HMA RESURFACING WITH MILLING
STP-078-4(29)--2C-44

LETTING DATE
01-19-2022

HENRY COUNTY

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

HENRY COUNTY

HMA RESURFACING WITH MILLING

IA 78 130TH ST/JAMES AVE INTERSECTION S OF OLDS TO WINFIELD

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
45
PROJECT IDENTIFICATION NUMBER
21-44-078-020
PROJECT NUMBER
STP-078-4(29)--2C-44
R.O.W. PROJECT NUMBER

INDEX OF SHEETS

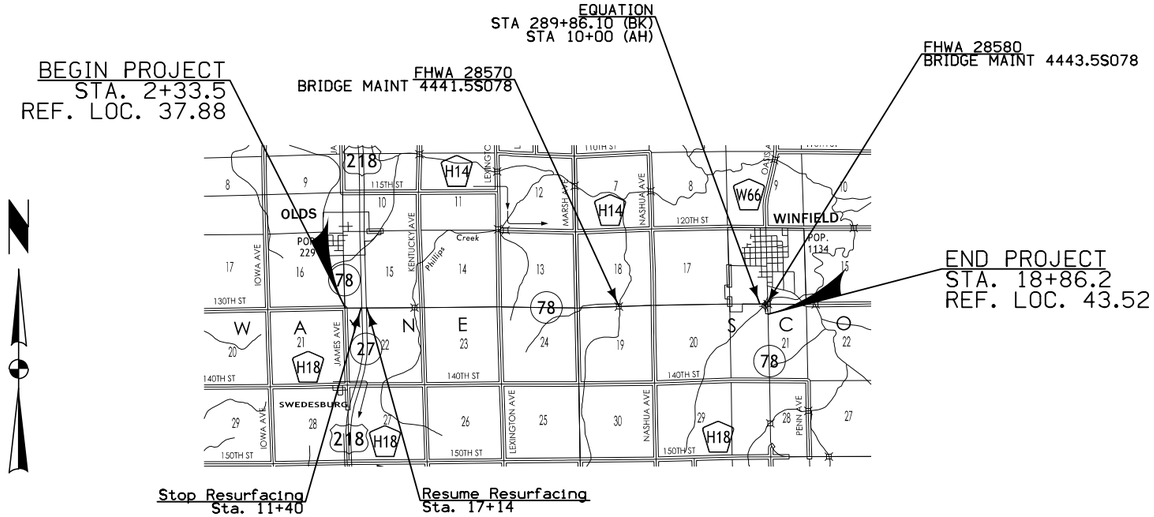
BEGIN PROJECT
STA. 2+33.5
REF. LOC. 37.88

EQUATION
STA 289+86.10 (BK)
STA 10+00 (AH)

FHWA 28570
BRIDGE MAINT 4441.5S078

FHWA 28580
BRIDGE MAINT 4443.5S078

END PROJECT
STA. 18+86.2
REF. LOC. 43.52



Stop Resurfacing
Sta. 11+40

Resume Resurfacing
Sta. 17+14

LOCATION MAP SCALE
0 1 2 3
Miles

DESIGN DATA RURAL

2022 AADT	1,065	V.P.D.
2042 AADT	1,280	V.P.D.
2042 DHV	140	V.P.H.
TRUCKS	12	%
Total Design ESALs	409,080	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Jonathan W. Bahr	Primary Signature Block
RC.1	Seana K. Godbold	Landscape Design
V.1	Jaremy D. Kotta	Structural Design

Project Design Events:
D7 – 11–02–2021

PRELIMINARY PLANS

Subject to change by final design.

DM5 Plan – Date: 10–15–2021

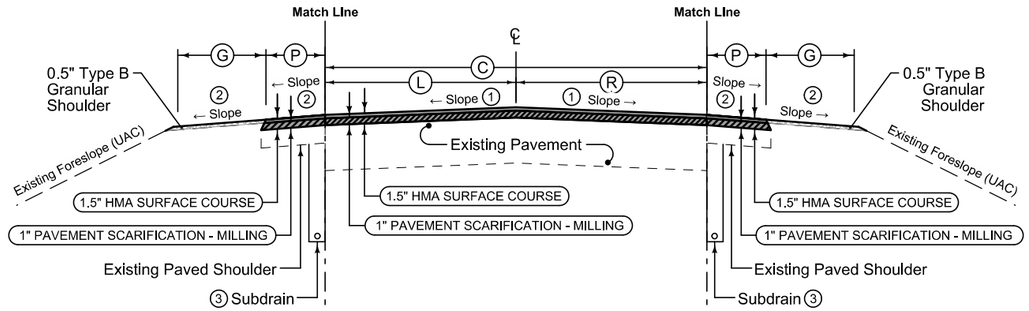
FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER A.1

7:12:45 PM 10/15/2021 kjackso pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\4407802021\Design\CADD_Files\Sheet_Files\SHT_44078029_A01.dgn

Combination Shoulder

3R_Shldr_C_Overlay_ 04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
2+33.5	11+40	2.0	3.0
17+14	191+80.18	2.0	3.0
192+03.43	289+86.10 (E1)	2.0	3.0
10+00 (E1)	12+94	2.0	3.0

STATION EQUATION (E1) 289+86.10 (BK) = 10+00 (AH)



3R_MillingOverlay_ Modified				
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet
2+33.5	11+40	22.0	11.0	11.0
17+14	191+80.18	22.0	11.0	11.0
192+03.43	289+86.10 (E1)	22.0	11.0	11.0
10+00 (E1)	12+94	22.0	11.0	11.0

STATION EQUATION (E1) 289+86.10 (BK) = 10+00 (AH)

Combination Shoulder

3R_Shldr_C_Overlay_ 04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
2+33.5	11+40	2.0	3.0
17+14	191+80.18	2.0	3.0
192+03.43	289+86.10 (E1)	2.0	3.0
10+00 (E1)	12+94	2.0	3.0

STATION EQUATION (E1) 289+86.10 (BK) = 10+00 (AH)

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

② **Finished slope of Shoulder shall match existing pavement except the maximum allowable slope is 6% and the minimum allowable slope of 4%. Section may be modified as directed by the Engineer through areas of special shaping.**

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

See Tab 100-25 for pavement quantities.

See Tab 112-9 for granular shoulder quantities.

Notes:

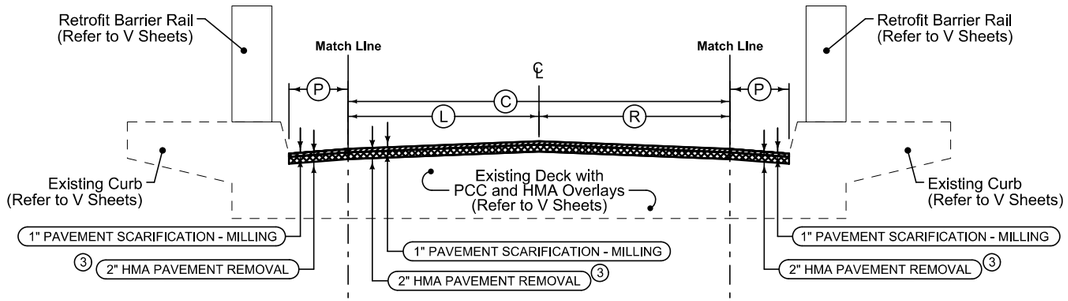
1. Stationing on typical sections does not include gapping for bridges, sideroads, or entrances. Refer to tabulations and details for precise stationing and quantities.

IA 78 HMA RESURFACING WITH MILLING

(US 218 to Winfield)

HMA Shoulder REMOVAL

3R_Shldr_P_Milling_ Modified		
STATION TO STATION		(P) Feet
191+80.18	192+03.43	4.0



Mainline REMOVAL

3R_MillingOverlay_ Modlfled				
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet
191+80.18	192+03.43	22.0	11.0	11.0

HMA Shoulder REMOVAL

3R_Shldr_P_Milling_ Modified		
STATION TO STATION		(P) Feet
191+80.18	192+03.43	4.0

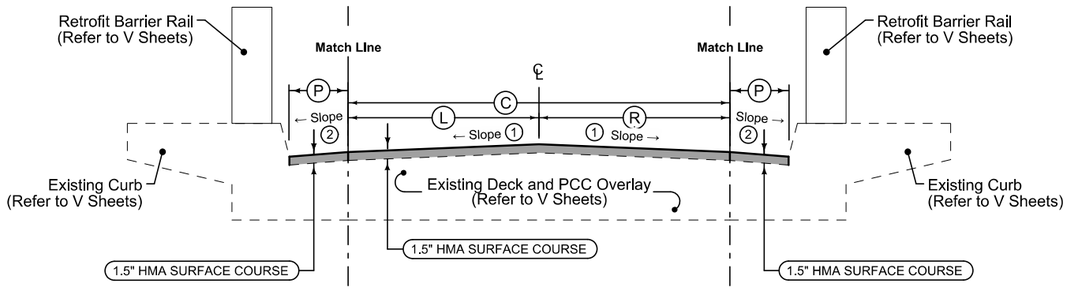
① Finished slope shall match existing pavement except the maximum allowable slope is 3.0% and the minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.

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

③ HMA Pavement Removal only. The existing PCC Overlay shall be UAC. Refer to V Sheets for repairs.

HMA Shoulder RESURFACING

3R_Shldr_P_Overlay_ Modified		
STATION TO STATION		(P) Feet
191+80.18	192+03.43	4.0



Mainline RESURFACING

3R_MillingOverlay_ Modified				
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet
191+80.18	192+03.43	22.0	11.0	11.0

HMA Shoulder RESURFACING

3R_Shldr_P_Overlay_ Modified		
STATION TO STATION		(P) Feet
191+80.18	192+03.43	4.0

See Tab 100-25 for pavement quantities.

Notes:

1. Removal and Resurfacing of Roadway shall be coordinated with Bridge Repair and Retrofit information shown on V Sheets.

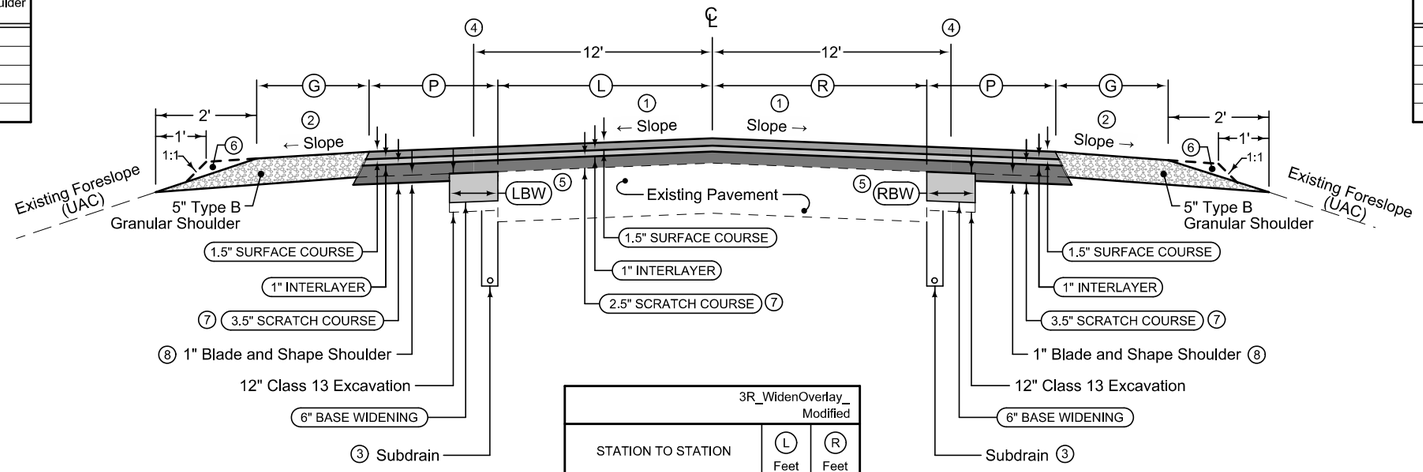
IA 78 HMA RESURFACING WITH MILLING AND REMOVAL

(Bridge, FHWA 28570)

Combination Shoulder with Widening

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(LBW) Feet	(P) Feet	(G) Feet	Blade and (8) Shape Shoulder Sta
					3R_Shldr_Paved_ Modified
12+94	18+86.2	2.0	5.0	4.0	5.92



STATION TO STATION		(L) Feet	(R) Feet
			3R_WidenOverlay_ Modified
12+94	18+86.2	11.0	11.0

Combination Shoulder with Widening

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(RBW) Feet	(P) Feet	(G) Feet	Blade and (8) Shape Shoulder Sta
					3R_Shldr_Paved_ Modified
18+86.2	625+87.3 (E1)	2.0	5.0	4.0	5.92

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

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

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

(4) Edge of Traveled Way and white painted edge line to be located at 12 ft Rt and Lt of Centerline. See Modified Standard PV-12 in U-sheets for placement of Shoulder Rumble Stripes. See Tab 112-10 for Locations.

(5) 6 inches of Special Backfill is required beneath the Base Widening unit when Base Widening unit is part of the proposed traffic lane.

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

(7) Scratch Course consists of a HMA Mixture Leveling or Strengthening Course. The 2.5" and 3.5" Scratch Course thicknesses indicated in the typical shall be placed during the same construction overlay operation (instead of placing a separate 1" lift of Scratch Course in the outer 3 ft wide trench).

(8) Blading area consists of the top 1" of existing shoulder. Bladed material shall be utilized to shape and level the shoulder bed. Class 13 Excavation is incidental to this bid item and will not be paid separately.

See Tab 100-25 for pavement quantities.

See Tab 112-9 for granular shoulder quantities.

Notes:

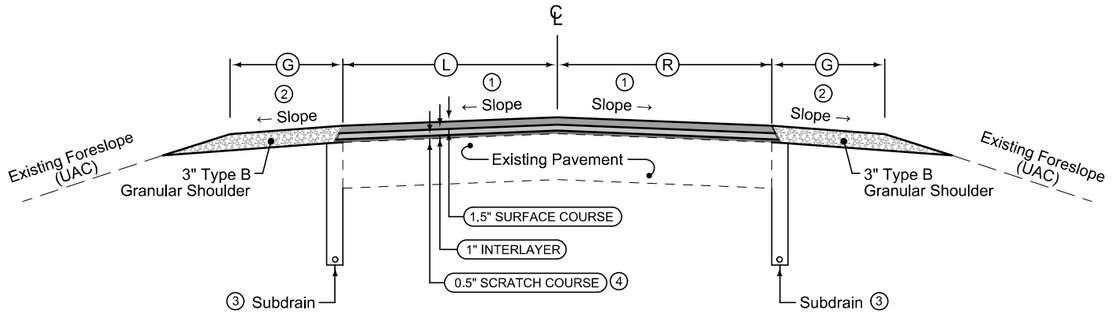
1. Stationing on typical sections does not include gapping for bridges, sideroads, or entrances. Refer to tabulations and details for precise stationing and quantites.

IA 78 WIDENING/HMA RESURFACING

(Winfield)

Granular Shoulder

3R_Shldr_G_Overlay Modified			
STATION TO STATION		(G) Feet	DIVISION
1100+20	1105+80	5.0	HENRY COUNTY, DIV 3
1105+80	1109+35	5.0	CITY OF WINFIELD, DIV 4



3R_Overlay_ Modified				
STATION TO STATION		(L) Feet	(R) Feet	DIVISION
1100+20	1105+80	10.0	10.0	HENRY COUNTY, DIV 3
1105+80	1109+35	10.0	10.0	CITY OF WINFIELD, DIV 4

Granular Shoulder

3R_Shldr_G_Overlay Modified			
STATION TO STATION		(G) Feet	DIVISION
1100+20	1105+80	5.0	HENRY COUNTY, DIV 3
1105+80	1109+35	5.0	CITY OF WINFIELD, DIV 4

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

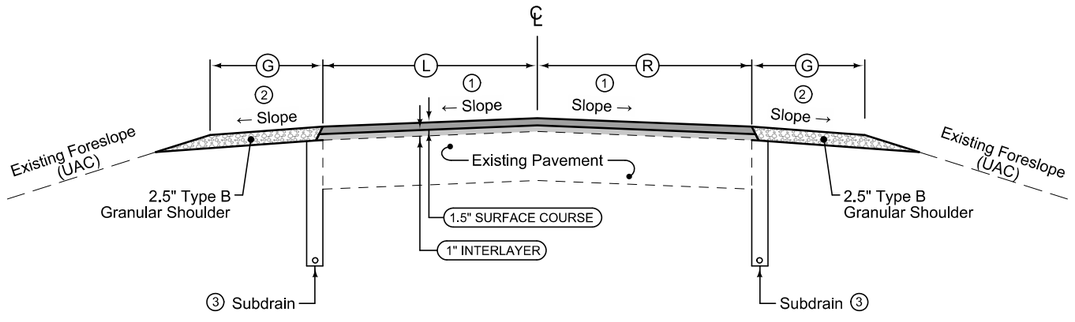
② Finished slope of Shoulder shall have a maximum allowable slope of 6% and a minimum allowable slope of 4%. Section may be modified as directed by the Engineer through areas of special shaping.

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

④ Scratch Course consists of a HMA Mixture Leveling or Strengthening Course.

Granular Shoulder

3R_Shldr_G_Overlay Modified			
STATION TO STATION		(G) Feet	DIVISION
1109+35	1116+80	5.0	CITY OF WINFIELD, DIV 4



3R_Overlay_ Modified				
STATION TO STATION		(L) Feet	(R) Feet	DIVISION
1109+35	1116+80	10.0	10.0	CITY OF WINFIELD, DIV 4

Granular Shoulder

3R_Shldr_G_Overlay Modified			
STATION TO STATION		(G) Feet	DIVISION
1109+35	1116+80	5.0	CITY OF WINFIELD, DIV 4

See Tab 100-25 for pavement quantities.

See Tab 112-9 for granular shoulder quantities.

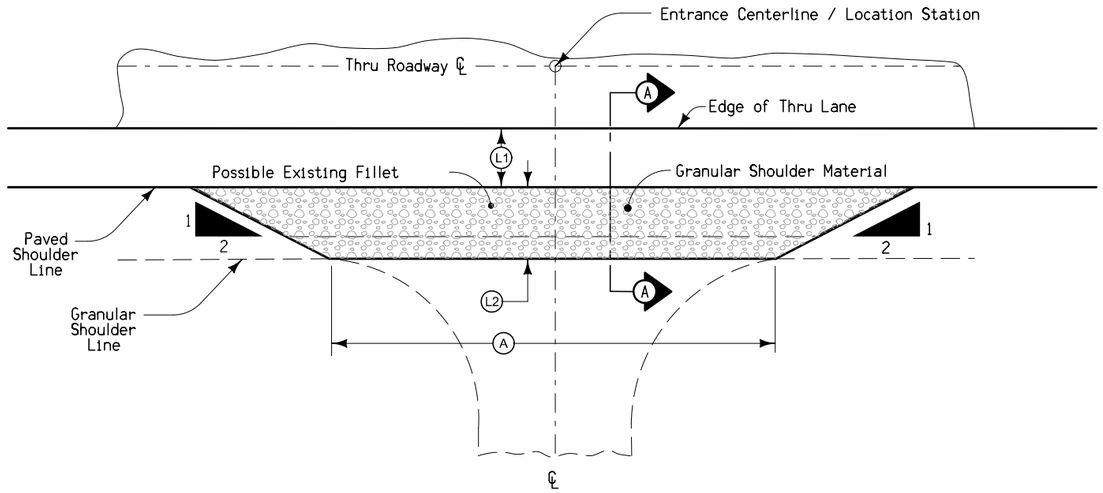
Notes:

1. Stationing on typical sections does not include gapping for bridges, sideroads, or entrances. Refer to tabulations and details for precise stationing and quantities.

