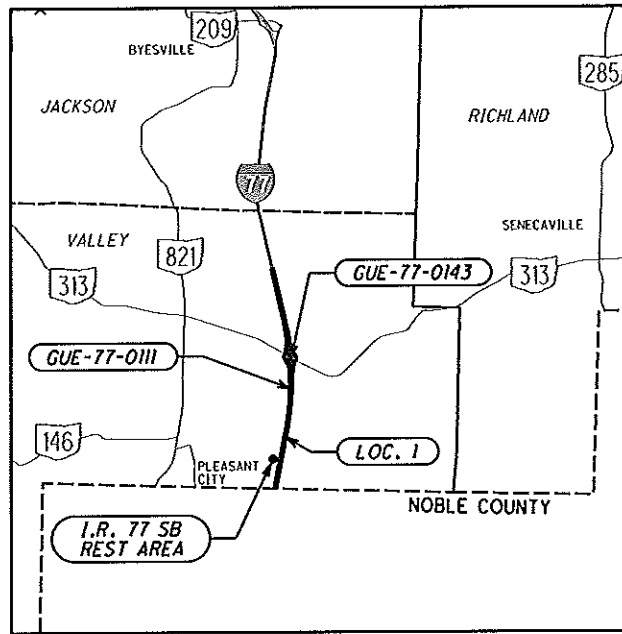


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
GUE-77-0.00

VALLEY TOWNSHIP
GUERNSEY COUNTY

PROJECT DESCRIPTION
ASPHALT CONCRETE RESURFACING AND RELATED WORK ON I.R. 77 ALONG WITH FULL DEPTH RAMP SHOULDERS AND WALK AT THE I.R. 77 SOUTHBOUND REST AREA, PILE ENCASEMENT/ ABUTMENT REPAIRS ON GUE-77-0111, BACKWALL/ABUTMENT REPAIRS ON GUE-77-0143, AND DECK SEALING IN GUERNSEY COUNTY.

PROJECT EARTH DISTURBED AREA = 0.32 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = 0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA = N/A (NOT REQUIRED)



LOCATION MAP

LATITUDE: N 39° 55' 00" LONGITUDE: W 81° 31' 36"

PORTION TO BE IMPROVED -----

DESIGN DESIGNATION	I.R. 70
FUNCTIONAL CLASSIFICATION	INT
OPENING YEAR ADT (2019)	22,000
DESIGN YEAR ADT (2031)	22,500
DESIGN HOURLY VOLUME (2031)	2,200
DIRECTIONAL DISTRIBUTION	57%
TRUCKS (24 HOUR B&C)	26%
DESIGN SPEED	70 MPH
LEGAL SPEED	70 MPH
NHS PROJECT	YES

INT = INTERSTATE

DESIGN EXCEPTIONS

NONE

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

Call Before You Dig
1-800-362-2764

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

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

ENGINEERS SEAL
STRUCTURES

SIGNED: *Justin D. Reed*
DATE: 9/17/2018

ENGINEERS SEAL

SIGNED: *Jason S. Lutz*
DATE: 9/17/2018

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LOCATION	PLAN SPLIT	COUNTY	ROUTE	BEGIN	END	LENGTH MILES	CITY/VILLAGE
				SLM	SLM		
I	I	GUE	77	0.00	2.50	2.50	

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.

2016 SPECIFICATIONS

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

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

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	7/18/14	MT-95.30	7/21/17	TC-61.30	1/20/17		800	10/19/18
BP-5.1	7/20/18	MT-97.10	7/18/14	TC-65.10	1/17/14		808	7/20/18
BP-9.1	7/21/17	MT-97.12	1/20/17	TC-65.11	7/21/17		821	4/20/12
		MT-98.29	1/20/17	TC-71.10	1/20/17		832	1/17/14
MGS-1.1	1/19/18	MT-99.20	7/21/17	TC-72.20	7/15/16		908	10/20/17
MGS-2.1	1/19/18	MT-101.60	1/20/17	TC-73.20	7/21/17		921	4/20/12
MGS-4.2	7/19/13	MT-101.90	7/21/17					
MGS-4.3	1/18/13	MT-104.10	10/16/15					
		MT-105.10	7/19/13					
DM-4.4	1/15/16							

SUPPLEMENTAL SPECIFICATIONS

SPECIAL PROVISIONS
WATER PERMIT CONDITIONS
DATE: 9/4/18
PMT
DATE: 9/12/17
VRAM
DATE: 9/13/17

APPROVED *Jan 2 Strong*
DATE 9/13/18 DISTRICT DEPUTY DIRECTOR

APPROVED *Jason Lutz*
DATE 9-25-18 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E170(452)
PID NO. 93022
CONSTRUCTION PROJECT NO. NONE
RAILROAD INVOLVEMENT NONE
GUE-77-0.00
1/51

GUE-IR 77-00.00
180607 PID - 93022
Dist 5 12/13/2018

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

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UTILITIES

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

CONTINGENCY QUANTITIES

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

PAVEMENT MARKINGS

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

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER A MINIMUM OF 24 HOURS PRIOR TO APPLYING PAVEMENT MARKING MATERIALS ON ANY ROUTES SO THAT ODOT PERSONNEL MAY BE PRESENT DURING PAVEMENT MARKING OPERATIONS. AS PER CMS 614.04, THE CONTRACTOR SHALL PROVIDE ODOT PERSONNEL A COPY OF THE DLS SHORT REPORT AT THE END OF EVERY WORK DAY OR AS REQUESTED THROUGHOUT THE DAY. THE CONTRACTOR SHALL NOT RECEIVE PAYMENT FOR ANY WORK DONE WITHOUT NOTIFICATION AS STATED ABOVE OR IF DSL SHORT REPORTS ARE NOT PROVIDED DAILY.

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.

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 209, LINEAR GRADING.

**ITEM 209, LINEAR GRADING
LOCATION 1: 10.00 MILE**

ITEM 253, PAVEMENT REPAIR

ALL REPAIRS SHALL TAKE PLACE PRIOR TO THE PLANING/PAVING OPERATIONS. THE INTENT OF THIS OPERATION IS TO REPAIR THOSE AREAS OF PAVEMENT WHICH HAVE COMPLETELY FAILED (PUMPING OF SUB-BASE MATERIAL) AND NOT TO CORRECT SURFACE IRREGULARITIES. DEPTH OF EXCAVATION SHALL BE 5" OR TO THE TOP OF CONCRETE BASE. AFTER EXCAVATION HAS BEEN COMPLETED, THE FACE OF THE REPAIR SHALL BE COATED WITH ITEM 407 TACK COAT. REPLACEMENT MATERIAL WILL BE 7" OF ITEM 301, ASPHALT CONCRETE BASE, PG64-22 (PLACED AND COMPACTED AS DIRECTED).

REPAIR QUANTITIES MAY BE USED ON THE MAINLINE PAVEMENT, RAMP PAVEMENT, AND PAVED SHOULDERS, AS DIRECTED BY THE ENGINEER.

ALL EXCAVATION, 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 253, PAVEMENT REPAIR.

**ITEM 253, PAVEMENT REPAIR
LOCATION 1: 50 CY**

ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE, BY DEPTH

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

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

ITEM 407, NON-TRACKING TACK COAT

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

ITEM 408, PRIME COAT, AS PER PLAN

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

ITEM 516, 2" DEEP JOINT SEALER, AS PER PLAN

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

ITEM 617, COMPACTED AGGREGATE, AS PER PLAN

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

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

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

ITEM 621, RAISED PAVEMENT MARKER REMOVED

RPM REMOVAL SHALL NOT OCCUR SOONER THAN 10 DAYS PRIOR TO RESURFACING OF THE ROADWAY. ALL RPM'S REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

ITEM SPECIAL, VOID REDUCING ASPHALT MEMBRANE (VRAM)

AS PART OF THIS PROJECT AND FOR TESTING PURPOSES, THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT A COLD LONGITUDINAL JOINT USING VOID REDUCING ASPHALT MEMBRANE (VRAM) MATERIAL FOR THE ENTIRE LENGTH OF THE PROJECT NORTHBOUND AND SOUTHBOUND. THE MEMBRANE SHALL BE APPLIED TO THE SURFACE COURSE ONLY.

THE VRAM MATERIAL SHALL CONFORM TO THE SPECIFICATIONS FOUND IN THE SPECIAL PROVISIONS.

JOINT CORING AS PER 806.06 WILL NOT BE REQUIRED FOR ALL ASPHALT CONCRETE PLACED WITH COLD LONGITUDINAL JOINTS USING VRAM MATERIAL. THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME COLD JOINT CONSTRUCTION TECHNIQUES, EQUIPMENT, AND ROLLER PATTERNS USED ON THE REMAINDER OF THE PROJECT WHEN CONSTRUCTING ASPHALT CONCRETE IN THE VRAM SECTIONS. OBTAIN 10 MAT CORES FOR EACH LOT OF MATERIAL PER 806.05. PAY FACTORS FOR EACH LOT OF MATERIAL WILL BE DETERMINED PER TABLE 806.05-1.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM. THE FOLLOWING QUANTITY IS BEING CARRIED TO THE SUB-SUMMARY FOR THE WORK STATED WITHIN THIS NOTE:

**ITEM SPECIAL, VOID REDUCING ASPHALT MEMBRANE (VRAM)
LOCATION 1: 26,400 FT**

ITEM SPECIAL, PAVER MOUNTED THERMAL PROFILING (PMTP)

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

QUESTIONS REGARDING THE PMTP SYSTEM SHALL BE DIRECTED TO CRAIG LANDEFELD AT 614-644-6622.

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

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GENERAL NOTES

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SURVEYING PARAMETERS

USE THE FOLLOWING VERTICAL AND HORIZONTAL POSITIONING PARAMETERS FOR SURVEYING AT THE I.R. 77 S.B REST AREA. SEE TABLE ON SHEET 26 FOR CONTROL POINTS FOR THE PROJECT:

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID12A(OHIO)

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(CORS96) ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE – SOUTH ZONE
COMBINED SCALE FACTOR: 1.000000000

UNITS ARE IN U.S. SURVEY FEET.

ITEM SPECIAL – MISC.: 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" OF ASPHALT CONCRETE AFTER PLACING OF THE REINFORCING MESH. THIS WORK SHALL BE PERFORMED ON ALL JOINTS THROUGHOUT THE PROJECT LIMITS AS DIRECTED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL MARK LOCATION OF ALL JOINTS PRIOR TO PAVEMENT PLANING BY MEANS OF STAKING (OR OTHER METHOD APPROVED BY ENGINEER) TO ENSURE PROPER PLACEMENT OF MESH OVER JOINTS. 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 – MISC.: REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS.

2 NB LANES - SLM 0.00 TO SLM 2.50 = 2.50 X 5280' = 13,200'
2 NB LANES - SLM 0.00 TO SLM 2.50 = 2.50 X 5280' = 13,200'
26,400' / 60' SPACING = 440 JOINTS
440 JOINTS X 24' X 5' WIDE / 9 = 5,867 SQ.YD.

EXTRA TO BE USED AS DIRECTED BY ENGINEER FOR MID-SLAB, SLEEPER SLAB, OR REDUCED PANEL SPACING CRACKS – 633 SQ.YD.

**ITEM SPECIAL – MISC.: REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS
LOCATION 1 – 6,500 SY**

ITEM 442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446), AS PER PLAN

ON THIS PROJECT SUPPLY A 19MM INTERMEDIATE COURSE MEETING THE REQUIREMENTS OF 442 EXCEPT AS MODIFIED BELOW.

MODIFY TABLE 442.02-2 AS FOLLOWS:

Sieve Size		9.5 mm mix	12.5 mm mix	19 mm mix
		Total Percent Passing		
1 1/2 inch	(3.75 mm)	–	–	100
3/4 inch	(19 mm)	–	100	95 to 100
1/2 inch	(12.5 mm)	100	95 to 100	90 to 100
3/8 inch	(9.5 mm)	90 to 100	96 max	
No. 4	(4.75 mm)	70 max	52 to 65	60 max
No. 8	(2.36 mm)	34 to 52	34 to 45	34 to 45
No. 200	(75 µm)	2 to 8	2 to 8	2 to 8

MODIFY TABLE 442.02-3 AS FOLLOWS:

APPLY 14.0 FOR A VMA (PERCENT MINIMUM) FOR A 19MM MIX.

APPLY 5.3 PERCENT FOR THE MINIMUM TOTAL ASPHALT BINDER CONTENT FOR A 19MM MIX.

MODIFY THE 442 INTERMEDIATE COURSE REQUIREMENTS OF TABLES 401.04-1 AND 401.04-2 AS FOLLOWS:

APPLY 3.5 PERCENT FOR THE TOTAL VIRGIN ASPHALT BINDER CONTENT, MINIMUM.

USE A PG 64-22 IF USING 25 PERCENT OR LESS RAP. USE PG 64-28 IF USING GREATER THAN 25 PERCENT RAP.

PROVIDE AN APPROVED DENSITY GAUGE AND OPERATOR TO COLLECT INFORMATIONAL DENSITY READINGS EACH DAY OR NIGHT OF PAVING AS DIRECTED BY THE ENGINEER.

INSTREAM WORK RESTRICTION (GUE-77-0111 L/R)

SENECA FORK WILLS CREEK IS DESIGNATED AS A WARMWATER HABITAT AND HAS A DRAINAGE AREA GREATER THAN 20 SQUARE MILES AT THE GUE-77-1.11 BRIDGE STRUCTURE, THEREFORE, IN ACCORDANCE WITH SECTION II (D)(2)D OF THE MEMORANDUM OF AGREEMENT BETWEEN THE OHIO DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, OHIO DEPARTMENT OF NATURAL RESOURCES AND THE UNITED STATES FISH AND WILDLIFE SERVICE FOR INTERAGENCY COORDINATION FOR HIGHWAY PROJECTS WHICH REQUIRE CONSULTATION UNDER THE ENDANGERED SPECIES ACT, IMPACT STATE LISTED SPECIES, AND/OR MODIFY JURISDICTIONAL WATERS 2016, NO INSTREAM WORK SHALL OCCUR BETWEEN APRIL 15TH AND JUNE 30TH. SENECA FORK WILLS CREEK IS LISTED AS A KNOWN PADDLING STREAM BY ODNR DIVISION OF PARKS AND WATERCRAFT, THEREFORE, THE STREAM SHALL BE KEPT OPEN TO BOATING TRAFFIC DURING CONSTRUCTION. A TEMPORARY STREAM CROSSING IS NOT PERMITTED. AS A REMINDER THE STATE AUTHORITY FOR APPROVAL OF ANY CLOSURE ON OHIO'S WATERWAYS IS THE CHIEF OF THE ODNR DIVISION OF PARKS AND WATERCRAFT (CURRENTLY ASSISTANT DIRECTOR GARY OBERMILLER).

IF A CLOSURE BECOMES NECESSARY FOR SAFETY REASONS, A PORTAGE FOR PADDLERS SHALL BE ESTABLISHED AND MARKED FOR SAFE PASSAGE AROUND THE CONSTRUCTION AREA. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND THE DISTRICT 5 ENVIRONMENTAL COORDINATOR OF ANY NECESSARY CLOSURE SO THAT THE ODNR DIVISION OF PARKS AND WATERCRAFT CAN BE NOTIFIED.

APPROPRIATE SIGNAGE/BUOYS/MARKERS SHOULD BE PLACED UPSTREAM AND DOWNSTREAM OF THE PROJECT AREA TO ALERT PADDLERS OF CONSTRUCTION ACTIVITY.

THE ODNR DIVISION OF PARKS AND WATERCRAFT SHALL BE NOTIFIED AT LEAST TWO WEEKS IN ADVANCE OF CONSTRUCTION TO POST NOTICE OF THE IMPENDING PROJECT ON ODNR'S ONLINE BOATING WEBPAGE AND ASSOCIATED MAPS. COORDINATION AND NOTIFICATION SHOULD BE THROUGH THOMAS ARBOUR AT (614) 265-6575 OR THOMAS.ARBOUR@DNR.STATE.OH.US.

IF ON-THE WATER LAW ENFORCEMENT ASSISTANCE IS NEEDED DURING ANY PORTION OF THE CONSTRUCTION OR DEMOLITION PHASE, PLEASE CONTACT THE DIVISION OF PARKS AND WATERCRAFT LAW ENFORCEMENT SUPERVISOR HARRY MOORE AT HARRY.MOORE@DNR.STATE.OH.US OR (614) 561-9896.

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GENERAL NOTES

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ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF TWO LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON I.R. 77, EXCLUDING THE CLOSURE TIMES STATED IN THE LANE VALUE CONTRACT TABLE BELOW.

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

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

LANE VALUE CONTRACT TABLE

LOCATION	CRITICAL WORK: TIME WHEN ONE (1) LANE MAY BE CLOSED	TIME UNIT	DISINCENTIVE (\$ PER TIME UNIT)
I.R 77 NB & S.B.	ODOT PERMITTED LANE CLOSURE TIMES WEBSITE: HTTP://PLCM.DOT.STATE.OH.US	15 MIN.	\$2,500

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

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS **SHALL BE NO LONGER THAN 2.5 MILES**, UNLESS DIRECTED BY THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT, IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

THE I.R. 77 SOUTHBOUND REST AREA SHALL BE CLOSED DURING CONSTRUCTION. AFTER REST AREA WORK IS COMPLETED, CONTACT FACILITIES MANAGER BOB ROAHRIG AT 740.323.5150 FOR ACCEPTANCE OF WORK.

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

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

NOTICE OF CLOSURE SIGN

THE CONTRACTOR SHALL PROVIDE NOTICE OF CLOSURE TO THE **SOUTHBOUND REST AREA** TRAFFIC AT LEAST **SEVEN CALENDAR DAYS** IN ADVANCE OF CLOSURE THROUGH THE USE OF PORTABLE CHANGEABLE MESSAGE SIGNS. THE SIGNS MAY BE ERECTED ANYWHERE ON THE RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTIFICATION OF ROAD CLOSURE OR RESTRICTIONS

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

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

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

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

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

LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES ON I.R. 77 SHALL BE OPENED TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

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

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

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

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 OF **\$75** FOR EACH MINUTE THE ABOVE DESCRIBED LANE AND/OR RAMP CLOSURE RESTRICTIONS ARE VIOLATED.

DROP-OFFS IN WORK ZONES

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

ITEM 614, WORK ZONE MARKING SIGNS

THE CONTRACTOR SHALL ERECT A "GROOVED PAVEMENT" SIGN 250 FEET 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, WORK ZONE PAVEMENT MARKINGS

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

ITEM 614, WORK ZONE LANE LINE, CLASS II, 4", 642 PAINT (INTERMEDIATE)
LOCATION 1: 5.00 MILE

ITEM 614, WORK ZONE LANE LINE, CLASS III, 4", 642 PAINT (SURFACE)
LOCATION 1: 5.00 MILE

ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (INTERMEDIATE)
LOCATION 1: 10.00 MILE

ITEM 614, WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT (SURFACE)
LOCATION 1: 10.00 MILE

ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS II, 8", 642 PAINT (INTERMEDIATE)
LOCATION 1: 4,436 FEET

ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT (SURFACE)
LOCATION 1: 4,436 FEET

BUTT JOINT

A BUTT JOINT WILL BE REQUIRED AT THE LOCATIONS SPECIFIED BELOW. BUTT JOINTS SHALL BE AS PER STANDARD DRAWING **BP-3.1** UNLESS OTHERWISE SHOWN IN THE PLANS.

THE MINIMUM ASPHALT WEDGE LENGTH AT BUTT JOINTS SHALL BE **10'**. THE GRINDING FOR BUTT JOINTS SHALL BE INCLUDED WITH ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE.

LOCATION	ROUTE	DESCRIPTION	S.L.M.	ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
				CU. YD.
1	I.R. 77	BEGIN WORK	11.70	3.5
		BRIDGE: GUE-77-0111L	14.74	3.5
		BRIDGE: GUE-77-0111R	14.74	3.5
		BRIDGE: GUE-77-0143L	15.48	3.5
		BRIDGE: GUE-77-0143R	15.48	3.5
		END WORK	17.70	3.5
		TOTAL		21.0

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MAINTENANCE OF TRAFFIC NOTES

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ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

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

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

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

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

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

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

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

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

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

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

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

LOCATION 1: 250 HOUR

ITEM 614, WORK ZONE SPEED ZONES (WZSZS)

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

WZSZ REVISION NUMBER	COUNTY & ROUTE	DIRECTION
WZ-30602	GUE-77-(0.00-2.51)	NB/SB
WZ-55252	NOB-77-(18.67-18.92)	NB/SB

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

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

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

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ.

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

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

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

WHEN LOOKING UP THE WARRANTED WORK ZONE SPEED LIMITS, ALWAYS USE THE ORIGINAL, PRE-CONSTRUCTION, POSTED SPEED LIMIT. DO NOT USE A PRIOR OR CURRENT WORK ZONE SPEED LIMIT AS A LOOK UP VALUE IN THE TABLE. POSITIVE PROTECTION IS GENERALLY REGARDED AS PORTABLE BARRIER OR OTHER RIGID BARRIER IN USE ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WITHOUT POSITIVE PROTECTION IS GENERALLY REGARDED AS USING DRUMS, CONES, SHADOW VEHICLE, ETC., ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WORKERS ARE CONSIDERED AS BEING PRESENT WHEN ON-SITE, WORKING WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WHEN THE WORK ZONE CONDITION REDUCING THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS IS REMOVED, THE SPEED LIMIT DISPLAYED SHALL RETURN TO THE ORIGINAL POSTED SPEED LIMIT.

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

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

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

PART 1 (2 MILE RESURFACING WORK ZONE)
I.R. 77 NB: 3 DSL X 2 MONTHS = 6 SNMT
I.R. 77 SB: 3 DSL X 2 MONTHS = 6 SNMT

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

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MAINTENANCE OF TRAFFIC NOTES

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ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

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

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

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

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

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

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

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

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

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

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

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

A TOTAL OF 4 PCMS WILL BE REQUIRED FOR THIS PROJECT.

RESURFACING: 2 SIGNS X 2 SNMT = 4 SNMT
BRIDGE WORK: 2 SIGNS X 2 SNMT = 4 SNMT
REST AREA WORK: 1 SIGN X 2 SNMT = 2 SNMT

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN LOCATION 1: 10 SNMT

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MAINTENANCE OF TRAFFIC NOTES

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SEQUENCE OF OPERATIONS

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

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

ALL FULL DEPTH PAVEMENT REPAIRS SHALL BE COMPLETED PRIOR TO PLANING, DURING THE SEQUENCE OF OPERATIONS FOR PAVING OR PRIOR TO THE PAVING OPERATION USING A SIMILAR SEQUENCE OF OPERATIONS AS SHOWN BELOW.

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

PHASE 1: BEGIN PROJECT TO END PROJECT

- (1) INSTALL NECESSARY TRAFFIC CONTROL DEVICES, CLOSE OUTSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE INSIDE LANE AND PAVED SHOULDER.
- (2) FILL IN RUMBLE STRIPS ON OUTSIDE SHOULDER WITH ITEM 441 INTERMEDIATE COURSE TO ALLOW FOR MAINTAINING TRAFFIC ON SHOULDER.
- (3) REMOVE TRAFFIC CONTROL DEVICES FOR CLOSING INSIDE LANE.

PHASE 2: BEGIN PROJECT TO END PROJECT

- (1) INSTALL NECESSARY TRAFFIC CONTROL DEVICES, CLOSE INSIDE LANE AND MAINTAIN TRAFFIC BY USE OF THE OUTSIDE LANE AND PAVED SHOULDER.
- (2) PLANE INSIDE LANE AND SHOULDER AT DEPTHS DETAILED IN PLANS.
- (3) PLACE JOINT/CRACK REINFORCING MATERIAL
- (4) IMMEDIATELY PLACE ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE FOR INSIDE LANE AND SHOULDER. COMPLETE ALL OTHER RELATED WORK AS PER TYPICAL SECTION.
- (5) REMOVE TRAFFIC CONTROL DEVICES FOR CLOSING INSIDE LANE.

PHASE 3: BEGIN PROJECT TO END PROJECT

- (1) INSTALL NECESSARY TRAFFIC CONTROL DEVICES, CLOSE OUTSIDE LANE, AND MAINTAIN TRAFFIC BY USE OF THE INSIDE LANE AND PAVED SHOULDER.
- (2) PLANE OUTSIDE LANE AND SHOULDER AT DEPTHS DETAILED IN PLANS.
- (3) PLACE JOINT/CRACK REINFORCING MATERIAL
- (4) IMMEDIATELY PLACE ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE FOR OUTSIDE LANE AND SHOULDER, RAMP AREAS WHERE APPLICABLE, COMPLETE ALL OTHER RELATED WORK AS PER TYPICAL SECTION.
- (5) REMOVE TRAFFIC CONTROL DEVICES FOR CLOSING OUTSIDE LANE.

PHASE 4: BEGIN PROJECT TO END PROJECT

- (1) INSTALL NECESSARY TRAFFIC CONTROL DEVICES, CLOSE INSIDE LANE, AND MAINTAIN TRAFFIC BY USE OF THE OUTSIDE LANE AND PAVED SHOULDER.
- (2) PLACE ITEM 442, ASPHALT CONCRETE SURFACE COURSE ON INSIDE LANE AND SHOULDER AS PER TYPICAL SECTION.
- (3) REMOVE TRAFFIC CONTROL DEVICES FOR CLOSING INSIDE LANE.

PHASE 5: BEGIN PROJECT TO END PROJECT

- (1) INSTALL NECESSARY TRAFFIC CONTROL DEVICES, CLOSE OUTSIDE LANE, AND MAINTAIN TRAFFIC BY USE OF THE INSIDE LANE AND PAVED SHOULDER.
- (2) PLACE ITEM 442, ASPHALT CONCRETE SURFACE COURSE ON OUTSIDE LANE, PAVED SHOULDER AND RAMP AREAS, WHERE APPLICABLE, AS PER TYPICAL SECTION.
- (3) REMOVE TRAFFIC CONTROL DEVICES FOR CLOSING OUTSIDE LANE.

PHASE 6: BEGIN PROJECT TO END PROJECT

- (1) INSTALL RUMBLE STRIPS, PLACE ALL PERMANENT PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS. OPEN ROADWAY TO UNRESTRICTED TRAFFIC.

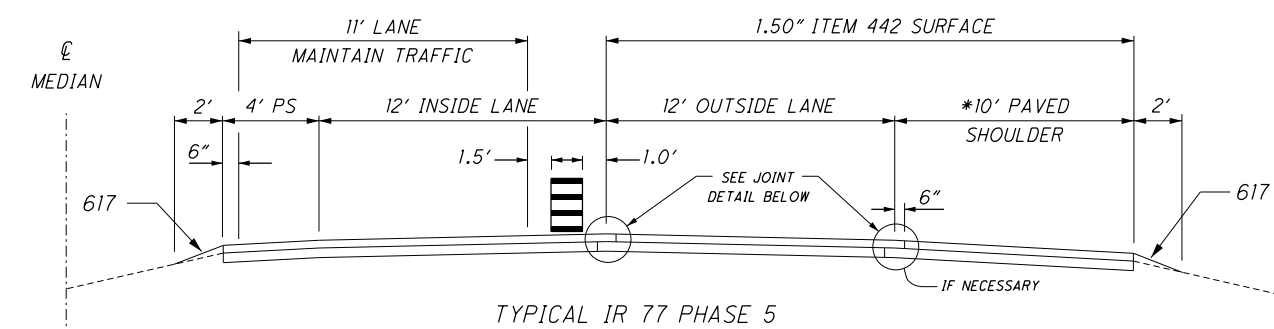
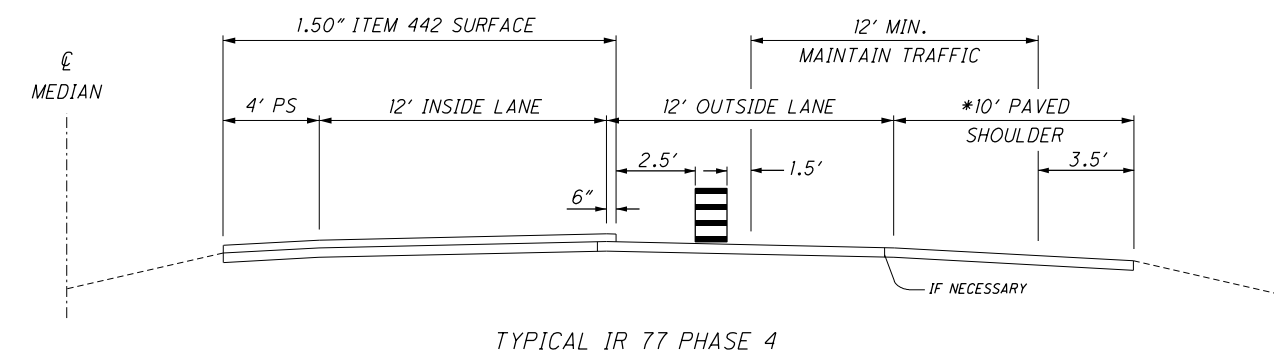
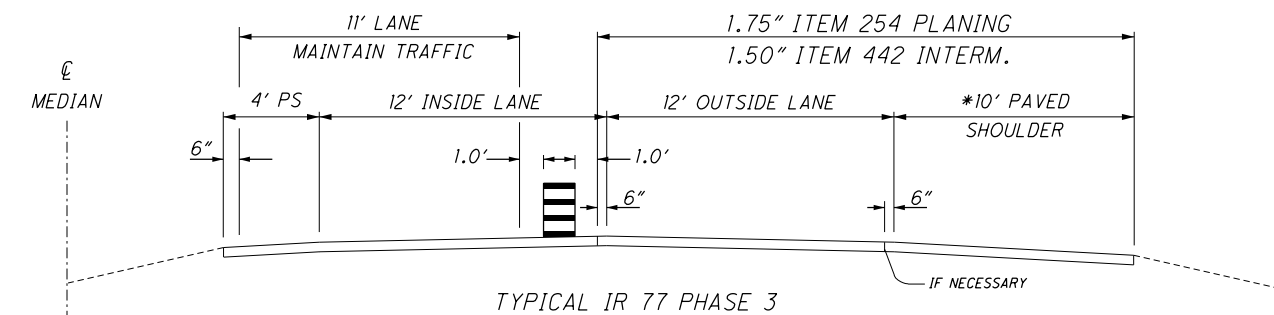
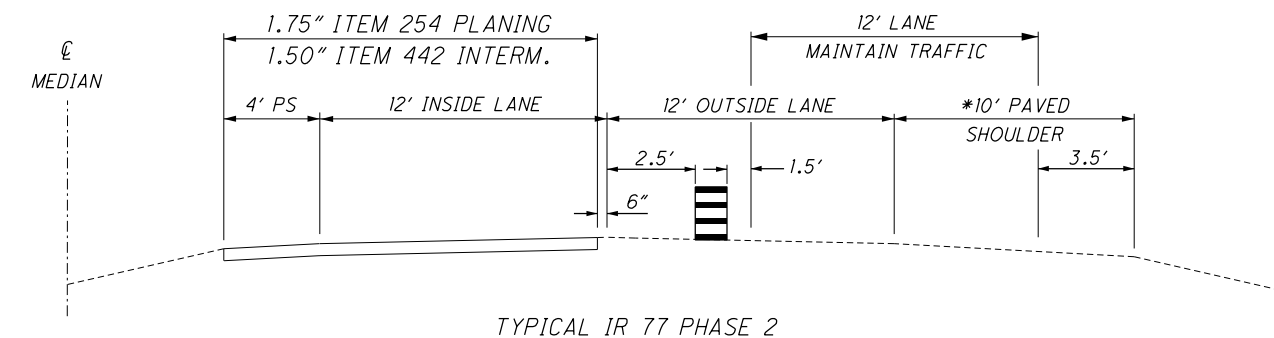
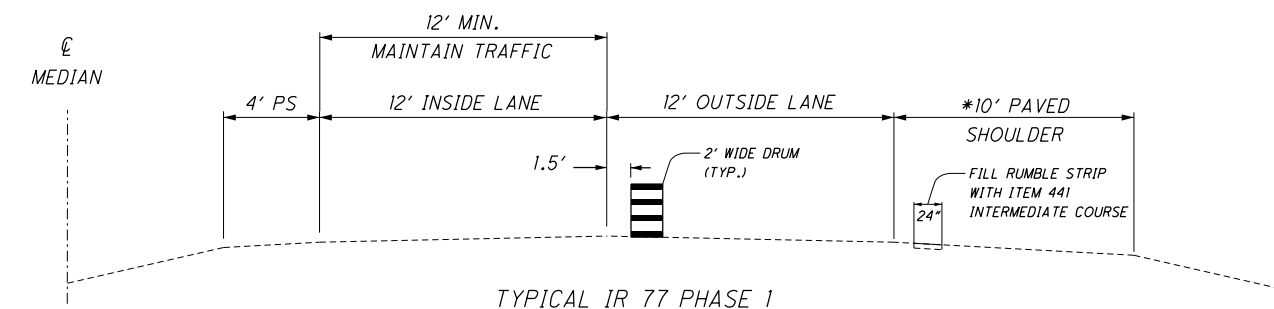
ALL TEMPORARY OR PERMANENT PAVEMENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC.

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

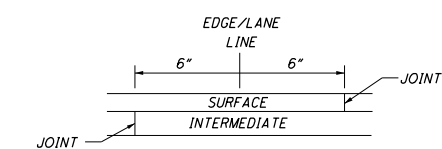
THIS ITEM SHALL BE USED TO FILL IN RUMBLE STRIPS FOR MAINTAINING TRAFFIC AS DESCRIBED IN PHASE 1 ABOVE. AVERAGE THICKNESS FOR CALCULATION PURPOSES IS 0.75". THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

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

LOCATION 1: (0.00-2.50) x 5280 = 13,200 ft - (2(13,200' x 2.0' x (0.75"/12)))/27 = 122.2 = 123 CU.YD.



* SHOULDER WIDTH VARIES IN RAMP AREAS

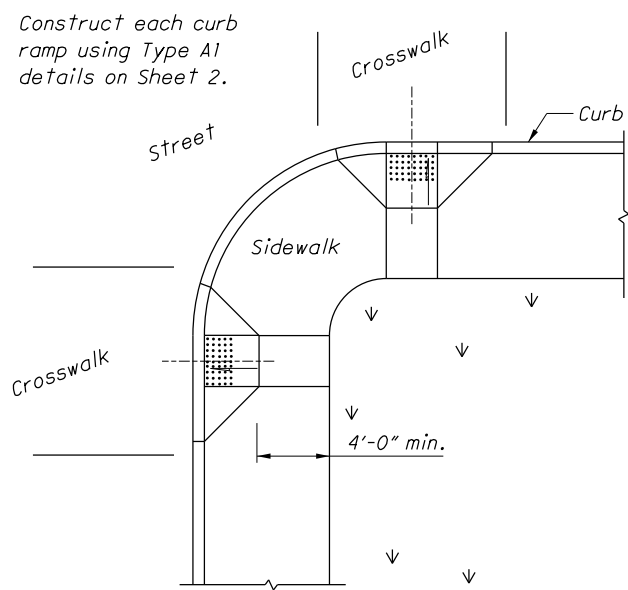


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SEQUENCE OF OPERATION

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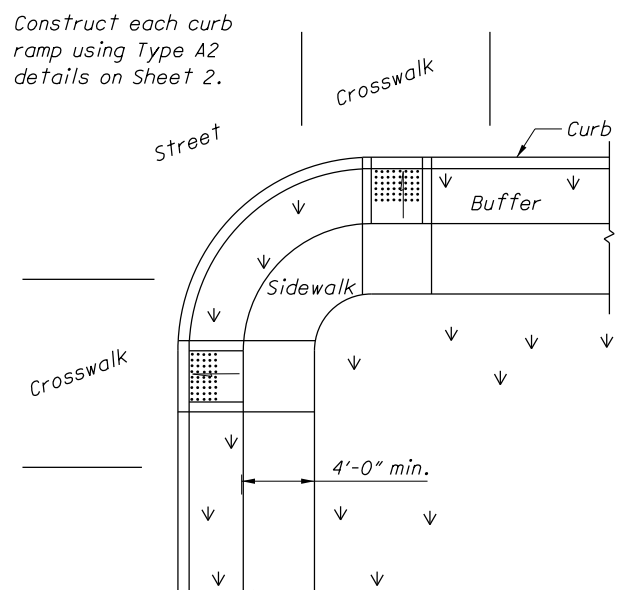
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Construct each curb ramp using Type A1 details on Sheet 2.

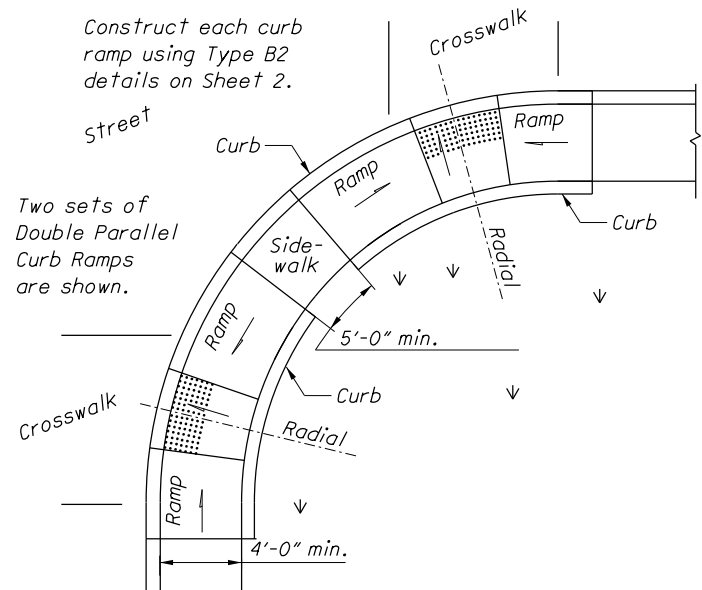
Use curb ramps with flared sides at locations with wide sidewalks.

