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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
LEE COUNTY
HMA PAVEMENT - GRADE AND NEW
IA 16 Intersection and Co Rd J20 Intersection

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.13 of the Specifications.



REVISIONS

PROJECT IDENTIFICATION NUMBER	TOTAL
	27
26-56-218-030	
PROJECT NUMBER	
HSIPX-218-1(090)--3L-56	
R.O.W. PROJECT NUMBER	
-	
-	
-	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Cory D. Tap	Primary Signature Block	C.1
RC.1	Rachel A. Harris	Landscape Design	RC.2

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

Cory D. Tap

Date

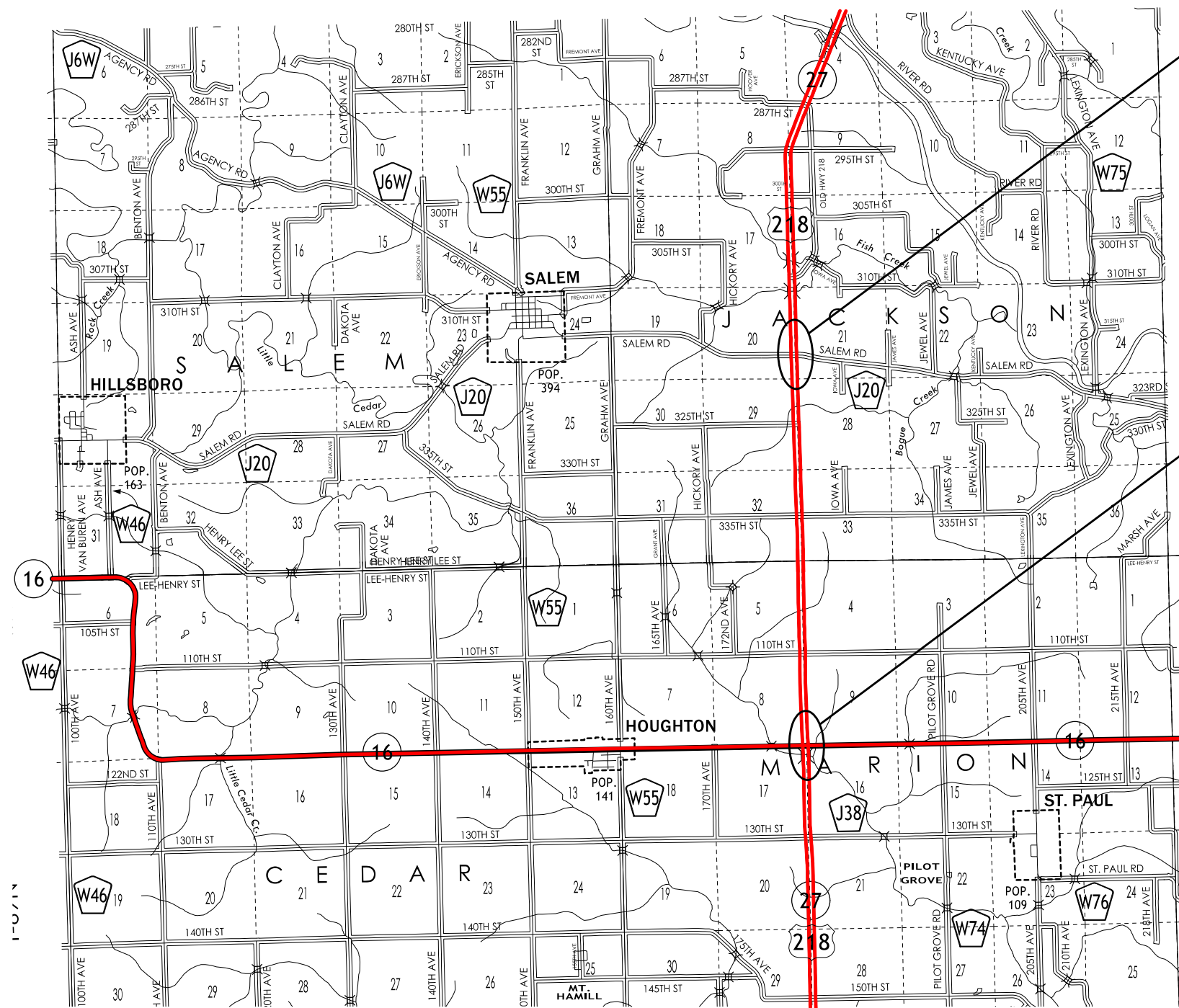
09-28-2026

Printed or Typed Name

Cory D. Tap

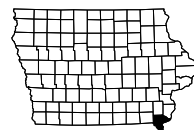
My license renewal date is December 31, 20 26

Pages or sheets covered by this seal: A.1-A.2; B.1-B.2; C.1-C.6; D.1-D.2; G.1; J.1; L.1-L.4; U.1-U.4



PROJECT LOCATION
US 218 SB at CO RD J20
REF LOC: 34.83

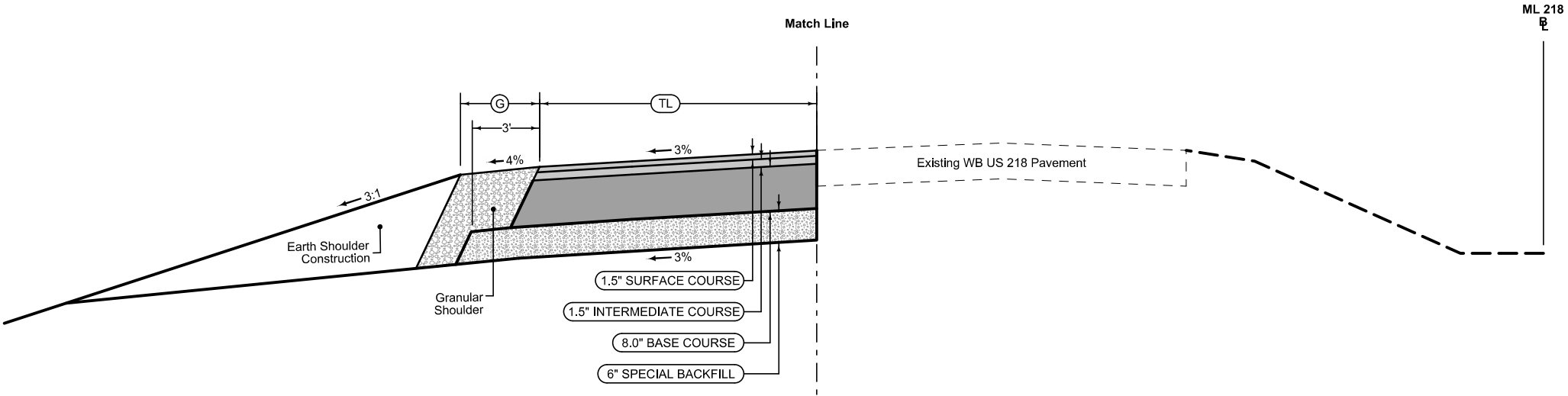
PROJECT LOCATION
US 218 SB at IA 16
REF LOC: 30.54



