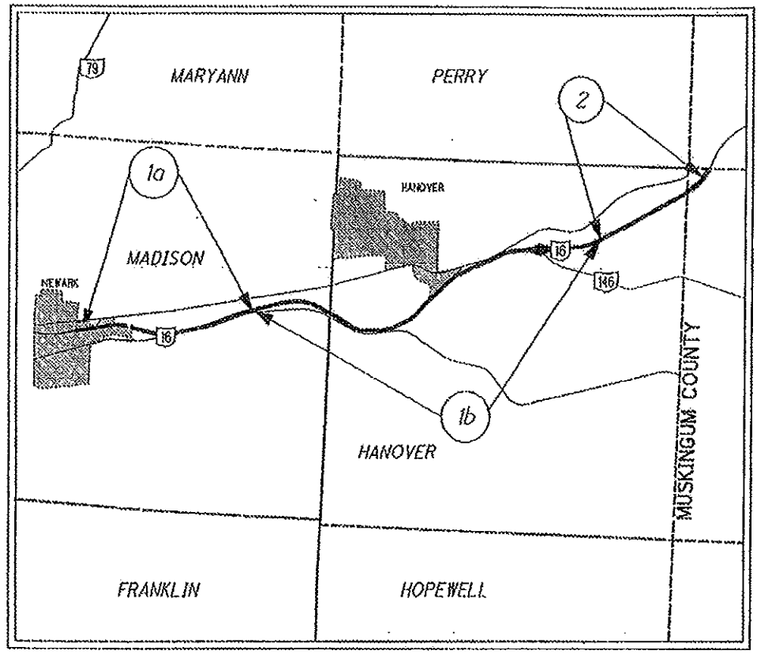


LOCATION MAP
LON/LAT: 82° 16' 03" / 40° 03' 54"

PORTION TO BE IMPROVED

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LIC-16-23.76
MUS-16-0.00

CITY OF NEWARK

MADISON, HANOVER AND LICKING TOWNSHIPS

LICKING & MUSKINGUM COUNTIES

PROJECT DESCRIPTION:
4 LANE DIVIDED ASPHALT CONCRETE RESURFACING AND RELATED WORK ON S.R. 16 IN LICKING AND MUSKINGUM COUNTIES. DECK AND PARAPET REPLACEMENT ON LIC-16-2930.

Project Earth Disturbed Area =
N/A (Maintenance Project)
Estimated Contractor Earth Disturbed Area =
N/A (Maintenance Project)
Notice of Intent Earth Disturbed Area =
N/A (Maintenance Project)

LOCATION	COUNTY	ROUTE	BEGIN SLM	END SLM	LENGTH MILES	CITY
1a	LIC	S.R. 16 E.B.	23.76	24.58	0.82	NEWARK
1a	LIC	S.R. 16 W.B.	23.86	24.27	0.41	NEWARK
1b	LIC	S.R. 16 E.B.	24.58	33.14	8.56	
1b	LIC	S.R. 16 W.B.	24.27	33.14	8.87	
2	MUS	S.R. 16	0.00	0.29	0.29	

INDEX OF SHEETS:

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.

2013 SPECIFICATIONS

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

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

APPROVED _____
DATE 11/4/13 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE 11-22-13 DIRECTOR, DEPARTMENT OF TRANSPORTATION

DESIGN DESIGNATION	LIC-S.R. 16 LOCATION 1a	LIC-S.R. 16 LOCATION 1b	MUS-S.R. 16 LOCATION 2
Functional Classification	UPA	RPA	RPA
Opening Year ADT (2014)	23000	20000	7300
Design Year ADT (2026)	27000	23000	8800
Design Hourly Volume (2026)	2700	2800	1100
Directional Distribution	53%	53%	53%
Trucks (24 Hour B&C)	6%	4%	9%
Design Speed	65mph	75mph	75mph
Legal Speed	55mph	60mph-70mph	70mph

UPA = URBAN PRINCIPAL ARTERIAL
RPA = RURAL PRINCIPAL ARTERIAL

DESIGN EXCEPTIONS: NONE

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: 1-800-925-0988

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

ENGINEERS SEAL: STRUCTURE	ENGINEERS SEAL: STRUCTURE
STATE OF OHIO Douglas N. Morgan E-63849 REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO Tracy Allen Greenwald E-71057 REGISTERED PROFESSIONAL ENGINEER
SIGNED: _____ DATE: 11-04-2013	SIGNED: _____ DATE: 11-04-2013

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	
BP-2.1	7-19-13	MT-101.90	7-19-13	800	10-18-13
BP-2.5	7-19-13	MT-105.10	7-19-13	832	10-18-13
BP-3.1	4-20-12			847	12-31-12
BP-9.1	7-19-13				
		PCB-91	1-18-13		
MT-95.30	7-19-13	SBR-1-99	7-19-02		
MT-95.40	7-19-13				
MT-98.11	7-19-13	TC-65.10	4-20-12	SPECIAL PROVISIONS	
MT-98.20	7-19-13	TC-65.11	4-20-12		
MT-98.22	7-19-13	TC-71.10	10-19-12		
MT-98.28	7-19-13	TC-72.20	7-20-12		
MT-99.20	7-19-13	TC-73.10	4-20-12		

FEDERAL PROJECT NO. E036(426)
PID NO. 76425
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
LIC-16-23.76
MUS-16-0.00
1/47

LIC - SR-16-23.76; MUS-16-0.00
140079 PID - 76425 Contract Proposal Available @ www.contracts.dot.state.oh.us/home
Dist 5 2/6/2014

76425_MTS_001.dgn 10-30-13

UTILITY OWNERSHIP

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AEP DISTRIBUTION
850 TECH CENTER DRIVE
GAHANNA, OHIO 43230
ATTN: PAUL PAXTON
614-883-6831

COLUMBIA GAS OF OHIO
2429 LINDEN AVE.
P.O. BOX 310
ZANESVILLE, OHIO 43702
ATTN: WILLIAM RICH
740-648-0079

MARATHON ASHLAND PIPE LINE LLC
539 SOUTH MAIN STREET
FINDLAY, OHIO 45840
ATTN: DAVID WISNER
419-421-2211

NATIONAL GAS AND OIL CORP.
1500 GRANVILLE ROAD
P.O. BOX 4970
NEWARK, OHIO 43058-4970
ATTN: GREG WILSON
740-348-1254

TIME WARNER CABLE
3760 INTERCHANGE DRIVE
COLUMBUS, OHIO 43204
ATTN: RAY MAURER
614-481-5262

WINDSTREAM
66 NORTH FOURTH STREET
NEWARK, OHIO 43055
ATTN: JACKIE CAUGHENBAUGH
740-349-8866

THE LOCATION OF THE UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

NOTIFICATION OF ROAD CLOSURE OR RESTRICTION

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

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

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

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

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

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.

WATERWAY PERMITS

THE PROJECT DOES NOT REQUIRE THE PLACEMENT OF ANY TEMPORARY OR PERMANENT FILLS BELOW THE ORDINARY HIGH WATER ELEVATION OF ROCKY FORK CREEK (SLM 29.30), THEREFORE, A SECTION 404 PERMIT FROM THE U.S. ARMY CORPS OF ENGINEERS HAS NOT BEEN OBTAINED. THE CONTRACTOR SHALL NOT PLACE, OR ALLOW ANY MATERIALS TO FALL, BELOW THE ORDINARY HIGH WATER ELEVATION OF ROCKY FORK CREEK.

REMOVED MATERIALS

ALL REMOVED MATERIALS, EXCEPT AS NOTED ELSEWHERE IN THE PLANS, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE JOB SITE.

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 LIMTS.

ENVIRONMENTAL COORDINATOR NOTIFICATION

THE CONTRACTOR SHALL CONTACT THE DISTRICT ENVIRONMENTAL COORDINATOR, AMY TOOHEY AT 740-323-5191 AT LEAST TWO WEEKS PRIOR TO THE START OF CONSTRUCTION ON BRIDGE LIC-16-2930 L&R, SO THE UNDERSIDE OF THE BRIDGE CAN BE INSPECTED FOR THE PRESENCE OF BATS.

PAVEMENT MARKING

STOP LINES, CROSSWALK LINES, CHANNELIZING LINES, ETC., SHOWN IN THE PLANS ARE TAKEN FROM EXISTING MARKINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DOCUMENT EXISTING MARKING LOCATIONS (i.e. BY USE OF VIDEO, PICTURES) AND PLACE NEW PAVEMENT MARKINGS AS NEAR AS POSSIBLE TO THE EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DOCUMENTATION OF PAVEMENT MARKING SHALL BE SUPPLIED TO THE ENGINEER BEFORE COMMENCEMENT OF ANY OPERATION WHICH WILL REMOVE/OBLITERATE MARKINGS.

ITEM 201 CLEARING AND GRUBBING, AS PER PLAN

FALLEN TREES AND DEBIS LOCATED UPSTREAM FROM THE LEFT BRIDGE OF STRUCTURE LIC-16-2930 AND AT THE RIGHT BRIDGE OF STRUCTURE LIC-16-2930, UNDER SPAN 3 SHALL BE REMOVED ALLOWING WATER TO FLOW FREELY THROUGH THE STREAM. ALTHOUGH THERE ARE NO OTHER TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING, AS PER PLAN. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, AS PER PLAN.

ITEM 202 - BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN

THE EXISTING BRIDGE TERMINAL ASSEMBLIES SHOWN ON SHEET 38/47 SHALL BE REMOVED DURING EACH RESPECTIVE CONSTRUCTION PHASE AND REUSED AFTER PHASE CONSTRUCTION IS FINISHED. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 202 - BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO REMOVE AND REUSE A COMPLETE AND FUNCTIONAL BRIDGE TERMINAL ASSEMBLY, TYPE 1 INCLUDING ALL RELATED TRANSITIONS, HARDWARE, AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. SEE SHEET 5/47 FOR BRIDGE TERMINAL ASSEMBLY, TYPE 1 DETAILS.

ITEM 202 – BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN
LOCATION 1b – 4 EACH

ITEM 209 LINEAR GRADING

IN ORDER TO PROVIDE POSITIVE DRAINAGE FROM THE ROADWAY SURFACE TO THE SHOULDER BREAK, THE EXISTING ROADWAY SHOULDERS SHALL BE GRADED AND SHAPED USING A GRADER OF ADEQUATE SIZE TO PERFORM THE WORK TO THE SATISFACTION OF THE ENGINEER.

ALL EXCESS MATERIAL REMAINING AROUND GUARDRAIL AND OTHER AREAS AFTER THE GRADER WORK IS COMPLETED AND NOT DISPOSED OF ON THE SITE, SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. ALL EQUIPMENT, LABOR, OR INCIDENTALS REQUIRED TO COMPLETE THIS ITEM SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR ITEM 209 LINEAR GRADING.

THIS WORK MAY BE INTERMITTENT AND SPREAD THROUGHOUT THE PROJECT LIMITS, AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL ONLY BE PAID FOR INTERSECTIONS AND GAPS IF THEY ARE WITHIN THE LIMITS OF A SECTION MARKED BY THE ENGINEER FOR GRADING.

AREAS WITH GUARDRAIL SHALL NOT BE EXCLUDED FROM LINEAR GRADING.

ALL LINEAR GRADING WORK SHALL BE DONE BEFORE PLACING THE ASPHALT SURFACE COURSE

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE PURPOSES AND TO REPAIR EXISTING AGGREGATE SHOULDERS AS DIRECTED BY THE ENGINEER.

ITEM 209 LINEAR GRADING
LOCATION 1a – 2.46 MILE
LOCATION 1b – 34.86 MILE
LOCATION 2 – 1.16 MILE

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE

DEPTH OF PLANING SHALL BE EITHER 1.75" OR 3.25" FOR FULL WIDTH OF PAVEMENT FOR MAINLINE AND 1.75" FULL WIDTH FOR RAMPS, INCLUDING PAVED SHOULDERS, AS SHOWN ON DATA SHEETS UNLESS OTHERWISE DIRECTED BY THE ENGINEER

THE ROADWAY SHALL BE PLANED SUCH THAT POSITIVE DRAINAGE IS CREATED FROM THE LANE LINE TO THE EDGE OF PAVEMENT IN TANGENT SECTIONS AND SHALL FOLLOW EXISTING SUPERELEVATIONS WHERE APPLICABLE. ALL REQUIREMENTS OF ITEM 254 SHALL APPLY.

2,000 TONS OF GRINDINGS (RACP) SHALL BE DELIVERED TO THE OHIO DEPARTMENT OF TRANSPORTION – LICKING COUNTY GARAGE 9600 JACKSONTOWN ROAD, JACKSONTOWN, OHIO 43030.

HAULING OF THE RACP SHALL BE PAID FOR UNDER THE FOLLOWING ITEM:

ITEM 690 SPECIAL MISC.: HAULING RACP
LOCATION 1b – 2,000 TONS

ITEM 407 TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLONS PER SQUARE YARD FOR ESTIMATING PURPOSES ONLY.

ITEM 407 TACK COAT FOR INTERMEDIATE COURSE

THE RATE OF APPLICATION OF THE 407 TACK COAT FOR INTERMEDIATE COURSE SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.05 GALLONS PER SQUARE YARD FOR ESTIMATING PURPOSES ONLY.

CALCULATED LME
CHECKED DNM

GENERAL NOTES

LIC-16-23.76
MUS-16-0.00

CALCULATED LME CHECKED DNM

GENERAL NOTES

ITEM 516 2" DEEP JOINT SEALER, AS PER PLAN

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.

LOCATION 1a (BEGIN WORK AT DAYTON ROAD CONCRETE) – 74 FEET

SEE "BRIDGE DECK TREATMENT DATA" SHEET FOR LOCATION 1b AND LOCATION 2 QUANTITIES.

RESHAPING BERM

BERMS AT LOCATIONS WHERE EXISTING GUARDRAIL IS REMOVED OR WHERE NEW GUARDRAIL IS TO BE ERECTED SHALL BE RESHAPED AS DIRECTED BY THE ENGINEER TO ENSURE A SMOOTH SURFACE FREE FROM ALL IRREGULARITIES. A QUANTITY OF EMBANKMENT REQUIRED TO ACHIEVE THE ABOVE SHALL BE CARRIED TO THE GENERAL SUMMARY.

EXCESS EXCAVATION RESULTING FROM RESHAPING BERMS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR RESHAPING BERMS AS DESCRIBED SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER FOOT FOR ITEM SPECIAL, RESHAPING BERM. A QUANTITY OF RESHAPING BERM SHALL BE CARRIED TO THE GENERAL SUMMARY .

BERM RESHAPING, GUARDRAIL REMOVAL AND CONSTRUCTION SHALL BE PREFORMED ON ONE SIDE OF THE PAVEMENT AT ANY GIVEN TIME. THE OPEN AREA DUE TO GUARDRAIL REMOVAL SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH TEMPORARY GUIDE MARKERS OR BARRICADES AT ALL TIMES. WHERE EXISTING GUARDRAIL IS REMOVED, NEW GUARDRAIL SHALL BE ERECTED AS SOON AS PRACTICAL. ANY AREAS LEFT UNGUARDED OVERNIGHT SHALL BE PROTECTED BY THE USE OF BARRICADES, DRUMS, OR OTHER WARNING DEVICES SATISFACTORY TO THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 203 EMBANKMENT
LOCATION 1b – 10 CU. YD.

ITEM 606 SPECIAL – RESHAPING BERM
LOCATION 1b – 140 FT.

LOCATION OF GUARDRAIL

THE LOCATIONS OF THE GUARDRAIL RUNS, AS SHOWN IN THE THESE PLANS ARE SUBJECT TO ADJUSTMENTS PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATION WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

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 ASPHALT CONCRETE PAVEMENT (RACP MEETING REQUIREMENTS OF 617.02) IN LIEU OF CRUSHED LIMESTONE.

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 659 SEEDING AND MULCHING, CLASS 2

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

LOCATION 1b

ITEM 659 - SEEDING AND MULCHING, CLASS 2	533 SQ. YD.
ITEM 659 - COMMERCIAL FERTILIZER	0.07 TON
ITEM 659 - LIME	0.110 ACRES
ITEM 659 - WATER	2.88 M. GAL

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 632 DETECTOR LOOP, AS PER PLAN

ALL STOP LINE INDUCTANCE DETECTOR LOOPS SHALL BE THE POWER HEAD CONFIGURATION SHOWN ON TC-82.10. THE WIDTH SHALL BE AS SPECIFIED ON TC-82.10 AND THE LENGTH SHALL BE AS CURRENTLY CALLED FOR IN THE PLANS. THE STOP LINE DETECTOR LOOPS SHALL NOT BE WIRED TO ANY OTHER LOOPS AND SHALL HAVE ITS OWN DETECTOR CHANNEL.

ALL DILEMMA ZONE INDUCTANCE DETECTOR LOOPS CALLED FOR IN THE PLANS SHALL BE THE RECTANGULAR DETECTION. THE LOOPS SHALL BE 6' LONG AND 20' WIDE, IN ORDER TO COVER BOTH LANES OF TRAFFIC.

ALL STOP LINE DETECTION SHALL BE TESTED FOR A BICYCLE TARGET AND ALL DILEMMA DETECTION ZONES SHALL BE TESTED FOR A MOTORCYCLE TARGET.

ALL DETECTOR LOOPS SHALL BE CUT INTO THE PLANED SURFACE OR THE PROPOSED INTERMEDIATE COURSE AT A DEPTH OF 4" FROM THE PROPOSED SURFACE ELEVATION. IF THE CONTRACTOR SO CHOOSES, THEY MAY CUT THE DETECTOR LOOPS INTO THE EXISTING ASPHALT BEFORE PLANING BUT SHALL MAKE SURE THE MATERIAL USED TO FILL THE SAW CUT IS LEFT FAR ENOUGH BELOW THE SURFACE COURSE THAT IT WILL NOT BE DISTURBED DURING THE PLANING OPERATION. THE CONTRACTOR SHALL TEST ALL LEAD-IN CABLES PRIOR TO MAKING THE FINAL SPLICE. PLACEMENT SHALL BE AS PER SPECIFICATION 632.10. FINAL LOCATIONS, SIZE AND ORIENTATION SHALL BE PROVIDED TO THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING. ALL MATERIALS, LABOR, TOOLS, EQUIPMENT, TRAFFIC CONTROL AND INCIDENTALS NECESSARY TO PERFORM THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 632, DETECTOR LOOP, AS PER PLAN.

LOCATION 1b – 18 EACH

@ MARNE RD. – 4 DELIMMA ZONE (20' x 6'), 4 POWERHEAD (25' LONG)
@ LICKING VALLEY RD/BROWNSVILLE RD – 4 DELIMMA ZONE (20' x 6'), 6-POWERHEAD (4-30' LONG & 2-25' LONG)

ITEM SPECIAL – REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS

THIS ITEM SHALL BE USED TO REINFORCE TRANSVERSE JOINT CRACKS. PLACE REINFORCING MESH ON PLANED SURFACE, 5.0' WIDE FROM EDGE LINE TO EDGE LINE (24' LENGTH) CENTERED OVER TRANSVERSE JOINT CRACK. THE ENTIRE ROADWAY SHALL BE OVERLAYED WITH 3.25" ASPHALT CONCRETE AFTER PLACING OF THE REINFORCING MESH. THIS WORK SHALL BE PERFORMED ON ALL JOINTS AS DIRECTED BY THE PROJECT ENGINEER. THE PROJECT ENGINEER SHALL SELECT TRANSVERSE JOINT CRACKS UNTIL ALL OF THE MATERIAL SHOWN BELOW HAS BEEN UTILIZED. REINFORCING MATERIAL SHALL BE GLASGRID CG100 OR EQUIVALENT AND SHALL BE PLACED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND THIS NOTE.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, TRAFFIC CONTROL AND INCIDENTALS NEEDED TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR ITEM SPECIAL – REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS.

S.R. 16 E.B. - SLM 23.76 TO SLM 24.58 = 4,330' / 60' SPACING = 72 JOINTS
S.R. 16 W.B - SLM 23.86 TO SLM 24.27 = 2,165' / 60' SPACING = 36 JOINTS
(108 JOINTS X 24' X 5' WIDE)/9 = 1,440 SQ.YD.

S.R. 16 E.B. - SLM 24.58 TO SLM 28.07 = 18,427' / 60' SPACING = 307 JOINTS
S.R. 16 W.B - SLM 24.27 TO SLM 28.07 = 20,064' / 60' SPACING = 335 JOINTS
(642 JOINTS X 24' X 5' WIDE) = 8,560 SQ.YD.

ITEM 690 SPECIAL – REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS

LOCATION 1a – 1,440 SQ.YD.
LOCATION 1b – 8,560 SQ.YD.

LIC-16-23.76
MUS-16-0.00

ITEM 690 SPECIAL-MISC.: POLISHING AND DETERMINING FRICTION OF GYRATORY COMPACTED ASPHALT SPECIMENS

ON THIS PROJECT CONDUCT LABORATORY POLISHING AND FRICTION MEASUREMENT OF THE SURFACE COURSE ASPHALT MIXTURE AS DESCRIBED BELOW. CONDUCT POLISHING AND FRICTION TESTING ON THE SURFACE COURSE MIX DESIGN APPROVAL SUBMITTAL SAMPLES AND QC SIX INCH DIAMETER GYRATORY SAMPLES. FOR MIX DESIGN APPROVAL SUBMIT TWO POLISHED GYRATORY SPECIMENS WITH BPN FRICTION MEASUREMENTS (PER ASTM E 303) AND TWO UNPOLISHED SPECIMENS WITH THE SUBMITTAL PACKET TO THE LABORATORY. SUBMIT TABULAR BPN VS TIME VALUES FOR A FRICTION DEGRADATION CURVE IN ELECTRONIC EXCEL FORMAT. FOR QC CONDUCT POLISHING AND BPN FRICTION MEASUREMENT ON TWO POLISHED GYRATORY SPECIMENS, ONE CHOSEN RANDOMLY BY THE CONTRACTOR FROM THE SECOND DAY OF PRODUCTION AND ONE CHOSEN RANDOMLY BY THE DISTRICT FROM REMAINING SURFACE COURSE PRODUCTION. SUBMIT TESTED QC SAMPLES AND DATA TO THE LABORATORY. SUBMIT TABULAR BPN VS TIME VALUES FOR A FRICTION DEGRADATION CURVE IN ELECTRONIC EXCEL FORMAT WITH IDENTIFICATION OF THE PROJECT AND JMF. USE THE EXCEL FILE LAYOUT AVAILABLE FROM FPO OR THE ODOT OMM LAB. NOTE ON THE EXCEL FILE ANY NOTES OF VALUE SUCH AS IF NEW OR USED POLISHING DISC WAS USED. SUBMIT ELECTRONIC TE-199S REPRESENTING ASPHALT MIX USED FOR PREPARING THE POLISHED GYRATORY SAMPLES.

POLISHING AND DETERMINING FRICTION NUMBER OF GYRATORY COMPACTED SPECIMENS

ASPHALT POLISHING MACHINE REQUIREMENTS
ASPHALT POLISHING MACHINE OPERATION
BRITISH PENDULUM TESTING FOR DETERMINING BRITISH PENDULUM NUMBER
LABORATORY TEST PROCEDURE FOR FRICTION DEGRADATION CURVE

ASPHALT POLISHING MACHINE REQUIREMENTS:

THE POLISHER IS A LABORATORY ACCELERATED POLISHING DEVICE TO POLISH THE CROSS SECTIONAL SURFACE OF A GYRATORY COMPACTED ASPHALT MIXTURE SAMPLE USING A ROTATING RUBBER DISC AT A CONSTANT ROTATING SPEED AND UNDER CONSTANT VERTICAL FORCE. ENSURE THAT THE POLISHING MACHINE MEETS THE FOLLOWING REQUIREMENTS:

1. HOLD A GYRATORY COMPACTED ASPHALT MIXTURE SAMPLE IN PLACE WHILE IT IS BEING SUBJECTED TO ROTATIONAL POLISHING ACTION ON THE CROSS SECTIONAL SURFACE OF THE SAMPLE BY A RUBBER POLISHING DISC.
2. ACCOMMODATE A GYRATORY COMPACTED SAMPLE SIZE OF 6 IN (15.2 CM) DIAMETER BY 6 IN (15.24 CM) HEIGHT OR 6 IN (15.24 CM) DIAMETER BY 4 IN (10.2 CM) HEIGHT.
3. MAINTAIN FLAT CONTACT BETWEEN THE RUBBER POLISHING DISC AND THE ASPHALT MIXTURE SAMPLE CROSS SECTIONAL SURFACE DURING THE ENTIRE DURATION OF POLISHING ACTION.
4. MAINTAIN A CONSTANT VERTICAL FORCE OF 290 LB (131.5 KG) DURING POLISHING.
5. MAINTAIN A CONSTANT ROTATIONAL SPEED OF THE RUBBER POLISHING DISC AT 30 RPM.
6. MAINTAIN CONSTANT WATER FLOW OF 100 ML (3.38 OZ) PER MINUTE ONTO THE CONTACT INTERFACE BETWEEN THE SAMPLE TOP SURFACE AND BOTTOM SURFACE OF RUBBER DISC DURING POLISHING. PROVIDE AN EASILY SEEN FLOW METER.
7. AUTOMATIC TIMER TO SHUT OFF RUBBER POLISHING DISC ROTATION AT EVERY ONE HOUR INTERVAL.
8. THE RUBBER POLISHING DISC IS MADE OF 90 DUROMETER SBR RUBBER.

ASPHALT POLISHING MACHINE OPERATION:

THE POLISHER MUST BE OPERATED IN ACCORDANCE WITH THE OPERATOR MANUAL INSTRUCTIONS. HOWEVER, CERTAIN POTENTIAL PROBLEMS SHOULD BE WATCHED FOR.

1) THE WATER FLOW RATE IS CRITICAL FOR MAXIMIZING THE LIFE OF THE RUBBER PAD, BUT TOO MUCH WATER WILL STOP THE WEARING PROCESS ON THE AGGREGATE. IF THE FLOW RATE IS SET WHILE THE MACHINE IS STOPPED EXPECT SOME FLOW RATE CHANGE DURING OPERATION. SET THE FLOW RATE TO ACHIEVE THE REQUIRED FLOW RATE OF 100ML/MINUTE DURING POLISHER OPERATION. EXPERIENCE WILL DETERMINE THE BEST SETTING TO START WITH TO ACHIEVE THE CORRECT FLOW RATE.
2) SOME MIX TYPES WITH HIGH FRICTION AGGREGATE LIKE SLAG OR CRUSHED GRAVEL WILL WEAR POLISHING DISCS QUICKLY. IF WEAR IS EXCESSIVE BITS OF RUBBER CAN CLOG THE DISC WATER FLOW CHANNELS. AS NEEDED, REMOVE THE PAD OR OTHERWISE VERIFY CHANNELS ARE CLEAR FOR FLOW OF WATER.
3) EVEN WEAR ON THE POLISHING DISC IS DESIRED. UNEVEN WEAR WITH GREATER DISC DEGRADATION TOWARDS THE OUTSIDE OF THE DISC INDICATES UNEVEN WATER FLOW.
4) MULTIPLE DISCS MAY BE NECESSARY TO COMPLETE A FULL CYCLE OF POLISHING DEPENDING ON AGGREGATE TYPE.
5) EVENLY WORN DISCS MAY BE RE-USED.

