

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

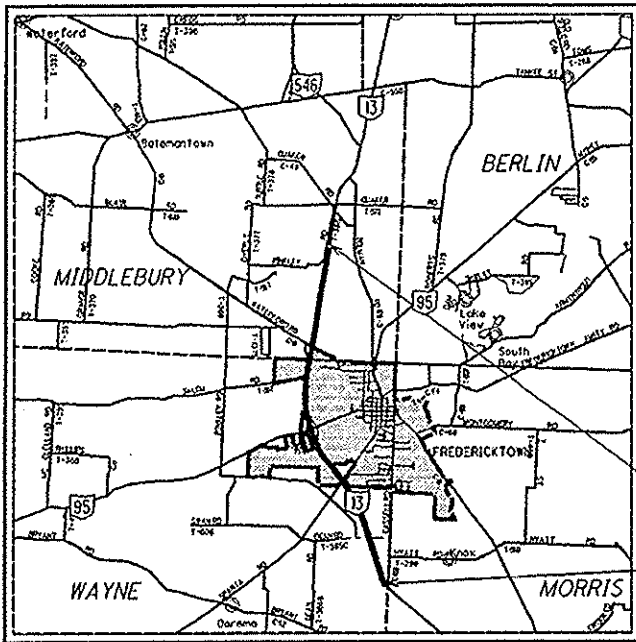
KNO-13-16.00

**WAYNE AND MIDDLEBURY TOWNSHIPS
KNOX COUNTY**

PROJECT DESCRIPTION

MICROSURFACING ALONG S.R. 13 IN KNOX COUNTY BETWEEN
SLM 16.00 (SOUTHERN LIMIT) AND SLM 20.8 (NORTHERN LIMIT).

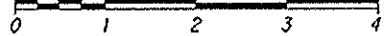
PROJECT EARTH DISTURBED AREA: N/A
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A
NOTICE OF INTENT EARTH DISTURBED AREA: N/A



LOCATION MAP

LATITUDE: 40°29' 05" LONGITUDE: 82°33' 33"

SCALE IN MILES



PORTION TO BE IMPROVED.....

INTERSTATE HIGHWAY.....	—————
FEDERAL ROUTES.....	—————
STATE ROUTES.....	—————
COUNTY & TOWNSHIP ROADS.....	—————
OTHER ROADS.....	—————

DESIGN DESIGNATION

CURRENT ADT (2016).....	8,600
DESIGN YEAR ADT (2028).....	9,200
DESIGN HOURLY VOLUME (2028).....	830
DIRECTIONAL DISTRIBUTION.....	0.57
TRUCKS (24 HOUR B&C).....	0.11
DESIGN SPEED.....	65
LEGAL SPEED.....	60
DESIGN FUNCTIONAL CLASSIFICATION:	
RURAL PRINCIPAL ARTERIAL	

DESIGN EXCEPTIONS

NONE REQUIRED

INDEX OF SHEETS:

TITLE SHEET	1
GENERAL NOTES	2
MAINTENANCE OF TRAFFIC NOTES	3
ASPHALT CONCRETE DATA	4
PAVED SHOULDER DATA	5
RAMP AND MEDIAN DATA	6
BRIDGE TREATMENT DATA	7
EDGE/LANE/CENTER LINE DATA	8
AUXILIARY MARKING DATA	9
PAVEMENT MARKING DETAILS	10-II
RAISED PAVEMENT MARKING DATA	12
GENERAL SUMMARY	13

2013 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

LOCATION	COUNTY	ROUTE	BEGIN SLM	END SLM	LENGTH MILES	CITY/VILLAGE
1	KNO	S.R. 13	16.00	20.80	4.80	FREDERICKTOWN

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764

(Non-members must be called directly)

OIL & GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
1-800-925-0988

PLAN PREPARED BY:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 ENGINEERING OFFICE

ENGINEER'S SEAL:
STATE OF OHIO

DOUGLAS N. MORGAN
E-63839

REGISTERED PROFESSIONAL ENGINEER

SIGNED: *Douglas N. Morgan*
DATE: 12-16-15

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	7/18/14	TC-65.10	1/17/14	800	1/15/2016
		TC-65.11	7/18/14	832	1/17/2014
MT-95.30	7/18/14	TC-71.10	1/17/14	821	4/20/2012
MT-97.12	7/18/14	TC-72.20	7/18/14	881	12/31/2012
MT-98.10	7/18/14				
MT-98.11	7/18/14				
MT-98.20	7/18/14				
MT-98.22	7/18/14				
MT-98.28	7/18/14				
MT-99.20	7/19/13				
MT-101.90	7/17/15				
MT-105.10	7/19/13				

APPROVED *Dave Ray*
DATE 12-16-15 DISTRICT DEPUTY DIRECTOR

APPROVED *[Signature]*
DATE 1-4-16 DIRECTOR, DEPARTMENT OF TRANSPORTATION

KNO - SR 13-16.00
160144 PID - 93024
Dist 5 3/24/2016

Contract Proposal Available @ www.
contracts.dot.state.oh.us/home

FEDERAL PROJECT NO.
E160(056)

PID NO.
93024

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

KNO-13-16.00

1/13

UTILITIES

THERE ARE NO UNDERGROUND UTILITIES SHOWN ON THIS PLAN. THE NATURE OF THE WORK REQUIRED BY THIS PROJECT WILL NOT AFFECT ANY KNOWN UNDERGROUND UTILITIES THAT EXIST UNDER OR ADJACENT TO THE WORK AREA.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

NOTIFICATION OF ROAD CLOSURE OR RESTRICTION

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF TWENTY ONE (21) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICER (PIO) BY FAX AT (614) 887-4510 OR EMAIL AT D05.PIO@DOT.STATE.OH.US

DISTRICT PERMIT SECTION BY FAX AT (614) 887-4525 OR EMAIL AT BRIAN.BOSCH@DOT.STATE.OH.US

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR EMAIL AT HAULING.PERMITS@DOT.STATE.OH.US

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES.