Offset Turnlane and Granular Shoulder

Longitudinal joint: B
Shoulder Jointing:
Longitudinal joint: B

		DIMENSIONS		Existing Pavment Class 13 Excavation Area SF	Existing Shoulder Class 13 Excavation Area SF	Class 13 Excavation Quantity CY
STATION TO STATION		Ⓣ Feet	Ⓞ Feet			
734+21.28	734+33.59	Varies	4	1387.535	122.252	36.392
734+33.59	734+80.00	Varies	0-4	714.918	934.853	64.497
734+80.00	741+09.55	28.7-8	4	179.762	14,641.649	759.493
741+09.55	742+24.74	4-8	4-8	0	1,496.079	82.118
742+24.74	743+40.00	4	8	0	1,496.254	81.709
447+80.54	448+01.02	Varies	4	1,360.907	478.792	54.524
448+01.02	448+40.00	Varies	0-4	310.991	1054.030	62.023
448+40.00	455+30.07	6-29	4	60.056	14,802.326	777.963
455+30.07	455+90.00	4-6	4-6	0	599.334	31.447
455+90.00	457+10.00	4	6	0	1,200.000	62.963
TOTAL=						2018.932



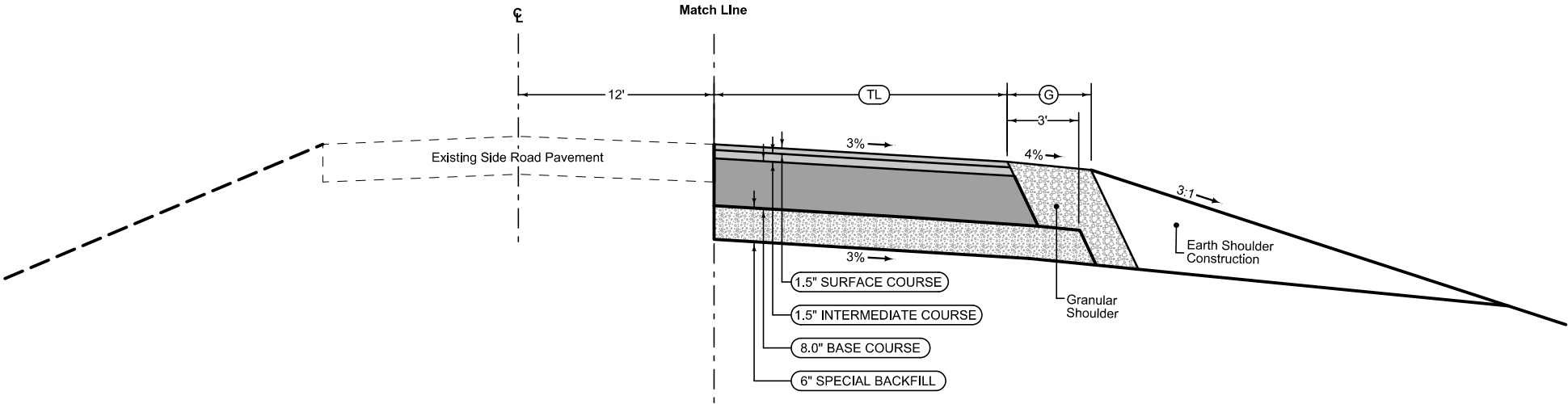
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

US 218

Offset Turnlane and Granular Shoulder

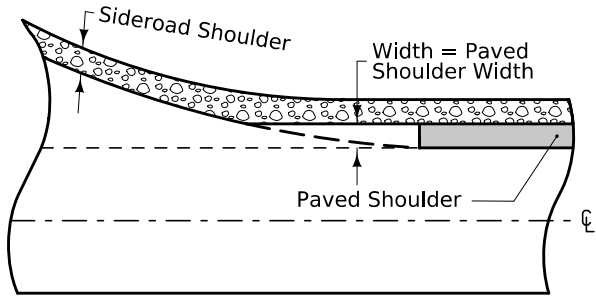
Longitudinal joint: B
Shoulder Jointing:
Longitudinal joint: B

		DIMENSIONS		Existing Pavment Class 13 Excavation Area SF	Existing Shoulder Class 13 Excavation Area SF	Class 13 Excavation Quantity CY
STATION TO STATION		Ⓣ Feet	Ⓞ Feet			
1734+71.67	1735+31.31	Varies	4	2,141.373	236.392	58.668
1735+31.31	1735+50.54	Varies	4-8	169.967	83.215	9.377
1735+50.54	1735+98.78	4	8	221.329	405.821	23.228
1449+39.72	1450+11.88	Varies	4	1,615.068	745.717	74.021
1450+11.88	1450+23.79	Varies	4-6	51.625	67.870	4.676
1450+23.79	1450+78.78	4	6	147.012	402.662	24.304
TOTAL=						195.781



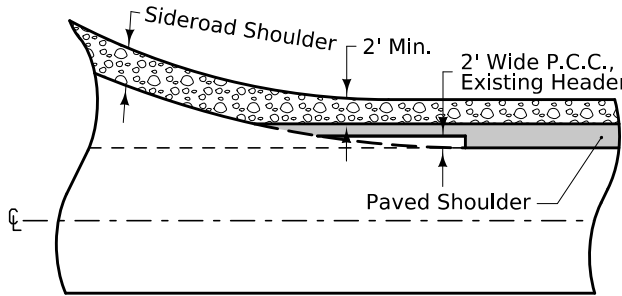
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

