

DESIGN DATA RURAL				
2027	AADT	1,800	V.P.D.	
2047	AADT	1,900	V.P.D.	
2027	DHV		V.P.H.	
TRUCKS		13	%	
Total				
Design ESALs		730,000		

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 5	Typical Sections and Details
C Sheets	Quantities and General Information
C.1 - 6	Estimated Project Quantities
C.7	Project Description
C.8	Index of Tabulations
C.9	Standard Road Plans
C.10 - 33	Project Tabulations
C.34 - 35	General Notes
D Sheets	Mainline Plan Sheets
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2 - 4	ML149_W (V66 to WCL Parnell) Plan Sheets
D.5 - 9	ML149 (NCL Parnell to SCL Williamsburg) Plan Sheets
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.2 - 3	Traffic Control Tabulations
U Sheets	500 Series, Mod.Stds. and Detail Sheets
U.1	Extended Paved Fillet Detail
U.2	Debris Removal
U.3 - 5	Existing Plan Typical Sections



PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

IOWA COUNTY

HMA RESURFACING WITH MILLING

Co. Rd. V66 to SCL Williamsburg

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
	63
PROJECT IDENTIFICATION NUMBER	
25-48-149-020	
PROJECT NUMBER	
STP-149-2(066)--2C-48	
R.O.W. PROJECT NUMBER	
--	

ROADWAY DESIGN	
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
Signature	8-14-2026 Date
Printed or Typed Name	
My license renewal date is December 31, 2027	
Pages or sheets covered by this seal: All	

EQ: Sta. 442+30.70 (BK)
= Sta. 429+99.98 (AH)

FHWA Bridge No.
29471

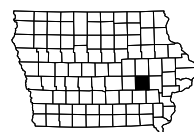
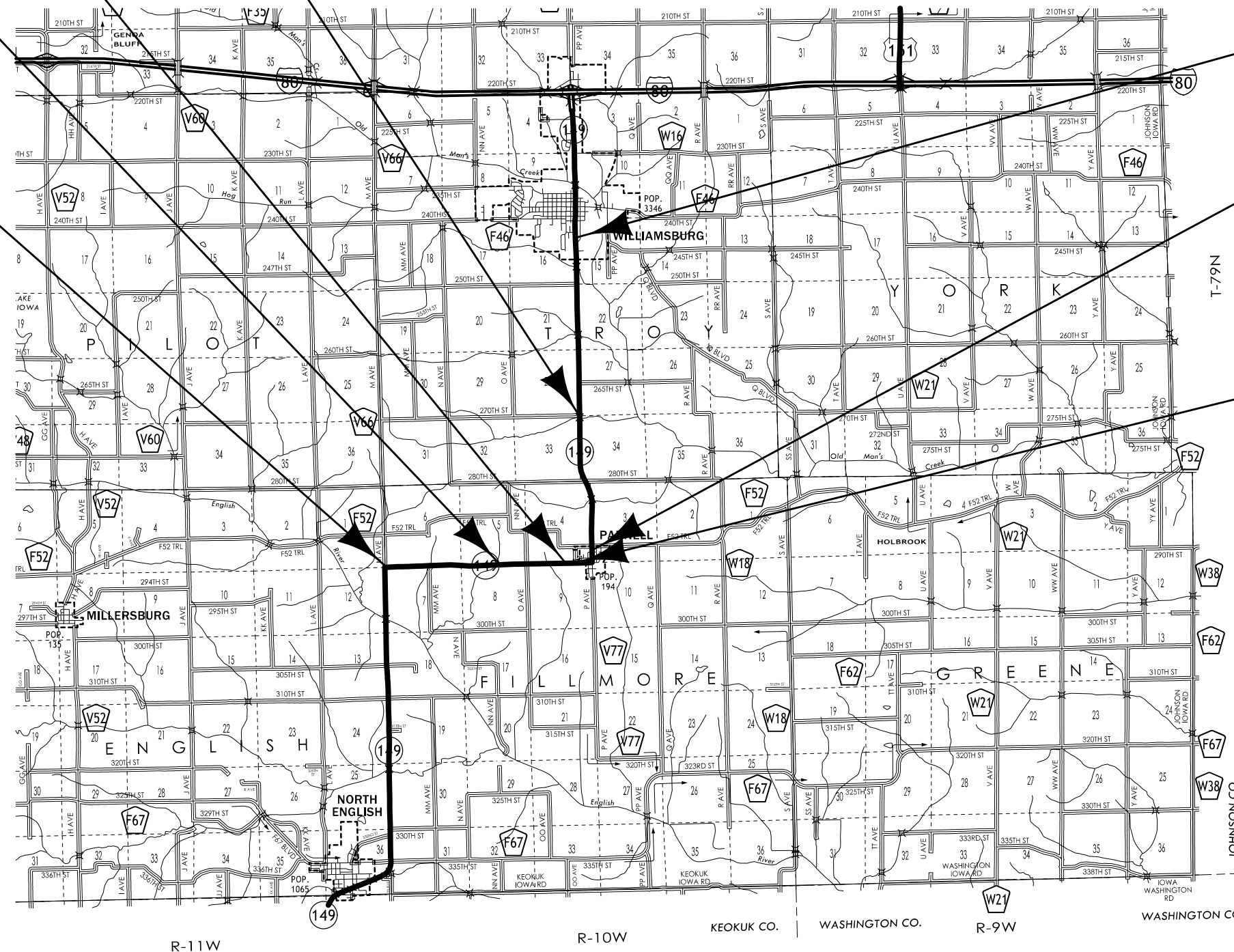
EQ: Sta. 403+35.96 (BK)
= Sta. 403+31.35 (AH)

Begin Project
Sta. 295+44.00
Milepost 55.71

End Project
Sta. 715+16.70
Milepost 64.10

Resume Paved Shoulder
Sta. 461+03.50
Milepost 59.30

Stop Resurfacing
and Paved Shoulder
Sta. 437+05.00
Milepost 58.92

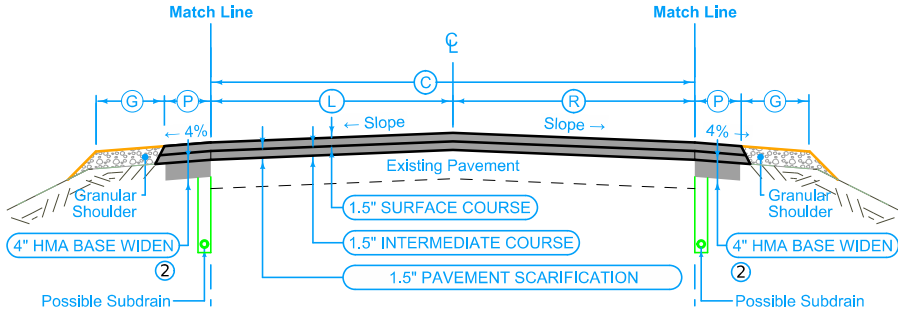


- ① REFER TO TABULATION 100-25 FOR SCARIFICATION QUANTITIES
② REFER TO TABULATION 106-05 FOR BASE WIDENING QUANTITIES

Combination Shoulder

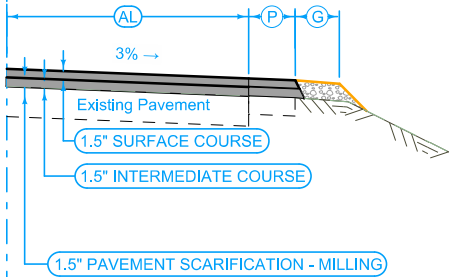
3R_Shldr_C_Overlay_04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
295+44.00	403+35.96 BK	4.0	6.0
403+31.35 AH	442+30.70 BK	4.0	6.0
429+99.98 AH	433+50.00	4.0	6.0

3R_MillingOverlay_04-19-11					
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet	Pavement Scarification SY
295+44.00	403+35.96 BK	24.0	12.0	12.0	①
403+31.35 AH	442+30.70 BK	24.0	12.0	12.0	①
429+99.98 AH	433+50.00	24.0	12.0	12.0	①



Combination Shoulder

3R_Shldr_C_Overlay_04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
295+44.00	403+35.96 BK	4.0	6.0
403+31.35 AH	442+30.70 BK	4.0	6.0
429+99.98 AH	432+95.75	4.0	6.0
432+95.75	433+50.00	4.0	6 - 2



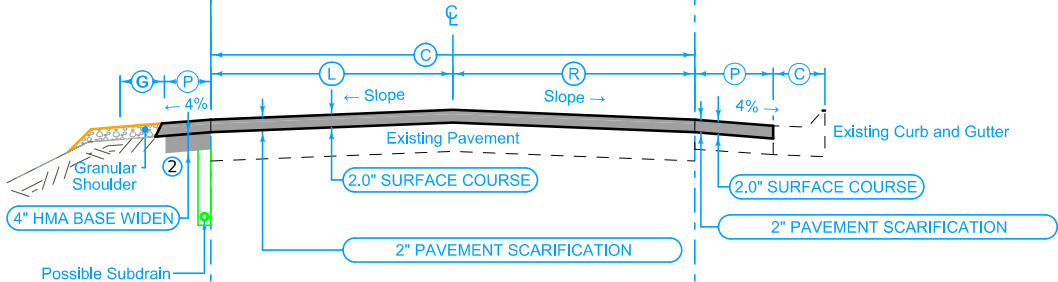
Aux. Lane Resurface

3R_MillingOverlay_MODIFIED				
STATION TO STATION		(AL) Feet	(P) Feet	Pavement Scarification SY
295+44.00	324+75.00	12.0	6.0	①
324+75.00	329+55.00	12.0 - 0.0	6.0	①

Combination Shoulder

3R_Shldr_C_Overlay_04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
433+50.00	434+65.00	4.0	6.0

3R_MillingOverlay_04-19-11					
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet	Pavement Scarification SY
433+50.00	437+05.00	24.0	12.0	12.0	①



Shoulder Resurface with Curb

3R_Shldr_C_Overlay_Modified			
STATION TO STATION		(P) Feet	(C) Feet
433+50.00	436+15.00	6.0	UAC
436+15.00	437+05.00	6 - 2	UAC

- ①
- REFER TO TABULATION 112-9 FOR PAVED SHOULDER DIMENSION AT GUARDRAIL
- ②
- REFER TO STANDARD ROAD PLAN PV-301 AND SHEET G.4 FOR SHOULDER SLOPES WITHIN LIMITS OF SUPERELEVATED CURVES.

Combination Shoulder

3R_Shldr_C_Overlay_ 04-19-11			
STATION TO STATION		P Feet	G Feet
461+03.50	564+56.00	4.0	6.0
570+63.60	714+58.65	4.0	6.0
714+58.65	715+16.70	4 - 2	6 - 2

Paved Shoulder at Guardrail

HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION		P Feet ①
564+56.00	566+48.00	VAR.
568+54.14	570+63.60	VAR.

Combination Shoulder

3R_Shldr_C_Overlay_ 04-19-11			
STATION TO STATION		P Feet	G Feet
461+03.50	564+32.00	4.0	6.0
569+70.30	616+77.00	4.0	6.0
621+20.00	708+12.23	4.0	6.0

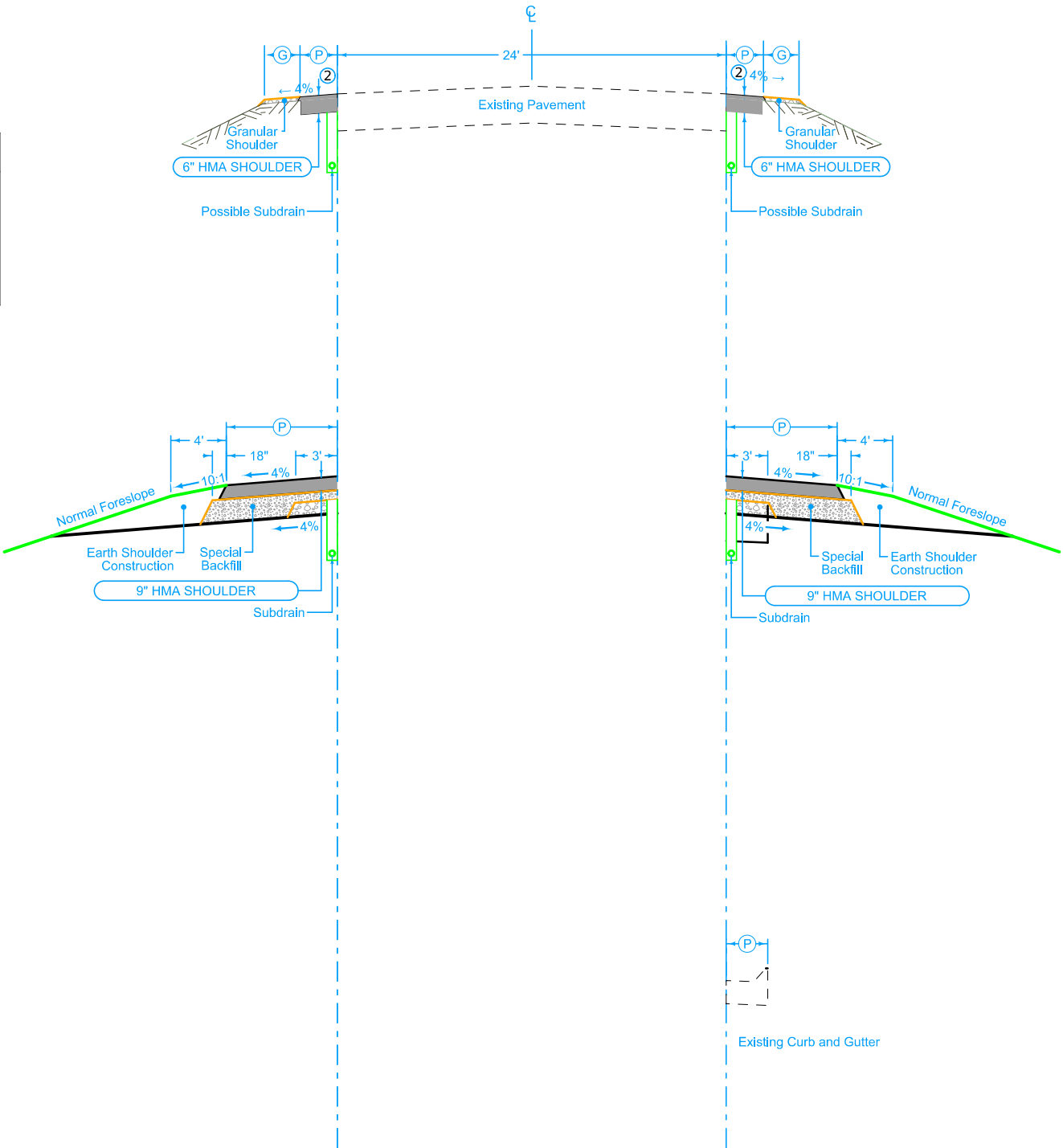
Paved Shoulder at Guardrail

HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION		P Feet ①
564+32.00	566+48.00	VAR.
568+53.70	569+70.30	VAR.

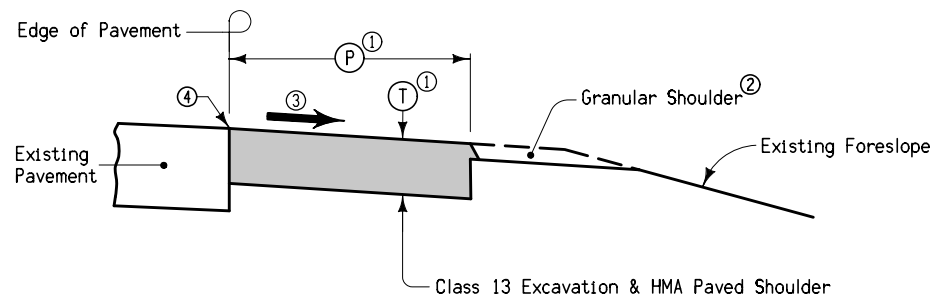
U.A.C. Curbed Shoulder

2_Curb_ 04-15-25			
STATION TO STATION		P Feet	Curb Type See PV-102
616+77.00	621+20.00	10.0	U.A.C.
708+12.23	715+16.70	3.0	U.A.C.



■ = HMA Paved Shoulder

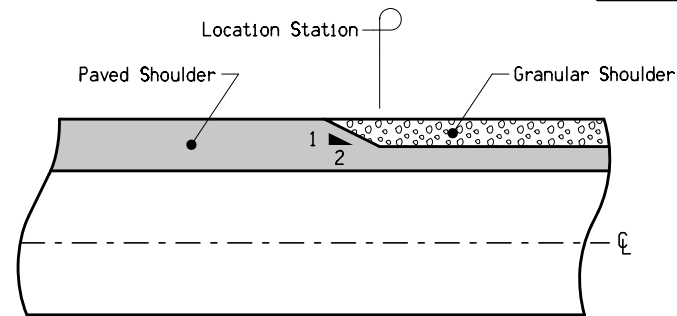
7152
MODIFIED



- ① Refer to Tab. 112-9 for locations, dimensions, bid items, and quantities.
- ② Refer to Typ. 7135 or Typ. 7145.
- ③ Slope at 4% for normal section. Refer to Standard Road Plans for requirements through superelevated curves.
- ④ Provide a vertical edge. Incidental to Class 13 Excavation.

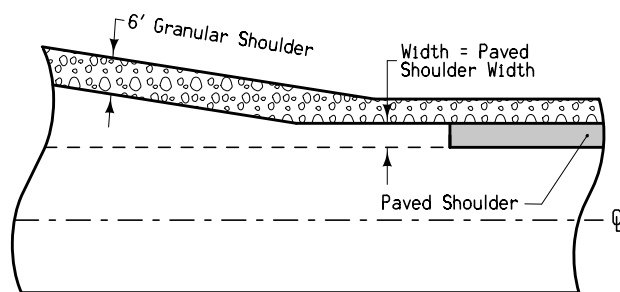
**TYPICAL SECTION
RETROFIT PAVED SHOULDER**

7154-C

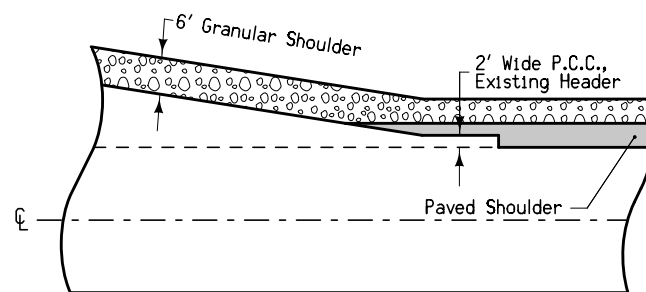


**TRANSITION FROM PARTIAL-WIDTH
PAVED SHOULDER TO FULL-WIDTH
PAVED SHOULDER**

7154A
10-20-09



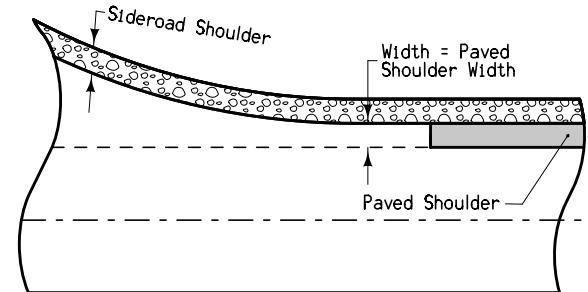
With Newly Constructed Turn Lanes



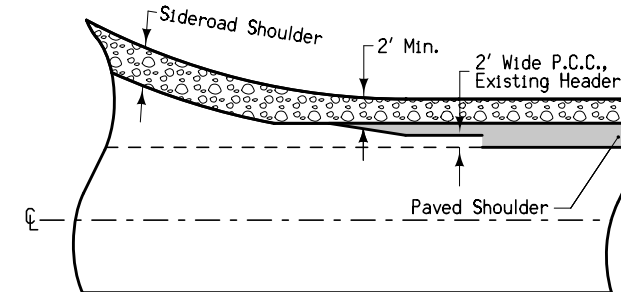
At UAC Turn Lanes

**PAVED SHOULDER
DETAIL AT
TURN LANES**

7154B
10-20-09



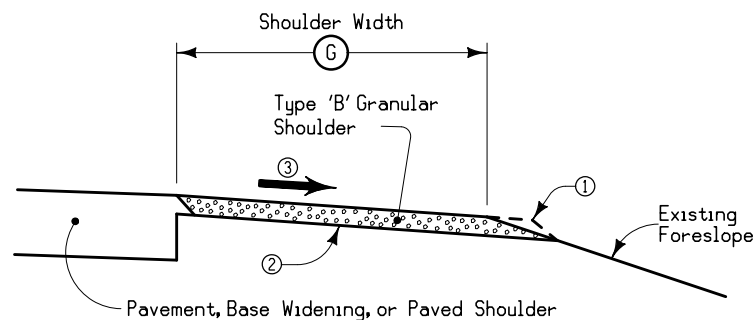
With Newly Constructed Returns



At UAC Returns

**PAVED SHOULDER
DETAIL AT RETURNS**

7135
MODIFIED



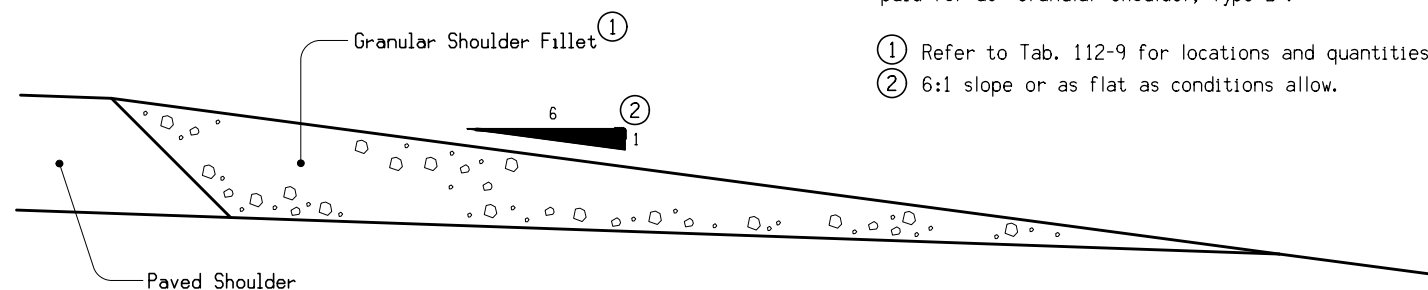
**TYPICAL SECTION
FOR TYPE 'B'
GRANULAR SHOULDER**

- ① Place and compact material to the dashed lines; then blade and shape to existing foreslope that portion above the solid line. Finished slope shall be 6:1 or as flat as conditions allow.
- ② Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material.
- ③ Slope at 4% for normal section. Refer to Standard Road Plans for requirements through superelevated curves.
- ④ Refer to Tab. 112-9 for locations, dimensions, bid items, and quantities.

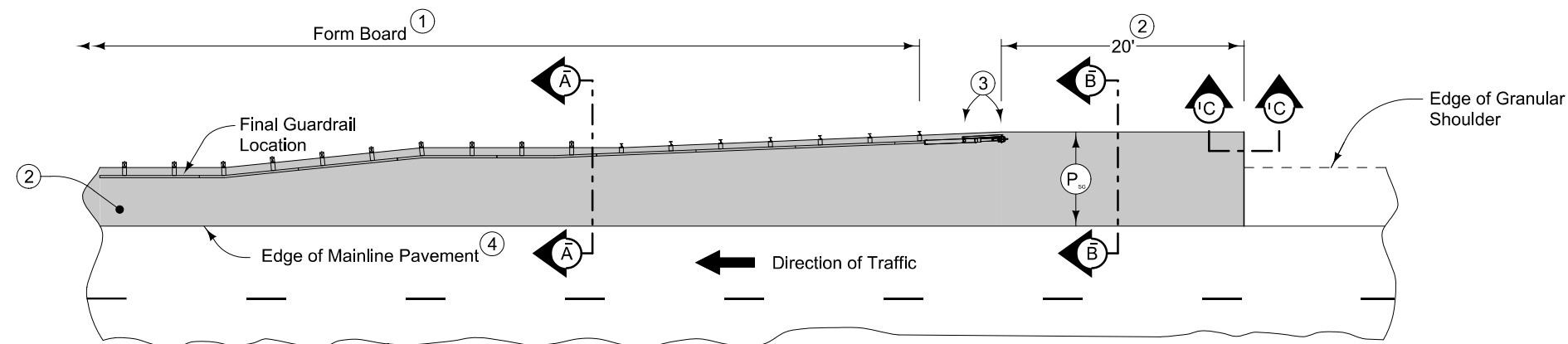
7145
MODIFIED

Notes:
This typical illustrates the construction requirements for a granular fillet at the edge of a full-width paved shoulder.
The granular fillet will be measured and paid for as "Granular Shoulder, Type B".

