

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MAH-224-13.64 PART 1

FOR PART 2 SEE
MAH-224/625-15.51/0.00

**BOARDMAN & CANFIELD TOWNSHIP
MAHONING COUNTY**

PROJECT DESCRIPTION

MAJOR RESURFACING MAH US 224 SLM 14.12 TO 18.61,
MINOR REHAB MAH US 224 SLM 13.64 TO 14.12
AND 18.61 TO 19.62, AND MINOR BRIDGE MAINTENANCE
TO THREE BRIDGES ON MAH US 224.

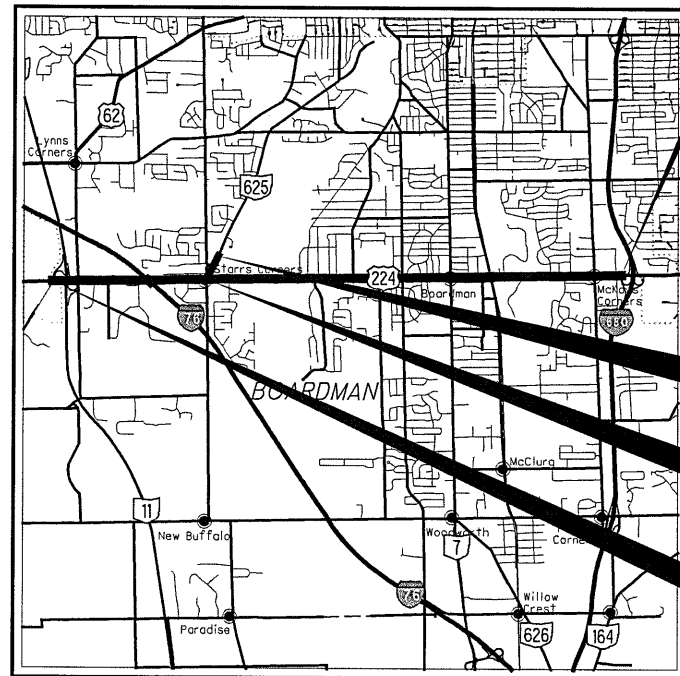
EARTH DISTURBED AREAS

PROJECT EDA: (N/A MAINTENANCE PROJECT)
ESTIMATED CONTRACTOR EDA: (N/A MAINTENANCE PROJECT)
NOTICE OF INTENT EDA: (N/A MAINTENANCE PROJECT)

2019 SPECIFICATIONS

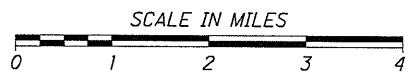
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

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 MAP

LATITUDE: N41°01'28" LONGITUDE: W80°40'50"



PORTION TO BE IMPROVED	—————
INTERSTATE HIGHWAY	—————
FEDERAL ROUTES	—————
STATE ROUTES	—————
COUNTY & TOWNSHIP ROADS	—————
OTHER ROADS	—————

DESIGN DESIGNATION

CURRENT ADT (2019) 32000
DESIGN FUNCTIONAL CLASSIFICATION:
MAH US 224 SLM 13.64-19.47 (PRINCIPAL ARTERIAL)
NHS PROJECT YES

DESIGN EXCEPTIONS

NONE

INDEX OF SHEETS:

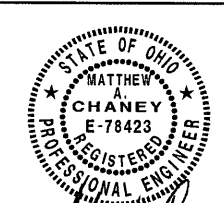
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UNDERGROUND UTILITIES



PLAN PREPARED BY:
ODOT DISTRICT 4 PLANNING & ENGINEERING
2088 SOUTH ARLINGTON RD
AKRON, OH 44306

ENGINEERS SEAL:



SIGNED: *Matthew Chaney*
DATE: 12-16-19

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
BP-3.1	10/18/19	MGS-1.1	1/19/18	PCB-91	1/18/13	TC-17.10	1/17/14	TC-85.21	1/20/17	800-2019	1/17/20		
BP-3.2	1/18/19	MGS-2.1	1/19/18	TST-1-99	7/20/18	TC-21.20	7/20/18	TC-85.22	1/19/18	816	10/18/19		
BP-4.1	7/19/13	MGS-2.3	7/18/14			TC-22.20	1/17/14			825	1/18/19		
BP-5.1	1/18/19	MGS-2.4	7/19/19	MT-95.31	7/19/19	TC-41.20	10/18/13			831	10/21/16		
BP-7.1	7/20/18	MGS-3.1	1/19/18	MT-95.41	7/21/17	TC-42.10	10/18/13			832	10/19/18		
		MGS-3.2	1/18/13	MT-95.50	7/21/17	TC-42.20	10/18/13						
CB-2.1	7/20/18	MGS-4.1	1/20/17	MT-98.10	1/20/17	TC-52.10	10/18/13						
CB-2.2	7/20/18	MGS-4.2	7/19/13	MT-98.20	4/19/19	TC-52.20	7/20/18						
CB-2.3	1/15/16	MGS-4.3	1/18/13	MT-99.20	4/19/19	TC-65.10	1/17/14						
		MGS-4.5	1/18/13	MT-101.90	7/21/17	TC-65.11	7/21/17						
MH-1.2	1/15/16	MGS-5.2	7/15/16	MT-102.20	4/19/19	TC-72.20	7/20/18						
		MGS-5.3	7/15/16	MT-104.10	10/16/15	TC-81.10	7/15/16						
DM-1.1	7/21/17	MGS-6.1	1/19/18	MT-105.10	7/19/13	TC-83.10	1/19/18						
DM-1.2	1/18/13	MGS-6.2	7/19/19	MT-120.00	1/19/18	TC-83.20	7/21/17						
DM-4.3	1/15/16					TC-84.20	10/18/13						
DM-4.4	1/15/16	DS-1-92	7/18/03	TC-16.21	7/20/18	TC-84.21	10/18/13						

