

**ITEM 611 – MANHOLE ADJUSTED TO GRADE, AS PER PLAN**  
**ITEM 623 – MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF CMS 611.10.D FOR MANHOLES, 623.05 FOR MONUMENT BOXES, OR 638.18 FOR VALVE BOXES, THE CONTRACTOR WILL MAKE A CLEAN CIRCULAR CUT AROUND THE CASTING (A MINIMUM OF 1'-0" OUTSIDE THE CASTING) AND REMOVE AND DISCARD THE EXISTING CASTING. INSTALL A NEW CASTING TO GRADE (ACCORDING TO TOLERANCES AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1) AFTER THE PAVEMENT SURFACE COURSE HAS BEEN REPLACED.

CMS 499 CLASS QCMS CONCRETE (DYE THE CONCRETE SUCH THAT ITS COLOR CLOSELY MATCHES THE COLOR OF THE SURROUNDING PAVEMENT) WILL BE USED FOR BACKFILLING THE FULL PAVEMENT SECTION AND THE JOINT BETWEEN THE ASPHALT AND CONCRETE WILL BE SEALED WITH CMS 702.01 PG BINDER. EPOXY COATED REBAR SHALL BE PLACED IN THE CONCRETE AT 6" MAXIMUM ON CENTER AND A MINIMUM OF 3.5" CLEARANCE FROM THE TOP, BOTTOM AND SIDES. THE CONCRETE WILL BE VIBRATED SUFFICIENTLY TO ELIMINATE AIR POCKETS UNDER THE FRAME.

PAYMENT WILL INCLUDE REMOVAL OF THE EXISTING MATERIAL, INSTALLATION AND FURNISHING OF A NEW CASTING, AND ALL LABOR AND MATERIALS REQUIRED TO COMPLETE THIS ITEM OF WORK AS DESCRIBED. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 611, MANHOLE ADJUSTED TO GRADE, AS PER PLAN, 2 EACH

**ITEM 611 - CATCH BASIN ADJUSTED TO GRADE**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY AND IS TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 611, CATCH BASIN ADJUSTED TO GRADE, 3 EACH

**ITEM 611 - MONHOLE RECONSTRUCTED TO GRADE**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY AND IS TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 611, MANHOLE RECONSTRUCTED TO GRADE, 2 EACH

**ITEM 611 - CATCH BASIN RECONSTRUCTED TO GRADE**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY AND IS TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 611, CATCH BASIN RECONSTRUCTED TO GRADE, 2 EACH

**PROFILE CORRECTION PLAN AT STRUCTURES**

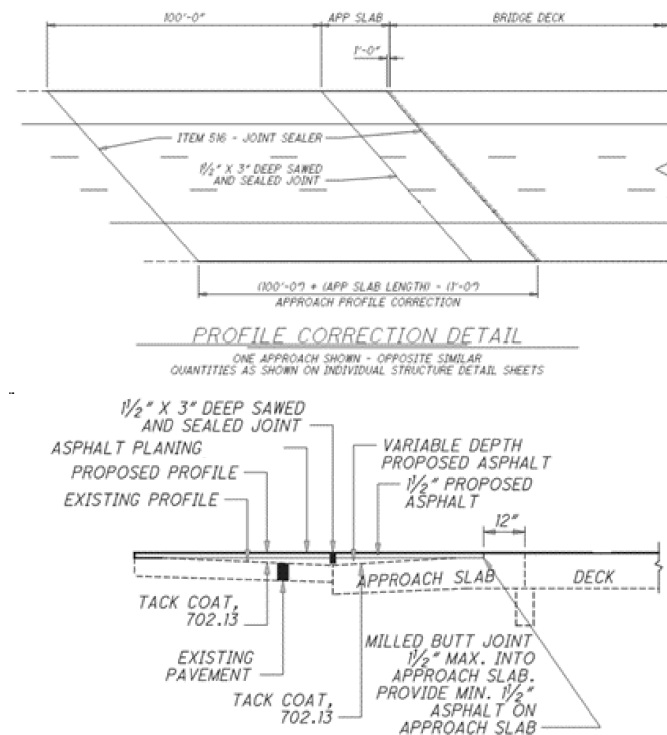
THE CONTRACTOR MUST PROFILE THE EXISTING PAVEMENT IN EACH LANE PER THE "SURFACE SMOOTHNESS FOR BRIDGES AND APPROACHES" NOTE IS THIS PLAN. SUBMIT A PROFILE CORRECTION PLAN TO INCLUDE VARIABLE DEPTH MILLING AND VARIABLE DEPTH ASPHALT AS NEEDED TO THE ENGINEER FOR APPROVAL PRIOR TO CONDUCTING THE PROFILE CORRECTION WORK. CORRECT THE PAVEMENT PROFILE BY CONSTRUCTING A SMOOTH TRANSITIONING PAVEMENT, AT A MINIMUM OF 1 1/2" THICK AND NOT MORE THAN 2" THICK, FOR A DISTANCE OF 100 LINEAR FEET BEGINNING AT THE APPROACH SLAB, A MINIMUM OF 12" FROM THE DECK END, AS NEEDED.

VARIABLE DEPTH MILLING WILL BE PERFORMED DURING THE PAVEMENT PLANING OPERATIONS OF THE MAINLINE.

PAYMENT FOR THE PROFILE CORRECTIVE ACTION PLAN WILL INCLUDE THE COLLECTION OF DATA, MAINTENANCE OF TRAFFIC TO COLLECT THE DATA, ANALYSIS OF PROFILE DATA INCLUDING SUBMITTAL OF CORRECTIVE ACTION PLAN DETAILING VARIABLE DEPTH MILLING AND VARIABLE DEPTH ASPHALT FOR THE FORWARD AND REAR APPROACHES AT EACH STRUCTURE. ALSO INCLUDED IS SCANNING THE APPROACH SLAB REINFORCING STEEL BAR DEPTH TO CONFIRM ADEQUATE COVER. DO NOT BEGIN CORRECTIVE ACTION UNTIL RECEIVING THE ENGINEER'S ACCEPTANCE OF THE CORRECTIVE ACTION PLAN.

PAYMENT FOR PROFILE CORRECTION PLAN AT STRUCTURES WILL BE INCLUDED IN THE LUMP SUM BID ITEM SPECIAL (690E98400) - PROFILE CORRECTION PLAN AT STRUCTURES.

PAYMENT FOR THE OTHER ITEMS OF WORK REQUIRED WILL BE INCLUDED IN THEIR APPROPRIATE BID ITEM.



**SURFACE SMOOTHNESS FOR BRIDGES AND APPROACHES - DATA COLLECTION**

DESCRIPTION: THE SURFACE SMOOTHNESS REQUIREMENTS OF C&MS 451.13 ARE MODIFIED AS FOLLOWS FOR BRIDGE ENCOUNTERS DEFINED AS 100 FEET OF ENTRY PAVEMENT, ENTRY APPROACH SLAB EXIT APPROACH SLAB AND 100 FEET OF EXIT PAVEMENT INCLUDING ALL JOINTS AND PAVEMENT TRANSITIONS WITHIN THIS LENGTH OF ROADWAY.

MATERIALS AND EQUIPMENT: PROVIDE SMOOTHNESS MEASURING EQUIPMENT CONFORMING TO SUPPLEMENT 1058. FURNISH THE DEPARTMENT'S APPROVAL LETTER OF THE PROFILER AND THE OPERATOR TO THE ENGINEER PRIOR TO COMMENCING WORK. THE ENGINEER WILL VERIFY THE SMOOTHNESS MEASURING

PROFILE OPERATOR'S CERTIFICATION AGAINST THE OPERATOR LIST POSTED ON THE OFFICE OF TECHNICAL SERVICES WEBPAGE. THE ENGINEER WILL COMPLETE THE SMOOTHNESS PROFILER VERIFICATION REPORT IN SUPPLEMENT 1058.

