

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

LETTING DATE
 03-19-2019



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

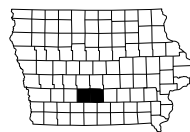
TOTAL
56

PROJECT IDENTIFICATION NUMBER
18-61-092-010
PROJECT NUMBER
NHSX-092-4(28)--3H-61
R.O.W. PROJECT NUMBER
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INDEX OF SHEETS

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* A.2	Location Map Sheet
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C.1	Estimated Project Quantities
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* CE.5 - 7	Temporary Sediment Control Detail
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J.1	Traffic Control Plan
J.1	511 Travel Restrictions
J.1	Coordinated Operations
U Sheets	500 Series, Mod.Stds. and Detail Sheets
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	* Color Plan Sheets

For Project Location Map
Refer to Sheet A.2



MADISON				WARREN			
DESIGN DATA RURAL				DESIGN DATA RURAL			
2019 AADT	3,100	V.P.D.		2019 AADT	4,600	V.P.D.	
2039 AADT	4,500	V.P.D.		2039 AADT	6,600	V.P.D.	
20-- DHV	--	V.P.H.		20-- DHV	--	V.P.H.	
TRUCKS	15	%		TRUCKS	10	%	
Total Design ESALs	1,204,500			Total Design ESALs	1,226,400		

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

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

Signature: Jason M. Holst Date: 1-04-19

Printed or Typed Name: Jason M. Holst

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.14, CE.1-CE.7, D.1-D.24, J.1, U.1



T-76N

T-75N

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

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

STA. 752+00.00
BEGIN MILL/HMA

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

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

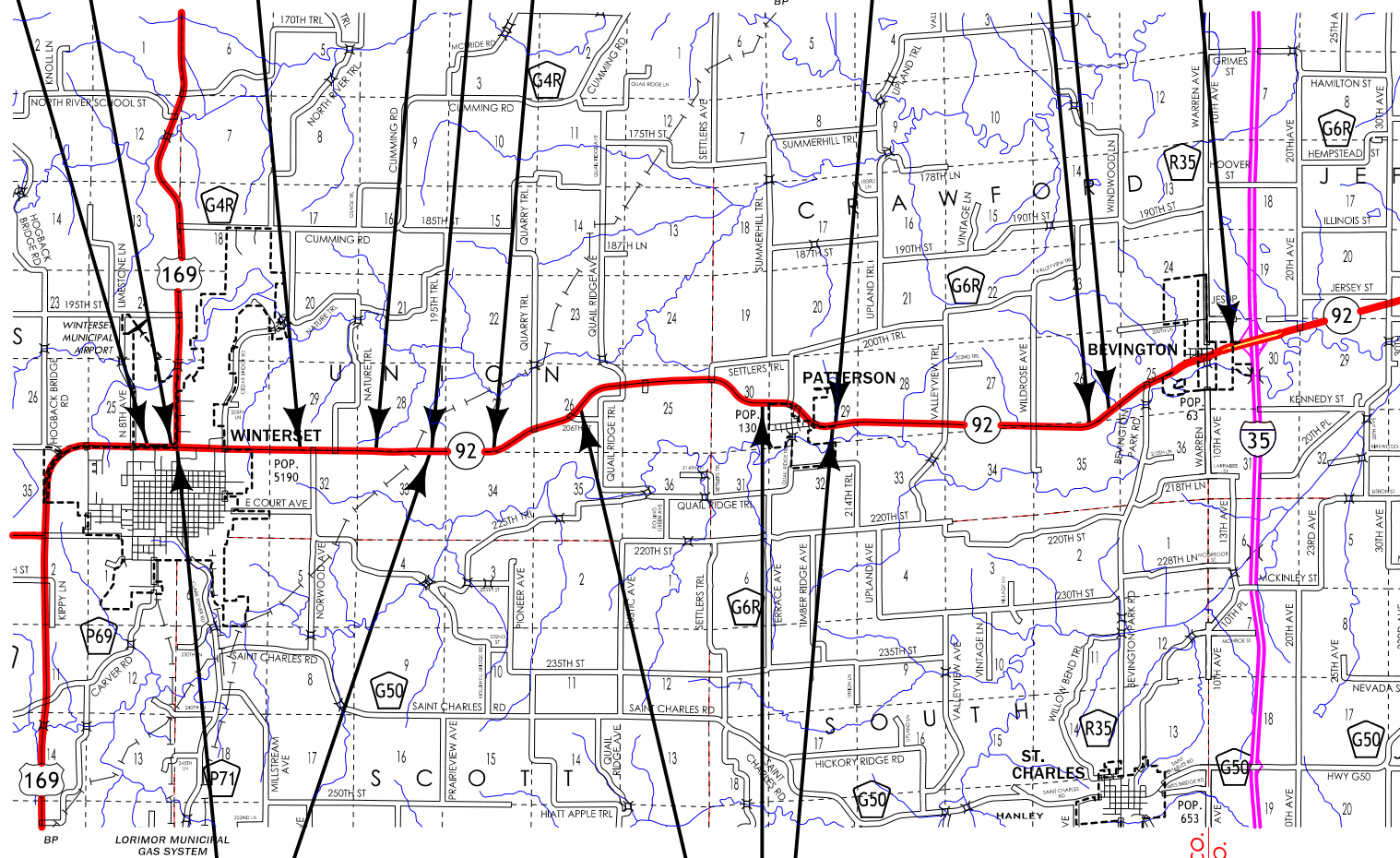
STA. 194+00.00
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RESUME MILL/HMA

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

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

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

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



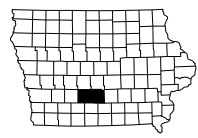
EQUATION:
 STA. 11+39.20 (AHEAD)
 REF. LOC. 106.06
 = STA. 756+37.30 (BACK)
 REF. LOC. 69.89

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

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

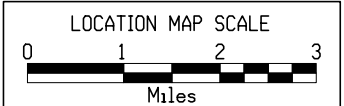
EQUATION:
 STA. 422+61.44 (AHEAD)
 = STA. 421+64.45 (BACK)

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



R-28W

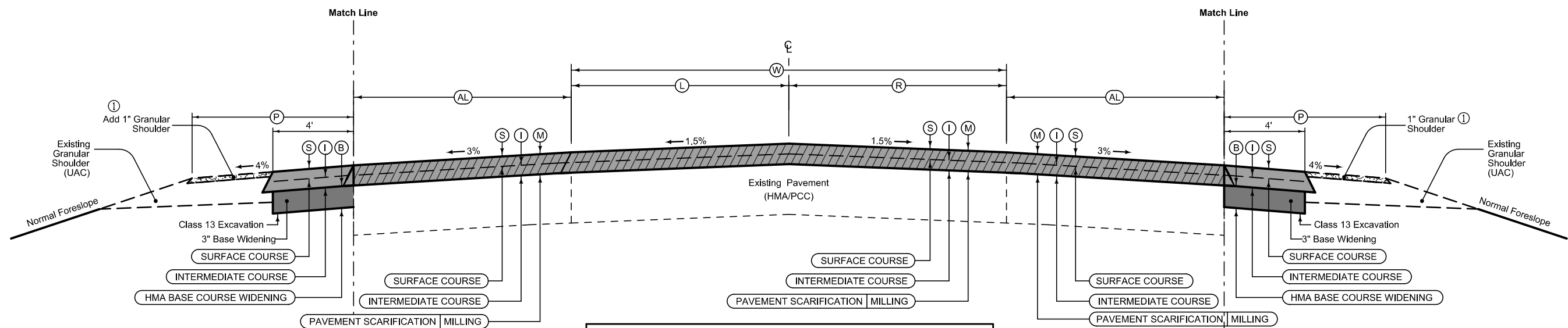
R-27W



R-26W

R-25W

LOCATION MAP



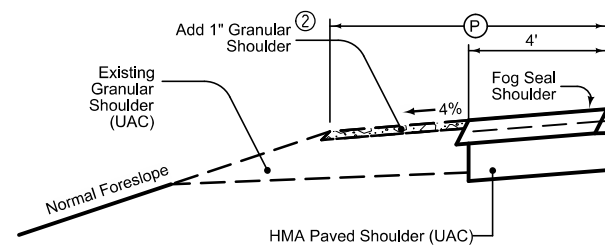
Auxiliary Lane Resurfacing & HMA Paved Shoulder Widening

STATION TO STATION		(AL)	(P)	(S)	(I)	(B)	(M)
		Feet	Feet	Inches	Inches	Inches	Inches
752+00.00	752+04.14	0	10.0	1.5	1.5	3.0	3.0
752+04.14	755+64.14	0 - 12.0	10.0	1.5	1.5	3.0	3.0
755+64.14	756+37.30(A)	12.0	10.0	1.5	1.5	3.0	3.0

STATION TO STATION		LENGTH	(W)	(L)	(R)	(S)	(I)	(M)
		Feet	Feet	Feet	Feet	Inches	Inches	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

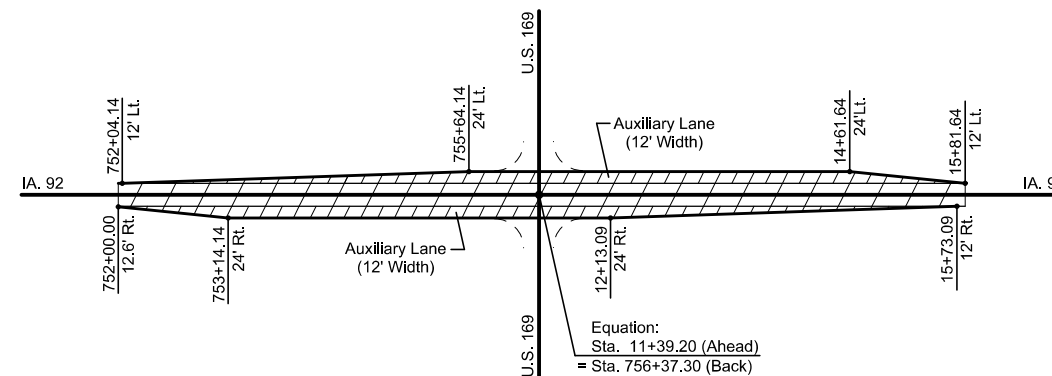
Auxiliary Lane Resurfacing & HMA Paved Shoulder Widening

STATION TO STATION		(AL)	(P)	(S)	(I)	(B)	(M)
		Feet	Feet	Inches	Inches	Inches	Inches
752+00.00	753+14.14	0.6 - 12.0	10.0	1.5	1.5	3.0	3.0
753+14.14	756+37.30(A)	12.0	10.0	1.5	1.5	3.0	3.0



Auxiliary Lane Resurfacing & HMA Paved Shoulder (UAC)

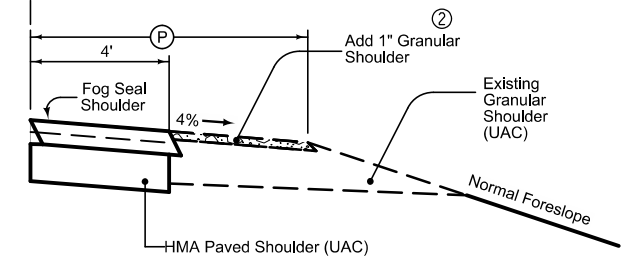
STATION TO STATION		(AL)	(P)	(S)	(I)	(B)	(M)	FOG SEAL
		Feet	Feet	Inches	Inches	Inches	Inches	Gal. *
11+39.20(A)	14+61.64	12.0	10.0	1.5	1.5	3.0	3.0	28.7
14+61.64	15+81.64	12.0 - 0	10.0	1.5	1.5	3.0	3.0	10.7
TOTAL:								39.4



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

- ① Refer to Typical 7135-A for additional information.
- ② Refer to Typical 7135-B for additional information.



Auxiliary Lane Resurfacing & HMA Paved Shoulder (UAC)

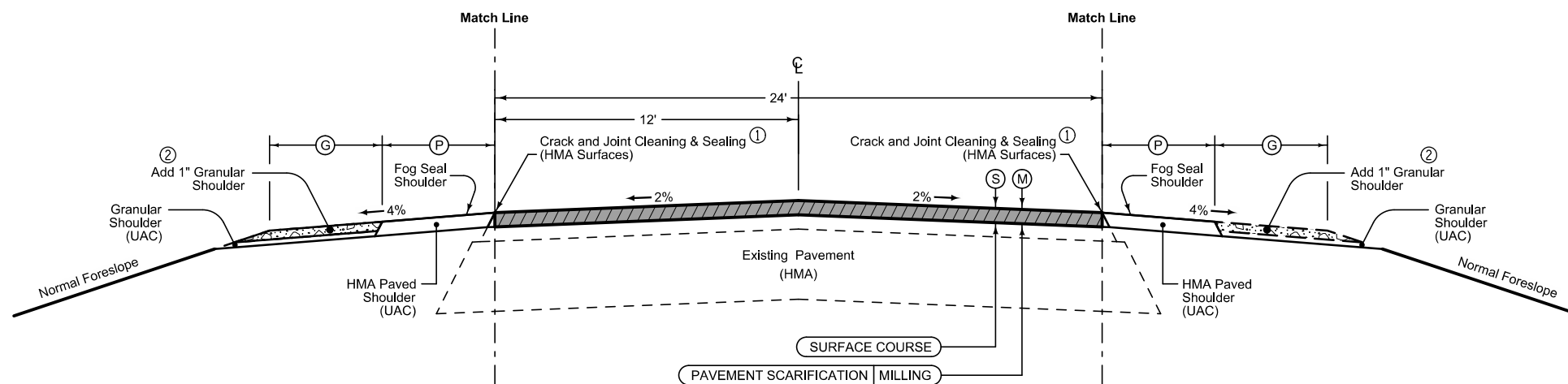
STATION TO STATION		(AL)	(P)	(S)	(I)	(B)	(M)	FOG SEAL
		Feet	Feet	Inches	Inches	Inches	Inches	Gal. *
11+39.20(A)	12+13.09	12.0	10.0	1.5	1.5	3.0	3.0	6.6
12+13.09	15+73.09	12.0 - 0	10.0	1.5	1.5	3.0	3.0	32.0
15+73.09	15+81.64	0	10.0	1.5	1.5	3.0	3.0	0.8
TOTAL:								39.4

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**

HMA Paved Shoulder (UAC)

2_P_G_HMA_RESURF					
* Bid Item	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



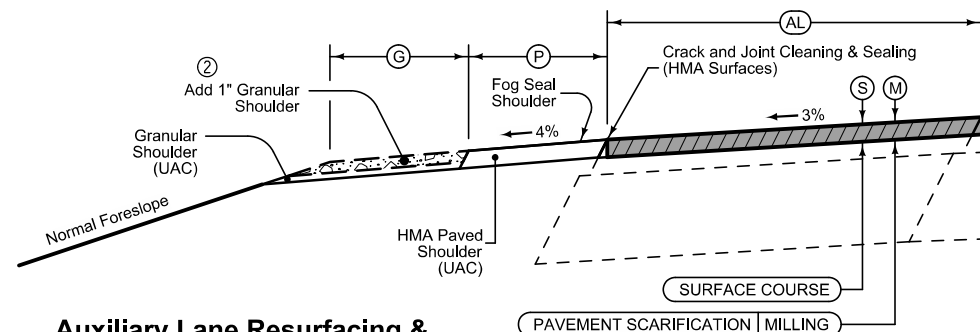
HMA Paved Shoulder (UAC)

2_P_G_HMA_RESURF					
* Bid Item	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	

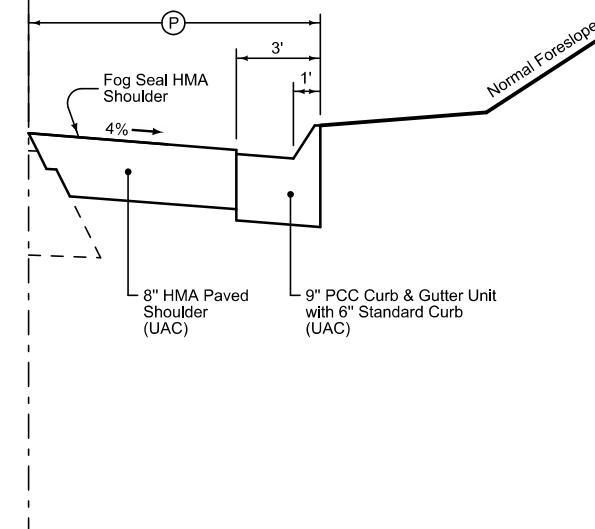
Auxiliary Lane Resurfacing & HMA Paved Shoulder (UAC)

2_AuxLane_HMA_Paved_Shoulder								
* Bid Item	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)

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



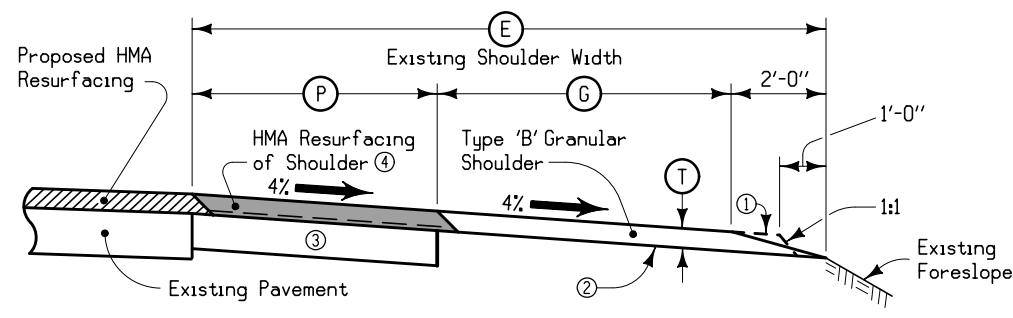
Equations:
 (B) Sta. 156+30.26 (Back) = Sta. 156+27.83 (Ahead)
 (C) Sta. 257+13.11 (Back) = Sta. 257+10.41 (Ahead)
 (D) Sta. 373+53.64 (Back) = Sta. 373+44.67 (Ahead)
 (E) Sta. 421+64.45 (Back) = Sta. 422+61.44 (Ahead)

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.
 ② Refer to Typical 7135-B for additional information.

IA 92 HMA MILLING & RESURFACING

7135-A
Modified



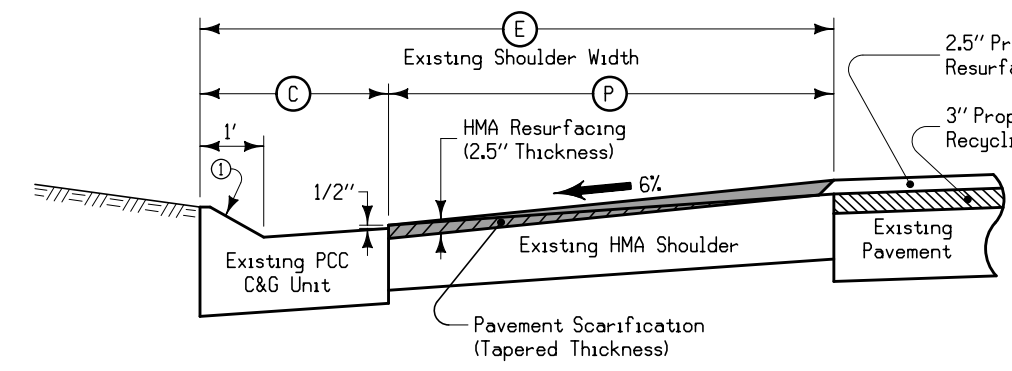
Notes:
Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.

- 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.
- 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.
- Existing paved shoulder (UAC) or new 3' HMA Widened.
- Refer to Sheet B.1 and B.2.

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER
ADJACENT TO HOT MIX ASPHALT RESURFACING OF SHOULDER

LOCATION			T	E	P	G	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Feet	Feet	Feet	
Ia. 92	752+00.00	756+37.30	Both	1.0	10.0	4.0	4.0
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

7137-A
Modified

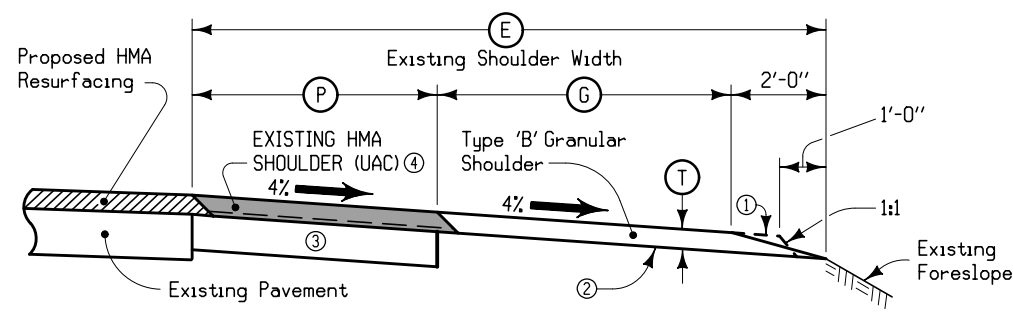


① Existing 6" Sloped Curb (UAC).

TYPICAL SECTION FOR HMA SHOULDER RESURFACING
ADJACENT TO HOT MIX ASPHALT RESURFACING OF MAINLINE

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

7135-B
Modified



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

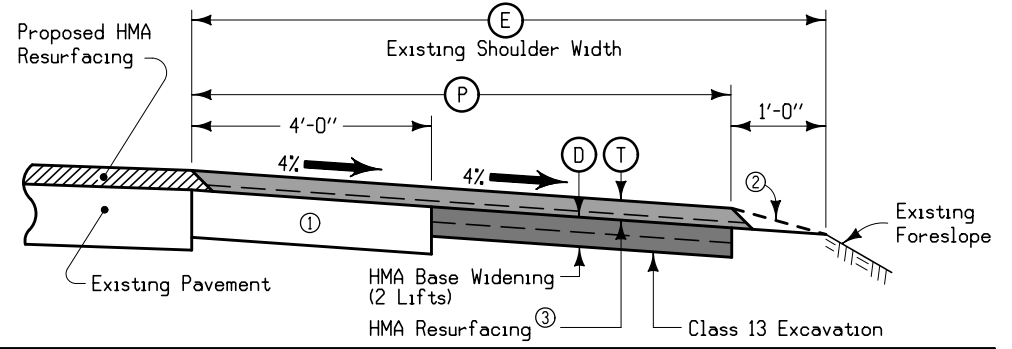
- Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.
- Additional material required due to existing low shoulders. Shape to ensure that the slope matches the paved shoulder. Shaping shall not be paid for separately, but shall be considered incidental to the price bid for granular shoulder material.
- Existing paved shoulder (UAC).
- Refer to Sheet B.1 and B.3.

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER
ADJACENT TO EXISTING HOT MIX ASPHALT SHOULDER

LOCATION			T	E	P	G	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Feet	Feet	Feet	
Ia. 92	11+39.20	15+81.64	Both	1.0	10.0	4.0	4.0
Ia. 92	41+00.00	79+00.00	Both	1.0	10.0	4.0	4.0
Ia. 92	124+00.00	156+30.26(B)	Both	1.0	10.0	4.0	4.0
Ia. 92	156+27.83(B)	157+00.00	Both	1.0	10.0	4.0	4.0
Ia. 92	194+00.00	257+13.11(C)	Both	1.0	10.0	4.0	4.0
Ia. 92	257+10.41(C)	323+80.00	Both	1.0	10.0	4.0	4.0
Ia. 92	323+80.00	331+00.00	Lt.	1.0	10.0	4.0	4.0-3.0
Ia. 92	331+00.00	357+00.00	Lt.	1.0	10.0	4.0	3.0
Ia. 92	357+00.00	358+80.00	Lt.	1.0	10.0	4.0	3.0-4.0
Ia. 92	358+80.00	373+53.64(D)	Both	1.0	10.0	4.0	4.0
Ia. 92	373+44.67(D)	421+64.45(E)	Both	1.0	10.0	4.0	4.0
Ia. 92	422+61.44(E)	426+00.00	Both	1.0	10.0	4.0	4.0
Ia. 92	570+00.00	584+25.00	Both	1.0	10.0	4.0	4.0

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)

7137-B
Modified

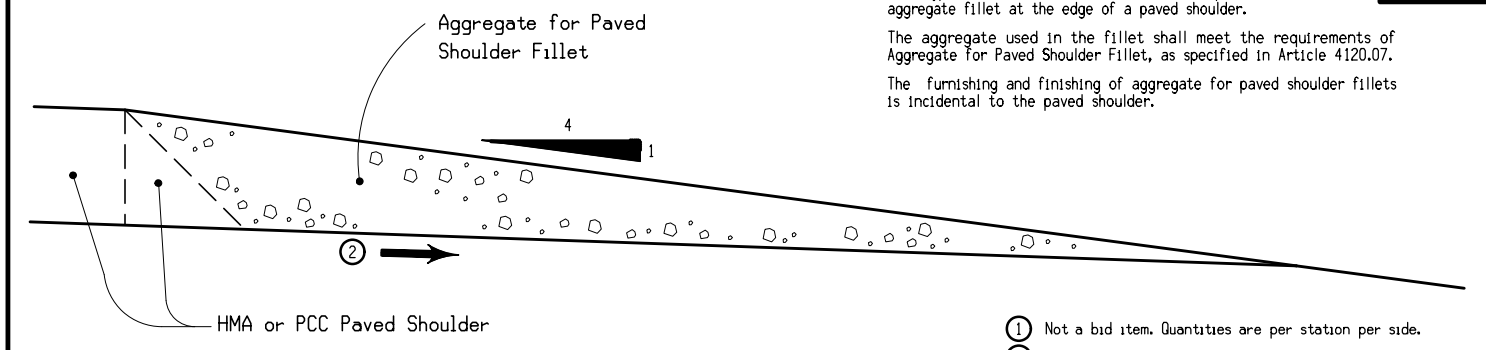


① Existing Paved Shoulder.
② Refer to Typical 7145-A.
③ Refer to Sheet B.2.

