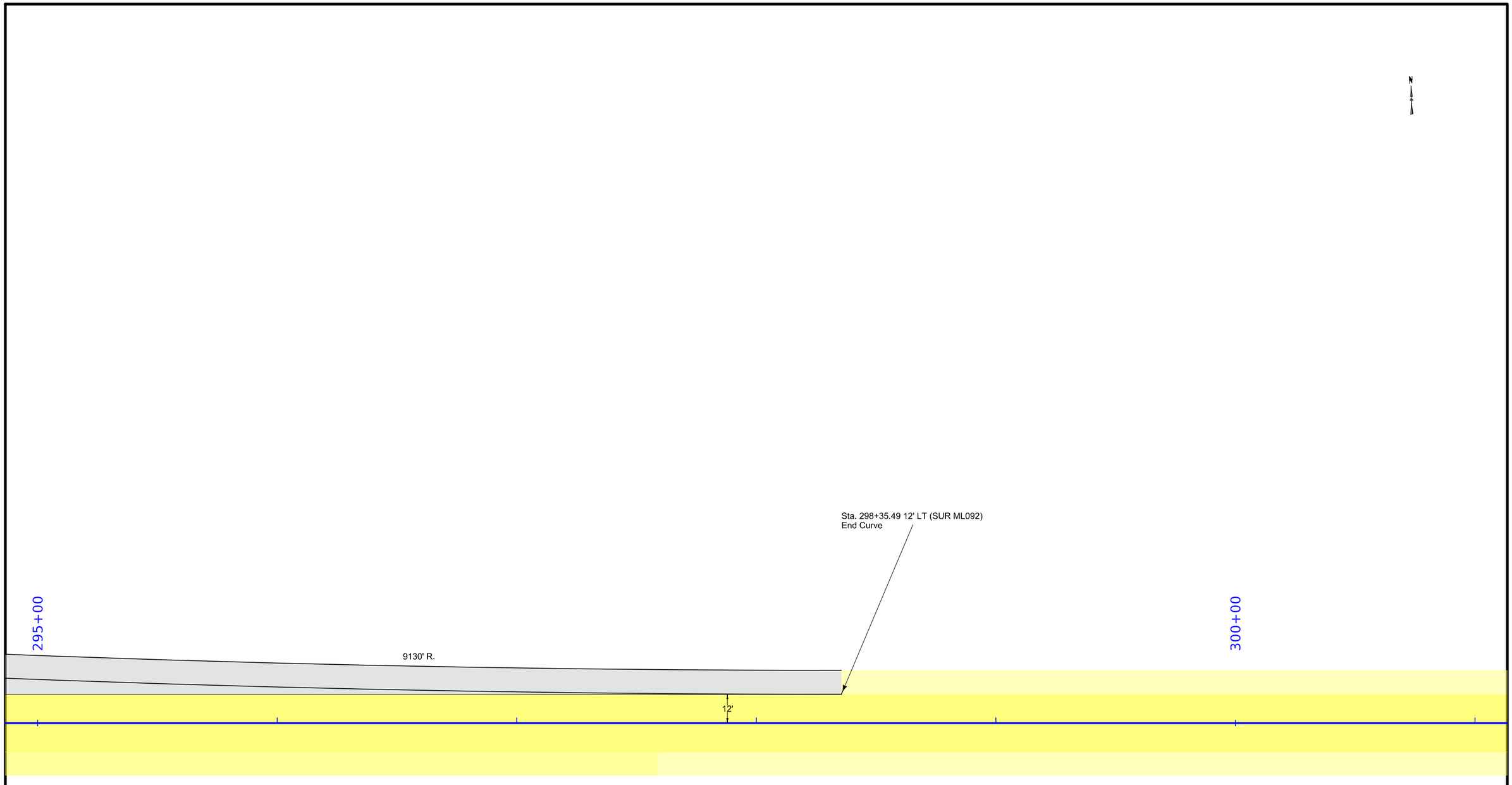


0 20
FEET

Geometric and Staking Details
Intersection of
IA 92 and Co. Rd. T17

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER L.4

9:25:28 AM 9/14/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_L01.dgn



Geometric and Staking Details
Intersection of
IA 92 and Co. Rd. T17

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER L.5	

LANDSCAPE DESIGN

STATE OF IOWA
RACHEL A. HARRIS
LANDSCAPE ARCHITECT
LA000775
PROFESSIONAL LANDSCAPE ARCHITECT

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional landscape architect under the laws of the state of Iowa.

Signature — Date: 07-13-2023

Rachel A. Harris
Printed or Typed Name

My license renewal date is June 30, 2024

Pages or sheets covered by this seal: RC.1 - 7; RR.1 - 17

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RC.1	

12:11:21 PM 8/28/2023 npohlen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_Sign_RC01.dgn

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2507-3250005	ENGINEERING FABRIC	SY	18.5	Refer to Tab. 100-23 for locations. Refer to Standard Road Plan EC-301. Use material specified for embankment erosion control according to Article 4196.01, B, 3. of the Standard Specifications. Material will be measured in sq. yds. of actual area covered. Refer to details. The tabulation includes estimated locations for placement of "Engineering Fabric" to address erosion at culvert outlets. The bid quantity includes an additional 30% for other locations as needed. Verify the additional locations with the Engineer prior to placement.
2	2507-6800061	REVETMENT, CLASS E	TON	8.6	Refer to Tab. 100-23 for locations. Refer to Standard Road Plan EC-301. The tabulation includes estimated locations for placement of "Revetment, Class E" to address erosion to be encountered at culvert outlets. The bid quantity includes an additional 30% for other locations as needed. Verify the additional locations with the Engineer prior to placement. Estimated at 1.4 ton/cu yd. Class E revetment shall meet requirements of Article 4130 of the Standard Specifications.
3	2601-2634100	MULCHING	ACRE	35	Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. Item is included for areas requiring reshaping and seedbed preparation except where slope protection has been applied. Use mulch that is Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
4	2601-2636015	NATIVE GRASS SEEDING	ACRE	11.5	Refer to Standard Road Plan EC-502. Seed all areas outside eight feet adjacent to outside shoulder along mainline, side roads, and infield areas at interchanges with "Native Grass Seeding". Supply all seed for "Native Grass Seeding". Apply all forb seed through the native grass drill wildflower or small seed box. Do not mix and apply Forb seed with the native grass seed. Apply cover crop through the cool season or through cover crop seed box. Do not mix and apply cover crop seed with the native grass seed. Remove seed remaining in the drill at the end of each day. At the completion of all seeding, remove remaining seed from the drill by vacuum or other means. Hand broadcast remaining seed on the project. Seeding and seed bed preparation shall be as described in the Standard Specifications Section 2601.03,C,5. The Engineer will review the limits with the Contractor prior to seeding.
5	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	16	Refer to Standard Road Plan EC-502. Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article 2601.03, C, 3, of the Standard Specifications. Use ground driven equipment.
6	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	27.5	Item is included for disturbed areas. Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications. If permanent seeding cannot be placed due to the restrictive planting dates, stabilizing crop will need to be placed on all disturbed areas as temporary erosion control. Preparation and seeding shall be performed in accordance with Section 2601. Stabilizing crop will not be used when the application dates in Section 2601 allows permanent seeding. If stabilizing crop must be used, place immediately following completions of finished grading. Reseeding of these areas will be required at contractors expense if damage occurs due to contractors negligence during the contract period. It is not necessary to place stabilizing crop in locations that have been covered by Special Ditch Control or Slope Protection.
7	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	1,700	Refer to Standard Road Plan EC-303.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
8	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	3,550	Refer to Tab. 100-19 for locations. Refer to Standard Road Plan EC-204. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
9	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	3,550	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement. Item may be used in addition to, or as a replacement for Perimeter Slope and Sediment Control Device, 12 IN. DIA. Upon Engineer approval.
10	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	7,100	
11	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
12	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
RC Sheets		
	SIGNATURE SHEET	RC.1
	ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES	RC.2 - RC.4
100-19	PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES	RC.5
100-23	ROCK EROSION CONTROL	RC.5
105-4	STANDARD ROAD PLANS	RC.5
110-12	POLLUTION PREVENTION PLAN	RC.6 - RC.7
111-25	INDEX OF TABULATIONS	RC.5
281-1	SECTION 404 PERMIT AND CONDITIONS	RC.5
281-3	STORM WATER BEST MANAGEMENT PRACTICES	RC.5

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-301	10-18-22	Rock Erosion Control (REC)
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit No.3. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

281-3
10-17-17

STORM WATER BEST MANAGEMENT PRACTICES

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided: Perimeter and Slope Sediment Control Devices, Rock Erosion Control and Seeding.

100-23
04-17-18

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Location						Rock Erosion Control (REC)					Material Bid Quantities			
Road Identification	Begin Station	End Station	Side	L	W	Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Eng. Fabric	Class E Revetment	Erosion Stone	Remarks
			Lt./Rt.	FT	FT						SY	TON	TON	
IA 92	284+87.00		Lt	8	8				X		14.2	6.6		
								Rock Erosion Control Tab Totals:			14.2	6.6		
									Engineering Fabric Bid Totals:		18.5			130% of Tab Total
									Class E Revetment Bid Totals:			8.6		130% of Tab Total

100-19
10-19-21

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Location			Perimeter and Slope Length of Installation			Ditch Check Length of Installation		Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	LF	LF	
271+82.00	274+06.00	Lt		224				
273+95.00	276+08.00	Lt		213				
275+99.00	278+00.00	Lt		203				
277+90.00	278+60.00	Lt		70				
278+49.00	6282+81.00	Lt		369				From IA 92 to County Road T17
6282+79.00	6283+13.00	Lt		35				County Road T17
6282+17.00	6283+11.00	Rt		130				County Road T17
282+79.00	283+06.00	Lt		49				
282+96.00	285+66.00	Lt		272				
286+09.00	287+37.00	Lt		127				
287+28.00	288+61.00	Lt		135				
288+53.00	289+85.00	Lt		134				
289+77.00	290+15.00	Lt		38				
290+20.00	292+75.00	Lt		255				
292+65.00	294+50.00	Lt		184				
294+39.00	298+35.00	Lt		402				
	PSSCD Tab Totals:			2840				
	12 inch PSSCD Bid Totals:			3550				125% of Tab Total
	PSSCD Removal Totals:			3550				100% of Bid Total

POLLUTION PREVENTION PLAN

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

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

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

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.

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

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

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

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

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for HMA Resurfacing and HMA Pavement - Grade and New in Marion County.

B. This PPP covers approximately 103.8 acres with an estimated 58.2 acres being disturbed. The portion of the PPP covered by this contract has 58.2 acres disturbed.

C. The PPP is located in an area of Otley - Ladoga soil association.
The estimated weighted average runoff coefficient number for this PPP after completion will be 0.40.

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

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

F. Runoff from this work will flow into the English Creek.

III. CONTROLS

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

B. Preserve vegetation in areas not needed for construction.

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

1. EROSION AND SEDIMENT CONTROLS

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

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.

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

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

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

IV. MAINTENANCE PROCEDURES

POLLUTION PREVENTION PLAN

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

V. INSPECTION REQUIREMENTS

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

B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

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

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

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector’s daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

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

Nathan Pohlen

Signature

Nathan J. Pohlen
Print Name

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINESTYLE	Design Element
– – – – – – – – – – – –	Living Snow Fence Single Row
⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝	Living Snow Fence Double Row
———	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS

CELL	Design Element	Plant Diameter
⊕	Clearing	
⊙	Proposed Shrub	6 FT
⊙	Proposed Understory Tree	12 FT
◔	Proposed Conifer Tree	18 FT
+	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS

Brush Clearing

Spray Area

Clearing & Grubbing

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINESTYLE	Design Element
	Silt Fence
9	Perimeter and Slope Sediment Control Device (9")
12	Perimeter and Slope Sediment Control Device (12")
20	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

Seeding and Fertilizing

R — Seeding and Fertilizing (Rural)

U — Seeding and Fertilizing (Urban)

N — Native Grass Seeding

ST — Salt Tolerant Seeding

WL — Wetland Grass Seeding

WF — Wildflower Seeding

SOD — Sodding

Turf Reinforcement Mat Type 1

Turf Reinforcement Mat Type 2

Turf Reinforcement Mat Type 3

Turf Reinforcement Mat Type 4

Slope Protection, Wood Excelsior Mat

TM — Transition Mat

Rock Features, Permanent

Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

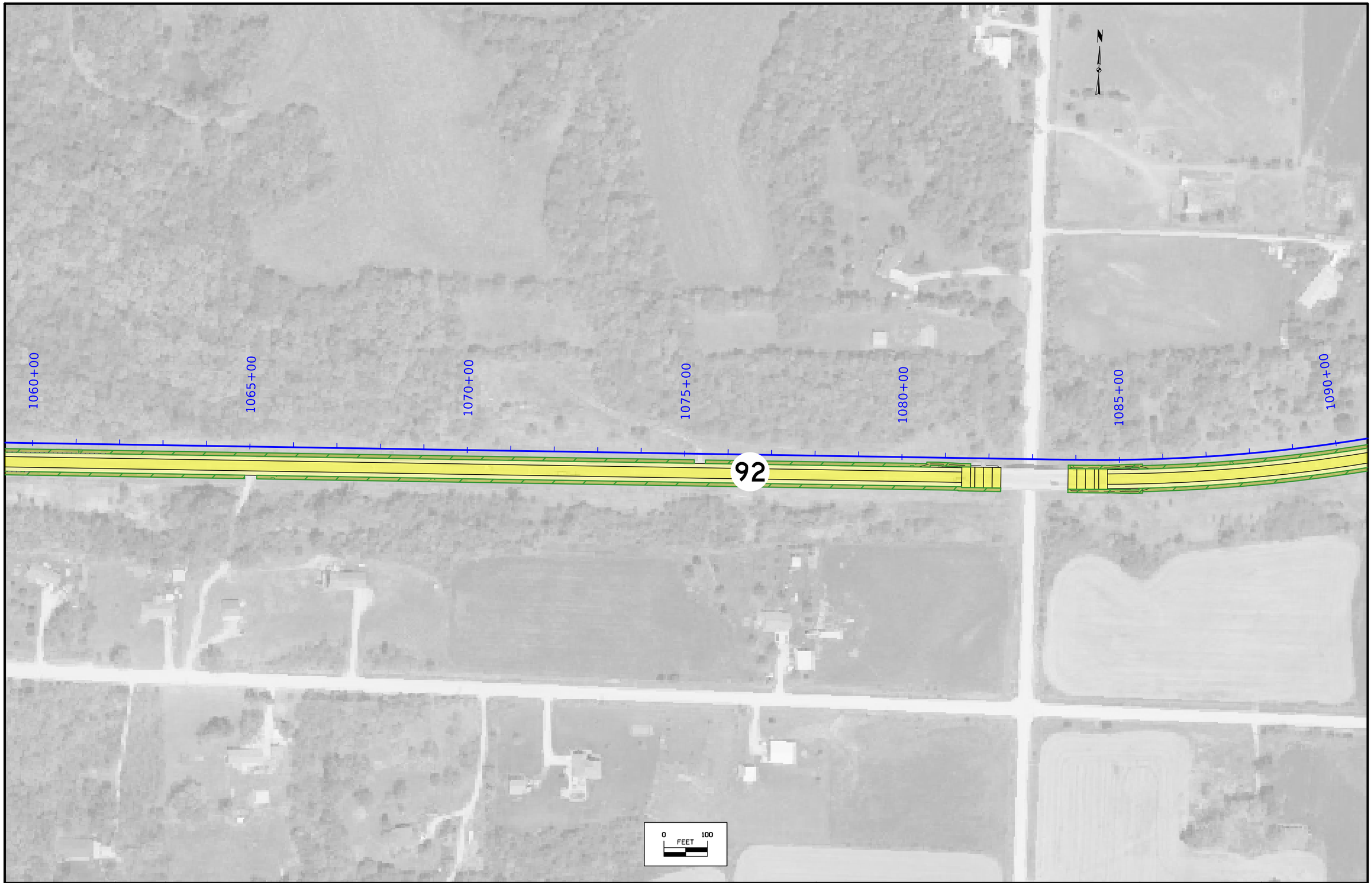
(COVERS SHEET SERIES R)

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.1	

9:00:49 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_LGD.dgn

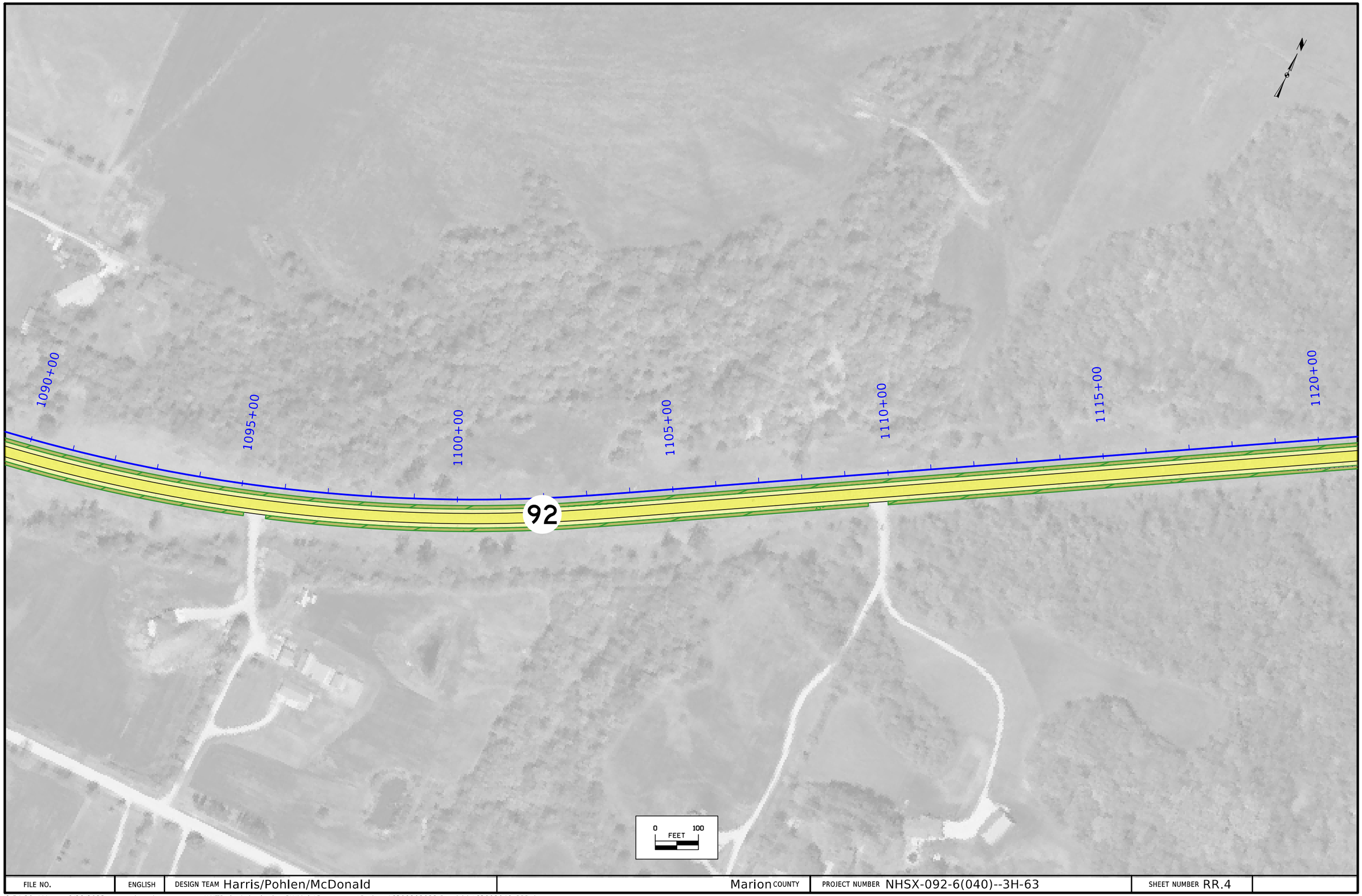
FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.2	

8:54:07 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn



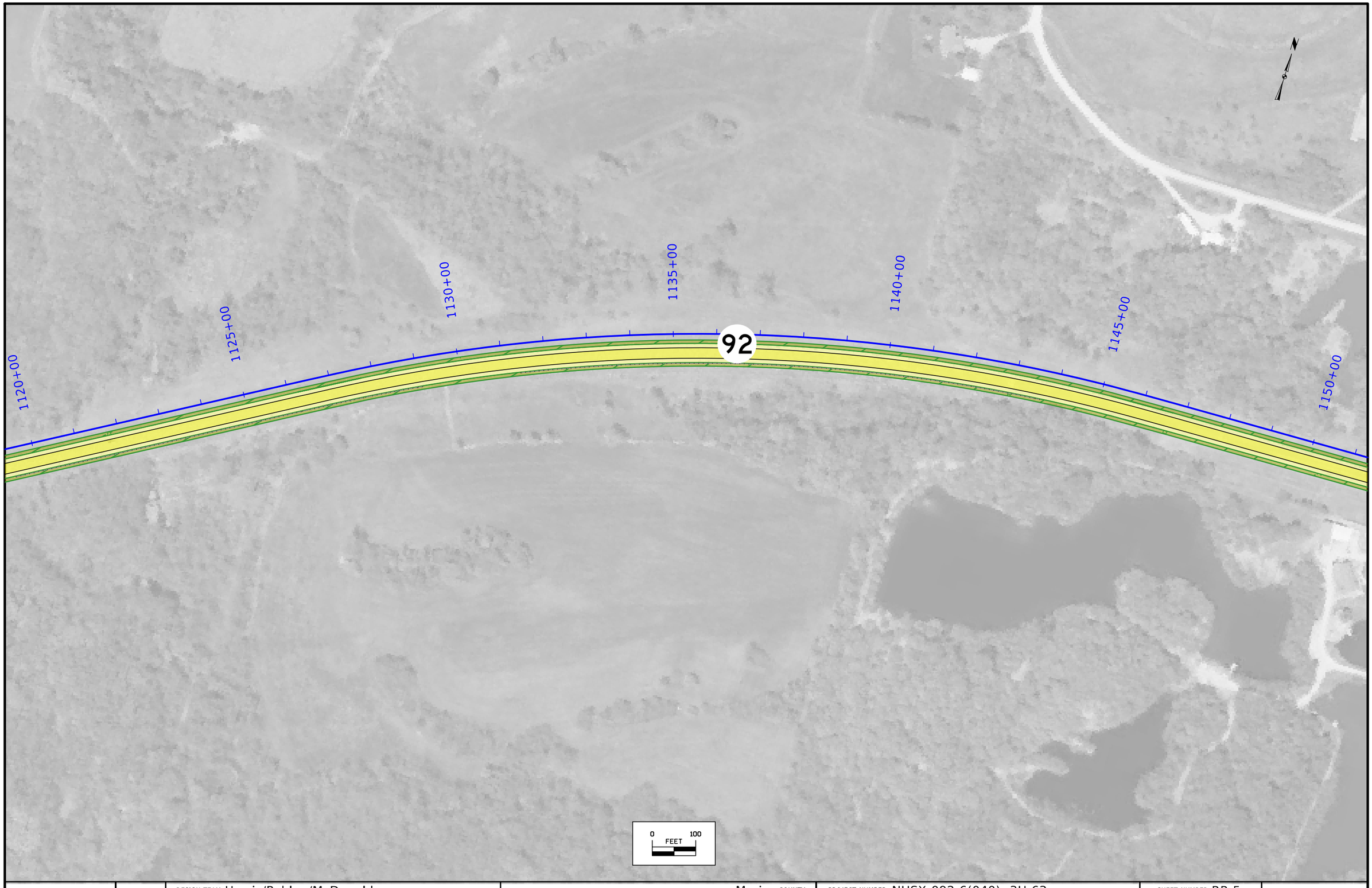
FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.3	

8:54:15 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn



FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.4	

8:54:20 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn



FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.5	

8:54:24 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.6	

8:54:28 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.7	

8:54:33 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.8	

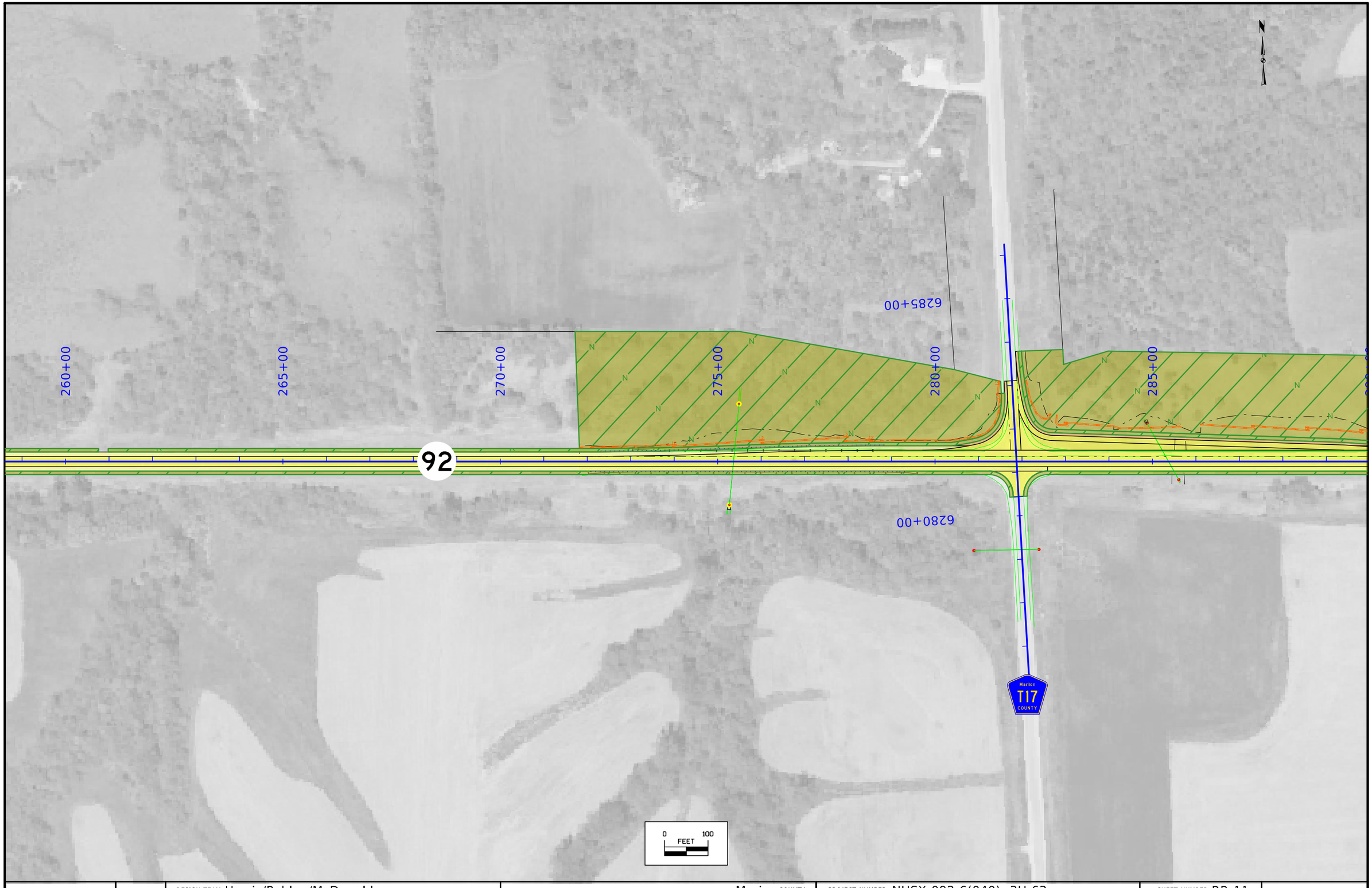
8:54:38 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.9	

