SEE SHEET 2 FOR LOCATION MAP

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

GUE-70/77-
CULVERT REPAIR

GUERNSEY COUNTY

VARIOUS TOWNSHIPS

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PROJECT DESCRIPTION

REHAB THREE INTERSTATE CULVERTS IN GUERNSEY COUNTY:
LOCATION 1: GUE-70-21.92 (126" LINER PIPE)
LOCATION 2: GUE-70-23.42 (171" X 107" LINER PIPE)
LOCATION 3: GUE-77-3.81 (144" LINER PIPE)

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.8 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A
NOTICE OF INTENT EARTH DISTURBED AREA: (ROUTINE MAINTENANCE PROJECT)	N/A

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 SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES 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.

UNDERGROUND UTILITIES
OHIO811.org Before You Dig

PLAN PREPARED BY:
ODOT DISTRICT 5 PLANNING & ENGINEERING
9600 JACKSONTOWN RD
JACKSONTOWN, OH 43030

ENGINEERS SEAL:

STATE OF OHIO Heather Ann Gilbert E-68643 REGISTERED PROFESSIONAL ENGINEER

SIGNED: Heather A. Gilbert
DATE: JANUARY 28, 2019

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
DM-1.1	7/21/17					800-2016	1/18/19	WATERWAY
DM-4.3	1/15/16					832	10/19/18	PERMITS
DM-4.4	1/15/16					837	10/20/17	CONDITIONS
								7/5/2018
F-2.1	7/20/18							
F-3.3	7/19/13							
RM-4.2	7/20/18							
MT-95.45	7/21/17							
MT-101.70	7/20/18							
MT-105.10	7/19/13							

APPROVED _____
DATE 1/29/19 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

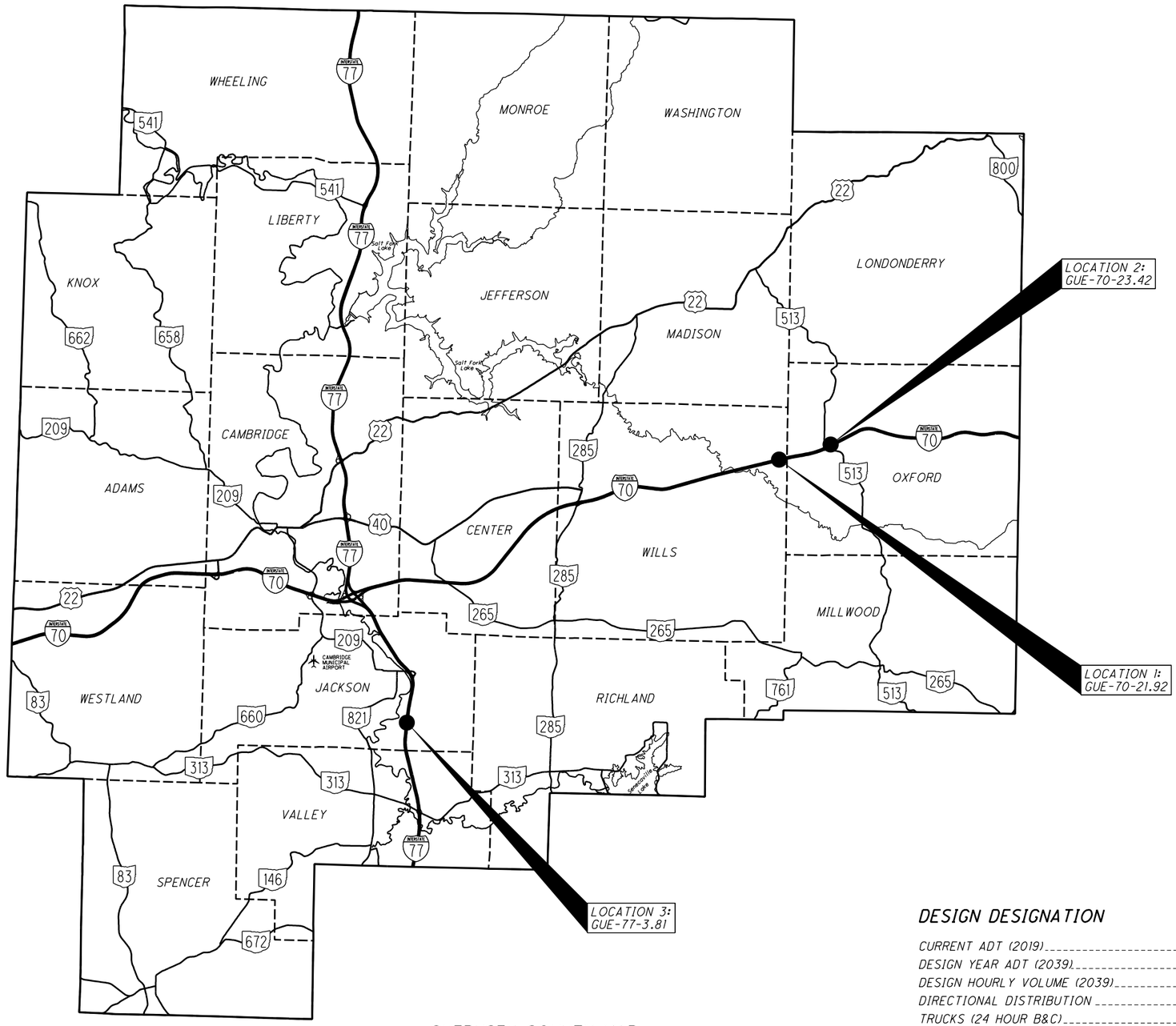
FEDERAL PROJECT NO. E170699

PID NO. 104755

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

GUE-70/77-
CULVERT REPAIR



LOCATION	C-R-S	LATITUDE	LONGITUDE
1	GUE-70-21.92	40° 02′ 53″	-81° 20′ 59″
2	GUE-70-23.42	40° 03′ 12″	-81° 19′ 21
3	GUE-77-3.81	39° 57′ 02″	-81° 31′ 57″

GUERNSEY COUNTY MAP

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES

DESIGN DESIGNATION

	LOCATION 1 GUE-70-21.92	LOCATION 2 GUE-70-23.42	LOCATION 3 GUE-77-3.81
CURRENT ADT (2019)	32,000	31,000	22,000
DESIGN YEAR ADT (2039)	39,000	39,000	22,000
DESIGN HOURLY VOLUME (2039)	3,500	3,500	2,200
DIRECTIONAL DISTRIBUTION	55%	56%	57%
TRUCKS (24 HOUR B&C)	35%	35%	23%
DESIGN SPEED	65	65	65
LEGAL SPEED	70	70	70
DESIGN FUNCTIONAL CLASSIFICATION	01 INTERSTATE	01 INTERSTATE	01 INTERSTATE
NHS PROJECT	YES	YES	YES

DESIGN EXCEPTIONS

NONE

CALCULATED BRH
CHECKED HAG

LOCATION MAP

GUE-70/77-
CULVERT REPAIR

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UTILITIES

THERE ARE NO KNOWN UNDERGROUND OR OVERHEAD UTILITIES WITHIN THE PROJECT CONSTRUCTION LIMITS.

SURVEYING PARAMETERS

PROJECT CONTROL:
NORTH AMERICAN DATUM (NAVD88)
OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE
GRID COORDINATES, NAD 83 (CONUS), GEOID G12A (OHIO)

LOCATION	NORTHING	EASTING	ELEVATION
1	747,900.86	2,290,236.71	841.58
GUE-70-21.92	748,088.38	2,291,014.42	835.25
2	749,956.93	2,297,912.84	874.76
GUE-70-23.42	750,294.36	2,298,551.53	890.86
	710,697.40	2,239,637.51	816.61
3	711,393.27	2,239,715.56	815.74
GUE-77-3.81	712,088.85	2,239,793.26	813.98

CONSTRUCTION NOTIFICATION

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 OFFICEER (PIO)
BY FAX: (614) 887-4510 OR
BY EMAIL: D05.PIO@DOT.OHIO.GOV

DISTRICT PERMIT SECTION
BY FAX: (614) 887-4525 OR
BY EMAIL: BRIAN.BOSCH@DOT.OHIO.GOV

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION
BY FAX: (614) 728-4099 OR
BY EMAIL: HAULING.PERMITS@DOT.OHIO.GOV

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.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT DRAINAGE ITEMS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 50 FEET. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND DOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING AN FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

EXPRESS PROCESSING CENTER
THE FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
AIR TRAFFIC AIRSPACE BRANCH ASW-520
2601 MEACHAN BLVD.
FORT WORTH, TX 76137-4298

ODOT OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE ROAD
COLUMBUS, OHIO 43235
614-387-2346

SEEDING AND MULCHING

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

ITEM 659, SEEDING AND MULCHING, CLASS 2 (1,000 PER LOCATION)	3,000 SY
ITEM 659, COMMERCIAL FERTILIZER (3,000 ÷ 7,410 = 0.6)	0.41 TON
ITEM 659, LIME (3,000 ÷ 4,840 = 0.9)	0.62 ACRES
ITEM 659, WATER (3,000 x 0.0054 = 22)	17 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 CALCULATION FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

FENCE DETAILS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR FENCE THAT MAY NEED TO BE REMOVED TO PERFORM THE WORK ON THE CULVERTS OR HEADWALLS. FENCE TERMINALS SHALL BE TYPE D IN ACCORD-ANCE WITH SCD. F-3.3.