PAVEMENT MARKING

STOP LINES, CROSSWALK LINES, CHANNELIZING LINES, ETC., SHOWN IN THE PLANS ARE TAKEN FROM EXISTING MARKINGS. THE CONTRACTOR SHALL DOCUMENT ALL OF THE EXISTING PAVEMENT MARKING LOCATIONS THAT WILL BE REMOVED/OBLITERATED DURING THIS PROJECT. THE CONTRACTOR SHALL PLACE NEW PAVEMENT MARKINGS AT THE LOCATION OF THE EXISTING MARKINGS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DOCUMENTATION OF PAVEMENT MARKING SHALL BE SUPPLIED TO THE ENGINEER BEFORE COMMENCEMENT OF ANY OPERATION WHICH WILL REMOVE/OBLITERATE MARKINGS. THE METHOD OF DOCUMENTATION SHALL BE APPROVED BY THE ENGINEER IN ORDER TO PROVIDE AN ACCEPTABLE TOLERANCE BETWEEN THE EXISTING AND PROPOSED PAVMENT MARKINGS.

ITEM 621, RAISED PAVEMENT MARKER REMOVED

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS TO REMOVE RAISED PAVEMENT MARKERS FOR DISPOSAL BY THE CONTRACTOR. RPM REMOVAL SHALL NOT OCCUR SOONER THAN 10 DAYS PRIOR TO RESURFACING OF THE ROADWAY. ALL RPM'S REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE DESCRIBED PURPOSE.

ITEM 621 RAISED PAVEMENT MARKER REMOVED

LOCATION 1 – 684 EACH

ITEM 881, MICROSURFACING WITH WARRANTY, AS PER PLAN

ALL REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 881 APPLY. IN ADDITION, SUPPLY A BLEND OF A MINIMUM OF 50% IGNEOUS DIABASE TRAP ROCK AND A MAXIMUM OF 50% LIMESTONE AGGREGATE FROM APPROVED SOURCES FOR USE AS AGGREGATE IN ITEM 421. DO NOT USE OTHER AGGREGATES.

CONTRACTOR SHALL USE TYPE II OR TYPE III MATERIAL FOR CRACK SEALING JOINTS AND CRACKS LONGER THAN 2 FEET IN ACCORDANCE WITH SURFACE PREPARATION, SEE 881.04.

MICROSURFACING SHALL BE IN ACCORDANCE WITH ITEM 421 WITH THE FOLLOWING CHANGE: TRUCK MOUNTED MACHINES ARE NOT PERMITTED ON THIS PROJECT.

THE CONTRACTOR SHALL PROTECT THE STOP LINES AND CENTER LINE MARKINGS ON ALL SIDE ROADS DURING THE MATERIAL APPLICATION. WE WILL NOT BE REPLACING ANY OF THE PAVEMENT MARKINGS ON THE SIDE ROADS.

THE CONTRACTOR SHALL PROTECT DRAINAGE STRUCTURES, MONUMENT BOXES, WATER VALVES, ETC. DURING MATERIAL APPLICATION.

CALCULATED
PCM
CHECKED
DMM

GENERAL NOTES

KNO - 13 - 16.00

2
13

MAINTAINING TRAFFIC

A MINIMUM OF 1 LANE IN EACH DIRECTION OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON SR 13 BY USE OF THE EXISTING PAVEMENT AND STANDARD DRAWING MT-95.30 OR MT-97.12.

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES INCLUDING REPAIRS.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT, IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

DROPOFFS IN WORK ZONES

DROPOFFS THAT DEVELOP DURING CONSTRUCTION OPERATIONS AND THAT ARE NOT OTHERWISE PROVIDED FOR IN THE PLANS SHALL BE TREATED AS SHOWN ON STANDARD DRAWING MT-101.90. WHERE THE PLANS DO NOT PROVIDE SPECIFIC ITEMS FOR LABOR, EQUIPMENT, OR MATERIALS TO IMPLEMENT THE DROP-OFF TREATMENTS SPECIFIED, THEY SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614, WORK ZONE MARKING SIGN

IN ACCORDANCE WITH CMS SECTION 614.04, THE QUANTITIES OF WORK ZONE MARKING SIGN HAVE BEEN CARRIED TO THE SUB-SUMMARIES TO BE USED AS DIRECTED BY THE ENGINEER.

W8-H12a (NO EDGE LINES):
LOCATION 1: 22 EACH

R4-1 (DO NOT PASS):
LOCATION 1: 5 EACH

R4-2 (PASS WITH CARE)
LOCATION 1: 4 EACH

ITEM 614, WORK ZONE MARKING SIGN

LOCATION 1: 31 EACH

ITEM 614, WORK ZONE SPEED ZONES (WZSZS)

THE FOLLOWING WORK ZONE SPEED ZONE (WZSZ) SPEED LIMIT REVISION(S) HAVE BEEN APPROVED FOR USE ON THIS PROJECT WHEN WORK ZONE CONDITIONS AND FACTORS ARE MET AS DESCRIBED BELOW:

WZSZ REVISION NUMBER COUNTY & ROUTE DIRECTION
WZ- 30534 KNO-SR13-16.05-20.74 NB/SB

POTENTIAL WZSZ LOCATIONS SHALL HAVE AN ORIGINAL (PRE-CONSTRUCTION) POSTED SPEED LIMIT OF =55 MPH, A QUALIFYING WORK ZONE CONDITION OF AT LEAST 0.5 MILE IN LENGTH, AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS, AND A WORK ZONE CONDITION IN PLACE THAT REDUCES THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS (I.E., LANE CLOSURE, LANE SHIFT, CROSSOVER, CONTRAFLOW AND/OR SHOULDER CLOSURE). THE LENGTH OF THE WORK ZONE CONDITION IS MEASURED FROM THE BEGINNING OF THE TAPER FOR THE SUBJECT WORK ZONE CONDITION IMPACTING THE TRAVEL LANES AND/OR SHOULDER TO THE END OF THE DOWNSTREAM TAPER, WHERE DRIVERS ARE RETURNED TO TYPICAL ALIGNMENT. AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS IS REQUIRED TO BALANCE THE ADDITIONAL EXPOSURE CREATED BY INSTALLING AND REMOVING WZSZ SIGNING WITH THE TIME NEEDED TO COMPLETE THE WORK.

IF THE WORK ZONE MEETS THESE MINIMUM CRITERIA, IT SHALL BE ANALYZED FURTHER USING TABLE 1 BELOW TO DETERMINE IF AND WHEN IT QUALIFIES FOR A SPEED LIMIT REDUCTION. DEPENDING ON THE ORIGINAL POSTED SPEED LIMIT, THE TYPE OF TEMPORARY TRAFFIC CONTROL USED, AND WHETHER OR NOT WORKERS ARE PRESENT, A WARRANTED WZSZ WILL VARY IN THE APPROVED SPEED LIMIT TO BE POSTED OVER TIME.

