


SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P.74		P.86		P.99		P.113				01/STR	02/STR						
		161								161		512	10050	161	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
		6								6		512	10600	6	FT	CONCRETE REPAIR BY EPOXY INJECTION	
		66								66		516	10501	66	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN	P.85
		8								8		516	46201	8	EACH	BEARING DEVICE, ROCKER, AS PER PLAN	P.85
		LS								LS		516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	P.85
		562								562		517	70100	562	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)	
		684								684		SPECIAL	51822300	684	FT	STEEL DRIP STRIP	P.92
		331								331		519	11101	331	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	P.85
		5								5		601	32100	5	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
		860								860		848	10201	860	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1.75" THICK)	P.85
		680								680		848	20001	680	SY	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN	P.85
		6								6		848	30201	6	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	P.85
		102								102		848	50001	102	SY	HAND CHIPPING, AS PER PLAN	P.85
		LS								LS		848	50101	LS		TEST SLAB, AS PER PLAN	P.85
		4								4		848	50201	4	CY	FULL DEPTH REPAIR, AS PER PLAN	P.95
																<b>STRUCTURE OVER 20 FOOT SPAN (DEL-00229-01.490)</b>	
				LS						LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	P.98
				67						67		202	23500	67	SY	WEARING COURSE REMOVED	
				22,922						22,922		509	10000	22,922	LB	EPOXY COATED STEEL REINFORCEMENT	
				580						580		509	20001	580	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN	P.98
				74						74		511	32210	74	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE	
				62						62		512	10050	62	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
				28						28		512	10600	28	FT	CONCRETE REPAIR BY EPOXY INJECTION	
				272						272		517	70100	272	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)	
				314						314		SPECIAL	51822300	314	FT	STEEL DRIP STRIP	P.105
				100						100		519	11101	100	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	P.98
				520						520		848	10201	520	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2" THICK)	P.98
				380						380		848	20001	380	SY	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN	P.98
				4						4		848	30201	4	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	P.98
				57						57		848	50001	57	SY	HAND CHIPPING, AS PER PLAN	P.98
				LS						LS		848	50101	LS		TEST SLAB, AS PER PLAN	P.98
				11						11		848	50201	11	CY	FULL DEPTH REPAIR, AS PER PLAN	P.107
				380						380		848	50320	380	SY	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" THICK)	
																<b>STRUCTURE 20 FOOT SPAN AND UNDER (CFN 1997557)</b>	
		LS								LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
		60								60		503	21100	60	CY	UNCLASSIFIED EXCAVATION	
		2,789									2,789	509	10000	2,789	LB	EPOXY COATED STEEL REINFORCEMENT	
		6								6		511	46010	6	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
		19								19		511	46510	19	CY	CLASS QC1 CONCRETE, FOOTING	
		1								1		511	46610	1	CY	CLASS QC1 CONCRETE, HEADWALL	
		32								32		512	10050	32	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
		95								95		512	33000	95	SY	TYPE 2 WATERPROOFING	
		81								81		512	33010	81	SY	TYPE 3 WATERPROOFING	
		24								24		516	13600	24	SF	1" PREFORMED EXPANSION JOINT FILLER	

GENERAL SUMMARY

DESIGN AGENCY  
  
 www.bgengr.com  
 5560 WILCOX PLACE, SUITE C  
 DUBLIN, OHIO 43016

DESIGNER  
 JEP

REVIEWER  
 RG 9-9-25

PROJECT ID  
 107754

SHEET TOTAL  
 P.24 P.136

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:**

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

DS-1-92	REVISED	07/15/2022
EXJ-2-81	REVISED	07/15/2022
PCB-91	REVISED	07/17/2020
TST-2-21	REVISED	01/17/2025

REFER TO THE FOLLOWING SPECIFICATIONS:

800	DATED	01/17/2025
848	DATED	07/19/2024

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 9TH EDITION, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**DESIGN LOADING:**

VEHICULAR LIVE LOAD: S-15-46

**DESIGN DATA:**

CONCRETE, QC/QA CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)  
CONCRETE, CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)  
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI (EPOXY COATED AND GALVANIZED)  
STRUCTURAL STEEL - ASTM A709, GRADE 50, GALVANIZED, MINIMUM YIELD STRENGTH 50 KSI

**MAINTENANCE OF TRAFFIC:**

FOR MAINTENANCE PLANS, SEE ROADWAY SHEETS.

**UTILITIES:**

FOR UTILITY NOTES, SEE ROADWAY SHEETS.

**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 C&MS 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.

**ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:**

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

CUT LINE CONSTRUCTION JOINT PREPARATION:  
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 ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL:  
REMOVE CONCRETE 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.

**ITEM 509 - GALVANIZED STEEL REINFORCEMENT, AS PER PLAN:**

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE STEEL REINFORCEMENT DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO C&MS 711.02.

**ITEM 509 - CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN:**

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT CONCRETE REINFORCEMENT BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING STEEL REINFORCEMENT BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW CONCRETE REINFORCEMENT OF THE SAME SIZE, COATING, AND MATERIAL AT NO COST TO THE DEPARTMENT.

**ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN:**

INSTALL ADHESIVE ANCHORS/DOWELS ACCORDING TO THE MANUFACTURE'S INSTALLATION INSTRUCTIONS PUBLISHED IN THE ICC-ES REPORTS LISTED BELOW.

THE HOLES FOR THE ADHESIVE ANCHORS SHALL BE DRILLED WITH A HAMMER DRILL AND CARBIDE BIT PRIOR TO THE INSTALLATION OF THE ANCHORS, CLEAN AND DRY THE HOLES IN A MANNER CONSISTENT WITH THE MANUFACTURE'S REQUIREMENTS FOR DRY CONCRETE.

[HTTPS://ICC-ES.ORG/EVALUATION-REPORT-PROGRAM/REPORTS-DIRECTORY/](https://icc-es.org/evaluation-report-program/reports-directory/)

SELECT FROM ONE OF THE FOLLOWING APPROVED PRODUCTS:

ADHESIVE ANCHOR/DOWEL SYSTEM OPTION 1 – ICC-ES ESR 4868  
ADHESIVE ANCHOR/DOWEL SYSTEM OPTION 2 – ICC-ES ESR 3298

**ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN:**

THIS WORK CONSISTS OF REPLACING THE EXISTING ELASTOMERIC COMPRESSION SEAL AS SHOWN IN THE PLANS.