8:54:42 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.10	

8:54:46 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn



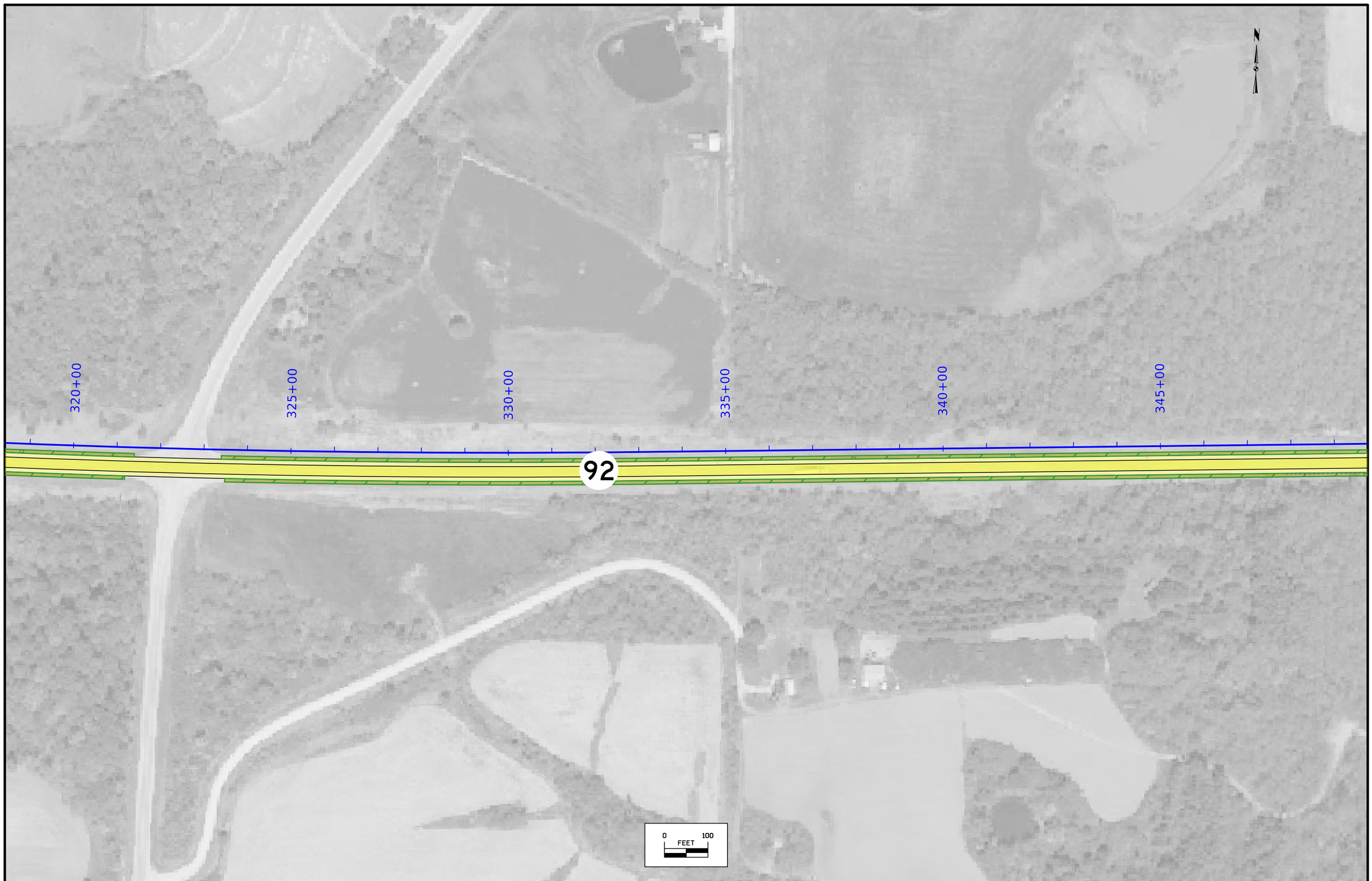
FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.11	

8:54:52 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

290+00
295+00
300+00
305+00
310+00
315+00
92
0 100
FEET

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.12	

8:54:56 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn



FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.13	

8:55:00 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.14	

8:55:05 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.15	

8:55:09 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

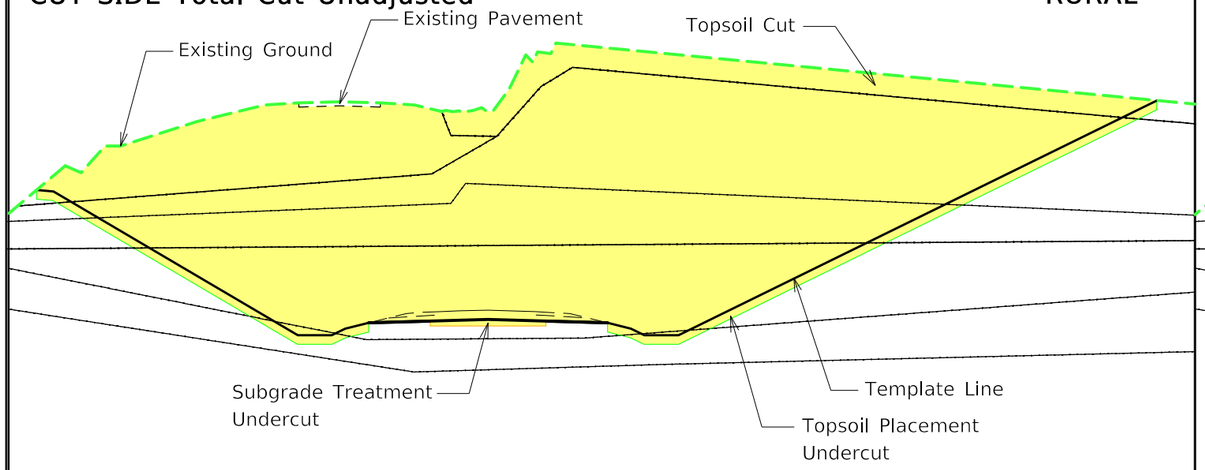
FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.16	

8:55:13 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER RR.17	

8:55:18 AM 8/28/2023 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Roadside\63092040_PPP.dgn

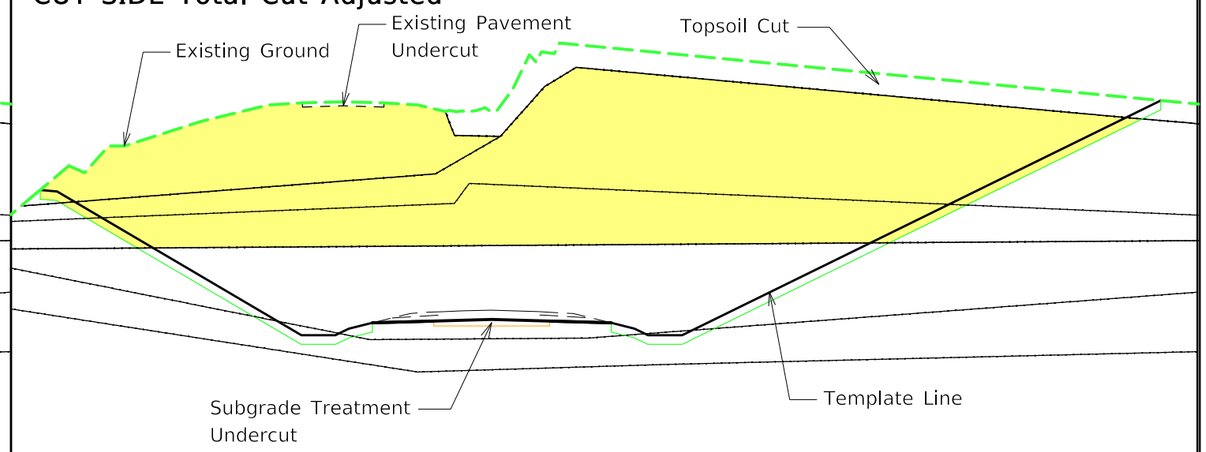
CUT SIDE Total Cut Unadjusted — RURAL



Notes:

1. "Total Cut Unadjusted" Column includes all cut values in the Station Range based on Typical, Topsoil and Subgrade Treatment needs.
2. "Total Cut Unadjusted" does not include and Existing Pavement values inside or outside the cut template as shown on cross sections.
3. Tabulated Plowing and Shaping operations are included in the "Total Cut Unadjusted" values.

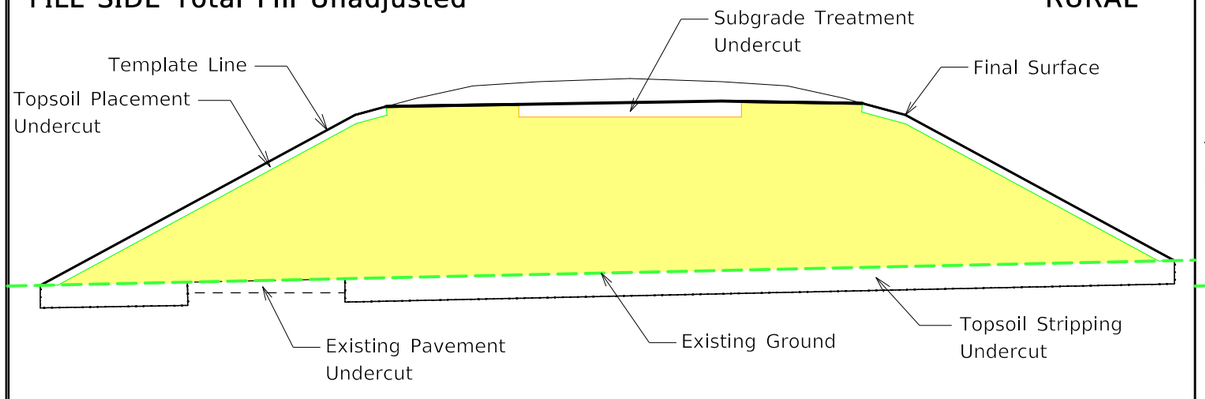
CUT SIDE Total Cut Adjusted



Notes:

1. "Total Cut Adjusted" Column includes all cut values usable as Class 10 material.
2. "Total Cut Adjusted" does not include and Existing Pavement , Existing Topsoil, or material to be wasted.

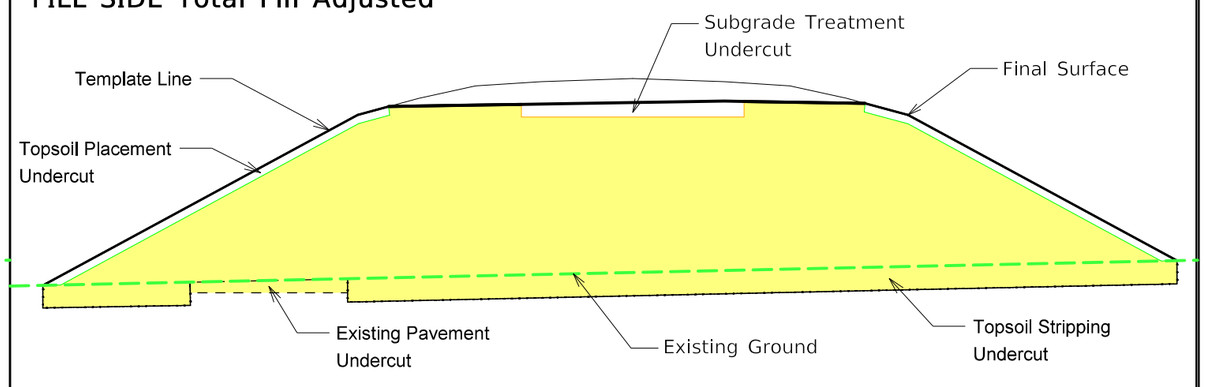
FILL SIDE Total Fill Unadjusted — RURAL



Notes:

1. "Total Fill Unadjusted" Column includes all Class 10, 12, and 13 fill. This excludes the topsoil, subgrade treatment, subbase, new pavement, and shoulder fill needs in that station range.
2. "Total Fill Unadjusted" Column does not include adjustments for additional fill from cuts such as existing pavement removed, plowing and shaping operations, entrances, dikes, or topsoil stripping.

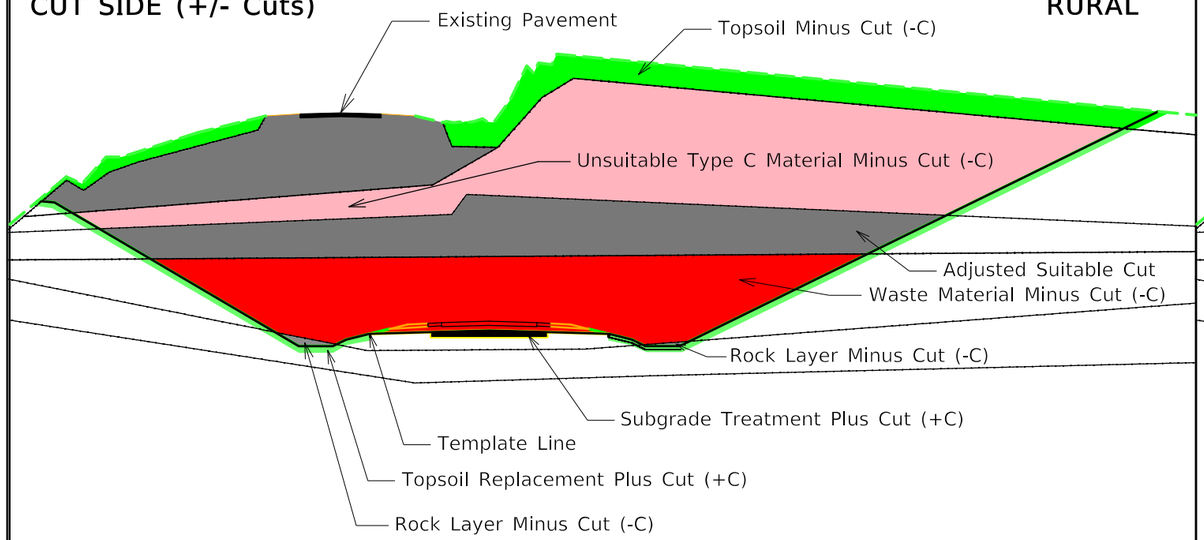
FILL SIDE Total Fill Adjusted



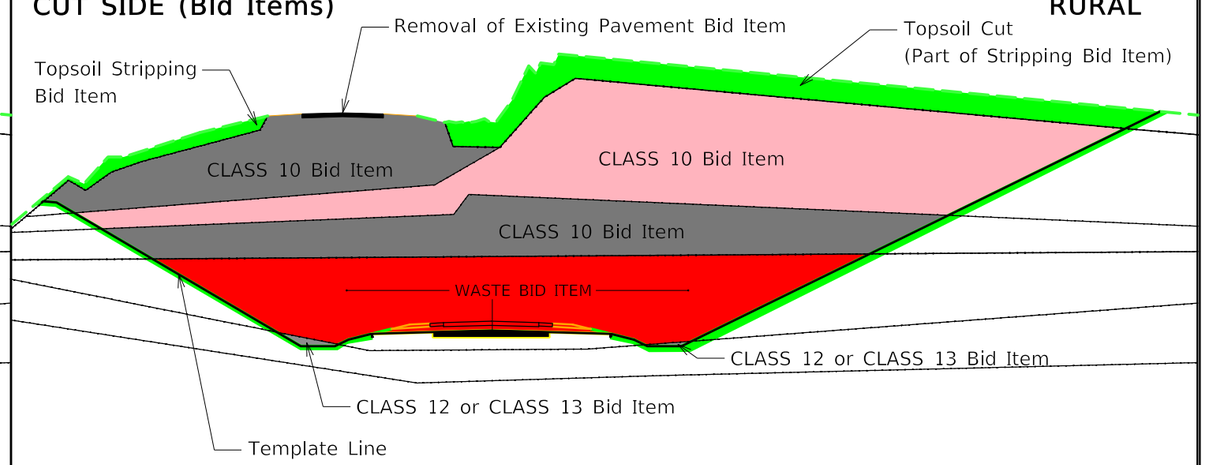
Notes:

1. "Total Fill Adjusted" Column includes all Class 10, 12, and 13 fill and adjustments for additional fill from cuts such as existing pavement, plowing and shaping operations, entrances, dikes, and topsoil stripping.
2. The available area to place unsuitable materials in the T Sheet tabulation does not include the undercut values from the topsoil stripping, existing pavement, or plowing and shaping

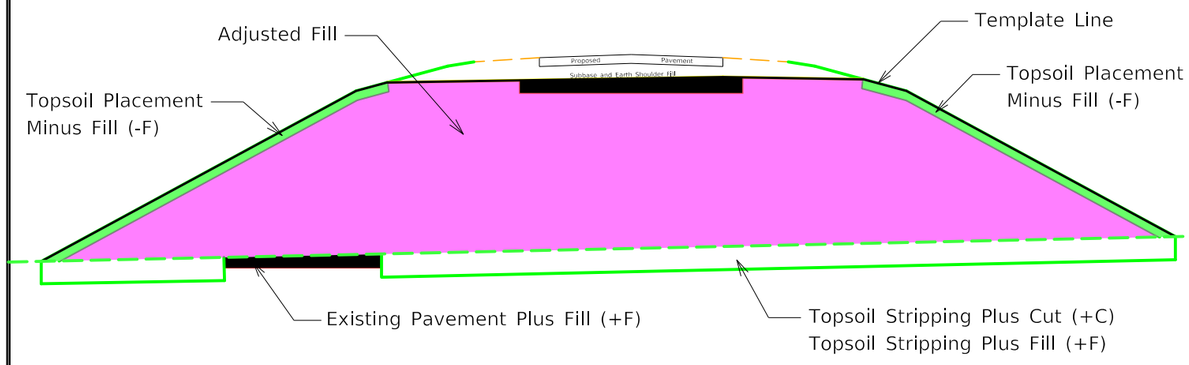
CUT SIDE (+/- Cuts) — RURAL



CUT SIDE (Bid Items) — RURAL



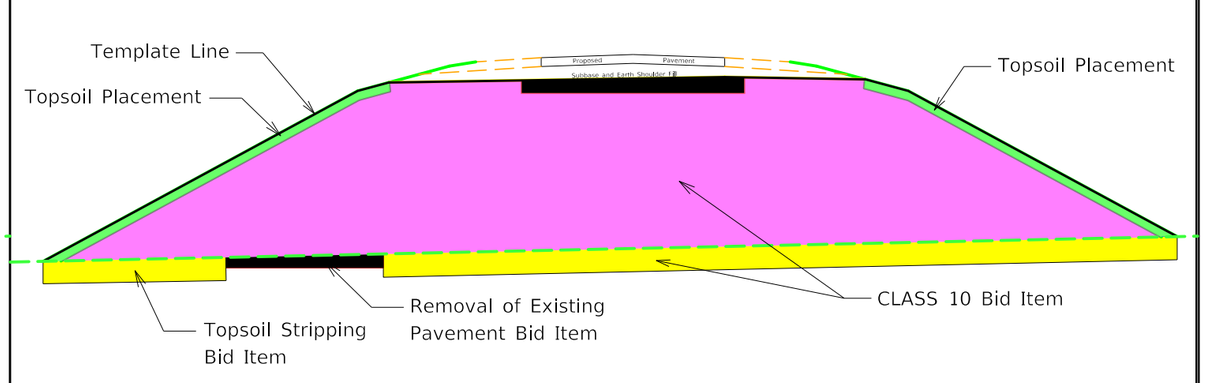
FILL SIDE (+/- Fills) — RURAL



Notes:

1. "Add Quantity +C" columns are additional cut encountered that is not Typical, Topsoil, or Subgrade Treatment Based. (Entrance, Dike, Etc.)
2. "-C" columns are either soil types or Class 10, 12, or 13 designated material that is encountered in the cut station range that is paid for by other bid items.
3. The "(SoilType) Cut" columns are soil types encountered in the cut that are paid by either Class 10, 12, or 13.
4. The "Adjusted Clas (10,12 or 13)" columns are the sum of all various soil types encountered in that station range, that are paid by Class 10, 12, or 13 bid items.
5. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

FILL SIDE (Bid Items) — RURAL



Notes:

1. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER T.2

9:30:58 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_LGD.dgn

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

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
SUR_ML092																						
271+81.86																						
272+00.00	24	15	8	15	1	1	1	2	13	0	0	8	0	0	9							
272+25.00	33	21	12	21	1	1	2	2	18	0	0	12	0	0	12							
272+50.00	30	20	10	20	1	1	2	3	17	0	0	10	0	0	10							
272+75.00	29	19	9	19	2	2	4	6	14	0	0	9	0	0	9							
273+00.00	26	20	6	20	2	2	5	6	14	0	0	6	0	0	6							
273+25.00	24	22	3	22	2	2	4	6	16	0	0	3	0	0	3							
273+50.00	26	23	4	23	3	3	6	8	15	0	0	4	0	0	4							
273+75.00	30	23	7	23	6	5	11	15	8	0	0	7	0	0	7							
274+00.00	33	22	11	22	9	9	18	24	-2	0	0	11	0	0	11							
274+25.00	37	22	15	22	15	13	28	37	-16	0	0	15	0	0	16							
274+50.00	41	21	20	21	24	18	42	55	-34	0	0	20	0	0	20							
274+75.00	47	21	26	21	36	24	60	78	-58	0	0	26	0	0	26							
275+00.00	54	21	33	21	50	30	80	104	-83	0	0	33	0	0	33							
275+25.00	57	21	37	21	60	34	94	122	-102	0	0	37	0	0	37							
275+50.00	60	20	40	20	71	37	108	140	-120	0	0	40	0	0	40							
275+75.00	64	20	43	20	83	41	124	161	-141	0	0	43	0	0	43							
276+00.00	64	20	43	20	88	41	129	168	-148	0	0	43	0	0	44							
276+25.00	63	20	43	20	89	41	130	169	-149	0	0	43	0	0	43							
276+50.00	62	21	42	21	87	40	127	165	-144	0	0	42	0	0	42							
276+75.00	59	21	38	21	78	36	114	149	-128	0	0	38	0	0	38							
277+00.00	54	21	33	21	65	32	97	126	-105	0	0	33	0	0	34							
277+25.00	51	21	30	21	56	29	85	110	-89	0	0	30	0	0	30							
277+50.00	49	21	28	21	51	27	79	102	-81	0	0	28	0	0	29							
277+75.00	50	21	29	21	49	27	76	99	-78	0	0	29	0	0	29							
278+00.00	50	21	29	21	48	27	75	98	-76	0	0	29	0	0	29							
278+25.00	48	21	26	21	43	25	67	88	-67	0	0	26	0	0	27							
278+50.00	44	21	23	21	31	21	52	68	-47	0	0	23	0	0	24							
278+75.00	41	20	21	20	22	17	39	50	-30	0	0	21	0	0	21							
279+00.00	40	20	21	20	18	15	32	42	-23	0	0	21	0	0	21							
279+25.00	40	19	21	19	17	14	31	41	-22	0	0	21	0	0	21							
279+50.00	40	19	21	19	17	14	31	41	-22	0	0	21	0	0	21							
279+75.00	40	19	21	19	16	14	29	38	-19	0	0	21	0	0	21							
280+00.00	35	20	15	20	15	7	21	28	-8	0	0	15	0	0	15							
280+25.00	35	20	15	20	16	7	24	31	-11	0	0	15	0	0	15							
280+50.00	44	21	23	21	21	16	37	48	-27	0	0	23	0	0	23							
280+75.00	49	22	26	22	31	20	51	66	-44	0	0	26	0	0	26							
281+00.00	54	25	29	25	53	24	76	99	-74	0	0	29	0	0	29							
281+25.00	80	30	50	30	94	44	138	180	-150	0	0	50	0	0	50							
281+50.00	129	48	81	48	106	67	173	225	-178	0	0	81	0	0	81							
281+75.00	89	43	46	43	46	35	81	105	-62	0	0	46	0	0	46							
282+00.00	190	148	41	148	11	11	22	29	119	0	0	41	0	0	41							
282+25.00	260	159	101	159	143	71	214	278	-119	0	0	101	0	0	101							
282+50.00	137	36	101	36	281	100	382	496	-460	0	0	101	0	0	101							
282+75.00	90	24	66	24	212	63	275	358	-334	0	0	66	0	0	66							
283+00.00	151	91	60	91	91	38	128	167	-76	0	0	60	0	0	61							
283+25.00	229	159	70	159	54	28	82	107	52	0	0	70	0	0	71							
283+50.00	218	149	69	149	49	27	76	99	50	0	0	69	0	0	69							
283+75.00	196	131	66	131	41	25	66	86	45	0	0	66	0	0	66							
284+00.00	151	90	61	90	42	26	67	88	3	0	0	61	0	0	61							
284+25.00	93	39	54	39	76	37	112	146	-107	0	0	54	0	0	54							
284+50.00	76	17	59	17	144	53	197	256	-239	0	0	59	0	0	59							
284+75.00	90	17	74	17	202	68	270	351	-334	0	0	74	0	0	74							
285+00.00	93	17	77	17	191	70	260	339	-322	0	0	77	0	0	77							
285+25.00	88	17	70	17	156	63	218	284	-267	0	0	70	0	0	70							
285+50.00	80	18	62	18	140	55	195	254	-236	0	0	62	0	0	63							
285+75.00	71	18	53	18	112	46	158	205	-188	0	0	53	0	0	53							
286+00.00	67	18	49	18	81	37	118	153	-136	0	0	49	0	0	49							
286+25.00	102	46	56	46	63	31	94	123	-77	0	0	56	0	0	57							
286+50.00	167	101	66	101	55	28	84	109	-8	0	0	66	0	0	67							
286+75.00	220	148	72	148	49	27	76	99	49	0	0	72	0	0	72							
287+00.00	262	186	76	186	44	26	70	91	95	0	0	76	0	0	76							
287+25.00	283	205	78	205	40	26	66	86	120	0	0	78	0	0	78							
287+50.00	279	202	77	202	39	25	64	84	118	0	0	77	0	0	77							
287+75.00	262	186	75	186	38	25	64	83	104	0	0	75	0	0	75							
288+00.00	241	168	73	168	37	25	63	82	86	0	0	73	0	0	74							
288+25.00	231	158	73	158	36	25	61	79	79	0	0	73	0	0	73							
288+50.00	231	158	73	158	35	24	59	77	81	0	0	73	0	0	74							
Subtotals:	6,487	3,592	2,895	3,592	3,983	1,946	5,929	7,712	-4,121	0	0	2,895	0	0	2,899							