Side Roads



With Newly Constructed Returns

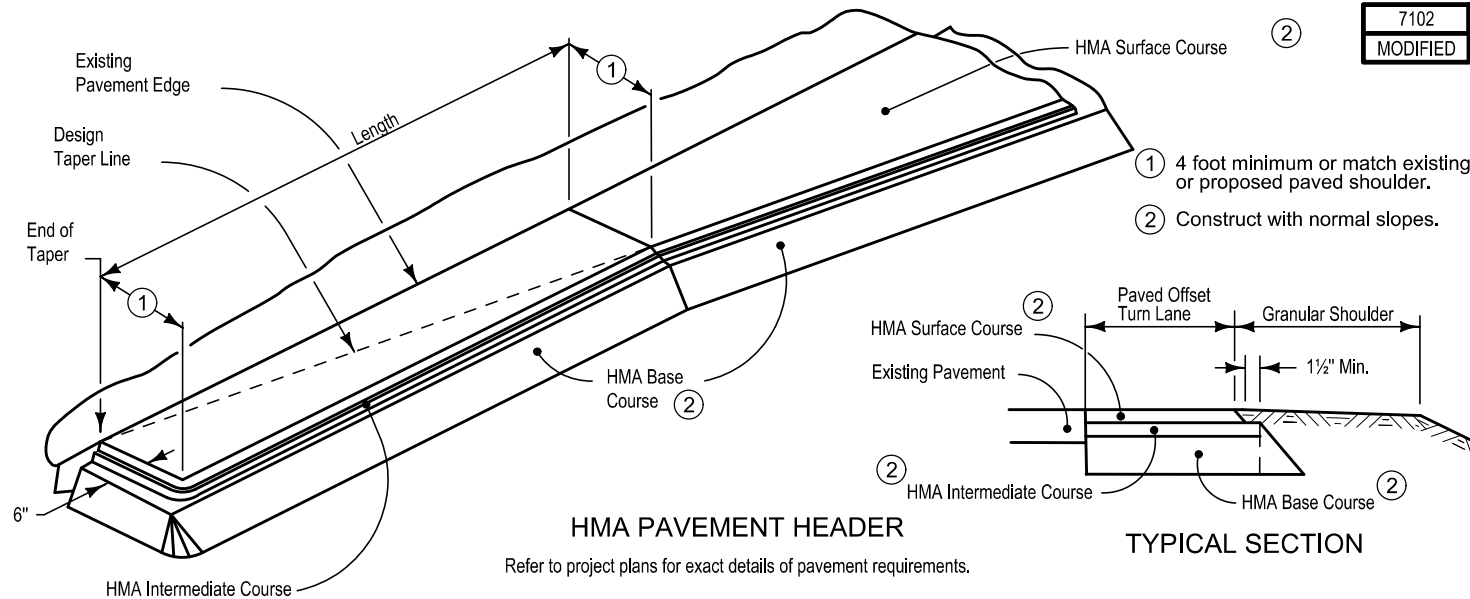
Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).



At UAC Returns

PAVED SHOULDER
DETAIL AT RETURNS

7154B
10-19-21



7102
MODIFIED

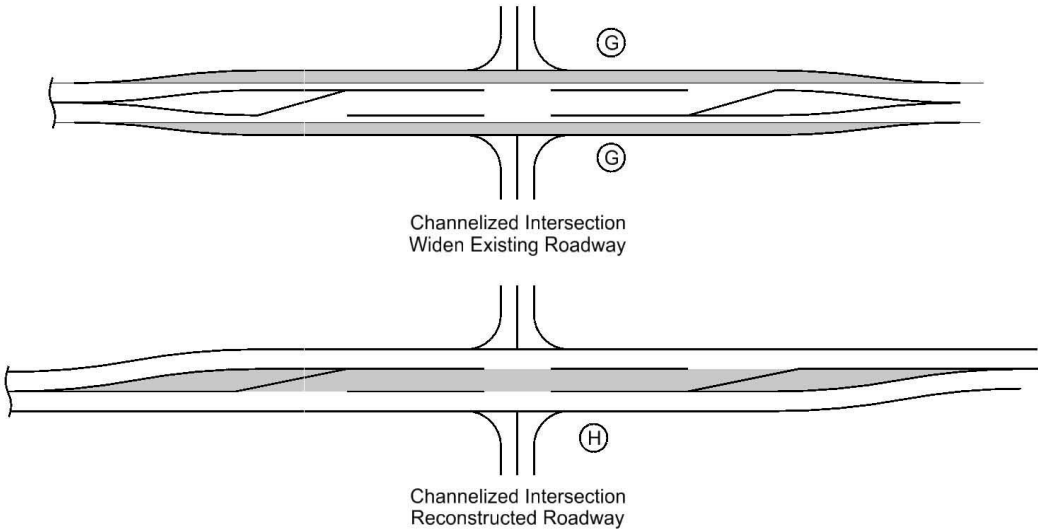
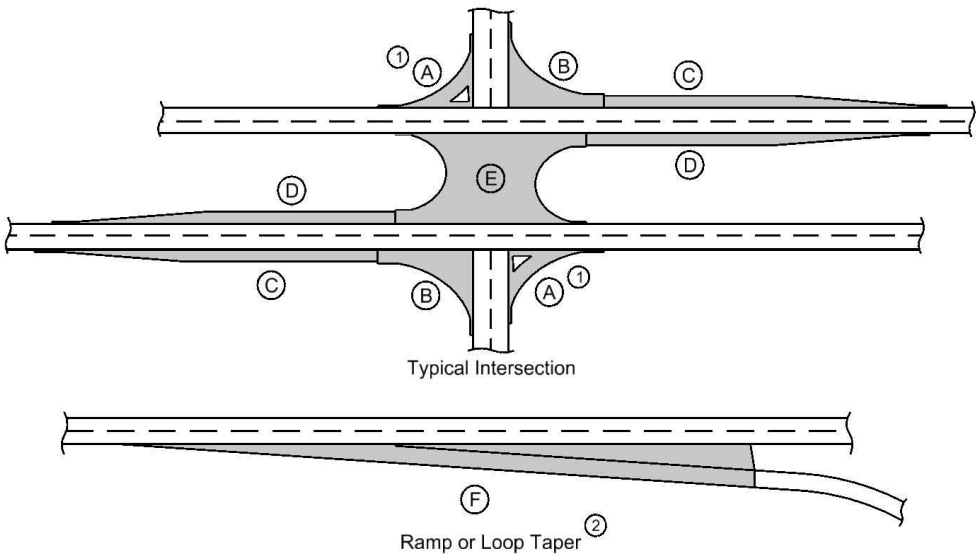
ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2102-0425070	SPECIAL BACKFILL	TON	1,547.441	See Tab. 100-25 in the C Sheets for details.
2	2102-2625000	EMBANKMENT-IN-PLACE	CY	570	Provide borrow material according to Section 2102 of the Standard Specifications. Quantity was estimated using approximated terrain data not to be used for construction. Contractor shall confirm with Engineer no utilities or drainage items will be affected prior to start of earthwork. Earthwork will be done in a way as to ensure positive drainage throughout the project and keep drainage within existing ROW at the Engineers discretion.
3	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	2,214.713	See B Sheets for details. Dispose of excess material according to Article 1106.07 of the current specifications.
4	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	300.021	See Tab 103-10 in the C Sheets for details. Quantity will be computed on the basis of given depths over the area involved once staking of foreslope tie points is completed. Sufficient field measurements will be taken to assure reasonable conformity with the required depth of cut. Provided quantity is estimated from a terrain not to be used for construction.
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	733.095	See Tabulation 112-9 in the C Sheets for details.
6	2122-5500110	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 11 IN.	SY	19	See Tab. 112-9 in the C Sheets for details.
7	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	21.1	See Tab. 112-9 in the C Sheets for details. Requires a minimum of 4 inches of topsoil. Place according to Article 2105.03,B of the Standard Specifications.
8	2303-1041500	HOT MIX ASPHALT HIGH TRAFFIC, BASE COURSE, 1/2 IN. MIX	TON	1,747.168	See Tab. 100-25 in the C Sheets for details.
9	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	332.113	
10	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	332.113	
11	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	104.83	See Tab. 100-25 in the C Sheets for details. Quantity is for use with base course.
12	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	39.854	See Tab. 100-25 in the C Sheets for details. Quantity is for surface and intermediate courses.
13	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1	
14	2510-6745850	REMOVAL OF PAVEMENT	SY	944	See Tab. 110-1 and Tab. 102-5 in the C Sheets for details.
15	2520-0005010	POP-UP NETWORK DEVICE	EACH	1	Use device as instructed by the Engineer.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
16	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	Item is for establishing construction baselines and any staking necessary to construct project. Project plans and associated electronic files should not be used to establish construction baselines.
17	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	11.52	See Tab. 108-22 and U Sheets for details.
18	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	75.55	
19	2528-2518000	SAFETY CLOSURE	EACH	4	See Tab 108-13A for details.
20	2528-8445110	TRAFFIC CONTROL	LS	1	See Traffic Control Plan on Sheet J.1.
21	2533-4980005	MOBILIZATION	LS	1	--