C&MS ITEM 614, PARAGRAPH 614.02(B), INDICATES THAT TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, A SPEED LIMIT REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE A SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION. EACH DIRECTION SHALL BE ANALYZED INDEPENDENTLY FROM EACH OTHER.

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ. THE PRIMARY SIGNING STRATEGY USES DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLIES. THE SECONDARY STRATEGY USES TEMPORARY FLATSHEET SPEED LIMIT SIGNS (R2-1) FOR WHEN THERE ARE NO DSL SIGN ASSEMBLIES ON THE APPROVED LIST, OR DSL SIGN ASSEMBLIES ARE NOT AVAILABLE.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, SUPPLEMENTAL SPECIFICATION (SS) 808, AND TRAFFIC SCD MT-104.10. WZSZS USING TEMPORARY FLATSHEET SPEED LIMIT SIGNS SHALL BE IN ACCORDANCE WITH THIS NOTE AND SCD MT-104.10. ADDITIONALLY PAYMENT MAY BE REMOVED, OR A DISINCENTIVE APPLIED, FOR WZSZS USING TEMPORARY FLATSHEET SPEED LIMIT SIGNS THE SAME AS DESCRIBED IN THE MOST RECENT PUBLICATION OF SS 808 IN REGARDS TO WZSZS USING DSL SIGN ASSEMBLIES (SEE SS 808.06 PARAGRAPHS 4 THROUGH 7, INCLUDING TABLE 1).

ONLY ONE WARRANTED SPEED LIMIT APPLIES AT ANY ONE TIME; SPEED LIMIT REDUCTIONS ARE NOT CUMULATIVE. WZSZS SHALL NOT BE USED FOR MOVING/MOBILE ACTIVITIES, AS DEFINED IN OMUTCD PART 6.

WHEN LOOKING UP THE WARRANTED WORK ZONE SPEED LIMITS, ALWAYS USE THE ORIGINAL, PRE-CONSTRUCTION, POSTED SPEED LIMIT. DO NOT USE A PRIOR OR CURRENT WORK ZONE SPEED LIMIT AS A LOOK UP VALUE IN THE TABLE. POSITIVE

ITEM 614, WORK ZONE SPEED ZONES (WZSZS) (CONT.)

PROTECTION IS GENERALLY REGARDED AS PORTABLE BARRIER OR OTHER RIGID BARRIER IN USE ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WITHOUT POSITIVE PROTECTION IS GENERALLY REGARDED AS USING DRUMS, CONES, SHADOW VEHICLE, ETC., ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WORKERS ARE CONSIDERED AS BEING PRESENT WHEN ON-SITE, WORKING WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WHEN THE WORK ZOE CONDITION REDUCING THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS IS REMOVED, THE SPEED LIMIT DISPLAYED SHALL RETURN TO THE ORIGINAL POSTED SPEED LIMIT.

TABLE 1: WARRANTED WORK ZONE SPEED LIMITS (MPH) FOR WORK ZONES ON HIGH-SPEED (=55 MPH) MULTI-LANE HIGHWAYS

ORIGINAL POSTED SPEED LIMIT	WITH POSITIVE PROTECTION		WITHOUT POSITIVE PROTECTION	
	WORKERS PRESENT	WORKERS NOT PRESENT	WORKERS PRESENT	WORKERS NOT PRESENT
70	60	65	55	65
65	55	60	50	60
60	55	60	50	60
55	50	55	45	55

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, WORK ZONE SPEED LIMIT SIGN 24 EACH