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

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
288+50.00	231	157	74	157	35	24	59	77	80	0	0	74	0	0	74							
288+75.00	227	153	74	153	37	24	61	79	73	0	0	74	0	0	75							
289+00.00	214	140	73	140	38	24	62	81	59	0	0	73	0	0	73							
289+25.00	179	110	69	110	38	24	62	81	30	0	0	69	0	0	69							
289+50.00	134	73	61	73	36	24	60	78	-6	0	0	61	0	0	61							
289+75.00	93	41	52	41	35	24	59	77	-36	0	0	52	0	0	52							
290+00.00	63	22	41	22	34	24	58	76	-54	0	0	41	0	0	41							
290+25.00	49	18	31	18	26	21	47	61	-43	0	0	31	0	0	31							
290+50.00	48	18	30	18	21	18	39	51	-33	0	0	30	0	0	30							
290+75.00	50	18	33	18	27	22	49	63	-46	0	0	33	0	0	33							
291+00.00	52	18	34	18	34	25	59	77	-59	0	0	34	0	0	34							
291+25.00	54	18	36	18	38	27	65	84	-67	0	0	36	0	0	36							
291+50.00	55	18	37	18	39	28	67	87	-69	0	0	37	0	0	37							
291+75.00	54	18	36	18	37	27	64	83	-65	0	0	36	0	0	37							
292+00.00	55	18	37	18	37	26	63	82	-65	0	0	37	0	0	37							
292+25.00	55	18	37	18	40	28	69	89	-72	0	0	37	0	0	37							
292+50.00	54	17	37	17	42	29	72	93	-76	0	0	37	0	0	37							
292+75.00	52	17	35	17	39	27	66	87	-70	0	0	35	0	0	36							
293+00.00	49	17	32	17	32	24	56	73	-57	0	0	32	0	0	33							
293+25.00	46	17	29	17	26	21	46	60	-43	0	0	29	0	0	29							
293+50.00	45	18	27	18	22	18	40	52	-34	0	0	27	0	0	28							
293+75.00	45	18	27	18	20	17	38	49	-31	0	0	27	0	0	27							
294+00.00	43	17	26	17	19	17	36	47	-29	0	0	26	0	0	26							
294+25.00	43	17	25	17	19	17	36	47	-29	0	0	25	0	0	26							
294+50.00	41	18	23	18	15	14	29	38	-20	0	0	23	0	0	23							
294+75.00	38	18	20	18	10	10	20	26	-7	0	0	20	0	0	20							
295+00.00	36	19	18	19	8	8	16	21	-2	0	0	18	0	0	18							
295+25.00	35	19	17	19	7	7	14	18	1	0	0	17	0	0	17							
295+50.00	34	19	15	19	6	6	12	16	3	0	0	15	0	0	16							
295+75.00	33	19	14	19	5	5	9	12	7	0	0	14	0	0	14							
296+00.00	32	19	13	19	4	4	7	9	10	0	0	13	0	0	13							
296+25.00	31	19	13	19	4	4	7	10	10	0	0	13	0	0	13							
296+50.00	31	19	12	19	4	4	8	10	9	0	0	12	0	0	12							
296+75.00	30	19	12	19	3	3	7	9	10	0	0	12	0	0	12							
297+00.00	30	19	11	19	2	2	5	6	13	0	0	11	0	0	11							
297+25.00	30	20	11	20	2	2	3	4	16	0	0	11	0	0	11							
297+50.00	31	20	11	20	1	1	2	3	17	0	0	11	0	0	11							
297+75.00	30	20	10	20	1	1	2	3	17	0	0	10	0	0	11							
298+00.00	30	19	10	19	1	1	2	2	17	0	0	10	0	0	10							
298+25.00	12	8	4	8	0	0	1	1	7	0	0	4	0	0	4							
298+35.49																						
SUR_ML092																						
Totals:	8,983	4,878	4,105	4,878	4,829	2,578	7,406	9,633	-4,757	0	0	4,105	0	0	4,111							

FILE NO.		DESIGN TEAM HOLST\BAHR\McNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER T.4	

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

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
Summary:																						
SUR_ML092	8,983	4,878	4,105	4,878	4,829	2,578	7,406	9,633	-4,757	0	0	4,105	0	0	4,111							
Project Totals:	8,983	4,878	4,105	4,878	4,829	2,578	7,406	9,633	-4,757	0	0	4,105	0	0	4,111							

EXCAVATION, CLASS 10, ROADWAY AND BORROW
TOTAL: 4,878 CY

EMBANKMENT-IN-PLACE
TOTAL: 4757/1.3 3,660 CY

TOPSOIL, STRIP, SALVAGE AND SPREAD
TOTAL: 4,105 CY

FILE NO.		DESIGN TEAM HOLST\BAHR\McNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER T.5	

9/7/2023 12:03:31 PM wmcnama c:\pw_work\pwmain\wmcnama\d1374356\EW_6309204OZ09_T01.xlsm

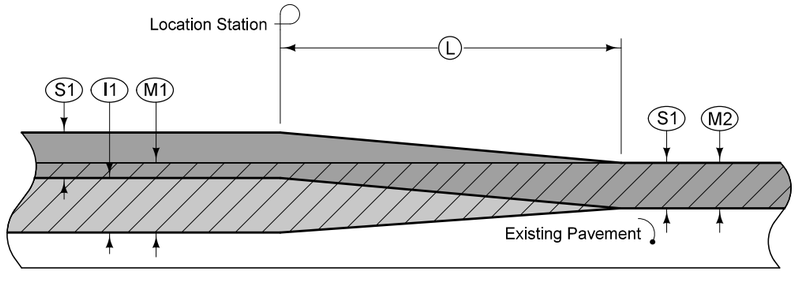
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER U.1	

12:46:19 PM 8/9/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040_U01.dgn

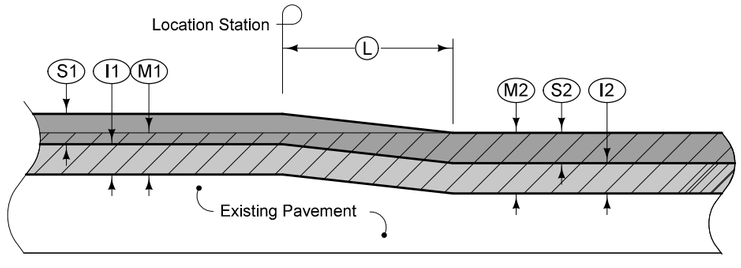
(S#) HMA Surface Course
(I#) HMA Intermediate Course
(L) Runout Length
(M#) Milling

Posted Speed Limit (mph)	Runout Ratio (ft per inch)
Over 40	50
20 to 40	25
Under 20	10*

* Based on turning maneuvers at side roads and intersections.



TYPE 'R5-M1'
SURFACE AND INTERMEDIATE COURSE RUNOUT FOR TRANSITION
FROM DOUBLE COURSE MILLED RESURFACING
TO SINGLE COURSE MILLED RESURFACING



TYPE 'R6-M1'
TRANSITION FROM
DOUBLE COURSE RESURFACING IN
MILLED AREAS TO MILLED AREAS

Tabulations:
100-25
102-16

MODIFIED
STANDARD ROAD PLAN

REVISION	
NEW	7-02-2021

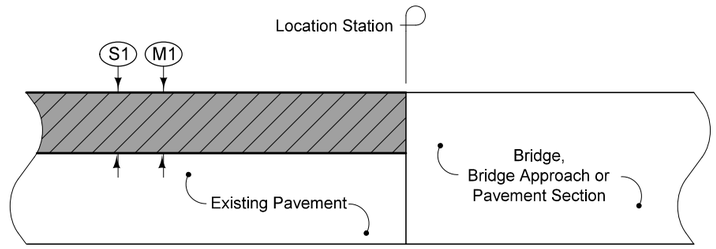
PR-201
SHEET 1 of 1

REVISIONS: Created Runout 'R5-M1'
Removed runouts not applicable to this project.

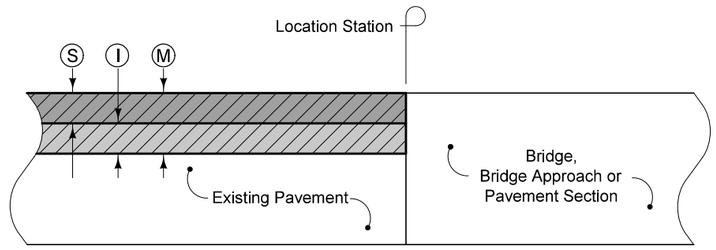
RUNOUTS FOR RESURFACING

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)–3L-63	SHEET NUMBER U.2

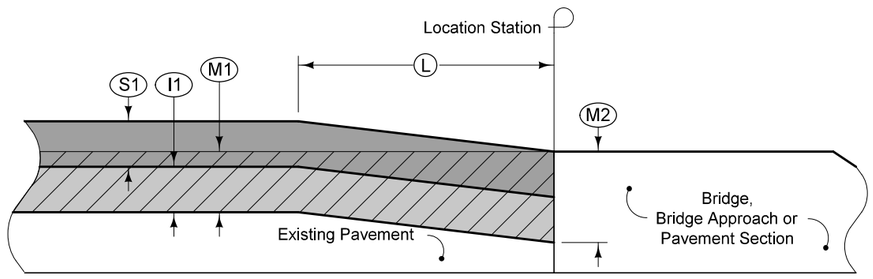
12:47:17 PM 8/9/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040_U02.dgn



TYPE 'N2'
SINGLE COURSE
RESURFACING OF MILLED AREAS



TYPE 'N4'
DOUBLE COURSE
RESURFACING OF MILLED AREAS



TYPE 'N5-M1'
SURFACE AND INTERMEDIATE NOTCH -
RUNOUT FOR RESURFACING OF MILLED AREAS

S# HMA Surface Course
I# HMA Intermediate Course
L Runout Length
M# Milling

Posted Speed Limit (mph)	Runout Ratio (ft per inch)
Over 40	50
20 to 40	25
Under 20	10*

* Based on turning maneuvers at side roads and intersections.

Tabulations:
100-25
102-16

MODIFIED
STANDARD ROAD PLAN

REVISION
NEW 7-02-2021

PR-202

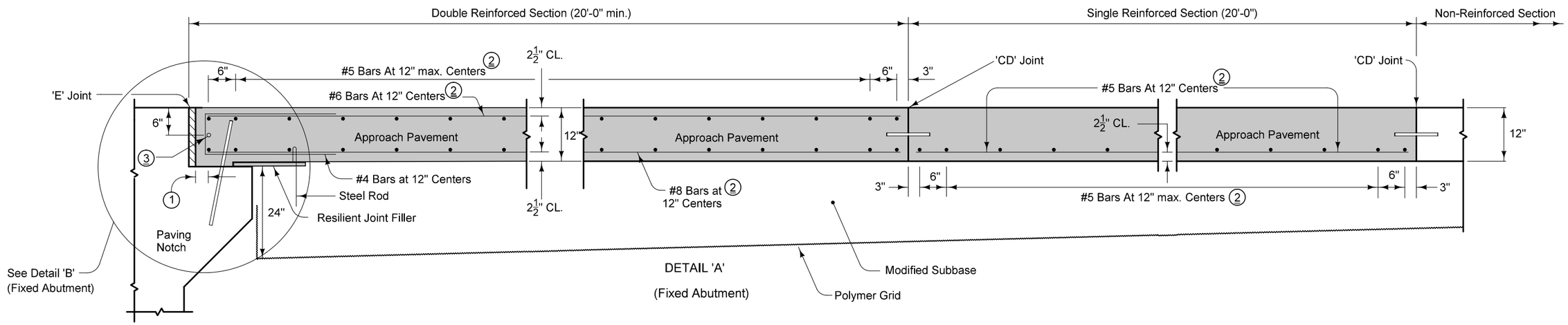
SHEET 1 of 1

REVISIONS: Created notch "N3-M1' and 'N5-M1'
Removed notches not applicable to this project.

NOTCHES FOR RESURFACING (WITH OR WITHOUT RUNOUT)

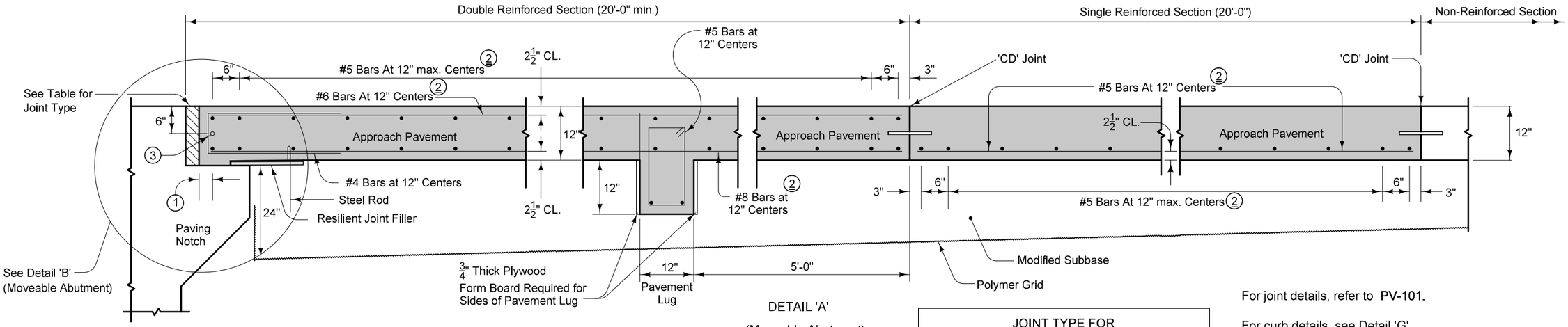
FILE NO. | ENGLISH | DESIGN TEAM HOLST / BAHR / MCNAMARA | MARION COUNTY | PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63 | SHEET NUMBER U.3

12:47:28 PM 8/9/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040_U02.dgn



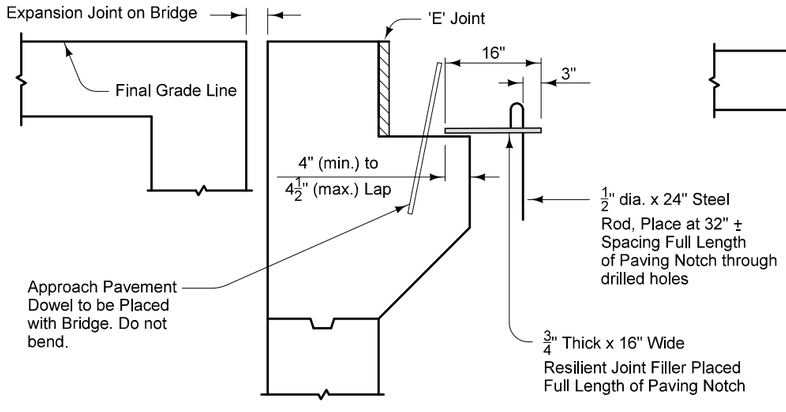
DETAIL 'A'

(Fixed Abutment)

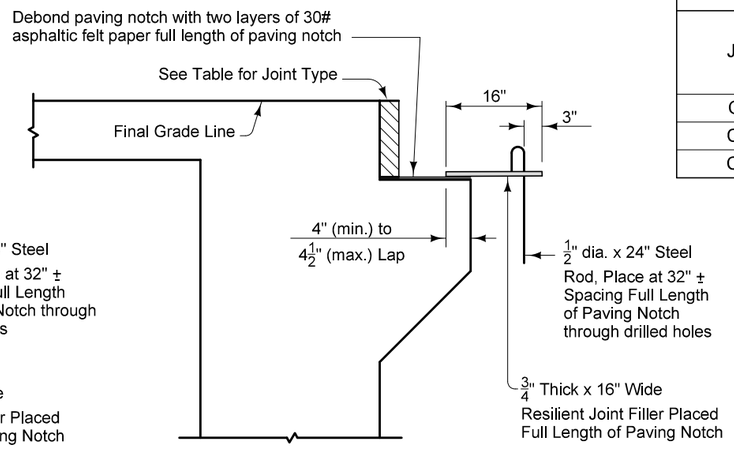


DETAIL 'A'

(Moveable Abutment)



DETAIL 'B' (Fixed Abutment)



DETAIL 'B' (Moveable Abutment)

JOINT TYPE FOR MOVEABLE ABUTMENT BRIDGES		
Joint	Maximum Bridge Length	
	Concrete Beam or Slab	Steel Girder
CF-1	370'	250'
CF-2	465'	320'
CF-3	575'	400'

(1) 2" min. to 2 1/2" max. clear to bent bar.

(2) Minimum lap length: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"

(3) If bridge is skewed, place additional #5 bar parallel to skewed face.

For joint details, refer to PV-101.

For curb details, see Detail 'G'.

All transverse bars are #5.

Possible Contract Item:
Bridge Approach, BR-203

Possible Tabulation:
112-6

MODIFIED STANDARD ROAD PLAN

REVISION 2 10-19-21

BR-203

SHEET 1 of 3

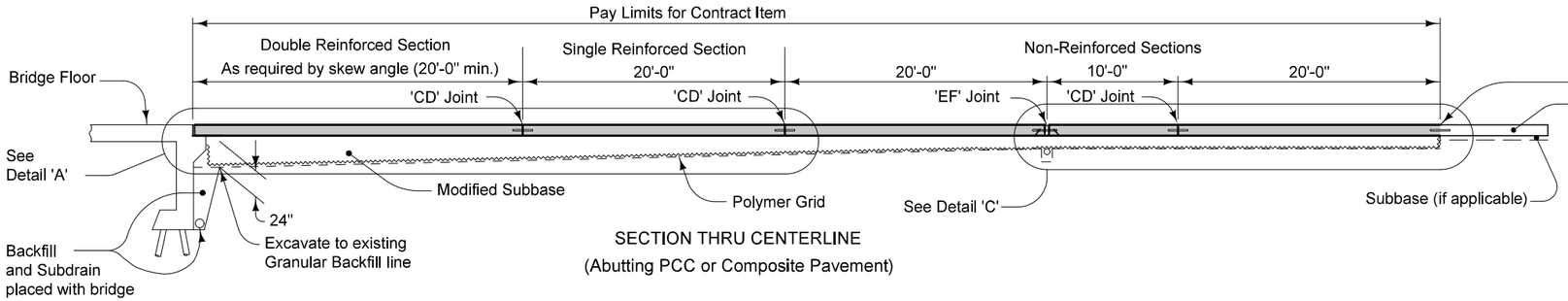
MODIFICATIONS: Added additional 20' non-reinforced section
Removed section thru centerline (Abbuting HMA Pavement)

APPROVED BY DESIGN METHODS ENGINEER

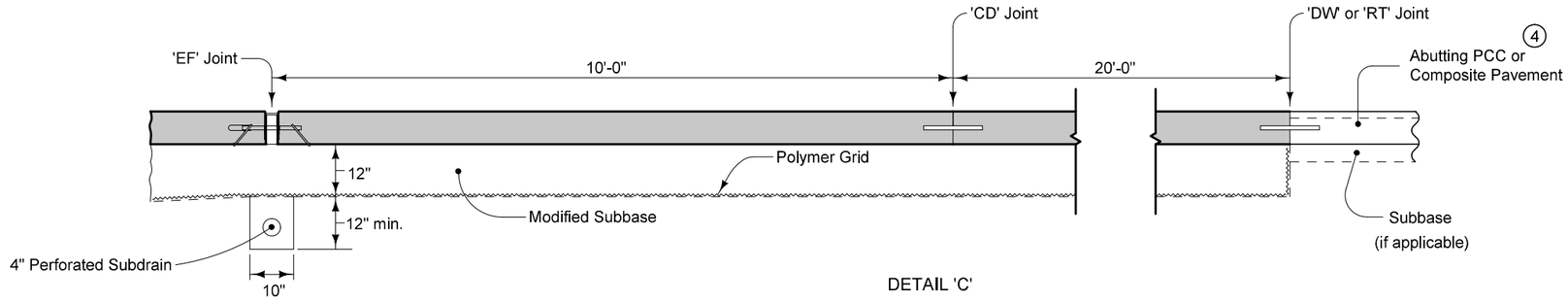
DOUBLE REINFORCED 12" APPROACH

FILE NO. | ENGLISH | DESIGN TEAM HOLST / BAHR / MCNAMARA | MARION COUNTY | PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63 | SHEET NUMBER U.4

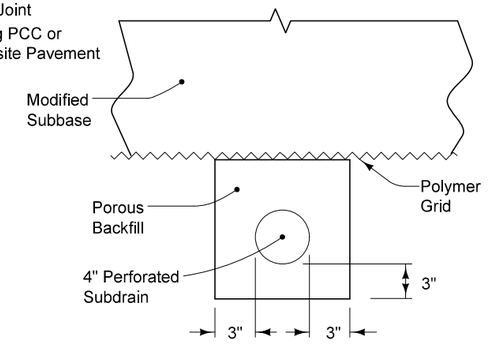
12:47:40 PM 8/9/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040_U02.dgn



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)



DETAIL 'C'
(Doweled PCC Pavement)



4" SUBDRAIN LOCATION

(4) If abutting pavement (PCC or HMA) is not in place, refer to **BR-213**.

MODIFIED
STANDARD ROAD PLAN

REVISION
2 | 10-19-21

BR-203
SHEET 2 of 3

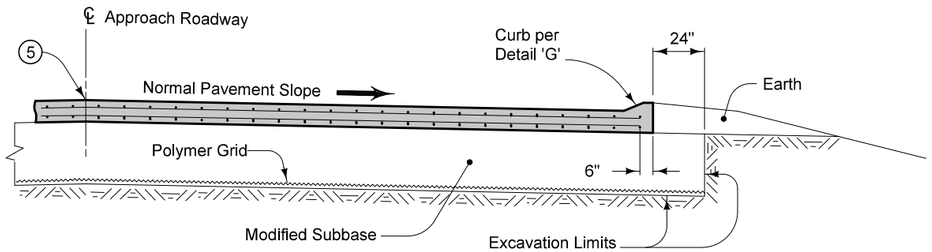
MODIFICATIONS: Added additional 20' non-reinforced section
Removed section thru centerline (Abbuting HMA Pavement)

APPROVED BY DESIGN METHODS ENGINEER

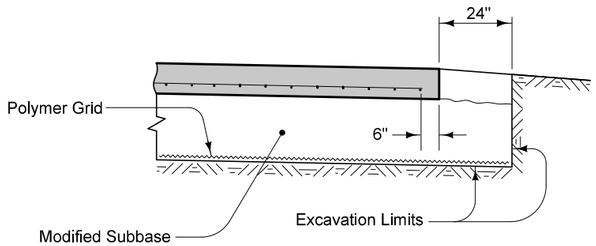
DOUBLE REINFORCED 12" APPROACH

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER U.5

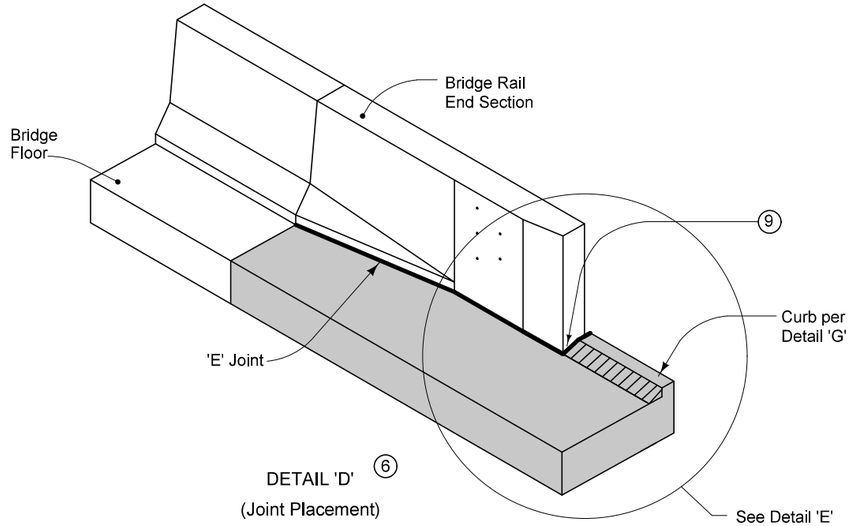
12:47:53 PM 8/9/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040_U02.dgn



SECTION A-A (6)

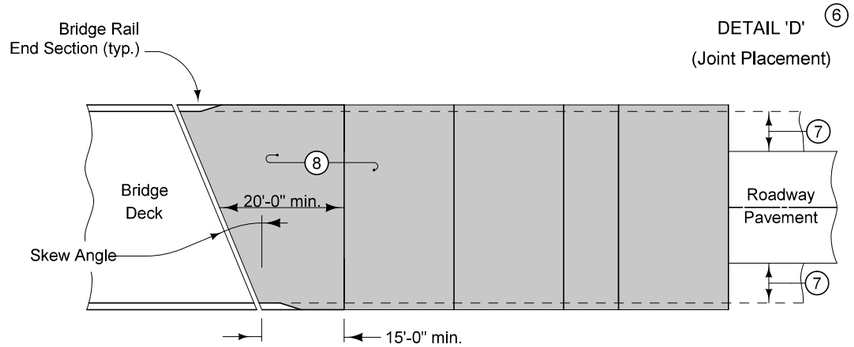


SECTION B-B (6)

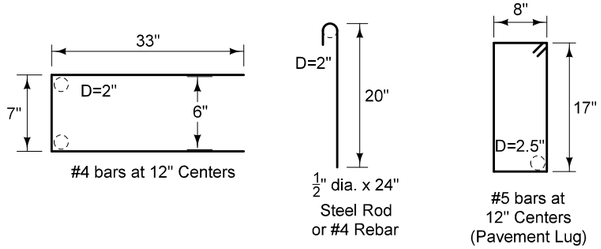


DETAIL 'D' (6)

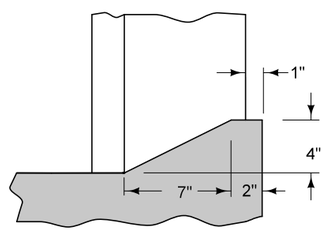
(Joint Placement)



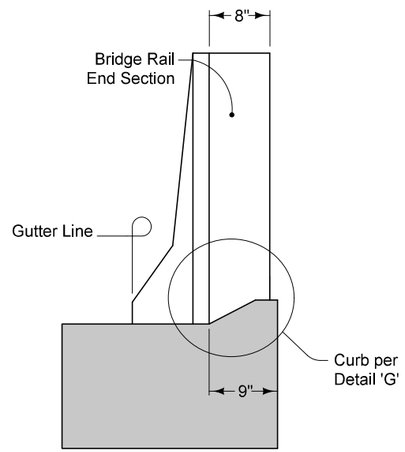
APPROACH PAVEMENT
LAYOUT AT A SKEW



BENT BAR SHAPES



DETAIL 'G'



DETAIL 'E'

(Back of Curb Placement)

(5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' joint.