TYPICAL SECTION FOR HMA SHOULDER RESURFACING
ADJACENT TO HOT MIX ASPHALT RESURFACING OF MAINLINE

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

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.

AGGREGATE FOR PAVED SHOULDER FILLET

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.	0.01

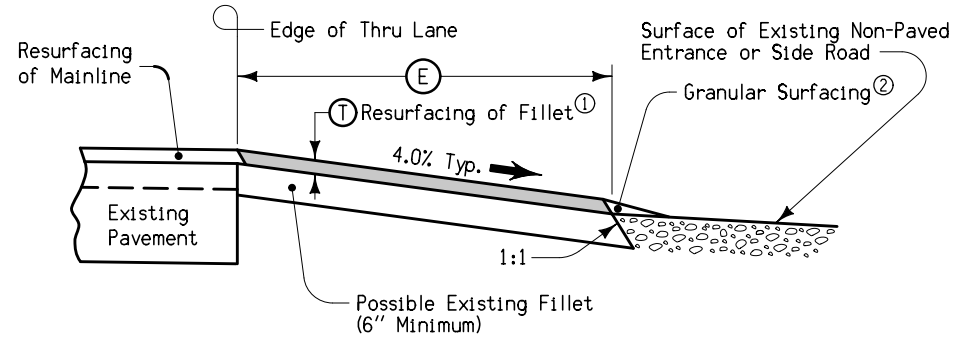
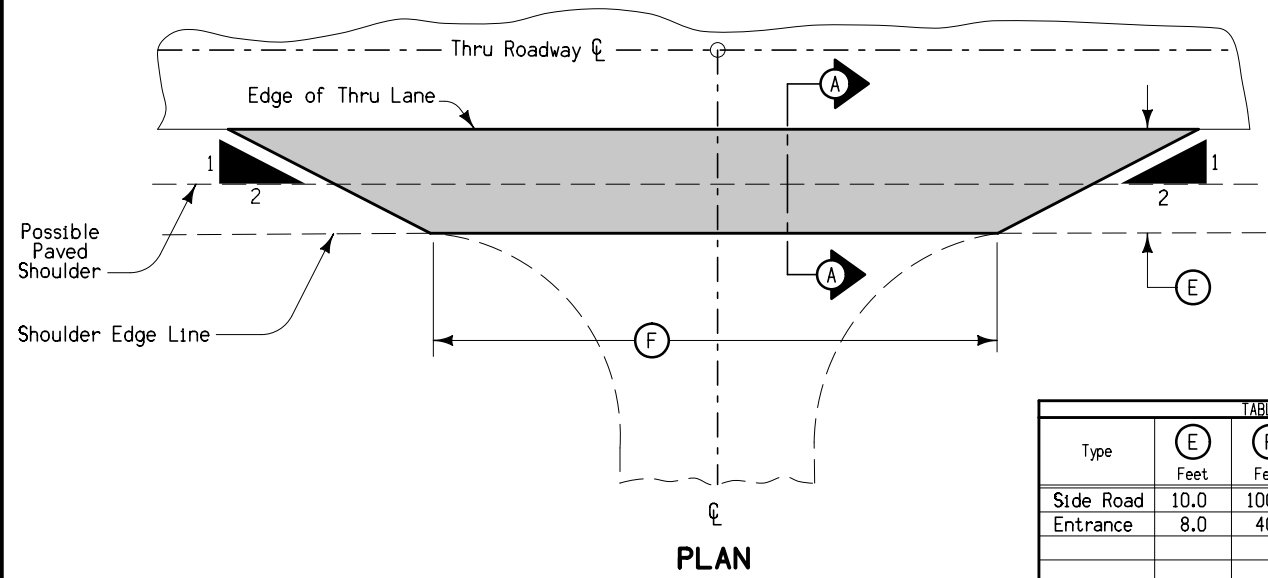


TABLE OF DESIGN QUANTITIES

Type	E Feet	F Feet	Each.	Per Location		
				ASPHALT BINDER Tons	SURFACE COURSE Tons	LEVELING COURSE Tons
Side Road	10.0	100.0	9.0	1.2	11.1	7.4
Entrance	8.0	40.0	35.0	0.5	4.2	2.8

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

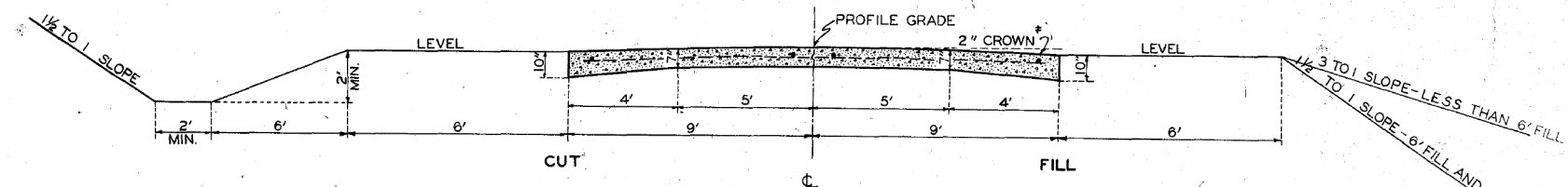
Quantities included with mainline quantities.

① Refer to other Typical in B Sheets for thickness.

② Granular material incidental to the construction of fillet.

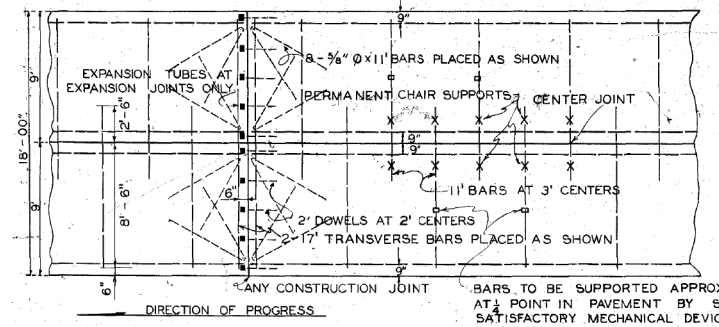
**RESURFACING OF FILLETS FOR
NON-PAVED ENTRANCES AND SIDE ROADS**

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 5/8" Ø BARS. FOUR LONGITUDINAL BARS TO BE PLACED AS SHOWN, 2 1/2" 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.

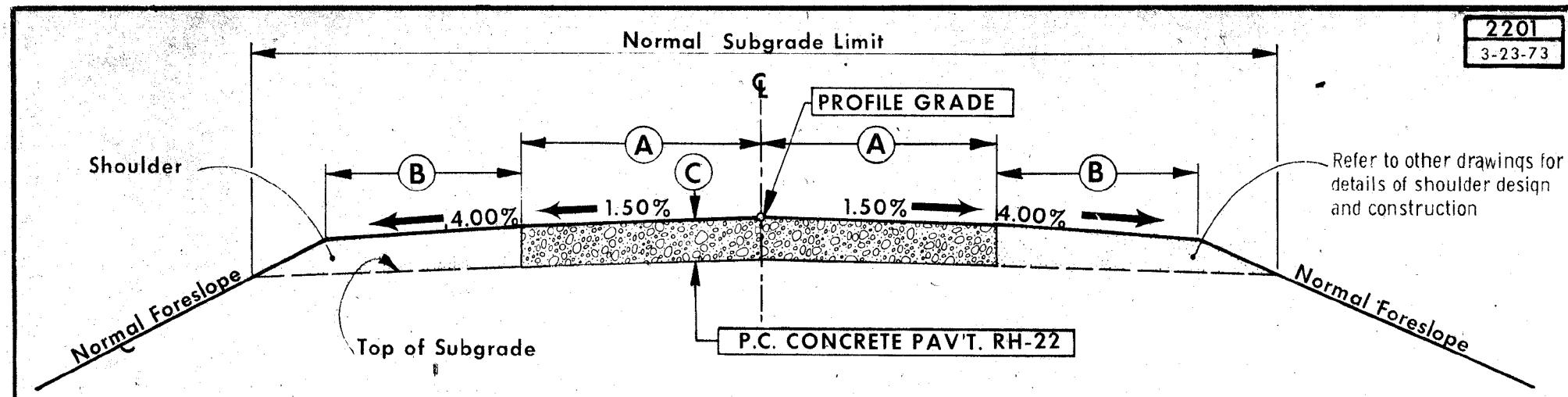
ALL REINFORCING STEEL, INCLUDING DOWELS AT TRANSVERSE JOINTS, TO BE HELD RIGIDLY IN CORRECT POSITION.

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 2 1/2 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 3 1/2". METAL TO BE 18 GAUGE.

P-764

EXISTING PAVEMENT TYPICAL



TYPICAL CROSS SECTION PROPOSED HIGHWAY IMPROVEMENT.

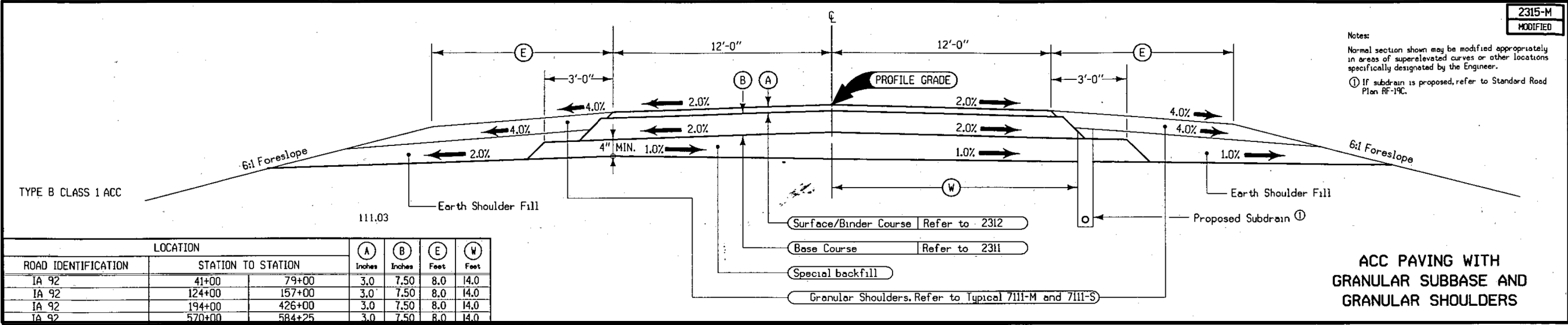
NOTE:
 Normal sections shown ~~may be~~ appropriately modified for areas specifically designated by the engineer such as intersections or superelevated curves

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

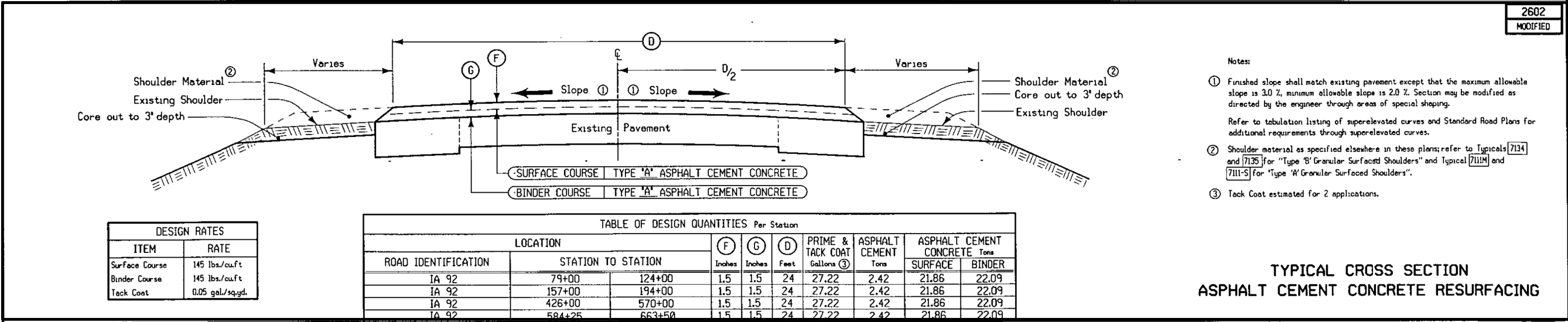
2315-M
MODIFIED



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

EXISTING PAVEMENT TYPICAL

2602
MODIFIED



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

EXISTING PAVEMENT TYPICAL

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.

**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	6,914.9	
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	75.2	
9	2213-8201030	BASE WIDENING, 3 IN. HOT MIX ASPHALT MIXTURE	SY	388.8	
10	2213-8201040	BASE WIDENING, 4 IN. HOT MIX ASPHALT MIXTURE	SY	375.9	
11	2214-5145150	PAVEMENT SCARIFICATION	SY	93,408.4	
12	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	TON	7,041.8	
13	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	351.00	
14	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	18,749.60	
15	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	1,568.70	
16	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1.00	
17	2308-1000000	ASPHALT EMULSION FOR FOG SEAL (SHOULDERS)	GAL	5,736.5	
18	2318-1001100	COLD IN-PLACE RECYCLED ASPHALT PAVEMENT	SY	88,971.0	
19	2318-1001220	ASPHALT STABILIZING AGENT (FOAMED ASPHALT)	TON	239.9	
20	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	9	
21	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN .	EACH	8	
22	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	18	
23	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	24	
24	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	14	
25	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	12	
26	2416-1180060	CULVERT, CONCRETE ROADWAY PIPE, 60 IN. DIA.	LF	24	
27	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	100	
28	2417-0225015	APRONS, METAL, 15 IN. DIA.	EACH	2	
29	2417-1040015	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 15 IN. DIA.	LF	34	
30	2507-3250005	ENGINEERING FABRIC	SY	179.6	
31	2507-6800061	REVEEMENT, CLASS E	TON	10.5	
32	2507-8029000	EROSION STONE	TON	142.6	
33	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
34	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	5,215.26	
35	2528-8445110	TRAFFIC CONTROL	LS	1.00	
36	2528-8445113	FLAGGERS	EACH	See Proposal	
37	2528-8445115	PILOT CARS	EACH	See Proposal	
38	2529-2242304	CD JOINT ASSEMBLY	EACH	1	
39	2529-2242320	CT JOINT	EACH	1	
40	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	88.0	
41	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	2	
42	2533-4980005	MOBILIZATION	LS	1.00	
43	2541-1004011	CRACK AND JOINT CLEANING AND SEALING (HMA SURFACES)	MILE	12.0	
44	2541-1005001	SEALER MATERIAL (HMA SURFACES)	LB	24288	
45	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	667.3	
46	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	723.2	
47	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	333.6	
48	2590-0000020	PROJECT MANAGEMENT	LS	1.00	
49	2601-2633100	MOWING	ACRE	17.6	
50	2601-2636015	NATIVE GRASS SEEDING	ACRE	8.8	
51	2601-2640330	SPECIAL DITCH CONTROL, PLASTIC NETTING	SQ	4,792.0	
52	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	8.8	
53	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	958.40	
54	2601-2643300	MOBILIZATION FOR WATERING	EACH	3	
55	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	7,402.5	
56	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	7,402.5	
57	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	740.3	
58	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	600.0	
59	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	3,520.0	
60	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	4,120.0	
61	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
62	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	
63	2612-0000520	ROADSIDE SPRAY FOR WEED CONTROL	ACRE	1.0	

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING Refer to Tab. 110-17 in C Sheets.
2	2102-2625000	EMBANKMENT-IN-PLACE Refer to Tab 3R-CULV in C Sheets.
3	2121-7425020	GRANULAR SHOULDERS, TYPE B Refer to B Sheets for details. Refer to Tab 112-9 in C Sheets for locations and amounts.
4	2125-2225050	RESHAPING DITCHES Refer to Tab 3R-CULV in C Sheets for locations and additional information.
5	2212-0475095	CLEANING AND PREPARATION OF BASE This bid item is for the resurfacing from Sta. 752+00.00 to Sta. 666+70.75.
6	2212-5070310	PATCHES, FULL-DEPTH REPAIR
7	2212-5070330	PATCHES BY COUNT (REPAIR) Refer to Tab 102-6C in C Sheets 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 contact person for this site is: Todd Netley Highway Maintenance Supervisor (641) 764-2755
9	2213-8201030	BASE WIDENING, 3 IN. HOT MIX ASPHALT MIXTURE Item is for base widening unit. Refer to sheet B.1, typical 7135-A in sheet B.4, and Tab. 106-5 in C Sheets for loaction and additional information.
10	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, and Tab 106-5 on C Sheets for location and additional information.
11	2214-5145150	PAVEMENT SCARIFICATION Refer to B sheets for details. Refer to Tab 100-25 in C Sheets. Item includes 200 SY for runout scarification. Refer to Tab. 102-16 in C Sheets. Refer to Tab. 102-5 for existing pavement. All millings to remain property of the Contractor and disposed of off site.
12	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.
13	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.
14	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, F RICTION L-3 Refer to Sheets B.1 through B.5 and Tab 100-25 on C Sheets for locations and additional information. Quantity includes an additional 5% for irregularities.
15	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 106-2 in C Sheets.
16	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES
17	2308-1000000	ASPHALT EMULSION FOR FOG SEAL (SHOULDERS) Refer to Sheets B.1 and B.3 for locations and details. To be placed at a rate of 0.20 Gallons per Square Yard.
18	2318-1001100	COLD IN-PLACE RECYCLED ASPHALT PAVEMENT Refer to Sheet B.2 for locations and details.
19	2318-1001220	ASPHALT STABILIZING AGENT (FOAMED ASPHALT) Refer to Tab. 100-25 in C Sheets for details.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
20	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.
21	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN .
22	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
23	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.
24	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.
25	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.
26	2416-1180060	CULVERT, CONCRETE ROADWAY PIPE, 60 IN. DIA.
27	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.
28	2417-0225015	APRONS, METAL, 15 IN. DIA.
29	2417-1040015	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 15 IN. DIA. Refer to Tab 3R-CULV in C Sheets for locations and additional information.
30	2507-3250005	ENGINEERING FABRIC
31	2507-6800061	REVEMENT, CLASS E
32	2507-8029000	EROSION STONE Items are for placement of rock splash basins and rock slope protection. Refer to Tab 100-23 in C Sheets for locations and details.
33	2526-8285000	CONSTRUCTION SURVEY All monuments that are within the paved surface of the roadway (centerline, section corners, property corners) will be referenced before construction, and reestablished after construction, by the District Land Surveyor. The Contractor will be responsible for referencing and reestablishing all other monuments - including but not limited to right of way, section corners, property corners, benchmarks, etc. - that are outside of the paved highway surface. Any centerline points (PC, PI, PT, POT etc.) and their references that were found by the District Land Surveyor, may be made available to the Contractor, per their request. Roadway geometric alignments will not be provided. Record drawings of prior projects may be found at: http://www.mydotdocs.iowadot.gov/CollectionDetails.aspx?AppId=HIGHWAY+PLANS&ColId=HIGHWAY+PLANS&DisplayType=R All other survey necessary for construction of the project, as provided by Section 2526 Construction Survey will be required by the Contractor.
34	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED Refer to Tab 108-22 in C Sheets for locations and amounts.
35	2528-8445110	TRAFFIC CONTROL Refer to J Sheets for Traffic Control details.
36	2528-8445113	FLAGGERS
37	2528-8445115	PILOT CARS
38	2529-2242304	CD JOINT ASSEMBLY
39	2529-2242320	CT JOINT
40	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA
41	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT Refer to Tab 102-6C in C Sheets for locations and details.
42	2533-4980005	MOBILIZATION
43	2541-1004011	CRACK AND JOINT CLEANING AND SEALING (HMA SURFACES)
44	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.
45	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE
46	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)
47	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE Refer to Tab 112-10 in C Sheets for locations and additional information.
48	2590-0000020	PROJECT MANAGEMENT Refer to Supplemental Specification SS-15008 for Project Management.
49	2601-2633100	MOWING Estimate is based on two mowings of all native grass seeded areas. In areas inaccessible to field equipment, cut with appropriate hand equipment and keep current with the mowing of adjacent areas. Perform mowings when the vegetation is between 12 and 18 inches tall. Mow vegetation to a height between four and eight inches.
50	2601-2636015	NATIVE GRASS SEEDING Seed all disturbed areas outside eight feet adjacent to outside shoulder along mainline and side roads, with "Native Grass Seeding". Supply all seed for "Native Grass Seeding". Apply all forb seed through the native grass drill wildflower or small seed box. Do not mix and apply Forb seed with the native grass seed. Apply cover crop through the cool season or through cover crop seed box.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Do not mix and apply cover crop seed with the native grass seed.
		Remove seed remaining in the drill at the end of each day. At the completion of all seeding, remove remaining seed from the drill by vacuum or other means. Hand broadcast remaining seed on the project.
		The Engineer will review the limits with the Contractor prior to seeding.
51	2601-2640330	SPECIAL DITCH CONTROL, PLASTIC NETTING Include to prevent erosion after ditch clean-out and help re-establish vegetation. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for other locations of erosion.
52	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING Item is included for disturbed areas. Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications.
53	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION Estimate for watering Special Ditch Control, Slope Protection Areas, Turf Reinforcement Mat, or Transition Mat is based on a total of four waterings at a rate of 50 gallons per square.
54	2601-2643300	MOBILIZATION FOR WATERING
55	2602-0000030	SILT FENCE FOR DITCH CHECKS Refer to Tab 100-18 in C Sheets. The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.
56	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence and silt fence for ditch check removal required for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.
57	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.
58	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
59	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. Refer to Tab. 100-19 and Temporary Sediment Control Devices in CE Sheets.
60	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE
61	2602-0010010	MOBILIZATIONS, EROSION CONTROL
62	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL
63	2612-0000520	ROADSIDE SPRAY FOR WEED CONTROL Furnish and spot spray clopyralid to patch infestations of thistle and teasel species, and if directed by the Engineer, to other weed species. The Engineer will notify the Contractor to begin each spraying. The Contractor will be charged working days, beginning with the 3rd working day after notification to start spraying until each spraying is complete. Timing of herbicide application shall be made at the weed's recommended growth stage according to manufacturer's label directions for Canada thistle. This is from full leaf expansion to early bud stage, unless otherwise listed in label directions. LOCATION: Identify thistle and teasel infestation within the native grass seeding areas. APPLICATION: Apply in September of 2013, and June and September of 2014. The rate shall be clopyralid herbicide 4.3 oz./acre active ingredient (e.g. for 40.9% active ingredient products apply at 10.5 oz./acre). According to label directions: use a surfactant, a drift control agent, and re-add the agent to the herbicide to maintain drift control throughout the application period. Use hand equipment for spot spraying of all thistle by close-up comprehensive drive through the seeding areas. Method of Measurement The quantity of Roadside Spray For Weed Control for which payment is made will be the acres displaying complete visual herbicide control response. Basis of Payment For the number of acres of Roadside Spray For Weed Control designated by the Engineer, the Contractor will be paid contract unit price based on the measured area displaying a complete visual herbicide control response. This payment will be full compensation for all labor, equipment, and materials for this item.