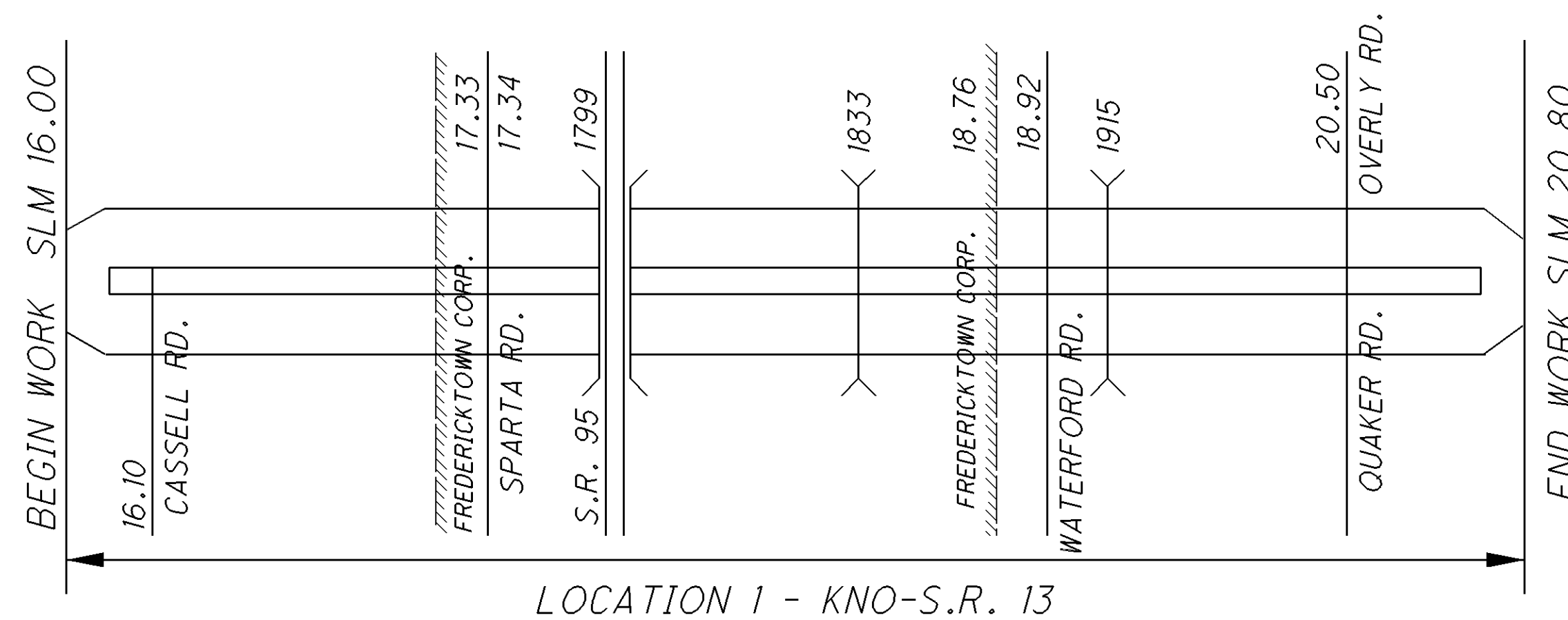
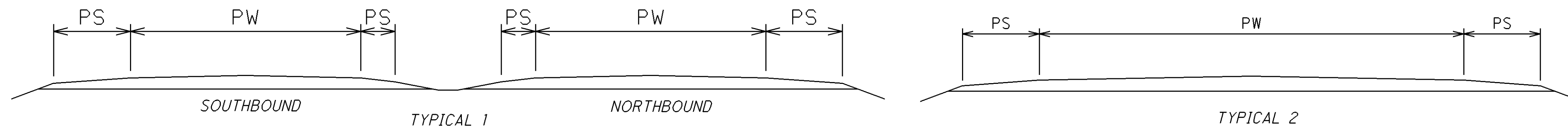
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PAVEMENT DATA												
LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		PAVEMENT WIDTH (FEET)	TYPICAL	EXISTING PAVEMENT TYPE	PAVEMENT AREA	614	881
					MILES	LIN. FT.					WORK ZONE LANE LINE, CLASS II (2 APPLICATIONS)	MICROSURFACING WITH WARRANTY, MULTIPLE COURSE, AS PER PLAN
1	KNO	S.R. 13	16.00	16.06	0.06	316.80	42.0 (AVG.)	2	448	1,478.4	0.12	1,478.4
1	KNO	S.R. 13 N.B.	16.06	17.27	1.21	6,388.80	24.0	1	448	17,036.8	2.42	17,036.8
1	KNO	S.R. 13 N.B.	17.27	17.32	0.05	264.00	30.0 (AVG.)	1	448	880.0	0.10	880.0
1	KNO	S.R. 13 N.B.	17.32	17.35	0.03	158.40	36.0	1	448	633.6	0.06	633.6
1	KNO	S.R. 13 N.B.	17.35	18.85	1.50	7,920.00	24.0	1	448	21,120.0	3.00	21,120.0
1	KNO	S.R. 13 N.B.	18.85	18.90	0.05	264.00	30.0 (AVG.)	1	448	880.0	0.10	880.0
1	KNO	S.R. 13 N.B.	18.90	18.93	0.03	158.40	36.0	1	448	633.6	0.06	633.6
1	KNO	S.R. 13 N.B.	18.93	20.45	1.52	8,025.60	24.0	1	448	21,401.6	3.04	21,401.6
1	KNO	S.R. 13 N.B.	20.45	20.50	0.05	264.00	30.0 (AVG.)	1	448	880.0	0.10	880.0
1	KNO	S.R. 13 N.B.	20.50	20.53	0.03	158.40	36.0	1	448	633.6	0.06	633.6
1	KNO	S.R. 13 N.B.	20.53	20.74	0.21	1,108.80	24.0	1	448	2,956.8	0.42	2,956.8
1	KNO	S.R. 13 S.B.	16.06	17.32	1.26	6,652.80	24.0	1	448	17,740.8	2.52	17,740.8
1	KNO	S.R. 13 S.B.	17.32	17.35	0.03	158.40	36.0	1	448	633.6	0.06	633.6
1	KNO	S.R. 13 S.B.	17.35	17.40	0.05	264.00	30.0 (AVG.)	1	448	880.0	0.10	880.0
1	KNO	S.R. 13 S.B.	17.40	18.90	1.50	7,920.00	24.0	1	448	21,120.0	3.00	21,120.0
1	KNO	S.R. 13 S.B.	18.90	18.93	0.03	158.40	36.0	1	448	633.6	0.06	633.6
1	KNO	S.R. 13 S.B.	18.93	18.98	0.05	264.00	30.0 (AVG.)	1	448	880.0	0.10	880.0
1	KNO	S.R. 13 S.B.	18.98	20.50	1.52	8,025.60	24.0	1	448	21,401.6	3.04	21,401.6
1	KNO	S.R. 13 S.B.	20.50	20.53	0.03	158.40	36.0	1	448	633.6	0.06	633.6
1	KNO	S.R. 13 S.B.	20.53	20.58	0.05	264.00	30.0 (AVG.)	1	448	880.0	0.10	880.0
1	KNO	S.R. 13 S.B.	20.58	20.74	0.16	844.80	24.0	1	448	2,252.8	0.32	2,252.8
1	KNO	S.R. 13	20.74	20.80	0.06	316.80	43.0 (AVG.)	2	448	1,513.6	0.12	1,513.6
BRIDGE DEDUCTIONS (FROM SHEET 7)										(1,605.8)	(0.23)	(1,605.8)
LOCATION 1 (TOTALS CARRIED TO SHEET 13)											18.73	135,498.2

ASPHALT CONCRETE DATA

KNO - 13 - 16.00

SHOULDER DATA															
LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		TYPICAL	PROPOSED WIDTH (FT.)				SHOULDER AREA	618	881	
					MILES	LIN. FT.		A	B	C	D		EDGE LINE, RUMBLE STRIPE (ASPHALT CONCRETE)	MICROSURFACING WITH WARRANTY, MULTIPLE COURSE, AS PER PLAN	
													SQ. YD.	MILE	SQ. YD.
1	KNO	S.R. 13	16.00	16.06	0.06	316.80	2	8	8			563.2	0.12	563.2	
1	KNO	S.R. 13 N.B.	16.06	20.74	4.68	24,710.40	1			4	8	32,947.2	9.36	32,947.2	
1	KNO	S.E. RAMP TO S.R. 95					785.00	2	3	3			523.3		523.3
1	KNO	N.E. RAMP FROM S.R. 95					760.00	2	3	3			506.7		506.7
1	KNO	S.W. RAMP FROM S.R. 95					855.00	2	3	3			570.0		570.0
1	KNO	N.W. RAMP TO S.R. 95					768.00	2	3	3			512.0		512.0
1	KNO	S.R. 13 S.B.	16.06	20.74	4.68	24,710.40	1	8	4			32,947.2	9.36	32,947.2	
1	KNO	S.R. 13	20.74	20.80	0.06	316.80	2	8	8			563.2	0.12	563.2	
DEDUCT FOR BRIDGES (FROM SHEET 7)												(803.0)	(0.23)	(803.00)	
DEDUCT FOR INTERSECTIONS													(0.44)		
LOCATION 1 (TOTALS CARRIED TO SHEET 13)													18.29	68,329.8	