ITEM 202, FENCE REMOVED	240 FT
ITEM 607, FENCE, TYPE 47	240 FT

ITEM 837, LINER PIPE, AS PER PLAN, (BY SIZE), 748.06

PROPOSED LINER PIPE SIZES:

LOC. 1 (GUE-70-21.92): 126" ID
LOC. 2 (GUE-70-23.42): 171" X 107" ID
LOC. 3 (GUE-77-3.81): 144" ID

THE PROPOSED LINER PIPE SIZES AS SHOWN IN THESE PLANS ARE THE MINIMUM DIMENSIONS REQUIRED FOR HYDRAULIC PURPOSES. THE LINER SHALL MATCH THE EXISTING PIPE AS CLOSELY AS POSSIBLE ALLOWING SUFFICIENT ROOM FOR FLOW BYPASS DURING CONSTRUCTION AS WELL AS FOR BACKFILLING THE ANNULAR AREA BETWEEN BOTH PIPES.

SUPPLEMENTAL SPECIFICATION 837 SHALL APPLY EXCEPT AS MODIFIED HEREIN.

REQUIRED SUBMITTALS:
THE CONTRACTOR SHALL SUBMIT THE FOLLOWING INFORMATION TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE STARTING THE WORK:

A. PIPE LAYOUT IN FULL DETAIL INCLUDING DIMENSIONS AND CONSTRUCTION SEQUENCE.

B. LOCATION OF PIPE SUPPORTS AND/OR BLOCKING.

C. PIPE MANUFACTURER'S LIMITATIONS FOR GROUTING PRESSURES SPECIFIC TO GROUTING ANNULAR SPACE BETWEEN THE LINER PIPE AND THE EXISTING CULVERT.

D. LIST OF EQUIPMENT TO BE EMPLOYED IN THE LINING PROCESS.

E. DETAILS SHOWING THE CONTRACTOR'S PROPOSED METHODS OF LIFTING, LOWERING, AND INSTALLING THE LINER PIPE.

F. WRITTEN PROOF THAT THE LINER PIPE MANUFACTURER CONCURS WITH PROPOSED INSTALLATION DETAILS (METHODOLOGY AND PROCEDURES).

G. THE CONTRACTOR SHALL SUBMIT CALCULATIONS DOCUMENTING THAT THE ACTUAL PRESSURE APPLIED TO THE LINED PIPE DURING CONSTRUCTION DOES NOT EXCEED THE MANUFACTURER'S MAXIMUM ALLOWABLE.

H. IF THE CONTRACTOR'S GROUTING PROCEDURE REQUIRES INTERNAL BRACING OF THE LINER PIPE DURING CONSTRUCTION; CALCULATIONS AND DETAILS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

THESE SUBMITTALS SHALL BE SIGNED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER WITH SIGNIFICANT EXPERIENCE IN LINING AND GROUTING LARGE DIAMETER CULVERTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSERTION OF THE 748.06 LINER AND REMOVAL OR MODIFICATION OF THE EXISTING PIPE TO ALLOW PROPER INSERTION AS SPECIFIED ABOVE.

TECHNICAL SUPPORT:
THE LINER PIPE MANUFACTURER SHALL PROVIDE TECHNICAL SUPPORT THROUGH THE SERVICES OF AN ON-SITE REPRESENTATIVE DURING THE INITIAL INSTALLATION OF THE PROPOSED LINER PIPE. THIS REPRESENTATIVE SHALL REMAIN ON SITE UNTIL A MINIMUM OF THREE SECTIONS OF THE LINER PIPE HAVE BEEN INSTALLED AND WELDED.

PAYMENT:
PAYMENT FOR ALL LABOR, EQUIPMENT, CHANNEL EXCAVATION, AND MATERIALS REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAR FOOT FOR ITEM 837, LINER PIPE, AS PER PLAN, (BY SIZE), 748.06 UNLESS SEPARATELY ITEMIZED IN THE PLANS.

ITEM 602, CONCRETE MASONRY, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS FOR ITEM 602, CONCRETE MASONRY, THIS ITEM SHALL INCLUDE DOWELS TO ANCHOR THE CONCRETE TO AN EXISTING HEADWALL. DOWELS SHALL BE #5 BARS THAT ARE A MINIMUM OF 18" IN LENGTH. DOWELS SHALL BE SPACED AT A MINIMUM SPACING OF 24". ALL LABOR, EQUIPMENT, AND MATERIALS (INCLUDING ALL DRILLING AND SURFACE PREPARATION) REQUIRED TO DOWEL THE CONCRETE TO THE EXISTING HEADWALL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR ITEM 602, CONCRETE MASONRY, AS PER PLAN.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM THE DESIGN PLANS OF THE EXISTING PIPES ORIGINAL INSTALLATION. 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 C&MS 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.

ENVIRONMENTAL NOTES:

ENDANGERED AND THREATENED BAT HABITAT

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSE OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

WETLAND AVOIDANCE

JURISDICTIONAL WETLANDS HAVE BEEN IDENTIFIED AT THE GUE-70-21.92 AND GUE-77-3.81 PROJECT LOCATIONS. THE CONTRACTOR SHALL AVOID IMPACTING THE WETLANDS BEYOND THE IDENTIFIED CONSTRUCTION LIMITS AND MINIMIZE THE IMPACTS TO THE EXTENT PRACTICABLE WITHIN THE PROJECT LIMITS. ANY TEMPORARILY PLACED MATERIALS TO FACILITATE ACCESS MUST BE REMOVED UPON COMPLETION OF THE PROJECT. THESE WETLANDS ARE SHOWN ON SHEETS 6 AND 12.

CALCULATED BRH
CHECKED HAG

GENERAL NOTES

GUE-70/77-
CULVERT REPAIR

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ITEM 614, MAINTAINING TRAFFIC

TRAFFIC SHALL BE MAINTAINED AS PER THE DETAIL SHEETS, SPECIFICATIONS, AND AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST REVISION. IN ADDITION, THE FOLLOWING REQUIREMENTS SHALL APPLY:

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE OF THESE WORK LIMITS.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR REPLACING NECESSARY TRAFFIC CONTROL DEVICES IMMEDIATELY, AS PER 614.03.

DRUMS SHALL BE PROPERLY REFLECTORIZED (HIGH INTENSITY, FLORESCENT SHEETING) PLASTIC DRUMS AND WEIGHTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL REQUIRED IN PLACING AND REMOVING ALL ITEM 622, PORTABLE BARRIER, 32".

THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, WORKERS, AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE APPROVED BY THE PORJECT ENGINEER.

EXISTING SIGNS OR CONTRACTOR SUPPLIED SIGNS SHALL BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION.

ANY CONFLICTING SIGNS AND PAVEMENT MARKINGS WHETHER INSIDE OR OUTSIDE THE WORK LIMITS SHALL BE REMOVED OR COVERED AND TEMPORARY SIGNS AND MARKINGS ERECTED AND PLACED WHEN APPLICABLE BY THE CONTRACTOR.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 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 AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLANS.

LANE VALUE CONTRACT

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

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

NO WORK WITHIN ACTIVE TRAVEL LANES OR WHICH SLOW TRAFFIC IS PERMITTED AT ANY OF THE RESTRICTED TIMES. WHEN NECESSARY, LANE CLOSURES SHALL BE ACCOMPLISHED IN ACCORDANCE WITH STANDARD DRAWINGS.

