HMA RESURFACING/
COLD-IN-PLACE RECYCLING
NHSX-092-4(28)--3H-61
MADISON/WARREN Co

LETTING DATE 02-19-2019

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

MADISON/WARREN COUNTY

HMA RESURFACING/COLD-IN-PLACE RECYCLING

E Jct US 169 to I-35

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

REVISIONS

TOTAL
46
PROJECT IDENTIFICATION NUMBER
18-61-092-010
PROJECT NUMBER
NHSX-092-4(28)--3H-61
R.O.W. PROJECT NUMBER
--

INDEX OF SHEETS

For Project Location Map
Refer to Sheet A.2

MADISON	
DESIGN DATA RURAL	
2019 AADT	3,100 V.P.D.
2039 AADT	4,500 V.P.D.
20-- DHV	-- V.P.H.
TRUCKS	15 %
Total Design ESALs	1,204,500

WARREN	
DESIGN DATA RURAL	
2019 AADT	4,600 V.P.D.
2039 AADT	6,600 V.P.D.
20-- DHV	-- V.P.H.
TRUCKS	10 %
Total Design ESALs	1,226,400

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Jason M. Holst	Primary Signature Block

LICENSED PROFESSIONAL ENGINEER
Jason M. Holst
16923
IOWA

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

[redacted]
Printed or Typed Name

My license renewal date is December 31, 2019

Pages or sheets covered by this seal: A.1-A.2, B.1-B.7, C.1-C.11, D.1-D.24, J.1-J.2, U.1

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER A.1

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STA. 124+00.00
STOP CIP/HMA
RESUME MILL/HMA

STA. 157+00.00
STOP MILL/HMA
RESUME CIP/HMA

STA. 570+00.00
STOP CIP/HMA
RESUME MILL/HMA

STA. 79+00.00
STOP MILL/HMA
BEGIN CIP/HMA

STA. 194+00.00
STOP CIP/HMA
RESUME MILL/HMA

STA. 584+25.00
STOP MILL/HMA
RESUME CIP/HMA

STA. 752+00.00
BEGIN MILL/HMA

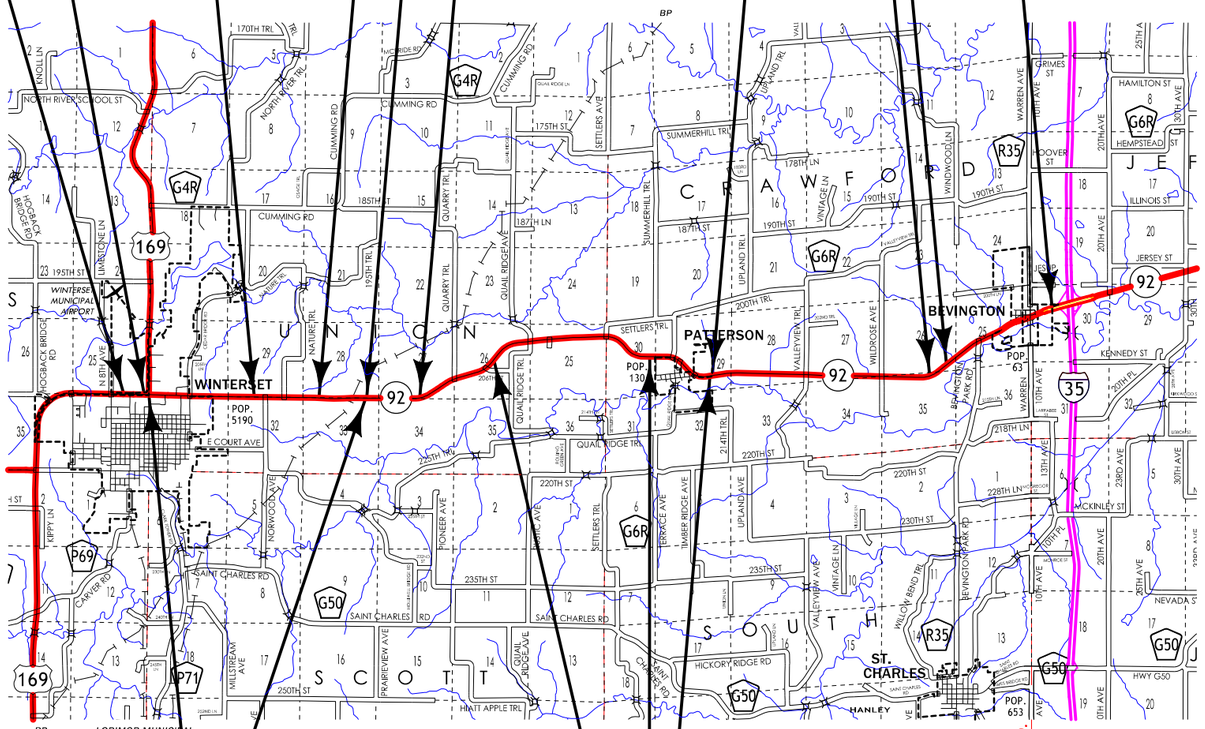
STA. 426+00.00
STOP MILL/HMA
RESUME CIP/HMA

STA. 666+70.75
END CIP/HMA
END PROJECT
REF. LOC. 118.63

STA. 738+71.30
BEGIN PROJECT
BEGIN PATCHING
REF. LOC. 69.55

T-76N

T-75N



EQUATION:
STA. 11+39.20 (AHEAD)
REF. LOC. 106.06
= STA. 756+37.30 (BACK)
REF. LOC. 69.89

EQUATION:
STA. 156+27.83 (AHEAD)
= STA. 156+30.26 (BACK)

EQUATION:
STA. 257+10.41 (AHEAD)
= STA. 257+13.11 (BACK)

EQUATION:
STA. 422+61.44 (AHEAD)
= STA. 421+64.45 (BACK)

EQUATION:
STA. 373+44.67 (AHEAD)
= STA. 373+53.64 (BACK)

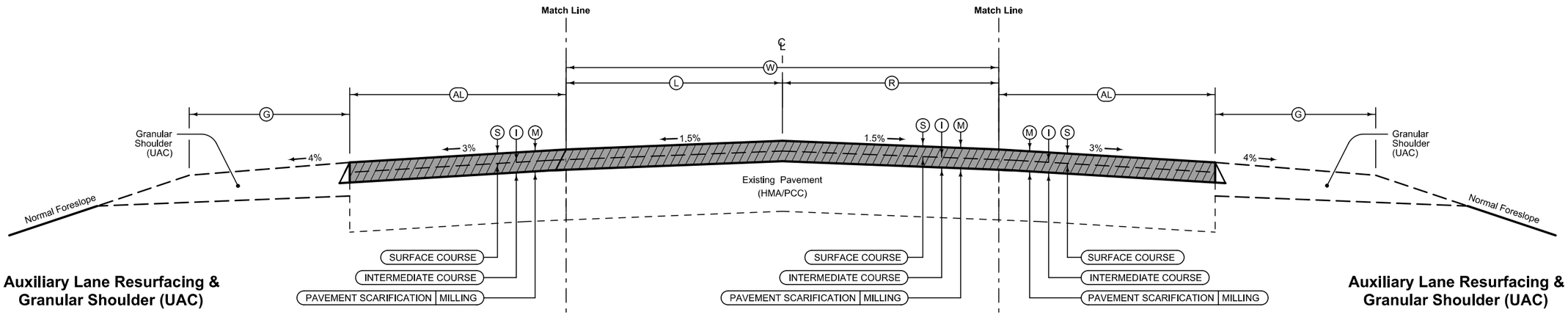
R-28W R-27W R-26W R-25W

LOCATION MAP SCALE
0 1 2 3
Miles

LOCATION MAP

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER A.2

11:34:16 AM 10/30/2018 dcampbe pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6109201018\Design\61092028_A01.sht



Auxiliary Lane Resurfacing & Granular Shoulder (UAC)

2_AuxLane_HMA_Paved_Shoulder

STATION TO STATION		(AL) Feet	(G) Feet	(S) Inches	(I) Inches	(M) Inches
752+00.00	752+04.14	0	10.0	1.5	1.5	3.0
752+04.14	755+64.14	0 - 12.0	10.0	1.5	1.5	3.0
755+64.14	756+37.30(A)	12.0	10.0	1.5	1.5	3.0
11+39.20(A)	14+61.64	12.0	10.0	1.5	1.5	3.0
14+61.64	15+81.64	12.0 - 0	10.0	1.5	1.5	3.0

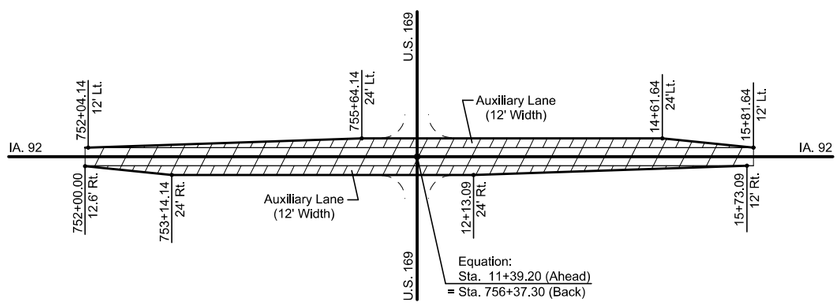
2LANE_PAVE_MILL

STATION TO STATION		LENGTH Feet	(W) Feet	(L) Feet	(R) Feet	(S) Inches	(I) Inches	(M) Inches
752+00.00	756+37.30(A)	437.30	24.0	12.0	12.0	1.5	1.5	3.0
11+39.20(A)	15+81.64	442.44	24.0	12.0	12.0	1.5	1.5	3.0

Auxiliary Lane Resurfacing & Granular Shoulder (UAC)

2_AuxLane_HMA_Paved_Shoulder

STATION TO STATION		(AL) Feet	(G) Feet	(S) Inches	(I) Inches	(M) Inches
752+00.00	753+14.14	0.6 - 12.0	10.0	1.5	1.5	3.0
753+14.14	756+37.30(A)	12.0	10.0	1.5	1.5	3.0
11+39.20(A)	12+13.09	12.0	10.0	1.5	1.5	3.0
12+13.09	15+73.09	12.0 - 0	10.0	1.5	1.5	3.0
15+73.09	15+81.64	0	10.0	1.5	1.5	3.0



Equation:
(A) Sta. 756+37.30 (Back) = Sta. 11+39.20 (Ahead)

DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs/cu ft
Intermediate Course	147 lbs/cu ft
Asphalt Binder	6.0% per Ton
Pavement Scarification	135 lbs/cu ft

Notes:

Section may be modified as directed by the Engineer in areas of special shaping and through intersections.

See Tab 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

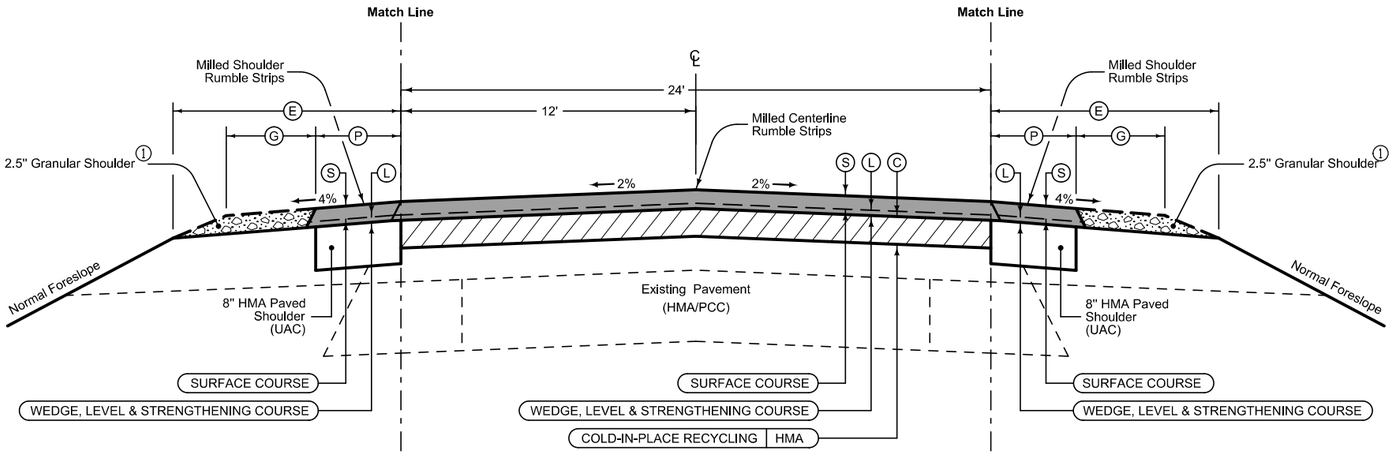
INTERSECTION OF IA. 92 AND U.S. 169
HMA MILLING AND RESURFACING

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER B.1

HMA Shoulder Resurfacing

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(E) Feet	(P) Feet	(G) Feet	(L) Inches	(S) Inches
					2_P_G_HMA_RESURF	
15+81.64	41+00.00	10.0	4.0	4.0	1.0	1.5
79+00.00	124+00.00	10.0	4.0	4.0	1.0	1.5
157+00.00	194+00.00	10.0	4.0	4.0	1.0	1.5
426+00.00	570+00.00	10.0	4.0	4.0	1.0	1.5
584+25.00	654+60.00	10.0	4.0	4.0	1.0	1.5
662+70.00	666+70.75	10.0	4.0	4.0	1.0	1.5



HMA Shoulder Resurfacing

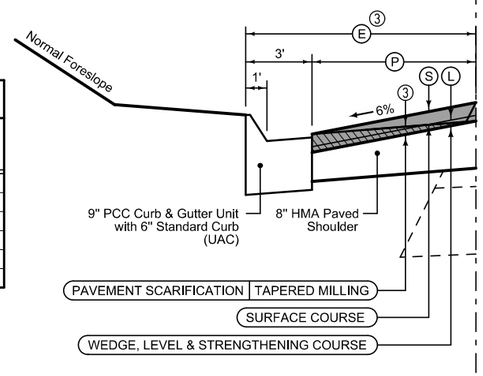
Shoulder Jointing:
Longitudinal joint: B

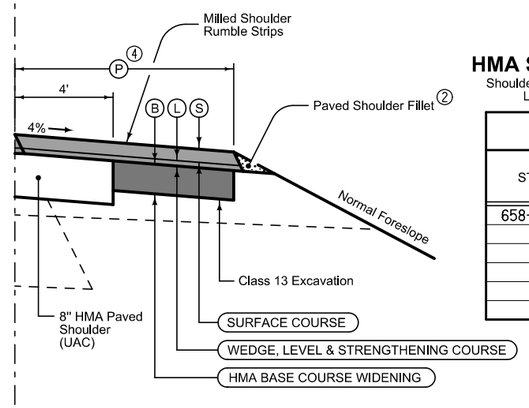
STATION TO STATION		(E) Feet	(P) Feet	(G) Feet	(L) Inches	(S) Inches
					2_P_G_HMA_RESURF	
15+81.64	41+00.00	10.0	4.0	4.0	1.0	1.5
79+00.00	124+00.00	10.0	4.0	4.0	1.0	1.5
157+00.00	194+00.00	10.0	4.0	4.0	1.0	1.5
426+00.00	570+00.00	10.0	4.0	4.0	1.0	1.5
584+25.00	658+25.00	10.0	4.0	4.0	1.0	1.5

STATION TO STATION		LENGTH Feet	(C) Inches	(L) Inches	(S) Inches	REMARKS
			2LANE_PAVE_MILL			
15+81.64	41+00.00	2528.36	3.0	1.0	1.5	
79+00.00	124+00.00	4500.00	3.0	1.0	1.5	
157+00.00	194+00.00	3700.00	3.0	1.0	1.5	
426+00.00	570+00.00	14400.00	3.0	1.0	1.5	
584+25.00	666+70.75	8245.75	3.0	1.0	1.5	

Paved Shoulder with Curb

STATION TO STATION		(E) Feet	(P) Feet	(L) Inches	(S) Inches
					2_P_HMA_RESURF
654+60.00	662+70.00	11.0	9.0	1.0	1.5





HMA Shoulder Resurfacing with Widening

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(P) Feet	(B) Inches	(L) Inches	(S) Inches
					2_P_HMA_RESURF
658+25.00	666+70.75	9.0	4.0	1.0	1.5

DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs/cu ft
Leveling Course	147 lbs/cu ft
Base Course	145 lbs/cu ft
Asphalt Binder	6.0% per Ton
Pavement Scarification	135 lbs/cu ft

Notes:

Section may be modified as directed by the Engineer in areas of special shaping and through intersections.

See Tab 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

Refer to PV-202

(1) Refer to Typical 7135-A for additional information.
(2) Refer to Typical 7145-A for additional information.
(3) Refer to Typical 7137-A for additional information.
(4) Refer to Typical 7137-B for additional information.

IA 92 CIP & HMA RESURFACING

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER B.2

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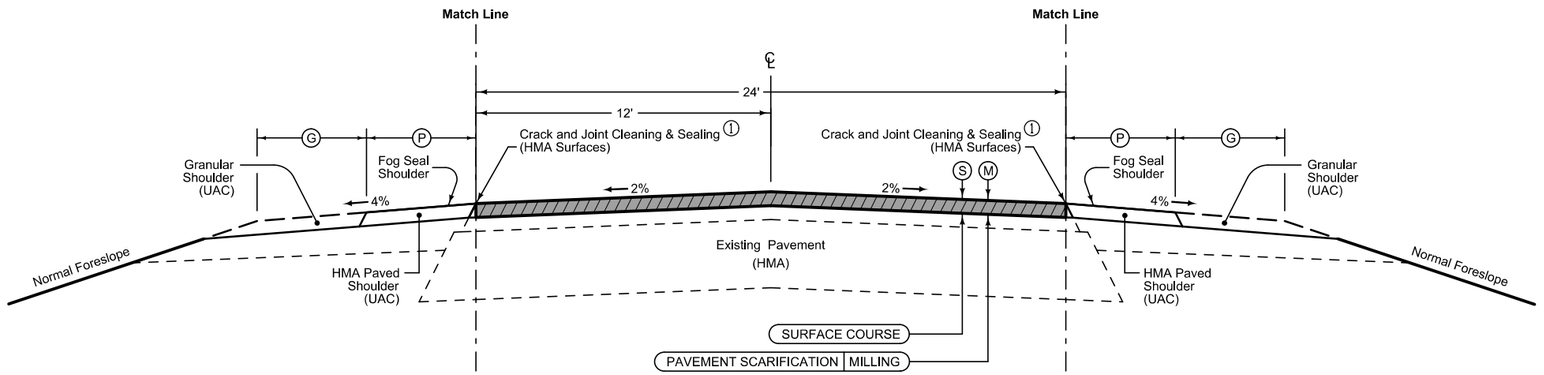
HMA Paved Shoulder (UAC)

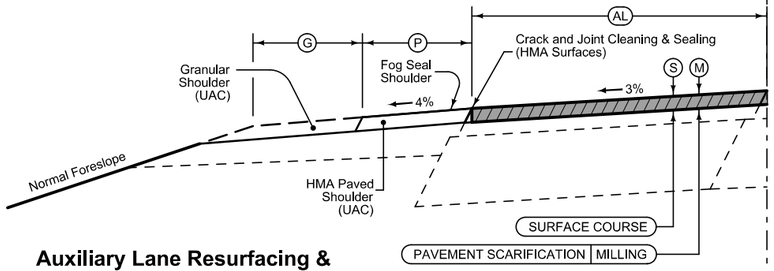
* Bid Item				2_P_G_HMA_RESURF
STATION TO STATION		(P) Feet	(G) Feet	FOG SEAL Gal. *
41+00.00	79+00.00	4.0	4.0	337.8
124+00.00	156+30.26(B)	4.0	4.0	287.1
156+27.83(B)	157+00.00	4.0	4.0	6.4
194+00.00	257+13.11(C)	4.0	4.0	561.2
257+10.41(C)	323+80.00	4.0	4.0	592.9
358+80.00	373+53.64(D)	4.0	4.0	131.0
373+44.67(D)	421+64.45(E)	4.0	4.0	428.4
422+61.44(E)	426+00.00	4.0	4.0	30.1
570+00.00	584+25.00	4.0	4.0	126.7
			TOTAL:	2501.6



HMA Paved Shoulder (UAC)

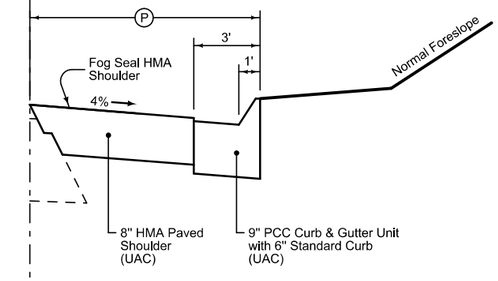
* Bid Item				2_P_G_HMA_RESURF
STATION TO STATION		(P) Feet	(G) Feet	FOG SEAL Gal. *
41+00.00	79+00.00	4.0	4.0	337.8
124+00.00	156+30.26(B)	4.0	4.0	287.1
156+27.83(B)	157+00.00	4.0	4.0	6.4
194+00.00	257+13.11(C)	4.0	4.0	561.2
257+10.41(C)	352+10.00	4.0	4.0	844.4
359+38.00	373+53.64(D)	4.0	4.0	125.8
373+44.67(D)	421+64.45(E)	4.0	4.0	428.4
422+61.44(E)	426+00.00	4.0	4.0	30.1
570+00.00	584+25.00	4.0	4.0	126.7
			TOTAL:	2747.9

2LANE_PAVE_MILL					
STATION TO STATION		LENGTH Feet	(S) Inches	(M) Inches	REMARKS
41+00.00	79+00.00	3800.00	1.5	1.5	
124+00.00	156+30.26(B)	3230.26	1.5	1.5	
156+27.83(B)	157+00.00	72.17	1.5	1.5	
194+00.00	257+13.11(C)	6313.11	1.5	1.5	
257+10.41(C)	373+53.64(D)	11643.23	1.5	1.5	
373+44.67(D)	421+64.45(E)	4819.78	1.5	1.5	
422+61.44(E)	426+00.00	338.56	1.5	1.5	
570+00.00	584+25.00	1425.00	1.5	1.5	



Auxiliary Lane Resurfacing & HMA Paved Shoulder (UAC)

* Bid Item							2_AuxLane_HMA_Paved_Shoulder
STATION TO STATION		(AL) Feet	(P) Feet	(G) Feet	(S) Inches	(M) Inches	FOG SEAL Gal. *
323+80.00	331+00.00	0-12.0	4.0	4.0-3.0	1.5	1.5	64.0
331+00.00	357+00.00	12.0	4.0	3.0	1.5	1.5	231.1
357+00.00	358+80.00	12.0-0	4.0	3.0-4.0	1.5	1.5	16.0
						TOTAL:	311.1



HMA Paved Shoulder with PCC Curb (UAC)

* Bid Item			2_P_HMA_RESURF
STATION TO STATION		(P) Feet	FOG SEAL Gal. *
352+10.00	359+38.00	9.0	97.1
		TOTAL:	97.1

Equations:
(B) Sta. 156+30.26 (Back) = Sta. 156+27.83 (Ahead)
(C) Sta. 257+13.11 (Back) = Sta. 257+10.41 (Ahead)
(D) Sta. 373+53.64 (Back) = Sta. 373+44.67 (Ahead)
(E) Sta. 421+64.45 (Back) = Sta. 422+61.44 (Ahead)

DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs/cu ft
Asphalt Binder	6.0% per Ton
Pavement Scarification	135 lbs/cu ft

Notes:

Section may be modified as directed by the Engineer in areas of special shaping and through intersections.

See Tab 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

① Required when adjacent to paved shoulder.

IA 92 HMA MILLING & RESURFACING

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER B.3

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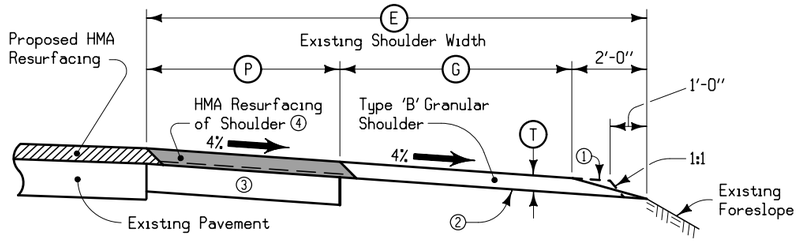
7135-A
Modified



Notes:

Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.

① Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.

② Additional material required due to existing low shoulders. Shape to ensure that the slope matches the paved shoulder. Shaping shall not be paid for separately, but shall be considered incidental to the price bid for granular shoulder material.

③ Existing paved shoulder (UAC).

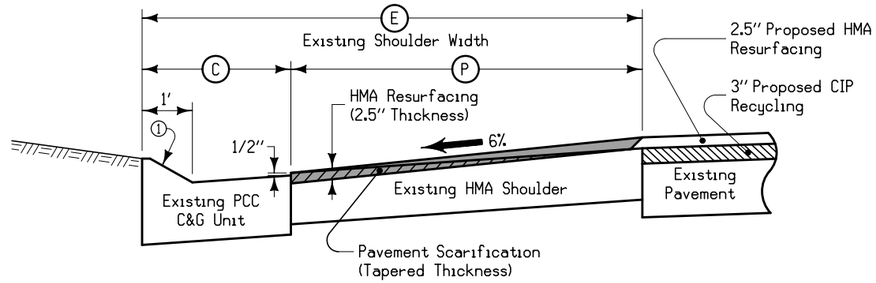
④ Refer to Sheet B.2.

LOCATION				(T) Inches	(E) Feet	(P) Feet	(G) Feet
ROAD IDENTIFICATION	STATION TO STATION		SIDE				
Ia. 92	15+81.64	41+00.00	Both	2.5	10.0	4.0	4.0
Ia. 92	79+00.00	124+00.00	Both	2.5	10.0	4.0	4.0
Ia. 92	157+00.00	194+00.00	Both	2.5	10.0	4.0	4.0
Ia. 92	426+00.00	570+00.00	Both	2.5	10.0	4.0	4.0
Ia. 92	584+25.00	654+60.00	Lt.	2.5	10.0	4.0	4.0
Ia. 92	584+25.00	658+25.00	Rt.	2.5	10.0	4.0	4.0
Ia. 92	662+70.00	666+70.75	Lt.	2.5	10.0	4.0	4.0

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

ADJACENT TO HOT MIX ASPHALT RESURFACING OF SHOULDER

7137-A
Modified



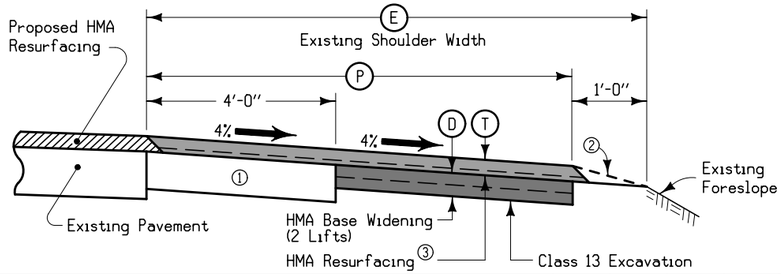
① Existing 6" Sloped Curb (UAC).

LOCATION				(E) Feet	(P) Feet	(C) Feet
ROAD IDENTIFICATION	STATION TO STATION		SIDE			
Ia. 92	654+60.00	662+70.00	Lt.	11.0	8.0	3.0

TYPICAL SECTION FOR HMA SHOULDER RESURFACING

ADJACENT TO HOT MIX ASPHALT RESURFACING OF MAINLINE

7137-B
Modified



① Existing Paved Shoulder.

② Refer to Typical 7145-A.

③ Refer to Sheet B.2.

LOCATION				(T) Inches	(D) Inches	(E) Feet	(P) Feet
ROAD IDENTIFICATION	STATION TO STATION		SIDE				
Ia. 92	658+25.00	666+70.75	Rt.	2.5	4.0	10.0	9.0

TYPICAL SECTION FOR HMA SHOULDER RESURFACING

ADJACENT TO HOT MIX ASPHALT RESURFACING OF MAINLINE

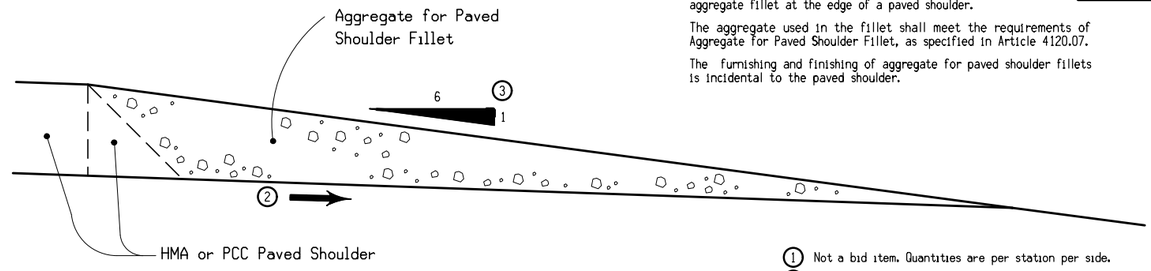
7145-A
Modified

Notes:

This typical illustrates the construction requirements for an aggregate fillet at the edge of a paved shoulder.

The aggregate used in the fillet shall meet the requirements of Aggregate for Paved Shoulder Fillet, as specified in Article 4120.07.

The furnishing and finishing of aggregate for paved shoulder fillets is incidental to the paved shoulder.



① Not a bid item. Quantities are per station per side.
② Match slope of under side of shoulder pavement.
③ 6:1 Slope minimum

LOCATION				QUANTITIES ①	
ROAD IDENTIFICATION	STATION TO STATION		SIDE	AGGREGATE FOR PAVED SHOULDER FILLET	
				PCC Tons	HMA Tons
Ia. 92	658+25.00	666+70.75	Rt.		6.17

AGGREGATE FOR PAVED SHOULDER FILLET

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER B.4

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7148-A
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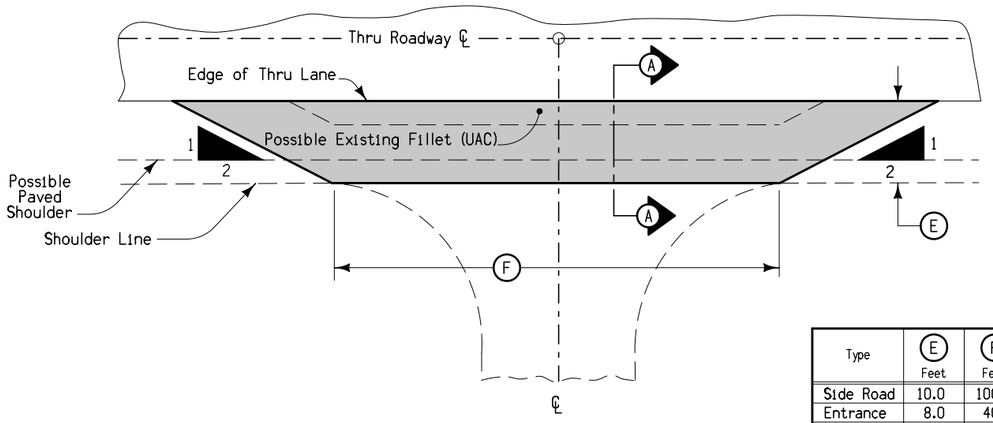
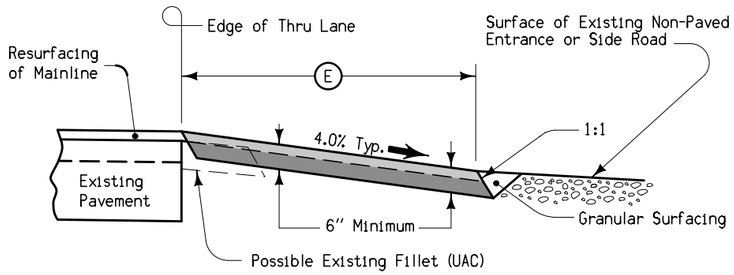


PLAN

Type	(E) Feet	(F) Feet
Side Road	10.0	100.0
Entrance	8.0	40.0	



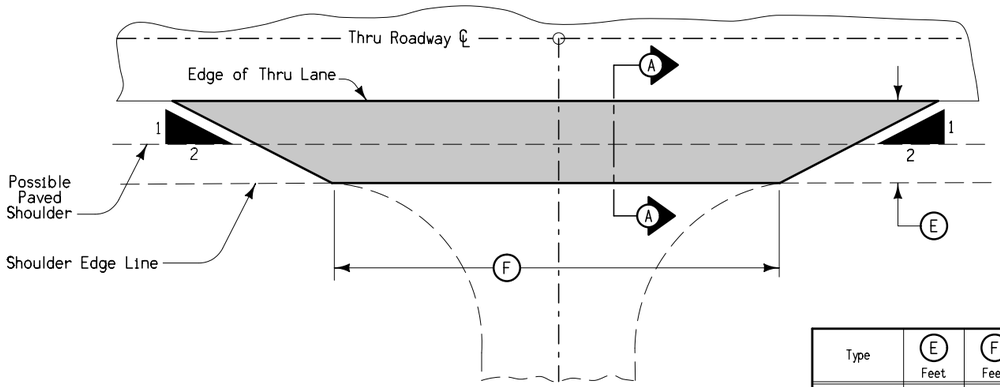
SECTION A-A

Special shaping of existing surface prior to placement of fillet may be required by the Engineer and is incidental to other work on the project.

Quantites included with mainline quantities.

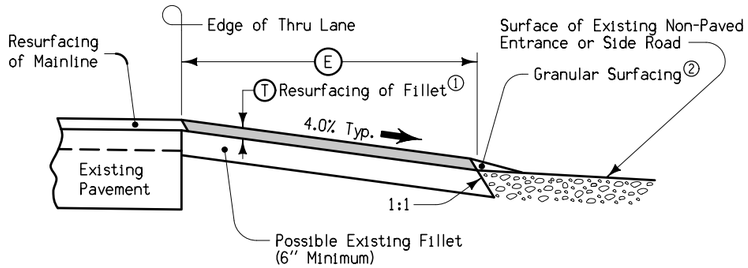
FILLET FOR NON-PAVED ENTRANCES OR SIDE ROADS

7148-B
Modified



PLAN

Type	(E) Feet	(F) Feet
Side Road	10.0	100.0
Entrance	8.0	40.0	



SECTION A-A

Cleaning & preparation of existing surface prior to resurfacing of fillet will be required and is incidental to other work on the project.

Quantites included with mainline quantities.

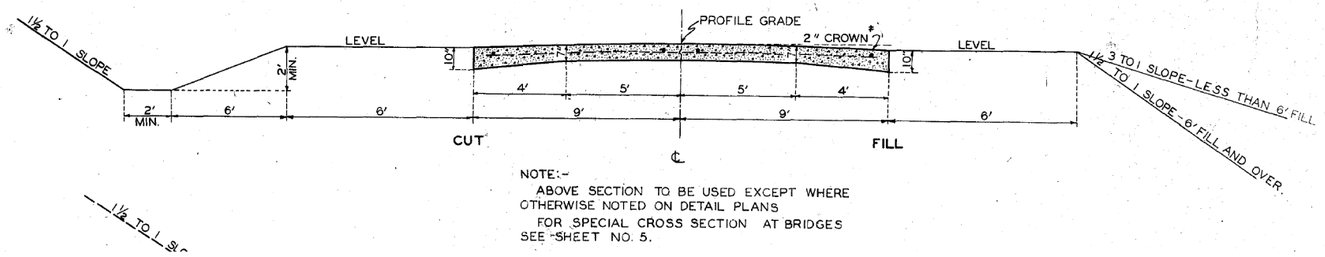
① Refer to other Typicals in B Sheets for thickness.

② Granular material incidental to the construction of fillet.

RESURFACING OF FILLETS FOR NON-PAVED ENTRANCES AND SIDE ROADS

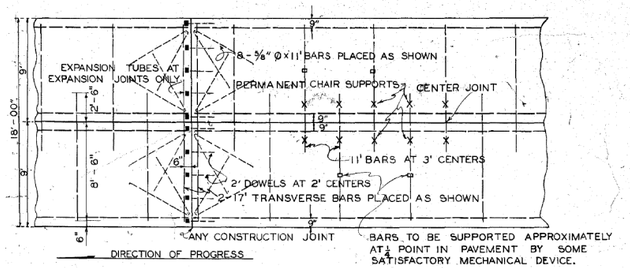
E-1

TYPICAL CROSS SECTIONS



NOTE:-
ABOVE SECTION TO BE USED EXCEPT WHERE OTHERWISE NOTED ON DETAIL PLANS
FOR SPECIAL CROSS SECTION AT BRIDGES SEE SHEET NO. 5.

PAVEMENT REINFORCING PLAN



ALL REINFORCING STEEL TO BE PLAIN ⅝" Ø BARS. FOUR LONGITUDINAL BARS TO BE PLACED AS SHOWN, 2½" BELOW TOP SURFACE, 2' LAP TO BE USED AT ALL SPLICES. ALL DOWEL BARS TO BE PLACED IN CENTER OF SECTION. DOWELS AT TRANSVERSE JOINTS TO PROJECT 6" INTO NEW WORK, AND TO BE FITTED WITH EXPANSION TUBES AT EXPANSION JOINTS. LONGITUDINAL REINFORCING STEEL TO END 2" FROM TRANSVERSE JOINTS.

ALL REINFORCING STEEL, INCLUDING DOWELS AT TRANSVERSE JOINTS, TO BE HELD RIGIDLY IN CORRECT POSITION.

MINIMUM CONSTRUCTION REQUIREMENTS AS FOLLOWS:-

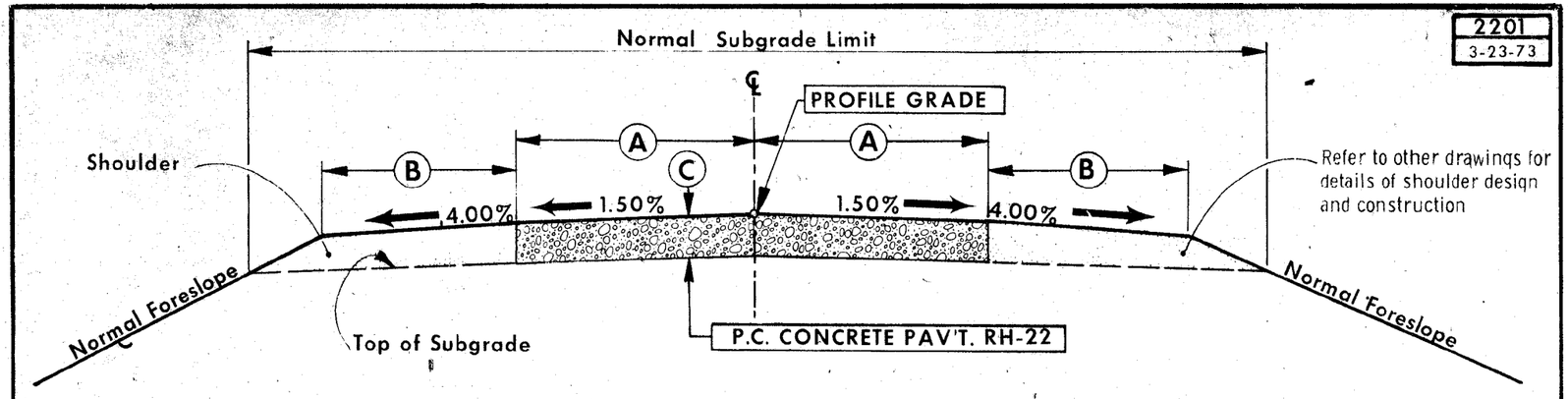
1. ALL TRANSVERSE BARS TO BE PLACED UNDER LONGITUDINAL BARS, AND TO BE SUPPORTED BY TWO PERMANENT CHAIRS AND ONE REMOVABLE DEVICE AT QUARTER POINT. (SEE PLAN ABOVE. ALSO SEE NOTE NO. 5 BELOW.)
2. SIDE LONGITUDINAL BARS TO BE SUPPORTED BY REMOVABLE BRACKETS FROM SIDE FORMS.
3. ALL LAPS AND INTERSECTIONS OF BARS TO BE SECURELY WIRED EXCEPT AS NOTED BELOW.
4. EIGHT BENT BARS TO BE PLACED 2½ INCHES BELOW TOP SURFACE, ADJACENT TO ALL TRANSVERSE JOINTS. (SEE PLAN ABOVE.) (NO WIRES REQUIRED FOR BENT BARS.)
5. PERMANENT CHAIRS TO BE U-SHAPED PRESSED METAL PINS, WITH NOT LESS THAN 4" PENETRATION INTO SUBGRADE, DISTANCE FROM SUBGRADE LUG TO BOTTOM OF DOWEL HOLE TO BE 3½". METAL TO BE 18 GAUGE.

P-764

EXISTING PAVEMENT TYPICAL

E-2

2201
3-23-73



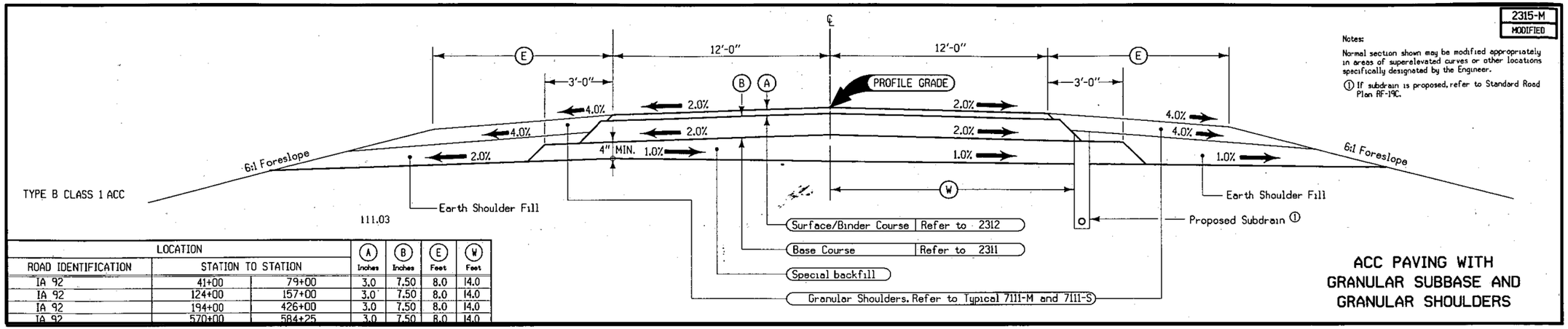
NOTE:
Normal sections shown ~~may be~~ appropriately modified for areas specifically designated by the engineer such as intersections or superelevated curves

TYPICAL CROSS SECTION PROPOSED HIGHWAY IMPROVEMENT

ROAD IDENT.	STATION TO STATION		A	B	C	SHLDR. TYPE
Ia. No. 92	757+11.19 (Lt.)	759+59.74 (Lt.)	24.0'	10.0'	8"	Stab.
Ia. No. 92	757+11.19 (Rt.)	760+71.19 (Rt.	240'-120'	10.0'	8"	Stab.
Ia. No. 92	759+59.74 (Lt.)	760+79.74 (Lt.)	240'-120'	10.0'	8"	Stab.
Ia. No. 92	760+79.74 (Lt.)	796+00.00 (Lt.)	12.0'	10.0'	8"	Stab.
Ia. No. 92	760+71.19 (Rt.)	796+00.00 (Rt.)	12.0'	10.0'	8"	Stab.

FN-92-4(9)--21-61

EXISTING PAVEMENT TYPICAL

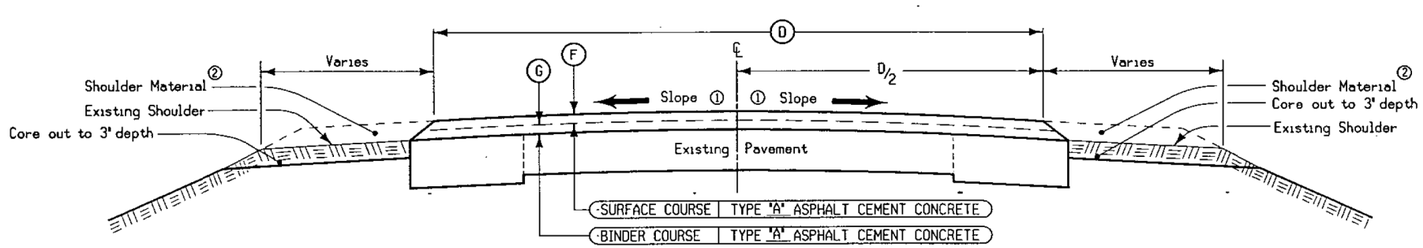


LOCATION			(A)	(B)	(E)	(W)
ROAD IDENTIFICATION	STATION TO STATION		Inches	Inches	Feet	Feet
IA 92	41+00	79+00	3.0	7.50	8.0	14.0
IA 92	124+00	157+00	3.0	7.50	8.0	14.0
IA 92	194+00	426+00	3.0	7.50	8.0	14.0
IA 92	570+00	584+25	3.0	7.50	8.0	14.0

ACC PAVING WITH GRANULAR SUBBASE AND GRANULAR SHOULDERS

STPN-169-2(19)--2J-61

EXISTING PAVEMENT TYPICAL



DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu.ft
Binder Course	145 lbs./cu.ft
Tack Coat	0.05 gal./sq.yd.