INDEX OF TABULATIONS			111-25 10-18-11
Tabulation	Tabulation Title	Sheet No.	
C Sheets			
100-1A	ESTIMATED PROJECT QUANTITIES	C.1	
100-1D	PROJECT DESCRIPTION	C.1	
100-4A	ESTIMATE REFERENCE INFORMATION	C.1 - C.2	
100-23	ROCK EROSION CONTROL	C.11	
100-25	HMA PAVEMENT	C.5 - C.6	
102-5	EXISTING PAVEMENT	C.4	
102-6C	FULL-DEPTH PATCHES	C.12 - C.13	
102-16	NOTCHES AND RUNOUTS FOR RESURFACING	C.7 - C.8	
105-4	STANDARD ROAD PLANS	C.3	
106-2	LEVELING COURSES	C.7 - C.8	
106-5	AREAS FOR PAVEMENT OR BASE WIDENING	C.9	
108-22	PAVEMENT MARKING LINE TYPES	C.14	
110-13	DELIVERY AND STOCKPILING	C.7 - C.8	
110-17	CLEARING AND GRUBBING	C.11	
111-25	INDEX OF TABULATIONS	C.3	
112-9	SHOULDERS	C.8	
112-10	MILLED RUMBLE STRIPS	C.9	
3R-CULV	DRAINAGE STRUCTURE REPAIR WORK	C.10 - C.11	
CE Sheets			
110-12A	POLLUTION PREVENTION PLAN	CE.1 - CE.2	
100-18	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	CE.2	
100-19	SILT FENCES FOR DITCH CHECKS	CE.3 - CE.4	

STANDARD ROAD PLANS			105-4 10-18-11
Number	Date	Title	
The following Standard Road Plans apply to construction work on this project.			
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)	
DR-102	04-21-15	Pipe Culvert (Cover and Camber)	
DR-103	04-21-15	Pipe Culvert (Installation Details)	
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe	
DR-121	10-17-17	Connected Pipe Joints	
DR-201	10-16-18	Concrete Aprons	
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection	
EC-201	10-16-18	Silt Fence	
EC-204	04-18-17	Perimeter and Slope Sediment Control Devices	
EC-301	10-18-16	Rock Erosion Control (REC)	
EC-502	04-21-15	Seeding in Rural Areas	
PM-110	10-16-18	Line Types	
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-101	10-16-18	Joints	
PV-202	04-16-13	Hot Mix Asphalt Resurfacing	
PV-203	10-15-13	HMA Base Widening	
SI-881	10-17-17	Special Signs for Workzones	
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	
TC-283	10-18-11	Surveying Operations	

HERBICIDE	231-2 10-16-12
For all herbicide applications, the following provisions shall apply.	
1. Follow all laws, rules and regulations related to the handling of pesticides, including but not limited to:	
a. Follow all herbicide label directions, restrictions, and precautions.	
b. The company responsible for the herbicide applicator must be licensed with Iowa Department of Agriculture and Land Stewardship (IDALS) as a commercial pesticide applicator company.	
c. The person applying the herbicide must be certified through IDALS as a pesticide applicator in Category 6, Right-of-Way. For herbicide applications that require an aquatic certification, the applicator must also be certified as a pesticide applicator in Category 5, Aquatics.	
d. Use herbicide and adjuvant products labeled for the application site:	
i. For applications on the primary highway right-of-way, use only products labeled for use on highway rights-of-way or roadsides.	
ii. For applications to or over water, use only products labeled for corresponding use in aquatic sites, unless intermittent pockets of standing water, such as tire ruts, and the product is labeled for such use.	
iii. For applications to areas in the water conveyance portion of the ditch that do not contain water at the time of application, use only products labeled for non-irrigation ditch banks or aquatic sites.	
e. Do not apply any herbicide to or over standing or flowing water unless required coverage is obtained under a National Pollutant Discharge and Elimination System (NPDES) Pesticide Discharge Permit through Iowa DNR. If standing or flowing water is encountered in areas when they need to be sprayed, notify Iowa DOT (Roadside Development) to determine if submittal of a Notice of Intent (NOI) is required.	
2. Schedule work according to weather conditions and take measures to avoid off-target damage, such as runoff, leaching, drift and volatilization.	
a. Do not spray herbicide 24 hours prior to forecast precipitation that is expected to cause significant runoff conditions.	
b. For areas with saturated soil, such as ditch bottoms, do not spray herbicide 24 hours prior to forecast precipitation, unless using products labeled for aquatic sites.	
c. For conventional applications, avoid applications when wind speed exceeds 10 mph. For invert applications, avoid applications when wind speed exceeds 15 mph.	
d. For conventional foliar applications, use a drift retardant and maintain drift control throughout the application period by adding more to the tank as it breaks down from agitation.	
e. Avoid spraying volatile products when temperatures are forecast to exceed 85° F within 3 days.	
f. Check the IDALS Sensitive Crops Directory and do not spray adjacent to a listed operation when wind is blowing towards it.	
3. Respond to allegations of any off-target damage attributed to handling and spraying of herbicide.	
4. Provide the following documents to the Engineer for approval not less than 2 weeks prior to the application.	
a. A copy of the herbicide and adjuvant labels, including any applicable supplemental labels.	
b. A copy of the herbicide and adjuvant Material Safety Data Sheets (MSDS.)	
5. Have copies of the herbicide and adjuvant labels and MSDSs on-hand and at locations of storage, transport, and application.	
6. Schedule work to maximize efficiency of the herbicide application in relation to weather conditions and plant growth stage. Follow any label recommendations given as "for best results."	
a. For weed applications:	
i. To determine if weeds are "actively growing," use as a guideline that there needs to have been at least 1 hour of temperature above 65° F and 1 hour of sun in the day prior to, of, or forecast before a rain the day after the application.	
ii. For spring applications to thistles, apply after basal leaves of Canada thistles are fully extended, and after rosettes of musk thistle are at least 8 inches diameter, but before flower stage.	
iii. For fall applications to thistles, apply prior to the second hard freeze of 28° F, unless otherwise listed in the label directions.	
b. For tree and brush applications:	

HERBICIDE	231-2 10-16-12
i. For foliar applications and cut stump/surface applications with water-soluble products, apply after leaves are fully opened in the spring and prior to leaf discoloration in the fall.	
ii. For cut stump applications with oil soluble products, do not apply during periods of heavy sap flow. Use as a guideline that heavy sap flow occurs in late winter to early spring when nighttime temperatures below 32° F are followed by daytime temperatures above 32° F with sunny conditions.	
iii. For cut stump and basal bark applications, add sufficient dye so that treated areas are visible to inspection 7 days after application.	
7. Notify the Engineer prior to calibrating, mixing and applying herbicides, including incidental items.	
8. Provide copies of daily spray logs to the RCE at the end of each week of spraying (form provided by Iowa DOT).	
9. If Contractor does not complete spray item on schedule, the Engineer may adjust the schedule.	

232-10
04-18-17

EMERALD ASH BORER

Any living, dead, cut or fallen material of the ash (Fraxinus spp.) including trees, nursery stock, logs, firewood, stumps, roots, branches, and composted or uncomposted ash chips can be freely moved within the yellow areas of the most recent Federal EAB Quarantine & Authorized Transit.

https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/eab_quarantine_map.pdf.

Obtain appropriate Compliance Agreements from USDA APHIS PPQ prior to moving any of the above listed ash articles to areas outside the yellow zone on the map.

For questions, concerns, and general assistance, contact:

USDA APHIS PPQ, Iowa office, 515-414-3295

Or

Iowa Department of Agriculture & Land Stewardship
515-725-1470
Entomology@IowaAgriculture.gov

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.

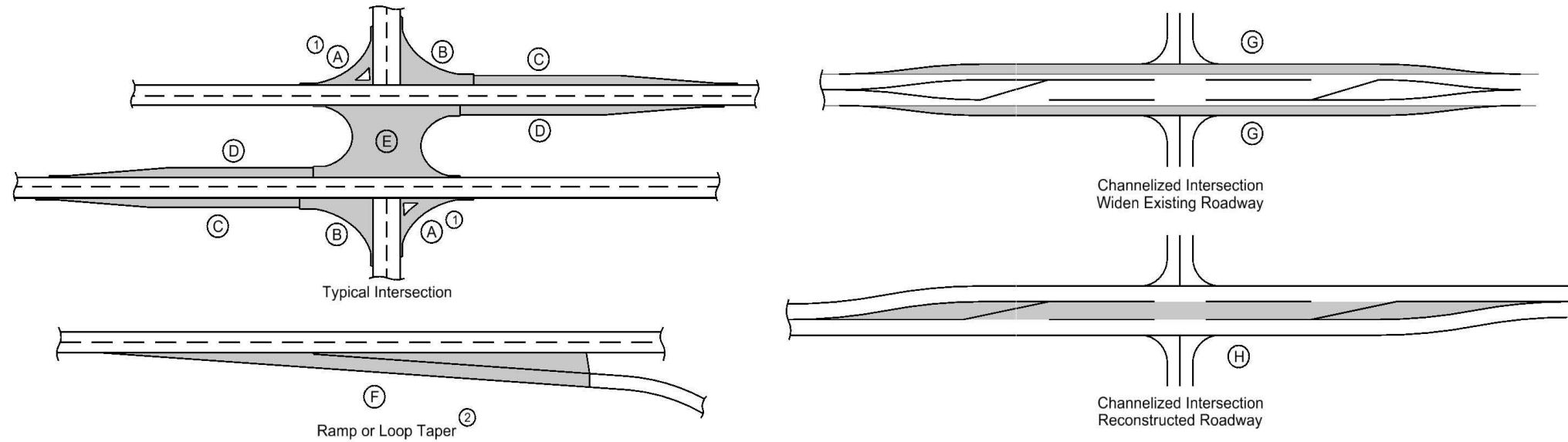
These properties are:
On the north side of the road approximately 1000' East of the IA 92 and Cedar Bridge Road intersection.

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		
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.			
3	Madison	IA 092	EB/WB	106.07	106.81	1977		FN-92-4(9)--21-61	PCC	8							Early Chappel	C.LST.	1		M.P. 69.90 = M.P. 106.07
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



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

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

Location			Mainline			Area ③								Bid Items									Remarks					
Road Identification	Direction of Travel	Station to Station	Width	Length	Area	Hot Mix Asphalt Pavement								Binder			CIP Thickness	Bid Items										
						A ①	B	C	D	E	F ②	G	H	Surface	Intermediate	Base		Surface	Intermediate	Base	Cold In Place Recycling	Asphalt Stabilization		Pavement Scarification				
			FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS		IN	SY	TONS	SY	
(Fillets)					1200.0									99.225	1200.0					5.954								
Side Road Entrance					1742.2									144.060	1742.2					8.644							(4)	
																											(5)	
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.																												
(4) See Typical 7148-A on B Sheets; Total for 9 Side Roads																												
(5) See Typical 7148-A on B Sheets; Total for 35 Entrances																												
								</																				

SHOULDERS

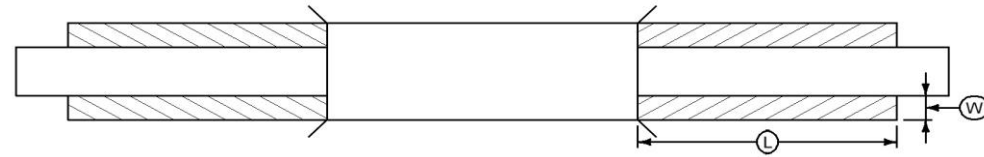
- ① Lane(s) to which the shoulder is adjacent.
- ② Bid Item
- ③ Applies only for Paved Shoulders constructed on project with existing granular shoulders.
- ④ Does not include shrink.

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.

Road Identification	① Direction Of Traffic	Location			Quantities																	Remarks				
		Station to Station	Side	P Width FT	G Width FT	L Length FT	Class 13 Excavation CY ②	Hot Mix Asphalt		Binder TONS	Paved Shoulder SY ②	Reinforced Paved Shoulder SY ②	Special Backfill				Modified Subbase CY ②	Granular Shoulder		Earth Shoulder Construction Alternates						
								TON	TON/STA				HMA Alternate		PCC Alternate			TON ②	TON/STA	CY ②	TON ②		TON/STA	STA ②	HMA CY ④	PCC CY ④
													TON ②	TON/STA	TON ②	TON/STA										
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)					
Areas of HMA Milling & Resurfacing:																										
Ia. 92	EB	752+00.00	756+37.30	Rt.	6.0	437.3											15.306	3.500								
Ia. 92	EB	11+39.20	15+81.64	Rt.	6.0	442.4											15.485	3.500								
Ia. 92	WB	752+00.00	756+37.30	Rt.	6.0	437.3											15.306	3.500								
Ia. 92	WB	11+39.20	15+81.64	Rt.	6.0	442.4											15.485	3.500								
Ia. 92	EB	41+00.00	79+00.00	Rt.	4.0	3800.0											88.667	2.333								
Ia. 92	EB	124+00.00	156+30.26	Rt.	4.0	3230.3											75.373	2.333								
Ia. 92	EB	156+27.83	157+00.00	Rt.	4.0	72.2											1.684	2.333								
Ia. 92	EB	194+00.00	257+13.11	Rt.	4.0	6313.1											147.306	2.333								
Ia. 92	EB	257+10.41	352+10.00	Rt.	4.0	9499.6											221.657	2.333								
Ia. 92	EB	359+38.00	373+53.64	Rt.	4.0	1415.6											33.032	2.333								
Ia. 92	EB	373+44.67	421+64.45	Rt.	4.0	4819.8											112.462	2.333								
Ia. 92	EB	422+61.44	426+00.00	Rt.	4.0	338.6											7.900	2.333								
Ia. 92	EB	570+00.00	584+25.00	Rt.	4.0	1425.0											33.250	2.333								
Ia. 92	WB	41+00.00	79+00.00	Rt.	4.0	3800.0											88.667	2.333								
Ia. 92	WB	124+00.00	156+30.26	Rt.	4.0	3230.3											75.373	2.333								
Ia. 92	WB	156+27.83	157+00.00	Rt.	4.0	72.2											1.684	2.333								
Ia. 92	WB	194+00.00	257+13.11	Rt.	4.0	6313.1											147.306	2.333								
Ia. 92	WB	257+10.41	323+80.00	Rt.	4.0	6669.6											155.624	2.333								
Ia. 92	WB	323+80.00	331+00.00	Rt.	4 to 3	720.0											14.700	2.042								
Ia. 92	WB	331+00.00	357+00.00	Rt.	3.0	2600.0											45.500	1.750								
Ia. 92	WB	357+00.00	358+80.00	Rt.	3 to 4	180.0											3.675	2.042								
Ia. 92	WB	358+80.00	373+53.64	Rt.	4.0	1473.6											34.385	2.333								
Ia. 92	WB	373+44.67	421+64.45	Rt.	4.0	4819.8											112.462	2.333								
Ia. 92	WB	422+61.44	426+00.00	Rt.	4.0	338.6											7.900	2.333								
Ia. 92	WB	570+00.00	584+25.00	Rt.	4.0	1425.0											33.250	2.333								
Note: Quantities increased for existing low shoulder.																	TOTAL =	6286.262								
(1) Quantities for shoulder adjacent to EB Lane.																	10% =	628.626	(3)							
(2) Quantities for shoulder adjacent to WB Lane.																	BID TOTAL =	6914.888								
(3) For Irregularities																										

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 FT	W Width FT	T Thickness IN	HMA Base Widening 3" ① SY	HMA Base Widening 4" ① SY	PCC Base Widening ① SY	PCC Pavement Widening ① SY	Tack Coat			Asphalt Binder ① TONS	Class 13 Excavation, Widening ① CY	Special Backfill ① TONS	Remarks
										Lifts	Vertical Edge	Tack Coat				
										GAL	GAL	GAL				
752+00.00	756+37.30	RT	HMA	437.30	4.0	3.0	194.356			19.44	1.21	20.65		17.0		
752+00.00	756+37.30	LT	HMA	437.30	4.0	3.0	194.356			19.44	1.21	20.65		16.2		
658+25.00	666+70.75	RT	HMA	845.75	4.0	4.0		375.9		37.59	3.13	40.72		42.0		
Total:						388.800	375.9							75.2		

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Road Identification	Location Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)	Length		Fog Seal* (Milled Rumble Strip) Shoulder GAL	Effective Shoulder Width			Remarks		
					PCC STA	HMA STA		PCC Paved FT	HMA Paved FT	Granular\ Earth FT			
												Length	
												Length	Length
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	Length New Const.		Connected Pipe Joint* (DR-121, DR-122)	New Apron		Remove and Reinstall Pipe Culvert				Remove and Reinstall Apron				Class 20 Excavation		Embankment In-Place		Reshaping Ditch		Remarks			
				Lin. Ft.	Rt.		Type	Lt.	Rt.	Lt.	Rt.	Linear Feet				Each				CY		CY		STA		
												≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	CY	CY	Lt.		Rt.		
																									Lt.	Rt.
Division 1 - Rural																										
1	MP 107	52	RCP																			12x24 splash basin Tab. 100-23, clear & grub				
2	107.3	42	RCP		6	2.0																				
3	107.6	30	RCP	6	6	2.0																				
4	108.2	30	RCP	6	6	2.0																				
5	108.5	30	RCP																							
6	108.8	42	RCP	8		2.0																				
7	109.5	30	RCP																							
8	109.9	30	CMP																							
9	110.2	24	RCP/CMP																							
10	110.7	24	RCP/CMP		6	2.0																				
11	111.6	36	RCP																							
12	112.38 R	24	RCP	6	6	2.0																				
13	114.2	8X6	RCB																							
14	115.7	48	RCP	6	6	2.0																				
15	116.3	TWIN 60"	RCB	12	12	2.0																				
16	116.5	24	RCP																							
17	118.5 R	15	CMP	20	14		1	1																		
Ditch Reshaping																										
	From Sta	To Sta																								
	633+86.0	634+15.0																				0.3				
	611+12.0	611+97.0																				0.9				
	590+70.0	601+28.0																				10.6				
	566+10.0	575+07.0																				9.0				
	574+25.0	585+86.0																				11.6				
	528+64.0	557+38.0																				28.7				
	505+20.0	517+40.0																				12.2				
	491+63.0	499+50.0																				7.9				
	490+00.0	490+82.0																				0.8				
	464+33.0	465+20.0																				0.9				
	435+55.0	455+30.0																				19.8				
	411+43.0	412+90.0																				1.5				
	392+61.0	393+10.0																				0.5				
	380+60.0	380+98.0																				0.4				
	34+52.0	36+00.0																				1.5				
	32+42.0	33+73.0																				1.3				
	30+90.0	31+87.0																				1.0				
	17+74.0	20+70.0																				3.0				
	14+72.0	17+37.0																				2.7				
	597+33.0	597+70.0																				0.4				
	16+16.0	17+18.0																				1.0				
	17+98.0	22+34.0																				4.4				
	23+39.0	24+50.0																				1.1				
	31+59.0	33+53.0																				1.9				
	38+10.0	39+75.0																				1.7				
	89+26.0	90+93.0																				1.7				
	220+59.0	225+00.0																				4.4				
	341+93.0	344+33.0																				2.4				
	513+75.0	515+00.0																				1.3				
	584+25.0	584+35.0																				0.1				
	612+56.0	612+85.0																				0.3				
	642+70.0	643+33.0																				0.6				
	643+55.0	643+78.0																				0.2				
	646+09.0	651+03.0																				4.9				
	651+38.0	656+37.0																				5.0				
	656+72.0	657+90.0																				1.2				
				64	62		1	1																		
																						100				
																						5				
																						4				
																						4				
																						4				
																						75				
																						102				
																						177				
																						114.6				
																						32.2				
																						146.8				
																						Subtotal				
																						Total Reshaping Ditch				
For quantity totals please see the next page.																										

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 IN	Kind Of Pipe ①	Length New Const.		Connected Pipe Joint* (DR-121, DR-122)	New Apron		Remove and Reinstall Pipe Culvert				Remove and Reinstall Apron				Class 20 Excavation		Embankment In-Place		Reshaping Ditch		Remarks	
				Lin. Ft.			Each		Linear Feet		Each		CY		CY		STA							
				Lt.	Rt.		Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	Left Side	Right Side	Left Side	Right Side	≤ 36"	>36"	≤ 36"	>36"	Lt.		Rt.
				Remove and Reinstall Pipe Culvert less than or equal to 36"																				
				Remove and Reinstall Pipe Culvert greater than 36"																				
				Remove and Reinstall Pipe Apron less than or equal to 36"																				
				Remove and Reinstall Pipe Apron greater than 36"																				
				15" CMP																				
				15" CMP Apron																				
				24" RCP																				
				24" Apron																				
				30" RCP																				
				30" Apron																				
				42" RCP																				
				42" Apron																				
				48" RCP																				
				48" Apron																				
				60" RCP																				
				60" Apron																				
				Embankment in Place																				
				Ditch Reshaping																				

CLEARING AND GRUBBING

Location		Direction of Travel	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				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	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	Units	Acres		Each
Iowa 92 (28) Madison Co			Trees - Clearing and Grubbing																		See Tab 3RCulv	
MP 107, 52"RCP			Trees - Clearing and Grubbing																		12x24spl basin	
MP 108.2, Rt., 30" RCP			Trees - Clearing and Grubbing																		10x10spl basin	
MP 108.51, Rt., 30" RCP			Trees - Clearing and Grubbing																			
																					Total	

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

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

Count	Location			Dimension			PCC Patches				HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels										
							PR-103	PR-102	PR-104	PR-105										
L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	PR-101 or PR-140	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													Removal of Rumble Strip Panel
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	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.

Count	Location			Dimension			PCC Patches				HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels										
							PR-103	PR-102	PR-104	PR-105										
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	PR-101 or PR-140 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)

POLLUTION PREVENTION PLAN

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

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

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

I. ROLES AND RESPONSIBILITIES**A. Designer:**

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

B. Contractor/Subcontractor:

1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. Affected contractors/subcontractors are anyone responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Submit an Erosion Control Implementation Plan (ECIP) according to Specifications Section 2602 and any additional plan notes.
3. Install and maintain appropriate controls.
4. Supervise and implement good housekeeping practices.
5. Conduct joint required inspections of the site with inspection staff.
6. Comply with training and certification requirements of Specifications Section 2602.
7. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.

C. RCE/Inspector:

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

II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the construction of a two lane state highway.
- B. This PPP covers approximately 151.64 acres with an estimated 21.06 acres being disturbed. The portion of the PPP covered by this contract has 21.06 acres disturbed.
- C. The PPP is located in an area of one soil association (Sharpsburg - Shelby - Adair). The estimated weighted average runoff coefficient number for this PPP after completion will be 0.38.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
 1. Drainage patterns - Plan and Profile sheets and Situation plans.
 2. Proposed Slopes - Cross Sections.
 3. Areas of Soil Disturbance - construction limits shown on Plan and Profile sheets.
 4. Location of Structural Controls - Tabulations on C sheets.
 5. Locations of Non-structural Controls - Tabulations on C sheets.
 6. Locations of Stabilization Practices - generally within construction limits shown on Plan and Profile sheets.
 7. Surface Waters (including wetlands) - Project Location Map and Plan and Profile sheets.
 8. Locations where storm water is discharged - Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.
- F. Runoff from this work will flow from Road Ditches to unnamed stream to Cedar Creek and Road Ditches to unnamed stream to Middle River.

III. CONTROLS

- A. The contractor's ECIP specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
 1. EROSION AND SEDIMENT CONTROLS
 - a. Stabilization Practices
 - 1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
 - 2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
 - a) Permanently ceased on any portion of the site, or
 - b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
 - 3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
 - 4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan.

POLLUTION PREVENTION PLAN

Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation.

- 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
 - 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.
- b. Structural Practices
 - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
 - 2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plans or are referenced in the Standard Road Plans Tabulation.
 - c. Storm Water Management
 - 1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
2. OTHER CONTROLS
 - a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
 - 1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
 - 2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
 - 3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
 - 4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
 - 5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
 - 6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
 - 7) Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
 - 8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water.
 - 9) Litter Management - Ensure employees properly dispose of litter.
 - 10) Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
 3. APPROVED STATE OR LOCAL PLANS
 During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

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

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
 1. Date of the inspection.
 2. Summary of the scope of the inspection.
 3. Name and qualifications of the personnel making the inspection.
 5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
 6. Major observations related to the implementation of the PPP.
 7. Identify corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection.