FURNISH PLATES TO BE FIELD WELDED TO THE EXISTING JOINT ARMOR, A 4" ELASTOMERIC COMPRESSION SEAL, AND 1/2" Ø RETAINERS. THE MATERIAL, TESTING, AND INSTALLATION OF THE SEAL SHALL CONFORM TO THE ODOT STANDARD BRIDGE DRAWING EXJ-2-81.

THE DEPARTMENT WILL MEASURE THIS ITEM IN FEET BY LENGTH OF STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL COMPLETED IN PLACE.

PAYMENT FOR THIS ITEM INCLUDES, BUT IS NOT LIMITED TO: THE LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION OF EXPANSION JOINT, THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

**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 C&MS 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 C&MS 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

**ITEM 516 - BEARING DEVICE, ROCKER, AS PER PLAN:**

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO REPLACE EXISTING (R-100) ROCKER BEARINGS WITH NEW ROCKER BEARINGS IN KIND. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - BEARING DEVICE, ROCKER, AS PER PLAN.

**ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN:**

PRIOR TO THE SURFACE CLEANING SPECIFIED IN C&MS 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED STEEL REINFORCEMENT. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

**SPECIAL PROVISIONS**

**ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION AS PER PLAN, 1 3/4" THICK**

**ITEM 848 - SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN**

**ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN**

**ITEM 848 - HAND CHIPPING, AS PER PLAN**

**ITEM 848 TEST SLAB, AS PER PLAN**

WORK MUST BE PERFORMED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 848, "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRO-DEMOLITION" ON STRUCTURE DEL-229-0.93 WITH THE FOLLOWING REVISIONS.

THE INTENT OF THIS ITEM IS TO REPAIR THE EXISTING BRIDGE DECK TO THE LIMITS SHOWN ON THE PLAN WITHIN THE PERMITTED CLOSURE PERIOD SPECIFIED IN THE MAINTENANCE OF TRAFFIC SHEETS.

THE REMOVAL OPERATIONS MUST NOT BEGIN IF SUSTAINED RAINS (5 HOURS OR MORE WITH BREAKS BETWEEN SHOWERS LESS THAN 1 1/2 HOURS) ARE PREDICTED WITHIN 48 HOURS OF COMMENCEMENT.

REMOVAL OF EXISTING CONCRETE DECK SURFACE (1 1/4") MAY INCLUDE SCARIFYING 3/4" OF EXISTING SURFACE. HYDRODEMOLITION MUST BE PERFORMED ON THE REMAINING 1/4" AS WELL AS AREAS DEEPER DUE TO EXISTING DEBONDED CONCRETE. IDENTIFY THE LIMITS OF POSSIBLE FULL DEPTH REMOVAL PRIOR TO COMMENCING HYDRODEMOLITION AND DURING REMOVALS, IF THE DECK CONCRETE IS UNSOUND MORE THAN 1/2 OF THE BRIDGE DECK, FULL DEPTH REMOVAL IS TO BE EXPECTED EITHER THROUGH THE HYDRODEMOLITION PROCESS OR HANDCHIPPING. LOCATIONS OF EXPECTED FULL DEPTH REPAIRS HAVE BEEN IDENTIFIED IN THE PLANS.

DURING HYDRODEMOLITION ONLY HYDRODEMOLITION REMOVAL EQUIPMENT IS PERMITTED TO DRIVE/OPERATE ON REMOVED SURFACES. THE INTENT IS TO NOT DAMAGE EXISTING REBAR OR CAUSE UNNECESSARY DAMAGE TO THE EXISTING DECK. EQUIPMENT MUST BE OPERATED FROM A SAFE DISTANCE ON THE BRIDGE DECK AND A VACUUM TRUCK CAPABLE OF OPERATING WITH A BOOM FROM A SAFE DISTANCE MUST BE PROVIDED FOR CLEANING HYDRODEMOLITION DEBRIS. DRIVING DIRECTLY ON EXPOSED REBAR WILL NOT BE PERMITTED.

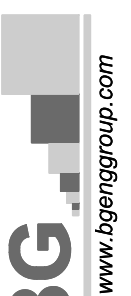
HAND CHIPPING OF AREAS WHERE THE HYDRODEMOLITION MACHINE DOES NOT HAVE ACCESS IS INCIDENTAL TO THE REMOVAL.

THE CONTRACTOR MUST PROVIDE A MIX DESIGN AND MAKE ONE OR MORE, ONE CUBIC YARD, TRIAL BATCHES OF OVERLAY MATERIAL AT LEAST TWO WEEKS BEFORE THE OVERLAY IS PLACED DEMONSTRATING THE ABILITY TO MEET 848.26 AND 848.31. DEVELOP BEAM BREAK MATURITY CURVES.

REVISE 848.29. THE CONTRACTOR MUST CONTINUE THE WET CURE FOR THE MAXIMUM HOURS POSSIBLE DURING THE PERMITTED CLOSURE. TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL A MINIMUM WET CURE OF 12 HOURS, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 600 PSI.

THE CONTRACTOR MUST PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS. PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS AND THE MODULUS OF RUPTURE OF EACH BEAM.

A WATER FOG SHALL BE CONTINUOUSLY APPLIED OVER THE SURFACE OF THE FRESHLY PLACED CONCRETE IN SUCH A MANNER THAT THE ENTIRE SURFACE IS KEPT AT A RELATIVE HUMIDITY OF 90% OR GREATER. THE AREA TO BE FOGGED SHALL BE THE ENTIRE AREA OF THE FRESHLY PLACED CONCRETE, WHICH HAS NOT HAD THE FINAL FINISH APPLIED. THIS FOG SHALL BE DELIVERED THROUGH A NETWORK OF NOZZLES, WHICH ARE PROPERLY SPACED TO PROVIDE A UNIFORM FOG AT THE SURFACE OF THE CONCRETE. THE NOZZLES USED SHALL BE OF THE TYPE WHICH ATOMIZES THE WATER SO THAT THERE ARE NO VISUALLY DISCERNIBLE DROPLETS OF WATER. THE FOGGING EQUIPMENT SHALL BE CAPABLE OF APPLY WATER IN A MIST, NOT A SPRAY, TO FINE TO DAMAGE THE CONCRETE SURFACE. THE AREA OF COVERAGE FROM EACH NOZZLE SHALL OVERLAP ALL ADJACENT COVERAGES BY AT LEAST 12 INCHES.