TABLE OF DESIGN QUANTITIES Per Station

LOCATION			(F)	(G)	(D)	PRIME & TACK COAT	ASPHALT CEMENT	ASPHALT CEMENT CONCRETE Tons	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Inches	Feet	Gallons ③	Tons	SURFACE	BINDER
IA 92	79+00	124+00	1.5	1.5	24	27.22	2.42	21.86	22.09
IA 92	157+00	194+00	1.5	1.5	24	27.22	2.42	21.86	22.09
IA 92	426+00	570+00	1.5	1.5	24	27.22	2.42	21.86	22.09
IA 92	584+25	663+50	1.5	1.5	24	27.22	2.42	21.86	22.09

TYPICAL CROSS SECTION ASPHALT CEMENT CONCRETE RESURFACING

STPN-169-2(19)--2J-61

EXISTING PAVEMENT TYPICAL

100-1D
10-18-05

PROJECT DESCRIPTION

This project involves alternating areas of HMA Milling and Resurfacing for mainline with areas of HMA Cold-In-Place Recycling and Resurfacing for mainline and shoulders. Also includes granular shoulders in the areas of HMA Cold-In-Place Recycling and Resurfacing.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.1	
2	2102-2625000	EMBANKMENT-IN-PLACE	CY	177.0	
3	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	5,261.1	
4	2125-2225050	RESHAPING DITCHES	STA	146.80	
5	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	12.5	
6	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	1,994.8	
7	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	193	
8	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	53.0	
9	2213-8201040	BASE WIDENING, 4 IN. HOT MIX ASPHALT MIXTURE	SY	469.9	
10	2214-5145150	PAVEMENT SCARIFICATION	SY	93,408.4	
11	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	TON	6,868.9	
12	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	351.00	
13	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	18,894.20	
14	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	1543.40	
15	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1.00	
16	2308-1000000	ASPHALT EMULSION FOR FOG SEAL (SHOULDERS)	GAL	5,657.7	
17	2318-1001100	COLD IN-PLACE RECYCLED ASPHALT PAVEMENT	SY	88,971.0	
18	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	9	
19	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN .	EACH	8	
20	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	18	
21	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	24	
22	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	14	
23	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	12	
24	2416-1180060	CULVERT, CONCRETE ROADWAY PIPE, 60 IN. DIA.	LF	24	
25	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	100	
26	2417-0225015	APRONS, METAL, 15 IN. DIA.	EACH	2	
27	2417-1040015	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 15 IN. DIA.	LF	34	
28	2507-3250005	ENGINEERING FABRIC	SY	179.6	
29	2507-6800061	REVETMENT, CLASS E	TON	10.5	
30	2507-8029000	EROSION STONE	TON	142.6	
31	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
32	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	5,215.26	
33	2528-8445110	TRAFFIC CONTROL	LS	1.00	
34	2528-8445113	FLAGGERS	EACH	See Proposal	
35	2528-8445115	PILOT CARS	EACH	See Proposal	
36	2529-2242304	CD JOINT ASSEMBLY	EACH	1	
37	2529-2242320	CT JOINT	EACH	1	
38	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	88.0	
39	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	2	
40	2533-4980005	MOBILIZATION	LS	1.00	
41	2541-1004011	CRACK AND JOINT CLEANING AND SEALING (HMA SURFACES)	MILE	12.0	
42	2541-1005001	SEALER MATERIAL (HMA SURFACES)	LB	24322	
43	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	667.3	
44	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	723.2	
45	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	333.6	
46	2590-0000020	PROJECT MANAGEMENT	LS	1.00	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	**CLEARING AND GRUBBING**
		Refer to Tab. 110-17 on C Sheets.
2	2102-2625000	**EMBANKMENT-IN-PLACE**
		Refer to Tab 3R-CULV on C Sheets.
3	2121-7425020	**GRANULAR SHOULDERS, TYPE B**
		Refer to Sheet B.2 and Typical 7135-A on Sheet B.4.
		Refer to Tab 112-9 for locations and amounts.
4	2125-2225050	**RESHAPING DITCHES**
		Refer to Tab 3R-CULV for locations and additional information.
5	2212-0475095	**CLEANING AND PREPARATION OF BASE**
		this bid item is for the resurfacing from Sta. 7+01.90 to Sta. 666+70.75.
6	2212-5070310	**PATCHES, FULL-DEPTH REPAIR**
7	2212-5070330	**PATCHES BY COUNT (REPAIR)**
		Refer to Tab 102-6C for locations and details.
8	2213-2713300	**EXCAVATION, CLASS 13, FOR WIDENING**
		Refer to Sheet B.2, Typical 7137-B on Sheet B.4, and Tab 106-5 in C Sheets.
		This material will be delivered to the I.D.O.T. Martensdale garage.
		The contacter person for this site is:
		Todd Netley
		Highway Maintenance Supervisor
		(641) 764-2755
9	2213-8201040	**BASE WIDENING, 4 IN. HOT MIX ASPHALT MIXTURE**
		Item is for base widening unit. Refer to Sheet B.2, Typical 7137-B on Sheet B.4, Typical 7148-B on Sheet B.5, and Tab 106-5 on C Sheets for location and additional information.
		Item includes 20 tons for non-paved side road and entrance fillets. Refer to Sheet B.5.
10	2214-5145150	**PAVEMENT SCARIFICATION**
		Refer to Sheets B.1 through B.6 and Typical 7137-A on Sheet B.4.
		Refer to Tab 100-25 in C Sheets.
		Item includes 200 SY for runout scarification. Refer to Tab 102-16 in C Sheets.
		All millings to remain property of the Contractor and disposed of off site.
11	2303-0001000	**HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE**
		Refer to Sheet B.2 and Tab 106-2 on C Sheets for locations and additional information.
		Quantity includes an additional 5% for irregularities.
12	2303-1042500	**HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX**
		Refer to Sheet B.1 and Tab 100-25 on C Sheets for locations and additional information.
		Quantity includes an additional 5% for irregularities.
13	2303-1043503	**HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3**
		Refer to Sheets B.1 through B.5 and Tab 100-25 on C Sheets for locations and additional information.
		Item includes 400 tons for non-paved side road and entrance fillets. Refer to Sheet B.5.
		Quantity includes an additional 5% for irregularities.
14	2303-1258284	**ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC**
		Rate is estimated at 6.00% for Surface, Intermediate, Leveling, and Base Courses.
		Refer to Tabs 100-25 and 160-2 in C Sheets.
15	2303-6911000	**HOT MIX ASPHALT PAVEMENT SAMPLES**
16	2308-1000000	**ASPHALT EMULSION FOR FOG SEAL (SHOULDERS)**
		Refer to Sheet B.3 for locations and details.
		To be placed at a rate of 0.20 Gallons per Square Yard.
17	2318-1001100	**COLD IN-PLACE RECYCLED ASPHALT PAVEMENT**
		Refer to Sheet B.2 for locations and details.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
18	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.
19	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN .
20	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
21	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.
22	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.
23	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.
24	2416-1180060	CULVERT, CONCRETE ROADWAY PIPE, 60 IN. DIA.
25	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.
26	2417-0225015	APRONS, METAL, 15 IN. DIA.
27	2417-1040015	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 15 IN. DIA.
		Refer to Tab 3R-CULV for locations and additional information.
28	2507-3250005	ENGINEERING FABRIC
29	2507-6800061	REVETMENT, CLASS E
30	2507-8029000	EROSION STONE
		Items are for placement of rock splash basins and rock slope protection. Refer to Tab 100-23 for locations and details.
31	2526-8285000	CONSTRUCTION SURVEY
32	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
		Refer to Tab 108-22 for locations and amounts.
33	2528-8445110	TRAFFIC CONTROL
		Refer to J Sheets for Traffic Control details.
34	2528-8445113	FLAGGERS
35	2528-8445115	PILOT CARS
36	2529-2242304	CD JOINT ASSEMBLY
37	2529-2242320	CT JOINT
38	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA
39	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT
		Refer to Tab 102-6C on C Sheets for locations and details.
40	2533-4980005	MOBILIZATION
41	2541-1004011	CRACK AND JOINT CLEANING AND SEALING (HMA SURFACES)
42	2541-1005001	SEALER MATERIAL (HMA SURFACES)
		All work to be as per current Standard Specifications.
		Edge of pavement/HMA shoulder joint will be sealed. Sealer Material estimated at 1 pound per 3 linear feet.
		Sealer material quantity increased by 15% for irregularities.
43	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE
44	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)
45	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE
		Refer to Tab 112-10 on C Sheets for locations and additional information.
46	2590-0000020	PROJECT MANAGEMENT
		Refer to Supplemental Specification SS-15008 for Project Management.

INDEX OF TABULATIONS

STANDARD ROAD PLANS

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

Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-121	10-17-17	Connected Pipe Joints
DR-201	10-16-18	Concrete Aprons
EC-301	10-18-16	Rock Erosion Control (REC)
PM-110	10-16-18	Line Types
PM-111	04-21-15	Symbols and Legends
PM-120	10-21-14	Stop Lines and Islands
PM-221	10-18-16	Climbing Lane
PR-103	10-21-14	Full Depth PCC Patch with Dowels
PR-107	10-16-18	Partial Depth PCC Finish Patches
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	04-19-16	Milled Shoulder Rumble Strips
PV-13	10-17-17	Milled Centerline Rumble Strips
PV-202	04-16-13	Hot Mix Asphalt Resurfacing
PV-203	10-15-13	HMA Base Widening
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-213	04-17-12	Lane Closure with Flaggers
TC-214	10-17-17	Lane Closure with Flaggers for use with Pilot Car
TC-231	10-15-13	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-282	04-19-11	Uneven Lanes

232-3A
10-20-15

EROSION CONTROL (RURAL SEEDING)

Following the completion of work in a disturbed area, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Use seed mix and fertilizer meeting the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Use mulch meeting the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed and furnishing and applying seed, fertilizer, and mulch is incidental to mobilization and will not be paid for separately.

232-3B
10-20-15

EROSION CONTROL (URBAN SEEDING)

Following the completion of work in a disturbed area, place seed, fertilizer, and mulch on the disturbed area as follows:

Use seed mix and fertilizer meeting the requirements of Article 2601.03,C,4 and Section 4169 of the Standard Specifications.

Use mulch meeting the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed and furnishing and applying seed, fertilizer, and mulch is incidental to mobilization and will not be paid for separately.

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.

MODIFIED

LOW VIBRATION

LOW VIBRATION

This project is adjacent to properties eligible for listing on the National Register of Historic Places. The Contractor shall use demolition and construction methods with equipment that achieve low vibration levels when working near these properties. If damage to these properties occurs during construction or demolition, all activities shall cease until approval from the Construction Engineer occurs.

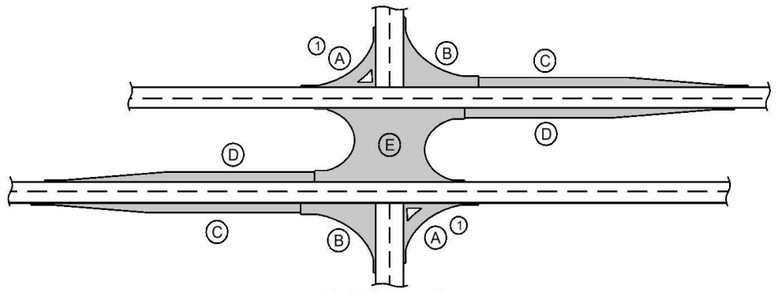
These properties are:
On the north side of the road approximately 1000' East of the IA 92 and Cedar Bridge Road intersection.

102-5
04-18-17

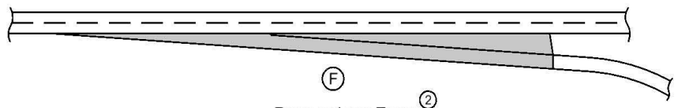
EXISTING PAVEMENT

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	
IA 92																					
1	Madison	IA 092	EB/WB	69.55	69.9	1977		FN-169-3(10)--21-61	PCC	8							Messeschmidt	C.LST.	2		
2	Madison	IA 092	EB/WB	69.55	69.9	1998		STPN-169-2(19)--2J-88	AAC	1.5	BAC	2					Menlo	C.LST.			
																					M.P. 69.90 = M.P. 106.07
3	Madison	IA 092	EB/WB	106.07	106.81	1977		FN-92-4(9)--21-61	PCC	8							Early Chappel	C.LST.	1		
4	Madison	IA 092	EB/WB	106.81	107.42	1997		STPN-92-4(19)--2J-61	AAC	3	BAC	7.5	GSB	9			Ames Mine	C.LST.			
5	Madison	IA 092	EB/WB	107.42	108.27	1931		P-764	PC7	7							Winterset	C.LST.	1		DUR=0
6	Madison	IA 092	EB/WB	107.42	108.27	1952		P-1023	BAC	1.5	TBB	1.5									
7	Madison	IA 092	EB/WB	107.42	108.27	1956		P-1023(2)	AAC	1.5	AAC	1.5					Gendler	C.LST.			
8	Madison	IA 092	EB/WB	107.42	108.27	1981		FN-92-4(13)--21-61	ASC	0.5	RAC	0.5					Early Chappel	C.LST.			Hot Sand Mix
9	Madison	IA 092	EB/WB	107.42	108.27	1997		STPN-92-4(19)--2J-61	AAC	1.5	AAC	1.5					Ames Mine	C.LST.			
10	Madison	IA 092	EB/WB	108.27	108.9	1997		STPN-92-4(19)--2J-61	AAC	3	BAC	7.5	GSB	9			Ames Mine	C.LST.			
11	Madison	IA 092	EB/WB	108.9	109.6	1931		P-764	PC7	7							Winterset	C.LST.	1		DUR=0
12	Madison	IA 092	EB/WB	108.9	109.6	1952		P-1023	BAC	1.5	TBB	1.5									
13	Madison	IA 092	EB/WB	108.9	109.6	1956		P-1023(2)	AAC	1.5	AAC	1.5					Gendler	C.LST.			
14	Madison	IA 092	EB/WB	108.9	109.6	1981		FN-92-4(13)--21-61	ASC	0.5	RAC	0.5					Early Chappel	C.LST.			Hot Sand Mix
15	Madison	IA 092	EB/WB	108.9	109.6	1997		STPN-92-4(19)--2J-61	AAC	1.5	AAC	1.5					Ames Mine	C.LST.			
16	Madison	IA 092	EB/WB	109.6	113.99	1997		STPN-92-4(19)--2J-61	AAC	3	BAC	7.5	GSB	9			Ames Mine	C.LST.			
17	Madison	IA 092	EB/WB	113.99	118.47	1931		P-764	PC7	7							Winterset	C.LST.	1		DUR=0
18	Madison	IA 092	EB/WB	113.99	118.47	1952		P-1023	BAC	1.5	TBB	1.5									
19	Madison	IA 092	EB/WB	113.99	118.47	1956		P-1023(2)	AAC	1.5	AAC	1.5					Gendler	C.LST.			
20	Madison	IA 092	EB/WB	113.99	118.47	1981		FN-92-4(13)--21-61	ASC	0.5	RAC	0.5					Early Chappel	C.LST.			Hot Sand Mix
21	Madison	IA 092	EB/WB	113.99	118.47	1997		STPN-92-4(19)--2J-61	AAC	1.5	AAC	1.5					Ames Mine	C.LST.			
22	Warren	IA 092	EB/WB	118.47	118.63	1932		FA-365	PC7	7							Winterset	Gravel	1		
23	Warren	IA 092	EB/WB	118.47	118.63	1956		P-1023(2)	AAC	1.5	AAC	1.5					Gendler	C.LST.			

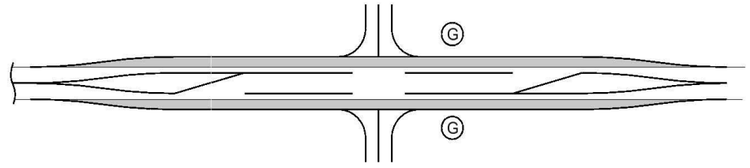
HMA PAVEMENT



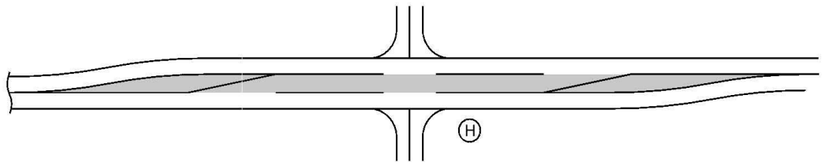
Typical Intersection



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		Intermediate		Base		Surface	Intermediate	Base	Special Backfill	Modified Subbase	Cold In Place Recycl.	Pavement Scarification	Remarks
			FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	SY	
Areas of Milling/Resurfacing:																											
(Mainline)																											
Ia. 92	Both	752+00.00	756+37.30	24.0	437.3	1166.1			847.8					166.527	2013.9	166.527	2013.9			9.992	9.992					2013.9	(1)
Ia. 92	Both	11+39.20	15+81.64	24.0	442.4	1179.8			849.0					167.760	2028.8	167.760	2028.8			10.066	10.066					2028.8	(1)
Ia. 92	Both	41+00.00	79+00.00	24.0	3800.0	10133.3								837.900	10133.3					50.274						10133.3	
Ia. 92	Both	124+00.00	156+30.26	24.0	3230.3	8614.0								712.272	8614.0					42.736						8614.0	
Ia. 92	Both	156+27.83	157+00.00	24.0	72.2	192.5								15.913	192.5					0.955						192.5	
Ia. 92	Both	194+00.00	257+13.11	24.0	6313.1	16835.0								1392.041	16835.0					83.522						16835.0	
Ia. 92	Both	257+10.41	373+53.64	24.0	11643.2	31048.6			4066.7					2903.597	35115.3					174.216						35115.3	(1)
Ia. 92	Both	373+44.67	421+64.45	24.0	4819.8	12852.7								1062.761	12852.7					63.766						12852.7	
Ia. 92	Both	422+61.44	426+00.00	24.0	338.6	902.8								74.652	902.8					4.479						902.8	
Ia. 92	Both	570+00.00	584+25.00	24.0	1425.0	3800.0								314.213	3800.0					18.853						3800.0	
Areas of CIP/Resurfacing:																											
(Mainline)																											
Ia. 92	Both	15+81.64	41+00.00	24.0	2518.4	6715.6								558.191	6715.6					33.491					6715.6		
Ia. 92	Both	79+00.00	124+00.00	24.0	4500.0	12000.0								997.418	12000.0					59.845					12000.0		
Ia. 92	Both	157+00.00	194+00.00	24.0	3700.0	9866.7								820.099	9866.7					49.206					9866.7		
Ia. 92	Both	426+00.00	570+00.00	24.0	14400.0	38400.0								3191.738	38400.0					191.504					38400.0		
Ia. 92	Both	584+25.00	658+25.00	24.0	7400.0	19733.3								1640.198	19733.3					98.412					19733.3		
Ia. 92	Both	658+25.00	666+70.75	24.0	845.8	2255.3								187.459	2255.3					11.248					2255.3		
(Shoulders)																											
Ia. 92	EB	15+81.64	41+00.00	4.0	2518.4	1119.3								93.996	1136.8					5.640							(2)
Ia. 92	EB	79+00.00	124+00.00	4.0	4500.0	2000.0								167.959	2031.3					10.078							(2)
Ia. 92	EB	157+00.00	194+00.00	4.0	3700.0	1644.4								138.100	1670.1					8.286							(2)
Ia. 92	EB	426+00.00	570+00.00	4.0	14400.0	6400.0								537.469	6500.0					32.248							(2)
Ia. 92	EB	584+25.00	658+25.00	4.0	7400.0	3288.9								276.199	3340.3					16.572							(2)
Ia. 92	EB	658+25.00	666+70.75	9.0	845.8	845.8								70.419	851.6					4.225							(2)
Ia. 92	WB	15+81.64	41+00.00	4.0	2518.4	1119.3								93.996	1136.8					5.640							(3)
Ia. 92	WB	79+00.00	124+00.00	4.0	4500.0	2000.0								167.959	2031.3					10.078							(3)
Ia. 92	WB	157+00.00	194+00.00	4.0	3700.0	1644.4								138.100	1670.1					8.286							(3)
Ia. 92	WB	426+00.00	570+00.00	4.0	14400.0	6400.0								537.469	6500.0					32.248							(3)
Ia. 92	WB	584+25.00	654+60.00	4.0	7035.0	3126.7								262.576	3175.5					15.755							(3)
Ia. 92	WB	654+60.00	662+70.00	8.0	810.0	720.0								79.354	720.0					4.761						720.0	(3)
Ia. 92	WB	662+70.00	666+70.75	4.0	400.8	178.1								14.958	180.9					0.897							(3)
													SUB	TOTALS	=	17621.292		334.287		1057.278	20.057			88971.0	93208.4	
														+5%	=	881.065		16.714		52.864	1.003					
														TOTALS	=	18502.357		351.001		1110.141	21.060					

Note: See Tab 106-2 for Leveling Course quantities.
(1) Column C is for auxiliary lane(s) adjacent mainline.
(2) Quantities for shoulder adjacent to EB Lane.
(3) Quantities for shoulder adjacent to WB Lane.

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
HMA Millings	2011.1	CY	Martensdale Garage	Todd Netley (641) 764-2755	50 % of SY

106-2
04-18-17

LEVELING COURSES

Location				Hot Mix Asphalt Pavement		Remarks
Begin Ref. Location Sign	End Ref. Location Sign	Begin Station	End Station	Average Thickness (Inches)	Tons	
106.13	106.61	15+81.64	41+00.00	1.0	491.318	Refer to Sheet B.2.
107.33	108.18	79+00.00	124+00.00	1.0	877.925	Refer to Sheet B.2.
108.81	109.51	157+00.00	194+00.00	1.0	721.850	Refer to Sheet B.2.
113.90	116.63	426+00.00	570+00.00	1.0	2809.361	Refer to Sheet B.2.
116.90	118.47	584+25.00	666+70.75	1.0	1608.700	Refer to Sheet B.2.
					32.630	Runouts (Tab 102-16)
				SUBTOTAL =	6541.784	
				+5% =	327.089	
				TOTAL =	6868.900	
				NDER @ 6% =	412.200	

102-16
10-21-14

NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

(1) Bid item. Applies only to Types 'N1' and 'N3' on PR-202 and 'R8' on Sheet U.1. Refer to 100-25 for remaining values.

Location Station	Type of Notch or Runout	S (IN)	I (IN)	WL (IN)	L (FT)	M (IN)	Pavement Scarification (1) (SY)	Remarks
7+01.90	Type 'N4'	1.5	1.5			3.0	266.7	Refer to PR-202.
15+81.64	Type 'N6"	1.5	1.5	1.0	125.0	3.0	200.0	Refer to Sheet U.1.
41+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
79+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
124+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
157+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
194+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
426+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
570+00.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
584+25.00	Type 'R7'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
668+00.00	Type 'R8'	1.5		1.0	125.0	1.5	200.0	Refer to Sheet U.1.
Note: Pavement Scarification quantity in area of tapered milling.					**Total Bid QTY:**		**200.0**	

112-9
10-15-13

SHOULDERS

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

Calculations assume a HMA unit weight (lbs/cf) of 147, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

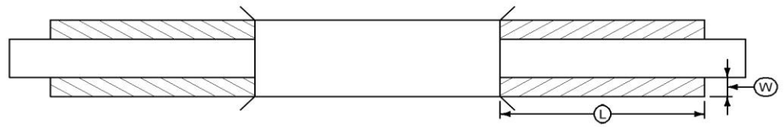
Location					Quantities																
Road Identification	Direction Of Traffic (1)	Station to Station		Side	P Width (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (3) CY (2)	Hot Mix Asphalt TON	Hot Mix Asphalt TON/STA	Binder TONS	Paved Shoulder SY (2)	Reinforced Paved Shoulder SY (2)	Special Backfill HMA Alternate TON (2)	Special Backfill HMA Alternate TON/STA	Special Backfill PCC Alternate TON (2)	Special Backfill PCC Alternate TON/STA	Modified Subbase CY (2)	Granular Shoulder TON (2)	Granular Shoulder TON/STA	Earth Shoulder Construction Alternates STA (2)	Earth Shoulder Construction Alternates HMA CY (4)	Earth Shoulder Construction Alternates PCC CY (4)	Remarks
Areas of CIP & Resurfacing:																							
Ia. 92	EB	15+81.64	41+00.00	Rt.		4.0	2518.4												185.099	7.350				(1)
Ia. 92	WB	15+81.64	41+00.00	Rt.		4.0	2518.4												185.099	7.350				(2)
Ia. 92	EB	79+00.00	124+00.00	Rt.		4.0	4500.0												330.750	7.350				(1)
Ia. 92	WB	79+00.00	124+00.00	Rt.		4.0	4500.0												330.750	7.350				(2)
Ia. 92	EB	157+00.00	194+00.00	Rt.		4.0	3700.0												271.950	7.350				(1)
Ia. 92	WB	157+00.00	194+00.00	Rt.		4.0	3700.0												271.950	7.350				(2)
Ia. 92	EB	426+00.00	570+00.00	Rt.		4.0	14400.0												1058.400	7.350				(1)
Ia. 92	WB	426+00.00	570+00.00	Rt.		4.0	14400.0												1058.400	7.350				(2)
Ia. 92	EB	584+25.00	658+25.00	Rt.		4.0	7400.0												543.900	7.350				(1)
Ia. 92	WB	584+25.00	654+60.00	Rt.		4.0	7035.0												517.073	7.350				(2)
Ia. 92	WB	662+70.00	666+70.75	Rt.		4.0	400.8												29.455	7.350				(2)
																		TOTAL =	4782.827					
																		10% =	478.283					(3)
																		BID TOTAL =	5261.109					

Note: Quantities increased for existing low shoulder.
(1) Quantities for shoulder adjacent to EB Lane.
(2) Quantities for shoulder adjacent to WB Lane.
(3) For Irregularities

106-5
10-21-14

AREAS FOR PAVEMENT OR BASE WIDENING

Refer to Standard Road Plans PV-105 or PV-203



(1) Bid Item
(2) Estimated for two applications to achieve lifts and one application of 0.10 Gal/SY adjacent to existing pavement. Priming of subgrade or finished base is not required.
Calculations assume a HMA unit weight (lbs/cf) of 145, a Special Backfill unit weight (lbs/cf) of 140, and a Tack Coat unit weight (gal/sy) of 0.05.

