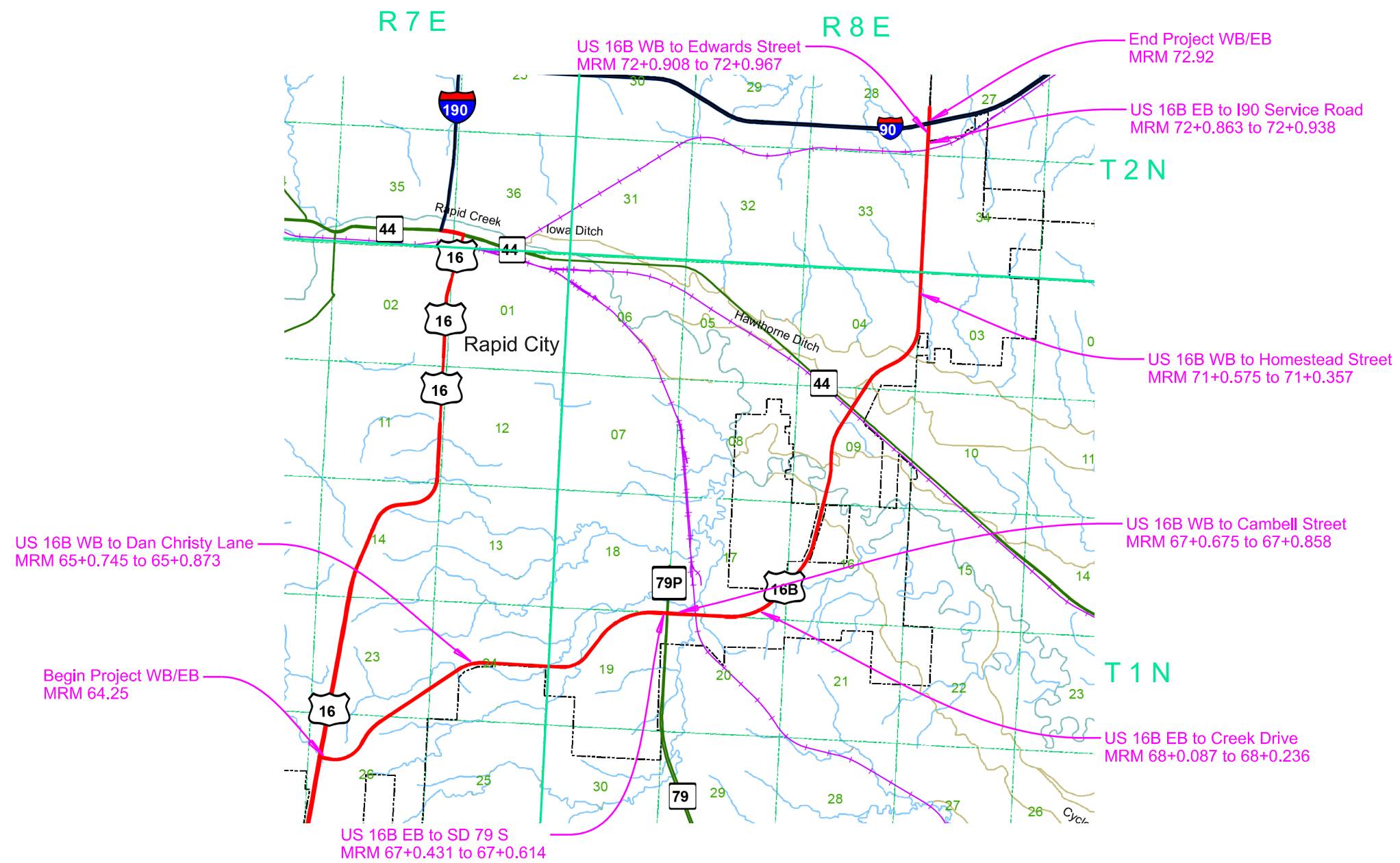


# SECTION M: PAVEMENT MARKING PLANS

## INDEX OF SHEETS

M1	General Layout with Index
M2-M3	Estimate With General Notes & Tables
M4-M9	Pavement Marking Layouts



**SECTION M ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
633E0010	Cold Applied Plastic Pavement Marking, 4"	1,513	Ft
633E0020	Cold Applied Plastic Pavement Marking, 8"	1,461	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	300	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	19	Each
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	3,196	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	130	Ft
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	1,513	Ft
633E5005	Grooving for Cold Applied Plastic Pavement Marking, 8"	1,461	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	300	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	19	Each
633E5100	Grooving for Durable Pavement Marking, 4"	3,326	Ft
634E0560	Remove Pavement Marking, 4" or Equivalent	3,176	Ft

**PAVEMENT MARKING PAINT**

Application of permanent pavement marking will be completed within 14 calendar days following completion of the final surfacing.

