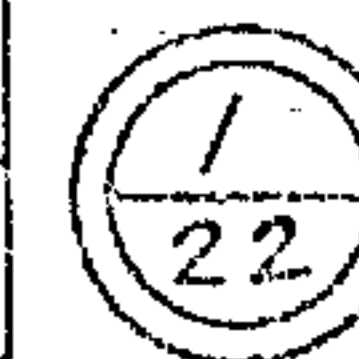


OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

FHWA REGION	STATE	FEDERAL PROJECT	
5	OHIO		



PLAN NO. 316

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINII		NET LENGTH MILES	TOWNSHIP	CITY	VILLAGE
				BEGIN	END				
1	ATB	US322	(0.00-5.37)(8.13)	0.00	12.51	11.04			
1	ATB	US 322	6.66	6.66	8.13	1.45	(Sta Eq. 8.11B= 8.13A)	ORWELL	

The Standard 1989 Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that the making of these improvements will require the closing of the highways to traffic on Parts No. NONE and that detours will be provided by State forces. The closing to traffic of the highways will not be required on Parts No. 1 and provisions for the maintenance and safety of traffic will be as indicated in the proposal.

Approved Date 2-22-91 David R. Hayes
District Deputy Director of Transportation

JEM Approved Date 3-1-91 B. D. Hamilton
Engineer of Bridges

Approved Date _____
Engineer of Maintenance

Approved Date 3-17-91 Alexander H. Hynds
DEPUTY DIRECTOR, OPERATIONS

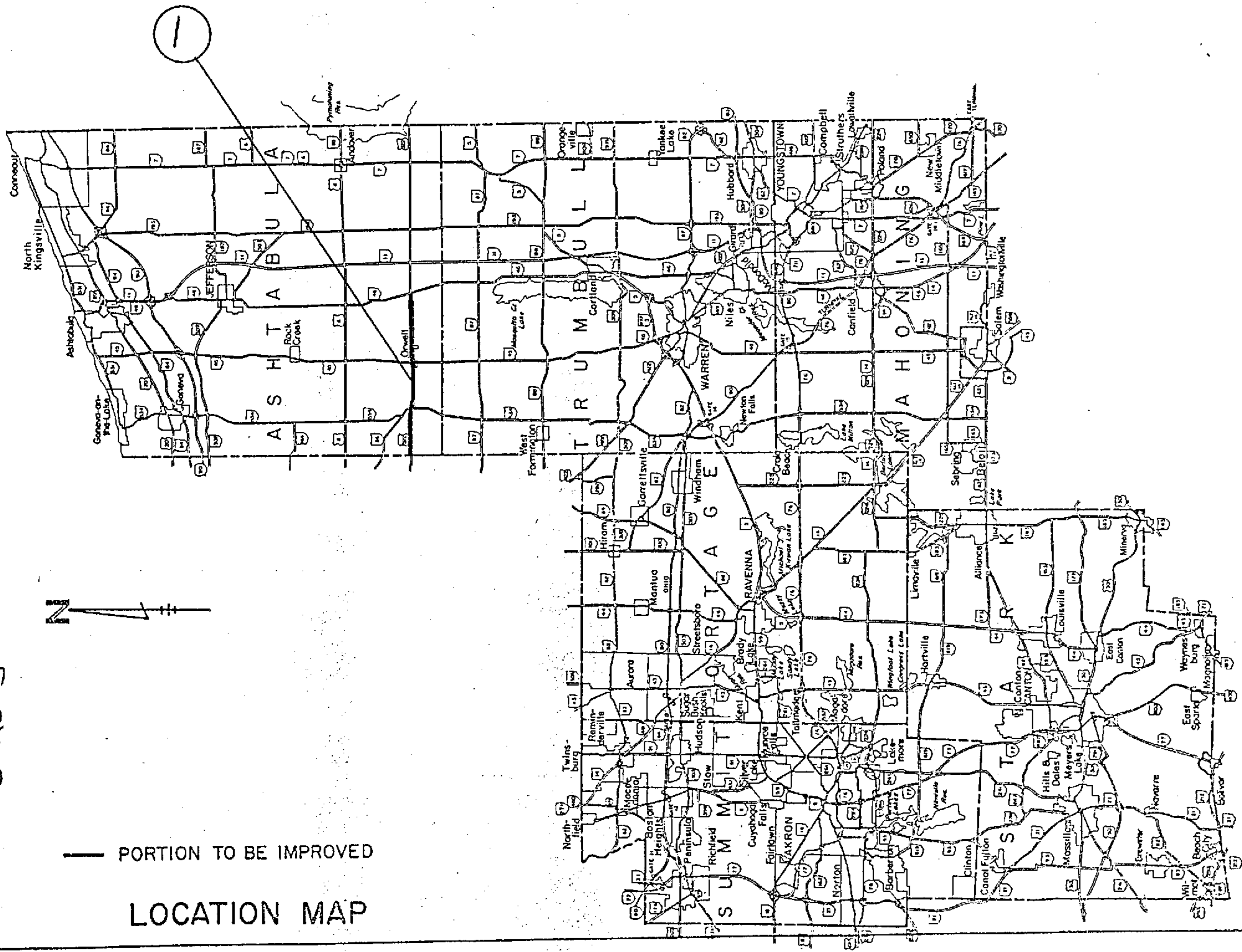
Approved Date _____
Assistant Deputy Director, Program Development

Approved Date _____
Chief Engineer, Construction

Approved Date _____
Chief Engineer, Design

Approved Date _____
Assistant Director, Department of Transportation

Approved Date 3-18-91 Jerry Wray
Director, Department of Transportation



DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
BP-5	10-1-87	SS-814	1-21-88
MC-7	6-13-69	SS-924	12-14-88
BP-6	10-1-87		
MT-97.10	4-29-88		
MT-97.11	10-4-89		
MT-99.10	11-14-86		
MT-99.20	4-29-88		

463

5-21-91

— PORTION TO BE IMPROVED
LOCATION MAP

GENERAL NOTES

ESTIMATED QUANTITIES:

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED AS DIRECTED BY THE ENGINEER SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIAL SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

TRAFFIC:

TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. THE LENGTH OF RESTRICTED TRAFFIC ZONES SHALL BE KEPT TO A MINIMUM CONSISTENT WITH THE SPECIFICATION REQUIREMENTS FOR PROTECTION OF COMPLETED COURSES.

RAILROAD CROSSINGS:

THE NEW SURFACE COURSE SHALL BE JOINTED TO MEET THE RAIL GRADES AS SPECIFIED. BUTT

ALIGNMENT AND PROFILE:

THE WORK PROPOSED BY THIS PROJECT IS FOR THE RESURFACING OF THE EXISTING PAVEMENT. THE ALIGNMENT OF THE EXISTING PAVEMENT WILL NOT BE CHANGED, AND THE PROFILE OF THE PROPOSED SURFACE WILL BE SIMILAR TO THAT OF THE EXISTING PAVEMENT EXCEPT THAT IT WILL BE RAISED AN AMOUNT EQUAL TO THE THICKNESS OF THE RESURFACING COURSE OR COURSES SPECIFIED IN THESE PLANS.

INTERMEDIATE COURSE, SPOT LEVELING AND PATCHING:

THIS MATERIAL SHALL BE PLACED IN A SEPARATE OPERATION WHERE AND AS DIRECTED BY THE ENGINEER.

TACK COAT:

407.04 PREPARATION OF SURFACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL DIRT, VEGETATION, ETC. TO EXPOSE THE EXISTING PAVED SHOULDER AT NO ADDITIONAL COST TO THE STATE.

ITEM SPECIAL MAILBOX SUPPORTS:

THIS ITEM SHALL CONSIST OF REPLACING AND RESETTING ALL NON-STANDARD MAILBOX SUPPORTS WITH PRESSURE TREATED FOUR INCH BY FOUR INCH (NOMINAL) TIMBER POSTS, MEETING AASHTO M 133 81 AWTA P8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL POSTMASTER TO DETERMINE PROPER HEIGHT, DEPTH OF EMBEDMENT AND LOCATION OF SUPPORTS. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE REMOVAL AND INSTALLATION OF THE EXISTING MAILBOX ON THE NEW TIMBER POSTS AND RESETTING THE MAILBOX POSTS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL MAILBOX SUPPORTS.

TACK COAT:

THE TACK COAT OPERATION SHALL BE AS DETERMINED AT A PRE-CONSTRUCTION CONFERENCE AS PER 407.05, AND APPLICATION RATES SHALL NOT EXCEED 0.10 GAL. PER SQ. YD.

ITEM 659 SEEDING AND MULCHING:

ALL AREAS SHALL BE SEEDED WITH THE MIXTURE REQUIRED FOR URBAN AREAS AS PER 659.09.

PAVED MAILBOX APPROACHES:

ALL EXISTING MAILBOX APPROACHES SHALL BE PAVED WITH 404 ASPHALT CONCRETE AS PER TYPICAL SHOWN OR AS NEAR AS PRACTICABLE. AGGREGATE APPROACHES SHALL HAVE 2.0' MINIMUM THICKNESS; IMPROVED APPROACHES SHALL HAVE A 1.0' MINIMUM THICKNESS. THE CONTRACTOR HAS THE OPTION OF PAVING THE MAILBOX APPROACHES WITH EITHER THE PAVING OF THE DRIVEWAYS OR THE PAVING OF THE MAINLINE AND SHOULDERS. PAYMENT SHALL BE AS FOLLOWS:

1. SHOULD THE CONTRACTOR ELECT TO PAVE THE MAILBOX APPROACHES WITH THE DRIVEWAYS THEN ALL GRADING, PRIME, TACK, TOOLS, EQUIPMENT, MATERIAL AND INCIDENTALS REQUIRED TO LAYOUT AND CONSTRUCT THE MAILBOX APPROACHES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 404 ASPHALT CONCRETE AC-20 FOR DRIVEWAYS.

2. SHOULD THE CONTRACTOR ELECT TO PAVE THE MAILBOX APPROACHES WITH THE MAINLINE AND SHOULDERS THEN ALL GRADING, PRIME, TACK, TOOLS, EQUIPMENT, MATERIAL AND INCIDENTALS REQUIRED TO LAYOUT AND CONSTRUCT THE MAILBOX APPROACHES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 404 ASPHALT CONCRETE AC-20.

INTERSECTIONS:

INTERSECTIONS SHALL BE RESURFACED A MINIMUM OF 25 FT. BEYOND THE EDGELINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ESTIMATED AVERAGE THICKNESS 1.25 INCHES. WHEN AGGREGATE INTERSECTIONS ARE ENCOUNTERED, THE AVERAGE THICKNESS SHALL BE 3.0 INCHES AND ANY GRADING OR PRIME NECESSARY TO ACCOMPLISH WORK SHALL BE INCLUDED IN THE COST OF ITEM OF 404.

PAVED SHOULDERS:

403/404 ASPHALT CONCRETE FOR SHOULDERS MAY BE PLACED IN THE SAME OPERATION AS ADJACENT PAVEMENT OVERLAY.

ITEM 404 ASPHALT CONCRETE AC-20 FOR DRIVEWAYS:

THIS ITEM OF WORK SHALL CONSIST OF PAVING ALL EXISTING DRIVEWAYS, 2' MIN. AGGREGATE OR 1' MIN. IMPROVED, A DISTANCE OF 10' FROM THE EDGE OF THE PAVED SHOULDER UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ALL GRADING, PRIME, TACK, TOOLS, EQUIPMENT, MATERIAL AND INCIDENTALS REQUIRED TO LAYOUT AND CONSTRUCT THE DRIVEWAYS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 404 ASPHALT CONCRETE AC-20 FOR DRIVEWAYS.

ITEM 202 WEARING COURSE REMOVED:

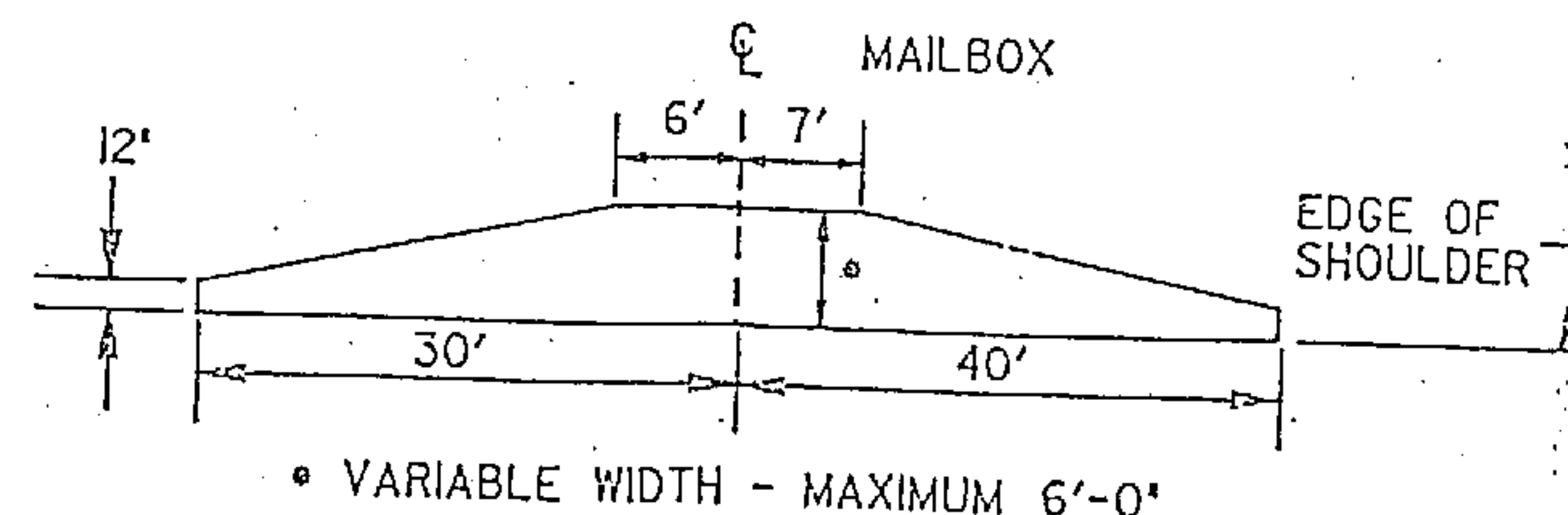
ESTIMATED QUANTITIES HAVE BEEN PROVIDED AND SHALL BE USED WHERE AND AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL 512 Sealing of Concrete Surfaces (EPOXY)

THIS ITEM OF WORK SHALL BE USED TO SEAL THE EDGES OF THE EXISTING BRIDGE DECK AS DIRECTED BY THE ENGINEER. FOR ADDITIONAL DETAILS SEE THE NOTES INCLUDED IN THE PROPOSAL.

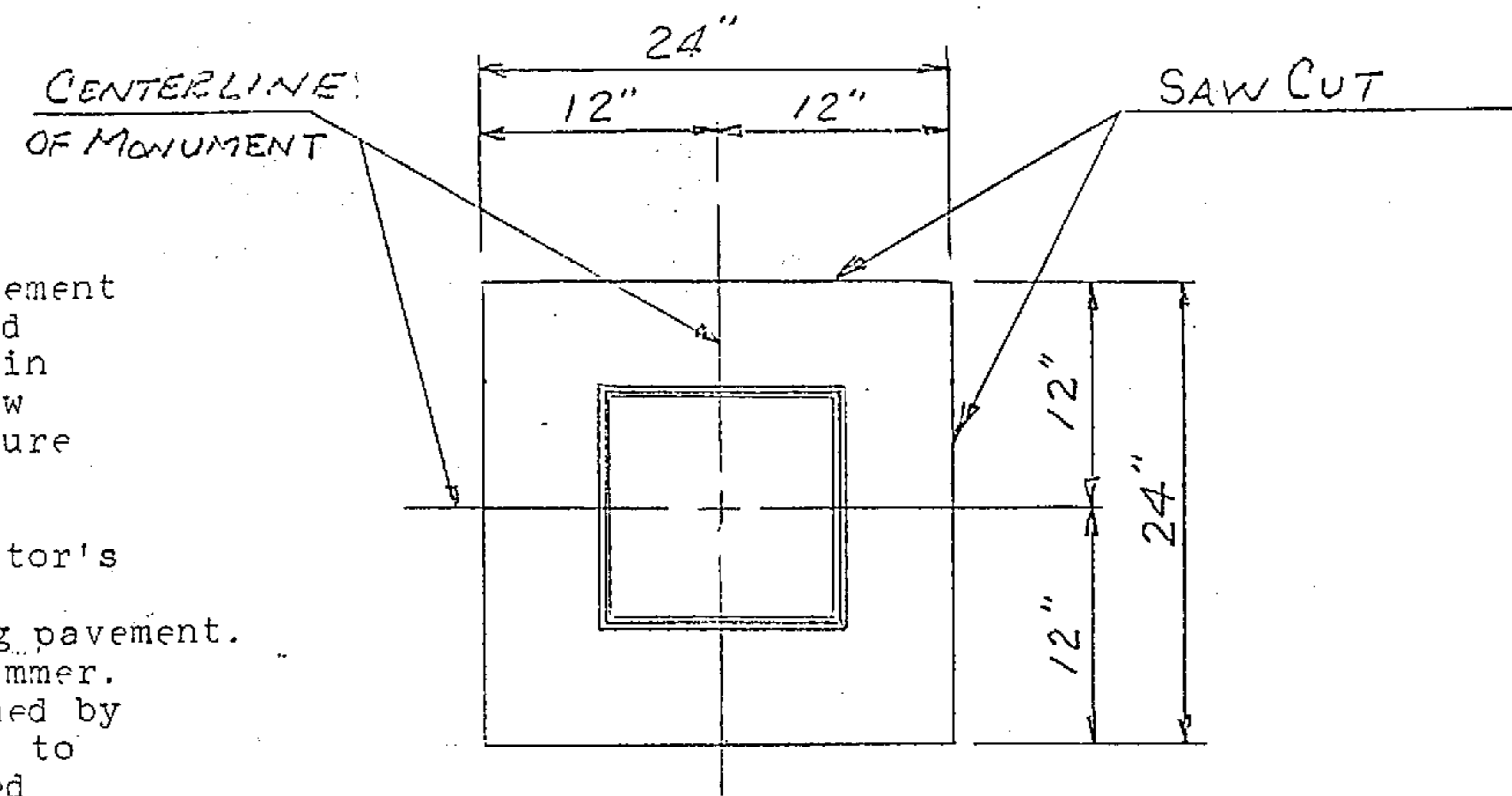
ITEM 253 PAVEMENT REPAIR

An estimated quantity of Item 253 Pavement Repair has been added to the General Summary and shall be used where and as directed by the Engineer. Depth of removal shall be all unsound and loose pavement and aggregate base. Replaced material shall be 301 Bituminous Aggregate Base, AC-20 compacted to the top of the existing pavement. All materials, labor, equipment and incidentals necessary to complete the above operation shall be included in the unit Price Bid for Item 253 Pavement Repair 150 SQ. YD. Average Depth of repair is 9 inches.

