LIC - IR/MUS-IR 70-23.84/00.00
210438 PID - 113922
Dist 5 7/29/2021

Contract Proposal available @
www.contracts.dot.state.oh.us

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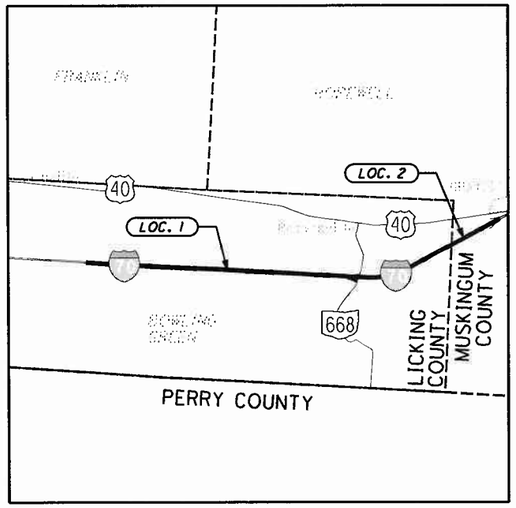


LOCATION MAP

LATITUDE: N 39° 56' 13" LONGITUDE: W 82° 16' 41"

PORTION TO BE IMPROVED

DESIGN DESIGNATION	I.R. 70
FUNCTIONAL CLASSIFICATION	INT
OPENING YEAR ADT (2021)	37,500
DESIGN YEAR ADT (2033)	44,000
DESIGN HOURLY VOLUME (2033)	4,400
DIRECTIONAL DISTRIBUTION	51%
TRUCKS (24 HOUR B&C)	21%
DESIGN SPEED	70 MPH
LEGAL SPEED	70 MPH
NHS PROJECT	YES

INT = INTERSTATE

DESIGN EXCEPTIONS
NONE REQUIRED

ADA DESIGN WAIVER
NONE REQUIRED

UNDERGROUND UTILITIES

OHIO811.org Before You Dig

PLAN PREPARED BY:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 PLANNING & ENGINEERING

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LIC / MUS - 70 - 23.84 / 0.00

BOWLING GREEN AND HOPEWELL TOWNSHIPS
LICKING AND MUSKINGUM COUNTIES

INDEX OF SHEETS

ENGINEERS SEAL
STRUCTURES

STATE OF OHIO
JUSTIN DEAN REED
E-71763
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Justin D. Reed
DATE: 5/3/2021

ENGINEERS SEAL

STATE OF OHIO
JASON SCOTT LUTZ
E-77397
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 5/3/2021

CONFORMED SET

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	1/17/20	MT-99.20	4/19/19					800	4/16/21
BP-4.1	7/19/13	MT-101.60	1/17/20					808	1/18/19
BP-9.1	1/18/19	MT-101.90	7/17/20					821	4/20/12
		MT-104.10	10/16/15					832	10/19/18
MT-95.30	7/19/19	MT-105.10	1/17/20					861	1/15/21
MT-96.11	4/17/20							875	1/18/19
MT-96.20	7/15/16	TC-41.10	7/19/13					908	10/20/17
MT-96.26	1/18/19	TC-41.20	10/18/13					921	4/20/12
MT-97.10	4/19/19	TC-65.10	1/17/14					961	4/17/20
MT-98.10	1/17/20	TC-65.11	7/21/17					SPECIAL PROVISIONS	
MT-98.11	1/17/20	TC-71.10	1/19/18					PMTP DATE: 9/12/17	
MT-98.20	1/17/20	TC-72.20	7/20/18						
MT-98.22	1/17/20	TC-73.20	1/17/20						
MT-98.28	1/17/20								
MT-98.29	1/17/20								

PROJECT DESCRIPTION

ASPHALT CONCRETE RESURFACING AND RELATED WORK ON I.R. 70 IN LICKING AND MUSKINGUM COUNTIES INCLUDING ABUTMENT REPAIRS ON STRUCTURES LIC-70-2421 AND LIC-70-2583 AND PIER PATCHING ON LIC-70-2653 ALONG WITH DECK SEALING ON VARIOUS STRUCTURES

PROJECT EARTH DISTURBED AREA = 0.07 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = 0.13 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA = NOI NOT REQUIRED

LOCATION	PLAN SPLIT	COUNTY	ROUTE	BEGIN SLM	END SLM	LENGTH MILES	CITY / VILLAGE
1	1	LIC	70	23.84	28.93	5.09	
2	1	MUS	70	0.00	0.76	0.76	

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 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 APPROVE 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.

APPROVED Jason Z Sarge
DATE 4/29/2021 DISTRICT DEPUTY DIRECTOR

APPROVED Jack Marchbanks ODS
DATE 6/15/21 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E210(251)
PID NO. 113922
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
LIC/MUS-70-23.84/0.00
1/35

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.

PAVEMENT MARKINGS

AUXILIARY MARKINGS (STOP LINES, CROSSWALK LINES, CHANNELIZING LINES, ETC.) SHOWN IN THE PLANS ARE TAKEN FROM EXISTING LOCATIONS. THE CONTRACTOR SHALL DOCUMENT ALL AUXILIARY MARKING LOCATIONS THAT WILL BE REMOVED/OBLITERATED DURING THIS PROJECT AND PLACE NEW AUXILIARY MARKINGS AT THE LOCATION OF THE EXISTING MARKINGS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER A MINIMUM OF **24 HOURS** PRIOR TO APPLYING PAVEMENT MARKING MATERIALS ON ANY ROUTES SO THAT ODOT PERSONNEL MAY BE PRESENT DURING PAVEMENT MARKING OPERATIONS. AS PER CMS 641.04, THE CONTRACTOR SHALL PROVIDE ODOT PERSONNEL A COPY OF THE DLS SHORT REPORT AT THE END OF EVERY WORKDAY OR AS REQUESTED THROUGHOUT THE DAY. THE CONTRACTOR SHALL NOT RECEIVE PAYMENT FOR ANY WORK DONE WITHOUT NOTIFICATION AS STATED ABOVE OR IF DSL SHORT REPORTS ARE NOT PROVIDED DAILY.

DLS CLOUD BASED REPORTING PER PROPOSAL NOTE 640 SHALL BE USED ON THIS PROJECT

ITEM 253, PAVEMENT REPAIR

AN ESTIMATED QUANTITY FOR PAVEMENT REPAIR HAS BEEN INCLUDED IN THE PLAN TO BE USED **AS DIRECTED BY THE ENGINEER**. REPAIRS SHALL TAKE PLACE PRIOR TO ANY PLANING OPERATIONS.

THE INTENT OF THIS OPERATION IS TO REPAIR THE ASPHALT OVER DETERIORATED JOINTS.

DEPTH OF EXCAVATION SHALL BE **7" (OR TOP OF CONCRETE BASE, WHICHEVER COMES FIRST).** THE MINIMUM LENGTH SHALL BE **6 FEET, CENTERED OVER JOINT** BUT MAY BE EXTENDED TO COVER ADJACENT JOINTS IF NECESSARY. THE MINIMUM WIDTH SHALL BE **12'** OR ENTIRE TRAVEL LANE

AFTER EXCAVATION HAS BEEN COMPLETED, THE FACE OF THE REPAIR SHALL BE COATED WITH 407 TACK COAT. REPLACEMENT MATERIAL WILL BE **7"** (OR DEPTH OF EXCAVATION) OF ITEM 301 ASPHALT CONCRETE BASE, PG64-22 (PLACED, COMPACTED, AND TACKED IN TWO LIFTS).

ALL EXCAVATION, MATERIALS, LABOR, EQUIPMENT, TOOLS, TRAFFIC CONTROL AND INCIDENTALS NEEDED TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE PAID FOR UNDER ITEM 253, PAVEMENT REPAIR.

ITEM 253, PAVEMENT REPAIR
LOCATION 1: 700 CU.YD.
LOCATION 2: 100 CU.YD.

ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE, BY DEPTH

DEPTH OF PLANING SHALL BE AS SHOWN ON THE PAVEMENT AND SHOULDER DATA TABLES. PLANING SHALL BE THE FULL WIDTH OF THE EXISTING PAVEMENT, INCLUDING PAVED SHOULDERS. THE ROADWAY SHALL BE PLANED SUCH THAT POSITIVE DRAINAGE IS CREATED FROM THE CENTER LINE TO THE EDGE OF PAVEMENT IN TANGENT SECTIONS AND SHALL FOLLOW EXISTING SUPERELEVATIONS WHERE APPLICABLE. ALL REQUIREMENTS OF ITEM 254 SHALL APPLY.

IF DURING PLANING OPERATIONS EXCESSIVE RIDGES OR OTHER IRREGULARITIES ARE FOUND, PLANING DEPTH ADJUSTMENTS SHALL BE MADE UP TO 3/8 INCH, AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID PER CMS 254.07.

ITEM 407, NON-TRACKING TACK COAT

THE RATE OF APPLICATION OF THE ITEM 407, NON-TRACKING TACK COAT SHALL BE PER **CMS TABLE 407.06-1** AND SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF **0.08 GAL/SY** FOR TACK COAT UNDER THE INTERMEDIATE COURSE AND **0.05 GAL/SY** UNDER SURFACE COURSE, (FOR ESTIMATING PURPOSES ONLY).

ITEM 408, PRIME COAT, AS PER PLAN

THE CONTRACTOR SHALL APPLY ONE COAT OF MC-70 (AS PER CMS 702) AT A RATE OF **0.40 GAL/SY** TO THE COMPLETED AGGREGATE SHOULDER. TO REDUCE AGGREGATE LOSS, **THE PRIME COAT SHALL BE APPLIED WITHIN SEVEN (7) DAYS AFTER PLACEMENT OF THE AGGREGATE SHOULDER OR LIQUATED DAMAGES PER CMS 108.07 WILL BE ASSESSED.** THE CONTRACTOR SHALL PROVIDE A SHIELD TO PREVENT THE SPRAYING OR DRIFTING OF LIQUID BITUMINOUS MATERIAL ONTO THE EDGE OF PAVEMENT OR EDGE LINE. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO 107.10 OF THE SPECIFICATIONS.

ITEM 516, 2" DEEP JOINT SEALER, AS PER PLAN (A)

THE CONTRACTOR SHALL PLACE A **1" X 2.0" DEEP** BEAD OF JOINT SEALER (AS PER 705.04) AT THE LOCATIONS SHOWN IN PLANS. THE CONTRACTOR SHALL SAW CUT A CHANNEL FOR THE JOINT SEALER. THE COST FOR SAW CUTTING THE CHANNEL FOR THE JOINT SEALER SHALL BE INCLUDED FOR PAYMENT WITH ITEM 516, 2" DEEP JOINT SEALER, AS PER PLAN.

ITEM 617, COMPACTED AGGREGATE, AS PER PLAN

ALL AGGREGATE SHALL BE 100% CRUSHED LIMESTONE. ALL QUALITY REQUIREMENTS EXCEPT SHALE SHALL BE WAIVED. OTHER GRADATION REQUIREMENTS SHALL BE AS SPECIFIED EXCEPT THE INDEX SHALL BE WAIVED. IF SO PERMITTED, THE CONTRACTOR MAY USE RECYCLED ASPHALT CONCRETE PAVEMENT (RACP) MEETING REQUIREMENTS OF 617.02 IN LIEU OF CRUSHED LIMESTONE.

ALL AREAS SHALL BE LOOSENED AND FREE OF VEGETATION PER 617.04 PRIOR TO PLACEMENT OF COMPACTED AGGREGATE. AGGREGATE SHOULDERS SHALL BE SLOPED TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE ROADWAY.

SHOULDER PREPARATION SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR ITEM 617, COMPACTED AGGREGATE, AS PER PLAN.

ITEM 621, RAISED PAVEMENT MARKER REMOVED

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.

ITEM 642, SPEED MEASUREMENT MARKING, AS PER PLAN

SPEED MEASUREMENT MARKINGS SHALL BE WHITE AND 24 INCHES WIDE MEASURED IN THE DIRECTION OF TRAVEL AND 4 FEET IN LENGTH SPACED AT 0.25 MILE INTERVALS OVER A 1-MILE LENGTH OF ROADWAY AT THE FOLLOWING LOCATION:

EASTBOUND I.R. 70 MM 141.00 – 142.00

ON FOUR-LANE ROADWAYS SPEED MEASUREMENT MARKINGS SHALL BE PLACED ON BOTH SHOULDERS ADJACENT TO THE EDGE LINE MARKING AND SHALL BE OFFSET FROM RUMBLE STRIPS IF PRESENT.

ON TWO-LANE ROADWAYS WITH PAVED SHOULDERS LESS THAN 4 FEET IN WIDTH SPEED MEASUREMENT MARKINGS SHALL BE PLACED WITH 2 FEET ON EACH SIDE OF THE CENTER LINE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE MARKINGS LAID OUT BY A REGISTERED SURVEYOR. A RECORD IS TO BE KEPT AND ONE ORIGINAL SIGNED AND SEALED DOCUMENT IS TO BE SENT TO THE DISTRICT SURVEY MANAGER AND ONE COPY IS TO BE SENT TO THE DISTRICT CONSTRUCTION ENGINEER.

FIVE (5) MARKINGS PLACED ON ONE SHOULDER OF ROADWAY SHALL EQUAL ONE ZONE. ONE ZONE SHALL BE MEASURED AS **ONE (1) EACH** FOR SPEED MEASUREMENT MARKING, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DESCRIBED ABOVE.

ITEM 642, SPEED MEASUREMENT MARKING, AS PER PLAN
LOCATION 1: 2 EACH

ITEM SPECIAL, PAVER MOUNTED THERMAL PROFILING (PMTP)

THIS ITEM CONSISTS OF PROVIDING A PAVER MOUNTED THERMAL PROFILING (PMTP) SYSTEM TO IDENTIFY THE PRESENCE OF ANY THERMAL SEGREGATION OF AN UNCOMPACTED MAT OF HOT MIX ASPHALT. METHODS AMD PROCEDURES FOR DETERMINING THE THERMAL PROFILE USING A PAVER-MOUNTED THERMAL IMAGING SYSTEM SHALL CONFORM TO THE SPECIFICATIONS FOUND IN THE SPECIAL PROVISIONS.

ALL, LABOR, EQUIPMENT, SOFTWARE, AND INCIDENTALS NECESSARY TO INSTALL THE EQUIPMENT AND ANALYZING THE DATA SHALL BE INCLUDED FOR PAYMENT WITH THE **LUMP SUM** BID FOR **ITEM SPECIAL, PAVER MOUNTED THERMAL PROFILING (PMTP)**

ENVIRONMENTAL NOTES

THREE (3) STRUCTURES IN THE PROJECT AREA INVOLVE WORK OVER A STREAM, **LIC-70-2599** OVER **WISE RUN**, **LIC-70-2742** OVER **BERRY RUN,** AND **LIC-70-2888** OVER **VALLEY RUN**. ALL WORK IS PROHIBITED TO OCCUR BELOW THE OHWM IN STREAMS THAT FLOW UNDER THE STRUCTURES, AND NO MATERIAL MAY ENTER ANY STREAM DURING CONSTRUCTION. **ALL BRIDGE SCUPPERS SHALL BE COVERED, AT THE APPROVAL OF THE ENGINEER, FOR ANY WORK TAKING PLACE ON AND/OR ADJACENT TO THE STRUCTURES MENTIONED ABOVE.**

CALCULATED LME CHECKED JSL

GENERAL NOTES

LIC / MUS-70-23.84 / 0.00

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF TWO (2) LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCLUDING THE CLOSURE TIMES STATED IN THE LANE VALUE CONTRACT TABLE BELOW.

AREAS THAT ARE PLANED SHALL NOT BE OPENED TO TRAFFIC. ALL PLANED AREAS MUST BE INLAID WITH A PROPOSED COURSE OF ITEM 442, ASPHALT CONCRETE PRIOR TO BEING OPENED TO TRAFFIC.

OVERNIGHT CLOSURES MUST MEET SPECIFICATIONS AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. THE ROADWAY SHALL NOT BE OPENED TO TRAFFIC WITHOUT EITHER THE PERMANENT OR WORK ZONE MARKINGS IN PLACE. **THE ROADWAY SHALL NOT BE OPENED TO TRAFFIC WITHOUT EITHER THE PERMANENT OR WORK ZONE MARKINGS IN PLACE.**

LANE VALUE CONTRACT TABLE

LOCATION	CRITICAL WORK: TIME WHEN ONE (1) LANE MAY BE CLOSED	TIME UNIT	DISINCENTIVE ($ PER TIME UNIT)
I.R 70 E.B. & W.B.	HTTP://PLCM.DOT.STATE.OH.US SPRING/FALL MONDAY-THURSDAY: 6PM-2PM FRIDAY-SUNDAY: 7PM-11AM SUMMER MONDAY-THURSDAY: 7PM-12PM FRIDAY-SUNDAY: 8PM-9AM	15 MIN.	$2,500

BRIDGES LIC-70-2653 (T.R. 345), LIC-70-2754 (S.R. 668), LIC-70-2863 (T.R7)

ONE-LANE, TWO-WAY TRAFFIC WILL BE PERMITTED, WITH PORTABLE TRAFFIC SIGNALS FOR DECK SEALING PER **SS 961** (SUPPLEMENT 1050), AT APPROVAL OF THE ENGINEER.

I.R. 70/ S.R 668 RAMP RESURFACING

10-HOUR MAXIMUM RAMP CLOSURE WILL BE PERMITTED FOR RESURFACING AT I.R. 70 /S.R. 668 RAMPS. USE PCMS FOR DETOUR, AT APPROVAL OF THE ENGINEER.

LANE CLOSURES WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE STANDARD DRAWINGS LISTED ON THE TITLE SHEET, IN CONSIDERATION OF THE TRAFFIC FLOW. LANE CLOSURES SHALL ONLY OCCUR DURING CONTRACTOR WORK HOURS.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE NO LONGER THAN 2 MILES, UNLESS DIRECTED BY 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.

THE CONTRACTOR WILL HAVE ON SITE AND IN WORKING AND OR SUITABLE CONDITION; ALL EQUIPMENT, TOOLS, LABORERS, LEO'S, TRAFFIC CONTROL DEVICES AND INCIDENTALS NECESSARY TO EFFICIENTLY PERFORM THE CLOSURE BEFORE INITIALIZING THE LANE CLOSURE.

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.

LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES ON **I.R. 70** SHALL BE OPENED TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

MEMORIAL DAY, FOURTH OF JULY, LABOR DAY, THANKSGIVING, CHRISTMAS, NEW YEARS, EASTER

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00AM FRIDAY
THURSDAY (THANKSGIVING)	12:00N WEDNESDAY THROUGH 6:00AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER LANE VALUE CONTRACT (PN 127).

WINDOW CONTRACT TABLE

DESCRIPTION OF CRITICAL WORK	CALENDAR DAYS	DISINCENTIVE ($ PER TIME UNIT)
ALL WORK ON PROJECT	120	PER CMS 108.07

NOTIFICATION OF ROAD CLOSURE OR RESTRICTIONS

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.

WORK RESTRICTIONS

NO WORK SHALL BEGIN PRIOR TO MAY 1ST, 2022.

NO WESTBOUND PAVING SHALL BEGIN UNTIL COMPLETION OF PROJECT LIC-70-19.47 PID 93013 (ESTIMATED COMPLETION JULY 31ST, 2022)

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE **LUMP SUM** BID FOR **ITEM 614, MAINTAINING TRAFFIC.**

BUTT JOINT

A BUTT JOINT WILL BE REQUIRED AT THE LOCATIONS SPECIFIED BELOW PER STANDARD DRAWING **BP-3.1** EXCEPT THE MINIMUM LENGTH SHALL B **300' PER INCH**, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE GRINDING FOR BUTT JOINTS SHALL BE INCLUDED WITH ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE.

THE MINIMUM ASPHALT WEDGE LENGTH AT BUTT JOINTS SHALL BE **20'**.

LOCATION	ROUTE	DESCRIPTION	S.L.M.	ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
				CU. YD.
1	I.R. 70	BEGIN WORK	23.84	7.0
		BRIDGE: LIC-70-2421 L/R	24.21	14.0
		BRIDGE: LIC-70-2583 L/R	25.83	14.0
		BRIDGE: LIC-70-2888 L/R	28.88	14.0
		TOTAL		49.0
2	I.R. 70	END WORK	0.76	7.0

DROP-OFFS IN WORK ZONES

DROP-OFFS 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**.

COOPERATION BETWEEN CONTRACTORS

THE STATE OF OHIO HAS CONTRACTED PROJECTS **LIC-70-19.47 PID 93013 AND D05-PM-2022(C) R-WR PID 113444**, WHICH MAY BE CONSTRUCTED CONCURRENTLY WITH THIS PROJECT. IT IS IMPERATIVE THAT THE CONTRACTORS COOPERATE FULLY WITH EACH OTHER AS OUTLINED IN SECTION 105.08 OF THE CMS MANUAL. ALL MAINTENANCE OF TRAFFIC SHALL BE COORDINATED BETWEEN PROJECTS AND NOT CONFLICTNWITH ONE ANOTHER

CALCULATED LME CHECKED JSL

MAINTENANCE OF TRAFFIC NOTES

LIC / MUS-70-23.84 / 0.00

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED IN THIS NOTE WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS, **AS DIRECTED BY THE ENGINEER**:

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED, AND NIGHT WORK ON THE INTERSTATE.

IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LAW ENFORCEMENT OFFICERS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE.

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
LOCATION 1: 500 HOUR
LOCATION 2: 100 HOUR

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-30699	**LIC-70-(23.84-28.93)**	**EB/WB**
WZ-30700	**MUS-70-(0.00-0.76)**	**EB/WB**

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 DIVIDIED 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.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, SUPPLEMENTAL SPECIFICATIONS **808**, **908** AND TRAFFIC SCD **MT-104.10**

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.

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

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 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

A TOTAL OF ***6 DSL SIGN ASSEMBLIES WILL*** BE REQUIRED FOR THIS PROJECT.

2-MILE MOVING ZONE FOR RESURFACING

LOCATION 1:
I.R. 70 EB: 3 DSL X 2 MONTHS = 6 SNMT
I.R. 70 WB: 3 DSL X 2 MONTHS = 6 SNMT

LOCATION 2:
I.R. 70 EB: 3 DSL X 1 MONTH = 3 SNMT
I.R. 70 WB: 3 DSL X 1 MONTH = 3 SNMT

ITEM 614, DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY
LOCATION 1: 12 SNMT
LOCATION 2: 6 SNMT

CALCULATED LME CHECKED JSL

MAINTENANCE OF TRAFFIC NOTES

LIC/MUS-70-23.84/0.00

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FEET AND 475 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 2 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN (CONT'D.)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

A TOTAL OF **4 PCMS** MAY BE REQUIRED FOR THIS PROJECT.