SMOOTHNESS MEASUREMENT: COLLECT PROFILE DATA FOR BOTH WHEEL PATHS IN EACH TRAVEL LANE DURING ONE CONTINUOUS PASS. THE WHEEL PATHS ARE LOCATED PARALLEL TO THE CENTERLINE OR BASELINE OF THE ROADWAY OR RAMP AND TO APPROXIMATELY 3.0 FEET INSIDE ALL LANE EDGES, MEASURED TRANSVERSELY. START THE PROFILE MEASUREMENT APPROXIMATELY 250 BEFORE THE PAVEMENT/APPROACH SLAB INTERFACE AT THE ENTRY END AND CONTINUE TO APPROXIMATELY 250 FEET AFTER THE APPROACH SLAB/PAVEMENT INTERFACE AT THE EXIT END. ENSURE THE PROFILER WILL MEET THE SURFACE SMOOTHNESS REQUIREMENTS PER 451.13 FOR BRIDGE ENCOUNTER.

NOTIFY THE ENGINEER A MINIMUM OF 24 HOURS PRIOR TO COLLECTING SURFACE SMOOTHNESS MEASUREMENTS. REMOVE ALL DIRT AND DEBRIS FROM THE SURFACE OF THE TRAVEL LANES PRIOR TO PERFORMING THE SURFACE SMOOTHNESS MEASUREMENTS. ENSURE THE PATH OF THE PROFILER IS PARALLEL TO THE LANE EDGES AT ALL TIMES DURING DATA COLLECTION.

DEVELOP AN INTERNATIONAL ROUGHNESS INDEX (IRI) ACCORDING TO ASTM E 1926 FOR THE BRIDGE ENCOUNTER USING A CONTINUOUS 25 FOOT BASE LENGTH ANALYSIS FOR EACH WHEEL PATH FOR THE RIGHT AND LEFT WHEEL PATHS IN EACH TRAVEL LANE. SUBMIT THE SUMMARY REPORT FROM PROVAL CONFORMING TO SUPPLEMENT 1112 AND ELECTRONIC COPIES OF ALL BRIDGE ENCOUNTER PROFILES IN PROVAL COMPATIBLE FORMAT TO THE ENGINEER WHICH WILL BE SHARED WITH THE OFFICE OF TECHNICAL SERVICES. PROVIDE NECESSARY TRAFFIC CONTROL AND SURVEY STATIONING FOR ALL PROFILE CORRECTION MEASUREMENTS.

MANDATORY CORRECTIVE WORK: THE DEPARTMENT WILL REQUIRE CORRECTIVE ACTION WHERE THE LOCALIZED IRI IN ANY 25 FT SEGMENT OF THE BRIDGE ENCOUNTER EXCEEDS 250 INCHES PER MILE, EXCEPT IN SEGMENTS THAT INCLUDE A STEEL ARMORED EXPANSION JOINT SYSTEM, WHERE THE LIMIT WOULD BE 350 INCHES PER MILE. PERFORM CORRECTIVE ACTION TO REDUCE THE IRI FOR EACH CORRECTED LANE TO 250 INCHES PER MILE OR LESS, EXCEPT IN SEGMENTS THAT INCLUDE A STEEL ARMORED EXPANSION JOINT SYSTEM INSTALLED PRIOR TO THE CORRECTIVE WORK. FEATHER AREAS ADJACENT TO GROUND AREAS TO PROVIDE A SMOOTH TRANSITION. RE-GROOVE DIAMOND GROUND SURFACES ACCORDING TO 511.17 IF THE EXISTING GROOVES ARE LESS THAN 0.08 INCHES DEEP AT NO ADDITIONAL COST TO THE DEPARTMENT.

FOLLOWING COMPLETION OF PROFILE CORRECTIONS AND SURFACE COURSE PAVING, THE PROFILE DATA IS TO BE COLLECTED AND ANALYZED PER PN 420.

THE PROPOSED SURFACE SMOOTHNESS FOR BRIDGES AND APPROACHES WILL BE COMPLETED AT THE FOLLOWING STRUCTURES:

- SUM-480-0745L
- SUM-480-0745R

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY AND ARE TO BE USED AS DIRECTED BY THE ENGINEER:

- ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE, 1910 SY
- ITEM 409, SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 185 FT
- ITEM 442, ASPHALT CONCRETE SURFACE COURSE, TYPE A (447), AS PER PLAN, 120 CY

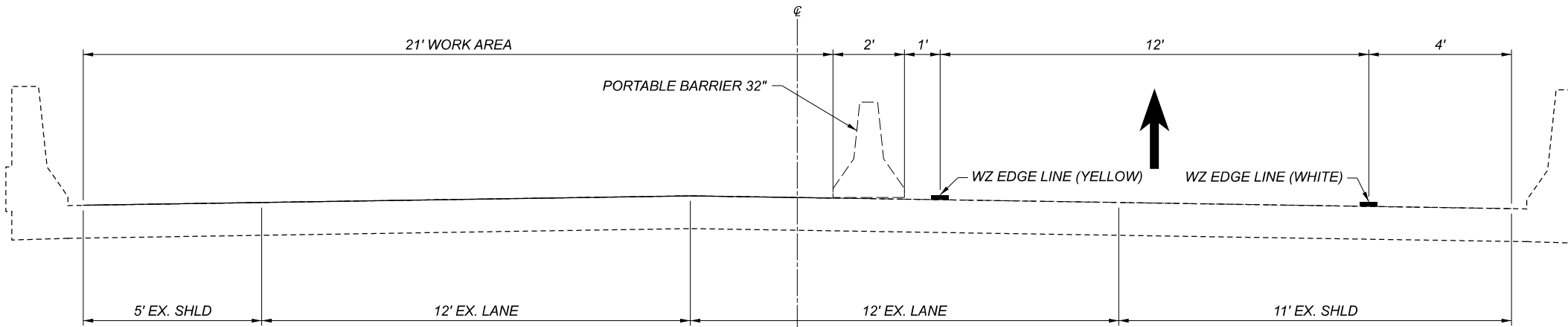
**ITEM 407 TACK COAT, 702.13**

ENSURE THAT ANY TACK COAT USED IN THE PROCESS OF COMPLETING THE PRESCRIBED PROFILE CORRECTION USES TACK COAT IN ACCORDANCE WITH C&MS 702.13. ANY TACK COAT USED ON THE PROFILE CORRECTIONS THAT IS NOT IN ACCORDANCE WITH 702.13 SHALL BE REMOVED IN ITS ENTIRETY AND REPLACED WITH AN APPROVED MATERIAL AT NO COST TO THE DEPARTMENT AND APPROVED BY THE ENGINEER.

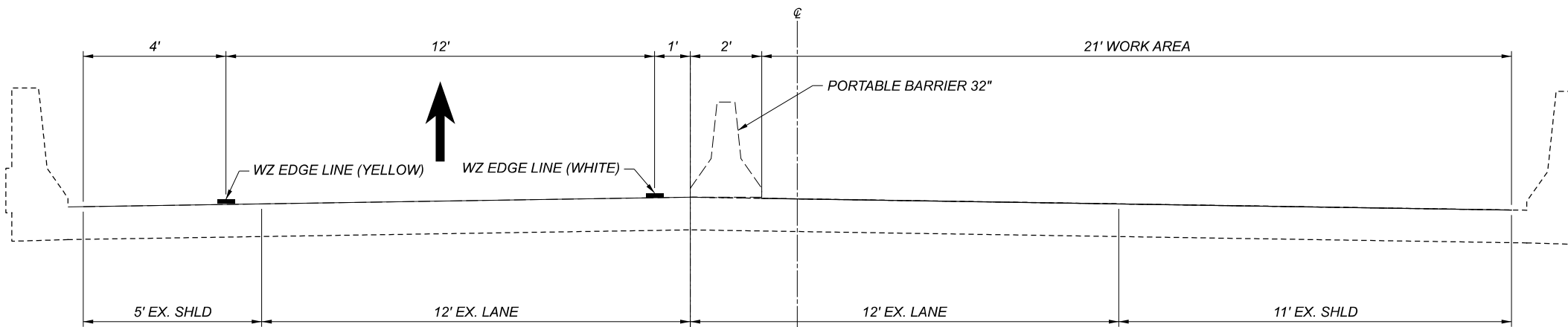
THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY AND ARE TO BE USED AS DIRECTED BY THE ENGINEER:

- ITEM 407, TACK COAT, 702.13, 195 GAL





TYPICAL SECTION WORKZONE PHASE 1



TYPICAL SECTION WORKZONE PHASE 2

THE FOLLOWING QUANTITIES SHALL BE USED FOR THE MAINTENANCE OF TRAFFIC ON IR 480 AT STRUCTURES SUM-480-0205L & 0208R AND HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

PHASE 1 - LEFT LANE CLOSURE (SEE SHEET 9)

- ITEM 614, WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 1 EACH
- ITEM 614, BARRIER REFLECTORS, TYPE 1, ONE WAY, 16 EACH
- ITEM 614, OBJECT MARKERS, ONE-WAY, 16 EACH
- ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I, 1.19 MILE
- ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 6", 740.06, TYPE I, 880 FT
- ITEM 614 MAINTAINING TRAFFIC, MISC.: SHOULDER RUMBLE STRIPS, 2110 FT
- ITEM 614, INCREASED BARRIER DELINEATION 60 FEET
- ITEM 622, PORTABLE BARRIER, UNANCHORED, 530 FT

PHASE 2 - RIGHT LANE CLOSURE (SEE SHEET 10)

- ITEM 614, WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 1 EACH
- ITEM 614, BARRIER REFLECTORS, TYPE 1, ONE WAY, 16 EACH
- ITEM 614, OBJECT MARKERS, ONE-WAY, 16 EACH
- ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I, 0.82 MILE
- ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 6", 740.06, TYPE I, 880 FT
- ITEM 614 MAINTAINING TRAFFIC, MISC.: SHOULDER RUMBLE STRIPS, 1330 FT
- ITEM 614, INCREASED BARRIER DELINEATION 60 FEET
- ITEM 622, PORTABLE BARRIER, UNANCHORED, 530 FT

THE ABOVE LISTED QUANTITIES ARE FOR ONE STRUCTURE

**DELINEATION OF PORTABLE AND PERMANENT BARRIER**

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

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

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND PERMANENT CONCRETE BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS; OR ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.

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

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

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

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

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

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

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

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

**REMOVAL AND REPLACEMENT OF EXISTING RUMBLE STRIPS**

WHEN TRAFFIC WILL BE SHIFTED ONTO THE SHOULDER ALL EXISTING RUMBLE STRIPS SHALL BE FILLED WITH ASPHALT. WHEN CONSTRUCTION IS COMPLETE, THE RUMBLE STRIPS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND LOCATION. PAYMENT FOR ALL WORK AND MATERIALS ASSOCIATED WITH PLACING THE ASPHALT AND RESTORING THE RUMBLE STRIPS TO THEIR ORIGINAL CONDITION WILL BE PAID FOR UNDER ITEM 614, MAINTAINING TRAFFIC, MISC.: SHOULDER RUMBLE STRIPS. ALL REQUIREMENTS OF STANDARD CONSTRUCTION DRAWING SHALL BP-9.1 WILL APPLY.

**WORKZONE LANE CLOSURE TIME LIMITATION**

THE DURATION OF EACH PHASE PER DIRECTION SHALL BE LIMITED TO 1 WEEKEND (7:00PM FRIDAY THROUGH 6:00AM MONDAY) FOR BACKWALL AND EXPANSION JOINT REPLACEMENTS ON STRUCTURES SUM-480-0205L & SUM-480-0208R

SHOULD THE CONTRACTOR FAIL TO MEET THIS REQUIREMENT, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$2000 PER HOUR OR PORTION THEREOF THAT THE LANE REDUCTION REMAINS BEYOND THE SPECIFIED LIMIT.

DESIGN AGENCY



DESIGNER

BFR

REVIEWER

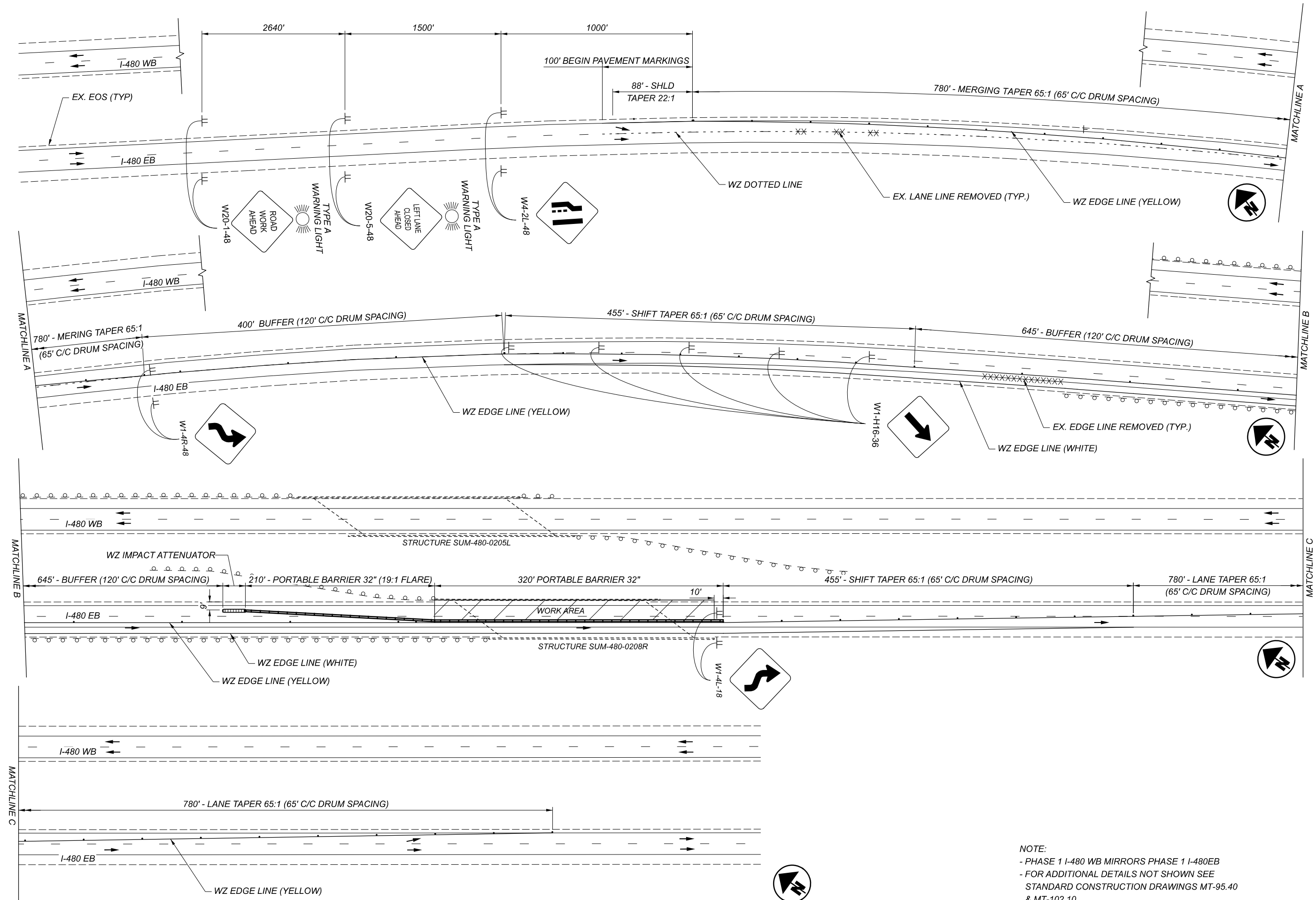
XXX MM-DD-YY

PROJECT ID

110698

SHEET TOTAL

P.8 29



NOTE:  
 - PHASE 1 I-480 WB MIRRORS PHASE 1 I-480EB  
 - FOR ADDITIONAL DETAILS NOT SHOWN SEE  
 STANDARD CONSTRUCTION DRAWINGS MT-95.40  
 & MT-102.10



