LETTING DATE
March 20, 2018

MUSCATINE Co. HMA RESURFACING/HMA Paved Shoulder-New NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

MUSCATINE COUNTY

HMA RESURFACING/HMA Paved Shoulder-New

Near River Rd to Co Rd Y40

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

For Project Location Map
Refer to Sheet No. A.2-A.3

REVISIONS

	TOTAL
	82
PROJECT IDENTIFICATION NUMBER	
16-70-022-010	
PROJECT NUMBER	
NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	
R.O.W. PROJECT NUMBER	

INDEX OF SHEETS

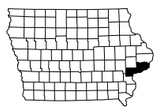
MP 74.16 TO 76.12 DESIGN DATA RURAL		
2018 AADT	3,635	V.P.D.
2038 AADT	3,919	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	--	%
Total Design ESALs	--	

MP 76.12 TO 82.77 DESIGN DATA RURAL		
2018 AADT	1,983	V.P.D.
2038 AADT	2,150	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	--	%
Total Design ESALs	--	

MP 82.77 TO 85.82 DESIGN DATA RURAL		
2018 AADT	1,598	V.P.D.
2038 AADT	1,739	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	--	%
Total Design ESALs	--	

MP 85.82 TO 86.90 DESIGN DATA RURAL		
2018 AADT	1,739	V.P.D.
2038 AADT	1,890	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	--	%
Total Design ESALs	--	

MP 86.90 TO 88.78 DESIGN DATA RURAL		
2018 AADT	1,738	V.P.D.
2038 AADT	1,890	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	--	%
Total Design ESALs	--	



INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	James R. Phillips	Primary Signature Block
MP.1	Craig J. Steffensmeiers	MP.1 - MP.11
V.1	XXXX XXXX	V.1 - V.2

LICENSED PROFESSIONAL ENGINEER
James R. Phillips
12177
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

James R. Phillips
Printed or Typed Name

My license renewal date is December 31, 20 18

Pages or sheets covered by this seal: A, B, C, J, and U Sheets

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER A.1

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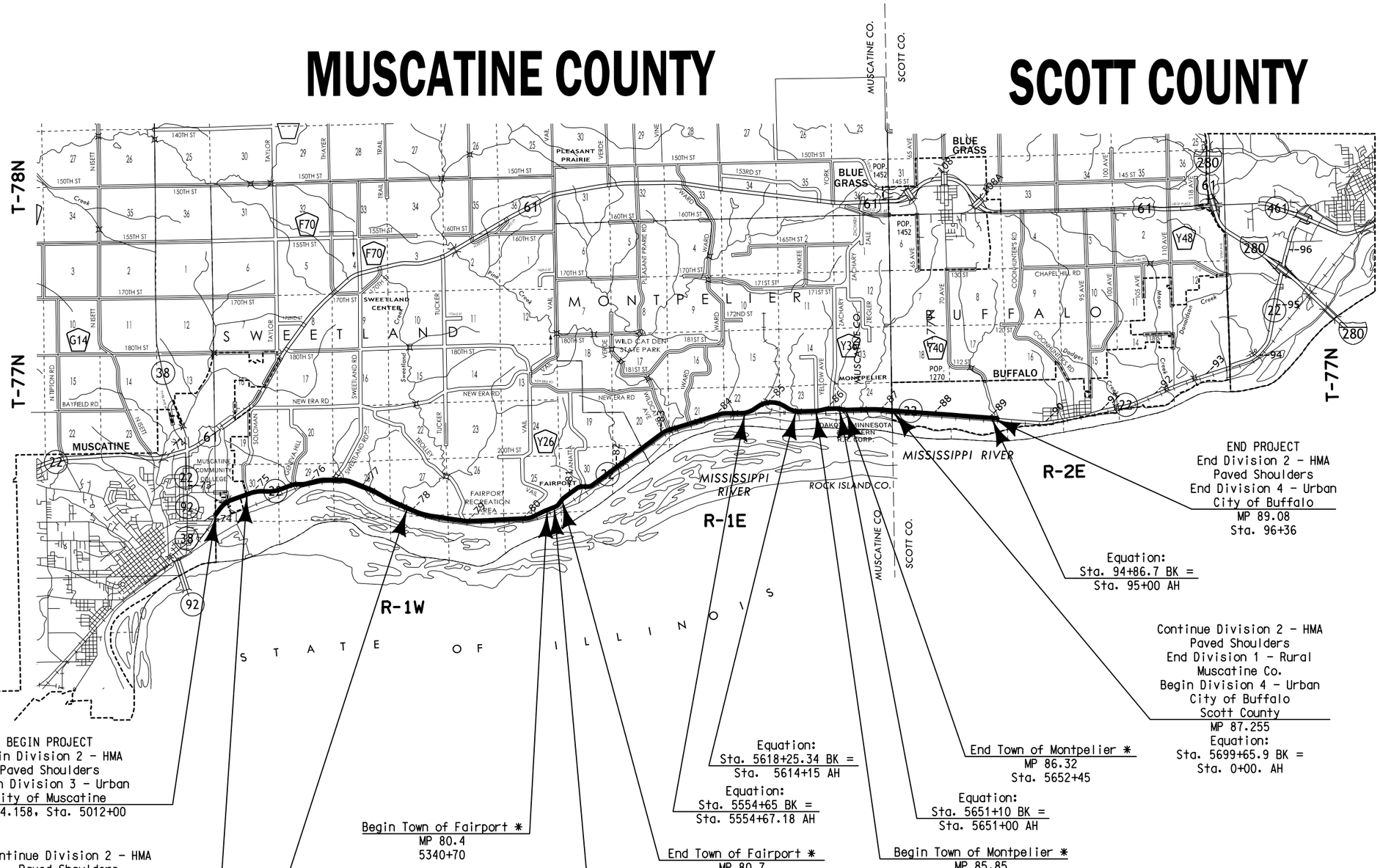
MUSCATINE COUNTY

SCOTT COUNTY



BEGIN PROJECT
Begin Division 2 - HMA
Paved Shoulders
Begin Division 3 - Urban
City of Muscatine
MP 74.158, Sta. 5012+00

Continue Division 2 - HMA
Paved Shoulders
End Division 3 - Urban
City of Muscatine
Begin Division 1 - Rural
Muscatine Co.
MP 74.868, Sta. 5049+48.5

Equation:
Sta. 5213+56 BK =
Sta. 5213+64.41 AH

Begin Town of Fairport *
MP 80.4
5340+70

Equation:
Sta. 5357+22.5 BK =
Sta. 5257+27.8 AH

Equation:
Sta. 5618+25.34 BK =
Sta. 5614+15 AH

Equation:
Sta. 5554+65 BK =
Sta. 5554+67.18 AH

End Town of Fairport *
MP 80.7
Sta. 5356+40

Begin Town of Montpelier *
MP 85.85
5627+70

Equation:
Sta. 5651+10 BK =
Sta. 5651+00 AH

End Town of Montpelier *
MP 86.32
Sta. 5652+45

END PROJECT
End Division 2 - HMA
Paved Shoulders
End Division 4 - Urban
City of Buffalo
MP 89.08
Sta. 96+36

Equation:
Sta. 94+86.7 BK =
Sta. 95+00 AH

Continue Division 2 - HMA
Paved Shoulders
End Division 1 - Rural
Muscatine Co.
Begin Division 4 - Urban
City of Buffalo
Scott County
MP 87.255
Equation:
Sta. 5699+65.9 BK =
Sta. 0+00. AH

LOCATION MAP SCALE
0 1 2 3
Miles

*Fairport and Montpelier are Unincorporated, Rural

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER A.2

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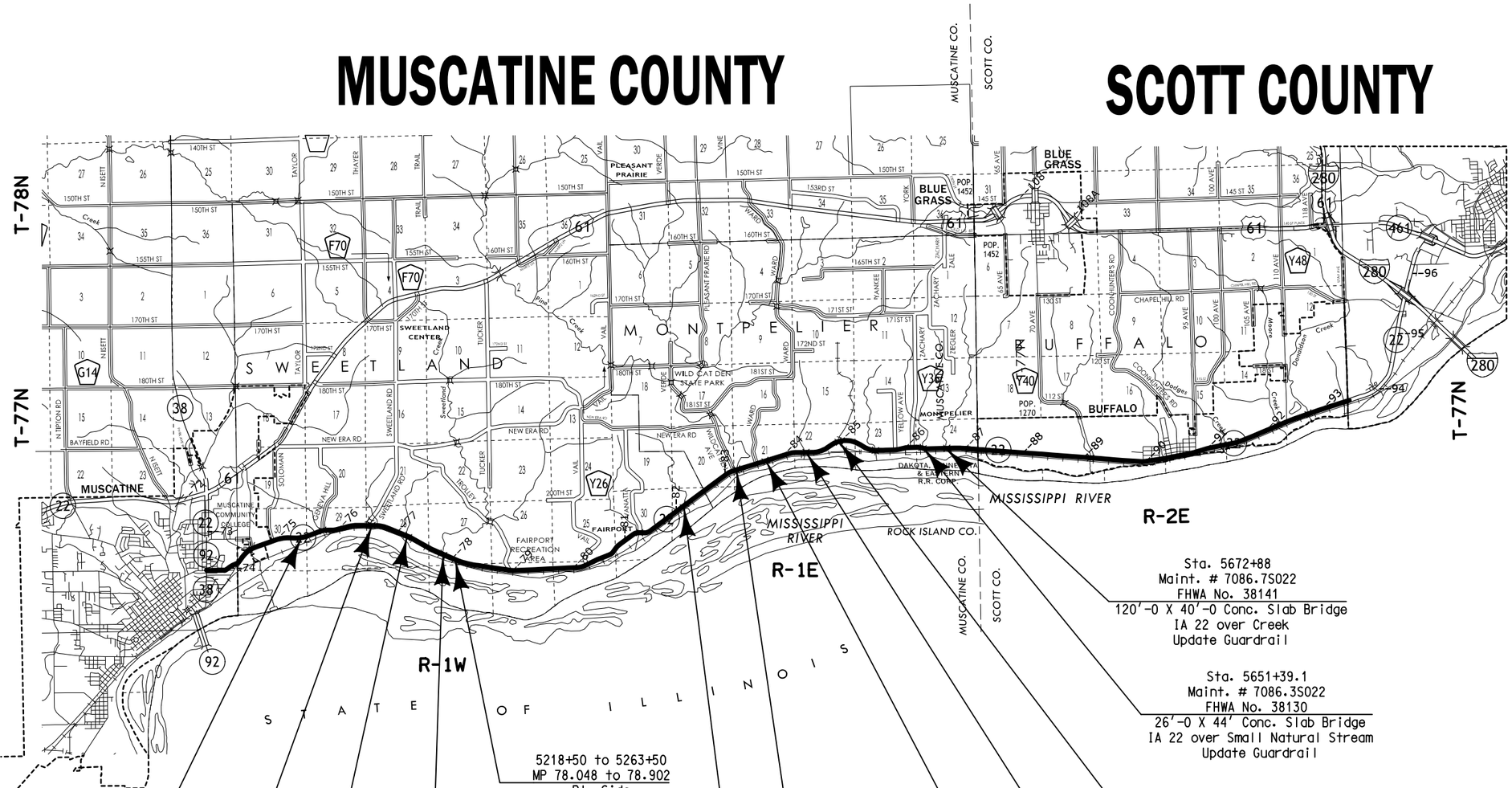
MUSCATINE COUNTY

SCOTT COUNTY



Sta. 5081+13
MP 75.451
Entrance to Geneva Plant
Rt. Side
Update Guardrail

Sta. 5138+10
Maint. # 7076.6S022
FHWA No. 38030
26' X 44' Conc. Slab Bridge
IA 22 over Small Natural Stream
Guardrail and Paved Shlds.
to be completed on Project
BRFN-022-7(72)--39-40

Sta. 5170+36
Maint. # 7077.2S022
FHWA No. 38041
Twin 10' X 9' X 44'-0 RCB Culvert
IA 22 over Drainage Ditch
Update Guardrail

Sta. 5204+45.58
Maint. # 7077.8S022
FHWA No. 38051
147'-2 X 44' Pretensioned Prestressed
Conc. Beam Bridge
IA 22 over Sweetland Cr.
Update Guardrail

5218+50 to 5263+50
MP 78.048 to 78.902
Rt. Side
Update Guardrail

Sta. 5433+21.5
Maint. # 7082.2S022
FHWA No. 38061
Twin 10' X 8' X 61' RCB Culvert
IA 22 over Drainage Ditch
Update Guardrail

Sta. 5489+20
Maint. # 7083.2S022
FHWA No. 38081
180'-6 X 44' Pretensioned Prestressed
Conc. Beam Bridge
IA 22 over Pine Creek
Update Guardrail

LOCATION MAP SCALE
0 1 2 3
Miles

Sta. 5672+88
Maint. # 7086.7S022
FHWA No. 38141
120'-0 X 40'-0 Conc. Slab Bridge
IA 22 over Creek
Update Guardrail

Sta. 5651+39.1
Maint. # 7086.3S022
FHWA No. 38130
26'-0 X 44' Conc. Slab Bridge
IA 22 over Small Natural Stream
Update Guardrail

Sta. 5581+12.01
Maint. # 7084.9S022
FHWA No. 606310
201'-4 X 40' Pretensioned Prestressed
Conc. Beam Bridge
with Integral Abutments
IA 22 over RR Spur Line (IPSCO)
Update Guardrail

Sta. 5550+50
Maint. # 7084.4B022
FHWA No. 606030
12' X 8' 61' RCB Culvert
IA 22 over Drainage Ditch
Update Guardrail

Sta. 5514+60
Maint. # 7083.7B022
FHWA No. 606125
10' X 8' X 61' RCB Culvert
IA 22 over Beaver Creek
Update Guardrail
Retrofit Bridge Rail

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER A.3

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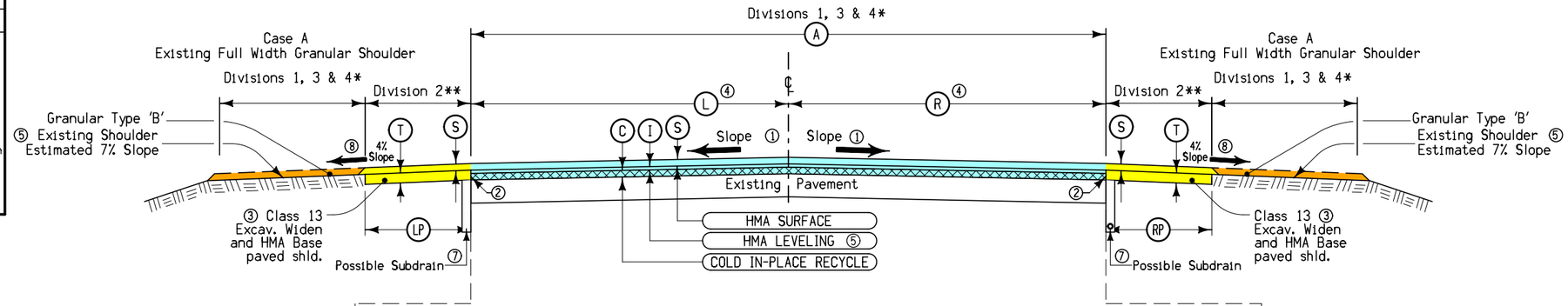
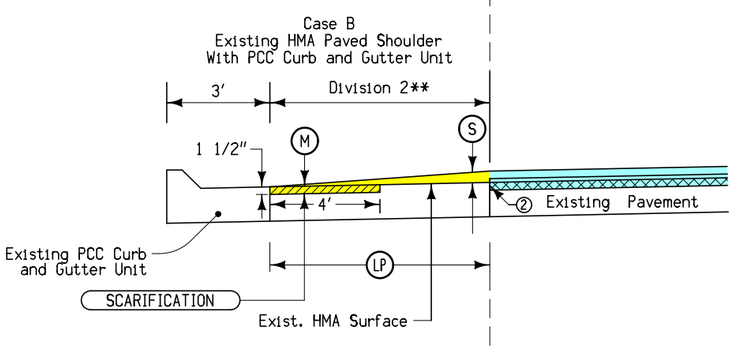
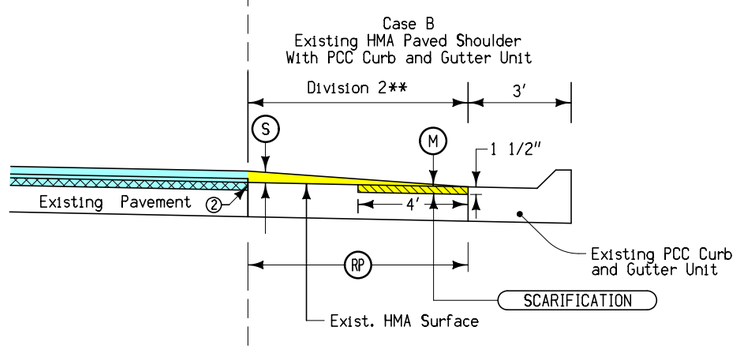
DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs/cu ft
Intermediate Course	147 lbs/cu ft
HMA Base	145 lbs/cu ft
Asph Bndr - Sur/Base	6% Per Ton
Asph Bndr - Inter	6% Content
Cold In Place	sq yd
Foamed Asphalt	0.0011 tons/sq yd/in
Tack Coat***	0.05 gal./sq. yd.
Scarification	135 lbs/cu ft
Granular	140 lbs/cu ft

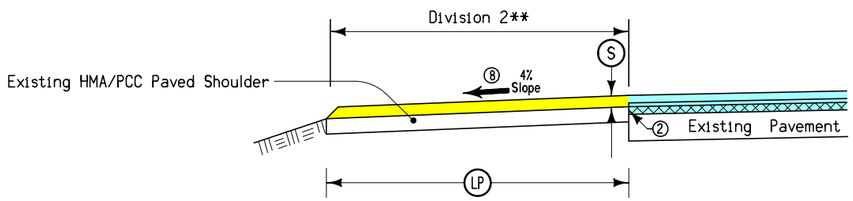
*** Not a bid item

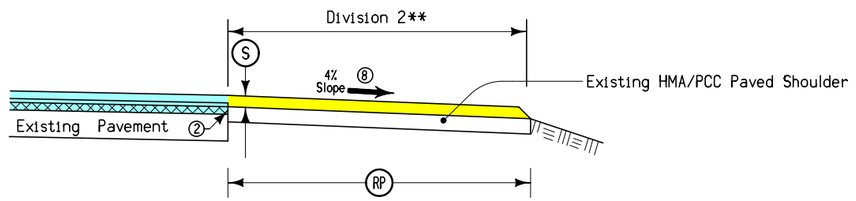


TYPICAL CROSS SECTION HMA RESURFACING WITH COLD IN-PLACE RECYCLING AND HMA BASE WIDENING SEE SHEETS B.2, B.3 & B.4 FOR QUANTITIES









* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

Notes:
① Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the engineer through areas of special shaping.
② Provide a vertical edge. Incidental to Class 13 Excavation.
③ HMA Base is to be completed after Cold In-Place Recycling has been done. See Tab 108-26A 'Staging Notes' on sht J.1 for more information.
④ Edge of Traveled Way and white painted edge line to be located at 12 ft Rt and Lt of Centerline. See current Standard Specifications and Road Standards for placement of Shoulder Rumble strips for information. See Tab 112-10 for locations.
⑤ Shoulder material as specified elsewhere in these plans; refer to Typ 7135 Mod. for "Type 'B' Granular Surfaced Shoulders".
⑥ Quantity estimated for 2 courses. (Not a bid item)
⑦ For Subdrains, See Note 2, Tab 112-9.
⑧ See Standard Road Plan PV-301 for shoulder cross slope variations along superelevated horizontal curves.

TABLE OF DESIGN QUANTITIES MAINLINE (Actual per Location) - 2602

LOCATION				DIVISIONS 1, 3 & 4 *													
											HMA RESURFACING		ASPHALT CEMENT		COLD IN-PLACE RECYCLING		
ROAD IDENTIFICATION	BEGIN STATION	END STATION	TOTAL LENGTH	(A)	(L)	(R)	(C)	(S)	(I)	Tackcoat	SURFACE	LEVELING	SURFACE	LEVELING	ASPHALT PVM'T	FOAMED ASPHALT	REMARKS
			LF	Feet	Feet	Feet	Inches	Inches	Inches	Gallons⑥	Tons	Tons	Tons	Tons	SY	Tons	
Begin Division 3 - Urban City of Muscatine																	
IA 22	5012+00.00	5013+00.00	100.00	24.0	12.0	12.0	0.0	1.5	0.5	26.67	22.050	7.350	1.323	0.441			See RO-1 Sheet B.24
IA 22	5013+00.00	5049+48.50	3,648.50	24.0	12.0	12.0	4.0	1.5	0.5	972.93	804.494	268.165	48.270	16.090	9,729.33	42.809	
End Division 3 - Urban City of Muscatine																	
Begin Division 1 - Rural Muscatine County																	
IA 22	5049+48.50	5130+25.00	8,076.50	24.0	12.0	12.0	4.0	1.5	0.5	2,153.73	1,780.868	593.623	106.852	35.617	21,537.33	94.764	
IA 22	5130+25.00	5131+00.00	75.00	24.0	12.0	12.0	0.0	1.5	0.5	20.00	16.538	5.513	0.992	0.331			See RO-3 Sheet B.24
IA 22	5131+00.00	5143+50.00															See Typical 2617
IA 22	5143+50.00	5144+25.00	75.00	24.0	12.0	12.0	0.0	1.5	0.5	20.00	16.538	5.513	0.992	0.331			See sheet B.13 and See RO-3 Sheet B.24
IA 22	5144+25.00	5170+24.88	2,599.88	24.0	12.0	12.0	4.0	1.5	0.5	693.30	573.274	191.091	34.396	11.465	6,933.01	30.505	See sheet B.13
IA 22	5170+24.88	5170+47.12	22.24	44.0	22.0	22.0	0.0	1.5	0.5	10.87	8.991	2.997	0.539	0.180			Includes 10' paved shld. each side, See sheet B.13
Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert, Sta. 5170+36																	See sheet B.13
IA 22	5170+47.12	5194+25.00	2,377.88	24.0	12.0	12.0	4.0	1.5	0.5	634.10	524.323	174.774	31.459	10.486	6,341.01	27.900	See sheet B.13
IA 22	5194+25.00	5195+00.00	75.00	24.0	12.0	12.0	0.0	1.5	0.5	20.00	16.538	5.513	0.992	0.331			See sheet B.13 and See RO-3 Sheet B.24
IA 22	5195+00.00	5213+56.00															See Typical 2617
Equation	5213+56.00	Back =															
	5213+64.41	Ahead															
IA 22	5213+64.41	5262+00.00															See Typical 7152
IA 22	5262+00.00	5263+00.00	100.00	24.0	12.0	12.0	0.0	1.5	0.5	26.67	22.050	7.350	1.323	0.441			See sheets B.16 & B.15 and See RO-1 Sheet B.24
IA 22	5263+00.00	5357+22.50	9,422.50	24.0	12.0	12.0	4.0	1.5	0.5	2,512.67	2,077.661	692.554	124.660	41.553	25,126.67	110.557	See sheets B.16 & B.15
Equation	5357+22.50	Back =															
	5357+27.80	Ahead															
IA 22	5357+27.80	5433+10.12	7,582.32	24.0	12.0	12.0	4.0	1.5	0.5	2,021.95	1,671.902	557.301	100.314	33.438	20,219.52	88.966	See sheet B.17
IA 22	5433+10.12	5433+32.87	22.75	37.2	16.0	21.2	0.0	1.5	0.5	9.40	7.775	2.592	0.467	0.156			Includes paved shld. 4' LT and 9.2' RT, See sheet B.17
Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert, Sta. 5433+21.5																	See sheet B.17
IA 22	5433+32.87	5481+25.00	4,792.13	24.0	12.0	12.0	4.0	1.5	0.5	1,277.90	1,056.665	352.222	63.400	21.133	12,779.01	56.228	See sheet B.17
IA 22	5481+25.00	5482+00.00	75.00	24.0	12.0	12.0	0.0	1.5	0.5	20.00	16.538	5.513	0.992	0.331			See sheet B.17 and See RO-3 Sheet B.24
IA 22	5482+00.00	5498+00.00															See Typical 2617
IA 22	5498+00.00	5498+75.00	75.00	24.0	12.0	12.0	0.0	1.5	0.5	20.00	16.538	5.513	0.992	0.331			See sheet B.19 and See RO-3 Sheet B.24
IA 22	5498+75.00	5514+54.00	1,579.00	24.0	12.0	12.0	4.0	1.5	0.5	421.07	348.170	116.057	20.890	6.963	4,210.67	18.527	See sheet B.19
IA 22	5514+54.00	5514+66.00	12.00	37.2	16.0	21.2	0.0	1.5	0.5	4.96	4.101	1.367	0.246	0.082			Includes paved shld. 4' LT and 9.2' RT, See sheet B.19
Maint. # 7083.7S022, FHWA No. 606125, RCB Culvert, Sta. 5514+60																	See sheet B.19
IA 22	5514+66.00	5550+43.00	3,577.00	24.0	12.0	12.0	4.0	1.5	0.5	953.87	788.729	262.910	47.324	15.775	9,538.67	41.970	See sheets B.19 & B.20
IA 22	5550+43.00	5550+57.00	14.00	37.2	16.0	21.2	0.0	1.5	0.5	5.79	4.785	1.595	0.287	0.096			Includes paved shld. 4' LT and 9.2' RT, See sheet B.20
Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert, Sta. 5550+50																	See sheet B.20
IA 22	5550+57.00	5553+65.00	308.00	24.0	12.0	12.0	4.0	1.5	0.5	82.13	67.914	22.638	4.075	1.358	821.33	3.614	See sheet B.20
IA 22	5553+65.00	5554+65.00	100.00	24.0	12.0	12.0	0.0	1.5	0.5	26.67	22.050	7.350	1.323	0.441			See sheet B.20 and See RO-1 Sheet B.24
Equation	5554+65.00	Back =															
	5554+67.18	Ahead															
IA 22	5554+67.18	5618+25.34															See Typical 7152
Equation	5618+25.34	Back =															
	5614+15.00	Ahead															
IA 22	5614+15.00	5620+00.00	585.00	24.0	12.0	12.0	0.0	1.5	0.5	156.00	128.993	42.998	7.740	2.580			See RO-1 Sheet B.24
IA 22	5620+00.00	5650+23.00	3,023.00	24.0	12.0	12.0	4.0	1.5	0.5	806.13	666.572	222.191	39.994	13.331	8,061.33	35.470	
IA 22	5650+23.00	5651+10.00	87.00	24.0	12.0	12.0	0.0	1.5	0.5	23.20	19.184	6.395	1.151	0.384			See RO-4 Sheet B.24
Equation	5651+10.00	Back															
	5651+00.00	Ahead															
IA 22	5651+00.00	5651+13.00	13.00	24.0	12.0	12.0	0.0	1.5	0.5	3.47	2.867	0.956	0.172	0.057			See sheet B.22 and See RO-4 Sheet B.24
IA 22	5651+13.00	5651+65.20															See Typical 2618, See sheet B.22
IA 22	5651+65.20	5652+65.20	100.00	24.0	12.0	12.0	0.0	1.5	0.5	26.67	22.050	7.350	1.323	0.441			See sheets B.22 & B.23 and See RO-4 Sheet B.24
IA 22	5652+65.20	5671+26.26	1,861.06	24.0	12.0	12.0	4.0	1.5	0.5	496.28	410.364	136.788	24.622	8.207	4,962.83	21.836	See sheets B.22 & B.23
IA 22	5671+26.26	5672+06.26	80.00	24.0	12.0	12.0	0.0	1.5	0.5	21.33	17.640	5.880	1.058	0.353			See sheet B.23 and See RO-1 Sheet B.24
IA 22	5672+06.26	5672+26.26	20.00	42.0	21.0	21.0	0.0	1.5	0.5	9.33	7.718	2.573	0.463	0.154			Includes existing PCC shlds., See sheet B.23 and
																	See RO-1 Sheet B.24
Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge, Sta. 5672+88																	See sheet B.23
IA 22	5673+49.73	5673+69.73	20.00	42.0	21.0	21.0	0.0	1.5	0.5	9.33	7.718	2.573	0.463	0.154			Includes existing PCC shlds., See sheet B.23 and
																	See RO-1 Sheet B.24
IA 22	5673+69.73	5674+49.73	80.00	24.0	12.0	12.0	0.0	1.5	0.5	21.33	17.640	5.880	1.058	0.353			See sheet B.23 and See RO-1 Sheet B.24
IA 22	5674+49.73	5699+65.90	2,516.17	24.0	12.0	12.0	4.0	1.5	0.5	670.98	554.815	184.938	33.289	11.096	6,709.79	29.523	See sheet B.23
End Division 1 - Rural Muscatine County																	
Equation	5699+65.90	Back															
	+00.00	Ahead															
Begin Division 4 - Urban City of Buffalo																	
IA 22	+00.00	94+86.70	9,486.70	24.0	12.0	12.0	4.0	1.5	0.5	2,529.79	2,091.817	697.272	125.509	41.836	25,297.87	111.311	
Equation	94+86.70	Back															
	95+00.00	Ahead															
IA 22	95+00.00	95+36.00	36.00	24.0	12.0	12.0	4.0	1.5	0.5	9.60	7.938	2.646	0.476	0.159	96.00	0.422	
IA 22	95+36.00	96+36.00	100.00	24.0	12.0	12.0		1.5	0.5	26.67	22.050	7.350	1.323	0.441			See RO-1 Sheet B.24
End Division 4 - Urban City of Buffalo																	
Subtotals Division 1 - Rural Muscatine County			49,346.43							13,179.14	10,897.502	3,632.501	653.850	217.950	127,241.17	559.861	
Subtotals Division 3 - Urban City of Muscatine			3,748.50							999.60	826.544	275.515	49.593	16.531	9,729.33	42.809	
Subtotals Division 4 - Urban City of Buffalo			9,622.70							2,566.05	2,121.805	707.268	127.308	42.436	25,393.87	111.733	

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

⑥ Quantity estimated for 2 courses. (Not a bid item)

SEE SHEET B.1 FOR TYPICAL

TABLE OF DESIGN QUANTITIES SHOULDER LEFT (Actual per Location) - 2602

LOCATION								DIVISION 2 **								
ROAD IDENTIFICATION	BEGIN STATION	END STATION	TOTAL LENGTH LF	(LP) Feet	(S) Inches	(T) Inches	(M) Inches	EXCAVATION CL 13 Widening Cu. Yds.	Tackcoat Gallons ⑥	HMA RESURFACING SURFACE Tons	HMA RESURFACING BASE WIDENING Tons	ASPHALT CEMENT SURFACE Tons	ASPHALT CEMENT BASE WIDENING Tons	SCARIFICATION SY	LEFT SHOULDER CASE	REMARKS
Begin Division 2																
Begin - Urban City of Muscatine																
IA 22	5012+00.00	5013+00.00	100.00	5 to 8	2.0		1.5		3.61	7.656		0.459		44.44	B	Width varies
IA 22	5013+00.00	5026+60.00	1,360.00	8.0	2.0		1.5		60.44	116.620		6.997		604.44	B	
IA 22	5026+60.00	5036+00.00	940.00	4.0	1.5	4.5		52.22	26.11	35.085	102.225	2.105	6.134		A	
IA 22	5036+00.00	5049+48.50	1,348.50	8.0	2.0		1.5		59.93	115.634		6.938		599.33	B	
End - Urban City of Muscatine																
Begin - Rural Muscatine County																
IA 22	5049+48.50	5052+00.00	251.50	10.0	2.0				13.97	31.065		1.864			C	
IA 22	5052+00.00	5067+10.00	1,510.00	8.0	2.0		1.5		67.11	129.483		7.769		671.11	B	
IA 22	5067+10.00	5075+10.00	800.00	4.0	1.5	4.5		44.44	22.22	29.859	87.000	1.792	5.220		A	
IA 22	5075+10.00	5093+40.00	1,830.00	8.0	2.0		1.5		81.33	156.923		9.415		813.33	B	
IA 22	5093+40.00	5094+80.00	140.00	4.0	1.5	4.5		7.78	3.89	5.225	15.225	0.314	0.914		A	
IA 22	5094+80.00	5104+05.54	925.54	2.0	1.5	4.5		25.71	15.43	17.538	50.326	1.052	3.020		A	Sta. 5104+05.54 begin 10' paved shld., See sheet B.11
IA 22	5104+05.54	5108+91.30														Full width paved shld., see tab 112-9, See sheet B.11
IA 22	5108+91.30	5131+00.00	2,208.70	2.0	1.5	4.5		61.35	36.81	41.853	120.098	2.511	7.206		A	Sta. 5108+91.03 end 10' paved shld., See sheet B.11
IA 22	5131+00.00	5143+50.00														See Typical 2617
IA 22	5143+50.00	5169+02.47	2,552.47	2.0	1.5	4.5		70.90	42.54	48.367	138.791	2.902	8.327		A	Sta. 5169+02.47 begin full width Paved Shld., See sheet B.13
Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert, Sta. 5170+36																See sheet B.13
IA 22	5171+93.65	5195+00.00	2,306.35	2.0	1.5	4.5		64.07	38.44	43.704	125.408	2.622	7.524		A	Sta. 5171+93.65 end full width Paved Shld., See sheet B.13
IA 22	5195+00.00	5213+56.00														See Typical 2617
Equation	5213+56.00	Back =														
	5213+64.41	Ahead														
IA 22	5213+64.41	5262+00.00														See Typical 7152
IA 22	5262+00.00	5264+93.00														Full width paved shld. LT, see Tab 112-9, See sheet B.16
IA 22	5264+93.00	5357+22.50	9,229.50	2.0	1.5	4.5		256.38	153.83	174.892	501.854	10.494	30.111		A	See sheet B.16
Equation	5357+22.50	Back =														
	5357+27.80	Ahead														
IA 22	5357+27.80	5433+10.12	7,582.32	2.0	1.5	4.5		210.62	126.37	143.679	412.289	8.621	24.737		A	See sheet B.17
Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert, Sta. 5433+21.5																See sheet B.17
IA 22	5433+32.87	5482+00.00	4,867.13	2.0	1.5	4.5		135.20	81.12	92.228	264.650	5.534	15.879		A	See sheet B.17
IA 22	5482+00.00	5498+00.00														See Typical 2617
IA 22	5498+00.00	5514+54.00	1,654.00	2.0	1.5	4.5		45.94	27.57	31.342	89.936	1.881	5.396		A	See sheet B.19
Maint. # 7083.7S022, FHWA No. 606125, RCB Culvert, Sta. 5514+60																See sheet B.19
IA 22	5514+66.00	5550+43.00	3,577.00	2.0	1.5	4.5		99.36	59.62	67.781	194.499	4.067	11.670		A	See sheets B.19 & B.20
Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert, Sta. 5550+50																See sheet B.20
IA 22	5550+57.00	5554+65.00	408.00	2.0	1.5	4.5		11.33	6.80	7.731	22.185	0.464	1.331		A	See sheet B.20
Equation	5554+65.00	Back =														
	5554+67.18	Ahead														
IA 22	5457+67.18	5618+25.34														See Typical 7152
Equation	5618+25.34	Back =														
	5614+15.00	Ahead														
IA 22	5614+15.00	5620+00.00	585.00	4.0	1.5	4.5		32.50	16.25	21.835	63.619	1.310	3.817		A	
IA 22	5620+00.00	5650+55.90	3,055.90	2.0	1.5	4.5		84.89	50.93	57.907	166.165	3.474	9.970		A	Sta. 5650+55.90 begin full width Paved Shld., See sheet B.22
Equation	5651+10.00	Back														
	5651+00.00	Ahead														
Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge, Sta. 5651+39.1																See sheet B.22
IA 22	5652+86.94	5671+04.18	1,817.24	2.0	1.5	4.5		50.48	30.29	34.435	98.812	2.066	5.929		A	Sta. 5652+86.94 End full width Paved Shld., See sheets B.22 & B.23
																Sta. 5671+04.18 begin full width Paved Shld., See sheet B.23
Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge, Sta. 5672+88																See sheet B.23
IA 22	5674+98.72	5699+65.90	2,467.18	2.0	1.5	4.5		68.53	41.12	46.751	134.153	2.805	8.049		A	Sta. 5674+98.72 end full width Paved Shld., See sheet B.23
End - Rural Muscatine County																
Equation	5699+65.90	Back														
	+00.00	Ahead														
Begin - Urban City of Buffalo																
IA 22	+00.00	94+86.70	9,486.70	2.0	1.5	4.5		263.52	158.11	179.766	515.839	10.786	30.950		A	
Equation	94+86.70	Back														
	95+00.00	Ahead														
IA 22	95+00.00	96+36.00	136.00	2.0	1.5	4.5		3.78	2.27	2.577	7.395	0.155	0.444		A	
End - Urban City of Buffalo																
End Division 2																
Subtotals Division 2			61,139.03					1589.00	1,226.11	1,639.937	3,110.469	98.396	186.628	2732.67		

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

⑥ Quantity for Case A estimated for 1 course plus vertical face of paved shoulder units. Quantity for Case B and C estimated for 1 course. (Not a bid item)

SEE SHEET B.1 FOR TYPICAL

TABLE OF DESIGN QUANTITIES SHOULDER RIGHT (Actual per Location) - 2602

LOCATION								DIVISION 2 **								
ROAD IDENTIFICATION	BEGIN STATION	END STATION	TOTAL LENGTH LF	(RP) Feet	(S) Inches	(T) Inches	(M) Inches	EXCAVATION CL 13 Widening Cu. Yds.	Tackcoat Gallons ⑥	HMA RESURFACING SURFACE Tons	HMA RESURFACING BASE WIDENING Tons	ASPHALT CEMENT SURFACE Tons	ASPHALT CEMENT BASE WIDENING Tons	SCARIFICATION SY	RIGHT SHOULDER CASE	REMARKS
Begin Division 2																
Begin - Urban City of Muscatine																
IA 22	5012+00.00	5013+90.00	190.00	6.0	2.0				6.33	14.159		0.850			C	
IA 22	5013+90.00	5049+48.50	3,558.50	4.0	1.5	4.5		197.69	98.85	132.818	386.987	7.969	23.219		A	
End - Urban City of Muscatine																
Begin - Rural Muscatine County																
IA 22	5049+48.50	5080+80.00	3,131.50	4.0	1.5	4.5		173.97	86.99	116.881	340.551	7.013	20.433		A	See sheet B.10
IA 22	5080+98.66	5082+82.91														Hon Industries, full width paved shld. See Tab 112-9, See sheet B.10
IA 22	5082+82.91	5089+60.00	677.09	4.0	1.5	4.5		37.62	18.81	25.272	73.634	1.516	4.418		A	Sta. 5082+82.91 End full width HMA paved shld. RT, See sheet B.10
IA 22	5089+60.00	5093+20.00	360.00	4.0	2.0		1.5		8.00	22.050		1.323		160.00	B	
IA 22	5093+20.00	5096+00.00	280.00	4.0	1.5	4.5		15.56	7.78	10.451	30.450	0.627	1.827		A	
IA 22	5096+00.00	5131+00.00	3,500.00	2.0	1.5	4.5		97.22	58.33	66.322	190.313	3.979	11.419		A	
IA 22	5131+00.00	5143+50.00														See Typical 2617
IA 22	5143+50.00	5168+64.96	2,514.96	2.0	1.5	4.5		69.86	41.92	47.657	136.751	2.859	8.205		A	Sta. 5168+64.96 begin full width Paved Shld., See sheet B.13
Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert, Sta. 5170+36																See sheet B.13
IA 22	5171+70.26	5195+00.00	2,329.74	2.0	1.5	4.5		64.71	38.83	44.147	126.680	2.649	7.601		A	Sta. 5171+70.26 end full width Paved Shld., See sheet B.13
IA 22	5195+00.00	5213+56.00														See Typical 2617
Equation	5213+56.00	Back =														
	5213+64.41	Ahead														
IA 22	5213+64.41	5218+27.71														See Typical 7152
IA 22	5218+27.71	5263+69.41														Full width paved shld. see Tab 112-9, See sheet B.15
IA 22	5263+69.41	5357+22.50	9,353.09	2.0	1.5	4.5		259.81	155.88	177.234	508.574	10.634	30.514		A	Sta. 5263+69.41 end full width Paved Shld., See sheet B.15
Equation	5357+22.50	Back =														
	5357+27.80	Ahead														
IA 22	5357+27.80	5431+37.59	7,409.79	2.0	1.5	4.5		205.83	123.50	140.410	402.907	8.425	24.174		A	Sta. 5431+37.59 begin full width Paved Shld., See sheet B.17
Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert, Sta. 5433+21.5																See sheet B.17
IA 22	5434+55.41	5482+00.00	4,744.59	2.0	1.5	4.5		131.79	79.08	89.906	257.987	5.394	15.479		A	Sta. 5434+55.41 end full width Paved Shld. RT, See sheet B.17
IA 22	5482+00.00	5498+00.00														See Typical 2617
IA 22	5498+00.00	5512+81.72	1,481.72	2.0	1.5	4.5		41.16	24.70	28.077	80.569	1.685	4.834		A	Sta. 5512+81.72 begin full width Paved Shld., See sheet B.19
Maint. # 7083.7S022, FHWA No. 606125, RCB Culvert, Sta. 5514+60																See sheet B.19
IA 22	5515+88.28	5548+70.72	3,282.44	2.0	1.5	4.5		91.18	54.71	62.200	178.483	3.732	10.709		A	Sta. 5515+88.28 end full width Paved Shld., See sheets B.19 & B.20
																Sta. 5548+70.72 begin full width Paved Shld., See sheet B.20
Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert, Sta. 5550+50																See sheet B.20
IA 22	5551+79.28	5554+65.00	285.72	2.0	1.5	4.5		7.94	4.76	5.414	15.536	0.325	0.932		A	Sta. 5551+79.28 end full width Paved Shld., See sheet B.20
Equation	5554+65.00	Back =														
	5554+67.18	Ahead														
IA 22	5457+67.18	5620+00.00														See Typical 7152
Equation	5618+25.34	Back =														
	5614+15.00	Ahead														
IA 22	5614+15.00	5620+00.00	585.00	4.0	1.5	4.5		32.50	16.25	21.835	63.619	1.310	3.817		A	
IA 22	5620+00.00	5649+94.31	2,994.31	2.0	1.5	4.5		83.18	49.91	56.740	162.816	3.404	9.769		A	Sta. 5649+94.31 begin full width Paved Shld., See sheet B.22
Equation	5651+10.00	Back														
	5651+00.00	Ahead														
Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge, Sta. 5651+39.1																See sheet B.22
IA 22	5652+26.79	5670+77.28	1,850.49	2.0	1.5	4.5		51.40	30.84	35.065	100.620	2.104	6.037		A	Sta. 5652+26.79 end full width Paved Shld., See sheets B.22 & B.23
																Sta. 5670+77.28 begin full width Paved Shld., See sheet B.23
Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge, Sta. 5672+88																See sheet B.23
IA 22	5674+71.81	5699+65.90	2,494.09	2.0	1.5			69.28	41.57	47.261	135.616	2.836	8.137		A	Sta. 5674+71.81 end full width Paved Shld., See sheet B.23
End - Rural Muscatine County																
Equation	5699+65.90	Back														
	+00.00	Ahead														
Begin - Urban City of Buffalo																
IA 22	+00.00	94+86.70	9,486.70	2.0	1.5	4.5		263.52	158.11	179.766	515.839	10.786	30.950		A	
Equation	94+86.70	Back														
	95+00.00	Ahead														
IA 22	95+00.00	96+36.00	136.00	2.0	1.5	4.5		3.78	2.27	2.577	7.395	0.155	0.444		A	
End - Urban City of Buffalo																
End Division 2																
Subtotals Division 2			60,645.73					1,897.99	1,107.40	1,326.241	3,715.325	79.574	222.920	160.00		

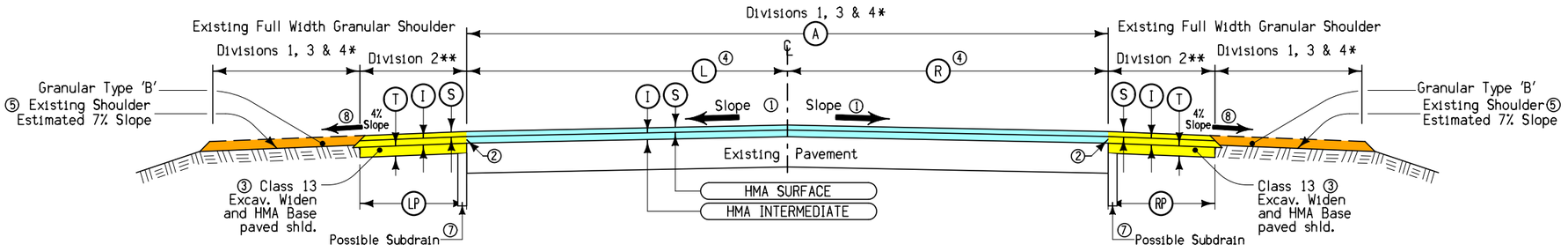
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

⑥ Quantity for Case A estimated for 1 course plus vertical face of paved shoulder units. Quantity for Case B and C estimated for 1 course. (Not a bid item)

SEE SHEET B.1 FOR TYPICAL

2617
MODIFIED



TYPICAL CROSS SECTION
HMA SURFACING AND
HMA BASE WIDENING
SEE SHEET B.6
FOR ADDITIONAL QUANTITIES

Notes:

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

② Provide a vertical edge. Incidental to Class 13 Excavation.