Station to Station		Side	Pavement Type	(L) Length	(W) Width	(T) Thickness	HMA Base Widening (1)	HMA Base Widening (1)	PCC Base Widening (1)	PCC Pavement Widening (1)	Tack Coat		Tack Coat (2)	Asphalt Binder (1)	Class 13 Excavation, Widening (1)	Special Backfill (1)	Remarks
											Lifts	Vertical Edge					
				FT	FT	IN	TONS	SY	SY	SY	GAL	GAL	GAL	TONS	CY	TONS	
658+25.00	666+70.75	LT	HMA	845.75	5.0	4.0		469.9			46.99	3.13	50.12		53.0		

112-10
MODIFIED

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location					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)	PCC	HMA	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
					STA	STA	GAL	FT	FT	FT	
Ia. 92	15+81.64	41+00.00	HMA	Left Shoulder		25.18	27.3		4.0	6.0	
Ia. 92	15+81.64	41+00.00	HMA	Centerline		25.18	--		--	--	
Ia. 92	15+81.64	41+00.00	HMA	Right Shoulder		25.18	27.3		4.0	6.0	
Ia. 92	79+00.00	124+00.00	HMA	Left Shoulder		45.00	48.8		4.0	6.0	
Ia. 92	79+00.00	124+00.00	HMA	Centerline		45.00	--		--	--	
Ia. 92	79+00.00	124+00.00	HMA	Right Shoulder		45.00	48.8		4.0	6.0	
Ia. 92	157+00.00	194+00.00	HMA	Left Shoulder		37.00	40.1		4.0	6.0	
Ia. 92	157+00.00	194+00.00	HMA	Centerline		37.00	--		--	--	
Ia. 92	157+00.00	194+00.00	HMA	Right Shoulder		37.00	40.1		4.0	6.0	
Ia. 92	426+00.00	570+00.00	HMA	Left Shoulder		144.00	156.0		4.0	6.0	
Ia. 92	426+00.00	570+00.00	HMA	Centerline		144.00	--		--	--	
Ia. 92	426+00.00	570+00.00	HMA	Right Shoulder		144.00	156.0		4.0	6.0	
Ia. 92	584+25.00	666+70.75	HMA	Left Shoulder		82.46	89.4		4.0	6.0	
Ia. 92	584+25.00	666+70.75	HMA	Centerline		82.46	--		--	--	
Ia. 92	584+25.00	666+70.75	HMA	Right Shoulder		82.46	89.4		4.0	6.0	
						1000.92	723.2				TOTALS

DRAINAGE STRUCTURE REPAIR WORK

* Not a bid item
① UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

No.	Location	Size	Kind Of Pipe ①	Length New Const.		Connected Pipe Joint* (DR-121, DR-122)	New Apron		Flow Line Elevations		Remove and Reinstall Pipe Culvert				Remove and Reinstall Apron				Class 20 Excavation		Embankment In-Place		Reshaping Ditch		Remarks
				Lin. Ft.			Each				Linear Feet				Each										
											Left Side		Right Side		Left Side		Right Side								
		IN		Lt.	Rt.	Type	Lt.	Rt.	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	CY		CY		STA		
Division 1 - Rural				North	South																				
1	MP 107	52	RCP																						12x24 splash basin tab100-23, clear & grub
2	1+07.3	42	RCP		6	2.0												1				10			
3	1+07.6	30	RCP	6	6	2.0									1		1				8	8			
4	1+08.2	30	RCP	6	6	2.0									1		1				8	8			clear and grub 8.0 Rt.
5	1+08.5	30	RCP																			11			10x10 splash basin,clear & grub
6	1+08.8	42	RCP	8		2.0										1					8	8			10X10 riprap, See tab 100-23
7	1+09.5	30	RCP																						10x10 splash basin Lt. See tab 100-23
8	1+09.9	30	CMP																						10x10 splash basin Lt. See tab 100-23
9	1+10.2	24	CP/CMI										100												CMP with c-collar
10	1+10.7	24	CP/CMI		6	2.0											1					6			
11	1+11.6	36	RCP												1										10X20 splash basin Rt. See tab 100-23
12	112.38 R	24	RCP	6	6	2.0									1		1				6	6			
13	1+14.2	8X6	RCB																						20X20 splash basin See tab 100-23
14	1+15.7	48	RCP	6	6	2.0										1		1			10	10			
15	1+16.3	TWIN 60"	RCB	12	12	2.0										2		2			15	15			
16	1+16.5	24	RCP												1										
17	118.5 R	15	CMP	20	14		1	1													20	20			DRIVEWAY CMP
	ch Reshaping																								
	From Sta	To Sta																							
	633+86.0	634+15.0																					0		North side, crossroad culvert
	611+12.0	611+97.0																					1		North side, crossroad culvert
	590+70.0	601+28.0																					11		North side, ditch line
	566+10.0	575+07.0																					9		North side, ditch line
	574+25.0	585+86.0																					12		North side, ditch line
	528+64.0	557+38.0																					29		North side, ditch line
	505+20.0	517+40.0																					12		North side, ditch line
	491+63.0	499+50.0																					8		North side, ditch line
	490+00.0	490+82.0																					1		North side, crossroad culvert
	464+33.0	465+20.0																					1		North side, crossroad culvert
	435+55.0	455+30.0																					20		North side, ditch line
	411+43.0	412+90.0																					1		North side, ditch line
	392+61.0	393+10.0																					0		North side, crossroad culvert
	380+60.0	380+98.0																					0		North side, crossroad culvert
	34+52.0	36+00.0																					1		North side, ditch line
	32+42.0	33+73.0																					1		North side, ditch line
	30+90.0	31+87.0																					1		North side, ditch line
	17+74.0	20+70.0																					3		North side, ditch line
	14+72.0	17+37.0																					3		North side, ditch line
	597+33.0	597+70.0																					0		North side, crossroad culvert
	16+16.0	17+18.0																						1	South side, ditch line
	17+98.0	22+34.0																						4	South side, ditch line
	23+39.0	24+50.0																						1	South side, ditch line
	31+59.0	33+53.0																						2	South side, ditch line
	38+10.0	39+75.0																						2	South side, ditch line
	89+26.0	90+93.0																						2	South side, ditch line
	220+59.0	225+00.0																						4	South side, ditch line
	341+93.0	344+33.0																						2	South side, ditch line
	513+75.0	515+00.0																						1	South side, crossroad culvert
	584+25.0	584+35.0																						0	South side, crossroad culvert
	612+56.0	612+85.0																						0	South side, crossroad culvert
	642+70.0	643+33.0																						1	South side, ditch line
	643+55.0	643+78.0																						0	South side, ditch line
	646+09.0	651+03.0																						5	South side, ditch line
	651+38.0	656+37.0																						5	South side, ditch line
	656+72.0	657+90.0																						1	South side, ditch line
				64	62		1	1					100		5	4	4	4			75	102	32	115	Subtotal
																						177		147	Total Reshaping Ditch

DRAINAGE STRUCTURE REPAIR WORK

* Not a bid item
(1) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

No.	Location	Size	Kind Of Pipe (1)	Length New Const.		Connected Pipe Joint* (DR-121, DR-122)	New Apron		Flow Line Elevations		Remove and Reinstall Pipe Culvert				Remove and Reinstall Apron				Class 20 Excavation		Embankment In-Place		Reshaping Ditch		Remarks
											Linear Feet				Each										
				Lin. Ft.			Each				Left Side		Right Side		Left Side		Right Side		CY		CY		STA		
		IN		Lt.	Rt.	Type	Lt.	Rt.	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	
													Remove and Reinstall Pipe Culvert less than or equal to 36"	=	100											
													Remove and Reinstall Pipe Culvert greater than 36"	=	0											
													Remove and Reinstall Pipe Apron less than or equal to 36"	=	9											
													Remove and Reinstall Pipe Apron greater than 36"	=	8											
													15" CMP	=	34		LF								
													15" CMP Apron	=	2		EA								
													24" RCP	=	**18**		**LF**								
													24" Apron	=	0		EA								
													30" RCP	=	24		LF								
													0" Apro	=	0		EA								
													42" RCP	=	**14**		**LF**								
													42" Apron	=	0		EA								
													48" RCP	=	**12**		**LF**								
													48" Apron	=	0		EA								
													60" RCP	=	**24**		**LF**								
													60" Apron	=	0		EA								
													Embankment in Place	=	177		CY								
													Ditch Reshaping	=	147		STA								

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	
Iowa 92 (28) Madison Co																					See Tab 3RCulv
MP 107, 52"RCP		Trees - Clearing and Grubbing																	0.035		12x24spl basin
MP 108.2, Rt., 30" RCP		Trees - Clearing and Grubbing																	0.035		
MP 108.51, Rt., 30" RCP		Trees - Clearing and Grubbing																	0.030		10x10spl basin
																			0.100		Total

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
						Type 1	Type 2	Type 3	Type 4	Type 5				
Road Identification	Begin Station	End Station	Side			Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection	Eng. Fabric	Class E Revetment	Erosion Stone	
			Lt./Rt.	FT	FT						SY	TON	TON	
IA 92, 52" RCP, Ref. Loc. 107.00, Rt.				12	24				X		37.3		34.6	2 ft. deep
IA 92, 30" RCP, Ref. Loc. 108.51, Rt.				10	10				X		15.6		12.0	2 ft. deep
IA 92, 42" RCP, Ref. Loc. 108.75, Lt.				10	10					X	15.6	10.5		2 ft. deep
IA 92, 30" RCP, Ref. Loc. 109.46, Lt.				10	10				X		15.6		12.0	2 ft. deep
IA 92, 30" CMP, Ref. Loc. 109.88, Lt.				10	10				X		15.6		12.0	2 ft. deep
IA 92, 36" RCP, Ref. Loc. 111.57, Rt.				10	20				X		26.7		24.0	2 ft. deep
IA 92, 8x6 RCB, Ref. Loc. 114.18, Rt.				20	20				X		53.3		48.0	2 ft. deep
											179.6	**10.5**	**142.6**	**TOTALS**

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.	
Finish																				
1	738+90		R	36.0	12.0	8.0	48.0													Removal of Rumble Strip Panel
1	745+90		R	30.0	12.0	8.0	40.0													Removal of Rumble Strip Panel
2							88.0													TOTALS (FINISH)
Repair																				
1	753+31		R	40.0	12.0	8.0	53.3													Removal of Rumble Strip Panel
1	753+31		R	40.0	10.0-12.0	8.0	51.1													Removal of Rumble Strip Panel-Auxilliary lane
1	15+04		L	40.0	12.0	8.0	53.3													Removal of Rumble Strip Panel
1	15+04		L	40.0	7.0-3.0	8.0	22.2													Removal of Rumble Strip Panel-Auxilliary lane
1	15+13		R	6.0	12.0	10.5	8.0													
1	15+52		L	6.0	12.0	10.5	8.0													
1	22+25		L	30.0	12.0	10.5	40.0													Removal of Rumble Strip Panel
1	22+70		R	6.0	12.0	10.5	8.0													
2	25+72		B	6.0	12.0	10.5	16.0													
2	26+69		B	6.0	12.0	10.5	16.0													
1	29+13		L	30.0	12.0	10.5	40.0													Removal of Rumble Strip Panel
2	79+72		B	6.0	12.0	17.0	16.0													
2	83+75		B	6.0	12.0	17.0	16.0													
2	98+20		B	6.0	12.0	17.0	16.0													
2	111+25		B	6.0	12.0	17.0	16.0													
2	116+28		B	6.0	12.0	17.0	16.0													
2	117+86		B	6.0	12.0	17.0	16.0													
2	120+68		B	6.0	12.0	17.0	16.0													
2	157+07		B	6.0	12.0	17.0	16.0													
1	157+33		R	6.0	12.0	17.0	8.0													
1	158+06		R	6.0	12.0	17.0	8.0													
2	158+87		B	6.0	12.0	17.0	16.0													
1	161+21		R	6.0	12.0	17.0	8.0													
2	163+75		B	6.0	12.0	17.0	16.0													
2	168+90		B	6.0	12.0	17.0	16.0													
2	171+27		B	6.0	12.0	17.0	16.0													
2	174+40		B	6.0	12.0	17.0	16.0													
1	184+90		L	6.0	12.0	17.0	8.0													
2	187+29		B	6.0	12.0	17.0	16.0													
2	193+76		B	6.0	12.0	10.5	16.0													
1	194+64		L	6.0	12.0	10.5	8.0													
1	425+99		R	6.0	12.0	17.0	8.0													
1	428+16		R	6.0	12.0	17.0	8.0													
1	434+78		R	6.0	12.0	17.0	8.0													
2	437+14		B	6.0	12.0	17.0	16.0													
1	437+90		R	10.0	12.0	17.0	13.3													
2	439+47		B	6.0	12.0	17.0	16.0													
2	440+26		B	6.0	12.0	17.0	16.0													
1	451+70		R	6.0	12.0	17.0	8.0													
2	452+50		B	6.0	12.0	17.0	16.0													
2	454+84		B	10.0	12.0	17.0	26.7													
1	455+65		R	6.0	12.0	17.0	8.0													
2	456+42		B	6.0	12.0	17.0	16.0													
2	457+96		B	6.0	12.0	17.0	16.0													
2	458+77		B	6.0	12.0	17.0	16.0													
2	460+33		B	6.0	12.0	17.0	16.0													
2	462+60		B	6.0	12.0	17.0	16.0													
1	466+41		R	6.0	12.0	17.0	8.0													
1	466+80		R	6.0	12.0	17.0	8.0													
2	467+95		B	6.0	12.0	17.0	16.0													
2	468+80		B	6.0	12.0	17.0	16.0													
2	469+51		B	6.0	12.0	17.0	16.0													
2	470+28		B	6.0	12.0	17.0	16.0													
1	470+95		R	20.0	12.0	17.0	26.7										1			
1	471+00		L	10.0	12.0	17.0	13.3													
2	473+60		B	10.0	12.0	17.0	26.7													
2	474+39		B	6.0	12.0	17.0	16.0													
1	475+93		R	6.0	12.0	17.0	8.0													
2	476+70		B	6.0	12.0	17.0	16.0													
2	477+46		B	10.0	12.0	17.0	26.7													
1	478+24		R	10.0	12.0	17.0	13.3													
2	479+02		B	10.0	12.0	17.0	26.7													
1	480+57		R	12.0	12.0	17.0	16.0													
1	480+61		L	8.0	12.0	17.0	10.7													
2	481+40		B	6.0	12.0	17.0	16.0													
1	482+18		R	6.0	12.0	17.0	8.0													
1	483+78		R	6.0	12.0	17.0	8.0													
2	485+38		B	6.0	12.0	17.0	16.0													
2	486+13		B	6.0	12.0	17.0	16.0													
2	491+70		B	10.0	12.0	17.0	26.7													

Continued on Next Sheet

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.	
2	494+80		B	6.0	12.0	17.0	16.0													
1	506+68		R	6.0	12.0	17.0	8.0													
1	507+45		R	6.0	12.0	17.0	8.0													
1	511+50		R	6.0	12.0	17.0	8.0													
2	514+05		B	20.0	12.0	17.0	53.3									1				
2	515+48		B	6.0	12.0	17.0	16.0													
1	520+24		R	6.0	12.0	17.0	8.0													
1	522+65		R	6.0	12.0	17.0	8.0													
1	527+46		R	6.0	12.0	17.0	8.0													
2	532+01		B	10.0	12.0	17.0	26.7													
2	532+77		B	10.0	12.0	17.0	26.7													
2	533+55		B	6.0	12.0	17.0	16.0													
1	538+36		R	6.0	12.0	17.0	8.0													
1	539+90		R	6.0	12.0	17.0	8.0													
1	542+13		R	10.0	12.0	17.0	13.3													
2	548+16		B	6.0	12.0	17.0	16.0													
2	552+57		B	6.0	12.0	17.0	16.0													
2	557+16		B	6.0	12.0	17.0	16.0													
2	562+81		B	6.0	12.0	17.0	16.0													
2	567+56		B	6.0	12.0	17.0	16.0													
1	591+14		L	6.0	12.0	17.0	8.0													
2	607+68		B	6.0	12.0	10.5	16.0													
2	610+01		B	10.0	12.0	10.5	26.7													
2	625+64		B	6.0	12.0	10.5	16.0													
1	632+05		R	6.0	12.0	10.5	8.0													
1	632+67		R	6.0	12.0	10.5	8.0													
2	633+77		B	6.0	12.0	10.5	16.0													
1	633+97		L	6.0	12.0	17.0	8.0													
1	662+54		L	6.0	12.0	10.0	8.0													
1	663+26		L	6.0	12.0	10.0	8.0													
2	665+29		B	6.0	12.0	10.0	16.0													
2	665+44		B	6.0	12.0	10.0	16.0													
2	665+78		B	6.0	12.0	10.0	16.0													
2	665+96		B	6.0	12.0	10.0	16.0													
2	666+13		B	8.0	12.0	10.0	21.3													
1	666+30		R	6.0	12.0	10.0	8.0													
2	666+66		B	6.0	12.0	10.0	16.0													
168							1734.6									1	1			SUBTOTALS (REPAIR)
25							260.2									0	0			15% ADDITIONAL (REPAIR)
193							1994.8									1	1			TOTALS (REPAIR)

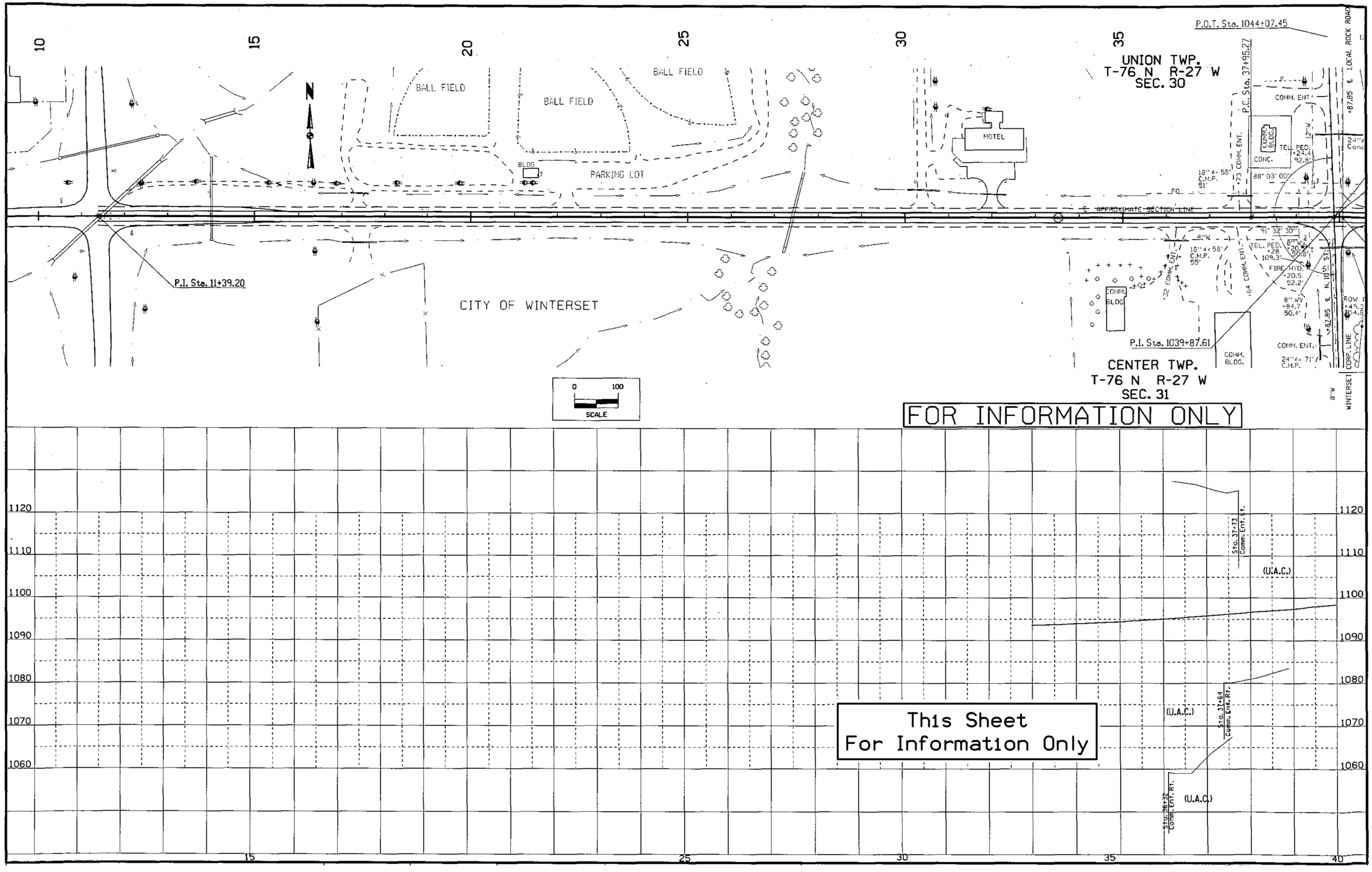
PAVEMENT MARKING LINE TYPES

See PM-110

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

BCY4: Broken Centerline (Yellow) @ 0.25 | DCY4: Double Centerline (Yellow) @ 2.00 | NPY4: No Passing Zone Line (Yellow) @ 1.25 | BLW4: Broken Lane Line (White) @ 0.25 | ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00 | SLW2: Stop Line (White) @ 6.00 | SLW4: Solid Lane Line (White) @ 1.00 | DLW4: Dotted Line (White) @ 0.33