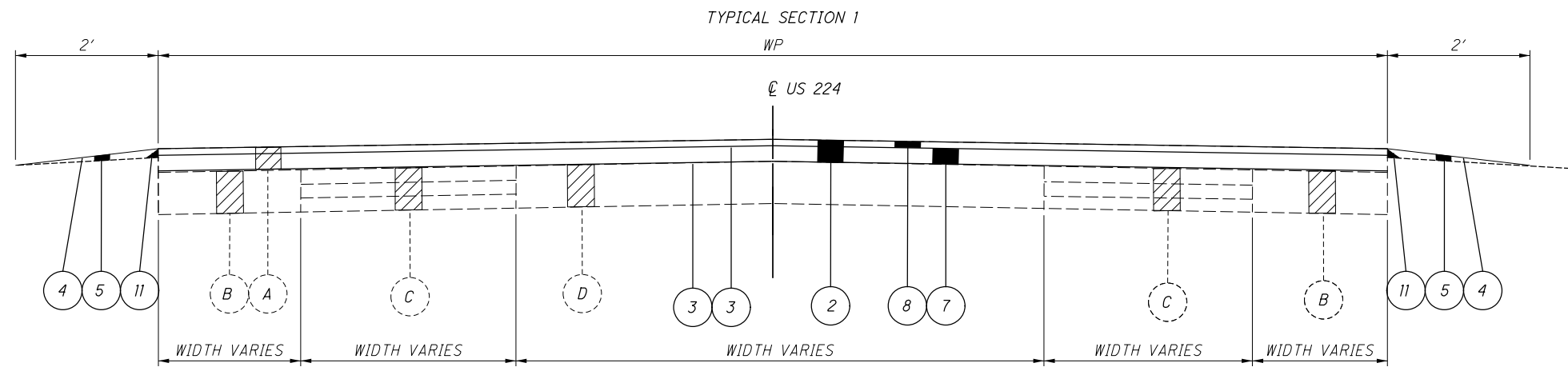
APPROVED: *Alan W. ...*
DATE 12/17/19 DISTRICT DEPUTY DIRECTOR

APPROVED: _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

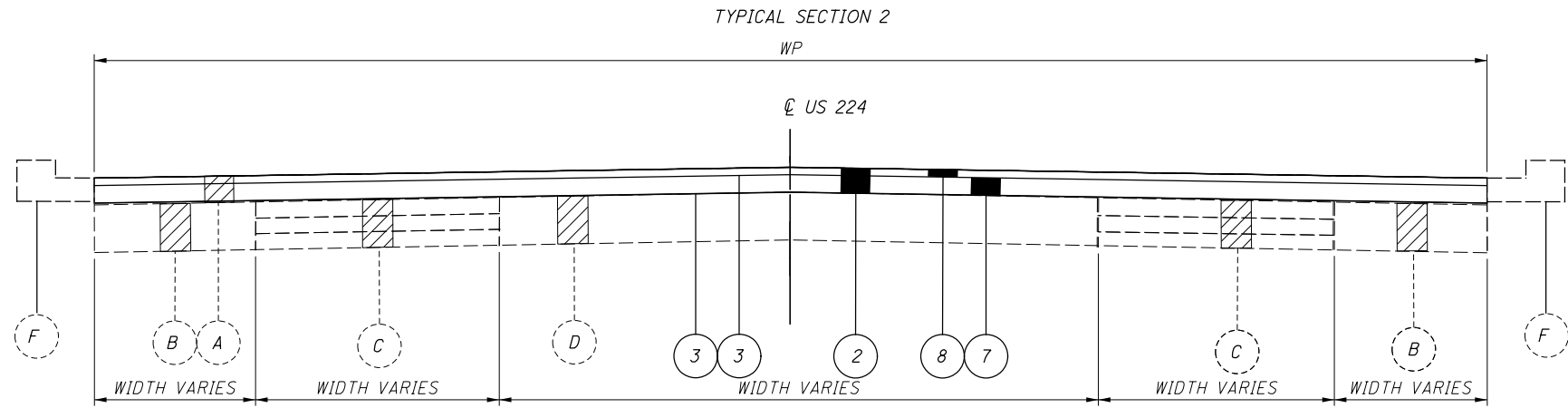
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FEDERAL PROJECT NO. E140(845)
PID NO. 94132
CONSTRUCTION PROJECT NO. _____
RAILROAD INVOLVEMENT CENTAL COLUMBIANA & PENNSYLVANIA
MAH-224-13.64
1/25

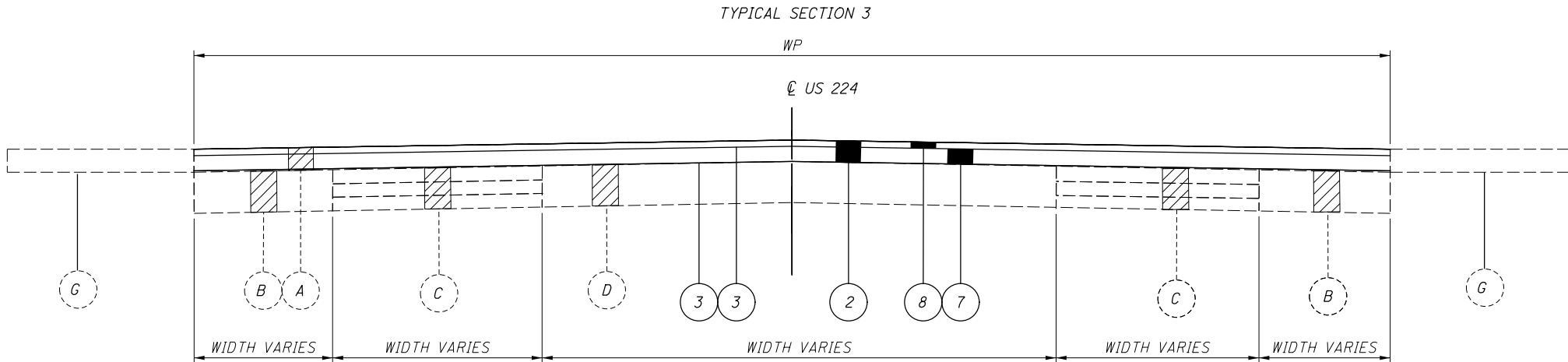
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TYPICAL SECTION 1				
ROUTE	SLM		LENGTH (MILES)	PW (FEET)
	FROM	TO		
US 224	14.12	14.16	0.04	68
US 224	14.22	14.28	0.06	68
US 224	15.44	15.91	0.47	77
US 224	15.93	16.03	0.1	78