**COLD APPLIED PLASTIC PAVEMENT MARKING**

All materials will be applied as per the manufacturer's recommendations.

Cold Applied Plastic Pavement Markings will be 3M Series 380 IES or an approved equal.

**HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

All materials will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to Section 980.1 B.

Reflective media consisting of glass beads as well as wet-reflective optics will be adhered to the paint.

The wet-reflective optics will contain either clear, white, amber, or yellow tinted beads composed of glass or a composite consisting of a core made from ceramic or glass with an outer layer of microcrystalline ceramic or glass beads. The wet-reflective optics will provide a 50/50 blend of dry to wet ratio of optics. All beads bonded to wet-reflective optics will have a minimum index of refraction of 1.8 for dry retroreflectivity and 2.4 for wet retroreflectivity when tested using the liquid oil immersion method.

Reflective media will require a Certificate of Compliance for Certification for each type, source, and lot. Acceptance sampling will not be required.

The Department will take retroreflectivity readings on the pavement marking lines no sooner than 3 days and no later than 30 days after the completion of all line applications required for an individual highway route using a portable retroreflectometer conforming to 30-meter geometry. Retroreflectivity readings will be taken on a test location with cleaning being limited to light hand brooming.

Pavement markings not conforming to the retroreflectivity requirements will be removed and replaced. If replacement of markings cannot be applied within the same year, the Contractor will schedule subject work to be completed no later than June 15<sup>th</sup> in the following year. Upon replacement, the retroreflectivity testing process will be done again requiring new readings.

The Department will randomly select one test location per mile of each edge line including ramps and one test location per mile of centerline (solid and/or skip line will be considered as one centerline). Three retroreflectivity readings will be taken at each test location. The three readings will be averaged and become the reading for that test location.

Initial readings:

Pavement Marking Color	Minimum Value
White	350 mc/m <sup>2</sup> /lux
Yellow	275 mc/m <sup>2</sup> /lux

All pavement markings not conforming to the requirements provided in these plans will be considered deficient and will be removed and replaced. Additional retroreflectivity readings will be taken by the Department to determine the limits of removal. The removal will be accomplished using suitable sand blasting or grinding equipment unless the Engineer authorizes other means. The removal process will remove at least 90% of the deficient line, with no excessive scarring of the existing pavement. The removal width will be one inch wider all around the nominal width of the pavement marking to be removed. Removal and replacement of the pavement markings will be at the Contractor's expense, with no cost incurred by the State.

**RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

Solid 4" line = 27.8 Gals/Mile  
Dashed 4" line = 7.6 Gal/Mile  
Glass Beads = 5.3 Lbs/Gal.  
Wet-Reflective Optics = 2.1 Lbs/Gal.

All cost for materials, labor, and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

**GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING**

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving will be vacuumed. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners. Residue from wet grooving will not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. The cleaning of the residue for grooving will be to the satisfaction of the Engineer and may require more than one pass to adequately remove material. All costs for removal of grinding and/or grooving residue will be included in the contract unit price per foot and each for "Grooving for Cold Applied Plastic Pavement Marking" contract items.

**GROOVING FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving will be vacuumed. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners. Residue from wet grooving will not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. All costs for removal of grinding and/or grooving residue will be included in the contract unit price per foot for "Grooving for Durable Pavement Marking" contract item.

Unless otherwise specified in the plans, the Contractor will groove the surface for High Build Waterborne Pavement Marking Paint as specified in these plans and as per the manufacturer's instructions.