Location								Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW2	SLW4	DLW4						
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
Ia. 92	752+00.00	755+97.50	BOTH	Waterborne/Solvent Paint		X	X	7.95		7.95		15.90										2-Lifts (Temporary)
Ia. 92	752+00.00	755+97.50	BOTH	Waterborne/Solvent Paint		X	X	3.98		3.98		7.95										Final Lift (Permanent)
Ia. 92	753+57.50	755+97.50	EB	Waterborne/Solvent Paint			X								4.80							2-Lifts (Temporary)
Ia. 92	753+57.50	755+97.50	EB	Waterborne/Solvent Paint			X								2.40							Final Lift (Permanent)
Ia. 92	755+97.50	--	EB	Waterborne/Solvent Paint			X							0.68								2-Lifts (Temporary)
Ia. 92	755+97.50	--	EB	Waterborne/Solvent Paint			X							0.34								Final Lift (Permanent)
Ia. 92	11+80.00	156+30.26	BOTH	Waterborne/Solvent Paint		X	X	289.01				564.01										2-Lifts (Temporary)
Ia. 92	11+80.00	156+30.26	BOTH	Waterborne/Solvent Paint		X	X	144.50				282.01										Final Lift (Permanent)
Ia. 92	11+80.00	18+10.00	WB	Waterborne/Solvent Paint		X				12.60												2-Lifts (Temporary)
Ia. 92	11+80.00	18+10.00	WB	Waterborne/Solvent Paint		X				6.30												Final Lift (Permanent)
Ia. 92	11+80.00	14+20.00	WB	Waterborne/Solvent Paint			X								4.80							2-Lifts (Temporary)
Ia. 92	11+80.00	14+20.00	WB	Waterborne/Solvent Paint			X								2.40							Final Lift (Permanent)
Ia. 92	11+80.00	--	WB	Waterborne/Solvent Paint			X							0.60								2-Lifts (Temporary)
Ia. 92	11+80.00	--	WB	Waterborne/Solvent Paint			X							0.30								Final Lift (Permanent)
Ia. 92	156+27.83	257+13.11	BOTH	Waterborne/Solvent Paint		X	X	201.71				394.41										2-Lifts (Temporary)
Ia. 92	156+27.83	257+13.11	BOTH	Waterborne/Solvent Paint		X	X	100.85				197.21										Final Lift (Permanent)
Ia. 92	169+60.00	177+50.00	EB	Waterborne/Solvent Paint		X				15.80												2-Lifts (Temporary)
Ia. 92	169+60.00	177+50.00	EB	Waterborne/Solvent Paint		X				7.90												Final Lift (Permanent)
Ia. 92	178+00.00	186+05.00	WB	Waterborne/Solvent Paint		X				16.10												2-Lifts (Temporary)
Ia. 92	178+00.00	186+05.00	WB	Waterborne/Solvent Paint		X				8.05												Final Lift (Permanent)
Ia. 92	195+00.00	199+10.00	EB	Waterborne/Solvent Paint		X				8.20												2-Lifts (Temporary)
Ia. 92	195+00.00	199+10.00	EB	Waterborne/Solvent Paint		X				4.10												Final Lift (Permanent)
Ia. 92	200+20.00	210+00.00	WB	Waterborne/Solvent Paint		X				19.60												2-Lifts (Temporary)
Ia. 92	200+20.00	210+00.00	WB	Waterborne/Solvent Paint		X				9.80												Final Lift (Permanent)
Ia. 92	257+10.41	373+53.64	BOTH	Waterborne/Solvent Paint		X	X	180.86				453.73										2-Lifts (Temporary)
Ia. 92	257+10.41	373+53.64	BOTH	Waterborne/Solvent Paint		X	X	90.43				226.86										Final Lift (Permanent)
Ia. 92	308+15.00	315+00.00	EB	Waterborne/Solvent Paint		X				13.70												2-Lifts (Temporary)
Ia. 92	308+15.00	315+00.00	EB	Waterborne/Solvent Paint		X				6.85												Final Lift (Permanent)
Ia. 92	315+50.00	327+15.00	WB	Waterborne/Solvent Paint		X				23.30												2-Lifts (Temporary)
Ia. 92	315+50.00	327+15.00	WB	Waterborne/Solvent Paint		X				11.65												Final Lift (Permanent)
Ia. 92	327+15.00	351+50.00	BOTH	Waterborne/Solvent Paint		X			48.70													2-Lifts (Temporary)
Ia. 92	327+15.00	351+50.00	BOTH	Waterborne/Solvent Paint		X			24.35													Final Lift (Permanent)
Ia. 92	331+00.00	357+00.00	WB	Waterborne/Solvent Paint			X	52.00			52.00											2-Lifts (Temporary)
Ia. 92	331+00.00	357+00.00	WB	Waterborne/Solvent Paint			X	26.00			26.00											Final Lift (Permanent)
Ia. 92	351+50.00	358+75.00	WB	Waterborne/Solvent Paint		X				14.50												2-Lifts (Temporary)
Ia. 92	351+50.00	358+75.00	WB	Waterborne/Solvent Paint		X				7.25												Final Lift (Permanent)
Ia. 92	370+40.00	373+53.64	EB	Waterborne/Solvent Paint		X				6.27												2-Lifts (Temporary)
Ia. 92	370+40.00	373+53.64	EB	Waterborne/Solvent Paint		X				3.14												Final Lift (Permanent)
Ia. 92	373+44.67	421+64.45	BOTH	Waterborne/Solvent Paint		X	X	96.40				177.79										2-Lifts (Temporary)
Ia. 92	373+44.67	421+64.45	BOTH	Waterborne/Solvent Paint		X	X	48.20				88.90										Final Lift (Permanent)
Ia. 92	373+44.67	379+30.00	EB	Waterborne/Solvent Paint		X				11.71												2-Lifts (Temporary)
Ia. 92	373+44.67	379+30.00	EB	Waterborne/Solvent Paint		X				5.85												Final Lift (Permanent)
Ia. 92	379+30.00	394+65.00	BOTH	Waterborne/Solvent Paint		X			30.70													2-Lifts (Temporary)
Ia. 92	379+30.00	394+65.00	BOTH	Waterborne/Solvent Paint		X			15.35													Final Lift (Permanent)
Ia. 92	394+65.00	403+65.00	WB	Waterborne/Solvent Paint		X				18.00												2-Lifts (Temporary)
Ia. 92	394+65.00	403+65.00	WB	Waterborne/Solvent Paint		X				9.00												Final Lift (Permanent)
Ia. 92	403+65.00	404+90.00	BOTH	Waterborne/Solvent Paint		X			2.50													2-Lifts (Temporary)
Ia. 92	403+65.00	404+90.00	BOTH	Waterborne/Solvent Paint		X			1.25													Final Lift (Permanent)
Ia. 92	404+90.00	411+28.00	EB	Waterborne/Solvent Paint		X				12.76												2-Lifts (Temporary)
Ia. 92	404+90.00	411+28.00	EB	Waterborne/Solvent Paint		X				6.38												Final Lift (Permanent)
Ia. 92	411+28.00	414+15.00	BOTH	Waterborne/Solvent Paint		X			5.74													2-Lifts (Temporary)
Ia. 92	411+28.00	414+15.00	BOTH	Waterborne/Solvent Paint		X			2.87													Final Lift (Permanent)
Ia. 92	414+15.00	421+64.45	WB	Waterborne/Solvent Paint		X				14.99												2-Lifts (Temporary)
Ia. 92	414+15.00	421+64.45	WB	Waterborne/Solvent Paint		X				7.49												Final Lift (Permanent)
Ia. 92	422+61.44	659+60.00	BOTH	Waterborne/Solvent Paint		X	X	473.97														2-Lifts (Temporary)
Ia. 92	422+61.44	659+60.00	BOTH	Waterborne/Solvent Paint		X	X	236.99														Final Lift (Permanent)
Ia. 92	422+61.44	666+70.75	BOTH	Waterborne/Solvent Paint		X	X	488.19				938.37										2-Lifts (Temporary)
Ia. 92	422+61.44	666+70.75	BOTH	Waterborne/Solvent Paint		X	X	244.09				469.19										Final Lift (Permanent)
Ia. 92	422+61.44	424+80.00	WB	Waterborne/Solvent Paint		X				4.37												2-Lifts (Temporary)
Ia. 92	422+61.44	424+80.00	WB	Waterborne/Solvent Paint		X				2.19												Final Lift (Permanent)
Ia. 92	582+00.00	583+00.00	EB	Waterborne/Solvent Paint			X									2.00						2-Lifts (Temporary)
Ia. 92	582+00.00	583+00.00	EB	Waterborne/Solvent Paint			X									1.00						Final Lift (Permanent)
Ia. 92	644+32.50	645+32.50	WB	Waterborne/Solvent Paint			X									2.00						2-Lifts (Temporary)
Ia. 92	644+32.50	645+32.50	WB	Waterborne/Solvent Paint			X									1.00						Final Lift (Permanent)
Ia. 92	659+60.00	666+70.00	BOTH	Waterborne/Solvent Paint		X			14.20													2-Lifts (Temporary)
Ia. 92	659+60.00	666+70.00	BOTH	Waterborne/Solvent Paint		X			7.10													Final Lift (Permanent)
				Factored Total: Waterborne/Solvent Paint				671.28	305.52	374.72	19.50	3816.32	-	11.52	14.40	2.00	-	-	-	-	-	-	
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							5215.26											



Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.1

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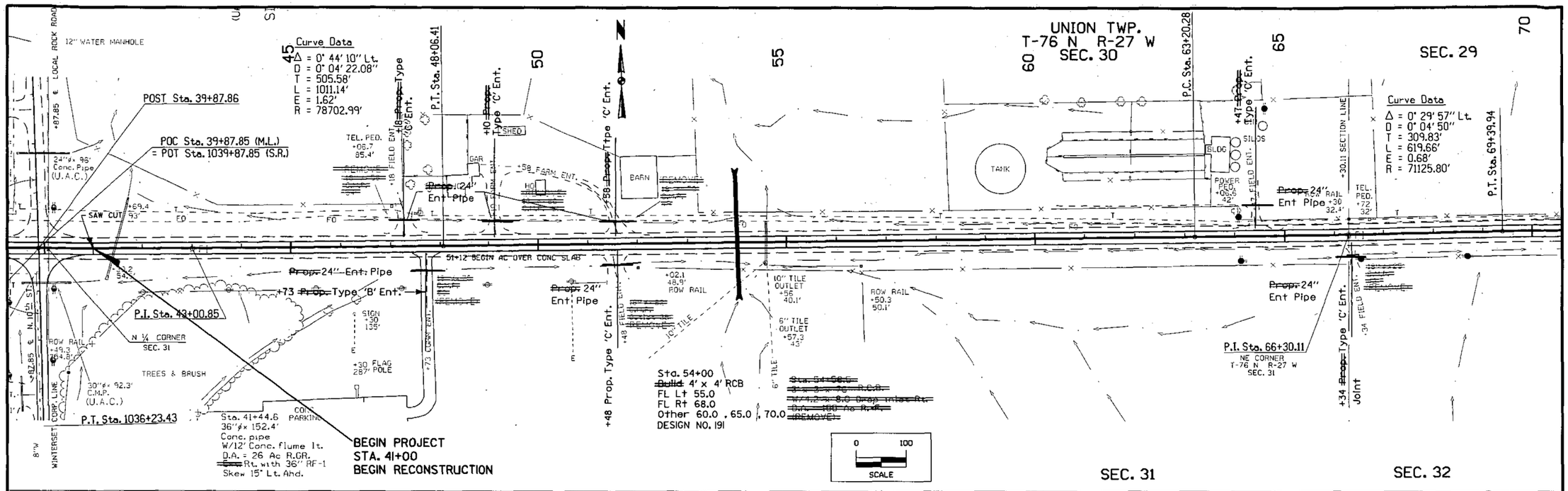

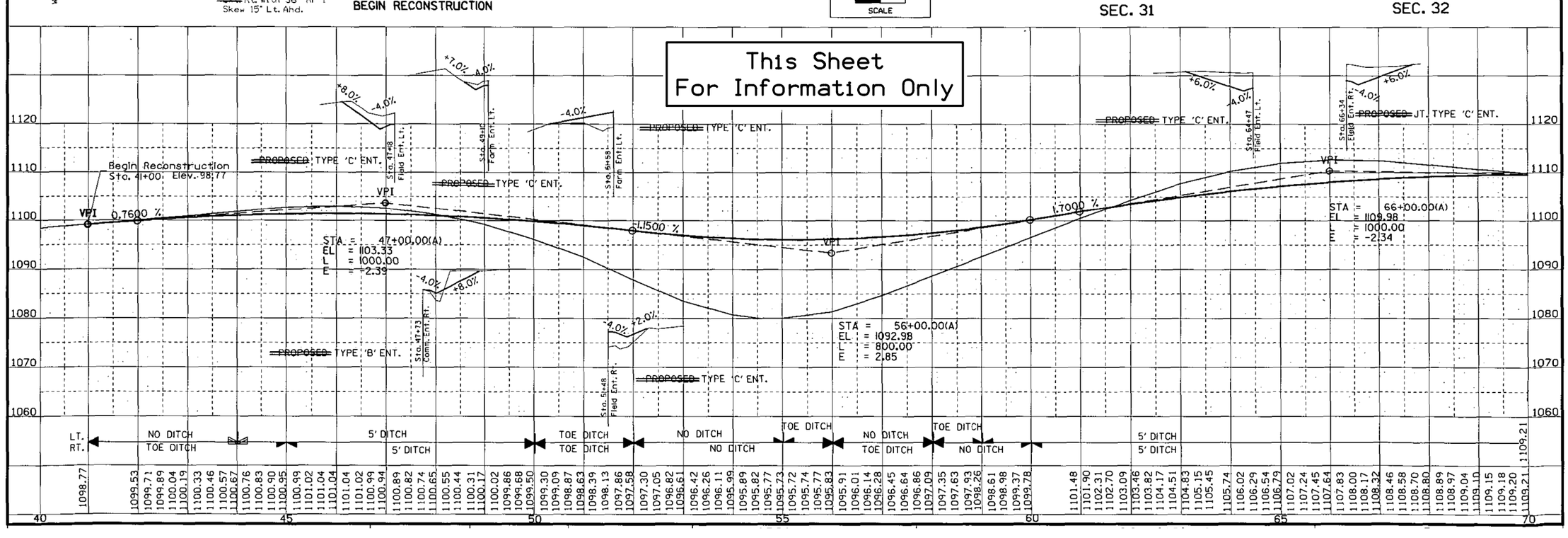

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.2

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UNION TWP.
T-76 N R-27 W
SEC. 29

70 75 80 85 90 95 100

+03 Prop. Type 'C' Ent.
+80 Prop. Type 'C' Ent.
+17 Field Ent. Prop. Type 'C' Ent.

30" CONC. +66.7 144.2'
36" CONC. WELL +86.4 105.6'
ROW RAIL +00 50'
ROW RAIL +0.4 32.9'
6" TILE RISER +49.5 90.3'
Prop. 24" Ent Pipe
TEL. PED. +28.1 48.5'
ROW RAIL +98.5 49.7'
SAW CUT
(REMOVE)
Prop. 24" Ent Pipe
Prop. 24" Ent Pipe
TEL. PED. +93.7 48.1'
ROW RAIL +41.3 50.1'
+47 Safety Ramp
APPROXIMATE 1/4 SECTION LINE
Prop. 24" Ent Pipe
(REMOVE)

Curve Data
Δ = 0° 04' 51" RT.
D = 0° 00' 58.56"
T = 248.46'
L = 496.93'
E = 0.09'
R = 352228.15'

P.O.S.T. Sta. 92+41.71
= P.I. Sta. 2092+41.80
P.O.C. Sta. 92+41.71 (M.L.)
= P.O.T. Sta. 2092+41.71 (S.R.)
P.I. Sta. 92+42.22

Sta. 73+50
~~Install~~ 42" RF-1
FL Lt 00.0
FL Rt 03.5
~~Sta. 73+66.0~~
~~2' x 2' x 45'~~
~~R.C.B.~~
~~D.A. = 21 Ac F.~~
~~(REMOVE)~~

STA. 79+00
STOP RECONSTRUCTION
BEGIN SHOULDERING

+76 Prop. Type 'C' Ent. +76 Field Ent.

Sta. 85+60.0
2' x 2' x 42.3'
R.C.B.
D.A. = 21 Ac F.
~~Est. with~~ 30" RF-1
FL Lt. 03.0
Rt. 04.0

P.C. Sta. 89+93.76
0602
+09 Prop. Type 'B' Ent.
+09 COMM. ENT.
TEL. PED. +13.7 49.1'
COMM. BLDG.
TEL. PED. +70 56.7'
COMM. RISER
Prop. 24" Ent Pipe
90° 52' 56" RT.
COMM. ENT.
18" ø x 40' C.M.P.
+41.71 ℄ SIDE ROAD
TEL. PED. +97.6 96.7'
P.T. Sta. 94+90.69
18" ø x 36' C.M.P.
FIELD ENT.
P.O.T. Sta. 2092+41.65
N ¼ CORNER T-76 N R-27 W SEC. 32
TANK
TANK

SEC. 32

0 100
SCALE

Refer To Sheet No. E.02
For Side Road Details.

-4.0%
-0.1689 %
VPI
VPI
STA = 75+00.00(A)
EL = 1108.46
L = 800.00
E = 0.52
Stop Reconstruction
Begin Resurfacing
Sta. 79+00
Sta. 75+03 Field Ent. Lt.
PROPOSED TYPE 'C' ENT.
-6.0%
-4.0%
Sta. 84+80 Field Ent. Lt.
PROPOSED TYPE 'C' ENT.
PROPOSED SAFETY RAMP
-4.0%
Sta. 92+47
U.A.C.
-3.0%
Sta. 96+17 Field Ent. Lt.
PROPOSED TYPE 'C' ENT.
2.0%
Sta. 83+76 Field Ent. Rt.
PROPOSED TYPE 'C' ENT.
1.0%
Sta 91+09 Comm. Ent. Rt.
PROPOSED TYPE 'B' ENT.

1130 1120 1110 1100 1090 1080 1070

5' DITCH
5' DITCH
TOE DITCH
5' DITCH
5' DITCH
NO DITCH
5' DITCH
℄ SIDE ROAD ℄

1109.21 1109.20 1109.17 1109.14 1109.10 1109.06 1109.03 1109.00 1108.98 1108.96 1108.94 1108.93 1108.92 1108.92 1108.92 1108.92 1108.93 1108.94 1108.96 1108.98 1109.00 1109.03 1109.07 1109.10 1109.14 1109.19 1109.24 1109.29 1109.35 1109.41 1109.47 1109.54 1109.62 1109.69 1109.78 1109.86 1109.86

75 80 85 90 95 100

This Sheet
For Information Only

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.3

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Refer To Sheet No. E.02
For Side Road Details.

UNION TWP.
T-76 N R-27 W
SEC. 29

SEC. 32

SEC. 28

SEC. 33

~~Prop.~~ 24" Ent Pipe

~~+75 Prop.~~ Type 'C' Ent.

~~(REMOVE)~~

TEL. PED. +50.4 45.8'

+75 FIELD ENT.

15" x 20' C.M.P.

WELL 4' x 4' CONC. COVER +38.6 108.2'

FIELD ENT.

TEL PED. +79 68.5'

~~(REMOVE)~~

TEL PED. +48.5 48.7'

+50.41 ℄ SIDE ROAD

89° 36' 50" R

50' R

50' L

P.O.T. Sta. 105+50.41 (M.L.)
= P.I. Sta. 3105+50.41 (S.R.)

~~Prop.~~ 24" Ent Pipe

+44 Safety Ramp

P.O.T. Sta. 118+67.29
NE CORNER
T-76 N R-27 W
SEC. 32

APPROXIMATE SECTION LINE

TEL. VENT +97.2 49.2'

Sta. 119+64.0
2'x 2' x 45.5'
R.C.B.
D.A. = 12 Ac. F.
~~Ent with~~ 30' RF-1
Skew Outlet 20° Lt. Ahd.
FL Lt. 83.0
Rt. 86.5

+43 ~~Prop~~ Type 'C' Ent.

Use as a Dike.

SAW CUT

P.C. Sta. 124+29.08
(OFFICE REL.)

P.I. STA. 127+50 O.R.
Δ = 3°12'30.00" Rt.

+70 ~~PROP~~ TYPE 'B' ENT.

15" x 41' Conc. Pipe 38'

~~PROP~~ TYPE 'B' ENT.

TEL. PED. +27 45.3'

TEL. VENT +24.2 36.4'

TEL. PED. +09.2 32.8'

P.I. Sta. 130+70.75

STA. 124+00
STOP RESURFACING
RESUME RECONSTRUCTION

OFFICE RELOCATION
PISTA 127+50.00 (A)
Curve Data
Δ = 3°12'30.00" R
D = 0 °30'00.00"
T = 320.92
L = 641.67
E = 4.49
R = 11459.16
e = N.C.

0 100
SCALE

This Sheet For Information Only

0.0% -4.0%
Sta. 101+75 Field Ent. Lt.
~~PROPOSED~~ TYPE 'C' ENT.
-4.0% +3%
Sta. 105+44 Safety Dike Rt.
~~PROPOSED~~ SAFETY RAMP
-0.4509 %
U.A.C.
-4.0% 0.0%
Sta. 120+43 Comm Ent. Rt.
~~PROPOSED~~ TYPE 'C' ENT.
-2.1% Left
+00 86.65
+74 83.0
+1.94% Left
+00 85.44
5' DITCH
5' DITCH
DITCH GRADE
DITCH GRADE
5' DITCH
Stop Resurfacing
Resume Reconstruction
Sta. 124+00
VPI
-0.4625 %
VPI
NO DITCH
5' DITCH
~~PROPOSED~~ TYPE 'B' ENT.
-4.0%
Sta. 128+41 Comm Ent. Lt.
-4.0%
~~PROPOSED~~ TYPE 'B' ENT.
Sta. 127+76 Comm Ent. Lt.
STA = 128+00.00(A)
EL = 087.72
L = 600.00
E = 0.15

1130 1120 1110 1100 1090 1080 1070

100 105 110 115 120 125 130

1089.57 1089.11 1088.99 1088.88 1088.77 1088.66 1088.56 1088.45 1088.35 1088.25 1088.15 1088.06 1087.96 1087.87 1087.78 1087.70 1087.61 1087.53 1087.45 1087.37 1087.29 1087.22

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.4

UNION TWP.
T-76 N R-27 W
SEC. 28

STA. 157+00
STOP RECONSTRUCTION
RESUME RESURFACING

Curve Data (SURVEY)
Δ = 0° 21' 15" Lt.
D = 0° 04' 03"
T = 262.35'
L = 524.69'
E = 0.41'
R = 84882.64'

P.I. Sta. 130+70.75 (OFFIC REL.)

Sta. 135+71.5
2 x 2 = 52.8
R.C.B.
Dia. 1.23 AC ft.
(REMOVE)

Sta. 135+70
~~Install~~ 36" RF-1
FL Lt 66.0
FL Rt 77.0
OTHER 71.0

P.C. Sta. 133+59.42 (OFFICE REL.)

Office Relocation
P.I. Sta. 140+01.76
Curve Data
Δ = 06°25'00.00" Lt.
D = 00 °30'00.00"
T = 642.34
L = 1283.33
E = 17.99
R = 11459.16
e = N.C.

SEC. 33

P.I. Sta. 140+01.76 O.R.
Δ = 6°25'00" Lt.

P.C. Sta. 142+42.51 (SURVEY)

(SURVEY)
P.I. Sta. 145+04.86
N ¼ CORNER
T-76 N R-27 W
SEC. 33

APPROXIMATE ¼ SECTION LINE

P.T. Sta. 147+67.20 (SURVEY)

Sta. 148+50
~~Install~~ 36" RF-1 & RF-13
FL Lt 60.0
FL Rt 73.0
Other 67.0
Skew 10° Lt. Ahd.

P.C. Sta. 150+59.42 OFFICE REL.

Office Relocation
Curve Data
Δ = 02°51'15.00" Rt.
D = 0°30'00.00"
T = 285.48
L = 570.83
E = 3.56
R = 11459.15
e = N.C.

P.I. Sta. 156+30.26(Back)
P.O.T. Sta 156+27.83(Ahead)

EQU.

0 100
SCALE

This Sheet
For Information Only

+3.0% -4.0%
-0.0% -4%
-6%
4%
+0.2596 %
1.1305 %
-3.0%
-4.0% -0.0%
-4.0% -2.0%

~~PROPOSED~~ TYPE 'C' ENT.
~~PROPOSED~~ JOINT TYPE 'C' ENT.

Sta. 134+18 Form Ent. Lt.
Sta. 138+09 Form Ent. Lt.
Sta. 145+09 Field Ent. Lt.
Sta. 155+21 Field Ent. Rt.
Sta. 158+16 Field Ent. Lt.
Sta. 159+70 Form Ent. Rt.

Stop Reconstruction
Resume Resurfacing
Sta. 157+00

VPI
U.A.D.