WORKZONE PLAN  
 PHASE 1

DESIGN AGENCY

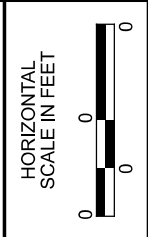
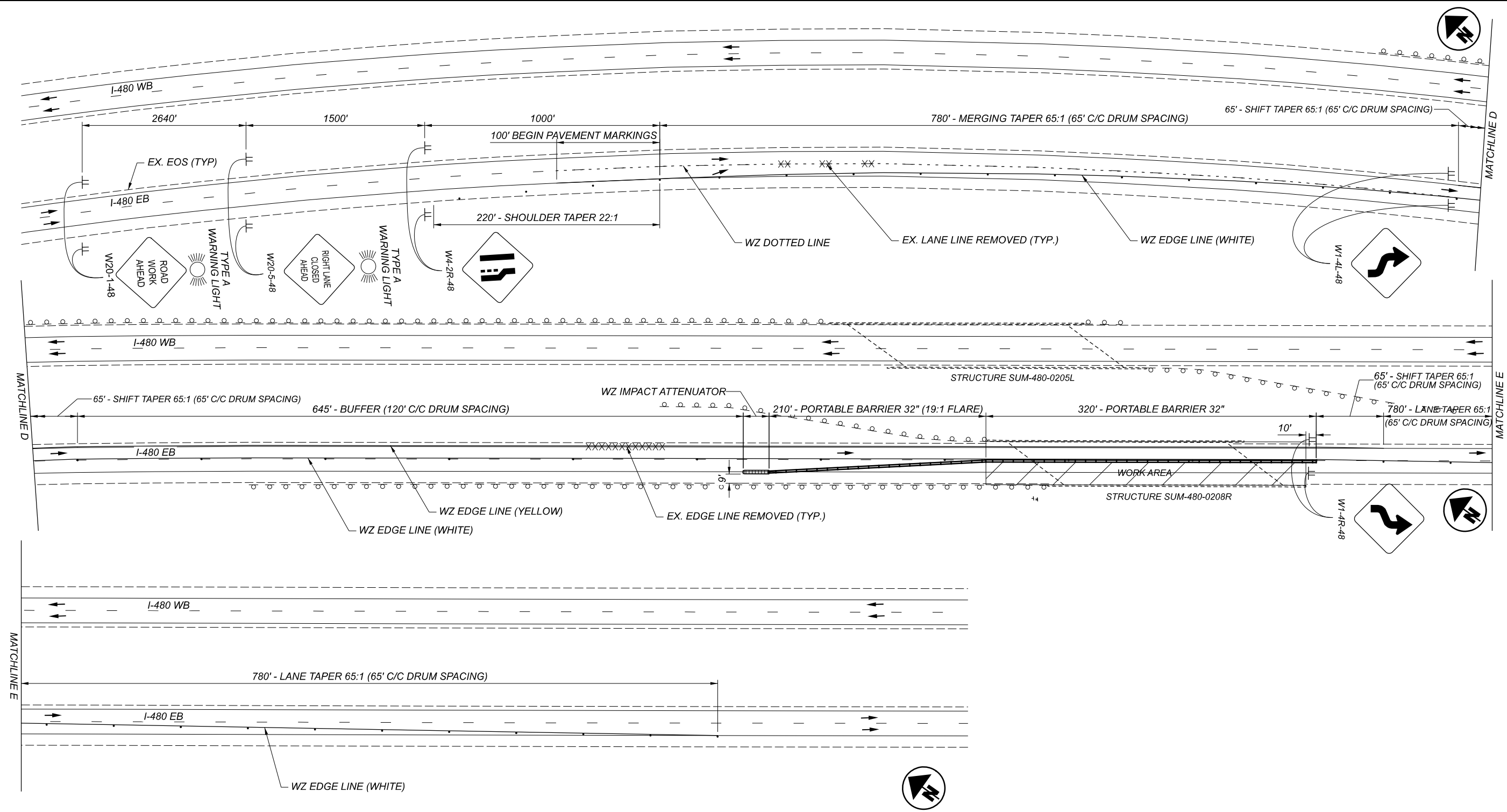


DESIGNER  
 BFR

REVIEWER  
 XXX MM-DD-YY

PROJECT ID  
 110698

SHEET TOTAL  
 P.9 29



WORKZONE PLAN  
 PHASE 2

NOTE:  
 - PHASE 2 I-480 WB MIRRORS PHASE 2 I-480EB  
 - FOR ADDITIONAL DETAILS NOT SHOWN SEE  
 STANDARD CONSTRUCTION DRAWINGS MT-95.40  
 & MT-102.10

DESIGN AGENCY	
DESIGNER	BFR
REVIEWER	XXX MM-DD-YY
PROJECT ID	110698
SHEET	TOTAL
P.10	29

SHEET NUM.										PART.				ALT (X)	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	8	13	14	15	16	17	18	23	01/IMS/PV	02/NHS/PV/TWIN	03/IMS/BR	04/NHS/OT/TWIN							
<b>ROADWAY</b>																				
250										250				203	10000	250	CY	EXCAVATION		
	809									809				209	60200	809	STA	LINEAR GRADING		
		2,120								2,120				622	41100	2,120	FT	PORTABLE BARRIER, UNANCHORED		
7										5	2			SPECIAL	69098000	7	EACH	VERTICAL CLEARANCE	4	
<b>EROSION CONTROL</b>																				
	22,473									22,473				659	10000	22,473	SY	SEEDING AND MULCHING		
	3.03									3.03				659	20000	3.03	TON	COMMERCIAL FERTILIZER		
	4.64									4.64				659	31000	4.64	ACRE	LIME		
	121.35									121.35				659	35000	121.35	MGAL	WATER		
										3,000				832	30000	3,000	EACH	EROSION CONTROL		
<b>DRAINAGE</b>																				
	3										3			611	98630	3	EACH	CATCH BASIN ADJUSTED TO GRADE		
	2												2	611	98634	2	EACH	CATCH BASIN RECONSTRUCTED TO GRADE		
	2										2			611	99655	2	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	4	
	2												2	611	99660	2	EACH	MANHOLE RECONSTRUCTED TO GRADE		
<b>PAVEMENT</b>																				
4,650										4,000		650		251	01000	4,650	SY	PARTIAL DEPTH PAVEMENT REPAIR (441)		
1,500										1,500				252	01000	1,500	SY	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT		
7,000										7,000				252	01500	7,000	FT	FULL DEPTH PAVEMENT SAWING		
	1,910		376,770	17,828	48,382					432,875	12,015			254	01000	444,890	SY	PAVEMENT PLANING, ASPHALT CONCRETE (T=1 1/2")		
250										250				304	20000	250	CY	AGGREGATE BASE		
	195									195				407	13900	195	GAL	TACK COAT, 702.13		
			33,910	1,605	4,355					38,787	1,083			407	20000	39,870	GAL	NON-TRACKING TACK COAT		
			15,714		1,492					17,206				408	10001	17,206	GAL	PRIME COAT, AS PER PLAN	10	
	185									185				409	30000	185	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS		
			9,821	499	667					10,488	499			442	00100	10,987	CY	ANTI-SEGREGATION EQUIPMENT		
	120		15,699	743	2,016					18,077	501			442	10301	18,578	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG70-22M, (T=1 1/2")	10	
			2,183		208					2,391				617	10101	2,391	CY	COMPACTED AGGREGATE, AS PER PLAN	10	
			33.48		0.48					33.96				618	40600	33.96	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)		
<b>TRAFFIC CONTROL</b>																				
						1,074				1,074				621	00100	1,074	EACH	RPM		
						860				860				621	54000	860	EACH	RAISED PAVEMENT MARKER REMOVED		
							38.1			38.1				642	00104	38.1	MILE	EDGE LINE, 6", TYPE 1		
							17.68			17.68				642	00204	17.68	MILE	LANE LINE, 6", TYPE 1		
							5,678			5,678				642	00404	5,678	FT	CHANNELIZING LINE, 12", TYPE 1		
							5,656			5,656				642	01510	5,656	FT	DOTTED LINE, 6", TYPE 1		
								0.41			0.27	0.14		646	10010	0.41	MILE	EDGE LINE, 6"		
								0.52			0.52			646	10110	0.52	MILE	LANE LINE, 6"		
								0.33			0.25	0.08		646	10200	0.33	MILE	CENTER LINE		
								680			680			646	10300	680	FT	CHANNELIZING LINE, 8"		
									132	151				646	10400	283	FT	STOP LINE		
										705				646	10600	705	FT	TRANSVERSE/DIAGONAL LINE		
										11	11			646	20300	22	EACH	LANE ARROW		
										8				646	20320	8	EACH	WRONG WAY ARROW		
<b>STRUCTURE REPAIRS</b>																				
																		FOR SUM-480-0137 ESTIMATED QUANTITIES	23	
																		FOR SUM-480-0205L ESTIMATED QUANTITIES	23	
																		FOR SUM-480-0208R ESTIMATED QUANTITIES	23	
																		FOR SUM-480-0481L ESTIMATED QUANTITIES	23	
																		FOR SUM-480-0481R ESTIMATED QUANTITIES	23	
																		FOR SUM-480-0672 ESTIMATED QUANTITIES	23	
																		FOR SUM-480-0814 ESTIMATED QUANTITIES	23	
																		FOR SUM-82-0727 ESTIMATED QUANTITIES	23	