BRITISH PENDULUM TESTING FOR DETERMINING BRITISH PENDULUM NUMBER:

TEST SAMPLES WITH A CALIBRATED BRITISH PENDULUM TESTER IN ACCORDANCE WITH ASTM E 303 TO DETERMINE A BRITISH PENDULUM NUMBER (BPN). RECORD THE FINAL READING AS THE BPN FOR THE ASPHALT MIXTURE. MEASURE FOUR BPN NUMBERS AND AVERAGE FOR EACH TEST.

LABORATORY TEST PROCEDURE FOR FRICTION DEGRADATION CURVE:

THE FRICTION DEGRADATION CURVE IS A CURVE OBTAINED FROM TESTS USING THE POLISHER. IT IS A CURVE SHOWING THE BPN VALUES, MEASURED BY THE BRITISH PENDULUM TESTER IN ACCORDANCE WITH ASTM E 303, VERSUS POLISHING TIME AT ONE HOUR INTERVALS UNTIL REACHING THE 8-HOUR DURATION.

TWO GYRATORY COMPACTED SAMPLES PREPARED IN ACCORDANCE WITH THE JMF ARE REQUIRED. THE PROCEDURE CONSISTS OF THE FOLLOWING STEPS.

STEP 1: MEASURE THE INITIAL BPN OF SAMPLE CROSS SECTIONAL SURFACE USING THE BRITISH PENDULUM TESTER AND RECORD IT AS BPN_0 AT TIME T_0.

STEP 2: SUBJECT SAMPLE TO ONE HOUR POLISHING IN THE POLISHER.

STEP 3: MEASURE THE FRICTION VALUE USING THE BRITISH PENDULUM TESTER AND RECORD IT AS BPN AT T, WHERE T INDICATES ACCUMULATED POLISHING DURATION.

REPEAT STEP 2 AND STEP 3 FOR THE NEXT ONE-HOUR POLISHING

AND MEASUREMENT, UNTIL A TOTAL OF 8 HOURS POLISHING DURATION IS COMPLETE.

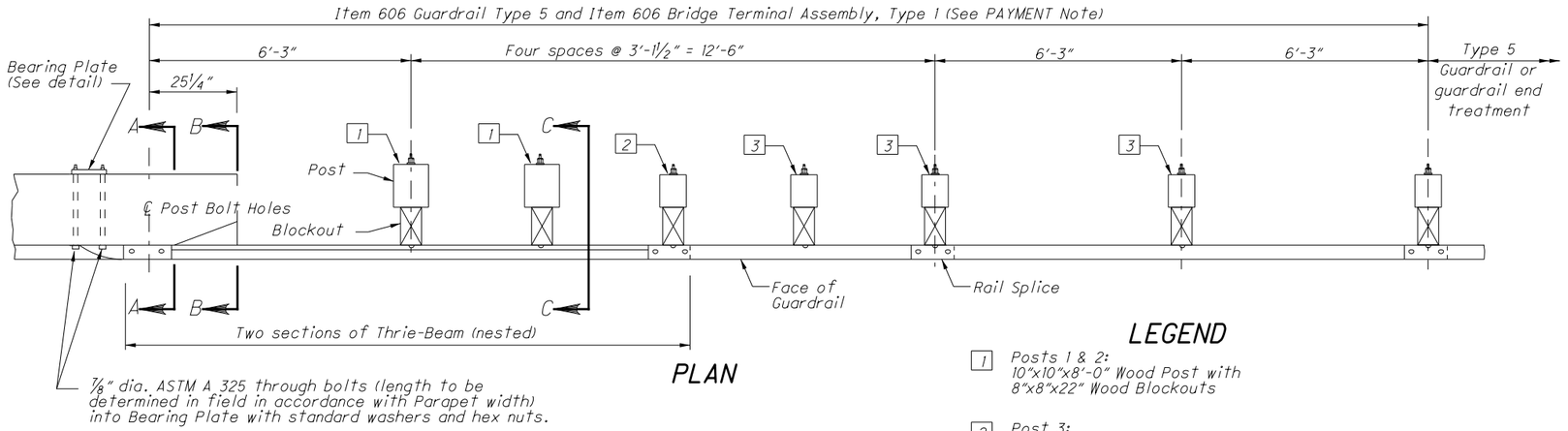
PAYMENT FOR THE ABOVE DESCRIBED PROCEDURE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 690 SPECIAL-MISC.: POLISHING AND DETERMINING FRICTION OF GYRATORY COMPACTED ASPHALT SPECIMENS – LUMP.

LOCATION 1A – LUMP
LOCATION 1B – LUMP
LOCATION 2 - LUMP

CALCULATED LME CHECKED DNM

GENERAL NOTES

LIC-16-23.76
MUS-16-0.00



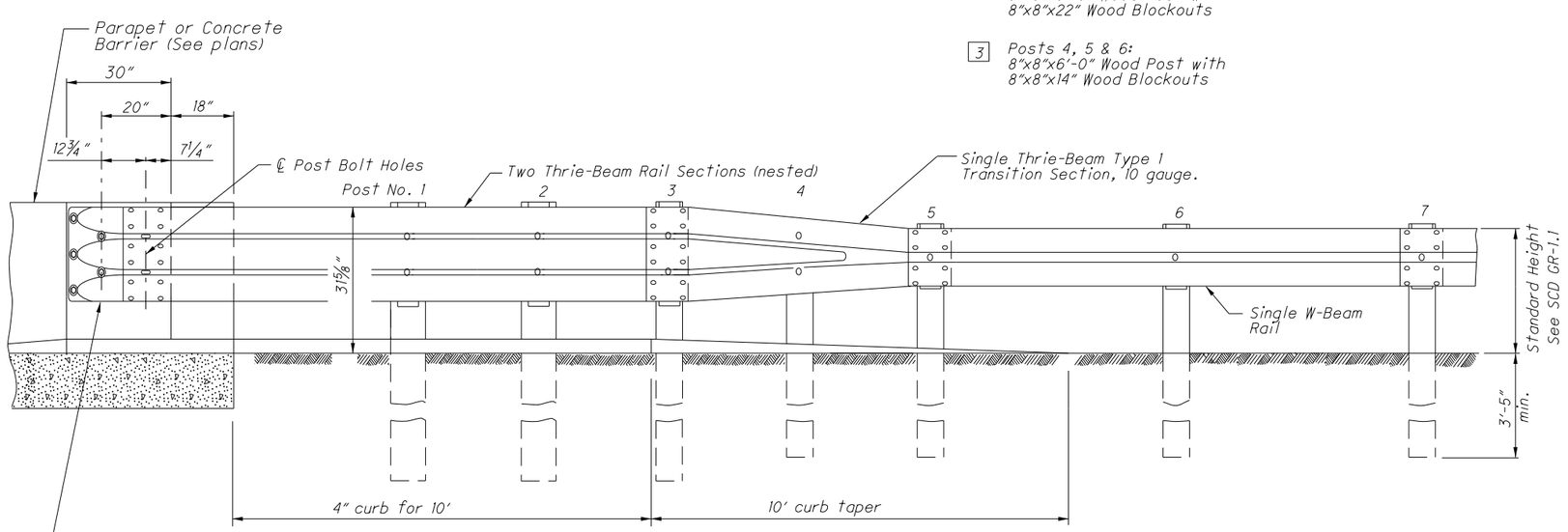
PLAN

LEGEND

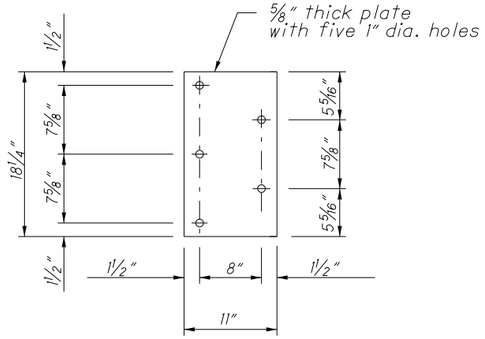
[1] Posts 1 & 2:
10"x10"x8'-0" Wood Post with
8"x8"x22" Wood Blockouts

[2] Post 3:
8"x8"x8'-0" Wood Post with
8"x8"x22" Wood Blockouts

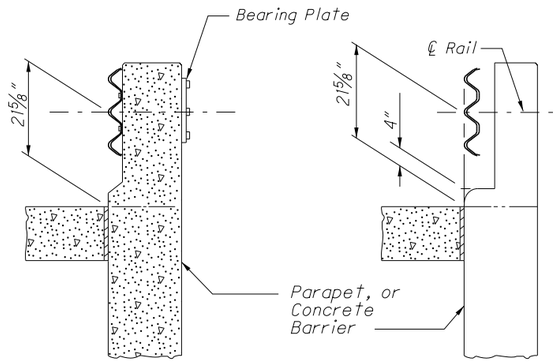
[3] Posts 4, 5 & 6:
8"x8"x6'-0" Wood Post with
8"x8"x14" Wood Blockouts



ELEVATION

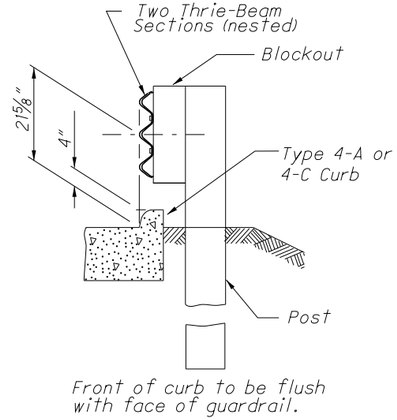


BEARING PLATE



SECTION A-A

SECTION B-B



SECTION C-C

NOTES

GENERAL: *For additional details, see* ***SCD GR-1.1.***

APPLICATION: *Use Type 1 Bridge Terminal Assembly to connect guardrail runs to bridges having deflector Parapet Type Bridge Railing (see* ***Structural Engineering's SCD BR-11.*** *It may also be used to connect guardrail runs to the approach ends of Concrete Barrier (see* ***SCD RM-4.6).***

On undivided, bi-directional roadways, Type 1's may be used to anchor guardrail runs to the trailing end of Deflector Parapets or Concrete Barrier installations.

THRIE BEAM TRANSITION: *Symmetrical W-Beam to Thrie Beam transition panel shall be 10 gauge.*

POSTS: *Posts may be set in drilled holes or driven to grade. See* ***SCD GR-1.1*** *for additional Post embedment details.*

WOOD POSTS - Use sqaure sawed pressure treated wood as per CMS 710.14 and fabricate with square ends. Bore bolt holes and trim the tops of posts, if required, after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W8x24 for 10"x10" wood posts and use W6x25 for 8"x8" posts. Use same post material throughout assembly.

BLOCKOUTS: Use wood blockouts only, steel or plastic blockouts are not permitted. Use notched blockouts with steel posts.

CURB: *Provide a Type 4A or 4C concrete curb minimum of 20', or longer as shown on plans, including a 10' taper (from curb height to flush). Front of curb to be flush with face of guardrail.*

FLARED GUARDRAIL: *Begin Standard Guardrail Flares as shown on* ***SCD GR-5.1*** *preferably at or beyond Post No. 7; however, the flare may begin at Post No. 5.*

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 1, Each, *includes the cost of extra components, in excess of normal guardrail, for additional and different size of posts and blockouts, nested Thrie-Beam, transition and connector sections, Bearing Plate, bolts, washers, nuts, and other hardware.*

The curb is required in this design, and is paid separately under ***Item 609 - Curb, Type 4A (or 4C), per Foot,*** *for the curb and taper sections, including materials, forming and labor needed to construct as shown.*

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE | CHECKED

PTS NUMBER

PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE 1

LIC-16-23.76
MUS-16-0.00

1 / 1

5
47

CALCULATED LME
CHECKED DNM

ITEM 614 MAINTAINING TRAFFIC

THROUGH TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY THE USE OF PART WIDTH CONSTRUCTION AS SHOWN ON MAINTENANCE OF TRAFFIC SHEETS 9 THROUGH 16 FOR BRIDGE RECONSTRUCTION.

TWO LANES OF TRAFFIC IN EACH DIRECTION WILL BE MAINTAINED ON S.R. 16 AT ALL TIMES, EXCEPT AS NOTED BELOW FOR PAVEMENT RESURFACING ACTIVITIES:

LANE CLOSURES FOR THE PURPOSE OF PLACING DRUMS IN ORDER FOR THE CONTRACTOR TO COMPLETE THE WORK AS DESCRIBED IN THE PLANS WILL BE PERMITTED AS FOLLOWS:

LANE CLOSURES WILL ONLY BE IMPLEMENTED AT THE TIMES LISTED ON THE OHIO DEPARTMENT OF TRANSPORTATION'S WEB SITE, "PERMITTED LANE CLOSURE TIMES" SECTION, LOCATED AT THE ADDRESS SHOWN BELOW:

http://plcm.dot.state.oh.us/

THE PERMITTED CLOSURE TIMES LISTED ON THE WEBSITE, 14 CALENDAR DAYS PRIOR TO THE BID LETTING DATE WILL BE IN EFFECT FOR THIS PROJECT.

NO WORK WITHIN ACTIVE TRAVEL LANES OR WHICH WILL SLOW TRAFFIC IS PERMITTED AT ANY OTHER TIMES.

THE WORK ZONE CLOSURES SHALL BE NO LONGER THAN 2 MILES OR AS DIRECTED BY THE ENGINEER IN CONSIDERATION OF THE TRAFFIC FLOW.

WHEN NECESSARY, LANE CLOSURES WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE STANDARD DRAWINGS.

IT IS THE INTENT TO RESTRICT LANE CLOSURES TO THE MINIMUM AMOUNT OF TIME NECESSARY TO PERFORM THE WORK AS DESCRIBED IN THE PLANS. THE CONTRACTOR WILL NOT COMMENCE ANY LANE CLOSURE BEFORE THE HOURS AS SPECIFIED OR COMMENCE ANY CLOSURE AT A TIME WHICH WILL NOT ALLOW COMPLETION OF THE WORK PRIOR TO THE HOURS SPECIFIED. SHOULD THE CONTRACTOR CLOSE THE LANES BEFORE THE ALLOWABLE TIME AND/OR FAIL TO RE-OPEN ALL LANES TO TRAFFIC BY THE ALLOWABLE TIME A DISINCENTIVE OF $50 PER MINUTE SHALL BE ASSESSED FOR EACH MINUTE OUTSIDE THE PERMITTED LANE CLOSURE.

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.

THERE SHALL BE NO LANE CLOSURES ON HOLIDAYS OR HOLIDAY WEEKENDS. THE FOLLOWING ARE CONSIDERED HOLIDAYS:

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 FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIMES ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 12:00N TUESDAY
MONDAY	12:00N FRIDAY THROUGH 12:00N TUESDAY
TUESDAY	12:00N MONDAY THROUGH 12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 12:00N FRIDAY
FRIDAY	12:00N THURSDAY THROUGH 12:00N MONDAY
SATURDAY	12:00N FRIDAY THROUGH 12:00N MONDAY

ITEM 614 MAINTAINING TRAFFIC (cont'd)

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

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. ROADWAY SHALL NOT BE OPENED TO TRAFFIC WITHOUT EITHER THE PERMANENT OR WORK ZONE MARKINGS IN PLACE.

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

DROPOFFS IN WORK ZONES

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

ITEM 614 WORK ZONE MARKING SIGNS

IN ACCORDANCE WITH CMS SECTION 614.04, A QUANTITY OF WORK ZONE MARKING SIGNS HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

W8-H12a (NO EDGE LINES)
LOCATION 1a - 2 EACH
LOCATION 1b - 24 EACH
LOCATION 2 – 2 EACH

ITEM 614 WORK ZONE MARKING SIGN
LOCATION 1a - 2 EACH
LOCATION 1b - 24 EACH
LOCATION 2 – 2 EACH

IN ADDITION, THE CONTRACTOR SHALL ERECT A "GROOVED PAVEMENT" SIGN 250 FEET (75M) IN ADVANCE OF ANY SECTION OF ROADWAY WHERE TRAFFIC MUST TRAVEL ON A PLANED SURFACE. ENSURE THESE SIGNS ARE IN PLACE BEFORE OPENING THE ROADWAY TO TRAFFIC. ERECT THESE SIGNS ON EACH ENTRANCE RAMP AND AT INTERSECTIONS OF THROUGH ROUTES TO WARN TRAFFIC OF THIS SURFACE CONDITION. "GROOVED PAVEMENT" SIGNS SHALL BE INCLUDED FOR PAYMENT WITH THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC AS PER CMS SECTION 614.055.

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 1a – 10 EACH
LOCATION 1b – 70 EACH

BUTT JOINT

A BUTT JOINT WILL BE REQUIRED AT LOCATIONS SPECIFIED BELOW AND AT THE EXTRA AREAS WITH WEARING COURSE REMOVED.

BUTT JOINTS SHALL BE AS PER STANDARD CONSTRUCTION DRAWING BP-3.1 UNLESS OTHERWISE SHOWN IN THE PLANS.

MINIMUM 10' WEDGE LENGTH FOR ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC AT ALL BUTT JOINTS.

LOCATION	ROUTE	DESCRIPTION	S.L.M.	ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC CU. YD.
1a	S.R. 16	BEGIN WORK E.B.	23.76	1.8
		BEGIN WORK W.B.	23.86	1.8
1a	**S.R. 16**	**TOTAL**		**3.6**
1b	S.R. 16	LIC-16-2591 RT	25.91	3.6
		LIC-16-2591 LT	25.91	3.6
		LIC-16-2930 RT	29.30	3.6
		LIC-16-2930 LT	29.30	3.6
		LIC-16-3086 RT	30.86	3.6
		LIC-16-3086 LT	30.86	3.6
		LIC-16-3272 RT	32.72	3.6
1b	**S.R. 16**	**TOTAL**		**25.2**
2	S.R. 16	MUS-16-0029 RT	0.29	1.8
		MUS-16-0029 LT	0.29	1.8
2	**S.R. 16**	**TOTAL**		**3.6**

GRINDING FOR BUTT JOINTS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE

ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

AN ADDITIONAL QUANTITY OF 10 CU. YDS. HAS BEEN INCLUDED IN THE PLANS TO STABILIZE BERMS AND/OR REPAIR PAVEMENT OR BERMS DAMAGED WHEN MAINTAINING TRAFFIC FOR BRIDGE RECONSTRUCTION (SEE SHEETS 9 TO 16).

MAINTENANCE OF TRAFFIC NOTES

LIC-16-23.76
MUS-16-0.00

ITEM 614 WORK ZONE PAVEMENT MARKINGS

THE CONTRACTOR SHALL PLACE ALL WORK ZONE PAVEMENT MARKINGS IN ACCORDANCE WITH THE CURRENT CMS MANUAL AND STANDARD CONSTRUCTION DRAWINGS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ONLY ITEM 614 WORK ZONE LANE LINE, CLASS II HAS BEEN ITEMIZED IN THE PLAN FOR USE ON PLANED SURFACE AND ON INTERMEDIATE COURSE FOR PAVING OPERATION. SURFACE COURSE TEMPORARY MARKINGS SHALL BE PLACED AS PER SPECIFICATIONS AND SHALL BE INCLUDED, ALONG WITH ALL OTHER WORK ZONE PAVEMENT MARKINGS NECESSARY, IN THE LUMP SUM BID FOR MAINTAINING TRAFFIC.

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

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS. THE APPROVED LIST IS AVAILABLE AT THE "ROADWAY STANDARDS: PROPRIETARY ROADSIDE SAFETY DEVICES" WEB PAGE ON THE OFFICE OF ROADWAY ENGINEERING WEBSITE.

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

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

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

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

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

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

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, FOUR CHANGEABLE MESSAGE SIGNS, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGNS SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN LICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT. AND 475 FT., 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. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (cont'd)

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, AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW RETROREFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING 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 CMS 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.

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.

A TOTAL OF 2 PCMS SHALL BE REQUIRED FOR THIS PROJECT.

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. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
LOCATION 1a – 3 SIGN MNTH
LOCATION 2 – 3 SIGN MNTH

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 GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. 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 CMS 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:

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

IN ADDITION TO THE REQUIREMENTS OF CMS 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:

- 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. 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.
- WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

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 SHOULD REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING THE SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF THE SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHOULD 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 THE 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). **THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:**

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
LOCATION 1a - 20 HOURS LOCATION 1b – 60 HOURS
LOCATION 2 – 20 HOURS

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.

CALCULATED LME CHECKED DNM

MAINTENANCE OF TRAFFIC NOTES

LIC-16-23.76
MUS-16-0.00

ITEM 614, BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. ESTIMATED QUANTITIES OF ITEM 614 BARRIER REFLECTOR AND OF ITEM 614 OBJECT MARKER, ONE-WAY HAVE BEEN SHOWN ON SHEET 15/46 AND CARRIED TO THE GENERAL SUMMARY.

ITEM 622 PORTABLE CONCRETE BARRIER, 32"

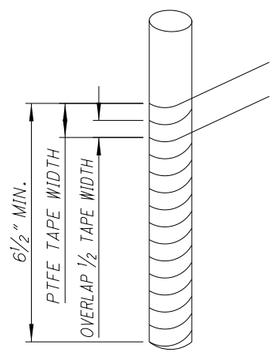
THE CONTRACTOR SHALL INSTALL A PORTABLE CONCRETE BARRIER, 32" AS PER STANDARD DRAWING RM-4.2. ITEM 622 PORTABLE CONCRETE BARRIER, 32" HAS BEEN PROVIDED FOR MAINTAINING TRAFFIC AS SHOWN ON THE MAINTAINANCE OF TRAFFIC SHEETS. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL THE MOVEMENT OF THE BARRIERS IS COMPLETE AND TRAFFIC IS MAINTAINED. AFTER THE PROJECT HAS BEEN COMPLETED THE PORTABLE CONCRETE BARRIER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE PROJECT SITE.

ITEM 622 - PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED, AS PER PLAN

THE CONTRACTOR SHALL INSTALL A PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED AS PER STANDARD DRAWING PCB-91. CONNECTIONS OF THE SEGMENTS SHALL BE ACCOMPLISHED BY USING 1," DIA. HIGH STRENGTH BOLTS. ANCHORING OF PORTABLE CONCRETE BARRIER ON THE BRIDGE WHEN REQUIRED SHALL BE AS SPECIFIED IN STD. DWG. PCB-91 WITH THE EXCEPTION THAT THE ANCHOR BOLTS THREADS SHALL BE WRAPPED WITH A PTFE TAPE AS PER THE DETAIL SHOWN BELOW TO FACILIATE THE REMOVAL OF THE ANCHOR BOLTS.

ITEM 622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED HAS BEEN PROVIDED FOR MAINTAINING TRAFFIC AS SHOWN ON THE MAINTAINANCE OF TRAFFIC SHEETS. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL THE MOVEMENT OF THE BARRIERS IS COMPLETE AND TRAFFIC IS MAINTAINED. AFTER THE PROJECT HAS BEEN COMPLETED THE PORTABLE CONCRETE BARRIER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE PROJECT SITE.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED, AS PER PLAN.



PTFE TAPING DETAIL

ITEM 614 – WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (60 MPH SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT SIGNS WITHIN THE REDUCED SPEED ZONE(S). THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK THAT CAUSES THE WARRANTING CONDITION(S) TO OCCUR. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING REMOVAL OF THE WARRANTING CONDITION(S), OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY REMOVAL OF WARRANTING CONDITION(S) SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE.

CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 614, PARAGRAPH 614.02(B), INDICATES THAT THE TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, A SPEED REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE A SPEED REDUCTION IN THE OPPOSITE DIRECTION. A SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION, IN SUCH CASE, IS APPROPRIATE ONLY IF CONDITIONS ARE EXPECTED TO HAVE AN IMPACT ON THE DIRECTIONAL TRAFFIC FLOW, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF THE WARRANTING CONDITION, AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF A DIRECTIONAL ROADWAY OF DIVIDED HIGHWAYS. THE FIRST WORK ZONE SPEED LIMIT SIGN SHALL BE PLACED APPROXIMATELY 500 FEET IN ADVANCE OF THE LANE REDUCTION, SHIFT TAPER, OR OTHER ROADWAY OR SHOULDER RESTRICTION THAT WARRANTED THE WORK ZONE SPEED ZONE. ON UNDIVIDED HIGHWAYS THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, APPROXIMATELY 250 FEET IN ADVANCE OF SUCH RESTRICTIONS. THE SIGN SHALL BE REPEATED EVERY 1 MILE FOR 60 AND 55 MPH ZONES AND EVERY ONE-HALF MILE FOR 50 MPH AND 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE.

THE SPEED LIMIT REDUCTION SHALL BE LIMITED TO ONLY THE PORTION OF THE PROJECT AND THE WORK THAT WARRANTED THE WORK ZONE SPEED LIMIT REDUCTION.

SPEED REDUCTION (SPEED ZONE AHEAD SYMBOL) SIGNS (W3-5) SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1250 FEET ON MULTI-LANE HIGHWAYS AND 500 FEET ON TWO-LANE HIGHWAYS.

A SIGN(S) TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD CONDITION, PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO ITEM 630, GROUND MOUNTED SUPPORTS, NO. 3 POSTS, UNLESS MOUNTED ON A TEMPORARY SIGN SUPPORT PER SCD MT 105.10.

WORK ZONE SPEED LIMIT AND RELATED SIGN SIZES, PLACEMENT, SUPPORTS, ETC SHALL BE PER THE OMUTCD, WITH TWO EXCEPTIONS: 1) EXPRESSWAY SIZE SPEED LIMIT SIGNS MAY BE USED ON FREEWAYS AND EXPRESSWAYS, IF NECESSARY; 2) THE HEIGHT OF SIGNS MOUNTED ON PORTABLE SUPPORTS SHOULD BE THE HEIGHT REQUIRED FOR GROUND-MOUNTED SIGNS BUT SHALL NOT BE MORE THAN 1 FOOT LOWER THAN THE HEIGHT REQUIRED BY THE OMUTCD, OR AS DIRECTED BY THE ENGINEER. PORTABLE SUPPORTS SHOULD NOT BE USED FOR A DURATION OF MORE THAN 3 DAYS.

WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE INCLUDED IN THE LUMP SUM BID FOR MAINTAINING TRAFFIC. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS. SPEED LIMIT SIGNING FOR THE POINT OF RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE PAID FOR AS WORK ZONE SPEED LIMIT SIGNS.