VI. NON-STORM WATER DISCHARGES

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

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

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

VIII. DEFINITIONS

- A. Base PPP - Initial Pollution Prevention Plan.

110-12A
10-17-17

POLLUTION PREVENTION PLAN

- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and fieldbook entries made by the inspector.
- C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and bid item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
- E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

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



Signature

Jason M. Holst
Print Name

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.

281-3
10-17-17

**STORM WATER
BEST MANAGEMENT PRACTICES**

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided:

Perimeter Slope and Sediment Control Device (EC-204)
Silt Fence (EC-201)
Vegetative Buffer

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.

100-19
04-19-16

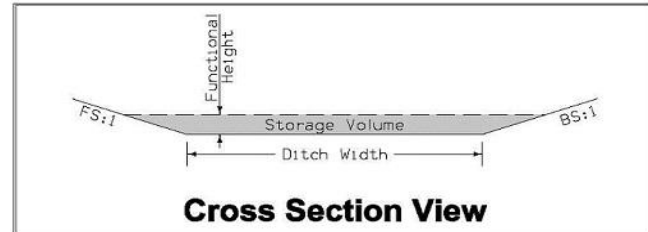
PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

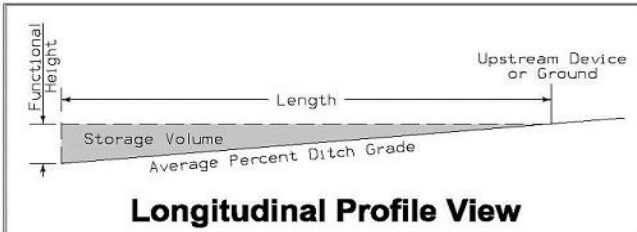
Location		Length of Installation			Remarks	
Begin Station	End Station	Side	9 inch Dia	12 inch Dia		20 inch Dia
			LF	LF		LF
TYPE A					0.0	Estimated 0 Locations at 140 LF Each. (1)
TYPE B					2400.0	Estimated 10 Locations at 240 LF Each. (1)
TYPE C					1120.0	Estimated 7 Locations at 160 LF Each. (1)
Total					3520.0	
(1) refer to temporary detail on CE Sheets						

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



Cross Section View



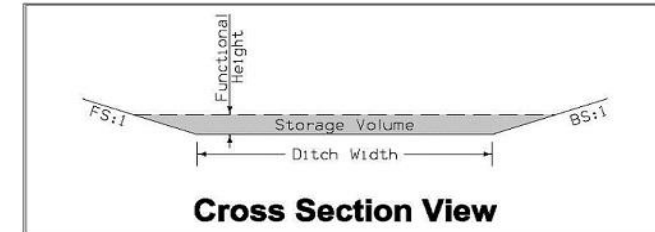
Longitudinal Profile View

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

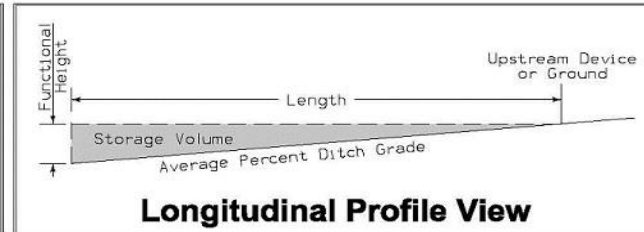
Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
		14+72.00	LT	35.0								
		15+72.00	LT	35.0								
		17+74.00	LT	35.0								
		18+74.00	LT	35.0								
		19+74.00	LT	35.0								
		30+90.00	LT	35.0								
		32+42.00	LT	35.0								
		34+52.00	LT	35.0								
		35+52.00	LT	35.0								
		380+98.00	LT	35.0								
		411+90.00	LT	35.0								
		412+90.00	LT	35.0								
		435+55.00	LT	35.0								
		436+55.00	LT	35.0								
		437+55.00	LT	35.0								
		438+40.00	LT	35.0								
		439+00.00	LT	35.0								
		440+00.00	LT	35.0								
		441+00.00	LT	35.0								
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		452+30.00	LT	35.0								
		453+30.00	LT	35.0								
		454+30.00	LT	35.0								
		455+30.00	LT	35.0								
		465+00.00	LT	35.0								
		492+50.00	LT	35.0								
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		531+50.00	LT	35.0								
		532+50.00	LT	35.0								
		533+50.00	LT	35.0								
		534+50.00	LT	35.0								
		535+50.00	LT	35.0								
		536+50.00	LT	35.0								
		537+50.00	LT	35.0								
		538+50.00	LT	35.0								
		539+50.00	LT	35.0								
		540+50.00	LT	35.0								
		541+50.00	LT	35.0								
		542+50.00	LT	35.0								
		544+50.00	LT	35.0								

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



Cross Section View



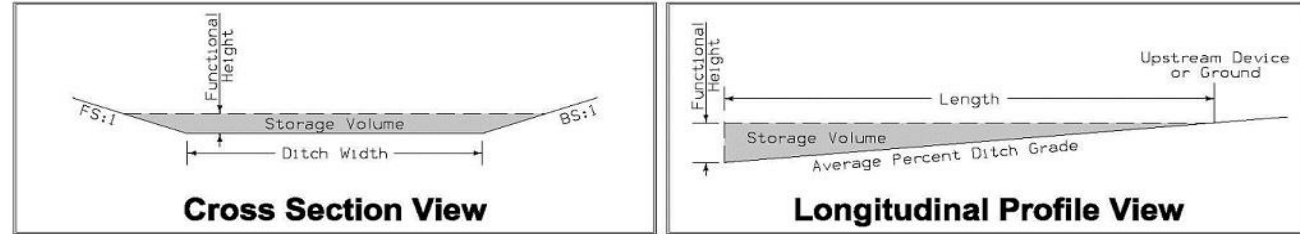
Longitudinal Profile View

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

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
		545+50.00	LT	35.0								
		546+50.00	LT	35.0								
		547+50.00	LT	35.0								
		548+50.00	LT	35.0								
		549+50.00	LT	35.0								
		550+50.00	LT	35.0								
		551+50.00	LT	35.0								
		552+50.00	LT	35.0								
		555+00.00	LT	35.0								
		556+00.00	LT	35.0								
		567+00.00	LT	35.0								
		568+00.00	LT	35.0								
		569+00.00	LT	35.0								
		570+00.00	LT	35.0								
		571+00.00	LT	35.0								
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		573+00.00	LT	35.0								
		574+00.00	LT	35.0								
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		595+00.00	LT	35.0								
		596+00.00	LT	35.0								
		597+00.00	LT	35.0								
		598+00.00	LT	35.0								
		599+00.00	LT	35.0								
		600+00.00	LT	35.0								
		611+75.00	LT	35.0								
		17+18.00	RT	35.0								
		19+00.00	RT	35.0								
		20+00.00	RT	35.0								
		21+00.00	RT	35.0								
		22+00.00	RT	35.0								
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		646+00.00	RT	35.0								
		647+00.00	RT	35.0								
		648+00.00	RT	35.0								
		649+00.00	RT	35.0								
		650+00.00	RT	35.0								
		652+00.00	RT	35.0								

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4

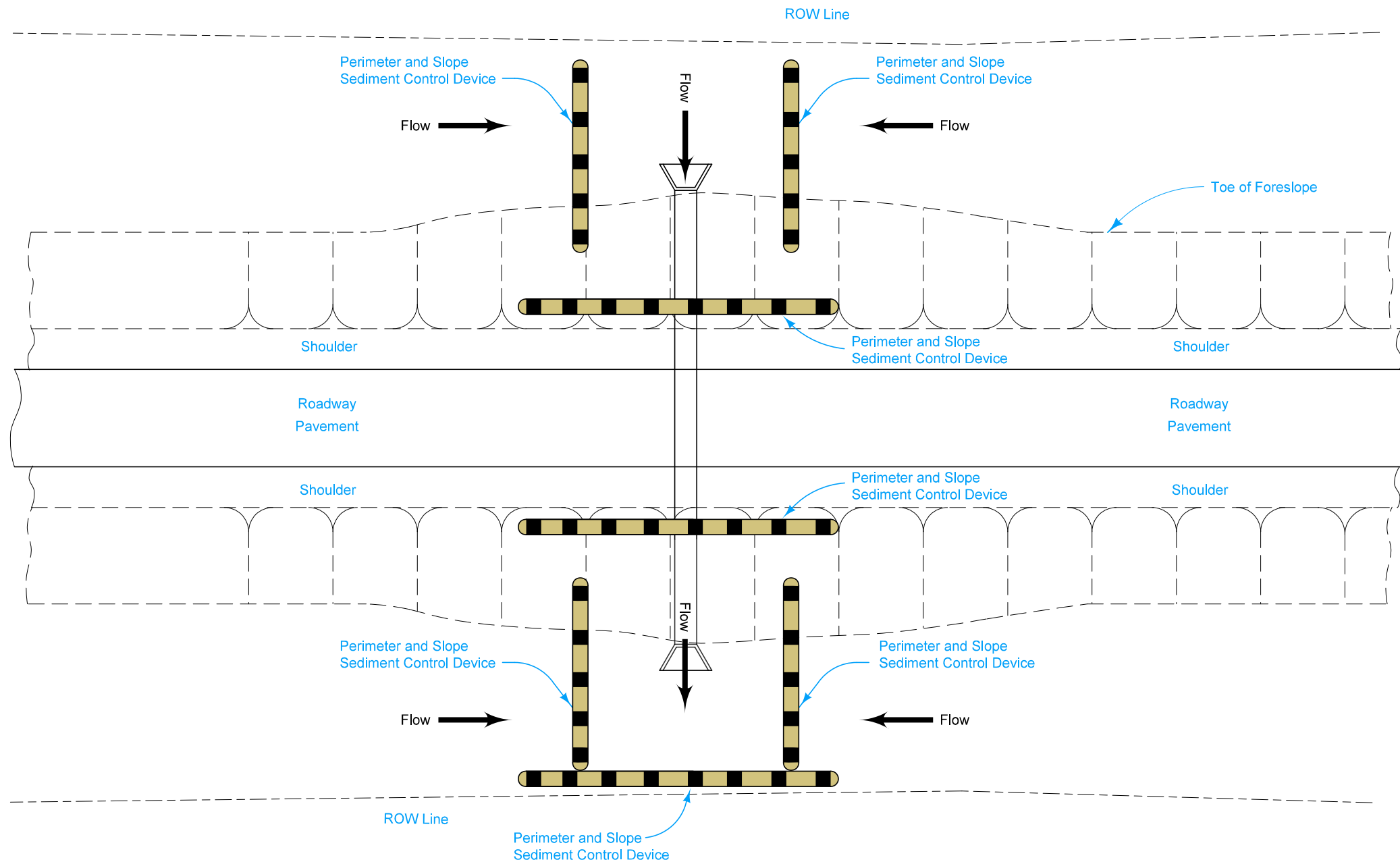


* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation LF	Maintenance LF	Removal LF	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg.% Slope Ditch Grade	Volume* CF	
		653+00.00	RT	35.0								
		654+00.00	RT	35.0								
		655+00.00	RT	35.0								
		656+00.00	RT	35.0								
		657+00.00	RT	35.0								
		657+90.00	RT	35.0								
		Tab Total		4935.0								
		Bid Total		7402.5	= 150% Tab							
		Maint. Total		740.3	= 10% Bid							
		Removal Total		7402.5	= 100% Bid							

See Standard Road Plan EC-204 for installation details.

Estimated total length of perimeter and slope sediment control device is 140 linear feet per culvert.



Possible Contract Items:
Perimeter and Slope Sediment Control Device

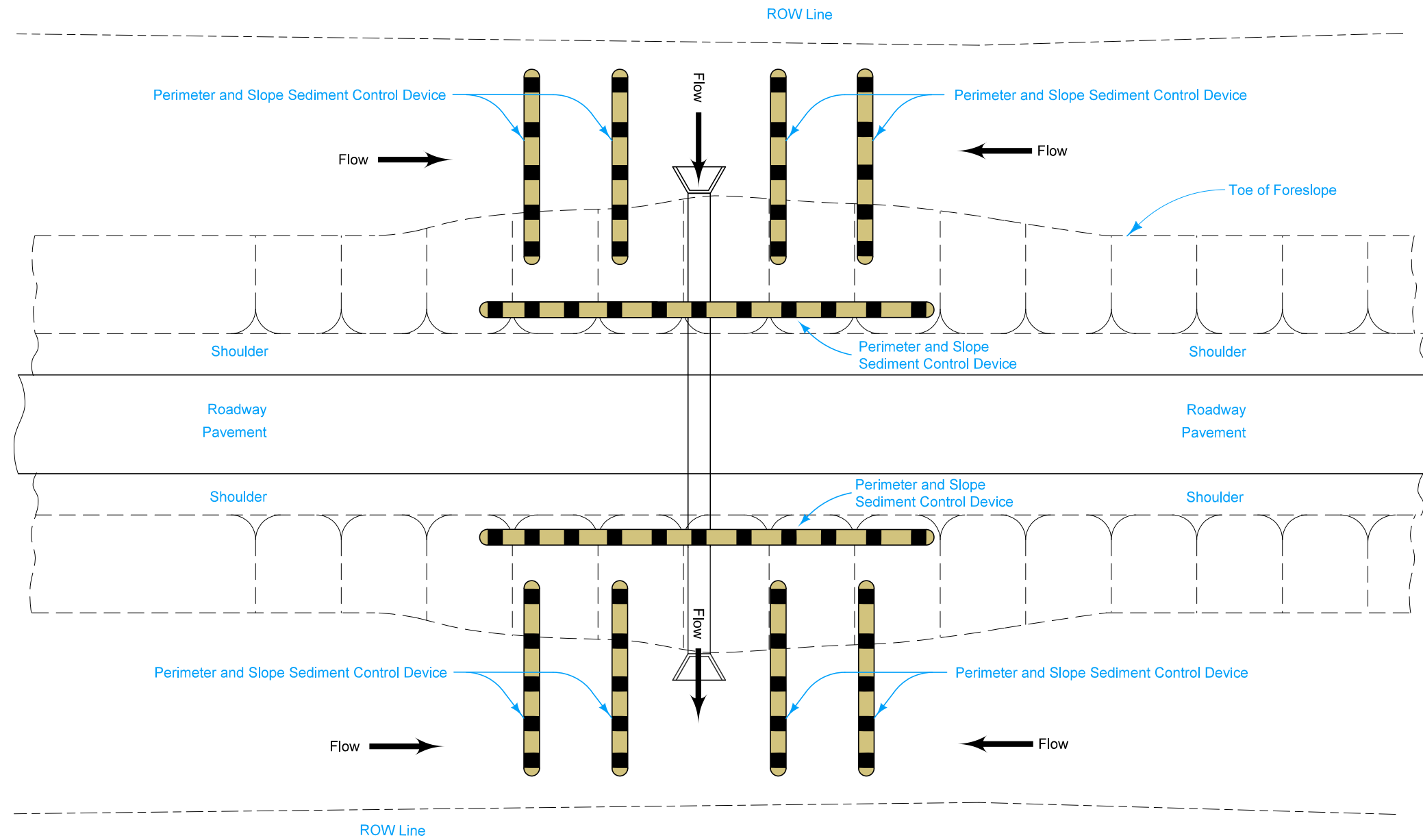
Possible Tabulations:
100-16
100-19
100-34

TYPE A
SHOULDER WIDENING WITH EXPOSED SOIL
(Non-Continuous Flow Culvert)

TEMPORARY SEDIMENT CONTROL DETAIL
(1 OF 3)

See Standard Road Plan [EC-204](#) for installation details.

Estimated total length of perimeter slope and sediment control device is 240 linear feet per culvert.



Possible Contract Items:
Perimeter and Slope Sediment Control Device

Possible Tabulations:
100-16
100-19
100-34

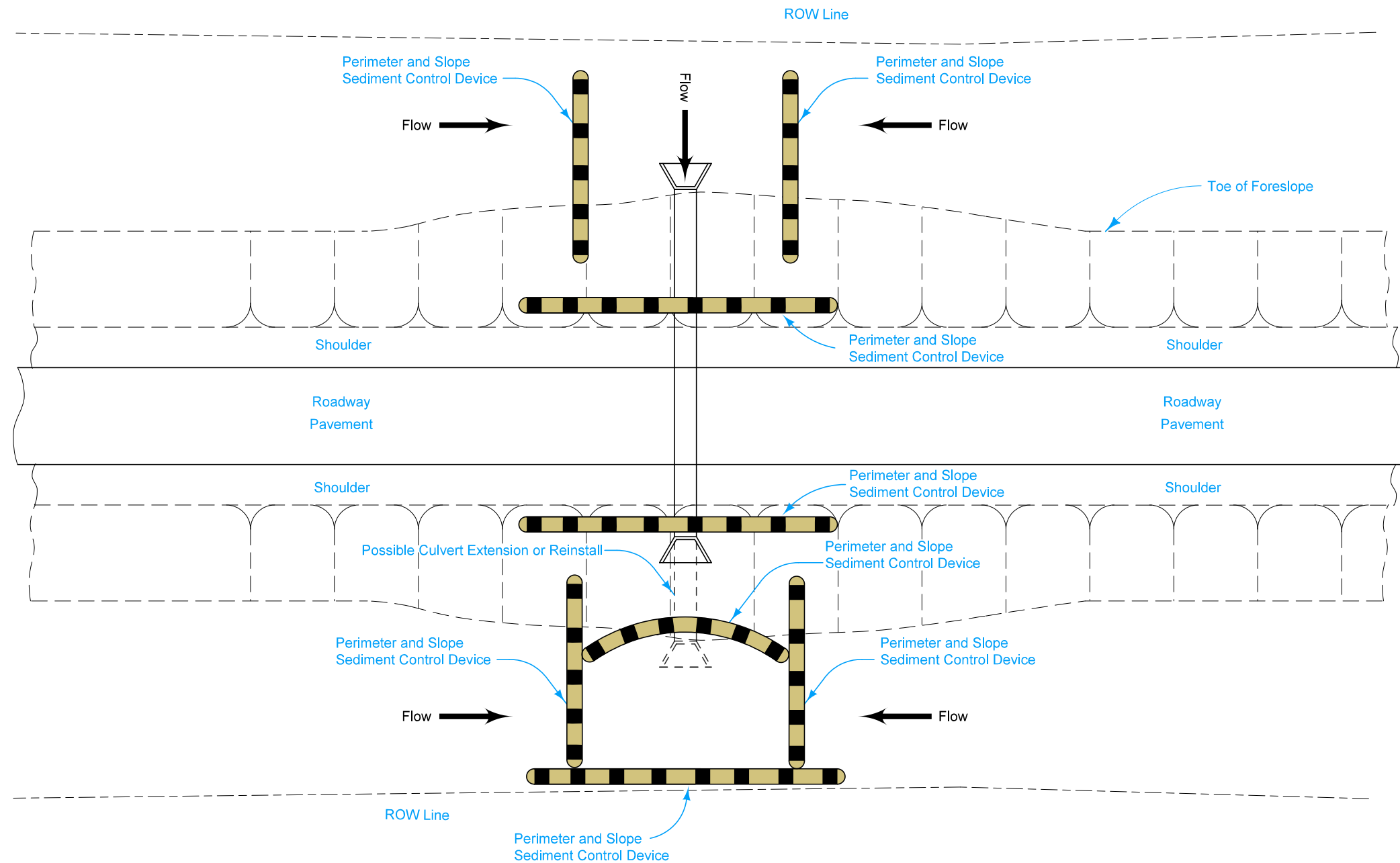
TYPE B

**SHOULDER WIDENING WITH EXPOSED SOIL
(Continuous Flow Culvert)**

**TEMPORARY SEDIMENT CONTROL DETAIL
(2 OF 3)**

See Standard Road Plans [EC-204](#) and [EC-301](#) for installation details.

Estimated total length of perimeter slope and sediment control device is 160 linear feet per culvert.



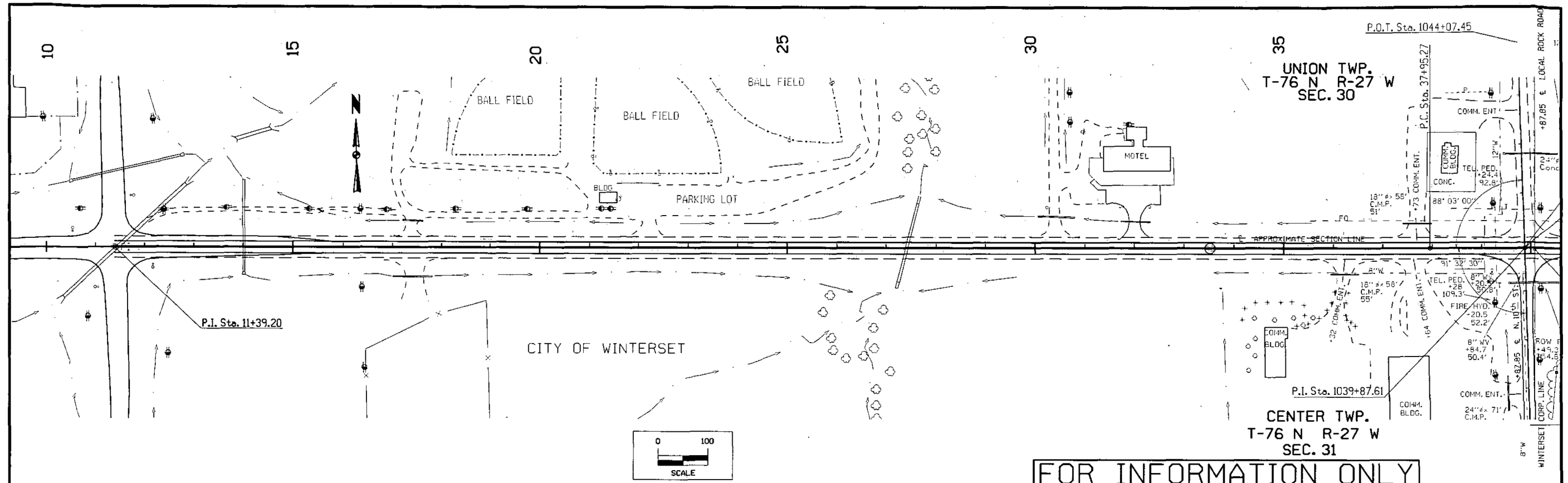
Possible Contract Items:
Perimeter and Slope Sediment Control Device