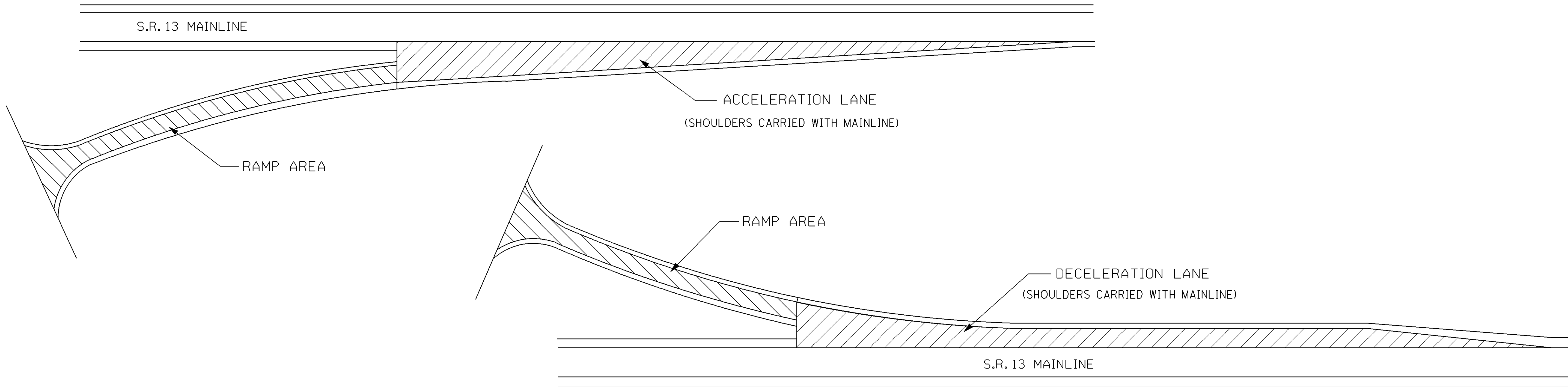


RAMP DATA AND MEDIAN CROSSOVERS

LOCATION	COUNTY	ROUTE	DESCRIPTION	RAMP LENGTH	RAMP WIDTH	AREA	881
				FEET	FEET	SQ. YDS.	MICROSURFACING WITH WARRANTY, MULTIPLE COURSE, AS PER PLAN SQ. YDS.
1	KNO	S.R. 13	MEDIAN CROSSOVER AT CASSELL ROAD *			160	160
1	KNO	S.R. 13	MEDIAN CROSSOVER AT SPARTA ROAD *			285	285
1	KNO	S.R. 13	MEDIAN CROSSOVER AT WATERFORD ROAD *			275	275
1	KNO	S.R. 13	MEDIAN CROSSOVER AT QUAKER/OVERLY ROAD *			260	260
1	KNO	S.R. 13 N.B.	DECELERATION LANE TO S.R. 95 *			1311	1311
1	KNO	S.R. 13 N.B.	N.B. EXIT RAMP	785	16	1396	1396
1	KNO	S.R. 13 N.B.	ACCELERATION LANE FROM S.R. 95 * (SEE NOTE 1)			1840	1840
1	KNO	S.R. 13 N.B.	N.B. ENTRANCE RAMP	760	16	1351	1351
1	KNO	S.R. 13 S.B.	DECELERATION LANE TO S.R. 95 *			1226	1226
1	KNO	S.R. 13 S.B.	S.B. EXIT RAMP	768	16	1365	1365
1	KNO	S.R. 13 S.B.	ACCELERATION LANE FROM S.R. 95 *			2407	2407
1	KNO	S.R. 13 S.B.	S.B. ENTRANCE RAMP	855	16	1520	1520
1			TOTALS (CARRIED TO SHEET 13)				13,396

NOTES:
1. THE AREA FOR THIS ACCELERATION LANE DOES NOT INCLUDE ANY PORTION OF THE ACCELERATION LANE THAT EXTENDS ONTO THE BRIDGE DECK/APPROACH SLAB FOR BRIDGE KNO-13-1833R.

* AREA MEASURED BY COMPUTER/FIELD VERIFIED



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BRIDGE DATA							
L O C A T I O N	C O U N T Y, R O U T E, B R I D G E N O.	LE N G T H (B R I D G E L I M I T S)	W I D T H	A R E A	A P P R O A C H S L A B L E N G T H	A P P R O A C H S L A B W I D T H	A P P R O A C H S L A B A R E A (I N C L U D E S B O T H A P P R O A C H S L A B S)
		L I N. F T.	L I N. F T.	S Q. Y D.	L I N. F T.	L I N. F T.	S Q. Y D.
1	KNO-13-1799	O V E R H E A D					
1	KNO-13-1833L	66.6	40	296.0	25	40.0	222.3
1	KNO-13-1833R	66.6	43.5 (AVG.)	321.9	25	43.5 (AVG.)	241.7
1	KNO-13-1915L	184.5	40	820.0	25	40.0	222.3
1	KNO-13-1915R	184.5	40	820.0	25	40.0	222.3

BRIDGE DEDUCTIONS
 MAINLINE
 (APPROACH SLABS ADDED TO
 LENGTH WHERE APPLICABLE)

LOCATION 1:
 KNO-13-1799 - OVERHEAD (NO DEDUCTION)
 KNO-13-1833L - [(66.6' X 24') + 2(25' X 24')] / 9 = 310.9 SQ.YD.
 KNO-13-1833R - [(66.6' X 24') + 2(25' X 24')] / 9 = 310.9 SQ.YD.
 KNO-13-1915L - (184.5' X 24') / 9 = 492.0 SQ.YD.
 KNO-13-1915R - (184.5' X 24') / 9 = 492.0 SQ.YD.
 TOTAL = 1,605.8 SQ.YDS.