TYPICAL SECTION 2				
ROUTE	SLM		LENGTH (MILES)	PW (FEET)
	FROM	TO		
US 224	14.16	14.22	0.06	68
US 224	14.28	14.44	0.16	73
US 224	14.44	14.61	0.17	70
US 224	14.68	14.73	0.05	54
US 224	14.73	15.06	0.33	61
US 224	15.06	15.16	0.1	64 AVG.
US 224	15.16	15.26	0.1	71
US 224	15.26	15.44	0.18	74 AVG.
US 224	16.27	17.71	1.44	62
US 224	17.71	17.81	0.1	72
US 224	18.23	18.46	0.23	60
US 224	18.46	18.61	0.15	84

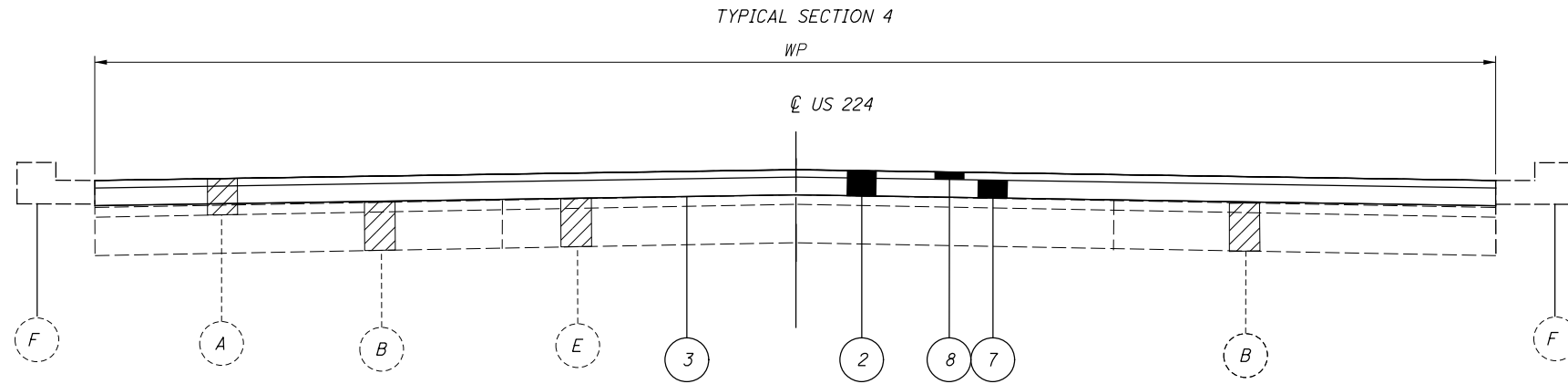


TYPICAL SECTION 3				
ROUTE	SLM		LENGTH (MILES)	PW (FEET)
	FROM	TO		
US 224	16.03	16.08	0.05	68
US 224	16.08	16.17	0.09	60
US 224	16.21	16.27	0.06	60

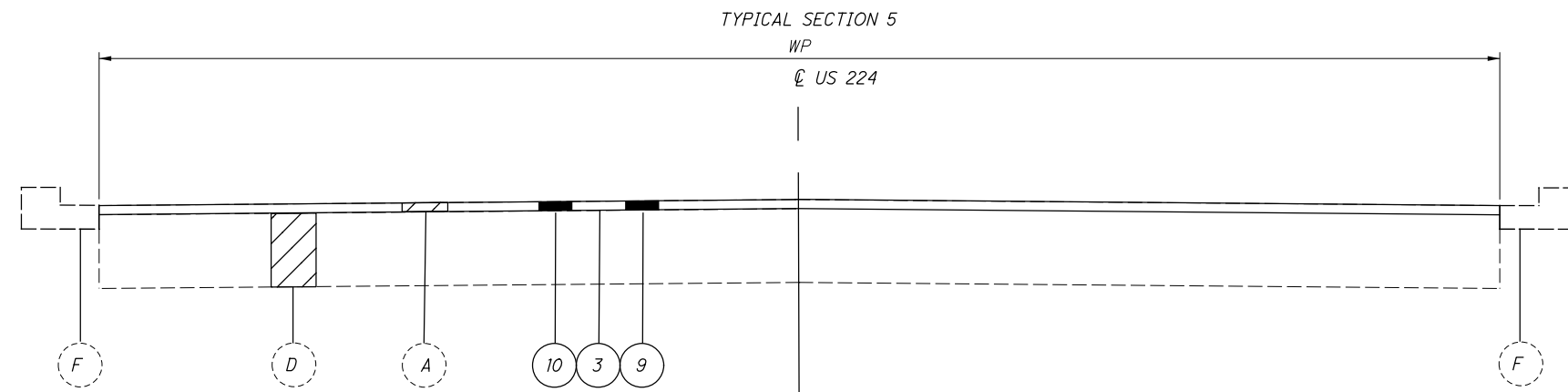
LEGEND

- | | |
|---|---|
| <ul style="list-style-type: none"> 1 254, PAVEMENT PLANING, ASPHALT CONCRETE (T=4 1/4") 2 254, PAVEMENT PLANING, ASPHALT CONCRETE (T=5 1/2") 3 407, NON-TRACKING TACK COAT * 4 408, PRIME COAT, AS PER PLAN @ 0.40 GAL/SY 5 617, COMPACTED AGGREGATE, AS PER PLAN 6 442, ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (446), (T= 3") 7 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN, PG64-28 (T=4 1/2")* 8 424, FINE GRADED POLYMER, TYPE B, AS PER PLAN (T= 1") (TRUCK ADT > 1500) 9 424, FINE GRADED POLYMER, TYPE B, AS PER PLAN (T=1 1/4") (TRUCK ADT > 1500) 10 897, PAVEMENT PLANING, ASPHALT CONCRETE (T=1 1/4") 11 SAFETY EDGE (SEE SCD BP-3.2) | <ul style="list-style-type: none"> A EXISTING ASPHALT CONCRETE SURFACE B EXISTING ASPHALT CONCRETE BASE C EXISTING BITUMINOUS AGGREGATE BASE (2-4" COURSES) D EXISTING MACADAM BASE E EXISTING BRICK BASE F EXISTING CURB AND GUTTER (IN VARIOUS LOCATIONS) G EXISTING CONCRETE SHOULDER (TO REMAIN) |
|---|---|