RESURFACING WORK:
LOCATION 1 - 4 PCMS X 2 MONTH = 8 SNMT
LOCATION 2 - 2 PCMS X 1 MONTH = 2 SNMT

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
LOCATION 1: 8 SNMT
LOCATION 2: 2 SNMT

NOTICE OF CLOSURE SIGN

THE CONTRACTOR SHALL PROVIDE NOTICE OF **RAMP CLOSURES** TO ALL TRAFFIC AT LEAST **SEVEN CALENDAR DAYS** IN ADVANCE OF CLOSURE THROUGH THE USE OF PORTABLE CHANGEABLE MESSAGE SIGNS. THE PCMS SHOULD BE ERECTED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER. THE PCMS SHOULD BE ERECTED WELL IN ADVANCE OF THE CLOSURE AREA TO AVOID DISTRACTING MOTORISTS.

DELINEATION OF TEMPORARY AND PERMANENT GUARDRAIL

BARRIER REFLECTORS SHALL BE INSTALLED ON ALL TEMPORARY GUARDRAIL USED FOR TRAFFIC CONTROL; AND, ON ALL PERMANENT GUARDRAIL LOCATED WITHIN **5 FEET** OF THE EDGE OF THE ADJACENT TRAVEL LANE. BARRIER REFLECTORS SHALL CONFORM TO **CMS 626** AND THE SPACING SHALL BE APPROXIMATELY **50 FEET**.

OBJECT MARKERS SHALL BE INSTALLED ON ALL TEMPORARY AND PERMANENT GUARDRAIL LOCATED WITHIN **5 FEET** OF THE EDGE OF THE ADJACENT TRAVEL LANE. GUARDRAIL-MOUNTING OF OBJECT MARKERS SHALL BE MADE BY INSTALLING THE OBJECT MARKERS ON THE EXTENSION BLOCKS RATHER THAN DIRECTLY ONTO THE GUARDRAIL ITSELF. OBJECT MARKERS SHALL CONFORM TO **CMS 614.03** AND THE SPACING SHALL BE APPROXIMATELY **50 FEET** WITH A **25 FOOT** OFFSET FROM THE BARRIER REFLECTORS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS TO BE USED FOR THE FOLLOWING LOCATIONS DURING NIGHTLY LANE CLOSURES WHEN TRAFFIC IS BEING MAINTAINED IN THE PASSING LANE, AS DIRECTED BY THE ENGINEER.

EASTBOUND LIC-70-(24.95-25.65)
WESTBOUND LIC-70-(24.61-25.11)

ITEM 614, BARRIER REFLECTOR, TYPE 2 (ONE-WAY)
LOCATION 1: 130 EACH

ITEM 614, OBJECT MARKER, ONE-WAY
LOCATION 1: 130 EACH

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE ABOVE ITEM(S).

ITEM 614, WORK ZONE PAVEMENT MARKINGS

THE CONTRACTOR SHALL PLACE ALL WORK ZONE PAVEMENT MARKINGS IN ACCORDANCE WITH **CMS 614.11** AND STANDARD DRAWING **MT-99.20** UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE QUANTITIES BELOW ARE FOR PLACEMENT OF TEMPORARY MARKINGS.

ITEM 614, WORK ZONE LANE LINE, CLASS I, 6", 807 PAINT (SURFACE AND INTERMEDIATE)
LOCATION 1: 19.96 MILE
LOCATION 2: 3.04 MILE

ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT (SURFACE AND INTERMEDIATE)
LOCATION 1: 41.00 MILE
LOCATION 2: 6.08 MILE

ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT (RAMPS) (SURFACE ONLY)
LOCATION 1: 0.54 MILE

ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS I, 12", 807 PAINT (SURFACE AND INTERMEDIATE)
LOCATION 1: 3,010 FEET

ITEM 614, WORK ZONE STOP LINE, CLASS III, 642 PAINT (RAMPS) (SURFACE ONLY)
LOCATION 1: 38 FEET

ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

ITEM 614, REPLACEMENT DRUM
LOCATION 1: 20 EACH
LOCATION 2: 5 EACH

CALCULATED LME CHECKED JSL

MAINTENANCE OF TRAFFIC NOTES

LIC/MUS-70-23.84/0.00

5
35

SEQUENCE OF OPERATIONS

IT IS THE INTENT OF THIS SEQUENCE OF OPERATIONS TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELING PUBLIC. IT MAY BE NECESSARY FOR THE CONTRACTOR TO ALTERNATE BETWEEN PHASES IN ORDER TO MEET WORK RESTRICTIONS FOUND IN ODOT'S "DROP-OFFS IN WORK ZONES" STANDARD DRAWING MT-101.90.

IF THE CONTRACTOR SO ELECTS, HE/SHE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS ARE FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE ENGINEER.

ALL WORK NOT SPECIFIED IN THE SEQUENCE OF OPERATIONS CAN BE COMPLETED ANYTIME DURING THE DURATION OF THE PROJECT AT THE APPROVAL OF THE ENGINEER.

ALL TEMPORARY OR PERMANENT PAVEMENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC

LANES CLOSED IN BOTH THE EASTBOUND AND WESTBOUND DIRECTION SHALL BE AT THE APPROVAL OF THE ENGINEER

PHASE 1:
(1) CLOSE INSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE OUTSIDE LANE AND PAVED SHOULDER
(2) FILL IN RUMBLE STRIPS ON INSIDE SHOULDER WITH ITEM 441 INTERMEDIATE COURSE TO ALLOW FOR MAINTAINING TRAFFIC ON SHOULDER (SEE QUANTITY BELOW) (CLEAN SHOULDER OF DEBRIS IF NECESSARY)
(3) PLACE BARRIER REFLECTORS/ OBJECT MARKERS AT LOCATIONS SPECIFIED IN THE PLANS

PHASE 2: (PERFORM IN ANY ORDER)
(1) PERFORM FULL DEPTH PAVEMENT REPAIRS
(2) PERFORM BRIDGE WORK AND DECK SEALING ON ALL BRIDGES

PHASE 3:
(1) CLOSE OUTSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE INSIDE LANE AND PAVED SHOULDER
(2) PLANE OUTSIDE LANE AND SHOULDER AT DEPTH DETAILED IN PLANS
(3) IMMEDIATELY PLACE ITEM 861, ASPHALT CONCRETE INTERMEDIATE COURSE FOR OUTSIDE LANE AND SHOULDER (RAMP AREAS WHERE APPLICABLE) PER TYPICAL SECTION

PHASE 4:
(1) CLOSE INSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE OUTSIDE LANE AND PAVED SHOULDER
(2) PLANE INSIDE LANE AND SHOULDER AT DEPTHS DETAILED IN PLANS
(3) IMMEDIATELY PLACE ITEM 861, ASPHALT CONCRETE INTEMEDIATE COURSE FOR INSIDE LANE AND SHOULDER PER TYPICAL SECTION

PHASE 5:
(1) CLOSE OUTSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE INSIDE LANE AND PAVED SHOULDER
(2) PLACE ITEM 442, ASPHALT CONCRETE SURFACE COURSE FOR OUTSIDE LANE AND SHOULDER (RAMP AREAS WHERE APPLICABLE) PER TYPICAL SECTION

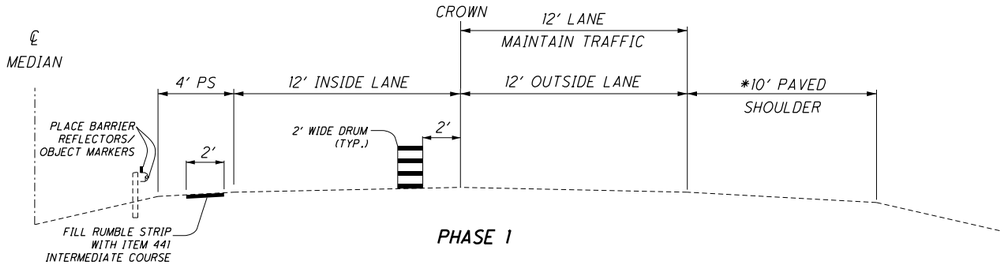
PHASE 6:
(1) CLOSE INSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE OUTSIDE LANE AND PAVED SHOULDER
(2) PLACE ITEM 442, ASPHALT CONCRETE SURFACE COURSE FOR INSIDE LANE AND SHOULDER PER TYPICAL SECTION

PHASE 7:
(1) INSTALL COMPACTED AGGREGATE, 2" DEEP JOINT SEALER, RUMBLE STRIPS, PERMANENT PAVEMENT MARKINGS, AND RAISED PAVEMENT MARKERS. OPEN ROADWAY TO UNRESTRICTED TRAFFIC

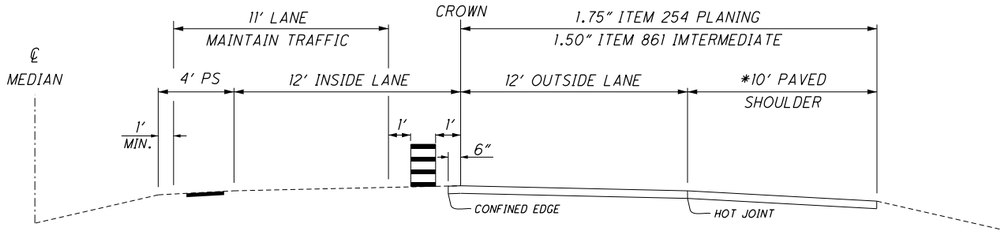
ITEM 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)

THIS ITEM SHALL BE USED TO FILL IN RUMBLE STRIPS FOR MAINTAINING TRAFFIC AS DESCRIBED IN PHASE 1 ABOVE. AVERAGE THICKNESS FOR CALCULATION PURPOSES IS 0.75". THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE LOCATION SUB-SUMMARY.

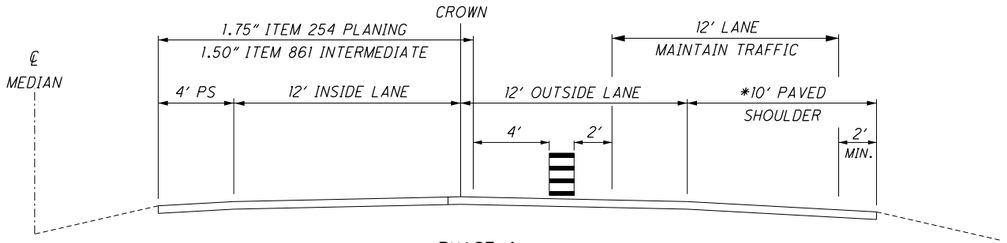
ITEM 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)
LOCATION 1: (28.93-23.84) x 5280' = 26,875 ft - (2(26,875' x 2.0' x (0.75"/12)))/27 **= 250 CU.YD.**
LOCATION 2: (0.76-0.00) x 5280' = 4,013 ft - (2(4,013' x 2.0' x (0.75"/12)))/27 **= 38 CU.YD.**



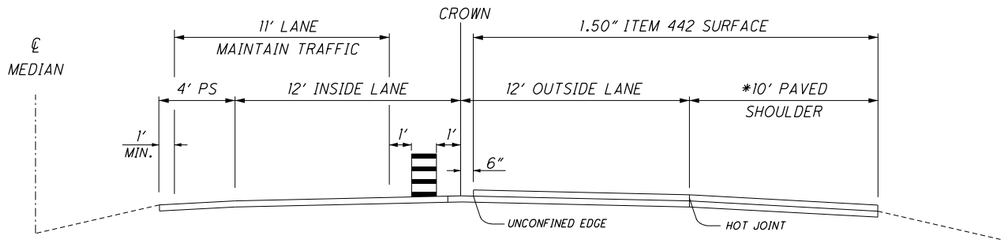
PHASE 1



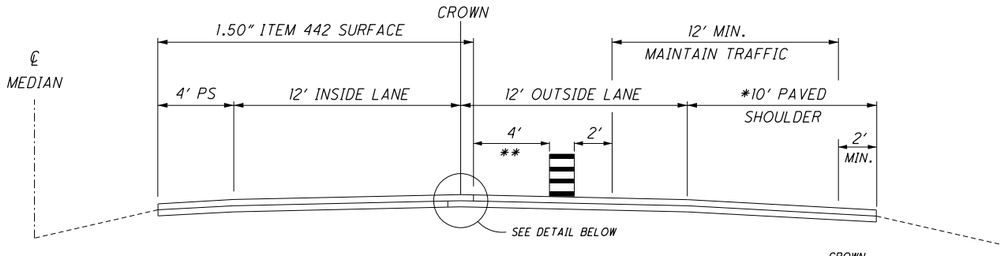
PHASE 3



PHASE 4



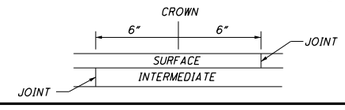
PHASE 5



PHASE 6

* SHOULDER WIDTH VARIES IN RAMP AREAS

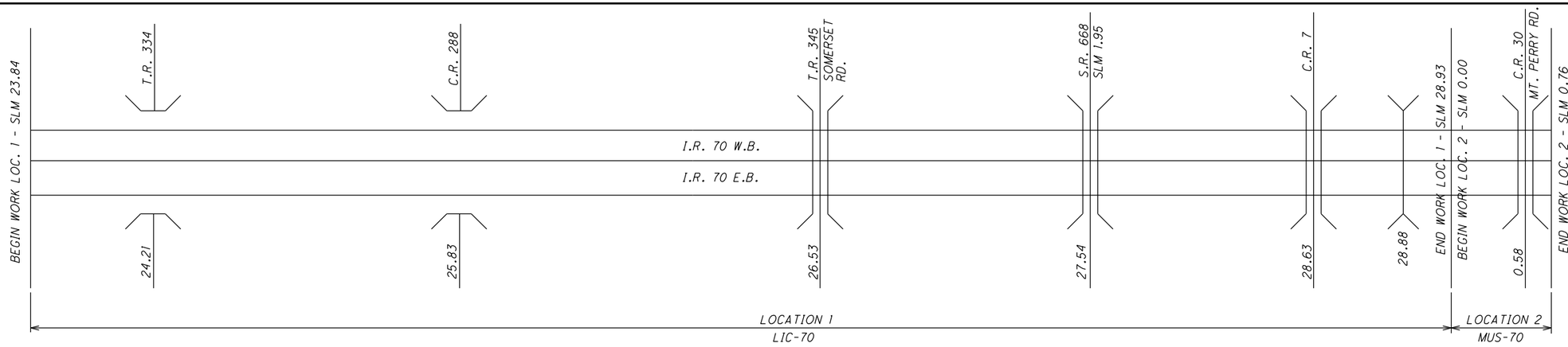
** 4' BUFFER PROVIDED FOR JOINT CORES



CALCULATED LME
CHECKED JSL

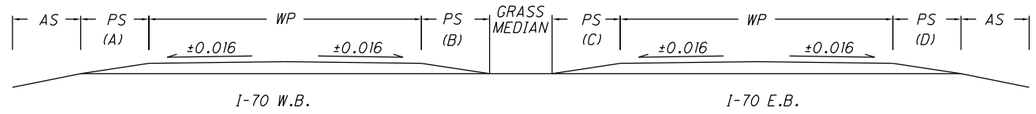
SEQUENCE OF OPERATIONS

LIC/MUS-70-23.84/0.00



TYPICAL 1

AS = AGGREGATE SHOULDER
PS = PAVED SHOULDER
WP = WIDTH OF PAVEMENT



BRIDGE DEDUCTIONS = PAVEMENT WIDTH X (BRIDGE LENGTH + APPROACH LENGTH + 3.00" PAVEMENT PLANING)

PAVEMENT DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		PAVEMENT WIDTH (FEET)	TYPICAL	PAVEMENT AREA	254	407		861		442		
					MILES	LIN. FT.			SQ.YD.	PAVEMENT PLANING, ASPHALT CONCRETE, 1.75" SQ.YD.	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y. GAL.	NON-TRACKING TACK COAT @ 0.05 GAL./S.Y. GAL.	THICKNESS INCH	INTERMEDIATE COURSE, 12.5 MM, TYPE A (446) CU.YD.	ANTI-SEGREGATION EQUIPMENT CU.YD.	THICKNESS INCH	SURFACE COURSE, 12.5 MM, TYPE A (447) CU.YD.
1	LIC	I.R. 70 E.B.	23.84	24.00	0.16	844.80	30.0 Avg.	1	2,816.0	2,816.0	225.3	140.8	1.50	117.4	234.8	1.50	117.4
			24.00	28.93	4.93	26,030.40	24.0	1	69,414.4	69,414.4	5,553.2	3,470.8	1.50	2,892.3	5,784.6	1.50	2,892.3
		I.R. 70 W.B.	23.84	24.00	0.16	844.80	30.0 Avg.	1	2,816.0	2,816.0	225.3	140.8	1.50	117.4	234.8	1.50	117.4
			24.00	28.93	4.93	26,030.40	24.0	1	69,414.4	69,414.4	5,553.2	3,470.8	1.50	2,892.3	5,784.6	1.50	2,892.3
		BRIDGES DEDUCTIONS (FROM SHEET 13)							(28,127.9)	(28,127.9)	(2,250.2)	(1,406.4)	1.50	(1,172.0)	(2,344.0)	1.50	(1,172.0)
		SUB-TOTALS									9,306.8	5,816.8					
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)										**116,332.9**	**15,123.6**			**4,847.4**	**9,694.8**		**4,847.4**
2	MUS	I.R. 70 E.B.	0.00	0.76	0.76	4,012.80	24.0	1	10,700.8	10,700.8	856.1	535.1	1.50	445.9	891.8	1.50	445.9
		I.R. 70 W.B.	0.00	0.76	0.76	4,012.80	24.0	1	10,700.8	10,700.8	856.1	535.1	1.50	445.9	891.8	1.50	445.9
		BRIDGES DEDUCTIONS (FROM SHEET 13)							(4,266.7)	(4,266.7)	(341.3)	(213.3)	1.50	(177.8)	(355.6)	1.50	(177.8)
		SUB-TOTALS									1,370.9	856.9					
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)										**17,134.9**	**2,227.8**			**714.0**	**1,428.0**		**714.0**

CALCULATED LME
CHECKED JSL

PAVEMENT DATA

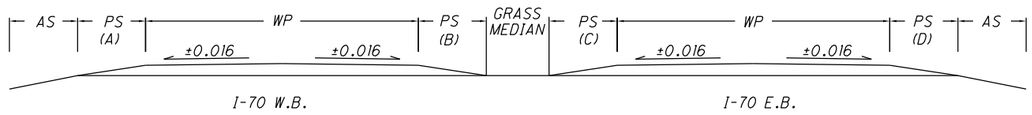
LIC/MUS-70-
23.84/0.00

CALCULATED LME
CHECKED JSL

SHOULDER DATA

AS = AGGREGATE SHOULDER
PS = PAVED SHOULDER
WP = WIDTH OF PAVEMENT

TYPICAL 1

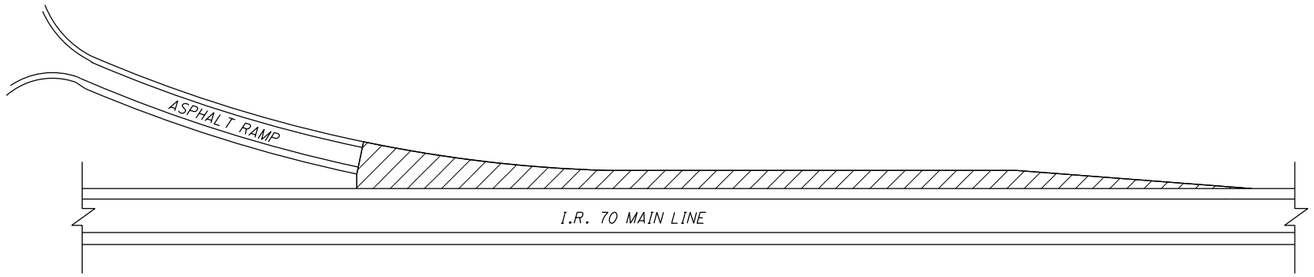


BRIDGE DEDUCTIONS = PAVEMENT WIDTH X (BRIDGE LENGTH + APPROACH LENGTH + 3.00" PAVEMENT PLANING)