- ① Refer to Tab. 112-9 for locations and quantities.
- ② 6:1 slope or as flat as conditions allow.



**GRANULAR
SHOULDER FILLET**



PLAN VIEW

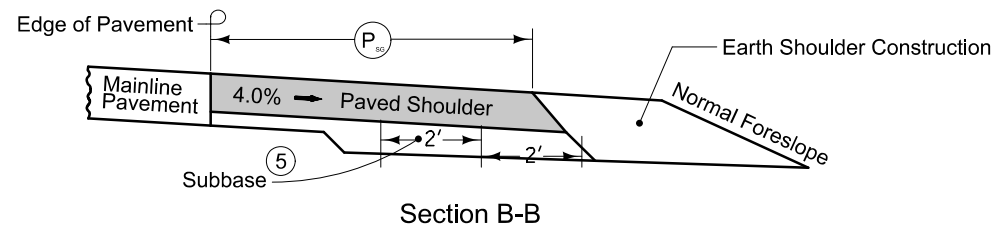
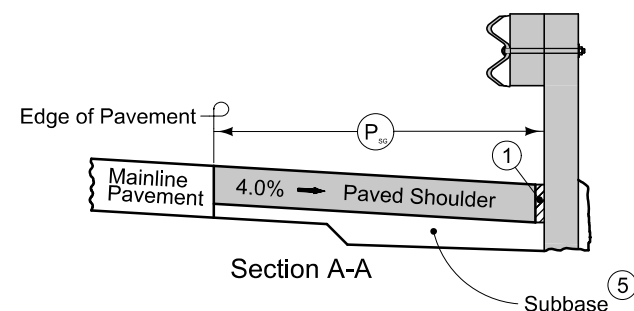
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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

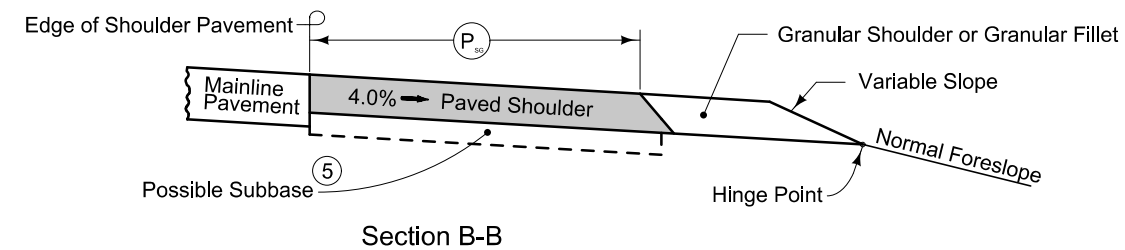
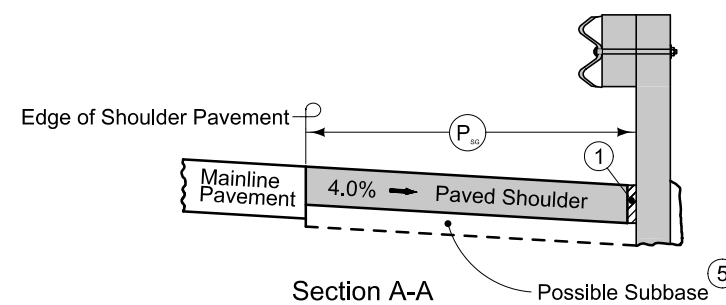
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

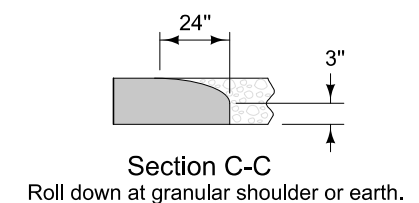
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT-1 joint for PCC shoulder. 'B' joint for HMA shoulder.
- ⑤ Refer to other details in the plan.



NEW CONSTRUCTION



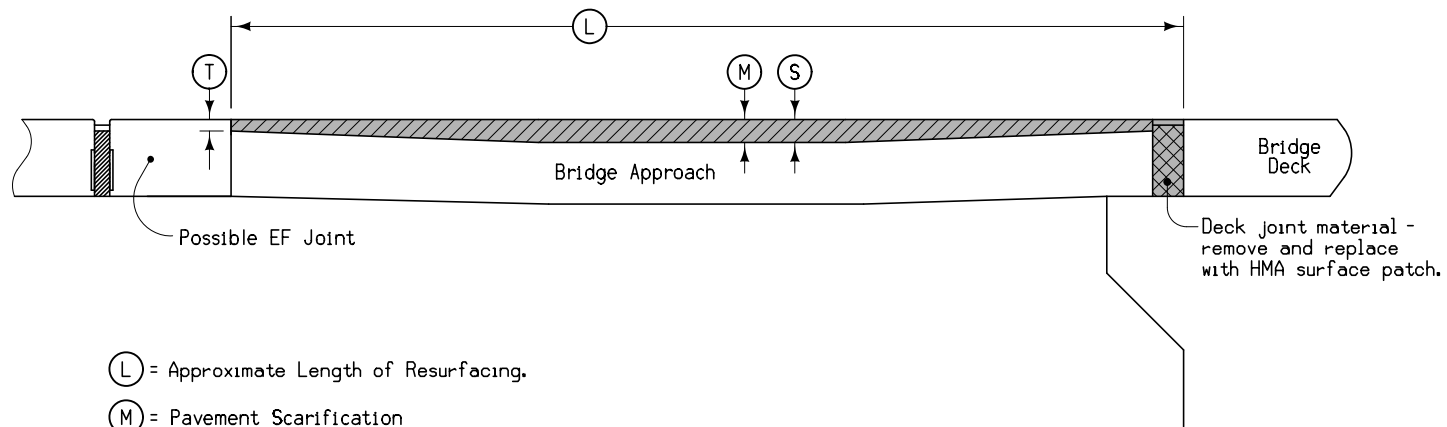
EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL
(GRANULAR SHOULDER ADJACENT TO MAINLINE)

  = Pavement Scarification

7307
MODIFIED



- (L) = Approximate Length of Resurfacing.
(M) = Pavement Scarification
(S) = Surface Course (Average Thickness)
(T) = Depth of Surface Notch shall be 1.5".

**LONGITUDINAL SECTION FOR
HMA RESURFACING
AT BRIDGE APPROACH**

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Division 1 : STP-149-2(066)--2C-48
Division 2 : Iowa County - Agreement 2026-C-127
Division 3 : Iowa DOT HSIPX-149-2(065)--3L-48
Division 4 : STP-149-2(066)--2C-48 Non-Participating

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	59.3				59.3	Provide borrow material according to Section 2102 of the Standard Specifications. Refer to Tabulation 107-23. Material shall be provided by the Contractor.
2	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	214.9	127.3			342.2	Refer to Tabulations 112-09, and 100-25, and Sheets B.2, and U.1. Item is for construction of paved shoulder at guardrail (214.9 CY) and extended paved fillets (127.3 CY). Dispose of excess material according to Article 1106.07 of the current specifications.
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	166.7				166.7	Refer to Tabulations 103-10 and 107-23.
4	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	8,148.6				8,148.6	Refer to Typical 7135 and 7145 and Tabulation 112-9.
5	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY			20,743.3		20,743.3	Refer to Tabulation 112-09. Item is for paved shoulders outside limits of HMA resurfacing.
6	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	867.7				867.7	Refer to Tabulation 112-9.
7	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	7.34				7.34	Refer to Tabulation 112-09. Item is for construction of earth shoulders adjacent to guardrail paved shoulders. Material is included in bid items for embankment in place and topsoil. Top 6" shall be topsoil.
8	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	3.2				3.2	This bid item includes: 3.2 miles of two lane roadway 3.2 miles total
9	2212-5075001	HOT MIX ASPHALT SURFACE PATCHES	TON	14				14	Item is for patching of the scarified surface.

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
10	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	5,014.4				5,014.4	Refer to Tabulation 106-05 and Tabulation 112-09. Quantity includes 1479.3 CY for paved shoulders within the resurfacing limits and 3535.1 CY for paved shoulders outside the resurfacing limits.
11	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE	TON			2,995.5		2,995.5	Refer to Tabulation 106-05.
12	2214-5145150	PAVEMENT SCARIFICATION, NOMINAL THICKNESS	SY	46,764.2				46,764.2	Refer to Tabulations 100-25 and 102-16.
13	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	5,144.7	193.4			5,338.1	Refer to Tabulation 100-25. Contractor to contact Iowa County Secondary Roads for assistance laying out paved fillets shown on Sheet U.1 prior to paving.
14	2303-1033504	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4	TON	5,552.5	66.6			5,619.1	
15	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	641.83	15.6	179.73		837.16	
									Refer to Tabulations 100-25 and 106-05. Item is 6% of HMA items.
16	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1				1	
17	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR)	EACH	10,697.2				10,697.2	
18	2303-7000620	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE FIELD VOIDS (FORMULA - BY PAY FACTOR)	EACH	10,697.2				10,697.2	
19	2303-9091010	RUMBLE STRIP PANEL (HMA SURFACE)	EACH	2				2	Refer to Tabulation 112-07. Method of Measurement: Item shall be counted by each location installed according to the plans. Basis of Payment: Payment shall be full compensation for each sinusoidal Rumble Strip Panel installed.
20	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE)	EACH	11,223.4				11,223.4	

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
21	2401-6745355	REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS	EACH	4				4	Refer to Tabulation 190-62 for locations and details. This item shall consist of removal of concrete footings for steel breakaway sign support posts. Concrete footings or parts of concrete footings removed shall become the property of the Contractor, and shall be removed in accordance with Article 1104.08. Unless otherwise provided or ordered, concrete footings for steel breakaway sign support posts shall be removed 1 foot below natural ground surface. Where portions of the existing concrete footings lie wholly or in part within limits for a new structure (culvert, concrete footing, or other), they shall be removed as necessary to accommodate construction of the proposed structure. Holes remaining from the removal of concrete footings for steel breakaway sign support posts shall be backfilled with suitable earth to the original level or to the natural ground surface in accordance with Article 2402.09. Measurement: The Engineer will count each concrete footing for steel breakaway sign support post removed. Payment: For each concrete footing for steel breakaway sign support post removed, the Contractor shall be paid the contract unit price. This payment shall be full compensation for furnishing all material, equipment, and labor and for the performance of all work necessary for removal of the concrete footings from the project and for any backfilling made necessary by these operations.
22	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	1				1	Refer to Tabulation 104-3.
23	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	1				1	Refer to Tabulation 104-3.
24	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	6				6	Refer to Tabulation 104-3.
25	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	240				240	Refer to Tabulation 104-3.
26	2499-4000036	SLIPLINING EXISTING CULVERTS, LESS THAN OR EQUAL TO 36 IN. DIA. OR HEIGHT	LF	43				43	Refer to Tabulation 104-3 and DS-23028.
27	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	25,775				25,775	Refer to Tabulation 104-9A.
28	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	100				100	Refer to Tabulation 104-09A.
29	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	260				260	Refer to Tabulation 110-7A.
30	2505-4008300	STEEL BEAM GUARDRAIL	LF	262.5				262.5	Refer to Tabulation 108-08A.

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
31	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	4				4	
32	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4				4	
33	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	3				3	
34	2505-4021721	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206	EACH	1				1	
35	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	4				4	Refer to Tabulations 190-51 and 190-61. The Contractor shall remove each sign and the hardware used to secure the sign to another sign, posts, or sign support structure. For signs mounted directly to posts, removal of the sign shall include removal of the posts. Posts may be either wood posts or steel breakaway sign posts. The removal of concrete footings for steel breakaway sign posts will be measured and paid for separately. All steel posts removed shall become the property of the Contractor. The Contractor shall furnish all necessary hardware to install the signs. When the new installation is similar to the original installation, unless otherwise noted, the existing hardware may be used to reinstall the sign. Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials shall be new. The DOT will furnish all details necessary for fabrication of the replacement materials. METHOD OF MEASUREMENT: The Engineer will count each sign removed and reinstalled. BASIS OF PAYMENT: For each sign removed and reinstalled, the Contractor shall be paid the contract unit price.
36	2524-6765110	REMOVAL OF TYPE A SIGN	EACH				3	3	Refer to Tabulation 190-62 for location and details. Item is for the removal of sheet aluminum, galvanized sheet or plywood sign panel from its support structure ie: wood/steel posts, overhead truss or another sign and for delivery to DOT storage facility. Measurement: Each. The Engineer will count the number of Type A sign panels removed. Payment: The Contractor will be paid the contract unit price for each Type A sign panel removed.
37	2524-9276010	PERFORATED SQUARE STEEL TUBE POSTS	LF	56				56	Refer to Tabulation 190-51 for locations and details.

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
38	2524-9276027	PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY	EACH	4				4	
39	2524-9325001	TYPE A SIGNS, SHEET ALUMINUM	SF	60				60	Refer to Tabulation 190-51 and 190-66 for locations and details.
40	2526-8285010	CONSTRUCTION SURVEY, MONUMENT PRESERVATION	LS	1				1	
41	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	2,978.89				2,978.89	Refer to Tabulation 108-22.
42	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	993.31				993.31	
43	2528-8445110	TRAFFIC CONTROL	LS	1				1	Refer to Traffic Control Plan on Sheet J.1.
44	2528-8445113	FLAGGERS	EACH	0				0	See Proposal.
45	2528-8445115	PILOT CARS	EACH	0				0	
46	2528-8445116	FLAGGER WITH AFAD	EACH	0				0	See Proposal
47	2533-4980005	MOBILIZATION	LS	1				1	--
48	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL			812		812	Refer to Tabulation 112-10.
49	2548-0000170	MILLED SHOULDER SINUSOIDAL RUMBLE STRIPS, HMA SURFACE	STA			749.62		749.62	
50	2548-0000357	MILLED CENTERLINE SINUSOIDAL RUMBLE STRIPS, HMA SURFACE	STA	145.61				145.61	
51	2549-0025000	DEBRIS REMOVAL, TRANSPORTATION, AND DISPOSAL	TON	389				389	Refer to Sheet U.2 for details.
52	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	1,220				1,220	Refer to Tabulation 100-19. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 20 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
53	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	1,220				1,220	Refer to Tabulation 100-19. Quantity includes additional 25% for field adjustments.

100_01D
8/15/22

PROJECT DESCRIPTION

This project is located on IA 149 in Iowa County from County Rd. V66 to Williamsburg.

The work includes longitudinal subdrain, culvert repairs, HMA milling, HMA resurfacing, HMA paved shoulders, HMA bridge approach leveling, granular shoulders, steel-beam guardrail removal and installation, milled centerline and shoulder rumble strips, pavement markings, sign replacement and debris removal.

Division 2 is for Extended Paved Fillets at Iowa County Secondary Road intersections per agreement 2026-C-127.

Division 3 is for paved shoulders being funded separately under HSIPX-149-2(065)--3L-48.

Division 4 is for non-participating sign removals.

INDEX OF TABULATIONS				111_25 10/20/26
Line No.	Tabulation	Tabulation Title	Sheet No.	
1.0	100_01D	PROJECT DESCRIPTION	C.7	
2.0	100_19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.18	
3.0	100_25	HMA PAVEMENT	C.21	
4.0	100_27	PROPOSED POSTED SPEED LIMIT	C.10	
5.0	102_05	EXISTING PAVEMENT	C.11	
6.0	102_05A	EXISTING HMA PAVEMENT FOR RECYCLING	C.12	
7.0	102_16	NOTCHES AND RUNOUTS FOR RESURFACING	C.20	
8.0	103_10	TOPSOIL STRIPPING AND PLACEMENT	C.17	
9.0	104_03	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.15	
10.0	104_09A	LONGITUDINAL SUBDRAIN SHOULDER	C.13	
11.0	105_04	STANDARD ROAD PLANS	C.9	
12.0	106_05	AREAS FOR PAVEMENT OR BASE WIDENING	C.19	
13.0	107_23	GRADING FOR GUARDRAIL INSTALLATIONS	C.16	
14.0	108_08A	STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION	C.23	
15.0	108_22	PAVEMENT MARKING LINE TYPES	C.28	
16.0	110_07A	REMOVAL OF STEEL BEAM GUARDRAIL	C.33	
17.0	111_25	INDEX OF TABULATIONS	C.8	
18.0	112_07	RUMBLE STRIP PANELS	C.27	
19.0	112_09	SHOULDERS	C.24	
20.0	112_10	MILLED RUMBLE STRIPS	C.26	
21.0	190_51	MATERIALS FOR TYPE A SIGNS	C.30	
22.0	190_61	EXISTING SIGNS TO BE REINSTALLED	C.32	
23.0	190_62	EXISTING SIGNS TO BE REMOVED	C.31	
24.0	190_66	SUMMARY OF TYPE A SIGNS	C.29	

105_04 10/20/26 STANDARDS The following Standards apply to construction work on this project.		
Number	Date	Title
BA-200	4/15/2025	Steel Beam Guardrail Components
BA-201	10/18/2022	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10/20/2026	Steel Beam Guardrail Bolted End Anchor
BA-205	10/17/2023	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-206	10/19/2021	Steel Beam Guardrail Flared End Terminal For Cable Connection
BA-250	10/20/2026	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
DR-101	4/18/2017	Pipe Culvert (Bedding and Backfill)
DR-121	4/18/2023	Connected Pipe Joints
DR-303	10/17/2017	Subdrains (Longitudinal)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
EC-204	10/19/2021	Perimeter, Slope and Ditch Check Sediment Control Devices
EW-301	10/20/2026	Guardrail Grading
PM-110	10/15/2024	Line Types
PM-115	10/20/2026	Grooving for Line Types
PM-221	10/15/2024	Climbing Lane
PM-420	10/20/2026	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PR-202	10/21/2014	Notches for Resurfacing (with or without Runout)
PV-10	10/20/2026	Rumble Strip Panel for Intersection Approach
PV-12	10/20/2026	Milled Shoulder Rumble Strips
PV-13	10/20/2026	Milled Centerline Rumble Strips
PV-301	4/15/2025	Superelevation Details Two Lane Roadway
SI-101	4/19/2016	Locations - Type 'A' Signs
SI-131	10/18/2016	Installation - Type 'A' Signs
SI-881	10/20/2026	Special Signs for Workzones
TC-1	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-213	4/18/2023	Lane Closure with Flaggers
TC-214	4/18/2023	Lane Closure with Flaggers for use with Pilot Car
TC-202	4/18/2023	Work Within 15 ft of Traveled Way

PROPOSED POSTED SPEED LIMIT				
Roadway Identification	Station From	Station To	Proposed Posted Speed	Remarks
IA 149	295+44.00	403+35.96	over 45	(A)
IA 149	403+31.35	442+30.70	40-45	(A) (B)
IA 149	429+99.98	437+00.00	over 45	(B)
IA 149	437+00.00	437+05.00	40-45	
IA 149	460+80.00	705+00.00	over 45	
IA 149	705+00.00	712+38.00	40-45	
I A149	712+38.00	714+95.00	35 or less	

Notes:
(A): Equation: Sta. 403+35.96 BK = Sta. 403+31.55 AH
(B): Equation: Sta. 442+30.70 BK = 429+99.98 AH

EXISTING PAVEMENT																				102_05 9/29/23
County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
Iowa	IA 149	NB	59.26	63.7	2019	M	MP-149-6(706)50--76-48	PCC												PCC patching
Iowa	IA 149	NB	59.26	63.7	2018	M	MP-149-6(705)50--76-48	PCC												PCC patching
Iowa	IA 149	NB	59.26	63.7	2017	S	STPN-149-2(61)--2J-48	HMA												
Iowa	IA 149	NB	59.26	63.7	2017	M	MP-149-6(704)50--76-48	PCC												PCC Patching
Iowa	IA 149	NB	59.26	63.7	1986		F-149-2(37)--20-48	BAC	3.0	ATB	6.5					CONKLIN	C.LST.			
Iowa	IA 149	NB	63.7	64.07	2019	M	MP-149-6(706)50--76-48													PCC patching
Iowa	IA 149	NB	63.7	64.07	2018	M	MP-149-6(705)50--76-48	PCC												PCC patching
Iowa	IA 149	NB	63.7	64.07	2017	M	MP-149-6(704)50--76-48	PCC	9.5											PCC Patching
Iowa	IA 149	NB	63.7	64.07	2017	S	STPN-149-2(61)--2J-48	SS												
Iowa	IA 149	NB	63.7	64.07	1986		NA	BAC	3.0	RAC	6.5									

102_05A
9/29/23

EXISTING HMA PAVEMENT FOR RECYCLING																	
For informational purposes only. When designed RAP is specified, process the RAP to control the uniformity of the final mixture.																	
Line No.	Route No.	Location	Year Placed	Layer	Thickness	Asphalt Binder Grade	Asphalt Binder Content	Description	Quality Type	Size	Content	% of -4 that is Type 2	% of +4 that is Type 2	% of +4 that is Type 3	% of +4 that is Type 4	% Crushed	% Limestone
1.0	149	MP. 55.71-58.92	1989	Surface	1.5	AC 10	6.5		A	1/2''	60.0					60.0	60.0
2.0	149	MP. 59.26-63.7	1987	Surface	1.5	AC 10	5.4		A	3/4''	65.0					65.0	65.0