GENERAL SUMMARY

DESIGN AGENCY	
DESIGNER	RMK
REVIEWER	MAC
PROJECT ID	110698
SHEET	P.11
TOTAL	29



**ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.:  
 VES-LMC (VERY EARLY STRENGHT LATEX MODIFIED CONCRETE)**

**DESCRIPTION:**

THIS ITEM WILL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECKS, APPROACH SLABS AND TOPS OF THE BACKWALLS, INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, BONDING COAT, AND THE MIXING, PLACING, FINISHING, CURING, COMPRESSIVE STRENGTH TESTING, AND SEALING OF ALL THE PATCHES AS DIRECTED BU THE ENGINEER.

**RESTRICTIONS:**

THE VES-LMC WILL NOT BE PLACED WHEN RAIN IS FORECAST WITHIN THE PERIOD OF TIME WHEN THE REPAIR WILL BE PERFORMED, INCLUDING PREPARATION, INSTALLATION OF THE PATCH AND CURING. IF RAIN OCCURS DURING THE PLACING OF THE MATERIAL, ALL OPERATIONS WILL CEASE. DURING DELAYS IN THE PATCH PLACEMENT OPERATIONS OF MORE THAN 10 MINUTES, THE WORK FACE OF THE PLACED PATCH MATERIAL AND ANY BONDING GROUTED AREAS WILL BE TEMPORARILY COVERED WITH WET BURLAP. IF AN EXCESSIVE DELAY IS ANTICIPATED, A BULKHEAD WILL BE INSTALLED AT THE WORK FACE AND THE PATCHING PLACEMENT OPERATION TERMINATED

THE VES-LMC PATCHING MATERIAL WILL BE PLACED ONLY WHEN THE LOCAL AMBIENT TEMPERATURE IS ABOVE 45°F AND IS FORECAST TO REMAIN ABOVE 45°F FOR THE CURING PERIOD. THE TEMPERATURE AT THE PATCH SURFACE WILL BE MAINTAINED ABOVE 35°F UNTIL THE CURING PERIOD IS COMPLETE.

DO NOT BEGIN OPERATIONS IF EVAPORATION RATES ARE PREDICTED TO BE MORE THAN 0.1 POUND PER SQUARE FOOT PER HOUR AS DETERMINED ACCORDING TO CMS 511.10, FIGURE 1, ACI 308, WITHIN 12 HOURS OF COMMENCEMENT.

UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, PATCHES WILL NOT BE PLACED ADJACENT TO A PREVIOUS PATCH WHICH HAS CURED FOR LESS THAN 4 HOURS.

IF PLACEMENT OF PATCHES IS TO BE MADE AT NIGHT, THE CONTRACTOR WILL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR WORK AREA. THE PLAN WILL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS WILL BE DIRECTED SO THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

**REMOVAL OF UNSOUND CONCRETE:**

THE ENGINEER WILL SOUND THE WEARING SURFACE AND BACKWALL TOPS AND OUTLINE THE AREAS TO BE REMOVED. SOUNDING MAY HAVE TO BE DELAYED UNTIL THE DECK IS SUFFICIENTLY DRY TO PERMIT DETECTION OF ALL AREAS OF DELAMINATION. BACKWALL REMOVAL AND DEPTH WILL BE AS DIRECTED THE ENGINEER AND WILL NOT GO BELOW THE EXISTING APPROACH SLAB SEAT. THE PERIMETER OF ALL REMOVAL AREAS WILL BE SAWED TO A DEPTH OF 2 INCHES TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL. SAW CUTS WILL NOT EXTEND BEYOND THE LIMITS OF THE PATCH. COOLING WATER FROM WET SAWING AND DUST FROM DRY SAWING WILL NOT BE ALLOWED TO CONTAMINATE THE EXPOSED PATCH HOLES. ALL PATCHES OTHER THAN SOUND CONCRETE AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE WILL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING, AND DRES- SING, OR HYDRODEMOLITION (AS PER SS848). THE REMOVAL OF AN UNSOUND EXISTING CONCRETE OVERLAY MAY BE PERFORMED AS PER SS847.17. CHIPPING HAMMERS WILL NOT BE HEAVIER THAN THE NORMAL 35-POUND CLASS AND WILL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK.

CONCRETE WILL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING REINFORCING STEEL, WHERE THE BOND BETWEEN THE CONCRETE AND PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE WILL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3#4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE, REINFORCEMENT WHICH HAS BECOME LOOSE WILL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE.

**SURFACE PREPARATION:**

CLEANING WILL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT OR THE PATCHING MATERIAL. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WILL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO PATCHING BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA WILL NOT BE ALLOWED. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE WILL BE PREVENTED BY PLACEMENT OF A CLEAN 4-MIL POLYETHYLENE SHEET (OR ANY OTHER COVERINGS AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING. WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR WILL PROVIDE ADEQUATE SUPPORT FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE CONCRETE MIXER, OR WILL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER THE PATCH LOCATIONS.

**MATERIALS:**

MATERIALS WILL CONFORM TO THE FOLLOWING REQUIREMENTS:

FINE AGGREGATE (NATURAL SAND)	703.02 (NOTE 1)
COARSE AGGREGATE (NO. 8)	703.02 (NOTE 1)
RAPID HARDENING HYDRAULIC CEMENT	(NOTE 2)
WATER	499.02
LATEX EMULSION	SS953
CURING MATERIAL	705.05,OR 705.06, WHITE OPAQUE
REPLACEMENT REINFORCING STEEL	709.00

POSSOLONIC MATERIAL OR PORTLAND POZZOLAN CEMENTS WILL NOT BE USED.

ANTI-FOAM ADDITIVES AS RECOMMENDED BY THE LATEX EMULSION MANUFACTURER MAY BE REQUIRED IF THE CONCRETE MIXTURE ENTRAINED AIR IS ABOVE THE SPECIFIED AMOUNT.

AIR-ENTRAINING ADMIXTURES WILL NOT BE USED

A SET CONTROL IN ACCORDANCE WITH THE CEMENT MANUFACTURER'S RECOMMENDATION MAY BE CONSIDERED.

ADMIXTURES CONTAINING CALCIUM CHLORIDE WILL NOT BE USED.

(NOTE 1 ): DELETRIOUS MATERIAL WILL NOT EXCEED ONE HALF THE REQUIREMENTS FOR THE SUPERSTRUCTURE AGGREGATE, AND THE SODIUM SULFATE SOUNDNESS LOSS WILL NOT EXCEED THAT SPECIFIED FOR SUPERSTRUCTURE CONCRETE IN 703.02.

(NOTE 2 ): CEMENT WILL BE APPROXIMATELY 1#3 CALCIUM SULFOALUMINATE (C4A3S) AND 2#3 DICALCIUM SILICATE (CS2) OR OTHER HYDRAULIC CEMENT THAT WILL PROVIDE A LATEX MODIFIED CONCRETE THAT MEETS THE PHYSICAL REQUIREMENTS FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE LISTED BELOW:

- 1.COMPRESSIVE STRENGHT, MINIMUM, CONCRETE ASTM C39:
  - 3 HOURS: 2500 PSI
  - 1 DAY: 3500 PSI
  - 7 DASY: 5000 PSI

2. PRIOR TO PLACING PATCHES THE CONCRETE WILL DEMONSTRATE THAT THE CONCRETE MIXTURE WILL OBTAIN A COMPRESSIVE STRENGHT OF AT LEAST 2500 PSI WITHIN THE CURING PERIOD AND AT THE CURING TEMPERATURES IN WHICH THE PATCHES WILL BE PLACED.