S Locust Street - HMA RESURFACING

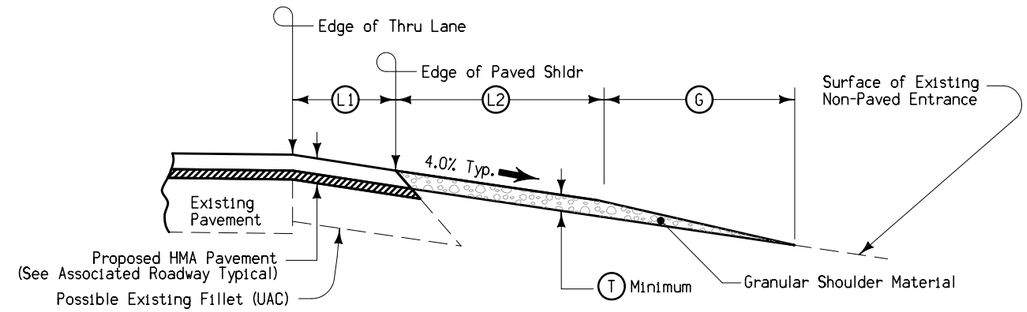
Henry County Funded, per Agreement 2021-C-112 (DIVISION 3)
City of Winfield Funded, per Agreement 2021-6-113 (DIVISION 4)

7117-M
Modified



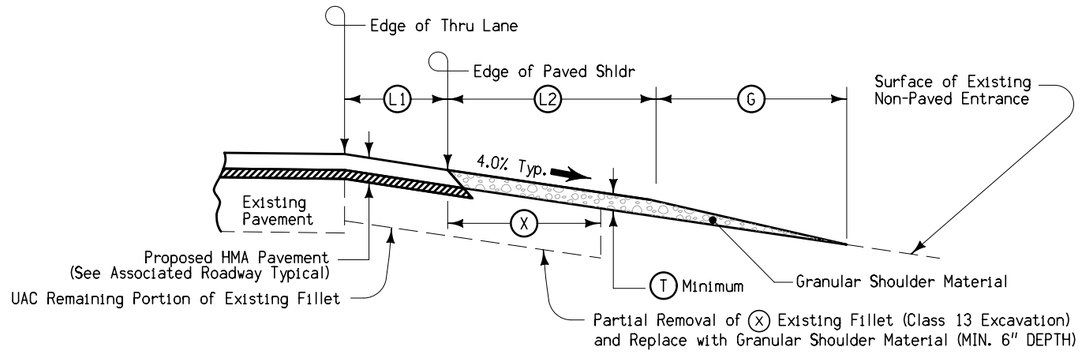
PLAN

CASE 'A' - Existing Paved Fillet Less Than or Equal to (L1)(1)



SECTION A-A

CASE 'B' - Existing Paved Fillet Greater Than (L1)(1)



SECTION A-A

ENTRANCE TABULATION

LOCATION STATION	(A) Feet	(L1) Feet	(L2) Feet	(G) Feet	(T) Inches	(X) Feet	Class 13 Excavation for Fillet Removal (CASE B) CY	Granular Shldr Material for Fillet Replacement (CASE B, 140 lbs/cf) TONS
CASE 'A' TABULATION								
5 Entrances	22 AVG	2	3	3	0.5	–	--	–
CASE 'B' TABULATION								
38 Entrances	30 AVG	2	3	3	0.5	3	67.6	127.70
Class 13 Excavation / Granular Shoulder Material TOTALS							67.6	127.7

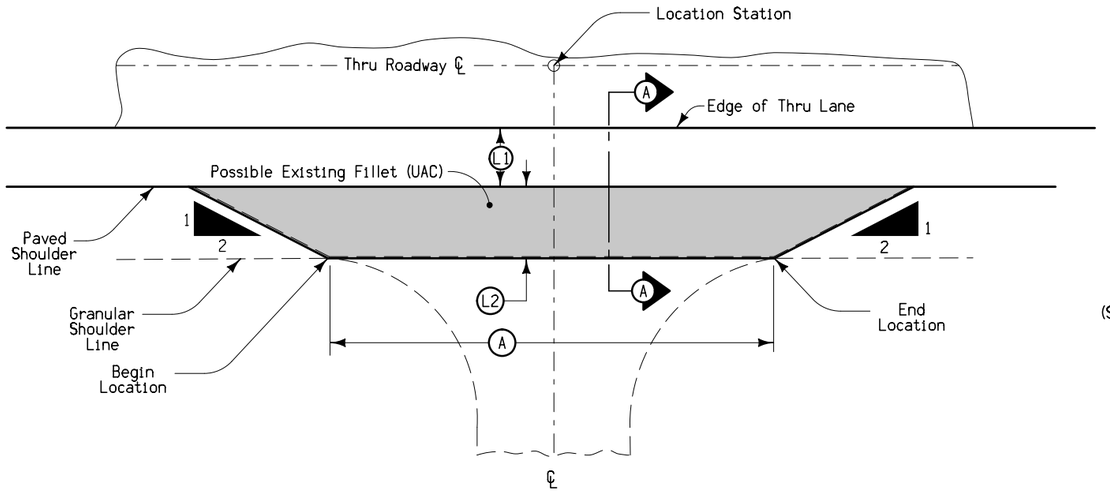
NOTES:

1. HMA Pavement Quantities associated with Dimension (L1) are included with the Mainline. Refer to Tab 100-25 (HMA Pavement) on the C Sheets.
2. Granular Shoulder Material Quantities associated with Dimensions (L2) and (G) are tabulated on Tab. 112-9 (Shoulders) on C Sheets. Refer to notes on Roadway Typical Sections on B sheets for more information.
3. Special shaping of existing surface prior to placement of shoulder may be required by the Engineer and is incidental to other work on the project.

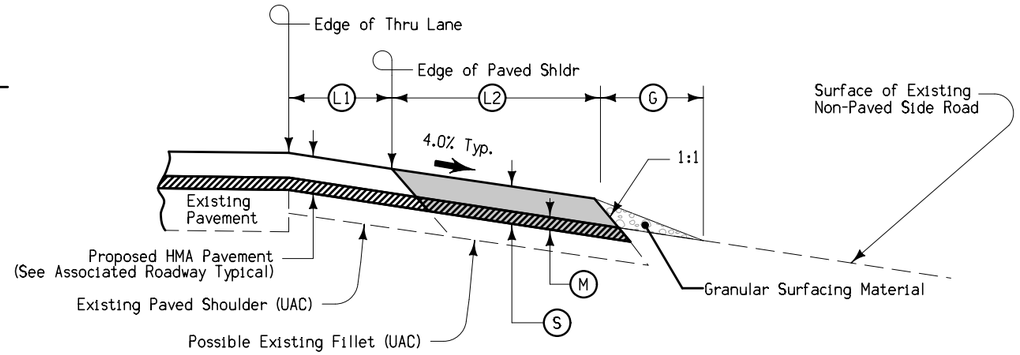
(1) Existing Fillet Length as measured from the Edge of Thru Lane.

GRANULAR SHOULDER CONSTRUCTION THRU NON-PAVED ENTRANCES

7148-M
Modified



PLAN



SECTION A-A

Location	Side	Location Station	Begin Station	End Station	A	M	S	L1	L2	G	HMA Pavement		Asphalt Binder	Scarification	Granular Surfacing Material (140 lbs/cf)	Funding Division
											HMA Surface RURAL		HMA Surface RURAL			
											Area	Standard Traffic	PG 58-28S			
					Feet	Inches	Inches	Feet	Feet	Feet	SY	Tons	Tons	SY	Tons	
Kentucky Ave	LT	54+50	54+35	54+65	30	1.0	1.5	2.0	3.0	1.0	10.7	0.88	0.05	10.7	0.04	DIV. 1 (IDOT Rural)
Kentucky Ave	RT	54+50	54+25	54+75	50	1.0	1.5	2.0	3.0	1.0	17.3	1.43	0.09	17.3	0.07	DIV. 1 (IDOT Rural)
Lexington Ave	LT	108+25	108+00	108+50	50	1.0	1.5	2.0	3.0	1.0	17.3	1.43	0.09	17.3	0.07	DIV. 1 (IDOT Rural)
Lexington Ave	RT	108+25	108+00	108+50	50	1.0	1.5	2.0	3.0	1.0	17.3	1.43	0.09	17.3	0.07	DIV. 1 (IDOT Rural)
Marsh Ave	LT	162+50	162+15	162+85	70	1.0	1.5	2.0	3.0	1.0	24.0	1.98	0.12	24.0	0.10	DIV. 1 (IDOT Rural)
Marsh Ave	RT	162+50	162+25	162+70	45	1.0	1.5	2.0	3.0	1.0	15.7	1.30	0.08	15.7	0.07	DIV. 1 (IDOT Rural)
Nashua Ave	LT	215+85	215+70	216+00	30	1.0	1.5	2.0	3.0	1.0	10.7	0.88	0.05	10.7	0.04	DIV. 1 (IDOT Rural)
Nashua Ave	RT	215+75	215+50	216+00	50	1.0	1.5	2.0	3.0	1.0	17.3	1.43	0.09	17.3	0.07	DIV. 1 (IDOT Rural)
TOTALS											130.3	10.78	0.65	130.3	0.55	DIV. 1 (IDOT Rural)

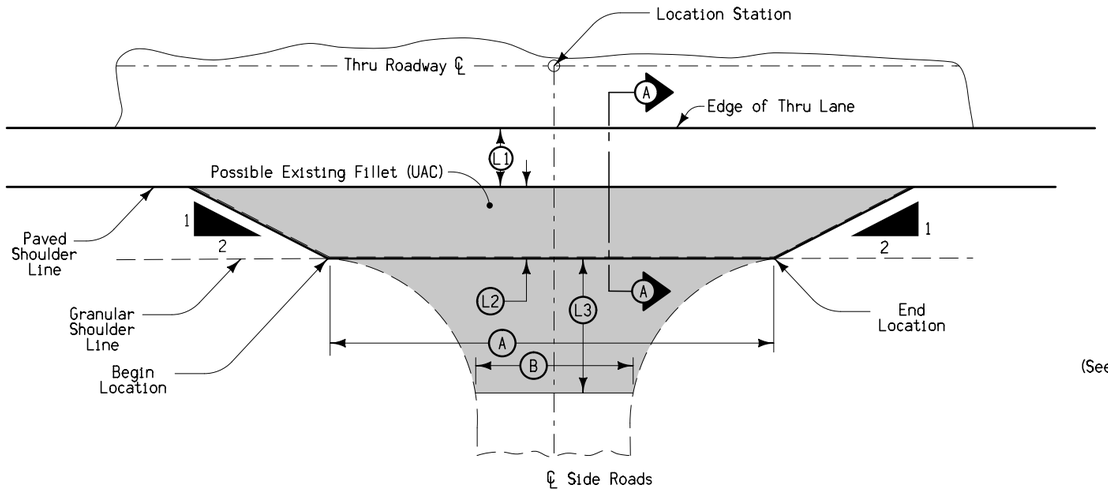
Notes:

1. Quantities associated with Dimension L1 are included with the Mainline. Refer to Tab 100-25 on the C Sheets.

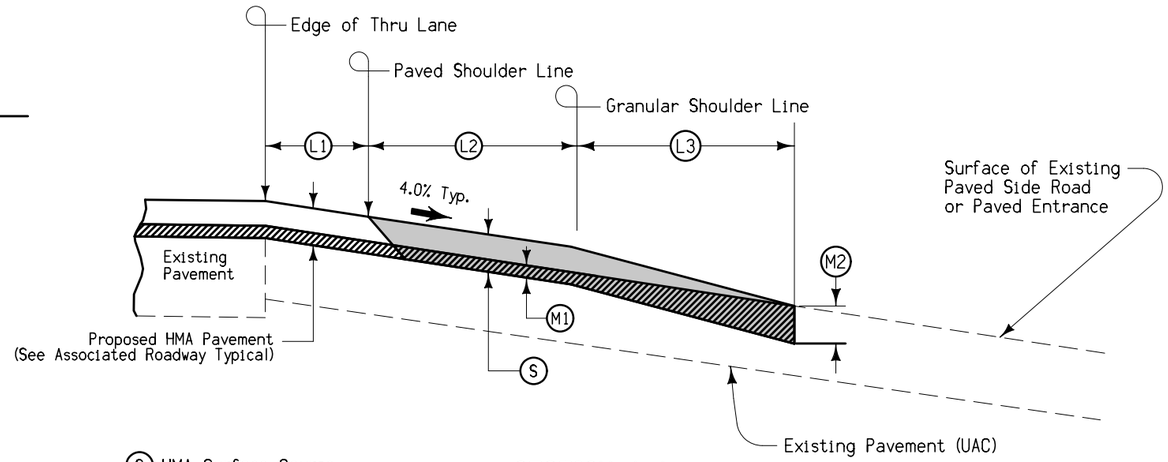
2. Special shaping of existing surface prior to placement of fillet may be required by the Engineer and is incidental to other work on the project.

RESURFACING OF PAVED FILLETS AT NON-PAVED SIDE ROADS

7149-M
MODIFIED



PLAN



(S) HMA Surface Course
(L3) Runout Length
(M#) Milling

SECTION A-A

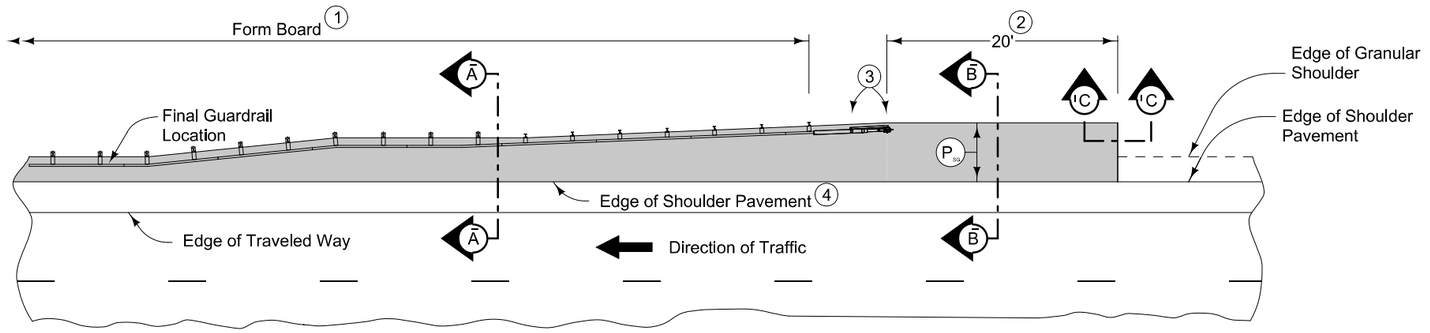
TYPE 'N2-M'
SINGLE COURSE
RUNOUT FOR RESURFACING OF MILLED AREAS

Location	Side	Location Station	Begin Station	End Station	Existing Material Surface	Type of Notch	(A)	(B)	(S)	(M1)	(M2)	(L1)	(L2)	(L3)	HMA Pavement		Asphalt Binder	Scarification	Funding Division	Remarks
															HMA Surface Course		HMA Surface Course			
															Area	Standard Traffic	PG 58-28S	Area		
							Feet	Feet	Inches	Inches	Inches	Feet	Feet	Feet	SY	Tons	Tons	SY		
House	LT	222+38	222+21	222+56	PCC	N2-M	35	20	1.5	1.0	1.5	2.0	3.0	5	30.0	2.48	0.15	30.0	DIV. 1	
Nebraska Ave	LT	269+23.9	268+91	269+56	HMA	N2-M	65	50	1.5	1.0	1.5	2.0	3.0	5	54.0	4.47	0.27	54.0	DIV. 2	
Business	RT	270+15	269+58	270+73	HMA	N2-M	115	92	1.5	1.0	1.5	2.0	3.0	5	110.0	9.10	0.55	110.0	DIV. 2	
Oasis Road	LT	10+00	10+00	11+85	HMA	N2-M	185	130	1.5	1.0	1.5	2.0	3.0	5	155.0	12.82	0.77	155.0	DIV. 2	Includes Gore
TOTALS (DIVISION 1, IDOT RURAL)															30.0	2.48	0.15	30.0	DIV. 1	
TOTALS (DIVISION 2, IDOT URBAN)															319.0	26.38	1.58	319.0	DIV. 2	

NOTES:

1. HMA Pavement Quantities associated with Dimension L1 are included with the Mainline. Refer to Tab 100-25 on the C Sheets.
2. Special shaping of existing surface prior to placement of runout may be required by the Engineer and is incidental to other work on the project.
3. Dimensions are approximate and shall match existing.
4. Unit weight of HMA Surface Course: 147 lbs/cf
5. Asphalt Binder application rate for HMA Surface Course: 6.0% per ton of HMA Pavement.

HMA RUNOUT FOR PAVED SIDE ROADS OR PAVED ENTRANCES IN AREAS WITH COMBINATION SHOULDER



PLAN VIEW

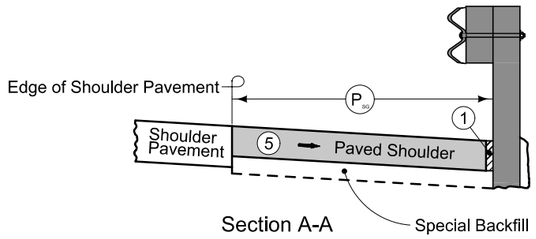
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

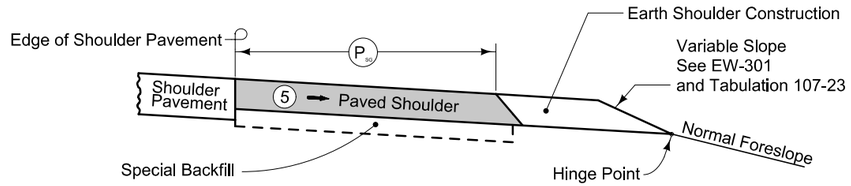
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

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' (per PV-102) joint for PCC shoulder.
   'B' (per PV-102) joint for HMA shoulder.
5. Match shoulder slope.

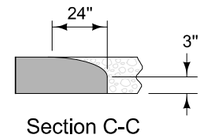


Section A-A



Section B-B

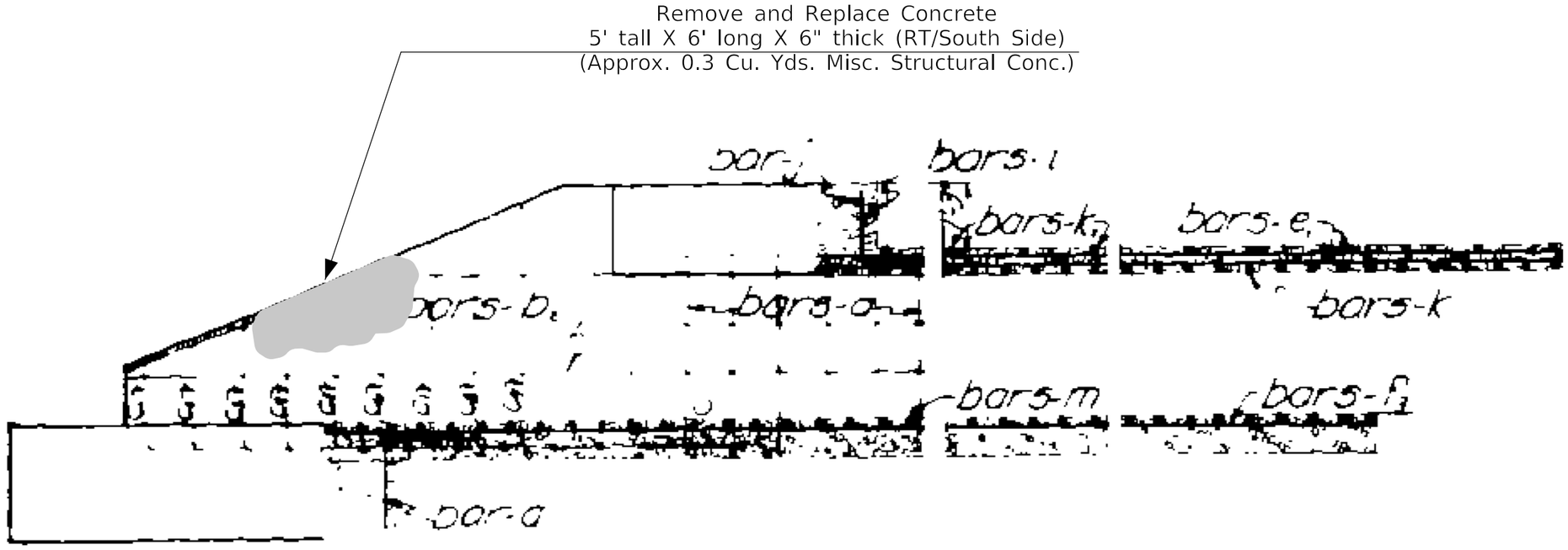
EXISTING SHOULDER



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

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

1. For information see tab 3R_CULV.
2. Asbuilt Plans Bridges and Culverts Project # P-626



5'X3' SKEW BOX CULV. EXT.
STA 166+50.7, Milepost 41.03
Misc. Structural Concrete Repair

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Division 1 : Iowa DOT and Federal Participation (Rural)
Division 2 : Iowa DOT and Federal Participation (Urban)
Division 3 : Henry County Funding, per Agreement No. 2021-C-112
Division 4 : City of Winfield Funding, per Agreement No. 2021-6-113
Division 5 : 100% Iowa DOT

Item no.	Item Code	Item	Unit	Quantities						Estimate Reference Notes
				Estimated						
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	
1	2101-0850002	CLEARING AND GRUBBING	UNIT	92					92	Refer to Tab. 110-17 on C-sheets. All wood material generated as a result of Clearing and Grubbing must be disposed of according to Iowa Department of Agriculture and Land Stewardship Emerald Ash Borer Quarantine Order. For more information see www.iowatreepests.com. Suitable bat habitat will not be impacted. The trees to be cut do not require Iowa DOT Specification 2101.01A. Woodland, per Iowa Code 314.23, will not be impacted.
2	2102-0425070	SPECIAL BACKFILL	TON	551.5					551.5	Refer to Tabs. 106-5 and 112-9. Refer to Typicals on B-sheets. 82.9 Tons for Base Widening 468.8 Tons for Paved Shoulder at Guardrail
3	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY	465					465	Refer to Tab. 107-23 in C-sheets.
4	2102-2713070	EXCAVATION, CLASS 13, ROADWAY AND BORROW	CY	117.9					117.9	Refer to Typical 7117-M on B-sheets.
5	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	838.4					838.4	216.6 CY for Base Widening 621.8 CY for Paved Shoulder at Guardrail
6	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	1,010.7	46.65	97.44	153.94		1,308.73	Refer to Tab. 112-9 on C Sheets. Tabulation includes 20% contingency for irregularities. Includes 12.0 Tons for entrance culverts. Refer to Tab. 3R-CULV. Includes 2.19 Tons from Typical 7148-M on B-sheets. Includes 221.03 Tons from Typical 7117-M on B-sheets.
7	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	1,492.4					1,492.4	Refer to Tab. 112-9 on C-sheets and Typicals on B-sheets.
8	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	18.4					18.4	Refer to Tab. 112-9 on C-sheets.