BRIDGE DEDUCTIONS
 PAVED SHOULDERS
 (APPROACH SLABS ADDED TO
 LENGTH WHERE APPLICABLE)

LOCATION 1:
 KNO-13-1799 - OVERHEAD (NO DEDUCTION)
 KNO-13-1833L - [(66.6' X (4'+8')) + 2(25' X (4'+8'))] / 9 = 155.5 SQ.YD.
 KNO-13-1833R - [(66.6' X (4'+8')) + 2(25' X (4'+8'))] / 9 = 155.5 SQ.YD.
 KNO-13-1915L - (184.5' X (4'+8')) / 9 = 246.0 SQ.YD.
 KNO-13-1915R - (184.5' X (4'+8')) / 9 = 246.0 SQ.YD.
 TOTAL = 803.0 SQ.YDS.

ITEM 642 EDGE LINE SUB-SUMMARY

LOCATION	COUNTY	ROUTE	S.L.M.		TOTAL LENGTH (MILES)	INFORMATION ONLY						TOTAL EDGE LINE MILES	REMARKS
						WHITE EDGE LINE QUANTITIES			YELLOW EDGE LINE QUANTITIES				
			FROM	TO		TOTAL MILES	HIGHWAY MILES	RAMP MILES	TOTAL MILES	HIGHWAY MILES	RAMP MILES		
1	KNO	S.R. 13	16.00	16.06	0.06	0.12	0.12					0.12	2-LANE TO 4-LANE TRANSITION
1	KNO	S.R. 13	16.06	20.74	4.68	9.36	9.36		9.36	9.36		18.72	4-LANE DIVIDED
1	KNO	S.R. 13	20.74	20.80	0.06	0.12	0.12					0.12	4-LANE TO 2-LANE TRANSITION
LOCATION 1 (TOTAL CARRIED TO SHEET 13)						9.60			9.36			18.96	

ITEM 642 CENTER LINE SUB-SUMMARY

LOCATION	COUNTY	ROUTE	S.L.M.		TOTAL LENGTH (MILES)	INFORMATION ONLY		TOTAL CENTER LINE MILES	REMARKS
						CENTER LINE QUANTITIES			
			FROM	TO		TOTAL MILES	EQUIVALENT SOLID LINE		
1	KNO	S.R. 13	16.00	16.06	0.06	0.12	0.240	0.12	2 LANE TO 4 LANE TRANSITION
1	KNO	S.R. 13 S.B.	16.06	16.09	0.03	0.03	0.060	0.03	
1	KNO	S.R. 13 S.B.	16.15	16.28	0.13	0.13	0.260	0.13	
1	KNO	S.R. 13 N.B.	20.63	20.74	0.11	0.11	0.220	0.11	
1	KNO	S.R. 13	20.74	20.80	0.06	0.12	0.240	0.12	4 LANE TO 2 LANE TRANSITION
LOCATION 1 (TOTAL CARRIED TO SHEET 13)								0.51	

ITEM 642 LANE LINE SUB-SUMMARY

LOCATION	COUNTY	ROUTE	S.L.M.		INFORMATION ONLY						TOTAL LANE LINE MILES	REMARKS
					LANE LINE QUANTITIES							
			FROM	TO	TOTAL MILES	DASHED	SOLID					
1	KNO	S.R. 13 N.B.	16.06	20.55	4.49	4.49					4.49	4-LANE DIVIDED
1	KNO	S.R. 13 S.B.	16.34	20.74	4.40	4.40					4.40	4-LANE DIVIDED
LOCATION 1 (TOTAL CARRIED TO SHEET 13)						8.89	8.89				8.89	