THE FOLLOWING PROVIDES DETAILS ON WORK ZONE SPEED ZONES APPROVED FOR USE ON THIS PROJECT:

WZSZ REVISION NUMBER: WZ30448

COUNTY-ROUTE: MUSKINGUM S.R. 16

SLM FROM / TO: 28.90 TO 29.70

PHASE/PART & DIRECTION: ALL PHASES

APPROVED SPEED LIMIT (MPH): 60

SPECIFIC WARRANTING CONDITIONS AND FACTORS:
BARRIER LOCATED WITHIN 1.5 FEET FROM EDGE LINE AND CONSTRUCTION VEHILCES ENTERING AND LEAVING THE WORK ZONE.

CALCULATED LME
CHECKED DNM

MAINTENANCE OF TRAFFIC NOTES

LIC-16-23.76
MUS-16-0.00

8
47

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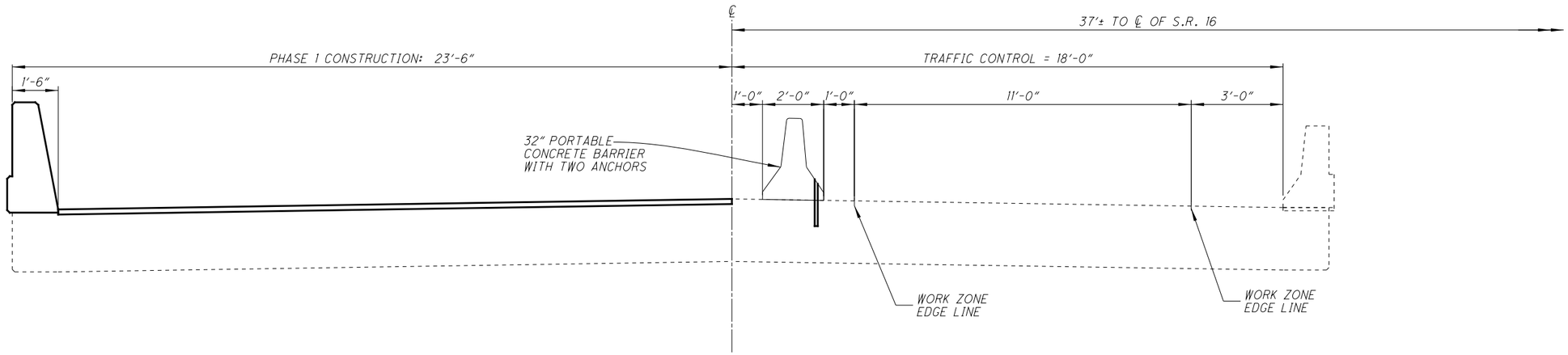
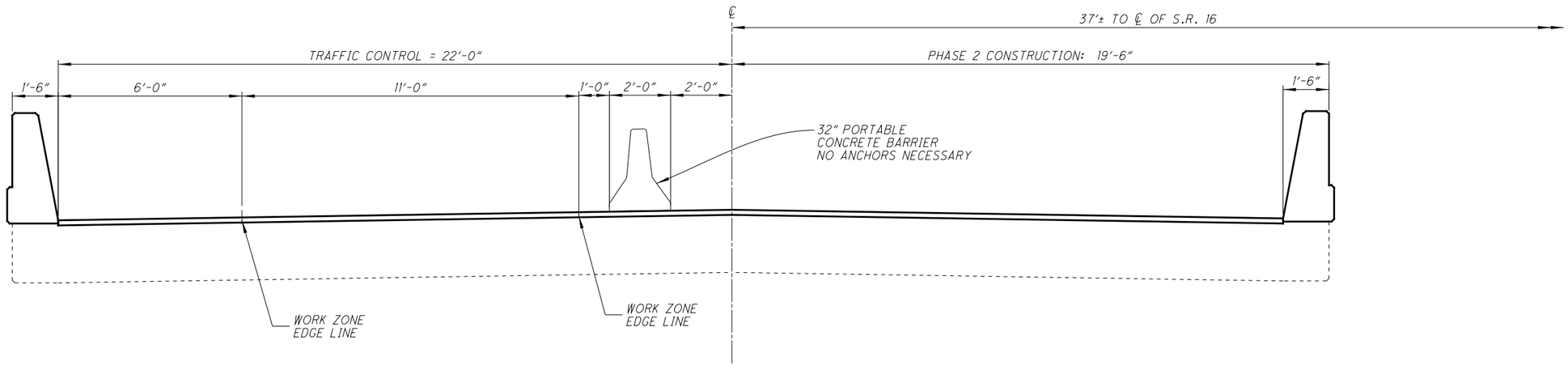


LIC-16-29.30 LEFT (PHASE 1) REPAIR AND TRAFFIC CONTROL



LIC-16-29.30 LEFT (PHASE 2) REPAIR AND TRAFFIC CONTROL

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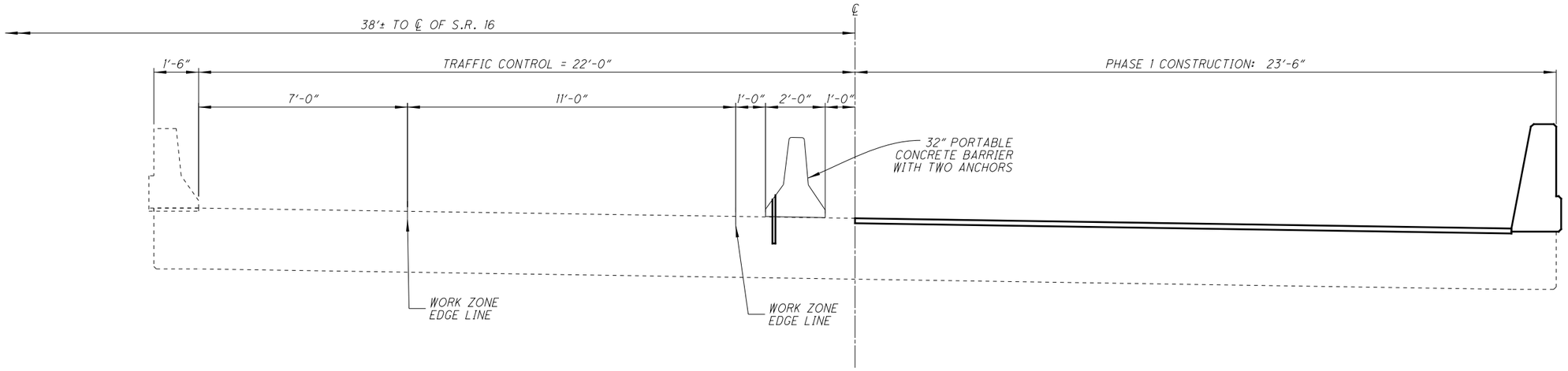
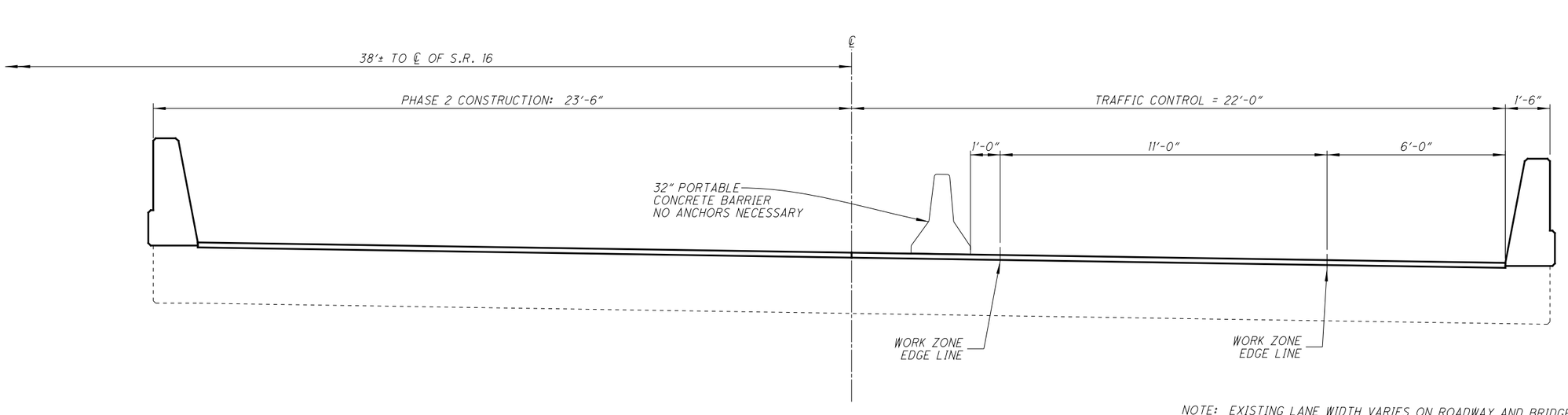
CALCULATED JMS
CHECKED CPS

MAINTANENCE OF TRAFFIC

LIC-16-23.76
MUS-16-0.00



LIC-16-29.30 RIGHT (PHASE 1) REPAIR AND TRAFFIC CONTROL



NOTE: EXISTING LANE WIDTH VARIES ON ROADWAY AND BRIDGE; THEREFORE, SHOULDER WIDTHS MAY BE ADJUSTED WHEN NECESSARY

LIC-16-29.30 RIGHT (PHASE 2) REPAIR AND TRAFFIC CONTROL

CALCULATED JMS
CHECKED CPS

MAINTANENCE OF TRAFFIC

LIC-16-23.76
MUS-16-0.00

10
47

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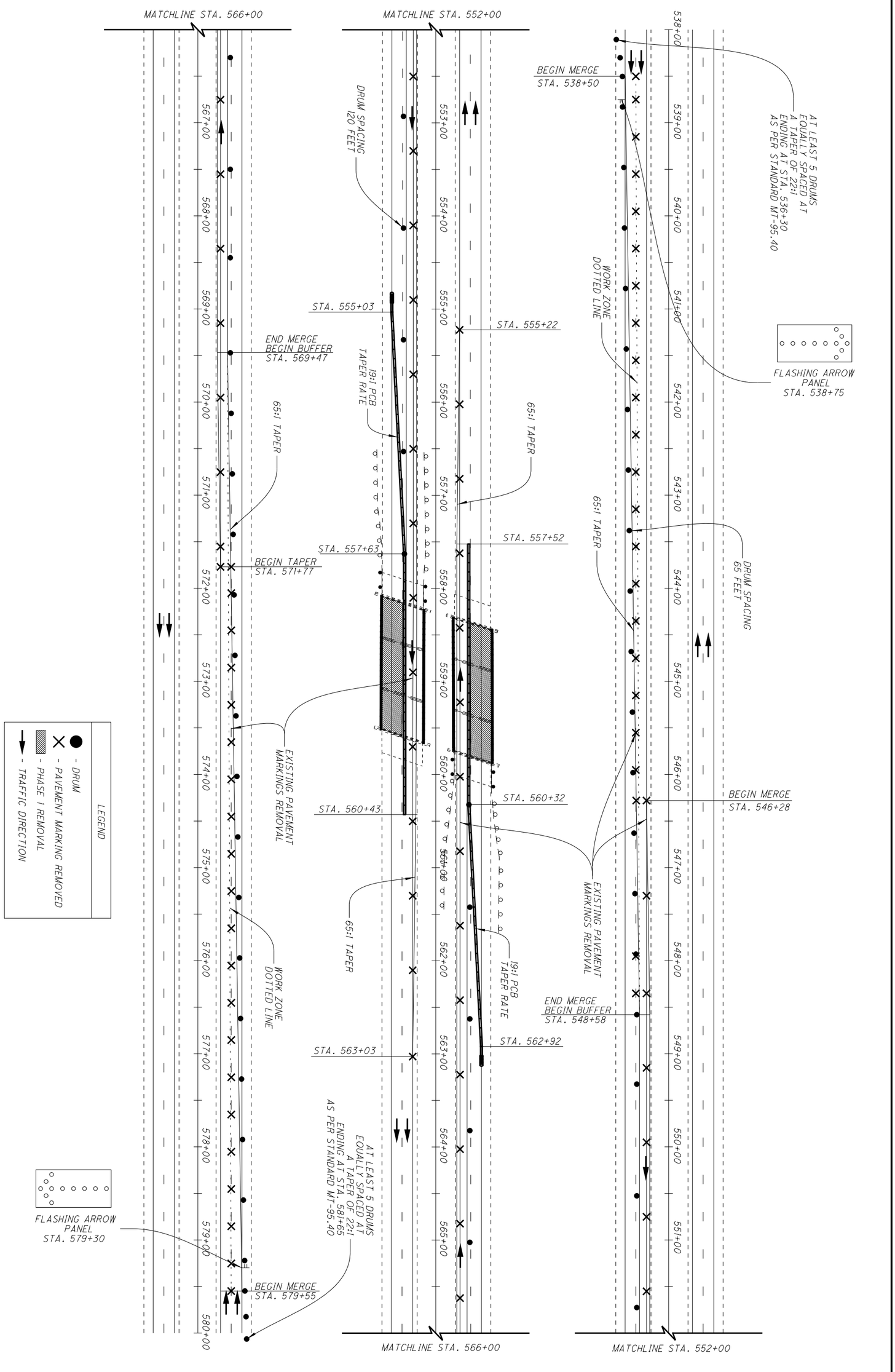

11 / 47	LIC-16-23.76 MUS-16-0.00	MAINTENANCE OF TRAFFIC PHASE 1 BRIDGE NO. LIC-16-29.30 L/R	CALCULATED JMS CHECKED CPS	0 HORIZONTAL SCALE IN FEET

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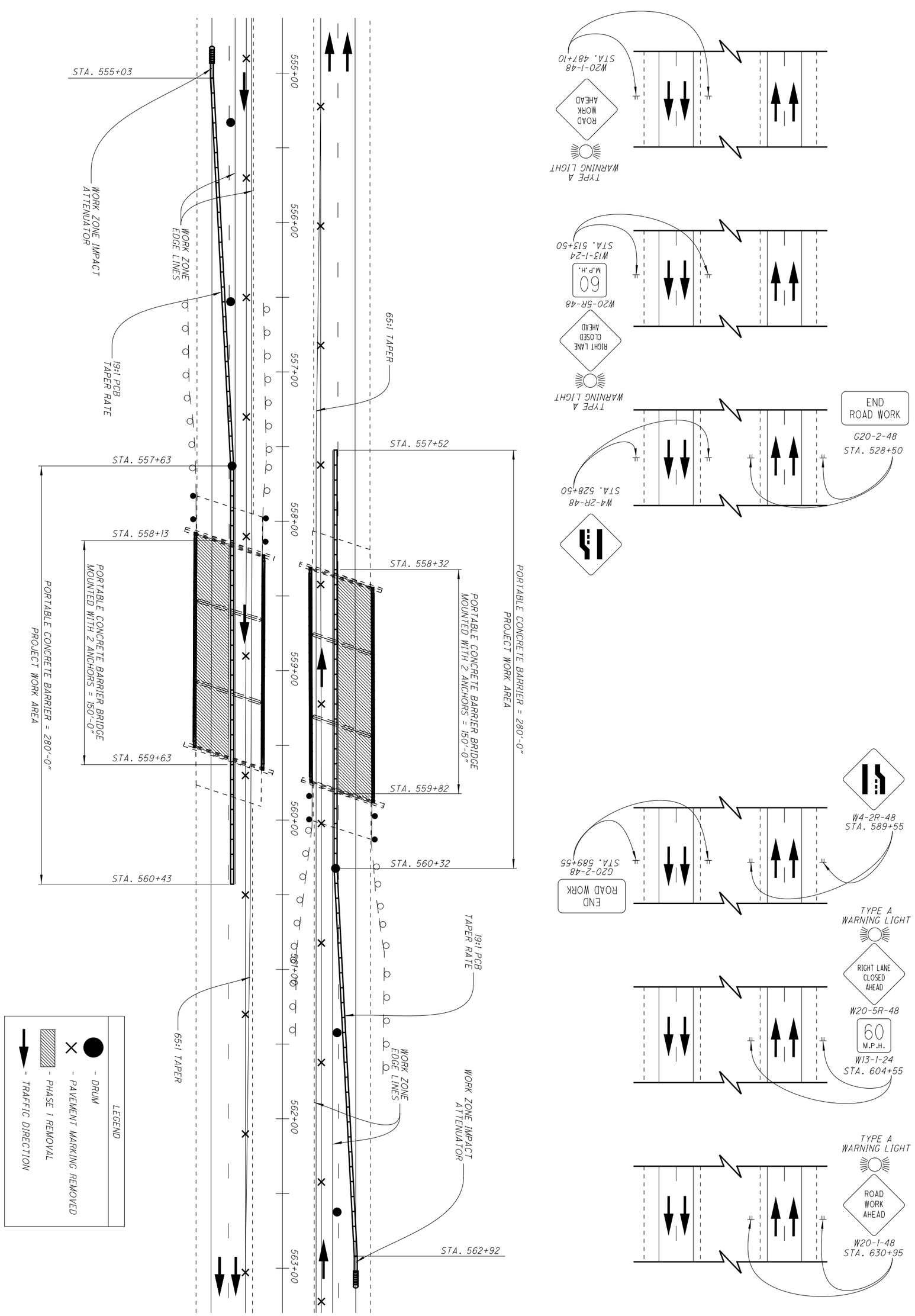

12 / 47	LIC-16-23.76 MUS-16-0.00	MAINTENANCE OF TRAFFIC PHASE 1 BRIDGE NO. LIC-16-29.30 L/R	CALCULATED JMS CHECKED CPS 0 HORIZONTAL SCALE IN FEET

AT LEAST 5 DRUMS
EQUALLY SPACED AT
A TAPER OF 22:1
ENDING AT STA. 537+55
AS PER STANDARD MT-95.40

FLASHING ARROW
PANEL
STA. 538+85

DRUM SPACING
65 FEET

538+00 539+00 540+00 541+00 542+00 543+00 544+00 545+00 546+00 547+00 548+00 549+00 550+00 551+00

MATCHLINE STA. 552+00

BEGIN MERGE
STA. 538+60

WORK ZONE
DOTTED LINE

65:1 TAPER

EXISTING PAVEMENT
MARKINGS REMOVAL

STA. 546+51

END MERGE
BEGIN BUFFER
STA. 549+46

MATCHLINE STA. 552+00

STA. 554+30

65:1 TAPER

WORK ZONE
EDGE LINE

STA. 557+55

STA. 560+35

19:1 PCB
TAPER RATE

STA. 562+14

553+00 554+00 555+00 556+00 557+00 558+00 559+00 560+00 561+00 562+00 563+00 564+00 565+00

MATCHLINE STA. 566+00

DRUM SPACING
120 FEET

STA. 555+81

19:1 PCB
TAPER RATE

STA. 557+61

STA. 560+41

65:1 TAPER

WORK ZONE
EDGE LINE

STA. 563+01

MATCHLINE STA. 566+00

END MERGE
BEGIN BUFFER
STA. 568+59

65:1 TAPER

BEGIN TAPER
STA. 571+52

EXISTING PAVEMENT
MARKINGS REMOVAL

WORK ZONE
DOTTED LINE

BEGIN MERGE
STA. 579+45

567+00 568+00 569+00 570+00 571+00 572+00 573+00 574+00 575+00 576+00 577+00 578+00 579+00 580+00

MATCHLINE STA. 566+00

FLASHING ARROW
PANEL
STA. 579+20

AT LEAST 5 DRUMS
EQUALLY SPACED AT
A TAPER OF 22:1
ENDING AT STA. 580+50
AS PER STANDARD MT-95.40

NOTE:

ALL PHASE 1 WORK ZONE EDGE LINES AND
DOTTED LINES SHALL BE REMOVED AND ARE
INCIDENTAL IN ITEM 614: MAINTAINING TRAFFIC.

LEGEND

- DRUM
- PAVEMENT MARKING REMOVED
- PHASE 1 REMOVAL
- TRAFFIC DIRECTION

HORIZONTAL
SCALE IN FEET
0

CALCULATED JMS
CHECKED CPS

MAINTENANCE OF TRAFFIC PHASE 2
BRIDGE NO. LIC-16-29.30 L/R

LIC-16-23.76
MUS-16-0.00

13
47

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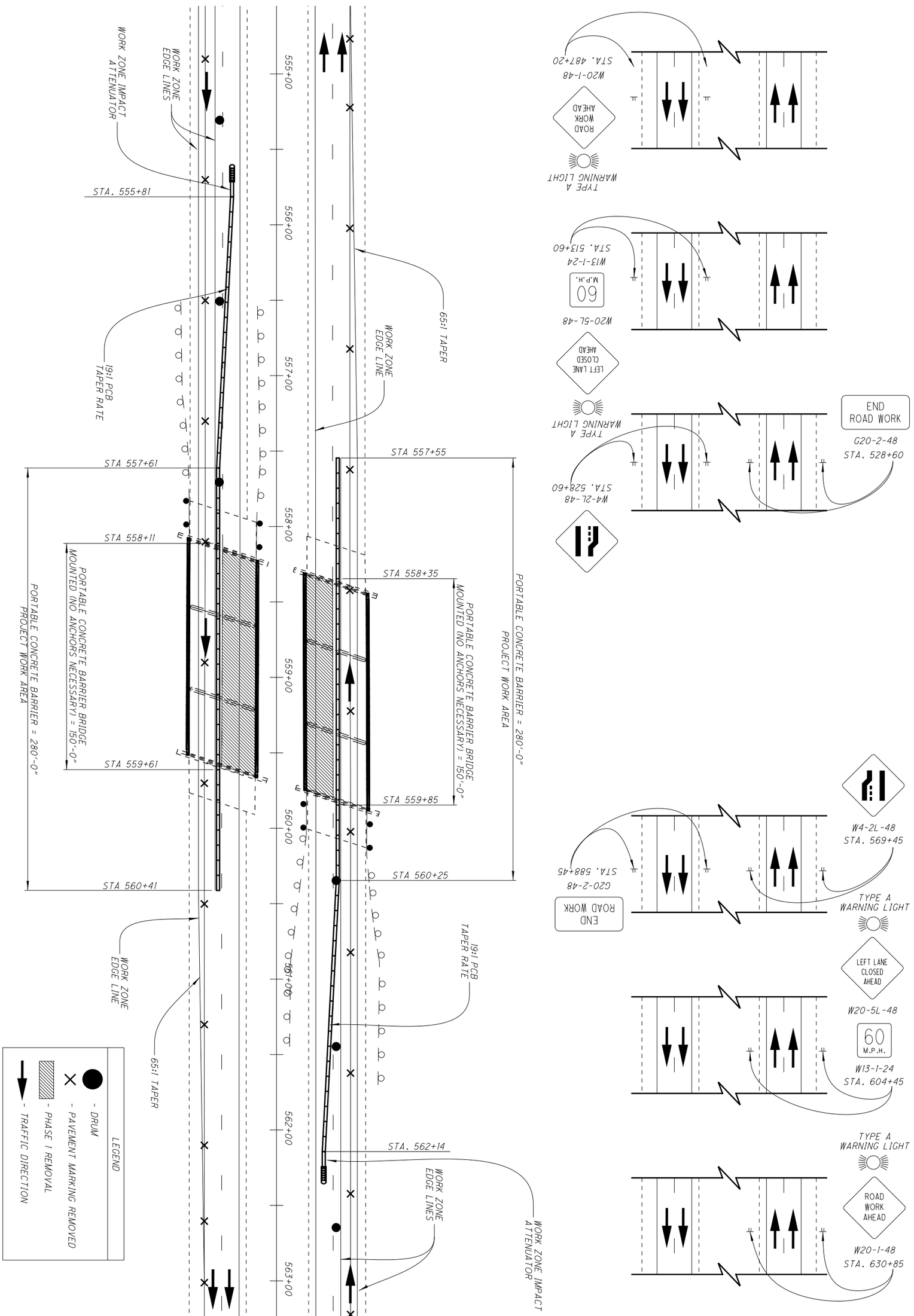


14 / 47	LIC-16-23.76 MUS-16-0.00	MAINTENANCE OF TRAFFIC PHASE 2 BRIDGE NO. LIC-16-29.30 L/R	CALCULATED JMS CHECKED	0 HORIZONTAL SCALE IN FEET

MAINTANENCE OF TRAFFIC QUANTITIES

LEGEND
W - WHITE
Y - YELLOW

ITEM 614 BARRIER REFLECTORS

STATIONING	SPACING (FT)	TYPE A		TYPE B		TYPE A2	TYPE B2	OBJECT MARKER, ONE-WAY
		W	Y	W	Y			
PHASE 1: WESTBOUND								
ON PCB: 557+52 TO 562+92	50			12				12
ON EX. PARAPET: 558+31 TO 559+75	50				4			
ON EX. G.R.: 559+75 TO 561+35	50		5					
PHASE 1: EASTBOUND								
ON PCB: 555+03 TO 560+43	50			12				12
ON EX. G.R.: 556+81 TO 558+23	50		4					
ON EX. PARAPET: 558+23 TO 559+66	50				4			
PHASE 2: WESTBOUND								
ON PCB: 557+55 TO 562+14	50				11			11
ON PARAPET: 558+44 TO 559+88	50			4				
ON EX. G.R.: 559+88 TO 561+42	50	4						
PHASE 2: EASTBOUND								
ON PCB: 555+81 TO 560+41	50				11			11
ON G.R.: 556+54 TO 558+08	50	4						
ON PARAPET: 558+08 TO 559+51	50			4				
		8	9	32	30			
TOTALS		79						46

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY

ITEM 614: BARRIER REFLECTORS.....79 EACH
ITEM 614: OBJECT MARKERS, ONE WAY.....46 EACH

ITEM 630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION

THE FOLLOWING QUANTITIES ARE CARRIED TO THE SUB-SUMMARY TO REMOVE AND REERECT BRIDGE MARKER SIGNS.