Item no.	Item Code	Item	Unit	Quantities						Estimate Reference Notes
				Estimated						
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	
9	2125-2225050	RESHAPING DITCHES	STA	16	2				18	Refer to Tab. 3R-CULV on C Sheets.
10	2128-0000200	CONTRACTOR STOCKPILED SHOULDER MATERIAL	TON					4,335	4,335	Refer to Tab. 110-13 on C Sheets. Refer to Developmental Specification DS-15007. So as to help to minimize the square footage of land space area needed for stockpiling each specific different material - Class A Rock, Class 13 Excavation, or HMA Millings - at the Maintenance garage, the contractor shall consolidate and stockpile the dump trucked material(s) to a singular stockpile for each material type, to a height of approximately 10 feet.
11	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	5.5					5.5	This bid item includes: 5.5 miles of two lane roadway 5.5 miles total
12	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	1,022					1,022	Refer to Tab 102-6C on C Sheets for locations and details. Tabulation includes a 5% increases for contingency purposes.
13	2212-5070322	PATCHES, PARTIAL-DEPTH REPAIR, HOT MIX ASPHALT	SY	2					2	For use in repair of 3.5" scratch shoulder course.
14	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	119					119	Refer to Tab 102-6C on C Sheets for locations and details. Tabulation includes a 5% increases for contingency purposes.
15	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	87.7					87.7	Refer to Tab 106-5 on C-sheets and Typical on B-sheets.
16	2213-8201060	BASE WIDENING, 6 IN. HOT MIX ASPHALT MIXTURE	SY	263.2					263.2	Refer to Tab 106-5 on C-sheets and typicals on B-sheets.
17	2214-5145150	PAVEMENT SCARIFICATION	SY	78,406.3	5,994.2				84,400.5	Refer to Tab. 100-25 on C Sheets. 435.5 SY from Typical 7149-M1 on B-sheets.
18	2214-7450050	BLADING AND SHAPING SHOULDER MATERIAL	STA	11.84					11.84	Refer to Typicals on the B-sheets.
19	2303-0002380	HOT MIX ASPHALT MIXTURE INTERLAYER BASE COURSE, 3/8 IN. MIX	TON	121.88		74.6	141.49		337.97	Refer to Tab. 100-25 on C Sheets. Tabulation includes 5% contingency for irregularities.
20	2303-0101000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	SY	323.08		36.79			359.87	

Item no.	Item Code	Item	Unit	Quantities						Estimate Reference Notes
				Estimated						
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	
21	2303-1033500	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	TON	6,856.16	520.27	111.9	212.23		7,700.56	Refer to Tab. 100-25 on C Sheets. Tabulation includes 5% contingency for irregularities. Includes 52.15 Tons from typicals 7148-M and 7149-M1 on B-sheets.
22	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	430.95	31.21	8.92	12.73		483.81	Refer to Tab. 100-25 on C Sheets. Tabulation includes 5% contingency for irregularities. Includes 3.14 Tons from Typicals 7148-M and 7149-M1 on B-sheets.
23	2303-1258346	ASPHALT BINDER, PG 58-34E, EXTREMELY HIGH TRAFFIC	TON	9.14		5.6	10.61		25.35	Refer to Tab. 100-25 on C Sheets. Tabulation includes 5% contingency for irregularities.
24	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR)	EACH	4,161.85					4,161.85	
25	2303-7000620	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE FIELD VOIDS (FORMULA - BY PAY FACTOR)	EACH	4,161.85					4,161.85	
26	2303-9091010	RUMBLE STRIP PANEL (HMA SURFACE)	EACH	4					4	Refer to Tab. 112-7 on C Sheets for more information.
27	2312-8260250	GRANULAR SURFACING ON ROAD, CRUSHED STONE	TON	12					12	Refer to Tab. 3R-CULV on C Sheets.
28	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE)	EACH	17,978.93					17,978.93	
29	2402-0425040	FLOODED BACKFILL	CY	65					65	Refer to Tab. 3R-CULV in C Sheets.
30	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	169.4	31.8				201.2	Refer to Tab. 3R-CULV in C Sheets. Item includes 19.1 CY for culvert cleaning. Refer to Tab. 3R-CULV in C Sheets. Item includes 9.2 CY for culvert cleaning.
31	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	0.3					0.3	Refer to typical on B-sheets.
32	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	2					2	Refer to Tab. 3R-CULV in C Sheets.

Item no.	Item Code	Item	Unit	Quantities						Estimate Reference Notes
				Estimated						
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	
33	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	50					50	
34	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	40					40	
35	2417-1060018	CULVERT, CORRUGATED METAL ROADWAY PIPE, 18 IN. DIA.	LF	60					60	
36	2417-1060036	CULVERT, CORRUGATED METAL ROADWAY PIPE, 36 IN. DIA.	LF	40					40	
37	2422-1722015	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 15 IN. DIA.	LF	60					60	
38	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.	LF	210	40				250	
39	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	820					820	Refer to Tab 110-7A in C-sheets.
40	2505-4008300	STEEL BEAM GUARDRAIL	LF	425					425	Refer to Tabs. 108-8A and 108-8B in C-sheets. Includes 100 LF of nested thrie-beam.
41	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	12					12	Refer to Tabs. 108-8A and 108-8B in C-sheets.
42	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4					4	
43	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	11					11	
44	2505-4021721	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206	EACH	1					1	
45	2506-4984000	FLOWABLE MORTAR	CY	9					9	Refer to Tab. 3R-CULV in C Sheets.
46	2507-3250005	ENGINEERING FABRIC	SY	20	10				30	Refer to Tab. 100-23. Use material specified for embankment erosion control according to Article 4196.01, B, 3. Material will be measured in sq. yds. of actual area covered. Refer to details. ---------- Engineering fabric shall be material as specified for embankment erosion control in accordance with Article 4196.01,B,3, of the Standard Specifications. Engineering fabric shall be material as specified for embankment erosion control, Article 4196.01C. Material shall be measured in sq. yard of actual area covered.

Item no.	Item Code	Item	Unit	Quantities						Estimate Reference Notes
				Estimated						
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	
47	2507-8029000	EROSION STONE	TON	10	0.5				10.5	Refer to Tab. 100-23. ---------- The tabulation includes estimated locations for placement of "Erosion Stone" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Estimated at 1.6 ton/cu yd. Erosion Stone shall meet the requirements of Article 4130. Broken Concrete and granite is not allowed.
48	2510-6745850	REMOVAL OF PAVEMENT	SY	81.7					81.7	Refer to typical in B-sheets and to V-sheets.
49	2520-3350010	FIELD LABORATORY	EACH	1					1	
50	2526-8285000	CONSTRUCTION SURVEY	LS	1					1	The preservation and referencing of existing Control Points, as indicated by article 2526.03, A,10. HMA Overlays, will not be required by the Contractor. The replacing of Control Points after the work is complete, as part of this article, also will not be required by the Contractor. The District Land Surveyor will reset any land corner monuments or their associated permanent reference markers, as a result of their discovery during the progress of the project work. All other survey necessary for construction of the project, as provided by Section 2526 Construction Survey' will be required. The Contractor shall be responsible for maintaining the location of the roadway centerline.
51	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	2,295.08	155.73	39.15	49.5		2,539.46	Refer to Tab. 108-22 on C Sheets for more information.
52	2528-8445110	TRAFFIC CONTROL	LS	1					1	Refer to Traffic Control Plan on J Sheets.
53	2528-8445113	FLAGGERS	EACH	0					0	See Proposal
54	2528-8445115	PILOT CARS	EACH	0					0	
55	2529-2242320	CT JOINT	EACH	6					6	Refer to Tab 102-6C on C Sheets for locations and details.
56	2533-4980005	MOBILIZATION	LS	1					1	
57	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	540.05					540.05	Refer to Tab 112-10 on C-sheets. Refer to Modified Standard Road Plan PV-12 (Milled Shoulder Rumble Stripes) on U Sheets.
58	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	270.03					270.03	Refer to Tab. 112-10 on C Sheets for more information.

100-1D
10-18-05

PROJECT DESCRIPTION

Resurfacing on IA 78 from US 218 to Winfield.

111-25
10-18-11

INDEX OF TABULATIONS

232-10
04-18-17

EMERALD ASH BORER

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

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

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

For questions, concerns, and general assistance, contact:

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

Or

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

262-6
10-18-05

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.

SEE RC SHEETS FOR ADDITIONAL BID ITEMS AND QUANTITIES.

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-203	04-21-20	Metal Pipe Aprons and Beveled Ends
DR-211	04-21-20	Metal Safety Slope Apron 6:1 Slope
EW-501	10-20-15	Rural Entrance
EW-503	10-20-15	Side Road Grading
PM-110	04-21-20	Line Types
PM-120	10-21-14	Stop Lines and Islands
PM-420	10-15-19	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PM-520	10-15-19	Two-Lane Roadway with no Turn Lanes (Two-Way Stop Condition)
PR-103	04-21-20	Full Depth PCC Patch with Dowels
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	10-20-20	Milled Shoulder Rumble Strips
PV-13	10-17-17	Milled Centerline Rumble Strips
PV-101	04-21-20	Joints
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	10-19-21	Work Within 15 ft of Traveled Way
TC-213	10-15-19	Lane Closure with Flaggers
TC-214	04-21-20	Lane Closure with Flaggers for use with Pilot Car
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-233	10-17-17	Pavement Marking Operations Two-Lane
TC-282	10-15-19	Uneven Lanes

100-26
10-15-13

INCIDENTAL ITEMS

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

No.	Incidental Item	Unit	Quantity	Incidental To		Remarks
				Item Code	Item	
	Culvert Cleaning	CY	26.3	2402-2720100	Class 20 Excavation	Note (1)
	(1) See Tab 3R_CULV, Note 1 for culvert interior flushing.					

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
HMA Millings/Class A Stone	1835	Tons	Reload Station, mile north of IA 78 on US 61 (MP 61.7)	Scott Fix 563-272-8660	Primary Location
HMA Millings/Class A Stone	2500	Tons	IDOT Muscatine Maint. Shop	Scott Fix 563-272-8660	Secondary Location

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
	44	IA-78	1	037.88	043.52	1994		STP-78-4(14)--2C-44	AAC	1.5	BAC	3					OLLIE	C.LST.			
	44	IA-78	1	037.88	043.52	1990		MP-78-5(3)38--76-4	BSC												
	44	IA-78	1	037.88	043.52	1954		FN-352	AAC	3	RSB	12	SAS	6			COLUMBUS JCT	GRAVEL			

110-17
04-18-17

CLEARING AND GRUBBING

Location: Station to Station or Ref. Loc. Sign to Ref. Loc. Sign or Description	Location: Direction of Travel	Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters												All Other Materials		Estimated Quantities			Remarks
			3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Length FT	Width FT	Units	Area Acres	Herbicide Application Each	
Division 1 - IDOT RURAL																				
32+64	EB	Trees - Clearing and Grubbing	9															14.4			
32+64	EB	Brush - Clearing														200.0	15.0	24.0			
114+39	WB	Trees - Clearing and Grubbing	8															12.8			
151+22	EB	Brush - Clearing														300.0	15.0	36.0			
208+35	WB	Trees - Clearing and Grubbing	3															4.8			
Totals																		**92.0**			

100-23
04-17-18

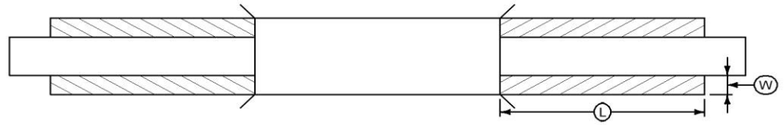
ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Location: Road Identification	Begin Station	End Station	Side	L	W	Rock Erosion Control (REC) Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Material Bid Quantities: Eng. Fabric SY	Class E Revetment TON	Erosion Stone TON	Remarks
			Lt./Rt.	FT	FT									
Division 1 - IDOT RURAL														
IA 78, Beehive drain	108+00+/-		Rt.				1				20.0		10.0	See 3R-CULV
Totals											**20.0**		**10.0**	
Division 2 - IDOT URBAN														
IA 78, Entrance Sinclair Tractor	278+35.00		Lt.				1				10.0		0.5	See 3R-CULV
Totals											**10.0**		**0.5**	

AREAS FOR PAVEMENT OR BASE WIDENING

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



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

Station to Station		Side	Pavement Type	(L) Length	(W) Width	(T) Thickness	HMA Base Widening (1)	HMA Base Widening (1)	PCC Base Widening (1)	PCC Pavement Widening (1)	Tack Coat		Tack Coat (2)	Asphalt Binder (1)	Class 13 Excavation, Widening (1)	Special Backfill (1)	Remarks
											Lifts	Vertical Edge					
				FT	FT	IN	TONS	SY	SY	SY	GAL	GAL	GAL	TONS	CY	TONS	
Division 1 - IDOT RURAL																	
12+94.00	18+86.20	RT	HMA	592.20	2.0	6.0		131.6			13.16	3.29	16.45		43.9	41.454	
12+94.00	18+86.20	LT	HMA	592.20	2.0	6.0		131.6			13.16	3.29	16.45		43.9	41.454	
	Totals							**263.2**					**32.90**		**87.7**	**82.908**	

DRAINAGE STRUCTURE REPAIR WORK

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

No.	Location	Size (1)	Kind Of Pipe (2)	Length New Const.		New Apron		Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Flow Line Elevations Note 6		Remove and Reinstall Pipe Culvert Note 5				Remove and Reinstall Apron Note 5				Class 20 Excavation (Culvert Cleaning) Note 1		Class 20 Excavation		Granular Shoulder Note 4		Reshaping Ditch Std Rd. Plan EW-105		Floodable Backfill Note 3	Flowable Mortar Note 3	Tile Repair	Remarks
				Lin. Ft.		Each							Left Side		Right Side		Left Side		Right Side		CY		CY		TON		STA				
		IN		Lt.	Rt.	Lt.	Rt.	Type	No.	Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	C.Y.	C.Y.	LF	
	Division 1 - IDOT RURAL																														
1	20+25.00																										1.0				
2	27+80.00	18	CMP	40									40.0										15.6								Entrance LT, replace plastice pipe with CMP
3	45+79.00	18	UNCL												40.0									10.7							Ent. RT, replace pipe, beehive drain to west
4	54+76.00	18	CMP		60								60.0										15.6				2.0				Crossroad under Kentucky Ave., replace
5	56+16.00	18	CMP		40										40.0									15.6		3.0		1.0			Entrance RT, replace
6	57+37.00	18	CMP																			1.3									Entrance RT, clean out
7	59+76.00	16	CMP																			2.1									Entrance RT, clean out
8	68+24.00	12	CMP		30										30.0									10.0				1.0			Entrance RT, replace
9	72+81.00	16	CMP	40									40.0										9.9					1.0			Entrance LT, replace
10	108+00 +/-																											1.0			Beehive drain RT, repair erosion, see 100-23
11	109+73.00	18	CMP		30										30.0									15.6		3.0					Entrance RT, replace
12	135+66.00	16	UNCL																		1.6										Entrance LT, combination RCP/plastic, clean out
13	147+56.00	12	CMP		30										30.0								10.0								Entrance RT, replace
14	150+37.40																										1.0	1.0			Crossroad 2X2 RCB, ditch reshaping
15	156+67.00																										1.0	1.0			Crossroad 3X2 RCB, ditch reshaping
16	166+50.70																							5.0							5X3 RCB, repair RT/South Side, see B sheet
17	177+21.00																											1.0			Crossroad 2X2 RCB, ditch reshaping
18	189+57.00	16	CMP																		2.1										Entrance LT, clean out
19	193+20.00	18	CMP		30										30.0								11.7								Entrance RT, replace
20	200+88.00	16	CMP																			1.6									Entrance RT, clean out
21	211+90.10	18	UNCL	30									30.0										7.8		3.0						Entrance LT, replace plastice pipe with CMP
22	211+91.00	2x2	RCB																					9.0							RCB needs repair - To Be Removed
	211+91.00	36	RCP	25	25	1	1			1	698.00	697.34																	65.0	9.0		Replace above RCB with new RCP, TC-218 & TBR; See Tab 10
23	216+10.80	32	CMP	40									40.0										13.8				1.0				Crossroad under Nashua Ave. LT, replace
24	216+38.00	48	CMP																									1.0			Crossroad pipe RT under Nashua Ave., ditch reshaping
25	222+60.00	32	CMP																		8.3										Entrance paved LT, clean out
26	242+50.00	18	CMP																												Entrance RT, damage west end, cut off see Note 2
27	253+12.90																										1.0	1.0			Crossroad 2X2 RCB, ditch reshaping
28	267+40.00	16	CMP																		2.1										Entrance LT, clean out
	Division 2 - IDOT URBAN																														
29	270+01.00	18	CMP	40									40.0										15.6		3.0						Entrance LT, replace
30	273+54.00	16	CMP																		2.1										Entrance LT, clean out

DRAINAGE STRUCTURE REPAIR WORK

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

No.	Location	Size (1)	Kind Of Pipe (2)	Length New Const.		New Apron		Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Flow Line Elevations Note 6		Remove and Reinstall Pipe Culvert Note 5				Remove and Reinstall Apron Note 5				Class 20 Excavation (Culvert Cleaning) Note 1		Class 20 Excavation		Granular Shoulder Note 4		Reshaping Ditch Std Rd. Plan EW-105		Floodable Backfill Note 3	Flowable Mortar Note 3	Tile Repair	Remarks
				Lin. Ft.		Each							Left Side		Right Side		Left Side		Right Side		CY		CY		TON		STA					
		IN		Lt.	Rt.	Lt.	Rt.	Type	No.	Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	C.Y.	C.Y.	LF	
31	276+10.00	24	RCP																		3.5											Entrance LT, clean out
32	278+35.00	24	RCP																				7.0									Ent. LT Sinclair Tractor, clean out, see 100-23
33	285+71.00	16	RCP																		1.6						1.0					Entrance LT, clean out
34	287+61.00	18	RCP																		2.0						1.0					Entrance LT, clean out
Equ:	289+86.1 Back																															
	10+00.0 Ahead																															
	Totals			**460**		**2**							**450.0**	**0.0**			**0**	**0**			**28.3**		**172.9**		**12.0**		**18.0**		**65.0**	**9.0**	**0.0**	
	Entrance Culvert Subtotal (Div. 1 - IDOT RURAL)																															
	UNCL	15		60		0																										
	UNCL	18		210		0																										
	Roadway Culvert Subtotal (Div. 1 - IDOT RURAL)																															
	CMP	18		60		0																										
	CMP	36		40		0																										
	RCP	36		50		2																										
	Entrance Culvert Subtotal (Div. 2 - IDOT URBAN)																															
	UNCL	18		40		0																										

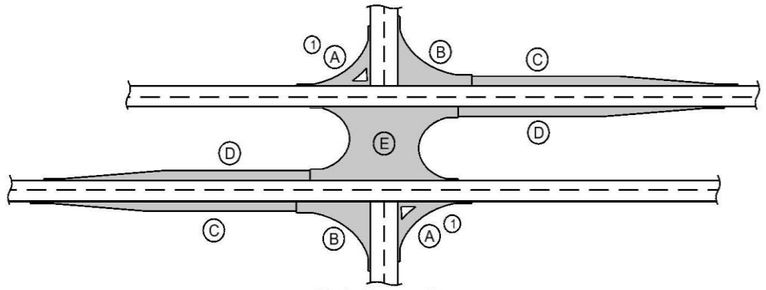
Note 1: Class 20 Excavation for cleaning is approximated to equal to the volume of the culvert. The interior of the culvert is to be flushed clean with water. Flushing of the culvert will be considered incidental to Class 20 Exc., See Tab 100-26.
Note 2: Iowa DOT Maintenance to bevel, cut off, the existing bent pipe end.
Note 3: Iowa 78 to be closed to one lane. Pipe to be installed 1/2 at a time. Other bid Items and tabs apply for Rd. Std. TC-217 bid items, flowable mortar backfill for pipe backfill, Std. DR-101, subbase patch, PCC patch Tab 102-6C.
Note 4: Pipe trenching through Entrances are to replace granular surfacing.
Note 5: Remove and Replace. Bid Item is to remove the existing pipe or apron and is to replace with new pipe or apron, if pipe is also itemized as Length New Construction or New Apron.
Otherwise, reset the existing pipe or apron to grade by using the existing pipe and/or apron.
Note 6: For pipe flowlines, see Record Drawings.
Note 7: Culvert removal is incidental to Class 20 excavation.
Note 8: Replace non-standard sized culvets with a standard size culvert that is the next size larger.