SHOULD THE CONTRACTOR CLOSE THE LANE BEFORE THE ALLOWABLE TIME AND/OR FAIL TO RE-OPEN THE LANE TO ITS NORMAL TRAFFIC PATTERN BY THE ALLOWABLE TIME, A DISINCENTIVE AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE (BELOW) AND PROPOSAL NOTE 127 WILL BE ASSESSED.

LANE VALUE CONTRACT TABLE

DESCRIPTION OF CRITICAL LANE/RAMP	RESTRICTED TIME PERIOD	DISINCENTIVE (PER HOUR)
NORMAL TRAFFIC, ALL LOCATIONS	SEE PLCM WEBSITE	$10,000

ITEM 614, MAINTAINING TRAFFIC (LANES OPEN FOR HOLIDAYS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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 HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH (6:00 AM OR 12:00N) MONDAY
MONDAY	12:00N FRIDAY THROUGH (6:00 AM OR 12:00N) TUESDAY
TUESDAY	12:00N MONDAY THROUGH (6:00 AM OR 12:00N) WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH (6:00 AM OR 12:00N) THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH (6:00 AM OR 12:00N) FRIDAY
THURSDAY (THANKSGIVING ONLY)	12:00N WEDNESDAY THROUGH (6:00 AM OR 12:00N) MONDAY
FRIDAY	12:00N THURSDAY THROUGH (6:00 AM OR 12:00N) MONDAY
SATURDAY	12:00N FRIDAY THROUGH (6:00 AM OR 12:00N) MONDAY

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. 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.

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 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 TWO 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 SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.) 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.

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.

(2 SIGNS PER WORK LOCATION AT A TIME,
2 SIGNS x 1 MONTH X 3 WORK LOCATIONS = 6 SNMT)

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	6 SNMT

CALCULATED BRH CHECKED HAG

GENERAL NOTES

MAINTENANCE OF TRAFFIC

GUE-70/77-
CULVERT REPAIR

4
13

SHEET NUM.												PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	6	7	8	9	10	11	13				01/IMS/BR						
																	ROADWAY	
LS												LS	201	11000	LS		CLEARING AND GRUBBING	
				2.5			0.8					3.3	202	11300	3.3	CY	PORTIONS OF STRUCTURE REMOVED	
240												240	202	75000	240	FT	FENCE REMOVED	
240												240	607	15000	240	FT	FENCE, TYPE 47	
																	EROSION CONTROL	
						20						20	601	11000	20	SY	RIPRAP, TYPE D	
						113						113	601	32000	113	CY	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	
3,000												3,000	659	00510	3,000	SY	SEEDING AND MULCHING, CLASS 2	
0.41												0.41	659	20000	0.41	TON	COMMERCIAL FERTILIZER	
0.62												0.62	659	31000	0.62	ACRE	LIME	
17												17	659	35000	17	MGAL	WATER	
												1,000	832	30000	1,000	EACH	EROSION CONTROL	
																	DRAINAGE	
				2.5		1.5	0.8					4.8	602	20001	4.8	CY	CONCRETE MASONRY, AS PER PLAN	3
																	STRUCTURE 20 FOOT SPAN AND UNDER (GUE-70-2192, SFN 3002071))	
			LS									LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
				30								30	512	10000	30	SY	SEALING OF CONCRETE SURFACES	
			204									204	837	10001	204	FT	LINER PIPE, AS PER PLAN, 126" ID, 748.06	3
			204									204	837	21000	204	FT	BACKFILL FOR LINER PIPE	
																	STRUCTURE 20 FOOT SPAN AND UNDER (GUE-70-2342, SFN 3002136)	
						LS						LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
							34					34	512	10000	34	SY	SEALING OF CONCRETE SURFACES	
						318						318	837	10001	318	FT	LINER PIPE, AS PER PLAN, 171" X 107" ID, 748.06	3
						318						318	837	21000	318	FT	BACKFILL FOR LINER PIPE	
																	STRUCTURE 20 FOOT SPAN AND UNDER (GUE-77-0381, SFN 3002551)	
								LS				LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
								240				240	837	10001	240	FT	LINER PIPE, AS PER PLAN ,144" ID, 748.06	3
								240				240	837	21000	240	FT	BACKFILL FOR LINER PIPE	
																	MAINTENANCE OF TRAFFIC	
		1			1							2	614	12336	2	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
		5			3							8	614	13310	8	EACH	BARRIER REFLECTOR, TYPE 1 (1-WAY)	
		4			2							6	614	13350	6	EACH	OBJECT MARKER, ONE WAY	
	6											6	614	18601	6	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	4
		250			150							400	622	41000	400	FT	PORTABLE BARRIER, 32"	
																	INCIDENTALS	
	LS											LS	614	11000	LS		MAINTAINING TRAFFIC	
												LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS	624	10000	LS		MOBILIZATION	

CALCULATED BRH
CHECKED HAG

GENERAL SUMMARY

GUE-70/77-
CULVERT REPAIR

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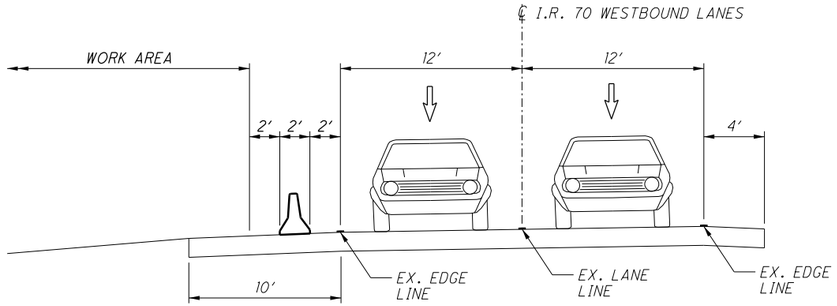
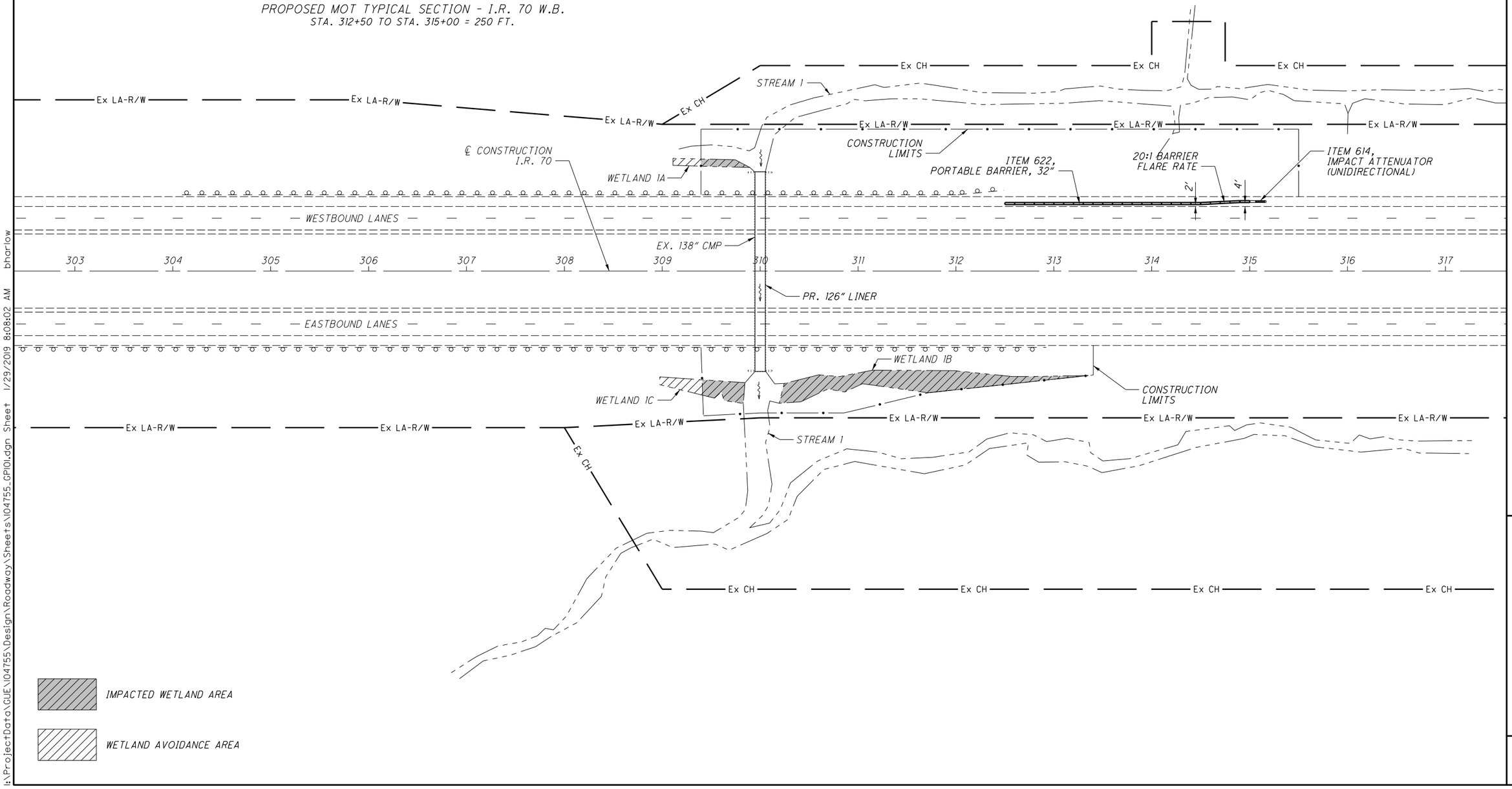
13