ITEM 630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION - 4 EACH
ITEM 630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL - 4 EACH
ITEM 630 GROUND MOUNTED SUPPORT, NO. 2 POST - 44 FEET

ITEM 622 PORTABLE CONCRETE BARRIER, 32"

PHASE 1 WESTBOUND (LEFT BRIDGE)
STA. 557+52 TO STA. 558+32 = 80 FEET
STA. 559+82 TO STA. 562+92 = 310 FEET

PHASE 1 EASTBOUND (RIGHT BRIDGE)
STA. 555+03 TO STA. 558+13 = 310 FEET
STA. 559+63 TO STA. 560+43 = 80 FEET

PHASE 2 WESTBOUND (LEFT BRIDGE)
STA. 557+55 TO STA. 558+35 = 80 FEET
STA. 559+85 TO STA. 562+14 = 230 FEET

PHASE 2 EASTBOUND (RIGHT BRIDGE)
STA. 555+81 TO STA. 558+11 = 230 FEET
STA. 559+61 TO STA. 560+41 = 80 FEET
TOTAL = 1,400 FEET

ITEM 622 PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED

PHASE 1 WESTBOUND (LEFT BRIDGE)
STA. 558+32 TO STA. 559+82 = 150 FEET

PHASE 1 EASTBOUND (RIGHT BRIDGE)
STA. 558+13 TO STA. 559+63 = 150 FEET

PHASE 2 WESTBOUND (LEFT BRIDGE)
STA. 558+35 TO STA. 559+85 = 150 FEET

PHASE 2 EASTBOUND (RIGHT BRIDGE)
STA. 558+11 TO STA. 559+61 = 150 FEET
TOTAL = 600 FEET

ITEM 614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)

TOTAL = 4 EACH

ITEM 642 REMOVAL OF PAVEMENT MARKING

PHASE 1 WESTBOUND (LEFT BRIDGE)
EDGE LINE: STA. 555+22 TO STA. 571+77 = 1,655 FEET
LANE LINE: STA. 571+77 TO STA. 579+55 = 778 FEET

PHASE 1 EASTBOUND (RIGHT BRIDGE)
EDGE LINE: STA. 546+28 TO STA. 563+03 = 1,675 FEET
LANE LINE: STA. 538+50 TO STA. 546+28 = 778 FEET

PHASE 2 WESTBOUND (LEFT BRIDGE)
EDGE LINE: STA. 554+30 TO STA. 571+52 = 1,722 FEET

PHASE 2 EASTBOUND (RIGHT BRIDGE)
EDGE LINE: STA. 546+51 TO STA. 563+01 = 1,650 FEET
TOTAL = 8,258 FEET

ALL QUANTITIES CARRIED TO LOCATION 1b SUB-SUMMARY.

ITEM 614 WORK ZONE EDGE LINE CLASS 1

PHASE 1 WESTBOUND (LEFT BRIDGE)
LEFT (YELLOW) STA. 555+22 TO STA. 571+77 = 1,655 FEET
RIGHT (WHITE) STA. 557+52 TO STA. 579+55 = 2,203 FEET

PHASE 1 EASTBOUND (RIGHT BRIDGE)
RIGHT (WHITE) STA. 538+50 TO STA. 560+43 = 2,193 FEET
LEFT (YELLOW) STA. 546+28 TO STA. 563+03 = 1,675 FEET

PHASE 2 WESTBOUND (LEFT BRIDGE)
RIGHT (WHITE) STA. 554+30 TO STA. 571+52 = 1,722 FEET
LEFT (YELLOW) STA. 557+55 TO STA. 579+45 = 2,190 FEET

PHASE 2 EASTBOUND (RIGHT BRIDGE)
LEFT (YELLOW) STA. 538+60 TO STA. 560+41 = 2,181 FEET
RIGHT (WHITE) STA. 546+51 TO STA. 563+01 = 1,650 FEET
TOTAL = 15,469 / 2.93 MILES

ITEM 614 WORK ZONE DOTTED LINE, CLASS 1

PHASE 1 WESTBOUND (LEFT BRIDGE)
STA. 569+47 TO STA. 579+55 = 1,008 FEET

PHASE 1 EASTBOUND (RIGHT BRIDGE)
STA. 538+50 TO STA. 548+58 = 1,008 FEET

PHASE 2 WESTBOUND (LEFT BRIDGE)
STA. 568+59 TO STA. 579+45 = 1,086 FEET

PHASE 2 EASTBOUND (RIGHT BRIDGE)
STA. 538+60 TO STA. 549+46 = 1,086 FEET
TOTAL = 4,188 FEET

ITEM 626 BARRIER REFLECTORS

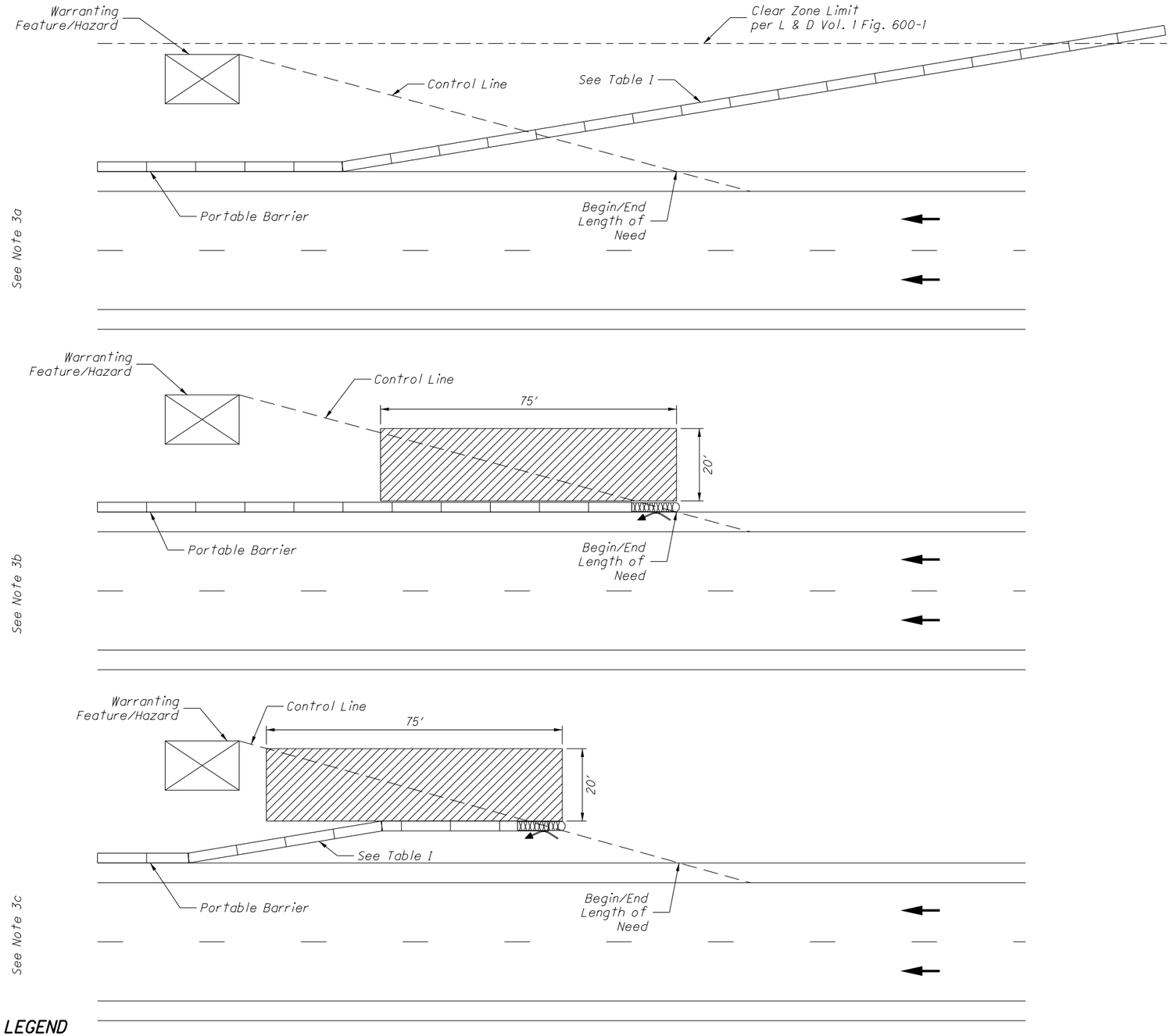
STATIONING	SIDE	SPACING (FT.)	TYPE A		TYPE B		TYPE A2	TYPE B2	REMARKS
			W	Y	W	Y			
WESTBOUND: 558+45 TO 561+41	SHOULDER	*	3		3				
WESTBOUND: 558+31 TO 561+37	MEDIAN	*				3	3		
EASTBOUND: 556+98 TO 559+66	MEDIAN	*				3	3		
EASTBOUND: 556+53 TO 559+52	SHOULDER	*	3		3				
			6		12		6		
TOTAL			24						

* SEE CMS SECTION 626.03

CALCULATED JMS
CHECKED CPS

MAINTANENCE OF TRAFFIC CALCULATIONS
BRIDGE NO. LIC-16-29.30 L/R

LIC-16-23.76
MUS-16-0.00



LEGEND

- RECOVERY AREA
- PORTABLE BARRIER
- NON-GATING IMPACT ATTENUATOR
- DIRECTION OF TRAVEL

NOTES:

1. Attenuators shall be installed per the manufacturer's specifications.
2. Recovery area shall have slopes 3:1 or flatter and be free of workers, hazards, equipment, drop-offs, and material storage.
3. The Contractor shall select one of the three acceptable options for terminating portable barrier:
   a) Terminate flared section of portable barrier outside clear zone with tapered end only where cross slopes are 10:1 or flatter.
   b) Terminate portable barrier with an impact attenuator. A non-gating attenuator may be included in the length of need measurement.
   c) Flare a section of portable barrier to the length of need control line and terminate with an impact attenuator. A non-gating impact attenuator may be included in the flared section of portable barrier.
4. The Contractor shall submit documentation to the Engineer, 2 weeks prior to implementation, for acceptance when:
   a) Deviating from the three acceptable options for terminating portable barrier.

      Documentation shall explain any deviations and verify that the recovery area fulfills the manufacturer's specifications and Note 2.

   b) Using a gating impact attenuator in lieu of a non-gating impact attenuator.

      The gating impact attenuator length shall not be included as part of the length of need or recovery area requirements. Additional portable barrier will need to be added. The additional cost for the additional barrier required for a gating impact attenuator shall be included in the cost of the gating impact attenuator.

      Documentation shall verify that the extended recovery area fulfills the manufacturer's specifications and and Note 2.
5. Gating impact attenuators shall not be used in gore locations or within the clear zone between bi-directional traffic.

TABLE I

SPEED LIMIT (MPH)	PB FLARE RATE MINIMUM
25	8:1
30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

THIS DRAWING REPLACES PIS 2010175 DATED 7-20-2012.

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE 7-19-2013 | CHECKED

PIS NUMBER 2010175

PLAN INSERT SHEET

IMPACT ATTENUATOR PLACEMENT

LIC-16-23.76
MUS-16-0.00

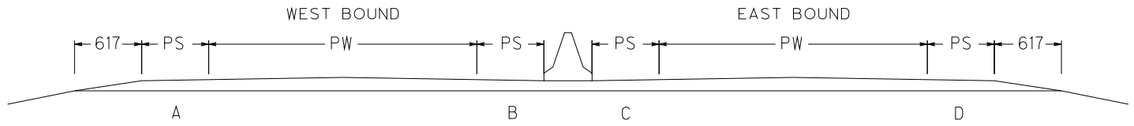
1 / 1

16
47

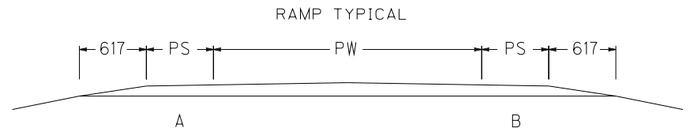
PW = PAVEMENT WIDTH
PS = PAVED SHOULDER

TYPICAL 1

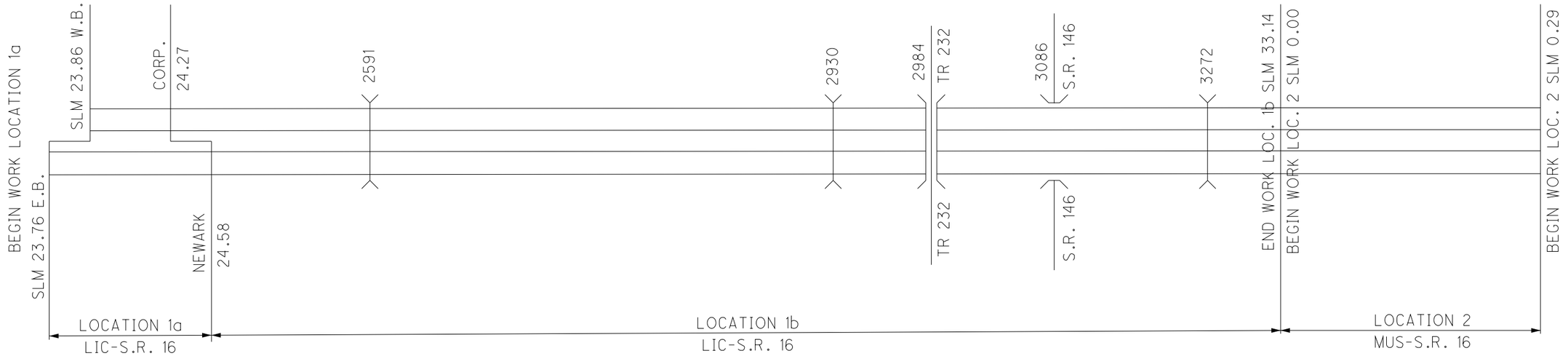
TYPICAL 2



TYPICAL 3



STRAIGHT LINE DIAGRAM



CALCULATED LME
CHECKED DNM

ASPHALT CONCRETE DATA

LIC-16-23.76
MUS-16-0.00

17
47

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SEE SHEET 17 FOR TYPICALS AND STRAIGHT LINE DIAGRAM

PAVEMENT DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		PAVEMENT WIDTH (FEET)	TYPICAL	PAVEMENT AREA	254		407		442 ASPHALT CONCRETE				614
					MILES	LIN. FT.				THICKNESS	PAVEMENT PLANING, ASPHALT CONCRETE	TACK COAT @ 0.075 GAL./S.Y.	TACK COAT FOR INTERMEDIATE COURSE @ 0.05 GAL./S.Y.	THICKNESS	INTERMEDIATE COURSE, 19 MM, TYPE A (446)	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (446)	WORK ZONE LANE LINE, CLASS II
									SQ. YD.	INCHES	SQ. YD.	GAL.	GAL.	INCHES	CU. YD.	INCHES	CU. YD.	MILE
1a	LIC	S.R. 16 E.B.	23.76	24.58	0.82	4,329.6	24.0	1	11,545.6	3.25	11,545.6	865.9	577.3	1.75	561.3	1.50	481.1	1.64
1a	LIC	S.R. 16 W.B.	23.86	24.27	0.41	2,164.8	24.0	1	5,772.8	3.25	5,772.8	433.0	288.6	1.75	280.7	1.50	240.6	0.82
LOCATION 1a TOTALS (CARRIED TO SUB-SUMMARY)											**17,318.4**	**1,298.9**	**865.9**		**842.0**		**721.7**	**2.46**
1b	LIC	S.R. 16 E.B.	24.58	25.06	0.48	2,534.4	24.0	1	6,758.4	3.25	6,758.4	506.9	337.9	1.75	328.6	1.50	281.6	0.96
1b	LIC	S.R. 16 E.B.	25.06	25.64	0.58	3,062.4	24.0	2	8,166.4	3.25	8,166.4	612.5	408.3	1.75	397.0	1.50	340.3	1.16
1b	LIC	S.R. 16 E.B.	25.64	33.14	7.50	39,600.0	24.0	1	105,600.0	1.75	105,600.0	7,920.0	5,280.0	1.75	5,133.4	1.50	4,400.0	15.00
1b	LIC	S.R. 16 W.B.	24.27	25.06	0.79	4,171.2	24.0	1	11,123.2	3.25	11,123.2	834.2	556.2	1.75	540.8	1.50	463.5	1.58
1b	LIC	S.R. 16 W.B.	25.06	25.64	0.58	3,062.4	24.0	2	8,166.4	3.25	8,166.4	612.5	408.3	1.75	397.0	1.50	340.3	1.16
1b	LIC	S.R. 16 W.B.	25.64	33.14	7.50	39,600.0	24.0	1	105,600.0	1.75	105,600.0	7,920.0	5,280.0	1.75	5,133.4	1.50	4,400.0	15.00
						0.0												0.00
	BRIDGE DEDUCTIONS								(3,441.0)		(3,441.0)	(258.1)	(172.1)	1.75	(167.2)	1.50	(143.3)	(0.42)
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)											**241,973.4**	**18,148.0**	**12,098.6**		**11,763.0**		**10,082.4**	**34.44**
2	MUS	S.R. 16 E.B.	0.00	0.29	0.29	1,531.2	24.0	1	4,083.2	1.75	4,083.2	306.2	204.2	1.75	198.5	1.50	170.2	0.58
2	MUS	S.R. 16 W.B.	0.00	0.29	0.29	1,531.2	24.0	1	4,083.2	1.75	4,083.2	306.2	204.2	1.75	198.5	1.50	170.2	0.58
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)											**8,166.4**	**612.4**	**408.4**		**397.0**		**340.4**	**1.16**

CALCULATED LME
CHECKED DNM

ASPHALT CONCRETE DATA

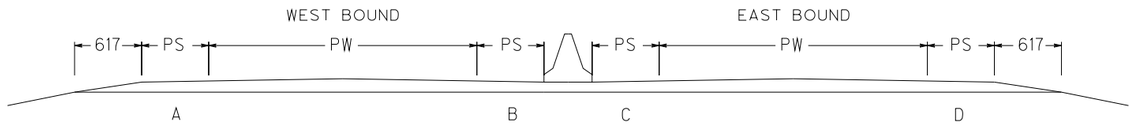
LIC-16-23.76
MUS-16-0.00

TYPICAL 1

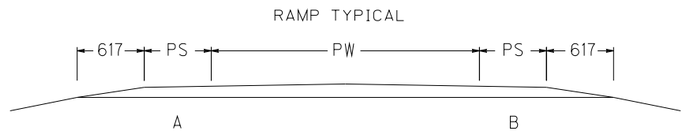
PW = PAVEMENT WIDTH

PS = PAVED SHOULDER

TYPICAL 2



TYPICAL 3



SHOULDER DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		TYPICAL	PROPOSED WIDTH (FT.)				SHOULDER AREA	254		407		442 ASPHALT CONCRETE				617		618
					MILES	LIN.FT.		A	B	C	D		THICKNESS	PAVEMENT PLANING, ASPHALT CONCRETE	TACK COAT @ 0.075 GAL./S.Y.	TACK COAT FOR INTERMEDIATE COURSE @ 0.05 GAL./S.Y.	THICKNESS	INTERMEDIATE COURSE, 19 MM, TYPE A (446)	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (446)	THICKNESS	COMPACTED AGGREGATE, AS PER PLAN (2' WIDTH)	RUMBLE STRIPS, (ASPHALT CONCRETE)
												SQ. YD.	INCHES	SQ. YD.	GAL.	GAL.	INCHES	CU. YD.	INCHES	CU. YD.	INCHES	CU. YD.	MILE
1a	LIC	S.R. 16 E.B.	23.76	24.58	0.82	4,329.6	1			4	10	6,734.9	3.25	6,734.9	505.1	336.7	1.75	327.4	1.50	280.6	2.00	106.9	1.64
1a	LIC	S.R. 16 W.B.	23.86	24.27	0.41	2,164.8	1	8	4			2,886.4	3.25	2,886.4	216.5	144.3	1.75	140.3	1.50	120.3	2.00	53.5	0.82
LOCATION 1a TOTALS (CARRIED TO SUB-SUMMARY)														**9,621.3**	**721.6**	**481.0**		**467.7**		**400.9**		**160.4**	**2.46**
1b	LIC	S.R. 16 E.B.	24.58	25.06	0.48	2,534.4	1			4	10	3,942.4	3.25	3,942.4	295.7	197.1	1.75	191.6	1.50	164.3	2.00	62.6	0.96
1b	LIC	S.R. 16 E.B.	25.06	25.64	0.58	3,062.4	2			6.8 AVG	10	5,716.5	3.25	5,716.5	428.7	285.8	1.75	277.9	1.50	238.2	2.00	75.6	1.16
1b	LIC	S.R. 16 E.B.	25.64	33.14	7.50	39,600.0	1			4	10	61,600.0	1.75	61,600.0	4,620.0	3,080.0	1.75	2994.4	1.50	2,566.7	3.00	1,466.7	15.00
		S.W. RAMP TO S.R. 146				927.0	3	3	6			927.0	1.75	927.0	69.5	46.4	1.75	45.1	1.50	38.6	3.00	34.3	
		S.E. RAMP FROM S.R. 146				495.0	3	3	6			495.0	1.75	495.0	37.1	24.8	1.75	24.1	1.50	20.6	3.00	18.3	
1b	LIC	S.R. 16 W.B.	24.27	25.06	0.79	4,171.2	1	8	4			5,561.6	3.25	5,561.6	417.1	278.1	1.75	270.4	1.50	231.7	2.00	103.0	1.58
1b	LIC	S.R. 16 W.B.	25.06	25.57	0.51	2,692.8	2	8	7.0 AVG			4,488.0	3.25	4,488.0	336.6	224.4	1.75	218.2	1.50	187.0	2.00	66.5	1.02
1b	LIC	S.R. 16 W.B.	25.57	28.07	2.50	13,200.0	1	8	4			17,600.0	1.75	17,600.0	1,320.0	880.0	1.75	855.6	1.50	733.3	3.00	488.9	5.00
1b	LIC	S.R. 16 W.B.	28.07	32.62	4.55	24,024.0	1	10	4			37,370.7	1.75	37,370.7	2,802.8	1,868.5	1.75	1816.6	1.50	1,557.1	3.00	889.8	9.10
1b	LIC	S.R. 16 W.B.	32.62	33.14	0.52	2,745.6	1	10	8			5,491.2	1.75	5,491.2	411.8	274.6	1.75	266.9	1.50	228.8	3.00	101.7	1.04
		N.W. RAMP FROM S.R. 146				523.0	3	6	3			523.0	1.75	523.0	39.2	26.2	1.75	25.4	1.50	21.8	3.00	19.4	
		N.E. RAMP TO S.R. 146				927.0	3	6	3			927.0	1.75	927.0	69.5	46.4	1.75	45.1	1.50	38.6	3.00	34.3	
		BRIDGE DEDUCTIONS										(2,035.8)		(2,035.8)	(152.69)	(101.79)	1.75	(98.96)	1.50	(84.83)	3.00	(39.3)	(0.49)
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)														**142,606.6**	**10,695.3**	**7,130.5**		**6,932.3**		**5,941.9**		**3,321.8**	**34.37**
2	MUS	S.R. 16 E.B.	0.00	0.29	0.29	1,531.2	1			4	10	2,381.9	1.75	2,381.9	178.6	119.1	1.75	115.8	1.50	99.2	3.00	56.7	0.58
2	MUS	S.R. 16 W.B.	0.00	0.29	0.29	1,531.2	1	10	8			3,062.4	1.75	3,062.4	229.7	153.1	1.75	148.9	1.50	127.6	3.00	56.7	0.58
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)														**5,444.3**	**408.3**	**272.2**		**264.7**		**226.8**		**113.4**	**1.16**

CALCULATED LME CHECKED DNM

PAVED SHOULDER DATA

LIC-16-23.76
MUS-16-0.00

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EXTRA AREAS

LOCATION	COUNTY	ROUTE	SIDE	DESCRIPTION	INTERSECTIONS DETAIL DIMENSION A	B	C	AREA	202 WEARING COURSE REMOVED	407 TACK COAT @ 0.075 GAL./S.Y.	407 TACK COAT FOR INTERMEDIATE COURSE @0.05 GAL./S.Y.	442 ASPHALT CONCRETE THICKNESS	INTERMEDIATE COURSE, 19 MM, TYPE A (446)	442 ASPHALT CONCRETE THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (446)
					FT.	FT.	FT.	SQ. YD.	SQ. YD.	GAL.	GAL.	INCHES	CU. YD.	INCHES	CU. YD.
1b	LIC	S.R. 16 E.B.	RT	RIGHT TURN LANE @ E. MAIN ST.	SEE DETAIL SHEET 25			624.0	624.0	46.8	31.2	1.75	30.4	1.50	26.0
1b	LIC	S.R. 16 E.B.	RT	OFFSET LEFT TURN LANE @ MARNE RD.	SEE DETAIL SHEET 25			1,339.0	1,339.0	100.5	67.0	1.75	65.1	1.50	55.8
1b	LIC	S.R. 16 E.B.	RT	E. MAIN ST.	58	48	130	573.6	573.6	43.1	28.7	1.75	27.9	1.50	23.9
1b	LIC	S.R. 16 E.B.	CL	PAVED MEDIAN BEFORE BARRIER	104	19		219.6	219.6	16.5				1.50	9.2
1b	LIC	S.R. 16 E.B.	RT	RIGHT TURN LANE @ C.R. 668	SEE DETAIL SHEET 26			347.0	347.0	26.1	17.4	1.75	16.9	1.25	12.1
1b	LIC	S.R. 16 E.B.	RT	OFFSET LEFT TURN LANE @ C.R. 668	SEE DETAIL SHEET 26			1,386.0	1,386.0	104.0	69.3	1.75	67.4	1.25	48.2
1b	LIC	S.R. 16 E.B.	RT	C.R. 668	46	35	123	403.8	403.8	30.3	20.2	1.75	19.7	1.25	14.1
1b	LIC	S.R. 16 E.B.	CL	MEDIAN U-TURN				319.0		24.0				1.50	13.3
1b	LIC	S.R. 16 E.B.	CL	MEDIAN U-TURN				319.0		24.0				1.50	13.3
1b	LIC	S.R. 16 W.B.	LT	RIGHT TURN LANE @ MARNE RD.	SEE DETAIL SHEET 25			624.0	624.0	46.8	31.2	1.75	30.4	1.25	21.7
1b	LIC	S.R. 16 W.B.	LT	OFFSET LEFT TURN LANE @ E. MAIN ST.	SEE DETAIL SHEET 25			1,342.0	1,342.0	100.7	67.1	1.75	65.3	1.25	46.6
1b	LIC	S.R. 16 W.B.	LT	MARNE RD.	55	28	90	360.6	360.6	27.1	18.1	1.75	17.6	1.25	12.6
1b	LIC	S.R. 16 W.B.	LT	RIGHT TURN LANE @ C.R. 668	SEE DETAIL SHEET 26			347.0	347.0	26.1	17.4	1.75	16.9	1.25	12.1
1b	LIC	S.R. 16 W.B.	LT	OFFSET LEFT TURN LANE @ C.R. 668	SEE DETAIL SHEET 26			1,385.0	1,385.0	103.9	69.3	1.75	67.4	1.25	48.1
1b	LIC	S.R. 16 W.B.	LT	C.R. 668	66	26	108	491.4	491.4	36.9	24.6	1.75	23.9	1.25	17.1
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)									**9,443.0**	**756.8**	**461.5**		**448.9**		**374.1**