(6) Refer to BR-211, BR-212, or BR-231.

(7) Design shoulder width.

(8) Reinforced bridge approach section.

(9) Expansion joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B of PV-101. Seal joint per Detail F of PV-101.

- Fixed Abutment Bridges: Type 'E' joint.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4136 of the Standard Specifications. Minimum filler width is the abutment 'CF' joint width. Joint length as required to completely fill from back side of curb to front face of bridge wing.

MODIFIED

STANDARD ROAD PLAN

REVISION	
2	10-19-21

BR-203

SHEET 3 of 3

MODIFICATIONS: Added additional 20' non-reinforced section
Removed section thru centerline (Abbuting HMA Pavement)

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER U.6

12:48:05 PM 8/9/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040_U02.dgn

ESTIMATED BRIDGE REPAIR QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2426-6772016	CONCRETE REPAIR	SF	117.7
2	2499-0800000	PAVING NOTCH REPLACEMENT	LF	88

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	ITEM DESCRIPTION
1	2426-6772016	CONCRETE REPAIR The area of structural concrete repair for the edge of deck is estimated. The engineer may direct the contractor to repair the edge of deck as necessary to eliminate deck deterioration at the ends of the bridge. Structural concrete repair on the deck may be deleted by the engineer if deemed unnecessary.
2	2499-0800000	PAVING NOTCH REPLACEMENT Includes 6.2 cu yd of structural concrete Class C, 1408 lbs of epoxy-coated reinforcing steel, excavation, removing and disposing of the existing paving notch and concrete removed to form the shear keyways, drilling holes for dowel bars, and polymer grout material.

STRUCTURAL DESIGN

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

LICENSED PROFESSIONAL ENGINEER — David R. Evans 18670 — IOWA

Signature 8/14/2023 Date

David R. Evans
Printed or Typed Name

My license renewal date is December 31, 2023

Pages or sheets covered by this seal: V.1 - V.6

Engineering Seal Note:
In addition to the plan sheets for Marion County, Design 0224 project, the Structural Engineering Seal on this plan sheet applies to other plan sheets for Design 0324, with Asset ID 603550.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN HISTORY AT THIS SITE

(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
0476	ORIGINAL DESIGN
0224	PAVING NOTCH REPLACEMENT

GENERAL NOTES:

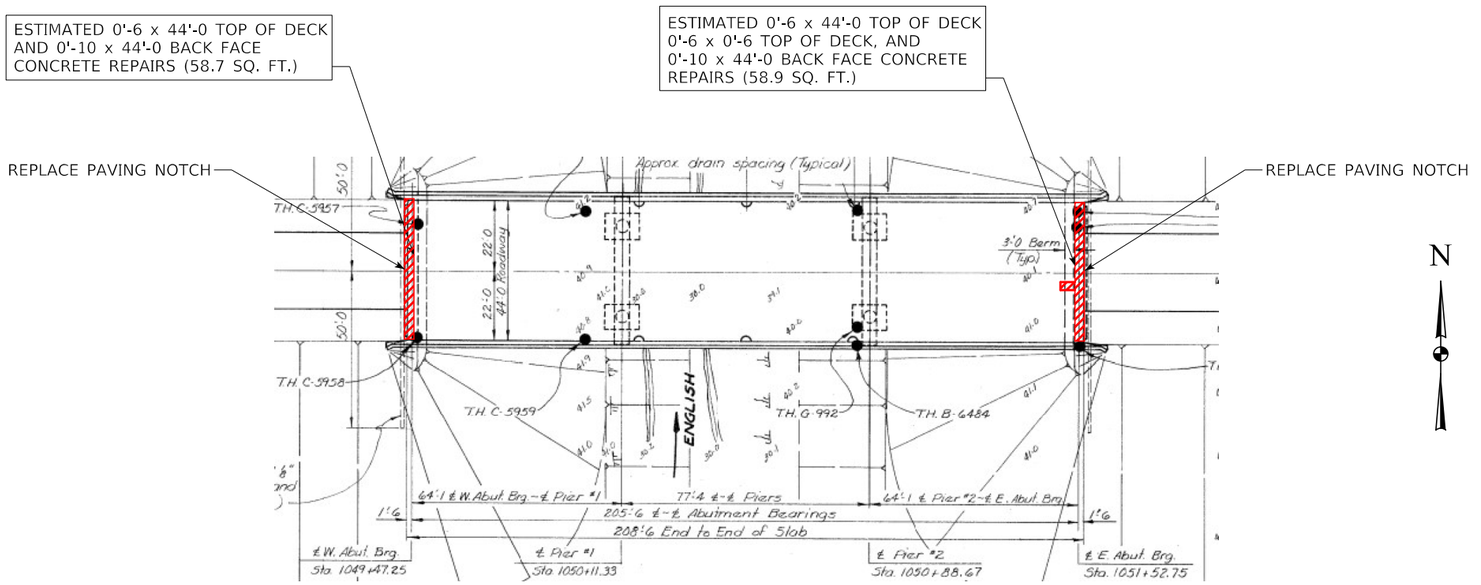
THIS DESIGN IS FOR REPAIRS TO THE EXISTING 205'-6 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON IA 92 OVER ENGLISH RIVER. ELECTRONIC COPIES OF ORIGINAL DESIGN PLANS ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ARE BASED ON ORIGINAL DESIGN PLANS.

REPAIR SHALL CONSIST OF THE FOLLOWING:

1. REMOVE AND REPLACE THE PAVING NOTCH AT BOTH ABUTMENTS.
2. PERFORM CONCRETE REPAIRS ON THE VERTICAL BACKFACE OF DECK AND TOP EDGE AT BOTH ABUTMENTS.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.



GENERAL PLAN VIEW

NOTE: General Plan View is the Situation Plan provided for information as shown in the Original Design No. 476

LOCATION

IA 92 OVER ENGLISH RIVER
T-75N R-19W
SECTION 16
KNOXVILLE TOWNSHIP
MARION COUNTY
FHWA NO. 603530
BRIDGE MAINT. NO. 6359.4S092
LATITUDE 41.30045342°
LONGITUDE -93.04571906°

Design For Repair to a 0° Skew

205'-6 x 44'-0 Pretensioned Prestressed Concrete Beam Bridge

2 @ 64'-1 End Spans 77'-4 Interior Span

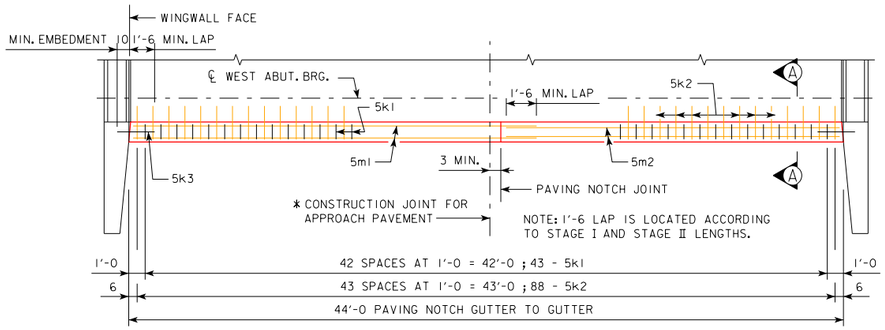
Notes And Quantities

STA. 1050+50.00 ℄ (IA 92) Turn-in Date: October, 2023

Marion County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0224 Design Sheet No. 1 of 3 FHWA No. 603530



PART PLAN VIEW AT WEST ABUTMENT (EAST ABUTMENT SIMILAR)

NOTE: 5k3 BARS SHALL BE SET AS DOWELS EMBEDDED 10 INCHES MINIMUM INTO THE EXISTING BRIDGE WINGWALLS AND EXTENDING A MINIMUM OF 1'-6 INTO THE NEW PAVING NOTCH REPLACEMENT.

NOTE:
NEW PAVING NOTCH REPLACEMENT SHOULD EXTEND FROM BRIDGE WINGWALL TO BRIDGE WINGWALL.

* CONSTRUCTION JOINT FOR NOTCH REPAIR TO EXTEND A MINIMUM OF 3 INCHES PAST CONSTRUCTION JOINT FOR PAVEMENT. PROVIDE 1'-6 MINIMUM LAP FOR REINFORCEMENT

DOWEL SETTING NOTE:

THE DEFORMED 5k2 & 5k3 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. A POLYMER GROUT SYSTEM SHALL BE USED TO INSTALL THE DEFORMED DOWEL BARS IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS, AND THE GROUT MANUFACTURER'S RECOMMENDATIONS.

NOTE:
USE "BR-203" APPROACH PAVEMENT STANDARD FOR MOVEABLE ABUTMENT.

PAVING NOTCH REPLACEMENT NOTES:

THE PAVING NOTCH REPLACEMENT IS TO BE CLASS "C" STRUCTURAL CONCRETE.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE BID ITEM "PAVING NOTCH REPLACEMENT" LINEAR FEET, SHALL INCLUDE ALL COSTS OF LABOR AND MATERIALS ASSOCIATED WITH EXCAVATION, REMOVING AND DISPOSING OF THE EXISTING PAVING NOTCH, GRANULAR BACKFILL AND COMPACTION AS NEEDED, AND INSTALLING THE NEW PAVING NOTCH. THIS WORK SHALL INCLUDE, CUTTING OF EXISTING #4 BARS, PAINTING THE ENDS OF THE #4 BARS, REMOVING THE CONCRETE FOR THE SHEAR KEYWAYS, DRILLING THE HOLES FOR THE DEFORMED DOWELS AND CONSTRUCTING THE NEW NOTCH TO THE DIMENSIONS SHOWN. THE NEW NOTCH IS ESTIMATED AT 0.07 CUBIC YARDS PER FOOT OF STRUCTURAL CONCRETE AND 16.0 POUNDS OF EPOXY COATED REINFORCING STEEL PER FOOT.

REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

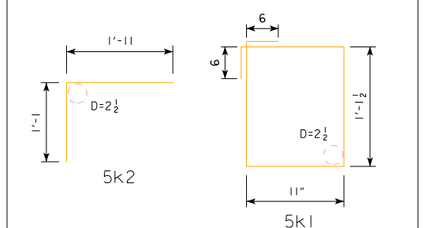
SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 2002.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2023, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 4.0 KSI.

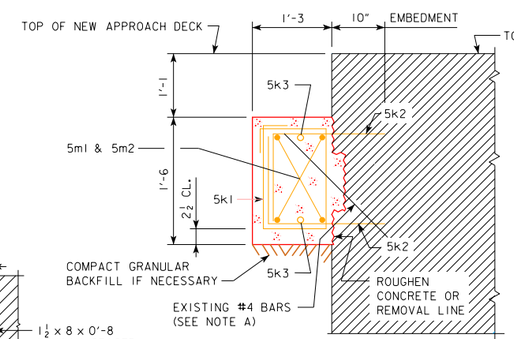
BENT BAR DETAILS



NOTE: ALL REINFORCING IS TO BE EPOXY COATED.

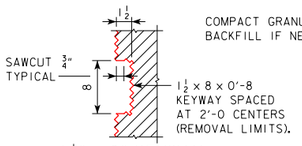
NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER.

NOTE: 5k2 BARS AT 1'-0 CENTERS ARE TO BE PLACED AT THE TOP & BOTTOM OF THE PAVING NOTCH. THE 5k1 BARS AT 1'-0 CENTERS ARE CENTERED BETWEEN THE 5k2 BARS.



PART SECTION A-A

NOTE: DOWELS SHALL BE PLACED TO MISS ANY EXISTING REINFORCING STEEL EXPOSED DURING REMOVALS.



1½" x 8" KEYWAY DETAIL

NOTE A:
THE BOTTOM PORTION OF THE EXISTING #4 BARS SHALL BE CAREFULLY EXPOSED AND INCORPORATED INTO NEW WORK. THE BAR SHALL BE CUT OFF TO PROVIDE 2 INCHES OF COVER FROM THE TOP OF THE NEW PAVING NOTCH. THE TOP PORTION OF THE BAR SHALL BE CUT OFF FLUSH OR SLIGHTLY BELOW THE CONCRETE SURFACE AND THE ENDS PAINTED WITH 2 COATS OF ZINC RICH PAINT.

Design For Repair to a 0° Skew

205'-6 x 44'-0 Pretensioned Prestressed Concrete Beam Bridge

2 @ 64'-1 End Spans — 77'-4 Interior Span

Paving Notch Repair Details

STA. 1050+50.00 ℄ (IA 92) — Turn-in Date: October, 2023

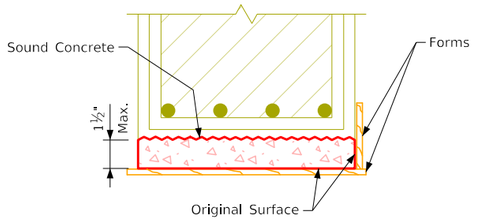
Marion County

IOWA DEPARTMENT OF TRANSPORTATION

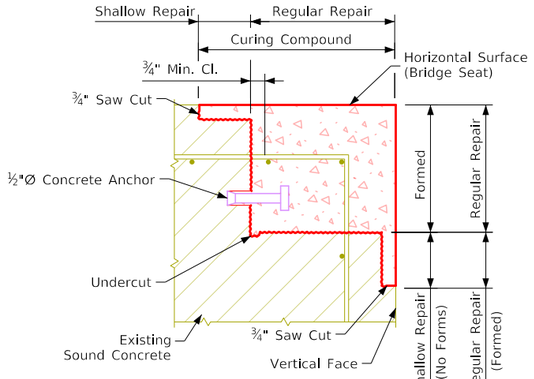
Design No. 0224 — Design Sheet No. 2 of 3 — FHWA No. 603530

FILE NO. 32169	ENGLISH	DESIGN TEAM AY / DD / DRE	PAVING NOTCH REPLACEMENT	STANDARD SHEET 1068	Marion COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63	SHEET NUMBER V.2	

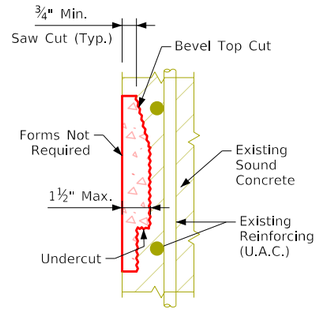
3:01:28 PM 8/10/2023 ayusuf pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Bridge\(040)_Abutment Repair\SHT_63092040_0224_0324_603530 - 603550_Z09.dgn



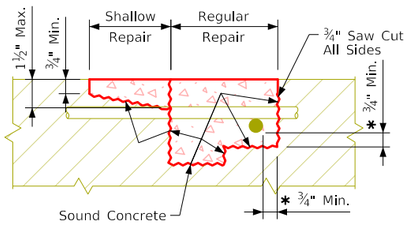
Shallow Repair Bottom Surface



Corner Repair

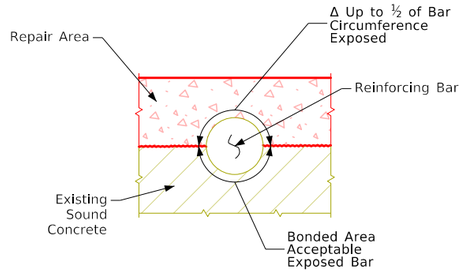


Shallow Repair Vertical Face

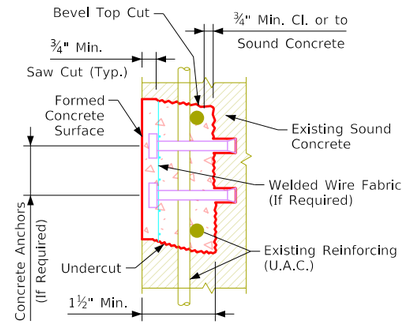


Repair Definition

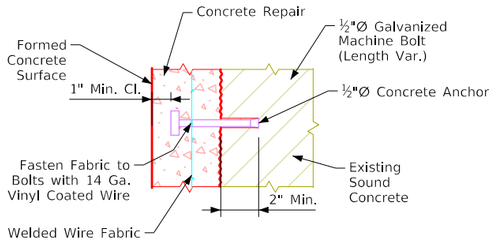
* Indicates Clearance for an Un-Bonded Rebar.



Δ If more than ½ of the rebar is exposed it shall be treated as an un-bonded rebar.

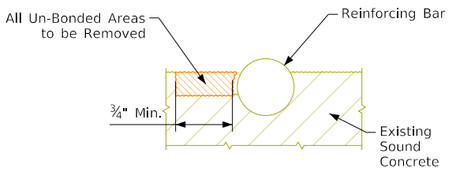


Regular Repair Vertical Face



Anchor Detail

For Spacing and Use of Concrete Anchors and WWF See the Repair Notes.



Concrete Removal Adjacent to Reinforcing

Repair Notes:

The spalled and hollow areas of this bridge as noted and shown in these plans shall be repaired as follows:

- All the costs of equipment and materials required to repair the spalled and hollow areas of this bridge shall be included in the price bid for "Concrete Repair".
- The price bid for "Concrete Repair" shall include the cost of all concrete anchors and welded wire fabric required by the plans.
- The Engineer shall determine and outline by visual and audible inspection the actual areas of the concrete repairs. The Contractor shall be paid for the actual amount of repairs made on a square foot basis based on the price bid per square foot.
- All existing reinforcing bars that are exposed by the concrete removal shall be cleaned and carefully incorporated into the new work, except badly deteriorated existing reinforcing which shall be replaced as directed by the Engineer.
- The concrete anchors required shall have a minimum pull out of 5,000 lbs based on 4,000 psi concrete. An anchor meeting the requirements of Iowa D.O.T. Materials I.M. 453.09 and the pull out load above is required. The anchors shall be galvanized and shall be installed according to recommendations of the Manufacturer. The cost of furnishing and installing the concrete anchors shall be included in the price bid for "Concrete Repair".
- The welded wire fabric shall be ASTM A185 and galvanized as per ASTM A-641. The WWF wires shall be spaced 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 sq in inclusive, example "WWF 3x3 - W1.4xW2.9".

Where reinforcement has been exposed and clearance around the periphery of the existing bar is provided, no supplemental reinforcing is required, except where existing reinforcement density and pattern are such that individual open spaces between bars are of 1.5 sq ft or larger. For this condition ½"Ø concrete anchors and welded wire fabric shall be installed at the rate of one concrete anchor with WWF per each 1.5 sq ft of area within each open space.

Repairing the structural concrete shall be in accordance with Section 2426, of the Standard Specifications.

In addition to the Specification 2426, the following requirements of the patching material are necessary for the concrete repairs:

- When Class O concrete is used, scrub a cement-sand-water grout of creamy consistency onto patch surface, including edges. Grout shall consist of two parts Type I or Type I/II Portland cement and one part sand mixed with water. Mix grout by mechanical means. Place patch material before grout dries. If grout dries before placement of patch material, clean patch area again by sandblasting and air blasting, then reapply grout.
- Thoroughly trowel patching material into patch edges to ensure a good bond and seal. Ensure that all saw cuts extending beyond the patch area are filled with patching material to prevent water from getting around or under the patch.
- Match profile of patches to the existing deck grade and cross slope Texture the surface of patches to match the adjacent deck surface.
- Prior to final acceptance, the patch shall be level with the adjacent pavement and have a smooth riding surface.

Concrete Placement Quantities

Mark	Type	Units	Quantity
①	Shallow repair	Sq. Ft.	29.3
②	Regular repair	Sq. Ft.	88.4
		Total (Sq. Ft.)	117.7

Estimated Concrete Repair Quantities

Description	Units	Amount
Concrete Repair	Sq. Ft.	117.7

Note:
The areas of repair are roughly estimated between shallow repair and regular repair. The limits of shallow and regular depths shall be determined in the field.

Design For Repair to a 0° Skew

205'-6 x 44'-0 Pretensioned Prestressed Concrete Beam Bridge

2 @ 64'-1 End Spans 77'-4 Interior Span

Concrete Repairs

STA. 1050+50.00 ℄ (IA 92) Turn-in Date: October, 2023

Marion County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0224 Design Sheet No. 3 of 3 FHWA No. 603530

Revised 10-2014 - Deleted All References to Grout. Section 2426 Covers this Requirement and Doesn't Need to be Stated on the Plans.
RepairRetrofitBridges.dgn - 1045 - This Sheet Redrawn 09-27-1990.
RepairRetrofitBridges.dgn - 1045 - This Sheet Re-Issued 07-23.

ESTIMATED BRIDGE REPAIR QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2426-6772016	CONCRETE REPAIR	SF	117.4
2	2499-0800000	PAVING NOTCH REPLACEMENT	LF	88

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	ITEM DESCRIPTION
1	2426-6772016	CONCRETE REPAIR The area of structural concrete repair for the edge of deck is estimated. The engineer may direct the contractor to repair the edge of deck as necessary to eliminate deck deterioration at the ends of the bridge. Structural concrete repair on the deck may be deleted by the engineer if deemed unnecessary.
2	2499-0800000	PAVING NOTCH REPLACEMENT Includes 6.2 cu yd of structural concrete Class C, 1408 lbs of epoxy-coated reinforcing steel, excavation, removing and disposing of the existing paving notch and concrete removed to form the shear keyways, drilling holes for dowel bars, and polymer grout material.

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 151'-4 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON IA 92 OVER 165TH AVENUE. ELECTRONIC COPIES OF ORIGINAL DESIGN PLANS ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ARE BASED ON ORIGINAL DESIGN PLANS.

REPAIR SHALL CONSIST OF THE FOLLOWING:

1. REMOVE AND REPLACE THE PAVING NOTCH AT BOTH ABUTMENTS.
2. PERFORM CONCRETE REPAIRS ON THE VERTICAL BACKFACE OF DECK AND TOP EDGE AT BOTH ABUTMENTS.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

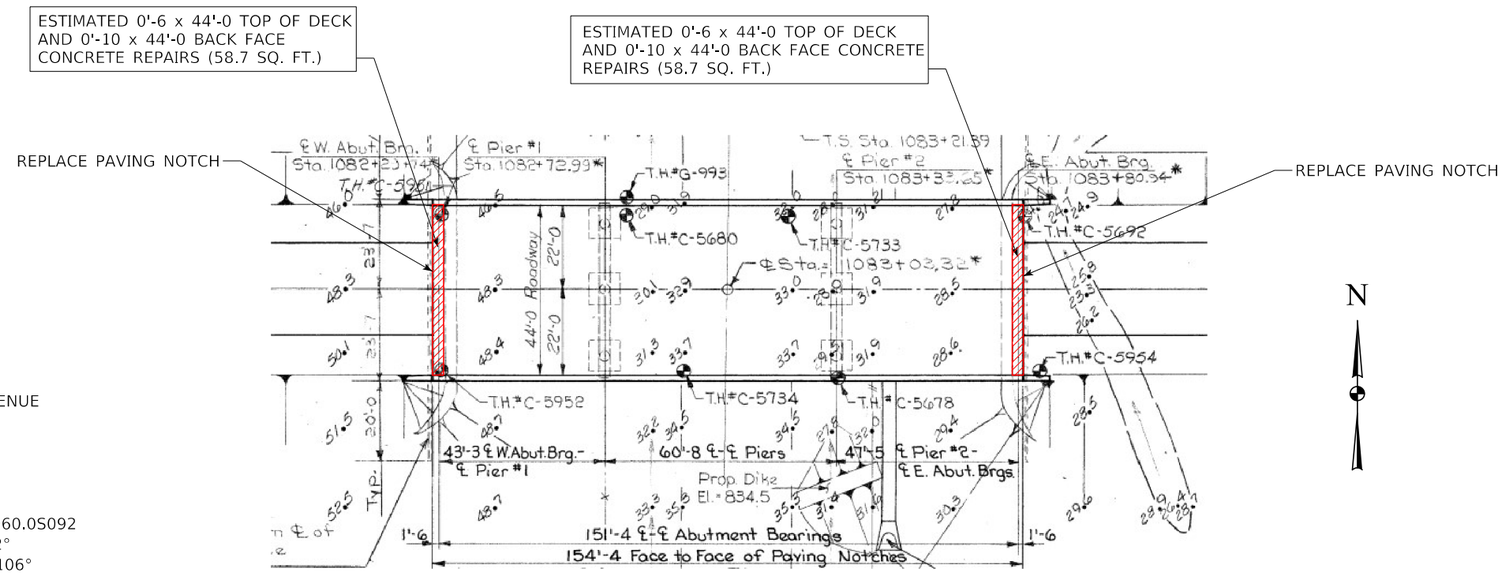
Engineering Seal Note:
Refer to project plans of Marion County with Design No. 0224, and Asset ID. No. 603530 for the Structural Engineering Seal applicable to this design.