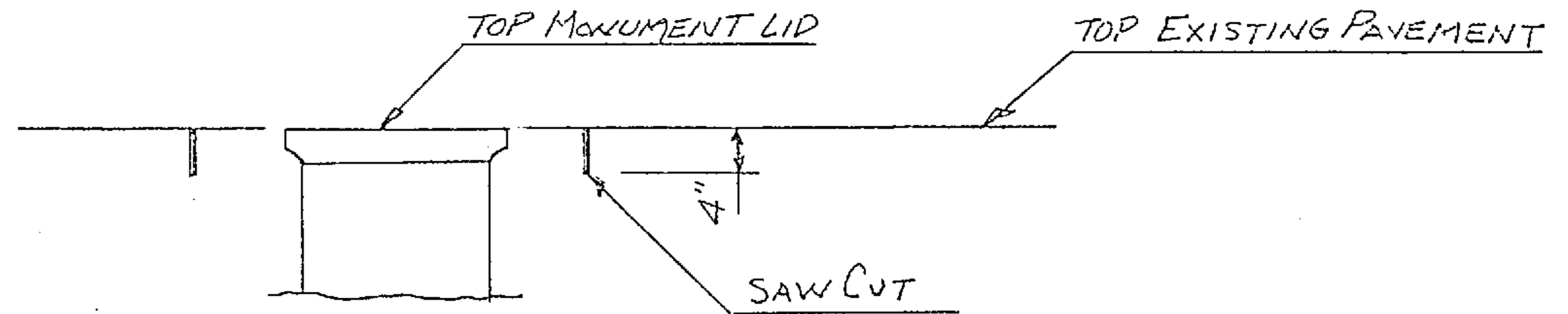


604 Monument Assembly As Per Plan

This unit of work shall include the complete removal and replacement of each monument assembly. Replacement shall be as per Standard Construction Drawing MC-7 dated 6-13-69 and shall include new pin frame, lid and pipe. The removal shall begin with a 4" deep saw cut 24" square around existing box. Care shall be taken to insure remaining vertical surfaces are protected from damages. Any damages done to the pavement and/or shoulders as the result of this work needing removed and replaced, shall be at the contractor's expense. Bedding if required shall be 6'7 type A compacted and backfill, 404 compacted in 3" lifts maximum, to top of existing pavement. CONTRACTOR NOTE: Removal work may require the use of a jack hammer. Once a removal is started, complete replacement shall be finished by the end of the working day. No open excavation will be allowed to remain overnight. The above work shall be started and completed after the 403 spot leveling course, but before the 404 wearing course is placed. Re-establishment of reference or elevation points shall be performed by a licensed surveyor and any changes from the original points shall be reported to the appropriate officials. Name of Surveyor, license number and copy of actual field notes used in the performance of this work shall become a permanent record filed in the District Construction Office. Traffic control during performance of this work shall be as per the Ohio Manual of Traffic Control For Construction and Maintenance Operations. All materials, labor, equipment and incidentals necessary to complete the above operation shall be included in the unit bid for Item 604 Monument Assembly As Per Plan.



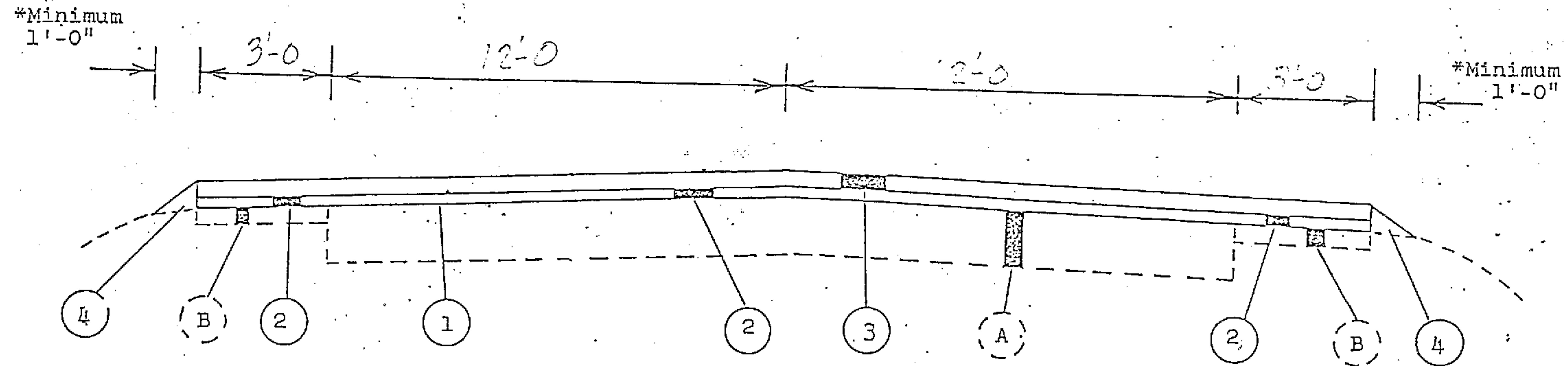
PLAN NO.
316



S.L.M. 0.00-6.66
 6.66-8.13B
 8.13A-8.14

4
 22

PLAN NO.
 316



*Minimum width
 unless otherwise
 directed by the
 engineer

NO SCALE

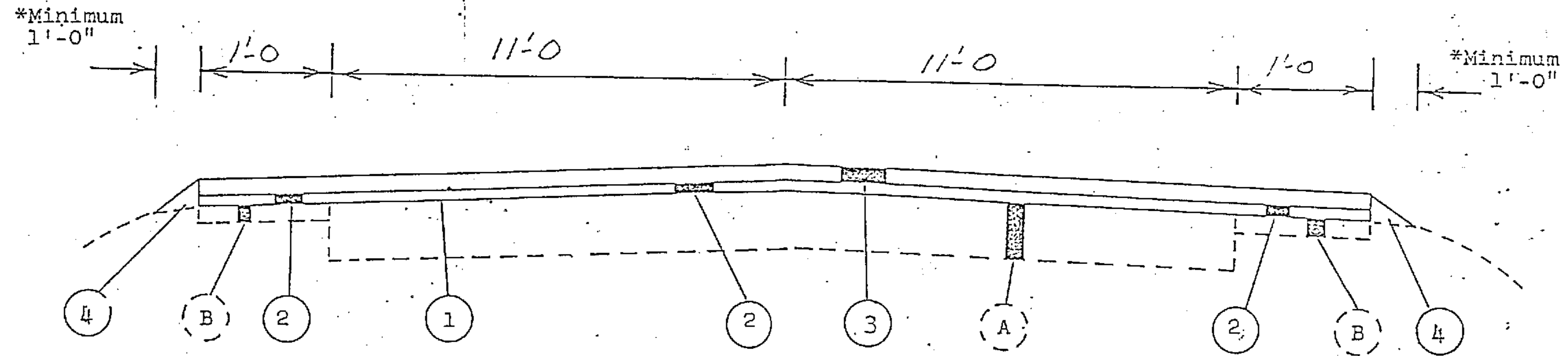
LEGEND

- | | | |
|-----|----------------|--|
| (1) | 407 | Tack Coat |
| (2) | 403 0.00" min. | Asphalt Concrete AC-20
(Estimated at 0.50 inches) |
| (3) | 404 1.00" | Asphalt Concrete AC-20 |
| (4) | 617 | Compacted Aggregate, Type A
<i>ESTIMATED 2" THICKNESS</i> |
| (A) | 404 | Existing Pavement |
| (B) | 404 | Existing Shoulder |

S.L.M. 8.14-12.51

5
22

PLAN NO.
3/6



*Minimum width
 unless otherwise
 directed by the
 engineer

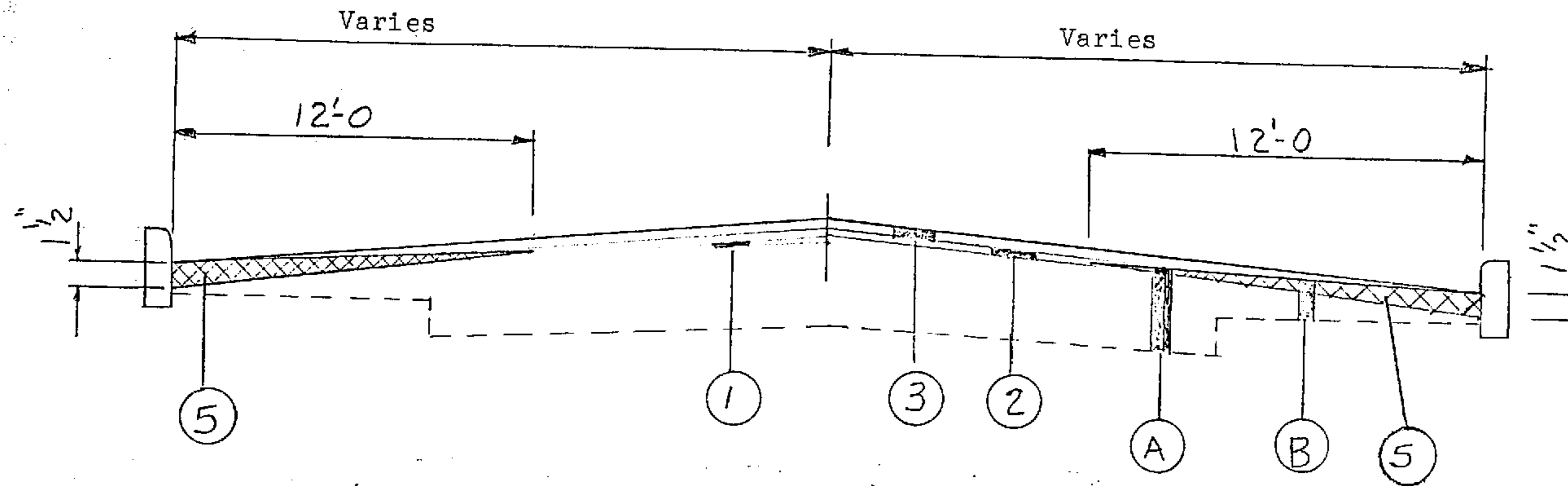
NO SCALE

LEGEND

①	407	Tack Coat
②	403 0.00" min.	Asphalt Concrete AC-20 (Estimated at 0.50 inches)
③	404 1.00"	Asphalt Concrete AC-20
④	617	Compacted Aggregate, Type A 2" ESTIMATED THICKNESS
(A)	404	Existing Pavement
(B)	404	Existing Shoulder

At curb locations : Windsor and Orwell

PLAN NO.
3/6



LEGEND

(1)	407	Tack Coat
(2)	403 0.00" min.	Asphalt Concrete AC-20 (Estimated at 0.50 inches)
(3)	404 1.00"	Asphalt Concrete AC-20
(4)	617 0.00" min.	Compacted Aggregate, Type A
(5)	254 0.0" - 1-1/2"	Pavement Planning, Bituminous (0.75" Avg.)
(A)	404	Existing Pavement
(B)	404	Existing Shoulder

ITEM 203 LINEAR GRADING METHOD D

7
22

PLAN NO.
316

ITEM 203 LINEAR GRADING METHOD D:

UPON COMPLETION OF THE PAVING OPERATION, THE CONTRACTOR SHALL PLACE ITEM 617 COMPACTED AGGREGATE ADJACENT TO THE PAVED BERM, NO MORE THAN 4" THICK. THE REMAINING SHOULDER WIDTH, BEYOND THE PAVED SHOULDER, SHALL BE GRADED USING A 3/4"/FT. SLOPE TO THE BREAK POINT. ALL EXCAVATED MATERIAL SHALL BE USED TO CONSTRUCT EMBANKMENTS IN CONFORMITY WITH THE TYPICAL SECTION. THE CONTRACTOR WILL NOT BE REQUIRED TO SCALP THE EXISTING FORE SLOPES PRIOR TO THE EMBANKMENT CONSTRUCTION. ANY EXCESS MATERIAL AND ALL MATERIAL DETERMINED TO BE UNSUITABLE, BY THE ENGINEER, SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. ANY DISTURBED AREAS, BEYOND THE AREA TREATED WITH ITEM 617, SHALL BE SEEDED IN ACCORDANCE WITH ITEM 659 SEEDING AND MULCHING.

THE METHOD OF MEASUREMENT, OF ITEM 203 LINEAR GRADING METHOD D, SHALL BE STATIONS, WITH ONE STATION EQUAL TO 100 LIN.FT. STATIONS SHALL BE MEASURED ALONG EACH EDGE OF PAVEMENT.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203 LINEAR GRADING METHOD D, EXCLUDING ITEM 659 SEEDING AND MULCHING AND ITEM 617 COMPACTED AGGREGATE, WHICH SHALL BE PAID FOR SEPARATELY.

ITEM 203 BORROW, AS PER PLAN:

AN ESTIMATED QUANTITY OF ITEM 203 BORROW, AS PER PLAN HAS BEEN ADDED TO THE GENERAL SUMMARY AND SHALL BE USED WHERE AND AS DIRECTED BY THE ENGINEER. ALL BORROW SHALL BE RESTRICTED TO MATERIALS WHICH HAVE A MAXIMUM 50% BY WEIGHT PASSING THE No. 200 SEIVE, IN ORDER TO ELIMINATE SANDY SOILS AND SUPPORT GROWTH OF VEGETATION. ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 BORROW, AS PER PLAN.

PART I 50 CU.YDS.

ITEM 659 SEEDING AND MULCHING:

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED TO RESTORE VEGETATIVE GROWTH TO THE AREAS DISTURBED BY THE ITEM 203 LINEAR GRADING, METHOD D. ALL AREAS SHALL BE SEEDED WITH THE MIXTURE REQUIRED FOR URBAN AREAS.