Possible Tabulations:
100-16
100-19
100-23
100-34
3R-CULV

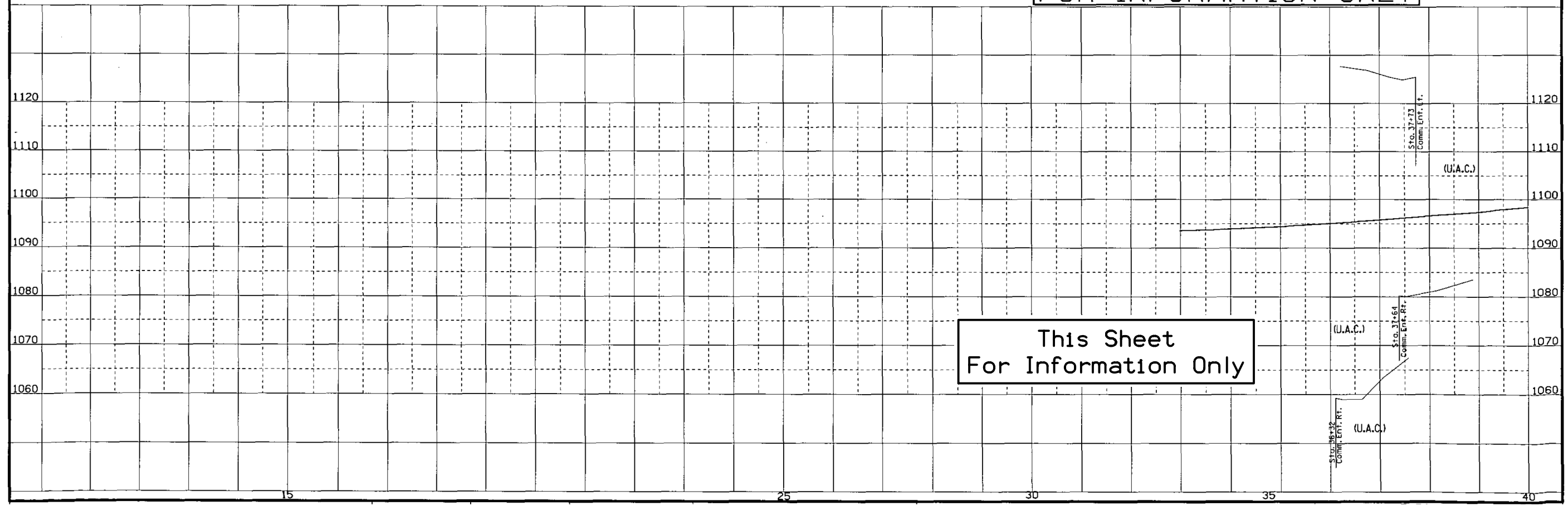
TYPE C

**CULVERT EXTENSION WITH
EXPOSED SOIL**

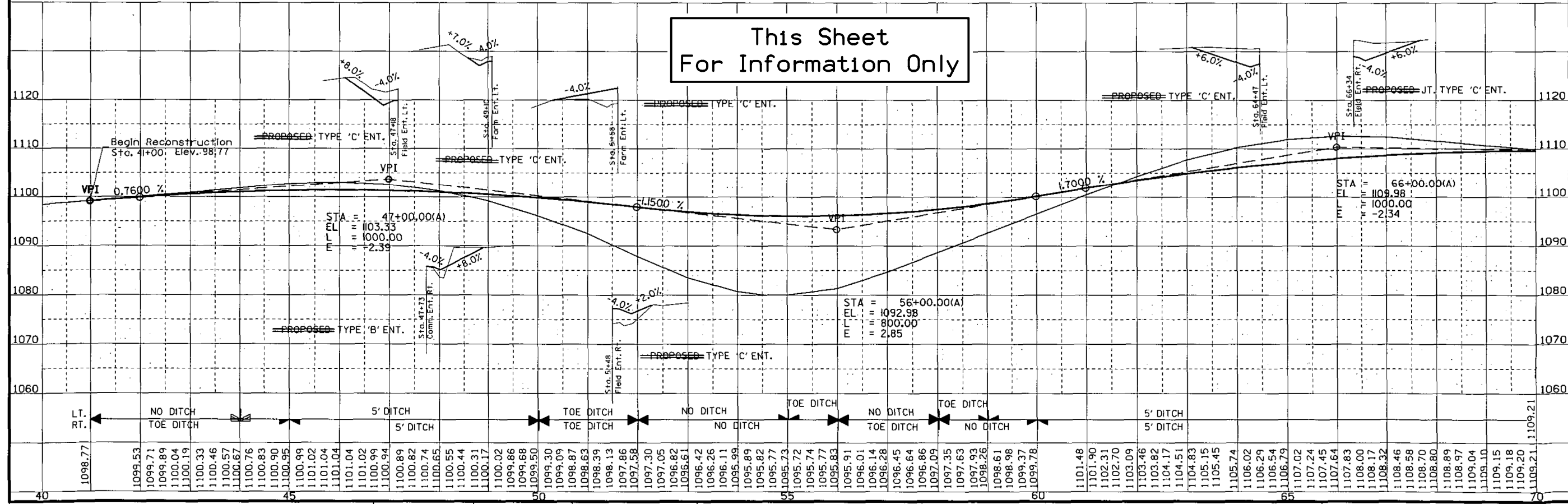
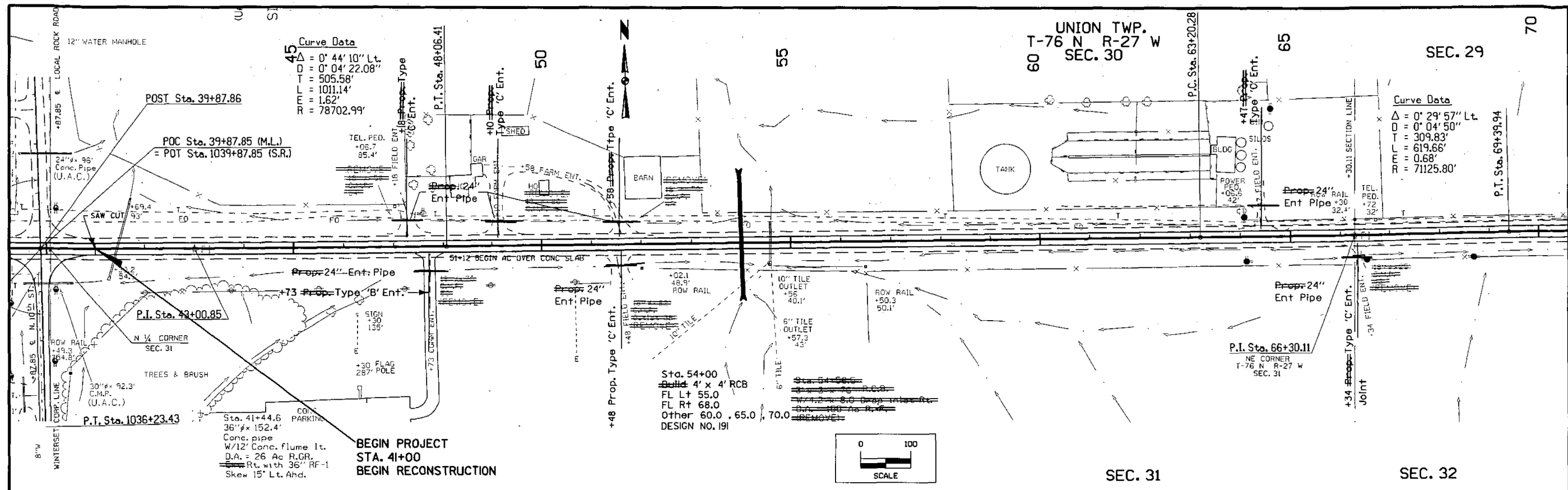
**TEMPORARY SEDIMENT CONTROL DETAIL
(3 OF 3)**



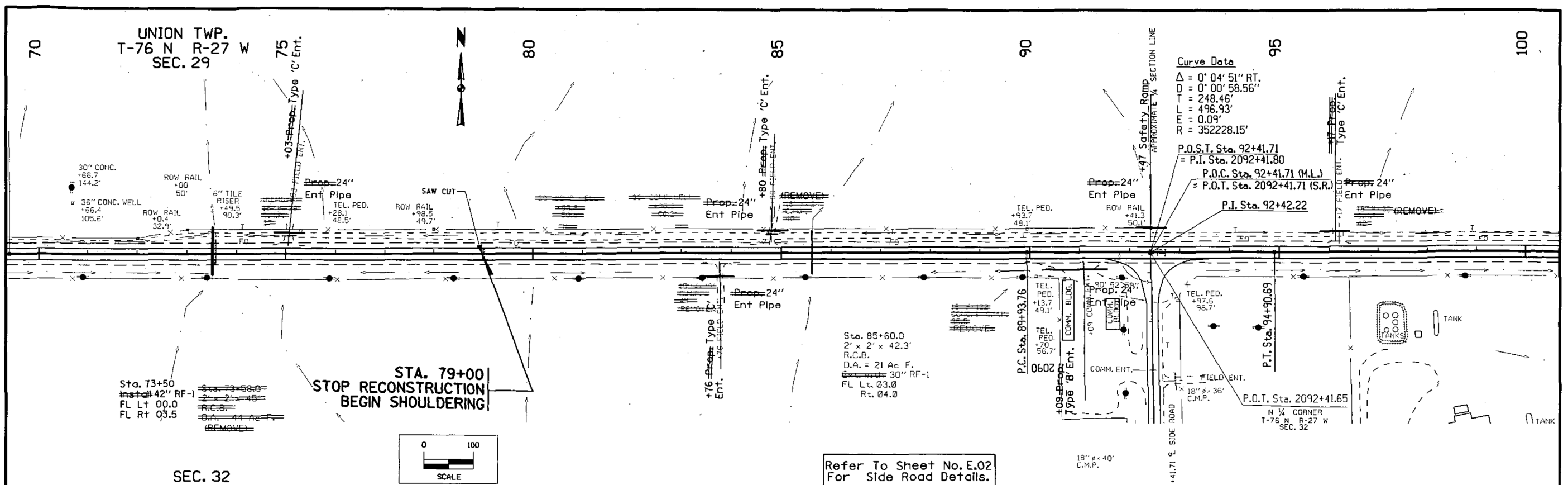
FOR INFORMATION ONLY



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



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



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

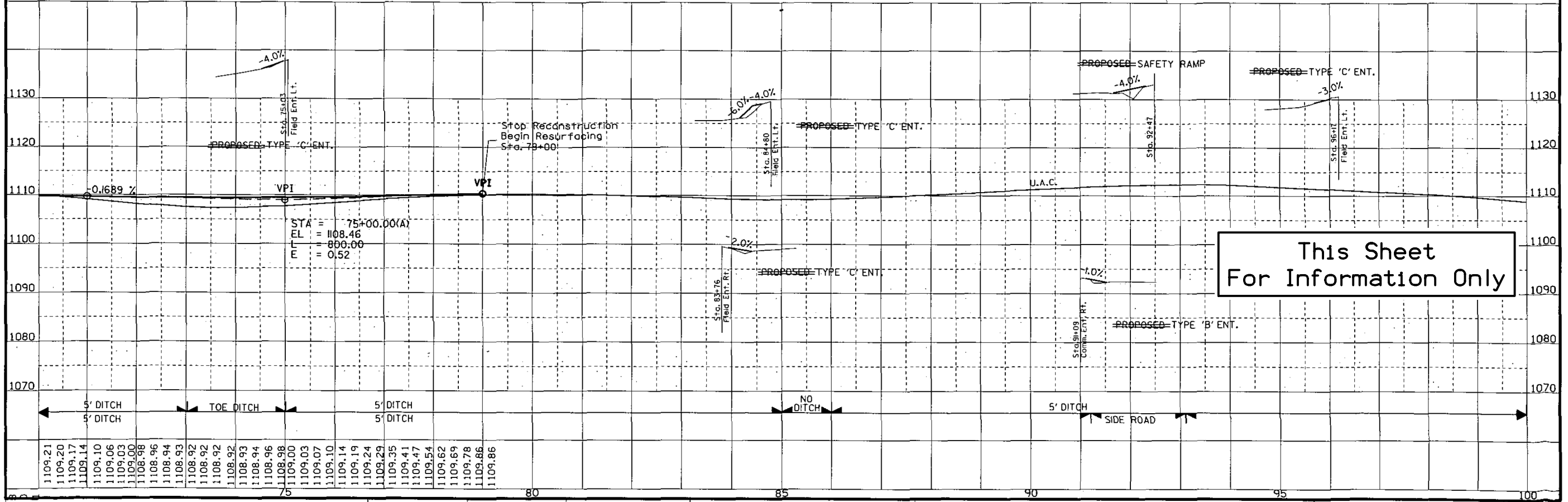
Curve Data
 $\Delta = 0^\circ 04' 51''$ RT.
 $D = 0^\circ 00' 58.56''$
 $T = 248.46'$
 $E = 496.93'$
 $L = 0.09'$
 $R = 352228.15'$
 P.O.S.T. Sta. 92+41.71
 = P.I. Sta. 2092+41.80
 P.O.C. Sta. 92+41.71 (M.L.)
 = P.O.T. Sta. 2092+41.71 (S.R.)
 P.I. Sta. 92+42.22

Sta. 73+50
 Inst. 42" RF-1
 FL Lt 00.0
 FL Rt 03.5

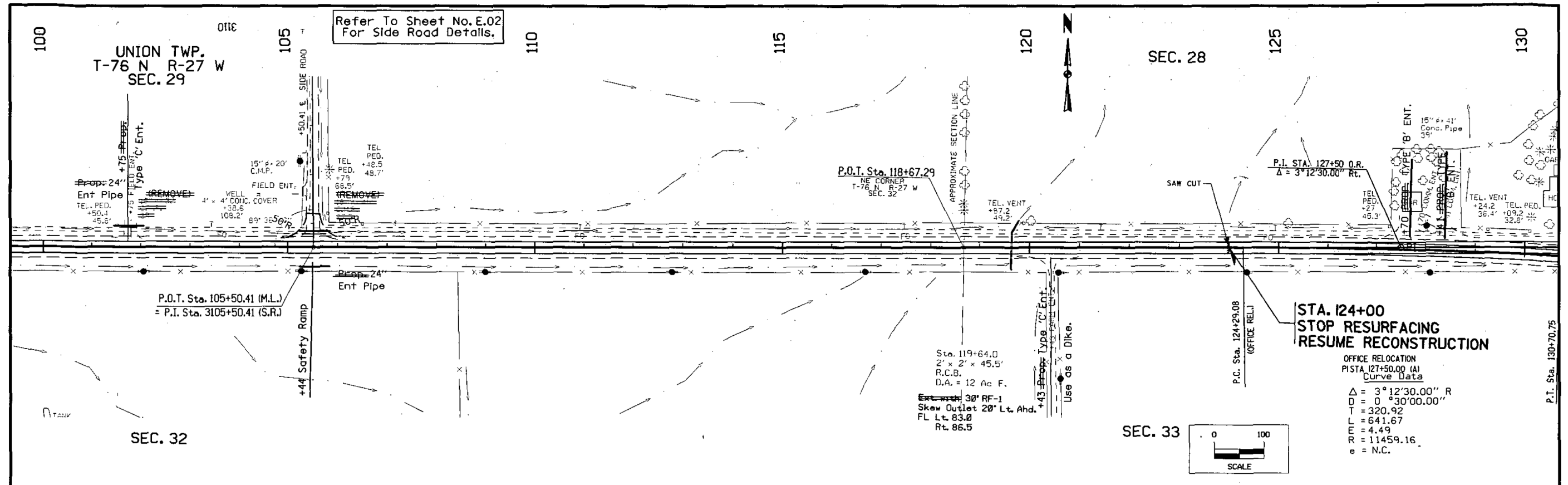
STA. 79+00
 STOP RECONSTRUCTION
 BEGIN SHOULDERING

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

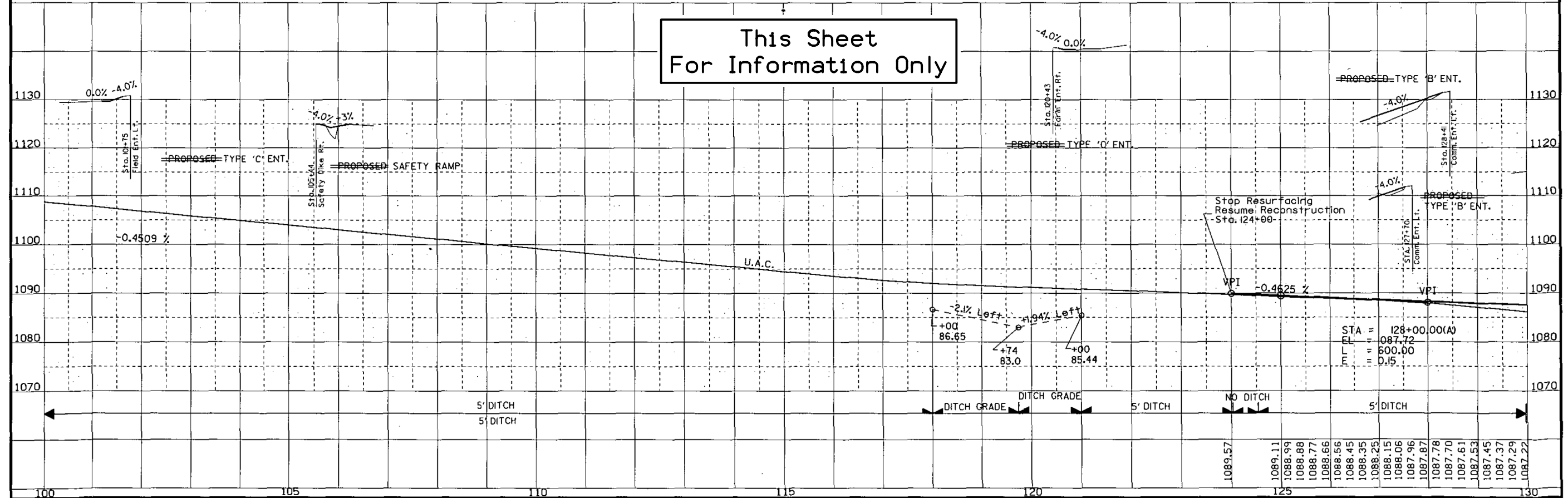
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 For Information Only



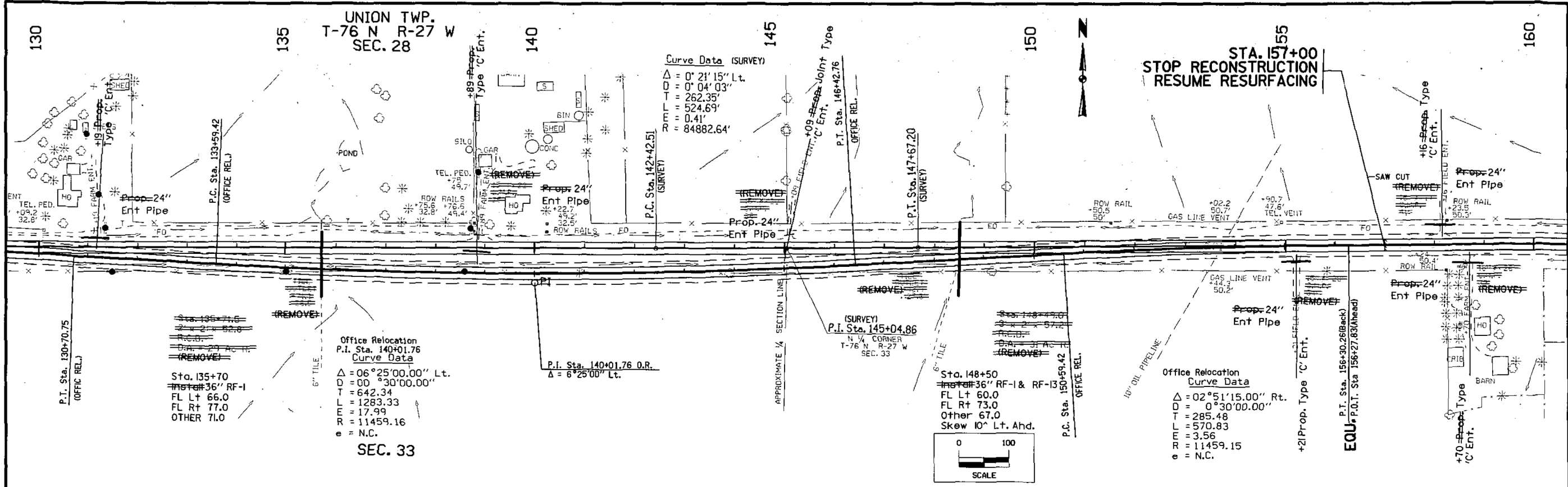
Existing Plans: STPN-92-4(19)--2J-61



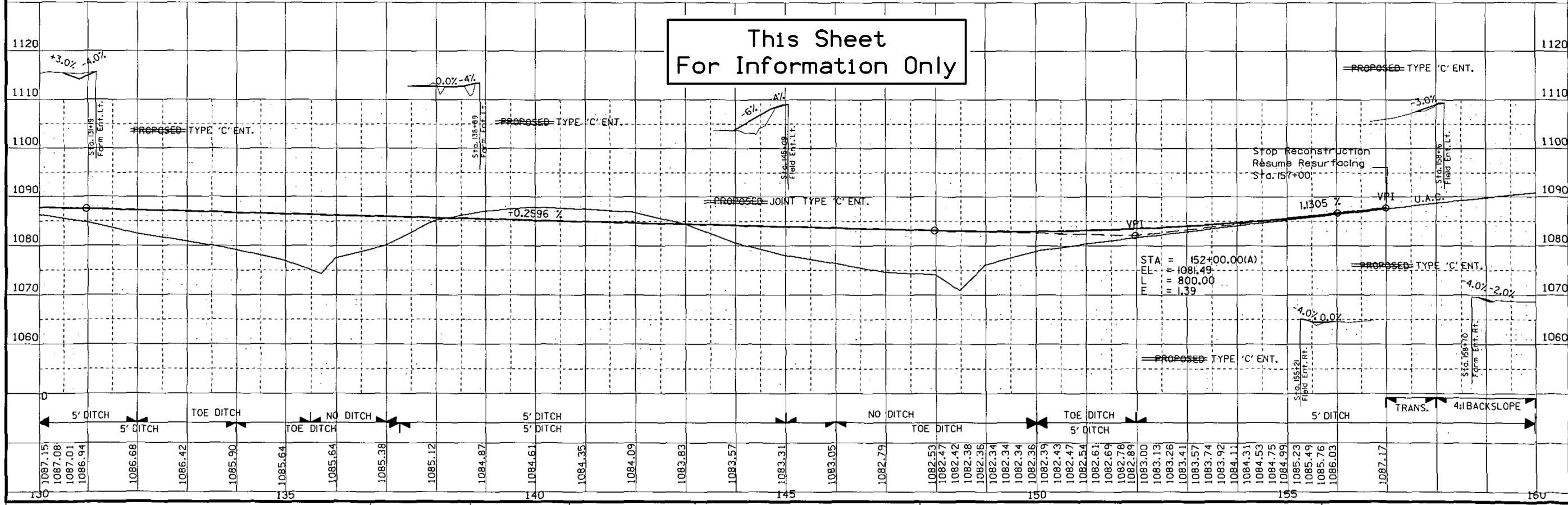
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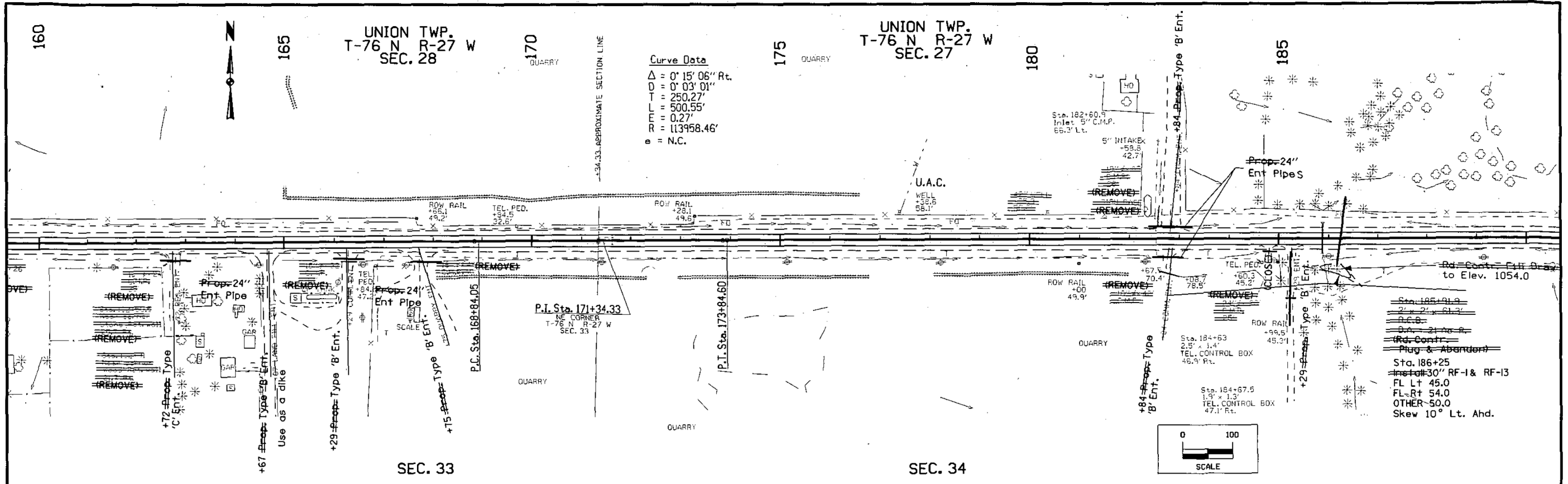
Existing Plans: STPN-92-4(19)--2J-61