PERPENDICULAR CURB RAMPS



Construct each curb ramp using Type A2 details on Sheet 2.

Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.

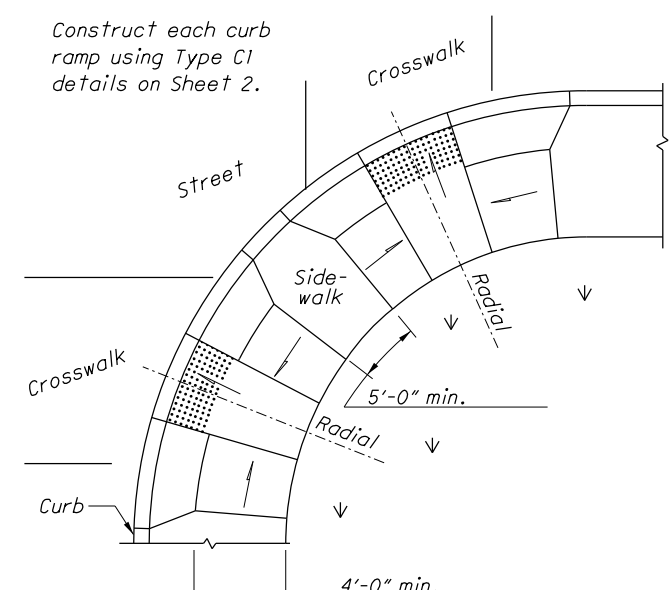


Construct each curb ramp using Type B2 details on Sheet 2.

Two sets of Double Parallel Curb Ramps are shown.

Place on streets having wide turning radius and where sidewalks are narrow.

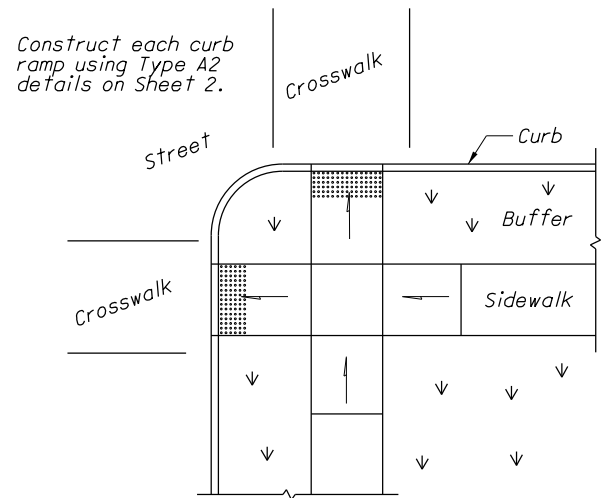
PARALLEL CURB RAMPS



Construct each curb ramp using Type C1 details on Sheet 2.

Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

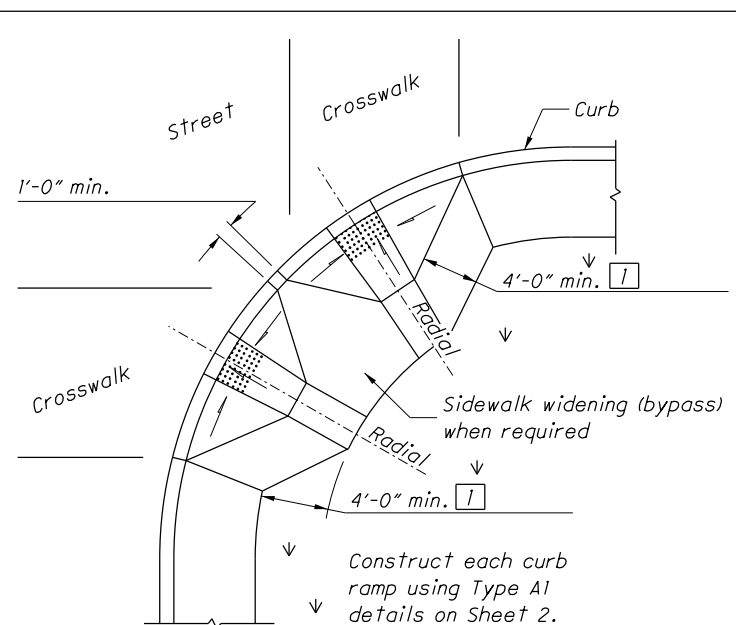
COMBINATION CURB RAMPS



Construct each curb ramp using Type A2 details on Sheet 2.

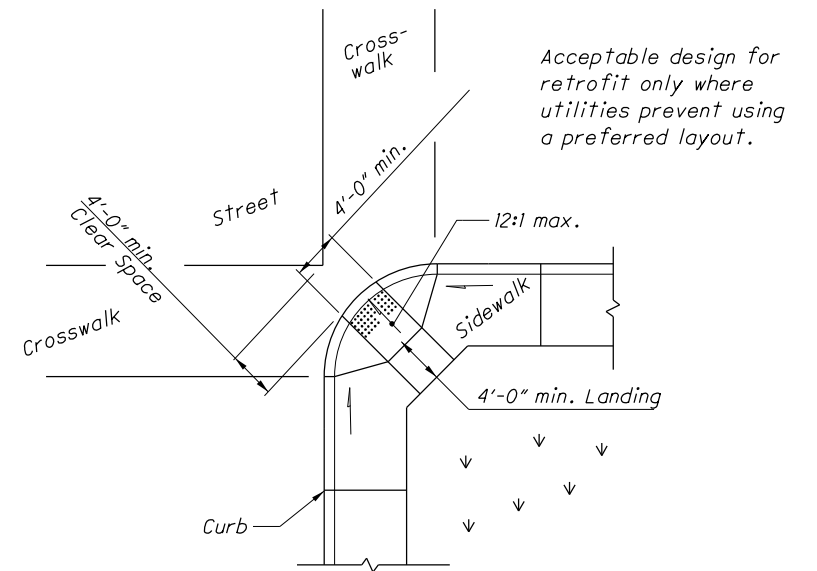
LEGEND

1 May be reduced to 3'-4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.



Acceptable design on corners with wide turning radius where user is able to maneuver within crosswalk limits so as not to encroach into adjacent traveled lanes.

PERPENDICULAR RAMPS



Acceptable design for retrofit only where utilities prevent using a preferred layout.

Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0" .

DIAGONAL RAMP (Type D)

ACCEPTABLE CONSTRUCTION PLACEMENT

NOTES

- GENERAL:** This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.
- Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.
- Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to assure that the design is appropriate for site constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.
- METHOD OF MEASUREMENT:** The Department will measure Curb Ramps by the number of each completed curb ramp. The Department will measure Detectable Warnings in existing curb ramps and at grade crossings by the number of square feet completed.
- Concrete Walk and Curb, Item 608 and 609, will be measured through out the curb ramp area and paid for under their respective Items.
- METHOD OF PAYMENT:** New Curb Ramps constructed in new or existing Walk are paid for under Item 690 Special Misc.: Curb Ramp, Type -- (A1, A2, B1, B2, B3, C1, C2, or D) each, and includes the cost of any additional materials and installation (including detectable warnings), grading, forming and finishing.
- Detectable Warnings constructed in existing curb ramps or for at-grade crossing locations are paid for under Item 608, Detectable Warning, As Per Plan (Sq. Ft.) and is full compensation for excavation, backfill, base course material, reinforcing steel, expansion joint materials, and any incidentals required to complete the installation as specified. The work to cast the tiles in place will also require removal of existing pavement or sidewalk (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.
- Removal of existing curb, pavement, walk (or existing curb ramps) are paid under Item 202.

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NOTES CONTINUED

The running slope of the ramp is preferred to be 12:1 or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limits) it may be reduced as follows:

- A) 10:1 for a max. rise of 6",
- B) 8:1 for a max. rise of 3",
- C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

To prevent chasing the grade indefinitely, the transition from existing sidewalk to the curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the crosswalk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope, unless otherwise shown.

DETECTABLE WARNINGS: Install Detectable warnings on each curb ramp with approved materials as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed ramp allows for proper drainage, without exceeding allowable cross slope or ramp slope. Vertical change in level exceeding 1/8" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

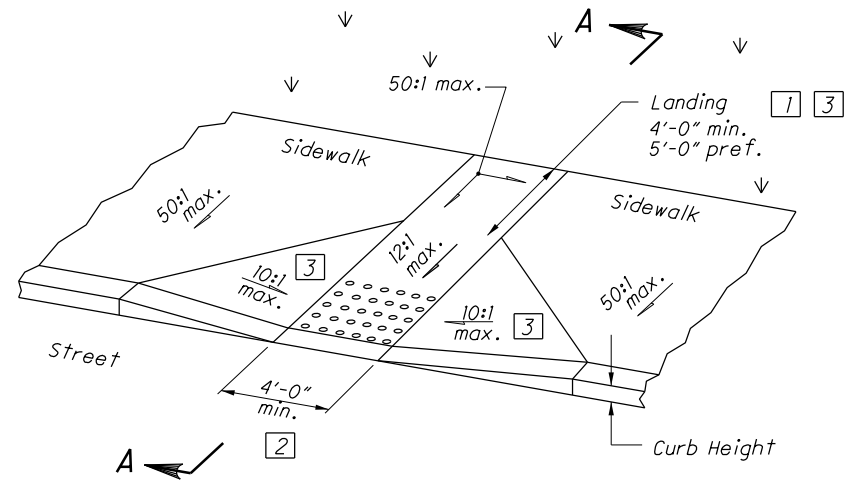
JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes and do not necessarily indicate joint lines.

SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

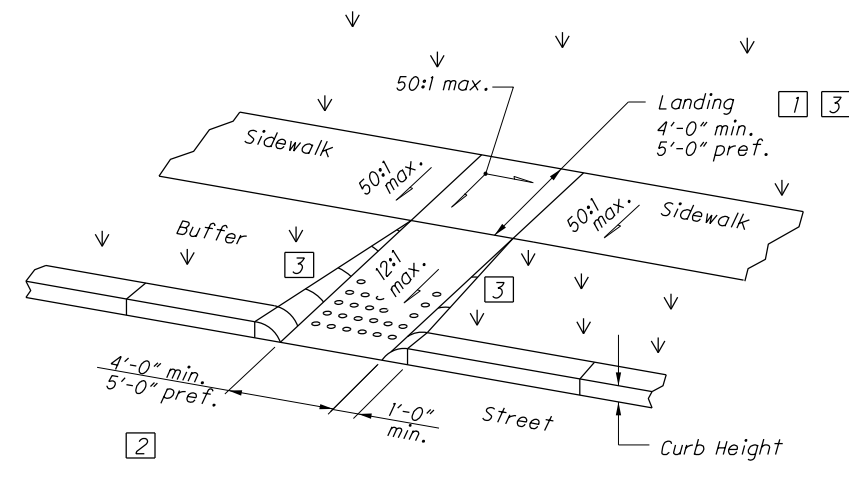
LEGEND

- [1] Dimension may be reduced to 3'-0" in existing sidewalks if the landing is unconstrained along the back edge.
- [2] May be reduced to 3'-4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.
- [3] Where landing width (D) has been reduced to 3'-0" the flared sides shall have a maximum slope of 12:1. Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheelchair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.

See Sheet 3 for Sections.

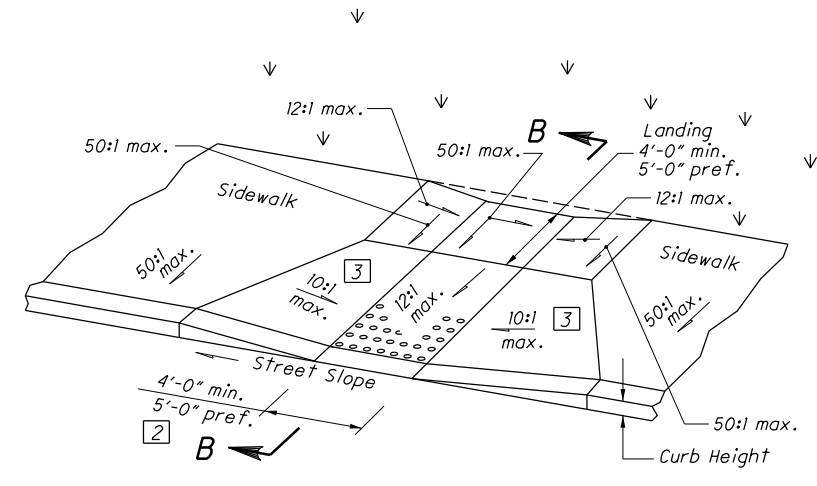


Type A1 (Perpendicular with flared sides)

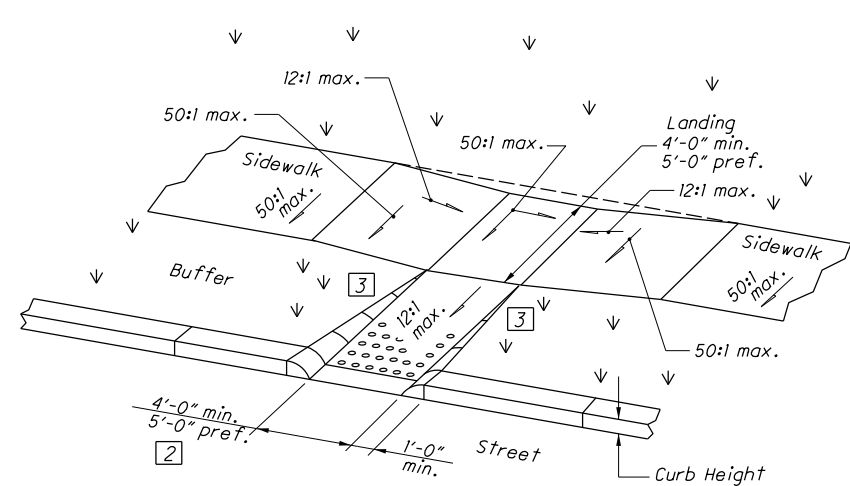


Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

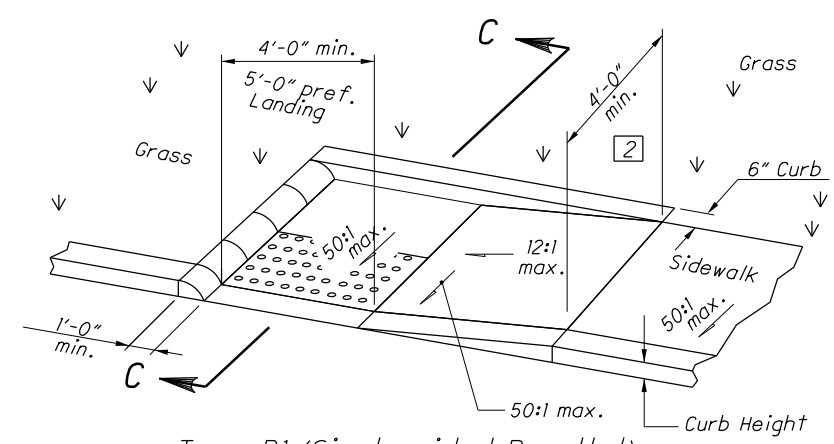


Type C1 (Combined with flared sides)

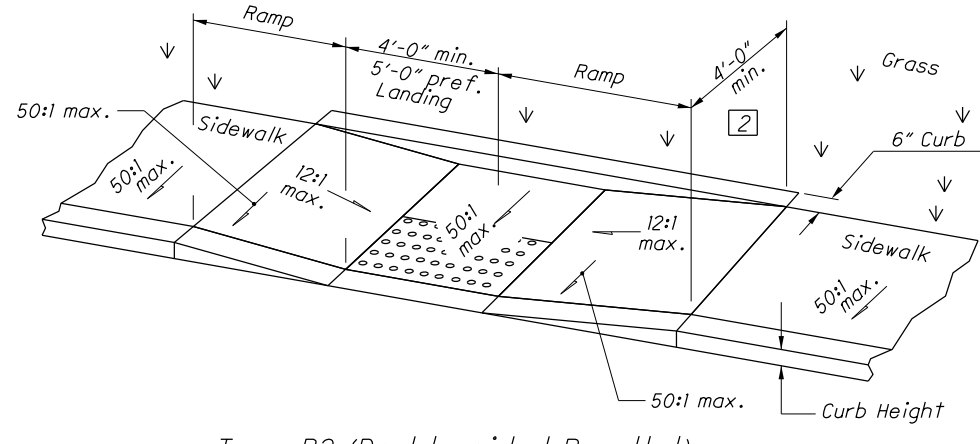


Type C2 (Combined with returned curb)

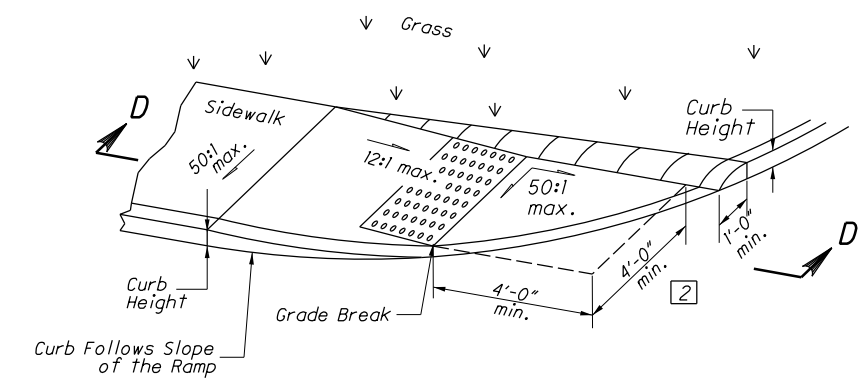
COMBINED CURB RAMP DETAILS



Type B1 (Single sided Parallel)



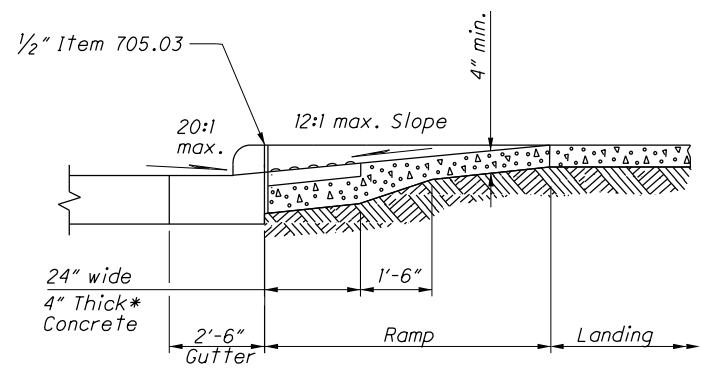
Type B2 (Double sided Parallel)



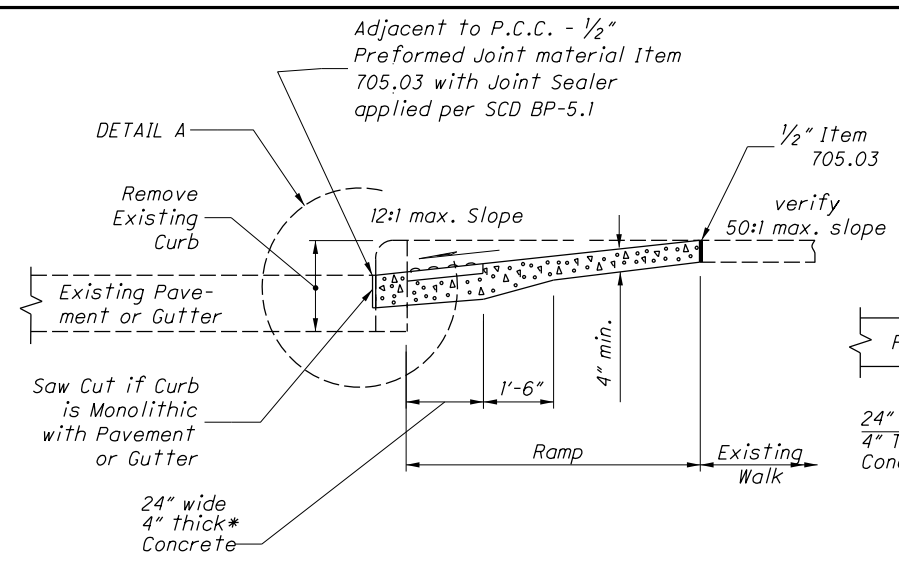
Type B3 (Single sided Parallel)

PARALLEL CURB RAMP DETAILS

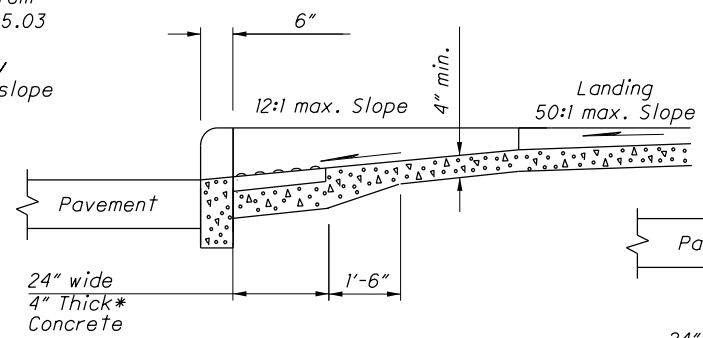
I:\ProjectData\GUE\93022\Design\Roadway\Sheets\93022_CRD002.dgn Sheet 9/17/2018 5:04:07 PM jlutzi



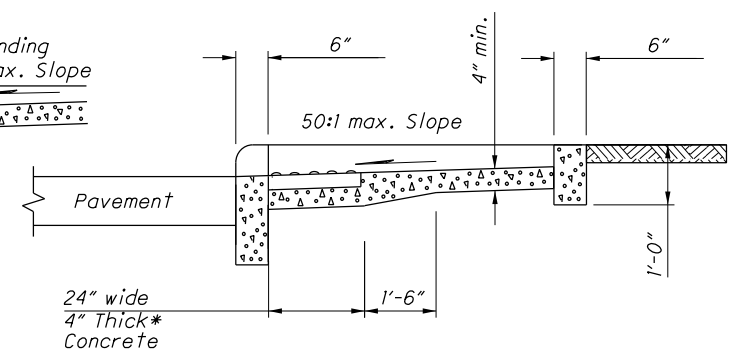
New gutter shown.
**SECTION A-A
NORMAL DETAIL**
See Sheet 2.



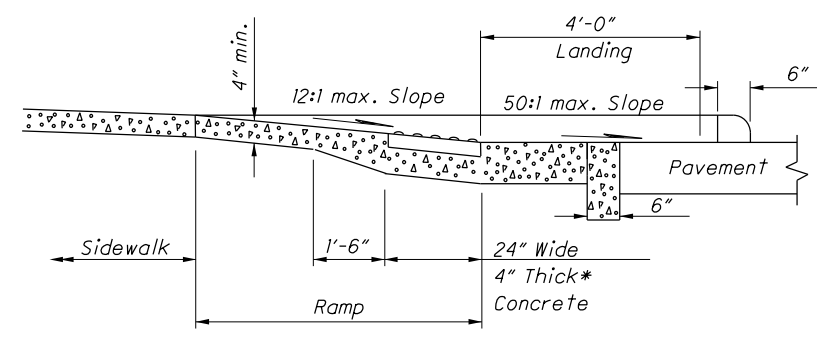
**SECTION A-A
EXISTING WALK DETAIL**
See Sheet 2.



SECTION B-B
See Sheet 2.

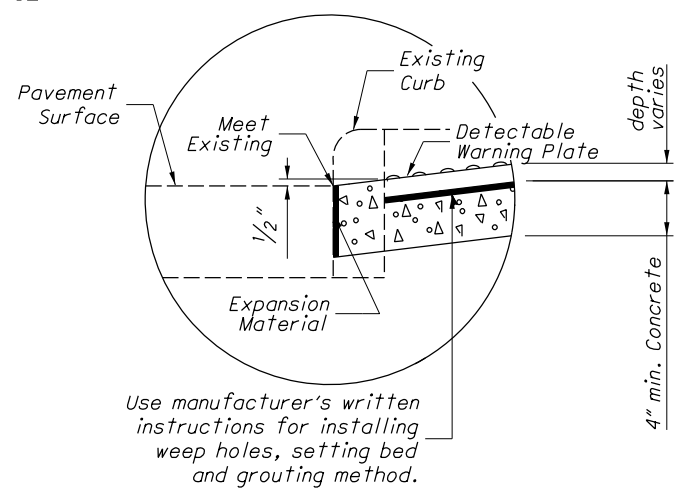


SECTION C-C
See Sheet 2.

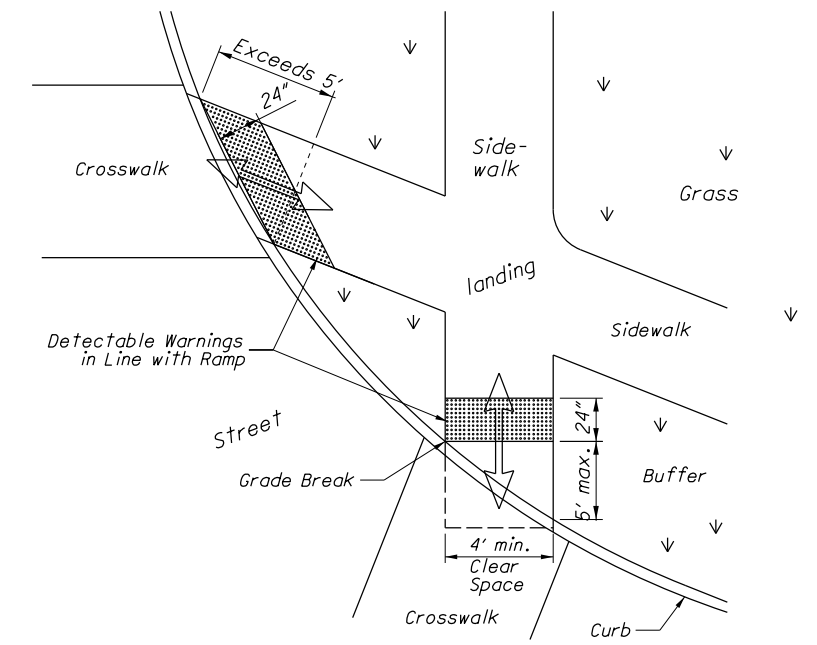


SECTION D-D
See Sheet 2.

*Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.



DETAIL A



DETECTABLE WARNING ALIGNMENT

DETECTABLE WARNINGS NOTES

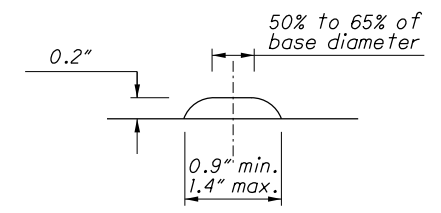
GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

PLACEMENT: Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 2.

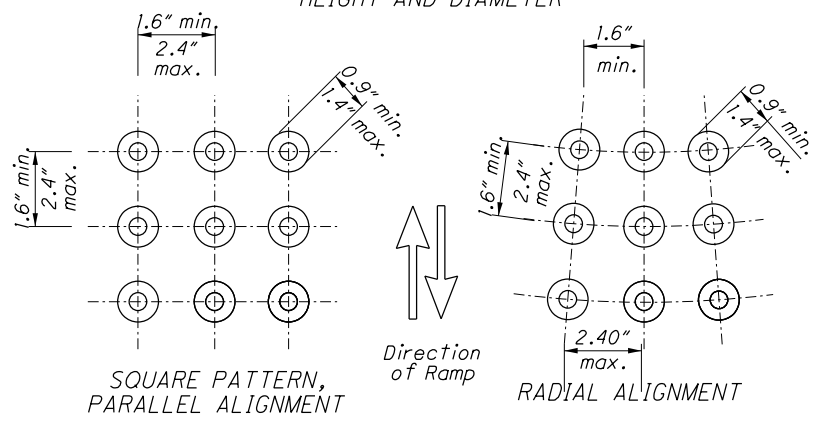
The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

ALIGNMENT: Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but in skewed conditions see DETECTABLE WARNING ALIGNMENT DETAIL. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

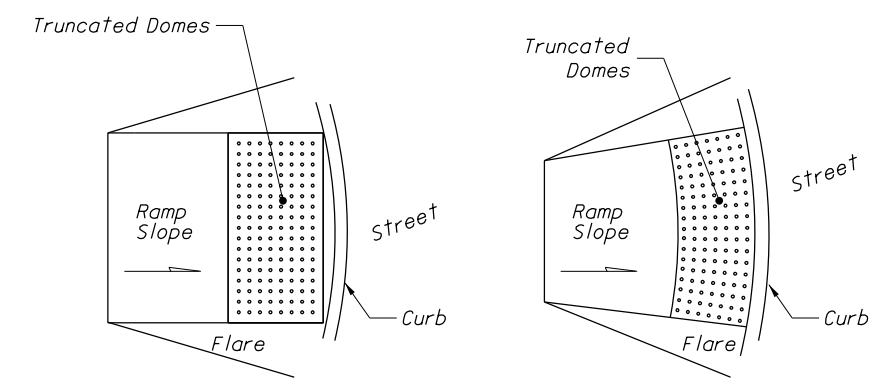
PRODUCTS & COLORS: Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.



HEIGHT AND DIAMETER



TRUNCATED DOMES DETAILS

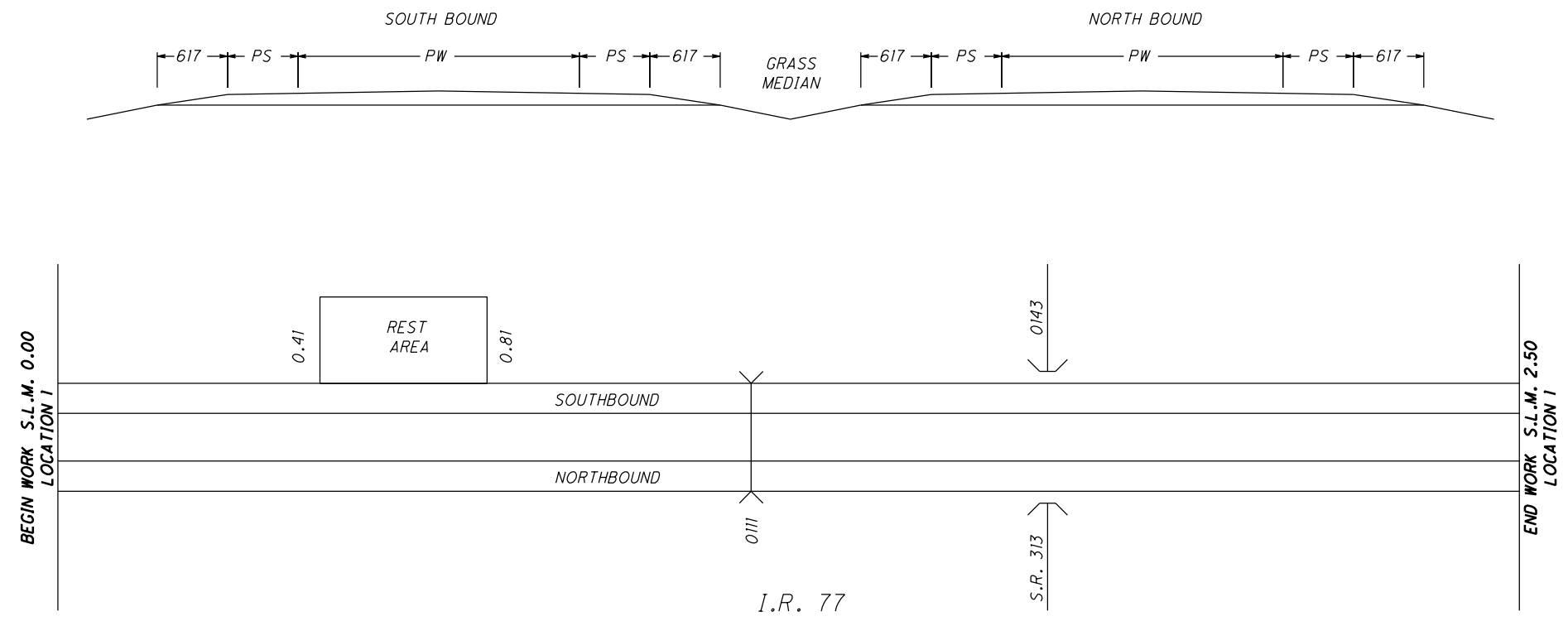


DOME ALIGNMENT ON RADIUS CURB

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TYPICAL 1

PW = PAVEMENT WIDTH
PS = PAVED SHOULDER



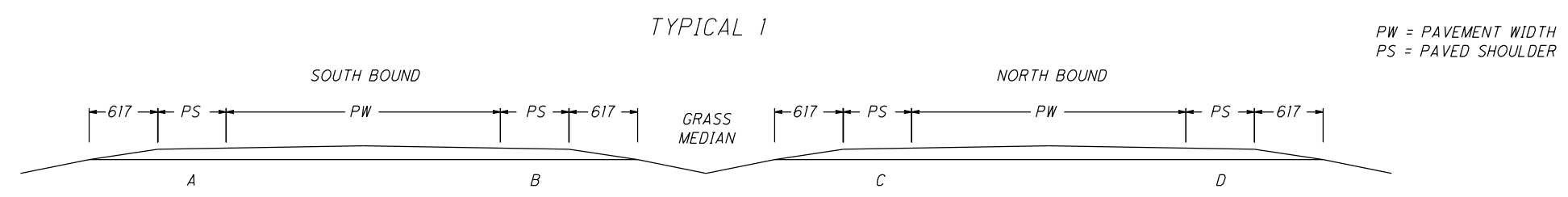
PAVEMENT DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		PAVEMENT WIDTH (FEET)	TYPICAL	PAVEMENT AREA	254	407		442	442			
					SQ.YD.	SQ.YD.				GAL.	GAL.	CU.YD.	INCH	CU.YD.	INCH	CU.YD.	
																	MILES
1	GUE	I.R. 77 N.B.	0.00	2.50	2.50	13,200.00	24.0	1	35,200.0	35,200.0	2,816.0	1,760.0	2,933.4	1.50	1,466.7	1.50	1,466.7
		I.R. 77 S.B.	0.00	2.50	2.50	13,200.00	24.0	1	35,200.0	35,200.0	2,816.0	1,760.0	2,933.4	1.50	1,466.7	1.50	1,466.7
BRIDGE DEDUCTIONS (FROM SHEET 16)									(597.4)		(47.7)	(14.9)	(49.8)	1.50	(24.9)	1.50	(24.9)
SUB-TOTALS											5,584.3	3,505.1					
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)										70,400.0	9,089.4	5,817.0		2,908.5		2,908.5	

PAVEMENT DATA

GUE-77-0.00

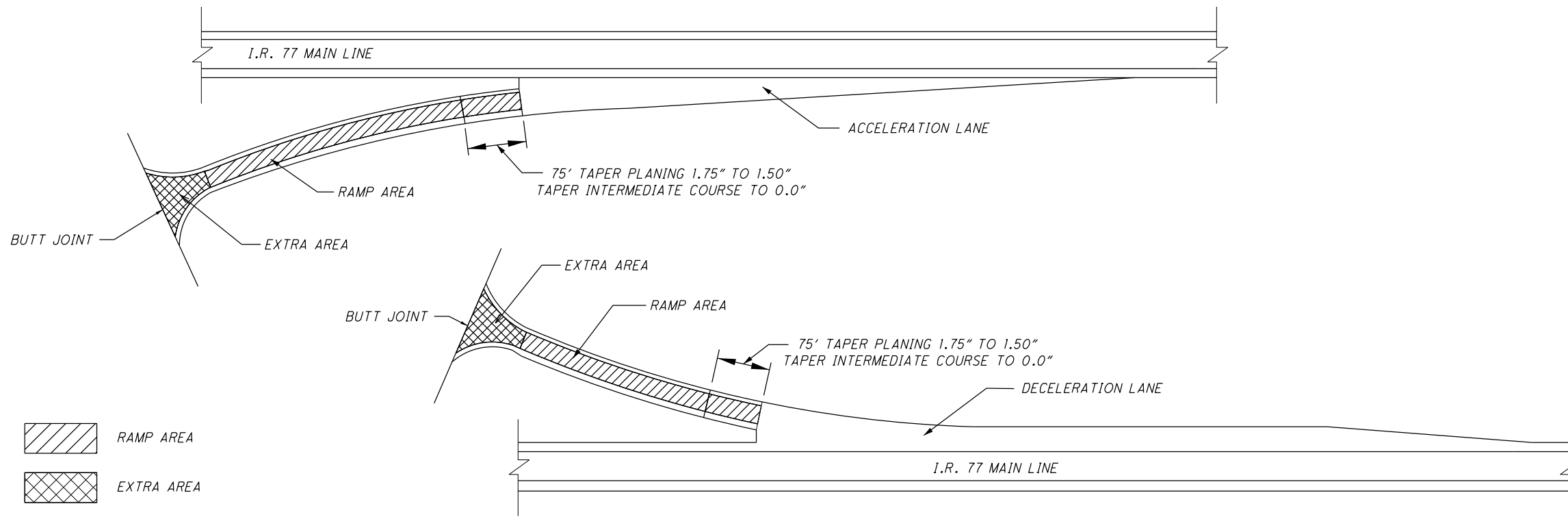
SHOULDER DATA

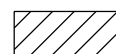
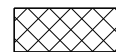