I:\ProjectData\GUE\104755\Design\Roadway\Sheets\104755_GG001.dgn Sheet 1/29/2019 8:07:59 AM bharlow



PROPOSED MOT TYPICAL SECTION - I.R. 70 W.B.
STA. 312+50 TO STA. 315+00 = 250 FT.

ITEM	QUANTITY	UNIT	DESCRIPTION
614	1	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
614	5	EACH	BARRIER REFLECTOR, TYPE 1 (ONE-WAY)
614	4	EACH	OBJECT MARKER, ONE WAY
622	250	FT	PORTABLE BARRIER, 32"
TOTALS CARRIED TO GENERAL SUMMARY			



N

HORIZONTAL SCALE IN FEET
0 25 50 100

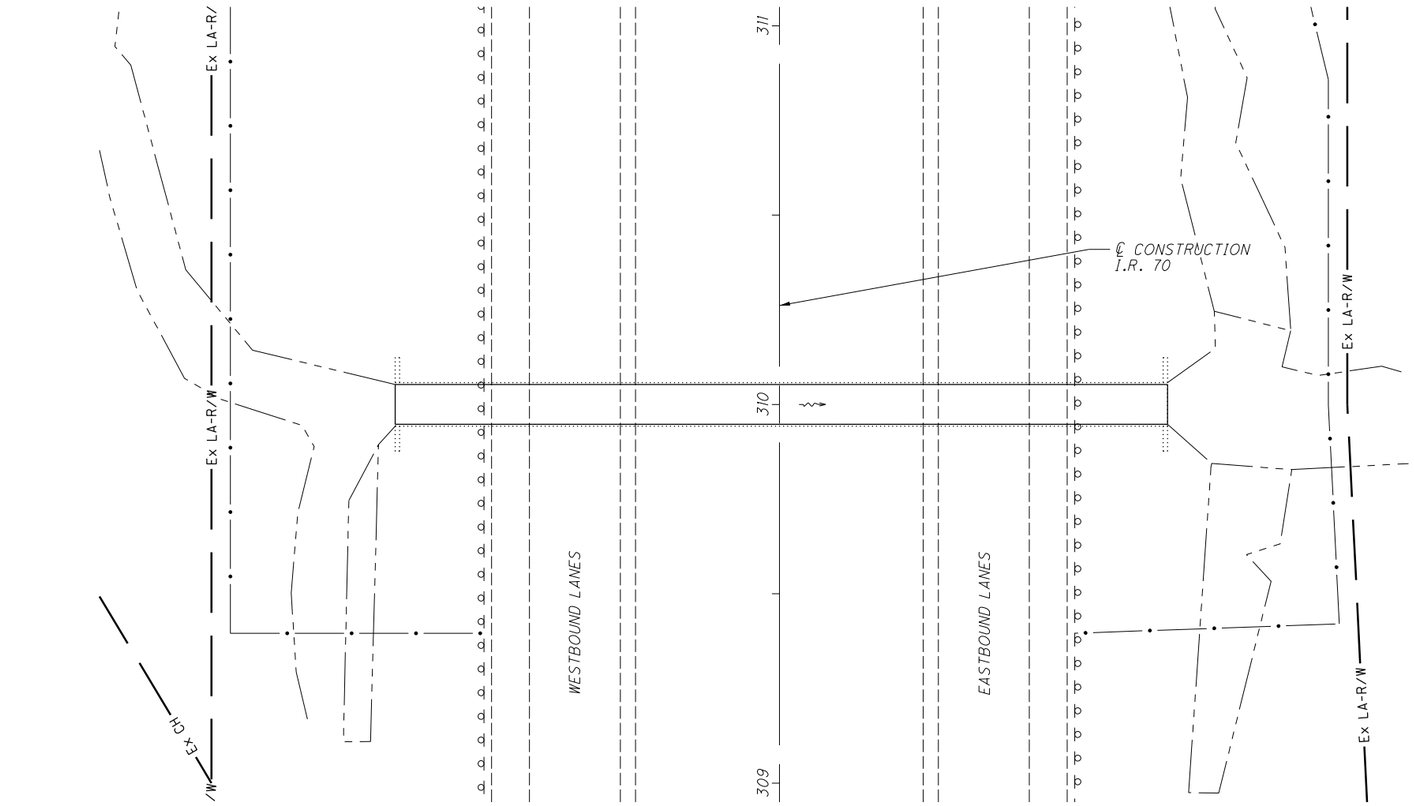
CALCULATED BRH
CHECKED HAG

CULVERT PLAN
LOCATION 1 (GUE-70-21.92)

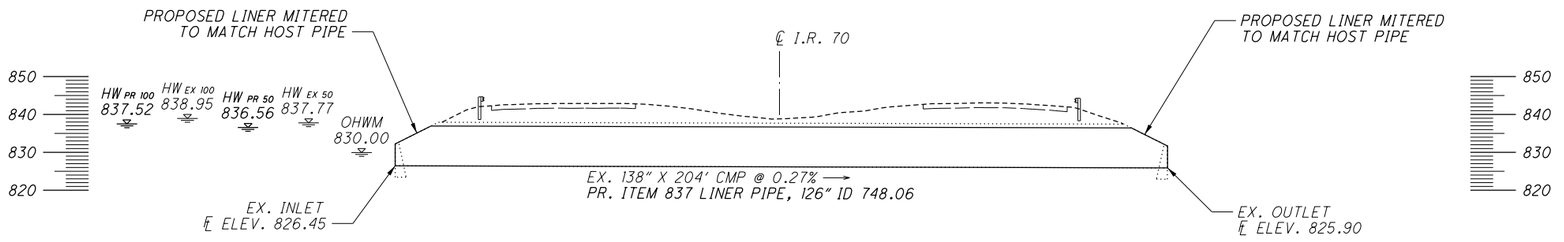
GUE-70/77-
CULVERT REPAIR

6
13

I:\ProjectData\GUE\104755\Design\Roadway\Sheets\104755_GP101.dgn Sheet 1/29/2019 8:08:02 AM bharlow



ITEM	QUANTITY	UNIT	DESCRIPTION
503	LS		COFFERDAMS AND EXCAVATION BRACING
837	204	FT	LINER PIPE, AS PER PLAN, 126" ID, 748.06
837	204	FT	BACKFILL FOR LINER PIPE
TOTALS CARRIED TO GENERAL SUMMARY			



EX. HYDRAULIC DATA

DRAINAGE AREA: 1331.2 Acres
Q_{50} = 780 cfs
Q_{100} = 906 cfs
V_{50} = 13.0 fps
V_{100} = 14.3 fps

PR. HYDRAULIC DATA

DRAINAGE AREA: 1331.2 Acres
Q_{50} = 780 cfs
Q_{100} = 906 cfs
V_{50} = 13.6 fps
V_{100} = 15.1 fps