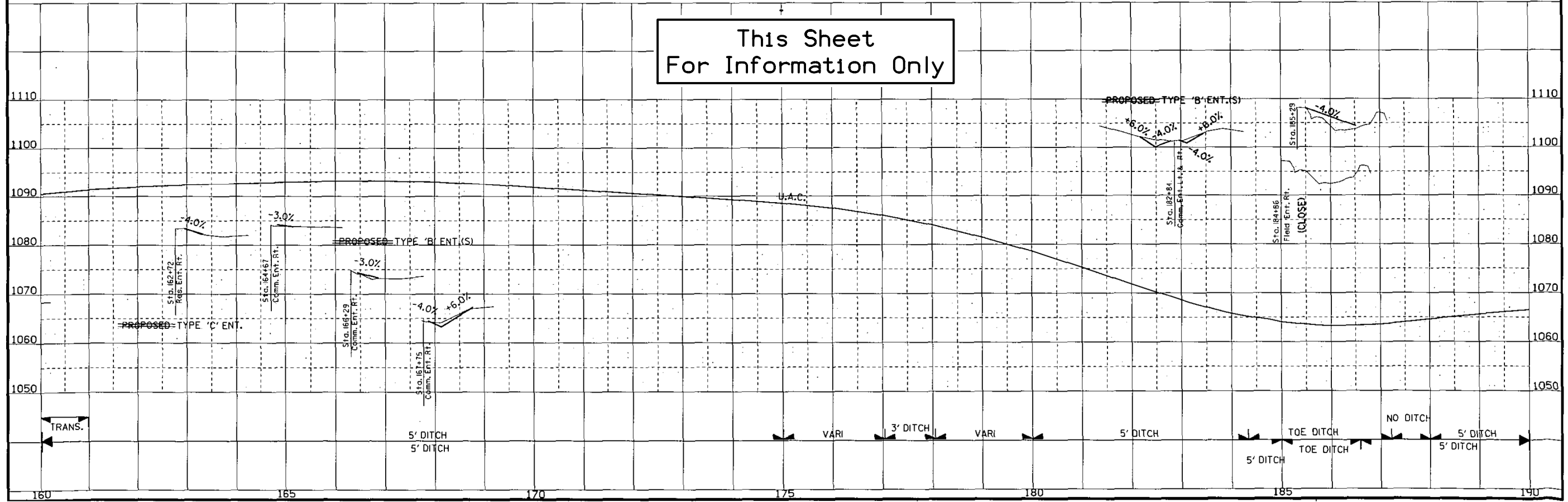
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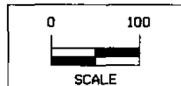
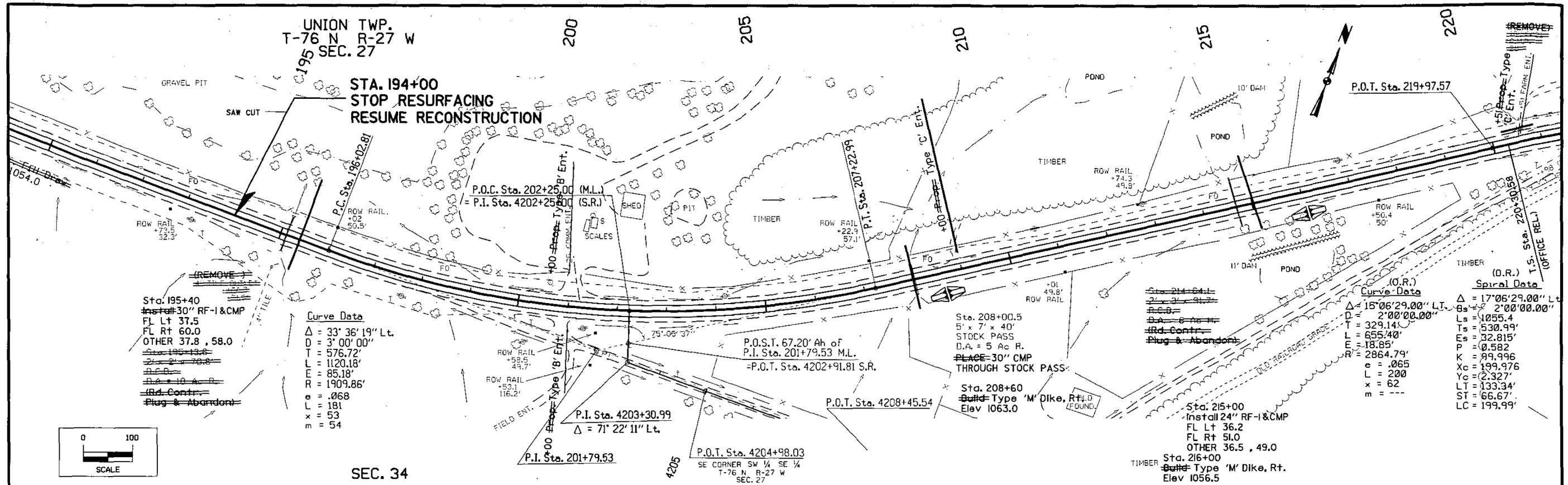
Existing Plans: STPN-92-4(19)--2J-61



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For Information Only

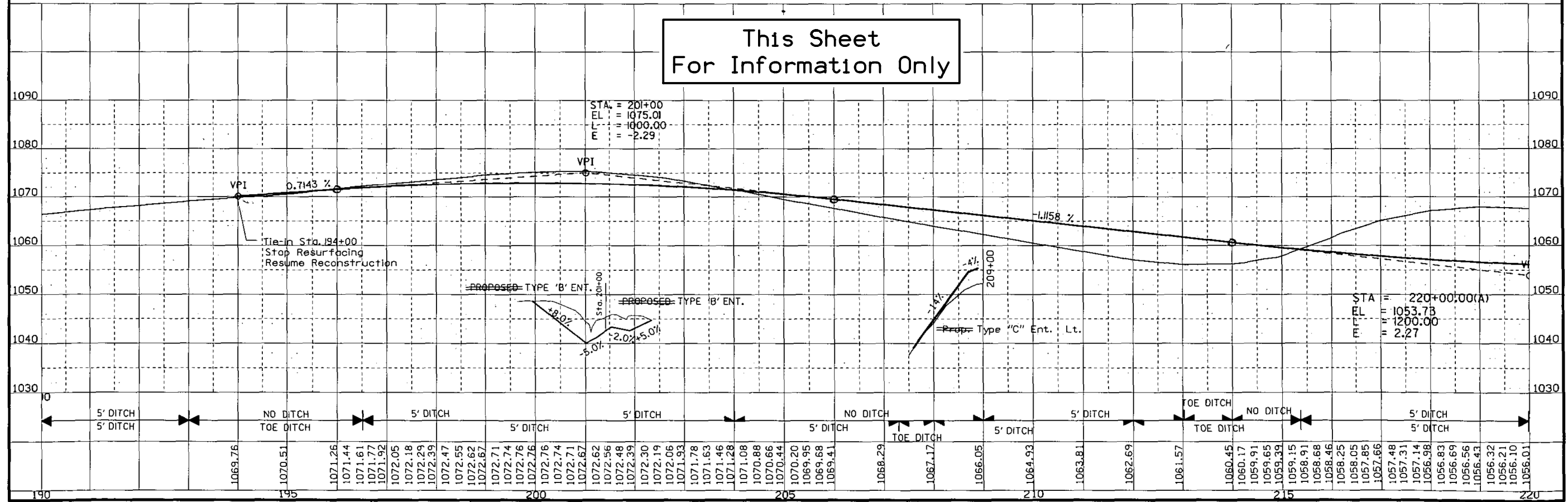


Existing Plans: STPN-92-4(19)--2J-61

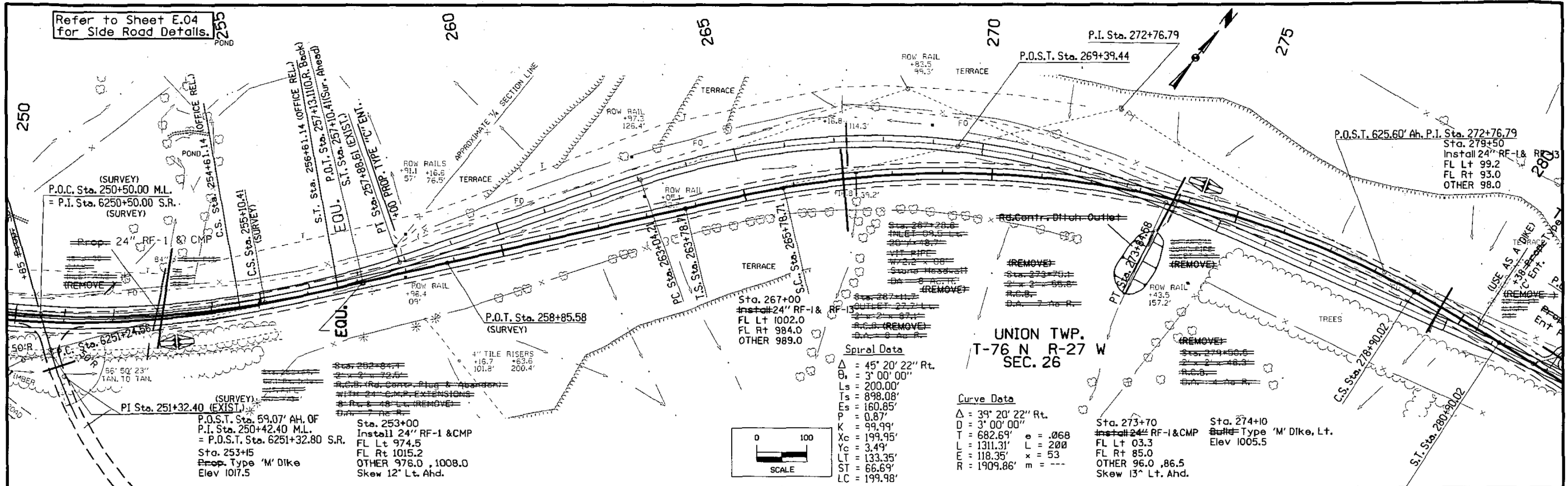


SEC. 34

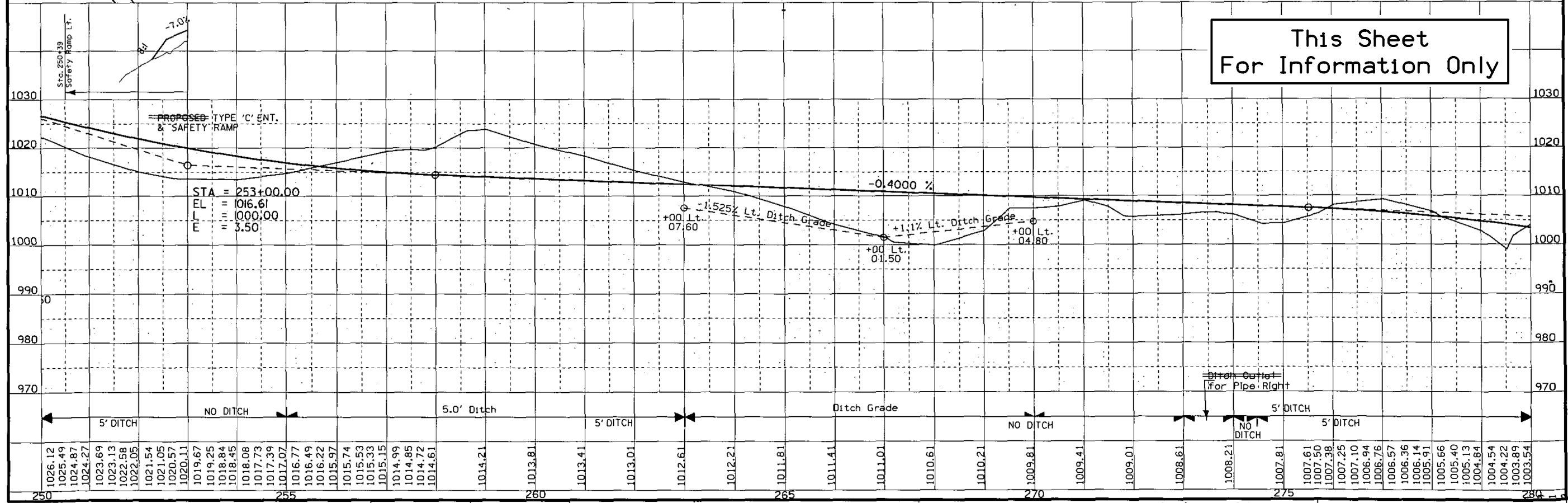
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For Information Only



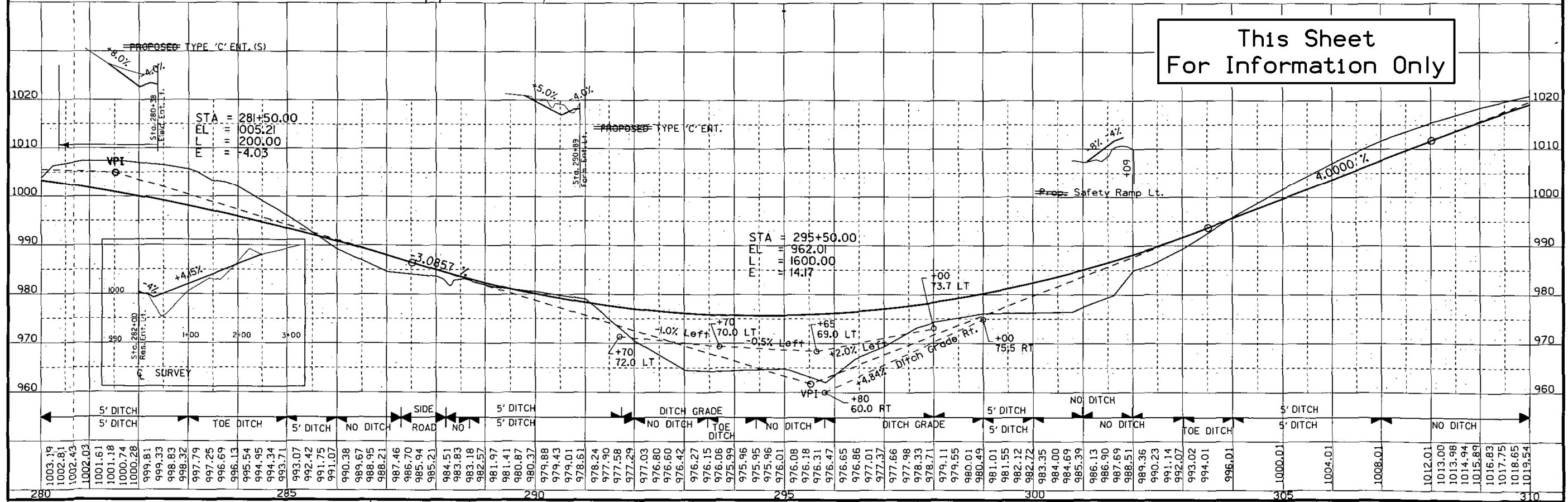
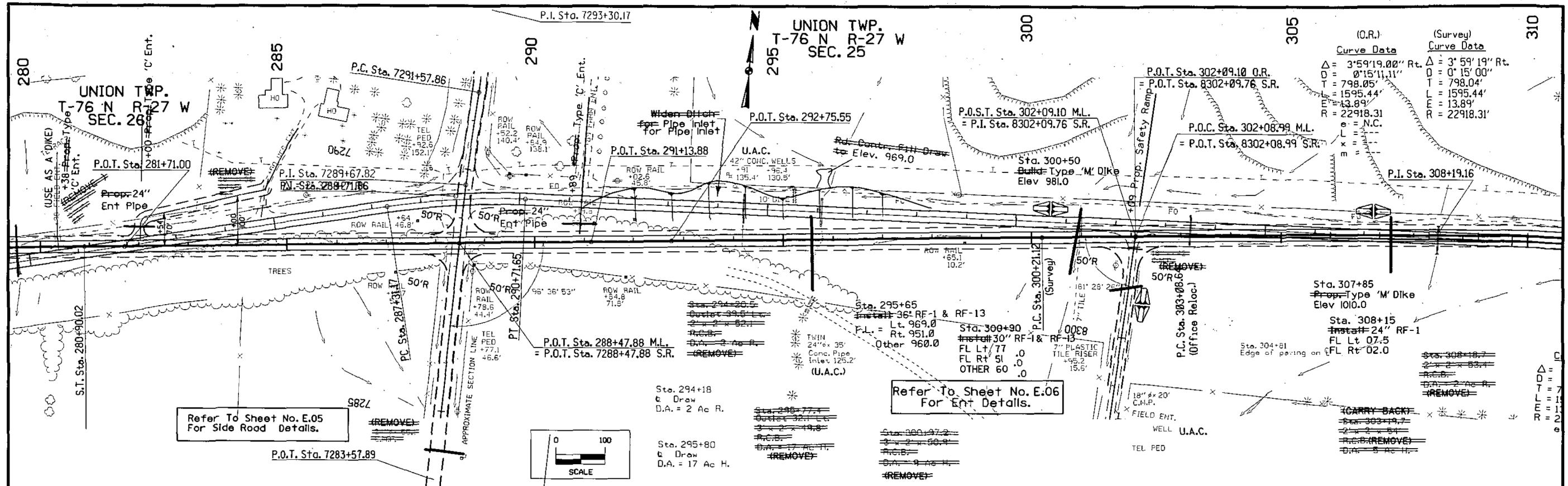
Existing Plans: STPN-92-4(19)--2J-61



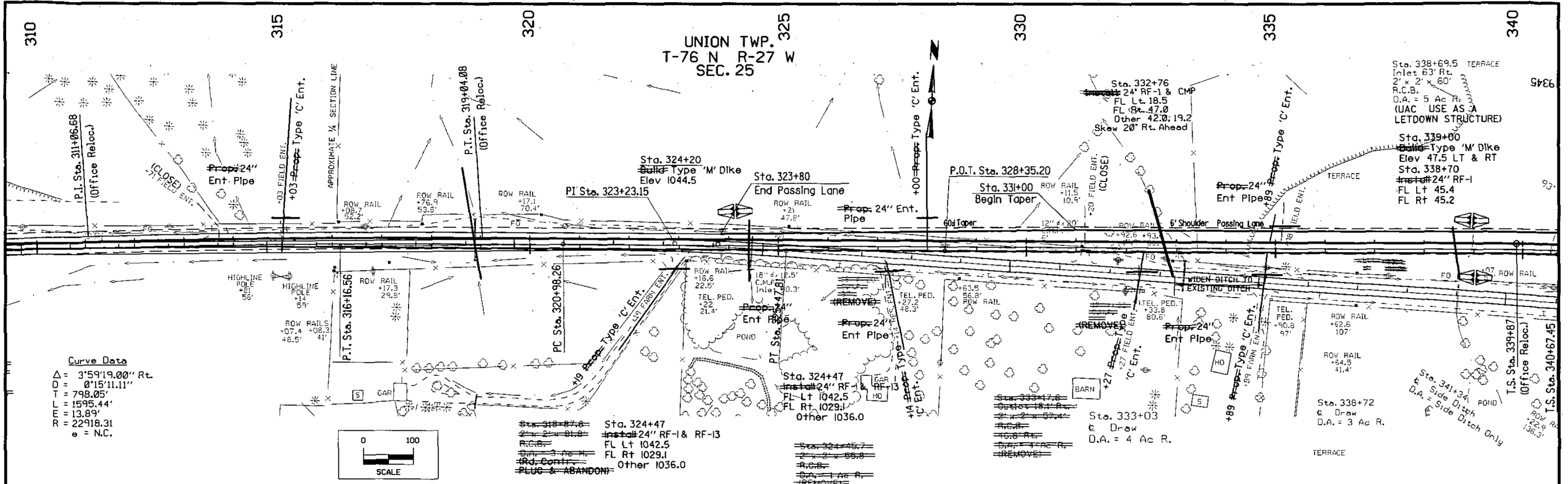
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For Information Only



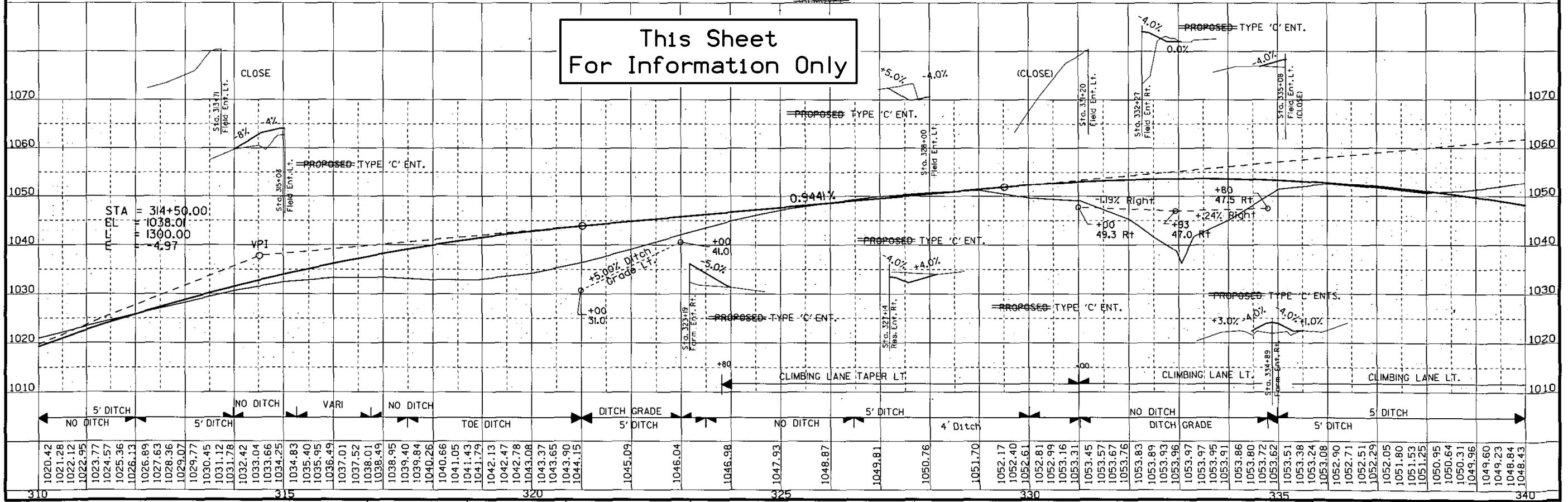
Existing Plans: STPN-92-4(19)--2J-61



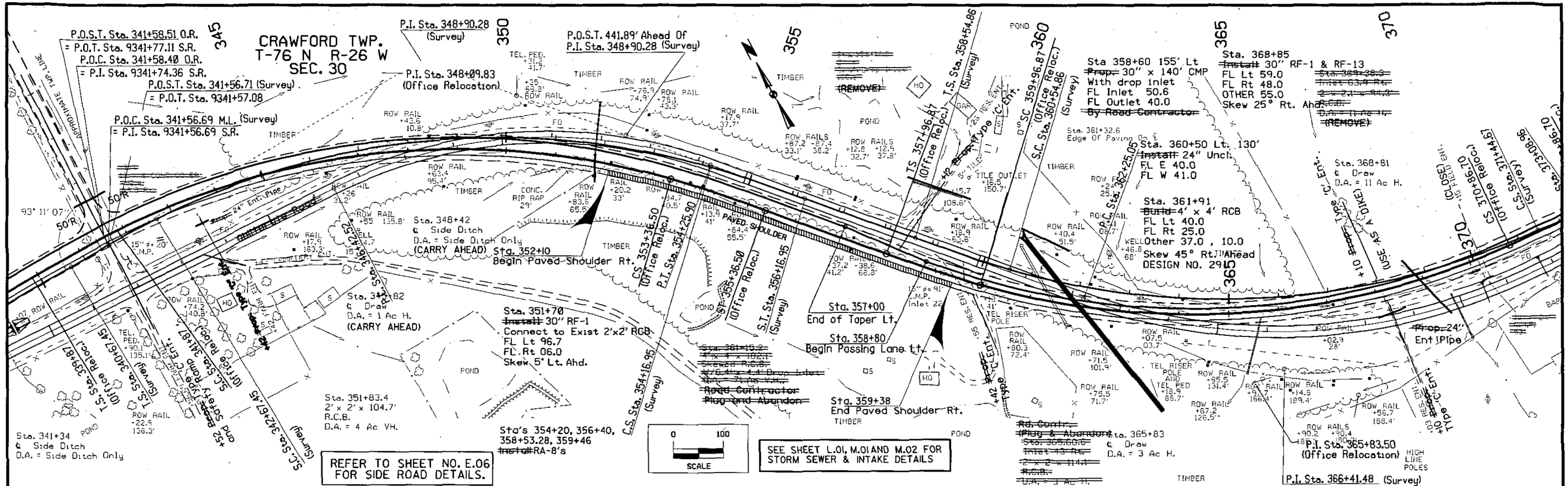
Existing Plans: STPN-92-4(19)--2J-61



This Sheet
For Information Only



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



REFER TO SHEET NO. E.06 FOR SIDE ROAD DETAILS.