The grooving will be completed within the following tolerances:

Description	Specification	Tolerance
Depth of Groove	Marking Thickness <sup>1</sup> + 15 mils	+ 5 mils
Width of Groove	5 to 6 inches	
Length of Skip Lines <sup>2</sup>	10 foot 6 inches	± 3 inch
Tapers at ends of lines	6 to 9 inches	
Between Double Lines	4 inches	± 1/2 inch

<sup>1</sup> Marking thickness will include the thickness of marking material and reflective media.

<sup>2</sup> Additional length may be required as specified in the plans.


The equipment will be capable of the following:

- Grooving the total width of the groove in one pass or uniform depths with multiple passes.
- Grooving without causing damage to the pavement joints or joint sealant material.
- Provide uniform alignment and depth.
- Moving continuously to permit a mobile traffic work operation.

If damage occurs, including, but not limited to, joints, joint sealant material, and backer rod, the grooving operation will be stopped and modifications will be made to the grooving operation to prevent further damage. The Contractor will be required to use specially prepared circular diamond blade cutting heads to prevent damage at the joints. Damage caused will be repaired or replaced by the Contractor, as directed by the Engineer. No additional payment will be made for the repair work or any reapplication of the pavement marking in the area of the repair.

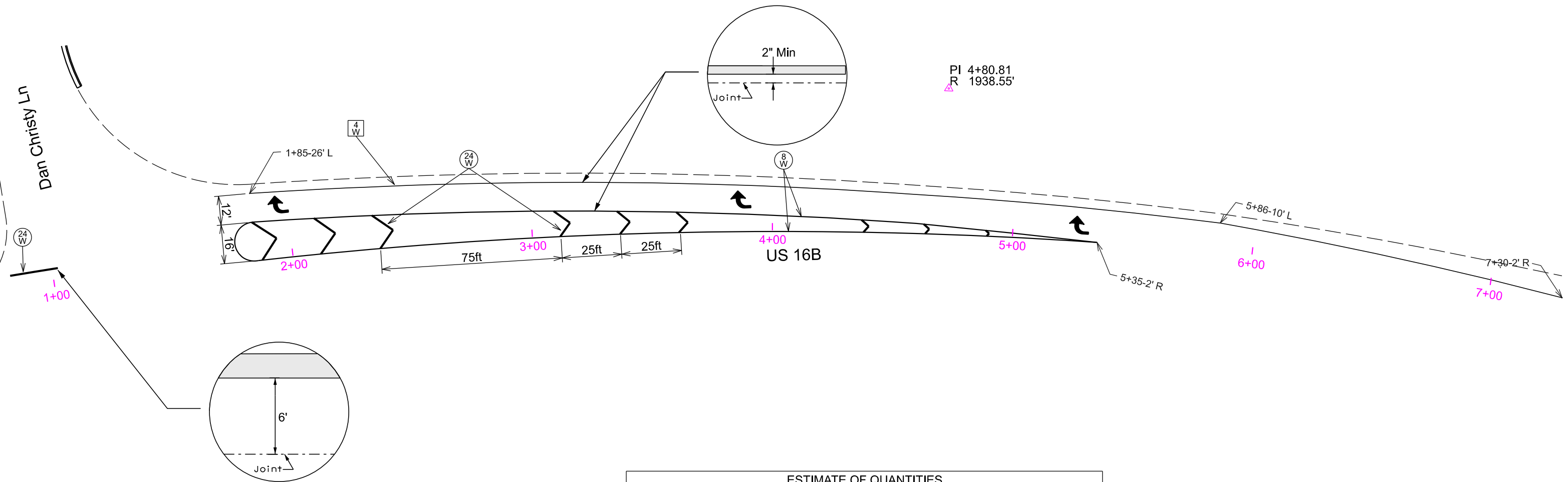
**REMOVE PAVEMENT MARKING, 4" OR EQUIVALENT**

Markings that fall outside of the new groove will be obliterated using additional methods approved by the Engineer. Removal of the existing markings will be accomplished without causing damage to the pavement, pavement joints, or joint sealant. The Contractor will repair any damage to the pavement, pavement joints, or joint sealant for no additional payment and at no cost to the State. All costs for materials, labor, and equipment necessary to remove the existing markings will be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or Equivalent".