③ HMA Base is to be completed after Cold In-Place Recycling has been done. See Tab 108-26A 'Staging Notes' on sht J.1 for more information.

④ Edge of Traveled Way and white painted edge line to be located at 12 ft Rt and Lt of Centerline. See current Standard Specifications and Road Standards for placement of Shoulder Rumble strips for information. See Tab 112-10 for locations.

⑤ Shoulder material as specified elsewhere in these plans; refer to Typ 7135 Mod. for "Type 'B' Granular Surfaced Shoulders".

⑥ Quantity estimated for 2 courses. (Not a bid item)

⑦ For Subdrains, See Note 2, Tab 112-9.

⑧ See Standard Road Plan PV-301 for shoulder cross slope variations along superelevated horizontal curves.

TABLE OF DESIGN QUANTITIES MAINLINE (Actual per Location) - 2617

LOCATION				DIVISIONS 1, 3 & 4 *											
ROAD IDENTIFICATION	BEGIN STATION	END STATION	TOTAL LENGTH	(A)	(L)	(R)	(S)	(I)	Tackcoat	HMA RESURFACING		ASPHALT CEMENT		REMARKS
										SURFACE	INTERMEDIATE	SURFACE	INTERMEDIATE	
			LF	Feet	Feet	Feet	Inches	Inches	Gallons⑥	Tons	Tons	Tons	Tons	
Begin Division 1 - Rural Muscatine County														
IA 22	5049+48.50	5131+00.00												See Typical 2602
IA 22	5131+00.00	5136+36.00	536.00	24.0	12.0	12.0	1.5	2.0	142.93	118.188	157.584	7.091	9.455	See sheet B.12, RO-3 Sheet B.24 and Tab 102-16
Maint. # 7076.6S022, FHWA No. 38030, Conc. Slab Bridge, Sta. 5138+10														See sheet B.12
IA 22	5139+84.00	5140+77.00	93.00	30.0	12.0	18.0	1.5	2.0	31.00	25.633	34.178	1.538	2.051	Includes existing shld. Strengthening RT, See sheet B.12 and Tab 102-16
IA 22	5140+77.00	5143+50.00	273.00	24.0	12.0	12.0	1.5	2.0	72.80	60.197	80.262	3.612	4.816	See RO-3 Sheet B.24
IA 22	5143+50.00	5195+00.00												See Typical 2602
IA 22	5195+00.00	5203+70.50	870.50	24.0	12.0	12.0	1.5	2.0	232.13	191.945	255.927	11.517	15.356	See sheet B.14, RO-3 Sheet B.24 and Tab 102-16
Maint. # 7077.8S022, FHWA No. 38051, Conc. Beam Bridge, Sta. 5204+45.58														See sheet B.14
IA 22	5205+20.66	5213+56.00	835.34	24.0	12.0	12.0	1.5	2.0	222.76	184.192	245.590	11.052	14.735	See sheet B.14 and Tab 102-16
Equation:	5213+56.00	Back =												
	5213+64.41	Ahead												
IA 22	5213+64.41	5262+00.00												See Typical 7152
IA 22	5262+00.00	5482+00.00												See Typical 2602
IA 22	5482+00.00	5486+70.31	470.31	24.0	12.0	12.0	1.5	2.0	125.42	103.703	138.271	6.222	8.296	See sheet B.18 and See RO-3 Sheet B.24
IA 22	5486+70.31	5487+75.02	104.71	32.0	16.0	16.0	1.5	2.0	37.23	30.785	41.046	1.847	2.463	Includes existing PCC shoulders, See sheet B.18 and Tab 102-16
Maint. # 7083.2S022, FHWA No. 38081, Conc. Beam Bridge, Sta. 5489+20														See sheet B.18
IA 22	5490+11.98	5490+31.98	20.00	44.0	22.0	22.0	1.5	2.0	9.78	8.085	10.780	0.485	0.647	Includes existing full width PCC shoulders, See sheet B.18 and Tab 102-16
IA 22	5490+31.98	5491+84.69	152.71	24.0	12.0	12.0	1.5	2.0	40.72	33.673	44.897	2.020	2.694	Includes existing PCC shoulders, See sheet B.18
IA 22	5491+84.69	5498+00.00	615.31	24.0	12.0	12.0	1.5	2.0	164.08	135.676	180.901	8.141	10.854	See sheet B.18 and See RO-3 Sheet B.24
IA 22	5498+00.00	5554+65.00												See Typical 2602
Equation	5554+65.00	Back =												
	5554+67.18	Ahead												
IA 22	5554+67.18	5618+25.34												See Typical 7152
Equation	5618+25.34	Back =												
	5614+15.00	Ahead												
IA 22	5614+15.00	5620+00.00												See Typical 2602
IA 22	5620+00.00	5651+13.00												See Typical 2602
IA 22	5651+13.00	5651+65.20												See Typical 2618
IA 22	5651+65.20	5699+65.90												See Typical 2602
End Division 1 - Rural Muscatine County														
Subtotals Division 1 - Rural Muscatine County			3,970.88						1,078.85	892.077	1,189.436	53.525	71.366	

DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs./cu. ft.
Intermediate Course	147 lbs./cu. ft.
Scarification	135 lbs./cu. ft.
HMA Base	145 lbs./cu. ft.
CL 13 Excavation	
Tack Coat***	0.05 gal./sq. yd.
Asphalt Cement	6.0% per Ton
Type 'B' Granular	140 lbs./cu. ft.

*** Not a bid item

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

TABLE OF DESIGN QUANTITIES SHOULDER LEFT (Actual per Location) - 2617

LOCATION								DIVISION 2 **								REMARKS
ROAD IDENTIFICATION	BEGIN STATION	END STATION	TOTAL LENGTH LF	(LP) Feet	(S) Inches	(I) Inches	(T) Inches	EXCAVATION CL 13 Widening Cu. Yds.	Tackcoat Gallons⑥	HMA RESURFACING SURFACE Tons	HMA RESURFACING INTERMEDIATE Tons	HMA RESURFACING BASE WIDENING Tons	ASPHALT CEMENT SURFACE Tons	ASPHALT CEMENT INTERMEDIATE Tons	ASPHALT CEMENT BASE WIDENING Tons	
Begin Division 2																
Begin - Rural Muscatine County																
IA 22	5049+48.50	5131+00.00														See Typical 2602
IA 22	5131+00.00	5134+62.66	362.66	4.0	1.5	1.5	2.5	11.19	18.13	13.536	18.696	21.911	0.812	1.122	1.315	Sta. 5134+62.66 begin full width paved shld., See sheet B.12
Maint. # 7076.6S022, FHWA No. 38030, Conc. Slab Bridge, Sta. 5138+10																See sheet B.12
IA 22	5139+84.00	5143+50.00	366.00	4.0	1.5	2.0	2.5	11.30	18.30	13.661	18.868	22.113	0.820	1.132	1.327	Sta. 5139+84.00 end existing shld. Strengthening, See sheet B.12
IA 22	5143+50.00	5195+00.00														See Typical 2602
IA 22	5195+00.00	5202+58.00	758.00	4.0	1.5	2.0	2.5	23.40	37.90	28.292	39.076	45.796	1.698	2.345	2.748	Sta. 5202+58.00 begin full width paved shld., See sheet B.14
Maint. # 7077.8S022, FHWA No. 38051, Conc. Beam Bridge, Sta. 5204+45.58																See sheet B.14
IA 22	5206+70.66	5213+56.00	685.34	4.0	1.5	2.0	2.5	21.15	34.27	25.580	35.331	41.406	60.910	2.120	4.019	Sta. 5206+70.66 end full width paved shld., See sheet B.14
Equation	5213+56.00	Back =														
	5213+64.41	Ahead														
IA 22	5213+64.41	5262+00.00														See Typical 7152
IA 22	5262+00.00	5482+00.00														See Typical 2602
IA 22	5482+00.00	5486+70.31	470.31	4.0	1.5	2.0	2.5	14.52	23.52	17.554	24.245	28.415	1.053	1.455	1.705	Sta. 5486+70.31 begin existing 4' PCC shld., See sheet B.18
Maint. # 7083.2S022, FHWA No. 38081, Conc. Beam Bridge, Sta. 5489+20																See sheet B.18
IA 22	5491+84.69	5498+00.00	615.31	4.0	1.5	2.0	2.5	18.99	30.77	22.966	31.721	37.175	1.378	1.903	2.230	Sta. 5491+84.69 end existing 4' PCC shld., See sheet B.18
IA 22	5498+00.00	5554+65.00														See Typical 2602
Equation	5554+65.00	Back =														
	5554+67.18	Ahead														
IA 22	5554+67.18	5618+25.34														See Typical 7152
Equation	5618+25.34	Back =														
	5614+15.00	Ahead														
IA 22	5614+15.00	5620+00.00														See Typical 2602
IA 22	5620+00.00	5699+65.90														See Typical 2602
End - Rural Muscatine County																
End Division 2																
Subtotals Division 2			3,257.62					100.54	162.88	121.588	167.937	196.815	66.671	10.076	13.344	

TABLE OF DESIGN QUANTITIES SHOULDER RIGHT (Actual per Location) - 2617

LOCATION								DIVISION 2 **								REMARKS
ROAD IDENTIFICATION	BEGIN STATION	END STATION	TOTAL LENGTH LF	(RP) Feet	(S) Inches	(I) Inches	(T) Inches	EXCAVATION CL 13 Widening Cu. Yds.	Tackcoat Gallons⑥	HMA RESURFACING SURFACE Tons	HMA RESURFACING INTERMEDIATE Tons	HMA RESURFACING BASE WIDENING Tons	ASPHALT CEMENT SURFACE Tons	ASPHALT CEMENT INTERMEDIATE Tons	ASPHALT CEMENT BASE WIDENING Tons	
Begin Division 2																
Begin - Rural Muscatine County																
IA 22	5049+48.50	5131+00.00														See Typical 2602
IA 22	5131+00.00	5136+36.00	536.00	4.0	1.5	2.0	2.5	16.54	26.80	20.006	27.632	32.383	1.200	1.658	1.943	Sta. 5136+36.00 begin existing shld. Strengthening, See sheet B.12
Maint. # 7076.6S022, FHWA No. 38030, Conc. Slab Bridge, Sta. 5138+10																See sheet B.12
IA 22	5140+77.00	5143+50.00	273.00	4.0	1.5	2.0	2.5	8.43	13.65	10.190	14.074	16.494	0.611	0.844	0.990	Sta. 5140+77.00 end existing shld. Strengthening, See sheet B.12
IA 22	5143+50.00	5195+00.00														See Typical 2602
IA 22	5195+00.00	5202+20.50	720.50	4.0	1.5	2.0	2.5	22.24	36.03	26.892	37.143	43.530	1.614	2.229	2.612	Sta. 5202+20.50 begin full width paved shld., See sheet B.14
Maint. # 7077.8S022, FHWA No. 38051, Conc. Beam Bridge, Sta. 5204+45.58																See sheet B.14
IA 22	5206+33.16	5213+56.00	722.84	4.0	1.5	2.0	2.5	22.31	36.14	26.979	37.264	43.672	1.619	2.236	2.620	Sta. 5206+33.16 end full width paved shld., See sheet B.14
Equation	5213+56.00	Back =														
	5213+64.41	Ahead														
IA 22	5213+64.41	5262+00.00														See Typical 7152
IA 22	5262+00.00	5482+00.00														See Typical 2602
IA 22	5482+00.00	5486+67.28	467.28	4.0	1.5	2.0	2.5	14.42	23.36	17.441	24.089	28.232	1.046	1.445	1.694	Sta. 5486+67.28 begin full width paved shld., See sheet B.18
Maint. # 7083.2S022, FHWA No. 38081, Conc. Beam Bridge, Sta. 5489+20																See sheet B.18
IA 22	5491+84.69	5498+00.00	615.31	4.0	1.5	2.0	2.5	18.99	30.77	22.966	31.721	37.175	1.378	1.903	2.230	Sta. 5491+84.69 end existing 4' PCC shld., See sheet B.18
IA 22	5498+00.00	5554+65.00														See Typical 2602
Equation	5554+65.00	Back =														
	5554+67.18	Ahead														
IA 22	5554+67.18	5618+25.34														See Typical 7152
Equation	5618+25.34	Back =														
	5614+15.00	Ahead														
IA 22	5614+15.00	5620+00.00														See Typical 2602
IA 22	5620+00.00	5699+65.90														See Typical 2602
End - Rural Muscatine County																
End Division 2																
Subtotals Division 2			3,334.93					102.93	166.75	124.474	171.923	201.485	7.468	10.315	12.089	

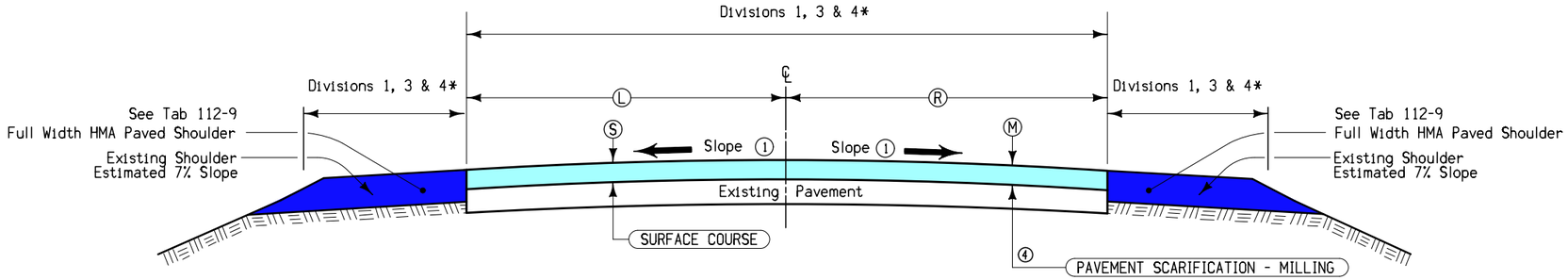
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

⑥ Quantity estimated for 2 courses plus vertical faces of paved shoulder units. (Not a bid item)

SEE SHEET B.5 FOR TYPICAL

2618
MODIFIED



Notes:

Section shown in the direction of travel

(1) Match finished slope to existing pavement, except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the Engineer through areas of special shaping.

(2) Quantity estimated for 1 course. (Not a bid item)

(3) See Standard Road Plan PV-301 for shoulder cross slope variations along superelevated curves.

(4) Milling is intended to be a nominal 1" depth for removal of HMA only.

DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs./cu. ft.
Intermediate Course	147 lbs./cu. ft.
Asphalt Binder	6% Per Ton
Scarification	145 lbs./cu. ft.
Tack Coat***	0.05 gal./sq. yd.

*** Not a bid item

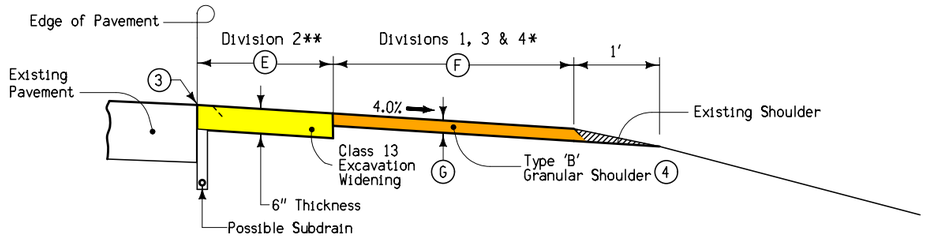
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders
Full Width HMA Shoulder, See Tab 112-9
** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

TABLE OF DESIGN QUANTITIES

LOCATION				(L)	(R)	(S)	(M)	TACK COAT (2)	ASPHALT CEMENT	HMA SURFACE	SCARIFICATION	
ROAD IDENTIFICATION	STATION TO STATION		Lineal Feet	Inches	Inches	Inches	Inches	Gallons	Tons	Tons	SY	REMARKS
Begin Division 1 - Rural Muscatine County												
IA 22	5651+13.00	5651+24.89	11.89	12.0	12.0	1.0	1.0	3.17	0.105	1.748	31.71	See sheet B.22 and R0-4 Sheet B.24
IA 22	5651+24.89	5651+53.31	28.42	20.7	20.7	1.0	1.0	13.07	0.432	7.207	130.73	Includes bridge deck shld., maintain positive flow, See sheet B.22
Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge, Sta. 5651+39.1												See sheet B.22
IA 22	5651+53.31	5651+65.20	11.89	12.0	12.0	1.0	1.0	3.17	0.105	1.748	31.71	See sheet B.22 and R0-4 Sheet B.24
End Division 1 - Rural Muscatine County												
Subtotals Division 1 - Rural Muscatine County			52.20					19.41	0.642	10.702		

TYPICAL CROSS SECTION
HMA RESURFACING & PAVEMENT SCARIFICATION

7152
MODIFIED



1. Per side per Station.
2. Bid Items.
3. Provide a vertical edge. Incidental to Class 13 Excavation Widening.
4. Place and compact material then blade and shape to existing shoulder in the outer 1'-0" and roll with loaded truck tire.
5. See Standard Road Plan PV-301 for shoulder cross slope variation along superelevated horizontal curves.

DESIGN RATES	
ITEM	RATE
HMA Base	145 lbs./cu. ft.
Asphalt Binder	6.0 % Content
Tack Coat***	0.05 gal./sq. yd.
Type 'B' Granular	140 lbs./cu. ft.

*** Not a bid item

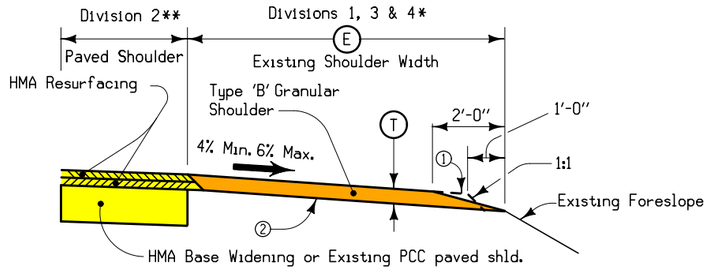
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

TABLE OF DESIGN QUANTITIES MAINLINE - 7152 (1)

Location					E	F	G	Division 2 **					Divisions 1, 3 & 4 *	
Road Identification	Station to Station		Length Feet	Side	Feet	Feet	Inches	Class 13 (2) Excavation Widening Cu.Yds.	Paved (2) Shoulder Sq.Yds.	Hot Mix Asphalt Tons	Tack Coat Gals.	Asphalt Binder (2) Tons	Granular (2) Shoulder Tons	Remarks
Begin Divisions 1 & 2														
Rural Muscatine County														
IA 22	5049+48.50	5131+00.00		LT										See Typical 2602
IA 22	5131+00.00	5143+50.00		LT										See Typical 2617
IA 22	5143+50.00	5195+00.00		LT										See Typical 2602
IA 22	5195+00.00	5213+56.00		LT										See Typical 2617
Equation	5213+56.00	Back		LT										
	5213+64.41	Ahead		LT										
IA 22	5213+64.41	5262+00.00	4835.59	LT	4	2	1	7.41	44.44	14.500	2.22	0.870	1.167	Sta. 5262+00.00 begin full width paved shld., See sheet B.16
IA 22	5262+00.00	5482+00.00		LT										See Typical 2602
IA 22	5482+00.00	5498+00.00		LT										See Typical 2617
IA 22	5498+00.00	5554+65.00		LT										See Typical 2602
Equation	5554+65.00	Back =												
	5554+67.18	Ahead												
IA 22	5554+67.18	5579+09.08	2441.90	LT	4	4	1	7.41	44.44	14.500	2.22	0.870	2.333	Sta. 5579+09.08 begin full width paved shld., See sheet B.21
Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge, Sta. 5581+12.01														See sheet B.21
IA 22	5583+52.11	5618+25.34	3473.23	LT	4	4	1	7.41	44.44	14.500	2.22	0.870	2.333	Sta. 5583+52.11 end full width paved shld., See sheet B.21
Equation	5618+25.34	Back =												
	5614+15.00	Ahead												
IA 22	5614+15.00	5620+00.00		LT										See Typical 2602
IA 22	5620+00.00	5699+65.90		LT										See Typical 2602
IA 22	5049+48.50	5131+00.00		RT										See Typical 2602
IA 22	5131+00.00	5143+50.00		RT										See Typical 2617
IA 22	5143+50.00	5195+00.00		RT										See Typical 2602
IA 22	5195+00.00	5213+56.00		RT										See Typical 2617
Equation	5213+56.00	Back		RT										
	5213+64.41	Ahead		RT										
IA 22	5213+64.41	5218+27.71	463.30	RT	4	2	1	7.41	44.44	14.500	2.22	0.870	1.167	Sta. 5218+27.71 begin full width paved shoulder, See sheet B.15
IA 22	5218+27.71	5262+00.00		RT										Full width paved shoulder, see Tab 112-9, See sheet B.15
IA 22	5262+00.00	5482+00.00		RT										See Typical 2602
IA 22	5482+00.00	5498+00.00		RT										See Typical 2617
IA 22	5498+00.00	5554+65.00		RT										See Typical 2602
Equation	5554+65.00	Back =												
	5554+67.18	Ahead												
IA 22	5554+67.18	5578+42.36	2375.18	RT	4	4	1	7.41	44.44	14.500	2.22	0.870	2.333	Sta. 5578+42.36 begin full width paved shld., See sheet B.21
Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge, Sta. 5581+12.01														See sheet B.21
IA 22	5583+18.63	5618+25.34	3506.71	RT	4	4	1	7.41	44.44	14.500	2.22	0.870	2.333	Sta. 5583+18.63 end full width paved shld., See sheet B.21
Equation	5618+25.34	Back =												
	5614+15.00	Ahead												
IA 22	5614+15.00	5620+00.00		RT										See Typical 2602
IA 22	5620+00.00	5699+65.90		RT										See Typical 2602
End Rural Muscatine County														
End Divisions 1 & 2														
Subtotals Division 1													337.063	
Subtotals Division 2								1,266.81	7,597.46	2,478.920	379.53	148.735		

TYPICAL SECTION
RETROFIT HOT MIX ASPHALT PAVED SHOULDER



TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

ADJACENT TO HOT MIX ASPHALT RESURFACING

DESIGN RATE	
ITEM	RATE
Granular Shoulder	140 lbs/cu ft

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

(2) Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing.

Approx. average existing slope is 6.5%

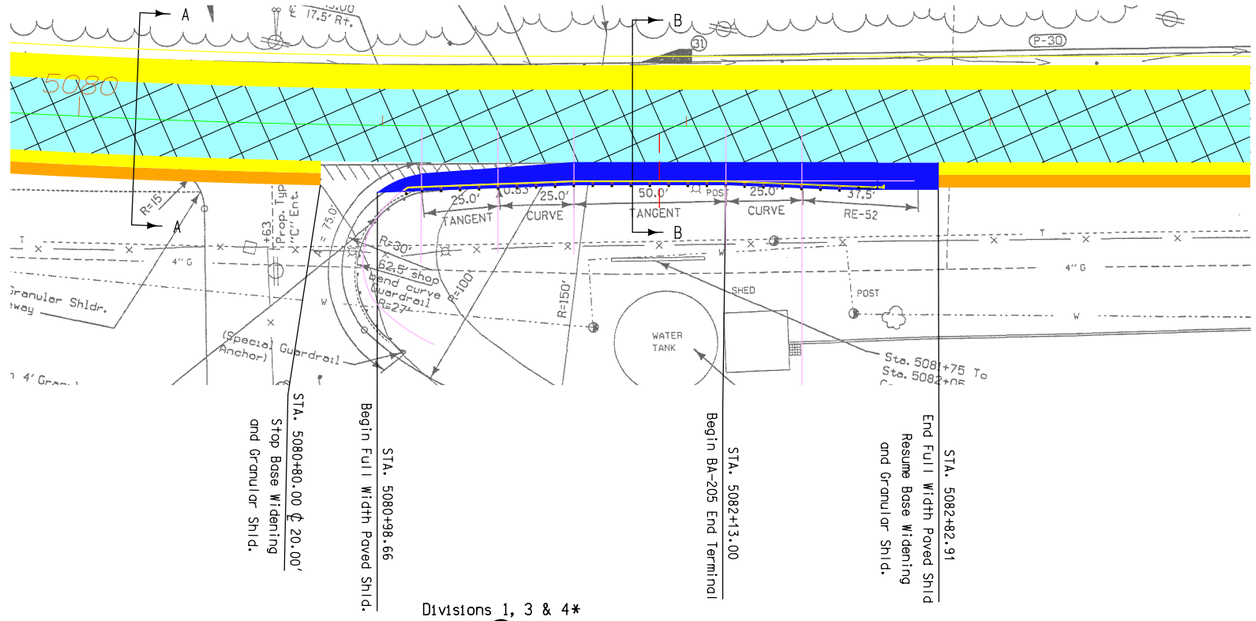
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

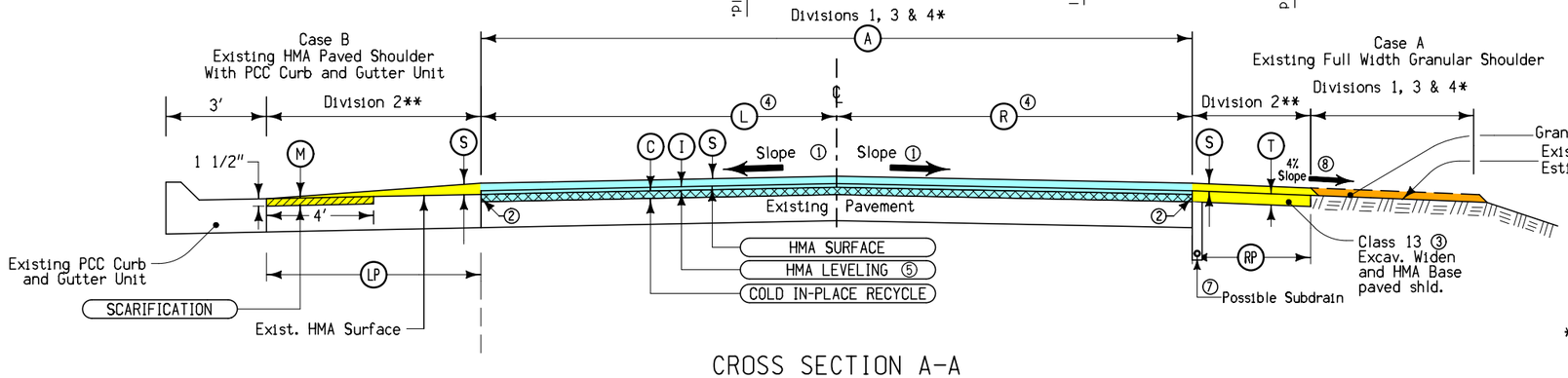
7135
MODIFIED

LOCATION					T Inches	E Feet	TONS/ STA.	TONS
ROAD IDENTIFICATION	STATION TO STATION		STA'S	SIDE				
Begin Division 3 - Urban City of Muscatine								
IA 22	5026+60.00	5035+50.00	8.900	LT	2.50	4.0	5.833	51.914
IA 22	5035+50.00	5036+00.00	0.500	LT	2.50	4.0	8.021	4.011
End Division 3 - Urban City of Muscatine								
Begin Division 1 - Rural Muscatine County								
IA 22	5067+10.00	5074+60.00	7.500	LT	2.50	4.0	5.833	43.748
IA 22	5074+60.00	5075+10.00	0.500	LT	2.50	4.0	8.021	4.011
IA 22	5093+40.00	5093+90.00	0.500	LT	2.50	7.0	8.021	4.011
IA 22	5093+90.00	5094+80.00	0.900	LT	2.50	4.0	5.833	5.250
IA 22	5094+80.00	5104+05.54	9.255	LT	2.50	1.0	1.458	13.494
IA 22	5108+91.30	5131+00.00	22.087	LT	2.50	1.0	1.458	32.203
IA 22	5131+00.00	5134+62.66	3.627	LT	3.50	6.0	12.250	44.426
Maint. # 7076.6S022, FHWA No. 38030, Conc. Slab Bridge, Sta. 5138+10								
IA 22	5139+34.00	5139+84.00	0.500	LT	3.50	4.0	8.167	4.084
IA 22	5139+84.00	5143+50.00	3.660	LT	3.50	6.0	12.250	44.835
IA 22	5143+50.00	5169+02.47	25.525	LT	2.50	1.0	1.458	37.215
Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert, Sta. 5170+36								
IA 22	5171+93.65	5195+00.00	23.063	LT	2.50	1.0	1.458	33.627
IA 22	5195+00.00	5202+58.00	7.580	LT	3.50	6.0	12.250	92.855
Maint. # 7077.8S022, FHWA No. 38051, Conc. Beam Bridge, Sta. 5204+45.58								
IA 22	5206+70.66	5213+56.00	6.853	LT	3.50	6.0	12.250	83.954
Equation	5213+56.00	Back =						
	5213+64.41	Ahead						
IA 22	5264+93.00	5357+22.50	92.295	LT	2.50	1.0	1.458	134.566
Equation	5357+22.50	Back =						
	5357+27.80	Ahead						
IA 22	5357+27.80	5433+21.50	75.937	LT	2.50	1.0	1.458	110.716
Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert, Sta. 5433+21.5								
IA 22	5433+21.50	5482+00.00	48.785	LT	2.50	1.0	1.458	71.129
IA 22	5482+00.00	5487+30.18	5.302	LT	3.50	6.0	12.250	64.947
Maint. # 7083.2S022, FHWA No. 38081, Conc. Beam Bridge, Sta. 5489+20								
IA 22	5491+72.72	5498+00.00	6.273	LT	3.50	6.0	12.250	76.842
IA 22	5498+00.00	5514+60.00	16.600	LT	2.50	1.0	1.458	24.203
Maint. # 7083.7S022, FHWA No. 606125, RCB Culvert, Sta. 5514+60								
IA 22	5514+60.00	5550+50.00	35.900	LT	2.50	1.0	1.458	52.342
Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert, Sta. 5550+50								
IA 22	5550+50.00	5554+65.00	4.150	LT	2.50	1.0	1.458	6.051
Equation	5554+65.00	Back =						
	5554+67.18	Ahead						
IA 22	5554+67.18	5620+00.00						
IA 22	5620+00.00	5650+55.90	30.559	LT	2.50	1.0	1.458	44.555
Equation	5651+10.00	Back						
	5651+00.00	Ahead						
Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge, Sta. 5651+39.1								
IA 22	5652+86.94	5671+04.18	18.172	LT	2.50	1.0	1.458	26.495
Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge, Sta. 5672+88								
IA 22	5674+98.72	5699+65.90	24.672	LT	2.50	1.0	1.458	35.971
End Division 1 - Rural Muscatine County								
Equation	5699+65.90	Back						
	+00.00	Ahead						
Begin Division 4 - Urban City of Buffalo								
IA 22	+00.00	94+86.70	94.867	LT	2.50	1.0	1.458	138.316
Equation	94+86.70	Back						
	95+00.00	Ahead						
IA 22	95+00.00	96+36.00	1.360	LT	2.50	1.0	1.458	1.983
End Division 4 - Urban City of Buffalo								
Subtotals Division 1 - Rural Muscatine County			470.195					1,091.528
Subtotals Division 3 - Urban City of Muscatine			9.400					55.924
Subtotals Division 4 - Urban City of Buffalo			96.227					140.299

LOCATION					T Inches	E Feet	TONS/ STA.	TONS
ROAD IDENTIFICATION	STATION TO STATION		STA'S	SIDE				
Begin Division 3 - Urban City of Muscatine								
IA 22	5013+90.00	5049+48.50	35.585	RT	2.50	4.0	5.833	207.567
End Division 3 - Urban City of Muscatine								
Begin Division 1 - Rural Muscatine County								
IA 22	5049+48.50	5080+80.00	31.315	RT	2.50	4.0	5.833	182.660
IA 22	5080+98.66	5082+82.91		RT				
IA 22	5082+82.91	5089+60.00	6.771	RT	2.50	4.0	5.833	39.495
IA 22	5093+20.00	5096+00.00	2.800	RT	2.50	4.0	5.833	16.332
IA 22	5096+00.00	5131+00.00	35.000	RT	2.50	1.0	1.458	51.030
IA 22	5131+00.00	5136+36.00	5.360	RT	3.50	6.0	12.250	65.660
IA 22	5136+36.00	5136+86.00	0.500	RT	3.50	4.0	8.167	4.084
Maint. # 7076.6S022, FHWA No. 38030, Conc. Slab Bridge, Sta. 5138+10								
IA 22	5139+77.00	5140+77.00	1.000	RT	3.50	4.0	8.167	8.167
IA 22	5140+77.00	5143+50.00	2.730	RT	3.50	6.0	12.250	33.443
IA 22	5143+50.00	5168+64.96	25.150	RT	2.50	1.0	1.458	36.668
Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert, Sta. 5170+36								
IA 22	5171+70.26	5195+00.00	23.297	RT	2.50	1.0	1.458	33.968
IA 22	5195+00.00	5202+20.50	7.205	RT	3.50	6.0	12.250	88.261
Maint. # 7077.8S022, FHWA No. 38051, Conc. Beam Bridge, Sta. 5204+45.58								
IA 22	5206+33.16	5213+56.00	7.228	RT	3.50	6.0	12.250	88.548
Equation	5213+56.00	Back =						
	5213+64.41	Ahead						
IA 22	5263+69.41	5357+22.50	93.531	RT	2.50	1.0	1.458	136.368
Equation	5357+22.50	Back =						
	5357+27.80	Ahead						
IA 22	5357+27.80	5431+37.59	74.098	RT	2.50	1.0	1.458	108.035
Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert, Sta. 5433+21.5								
IA 22	5434+55.41	5482+00.00	47.446	RT	2.50	1.0	1.458	69.176
IA 22	5482+00.00	5486+67.28	4.673	RT	3.50	6.0	12.250	57.242
Maint. # 7083.2S022, FHWA No. 38081, Conc. Beam Bridge, Sta. 5489+20								
IA 22	5491+09.82	5498+00.00	6.902	RT	3.50	6.0	12.250	84.547
IA 22	5498+00.00	5512+81.72	14.817	RT	2.50	1.0	1.458	21.603
Maint. # 7083.7S022, FHWA No. 606125, RCB Culvert, Sta. 5514+60								
IA 22	5515+88.28	5548+70.72	32.824	RT	2.50	1.0	1.458	47.858
Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert, Sta. 5550+50								
IA 22	5551+79.28	5554+65.00	2.857	RT	2.50	1.0	1.458	4.166
Equation	5554+65.00	Back =						
	5554+67.18	Ahead						
IA 22	5554+67.18	5620+00.00						
IA 22	5620+00.00	5649+94.31	29.943	RT	2.50	1.0	1.458	43.657
Equation	5651+10.00	Back						
	5651+00.00	Ahead						
Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge, Sta. 5651+39.1								
IA 22	5652+26.79	5670+77.28	18.505	RT	2.50	1.0	1.458	26.980
Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge, Sta. 5672+88								
IA 22	5674+71.81	5699+65.90	24.941	RT	2.50	1.0	1.458	36.364
End Division 1 - Rural Muscatine County								
Equation	5699+65.90	Back						
	+00.00	Ahead						
Begin Division 4 - Urban City of Buffalo								
IA 22	+00.00	94+86.70	94.867	RT	2.50	1.0	1.458	138.316
Equation	94+86.70	Back						
	95+00.00	Ahead						
IA 22	95+00.00	96+36.00	1.360	RT	2.50	1.0	1.458	1.983
End Division 4 - Urban City of Buffalo								
Subtotals Division 1 - Rural Muscatine County			498.893					1,284.311
Subtotals Division 3 - Urban City of Muscatine			35.585					207.567
Subtotals Division 4 - Urban City of Buffalo			96.227					140.299

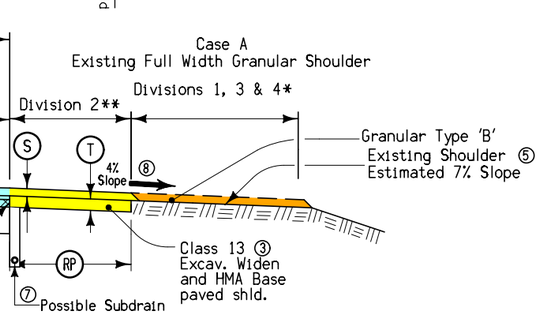


Case B
Existing HMA Paved Shoulder
With PCC Curb and Gutter Unit

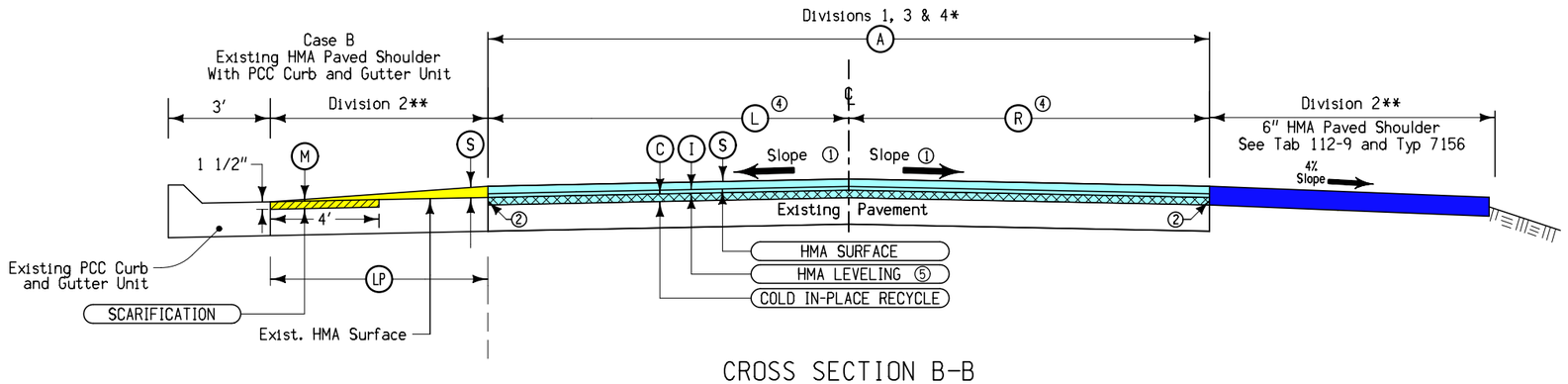


CROSS SECTION A-A

Case A
Existing Full Width Granular Shoulder



Case B
Existing HMA Paved Shoulder
With PCC Curb and Gutter Unit



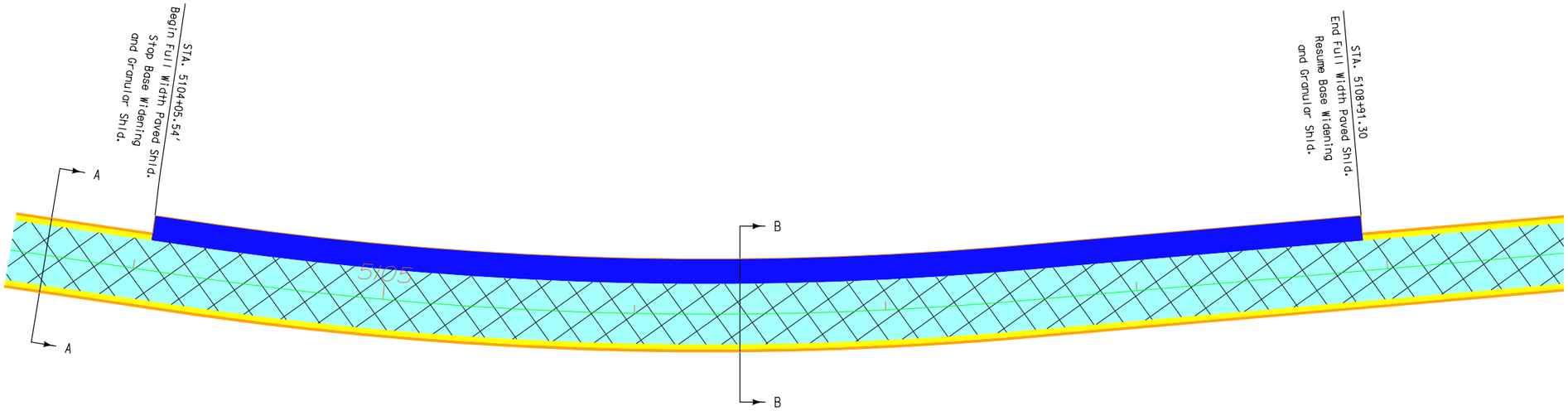
CROSS SECTION B-B

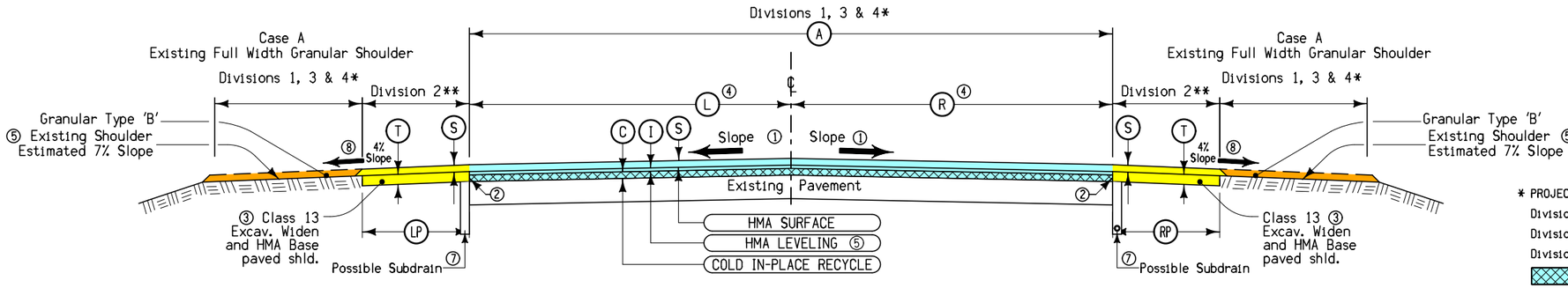
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