EXISTING STRUCTURE

SFN: 3002071
TYPE: CORRUGATED METAL
SPAN: 138"
LENGTH: 204'
ALIGNMENT: TANGENT
SKEW: 0°
STREAM: DITCH

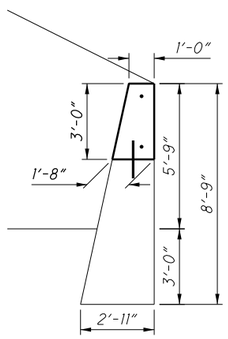
CALCULATED BRH
CHECKED HAG

0 10 20 40
HORIZONTAL SCALE IN FEET

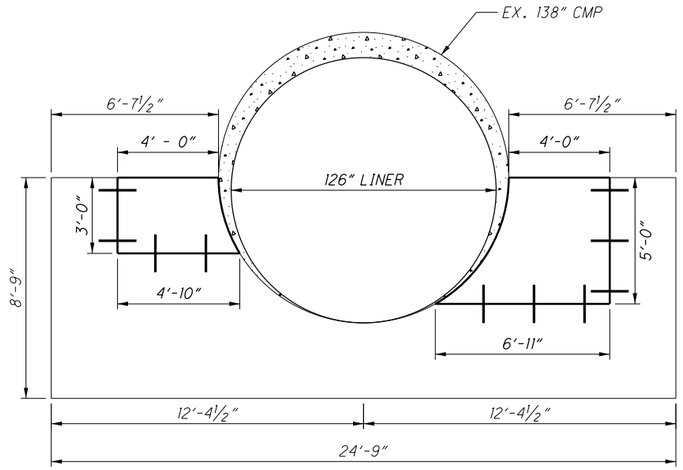
CULVERT DETAIL
LOCATION 1 (GUE-70-21.92)

GUE-70/77-
CULVERT REPAIR

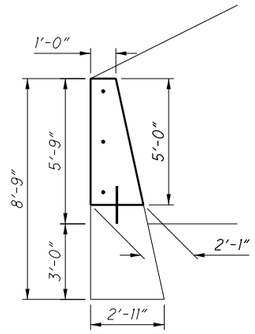
7
13



PROFILE VIEW



CROSS SECTION VIEW



PROFILE VIEW

EX. INLET HEADWALL DETAILS

ITEM 837, BACKFILL FOR LINER PIPE

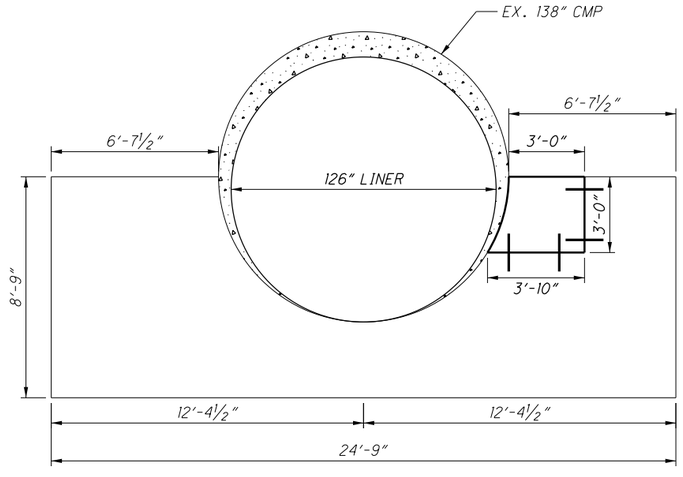
CALCULATIONS, INLET HEADWALL:

ITEM 202, PORTIONS OF STRUCTURE REMOVED = 2.0 CY
CADD GENERATED VOLUME, RT. SIDE = 1.4 CY
CADD GENERATED VOLUME, LT. SIDE = 0.6 CY

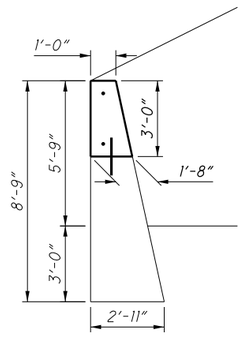
ITEM 512, SEALING OF CONCRETE SURFACES = 15 SY
SEAL ENTIRE EXPOSED HEADWALL (INCLUDING EXISTING CONCRETE).
ASSUMING THE FRONT OF THE HEADWALL WILL BE EXPOSED:
SEAL THE FRONT OF THE HEADWALL FROM THE TOP TO THE INVERT OF THE EX. PIPE.
SEAL THE ENTIRE TOP OF THE HEADWALL.
SEAL THE BACK OF THE HEADWALL FROM THE TOP TO 6" BELOW THE TOP.
SEAL THE SIDE OF THE HEADWALL FROM THE TOP TO THE INVERT OF THE EX. PIPE.
= (FRONT + TOP + BACK + SIDE) * 2 SIDES
= ((45.2 SF + 3.4 SF + 6.7 SF + 9.4 SF) * 2) ÷ 9 = 15 SY

ITEM 602, CONCRETE MASONRY, AS PER PLAN = 2.0 CY

ITEM	QUANTITY	UNIT	DESCRIPTION
202	2.5	CY	PORTIONS OF STRUCTURE REMOVED
512	30	SY	SEALING OF CONCRETE SURFACES
602	2.5	CY	CONCRETE MASONRY, AS PER PLAN
TOTALS CARRIED TO GENERAL SUMMARY			



CROSS SECTION VIEW



PROFILE VIEW

EX. OUTLET HEADWALL DETAILS

CALCULATIONS, OUTLET HEADWALL:

ITEM 202, PORTIONS OF STRUCTURE REMOVED = 0.5 CY
CADD GENERATED VOLUME, RT. SIDE = 0.5 CY

ITEM 512, SEALING OF CONCRETE SURFACES = 15 SY

ITEM 602, CONCRETE MASONRY, AS PER PLAN = 0.5 CY

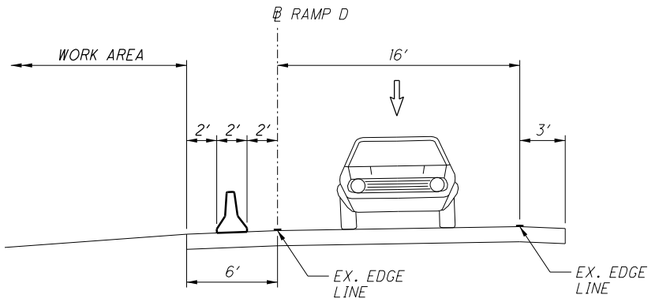
CALCULATED BRH
CHECKED HAG

HEADWALL DETAILS
LOCATION 1 (GUE-70-21.92)