SHOULDER DATA

NO	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		TYPICAL	PROPOSED PAVED SHOULDER WIDTH (FEET)				SHOULDER AREA SQ. YD.	254	407		408	442			617		618									
					MILES	LIN. FT.		A	B	C	D		PAVEMENT PLANING, ASPHALT CONCRETE, 1.75"	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	NON-TRACKING TACK COAT @ 0.05 GAL./S.Y.	PRIME COAT, AS PER PLAN (@ 0.40 GAL/SY)	SSMZCC-IT	INTERMEDIATE COURSE, 19 MM, TYPE A (446), AS PER PLAN	SSMZCC-IT	SURFACE COURSE, 12.5 MM, TYPE A (446)	SSMZCC-IT	COMPACTED AGGREGATE, AS PER PLAN (2' WIDE)	RUMBLE STRIPS (ASPHALT CONCRETE)								
													SQ. YD.	SQ. YD.	GAL.	GAL.	GAL.	INCH	CU. YD.	INCH	CU. YD.	INCH	CU. YD.	MILE							
1	GUE	I.R. 77 N.B.	0.00	2.50	2.50	13,200.0	1			4.0	10.0	20,533.3	20,533.3	1,642.7	1,026.7	2,346.7	1.50	855.6	1.50	855.6	2.00	325.9	5.00								
		I.R. 77 S.B.	0.00	2.50	2.50	13,200.0	1	10.0	4.0			20,533.3	20,533.3	1,642.7	1,026.7	2,346.7	1.50	855.6	1.50	855.6	2.00	325.9	5.00								
BRIDGE DEDUCTIONS (FROM SHEET 16)																															
SUB-TOTALS																															
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)																															
												41,066.6		5,302.3		4,554.1		1,696.7		1,696.7		635.0		9.94							

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 RAMP AREA
 EXTRA AREA

RAMP PAVEMENT DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION	RAMP LENGTH	PAVEMENT WIDTH	TYPICAL	PAVEMENT AREA	254	407	442	
								PAVEMENT PLANING, ASPHALT CONCRETE, 1.50"	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	THICKNESS	SURFACE COURSE, 12.5 MM, TYPE A (446)
				LIN. FT.	FT.		SQ. YD.	SQ.YD.	GAL.	INCH	CU.YD.
1	GUE	I.R. 77 N.B.	S.E. RAMP TO S.R. 313	644.0	16.0	1	1,144.9	1,144.9	91.6	1.50	47.8
			S.E. RAMP EXTRA AREA				574.0	574.0	46.0	1.50	24.0
			N.E. RAMP FROM S.R. 313	953.0	16.0	1	1,694.2	1,694.2	135.6	1.50	70.6
			N.E. RAMP EXTRA AREA				884.0	884.0	70.8	1.50	36.9
		I.R. 77 S.B.	N.W. RAMP TO S.R. 313	749.0	16.0	1	1,331.6	1,331.6	106.6	1.50	55.5
			N.W. RAMP EXTRA AREA				789.0	789.0	63.2	1.50	32.9
			S.W. RAMP FROM S.R. 313	775.0	16.0	1	1,377.8	1,377.8	110.3	1.50	57.5
			S.W. RAMP EXTRA AREA				797.0	797.0	63.8	1.50	33.3
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)								8,592.5	687.9		358.5

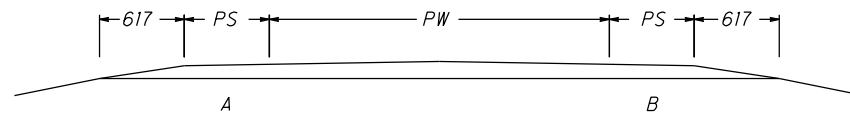
RAMP DATA

GUE - 77 - 0.00

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TYPICAL 1



PW = PAVEMENT WIDTH
PS = PAVED SHOULDER

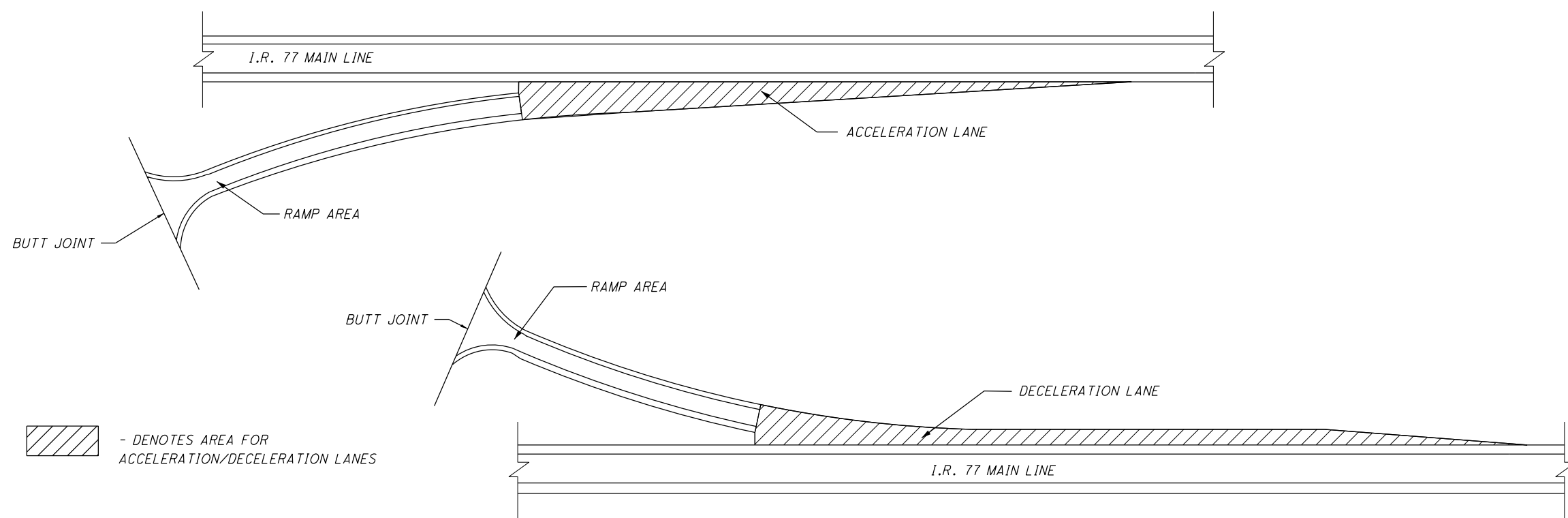
RAMP SHOULDER DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION	LENGTH	TYPICAL	PROPOSED PAVED SHOULDER WIDTH (FEET)		SHOULDER AREA	254	407	408	442		617	
						A	B		SQ. YD.	GAL.	GAL.	INCH	CU.YD.	INCH	CU.YD.
						LIN. FT.	SQ. YD.		GAL.	INCH	CU.YD.	INCH	CU.YD.		
1	GUE	I.R. 77 N.B.	S.E. RAMP TO S.R. 313	644.0	1	3.0	6.0	644.0	644.0	51.6	114.5	1.50	26.9	2.00	15.9
			N.E. RAMP FROM S.R. 313	953.0	1	3.0	6.0	953.0	953.0	76.3	169.5	1.50	39.8	2.00	23.5
		I.R. 77 S.B.	N.W. RAMP TO S.R. 313	749.0	1	3.0	6.0	749.0	749.0	60.0	133.2	1.50	31.3	2.00	18.5
			S.W. RAMP FROM S.R. 313	775.0	1	3.0	6.0	775.0	775.0	62.0	137.8	1.50	32.3	2.00	19.1
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)									3,121.0	249.9	555.0		130.3		77.0

CALCULATED
LIME
CHECKED
JSL

RAMP DATA

GUE - 77 - 0.00



DECELERATION/ACCELERATION LANE DATA

LOCATION	COUNTY	ROUTE	DESCRIPTION	AREA	254		407		442		
					SQ. YD.	SQ.YD.	GAL.	GAL.	INCH	CU.YD.	INCH
1	GUE	I.R. 77 N.B.	DECELERATION LANE TO SR 313	1,728.0	1,728.0	139.0	87.0	1.50	72.0	1.50	72.0
			ACCELERATION LANE FROM SR 313	2,167.0	2,167.0	174.0	109.0	1.50	90.3	1.50	90.3
		I.R. 77 S.B.	DECELERATION LANE TO SR 313	1,943.0	1,943.0	156.0	98.0	1.50	81.0	1.50	81.0
			ACCELERATION LANE FROM SR 313	2,225.0	2,225.0	178.0	112.0	1.50	92.8	1.50	92.8
			DECELERATION LANE TO REST AREA	1,778.0	1,778.0	143.0	89.0	1.50	74.1	1.50	74.1
			ACCELERATION LANE FROM REST AREA	1,667.0	1,667.0	134.0	84.0	1.50	69.5	1.50	69.5
			MEDIAN CROSSOVER - SLM 2.23	380.0		31.0				1.50	15.9
SUB-TOTALS						955.0	579.0				
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)					11,508.0	1,534.0			479.7		495.6

RAMP DATA

GUE-77-0.00

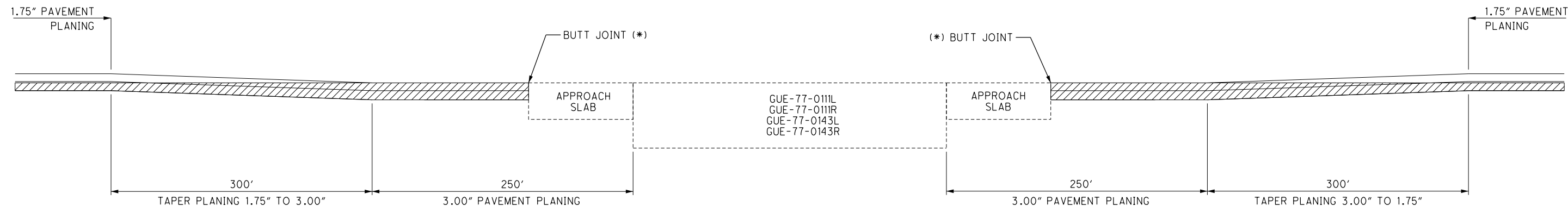
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BRIDGE TREATMENT:

- GUE-77-0111L - BUTT JOINT AT APPROACH SLABS**
- GUE-77-0111R - BUTT JOINT AT APPROACH SLABS**
- GUE-77-0143L - BUTT JOINT AT APPROACH SLABS**
- GUE-77-0143R - BUTT JOINT AT APPROACH SLABS**

**SEE SHEETS 38-51 FOR BRIDGE WORK

DETAIL 1



ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE

* 2" DEEP JOINT SEALER, AS PER PLAN

BRIDGE TREATMENT 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	PAVEMENT DEDUCTIONS (CARRIED TO SHEET 11)	SHOULDER DEDUCTIONS (CARRIED TO SHEET 12)	202		407		442			516
											WEARING COURSE REMOVED	NON-TRACKING TACK COAT @ 0.08 GAL./S.Y.	NON-TRACKING TACK COAT @ 0.05 GAL./S.Y.	S U M M Z K K C - I - I - I	INTERMEDIATE COURSE, 19 MM, TYPE A (446)	S U M M Z K K C - I - I - I	SURFACE COURSE, 12.5 MM, TYPE A (446)	2" DEEP JOINT SEALER, AS PER PLAN
		LIN. FT.	LIN. FT.	SQ. YD.	LIN. FT.	LIN. FT.	SQ. YD.		SQ.YD.	SQ.YD.	S.Y.	GAL.	GAL.	INCH	C.Y.	INCH	C.Y.	FT.
1	GUE-77-0111L	112.0	51.0	634.7	25.0	38.0	211.2	1	298.7	174.2								76.0
	GUE-77-0111R	112.0	42.3	526.4	25.0	38.0	211.2	1	298.7	174.2								76.0
	GUE-77-0143L	129.0	42.3	606.3	25.0	38.0	211.2	1	344.0	200.7								76.0
	GUE-77-0143R	129.0	42.3	606.3	25.0	38.0	211.2	1	344.0	200.7								76.0
BRIDGE DEDUCTIONS									597.4	348.4								
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)																		304.0

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LONG LINE DATA														
LOCATION	COUNTY	ROUTE	S.L.M.		TOTAL LENGTH (MILES)	ITEM 644						REMARKS		
						EDGE LINE, 6" (WHITE)			EDGE LINE, 6" (YELLOW)				TOTAL EDGE LINE (6")	TOTAL LANE LINE (6")
			FROM	TO		TOTAL MILES	HIGHWAY MILES	RAMP MILES	TOTAL MILES	HIGHWAY MILES	RAMP MILES		MILES	MILES
1	GUE	I.R. 77 N.B.	0.00	2.50	2.50	2.50	2.50		2.50	2.50		5.00	2.50	4-LANE DIVIDED
			S.E. RAMP TO S.R. 313			0.12		0.12	0.12		0.12	0.24		
			N.E. RAMP FROM S.R. 313			0.18		0.18	0.18		0.18	0.36		
		I.R. 77 S.B.	0.00	2.50	2.50	2.50	2.50		2.50	2.50		5.00	2.50	4-LANE DIVIDED
			N.W. RAMP TO S.R. 313			0.14		0.14	0.14		0.14	0.28		
			S.W. RAMP FROM S.R. 313			0.15		0.15	0.15		0.15	0.30		
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)											11.18	5.00		
	GUE	I.R. 77 S.B.	N.W. RAMP TO REST AREA			0.10		0.10	0.10		0.10	0.20		
			S.W. RAMP FROM REST AREA			0.11		0.11	0.10		0.10	0.21		ADDED 0.01 MILE FOR RADIUS IN REST AREA
REST AREA TOTALS (CARRIED TO SUB-SUMMARY)											0.41			

AUXILIARY DATA														
LOCATION	COUNTY	ROUTE	S.L.M.		ITEM 644							COMMENTS		
					CHANNELIZING LINE, 12"	DOTTED LINE, 6"	STOP LINE	WRONG WAY ARROW	PARKING LOT STALL MARKING	HANDICAP SYMBOL MARKING	TRANSVERSE/DIAGONAL LINE (WHITE)			
			FROM	TO	FT.	FT.	FT.	EACH	FEET	EACH	FEET			
1	GUE	I.R. 77 N.B.	S.E. RAMP TO S.R. 313		514	550	50	2						DECELERATION LANE
			N.E. RAMP FROM S.R. 313		750	1,122								ACCELERATION LANE
		I.R. 77 S.B.	N.W. RAMP TO S.R. 313		570	480	60	2						DECELERATION LANE
			S.W. RAMP FROM S.R. 313		984	1,254								ACCELERATION LANE
			N.W. RAMP TO REST AREA		660	478								DECELERATION LANE
			S.W. RAMP FROM REST AREA		958	1,231								ACCELERATION LANE
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)					4,436	5,115	110	4						
	GUE	I.R. 77 S.B.	REST AREA						747	2	50			
REST AREA TOTALS (CARRIED TO SUB-SUMMARY)									747	2	50			

CALCULATED LIME CHECKED JSL
 PAVEMENT MARKING DATA
 GUE-77-0.00
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 51

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

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

RPM DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		DETAIL	621		PRISMATIC RETRO-REFLECTOR COLORS					REMARKS		
								RPM	RAISED PAVEMENT MARKER REMOVED	INFORMATION ONLY							
										ONE-WAY		TWO-WAY					
										WHITE	YELLOW	YELLOW / YELLOW	WHITE / RED	YELLOW / RED			
EACH	EACH																
1	GUE	I.R. 77 N.B.	0.00	2.50	2.50	13,200	REM	110	110	110					120' SPACING ON LANE LINE		
			S.E. RAMP TO S.R. 313				2/7	40	40	16			14	10	GORE AREA AND RAMP		
			N.E. RAMP FROM S.R. 313				1	23	23				10	13	GORE AREA AND RAMP		
		I.R. 77 S.B.	0.00	2.50	2.50	13,200	REM	110	110	110					120' SPACING ON LANE LINE		
			N.W. RAMP TO S.R. 313				2/7	41	41	16			15	10	GORE AREA AND RAMP		
			S.W. RAMP FROM S.R. 313				1	25	25				14	11	GORE AREA AND RAMP		
			N.W. RAMP TO REST AREA				2	25	25				17	8	GORE AREA AND RAMP		
			S.W. RAMP FROM REST AREA				1	20	20				13	7	GORE AREA AND RAMP		
SUBTOTALS										252			83	59			
LOCATION 1 TOTALS (CARRIED TO SUB-SUMMARY)								394	394								

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LOCATION 1 SHEET TOTALS

LOCATION 1 SHEET TOTALS														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
2	3	4	5	6	7	11	12	13	14	15	16	17	18					
														ROADWAY				
10.00														209	60500	10.00	MILE	LINEAR GRADING
														PAVEMENT				
50														253	02000	50	CY	PAVEMENT REPAIR
								8,593	3,121					254	01000	11,714	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.50"
						70,400	41,067			11,508				254	01000	122,975	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.75"
						9,090	5,303	688	250	1,534				407	20000	16,865	GAL	NON-TRACKING TACK COAT
							4,554		555					408	10001	5,109	GAL	PRIME COAT, AS PER PLAN
						5,817								442	00100	5,817	CY	ANTI-SEGREGATION EQUIPMENT
						2,909	1,697	359	131	496				442	10000	5,592	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
						2,909	1,697			480				442	10101	5,086	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446), AS PER PLAN
											304			516	31011	304	FT	2" DEEP JOINT SEALER, AS PER PLAN
							635		77					617	10101	712	CY	COMPACTED AGGREGATE, AS PER PLAN
							9.94							618	40600	9.94	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)
	6,500													690	12050	6,500	SY	SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS
26,400														690	98100	26,400	FT	SPECIAL - VOID REDUCING ASPHALT MEMBRANE (VRAM)
LS														690	98400		LS	SPECIAL - PAVER MOUNTED THERMAL PROFILING (PMTP)
														TRAFFIC CONTROL				
													394	621	00100	394	EACH	RPM
													394	621	54000	394	EACH	RAISED PAVEMENT MARKER REMOVED
												11.18	644	00104	11.18	MILE	EDGE LINE, 6"	
												5.00	644	00204	5.00	MILE	LANE LINE, 6"	
												4,436	644	00404	4,436	FT	CHANNELIZING LINE, 12"	
												110	644	00500	110	FT	STOP LINE	
												4	644	01360	4	EACH	WRONG WAY ARROW	
												5,115	644	01510	5,115	EACH	DOTTED LINE, 6"	
														MAINTENANCE OF TRAFFIC				
					123									441	50200	123	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)
			250											614	11110	250	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
		21												614	13000	21	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
				10										614	18601	10	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
		5.00												614	20500	5.00	MILE	WORK ZONE LANE LINE, CLASS II, 4", 642 PAINT
		5.00												614	20550	5.00	MILE	WORK ZONE LANE LINE, CLASS III, 4", 642 PAINT
		10.00												614	22100	10.00	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT
		10.00												614	22350	10.00	MILE	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT
		4,436												614	23660	4,436	FT	WORK ZONE CHANNELIZING LINE, CLASS II, 8", 642 PAINT
		4,436												614	23680	4,436	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT
			12											808	18700	12	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY

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LOCATION 1 SUB - SUMMARY

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REST AREA TOTALS			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
17	25	27					
							ROADWAY
	2,649	3,000	202	30000	5,649	SF	WALK REMOVED
	38		202	30600	38	SY	CONCRETE MEDIAN REMOVED
	829	50	202	32000	879	FT	CURB REMOVED
	1		202	42040	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T
	511		203	10000	511	CY	EXCAVATION
	109		203	20000	109	CY	EMBANKMENT
	1,035		204	10000	1,035	SY	SUBGRADE COMPACTION
	237.5		606	15050	237.5	FT	GUARDRAIL, TYPE MGS
	1		606	26550	1	EACH	ANCHOR ASSEMBLY, MGS TYPE T
	2,751	3,000	608	10000	5,751	SF	4" CONCRETE WALK
	60		608	53021	60	SF	DETECTABLE WARNING, AS PER PLAN
	1		SPECIAL	98000	1	EACH	CURB RAMP, TYPE A1
							EROSION CONTROL
	1,156		659	00510	1,156	SY	SEEDING AND MULCHING, CLASS 2
			832	30000	5000	EACH	EROSION CONTROL
							PAVEMENT
	7,904		254	01000	7,904	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.50"
	131		301	46000	131	CY	ASPHALT CONCRETE BASE, PG64-22
	173		304	20000	173	CY	AGGREGATE BASE
	724		407	20000	724	GAL	NON-TRACKING TACK COAT
	193		408	10001	193	GAL	PRIME COAT, AS PER PLAN
	330		442	10000	330	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
	973		451	14010	973	SY	9" REINFORCED CONCRETE PAVEMENT, CLASS QC1
	26		452	12010	26	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1
	536		609	26000	536	FT	CURB, TYPE 6
	334	50	609	28000	384	FT	CURB, TYPE 7
	27		617	10101	27	CY	COMPACTED AGGREGATE, AS PER PLAN
							TRAFFIC CONTROL
0.41			644	00104	0.41	MILE	EDGE LINE, 6"
50			644	00700	50	FT	TRANSVERSE/DIAGONAL LINE
747			644	01200	747	EACH	PARKING LOT STALL MARKING
2			644	01600	2	EACH	HANDICAP SYMBOL MARKING

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REST AREA SUB-SUMMARY

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TOTALS		PLAN SPLITS				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
LOC. 1	REST AREA	01/IMS/PV	02/IMS/BR	03/IMS/PV	04/IMS/OT						
	5,649				5,649	202	30000	5,649	SF	WALK REMOVED	
	38			38		202	30600	38	SY	CONCRETE MEDIAN REMOVED	
	879				879	202	32000	879	FT	CURB REMOVED	
	1			1		202	42040	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
	511			511		203	10000	511	CY	EXCAVATION	
	109			109		203	20000	109	CY	EMBANKMENT	
	1,035			1,035		204	10000	1,035	SY	SUBGRADE COMPACTION	
10.00		10.00				209	60500	10.00	MILE	LINEAR GRADING	
	237.5			237.5		606	15050	237.5	FT	GUARDRAIL, TYPE MGS	
	1			1		606	26550	1	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
	5,751				5,751	608	10000	5,751	SF	4" CONCRETE WALK	
	60				60	608	53021	60	SF	DETECTABLE WARNING, AS PER PLAN	8
	1				1	SPECIAL	98000	1.0	EACH	CURB RAMP, TYPE A1	8,9,10
										EROSION CONTROL	
	1,156			1,156		659	00510	1,156	SY	SEEDING AND MULCHING, CLASS 2	
	5,000			5,000		832	30000	5,000	EACH	EROSION CONTROL	
										PAVEMENT	
50		50				253	02000	50	CY	PAVEMENT REPAIR	
11,714	7,904	11,714		7,904		254	01000	19,618	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.50"	
122,975		122,975				254	01000	122,975	SY	PAVEMENT PLANING, ASPHALT CONCRETE , 1.75"	
	131			131		301	46000	131	CY	ASPHALT CONCRETE BASE, PG64-22	
	173			173		304	20000	173	CY	AGGREGATE BASE	
16,865	724	16,865		724		407	20000	17,589	GAL	NON-TRACKING TACK COAT	
5,109	193	5,109		193		408	10001	5,302	GAL	PRIME COAT, AS PER PLAN	2
5,817		5,817				442	00100	5,817	CY	ANTI-SEGREGATION EQUIPMENT	
5,592	330	5,592		330		442	10000	5,922	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	
5,086		5,086				442	10101	5,086	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446), AS PER PLAN	3
	973			973		451	14010	973	SY	9" REINFORCED CONCRETE PAVEMENT, CLASS QC1	
	26				26	452	12010	26	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1	
304		304				516	31011	304	FT	2" DEEP JOINT SEALER, AS PER PLAN	2
	536				536	609	26000	536	FT	CURB, TYPE 6	
	384				384	609	28000	384	FT	CURB, TYPE 7	
712	27	712		27		617	10101	739	CY	COMPACTED AGGREGATE, AS PER PLAN	2
9.94		9.94				618	40600	9.94	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)	
6,500		6,500				690	12050	6,500	SY	SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS	3
26,400		26,400				690	98100	26,400	FT	SPECIAL - VOID REDUCING ASPHALT MEMBRANE (VRAM)	2
LS		LS				690	98400		LS	SPECIAL - PAVER MOUNTED THERMAL PROFILING (PMTP)	2

CALCULATED LIME CHECKED JSL	GENERAL SUMMARY	GUE-77-0.00	21 51
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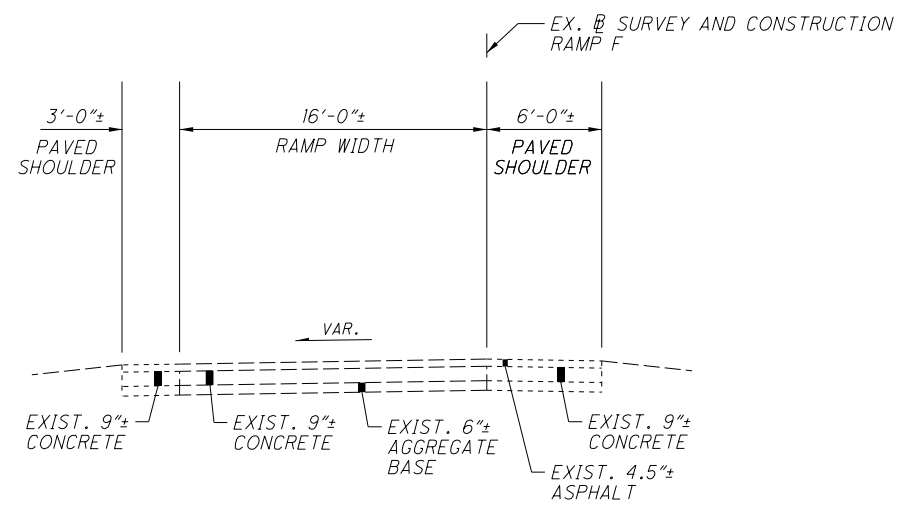
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TOTALS		PLAN SPLITS				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
LOC. 1	REST AREA	01/MS/PV	02/MS/BR	03/MS/PV	04/MS/OT						
										TRAFFIC CONTROL	
394		394				621	00100	394	EACH	RPM	
394		394				621	54000	394	EACH	RAISED PAVEMENT MARKER REMOVED	
	50			50		644	00700	50	FT	TRANSVERSE/DIAGONAL LINE	
11.18	0.41	11.18		0.41		644	00104	11.59	MILE	EDGE LINE, 6"	
5.00		5				644	00204	5.00	MILE	LANE LINE, 6"	
4,436		4,436				644	00404	4,436	FT	CHANNELIZING LINE, 12"	
110		110				644	00500	110	FT	STOP LINE	
	747			747		644	01200	747	EACH	PARKING LOT STALL MARKING	
4		4				644	01360	4	EACH	WRONG WAY ARROW	
5,115		5,115				644	01510	5,115	EACH	DOTTED LINE, 6"	
	2			2		644	01600	2	EACH	HANDICAP SYMBOL MARKING	
										STRUCTURE REPAIR	
										GUE-77-0111L, GUE-77-0111R: SEE BRIDGE SUMMARY SHEET 38	
										GUE-77-0143L, GUE-77-0143R: SEE BRIDGE SUMMARY SHEET 39	
										MAINTENANCE OF TRAFFIC	
123		123				441	50200	123	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)	
250		250				614	11110	250	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
21		21				614	13000	21	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
10		10				614	18601	10	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	6
5.00		5.00				614	20500	5.00	MILE	WORK ZONE LANE LINE, CLASS II, 4", 642 PAINT	
5.00		5.00				614	20550	5.00	MILE	WORK ZONE LANE LINE, CLASS III, 4", 642 PAINT	
10.00		10.00				614	22100	10.00	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT	
10.00		10.00				614	22350	10.00	MILE	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT	
4,436		4,436				614	23660	4,436	FT	WORK ZONE CHANNELIZING LINE, CLASS II, 8", 642 PAINT	
4,436		4,436				614	23680	4,436	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	
12		12				614	18700	12	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	5
										INCIDENTALS	
		LS	LS	LS	LS	614	11000	LS	LS	MAINTAINING TRAFFIC	
		1.5	1.5	1.5	1.5	619	16010	6	MNTH	FIELD OFFICE, TYPE B	
		LS	LS	LS	LS	623	10000	LS	LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
		LS	LS	LS	LS	624	10000	LS	LS	MOBILIZATION	

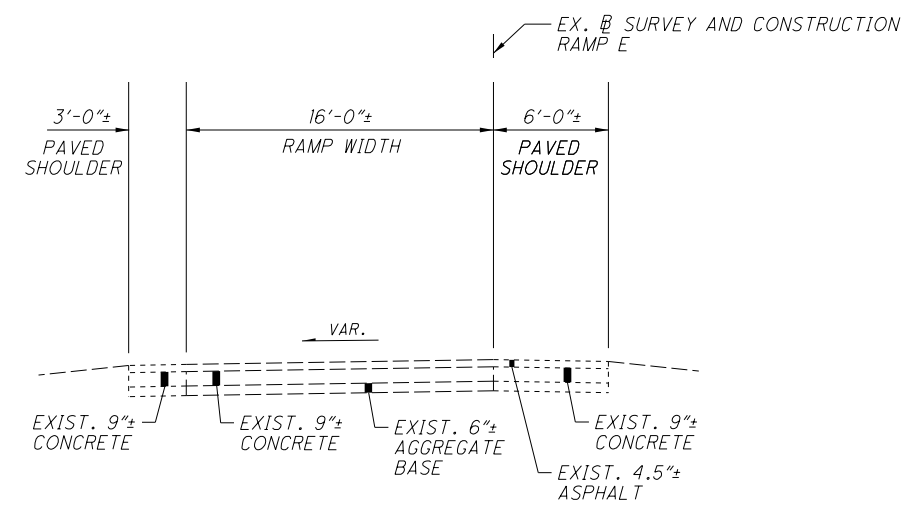
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GENERAL SUMMARY

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RAMP F (EXISTING)
NORMAL SECTION APPLIES:
STA. 13+26.19 TO STA. 18+76.19 = 550.00 FT.
TOTAL 550.00 FT.



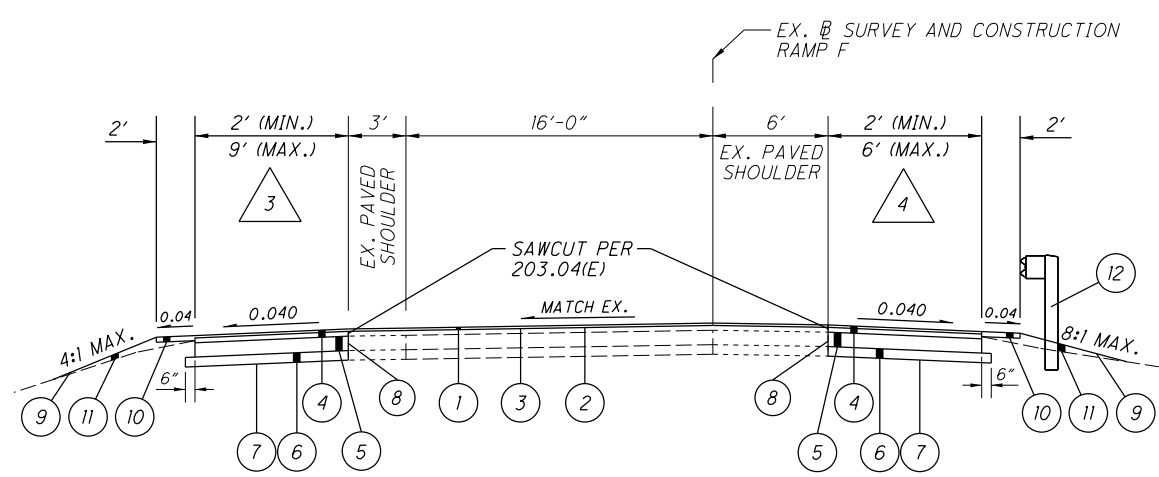
RAMP E (EXISTING)
NORMAL SECTION APPLIES:
STA. 0+87.50 TO STA. 6+06.00 = 518.50 FT.
TOTAL 518.50 FT.

3 TAPERS FROM 2.0' @ STA. 15+00.00 TO 9.0' @ STA. 15+35.00
9.0' FROM STA. 15+35.00 TO STA. 18+68.20
TAPERS FROM 9.0' @ STA. 18+68.20 TO 2.0' @ STA. 19+01.08

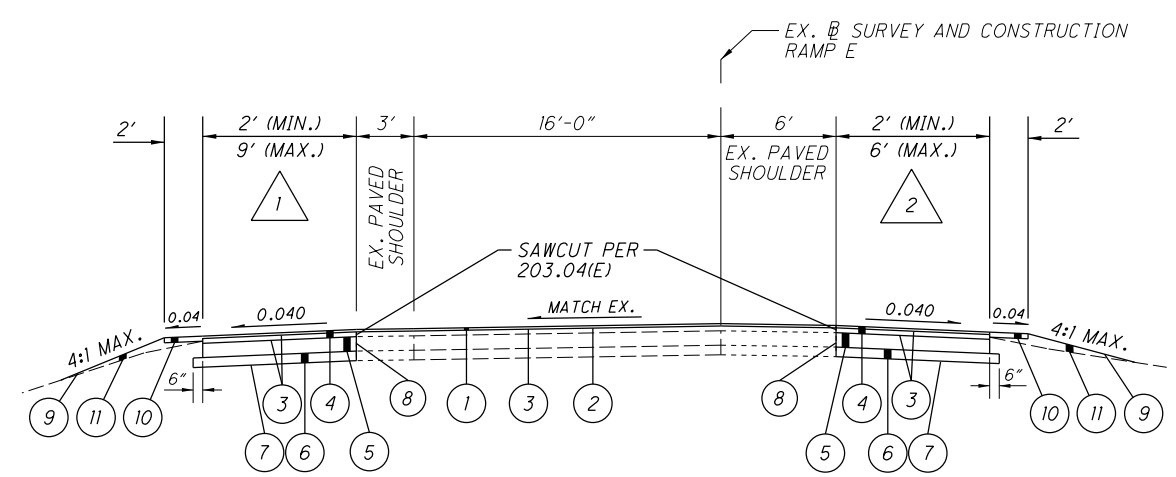
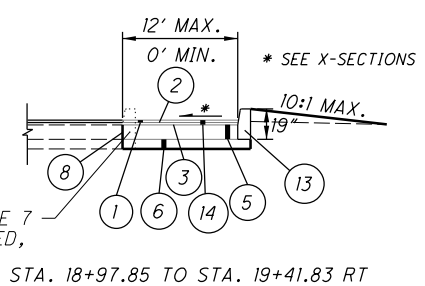
4 TAPERS FROM 2.0' @ STA. 16+75.00 TO 6.0' @ STA. 17+00.00
6.0' FROM STA. 17+00.00 TO STA. 18+97.85

1 TAPERS FROM 2.0' @ STA. 0+87.502 TO 9.0' @ STA. 1+22.50
9.0' FROM STA. 1+22.50 TO STA. 3+25.00.
TAPERS FROM 9.0' @ STA. 3+25.00 TO 2.0' @ STA. 3+60.00

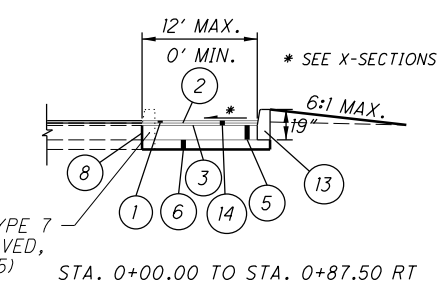
2 SEE DETAIL BELOW FOR STA. 0+00.00 TO STA. 0+87.50
TAPERS FROM 6.0' @ STA. 0+87.50 TO 2.0' @ STA. 1+80.00.



RAMP F (PROPOSED)
NORMAL SECTION APPLIES:
STA. 15+00.00 TO STA. 19+01.08 LT = 401.08 FT.
STA. 16+75.00 TO STA. 18+97.85 RT = 222.85 FT.
TOTAL 623.93 FT.



RAMP E (PROPOSED)
NORMAL SECTION APPLIES:
STA. 0+87.50 TO STA. 3+60.00 LT = 272.50 FT.
STA. 0+87.50 TO STA. 1+80.00 RT = 92.50 FT.
TOTAL 365.00 FT.