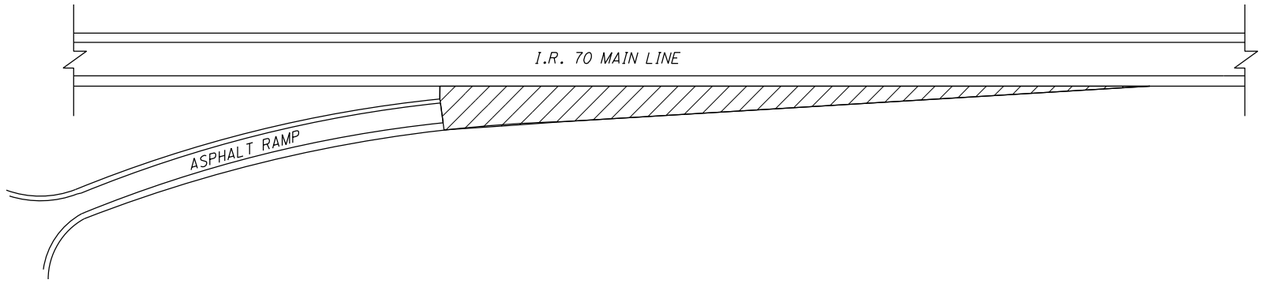
SHOULDER DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		TYPICAL	PAVED SHOULDER WIDTH (FEET)				SHOULDER AREA	254	407		408	861		442		617		618
													PAVEMENT PLANING, ASPHALT CONCRETE, 1.75"	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	NON-TRACKING TACK COAT @ 0.05 GAL./S.Y.	PRIME COAT, AS PER PLAN (@ 0.40 GAL/SY)	THICKNESS	INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (447)	THICKNESS	COMPACTED AGGREGATE, AS PER PLAN (2' WIDE)	RUMBLE STRIPS (ASPHALT CONCRETE)
					MILES	LIN. FT.		A	B	C	D	SQ. YD.	SQ.YD.	GAL.	GAL.	GAL.	INCH	CU.YD.	INCH	CU.YD.	INCH	CU.YD.	MILE
1	LIC	I.R. 70 E.B.	23.84	28.76	4.92	25,977.6	1			4.0	10.0	40,409.6	40,409.6	3,232.8	2,020.5	4,618.3	1.50	1,683.8	1.50	1,683.8	2.00	641.4	9.84
			28.76	28.93	0.17	897.6	1			4.0	14.0	1,795.2	1,795.2	143.7	89.8	159.6	1.50	74.8	1.50	74.8	2.00	22.2	0.34
		I.R. 70 W.B.	23.84	28.76	4.92	25,977.6	1	10.0	4.0			40,409.6	40,409.6	3,232.8	2,020.5	4,618.3	1.50	1,683.8	1.50	1,683.8	2.00	641.4	9.84
			28.76	28.93	0.17	897.6	1	14.0	4.0			1,795.2	1,795.2	143.7	89.8	159.6	1.50	74.8	1.50	74.8	2.00	22.2	0.34
	BRIDGE DEDUCTIONS (FROM SHEET 13)											(17,252.3)	(17,252.3)	(1,380.2)	(862.6)	(150.8)	1.50	(718.8)	1.50	(718.8)	2.00	(20.9)	(0.32)
	SUB-TOTALS													5,372.8	3,358.0								
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)													**67,157.3**	**8,730.8**		**9,405.0**		**2,798.4**		**2,798.4**		**1,306.3**	**20.04**
2	MUS	I.R. 70 E.B.	0.00	0.07	0.07	369.6	1			4.0	14.0	739.2	739.2	59.2	37.0	65.8	1.50	30.8	1.50	30.8	2.00	9.1	0.14
			0.07	0.76	0.69	3,643.2	1			4.0	10.0	5,667.2	5,667.2	453.4	283.4	647.7	1.50	236.2	1.50	236.2	2.00	90.0	1.38
		I.R. 70 W.B.	0.00	0.07	0.07	369.6	1	14.0	4.0			739.2	739.2	59.2	37.0	65.8	1.50	30.8	1.50	30.8	2.00	9.1	0.14
			0.07	0.76	0.69	3,643.2	1	10.0	4.0			5,667.2	5,667.2	453.4	283.4	647.7	1.50	236.2	1.50	236.2	2.00	90.0	1.38
	BRIDGE DEDUCTIONS (FROM SHEET 13)											(2,488.9)	(2,488.9)	(199.1)	(124.4)		1.50	(103.7)	1.50	(103.7)			
	SUB-TOTALS													826.1	516.4								
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)													**10,323.9**	**1,342.5**		**1,427.0**		**430.3**		**430.3**		**198.2**	**3.04**

LIC / MUS-70-23.84 / 0.00



TYPICAL DECELERATION LANE



TYPICAL ACCELERATION LANE

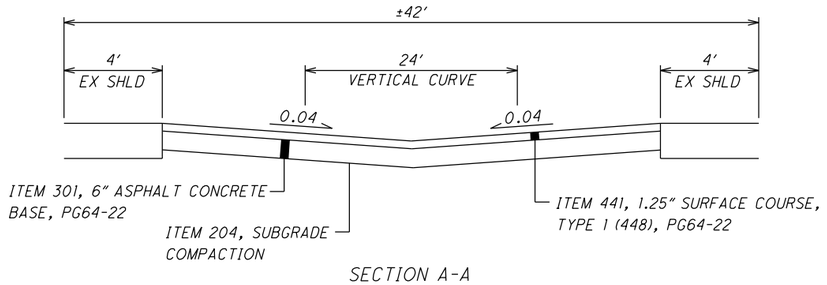
ACCELERATION/DECELERATION AREA

ACCEL/DECEL LANE DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION (SEE DETAILS ABOVE)	AREA CADD MEASURED	254	407		861		442		
					PAVEMENT PLANING, ASPHALT CONCRETE, 1.75"	NON-TRACKING TACK COAT @ 0.08 GAL/S.Y.	NON-TRACKING TACK COAT @ 0.05 GAL/S.Y.	THICKNESS	INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)	ANTI-SEGREGATION EQUIPMENT	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (447)
				SQ. YD.	SQ.YD.	GAL.	GAL.	INCH	CU.YD.	CU.YD.	INCH	CU.YD.
1	LIC	I.R. 70 E.B.	DECELERATION LANE TO S.R. 668	2,228.0	2,228.0	179.0	112.0	1.50	92.9	185.8	1.50	92.9
		I.R. 70 W.B.	ACCELERATION LANE FROM S.R. 668	2,393.0	2,393.0	192.0	120.0	1.50	99.8	199.6	1.50	99.8
			SUB-TOTALS			371.0	232.0					
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)					4,621.0	603.0			192.7	385.4		192.7

CALCULATED LME
CHECKED JSL

LIC/MUS-70-23.84/0.00



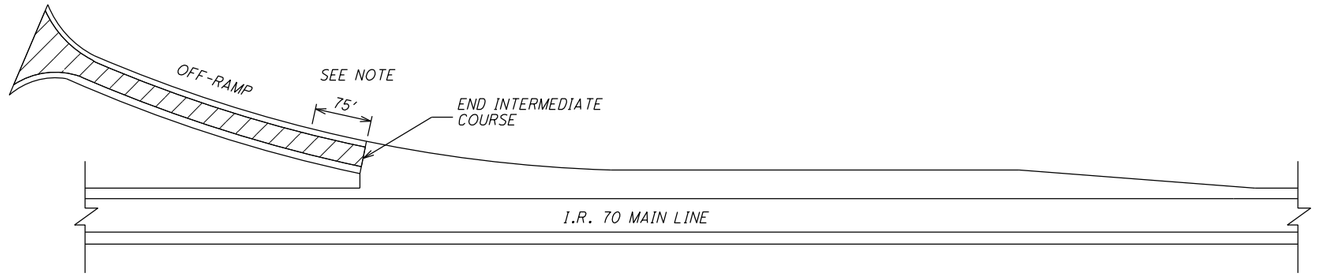
SECTION A-A

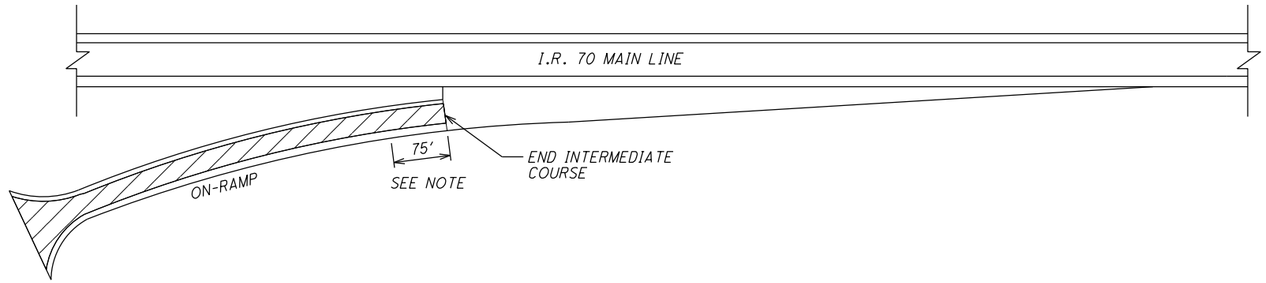
MEDIAN U-TURN DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION	AREA CADD MEASURED	203		204	254	301		407	441		659
					THICKNESS	EXCAVATION	SUBGRADE COMPACTION	PAVEMENT PLANING, ASPHALT CONCRETE, 1.25"	THICKNESS	ASPHALT CONCRETE BASE, PG64-22	NON-TRACKING TACK COAT @ 0.08 GAL/S.Y.	THICKNESS	SURFACE COURSE, TYPE 1, (448), PG64-22	SEEDING AND MULCHING, CLASS 2
				SQ. YD.	INCH	CU.YD.	SQ.YD.	SQ.YD.	INCH	CU.YD.	GAL.	INCH	CU.YD.	SQ. YD.
1	LIC	I.R. 70	END OF MEDIAN BARRIER - SLM 23.86**	954.0				954.0			77.0	1.25	33.2	
			BRIDGE MEDIAN LIC-70-2421**	4,698.0				4,698.0			376.0	1.25	163.2	
			MEDIAN U-TURN - SLM 27.06 (SEE DETAIL ABOVE)	332.7	7.25	67.1	332.7		6.00	55.5	27.0	1.25	11.6	500.0
			BRIDGE MEDIAN LIC-70-2888**	5,600.0				5,600.0			448.0	1.25	194.5	
		** DO NOT DISTURB PAVEMENT UNDER GUARDRAIL/ CABLE RAIL												
LOCATION 1 TOTALS (CARRIED TO GENERAL SUMMARY)						**67.1**	**332.7**	**11,252.0**		**55.5**	**928.0**		**402.5**	**500.0**

CALCULATED LME
CHECKED JSL

LIC/MUS-70-23.84/0.00





RAMP AREA

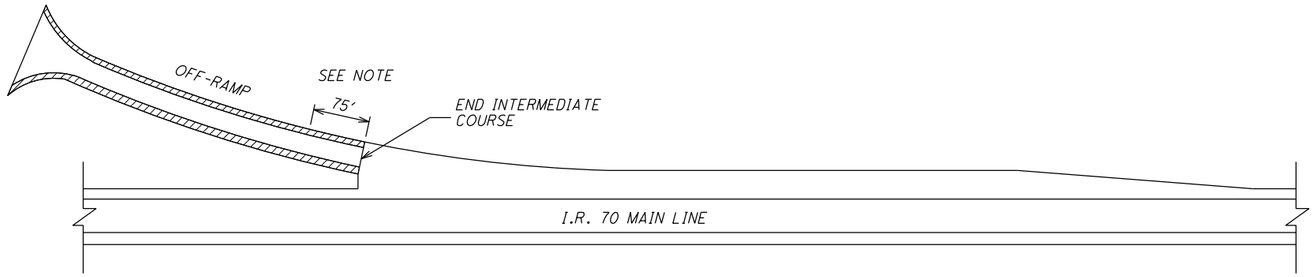
NOTE: TAPER PLANING FROM 1.75" TO 1.50" IN 75' ON RAMP, PLACE SURFACE COURSE ONLY ON RAMP.

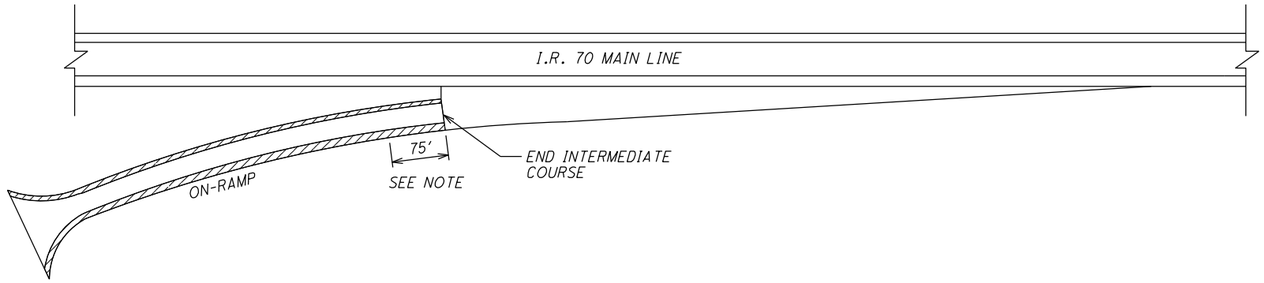
RAMP PAVEMENT DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION (SEE DETAILS ABOVE)	RAMP LENGTH	RAMP WIDTH	RAMP AREA *CADD MEASURED	254 PAVEMENT PLANING, ASPHALT CONCRETE, 1.50"	407 NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	442 THICKNESS	442 SURFACE COURSE, 12.5 MM, TYPE A (447)
				LIN. FT.	FT.	SQ. YD.	SQ.YD.	GAL.	INCH	CU.YD.
1	LIC	I.R. 70 E.B.	S.W. RAMP TO S.R. 668	650.0	16.0	1,155.6	1,155.6	92.5	1.50	48.2
			S.W. RAMP EXTRA AREA	50.0	34.0 (AVG.)	136.7*	136.7	11.0	1.50	5.7
		I.R. 70 W.B.	N.W. RAMP FROM S.R. 668	692.0	16.0	1,230.2	1,230.2	98.5	1.50	51.3
			N.W. RAMP EXTRA AREA	50.0	52.0 (AVG.)	287.4*	287.4	23.0	1.50	12.0
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)							**2,809.9**	**225.0**		**117.2**

CALCULATED LME
CHECKED JSL

LIC/MUS-70-23.84/0.00

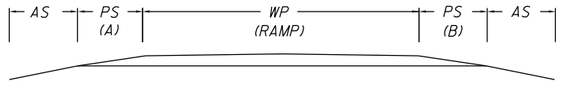




RAMP SHOULDER AREA

NOTE: TAPER PLANING FROM 1.75" TO 1.50" IN 75' ON RAMP, PLACE SURFACE COURSE ONLY ON RAMP.

TYPICAL 1



AS = AGGREGATE SHOULDER
PS = PAVED SHOULDER
WP = WIDTH OF PAVEMENT

RAMP SHOULDER DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION	LENGTH	TYPICAL	PAVED SHOULDER WIDTH (FEET)		SHOULDER AREA	254	407	408	442		617	
									PAVEMENT PLANING, ASPHALT CONCRETE, 1.50"	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	PRIME COAT, AS PER PLAN (@ 0.40 GAL/SY)	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (447)	THICKNESS	COMPACTED AGGREGATE, AS PER PLAN (2' WIDE)
				LIN. FT.		A	B	SQ. YD.	SQ.YD.	GAL.	GAL.	INCH	CU.YD.	INCH	CU.YD.
1	LIC	I.R. 70 E.B.	S.W. RAMP TO S.R. 668	698.0	1	3.0	6.0	698.0	698.0	55.9	124.1	1.50	29.1	2.00	17.2
		I.R. 70 W.B.	N.W. RAMP FROM S.R. 668	768.0	1	3.0	6.0	768.0	768.0	61.5	136.6	1.50	32.0	2.00	19.0
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)									1,466.0	117.4	260.7		61.1		36.2

CALCULATED LME
CHECKED JSL

RAMP SHOULDER DATA

LIC/MUS-70-23.84/0.00

BRIDGE TREATMENT

LOCATION 1:

LIC-70-2421 L/R: BUTT JOINT AT APPROACH SLABS, SEAL DECK AND APPROACH SLABS, POUR ABUTMENT WALL (SEE SHEETS 27-32)

LIC-70-2583 L/R: BUTT JOINT AT APPROACH SLABS, SEAL DECK AND APPROACH SLABS, POUR ABUTMENT WALL (SEE SHEETS 27-32)

LIC-70-2653 (LIC-TR345-0.53): MILL/FILL TO MAINTAIN VERTICAL CLEARANCE, SEAL DECK AND APPROACH SLABS, PATCH PIER COLUMN (SEE SHEET 33)

LIC-70-2754 (LIC-668-0192): MILL/FILL TO MAINTAIN VERTICAL CLEARANCE, SEAL DECK AND APPROACH SLABS

LIC-70-2863 (LIC-TR7-1.81): MILL/FILL TO MAINTAIN VERTICAL CLEARANCE, SEAL DECK AND APPROACH SLABS. PATCH PARAPET (SEE SHEET 34)

LIC-70-2888 L/R: BUTT JOINT AT BRIDGE DECK, SEAL DECK

LOCATION 2:

MUS-70-0058 (MUS-CR30-2.18): MILL/FILL TO MAINTAIN VERTICAL CLEARANCE, SEAL DECK AND APPROACH SLABS

BRIDGE TREATMENT DATA

LOCATION	COUNTY, ROUTE, BRIDGE NO.	SFN	PLAN SPLIT	LENGTH (BRIDGE LIMITS)	WIDTH	AREA	APPROACH SLAB LENGTH	APPROACH SLAB WIDTH	APPROACH SLAB AREA (INCLUDES BOTH APPROACH SLABS)	DETAILS (SEE SHEET 14)	PAVEMENT DEDUCTIONS (CARRIED TO PAVEMENT DATA TABLE)	SHOULDER DEDUCTIONS (CARRIED TO SHOULDER DATA TABLE)	254	407		861		442		512	516
													PAVEMENT PLANING, ASPHALT CONCRETE, 3.00"	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	NON-TRACKING TACK COAT @ 0.05 GAL./S.Y.	THICKNESS	INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)	ANTI-SEGREGATION EQUIPMENT	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (447)	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	2" DEEP JOINT SEALER, AS PER PLAN (A)
				LIN. FT.	LIN. FT.	SQ. YD.	LIN. FT.	LIN. FT.	SQ. YD.		SQ.YD.	SQ.YD.	SY	GAL.	GAL.	INCH	CY	CY	INCH	CY	SY	FT
1	LIC-70-2421L	4504208	2	112	60	746.7	25	60	333.4	1	2,565.3	1,496.4	3,377.8	271.0	169.0	1.50	140.8	177.8	1.50	140.8	1,080.1	120.0
	LIC-70-2421R			112	60	746.7	25	60	333.4	1	2,565.3	1,496.4	3,377.8	271.0	169.0	1.50	140.8	177.8	1.50	140.8	1,080.1	120.0
	LIC-70-2583L	4504267	2	112	58	721.8	25	58	322.3	1	2,565.3	1,496.4	3,377.8	271.0	169.0	1.50	140.8	177.8	1.50	140.8	1,044.1	116.0
	LIC-70-2583R			112	58	721.8	25	58	322.3	1	2,565.3	1,496.4	3,377.8	271.0	169.0	1.50	140.8	177.8	1.50	140.8	1,044.1	116.0
	LIC-70-2653	4504356	2	201	27	603.0	25	24	133.4	2	4,266.7	2,488.9	6,755.6	541.0	338.0	1.50	281.5	355.6	1.50	281.5	736.4	
	LIC-70-2754	4506782	1	224	28	696.9	25	28	155.6	2	4,266.7	2,488.9	6,755.6	541.0	338.0	1.50	281.5	355.6	1.50	281.5	852.5	
	LIC-70-2863	4504445	2	246	27	738.0	25	24	133.4	2	4,266.7	2,488.9	6,755.6	541.0	338.0	1.50	281.5	355.6	1.50	281.5	871.4	
	LIC-70-2888L	4504542	1	100	62	688.9	25	60	333.4	3	2,533.3	1,900.0	3,733.3	299.0	187.0	1.50	155.6	177.8	1.50	155.6	688.9	124.0
	LIC-70-2888R			100	62	688.9	25	60	333.4	3	2,533.3	1,900.0	3,733.3	299.0	187.0	1.50	155.6	177.8	1.50	155.6	688.9	124.0
	BRIDGE DEDUCTIONS (INCLUDES 3.00" PAVEMENT PLANING LIMITS)										(28,127.9)	(17,252.3)										
	SUB-TOTALS													3,305.0	2,064.0							
	LOCATION 1 TOTALS (CARRIED TO BRIDGE GENERAL SUMMARY)												**41,244.6**	**5,369.0**			**1,718.9**	**2,133.6**		**1,718.9**	**8,086.5**	**720.0**
2	MUS-70-0058	6002285	1	243	28	756.0	25	28	155.6	2	4,266.7	2,488.9	6,755.6	541.0	338.0	1.50	281.5	177.8	1.50	281.5	911.6	
	BRIDGE DEDUCTIONS (INCLUDES 3.00" PAVEMENT PLANING LIMITS)										(4,266.7)	(2,488.9)										
	SUB-TOTALS													541.0	338.0							
	LOCATION 2 TOTALS (CARRIED TO BRIDGE GENERAL SUMMARY)												**6,755.6**	**879.0**			**281.5**	**177.8**		**281.5**	**911.6**	