HMA PAVEMENT



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

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

Location				Mainline			Area ③								Bid Items														Remarks	
															Hot Mix Asphalt Pavement								Binder			Special Backfill	Modified Subbase	Granular Subbase		Pavement Scarification
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	① A	B	C	D	E	② F	G	H	Surface		Intermediate		Base		Surface	Intermediate	Base							
							FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY
US 218	WB	733+78.97	743+40.00	Varies	961.0				573.9	1429.5					165.656	2003.4	165.656	2003.4	871.481	2003.4	9.939	9.939	52.289	769.422						
US 218	WB	447+42.28	457+10.00	Varies	967.7				584.7	1428.4					166.456	2013.1	166.456	2013.1	875.687	2013.1	9.987	9.987	52.541	778.019						
TOTALS=															332.113		332.113		1747.168		19.927	19.927	104.830	1547.441						
Note 1: Special backfill quantity is for both turn lane and shoulders.																														
Note 2: Excavation quantities are provided in the B Sheets.																														

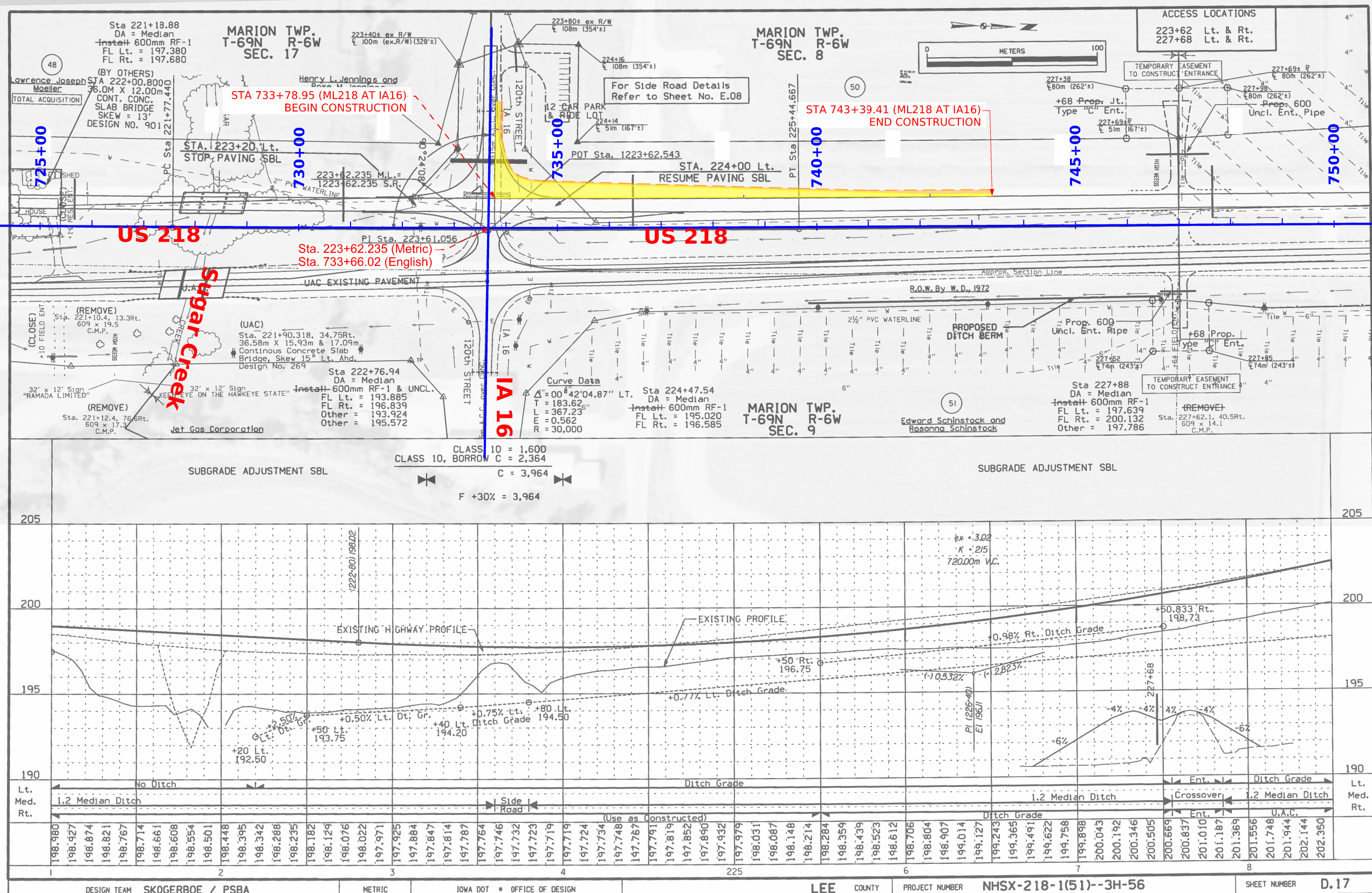
108-13A 08-01-08			
SAFETY CLOSURES			
Refer to Section 2518 of the Standard Specifications			
Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
1455+10.55	1		CO RD J20 Closure
1449+00.00	1		CO RD J20 Closure
1736+80.00	1		IA 16 Closure
1734+34.00	1		IA 16 Closure
TOTAL=	4		