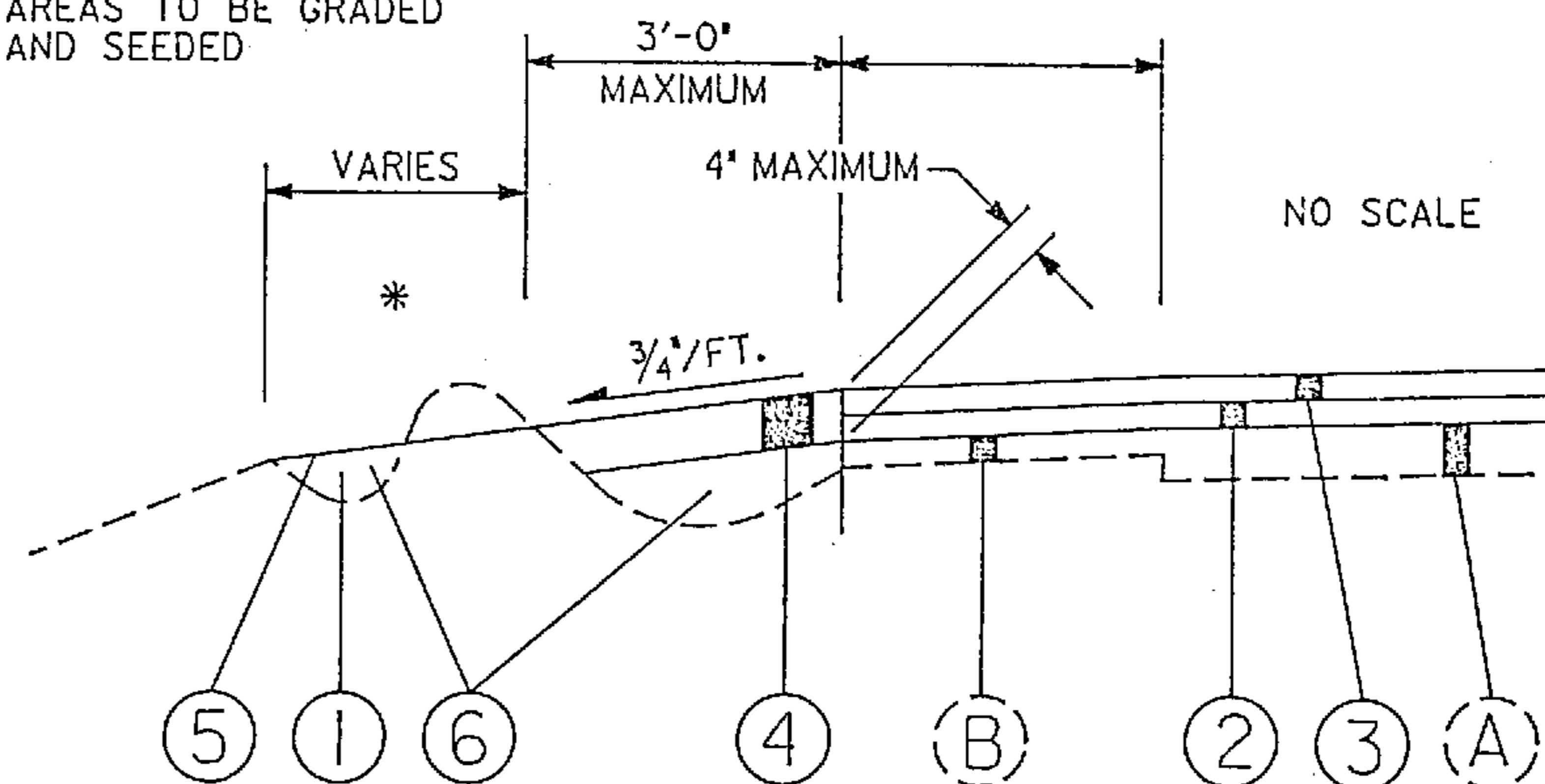
ITEM	UNIT	DESCRIPTION	PART I
659	SQ.YDS.	SEEDING AND MULCHING	29,000
659	TONS	COMMERCIAL FERTILIZER	2.61
659	TONS	AGRICULTURAL LIMING	13.05

THE CONTRACTOR HAS THE OPTION OF USING SS-943 IN LIEU OF 659.06 MATERIAL.

PART	ROUTE	FROM	TO
1	US-322	0.00	12.51*

* Excluding Curbed Sections

* AREAS TO BE GRADED AND SEEDED



LEGEND

- ① 203 LINEAR GRADING METHOD "D"
- ② 403 VAR. DEPTH ASPHALT CONCRETE, AC-20 (ESTIMATED @ 0.50 INCHES)
- ③ 404 ASPHALT CONCRETE, AC-20
- ④ 617 2.00" AVG. COMPACTED AGGREGATE, TYPE A
- ⑤ 659 SEEDING AND MULCHING
- ⑥ 203 BORROW, AS PER PLAN
- (A) EXISTING ASP. CONC. PAVEMENT
- (B) EXISTING PAVED SHOULDER

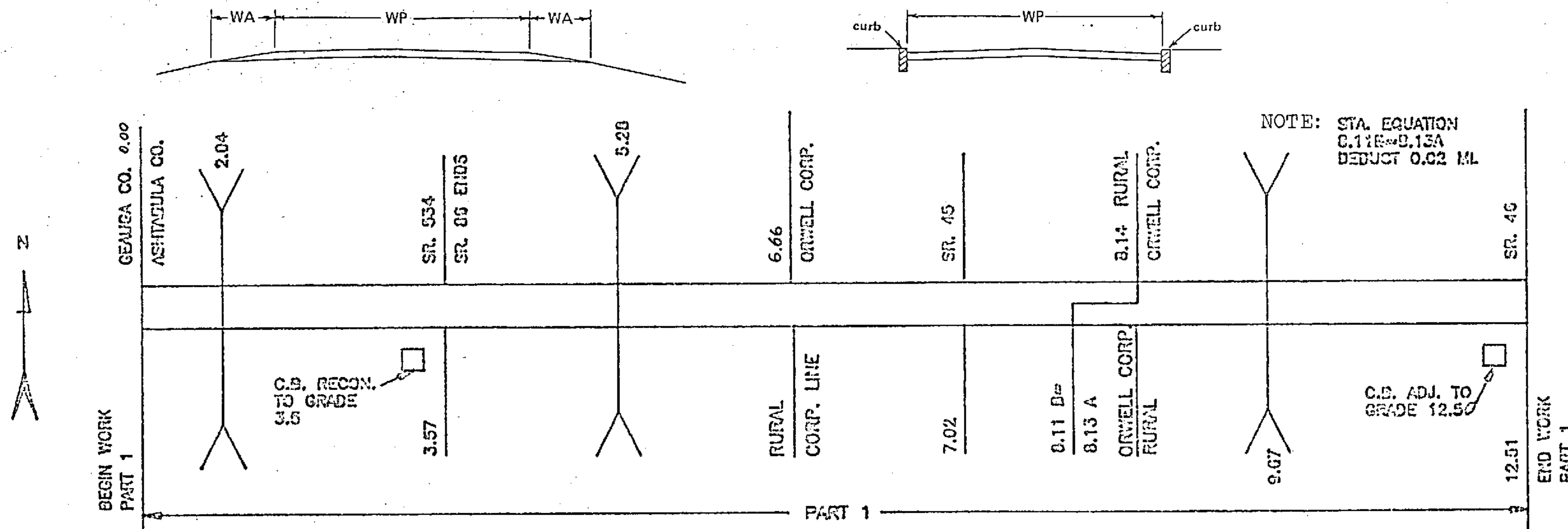
ASPHALT CONCRETE

PLAN NO.
316

8
22

TYPICAL 1

TYPICAL 2



See Page 4

& See Page 5 No Scale

PAVEMENT DATA

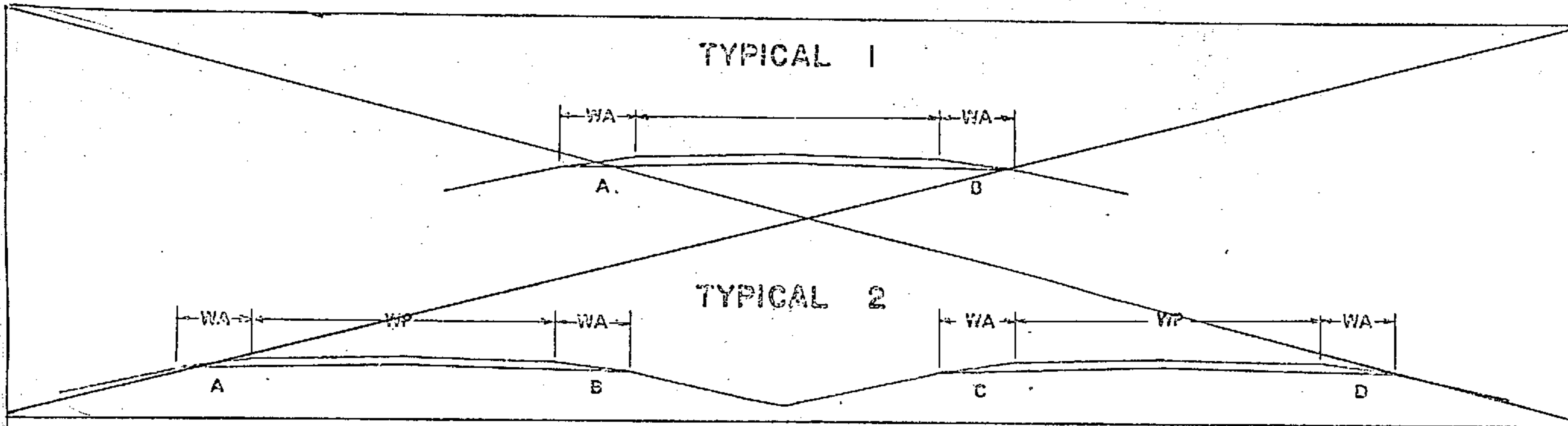
PART	ROUTE	LOG POINT TO LOG POINT	LENGTH		WP FEET	TYPICAL	EXISTING TYPE PAVEMENT	PAVEMENT AREA SQ. YDS.	PROPOSED PAVEMENT						604 Monument Ass'y As Per Plan EACH	254 Pavement Planing Bitum's SQ. YD.	604 Manhole Adj. to Grade EACH	604 Catch-Basin Recont. to Grade EACH	604 Catch-Basin Adj. to Grade EACH	814 Valve Box Adj. to Grade EACH	
			MILES	LIN. FT.					407		ASPHALT CONCRETE										
									TACK COAT @ 0.075 gal./s.y. GALS.	COVER AGGR. @ lbs./s.y. TONS	ITEM 403		ITEM 404								ITEM 404 Drive-ways CU. YDS.
											THICK INCHES 0.5	SPOT LEVELING CU. YDS.	THICK INCHES 1.0	CU. YDS.							
1	US-322	0.00-6.66	6.66	35165	24	#	404	93773	7,033		1303		2604		225						
1	US-322	8.13A-8.14RT	0.01	53	12	#	404	71	6		1		2								
1	US-322	8.14-12.51	4.37	23074	22	&	404	56402	4,230		784		1567		120						
		Intersections											85								
		Extra areas, Curb widenings									20		47			2000					
		TOTAL Rural	11.04	58292				150246	11269		2108		4305		345	21	2000	1	1	1	
1	US-322	8.11B-6.66-8.13A	1.45	7656	24	#	404	20416	1531		284		567		150					1	
1	US-322	8.13-8.14 LT	(0.01)	(53)	12	#	404	71	6		1		2								
		Intersections											55								
		Extra areas for Curb widenings									25		59			2300					
		TOTAL VILLAGE	1.45	7656				20487	1537		310		683		150	2	2300	13		1	
		Deduct .02 for sta. eq.																			
		TOTAL PART-1	12.49	65948				170733	12806		2418		4988		495	23	4300	14	1	1	

PAVED SHOULDERS

PLAN NO. 316

9/22

*NOTES



2. **ITEM 402 ASPHALT CONCRETE:** Prior to placing a bituminous mixture for shoulder paving, the edge of the existing pavement, for the full depth of the trench, shall be coated with bituminous material in accordance with 401.12.
3. **ITEM 301 BITUMINOUS AGGREGATE BASE** may be used in lieu of Item 402 Asphalt Concrete.
4. **ITEM 617 COMPACTED AGGREGATE:** A quantity of Item 617 Compacted Aggregate has been provided for areas where the shoulders were low prior to grading and/or low areas caused by removal of unsuitable material.
5. **ITEM 408 BITUMINOUS PRIME COAT:** After application of the Prime Coat, no further treatment shall be performed until so directed by the Engineer.
6. **SHIELD:** The contractor shall provide a shield to prevent the spraying or drifting of liquid bituminous material onto the edge of the pavement or edgelines. The attention of the contractor is directed to 107.12 of the Specifications.

ITEM 411 STABILIZED CRUSHED AGGREGATE: Whenever 411 stabilized crushed aggregate is stipulated, the first paragraph of 411.03 is waived and subgrade compaction shall be to the satisfaction of the Engineer.

** One station equals 100 lin. ft. Stations shall be measured along each edge of pavement.

* Deduction made for curbed areas

See Page 4 & See Page 5

PAVED SHOULDER DATA

PART	ROUTE	LOG POINT TO LOG POINT	LENGTH		TYPICAL	PROPOSED WIDTH (FT.)				SHOULDER AREA SQ. YDS.	203		403		404		407		617			605	SPECIAL	* NOTES	
			MILES	LIN. FT.		A	B	C	D		LINEAR GRADING		ASPHALT CONCRETE		Asphalt Concrete		Bit. Matl.	Bit. Matl.	Aggr.	COMPACTED AGGREGATE	AGGREGATE DRAINS	Mailbox Supports			
											method	**STA.	AVG. THICK INCHES	SPOT LEVELS	AVG. THICK INCHES	CU. YDS.							CU. YDS.		@ 0.075 gal./s.y. GALS.
1	US-322	0.00-6.66	6.66	35165	#	3	3			23,443	D	690 *		326		651	1758								
1	US-322	8.13-8.14RT	0.01	53	#		3			18	D	1		1		1	2								
1	US-322	8.14-12.51	4.37	23074	&	1	1			5,128	D	461		71		143	385								
		Mailbox Approaches														145								8	
		TOTAL Rural	11.04	58292						28589		1152		398		940	2145							8	
		8.11B																							
1	US-322	6.66-8.13A	1.45	7656	#	3	3			5104	D	140 *		71		142	383								
1	US-322	8.13-8.14LT	(0.01)	(53)	#	3				18	D	1		1		1	2								
		Mailbox Approaches														75								2	
		TOTAL Village	1.45	7656						5122		141		72		218	385							2	
		TOTAL PART-1	12.49	65948						33711		1293		470		1158	2530							10	

REVISED 10/90

BRIDGE DECK TREATMENT

PROTECTIVE COURSE FOR MEMBRANE WATERPROOFING:

MEMBRANE WATERPROOFING, SHEET TYPE I:

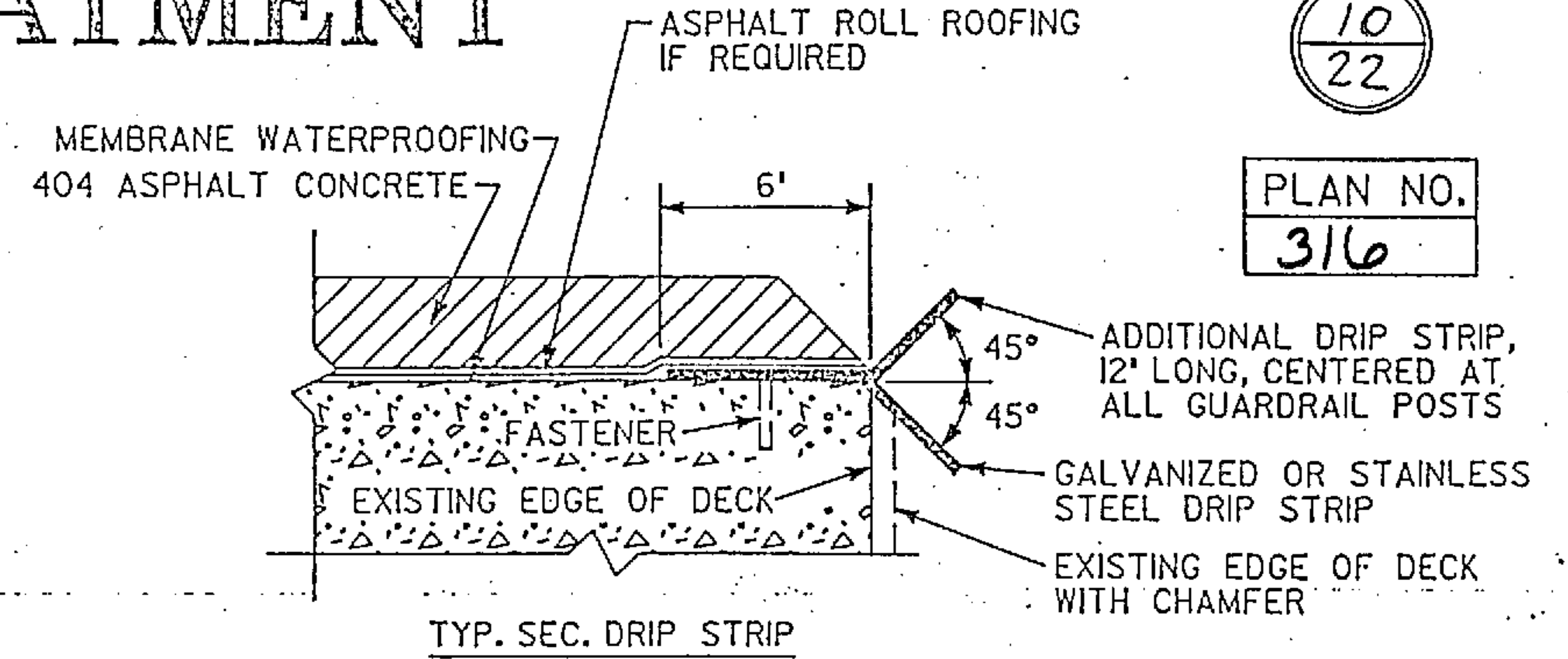
A MINIMUM OF 1-1/2 INCHES OF 404 ASPHALT CONCRETE SHALL BE PLACED OVER THE MEMBRANE.

MEMBRANE WATERPROOFING:

A MINIMUM OF 2-1/2 INCHES OF 404 ASPHALT CONCRETE SHALL BE PLACED OVER THE MEMBRANE.

DRIP STRIP: PRIOR TO APPLYING DECK MEMBRANE WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6" C/C MAXIMUM WITH No. 10 GALVANIZED SCREWS AND EXPANSION ANCHORS. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WINGWALL OR STEEL END DAM ANGLE. WHERE SPLICES ARE REQUIRED, A 3" (MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8' x 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167, TYPE 304, MILL FINISH.

THE FINAL PAY QUANTITY SHALL BE THE ACTUAL OVERALL LENGTH OF THE DRIP STRIP. ALL LAPS AND ADDITIONAL STRIPS AT POSTS SHALL NOT BE MEASURED FOR PAYMENT. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL, LIN.FT., STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.