CALCULATED LME
CHECKED JSL

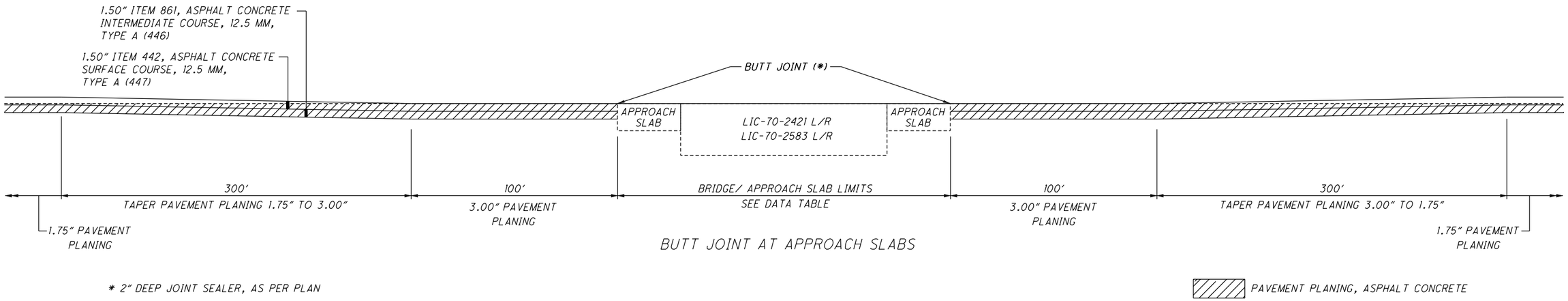
BRIDGE TREATMENT DATA

LIC/MUS-70-23.84/0.00

13
35

CALCULATED LME
CHECKED JSL

DETAIL 1

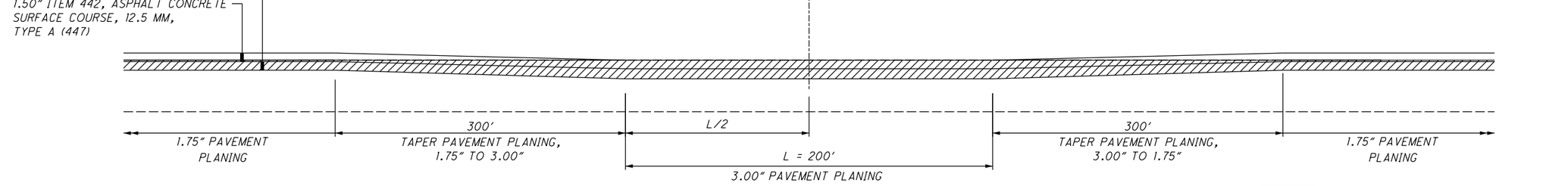


BUTT JOINT AT APPROACH SLABS

* 2" DEEP JOINT SEALER, AS PER PLAN

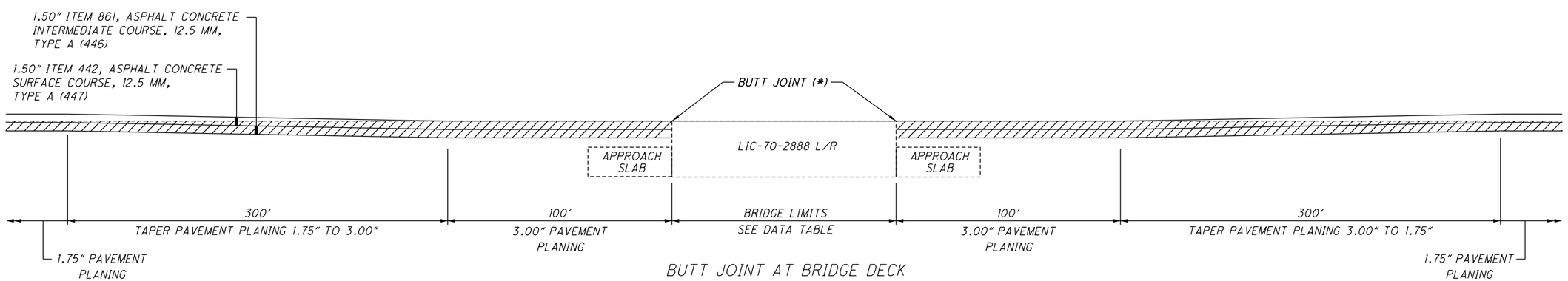
PAVEMENT PLANING, ASPHALT CONCRETE

DETAIL 2



PAVEMENT PLANING, ASPHALT CONCRETE

DETAIL 3



BUTT JOINT AT BRIDGE DECK

* 2" DEEP JOINT SEALER, AS PER PLAN

PAVEMENT PLANING, ASPHALT CONCRETE

BRIDGE TREATMENT DETAILS

LIC/MUS-70-23.84/0.00

LONG LINE MARKING DATA

LOCATION	COUNTY	ROUTE	S.L.M. FROM	S.L.M. TO	TOTAL LENGTH (MILES)	EDGE LINE, 6" (WHITE) HIGHWAY MILES	EDGE LINE, 6" (WHITE) BRIDGE MILES	EDGE LINE, 6" (WHITE) RAMP MILES	EDGE LINE, 6" (YELLOW) HIGHWAY MILES	EDGE LINE, 6" (YELLOW) BRIDGE MILES	EDGE LINE, 6" (YELLOW) RAMP MILES	642 TOTAL EDGE LINE (6")	642 TOTAL LANE LINE (6")	646 TOTAL EDGE LINE (6")	646 TOTAL LANE LINE (6")	646 TOTAL CENTER LINE	REMARKS
					MILES	MILES	MILES	MILES	MILES	MILES	MILES	MILES	MILES	MILES	MILES	MILES	
1	LIC	I.R. 70 E.B.	23.84	28.93	5.09	5.09			5.09			10.18	5.09				4-LANE DIVIDED (12' LANES)
			S.W. RAMP TO S.R. 668		0.13			0.13			0.13	0.26					ASPHALT (16' LANE)
		I.R. 70 W.B.	23.84	28.93	5.09	5.09			5.09			10.18	5.09				4-LANE DIVIDED (12' LANES)
			N.W. RAMP FROM S.R. 668		0.14			0.14			0.14	0.28					ASPHALT (16' LANE)
			BRIDGES														
			LIC-70-2421R		0.04		0.04			0.04				0.08	0.04		
			LIC-70-2421L		0.04		0.04			0.04				0.08	0.04		
			LIC-70-2583R		0.04		0.04			0.04				0.08	0.04		
			LIC-70-2583L		0.04		0.04			0.04				0.08	0.04		
			LIC-70-2653		0.05		0.05			0.05				0.10		0.05	OVERHEAD - T.R. 345
			LIC-668-0195		0.06		0.06			0.06				0.12		0.06	OVERHEAD - S.R. 668
			LIC-70-2863		0.06		0.06			0.06				0.12		0.06	OVERHEAD - T.R. 7
			LIC-70-2888R		0.02		0.02			0.02				0.04	0.02		
			LIC-70-2888L		0.02		0.02			0.02				0.04	0.02		
			DEDUCT FOR BRIDGES									(0.40)	(0.20)				
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)												**20.50**	**9.98**	**0.74**	**0.20**	**0.17**	
2	MUS	I.R. 70 E.B.	0.00	0.76	0.76	0.76			0.76			1.52	0.76				4-LANE DIVIDED (12' LANES)
		I.R. 70 W.B.	0.00	0.76	0.76	0.76			0.76			1.52	0.76				4-LANE DIVIDED (12' LANES)
			BRIDGES														
			MUS-70-0058		0.06		0.06			0.06				0.12		0.06	OVERHEAD - C.R. 30
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)												**3.04**	**1.52**	**0.12**		**0.06**	

AUXILIARY MARKING DATA

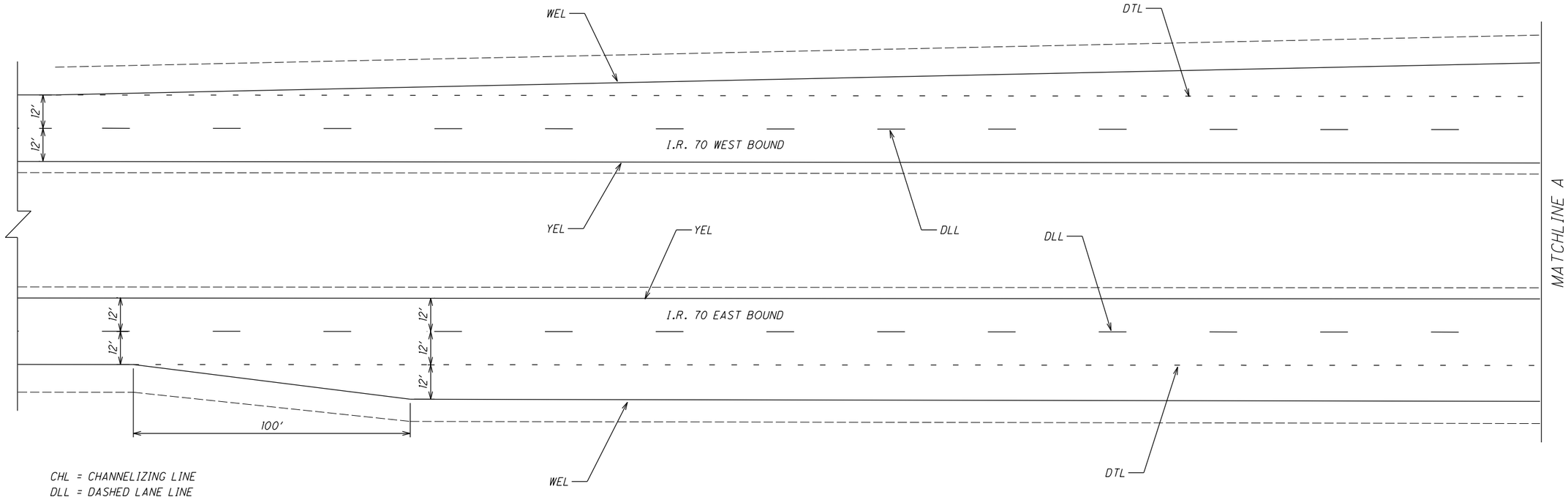
LOCATION	COUNTY	ROUTE	DESCRIPTION	642 CHANNELIZING LINE, 12"	642 DOTTED LINE, 6"	644 STOP LINE	644 WRONG WAY ARROW	REMARKS
				FT	FT.	FT	EACH	
1	LIC	I.R. 70 E.B.	S.W. RAMP TO S.R. 668	655	979	38	2	RAMP AND GORE/DECEL LANE
		I.R. 70 W.B.	N.W. RAMP FROM S.R. 668	850	956			RAMP AND GORE/ACCEL LANE
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)				**1,505**	**1,935**	**38**	**2**	

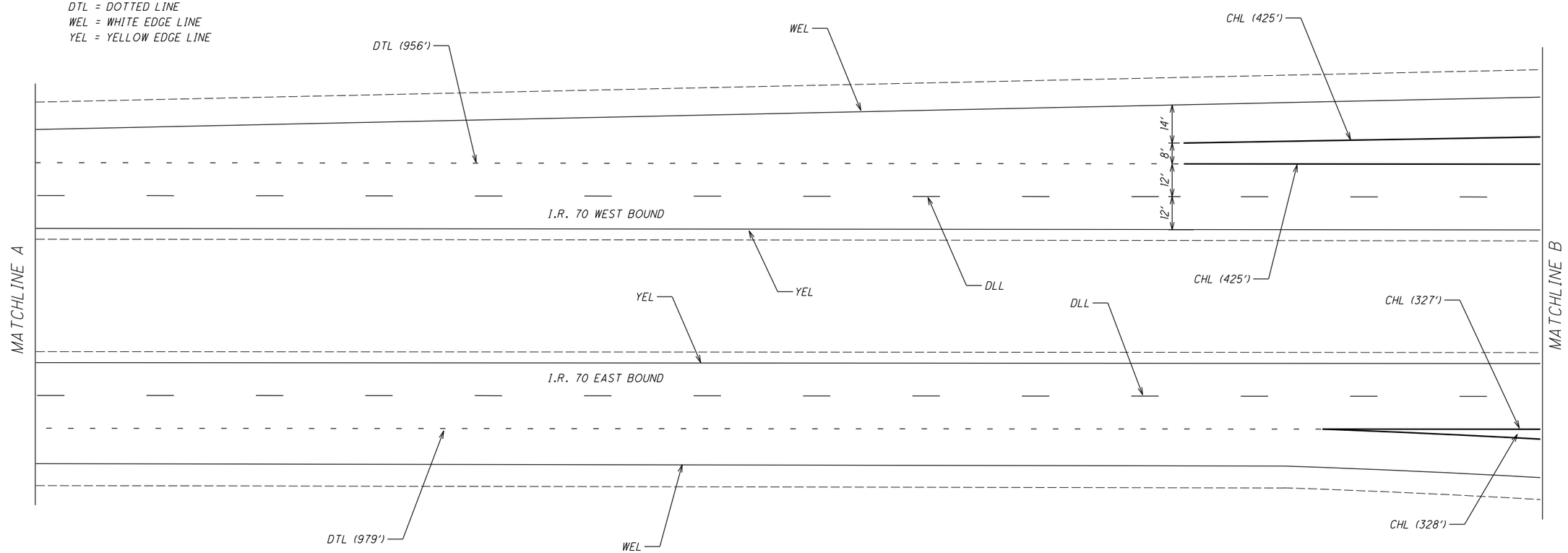
CALCULATED LME CHECKED JSL

PAVEMENT MARKING DATA

LIC/MUS-70-
23.84/0.00

15
35





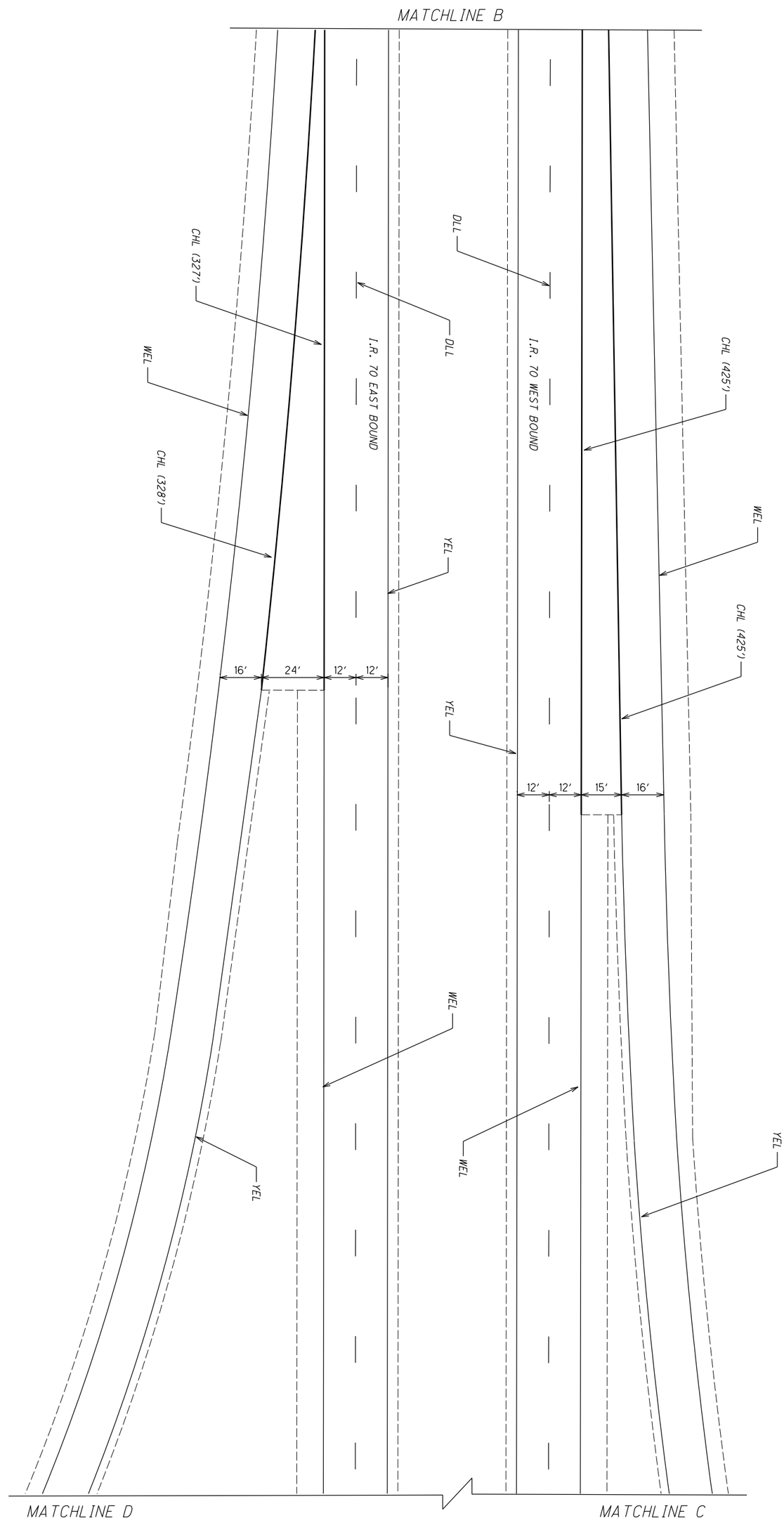
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED LME
CHECKED JSL

PAVEMENT MARKING DETAILS
I.R. 70/S.R. 668 INTERCHANGE

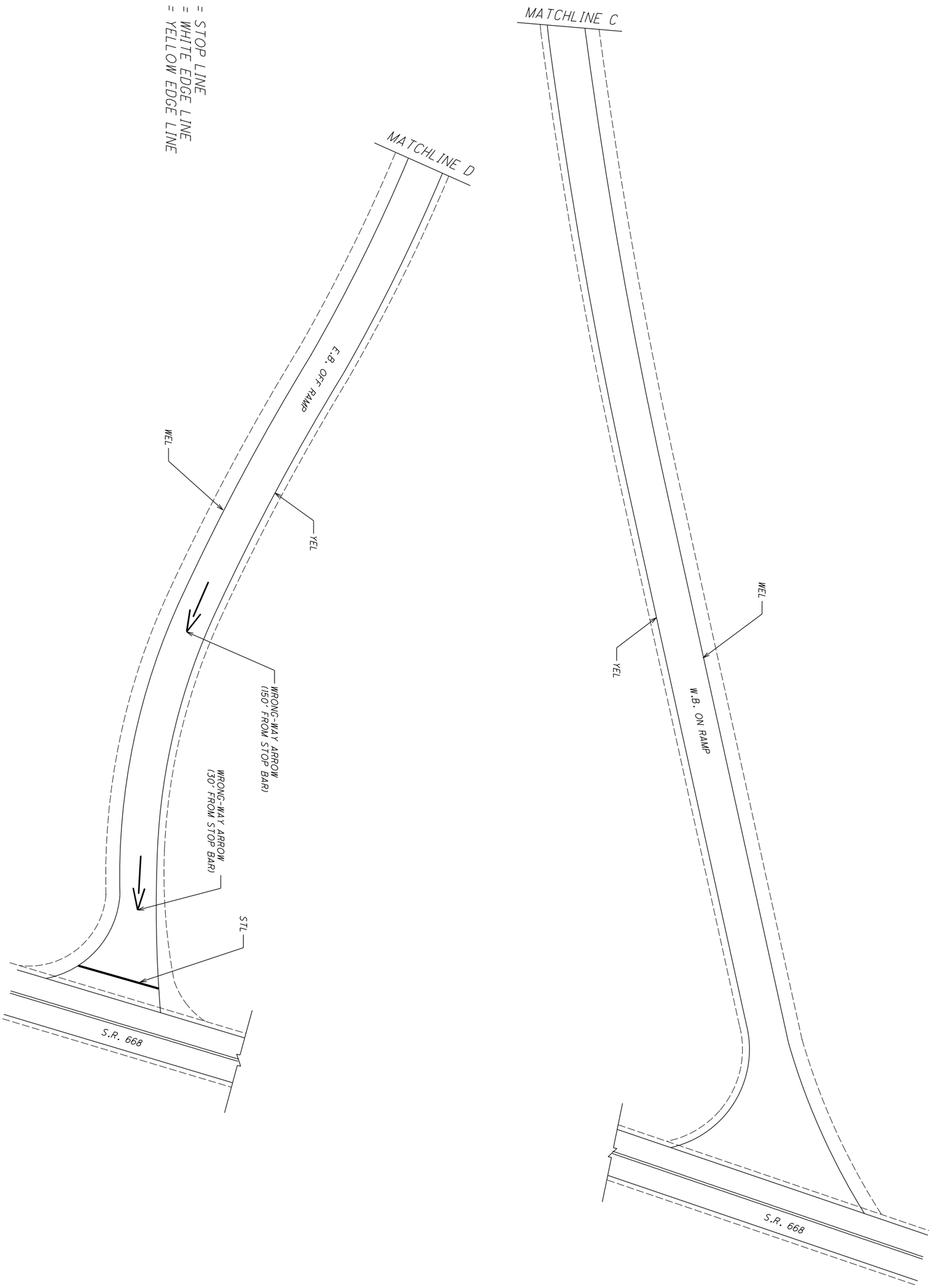
LIC/MUS-70-23.84/0.00

16
35



17/35	LIC/MUS-70-23.84/0.00	PAVEMENT MARKING DETAILS I.R. 70/S.R. 668 INTERCHANGE	CALCULATED LME CHECKED JSL	0 20 10 40 HORIZONTAL SCALE IN FEET

STL = STOP LINE
WEL = WHITE EDGE LINE
YEL = YELLOW EDGE LINE



18/35	LIC/MUS-70-23.84/0.00	PAVEMENT MARKING DETALS I.R. 70/S.R. 668 INTERCHANGE	CALCULATED LME CHECKED JSL	0 20 10 40 HORIZONTAL SCALE IN FEET

DETAIL	SEE SCD TC-65.11
1	TAPERED ACCELERATION LANE
2	DECELERATION LANE
3	MULTILANE DIVIDED
4	4-LANE DIVIDED TO 2-LANE TRANSITION
5	4-LANE UNDIVIDED TO 2-LANE TRANSITION
6	ONE LANE BRIDGE
7	STOP APPROACH (SEE SCD TC-73.20)

DETAIL	SEE SCD TC-65.11
8	THRU APPROACH
9	TWO-WAY LEFT TURN LANE
10	APPROACH WITH LEFT TURN LANE
11	HORIZONTAL CURVE 40' SPACING
12	HORIZONTAL CURVE 20' SPACING
GAP	CENTER LINE AT 80' TYPICAL SPACING
REM	SEE REMARKS

RAISED PAVEMENT MARKER DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		DETAIL	621		PRISMATIC RETRO-REFLECTOR COLORS					REMARKS
										INFORMATION ONLY					
										ONE-WAY		TWO-WAY			
					MILES	LIN.FT.		RPM	RAISED PAVEMENT MARKER REMOVED	WHITE	YELLOW	YELLOW / YELLOW	WHITE / RED	YELLOW / RED	
								EACH	EACH						
1	LIC	I.R. 70 E.B.	23.84	28.93	5.09	26,875	REM	224	224	224					120' SPACING ON LANE LINE
			S.W. RAMP TO S.R. 668		0.13	700	2,7	48	48				33	15	RAMP AND DECEL LANE
		I.R. 70 W.B.	23.84	28.93	5.09	26,875	REM	224	224	224					120' SPACING ON LANE LINE
			N.W. RAMP FROM S.R. 668		0.14	765	1	23	23				12	11	RAMP AND ACCEL LANE
		SUB-TOTALS								448					
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)								**519**	**519**						
2	MUS	I.R. 70 E.B.	0.00	0.76	0.76	4,013	REM	34	34	34					120' SPACING ON LANE LINE
		I.R. 70 W.B.	0.00	0.76	0.76	4,013	REM	34	34	34					120' SPACING ON LANE LINE
		SUB-TOTALS								68					
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)								**68**	**68**						

CALCULATED LME
CHECKED JSL

RAISED PAVEMENT MARKER DATA

LIC/MUS-70-23.84/0.00

LOCATION 1 SHEET TOTALS										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
2			7	8	9	10	11	12	13					
														ROADWAY
						68				203	10000	68	CY	EXCAVATION
						333				204	10000	333	SY	SUBGRADE COMPACTION
														EROSION CONTROL
						500				659	00510	500	SY	SEEDING AND MULCHING, CLASS 2
										832	30000	1,000	EACH	EROSION CONTROL
														PAVEMENT
700										253	02000	700	CY	PAVEMENT REPAIR
						11,252				254	01000	11,252	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.25"
							2,810	1,466		254	01000	4,276	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.50"
			116,333	67,158	4,621					254	01000	188,112	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.75"
									41,245	254	01000	41,245	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 3.00"
						56				301	46000	56	CY	ASPHALT CONCRETE BASE, PG64-22
			15,124	8,731	603	928	225	118	5,369	407	20000	31,098	GAL	NON-TRACKING TACK COAT
				9,405				261		408	10001	9,666	GAL	PRIME COAT, AS PER PLAN
						403				441	50000	403	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22
			9,695		386				2,134	442	00100	12,215	CY	ANTI-SEGREGATION EQUIPMENT
			4,848	2,799	193		118	62	1,719	442	10300	9,739	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447)
									8,087	512	10300	8,087	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN
									720	516	31011	720	FT	2" DEEP JOINT SEALER, AS PER PLAN (A)
				1,307				37		617	10101	1,344	CY	COMPACTED AGGREGATE, AS PER PLAN
				20.04						618	40600	20.04	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)
			4,848	2,799	193				1,719	861	11100	9,559	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)
LS										SPECIAL	69098400		LS	PAVER MOUNTED THERMAL PROFILING (PMTP)