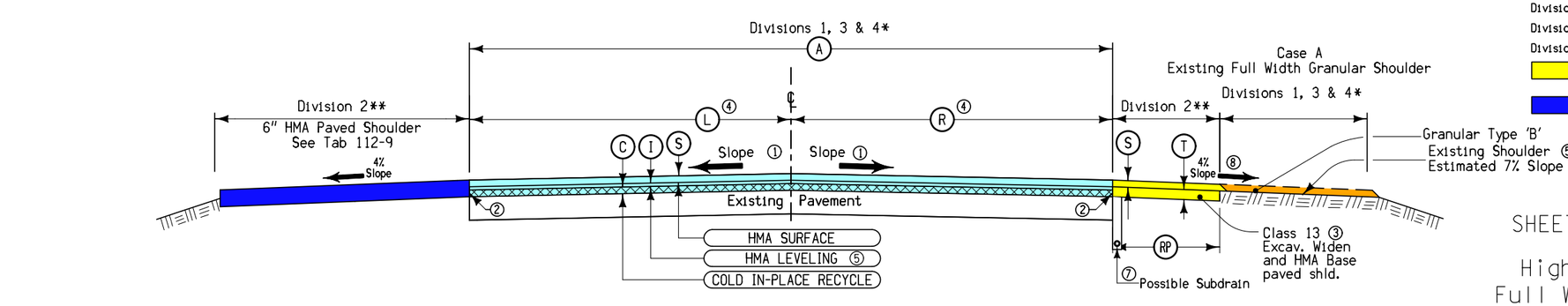
SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

Hon Industries Entrance
Sta 5081+13 MP 75.451





CROSS SECTION A-A



CROSS SECTION B-B

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

High Maintenance Shoulder
Full Width Paved Shoulder Lt.
MP 75.938 to MP 76.03
Sta. 5104+05.54 to Sta. 5108+91.30

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.11

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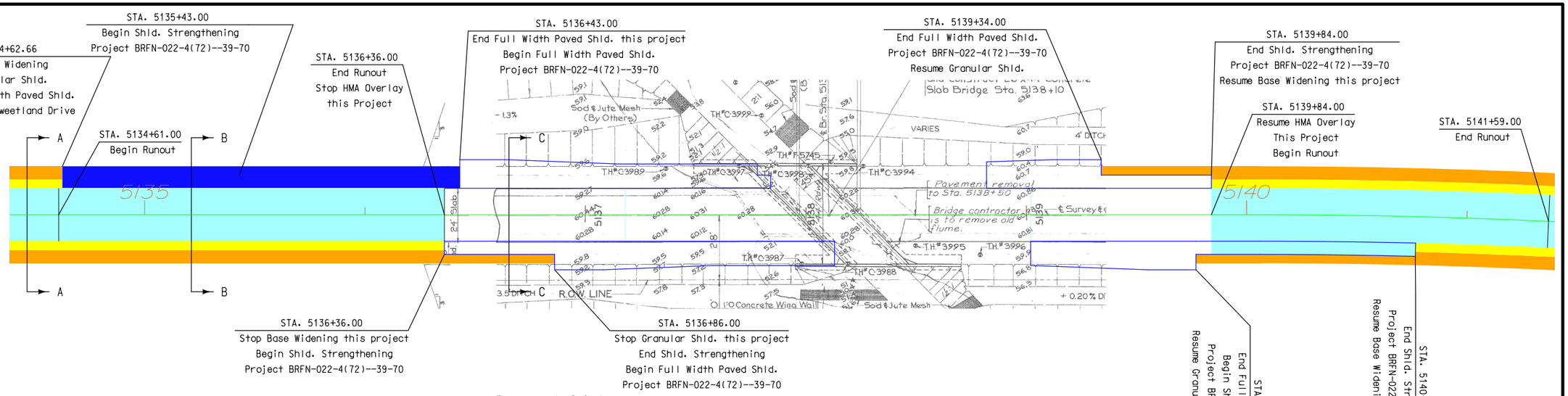
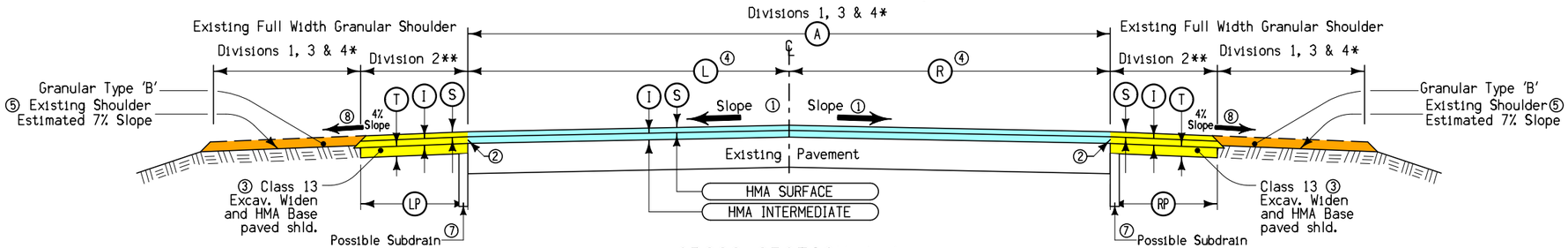
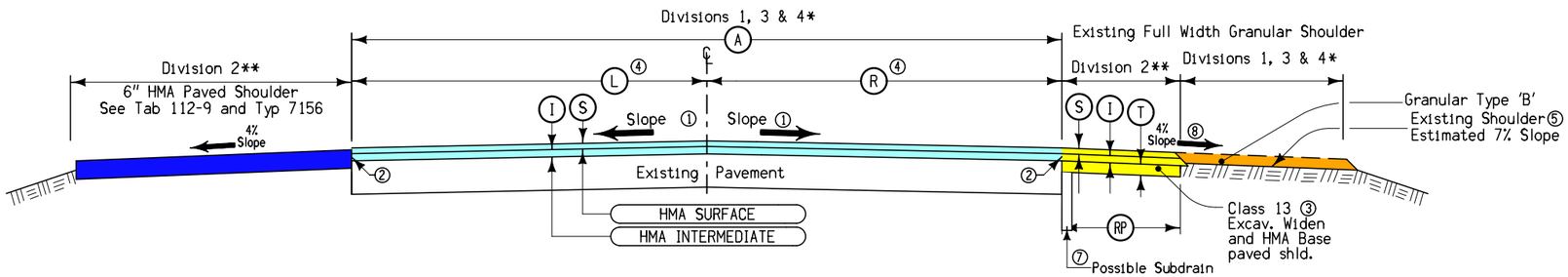
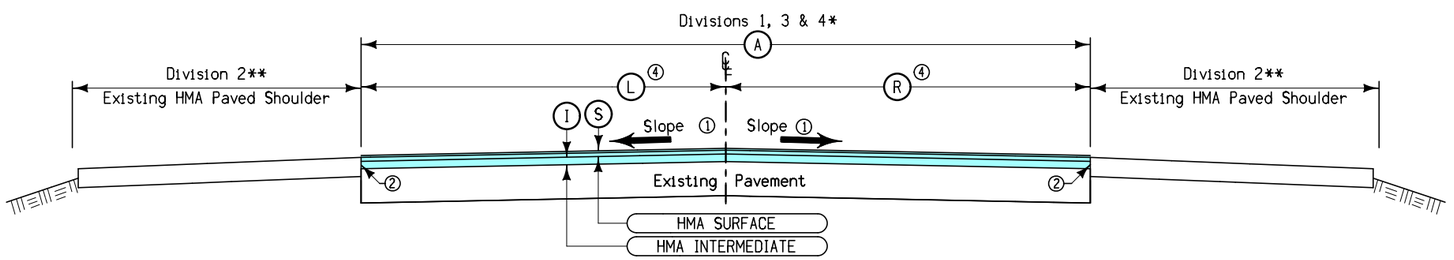




CROSS SECTION A-A



CROSS SECTION B-B



CROSS SECTION C-C

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER, SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2617
SHEETS B.5, & B.6

26' X 44'
Concrete Slab Bridge
Sta 5138+10 MP 76.59
Maint # 7076.6S022
FHWA 38030

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.12

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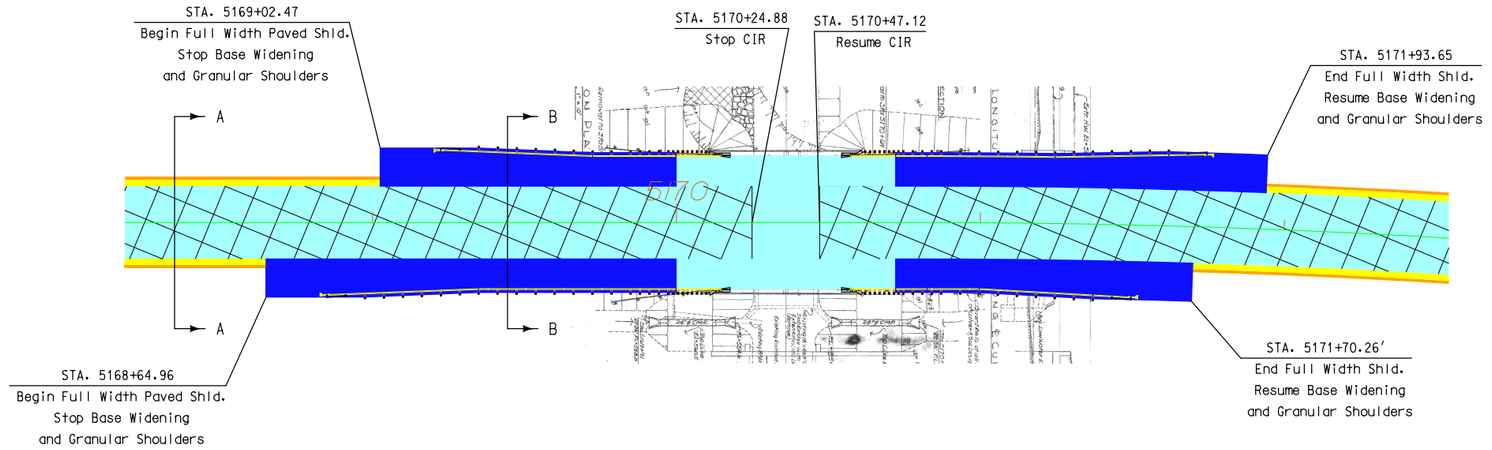
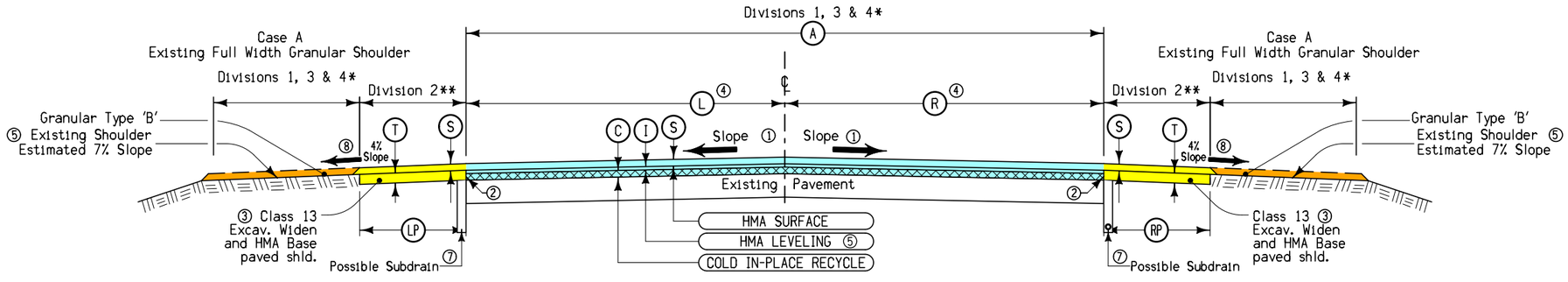
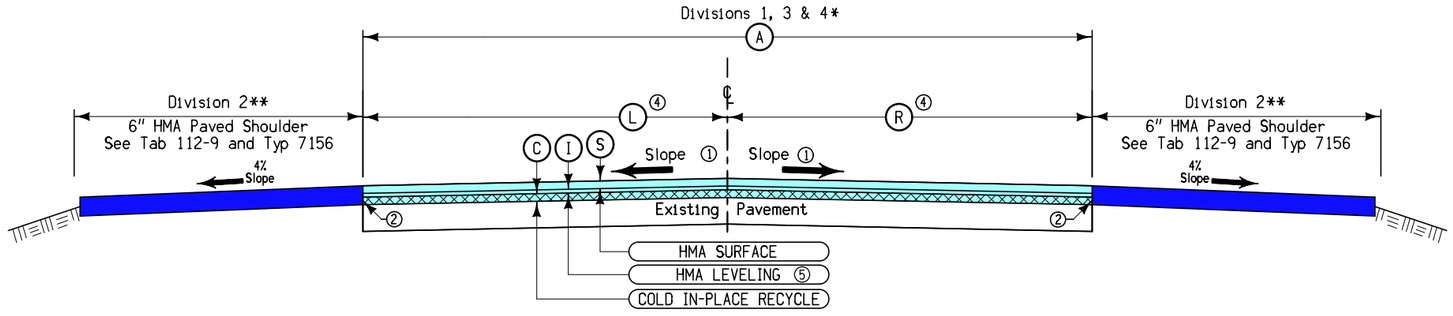




CROSS SECTION A-A



CROSS SECTION B-B

CROSS SECTION C-C

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

10.0' X 9.0' X 44' RCB Culvert
Sta 5170+36 MP 77.19
Maint # 7077.2S022
FHWA 38041

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.13

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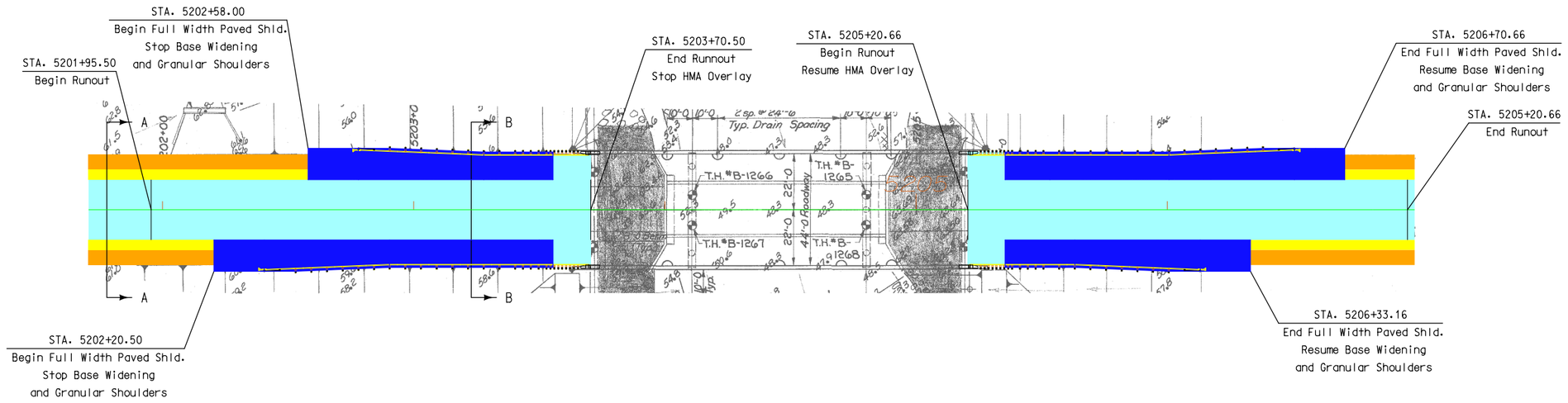
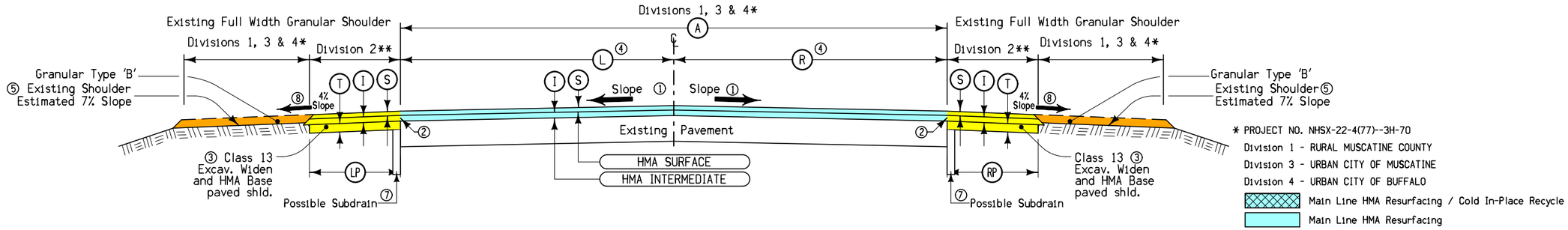
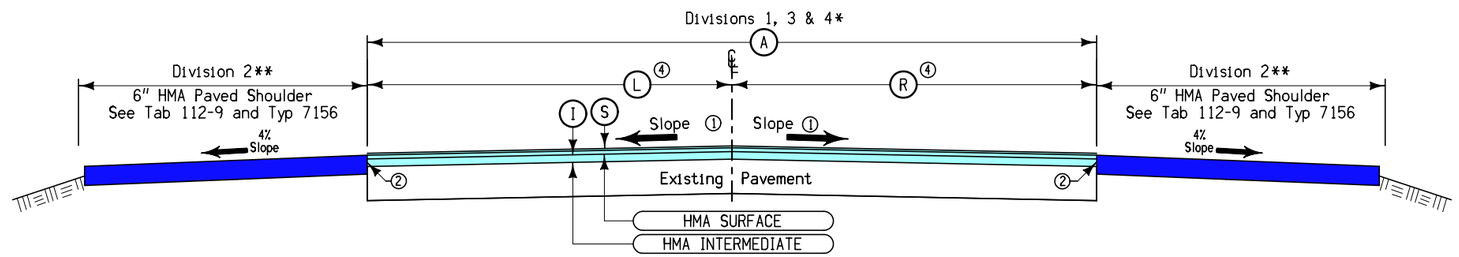




CROSS SECTION A-A



CROSS SECTION B-B

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER, SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2617
SHEETS B.5, & B.6

147'-2 X 44'
Conc. Beam Bridge
Sta 5204+45.58 MP 77.84
Maint # 7077.8S022
FHWA 38051

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.14

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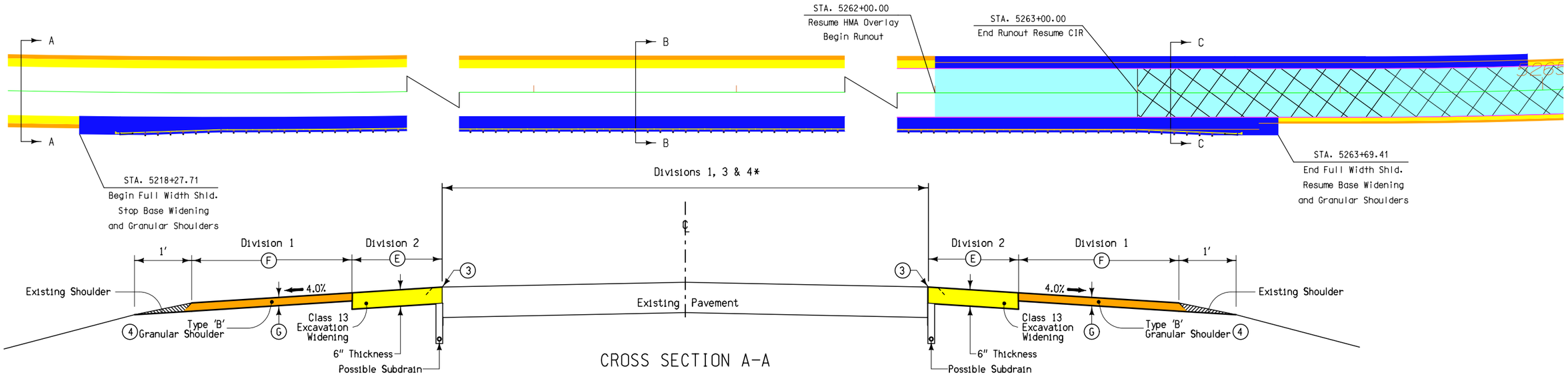
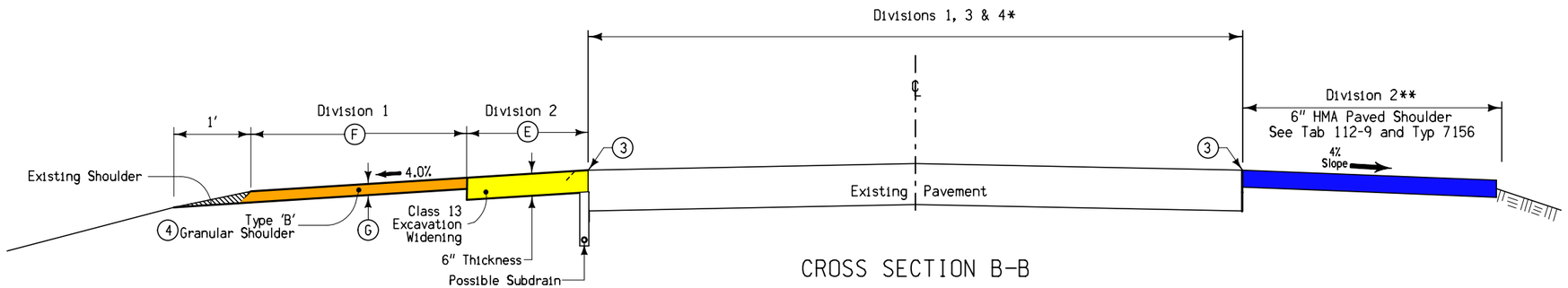
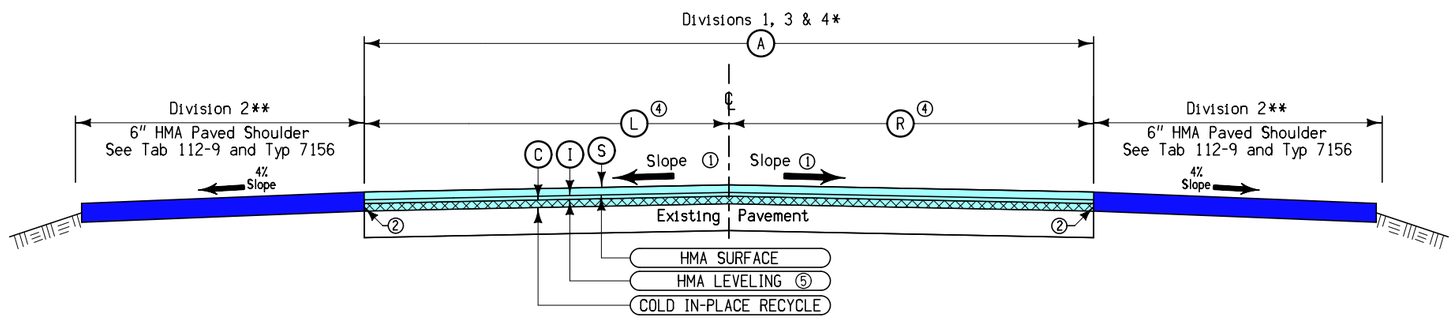


CROSS SECTION A-A



CROSS SECTION B-B



CROSS SECTION C-C

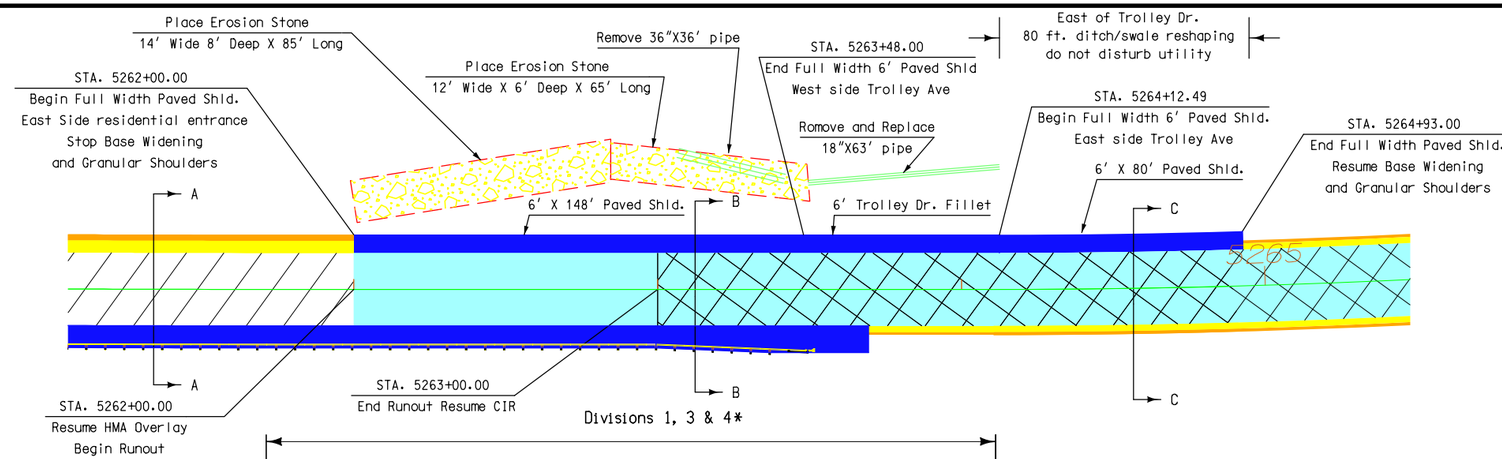
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

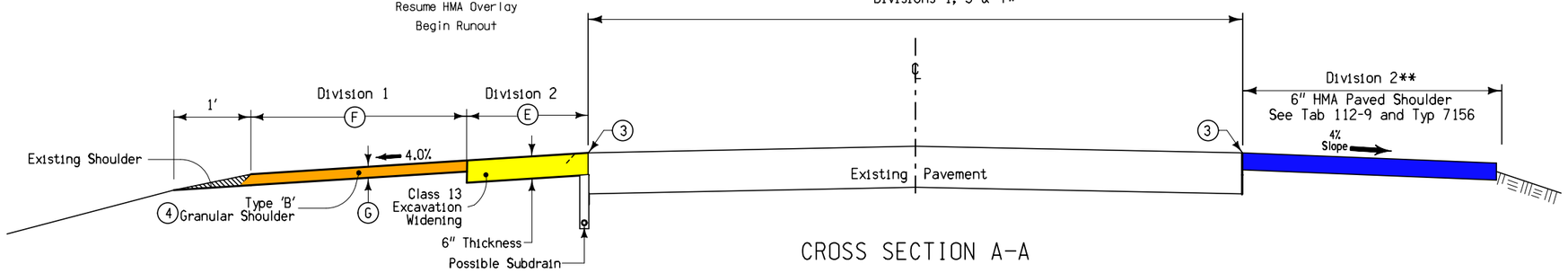
** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4
AND
SEE TYPICAL 7152
SHEETS B.8

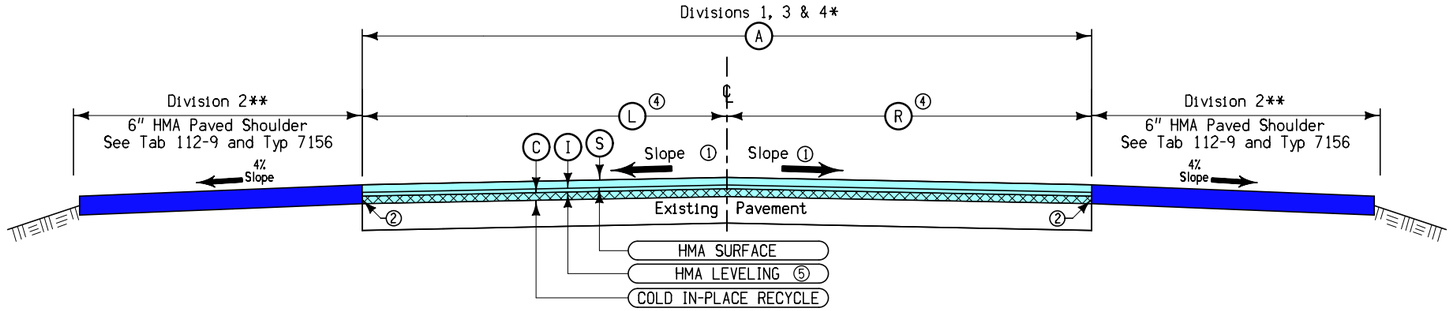
Wyoming Hill
Sta 5218+27.71 to Sta 5263+69.41
MP 78.048 to MP 78.902
Right of Centerline

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.15

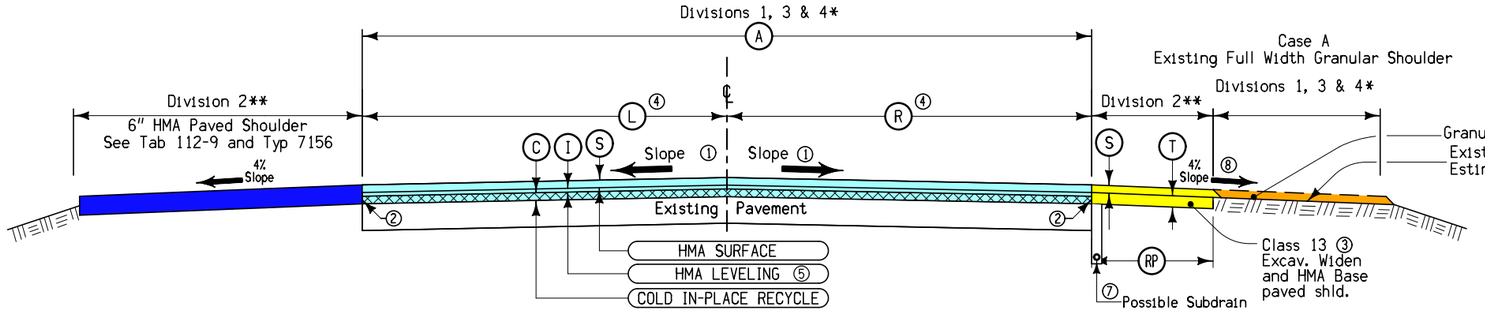




CROSS SECTION A-A



CROSS SECTION B-B



CROSS SECTION C-C

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening

FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4
AND
SEE TYPICAL 7152
SHEETS B.8

Full Width Paved Shld. Left
East side of residential entrance
to West side of Trolley Ave.
Sta 5262+00.00 to Sta 5263+48.00
MP 78.8
Left of Centerline

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.16

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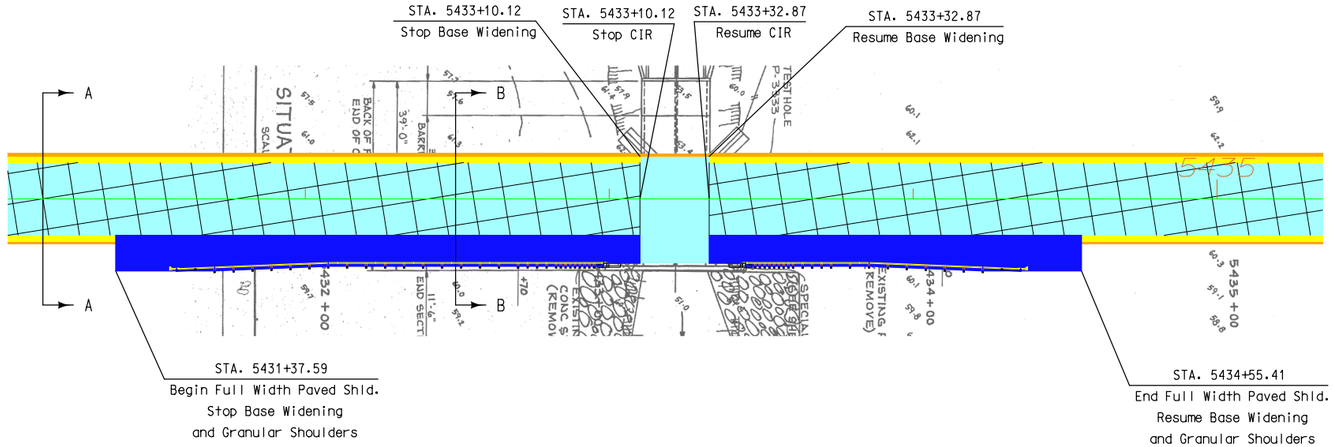
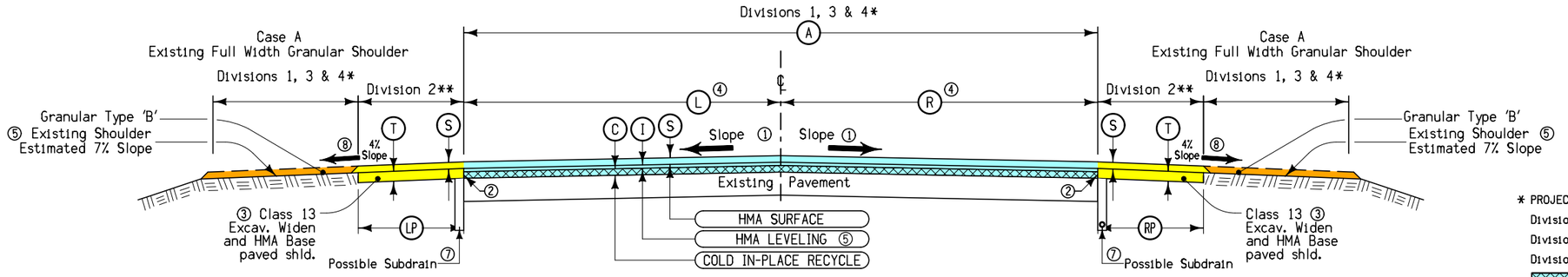
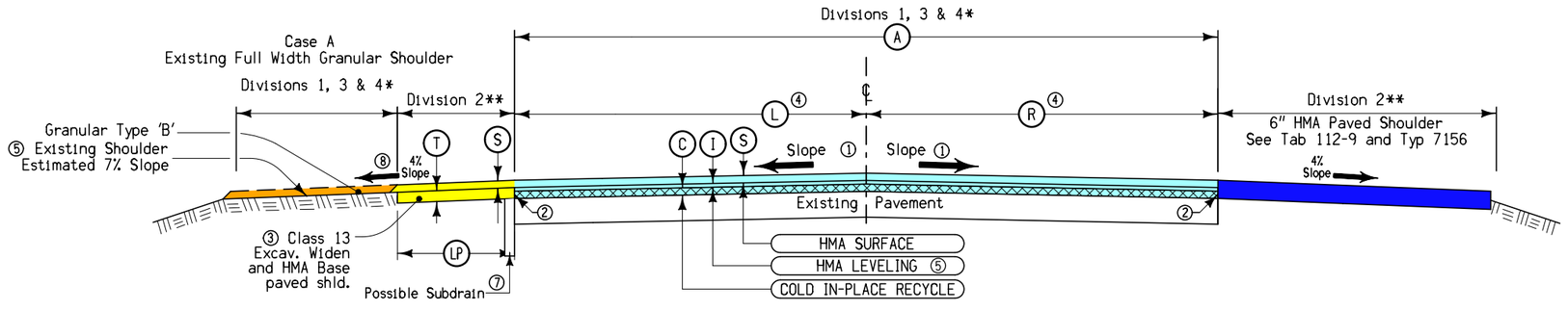




CROSS SECTION A-A



CROSS SECTION B-B

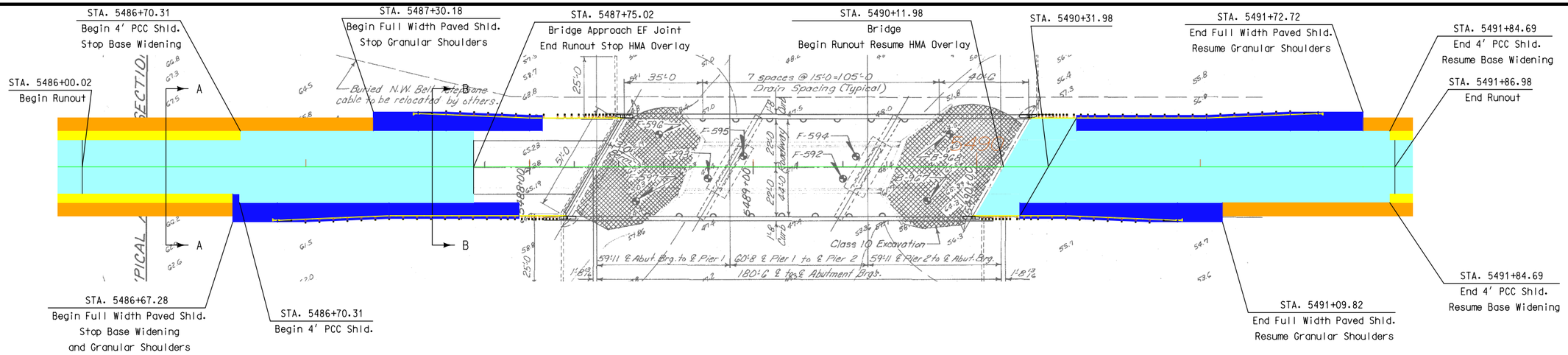
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

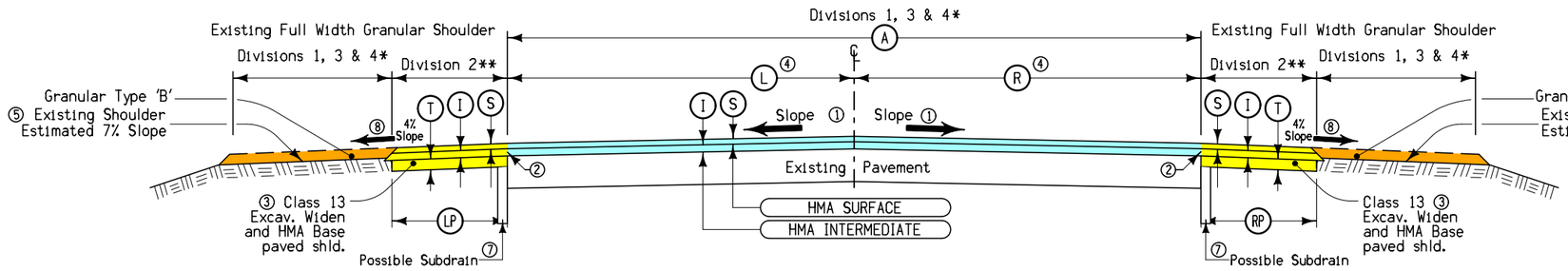
** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

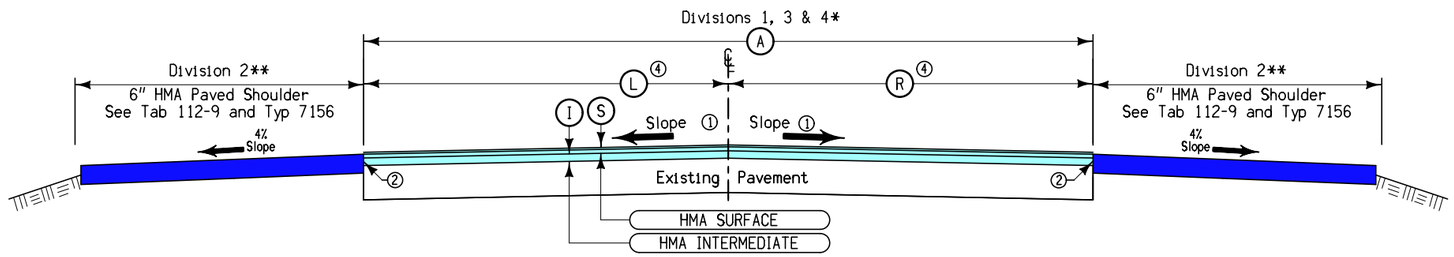
Twin 10.0' X 8.0' X 61'
RCB Culvert
Sta 5433+21.5 MP 82.17
Maint # 7082.2S022
FHWA 38061

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.17





CROSS SECTION A-A



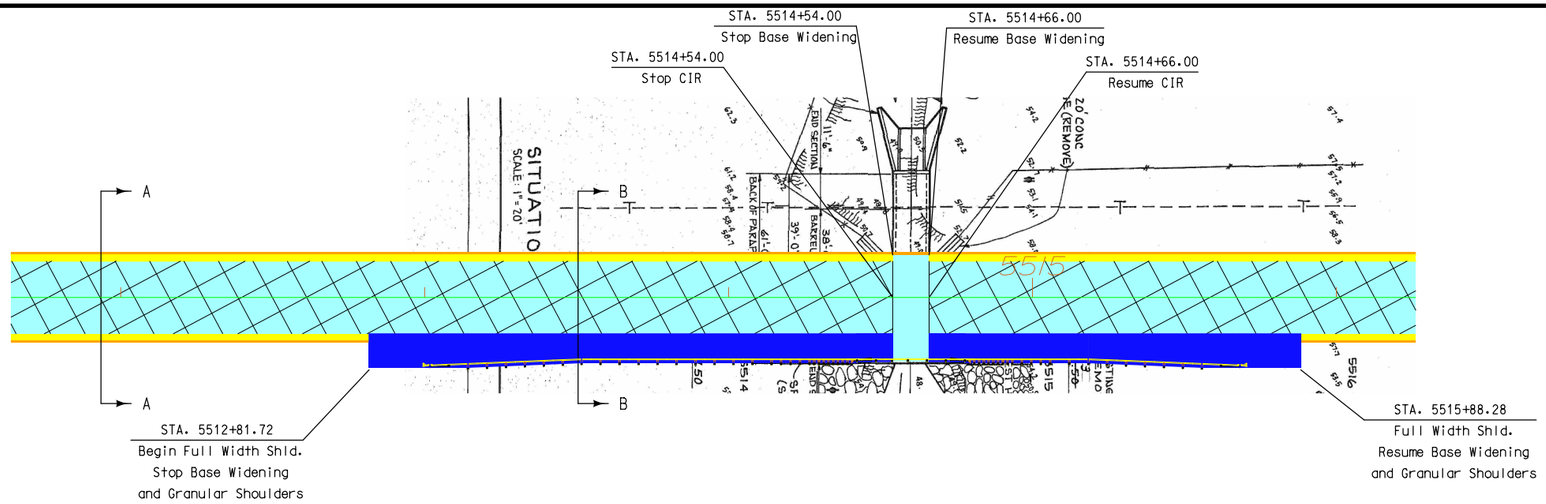
CROSS SECTION B-B

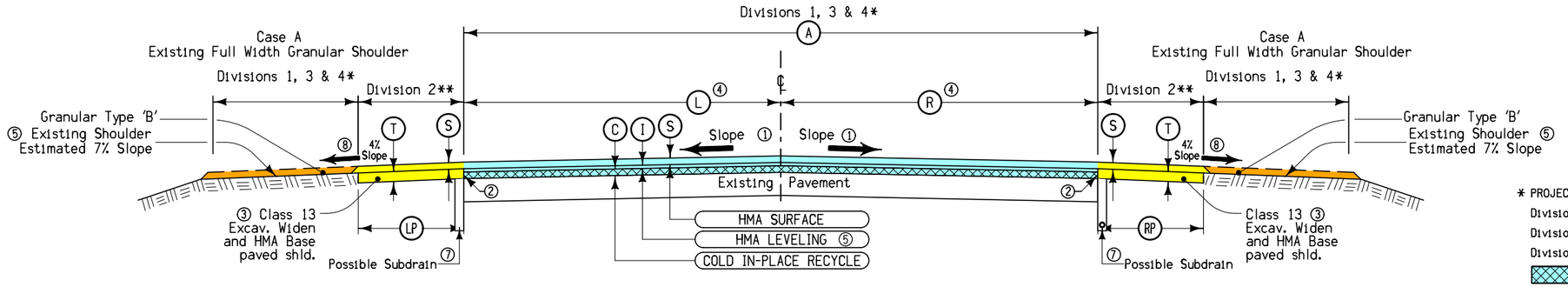
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER, SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2617
SHEETS B.5, & B.6