SFN 2102730	
DESIGN AGENCY  www.bgggroup.com 5960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016	
DESIGNER GLA	CHECKER RG
REVIEWER GTB 10-30-24	
PROJECT ID 107754	
SUBSET 2	TOTAL 13
SHEET P.85	TOTAL P.136

IT SHALL BE DEMONSTRATED PRIOR TO THE PLACEMENT OF THE CONCRETE THAT THE INTENDED SYSTEM IS CAPABLE OF DELIVERING THE REQUIRED FOGGING ENVIRONMENT FOR AT LEAST TWICE THE THE ANTICIPATED REQUIRED TIME. THE INTENDED SYSTEM MUST BE PROPERLY FIELD TESTED. CARE SHALL BE EXERCISED DURING FINISHING TO PREVENT FOGGED WATER FROM BECOMING PART OF THE CONCRETE AND TO PREVENT INCREASING THE WATER CONTENT IN THE CONCRETE BY THE WATER USED IN THE CURING PROCESS.

FOGGING CONTINUE UNTIL THE SURFACE IS COVERED WITH WET BURLAP. THE WET BURLAP SHALL NOT BE APPLIED UNTIL THE DECK CAN RECEIVE THE WET BURLAP AND PLACEMENT LOADS WITHOUT DEFORMATION.

REVISIONS TO 848.26. GROOVES SHALL BE SAWED IN THE CONCRETE SURFACE IN THE SAME DIRECTION OF THE EXISTING SAWED LINES PER 511.20 AFTER THE WET CURE IS COMPLETED. AFTER THE TEXTURING OF THE CONCRETE SURFACE, CLEAN THE SURFACE AND SPRAY A UNIFORM APPLICATION OF CURING MATERIAL 705.07, TYPE 1 OR 1D AS PER CMS 511.17 METHOD B OF MEMBRANE CURING. THE DECK SURFACE MUST BE DRY PRIOR TO PLACEMENT OF THE CURING MATERIAL. IF THE SAWING OF THE GROOVES CANNOT BE DONE WITHIN THE SAM WEEKEND AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY AFTER THE CURING COMPOUND HAS BEEN APPLIED AND COMPLETE THIS WORK AT A SEPARATE TIME, AND REAPPLY THE MEMBRANE COMPOUND.

PRIOR TO CONSTRUCTION OF PROPOSED OVERLAY, HOLD A PRE-PLACEMENT MEETING. ITEMS TO BE DISCUSSED INCLUDE BUT ARE NOT LIMITED TO:

- SEQUENCE OF CONSTRUCTION AND MOT
- STAGING OF EQUIPMENT DURING HYDRODEMOLITION AND PLACEMENT OF PROPOSED OVERLAY
- ANTICIPATED WEATHER CONDITIONS AND EMERGENCY COVERING MATERIALS IN CASE OF INCLEMENT WEATHER
- RATE OF DELIVERY OF THE CONCRETE TO ENSURE COMPLETION
- PROCEDURES FOR INSTALLATION OF FORMWORK FOR FULL DEPTH AREAS
- CONSOLIDATION AND FINISHING OF CONCRETE
- NUMBER OF FINISHERS AND THEIR DUTIES
- FINISHING TOOLS AND EQUIPMENT AVAILABLE
- TIMING OF FOGGING AND PLACEMENT OF WET CURE
- REMOVAL OF WET CURE
- APPLICATION OF SPRAY CURE
- ANY OTHER APPROPRIATE SUBJECTS

PAYMENT FOR THIS WORK INCLUDES ALL EQUIPMENT, TOOLS, MATERIAL, LABOR, AND INCIDENTALS NECESSARY TO PERFORM THIS WORK AND WILL BE MADE AT THE CONTRACT PRICE BID FOR THE ITEMS OF WORK ESTABLISHED IN SS 848

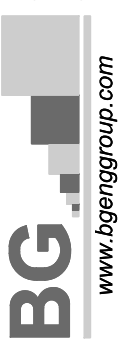
**PROPOSED WORK**

1. REMOVE DECK EDGE AND RAILING AND REPLACE WITH NEW DECK EDGE AND TST-2-21 RAILING.
2. USE HYDRODEMOLITION TO REMOVE 1" OF EXISTING DECK AND CONSTRUCT 1¾" SUPERPLASTICIZED DENSE OVERLAY.
3. VARIABLE MILL 1½" AT BEGINNING APPROACH SLAB TO ¾" END APPROACH SLAB AND RESURFACE WITH 1½" THICKNESS OF ITEM 441- ASPHALT CONCRETE SURFACE COURSE
4. REFURBISH EXISTING ABUTMENT BEARINGS.
5. REPLACE COMPRESSION SEALS.
6. REPAIR PIERS AT WATERLINE AND ADD ROCK CHANNEL PROTECTION.

**ABBREVIATIONS:**

ABUT. - ABUTMENT  
 ADT - AVERAGE DAILY TRAFFIC  
 ADTT - AVERAGE DAILY TRUCK TRAFFIC  
 APPR. - APPROACH  
 B - BOTTOM  
 BM - BENCHMARK  
 BOT. OR BTM. - BOTTOM  
 BRGS. - BEARINGS  
 @ - CENTERLINE  
 C/C - CENTER TO CENTER  
 C.J. - CONSTRUCTION JOINT  
 CLR. - CLEAR  
 CMS - CONSTRUCTION AND MATERIAL SPECIFICATIONS  
 CONC. - CONCRETE  
 CONSTR. - CONSTRUCTION  
 DIA. - DIAMETER  
 DIM. - DIMENSION  
 DWG. - DRAWING  
 E.F. - EACH FACE  
 EL. OR ELEV. - ELEVATION  
 E/P - EDGE OF PAVEMENT  
 EQ. - EQUAL  
 EST. - ESTIMATED  
 EX. - EXISTING  
 F.A. - FORWARD ABUTMENT  
 F/F - FACE TO FACE  
 F.F. - FAR FACE  
 FT. - FOOT OR FEET  
 FWD. - FORWARD  
 HW - HIGH WATER  
 IN. - INCH  
 INT. - INTEGRAL  
 JT. - JOINT  
 LT. - LEFT  
 MAX. - MAXIMUM  
 MIN. - MINIMUM  
 MISC. - MISCELLANEOUS