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

FILE NO.		DESIGN TEAM	FLATTERY\BELL\TAP	LEE COUNTY	PROJECT NUMBER	HSIPX-218-1(090)--3L-56	SHEET NUMBER	C.5
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108-22

PAVEMENT MARKING LINE TYPES																								
										See PM-110														
*BCY4 - Place on the same side of the roadway to match existing markings near the project.										***MNY4 - Factor of 1.00 as value includes number of 6-inch passes to cover median nose area.														
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.																								
ELW6: Edge Line Right (White) @ 1.00					CHW10: Channelizing Line (White) @ 1.67					DLW6: Dotted Line (White) @ 0.33					ELW4: Edge Line Right (White) @ 0.67									
Location				Length by Line Type (Unfactored)																				Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			ELW6	CHW10	DLW6	ELW4													
					L	C	R																	
US 218	734+90.00	743+40.00	SB	PAVEMENT MARKINGS REMOVED			X				8.50													
US 218	733+81.80	734+80.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X	0.98																
US 218	734+80.00	743+40.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X	8.60																
US 218	733+78.50	739+65.50	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X		15.85															See Note 1
US 218	739+65.50	743+40.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			3.75														
US 218	448+40.00	457+10.00	SB	PAVEMENT MARKINGS REMOVED			X				8.70													
US 218	447+46.11	448+40.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X	0.94																
US 218	448+40.00	457+10.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X	8.70																See Note 1
US 218	447+41.50	453+50.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X		16.43															
US 218	453+50.00	457+10.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			3.60														



		Point on Tangent	Begin Spiral	Begin Curve	Simple Curve PI or Master PI of SCS	End Curve	End Spiral
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[illegible]

			Horizontal Alignment Data		
			Stationing	Offset	

[illegible]

TRAFFIC CONTROL PLAN

108-23A
08-01-08

Traffic on US 218 and all side streets shall be maintained at all times using the traffic control plan of tied project NHSX-218-1(089)--3H-56 which entails an HMA overlay of 2.5" and constructing 4' paved shoulders. Outside shoulder construction within the limits of this (090) project will be addressed in these plans herein, not in the (089) plans.