NOTE: ITEM 301, ASPHALT CONCRETE BASE SHALL BE PLACED FLUSH WITH EXISTING SURFACE PRIOR TO 1.5" MILL/FILL ON BOTH RAMP E AND RAMP F

EX. CURB, TYPE 7 (TO BE REMOVED, SEE SHEET 25)

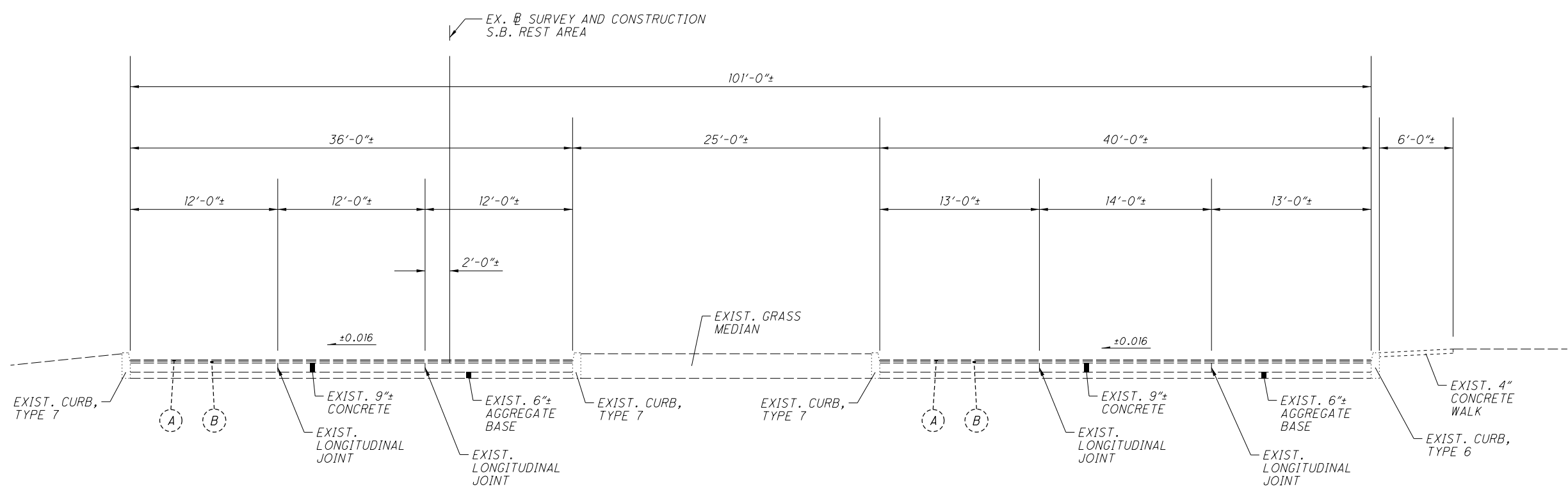
LEGEND

- 1 ITEM 442, 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (446)
- 2 ITEM 254, 1 1/2" PAVEMENT PLANING, ASPHALT CONCRETE
- 3 ITEM 407, NON-TRACKING TACK COAT (SEE TABLE 407.06-1 FOR RATES)
- 4 ITEM 301, 4 1/2" ASPHALT CONCRETE BASE, PG64-22

- 5 ITEM 451, 9" REINFORCED CONCRETE PAVEMENT, CLASS OC1
- 6 ITEM 304, 6" AGGREGATE BASE
- 7 ITEM 204, SUBGRADE COMPACTION
- 8 STANDARD LONGITUDINAL JOINT PER BP-2.1
- 9 ITEM 659, SEEDING AND MULCHING, CLASS 2

- 10 ITEM 617, COMPACTED AGGREGATE, AS PER PLAN
- 11 ITEM 203, EMBANKMENT
- 12 ITEM 606, GUARDRAIL, TYPE MGS
- 13 ITEM 609, CURB, TYPE 7 (19")
- 14 ITEM 301, 3" ASPHALT CONCRETE BASE, PG64-22

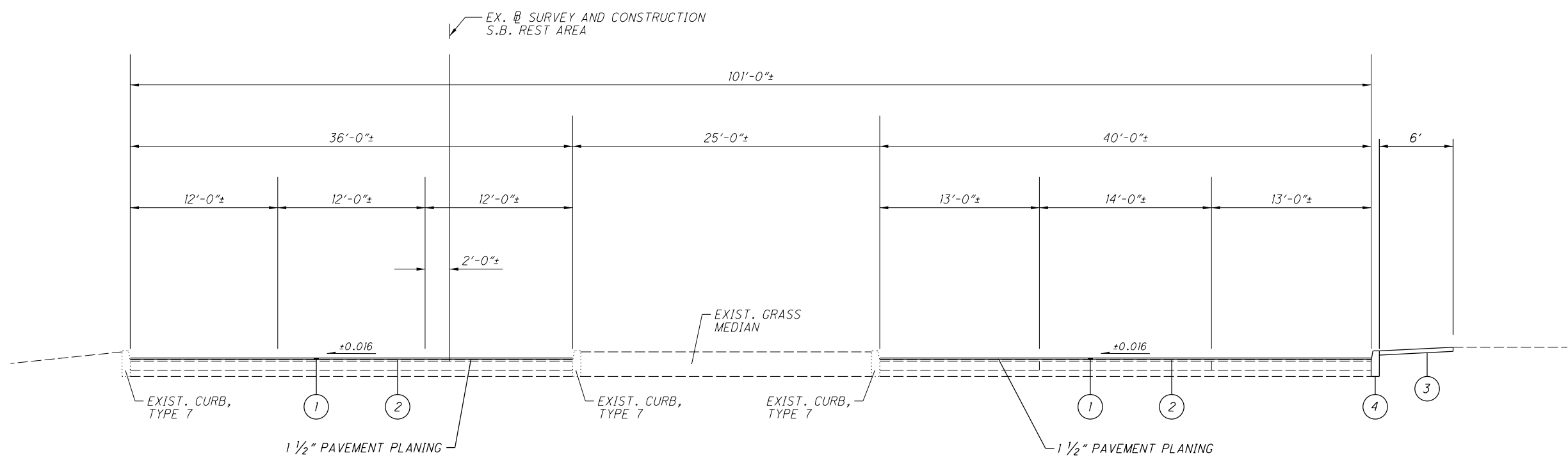
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S.B. REST AREA (EXISTING)

LEGEND

- (A) ITEM 442, 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (446)
- (B) ITEM 446, 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20



S.B. REST AREA (PROPOSED)

LEGEND

- (1) ITEM 442, 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (446)
- (2) ITEM 407, NON-TRACKING TACK COAT (@ 0.08 GAL./SQ. YD.)
- (3) ITEM 608, 4" CONCRETE WALK
- (4) ITEM 609, CURB, TYPE 6

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REST AREA PAVEMENT DATA

L O C A T I O N	C O U N T Y	M I T T O R	DESCRIPTION	SIDE	STA. TO STA.		RAMP LENGTH	RAMP WIDTH (AVG.)	AREA	203		204	254	301		304	451	407		408	442		617		659			
					FROM	TO				EXCAVATION (19" Depth)	EMBANKMENT	SUBGRADE COMPACTION	PAVEMENT PLANING, ASPHALT CONCRETE, 1.50"	ASPHALT COCNETRE BASE, P664-22 (3.0")	ASPHALT COCNETRE BASE, P664-22 (4.5")	AGGREGATE BASE (6")	9" REINFORCED CONCRETE PAVEMENT, CLASS QC1	NON-TRACKING TACK COAT @ 0.08 GAL./SQ. YD. (PLACE ON CONCRETE)	NON-TRACKING TACK COAT @ 0.08 GAL./SQ. YD.	PRIME COAT, AS PER PLAN (@ 0.40 GAL/SY)	SMZKCH	SURFACE COURSE, 12.5 MM, TYPE A (446)	SMZKCH	COMPACTED AGGREGATE, AS PER PLAN (2' WIDTH)	SEEDING AND MULCHING, CLASS 2			
					FT.	FT.				C.Y.	C.Y.	S.Y.	S.Y.	C.Y.	C.Y.	C.Y.	S.Y.	GAL.	GAL.	GAL.	IN.	C.Y.	IN.	C.Y.	S.Y.			
1	GUE	I.R. 77 S.B.	SOUHBOUND OFF RAMP TO REST AREA (RAMP F)																									
			RAMP "F" WIDENING	LT	15+00.0	15+35.0	35.00	4.5 (AVG.)	17.5			19.4	17.5		2.2	3.2	17.5	2.0	2.0		1.50	0.8						
			RAMP "F" WIDENING	LT	15+35.0	18+68.2	333.20	9.0	333.2			351.7	333.2		41.7	58.6	333.2	27.0	27.0		1.50	13.9						
			RAMP "F" WIDENING	LT	18+68.2	19+01.1	32.90	4.5 (AVG.)	16.5			18.3	16.5		2.1	3.1	16.5	2.0	2.0		1.50	0.7						
			RAMP "F" WIDENING	RT	16+75.0	17+00.0	25.00	4.0 (AVG.)	11.2			12.6	11.2		1.4	2.1	11.2	1.0	1.0		1.50	0.5						
			RAMP "F" WIDENING	RT	17+00.0	18+97.9	197.90	6.0	132.0			143.0	132.0		16.5	23.8	132.0	11.0	11.0		1.50	5.5						
			RAMP "F" WIDENING	RT	18+97.9	19+35.2	37.30	VAR	39.4			41.5	39.4	3.3	4.9	6.9	39.4	4.0	4.0		1.50	1.7						
			EXISTING RAMP "F" AREA (INCLUDES PAVED SHOULDERS)		13+34.0	18+97.9	563.90	25.0	1,566.4				1,566.4							126.0	100.3	1.50	65.3	2.00	13.9			
			CARRIED FROM SHEET 33										312	52													604	
		I.R. 77 S.B.	SOUTHBOUND ON RAMP FROM REST AREA (RAMP E)																									
			RAMP "E" WIDENING	RT	0+00.0	0+87.5	87.50	VAR	66.6			71.5	66.6	5.6	8.3	11.9	66.6	6.0	6.0		1.50	2.8						
			RAMP "E" WIDENING	RT	0+87.5	1+80.0	92.50	5.0 (AVG.)	51.4			56.5	51.4		6.4	9.4	51.4	5.0	5.0		1.50	2.2						
			RAMP "E" WIDENING	LT	0+87.5	1+22.5	35.00	4.5 (AVG.)	17.5			19.4	17.5		2.2	3.2	17.5	2.0	2.0		1.50	0.8						
			RAMP "E" WIDENING	LT	1+22.5	3+25.0	202.50	12.0	270.0			281.3	270.0		33.8	46.9	270.0	22.0	22.0		1.50	11.3						
			RAMP "E" WIDENING	LT	3+25.0	3+60.0	35.00	4.5 (AVG.)	17.5			19.4	17.5		2.2	3.2	17.5	2.0	2.0		1.50	0.8						
			EXISTING RAMP "E" AREA (INCLUDES PAVED SHOULDERS)		0+87.5	6+06.0	518.50	25.0	1,440.3				1,440.3							116.0	92.2	1.50	60.1	2.00	12.8			
			PARKING AREA (TRUCK AND CAR)						3,924.0				3,924.0							314.0		1.50	163.5					
			CARRIED FROM SHEET 37										199	57														552
			SUB-TOTALS												8.9	121.7				84.0	640.0							
			REST AREA TOTALS (CARRIED TO SUB-SUMMARY)									511	109	1,034.6	7,903.5	130.6	172.3	972.8	724.0	192.5	329.9	26.7	1,156					

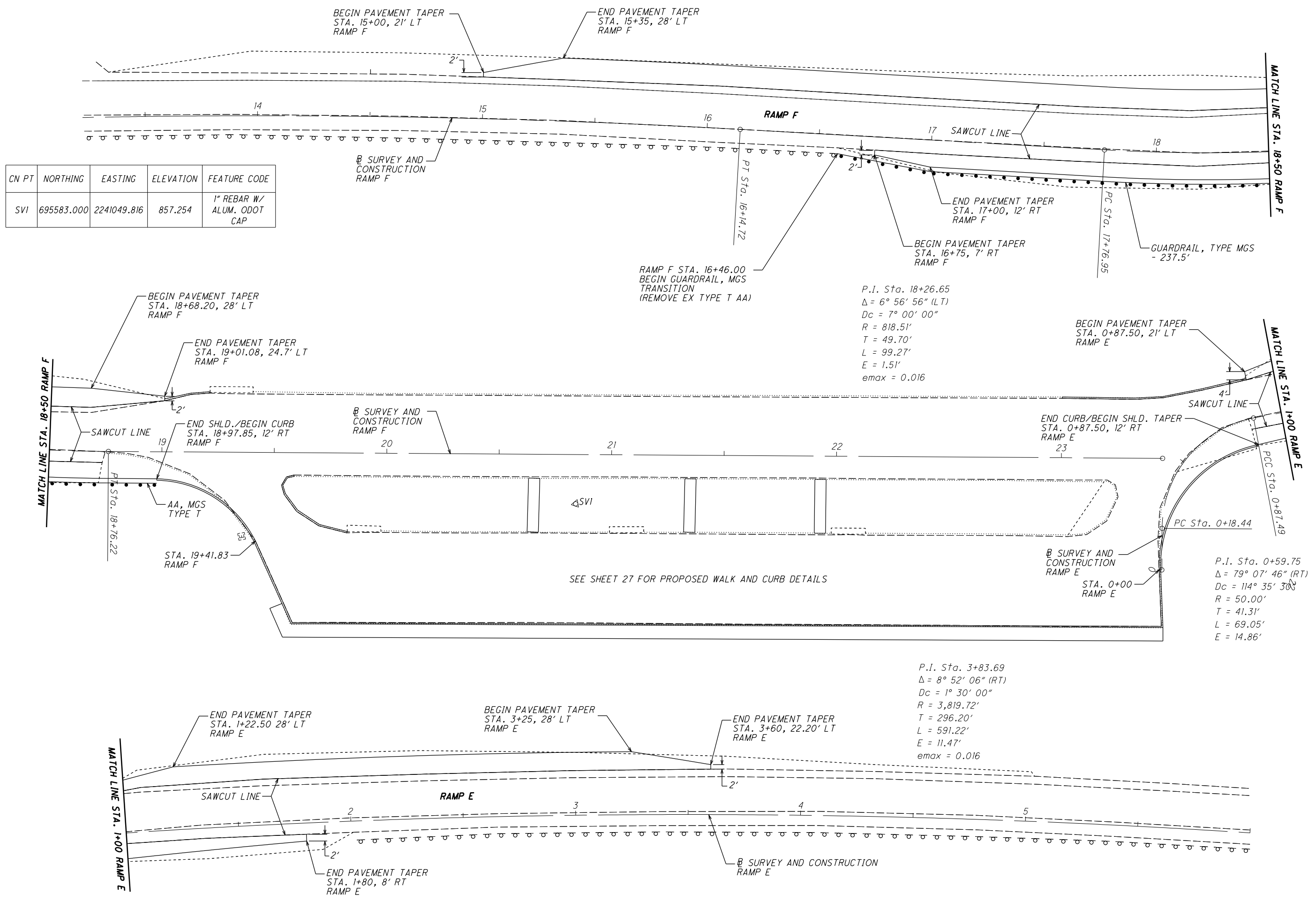
REST AREA ROADWAY DATA

L O C A T I O N	C O U N T Y	M I T T O R	DESCRIPTION	202				452	606		608		609		SPECIAL
				WALK REMOVED	CONCRETE MEDIAN	CURB REMOVED	ANCHOR ASSEMBLY REMOVED, TYPE T	8" NON-REINFORCED CONCRETE PAVEMENT	GUARDARIL, TYPE MGS	ANCHOR ASSEMBLY, MGS TYPE T	4" CONCRETE WALK	DETECTABLE WARNING, AS PER PLAN	CURB, TYPE 6	CURB, TYPE 7	CURB RAMP, TYPE A1
				S.F.	S.Y.	FT.	EACH	S.Y.	FT.	EACH	S.F.	S.F.	FT.	FT.	EACH
	GUE	I.R. 77 S.B.	REST AREA PARKING LOT	2,649	38	829	1	26	237.5	1	2,751	60	536	334	1
			REST AREA TOTALS (CARRIED TO SUB-SUMMARY)	2,649	38	829	1	26	237.5	1	2,751	60	536	334	1

CALCULATED
LIME
CHECKED
JSL

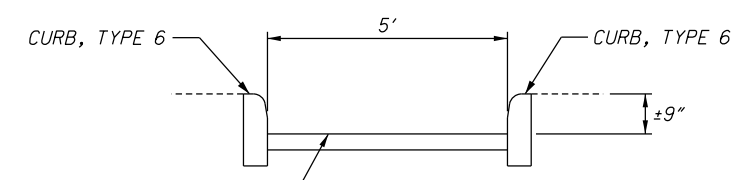
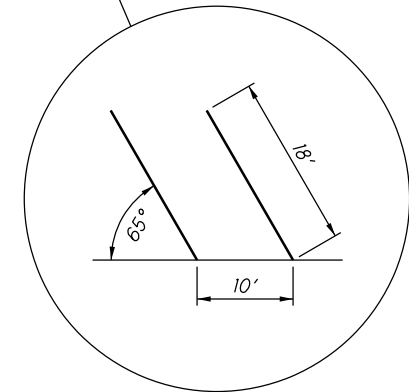
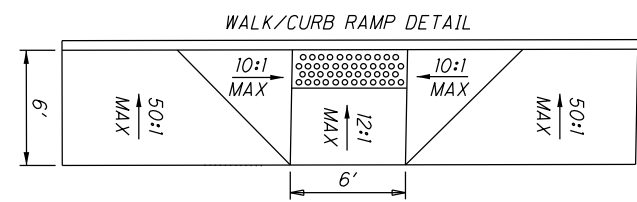
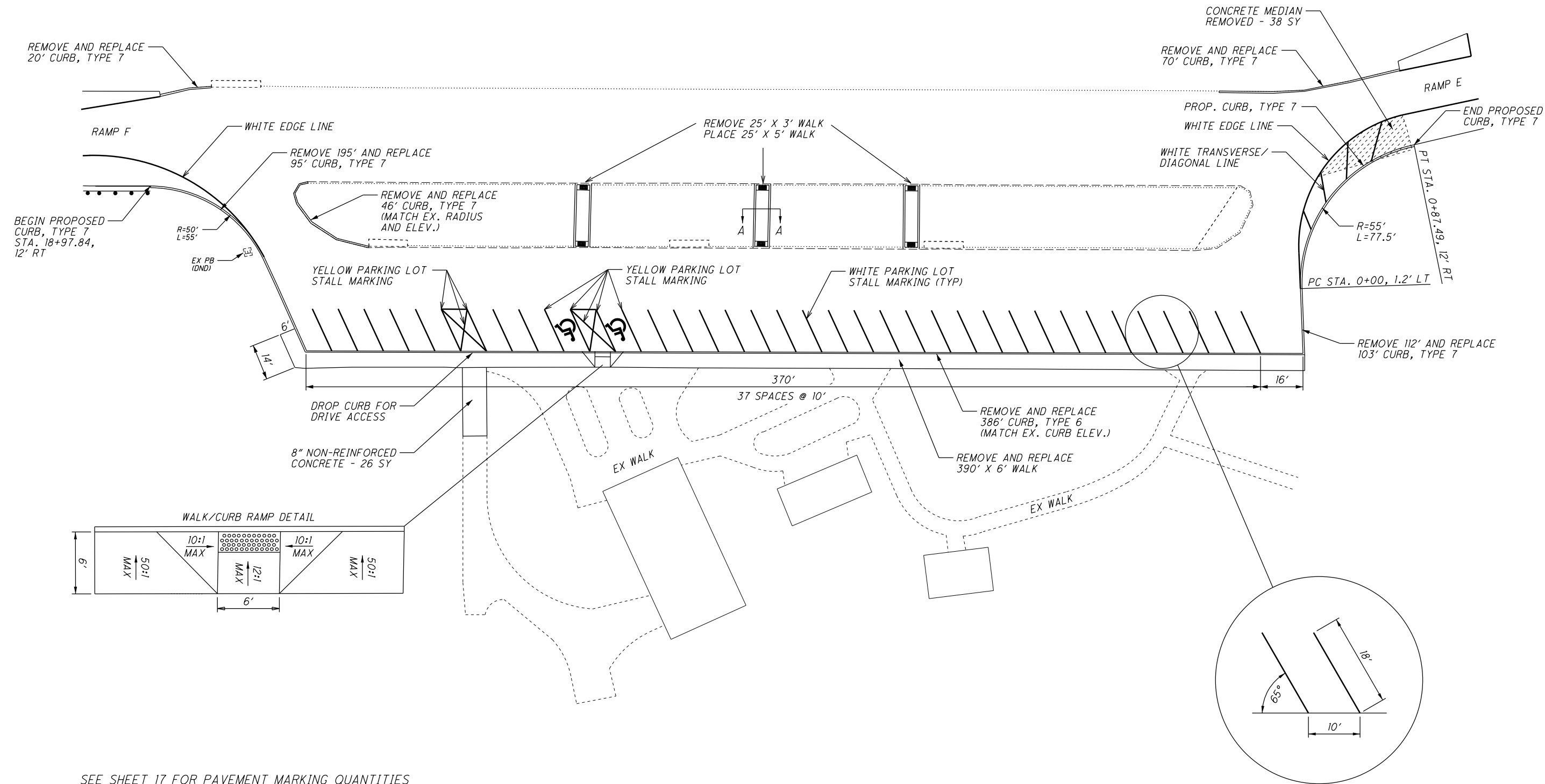
REST AREA CALCULATIONS

GUE-77-0.00



CN PT	NORTHING	EASTING	ELEVATION	FEATURE CODE
SVI	695583.000	2241049.816	857.254	1" REBAR W/ ALUM. ODOT CAP

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SEE SHEET 17 FOR PAVEMENT MARKING QUANTITIES
SEE SHEET 25 FOR CONCRETE WALK/CURB QUANTITIES

NOTE:
THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE REST AREA SUB-SUMMARY TO REMOVE AND REPLACE DETERIORATED WALK THROUGHOUT PARK AS DIRECTED BY THE ENGINEER.

- ITEM 202, WALK REMOVED - 3,000 S.F.
- ITEM 202, CURB REMOVED - 50 FT.
- ITEM 608, 4' CONCRETE WALK - 3,000 S.F.
- ITEM 609, CURB, TYPE 7 - 50 FT.

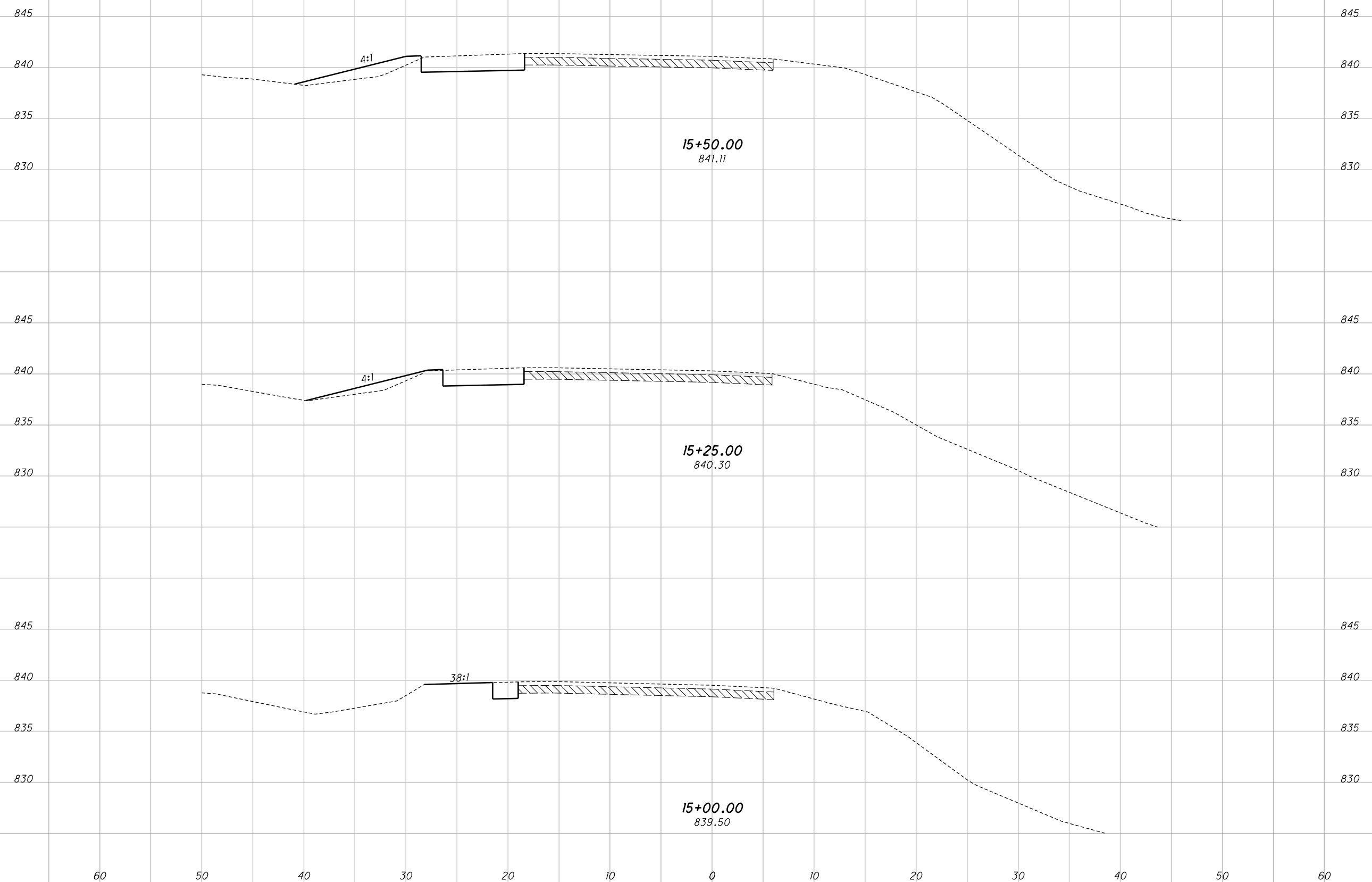
PROPOSED 4" CONCRETE WALK TO BE PLACED FLUSH WITH PROPOSED 1.5" ASPHALT CONCRETE OVERLAY

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SEEDING	
END WIDTH	SO. YDS.
67	
13	
38	
14	
29	
7	

 9" REINFORCED CONCRETE PAVEMENT



END AREA		VOLUME	
CUT	FILL	CUT	FILL
16	9		
13	6	13	7
4	0	8	3
		21	10

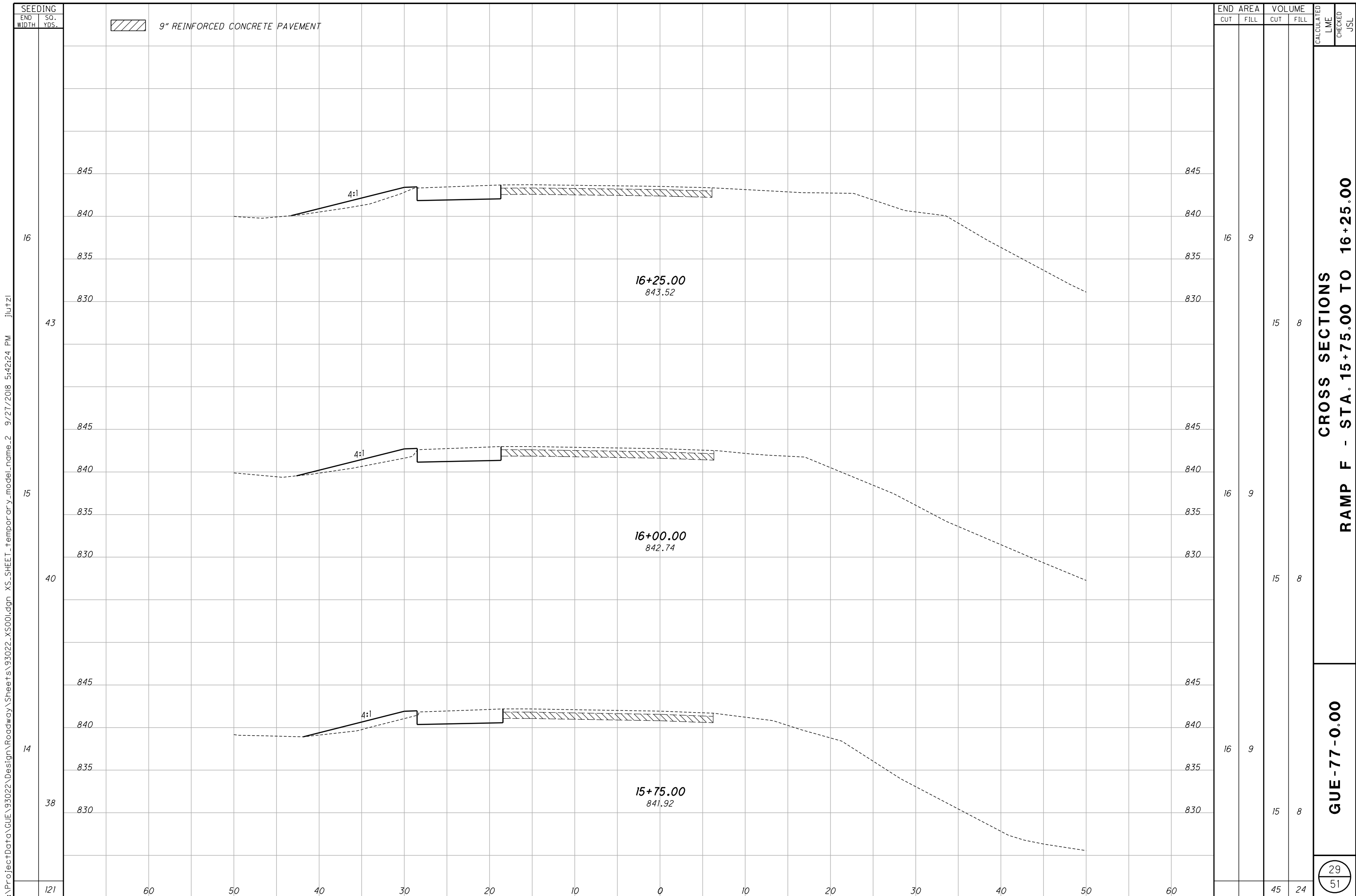
CALCULATED LIME CHECKED JSL

CROSS SECTIONS

RAMP F - STA. 15+00.00 TO STA. 15+50.00

GUE-77-0.00

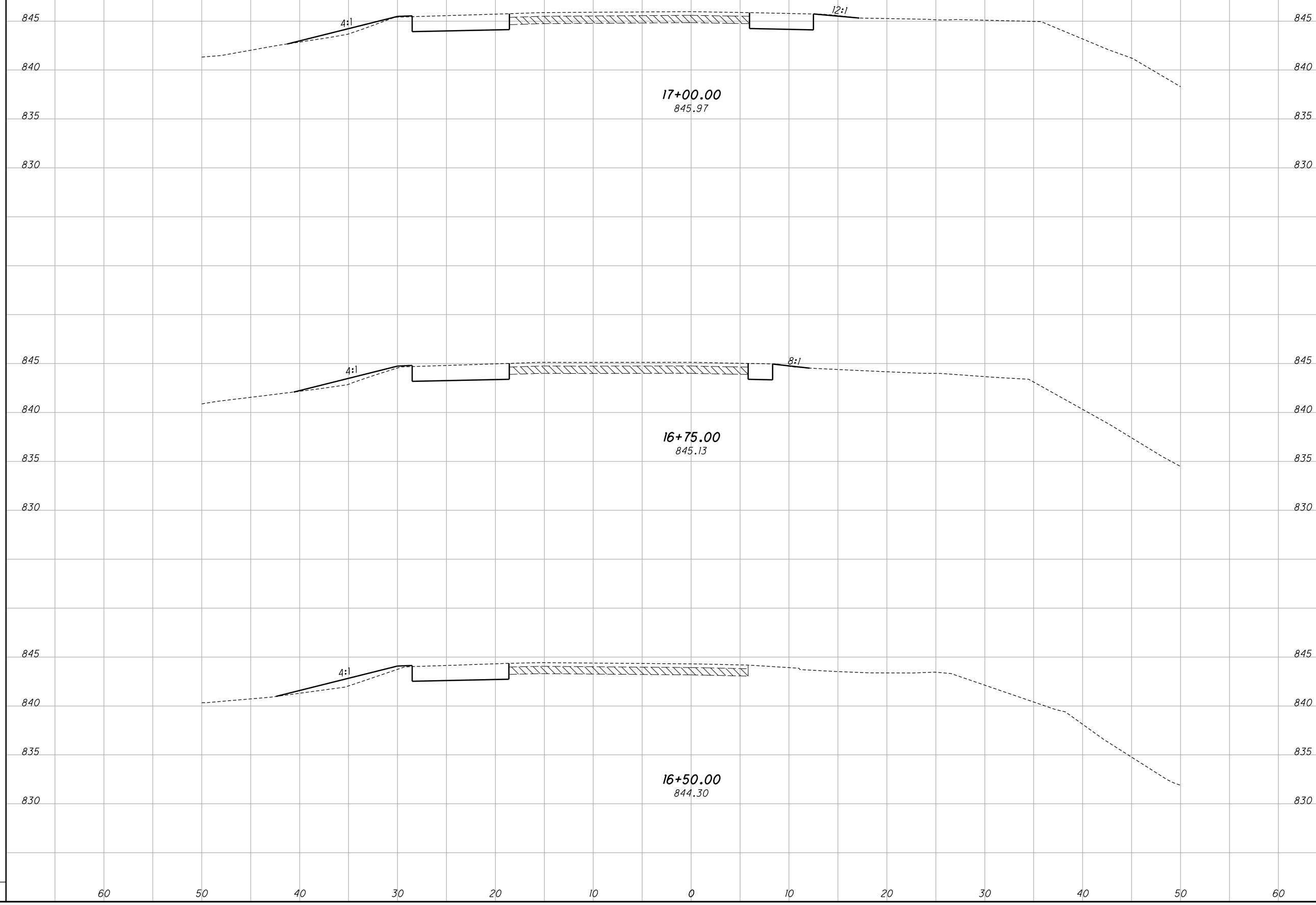
28
51



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SEEDING
 END SO.
 WIDTH YDS.
 18
 47
 16
 43
 15
 43
 133

 9" REINFORCED CONCRETE PAVEMENT

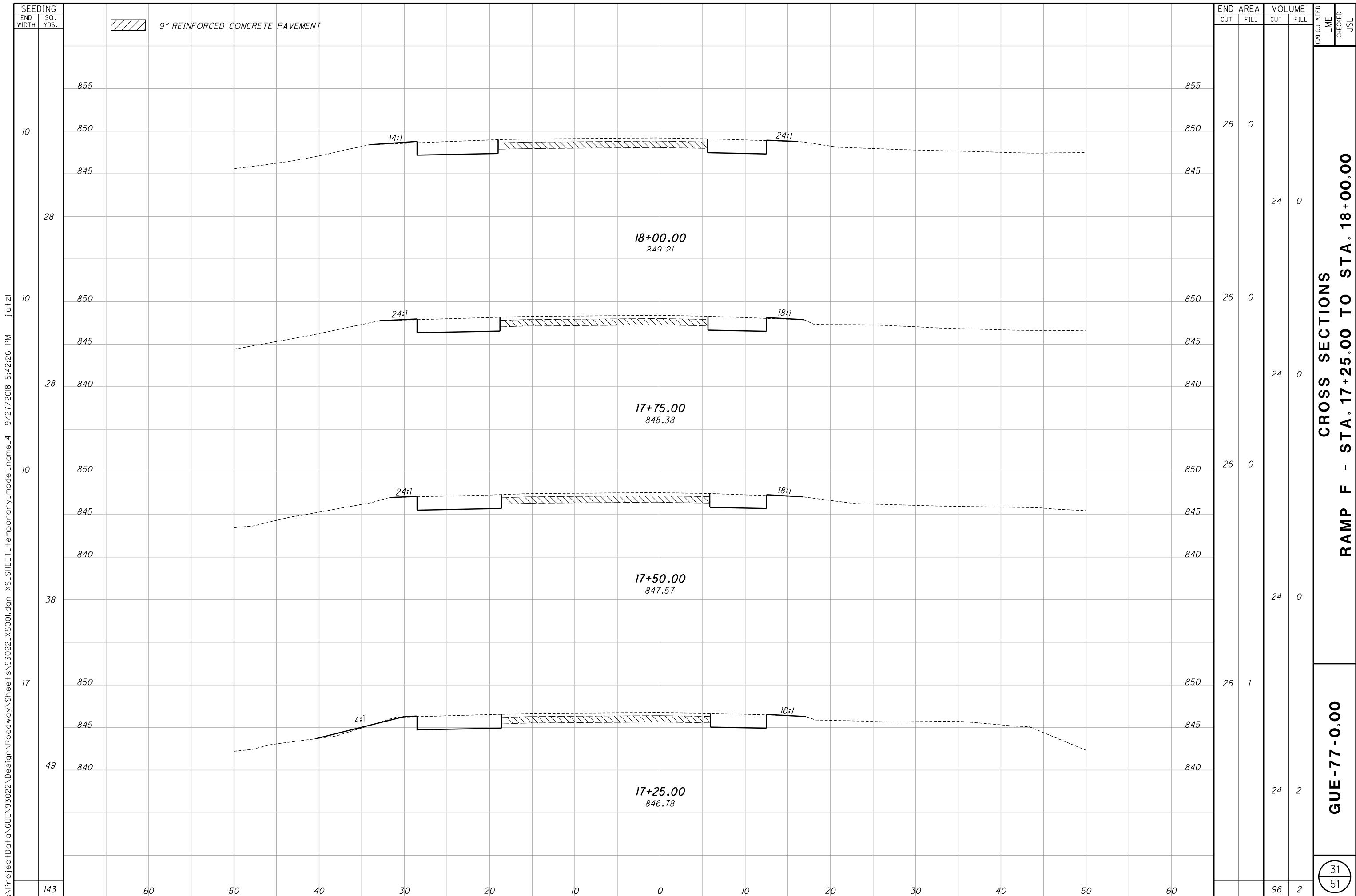


END AREA		VOLUME	
CUT	FILL	CUT	FILL
26	4	21	4
19	4	16	5
16	6	15	7
		52	16

CALCULATED
 LIME
 CHECKED
 JSL
CROSS SECTIONS
RAMP F - STA. 16+50.00 TO STA. 17+00.00
GUE-77-0.00

30
51

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**CROSS SECTIONS
RAMP F - STA. 17+25.00 TO STA. 18+00.00**