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ITEM 642 AUXILIARY MARKINGS

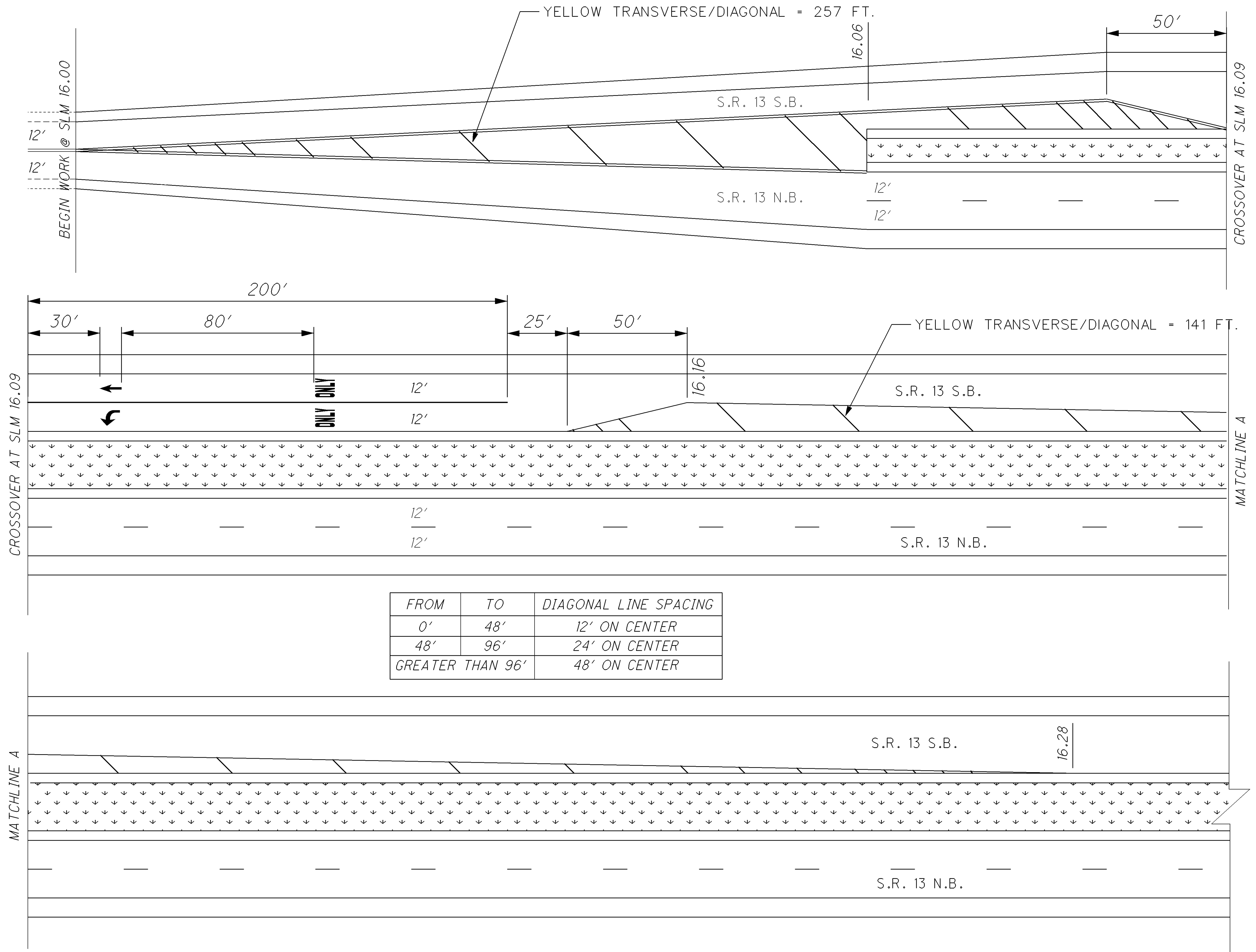
LOCATION	COUNTY	ROUTE	DESCRIPTION	SIDE	8" CHANNELIZING LINE FT.	STOP LINE (24") FT.	TRANSVERSE/ DIAGONAL LINES (24")		LANE ARROW			WORD ON PAVEMENT		DOTTED LINE, 6" FT.	REMARKS
							WHITE FT.	YELLOW FT.	THRU EACH	LT. EACH	RT. EACH	"ONLY"			
												72" EACH	96" EACH		
1	KNO	S.R. 13	2 TO 4 LANE TRANSITION	CL				398							SEE NOTE ON SHEET 2
1	KNO	S.R. 13	CO. RD. 69 (CASSELL RD.)	RT	200				1	1			2		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	CO. RD. 11 (SPARTA RD.)	RT	75					1			1		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	CO. RD. 11 (SPARTA RD.)	LT	75					1			1		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	N.B. EXIT RAMP S.R. 95		440	65			1					567	PLACE DOTTED LINE, PER STD. DWG. TC-72.20
1	KNO	S.R. 13	N.B. ENTRANCE RAMP S.R. 95		310									420	PLACE DOTTED LINE, PER STD. DWG. TC-72.20
1	KNO	S.R. 13	S.B. ENTRANCE RAMP S.R. 95		340									580	PLACE DOTTED LINE, PER STD. DWG. TC-72.20
1	KNO	S.R. 13	S.B. EXIT RAMP S.R. 95		340	49			1					630	PLACE DOTTED LINE, PER STD. DWG. TC-72.20
1	KNO	S.R. 13	CO. RD. 6 (WATERFORD RD.)	RT	70					1			1		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	CO. RD. 6 (WATERFORD RD.)	LT	70					1			1		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	CO. RD. 49 (QUAKER RD.)	RT	73					1			1		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	CO. RD. 377 (OVERLY RD.)	LT	73					1			1		SEE NOTE ON SHEET 2
1	KNO	S.R. 13	4 TO 2 LANE TRANSITION	CL				279							
LOCATION 1 (TOTALS CARRIED TO SHEET 13)					2,066	114		677	3	7			8	2,197	