3.PERMEABILITY, MAXIMUM AT 28 DAYS, AASHTO T277: 1000 COULOMBS. PERMEABILITY SAMPLES WILL BE MOIST CURED 2 DAYS IN THE MOLDS (1 DAY AT THE JOB SITE AND 1 DAY IN THE LAB). AIR CURED 5 DAYS IN THE MOLDS IN THE LABORATORY, AND 21 DAYS OUT OF THE MOLDS AT 100°F AIR TEMP.

4.BOND STRENGHT, MINIMUM AT 7 DAYS, ASTM C1583 USING TYPE 1, SELF-ALIGNMENT ADHESION TESTER PER ASTM D4541 = 150 PSI.

(NOTE 3): THE LATEX EMULSION WILL BE PROTECTED FROM FREEZING AND PROLONGED EXPOSURE TO TEMPERATURES IN EXCESS OF 85°F. EMULSIONS IN STORAGE FACILITIES WILL BE RE-CIRCULATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

**PROPORTIONING AND MIXING:**

ALL MIXING OF MATERIALS WILL BE DONE ON SITE IN A CONTINUOUS MOBILE MIXER. PRIOR TO EACH DAY'S PLACEMENT, EACH MIXER WILL BE CHECKED TO ASSURE THAT SPECIFIED AIR CONTENT, SLUMP, AND YEILD HAE BEEN ATTAINED. TRIAL CONCRETE WILL NOT BE INCORPORATED INTO THE WORK. PROPORTIONING AND ALL OTHER REQUIRED CHARACTERISTICS OF THE MIX WILL BE ADJUSTED OFF THE DECK BEFORE PLACEMENT OF THE PATCHES BEGIN.

THE MIXTURE WILL CONSIST OF A WORKABLE MIXTURE OF UNIFORM COMPOSITION AND CONSISTENCY WITH THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD (DRY WEIGHT):

QUANTITIES OF MATERIALS PER CUBIC YARD (DRY WEIGHT):

TYPE OF COARSE AGGREGATE	FINE AGGREGATE (LB)	COARSE AGGREGATE (LB)	CEMENT (LB)	LATEX EMULSION (GAL)	MAX. NET WATER (GAL)
GRAVEL	1645	1300	658	24.5	17.5
LIMESTONE	1645	1315	658	24.5	17.5
SLAG	1645	1140	658	24.5	17.5

SLUMP: 4 TO 6 INCHES

AIR CONTENT OF PLASTIC MIX WILL NOT EXCEED 7 PERCENT

NOTE: THE SPECIFIC GRAVITY USED FOR DETERMINING THE ABOVE WEIGHTS ARE: NATURAL SAND 2.62, GRAVEL 2.62, LIMESTONE 2.65, AND SLAG 2.30.

NOTE: THE DRY WEIGHTS ARE APPROXIMATE. THIS PROPORTION SHOULD PRODUCE GOOD WORKABILITY, BUT DUE TO GRADATION VARIABILITY, THE FINE AGGREGATE CONTENT MAY BE INCREASED WITH APPROVAL BY THE ENGINEER, AS MUCH AS 8 PERCENT BY WEIGHT IF THE COARSE AGGREGATE IS REDUCED AN EQUAL VOLUME.

NOTE: THE SLUMP WILL NOT BE MEASURED UNTIL AFTER THE CONCRETE HAS BEEN DISCHARGED FROM THE MIXER AND LEFT UNDISTURBED FOR 4 TO 5 MINUTES. THE WATER CONTENT MAY BE ADJUSTED TO CONTROL THE SLUMP WITHIN THE PRESCRIBED LIMITS.

**CONTINUOUS MOBILE MIXER:**

REQUIREMENTS FOR CONTINUOUS MOBILE MIXERS FOR LATEX MODIFIED CONCRETE ARE AS FOLLOWS: THE PROPORTIONING AND MIXING EQUIPEMENT WILL BE AN INTEGRAL MOBILE UNIT HAVING CAPACITY AND CONTINUOUS MIXING CAPABILITY TO PERMIT THE FINISHING OPERATIONS TO PROCEED AT A CONSTANT RATE SO THAT THE FINAL FINISHING CAN BE COMPLETED PRIOR TO THE FORMATION OF A PLASTIC FILM ON THE VES-LMC SURFACE. IT WILL CONSISTENTLY PRODUCE UNIFORMLY BLENDED MIXTURE WITH THE SPECIFIED AIR CONTENT AND SLUMP LIMITS.

THE MIXER WILL ALSO:

- BE CAPABLE OF PRODUCING NOT LESS THAN 6 CUBIC YARDS OF VES-LMC WITHOUT RECHARGING
- BE EQUIPED WITH A RECORDING METR WITH A TICKET PRINTOUT DEVICE TO RECORD AN INDICATION OF THE CEMENT QUANTITY BEING INTRODUCED INTO THE MIX. THE METERING DEVICE WILL BE ACCURATE WITHIN A TOLERANCE OF -1 TO +3 PERCENT.
- BE EQUIPED WITH A LATEX METERING DEVICE TO INDICATE VOLUME DISPENSED. THE METERING DEVICE WILL BE ACCURATE TO WITHIN A TOLERANCE OF -1 TO +2 PERCENT. IN ADDITION THE LATEX TANK WILL HAVE A STAND PIPE MARKED GALLONS.
- BE EQUIPPED WITH A WATER FLOW INDICATOR AND HAVE A WATER FLOW CONTROL THAT IS READILY ADJUSTABLE TO PROVIDE FOR MINOR VARIATIONS IN AGGREGATE MOIS- TURE CONTENT. THE FLOW INDICATOR WILL BE ACCURATE WITHIN A TOLERANCE OF +1 PERCENT IN THE RANGE OF EXPECTED USE.
- BE EQUIPPED WITH A CONTROL TO REGULATE THE QUANTITY OF EACH OF THE VES-LMC COMPONENTS TO PERMIT THE PRODUCTION OF THE MIX HAVING THE SPECIFIED COMPOSITION. TO ENSURE THAT THE MIXER CAN ACCURATELY PROPORTION AND BLEND ALL COMPONENTS OF THE VES-LMC ON A CONTINUOS OR INTERMITTENT BASIS. THE MIXER WILL BE CALIBRATED PRIOR TO THE PRODUCTION OF THE MATERIAL.
- THE ENGINEER MAY REQUIRE RE-CALIBRATION OF THE CEMENT, LATEX AND WATER METERING DEVICES AS HE DEEMS NECESSARY.
- BE CAPABLE OF DISCHARGING MIXED VES-LMC THROUGH A CONVENTIONAL CHUTE DIRECTLY IN FRONT OF THE FINISHING MACHINE.
- BE KEPT CLEAN, FREE OF PARTIALLY DRIED OR HARDENED MATERIALS, AND PROPERLY OPERATED AT ALL TIMES.

**PLACING, CONSOLIDATING AND FINISHING:**

IMMEDIATELY PRIOR TO PLACING THE PATCHES, CLEAN AND WET ALL EXPOSED CONCRETE SURFACES.

CONTINUOUSLY FOG THE VES-LMC MATERIAL FROM THE TIME OF PLACING UNTIL COVERED WITH WET BURLAP. APPLY THE FOG UNIFORMLY OVER THE ENTIRE SURFACE OF THE PATCH AREA WITHOUT PRODUCING STANDING WATER.

STRUCTURE NOTES

SUM-480-0137, SUM-480-0205L, SUM-480-0208R, SUM-82-0727, SUM-480-0481L, SUM-480-0481R, SUM-480-0672, SUM-480-0814

SFN

DESIGN AGENCY



DESIGNER/CHECKER

BFR

REVIEWER

RAB 07/12/21

PROJECT ID  
110698

SUBSET	TOTAL
3	11

SHEET	TOTAL
P.21	29

**SCREEDING:**

THE PATCHING MATERIAL WILL BE PLACED, CONSOLIDATED, AND FINISHED TO THE ADJACENT GRADE. PATCHES EXCEEDING 50 SQ FT (4.6 SQ M) WILL BE LEVELED AND CONSOLIDATED WITH A MECHANICAL VIBRATING SCREED. SMALLER PATCHES WILL BE HAND VIBRATED AND LEVELED WITH A STRAIGHTEDGE. THE SCREED WILL BE PLACED PARALLEL TO THE BRIDGE CENTERLINE SO THAT THE DECK PROFILE REMAINS CONSISTENT WITH THE WORN SURFACE.