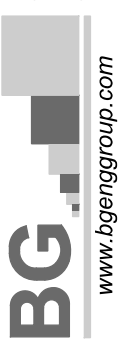
N.F - NEAR FACE  
 NO. - NUMBER  
 N.P.C.P.P. - NON-PERFORATED CORRUGATED PLASTIC PIPE  
 OHWM - ORDINARY HIGH WATER MARK  
 O/O - OUT TO OUT  
 P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE  
 P.E.J.F. - PREFORMED EXPANSION JOINT FILLER  
 PG - PROFILE GRADE  
 PROP. - PROPOSED  
 PSF - POUNDS PER SQUARE FOOT  
 P.V.I. - POINT OF VERTICAL INTERSECTION  
 Q - FLOW RATE  
 R - RADIUS  
 R.A. - REAR ABUTMENT  
 RCP - ROCK CHANNEL PROTECTION  
 REQD. - REQUIRED  
 RT. - RIGHT  
 R/W - RIGHT OF WAY  
 SER. - SERIES  
 SHLDR - SHOULDER  
 SPA. - SPACE OR SPACES  
 STA. - STATION  
 STD. - STANDARD  
 STR - STRAIGHT  
 T - TOP  
 T&B - TOP & BOTTOM  
 TBR - TO BE REMOVED  
 TEMP. - TEMPORARY  
 T.O.S. OR T/S - TOP OF SLOPE  
 T/T - TOE TO TOE  
 TYP. - TYPICAL  
 U.N.O. - UNLESS NOTED OTHERWISE  
 VAR. - VARIES  
 V - VELOCITY

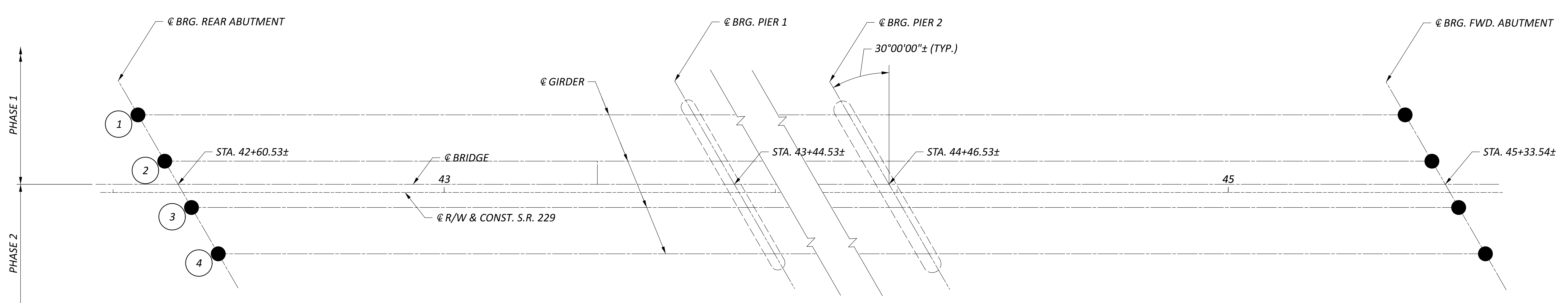
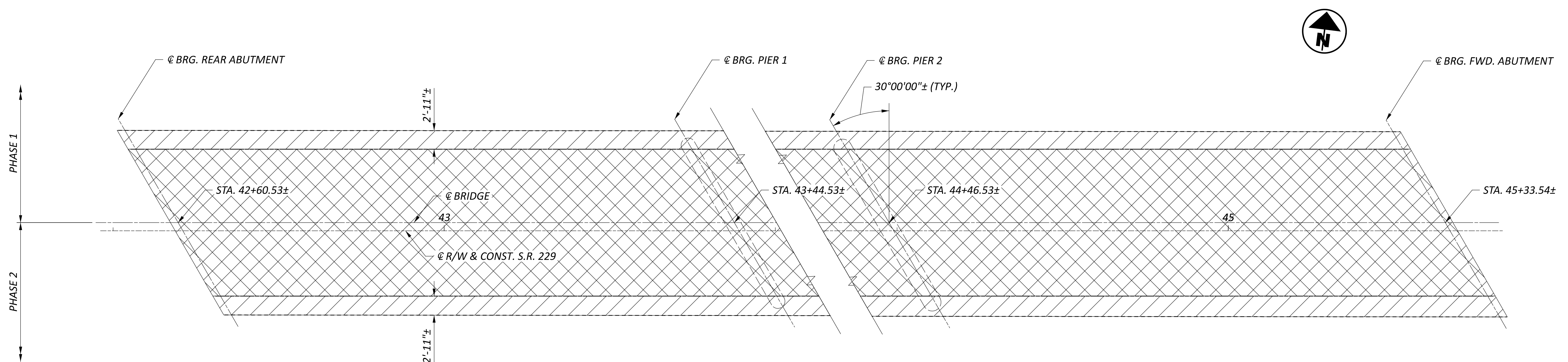
SFN 2102730	
DESIGN AGENCY  www.bgengr.com 6960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016	
DESIGNER GLA	CHECKER RG
REVIEWER GTB 10-30-24	
PROJECT ID 107754	
SUBSET 2A	TOTAL 13
SHEET P.85A	TOTAL P.136

ESTIMATED QUANTITIES						CALCULATED BY GLA DATE 10/16/2024		CHECKED BY SB DATE 10/23/2024		
ITEM	ITEM EXT.	TOTAL	PART. 01/STR	UNITS	DESCRIPTION	STRUCTURE FILE NUMBER 2102730				
						ABUTS.	PIERS	SUPER.	GENERAL	SHT. REF.
202	11203	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2, 4, 5
202	23500	94	94	SY	WEARING COURSE REMOVED				94	
503	11100	LUMP	LUMP		COFFERDAMS AND EXCAVATION BRACING				LUMP	
509	10000	20537	20537	LB	EPOXY COATED STEEL REINFORCEMENT			20537		
509	20001	100	100	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN			100		2
509	26001	303	303	LB	GALVANIZED STEEL REINFORCEMENT, AS PER PLAN		303			2
510	10001	120	120	EA	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN (9" DOWELS)		120			2
511	34444	119	119	CY	CLASS QC2 CONCRETE, BRIDGE DECK			119		
511	40510	3	3	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS		3			
512	10050	161	161	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)		18	143		
512	10600	6	6	FT	CONCRETE REPAIR BY EPOXY INJECTION	6				
516	10501	66	66	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			66		2
516	46201	8	8	EA	BEARING DEVICE, ROCKER, AS PER PLAN			8		2
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		2
517	70100	562	562	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)			562		
518	22300	684	684	FT	SPECIAL - STEEL DRIP STRIP			684		
519	11101	331	331	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN		331			2
848	10201	860	860	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1 3/4" THICK)			860		
848	20001	680	680	SY	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN			680		
848	30201	6	6	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN			6		
848	50001	102	102	SY	HAND CHIPPING, AS PER PLAN			102		
848	50101	LUMP	LUMP		TEST SLAB, AS PER PLAN			LUMP		
848	50201	4	4	CY	FULL DEPTH REPAIR, AS PER PLAN			4		12

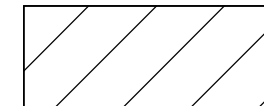
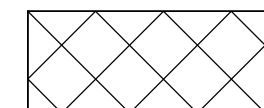
NOTE: ROCK CHANNEL PROTECTION AND PORTABLE BARRIER QUANTITIES CARRIED WITH ROADWAY QUANTITIES.