180'-6 X 44'
conc beam bridge
Sta 5489+20 MP 83.23
Maint # 7083.2S022
FHWA 38081





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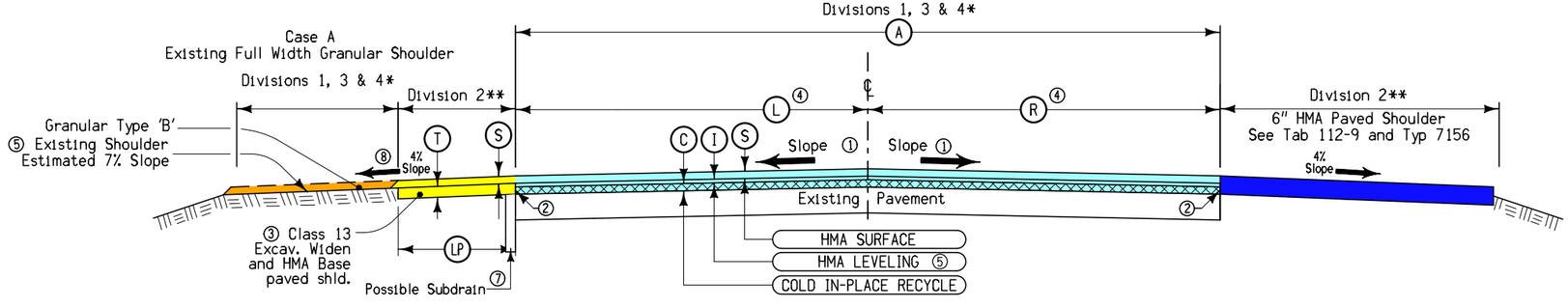

CROSS SECTION B-B

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

10.0' X 8.0' X 61' RCB Culvert
Sta 5514+60 MP 83.71
Maint # 7083.7B022
FHWA 606125

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.19

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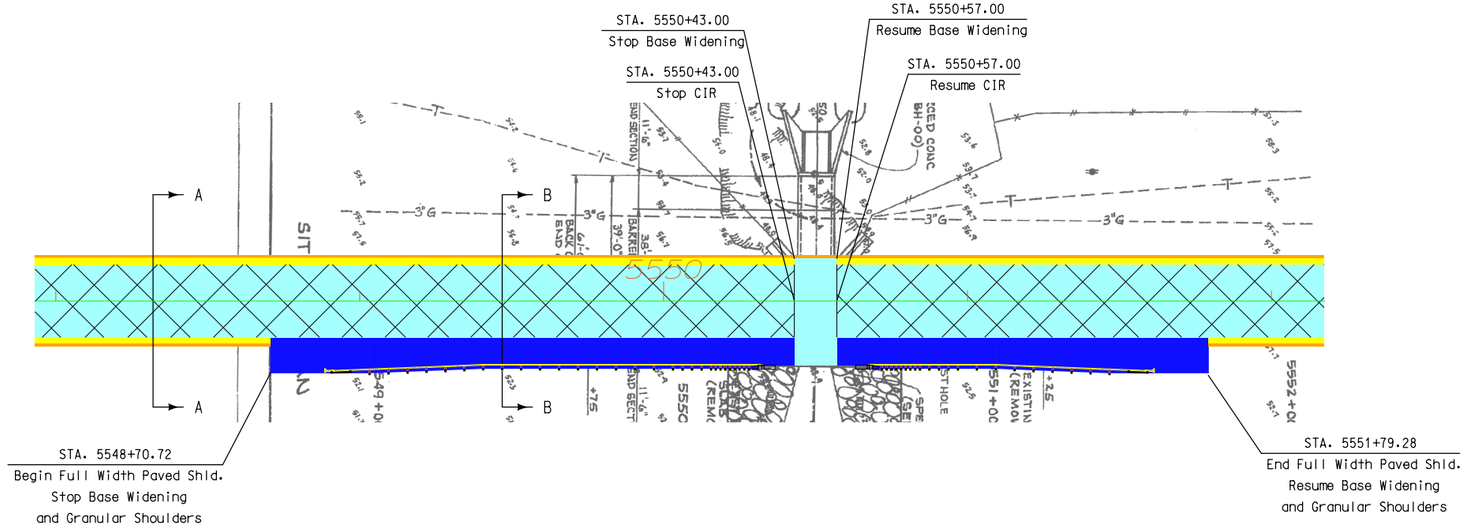
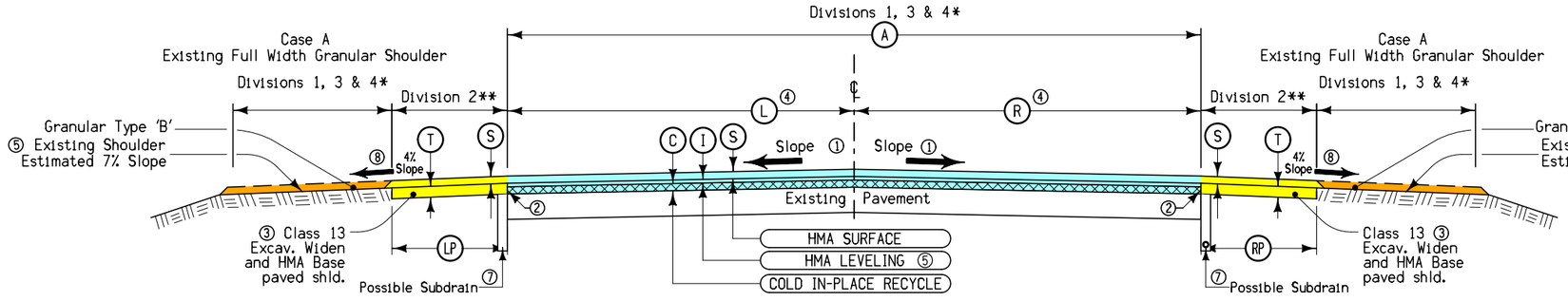
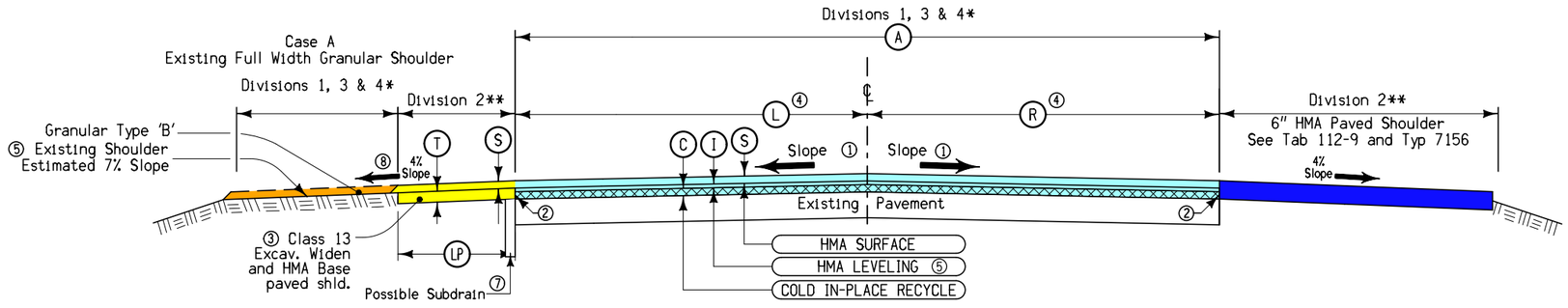




CROSS SECTION A-A



CROSS SECTION B-B

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

12.0' X 8.0' X 61'
RCB Culvert
Sta 5550+50 MP 84.39
Maint # 7084.4B022
FHWA 606030

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.20

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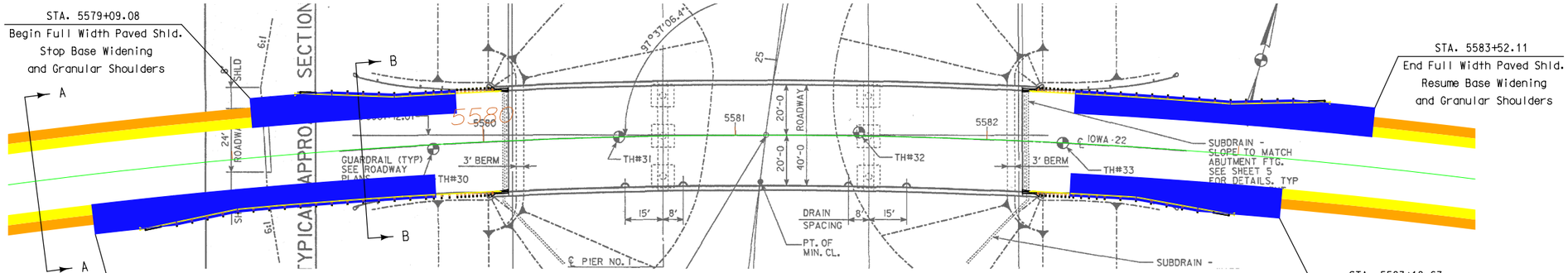
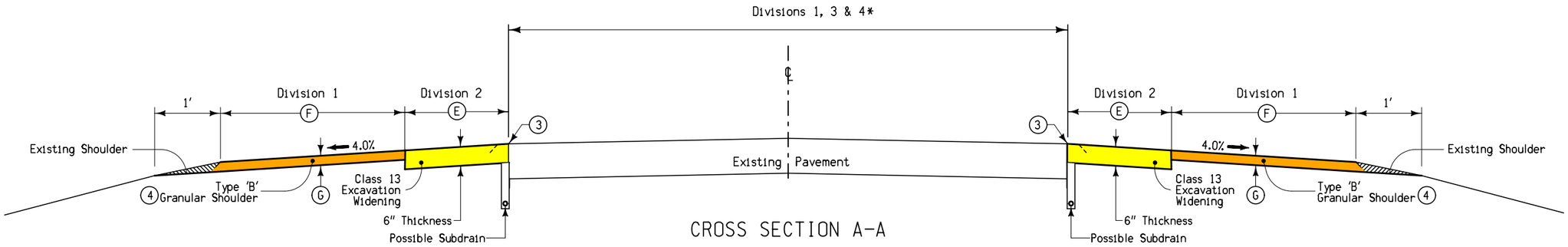
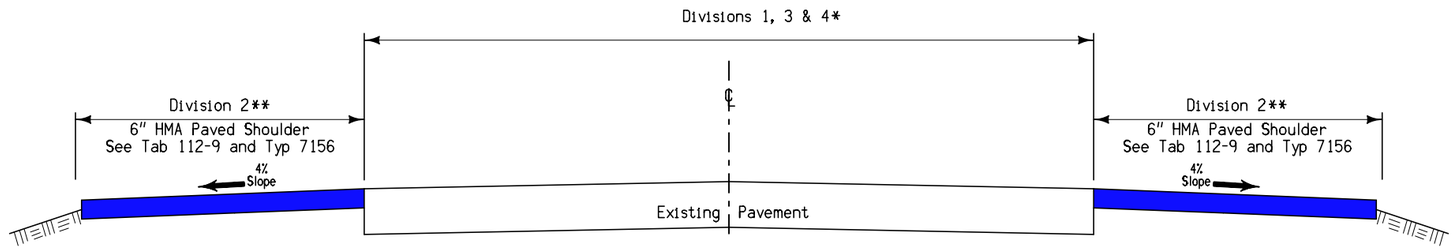




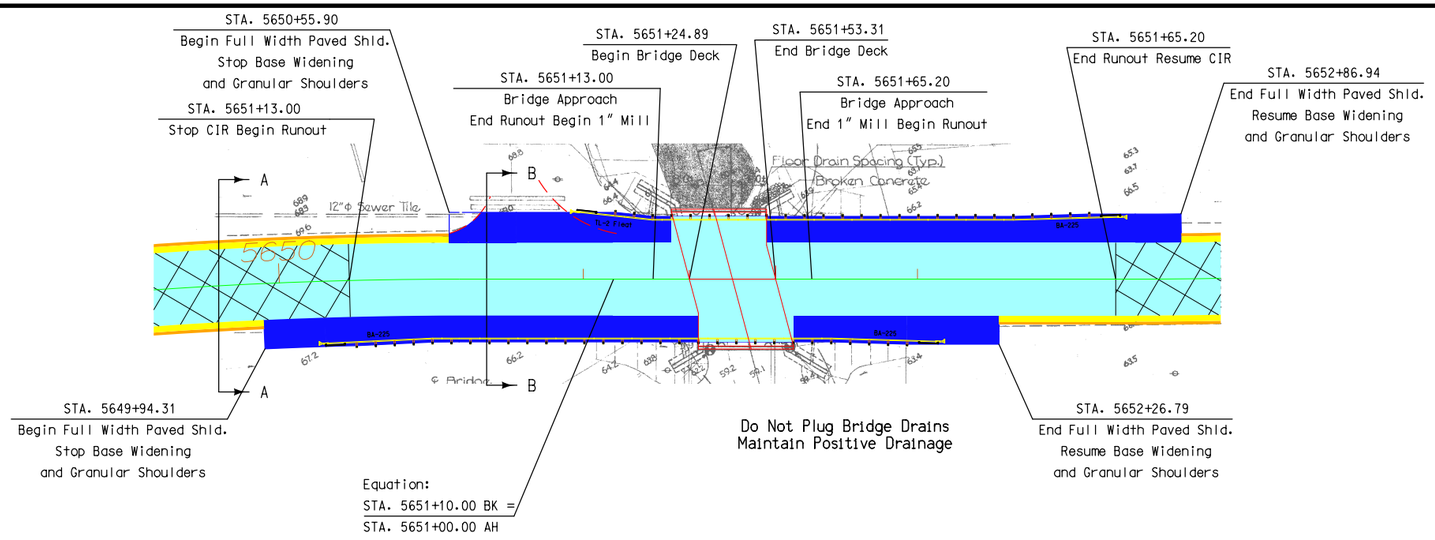


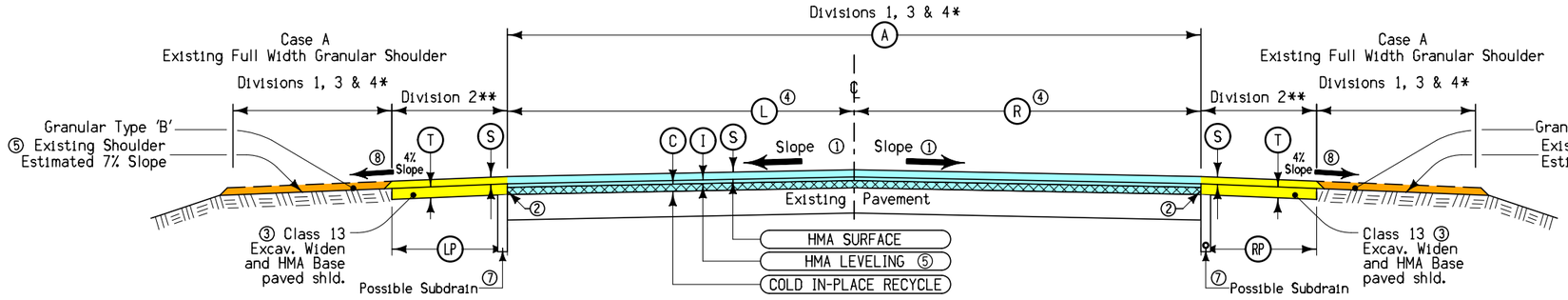
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

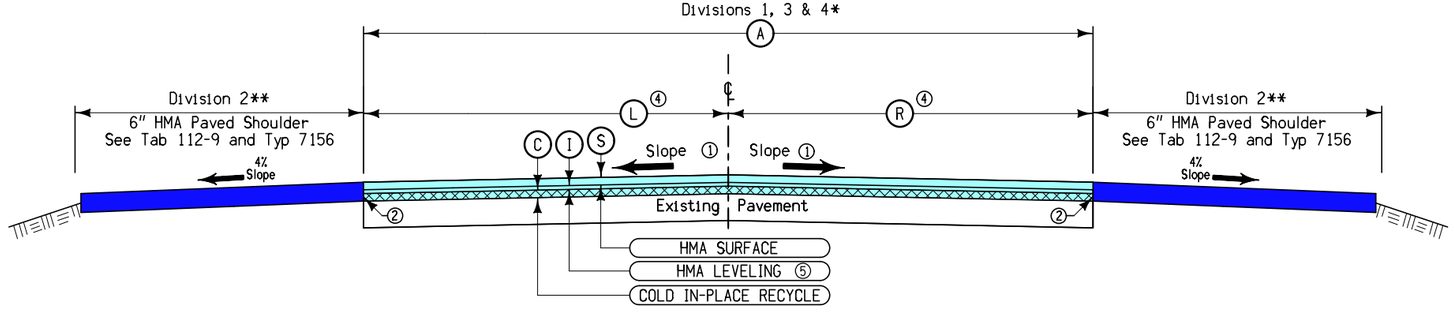
SEE TYPICAL 7152
SHEETS B.8

201'-4 X 40'
conc beam bridge
Sta 5581+12.01 MP 84.90
Bridge #7084.9S022
FHWA 606310





CROSS SECTION A-A



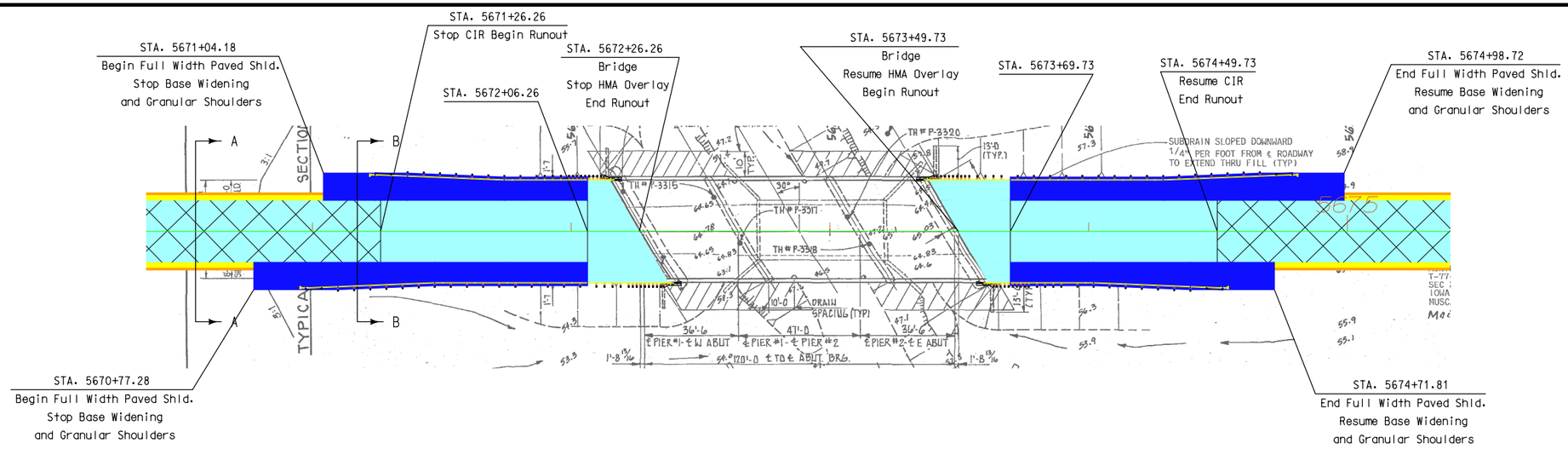
CROSS SECTION B-B

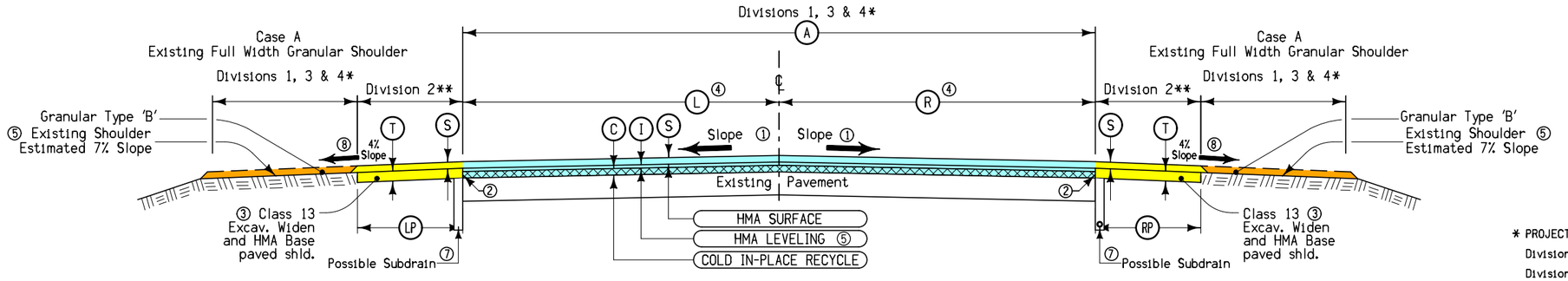
* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER,
SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

26'-0 X 44'
conc beam bridge
Sta 5651+39.1 MP 86.30
Maint # 7086.3S022
FHWA 38130





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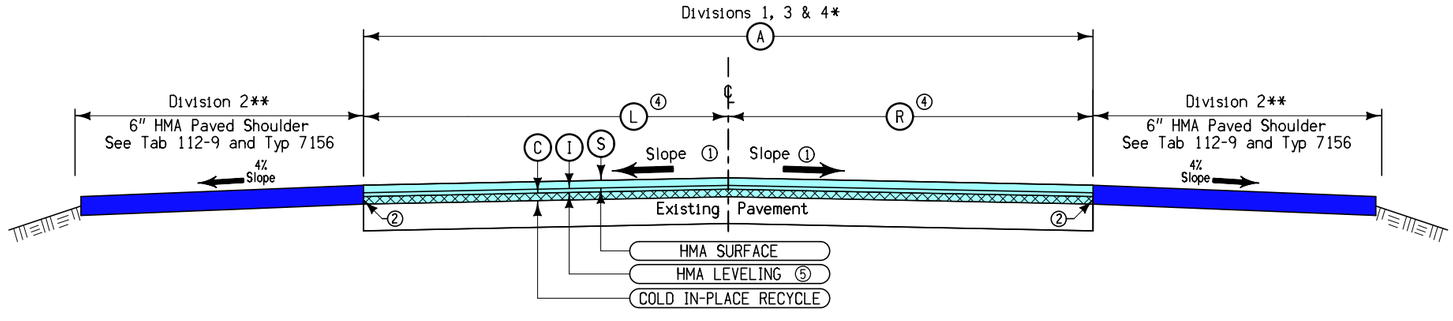


CROSS SECTION B-B

* PROJECT NO. NHSX-22-4(77)--3H-70
Division 1 - RURAL MUSCATINE COUNTY
Division 3 - URBAN CITY OF MUSCATINE
Division 4 - URBAN CITY OF BUFFALO
Main Line HMA Resurfacing / Cold In-Place Recycle
Main Line HMA Resurfacing
Granular Shoulders

** PROJECT NO. HSIPX-22-4(78)--3H-70
Division 2 - RURAL MUSCATINE COUNTY
Division 2 - URBAN CITY OF MUSCATINE
Division 2 - URBAN CITY OF BUFFALO
HMA Paved Shoulder / HMA Base Widening
FULL WIDTH HMA PAVED SHOULDER, SEE TAB 112-9 AND TYP 7156

SEE TYPICAL 2602
SHEETS B.1, B.2, B.3 & B.4

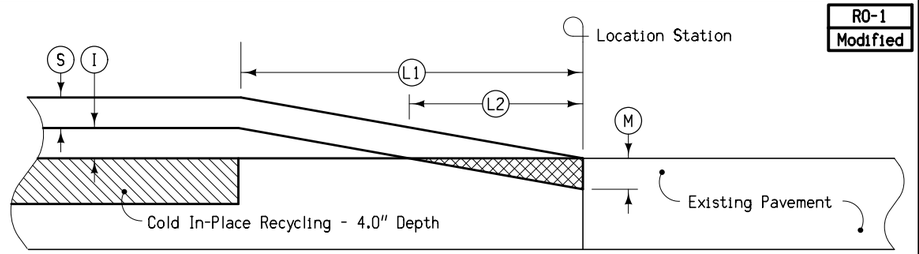
120'-0" X 40'-0"
conc beam bridge
Sta 5672+88 MP 86.71
Maint # 7086.7S022
FHWA 38141

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.23

RO-1 Modified

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.



(1) Quantity calculated at 24' pavement width.

Location Station	(L1) Feet	(L2) Feet	(S) Inches	(I) Inches	(M) Inches	Scarification Sq. Yd.s	Comments
5012+00.00	100	50	1.5	0.5	1.5	133.33 (1)	Div. 3
5262+00.00	100	50	1.5	0.5	1.5	133.33 (1)	Div. 1
5554+67.18	100	50	1.5	0.5	1.5	133.33 (1)	Div. 1
5620+00.00	100	50	1.5	0.5	1.5	133.33 (1)	Div. 1
5672+26.26	100	50	1.5	0.5	1.5	133.33 (1)	Div. 1
5673+49.73	100	50	1.5	0.5	1.5	133.33 (1)	Div. 1
96+36.00	100	50	1.5	0.5	1.5	133.33 (1)	Div. 4
Subtotal Division 1 - Rural Muscatine						666.67	
Subtotal Division 3 - City of Muscatine						133.33	
Subtotal Division 4 - City of Buffalo						133.33	

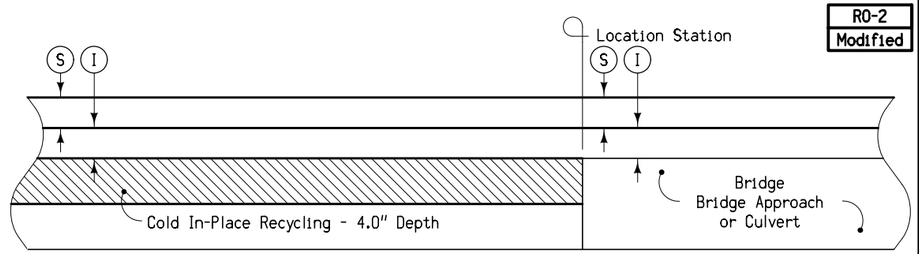
(S) Surface Course
(I) Leveling Course
(M) Milling

SURFACE NOTCH - LEVELING
RUNOUT FOR DOUBLE COURSE RESURFACING
WITH COLD IN-PLACE RECYCLING
DIVISIONS 1, 3 & 4 - NHSX-22-4(77)--3H-70

RO-2 Modified

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.



(1) Quantity calculated at 24' pavement width.

Location Station	(S) Inches	(I) Inches	Comments
5170+24.88	1.5	0.5	Div. 1
5170+47.12	1.5	0.5	Div. 1
5433+10.12	1.5	0.5	Div. 1
5433+32.87	1.5	0.5	Div. 1
5514+54.00	1.5	0.5	Div. 1
5514+66.00	1.5	0.5	Div. 1
5550+43.00	1.5	0.5	Div. 1
5550+57.00	1.5	0.5	Div. 1

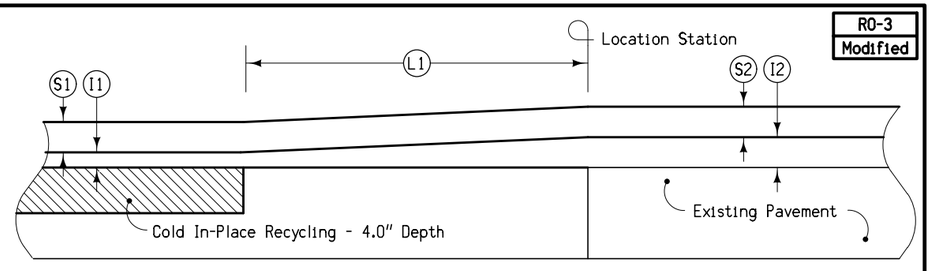
(S) Surface Course
(I) Leveling Course

COLD IN-PLACE RUNOUT FOR
SURFACE - LEVELING
DOUBLE COURSE RESURFACING
WITH COLD IN-PLACE RECYCLING
DIVISIONS 1, 3 & 4 - NHSX-22-4(77)--3H-70

RO-3 Modified

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.



(1) Quantity calculated at 24' pavement width.

Location Station	(L1) Feet	(S1) Inches	(I1) Inches	(S2) Inches	(I2) Inches	Comments
5131+00.00	75	1.5	0.5	1.5	2.0	Div. 1
5143+50.00	75	1.5	0.5	1.5	2.0	Div. 1
5195+00.00	75	1.5	0.5	1.5	2.0	Div. 1
5482+00.00	75	1.5	0.5	1.5	2.0	Div. 1
5498+00.00	75	1.5	0.5	1.5	2.0	Div. 1

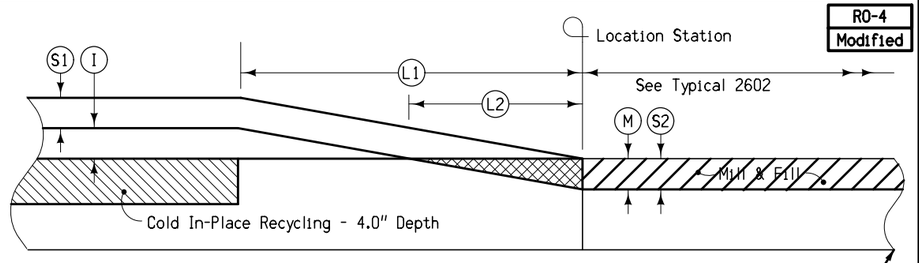
(S1) Surface Course
(I1) Leveling Course
(S2) Surface Course
(I2) Intermediate Course

TRANSITION FROM
DOUBLE COURSE RESURFACING
WITH COLD IN-PLACE RECYCLING
TO DOUBLE COURSE SURFACING
DIVISIONS 1, 3 & 4 - NHSX-22-4(77)--3H-70

RO-4 Modified

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.



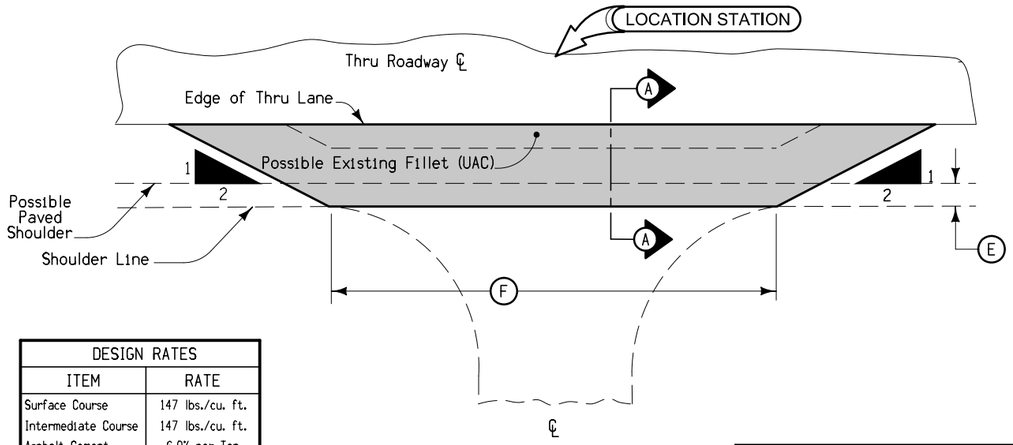
(1) Quantity calculated at 24' pavement width.

Location Station	(L1) Feet	(L2) Feet	(S1) Inches	(S2) Inches	(I) Inches	(M) Inches	Scarification Sq. Yd.s	Comments
5651+13.00	100	50	1.5	1	0.5	1.0	133.33 (1)	Div. 1
5651+65.20	100	50	1.5	1	0.5	1.0	133.33 (1)	Div. 1
Subtotal Division 1 - Rural Muscatine							266.66	

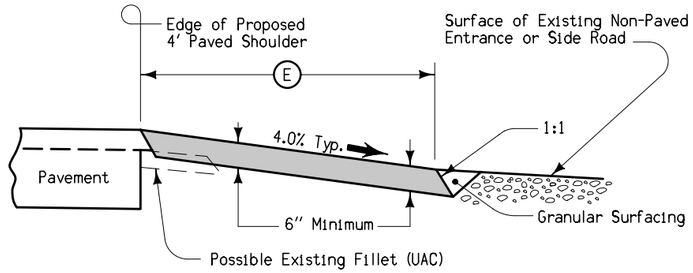
(S1) (S2) Surface Course
(I) Leveling Course
(M) Milling
Bridge Approach

SURFACE/LEVELING NOTCH
RUNOUT FOR DOUBLE COURSE RESURFACING
WITH COLD IN-PLACE RECYCLING
DIVISIONS 1, 3 & 4 - NHSX-22-4(77)--3H-70

7148
MODIFIED



PLAN



SECTION A-A

Note:

Full thickness fillets of hot mix asphalt shall be constructed as non-paved entrances to farm dwellings and other residences where practical, and at commercial entrances.

Fillet sizes as listed in the table are recommended and shall be used for design and estimating purposes. The Engineer shall establish the size of each individual fillet to accommodate conditions at the site.

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

① Estimated at 147 lbs./cu. ft., 6.0" depth surface

② Estimated for 1 application at 0.05 gal./sq. yd. The tack coat for entrance fillets may be eliminated when so directed by the Engineer.

DESIGN RATES	
ITEM	RATE
Surface Course	147 lbs./cu. ft.
Intermediate Course	147 lbs./cu. ft.
Asphalt Cement	6.0% per Ton
Tack Coat*	0.05 gal./sq. yd.

* Not a bid item

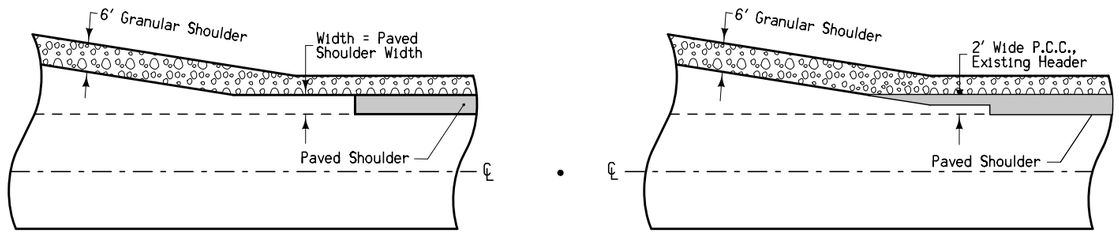
NORMAL FILLET SIZE	
Type	(F)
Res. Entrance	40'
Farm Entrance	60'
Commercial Ent.	80'
Non-Paved Road	100'

TABLE OF DESIGN QUANTITIES

Location Station	(E) Feet	(F) Feet	SURFACE COURSE Tons ①	ASPHALT CEMENT Tons	CL 13 EXCAV. WASTE Cu. Yds.	TACK COAT Gal. ②	REMARKS
MP 77.91 Entrance Rd.	6	100	24.697	1.482	12.45	3.7	Quantity per Sideroad Location
MP 78.15 Wyoming Hill Rd.	2	100	7.644	0.459	3.85	1.2	Quantity per Sideroad Location
Totals			32.341	1.941	16.30	4.9	Total Quantities Non-Paved Sideroads

FILLET FOR NON-PAVED PUBLIC SIDE ROADS

7154A
10-20-09

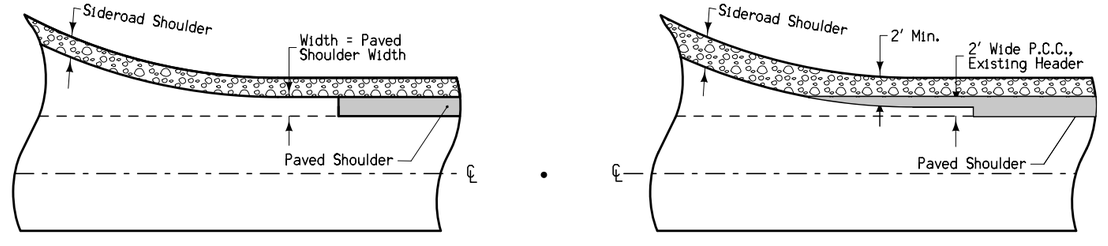


With Newly Constructed Turn Lanes

At UAC Turn Lanes

PAVED SHOULDER DETAIL AT TURN LANES

7154B
10-20-09



With Newly Constructed Returns

At UAC Returns

PAVED SHOULDER DETAIL AT RETURNS

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER B.26

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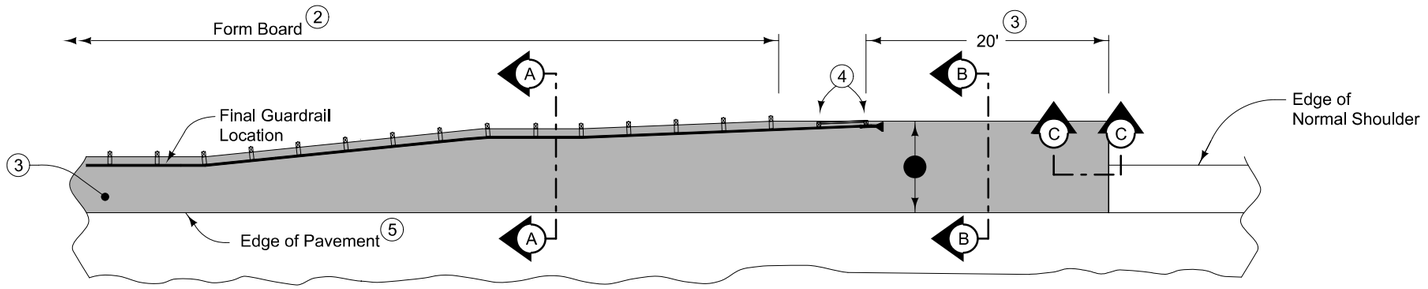
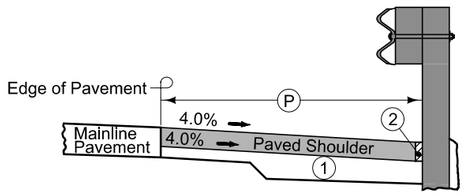
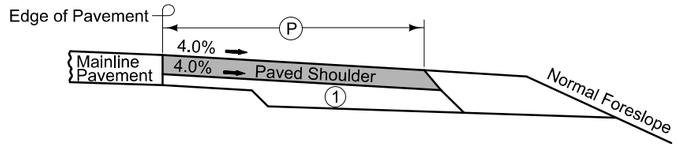


PLAN VIEW

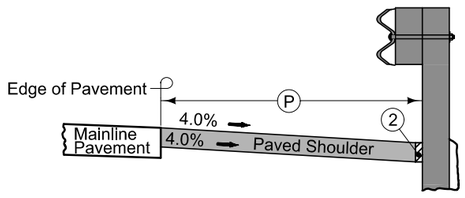


Section A-A

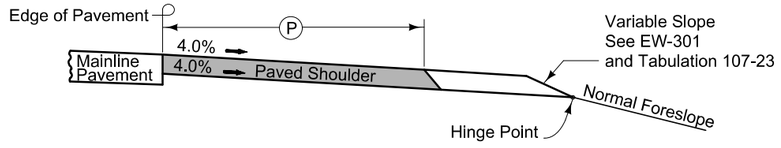


Section B-B

NEW CONSTRUCTION



Section A-A



Section B-B

EXISTING SHOULDER

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.

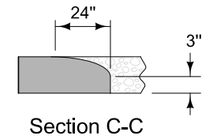
(1) For subgrade treatment, refer to other details in the plan.

(2) 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. Refer to note 4 for final 2 posts.

(3) Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.

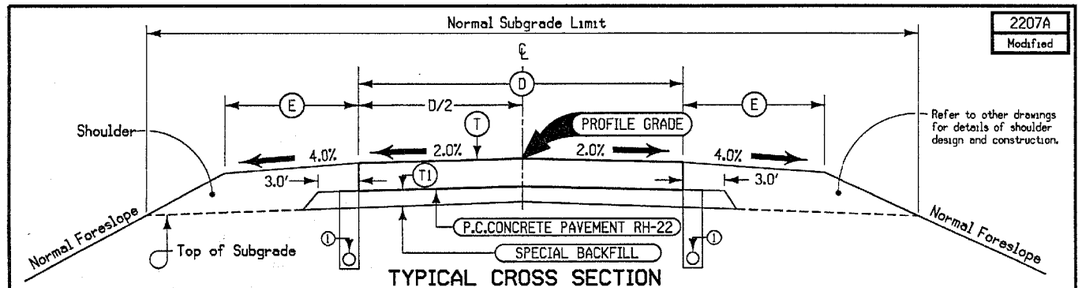
(4) Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(5) 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.



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

PAVED SHOULDER AT GUARDRAIL



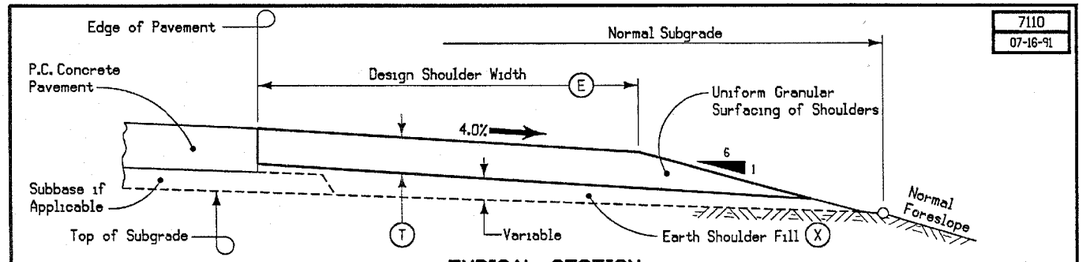
TYPICAL CROSS SECTION
2 LANE ROADWAY With SPECIAL BACKFILL

Note:

Normal sections shown may be appropriately modified for areas specifically designated by the engineer such as intersections or super-elevated curves.

(1) Possible subdrain see Standard Road Plan RF-19C

LOCATION			(D) Feet	(T) Inches	(T1) Inches	(E) Feet	SHOULDER TYPE
ROAD IDENTIFICATION	STATION TO STATION						
IA 22	5554+67.18	5618+25.34	24	10	12	8	GRANULAR
EXIST. IA 22 CONN.	15567+12.18	15573+50	24	8	6	6	GRANULAR
CIPCO ENTRANCE	15605+12.18	15609+07.68	24	8	6	6	GRANULAR



TYPICAL SECTION
TYPE 'A' GRANULAR SHOULDER
Adjacent to PCC Pavement

Note:

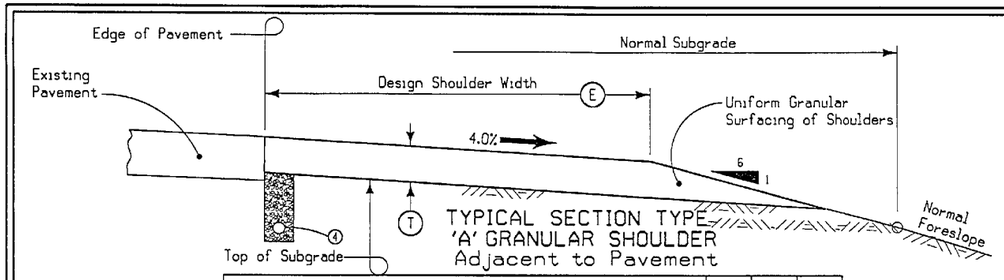
Earth Shoulder fill requires approximately (X) cubic yards of excavation, including 68% for shrinkage, per station.