	PROJECT	SECTION	SHEET
	NH 016B(03)64	M	3

# PAVEMENT MARKING LAYOUT

## US 16B - Dan Christy Ln



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Remove Pavement Marking, 4" or Equivalent	578	FT
	Grooving for Cold Applied Plastic Pavement Marking, Arrow	3	EACH
	Grooving for Cold Applied Plastic Pavement Marking, 8"	725	FT
	Grooving for Cold Applied Plastic Pavement Marking, 24"	138	FT
	Grooving for Durable Pavement Marking, 4"	525	FT
↷	Cold Applied Plastic Pavement Marking, Arrow (Right)	3	EACH
⊘ 8 W	Cold Applied Plastic Pavement Marking, 8" White	725	FT
⊘ 24 W	Cold Applied Plastic Pavement Marking, 24" White	138	FT
⊠ 4 W	High Build Waterborne Pavement Marking Paint, 4" White	525	FT

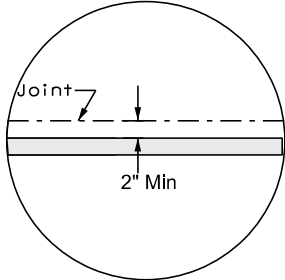
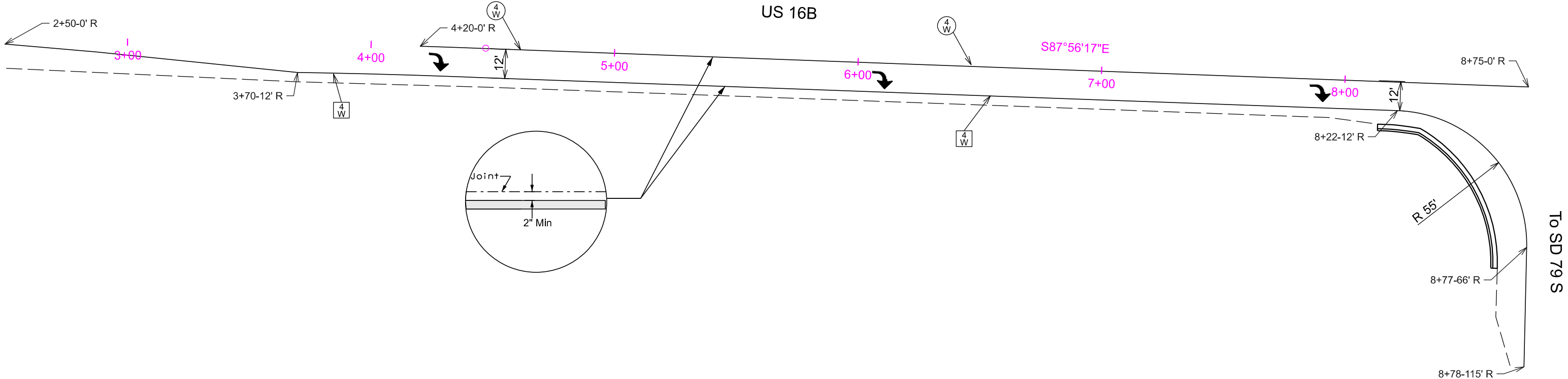
--- Edge of Surfacing



# PAVEMENT MARKING LAYOUT

Plotting Date: 2/13/2026

## US 16B - SD 79 S



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Remove Pavement Marking, 4" or Equivalent	715	FT
	Grooving for Cold Applied Plastic Pavement Marking, Arrow	3	EACH
	Grooving for Cold Applied Plastic Pavement Marking, 4"	455	FT
	Grooving for Durable Pavement Marking	706	FT
↷	Cold Applied Plastic Pavement Marking, Arrow, Right	3	EACH
⓪ W	Cold Applied Plastic Pavement Marking, 4" White	455	FT
⓪ W	High Build Waterborne Pavement Marking Paint, 4" White	706	FT