LONGITUDINAL SUBDRAIN SHOULDER											104_09A 5/6/24
* Not a bid item.											
Line No.	Road or Lane Identification	Station From	Station To	Side	Depth (IN) (D)	Subdrain Size (IN)	Length (FT)	Outlet Station	Outlet Type	Porous Backfill* (CY)	Remarks
1.0	IA 149	317+50.00	322+50.00	Right	36.0	4.0	530.0	317+50.00	DR-306	40.9	
2.0	IA 149			Right	36.0	4.0	30.0	322+50.00	DR-306	2.3	
3.0	IA 149	322+50.00	328+50.00	Right	36.0	4.0	630.0	322+50.00	DR-306	48.6	
4.0	IA 149			Right	36.0	4.0	30.0	328+50.00	DR-306	2.3	
5.0	IA 149	332+25.00	335+50.00	Right	36.0	4.0	355.0	332+25.00	DR-306	27.4	
6.0	IA 149			Right	36.0	4.0	30.0	335+50.00	DR-306	2.3	
7.0	IA 149	332+50.00	336+00.00	Left	36.0	4.0	380.0	332+50.00	DR-306	29.3	
8.0	IA 149			Left	36.0	4.0	30.0	336+00.00	DR-306	2.3	
9.0	IA 149	336+00.00	339+50.00	Left	36.0	4.0	380.0	336+00.00	DR-306	29.3	
10.0	IA 149			Left	36.0	4.0	30.0	339+50.00	DR-306	2.3	
11.0	IA 149	342+00.00	348+00.00	Left	36.0	4.0	630.0	342+00.00	DR-306	48.6	
12.0	IA 149			Left	36.0	4.0	30.0	348+00.00	DR-306	2.3	
13.0	IA 149	351+00.00	356+00.00	Right	36.0	4.0	530.0	351+00.00	DR-306	40.9	
14.0	IA 149			Right	36.0	4.0	30.0	356+00.00	DR-306	2.3	
15.0	IA 149	357+00.00	361+50.00	Right	36.0	4.0	480.0	357+00.00	DR-306	37.0	
16.0	IA 149			Right	36.0	4.0	30.0	361+50.00	DR-306	2.3	
17.0	IA 149	361+50.00	366+00.00	Right	36.0	4.0	480.0	361+50.00	DR-306	37.0	
18.0	IA 149			Right	36.0	4.0	30.0	366+00.00	DR-306	2.3	
19.0	IA 149	366+50.00	371+50.00	Right	36.0	4.0	530.0	366+50.00	DR-306	40.9	
20.0	IA 149			Right	36.0	4.0	30.0	371+50.00	DR-306	2.3	
21.0	IA 149	371+50.00	376+50.00	Right	36.0	4.0	530.0	371+50.00	DR-306	40.9	
22.0	IA 149			Right	36.0	4.0	30.0	376+50.00	DR-306	2.3	
23.0	IA 149	377+25.00	382+25.00	Right	36.0	4.0	530.0	377+25.00	DR-306	40.9	
24.0	IA 149			Right	36.0	4.0	30.0	382+25.00	DR-306	2.3	
25.0	IA 149	383+00.00	388+00.00	Right	36.0	4.0	530.0	383+00.00	DR-306	40.9	
26.0	IA 149			Right	36.0	4.0	30.0	388+00.00	DR-306	2.3	
27.0	IA 149	394+25.00	399+25.00	Right	36.0	4.0	530.0	394+25.00	DR-306	40.9	
28.0	IA 149			Right	36.0	4.0	30.0	399+25.00	DR-306	2.3	
29.0	IA 149	399+25.00	403+25.00	Right	36.0	4.0	430.0	399+25.00	DR-306	33.2	
30.0	IA 149			Right	36.0	4.0	30.0	403+25.00	DR-306	2.3	
31.0	IA 149	403+25.00	407+25.00	Right	36.0	4.0	430.0	403+25.00	DR-306	33.2	
32.0	IA 149			Right	36.0	4.0	30.0	407+25.00	DR-306	2.3	
33.0	IA 149	409+00.00	412+25.00	Right	36.0	4.0	355.0	409+00.00	DR-306	27.4	
34.0	IA 149			Right	36.0	4.0	30.0	412+25.00	DR-306	2.3	
35.0	IA 149	412+25.00	417+25.00	Right	36.0	4.0	530.0	412+25.00	DR-306	40.9	
36.0	IA 149			Right	36.0	4.0	30.0	417+25.00	DR-306	2.3	
37.0	IA 149	417+25.00	422+25.00	Right	36.0	4.0	530.0	417+25.00	DR-306	40.9	
38.0	IA 149			Right	36.0	4.0	30.0	422+25.00	DR-306	2.3	
39.0	IA 149	422+25.00	426+50.00	Right	36.0	4.0	455.0	422+25.00	DR-306	35.1	
40.0	IA 149			Right	36.0	4.0	30.0	426+50.00	DR-306	2.3	
41.0	IA 149	428+50.00	432+25.00	Right	36.0	4.0	405.0	428+50.00	DR-306	31.3	
42.0	IA 149			Right	36.0	4.0	30.0	432+25.00	DR-306	2.3	
43.0	IA 149	432+25.00	437+25.00	Right	36.0	4.0	530.0	432+25.00	DR-306	40.9	
44.0	IA 149			Right	36.0	4.0	30.0	437+25.00	DR-306	2.3	
45.0	IA 149	437+25.00	442+25.00	Right	36.0	4.0	530.0	437+25.00	DR-306	40.9	
46.0	IA 149			Right	36.0	4.0	30.0	442+25.00	DR-306	2.3	
47.0	IA 149	463+50.00	466+00.00	Right	36.0	4.0	280.0	463+50.00	DR-306	21.6	
48.0	IA 149			Right	36.0	4.0	30.0	466+00.00	DR-306	2.3	
49.0	IA 149	466+25.00	471+00.00	Left	36.0	4.0	505.0	466+25.00	DR-306	39.0	
50.0	IA 149			Left	36.0	4.0	30.0	471+00.00	DR-306	2.3	
51.0	IA 149	471+00.00	476+00.00	Left	36.0	4.0	530.0	471+00.00	DR-306	40.9	
52.0	IA 149			Left	36.0	4.0	30.0	476+00.00	DR-306	2.3	
53.0	IA 149	476+00.00	481+00.00	Left	36.0	4.0	530.0	476+00.00	DR-306	40.9	
54.0	IA 149			Left	36.0	4.0	30.0	481+00.00	DR-306	2.3	
55.0	IA 149	481+00.00	485+50.00	Left	36.0	4.0	480.0	481+00.00	DR-306	37.0	

LONGITUDINAL SUBDRAIN SHOULDER											104_09A 5/6/24
* Not a bid item.											
Line No.	Road or Lane Identification	Station From	Station To	Side	Depth (IN) (D)	Subdrain Size (IN)	Length (FT)	Outlet Station	Outlet Type	Porous Backfill* (CY)	Remarks
56.0	IA 149			Left	36.0	4.0	30.0	485+50.00	DR-306	2.3	
57.0	IA 149	505+25.00	509+75.00	Left	36.0	4.0	480.0	505+25.00	DR-306	37.0	
58.0	IA 149			Left	36.0	4.0	30.0	509+75.00	DR-306	2.3	
59.0	IA 149	509+75.00	514+25.00	Left	36.0	4.0	480.0	509+75.00	DR-306	37.0	
60.0	IA 149			Left	36.0	4.0	30.0	514+25.00	DR-306	2.3	
61.0	IA 149	536+00.00	542+00.00	Left	36.0	4.0	630.0	536+00.00	DR-306	48.6	
62.0	IA 149			Left	36.0	4.0	30.0	542+00.00	DR-306	2.3	
63.0	IA 149	544+50.00	549+50.00	Left	36.0	4.0	530.0	544+50.00	DR-306	40.9	
64.0	IA 149			Left	36.0	4.0	30.0	549+50.00	DR-306	2.3	
65.0	IA 149	549+50.00	554+50.00	Left	36.0	4.0	530.0	549+50.00	DR-306	40.9	
66.0	IA 149			Left	36.0	4.0	30.0	554+50.00	DR-306	2.3	
67.0	IA 149	574+75.00	579+75.00	Left	36.0	4.0	530.0	574+75.00	DR-306	40.9	
68.0	IA 149			Left	36.0	4.0	30.0	579+75.00	DR-306	2.3	
69.0	IA 149	579+75.00	584+75.00	Left	36.0	4.0	530.0	579+75.00	DR-306	40.9	
70.0	IA 149			Left	36.0	4.0	30.0	584+75.00	DR-306	2.3	
71.0	IA 149	584+75.00	589+75.00	Left	36.0	4.0	530.0	584+75.00	DR-306	40.9	
72.0	IA 149			Left	36.0	4.0	30.0	589+75.00	DR-306	2.3	
73.0	IA 149	589+75.00	594+75.00	Left	36.0	4.0	530.0	589+75.00	DR-306	40.9	
74.0	IA 149			Left	36.0	4.0	30.0	594+75.00	DR-306	2.3	
75.0	IA 149	594+75.00	599+75.00	Left	36.0	4.0	530.0	594+75.00	DR-306	40.9	
76.0	IA 149			Left	36.0	4.0	30.0	599+75.00	DR-306	2.3	
77.0	IA 149	602+50.00	606+75.00	Left	36.0	4.0	455.0	602+50.00	DR-306	35.1	
78.0	IA 149			Left	36.0	4.0	30.0	606+75.00	DR-306	2.3	
79.0	IA 149	606+75.00	610+50.00	Left	36.0	4.0	405.0	606+75.00	DR-306	31.3	
80.0	IA 149			Left	36.0	4.0	30.0	610+50.00	DR-306	2.3	
81.0	IA 149	610+50.00	614+00.00	Left	36.0	4.0	380.0	610+50.00	DR-306	29.3	
82.0	IA 149			Left	36.0	4.0	30.0	614+00.00	DR-306	2.3	
83.0	IA 149	634+50.00	638+60.00	Left	36.0	4.0	440.0	634+50.00	DR-306	34.0	
84.0	IA 149			Left	36.0	4.0	30.0	638+60.00	DR-306	2.3	
85.0	IA 149	638+60.00	643+50.00	Left	36.0	4.0	520.0	638+60.00	DR-306	40.1	
86.0	IA 149			Left	36.0	4.0	30.0	643+50.00	DR-306	2.3	
87.0	IA 149	643+50.00	648+50.00	Left	36.0	4.0	530.0	643+50.00	DR-306	40.9	
88.0	IA 149			Left	36.0	4.0	30.0	648+50.00	DR-306	2.3	
89.0	IA 149	648+50.00	653+50.00	Left	36.0	4.0	530.0	648+50.00	DR-306	40.9	
90.0	IA 149			Left	36.0	4.0	30.0	653+50.00	DR-306	2.3	
91.0	IA 149	653+50.00	658+50.00	Left	36.0	4.0	530.0	653+50.00	DR-306	40.9	
92.0	IA 149			Left	36.0	4.0	30.0	658+50.00	DR-306	2.3	
93.0	IA 149	658+50.00	661+00.00	Left	36.0	4.0	280.0	658+50.00	DR-306	21.6	
94.0	IA 149			Left	36.0	4.0	30.0	661+00.00	DR-306	2.3	
95.0	IA 149	676+00.00	680+00.00	Left	36.0	4.0	430.0	676+00.00	DR-306	33.2	
96.0	IA 149			Left	36.0	4.0	30.0	680+00.00	DR-306	2.3	
97.0	IA 149	680+00.00	684+00.00	Left	36.0	4.0	430.0	680+00.00	DR-306	33.2	
98.0	IA 149			Left	36.0	4.0	30.0	684+00.00	DR-306	2.3	
99.0	IA 149	684+00.00	688+50.00	Left	36.0	4.0	480.0	684+00.00	DR-306	37.0	
100.0	IA 149			Left	36.0	4.0	30.0	688+50.00	DR-306	2.3	
Total:							25775	1988.1			

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

104_03
3/18/24

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

Drainage Area (ACRE)	Location	Type	Size (IN) (1)	Pipe Classification	Kind of Pipe (2)	Length New Const. (LF)	Length of total that is Trenchless Bedding	Design Cover (H) (FT)	Camber* (DR-102) (FT)	Apron No. (IN)	Apron No. (OUT)	Apron Guard* (DR-213) (No.)	Elbow* (DR-141) (No.)	Diaphragm* (DR-501) (No.)	Tee Section* (DR-142) (No.)	"D" Section* (DR-141) (No.)	Reducer* (No.)	Type 'C' Conn.* (DR-122)	Type 'C' Conn.* (No.)	Connected Pipe Joint* (DR-121)	4" Perforated Subdrain* (FT)	Line Elevatio n LT.	Line Elevatio n RT.	Line Elevatio n Other	Line Elevatio n Other	Dimensions Lineal Feet Total (Left)	Dimensions Lineal Feet Total (Right)	Dimensions Lineal Feet Extensions	Dimensions Lineal Feet Extensions	Skew Ahead Degrees (Left)	Skew Ahead Degrees (Right)	Class 20 (CY)	Flowable Mortar	Floodable Backfill* (A)	Porous Backfill* (B)	Flooded Backfill(A+B)	Remarks
6	338+25.00	Rem./Reinstall	24.0		RCP															Type 3																	RT: Reset 24 LF + Apron
13	376+99.78	Rem./Reinstall	36.0		RCP					1										Type 3																	Lt Reset 24 LF + new apron, RT reset 24 LF + apron
2	398+04.51	Rem./Reinstall	24.0		RCP						1									Type 3																	Lt Reset 24 LF + apron, Rt Reset 48 LF + new apron
8	431+80.02	Rem./Reinstall	30.0		RCP															Type 3																	Lt Reset 24 LF + apron, Rt Reset 60 LF + apron
5	440+79.62	Slipline	30.0		RCP																																Slipline 43 LF, Reset Apron + 12' Rt.

Quantities:

2416-0100024 APRONS, CONCRETE, 24 IN. DIA. 1 EACH
2416-0100036 APRONS, CONCRETE, 36 IN. DIA. = 1 EACH
2416-0101036 REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN. = 6 EA
2416-1541036 REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN. = 240 LF
2499-4000036 SLIPLINING EXISTING CULVERTS, LESS THAN OR EQUAL TO 36 IN. DIA. OR HEIGHT = 43 LF

107_23
8/15/22

GRADING FOR GUARDRAIL INSTALLATIONS

Refer to EW-301.

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

Line No.	Direction of Traffic (1)	Station	Side	Foreslope at Guardrail	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	X3 (FT)	Y3 (FT)	X4 (FT)	Y4 (FT)	Z (FT)	Excavation Class 10 (CY)	Embankment-in-Place (CY)	Remarks
1.0	NB	566+63.96	Right		162.1	5.0					211.6	7.0	47.0		66.4	Requires 50.5 CY Topsoil
2.0	NB	568+18.44	Right		54.5	5.0					111.8	7.0	47.0		50.1	Requires 34.7 CY Topsoil
3.0	SB	566+63.77	Left		138.3	5.0					187.0	7.0	47.0		61.9	Requires 46.4 CY Topsoil
4.0	SB	568+18.26	Left		50.9	5.0					90.5	9.0	54.0		47.6	Requires 35.1 CY Topsoil
Total:															226	

Quantities:
2102-2625000 EMBANKMENT-IN-PLACE = 59.3 CY
2105-8425005 TOPSOIL, FURNISH AND SPREAD = 166.7 CY

Notes:
Embankment in Place Column in Tabulation includes both topsoil and regular embankment

TOPSOIL STRIPPING AND PLACEMENT							103 10 4/30/25
Line No.	Road Identification	Dir. of Traffic	Station From	Station To	Topsoil Stripping Thickness (IN)	Topsoil Placement Thickness (IN)	Remarks
1.0	IA 149	NB	564+05.00	566+64.00		6.0	
2.0	IA 149	NB	568+18.00	569+77.00		6.0	
3.0	IA 149	SB	564+29.00	566+64.00		6.0	
4.0	IA 149	SB	568+18.00	569+08.00		6.0	

100_19 10/15/24 PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE Possible Standards: EC-204							
Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1.0	338+15.00	338+35.00	Right	Perimeter and Slope	20 inch	20.00	Culvert
2.0	376+89.78	377+09.78	Left	Perimeter and Slope	20 inch	20.00	Culvert
3.0	376+89.78	377+09.78	Right	Perimeter and Slope	20 inch	20.00	Culvert
4.0	397+94.51	398+14.51	Left	Perimeter and Slope	20 inch	20.00	Culvert
5.0	397+94.51	398+14.51	Right	Perimeter and Slope	20 inch	20.00	Culvert
6.0	431+70.02	431+90.02	Left	Perimeter and Slope	20 inch	20.00	Culvert
7.0	431+70.02	431+90.02	Right	Perimeter and Slope	20 inch	20.00	Culvert
8.0	440+69.62	440+89.62	Left	Perimeter and Slope	20 inch	20.00	Culvert
9.0	440+69.62	440+89.62	Right	Perimeter and Slope	20 inch	20.00	Culvert
10.0	564+03.26	566+63.26	Right	Perimeter and Slope	20 inch	260.00	
11.0	568+18.44	569+78.44	Right	Perimeter and Slope	20 inch	160.00	
12.0	564+23.77	566+63.77	Left	Perimeter and Slope	20 inch	240.00	
13.0	568+18.26	569+48.26	Left	Perimeter and Slope	20 inch	130.00	
Total:						970	

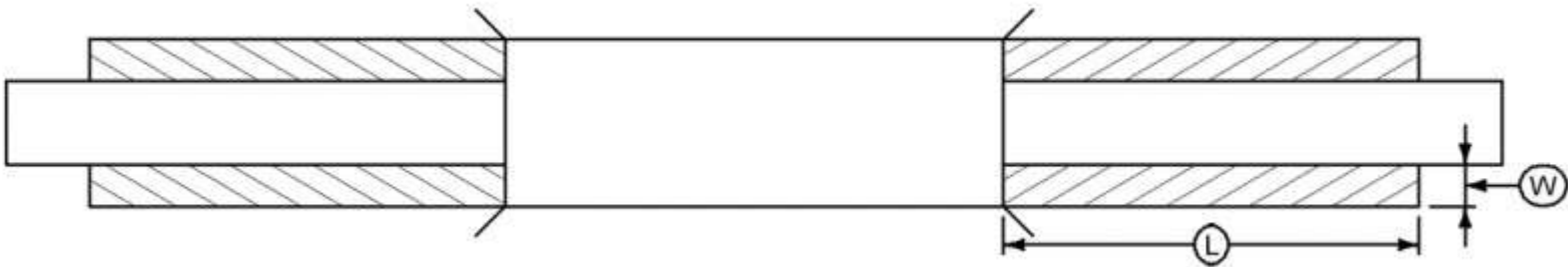
Quantities:

Additional 25% added for discretionary purposes.

Total = 970 LF + 250 LF (25%)

Total = 1220 LF

AREAS FOR PAVEMENT OR BASE WIDENING



- (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.

Station From	Station To	Side	Pavement Type	Length (LF)	Width (LF)	Thickness (IN)	HMA Unit Wt. (lbs/cf)	HMA Base Widening (1) (TONS)	HMA Base Widening (1) (SY)	PCC Base Widening (1) (SY)	PCC Pavement Widening (1) (SY)	Tack Coat Unit Wt. (gal/sy)	Tack Coat Lifts (GAL)	Tack Coat Vertical Edge (GAL)	Tack Coat (2) (GAL)	Asphalt Binder (1) (TON)	Class 13 Excavation Widening (1) (CY)	Special Backfill Unit Weight (lbs-cf)	Special Backfill (1) (TONS)	Remarks
295+44.00	403+35.96	Right	HMA	10791.96	4.0	4.0	150	1079.196				0.05	479.64	39.97	519.61	64.752	532.9	140		(A)
403+31.55	407+65.00	Right	HMA	433.45	4.0	4.0	150	43.345				0.05	19.26	1.61	20.87	2.601	21.4	140		(A)
408+88.00	442+30.72	Right	HMA	3342.72	4.0	4.0	150	334.272				0.05	148.57	12.38	160.95	20.056	165.1	140		(B)
429+99.98	433+50.00	Right	HMA	350.02	4.0	4.0	150	35.002				0.05	15.56	1.30	16.86	2.100	17.3	140		(B)
295+44.00	403+35.96	Left	HMA	10791.96	4.0	4.0	150	1079.196				0.05	479.64	39.97	519.61	64.752	532.9	140		(A)
403+31.55	407+65.00	Left	HMA	433.45	4.0	4.0	150	43.345				0.05	19.26	1.61	20.87	2.601	21.4	140		(A)
408+84.00	442+30.72	Left	HMA	3346.72	4.0	4.0	150	334.672				0.05	148.74	12.40	161.14	20.080	165.3	140		(B)
429+99.98	434+65.00	Left	HMA	465.02	4.0	4.0	150	46.502				0.05	20.67	1.72	22.39	2.790	23.0	140		(B)

Total: 2995.53 179.732 1479.3

Notes:
This tabulation is for new HMA paved shoulders within limits of HMA resurfacing.

Remarks:
(A): Equation: Sta. 403+35.96 BK = Sta. 403+31.55 AH
(B): Equation: Sta. 442+30.70 BK = 429+99.98 AH

102_16

11/1/24

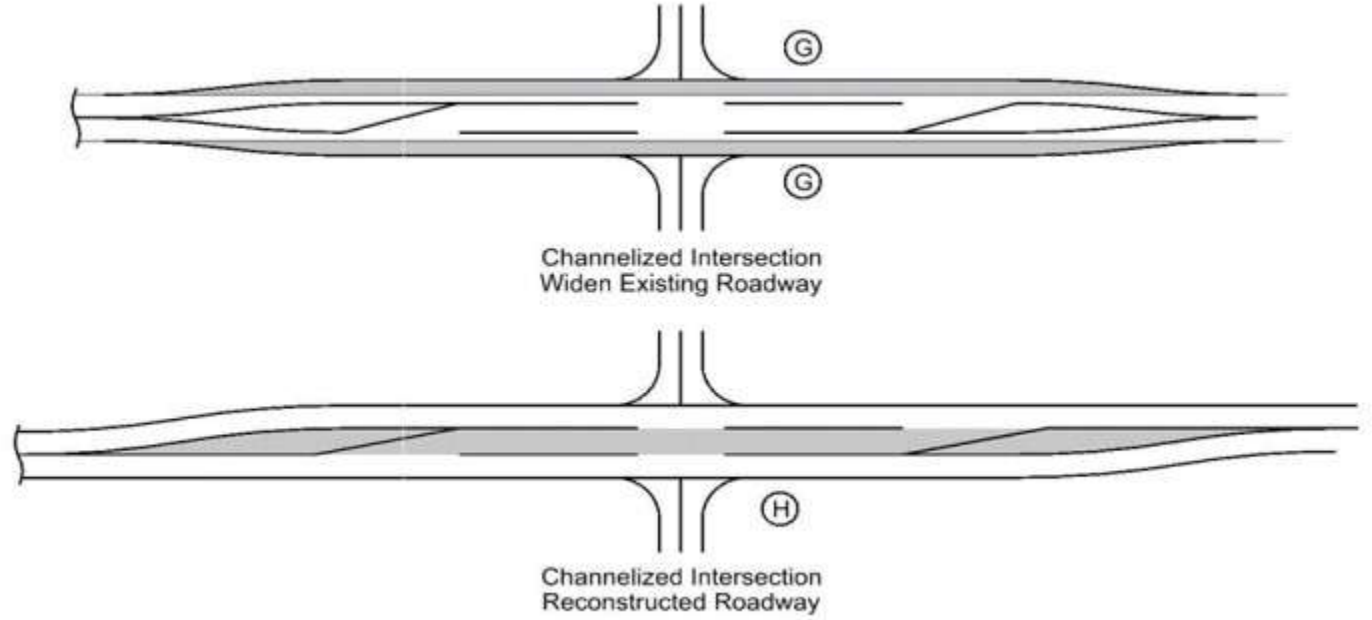
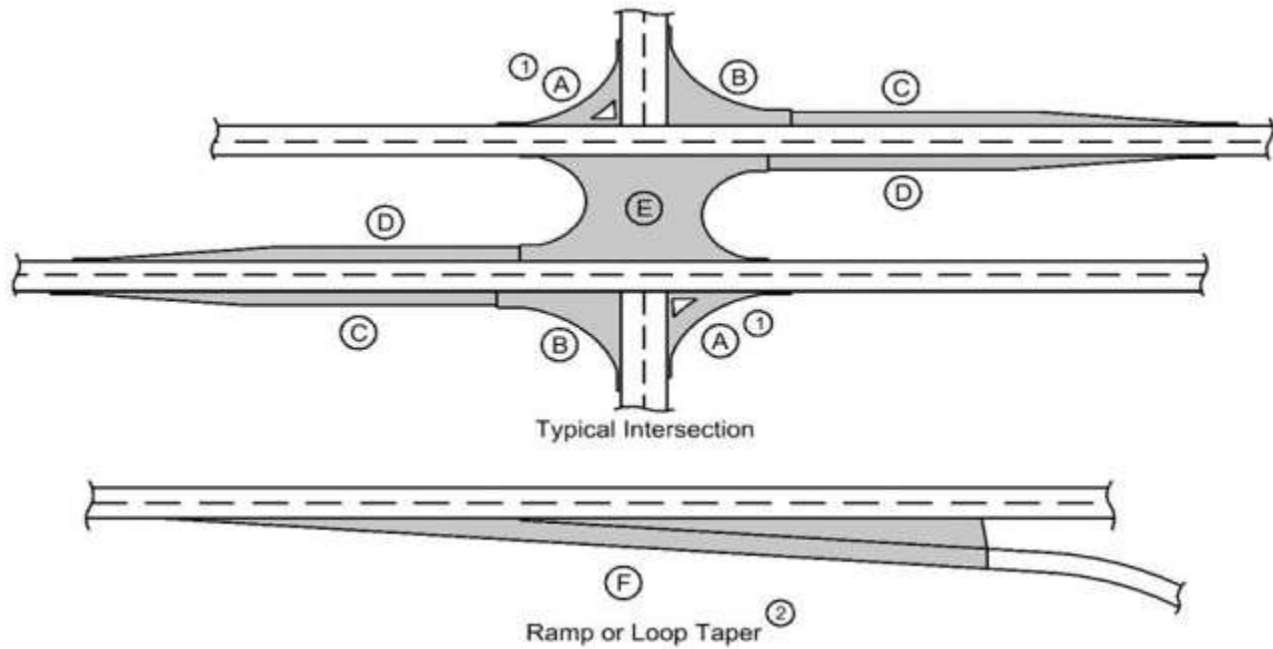
NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

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

Line No.	Station	Type of Notch or Runout	S (IN)	I (IN)	DI (IN)	L (FT)	M (IN)	Pavement Scarification (SY) (1)	Remarks
1.0	295+44.00	Type N5	1.5	1.5		150.0	1.5		
2.0	433+50.00	Type N5	1.5	1.5		150.0	1.5		Transition M from 1.5 IN. to 2.0 IN. over 25 FT.
3.0	437+05.00	Type N2	2.0				2.0		