ESTIMATED QUANTITIES  
 BRIDGE NO. DEL-00229-00.930  
 S.R. 229 OVER OLENTANGY RIVER


SFN 2102730  
 DESIGN AGENCY  
  
 5960 WILCOX PLACE, SUITE C  
 DUBLIN, OHIO 43016  
 DESIGNER: GLA CHECKER: RG  
 REVIEWER: GTB 10-30-24  
 PROJECT ID: 107754  
 SUBSET: 3 TOTAL: 13  
 SHEET: P.86 TOTAL: P.136

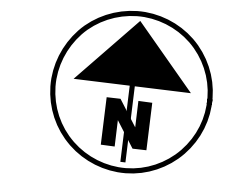



LEGEND:

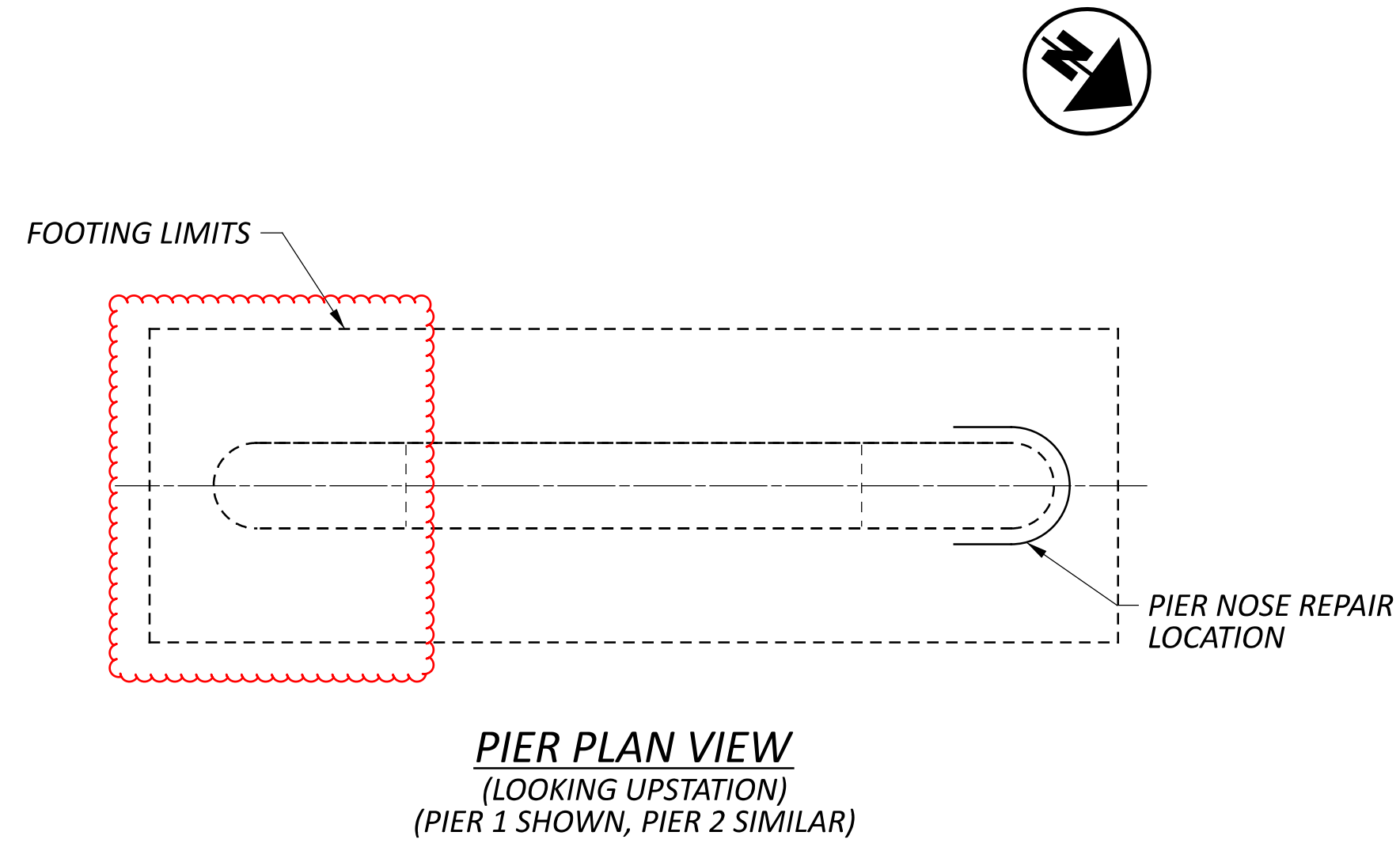
-  - LIMITS OF REMOVAL
-  - INDICATED PORTIONS OF EX. WEARING SURFACE TO BE REMOVED PER SS848