CALCULATED LME CHECKED JSL

LOCATION 1 SUB-SUMMARY

LIC/MUS-70-23.84/0.00

LOCATION 1 SHEET TOTALS										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
2	3	4	5	6				15	19					
														TRAFFIC CONTROL
									519	621	00100	519	EACH	RPM
									519	621	54000	519	EACH	RAISED PAVEMENT MARKER REMOVED
								20.50		642	00104	20.50	MILE	EDGE LINE, 6", TYPE 1
								9.98		642	00204	9.98	MILE	LANE LINE, 6", TYPE 1
								1,505		642	00404	1,505	FT	CHANNELIZING LINE, 12", TYPE 1
								1,935		642	01510	1,935	FT	DOTTED LINE, 6", TYPE 1
2										642	40001	2	EACH	SPEED MEASUREMENT MARKING, AS PER PLAN
								38		644	00500	38	FT	STOP LINE
								2		644	01360	2	EACH	WRONG WAY ARROW
								0.74		646	10010	0.74	MILE	EDGE LINE, 6"
								0.20		646	10110	0.20	MILE	LANE LINE, 6"
								0.17		646	10200	0.17	MILE	CENTER LINE
														MAINTENANCE OF TRAFFIC
				250						441	50200	250	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)
		500								614	11110	500	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
			20							614	12600	20	EACH	REPLACEMENT DRUM
	49									614	13000	49	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
			130							614	13312	130	EACH	BARRIER REFLECTOR, TYPE 2 (ONE WAY)
			130							614	13350	130	EACH	OBJECT MARKER, ONE WAY
			8							614	18601	8	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
			19.96							614	20056	19.96	MILE	WORK ZONE LANE LINE, CLASS I, 6", 807 PAINT
			41.54							614	22056	41.54	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT
			3,010							614	23110	3,010	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 807 PAINT
			38							614	26610	38	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT
		12								808	18700	12	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY

CALCULATED LME
CHECKED JSL

LOCATION 1 SUB-SUMMARY

LIC/MUS-70-23.84/0.00

LOCATION 2 SHEET TOTALS										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
2	3	4	5	6	7	8	13	15	19					
														PAVEMENT
100										253	02000	100	CY	PAVEMENT REPAIR
					17,135	10,324				254	01000	27,459	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.75"
							6,756			254	01000	6,756	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 3.00"
					2,228	1,343	879			407	20000	4,450	GAL	NON-TRACKING TACK COAT
						1,427				408	10001	1,427	GAL	PRIME COAT, AS PER PLAN
					1,428		178			442	00100	1,606	CY	ANTI-SEGREGATION EQUIPMENT
					714	431	282			442	10300	1,427	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447)
							912			512	10300	912	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN
						199				617	10101	199	CY	COMPACTED AGGREGATE, AS PER PLAN
						3.04				618	40600	3.04	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)
					714	431	282			861	11100	1,427	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)
LS										SPECIAL	69098400		LS	PAVER MOUNTED THERMAL PROFILING (PMTP)
														TRAFFIC CONTROL
									68	621	00100	68	EACH	RPM
									68	621	54000	68	EACH	RAISED PAVEMENT MARKER REMOVED
								3.04		642	00104	3.04	MILE	EDGE LINE, 6", TYPE 1
								1.52		642	00204	1.52	MILE	LANE LINE, 6", TYPE 1
								0.12		646	10010	0.12	MILE	EDGE LINE, 6"
								0.06		646	10200	0.06	MILE	CENTER LINE
														MAINTENANCE OF TRAFFIC
				38						441	50200	38	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)
		100								614	11110	100	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
			5							614	12600	5	EACH	REPLACEMENT DRUM
	7									614	13000	7	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
			2							614	18601	2	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
			3.04							614	20110	3.04	MILE	WORK ZONE LANE LINE, CLASS I, 6", 642 PAINT
			6.08							614	22110	6.08	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT
		6								808	18700	6	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY

CALCULATED LME CHECKED JSL

LOCATION 2 SUB-SUMMARY

LIC/MUS-70-23.84/0.00

22
35

I:\ProjectData\LIC\II3922\Design\Roadway\Sheets\II3922_GS003.dgn Sheet 6/3/2021 12:15:50 PM jlutzi

LOCATION TOTALS		FUNDING SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
1	2	01/IMS/PV	02/IMS/BR						
								ROADWAY	
68		68		203	10000	68	CY	EXCAVATION	
333		333		204	10000	333	SY	SUBGRADE COMPACTION	
								EROSION CONTROL	
500		500		659	00510	500	SY	SEEDING AND MULCHING, CLASS 2	
1,000		500	500	832	30000	1,000	EACH	EROSION CONTROL	
								PAVEMENT	
700	100	800		253	02000	800	CY	PAVEMENT REPAIR	
11,252		11,252		254	01000	11,252	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.25"	
4,276		4,276		254	01000	4,276	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.50"	
188,112	27,459	215,571		254	01000	215,571	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.75"	
41,245	6,756	48,001		254	01000	48,001	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 3.00"	
56		56		301	46000	56	CY	ASPHALT CONCRETE BASE, PG64-22	
31,098	4,450	35,548		407	20000	35,548	GAL	NON-TRACKING TACK COAT	
9,666	1,427	11,093		408	10001	11,093	GAL	PRIME COAT, AS PER PLAN	2
403		403		441	50000	403	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
12,215	1,606	13,821		442	00100	13,821	CY	ANTI-SEGREGATION EQUIPMENT	
9,739	1,427	11,166		442	10300	11,166	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447)	
8,087	912	3,142	5,857	512	10300	8,999	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
720		720		516	31011	720	FT	2" DEEP JOINT SEALER, AS PER PLAN (A)	2
1,344	199	1,543		617	10101	1,543	CY	COMPACTED AGGREGATE, AS PER PLAN	2
20.04	3.04	23.08		618	40600	23.08	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
9,559	1,427	10,986		861	11100	10,986	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)	
LS	LS	LS		SPECIAL	69098400		LS	PAVER MOUNTED THERMAL PROFILING (PMTP)	2

CALCULATED LME
CHECKED JSL

GENERAL SUMMARY

LIC/MUS-70-23.84/0.00

LOCATION TOTALS		FUNDING SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
1	2	01/IMS/PV	02/IMS/BR						
								TRAFFIC CONTROL	
519	68	587		621	00100	587	EACH	RPM	
519	68	587		621	54000	587	EACH	RAISED PAVEMENT MARKER REMOVED	
20.50	3.04	23.54		642	00104	23.54	MILE	EDGE LINE, 6", TYPE 1	
9.98	1.52	11.50		642	00204	11.50	MILE	LANE LINE, 6", TYPE 1	
1,505		1,505		642	00404	1,505	FT	CHANNELIZING LINE, 12", TYPE 1	
1,935		1,935		642	01510	1,935	FT	DOTTED LINE, 6", TYPE 1	
2		2		642	40001	2	EACH	SPEED MEASUREMENT MARKING, AS PER PLAN	2
38		38		644	00500	38	FT	STOP LINE	
2		2		644	01360	2	EACH	WRONG WAY ARROW	
0.74	0.12		0.86	646	10010	0.86	MILE	EDGE LINE, 6"	
0.20			0.20	646	10110	0.20	MILE	LANE LINE, 6"	
0.17	0.06		0.23	646	10200	0.23	MILE	CENTER LINE	
								STRUCTURE REPAIR (VARIOUS)	
								SEE SHEET 27 FOR BRIDGE GENERAL SUMMARY	
								MAINTENANCE OF TRAFFIC	
250	38	288		441	50200	288	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)	
500	100	600		614	11110	600	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	4
20	5			614	12600	25	EACH	REPLACEMENT DRUM	5
49	7	56		614	13000	56	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
130		130		614	13312	130	EACH	BARRIER REFLECTOR, TYPE 2 (ONE WAY)	
130		130		614	13350	130	EACH	OBJECT MARKER, ONE WAY	
8	2	10		614	18601	10	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	5
19.96	3.04	23.00		614	20056	23.00	MILE	WORK ZONE LANE LINE, CLASS I, 6", 807 PAINT	
41.54	6.08	47.62		614	22056	47.62	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT	
3,010		3,010		614	23110	3,010	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 807 PAINT	
38		38		614	26610	38	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
12	6	18		808	18700	18	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	4
								INCIDENTALS	
				614	11000		LS	MAINTAINING TRAFFIC	
				623	10000		LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
				624	10000		LS	MOBILIZATION	

CALCULATED LME
CHECKED JSL

GENERAL SUMMARY

LIC/MUS-70-23.84/0.00

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:
N/A DATED: N/A

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
800 DATED: (SEE TITLE SHEET)
832 DATED: (SEE TITLE SHEET)

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

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.

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.

ITEM 614, MAINTAINING TRAFFIC

SEE SHEET 3 FOR MAINTENANCE OF TRAFFIC NOTES WRITTEN IN THIS PLAN FOR THE MINIMUM LANES OF TRAFFIC IN EACH DIRECTION THAT WILL BE MAINTAINED AT ALL TIMES.

ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

UTILIZE THE SOUNDING METHODS FOR DETERMINING UNSOUND CONCRETE AS PER C&MS 519 TO DETERMINE THE LOCATIONS OF CONCRETE REMOVAL ALONG THE FACE OF THE ABUTMENT BREASTWALLS. ALL CONCRETE REMOVED FROM THE BREASTWALL FACE DOWN TO THE TOP OF FOOTER SHALL BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. NO REMOVALS SHALL BE DEEPER THAN 7½" FROM THE FACE OF THE EXISTING ABUTMENTS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. FOLLOWING THE CHIPPING HAMMER REMOVALS, UTILIZE WATER AND/OR ABRASIVE BLASTING METHODS, AS DESCRIBED IN C&MS 512.03.F, TO REMOVE DUST, DIRT, OIL, WAX, CURING COMPOUNDS, EFFLORESCENCE, LAITANCE, COATINGS AND OTHER FOREIGN MATERIALS FROM ALL BREASTWALL & FOOTING SURFACES THAT WILL ADJOIN THE PROPOSED CONCRETE POUR(S). ENSURE THAT ALL WASTES GENERATED BY THE SURFACE PREPARATION OPERATION ARE MANAGED IN ACCORDANCE WITH 107.19. SURFACE PROFILING AND SURFACE CAVITY/DEFECT REPAIRS DESCRIBED IN C&MS 512.03.F, NEED NOT BE PERFORMED.

THE DEPARTMENT WILL MEASURE THE QUANTITY ON A CU.YD. BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITY AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

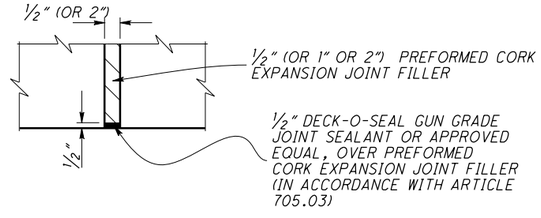
IN LIEU OF THE PAYABLE WORK EXTENTS DESCRIBED THE ODOT C&MS SECTION 503, THIS ITEM WILL INCLUDE ALL ENCOUNTERED MATERIAL NECESSARY TO REMOVE AND REINSTALL, AS SHOWN IN THE PLAN, IN ORDER TO COMPLETE THE WORK AT THE ABUTMENT FACES. ALL EXISTING ROCK CHANNEL PROTECTION, CRUSHED AGGREGATE, OR OTHER EXISITNG SLOPE PROTECTION MATERIAL REMOVED TO PROVIDE ACCESS FOR THE ABUTMENT REHABILITATION WILL BE REINSTALLED TO COMPLETE THE WORK AND THIS ITEM. THE SLOPE PROTECTION MATERIALS WILL BE PLACED TO BLANKET THE OTHER FILL MATERIALS PLACED INITIALLY SO THAT THE THE FINISHED SLOPE WILL FOLLOW THE FINAL GRADE LINES SHOWN IN THE PLAN. THE LIMITS SHOWN IN THE PLAN ARE AN APPROXIMATION OF WHAT WILL BE NECESSARY. MODIFATIONS OF THE WORK LIMITS SHOWN MAY BE PROPOSED TO THE FIELD ENGINEER AND, IF APPROVED, THE ADDITIONAL OR REDUCED WORK WILL BE INCIDENTAL TO THIS ITEM'S MEASURED QUANTITY AND PAYMENT. IF NECESSARY TO SUPPLEMENT THE EXISITNG SLOPE PROTECTION QUANTITIY PRESENT AT THE SITE, CONCRETE REMOVED FROM THE EXISITNG STRUCTURE MAY BE USED FOR THIS ITEM PROVIDING THAT ALL RE-STEEL FROM THE CONCRETE IS TRIMMED/REMOVED AND THE MATERIAL IS SIZED TO MATCH THE EXISTING AVERAGE. THE ACCEPTABLE MATERIAL FOR REINSTALLATION WILL BE AS DIRECTED BY THE ENGINEER.

THE DEPARTMENT WILL MEASURE THE QUANTITY ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITY AT THE CONTRACT PRICE FOR ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN.

ITEM 516 - 1/2" (OR 1" OR 2") PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

ALL ½" (OR 1" OR 2") P.E.J.F. CALLED FOR IN THE PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH ARTICLE 705.03). RECESS JOINT FILLER ½" FOR ALL JOINTS (SEE DETAIL). SEAL ALL JOINTS WITH DECK-O-SEAL GUN GRADE-JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE GRAY. APPROVED MANUFACTURER'S APPLICATION METHODS SHALL BE FOLLOWED DURING SURFACE PREPARATION AND APPLICATION FOR MAXIMUM EFFECTIVENESS.

DECK-O-SEAL
P.O. BOX 397
HAMPSHIRE, IL 60140
PHONE: 800-542-7665



PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - ½" (OR 1" OR 2") PEJF, A.P.P., SQ.FT., AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK DESCRIBED.

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN (B)

FOR THE BRIDGE LOCATIONS PROVIDED REMOVE ANY EXISTING SEAL MATERIAL, FOREIGN MATERIAL, AND DEBRIS FROM THE EXISTING JOINT BETWEEN THE APPROACH SLAB AND THE ABUTMENT BACKWALL (OR DECK END). ANY SPALLS ADJACENT TO THE JOINT LESS THAN OR EQUAL TO 2" SHALL BE CLEANED AND SEALED WITH THIS ITEM. FOR SPALLS GREATER THAN 2" REFER TO CONCRETE PATCHING ITEMS IN THIS PLAN.

IF ONLY A SAWCUT EXISTS AT THIS LOCATION, PERFORM A NEW SAWCUT TO ESTABLISH A ½" (MIN.) WIDE X 2¼"(MIN.) DEEP CLEAN JOINT ALONG THIS INTERFACE. ONCE THE JOINT HAS BEEN OPENED OR CREATED, AIRBLAST THOROUGHLY PRIOR TO PLACEMENT OF HOT APPLIED JOINT SEALER AS PER 705.04 AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN.

ITEM 511 - CONCRETE, MISC.: PUMPED SELF CONSOLIDATING CONCRETE

IN ADDITION TO THE WORK ITEMS REQUIRED IN 511, THIS ITEM WILL INCLUDE THE DEVELOPMENT, DELIVERY AND PLACEMENT OF A CLASS QC2 SELF CONSOLIDATING CONCRETE MIX DESIGN AS DESCRIBED PER SUPPLEMENT 1126.

PROVIDE A CONCRETE MIX WITH THE FOLLOWING PROPERTIES:
SELF-CONSOLIDATING CONCRETE (SCC): WHEN REQUIRED IN THE DESIGN PLANS OR APPROVED BY THE ENGINEER, PROVIDE AN SCC MIX THAT IS FLOWABLE, NON-SEGREGATING CONCRETE THAT CAN SPREAD INTO PLACE, FILL THE FORMWORK, AND ENCAPSULATE THE REINFORCEMENT WITHOUT MECHANICAL CONSOLIDATION.

ESTABLISH QUALITY CONTROL PROCEDURES IN THE QUALITY CONTROL PLAN FOR SCC CONCRETE. SET THE TARGET SLUMP FLOW FOR THE MIX AND MAINTAIN THE FLOW WITHIN ± 2 INCHES. VISUALLY INSPECT THE STABILITY OF THE MIX TO ENSURE THAT THERE IS NO AGGREGATE PILE IN THE MIDDLE OF, NOR MORTAR HALO IN EXCESS OF ½ INCH ON THE LEADING EDGE OF THE SLUMP FLOW TEST PILE. TEST THE SLUMP FLOW ACCORDING TO ASTM C1611.

THIS SCC CONCRETE IS BEING UTILIZED TO BEST FILL THE FORMWORK, WHERE SPECIFIED IN THIS PLAN.

ADDITIONALLY, PROVIDE A CONCRETE MIX AT A SLUMP THAT ALLOWS THE CONCRETE MIX TO BE PUMPED THROUGH AN ACCESS HOLE(S) IN THE FACE OF A VERTICAL FORM(S), SELF CONSOLIDATED, AND THEN PRESSURIZED, FILLING THE FORMWORK TIGHT TO THE UNDERSIDE OF THE DECK SLAB OR DIAPHRAGM.

ACCESS HOLES MAY BE PROVIDED AT A MINIMUM SPACING OF 6 FEET. USE THE ACCESS HOLES TO DELIVER THE CONCRETE. IF MULTIPLE ACCESS HOLES ARE UTILIZED, THOSE NOT USED FOR FINAL CONCRETE DELIVERY SHALL BE BLOCKED PRIOR TO PRESSURE FILLING THE UPPER PORTION OF THE FORMWORK. DRILL 1" BREATHING/MONITORING HOLES IN THE VERTICAL FORMS WITHIN 6 INCHES OF THE TOP OF THE FORMS (BOTTOM OF THE DECK) SPACED BETWEEN 3 AND 5 FEET AND ELSEWHERE THROUGHOUT THE FORMWORK AS DIRECTED BY THE ENGINEER.

PUMP THE CONCRETE INTO THE FORMS UNTIL FULL AND ALL AIR VOIDS ARE DETERMINED TO HAVE BEEN ELIMINATED. THE ENGINEER WILL USE THE 1 INCH BREATHING/MONITORING HOLES DRILLED INTO THE VERTICAL FORMS TO DETERMINE WHEN THE AIR VOIDS HAVE BEEN ELIMINATED, (I.E. WHEN CONCRETE SEEPS FROM THE BREATHING/MONITORING HOLES).

ASSURE THE CONCRETE HAS COMPLETELY FILLED THE FORMS UP TO THE BOTTOM OF THE DECK BEFORE MOVING OPERATIONS TO ANOTHER POUR. USE VIBRATION EQUIPMENT TO HELP CONSOLIDATE THE CONCRETE MIX.

THE CONTRACTOR SHALL PROVIDE FORMWORK TO WITHSTAND THE PRESSURE REQUIRED TO PLACE CONCRETE BY THIS PUMPING/PRESSURIZATION METHOD.

DURING THE CONCRETE OPERATIONS, ASSURE THE REPRESENTATIVES OF THE READY MIX PRODUCER AND THE CHEMICAL ADMIXTURE MANUFACTURER ARE ON SITE TO DETERMINE ANY ADJUSTMENTS REQURIED TO COMPLETE THE CONCRETE PLACEMENT.

WHEN THE FORMWORK IS REMOVED, THE PROJECT ENGINEER WILL DETERMINE IF THE NEW CONCRETE IS FLUSH WITH THE UNDERSIDE OF THE CONCRETE ABOVE. IF THERE ARE VOIDS FOUND BETWEEN THE NEW CONCRETE AND THE UNDERSIDE OF THE CONCRETE ABOVE, THEN THE CONTRACTOR WILL PRESSURE GROUT THE VOIDS UNTIL ALL MATERIAL IS FOUND TO BE IN CONTACT WITH ONE ANOTHER. THE GROUT MATERIAL WILL ACHIEVE AT LEAST 4000 PSI IN 7 DAYS AND CONSIST OF CEMENT AND SAND MEETING ODOT MATERIALS SPECIFICATIONS.

A PROPOSED FORM PUMPING SYSTEM MEETING ALL REQURIEMENTS OF THIS ITEM MUST BE SUBMITTED AND ACCEPTED BY THE PROJECT ENGINEER PRIOR TO THE INSTALLATION OF ANY FORMWORK. A TEST AREA ON THE FIRST BRIDGE ABUTMENT TO BE DONE SHALL BE USED TO DETERMINE THE PERFORMANCE OF THE PROPOSED PUMPING SYSTEM. UPON COMPLETING THE TEST SECTION, THE PROJECT ENGINEER SHALL INSPECT THE AREA FOR THE PRESENCE OF AIR VOIDS TO ENSURE THAT ALL AREAS ARE FILLED. UPON APPROVAL OF THE TEST AREA BY THE PROJECT ENGINEER, THE CONTRACTOR MAY USE THE APPROVED FORM PUMPING SYSTEM.

ALL PROPOSED CONCRETE WORK IS TO BE PERFORMED FROM BENEATH THE STRUCTURE.

ALL FORMWORK/WORK NECESSARY AS DESCRIBED ABOVE SHALL BE INCIDENTAL TO ITEM 511.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITY OF CUBIC YARDS.

PAYMENT WILL INCLUDE FORMWORK, DEVELOPMENT AND PLACEMENT OF THE SELF CONSOLIDATING CONCRETE MIX, PRESSURE GROUTING, EXCAVATION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS ITEM.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
CLZ	JDR	JDR	03/15/21	4504208/4504267
CHECKED	REVISED			
JSL				

BRIDGE NOTES
BRIDGE NO. LIC-70-2421 AND 2583
I.R. 70 OVER T.R. 334 AND C.R 288

LIC/MUS-70-23.84/0.00
PID No. 113922

1 / 11

25 / 35

ITEM 202 - PORTION OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

REMOVE THE PORTIONS OF STRUCTURE AS DETAILED BY THE PLAN AND MARKED BY THE FIELD ENGINEER. THE FIELD ENGINEER WILL THEN SOUND THE CONCRETE AT THE REMOVAL LIMIT TO DETERMINE IF FURTHER REMOVAL IS NECESSARY AND THEN INDICATE, TO THE CONTRACTOR, ANY FURTHER PORTIONS OF STRUCTURE TO BE REMOVED FOR REPLACEMENT. THE TEMPORARY SUPPORT OF ANY RESTEEL, JOINT ARMORS, OR OTHER STRUCTURAL APPURTENANCES, THAT MAY BECOME NECESSARY DUE TO THIS ITEM IS INCLUDED FOR PAYMENT WITH THIS ITEM.

THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES AND AS SHOWN IN THIS PLAN. PERFORM WORK CAREFULLY DURING REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE RELIED ON DURING THE REMOVAL PROCESS. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF TRAFFIC: THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) AS PER CMS 2019 501.05.B.2.

ALL CONCRETE REMOVED SHALL BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. FOLLOW C.M.S. SECTION, 519 TO PROPERLY EXTEND THE LIMITS OF REMOVAL AS DIRECTED BY THE ENGINEER OR SHOWN IN THIS PLAN AND FOR PREPARING THE REMOVED AREAS FOR THE PLACEMENT OF ITEM #2 SHOWN ON THIS SHEET.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A CUBIC YARD BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, (SUPERSTRUCTURE).

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN

THE PROPOSED MATERIAL WILL BE AS PER C.&M.S. CLASS QC2 CONCRETE.

IN ADDITION TO THE PROVISIONS OF 511, THE FOLLOWING WILL APPLY.

AT ALL EXISTING DEFLECTION CONTROL JOINTS THAT THIS WORK ADJOINS, SAW AND SEAL A NEW JOINT AS PER THE SAWCUT DETAIL (DETAIL A) PRESENTED IN THE REPAIR DETAILS IN THIS PLAN.

CAREFULLY ALIGN THE SAW TO CUT THROUGH ANY POTIONS OF EXISING JOINTS THAT HAVE REMAINED, SO THAT A NEW CONTINUOUS SEAL CAN BE PLACED. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE RAILING. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH.

SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINTS TO A MINIMUM DEPTH OF ONE INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2 INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE RAILING UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF WORK ON A CUBIC YARD BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITY AT THE CONTRACT PRICE FOR ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN.

ITEM 519 - PATCHING CONCRETE STRUCTURE

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PATCH UNSOUND AND/OR DETERIORATED AREAS OF STRUCTRUAL CONCRETE AS DESCRIBED BELOW.

THE AREAS WILL BE IDENTIFIED BY THE PROJECT ENGINEER PRIOR TO STARTING ANY REMOVAL WORK ASSOCIATED WITH THIS ITEM. FINAL QUANTITIES TO BE PAID FOR THIS WORK WILL BE BASED ON FIELD MEASUREMENTS OF THE ACUTAL WORK. FOR BIDDING PURPOSES ONLY, THE FOLLOWING ARE THE ESTIMATED LOCATIONS AND QUANTITIES OF WORK FOR PIER CONCRETE PATCHING:

BRIDGE NO. LIC-70-2653: "C" = AT COLUMN & AJOINING CAP FACES

(C #1)	(C #2)	(C #3)	
0 SF	0 SF	0 SF	(SOUTH - PIER #1)
0 SF	0 SF	0 SF	(CENTER - PIER #2)
28 SF	29 SF	0 SF	(NORTH - PIER #3)

28 SF + 29 SF + 0 SF = 57 SF = TOTAL

THESE QUANTITIES HAVE BEEN CARRIED IN THE BRIDGE SUMMARY.

ALL WORK SHALL BE DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR, EQUIPMENT, AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 519 - PATCHING CONCRETE STRUCTURE.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
CLZ	JDR	JDR	04/26/15	4504356/4504445
CHECKED	REVISED			
JSL				

BRIDGE NOTES

BRIDGE NO. LIC-70-2653 AND 2863
T.R. 345 AND T.R. 7 OVER I.R. 70

LIC/MUS-70-23.84/0.00
PID No. 113922

2 / 11

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PLAN SPLIT CODE		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GENERAL	SEE SHEET NUMBER
	02/IMS/BR										
						STRUCTURE REPAIR (BRIDGE NO. LIC-70-2421)					
	3	202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)		3			25
	LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN					25
	15,623	509	10000	15,623	POUND	EPOXY COATED REINFORCING STEEL		15,623			
	1,488	510	10000	1,488	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		1,488			
	34	511	46510	34	CU YD	CLASS QC1 CONCRETE, FOOTING		34			
	44	511	71100	44	CU YD	CONCRETE MISC.: PUMPED SELF CONSOLIDATING CONCRETE		44			25
	51	512	10050	51	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)		51			
	240	516	31011	240	FT	2" DEEP JOINT SEALER, AS PER PLAN (B)				240	25
						STRUCTURE REPAIR (BRIDGE NO. LIC-70-2583)					
	3	202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)		3			25
	LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN					25
	15,543	509	10000	15,543	POUND	EPOXY COATED REINFORCING STEEL		15,543			
	1,488	510	10000	1,488	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		1,488			
	34	511	46510	34	CU YD	CLASS QC1 CONCRETE, FOOTING		34			
	47	511	71100	47	CU YD	CONCRETE MISC.: PUMPED SELF CONSOLIDATING CONCRETE		47			25
	61	512	10050	61	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)		61			
	18	516	13901	18	SQ FT	2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN				18	25
	238	516	31011	238	FT	2" DEEP JOINT SEALER, AS PER PLAN (B)				238	25
						STRUCTURE REPAIR (BRIDGE NO. LIC-70-2653)					
	57	519	11100	57	SQ FT	PATCHING CONCRETE STRUCTURE			57		26
						STRUCTURE REPAIR (BRIDGE NO. LIC-70-2863)					
	2.3	202	11301	2.3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)		2.3			26
	2.3	511	34411	2.3	CU YD	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN		2.3			26

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED CLZ | DRAWN JDR | REVIEWED JDR | DATE 04/26/21
CHECKED JSL | REVISED | STRUCTURE FILE NUMBER MULTIPLE

BRIDGE GENERAL SUMMARY
VARIOUS STRUCTURES

LIC/MUS-70-23.84/0.00
PID No. 113922

3 / 11

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35

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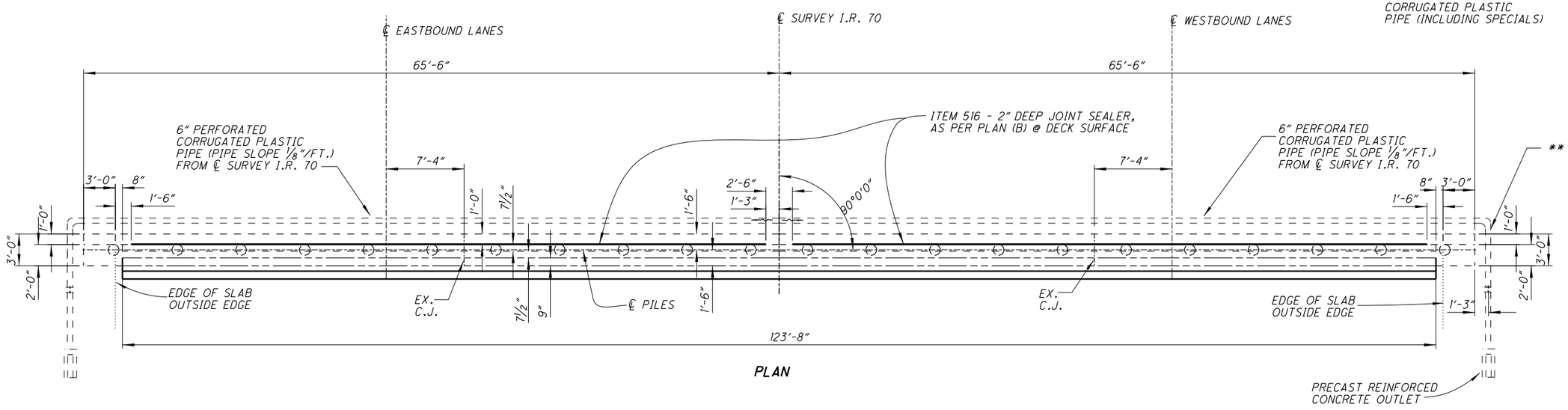
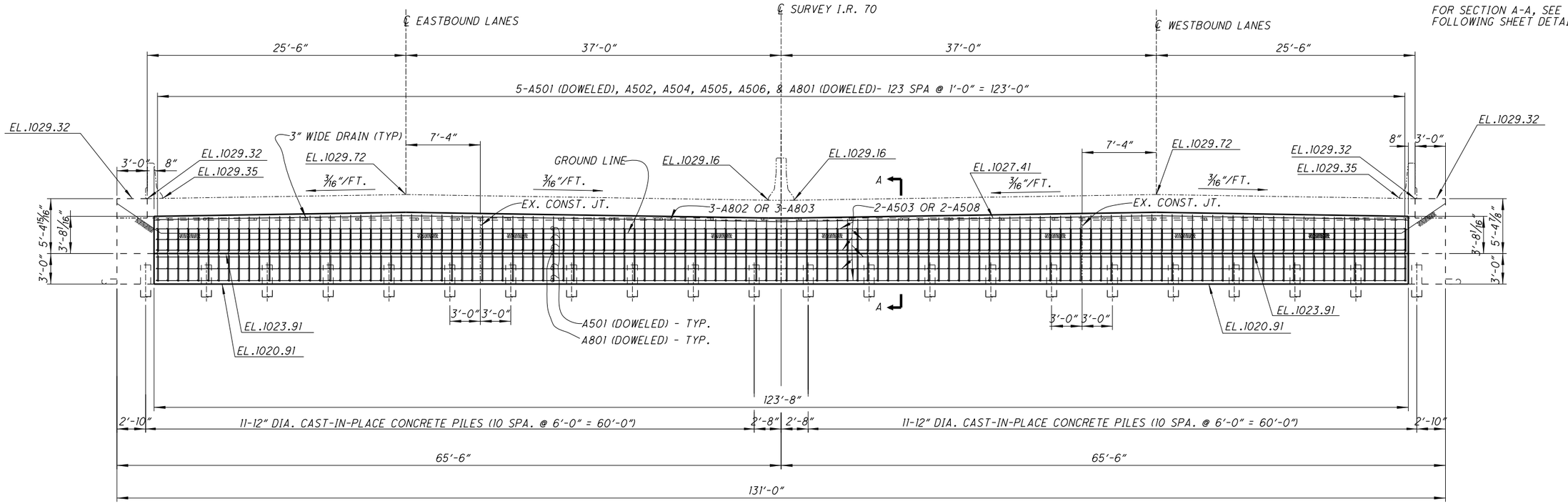
NOTE:
ALL ELEVATIONS SHOWN ARE TAKEN FROM ORGINAL CONSTRCUTION DATUM.
THE ELEVATIONS ARE FOR QUANTITY ESTIMATION ONLY. ALL PROPOSED REHABILITATION WORK WILL BE ALIGNED/MATED WITH THE EXISTING STRUCTURE ELEMENTS AS SHOWN IN THIS PLAN.



PLAN



ELEVATION
(LOOKING WEST)

LAP LENGTH
NO. 5 - 3'-1"
NO. 8 - 5'-4"

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CLZ	JDR	JDR	3/15/21
CHECKED	REVISED		STRUCTURE FILE NUMBER
JSL			4504208

EXISTING REAR ABUTMENT
BRIDGE NO. LIC-70-2421
I.R. 70 OVER T.R. 334

LIC/MUS-70-23.84/0.00
PID No. 113922

4 / 11

28 / 35

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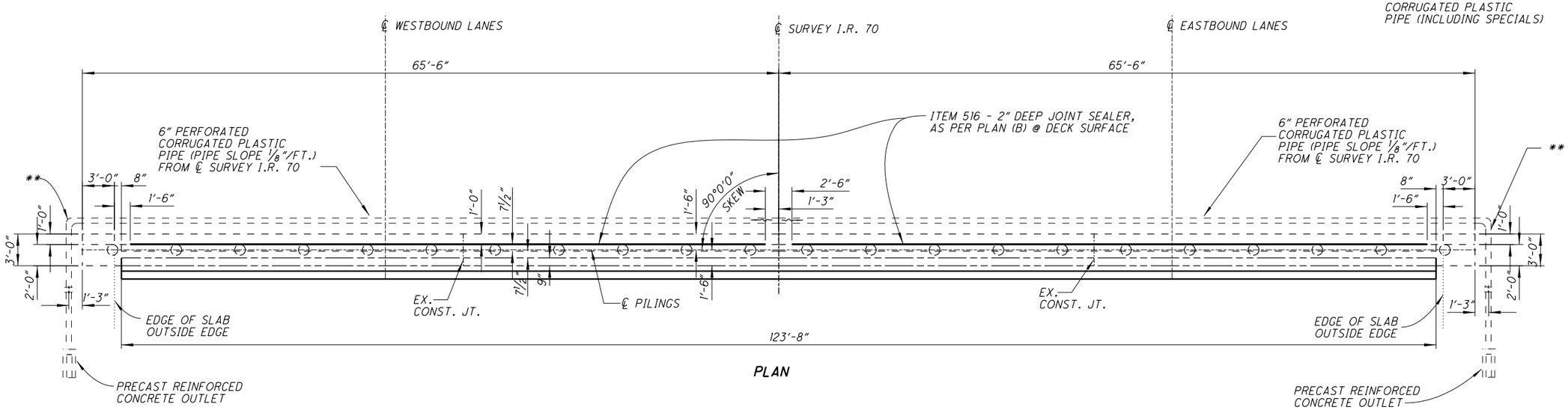
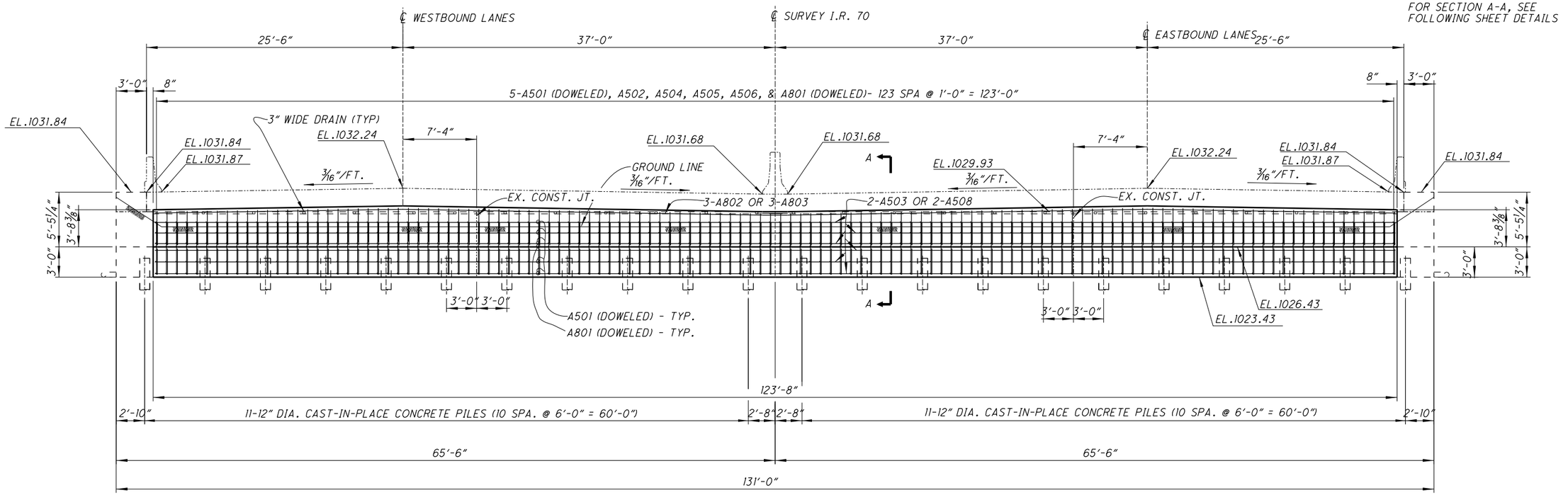
NOTE:
ALL ELEVATIONS SHOWN ARE TAKEN FROM ORGINAL CONSTRCUTION DATUM.
THE ELEVATIONS ARE FOR QUANTITY ESTIMATION ONLY. ALL PROPOSED REHABILITATION WORK WILL BE ALIGNED/MATED WITH THE EXISTING STRUCTURE ELEMENTS AS SHOWN IN THIS PLAN.



PLAN



ELEVATION
(LOOKING EAST)

LAP LENGTH
NO. 5 - 3'-1"
NO. 8 - 5'-4"

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
CLZ	JDR	JDR	03/15/21	4504208
CHECKED	REVISED			
JSL				

EXISTING FORWARD ABUTMENT
BRIDGE NO. LIC-70-2421
I.R. 70 OVER T.R. 334

LIC/MUS-70-23.84/0.00
PID No. 113922

5 / 11

29 / 35

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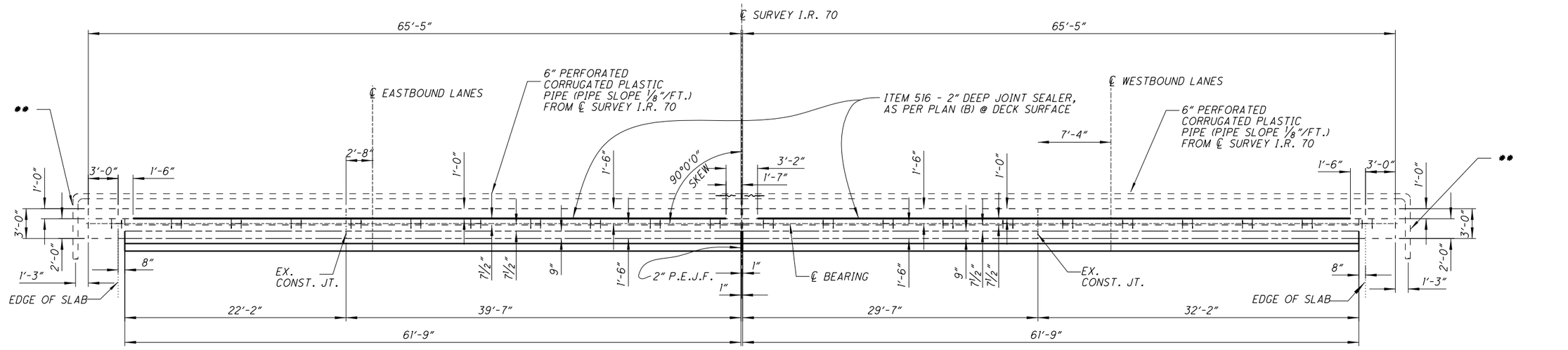
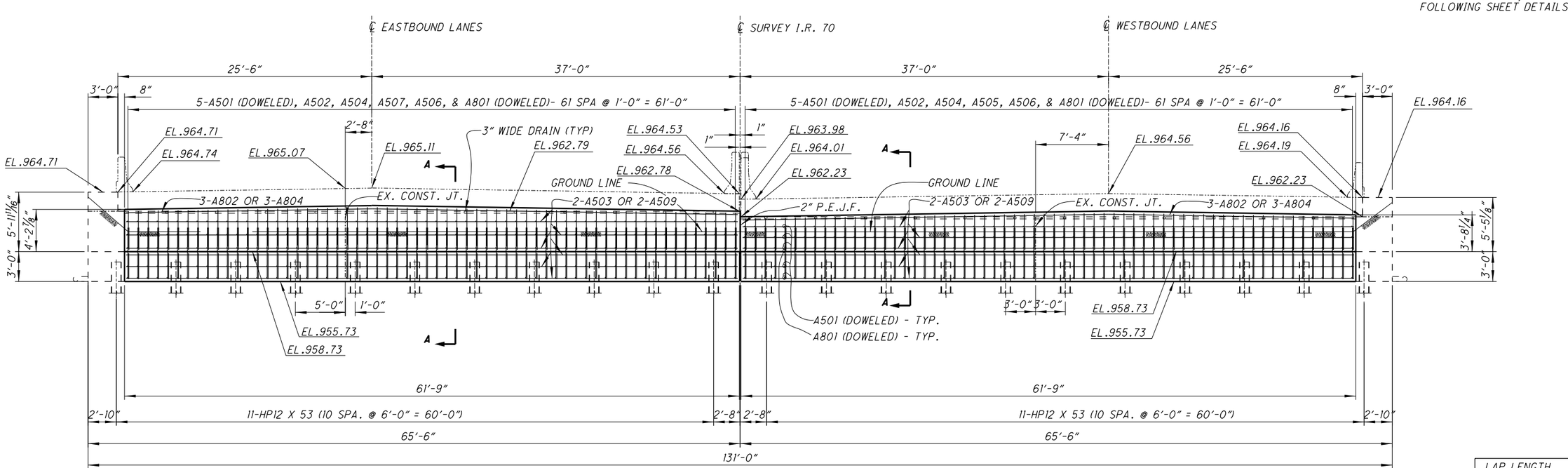
NOTE:
ALL ELEVATIONS SHOWN ARE TAKEN FROM ORGINAL CONSTRCUTION DATUM.
THE ELEVATIONS ARE FOR QUANTITY ESTIMATION ONLY. ALL PROPOSED REHABILITATION WORK WILL BE ALIGNED/MATED WITH THE EXISTING STRUCTURE ELEMENTS AS SHOWN IN THIS PLAN.