HMA PAVEMENT

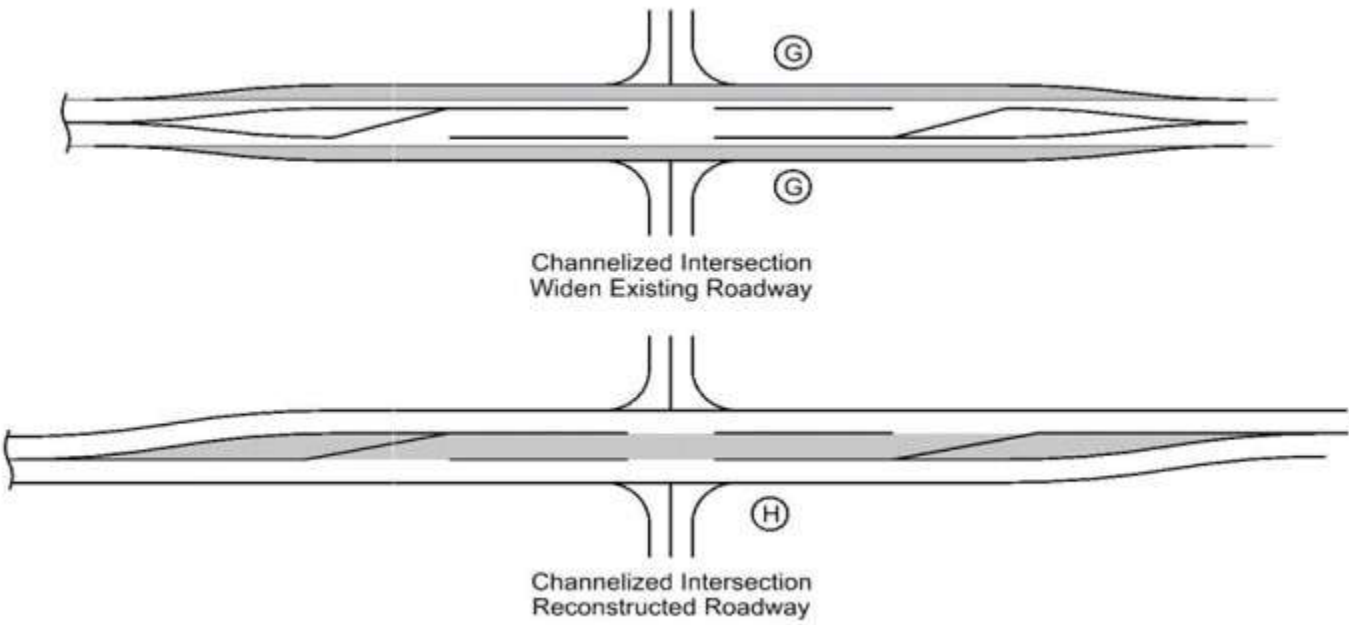
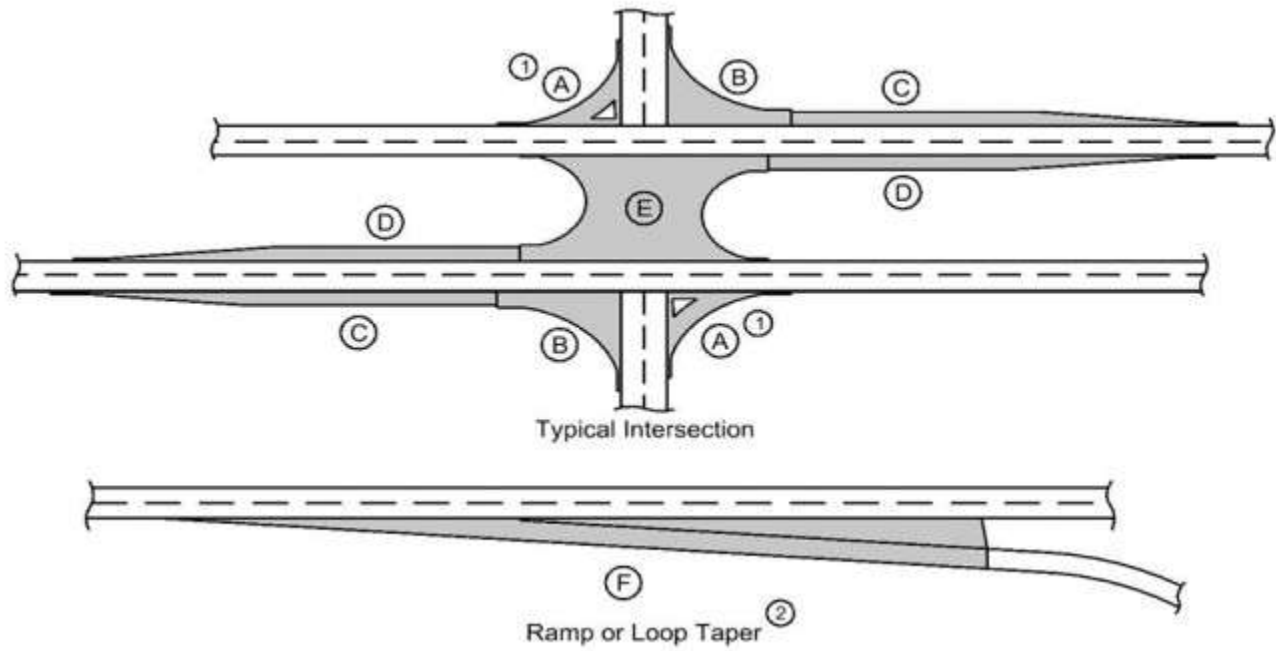


- (1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
(2) Refer to PV-410, PV-411, PV-412, and PV-414.
(3) Quantity includes Pavement Header.

Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	Area D (SY)(3)	Area E(2) (SY)(3)	Area F (SY)(3)	Area G (SY)(3)	Area H (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Pavement Scarification (SY)	Remarks
IA 149	NB	295+44.00	324+75.00	36.0	2931.00	11724.00							2605.33		1249.338	14329.33	1209.037	14329.33			74.960	72.542		11724.00	
IA 149	NB	324+75.00	329+55.00	24.0	480.00	1280.00			320.00				426.67		176.700	2026.67	171.000	2026.67			10.602	10.260		1600.00	
IA 149	NB	329+55.00	403+35.96	24.0	7380.96	19682.56							6560.85		2288.097	26243.41	2214.288	26243.41			137.286	132.857		19682.56	(A)
IA 149	NB	403+31.55	442+30.70	24.0	3899.15	10397.79	260.00						3465.93		1231.412	14123.72	1191.689	14123.72			73.885	71.501		10657.79	(A)(B)
IA 149	NB	429+99.98	433+50.00	24.0	350.02	933.39							311.13		108.507	1244.52	105.006	1244.52			6.510	6.300		933.39	(B)
IA 149	NB	433+50.00	436+15.00	30.0	265.00	883.33									102.687	883.33		883.33			6.161			883.33	
IA 149	NB	436+15.00	437+05.00	24.0	90.00	240.00			40.00						32.550	280.00		280.00			1.953			280.00	
IA 149	NB	514+43.70	515+70.70		127.00		136.67								11.916	136.67		136.67			0.715			136.67	10' Paved Fillet
IA 149	NB	566+23.00	566+73.00	40.0	50.00	222.22									25.833	222.22		222.22			1.550			222.22	Near Bridge Approach FHWA# 29471
IA 149	NB	568+18.00	568+73.00	40.0	55.00	244.44									28.416	244.44		244.44			1.705			244.44	Far Bridge Approach FHWA# 29471
IA 149	NB	594+81.20	595+94.20		113.00		117.58								10.252	117.58		117.58			0.615			117.58	10' Paved Fillet
IA 149	SB	514+81.70	516+20.70		139.00		150.00								13.078	150.00		150.00			0.785			150.00	10' Paved Fillet
IA 149	SB	674+28.20	675+49.17		120.97		132.19								11.525	132.19		132.19			0.692			132.19	10' Paved Fillet
IA 149	NB													3006.70	262.147	3006.70	253.690	3006.70			15.729	15.221			5% Irregularities Division 1/2
O Ave. North	SB	408+25.00	408+25.00					104.57							9.117	104.57	26.469	104.57			0.547	1.588			Division 3. 17.43 CY
O Ave. South	NB	408+27.00	408+27.00					106.05							9.246	106.05	26.844	106.05			0.555	1.611			Division 3. 17.67 CY
280th St. East	NB	515+01.00	515+01.00					127.67							11.131	127.67	32.316	127.67			0.668	1.939			Division 3. 21.28 CY
280th St. West	SB	515+58.00	515+58.00					122.92							10.717	122.92	31.114	122.92			0.643	1.867			Division 3. 20.49 CY
270th St. West	SB	569+67.00	569+67.00					167.53							14.607	167.53	42.406	167.53			0.876	2.544			Division 3. 27.92 CY
250th St. West	SB	574+87.00	574+87.00					135.10							11.779	135.10	34.197	135.10			0.707	2.052			Division 3. 22.52 CY
Total:															5619.055		5338.056				337.144	320.282		46764.17	

Refer to next sheet for total quantities and notes

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.

Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	Area D (SY)(3)	Area E(2) (SY)(3)	Area F (SY)(3)	Area G (SY)(3)	Area H (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Pavement Scarification (SY)	Remarks
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Remarks:
(A) Equation: Sta. 403+35.96 BK = Sta. 403+31.35 AH
(B) Equation: Sta. 442+30.70 BK = Sta. 429+99.98 AH

Areas in column G are for surfacing new base widened paved shoulders and is not included in scarification quantity calculation. Areas in column A/B are for paved fillets. Column A is Division 1 and Column B is Division 2. See remarks for location of paved fillets in Division 2. Requires Cl 13 quantity indicated in notes column.

Quantities:
EXCAVATION, CLASS 13, WASTE:
Division 2 = 127.31
PAVEMENT SCARIFICATION, NOMINAL THICKNESS:
Division 1 = 46,297.5 SY
HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX:
Division 1 = 5,144.7 TON
Division 2 = 193.4 TON

HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4 :
Division 1 = 5,552.5TONS
Division 2 = 66.6 TONS

ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC:
Division 1 = 641.83TONS
Division 2 = 15.60 TONS

108_08A
4/25/25

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION																													
Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-209, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.																													
(1) Lane(s) to which the obstacle is adjacent. (2) Not a bid item. Incidental to guardrail installation.																													
Line No.	Direction of Travel (1)	Side	Station	Offset (FT)	Barrier Transition Section	Barrier Transition Section (EA)	End Terminal	End Terminal Count (EA)	VT1 (LF)	VF (LF)	VT2 (LF)	ET (LF)	BA-211 Station	BA-211 (Type)	SI-211 (Type) (2)	Delineator SI-172 Type 1 (EA) (2)	Object Marker Type 2 (EA) (2)	Object Marker Type 3 Lt (EA)(2)	Object Marker Type 3 Rt (EA)(2)	Bolted End Anchor BA-202 (Type)	Bolted End Anchor BA-202 (EA)	Post Adapter BA-210 (EA)	Steel Beam Guardrail BA-200 (LF)	Remarks					
1.0	NB	Right	566+63.96		BA-201	1	BA-205	1	165.625			47.70			3			1	1	C	1		125.0						
2.0	NB	Right	568+18.44		BA-201	1	BA-205	1	65.625			47.70			3			1	1	C	1		25.0						
3.0	SB	Left	566+63.77		BA-201	1	BA-205	1	140.625			47.70			3			1	1	C	1		100.0						
4.0	SB	Left	568+18.26		BA-201	1	BA-206	1	53.125			37.50			3			1	1	C	1		12.5						
Total:						4		4														4		262.5					

Quantities:
2505-4008300 STEEL BEAM GUARDRAIL = 262.5 LF
2505-4008410 STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201 = 4 EA
2505-4021010 STEEL BEAM GUARDRAIL END ANCHOR, BOLTED = 4 EA
2505-4021720 STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205 = 3 EA
2505-4021721 STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206 = 1 EA

SHOULDERS																												112.09 4/21/26
(1) Lane(s) to which the shoulder is adjacent. (2) See Typ. 7156, 7157, or 7158. (3) Bid Item. (4) Applies only for Paved Shoulders constructed on project with existing granular shoulders. (5) Bid Item. Typ. 7156, 7157, or 7158. (6) Does not include shrink. (7) Paved shoulder thickness specified in Remarks. (8) Subbase type specified in Remarks.																												
Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/ STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grd rail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Pavement Scarification (SY)	Polymer Grid (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
IA 149	NB	295+44.00	403+35.96	Right	4		6	10791.96															1133.156	10.500				(A)
IA 149	NB	403+31.55	407+65.00	Right	4		6	433.45															45.512	10.500				(A)
IA 149	NB	408+88.00	442+30.70	Right	4		6	3342.70															350.983	10.500				(B)
IA 149	NB	429+99.98	432+95.75	Right	4		6	295.77															31.056	10.500				(B)
IA 149	NB	432+95.75	433+50.00	Right	4 to 2		6	54.25															5.696	10.500				
IA 149	NB	461+03.50	461+40.70	Right	4		6	37.20	2.8	5.580	15.000	0.335	16.5										3.906	10.500				
IA 149	NB	462+92.70	514+43.70	Right	4		6	5151.00	381.6	772.650	15.000	46.359	2289.3										540.855	10.500				
IA 149	NB	515+70.70	519+50.00	Right	4		6	379.30	28.1	56.895	15.000	3.414	168.6										39.827	10.500				
IA 149	NB	519+50.00	530+20.00	Right	2		6	1070.00	79.3	80.250	7.500	4.815	237.8										112.350	10.500				(C)
IA 149	NB	530+20.00	564+32.00	Right	4		6	3412.00	252.7	511.800	15.000	30.708	1516.4										358.260	10.500				
IA 149	NB	564+32.00	564+52.00	Right		12		20.00	6.7	13.500	67.500	0.810		26.7											0.20			
IA 149	NB	564+52.00	565+01.89	Right		12 to 10		49.89	15.2	30.869	61.875	1.852		61.0											0.50			
IA 149	NB	565+01.89	566+48.00	Right		10		146.11	40.6	82.187	56.250	4.931		162.3											1.46			
IA 149	NB	568+53.70	568+60.70	Right		10		7.00	1.9	3.938	56.250	0.236		7.8											0.07			
IA 149	NB	568+60.70	569+30.30	Right		10 to 12		69.60	21.3	43.065	61.875	2.584		85.1											0.70			
IA 149	NB	569+30.30	569+70.30	Right		12		40.00	13.3	27.000	67.500	1.620		53.3											0.40			
IA 149	NB	569+70.30	594+81.20	Right	4		6	2510.90	186.0	376.635	15.000	22.598	1116.0										263.644	10.500				
IA 149	NB	595+94.20	616+77.00	Right	4		6	2082.80	154.3	312.420	15.000	18.745	925.7										218.694	10.500				
IA 149	NB	621+20.00	701+24.00	Right	4		6	8004.00	592.9	1200.600	15.000	72.036	3557.3										840.420	10.500				
IA 149	NB	701+80.70	708+12.30	Right	4		6	631.60	46.8	94.740	15.000	5.684	280.7										66.318	10.500				
IA 149	SB	295+44.00	340+83.00	Left	4		6	4539.00															476.595	10.500				
IA 149	SB	341+35.00	403+35.96	Left	4		6	6200.96															651.101	10.500				(A)
IA 149	SB	403+31.55	407+65.00	Left	4		6	433.45															45.512	10.500				(A)
IA 149	SB	408+84.00	442+30.70	Left	4		6	3346.70															351.403	10.500				(B)
IA 149	SB	429+99.98	434+65.00	Left	4		6	465.02															48.827	10.500				(B)
IA 149	SB	461+03.50	461+46.70	Left	4		6	43.20	3.2	6.480	15.000	0.389	19.2										4.536	10.500				
IA 149	SB	462+49.00	498+00.00	Left	4		6	3551.00	263.0	532.650	15.000	31.959	1578.2										372.855	10.500				
IA 149	SB	498+00.00	508+00.00	Left	2		6	1000.00	74.1	75.000	7.500	4.500	222.2										105.000	10.500				(C)
IA 149	SB	508+00.00	514+81.70	Left	4		6	681.70	50.5	102.255	15.000	6.135	303.0										71.578	10.500				
IA 149	SB	516+20.70	564+56.00	Left	4		6	4835.30	358.2	725.295	15.000	43.518	2149.0										507.707	10.500				
IA 149	SB	564+56.00	564+76.00	Left		12		20.00	6.7	13.500	67.500	0.810		26.7											0.20			
IA 149	SB	564+76.00	565+25.49	Left		12 to 10		49.49	15.1	30.622	61.875	1.837		60.5											0.49			
IA 149	SB	565+25.49	566+48.00	Left		10		122.51	34.0	68.912	56.250	4.135		136.1											1.23			
IA 149	SB	568+54.14	568+78.56	Left		10		24.42	6.8	13.736	56.250	0.824		27.1											0.24			
IA 149	SB	568+78.56	569+08.47	Left		10 to 14		29.91	9.1	20.189	67.500	1.211		39.9											0.30			
IA 149	SB	569+08.47	569+28.47	Left		14		20.00	6.7	15.750	78.750	0.945		31.1											0.20			
IA 149	SB	569+28.47	570+63.60	Left		10		135.13	37.5	76.011	56.250	4.561		150.1											1.35			
IA 149	SB	570+63.60	674+28.20	Left	4		6	10364.60	767.7	1554.690	15.000	93.281	4606.5										1088.283	10.500				
IA 149	SB	675+49.17	714+58.65	Left	4		6	3909.48	289.6	586.422	15.000	35.185	1737.5										410.495	10.500				
IA 149	SB	714+58.65	715+16.70	Left	4 to 2		6 to 2	58.05	4.3	6.531	11.250	0.392	19.4										4.064	7.000				
Total:									3750				20743.3	867.7									8148.633		7.34			

Notes:

112_09

4/21/26

SHOULDERS

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

(2) See Typ. 7156, 7157, or 7158.

(3) Bid Item.

(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.

(5) Bid Item. Typ. 7156, 7157, or 7158.

(6) Does not include shrink.

(7) Paved shoulder thickness specified in Remarks.

(8) Subbase type specified in Remarks.

Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grd rail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Pavement Scarification (SY)	Polymer Grid (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
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This tabulation is for new HMA paved shoulders outside the limits of HMA resurfacing. For Stations 295+44 to 337+05, widths of paved shoulder are for information only. Refer to Tabulation 106-05 for quantities.

Quantities:
2121-7425020 GRANULAR SHOULDERS, TYPE B = 8148.6 TON
2122-5500060 PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN. = 20,743.3 SY
2122-5500090 PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN. = 867.7 SY
2123-7450000 SHOULDER CONSTRUCTION, EARTH = 7.34 STA.
2102-2713090 EXCAVATION, CLASS 13, WASTE = 214.9 CY (DIVISION 1)
2213-2713300 EXCAVATION, CLASS 13, FOR WIDENING = 3535.1 CY (DIVISION 1)
Remarks:

(A): Equation: Sta. 403+35.96 BK = Sta. 403+31.55 AH
(B): Equation: Sta. 442+30.70 BK = 429+99.98 AH
(C): Add 2 ft. additional width to outside of existing 2 ft. shoulder

112_10 10/20/26															
RUMBLE STRIPS															
* Calculated at 18" width for Shoulder. ** For use with penetrating Engineered Fog Seal. Calculated at 2" wider than rumble strips.															
Road Identification	Station From	Station To	Surface Type	Rumble Strip Lane	Rumble Strip Type	Fog Seal Type	L (IN)	PCC Length (STA)	HMA Length (STA)	Fog Seal* Shoulder (GAL)	Fog Seal (SV)**	Effective Shoulder Width PCC (FT)	Effective Shoulder Width HMA (FT)	Effective Shoulder Width Granular\Earth (FT)	Remarks
IA 149	295+44.00	403+35.96	HMA	Right Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		107.92	116.9	1798.7		4.0	6.0	(A)
IA 149	403+31.35	441+00.00	HMA	Right Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		37.69	40.8	628.2		4.0	6.0	(A)
IA 149	463+00.00	565+50.00	HMA	Right Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		102.50	111.0	1708.3		4.0	6.0	
IA 149	568+80.00	695+50.00	HMA	Right Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		126.70	137.3	2111.7		4.0	6.0	
IA 149	295+44.00	403+35.96	HMA	Left Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		107.92	116.9	1798.7		4.0	6.0	(A)
IA 149	403+31.35	441+00.00	HMA	Left Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		37.69	40.8	628.2		4.0	6.0	(A)
IA 149	463+00.00	565+50.00	HMA	Left Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		102.50	111.0	1708.3		4.0	6.0	
IA 149	568+80.00	695+50.00	HMA	Left Shoulder	Milled Sinusoidal Shoulder Rumble Strips (HMA only)	Asphalt Emulsion	12"		126.70	137.3	2111.7		4.0	6.0	
IA 149	295+44.00	403+35.96	HMA	Centerline	Milled Sinusoidal Centerline Rumble Strips (HMA only)				107.92						(A)
IA 149	403+31.35	441+00.00	HMA	Centerline	Milled Sinusoidal Centerline Rumble Strips (HMA only)				37.69						(A)
Total:									895.23	812					

Remarks:

(A): Equation: Sta. 403+35.96 BK = Sta. 403+31.55 AH

Quantities:

2548-0000170 MILLED SHOULDER SINUSOIDAL RUMBLE STRIPS, HMA SURFACE = 749.62 STA
2548-0000357 MILLED CENTERLINE SINUSOIDAL RUMBLE STRIPS, HMA SURFACE = 145.61 STA
2548-0000110 ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS) = 812 GAL

RUMBLE STRIP PANELS Refer to Standard Road Plan PV-10.						112_07 10/20/26
Line No.	Roadway Identification	Station	Side	Pavement Type	Rumble Strip Panel Type	Remarks
1.0	IA 149	296+89.00	Left	New	Sinusoidal Rumble Strip Panel	
2.0	IA 149	300+40.00	Left	New	Sinusoidal Rumble Strip Panel	

PAVEMENT MARKING LINE TYPES

108.22
11/25/25

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

BCY4: Broken Centerline (Yellow) @ 0.17
CBW6: Crosswalk Bar (White) @ 10.00
CLW6: Crosswalk Line (White) @ 2.00
DLW4: Dotted Line (White) @ 0.22
ELW6: Edge Line Right (White) @ 1.00
MNY6: Median Nose (Yellow) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
SPW4: Sloped Curb 4" (White) @ 2.16
STY6: Standard Curb 6" (Yellow) @ 2.03

BCY6: Broken Centerline (Yellow) @ 0.25
CHW8: Channelizing Line (White) @ 1.33
DCY4: Double Centerline (Yellow) @ 1.34
DLW6: Dotted Line (White) @ 0.33
ELY4: Edge Line Left (Yellow) @ 0.67
NPY4: No Passing Zone Line (Yellow) @ 0.84
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SPW6: Sloped Curb 6" (White) @ 2.28
YLW2: Yield Line (White) @ 1.15

BLC6: Broken Line Contrast (White/Black) @ 0.50
CHW10: Channelizing Line (White) @ 1.67
DCY6: Double Centerline (Yellow) @ 2.00
DLY4: Dotted Line (Yellow) @ 0.22
ELY6: Edge Line Left (Yellow) @ 1.00
NPY6: No Passing Zone Line (Yellow) @ 1.25
SLW2: Stop Line (White) @ 4.00
SPY4: Sloped Curb 4" (Yellow) @ 2.16

BLW4: Broken Lane Line (White) @ 0.17
CHY8: Channelizing Line (Yellow) @ 1.33
DDY4: Double Dotted Line (Yellow) @ 0.44
DLY6: Dotted Line (Yellow) @ 0.33
LDW8: Lane Drop (White) @ 0.33
RLW4: Ramp Edge Line Right (White) @ 0.67
SLW4: Solid Lane Line (White) @ 0.67
SPY6: Sloped Curb 6" (Yellow) @ 2.28