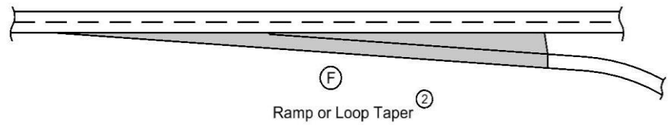
FULL-DEPTH PATCHES

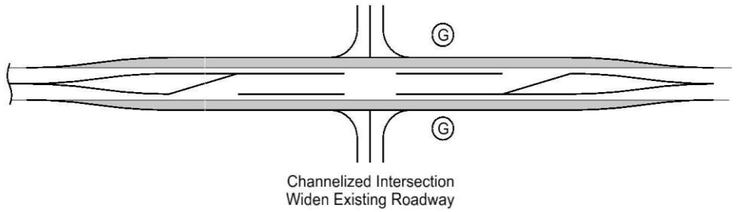
Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105, and PR-140.

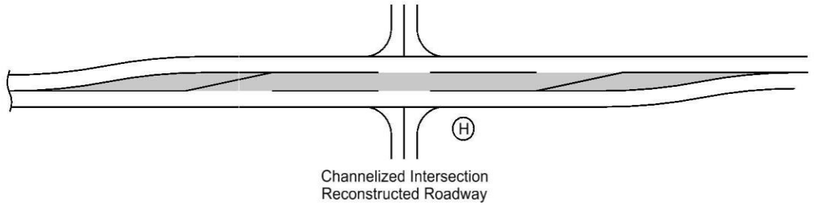
Location				Dimension			PCC Patches												
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
Division 1 - IDOT RURAL																				
2	26+95.00		B	6.0	12.0	9.0		16.0												
2	27+88.00		B	6.0	12.0	9.0		16.0												
2	29+07.00		B	6.0	12.0	9.0		16.0												
2	32+63.00		B	6.0	12.0	9.0		16.0												
2	36+06.00		B	6.0	12.0	9.0		16.0												
2	37+94.00		B	6.0	12.0	9.0		16.0												
2	41+16.00		B	6.0	12.0	9.0		16.0												
2	42+60.00		B	12.0	12.0	9.0		32.0									2			
1	45+96.00		L	6.0	12.0	9.0		8.0												
2	48+41.00		B	6.0	12.0	9.0		16.0												
2	50+48.00		B	6.0	12.0	9.0		16.0												
1	53+52.00		R	6.0	12.0	9.0		8.0												
2	64+80.00		B	6.0	12.0	9.0		16.0												
2	65+56.00		B	6.0	12.0	9.0		16.0												
2	66+52.00		B	6.0	12.0	9.0		16.0												
2	71+01.00		B	6.0	12.0	9.0		16.0												
2	73+55.00		B	6.0	12.0	9.0		16.0												
1	74+29.00		R	6.0	12.0	9.0		8.0												
2	75+97.00		B	6.0	12.0	9.0		16.0												
2	77+49.00		B	6.0	12.0	9.0		16.0												
2	79+71.00		B	6.0	12.0	9.0		16.0												
2	80+88.00		B	6.0	12.0	9.0		16.0												
2	83+59.00		B	12.0	12.0	9.0		32.0									2			
2	84+19.00		B	6.0	12.0	9.0		16.0												
2	85+95.00		B	6.0	12.0	9.0		16.0												
2	87+22.00		B	12.0	12.0	9.0		32.0									2			
2	89+57.00		B	6.0	12.0	9.0		16.0												
2	90+00.00		B	6.0	12.0	9.0		16.0												
2	91+30.00		B	6.0	12.0	9.0		16.0												
2	91+67.00		B	6.0	12.0	9.0		16.0												
2	92+44.00		B	6.0	12.0	9.0		16.0												
2	93+06.00		B	6.0	12.0	9.0		16.0												
2	95+49.00		B	6.0	12.0	9.0		16.0												
2	97+14.00		B	6.0	12.0	9.0		16.0												
2	98+34.00		B	6.0	12.0	9.0		16.0												
2	99+78.00		B	6.0	12.0	9.0		16.0												
2	101+36.00		B	6.0	12.0	9.0		16.0												
2	102+68.00		B	6.0	12.0	9.0		16.0												
1	103+79.00		R	6.0	12.0	9.0		8.0												
2	104+46.00		B	6.0	12.0	9.0		16.0												
1	105+15.00		R	6.0	12.0	9.0		8.0												
2	120+19.00		B	6.0	12.0	9.0		16.0												
1	122+12.00		R	6.0	12.0	9.0		8.0												
2	123+54.00		B	6.0	12.0	9.0		16.0												
1	124+14.00		R	6.0	12.0	9.0		8.0												
1	124+87.00		R	6.0	12.0	9.0		8.0												
2	131+88.00		B	6.0	12.0	9.0		16.0												
2	132+70.00		B	6.0	12.0	9.0		16.0												
1	133+98.00		R	6.0	12.0	9.0		8.0												
2	143+87.00		B	6.0	12.0	9.0		16.0												
2	151+15.00		B	6.0	12.0	9.0		16.0												
1	154+90.00		R	6.0	12.0	9.0		8.0												
1	155+42.00		R	6.0	12.0	9.0		8.0												
1	156+01.00		R	6.0	12.0	9.0		8.0												
2	158+88.00		B	6.0	12.0	9.0		16.0												
2	173+61.00		B	6.0	12.0	9.0		16.0												
2	174+33.00		B	6.0	12.0	9.0		16.0												
1	180+70.00		R	6.0	12.0	9.0		8.0												
2	185+64.00		B	6.0	12.0	9.0		16.0												
2	209+30.00		B	6.0	12.0	9.0		16.0												
2	211+15.00		B	6.0	12.0	9.0		16.0												
2	211+91.00		B	14.0	12.0	9.0		37.3												
2	220+11.00		B	6.0	12.0	9.0		16.0												
113	Subtotals							973.3									6			
5.65	+5% CONTINGENCY							48.7									-			
118.65	**Totals**							**1022.0**									**6**			

HMA PAVEMENT









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

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

(3) Quantity includes Pavement Header.

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

Location				Mainline			Area (3)								Bid Items											
															Hot Mix Asphalt Pavement						Binder						
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	Surface		Interlayer		Scratch		Surface	Interlayer	Scratch	Special Backfill	Modified Subbase	Granular Subbase	Pavement Scarification	Remarks
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	SY	
DIVISON 1 - IDOT RURAL																											
IA 78	Both	2+33.50	11+40.00	26.0	906.5	2618.8									216.540	2618.8					12.992						2618.8	
IA 78	Both	17+14.00	269+23.90	26.0	25209.9	72828.6									6022.015	72828.6					361.321						72828.6	
Station Equation 289+86.10 BK = 10+00 AH																												
IA 78	Both	10+00.00	12+94.00	26.0	294.0	849.3									70.229	849.3					4.214						849.3	
IA 78	Both	12+94.00	18+86.20	26.0	592.2	1710.8									141.462	1710.8	94.308	1710.8	232.562	1710.8	8.488	7.073	13.954					
IA 78	Both	12+94.00	18+86.20	3.0	592.2	197.4									16.323	197.4	10.882	197.4	37.568	197.4	0.979	0.816	2.254					
IA 78	Both	12+94.00	18+86.20	3.0	592.2	197.4									16.323	197.4	10.882	197.4	37.568	197.4	0.979	0.816	2.254					
Subtotals															6482.891		116.071		307.697		388.973	8.705	18.462				76296.7	
5% Contingency															324.145		5.804		15.385		19.449	0.435	0.923				--	
Totals															**6807.036**		**121.875**		**323.082**		**408.422**	**9.141**	**19.385**				**76296.7**	
DIVISON 2 - IDOT URBAN																												
IA 78	Both	269+23.90	289+86.10	26.0	2062.2	5957.5									492.608	5957.5					29.556						5957.5	
Station Equation																												
Subtotals															492.608						29.556						5957.5	
5% Contingency															24.630						1.478						--	
Totals															**517.238**						**31.034**						**5957.5**	
DIVISON 3 - Henry County																												
S Locust St	Both	1100+00.00	1105+80.00	20.0	580.0	1288.9									106.575	1288.9	71.050	1288.9	35.042	1288.9	6.395	5.329	2.103					
Subtotals															106.575		71.050		35.042		6.395	5.329	2.103					
5% Contingency															5.329		3.553		1.752		0.320	0.266	0.105					
Totals															**111.904**		**74.603**		**36.794**		**6.714**	**5.595**	**2.208**					
DIVISON 4 - City of Winfield																												
S Locust St	Both	1105+80.00	1116+80.00	20.0	1100.0	2444.4									202.125	2444.4	134.750	2444.4			12.128	10.106						
Subtotals															202.125		134.750				12.128	10.106						
5% Contingency															10.106		6.738				0.606	0.505						
Totals															**212.231**		**141.488**				**12.734**	**10.612**						

SHOULDERS

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

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																		
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(P_{SG}) Width	(G) Width	(L) Length	Class 13 (4) Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	9" Paved Shoulder at Guardrail	Reinforced Paved Shoulder	Special Backfill				Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
																HMA Alternate		PCC Alternate					STA (3)	HMA	PCC	
					FT	FT (2)	FT	FT	CY (3)	TON	TON/STA	TONS	SY (3)	SY (5)	SY (3)	TON (3)	TON/STA	TON (3)	TON/STA	CY (3)	TON (3)	TON/STA		CY (6)	CY (6)	
DIVISION 1 - IDOT RURAL																										
IA 78	EB	2+33.50	269+23.90	RT			**3.0**	**26690.4**													235.409	0.882				
Station Equation 289+86.10 BK = 10+00 AH																										
IA 78	EB	10+00.00	12+94.00	RT			**3.0**	**294.0**													2.593	0.882				
IA 78	EB	12+94.00	18+86.20				**4.0**	**592.2**													86.362	14.583				
IA 78	WB	2+33.50	269+23.90	LT			**3.0**	**26690.4**													235.409	0.882				
Station Equation 289+86.10 BK = 10+00 AH																										
IA 78	WB	10+00.00	12+94.00	LT			**3.0**	**294.0**													2.593	0.882				
IA 78	WB	12+94.00	18+86.20	LT			**4.0**	**592.2**													86.362	14.583				
IA 78	EB	47+66.00	47+86.00	RT		**11.2**		**20.0**	10.4					24.9		7.840	39.200						**0.2**	**1.3**		
IA 78	EB	47+86.00	48+34.00	RT		**.2 to 9.3**		**48.0**	22.8					54.7		17.220	35.875						**0.5**	**3.0**		
IA 78	EB	48+34.00	49+03.00	RT		**9.3**		**69.0**	29.7					71.3		22.460	32.550						**0.7**	**4.3**		
IA 78	EB	49+25.00	49+94.00	RT		**9.3**		**69.0**	29.7					71.3		22.460	32.550						**0.7**	**4.3**		
IA 78	EB	49+94.00	50+42.00	RT		**3 to 11.2**		**48.0**	22.8					54.7		17.220	35.875						**0.5**	**3.0**		
IA 78	EB	50+38.00	50+62.00	RT		**11.2**		**24.0**	12.4					29.9		9.408	39.200						**0.2**	**1.5**		
IA 78	WB	47+66.00	47+86.00	LT		**11.2**		**20.0**	10.4					24.9		7.840	39.200						**0.2**	**1.3**		
IA 78	WB	47+86.00	48+34.00	LT		**.2 to 9.3**		**48.0**	22.8					54.7		17.220	35.875						**0.5**	**3.0**		
IA 78	WB	48+34.00	49+03.00	LT		**9.3**		**69.0**	29.7					71.3		22.460	32.550						**0.7**	**4.3**		
IA 78	WB	49+25.00	49+94.00	LT		**9.3**		**69.0**	29.7					71.3		22.460	32.550						**0.7**	**4.3**		
IA 78	WB	49+94.00	50+42.00	LT		**3 to 11.2**		**48.0**	22.8					54.7		17.220	35.875						**0.5**	**3.0**		
IA 78	WB	50+38.00	50+62.00	LT		**11.2**		**24.0**	12.4					29.9		9.408	39.200						**0.2**	**1.5**		
IA 78	EB	189+98.00	190+18.00	RT		**4.9**		**20.0**	4.5					10.9		3.430	17.150						**0.2**	**1.3**		
IA 78	EB	190+18.00	190+65.00	RT		**4.9 to 3**		**47.0**	8.6					20.6		6.580	14.000						**0.5**	**2.9**		
IA 78	EB	190+65.00	191+81.00	RT		**3.0**		**116.0**	16.1					38.7		12.180	10.500						**1.2**	**7.3**		
IA 78	EB	192+02.50	192+63.00	RT		**3.0**		**60.5**	8.4					20.2		6.353	10.500						**0.6**	**3.8**		
IA 78	EB	192+63.00	193+05.00	RT		**3 to 7.5**		**42.0**	10.2					24.5		5.880	14.000						**0.4**	**2.6**		
IA 78	EB	193+05.00	193+25.00	RT		**7.5**		**20.0**	6.9					16.7		5.250	26.250						**0.2**	**1.3**		
IA 78	WB	190+48.00	190+68.00	LT		**4.9**		**20.0**	4.5					10.9		3.430	17.150						**0.2**	**1.3**		
IA 78	WB	190+68.00	191+16.00	LT		**4.9 to 3**		**48.0**	8.8					21.1		6.720	14.000						**0.5**	**3.0**		
IA 78	WB	191+16.00	191+81.00	LT		**3.0**		**65.0**	9.0					21.7		6.825	10.500						**0.7**	**4.1**		
IA 78	WB	192+02.50	193+18.00	LT		**3.0**		**115.5**	16.0					38.5		12.128	10.500						**1.2**	**7.2**		
IA 78	WB	193+18.00	193+65.50	LT		**3 to 4.9**		**47.5**	8.7					20.8		6.650	14.000						**0.5**	**3.0**		
IA 78	WB	193+65.50	193+85.50	LT		**4.9**		**20.0**	4.5					10.9		3.430	17.150						**0.2**	**1.3**		
Station Equation 289+86.10 BK = 10+00 AH																										
IA 78	EB	11+82.00	12+02.00	RT		**9.9**		**20.0**	9.2					22.0		6.930	34.650						**0.2**	**1.3**		
IA 78	EB	12+02.00	12+52.00	RT		**9.9 to 8**		**50.0**	20.7					49.7		15.750	31.500						**0.5**	**3.1**		
IA 78	EB	12+52.00	14+90.00	RT		**8.0**		**238.0**	88.1					211.6		66.640	28.000						**2.4**	**14.9**		
IA 78	EB	14+90.00	15+40.00	RT		**8 to 9.9**		**50.0**	20.7					49.7		15.750	31.500						**0.5**	**3.1**		
IA 78	EB	15+40.00	15+60.00	RT		**9.9**		**20.0**	9.2					22.0		6.930	34.650						**0.2**	**1.3**		
IA 78	WB	12+35.00	12+55.00	LT		**9.9**		**20.0**	9.2					22.0		6.930	34.650						**0.2**	**1.3**		
IA 78	WB	12+55.00	13+00.00	LT		**9.9 to 8**		**45.0**	18.6					44.8		14.175	31.500						**0.5**	**2.8**		
IA 78	WB	13+00.00	14+52.00	LT		**8.0**		**152.0**	56.3					135.1		42.560	28.000						**1.5**	**9.5**		
IA 78	WB	14+52.00	14+97.00	LT		**8 to 9.9**		**45.0**	18.6					44.8		14.175	31.500						**0.5**	**2.8**		
IA 78	WB	14+97.00	15+17.00	LT		**9.9**		**20.0**	9.2					22.0		6.930	34.650						**0.2**	**1.3**		
Subtotal									621.8					1492.4		468.839					648.730		18.4	114.8		
20 % Contingency for Granular Shoulders																					129.746					
Totals									**621.8**					**1492.4**		**468.839**					**778.475**		**18.4**			
DIVISION 2 - IDOT URBAN																										
IA 78	EB	269+23.90	289+86.10	RT			**3.0**	**2062.2**													18.189	0.882				
Station Equation																										
IA 78	WB	269+23.90	289+86.10	LT			3.0	2062.2													18.189	0.882				
Station Equation																										
Subtotal																					36.377					
20 % Contingency for Granular Shoulders																					7.275					
Totals																					**43.653**					
DIVISION 3 - HENRY COUNTY																										
S Locust St	NB	1100+00.00	1105+80.00	RT			5.0	580.0													40.600	7.000				
S Locust St	SB	1100+00.00	1105+80.00	LT			5.0	580.0													40.600	7.000				
Subtotal																					81.200					

SHOULDERS

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

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																					
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(P_{SG}) Width	(G) Width	(L) Length	Class 13 Excavation (4)	Hot Mix Asphalt		Binder	Paved Shoulder	9" Paved Shoulder at Guardrail	Reinforced Paved Shoulder	Special Backfill				_____ Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
																HMA Alternate		PCC Alternate					STA (3)	HMA	PCC	
					FT	FT (2)	FT	FT	CY (3)	TON	TON/STA	TONS	SY (3)	SY (5)	SY (3)	TON (3)	TON/STA	TON (3)	TON/STA	CY (3)	TON (3)	TON/STA		CY (6)	CY (6)	
20 % Contingency																					16.240					
Totals																					**97.440**					
DIVISION 3 - CITY OF WINFIELD																										
S Locust St	NB	1105+80.00	1116+80.00	RT			5.0	1100.0													64.141	5.831				
S Locust St	SB	1105+80.00	1116+80.00	LT			5.0	1100.0													64.141	5.831				
Subtotal																					128.282					
20 % Contingency for Granular Shoulders																					25.656					
Totals																					**153.938**					
Totals																										

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL

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

Location					
No.	(1) Direction of Traffic	Station to Station		Side	Removal of Guardrail (2) LF
1	WB	48+40.00	49+80.00	LT	140.0
2	EB	48+40.00	49+80.00	RT	140.0
3	WB	191+20.00	192+60.00	LT	140.0
4	EB	191+20.00	192+60.00	RT	140.0
5	WB	13+15.00	14+45.00	LT	130.0
6	EB	13+15.00	14+45.00	RT	130.0
		Totals			**820.0**

