


SHEET NUM.								PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
2	5	6					01/NHS/04	ITEM	EXT	TOTAL				
ROADWAY														
LS							LS	201	11000	LS			CLEARING AND GRUBBING	
		266					266	202	35100	266	FT		PIPE REMOVED, 24" AND UNDER	
		LS					LS	503	11100	LS			COFFERDAMS AND EXCAVATION BRACING	
LS							LS	503	11101	LS			COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	2
EROSION CONTROL														
		5.6					5.6	601	32200	5.6	CY		ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
350							350	659	00300	350	CY		TOPSOIL	
3,150							3,150	659	10000	3,150	SY		SEEDING AND MULCHING	
0.42							0.42	659	20000	0.42	TON		COMMERCIAL FERTILIZER	
0.65							0.65	659	31000	0.65	ACRE		LIME	
17.4							17.4	659	35000	17.4	MGAL		WATER	
		385					385	670	00500	385	SY		SLOPE EROSION PROTECTION	
							5,000	832	30000	5,000	EACH		EROSION CONTROL	
DRAINAGE														
		1.08					1.08	602	20000	1.08	CY		CONCRETE MASONRY	
		266					266	611	06700	266	FT		15" CONDUIT, TYPE F, 707.05 TYPE C, 707.21, OR 707.33	
STRUCTURE 20 FOOT SPAN AND UNDER (GRE-35-10.42) OPTION A: CARBON FIBER REINFORCED POLYMER														
	444						444	512	10100	444	SY		SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	2,661						2,661	SPECIAL	51900100	2,661	SF		COMPOSITE FIBER WRAP SYSTEM	5
	65						65	843	50000	65	SF		PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	
	200						200	843	50001	200	SF		PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR, AS PER PLAN	5
STRUCTURE 20 FOOT SPAN AND UNDER (GRE-35-10.42) OPTION B: SS 833														
	296						296	833	10001	296	FT		CONDUIT RENEWAL USING SPRAY APPLIED STRUCTURAL LINER, ROUND CONDUIT, AS PER PLAN, 108" RCP	5
STRUCTURE 20 FOOT SPAN AND UNDER (GRE-35-10.42) OPTION C: EIPI														
	296						296	611	97400	296	FT		CONDUIT, MISC.:108" EXPAND-IN-PLACE INTEGRATION TECHNOLOGY LINER PIPE	5
MAINTENANCE OF TRAFFIC														
3							3	614	12390	3	EACH		WORK ZONE IMPACT ATTENUATOR, 24"-36" WIDE HAZARDS, (UNIDIRECTIONAL)	
18							18	614	13350	18	EACH		OBJECT MARKER, ONE WAY	
18							18	614	13310	18	EACH		BARRIER REFLECTOR, TYPE 1, ONE WAY	
0.75							0.75	614	22210	0.75	MILE		WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I	
3,000							3,000	614	24402	3,000	FT		WORK ZONE DOTTED LINE, CLASS I, 6", 740.06, TYPE I	
870							870	622	41100	870	FT		PORTABLE BARRIER, UNANCHORED	
INCIDENTALS														
							LS	614	11000	LS			MAINTAINING TRAFFIC	
							LS	623	10000	LS			CONSTRUCTION LAYOUT STAKES AND SURVEYING	
							LS	624	10000	LS			MOBILIZATION	

DESIGN AGENCY



DESIGNER
MLB

REVIEWER
TRB 03-17-23

PROJECT ID
115575

SHEET TOTAL
03 06

ENDANGERED BAT HABITAT REMOVAL

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES 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 (ESA). FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

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.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOW ON THE PROPOSED PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, SUCH DETAILS AND DIMENSIONS ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.04. BASE THE CONTRACT BID PRICES UPON A RECOGNITIONS 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.

ACCESS BEHIND GUARDRAIL

REMOVE AND RE-ERECT GUARDRAIL AS NECESSARY FOR ACCESS TO A WORK LOCATION. REMOVE GUARDRAIL ONLY WHEN IT CAN BE REPLACED ON THE SAME DAY. OBTAIN APPROVAL FROM THE ENGINEER FOR EACH LOCATION, PRIOR TO PERFORMING THE WORK. THIS WORK INCLUDES REMOVAL OF EXISTING GUARDRAIL AND POSTS AND RE-ERECTION OF THE SAME MATERIALS. EXISTING RAIL ELEMENTS AND BARRIER REFLECTORS MAY BE REUSED. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

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.

COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

COFFERDAMS AND EXCAVATION BRACING INSTALLED FOR THE PROJECT ARE FOR DEWATERING THE WORK AREA AND ARE CONSIDERED FILL. COFFERDAMS AND EXCAVATION BRACING DESIGN, CONSTRUCTION, AND REIMBURSEMENT FOR DAMAGE IS BASED ON CMS 503. THE CONTRACTOR MUST COMPLY WITH ANY IN-STREAM RESTRICTION IN THE SPECIAL PROVISIONS WATERWAY PERMIT. ADDING FILL TO THE STREAM TO DEWATER THE WORK AREA REQUIRES A TEMPORARY ACCESS FILL (TAF) SUBMISSION PER THE SPECIAL PROVISIONS.

IF THE CONTRACTOR CHOOSES TO PERFORM 250 LINEAL FEET OR LESS OF THE REHABILITATION WORK REQUIRED IN THE PLANS PER LOCATION: ALL REQUIREMENTS OF CMS 503 APPLY, UNLESS STIPULATED ELSEWHERE IN THIS NOTE.

IF THE CONTRACTOR CHOOSES TO PERFORM MORE THAN 250 LINEAL FEET OF THE REHABILITATION WORK REQUIRED BY THE PLANS PER LOCATION: EVEN IF THE ACTUAL WATER ELEVATION EXCEEDS 3 ABOVE THE STATED ORDINARY HIGH WATER MARK, THE DEPARTMENT WILL ONLY REIMBURSE THE CONTRACTOR FOR RESULTING DAMAGE TO A MAXIMUM OF 250 LINEAL FEET OF WORK PROTECTED BY THE COFFERDAM. ALL OTHER PROVISIONS OF CMS 503 APPLY.

IF THE CONTRACTOR CHOOSES TO IMPACT THE STREAM DURING THE MONTHS OF APRIL THROUGH OCTOBER: ALL REQUIREMENTS OF CMS 503 APPLY, UNLESS STIPULATED ELSEWHERE IN THIS NOTE.

IF THE CONTRACTOR CHOOSES TO IMPACT THE STREAM AT ANY TIME IN THE MONTHS OF NOVEMBER THROUGH MARCH: EVEN IF THE ACTUAL WATER ELEVATION EXCEEDS 3 FEET ABOVE THE STATED ORDINARY HIGH WATER MARK, THE DEPARTMENT WILL NOT REIMBURSE THE CONTRACTOR FOR RESULTING DAMAGE TO THE WORK PROTECTED BY THE COFFERDAM. ALL OTHER REQUIREMENTS OF CMS 503 APPLY.

SEEDING AND MULCHING

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

659, TOPSOIL	350 CU. YD.
659, SEEDING AND MULCHING	3150 SQ. YD.
659, COMMERCIAL FERTILIZER	0.42 TON
659, LIME	0.65 ACRES
659, WATER	17.4 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.

INSTREAM WORK RESTRICTION

THE CONSTRUCTOR SHALL NOT PERFORM ANY WORK WITHIN THE JURISDICTIONAL BOUNDARIES OF ANY WATERWAY, INCLUDING WETLANDS, UNTIL ODOT OBTAINS THE NECESSARY WATERWAY PERMIT(S). THIS INCLUDES THE PLACEMENT OF ANY TEMPORARY OR PERMANENT FILLS.

INSTREAM WORK RESTRICTION

THE CONSTRUCTOR SHALL NOT PERFORM ANY WORK WITHIN THE JURISDICTIONAL BOUNDARIES OF ANY WATERWAY, INCLUDING WETLANDS, UNTIL ODOT OBTAINS THE NECESSARY WATERWAY PERMIT(S). THIS INCLUDES THE PLACEMENT OF ANY TEMPORARY OR PERMANENT FILLS.

LITTLE MIAMI BIKE TRAIL

THE CONTRACTOR WILL AVOID ALL IMPACTS THE LITTLE MIAMI BIKE TRAIL.

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

MAINTAIN A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES BY USE OF THE EXISTING PAVEMENT. WHEN A LANE IS CLOSED IN THE AREA OF AN ENTRANCE RAMP, MAINTAIN A MINIMUM OF THE EXISTING DECISION SIGHT DISTANCE.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF 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. RFACES USING ITEMS 410 AND 614.