BLW6: Broken Lane Line (White) @ 0.25
CHY10: Channelizing Line (Yellow) @ 1.67
DDY6: Double Dotted Line (Yellow) @ 0.67
ELW4: Edge Line Right (White) @ 0.67
LDW10: Lane Drop (White) @ 0.42
RLW6: Ramp Edge Line Right (White) @ 1.00
SLW6: Solid Lane Line (White) @ 1.00
STW6: Standard Curb 6" (Yellow) @ 2.03

Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	BCY6 (STA)	BCY6 Factored (STA)	BLW6 (STA)	BLW6 Factored (STA)	DCY6 (STA)	DCY6 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	NPY6** (STA)	NPY6** Factored (STA)	Remarks
IA 149_W (Resurfacing)																				
IA 149	295+44.00	319+25.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	101.19			23.81	5.95	23.81	47.62	47.62	47.62			Final
IA 149	319+25.00	320+00.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	3.00					0.75	1.50	1.50	1.50			Final
IA 149	320+00.00	329+00.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	29.25							18.00	18.00	9.00	11.25	Final
IA 149	329+00.00	331+65.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	5.96	2.65	0.66					5.30	5.30			Final
IA 149	331+65.00	343+00.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	36.89							22.70	22.70	11.35	14.19	Final
IA 149	343+00.00	355+90.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	51.60					12.90	25.80	25.80	25.80			Final
IA 149	355+90.00	366+30.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	33.80							20.80	20.80	10.40	13.00	Final
IA 149	366+30.00	385+75.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	43.76	19.45	4.86					38.90	38.90			Final
IA 149	385+75.00	396+10.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	33.64							20.70	20.70	10.35	12.94	Final
IA 149	396+10.00	403+35.96	Both	Waterborne/Solvent Paint	X	X	X	Yes	29.04					7.26	14.52	14.52	14.52			Final
IA 149	403+31.35	404+55.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	4.96					1.24	2.48	2.48	2.48			Final
IA 149	404+55.00	411+90.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	23.89							14.70	14.70	7.35	9.19	Final
IA 149	411+90.00	436+40.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	55.13	24.50	6.13					49.00	49.00			Final
IA 149	436+40.00	442+30.70	Both	Waterborne/Solvent Paint	X	X	X	Yes	19.21							11.82	11.82	5.91	7.39	Final
IA 149	429+99.98	434+50.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	14.63							9.00	9.00	4.50	5.63	Final
IA 149	434+50.00	437+05.00	Both	Waterborne/Solvent Paint	X	X	X	Yes	10.20					2.55	5.10	5.10	5.10			Final
IA 149	295+44.00	437+05.00	Both	Waterborne/Solvent Paint	X	X	X			139.80	34.95	71.43	17.86	145.53	291.06	923.82	923.82	176.58	220.73	Temporary 3 Applications
IA_149 (HMA Paved Shoulders)								Yes												
IA 149	461+00.00	566+48.00	Both	Waterborne/Solvent Paint	X		X	Yes	210.96							210.96	210.96			Final
IA 149	568+54.00	708+12.30	Both	Waterborne/Solvent Paint	X		X	Yes	279.16							279.16	279.16			Final
IA 149	708+12.30	715+16.70	Both	Waterborne/Solvent Paint	X			Yes	7.04							7.04	7.04			Final
IA 149	461+00.00	715+16.70	Both	Waterborne/Solvent Paint	X		X									497.16	497.16			Temporary 1 Application

Total:

993.31

46.6

23.81

388.08

2226.08

294.32

Quantities:

2527-9263209 PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED = 2978.89 STA
(993.31 Permanent, 1985.58 Temporary)

2527-9270112 GROOVES CUT FOR PAVEMENT MARKINGS = 993.31 STA

190_66 9/29/23					
SUMMARY OF TYPE 'A' SIGNS					
Line No.	Sign Number	Non-Standard Sign Number or Name	Quantity (EA)	Size (IN)	Total Sign Area (SF)
1.0	R2-1X	SPEED LIMIT 60	3	48 X 60	60.0
Total:					60

190_51
2/10/23

MATERIALS FOR TYPE 'A' SIGNS
Refer to SI-101, SI-111, SI-119 and N Sheets.

Line No.	Type A Signing Typicals	Sign Number	Dir. of Travel	Sign Location Station	Wood Posts (No.)	4 x 6 Leg 1 (FT)	4 x 6 Leg 2 (FT)	Sq. Steel Leg 1 (FT)	Sq. Steel Leg 2 (FT)	Sq. Steel Leg 3 (FT)	Perf. Sq. Anchor Type	Anchor Quantity (EA)	Steel Rect. Tube (No)	Steel Rect. Tube (FT)	Rect. Tube Anchors (EA)	Type A Bracket One Post	Type A Bracket Two Post	Type A Bracket Auxiliar y	Type A Bracket (H)	Type A Bracket (F)	Type A Bracket (F1)	Install. Type	Install. Dim X (FT)	Install. Signing Notes	Remarks	
1.0	N.P.Z.	W14-3	NB	331+65.00					14.0		Slip	1										1	24.0			
2.0	N.P.Z.	W14-3	SB	366+30.00					14.0		Slip	1										1	24.0			
3.0	N.P.Z.	W14-3	NB	385+75.00					14.0		Slip	1										1	24.0			
4.0	N.P.Z.	W14-3	SB	411+90.00					14.0		Slip	1										1	24.0			
5.0	S.L. (60)	R2-1x	SB	437+00.00												1									Remove sign and install new sign on existing post	
6.0	S.L. (60)	R2-1x	NB	460+70.00												1									Remove sign and install new sign on existing post	
7.0	S.L. (60)	R2-1x	SB	705+00.00												1									Remove sign and install new sign on existing post	

EXISTING SIGNS TO BE REMOVED											190_62 2/13/23
Line No.	Sign Number or Description	Location Station	Direction of Travel	Type 'A' Sign Assembly (RA) (EA)	Type 'B' Sign Assembly (RB) (EA)	Type 'A' Remove and Reinstall (RR) (EA)	Type 'B' Remove and Reinstall (RR) (EA)	Concrete Foundation (RF) (EA)	Support Structure & Foundation (RS) (EA)	Applicable Signing Notes	Remarks
1.0		437+00.00	SB	1							
2.0		460+70.00	NB	1							
3.0		705+00.00	SB	1							
Total:				3							

EXISTING SIGNS TO BE REINSTALLED										190_61 2/10/23
Line No.	Sign Description	Direction of Travel	Location Station	Number of Posts	Square Tube Steel Posts	Wood Posts 4"x4" (L F)	Wood Posts 4"x6" (L F)	Installation Type	Installation Dim 'X'	See Signing Notes
1.0	W14-3	NB	332+65.00	1	1			Match Exist.		Install at Sta. 331+65
2.0	W14-3	NB	386+75.00	1	1			Match Exist.		Install at Sta. 385+75
3.0	W14-3	SB	365+30.00	1	1			Match Exist.		Install at Sta. 366+30
3.0	W14-3	SB	410+90.00	1	1			Match Exist.		Install at Sta. 411+90

110_07A 8/15/22 REMOVAL OF STEEL BEAM GUARDRAIL (1) Lane(s) to which the installation is adjacent. (2) Includes length of End Terminals and End Anchors.						
Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0	1	NB	565+95.00	566+60.00	Right	65.0
2.0	2	NB	568+20.00	568+85.00	Right	65.0
3.0	3	SB	565+95.00	566+60.00	Left	65.0
4.0	4	SB	568+20.00	568+85.00	Left	65.0
Total:						260

FILE NO.

ENGLISH

DESIGN TEAM

Harle\Holub

IOWA COUNTY

PROJECT NUMBER

STP-149-2(066)--2C-48

SHEET NUMBER

C.33

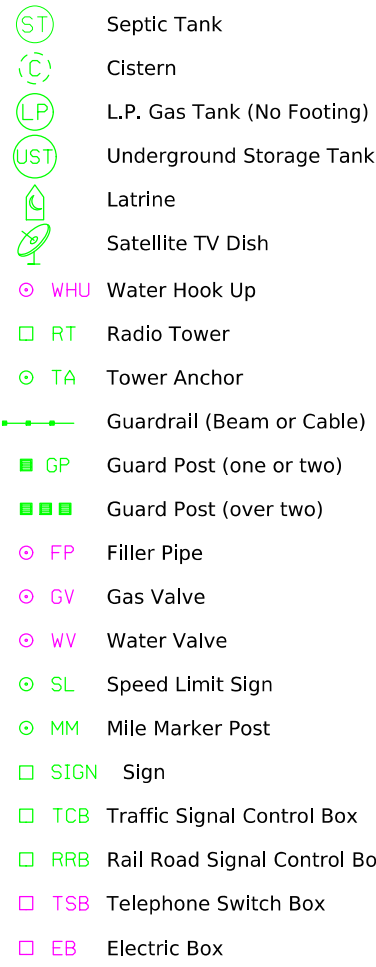
8/3/2026 3:57:01 PMmark.harle@iowadot.us

232_03A 9/28/22 EROSION CONTROL (RURAL SEEDING) Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications. Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications. Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications. Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.				259_01 10/15/25 SIGNING NOTES Apply the following during the replacement or modification of signs: - No more than one of the major guide signs for each direction of travel at an interchange out of service at any one time. - No major guide sign out of service for more than 8 hours. - No minor guide out of service for more than 24 hours. Remove existing signs and posts within 24 hours following the installation of a new replacement sign. In any case where the plans call for a new sign and posts to be installed at the same station location and offset as an existing sign, install the new posts at a minimum of either 5 ft ahead or behind the existing sign installation. Signs shall not be installed more than 25 ft ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, install the new replacement sign and remove the existing sign installation within 24 hours of the time that the new posts are erected. Where signs are located behind guardrail, locate the near edge of the sign a minimum of 3 ft behind the guardrail posts. Unless noted otherwise, leave auxiliary panels, such as exit number panels, in place or reattach to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, remove the business logo panel(s) from the existing sign and attach to the new sign as directed by the Engineer. Do not damage the auxiliary or logo panels when removing and reattaching them. This work is incidental to other work and no separate payment will be made. The following notes apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations. IB INSTALL NEW TYPE B SIGN IA INSTALL NEW TYPE A SIGN Install new signs at the location identified in the plans. For installation of new signs on an existing sign support structure, refer to note (L). For installation of new signs on existing posts: - if the new sign is taller than the existing sign, furnish the necessary hardware to extend the sign above the posts. Refer to Standard Road Plan SI-132. - if the new sign is shorter than the existing sign: - for wood posts and perforated square tube posts, install the sign at the proper height and cut off the excess post length. - for MASSH-400 and steel breakaway posts, install the sign at the top of the posts. For plywood signs, no vertical splices are allowed in signs less than or equal to 10 ft wide. No horizontal splices are allowed in signs less than or equal to 4 ft tall. Each new sign installed shall have a sticker applied to the back of the sign that shows the date the sign was installed. The Contractor shall supply the sticker for all contractor supplied signs. The DOT will supply date				259_01 10/15/25 SIGNING NOTES stickers on any signs supplied by the department. Payment for installing Type A signs or Type B signs includes furnishing hardware for mounting, extending signs above existing posts, and cutting posts to length. MS MODIFICATION OF EXISTING SIGNS For removal and/or installation of logo panels, and other sign modifications. Refer to the project plans and typical details for additional information. SC SIGN COVER For the installation or removal of temporary sign covers for the purposes of temporary traffic control. Sign covers shall completely cover the existing Sign. Care should be taken so that covers, fasteners, and installation practices do not damage the existing sign. Tape of any type shall not be applied to the sheeted face of the existing sign under any circumstances. Repair of damage to the existing sign caused by sign covers will be the responsibility of the Contractor. SO OVERLAY TYPE B GUIDE SIGNS MB INSTALL SPECIAL MOUNTING BRACKET Install special mounting brackets at the locations identified in the plans. Refer to Tabulations 190-51 and/or 190-65. PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTING PP INSTALL NEW PERFORATED SQUARE TUBE POSTS AND ANCHORS PM INSTALL NEW MASSH-400 POSTS AND ANCHORS Install new breakaway steel posts and footings, perforated square tube posts and anchors, or MASSH-400 posts and anchors at the locations identified in the plans. Refer to the Standard Road Plans, Typicals, and Tabulations 190-51 and 190-50 for post size and footing information. New posts shall be installed in undisturbed soil. The new posts shall not be placed in the hole of removed posts. Remove excess soil from footing hole. Do not spread soil on adjacent seeded or vegetated areas. If note (RR) accompanies (PB), (PP), or (PM), install an existing sign on the new posts. RR REMOVE AND REINSTALL SIGN AS PER PLAN Do not remove existing major Type B guide signs on posts until the new posts are installed. Promptly remove sign and install at the new location. Existing major Type B guide signs on overhead support structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. Transport the signs to a DOT storage area as designated by the Engineer. Transport the signs back to the job site when ready for installation at the new location. Signs to be reinstalled shall not be stored for any length of time with the sheeted face in contact with the ground. Replace signs damaged by the Contractor's activities at no additional cost to the Contracting Authority. Payment for Remove and Reinstall Sign includes sign				259_01 10/15/25 SIGNING NOTES removal, delivery to and from the DOT storage area (if applicable), and reinstallation, including any hardware required for reinstallation. When noted in the plans, payment for delivery and stockpile of existing signs will be separate from the payment for Remove and Reinstall Sign. RA REMOVAL OF TYPE A SIGN ASSEMBLY RB REMOVAL OF TYPE B SIGN ASSEMBLY Type A Sign Assembly consists of one or more signs installed on one or more posts, either directly mounted to the post or mounted to the post with special sign mounting brackets. Type B Sign Assembly consists of the main sign, all auxiliary signs and brackets, and posts. Unless stated otherwise in the plans, remove all posts with the signs and brackets. Remove each sign assembly identified in the plans. Sign posts removed become the property of the Contractor. All other materials removed remain the property of the DOT. For each sign assembly removed, disassemble each assembly before delivering to the DOT. * For Type A sign assemblies, unbolt all signs, special mounting brackets, and posts from each other. * For Type B assemblies, unbolt all extruded aluminum panels, brackets, and posts from each other. Do not damage the disassembled materials. When the plans call for the removal of posts, the entire existing post shall be removed. The post shall not be broken off or cut off at the ground line. Place backfill in holes remaining from the removal of posts and restore to the surrounding conditions. Deliver the removed signs, special sign mounting brackets, and extruded aluminum panels to a DOT storage area, as designated by the Engineer. The concrete footings for steel posts are not considered part of the sign assembly. Refer to note RF for concrete footing removal. Payment for Removal of Type A Sign Assembly or Removal of Type B Sign Assembly includes sign assembly removal and disassembly, post removal (if applicable), delivery to the DOT storage area, placing backfill in holes, and restoration of the surrounding conditions. RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST Remove existing concrete footings to a depth of at least 1 ft below the natural groundline. Place backfill in holes remaining from removal and restore to the normal surrounding conditions. This work is incidental to other work and no separate payment will be made. RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE The following are considered Type B Sign Support Structures: - Overhead sign trusses and foundations - Cantilever sign trusses and foundations - Bridge-mounted brackets			
FILE NO.	ENGLISH	DESIGN TEAM	Harle\Holub		IOWA COUNTY	PROJECT NUMBER	STP-149-2(066)--2C-48		SHEET NUMBER	C.34					

259_01 10/15/25	
SIGNING NOTES	
Unless stated otherwise in the plans, existing overhead trusses, cantilever trusses, and bridge brackets which are removed become the property of the Contractor. If stated in the plans, deliver overhead trusses, cantilever trusses, and bridge brackets to a DOT storage area, as designated by the Engineer. Payment for Removal of Sign Support Structure and Foundation includes sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions. Removal of the foundation includes removal of the stem to a minimum of 1 ft below the natural groundline. L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORT STRUCTURES Refer to the sign support structure details for information on the required angle brackets. Provided all specifications are met, the existing sign support angles may be reused. Install existing sign support angles to be reused only on the sign support structure from which they were removed. Sign support angles removed and not reused become the property of the Contractor. When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may need to be trimmed. Refer to the sign support details to determine if and where to trim the sign support angles. Do not use existing fasteners. Use new U-Bolts, stainless steel bolts and nuts to install the existing or new sign support angles to the sign support structure. Removal of existing sign support angles is incidental to removal of the sign. Reinstalling and/or modifying existing sign support angles; furnishing and installing new sign support angles (if required); and furnishing and installing new fasteners is incidental to work associated with Type B signs. SIGN INSTALLATION QUALITY CONTROL NOTES Post lengths have been derived from the proposed grading cross sections. Verify post lengths in the field prior to ordering or fabrication. Slight differences between the design template and the actual conditions should be expected. These variations should be resolved by doing some localized shaping and grading. Obtain material needed to meet the site requirements of SI-112 from the excavation and/or the area immediately adjacent to the work. Ensure reshaping work does not substantially change foreslopes or the drainage in the vicinity of the sign. Significant differences between the plan design and the actual field conditions shall be resolved in this manner: Survey the location and draw the actual template on the cross section. Recalculate each post length and compare to the maximum allowable leg length. If all of the maximum leg lengths are less than or equal to the maximum allowable leg length, then the proposed post design will be sufficient. If any leg is greater than the maximum allowable leg length, then submit the cross section with the actual template drawn (including offsets and elevation from the survey shown) to the Engineer. The Engineer may forward	

259_01 10/15/25	
SIGNING NOTES	
this information to the Engineer of Record in order to complete a new post design. Install the footings, stub posts, and posts according to the tolerances shown on the applicable SI Series Standard Road Plans. Footing construction is the controlling activity that substantially affects the quality of the site installation. Verify the elevation difference between the stubs is exactly the same as the elevation difference between the post lengths. If the Engineer requests, submit documentation detailing the site cross section in order to verify site installation.	
262_06 9/28/22	
UTILITIES (NOT A POINT 25 PROJECT)	
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.	
281_01 9/28/22	
SECTION 404 PERMIT AND CONDITIONS	
Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No. 14. 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.	

	Interstate Highway Symbol
	U.S. Highway Symbol
	Iowa Highway Symbol
	County Road Highway Symbol
	Evergreen Tree
	Deciduous Tree
	Fruit Tree
	Shrub (Bushes)
	Timber
	Hedge
	Stump
	Swamp
	Rock Outcrop
	Broken Concrete
	Revetment (Rip Rap)
	Cemetery
	Grave
	Cave
	Sink Hole
	Board Fence
	Chain Link or Security Fence
	Wire Fence
	Terrace
	Earth Dam or Dike (Existing)
	Tile Outlet
	Edge of Water
	Existing Drainage
	Right of Way Rail or Lot Corner
	Concrete Monument
	Well
	Windmill
	Beehive Intake
	Existing Intake
	Existing Utility Access (Manhole)
	Fire Hydrant
	Water Hydrant (Rural)



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

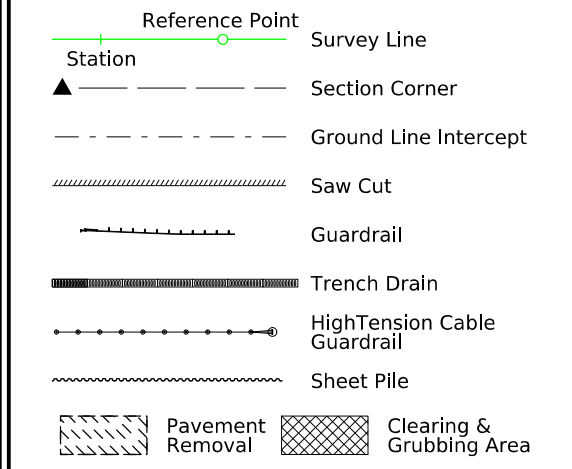
Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- | | |
|-----|--|
| E1 | EL1D, TIP Rural Electric Cooperative - Quality D |
| G | GL1D, Alliant Energy - Quality D |
| F0 | FO1D, MidAmerican-Fiber - Quality D |
| F02 | FO2D, Wellman Coop Telephoen Association - Quality D |
| F03 | FO3D, WIndstream Communications - Quality D |
| F04 | FO4D, Cooperative Telephone Company - Quality D |
| F05 | FO5D, Mediacom - Quality D |
| F06 | FO6D, Modern Cooperative Telephone - Quality D |
| W | WL1D, City of Williamsburg - Quality D |
| W2 | WL2D, Poweshiek Water Association - Quality D |

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities

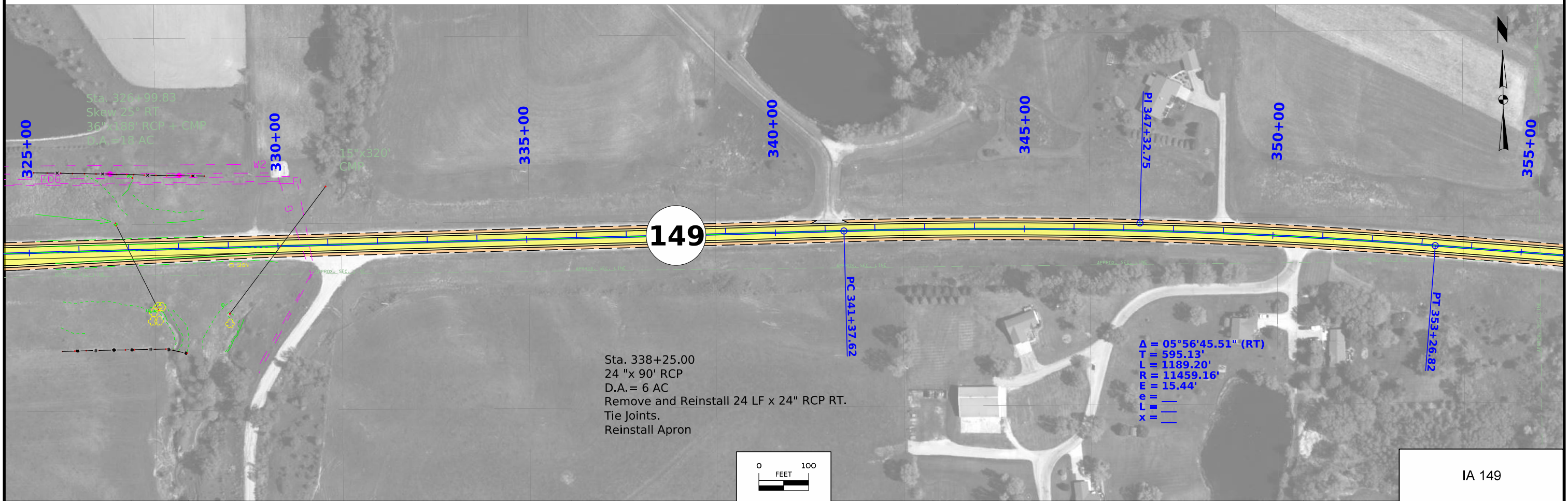
SHADING	Design Color No.		Transparency	
Pink, Dark	(13)		Temporary Pavement Shading	50%
Yellow	(4)		Proposed Pavement Shading	50%
Orange	(6)		Proposed Granular Shading	50%
Orange	(70)		Proposed Shoulder Granular Shading	50%
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading	50%
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading	50%
Brown, Light	(236)		Grading Shading	50%
Orange, Light	(134)		Proposed Granular Entrance Shading	50%
Yellow	(220)		Proposed Paved Entrance Shading	50%
Tan	(8)		Proposed Sidewalk Shading	50%
Blue, Light	(230)		Proposed Sidewalk Landing Shading	50%
Pink	(11)		Proposed Sidewalk Ramp Shading	50%
Red	(3)		Proposed Structure Shading	50%
Red	(3)		Delineates Restricted Areas	0%