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22

PLAN NO.
316

BRIDGE DECK DATA

PART	COUNTY, ROUTE, BRIDGE NO.	LENGTH (BRIDGE LIMITS) LIN.FT.	WIDTH LIN.FT.	BRIDGE DECK AREA SQ.YDS.	202	BRIDGE DECK REPAIR			SPECIAL				516	ASPHALT CONCRETE		SPECIAL	407	
					WEARING COURSE REMOVED DEPTH 1/2"	<input type="checkbox"/> SS-845 LATEX MODIFIED CONCRETE <input type="checkbox"/> SS-850 DENSE CONCRETE			PATCHING		STEEL DRIP STRIP LIN.FT.	DECK WATERPROOFING		VERTICAL EXTENSION OF STRUCT. EXPANSION JOINTS LIN.FT.	THICK INCHES	404 CU.YDS.	SEALING OF CONCRETE SURFACES (EPOXY) SQ.YDS.	TACK COAT SS-924 0.075 GAL/54
						SQ.YDS.	THICK OVERLAY SQ.YDS.	VARIABLE THICKNESS OVERLAY CU.YDS.	FULL DEPTH REPAIR CU.YDS.	TYPE		S.Y.	SQ.YDS.					
* ATB-322-0204		183'	29'	590	1090	x	x	x	x	x	x	x	2	(33)	x	44		
* ATB-322-0399	TWIN ELLIP. PIPE				x	x	x	x	x	x	x	x			x			
** ATB-322-0528	171'	40	760	500	x	x	x	x	x	x	x	x	NO ASPHALT	159.46				
* ATB-322-0581	TWIN ELLIP. PIPE				x	x	x	x	x	x	x	x			x			
* ATB-322-0718	Box Culvert				x	x	x	x	x	x	x	x			x			
** ATB-322-0967	85.5'	36	342	400	x	x	x	x	x	x	x	x	NO ASPHALT	103.8				
TOTAL					1990									(33)	262.76	44		

NOTE: WEARING COURSE REMOVAL OF APPROACHES TO BRIDGES.

BRIDGES APPLICABLE: ATB-322-0528, ATB-322-0967, ATB-322-0204

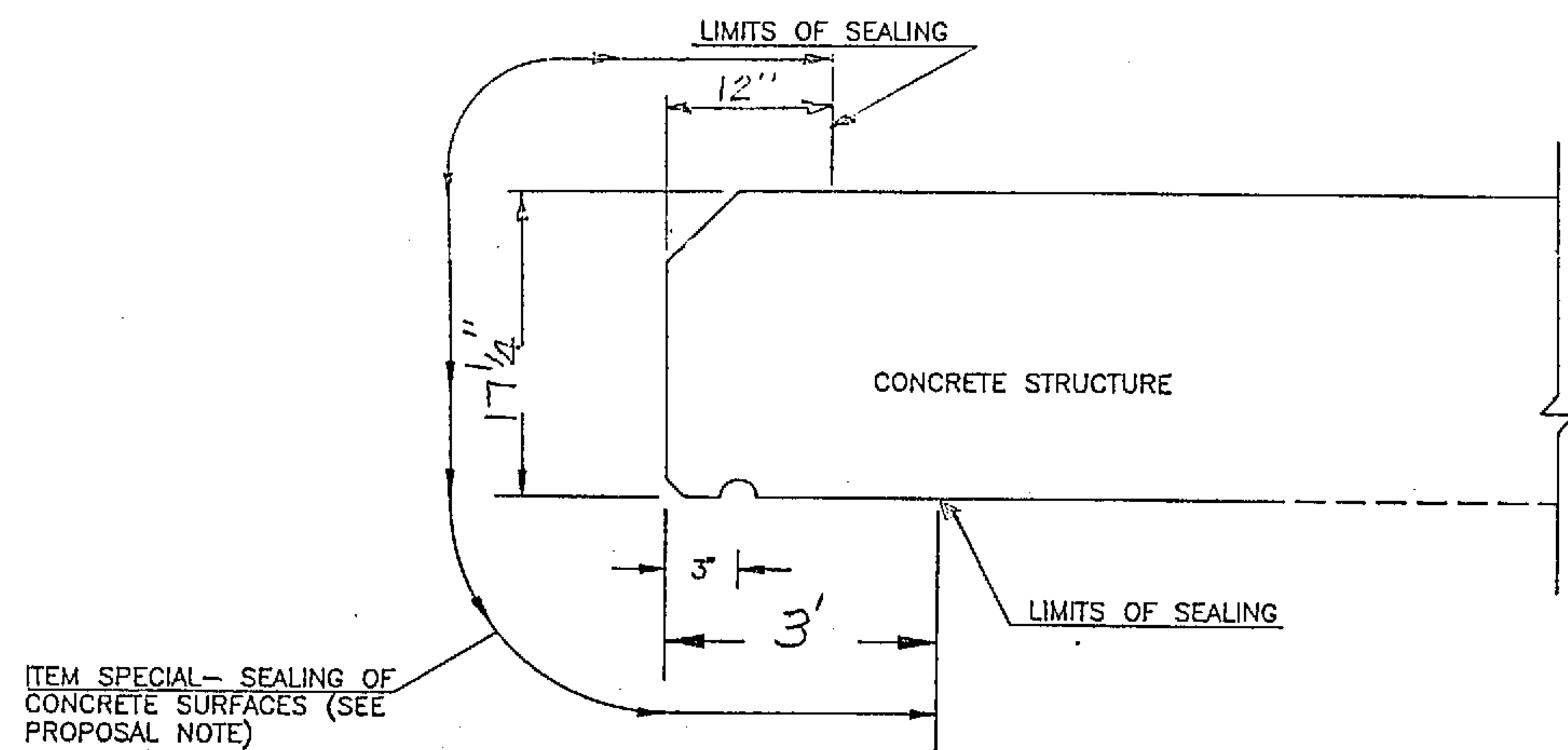
LENGTH OF WEARING COURSE REMOVAL ON ALL APPROACHES TO THESE THREE (3) BRIDGES WILL BE; 75 FEET EACH APPROACH (TOTAL OF SIX) AT A RATE OF 1/2 INCH TO 25 FEET. STARTING AT 0.0 INCHES 75 FEET FROM THE BRIDGE TO 1.5 INCHES AT BRIDGE.

* - PAVE OVER EXISTING STRUCTURES
** - NO ASPHALT ON BRIDGE DECKS, SEE NOTE FOR APPROACHES

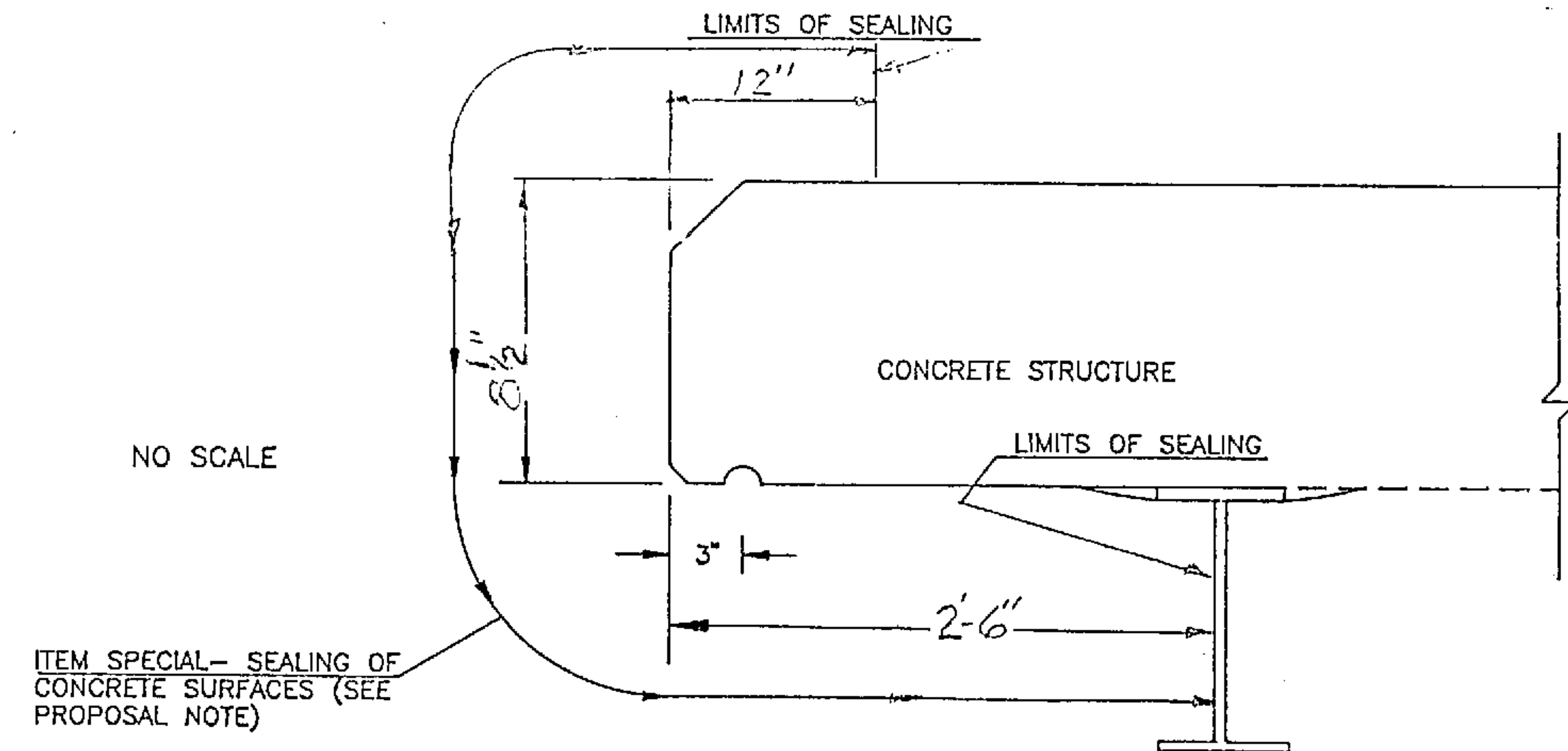
ITEM SPECIAL 512 - SEALING OF CONCRETE SURFACES (EPOXY)

11
22

PLAN No.
316



BRIDGE LENGTH - 85'-6"
 SURFACE WIDTH - 5.437'
 $85.5' \times 5.437' \times \frac{1}{9} = 51.65 \times 2 \text{ SIDES} = 103.3 \text{ SQ YDS}$



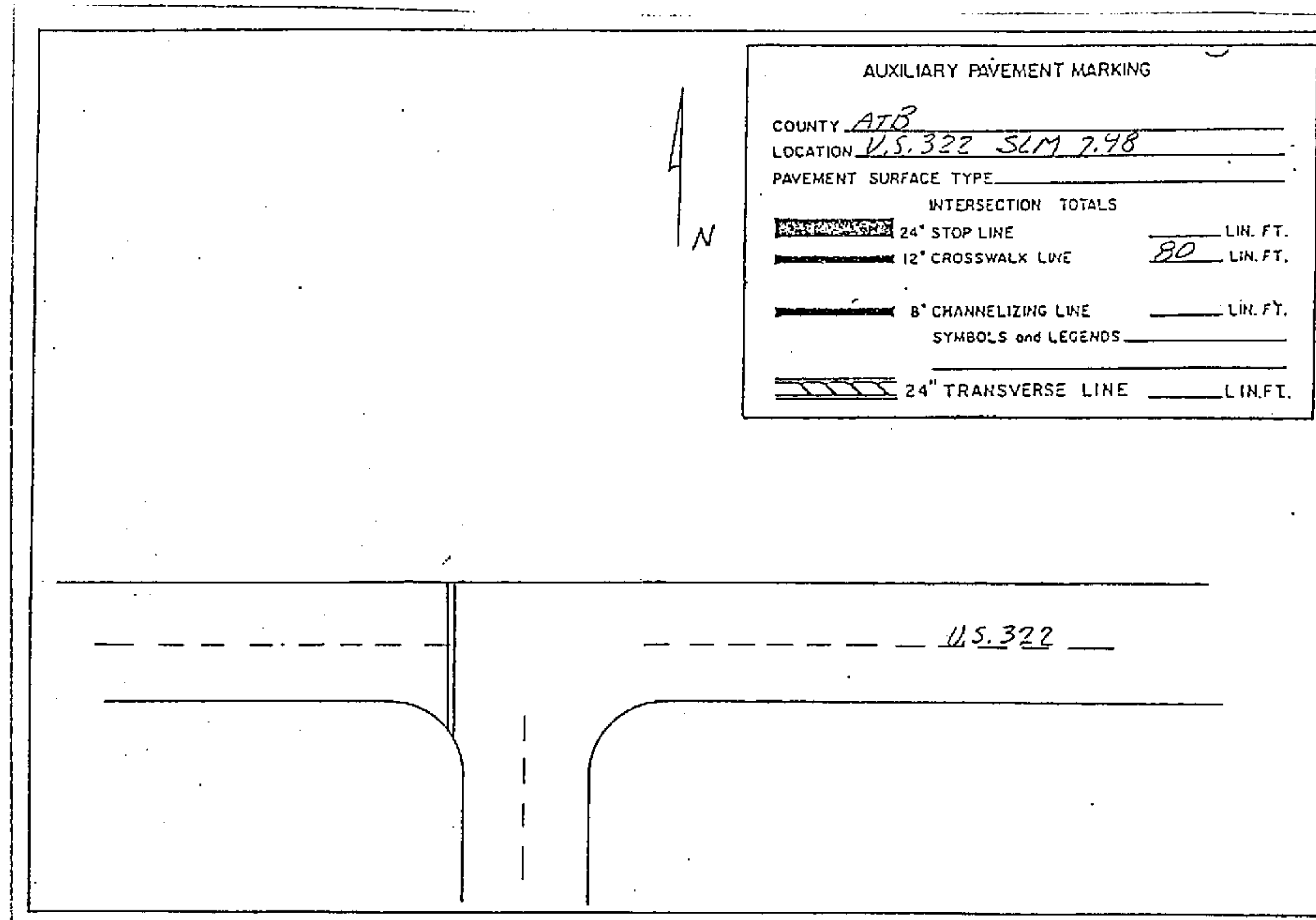
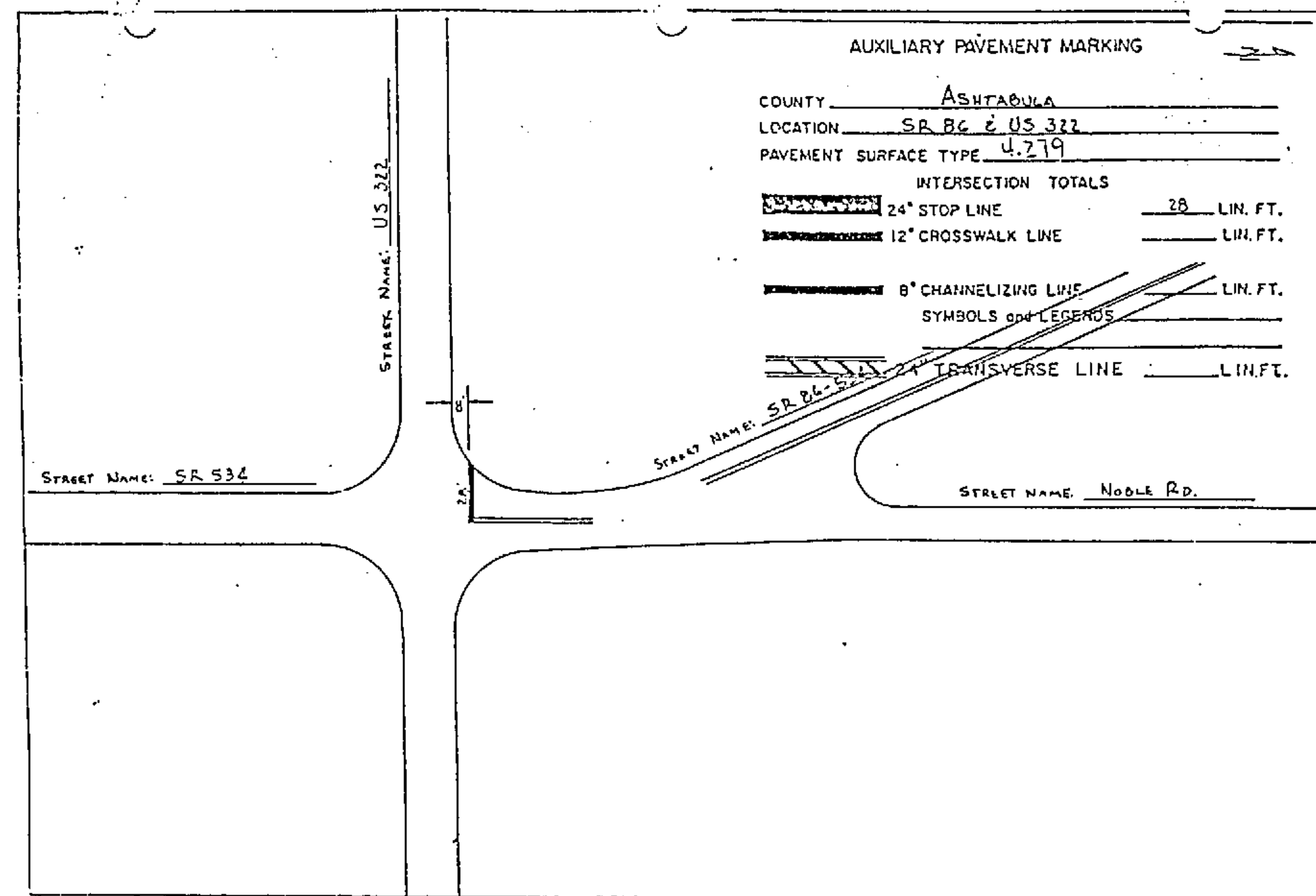
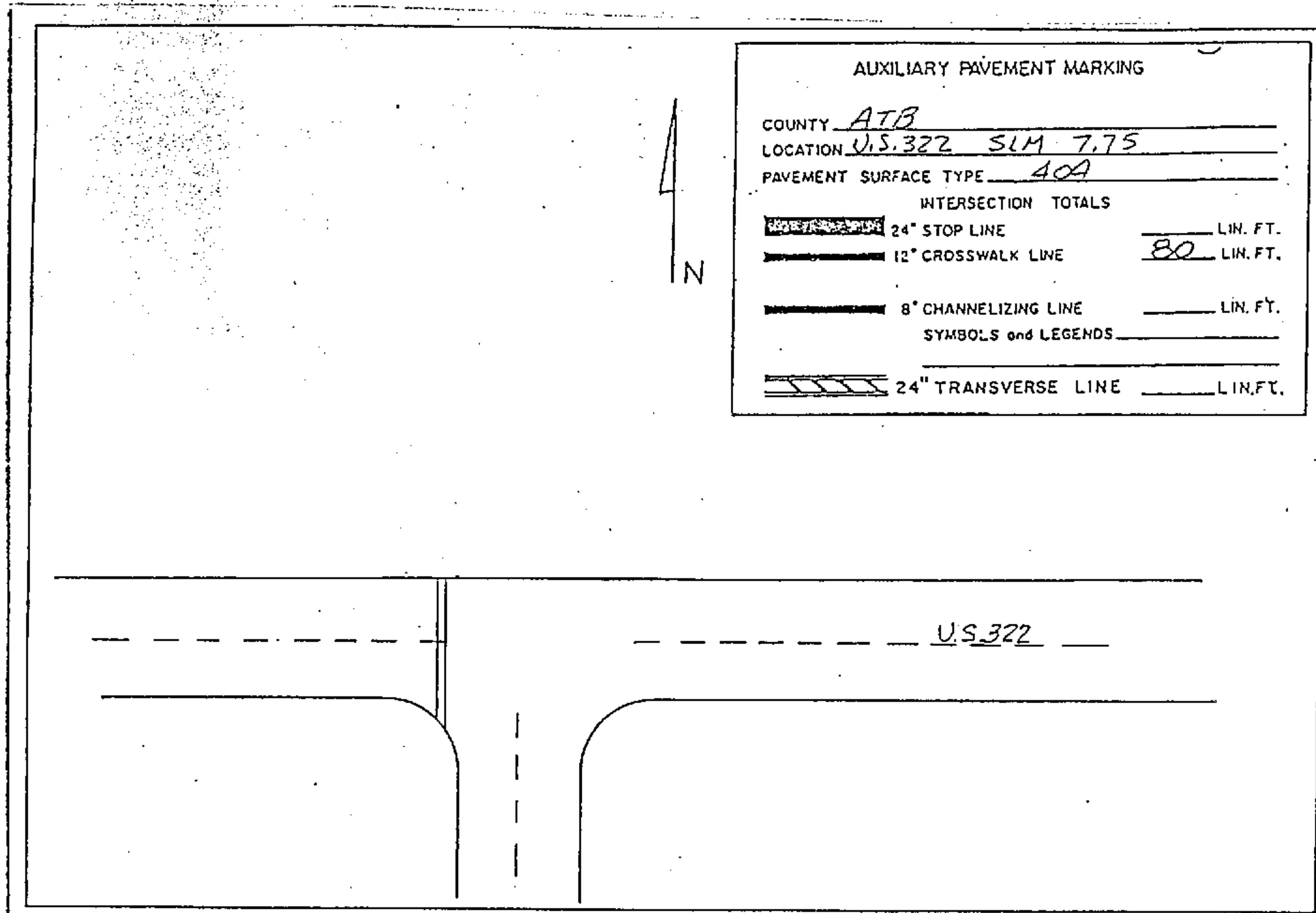
NO SCALE