STA = 152+00.00(A)
EL = 1081.49
L = 800.00
E = 1.39

5' DITCH
TOE DITCH
NO DITCH
TRANS.
4:1 BACKSLOPE

1087.15 1087.08 1087.01 1086.94 1086.68 1086.42 1086.90 1085.64 1085.64 1085.38 1085.12 1084.87 1084.61 1084.35 1084.09 1083.83 1083.57 1083.31 1083.05 1082.79 1082.53 1082.47 1082.42 1082.38 1082.35 1082.34 1082.34 1082.34 1082.36 1082.39 1082.43 1082.47 1082.54 1082.61 1082.69 1082.78 1082.89 1083.00 1083.13 1083.26 1083.41 1083.57 1083.74 1083.92 1084.11 1084.31 1084.53 1084.75 1084.99 1085.23 1085.49 1085.76 1086.03 1087.17

130 135 140 145 150 155 160

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.5

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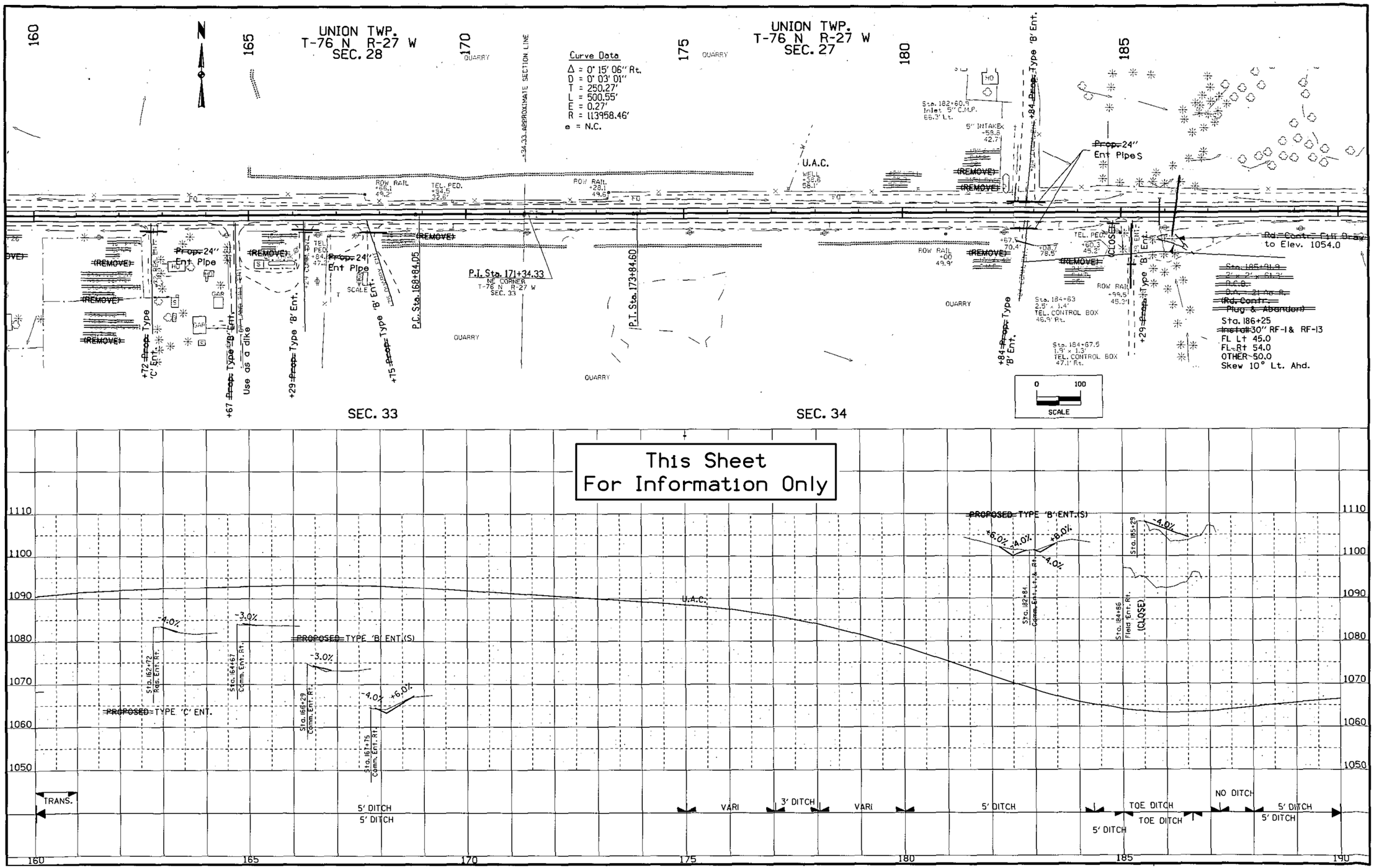

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.6

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Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL		MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.7

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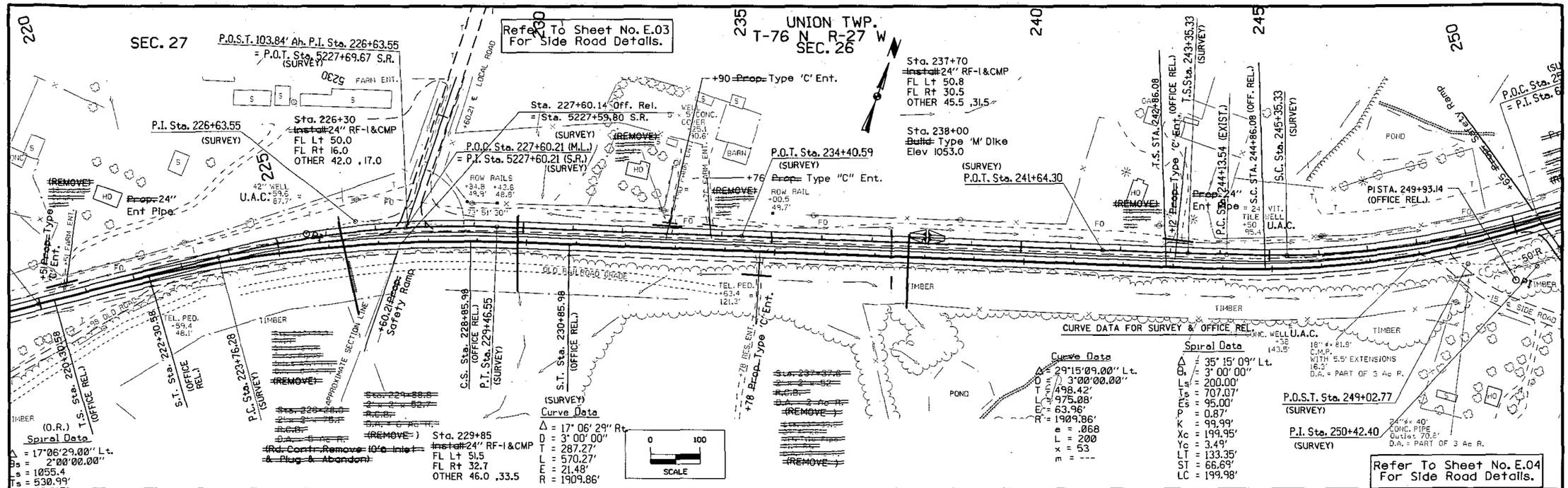

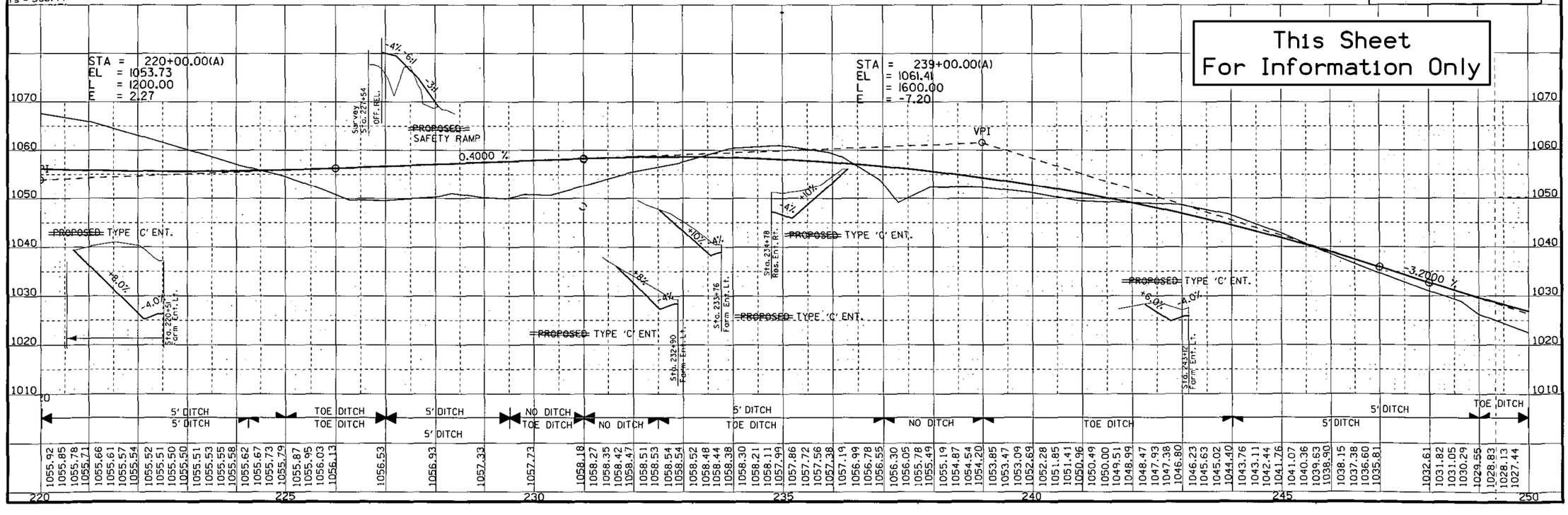

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.8

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Refer to Sheet E.04 for Side Road Details.

(SURVEY)
P.O.C. Sta. 250+50.00 M.L.
= P.I. Sta. 6250+50.00 S.R.
(SURVEY)

~~Prop.~~ 24" RF-1 & CMP

~~(REMOVE)~~

EQU.

C.S. Sta. 254+61.14 (OFFICE REL.)
S.T. Sta. 256+61.14 (OFFICE REL.) Back
P.O.T. Sta. 257+13.11 O.R. Back
P.O.T. Sta. 257+10.41 (Sur. Ahead)
S.T. Sta. 257+10.41 (EXIST.)
PT Sta. 257+88.61 (EXIST.)
+00 PROP. TYPE "C" ENT.
C.S. Sta. 255+10.41 (SURVEY)

APPROXIMATE ¼ SECTION LINE

POND

TERRACE

ROW RAILS +91.1 57' +16.6 76.5'

ROW RAIL +97.3 126.4'

ROW RAIL +96.4 09'

ROW RAIL +83.5 99.3'

ROW RAIL +43.5 157.2'

+16.8 114.3'

+16.8 139.2'

FO

TREES

P.O.T. Sta. 258+85.58 (SURVEY)

PC Sta. 263+04.21
T.S. Sta. 263+78.71
S.C. Sta. 265+78.71

4" TILE RISERS +16.7 101.8' +63.6 200.4'

Sta. 267+00
~~Install~~ 24" RF-1 & RF-3
FL Lt 1002.0
FL Rt 984.0
OTHER 989.0

~~Sta. 267+11.2~~
~~OUTLET 22.2' Lt.~~
~~2 - 2 - 87.1~~
~~R.C.B. (REMOVE)~~
~~D.A. 8 Ac. R.~~

~~Sta. 267+20.8~~
~~INLET 29.5' Lt.~~
~~36"x18" F~~
~~W=2.2 - .08~~
~~Storm Head wall~~
~~DA 8 AC. R.~~
~~(REMOVE)~~

~~Sta. 267+11.2~~
~~OUTLET 22.2' Lt.~~
~~2 - 2 - 87.1~~
~~R.C.B. (REMOVE)~~
~~D.A. 8 Ac. R.~~

~~Sta. 282+84.1~~
~~2 - 2 - 72.6~~
~~R.C.B. (Rd. Contr. Plug & Abandon)~~
~~w/ 24" C.M.P. EXTENSIONS~~
~~8 Ac. R. 48' Lt. (REMOVE)~~
~~D.A. 7 Ac. R.~~

~~Rd. Contr. Ditch Outlet~~

~~(REMOVE)~~
~~Sta. 273+70.6~~
~~2 - 2 - 55.8~~
~~R.C.B.~~
~~D.A. 7 Ac. R.~~

~~(REMOVE)~~
~~Sta. 279+50.6~~
~~2 - 2 - 48.3~~
~~R.C.B.~~
~~D.A. 4 Ac. R.~~

~~(REMOVE)~~

~~(REMOVE)~~

Spiral Data
Δ = 45° 20' 22" Rt.
θs = 3° 00' 00"
Ls = 200.00'
Ts = 898.08'
Es = 160.85'
P = 0.87'
K = 99.99'
Xc = 199.95'
Yc = 3.49'
LT = 133.35'
ST = 66.69'
LC = 199.98'

Curve Data
Δ = 39° 20' 22" Rt.
D = 3° 00' 00"
T = 682.69' e = .068
L = 1311.31' L = 200
E = 118.35' x = 53
R = 1909.86' m = ---

UNION TWP.
T-76 N R-27 W
SEC. 26

P.I. Sta. 272+76.79
P.O.S.T. Sta. 269+39.44

P.O.S.T. 625.60' Ah. P.I. Sta. 272+76.79
Sta. 279+50
Install 24" RF-1& RF-3
FL Lt 99.2
FL Rt 93.0
OTHER 98.0

(USE AS A TURNOUT)
+38 Type 'C' Ent.

~~(REMOVE)~~

Sta. 273+70
~~Install~~ 24" RF-1&CMP
FL Lt 03.3
FL Rt 85.0
OTHER 96.0 ,86.5
Skew 13^ Lt. Ahd.

Sta. 274+10
~~Build~~ Type 'M' Dike, Lt.
Elev 1005.5

PT Sta. 273+44.68

C.S. Sta. 278+90.02
S.T. Sta. 280+90.02

(SURVEY)
PI Sta. 251+32.40 (EXIST.)
P.O.S.T. Sta. 59.07' Ah. OF
P.I. Sta. 250+42.40 M.L.
= P.O.S.T. Sta. 6251+32.80 S.R.
Sta. 253+15
~~Prop.~~ Type 'M' Dike
Elev 1017.5

Sta. 253+00
Install 24" RF-1 &CMP
FL Lt 974.5
FL Rt 1015.2
OTHER 976.0 ,1008.0
Skew 12° Lt. Ahd.

P.C. Sta. 6251+24.56
50' R
56° 50' 23" TAN. TO TAN.

0 100
SCALE

Sta. 250+39
Safety Ramp Lt.

-7.0%

8:1

~~PROPOSED~~ TYPE 'C' ENT.
& SAFETY RAMP

STA = 253+00.00
EL = 1016.61
L = 1000.00
E = 3.50

-0.4000 %

-1.525% Lt. Ditch Grade
+00 Lt. 07.60

+1.11% Lt. Ditch Grade
+00 Lt. 01.50
+00 Lt. 04.80

~~Ditch Outlet for Pipe Right~~

5' DITCH | NO DITCH | 5.0' Ditch | 5' DITCH | Ditch Grade | NO DITCH | NO DITCH | 5' DITCH

1030 1020 1010 1000 990 980 970

1026.12 1025.49 1024.87 1024.27 1023.69 1023.13 1022.58 1022.05 1021.54 1021.05 1020.57 1020.11 1019.67 1019.25 1018.84 1018.45 1018.08 1017.73 1017.39 1017.07 1016.77 1016.49 1016.22 1015.97 1015.74 1015.53 1015.33 1015.15 1014.99 1014.85 1014.72 1014.61 1014.21 1013.81 1013.41 1013.01 1012.61 1012.21 1011.81 1011.41 1011.01 1010.61 1010.21 1009.81 1009.41 1009.01 1008.61 1008.21 1007.81 1007.61 1007.50 1007.38 1007.25 1007.10 1006.94 1006.76 1006.57 1006.36 1006.14 1005.91 1005.66 1005.40 1005.13 1004.84 1004.54 1004.22 1003.89 1003.54

250 255 260 265 270 275 280

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For Information Only

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.9

11:05:28 AM 10/30/2018 dcampbe pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6109201018\Design\61092028_D01.sht

UNION TWP.
T-76 N R-27 W
SEC. 26

UNION TWP.
T-76 N R-27 W
SEC. 25

P.I. Sta. 7293+30.17

P.C. Sta. 7291+57.86

P.O.T. Sta. 281+71.00

~~(REMOVE)~~

P.I. Sta. 7289+67.82

P.I. Sta. 288+71.86

~~Prop.~~ 24" Ent Pipe

~~Prop.~~ Type 'C' Ent.

~~Widen Ditch for~~ Pipe Inlet for Pipe Inlet

P.O.T. Sta. 291+13.88

U.A.C. 42" CONC. WELLS

~~Rd. Cont. Fill Drain to~~ Elev. 969.0

P.O.T. Sta. 292+75.55

P.O.S.T. Sta. 302+09.10 M.L. = P.I. Sta. 8302+09.76 S.R.

P.O.T. Sta. 302+09.10 O.R. = P.O.T. Sta. 8302+09.76 S.R.

P.O.C. Sta. 302+08.99 M.L. = P.O.T. Sta. 8302+08.99 S.R.

Sta. 300+50 ~~Build~~ Type 'M' Dike Elev 981.0

~~Prop.~~ Safety Ramp

P.I. Sta. 308+19.16

	(O.R.) Curve Data	(Survey) Curve Data
Δ =	3°59'19.00" Rt.	3° 59' 19" Rt.
D =	0°15'11.11"	0° 15' 00"
T =	798.05'	798.04'
L =	1595.44'	1595.44'
E =	13.89'	13.89'
R =	22918.31	22918.31'
e =	N.C.	
L =	---	
x =	---	
m =	---	

P.O.T. Sta. 288+47.88 M.L. = P.O.T. Sta. 7288+47.88 S.R.

P.C. Sta. 290+71.65

P.T. Sta. 287+31.17

S.T. Sta. 280+90.02

P.C. Sta. 300+21.12 (Survey)

P.C. Sta. 303+05.6 (Office Reloc.)

Sta. 307+85 ~~Prop.~~ Type 'M' Dike Elev 1010.0

Sta. 308+15 ~~Install~~ 24" RF-1 FL Lt 07.5 FL Rt 02.0

Sta. 295+65 ~~Install~~ 36" RF-1 & RF-13 F.L. = Lt. 969.0 Rt. 951.0 Other 960.0

Sta. 300+90 ~~Install~~ 30" RF-1 & RF-13 FL Lt/ 77 .0 FL Rt/ 51 .0 OTHER 60 .0

Sta. 294+18 & Draw D.A. = 2 Ac R.

Sta. 295+80 & Draw D.A. = 17 Ac H.

Refer To Sheet No. E.05 For Side Road Details.

Refer To Sheet No. E.06 For Ent Details.

P.O.T. Sta. 7283+57.89

SCALE 0 100

This Sheet For Information Only

STA = 281+50.00
EL = 1005.21
L = 200.00
E = -4.03

STA = 295+50.00
EL = 962.01
L = 1600.00
E = 14.17

-3.0857 %

4.0000 %

-1.0% Left

-0.5% Left

+2.0% Left

+4.84% Ditch Grade Rt.

5' DITCH | 5' DITCH | TOE DITCH | 5' DITCH | NO DITCH | SIDE ROAD | NO | 5' DITCH | 5' DITCH | DITCH GRADE | NO DITCH | TOE DITCH | NO DITCH | DITCH GRADE | 5' DITCH | 5' DITCH | NO DITCH | NO DITCH | TOE DITCH | 5' DITCH | NO DITCH

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.10

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UNION TWP.
T-76 N R-27 W
SEC. 25

Curve Data
Δ = 3°59'19.00" Rt.
D = 0°15'11.11"
T = 798.05'
L = 1595.44'
E = 13.89'
R = 22918.31
e = N.C.

SCALE 0 100

This Sheet
For Information Only

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.11

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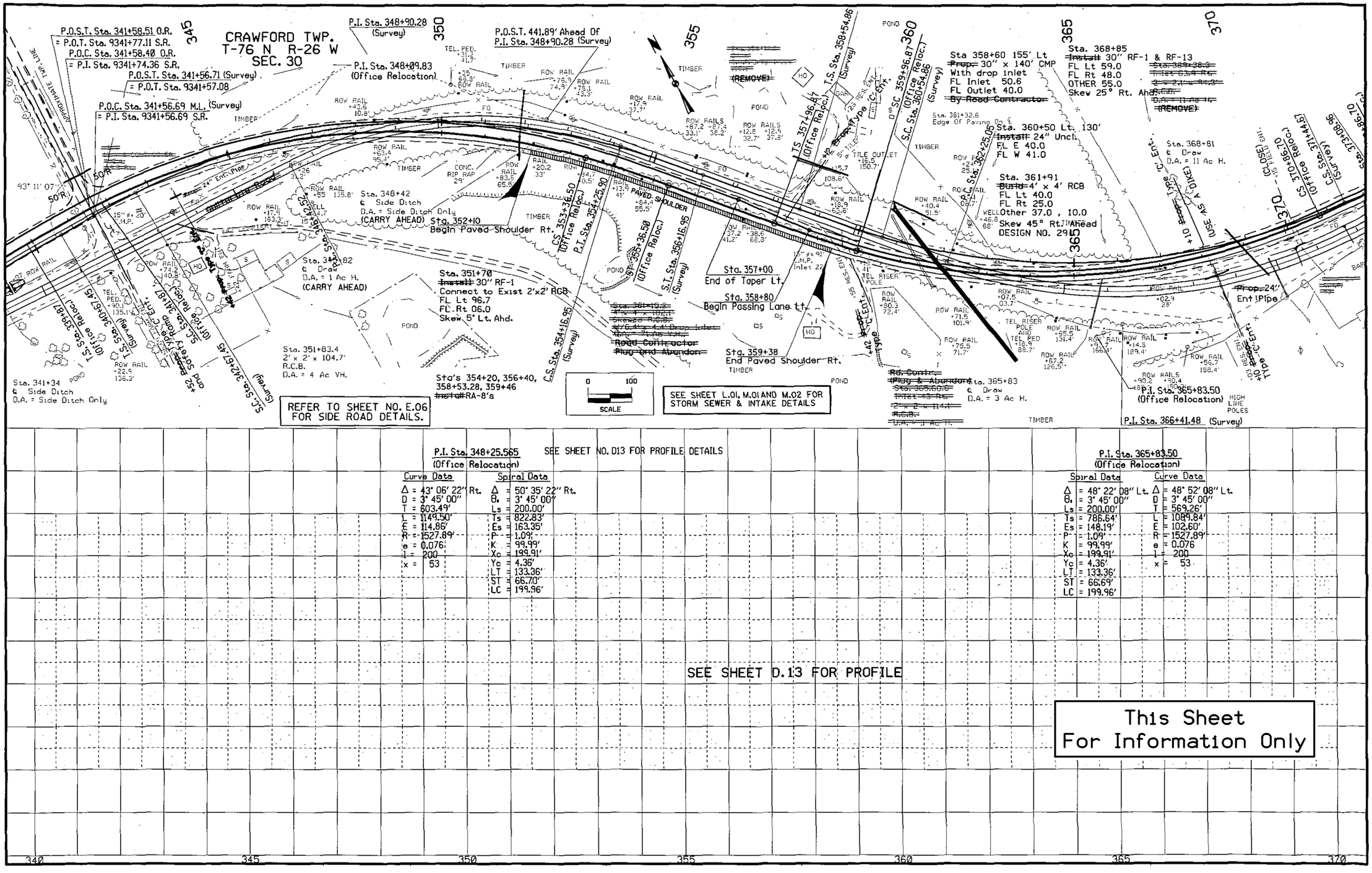

P.I. Sta. 348+25.565 (Office Relocation)

SEE SHEET NO. D13 FOR PROFILE DETAILS

Curve Data		Spiral Data	
Δ	= 43° 06' 22" Rt.	Δ	= 50° 35' 22" Rt.
D	= 3° 45' 00"	θ_s	= 3° 45' 00"
T	= 603.49'	Ls	= 200.00'
L	= 1149.50'	Ts	= 822.83'
E	= 114.86'	Es	= 163.35'
R	= 1527.89'	P	= 1.09'
e	= 0.076	K	= 99.99'
l	= 200	Xc	= 199.91'
x	= 53	Yc	= 4.36'
		LT	= 133.36'
		ST	= 66.70'
		LC	= 199.96'

P.I. Sta. 365+83.50 (Office Relocation)

Spiral Data		Curve Data	
Δ	= 48° 22' 08" Lt.	Δ	= 48° 52' 08" Lt.
θ_s	= 3° 45' 00"	D	= 3° 45' 00"
Ls	= 200.00'	T	= 569.26'
Ts	= 786.64'	L	= 1089.84'
Es	= 148.19'	E	= 102.60'
P	= 1.09'	R	= 1527.89'
K	= 99.99'	e	= 0.076
Xc	= 199.91'	l	= 200
Yc	= 4.36'	x	= 53
LT	= 133.36'		
ST	= 66.69'		
LC	= 199.96'		