CALCULATED LME
CHECKED DNM

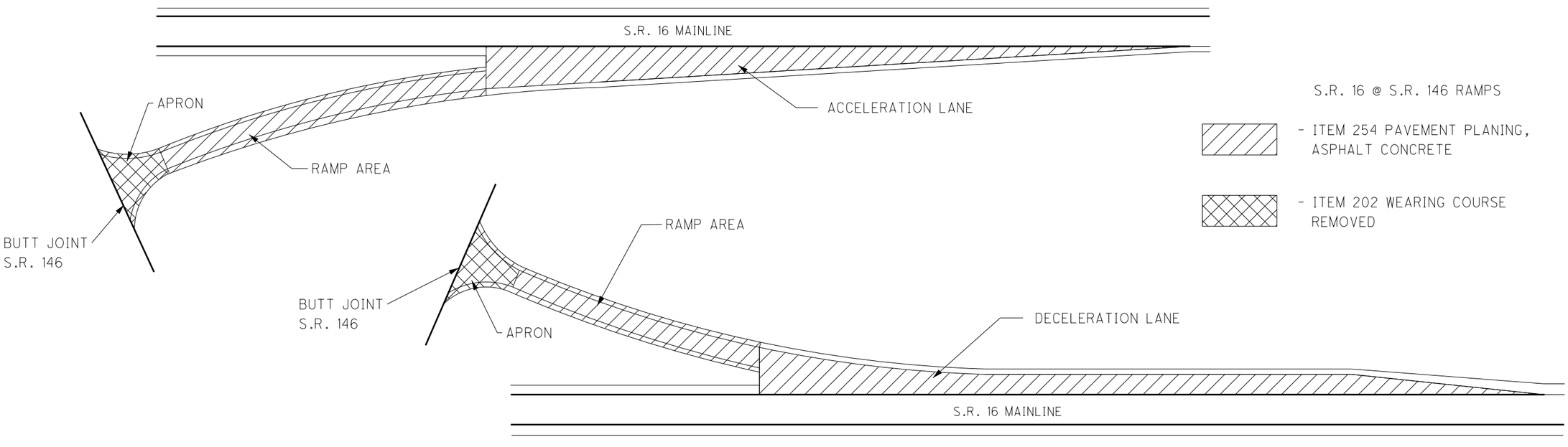
EXTRA AREAS DATA

LIC-16-23.76
MUS-16-0.00

RAMP DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION	RAMP LENGTH	RAMP WIDTH	AREA	APRON AREA	TOTAL AREA	202	254		407		442 ASPHALT CONCRETE			
									WEARING COURSE REMOVED	THICKNESS	PAVEMENT PLANING, ASPHALT CONCRETE	TACK COAT @ 0.075 GAL./SQ. YD.	TACK COAT FOR INTERMEDIATE COURSE @ 0.05 GAL./SQ. YD.	THICKNESS	INTERMEDIATE COURSE, 19 MM, TYPE A (446)	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (446)
				FEET	FEET	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	INCHES	SQ. YDS.	GAL.	GAL.	INCHES	CU. YDS.	INCHES	CU. YDS.
1b	LIC	S.R. 16 E.B.	DECELERATION LANE TO S.R. 146					1472.0		1.75	1472	111	74	1.75	71.6	1.50	61.4
1b	LIC	S.R. 16 E.B.	OFF RAMP TO S.R. 146	927.00	16.0	1648.0	314.0	1962.0	314	1.75	1648	148	99	1.75	95.4	1.50	81.8
1b	LIC	S.R. 16 E.B.	ON RAMP FROM S.R. 146	495.00	16.0	880.0	387.0	1267.0	387	1.75	880	96	64	1.75	61.6	1.50	52.8
1b	LIC	S.R. 16 E.B.	ACCELERATION LANE FROM S.R. 146					2060.0		1.75	2060	155	103	1.75	100.2	1.50	85.9
1b	LIC	S.R. 16 W.B.	DECELERATION LANE TO S.R. 146					1476.0		1.75	1476	111	74	1.75	71.8	1.50	61.5
1b	LIC	S.R. 16 W.B.	OFF RAMP TO S.R. 146	927.00	16.0	1648.0	258.0	1906.0	258	1.75	1648	143	96	1.75	92.7	1.50	79.5
1b	LIC	S.R. 16 W.B.	ON RAMP FROM S.R. 146	523.00	16.0	929.8	389.0	1318.8	389	1.75	930	99	66	1.75	64.2	1.50	55.0
1b	LIC	S.R. 16 W.B.	ACCELERATION LANE FROM S.R. 146					1731.0		1.75	1731	130	87	1.75	84.2	1.50	72.2
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)									**1,348**		**11,845**	**993.0**	**663.0**		**641.7**		**550.1**

NOTE: PAVED SHOULDER QUANTITIES ARE INCLUDED WITH MAINLINE FOR ACCEL/DECEL LANES



CALCULATED LME
CHECKED DNM

GORE AND RAMP DATA

LIC-16-23.76
MUS-16-0.00

LOCATION 1b

LIC-16-2591L: BUTT JOINT AT APPROACH SLABS
LIC-16-2591R: BUTT JOINT AT APPROACH SLABS
LIC-16-2930L: DECK OVERLAY, REPLACE PARAPET
LIC-16-2930R: DECK OVERLAY, REPLACE PARAPET
LIC-16-2984: OVERHEAD, MILL AND FILL MAINLINE 3.25"
LIC-16-3086L: BUTT JOINT AT EXPANSION JOINT, APPROACH SLAB REPAIR
LIC-16-3086R: BUTT JOINT AT EXPANSION JOINT, APPROACH SLAB REPAIR
LIC-16-3272L: MILL 1.75", PLACE 3.25" ASPHALT CONCRETE
LIC-16-3272R: BUTT JOINT AT APPROACH SLABS

LOCATION 2

MUS-16-0029L: BUTT JOINT AT REAR APPROACH SLAB, END PROJECT
MUS-16-0029R: BUTT JOINT AT REAR APPROACH SLAB, END PROJECT

BRIDGE DEDUCTIONS = ROADWAY/SHOULDER WIDTH X (BRIDGE LENGTH + APPROACH SLAB LENGTHS)

BRIDGE DATA

LOCATION	COUNTY, ROUTE, BRIDGE NO.	LENGTH (BRIDGE LIMITS)	WIDTH	AREA	APPROACH SLAB LENGTH	APPROACH SLAB WIDTH	APPROACH SLAB AREA (INCLUDES BOTH APPROACH SLABS)	DETAILS (SHEETS 23-24)	MAINLINE DEDUCTIONS (CARRIED TO SHEET 18)	SHOULDER DEDUCTIONS (CARRIED TO SHEET 19)	202		407		442 ASPHALT CONCRETE				516	519
											WEARING COURSE REMOVED	PORTION OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	TACK COAT @ 0.075 GAL/SQ.YD.	TACK COAT FOR INTERMEDIATE COURSE @ 0.05 GAL/SQ.YD.	THICKNESS	INTERMEDIATE COURSE, 19 MM, TYPE A (446)	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (446)	JOINT SEALER, AS PER PLAN	PATCHING CONCRETE STRUCTURE, MISC.: ELASTOMERIC CONCRETE
		LIN. FT.	LIN. FT.	SQ. YD.	LIN. FT.	LIN. FT.	SQ. YD.		SQ.YD.	SQ.YD.	SQ.YD.	LUMP	GALLON	GALLON	INCHES	CU.YD.	INCHES	CU.YD.	LIN. FT.	SQ. FT.
1b	LIC-16-2591L	79.6	40.0	353.8	25.0	36.0	200.0	1	345.6	172.8									72.0	
1b	LIC-16-2591R	79.6	38.5	340.6	25.0	36.0	200.0	1	345.6	201.6									72.0	
1b	LIC-16-2930L	144.6	43.3	695.7	25.0	40.0	222.2	1	518.9	302.7									82.0	
1b	LIC-16-2930R	144.6	47.3	760.0	25.0	40.0	222.2	1	518.9	302.7									93.0	
1b	LIC-16-2984	OVERHEAD (MILL & FILL MAINLINE)						2												
1b	LIC-16-3086L	155.5	42.3	730.9	20.0	24.0	106.7	3	521.3	304.1	177.8	LUMP	13.3	8.9	1.75	8.6	1.50	7.4	94.0	80.0
1b	LIC-16-3086R	148.5	42.3	698.0	20.0	24.0	106.7	3	502.7	293.2	177.8	LUMP	13.3	8.9	1.75	8.6	1.50	7.4	94.0	80.0
1b	LIC-16-3272L	79.0	47.3	415.2	25.0	44.0	244.4	4	344.0	258.0			49.5	33.0	1.75	32.1	1.50	27.5		
1b	LIC-16-3272R	79.0	47.3	415.2	25.0	44.0	244.4	1	344.0	200.7									88.0	
	BRIDGE DEDUCTIONS								3,441.0	2,035.8										
	LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)										**355.6**	**LUMP**	**76.1**	**50.8**		**49.3**		**42.3**	**595.0**	**160.0**
2	MUS-16-0029L	196.5	46.3	1,010.9	25.0	42.5	236.1	1											42.5	
2	MUS-16-0029R	196.5	46.3	1,010.9	25.0	42.5	236.1	1											42.5	
	LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)																		**85.0**	

CALCULATED LME
CHECKED DNM

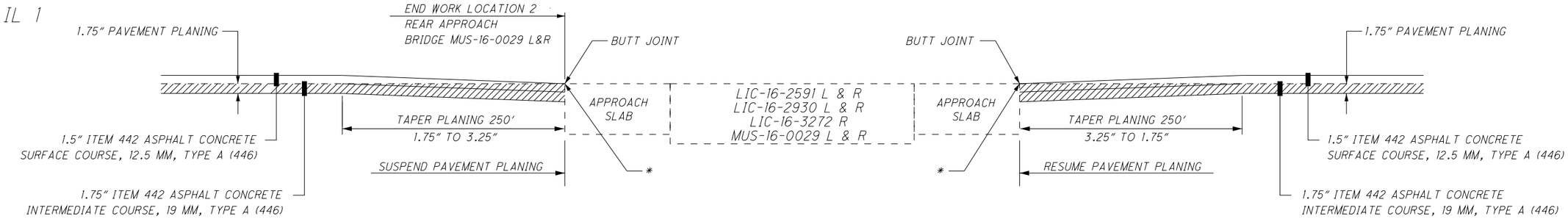
BRIDGE TREATMENT DATA

LIC-16-23.76
MUS-16-0.00

CALCULATED LME | CHECKED DNM

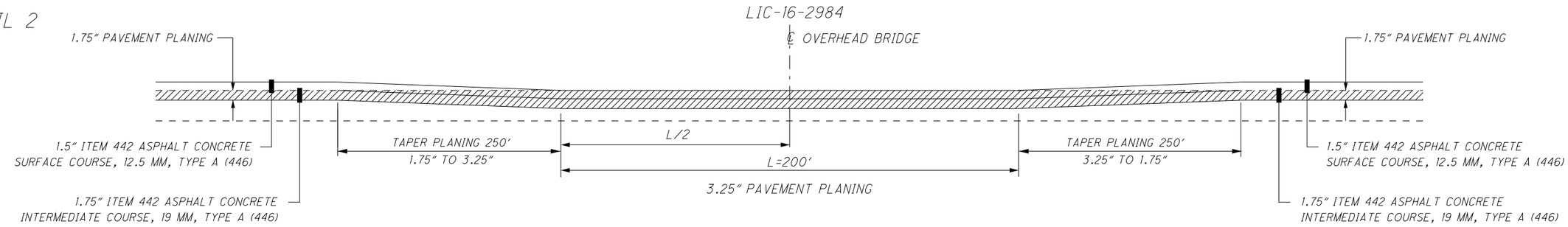
BRIDGE DECK TREATMENT DATA

DETAIL 1



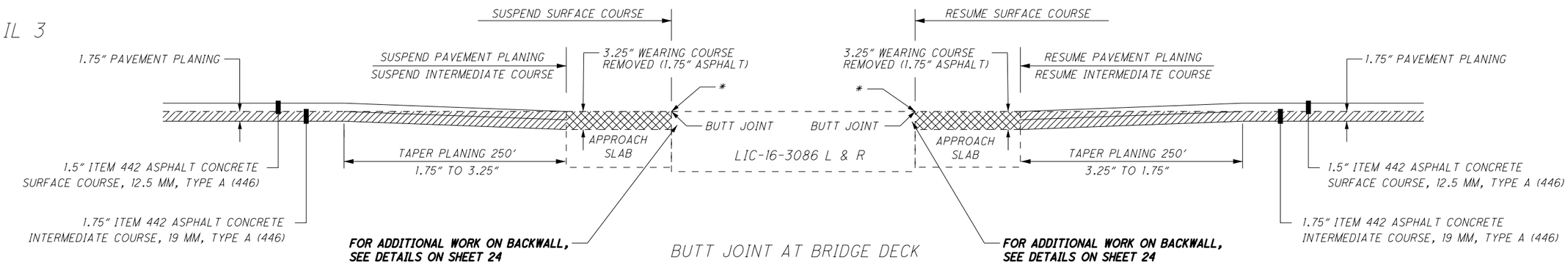
BUTT JOINT AT APPROACH SLABS

DETAIL 2



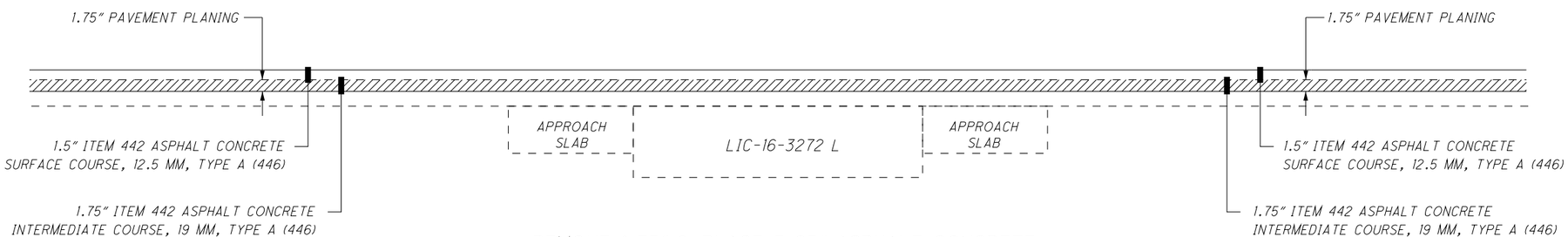
MILL AND FILL MAINLINE

DETAIL 3



BUTT JOINT AT BRIDGE DECK

DETAIL 4



REMOVE 1.75" & PLACE 3.25" ASPHALT CONCRETE

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE

ITEM 202 WEARING COURSE REMOVED

* 2.0" DEEP JOINT SEALER, AS PER PLAN

DETAILS NOT TO SCALE

LIC-16-23.76
MUS-16-0.00

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

ALL UNSOUND CONCRETE 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. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

(2) ITEM 519 SPECIAL - PATCHING CONCRETE STRUCTURE, MISC: ELASTOMERIC CONCRETE

THIS ITEM CONSISTS OF CLEANING, PREPARING, AND PLACING OF ELASTOMERIC CONCRETE AT LOCATIONS SPECIFIED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

FOR ALL REPAIR LOCATIONS FIRST CUT AND SQUARE CONCRETE AROUND THE ENTIRE AREA OF REPAIR. THEN CLEAN THE HOLE, FORM, PREPARE THE HOLE AND PLACE ELASTOMERIC CONCRETE AS PER THE APPROVED PRODUCT MANUFACTURE'S INSTALLATION GUIDELINES.

PROVIDE A FIELD MIXED ELASTOMERIC CONCRETE HEADER MATERIAL. THE ELASTOMERIC CONCRETE MATERIAL SHALL BE FIELD MIXED AND CONSIST OF A TWO COMPONENT ELASTOMERIC AND PREGRADED AGGREGATE MIX.

THE ELASTOMERIC CONCRETE SHALL BE:

WABO CRETE II
WATSON AND BOWMAN ACME CORP.
95 PINVIEW DRIVE
AMHERST, NY 14228
1-800-677-4922

OR AN APPROVED EQUAL.

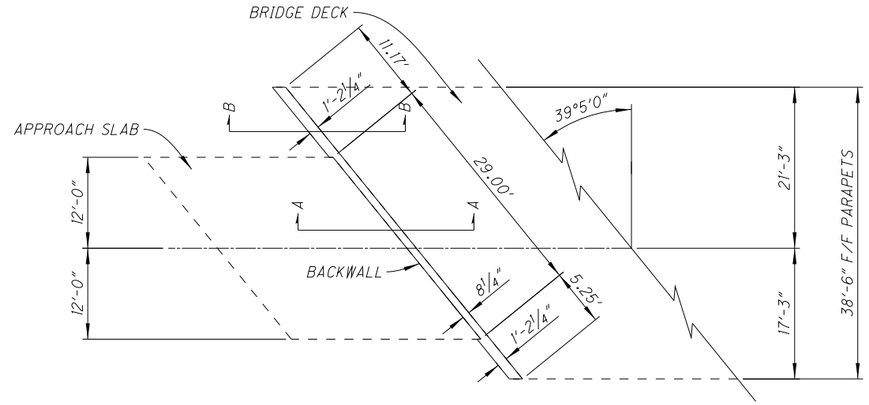
THE CONTRACTOR SHALL SUBMIT THE SELECTED PRODUCT INFORMATION, AFTER THE AWARD OF THE CONTRACT TO THE RESPECTIVE ODOT AREA ENGINEER FOR APPROVAL. THE MANUFACTURER WILL BE REQUIRED TO FURNISH A REPRESENTATIVE SAMPLE OF MATERIAL TO BE SUPPLIED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

THE CONTRACTOR SHALL PROVIDE APPROVED MANUFACTURER INSTRUCTIONS FOR THE PROPER INSTALLATION OF THE ELASTOMERIC CONCRETE. ELASTOMERIC CONCRETE SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE CONTRACT PER SQUARE FOOT UNIT PRICE FOR ITEM 519 SPECIAL - PATCHING CONCRETE STRUCTURE, MISC: ELASTOMERIC CONCRETE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO SHEET 22/47.

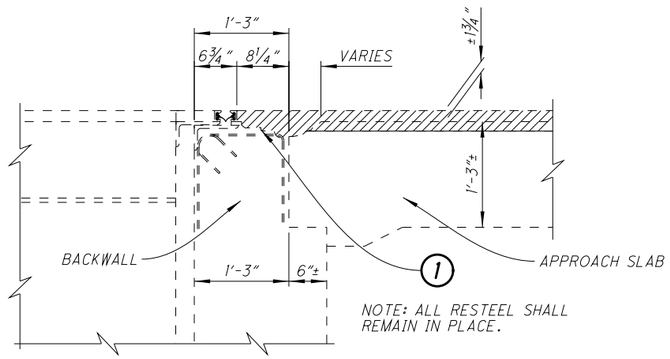
BRIDGE NO.	LOCATION	PATCH AREA (SF)
LIC-16-3086 L	REAR ABUTMENT	40
LIC-16-3086 L	FORWARD ABUTMENT	40
LIC-16-3086 R	REAR ABUTMENT	40
LIC-16-3086 R	FORWARD ABUTMENT	40



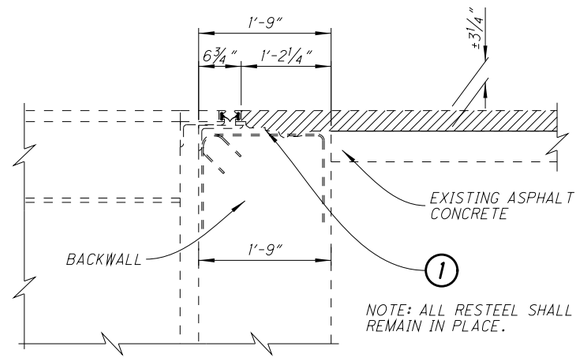
LIC-16-3086 L/R TYPICAL ABUTMENT PLAN VIEW (4-ABUTMENTS)

LEGEND

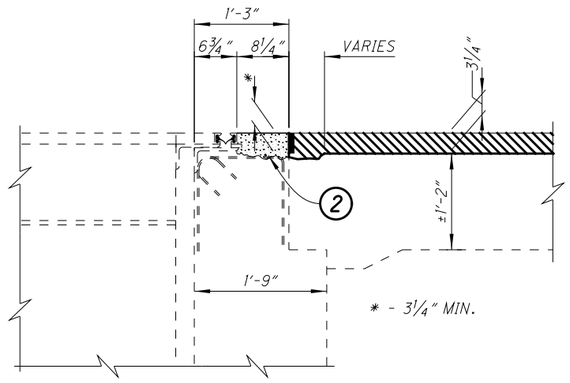
- ITEM 202 - WEARING COURSE REMOVED (SEE ROADWAY PLANS)
- PROPOSED ASPHALT CONCRETE SURFACE COURSE (SEE ROADWAY PLANS)
- ITEM 519 SPECIAL - PATCHING CONCRETE STRUCTURE, MISC: ELASTOMERIC CONCRETE
- ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN



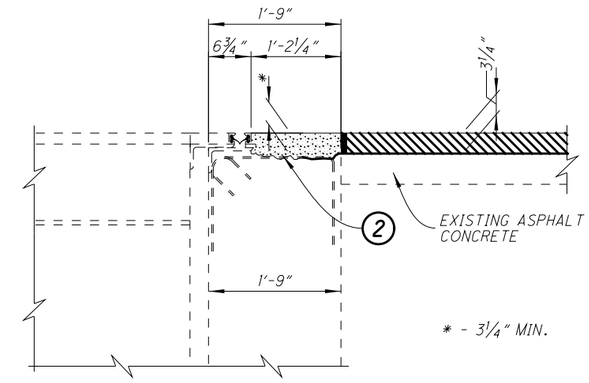
SECTION A-A (EXISTING APPROACH SLAB AREA)



SECTION B-B (TYPICAL EXISTING SHOULDER)



SECTION A-A (PROPOSED APPROACH SLAB AREA)



SECTION B-B (TYPICAL PROPOSED SHOULDER)

CALCULATED JPH
CHECKED JDR

DECK TREATMENT DATA

LIC-16-23.76
MUS-16-0.00

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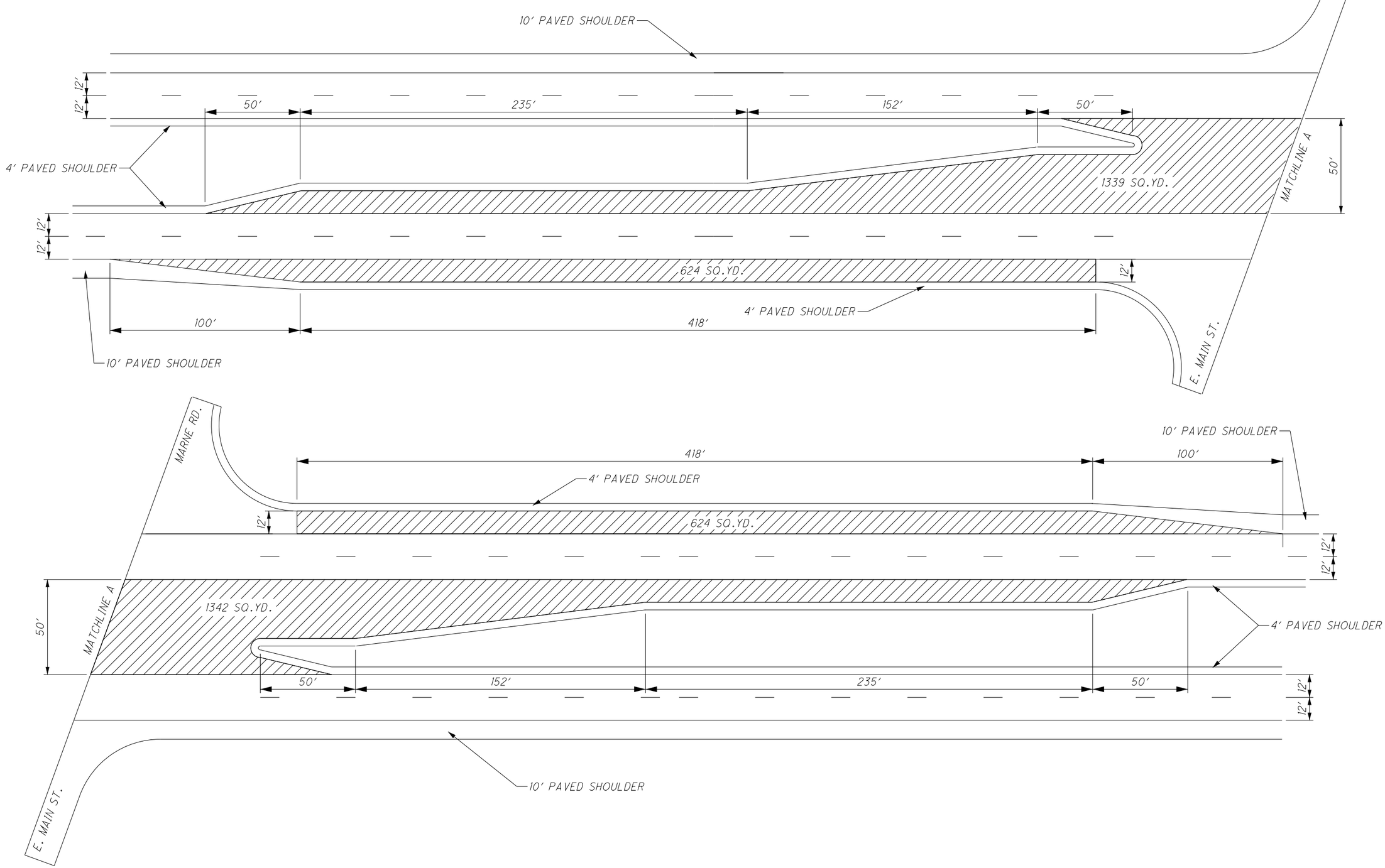
WEARING COURSE REMOVED

SEE SHEET 20 FOR TURN LANE QUANTITES



DRAWING NOT TO SCALE

CALCULATED LME
CHECKED DNM

PLAN SHEET
S.R. 16 & E.MAIN ST./MARNE RD.