 - BEARING TO BE REPLACED PER ITEM 516 - BEARING DEVICE, ROCKER, AS PER PLAN

 - GIRDER DESIGNATION

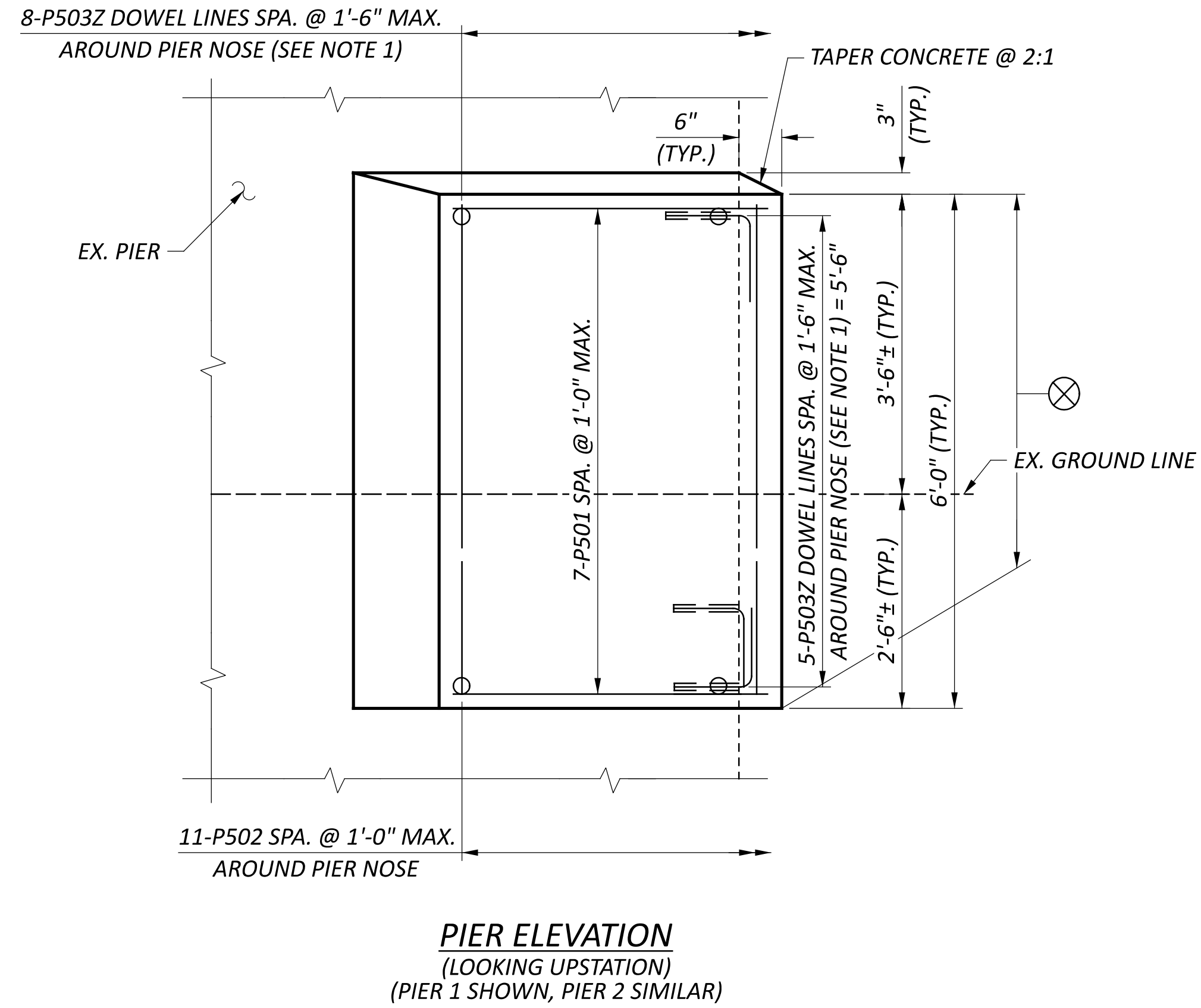