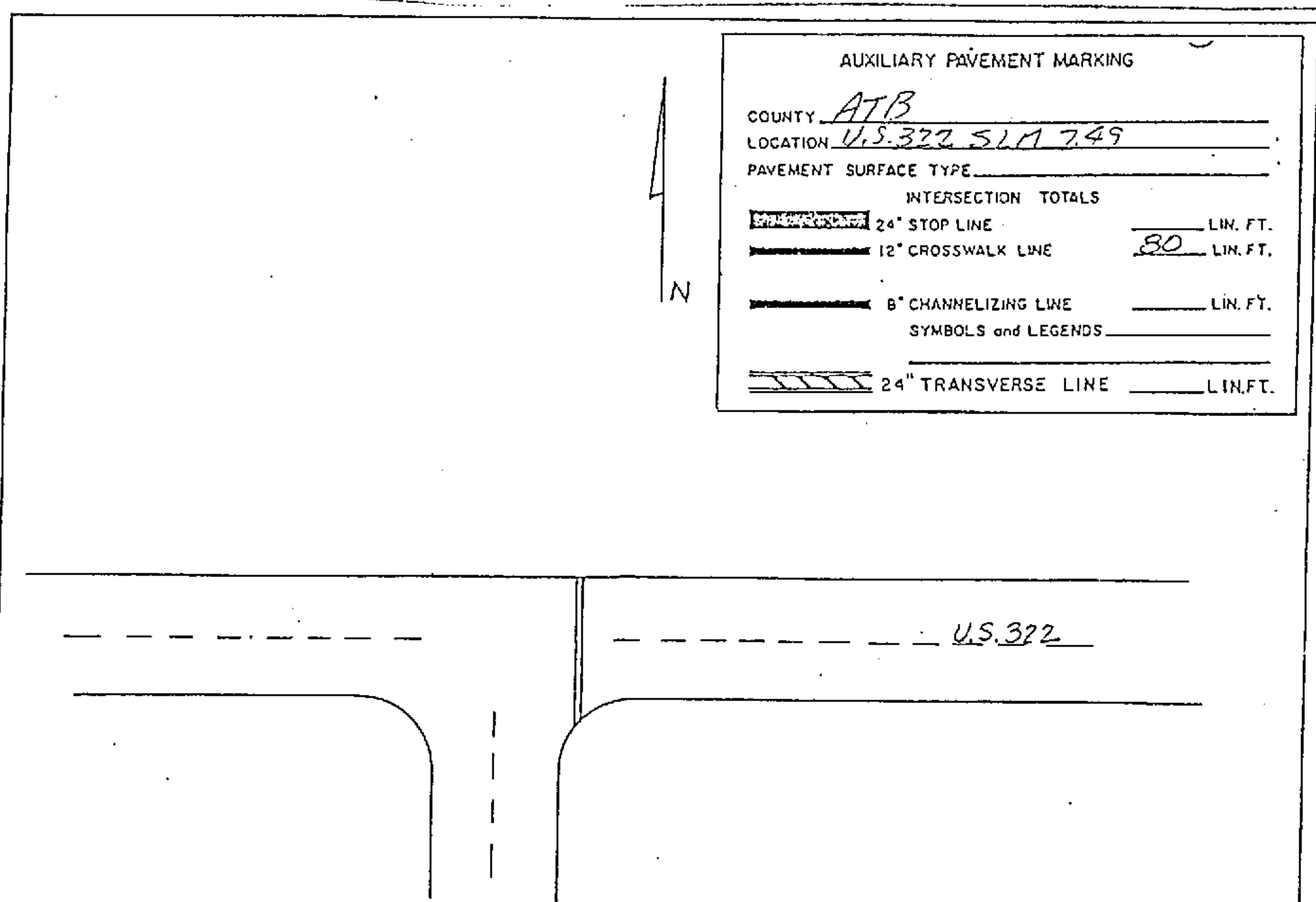
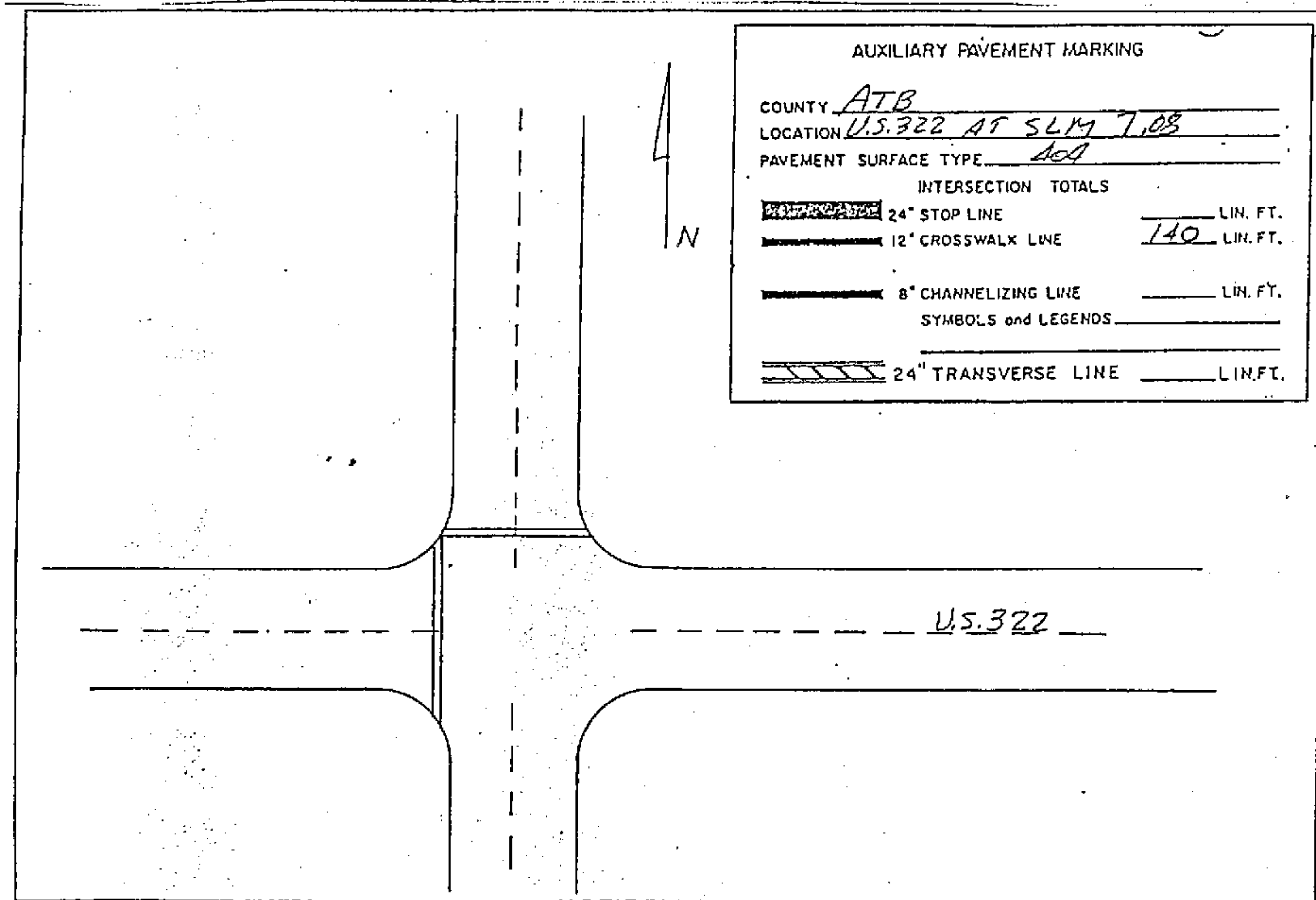
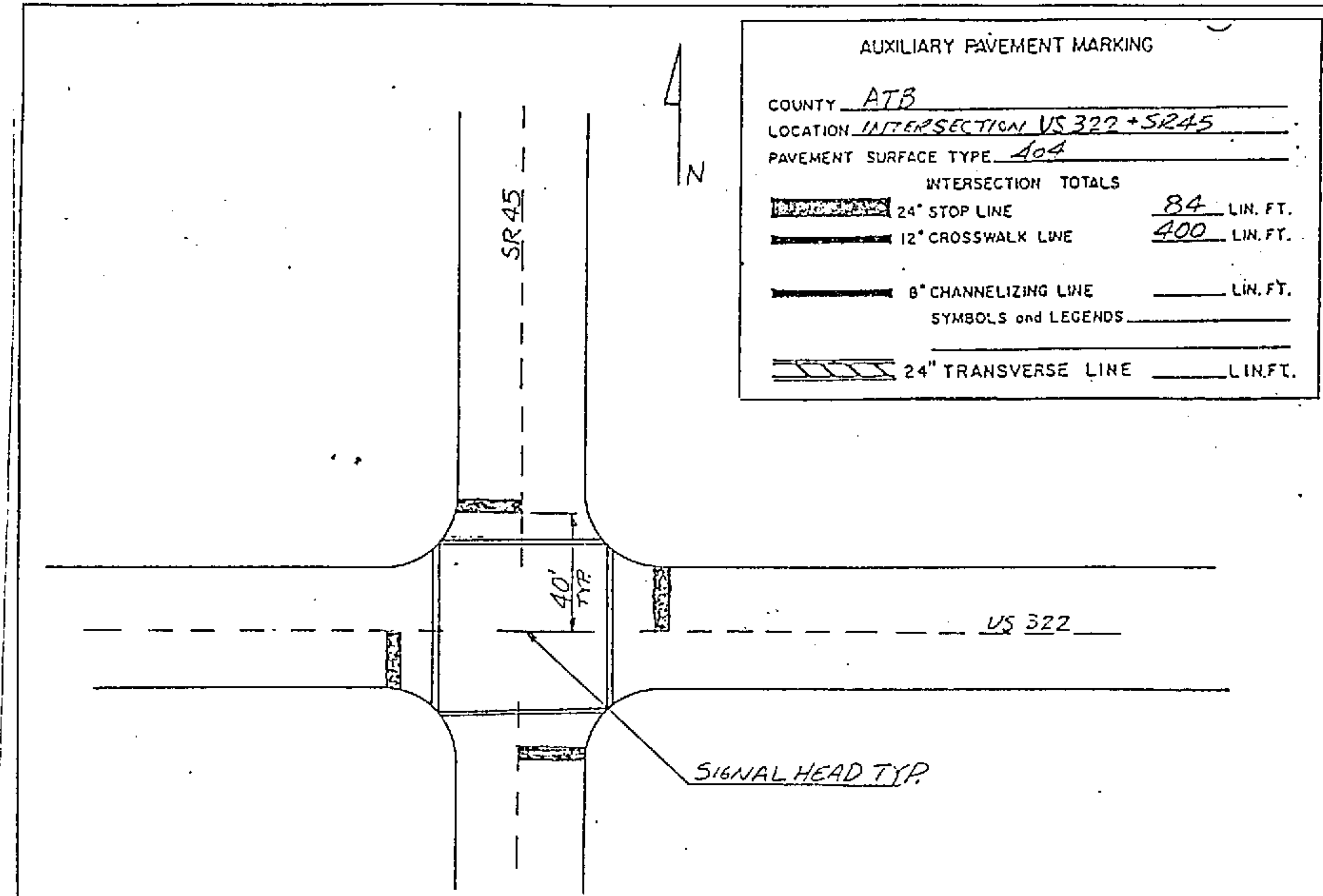
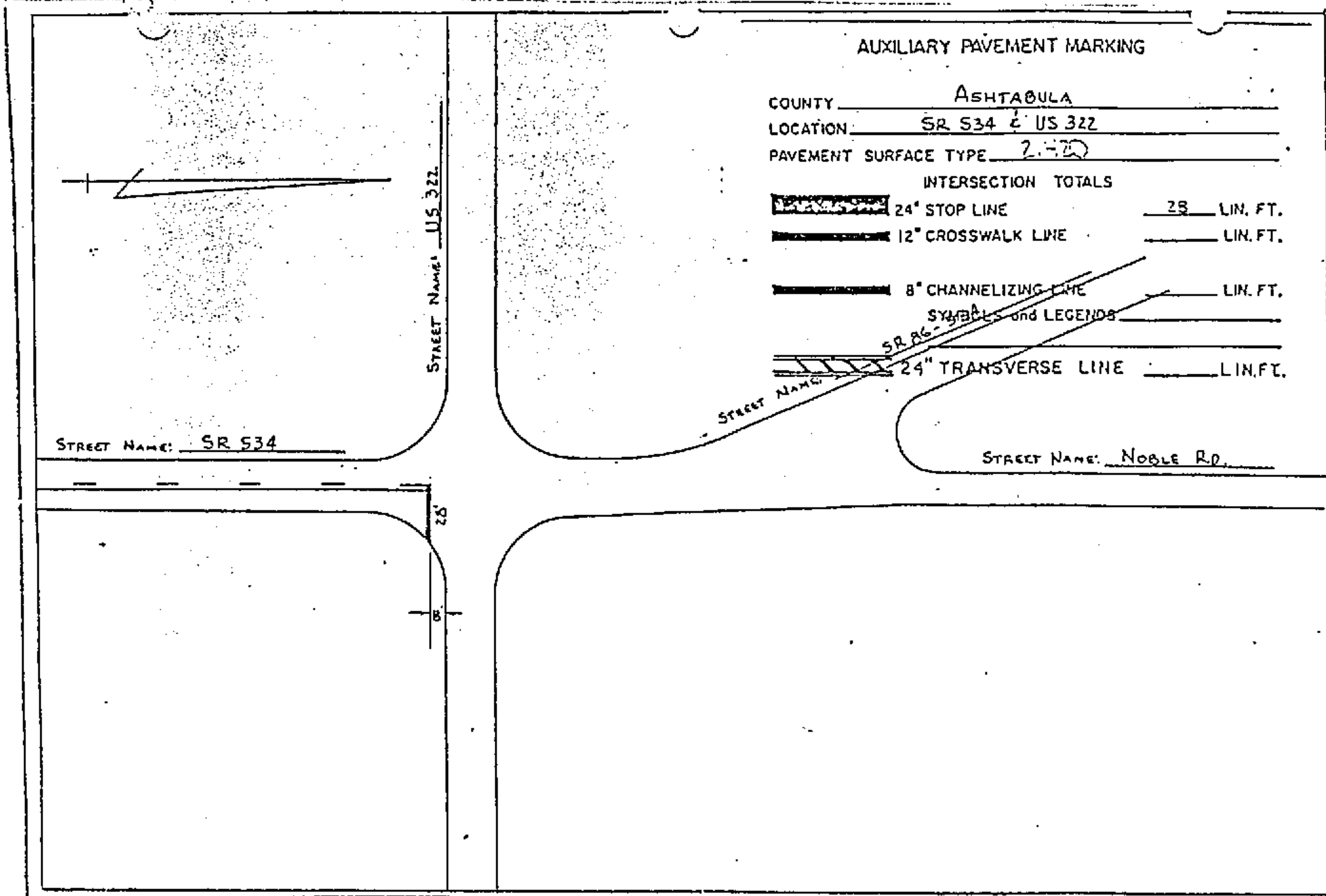
BRIDGE LENGTH - 170'-6 1/4"
 SURFACE WIDTH - 4.208'
 $170.52' \times 4.208' \times \frac{1}{9} = 79.73 \times 2 \text{ SIDES} = 159.46 \text{ SQ YDS}$