LIC-62-23.76
MUS-16-0.00

25
47

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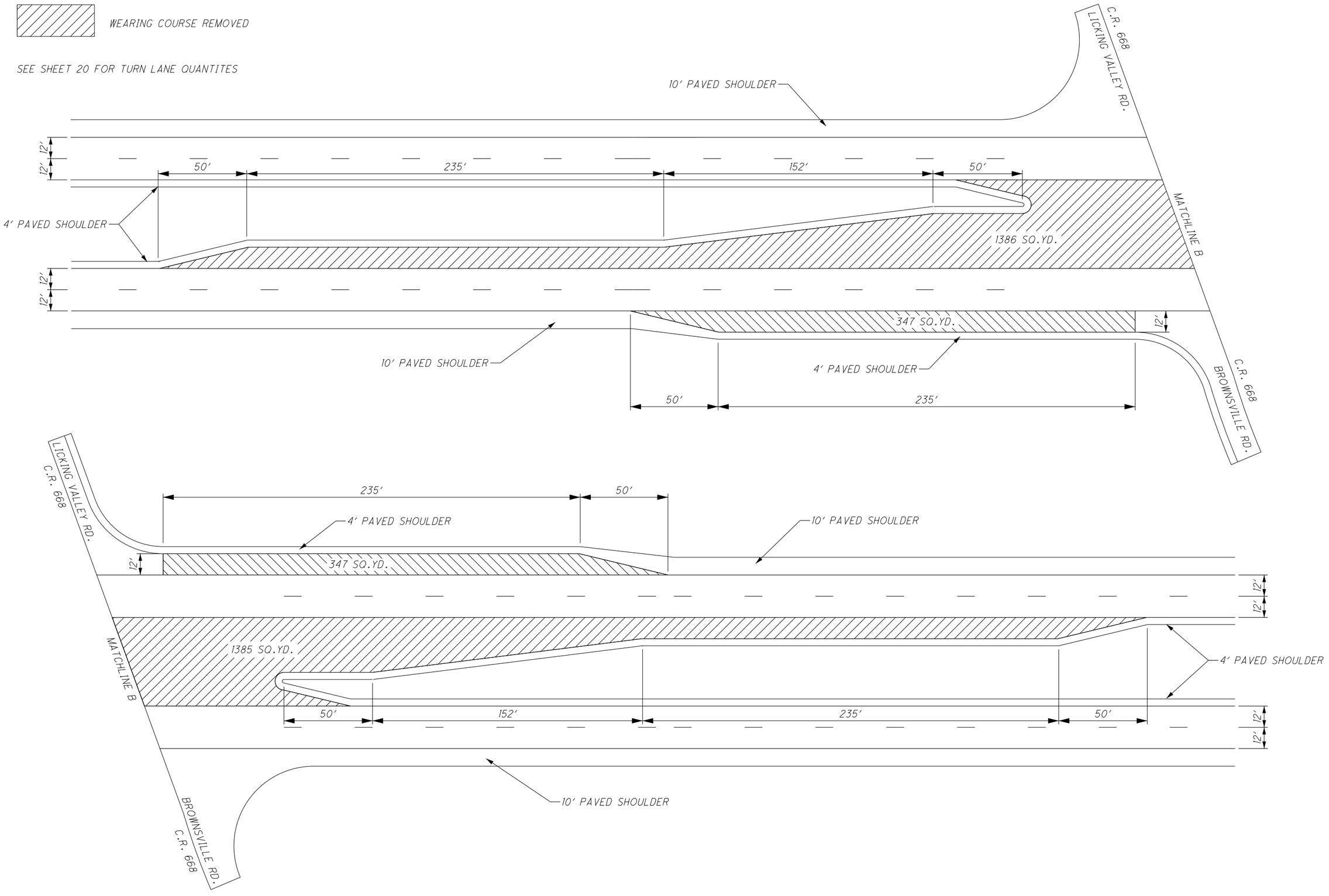
WEARING COURSE REMOVED

SEE SHEET 20 FOR TURN LANE QUANTITES



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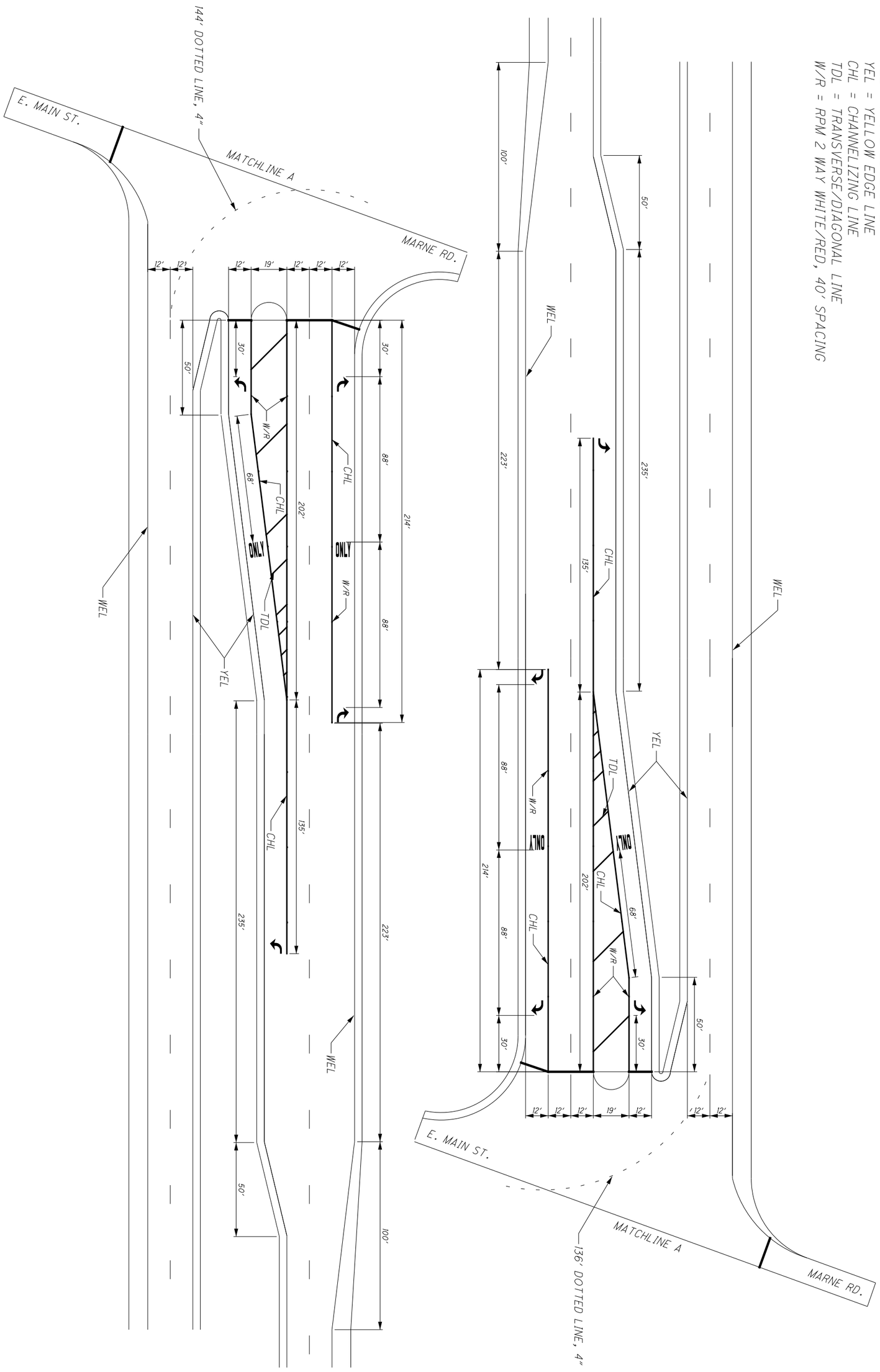
DRAWING NOT TO SCALE

CALCULATED LME
CHECKED DNM

PLAN SHEET
S.R. 16 & C.R. 668

LIC-16-23.76
MUS-16-0.00



27 / 47	LIC-16-23.76 MUS-16-0.00	PAVEMENT MARKING DETAIL S.R. 16 & E. MAIN ST./MARNE RD.	CALCULATED LME CHECKED DNM	0 DRAWING NOT TO SCALE

WEL = WHITE EDGE LINE
YEL = YELLOW EDGE LINE
CHL = CHANNELIZING LINE
TDL = TRANSVERSE/DIAGONAL LINE
W/R = RPM 2 WAY WHITE/RED, 40′ SPACING

DRAWING NOT TO SCALE

CALCULATED LME
CHECKED DNM

PAVEMENT MARKING DETAIL

S.R. 16 & C.R. 668

LIC-16-23.76
MUS-16-0.00

28
47

dmorgan
08-NOV-2013 8:28AM
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ITEM 648 EDGE LINE, 6"

LOCATION	COUNTY	ROUTE	S.L.M.		TOTAL LENGTH (MILES)	INFORMATION ONLY						TOTAL EDGE LINE 6"	REMARKS
						WHITE EDGE LINE QUANTITIES			YELLOW EDGE LINE QUANTITIES				
			FROM	TO		TOTAL MILES	HIGHWAY MILES	RAMP MILES	TOTAL MILES	HIGHWAY MILES	RAMP MILES	MILES	
1a	LIC	S.R. 16 E.B.	23.76	24.58	0.82	0.82	0.82		0.82	0.82		1.64	NEWARK CORP.
1a	LIC	S.R. 16 W.B.	23.86	24.27	0.41	0.41	0.41		0.41	0.41		0.82	NEWARK CORP.
LOCATION 1a TOTALS (CARRIED TO SUB-SUMMARY)												**2.46**	
1b	LIC	S.R. 16 E.B.	24.58	33.14	8.56	8.56	8.56		8.56	8.56		17.12	
1b	LIC	S.R. 16 W.B.	24.27	33.14	8.87	8.87	8.87		8.87	8.87		17.74	
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)												**34.86**	
2	MUS	S.R. 16 E.B.	0.00	0.29	0.29	0.29	0.29		0.29	0.29		0.58	
2	MUS	S.R. 16 W.B.	0.00	0.29	0.29	0.29	0.29		0.29	0.29		0.58	
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)												**1.16**	

ITEM 648 LANE LINE, 6"

LOCATION	COUNTY	ROUTE	S.L.M.		ITEM 648 LANE LINE QUANTITIES			REMARKS
			FROM	TO	TOTAL LANE LINE, 6"	DASHED	SOLID	
					MILE	MILE	MILE	
1a	LIC	S.R. 16 E.B.	23.76	24.58	0.82	0.82		NEWARK CORP.
1a	LIC	S.R. 16 W.B.	23.86	24.27	0.41	0.41		NEWARK CORP.
LOCATION 1a TOTALS					**1.23**			
1b	LIC	S.R. 16 E.B.	24.58	33.14	8.56	8.56		
1b	LIC	S.R. 16 W.B.	24.27	33.14	8.87	8.87		
LOCATION 1b TOTALS					**17.43**			
2	MUS	S.R. 16 E.B.	0.00	0.29	0.29	0.29		
2	MUS	S.R. 16 W.B.	0.00	0.29	0.29	0.29		
LOCATION 2 TOTALS					**0.58**			

CALCULATED LME CHECKED DNM

PAVEMENT MARKING DATA (LONG LINE)

LIC-16-23.76
MUS-16-0.00

ITEM 644 AUXILARY MARKING

LOCATION	COUNTY	ROUTE	DESCRIPTION	SIDE	STOP LINE (24")	WORD ON PAVEMENT		LANE ARROWS			CHANNELIZING LINE, 12"	TRANSVERSE/ DIAGONAL LINE (WHITE)	ISLAND MARKING (WHITE)	DOTTED LINE, 6"	REMARKS
						ONLY		THRU / LEFT	TURN						
						72"	96"		LT.	RT.					
					FT.	EACH	EACH	EACH	EACH	EACH	FEET	FEET	SQ.FT.	FEET	
1b	LIC	S.R. 16 E.B.	RIGHT TURN LANE @ E. MAIN ST.	RT			1			2	214				SEE DETAIL SHEET 27
1b	LIC	S.R. 16 E.B.	OFFSET LEFT TURN LANE @ MARNE RD.	RT	12		1		2		540	94	142		SEE DETAIL SHEET 27
1b	LIC	S.R. 16 E.B.	S.R. 16 MAINLINE @ E. MAIN ST./MARNE RD.		39										SEE DETAIL SHEET 27
1b	LIC	S.R. 16 E.B.	E. MAIN ST.	RT	34			1		1				136	PLACE AT EXISTING LOCATION
1b	LIC	S.R. 16 E.B.	RIGHT TURN LANE @ C.R. 668	RT						2	175				SEE DETAIL SHEET 28
1b	LIC	S.R. 16 E.B.	OFFSET LEFT TURN LANE @ C.R. 668	RT	12		1		2		540	94	142		SEE DETAIL SHEET 28
1b	LIC	S.R. 16 E.B.	S.R. 16 MAINLINE @ C.R. 668		36										SEE DETAIL SHEET 28
1b	LIC	S.R. 16 E.B.	C.R. 668	RT	48									168	PLACE AT EXISTING LOCATION
1b	LIC	S.R. 16 E.B.	DECELARATION LANE/ OFF RAMP TO S.R. 146	RT	28						380			587	SCD 72.20, 7-20-12
1b	LIC	S.R. 16 E.B.	ACCELARATION LANE/ ON RAMP FROM S.R. 146	RT							862			866	SCD 72.20, 7-20-12
1b	LIC	S.R. 16 W.B.	RIGHT TURN LANE @ MARNE RD.	LT			1			2	214				SEE DETAIL SHEET 27
1b	LIC	S.R. 16 W.B.	OFFSET LEFT TURN LANE @ E. MAIN ST.	LT	12		1		2		540	94	142		SEE DETAIL SHEET 27
1b	LIC	S.R. 16 W.B.	S.R. 16 MAINLINE @ E. MAIN ST./MARNE RD.		39										SEE DETAIL SHEET 27
1b	LIC	S.R. 16 W.B.	MARNE RD.	LT	20									144	PLACE AT EXISTING LOCATION
1b	LIC	S.R. 16 W.B.	RIGHT TURN LANE @ C.R. 668	LT						2	175				SEE DETAIL SHEET 28
1b	LIC	S.R. 16 W.B.	OFFSET LEFT TURN LANE @ C.R. 668	LT	12		1		2		540	94	142		SEE DETAIL SHEET 28
1b	LIC	S.R. 16 W.B.	S.R. 16 MAINLINE @ C.R. 668		36										SEE DETAIL SHEET 28
1b	LIC	S.R. 16 W.B.	C.R. 668	LT	34									165	PLACE AT EXISTING LOCATION
1b	LIC	S.R. 16 W.B.	ACCELARATION LANE/ ON RAMP FROM S.R. 146	LT							850			827	SCD 72.20, 7-20-12
1b	LIC	S.R. 16 W.B.	DECELARATION LANE/ OFF RAMP TO S.R. 146	LT	45						370			628	SCD 72.20, 7-20-12
			SUB-TOTALS					1	8	9					
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)					**407**		**6**		**18**		**5,400**	**376**	**568**	**3,521**	

CALCULATED LME
CHECKED DNM

PAVEMENT MARKING DATA (AUXILARY)

LIC-16-23.76
MUS-16-0.00

DETAIL	SEE STD. DWG. TC-65.11
1	TAPERED ACCELERATION LANE
2	DECELERATION LANE
3	MULTILANE DIVIDED/ CONTROLLED ACCESS

DETAIL	SEE STD. DWG. TC-65.11
4	4 LANE DIVIDED TO 2 LANE TRANSITION
5	4 LANE UNDIVIDED TO 2 LANE TRANSITION
6	ONE LANE BRIDGE
7	STOP APPROACH
8	THRU APPROACH
9	TWO WAY LEFT TURN LANE

REM = REMARKS

DETAIL	SEE STD. DWG. TC-65.11
10	APPROACH W/LT. TURN LANE
11	HORIZONTAL CURVE 40'
12	HORIZONTAL CURVE ALT.
GAP	CENTERLINE AT 80' TYP.

ITEM 621 RPM SUB-SUMMARY

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		DETAIL	621		PRISMATIC RETRO-REFLECTOR COLORS INFORMATION ONLY					REMARKS
								RAISED PAVEMENT MARKER REMOVED	RPM	ONE-WAY		TWO-WAY			
					MILES	LIN.FT.		EACH	EACH	WHITE	YELLOW	YELLOW / YELLOW	WHITE / RED	YELLOW / RED	
1a	LIC	S.R. 16 E.B.	23.76	24.58	0.82	4,330	3	55	55				55		
1a	LIC	S.R. 16 W.B.	23.86	24.27	0.41	2,165	3	28	28				28		
LOCATION 1a TOTALS (CARRIED TO SUB-SUMMARY)								**83**	**83**				**83**		
1b	LIC	S.R. 16 E.B.	24.58	33.14	8.56	45,197	3	565	565				565		
	RIGHT/LEFT TURN LANES AT E. MAIN ST.						7/REM	35	35	16			19		40' SPACING ON ALL CHENNELIZING LINES
	RIGHT/LEFT TURN LANES AT C.R. 668						7/REM	35	35	16			19		40' SPACING ON ALL CHENNELIZING LINES
	DECELERATION LANE						2	10	10				10		40' SPACING ON ALL CHENNELIZING LINES
	OFF RAMP TO S.R. 146						7	28	28	16				12	
	ON RAMP FROM S.R. 146						1	7	7					7	
	ACCELERATION LANE						1	11	11				11		
1b	LIC	S.R. 16 W.B.	24.27	33.14	8.87	46,834	3	586	586				586		
	RIGHT/LEFT TURN LANES AT MARNE RD.						7/REM	35	35	16			19		40' SPACING ON ALL CHENNELIZING LINES
	RIGHT/LEFT TURN LANES AT C.R. 668						7/REM	35	35	16			19		40' SPACING ON ALL CHENNELIZING LINES
	DECELERATION LANE						2	10	10				10		40' SPACING ON ALL CHENNELIZING LINES
	OFF RAMP TO S.R. 146						7	28	28	16				12	
	ON RAMP FROM S.R. 146						1	7	7					7	
	ACCELERATION LANE						1	11	11				11		
LOCATION 1b TOTALS (CARRIED TO SUB-SUMMARY)								**1,403**	**1,403**	**96**			**1269**	**38**	
2	MUS	S.R. 16 E.B.	0.00	0.29	0.29	1,531	3	20	20				20		
2	MUS	S.R. 16 W.B.	0.00	0.29	0.29	1,531	3	20	20				20		
LOCATION 2 TOTALS (CARRIED TO SUB-SUMMARY)								**40**	**40**				**40**		

CALCULATED LME
CHECKED DNM

RAISED PAVEMENT MARKER DATA

LIC-16-23.76
MUS-16-0.00

LOCATION 1a SHEET TOTALS									ITEM	ITEM EXT.	GRAND TOTALS	UNIT	DESCRIPTION
2	3	4	6	7	18	19	29	31					
													ROADWAY
2.46									209	60500	2.46	MILE	LINEAR GRADING
													PAVEMENT
					17,319	9,622			254	01000	26,941	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE
					1,299	722			407	10000	2,021	GALLON	TACK COAT
					866	481			407	14000	1,347	GALLON	TACK COAT FOR INTERMEDIATE COURSE
					722	401			442	10000	1,123	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)
					842	468			442	10100	1,310	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
						161			617	10101	161	CU YD	COMPACTED AGGREGATE, AS PER PLAN
						2.46			618	40600	2.46	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)
	1,440								690	12050	1,440	SQ YD	SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS
		LUMP							690	98400	LUMP		SPECIAL - MISC.: POLISHING AND DETERMINING FRICTION OF GYRATORY COMPACTED ASPHALT SPECIMENS
													TRAFFIC CONTROL
								83	621	00100	83	EACH	RPM
								83	621	54000	83	EACH	RAISED PAVEMENT MARKER REMOVED
							2.46		648	00104	2.46	MILE	EDGE LINE, 6"
							1.23		648	00204	1.23	MILE	LANE LINE, 6"
													STRUCTURES
	74								516	31011	74	FT	2" DEEP JOINT SEALER, AS PER PLAN
													MAINTENANCE OF TRAFFIC
				20					614	11110	20	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
			2						614	12460	2	EACH	WORK ZONE MARKING SIGN
			10						614	12600	10	EACH	REPLACEMENT DRUM
			4						614	13000	4	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
				3					614	18601	3	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
					2.46				614	20400	2.46	MILE	WORK ZONE LANE LINE, CLASS II

CALCULATED LME
CHECKED DNM

LOCATION 1a SUB-SUMMARY

LIC-16-23.76
MUS-16-0.00

LOCATION 1b SHEET TOTALS									ITEM	ITEM EXT.	GRAND TOTALS	UNIT	DESCRIPTION
2	3	4	18	19	20	21	22	39					
													ROADWAY
									201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN
					9,443	1,348	356		202	23500	11,147	SQ YD	WEARING COURSE REMOVED
4									202	47201	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN
	10								203	20000	10	CU YD	EMBANKMENT
34.86									209	60500	34.86	MILE	LINEAR GRADING
	140								606	50000	140	FT	SPECIAL - RESHAPING BERM
													EROSION CONTROL
								190	601	32204	190	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER
	533								659	00510	533	SQ YD	SEEDING AND MULCHING, CLASS 2
	0.07								659	20000	0.07	TON	COMMERCIAL FERTILIZER
	0.11								659	31000	0.11	ACRE	LIME
	2.88								659	35000	2.88	M GAL	WATER
									832	30000	1,500	EACH	EROSION CONTROL
													PAVEMENT
			241,974	142,607		11,845			254	01000	396,426	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE
			18,148	10,696	757	993	77		407	10000	30,671	GALLON	TACK COAT
			12,099	7,131	462	663	51		407	14000	20,406	GALLON	TACK COAT FOR INTERMEDIATE COURSE
			10,083	5,942	375	551	43		442	10000	16,994	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)
			11,763	6,933	449	642	50		442	10100	19,837	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
				3,322					617	10101	3,322	CU YD	COMPACTED AGGREGATE, AS PER PLAN
				34.37					618	40600	34.37	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)
	8,560								690	12050	8,560	SQ YD	SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS
		LUMP							690	98400	LUMP		SPECIAL - MISC.: POLISHING AND DETERMINING FRICTION OF GYRATORY COMPACTED ASPHALT SPECIMENS
2,000									690	98800	2,000	TON	SPECIAL - MISC.: HAULING RACP

CALCULATED LME
CHECKED DNM

LOCATION 1b SUB-SUMMARY

LIC-16-23.76
MUS-16-0.00

LOCATION 1b SHEET TOTALS									ITEM	ITEM EXT.	GRAND TOTALS	UNIT	DESCRIPTION
3	6	7	15	18	22	29	30	31					
													TRAFFIC CONTROL
								1,403	621	00100	1,403	EACH	RPM
								1,403	621	54000	1,403	EACH	RAISED PAVEMENT MARKER REMOVED
			24						626	00100	24	EACH	BARRIER REFLECTOR
			44						630	02100	44	FT	GROUND MOUNTED SUPPORT, NO. 2 POST
			4						630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
			4						630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
18									632	26501	18	EACH	DETECTOR LOOP, AS PER PLAN
			8,258						642	30000	8,258	FT	REMOVAL OF PAVEMENT MARKING
							5,400		644	00404	5,400	FT	CHANNELIZING LINE, 12"
							407		644	00500	407	FT	STOP LINE
							376		644	00700	376	FT	TRANSVERSE/DIAGONAL LINE
							568		644	00900	568	SQ FT	ISLAND MARKING
							18		644	01300	18	EACH	LANE ARROW
							6		644	01410	6	EACH	WORD ON PAVEMENT, 96"
							3,521		644	01510	3,521	FT	DOTTED LINE, 6"
						34.86			648	00104	34.86	MILE	EDGE LINE, 6"
						17.43			648	00204	17.43	MILE	LANE LINE, 6"
													STRUCTURES
					LUMP				202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)
					595				516	31011	595	FT	2" DEEP JOINT SEALER, AS PER PLAN
					160				519	11600	160	SQ FT	SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: ELASTOMERIC CONCRETE
													MAINTENANCE OF TRAFFIC
		60							614	11110	60	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
			4						614	12346	4	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
	24								614	12460	24	EACH	WORK ZONE MARKING SIGN
	70								614	12600	70	EACH	REPLACEMENT DRUM
	36								614	13000	36	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
			79						614	13100	79	EACH	BARRIER REFLECTOR
			46						614	13350	46	EACH	OBJECT MARKER, ONE WAY
				34.44					614	20400	34.44	MILE	WORK ZONE LANE LINE, CLASS II
			2.93						614	22000	2.93	MILE	WORK ZONE EDGE LINE, CLASS I
			4,188						614	24000	4,188	FT	WORK ZONE DOTTED LINE, CLASS I
			1,400						622	41000	1,400	FT	PORTABLE BARRIER, 32"
			600						622	41020	600	FT	PORTABLE BARRIER, 32", BRIDGE MOUNTED

CALCULATED LME CHECKED DNM

LOCATION 1b SUB-SUMMARY

LIC-16-23.76
MUS-16-0.00

LOCATION 2 SHEET TOTALS									ITEM	ITEM EXT.	GRAND TOTALS	UNIT	DESCRIPTION
2	4	6	7	18	19	22	29	31					
													ROADWAY
1.16									209	60500	1.16	MILE	LINEAR GRADING
													PAVEMENT
				8,167	5,445				254	01000	13,612	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE
				613	409				407	10000	1,022	GALLON	TACK COAT
				409	273				407	14000	682	GALLON	TACK COAT FOR INTERMEDIATE COURSE
				341	227				442	10000	568	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)
				397	265				442	10100	662	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
					114				617	10101	114	CU YD	COMPACTED AGGREGATE, AS PER PLAN
					1.16				618	40600	1.16	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)
	LUMP								690	98400	LUMP		SPECIAL - MISC.: POLISHING AND DETERMINING FRICTION OF GYRATORY COMPACTED ASPHALT SPECIMENS
													TRAFFIC CONTROL
								40	621	00100	40	EACH	RPM
								40	621	54000	40	EACH	RAISED PAVEMENT MARKER REMOVED
							1.16		648	00104	1.16	MILE	EDGE LINE, 6"
							0.58		648	00204	0.58	MILE	LANE LINE, 6"
													STRUCTURES
						85			516	31011	85	FT	2" DEEP JOINT SEALER, AS PER PLAN
													MAINTENANCE OF TRAFFIC
			20						614	11110	20	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
		2							614	12460	2	EACH	WORK ZONE MARKING SIGN
		4							614	13000	4	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
			3						614	18601	3	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
				1.16					614	20400	1.16	MILE	WORK ZONE LANE LINE, CLASS II