SEE SHEET D.13 FOR PROFILE

This Sheet For Information Only

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.12

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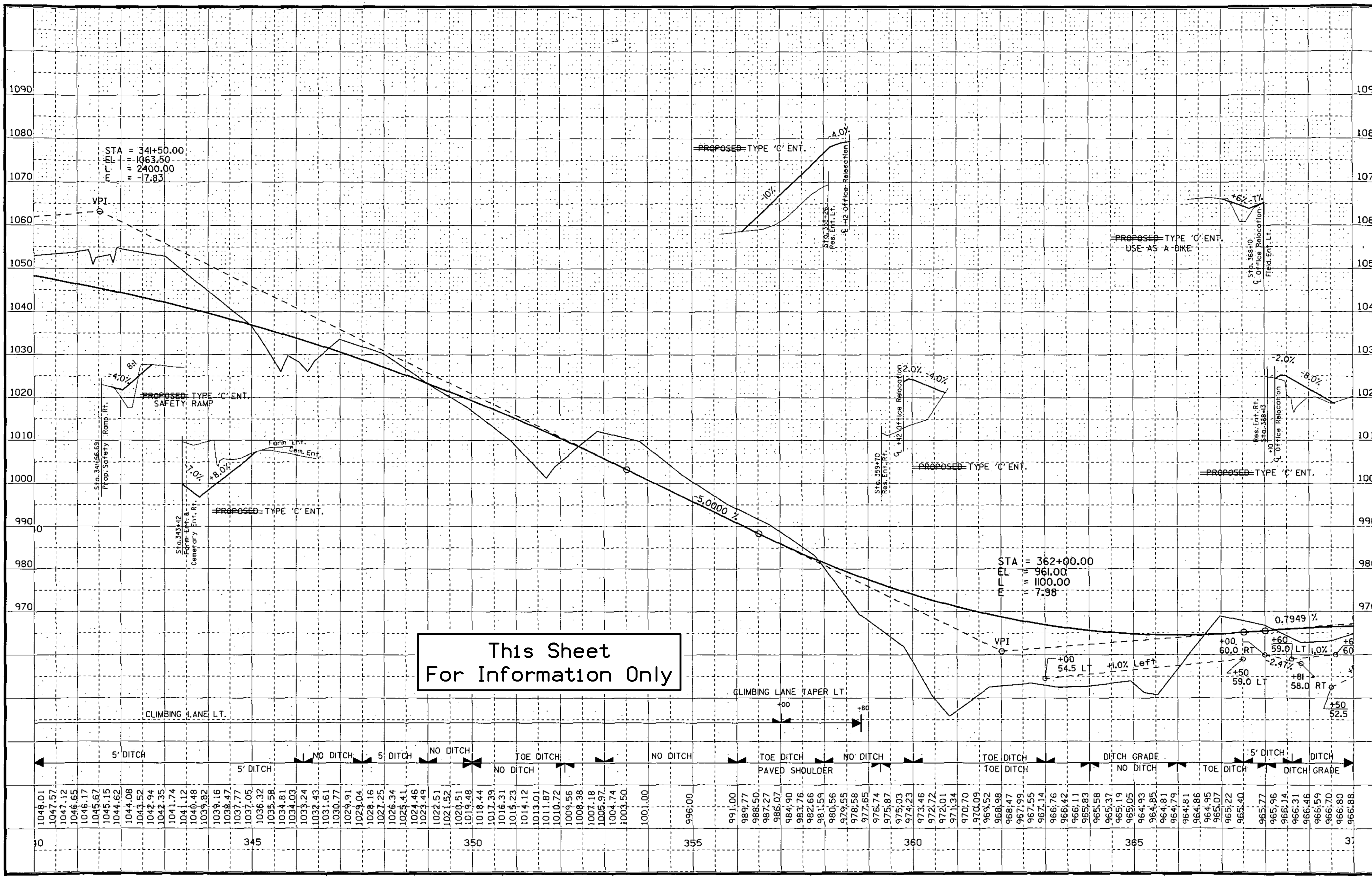

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.13

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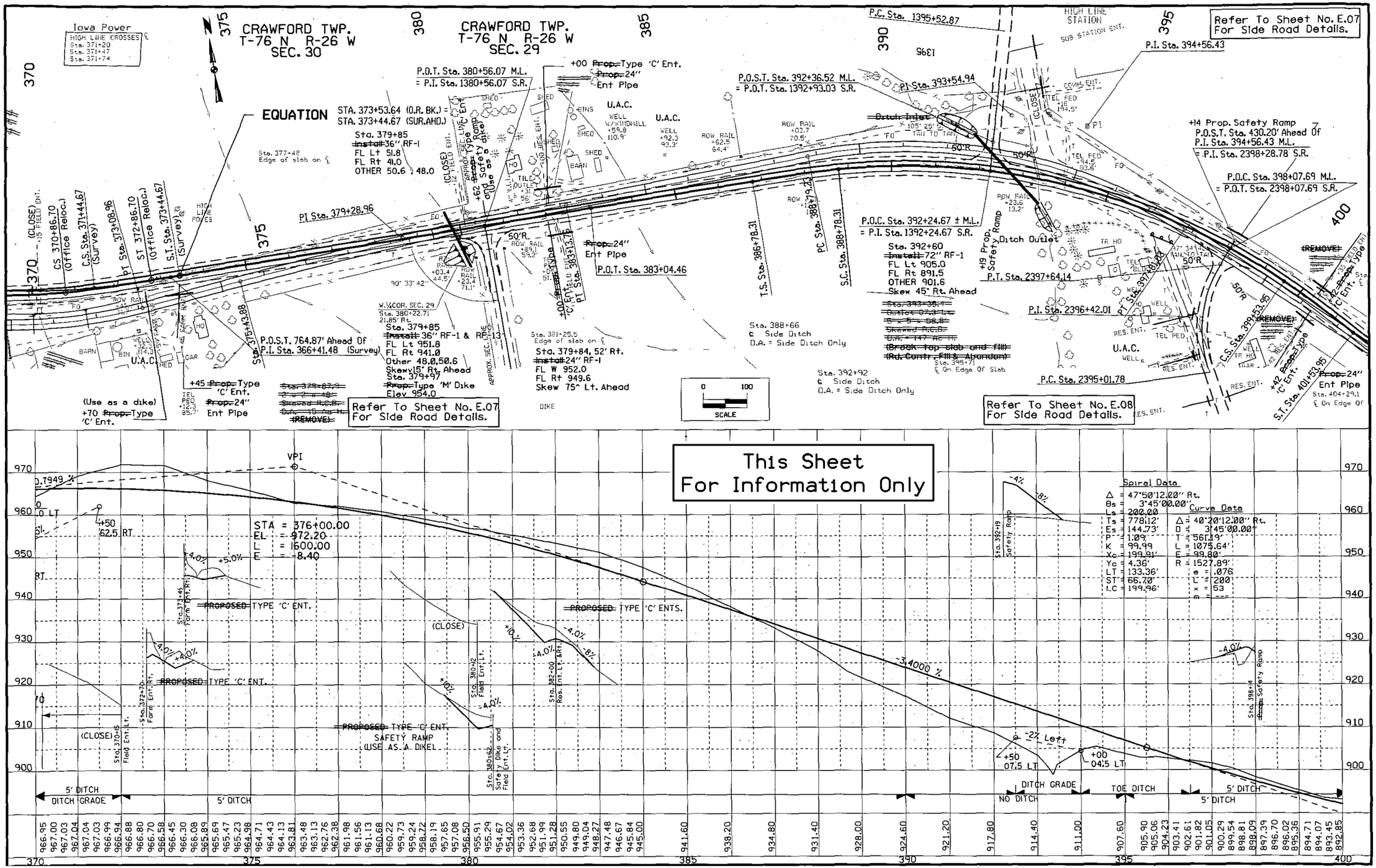
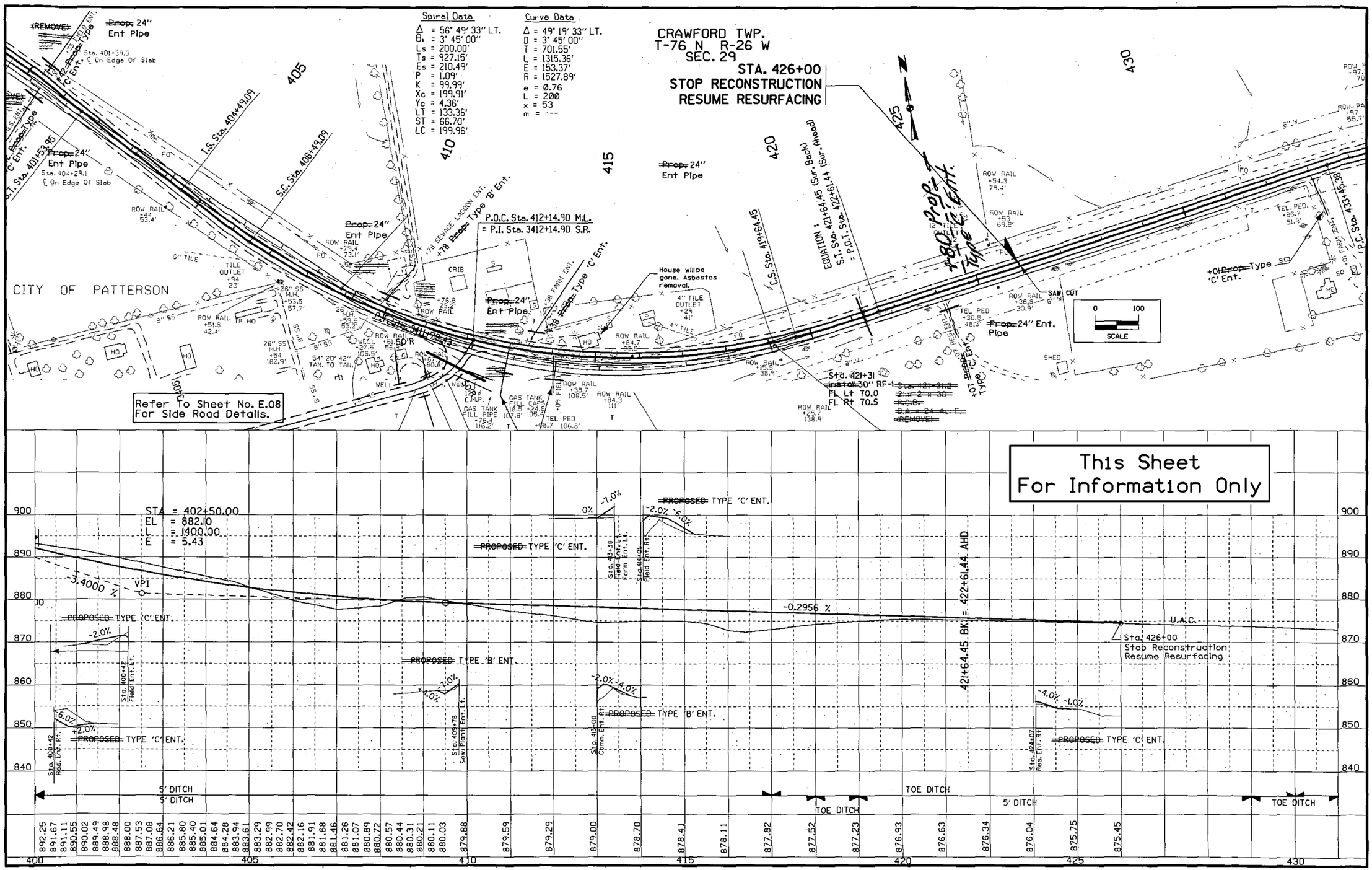


Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.14



Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.15

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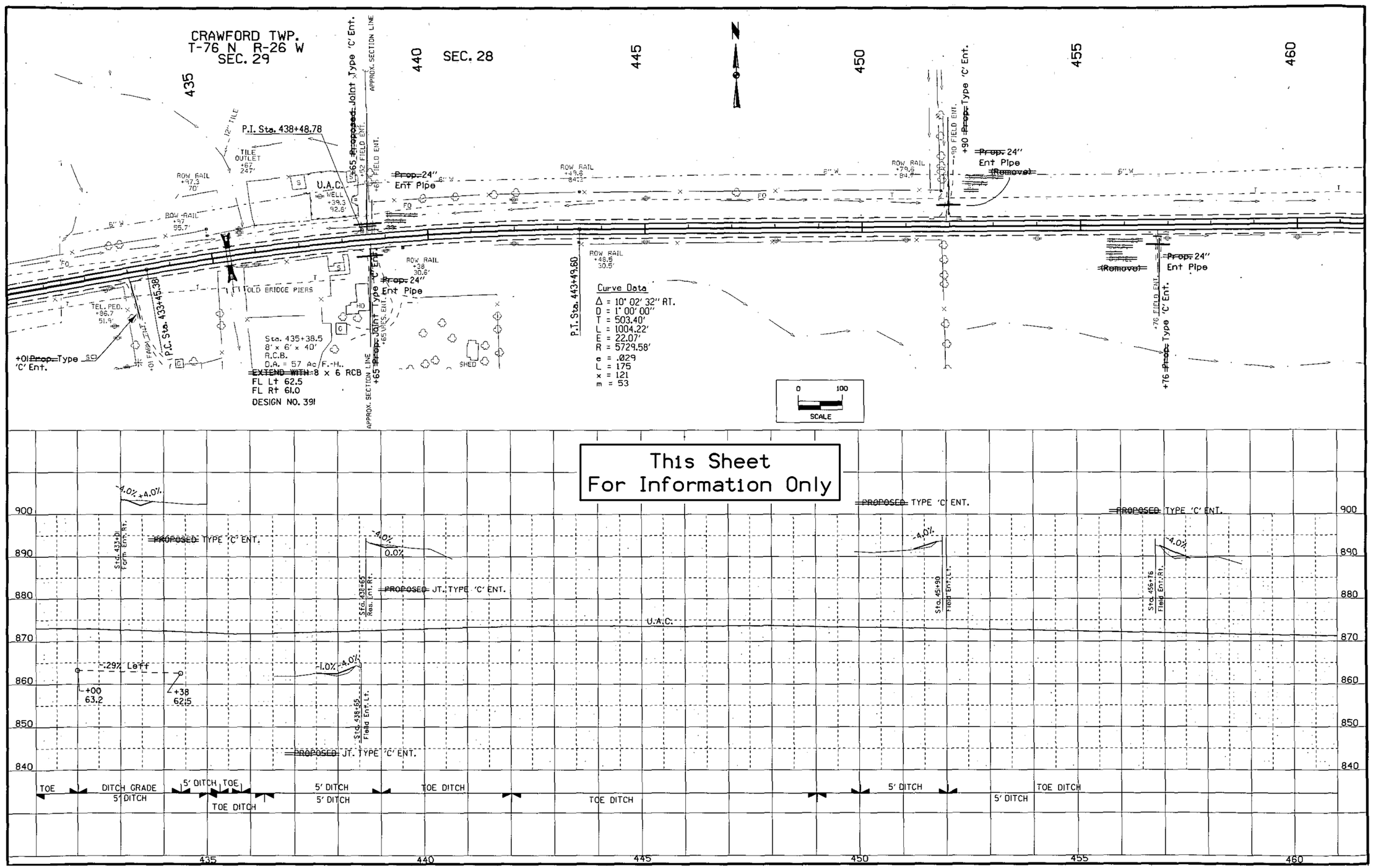

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.16

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CRAWFORD TWP.
T-76 N R-26 W
SEC. 28

4495

465 470 475 480 485 490

P.O.T. Sta. 466+40.50

~~Prop.~~ Type 'C' Ent. +90 DIKE ENT. (Use as a dike)

~~Prop.~~ 36" Uncl.

TREES & BRUSH

DIKE

FO

6" W

TILE OUTLET +96 23°

(Remove)

(Remove)

OLD R.R. GRADE

TREES & BRUSH

DIKE

Sta. 465+01.8
8' x 6' x 35.1'
R.C.B.
D.A. = 626 Ac F.-H..
~~Extend with~~ 8'x6' R.C.B.
Lt. 62.0
Rt. 60.0
DESIGN NO. 491

ROW RAIL
+83.5
30.6'

Sta. 490+30
~~Install~~ 52' x 32' C.A.P.
FL Lt. 64.0
Rt. 64.0

P.C. Sta. 487+61.57

86° 52' 21" TAN. TO

50'R

86° 36' 05" TAN. TO TAN.

P.O.T

0 100
SCALE

Curve Data
Δ = 1° 28' 04" RT.
D = 0° 14' 10"
T = 310.84'
L = 621.65'
E = 1.99'
R = 24266.45'

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910 900 890 880 870 860 850

4.0%

~~PROPOSED~~ TYPE 'C' ENT.

Sta. 475+90 DIKE ENT. LT.

U.A.C.

+00
66.0 LT

+50
66.0
LT & RT

+50
65.0
LT & RT

+50
64.5 RT

+50
64.0 LT

+0.1% Ditch Grade Left and Right

-0.1% Ditch Grade Right
-.14% Ditch Grade Left

5' DITCH

TOE DITCH
TOE DITCH

DITCH GRADE
DITCH GRADE

DITCH GRADE
DITCH GRADE

465 470 475 480 485 490

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.17

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CRAWFORD TWP.
T-76 N R-26 W
SEC. 27

495 500 505 510 515 520

P.O.T. Sta. 4493+73.53
P.I. Sta. 490+72.41 M.L.
P.I. Sta. 4490+74.40 S.R.
P.O.C. Sta. 490+72.4 ± M.L.
= P.O.T. Sta. 4490+72.41 S.R.
P.O.T. Sta. 4487+72.31
P.T. Sta. 493+83.22
50'R
FIELD ENT.
(REMOVE)
TEL. PED. +07.1 131.9'
N.H.
6" W
FO

Sta. 493+74.0
5' x 3' x 47.3'
TWIN R.C.B.
D.A. = 111 Ac H.-F..
~~EXTEND WITH~~ TWIN 5' x 3' RCB's
FL Lt 63.5
FL Rt 62.5
DESIGN NO. 591

Refer To Sheet No. E.10
For Side Road Details.

P.C. Sta. 501+16.50
U.A.C. WELL W/WINDMILL +62.2 11.5'
BIN
SHED
BARN
32" ø BRICK BASIN FOR WATER PUMP +20.4 97.6'
U.A.C. WELL +62.9 10.1'
+56 ~~Prop.~~ Type 'C' Ent. Use as a Dike.
TILE OUTLET +97 46'
(REMOVE)
WATER HYDRANT +28.6 99.6'
+63 ~~Prop.~~ Type 'C' Ent.
+63 FIELD ENT.
DO NOT DISTURB WATER HYDRANT
P.I. Sta. 504+36.15

P.T. Sta. 507+55.85

Curve Data
Δ = 3° 00' 40" LT.
D = 0° 28' 16"
T = 319.65'
L = 639.15'
E = 4.20'
R = 12161.84'
e = N.C.

P.I. Sta. 517+06.17
ROW RAIL +13.4 74.7'
ROW RAIL +13.5 30.1'
P.T. Sta. 520+12.73

Sta. 514+16.4
4' x 3' x 50.1'
R.C.B.
D.A. = 169 Ac H.-F..
~~EXTEND WITH~~ 48" RF-I
FL Lt 67.0
FL Rt 65.0
Skew Outlet 20^ Lt. Ah.

P.C. Sta. 513+99.57
ROW RAIL +07.2 127.3'
+20 ~~Prop.~~ Type 'C' Ent. 12' FIELD ENT.
Use as a Dike.
CRIB
BIN
CRIB

Curve Data
Δ = 1° 33' 12" RT.
D = 0° 15' 12"
T = 306.60'
L = 613.16'
E = 2.08'
R = 22616.76'

0 100
SCALE

This Sheet
For Information Only

900 890 880 870 860 850 840

+6.0% -4.0%
Sta. 503+56 Farm Ent. Lt.
~~PROPOSED~~ TYPE 'C' ENT. (Use a Dike.)

+0.60% Ditch Grade Lt.
U.A.C.
0.29% Ditch Grade Lt.
0.20% Ditch Grade Right
+10% Ditch Grade Rt.
+10% Ditch Grade Lt.

+75 64.0 LT
+00 64.48 RT
+00 64.7 LT
+00 68.2 LT 65.18 RT
+25 68.95 LT
+75 70.0 LT
+50 68.0 RT
+50 66.2 RT
+00 67.0 LT

~~PROPOSED~~ TYPE 'C' ENT.
6.0%
Sta. 503+63 Field Ent. Rt.

~~PROPOSED~~ TYPE 'C' ENT.
4.0% -8.0%
Sta. 517+20 Field Ent. Rt.

IDE DAD
5' DITCH 5' DITCH
DITCH GRADE DITCH GRADE
5' DITCH
DITCH GRADE 5' DITCH
DITCH GRADE DITCH GRADE
5' DITCH 5' DITCH

495 500 505 510 515 520

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.18

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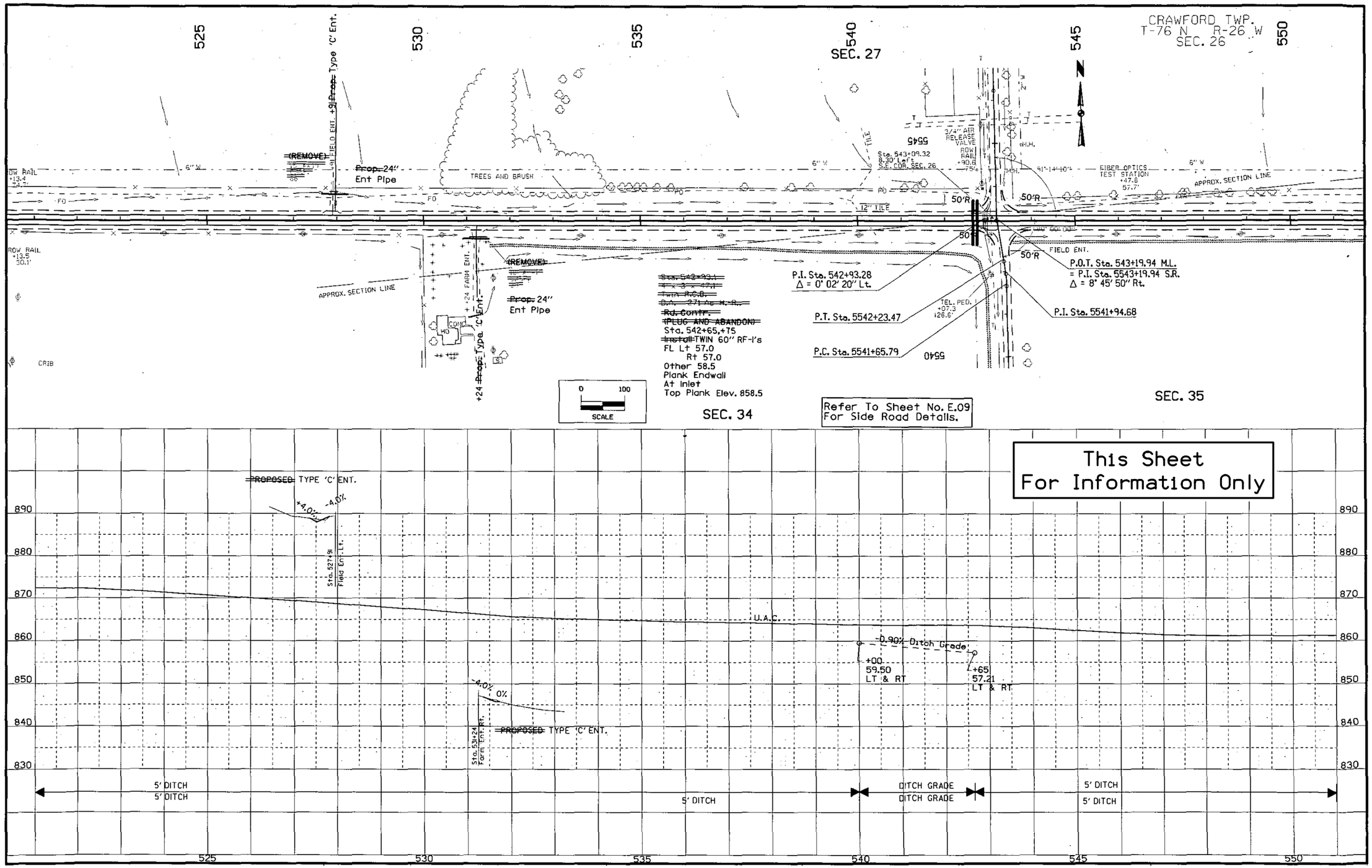