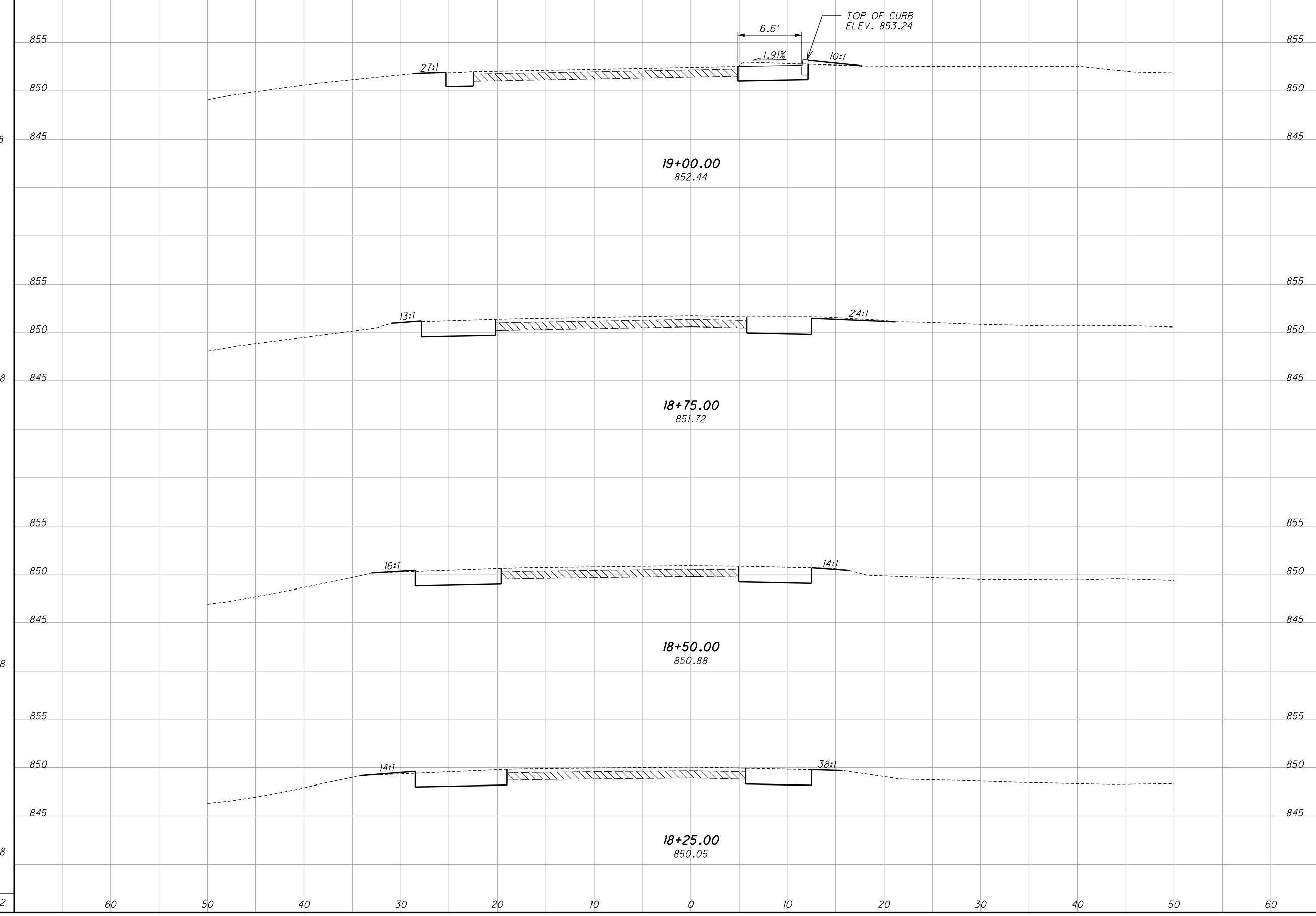
GUE-77-0.00

31
51

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SEEDING	
END WIDTH	SO. YDS.
10	
28	
10	
28	
10	
28	
10	
28	
112	

 9" REINFORCED CONCRETE PAVEMENT



END AREA		VOLUME		CALCULATED LIME	CHECKED JSL
CUT	FILL	CUT	FILL		
16	0				
		19	0		
25	0				
		23	0		
25	0				
		24	0		
26	0				
		24	0		
		90	0		

**CROSS SECTIONS
RAMP F - STA. 18+25.00 TO STA. 19+00.00**

GUE-77-0.00

32
51

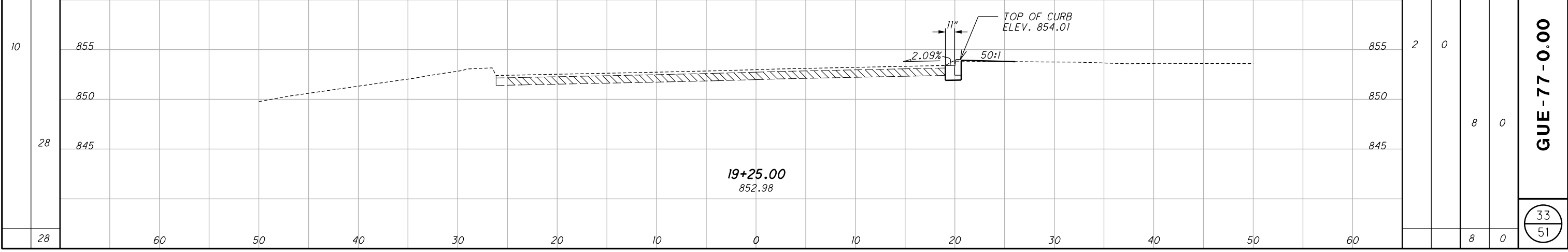
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SEEDING
END SO.
WIDTH YDS.

 9" REINFORCED CONCRETE PAVEMENT

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED
LIME
CHECKED
JSL

RAMP F			
SHEET NO.	CUT	FILL	SEEDING
28	21	10	67
29	45	24	121
30	52	16	133
31	96	2	143
32	90	0	112
33	8	0	28
TOTALS (CARRIED TO SHEET 25)			
	312	52	604



END AREA		VOLUME	
CUT	FILL	CUT	FILL
2	0	8	0
		8	0

CROSS SECTIONS
RAMP F - STA. 19+25.00 TO STA. 19+50.00

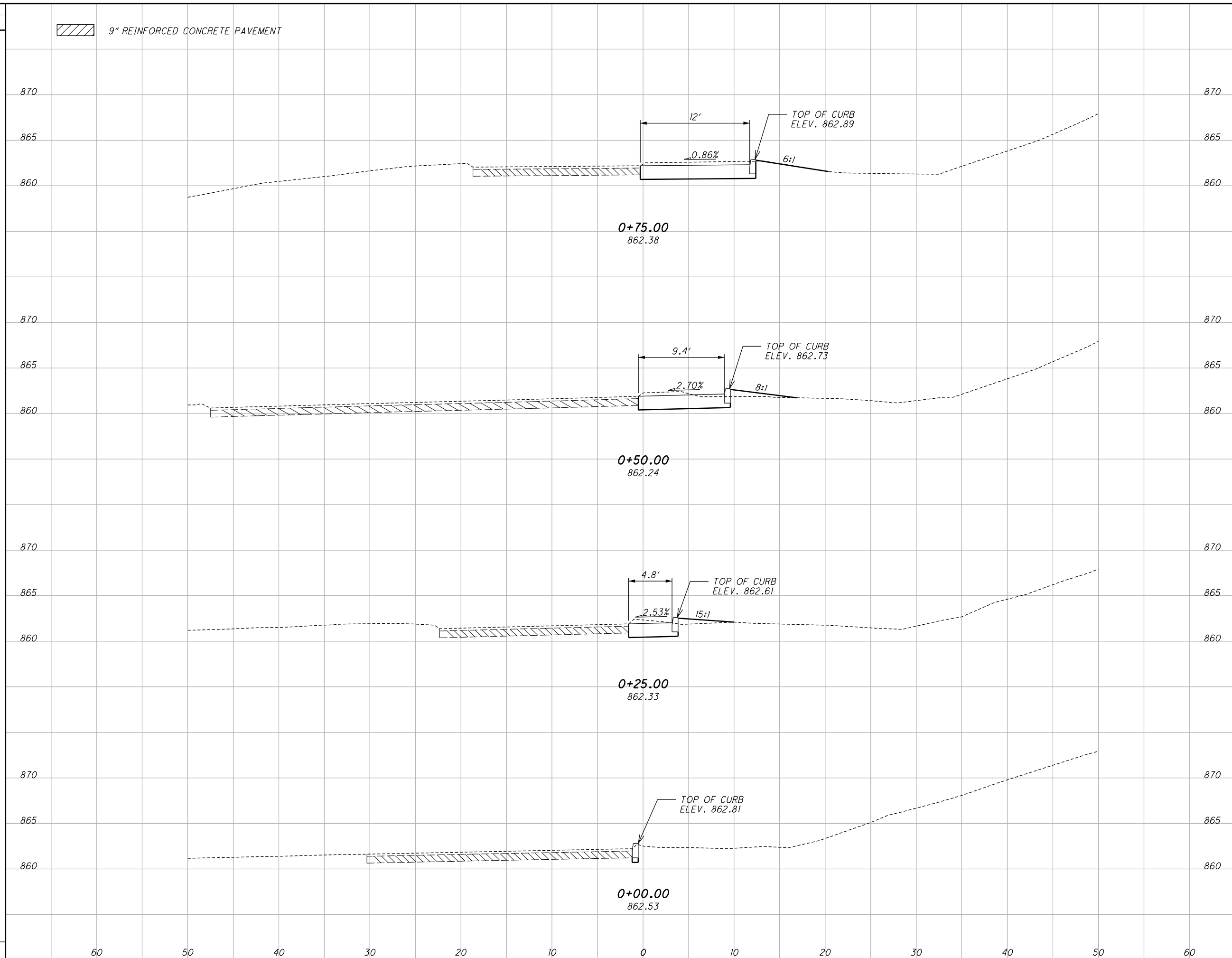
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33
51

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SEEDING	END SO. WIDTH YDS.	
	END WIDTH	SO. YDS.
	10	870
	28	860
	10	870
	28	860
	10	870
	28	860
	10	870
	28	860
	10	870
	28	860
	84	860

 9" REINFORCED CONCRETE PAVEMENT



END AREA	VOLUME	
	CUT	FILL
23	0	18
16	3	12
9	2	4
0	0	0
	34	4

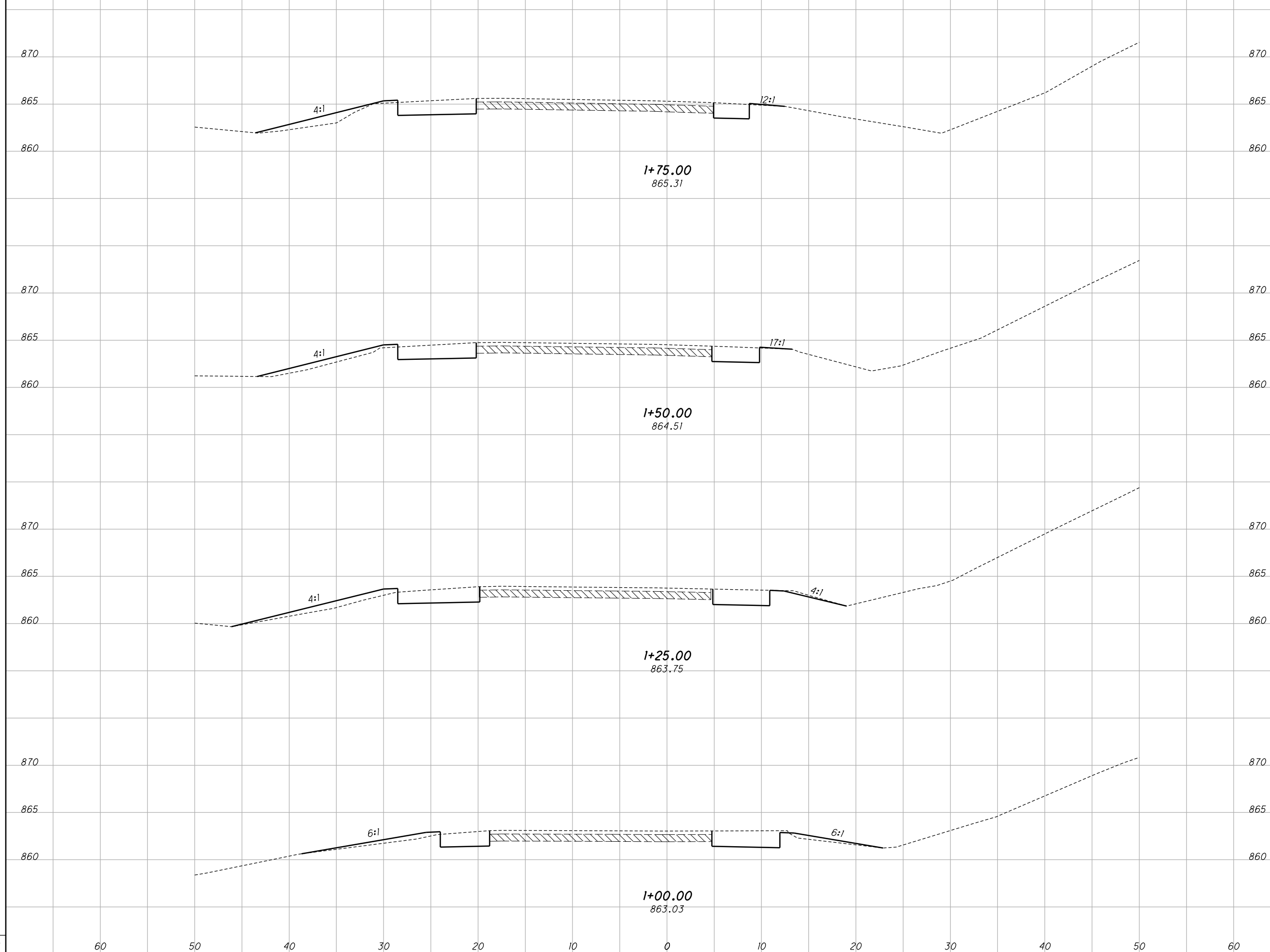
CROSS SECTIONS
RAMP E - STA. 0+00.00 TO STA. 0+75.00

GUE-77-0.00

34
51

SEEDING
 END SO.
 WIDTH YDS.
 20
 56
 20
 64
 26
 72
 26
 50
 242

 9" REINFORCED CONCRETE PAVEMENT



END AREA		VOLUME		CALCULATED LIME	CHECKED JSL
CUT	FILL	CUT	FILL		
19	8	18	7		
20	7	20	7		
23	8	20	7		
20	7	20	3		
		78	24		

**CROSS SECTIONS
 RAMP E - STA. 1+00.00 TO STA. 1+75.00**

GUE-77-0.00

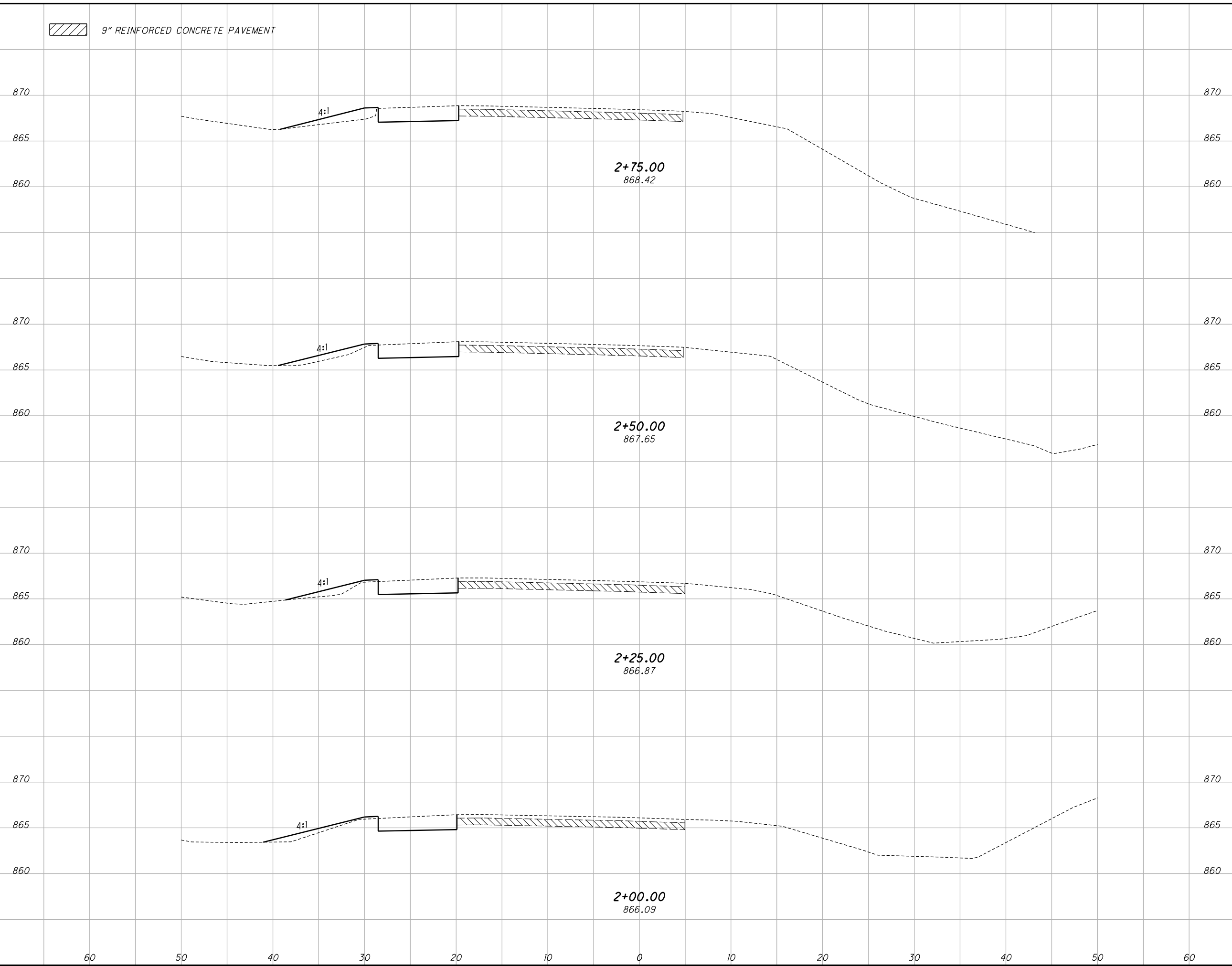
35
51

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SEEDING	END	
	WIDTH	SO. YDS.
11		
32		
12		
31		
10		
32		
13		
46		
141		

 9" REINFORCED CONCRETE PAVEMENT



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
11	14	7		
32			13	6
12	14	6		
31			13	5
10	13	5		
32			12	5
13	13	5		
46			15	6
141			53	22

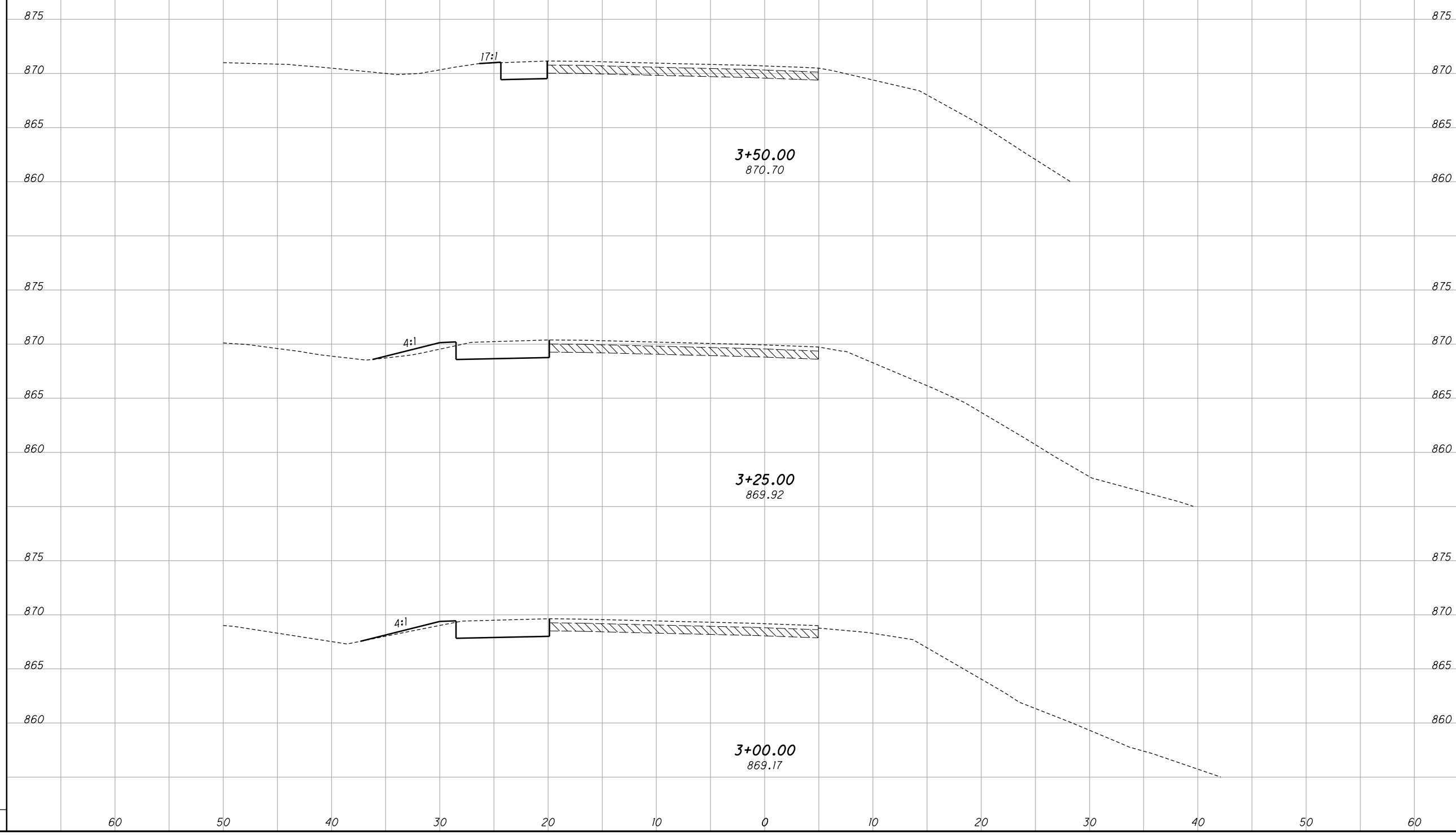
CROSS SECTIONS
RAMP E - STA. 2+00.00 TO STA. 2+75.00

36
51

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 85
 10
 10
 10
 28
 28
 28
 29


 9" REINFORCED CONCRETE PAVEMENT

RAMP E			
SHEET NO.	CUT	FILL	SEEDING
34	34	4	84
35	78	24	242
36	53	22	141
37	34	7	85
TOTALS (CARRIED TO SHEET 25)		199	57



SEEDING		END AREA		VOLUME		CALCULATED	CHECKED
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	LIME	JSL
		7	0				
		13	3	9	1		
		12	2	12	2		
		13	2	13	4		
		34	7				

CROSS SECTIONS
RAMP E - STA. 3+00.00 TO STA. 3+75.00

GUE-77-0.00

37
 51

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FUNDING SPLIT 02/IMS/BR/	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
STRUCTURE REPAIR (BRIDGE NO. GUE-77-011L)						
1	202	11301	1	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE (CONCRETE)	4
78	202	75200	78	FT	FENCE REMOVED FOR REUSE	
176	202	98200	176	FT	REMOVAL MISC.: PILE ENCASEMENT	9
LUMP	503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	3
550	SPECIAL	50771200	550	FT	PILE ENCASEMENT	9
3,187	509	10000	3,187	POUND	EPOXY COATED REINFORCING STEEL	
265	510	10000	265	EACH	DOWELS HOLES WITH NONSHRINK, NONMETALLIC GROUT	
7	511	46510	7	CU YD	CLASS QC1 CONCRETE, FOOTING	
5	511	71100	5	CU YD	CONCRETE MISC.: PUMPED SELF CONSOLIDATING CONCRETE	4
894	512	10300	894	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
105	601	32204	105	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
78	607	23100	78	FT	FENCE REBUILT	
0.06	646	10010	0.06	MILE	EDGE LINE, 6"	
0.03	646	10110	0.03	MILE	LANE LINE, 6"	
150	659	00510	150	SQ YD	SEEDING AND MULCHING, CLASS 2	
0.02	659	20000	0.02	TON	COMMERCIAL FERTILIZER	
0.03	659	31000	0.03	ACRE	LIME	
0.81	659	35000	0.81	M GAL	WATER	
STRUCTURE REPAIR (BRIDGE NO. GUE-77-011R)						
1	202	11301	1	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE (CONCRETE)	4
1	202	11301	1	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	13
78	202	75200	78	FT	FENCE REMOVED FOR REUSE	
128	202	98200	128	FT	REMOVAL MISC.: PILE ENCASEMENT	9
LUMP	503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	3
400	SPECIAL	50771200	400	FT	PILE ENCASEMENT	9
2,289	509	10000	2,289	POUND	EPOXY COATED REINFORCING STEEL	
205	510	10000	205	EACH	DOWELS HOLES WITH NONSHRINK, NONMETALLIC GROUT	
6	511	46510	6	CU YD	CLASS QC1 CONCRETE, FOOTING	
1	511	53012	1	CU YD	CLASS QC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE	13
4	511	71100	4	CU YD	CONCRETE MISC.: PUMPED SELF CONSOLIDATING CONCRETE	4
703	512	10300	703	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
4	516	31011	4	FT	2" DEEP JOINT SEALER, AS PER PLAN	13
89	601	32204	89	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
78	607	23100	78	FT	FENCE REBUILT	
0.06	646	10010	0.06	MILE	EDGE LINE, 6"	
0.03	646	10110	0.03	MILE	LANE LINE, 6"	
150	659	00510	150	SQ YD	SEEDING AND MULCHING, CLASS 2	
0.02	659	20000	0.02	TON	COMMERCIAL FERTILIZER	
0.03	659	31000	0.03	ACRE	LIME	
0.81	659	35000	0.81	M GAL	WATER	

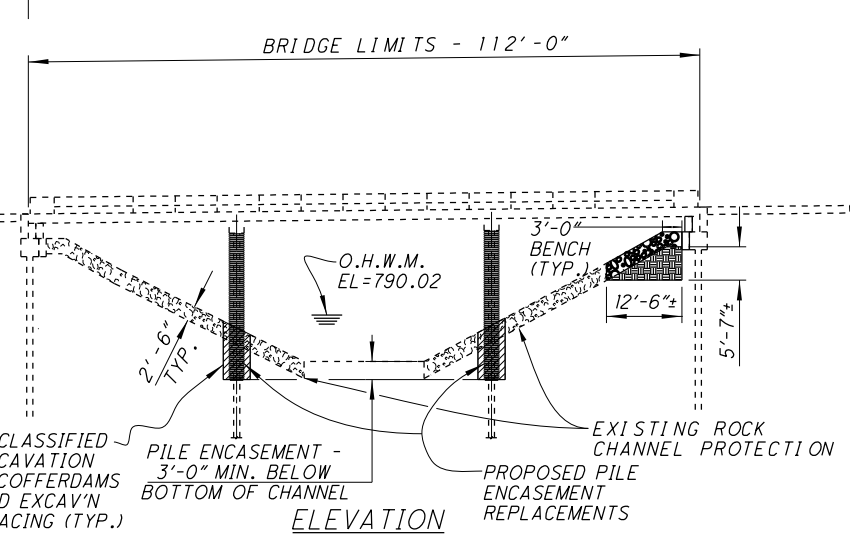
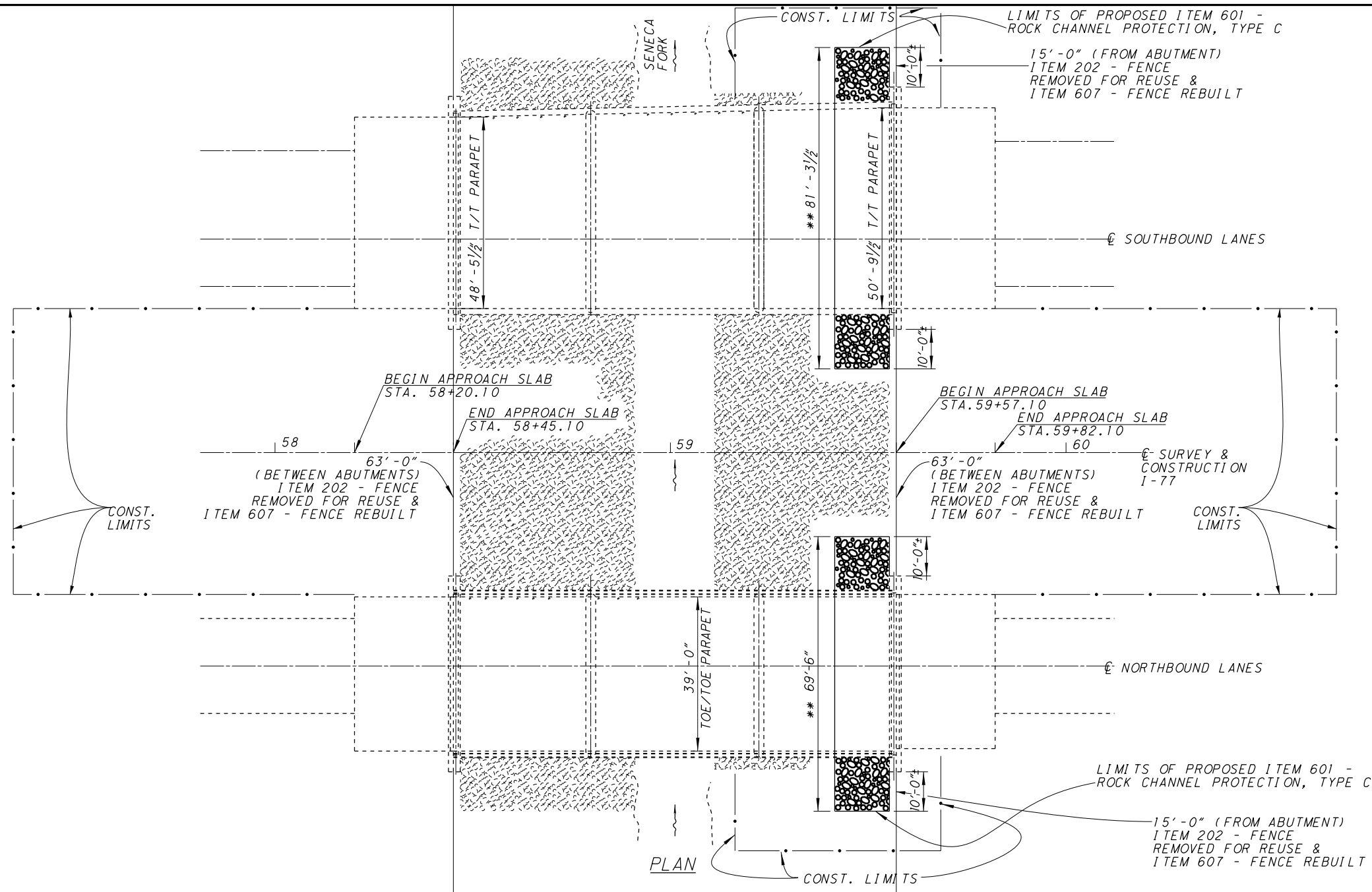
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BRIDGE SUMMARY
GUE-77-0.00
1 / 14
38 51

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FUNDING SPLIT 02/IMS/BR/	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
					STRUCTURE REPAIR (BRIDGE NO. GUE-77-0143L)	
3	202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	10
3	511	53012	3	CU YD	CLASS QC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE	10
787	512	10300	787	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
35	512	74000	35	SQ YD	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
97	516	31011	97	FT	2" DEEP JOINT SEALER, AS PER PLAN	10
6	516	46700	6	EACH	RESET BEARING	10
12	SPECIAL	516E46800	12	EACH	REFURBISH AND RESET BEARING	10
LUMP	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	10
84	519	11100	84	SQ FT	PATCHING CONCRETE STRUCTURE	
0.07	646	10010	0.07	MILE	EDGE LINE, 6"	
0.04	646	10110	0.04	MILE	LANE LINE, 6"	
					STRUCTURE REPAIR (BRIDGE NO. GUE-77-0143R)	
3	202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	10
3	511	53012	3	CU YD	CLASS QC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE	10
787	512	10300	787	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
35	512	74000	35	SQ YD	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
97	516	31011	97	FT	2" DEEP JOINT SEALER, AS PER PLAN	10
6	516	46700	6	EACH	RESET BEARING	10
12	SPECIAL	516E46800	12	EACH	REFURBISH AND RESET BEARING	10
LUMP	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	10
44	519	11100	44	SQ FT	PATCHING CONCRETE STRUCTURE	
0.07	646	10010	0.07	MILE	EDGE LINE, 6"	
0.04	646	10110	0.04	MILE	LANE LINE, 6"	

CALCULATED JDR CHECKED TAC	BRIDGE SUMMARY
GUE-77-0.00	
2 / 14	
39 51	

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ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN:
 EXTENDED LIMITS UNDER DECK (FOR ESTIMATING PURPOSES ONLY)
 N.B. (5.58' HT.) (12.5') (42') ÷ 2 ÷ 27 = 54.25 (54 CU. YD.)
 S.B. (5.58' HT.) (12.5') (53.79') ÷ 2 ÷ 27 = 69.42 (69 CU. YD.)

ITEM 601 - ROCK CHANNEL PROTECTION TYPE C:
 N.B. ABUTMENT GUE-77-011RT.
 (2.5') (13.9') (69.50') ÷ 27 = 89.44 (89 CU. YD.)
 S.B. ABUTMENT GUE-77-011LT.
 (2.5') (13.9') (81.29') ÷ 27 = 104.62 (105 CU. YD.)

EXISTING STRUCTURE
 TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH CAPPED PILE PIERS AND ABUTMENTS
 SPANS: 34'-0", 42'-6", 34'-0" C/C BRGS.
 ROADWAY: 39'-0" TOE/TOE PARAPETS (0111R) VARIES 48'-5½" TO 50'-9½" TOE/TOE PARAPETS (0111L)
 LOADING: CF-2000 (1957) ADEQUATE FOR AASHO ALTERNATE LOADING
 WEARING SURFACE: 1¾" MICRO-SILICA MODIFIED CONCRETE OVERLAY
 RAILING: DEFLECTOR PARAPET TYPE
 SKEW: NONE WITH RESPECT TO REFERENCE CHORD
 ALIGNMENT: 0°22' CURVE-NORTHBOUND LANES TANGENT (PARALLEL TO REFERENCE CHORD) SOUTHBOUND LANES
 APPROACH SLABS: AS-1-81 (25' LONG)
 SUPERELEVATION: 0.0156 FT/FT
 STRUCTURE FILE NO. 3002403 (LT. BRIDGE) 3002438 (RT. BRIDGE)

REHABILITATED STRUCTURE
 TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH CAPPED PILE PIERS AND ABUTMENTS
 SPANS: 34'-0", 42'-6", 34'-0" C/C BRGS.
 ROADWAY: 39'-0" TOE/TOE PARAPETS (0111R) VARIES 48'-5½" TO 50'-9½" TOE/TOE PARAPETS (0111L)
 LOADING: CF-2000 (1957) ADEQUATE FOR AASHO ALTERNATE LOADING
 WEARING SURFACE: 1¾" SUPERPLASTICIZED DENSE CONCRETE OVERLAY
 RAILING: DEFLECTOR PARAPET TYPE
 SKEW: NONE WITH RESPECT TO REFERENCE CHORD
 ALIGNMENT: 0°22' CURVE-NORTHBOUND LANES TANGENT (PARALLEL TO REFERENCE CHORD) SOUTHBOUND LANES
 APPROACH SLABS: AS-1-81 (25' LONG)
 SUPERELEVATION: 0.0156 FT/FT
 STRUCTURE FILE NO. 3002403 (LT. BRIDGE) 3002438 (RT. BRIDGE)

DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5	
REVIEWED JDR	DATE 8/1/18
DRAWN JDR	STRUCTURE FILE NUMBER 3002403
DESIGNED CPS	CHECKED TAG
PLAN AND ELEVATION BR. NO. GUE-77-011 L/R OVER SENECA FORK	
3 / 14	
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51	

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

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

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

INSTREAM WORK RESTRICTIONS (GUE-77-0111 L/R)
SEE SHEET 3

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATED OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION (2002), AND THE ODOT BRIDGE DESIGN MANUAL, 2004.