--- Edge of Surfacing

To SD 79 S

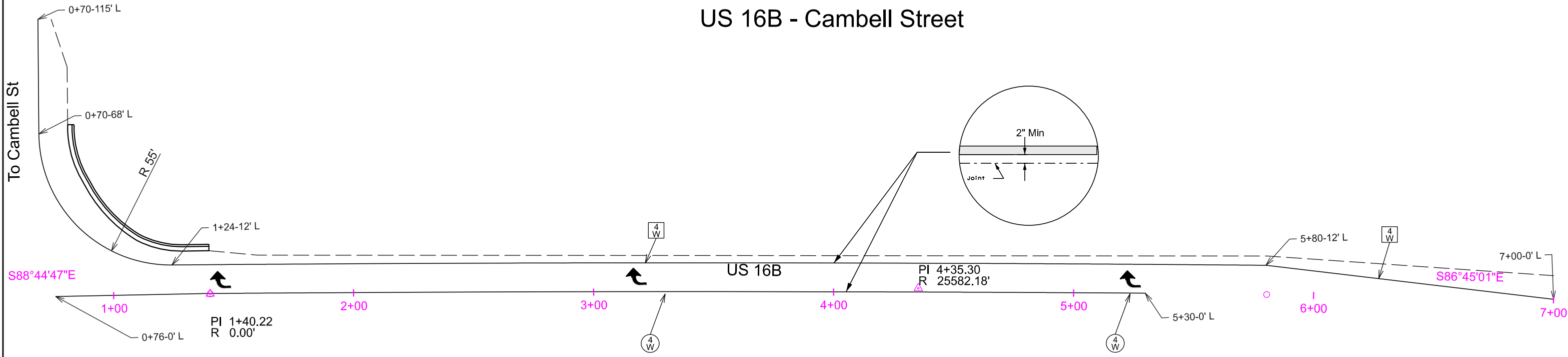


# PAVEMENT MARKING LAYOUT

SD DOT	PROJECT	SECTION	SHEET
	NH 016B(03)64	M	6

Plotting Date: 2/13/2026

## US 16B - Cambell Street



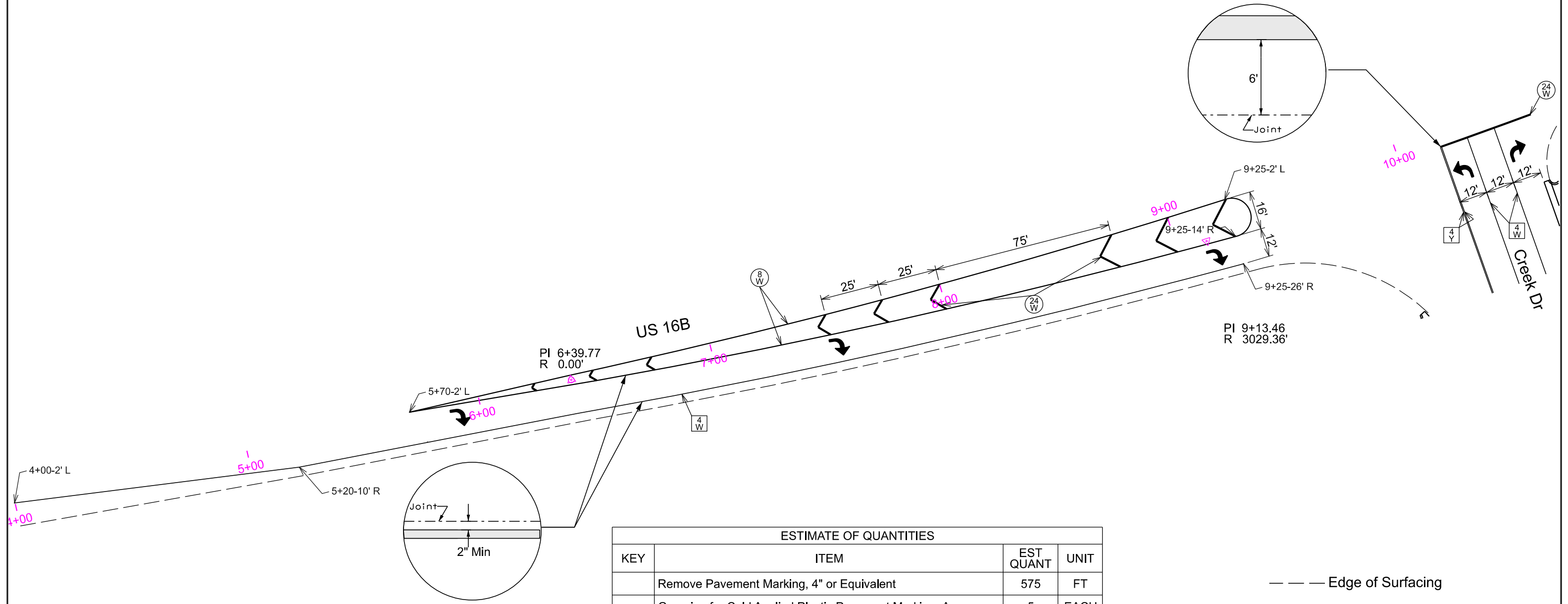
ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Remove Pavement Marking, 4" or Equivalent	718	FT
	Grooving for Cold Applied Plastic Pavement Marking, Arrow	3	EACH
	Grooving for Cold Applied Plastic Pavement Marking, 4"	454	FT
	Grooving for Durable Pavement Marking	712	FT
	Cold Applied Plastic Pavement Marking, Arrow, Right	3	EACH