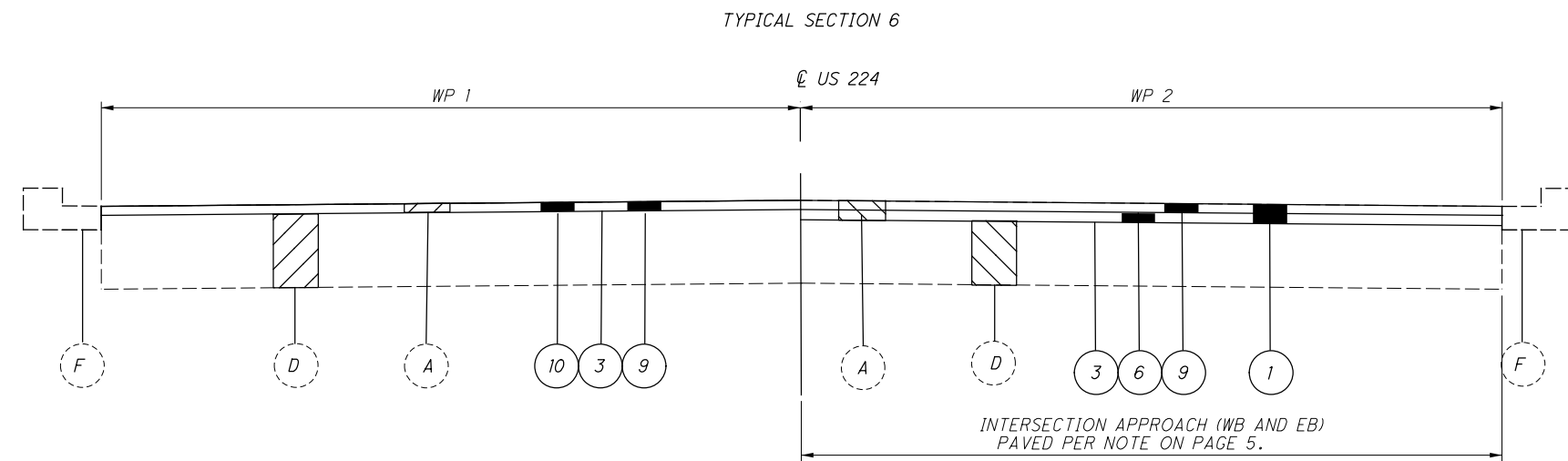
* 441, ASPHALT CONCRETE INTERMEDIATE COURSE NOTE ON SHEET 4.



TYPICAL SECTION 4				
ROUTE	SLM		LENGTH (MILES)	PW (FEET)
	FROM	TO		
US 224	17.81	17.89	0.08	79 AVG.
US 224	17.89	18.15	0.26	72
US 224	18.15	18.22	0.07	60



TYPICAL SECTION 5				
ROUTE	SLM		LENGTH (MILES)	PW (FEET)
	FROM	TO		
US 224	18.61	19.19	0.58	84
US 224	19.19	19.25	0.06	72
US 224	19.35	19.38	0.03	72
US 224	19.38	19.62	0.24	70
SR 625	0.00	0.13	0.13	64
SR 625	0.13	0.22	0.09	45



TYPICAL SECTION 6					
ROUTE	SLM		LENGTH (MILES)	PW 1 (FEET)	PW 2 (FEET)
	FROM	TO			
US 224	19.25	19.35	0.1	24	48

LEGEND
SEE SHEET 2 FOR LEGEND

UTILITIES

THE CONTRACTOR SHALL USE THE FOLLOWING PROCEDURE AT EACH LOCATION WHERE WORK IS PERFORMED, IN ACCORDANCE WITH SECTIONS 105.07 AND 107.16 IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE OHIO UTILITIES PROTECTION SERVICE (OUPS), THE OHIO & GAS PROCEDURES UNDERGROUND PROTECTION SERVICE (OGPUPS), THE OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 HEAD-QUARTERS AND ALL NON REGISTERED UTILITY OWNERS AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION IN ALL AREAS.

OUPS 1-800-362-2764 (CONTACT LIMITED BASIS PARTICIPANTS DIRECTLY)
 OGPUPS 1-800-925-0988
 ODOT 330-786-2267 MICHELLE CHANEY

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE NOT SHOWN ON THE PLANS, BUT CAN BE OBTAINED FROM THE OWNERS OF THE UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PAVING AT RAILROAD CROSSING

WORK THE CROWN OUT OF THE PROPOSED PAVEMENT ON EACH SIDE OF THE RAILROAD CROSSING, BEGINNING 50 FEET FROM THE NEAREST RAIL, BY RAISING THE EDGES OF THE NEW PAVEMENT TO MEET THE PLATFORM ELEVATION.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. ASPHALT CONCRETE OVERLAY AS SHOWN ON THE TYPICAL SECTIONS.

PAVEMENT MARKING LANE WIDTHS

THE NORMAL LANE WIDTH FOR THE PAVEMENT MARKINGS ON THIS PROJECT SHALL BE AS FOLLOWS (AT LEAST 3 DAYS PRIOR TO PERFORMING THE WORK CONTACT THE TRAFFIC OFFICE AT 330-786-3147 TO CONFIRM THE WIDTHS):

ROUTE	S.L.M. TO S.L.M.	LANE WIDTH
US 224	14.12 19.47	12' (AVG.)