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CALCULATED
PCM
CHECKED
DMM

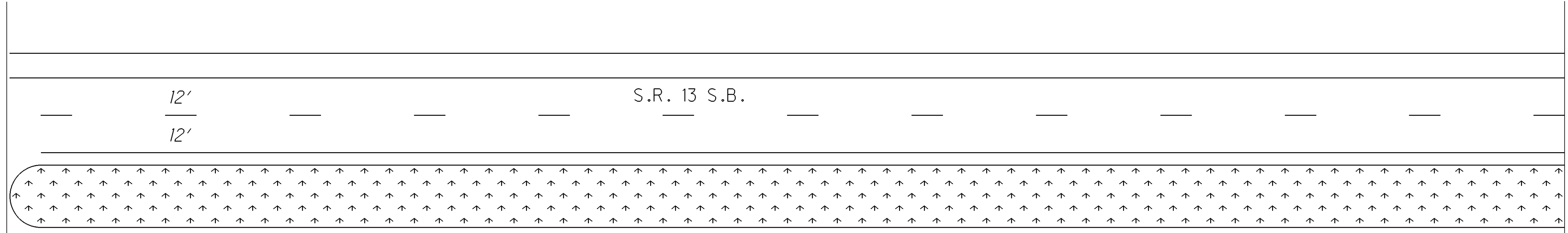
AUXILIARY MARKING DATA

KNO - 13 - 16.00



INTRSECTION S.R. 13 AND CO. RD. 11

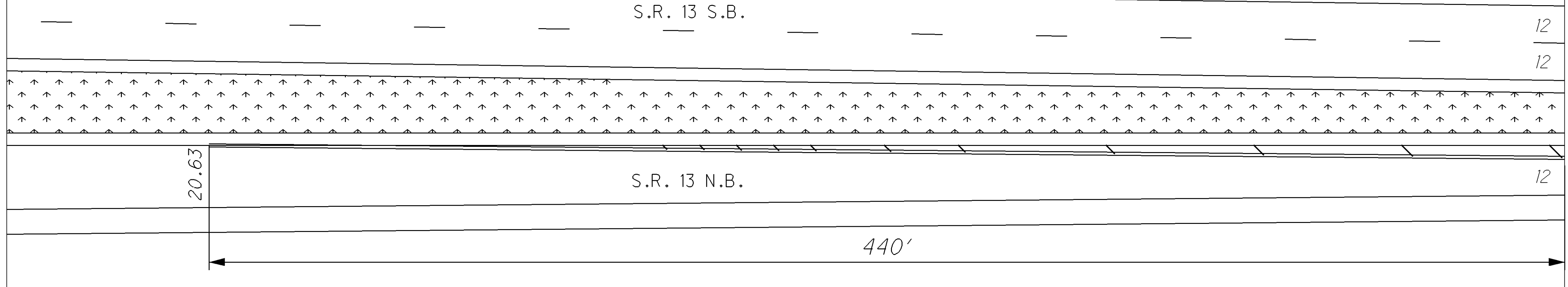
SLM 20.52



MATCHLINE B

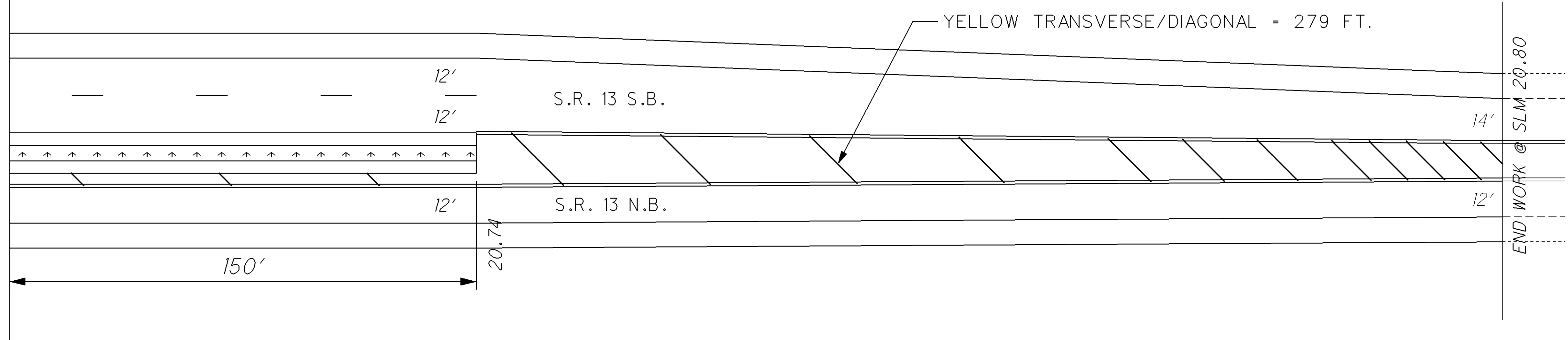
FROM	TO	DIAGONAL LINE SPACING
0'	48'	12' ON CENTER
48'	96'	24' ON CENTER
GREATER THAN 96'		48' ON CENTER

MATCHLINE B



MATCHLINE C

MATCHLINE C



END WORK @ SLM 20.80

CALCULATED
PCM
CHECKED
DMM

PAVEMENT MARKING DETAILS

KNO-13-16.00

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ITEM 621 RPM SUB-SUMMARY														
L O C A T I O N	C O U N T Y	R O U T E	B E G I N L O G P O I N T S L M	E N D L O G P O I N T S L M	L E N G T H		D E T A I L	621	P R I S M A T I C R E T R O - R E F L E C T O R C O L O R S					R E M A R K S
								R P M	I N F O R M A T I O N O N L Y					
									O N E - W A Y		T W O - W A Y			
					M I L E S	L I N . F T .			W H I T E	Y E L L O	Y E L L O Y E L L O	W H I T E R E D	Y E L L O R E D	
				E A C H										
1	KNO	S.R. 13	16.00	16.28	0.28	1,479	REM	38			22	16		2 LANE TO 4 LANE TRANSITION, 80' SPACING CENTER LINE
1	KNO	S.R. 13 N.B.	16.06	20.55	4.49	23,707	REM	297				297		80' SPACING ON LANE LINE
1	KNO	S.R. 13 S.B.	16.34	20.74	4.40	23,232	REM	291				291		80' SPACING ON LANE LINE
1	KNO	S.R. 13					10	6				6		LEFT TURN LANE @ C.R. 69, 40' SPACING ON CHANNELIZING LINE
1	KNO	S.R. 13					10	8				8		LEFT TURN LANES @ C.R. 11, 40' SPACING ON CHANNELIZING LINE
1	KNO	S.R. 13					10	8				8		LEFT TURN LANES @ C.R. 6, 40' SPACING ON CHANNELIZING LINE
1	KNO	S.R. 13					10	8				8		LEFT TURN LANES @ C.R. 49, 40' SPACING ON CHANNELIZING LINE
1	KNO	S.R. 13	20.74	20.80	0.06	317	REM	28			12	16		4 LANE TO 2 LANE TRANSITION, 80' SPACING CENTER LINE
LOCATION 1 (TOTAL CARRIED TO SHEET 13)								684			34	650		

CALCULATED
PCM
CHECKED
DMM

RAISED PAVEMENT MARKER DATA

KNO - 13 - 16.00

12
13

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
2	3	4	5	6	8	9	13						01/NHS/P V	EXT	TOTAL				
																		PAVEMENT	
			18.29										18.29	618	41000	18.29	MILE	EDGE LINE, RUMBLE STRIPE (ASPHALT CONCRETE)	
		135,499	68,330	13,396									217,225	881	20001	217,225	SY	MICROSURFACING WITH WARRANTY, MULTIPLE COURSE, AS PER PLAN	2
																		TRAFFIC CONTROL	
684							684						684	621	00100	684	EACH	RPM	
													684	621	54000	684	EACH	RAISED PAVEMENT MARKER REMOVED	
				18.96									18.96	642	00104	18.96	MILE	EDGE LINE, 6", TYPE 1	
				8.89									8.89	642	00204	8.89	MILE	LANE LINE, 6", TYPE 1	
				0.51									0.51	642	00300	0.51	MILE	CENTER LINE, TYPE 1	
													2,066	642	00404	2,066	FT	CHANNELIZING LINE, 12", TYPE 1	
													114	642	00500	114	FT	STOP LINE, TYPE 1	
													677	642	00700	677	FT	TRANSVERSE/DIAGONAL LINE, TYPE 1	
													10	642	01300	10	EACH	LANE ARROW, TYPE 1	
													8	642	01410	8	EACH	WORD ON PAVEMENT, 96", TYPE 1	
													2,197	642	01510	2,197	FT	DOTTED LINE, 6", TYPE 1	
																		MAINTENANCE OF TRAFFIC	
	31												31	614	12460	31	EACH	WORK ZONE MARKING SIGN	
	24												24	614	12470	24	EACH	WORK ZONE SPEED LIMIT SIGN	
		18.73											18.73	614	20400	18.73	MILE	WORK ZONE LANE LINE, CLASS II	
																		INCIDENTALS	
													LUMP	103	05000		LS	PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	
													LUMP	614	11000		LS	MAINTAINING TRAFFIC	
													LUMP	623	10000		LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LUMP	624	10000		LS	MOBILIZATION	

GENERAL SUMMARY			
CALCULATED	PCM	CHECKED	DNM
KNO - 13 - 16.00			
13	13		