DO NOT ADD WATER TO AID THE FINISHING AND AN EVAPORATION RETARDANT MAY NOT BE USED.

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED THEY WILL BE TEXTURED IN ACCORDANCE WITH 451.09. THE CONTRACTOR WILL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A STRAIGHTEDGE. THE STRAIGHTEDGE WILL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH THE ENDS RESTING ON THE EXISTING WEARING SURFACE ADJACENT TO THE PATCH AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1#8 INCH IN 10 FEET (3 MM IN 3 M) WILL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE WILL BE RECHECKED.

**CURING:**

COVER THE FINISHED PATCHED SURFACES WITH A SINGLE LAYER OF CLEAN WET BURLAP AND COVER THE BURLAP WITH A 4-MIL WHITE OPAQUE POLYETHYLENE FILM FOR A MINIMUM OF 4 HOURS FOLLOWED BY A MEMBRANE CURE PER 511.17 METHOD (B).

ADEQUATE PRECAUTIONS WILL BE TAKEN TO PROTECT THE FRESHLY PLACED VES-LMC FROM RAIN.

THE CONTRACTOR WILL SUPPLY A PROPERLY CALIBRATED IMPACT REBOUND HAMMER TO VERIFY THAT THE PATCHES HAVE REACHED 3000 PSI COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC.

**INSPECTION AND SOUNDING OF CONCRETE PATCHES:**

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS WILL BE SOUNDED. ALL DELAMINATED AREAS WILL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE. ALL PATCHES WHICH ARE SOUND BUT SHOW SIGNS OF CRACKING WILL BE SEALED AND THE PERIMETER OF ALL PATCHES WILL ALSO BE SEALED WITH GRAVITY FED RESIN.

ALL SOUNDING AND REPLACEMENT OF REJECTED AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

**METHOD OF MEASUREMENT:**

PAYMENT WILL BE MADE AT THE CONTRACTOR PRICE PER CUBIC YARD FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) WHICH WILL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK INCLUDING REMOVAL AND DISPOSAL OF THE EXISTING MATERIAL.

**ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)**

MAKE ONE OR MORE, ON CUBIC YARD, TRIAL BATCHES OF THE VES-LMC MATERIAL AT LEAST 14 DAYS PRIOR TO THE MATERIAL BEING PLACED. DEMONSTRATE THE ABILITY TO ACHIEVE THE REQUIREMENTS OF THE MATERIAL AS PER THE PLAN NOTE.

PAYMENT WILL BE MADE AT THE LUMP SUM CONTRACT PRICE FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) WHICH WILL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK.

STRUCTURE NOTES

SUM-480-0137, SUM-480-0205L, SUM-480-0208R, SUM-82-0727,  
 SUM-480-0481L, SUM-480-0481R, SUM-480-0672, SUM-480-0814

SFN

DESIGN AGENCY



DESIGNER/CHECKER

BFR

REVIEWER

RAB 07/12/21

PROJECT ID

110698

SUBSET TOTAL

4 11

SHEET TOTAL

P.22 29



CALC: BFR DATE: 6/17/2021  
 CHECKED: DATE:

ESTIMATED QUANTITIES

BRIDGE NO. / STRUCTURE FILE NO.								ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET
SUM-480-0137 7710208 03/IMS/BR	SUM-480-0205L 7710232 03/IMS/BR	SUM-480-0208R 7710267 03/IMS/BR	SUM-82-0727 7706960 03/IMS/BR	SUM-480-0481L 7710356 03/IMS/BR	SUM-480-0481R 7710380 03/IMS/BR	SUM-480-0672 7710410 03/IMS/BR	SUM-480-0814 7710569 03/IMS/BR					
LS	LS	LS	LS	LS	LS	LS	LS	201	11001		CLEARING AND GRUBBING, AS PER PLAN	1
1000	1223	1223						202	23500	SY	WEARING COURSE REMOVED	
150	184	184						407	13900	GAL	TACK COAT, 702.13	
60	74	74						407	20000	GAL	NON-TRACKING TACK COAT	
46	51	51						442	20001	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN, PG70-22M	1
	23	28	17	78	78	711	20	512	10100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
						711		512	74000	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
	12	12					8	516	45305	EACH	REFURBISH BEARING DEVICE, AS PER PLAN	2
	LS	LS					LS	516	47001		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	2
				300	200			SPECIAL	51900100	SF	COMPOSITE FIBER WRAP SYSTEM	2
			150				150	519	11101	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	1
11	15	15					30	519	12304	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	
								SPECIAL	53000600	SF	STRUCTURES CONCRETE SPALL REMOVAL	2
	20	20		20	20			601	20010	CY	CRUSHED AGGREGATE SLOPE PROTECTION	
	21	21	57					630	02100	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
	6	6	12					630	80100	SF	SIGN, FLAT SHEET	
	1	1	4					630	80100	SF	SIGN, FLAT SHEET, 730.20	
	3	3	8					630	84900	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
	2	2	6					630	86002	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	200	250		300	200			844	10000	SF	CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION	
25								846	00110	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	
42	51	51						856	10000	CY	BRIDGE DECK WATERPROOFING ASPHALT CONCRETE	
	LS	LS						202	11201		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2
	4949	4949						509	10001	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2
	200	200						509	20001	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	2
	23	23						SPECIAL	51911900	CY	PATCHING CONCRETE STRUCTURE VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	3
	LS							SPECIAL	51960000		PATCHING CONCRETE STRUCTURE TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	4

STRUCTURE ESTIMATED QUANTITIES  
 SUM-480-0137, SUM-480-0205L, SUM-480-0208R, SUM-82-0727,  
 SUM-480-0481L, SUM-480-0481R, SUM-480-0672, SUM-480-0814

SFN

DESIGN AGENCY



DESIGNER/CHECKER

BFR

REVIEWER

RAB 07/12/21

PROJECT ID

110698


SUBSET TOTAL

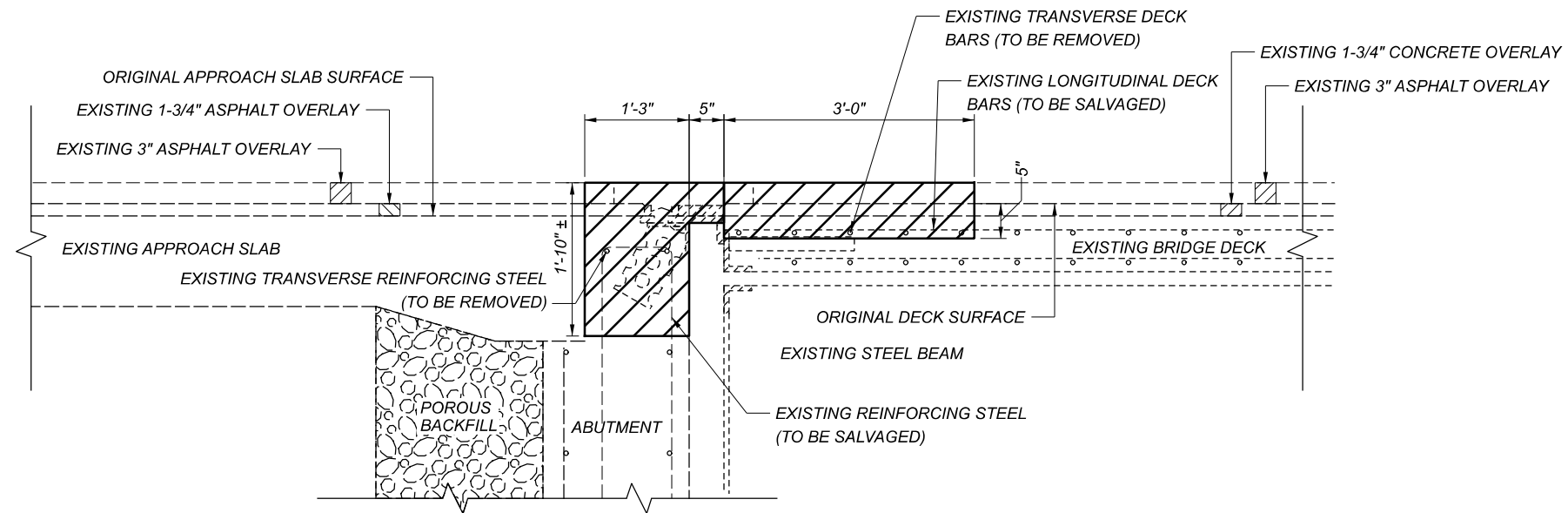
5 11

SHEET TOTAL

P.23 29

NOTES:

-  ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED
- REMOVAL OF EXISTING JOINTS, DECK CONCRETE AND BACKWALL CONCRETE WILL BE PAID FOR UNDER ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN. REMOVAL LIMITS WILL BE 1 FT. AWAY FROM BARRIER WALL TO 1 FT. AWAY FROM MEDIAN WALL OF BRIDGE DECK AND BACKWALL FOR THE LENGTH SHOWN IN THE DETAIL BELOW AT EACH ABUTMENT. CARE WILL BE TAKEN TO SALVAGE ALL EXISTING LONGITUDINAL DECK AND BACKWALL U-SHAPED REINFORCING STEEL DURING CONCRETE REMOVAL.