LOCATION			(E) Feet	(T) Inches	SIDE	(X) Cu. Yds.
ROAD IDENTIFICATION	STATION TO STATION					
IA 22	5554+67.18	5618+25.34	8	6	BOTH	91.3
EXIST. IA 22 CONN.	15567+12.18	15573+50	6	6	BOTH	18.2
CIPCO ENTRANCE	15605+12.18	15609+07.68	6	6	BOTH	18.2

See Standard Road Plan RH-370 for construction requirements.

Existing Typical
Project # STPN-22-4(61)--2J-70
FOR INFORMATION ONLY

X-5
10-15-92



TYPICAL SECTION TYPE 'A' GRANULAR SHOULDER
Adjacent to Pavement

LOCATION			E	T	SIDE
ROAD IDENTIFICATION	STATION TO STATION		Feet	Inches	
Ia. Hwy. 22	5013+90	5080+80	8	6	Rt.
Ia. Hwy. 22	5026+60	5029+95	8	6	Lt.
Ia. Hwy. 22	5030+40	5036+00	8 ①	6	Lt.
Ia. Hwy. 22	5067+27	5075+10	8 ②	6	Lt.
Ia. Hwy. 22	5093+40	5094+80	8 ③	6	Lt.
Ia. Hwy. 22	5081+00	5082+75	4	6	Rt.
Ia. Hwy. 22	5082+75	5089+25	8	6	Rt.
Ia. Hwy. 22	5093+20	5096+00	8	6	Rt.

See Standard Road Plan RH-370 for construction requirements.

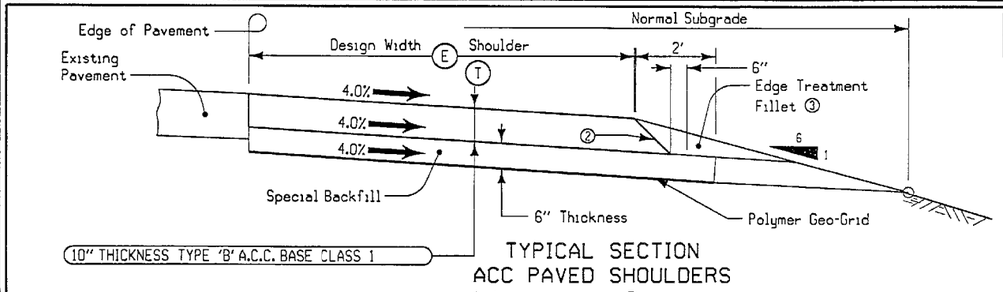
① Transition Shoulder Width from 8' to 11' from Sta. 5035+50 to Sta. 5036+00 (Lt. Side).

② Transition Shoulder Width from 8' to 11' from Sta. 5074+60 to Sta. 5075+10 (Lt. Side).

③ Transition Shoulder Width from 11' to 8' from Sta. 5093+40 to Sta. 5093+90.

④ Longitudinal Subdrain Per RF-TSC, Refer to Tab 104-9

X-6
10-15-92



TYPICAL SECTION
ACC PAVED SHOULDERS
Adjacent to Pavement

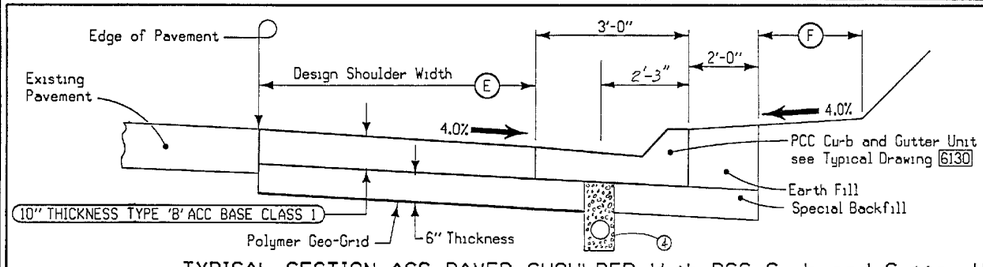
LOCATION			T	E	SIDE	QUANTITIES ①	
ROAD IDENTIFICATION	STATION TO STATION		Inch.	Feet			TYPE 'B' A.C.C. BASE Tons
Ia. Hwy. 22	5049+74	5052+00	10	10	Lt.		60.4

① Per side per station.

② Approximately 1:1 Slope

③ Refer to detail 7144, Sheet B.02.

X-7
10-15-92



TYPICAL SECTION ACC PAVED SHOULDER With PCC Curb and Gutter Unit

LOCATION			SIDE	DIMENSIONS E Feet	DIMENSIONS F Feet	QUANTITIES ①	
ROAD IDENTIFICATION	STATION TO STATION						TYPE 'B' ACC BASE Tons
Ia. Hwy. 22	5012+00	5026+60	Lt.	8 ②	③		48.4
Ia. Hwy. 22	5036+00	5041+40	Lt.	8	③		48.4
Ia. Hwy. 22	5041+68	5049+23	Lt.	8	③		48.4
Ia. Hwy. 22	5052+00	5067+10	Lt.	8	③		48.4
Ia. Hwy. 22	5075+10	5093+40	Lt.	8	③		48.4
Ia. Hwy. 22	5089+60	5092+80	Rt.	8	③		48.4

Notes:

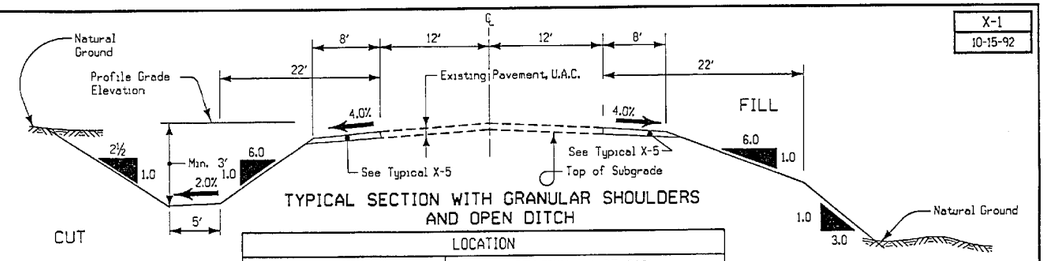
① Per Station Per Side.

② Transition Shoulder Width from Existing to 8' from Sta. 5012+00 to Sta. 5013+00.

③ See X-Sections

④ Longitudinal Subdrain Per RF-TSC, Refer to Tab 104-9

X-1
10-15-92

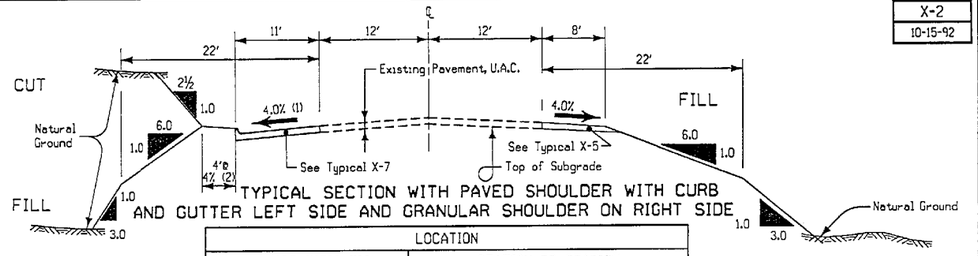


TYPICAL SECTION WITH GRANULAR SHOULDERS AND OPEN DITCH

LOCATION			
ROAD IDENTIFICATION	STATION TO STATION		
Ia. Hwy. 22	5026+60	5036+00	
Ia. Hwy. 22	5067+27	5075+10	
Ia. Hwy. 22	5093+40	5096+00	(1)

(1) Construction Ends on Left Side at Sta. 5094+80

X-2
10-15-92



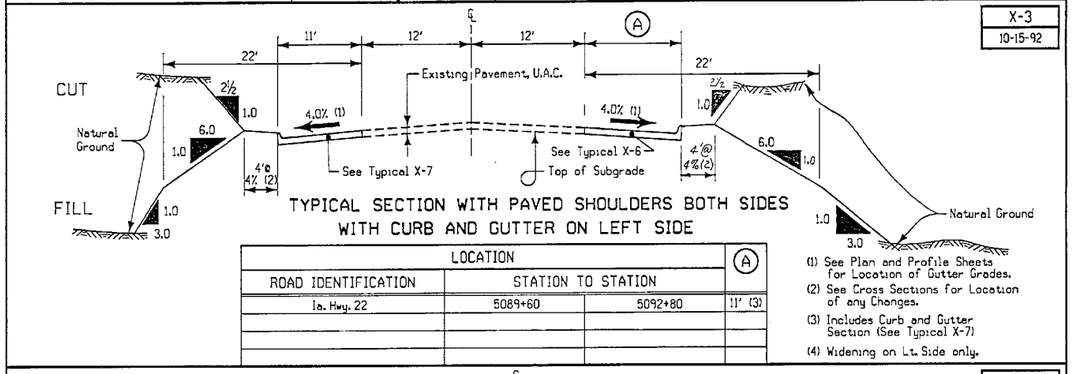
TYPICAL SECTION WITH PAVED SHOULDER WITH CURB AND GUTTER LEFT SIDE AND GRANULAR SHOULDER ON RIGHT SIDE

LOCATION		
ROAD IDENTIFICATION	STATION TO STATION	
Ia. Hwy. 22	5012+00	5026+60
Ia. Hwy. 22	5036+00	5049+74
Ia. Hwy. 22	5052+00	5067+27
Ia. Hwy. 22	5075+10	5089+60
Ia. Hwy. 22	5093+20	5093+40

(1) See Plan and Profile Sheets for Location of Gutter Grades.

(2) See Cross Sections for Location of any Changes.

X-3
10-15-92



TYPICAL SECTION WITH PAVED SHOULDERS BOTH SIDES WITH CURB AND GUTTER ON LEFT SIDE

LOCATION			A
ROAD IDENTIFICATION	STATION TO STATION		
Ia. Hwy. 22	5089+60	5092+80	11' (3)

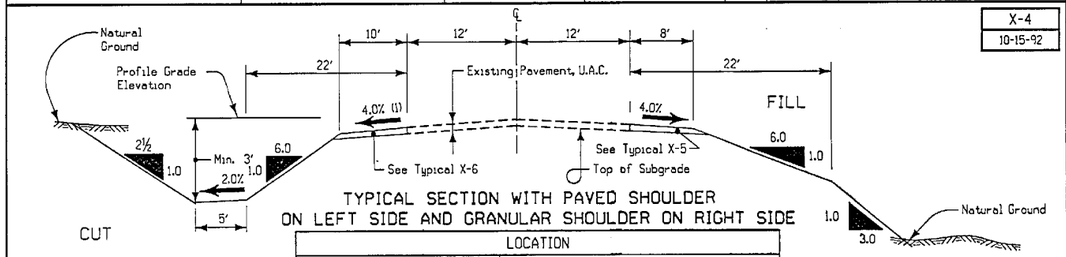
(1) See Plan and Profile Sheets for Location of Gutter Grades.

(2) See Cross Sections for Location of any Changes.

(3) Includes Curb and Gutter Section (See Typical X-7)

(4) Widening on Lt. Side only.

X-4
10-15-92

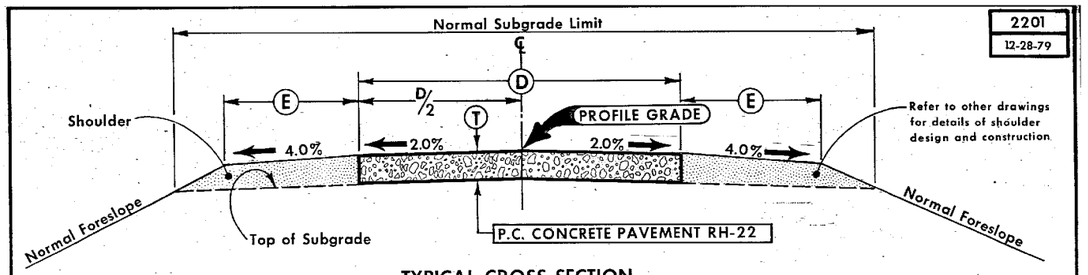


TYPICAL SECTION WITH PAVED SHOULDER ON LEFT SIDE AND GRANULAR SHOULDER ON RIGHT SIDE

LOCATION		
ROAD IDENTIFICATION	STATION TO STATION	
Ia. Hwy. 22	5049+74	5052+00

(1) See Plan and Profile Sheets for Location of Gutter Grades.

Existing Typical
Project # STPN-22-4(54)--2J-70
FOR INFORMATION ONLY

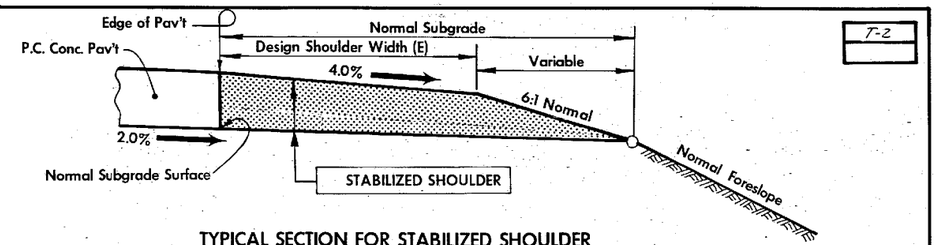


2201
12-28-79

TYPICAL CROSS SECTION
~~PROPOSED~~ HIGHWAY IMPROVEMENT

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

ROAD IDENT	STATION TO STATION		D	T	E	SHOULDER TYPE
Ia. # 22	5234+08.00	~~5238+00.00~~	24'	8 ½"	6	Stabilized
		5237+90				



T-2

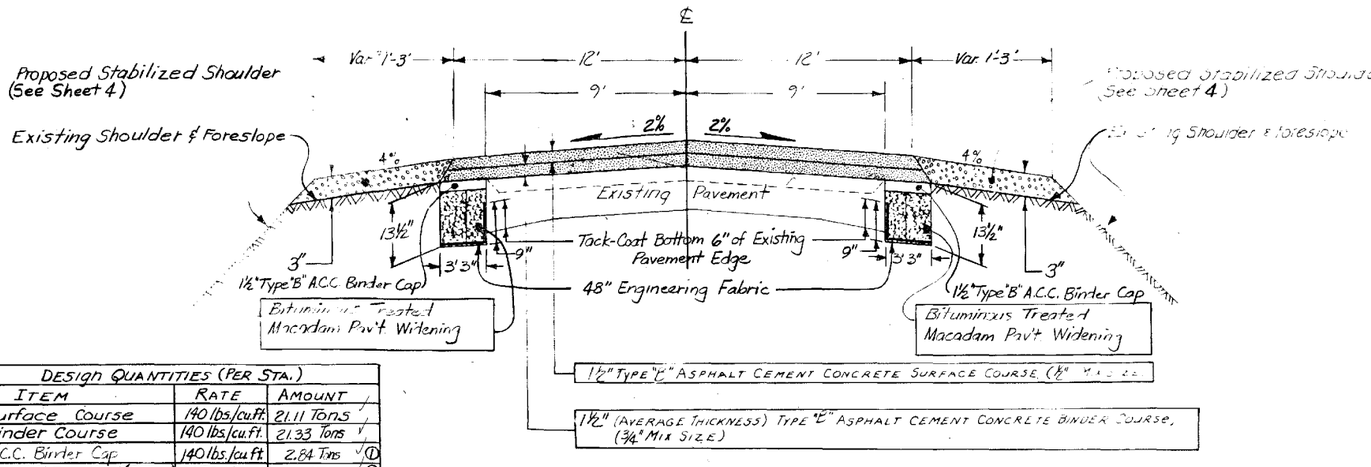
TYPICAL SECTION FOR STABILIZED SHOULDER
(Adjacent To P.C. Concrete Pavement)

TABULATION OF SHOULDER LOCATIONS

ROAD IDENT.	STATION TO STATION		E	SIDE	
Ia. # 22	5234+08.00	~~5238+00.00~~	6'	Lt & Rt	
		5237+90			

See Sheet No. 7 for construction requirements.

Existing Typical
Project # FN-22-4(37)--21-70
FOR INFORMATION ONLY



DESIGN QUANTITIES (PER STA.)			
ITEM	RATE	AMOUNT	
Surface Course	140 lbs./cu.ft.	21.11 Tons	√
Binder Course	140 lbs./cu.ft.	21.33 Tons	√
A.C.C. Binder Cap	140 lbs./cu.ft.	2.84 Tons	√ ①
Prime & Tack Coat (Resurf.)	0.056 Gal./sq.yd.	2722 Gal.	√ ②
Class 13 Excavation	———	13.54 Cu.Yds.	√ ①
Macadam Widening Course	115 lbs./cu.ft.	18.69 Tons	√ ①
Prime/Tack Coat (Pav't Edge)	0.10 Gal./sq.yd.	0.56 Gal.	√ ①
Engineering Fabric	———	44.44 Sq.Yds.	√ ①
Prime & Tack (Binder Cap)	0.05 Gal./sq.yd.	3.61 Gal.	√ ③

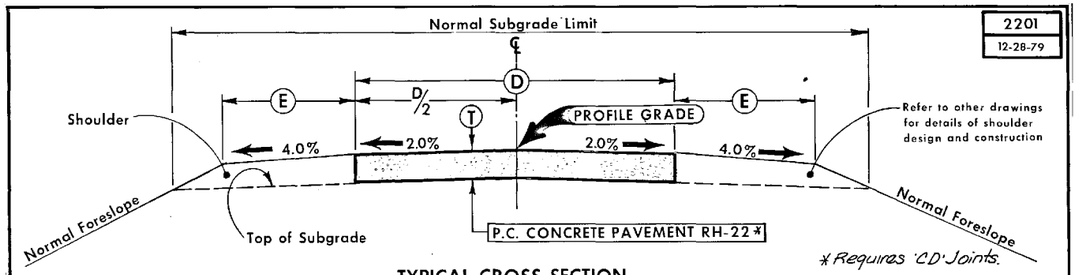
① Estimated For One Side
② Estimated For 2 Applications
③ Estimated For Two Sides

Asphalt Cement
Surface Course - 6.0%
Binder Course & Binder Cap - 5.75%
Macadam Widening Course - 2.00%

ROAD IDENT	STATION TO STATION		REMARKS	D.N.
Ia. #22				
Ia. #22	5015+98.50	5093+40.00		1
Ia. #22	5093+40.00	5095+25.00	No Widening Unit Required	1
Ia. #22	5095+25.00	5131+00.00		1
Ia. #22	5143+50.00	5169+72.00		1
Ia. #22	5169+72.00	5170+69.00	No Widening Unit Required	1
Ia. #22	5170+69.00	5195+45.00		1
Ia. #22	5262+00.00	5385+50.00		1
Ia. #22	5385+50.00	5387+16.00	No Widening Unit Required	1
Ia. #22	5387+16.00	5432+70.00		1
Ia. #22	5432+70.00	5434+10.00	No Widening Unit Required	1
Ia. #22	5434+10.00	5482+00.00		1
Ia. #22	5498+00.00	5513+87.50		1
Ia. #22	5513+87.50	5515+12.50	No Widening Unit Required	1
Ia. #22	5515+12.50	5549+75.00		1
Ia. #22	5549+75.00	5551+25.00	No Widening Unit Required	1
Ia. #22	5551+25.00	5565+90.00		1
Ia. #22	5565+90.00	5568+25.00	No Widening Unit Required	1
Ia. #22	5568+25.00	5603+00.00		1
Ia. #22	5603+00.00	5620+00.00	No Widening Unit or Binder Required	1
Ia. #22	5620+00.00	5651+13.00		1
Ia. #22	5651+13.00	5651+65.20	No Widening Unit or Shoulder Mat. Required	1
Ia. #22	5651+65.20	5671+75.00		1
Ia. #22	5674+25.00	5699+65.90*		1
Ia. #22	0+00.00*	96+00.00	* Equation: 5677+65.90 (Bk.) = 0+00.00 (Ahd.)	2

TYPICAL CROSS SECTION
MACADAM WIDENING & A.C.C. RESURFACING

Existing Typical
Project # FN-22-4(36)--21-70
FOR INFORMATION ONLY

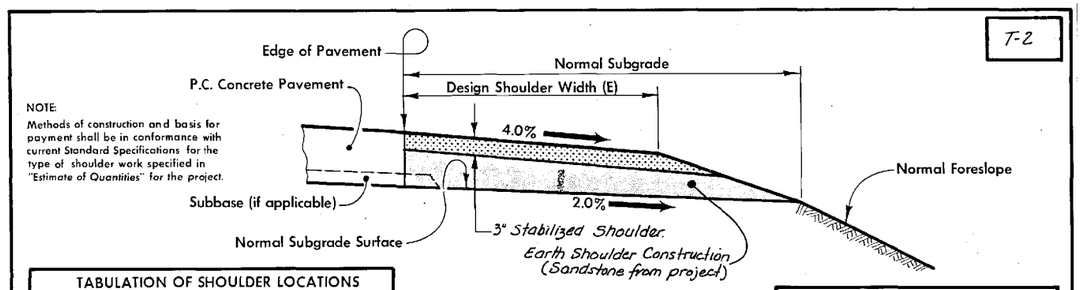


TYPICAL CROSS SECTION
~~PROPOSED~~ HIGHWAY IMPROVEMENT

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

ROAD IDENT	STATION TO STATION		(D)	(T)	(E)	SHOULDER TYPE
Ia. No. 22	5213+59.71	5262+00.00	24'	8½"	6'	3" Granular

Note: Sta 5262+00 to Sta. 5263+60 Prop. Taper from 4.5' to 2.5' on Rt.

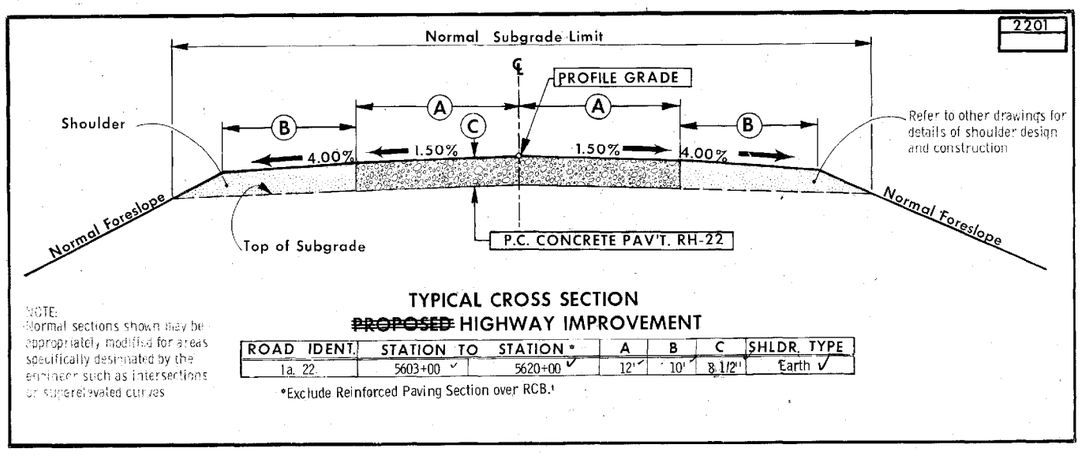


TABULATION OF SHOULDER LOCATIONS			
STATION TO STATION		E	SIDE
5213+59.71	5262+00.00	6'	Lt.
5213+59.71	5263+60.00	6'	Rt.

TYPICAL SECTION *STABILIZED* SHLDER.
ADJACENT TO P.C. CONCRETE PAVEMENT

DESIGN QUANTITY RATE	
Cu. Yds. per Shoulder per Station (Including 0 % for Shrinkage)	
E	SHOULDER MATERIAL(Sandstone)
6'	10.62

Existing Typical
Project # FN-22-4(29)--21-70
FOR INFORMATION ONLY

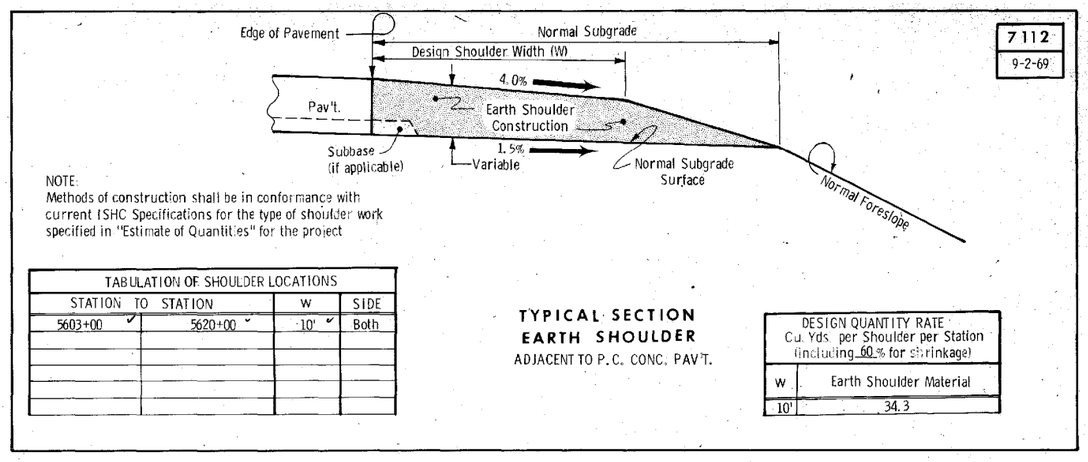


TYPICAL CROSS SECTION
~~PROPOSED~~ HIGHWAY IMPROVEMENT

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

ROAD IDENT.	STATION TO STATION *		A	B	C	SHLDR. TYPE
Ia. 22	5603+00 ✓	5620+00 ✓	12' ✓	10' ✓	8 1/2" ✓	Earth ✓

*Exclude Reinforced Paving Section over RCB.'

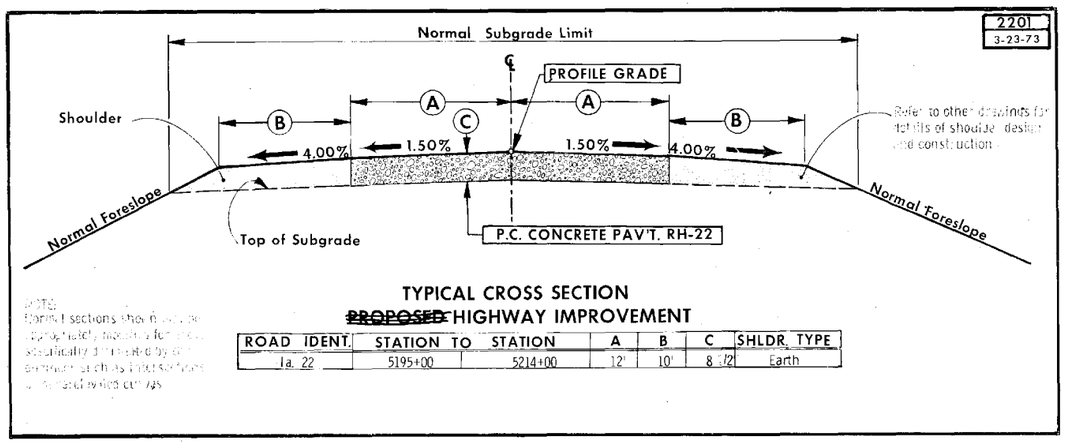


TABULATION OF SHOULDER LOCATIONS			
STATION TO STATION		W	SIDE
5603+00 ✓	5620+00 ✓	10' ✓	Both

TYPICAL SECTION
EARTH SHOULDER
ADJACENT TO P.C. CONC. PAV'T.

DESIGN QUANTITY RATE	
Cu. Yds. per Shoulder per Station (Including 60 % for Shrinkage)	
W	Earth Shoulder Material
10'	34.3

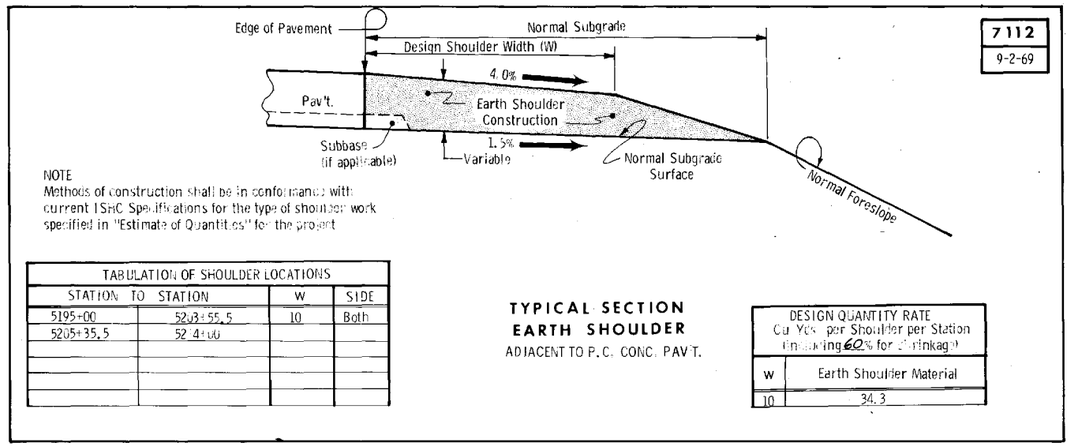
Existing Typical
Project # F-22-4(20)--20-70
FOR INFORMATION ONLY



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

TYPICAL CROSS SECTION
~~PROPOSED~~ HIGHWAY IMPROVEMENT

ROAD IDENT.	STATION TO STATION		A	B	C	SHLDR. TYPE
Ia. 22	5195+00	5214+00	12'	10'	8 1/2"	Earth



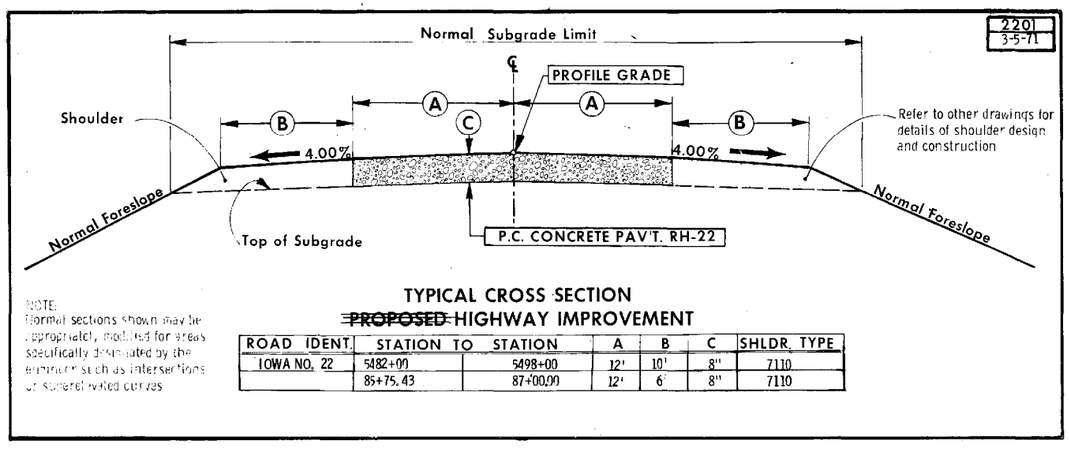
NOTE
Methods of construction shall be in conformance with current ISHC Specifications for the type of shoulder work specified in "Estimate of Quantities" for the project

TABULATION OF SHOULDER LOCATIONS			
STATION TO STATION		W	SIDE
5195+00	5203+55.5	10	Both
5205+35.5	5214+00		

TYPICAL SECTION
EARTH SHOULDER
ADJACENT TO P.C. CONC. PAV'T.

DESIGN QUANTITY RATE Cu. Yds. per Shoulder per Station (Including 60% for shrinkage)	
W	Earth Shoulder Material
10	34.3

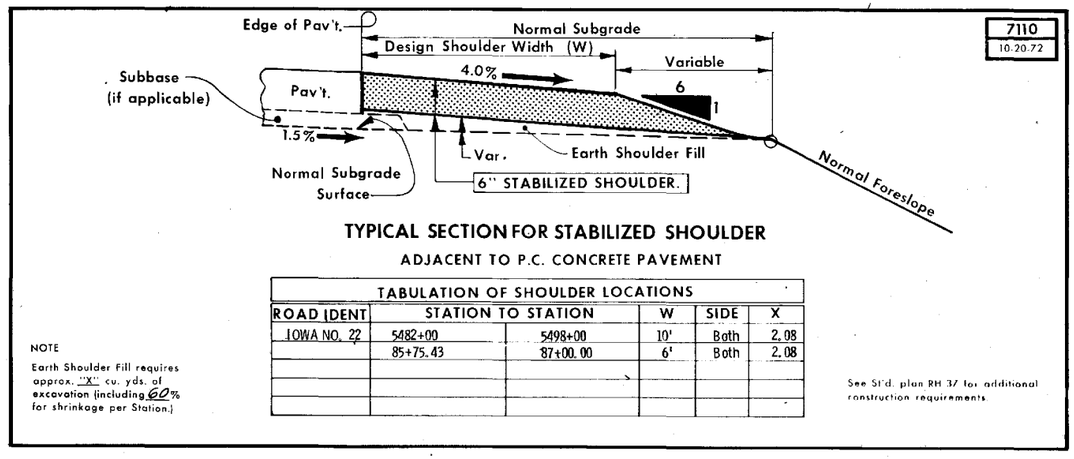
Existing Typical
Project # F-22-4(19)--20-70
FOR INFORMATION ONLY



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

TYPICAL CROSS SECTION
~~PROPOSED~~ HIGHWAY IMPROVEMENT

ROAD IDENT.	STATION TO STATION		A	B	C	SHLDR. TYPE
IOWA NO. 22	5482+00	5498+00	12'	10'	8"	7110
	85+75.43	87+00.00	12'	6'	8"	7110



TYPICAL SECTION FOR STABILIZED SHOULDER
ADJACENT TO P.C. CONCRETE PAVEMENT

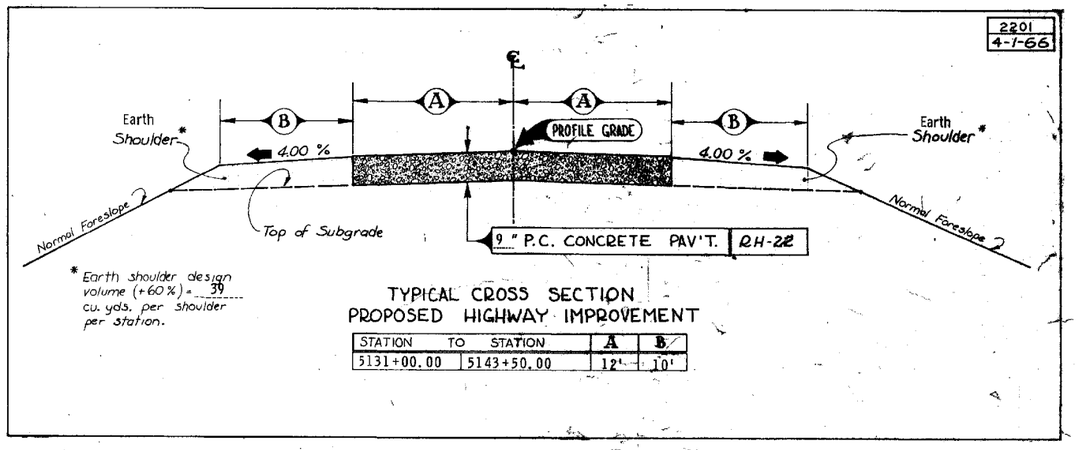
TABULATION OF SHOULDER LOCATIONS					
ROAD IDENT	STATION TO STATION		W	SIDE	X
IOWA NO. 22	5482+00	5498+00	10'	Both	2.08
	85+75.43	87+00.00	6'	Both	2.08

NOTE
Earth Shoulder Fill requires approx. "X" cu. yds. of excavation (including 60% for shrinkage per Station.)

See Std. plan RH 37 for additional construction requirements

Existing Typical
Project # FN-22-4(18)--21-70
FOR INFORMATION ONLY

2201
4-1-66



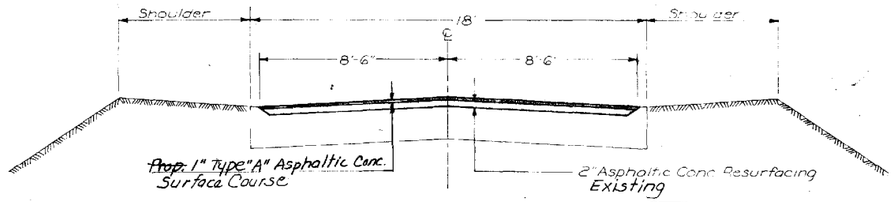
* Earth shoulder design volume (+60%) = 39 cu. yds. per shoulder per station.

TYPICAL CROSS SECTION
PROPOSED HIGHWAY IMPROVEMENT

STATION	TO	STATION	A	B
5131+00.00		5143+50.00	12'	10'

Existing Typical
Project # F-22-4(2)--20-70
FOR INFORMATION ONLY

2604
5-2-68

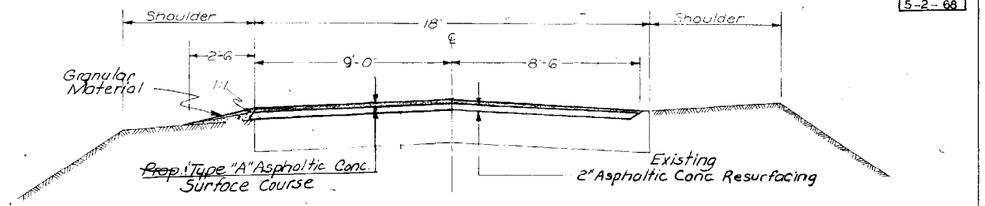


TYPICAL CROSS SECTION

LOCATION STATION	TO STATION	LIN. FT.	MILES
5001+25.0	5003+75.0		
5167+25.0	5170+75.0		
5182+00.0	5190+50.0		
5228+25.0	5340+00.0		
5342+90.0	5246+00.0		
5255+00.0	5263+50.0		
5269+75.0	5283+00.0		
5357+50.0	5362+75.0		
5365+00.0	5381+00.0		

TYPE "A" SECTION (CURB BOTH SIDES)		
DESIGN RATES PER STATION		
ITEM	UNIT	VOLUME
Asphaltic Concrete	Tons	10.25
Prime & Tack	Gal.	9.44
Sand Cover	Tons	0.47

2605
5-2-68



TYPICAL CROSS SECTION

LOCATION STATION	TO STATION	LIN. FT.	MILES
5003+75.0	5014+75.0		
5020+75.0	5032+50.0		
5070+10.0	5080+00.0		
5144+00.0	5148+00.0		
5170+75.0	5176+00.0		
5224+00.0	5228+25.0		
5240+00.0	5242+90.0		
5263+50.0	5269+75.0		
5326+25.0	5331+75.0		
5352+75.0	5357+50.0		
5362+75.0	5365+00.0		
5381+00.0	5387+30.0		
5478+75.0	5486+50.0		
5535+75.0	5541+25.0		
5646+75.0	5650+85.0		

TYPE "A" SECTION (CURB ONE SIDE ONLY)		
DESIGN RATES PER STATION		
ITEM	UNIT	VOLUME
Asphaltic Concrete	Tons	10.53
Prime & Tack	Gal.	9.72
Sand Cover	Tons	0.49
Granular Material	Tons	1

Existing Typical
Project # FN-22-4(10)--21-70
FOR INFORMATION ONLY

ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Division 1: NHSX-022-4(77)--3H-70 State 3R Project Rural Muscatine County See sheet C.1
Division 2: HSIPX-022-2(78)--3L-70 Safety Project See sheet C.3
Division 3: NHSX-022-4(77)--3H-70 State 3R Project Urban City of Muscatine, Muscatine County See sheet C.1
Division 4: NHSX-022-4(77)--3H-70 State 3R Project Urban City of Buffalo, Scott County See sheet C.1

Item No.	Item Code	Item	Unit	Quantities										
				Estimated						As Built				
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
1	2101-0850001	CLEARING AND GRUBBING	ACRE	4.3					4.3					
2	2101-0850002	CLEARING AND GRUBBING	UNIT	33					33					
3	2102-2625000	EMBANKMENT-IN-PLACE	CY	32.0	1,175.8				1,207.8					
4	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	231.0	2,182.9				2,413.9					
5	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY		1,055.6				1,055.6					
6	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	3,096.8		289.8	308.7		3,695.3					
7	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY		8,500.2				8,500.2					
8	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY		7,763.6				7,763.6					
9	2125-2225050	RESHAPING DITCHES	STA	0.80					0.80					
10	2128-0000200	CONTRACTOR STOCKPILED SHOULDER MATERIAL	TON	5.0	110.0				115.0					
11	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	10.1		0.7	1.8		12.6					
12	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	1,565.3		98.2	355.0		2,018.5					
13	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	118		2	30		150					
14	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY		4,957.3				4,957.3					
15	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE	TON		7,585.3				7,585.3					
16	2214-5145150	PAVEMENT SCARIFICATION	SY	1,127.5	160.0	133.3	133.3		1,554.1					
17	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	TON	3,814.1		289.3	742.6		4,846.0					
18	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	1,248.91	356.85				1,605.76					
19	2303-1033500	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO	TON	12,390.30	3,406.81	867.87	2,227.90		18,892.88					
		SPECIAL FRICTION REQUIREMENT												
20	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	1,047.20	2,075.05	69.43	178.20		3,369.88					
21	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	0.90	1.00	0.05	0.05		2.00					
22	2318-1001100	COLD IN-PLACE RECYCLED ASPHALT PAVEMENT	SY	127,241.8		9,729.3	25,393.9		162,365.0					
23	2318-1001220	ASPHALT STABILIZING AGENT (FOAMED ASPHALT)	TON	559.9		42.8	111.7		714.4					
24	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00					1.00					
25	2402-0425031	GRANULAR BACKFILL	TON	23.6					23.6					
26	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	46.0					46.0					
27	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	63					63					
28	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	47,666.9		0.0	5,560.9		53,227.8					
29	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	235		0	39		274					
30	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF		6,088.8				6,088.8					
31	2505-4008300	STEEL BEAM GUARDRAIL	LF		5,187.5				5,187.5					
32	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH		26				26					
33	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH		26				26					
34	2505-4021711	STEEL BEAM GUARDRAIL FLARED END TERMINAL, LS-626	EACH		1				1					
35	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH		23				23					
36	2505-4021721	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206	EACH		4				4					
37	2505-4021722	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-225	EACH		3				3					
38	2505-4502100	STEEL BEAM GUARDRAIL, POST ADAPTER UNIT, BA-210	EACH		12				12					
39	2507-2638620	MACADAM STONE SLOPE PROTECTION	SY	222.0					222.0					
40	2507-3250005	ENGINEERING FABRIC	SY	1,444.4					1,444.4					
41	2507-6800042	REVETMENT, CLASS D	TON	0.0					0.0					
42	2507-8029000	EROSION STONE	TON	374.0					374.0					
43	2526-8285000	CONSTRUCTION SURVEY	LS	0.90	1.00	0.05	0.05		2.00					
44	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	5,049.37		426.45	883.93		6,359.75					
45	2528-8445110	TRAFFIC CONTROL	LS	0.90	1.00	0.05	0.05		2.00					
46	2528-8445113	FLAGGERS	EACH						See Proposal					
47	2528-8445115	PILOT CARS	EACH						See Proposal					
48	2529-2242304	CD JOINT ASSEMBLY	EACH	21		2	1		24					
49	2529-2242320	CT JOINT	EACH	30		3			33					
50	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	1,284.8					1,284.8					
51	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	87					87					
52	2529-8174020	SUBBASE PATCH WITH EF JOINT	SY	319.2					319.2					
53	2529-8174050	PATCH SUBDRAIN	EACH	0					0					
54	2529-8201000	JOINT ASSEMBLY, EF	EACH	24					24					
55	2532-5200001	PAVEMENT SURFACE REPAIR (GRINDING LIMESTONE)	SY	29,306.0					29,306.0					
56	2533-4980005	MOBILIZATION	LS	0.90	1.00	0.05	0.05		2.00					
57	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA		1,590.1				1,590.1					
58	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL		1,722.3				1,722.3					
59	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA		428.8				428.8					
60	2548-0000320	MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE	STA		310.8				310.8					
61	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS	0.00	1.00	0.00	0.00		1.00					
62	2590-0000020	PROJECT MANAGEMENT	LS	0.90	1.00	0.05	0.05		2.00					
63	2602-0000020	SILT FENCE	LF	3,037.5	6,483.8		487.5		10,008.8					
64	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	3,037.5	6,483.8		487.5		10,008.8					
65	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	303.8	648.4		48.8		1,001.0					
66	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	1		1		3					
67	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	1		1		3					