CURB AND GUTTER REPAIR

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO REPAIR DETERIORATED SECTIONS OF CURB AND AND CURB AND GUTTER TO BE USED AS DIRECTED BY THE PROJECT ENGINEER.

ITEM 202 CURB REMOVED	500 FT
ITEM 202 CURB & GUTTER REMOVED	3500 FT
ITEM 609 COMBINATION CURB AND GUTTER, TYPE 2	3500 FT
ITEM 609 CURB, TYPE 4-C	500 FT

THE CONTRACTOR WILL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES.

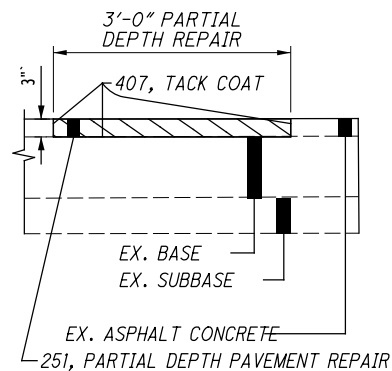
PAVEMENT MARKING DETAILS

THE PAVEMENT MARKING DETAIL SHEETS WILL BE SUPPLIED TO THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (WIDENING JOINT REPAIR US 224 SLM 13.64-14.12)

A QUANTITY OF THIS ITEM SHALL BE PROVIDED TO REPAIR THE WIDENING JOINT ON US 224 FOR SLM 13.64-14.12. THE ITEM SHALL CONSIST OF REPAIRING EXISTING LOCATIONS EXHIBITING SURFACE DETERIORATION AND PLACING ITEM 448 ASPHALT CONCRETE, TYPE 2. THE ASPHALT CONCRETE SHALL BE COMPACTED WITH A TYPE I PNEUMATIC TIRE ROLLER AND A STEEL WHEEL ROLLER AS PER 401.13. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REPAIR. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

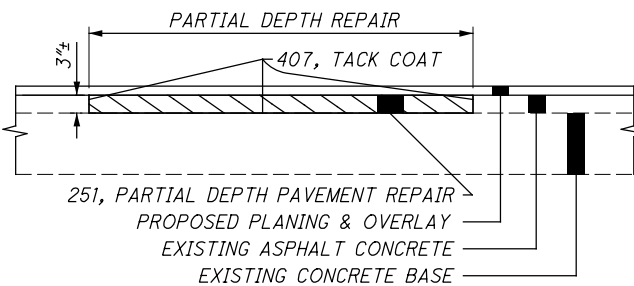
251, PARTIAL DEPTH PAVEMENT REPAIR, 850 SQ. YD.



ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (441) (SLM 18.61-19.62)

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THE ITEM SHALL CONSIST OF REPAIRING EXISTING LOCATIONS EXHIBITING SURFACE DETERIORATION AND PLACING ITEM 441 ASPHALT CONCRETE, TYPE 2. THE ASPHALT CONCRETE SHALL BE COMPACTED WITH A TYPE I PNEUMATIC TIRE ROLLER AND A STEEL WHEEL ROLLER AS PER 401.13. IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THIS ITEM SHALL BE PERFORMED AFTER THE COMPLETION OF MAINLINE PAVEMENT PLANING. ALSO, THIS ITEM SHALL COMMENCE WITHIN 5 DAYS OF THE COMPLETION OF MAINLINE PAVEMENT PLANING. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REPAIR. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

251, PARTIAL DEPTH PAVEMENT REPAIR (441), 300 SQ. YD.



INTERSECTIONS

INTERSECTIONS WILL BE RESURFACED 10 FT BEYOND THE EDGE OF PAVEMENT WITH SURFACE COURSE ONLY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. INTERSECTIONS SHALL BE PAVED AFTER COMPLETION OF THE SURFACE COURSE OR WITH THE MAINLINE PAVEMENT IF THIS CAN BE ACCOMPLISHED WITHOUT CHANGING THE VELOCITY AND DIRECTION OF THE PAVER. USE THE SAME ASPHALT CONCRETE AS THE MAINLINE PAVEMENT. A BUTT JOINT, AS PER STANDARD CONSTRUCTION DRAWING BP-3.1, SHALL BE USED TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING PAVEMENT. ANY GRADING OR PRIME NECESSARY TO ACCOMPLISH THIS WORK SHALL BE INCLUDED IN THE COST OF THE ASPHALT SURFACE COURSE.

INTERSECTION OF US 224 & SOUTH AVE.

PROVIDE ADDITIONAL 3" OF MILLING AND ITEM 441 INTERMEDIATE COURSE AT THE RUTTED APPROACH PAVEMENT INCLUDING TURN LANES AT SOUTH AVE. FOR 300 FEET EAST AND WEST OF INTERSECTION.

ITEM 408 - PRIME COAT, AS PER PLAN

APPLY "MC-70" AT A RATE OF 0.4 GALLONS PER SQUARE YARD, OR AS DETERMINED BY THE ENGINEER, TO THE COMPLETED COMPACTED AGGREGATE SHOULDER.

ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

IN LOW SHOULDER AREAS EXCEEDING 1", AND ADJACENT TO THE SAFETY EDGE, OR AS DIRECTED BY THE ENGINEER, RECYCLED ASPHALT PAVEMENT (RAP) SHALL BE USED IN AREAS ADJACENT TO THE PAVED BERM. THE RAP SHALL HAVE A MINIMUM PG CONTENT OF 4.5% AND MEET THE FOLLOWING GRADATION. ONCE THE STOCKPILE MEETS THE GRADATION, THE PG CONTENT OF THE RAP SHALL BE DETERMINED PER 441.03. THE RAP ANALYSIS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO USE. METHOD OF MEASUREMENT SHALL BE AS PER 617.06. PLACEMENT AND COMPACTION SHALL MEET THE REQUIREMENTS OF ITEM 617. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 617 COMPACTED AGGREGATE, AS PER PLAN.