107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

(1) Lane(s) to which the installation is adjacent. Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	(1) Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10 CY	Embankment In Place CY	
1	EB	49+00.00	Out	4:1	57.7	5.0					114.1	11.8	64.2		30.0	
2	WB	49+00.00	Out	4:1	57.7	5.0					114.1	11.8	64.2		30.0	
3	EB	49+20.00	Out	4:1	57.7	5.0					114.1	11.8	64.2		30.0	
4	WB	49+20.00	Out	4:1	57.7	5.0					114.1	11.8	64.2		30.0	
5	WB	191+81.00	Out	4:1	56.6	5.0					112.8	5.6	40.8		15.0	
6	EB	191+81.00	Out	4:1	106.6	5.0					163.0	5.6	40.8		20.0	
7	WB	192+02.50	Out	4:1	106.6	5.0					163.0	5.6	40.8		20.0	
8	EB	192+02.50	Out	4:1	56.6	5.0					103.0	6.9	45.7		20.0	
9	WB	13+65 (R2)	Out	4:1	57.7	5.0					114.1	11.8	64.2		60.0	
10	EB	13+70 (R2)	Out	4:1	107.7	5.0					164.1	11.8	64.2		80.0	
11	WB	13+95 (R2)	Out	4:1	82.7	5.0					114.1	11.8	64.2		60.0	
12	EB	14+00 (R2)	Out	4:1	57.7	5.0					139.1	11.8	64.2		70.0	
		Totals													**465.0**	

108-8A
10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

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

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

Location					Layout Lengths BA-250, BA-260, LS-630, or LS-635				Long-Span System BA-211		Delineators and Object Markers (2)					Bid Items										Remarks
																			BA-250 or LS-630					BA-260 or LS-635		
No.	(1) Direction of Traffic	Side O = Outside M = Median	Station	Offset	VT1	VF	VT2	ET	STATION	TYPE	SI-211	Delineator SI-172 Type 1	Object Marker SI-173 Type 2	Object Marker SI-173 Type 3		Bolted End Anchor		Post Adapter	Steel Beam Guardrail	Barrier Transition Section	End Terminal			Barrier Transition Section	End Terminal	
																					Tangent	Flared	Tangent	Flared		Tangent	
				FT	LF	LF	LF	LF			TYPE	White	EACH	EACH	EACH	TYPE	EACH	EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
													BA-210			BA-202		BA-210	BA-200	BA-201	BA-205	BA-206	LS-625	LS-626	BA-221	BA-225	
1	WB	O	191+81.00	15.0	53.125			47.7			2		3	1					12.5	1	1						
2	EB	O	191+81.00	15.0	103.125			47.7			2		5		1				62.5	1	1						
3	WB	O	192+02.50	15.0	103.125			47.7			2		5		1				62.5	1	1						
4	EB	O	192+02.50	15.0	53.125			37.5			2		2	1					12.5	1		1					
			Totals										**15**	**2**	**2**				**150.0**	**4**	**3**	**1**					

108-8B
04-19-16

STEEL BEAM GUARDRAIL FOR SIDE OBSTACLE (TWO-WAY PROTECTION)

Possible Standards: BA-200, BA-205, BA-206, BA-210, BA-211, BA-251, LS-625, LS-626, LS-631, SI-172, SI-173, and SI-211.

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

Location				O_L	D_O	Layout Lengths BA-251 or LS-631 Approach Side (A)				Trailing Side (T)				Long-Span System BA-211		Delineators and Object Markers					Bid Items				Remarks
																						End Terminal			
No.	(1) Direction of Traffic	Side O= Outside M= Median	Station			ET	$VT2_A$	VF_A	$VT1_A$	$VT1_T$	VF_T	$VT2_T$	ET	STATION	TYPE	SI-211	Delineator SI-172 Type 1	Object Marker SI-173 Type 2	Object Marker SI-173 Type 3		Steel Beam Guardrail	Standard	Count	Guardrail Transition Section	
				FT	FT	LF	LF	LF	LF	LF	LF	LF	LF	STATION	TYPE	TYPE	White EACH	OM2-2 EACH	OM3-L EACH	OM3-R EACH	BA-200 LF		EACH	BA-201 EACH	
1	EB	O	49+00.00	20.00	10.00	47.7			53.13	78.13			47.7			3			1	1	50.0(1)	BA-205	2	2	
2	WB	O	49+20.00	20.00	10.00	47.7			53.13	78.13			47.7			3			1	1	50.0(1)	BA-205	2	2	
3	EB	O	13+70 (R2)	25.00	10.00	47.7			103.13	103.13			47.7			3			1	1	125.0(1)	BA-205	2	2	
4	WB	O	13+95 (R2)	25.00	10.00	47.7			53.13	78.13			47.7			3			1	1	50.0(1)	BA-205	2	2	
			Totals																**4**	**4**	**275.0**		**8**	**8**	

(1) Includes 25 LF of nested thrie-beam

112-10
10-20-20

MILLED RUMBLE STRIPS

See PV-12 and PV-13

* Calculated at 18" width for Shoulder.

Location												
Road Identification	Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)	(L)	Installation Length		Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
						PCC	HMA	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
					IN	STA	STA	GAL	FT	FT	FT	
DIVISION 1 - IDOT RURAL												
IA 78	2+33.50	11+40.00	HMA	Centerline			9.07	0.0				
IA 78	17+14.00	269+23.90	HMA	Centerline			252.10	0.0				
Station Equation 289+86.10 BK = 10+00 AH												
IA 78	10+00.00	18+86.20	HMA	Centerline			8.86	0.0				
IA 78	2+33.50	11+40.00	HMA	Right Shoulder	12"		9.07	0.0		2.0	3.0	Rumble Stripes
IA 78	17+14.00	269+23.90	HMA	Right Shoulder	12"		252.10	0.0		2.0	3.0	Rumble Stripes
Station Equation 289+86.10 BK = 10+00 AH												
IA 78	10+00.00	18+86.20	HMA	Right Shoulder	12"		8.86	0.0		2.0	3.0	Rumble Stripes
IA 78	2+33.50	11+40.00	HMA	Left Shoulder	12"		9.07	0.0		2.0	3.0	Rumble Stripes
IA 78	17+14.00	269+23.90	HMA	Left Shoulder	12"		252.10	0.0		2.0	3.0	Rumble Stripes
Station Equation 289+86.10 BK = 10+00 AH												
IA 78	10+00.00	18+86.20	HMA	Left Shoulder	12"		8.86	0.0		2.0	3.0	Rumble Stripes
				Totals		**PCC**	**HMA**	**Fog Seal**				
				HMA Shoulders			**540.05**	**0.0**				
				PCC Shoulders		**0.00**						
				PCC or HMA Shoulders		**0.00**	**0.00**	**0.0**				
				HMA Centerlines			**270.03**					
				PCC Centerlines		**0.00**						
				PCC or HMA Centerlines		**0.00**	**0.00**					

112-7
10-19-10

RUMBLE STRIP PANELS

Refer to Standard Road Plan PV-10.

Location			Pavement		Remarks
Road Ident.	Station	Side	New	Existing	
Division 1 - IDOT RURAL					
IA 78	4+70.00	LT		HMA	
IA 78	7+78.00	LT		HMA	
IA 78	25+20.00	LT		HMA	
IA 78	30+60.00	LT		HMA	

102-16
10-21-14

NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

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

Location Station	Type of Notch or Runout	(S)	(I)	(DI)	(L)	(M)	Pavement (1) Scarification	Remarks
		IN	IN	IN	FT	IN	SY	
DIVISION 1 - IDOT RURAL								
2+33.50	Type 'N2'	1.5			25.0	1.0		Beginning of Project
11+40.00	Type 'N2'	1.5			25.0	1.0		US 218
17+14.00	Type 'N2'	1.5			25.0	1.0		US 218
12+96 (R2)	Type 'R6'	1.5		3.5	225.0	1.0		End of Milling, Beginning of Overlay
18+86.2 (R2)	Type 'R2'	1.5		3.5	250.0			End of Project
222+37.00	Type 'N2'	1.5				1.0		Paved Entrance
10+45 (R2)	Type 'N1'	1.5			75.0	1.0		Oasis Road
DIVISION 2 - IDOT URBAN								
268+55.00	Type 'N1'	1.5			12.5	1.0		Nebraska Ave
270+20.00	Type 'N1'	1.5			3.0	1.0		Paved Entrance

PAVEMENT MARKING LINE TYPES

See PM-110

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

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

Location								Length by Line Type (Unfactored)													Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	ELW4									PPLICATION	
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA		STA	
DIVISION 1 - IDOT RURAL																						
IA 78	2+33.50	11+40.00	BOTH	Waterborne/Solvent Paint	X		X				18.13										3.00	54.39
IA 78	17+14.00	269+23.90	BOTH	Waterborne/Solvent Paint	X		X				504.20										3.00	1512.59
IA 78	10+00.00	12+94.00	BOTH	Waterborne/Solvent Paint	X		X				5.88										3.00	17.64
IA 78	12+94.00	18+86.20	BOTH	Waterborne/Solvent Paint	X		X				11.84										4.00	47.38
IA 78	2+33.50	5+35.00	WB	Waterborne/Solvent Paint		X				3.02											3.00	9.05
IA 78	5+35.00	7+90.00	BOTH	Waterborne/Solvent Paint		X			2.55												3.00	7.65
IA 78	7+90.00	11+40.00	EB	Waterborne/Solvent Paint		X				3.50											3.00	10.50
IA 78	17+14.00	21+00.00	WB	Waterborne/Solvent Paint		X				3.86											3.00	11.58
IA 78	21+00.00	24+45.00	BOTH	Waterborne/Solvent Paint		X		3.45													3.00	10.35
IA 78	24+45.00	32+45.00	EB	Waterborne/Solvent Paint		X				8.00											3.00	24.00
IA 78	32+45.00	33+50.00	BOTH	Waterborne/Solvent Paint		X			1.05												3.00	3.15
IA 78	33+50.00	43+55.00	WB	Waterborne/Solvent Paint		X				10.05											3.00	30.15
IA 78	43+55.00	48+55.00	BOTH	Waterborne/Solvent Paint		X		5.00													3.00	15.00
IA 78	48+55.00	56+55.00	EB	Waterborne/Solvent Paint		X				8.00											3.00	24.00
IA 78	56+55.00	59+95.00	BOTH	Waterborne/Solvent Paint		X			3.40												3.00	10.20
IA 78	59+95.00	67+65.00	WB	Waterborne/Solvent Paint		X				7.70											3.00	23.10
IA 78	67+65.00	174+70.00	BOTH	Waterborne/Solvent Paint		X		107.05													3.00	321.15
IA 78	174+70.00	184+15.00	EB	Waterborne/Solvent Paint		X				9.45											3.00	28.35
IA 78	184+15.00	208+15.00	BOTH	Waterborne/Solvent Paint		X			24.00												3.00	72.00
IA 78	208+15.00	217+65.00	WB	Waterborne/Solvent Paint		X				9.50											3.00	28.50
IA 78	217+65.00	218+20.00	BOTH	Waterborne/Solvent Paint		X		0.55													3.00	1.65
IA 78	218+20.00	224+10.00	EB	Waterborne/Solvent Paint		X				5.90											3.00	17.70
IA 78	224+10.00	227+60.00	BOTH	Waterborne/Solvent Paint		X		3.50													3.00	10.50
IA 78	227+60.00	235+55.00	WB	Waterborne/Solvent Paint		X				7.95											3.00	23.85
IA 78	235+55.00	266+35.00	BOTH	Waterborne/Solvent Paint		X		30.80													3.00	92.40
IA 78	266+35.00	269+23.90	EB	Waterborne/Solvent Paint		X				2.89											3.00	8.67
IA 78	10+00.00	12+94.00	BOTH	Waterborne/Solvent Paint		X			2.94												3.00	8.82
IA 78	12+94.00	18+86.20	BOTH	Waterborne/Solvent Paint		X			5.92												4.00	23.69
DIVISION 2 - IDOT URBAN																						
IA 78	269+23.90	289+86.10	BOTH	Waterborne/Solvent Paint	X		X				41.24											
IA 78	269+23.90	275+40.00	EB	Waterborne/Solvent Paint		X				6.16												
IA 78	275+40.00	289+86.10	BOTH	Waterborne/Solvent Paint		X			14.46													
Station Equation 289+86.10 BK = 10+00 AH																						
Final Pavement Markings																						
IA 78	269+23.90	289+86.10	BOTH	Waterborne/Solvent Paint	X		X				41.24											
IA 78	269+23.90	275+40.00	EB	Waterborne/Solvent Paint		X				6.16												
IA 78	275+40.00	289+86.10	BOTH	Waterborne/Solvent Paint		X			14.46													
Station Equation 289+86.10 BK = 10+00 AH																						
DIVISION 3 - Henry County																						
S Locust	1100+00.00	1105+80.00	BOTH	Waterborne/Solvent Paint	X	X	X	5.80			11.60										3.00	52.20
DIVISION 4 - City of Winfield																						
S Locust	1105+80.00	1116+80.00	BOTH	Waterborne/Solvent Paint	X	X	X	11.00			22.00										2.00	66.00
			DIVISION 1: IDOT RURAL																			
				Factored Total: Waterborne/Solvent Paint				112.76	251.02	299.30	1632.00	-	-	-	-	-	-	-	-	-	-	-
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							2295.08											
			DIVISION 2: IDOT URBAN																			
				Factored Total: Waterborne/Solvent Paint				-	57.84	15.40	82.49	-	-	-	-	-	-	-	-	-	-	-
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							155.73											
			DIVISION 3: Henry County																			
				Factored Total: Waterborne/Solvent Paint				4.35	-	-	34.80	-	-	-	-	-	-	-	-	-	-	-
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							39.15											
			DIVISION 4: City of Winfield																			
				Factored Total: Waterborne/Solvent Paint				5.50	-	-	44.00	-	-	-	-	-	-	-	-	-	-	-
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							49.50											

FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER D.1	

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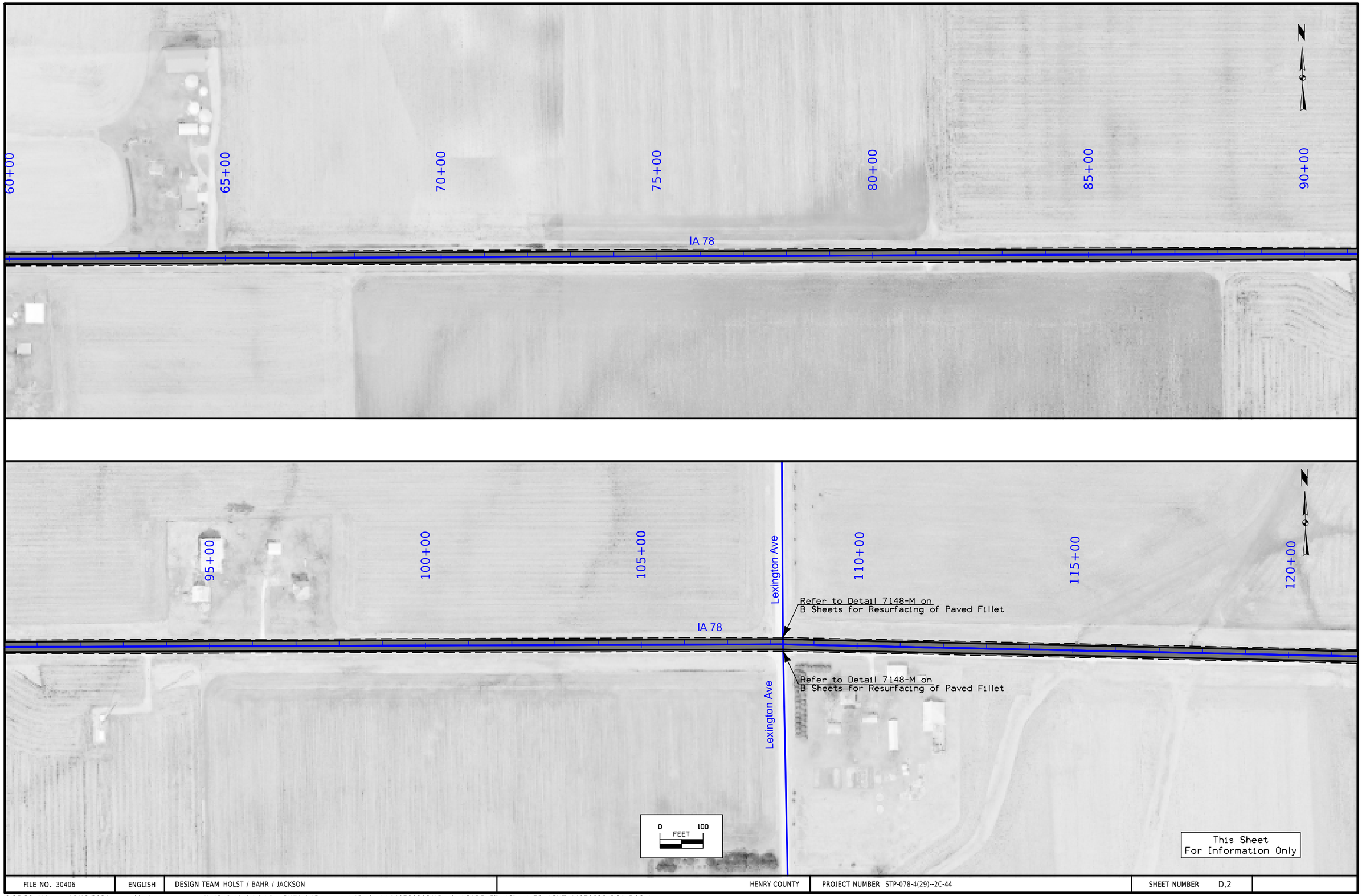

FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER D.2	

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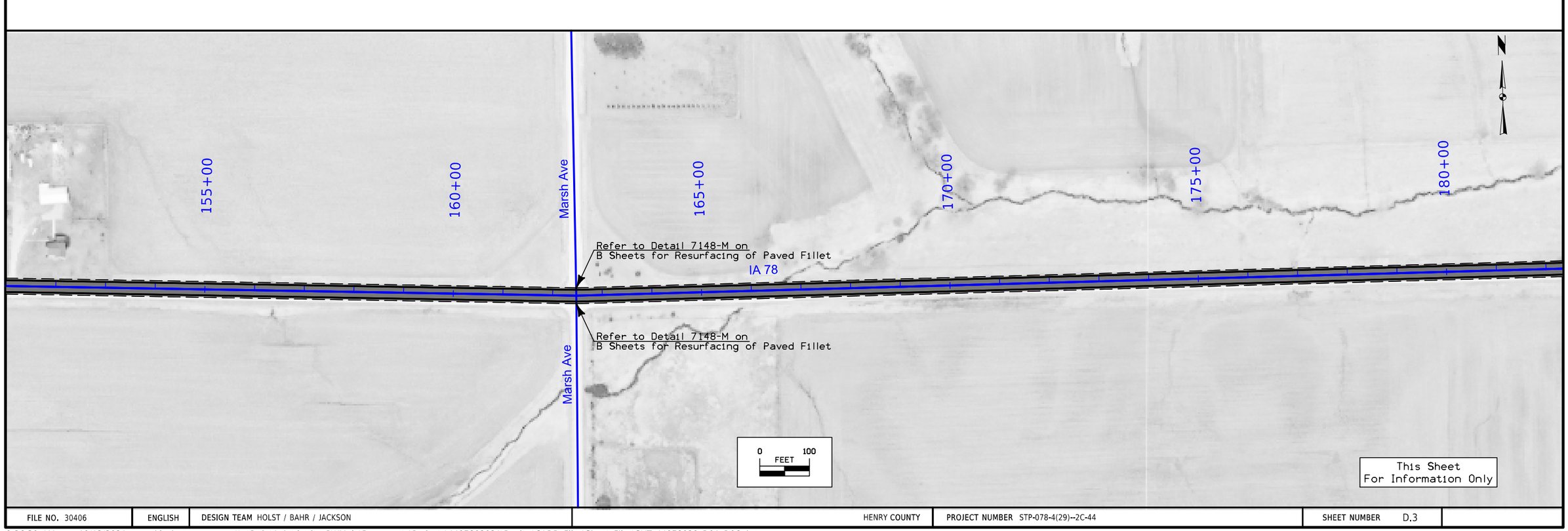

FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER D.3	

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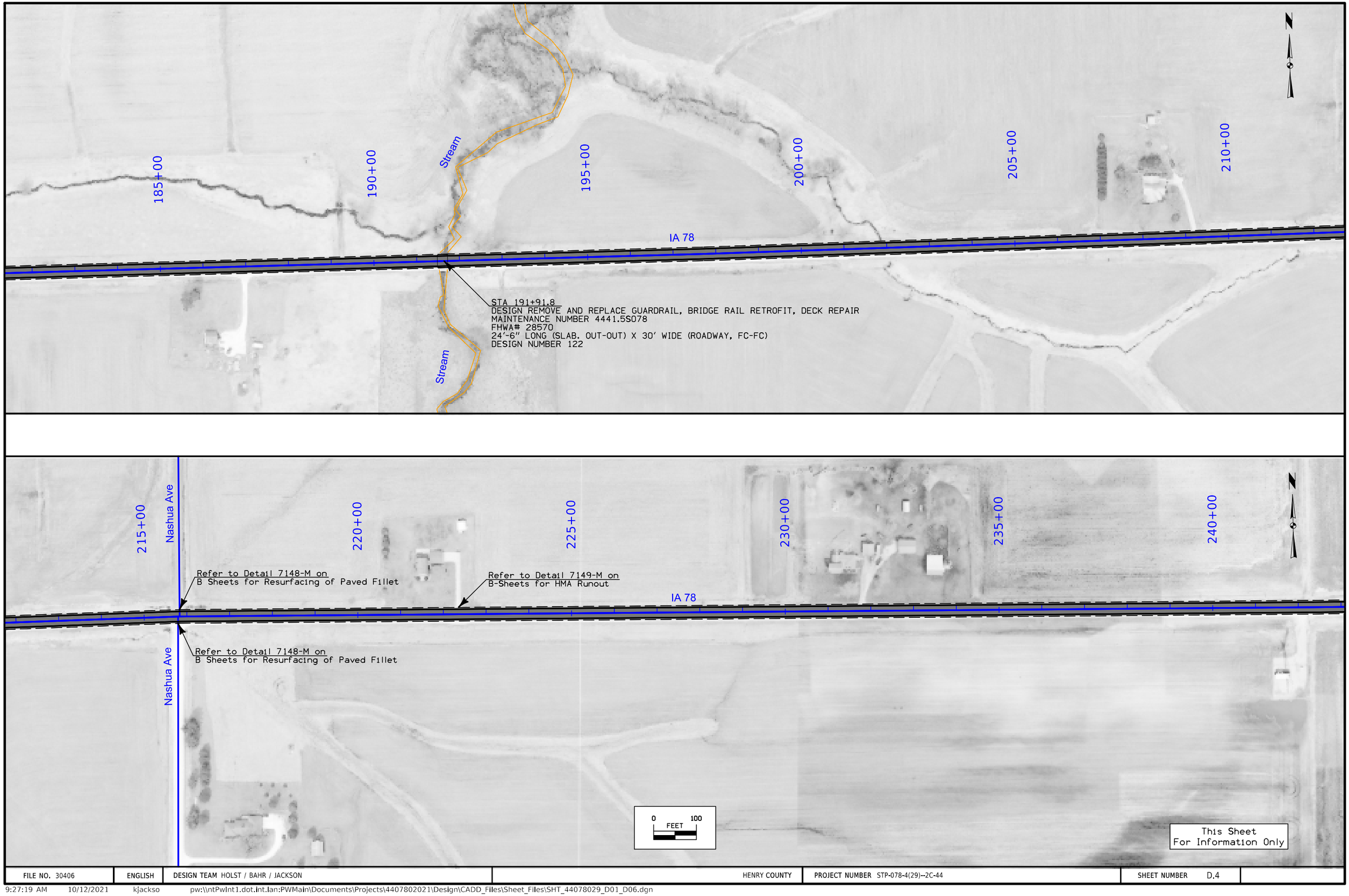

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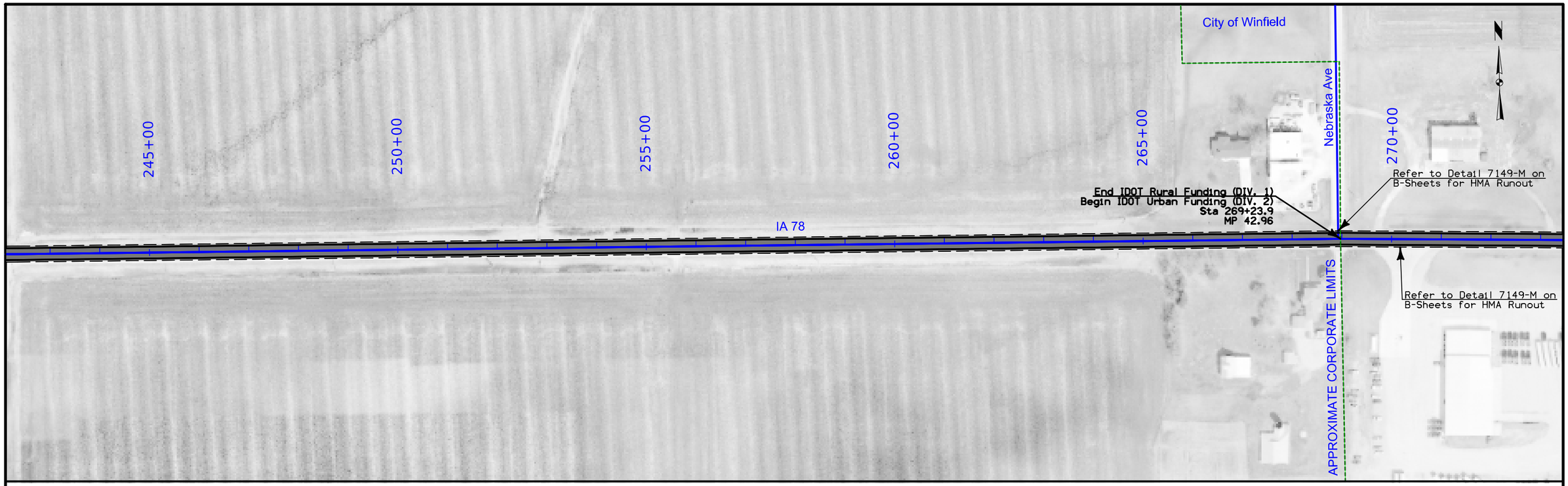


FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON		HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER D.5

9:28:03 AM 10/12/2021 kjackso pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\4407802021\Design\CADD_Files\Sheet_Files\SHT_44078029_D01_D06.dgn

City of Winfield

N

POE 1116+80.00

1115+00

Drainage Ditch

Refer to Detail 7149-M on
B-Sheets for HMA Runout

1110+00

Drainage Ditch

275+00

280+00

285+00

10+00

Refer to Detail 7149-M on
B-Sheets for HMA Runout

Funding Division Limits
End IDOT Urban Funding (DIV. 2)
Begin IDOT Rural Funding (DIV. 1)

Oasis Ave

IA 249 / S Locust Street

Drainage Ditch

IA 78

APPROXIMATE CORPORATE LIMITS

EQUATION
STA 289+86.10 BK
STA 10+00.00 AH
MP 43.36

1105+00

Drainage Ditch

15+00

STA 13+84
UAC RCB and CBR, Widen and Resurface Roadway,
Remove and Replace Guardrail
Maintenance Number 4443.5S078
FHWA# 28580
22' X 43' Twin RCB

Drainage Ditch

END PROJECT
Sta 18+86.2
MP 43.52

End IDOT Rural Funding (DIV. 1)

POB 1100+20.85

0 100
FEET

This Sheet
For Information Only

20+00

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER D.6	

9:29:00 AM 10/12/2021 kjackso pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\4407802021\Design\CADD_Files\Sheet_Files\SHT_44078029_D01_D06.dgn

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Through traffic on IA 78 and all side streets shall be maintained at all times.

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

3. If necessary to complete sideroad pavement replacement; lane closures and street closures shall be in accordance with TC-212, TC-251, and TC-252. Safety Closures or Type III barricades placed to protect work area will not be counted or paid for separately.

   The Contractor may use Standard Road Plans TC-228 to provide working areas and material delivery. Lane closures may not be used for nighttime equipment or materials storage.

4. The detail on J.2 is the Traffic Control Plan for Centerline Rumble Strip installation on HMA surfaces. Pavement markings shall be replaced within 48 hours of removal.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
MP-061-5(708)61--76-58	HMA Resurfacing and Milling
MB-000-5(509)0--77-00	Milling and Resurfacing bridge ends

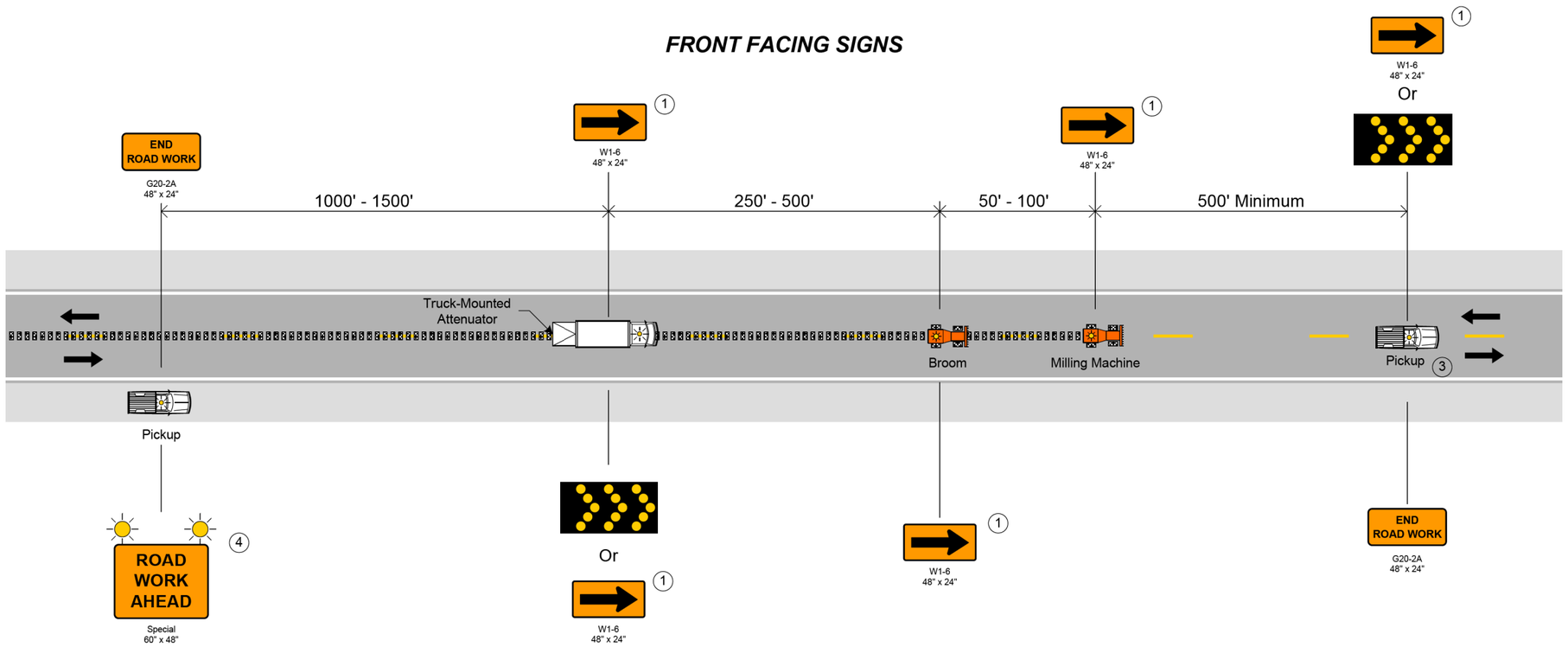
108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
IA 78	Both	Henry	130th St/James Ave Intersection S of Olds to Winfield		Traffic Control Device		Horizontal	N/A	11'	10'	N/A	(1)

(1) Restriction is only required during milling and paving operations.

FRONT FACING SIGNS



REAR FACING SIGNS

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

(1) Optional SYG sign background

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

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

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

01-17-19

CENTERLINE RUMBLE STRIPS
TWO-LANE

LANDSCAPE DESIGN

STATE OF IOWA
Seana K. Godbold
LANDSCAPE ARCHITECT NO. 508
PROFESSIONAL LANDSCAPE ARCHITECT

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

Signature — Date: 9/21/2021

Seana K. Godbold
Printed or Typed Name

My license renewal date is June 30, 2023

Pages or sheets covered by this seal: RC.1 - 3

FILE NO.	ENGLISH	DESIGN TEAM GODBOLD\POHLEN\MCDONALD	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER RC.1

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2602-0000020	SILT FENCE	LF	200	Refer to Tab. 100-17. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes tab quantity for the paving project for new locations and 10% of the original tab quantity for the grading project (insert original tab quantity from the grading project) for field adjustments and replacements. The engineer may adjust silt fence locations to fit field conditions.
2	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	200	This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.This item is included for silt fence and silt fence for ditch check removal. Remove silt fence and posts after mulching or vegetation is established and approved by the engineer.
3	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	20	This item is included for maintaining the new silt fence and silt fence ditch checks installed for the paving project and existing silt fence and silt fence ditch checks installed as part of the grading project.
4	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	200	
5	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200	Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
6	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200	
7	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	400	

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
RC Sheets		
	SIGNATURE SHEET	RC.1
	ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES	RC.2
105-4	STANDARD ROAD PLANS	RC.3
111-25	INDEX OF TABULATIONS	RC.3
232-3A	EROSION CONTROL (RURAL SEEDING)	RC.3
232-11	EROSION CONTROL (STABILIZING CROP SEEDING)	RC.3
281-3	STORM WATER BEST MANAGEMENT PRACTICES	RC.3

232-3A
10-19-21

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.

232-11
10-19-21

EROSION CONTROL (STABILIZING CROP 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.

If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,1 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 incidental to mobilization and will not be paid for separately.

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)

281-3
10-17-17

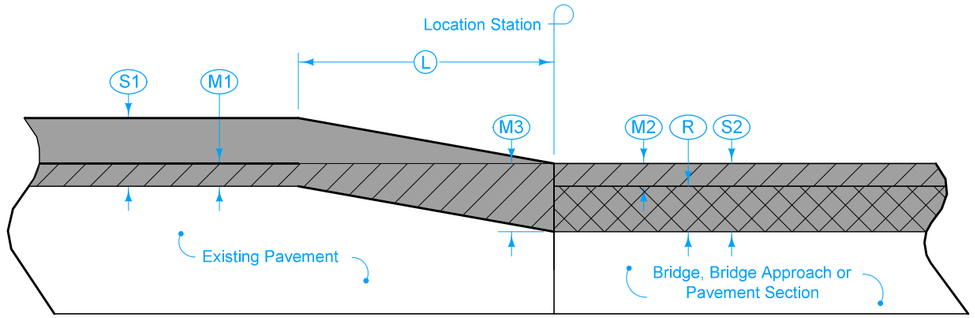
STORM WATER BEST MANAGEMENT PRACTICES

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

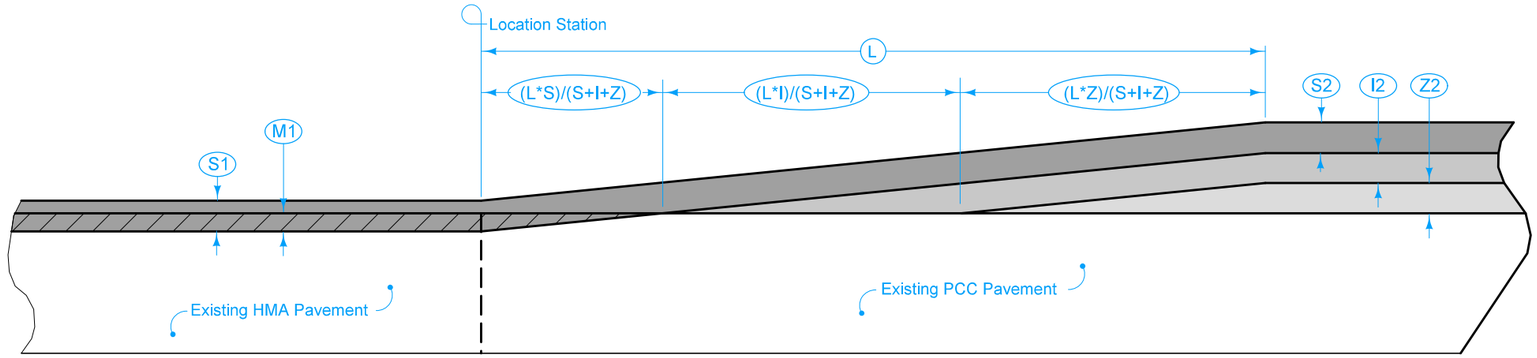
281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

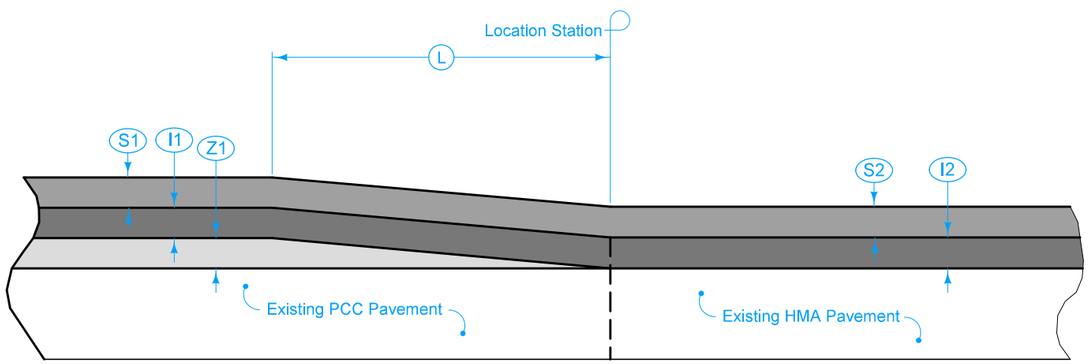
Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit No. 3. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.



TYPE 'R5-M1'
RUNOUT FOR TRANSITION FROM
SURFACE COURSE WITH MILLING
TO SURFACE COURSE WITH MILLING AND PAVEMENT REMOVAL



TYPE 'R5-M2'
RUNOUT FOR TRANSITION FROM
SURFACE COURSE WITH MILLING
TO SCRATCH COURSE - INTERLAYER - SURFACE COURSE



TYPE 'R5-M3'
RUNOUT FOR TRANSITION FROM
SCRATCH COURSE - INTERLAYER - SURFACE COURSE
TO INTERLAYER - SURFACE COURSE

- (S#) Surface Course
- (I#) Interlayer
- (Z#) Scratch Course
- (L) Runout Length
- (M#) Milling
- (R) HMA Pavement Removal

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

* Based on turning maneuvers
at side roads and intersections.

Tabulations:
100-25
102-16

MODIFIED
STANDARD ROAD PLAN

REVISION	
NEW	7-02-2021

PR-201

SHEET 1 of 1

REVISIONS: Created Runout 'R5-M1', 'R5-M2', and 'R5-M3'
Removed runouts not applicable to this project.