SUM-480-0205L & 0208R

APPROACH PAVEMENT SHOWN  
TRAILING PAVEMENT SIMILAR

CUY/SUM-480/91-29.69/19.07

MODEL: Sheet PAPER: 17x11 (in.) DATE: 9/23/2021 TIME: 12:17:46 PM USER: rkaso  
pwc:\hobolop-pw-bentley.com\shahodop-pw-02\Documents\01 Active Projects\Distict 04\Summit\110698\400-Engineering\Structures\SFN\_771015\110698\_SFN\_7710151\_SV\001.dgn

REMOVAL DETAILS  
BRIDGE NO. SUM-480-0205L & SUM-480-0208R  
FEATURE INTERSECTED: CHAMBERLIN RD

SFN

DESIGN AGENCY



DESIGNER/CHECKER

BFR

REVIEWER

XXX MM-DD-YY

PROJECT ID

110698

SUBSET	TOTAL
8	11

SHEET	TOTAL
P.26	29

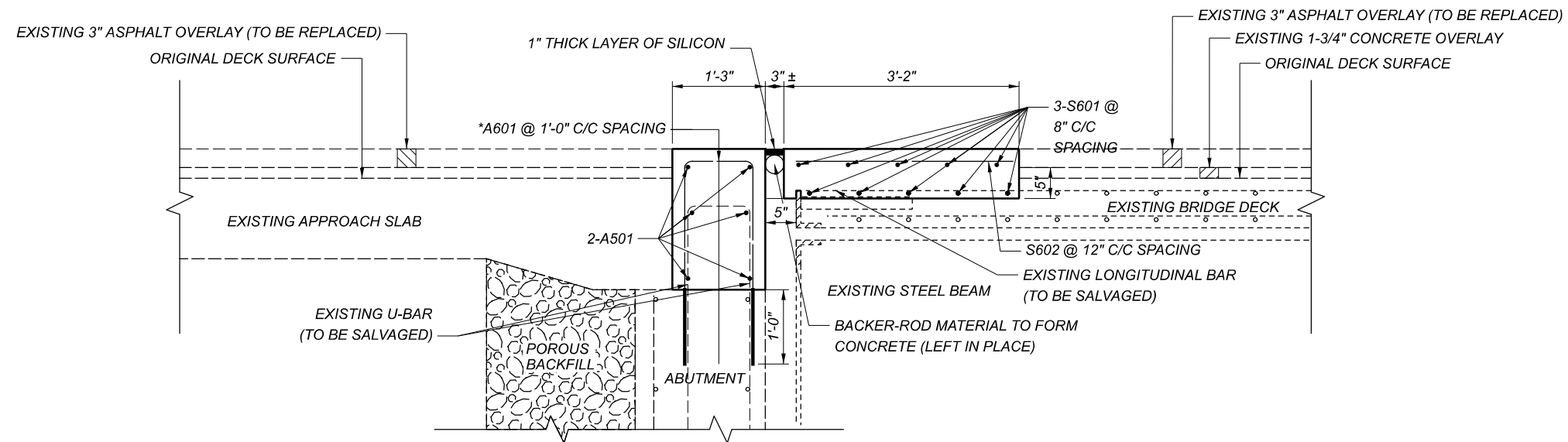
P.26

29

NOTES:

1. REBUILD PORTION OF DECK AND ABUTMENT BACKWALL PER THE DETAIL SHOWN BELOW. ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SUCH AS BACKER-ROD MATERIAL AND 1" THICK LAYER OF SILICON REQUIRED TO PERFORM THIS WORK WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM SPEC, PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH - LATEX MODIFIED CONCRETE).
2. ALL REINFORCING STEEL REQUIRED TO COMPLETE THE CONSTRUCTION OF THE NEW JOINT WILL BE PAID FOR UNDER ITEM 509, EPOXY COATED REINFORCING STEEL, AS PER PLAN.
3. PROVIDE A 2" MINIMUM REINFORCING STEEL CLEARANCE.

\* DOWEL



SUM-480-0205L & 0208R  
SKEW: 53°41'-15"

APPROACH PAVEMENT SHOWN  
TRAILING PAVEMENT SIMILAR

CUY/SUM-480/91-29.69/19.07

MODEL: Sheet PAPER: 17x11 (in.) DATE: 9/23/2021 TIME: 12:17:49 PM USER: rkas  
p:\chobol-pw-bentley.com\shobol-pw-02\Documents\01 Active Projects\Distict 04\Summit\110698\400-Engineering\Structures\SFN\_771015\1\Sheets\110698\_SF1\_771015\_SS001.dgn

BRIDGE NUMBER	BRIDGE DECK										APPROACH SLABS									
	LENGTH (FWD AND REAR) FT	JOINT WIDTH ON SKEW FT	DECK AREA SQ YD	SPECIAL PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) CY	SPECIAL PATCHING CONCRETE STRUCTURE, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX)						LENGTH (APPROACH SLABS) FT	APPROACH SLAB JOINT WIDTH ON SKEW FT	APPROACH SLAB AREA SQ YD	APPROACH (FORWARD / REAR)	SPECIAL PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) CY					
SUM-480-0205L	6.34	69.24	48.78	10.84	LS						1.25	69.24	9.62	FWD	6.08					
											1.25	69.24	9.62	REAR	6.08					
SUM-480-0208R	6.34	69.24	48.78	10.84							1.25	69.24	9.62	FWD	6.08					
											1.25	69.24	9.62	REAR	6.08					
	TOTALS			22	LS						TOTALS			25						

SUPER STRUCTURE DETAILS  
BRIDGE NO. SUM-480-0205L & SUM-480-0208R  
FEATURE INTERSECTED: CHAMBERLIN RD

SFN

DESIGN AGENCY



DESIGNER/CHECKER

BFR

REVIEWER

XXX MM-DD-YY

PROJECT ID

110698

SUBSET TOTAL

9 11

SHEET TOTAL

P.27 29

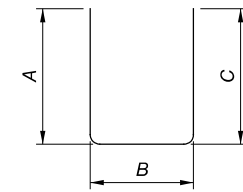
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
S601			60	60	24'-7"	2216	STR					
S602			136	136	2'-11"	596	STR					
SUPERSTRUCTURE SUB-TOTAL						2812						
A501	18	18		36	24'-3"	911	STR					
*A601	68	68		136	6'-0"	1226	2	2'-8"	1'-0"	2'-8"		
ABUTMENT SUB-TOTAL						2137						
GRAND TOTAL						4949						

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED

\* 12" DOWEL

QUANTITY SHOWN IS FOR ONE STRUCTURE



TYPE-2

REINFORCING STEEL  
 BRIDGE NO. SUM-480-0205L & SUM-480-0208R  
 FEATURE INTERSECTED: CHAMBERLIN RD

SFN	
DESIGN AGENCY	
DESIGNER/CHECKER	
BFR	
REVIEWER	
XXX MM-DD-YY	
PROJECT ID	
110698	
SUBSET	TOTAL
10	11
SHEET	TOTAL
P.28	29