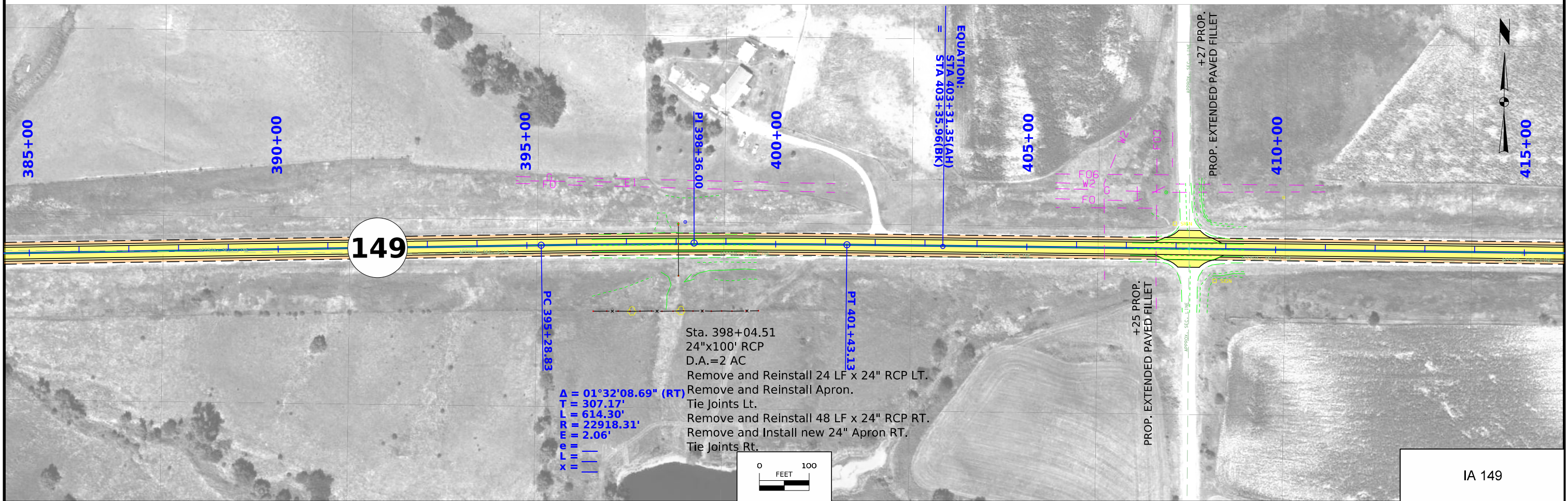
LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

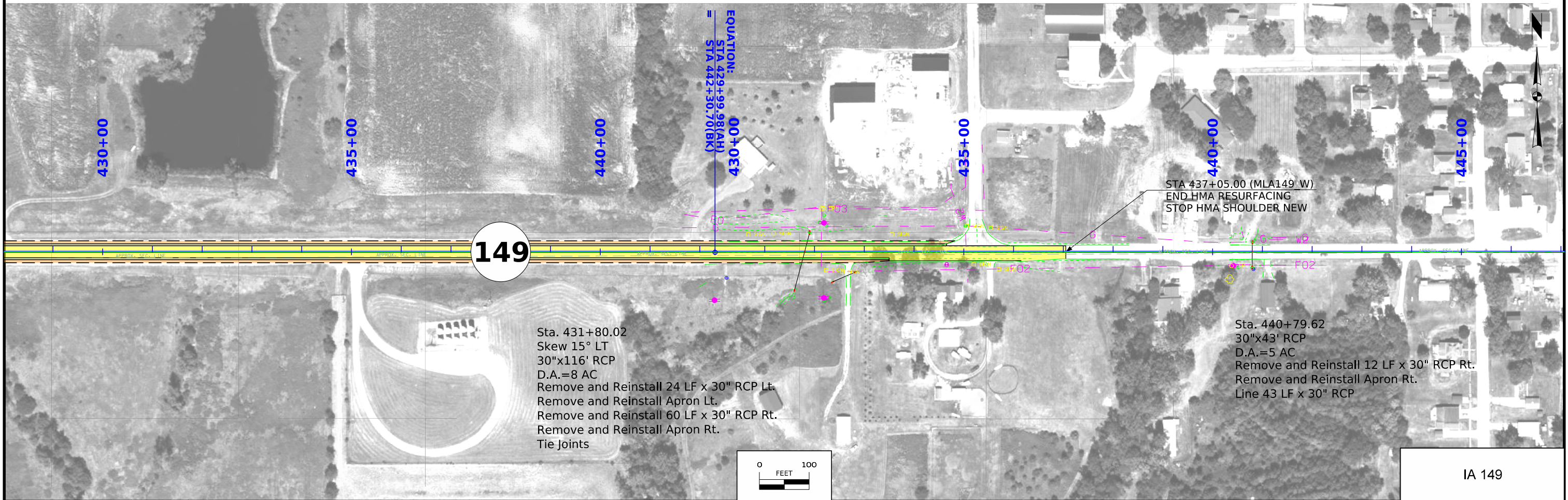
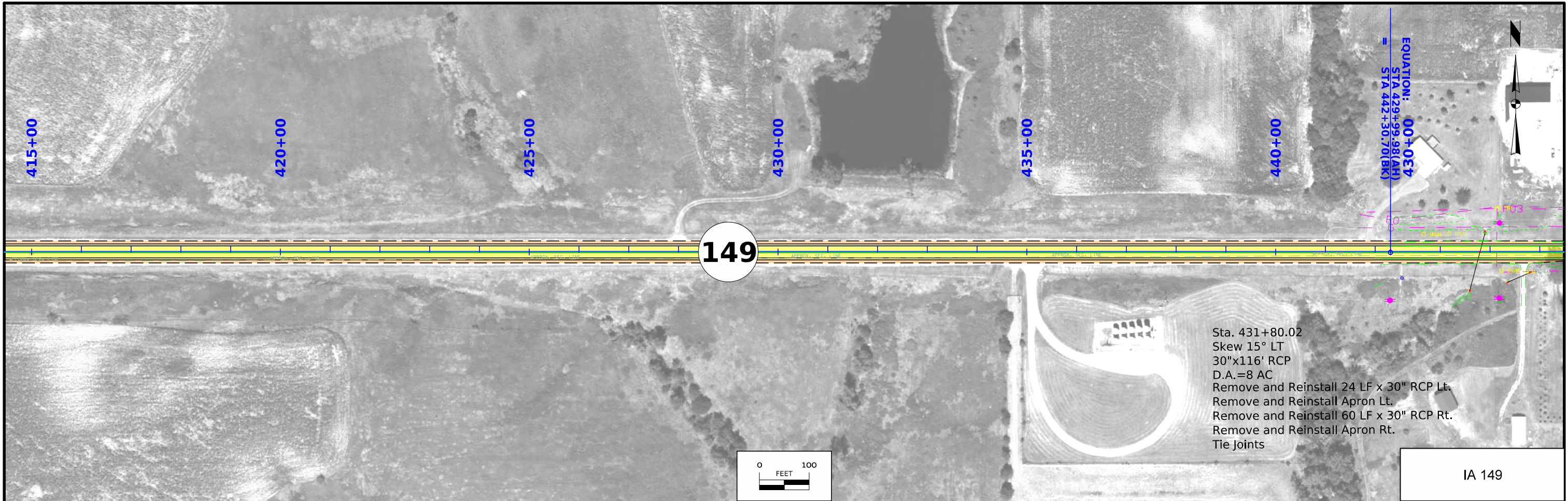


- Proposed Right-of-Way Symbol
- Proposed Right-of-Way Line
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary) Symbol
- Easement (Temporary) Line
- Easement
- Access Control
- Property Line Symbol
- Property Line

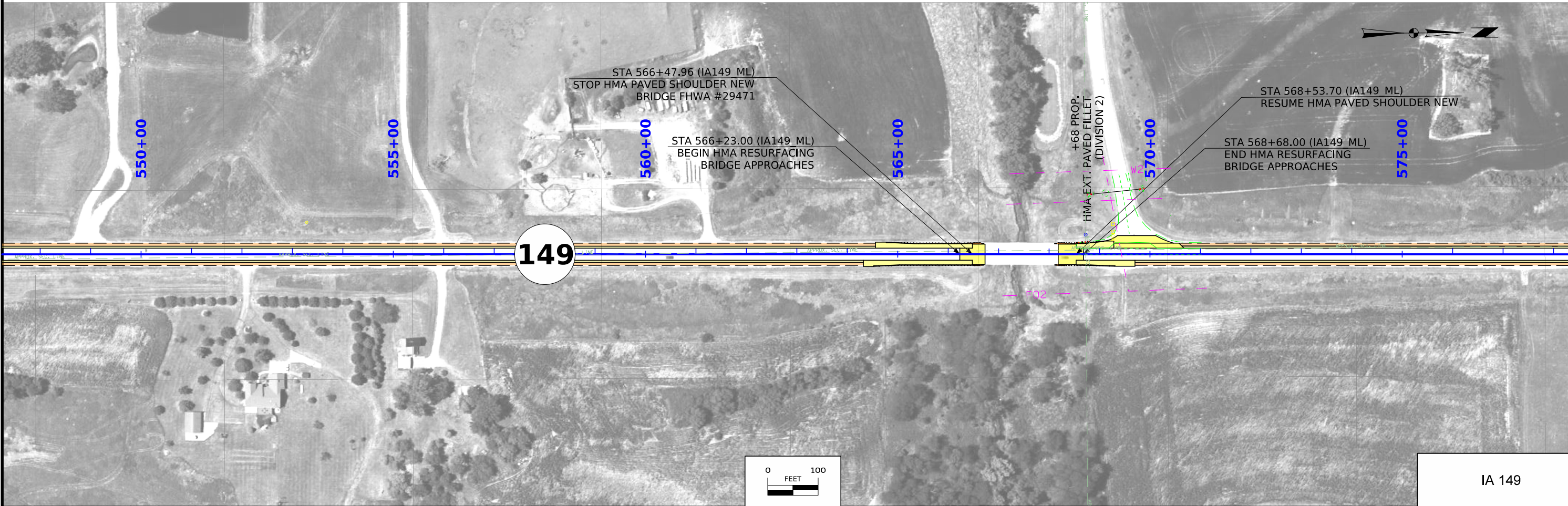
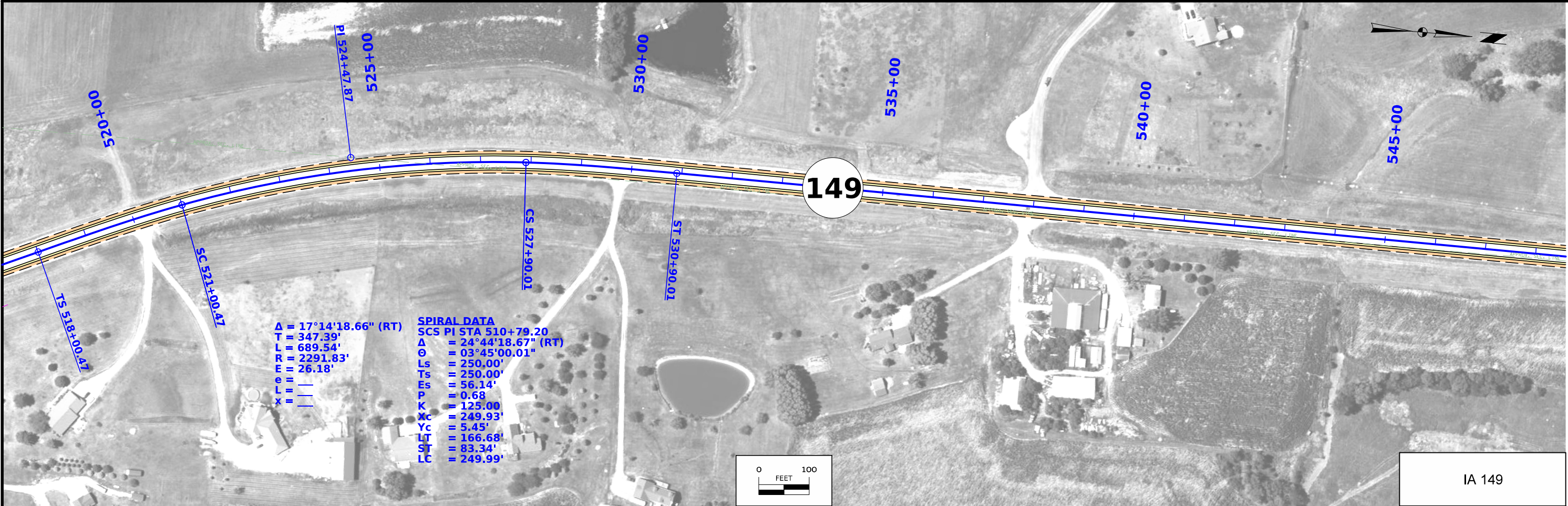
(COVERS SHEET SERIES D, E, F, & K)

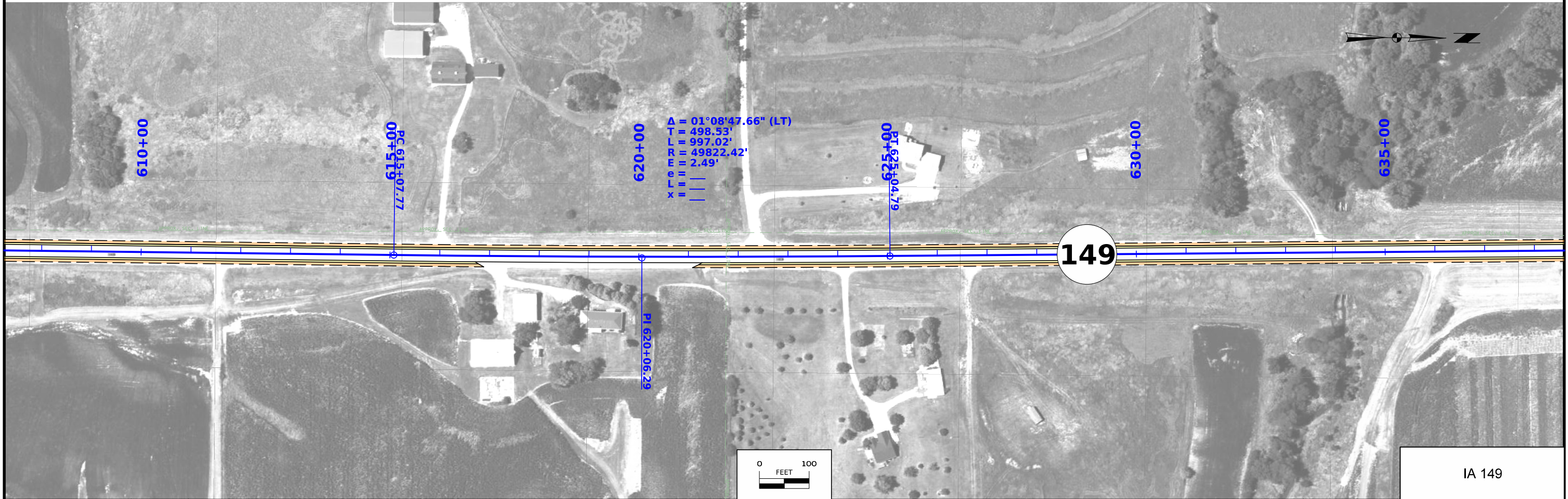
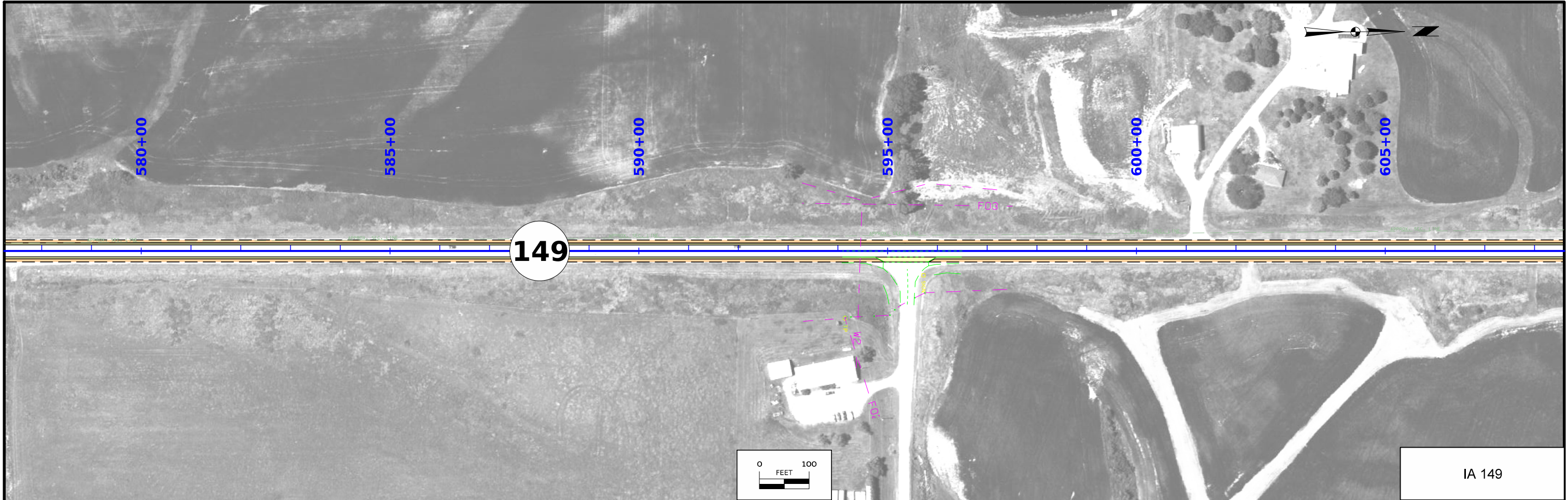






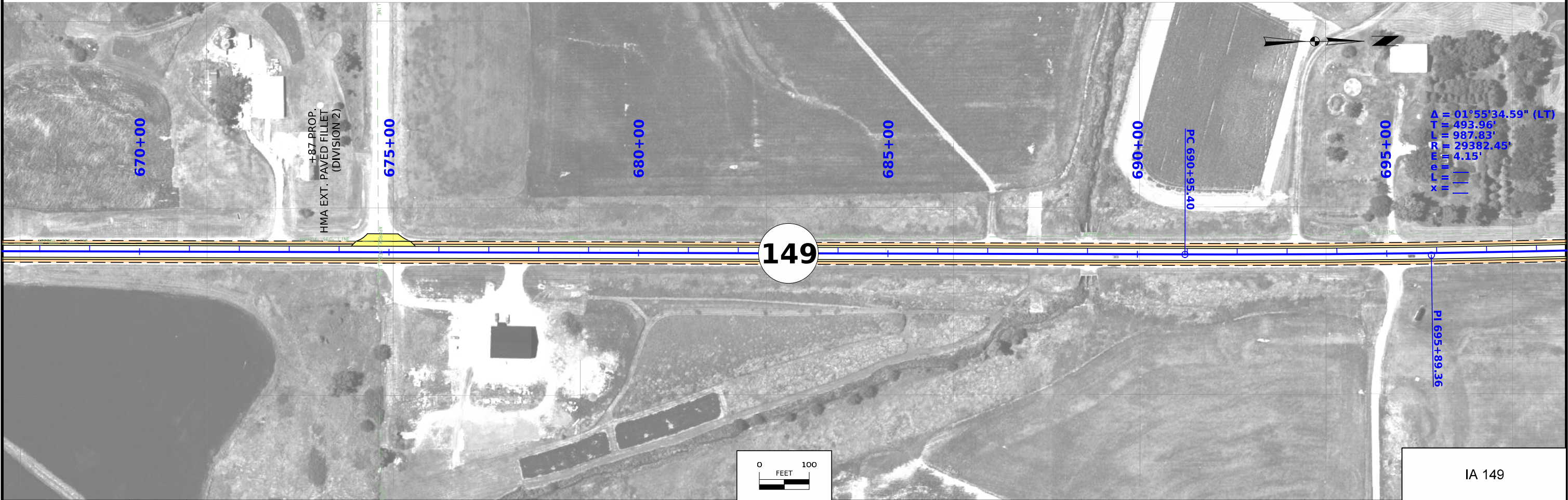
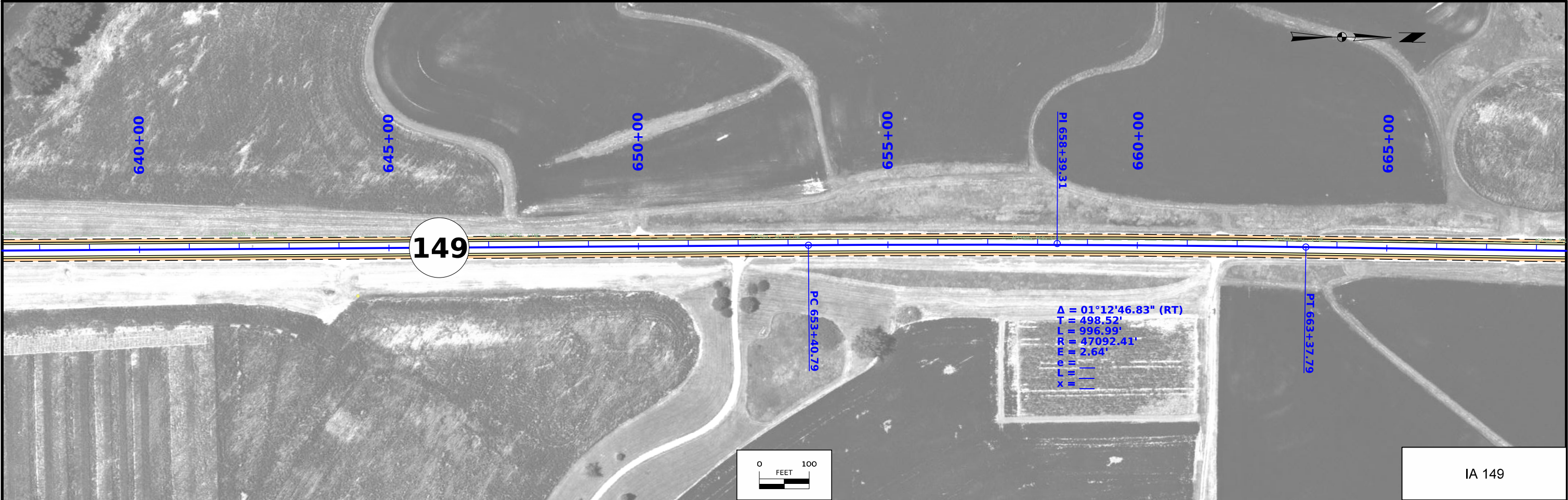
FILE NO.	ENGLISH	DESIGN TEAM HARLE/HOLUB	IOWA COUNTY	PROJECT NUMBER STP-149-2(066)--2C-48	SHEET NUMBER D.4
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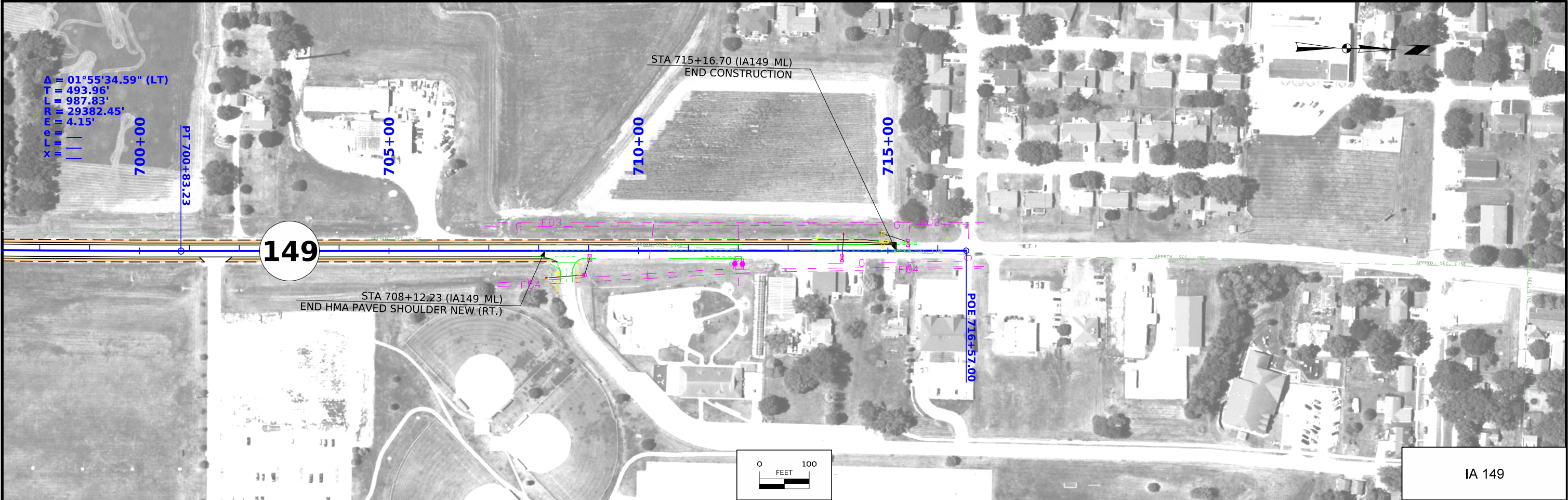




FILE NO.	ENGLISH	DESIGN TEAM HARLE/HOLUB	IOWA COUNTY	PROJECT NUMBER STP-149-2(066)--2C-48	SHEET NUMBER D.7
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SURVEY INDEX

County: Iowa
PIN: 25-48-149-020
Project Number: STP-149-2(066)—2C-48
Location: Co Rd V66 to SCL of Williamsburg
Type of Work: HMA Resurfacing/Cold-in-Place Recycling
Project Directory: 4814902025

Survey Personnel

Wes Shimp – PLS
Nathan Theis-Barnett – Survey Party Chief
Levi Suhr – Survey Party Chief
Matt Svec – Survey Technician

Date(s) of Survey

Begin Date 03/13/2026
End Date 05/31/2026

General Information

This survey is for IA Hwy 149 resurfacing and new paved shoulders from V66 to Williamsburg. This survey request was for the IA Hwy 149 corridor only. This project is a Partial Field DTM.