MODIFIED GRADATION SHALL APPLY:

SIEVE	TOTAL PERCENT PASSING
1-1/2"	100
3/4"	50-100
NO. 4	35-70
NO. 30	9-33
NO. 200	0-13

ITEM 424 - FINE GRADED POLYMER ASPHALT CONCRETE, TYPE B, AS PER PLAN

703.05 DO NOT USE ANY AGGREGATE FROM A SOURCE DESIGNATED 'SR' OR 'SRH' ACCORDING TO THE OFFICE OF MATERIALS MANAGEMENT (OMM) IN ANY JOB MIX FORMULA (JMF) FOR THIS ITEM.

ITEM 441 - ASPHALT INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN, PG64-28

THIS ITEM OF WORK SHALL BE IN CONFORMANCE WITH ITEM 441 OF CMS EXCEPT THAT THE CONTRACTOR SHALL PLACE THE INTERMEDIATE COURSE IN ONE (1) 4 1/2 INCH LIFT. IF OPTIMUM DENSITY PER ITEM 446 OF CMS IS NOT ACHIEVED THE CONTRACTOR SHALL PLACE THE INTERMEDIATE COURSE IN TWO (2) SEPARATE LIFTS WITH NON-TRACKING TACK COAT BETWEEN THE LIFTS. THE NON-TRACKING TACK COAT BETWEEN LIFTS SHALL BE AT NO ADDITIONAL COST TO THE DEPARTMENT. ALL EQUIPMENT, LABOR, TOOLS, NON-TRACKING TACK COAT AND OTHER INCIDENTALS TO PERFORM THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 441, ASPHALT INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN, PG64-28.

ITEM 831 - LONGITUDINAL CHANNELIZING DEVICE

LONGITUDINAL CHANNELIZING DEVICES SHALL BE INSTALLED AT THREE LOCATIONS ON THIS PROJECT. NEW CENTERLINE MARKINGS WILL BE PLACED WITH THIS ITEM AND ARE QUANTIFIED ON SHEET 12. THE DEVICES SHALL BE PLACED NEAR THE INTERSECTIONS OF US 224 WITH THE SHOPS AT BOARDMAN PARK AND SOUTH AVENUE. REFER TO SHEETS 14A - 14C FOR DETAILS AND PLACEMENT INFORMATION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 831 - LONGITUDINAL CHANNELIZING DEVICE 1047 FT

ITEM 611 CATCH BASIN TO GRADE, AS PER PLAN

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

ITEM 611, CATCH BASIN ADJUSTED TO GRADE 10 EACH

CALCULATED
TFS
CHECKED
MAC

GENERAL NOTES

MAH-224-13.64

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ITEM 622 32" PORTABLE BARRIER PLACEMENT

DURING THE PLACEMENT OF THE PORTABLE BARRIER, TRAFFIC WILL BE PROHIBITED FROM OCCUPYING THE TRAVEL LANE ADJACENT TO THE BARRIER. THE BARRIER WILL BE PLACED AT NIGHT PER THE WORK HOUR RESTRICTION NOTE AND IN ACCORDANCE WITH THE PERMITTED LANE CLOSURE MAP. THE CLOSURE OF THE ADJACENT LANE WILL BE PER THE STANDARD DRAWING MT-95.31.

THE CONTRACTOR WILL SUBMIT A PLAN TO THE ENGINEER FOR APPROVAL SEVEN (7) DAYS IN ADVANCE OF THE PLANNED LANE CLOSURE. WORK WILL NOT BEGIN UNTIL APPROVAL OF THE PLANS HAS BEEN GRANTED.

ALL COSTS INVOLVED IN PLACING THE PORTABLE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 622 PORTABLE CONCRETE BARRIER.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NONGATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

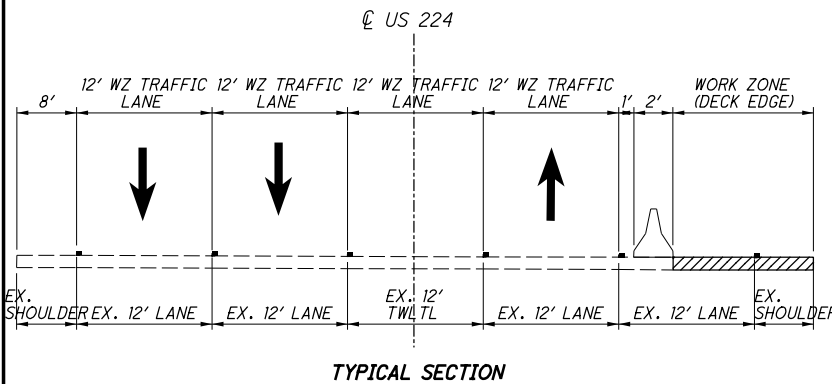
THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.



TYPICAL SECTION

WORK ZONE QUANTITIES (DECK EDGE REPLACEMENT)

THE FOLLOWING ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY AND SHALL BE USED IN WORK DETAILED ON SHEETS 20-21.

ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS 1, 8", 480FT	
ITEM 614, BARRIER REFLECTORS, TYPE 1 (BIDIRECTIONAL)	10 EACH
ITEM 614, OBJECT MARKERS, TWO-WAY	10 EACH
ITEM 614, WORK ZONE IMPACT ATTENUATOR, (BIDIRECTIONAL)	4 EACH
ITEM 622, PORTABLE BARRIER, 32",	360 FT
ITEM 622, PORTABLE BARRIER, 32", BRIDGE MOUNTED	160 FT

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL; AND, ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