ESTIMATE REFERENCE INFORMATION NHSX-22-4(77)--3H-70, Divs. 1, 3, & 4

Item No.	Item Code	Description
1	2101-0850001	**CLEARING AND GRUBBING**
2	2101-0850002	**CLEARING AND GRUBBING**
		See Tab 110-17, and note 232-10, for locations and information.
		Also see Sheet Q.1 Slide Repair (0.2 acre) for location and additional information.
		Cut trees after Oct. 1 and before March 31 per Specification 2101-01A.
-	-	-
3	2102-2625000	**EMBANKMENT-IN-PLACE**
		See Tab 3R-CULV and Sheet B.16 Div 1 (32 CY) for location and information.
		See Div 2 Tab 107-23 (1175.8 CY) for locations and information.
		See also Standard Note 232-3A, 232-3C, 232-11, 281-1 and Tab 100-26 for information.
		The use of Excavation, Class 13, for embankment-in-place will be allowed
		if approved by the Engineer.
-	-	-
4	2102-2713090	**EXCAVATION, CLASS 13, WASTE**
		See Typical 7148 Div. 2 (16.3 CY) and Typical 7156, Tab 112-9 for 9" paved shlds. Div. 2 (2166.6 CY)
		for locations and information.
		Also see Sheet Q.1 Slide Repair Div. 1 (231 CY) for location and additional information.
-	-	-
5	2105-8425005	**TOPSOIL, FURNISH AND SPREAD**
		See Tab 107-23 for locations and information.
-	-	-
6	2121-7425020	**GRANULAR SHOULDERS, TYPE B**
		See Typical 7152 Sheet B.8 and Typical 7135 Sheet B.9 for locations and details.
		Quantity increased by 10% due to degradation of shoulder cross-slope.
-	-	-
7	2122-5500060	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.**
		See Typical 7152 and Tab 112-9 for locations and information.
-	-	-
8	2122-5500090	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.**
		See Typical 7156 and Tab 112-9 for locations and information.
		See Sheets B.10-B.23 for additional information.
-	-	-
9	2125-2225050	**RESHAPING DITCHES**
		See Tab 3R-CULV and Sheet B.16 for location and information.
-	-	-
10	2128-0000200	**CONTRACTOR STOCKPILED SHOULDER MATERIAL**
		See Tab 110-13 for Pavement Scarification information and refer to the Developmental Specification.
-	-	-
11	2212-0475095	**CLEANING AND PREPARATION OF BASE**
		See Typicals 2602 Sheets B.1-B.4, 2617 Sheets B.5-B.6 and Typical 2618 Sheet B.7
		for locations and details.
-	-	-
12	2212-5070310	**PATCHES, FULL-DEPTH REPAIR**
13	2212-5070330	**PATCHES BY COUNT (REPAIR)**
		See Tab 102-6C for locations and information.
		Quantities increased by 10% for irregularities.
-	-	-
14	2213-2713300	**EXCAVATION, CLASS 13, FOR WIDENING**
		Item is for the removal of existing aggregate/earth shoulder material prior to placement of
		HMA paved shoulders,
		see Typical 2602 on Sheets B.1-B.4 Div. 2 (3487.0 CY)
		see Typical 2617 on Sheets B.5-B.6 Div. 2 (203.5 CY)
		see Typical 7152 on Sheet B.8 Div. 2 (1266.8 CY)
		for locations and infomation.
		Upon approval of the Engineer, the material shall be used as:
		See Tab 110-13, Div. 2 Stockpiling: (4,957 CY) or Approx. 9,369 Ton
		See Embankment-In-Place: (1,208 CY)
		Approximated To be stockpiled: 9,369 - 2,283 = 7,087 CY Deliver and Stockpile
-	-	-
15	2213-8200000	**BASE WIDENING, HOT MIX ASPHALT MIXTURE**
		See Typical 2602 on Sheets B.1-B.4 Div. 2 (6825.8 CY)
		see Typical 2617 on Sheets B.5-B.6 Div. 2 (398.3 CY)
		for locations and information.
		Use HMA mix 58-28.
		Quantities increased by 5% for irregularities.
-	-	-
16	2214-5145150	**PAVEMENT SCARIFICATION**
		See Typical 2602 Sheets B.1-B.4, Typical 2618 Sheet B.7 and runouts/notches Typical RO-1, Typical RO-4
		Sheet B.24, Tab 102-16 for locations and additional information.
		Div. 1: Typicals 2618 (194.1 SY), RO-1 (666.7 SY), RO-4 (266.7 SY), Tab 102-16 (1633.3 SY)

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION NHSX-22-4(77)--3H-70, Divs. 1, 3, & 4

Item No.	Item Code	Description
		Div. 2: Typical 2602 (2892.7 SY)
		Div. 3: Typical RO-1 (133.3 SY)
		Div. 4: Typical RO-1 (133.3 SY)
		See Tab 110-13 and Bid Item 2128-0000200 CONTRACTOR STOCKPILED SHOULDER MATERIAL, for Delivery & Stockpiling.
-	-	-
17	2303-0001000	**HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE**
18	2303-1032500	**HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX**
19	2303-1033500	**HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT**
20	2303-1258283	**ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC**
		See Typicals 2602 Sheets B.1-B.4, 2617 Sheets B.5-B.6, and 2618 Sheets B.7 for locations and details.
		Includes quantity for Surface, and Binder Typical 7148 Fillets, Sh. B.25.
		Quantities increased by 5% for irregularities.
-	-	-
21	2303-6911000	**HOT MIX ASPHALT PAVEMENT SAMPLES**
		As per current Standard Specifications and Road Standards.
-	-	-
22	2318-1001100	**COLD IN-PLACE RECYCLED ASPHALT PAVEMENT**
23	2318-1001220	**ASPHALT STABILIZING AGENT (FOAMED ASPHALT)**
		Div. 1: See Typical 2602 Sheets B.1-B.4 for information and locations.
		See Tab 102-5, and 102-5A for existing pavement information.
-	-	-
24	2401-6750001	**REMOVALS, AS PER PLAN**
		Item for removal of 36" X 36' CMP.
		See Tab 110-2, Tab 3R-CULV and Sheet B.16 for additional information.
-	-	-
25	2402-0425031	**GRANULAR BACKFILL**
		See Tab 3R-CULV and Sheet B.16 for location and information.
-	-	-
26	2402-2720100	**EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT**
		See tab 3R-CULV and Sheet B.16 for location and information.
		See Tab 100-26 for incidental work.
-	-	-
27	2416-1541036	**REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.**
		See Tab 3R_CULV for location and information.
-	-	-
28	2502-8212034	**SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.**
29	2502-8221306	**SUBDRAIN OUTLET, DR-306**
		Items include new installation of longitudinal subdrain within the project,
		including the addition of new outlets to existing longitudinal subdrains.
		See Tab 104-9 for locations and information.
		In general, when a new outlet is to be placed adjacent to an existing outlet,
		the adjacent existing outlet is also to be replaced and updated
		to the current road standard.
-	-	-
30	2505-4008120	**REMOVAL OF STEEL BEAM GUARDRAIL**
		See Tab 110-7A for locations and information.
		See Tab 110-13 for stockpiling steel guardrail.
		Posts are to become the property of the Contractor.
-	-	-
31	2505-4008300	**STEEL BEAM GUARDRAIL**
32	2505-4008410	**STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201**
33	2505-4021010	**STEEL BEAM GUARDRAIL END ANCHOR, BOLTED**
		See Tab 108-8A and 108-8B for locations and information.
		See Sheets B.10, B.12-B.21 and B.23 for additional information.
		Guardrail to be updated on project BRFN-022-7(72)--39-40 for Bridge Maint. #7076.6S022.
		See Sheets V.1-V.2 for bridge rail retrofit Bridge Maint. #7083.7B022.
		The 12 BA-210 Post Adapters are to be used at the Bridge Maint. #7086.3S022 location.
-	-	-
34	2505-4021711	**STEEL BEAM GUARDRAIL FLARED END TERMINAL, LS-626**
		See 108-8B for locations and additional information.
		The BA-225 and LS-626 end terminals at Brige Maint. #7086.3S022 shall be TL-2 installations
		instead of the TL-3.
		There are also 12 BA-210 Post Adapters to be used at this location.
		See Sheet B.22 for additional information.
-	-	-
35	2505-4021720	**STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205**
36	2505-4021721	**STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206**
		See Tab 108-8A and 108-8B for locations and information.
		See Sheets B.10, B.12-B.21 and B.23 for additional information.
		Guardrail to be updated on project BRFN-022-7(72)--39-40 for Bridge Maint. #7076.6S022.

ESTIMATE REFERENCE INFORMATION NHSX-22-4(77)--3H-70, Divs. 1, 3, & 4

Item No.	Item Code	Description
		See Sheets V.1-V.2 for bridge rail retrofit Bridge Maint. #7083.7B022.
		The 12 BA-210 Post Adapters are to be used at the Bridge Maint. #7086.3S022 location.
-	-	-
37	2505-4021722	**STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-225**
		See 108-8B for locations and additional information.
		The BA-225 and LS-626 end terminals at Brige Maint. #7086.3S022 shall be TL-2 installations
		instead of the TL-3.
		There are also 12 BA-210 Post Adapters to be used at this location.
		See Sheet B.22 for additional information.
-	-	-
38	2505-4502100	**STEEL BEAM GUARDRAIL, POST ADAPTER UNIT, BA-210**
		See Tab 108-8A and 108-8B for locations and information.
		See Sheets B.10, B.12-B.21 and B.23 for additional information.
		Guardrail to be updated on project BRFN-022-7(72)--39-40 for Bridge Maint. #7076.6S022.
		See Sheets V.1-V.2 for bridge rail retrofit Bridge Maint. #7083.7B022.
		The 12 BA-210 Post Adapters are to be used at the Bridge Maint. #7086.3S022 location.
-	-	-
39	2507-2638620	**MACADAM STONE SLOPE PROTECTION**
		See Sheet Q.1 Slide Repair for location and additional information.
-	-	-
40	2507-3250005	**ENGINEERING FABRIC**
		See Tab 100-23 Rock Erosion Control and Sheet B.16 for location and information.
		See Sheet Q.1 Slide Repair for location and information.
-	-	-
41	2507-6800042	**REVETMENT, CLASS D**
		See Tab 100-23 Rock Erosion Control and Sheet B.16 for location and information.
-	-	-
42	2507-8029000	**EROSION STONE**
		See Sheet Q.1 Slide Repair for location and additional information.
-	-	-
43	2526-8285000	**CONSTRUCTION SURVEY**
		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 resetting 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.
-	-	-
44	2527-9263109	**PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED**
		See Tab 108-22 for information and locations.
		Painted pavement markings shall be provided for 12 ft. lanes in mainline sections.
-	-	-
45	2528-8445110	**TRAFFIC CONTROL**
		As per current Standard Specifications and Road Plans.
		See Tab 108-23A, Sheet J.1 for additional information and staging notes.
-	-	-
46	2528-8445113	**FLAGGERS**
47	2528-8445115	**PILOT CARS**
		As per current Standard Specifications and Road Plans.
-	-	-
48	2529-2242304	**CD JOINT ASSEMBLY**
49	2529-2242320	**CT JOINT**
		See Tab 102-6C for locations and information.
-	-	-
50	2529-5070110	**PATCHES, FULL-DEPTH FINISH, BY AREA**
51	2529-5070120	**PATCHES, FULL-DEPTH FINISH, BY COUNT**
		See Tab 102-6C for locations and information.
		Quantities increased by 10% for irregularities.
-	-	-
52	2529-8174020	**SUBBASE PATCH WITH EF JOINT**
53	2529-8174050	**PATCH SUBDRAIN**
54	2529-8201000	**JOINT ASSEMBLY, EF**
		See Tab 102-6C for locations and information.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION NHSX-22-4(77)--3H-70, Divs. 1, 3, & 4

Item No.	Item Code	Description
-	-	-
55	2532-5200001	**PAVEMENT SURFACE REPAIR (GRINDING LIMESTONE)**
		Quantity computed at full length of the project and a 24 ft. mainline width.
		The CalPro inventory average international roughness index (IRI) value
		is: 206 inches per mile.
		Electronic files of the high speed testing of the existing
		profile bumps are available from the Office of Contracts.
-	-	-
56	2533-4980005	**MOBILIZATION**
		Preparing the seedbed and furnishing and applying seed and mulch is incidental to mobilization and will not be
		paid for separately. See Standard Notes 232-3A, 232-3C, 232-11 and Tab 100-26 for Incidental Items.
-	-	-
57	2548-0000100	**MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE**
58	2548-0000110	**ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)**
59	2548-0000310	**MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE**
60	2548-0000320	**MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE**
		See Tab 112-10 for locations and information.
-	-	-
61	2555-0000010	**DELIVER AND STOCKPILE SALVAGED MATERIALS**
		See Tab 110-13 for stockpiling guardrail steel, and Cl. 13 Excavation for widening.
-	-	-
62	2590-0000020	**PROJECT MANAGEMENT**
		See Supplemental Specifications.
-	-	-
63	2602-0000020	**SILT FENCE**
		See Tab 100-17 for information and locations. Also see note 110-12A and 281-1.
		The tabulation includes estimated locations for placement of silt fence to address erosion control to be
		encountered during construction. Verify the specific locations with the Engineer prior to beginning placement.
		Bid Item includes 25% additional quantity for field adjustments and replacements.
-	-	-
64	2602-0000071	**REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS**
		See Tab 100-13 and Tab 100-17 for locations and information.
-	-	-
65	2602-0000101	**MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK**
		This item is for the clean out and repair of silt fence.
		Estimated at 10% fo the silt fence quantity.
-	-	-
66	2602-0010010	**MOBILIZATIONS, EROSION CONTROL**
67	2602-0010020	**MOBILIZATIONS, EMERGENCY EROSION CONTROL**
		See Tab 100-26 for incidental items and notes 110-12A, 281-1.
		As per current Standard Specifications and Road Plans.
-	-	-

ESTIMATED PROJECT QUANTITIES
(HSIPX-22-4(78)--3L-70, Div. 2)

Item No.	Item Code	Item	Unit	Total	As Built Qty.

ESTIMATE REFERENCE INFORMATION HSIPX-22-4(78)--3L-70, Div. 2

Item No.	Item Code	Description

100-1D
10-18-05

PROJECT DESCRIPTION

This project is for the HMA resurfacing and widening in Muscatine and Scott Counties along Iowa Highway 2 from near River Road in Muscatine to County Road Y40.

This project will include cold-in-place recycling, longitudinal subdrains, culvert repairs, guardrail updates, patching and milled centerline / shoulder rumble strips.

Division 1 - Rural Muscatine County
Division 3 - City of Muscatine, Muscatine County
Division 4 - City of Buffalo, Scott County
State funding, for Mainline paving and granular shoulders. NHSX-022-4(77)--3H-70

Division 2
State Safety funding, for paved shoulders, rumble strips and guardrail. HSIPX-022-4(78)--3L-70

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	
1	Seeding and Fertilizing (Rural)	AC		2533-498005	Mobilization	Note (1)
2	Seeding and Fertilizing (Native Grass)	AC		2533-498005	Mobilization	Note (2)
3	Stabilizing Crop Seeding	AC		2533-498005	Mobilization	Note (3)
	(1) For areas along subdrain outlets (Tab 104-9), and Paved Shlds. (112-9). Also see note 232-3A and Std. Rd. Plan EC-502.					
	(2) For areas along pipe removal and replacement (3R_Culv), guard rail grading (Tab 107-23), any other disturbed soils. Also see Note 232-3C, and Std. Rd. Plan EC-502.					
	(3) For areas along subdrain outlets (Tab 104-9), paved shoulders (112-9), pipe removal and replacement (3R_Culv), guard rail grading (Tab 107-23), and any other disturbed soils. Also see note 232-11.					

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
See Item 2128-0000200 Contractor Stockpile Shld.			Muscatine	Scott Fix Area Supervisor	50% For Contr. Recycling
Pavement Scarification			Iowa DOT garage	563-272-8660 cell	50% for Delivery & Stockpile
Div. 1 - Rural Muscatine Co.	194	SY			50% of 194 SY = 97 SY
					@ 1" thick, 135 lb/ft3
					= Approx. 5 Ton Stockpile
Div. 2	2892	SY			50% of 2,892 SY = 1,446 SY
					@ 1.5" thick, 135 lb/ft3
					= Approx. 110 Ton Stockpile
Div. 2					
Removal of Steel Beam Guardrai	6089	LF	Muscatine	Scott Fix Area Supervisor	See Tab 110-7A
See Item 2555-0000010			Iowa DOT garage	563-272-8660 cell	Steel beam only.
Deliver and Stockpile Salvaged materials					Post are to become the
					property of the Contractor.
Excavation, Class 13 Widening	3749	CY	Muscatine	Scott Fix Area Supervisor	4957 CY Available (9369 T)
See Item 2555-0000010			Iowa DOT garage	563-272-8660 cell	-1208 CY Emb. In Pl (2283 T)
Deliver and Stockpile Salvaged materials					=3749 CY Stockpile 7087 T)

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
BA-200	10-18-16	Steel Beam Guardrail Components
BA-201	04-18-17	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-205	04-19-16	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-206	10-18-16	Steel Beam Guardrail Flared End Terminal For Cable Connection (MASH TL-3)
BA-210	04-19-16	Guardrail Post Adaptor Unit
BA-225	10-17-17	Steel Beam Guardrail Tangent End Terminal (MASH TL-2)
BA-250	10-18-16	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-251	04-19-16	Steel Beam Guardrail Installation at Side Obstacle (Two-Way Protection)
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-303	10-17-17	Subdrains (Longitudinal)
DR-306	10-17-17	Precast Concrete Headwall for Subdrain Outlets
EC-201	10-17-17	Silt Fence
EC-204	04-18-17	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
EC-502	04-21-15	Seeding in Rural Areas
EW-301	10-20-15	Guardrail Grading
LS-626	04-19-16	Steel Beam Guardrail Flared End Terminal (NCHRP 350 TL-3)
PM-110	04-16-13	Line Types
PM-420	04-19-11	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PM-550	04-19-11	Two-Lane Roadway with Two-Way Left Turn Lane
PR-101	04-21-15	Full Depth Patch with 'EF' Joint in PCC
PR-103	10-21-14	Full Depth PCC Patch with Dowels
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	04-19-16	Milled Shoulder Rumble Strips
PV-13	10-17-17	Milled Centerline Rumble Strips
PV-101	10-17-17	Joints
PV-202	04-16-13	Hot Mix Asphalt Resurfacing
PV-203	10-15-13	HMA Base Widening
PV-301	04-19-11	Superelevation Details Two Lane Roadway
SI-172	04-19-16	Delineators
SI-173	04-19-16	Object Markers
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-212	04-16-13	Spot Location Lane Closure with Flaggers
TC-213	04-17-12	Lane Closure with Flaggers
TC-214	10-17-17	Lane Closure with Flaggers for use with Pilot Car
TC-231	10-15-13	Slow Moving Vehicle Operating in the Traffic Lane
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-233	10-17-17	Pavement Marking Operations Two-Lane
TC-282	04-19-11	Uneven Lanes
TC-283	10-18-11	Surveying Operations

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.

232-3A
10-20-15

EROSION CONTROL
(RURAL SEEDING)

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

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

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

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

232-3C
10-20-15

EROSION CONTROL
(NATIVE GRASS SEEDING)

Following the completion of work in a disturbed area, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:

Big bluestem (Andropogon geradii)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)

Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debearded or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.

Use seed meeting requirements of Article 4169.02 of the Standard Specifications.

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

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

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

232-11
10-20-15

EROSION CONTROL
(STABILIZING CROP SEEDING)

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

Use seed mix and fertilizer meeting the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications.

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

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

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

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

110-17
04-18-17

CLEARING AND GRUBBING

Location: Station to Station or Ref. Loc. Sign to Ref. Loc. Sign or Description	Direction of Travel	Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters: 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"	All Other Materials: Length FT	Width FT	Estimated Quantities: Units Units	Area Acres	Herbicide Application Each	Remarks
Division 1 - Rural Muscatine County																					
MP 75.08 to MP 75.2	EB	Trees - Clearing and Grubbing														627.0	39.0		0.6		
MP 75.41 to MP 75.52	EB	Trees - Clearing and Grubbing														570.0	48.0		0.6		
MP 75.85 to MP 75.99	EB	Trees - Clearing														750.0	20.0		0.3		See Note 1, No Herb. Treatment item.
MP 76.88 to MP 77.0	WB	Trees - Clearing														580.0	11.0		0.1		See Note 1, No Herb. Treatment item.
MP 79.09 to MP 79.31	WB	Trees - Clearing														1180.0	17.0		0.5		See Note 1, No Herb. Treatment item.
MP 81.5 to MP 82.0	EB	Trees - Clearing														660.0	39.5		0.6		See Note 1, No Herb. Treatment item.
MP 83.4 to MP 83.56	EB	Trees - Clearing and Grubbing														680.0	35.0		0.5		
MP 86.71 to MP 86.77	WB	Trees - Clearing														300.0	32.0		0.2		See Note 1, No Herb. Treatment item.
MP 87.24 to MP 87.34	WB	Trees - Clearing														517.0	52.0		0.6		See Note 1, No Herb. Treatment item.
MP 78.31 to MP 78.33, MP 78.42 to MP 78.44, MP 87.43, MP 87.472, MP 87.525	WB	Trees - Clearing	8	2	4	2	1	1										32.5			See Note 1, No Herb. Treatment item.
Totals Division 1 - Rural Muscatine County																		32.5	4.1		

Note 1: Wetland Locations, Clear only and leave cut stumps. No herbicide treatment.

100-23
MODIFIED

ROCK EROSION CONTROL

Refer to EC-301

Location						Rock Erosion Control (REC)					Material Bid Quantities			
Road Identification	Begin Station	End Station	Side	L	W	Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone	Class D Revetment	Eng. Fabric	Remarks
			Lt./Rt.	FT	FT						TON	TON	SY	
Division 1 - Rural Muscatine County														
IA 22, along Wyoming Hill	MP 78.31	MP 78.33	Rt.	10	100							480.0	115.6	
IA 22, along Wyoming Hill	MP 78.42	MP 78.43	Rt.	30	30							432.0	113.3	
IA 22, along Wyoming Hill	MP 78.43	MP 78.44	Rt.	100	45							2160.0	544.4	
IA 22, along Wyoming Hill	MP 78.894	MP 78.895	Rt.	25	25							300.0	80.6	
IA 22, West of Trolley Ave. to drive	MP 78.8		Lt.	85	14							571.2	170.0	See Note 1
IA 22, West of Trolley Ave. to drive	MP 78.8		Lt.	65	12							374.4	115.6	See Note 1
Division 1 - Rural Muscatine County Totals												4317.6	1139.4	
						Note 1: See Sheet B.16 for additional information.								

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks
Division 1 - Rural Muscatine County		
MP 78.8	36" X 36' CMP	See Tab 3R-CULV and Sheet B.16 for more informaion.

3R-CULV
Special

DRAINAGE STRUCTURE REPAIR WORK

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

No.	Location	Size	Kind Of Pipe (1)	Length New Const. Lin. Ft. Lt.	Length New Const. Lin. Ft. Rt.	Connected Pipe Joint* (DR-121, DR-122)	New Apron Each Lt.	New Apron Each Rt.	Flow Line Elevations Lt.	Flow Line Elevations Rt.	Remove and Reinstall Pipe Culvert Linear Feet Left Side ≤ 36"	Remove and Reinstall Pipe Culvert Linear Feet Left Side >36"	Remove and Reinstall Pipe Culvert Linear Feet Right Side ≤ 36"	Remove and Reinstall Pipe Culvert Linear Feet Right Side >36"	Remove and Reinstall Apron Each Left Side ≤ 36"	Remove and Reinstall Apron Each Left Side >36"	Remove and Reinstall Apron Each Right Side ≤ 36"	Remove and Reinstall Apron Each Right Side >36"	Class 20 Excavation CY Lt.	Class 20 Excavation CY Rt.	Granular Backfill TON Lt.	Granular Backfill TON Rt.	Embankment In-Place CY Lt.	Embankment In-Place CY Rt.	Erosion Stone TON Lt.	Erosion Stone TON Rt.	Reshaping Ditch Std Rd. Plan EW-105 STA Lt.	Reshaping Ditch Std Rd. Plan EW-105 STA Rt.	Remarks
		IN		Lt.	Rt.	Type	Lt.	Rt.	Lt.	Rt.									Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	
Division 1 - Rural Muscatine Co.																													
1	MP 78.8	36	CMP																32.0				32.0						Remove 36" X 36' pipe, See Tab 100-23, 110-2 and and Sheet B.16 for additional information.
2	MP 78.8	18	CMP								63								14.0		23.6								Remove and replace 18" X 63' pipe, see Sheet B.16 for additional information.
	MP 78.8																										0.80		80 ft. ditch/swale reshaping, see Sheet B.16 for additional information.
Division 1 Rural Muscatine Co. Totals											63								46.0		23.6		32.0				0.80		

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	
	70	22	1	74.21	84.5	1986		FN-22-4(36)--21-70	BAC	1.5	TBB	1.5					MOSCOW	C.LST.			
						1970		FN-22-4(10)--21-70	AAC	1	AAC	2					MOSCOW				
						1964		FN-221	AAC	2							MOSCOW	C.LST.			
						1930		P-481	PC7	7							LINWOOD	C.LST.	I		MUCATINE GR.=3
	70	22	1	84.5	85.6	1996		STPN-22-4(61)--2J-70	PCC	7	GSB	10					MOSCOW	CONC.ST			
	70	22	1	85.6	87.27	1986		FN-22-4(36)--21-70	BAC	1.5	TBB	1.5					MOSCOW	C.LST.			
						1970		FN-22-4(10)--21-70	AAC	1	AAC	2					MOSCOW				
						1964		FN-221	AAC	2							MOSCOW	C.LST.			
						1930		P-481	PC7	7							LINWOOD	C.LST.	I		MUCATINE GR.=3
	82	22	1	87.27	89.09	1986		FN-22-4(36)--21-82	BAC	1.5	TBB	1.5					MOSCOW	C.LST.			
						1970		FN-22-5(7)--21-82	AAC	1	AAC	2					MOSCOW	C.LST.			
						1926		FA-221	PCC	8							LINWOOD	C.LST.	I		

EXISTING HMA PAVEMENT FOR RECYCLING

For informational purposes only. When designed RAP is specified, process the RAP to control the uniformity of the final mixture.

Route No.	Location	Year Placed	Layer	Thickness	Asphalt Binder		Mix									
					Grade	Content	Description	Quality Type	Size	Content	% of -4 that is Type 2	% of +4 that is Type 2	% of +4 that is Type 3	% of +4 that is Type 4	% Crushed	% Limestone

FULL-DEPTH PATCHES (REPAIR)

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.	
Begin Division 3 - Urban City of Muscatine, Muscatine County																				
1		MP 74.368	R	7.0	12.0		9.3													
1		MP 74.833	R	60.0	12.0		80.0									2	3			
End Division 3 - Urban City of Muscatine, Muscatine County																				
Begin Division 1 - Rural Muscatine County																				
1		MP 74.884	R	27.0	12.0		36.0									1				
1		MP 74.990	R	25.0	12.0		33.3									1				
1		MP 74.990	L	25.0	12.0		33.3									1				
1		MP 75.320	R	30.0	12.0		40.0									1	1			
1		MP 75.787	R	6.0	12.0		8.0													
1		MP 76.025	L	8.0	12.0		10.7													
1		MP 76.318	R	8.0	12.0		10.7													
1		MP 76.405	L	6.0	12.0		8.0													
1		MP 76.405	R	6.0	12.0		8.0													
1		MP 76.425	L	6.0	12.0		8.0													
1		MP 76.425	R	6.0	12.0		8.0													
1		MP 76.447	L	6.0	12.0		8.0													
1		MP 76.447	R	6.0	12.0		8.0													
1		MP 76.451	R	6.0	12.0		8.0													
1		MP 76.455	L	6.0	12.0		8.0													
1		MP 76.477	L	6.0	12.0		8.0													
1		MP 76.489	L	6.0	12.0		8.0													
1		MP 76.489	R	6.0	12.0		8.0													
1		MP 76.492	L	6.0	12.0		8.0													
1		MP 76.492	R	6.0	12.0		8.0													
1		MP 76.496	L	6.0	12.0		8.0													
1		MP 76.496	R	6.0	12.0		8.0													
1		MP 76.500	L	6.0	12.0		8.0													
1		MP 76.500	R	6.0	12.0		8.0													
1		MP 77.273	L	8.0	12.0		10.7													
1		MP 77.431	L	10.0	12.0		13.3													
1		MP 77.444	R	10.0	12.0		13.3													
1		MP 77.521	L	20.0	12.0		26.7										1			
1		MP 77.521	R	20.0	12.0		26.7										1			
1		MP 79.780	L	10.0	12.0		13.3													
1		MP 79.807	L	8.0	12.0		10.7													
1		MP 79.807	R	8.0	12.0		10.7													
1		MP 79.836	L	8.0	12.0		10.7													
1		MP 80.221	L	6.0	12.0		8.0													
1		MP 81.209	L	6.0	12.0		8.0													
1		MP 81.209	R	6.0	12.0		8.0													
1		MP 81.246	L	6.0	12.0		8.0													
1		MP 81.246	R	6.0	12.0		8.0													
1		MP 81.312	L	6.0	12.0		8.0													
1		MP 81.743	L	10.0	12.0		13.3													
1		MP 81.795	L	20.0	12.0		26.7										1			
1		MP 81.795	R	20.0	12.0		26.7										1			
1		MP 82.133	L	6.0	12.0		8.0													
1		MP 82.133	R	6.0	12.0		8.0													
1		MP 82.334	L	10.0	12.0		13.3													
1		MP 82.334	R	10.0	12.0		13.3													
1		MP 82.408	L	8.0	12.0		10.7													
1		MP 82.408	R	8.0	12.0		10.7													
1		MP 82.467	L	12.0	12.0		16.0													
1		MP 82.467	R	8.0	12.0		10.7													
1		MP 82.766	L	20.0	12.0		26.7										1			
1		MP 82.766	R	20.0	12.0		26.7										1			
1		MP 82.895	R	6.0	12.0		8.0													
1		MP 82.938	L	6.0	12.0		8.0													
1		MP 83.111	L	6.0	12.0		8.0													
1		MP 83.111	R	6.0	12.0		8.0													
1		MP 83.122	R	6.0	12.0		8.0													
1		MP 83.126	L	6.0	12.0		8.0													
1		MP 83.138	L	6.0	12.0		8.0													
1		MP 83.138	R	6.0	12.0		8.0													
1		MP 83.143	L	6.0	12.0		8.0													
1		MP 83.145	L	20.0	6.0		13.3										1			
1		MP 83.209	R	6.0	12.0		8.0													
1		MP 83.210	R	6.0	12.0		8.0													
1		MP 83.224	R	10.0	12.0		13.3													
1		MP 83.232	R	10.0	12.0		13.3													
1		MP 83.262	R	6.0	12.0		8.0													
1		MP 83.270	R	20.0	12.0		26.7										1			
1		MP 83.278	R	6.0	12.0		8.0													
1		MP 83.281	R	8.0	12.0		10.7													
1		MP 83.285	L	6.0	12.0		8.0													
1		MP 83.287	L	6.0	12.0		8.0													
1		MP 83.291	L	8.0	12.0		10.7													
1		MP 83.293	L	6.0	12.0		8.0													

FULL-DEPTH PATCHES (REPAIR)

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

Location				Dimension			PCC Patches													
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
1		MP 83.388	L	6.0	12.0		8.0													
1		MP 83.388	R	6.0	12.0		8.0													
1		MP 83.492	R	6.0	12.0		8.0													
1		MP 83.680	L	6.0	12.0		8.0													
1		MP 83.680	R	6.0	12.0		8.0													
1		MP 83.734	L	20.0	12.0		26.7										1			
1		MP 83.772	L	6.0	12.0		8.0													
1		MP 83.782	R	6.0	12.0		8.0													
1		MP 83.904	L	6.0	12.0		8.0													
1		MP 83.904	R	6.0	12.0		8.0													
1		MP 83.979	L	6.0	12.0		8.0													
1		MP 83.979	R	6.0	12.0		8.0													
1		MP 84.012	R	8.0	12.0		10.7													
1		MP 84.319	L	6.0	12.0		8.0													
1		MP 84.319	R	6.0	12.0		8.0													
1		MP 84.400	L	8.0	12.0		10.7													
1		MP 84.408	R	6.0	12.0		8.0													
1		MP 84.447	L	11.0	12.0		14.7													
1		MP 84.447	R	9.0	12.0		12.0													
1		MP 84.552	R	40.0	12.0		53.3									1	2			
1		MP 84.572	L	31.0	12.0		41.3									1				
1		MP 85.496	L	6.0	12.0		8.0													
1		MP 85.496	R	6.0	12.0		8.0													
1		MP 85.559	L	6.0	12.0		8.0													
1		MP 85.559	R	6.0	12.0		8.0													
1		MP 85.680	R	6.0	12.0		8.0													
1		MP 85.759	L	8.0	12.0		10.7													
1		MP 85.865	L	45.0	12.0		60.0									2	1			
1		MP 85.865	R	45.0	12.0		60.0									2	1			
1		MP 85.913	L	6.0	12.0		8.0													
1		MP 85.963	R	15.0	12.0		20.0													
1		MP 86.002	R	12.0	12.0		16.0													
1		MP 86.650	L	6.0	12.0		8.0													
End Division 1 - Rural Muscatine County																				
Begin Division 4 - Urban City of Buffalo, Scott County																				
1		MP 86.002	R	12.0	12.0		16.0													
1		MP 86.650	L	6.0	12.0		8.0													
End Division 1 - Rural Muscatine County																				
Begin Division 4 - Urban City of Buffalo, Scott County																				
1		MP 87.319	L	12.0	12.0		16.0													
1		MP 87.405	L	6.0	12.0		8.0													
1		MP 87.405	R	6.0	12.0		8.0													
1		MP 87.431	L	7.0	12.0		9.3													
1		MP 87.431	R	7.0	12.0		9.3													
1		MP 87.503	L	30.0	12.0		40.0									1				
1		MP 87.679	R	6.0	12.0		8.0													
1		MP 87.699	L	10.0	12.0		13.3													
1		MP 87.699	R	6.0	12.0		8.0													
1		MP 87.799	L	8.0	12.0		10.7													
1		MP 87.799	R	8.0	12.0		10.7													
1		MP 87.815	L	8.0	12.0		10.7													
1		MP 87.815	R	8.0	12.0		10.7													
1		MP 87.831	L	10.0	12.0		13.3													
1		MP 87.831	R	10.0	12.0		13.3													
1		MP 87.851	L	8.0	12.0		10.7													
1		MP 87.851	R	8.0	12.0		10.7													
1		MP 87.963	L	8.0	12.0		10.7													
1		MP 87.963	R	8.0	12.0		10.7													
1		MP 88.075	R	6.0	12.0		8.0													
1		MP 88.240	L	12.0	12.0		16.0													
1		MP 88.240	R	8.0	12.0		10.7													
1		MP 88.428	L	10.0	12.0		13.3													
1		MP 88.428	R	10.0	12.0		13.3													
1		MP 88.631	R	6.0	12.0		8.0													
1		MP 88.646	L	6.0	12.0		8.0													
1		MP 88.646	R	10.0	12.0		13.3													
End Division 4 - Urban City of Buffalo, Scott County																				
107	Totals Division 1 - Rural Muscatine County						1423.0									10	14			
2	Totals Division 3 - Urban City of Muscatine, Muscatine County						89.3									2	3			
27	Totals Division 4 - Urban City of Buffalo, Scott County						322.7									1				

FULL-DEPTH PATCHES (FINISH)

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.	
Begin Division 1 - Rural Muscatine County																				
1		MP 76.500	L	10.0	12.0		13.3							13.3				1		
1		MP 76.500	R	10.0	12.0		13.3							13.3				1		
1		MP 76.551	L	10.0	12.0		13.3							13.3				1		
1		MP 76.551	R	10.0	12.0		13.3							13.3				1		
1		MP 77.114	L	10.0	12.0		13.3							13.3				1		
1		MP 77.114	R	10.0	12.0		13.3							13.3				1		
1		MP 77.153	L	10.0	12.0		13.3							13.3				1		
1		MP 77.153	R	10.0	12.0		13.3							13.3				1		
1		MP 77.635	R	6.0	12.0		8.0													
1		MP 77.65	R	6.0	12.0		8.0													
1		MP 77.665	R	20.0	6.0		13.3										1			
1		MP 77.750	L	10.0	12.0		13.3							13.3				1		
1		MP 77.750	R	10.0	12.0		13.3							13.3				1		
1		MP 77.809	L	10.0	12.0		13.3							13.3				1		
1		MP 77.809	R	10.0	12.0		13.3							13.3				1		
1		MP 77.847	L	6.0	12.0		8.0													
1		MP 77.847	R	6.0	12.0		8.0													
1		MP 77.855	R	10.0	12.0		13.3													
1		MP 77.866	L	6.0	12.0		8.0													
1		MP 77.866	R	15.0	6.0		10.0													
1		MP 77.871	R	6.0	12.0		8.0													
1		MP 77.874	R	6.0	12.0		8.0													
1		MP 77.878	L	30.0	12.0		40.0									1	1			
1		MP 77.878	R	6.0	12.0		8.0													
1		MP 77.885	L	15.0	12.0		20.0													
1		MP 77.885	R	8.0	6.0		5.3													
1		MP 77.855	R	6.0	12.0		8.0													
1		MP 77.889	R	6.0	12.0		8.0													
1		MP 77.893	L	6.0	12.0		8.0													
1		MP 77.906	L	30.0	6.0		20.0									1	1			
1		MP 77.906	R	8.0	4.0		3.6													
1		MP 77.914	R	12.0	6.0		8.0													
1		MP 77.929	R	10.0	12.0		13.3													
1		MP 77.954	L	6.0	12.0		8.0													
1		MP 77.954	R	6.0	12.0		8.0													
1		MP 77.958	R	14.0	6.0		9.3													
1		MP 77.958	R	6.0	12.0		8.0													
1		MP 77.981	L	6.0	12.0		8.0													
1		MP 77.981	R	6.0	12.0		8.0													
1		MP 77.996	L	20.0	12.0		26.7										1			
1		MP 77.996	R	20.0	12.0		26.7										1			
1		MP 78.198	R	6.0	12.0		8.0													
1		MP 78.250	L	8.0	12.0		10.7													
1		MP 78.297	L	6.0	12.0		8.0													
1		MP 78.297	R	6.0	12.0		8.0													
1		MP 78.300	L	20.0	4.0		8.9										1			
1		MP 78.300	R	6.0	12.0		8.0													
1		MP 78.323	R	6.0	12.0		8.0													
1		MP 78.365	L	6.0	12.0		8.0													
1		MP 78.365	L	25.0	6.0		16.7									1				
1		MP 78.379	L	6.0	12.0		8.0													
1		MP 78.379	R	6.0	12.0		8.0													
1		MP 78.395	L	42.0	12.0		56.0									2	1			
1		MP 78.401	L	6.0	12.0		8.0													
1		MP 78.405	L	6.0	12.0		8.0													
1		MP 78.455	L	120.0	12.0		160.0									5	6			
1		MP 78.568	R	30.0	12.0		40.0									1				
1		MP 78.574	L	10.0	5.0		5.6													
1		MP 78.623	R	10.0	12.0		13.3													
1		MP 78.802	L	20.0	12.0		26.7										1			
1		MP 78.802	R	6.0	12.0		8.0													
1		MP 78.824	L	6.0	12.0		8.0													
1		MP 78.824	R	6.0	12.0		8.0													
1		MP 78.828	L	6.0	12.0		8.0													
1		MP 78.828	R	6.0	12.0		8.0													
1		MP 78.832	L	20.0	12.0		26.7										1			
1		MP 78.832	R	20.0	12.0		26.7										1			
1		MP 83.131	L	10.0	12.0		13.3							13.3				1		
1		MP 83.131	R	10.0	12.0		13.3							13.3				1		
1		MP 83.193	L	10.0	12.0		13.3							13.3				1		
1		MP 83.193	R	10.0	12.0		13.3							13.3				1		
1		MP 84.866	L	10.0	12.0		13.3							13.3				1		
1		MP 84.866	R	10.0	12.0		13.3							13.3				1		
1		MP 84.927	L	10.0	12.0		13.3							13.3				1		
1		MP 84.927	R	10.0	12.0		13.3							13.3				1		
1		MP 86.684	L	10.0	12.0		13.3							13.3				1		
1		MP 86.684	R	10.0	12.0		13.3							13.3				1		

FULL-DEPTH PATCHES (FINISH)

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

Location				Dimension			PCC Patches												
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
1		MP 86.738	L	10.0	12.0		13.3							13.3				1		
1		MP 86.738	R	10.0	12.0		13.3							13.3				1		
End Division 1 - Rural Muscatine County																				
79	Totals Division 1 - Rural Muscatine County						1168.0							319.2		11	16	24		