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

NEW YEAR'S (OBSERVED)	GENERAL/REGULAR ELECTION DAY (NOV)
TOTAL SOLAR ECLIPSE (4/8/24)	THANKSGIVING
MEMORIAL DAY	CHRISTMAS (OBSERVED)
FOURTH OF JULY (OBSERVED)	(OTHER HOLIDAY OR SPECIAL EVENT)
LABOR DAY	EASTER

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

DAY OF HOLIDAY TIME ALL LANES
OR SPECIAL EVENT MUST BE OPEN TO TRAFFIC

SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
MONDAY	(TOTAL SOLAR ECLIPSE)
	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
TUESDAY	(GEN./REG. ELECTION)
	5:00 AM TUESDAY THROUGH 12:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY	(THANKSGIVING ONLY)
	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

DURING THE SAME PERIODS, MAINTAIN PEDESTRAIN ACCESS IF PEDESTRIAN ACCESS WAS PRESENT PRIOR TO CONSTRUCTION.

[NEWLY CONSTRUCTED LANE ADDITIONS, ONCE COMPLETED AND INITIALLY OPENED TO TRAFFIC, SHALL BE OPEN TO TRAFFIC DURING ALL SUBSEQUENT DESIGNATED HOLIDAYS AND SPECIAL EVENTS, AND RELATED PERIODS OF TIME, SPECIFIED ABOVE.]

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

LANE VALUE CONTRACT TABLE

LOCATION	1 LANE CLOSED		TIME UNIT	DISINCENTIVE PER LAND PER TIME UNIT
	WEEKDAY	WEEKEND		
GRE-35-10.42	AT ALL TIMES	AT ALL TIMES	1 MINUTE	\$140

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.

WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF C&MS 614.04 AND 614.11.

ALL CONFLICTING MARKINGS ARE TO BE COVERED BY REMOVABLE, NON-REFLECTIVE, PREFORMED BLACKOUT TAPE PER 614.11. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

ESTIMATED QUANTITIES (TOTALS CARRIED TO GENERAL SUMMARY)			
ITEM	QUANTITY	UNIT	DESCRIPTION
614	3	EA	WORK ZONE IMPACT ATTENUATOR, 24"-36" WIDE HAZARDS (UNIDIRECTIONAL)
614	18	EA	OBJECT MARKER, ONE WAY
614	18	EA	BARRIER REFLECTOR, TYPE 1, ONE WAY
622	870	FT	PORTABLE BARRIER, UNANCHORED
614	0.75	MI	WORK ZONE EDGE LINE, CLASS 1, 6", 740.06, TYPE 1
614	3000	FT	WORKZONE DOTTED LINE, CLASS 1, 6", 740.06, TYPE 1

DESIGN AGENCY



DESIGNER

MLB

REVIEWER

TRB/SK 04-24-23

PROJECT ID

115575

SHEET

TOTAL

02 | 06

OPTION A: CARBON FIBER REINFORCED POLYMER (FRP)

- SMALL AREA REPAIR: SMALL AREAS OF SPALLED CONCRETE SHALL BE REPAIRED WITH TROWELABLE MORTAR PER SS 843. "SMALL AREAS" ARE DEFINED AS THOSE AREAS ESTIMATED TO BE LESS THAN 10 SF. ONCE TROWELABLE MORTAR HAS CURED PER MANUFACTURER'S SPECIFICATIONS, INSTALL ONE PLY OF PROTECTIVE FRP PER PN 519 ORIENTED CIRCUMFERENTIALLY. THIS PROTECTIVE FRP SHALL EXTEND 2 FT PAST THE LIMITS OF DETERIORATION IN EACH DIRECTION.
- LARGE AREA REPAIR: LARGE AREAS OF SPALLED CONCRETE SHALL BE REPAIRED WITH TROWELABLE MORTAR PER SS 843, AS PER PLAN (SEE NOTE ON THIS SHEET). "LARGE AREAS" ARE DEFINED AS THOSE AREAS ESTIMATED TO BE MORE THAN 10 SF. ONCE TROWELABLE MORTAR HAS CURED PER MANUFACTURER'S SPECIFICATIONS, INSTALL 2 LAYERS OF FRP AROUND THE ENTIRE PERIMETER OF THE EXISTING CONCRETE PIPE SECTION.
- INSTALL ONE PLY OF FRP PER PN 519 AROUND ENTIRE PERIMETER OF EXISTING CONCRETE PIPE ON SECTIONS OF CULVERT INDICATED ON SHEET 4.
- COAT ALL FRP WITH AN EPOXY URETHAN SEALER PER CSM 512. COLOR SHALL BE FEDERAL COLOR 17778. EXTEND THE SEALER 6" PAST THE LIMITS OF THE FRP.
- SEE PROFILE ON CULVERT PLAN SHEET FOR LOCATIONS OF SMALL AND LARGE REPAIRS PER OPTION A.
- PERFORM A POST-INSTALLATION VIDEO SURVEY OF THE PIPE AND PROVIDE A COPY OF THE VIDEO TO THE ENGINEER AS DESCRIBED IN SS902 SECTION 902.01 C.