MAH-224-13.64

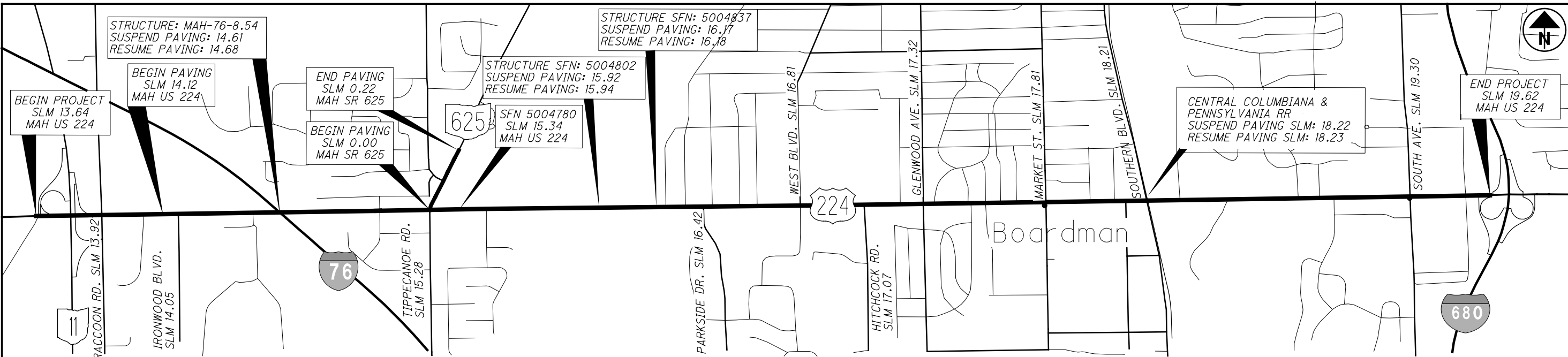
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SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	7	8	11	12	13	14	5A	01/NHS/P V	02/S>2/P V	06/SAF/P V						
ROADWAY																		
500										500			202	32000	500	FT	CURB REMOVED	
3,500										3,500			202	32500	3,500	FT	CURB AND GUTTER REMOVED	
								2,650		2,650			202	38000	2,650	FT	GUARDRAIL REMOVED	
								21		21			202	98100	21	EACH	REMOVAL MISC.: BARRIER REFLECTOR	9
									33	33			203	10000	33	CY	EXCAVATION (FOR PAVEMENT REPAIR)	
					71					71			209	72000	71	STA	PREPARING SUBGRADE FOR SHOULDER PAVING	
								1,775		1,775			606	15100	1,775	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
								200		200			606	15200	200	FT	GUARDRAIL, TYPE MGS HALF POST SPACING WITH LONG POSTS	
								100		100			606	17360	100	FT	GUARDRAIL, TYPE MGS, LONG-SPAN	
								6		6			606	26050	6	EACH	ANCHOR ASSEMBLY, MGS TYPE B	
								10		10			606	26150	10	EACH	ANCHOR ASSEMBLY, MGS TYPE E	
								4		4			606	32160	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE TST	
								4		4			606	35002	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
	14									14			623	39501	14	EACH	MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN	6
EROSION CONTROL																		
										3,000			832	30000	3,000	EACH	EROSION CONTROL	
DRAINAGE																		
									36	36			611	04401	36	FT	12" CONDUIT, TYPE B, AS PER PLAN	
10										10			611	98630	10	EACH	CATCH BASIN ADJUSTED TO GRADE	
									1	1			611	99574	1	EACH	MANHOLE, NO. 3	
	93									93			611	99655	93	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	6
PAVEMENT																		
1,150										1,110	40		251	01000	1,150	SY	PARTIAL DEPTH PAVEMENT REPAIR (441)	
								1,304		1,304			252	01500	1,304	FT	FULL DEPTH PAVEMENT SAWING	
								200		200			253	01000	200	SY	PAVEMENT REPAIR	
					178,563					178,563			254	01000	178,563	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
								20		20			301	46000	20	CY	ASPHALT CONCRETE BASE, PG64-22	
									33	33			304	20000	33	CY	AGGREGATE BASE (FOR PAVEMENT REPAIR)	
					31,451					30,797	654		407	20000	31,451	GAL	NON-TRACKING TACK COAT	
					629					629			408	10001	629	GAL	PRIME COAT, AS PER PLAN	4
					6,771					6,519	252		424	12001	6,771	CY	FINE GRADED POLYMER ASPHALT CONCRETE, TYPE B, AS PER PLAN	4
					21,969					21,969			441	00100	21,969	CY	ANTI-SEGREGATION EQUIPMENT	
					21,969					21,969			441	10201	21,969	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN, PG64-28	4
					235					235			442	10150	235	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE B (446)	
	3,500									3,500			609	12000	3,500	FT	COMBINATION CURB AND GUTTER, TYPE 2	
	500									500			609	24510	500	FT	CURB, TYPE 4-C	
					44					44			617	10101	44	CY	COMPACTED AGGREGATE, AS PER PLAN	4
					52,306					45,048	7,258		897	01010	52,306	SY	PAVEMENT PLANING, ASPHALT CONCRETE, CLASS A	
WATER WORK																		
	42									42			638	10801	42	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	6
TRAFFIC CONTROL																		
							1,612			1,612			621	00100	1,612	EACH	RPM	
							1,290			1,290			621	54000	1,290	EACH	RAISED PAVEMENT MARKER REMOVED	
								30		30			626	00110	30	EACH	BARRIER REFLECTOR, TYPE 2	
	2											2	630	79000	2	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE	
	24											24	630	80100	24	SF	SIGN, FLAT SHEET	
												3	630	87400	3	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
					3.92					3.92			646	10010	3.92	MILE	EDGE LINE, 6"	
					10.64					10.64			646	10110	10.64	MILE	LANE LINE, 6"	
					5.44					5.42	0.02		646	10200	5.44	MILE	CENTER LINE	
					11,655					11,420	235		646	10300	11,655	FT	CHANNELIZING LINE, 8"	
					1,243					1,243			646	10400	1,243	FT	STOP LINE	
					1,990					1,990			646	10500	1,990	FT	CROSSWALK LINE	
					2,618					2,618			646	10600	2,618	FT	TRANSVERSE/DIAGONAL LINE	
					150					150			646	10800	150	SF	ISLAND MARKING	
					5					5			646	20000	5	EACH	RAILROAD SYMBOL MARKING	