PLAN

FOR SECTION A-A, SEE FOLLOWING SHEET DETAILS



REAR ABUTMENT
(LOOKING WEST)

LAP LENGTH
NO. 5 - 3'-1"
NO. 8 - 5'-4"

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CLZ	JDR	JDR	03/15/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JSL		4504267	

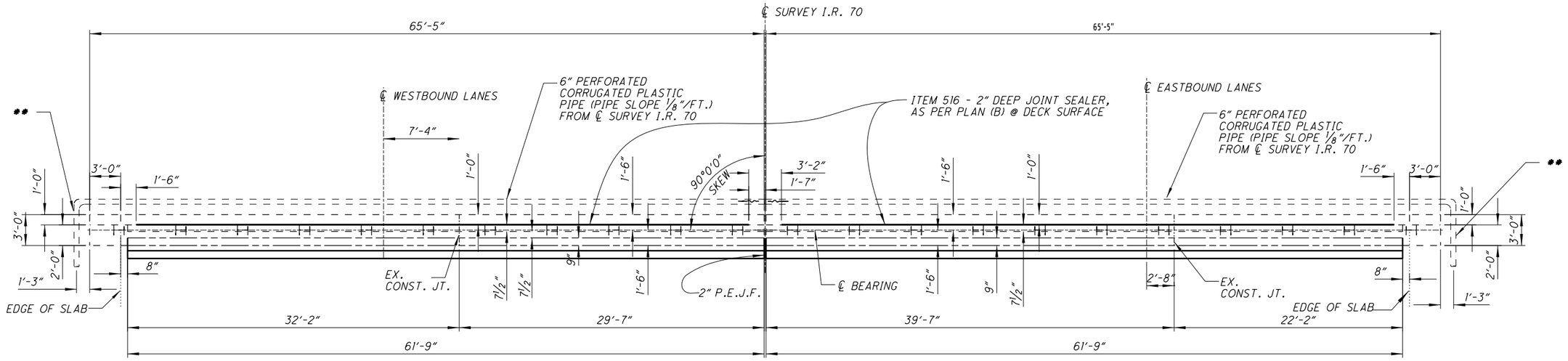
EXISTING REAR ABUTMENT
BRIDGE NO. LIC-70-2583
I.R. 70 OVER T.R. 288

LIC/MUS-70-23.84/0.00
PID No. 113922

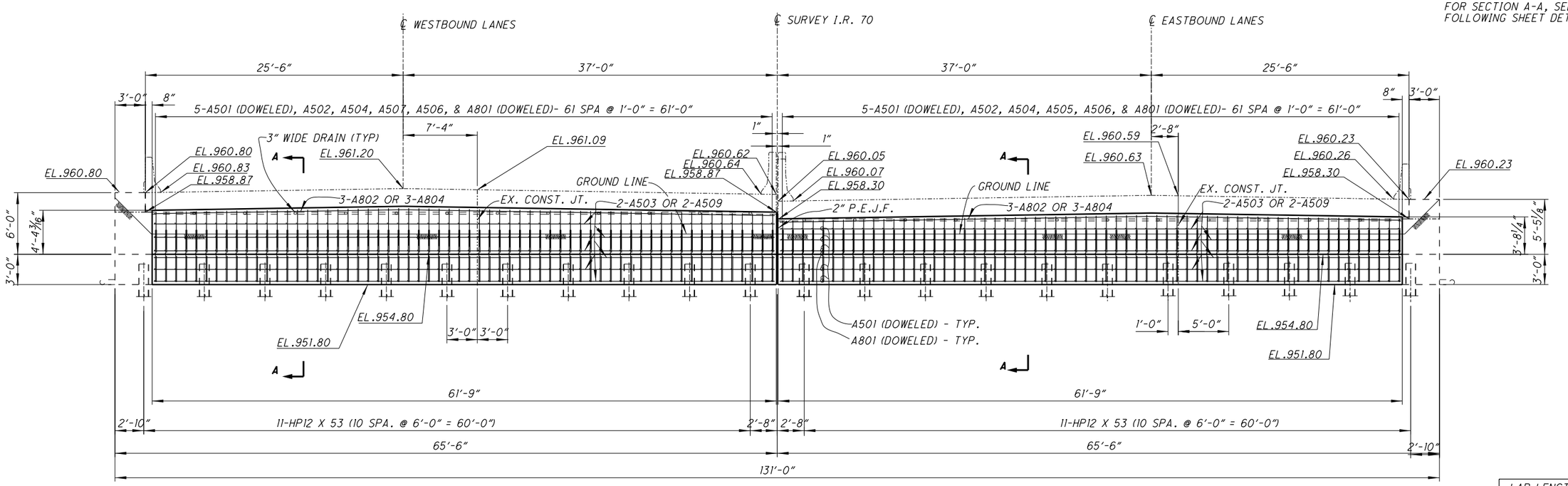
6 / 11

30 / 35

NOTE:
ALL ELEVATIONS SHOWN ARE TAKEN FROM ORGINAL CONSTRCUTION DATUM.
THE ELEVATIONS ARE FOR QUANTITY ESTIMATION ONLY. ALL PROPOSED REHABILITATION WORK WILL BE ALIGNED/MATED WITH THE EXISTING STRUCTURE ELEMENTS AS SHOWN IN THIS PLAN.



PLAN



FORWARD ABUTMENT
(LOOKING EAST)

LAP LENGTH
NO. 5 - 3'-1"
NO. 8 - 5'-4"

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CLZ	JDR	JDR	03/15/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JSL		4504267	

EXISTING FORWARD ABUTMENT
BRIDGE NO. LIC-70-2583
I.R. 70 OVER T.R. 288

LIC/MUS-70-23.84/0.00
PID No. 113922

7 / 11

31 / 35

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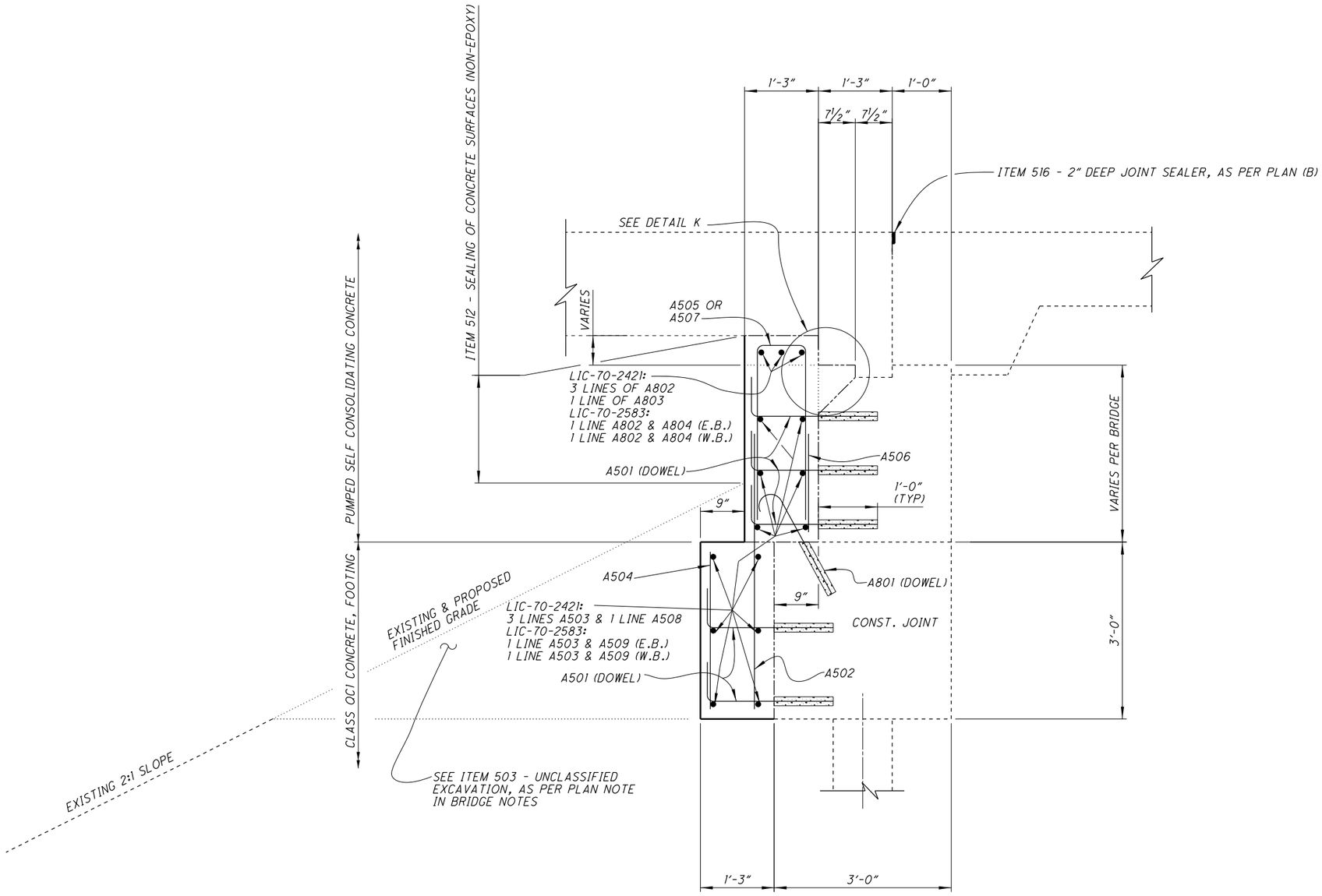
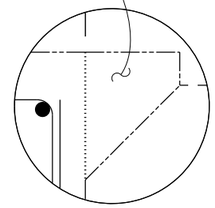


SECTION A-A ##

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE (CONCRETE): MAXIMUM REMOVAL AREA = 0.32 S.F.



DETAIL K

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CLZ	JDR	JDR	03/15/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JSL		4504208/4504267	

ABUTMENT DETAILS
BRIDGE NO. LIC-70-2421 AND 2583
I.R. 70 OVER T.R. 334 AND C.R 288

LIC/MUS-70-23.84/0.00
PID No. 113922

8 / 11

32
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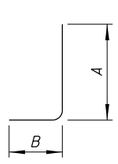
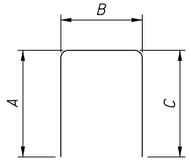
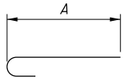
MARK	NUMBER REQ'D.	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
BRIDGE NO. LIC-70-2421: ABUTMENTS											
A501	1,240	2'-10"	3,664	1	10"	2'-1"					
A502	248	5'-3"	1,358	STR.							
A503	72	40'-0"	3,004	STR.							
A504	248	2'-7"	668	STR.							
A505	248	7'-4"	1,897	2	3'-4"	11"	3'-4"				
A506	248	2'-4"	604	STR.							
A507	NOT USED										
A508	24	12'-7"	315	STR.							
A509	NOT USED										
A801	248	2'-10"	1,876	16	2'-0"						
A802	18	40'-0"	1,922	STR.							
A803	6	19'-8"	315	STR.							
A804	NOT USED										
ABUTMENTS TOTAL			15,623								
BRIDGE NO. LIC-70-2583: ABUTMENTS											
A501	1,240	2'-10"	3,664	1	10"	2'-1"					
A502	248	5'-3"	1,358	STR.							
A503	48	40'-0"	2,003	STR.							
A504	248	2'-7"	668	STR.							
A505	124	7'-4"	948	2	3'-4"	11"	3'-4"				
A506	248	2'-4"	604	STR.							
A507	124	8'-2"	1,056	2	3'-9"	11"	3'-9"				
A508	NOT USED										
A509	48	24'-6"	1,227	STR.							
A801	248	2'-10"	1,876	16	2'-0"						
A802	12	40'-0"	1,282	STR.							
A803	NOT USED										
A804	12	26'-9"	857	STR.							
ABUTMENTS TOTAL			15,543								



TYPE-1



TYPE-2



TYPE-16

MARK	NUMBER REQ'D.	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.

QUANTITIES CARRIED TO BRIDGE SUMMARY

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

REVIEWED JDR DATE 03/15/21
STRUCTURE FILE NUMBER 4504208/4504267

DRAWN JDR
REVISED

DESIGNED CLZ
CHECKED JSL

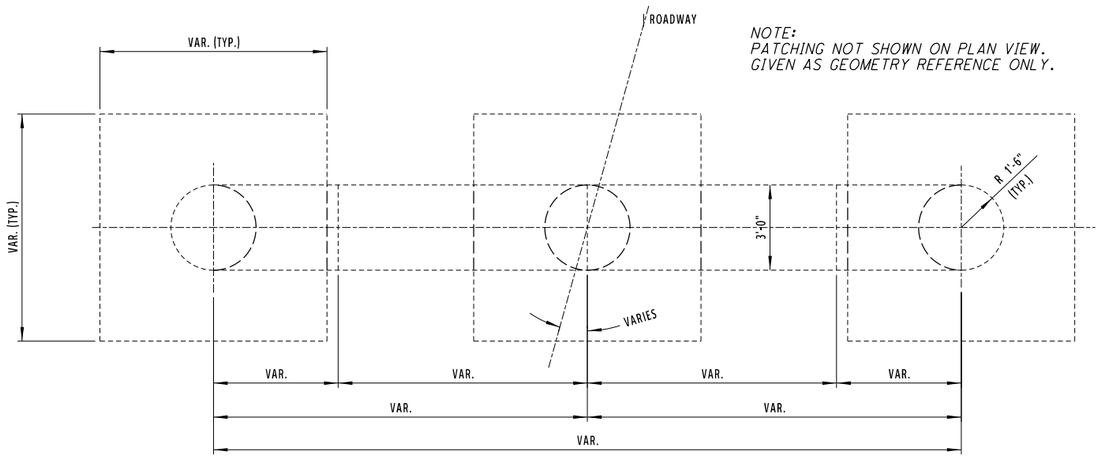
REINFORCING STEEL SCHEDULE

BRIDGE NO. LIC-70-2421 AND 2583
I.R. 70 OVER T.R. 334 AND C.R 288

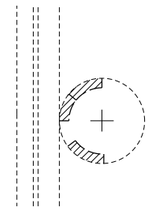
LIC/MUS-70-23.84/0.00
PID No. 113922

9 / 11

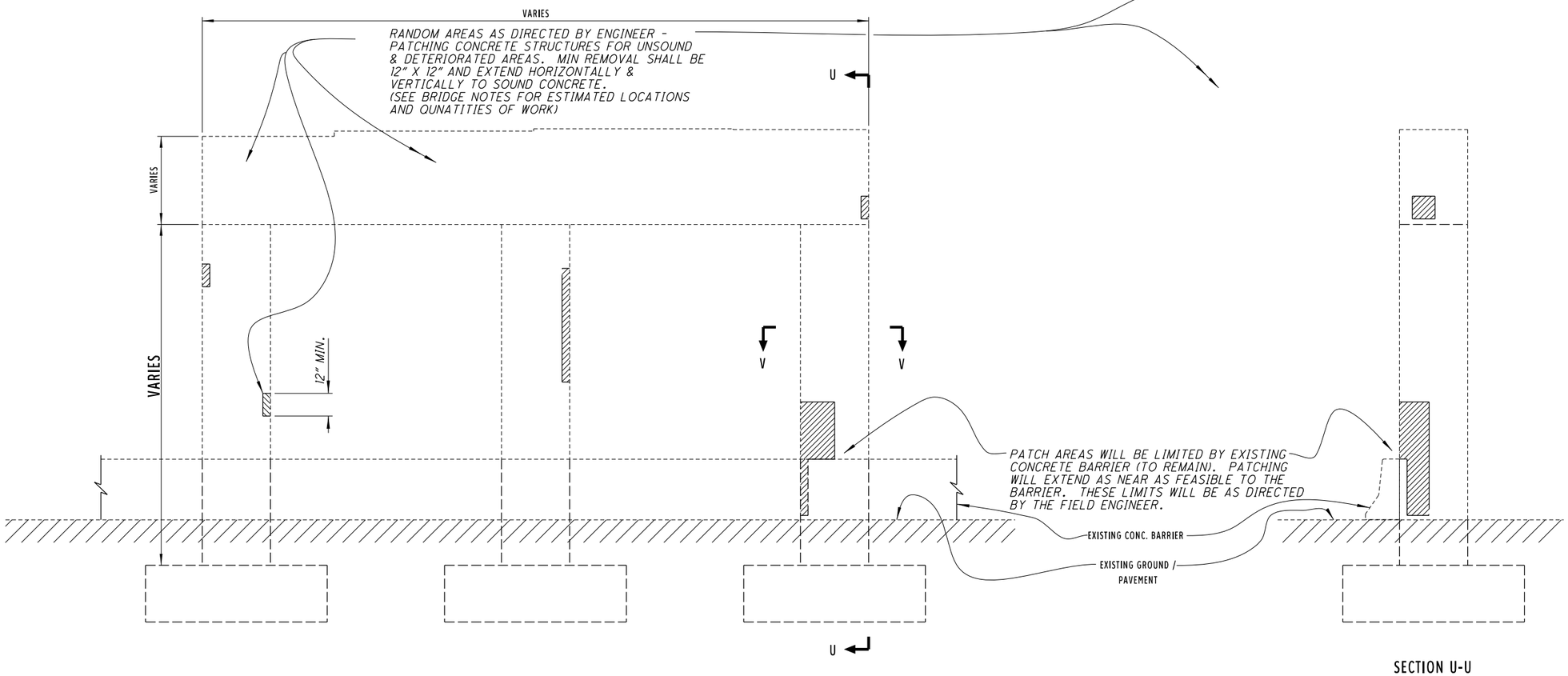
33 / 35



PLAN



COLUMN SECTION V-V



ELEVATION

SECTION U-U

NOTE:
ALL RESTEEL SHALL BE PRESERVED IN PLACE, UNLESS OTHERWISE SHOWN.

SUPPORT RESTEEL AS NECCESSARY.

ITEM 519 - PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CLZ	JDR	JDR	03/15/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JSL		4504356	

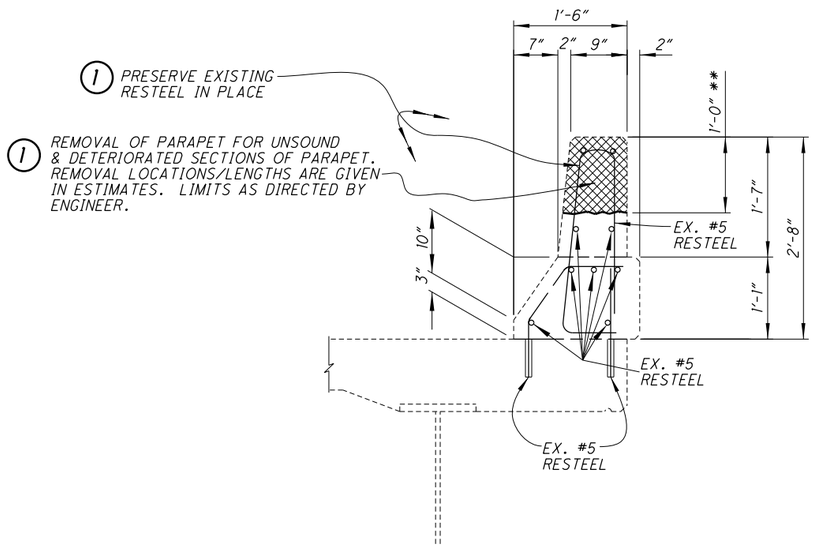
PIER PATCHING DETAIL

BRIDGE NO. LIC-70-2653
T.R. 345 OVER I.R. 70

LIC/MUS-70-
23.84/0.00
PID No. 113922

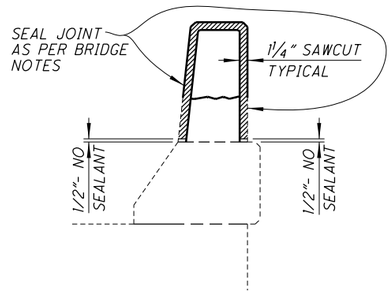
10 / 11

34
35



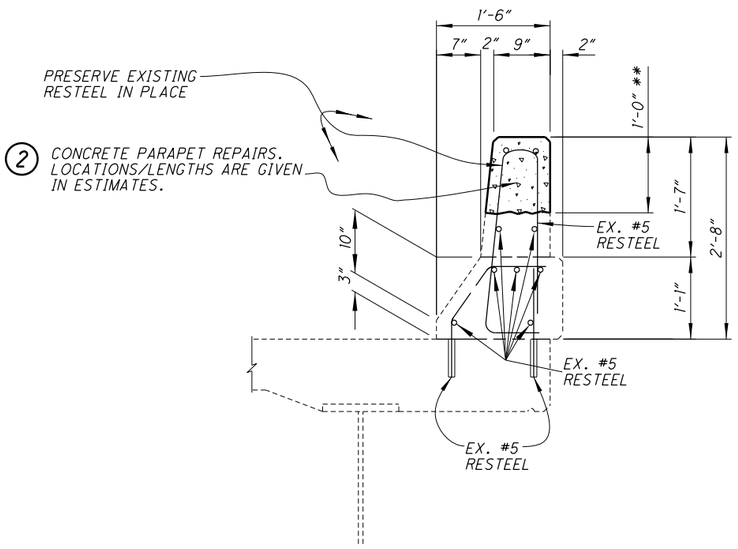
EXISTING: SECTION P-P

(TYPICAL PARTIAL HEIGHT SECTION)



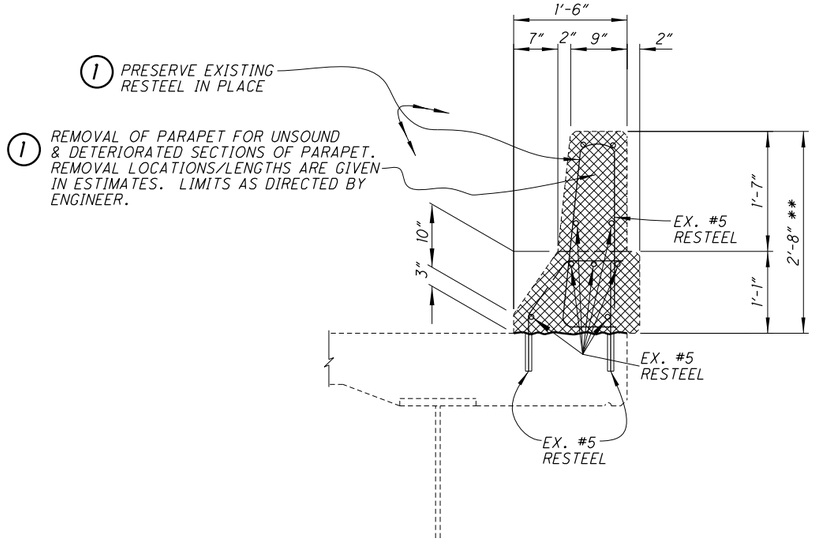
DETAIL A

TYPICAL SAWCUT AND SEAL



PROPOSED: SECTION P-P

(TYPICAL PARTIAL HEIGHT SECTION)



EXISTING: SECTION F-F

(TYPICAL FULL HEIGHT SECTION)

NOTES:
ALL RESTEEL SHALL BE PRESERVED IN PLACE, UNLESS OTHERWISE SHOWN.

SUPPORT RESTEEL AS NECCESSARY.

** - APPROXIMATE REMOVAL REPLACEMENT LIMIT. TO BE VERIFIED, ADJUSTED AS NECESSARY, AND DIRECTED BY FIELD ENGINEER.

ESTIMATED WORK FOR #1 AND #2 ON THIS SHEET

THE PORTIONS OF PARAPET CONCRETE REMOVAL AND REPLACEMENT SECTION, SHOWN ON THIS SHEET, WILL BE PERFORMED ALONG EXISTING DECK PARAPETS ON BRIDGE NO LIC-70-2862, AS DIRECTED BY THE ENGINEER.