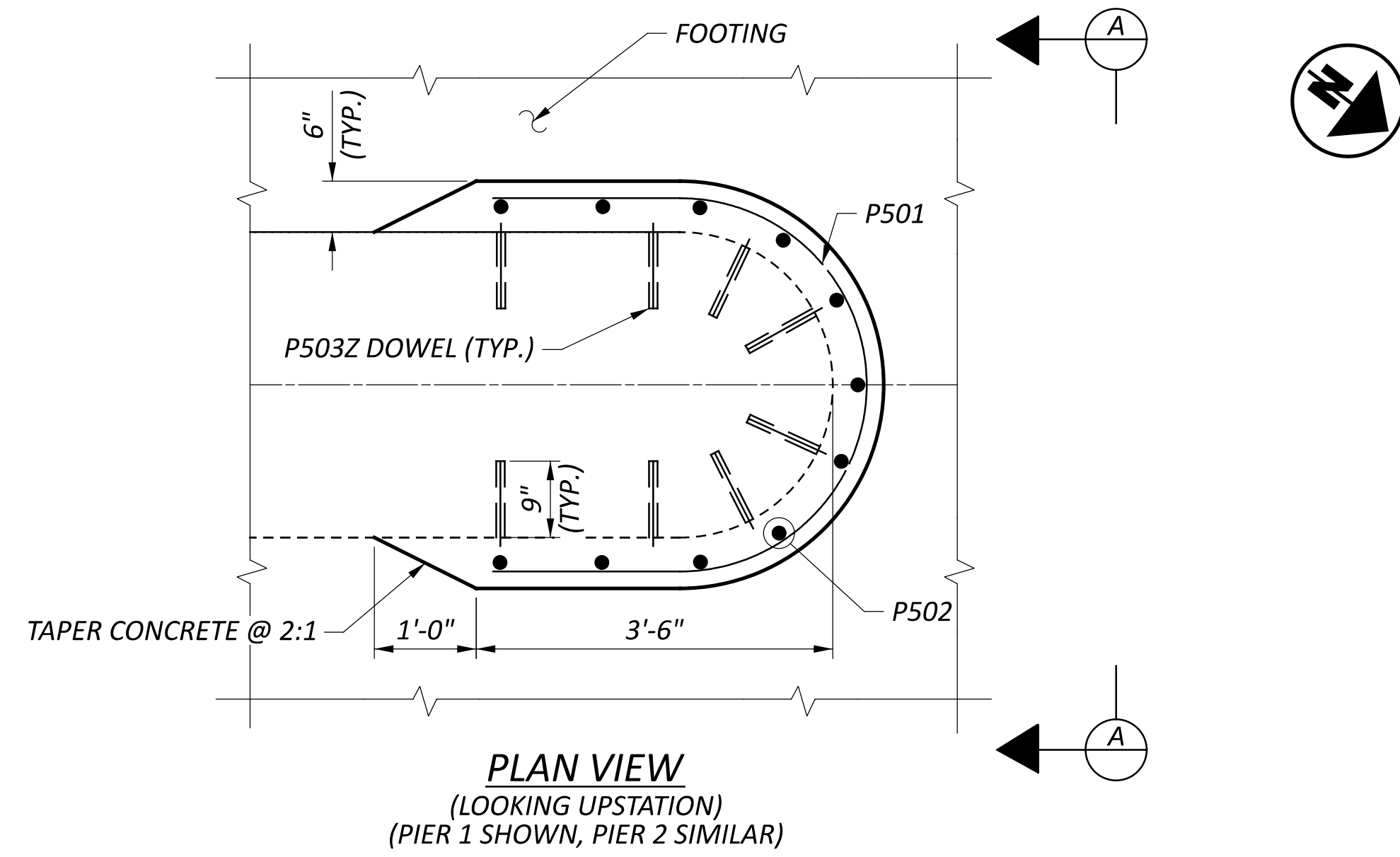
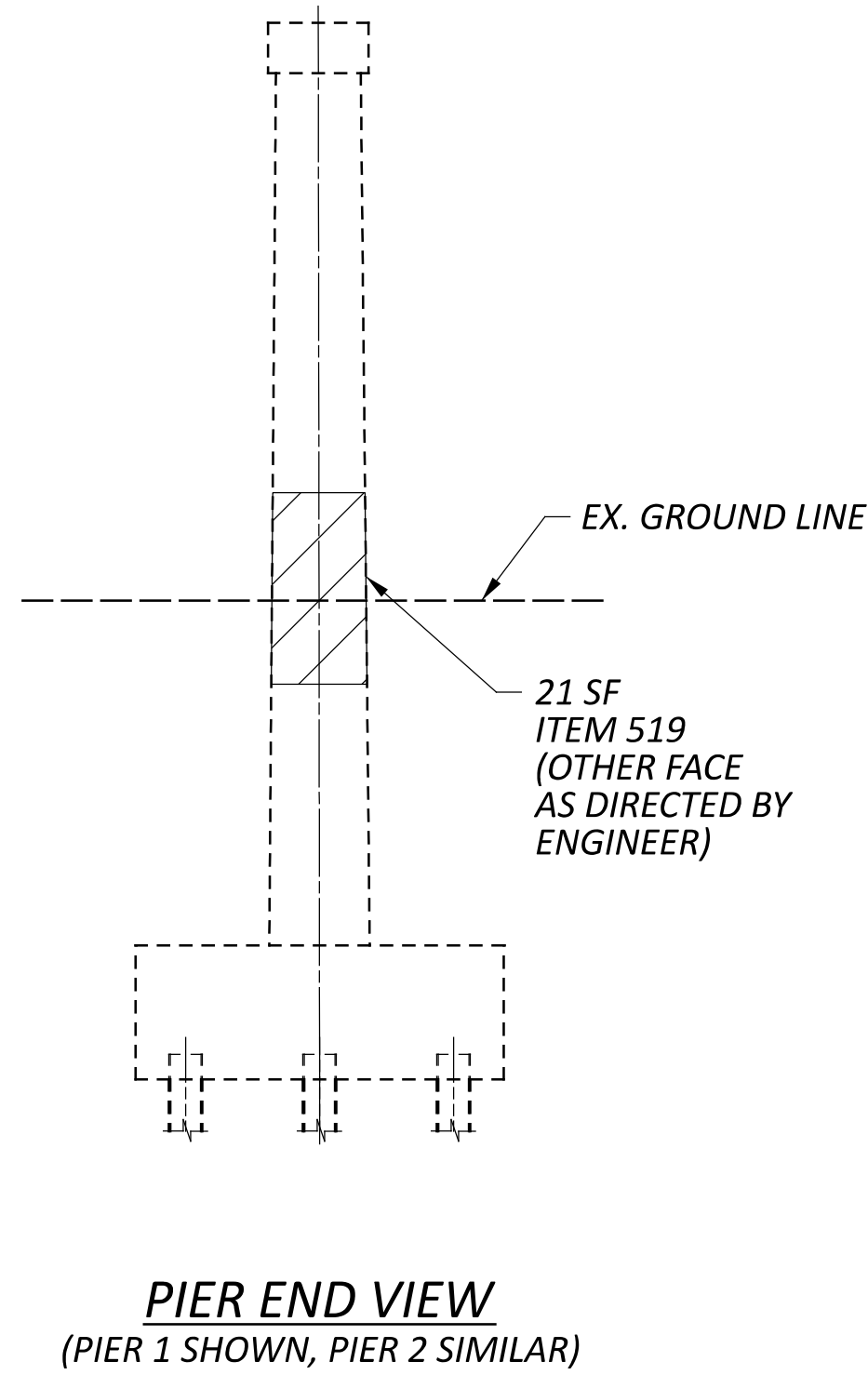
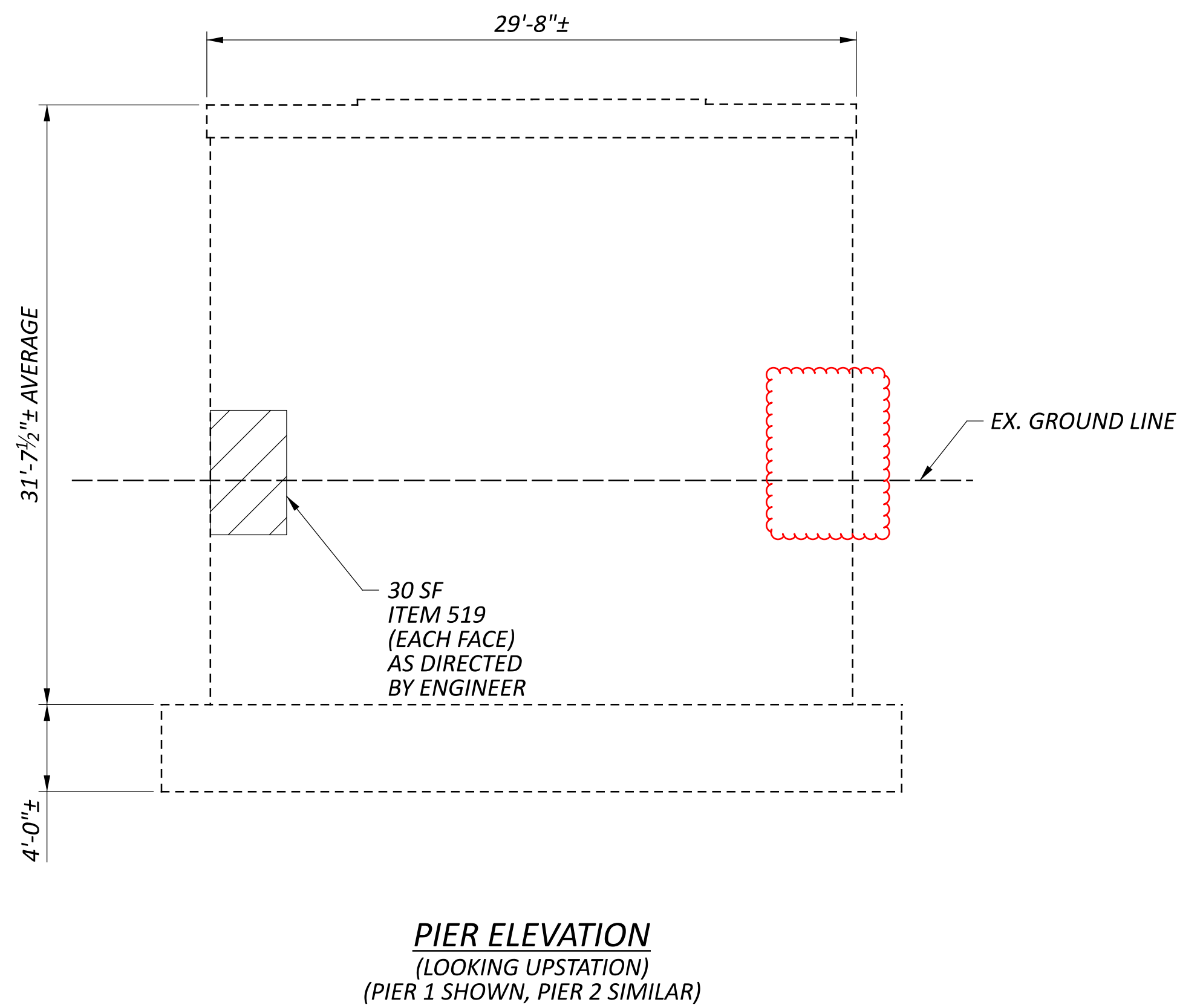