COORDINATED OPERATIONS

111-01
04-17-12

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

Project	Type of Work
NHSX-218-1(089)--3H-56	HMA RESURFACING

511 TRAVEL RESTRICTIONS

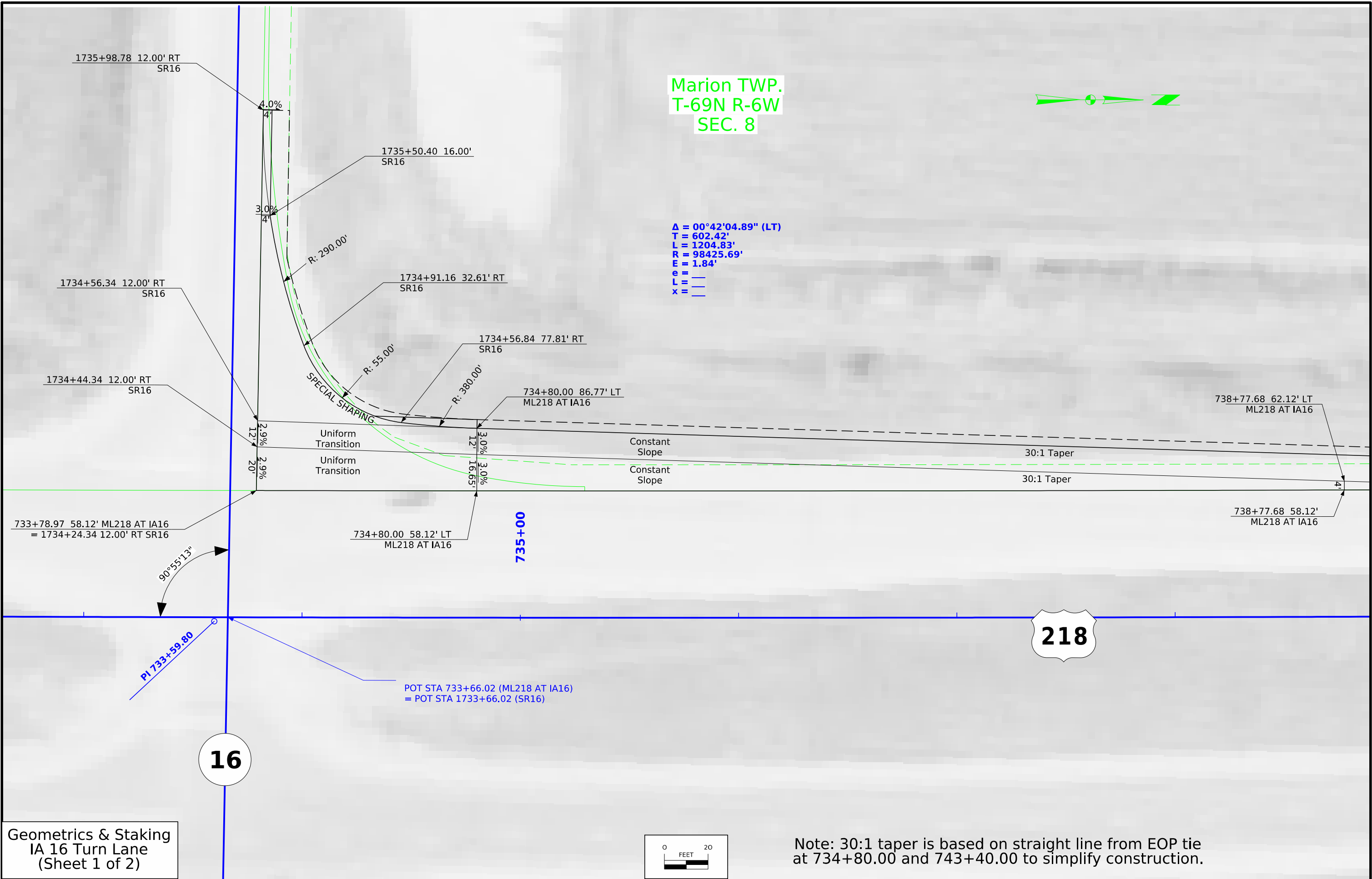
108-25
0-21-14

[illegible]

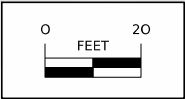
Marion TWP.
T-69N R-6W
SEC. 8



$\Delta = 00^\circ 42' 04.89''$ (LT)
 $T = 602.42'$
 $L = 1204.83'$
 $R = 98425.69'$
 $E = 1.84'$
 $e = \text{---}$
 $x = \text{---}$

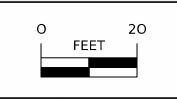
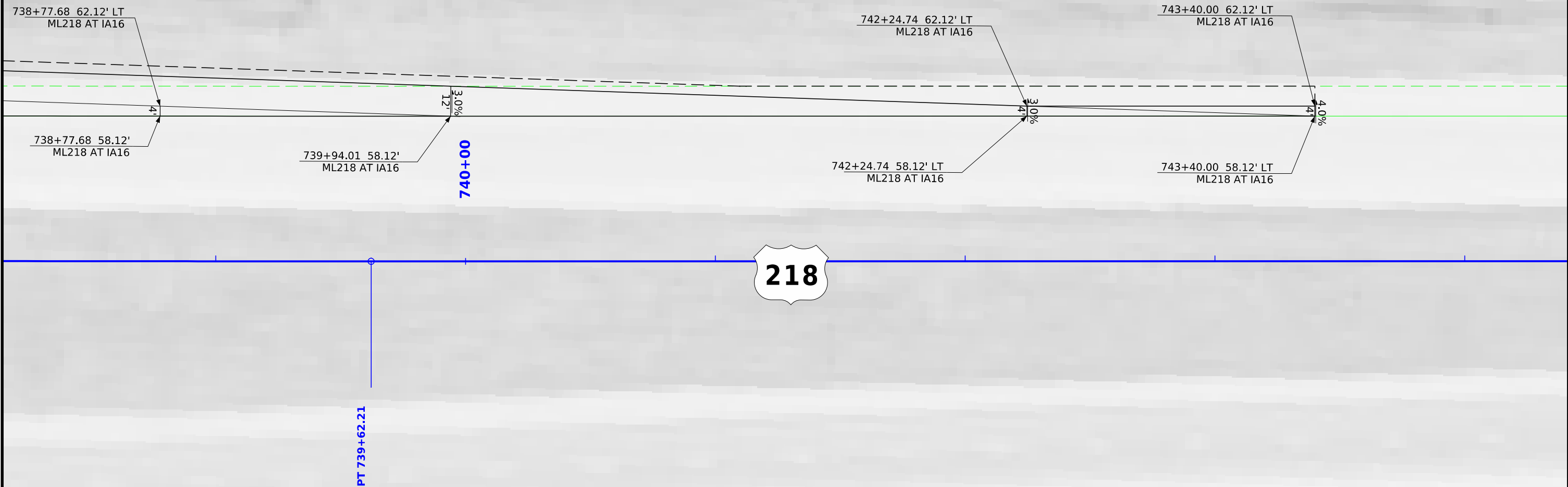


Geometrics & Staking
IA 16 Turn Lane
(Sheet 1 of 2)



Note: 30:1 taper is based on straight line from EOP tie
at 734+80.00 and 743+40.00 to simplify construction.

Marion TWP.
T-69N R-6W
SEC. 8



Geometrics & Staking
IA 16 Turn Lane
(Sheet 2 of 2)

Marion TWP.
T-70N R-6W
SEC. 20



1450+78.78 12.00' RT
SRJ20

4.0%
4'

1450+23.79 16.00'
SRJ20

3.0%
4'

R: 380.00'

1449+60.76 30.79' RT
SRJ20

R: 55.00'

1449+23.92 72.27' RT
SRJ20

R: 200.00'

448+40.00 119.92' LT
ML218 AT J20

452+30.00 94.92' LT
ML218 AT J20

1449+20.98 12.00' RT
SRJ20

1449+08.99 12.00' RT
SRJ20

1.8%
12'

Uniform
Transition

Constant
Slope

30:1 Taper

1.8%
20'

Uniform
Transition

Constant
Slope

30:1 Taper

447+42.28 90.93' LT ML218 AT J20
1448+88.99 12.00' RT SRJ20



91°12'30"