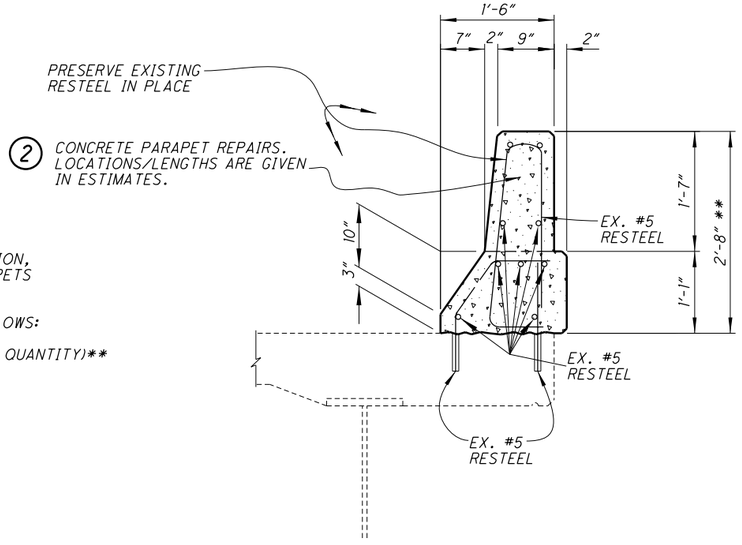
THE ESTIMATED LENGTHS AND DEPTHS ALONG EACH PARAPET ARE AS FOLLOWS:

		LENGTH**	DEPTH**	(CU. YD. QUANTITY)**
LIC-70-2862	=	2'	1'	0.06
(WEST PARAPET FROM		2'	1'	0.06
SOUTH TO NORTH)		2'	1'	0.06
		2'	1'	0.06
		2'	1'	0.06
		6'	1'	0.18
		10'	2.67"	1.07
		4'	1'	0.12
		10'	1'	0.30
		2'	1'	0.06
LIC-70-2862 (WEST PARAPET)	=			
(WEST PARAPET FROM		2'	1'	0.06
SOUTH TO NORTH)		2'	1'	0.06
		2'	1'	0.06
				+
LIC-70-2862 TOTAL WORK			=	2.3 CUBIC YARDS

FIELD ENGINEER TO VERIFY ACTUAL REMOVAL/REPLACEMENT LOCATIONS AND FINAL LIMITS OF WORK.

1 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

2 - ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN



PROPOSED: SECTION F-F

(TYPICAL FULL HEIGHT SECTION)

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CLZ	JDR	JDR	04/26/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JSL		4504445	

PARAPET PATCHING DETAIL

BRIDGE NO. LIC-70-2862
T.R. 7 OVER I.R. 70

LIC/MUS-70-23.84/0.00
PID No. 113922

11 / 11

35 / 35

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
PAVER MOUNTED THERMAL PROFILING

September 12, 2017

000.01 Description. This work consists of obtaining thermal profiles to identify the presence of any thermal segregation of an un-compacted mat of hot mix asphalt. This method includes procedures for determining thermal profile using a paver-mounted thermal imaging system.

000.02 Equipment. Provide a Paver Mounted Thermal Profiler (PMTP) system as follows:

A. PMTP System Supplier. Use a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing, as needed, during the Project to maintain equipment within specifications and requirements.

B. PMTP System Software. Provide the Engineer with access to the cloud storage and cloud computing before the start of paving requiring the PMTP method until ninety (90) days after final acceptance of all work.

Use PMTP software, and cloud computing and storage, capable of collecting, mapping, retaining and analyzing the mat temperature readings during placement and exporting thermal profile data meeting the requirements of this provision and supporting the following features:

(1) Filtering by surface temperature reading location (items 8 through N of Table 2016-3 [PMTP]).
(2) Display through a map/graph:
(2.1) Surface temperature readings across the required width and with respect to a user defined sublot length,
(2.2) Paver speed and
(2.3) Paver stops (location and duration).
(3) Provide the paving length and duration.

C. PMTP System

1. System Requirements. Use a PMTP system that functions independently from the paving crew during normal paving operations, but requires an operator to initiate the start of data collection. After initializing the equipment, no operator attendance is required for continuous data collection.

Ensure that the power consumption of all installed equipment does not exceed the capacity of the equipment providing operating power. Complete discharge of this system shall not impact the vehicle's regular electrical system.

Provide the Engineer with PMTP System(s) calibrated and installed according to Manufacturers recommendations.

Ensure the PMTP System meets the requirements of Table 2016-1 (PMTP) and is instrumented with the following:

Table 2016-1 (PMTP)
PMTP System Requirements

Parameter	Requirement
Longitudinal and Lateral Surface Temperature Readings	≤ 1-ft (300-mm) intervals **at all paving speeds** Tolerance: ± 1 in (25 mm)
Surface Temperature Readings Total Measurement Width	Traffic / Required Auxiliary lane(s) paved in one (1) pass.
Surface Temperature Readings	Range: 32°F (0°C) to 480°F (250°C) Accuracy: ± 3.6°F (2°C) or ± 2.0% of the sensor reading, whichever is greater.
GNSS	Accuracy ≤ ± 4 feet (1.2 m) in the X and Y Direction

(1) Modem, or Wi-Fi, for transferring data to cloud storage.
(2) Onboard Documentation System – Use an onboard documentation system with a minimum of the following capabilities:
(2.1) Display (in real-time) a map of the surface temperature readings, total distance, paver speed and location in terms of station and/or GNSS coordinates.
(2.2) Report the surface temperature readings and GNSS status.
(2.3) Provide real-time statistical summaries of the surface temperature readings.
(2.4) Have the ability to manually export data using a removable media device.
(2.5) Allows the operator to define the lot currently being placed per Tables 2016-4 (PMTP) and 2016-5 (PMTP).

2. Thermal Profiling Data. Export the thermal profiling data as dbase ASCII or Text Format, or directly into Veta if a file format compatible with Veta is available. Ensure the PMTP date/time stamp is reflective of the local time zone for both mapped and exported data. Encrypt the data logged in the results files to prevent tampering or manipulation.

Include the information in Table 2016-2 (PMTP) in the header of each data file or section. Include the fields in Table 2016-3 (PMTP) with each data point.

Table 2016-2 (PMTP)
Required Information in Data Header

Item No.	Description	Example Data included in Header
1	State Project Number, Highway and/or Section	Highway 77
2	Machine Trade Name	ABC Company
3	Machine ID	1234AC78
4	Lateral Spacing between surface temperature measurements (in)	12
5	Longitudinal Spacing between surface temperature measurements (inch)	12
6	Vertical Distance between the temperature sensor(s) and asphalt pavement mat (inch)	120
7	Reporting resolution for independent surface temperature data – in the paver moving direction (inch)	13
8	Number of lateral surface temperature measurements/sensors	12

Table 2016-2 (PMTP) Required Information in Data Header		
Item No.	**Description**	**Example Data included in Header**
9	Number of surface temperature measurement data blocks	5000

Table 2016-3 (PMTP) Required Fields for Each Data Block		
Item No.	**Date Field Name**	**Data Format Examples**
1	Date Stamp (YYYYMMDD)	20080701
2	Time Stamp (HHMMSS.S -military format)	090504.0 (9 hr 5 min. 4.0 s.)
3	Longitude (decimal degrees, with at least 6 significant digits)	94.859204
4	Latitude (decimal degrees, with at least 6 significant digits)	45.227773
5	Distance (feet)	1
6	Direction heading (degree angle, clockwise from the north); or calculated value, in Veta, using values from the other data blocks, ft/min	45
7	Speed (feet per minute or inches per minute)	30.0
8	Surface temperature Reading/Location 1 (ºF)*	290
9	Surface temperature Reading/Location 2 (ºF)*	295
…	…	…
N	Surface temperature Reading/Location N (ºF)*	300

* Surface temperature readings/locations are numbered from 1 to N, left to right, in the direction of paving.

3. Design File. Create the background and alignment file(s) containing, at a minimum, the following layers: centerline, station text, station tick marks and labeling for exceptions. Highly accurate horizontal positioning is not required since the required accuracy for the PMTP system is less than or equal to ± 4 ft (1.2 m).

4. Field Stationing**.** Ensure that field station markers, when used, match the centerline stationing used in the background alignment design file.

5. PMTP System Setup on Paver(s). Instrument all pavers that are paving the traffic and required auxiliary lanes with the PMTP System. The PMTP system is not required on secondary pavers. Secondary pavers are those pavers that are not used for paving of traffic lanes, but are used for paving of shoulders, ramps, intersecting streets, etc.

Ensure the installed PMTP System takes measurements within 10 ft (3 m) of the trailing edge of the screed plate. Ensure that brackets and/or other obstructions, used for pavement smoothness, that are located in the measurement area do not affect more than two (2) surface temperature readings recorded in the lateral direction (items number 8 through N in Table 2016-3 [PMTP]).

Verify that the surface temperature readings and the GNSS are working within the requirements of this specification when requested by the Engineer.

000.03 Thermal Profile Data Collection.

A. Lot Establishment. The Engineer defines a lot as all asphalt paving for a given day, lift, material type and centerline offsets.

Distinctly identify the lots for thermal profile measurements using the standardized format per Tables 2016-4 (PMTP) and 2016-5 (PMTP). Ensure that the lot designations are digitally stored with the associated thermal profile measurements.

The GNSS coordinates contain the date component of the lot designation, and therefore, it is not included in the standardized naming convention.

Table 2016-4 (PMTP) Standardized Naming Convention for Thermal Profile Lots	
Standardized Format	**Definition**
ROUTE-MATL-L#-XXX-XXX	Undivided Highways (e.g., US40-424B-L1-12L-CL)
ROUTE-MATL-L#-XXX-XXX-DT	Divided Highways (e.g., I70-19.0mm-L3-12L-CL-NB)

Table 2016-5 (PMTP)
Standardized Abbreviations for Thermal Profile Lots

<table>
<tr><th>Abbreviation</th><th>Definition</th></tr>
<tr><td>ROUTE</td><td>ROUTE DESIGNATION. Replace “ROUTE” with the route system, as designated by the following acronyms or short form, immediately followed by the route number (e.g., I70).

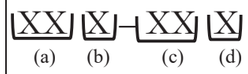
<table>
<tr><th>Acronym or Short Form</th><th>Full Name or Meaning</th></tr>
<tr><td>I</td><td>Interstate Highway</td></tr>
<tr><td>US</td><td>US Highway</td></tr>
<tr><td>SR</td><td>State Route</td></tr>
<tr><td>CR</td><td>County Road</td></tr>
<tr><td>TH</td><td>Township Highway</td></tr>
</table></td></tr>
<tr><td>MATL</td><td>MATERIAL/ SURFACE TYPE. The material/surface type is designated by the following acronyms or short form:

<table>
<tr><th>Acronym or Short Form</th><th>Specification</th><th>Full Name or Meaning</th></tr>
<tr><td>301</td><td>301</td><td>Asphalt Base</td></tr>
<tr><td>302</td><td>302</td><td>Asphalt Base</td></tr>
<tr><td>424A</td><td>424</td><td>Fine Graded Polymer Type A</td></tr>
<tr><td>424B</td><td>424</td><td>Fine Graded Polymer Type B</td></tr>
<tr><td>SMA</td><td>423</td><td>Stone Matrix Asphalt</td></tr>
<tr><td>T1</td><td>441</td><td>Type 1</td></tr>
<tr><td>T2</td><td>441</td><td>Type 2</td></tr>
<tr><td>9.5mm</td><td>442</td><td>9.5mm</td></tr>
<tr><td>12.5mm</td><td>442</td><td>12.5mm</td></tr>
<tr><td>19.0mm</td><td>442</td><td>19.0mm</td></tr>
</table></td></tr>
<tr><td>L#</td><td>LIFT NUMBER. The lift number is designated by the following acronym or short form:

<table>
<tr><th>Acronym or Short Form</th><th>Full Name or Meaning</th></tr>
<tr><td>L1</td><td>Lift 1</td></tr>
<tr><td>L2</td><td>Lift 2</td></tr>
<tr><td>L3</td><td>Lift 3</td></tr>
<tr><td>…</td><td>…</td></tr>
<tr><td>Ln</td><td>Lift n</td></tr>
</table></td></tr>
</table>

Table 2016-5 (PMTP)
Standardized Abbreviations for Thermal Profile Lots

<table>
<tr><th>Abbreviation</th><th>Definition</th></tr>
<tr><td>XXX-XXX</td><td>CENTERLINE OFFSET. The location of the left and right edge of the production area with respect to the centerline, facing in the direction of increasing stationing. Stationing typically increases from West to East and South to North. Each character of the abbreviation is defined as the following:


(a) (b) (c) (d)

(a) The offset distance (in feet rounded to the whole number) from the centerline to the left edge of the production area (e.g., CL, 12, 24). CL reflects the Center Line.

(b) R or L, to reflect Right (R) or Left (L) of Centerline, in the direction of increasing station numbering.

(c) The offset distance (in feet rounded to the whole number) from the centerline to the right edge of the production area (e.g., CL, 12, 24). CL reflects the Center Line.

(d) R or L, to reflect Right (R) or Left (L) of Centerline, in the direction of increasing station numbering.</td></tr>
<tr><td>DT</td><td>DIRECTION OF TRAVEL. The direction of travel is designated by the following acronyms or short form:

<table>
<tr><th>Acronym or Short Form</th><th>Full Name or Meaning</th></tr>
<tr><td>NB</td><td>North Bound</td></tr>
<tr><td>SB</td><td>South Bound</td></tr>
<tr><td>EB</td><td>East Bound</td></tr>
<tr><td>WB</td><td>West Bound</td></tr>
</table></td></tr>
</table>

B. Sublot Establishment Using Veta. Once established, the Engineer will divide the lot into 150 linear ft (45 linear m) sublots. Partial sublots will be treated as follows:

(1) Lot ≥ 150 linear ft (45 linear m)
  (1.1) Sublot < 75 linear ft (23 linear m) is combined with the previous sublot.
  (1.2) Sublot ≥ 75 linear ft (23 linear m) is treated as one sublot.
(2) Lot < 150 linear ft (45 linear m)
  (2.1) Surface temperature readings from lot are treated as one sublot.

Set the sublot “start” and “end” location for the given lot in Veta to correspond with the start and end of paving, respectively. Ensure that these locations are immediately adjacent to the beginning and end of the surface temperature readings.

C. Thermal Profile Measurements. Collect thermal profiles on **100 percent of each lift** of trafficked lanes:

Thermal profiles are not required on auxiliary lane tapers, ramps less than 1500ft, shoulders, cross-overs, non-continuous turn lanes, acceleration/deceleration lanes less than 1500ft and intersecting streets.

Ensure that the PMTP system is not capturing measurements outside of the traffic and required auxiliary lanes, as 100 percent of the recorded data is used in the thermal segregation analysis. Turn the data collection and recording off when not collecting thermal profile measurements.

D. PMTP System Failure**.** System Failure occurs when the PMTP system does not collect and/or store data per the requirements of this provision and/or the paver becomes inoperable.

Immediately notify the Engineer when PMTP system failure occurs and immediately after resolution of the issues. Additionally, provide the Engineer with a written notification of the dates of PMTP system failure, along with a brief description detailing the PMTP system failure and the paving areas affected by this failure. Do not proceed with placement the next working day without a functioning PMTP system.

000.04 Thermal Profile Analysis Software. Use the Veta software to plot thermal profile measurements and to determine thermal segregation and coverage. Produce *.VETAPROJ filenames in the **SPXXXX-XXX ROUTE PMTP** standardized format per Table 2016-6 (PMTP).

Table 2016-6 (PMTP)
Standardized Naming Convention for *.VETAPROJ Files *

Abbreviation	Definition
XX-XXXX	**PROJECT NUMBER.** Replace the "X's" with the project numbers (e.g., 16-0056).
ROUTE	**ROUTE NUMBER.** Replace "ROUTE" with the route system, as designated by the following acronyms or short form, immediately followed by the route number(s) mapped in the given Veta project. (e.g., I70, US40, SR13)
PMTP	PMTP reflects the paver mounted thermal profile method, the data set contained within the Veta project file.
* Example *.VETAPROJ filename: **16-0056 US40 PMTP**	

Acronym or Short Form	Full Name or Meaning
I	Interstate Highway
US	US Highway
SR	State Route
CR	County Road
TH	Township Highway

Create filter groups, operation filter and sublot names using the **LOT# MMDDYY LOTNAME** standardized format per Table 2016-7 (PMTP).

Table 2016-7 (PMTP)
Standardized Naming convention for Veta Filter Group, Operation Filter and Sublot Names *

Abbreviation	Definition
LOT#	**LOT NUMBER.** The lot number is a two-digit number increasing sequentially (01, 02, 03, …, n). Create filter groups, operation filters and sublot names in sequential order with respect to the lot dates. Lots containing Exceptions and/or Temporary Exceptions: ‖ Include a capital letter, in alphabetical order (A, B, …), immediately after the two-digit lot number to designate the side of the exception, or temporary exception, that the thermal profile data reflects (e.g., 01A, 01B, 02A, 02B, …).
MM	**MONTH** (include leading zeros)
DD	**DAY OF MONTH** (include leading zeros)
YY	**TWO-DIGIT YEAR**
LOTNAME	**STANDARDIZED LOT NAME** per Table 2016-4 (PMTP)

* Example Filter Group/Operation Filter Name (lot contains no exceptions):
01 070915 I70-12.5mm-L1-CL-12R, 02 071015 I70-12.5mm-L1-CL-12R, …
* Example Filter Group/Operation Filter Name (lot contains an exception):
01A 070915 I70-12.5mm-L1-CL-12R, 01B 070915 I70-12.5mm-L1-CL-12R,
02A 071015 I70-12.5mm-L1-CL-12R, 02B 071015 I70-12.5mm-L1-CL-12R,
…
‖ Temporary exceptions are areas to be paved at a later date.

000.05 Calculations and Submittals

A. Thermal Segregation

1. Surface Temperature Readings**.** Evaluate thermal segregation using 100 percent of the recorded data for each sublot. Exclude the following surface temperature readings from each sublot:

(1) Surface temperature readings less than 180°F (80°C); and
(2) Surface temperature readings within 2 ft (0.5 m) prior to and 8 ft (2.5 m) after paver stops that are greater than 1 minute in length.

2. Range. Calculate the Range, reported to the nearest tenth degree Fahrenheit, for each sublot per Equation 2016-1 (PMTP):

Equation 2016-1 (PMTP): $Range = T_{max} - T_{min}$

Where: T_{max} = surface temperature reading at the 98.5 percentile (°F) and
T_{min} = surface temperature reading at the 1 percentile (°F).

3. Thermal Segregation Category. Categorize the surface temperature readings for each sublot with respect to the ranges specified in Table 2016-8 (PMTP). Record the total number of low, moderate and severe sublots for the given lot in electronic form PMTP-102.

Table 2016-8 (PMTP)
Sublot Temperature Differential

Range Equation 2016-1 (PMTP)	**Thermal Segregation Category**
Range ≤ 25.0°F	Low
25.1°F < Range ≤ 50.0°F	Moderate
50.1 °F < Range	Severe

B. Thermal Coverage**.** Calculate thermal coverage for each lift per Equation 2016-4 (PMTP).

1. Thermal Profile Lot Length

Equation 2016-2 (PMTP): Thermal Profile Lot Length = $\sum_{i=1}^{n} Sublot\ Length_i$

Where:

Thermal Profile Lot Length = the total linear length of the surface temperature readings used for the thermal segregation analysis for the given lot, ft (reported to the nearest whole number);
n = the total number of sublots; and
Sublot Length = the linear length of sublot *i*, ft (reported to the nearest whole number).

2. Thermal Profile Lift Length

Equation 2016-3 (PMTP): Thermal Profile Lift Length = $\sum_{i=1}^{n} (Thermal\ Profile\ Lot\ Length)_i$

Where:

Thermal Profile Lift Length = the total linear length of the surface temperature readings used for the thermal segregation analysis for the entire lift, ft (reported to the nearest whole number);
n = the total number of lots for the entire *lift*; and
$(Thermal\ Profile\ Lot\ Length)_i$ = the total *linear* length of the surface temperature readings used for the thermal segregation analysis for the given lot *i* and lift as calculated by Veta, ft (reported to the nearest whole number). (See Equation 2016-2 [PMTP])

3. Thermal Coverage

Equation 2016-4 (PMTP): Thermal Coverage = $\left(\frac{Thermal\ Profile\ Lift\ Length}{LM \times 5280}\right) \times 100$

Where:

Thermal Coverage = % (reported to the nearest whole number);
Thermal Profile Lift Length = see Equation 2016-3 (PMTP), ft (reported to the nearest whole number); and
Lane Miles (LM) = Total number of lane miles for the given lift requiring thermal profiling, miles (reported to the hundredth).

C. Submittals

1. Thermal Profiling Data Submittal. Store the thermal profiling data internally until transfer of data. Transfer the thermal profiling data directly from the PMTP to Cloud Storage within 15-minute intervals, or at least once per day when there is limited cellular coverage. Notify the Engineer when cellular coverage is limited or not available. Transfer the thermal profiling data directly to the Engineer at the end of daily paving when cellular coverage is not available.

2. Veta Projects. Submit the first Veta project to the Engineer within three (3) days after the start of production for mixture requiring the PMTP Method. Submit an updated Veta project(s) to the Engineer at least two (2) non-consecutive days per calendar week. Ensure Veta projects include the following:

(1) Alignment File
(2) Surface Temperature Readings
(3) Filter Groups per:
  (3.1) lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL),
  (3.2) lane and per lift (e.g., I70-19.0mm-L1-12L-CL) and
  (3.3) lift (e.g., I70-19.0mm-L1)
(4) Operation Filters per lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL)
(5) Data Filter (Temperature ≥ 180°F)
(6) Sublot Creation per lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL)
(7) Override Filters per Machine ID per:
  (7.1) lift (e.g., I70-19.0mm-L1 Machine ID) and
  (7.2) lane and per lift (e.g., I70-19.0mm-L1-12L-CL Machine ID)

Note – the override filters are needed for cases where more than one paver (paving in Echelon) is instrumented with the PMTP system.

Submit the final version of the Veta Project(s) within 14-calendar days of completion of paving efforts requiring the PMTP method.

000.06 Basis of Payment. Interruptions in the availability of VRS Network and/or satellite signals to operate this system will not result in any reduction to the daily thermal coverage or adjustment to the "Basis of Payment" for any construction items or to Contract time.

The Department will pay for accepted work at the contract prices as follows:

Item	Unit	Description
XXX	Lump Sum	Paver Mounted Thermal Profiling