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.19

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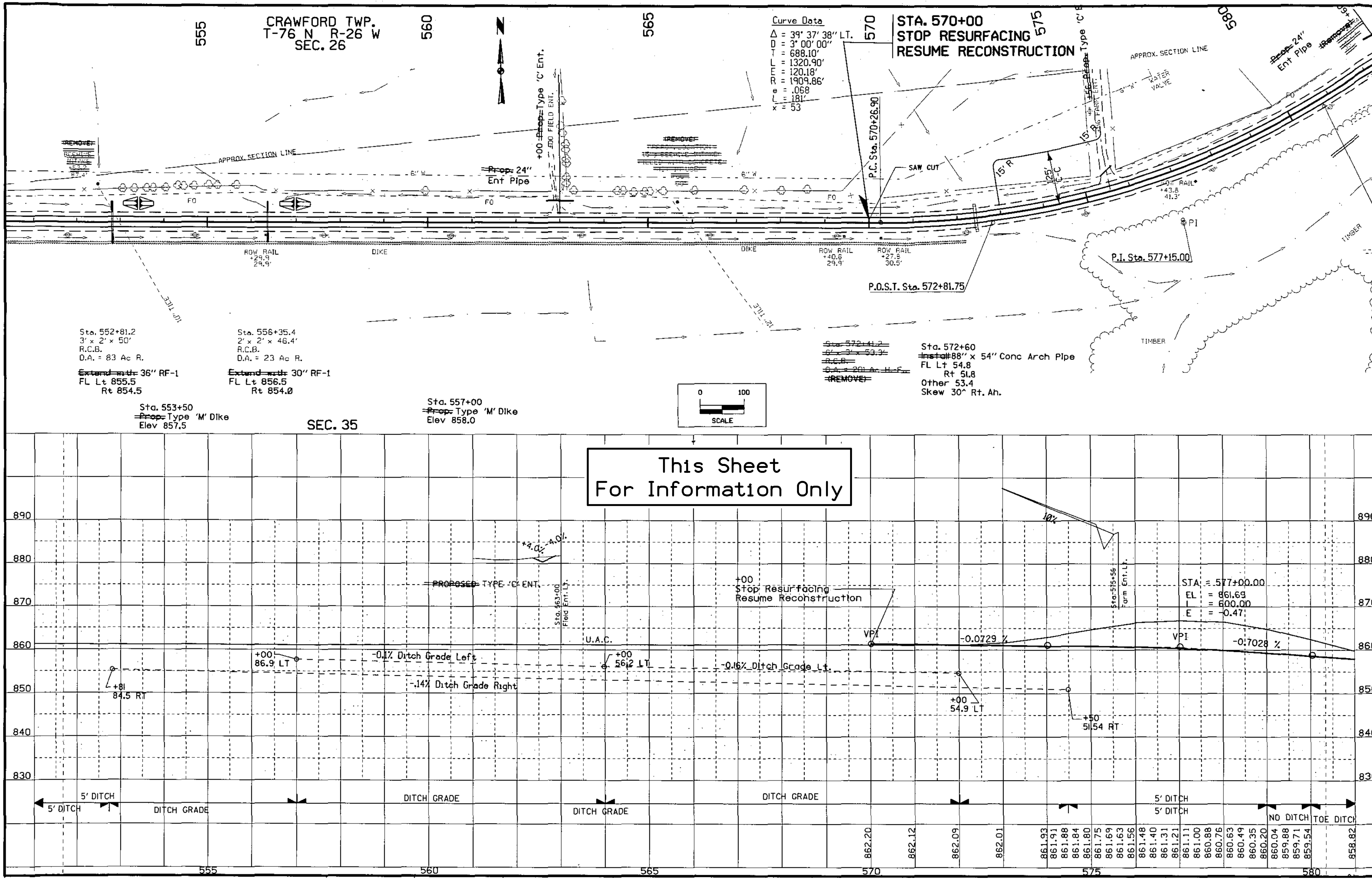
CRAWFORD TWP.
T-76 N R-26 W
SEC. 26
555
560
565
570
575
580
Curve Data
Δ = 39° 37' 38" LT.
D = 3° 00' 00"
T = 688.10'
L = 1320.90'
E = 120.18'
R = 1909.86'
e = .068
L = 181'
x = 53
STA. 570+00
STOP RESURFACING
RESUME RECONSTRUCTION
APPROX. SECTION LINE
Prop. 24"
Ent Pipe
+00 Prop. Type 'C' Ent.
P.C. Sta. 570+26.90
SAW CUT
15' R
25' C-C
P.I. Sta. 577+15.00
P.O.S.T. Sta. 572+81.75
ROW RAIL
DIKE
TIMBER
Sta. 552+81.2
3' x 2' x 50'
R.C.B.
D.A. = 83 Ac R.
Extend with 36" RF-1
FL Lt 855.5
Rt 854.5
Sta. 556+35.4
2' x 2' x 46.4'
R.C.B.
D.A. = 23 Ac R.
Extend with 30" RF-1
FL Lt 856.5
Rt 854.0
Sta. 553+50
Prop. Type 'M' Dike
Elev 857.5
SEC. 35
Sta. 557+00
Prop. Type 'M' Dike
Elev 858.0
0 100
SCALE
Sta. 572+41.2
(REMOVE)
Sta. 572+60
Install 88" x 54" Conc Arch Pipe
FL Lt 54.8
Rt 51.8
Other 53.4
Skew 30° Rt. Ah.
This Sheet
For Information Only
890
880
870
860
850
840
830
PROPOSED TYPE 'C' ENT.
+4.0% -4.0%
10%
+00
Stop Resurfacing
Resume Reconstruction
STA = 577+00.00
EL = 861.69
L = 600.00
E = -0.47
VPI
-0.0729 %
-0.7028 %
U.A.C.
+00
86.9 LT
-0.1% Ditch Grade Left
-.14% Ditch Grade Right
+81
84.5 RT
+00
56.2 LT
-0.16% Ditch Grade Lt.
+00
54.9 LT
+50
51.54 RT
5' DITCH
DITCH GRADE
NO DITCH
TOE DITCH
862.20
862.12
862.09
862.01
861.93
861.91
861.88
861.84
861.80
861.75
861.69
861.63
861.56
861.48
861.40
861.31
861.21
861.11
861.00
860.88
860.76
860.63
860.49
860.35
860.20
860.04
859.88
859.71
859.54
858.82

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.20

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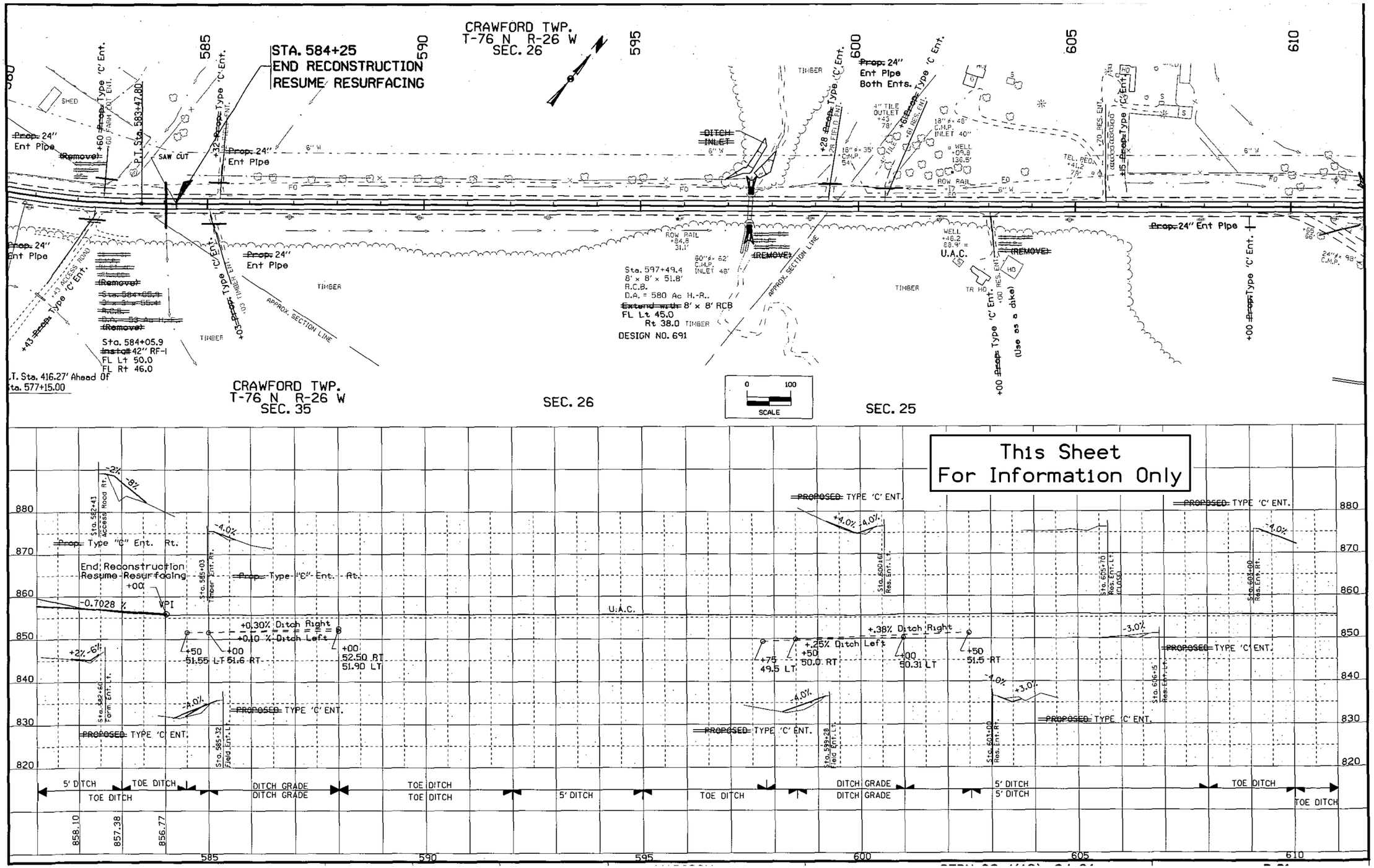
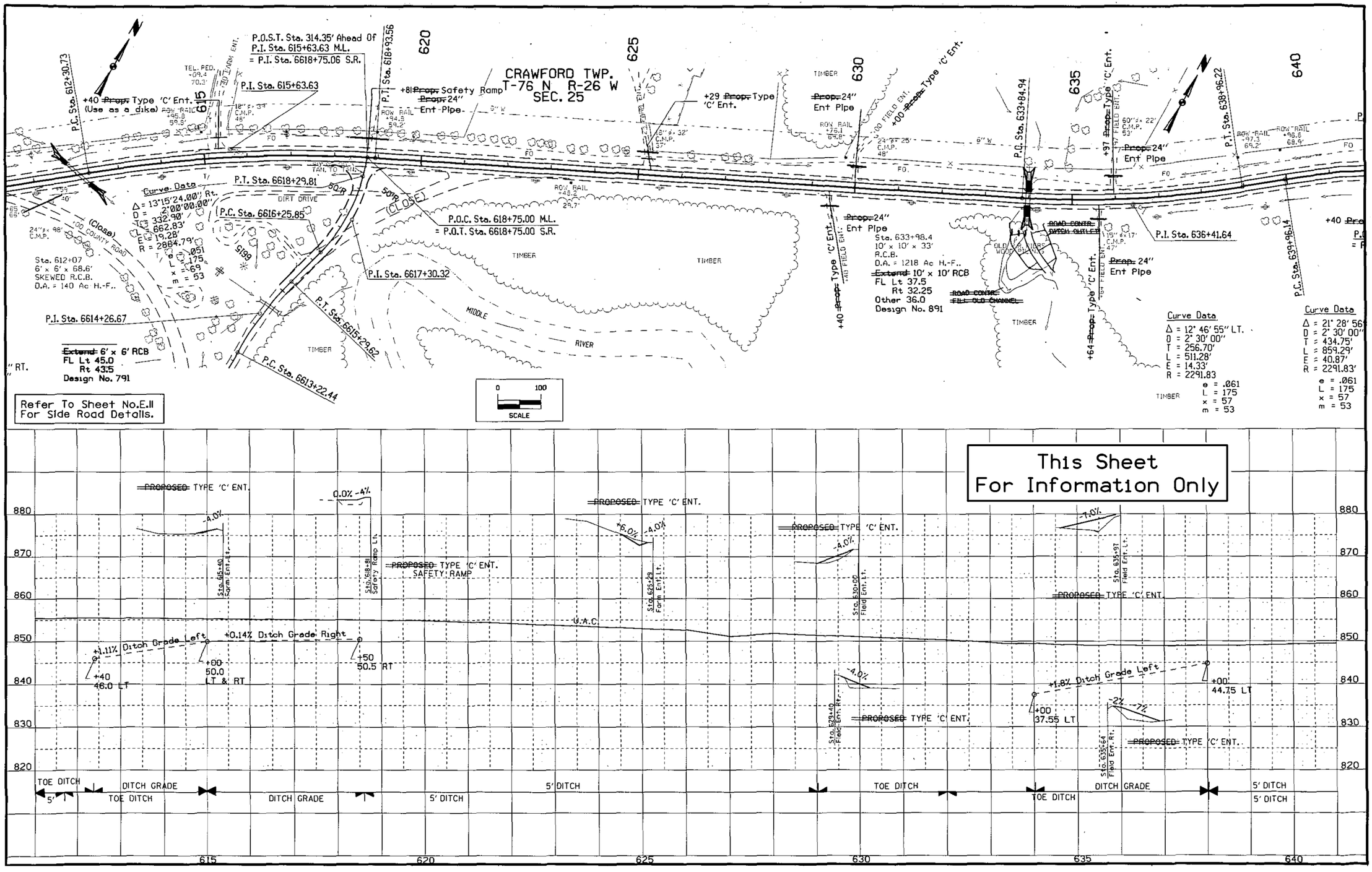


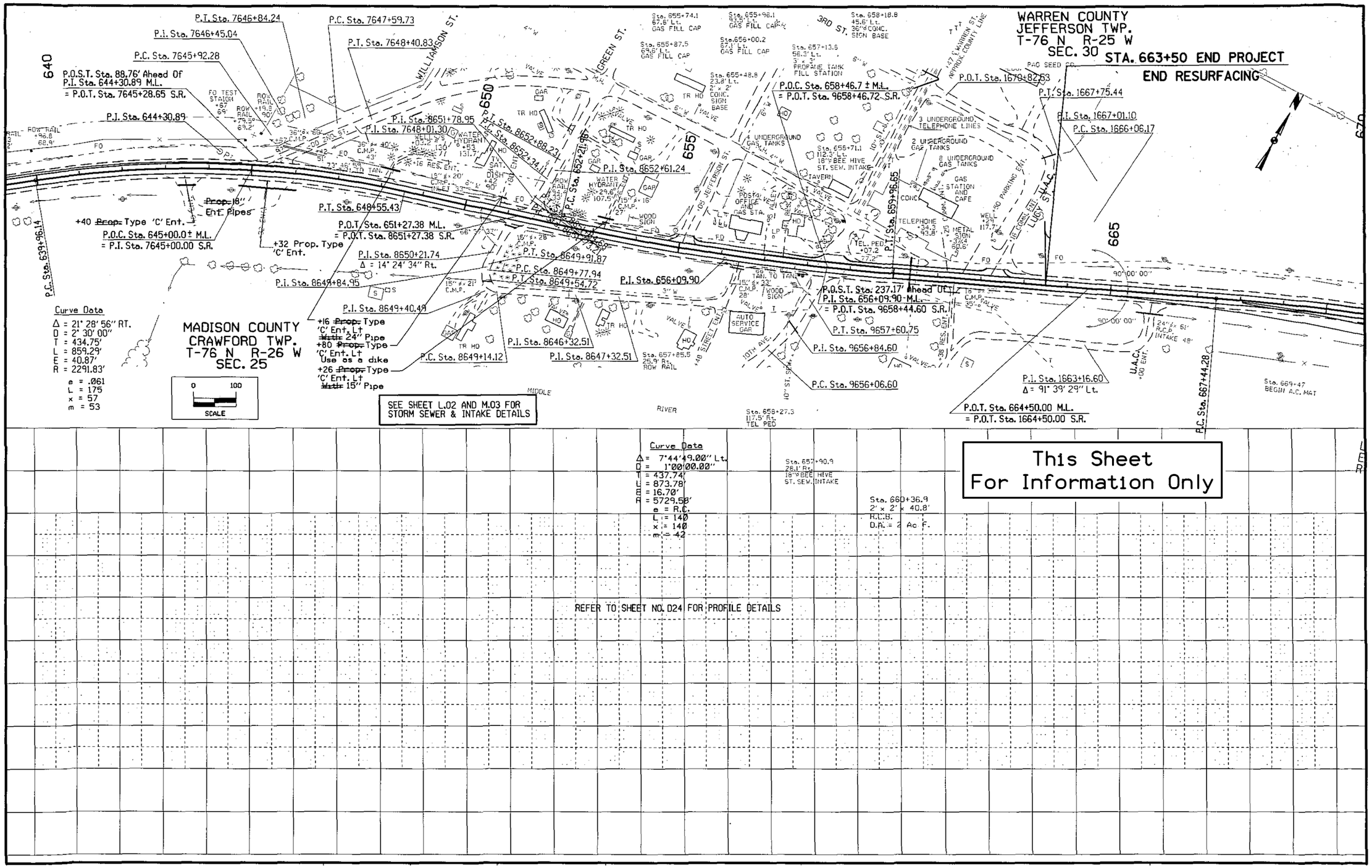
Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.21



Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.22



FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.23

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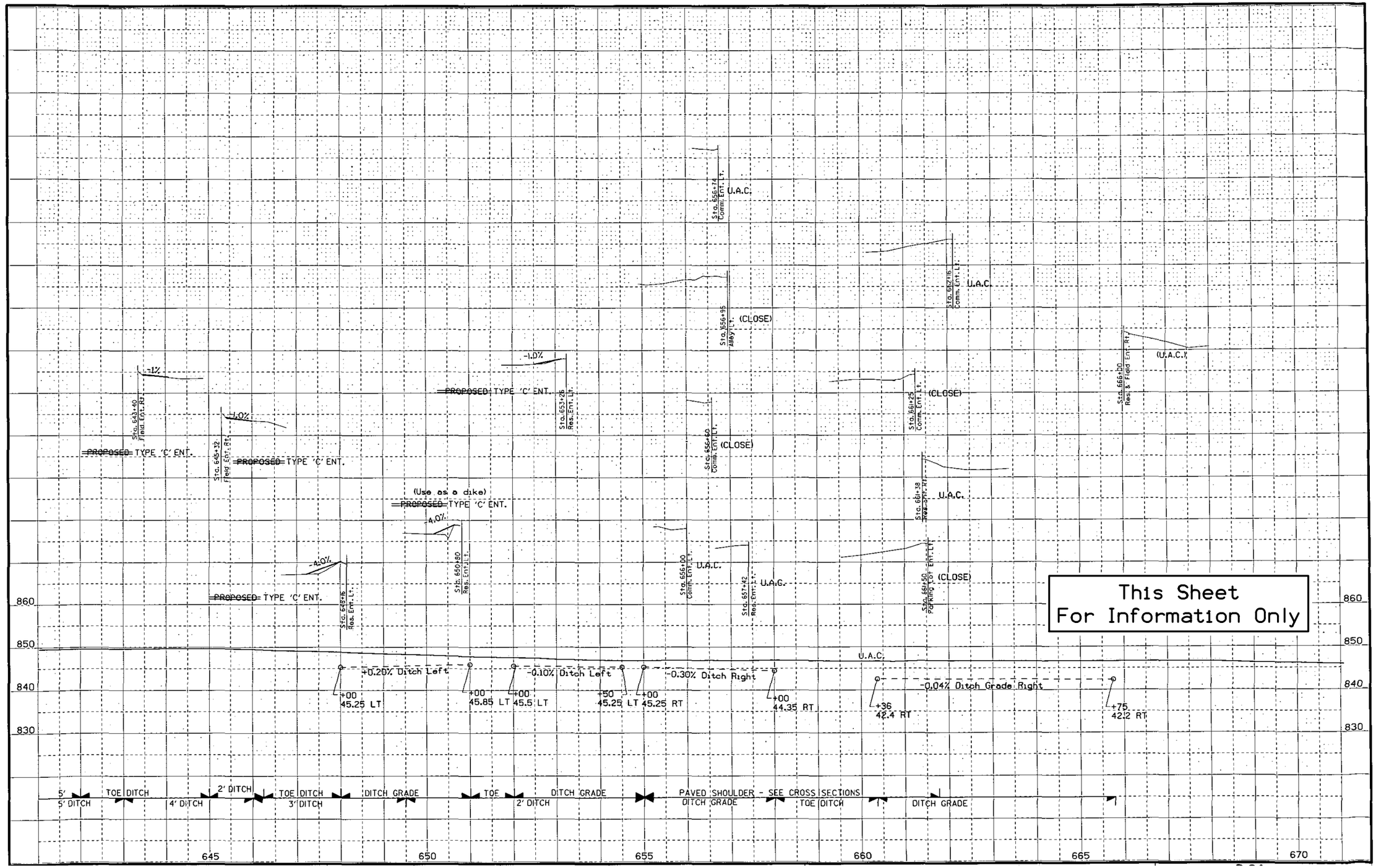

Existing Plans: STPN-92-4(19)--2J-61

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	MADISON/WARREN COUNTY	PROJECT NUMBER NHSX-092-4(28)--3H-61	SHEET NUMBER D.24

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

Through traffic on IA 92 to be maintained at all times.

111-01
04-17-12

COORDINATED OPERATIONS

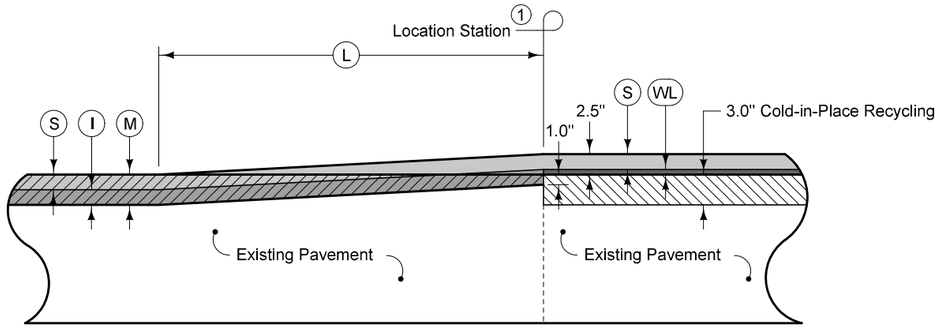
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
NHSX-092-5(63)--3H-91	Resurfacing/Cold-In-Place
HSIPX-092-5(68)--3L-91	HMA Paved Shoulder - New

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
			No Restrictions Expected									



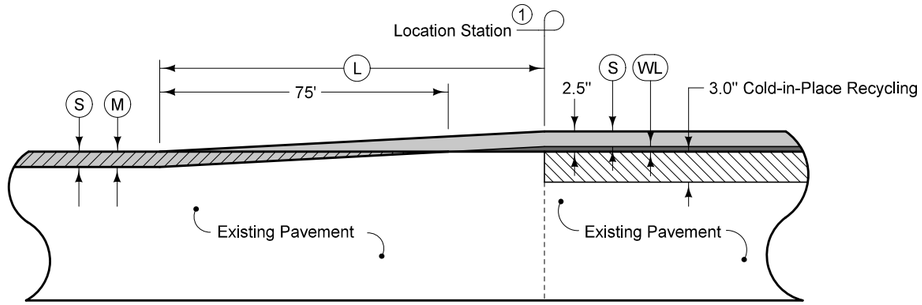
TYPE 'N6'
LEVELING AND
INTERMEDIATE NOTCH

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

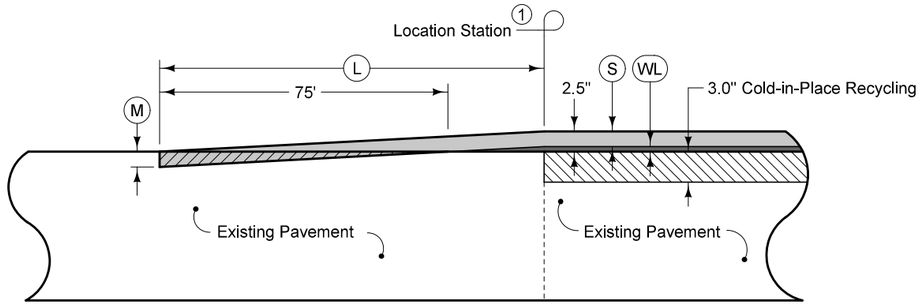
* Based on turning maneuvers
at side roads and intersections.

Contract Items:
- Pavement Scarification
- Cold-in-Place Recycling
- Surface Course
- Intermediate Course
- Wedge, Level, and Strengthening Course

Tabulations:
- 100-25
- 102-16



TYPE 'R7'
LEVELING RUNOUT
SURFACE COURSE WITH MILLING
AND COLD-IN-PLACE RECYCLING



TYPE 'R8'
LEVELING & SURFACE COURSE RUNOUT
TAPERED MILLING
AND COLD-IN-PLACE RECYCLING

- Pavement Scarification, M
- Cold-In-Place Recycling
- Surface Course, S
- Intermediate Course, I
- Wedge, Level, & Strengthening Course, WL

① Refer to Tabulation 102-16 for Location Stations.

RUNOUTS AND NOTCHES FOR RESURFACING