RUNOUTS FOR RESURFACING

FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER U.1

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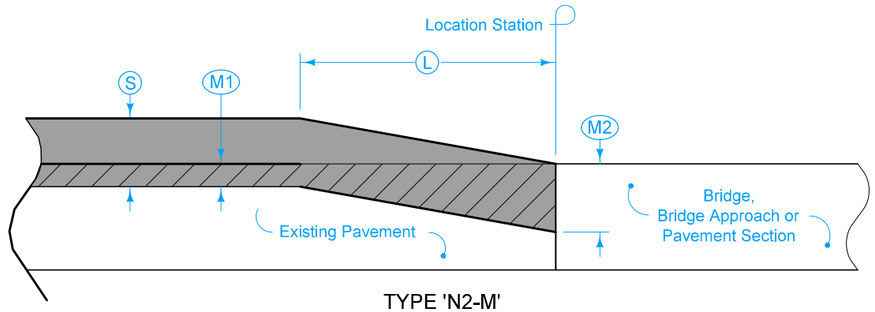
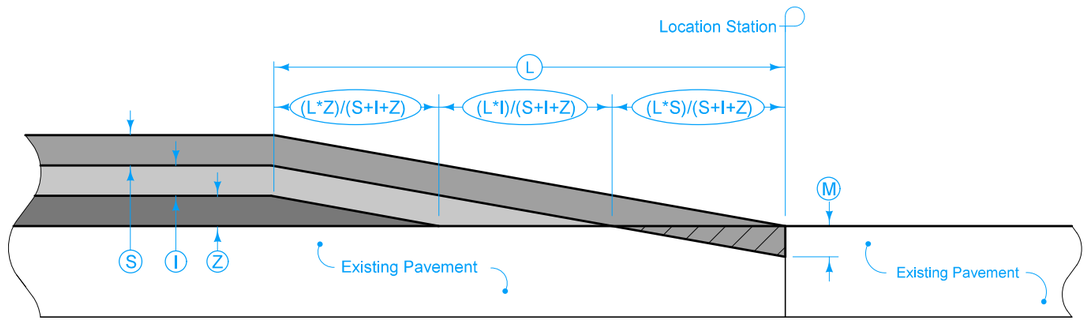
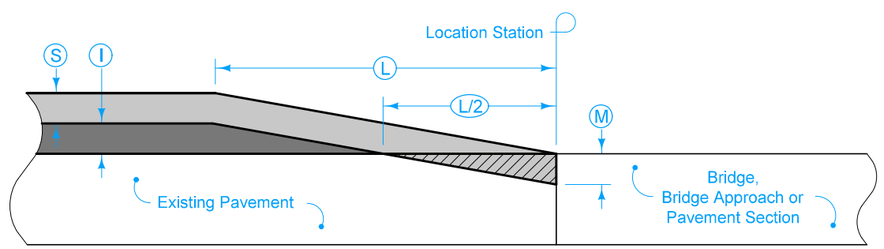


TYPE 'N2-M'
SINGLE COURSE
RUNOUT FOR RESURFACING OF MILLED AREAS



TYPE 'N3-M1'
SURFACE NOTCHES - INTERLAYER - SCRATCH COURSE
RUNOUT FOR TRIPLE COURSE RESURFACING



TYPE 'N3-M2'
SURFACE NOTCH - INTERLAYER
RUNOUT FOR DOUBLE COURSE RESURFACING

Ⓢ Surface Course
Ⓘ Interlayer
Ⓩ Scratch Course
Ⓛ Runout Length
Ⓜ Milling

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

* Based on turning maneuvers at side roads and intersections.

Contract Item:
Pavement Scarification

Tabulations:
100-25
102-16

MODIFIED
STANDARD ROAD PLAN

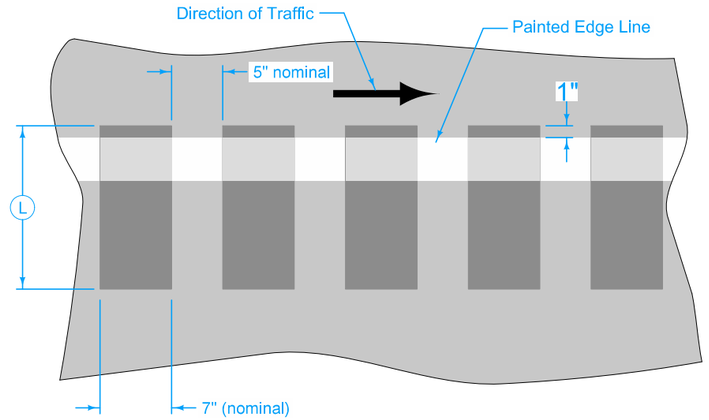
REVISION
NEW 7-02-2021

PR-202

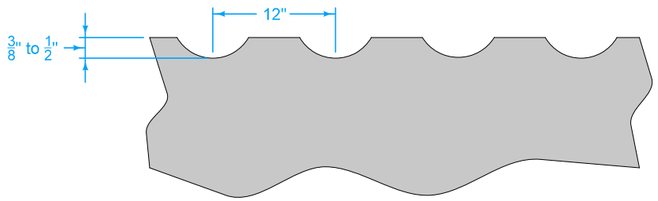
SHEET 1 of 1

REVISIONS: Created notch 'N3-M1'
Renamed notch 'N3' to 'N3-M2'
Removed notches not applicable to this project.

NOTCHES FOR RESURFACING (WITH OR WITHOUT RUNOUT)

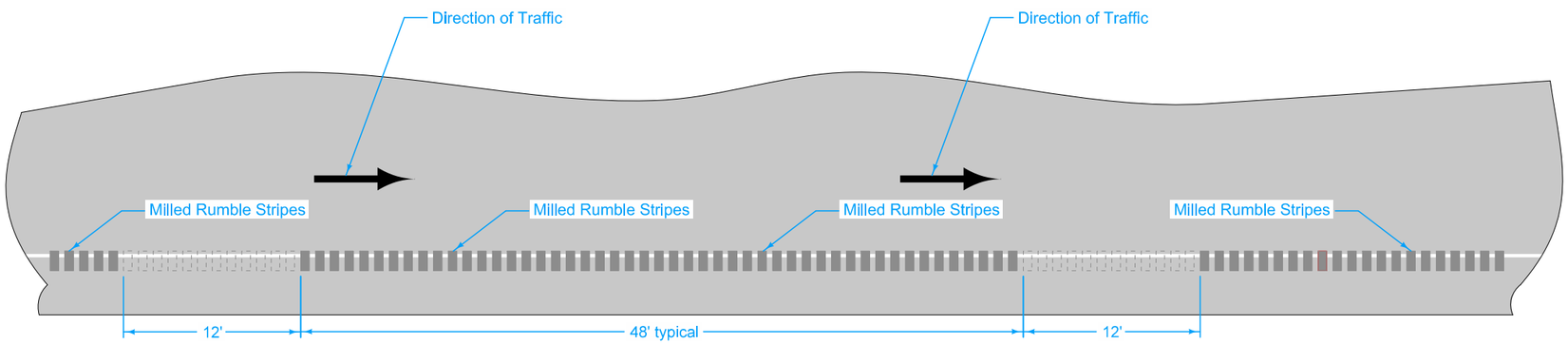


PLAN



SECTION

MILLED RUMBLE STRIPE



GAP DETAILS

Contract Items:
Milled Shoulder Rumble Strips, HMA Surface

Tabulation:
112-10

MODIFIED
STANDARD ROAD PLAN

REVISION
New 9-23-21

PV-12

SHEET 1 of 2

MODIFICATIONS: Replaced Rumble Strips with Rumble Stripes.
Removed Asphalt Emulsion for Fog Seal.
Removed details and references not applicable to this project (PCC, Interstates, Median Shoulders, Divided Highways, Ramps, Pedestrian Crossings, and Railroad Crossings).

MILLED SHOULDER RUMBLE STRIPES

FILE NO. 30406	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	HENRY COUNTY	PROJECT NUMBER STP-078-4(29)--2C-44	SHEET NUMBER U.3

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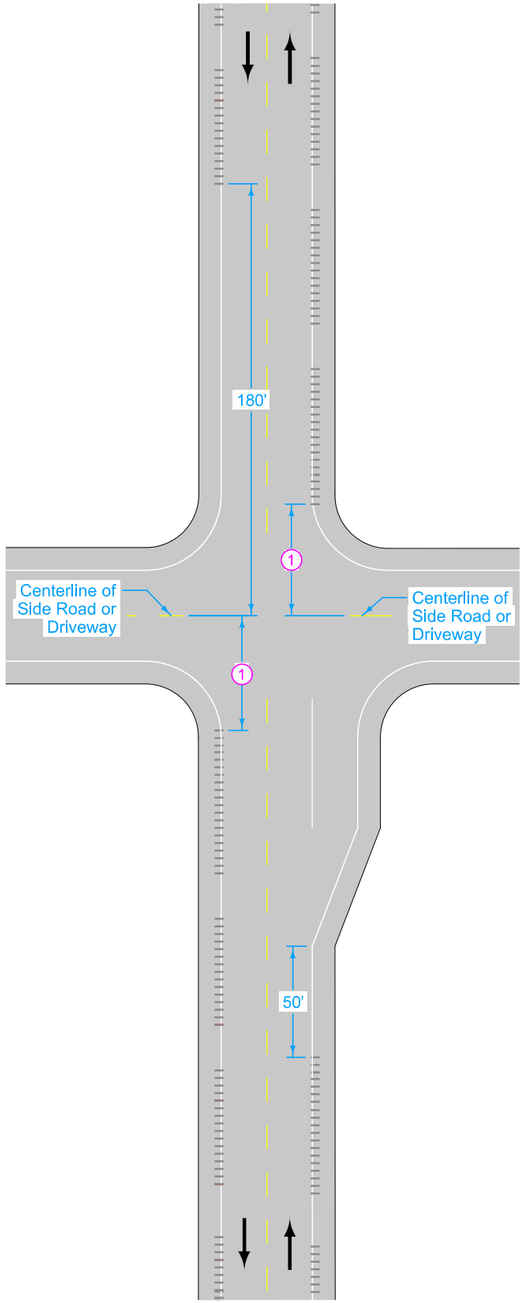
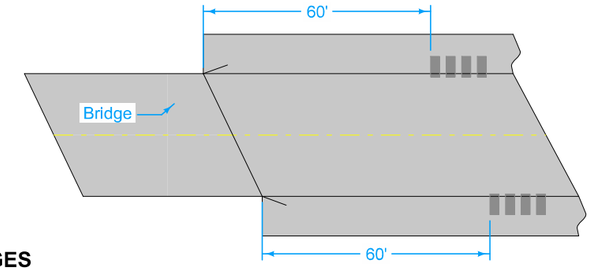


UNDIVIDED HIGHWAYS

INTERSECTION SITUATIONS



BRIDGES

(1) Begin rumbles 100 feet beyond paved side roads or 50 feet for driveways or granular side roads.

MODIFIED
STANDARD ROAD PLAN

REVISION	
New	9-23-21

PV-12

SHEET 2 of 2

MODIFICATIONS: Replaced Rumble Strips with Rumble Stripes.
Removed Asphalt Emulsion for Fog Seal.
Removed details and references not applicable to this project (PCC, Interstates, Median Shoulders, Divided Highways, Ramps, Pedestrian Crossings, and Railroad Crossings).

MILLED SHOULDER RUMBLE STRIPES

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 22'-0 x 30'-0 CONCRETE SLAB BRIDGE ON IA 78 OVER A SMALL NATURAL STREAM IN HENRY COUNTY.

ELECTRONIC COPIES OF ORIGINAL DESIGN PLANS AND REPAIR PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (ORIGINAL DESIGN NO. 3816, REMODEL-WIDENING DESIGN NO. 258, AND DECK OVERLAY DESIGN NO. 884.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

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

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

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

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

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST ONE TRAFFIC LANE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTE.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

PRESENT DECK THICKNESS IS ABOUT $15\frac{1}{2}$ INCHES INCLUDING A $1\frac{3}{4}$ INCH PC OVERLAY. THE CONTRACTOR SHALL EXERCISE CARE IN ORDER TO PREVENT UNNECESSARY REMOVAL OF CONCRETE BELOW THE TOP OF THE TOP REINFORCING. THE ENERGY OF HAND TOOLS SHALL BE RESTRICTED NEAR THE BOTTOM OF THE DESIGNATED CLASS A REPAIR AREAS IN ORDER TO PREVENT UNBONDING OF REINFORCING. NO CONCRETE SHALL BE REMOVED BELOW THE TOP OF THE TOP LONGITUDINAL REINFORCING WITHOUT PRIOR PERMISSION FROM THE BRIDGE ENGINEER.

THE BRIDGE DECK HAS AN APPROXIMATELY $1\frac{1}{2}$ INCH - 3 INCH HMA WEARING SURFACE COVERING MOST OF THE DECK. SEE SHEET V.2 FOR REMOVAL AND ADDITIONAL DETAILS.

THE CONTRACTOR SHALL NOTE THE REDEFINING OF THE CLASSIFICATION LINE FOR THIS PROJECT. THE CLASSIFICATION LINE WILL BE DEFINED AS THE TOP OF THE ORIGINAL PC OVERLAY. ALL COST OF REMOVALS AND PLACEMENT OF CONCRETE FROM THE TOP OF THE ORIGINAL PC OVERLAY TO BOTTOM OF REPAIR SHOWN WILL BE INCLUDED IN THE BID ITEM "DECK REPAIR, CLASS A". REPAIRS SHALL BE IN ACCORDANCE WITH SECTION 2413 OF THE STANDARD SPECIFICATIONS, EXCEPT AS NOTED OTHERWISE.

NO PRELIMINARY DECK SURVEY IS SHOWN. THE PLAN QUANTITY FOR "CLASS A BRIDGE DECK REPAIR" IS ESTIMATED AS 100% OF THE TOTAL DECK AREA. THE ACTUAL QUANTITY IS DETERMINED BY THE ENGINEER AFTER THE HMA SURFACE HAS BEEN REMOVED. ACTUAL SPALLED AND HOLLOW AREAS AS DETERMINED BY THE ENGINEER SHALL BE REPAIRED.

SPECIFICATIONS:

DESIGN: AASHTO SERIES 2002.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES 2002.

REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.

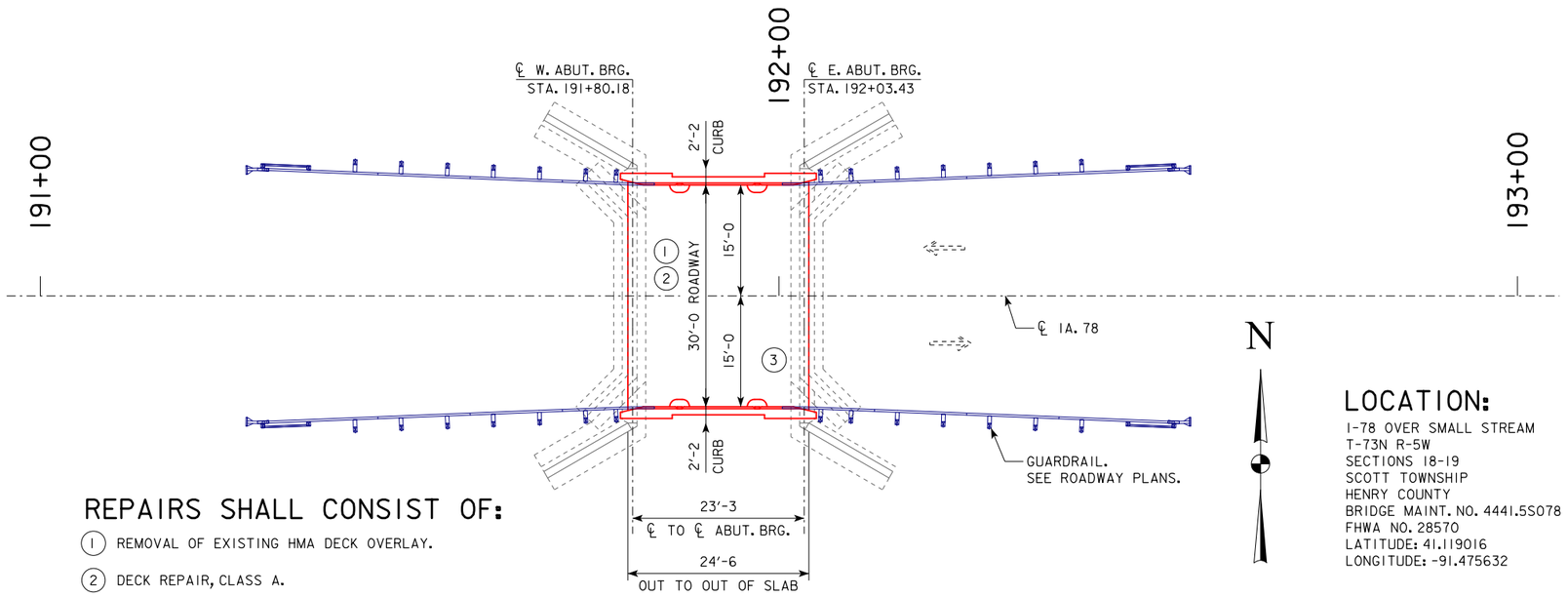
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 4.0 KSI.

ESTIMATED BRIDGE QUANTITIES - DESIGN NO. 122

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2401-6745636	REMOVAL OF EXISTING HANDRAIL AND END POSTS	LS	1.00	
2	2413-0698074	DECK REPAIR, CLASS A	SY	81.7	
3	2414-6431100	RETROFIT CONCRETE BARRIER RAILING	LF	53.0	
4	2533-4980005	MOBILIZATION	LS	1.0	

ESTIMATE REFERENCE INFORMATION:

ITEM NO.	DESCRIPTION
1	SEE NOTES ON DESIGN SHEET 4.
3	INCLUDES FURNISHING AND INSTALLING 1" DIAMETER PVC PIPE. INCLUDES 4.9 CU YD OF CLASS C OR CLASS BR STRUCTURAL CONCRETE AND 353 LBS OF GRADE 60 EPOXY COATED REINFORCING STEEL. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.



SITUATION PLAN

REPAIRS SHALL CONSIST OF:

1. REMOVAL OF EXISTING HMA DECK OVERLAY.
2. DECK REPAIR, CLASS A.
3. REMOVE EXISTING RAIL AND END POSTS AND CONSTRUCT RETROFIT CONCRETE BARRIER RAIL.