OPTION B: SS 833

- SPRAYLINE THE ENTIRE CIRCUMFERENCE OF THE EXISTING 108" CULVERT PER SS 833, AS PER PLAN (SEE NOTE ON THIS SHEET).
- WATER TABLE WITHIN THE EMBANKMENT SHALL BE ASSUMED TO BE AT THE ROADWAY SURFACE.

OPTION C: EXPAND IN PLACE INTEGRATION

- LINE THE ENTIRE INTERIOR CIRCUMFERENCE OF THE CULVERT WITH EXPAND-IN-PLACE INTEGRATION (EIPi).
- THE WATER TABLE WITHIN THE EMBANKMENT SHALL BE ASSUMED TO BE AT THE ROADWAY SURFACE.

SS 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR, AS PER PLAN

PROVISIONS FOR SS 843 SHALL BE FOLLOWED EXCEPT MODIFIED HEREIN. FOR SECTION 843.4, REMOVAL OF CONCRETE, POWER TOOLS SHALL BE PROHIBITED AND ONLY CONCRETE THAT WILL REQUIRE REMOVAL IS THAT WHICH CAN BE REMOVED WITH A HAND TOOL. EXCAVATION OF DETERIORATED OR UNSOUND CONCRETE AROUND EXPOSED REINFORCING STEEL IS NOT REQUIRED.

SS 833 - CONDUIT RENEWAL USING SPRAY APPLIED STRUCTURAL LINER, AS PER PLAN

PROVISIONS FOR SS 833 SHALL BE FOLLOWED EXCEPT MODIFIED HEREIN. THE MAXIMUM SPRAYLINER THICKNESS SHALL BE 2.0 INCHES. SIGNED AND STAMPED CALCULATIONS BY A PROFESSIONAL ENGINEER ARE STILL REQUIRED. MATERIALS REQUIRED A THICKNESS THAT EXCEEDS 2.0 INCHES WILL REDUCE THE HYDRAULIC CAPACITY OF THE PIPE BEYOND ACCEPTANCE AND ARE THEREFORE NOT ALLOWED.

THE AREAS OF LOOSE CONCRETE WITHIN THE PIPE SHALL BE REMOVED WITH HAND HELD TOOLS. THE USE OF POWER TOOLS SHALL BE PROHIBITED AND THE ONLY CONCRETE THAT WILL REQUIRE REMOVAL IS THAT WHICH CAN BE REMOVED WITH HAND TOOLS. AREAS WHERE REBAR IS EXPOSED AND/OR THE CONCRETE HAS BEEN REMOVED SHALL BE CLEANED PRIOR TO THE APPLICATION OF THE SPRAYLINER. CLEANING SHALL PRECEDE APPLICATION OF THE SPRAYLINER BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE PATCHED SHALL BE CLEANED BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA WILL NOT BE ALLOWED. EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED TO REMOVE ALL LOOSE AND BUILT-UP RUST, ASPHALT RESIDUE, AND ALL OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND. THE SURFACE SHALL BE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. EXPOSED PORTIONS OF EXISTING REINFORCING STEEL SHALL BE TREATED WITH A CORROSION INHIBITOR. THE PREPARATORY WORK SHALL BE INCIDENTAL TO SS 833.