EXISTING STRUCTURE VERIFICATION

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

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

CONTINGENCY QUANTITIES

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

WORK LIMITS

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

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

THERE SHALL BE NO SAWCUTS BELOW THE TOP OF EXISTING FOOTER ELEVATIONS AT ANY LOCATION EXCEPT AS DETAILED IN THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL CONCRETE REMOVED FROM THE SAWCUT DOWN TO THE TOP OF FOOTER SHALL BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. NO REMOVALS SHALL BE DEEPER THAN 6" FROM THE FACE OF THE EXISTING ABUTMENTS OR BEYOND THE ASSUMED EXISTING ϕ BEARING AS SHOWN IN THE ABUTMENT DETAILS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE AND CONSTRUCTION JOINT(S) PREPARATION

FOR ABUTMENT BACKWALL REMOVALS SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

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

IN ADDITION TO THE WORK ITEMS REQUIRED IN 511, THIS ITEM WILL INCLUDE THE DEVELOPMENT, DELIVERY AND PLACEMENT OF A CLASS OQ2 SELF CONSOLIDATING CONCRETE MIX DESIGN AS DESCRIBED IN THE FOLLOWING NOTE:

PROVIDE A CONCRETE MIX WITH THE FOLLOWING PROPERTIES:

SELF-CONSOLIDATING CONCRETE (SCC): WHEN REQUIRED IN THE DESIGN PLANS OR APPROVED BY THE ENGINEER, PROVIDE AN SCC MIX WITH AGGREGATE GRADATIONS WITHIN ZONE II OF THE COARSENESS FACTOR CHART THAT IS FLOWABLE, NON-SEGREGATING CONCRETE THAT CAN SPREAD INTO PLACE, FILL THE FORMWORK, AND ENCAPSULATE THE REINFORCEMENT WITHOUT MECHANICAL CONSOLIDATION. INCREASING THE AMOUNT OF AN APPROVED 705.12 (SCC) ADMIXTURE OF AN APPROVED JMF TO ACHIEVE THE DESIRED CONSISTENCY; RE-PROPORTIONING THE AGGREGATES WITHIN ZONE II; ADDING CEMENTITIOUS MATERIAL; AND INCLUDING A VISCOSITY MODIFYING ADMIXTURE (VMA) ARE ACCEPTABLE METHODS OF IMPROVING THE STABILITY OF THE MIX. A NEW MIX DESIGN IS NOT REQUIRED.

SLUMP REQUIREMENTS OF TABLE 499.04-1 DO NOT APPLY.

ESTABLISH QUALITY CONTROL PROCEDURES IN THE QUALITY CONTROL PLAN FOR SCC CONCRETE. SET THE TARGET SLUMP FLOW FOR THE MIX AND MAINTAIN THE FLOW WITHIN ± 2 INCHES. VISUALLY INSPECT THE STABILITY OF THE MIX TO ENSURE THAT THERE IS NO AGGREGATE PILE IN THE MIDDLE OF, NOR MORTAR HALO IN EXCESS OF $\frac{1}{2}$ INCH ON THE LEADING EDGE OF THE SLUMP FLOW TEST PILE. TEST THE SLUMP FLOW ACCORDING TO ASTM C1611.

GRADATION:

PROVIDE A WELL-GRADED CONCRETE MIX BY MAINTAINING THE GRADATION OF THE COMBINATION OF AGGREGATES WITHIN ZONE II (OPTIMAL) OF THE COARSENESS FACTOR CHART (FIGURE 1) AS DEFINED IN THE COMPASS OR EQUAL SOFTWARE. USE A 1 INCH NOMINAL MAXIMUM SIZE AGGREGATE. ENSURE THAT THE DESIGN YIELD IS 27.0 CU. FT.

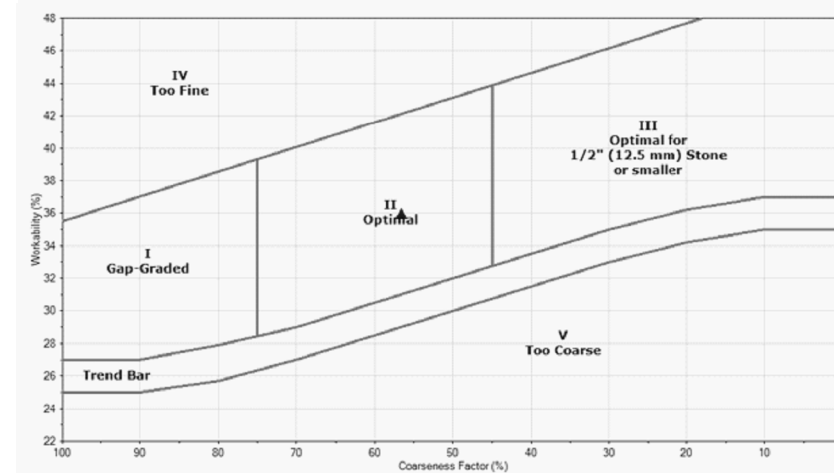


FIGURE 1- COARSENESS FACTOR CHART

USE THE FOLLOWING SIEVE SIZES TO DETERMINE THE GRADATION OF THE AGGREGATES:

- 1 1/2 INCH # 8
- 1 INCH # 16
- 3/4 INCH # 30
- 1/2 INCH # 50
- 3/8 INCH # 100
- #4 # 200

IN THE CHART: WORKABILITY FACTOR (%) REFERS TO THE PERCENT OF THE COMBINED AGGREGATE THAT PASSES THE NO. 8 SIEVE. COARSENESS FACTOR (%) REFERS TO THE PERCENT OF THE COMBINED AGGREGATE THAT IS RETAINED ON THE NO. 8 SIEVE THAT IS ALSO RETAINED ON THE 3/8 IN. SIEVE. THE CHART IS BASED ON A CEMENT CONTENT OF 564 LBS /CU.YD. ADJUST TO WORKABILITY PROPORTIONATELY AND DIRECTLY BY 2.5% PER 94 LBS. OF CEMENT WHEN USING EITHER LESS OR MORE. ENSURE THAT THE CONCRETE MIX DESIGN IS WORKABLE AND FINISHABLE DURING THE TRIAL PROCESS. WHEN THE MIX IS DETERMINED TO HAVE ISSUES RELATING TO WORKABILITY OR FINISHABILITY IN THE FIELD, THE DEPARTMENT MAY RESCIND THE MIX DESIGN ACCEPTANCE.

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

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

ITEM 511 - CONCRETE, MISC.: PUMPED SELF CONSOLIDATING CONCRETE (CONTINUED)

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 REQUIRED TO COMPLETE THE CONCRETE PLACEMENT.

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

A PROPOSED FORM PUMPING SYSTEM MEETING ALL 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 PROPOSED CONCRETE WORK IS TO BE PERFORMED FROM BENEATH THE STRUCTURE.

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

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

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

ITEM 659 SEEDING AND MULCHING, CLASS 2

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

	<u>GUE-77-0111 L&R</u>
ITEM 659 - SEEDING AND MULCHING, CLASS 2	300 SQ. YD.
ITEM 659 - COMMERCIAL FERTILIZER	0.04 TON
ITEM 659 - LIME	0.06 ACRES
ITEM 659 - WATER	1.62 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.

CALCULATIONS

ITEM 659 SEEDING AND MULCHING, CLASS 2

ESTIMATED QUANTITIES:
GUE-77-0111 (MEDIAN ACCESS AREA) = 150.0 SQ. YD.
GUE-77-0111R (MEDIAN ACCESS AREA) = 150.0 SQ. YD.
SUB-TOTAL = 300.0 SQ. YD.

ITEM 659 COMMERCIAL FERTILIZER

(300 SQ.YD.) (9) (30) ÷ ((1000) (2000)) = 0.04 TON

ITEM 659 LIME

(300 SQ.YD.) (9) ÷ 43,560 = 0.062 ACRE

ITEM 659 WATER

(300 SQ.YD.) x 0.0027 x (2 WATERINGS) = 1.62 M. GALLON

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DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION, DISTRICT 5

DATE
8/1/2018

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JDR

DESIGNED
CPS

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TAG

DRAWN
JDR

REVISIONS

BRIDGE NOTES

BRIDGE NO. GUE-77-0111 L/R
I.R. 77 OVER SENECA FORK

DESIGNED
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TAG

DRAWN
JDR

REVISIONS

DATE
8/1/2018

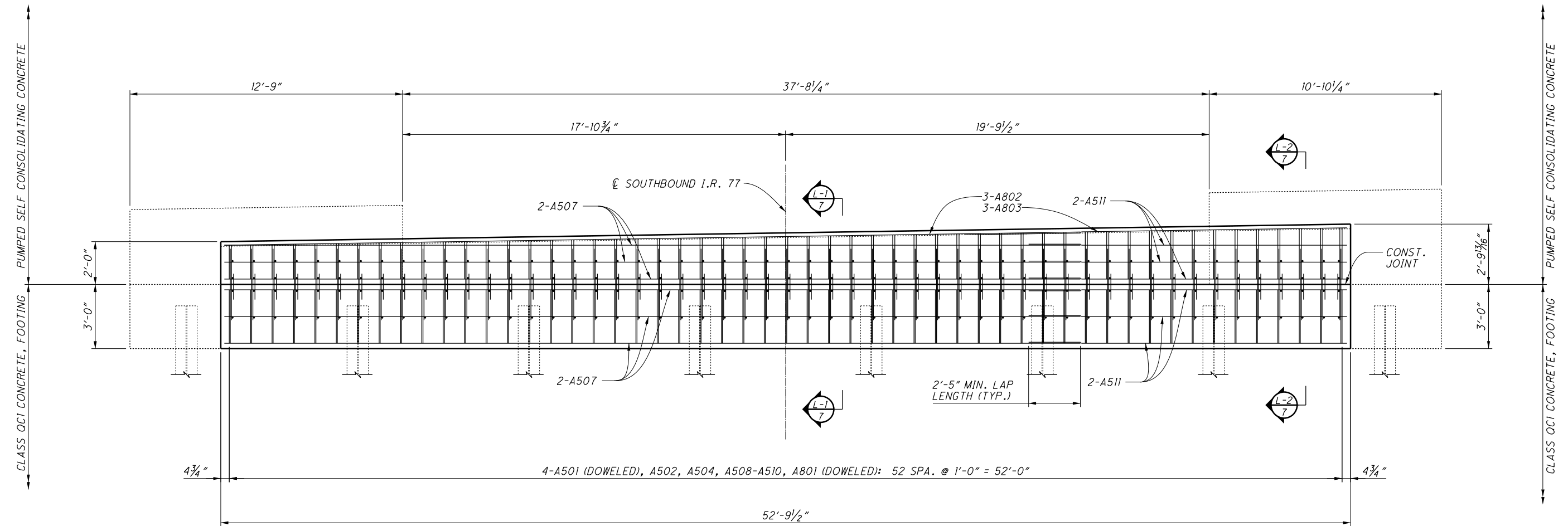
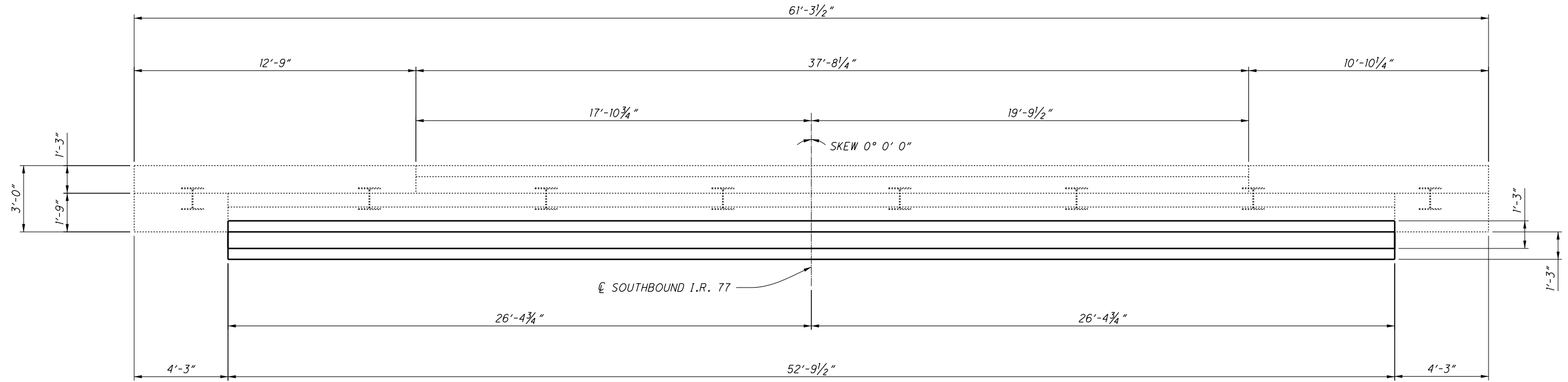
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DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION, DISTRICT 5

GUE-77-0.00
PID No. 93022

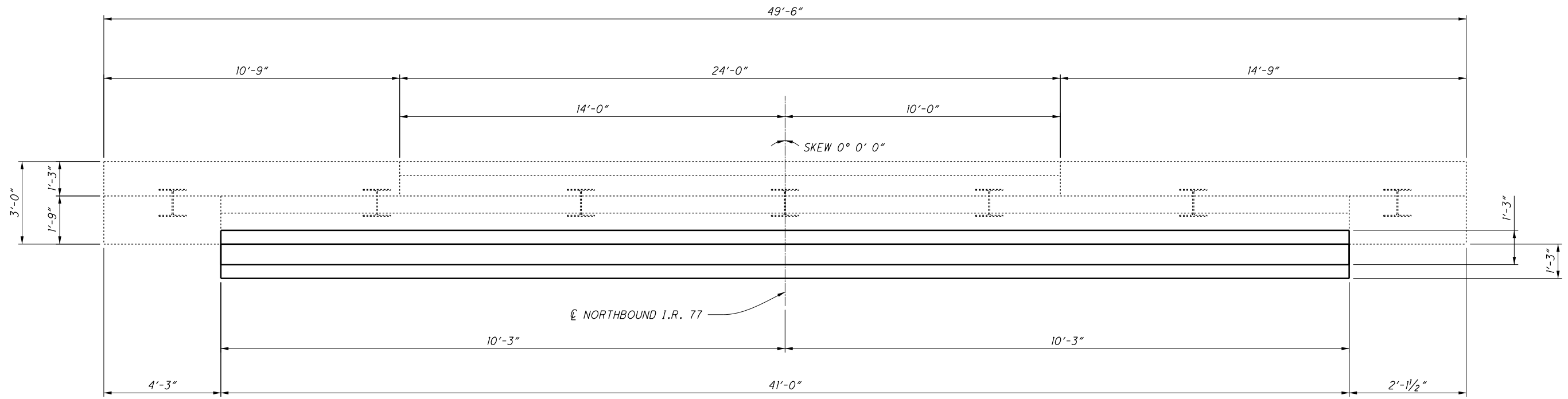
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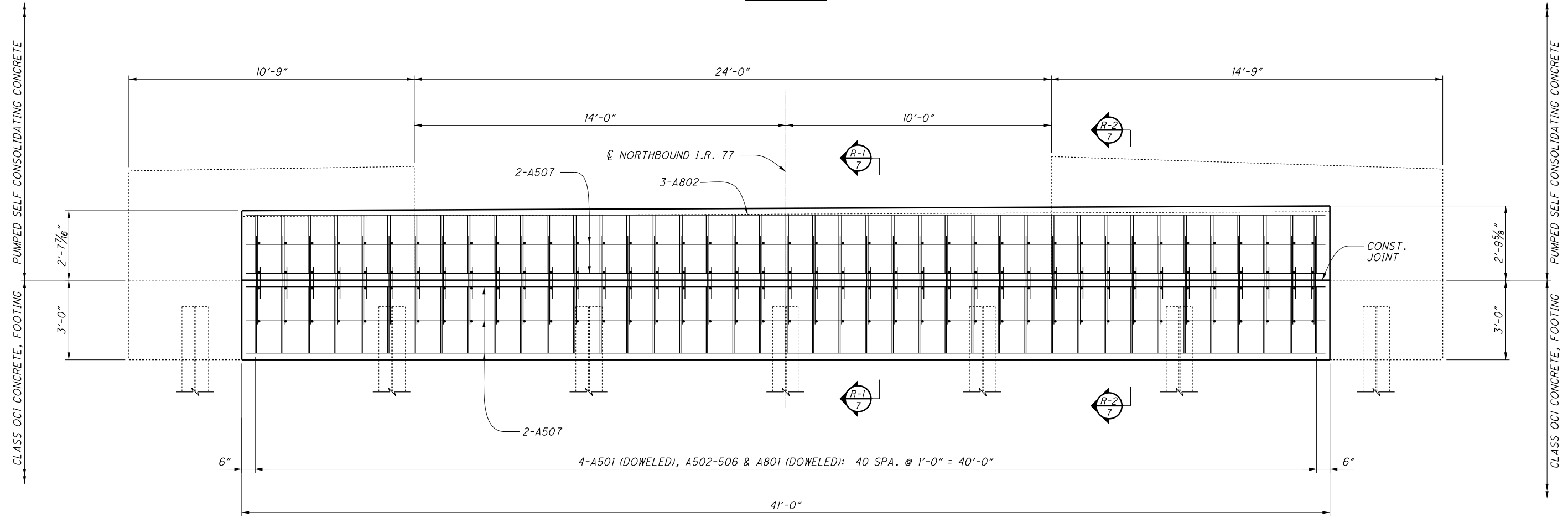


DESIGNED NEM		DRAWN NEM		REVIEWED JDR		DATE 8/1/2018		DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
CHECKED TAG		REVISED		STRUCTURE FILE NUMBER 3002403					
ABUTMENT DETAILS					BRIDGE NO. GUE-77-0111 L I.R. 77 OVER SENECA FORK				
GUE-77-0.00					PID No. 93022				
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PLAN VIEW



ELEVATION VIEW

DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION, DISTRICT 5

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DATE
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STRUCTURE FILE NUMBER
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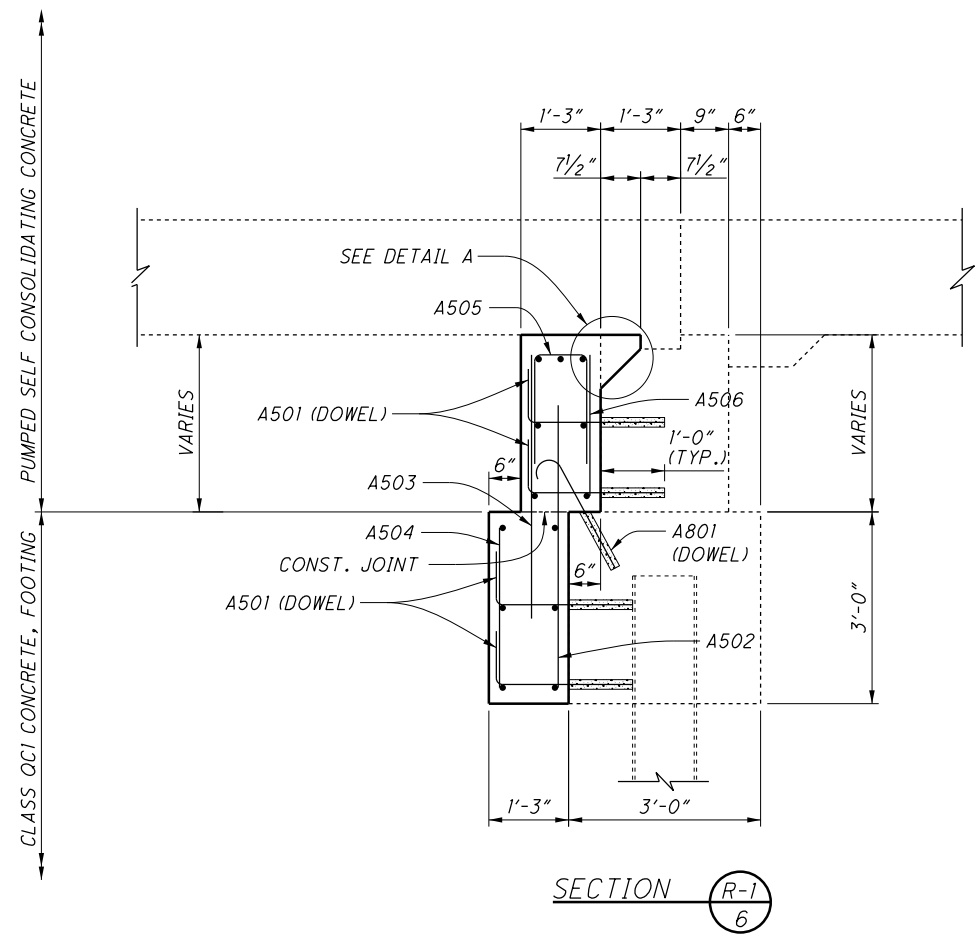
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BRIDGE NO. GUE-77-0111 R
I.R. 77 OVER SENECA FORK

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PID No. 93022

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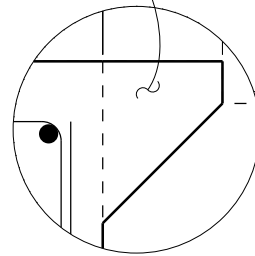
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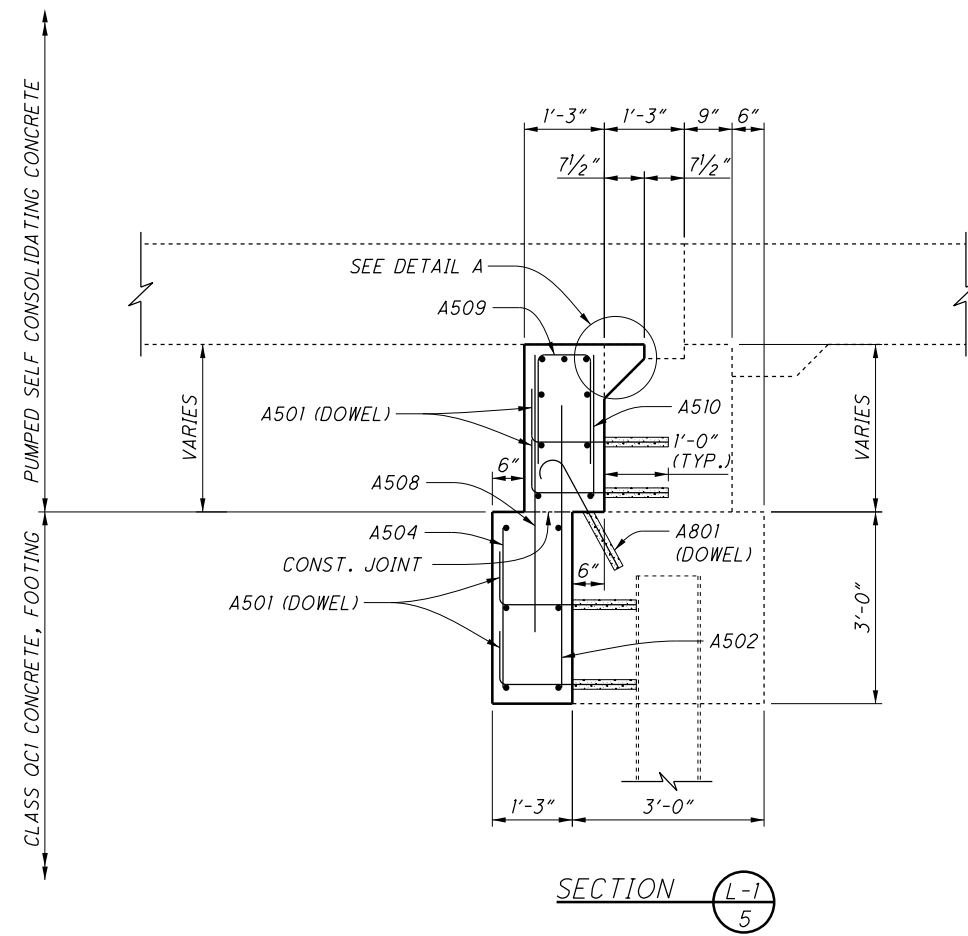


SECTION R-1
6

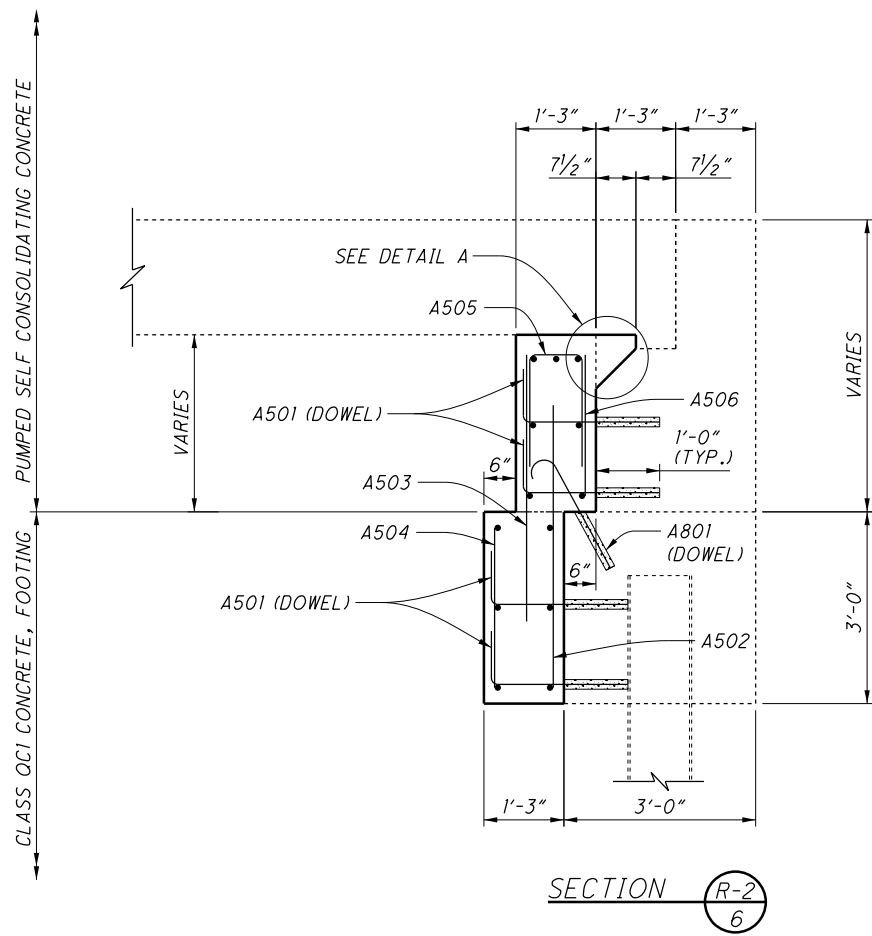
ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE (CONCRETE): ESTIMATED REMOVAL AREA = 0.332 SQ. FT. (AVG.)



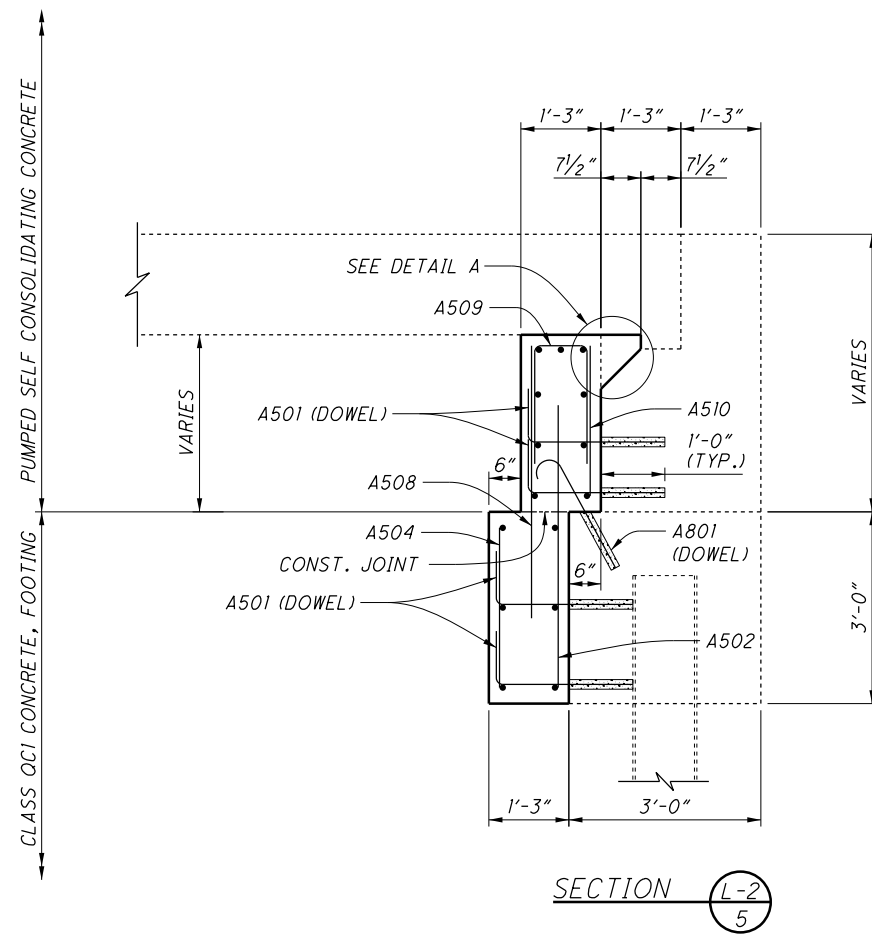
DETAIL A



SECTION L-1
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SECTION R-2
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SECTION L-2
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GUE-77-0.00
PID No. 93022

ABUTMENT DETAILS
BRIDGE NO. GUE-77-0111 L/R
I.R. 77 OVER SENECA FORK

DESIGNED	DRAWN	REVIEWED	DATE
NEM	NEM	JDR	8/1/2018
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DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION, DISTRICT 5

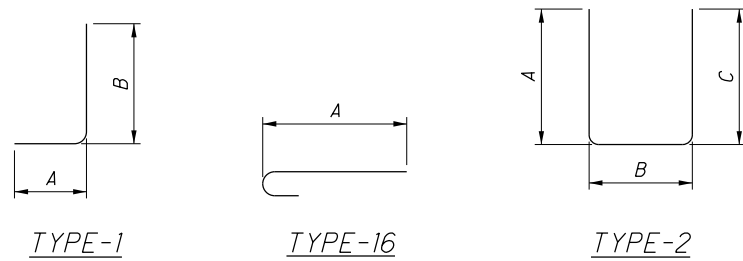
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

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS				
	LEFT	RIGHT				A	B	C	R	INC
LEFT AND RIGHT ABUTMENT STEEL										
A501	212	164	2'-10"	1111	1	0'-10"	2'-1"			
A502	53	41	4'-5"	433	STR.	4'-5"				
A503		41	4'-2"	178	STR.	4'-2"				
A504	53	41	2'-6"	245	STR.	2'-6"				
A505		41	4'-2"	178	2	1'-9"	0'-11"	1'-9"		
A506		41	2'-3"	96	STR.	2'-3"				
A507	12	10	40'-6"	929	STR.	40'-6"				
A508	53		4'-4"	240	STR.	4'-4"				
A509	1 SERIES OF 53		3'-10" TO 5'-6"	258	2	1'-7"	0'-11"	1'-7"		0'-0 6/16"
A510	1 SERIES OF 53		1'-7" TO 2'-5"	111	STR.	1'-7"				0'-0 3/16"
A511	12		15'-1"	189	STR.	15'-1"				
A801	53	41	2'-10"	711	16	2'-0"				
A802	3	3	40'-6"	648	STR.	40'-6"				
A803	3		18'-7"	149	STR.	18'-7"				
LEFT AND RIGHT ABUTMENT STEEL				5476						
TOTAL CARRIED TO GENERAL SUMMARY				5476	SPLIT TO: (GUE-77-011L = 3,187 LBS. & GUE-77-011R = 2,289 LBS.)					

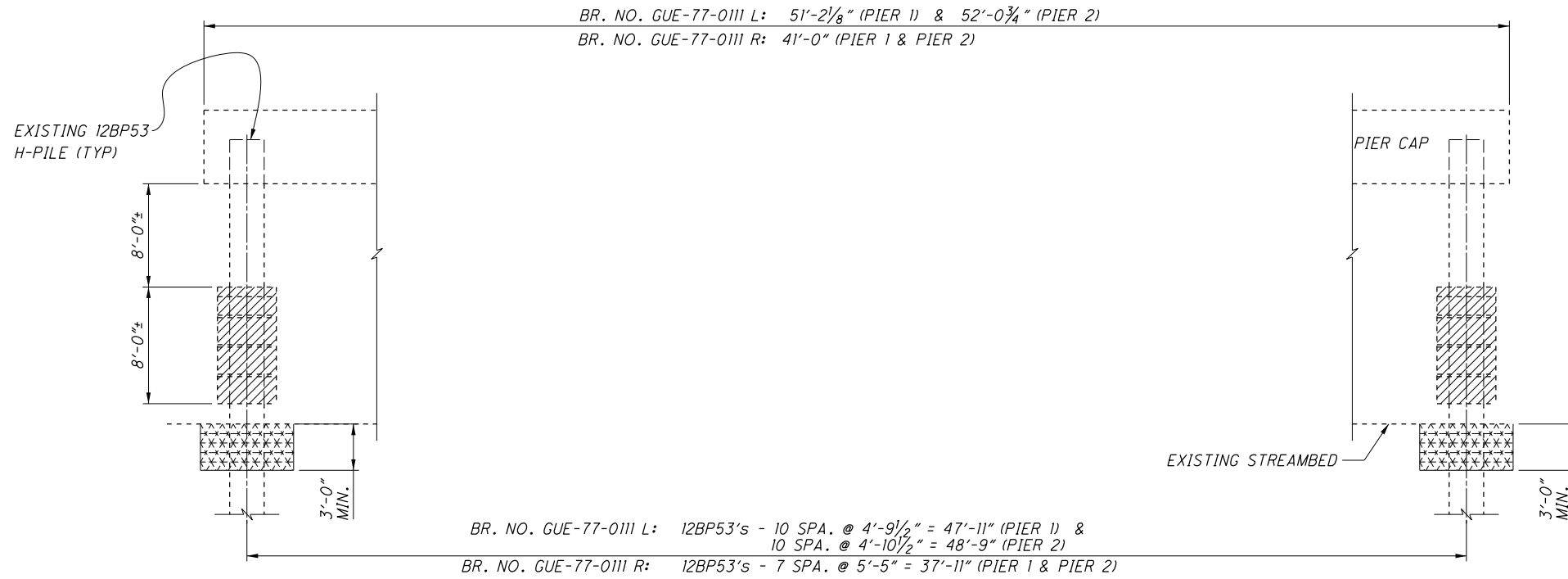
BENDING DIAGRAMS



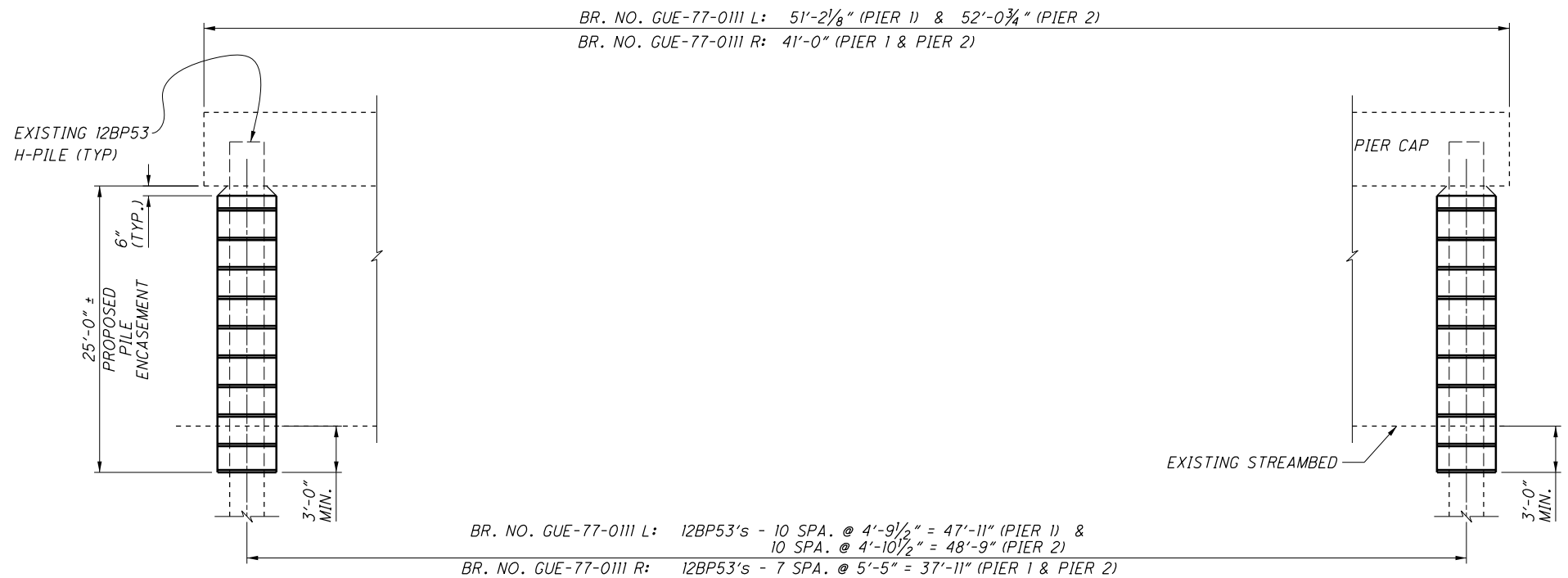
GUE-77-0.00 PID No. 93022	REINFORCING STEEL SCHEDULE BRIDGE NO. GUE-77-0111 L/R I.R. 77 OVER SENECA FORK	DESIGNED NEM CHECKED TAG	DRAWN NEM REVISED	REVIEWED JDR STRUCTURE FILE NUMBER 3002403/3002438	DATE 8/1/2018	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
8 / 14	45 51					

NOTE:
PIER CROWN/SUPERELEVATION NOT SHOWN.