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location					Depth	Longitudinal Subdrain (DR-303)								Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
Line No.	Road or Lane Identification	Station to Station		Side	D	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)				DR-303, DR-305 or DR-306				
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length		Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT				CY	CY	
Begine Division 1 - Rural Muscatine																		
1	WBL	5096+00.00	5101+00.00		48.0	4.0	560.0							5096+00.00	DR-306	60.5		
														5101+00.00	DR-306			
2	WBL	5101+00.00	5105+00.00		48.0	4.0	460.0							5101+00.00	DR-306	49.7		
														5105+00.00	DR-306			
3	WBL	5105+00.00	5110+00.00		48.0	4.0	560.0							5105+00.00	DR-306	60.5		
														5110+00.00	DR-306			
4	WBL	5110+00.00	5115+00.00		48.0	4.0	560.0							5110+00.00	DR-306	60.5		
														5115+00.00	DR-306			
5	WBL	5115+00.00	5120+00.00		48.0	4.0	560.0							5115+00.00	DR-306	60.5		
														5120+00.00	DR-306			
6	WBL	5121+00.00	5126+00.00		48.0	4.0	560.0							5121+00.00	DR-306	60.5		
														5126+00.00	DR-306			
7	WBL	5125+00.00	5130+00.00		48.0	4.0	560.0							5125+00.00	DR-306	60.5		
														5130+00.00	DR-306			
8	WBL	5130+00.00	5133+00.00		48.0	4.0	360.0							5130+00.00	DR-306	38.9		
														5133+00.00	DR-306			
9	WBL	5139+35.00	5144+35.00		48.0	4.0	560.0							5139+35.00	DR-306	60.5		
														5144+35.00	DR-306			
10	WBL	5144+35.00	5149+00.00		48.0	4.0	525.0							5144+35.00	DR-306	56.7		
														5149+00.00	DR-306			
11	WBL	5150+05.00	5155+00.00		48.0	4.0	30.0							5155+00.00	DR-306	3.2		Add outlet to existing subdrain
12	WBL	5155+00.00	5160+00.00		48.0	4.0	60.0							5155+00.00	DR-306	6.5		Add outlet to existing subdrain
														5160+00.00	DR-306			Add outlet to existing subdrain
13	WBL	5160+00.00	5163+75.00		48.0	4.0	60.0							5160+00.00	DR-306	6.5		Add outlet to existing subdrain
														5163+75.00	DR-306			Add outlet to existing subdrain
14	WBL	5163+75.00	5167+50.00		48.0	4.0	60.0							5163+75.00	DR-306	6.5		Add outlet to existing subdrain
														5167+50.00	DR-306			Replace existing outlet
15	WBL	5167+50.00	5169+46.00		48.0	4.0	256.0							5167+50.00	DR-306	27.7		
														5169+46.00	DR-306			
16	WBL	5171+36.00	5176+36.00		48.0	4.0	560.0							5171+36.00	DR-306	60.5		
														5176+36.00	DR-306			
17	WBL	5176+36.00	5181+20.00		48.0	4.0	544.0							5176+36.00	DR-306	58.8		
														5181+20.00	DR-306			
18	WBL	5181+20.00	5185+90.00		48.0	4.0	60.0							5181+20.00	DR-306	6.5		Add outlet to existing subdrain
														5185+90.00	DR-306			Add outlet to existing subdrain
19	WBL	5185+90.00	5190+60.00		48.0	4.0	60.0							5185+90.00	DR-306	6.5		Add outlet to existing subdrain
														5190+60.00	DR-306			Replace existing outlet
20	WBL	5190+60.00	5195+00.00		48.0	4.0	500.0							5190+60.00	DR-306	54.0		
														5195+00.00	DR-306			
21	WBL	5195+00.00	5199+40.00		48.0	4.0	500.0							5195+00.00	DR-306	54.0		
														5199+40.00	DR-306			
22	WBL	5199+40.00	5203+00.00		48.0	4.0	420.0							5199+40.00	DR-306	45.4		
														5203+00.00	DR-306			
23	EBL	5205+90.00	5210+90.00		36.0	4.0	560.0							5205+90.00	DR-306	43.2		
														5210+90.00	DR-306			
24	EBL	5210+90.00	5215+98.00		36.0	4.0	559.6							5210+90.00	DR-306	43.2		
														5215+98.00	DR-306			
	Equation:	5213+56.00	Back															
		5213+64.41	Ahead															
25	EBL	5215+98.00	5219+00.00		36.0	4.0	362.0							5215+98.00	DR-306	27.9		
														5219+00.00	DR-306			
26	EBL	5219+00.00	5222+00.00		36.0	4.0	360.0							5219+00.00	DR-306	27.8		
														5222+00.00	DR-306			
27	WBL	5222+00.00	5224+00.00		36.0	4.0	30.0							5224+00.00	DR-306	2.3		Add outlet to existing subdrain
28	EBL	5224+00.00	5228+00.00		36.0	4.0	460.0							5224+00.00	DR-306	35.5		
														5228+00.00	DR-306			
29	EBL	5228+00.00	5232+00.00		36.0	4.0	460.0							5228+00.00	DR-306	35.5		
														5232+00.00	DR-306			
30	EBL	5232+00.00	5236+00.00		36.0	4.0	460.0							5232+00.00	DR-306	35.5		
														5236+00.00	DR-306			
31	EBL	5236+00.00	5240+00.00		36.0	4.0	460.0							5236+00.00	DR-306	35.5		
														5240+00.00	DR-306			
32	EBL	5240+00.00	5243+25.00		36.0	4.0	385.0							5240+00.00	DR-306	29.7		Relace existing outlet
														5243+25.00	DR-306			
33	EBL	5243+25.00	5246+48.00		36.0	4.0	383.0							5243+25.00	DR-306	29.6		
														5246+48.00	DR-306			Relace existing outlet
34	EBL	5246+48.00	5251+32.00		36.0	4.0	544.0							5246+48.00	DR-306	42.0		
														5251+32.00	DR-306			
35	EBL	5251+32.00	5256+16.00		36.0	4.0	544.0							5251+32.00	DR-306	42.0		
														5256+16.00	DR-306			
36	EBL	5256+16.00	5261+00.00		36.0	4.0	544.0							5256+16.00	DR-306	42.0		
														5261+00.00	DR-306			

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location						Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
Line No.	Road or Lane Identification	Station to Station		Side	Depth (D)	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306				
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT			CY	CY	
37	WBL	5261+00.00	5262+00.00		36.0	4.0	30.0						5261+00.00	DR-306	2.3		Add outlet to existing subdrain
38	WBL	5264+00.00	5268+20.00		48.0	4.0	30.0						5268+20.00	DR-306	3.2		Add outlet to existing subdrain
39	WBL	5268+20.00	5272+40.00		48.0	4.0	60.0						5268+20.00	DR-306	6.5		Add outlet to existing subdrain
													5272+40.00	DR-306			Add outlet to existing subdrain
40	WBL	5272+40.00	5276+60.00		48.0	4.0	60.0						5272+40.00	DR-306	6.5		Add outlet to existing subdrain
													5276+60.00	DR-306			Replace existing outlet
41	WBL	5276+60.00	5280+30.00		48.0	4.0	60.0						5276+60.00	DR-306	6.5		Add outlet to existing subdrain
													5280+30.00	DR-306			Add outlet to existing subdrain
42	WBL	5280+30.00	5284+00.00		48.0	4.0	60.0						5280+30.00	DR-306	6.5		Add outlet to existing subdrain
													5284+00.00	DR-306			Replace existing outlet
43	WBL	5284+00.00	5287+50.00		48.0	4.0	410.0						5284+00.00	DR-306	44.3		
													5287+50.00	DR-306			
44	WBL	5287+50.00	5292+50.00		48.0	4.0	560.0						5287+50.00	DR-306	60.5		
													5292+50.00	DR-306			
45	WBL	5292+50.00	5295+70.00		48.0	4.0	380.0						5292+50.00	DR-306	41.0		
													5295+70.00	DR-306			
46	WBL	5296+70.00	5300+10.00		48.0	4.0	400.0						5296+70.00	DR-306	43.2		
													5300+10.00	DR-306			
47	WBL	5300+10.00	5303+50.00		48.0	4.0	400.0						5300+10.00	DR-306	43.2		
													5303+50.00	DR-306			
48	WBL	5304+20.00	5306+00.00		48.0	4.0	240.0						5304+20.00	DR-306	25.9		
													5306+00.00	DR-306			
49	WBL	5307+00.00	5310+50.00		48.0	4.0	410.0						5307+00.00	DR-306	44.3		
													5310+50.00	DR-306			
50	WBL	5310+50.00	5314+95.00		48.0	4.0	60.0						5310+50.00	DR-306	6.5		Replace existing outlet
													5314+95.00	DR-306			Add outlet to existing subdrain
51	WBL	5314+95.00	5319+40.00		48.0	4.0	60.0						5314+95.00	DR-306	6.5		Add outlet to existing subdrain
													5319+40.00	DR-306			Add outlet to existing subdrain
52	WBL	5319+40.00	5323+85.00		48.0	4.0	60.0						5319+40.00	DR-306	6.5		Add outlet to existing subdrain
													5323+85.00	DR-306			Replace existing outlet
53	WBL	5323+85.00	5328+85.00		48.0	4.0	560.0						5323+85.00	DR-306	60.5		
													5328+85.00	DR-306			
54	WBL	5328+85.00	5333+85.00		48.0	4.0	560.0						5328+85.00	DR-306	60.5		
													5333+85.00	DR-306			
55	WBL	5333+85.00	5338+85.00		48.0	4.0	560.0						5333+85.00	DR-306	60.5		
													5338+85.00	DR-306			
56	WBL	5338+85.00	5343+85.00		48.0	4.0	560.0						5338+85.00	DR-306	60.5		
													5343+85.00	DR-306			
57	WBL	5343+85.00	5348+00.00		48.0	4.0	475.0						5343+85.00	DR-306	51.3		
													5348+00.00	DR-306			
58	WBL	5348+00.00	5353+00.00		48.0	4.0	560.0						5348+00.00	DR-306	60.5		
													5353+00.00	DR-306			
59	WBL	5353+00.00	5356+28.00		48.0	4.0	388.0						5353+00.00	DR-306	41.9		
													5356+28.00	DR-306			
60	WBL	5356+28.00	5359+17.00		48.0	4.0	60.0						5356+28.00	DR-306	6.5		Replace existing outlet
													5359+17.00	DR-306			Add outlet to existing subdrain
	Equation:	5357+22.50	Back														
		5357+27.80	Ahead														
61	WBL	5359+17.00	5362+00.00		48.0	4.0	60.0						5359+17.00	DR-306	6.5		Add outlet to existing subdrain
													5362+00.00	DR-306			Add outlet to existing subdrain
62	WBL	5362+00.00	5365+90.00		48.0	4.0	30.0						5362+00.00	DR-306	3.2		Replace existing outlet
63	WBL	5366+00.00	5371+00.00		48.0	4.0	30.0						5371+00.00	DR-306	3.2		Add outlet to existing subdrain
64	WBL	5371+00.00	5376+00.00		48.0	4.0	60.0						5371+00.00	DR-306	6.5		Add outlet to existing subdrain
													5376+00.00	DR-306			Add outlet to existing subdrain
65	WBL	5376+00.00	5381+00.00		48.0	4.0	60.0						5376+00.00	DR-306	6.5		Add outlet to existing subdrain
													5381+00.00	DR-306			Add outlet to existing subdrain
66	WBL	5381+00.00	5385+15.00		48.0	4.0	30.0						5381+00.00	DR-306	3.2		Add outlet to existing subdrain
67	WBL	5387+75.00	5391+37.00		48.0	4.0	30.0						5391+37.00	DR-306	3.2		Add outlet to existing subdrain
68	WBL	5391+37.00	5395+00.00		48.0	4.0	60.0						5391+37.00	DR-306	6.5		Add outlet to existing subdrain
													5395+00.00	DR-306			Add outlet to existing subdrain
69	WBL	5395+00.00	5400+00.00		48.0	4.0	560.0						5395+00.00	DR-306	60.5		
													5400+00.00	DR-306			
70	WBL	5400+00.00	5405+00.00		48.0	4.0	560.0						5400+00.00	DR-306	60.5		
													5405+00.00	DR-306			
71	WBL	5405+00.00	5410+00.00		48.0	4.0	560.0						5405+00.00	DR-306	60.5		
													5410+00.00	DR-306			
72	WBL	5410+00.00	5415+00.00		48.0	4.0	560.0						5410+00.00	DR-306	60.5		
													5415+00.00	DR-306			
73	WBL	5415+00.00	5420+00.00		48.0	4.0	560.0						5415+00.00	DR-306	60.5		
													5420+00.00	DR-306			

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location					Depth	Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
Line No.	Road or Lane Identification	Station to Station		Side	D	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306				
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT			CY	CY	
74	WBL	5420+00.00	5423+00.00		48.0	4.0	360.0						5420+00.00	DR-306	38.9		
													5423+00.00	DR-306			
75	EBL	5423+00.00	5427+75.00		48.0	4.0	535.0						5423+00.00	DR-306	57.8		
													5427+75.00	DR-306			
76	EBL	5427+75.00	5432+50.00		48.0	4.0	535.0						5427+75.00	DR-306	57.8		
													5432+50.00	DR-306			
77	EBL	5432+50.00	5432+96.00		48.0	4.0	30.0						5432+50.00	DR-306	3.2		Add outlet to existing subdrain
78	EBL	5433+46.00	5434+35.00		48.0	4.0	30.0						5434+35.00	DR-306	3.2		Add outlet to existing subdrain
79	EBL	5434+35.00	5439+00.00		48.0	4.0	525.0						5434+35.00	DR-306	56.7		
													5439+00.00	DR-306			
80	EBL	5439+00.00	5444+00.00		48.0	4.0	560.0						5439+00.00	DR-306	60.5		
													5444+00.00	DR-306			
81	EBL	5444+00.00	5449+00.00		48.0	4.0	560.0						5444+00.00	DR-306	60.5		
													5449+00.00	DR-306			
82	EBL	5449+00.00	5454+00.00		48.0	4.0	560.0						5449+00.00	DR-306	60.5		
													5454+00.00	DR-306			
83	EBL	5454+00.00	5459+00.00		48.0	4.0	560.0						5454+00.00	DR-306	60.5		
													5459+00.00	DR-306			
84	EBL	5459+00.00	5464+00.00		48.0	4.0	560.0						5459+00.00	DR-306	60.5		
													5464+00.00	DR-306			
85	EBL	5464+00.00	5469+00.00		48.0	4.0	560.0						5464+00.00	DR-306	60.5		
													5469+00.00	DR-306			
86	EBL	5469+00.00	5474+00.00		48.0	4.0	560.0						5469+00.00	DR-306	60.5		
													5474+00.00	DR-306			
87	EBL	5474+00.00	5479+00.00		48.0	4.0	560.0						5474+00.00	DR-306	60.5		
													5479+00.00	DR-306			
88	EBL	5479+00.00	5484+00.00		48.0	4.0	560.0						5479+00.00	DR-306	60.5		
													5484+00.00	DR-306			
89	EBL	5484+00.00	5487+45.00		48.0	4.0	405.0						5484+00.00	DR-306	43.8		
													5487+45.00	DR-306			
90	EBL	5490+70.00	5495+70.00		48.0	4.0	560.0						5490+70.00	DR-306	60.5		
													5495+70.00	DR-306			
91	EBL	5495+70.00	5500+70.00		48.0	4.0	560.0						5495+70.00	DR-306	60.5		
													5500+70.00	DR-306			
92	EBL	5500+70.00	5505+70.00		48.0	4.0	560.0						5500+70.00	DR-306	60.5		
													5505+70.00	DR-306			
93	EBL	5505+70.00	5510+40.00		48.0	4.0	530.0						5505+70.00	DR-306	57.3		
													5510+40.00	DR-306			
94	EBL	5511+00.00	5513+52.00		48.0	4.0	312.0						5511+00.00	DR-306	33.7		
													5513+52.00	DR-306			
95	EBL	5513+52.00	5514+52.00		48.0	4.0	30.0						5513+52.00	DR-306	3.2		Add outlet to existing subdrain
96	EBL	5514+70.00	5515+70.00		48.0	4.0	160.0						5515+70.00	DR-306	17.3		Add outlet to existing subdrain
97	EBL	5515+70.00	5520+00.00		48.0	4.0	490.0						5515+70.00	DR-306	52.9		
													5520+00.00	DR-306			
98	EBL	5520+00.00	5525+00.00		48.0	4.0	560.0						5520+00.00	DR-306	60.5		
													5525+00.00	DR-306			
99	EBL	5525+00.00	5527+60.00		48.0	4.0	320.0						5525+00.00	DR-306	34.6		
													5527+60.00	DR-306			
100	EBL	5528+20.00	5532+00.00		48.0	4.0	440.0						5528+20.00	DR-306	47.5		
													5532+00.00	DR-306			
101	EBL	5532+00.00	5537+00.00		48.0	4.0	560.0						5532+00.00	DR-306	60.5		
													5537+00.00	DR-306			
102	EBL	5537+00.00	5542+00.00		48.0	4.0	560.0						5537+00.00	DR-306	60.5		
													5542+00.00	DR-306			
103	EBL	5542+00.00	5547+00.00		48.0	4.0	560.0						5542+00.00	DR-306	60.5		
													5547+00.00	DR-306			
104	EBL	5547+00.00	5549+40.00		48.0	4.0	300.0						5547+00.00	DR-306	32.4		
													5549+40.00	DR-306			
105	EBL	5549+40.00	5550+40.00		48.0	4.0	30.0						5549+40.00	DR-306	3.2		Add outlet to existing subdrain
106	EBL	5550+60.00	5551+50.00		48.0	4.0	30.0						5551+50.00	DR-306	3.2		Add outlet to existing subdrain
107	EBL	5551+50.00	5554+50.00		48.0	4.0	360.0						5551+50.00	DR-306	38.9		
													5554+50.00	DR-306			
	Equation:	5554+65.00	Back														
		5554+67.18	Ahead														
108	WBL	5614+00.00	5618+20.00		42.0	4.0	30.0						5618+20.00	DR-306	2.8		Replace existing outlet
109	WBL	5618+20.00	5619+10.00		42.0	4.0	560.3						5618+20.00	DR-306	51.9		
													5619+10.00	DR-306			
110	Equation:	5618+25.34	Back														

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location					Longitudinal Subdrain (DR-303)							Subdrain Outlet				
Line No.	Road or Lane Identification	Station to Station		Side	Depth D	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306		Porous* Backfill	Class "A"* Crushed Stone	Remarks
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT			CY	CY	
		5614+15.00	Ahead														
111	WBL	5619+10.00	5624+00.00		42.0	4.0	550.0						5619+10.00	DR-306	50.9		
													5624+00.00	DR-306			
112	WBL	5624+00.00	5629+00.00		42.0	4.0	560.0						5624+00.00	DR-306	51.9		
													5629+00.00	DR-306			
113	WBL	5629+00.00	5633+00.00		42.0	4.0	460.0						5629+00.00	DR-306	42.6		
													5633+00.00	DR-306			
114	EBL	5633+00.00	5636+40.00		42.0	4.0	400.0						5633+00.00	DR-306	37.0		
													5636+40.00	DR-306			
115	EBL	5637+30.00	5641+50.00		36.0	4.0	480.0						5637+30.00	DR-306	37.0		
													5641+50.00	DR-306			
116	EBL	5645+50.00	5648+50.00		42.0	4.0	360.0						5645+50.00	DR-306	33.3		
													5648+50.00	DR-306			
117	WBL	5649+15.00	5651+00.00		42.0	4.0	245.0						5649+15.00	DR-306	22.7		
													5651+00.00	DR-306			
	Equation:	5651+10.00	Back														
		5651+00.00	Ahead														
118	WBL	5652+00.00	5657+00.00		48.0	4.0	560.0						5652+00.00	DR-306	60.5		
													5657+00.00	DR-306			
119	WBL	5657+00.00	5662+00.00		48.0	4.0	560.0						5657+00.00	DR-306	60.5		
													5662+00.00	DR-306			
120	WBL	5662+00.00	5667+00.00		48.0	4.0	560.0						5662+00.00	DR-306	60.5		
													5667+00.00	DR-306			
121	WBL	5667+00.00	5671+50.00		48.0	4.0	510.0						5667+00.00	DR-306	55.1		
													5671+50.00	DR-306			
122	WBL	5674+00.00	5679+00.00		48.0	4.0	560.0						5674+00.00	DR-306	60.5		
													5679+00.00	DR-306			
123	WBL	5679+00.00	5684+00.00		48.0	4.0	560.0						5679+00.00	DR-306	60.5		
													5684+00.00	DR-306			
124	WBL	5684+00.00	5689+00.00		48.0	4.0	560.0						5684+00.00	DR-306	60.5		
													5689+00.00	DR-306			
125	WBL	5689+00.00	5694+00.00		48.0	4.0	560.0						5689+00.00	DR-306	60.5		
													5694+00.00	DR-306			
126	WBL	5694+00.00	5699+00.00		48.0	4.0	560.0						5694+00.00	DR-306	60.5		
													5699+00.00	DR-306			
End Division 1 - Rural Muscatine																	
Begin Division 4 - Urban City of Buffalo, Scott County																	
127	WBL	5699+00.00	4+34.00		48.0	4.0	559.9						5699+00.00	DR-306	60.5		
													4+34.00	DR-306			
	Equation:	5699+65.90	Back		48.0	4.0											
		+00.00	Ahead														
128	WBL	4+34.00	9+00.00		48.0	4.0	526.0						4+34.00	DR-306	56.8		
													9+00.00	DR-306			
129	WBL	9+00.00	14+00.00		48.0	4.0	560.0						9+00.00	DR-306	60.5		
													14+00.00	DR-306			
130	WBL	14+00.00	19+00.00		48.0	4.0	560.0						14+00.00	DR-306	60.5		
													19+00.00	DR-306			
131	WBL	19+00.00	24+00.00		48.0	4.0	560.0						19+00.00	DR-306	60.5		
													24+00.00	DR-306			
132	WBL	24+00.00	29+00.00		48.0	4.0	560.0						24+00.00	DR-306	60.5		
													29+00.00	DR-306			
133	WBL	29+00.00	34+00.00		48.0	4.0	560.0						29+00.00	DR-306	60.5		
													34+00.00	DR-306			
134	WBL	34+00.00	36+65.00		48.0	4.0	325.0						34+00.00	DR-306	35.1		
													36+65.00	DR-306			
135	WBL	36+65.00	40+00.00		48.0	4.0	60.0						36+65.00	DR-306	6.5		Replace existing outlet
													40+00.00	DR-306			Add outlet to existing subdrain
136	WBL	40+00.00	45+00.00		48.0	4.0	60.0						40+00.00	DR-306	6.5		Add outlet to existing subdrain
													45+00.00	DR-306			Add outlet to existing subdrain
137	WBL	50+00.00	55+00.00		48.0	4.0	60.0						50+00.00	DR-306	6.5		Add outlet to existing subdrain
													55+00.00	DR-306			Add outlet to existing subdrain
138	WBL	55+00.00	57+58.00		48.0	4.0	30.0						55+00.00	DR-306	3.2		Add outlet to existing subdrain
139	WBL	58+15.00	62+00.00		48.0	4.0	30.0						62+00.00	DR-306	3.2		Add outlet to existing subdrain
140	WBL	62+00.00	67+00.00		48.0	4.0	60.0						62+00.00	DR-306	6.5		Add outlet to existing subdrain
													67+00.00	DR-306			Add outlet to existing subdrain
141	WBL	67+00.00	69+80.00		48.0	4.0	60.0						67+00.00	DR-306	6.5		Replace Existing outlet
													69+80.00	DR-306			
142	WBL	69+80.00	74+00.00		48.0	4.0	60.0						69+80.00	DR-306	6.5		Add outlet to existing subdrain
													74+00.00	DR-306			Add outlet to existing subdrain
143	WBL	74+00.00	78+20.00		48.0	4.0	60.0						74+00.00	DR-306	6.5		Add outlet to existing subdrain
													78+20.00	DR-306			Add outlet to existing subdrain

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location					Depth	Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
Line No.	Road or Lane Identification	Station to Station		Side	D	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306				
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT			CY	CY	
144	WBL	78+20.00	82+39.00		48.0	4.0	30.0						78+20.00	DR-306	3.2		Add outlet to existing subdrain
145	WBL	82+39.00	83+40.00		48.0	4.0	30.0						83+40.00	DR-306	3.2		Add outlet to existing subdrain
146	WBL	83+40.00	86+70.00		48.0	4.0	390.0						83+40.00	DR-306	42.1		
													86+70.00	DR-306			
147	WBL	86+70.00	90+00.00		48.0	4.0	390.0						86+70.00	DR-306	42.1		
													90+00.00	DR-306			
148	WBL	90+00.00	95+25.00		48.0	4.0	30.0						90+00.00	DR-306	3.2		Add outlet to existing subdrain
End Division 4 - Urban City of Buffalo, Scott County																	
Totals							53227.8							DR-306 = 274	5496.9		
Totals Division 1 - Rural Muscatine County							47666.9							DR-306 = 235	4896.3		
Totals Division 4 - Urban City of Buffalo, Scott County							5560.9							DR-306 = 39	600.6		

NOTE: ALL LONGITUDINAL SUBDRAINS ARE TYPE 13 UNLESS OTHERWISE NOTED IN THE REMARKS COLUMN.

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 Scarification (1)	Remarks
		IN	IN	IN	FT	IN	SY	
5012+00.00								Div. 3, See Typical RO-1
5131+00.00								Div. 1, See Typical RO-3
5136+36.00	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5139+84.00	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5143+50.00								Div. 1, See Typical RO-3
5170+24.88								Div. 1, See Typical RO-2
5170+47.12								Div. 1, See Typical RO-2
5195+00.00								Div. 1, See Typical RO-3
5203+70.50	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5205+20.66	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5213+56.00	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5262+00.00								Div. 1, See Typical RO-1
5433+10.12								Div. 1, See Typical RO-2
5433+32.87								Div. 1, See Typical RO-2
5482+00.00								Div. 1, See Typical RO-3
5487+75.02	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5490+11.98	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Div. 1
5498+00.00								Div. 1, See Typical RO-3
5514+54.00								Div. 1, See Typical RO-2
5514+66.00								Div. 1, See Typical RO-2
5550+43.00								Div. 1, See Typical RO-2
5550+57.00								Div. 1, See Typical RO-2
5554+67.18								Div. 1, See Typical RO-1
5620+00.00								Div. 1, See Typical RO-1
5651+13.00								Div. 1, See Typical RO-4
5651+65.20								Div. 1, See Typical RO-4
5672+26.26								Div. 1, See Typical RO-1
5673+49.73								Div. 1, See Typical RO-1
96+36.00								Div. 4, See Typical RO-1
Subtotal Division 1 - Rural Muscatine							1633.3	

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.	Direction (1) of Traffic	Station to Station		Side	Removal of Guardrail (2)
					LF
Division 2					
Sta. 5081+13, MP 75.451, Hon Industries entrance					
	EB				170.0
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
	WB	NW Quadrant			62.5
	WB	NE Quadrant			62.5
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
	WB	NW Quadrant			62.5
	WB	NE Quadrant			62.5
MP 78.048 to MP 78.902, Wyoming Hill, Guardrail RT					
	EB	MP 78.048	MP 78.902		4293.8
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
	WB	NW Quadrant			62.5
	WB	NE Quadrant			62.5
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
	WB	NW Quadrant			62.5
	WB	NE Quadrant			62.5
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge					
	EB	SW Quadrant			62.5
	EB	SE Quadrant			62.5
	WB	NW Quadrant			62.5
	WB	NE Quadrant			62.5
Division 2 Total					6088.8

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	Topsoil Furnish and Spread CY	Embankment In Place CY	
Division 2																
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert																
1	WB	5170+13.00	Trl LT	6:1	40.6	16.0					90.5	17.5	85.3	39.6	51.1	
2	EB	5170+13.00	Apr RT	6:1	78.1	16.0					128.0	17.5	85.3	49.3	65.6	
3	WB	5170+59.00	Apr LT	6:1	65.7	16.0					115.7	17.4	84.6	45.9	60.3	
4	EB	5170+59.00	Trl RT	6:1	40.6	16.0					90.4	17.6	85.4	39.8	51.6	
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge																
5	WB	5203+68.53	Trl LT	6:1	40.6	16.0					90.5	17.5	85.3	31.0	31.4	
6	EB	5203+68.53	Apr RT	6:1	78.1	16.0					128.0	17.5	85.3	38.4	40.0	
7	WB	5205+22.63	Apr LT	6:1	78.1	16.0					128.0	17.5	85.3	38.4	40.0	
8	EB	5205+22.63	Trl RT	6:1	40.6	16.0					90.5	17.5	85.3	31.0	31.4	
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert																
9	EB	5432+98.12	Apr RT	6:1	90.6	15.2					140.5	16.7	82.2	49.0	61.9	
10	EB	5433+44.87	Trl RT	6:1	40.6	15.2					90.5	16.7	82.2	36.9	44.9	
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge																
11	WB	5488+40.72	Trl LT	6:1	40.6	16.0					90.5	17.5	85.3	31.0	31.4	
12	EB	5488+15.31	Apr RT	6:1	78.1	16.0					128.0	17.5	85.3	38.4	40.0	
13	WB	5490+24.69	Apr LT	6:1	78.1	16.0					128.0	17.5	85.3	38.4	40.0	
14	EB	5489+99.28	Trl RT	6:1	40.6	16.0					90.5	17.5	85.3	31.0	31.4	
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert																
15	EB	5514+42.25	Apr RT	6:1	90.6	14.5					140.5	16.0	79.7	45.9	55.0	
16	EB	5514+77.75	Trl RT	6:1	40.6	14.5					90.5	16.0	79.7	34.6	39.9	
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert																
17	EB	5550+31.25	Apr RT	6:1	90.6	15.2					140.5	16.7	82.2	49.0	61.9	
18	EB	5550+68.75	Trl RT	6:1	40.6	15.2					90.5	16.7	82.2	36.9	44.9	
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge																
19	WB	5580+06.09	Trl LT	6:1	40.6	14.0					77.9	16.6	81.8	19.2	13.7	
20	EB	5580+04.24	Apr RT	6:1	103.1	14.0					140.3	16.7	82.1	26.7	19.5	
21	WB	5582+17.92	Apr LT	6:1	78.1	14.0					115.4	16.6	81.8	23.6	17.0	
22	EB	5582+19.79	Trl RT	6:1	40.6	14.0					77.9	16.7	82.1	19.3	13.9	
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge																
23	WB	5651+19.62	Trl LT	6:1	6.8	13.7					31.7	15.0	0.0	7.0	7.3	Shape to match residential entrance
24	EB	5651+27.88	Apr RT	6:1	85.7	13.7					122.7	14.5	74.0	37.3	40.8	
25	WB	5651+50.31	Apr LT	6:1	81.2	13.7					116.4	14.4	73.6	35.8	38.9	
26	EB	5651+59.13	Trl RT	6:1	12.5	13.7					81.2	14.4	73.6	28.6	28.3	
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge																
27	WB	5672+14.72	Trl LT	6:1	40.6	14.0					90.5	15.5	77.8	32.9	36.4	
28	EB	5672+37.81	Apr RT	6:1	90.6	14.0					140.5	15.5	77.8	43.8	50.3	
29	WB	5673+38.19	Apr LT	6:1	90.6	14.0					140.5	15.5	77.8	43.8	50.3	
30	EB	5673+61.28	Trl RT	6:1	40.6	14.0					90.5	15.5	77.8	32.9	36.4	
													Division 2 Totals	1055.6	1175.8	

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

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

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

Location					Layout Lengths				Long-Span System		Delineators and Object Markers (2)					Bid Items										
					BA-250, BA-260, LS-630, or LS-635														BA-250 or LS-630					BA-260 or LS-635		
No.	Direction of Traffic (1)	Side O = Outside M = Median	Station	Offset	VT1	VF	VT2	ET	BA-211 STATION	BA-211 TYPE	SI-211 TYPE	Delineator SI-172 Type 1 White EACH	Object Marker SI-173 Type 2 OM2-2 EACH	Object Marker SI-173 Type 3 OM3-L EACH	Object Marker SI-173 Type 3 OM3-R EACH	Bolted End Anchor BA-202 TYPE	Bolted End Anchor BA-202 EACH	Post Adapter BA-210 EACH	Steel Beam Guardrail BA-200 LF	Barrier Transition Section BA-201 EACH	End Terminal Tangent BA-205 EACH	End Terminal Flared BA-206 EACH	End Terminal Tangent LS-625 EACH	End Terminal Flared LS-626 EACH	Barrier Transition Section BA-221 EACH	End Terminal Tangent BA-225 EACH	Remarks
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	EACH	EACH	EACH	EACH	TYPE	EACH	EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
Division 2																										
Sta. 5138+10, Maint. # 7076.6S022, FHWA No. 38030, Concrete Slab Bridge																										
Guardrail Updates and Paved Shoulders are to be completed in Project BRFN-022-7(72)--39-40																										
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert																										
1	WB		5170+13.00	22 LT	40.625			47.7								C	1		0.0	1	1					
2	EB		5170+13.00	22 RT	78.125			47.7								C	1		37.5	1	1					
3	WB		5170+59.00	22 LT	65.625			47.7								C	1		25.0	1	1					
4	EB		5170+59.00	22 RT	40.625			47.7								C	1		0.0	1	1					
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge																										
5	WB		5203+68.53	22 LT	40.625			47.7								C	1		0.0	1	1					
6	EB		5203+68.53	22 RT	78.125			47.7								C	1		37.5	1	1					
7	WB		5205+22.63	22 LT	78.125			47.7								C	1		37.5	1	1					
8	EB		5205+22.63	22 RT	40.625			47.7								C	1		0.0	1	1					
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert																										
9	EB		5432+98.12	21.2 RT	90.625			47.7								C	1		50.0	1	1					
10	EB		5433+44.87	21.2 RT	40.625			47.7								C	1		0.0	1	1					
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge																										
11	WB		5488+40.72	22 LT	40.625			47.7								A	1		0.0	1	1					
12	EB		5488+15.31	22 RT	78.125			47.7								A	1		37.5	1	1					
13	WB		5490+24.69	22 LT	78.125			47.7								A	1		37.5	1	1					
14	EB		5489+99.28	22 RT	40.625			47.7								A	1		0.0	1	1					
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert																										See Note 1
15	EB		5514+42.25	20.5 RT	90.625			47.7								C	1		50.0	1	1					75' Retrofit
16	EB		5514+77.75	20.5 RT	40.625			47.7								C	1		0.0	1	1					Thrie Beam
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert																										
17	EB		5550+31.25	21.2 RT	90.625			47.7								C	1		50.0	1	1					
18	EB		5550+68.75	21.2 RT	40.625			47.7								C	1		0.0	1	1					
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge																										
19	WB		5580+06.09	20 LT	40.625			37.5								C	1		0.0	1		1				
20	EB		5580+04.24	20 RT	103.125			37.5								C	1		62.5	1		1				
21	WB		5582+17.92	20 LT	78.125			37.5								C	1		37.5	1		1				
22	EB		5582+19.79	20 RT	40.625			37.5								C	1		0.0	1		1				
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge																										
23	WB		5672+14.72	20 LT	40.625			47.7								C	1		0.0	1	1					
24	EB		5672+37.81	20 RT	90.625			47.7								C	1		50.0	1	1					
25	WB		5673+38.19	20 LT	90.625			47.7								C	1		50.0	1	1					
26	EB		5673+61.28	20 RT	40.625			47.7								C	1		0.0	1	1					
Division 2 Totals																	26		562.5	26	22	4				

Note 1: See Sheet U.2, J.2 and V sheets for additional information, Conc. Bridge Rail 32" min. height.
Thrie-Beam rail shall be extended throughtout and attached to the bridge rail, 75' Thrie-Beam added 37.5 for each side.

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.

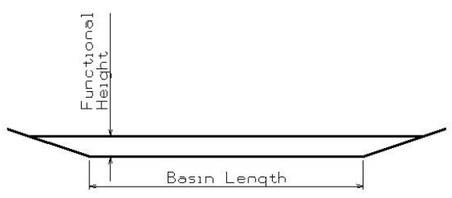
Location						Layout Lengths BA-251 or LS-631								Long-Span System		Delineators and Object Markers					Bid Items				Remarks
						Approach Side (A)				Trailing Side (T)							Delineator	Object Marker				End Terminal			
No.	Direction of Traffic (1)	Side (O= Outside M= Median)	Station	O_L	D_O	ET	$VT2_A$	VF_A	$VT1_A$	$VT1_T$	VF_T	$VT2_T$	ET			SI-211	SI-172	SI-173			Steel Beam Guardrail	Standard	Count	Post Adapter	
																	Type 1	Type 2	Type 3						
														BA-211			White	OM2-2	OM3-L	OM3-R	BA-200			BA-210	
				FT	FT	LF	LF	LF	LF	LF	LF	LF	LF	STATION	TYPE	TYPE	EACH	EACH	EACH	EACH	LF		EACH	EACH	
Division 2																									
Sta. 5081+13, MP 75.451, Hon Industries entrance																									
1	EB		5082+13.00		6.00				106.25				47.7								100.0	BA-205	1		See Note 1
MP 78.048 to MP 78.902, Wyoming Hill, Guardrail RT																									
2	EB		5246+00.00		6.00	47.7			2706.25	1700.00			47.7								4287.5				See Note 2
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge																									
3	WB		5651+50.31	31.32	7.40	35.2			81.25	37.50			25.0								112.5	BA-225	1	6	MASH TL-2 FLEAT
																						LS-626	1		MASH TL-2 FLEAT
4	EB		5651+27.88	31.32	7.40	35.2			87.50	43.75			35.2								125.0	BA-225	2	6	MASH TL-2 FLEAT
Division 2 Totals																					4625.0			12	
																						BA-205	1		
																						BA-225	3		
																						LS-626	1		

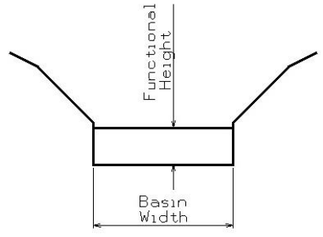
Note 1: Replace Existing RE-52 end terminal with new BA-205 end terminal.
It is intended to remove length of existing guardrail beginning at Sta. 5081+38 and existing RE-52 to allow placement of BA-205 end terminal within the existing shoulder blister.
Replacement guardrail shall be raised to a 31" mounting height by transitioning from existing 27" height at sta 5081+38.00 to 31" height at sta 5081+91.13.

Note 2: UAC existing Tubular Thrie Beam Guardrail. Subtracted 112.5' from Steel Beam Guardrail length for existing Thrie Beam and W-Beam to Thrie Beam Transition.
Station 5246+00 is the beginning of existing transition W to Thrie Beam.
Station 5247+12.5 is the end of existing transition W to Thrie Beam.
It is intended to remove existing W-Beam and RE-54 end terminals and replace with updated W-Beam and BA-205 end terminal.