DESIGN HISTORY AT THIS SITE
(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
0576	Original Design
0324	Paving Notch Replacement

LOCATION

IA 92 OVER 165TH AVENUE
T-75N R-19W
SECTION 15
KNOXVILLE TOWNSHIP
MARION COUNTY
FHWA NO. 603550
BRIDGE MAINT. NO. 6360.0S092
LATITUDE 41.30064642°
LONGITUDE -93.03376106°



GENERAL PLAN VIEW

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

NOTE: General Plan View is the Situation Plan provided for information as shown in the Original Design No. 576

Design For Repair to a 0° Skew

151'-4 x 44'-0 Pretensioned Prestressed Concrete Beam Bridge

43'-3 & 47'-5 End Spans — 60'-8 Interior Span

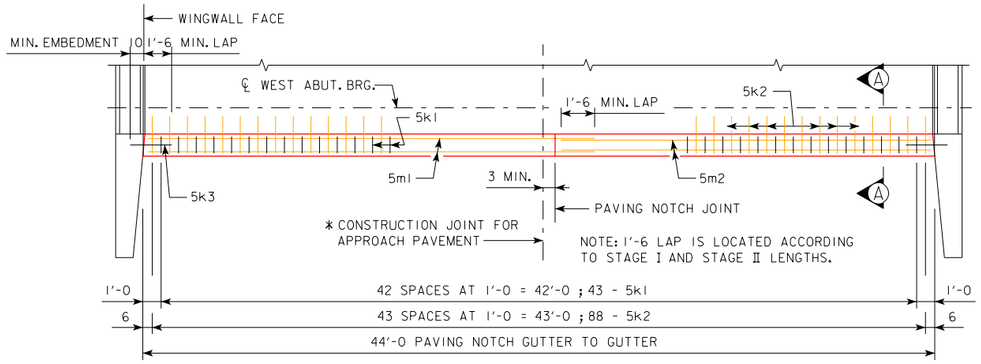
Notes And Quantities

STA. 1083+03.32 ℄ (IA 92) — Turn-in Date: October, 2023

Marion County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0324 — Design Sheet No. 1 of 3 — FHWA No. 603550



PART PLAN VIEW AT WEST ABUTMENT (EAST ABUTMENT SIMILAR)

NOTE: 5k3 BARS SHALL BE SET AS DOWELS EMBEDDED 10 INCHES MINIMUM INTO THE EXISTING BRIDGE WINGWALLS AND EXTENDING A MINIMUM OF 1'-6 INTO THE NEW PAVING NOTCH REPLACEMENT.

NOTE:
NEW PAVING NOTCH REPLACEMENT SHOULD EXTEND FROM BRIDGE WINGWALL TO BRIDGE WINGWALL.

N

* CONSTRUCTION JOINT FOR NOTCH REPAIR TO EXTEND A MINIMUM OF 3 INCHES PAST CONSTRUCTION JOINT FOR PAVEMENT. PROVIDE 1'-6 MINIMUM LAP FOR REINFORCEMENT

DOWEL SETTING NOTE:

THE DEFORMED 5k2 & 5k3 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. A POLYMER GROUT SYSTEM SHALL BE USED TO INSTALL THE DEFORMED DOWEL BARS IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS, AND THE GROUT MANUFACTURER'S RECOMMENDATIONS.

NOTE:
USE "BR-203" APPROACH PAVEMENT STANDARD FOR MOVEABLE ABUTMENT.

PAVING NOTCH REPLACEMENT NOTES:

THE PAVING NOTCH REPLACEMENT IS TO BE CLASS "C" STRUCTURAL CONCRETE.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE BID ITEM "PAVING NOTCH REPLACEMENT" LINEAR FEET, SHALL INCLUDE ALL COSTS OF LABOR AND MATERIALS ASSOCIATED WITH EXCAVATION, REMOVING AND DISPOSING OF THE EXISTING PAVING NOTCH, GRANULAR BACKFILL AND COMPACTION AS NEEDED, AND INSTALLING THE NEW PAVING NOTCH. THIS WORK SHALL INCLUDE, CUTTING OF EXISTING #4 BARS, PAINTING THE ENDS OF THE #4 BARS, REMOVING THE CONCRETE FOR THE SHEAR KEYWAYS, DRILLING THE HOLES FOR THE DEFORMED DOWELS AND CONSTRUCTING THE NEW NOTCH TO THE DIMENSIONS SHOWN. THE NEW NOTCH IS ESTIMATED AT 0.07 CUBIC YARDS PER FOOT OF STRUCTURAL CONCRETE AND 16.0 POUNDS OF EPOXY COATED REINFORCING STEEL PER FOOT.

REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

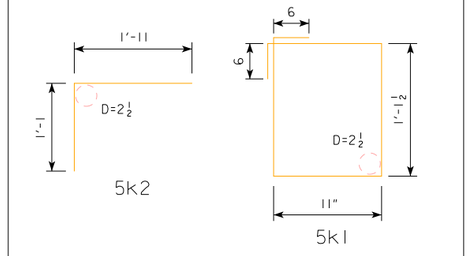
SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 2002.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2023, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 4.0 KSI.

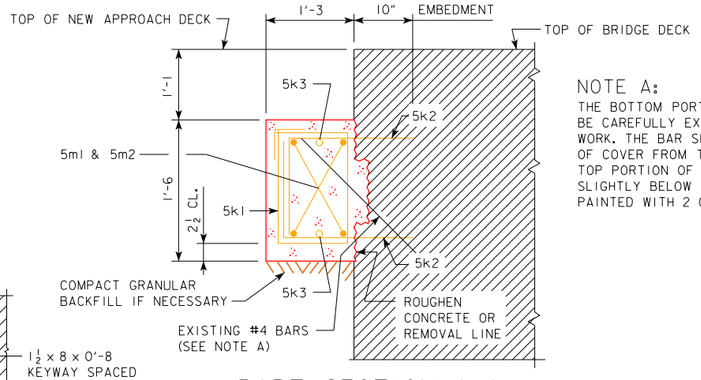
BENT BAR DETAILS



NOTE: ALL REINFORCING IS TO BE EPOXY COATED.

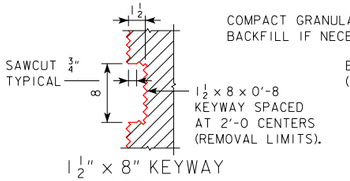
NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER.

NOTE: 5k2 BARS AT 1'-0 CENTERS ARE TO BE PLACED AT THE TOP & BOTTOM OF THE PAVING NOTCH. THE 5k1 BARS AT 1'-0 CENTERS ARE CENTERED BETWEEN THE 5k2 BARS.



PART SECTION A-A

NOTE: DOWELS SHALL BE PLACED TO MISS ANY EXISTING REINFORCING STEEL EXPOSED DURING REMOVALS.



1½" x 8" KEYWAY DETAIL

NOTE A:
THE BOTTOM PORTION OF THE EXISTING #4 BARS SHALL BE CAREFULLY EXPOSED AND INCORPORATED INTO NEW WORK. THE BAR SHALL BE CUT OFF TO PROVIDE 2 INCHES OF COVER FROM THE TOP OF THE NEW PAVING NOTCH. THE TOP PORTION OF THE BAR SHALL BE CUT OFF FLUSH OR SLIGHTLY BELOW THE CONCRETE SURFACE AND THE ENDS PAINTED WITH 2 COATS OF ZINC RICH PAINT.

Design For Repair to a 0° Skew

151'-4 x 44'-0 Pretensioned Prestressed Concrete Beam Bridge

43'-3 & 47'-5 End Spans — 60'-8 Interior Span

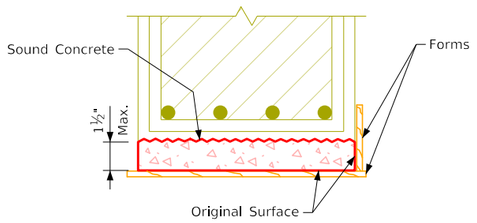
Paving Notch Repair Details

STA. 1083+03.32 ℄ (IA 92) — Turn-in Date: October, 2023

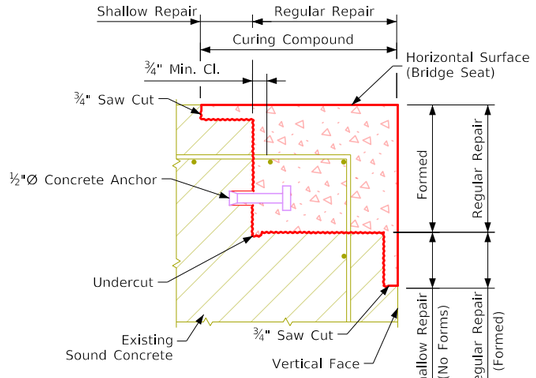
Marion County

IOWA DEPARTMENT OF TRANSPORTATION

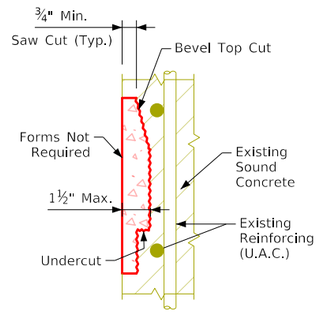
Design No. 0324 — Design Sheet No. 2 of 3 — FHWA No. 603550



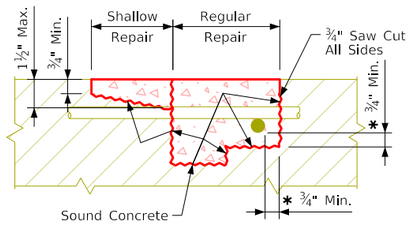
Shallow Repair Bottom Surface



Corner Repair

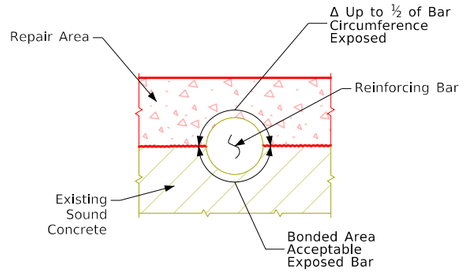


Shallow Repair Vertical Face

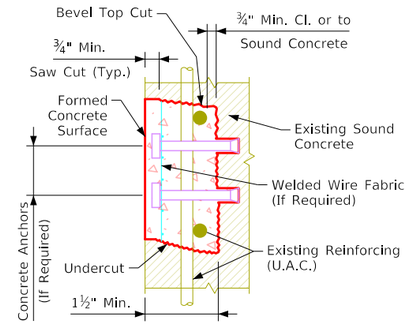


Repair Definition

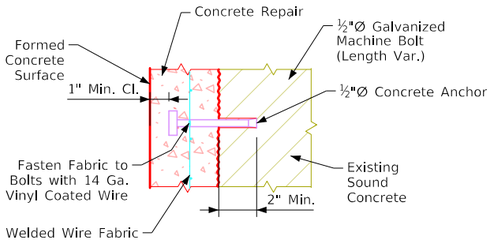
* Indicates Clearance for an Un-Bonded Rebar.



Δ If more than ½ of the rebar is exposed it shall be treated as an un-bonded rebar.

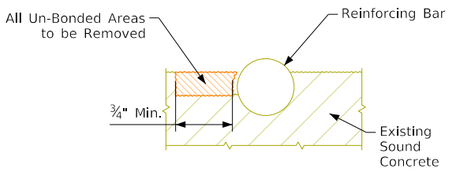


Regular Repair Vertical Face



Anchor Detail

For Spacing and Use of Concrete Anchors and WWF See the Repair Notes.



Concrete Removal Adjacent to Reinforcing

Repair Notes:

The spalled and hollow areas of this bridge as noted and shown in these plans shall be repaired as follows:

- All the costs of equipment and materials required to repair the spalled and hollow areas of this bridge shall be included in the price bid for "Concrete Repair".
- The price bid for "Concrete Repair" shall include the cost of all concrete anchors and welded wire fabric required by the plans.
- The Engineer shall determine and outline by visual and audible inspection the actual areas of the concrete repairs. The Contractor shall be paid for the actual amount of repairs made on a square foot basis based on the price bid per square foot.
- All existing reinforcing bars that are exposed by the concrete removal shall be cleaned and carefully incorporated into the new work, except badly deteriorated existing reinforcing which shall be replaced as directed by the Engineer.
- The concrete anchors required shall have a minimum pull out of 5,000 lbs based on 4,000 psi concrete. An anchor meeting the requirements of Iowa D.O.T. Materials I.M. 453.09 and the pull out load above is required. The anchors shall be galvanized and shall be installed according to recommendations of the Manufacturer. The cost of furnishing and installing the concrete anchors shall be included in the price bid for "Concrete Repair".
- The welded wire fabric shall be ASTM A185 and galvanized as per ASTM A-641. The WWF wires shall be spaced 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 sq in inclusive, example "WWF 3x3 - W1.4xW2.9".

Where reinforcement has been exposed and clearance around the periphery of the existing bar is provided, no supplemental reinforcing is required, except where existing reinforcement density and pattern are such that individual open spaces between bars are of 1.5 sq ft or larger. For this condition ½"Ø concrete anchors and welded wire fabric shall be installed at the rate of one concrete anchor with WWF per each 1.5 sq ft of area within each open space.

Repairing the structural concrete shall be in accordance with Section 2426, of the Standard Specifications.

In addition to the Specification 2426, the following requirements of the patching material are necessary for the concrete repairs:

- When Class O concrete is used, scrub a cement-sand-water grout of creamy consistency onto patch surface, including edges. Grout shall consist of two parts Type I or Type I/II Portland cement and one part sand mixed with water. Mix grout by mechanical means. Place patch material before grout dries. If grout dries before placement of patch material, clean patch area again by sandblasting and air blasting, then reapply grout.
- Thoroughly trowel patching material into patch edges to ensure a good bond and seal. Ensure that all saw cuts extending beyond the patch area are filled with patching material to prevent water from getting around or under the patch.
- Match profile of patches to the existing deck grade and cross slope Texture the surface of patches to match the adjacent deck surface.
- Prior to final acceptance, the patch shall be level with the adjacent pavement and have a smooth riding surface.

Concrete Placement Quantities

Mark	Type	Units	Quantity
①	Shallow repair	Sq. Ft.	29.3
②	Regular repair	Sq. Ft.	88.1
		Total (Sq. Ft.)	117.4

Estimated Concrete Repair Quantities

Description	Units	Amount
Concrete Repair	Sq. Ft.	117.4

Note:
The areas of repair are roughly estimated between shallow repair and regular repair. The limits of shallow and regular depths shall be determined in the field.

Design For Repair to a 0° Skew

151'-4 x 44'-0 Pretensioned Prestressed Concrete Beam Bridge

43'-3 & 47'-5 End Spans — 60'-8 Interior Span

Concrete Repairs

STA. 1083+03.32 ℄ (IA 92) — Turn-in Date: October, 2023

Marion County

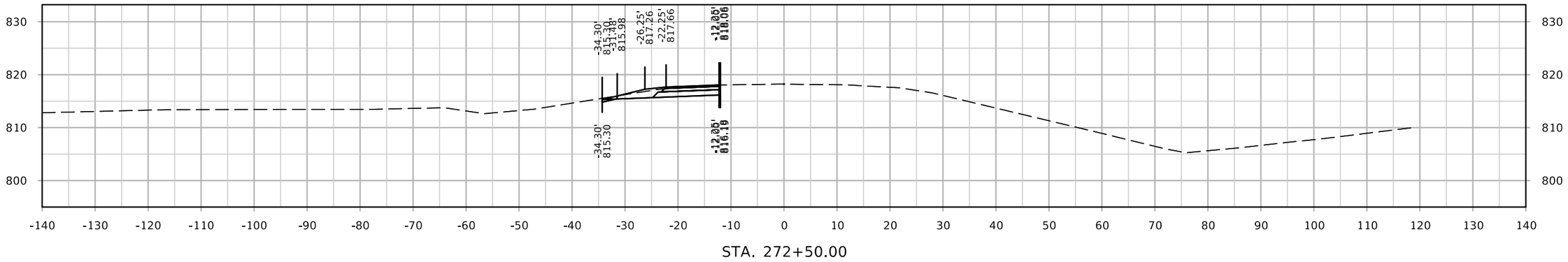
Iowa Department of Transportation

Design No. 0324 — Design Sheet No. 3 of 3 — FHWA No. 603550

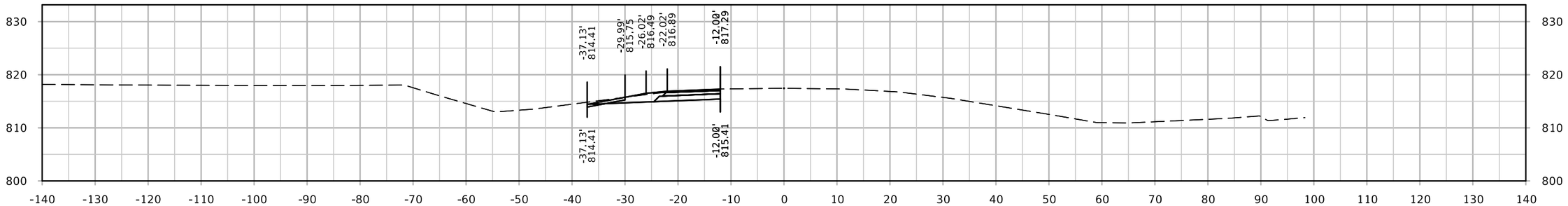
Revised 10-2014 - Deleted All References to Grout. Section 2426 Covers this Requirement and Doesn't Need to be Stated on the Plans.
RepairRetrofitBridges.dgn - 1045 - This Sheet Redrawn 09-27-1990.
RepairRetrofitBridges.dgn - 1045 - This Sheet Re-Issued 07-23.

12:47:23 PM 8/14/2023 ayusuf pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Bridge\(040)_Abutment Repair\SHT_63092040_0224_0324_603530 - 603550_Z09.dgn

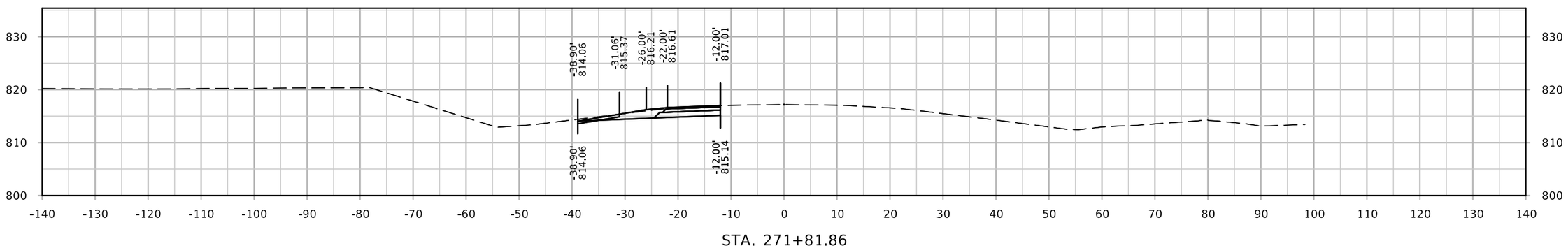
IA92



STA. 272+50.00



STA. 272+00.00

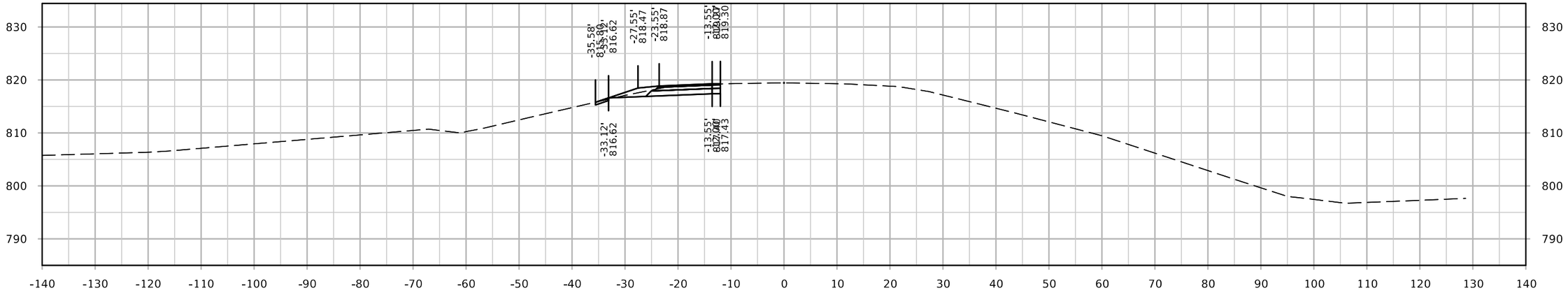


STA. 271+81.86

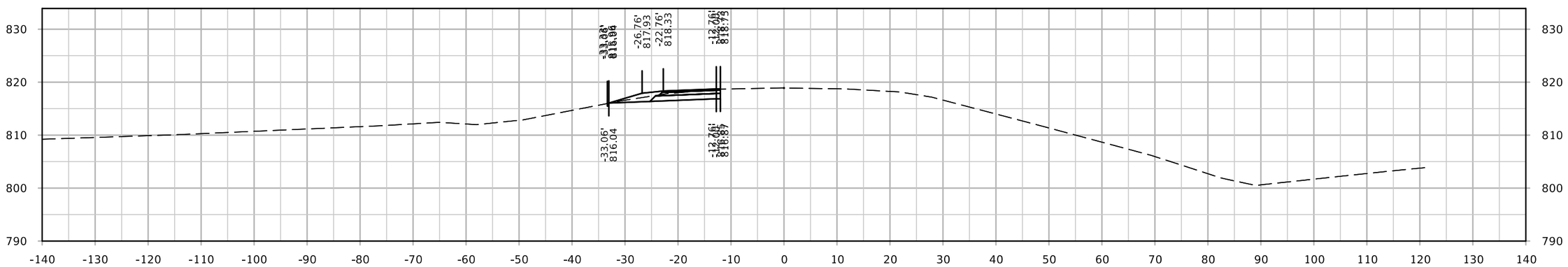
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.1

8:48:53 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 273+50.00

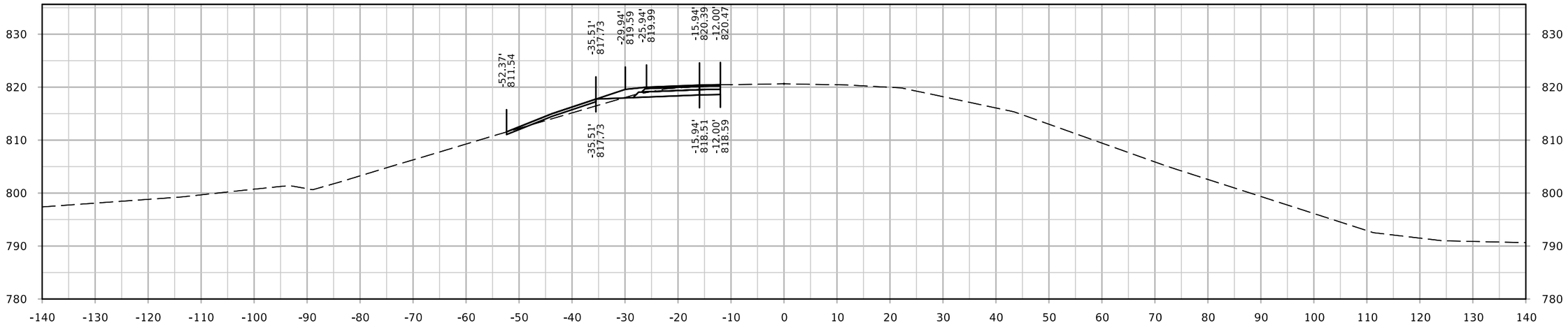


STA. 273+00.00

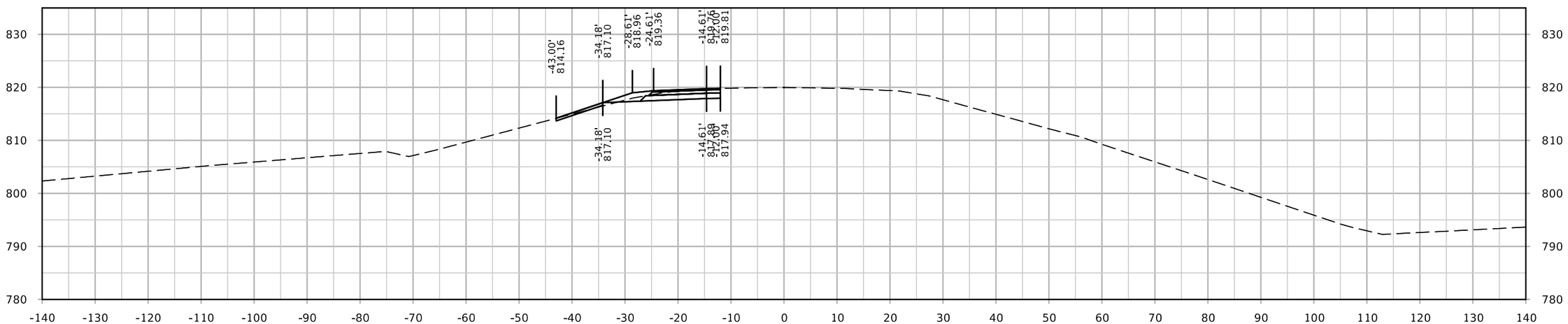
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.2