SEE SHEET L.01, M.01 AND M.02 FOR STORM SEWER & INTAKE DETAILS

P.I. Sta. 348+25.565 SEE SHEET NO. D13 FOR PROFILE DETAILS
(Office Relocation)

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

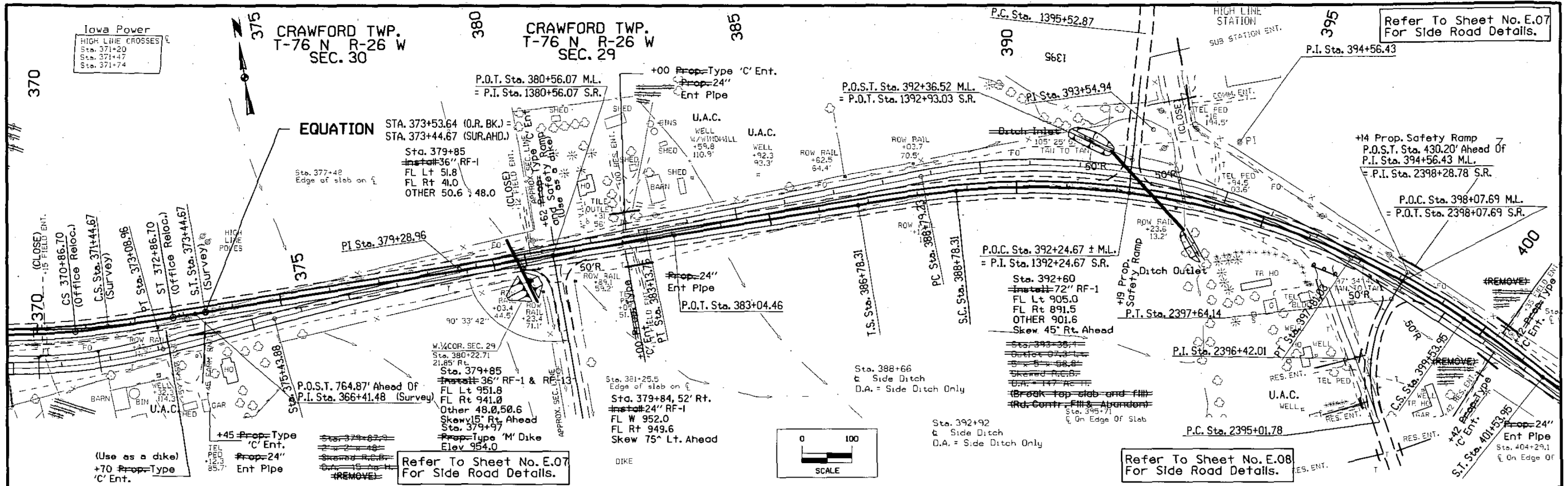
Curve Data		Spiral Data	
$\Delta = 43^{\circ} 06' 22''$ Rt.	$\Delta = 50^{\circ} 35' 22''$ Rt.	$\theta = 3^{\circ} 45' 00''$	
$D = 3^{\circ} 45' 00''$	$L_s = 200.00'$	$L_s = 200.00'$	
$T = 603.49'$	$T_s = 822.83'$	$E_s = 163.35'$	
$L = 1149.50'$	$P = 1.09\%$	$K = 99.99'$	
$E = 114.86'$	$X_c = 199.91'$	$Y_c = 4.36'$	
$R = 1527.89'$	$LT = 133.36'$	$ST = 66.70'$	
$e = 0.076'$	$LC = 199.96'$		
$L = 200'$			
$x = 53'$			

Spiral Data		Curve Data	
$\Delta = 48^{\circ} 22' 08''$ Lt.	$\Delta = 48^{\circ} 52' 08''$ Lt.	$\theta = 3^{\circ} 45' 00''$	
$D = 3^{\circ} 45' 00''$	$L_s = 200.00'$	$L_s = 200.00'$	
$T = 603.49'$	$T_s = 786.64'$	$E_s = 102.60'$	
$L = 1149.50'$	$P = 1.09\%$	$R = 1527.89'$	
$E = 114.86'$	$K = 99.99'$	$e = 0.076'$	
$R = 1527.89'$	$X_c = 199.91'$	$L = 200'$	
$e = 0.076'$	$Y_c = 4.36'$	$x = 53'$	
$L = 200'$	$LT = 133.36'$		
$x = 53'$	$ST = 66.69'$		
	$LC = 199.96'$		

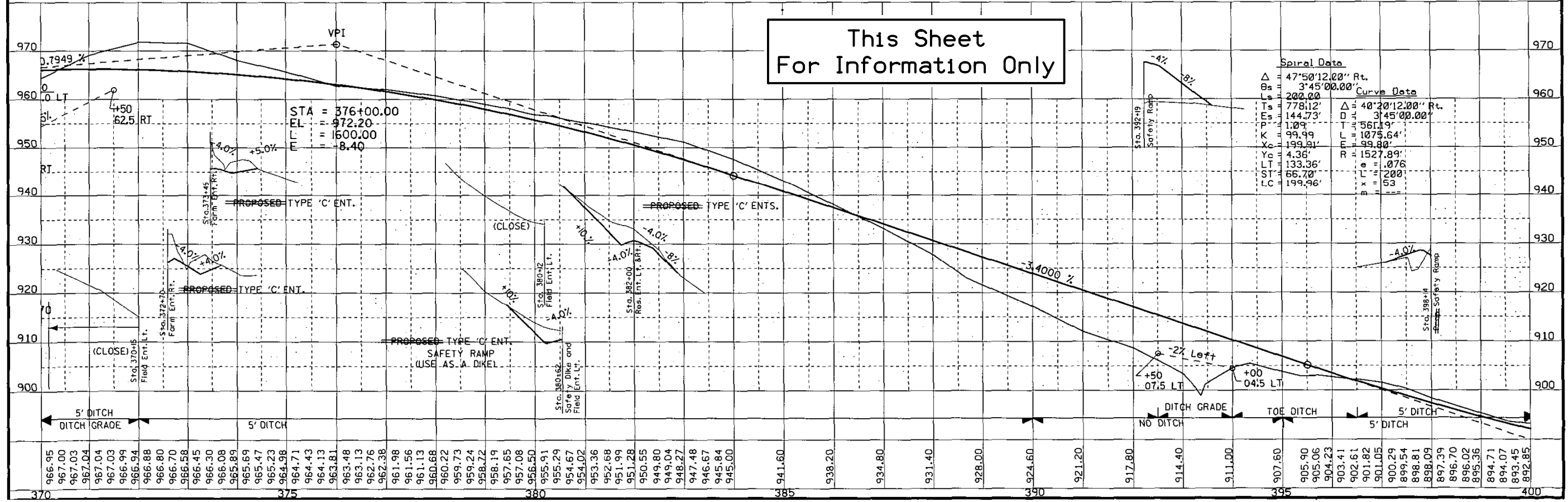
SEE SHEET D.13 FOR PROFILE

This Sheet For Information Only

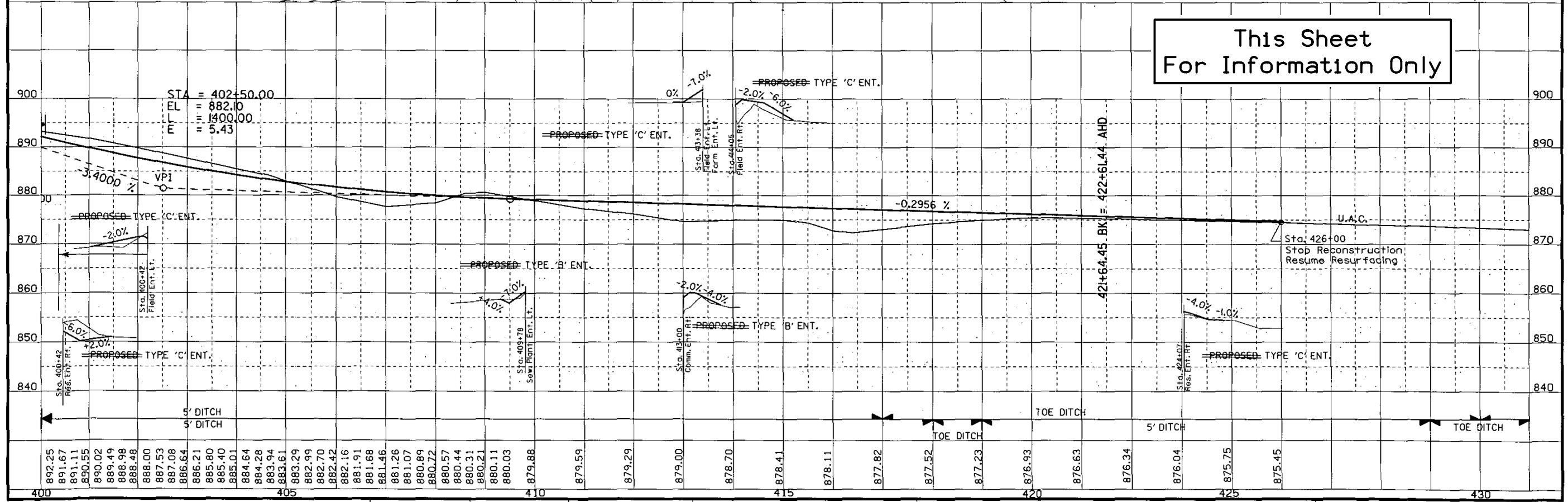
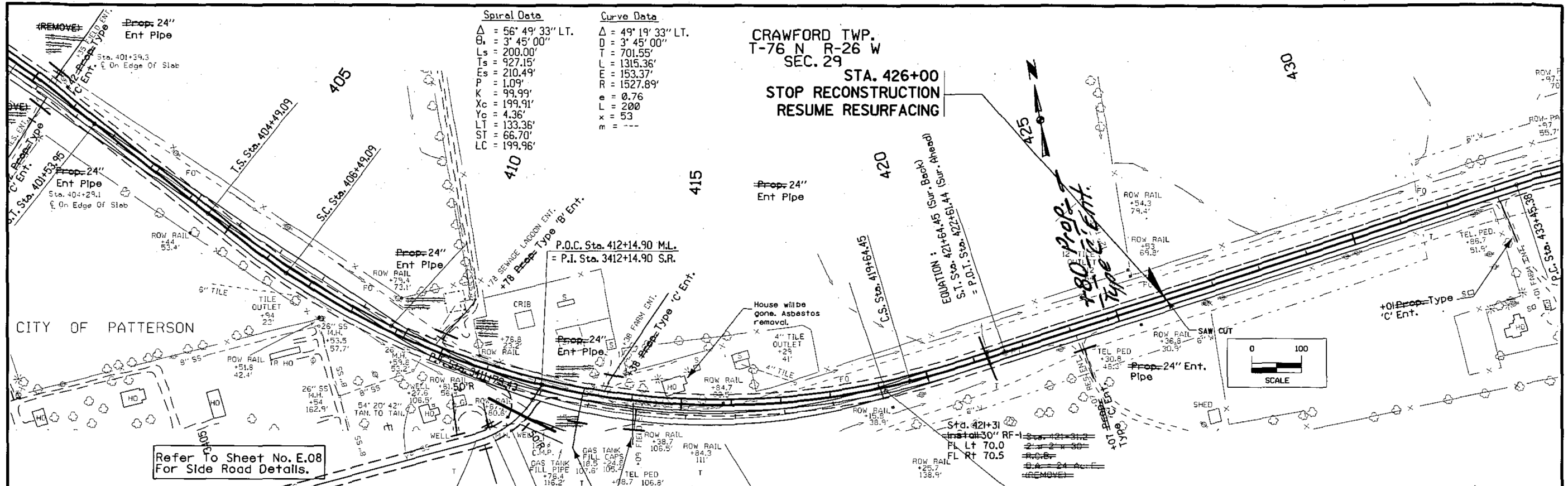
Existing Plans: STPN-92-4(19)--2J-61



This Sheet
For Information Only



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



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

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

497

485

490

465

470

475

480

P.O.T. Sta. 466+40.50

+90' Type 'C' Ent.
(Use as a dike)

Prop. 36' Uncl.

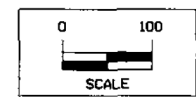
(Remove)
(Remove)

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

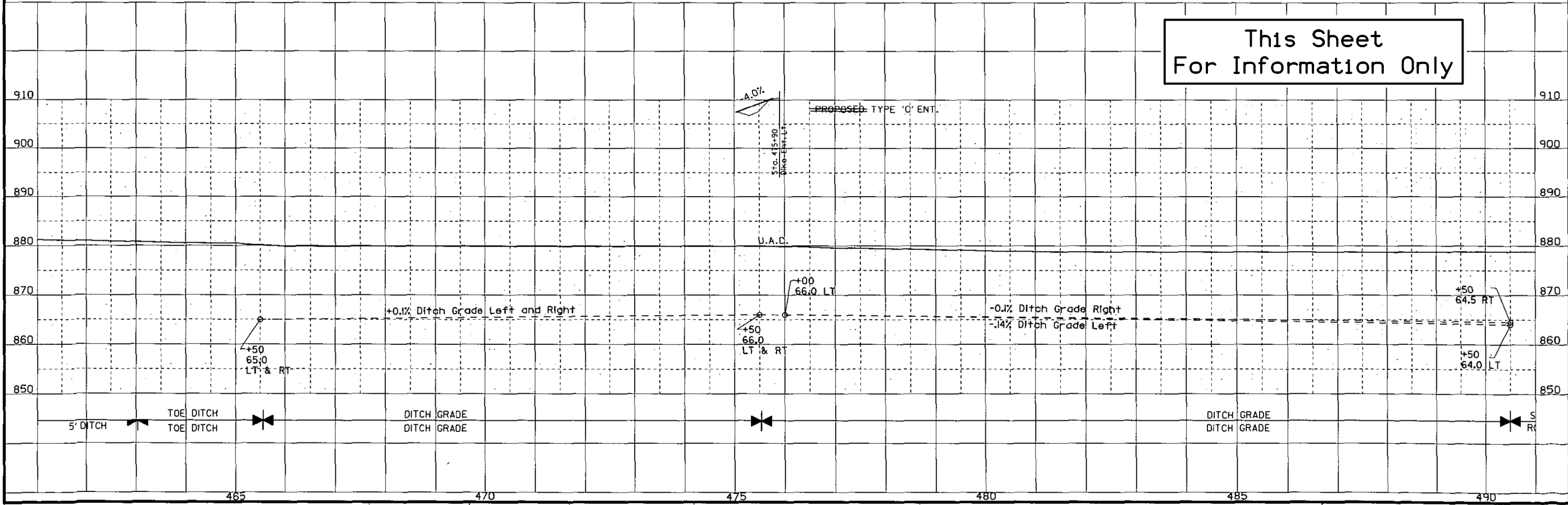
ROW RAIL
+83.5
30.6'

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

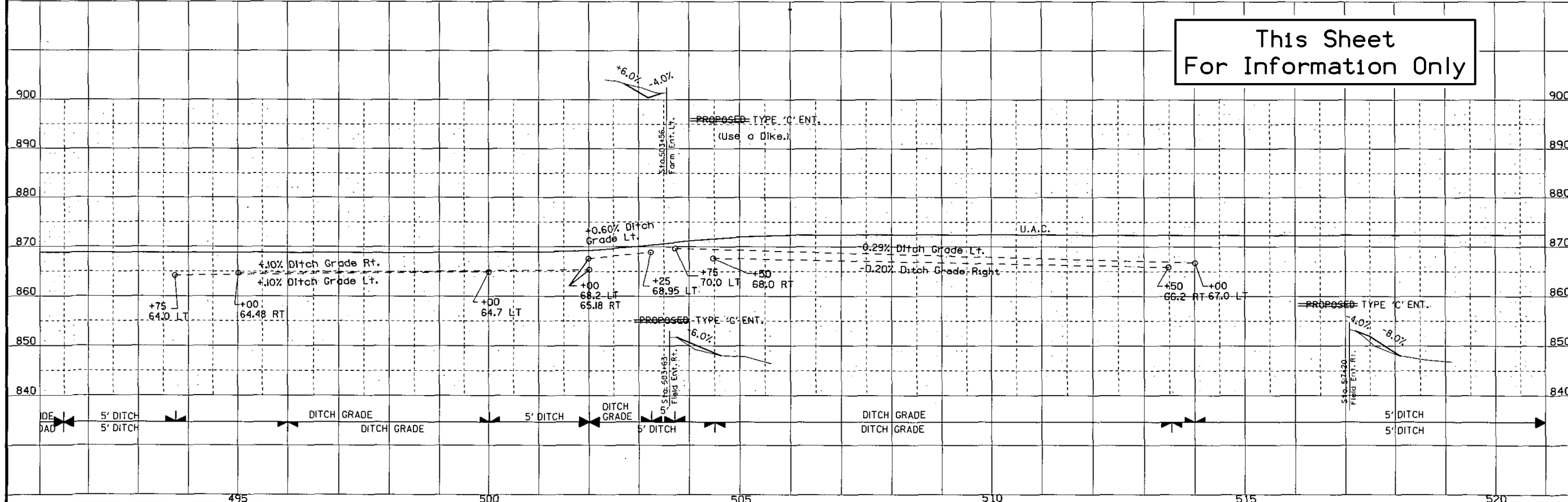
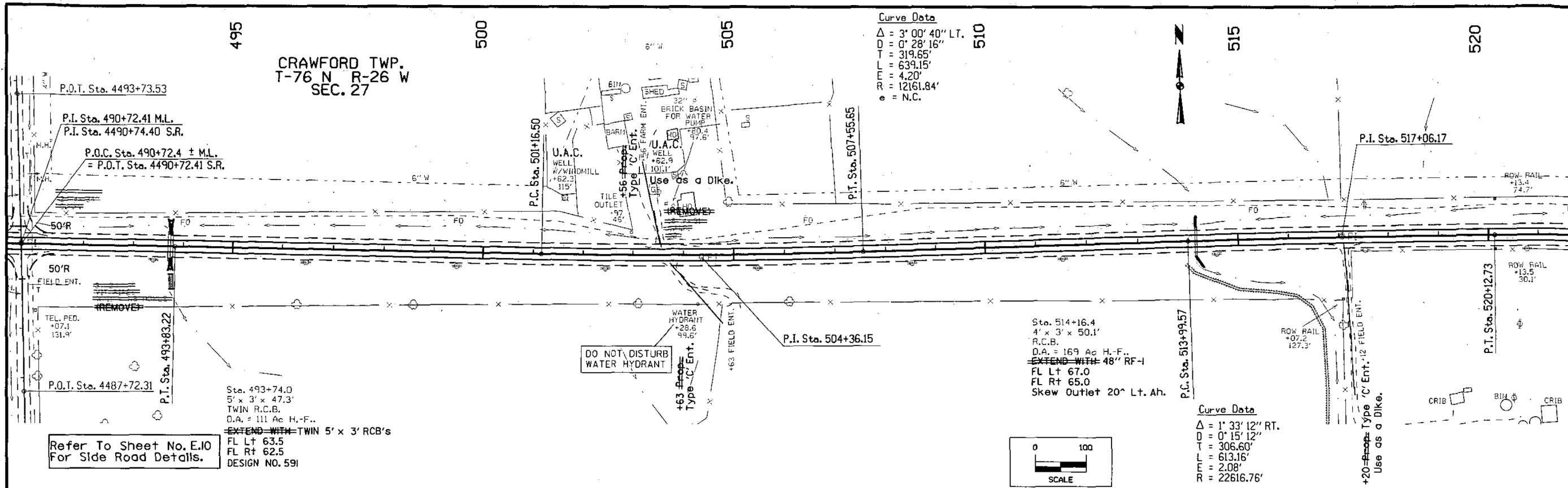
Curve Data
Δ = 1° 28' 04" RT.
D = 0° 14' 10"
T = 310.84'
L = 621.65'
E = 1.99'
R = 24266.45'



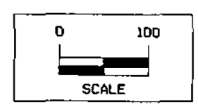
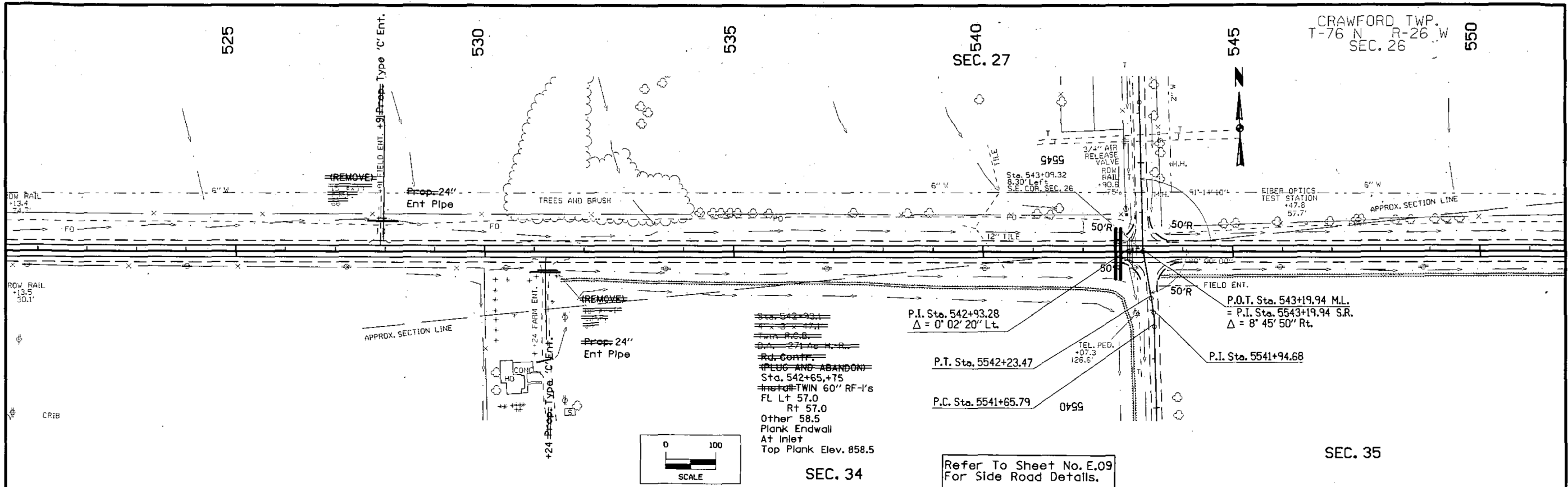
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For Information Only