GUE-70/77-
CULVERT REPAIR

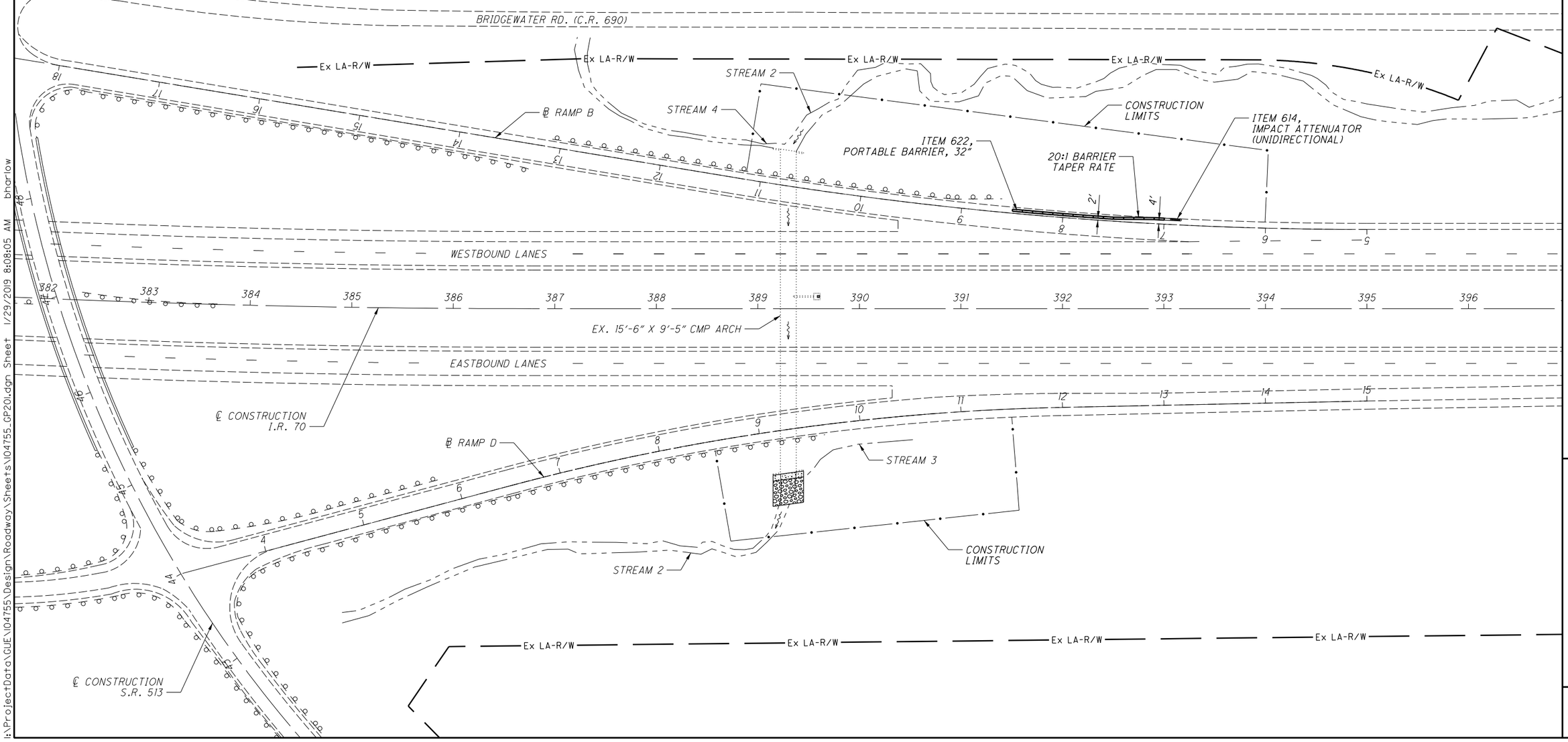
8
13

I:\ProjectData\GUE\104755\Design\Roadway\Sheets\104755_DC00IA.dgn Sheet 1/29/2019 8:08:03 AM bharlow



PROPOSED MOT TYPICAL SECTION - RAMP B
STA. 7+00 TO STA. 8+50 = 150 FT.

ITEM	QUANTITY	UNIT	DESCRIPTION
614	1	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
614	3	EACH	BARRIER REFLECTOR, TYPE 1 (ONE-WAY)
614	2	EACH	OBJECT MARKER, ONE WAY
622	150	FT	PORTABLE BARRIER, 32″
TOTALS CARRIED TO GENERAL SUMMARY			



HORIZONTAL SCALE IN FEET
0 25 50 100

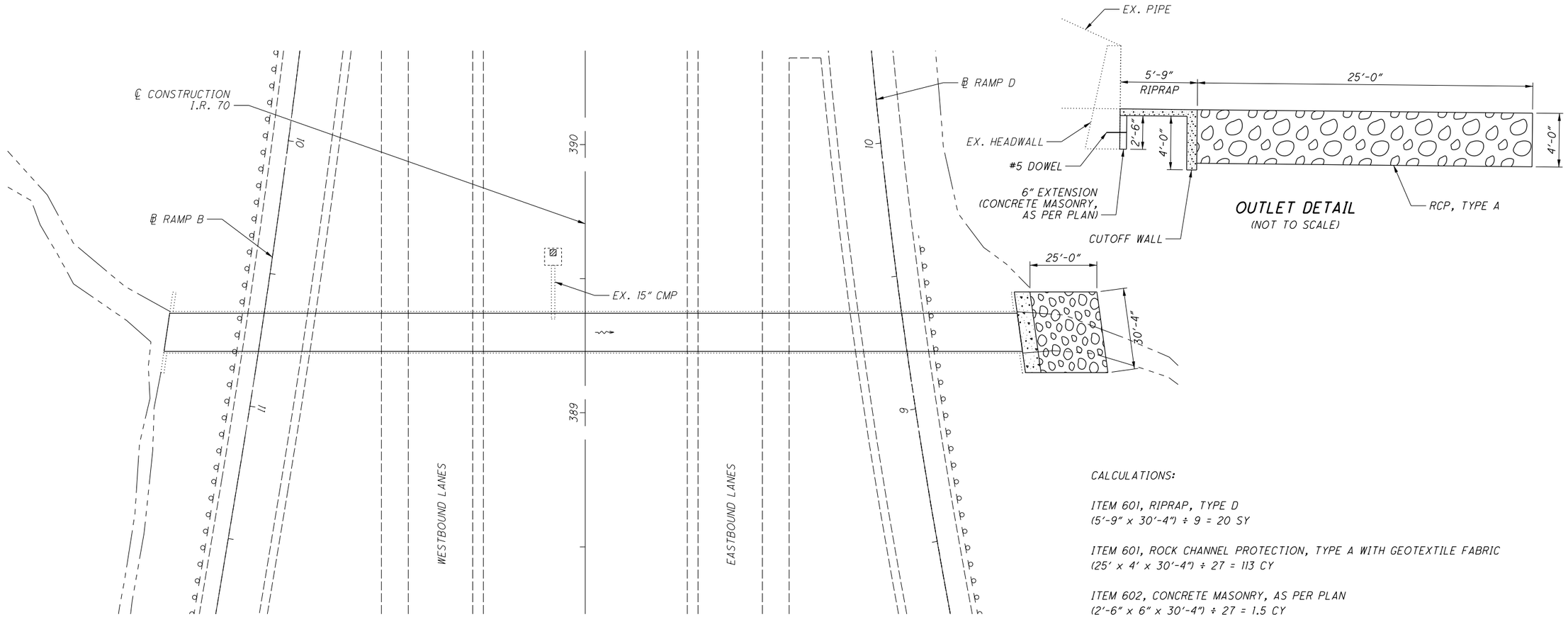
CALCULATED BRH
CHECKED HAG

CULVERT PLAN
LOCATION 2 (GUE-70-23.42)

GUE-70/77-
CULVERT REPAIR

9
13

I:\Project Data\GUE\104755\Design\Roadway\Sheets\104755_GP201.dgn Sheet1 1/29/2019 8:08:05 AM bharlow



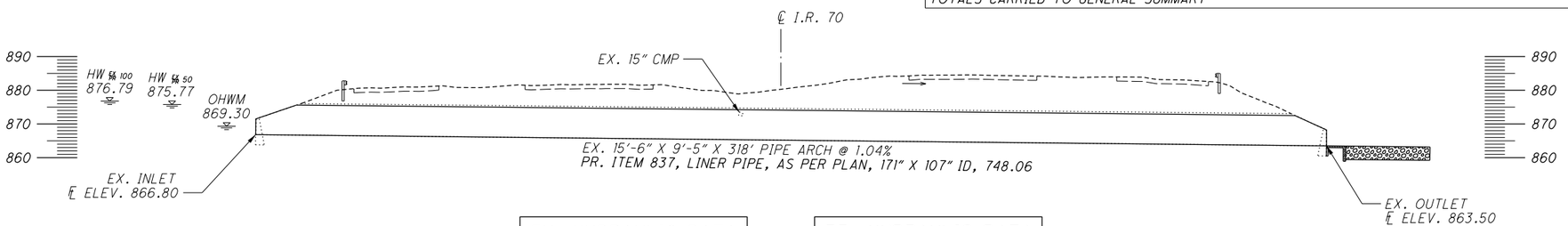
CALCULATIONS:

ITEM 601, RIPRAP, TYPE D
(5'-9" x 30'-4") ÷ 9 = 20 SY

ITEM 601, ROCK CHANNEL PROTECTION, TYPE A WITH GEOTEXTILE FABRIC
(25' x 4' x 30'-4") ÷ 27 = 113 CY

ITEM 602, CONCRETE MASONRY, AS PER PLAN
(2'-6" x 6" x 30'-4") ÷ 27 = 1.5 CY

ITEM	QUANTITY	UNIT	DESCRIPTION
503	LS		COFFERDAMS AND EXCAVATION BRACING
601	20	SY	RIPRAP, TYPE D
601	113	CY	ROCK CHANNEL PROTECTION, TYPE A WITH GEOTEXTILE FABRIC
602	1.5	CY	CONCRETE MASONRY, AS PER PLAN
837	318	FT	LINER PIPE, AS PER PLAN, 171" X 107", 748.06
837	318	FT	BACKFILL FOR LINER PIPE
TOTALS CARRIED TO GENERAL SUMMARY			