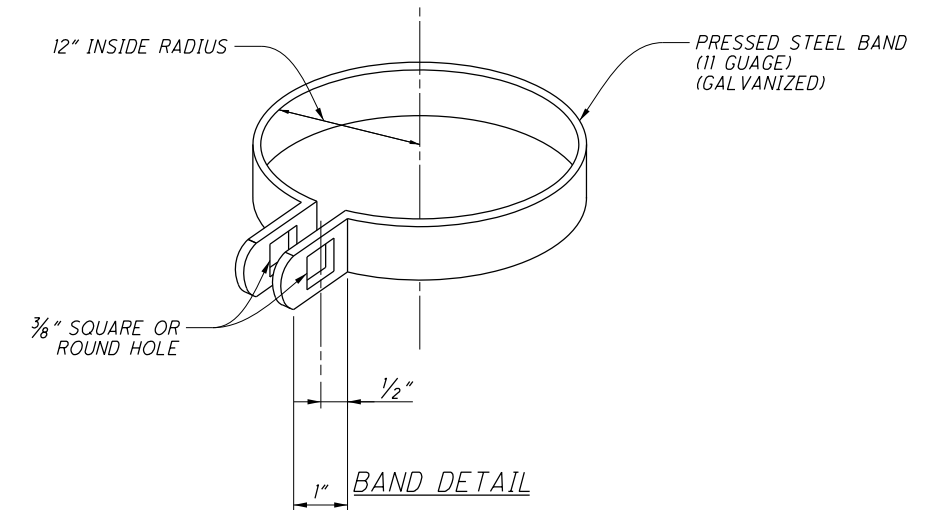
 UNCLASSIFIED EXCAVATION
 REMOVALS



EXISTING PIERS



PROPOSED PIERS



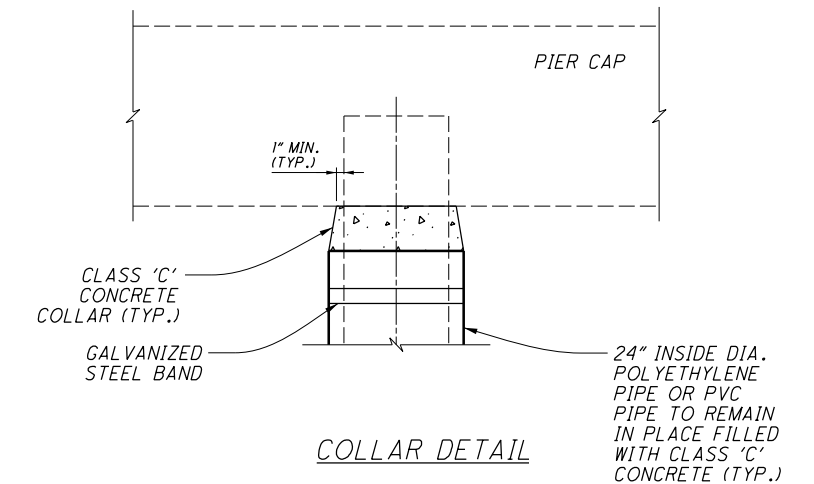
NOTES

1. THERE ARE A TOTAL OF 22 PIER PILES AT BR. NO. GUE-77-0111 L
2. THERE ARE A TOTAL OF 16 PIER PILES AT BR. NO. GUE-77-0111 R

ITEM SPECIAL - PILE ENCASEMENT

ENCASE ALL 12BP53 H-PILES FOR THE CAPPED PILE PIERS IN CLASS C CONCRETE. PROVIDE A CONCRETE SLUMP BETWEEN 6 TO 8 INCHES WITH THE USE OF A SUPERPLASTICIZER. PLACE THE CONCRETE WITHIN A FORM THAT CONSISTS OF POLYETHYLENE PIPE (707.33), OR PVC PIPE (707.42). THE PROPOSED ENCASEMENT SHALL EXTEND UP TO THE CONCRETE PIER CAP. POSITION THE PIPE SO THAT AT LEAST 3 INCHES OF CONCRETE COVER IS PROVIDED AROUND THE EXTERIOR OF THE PILE.

THE DEPARTMENT WILL MEASURE PILE ENCASEMENT BY THE NUMBER OF FEET. THE DEPARTMENT WILL DETERMINE THE SUM AS THE LENGTH MEASURED ALONG THE AXIS OF EACH PILE FROM THE BOTTOM OF THE ENCASEMENT TO THE BOTTOM OF THE PIER CAP. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR: ITEM - SPECIAL, PILE ENCASEMENT.



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DESIGNED CPS	CHECKED TAG	DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5
		DATE 8/1/18	
DRAWN JDR	REVIEWED JDR	STRUCTURE FILE NUMBER 3002403	3002438
PILE ENCASEMENT			
BR. NO. GUE-77-0111 L/R I.R. 77 OVER SENECA FORK			
GUE-77-0.00			
9 / 14		46 51	

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

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

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

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATED OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION (2002), AND THE ODOT BRIDGE DESIGN MANUAL, 2004.

EXISTING STRUCTURE VERIFICATION

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

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

CONTINGENCY QUANTITIES

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

WORK LIMITS

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

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION ON S.R. 313 SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT. FLAGGERS SHALL BE USED TO TEMPORARY CLOSE LANES AS SHOWN IN STD. DWG. MT-95.30

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 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.

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

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

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

2 ITEM 511 - CLASS OC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE

TO EXPEDITE WORK, CLASS OC2 CONCRETE WITH AN ACCELERATING ADMIXTURE SIKA RAPID-1 OR ANY APPROVED EQUIVALENT ADMIXTURE SHALL BE USED TO ACHIEVE 3,000 PSI COMPRESSIVE STRENGTH IN 12 HRS. USE A NON-CHLORIDE ACCELERATING ADMIXTURE AND PROVIDE DOCUMENTATION THAT THE MIX WILL PROVIDE THE STRENGTH IN THE SPECIFIED TIME.

THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

AT LEAST 5 DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A SCHEDULE OF REPAIR WORK ITEMS TO BE COMPLETED. THE SCHEDULE SHALL INCLUDE A BREAKDOWN OF ALL MAJOR WORK ACTIVITIES ON AN HOURLY BASIS. REPAIR WORK SHALL NOT BEGIN UNTIL THE SCHEDULE IS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL CONTINUE THE WET CURE FOR THE MAXIMUM NUMBER OF HOURS POSSIBLE DURING THE PERMITTED LANE CLOSURE. THE CLOCK STARTS FOR THE WET CURE WHEN THE CONCRETE PLACEMENT IS COMPLETE.

TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED CONCRETE SURFACE UNTIL AFTER COMPLETION OF A 12 HOUR MINIMUM WET CURE AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 400 PSI.

PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR, EQUIPMENT, AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 511 - CLASS OC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE

3 ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

FOR THE BRIDGE LOCATIONS PROVIDED REMOVE ANY EXISTING SEAL MATERIAL, FOREIGN MATERIAL, AND DEBRIS FROM THE EXISTING JOINT BETWEEN THE APPROACH SLAB OR CONCRETE ROADWAY AND THE ABUTMENT BACKWALL. ANY SPALLS ADJACENT TO THE JOINT LESS THAN OR EQUAL TO 2" SHALL BE CLEANED AND SEALED WITH THIS ITEM. FOR SPALLS GREATER THAN 2" SEE ITEMS #1 AND #2 SHOWN ON THIS SHEET.

IF ONLY A SAWCUT EXISTS AT THIS LOCATION, PERFORM A NEW SAWCUT TO ESTABLISH A 1/2" WIDE BY 2 1/4" DEEP CLEAN JOINT ALONG THIS INTERFACE. ONCE THE JOINT HAS BEEN OPENED OR CREATED, AIRBLAST THOROUGHLY PRIOR TO PLACEMENT OF HOT APPLIED JOINT SEALER AS PER 705.04 AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN.

4 ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

4 ITEM SPECIAL - 516 - REFURBISH AND RESET BEARING

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN AND/OR ADJUST BRIDGE BEARINGS, AS DETAILED IN THIS PLAN, AS WELL AS THEIR CLEANING AND PAINTING.

INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), SURFACE CLEANING, PAINTING ACCORDING TO C.M.S. 514, REPLACEMENT OF ANY DAMAGED SHEET LEAD, INSTALLATION OF ANY NECESSARY, VARIOUS THICKNESS, STEEL SHIMS OF THE SAME PLAN DIMENSIONS SIZE AS THE EXISTING BEARING PLATES TO PROVIDE A SNUG FIT, BUSHHAMMER OR GRINDING OF BEARING SEAT TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS.

THIS ITEM SHALL INCLUDE THE SURFACE PREPARATION AND PAINTING WITH PRIME, INTERMEDIATE, AND SURFACE COATS OF THE BEARING AND ANY WORK DAMAGED ADJACENT AREAS AS DIRECTED BY THE ENGINEER. THE PAINT MAY BE APPLIED BY BRUSH ACCORDING TO 514.17.E. SOLVENT CLEAN THE BEARINGS AND ANY ADJACENT AREAS AS PER SSPC-SP 1 AND SSPC-SP 2, RESPECTIVELY, PRIOR TO PAINTING ACCORDING TO ITEM 514. THE CONTRACTOR SHALL PROVIDE CONTAINMENT TO MAINTAIN PROPER CURING TEMPERATURES.

ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - 516 - REFURBISH AND RESET BEARING.

ITEM 516 - RESET BEARING

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY REALIGN AND/OR ADJUST BRIDGE BEARINGS AS PER C.M.S. 516.07. THIS ITEM INCLUDES REMOVAL AND REPLACEMENT OF THE EXISTING 1/8 INCH THICK SHEET LEAD, CONFORMING TO 711.19. THIS ITEM SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER. FOR BIDDING PURPOSES ONLY, AN ESTIMATED QUANTITY OF:

BR. NO. GUE-77-0143 LEFT = 6 EACH (AT PIER 1 ROCKER BEARINGS)
BR. NO. GUE-77-0143 RIGHT = 6 EACH (AT PIER 1 ROCKER BEARINGS)

HAS BEEN CARRIED IN THE BRIDGE SUMMARY.

ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - RESET BEARING.

ITEM 519 - PATCHING CONCRETE STRUCTURE

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PATCH UNSOUND AND/OR DETERIORATED AREAS OF CONCRETE WITHIN THE ABUTMENT BEARING SEATS, ABUTMENT BREASTWALL FACES, AND PARAPETS AT ALL LOCATIONS ON BR. NO.'s GUE-77-0143 L&R. THE AREAS WILL BE IDENTIFIED BY THE PROJECT ENGINEER PRIOR TO STARTING ANY REMOVAL WORK ASSOCIATED WITH THIS ITEM. FINAL QUANTITIES TO BE PAID FOR THIS WORK WILL BE BASED ON FIELD MEASUREMENTS OF THE ACUTAL WORK. FOR BIDDING PURPOSES ONLY, AN ESTIMATED QUANTITY OF:

BR. NO. GUE-77-0143		
(LEFT)	(RIGHT)	
16 SF	2 SF	(ABUTMENT BEARING SEATS)
32 SF	2 SF	(ABUTMENT BREASTWALL FACES)
36 SF	40 SF	(PARAPET FACES)
TOTAL=84 SF		44 SF

TOTAL = 84 SQ FT, GUE-77-0143 L
TOTAL = 44 SQ FT, GUE-77-0143 R

HAS BEEN CARRIED IN THE BRIDGE SUMMARY.

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

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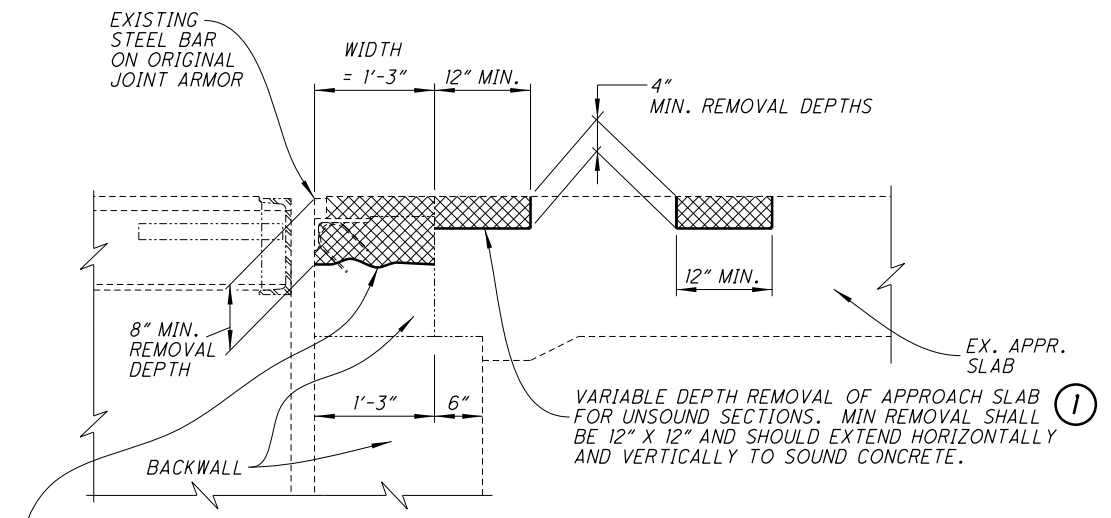
(BRIDGE NO. GUE-77-0143 L/R)
(SFN'S: 3002462 / 3002497)

BRIDGE NOTES

GUE-77-0.00

10 / 14

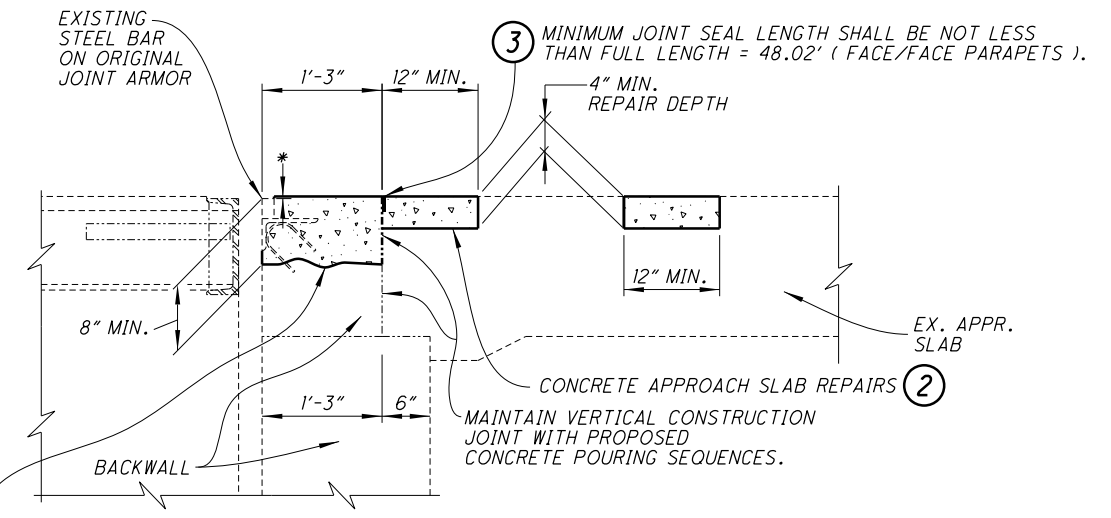
47
51



BR. NO.'s GUE-77-0143 L/R
 (EXISTING TYP. ABUTMENT SECTION
 IN LANES & SHOULDERS: 4 TOTAL ABUTMENTS)

NOTE:
 RESTEEL NOT SHOWN.
 ALL RESTEEL AND JOINT
 ARMORS SHALL BE
 PRESERVED IN PLACE.
 SUPPORT JOINT ARMOR
 AS NECESSARY.

VARIABLE DEPTH REMOVAL OF BACKWALL ①
 FOR UNSOUND SECTIONS OF BACKWALL.
 MINIMUM REMOVAL SHALL BE NOT LESS
 THAN FULL LENGTH X FULL BACKWALL WIDTH
 = 48.02' X 1.25' (FACE/FACE PARAPETS).
 EXTEND DOWN TO SOUND CONCRETE.



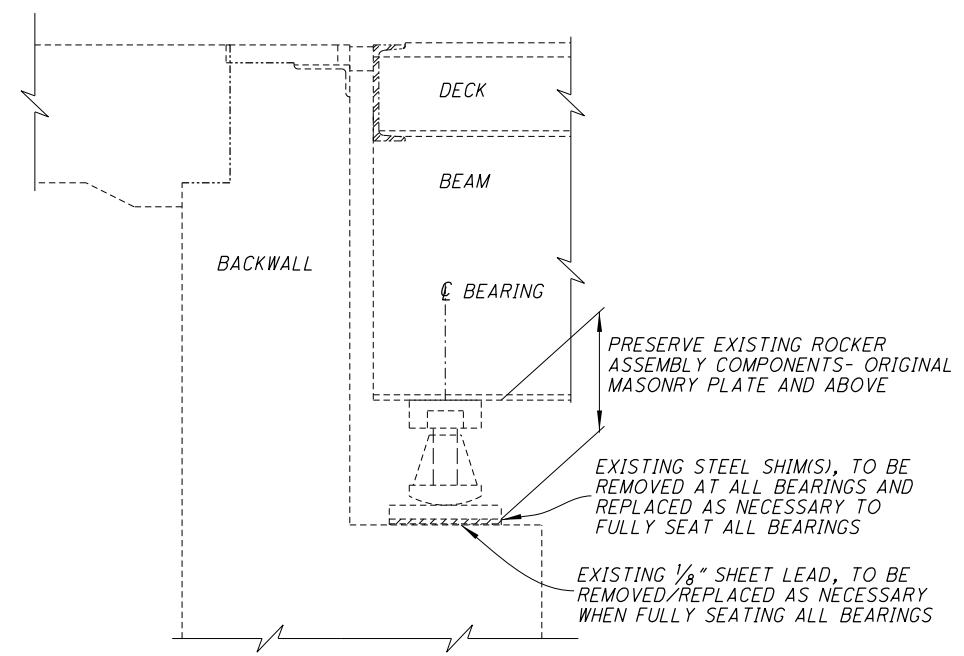
BR. NO.'s GUE-77-0143 L/R
 (PROPOSED TYP. ABUTMENT SECTION
 IN LANES & SHOULDERS: 4 TOTAL ABUTMENTS)

NOTE:
 RESTEEL NOT SHOWN.
 ALL RESTEEL AND JOINT
 ARMORS SHALL BE
 PRESERVED IN PLACE.
 SUPPORT JOINT ARMOR
 AS NECESSARY.

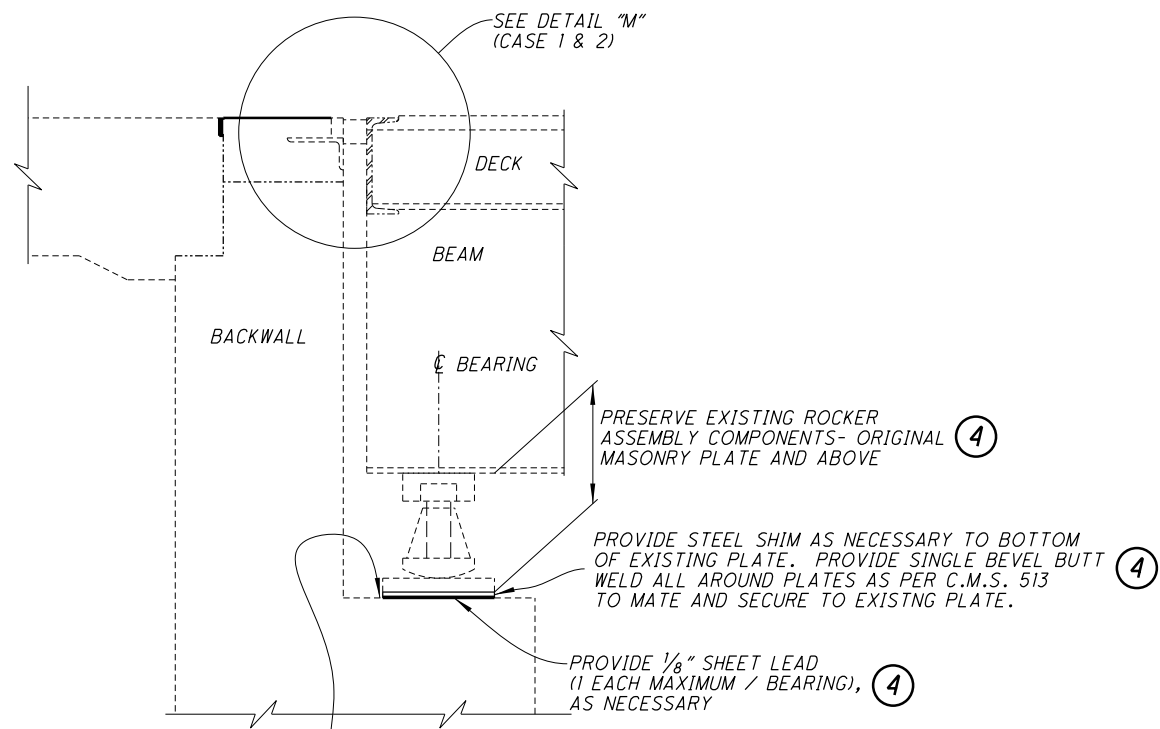
CONCRETE BACKWALL REPAIRS ②
 MINIMUM REPAIR SHALL BE NOT LESS
 THAN FULL LENGTH X FULL BACKWALL WIDTH
 = 48.02' X 1.25' (FACE/FACE PARAPETS).

- ① - [Cross-hatched pattern] ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
- ② - [Dotted pattern] ITEM 511 - CLASS OC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE
- ③ - [Solid black] ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

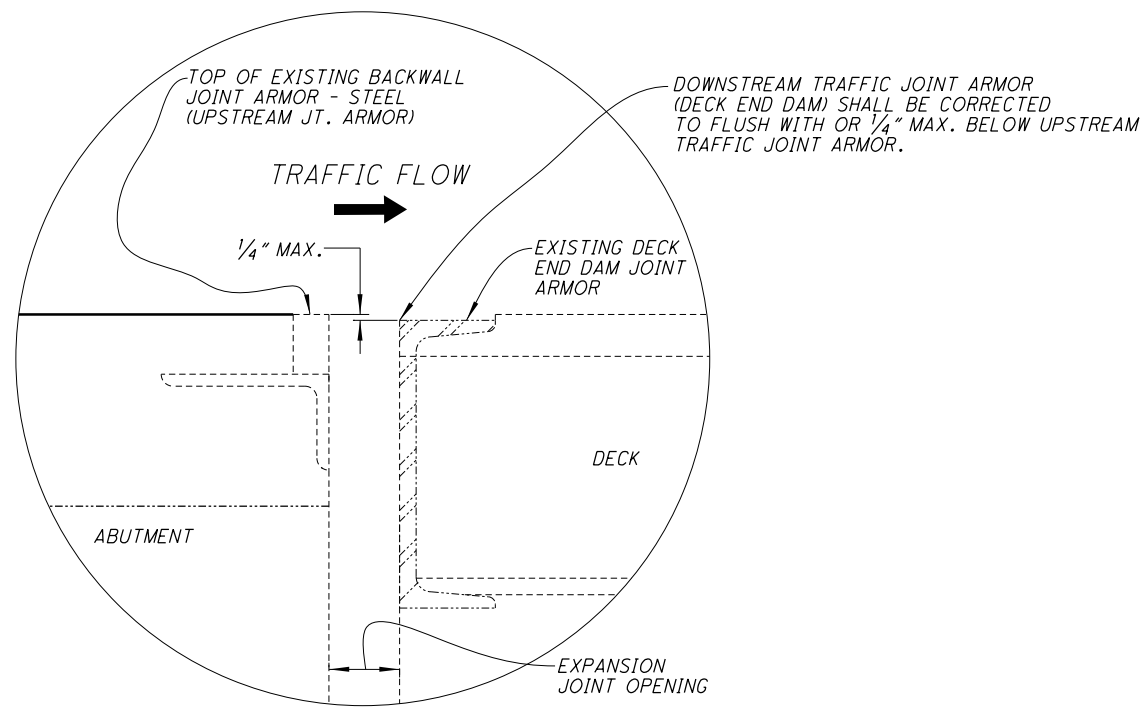
* - FINISH PROPOSED CONCRETE 0" TO 1/4" ABOVE EXISTING JOINT ARMOR.



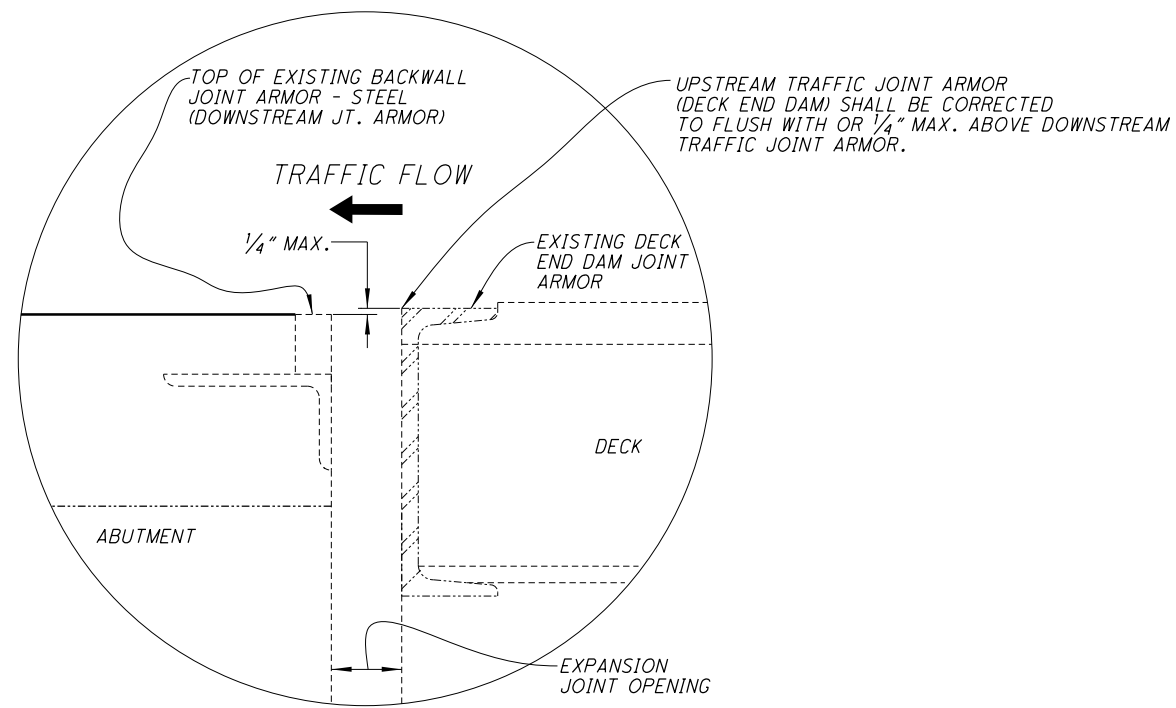
EXISTING
(BRIDGE NO. GUE-77-0143 L/R)



PROPOSED ④
(BRIDGE NO. GUE-77-0143 L/R)



DETAIL "M" ④
(CASE 1)
(BRIDGE NO. GUE-77-0143 L/R)



DETAIL "M" ④
(CASE 2)
(BRIDGE NO. GUE-77-0143 L/R)

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(BRIDGE NO. GUE-77-0143 L/R)
(SFN's: 3002462 / 3002497)

BEARING DETAILS AT ABUTMENTS

GUE-77-0.00

12 / 14

49
51

PROJECT LOCATIONS						
LOCATION	COUNTY	ROUTE	BRIDGE NUMBER	SFN	LATITUDE	LONGITUDE
1	GUE	IR 77	0111 L	3002403	39.912046	-81.526567
2	GUE	IR 77	0111 R	3002438	39.912046	-81.526567
3	GUE	IR 77	0143 L	3002462	39.916660	-81.526646
4	GUE	IR 77	0143 R	3002497	39.916660	-81.526646

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.

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

ITEM 512 SEALING CONCRETE BRIDGE DECKS WITH HMWM

THIS WORK CONSISTS OF SEALING CONCRETE DECKS WITH HMWM AS PER CMS 512.04 AND 705.25. CONTRACTOR SHALL ENSURE ALL DIRT AND DEBRIS IS CLEARED FROM BRIDGE AND EXPANSION JOINTS PRIOR TO SEALING AND ALL OTHER WORK SHALL BE DONE PRIOR TO SEALING THE BRIDGE DECK. REMOVE ALL PERMANENT PAVEMENT MARKINGS PRIOR TO SEALING THE DECK. PERFORM ALL CONCRETE PATCHING REQUIREMENTS PRIOR TO SEALING THE DECK. CONTRACTOR SHALL ENSURE THAT HMWM IS NOT APPLIED TO THE EXPANSION JOINTS OF THE BRIDGE. THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 512 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN.

THE FOLLOWING TABLE SHOWS THE ESTIMATED QUANTITIES OF ITEM 512 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN.

LOCATION	BRIDGE NO.	DECK/BACKWALL AREA (SY)	APPROACH SLAB AREA (SY)	SUB-TOTALS
1	GUE-77-0111 L	618	276	894
2	GUE-77-0111 R	486	217	703
3	GUE-77-0143 L	570	217	787
4	GUE-77-0143 R	570	217	787
SUB-TOTAL		2,244	927	
TOTAL		3,171		

PERMANENT PAVEMENT MARKINGS

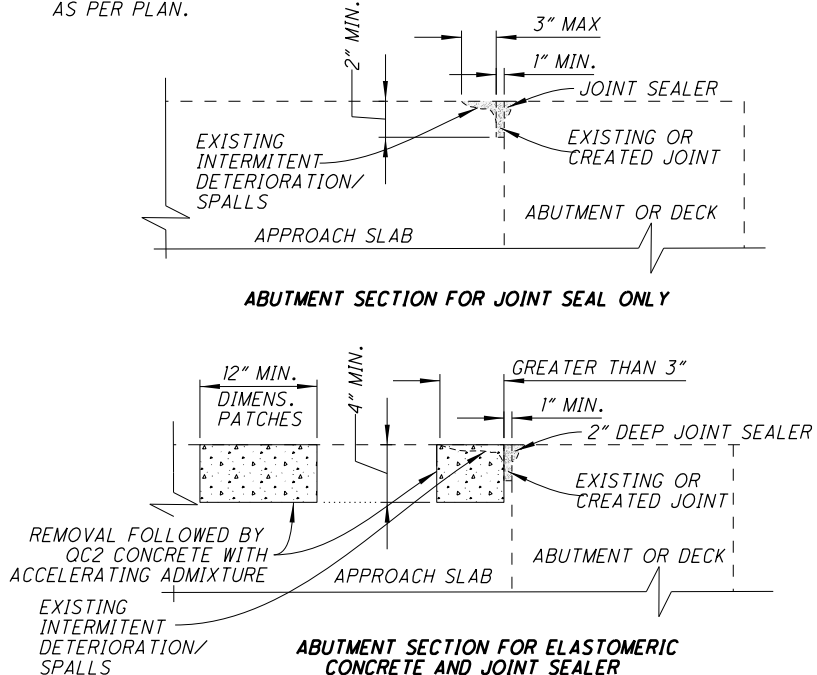
THE FOLLOWING PAVEMENT MARKING AND REMOVAL ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY AND ARE TO BE USED AS DIRECTED BY THE ENGINEER.

LOCATION	BRIDGE NO.	646	646		
		EDGE LINE, 6"	LANE LINE, 6"		
		MILE	MILE		
1	GUE-77-0111 L	0.06	0.03		
2	GUE-77-0111 R	0.06	0.03		
3	GUE-77-0143 L	0.07	0.04		
4	GUE-77-0143 R	0.07	0.04		
TOTAL CARRIED TO GENERAL SUMMARY		0.26	0.14		

LOCATION	BRIDGE NO.	ITEM 512-REMOVAL OF EXISTING COATINGS ... DECK/B.WALLS (S.Y.)	ITEM 512-REMOVAL OF EXISTING COATINGS ... APP. SLABS (S.Y.)	SUB-TOTALS
3	GUE-77-0143 L	29	6	35
4	GUE-77-0143 R	29	6	35
SUB-TOTAL		58	12	
TOTAL		70		

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

PERFORM THE FOLLOWING WORK PRIOR TO THE SEALING HAS BEEN PERFORMED ON THE BRIDGE DECK. FOR THE LOCATIONS PROVIDED REMOVE ANY COMPRESSION SEAL, FOREIGN MATERIAL, AND DEBRIS FROM THE EXISTING JOINT BETWEEN THE APPROACH SLAB AND ABUTMENT BACKWALL. ANY SPALLS ADJACENT TO THE JOINT LESS THAN OR EQUAL TO 3" SHALL BE CLEANED AND SEALED WITH THE JOINT. FOR SPALLS GREATER THAN 3" SEE ITEM 511 - CLASS OC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE NOTE. IF ONLY A SAWCUT EXISTS AT THIS LOCATION, PERFORM A NEW SAWCUT TO ESTABLISH A 1" WIDE BY 2" DEEP JOINT ALONG THIS INTERFACE. ONCE THE JOINT HAS BEEN OPENED OR CREATED, AIRBLAST THOROUGHLY PRIOR TO PLACEMENT OF HOT APPLIED JOINT SEALER AS PER 705.04 AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516 - JOINT SEALER, AS PER PLAN.



FOR THE FOLLOWING BRIDGES REMOVE PORTIONS OF THE JOINT SEALER ADJACENT TO THE CONCRETE REPAIRS AND REPLACE WITH JOINT SEALER.

ESTIMATED QUANTITIES FOR BRIDGE NO.'S:

GUE-77-0111R = 4.0 FT TOTAL

ITEM 202 - PORTION OF STRUCTURE REMOVED, AS PER PLAN

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

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

ESTIMATED QUANTITIES FOR BRIDGE NO.'S:

GUE-77-0111 R = 1 CU YD

ITEM 614 MAINTAINING TRAFFIC (DECK SEALING)

DO NOT EXCEED THE PERMITTED LANE CLOSURE TIMES POSTED ON THE DEPARTMENT'S PERMITTED LANE CLOSURE WEB SITE OR THE LANE VALUE CONTRACT TABLE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SUBMIT A LANE CLOSURE APPLICATION REQUEST FORM TO THE ENGINEER IN WRITING, THREE (3) WORKING DAYS IN ADVANCE OF THE LANE(S) CLOSURES UNLESS OTHERWISE DIRECTED BY THE ENGINEER. NO LANE CLOSURES WILL BE PERMITTED DURING HOLIDAYS OR SPECIAL EVENTS, SEE SPECIAL EVENTS/HOLIDAY NOTE.

FOR BRIDGES:
GUE-77-0111 L/R
GUE-77-0143 L/R

MAINTAIN TRAFFIC ON THE BRIDGE ACCORDING TO STANDARD DRAWING MT-95.30 CLOSE THE RIGHT OR LEFT LANES AND STANDARD DRAWING MT-98.29 FOR CLOSING OF RAMPS AS NEEDED OR DIRECTED BY THE ENGINEER.

CLOSING THE LANES BEFORE THE ALLOWABLE TIME AND/OR FAILURE TO RE-OPEN ALL LANES TO TRAFFIC AS DESIGNATED IN THE PLANS WILL RESULT IN A DISINCENTIVE AS DESIGNATED IN THE LANE VALUE CONTRACT PROPOSAL NOTE 127.

PLACE AN OCCUPIED SHADOW VEHICLE EQUIPPED WITH A TRUCK-MOUNTED ATTENUATOR (TMA) WHENEVER MAINTAINING TRAFFIC ACCORDING TO STANDARD DRAWING MT-95.30 OR AS DIRECTED BY THE ENGINEER. EQUIP THE VEHICLES WITH A 360 DEGREE ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE FROM A MINIMUM DISTANCE OF 1 QUARTER MILE.