8:48:54 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 274+50.00

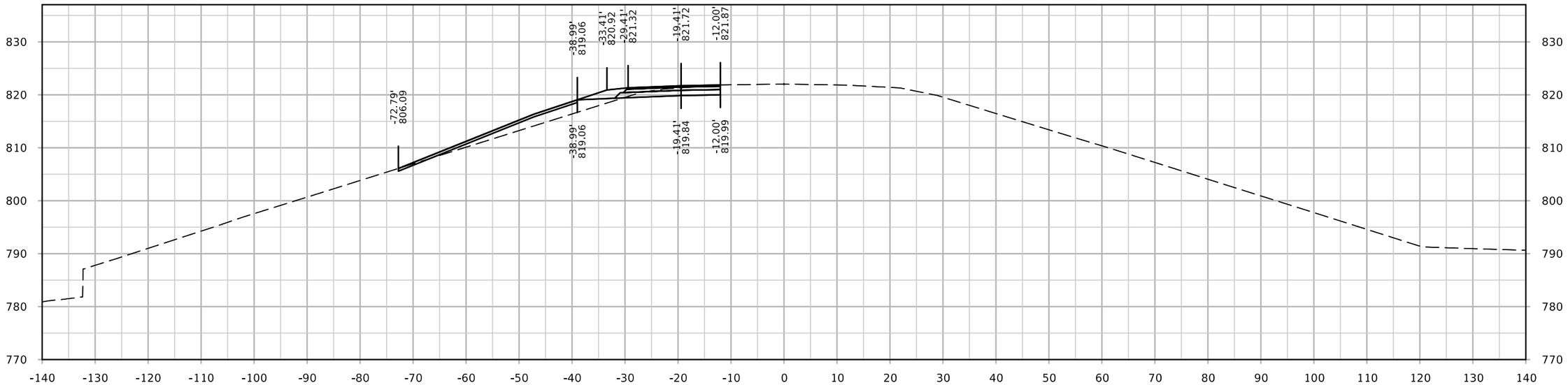


STA. 274+00.00

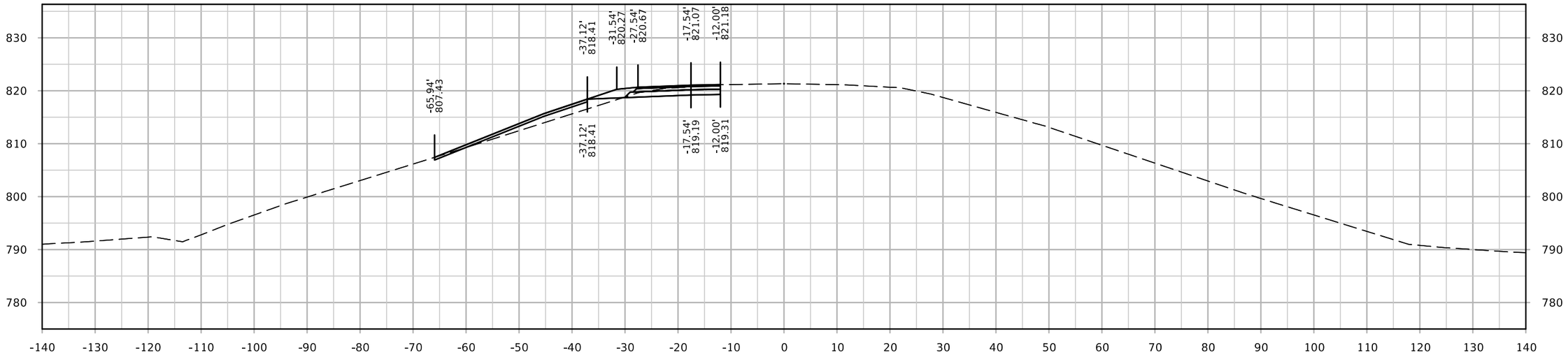
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.3

8:48:55 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 275+50.00

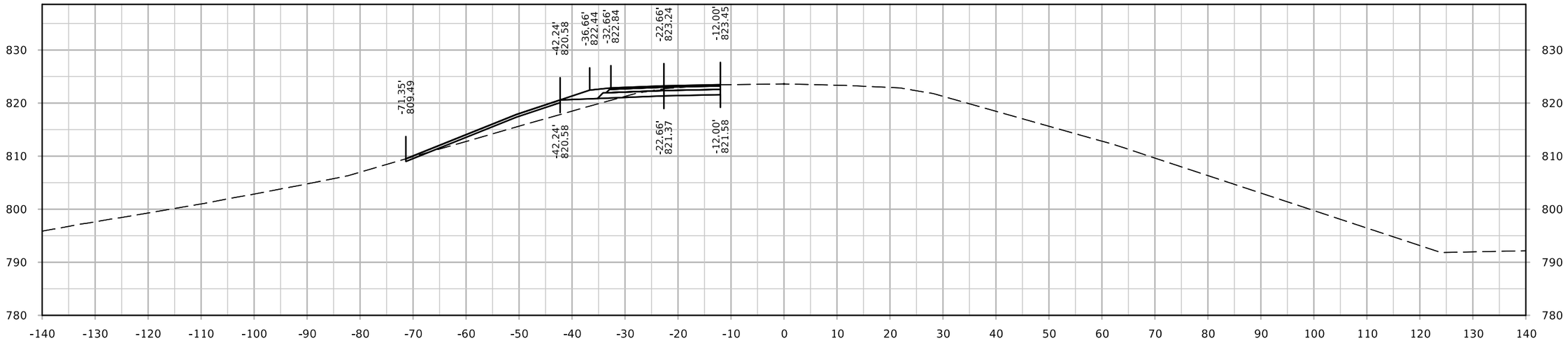


STA. 275+00.00

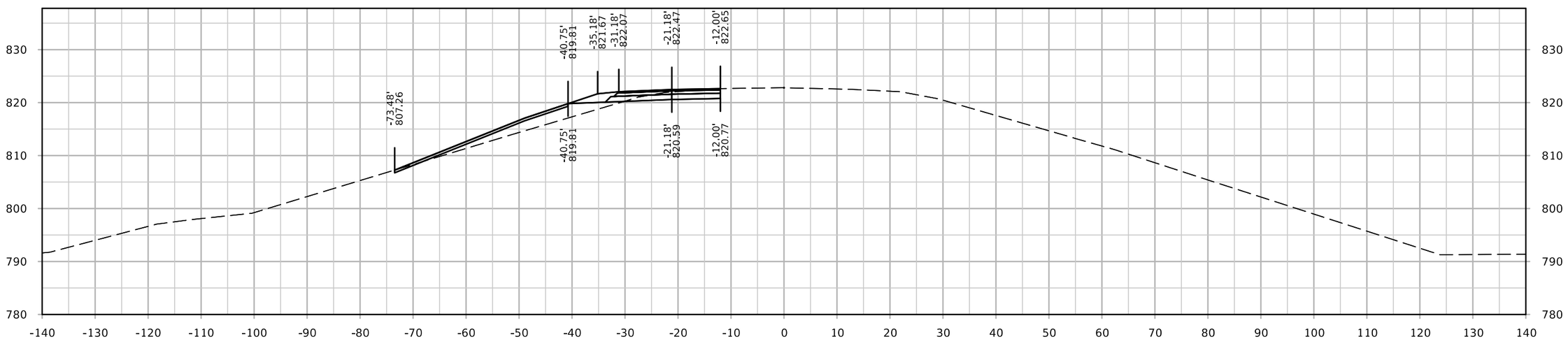
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.4

8:48:56 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 276+50.00

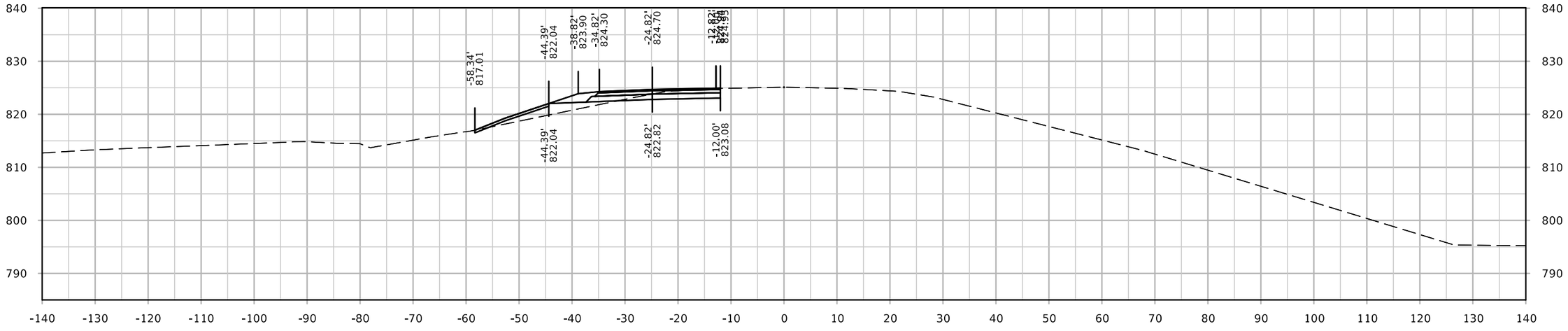


STA. 276+00.00

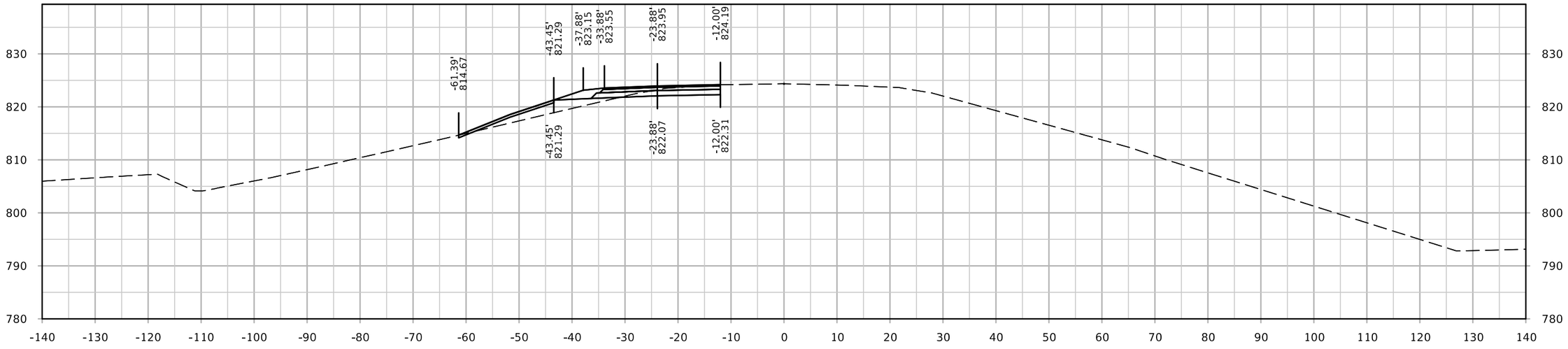
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.5

8:48:57 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 277+50.00

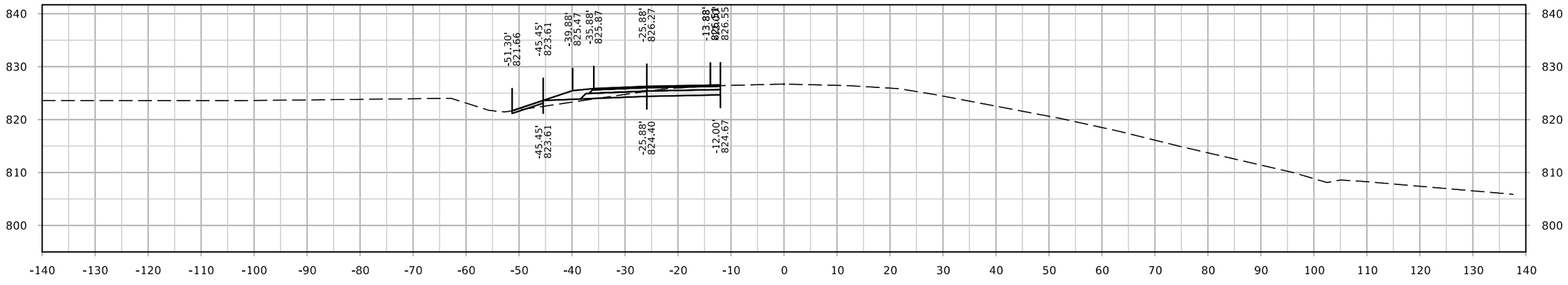


STA. 277+00.00

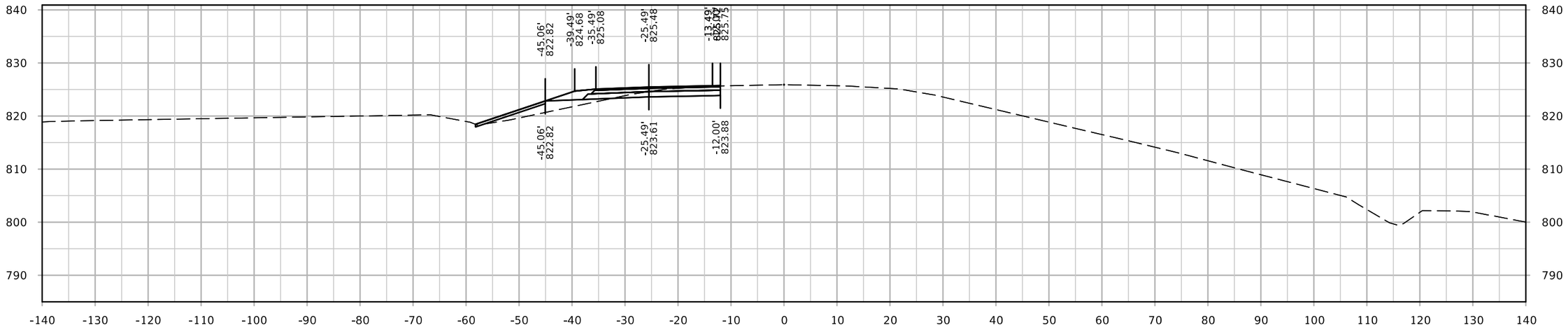
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.6

8:48:59 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 278+50.00

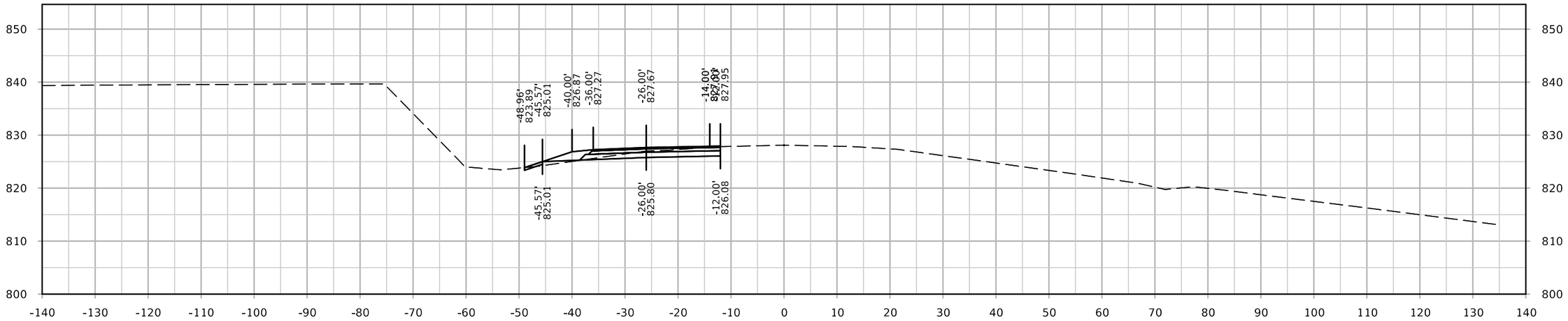


STA. 278+00.00

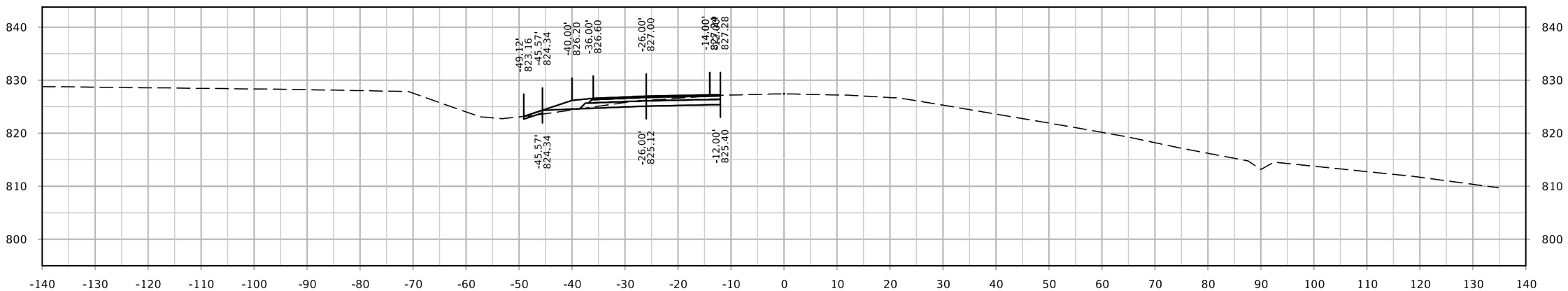
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.7

8:49:00 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



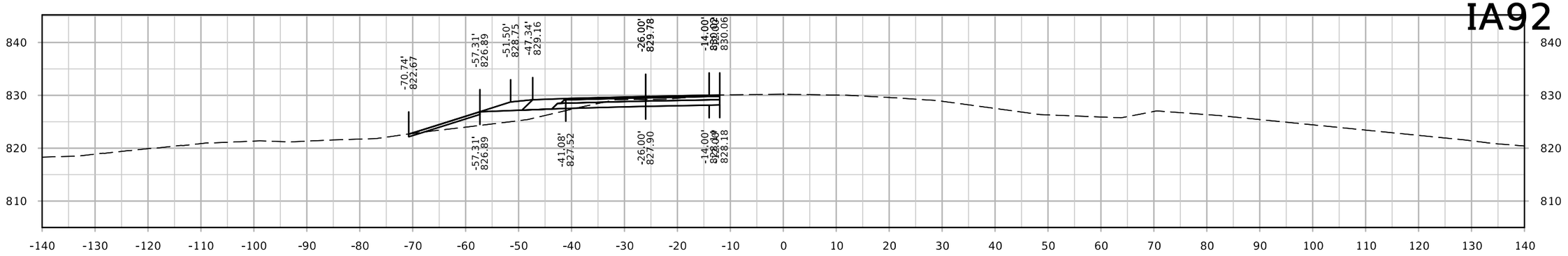
STA. 279+50.00



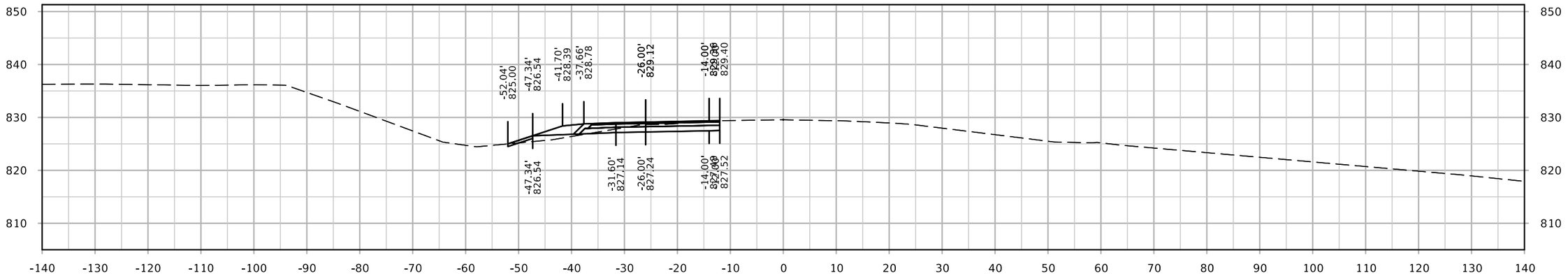
STA. 279+00.00

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.8

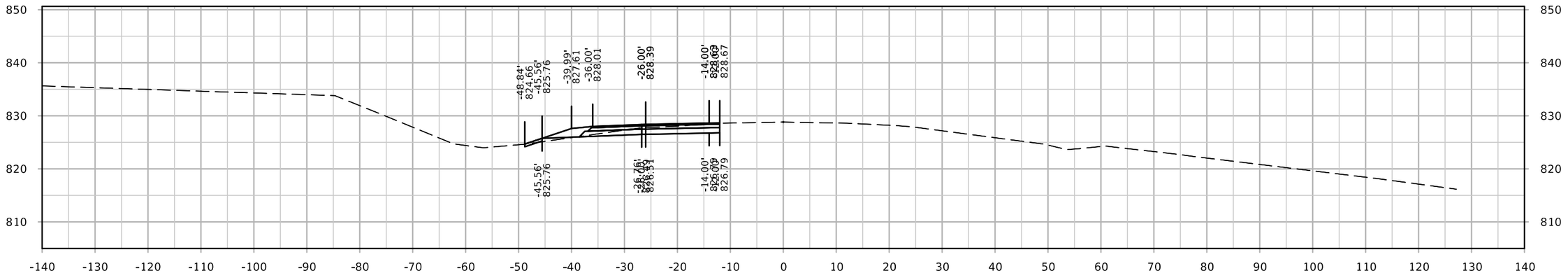
8:49:01 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn



STA. 281+00.00

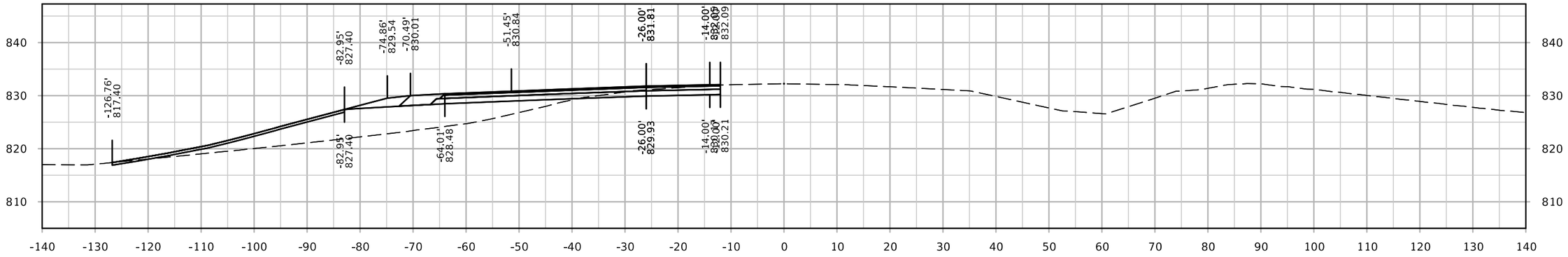


STA. 280+50.00

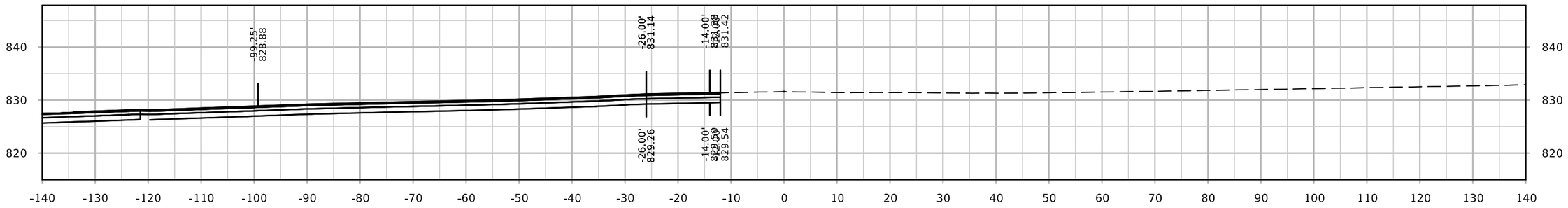


STA. 280+00.00

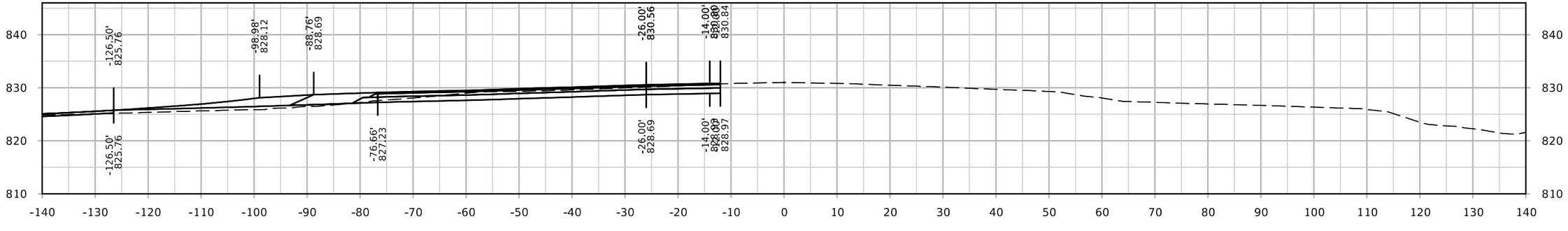
IA92



STA. 282+50.00



STA. 282+00.00

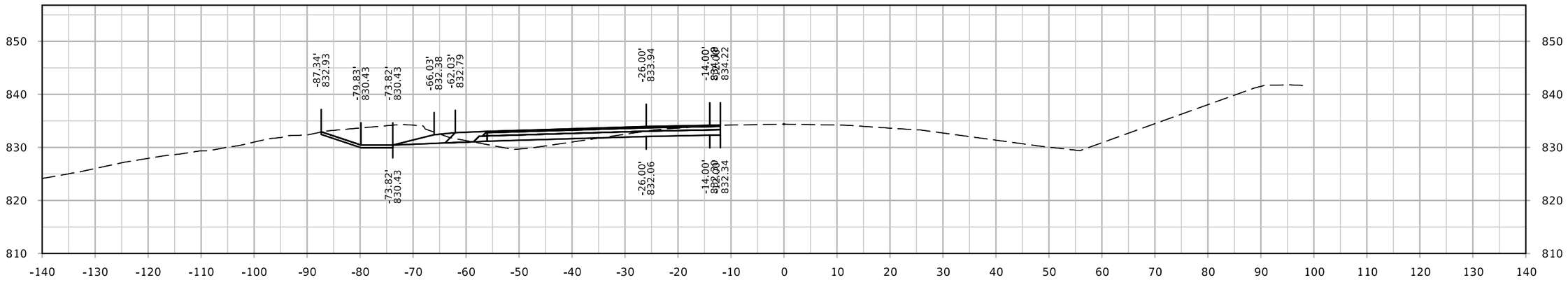


STA. 281+50.00

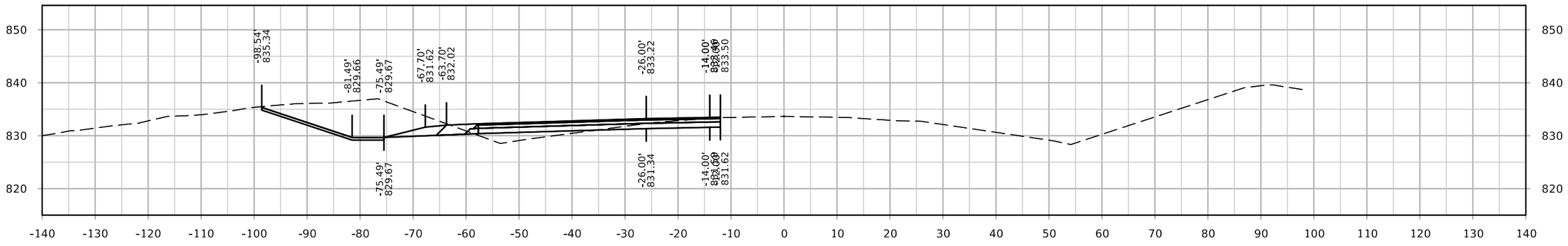
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.10