PARTIAL SECTION OF BRIDGE SUPERSTRUCTURE
 AT RIGHT ANGLE TO Q OF ROADWAY

ITEM SPECIAL 512 Sealing of
 Concrete Surfaces (EPOXY)
 BRIDGE No. ATB-322-9.67

ITEM SPECIAL - SEALING OF
 CONCRETE SURFACES (EPOXY)
 BRIDGE No. 322-5.28





TS 54
DISTRICT 4
Center Line Log Record and Field Sheet
COUNTY ASHTABULA ROUTE 322
Total This Route = Yellow: Solid 11.626, Yellow: Dash 22.925, White: Dash
Equivalent Yellow 17.357

90			(1.977)			(2.987)		
80			WISWELL Rd (1.218)			LANESE Rd (2.252)		
70			(1.677)			(2.763)		
60			(3.665)			(3.571)		
50			(3.574)			(3.419)		
40								
30								
20								
10			BUNDYSBURG Rd (0.000)			WISWELL Rd (1.177)		
0.00			ATB (0.000)			CON Rd (1.177)		

Yellow: Solid 11.626, Dash 22.925, White: Dash
Equivalent Yellow 17.357
TOTAL YELLOW THIS PAGE: SOLID 11.626, DASH 22.925, EQUIVALENT LINE 17.357

DISTRICT 4
COUNTY ASHTABULA ROUTE 322
Total This Route = Yellow: Solid 4.911, Yellow: Dash 2.724, White: Dash
Equivalent Yellow 1.725

90			(3.757)			(4.712)		
80			(3.665)			(4.723)		
70			(3.574)			(4.723)		
60			(3.574)			(4.723)		
50			(3.574)			(4.723)		
40								
30								
20								
10								
0.00								

Yellow: Solid 4.911, Dash 2.724, White: Dash
Equivalent Yellow 1.725
TOTAL YELLOW THIS PAGE: SOLID 4.911, DASH 2.724, EQUIVALENT LINE 1.725

TS 54
DISTRICT 4
Center Line Log Record and Field Sheet
COUNTY ASHTABULA ROUTE 322
Total This Route = Yellow: Solid 6.259, Yellow: Dash 2.715, White: Dash
Equivalent Yellow 1.937

90			(6.259)			(2.715)		
80			(6.259)			(2.715)		
70			(6.259)			(2.715)		
60			(6.259)			(2.715)		
50			(6.259)			(2.715)		
40			(6.259)			(2.715)		
30			(6.259)			(2.715)		
20			(6.259)			(2.715)		
10			(6.259)			(2.715)		
0.00			(6.259)			(2.715)		

Yellow: Solid 6.259, Dash 2.715, White: Dash
Equivalent Yellow 1.937
TOTAL YELLOW THIS PAGE: SOLID 6.259, DASH 2.715, EQUIVALENT LINE 1.937

DISTRICT 4 COUNTY ASHTABULA ROUTE 322

Total This Route = Yellow: Solid _____, Yellow: Dash _____, White: Dash _____
Equivalent Yellow _____

SEE ANNUAL MAINTENANCE SCHEDULE

90		90		90	SR 1138 ON RAMP (12.237)
					SR 1138 OFF RAMP (12.237)
.80		.80		.80	
.70		.70		.70	
.60		.60		.60	TRADMAN Rd (13.568) (13.557)
(12.557)					
.50	SR 46 (12.477)	.50		.50	
.40	(12.464)	.40		.40	
.30		.30		.30	
.20		.20		.20	
.10		.10		.10	
12.00		13.0		14.00	

Yellow: Solid 0.132 Dash 1.020 Yellow: Solid 3.440 Dash 0.939
TOTAL YELLOW THIS PAGE: SOLID 0.572 DASH 2.837, EQUIVALENT LINE 1.251

DISTRICT 4 COUNTY ASHTABULA ROUTE 322

Total This Route = Yellow: Solid _____, Yellow: Dash _____, White: Dash _____
Equivalent Yellow _____

90		90		90	SR 1138 (10.757)
.80		.80		.80	
.70		.70		.70	
.60	(1.655) (1.655)	.60		.60	
.50		.50		.50	
.40		.40		.40	
.30		.30		.30	
.20		.20		.20	
.10		.10		.10	FENTON Rd (10.014)
	MORRIS Rd (3.992)				FEE Rd (10.014)
9.00		10.00		11.00	

Yellow: Solid _____ Dash 1.000 Yellow: Solid 0.043 Dash 1.000 Yellow: Solid 0.055 Dash 1.000
TOTAL YELLOW THIS PAGE: SOLID 0.128 DASH 3.000, EQUIVALENT LINE 0.678

FHWA REGION	STATE	PROJECT
5	OHIO	

17
22

PLAN NO. 314

INITIAL PAVEMENT MARKINGS FOR RESURFACED SECTIONS GENERAL NOTES

In addition to the requirements of 621 and 847 the following shall apply:

621 and 847 Materials

The materials used on this project shall either be 621 fast dry traffic paint or 847 thermoplastic material approved by prequalification.

The Contractor shall provide storage for all materials and shall transport materials to the site where used. Glass beads shall be kept dry during storage and prior to use.

The Laboratory will furnish the names of manufacturers and code numbers from its approved list of prequalified white and yellow paint upon request.

621 and 847 Special Equipment

The Contractor's striping shall be equipped with an odometer graduated to 1/100 of a mile. The Engineer shall determine the degree of accuracy of the Contractor's odometer and establish an adjustment factor as may be required to accurately determine the pay item quantities. The Engineer shall periodically check the odometer's operation to assure maintenance to accurate measurements.

Failure of the odometer to function properly shall be cause to stop the work until the odometer is made to function properly. On short projects the Engineer may approve alternate methods to accurately measure the length of the various types of markings applied. If measurement of the work has to be done by the Department, the cost of the Department labor and equipment plus 10 percent shall be deducted from payment due the Contractor for the work. When measuring lane, edge and/or center line marking, the odometer shall be started at the first marked line and remain in operation, until the end of the section being marked, where it shall be shut off and the reading of the odometer recorded.

Electrical foot counters shall be provided and installed in the application equipment used to apply long line markings. The counters shall individually tabulate the amount of footage applied for each line, whether solid or dashed. The counters shall be a six digit type with a reset feature.

The Contractor shall use an accurate dashing mechanism, capable of being easily adjusted, to place lane or center line markings as specified in the plans or as directed by the Engineer.

Provision for the described special equipment by the Contractor shall be incidental to the application.

621 Material Quantity Measurement

The quantity of marking material or glass beads per unit of measurement will be computed by the Engineer at the end of each day's work. A day's applied mileage of less than 2 miles may be included in the next day's applied markings for the purpose of computing marking material and bead application rates.

The Contractor shall provide a calibrated measuring device acceptable to the Engineer for measuring material in the striping tanks.

The quantity of marking material used shall be determined by measuring the marking material in the tanks before and after marking material is applied. The Contractor shall cooperate with the Engineer in providing measurements whenever requested. The marking material application rate shall be determined by dividing the total gallons used by the appropriate marking length as determined from the foot counter as described within the Special Equipment Section of these notes. Any determination of pay deduction resulting from shortages in marking quantities shall be based on the measurements obtained by this method. The amount of glass beads applied will be ascertained by the Engineer by observation and from information supplied by the Contractor as to the quantity used.

847 Material Quantity Measurement

The quantity of marking material or glass beads per unit of measurement will be computed by the Engineer at the end of each day's work. A day's applied quantity of less than 100 pounds of marking material may be included in the next day's applied markings for the purpose of computing marking material and bead application rates.

The Contractor shall provide a calibrated measuring device acceptable to the Engineer for measuring material in the striping tanks.

The quantity of marking material used shall be determined by measuring the marking material before and after marking material is applied. The Contractor shall provide measurements whenever requested by the Engineer. The marking material application rate shall be determined by dividing the total pounds of thermoplastic material used by the appropriate marking length as determined from the foot counter as described within the Special Equipment Section of these notes. Any determination of pay deduction resulting from shortages in marking quantities shall be based on the measurements obtained by this method. The amount of glass beads applied shall be ascertained by the Engineer by observation and from information supplied by the Contractor as to quantity used.

INITIAL PAVEMENT MARKINGS FOR RESURFACED SECTIONS GENERAL NOTES

621 Layout and Premarking

In accordance with 621.05 the Contractor shall "T" no-passing zones in accordance with a no-passing zone log provided by the Engineer.

847 Layout and Premarking

In addition to the requirements of 847.04, premarking for auxiliary markings shall be located from schematic forms provided by the Engineer.

Markings shall not be applied over existing markings except when applying initial permanent markings over temporary markings of fast-dry paint. Temporary markings other than fast-dry paint shall be removed and the surface prepared to the satisfaction of the Engineer before permanent markings are applied.

621 and 847 Auxiliary Pavement Marking

For this project, auxiliary markings shall be defined as: Stop lines, crosswalk lines, transverse lines, railroad and school symbol markings, lane arrows, word on pavement, curb and island markings, parking lot stall markings and dotted lines except when used to extend edge lines.

847 Material Application Temperature

The Contractor shall provide a calibrated temperature sensing device which will accurately measure the temperature of the extruded thermoplastic material when it makes contact with the pavement. A temperature of 400°F to 440°F at point of application to road surface must be maintained at all times.

847 Material Application Rates

In addition to the requirements of 847 the minimum application rates shall be as follows:

Pounds Per Mile of Line	Width of Line (Inches)			
	4	8	12	24
Solid Line	2340	4680	7020	14040
Dashed Line	585	1170	1755	3510

133 Pounds Per 100 Square Feet

947.02 Thermoplastic Pavement Markings

Glass beads intermixed or dropped on 947.02 thermoplastic pavement marking material shall meet the following specification:

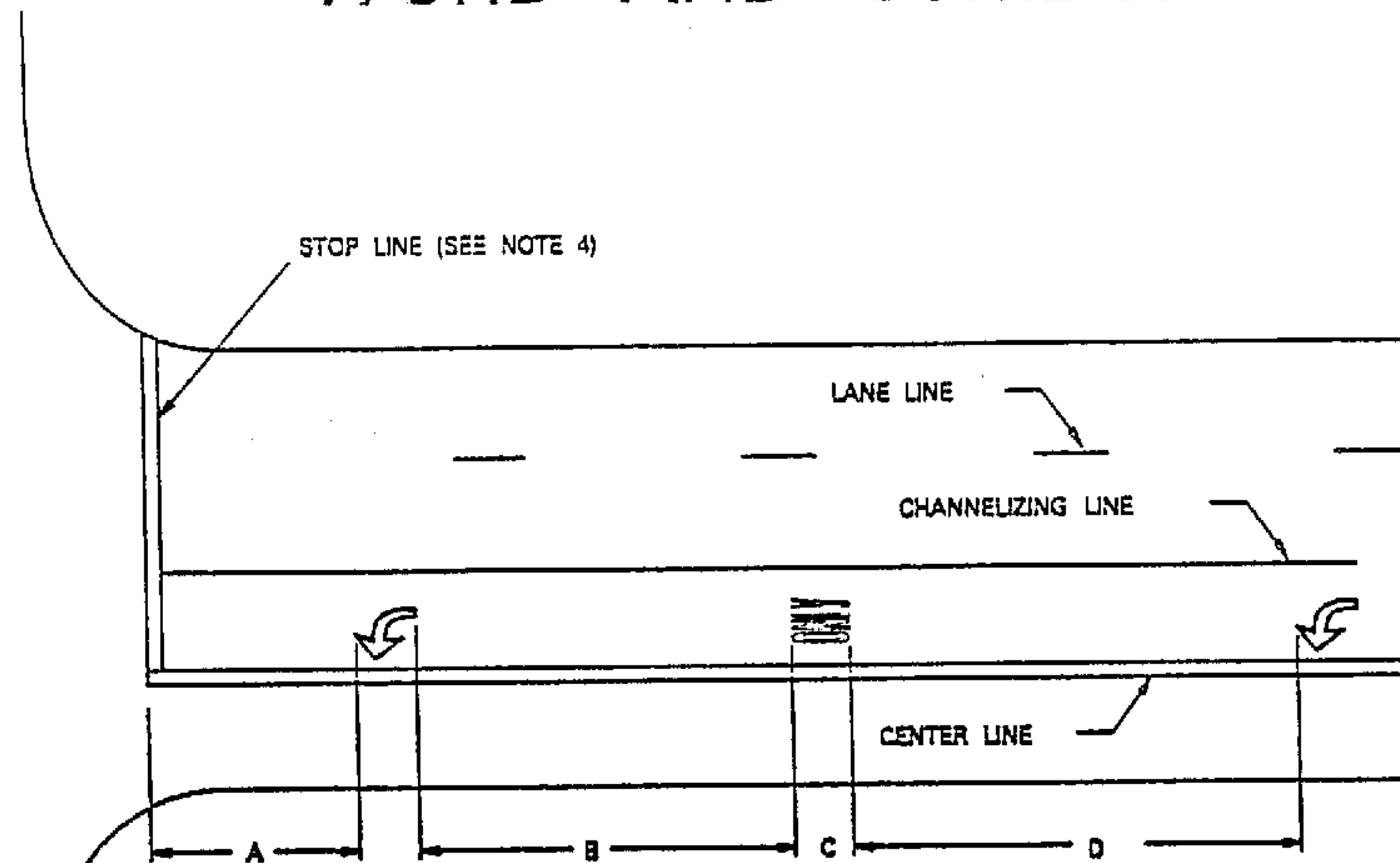
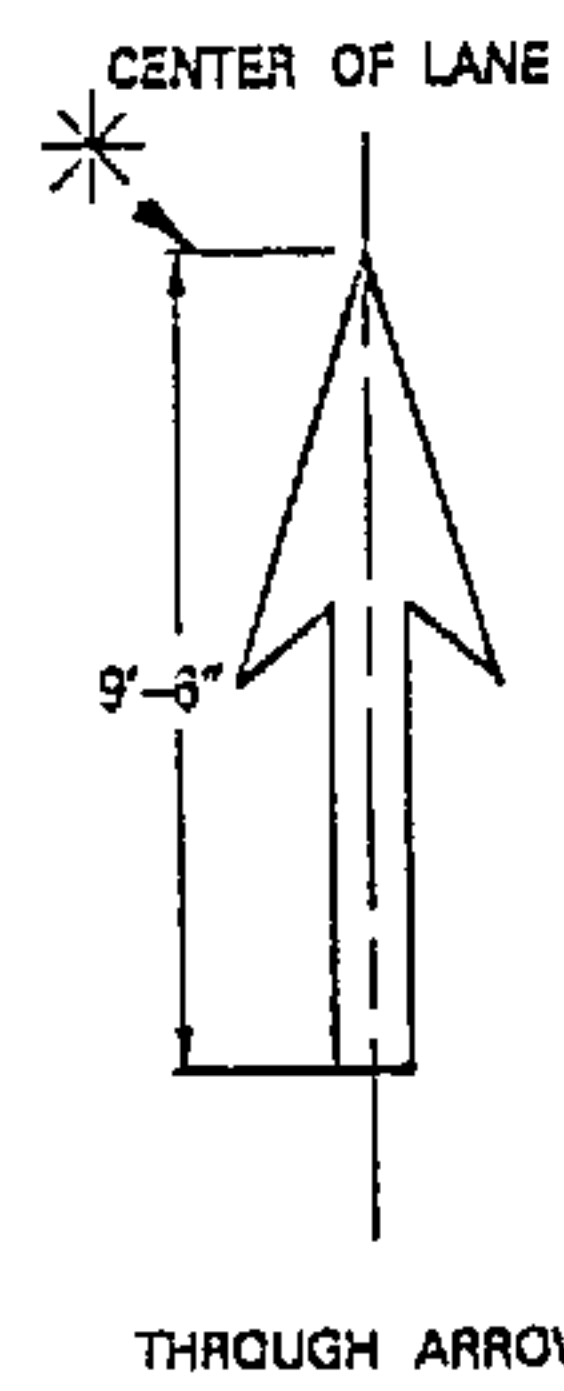
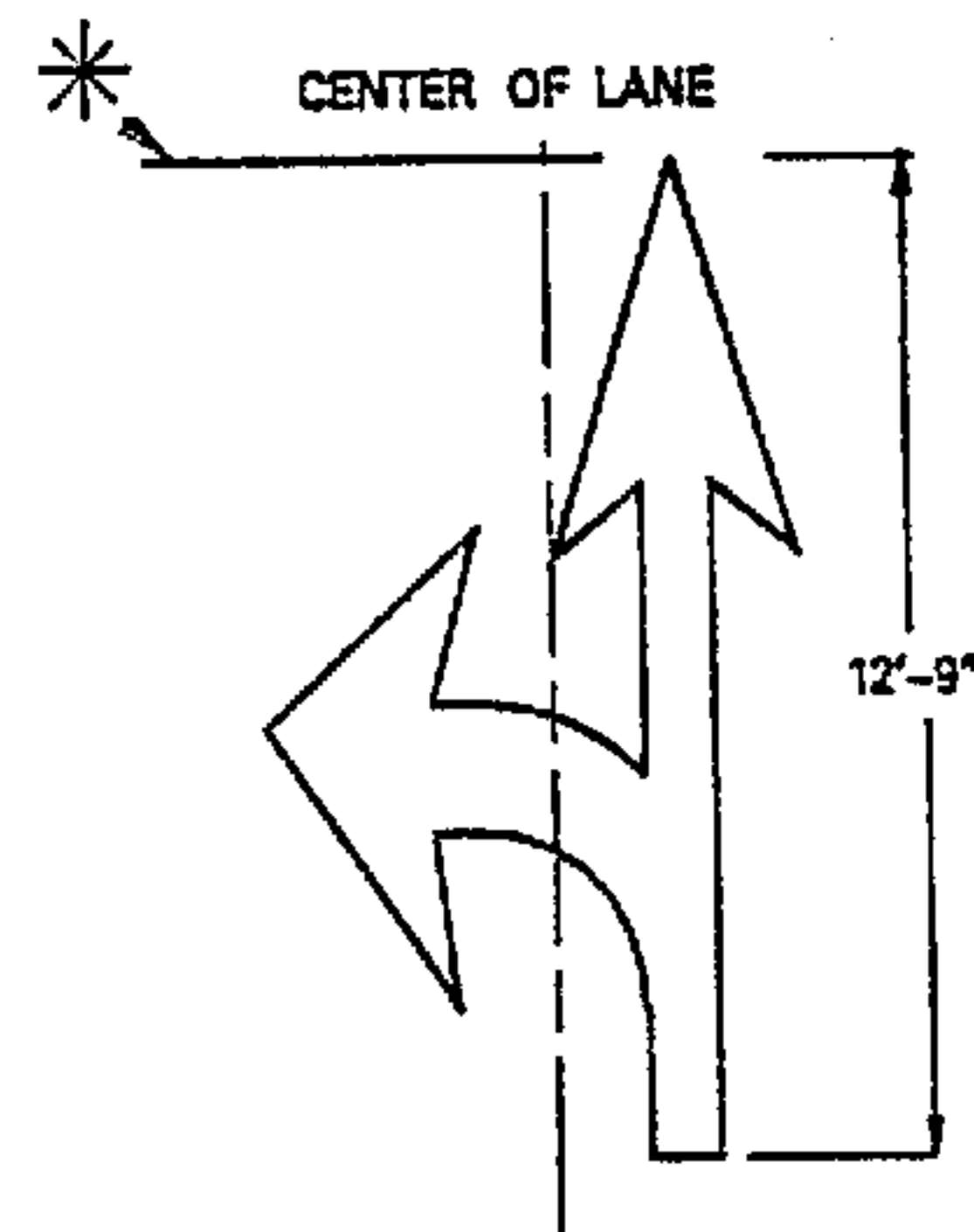
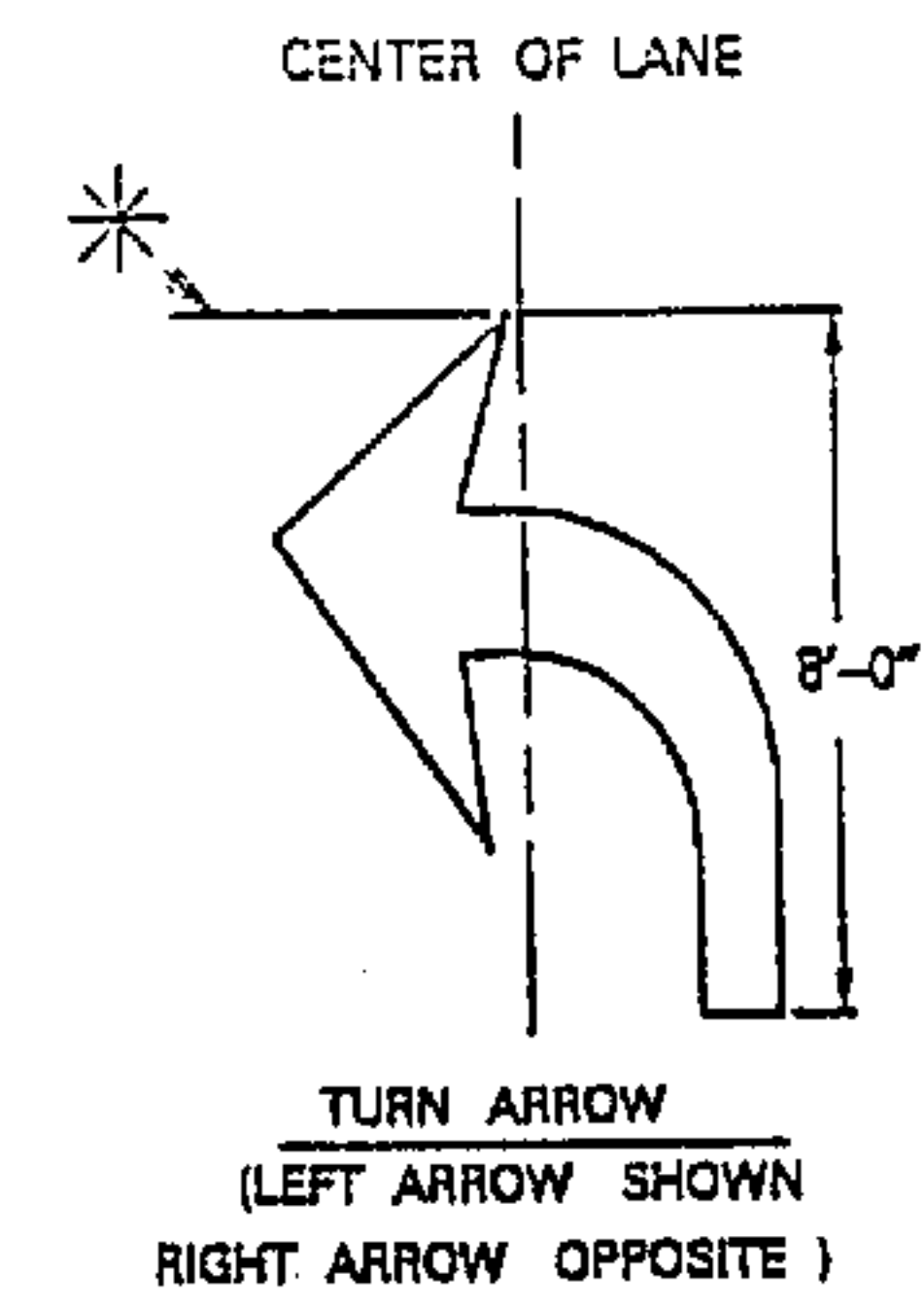
Sieve No.	% Retained
16	3 Max
20	5 to 20
40	65 to 95
50	0 to 5
Refractive Index:	1.50 to 1.60
Roundness:	80% Min
Coating:	Adhesion Promoting

The application rate of drop-on beads shall be a uniform 25 pounds of beads for each 100 square feet of thermoplastic material surface area.

862 Raised Pavement Markers

This Contract may include sections of roadway where plowable prismatic raised pavement markers are to be installed in the pavement. Raised pavement marker placement for a resurfaced section shall begin after the permanent pavement marking for that resurfaced section is completed and dry.

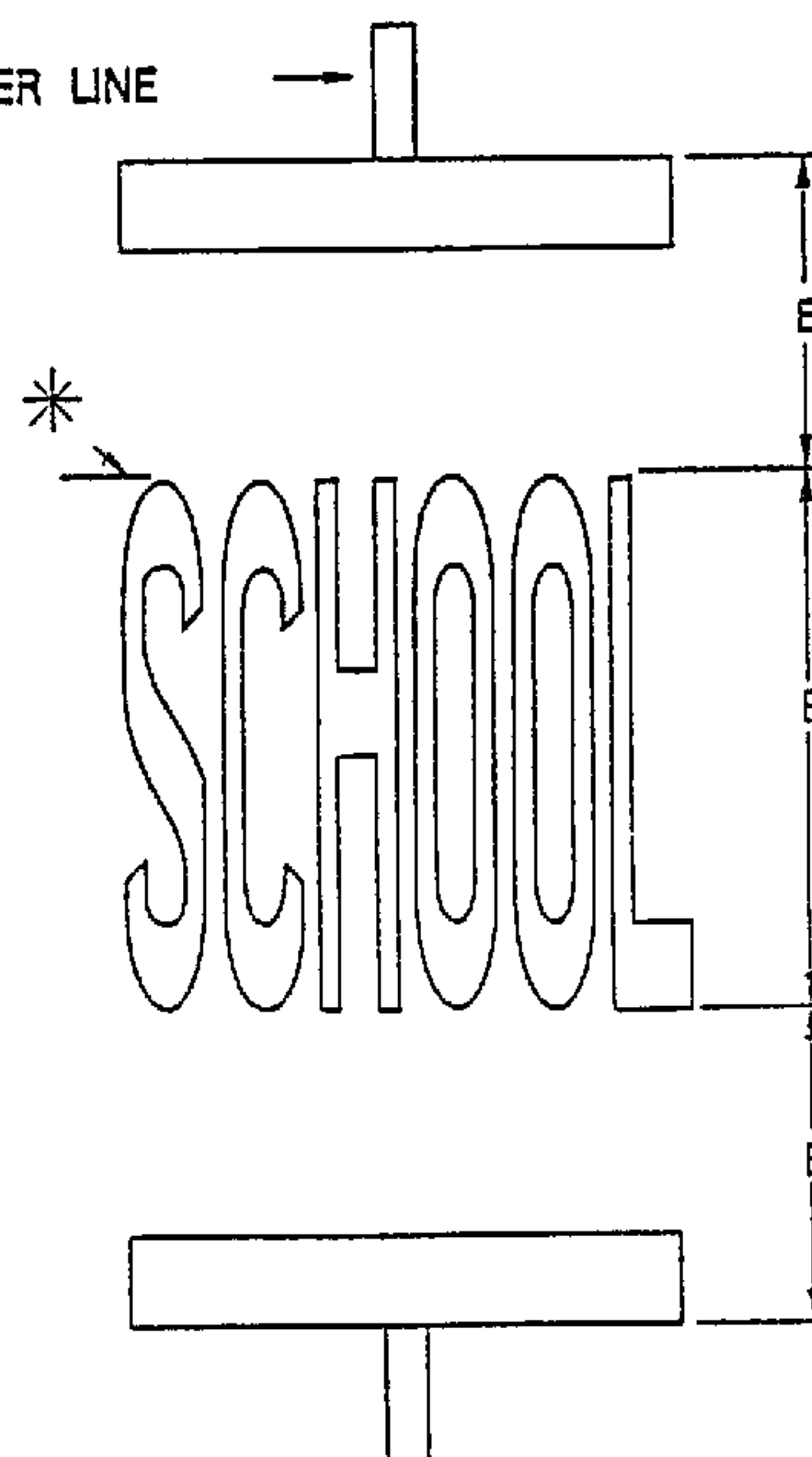
WORD AND SYMBOL MARKING DETAILS



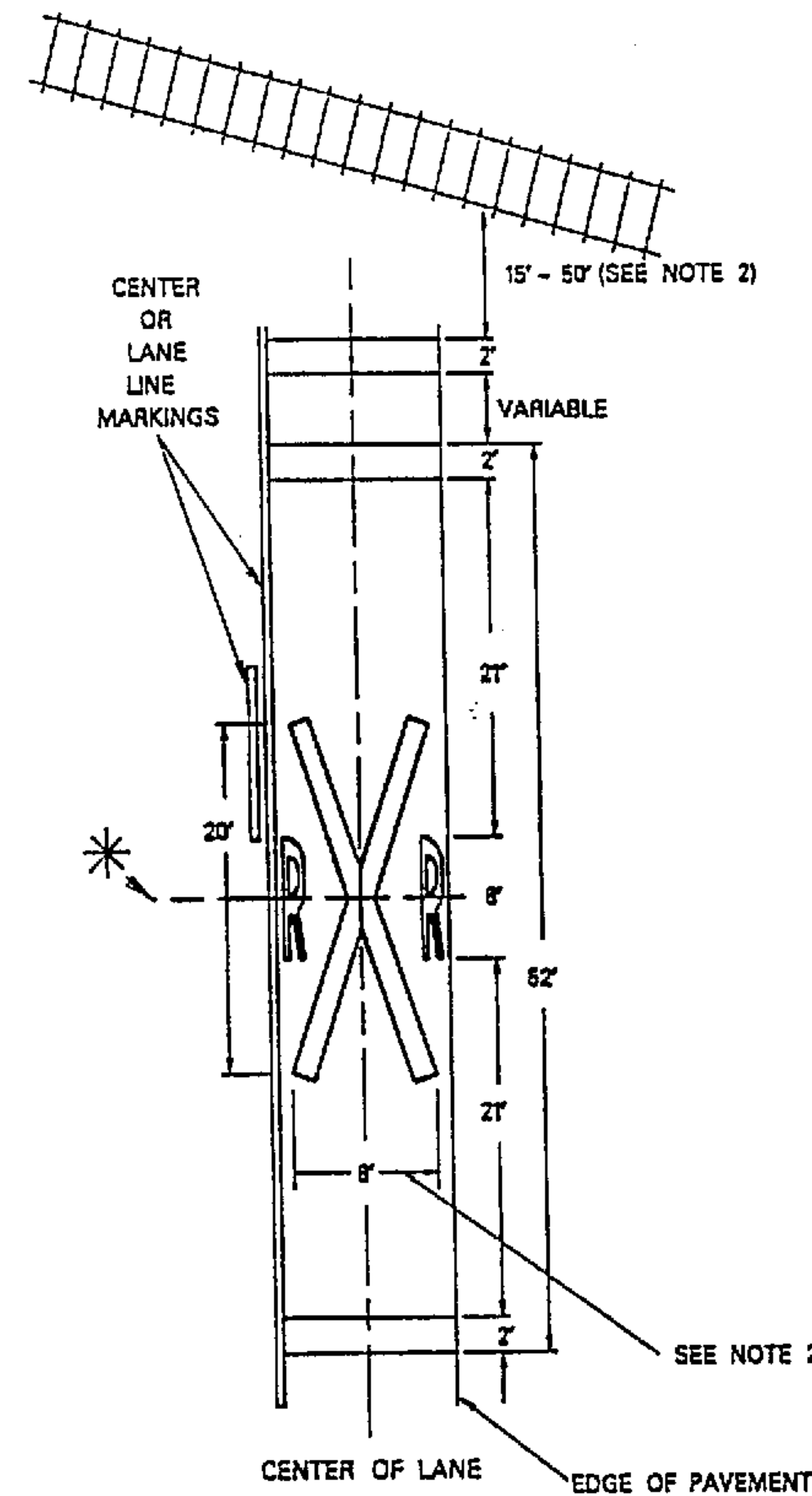
NOTE:
STOP LINE LOCATED MIN. 40' FROM
AT LEAST ONE SIGNAL HEAD WHICH APPLIES
TO THAT APPROACH