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

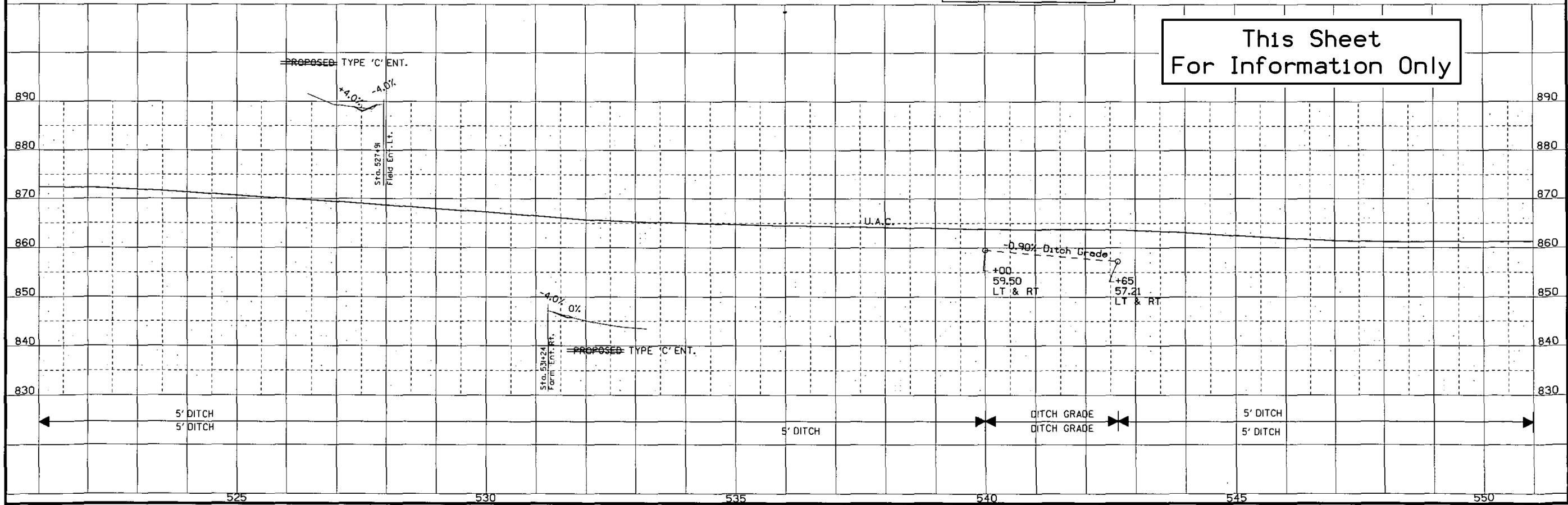


Existing Plans: STPN-92-4(19)--2J-61

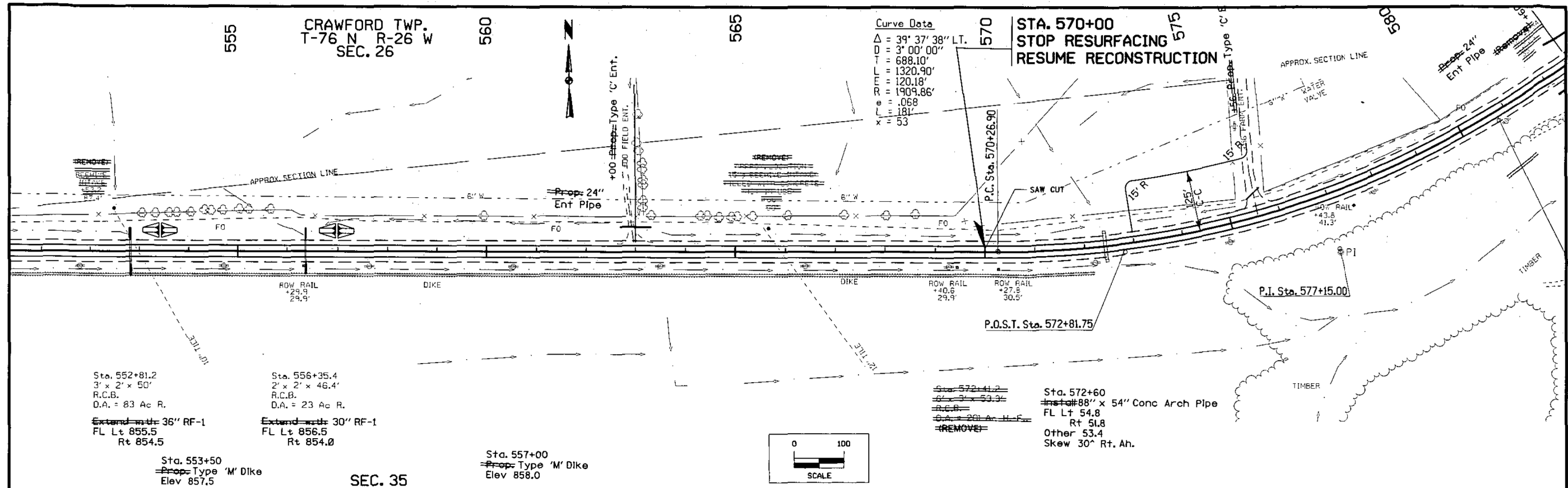


Refer To Sheet No. E.09
For Side Road Details.

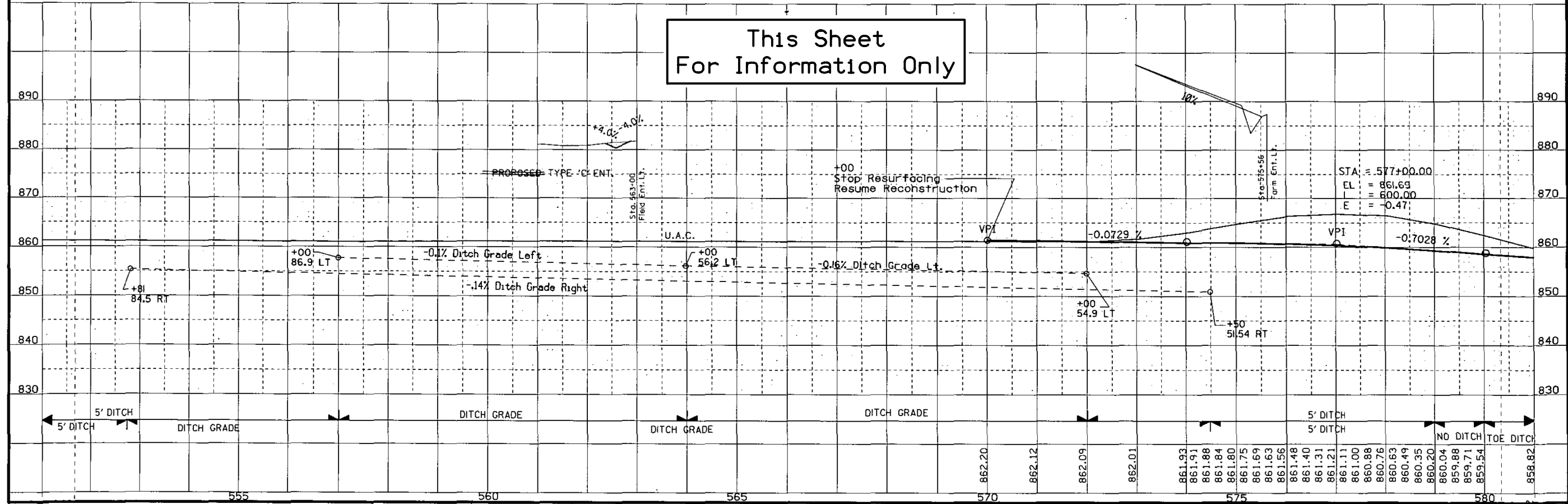
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For Information Only



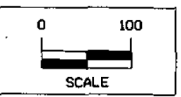
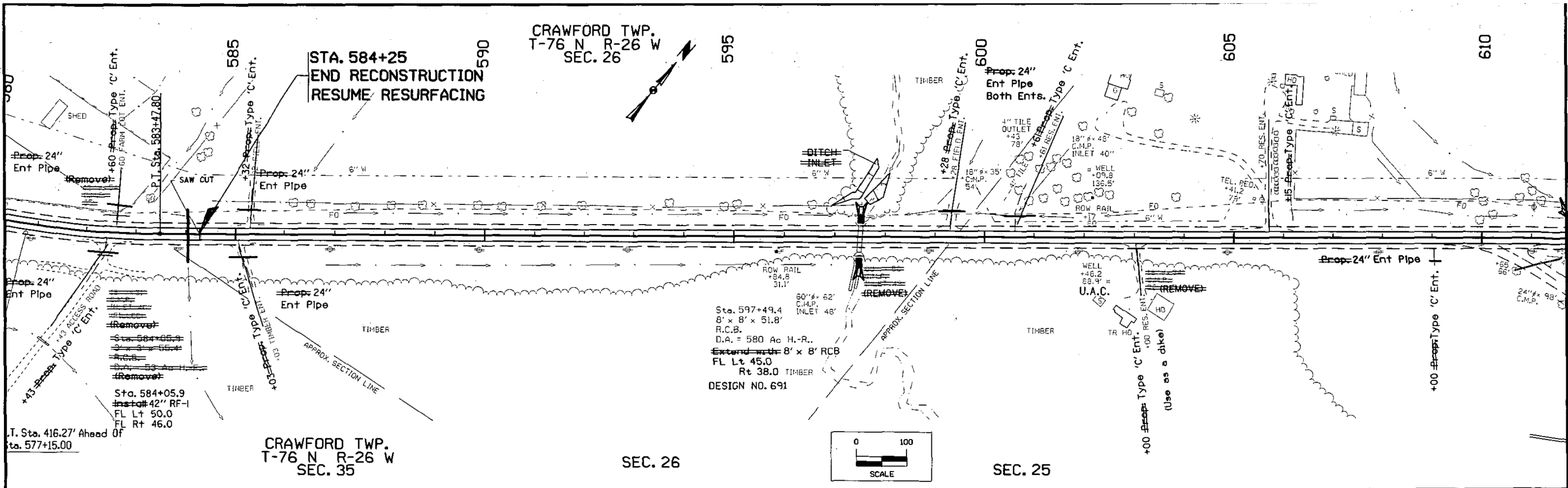
Existing Plans: STPN-92-4(19)--2J-61



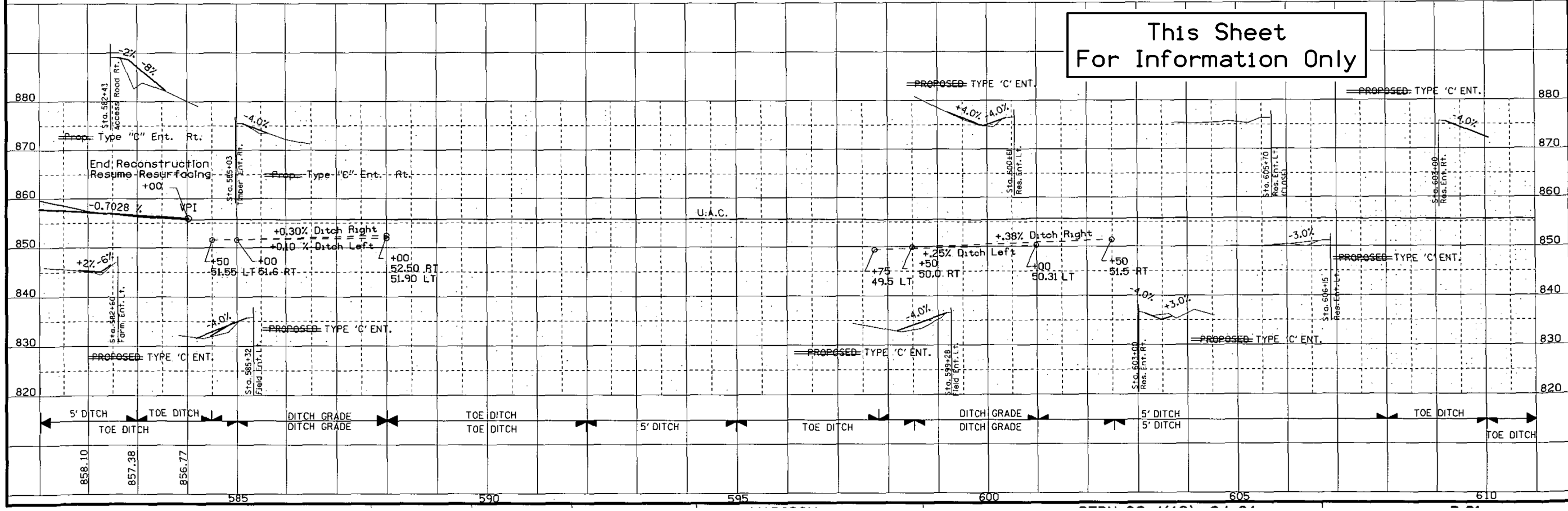
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For Information Only



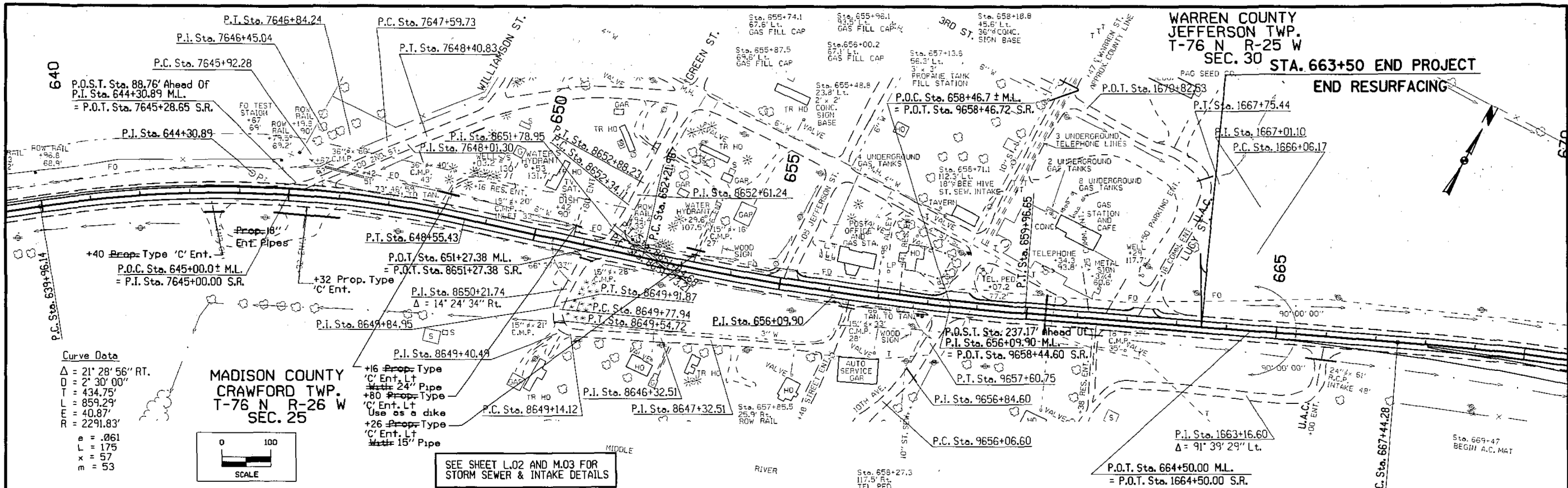
Existing Plans: STPN-92-4(19)--2J-61



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For Information Only



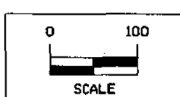
Existing Plans: STPN-92-4(19)--2J-61



WARREN COUNTY
JEFFERSON TWP.
T-76 N R-25 W
SEC. 30 STA. 663+50 END PROJECT
END RESURFACING

Curve Data
 $\Delta = 21^\circ 28' 56''$ RT.
 $D = 2' 30' 00''$
 $T = 434.75'$
 $L = 859.29'$
 $e = 40.87'$
 $m = 2291.83'$
 $a = .061$
 $L = 175$
 $x = 57$
 $m = 53$

MADISON COUNTY
CRAWFORD TWP.
T-76 N R-26 W
SEC. 25



SEE SHEET L.02 AND M.03 FOR
STORM SEWER & INTAKE DETAILS

Curve Data
 $\Delta = 7^\circ 44' 49.00''$ Lt.
 $D = 1' 00' 00.00''$
 $T = 437.74'$
 $L = 873.78'$
 $e = 16.70'$
 $m = 5729.58'$
 $a = R.C.$
 $L = 140$
 $x = 140$
 $m = 42$

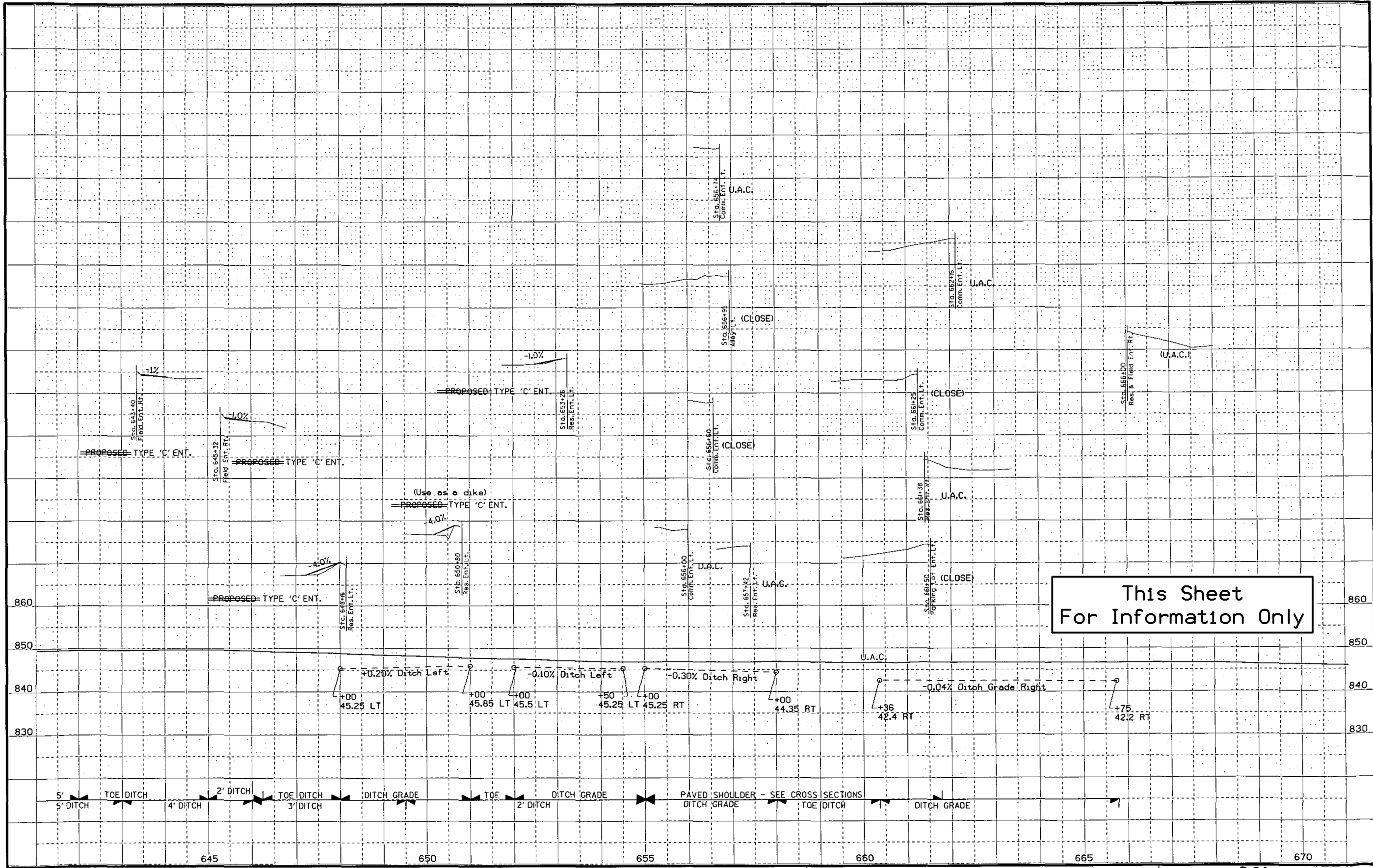
Sta. 657+90.9
26.1' R.C.
18" BEE HIVE
ST. SEW. INTAKE

Sta. 660+36.9
2' x 2' x 40.8'
R.C.B.
D.A. = 4 Ac F.

This Sheet
For Information Only

REFER TO SHEET NO. D24 FOR PROFILE DETAILS

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



This Sheet
For Information Only

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

108-23A
08-01-08

TRAFFIC CONTROL PLAN

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

Work is prohibited during the following special events. All lanes shall be returned to normal traffic patterns prior to Special Events:

A. RAGBRAI (July 22nd to July 23rd, 2019). No exposed milled surfaces will be allowed.

Note: The Contractor shall be responsible for contacting officials prior to all special events to confirm dates and plan not to work those dates.

111-01
04-17-12

COORDINATED OPERATIONS

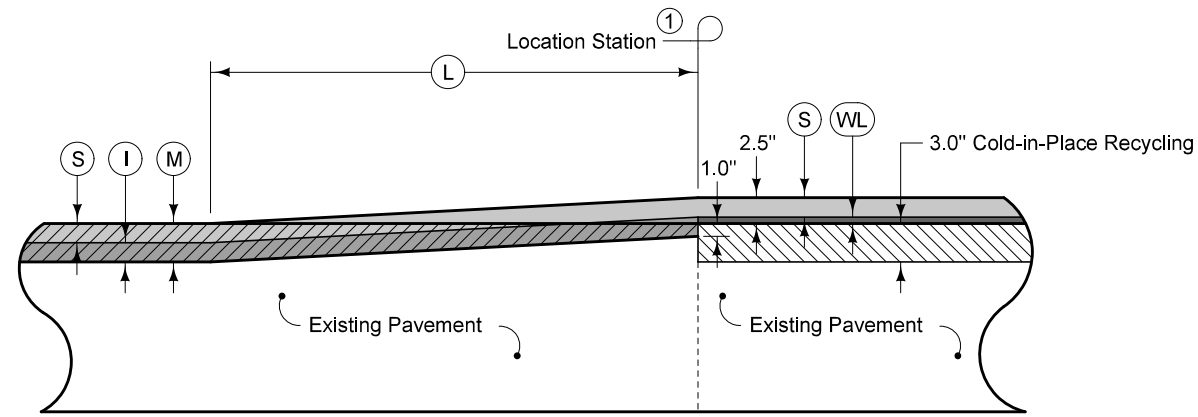
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

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*

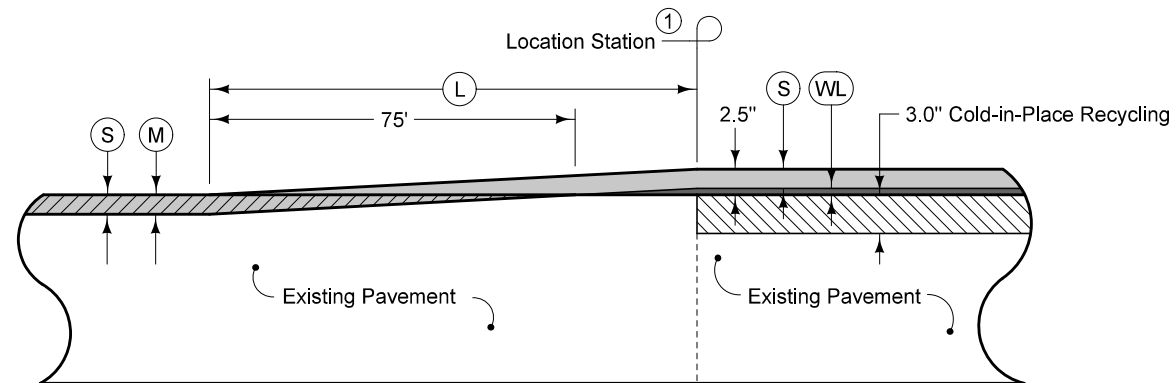
* Based on turning maneuvers at side roads and intersections.

Contract Items:

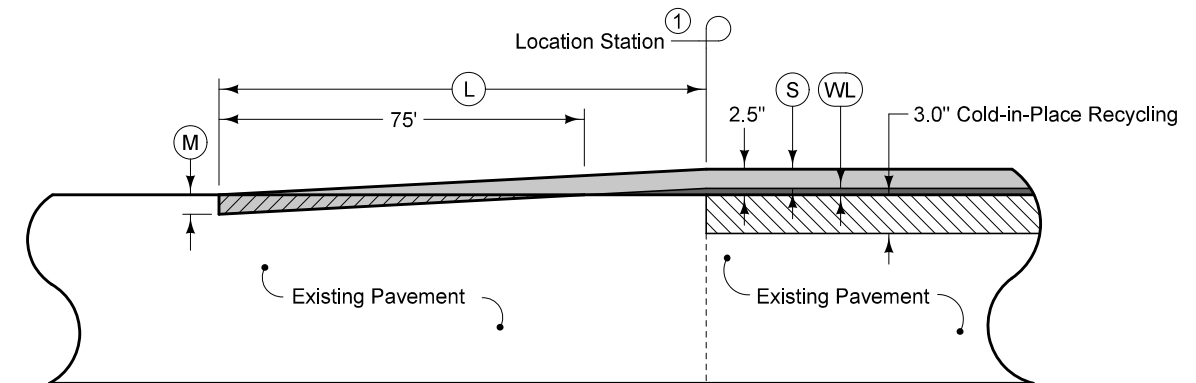
- Pavement Scarification
- Cold-in-Place Recycling
- Surface Course
- Intermediate Course
- Wedge, Level, and Strengthening Course

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**