SILT BASINS

Possible Standard: EW-403





* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
Division 1 - Rural Muscatine Co.				
Pipe Removal			40.0	See Tab 3R-CULV
Ditch Reshaping			40.0	See Tab 3R-CULV
Subdrain	235 Locatins		2350.0	Tab 104-9 Outlets
Division 1 Totals			2430.0	
Division 2				
Guard Rail improvements			5187.0	Tabs 107-23, 108-8A, and 108-8B
Division 4 - Urban City of Buffalo, Scott Co.				
Subdrain	39 Locatins		390.0	Tab 104-9 Outlets

SHOULDERS

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

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

Location					Quantities																
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(G) Width	(L) Length	(3) Class 13 Excavation	Hot Mix Asphalt		Binder	9" Paved Shoulder	6" Paved Shoulder	Special Backfill				Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
														HMA Alternate		PCC Alternate					(2) STA	HMA	PCC	
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA		(4) CY	(4) CY	
Division 1 - Rural Muscatine County																								
Sta. 5081+13, MP 75.451, Hon Industries entrance																								
IA 22	EB	5080+98.66	5081+63.00		10 to 7.3		64.3	15.5	20.175	31.356	1.210		61.8											
IA 22	EB	5081+63.00	5082+13.00		7.3		50.0	10.1	13.231	26.463	0.794		40.6											
IA 22	EB	5082+13.00	5082+50.39		7.3 to 8.8		37.4	8.4	10.911	29.181	0.655		33.4											
IA 22	EB	5082+50.39	5082+82.91		8.8		32.5	7.9	10.374	31.900	0.622		31.8											
MP 75.938 to MP 76.03 Lt. High Maintenance Shoulder																								
IA 22	WB	5104+05.54	5108+91.30		10.0		485.8	134.9	176.088	36.250	10.565		539.7											
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert																								
IA 22	WB	5169+02.47	5169+34.98		12.5		32.5	11.3	22.097	67.969	1.326	45.2												
IA 22	WB	5169+34.98	5169+72.38		12.5 to 11		37.4	12.2	23.895	63.891	1.434	48.8												
IA 22	WB	5169+72.38	5169+99.88		11.0		27.5	8.4	16.448	59.813	0.987	33.6												
IA 22	EB	5168+64.96	5168+97.47		12.5		32.5	11.3	22.097	67.969	1.326	45.2												
IA 22	EB	5168+97.47	5169+34.88		12.5 to 11		37.4	12.2	23.901	63.891	1.434	48.8												
IA 22	EB	5169+34.88	5169+99.88		11.0		65.0	19.9	38.878	59.813	2.333	79.4												
IA 22	WB	5170+72.12	5171+24.30		11.0		52.2	15.9	31.210	59.813	1.873	63.8												
IA 22	WB	5171+24.30	5171+61.40		11 to 12.4		37.1	12.1	23.603	63.619	1.416	48.2												
IA 22	WB	5171+61.40	5171+93.65		12.4		32.3	11.1	21.745	67.425	1.305	44.4												
IA 22	EB	5170+72.12	5170+99.76		11.0		27.6	8.4	16.532	59.813	0.992	33.8												
IA 22	EB	5170+99.76	5171+37.47		11 to 12.6		37.7	12.4	24.196	64.163	1.452	49.4												
IA 22	EB	5171+37.47	5171+70.26		12.6		32.8	11.5	22.465	68.513	1.348	45.9												
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge																								
IA 22	WB	5202+58.00	5202+78.00		12.5		20.0	6.9	13.594	67.969	0.816	27.8												
IA 22	WB	5202+78.00	5203+27.91		12.5 to 11		49.9	16.3	31.888	63.891	1.913	65.2												
IA 22	WB	5203+27.91	5203+55.50		11.0		27.6	8.4	16.502	59.813	0.990	33.7												
IA 22	EB	5202+20.50	5202+53.02		12.5		32.5	11.3	22.103	67.969	1.326	45.2												
IA 22	EB	5202+53.02	5202+90.41		12.5 to 11		37.4	12.2	23.889	63.891	1.433	48.8												
IA 22	EB	5202+90.41	5203+55.50		11.0		65.1	19.9	38.932	59.813	2.336	79.6												
IA 22	WB	5205+35.50	5206+00.75		11.0		65.3	19.9	39.028	59.813	2.342	79.8												
IA 22	WB	5206+00.75	5206+38.14		11 to 24.5		37.4	18.4	36.087	96.516	2.165	73.7												
IA 22	WB	5206+38.14	5206+70.66		11 to 24.5		32.5	16.0	31.387	96.516	1.883	64.1												
IA 22	EB	5205+35.50	5205+63.25		11.0		27.8	8.5	16.598	59.813	0.996	33.9												
IA 22	EB	5205+63.25	5206+00.64		11 to 24.5		37.4	18.4	36.087	96.516	2.165	73.7												
IA 22	EB	5206+00.64	5206+33.16		24.5		32.5	22.1	43.323	133.219	2.599	88.5												
MP 78.048 to MP 78.902, Wyoming Hill, Guardrail RT																								
IA 22	EB	5218+27.71	5218+60.11		8.7		32.4	7.8	15.327	47.306	0.920	31.3												
IA 22	EB	5218+60.11	5218+97.38		8.7 to 7.3		37.3	8.3	16.212	43.500	0.973	33.1												
IA 22	EB	5218+97.38	5262+99.50		7.3		4402.1	892.7	1747.367	39.694	104.842	3570.6												
IA 22	EB	5262+99.50	5263+36.89		7.3 to 8.8		37.4	8.4	16.366	43.772	0.982	33.4												
IA 22	EB	5263+36.89	5263+69.41		8.8		32.5	7.9	15.561	47.850	0.934	31.8												
MP 78.8 West Side Trolley Ave. to East side of drive to west of Trolley Ave.																								
IA 22	WB	5262+00.00	5263+48.00		6.0		148.0	24.7	32.190	21.750	1.931		98.7											See Sheet B.16
IA 22	WB	5263+48.00	5264+12.49		6.0		64.5	10.7	14.027	21.750	0.842		43.0											See Sheet B.16
IA 22	WB	5264+12.49	5264+93.00		6.0		80.5	13.4	17.511	21.750	1.051		53.7											See Sheet B.16
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert																								
IA 22	EB	5431+37.59	5431+70.11		11.7		32.5	10.6	20.689	63.619	1.241	42.3												
IA 22	EB	5431+70.11	5432+07.50		11.7 to 10.2		37.4	11.4	22.262	59.541	1.336	45.5												
IA 22	EB	5432+07.50	5432+98.12		10.2		90.6	25.7	50.260	55.463	3.016	102.7												
IA 22	EB	5432+98.12	5433+10.12		9.2		12.0	3.1	6.003	50.025	0.360	12.3												
IA 22	EB	5433+32.87	5433+44.87		9.2		12.0	3.1	6.003	50.025	0.360	12.3												
IA 22	EB	5433+44.87	5433+85.50		10.2		40.6	11.5	22.534	55.463	1.352	46.0												
IA 22	EB	5433+85.50	5434+22.89		10.2 to 11.7		37.4	11.4	22.262	59.541	1.336	45.5												
IA 22	EB	5434+22.89	5434+55.41		11.7		32.5	10.6	20.689	63.619	1.241	42.3												
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge																								
IA 22	WB	5487+30.18	5487+62.70		8.5		32.5	7.7	15.030	46.219	0.902	30.7												
IA 22	WB	5487+62.70	5488+00.10		8.5 to 7		37.4	8.1	15.761	42.141	0.946	32.2												
IA 22	WB	5488+00.10	5488+05.72		7.0		5.6	1.1	2.139	38.063	0.128	4.4												

SHOULDERS

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

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

Location					Quantities																
Road Identification	Direction Of Traffic (1)	Station to Station		Side	P Width	G Width	L Length	Class 13 Excavation (3)	Hot Mix Asphalt		Binder	9" Paved Shoulder	6" Paved Shoulder	Special Backfill				Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
														HMA Alternate		PCC Alternate					STA (2)	HMA	PCC	
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA		CY (4)	CY (4)	
IA 22	EB	5486+67.28	5486+70.31		24.5		3.0	2.1	4.037	133.219	0.242	8.2												
IA 22	EB	5486+70.31	5486+99.80		8.5		29.5	7.0	13.630	46.219	0.818	27.9												
IA 22	EB	5486+99.80	5487+37.19		8.5 to 7		37.4	8.0	15.756	42.141	0.945	32.2												
IA 22	EB	5487+37.19	5487+95.31		7.0		58.1	11.3	22.122	38.063	1.327	45.2												
IA 22	WB	5490+44.69	5491+02.81		7.0		58.1	11.3	22.122	38.063	1.327	45.2												
IA 22	WB	5491+02.81	5491+40.20		7 to 8.5		37.4	8.0	15.756	42.141	0.945	32.2												
IA 22	WB	5491+40.20	5491+72.72		8.5		32.5	7.7	15.030	46.219	0.902	30.7												
IA 22	EB	5490+19.28	5490+39.91		7.0		20.6	4.0	7.852	38.063	0.471	16.0												
IA 22	EB	5490+39.91	5490+77.30		7 to 8.5		37.4	8.0	15.756	42.141	0.945	32.2												
IA 22	EB	5490+77.30	5491+09.82		8.5		32.5	7.7	15.030	46.219	0.902	30.7												
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert																								
IA 22	EB	5512+81.72	5513+14.23		11.0		32.5	9.9	19.445	59.813	1.167	39.7												
IA 22	EB	5513+14.23	5513+51.62		11 to 9.5		37.4	10.6	20.839	55.734	1.250	42.6												
IA 22	EB	5513+51.62	5514+42.25		9.5		90.6	23.9	46.816	51.656	2.809	95.7												
IA 22	EB	5514+42.25	5514+54.00		8.5		11.8	2.8	5.431	46.219	0.326	11.1												
IA 22	EB	5514+66.00	5514+77.75		8.5		11.8	2.8	5.431	46.219	0.326	11.1												
IA 22	EB	5514+77.75	5515+18.37		9.5		40.6	10.7	20.983	51.656	1.259	42.9												
IA 22	EB	5515+18.37	5515+55.77		9.5 to 11		37.4	10.6	20.845	55.734	1.251	42.6												
IA 22	EB	5515+55.77	5515+88.28		11.0		32.5	9.9	19.445	59.813	1.167	39.7												
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert																								
IA 22	EB	5548+70.72	5549+03.23		11.7		32.5	10.6	20.682	63.619	1.241	42.3												
IA 22	EB	5549+03.23	5549+40.62		11.7 to 10.2		37.4	11.4	22.262	59.541	1.336	45.5												
IA 22	EB	5549+40.62	5550+31.25		10.2		90.6	25.7	50.266	55.463	3.016	102.7												
IA 22	EB	5550+31.25	5550+43.00		9.2		11.8	3.0	5.878	50.025	0.353	12.0												
IA 22	EB	5550+57.00	5550+68.75		9.2		11.8	3.0	5.878	50.025	0.353	12.0												
IA 22	EB	5550+68.75	5551+09.37		9.2 to 10.2		40.6	10.9	21.425	52.744	1.285	43.8												
IA 22	EB	5551+09.37	5551+46.77		10.2 to 11.7		37.4	11.4	22.268	59.541	1.336	45.5												
IA 22	EB	5551+46.77	5551+79.28		11.7		32.5	10.6	20.682	63.619	1.241	42.3												
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge																								
IA 22	WB	5579+09.08	5579+41.32		11.6		32.2	10.4	20.335	63.075	1.220	41.6												
IA 22	WB	5579+41.32	5579+65.81		11.6 to 9		24.5	7.0	13.716	56.006	0.823	28.0												
IA 22	WB	5579+65.81	5579+89.84		9.0		24.0	6.0	11.760	48.938	0.706	24.0												
IA 22	EB	5578+42.36	5578+75.28		11.7		32.9	10.7	20.943	63.619	1.257	42.8												
IA 22	EB	5578+75.28	5579+00.22		11.7 to 9		24.9	7.2	14.036	56.278	0.842	28.7												
IA 22	EB	5579+00.22	5579+79.84		9.0		79.6	19.9	38.964	48.938	2.338	79.6												
IA 22	WB	5582+34.18	5582+95.38		9.0		61.2	15.3	29.950	48.938	1.797	61.2												
IA 22	WB	5582+95.38	5583+19.87		9 to 11.6		24.5	7.0	13.716	56.006	0.823	28.0												
IA 22	WB	5583+19.87	5583+52.11		11.6		32.2	10.4	20.335	63.075	1.220	41.6												
IA 22	EB	5582+34.18	5582+60.77		9.0		26.6	6.6	13.012	48.938	0.781	26.6												
IA 22	EB	5582+60.77	5582+85.71		9 to 11.7		24.9	7.2	14.036	56.278	0.842	28.7												
IA 22	EB	5582+85.71	5583+18.63		11.7		32.9	10.7	20.943	63.619	1.257	42.8												
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge																								
IA 22	WB	5650+55.90	5651+00.55		9.9		44.7	12.3	24.036	53.831	1.442	49.1												See Note 1
IA 22	WB	5651+00.55	5651+12.82		9.9 to 8.7		12.3	3.2	6.205	50.569	0.372	12.7												
IA 22	WB	5651+12.82	5651+18.99		8.7		6.2	1.5	2.919	47.306	0.175	6.0												
IA 22	WB	5651+18.99	5651+50.31		8.7		31.3																	See Note 2
IA 22	EB	5649+94.31	5650+24.96		9.5		30.6	8.1	15.833	51.656	0.950	32.4												
IA 22	EB	5650+24.96	5650+50.29		9.5 to 8.7		25.3	6.4	12.534	49.481	0.752	25.6												
IA 22	EB	5650+50.29	5651+27.88		8.7		77.6	18.8	36.705	47.306	2.202	75.0												
IA 22	EB	5651+27.88	5651+59.20		8.7		31.3																	See Note 2
IA 22	WB	5651+50.31	5652+31.56		8.7		81.3	19.6	38.436	47.306	2.306	78.5												
IA 22	WB	5652+31.56	5652+56.52		8.7 to 9.4		25.0	6.3	12.283	49.209	0.737	25.1												
IA 22	WB	5652+56.52	5652+86.94		9.4		30.4	7.9	15.548	51.113	0.933	31.8												
IA 22	EB	5651+59.20	5651+71.63		8.7		12.4	3.0	5.880	47.306	0.353	12.0												
IA 22	EB	5651+71.63	5651+96.59		8.7 to 9.4		25.0	6.3	12.283	49.209	0.737	25.1												
IA 22	EB	5651+96.59	5652+26.79		9.4		30.2	7.9	15.436	51.113	0.926	31.5												
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge																								
IA 22	WB	5671+04.18	5671+36.70		10.5		32.5	9.5	18.567	57.094	1.114	37.9												

SHOULDERS

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

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

Location					Quantities																	
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(G) Width	(L) Length	(3) Class 13 Excavation	Hot Mix Asphalt		Binder	9" Paved Shoulder	6" Paved Shoulder	Special Backfill				Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
														HMA Alternate		PCC Alternate					(2) STA	HMA	PCC	
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA		CY (4)	CY (4)	
IA 22	WB	5671+36.70	5671+74.09		10.5 to 9		37.4	10.1	19.823	53.016	1.189	40.5											
IA 22	WB	5671+74.09	5672+06.26		9.0		32.2	8.0	15.743	48.938	0.945	32.2											
IA 22	EB	5670+77.28	5671+09.79		10.5		32.5	9.5	18.561	57.094	1.114	37.9											
IA 22	EB	5671+09.79	5671+47.19		10.5 to 9		37.4	10.1	19.828	53.016	1.190	40.5											
IA 22	EB	5671+47.19	5672+06.26		9.0		59.1	14.8	28.907	48.938	1.734	59.1											
IA 22	WB	5673+69.73	5674+28.81		9.0		59.1	14.8	28.912	48.938	1.735	59.1											
IA 22	WB	5674+28.81	5674+66.20		9 to 10.5		37.4	10.1	19.823	53.016	1.189	40.5											
IA 22	WB	5674+66.20	5674+98.72		10.5		32.5	9.5	18.567	57.094	1.114	37.9											
IA 22	EB	5673+69.73	5674+01.90		9.0		32.2	8.0	15.743	48.938	0.945	32.2											
IA 22	EB	5674+01.90	5674+39.29		9 to 10.5		37.4	10.1	19.823	53.016	1.189	40.5											
IA 22	EB	5674+39.29	5674+71.81		10.5		32.5	9.5	18.567	57.094	1.114	37.9											
Totals Division 1 - Rural Muscatine County								2166.6	4093.831		245.630	7763.6	902.7										

Note 1: Full width paved to begin at west side of entrance and includes entrance radius, see sheet B.21 for additional information.

Note 2: See Typical 2602 Sheets B.1 through B.3 and Sheet B.21 for additional information.

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location						Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
Road Identification	Station to Station		Length PCC	Length HMA	Type (Centerline, Rt or Lt Shoulder	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
			STA	STA		GAL	FT	FT	FT	
Division 2										
Begin - Rural Muscatine County										
IA 22	5049+48.50	5136+36.00		86.88	Centerline	0.0				
Sta. 5138+10, Maint. # 7076.6S022, FHWA No. 38030, Concrete Slab Bridge										
IA 22	5139+84.00	5170+36.00		30.52	Centerline	0.0				
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert										
IA 22	5170+36.00	5203+70.50		33.35	Centerline	0.0				
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge										
IA 22	5205+20.66	5213+56.00		8.35	Centerline	0.0				
Equation:	5213+56.00	Back								
	5213+64.41	Ahead								
IA 22	5213+64.41	5262+00.00	48.36		Centerline	0.0				
IA 22	5262+00.00	5357+22.50		95.23	Centerline	0.0				
Equation:	5357+22.50	Back								
	5357+27.80	Ahead								
IA 22	5357+27.80	5433+21.50	75.94		Centerline	0.0				
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert										
IA 22	5433+21.50	5487+75.02	54.54		Centerline	0.0				
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge										
IA 22	5490+11.98	5514+60.00	24.48		Centerline	0.0				
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert										
IA 22	5514+60.00	5550+50.00	35.90		Centerline	0.0				
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert										
IA 22	5550+50.00	5554+65.00	4.15		Centerline	0.0				
Equation:	5554+65.00	Back								
	5554+67.18	Ahead								
IA 22	5554+67.18	5580+10.00	25.43		Centerline	0.0				
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge										
IA 22	5582+14.00	5618+25.34	36.11		Centerline	0.0				
Equation:	5618+25.34	Back								
	5614+15.00	Ahead								
IA 22	5614+15.00	5620+00.00	5.85		Centerline	0.0				
IA 22	5620+00.00	5651+10.00		31.10	Centerline	0.0				
Equation:	5651+10.00	Back								
	5651+00.00	Ahead								
IA 22	5651+00.00	5651+25.00		0.25	Centerline	0.0				
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge										
Equation:	5651+10.00	Back								
	5651+00.00	Ahead								
IA 22	5651+00.00	5651+25.00		0.25	Centerline	0.0				
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge										
IA 22	5651+53.00	5672+26.26		20.73	Centerline	0.0				
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge										
IA 22	5673+49.73	5699+65.90		26.16	Centerline	0.0				
IA 22	5049+48.50	5052+00.00		2.52	Left Shoulder	2.7		10.0		
IA 22	5052+00.00	5067+10.00		15.10	Left Shoulder	16.4	3.0	8.0		PCC 3' Curb and Gutter
IA 22	5067+10.00	5075+10.00		8.00	Left Shoulder	8.7		4.0	4.0	
IA 22	5075+10.00	5093+40.00		18.30	Left Shoulder	19.8	3.0	8.0		PCC 3' Curb and Gutter
IA 22	5093+40.00	5094+80.00		1.40	Left Shoulder	1.5		4.0	4.0	
IA 22	5094+80.00	5104+05.54		9.26	Left Shoulder	10.0		2.0	1.0	
IA 22	5104+05.54	5108+91.30		4.86	Left Shoulder	5.3		10.0		
IA 22	5108+91.30	5131+00.00		22.09	Left Shoulder	23.9		2.0	1.0	
IA 22	5131+00.00	5134+62.66		3.63	Left Shoulder	3.9		4.0	6.0	
IA 22	5134+62.66	5136+43.00		1.80	Left Shoulder	2.0		10.0		
Sta. 5138+10, Maint. # 7076.6S022, FHWA No. 38030, Concrete Slab Bridge										
IA 22	5139+34.00	5139+84.00		0.50	Left Shoulder	0.5		6.0	4.0	
IA 22	5139+84.00	5143+50.00		3.66	Left Shoulder	4.0		4.0	6.0	
IA 22	5143+50.00	5169+02.47		25.52	Left Shoulder	27.6		2.0	1.0	
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert										
IA 22	5171+93.65	5195+00.00		23.06	Left Shoulder	25.0		2.0	1.0	
IA 22	5195+00.00	5202+58.00		7.58	Left Shoulder	8.2		4.0	6.0	
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge										
IA 22	5206+70.66	5213+56.00		6.85	Left Shoulder	7.4		4.0	6.0	
Equation:	5213+56.00	Back								
	5213+64.41	Ahead								
IA 22	5213+64.41	5262+00.00		48.36	Left Shoulder	52.4		4.0	2.0	
IA 22	5262+00.00	5263+48.00		1.48	Left Shoulder	1.6		6.0		
IA 22	5264+12.49	5264+93.00		0.81	Left Shoulder	0.9		6.0		
IA 22	5264+93.00	5433+21.50		168.29	Left Shoulder	182.3		2.0	1.0	
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert										
IA 22	5433+21.50	5357+22.50		75.99	Left Shoulder	82.3		2.0	1.0	
Equation:	5357+22.50	Back								
	5357+27.80	Ahead								
IA 22	5357+27.80	5482+00.00		124.72	Left Shoulder	135.1		2.0	1.0	
IA 22	5482+00.00	5487+30.18		5.30	Left Shoulder	5.7		4.0	6.0	
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge										
IA 22	5491+72.72	5498+00.00		6.27	Left Shoulder	6.8		4.0	6.0	
IA 22	5498+00.00	5514+60.00		16.60	Left Shoulder	18.0		2.0	1.0	
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert										
IA 22	5514+60.00	5550+50.00		35.90	Left Shoulder	38.9		2.0	1.0	
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert										

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location						Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
Road Identification	Station to Station		Length PCC	Length HMA	Type (Centerline, Rt or Lt Shoulder	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
			STA	STA		GAL	FT	FT	FT	
IA 22	5550+50.00	5554+65.00		4.15	Left Shoulder	4.5		2.0	1.0	
Equation:	5554+65.00	Back								
	5554+67.18	Ahead								
IA 22	5554+67.18	5579+09.08		24.42	Left Shoulder	26.5		4.0	4.0	
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge										
IA 22	5583+52.11	5618+25.34		34.73	Left Shoulder	37.6		4.0	4.0	
Equation:	5618+25.34	Back								
	5614+15.00	Ahead								
IA 22	5614+15.00	5620+00.00		5.85	Left Shoulder	6.3		4.0	6.0	
IA 22	5620+00.00	5650+55.90		30.56	Left Shoulder	33.1		2.0	1.0	
Equation:	5651+10.00	Back								
	5651+00.00	Ahead								
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge										
IA 22	5652+86.94	5671+04.18		18.17	Left Shoulder	19.7		2.0	1.0	
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge										
IA 22	5674+98.72	5699+65.90		24.67	Left Shoulder	26.7		2.0	1.0	
IA 22	5049+48.50	5080+80.00		31.32	Right Shoulder	33.9		4.0	4.0	
Sta. 5081+13, MP 75.451, Hon Industries entrance										
IA 22	5082+82.91	5089+60.00		6.77	Right Shoulder	7.3		4.0	4.0	
IA 22	5089+60.00	5093+20.00		3.60	Right Shoulder	3.9	3.0	8.0		PCC 3' Curb and Gutter
IA 22	5093+20.00	5096+00.00		2.80	Right Shoulder	3.0		4.0	4.0	
IA 22	5096+00.00	5131+00.00		35.00	Right Shoulder	37.9		2.0	1.0	
IA 22	5131+00.00	5136+36.00		5.36	Right Shoulder	5.8		4.0	6.0	
IA 22	5136+36.00	5136+86.00		0.50	Right Shoulder	0.5		6.0	4.0	
Sta. 5138+10, Maint. # 7076.6S022, FHWA No. 38030, Concrete Slab Bridge										
IA 22	5139+77.00	5140+77.00		1.00	Right Shoulder	1.1		6.0	4.0	
IA 22	5140+77.00	5143+50.00		2.73	Right Shoulder	3.0		4.0	6.0	
IA 22	5143+50.00	5168+64.96		25.15	Right Shoulder	27.2		2.0	1.0	
Sta. 5170+36, Maint. # 7077.2S022, FHWA No. 38041, RCB Culvert										
IA 22	5171+70.26	5195+00.00		23.30	Right Shoulder	25.2		2.0	1.0	
IA 22	5195+00.00	5202+20.50		7.21	Right Shoulder	7.8		4.0	6.0	
Sta. 5204+45.58, Maint. # 7077.8S022, FHWA No. 38051, Concrete Beam Bridge										
IA 22	5206+33.16	5213+56.00		7.23	Right Shoulder	7.8		4.0	6.0	
Equation:	5213+56.00	Back								
	5213+64.41	Ahead								
IA 22	5213+64.41	5218+27.71		4.63	Right Shoulder	5.0		4.0	2.0	
IA 22	5218+27.71	5263+69.41		45.42	Right Shoulder	49.2		6.0		Guardrail Wyoming Hill
IA 22	5263+69.41	5357+22.50		93.53	Right Shoulder	101.3		2.0	1.0	
Equation:	5357+22.50	Back								
	5357+27.80	Ahead								
IA 22	5357+27.80	5431+37.59		74.10	Right Shoulder	80.3		2.0	1.0	
Sta. 5433+21.5, Maint. # 7082.2S022, FHWA No. 38061, RCB Culvert										
IA 22	5434+55.41	5482+00.00		47.45	Right Shoulder	51.4		2.0	1.0	
IA 22	5482+00.00	5486+67.28		4.67	Right Shoulder	5.1		4.0	6.0	
Sta. 5489+20, Maint. # 7083.2S022, FHWA No. 38081, Concrete Beam Bridge										
IA 22	5491+09.82	5498+00.00		6.90	Right Shoulder	7.5		4.0	6.0	
IA 22	5498+00.00	5512+81.72		14.82	Right Shoulder	16.1		2.0	1.0	
Sta. 5514+60, Maint. # 7083.7B022, FHWA No. 606125, RCB Culvert										
IA 22	5515+88.28	5548+70.72		32.82	Right Shoulder	35.6		2.0	1.0	
Sta. 5550+50, Maint. # 7084.4B022, FHWA No. 606030, RCB Culvert										
IA 22	5551+79.28	5554+65.00		2.86	Right Shoulder	3.1		2.0	1.0	
Equation:	5554+65.00	Back								
	5554+67.18	Ahead								
IA 22	5554+67.18	5578+42.36		23.75	Right Shoulder	25.7		4.0	4.0	
Sta. 5581+12.01, Maint. # 7084.9S022, FHWA No. 606310, Conc. Beam Bridge										
IA 22	5583+18.63	5618+25.34		35.07	Right Shoulder	38.0		4.0	4.0	
Equation:	5618+25.34	Back								
	5614+15.00	Ahead								
IA 22	5614+15.00	5620+00.00		5.85	Right Shoulder	6.3		4.0	6.0	
IA 22	5620+00.00	5649+94.31		29.94	Right Shoulder	32.4		2.0	1.0	
Sta. 5651+39.1, Maint. # 7086.3S022, FHWA No. 38130, Conc. Beam Bridge										
Equation:	5651+10.00	Back								
	5651+00.00	Ahead								
IA 22	5652+26.79	5670+77.28		18.50	Right Shoulder	20.0		2.0	1.0	
Sta. 5672+88, Maint. # 7086.7S022, FHWA No. 38141, Conc. Beam Bridge										
IA 22	5674+71.81	5699+65.90		24.94	Right Shoulder	27.0		2.0	1.0	
End - Rural Muscatine County										
Equation:	5699+65.90	Back								
	+00.00	Ahead								
Begin - Urban City of Buffalo, Scott County										
IA 22	+00.00	94+86.70		94.87	Centerline	0.0				
Equation:	94+86.70	Back								
	95+00.00	Ahead								
IA 22	95+00.00	96+36.00		1.36	Centerline	0.0				

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location						Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
Road Identification	Station to Station		Length PCC	Length HMA	Type (Centerline, Rt or Lt Shoulder	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
			STA	STA		GAL	FT	FT	FT	
IA 22	+00.00	94+86.70		94.87	Left Shoulder	102.8		2.0	1.0	
Equation:	94+86.70	Back								
	95+00.00	Ahead								
IA 22	95+00.00	96+36.00		1.36	Left Shoulder	1.5		2.0	1.0	
IA 22	+00.00	94+86.70		94.87	Right Shoulder	102.8		2.0	1.0	
Equation:	94+86.70	Back								
	95+00.00	Ahead								
IA 22	95+00.00	96+36.00		1.36	Right Shoulder	1.5		2.0	1.0	
End - Urban City of Buffalo, Scott County										
Totals - Rural Muscatine County, Centerline			310.76	332.57		0.0				
Totals - Rural Muscatine County, Shoulder				1397.62		1513.7				
Totals - Urban City of Buffalo, Centerline			0.00	96.23		0.0				
Totals - Urban City of Buffalo, Shoulder				192.46		208.6				
Division 2 - Bid Quantity Totals, Centerline			310.76	428.80		0.0				
Division 2 - Bid Quantity Totals, Shoulder				1590.08		1722.3				

PAVEMENT MARKING LINE TYPES

See PM-110

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

BCY4: Broken Centerline (Yellow) @ 0.25 | DCY4: Double Centerline (Yellow) @ 2.00 | NPY4: No Passing Zone Line (Yellow) @ 1.25 | BLW4: Broken Lane Line (White) @ 0.25 | ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00 | CBW6: Crosswalk Bar (White) @ 15.00

Location							Length by Line Type (Unfactored)													Remarks
Road ID	Station to Station	Dir. of Travel	Marking Type	Side L	Side C	Side R	BCY4* STA	DCY4 STA	NPY4** STA	BLW4 STA	ELW4 STA	ELY4 STA	CBW6 STA								
Division 1 - Rural Muscatine County																				
Temporary Pavement Markings (Doubled for one Cold In-Place Recycle surface and one leveling surface - Typical 2602, one intermediate surface - Typical 2617 and one scarification surface - Typical 2618)																				
	MP 74.868	MP 87.255	BOTH	Waterborne/Solvent Paint	X	X	X	453.67	168.86	514.45		2073.96								
Division 1 - Rural Muscatine County, Temporary Factored Totals								113.42	337.72	643.06		2073.96								
											Division 1 - Rural Muscatine County: Temporary Pavement Markings Factored Bid Quantity Subtotal									3168.16	
Permanent Pa																				
	MP 74.868	MP 87.255	BOTH	Waterborne/Solvent Paint	X	X	X	313.87	91.82	248.53		1308.44								
Division 1 - Rural Muscatine County, Permanent Factored Totals								78.47	183.64	310.66		1308.44								
											Division 1 - Rural Muscatine County: Temporary Pavement Markings Factored Bid Quantity Subtotal									1881.21	
Division 3 - Urban City of Muscatine, Muscatine County																				
Temporary Pa																				
	MP 74.158	MP 74.868	BOTH	Waterborne/Solvent Paint	X	X	X	3.70	54.28	17.00		149.96								
Division 3 - Urban City of Muscatine, Temporary Factored Totals								0.93	108.56	21.25		149.96								
											Division 3 - Urban City of Muscatine: Temporary Pavement Markings Factored Bid Quantity Subtotal									280.70	
Permanent Pavement Markings																				
	MP 74.158	MP 74.868	BOTH	Waterborne/Solvent Paint	X	X	X	1.85	27.14	8.50		74.98		0.36						Crosswalk Bar for Running River Trail System
Division 3 - Urban City of Muscatine, Permanent Factored Totals								0.46	54.28	10.63		74.98		5.40						
											Division 3 - Urban City of Muscatine: Temporary Pavement Markings Factored Bid Quantity Subtotal									145.75	
Division 4 - Urban City of Buffalo, Scott County																				
Temporary Pavement Markings (Doubled for one Cold In-Place Recycle surface and one leveling surface - Typical 2602)																				
	MP 87.255	MP 89.08	BOTH	Waterborne/Solvent Paint	X	X	X	45.58	17.16	126.72		384.92								
Division 4 - Urban City of Buffalo, Temporary Factored Totals								11.40	34.32	158.40		384.92								
											Division 4 - Urban City of Buffalo: Temporary Pavement Markings Factored Bid Quantity Subtotal									589.04	
Permanent Pavement Markings																				
	MP 87.255	MP 89.08	BOTH	Waterborne/Solvent Paint	X	X	X	24.29	8.58	63.36		192.46								
Division 4 - Urban City of Buffalo, Permanent Factored Totals								6.07	17.16	79.20		192.46								
											Division 4 - Urban City of Buffalo: Temporary Pavement Markings Factored Bid Quantity Subtotal									294.89	
																			Division 1 - Rural Muscatine County: Pavement Markings Bid Quantity Total		5049.37	
																			Division 3 - Urban City of Muscatine: Pavement Markings Quantity Total		426.45	
																			Division 4 - Urban City of Buffalo: Pavement Markings Quantity Total		883.93	
																			Pavement Markings Quantity Total		6359.75	

POLLUTION PREVENTION PLAN

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

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

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

I. ROLES AND RESPONSIBILITES
- A. Designer:
  1. Prepares Base PPP included in the project plan.
  2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
  3. Signature authority on the Base PPP and NOI.
- B. Contractor/Subcontractor:
  1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. Affected contractors/subcontractors are anyone responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Submit an Erosion Control Implementation Plan (ECIP) according to Specifications Section 2602 and any additional plan notes.
  3. Install and maintain appropriate controls.
  4. Supervise and implement good housekeeping practices.
  5. Conduct joint required inspections of the site with inspection staff.
  6. Comply with training and certification requirements of Specifications Section 2602.
  7. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.
- C. RCE/Inspector:
  1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
  2. Maintain an up-to-date record that identifies contractors and subcontractors as co-permittees.
  3. Make these plans available to the DNR upon their request.
  4. Conduct joint required inspections of the site with the contractor/subcontractor.
  5. Complete an inspection report after each inspection.
  6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

II. PROJECT SITE DESCRIPTION
- A. This Pollution Prevention Plan (PPP) is for the construction of a *Describe Type Of Facility*.
- B. This PPP covers approximately *Provide # Of Acres* acres with an estimated *Provide # Of Acres* acres being disturbed. The portion of the PPP covered by this contract has *Provide # Of Acres* acres disturbed.
- C. The PPP is located in an area of *Provide # Of Types Of Soil Association* soil association (*Provide Soil Association Type Or* *Types*). The estimated weighted average runoff coefficient number for this PPP after completion will be *Provide runoff coefficient Number*.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
  1. Drainage patterns – Plan and Profile sheets and Situation plans.
  2. Proposed Slopes – Cross Sections.
  3. Areas of Soil Disturbance – construction limits shown on Plan and Profile sheets.
  4. Location of Structural Controls – Tabulations on C sheets.
  5. Locations of Non-structural Controls – Tabulations on C sheets.
  6. Locations of Stabilization Practices – generally within construction limits shown on Plan and Profile sheets.
  7. Surface Waters (including wetlands) – Project Location Map and Plan and Profile sheets.
  8. Locations where storm water is discharged – Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.
- F. Runoff from this work will flow into *List Outlets For Runoff*.

III. CONTROLS
- A. The contractor's ECIP specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
  1. EROSION AND SEDIMENT CONTROLS
     a. Stabilization Practices
        1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
        2) Stabilization practices shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
        3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days.
        4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation.
        5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
        6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.
     b. Structural Practices
        1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
        2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plans or are referenced in the Standard Road Plans Tabulation.
     c. Storm Water Management
        1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
  2. OTHER CONTROLS
     a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
        1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
        2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
        3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
        4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
        5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
        6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
        7) Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
        8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onside fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water.
        9) Litter Management - Ensure employees properly dispose of litter.
        10) Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
  3. APPROVED STATE OR LOCAL PLANS
     During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

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

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

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

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

VIII. DEFINITIONS
- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and

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POLLUTION PREVENTION PLAN

POLLUTION PREVENTION PLAN

fieldbook entries made by the inspector.

C. IDR - Inspector's Daily Report – this contains the inspector's daily diary and bid item postings.

D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).

E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

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

_____
Signature

_____
Printed or Typed Name

_____
Signature

_____
Printed or Typed Name

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 22	Both	Muscatine	Milepost 76.6	Small natural stream	Bridge, Shoulder Paved	7076.6S022	Horizontal	26'	13'		26'	See Note 1 and Sh. B.12
IA 22	Both	Muscatine	Milepost 77.8	Sweetland Creek	Bridge, Shoulder Paved	7077.8S022	Horizontal	44'	22'		44'	See Note 1 and Sh. B.14
IA 22	Both	Muscatine	Milepost 83.2	Pine Creek	Bridge, Shoulder Paved	7083.2S022	Horizontal	44'	22'		44'	See Note 1 and Sh. B.18
IA 22	Both	Muscatine	Milepost 84.9	Railroad Spur line	Bridge, Shoulder Paved	7084.9S022	Horizontal	40'	20'		40'	See Note 1 and Sh. B.21
IA 22	Both	Muscatine	Milepost 86.3	Small natural stream	Bridge, Shoulder Paved	7086.3S022	Horizontal	44'	22'		44'	See Note 1 and Sh. B.22
IA 22	Both	Muscatine	Milepost 86.7	Creek	Bridge, Shoulder Paved	7086.7S022	Horizontal	40'	20'		40'	See Note 1 and Sh. B.23

Note 1: 2 directional traffic on 2 lane highway, 24 ft. wide roadway, plus shoulders, may be reduced to share 1 lane of travel, alternating for each direction by use of Traffic Control Road Standards in Tab 105-4.

TRAFFIC CONTROL PLAN

Through traffic will be maintained at all times.

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

STAGING NOTES

Sequence of Construction:
A general sequence of construction is suggested below.

The contractor's activities may be scheduled in the following sequence, or the Contractors proposed sequence:

1. Place subdrains and additional outlets for Longitudinal Subdrains
2. Place Repair Patches, culvert abandonments, pipe repairs, ditch reshaping and seeding
3. Perform scarifications operations
3. Cold In-place Recycle the existing pavement width and allow for cure
4. Place shoulder, HMA Base Widening
5. Construct Safety Dike, foreslopes for cable rail and seed
6. Place HMA base for paved shoulders at guardrail
7. Place HMA Leveling, HMA Intermediate and Surface lifts
8. Place Type B granular shoulder
9. Place finish patches for EF Joints
10. Install guard rail and seed
11. Place milled rumble strips
12. Place permanent pavement markings.

Slide Repair

From Station 5236+45 to Station 5236+95, bench and rebuild the existing backslope using Erosion Stone underlain with Engineering Fabric.

The Erosion Stone shall be capped with a 1-foot thick layer of Macadam Stone Base Material (Gradation No.13, with no choke stone course).

The rebuilt backslope shall blend into the existing backslope to the east and west.

Benches shall extend a minimum of 5 feet into the undisturbed backslope.

The repair shall start at the toe of the existing backslope and then extend up-slope to the existing ridge.

Slope repair activities shall not disturb any existing tree vegetation present on the backslope adjacent to the area instability.

A relative small amount of Clearing and Grabbing will be necessary. Existing trees to east and west are not to be disturbed.

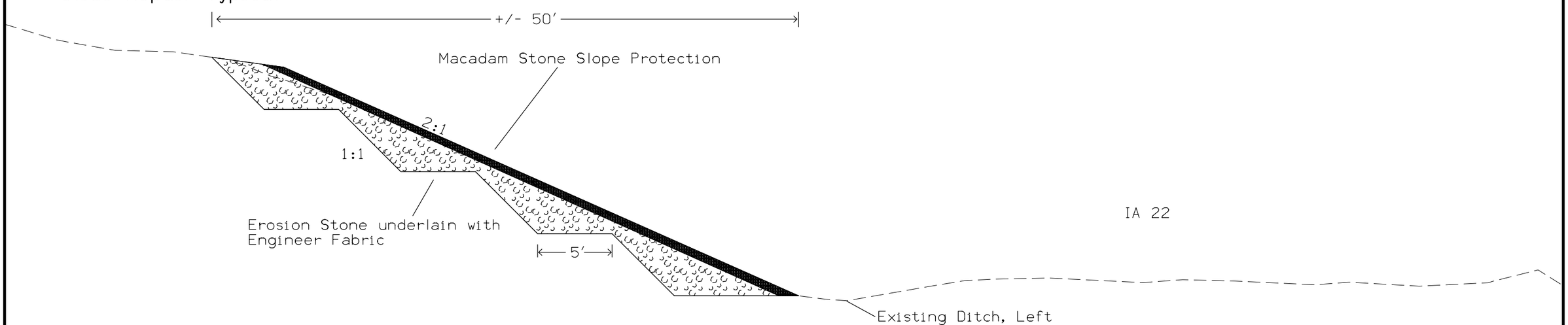
Clean and reshape the roadside ditch to allow for proper drainage. The ditch shall be protected from erosion after grading.

Actual limits of the repair will depend on the conditions at the time of construction.

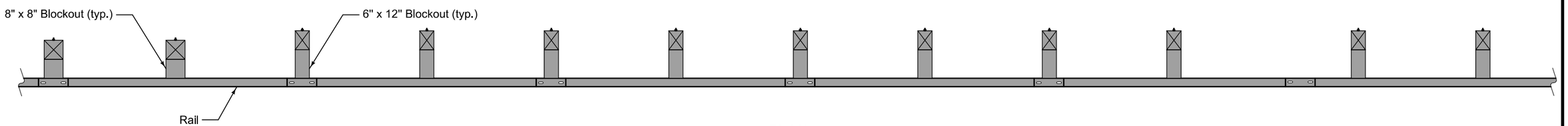
See typical below for details on benching.

Quantities	
Bid Items	Quantity
Class 13, Excavation & Waste	231 CY
Erosion Stone	374 Tons
Engineering Fabric	305 SY
Macadam Stone Slope Protection	222 SY
Clearing & Grubbing	0.2 Acres

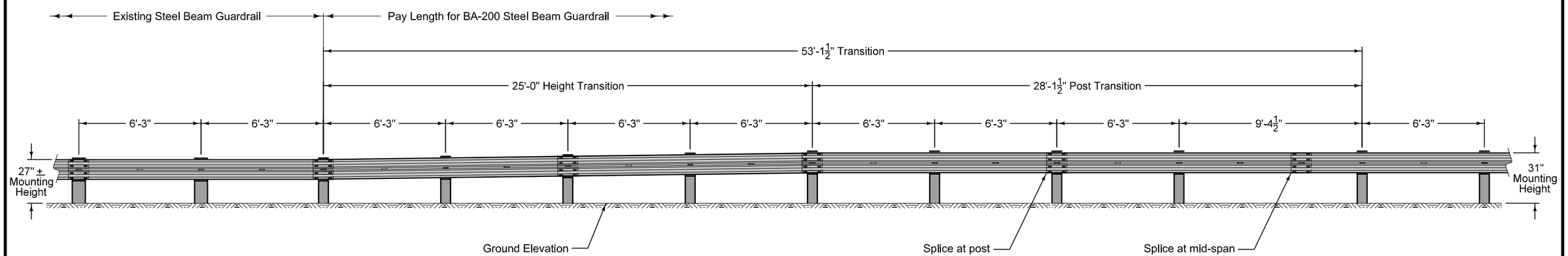
Slide Repair Typical



IA 22



PLAN



ELEVATION

W-BEAM HEIGHT TRANSITION

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER U.1

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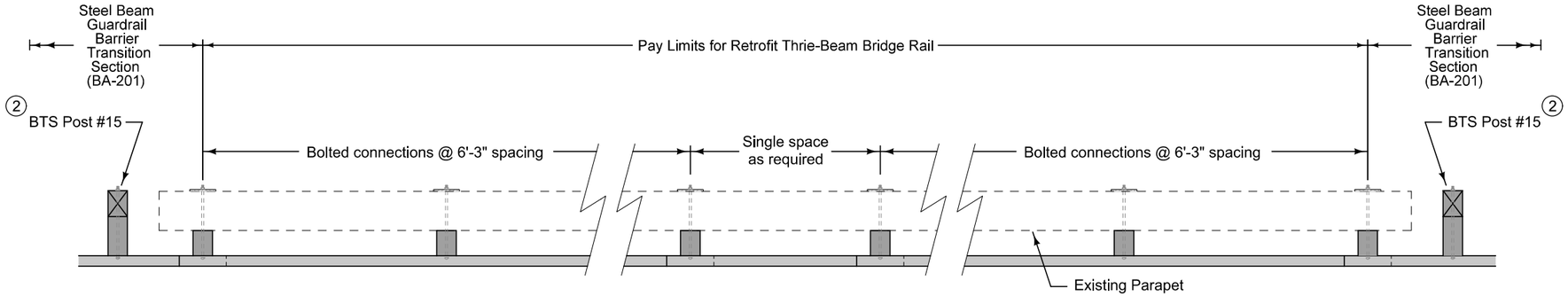
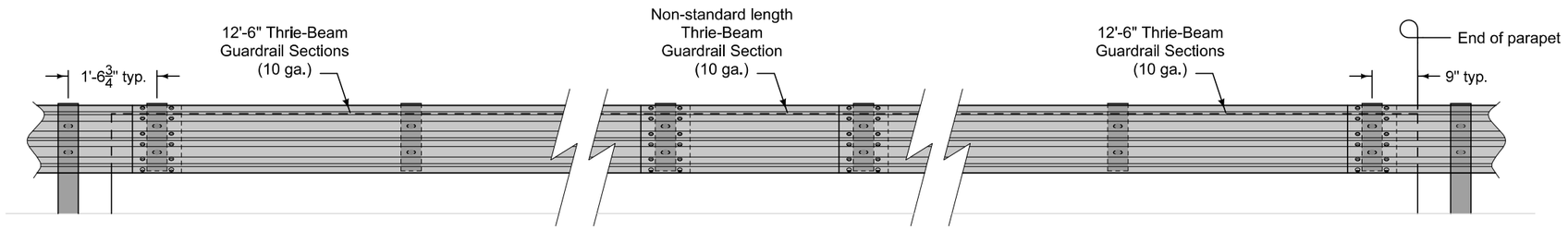


PLAN



ELEVATION

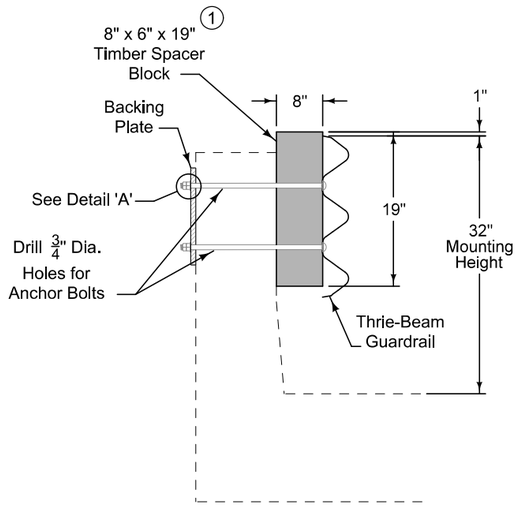
Drill holes in existing bridge parapet with a core bit.

Lap guardrail splices in the direction of adjacent traffic.

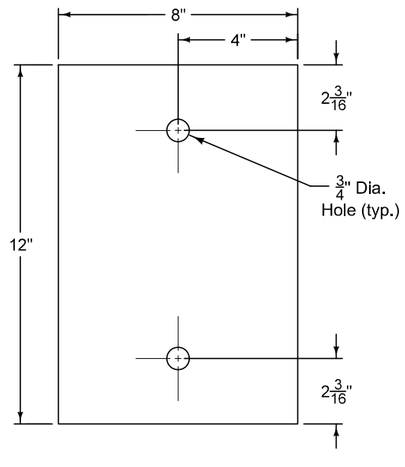
Use materials meeting the requirements of Section 4155.

① Treated timber blocks meeting the requirements of Section 4164. Install blocks so that wood grain is vertical.

② Depending on end anchor type, BTS Post #15 may be eliminated or modified. See BA-202.

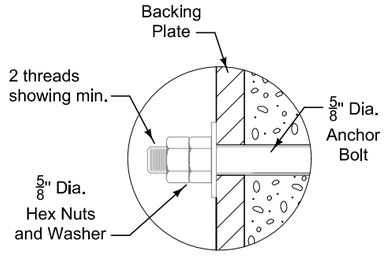


TYPICAL SECTION AT BOLTED CONNECTION



BACKING PLATE

⅝" A36 Steel Plate



DETAIL 'A'

Possible Contract Item:
Retrofit Thrie-Beam Bridge Rail

Materials included in the Contract Item:
Thrie-Beam Guardrail Sections (10 ga.)
8" x 6" x 19" Timber Spacer Blocks
Backing Plates
5/8" x sufficient length Anchor Bolts
Approved bolts, nuts, and washers
Refer to BA-200 for guardrail components

RETROFIT THRIE-BEAM BRIDGE RAIL

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ Phillips \ Fiedler	MUSCATINE COUNTY	PROJECT NUMBER NHSX-22-4(77)--3H-70/HSIPX-22-4(78)--3L-70	SHEET NUMBER U.2

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