--- Edge of Surfacing



# PAVEMENT MARKING LAYOUT

## US 16B - Creek Dr



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Remove Pavement Marking, 4" or Equivalent	575	FT
	Grooving for Cold Applied Plastic Pavement Marking, Arrow	5	EACH
	Grooving for Cold Applied Plastic Pavement Marking, 8"	736	FT
	Grooving for Cold Applied Plastic Pavement Marking, 24"	162	FT
	Grooving for Durable Pavement Marking	788	FT
↩	Cold Applied Plastic Pavement Marking, Arrow, Right-4, Left-1	5	EACH
8 W	Cold Applied Plastic Pavement Marking, 8" White	736	FT
24 W	Cold Applied Plastic Pavement Marking, 24" White	162	FT
4 W	High Build Waterborne Pavement Marking Paint, 4" White	658	FT
4 Y	High Build Waterborne Pavement Marking Paint, 4" Yellow	130	FT

--- Edge of Surfacing



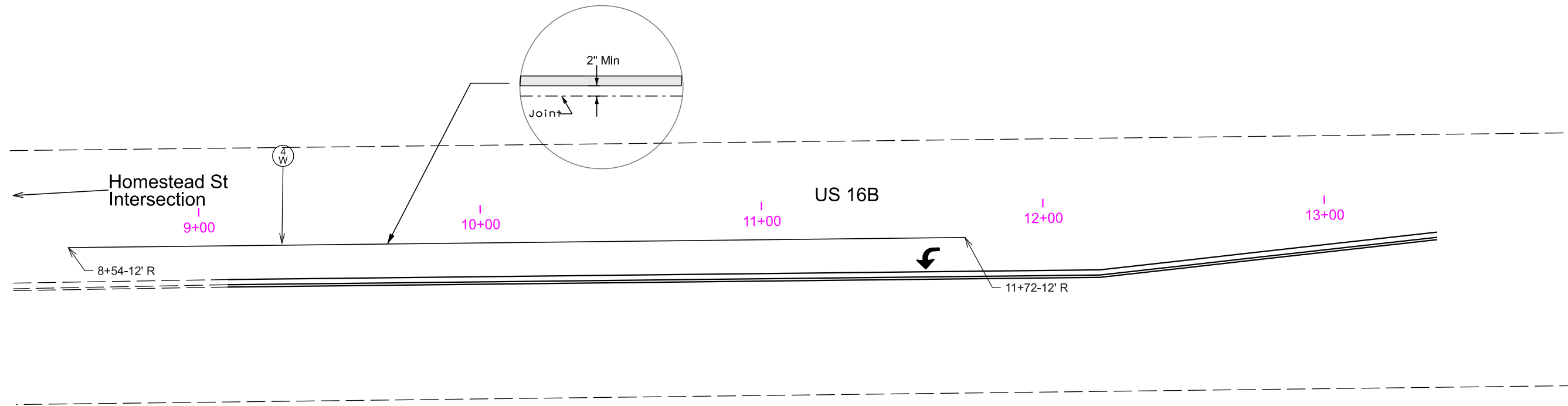
# PAVEMENT MARKING LAYOUT



PROJECT	SECTION	SHEET
NH 016B(03)64	M	8

Plotting Date: 2/13/2026

## US 16B - Homestead St

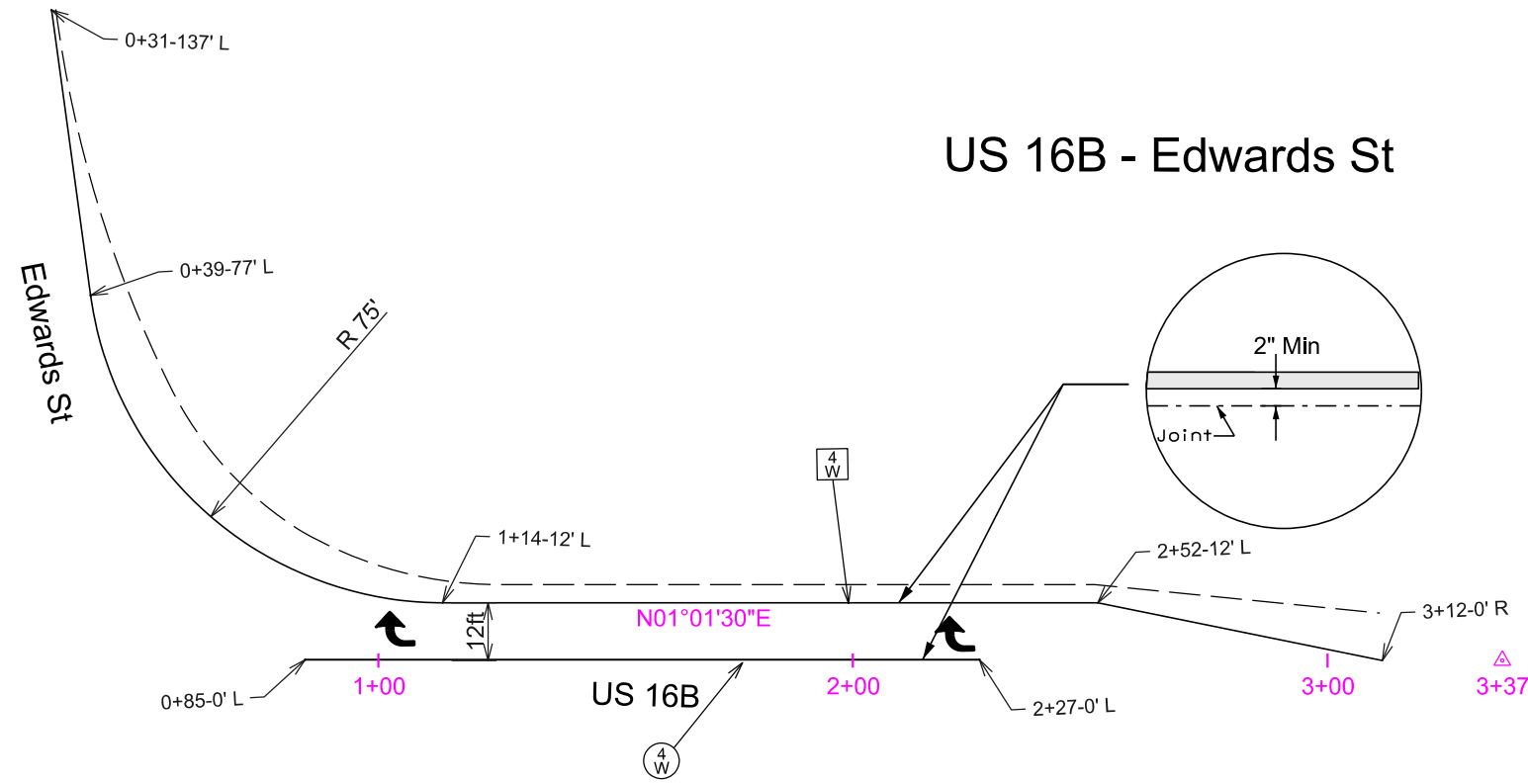


ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Grooving for Cold Applied Plastic Pavement Marking, Arrow	1	EACH
	Grooving for Cold Applied Plastic Pavement Marking, 4"	318	FT
Ⓞ W	Cold Applied Plastic Pavement Marking, 4" White	318	FT
↷	Cold Applied Plastic Pavement Marking, Arrow, Right	1	EACH