GENERAL SUMMARY

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SLM RANGE	TYPICAL SECTION	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=DxW/9	CADD GENERATED AREA	209	254	254	407	407	408	617	424	424	441	441	442	897												
							PREPARING SUBGRADE FOR SHOULDER PAVING	PAVEMENT PLANING, ASPHALT CONCRETE (T=4.25')	PAVEMENT PLANING, ASPHALT CONCRETE (T=5.5')	NON-TRACKING TACK COAT (0.06 GAL/SY)	NON-TRACKING TACK COAT (0.09 GAL/SY)	PRIME COAT, AS PER PLAN (0.40 GAL/SY)	COMPACTED AGGREGATE, AS PER PLAN (T=2')	FINE GRADED POLYMER ASPHALT CONCRETE, TYPE B, AS PER PLAN (T=1 1/4')	FINE GRADED POLYMER ASPHALT CONCRETE, TYPE B, AS PER PLAN (T=1 1/4')	ANTI-SEGREGATION EQUIPMENT	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN, PG64-28 (T=4.5')	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE B (446) (T=3')	PAVEMENT PLANING, ASPHALT CONCRETE, CLASS A (T=1 1/4')												
							STA	SY	SY	GAL	GAL	GAL	CY	CY	CY	CY	CY	CY	CY	CY	CY	SY									
MAH US 224																															
14.12	TO	14.16	1	211.20	68.00	1595.73	4.20		1595.73	95.74	143.62	37.55	2.61	44.33		199.47	199.47														
14.16	TO	14.22	2	316.80	68.00	2393.60			2393.60	143.62	215.42			66.49		299.20	299.20														
14.22	TO	14.28	1	316.80	68.00	2393.60	6.30		2393.60	143.62	215.42	66.32	8.91	66.49		299.20	299.20														
14.28	TO	14.44	2	844.80	73.00	6852.27			6852.27	411.14	616.70			190.34		856.53	856.53														
14.44	TO	14.61	2	897.60	70.00	6981.33			6981.33	418.88	628.32			193.93		872.67	872.67														
14.61	TO	14.73	2	264.00	64.00	1584.00			1584.00	95.04	142.56			44.00		198.00	198.00														
14.73	TO	15.06	2	1742.40	61.00	11809.60			11809.60	708.58	1062.86			328.04		1476.20	1476.20														
15.06	TO	15.16	2	528.00	64.00	3754.67			3754.67	225.28	337.92			104.30		469.33	469.33														
15.16	TO	15.26	2	528.00	71.00	4165.33			4165.33	249.92	374.88			115.70		520.67	520.67														
15.26	TO	15.44	2	950.40	74.00	7014.40			7014.40	468.88	703.30			217.07		976.80	976.80														
15.44	TO	15.91	1	2481.60	77.00	21231.47	49.60		21231.47	1273.89	1910.83	441.17	30.64	589.76		2653.93	2653.93														
15.91	TO	16.03	1	528.00	78.00	4576.00	10.80		4576.00	271.56	411.84	93.87	6.52	127.11		572.00	572.00														
16.03	TO	16.08	3	264.00	68.00	1994.67			1994.67	119.68	179.52			55.41		249.33	249.33														
16.08	TO	16.17	3	475.20	60.00	3168.00			3168.00	190.08	285.12			88.00		396.00	396.00														
16.21	TO	16.27	3	316.80	60.00	2112.00			2112.00	126.72	190.08			58.67		264.00	264.00														
16.27	TO	17.71	2	7603.20	62.00	52377.60			52377.60	3142.66	4713.98			1454.93		6547.20	6547.20														
17.71	TO	17.81	2	528.00	72.00	4224.00			4224.00	253.44	380.16			117.33		528.00	528.00														
17.81	TO	17.89	4	422.40	79.00	3707.73			3707.73	222.46	333.70			102.99		463.47	463.47														
17.89	TO	18.15	4	1372.80	72.00	10982.40			10982.40	658.94	988.42			305.07		1372.80	1372.80														
18.15	TO	18.22	4	369.60	60.00	2464.00			2464.00	147.84	221.76			68.44		308.00	308.00														
18.22	TO	18.46	2	1214.40	60.00	8096.00			8096.00	485.76	728.64			224.89		1012.00	1012.00														
18.46	TO	18.61	2	792.00	84.00	7392.00			7392.00	443.52	665.28			205.33		924.00	924.00														
18.61	TO	19.19	5	3062.40	84.00	28582.40			28582.40		2572.42				992.44										28582.40						
19.19	TO	19.25	5	316.80	72.00	2534.40			2534.40		228.10				88.00										2534.40						
19.25	TO	19.35	6	528.00	72.00	4224.00		2816.00	4224.00	253.44	380.16			146.67		234.67		4224.00						1408.00							
19.35	TO	19.38	5	158.40	72.00	1267.20			1267.20		114.05			44.00											1267.20						
19.38	TO	19.62	5	1267.20	70.00	9856.00			9856.00		887.04			342.22											9856.00						
MAH SR 625																															
0.00	TO	0.13	5	686.40	64.00	4881.07			4881.07		439.30			169.48											4881.07						
0.13	TO	0.22	5	475.20	45.00	2376.00			2376.00		213.84			82.50											2376.00						
INTERSECTIONS																															
14.12	TO	18.61					4075.00		4075.00	244.50	366.75			84.90		509.38	509.38														
18.61	TO	19.47					1400.00		1400.00		0.00				48.61				1400.00												
DRIVEWAYS																															
14.12	TO	16.03	1											2.50																	
SUBTOTALS																															
TOTALS CARRIED TO GENERAL SUMMARY																															
							70.70	2816.00	175745.40	10798.16	20651.98	628.91	43.67	4856.02	1913.93	21968.18	21968.18	234.67	52305.07	0.00	0.00	0.00	0.00	0.00							
							71	2817	175746	10799	20652	629	44	4857	1914	21969	21969	235	52306	0	0	0	0	0							

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ROADWAY CALCULATIONS

CALCULATED
TFS
CHECKED
MAC