Utility Information

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

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on five new primary project control points. Three five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values. Three existing Iowa DOT monuments were found and checked into. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 10
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignment for IA Hwy 149 this survey is a retrace of As-built Plans No. F-149-2(40)—20-48. Survey stationing was equated to the plan PI at Sta. 293+93.64 and carried ahead with equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 293+93.64 As-built Plans Project No. F-149-2(40)—20-48
Survey PI Sta. 293+93.64

PI Sta. 347+32.92 As-built Plans Project No. F-149-2(40)—20-48
Survey PI Sta. 347+32.75

PI Sta. 363+03.58 As-built Plans Project No. F-149-2(40)—20-48
Survey PI Sta. 363+03.07

PI Sta. 398+35.69 As-built Plans Project No. F-149-2(40)—20-48
Survey PI Sta. 398+36.00

POT Sta. 403+35.66 As-built Plans Project No. F-149-2(40)—20-48
Survey POT Sta. 403+35.96
Station Equation - Ahead Sta. 403+31.35

POT Sta. 442+30.72 As-built Plans Project No. F-149-2(40)—20-48
Survey POT Sta. 442+30.70
Station Equation - Ahead Sta. 429+99.98

PI Sta. 448+65.00 As-built Plans Project No. F-149-2(40)—20-48
Survey PI Sta. 448+65.00

PT Sta. 449+48.8 As-built Plans Project No. F-149-2(40)—20-48
Survey POT Sta. 449+48.85
Station Equation - Ahead Sta. 450+12.3

POT Sta. 461+99.47 As-built Plans Project No. F-149-2(40)—20-48
Survey POT Sta. 461+99.51

Ties into existing alignment provided for the north section of project

CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 10 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 10 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code - Description
100	7909075.41	20402545.50	854.16	CP SET FENO NE OF HWY 149 AND O AVE
103	7908948.27	20390888.09	768.37	CP SET FENO WEST OF HWY 149 AND M AVE
105	7919263.31	20406787.53	832.28	CP SET FENO WEST OF HWY 149 AND 0.3 MILES SOUTH OF 270TH STREET
107	7928372.52	20406960.78	788.44	CP SET FENO EAST OF HWY 149 AND 0.5 MILES SOUTH OF 250TH STREET
109	7935552.23	20406798.93	818.32	CP SET FENO SW OF HWY 149 AND LEOS BLVD
484309	7938751.19	20406274.40	785.40	CP FND MON NORTH OF NORTH STREET AND EAST OF ELM STREET
484251	7931346.94	20405918.61	830.03	CP FND MON SOUTH OF 250TH STREET AND 0.2 MILE EAST OF HWY 149
484222	7908883.21	20407802.63	860.00	CP FND MON 150 FT EAST OF HATTER AVE AND SOUTH OF CLEVELAND STREET

101_18
6/17/24

SUPERELEVATION DATA
See PV-300 Series

Line No.	Road Identification	Circular Curve or Spiral Curve Name	Radius (FT)	e (%)	L (FT)	x (FT)	Standard Road Plan	Section A-A	Section A'-A'	Section B-B	Section C'-C'	Section C-C	Section D-D	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
1.0	IA 149	SCS1-SC	3819.7	5.3	250.0	94.00	PV-301	490+55.56		491+49.56		492+43.56	493+99.56	493+99.56			493+38.24	493+38.24		
2.0	IA 149	SCS1-CS	3819.7	5.3	250.0	94.00	PV-301	513+39.86		512+45.86		511+51.86	509+95.86	509+95.86			510+57.18	510+57.18		
3.0	IA 149	SCS2-SC	2291.8	7.3	250.0	68.00	PV-301	517+82.47		518+50.47		519+18.47	521+00.47	521+00.47			519+87.46	519+87.46	520+90.20	
4.0	IA 149	SCS2-CS	2291.8	7.3	250.0	68.00	PV-301	531+08.01		530+40.01		529+72.01	527+90.01	527+90.01			529+03.02	529+03.02	528+00.28	

108_23A
8/15/22

TRAFFIC CONTROL PLAN

- 1. IA 149 to remain open to through traffic at all times.
- 2. Traffic Control shall be performed according to the Standard Road Plans listed in Tabulation 105-4 in the C-Sheets.
- 3. Work shall be staged so that two adjacent side streets are not closed at the same time.

111_01
10/14/22

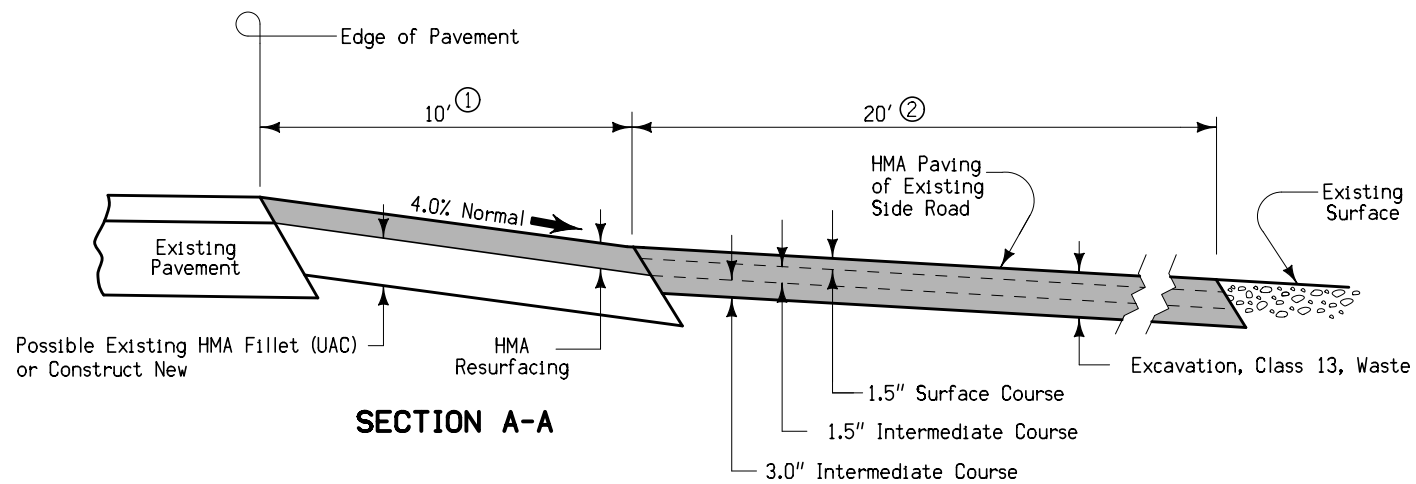
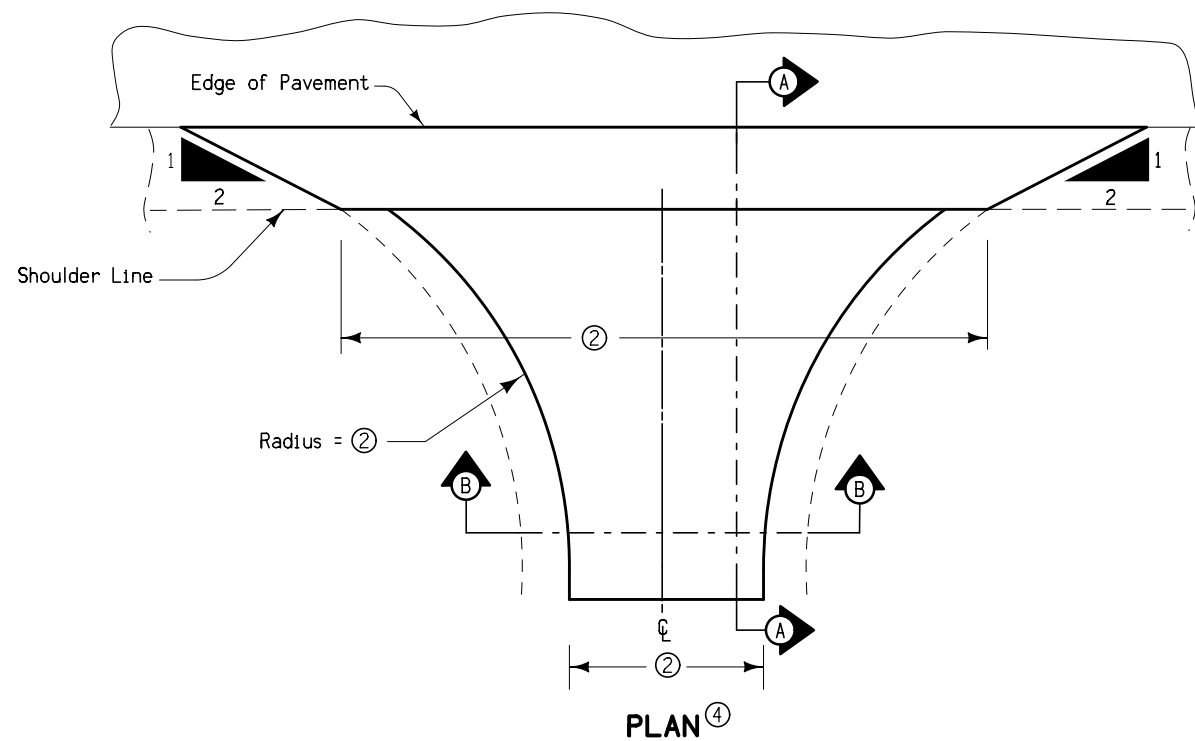
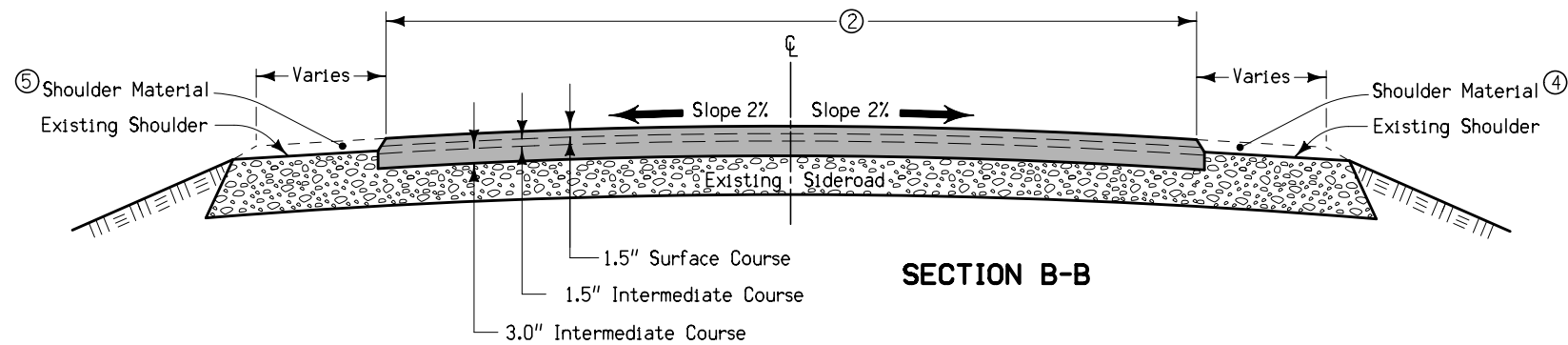
COORDINATED OPERATIONS

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

Project	Type of Work
None	

108_25
3/28/24

511 TRAVEL RESTRICTIONS													
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	IA 149	Both	Iowa	2.0 MI. N OF SR F52	BRANCH OLD MANS CREEK	Traffic Control Device	FHWA# 29471	Horizontal	40	20	20	40	



NO.	LOCATION	SIDE	EXISTING SURFACE TYPE	COMMENTS
1	0 Avenue	Both	Granular	Granular
2	280th St.	Both	Granular	Granular
3	270th St.	Lt.	Paved	Granular
4	250th St.	LT.	Paved	Granular

NOTES:

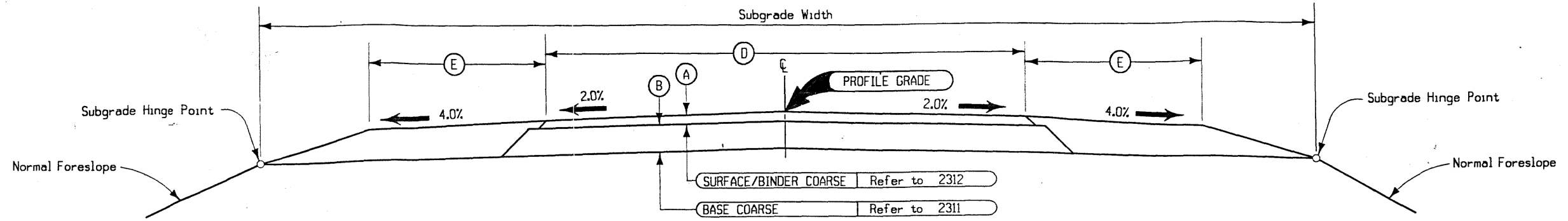
- ① Quantities in STP-149-2(066)--2C-48 (Division 1).
- ② Quantities in STP-149-2(066)--2C-48 (Division 2). Refer to sheets D.2-D.9 for approximate dimensions at each location. Dimensions shall be adjusted by the engineer to fit existing conditions. Contact Iowa County Engineer prior to paving.
- ③ Radius shall match existing conditions.
- ④ Quantity included in bid item for Granular Shoulder, Type B.

DETAIL SHEET

EXTENDED PAVED FILLETS FOR SIDEROADS



Debris Pile located at Sta. 632+50 viewed looking west to east



Notes:

Dimensions indicated hereon are for design purposes. Variation from the normal section will be allowed only at locations specifically designated by the engineer.

LOCATION			DIMENSIONS				SHOULDER
IDENT.	STATION TO STATION		(A)	(B)	(D)	(E)	TYPE
1a. 149	295+44.03	433+50.00 (1)	3"	6.5"	24'	8'	Gran.
1a. 149	433+50.00	436+00.00	3"	6.5"	24'	(3)	(4)
1a. 149	436+00.00	437+00.00	3"	6.5"	(2)	(5)	(4)

NOTES:

(1) Equations: Sta. 403+35.66 = Sta. 403+31.35
Sta. 442+30.72 = Sta. 429+99.98

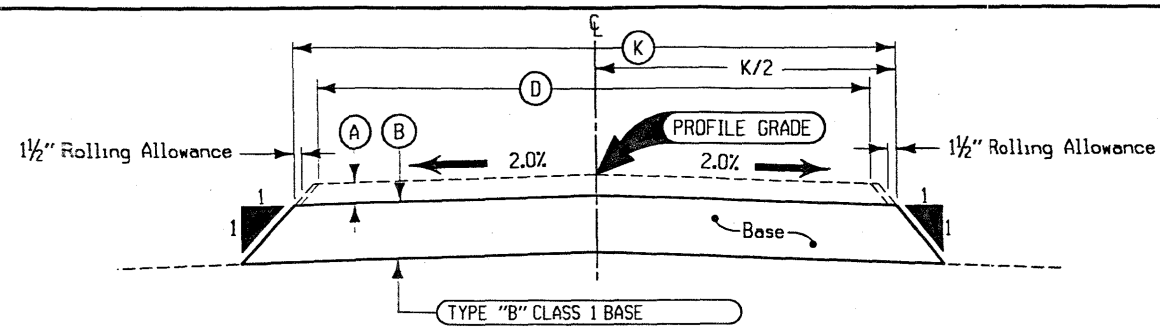
(2) Pavement tapers 2' on left only to "D" of 26'.

(3) Left shoulder is 8.0'. Right shoulder is 8.5'.

(4) Left shoulder is granular. Right shoulder is paved. Refer to Typical MOD4.

(5) Left shoulder tapers from 8.0' to 6.0'. Right shoulder tapers from 8.5' to 2.0'.

TYPICAL SECTION ACC PAVING



Notes:

For (B) of 8" or less base is assumed to be placed in two lifts.

For (B) of more than 8" base is assumed to be placed in three lifts.

A tack coat of 0.05 per sq. yd. is estimated between lifts of base.

Design Weight = 140 lbs. per cu. ft.

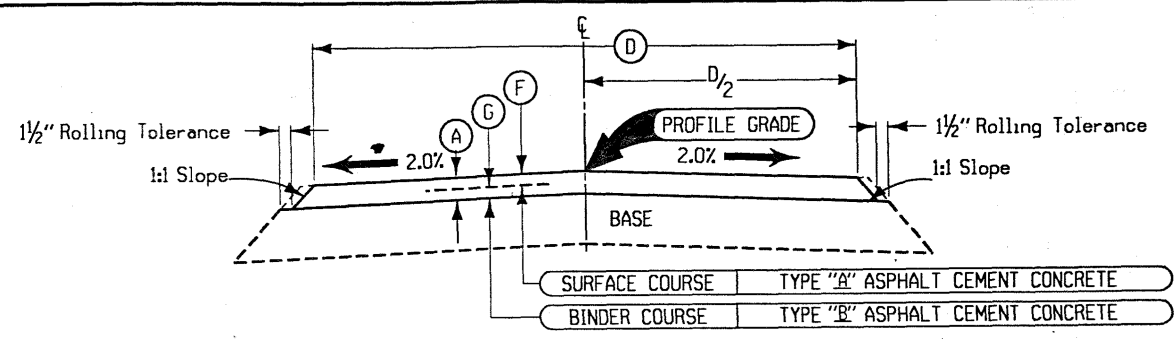
TABLE OF DESIGN QUANTITIES Per Station					
DIMENSIONS				PRIME COAT Gal.	TACK COAT Gal.
(K)	(D)	(A)	(B)	61.86	14.05
24.75'	24.0'	3.0"	6.5"	5.75	95.88

Notes:

(1) is required minimum dimension upon completion of construction operations and is used for determining quantities.

Where base is constructed on Soil-Lime or Soil-Cement sub-base, initial prime is not required. Where base is constructed on Soil Aggregate subbase or on earth subgrade, initial prime is estimated at the rate of 0.20 gal. per sq. yd. but may be eliminated at the direction of the engineer. Article 1109.03 of current Spec's. shall not apply to this work.

TYPICAL CROSS SECTION BASE



Notes:

(1) is required minimum dimension upon completion of construction operations and is used for determining quantities.

A tack coat of 0.05 gal. per sq. yd. preceding each lift of asphalt cement concrete may be required. This coat shall be applied only as directed by the engineer.

Indicated quantity is estimated on the basis of one tack coat preceding each lift.

TABLE OF DESIGN QUANTITIES Per Station

DIMENSIONS				PRIME AND TACK COAT Gallons	ASPHALT CEMENT Tons	ASPHALT CEMENT CONCRETE Tons	
(A)	(G)	(F)	(D)			SURFACE (1)	BINDER (1)
3.0"	1.5"	1.5"	24.0'	27.22	2.49	21.11	21.33

Notes:

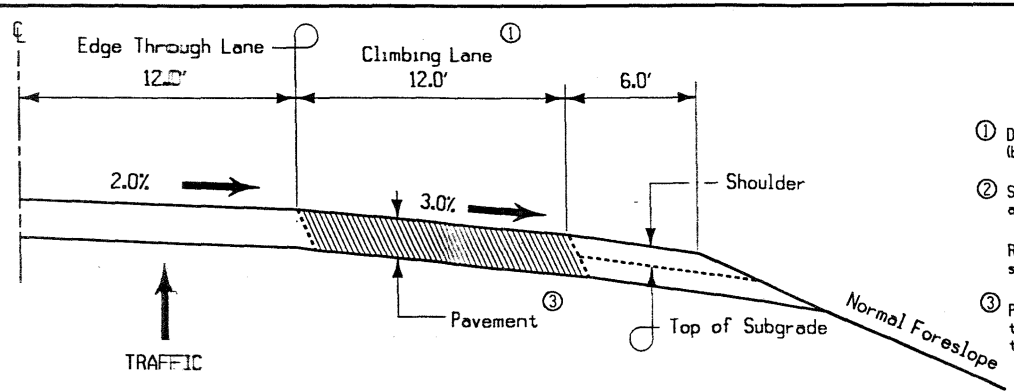
(1) To be placed in one lift.

(2) To be placed in two lifts.

Design Weight = 140 lbs. per cu. ft.

Quantities indicated hereon are for design purposes. Variation from the normal section will be allowed only when so specified by the engineer.

TYPICAL CROSS SECTION SURFACE MAT



(1) Details shall be similar for construction for either side (by stationing) of roadway.

(2) Shoulder shall be constructed 6 ft. wide only when adjacent to the climbing lane pavement.

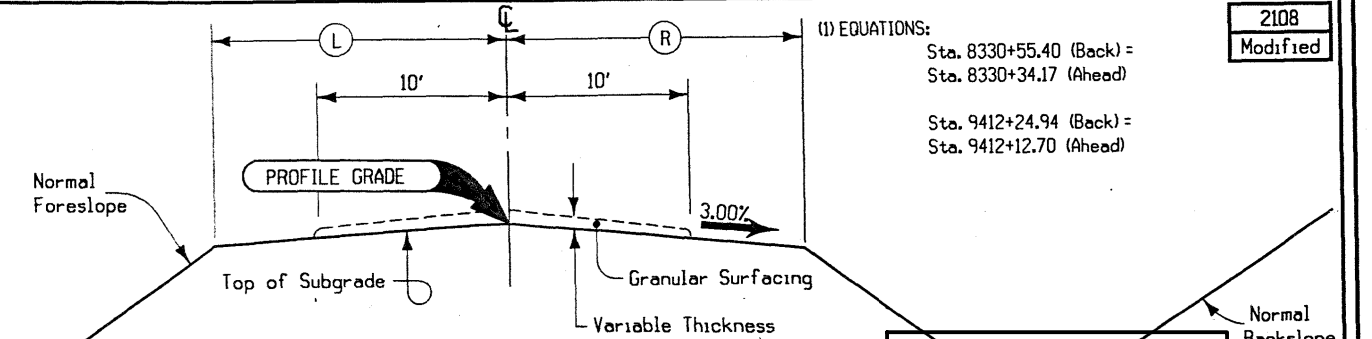
Refer to additional other plan drawings for details of shoulder construction.

(3) Pavement for climbing lane shall be constructed of the same combination of requirements specified for the through roadway pavement.

LOCATION			
ROAD IDENT.	STATION TO STATION		SIDE
1a. 149	295+44.03	329+55.00 •	Rt.

TYPICAL HALF SECTION ACC CLIMBING LANE

* Includes a 480' Taper.



Gran. Surfacing shall be placed as follows:

Stage 1 (Grading) Design application rate is 400 tons per mile.

Stage 2 (Paving) Design application rate is 400 tons per mile.