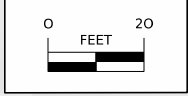
448+40.00 90.92' LT
ML218 AT J20

452+30.00 90.92' LT
ML218 AT J20

450+00

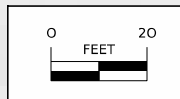
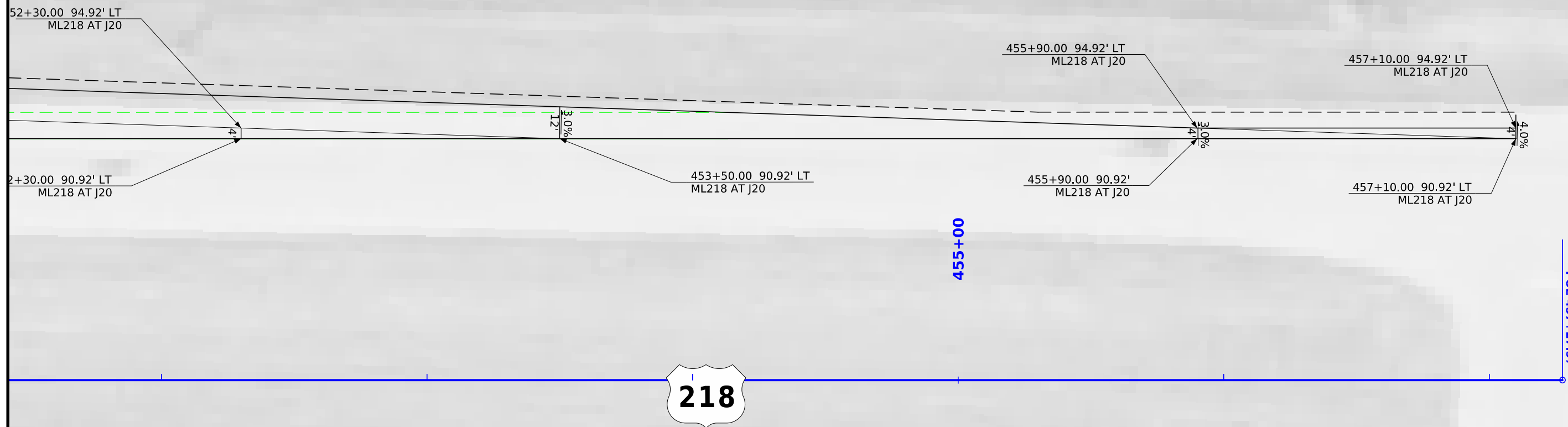


POT STA 447+28.36 (ML218 AT J20)
=POT STA 1447+97.79 (SRJ20)



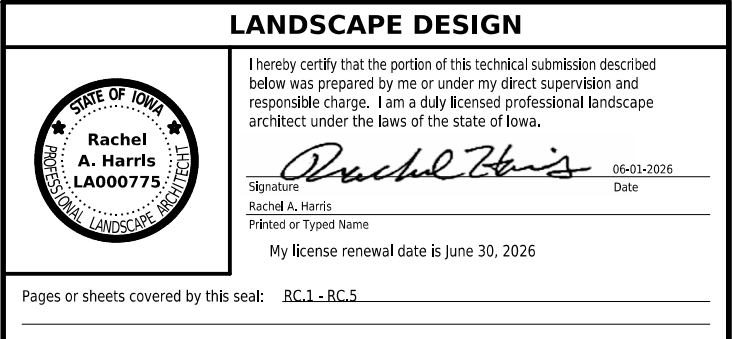
Geometrics & Staking
Co. Rd. J20 Turn Lane
(Sheet 1 of 2)

Marion TWP.
T-70N R-6W
SEC. 20



Geometrics & Staking
Co.Rd. J20 Turn Lane
(Sheet 2 of 2)

FILE NO. -	ENGLISH	DESIGN TEAM FLATTERY/BELL/TAP	LEE COUNTY	PROJECT NUMBER HSIPX-218-1(090)--3L-56	SHEET NUMBER L.4
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Signature Rachel Harris Date 06-01-2026

My license renewal date is June 30, 2026

My license renewal date is June 30, 2026

Pages or sheets covered by this seal: BC.1 - BC.5

RC.1

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadside Items : Roadside Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	500	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
2	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	500	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
3	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	1,000	

232_03A
9/28/22

EROSION CONTROL (RURAL SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

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

232_11
6/21/23

EROSION CONTROL (STABILIZING CROP SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

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

Place seed and fertilize according to the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

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

281_03
11/9/23

STORM WATER BEST MANAGEMENT PRACTICES

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided: Perimeter and Slope Sediment Control Devices and Seeding.

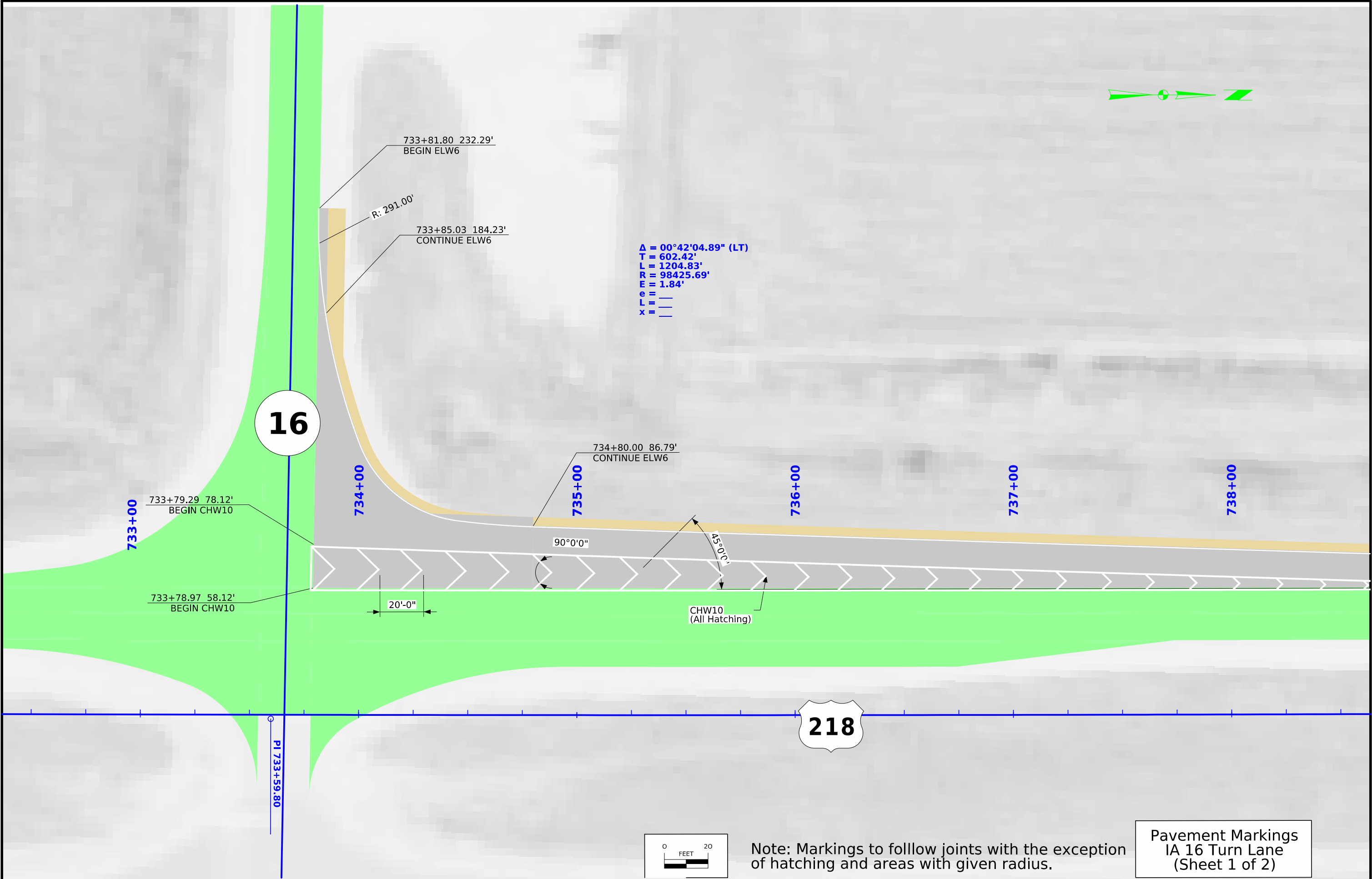
INDEX OF TABULATIONS			111_25 4/21/26
Tabulation	Tabulation Title	Sheet No.	
111_25	INDEX OF TABULATIONS	RC.4	
105_04	STANDARD ROAD PLANS	RC.5	