8:49:04 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

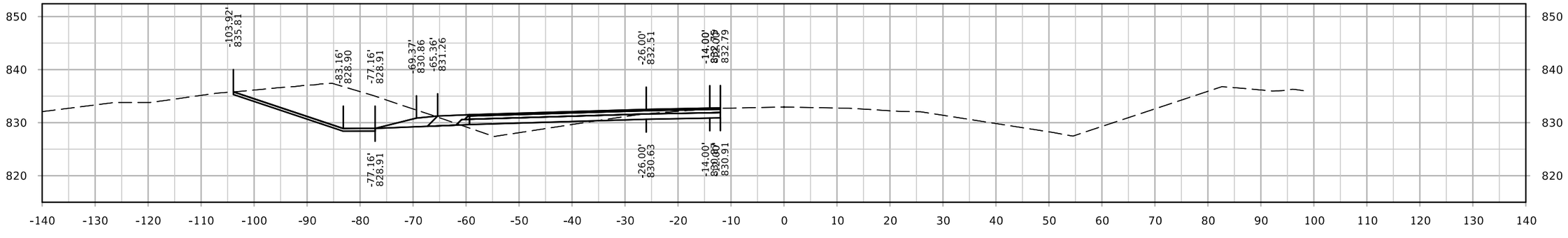
IA92



STA. 284+00.00



STA. 283+50.00

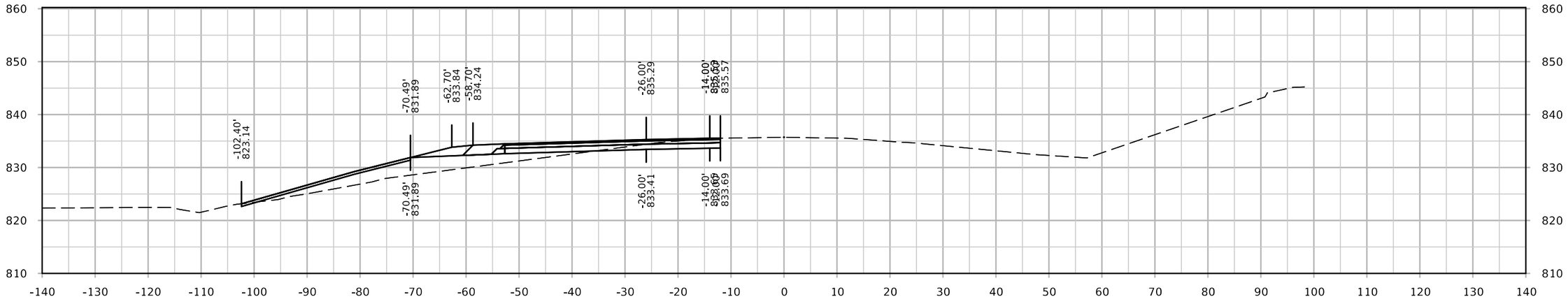


STA. 283+00.00

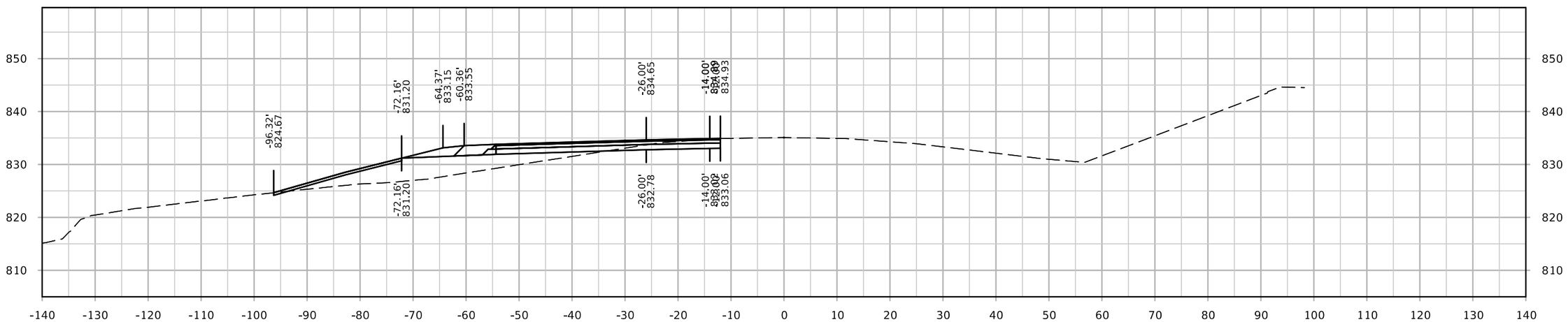
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.11

8:49:05 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

IA92



STA. 285+00.00

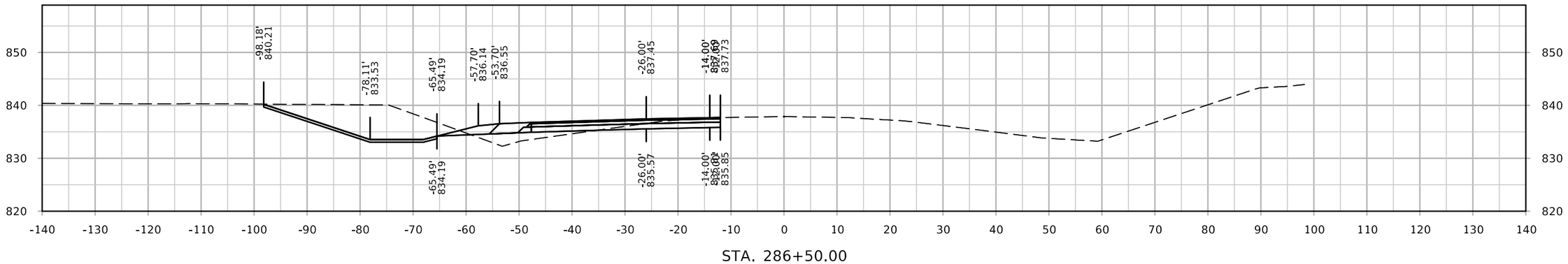


STA. 284+50.00

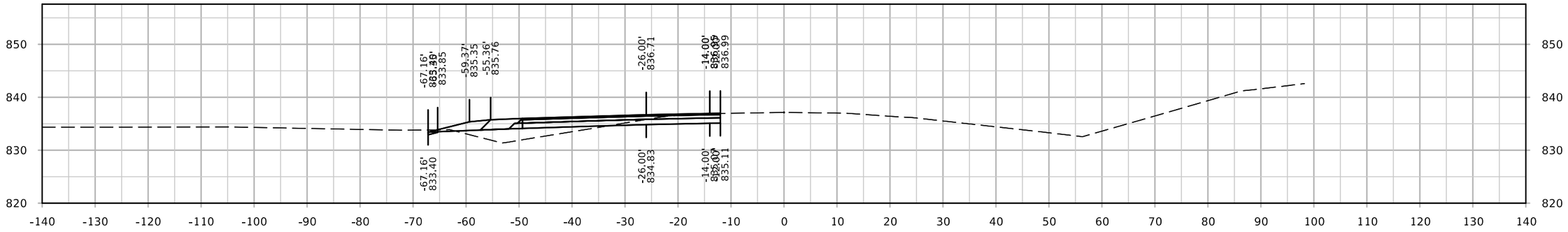
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.12

8:49:06 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

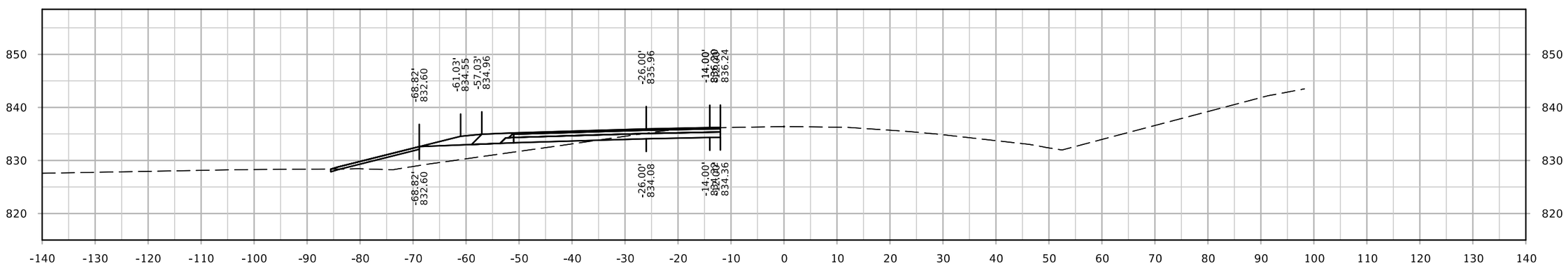
IA92



STA. 286+50.00



STA. 286+00.00

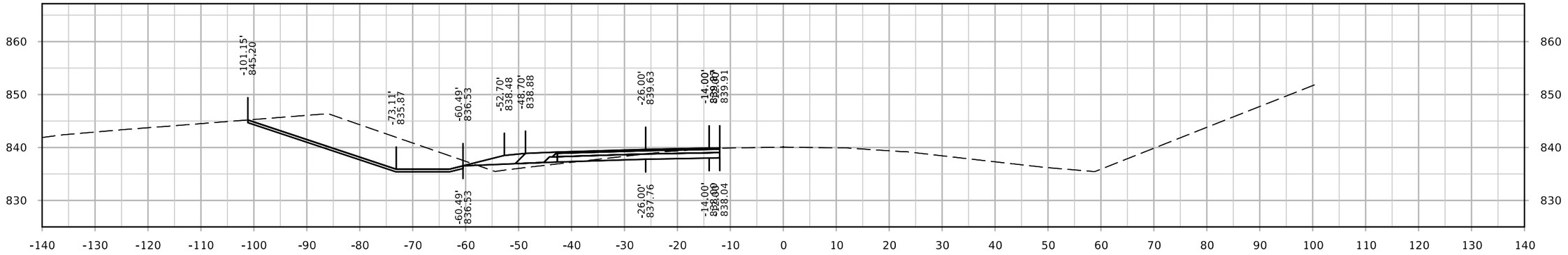


STA. 285+50.00

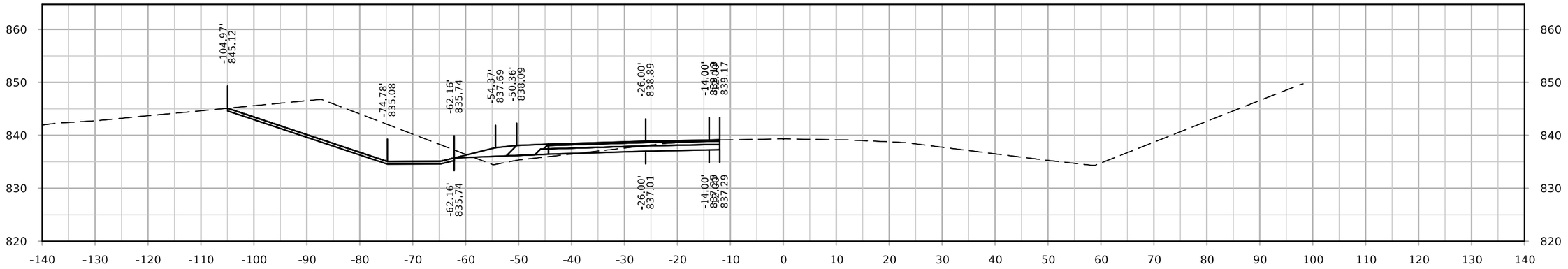
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.13

8:49:08 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

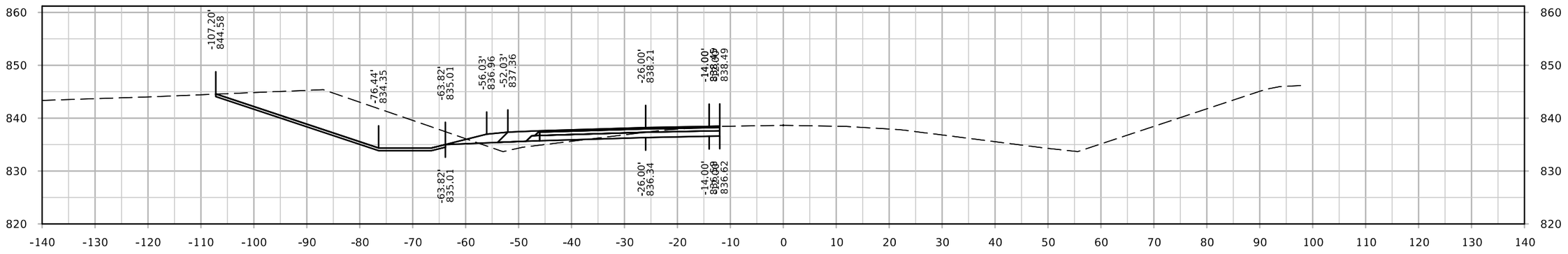
IA92



STA. 288+00.00



STA. 287+50.00

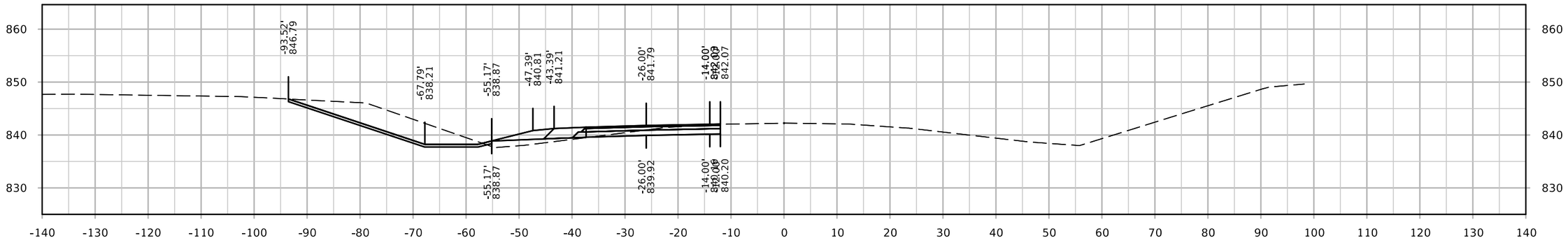


STA. 287+00.00

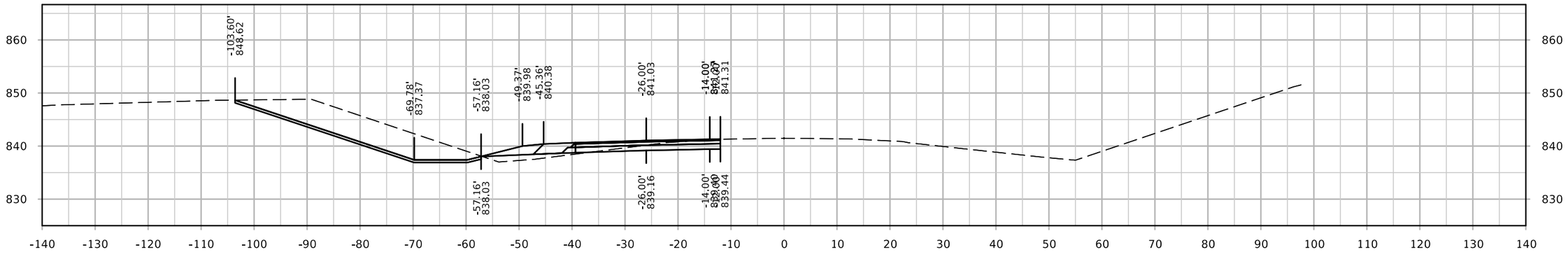
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.14

8:49:09 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

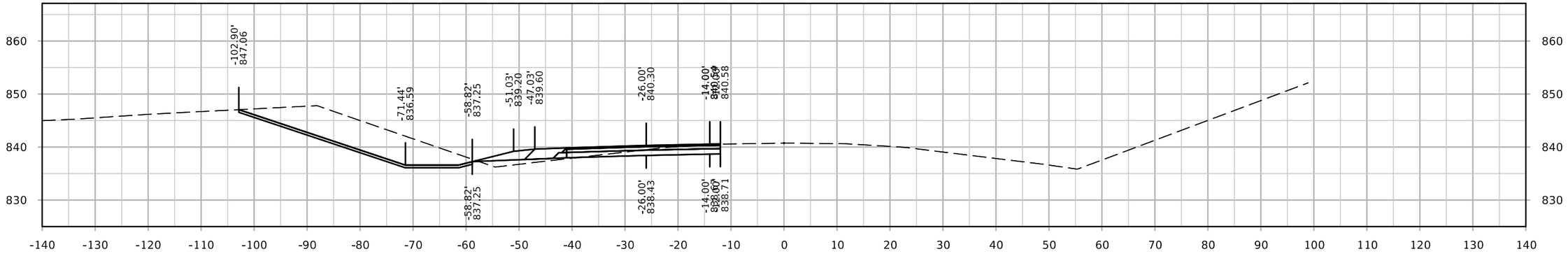
IA92



STA. 289+50.00



STA. 289+00.00

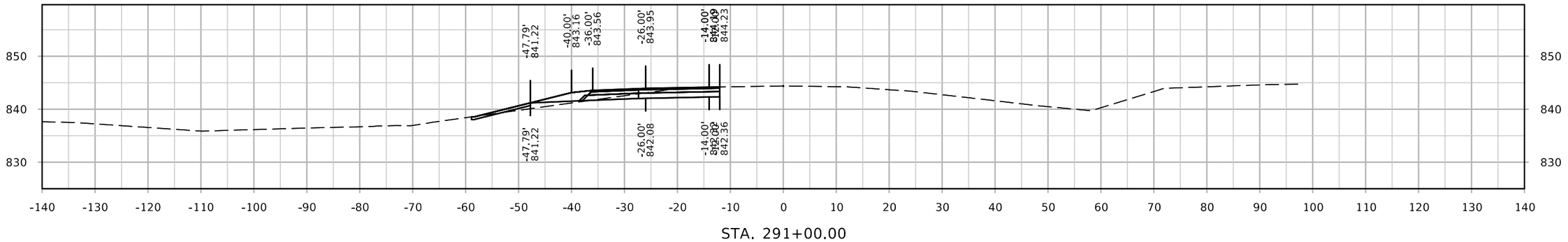


STA. 288+50.00

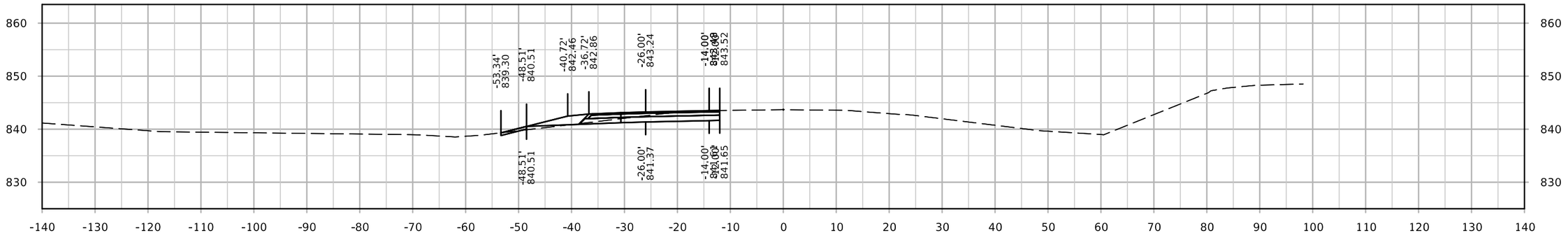
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.15

8:49:11 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

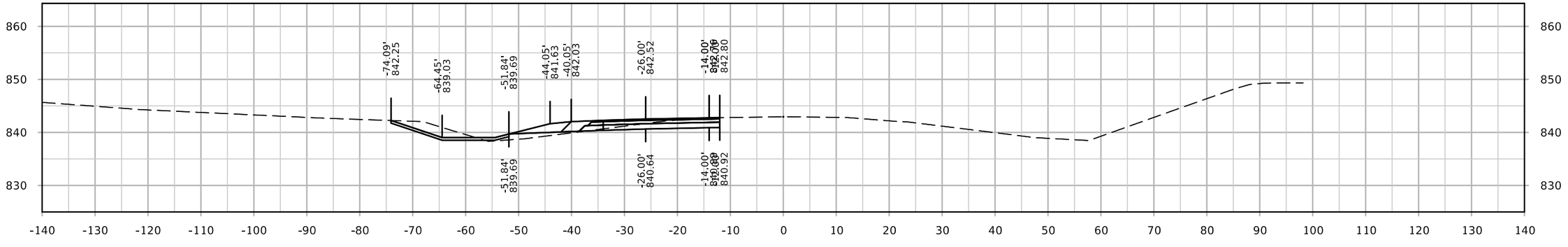
IA92



STA. 291+00.00



STA. 290+50.00

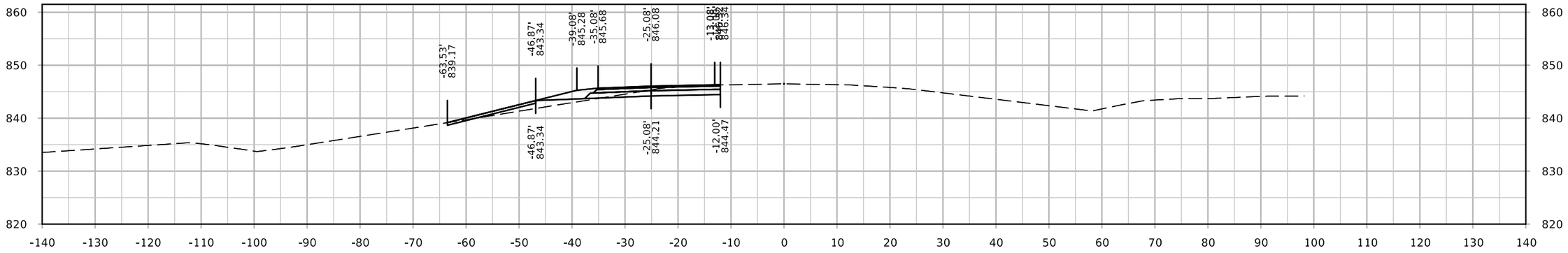


STA. 290+00.00

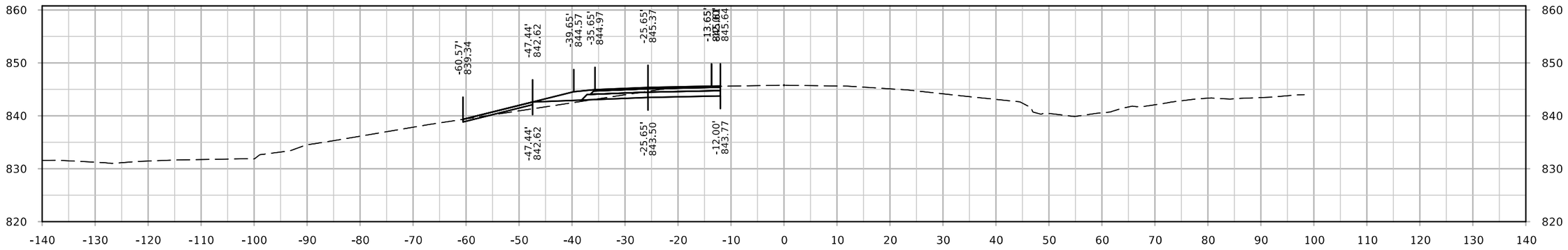
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.16