EX. HYDRAULIC DATA

DRAINAGE AREA: 1331.2 Acres
Q_{50} = 821 cfs
Q_{100} = 957 cfs
V_{50} = 19.5 fps
V_{100} = 20.4 fps

PR. HYDRAULIC DATA

DRAINAGE AREA: 1331.2 Acres
Q_{50} = 821 cfs
Q_{100} = 957 cfs
V_{50} = 20.4 fps
V_{100} = 21.5 fps

EXISTING STRUCTURE

SFN: 3002136
TYPE: CORRUGATED METAL ARCH
SIZE: 15-6" X 9'-5"
LENGTH: 318'
ALIGNMENT: TANGENT
SKEW: 0°
STREAM: DITCH

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BRH
CHECKED HAG

CULVERT DETAIL
LOCATION 2 (GUE-70-23.42)

GUE-70/77-
CULVERT REPAIR

10
13

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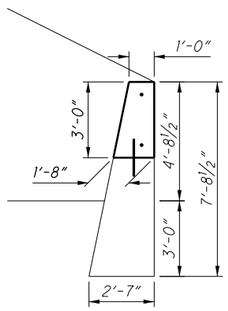
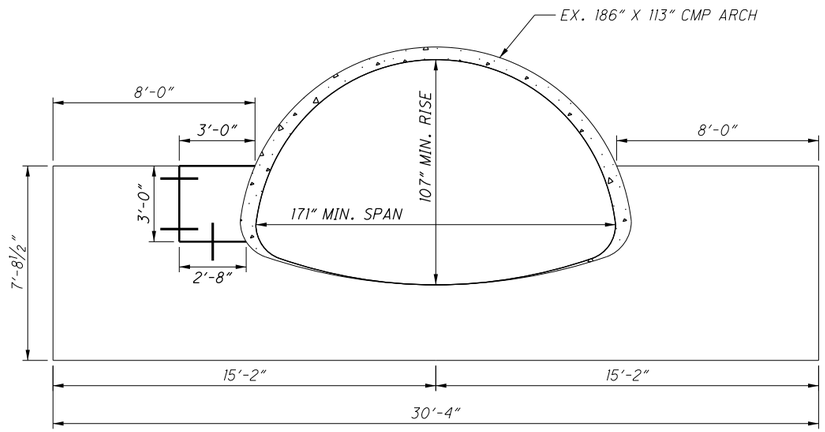


PROFILE VIEW



CROSS SECTION VIEW

EX. INLET HEADWALL DETAILS

ITEM 837, BACKFILL FOR LINER PIPE

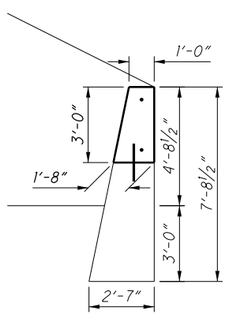
ITEM	QUANTITY	UNIT	DESCRIPTION
202	0.8	CY	PORTIONS OF STRUCTURE REMOVED
512	34	SY	SEALING OF CONCRETE SURFACES
602	0.8	CY	CONCRETE MASONRY, AS PER PLAN
TOTALS CARRIED TO GENERAL SUMMARY			

CALCULATIONS, INLET HEADWALL:

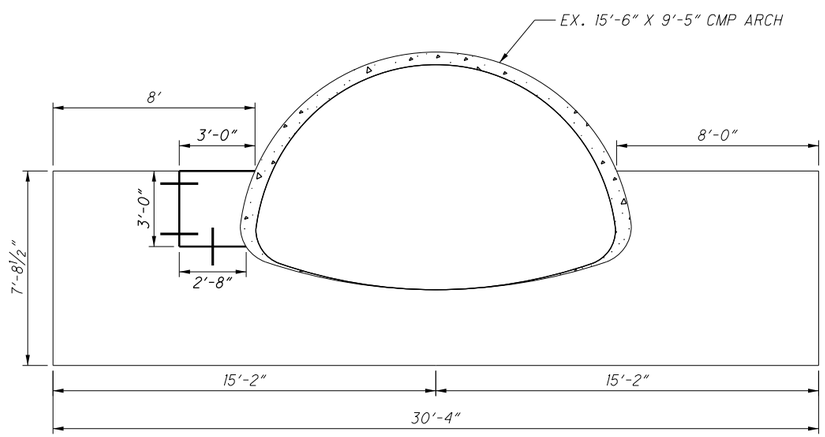
ITEM 202, PORTIONS OF STRUCTURE REMOVED = 0.4 CY
CADD GENERATED VOLUME, LT. SIDE = 0.4 CY

ITEM 512, SEALING OF CONCRETE SURFACES = 17 SY
SEAL ENTIRE EXPOSED HEADWALL (INCLUDING EXISTING CONCRETE).
ASSUMING THE FRONT OF THE HEADWALL WILL BE EXPOSED:
SEAL THE FRONT OF THE HEADWALL FROM THE TOP TO THE INVERT OF THE EX. PIPE.
SEAL THE ENTIRE TOP OF THE HEADWALL.
SEAL THE BACK OF THE HEADWALL FROM THE TOP TO 6" BELOW THE TOP.
SEAL THE SIDE OF THE HEADWALL FROM THE TOP TO THE INVERT OF THE EX. PIPE.
= (FRONT + TOP + BACK + SIDE) * 2 SIDES
= ((39.4 SF + 18.1 SF + 4.0 SF + 12.5 SF) * 2) ÷ 9 = 17 SY

ITEM 602, CONCRETE MASONRY, AS PER PLAN = 0.4 CY



PROFILE VIEW



CROSS SECTION VIEW

EX. OUTLET HEADWALL DETAILS

CALCULATIONS, OUTLET HEADWALL:

ITEM 202, PORTIONS OF STRUCTURE REMOVED = 0.4 CY
CADD GENERATED VOLUME, RT. SIDE = 0.4 CY

ITEM 512, SEALING OF CONCRETE SURFACES = 17 SY

ITEM 602, CONCRETE MASONRY, AS PER PLAN = 0.4 CY

CALCULATED BRH
CHECKED HAG

HEADWALL DETAILS
LOCATION 2 (GUE-70-23.42)

GUE-70/77-
CULVERT REPAIR

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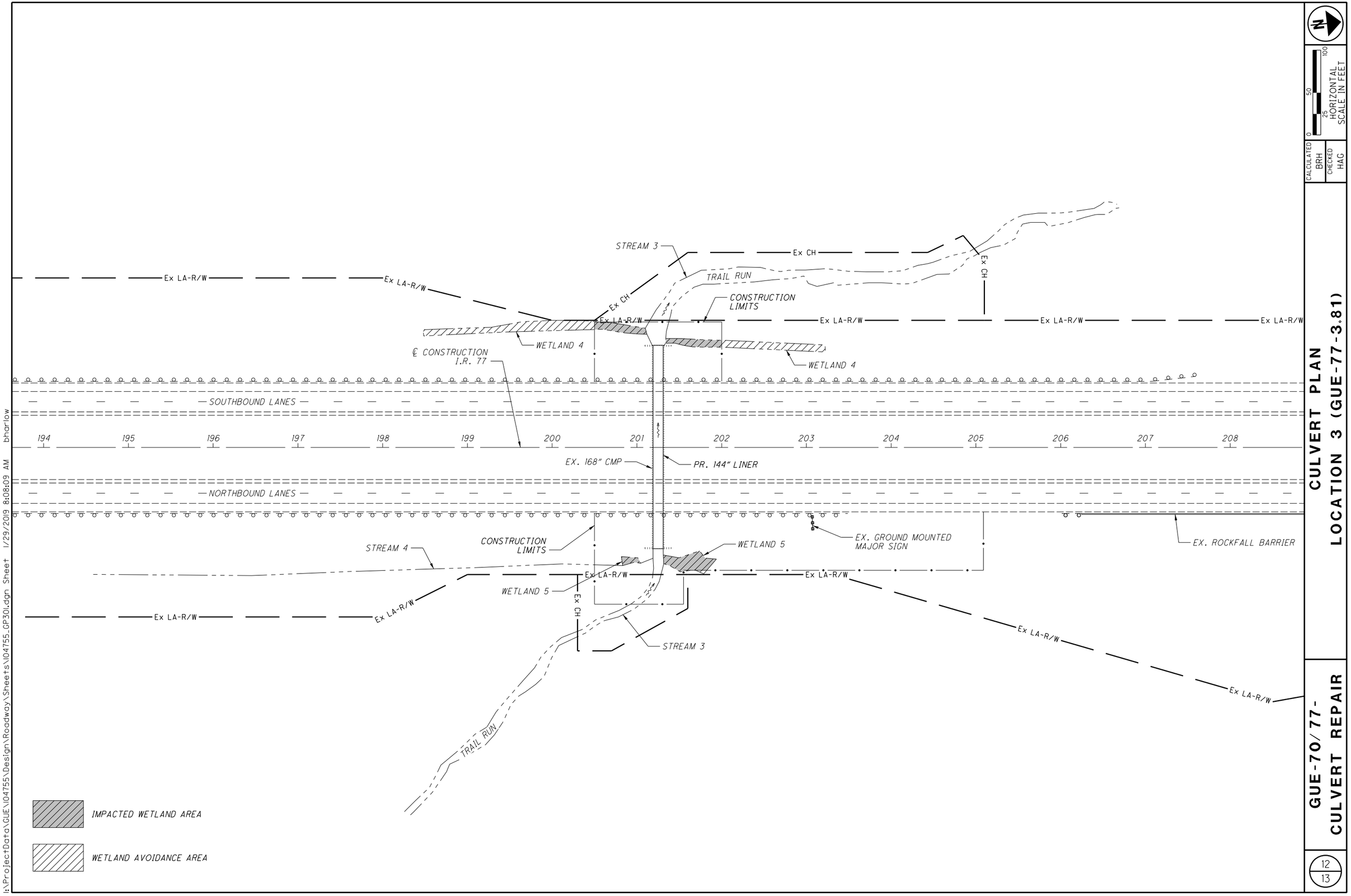
13