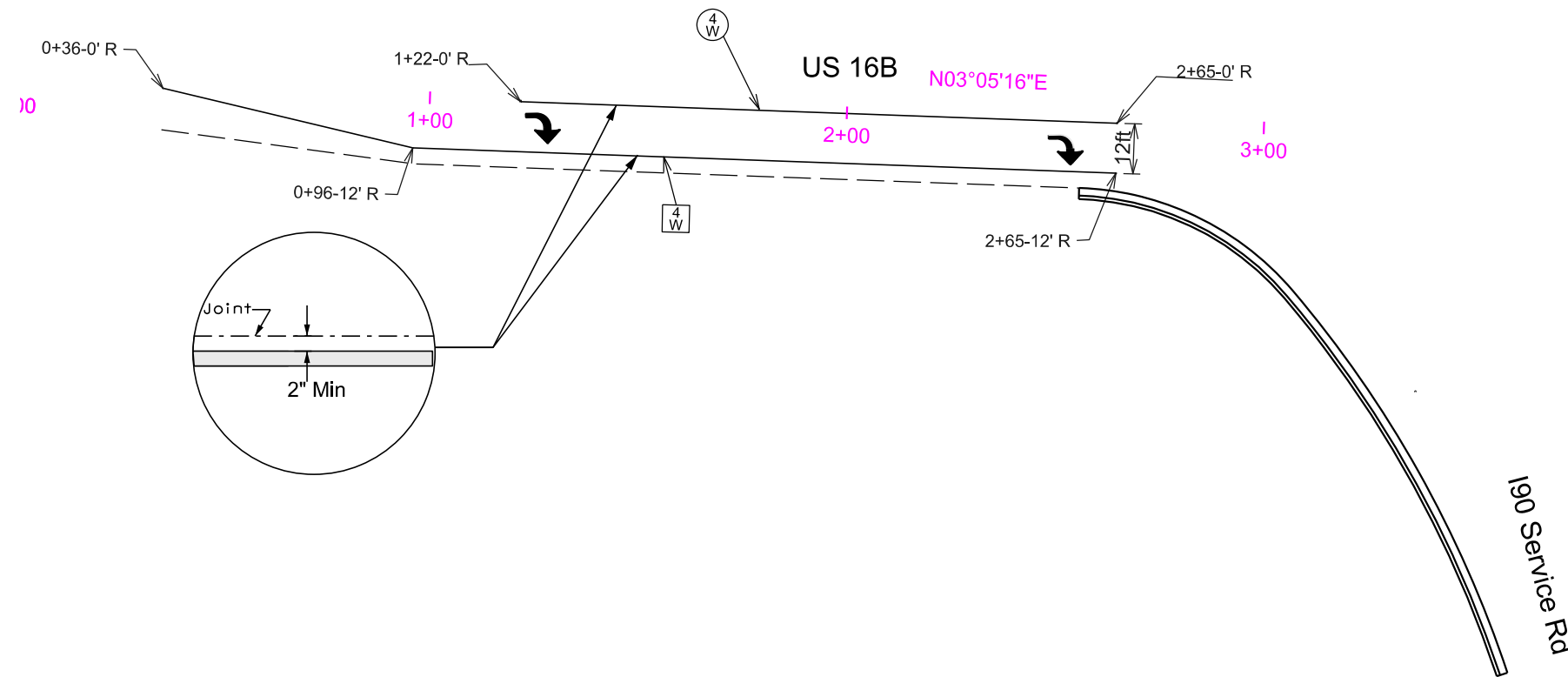
--- Edge of Surfacing

# PAVEMENT MARKING LAYOUT



US 16B - Edwards St

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Remove Pavement Marking, 4" or Equivalent	590	FT
	Grooving for Cold Applied Plastic Pavement Marking, Arrow	4	EACH
	Grooving for Cold Applied Plastic Pavement Marking, 4"	286	FT
	Grooving for Durable Pavement Marking	595	FT
4 W	High Build Waterborne Pavement Marking Paint, 4" White	595	FT
4 W	Cold Applied Plastic Pavement Marking, 4" White	286	FT
→	Cold Applied Plastic Pavement Marking, Arrow, Right	4	EACH



US 16B - I90 Service Rd