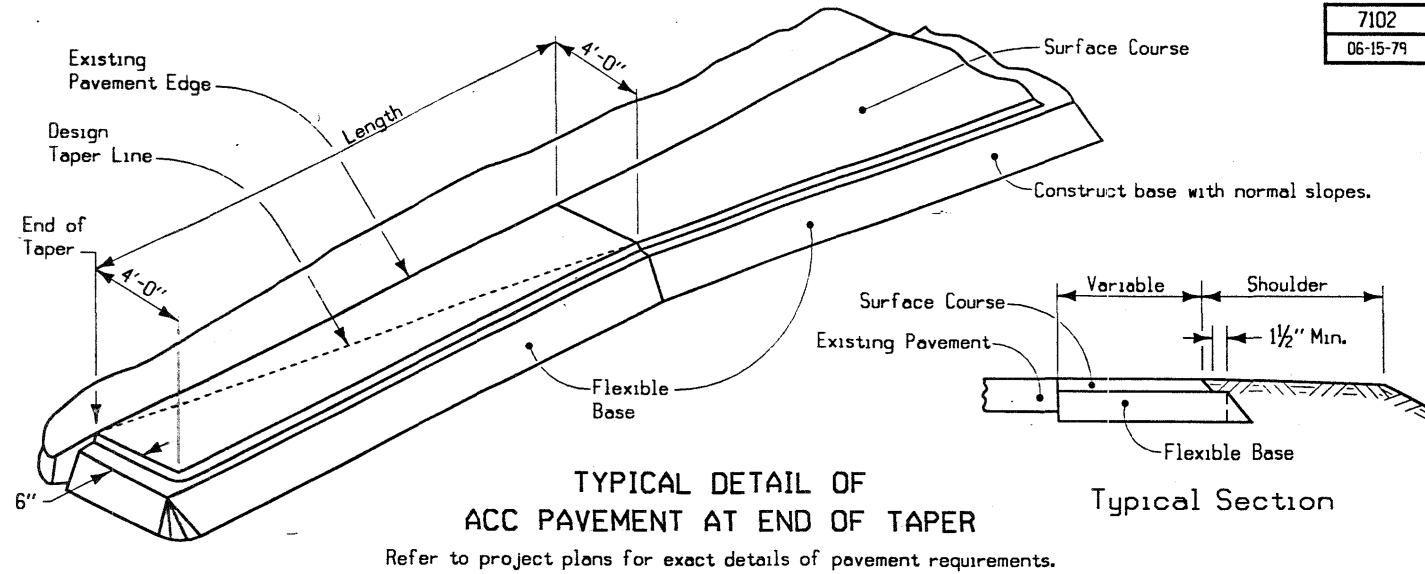
LOCATION			DIMENSIONS		SLOPES	
ROAD IDENT.	STATION TO STATION		(L)	(R)	FS	BS
Rt. Sta. 331+28 **	8325+00.00	8331+15.23 (1)	14.0'	14.0'		
Rt. & Lt. Sta. 408+21	9405+25.00	9413+75.00 (1)	14.0'	14.0'		

NOTE:

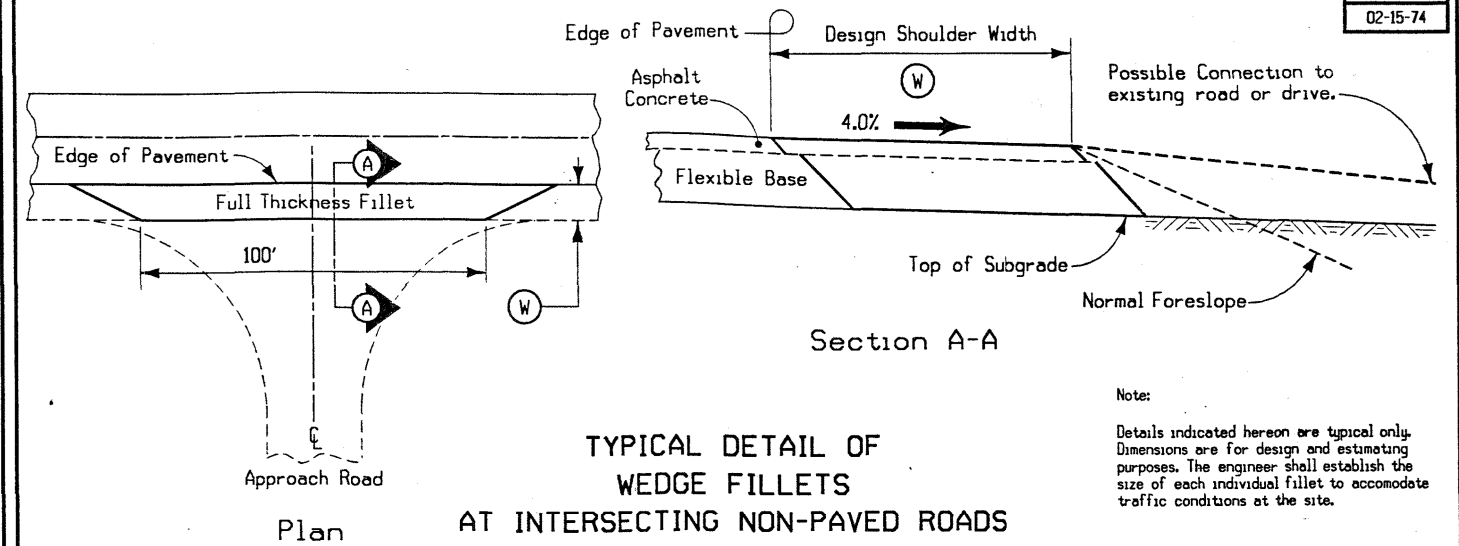
Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.

See Cross Sections for additional details of ditches and backslopes.

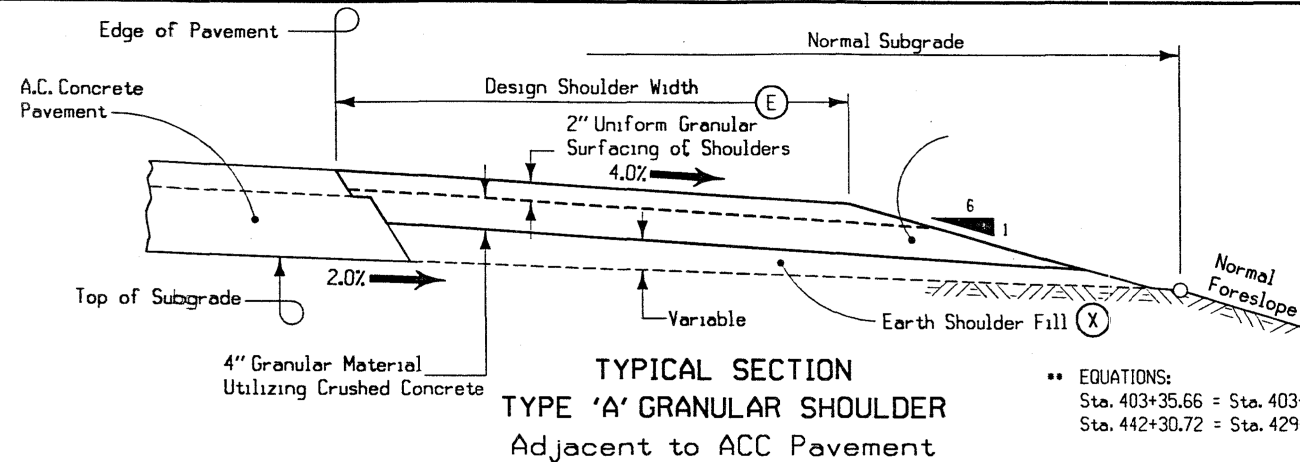
FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

7102
06-15-79

**TYPICAL DETAIL OF
ACC PAVEMENT AT END OF TAPER**
Refer to project plans for exact details of pavement requirements.

7103
02-15-74

**TYPICAL DETAIL OF
WEDGE FILLETS
AT INTERSECTING NON-PAVED ROADS**

7111
MODIFIED

Note:
Earth Shoulder fill requires approximately ① cubic yards of excavation, including ②% for shrinkage, per station.

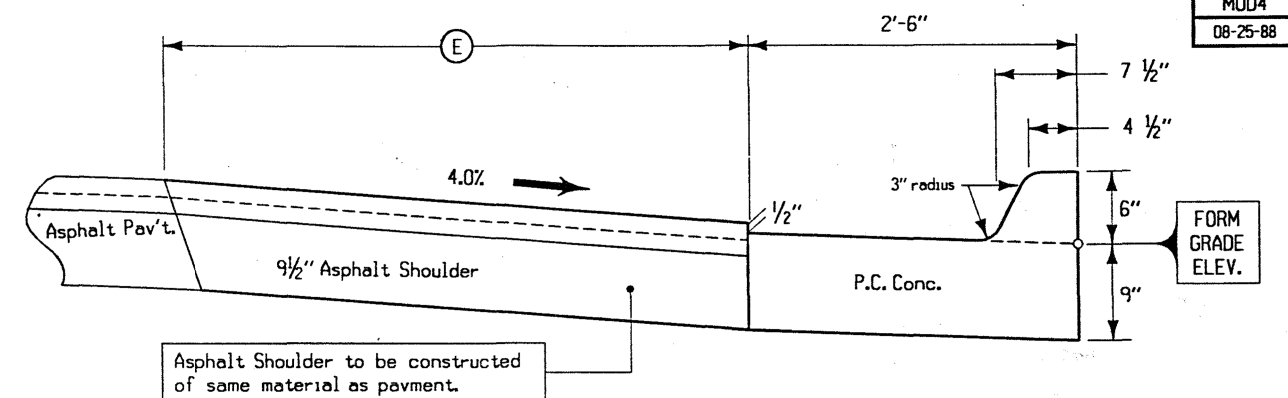
ROAD IDENT.	STATION TO STATION		(E)	SIDE	(X)
1a. 149	295+44.03	436+00.00 **	8.0'	Left	8.32
1a. 149	295+44.03	329+55.00	6.0'	Right	8.00
1a. 149	329+55.00	433+50.00 **	8.0'	Right	8.32
1a. 149	436+00.00	437+00.00	(1)	Left	

** EQUATIONS:
Sta. 403+35.66 = Sta. 403+31.35
Sta. 442+30.72 = Sta. 429+99.98

See Standard Road Plan
RJ-260 for construction
requirements.

(1) Width tapers from 8.0' to 6.0'.

**TYPICAL SECTION
TYPE 'A' GRANULAR SHOULDER
Adjacent to ACC Pavement**

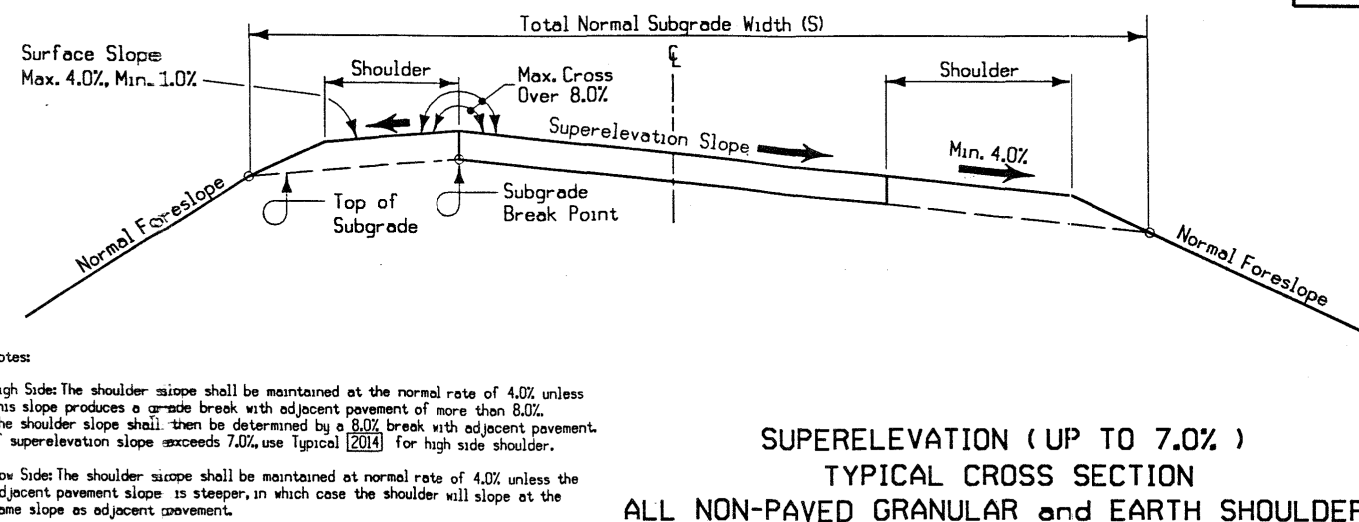
MOD4
08-25-88

(1) Curb and Gutter not required, Paved
Shoulder width tapers from 8.5' to 2.0'.

LOCATION				
IDENT.	STATION TO STATION		SIDE	(E)
1a. 149	433+50.00	436+00.00	Rt.	6.0'
1a. 149	436+00.00	437+00.00	Rt.	(1)

DETAILS OF 2'-6\"/>

NOTE:
Rumble Strips will not be required
in the Paved Shoulders.

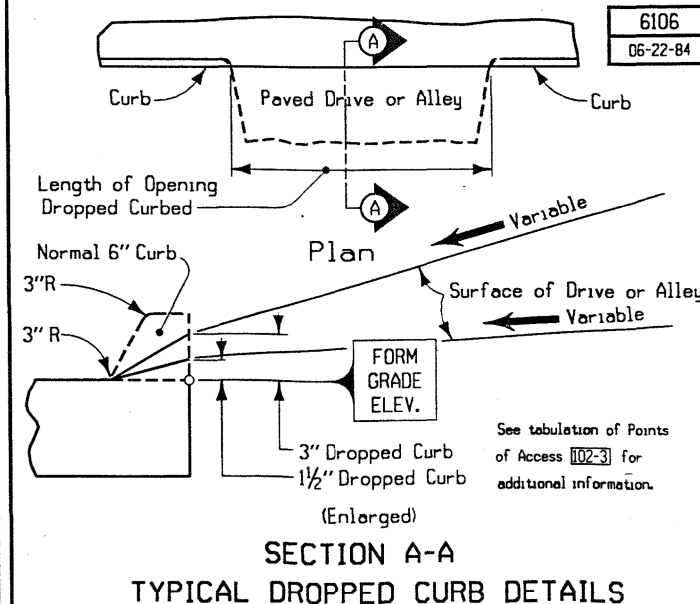
2011
08-30-88

Notes:

High Side: The shoulder slope shall be maintained at the normal rate of 4.0% unless this slope produces a grade break with adjacent pavement of more than 8.0%. The shoulder slope shall then be determined by a 8.0% break with adjacent pavement. If superelevation slope exceeds 7.0%, use Typical [2014] for high side shoulder.

Low Side: The shoulder slope shall be maintained at normal rate of 4.0% unless the adjacent pavement slope is steeper, in which case the shoulder will slope at the same slope as adjacent pavement.

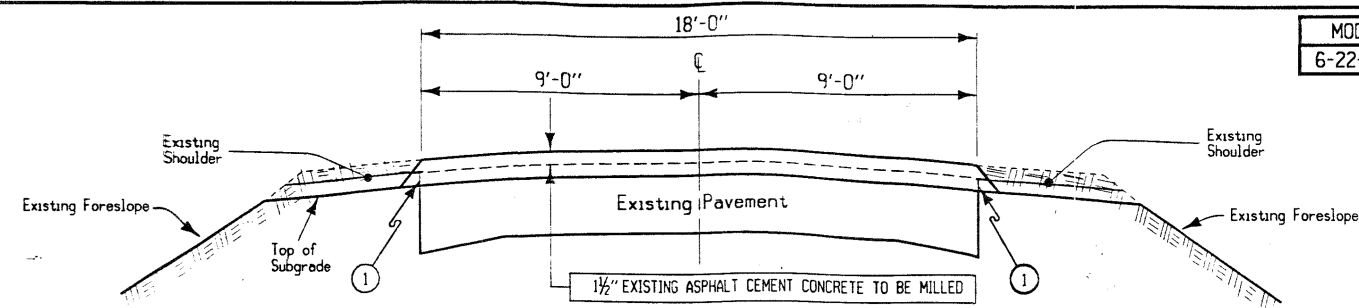
**SUPERELEVATION (UP TO 7.0%)
TYPICAL CROSS SECTION
ALL NON-PAVED GRANULAR and EARTH SHOULDERS**

6106
06-22-84

See tabulation of Points
of Access [002-3] for
additional information.

**SECTION A-A
TYPICAL DROPPED CURB DETAILS**

**FOR REFERENCE ONLY
NOT FOR CONSTRUCTION**



**TYPICAL CROSS SECTION
ASPHALT CEMENT CONCRETE MILLING**

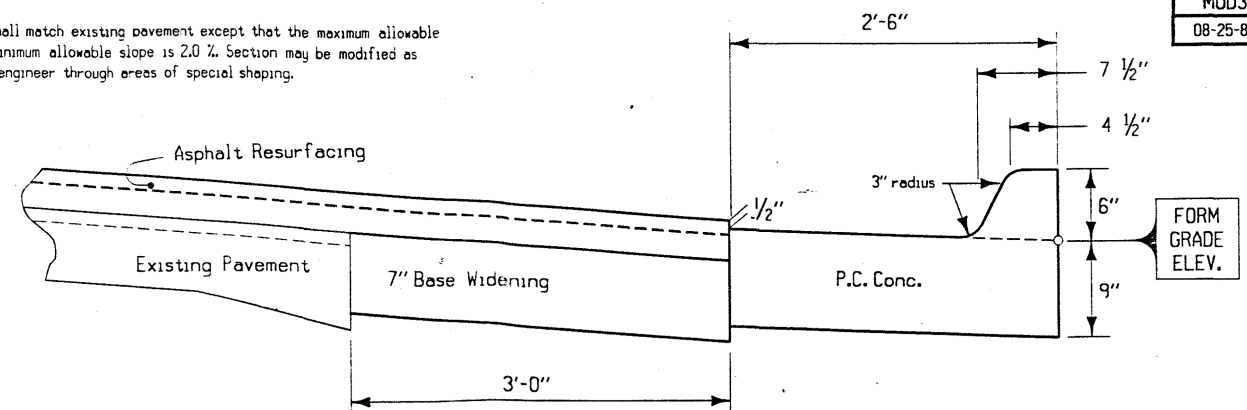
ROAD IDENT.	STATION TO STATION	
1a. 149	437+00.00	460+75.00

EQUATION:
Sta 449+48.80 (Back)
= Sta 450+12.30 (Ahead)

① Sawcut and removal of ACC is required to accommodate widening See Typical MOD2.

MOD1
6-22-87

Note:
Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the engineer through areas of special shaping.

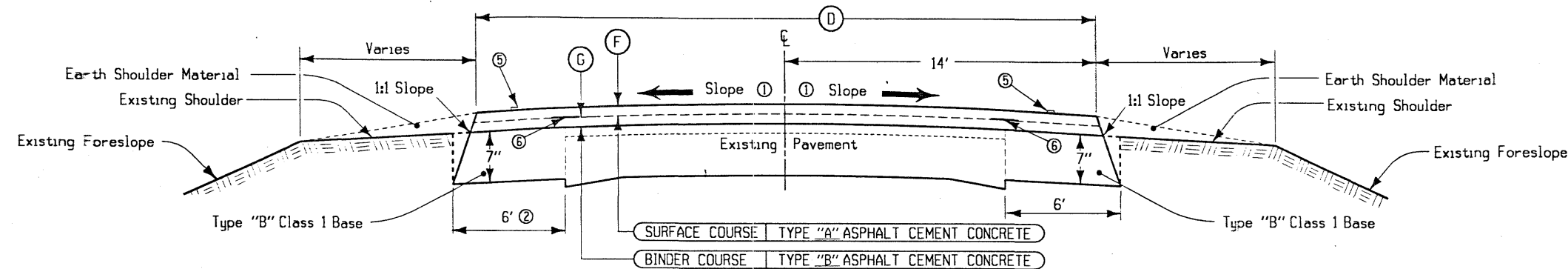


**DETAILS OF 2'-6" P.C. CONCRETE
CURB AND GUTTER UNIT**

Adjacent to Asphaltic Concrete Widening and Resurfacing

LOCATION		
IDENT.	STATION TO STATION	SIDE
1a. 149	439+00.00 440+78.00	Lt.

MOD3
08-25-88



DESIGN RATES	
ITEM	RATE
Surface Course	140 lbs./cu.ft
Binder Course	140 lbs./cu.ft
Tack Coat	0.05 gal./sq.yd.

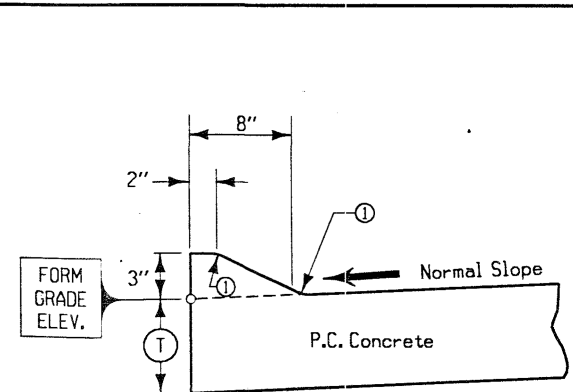
TABLE OF DESIGN QUANTITIES						Per Station	
LOCATION		DIMENSIONS			PRIME AND TACK COAT Gallons	ASPHALT CEMENT Tons	ASPHALT CEMENT CONCRETE Tons
ROAD IDENT.	STATION TO STATION	F	G	D			SURFACE ③ BINDER ④
1a. 149	437+00.00 447+17.70	1.5"	3.0"	28.0'	53.97	7.14	24.61 49.91
1a. 149	447+17.70 449+48.50	1.5"	3.0"	② 30.0'	58.41	7.94	26.36 53.41
1a. 149	450+12.30 460+75.00	1.5"	3.0"	28.0'	53.97	7.14	24.61 49.91

EQUATION:
Sta 449+48.80 (Back)
= Sta 450+12.30 (Ahead)

Notes:

- Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the engineer through areas of special shaping.
- Refer to tabulation listing of super-elevated curves and Standard Road Plans for additional requirements through super-elevated curves.
- Lt. Widening Unit varies through existing curve as follows:
447+17.70 to 447+47.70 tapers 5' to 7'; 447+47.70 to 449+18.80 7';
449+18.80 to 449+48.80 tapers 7' to 5'.
- To be placed in one lift.
- To be placed in two lifts.
- White Edgeline to be placed 12.0' Rt. and Lt. of Centerline.
- Place 18" wide Fabric Reinforcement over Widening Unit Joints, between the Binder and Surface.

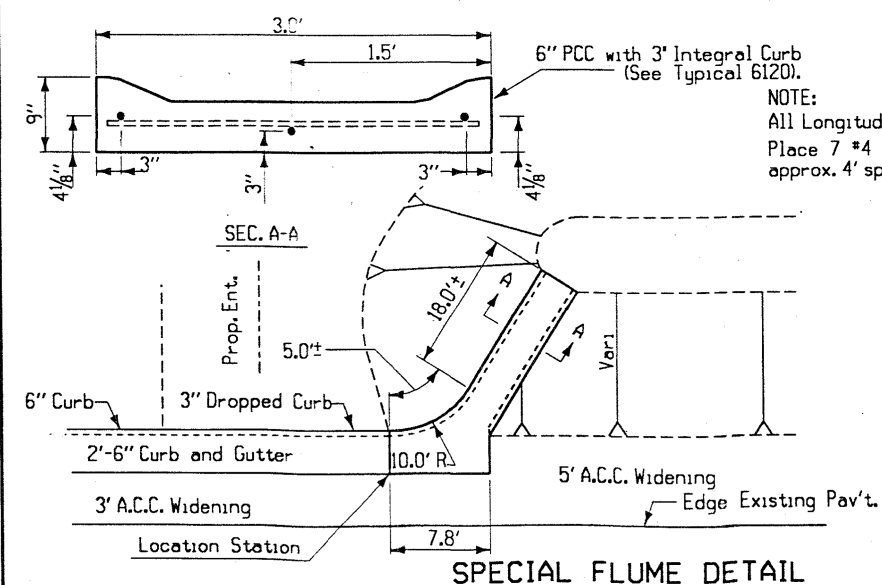
**TYPICAL CROSS SECTION
ASPHALT CEMENT CONCRETE RESURFACING**



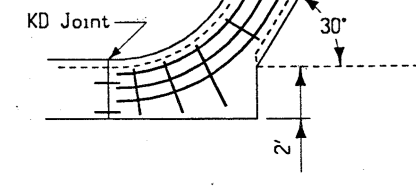
**FOR REFERENCE ONLY
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① is the thickness specified for pavement
② 3" radius
DETAILS OF 3" INTEGRAL CURB

6120
10-26-79



NOTE:
All Longitudinal Bars will be #5.
Place 7 #4 Transverse Bars at approx. 4' spacing.



DETAIL OF REINFORCEMENT

Location	Station	Side
	439+00.00	Lt.

TYP02