CALCULATED LME
CHECKED DNM

LOCATION 2 SUB-SUMMARY

LIC-16-23.76
MUS-16-0.00

LOCATION 1a TOTALS	LOCATION 1b TOTALS	LOCATION 2 TOTALS	FUNDING PARTICIPATION							ITEM	ITEM EXT.	GRAND TOTALS	UNIT	DESCRIPTION	SEE SHEET
			01/NHS/PV/	02/NHS/PV/ NEWA	03/BRO/BR/	04/NHS/BR/	05/NHS/OT/	06/NHS/OT/ NEWA	07/NHS/OT/						
														ROADWAY	
	LUMP				LUMP	LUMP				201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN	2
	11,147		11,147							202	23500	11,147	SQ YD	WEARING COURSE REMOVED	
	4				2	2				202	47201	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN	2
	10				5	5				203	20000	10	CU YD	EMBANKMENT	
2.46	34.86	1.16	36.02	2.46						209	60500	38.48	MILE	LINEAR GRADING	
	140				70	70				606	50000	140	FT	SPECIAL - RESHAPING BERM	
														EROSION CONTROL	
	190				190					601	32204	190	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER	
	533				267	266				659	00510	533	SQ YD	SEEDING AND MULCHING, CLASS 2	
	0.07				0.04	0.03				659	20000	0.07	TON	COMMERCIAL FERTILIZER	
	0.11				0.06	0.05				659	31000	0.11	ACRE	LIME	
	2.88				1.44	1.44				659	35000	2.88	MGAL	WATER	
	1,500				750	750				832	30000	1,500	EACH	EROSION CONTROL	
														PAVEMENT	
26,941	396,426	13,612	410,038	26,941						254	01000	436,979	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
2,021	30,671	1,022	31,693	2,021						407	10000	33,714	GALLON	TACK COAT	
1,347	20,406	682	21,088	1,347						407	14000	22,435	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
1,123	16,994	568	17,562	1,123						442	10000	18,685	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)	
1,310	19,837	662	20,499	1,310						442	10100	21,809	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)	
161	3,322	114	3,436	161						617	10101	3,597	CU YD	COMPACTED AGGREGATE, AS PER PLAN	3
2.46	34.37	1.16	35.53	2.46						618	40600	37.99	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)	
1,440	8,560		8,560	1,440						690	12050	10,000	SQ YD	SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS	3
LUMP	LUMP	LUMP	LUMP	LUMP						690	98400	LUMP		SPECIAL - MISC.: POLISHING AND DETERMINING FRICTION OF GYRATORY COMPACTED ASPHALT S	4
	2,000								2,000	690	98800	2,000	TON	SPECIAL - MISC.: HAULING RACP	2
														TRAFFIC CONTROL	
83	1,403	40					1,443	83		621	00100	1,526	EACH	RPM	
83	1,403	40					1,443	83		621	54000	1,526	EACH	RAISED PAVEMENT MARKER REMOVED	
	24				12	12				626	00100	24	EACH	BARRIER REFLECTOR	
	44				22	22				630	02100	44	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
	4				2	2				630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
	4				2	2				630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	18		18							632	26501	18	EACH	DETECTOR LOOP, AS PER PLAN	3
	8,258						8,258			642	30000	8,258	FT	REMOVAL OF PAVEMENT MARKING	
	5,400						5,400			644	00404	5,400	FT	CHANNELIZING LINE, 12"	
	407						407			644	00500	407	FT	STOP LINE	
	376						376			644	00700	376	FT	TRANSVERSE/DIAGONAL LINE	
	568						568			644	00900	568	SQ FT	ISLAND MARKING	
	18						18			644	01300	18	EACH	LANE ARROW	
	6						6			644	01410	6	EACH	WORD ON PAVEMENT, 96"	
	3,521						3,521			644	01510	3,521	FT	DOTTED LINE, 6"	
2.46	34.86	1.16					36.02	2.46		648	00104	38.48	MILE	EDGE LINE, 6"	
1.23	17.43	0.58					18.01	1.23		648	00204	19.24	MILE	LANE LINE, 6"	

CALCULATED LME
CHECKED DNM

GENERAL SUMMARY

LIC-16-23.76
MUS-16-0.00

LOCATION 1a TOTALS	LOCATION 1b TOTALS	LOCATION 2 TOTALS	FUNDING PARTICIPATION							ITEM	ITEM EXT.	GRAND TOTALS	UNIT	DESCRIPTION	SEE SHEET
			01/NHS/PV/	02/NHS/PV/ NEWA	03/BRO/BR/	04/NHS/BR/	05/NHS/OT/	06/NHS/OT/ NEWA	07/NHS/OT/						
														STRUCTURES	
	LUMP		LUMP							202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	24
74	595	85	680	74						516	31011	754	FT	2" DEEP JOINT SEALER, AS PER PLAN	3
	160		160							519	11600	160	SQ FT	SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: ELASTOMERIC CONCRETE	24
														FOR ADDITIONAL STRUCTURE QUANTITIES SEE SHEET 40	
														MAINTENANCE OF TRAFFIC	
20	60	20	80	20						614	11110	100	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
	4				2	2				614	12346	4	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
2	24	2	26	2						614	12460	28	EACH	WORK ZONE MARKING SIGN	
10	70		70	10						614	12600	80	EACH	REPLACEMENT DRUM	
4	36	4	30	4	5	5				614	13000	44	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
	79				39	40				614	13100	79	EACH	BARRIER REFLECTOR	
	46				23	23				614	13350	46	EACH	OBJECT MARKER, ONE WAY	
3		3	3	3						614	18601	6	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	7
2.46	34.44	1.16					35.60	2.46		614	20400	38.06	MILE	WORK ZONE LANE LINE, CLASS II	
	2.93						2.93			614	22000	2.93	MILE	WORK ZONE EDGE LINE, CLASS I	
	4,188						4,188			614	24000	4,188	FT	WORK ZONE DOTTED LINE, CLASS I	
	1,400				700	700				622	41000	1,400	FT	PORTABLE BARRIER, 32"	
	600				300	300				622	41020	600	FT	PORTABLE BARRIER, 32", BRIDGE MOUNTED	
			78%	9%	7%	6%				103	05000	LUMP		PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	
			78%	9%	7%	6%				614	11000	LUMP		MAINTAINING TRAFFIC	
			78%	9%	7%	6%				619	16000	3	MONTH	FIELD OFFICE, TYPE A	
			78%	9%	7%	6%				623	10000	LUMP		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
			78%	9%	7%	6%				624	10000	LUMP		MOBILIZATION	

CALCULATED LME CHECKED DNM

GENERAL SUMMARY

LIC-16-23.76
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EXISTING APPROACH SLAB = 25'-0"

BRIDGE LIMITS = 144'-6"±

EXISTING APPROACH SLAB = 25'-0"

LEFT BRIDGE: CROWN LOCATED AT CENTERLINE WITH SLOPE OF 0.016 '/'

BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN

40'-0"

3/16"/'

3/16"/'

BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN

558

559

560

EXISTING APPROACH SLAB = 25'-0"

20'-0"

BRIDGE LIMITS = 144'-4"±

20'-0"

EXISTING APPROACH SLAB = 25'-0"

BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN

62'-6"

RIGHT BRIDGE: SUPERELEVATION OF 0.016 '/'

62'-6"

44'-0"

3/16"/'

TYPE C WITH FABRIC FILTER

R.C.P.

R.C.P., TYPE C WITH FABRIC FILTER

BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN

PLAN VIEW

EX. GUARDRAIL, TYPE 5

BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE, AS PER PLAN

SINGLE SLOPE DEFLECTOR PARAPET (TYPE 42") LENGTH = 143'-11"± (LEFT BRIDGE), 143'-9"± (RIGHT BRIDGE)

ITEM 601: ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER 2'-0" THICKNESS

ITEM 601: ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER 2'-0" THICKNESS

ELEVATION VIEW

EXISTING STRUCTURES

TYPE: 3-SPAN CONTINUOUS REINFORCED SLAB BRIDGE ON CAPPED PILE PIERS AND CAPPED PILE ABUTMENTS

SPANS: 44'-0", 55'-0", 44'-0"

ROADWAY: RT BRIDGE: 44'-0" F/F PARAPET
LT BRIDGE: 40'-0" F/F PARAPET

LOADING: RT. BRIDGE: CF-400 (57)
LT. BRIDGE: HS-20-44

SKEW: 18°00'00" L.F.

WEARING SURFACE: MICRO-SILICA OVERLAY 1¼"

APPROACH SLABS: AS-1-81 (25'-0" LONG)

ALIGNMENT: 0°20' RT. C.

STRUCTURAL FILE NUMBER: RT. BRIDGE: 4501411
LT. BRIDGE: 4501381

DATE BUILT: RT. BRIDGE: 1960, LT. BRIDGE: 1971

REHABILITATED STRUCTURES

TYPE: 3-SPAN CONTINUOUS REINFORCED SLAB BRIDGE ON CAPPED PILE PIERS AND CAPPED PILE ABUTMENTS

SPANS: 44'-0", 55'-0", 44'-0"

ROADWAY: RT BRIDGE: 44'-0" F/F PARAPET
LT BRIDGE: 40'-0" F/F PARAPET

LOADING: RT. BRIDGE: CF-400 (57)
LT. BRIDGE: HS-20-44

SKEW: 18°00'00" L.F.

WEARING SURFACE: SUPERPLASTICIZED DENSE CONCRETE OVERLAY 2"

APPROACH SLABS: AS-1-81 (25'-0" LONG)

ALIGNMENT: 0°20' RT. C.

STRUCTURAL FILE NUMBER: RT. BRIDGE: 4501411
LT. BRIDGE: 4501381

(SCALE = 10.0000)

P:\LIC\76425\Design\Bridge\Plan_Sheets\L76425_BGP_001.dgn

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
CPS	CPS	TAG	
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JDR		4501411/4501381	

GENERAL PLAN AND ELEVATION

BRIDGE NO. LIC-16-29.30 L/R
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

SBR-1-99	DATED/REVISED	07/19/02
PCB-91	DATED/REVISED	01/18/13

AND TO THE FOLLWOING SUPPLEMENTAL SPECIFICATION(S):

847	DATED/REVISED	10/21/11

REFERENCE

DETAILED DRAWINGS OF THE EXISTING STRUCTURE MAY BE INSPECTED IN THE DISTRICT 5 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, JACKSONTOWN, OHIO.

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2010 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING

LIC-16-29.30 L: HS20-44.
LIC-16 29.30 R: CF-400 (57).

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 AND 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEND VERIFIED BY THE CONTRACTOR IN THE FIELD.

ENVIRONMANTAL COORDINATOR NOTIFICATION

THE CONTRACTOR SHALL CONTACT THE DISTRICT ENVIRONMENTAL COORDINATOR, AMY TOOHEY AT 740-323-5191 AT LEAST TWO WEEKS PRIOR TO THE START OF CONSTRUCTION SO THE UNDERSIDE OF THE BRIDGE CAN BE INSPECTED FOR THE PRESENCE OF BATS.

REMOVALS OVER WATER

REASONABLE CARE SHALL BE USED WHEN REMOVING MATERIAL OVER WATER. ANY MATERIAL DROPPED SHALL BE IMMEDIATELY REMOVED FROM THE WATER AND DISPOSED OF AWAY FROM THE SITE EXCEPT FOR MASONARY MATERIAL WHICH MAY BE USED FOR BANK PROTECTION AS APPROVED BY THE ENGINEER.

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

CONCRETE REMOVAL FROM THE ABUTMENTS SHALL BE REMOVED BY HAND TOOLS ONLY AS DIRECTED BY THE ENGINEER. AFTER HAND REMOVALS HAVE BEEN COMPLETED, THE CONCRETE SHALL BE AIR BLASTED CLEAN TO REMOVE ALL REMAINING LOOSE AND PERVIOUS CONCRETE. FINAL INSPECTION OF THE REMOVALS SHALL BE PERFORMED BY THE ENGINEER PRIOR TO PLACEMENT OF THE RE-STEEL, FORMS AND CONCRETE. THE ABOVE WORK INCLUDING ALL LABOR, TOOLS, MATERIALS AND INCIDENTALS SHALL BE INCLUDED FOR PAYMENT PER LUMP SUM WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBTRUCTURE.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN - PARAPET

THIS ITEM INCLUDES REMOVAL OF ALL EXISTING PARAPETS FOR LEFT AND RIGHT BRIDGES BEING REPLACED BY NEW CONSTRUCTION. PERFORM ALL WORK IN A MANNER THAT WILL NOT DAMAGE THE EXISTING STRUCTURE AS SHOWN IN THE PLAN. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 85-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE ENGINEER.

ITEM 202 - REMOVAL MISC.: CORRUGATED METAL FLOORING

THIS ITEM INCLUDES THE REMOVAL OF THE CORRUGATED METAL FLOORING WHERE LOCATED IN THE PLANS. THE USE OF TORCHES OR ANY OTHER DEVICE THAT USES A FLAME SHALL NOT BE PERMITTED. PERFORM WORK IN A MANNER WHERE THE EXISTING STRUCTURE AND CONCRETE WILL NOT BE DAMAGED. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE ENGINEER. THE ABOVE WORK INCLUDING ALL LABOR, TOOLS, MATERIALS AND INCIDENTALS SHALL BE INCLUDED FOR PAYMENT PER SQUARE FOOT WITH ITEM 202 - REMOVAL MISC.: CORRUGATED METAL FLOORING.

ITEM 511 - CONCRETE, MISC.: WITH HIGH EARLY STRENGTH PUMPED SELF CONSOLIDATING CONCRETE

IN ADDITION TO THE WORK ITEMS REQUIRED IN 511, THIS ITEM WILL INCLUDE THE DEVELOPMENT, DELIVERY AND PLACEMENT OF A SPECIAL CONCRETE MIX DESIGN AS DESCRIBED IN THE FOLLOWING NOTE:

PROVIDE A CONCRETE MIX WITH THE FOLLOWING PROPERTIES:

MINIMUM CEMENT CONTENT OF NO MICROSILICA	800 LB/CU.YD.
MAXIMUM COARSE AGGREGATE SIZE	8
MAXIMUM WATER/CEMENT RATIO	0.38
COARSE TO FINE AGGREGATE RATIO TO PRODUCE SELF CONSOLIDATING CONCRETE	
MINIMUM 12 HOUR STRENGTH	2500 PSI
MINIMUM 3 DAY STRENGTH	4000 PSI
MINIMUM 28 DAY STRENGTH	5500 PSI
MINIMUM AIR CONTENT	7% ±2%
MINIMUM SPREAD	24"

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. THE FINAL CONCRETE MIX WILL BE A SELF CONSOLIDATING ADMIXTURE.

SUBMIT THE MIX DESIGN AND TEST RESULTS TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

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 DECK. IF THERE ARE VOIDS FOUND BETWEEN THE NEW CONCRETE AND THE UNDERSIDE OF THE DECK, 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 REQUIREMENTS 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 BREASTWALL CONCRETE WORK IS TO BE PERFORMED FROM BENEATH THE STRUCTURE.

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, AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS ITEM.

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALIC GROUT, AS PER PLAN

PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR. DRILL DOWEL HOLES WHERE SHOWN IN PLANS EXCEPT AS NOTED ABOVE. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING NON SHRINK, NON METALLIC EPOXY GROUT, 705.20.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

ALTHOUGH NO SPECIFIED AREAS OF PATCHING THE CONCRETE STRUCTURE ARE LOCATED IN THE PLANS, PATCHING SHALL BE PERFORMED AT ANY UNSOUND AREA IN THE ABUTMENTS AND/OR PIERS OF BOTH BRIDGES AS DIRECTED BY THE ENGINEER. PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

A QUANTITY OF 50 SQ. FT. HAS BEEN INCLUDED FOR USE AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM 601 - ROCK CHANNEL PROTECTION TYPE C, WITH FABRIC FILTER

THE FOLLOWING ESTIMATED QUANTITES OF ITEM 601 ROCK CHANNEL PROTECION TYPE C, WITH FABRIC FILTER HAVE BEEN CARRIED TO LOCATION 1b SUB-SUMMARY.

LOCATION 1b

BRIDGE NO. LIC-16-2930 RIGHT = 190 CU. YD.

CONCRETE PARAPETS

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1¼" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼". SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ½" OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

DECK PROTECTION METHOD

2" SUPERPLASTICIZED DENSE CONCRETE OVERLAY & EXISTING SCUPPERS

REINFORCING STEEL

NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED. PAYMENT SHALL BE INCLUDED IN 509.

MAINTENANCE OF TRAFFIC

MAINTAIN TRAFFIC AS PER SHEETS 9-16/47

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
JMS	JMS	TAG	

CHECKED CPS | REVISED | STRUCTURE FILE NUMBER 4501411/4501381

BRIDGE NOTES
BRIDGE NO. LIC-16-29.30 L/R
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00

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PLAN SPLIT		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NUMBER
04/NHS/BR/ LIC-16-2930 (LEFT) GRAND TOTAL	03/BRO/BR/ LIC-16-2930 (RIGHT) GRAND TOTAL						
						STRUCTURES (OVER 20')	
	LUMP	202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURES)	39/47
33	33	202	11301	66	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (PARAPETS)	39/47
	160	202	98400	160	SQ. FT.	REMOVAL MISC.: CORRUGATED METAL FLOORING	39/47
	LUMP	503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
6,789	12,881	509	10000	19,670	POUND	EPOXY COATED REINFORCING STEEL	
584	808	510	10001	1,392	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	39/47
46	46	511	34448	92	CU. YD.	CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)	
	30	511	71100	30	CU. YD.	CONCRETE MISC.: WITH HIGH EARLY STRENGTH PUMPED SELF CONSOLIDATING CONCRETE	39/47
82	93	516	31001	175	FT	JOINT SEALER, AS PER PLAN	39/47
25	25	519	11101	50	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN	39/47
643	706	847	10200	1,349	SQ. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (2" THICKNESS)	
21	42	847	20200	63	CU. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	
LUMP	LUMP	847	30000	LUMP		TEST SLAB	
643	706	847	30400	1,349	SQ. YD.	EXISTING CONCRETE OVERLAY REMOVED (1¾" THICKNESS)	
168	334	847	50000	502	SQ. YD.	HAND CHIPPING	

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DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

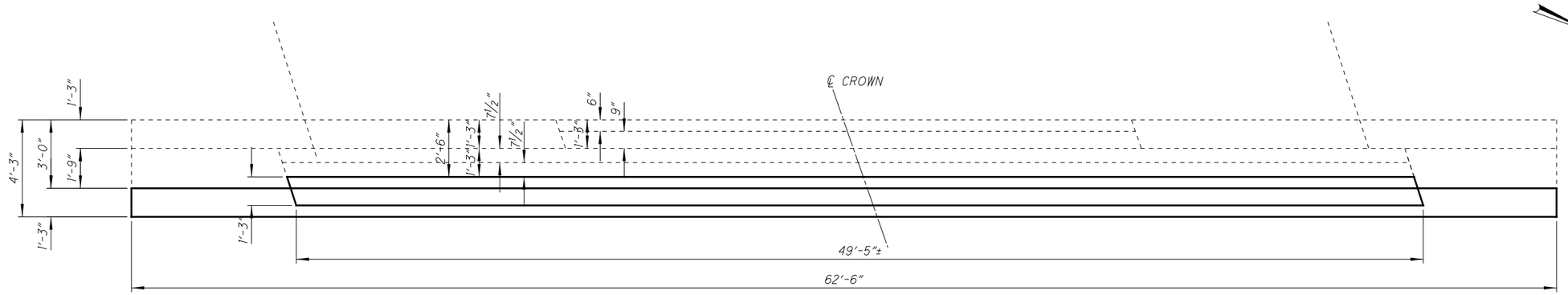
DESIGNED CPS | DRAWN CPS | REVIEWED TAG | DATE X | CHECKED JDR | REVISED

STRUCTURE FILE NUMBER 4501411/4501381

BRIDGE SUMMARY

BRIDGE NO. LIC-16-29.30 L/R
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00



PLAN

NOTES:

AVERAGE THICKNESS OF FORWARD ABUTMENT IS 2'-3"

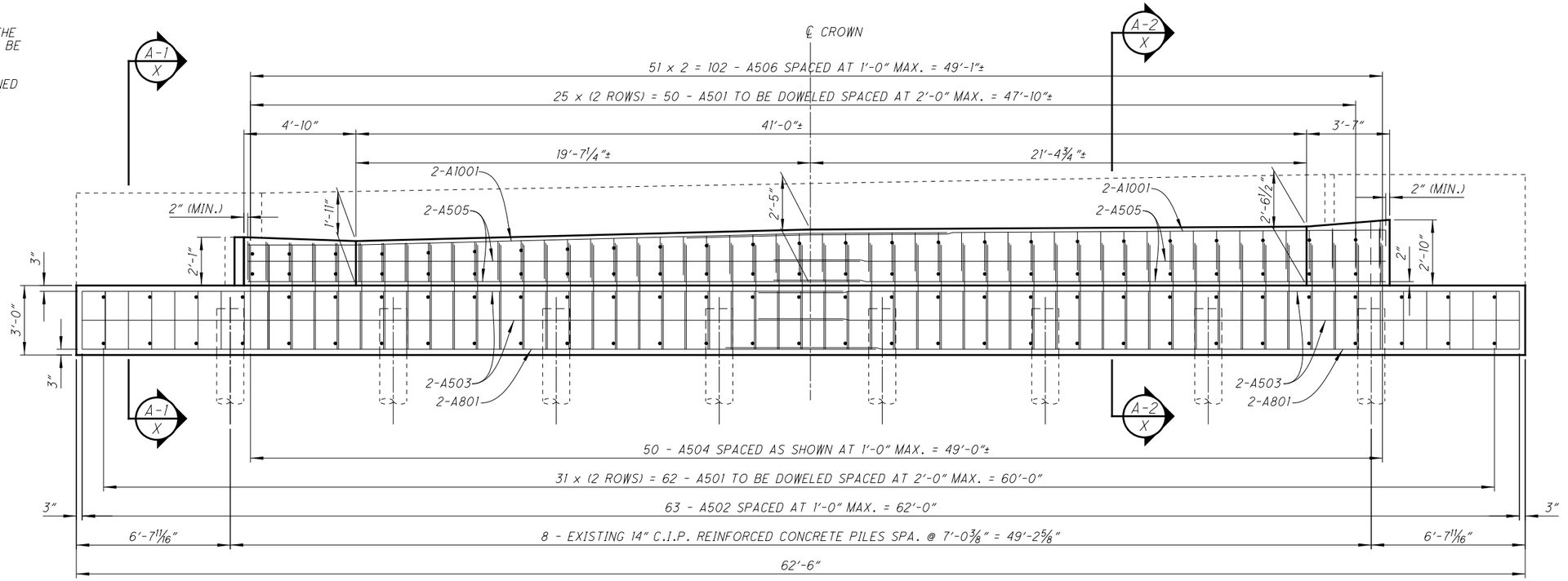
ALL DOWEL HOLES SHALL BE DRILLED 1'-0"

ANY UNSOUND CONCRETE IN THE ABUTMENT OR FOOTER SHALL BE REMOVED BY HAND TOOLS

ALL A501 BARS ARE POSITIONED PERPENDICULAR TO THE FACE OF THE FOOTER

NOTE:
ALL DOWEL HOLES SHALL BE DRILLED 1'-0"

ABUTMENT HORIZONTAL LAP LENGTH
No. 5 = 3'-7"
No. 8 = 6'-5"
No. 10 = 11'-1"



ELEVATION

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
JMS	JMS	TAG	
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CPS		4501411	

REAR ABUTMENT DETAILS
BRIDGE NO. LIC-16-29.30 RIGHT
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00

4 / 10

41
47

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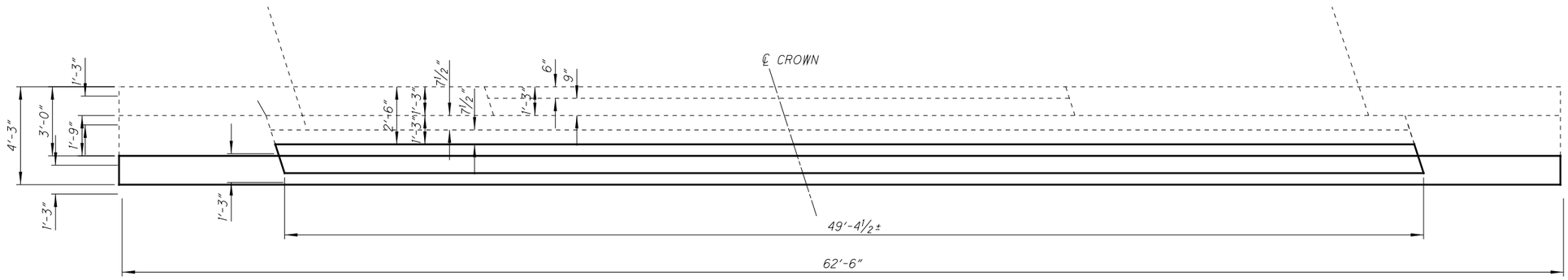

PLAN

NOTES:

AVERAGE THICKNESS OF FORWARD ABUTMENT IS 2'-3"

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NOTE:
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SHALL BE DRILLED 1'-0"

ABUTMENT HORIZONTAL LAP LENGTH
No. 5 = 3'-7"
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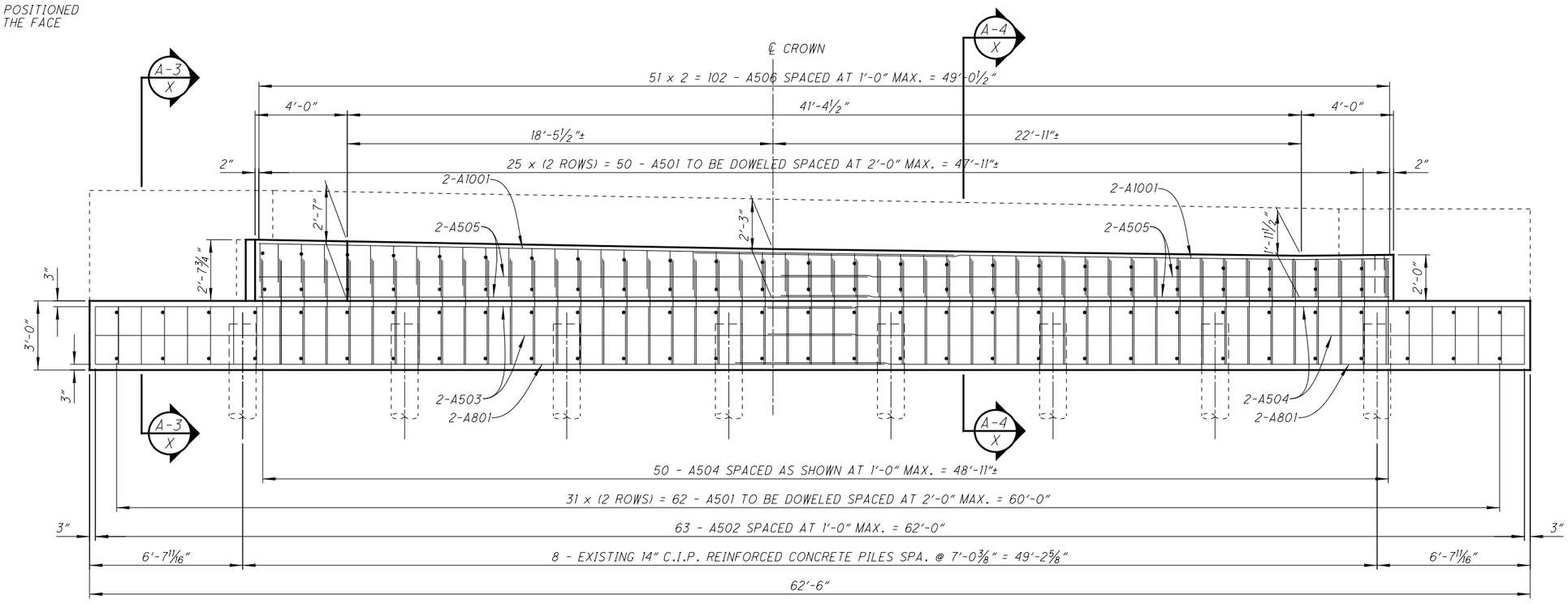

ELEVATION

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DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

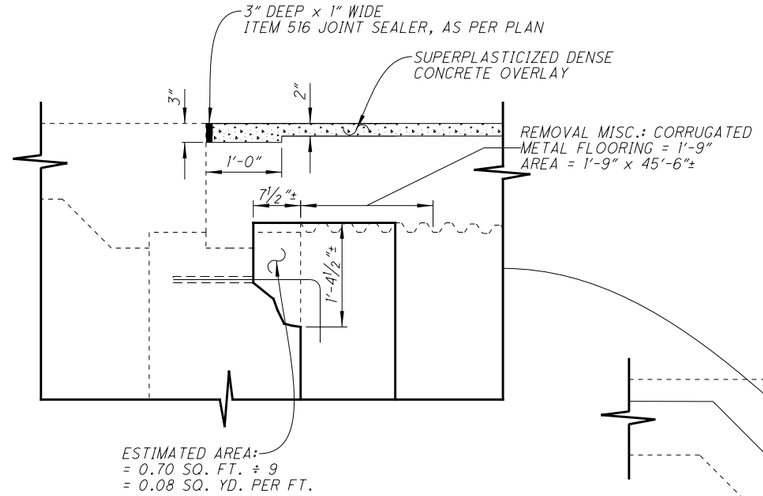
DESIGNED	DRAWN	REVIEWED	DATE
JMS	JMS	TAG	
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CPS		4501411	

FORWARD ABUTMENT DETAILS
BRIDGE NO. LIC-16-29.30 RIGHT
OVER ROCKY FORK CREEK

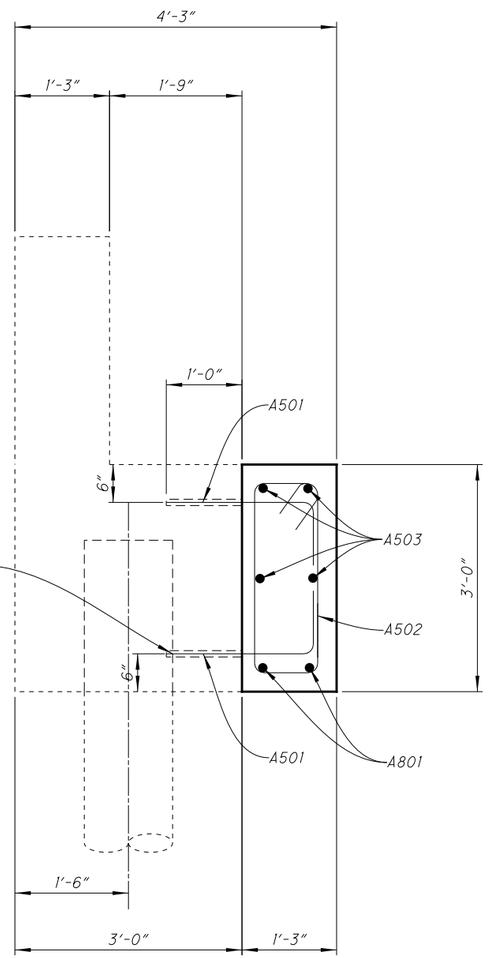
LIC-16-23.76
MUS-16-0.00

5 / 10

42
47



NOTE A: AREA SHOWN FOR REMOVAL IS FOR ESTIMATION PURPOSES ONLY. THE EXISTING ABUTMENT CONCRETE SHALL BE REMOVED IF IT IS UNSOUND. SOUND CONCETE SHALL BE LEFT IN PLACE.