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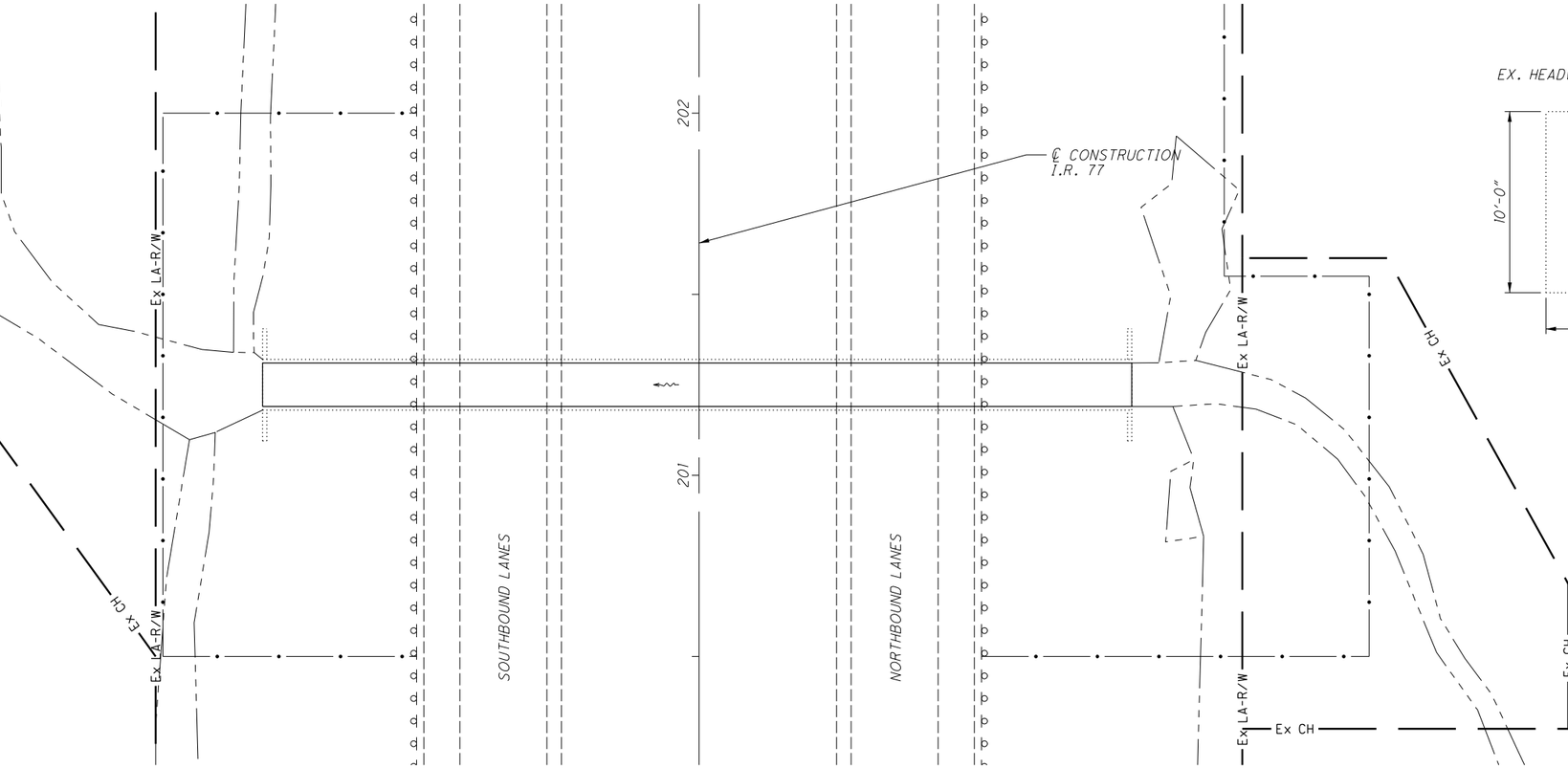
HORIZONTAL SCALE IN FEET
0 25 50 100

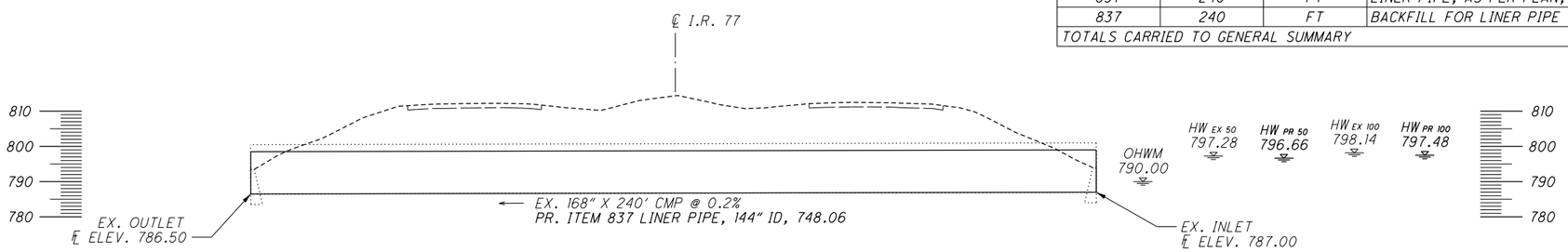
CALCULATED BRH
CHECKED HAG

CULVERT PLAN
LOCATION 3 (GUE-77-3.81)

GUE-70/77-
CULVERT REPAIR



ITEM	QUANTITY	UNIT	DESCRIPTION
503	LS		COFFERDAMS AND EXCAVATION BRACING
837	240	FT	LINER PIPE, AS PER PLAN, 144" ID, 748.06
837	240	FT	BACKFILL FOR LINER PIPE
TOTALS CARRIED TO GENERAL SUMMARY			



EX. HYDRAULIC DATA

DRAINAGE AREA: 1625.6 Acres
Q_{50} = 776 cfs
Q_{100} = 897 cfs
V_{50} = 12.2 fps
V_{100} = 12.8 fps

PR. HYDRAULIC DATA

DRAINAGE AREA: 1625.6 Acres
Q_{50} = 776 cfs
Q_{100} = 897 cfs
V_{50} = 12.8 fps
V_{100} = 13.5 fps

EXISTING STRUCTURE

SFN: 3002551
TYPE: CORRUGATED METAL, FIELD PAVED INVERT
SPAN: 168"
LENGTH: 240'
ALIGNMENT: TANGENT
SKEW: 0°
STREAM: TRAIL RUN

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BRH
CHECKED HAG

CULVERT DETAIL
LOCATION 3 (GUE-77-3.81)

GUE-70/77-
CULVERT REPAIR

13
13