8:49:12 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

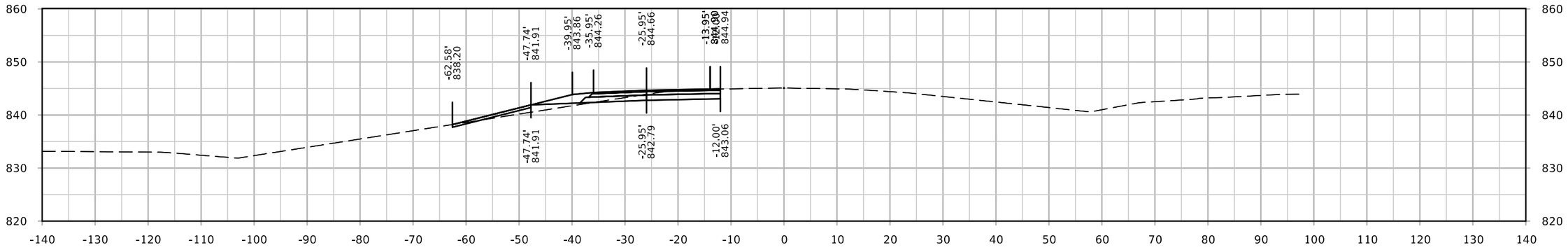
IA92



STA. 292+50.00



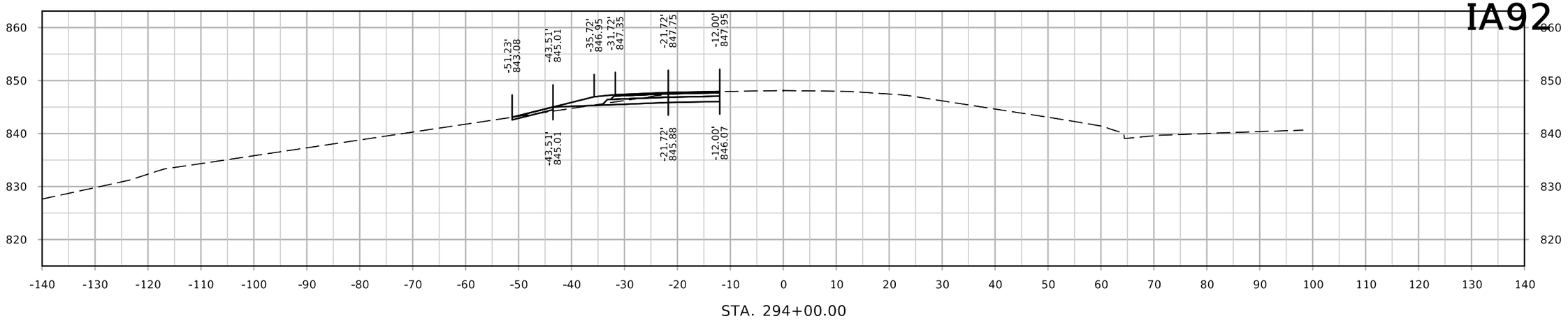
STA. 292+00.00



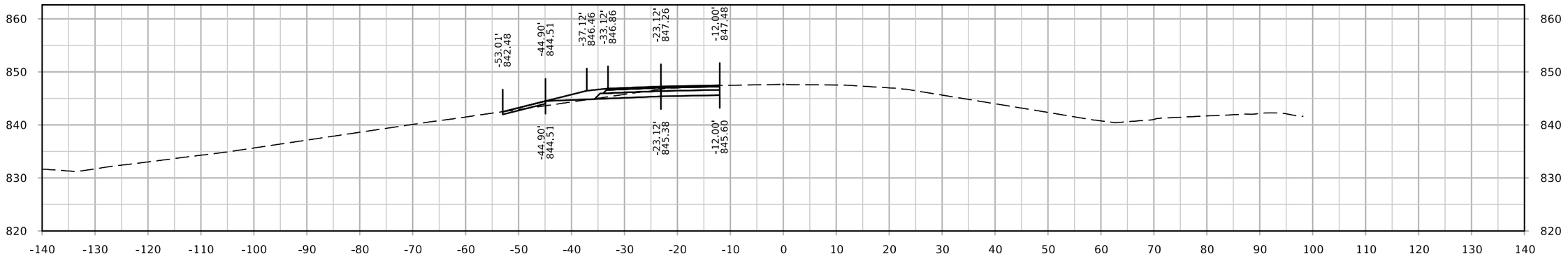
STA. 291+50.00

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.17

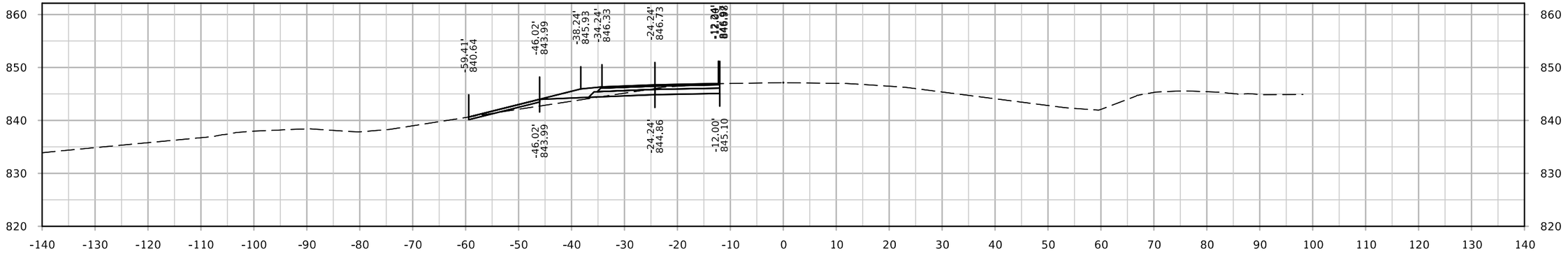
8:49:13 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn



STA. 294+00.00

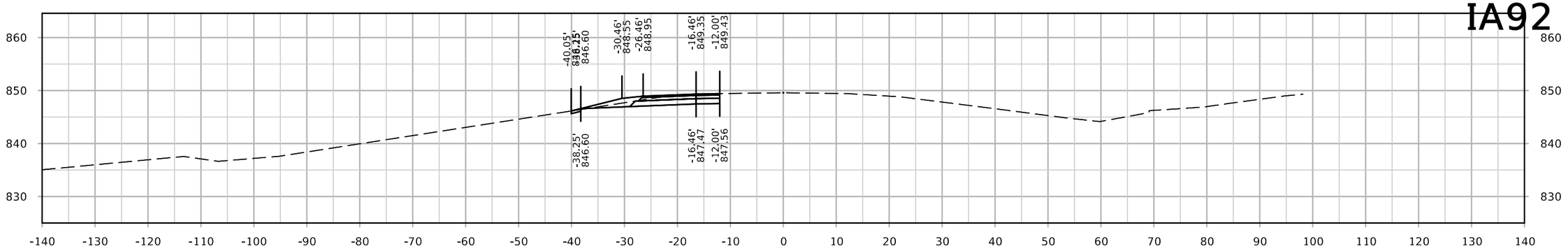


STA. 293+50.00

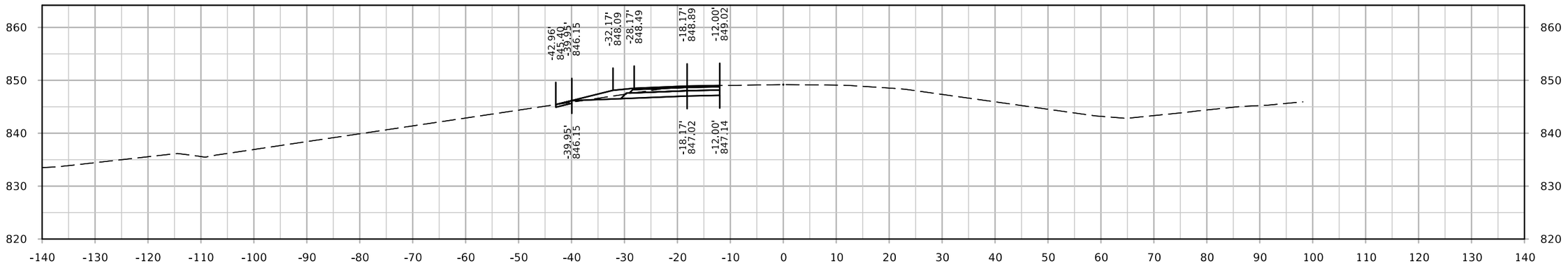


STA. 293+00.00

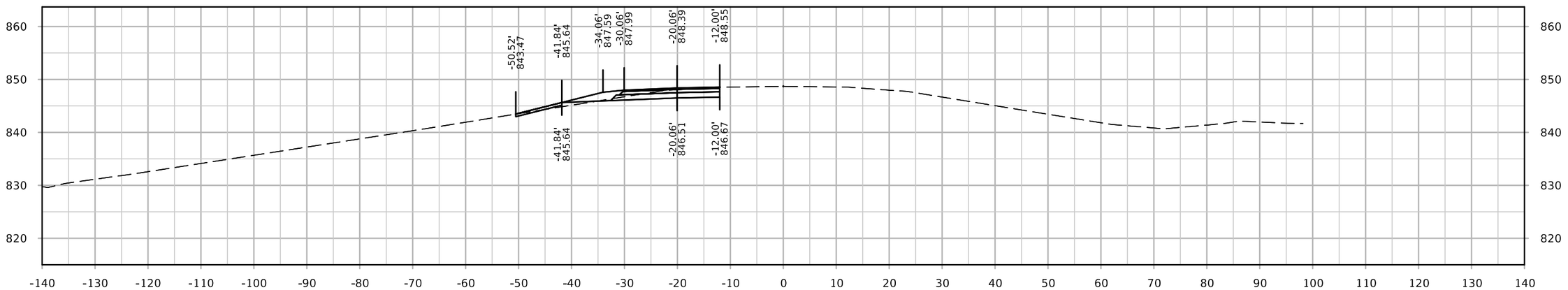
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.18



STA. 295+50.00



STA. 295+00.00

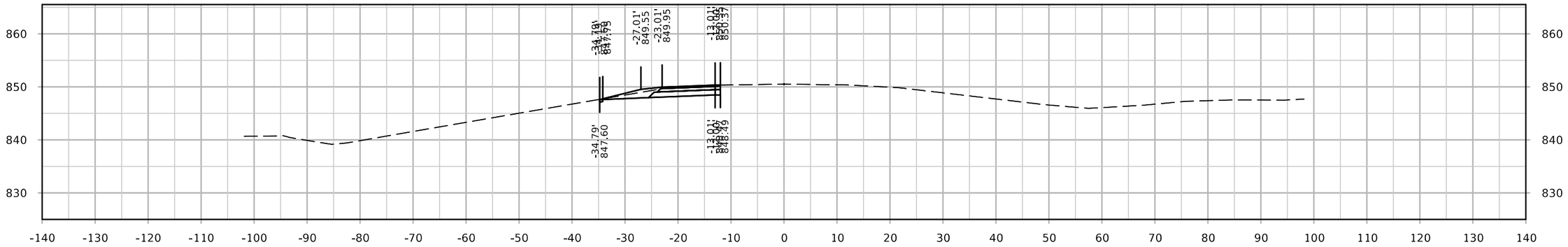


STA. 294+50.00

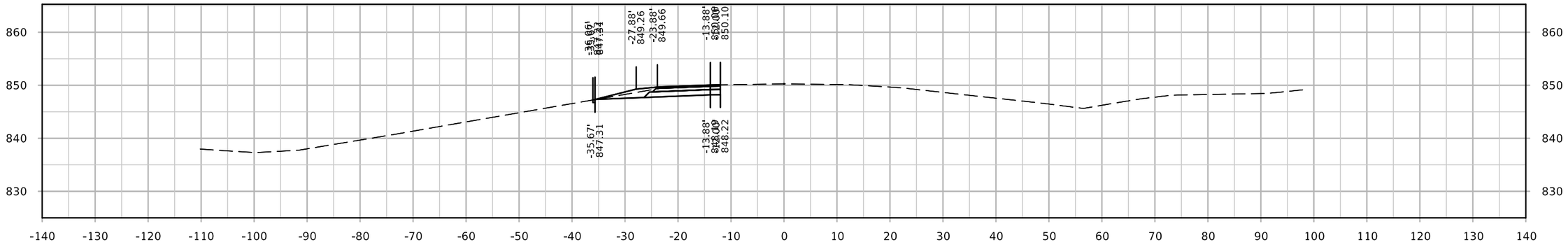
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.19

8:49:16 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

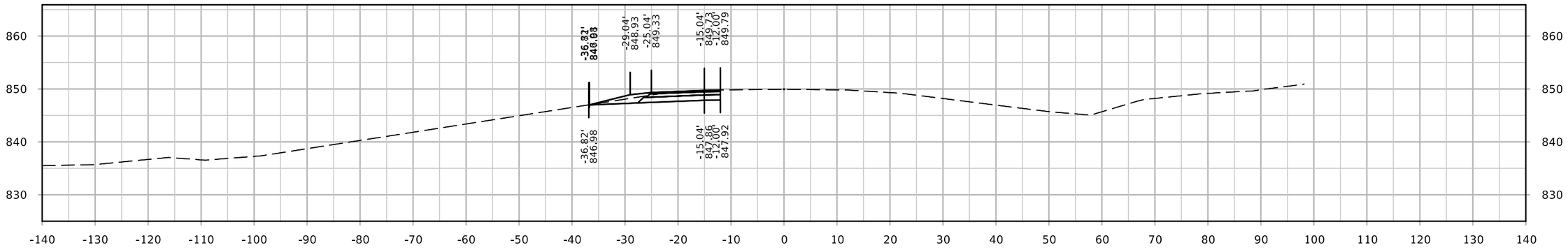
IA92



STA. 297+00.00



STA. 296+50.00

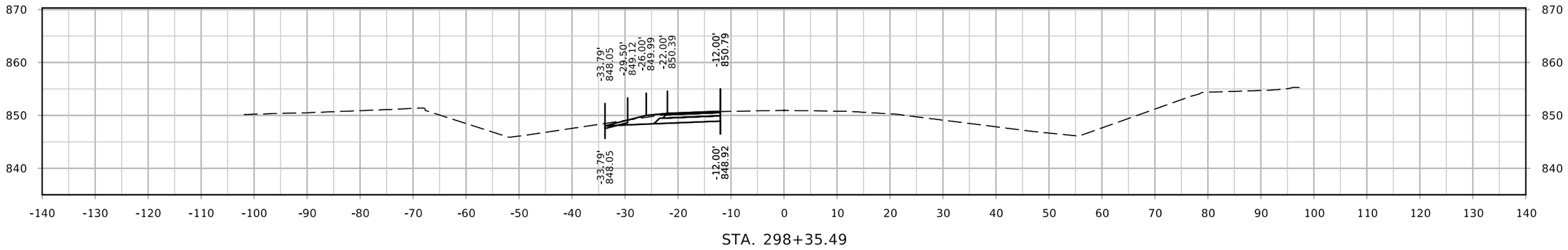


STA. 296+00.00

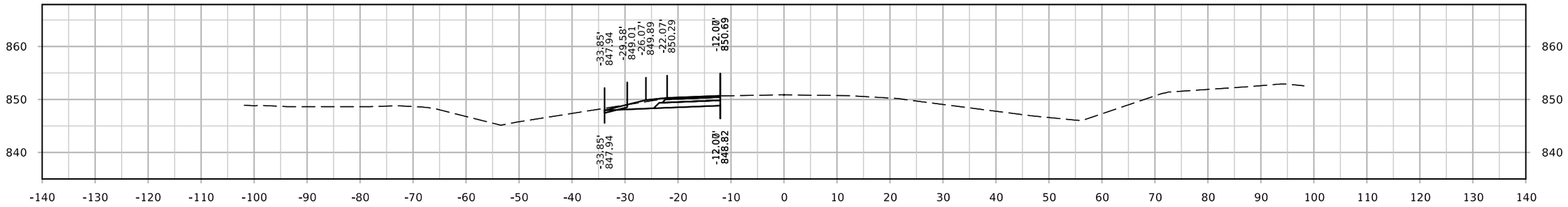
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.20

8:49:17 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

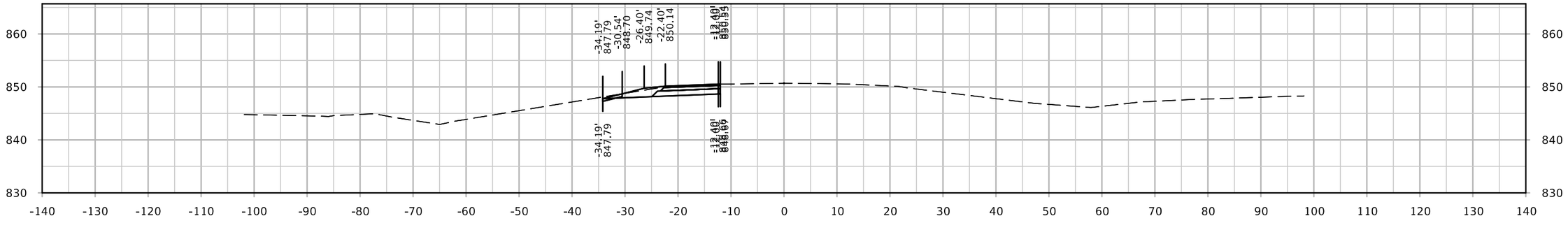
IA92



STA. 298+35.49



STA. 298+00.00

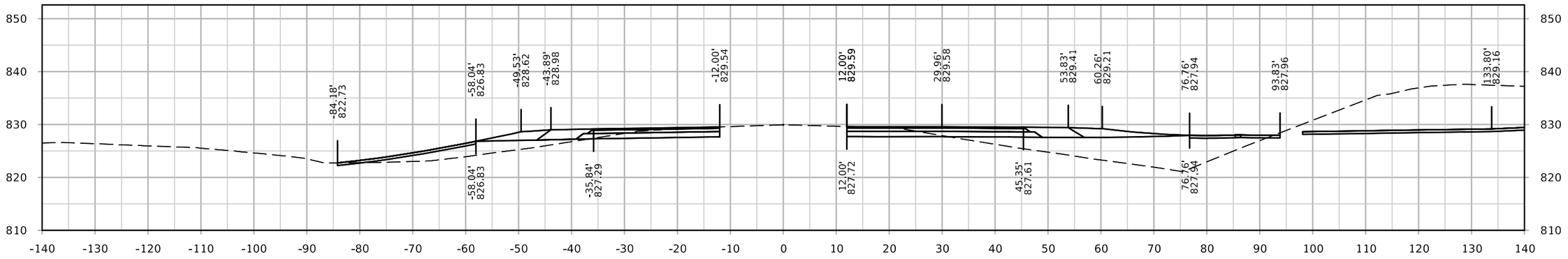


STA. 297+50.00

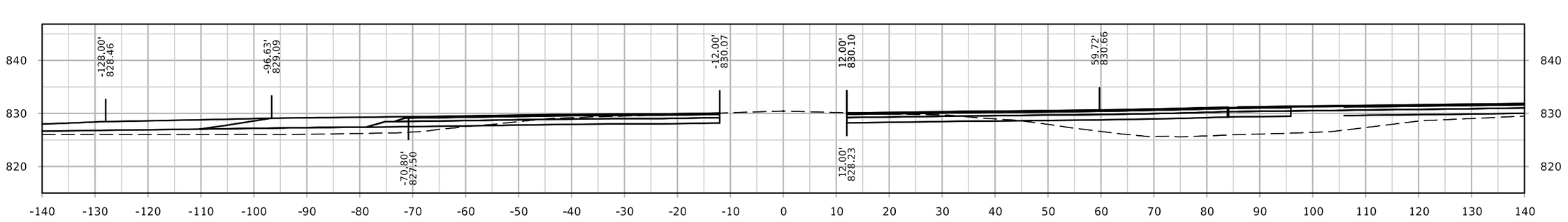
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER W.21

8:49:19 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_W01.dgn

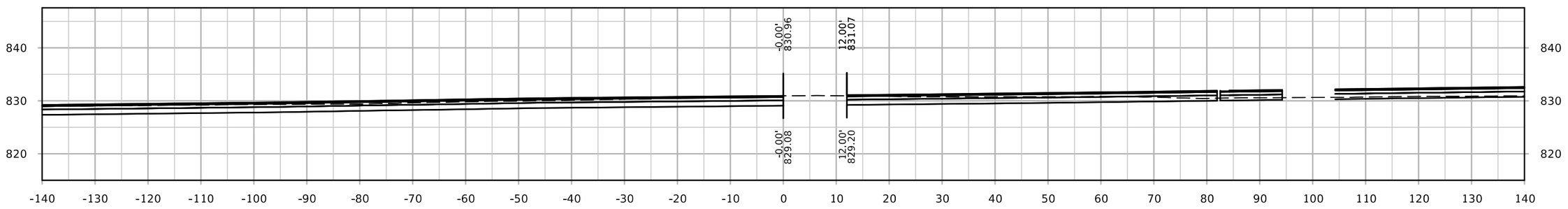
T17



STA. 6282+00.00



STA. 6281+75.00

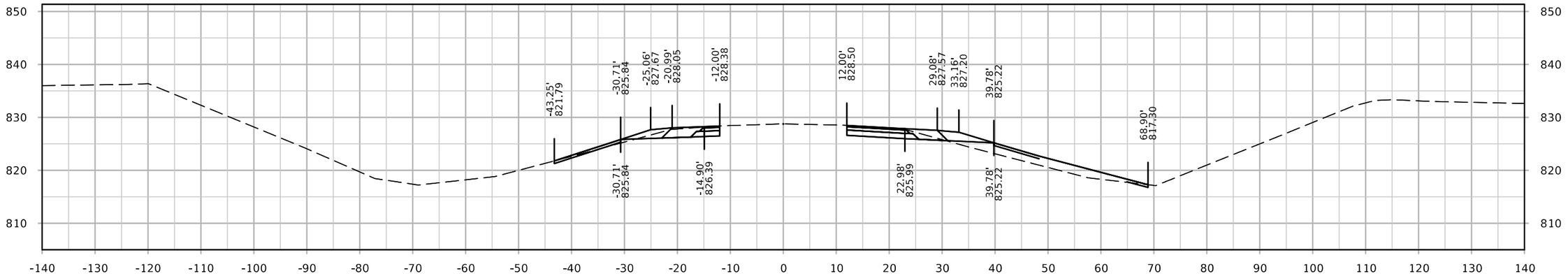


STA. 6281+50.94

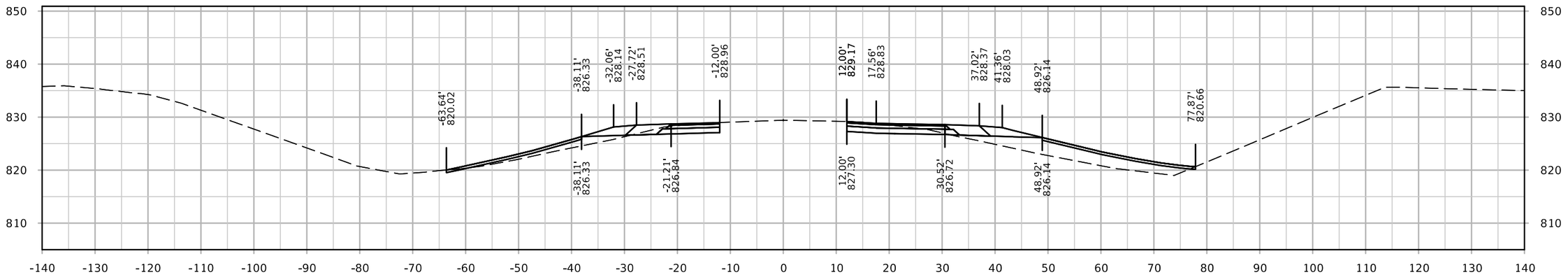
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER X.1

8:57:35 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_X01.dgn

T17



STA. 6282+50.00

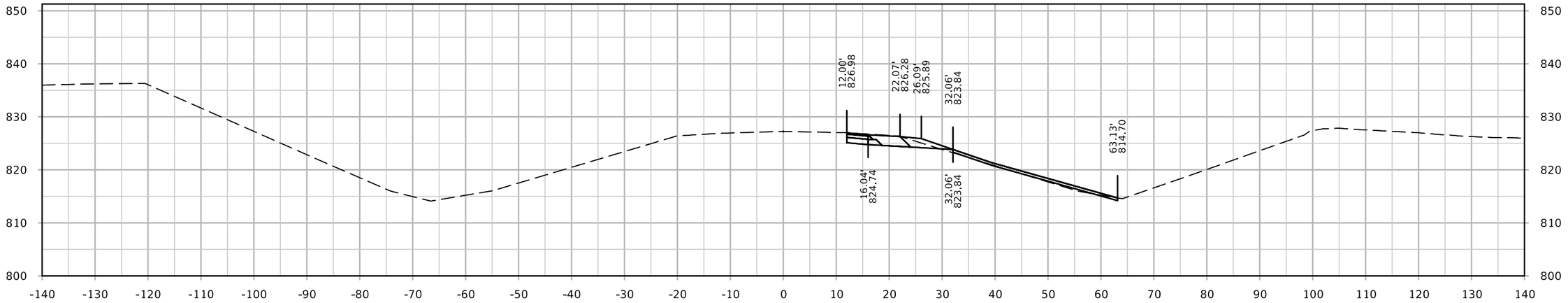


STA. 6282+25.00

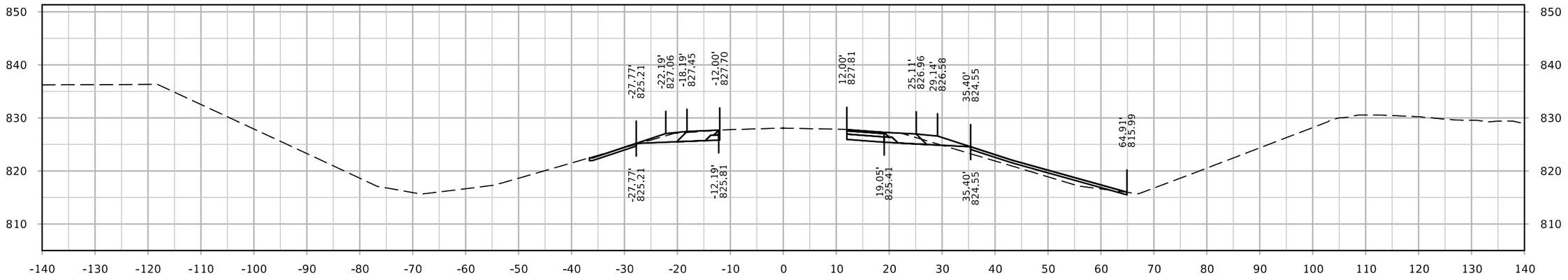
FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER X.2

8:57:36 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_X01.dgn

T17



STA. 6283+00.00

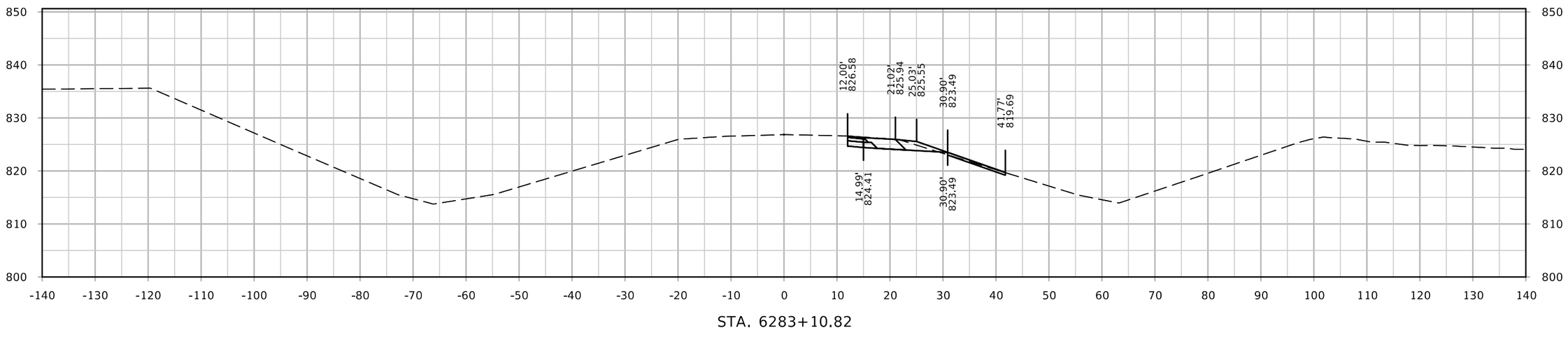


STA. 6282+75.00

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER X.3

8:57:37 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_X01.dgn

T17



STA. 6283+10.82

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSX-092-6(040)--3H-63/HSIPX-092-6(042)--3L-63	SHEET NUMBER X.4

8:57:38 AM 9/7/2023 wmcnama pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6309202022\Design\CADD_Files\Sheet_Files\SHT_63092040Z09_X01.dgn