LOCATION:

I-78 OVER SMALL STREAM
T-73N R-5W
SECTIONS 18-19
SCOTT TOWNSHIP
HENRY COUNTY
BRIDGE MAINT. NO. 4441.5S078
FHWA NO. 28570
LATITUDE: 41.119016
LONGITUDE: -91.475632

TRAFFIC ESTIMATE

2020 AADT 1100 V.P.D.
TRUCKS 7 %

DESIGN HISTORY AT THIS SITE
(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
3816	ORIGINAL DESIGN
258	REMODEL-WIDENING
884	DECK OVERLAY
108	PERMANENT SCOUR COUNTERMEASURE
122	BRIDGE RAIL RETROFIT

TRAFFIC CONTROL PLAN

THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER
Jaremy D. Kotta
18994
IOWA

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

Signature Date

Jaremy D. Kotta
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: SHEETS V.1 THRU V.4

PRELIMINARY
NOT FOR CONSTRUCTION

DESIGN FOR REPAIRS TO A 0° SKEW

22'-0 x 30'-0 CONCRETE SLAB BRIDGE QUANTITIES & NOTES

STA. 191+91.8 (℄ IA. 78) NOVEMBER, 2021

HENRY COUNTY

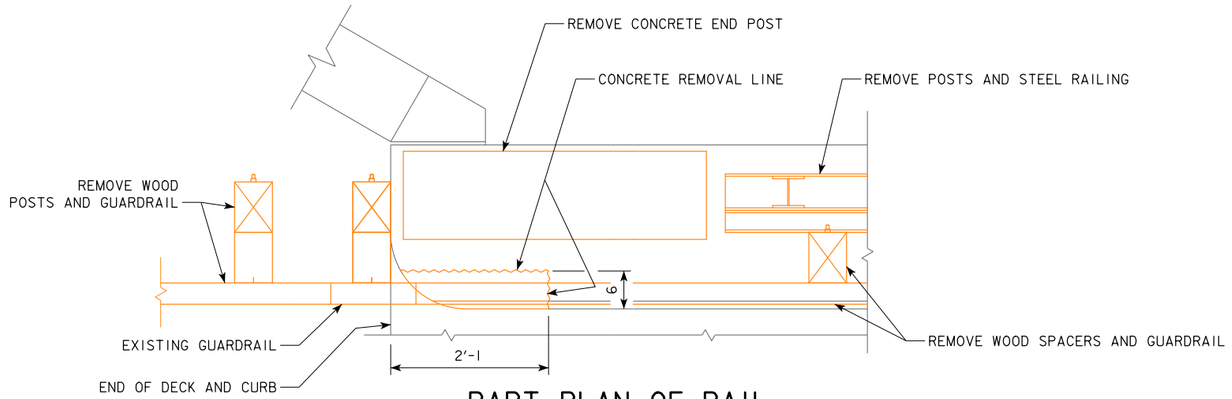
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 1 OF 4 FILE NO. 30406 DESIGN NO. 122

whks
engineers + planners + land surveyors

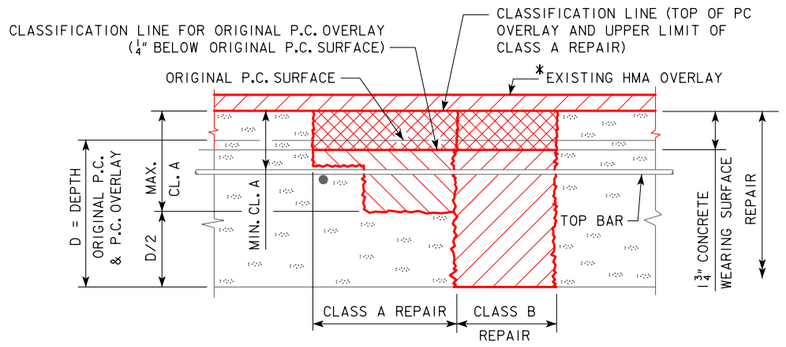
DESIGN TEAM JJS/JDK/LMG	HENRY COUNTY	PROJECT NUMBER STP-078-4(19)--2C-44	SHEET NUMBER V.1

7/14/2021 3:00:36 PM cm L:\Dept\6\9100.09 FY 2022 Retrofit Rails and Repairs\Henry, Louisa 110\Drawings\BRG_44078019.dgn 440122S001 11x17_pdf.pltcfg



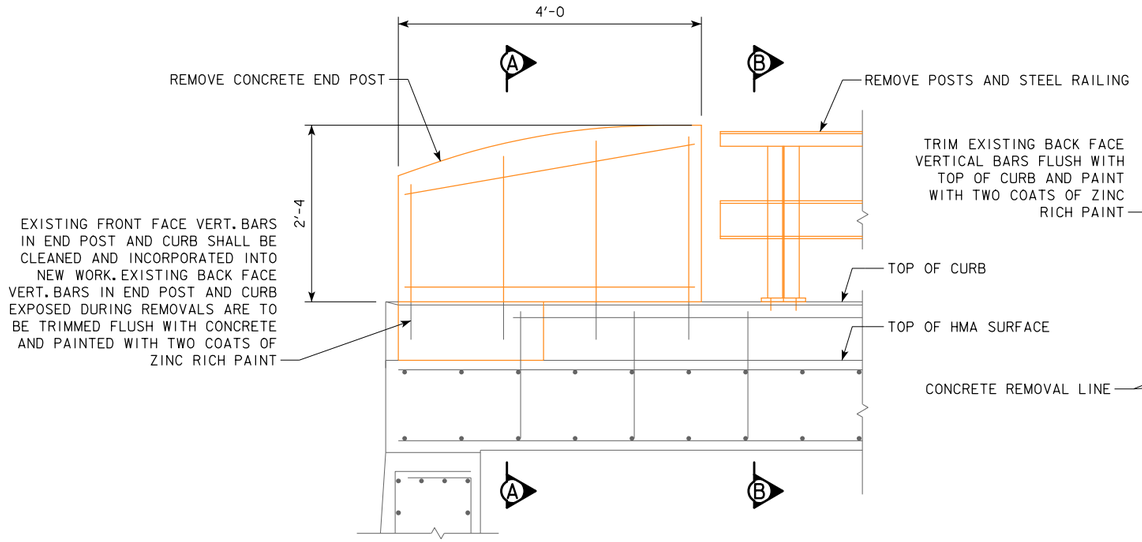
PART PLAN OF RAIL

TYPICAL EACH CORNER



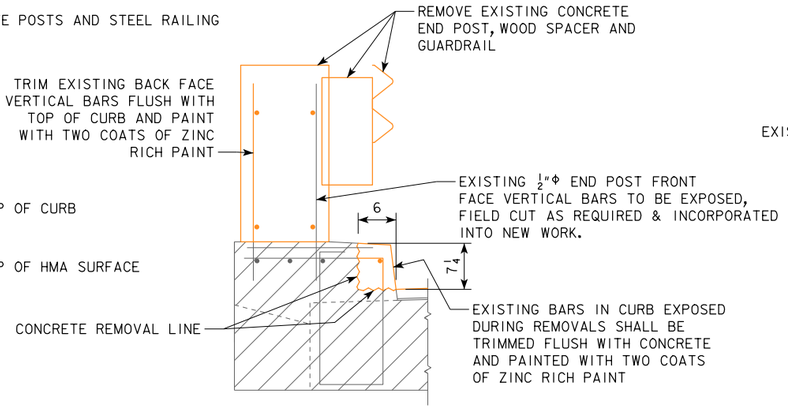
REPAIR DEFINITION

*EXISTING HMA OVERLAY THICKNESS VARIES FROM APPROXIMATELY 1½" TO 3" THICKNESS. ALL EXISTING HMA IS TO BE REMOVED. NEW HMA OVERLAY THICKNESS SHALL BE 1½" UNIFORM. SEE ROADWAY SHEETS FOR DETAILS.

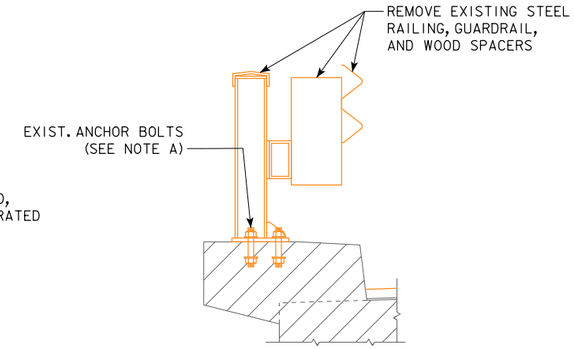


RAIL ELEVATION

TYPICAL EACH CORNER
(GUARDRAIL NOT SHOWN FOR CLARITY)



SECTION A-A



SECTION B-B

NOTE A:
EXISTING RAIL IS TO BE REMOVED. ANY ANCHOR BOLTS THAT WILL HAVE AT LEAST 2" OF CONCRETE COVER WHEN ENCOMPASSED BY THE NEW BARRIER RAIL MAY BE LEFT IN PLACE AT THE CONTRACTORS OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY ANCHOR BOLTS NOT HAVING THE 2" MIN. COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW THE TOP OF CURB AND ENDS OF NON STAINLESS STEEL BOLTS PAINTED WITH TWO COATS OF ZINC RICH PAINT.
STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL MAY BE LEFT IN PLACE AT CONTRACTORS OPTION SUBJECT TO APPROVAL OF THE ENGINEER. STAINLESS STEEL BOLTS NEED NOT BE PAINTED.
NON STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW TOP OF CURB SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

whks
engineers + planners + land surveyors

DESIGN FOR REPAIRS TO A 0° SKEW

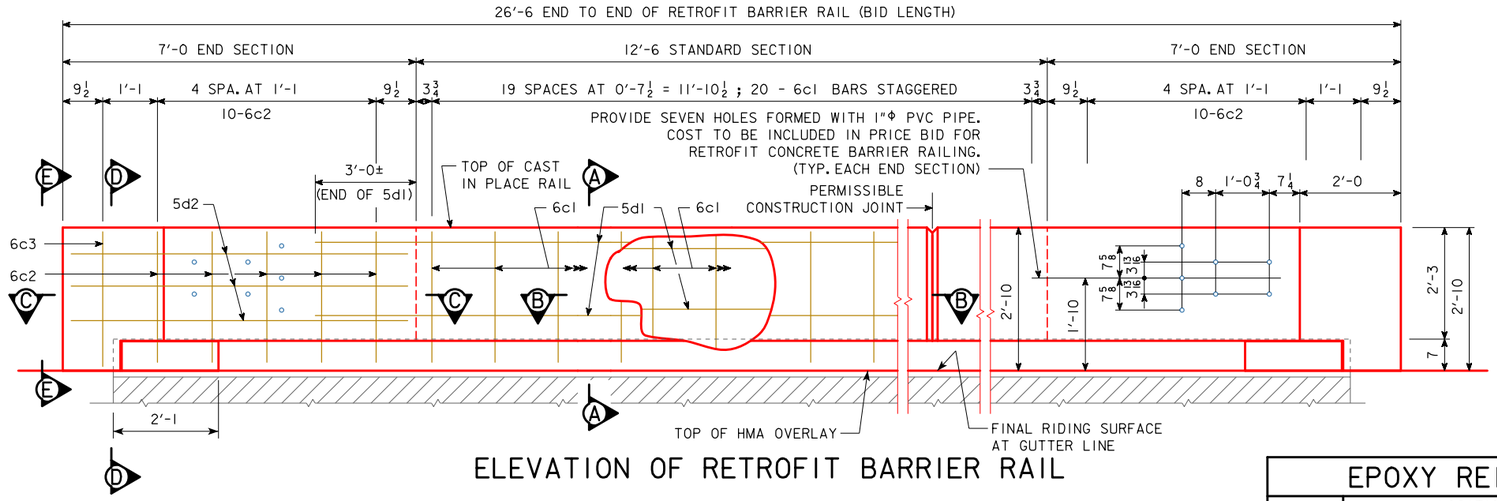
22'-0 x 30'-0 CONCRETE SLAB BRIDGE REMOVAL DETAILS

STA. 191+91.8 (℄ IA. 78) NOVEMBER, 2021

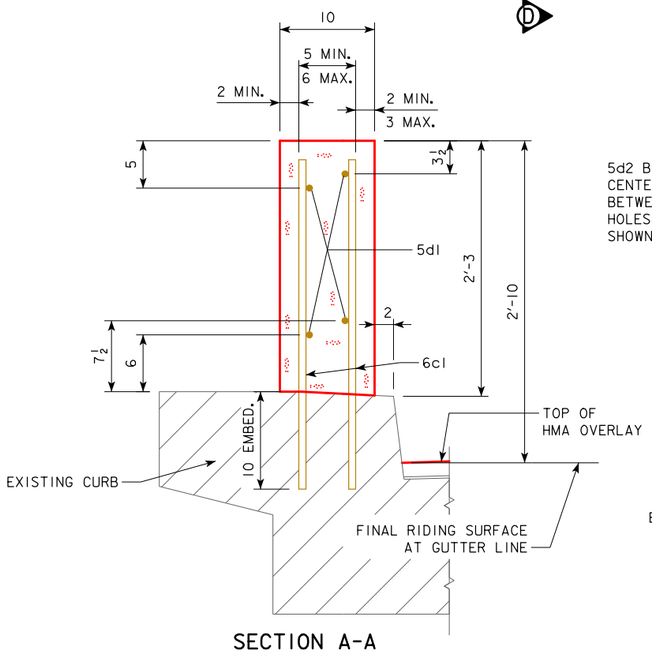
HENRY COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

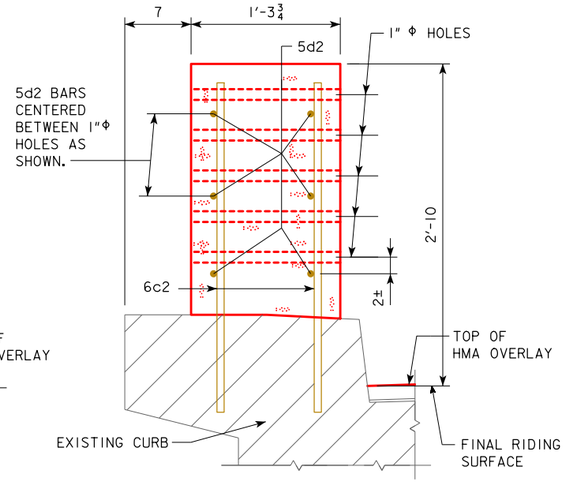
DESIGN SHEET NO. 2 OF 4 FILE NO. 30406 DESIGN NO. 122



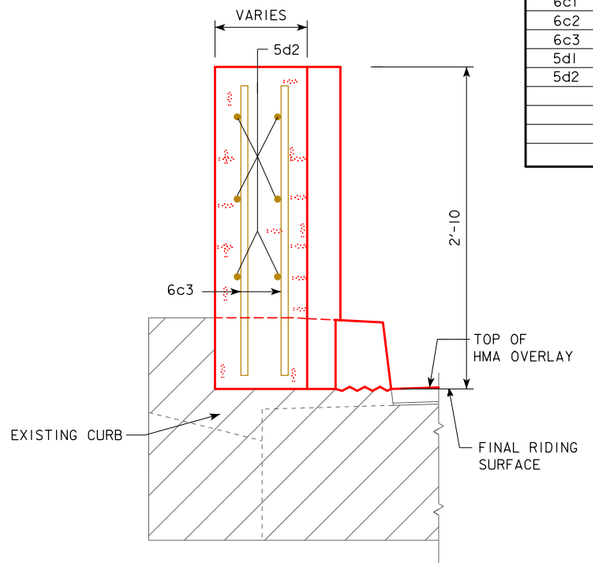
ELEVATION OF RETROFIT BARRIER RAIL



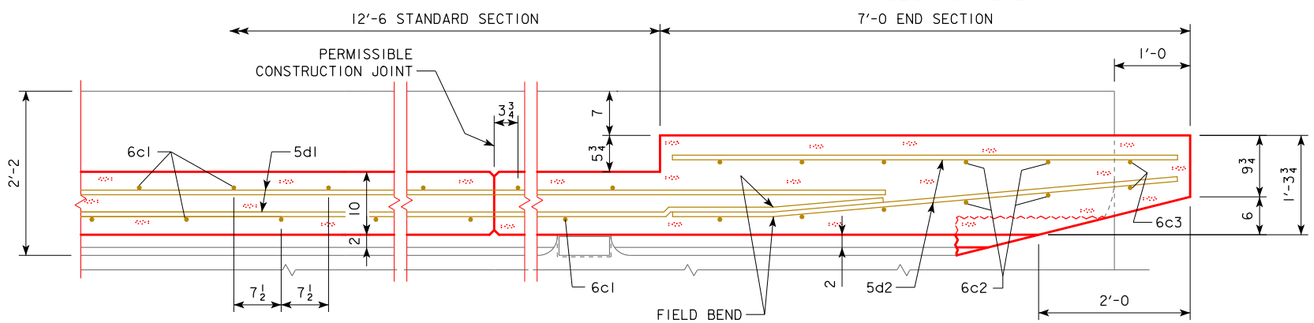
SECTION A-A



SECTION D-D



SECTION E-E



SECTION B-B
(SHOWING 6c1 PLACEMENT)

SECTION C-C
(SHOWING 6c2 & 6c3 PLACEMENT)

EPOXY REINFORCING STEEL-1 RAIL

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	STANDARD RAIL, VERT.	——	20	2'-11	88
6c2	END SECTION, VERTICAL	——	20	2'-11	88
6c3	END SECTION, VERTICAL	——	4	2'-9	17
5d1	STANDARD RAIL, LONGIT.	——	4	18'-6	77
5d2	END SECTION, LONGIT.	——	12	6'-8	83
				TOTAL (LBS.)	353

SEE DESIGN SHEET 4 FOR:
- DOWEL SETTING NOTE
- RETROFIT BARRIER RAIL NOTES
- CONCRETE PLACEMENT SUMMARY

DESIGN FOR REPAIRS TO A 0° SKEW

22'-0 x 30'-0 CONCRETE SLAB BRIDGE

RETROFIT BARRIER RAIL DETAILS

STA. 191+91.8 (℄ 1A. 78) NOVEMBER, 2021

HENRY COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 3 OF 4 FILE NO. 30406 DESIGN NO. 122

REVISED: 05-15 - REFERENCE TO "1"Φ PVC PIPE" WAS CHANGED FROM "1"Φ PLASTIC CONDUIT". ENGLISHREPAIRRETROFITBRIDGES.DGN 1031E - THIS SHEET ISSUED 5-25-99.

DESIGN TEAM JJS/JDK/LMG	STANDARD SHEET 1031E (MODIFIED)	HENRY COUNTY	PROJECT NUMBER STP-078-4(19)--2C-44	SHEET NUMBER V.3

REVISED 11-15 - MODIFIED "DESIGN HISTORY" TABLE TO STATE "(INCLUDES THIS DESIGN)".
REVISED 03-2017 - MODIFIED CONSTRUCTION: STANDARD SPECIFICATIONS BRIDGE CONSTRUCTION, SERIES TO 2015, (WAS 2012).
ENGLISHREPAIRRETROFITBRIDGES.DGN 1031T - THIS SHEET ISSUED 01-01.

RETROFIT BARRIER RAILING NOTES:

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

COST OF JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

THE RETROFIT BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS MEASURED FROM END TO END OF RAIL. THE NUMBER OF LINEAL FEET OF RETROFIT BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR RETROFIT CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING REINF. STEEL AND 1"Φ PVC PIPE) PLUS ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

ALL RETROFIT BARRIER RAIL CONCRETE IS TO BE EITHER CLASS BR MIX OR CLASS C MIX.

CLASS BR CONCRETE SHALL BE USED FOR THE SLIP FORMING METHOD.

CLASS C CONCRETE SHALL BE USED FOR THE CAST-IN-PLACE METHOD. THE PRICE BID FOR THE CAST-IN-PLACE METHOD SHALL INCLUDE THE FORMWORK.

ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

THE PRICE BID FOR "REMOVAL OF EXISTING HANDRAIL AND END POSTS" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING STEEL HANDRAIL (APPROX. 15'-8 L.F. AND 3 POSTS). THE RAILS AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE BY THE CONTRACTOR. THE BID ITEM SHALL ALSO INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING CONCRETE END POSTS AND THE CUTTING OFF AND PAINTING OF THE EXISTING RAIL POST ANCHOR BOLTS IF REQUIRED.

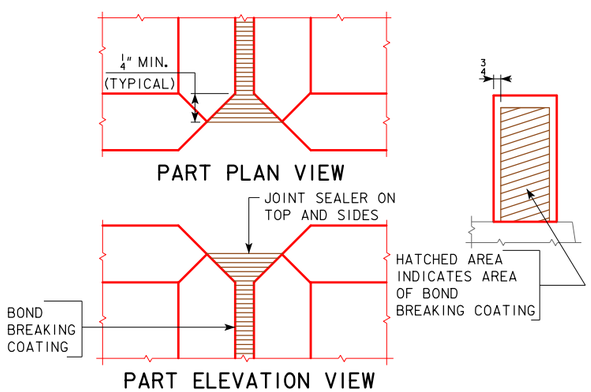
ANY REMOVALS REQUIRED SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE STATE.

EXISTING BRIDGE RAIL IS NOT TO BE REMOVED UNTIL AUTHORIZED BY THE ENGINEER.

DOWEL SETTING NOTE :

THE 6c1 AND 6c2 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. EITHER OF THE FOLLOWING SYSTEMS MAY BE USED AS A BONDING AGENT FOR VERTICAL DOWELS, BUT ONLY SYSTEM "A" MAY BE USED FOR HORIZONTAL DOWELS:

A. POLYMER GROUT SYSTEM SHALL BE IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS.
B. HYDRAULIC CEMENT GROUT SYSTEMS. DRILLED HOLES ARE TO BE 2½ TIMES THE DOWEL DIAMETER AND ARE TO BE BLOWN CLEAN WITH COMPRESSED AIR IMMEDIATELY PRIOR TO PLACING GROUT. THE HYDRAULIC CEMENT GROUT SHALL BE ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.



RETROFIT BARRIER RAIL JOINT DETAILS

CONCRETE PLACEMENT SUMMARY		
SECTION		TOTAL
STANDARD SECTION	25.0 AT 0.07 CU. YDS. PER LIN. FT	1.8
END SECTIONS	4 AT 0.75 CU. YDS. PER SECTION	3.0
CURB REPAIRS	4 AT 0.01 CU. YDS. PER SECTION	0.1
	TOTAL (CU. YDS.)	4.9

DESIGN FOR REPAIRS TO A 0° SKEW

22'-0 x 30'-0 CONCRETE SLAB BRIDGE

RETROFIT BARRIER RAIL DETAILS

STA. 191+91.8 (℄ 1A. 78) NOVEMBER, 2021

HENRY COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 4 OF 4 FILE NO. 30406 DESIGN NO. 122

DESIGN TEAM JJS/JDK/LMG	RETROFIT BARRIER RAIL DETAILS	STANDARD SHEET 1031T (MODIFIED)	HENRY COUNTY	PROJECT NUMBER STP-078-4(19)--2C-44	SHEET NUMBER V.4

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