TYPE	DIMENSIONS (FEET)			
	A	B	C	D
RURAL	30 MIN.	32-90	8	32-90
URBAN	10 MIN.	32-90	8	24-60

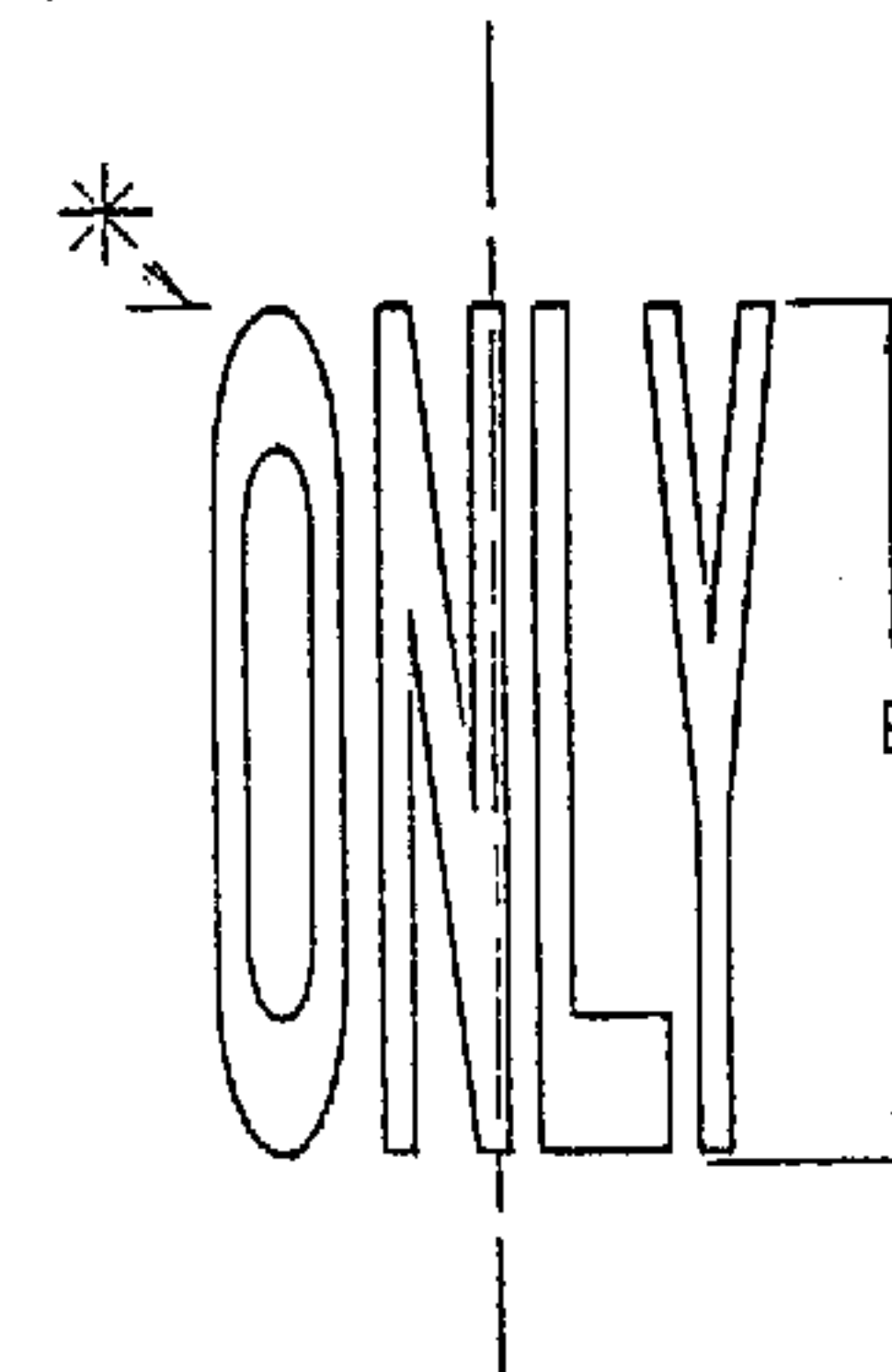
LANE OR CENTER LINE



TYPE	INCHES
	E
RURAL	96
URBAN	72



CENTER OF LANE



NOTES:

1. ON MULTI-LANE APPROACHES, THE TRANSVERSE LINES USED WITH THE RAILROAD SYMBOLS SHALL EXTEND ACROSS ALL APPROACH LANES AND SYMBOLS SHALL BE PLACED IN EACH APPROACH LANE.

2. THE RAILROAD SYMBOL SHALL BE LOCATED SO THAT THE W-94, "RAILROAD ADVANCE WARNING SIGN", IS WITHIN THE TWO TRANSVERSE BOUNDARY LINES OF THE RAILROAD SYMBOL. THE STOP LINE SHALL BE LOCATED FOR BEST SIGHT DISTANCE WITHIN 15 FEET TO 50 FEET OF THE NEAR EDGE OF THE TRACKS. STOP LINES SHALL BE PERPENDICULAR TO THE CENTER LINE OF THE ROADWAY. WIDTH OF "X" MAY VARY ACCORDING TO LANE WIDTH.

3. ON MULTI-LANE APPROACHES, THE TRANSVERSE LINES USED WITH THE WORD "SCHOOL" SHALL EXTEND ACROSS ALL APPROACH LANES WITH A SINGLE WORD "SCHOOL" CENTERED ACROSS THE APPROACH LANES. ON TWO LANE ROADWAYS, THE TRANSVERSE LINES SHALL EXTEND ACROSS THE ROADWAY WITH THE WORD "SCHOOL" CENTERED ACROSS THE ROADWAY. CENTER OR LANE LINES SHALL NOT PASS THROUGH THE "SCHOOL" MARKING.

4. THE STOP LINE SHOULD BE PLACED WHERE CROSS-CORNER VISION IS MAXIMUM, IN NO CASE MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. FOR NORMAL INTERSECTIONS A MAXIMUM DISTANCE OF 10 FEET IS RECOMMENDED.

IF A MARKED CROSSWALK IS PRESENT, THE STOP LINE SHOULD BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK.

5. FOR TRAFFIC PAINT AND POLYESTER APPLICATION, TEMPLATE GAPS SHALL BE FILLED WITH MARKING MATERIAL IN ACCORDANCE WITH 841.03. FOR EXTRUDED THERMOPLASTIC MATERIAL, THESE GAPS MAY REMAIN UNFILLED IN ACCORDANCE WITH 844.03.

6. USE STANDARD DIMENSIONS CONFORMING TO REQUIREMENTS OF OMUTCD SECTION 38-40 THROUGH 38-43 INCLUSIVE. (THAT IS THE 1977 METRIC EDITION STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING WITH ERRATA.)

* INDICATES STATION REFERENCE POINT

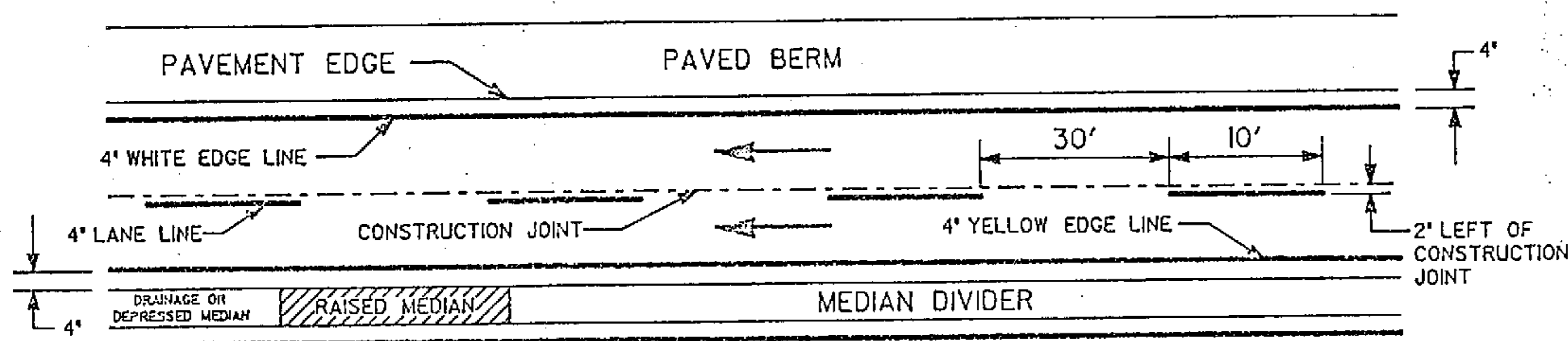
PAVEMENT MARKING TYPICAL DETAILS

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

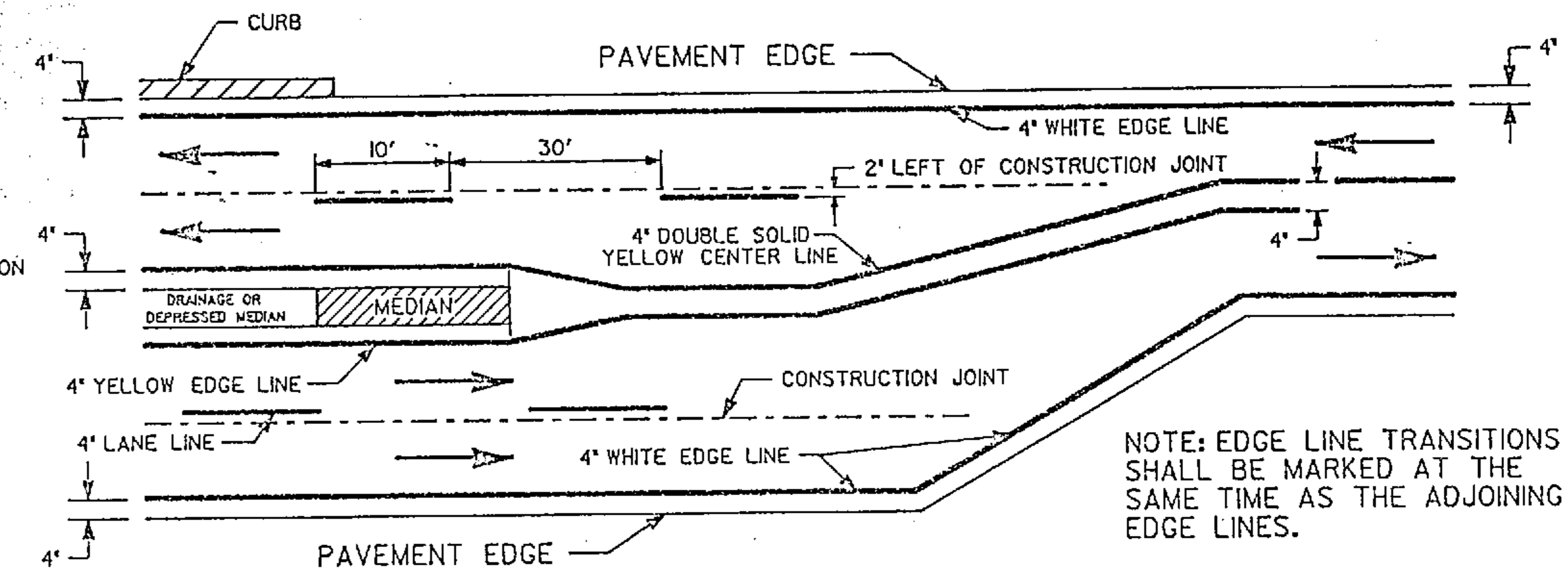
20
22

PLAN NO. 316

FREEWAY & EXPRESSWAY MAINLINE MARKINGS

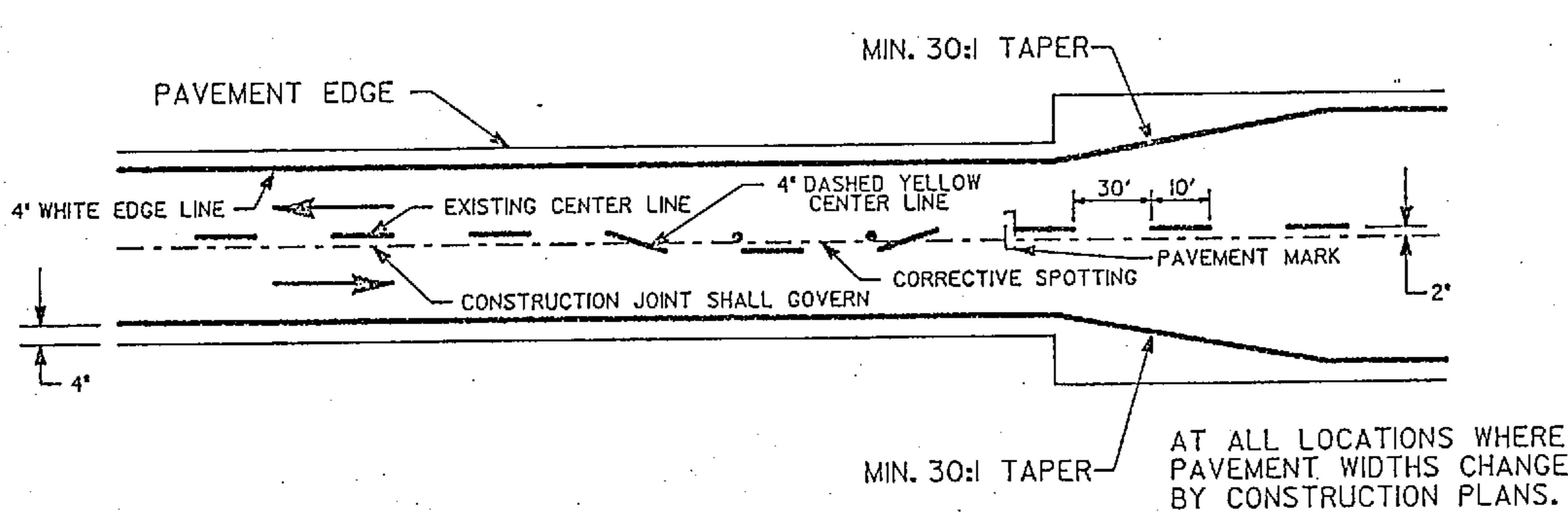


MULTILANE DIVIDED & UNDIVIDED HIGHWAY MARKINGS



NOTE: EDGE LINE TRANSITIONS SHALL BE MARKED AT THE SAME TIME AS THE ADJOINING EDGE LINES.

TWO LANE MARKINGS



AT ALL LOCATIONS WHERE PAVEMENT WIDTHS CHANGE BY CONSTRUCTION PLANS.

NOTES:

1. THE DISTANCE FROM THE PAVEMENT EDGE TO THE NEAR SIDE EDGE OF THE EDGELINE MAY BE INCREASED WITH THE APPROVAL OF THE ENGINEER IN ORDER TO MAINTAIN UNIFORM LANE WIDTH.
2. SEE TC-72.20 FOR ENTRANCE AND EXIT RAMP MARKINGS.
3. THE CYCLE LENGTH FOR DASHED LINES SHALL BE 40 FEET PLUS OR MINUS 6 INCHES. THE MINIMUM LENGTH OF DASH SHALL BE SUFFICIENTLY LONG TO MAINTAIN A 3:1 RATIO BETWEEN LENGTH OF GAP AND LENGTH OF DASH.

BUREAU OF TRAFFIC OHIO DEPARTMENT OF TRANSPORTATION	
PAVEMENT MARKING TYPICAL DETAILS	DATE 11/80
J.D.L. C.D.R.	

GENERAL SUMMARY

PLAN NO. 316

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22

ITEM	Item Ext.	Part-1			GRAND TOTAL	UNIT	DESCRIPTION
202	23500	1990			1990	SQ.YD.	Wearing Course Removed
202	54100	6			6	EACH	Raised Pavement Marker Removed for Storage
203	40001	50			50	CU.YD.	Borrow, as per plan
203	60000	1293			1293	STATION	Linear Grading, Method "D"
253	01000	150			150	SQ.YD.	Pavement Repair
254	01000	4300			4300	SQ.YD.	Pavement Planing, Bituminous 0"-1-1/2"
403	25000	2888			2888	CU.YD.	Asphalt Concrete, AC-20, Spot Leveling
404	20000	6146			6146	CU.YD.	Asphalt Concrete, AC-20
404	25000	495			495	CU.YD.	Asphalt Concrete, AC-20 (Driveways)
407	10000	15336			15336	Gallon	Tack Coat
407	13900	44			44	Gallon	Tack Coat using SS 924
Special	512 67502	263			263	SQ.YD.	Sealing of Concrete Surfaces (EPOXY)
604	09000	1			1	EACH	Catch Basin Adjusted to Grade
604	09500	1			1	EACH	Catch Basin Reconstructed to Grade
604	34500	14			14	EACH	Manhole Adjusted to Grade
604	38501	23			23	EACH	Monument Assembly, as per plan
614	11000	LUMP			Lump	Lump	Maintaining Traffic
614	12460	40			40	EACH	Work Zone Marking Sign
614	21400	24.96			24.96	Mile	Temporary Center line Class II
617	10100	1630			1630	CU.YD.	Compacted Aggregate, Type A
621	00100	24.73			24.73	Mile	Edge Line
621	20100	12.48			12.48	Mile	Center Line
621	40100	140			140	Lin. Ft.	Stop Line

GENERAL SUMMARY