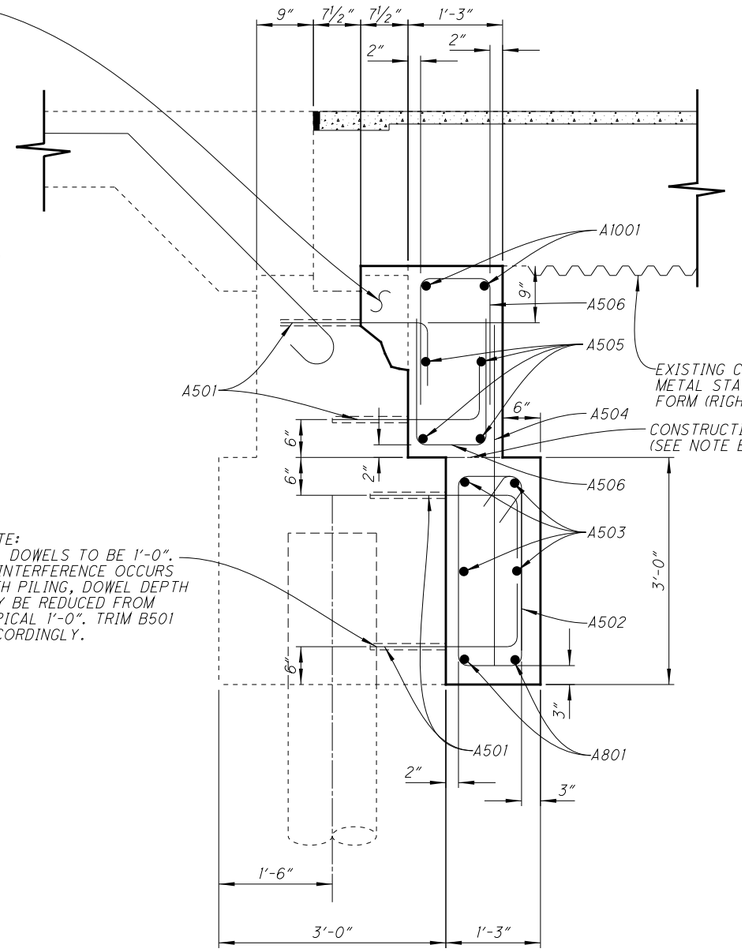
NOTE:
ALL DOWELS TO BE 1'-0". IF INTERFERENCE OCCURS WITH PILING, DOWEL DEPTH MAY BE REDUCED FROM TYPICAL 1'-0". TRIM B501 ACCORDINGLY.

SECTIONS

A-1 / X

A-3 / X

NOTE B: FOR EASE OF CONSTRUCTION THE FOOTER SHALL BE CONSTRUCTED BEFORE THE BREAST WALL



NOTE:
ALL DOWELS TO BE 1'-0". IF INTERFERENCE OCCURS WITH PILING, DOWEL DEPTH MAY BE REDUCED FROM TYPICAL 1'-0". TRIM B501 ACCORDINGLY.

SECTIONS

A-2 / X

A-4 / X

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DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

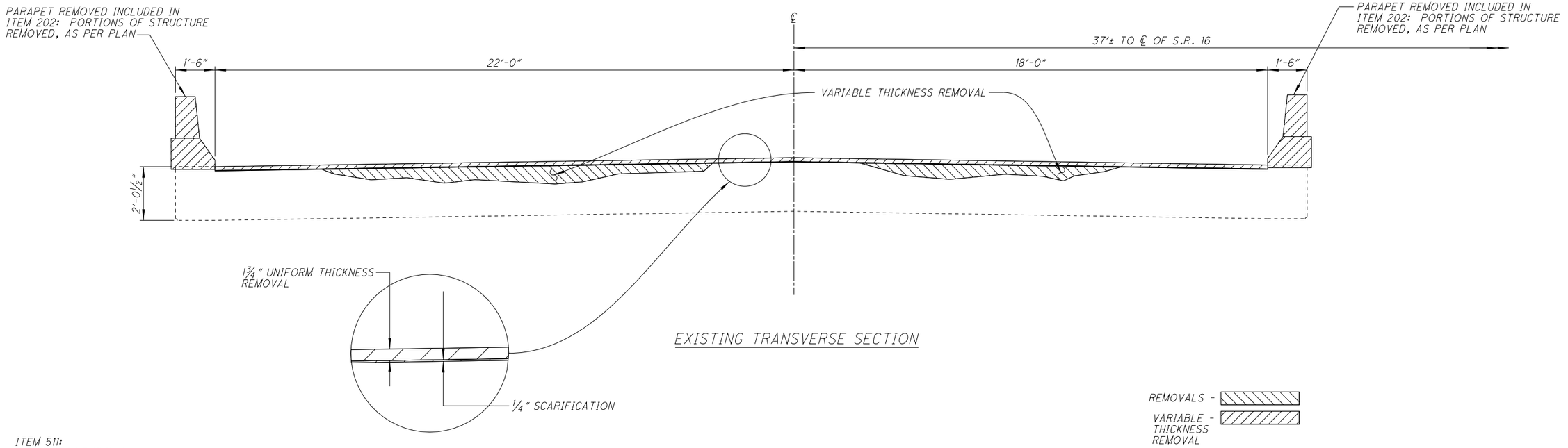
DESIGNED JMS | DRAWN JMS | REVIEWED TAG | DATE 11/6/2012

CHECKED CPS | REVISED | STRUCTURE FILE NUMBER 4501411

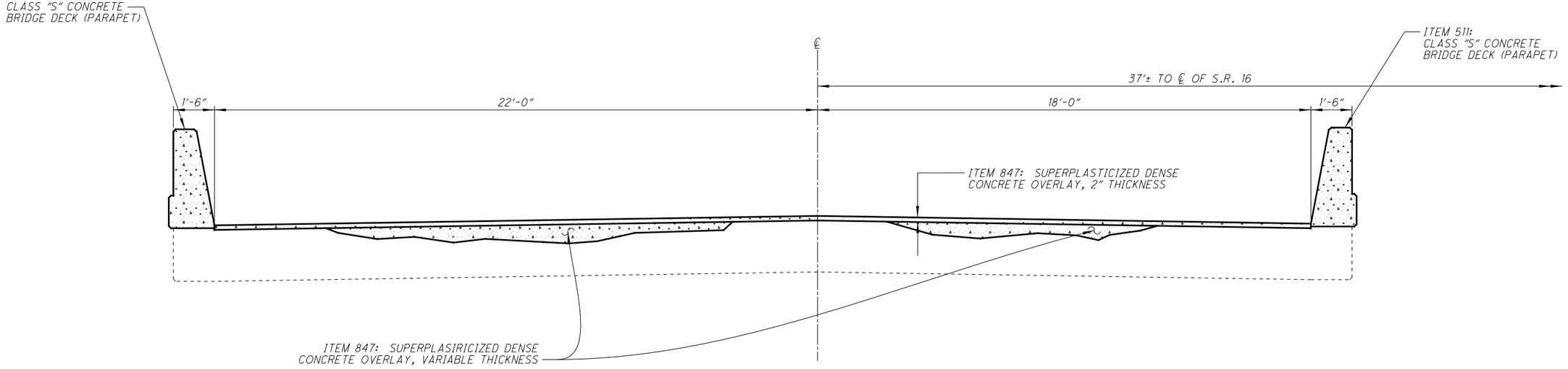
ABUTMENT DETAILS

BRIDGE NO. LIC-16-29.30 RIGHT
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00



EXISTING TRANSVERSE SECTION



PROPOSED TRANSVERSE SECTION

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DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
JMS	JMS	TAG	

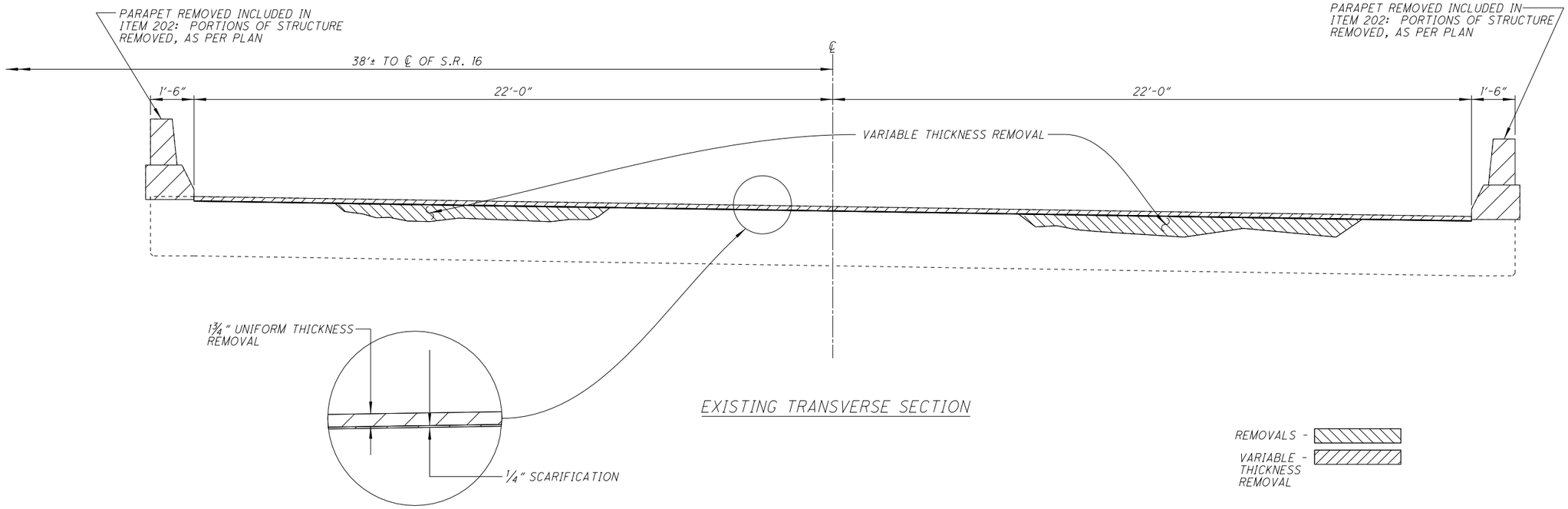
CHECKED CPS | REVISED | STRUCTURE FILE NUMBER 4501381

TRANSVERSE SECTION LEFT BRIDGE
BRIDGE NO. LIC-16-2930 LEFT
OVER ROCKY FORK CREEK

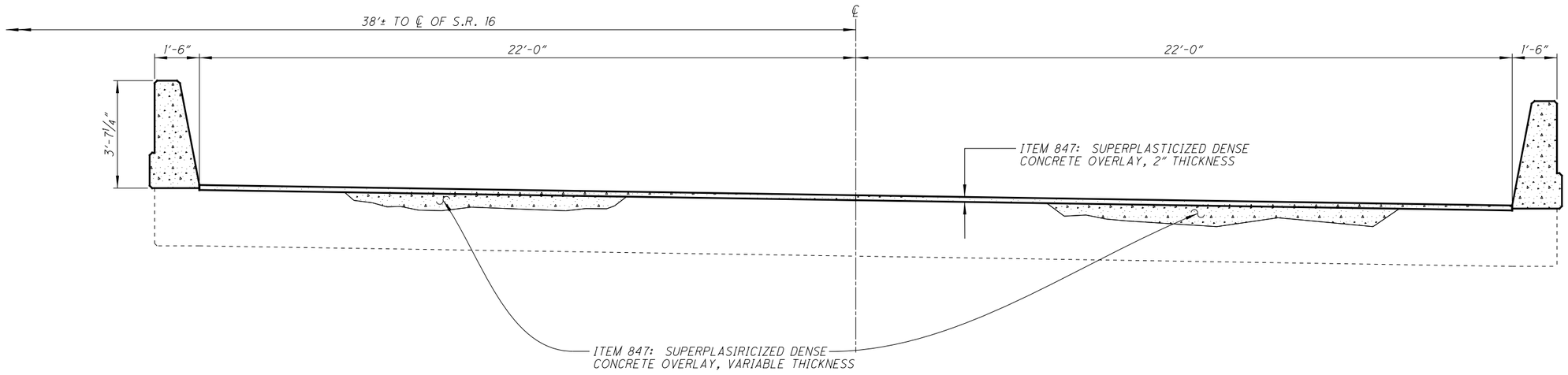
LIC-16-23.76
MUS-16-0.00

7 / 10

44
47



EXISTING TRANSVERSE SECTION



PROPOSED TRANSVERSE SECTION

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DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

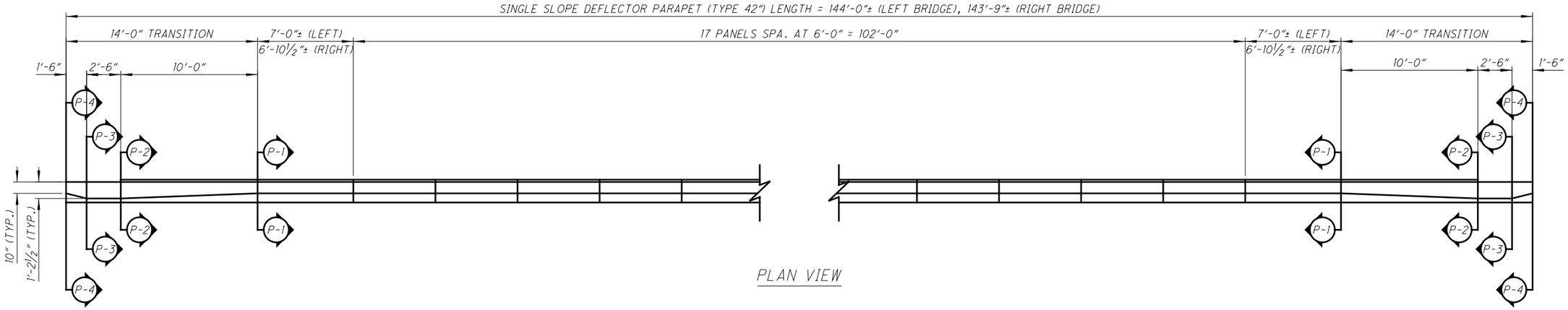
DESIGNED	DRAWN	REVIEWED	DATE
JMS	JMS	TAG	
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CPS		4501411	

TRANSVERSE SECTION RIGHT BRIDGE
BRIDGE NO. LIC-16-2930 RIGHT
OVER ROCKY FORK CREEK

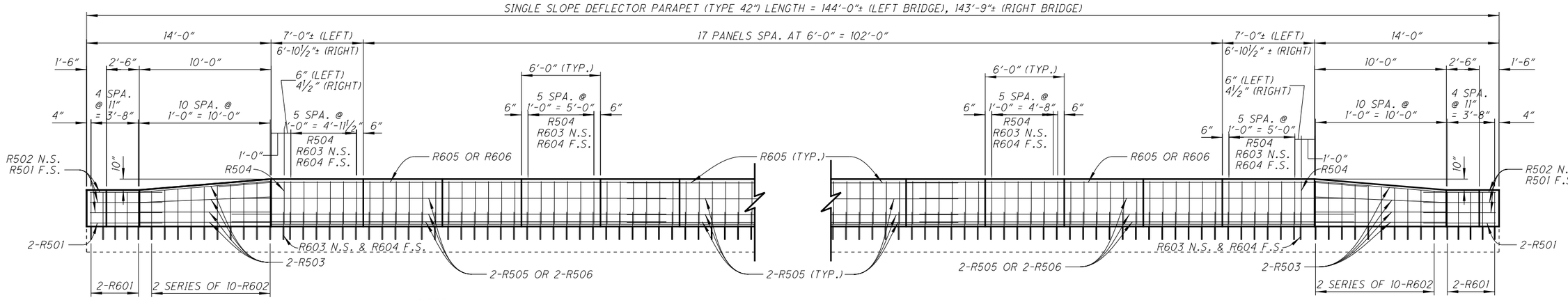
LIC-16-23.76
MUS-16-0.00

8 / 10

45
47



PLAN VIEW



ELEVATION VIEW

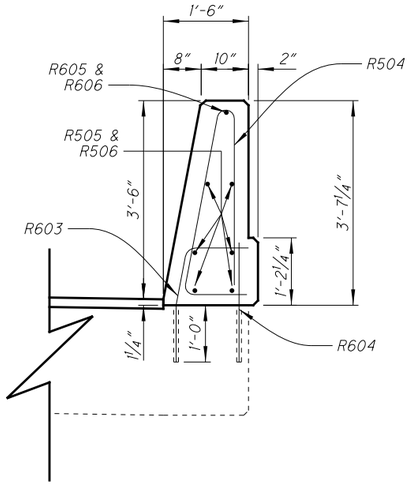
NOTES:

ALL DOWEL HOLES SHALL BE DRILLED 1'-0"

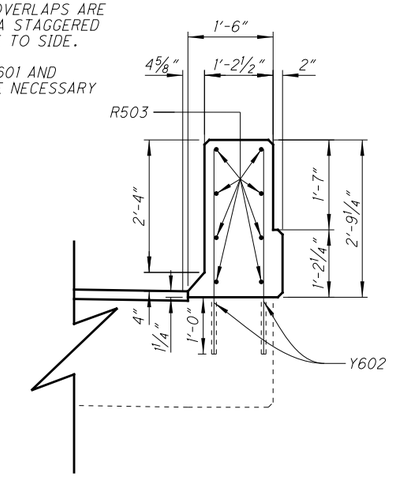
ALL HORIZONTAL OVERLAPS ARE TO BE PLACED IN A STAGGERED ARRANGEMENT SIDE TO SIDE.

FIELD BEND BAR R601 AND OTHER BARS WHERE NECESSARY

PARAPET MINIMUM LAP LENGTH
No. 5 = 3'-5"
No. 6 = 4'-4"



SECTION P-1



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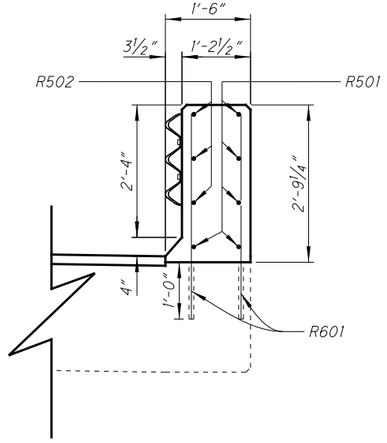

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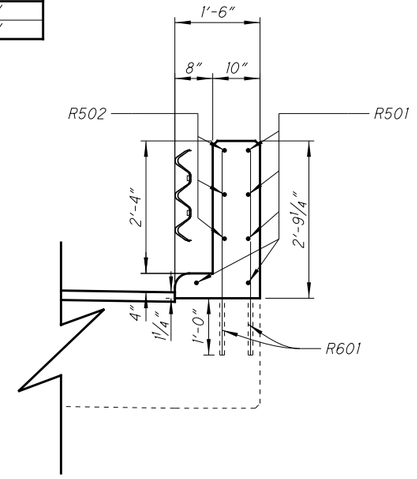

SECTION P-4

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED	DRAWN	REVIEWED	DATE
JMS	JMS	TAG	
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CPS		4501411/4501381	

PARAPET DETAILS

BRIDGE NO. LIC-16-29.30 L/R
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00

9 / 10

46
47

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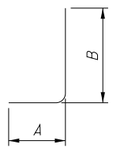
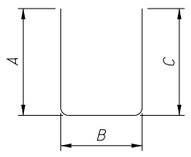
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS				
	RIGHT BRIDGE		TOTAL				A	B	C	D	INC
	REAR ABUTMENT TOTAL	FWD. ABUTMENT TOTAL									
LIC-16-2930 RIGHT BRIDGE ABUTMENTS											
A501	112	112	224	7'-1"	1,655	1	2'-0"	0'-10"			
A502	63	63	126	2'-9"	361	3	0'-10"	2'-6"			
A503	8	8	16	32'-8"	545	STR.	32'-8"				
A504	50	50	100	4'-6"	469	STR.	4'-6"				
A505	8	8	16	26'-5"	441	STR.	26'-5"				
A506	102	102	204	4'-0"	851	2	1'-8"	0'-11"	1'-8"		
A801	4	4	8	34'-3"	732	STR.	34'-3"				
A1001	4	4	8	30'-2"	1,038	STR.	30'-2"				
LIC-16-2930 ABUTMENTS TOTAL					6,092						

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	LEFT BRIDGE	RIGHT BRIDGE	TOTAL				A	B	C	D	E	R	INC
LIC-16-2930 LEFT & RIGHT BRIDGE PARAPETS													
R501	20	20	40	5'-6"	229	STR.	10'-0"						
R502	12	12	24	5'-6"	138	25	1'-8"	2'-4 15/16"	1'-4 1/4"	1 1/2"	5"		
R503	32	32	64	10'-0"	668	STR.	10'-0"						
R504	232	232	464	7'-7"	3,670	23	1'-1"	3'-3"	3'-1"			2 3/4"	
R505	36	36	72	40'-0"	3,004	STR.	40'-0"						
R506	12	12	24	11'-0"	276	STR.	11'-0"						
R601	40	40	80	3'-7"	431	STR.	3'-7"						
	8	8		3'-8"			3'-8"						
R602	SERIES OF	SERIES OF	160	TO	971	STR.	TO						1'-0"
	10	10		4'-5"			4'-5"						
R603	232	232	464	2'-7"	1,800	34	1'-0"	1'-0"	1'-1"				
R604	232	232	464	2'-2"	1,510	STR.	2'-2"						
R605	6	6	12	40'-0"	721	STR.	40'-0"						
R606	2	2	4	17'-9"	107	STR.	17'-9"						
LIC-16-2930 PARAPETS TOTAL					13,525								
LIC-16-2930 ABUTMENTS TOTAL					6,092								
LIC-16-2930 PARAPETS TOTAL					13,525								
GRAND TOTAL					19,617								

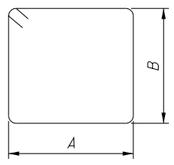
TYPE-STR.



TYPE-1



TYPE-2



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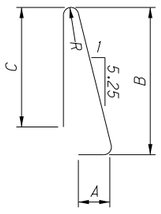

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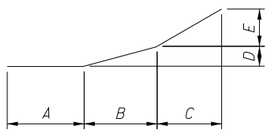

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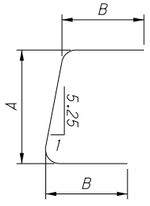

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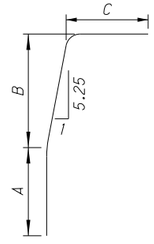

TYPE 34

P:\LIC\76425\Design\Bridge\Plan_Sheets\L76425_BRS_001.dgn

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DESIGNED CPS | DRAWN CPS | REVIEWED TAG | DATE X
CHECKED JDR | REVISED | STRUCTURE FILE NUMBER 4501381/4501411

RESTEEL SCHEDULE
BRIDGE NO. LIC-16-29.30 RIGHT
OVER ROCKY FORK CREEK

LIC-16-23.76
MUS-16-0.00

10 / 10

47
47