ITEM 611 - CONDUIT MISC.: EXPAND-IN-PLACE GLASS-FIBER LINER PIPE

INSTALL AN EXPAND-IN-PLACE GLASS-FIBER LINER PIPE THAT IS BONDED TO THE INTERIOR SURFACE OF THE CONCRETE HOST PIPE TO BE REHABILITATED. ENSURE THE LINER PIPE FITS TIGHTLY AND CONFORMS TO THE SHAPE OF THE EXISTING PIPE WHEN THE EXPANSION IS COMPLETE. GLASS ALL SEAMS AND JOINTS A MINIMUM THICKNESS EQUAL TO THE DESIGN THICKNESS TO PRODUCE A CONTINUOUS JOINT-LESS LINER THAT IS IMPERVIOUS TO INFILTRATION AND EXFILTRATION.

PROVIDE CALCULATIONS PERFORMED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER. DESIGN THE PIPE AS A STATE III LINER THAT INDEPENDENTLY SUPPORTS THE DEAD LOAD, LIVE LOAD, AND HYDRAULIC LOAD PER ASCE MOP 145, DESIGN OF CLOSE-FIT LINERS. USE A DESIGN SERVICE LIFE OF 75 YEARS. INCLUDE A LOAD RATING ANALYSIS, IF REQUIRED, PER THE BRIDGE DESIGN MANUAL SECTION 900 TO THE DISTRICT BRIDGE ENGINEER.

PROVIDE LINER PIPE CONFORMING TO 707.75.

PROVIDE A 2-PART BONDING SYSTEM CONSISTING OF A PRIMER AND BONDING AGENT, BOTH SOURCED FROM THE SAME PRODUCER, DESIGNED TO WORK IN CONJUNCTION TO BOND THE LINER PIPE TO THE CONCRETE HOST PIPE. FILL VOIDS WITH GROUT COMPATIBLE WITH THE 2-PART BONDING SYSTEM WHERE THEY EXIST BETWEEN THE LINER AND HOST PIPE DUE TO DETERIORATION OF THE HOST PIPE (SPALLING, JOINT SEPARATION / MISALIGNMENT) AND FULL CONTACT CANNOT BE ACHIEVED.

CURED BONDING AGENT PROPERTIES
 TENSILE STRENGTH 1700 PSI (MINIMUM)
 ELONGATION 480% (MAXIMUM)
 MODULUS (100%) 430PSI (MINIMUM)

INSTALL LINER PIPE AND BONDING SYSTEM AS PER THE DIRECTION OF THE MANUFACTURER USING ONLY MANUFACTURER CERTIFIED PERSONNEL.

CLEAN AND REMOVE DEBRIS FROM THE HOST PIPE PRIOR TO INSTALLING THE LINER PIPE. DEWATER PIPE AND BYPASS FLOW DURING INSTALLATION. RESTORE ACTIVE SERVICE CONNECTIONS AFTER INSTALLATION OF THE LINER PIPE. PERFORM A POST-INSTALLATION VIDEO SURVEY OF THE PIPE AND PROVIDE A COPY OF THE VIDEO TO THE ENGINEER AS DESCRIBED IN SS902 SECTION 902.01 C.

PAYMENT FOR THE ABOVE WORK IS INCLUDED IN THE CONTRACT PRICE FOR ITEM 611, CONDUIT MISC.: EXPAND-IN-PLACE GLASS-FIBER LINER PIPE 108", FOOT

ESTIMATED QUANTITIES (TOTALS CARRIED TO GENERAL SUMMARY)			
ITEM	QUANTITY	UNIT	DESCRIPTION
STRUCTURE 20 FOOT SPAN AND UNDER (GRE-35-10.42) OPTION A: FRP			
512	444	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
519	2661	SF	COMPOSITE FIBER WRAP SYSTEM
843	65	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR
843	200	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR, AS PER PLAN
STRUCTURE 20 FOOT SPAN AND UNDER (GRE-35-10.42) OPTION B: SS 833			
833	296	FT	CONDUIT RENEWAL USING SPRAY APPLIED STRUCTURAL LINER, ROUND CONDUIT, AS PER PLAN
STRUCTURE 20 FOOT SPAN AND UNDER (GRE-35-10.42) OPTION C: EIPi			
611	296	FT	CONDUIT, MISC.: 108" EXPAND IN PLACE INTEGRATION TECHNOLOGY LINER PIPE

DESIGN AGENCY



DESIGNER

MLB

REVIEWER

TRB 03-17-23

PROJECT ID

115575

SHEET TOTAL

05 | 06