PERFORM ALL WORK AND SUPPLY ALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH CMS 614 AND LATEST VERSION OF 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.

LANE VALUE CONTRACT TABLE

DESCRIPTION OF CRITICAL LANE/RAMP TO BE MAINTAIN	RESTRICTED TIME PERIOD	TIME UNIT	\$ PER TIME UNIT
ALL LANES OF IR-77	ODOT WEB SITE: PERMITTED LANE CLOSURE TIMES	EACH HOUR	\$10,000

THE FOLLOWING LINK SHOWN BELOW WILL PROVIDE THE PERMITTED LANE CLOSURE TIMES:

<http://plcm.dot.state.oh.us/PLCMsearch.aspx>

ITEM 511 - CLASS OC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE

TO EXPEDITE WORK, CLASS OC2 CONCRETE WITH AN ACCELERATING ADMIXTURE SIKA RAPID-1 OR ANY APPROVED EQUIVALENT ADMIXTURE SHALL BE USED IN ALL REPAIR LOCATIONS TO ACHIEVE 3,000 PSI COMPRESSIVE STRENGTH IN 12 HRS. USE A NON-CHLORIDE ACCELERATING ADMIXTURE AND PROVIDE DOCUMENTATION THAT THE MIX WILL PROVIDE THE STRENGTH IN THE SPECIFIED TIME.

THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

AT LEAST 5 DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A SCHEDULE OF REPAIR WORK ITEMS TO BE COMPLETED. THE SCHEDULE SHALL INCLUDE A BREAKDOWN OF ALL MAJOR WORK ACTIVITIES ON AN HOURLY BASIS. REPAIR WORK SHALL NOT BEGIN UNTIL THE SCHEDULE IS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL CONTINUE THE WET CURE FOR THE MAXIMUM NUMBER OF HOURS POSSIBLE DURING THE PERMITTED LANE CLOSURE. THE CLOCK STARTS FOR THE WET CURE WHEN THE CONCRETE PLACEMENT IS COMPLETE.

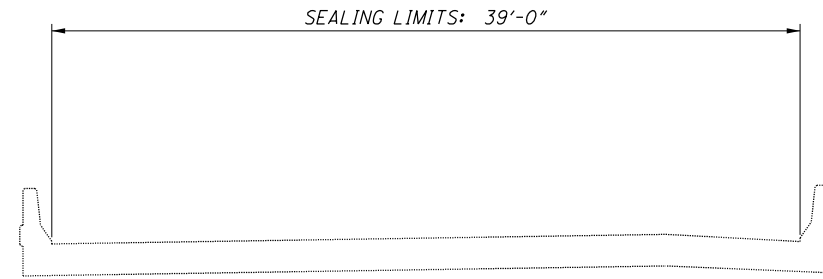
TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED CONCRETE SURFACE UNTIL AFTER COMPLETION OF A 12 HOUR MINIMUM WET CURE AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 400 PSI.

PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR, EQUIPMENT, AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 511 - CLASS OC2 CONCRETE, MISC.: ACCELERATING ADMIXTURE.

ESTIMATED QUANTITIES FOR BRIDGE NO.'S:

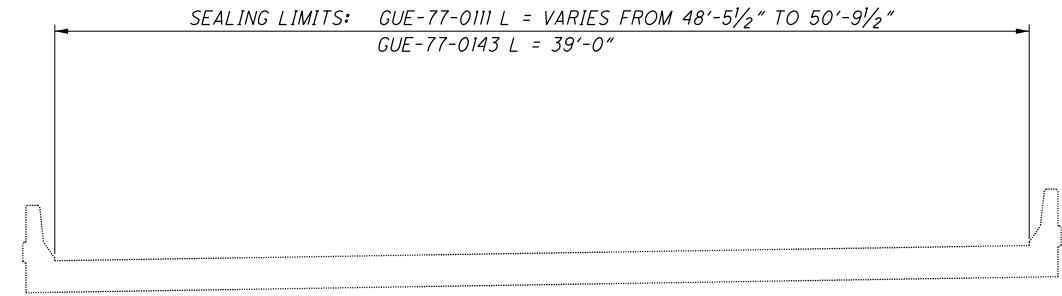
GUE-77-0111 R = 1 CU YD

GUE-77-0111 L/R: SFN's 3002403 / 3002438
 GUE-77-0143 L/R: SFN's 3002462 / 3002497



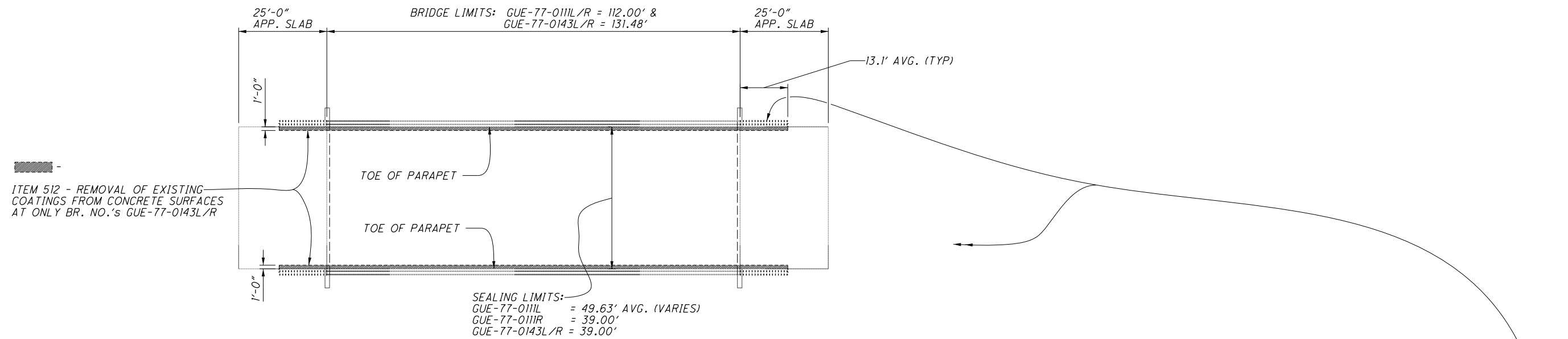
TRANSVERSE SECTION NORTHBOUND LANES

GUE-77-0111 R
 GUE-77-0143 R

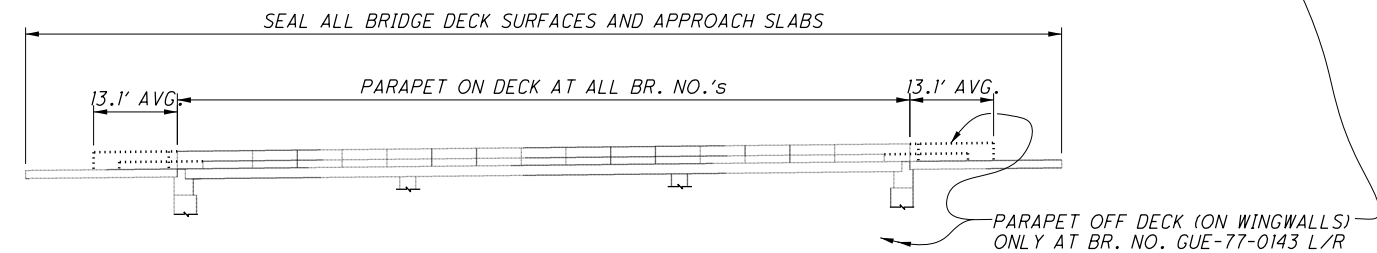


TRANSVERSE SECTION SOUTHBOUND LANES

GUE-77-0111 L
 GUE-77-0143 L



PLAN
 GUE-77-0111 L/R
 GUE-77-0143 L/R



ELEVATION
 GUE-77-0111 L/R
 GUE-77-0143 L/R

I:\ProjectData\GUE\93022\Design\Structures\GUE077_012C\Sheets\077_012C_SM001.dgn Sheet 9/14/2018 4:52:11PM jlutzi

DESIGN AGENCY
 OHIO DEPARTMENT OF
 TRANSPORTATION, DISTRICT 5

REVIEWED
 JDR
 DATE
 8/1/2018
 STRUCTURE FILE NUMBER

DRAWN
 NEM
 REVISED

DESIGNED
 NEM
 CHECKED
 TAG

SEALING DETAILS
 BRIDGE NO.'s GUE-77-0111 L/R & GUE-77-0143 L/R
 I.R. 77 OVER SENECA FORK & S.R. 313

GUE-77-0.00
 PID No. 93022

14 / 14

51
 51

SPECIAL PROVISIONS

WATERWAY PERMITS CONDITIONS

C-R-S: GUE-IR77-0.00

PID: 93022

Date: September 4, 2018

1. Waterway Permits Time Restrictions:

Regional General Permit B is authorized for GUE-77-0.00 (PID 93022). A copy of the RGP shall be kept at the work site at all times and made available to all contractors and subcontractors. The permit is effective starting: September 4, 2018. The permit expires: October 24, 2019.

For authorized work in aquatic resources (including streams, wetlands, jurisdictional ditches, captured streams, lakes, ponds), the Department will consider the Contractor's submission of a reauthorization to the waterway permit expiration date based on project constraints. If more than one permit is authorized for the project, then all permits become invalid once the first permit expires. In order for the request to be considered, the Contractor must submit a justification to the Engineer at least 90 days prior to the waterway permit expiration date. The Engineer will submit the request for a time extension to the Ohio Department of Transportation, Office of Environmental Services, Waterway Permits Unit (ODOT-OES-WPU) for consideration and coordination with the U.S. Army Corps of Engineers (USACE), Ohio Environmental Protection Agency (OEPA), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), and Ohio Department of Natural Resources (ODNR) as appropriate.

2. Deviations From Permitted Construction Activities

No deviation from the requirements for work in aquatic resources depicted in the plans, Special Provisions, and/or Working Drawings may be made unless a modification has been submitted to ODOT-OES-WPU and approved by the appropriate agencies (i.e., USACE, OEPA, USCG, ODNR, and USFWS).

For emergency situations resulting in unanticipated impacts to aquatic resources, provide notification (verbal or written) to the Engineer as soon as possible following discovery of the situation. Written notification to the Engineer and notification to the ODOT-OES-WPU (614-466-7100) must be made within 24 hours.

For non-emergency situations, notify the Engineer in writing for submission to the ODOT-OES-WPU (614-466-7100) for consideration and coordination with the appropriate agencies. Notification must be made at least 90 days prior to planned, non-permitted activities. Consideration of the requested deviation is at the discretion of the Director and must be coordinated with the appropriate regulatory agencies.

3. In-Stream Work Restrictions

Work in the following aquatic resources is further restricted as follows:

Stream Name /Description	Location	Work restriction dates (No in-stream work permitted)
Seneca Fork Wills Creek	STA. 59+00	April 15 to June 30*

*Restriction dates do not apply if the stream has been dewatered prior to April 15.

In-stream work has been defined as the placement and/or removal of fill materials (temporary or permanent) below ordinary high water of a stream. Examples of "fill" include, but are not limited to: bridge piers, abutments, culverts, rock channel protection, scour protection, and temporary access fills.

Fills placed within a stream identified in the above table (outside of the work restriction dates) can

continue to be worked from during the work restriction dates, but cannot be expanded, removed, or otherwise modified (below ordinary high water) until once again outside of the work restriction dates.

4. Materials:
Materials utilized in or adjacent to aquatic resources for temporary or permanent fill or bank protection shall consist of suitable material free from toxic contaminants in other than trace quantities. Broken asphalt is specifically excluded. Chromated Copper Arsenate (CCA), creosote, and other pressure treated lumber shall not be used in structures that are placed in aquatic resources.

5. Cultural Resources
Per CMS 107.10, if archeological sites, historical sites, or human remains are discovered, cease all work in the immediate area and notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-Cultural Resource Section at 614-466-7100. In the event of human remains are identified by OES-Cultural Resources Section, the Engineer shall also contact the Guernsey County Sheriff's Office at (740) 439-4455.

6. Aquatic Resource Demarcation:
All aquatic resources indicated on the plans shall be demarcated in the field as per SS 832 prior to site disturbance. The remainder of the aquatic resources must be demarcated as to ensure avoidance. The fence shall remain in place and be maintained throughout the construction process. Following the completion of the project, the fence and posts shall be removed.

Resource ID	Resource Location	Impact Location	Permanent Impact Amount	Temporary Impact Amount
Seneca Fork Creek	GUE-77-1.11	STA. 59+00	110 ft. (0.003 ac.)	200 ft. (0.15 ac.)

7. Spill containment:
Provide and Maintain an Oil Spill Kit with a minimum capacity of 65 gallons. The Spill Kit shall contain:
 - 6 - 3 in. X 8 ft. Oil only socks
 - 4 - 18 in. X18 in. Oil only pillows
 - 2 - 5 in. X 10ft. Booms
 - 50 - 16in. X 20 in. Oil only pads
 - 10- Disposable Bags
 - 1- 65 Gallon drum with lid
 - 25 pounds of Granular Oil Absorbent

The Oil Spill Kit shall be located within 150 feet of any equipment working in a stream or wetland. The oil Spill Kit shall be maintained for the life of the contract. Any materials utilized during the project will be replaced within 48 hours. All costs associated with furnishing and maintaining the above referenced spill containment kit is incidental to work.

8. Blasting:

State law requires notification to the Ohio Department of Natural Resources should blasting be required within or near stream channels (See ORC 1533.58 & CMS 107.09). Notify the Engineer, in writing, a minimum of 30 days in advance of blasting, for submission to ODOT-OES-WPU (614-466-7100) for coordination with ODNR.

9. Bridge Inspection:
Prior to the removal of bridge structures, the underside must be carefully examined for the presence of birds and bats. Should any birds or bats be found roosting on the underside of the bridge, the Contractor is required to notify the Engineer for coordination with ODOT-OES-WPU (614-466-7100).

10. Project Inspection:
Inspection of Work may include inspection by representatives of other government agencies or railroad corporations that pay a portion of the cost of the Work or regulate the Work through State and Federal law. Comments from the representatives of these agencies shall be directed to the Engineer. Please forward a copy to ODOT-OES-WPU (614-466-7100).

11. Temporary Access Fills (Stream and River Crossings and Fills)
Note: The Seneca Fork Wills Creek channel must remain open for paddlers during construction. (i.e a temporary crossing may not be constructed. Temporary fills are permitted as necessary for pile encasements.

Special Provisions Notes:

Definitions:

Hydraulic Opening
The cross-sectional area allowing an unimpeded discharge equal to twice the highest monthly flow without producing a rise in the backwater above the Ordinary High Water Mark (OHWM).

Standard Temporary Discharge
Discharge equal to twice the *highest monthly flow* without producing a rise in the backwater above the OHWM. The U.S. Geologic Service publication "Techniques for estimating Selected Streamflow Characteristics of Rural Unregulated Streams in Ohio" provides equations that estimate monthly flow for Ohio Waterways These flows are also available in a web application by USGS StreamStats, (<https://water.usgs.gov/osw/streamstats/ohio.html>).

Average Monthly Flow
The average monthly flow represents the estimated "normal" flow.

Temporary Access Fills (TAFs)
Include, but are not limited to, causeways, cofferdams, access pads, temporary bridges, etc. below the OHWM.

Requirements
21 calendar days prior to the initiation of any in-stream work, provide the Engineer with Working

Drawings that include:

- Plan view drawing (50 scale or less) showing the location of all jurisdictional temporary fill proposed for use on the project
- Scaled cross section and profile drawing showing the OHWM and the proposed hydraulic opening.
- Calculations analyzing the hydraulic impacts of the TAF on the waterway. Include in the calculations an analysis of the hydraulic opening sized adequately to pass the Standard Temporary Discharge without producing a rise in backwater above the OHWM. Include, in the analysis, calculated channel velocities adjacent to the TAF, culvert exit velocities, calculated headwater and tailwater elevations, and any additional appropriate calculations to assess potential impacts to the waterway during normal and anticipated high flow (twice the highest monthly flow) events.
- A description of the installation and staging of all temporary fill over the life of the contract.
- A description of the removal of all temporary fill and restoration of the channel and all areas impacted by the temporary fill.
- A schedule outlining the timing of the placement and removal of all temporary fill.
- Have competent individuals prepare and check the Working Drawings and hydraulic calculations. Provide a cover sheet containing the preparer(s) and checker(s): First Name, Last Name and Initials. The preparer(s) and checker(s) shall not be the same individual. Have an Ohio Registered Engineer review, approve, sign, seal and date the Working Drawings and hydraulic calculations according to ORC 4733 and OAC 4733-35. Include the following statement on the Working Drawings:
"These Working Drawings were prepared in compliance with the terms of these Special Provisions and all contract documents."

Do not begin in-stream work until the Engineer has accepted the Working Drawings and hydraulic calculations.

The design of the Contractor's TAF must minimize impacts to water bodies, stream banks, stream beds, and riparian zones to the maximum extent practicable.

Fording of streams and rivers is prohibited.

Construct TAFs in such a manner that will maintain flows, minimize upstream flooding, and avoid overtopping the TAF on a regular basis. *TAFs shall be designed and constructed so that the hydraulic opening provides capacity for a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the (OHWM).*

If the OHWM is not shown on the plans, the Department will establish the OHWM based on the definition of OHWM (as defined in SS 832) or the peak discharge from the 2-year event, using the method described in the most current version of the Department's Location and Design Manual Volume II.

If the Contractor proposes a TAF which does not meet all the requirements of these Special Provisions, the Contractor must submit a request in writing for a modified TAF to the Engineer. The request must include all Working Drawings and hydraulic calculations required by these Special Provisions. The Department makes no guarantee to grant the request. The Contractor's proposed TAF request will be coordinated by OES with the USACE and the OEPA, as appropriate. The time frame allowed for the coordination of the contractor's proposed TAF will be a minimum of 60 days.

Installation of any temporary fill without appropriate authorization is strictly prohibited. All direct coordination with the USACE and/or OEPA will be performed through OES.

TAFs Construction and Payment

Begin planning and installing causeways and access fills as early in construction as possible to avoid conflicts with these Special Provisions or other environmental commitments that have been included in

the construction plans.

TAFs in Streams and Rivers may include, but are not limited to, causeways, cofferdams, access pads, sheet piling, temporary bridges, etc. The Contractor must make every attempt to minimize disturbance to waterbodies, stream banks, stream beds and riparian zones during the construction, maintenance, and removal of the TAF. Construct the TAFs as narrow as practical. Install in-stream conduits parallel to the stream banks. Make the TAFs in shallow areas rather than deep pools where possible. Minimize clearing, grubbing, and excavation of stream banks, and approach sections. Construct the TAFs as to not erode stream banks or allow sediment deposits in the channel.

Prior to the initiation of any in-stream work, establish a monument upstream of the proposed TAF to visually monitor the water elevation in the waterway where the fill is permitted. Maintain the monument throughout the project. Provide a visual mark on the monument that identifies the elevation 1 foot above the OHWM. Ensure that the monument can be read from the bank of the waterway. Have this elevation set and certified by an Ohio Registered Surveyor. All costs associated with furnishing and maintaining the above referenced monument is incidental to the work.

Should the surface water elevation exceed the elevation 1 foot above OHWM, the Department will compensate the Contractor for repair of any resulting damage to the TAF up to the elevation of 1 foot above the OHWM, except as noted. The Department will recognize this event as an excusable, non-compensable delay in accordance with Section 108.06 of the Construction & Materials Specifications.

Follow the requirements in Item 502 for Structures for Maintaining Traffic and in Item 503 for Cofferdams and Excavation Bracing and any modifications to these items as shown in the plans. The Department will not pay for repair and maintenance of TAFs associated with Items 502 and 503 as a result of surface water elevation exceeding 1 foot above the OHWM. Compensation for damages associated with waterway flows will be provided as described in Items 502 and 503.

Construct the TAFs, not including Items 502 and 503, to a water elevation at least 1 foot (0.3 m) above the OHWM. If more than one-third the width of the stream is filled, then use culvert pipes to allow the movement of aquatic life. Ensure that any ponding of water behind the causeway and access fills will not damage property or threaten human health and safety.

The following minimum requirements apply to TAFs where culverts are used.

- Furnish culverts on the existing stream bottom.
- Avoid a drop in water elevation at the downstream end of the culvert that would result in an adverse impact to the waterway.
- Furnish a sufficient number of culverts in addition to stream openings to provide a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the OHWM.
- Furnish culverts with a minimum diameter of 18 inches (0.5 m).

All TAFs must be constructed of suitable materials. Causeways and access fills must be encapsulated with clean, non-erodible, nontoxic Dumped Rock Fill, Type A, B, C, or D, as specified in C&MS 703.19.B. Extend rock fill up the slope from original stream bank for 50 feet (10 m) to catch and remove erodible material from equipment.

When the work requiring TAF is complete, all portions of the TAF (including all rock and culverts) will be removed in its entirety. Do not dispose of TAF material in other aquatic resources or where erosion into another aquatic resource is possible. The stream bottom affected by the causeway and access fills will be restored to its pre-construction elevations. The TAF will not be paid as a separate item but will be included by the Contractor as part of the total project cost.

Unless specific TAF compensation is included in the plans, all environmental protection and control associated with the authorized activities, are incidental to the work within the boundaries of the aquatic resources.

12. Excavation Activities:

Excavated material will be placed at an upland site and disposed of in such a manner that sediment and runoff to streams and other aquatic resources is controlled and minimized. Additionally, no more than incidental fallback into jurisdictional waters of the U.S. is permitted during the excavation process. If any changes to the proposed work are deemed necessary, you must notify and coordinate with the ODOT-OES-WPU (614-466-7100).

13. Demolition Debris:

The temporary discharge of demolition debris (pile encasements) into Seneca Fork is conditionally authorized for this project. Demolition debris may not remain in the waterway for more than 72 hours and must be removed in its entirety. If removal of debris material cannot be achieved within 72 hours, notify the Engineer in writing and contact ODOT-OES-WPU at 614-466-7100.

Version: 2017

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
PAVER MOUNTED THERMAL PROFILING

September 12, 2017

- 000.01 Description
- 000.02 Equipment
- 000.03 Thermal Profile Data Collection
- 000.04 Thermal Profile Analysis Software
- 000.05 Calculations Submittals
- 000.06 Basis of Payment

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

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

- A. PMTP System Supplier. Use a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing, as needed, during the Project to maintain equipment within specifications and requirements.
- B. PMTP System Software. Provide the Engineer with access to the cloud storage and cloud computing before the start of paving requiring the PMTP method until ninety (90) days after final acceptance of all work.

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

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

C. PMTP System

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

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

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

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

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

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

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

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

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

Item No.	Description	Example Data included in Header
9	Number of surface temperature measurement data blocks	5000

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

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

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

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

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

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

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

000.03 Thermal Profile Data Collection.

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

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

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

Standardized Format	Definition
ROUTE-MATL-L#-XXX-XXX	Undivided Highways (e.g., US40-424B-L1-12L-CL)
ROUTE-MATL-L#-XXX-XXX-DT	Divided Highways (e.g., I70-19.0mm-L3-12L-CL-NB)

Abbreviation	Definition																																	
ROUTE	<p>ROUTE DESIGNATION. Replace "ROUTE" with the route system, as designated by the following acronyms or short form, immediately followed by the route number (e.g., I70).</p> <table border="1"> <thead> <tr> <th>Acronym or Short Form</th> <th>Full Name or Meaning</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>Interstate Highway</td> </tr> <tr> <td>US</td> <td>US Highway</td> </tr> <tr> <td>SR</td> <td>State Route</td> </tr> <tr> <td>CR</td> <td>County Road</td> </tr> <tr> <td>TH</td> <td>Township Highway</td> </tr> </tbody> </table>	Acronym or Short Form	Full Name or Meaning	I	Interstate Highway	US	US Highway	SR	State Route	CR	County Road	TH	Township Highway																					
Acronym or Short Form	Full Name or Meaning																																	
I	Interstate Highway																																	
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...	...																																	
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Table 2016-5 (PMTP) Standardized Abbreviations for Thermal Profile Lots											
Abbreviation	Definition										
XXX-XXX	CENTERLINE OFFSET. The location of the left and right edge of the production area with respect to the centerline, facing in the direction of increasing stationing. Stationing typically increases from West to East and South to North. Each character of the abbreviation is defined as the following: <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; padding: 2px;">XX</div> <div style="border: 1px solid black; padding: 2px;">X</div> <div style="border: 1px solid black; padding: 2px;">-</div> <div style="border: 1px solid black; padding: 2px;">XX</div> <div style="border: 1px solid black; padding: 2px;">X</div> </div> <p>(a) (b) (c) (d)</p>										
	(a) The offset distance (in feet rounded to the whole number) from the centerline to the left edge of the production area (e.g., CL, 12, 24). CL reflects the Center Line .										
	(b) R or L, to reflect Right (R) or Left (L) of Centerline, in the direction of increasing station numbering.										
	(c) The offset distance (in feet rounded to the whole number) from the centerline to the right edge of the production area (e.g., CL, 12, 24). CL reflects the Center Line .										
	(d) R or L, to reflect Right (R) or Left (L) of Centerline, in the direction of increasing station numbering.										
DT	DIRECTION OF TRAVEL. The direction of travel is designated by the following acronyms or short form:										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Acronym or Short Form</th> <th style="text-align: center;">Full Name or Meaning</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">NB</td> <td style="text-align: center;">North Bound</td> </tr> <tr> <td style="text-align: center;">SB</td> <td style="text-align: center;">South Bound</td> </tr> <tr> <td style="text-align: center;">EB</td> <td style="text-align: center;">East Bound</td> </tr> <tr> <td style="text-align: center;">WB</td> <td style="text-align: center;">West Bound</td> </tr> </tbody> </table>	Acronym or Short Form	Full Name or Meaning	NB	North Bound	SB	South Bound	EB	East Bound	WB	West Bound
	Acronym or Short Form	Full Name or Meaning									
	NB	North Bound									
	SB	South Bound									
EB	East Bound										
WB	West Bound										

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

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

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

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

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

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

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

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

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

Table 2016-6 (PMTP) Standardized Naming Convention for *.VETAPROJ Files *													
Abbreviation	Definition												
XX-XXXX	PROJECT NUMBER. Replace the "X's" with the project numbers (e.g., 16-0056).												
ROUTE	ROUTE NUMBER. Replace "ROUTE" with the route system, as designated by the following acronyms or short form, immediately followed by the route number(s) mapped in the given Veta project. (e.g., I70, US40, SR13)												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Acronym or Short Form</th> <th style="text-align: center;">Full Name or Meaning</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">I</td> <td style="text-align: center;">Interstate Highway</td> </tr> <tr> <td style="text-align: center;">US</td> <td style="text-align: center;">US Highway</td> </tr> <tr> <td style="text-align: center;">SR</td> <td style="text-align: center;">State Route</td> </tr> <tr> <td style="text-align: center;">CR</td> <td style="text-align: center;">County Road</td> </tr> <tr> <td style="text-align: center;">TH</td> <td style="text-align: center;">Township Highway</td> </tr> </tbody> </table>	Acronym or Short Form	Full Name or Meaning	I	Interstate Highway	US	US Highway	SR	State Route	CR	County Road	TH	Township Highway
	Acronym or Short Form	Full Name or Meaning											
	I	Interstate Highway											
	US	US Highway											
SR	State Route												
CR	County Road												
TH	Township Highway												
PMTP	PMTP reflects the paver mounted thermal profile method, the data set contained within the Veta project file.												
* Example *.VETAPROJ filename: 16-0056 US40 PMTP													

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

Table 2016-7 (PMTP) Standardized Naming convention for Veta Filter Group, Operation Filter and Sublot Names *	
Abbreviation	Definition
LOT#	<p>LOT NUMBER. The lot number is a two-digit number increasing sequentially (01, 02, 03, ..., n). Create filter groups, operation filters and sublot names in sequential order with respect to the lot dates.</p> <p>Lots containing Exceptions and/or Temporary Exceptions: Include a capital letter, in alphabetical order (A, B, ...), immediately after the two-digit lot number to designate the side of the exception, or temporary exception, that the thermal profile data reflects (e.g., 01A, 01B, 02A, 02B, ...).</p>
MM	MONTH (include leading zeros)
DD	DAY OF MONTH (include leading zeros)
YY	TWO-DIGIT YEAR
LOTNAME	STANDARDIZED LOT NAME per Table 2016-4 (PMTP)
*	Example Filter Group/Operation Filter Name (lot contains no exceptions): 01 070915 I70-12.5mm-L1-CL-12R, 02 071015 I70-12.5mm-L1-CL-12R, ...
*	Example Filter Group/Operation Filter Name (lot contains an exception): 01A 070915 I70-12.5mm-L1-CL-12R, 01B 070915 I70-12.5mm-L1-CL-12R, 02A 071015 I70-12.5mm-L1-CL-12R, 02B 071015 I70-12.5mm-L1-CL-12R, ...
	Temporary exceptions are areas to be paved at a later date.

000.05 Calculations and Submittals

A. Thermal Segregation

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

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

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

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

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

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

Table 2016-8 (PMTP) Sublot Temperature Differential	
Range Equation 2016-1 (PMTP)	Thermal Segregation Category
Range ≤ 25.0°F	Low
25.1°F < Range ≤ 50.0°F	Moderate
50.1 °F < Range	Severe

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

1. Thermal Profile Lot Length

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

Where:

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

2. Thermal Profile Lift Length

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

Where:

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

3. Thermal Coverage

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

Where:

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

C. Submittals

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

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

- (1) Alignment File
- (2) Surface Temperature Readings
- (3) Filter Groups per:
 - (3.1) lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL),
 - (3.2) lane and per lift (e.g., I70-19.0mm-L1-12L-CL) and
 - (3.3) lift (e.g., I70-19.0mm-L1)

- (4) Operation Filters per lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL)
- (5) Data Filter (Temperature \geq 180°F)
- (6) Sublot Creation per lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL)
- (7) Override Filters per Machine ID per:
 - (7.1) lift (e.g., I70-19.0mm-L1 Machine ID) and
 - (7.2) lane and per lift (e.g., I70-19.0mm-L1-12L-CL Machine ID)

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

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

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

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

Item	Unit	Description
XXX	Lump Sum	Paver Mounted Thermal Profiling

ITEM 690 SPECIAL - VOID REDUCING ASPHALT MEMBRANE (VRAM)
9/13/2017

General. As part of this project, the contractor will be required to construct sections of cold longitudinal joints using Void Reducing Asphalt Membrane (VRAM) material at specified locations. Provide additional cores samples, loose mix samples and liquid material samples as directed by the Engineer. Construct all surface course cold longitudinal joints VRAM material and conforming with the following requirements.

Materials. Provide J-band produced by Asphalt Materials, Inc. or other approved asphalt material as follows:

Provide a base asphalt modified with styrene-butadiene diblock or triblock copolymer without oil extension, or a styrene-butadiene rubber Elastomers. Do not use Air blown asphalt, acid modification, or other modifiers.

Test	Test Requirement	Test Method
Dynamic shear @ 82°C (unaged), G*/sin δ , kPa	1.00 min.	AASHTO T 315
Creep stiffness @ -18°C (unaged), Stiffness (S), MPa m-value	300 max. 0.300 min.	AASHTO T 313
Ash, %	6.0 max.	AASHTO T 111
Elastic Recovery, 100 mm elongation, cut immediately, 25°C, %	58 min.	AASHTO T301
Separation of Polymer, Difference in °C of the softening point (ring and ball)	3 max.	ASTM D7173, AASHTO T53
Migration of VRAM, %	50-75	ITM XYZ

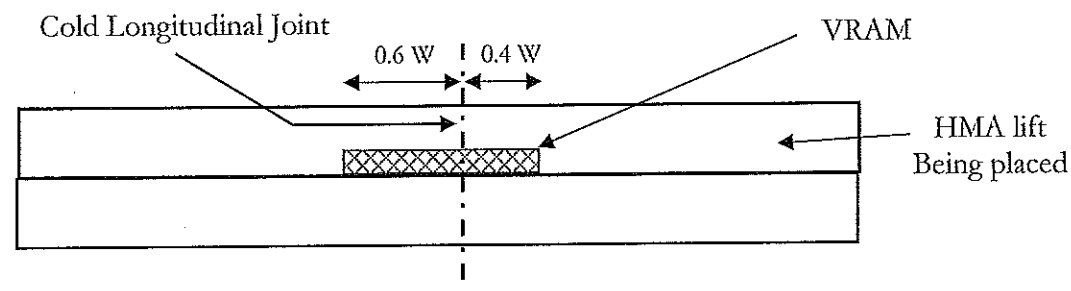
Equipment. When a pressure distributor is used to apply the VRAM, equip the distributor with a heating and recirculating system along with a functioning auger agitating system or vertical shaft mixer in the hauling tank to prevent localized overheating.

When a melter kettle is used to transport and apply the VRAM, use only oil jacketed double-boiler melter kettles with agitating and recirculating systems. Material from the kettle may be dispensed through a pressure feed wand with an applicator shoe or through a pressure feed wand into a hand-operated “thermal push cart.”

Preparation of Surface. Prior to placing VRAM, clean the pavement surface area to be treated of all foreign materials deemed detrimental by the Engineer. Only apply VRAM to surfaces that are dry and cleaned of all dust, debris, and any substances that will prevent the VRAM from adhering. The VRAM may be placed before or after the tack coat placement. When placed after the tack coat, ensure the tack coat is fully cured prior to placement of the VRAM.

Application of VRAM. Apply VRAM to cold longitudinal joints under surface courses. Only apply VRAM when the pavement surface temperature and the ambient temperature are a minimum of 40 °F and rising.

Apply VRAM material on the cold longitudinal joint as detailed below:



Apply VRAM at the width and application rate required according to the following table:

VRAM Application Rate Table		
Overlay Thickness, (in.)	VRAM Width, "W", (in.)	Application Rate ^[1] , (lb/ft)
HMA Mixtures ^[2]		
1	15	0.95
1 ¼	15	1.09
1 ½	15	1.22
1 ¾	15	1.36
2	15	1.49
2 ¼	15	1.62
2 ½	15	1.76
2 ¾	15	1.89
3	15	2.03
3 ¼	15	2.16
3 ½	15	2.30
3 ¾	15	2.43
4	15	2.57
SMA Mixtures ^[2]		
1 ½	12	0.83
1 ¾	12	0.92
2	12	1.00

^[1] The application rate has a surface demand for liquid included within it. The nominal thickness of the VRAM may taper from the center of the application to a lesser thickness on the edge of the application. The width and weight/foot shall be maintained.

^[2] In the event of a joint between an SMA and HMA mixture, the SMA application rate will be used.

Apply VRAM in a single pass with a pressure distributor, melter kettle, or hand applied from a roll, for asphalt courses up to 2 in. (50 mm) in thickness. Apply VRAM in two passes for asphalt courses between 2 and 4 in. (50 and 100 mm) in thickness. Ensure the applied width of VRAM is within ± 1.5 in. (38 mm) of the width specified. If the VRAM flows more than 2 in. (50 mm) from the initial placement width, immediately stop placement of VRAM and perform corrective actions. Coordinate the application of VRAM and placement of the asphalt mixture to ensure the center of the VRAM application is within ± 2.0 in. (50 mm) of the center of the asphalt pavement cold joint being constructed.

If the VRAM material will be exposed to traffic prior to closing the longitudinal joint, shift the location of the centerline of the VRAM material about the joint centerline such that no more than a nominal 6 in (152 mm) of material is exposed. Do not open to traffic if width of exposed VRAM material is greater than 6 in. (152 mm).

If the paving operation only allows VRAM to be placed on one side of the cold longitudinal joint at a time, coat the vertical face of the cold longitudinal joint with VRAM material in addition to the requirements above. Do not seal the face of cold longitudinal joints as required per 401.17 when using VRAM for the cold longitudinal joint.

Furnish a bill of lading for each tanker supplying material to the project. Verify the application rate of VRAM within the first 1000 ft. (305 m) of the day's scheduled application length and every 6000 ft. (1829 m) the remainder of the day. For projects less than 3000 ft. (914 m), the rate will be verified once. Place a suitable paper or pan at a random location in the path of the placement for the VRAM. After application of the VRAM, pick up the paper or pan and obtain the weight of material. Calculate the weight per foot of VRAM. Ensure the actual weight per foot of VRAM is within ± 15 percent of the target weight/foot from the VRAM Application Rate Table. Replace the VRAM in the areas where the samples are taken.

When beginning placement of a run of VRAM, use a suitable release paper to cover previous VRAM application to prevent doubling up of thickness of VRAM.

The VRAM must be suitable for construction traffic to drive on without pickup or tracking within 30 minutes of placement. If pickup or tracking occurs, immediately stop placement of VRAM and repair damaged areas.

Prior to start of paving, ensure the paver end plate and any grade control devices are adequately raised above the finished height of the VRAM.

Immediately stop placement of asphalt mixture and VRAM if flushing is noted in the asphalt surface. Do not continue placement of the asphalt mixture until the issue is corrected.

Method of Measurement. The Department will measure VRAM by the number of feet (meters) completed and accepted in place.

Basis of Payment. Department will pay for accepted quantities at the contract price as follows:

Item	Unit	Description
690EXXX	Foot (Meter)	Special - Void Reducing Asphalt Membrane (VRAM)