105_04
4/21/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-502	04-21-15	Seeding in Rural Areas





739+00

740+00

741+00

742+00

743+00

744+00

739+80.00 58.12'
END CHW10; BEGIN DLW6

PT 739+62.21

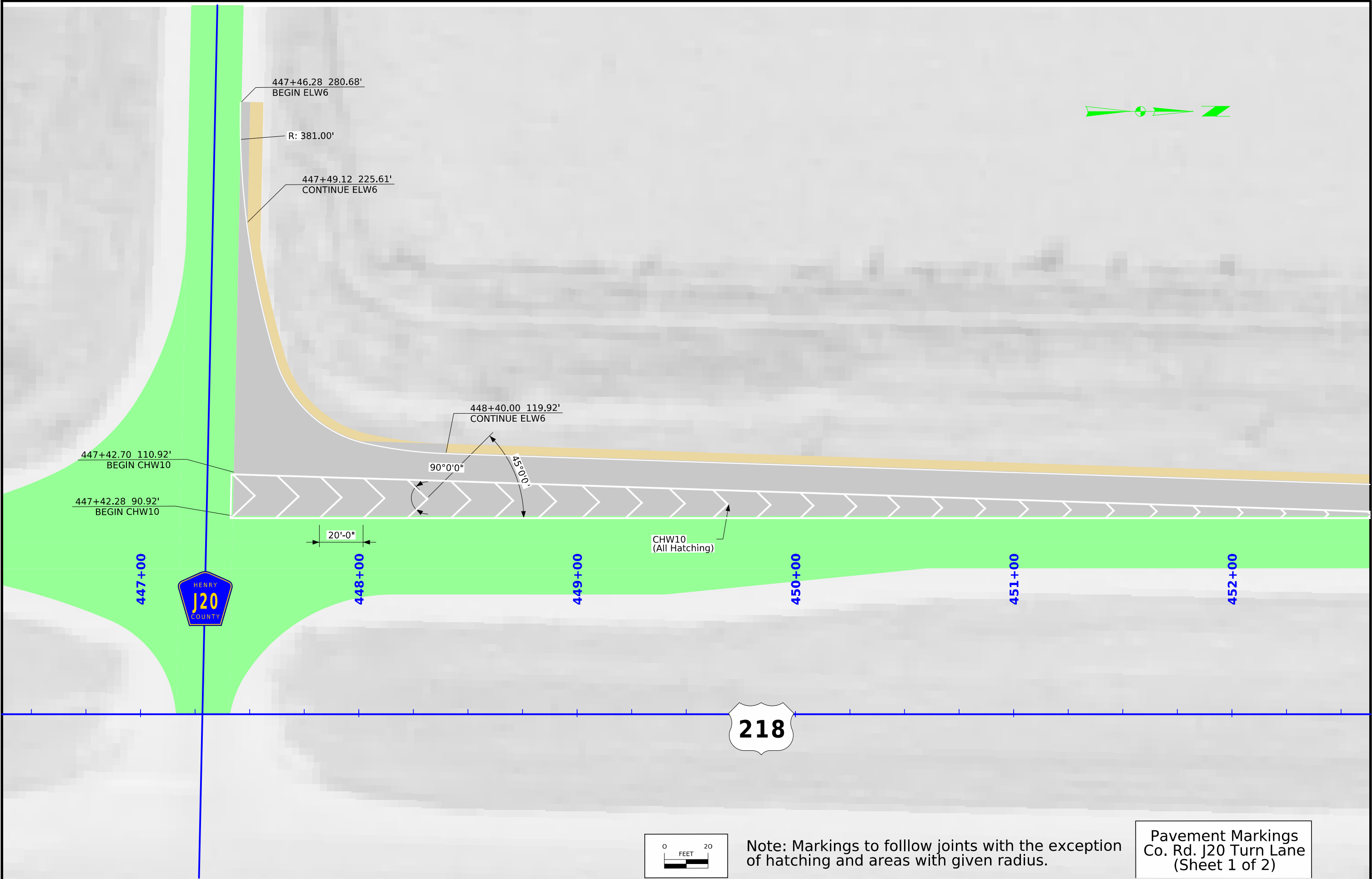
742+20.00 62.12'
CONTINUE ELW6

743+40.00 58.12'
END ELW6; END DLW6



Note: Markings to follwo joints with the exception
of hatching and areas with given radius.

Pavement Markings
IA 16 Turn Lane
(Sheet 2 of 2)





453+50.00 90.92'
END CHW10; BEGIN DLW6

455+90.00 94.92'
CONTINUE ELW6

457+10.00 90.92'
END ELW6; END DLW6

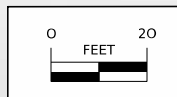
453+00

454+00

455+00

456+00

457+00



Note: Markings to follrow joints with the exception
of hatching and areas with given radius.

Pavement Markings
Co. Rd. J20 Turn Lane
(Sheet 1 of 2)