SFN		2102730	
DESIGN AGENCY			
		www.bginfinitygroup.com	
5960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016			
DESIGNER	CHECKER	REVIEWER	
GLA	RG	GTB 10-30-24	
PROJECT ID			
107754			
SUBSET	TOTAL		
6	13		
SHEET	TOTAL		
P.89	P.136		



SUMMARY OF PATCHING AREAS	
LOCATION	QUANTITY (SF)
PIER 1	81
AS DIRECTED BY ENGINEER (30%)	24.3
TOTAL	105.3

SUMMARY OF PATCHING AREAS	
LOCATION	QUANTITY (SF)
PIER 2	81
AS DIRECTED BY ENGINEER (30%)	24.3
TOTAL	105.3



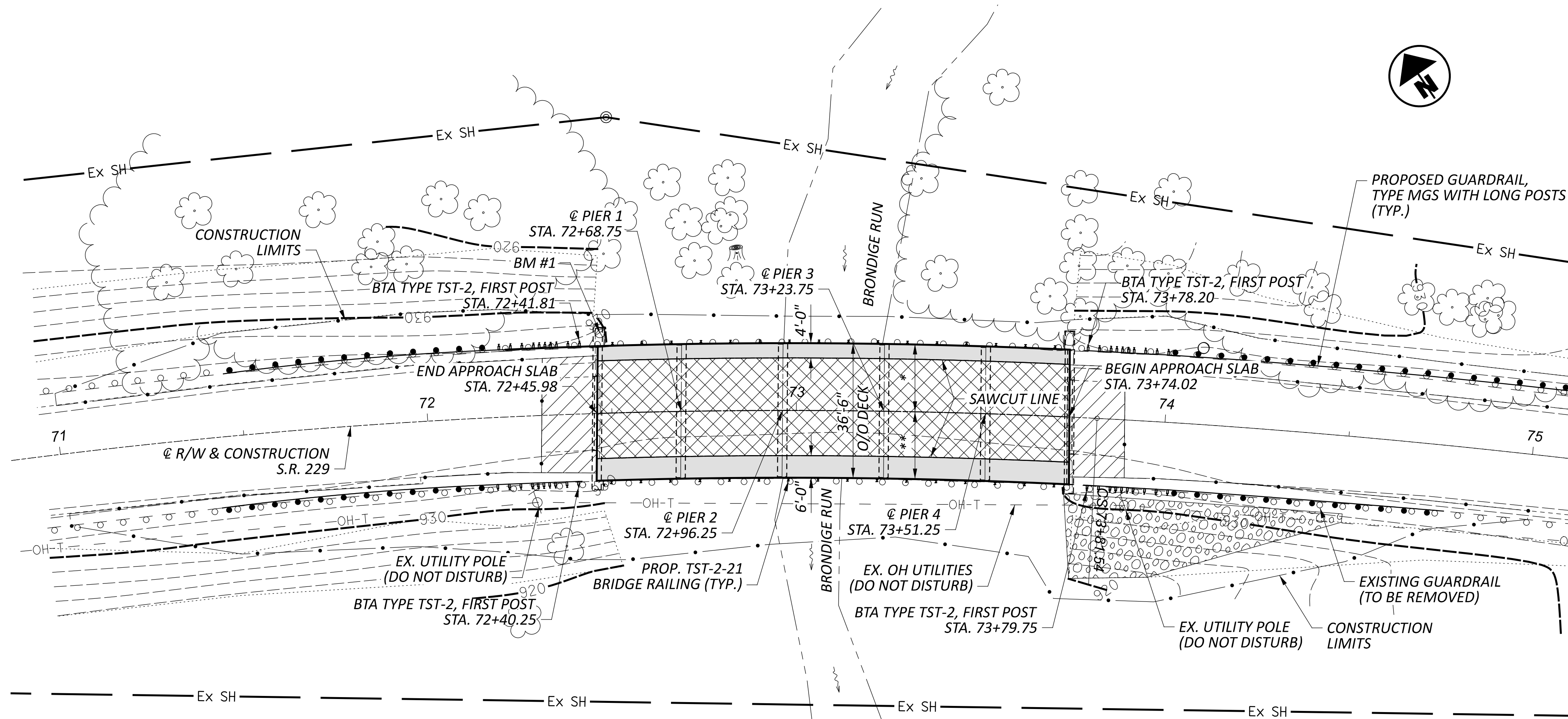
**LEGEND:**

- ITEM 519 - PATCHING OF CONCRETE STRUCTURE, AS PER PLAN
- SEALING OF CONCRETE SURFACES (NON-EPOXY) (TYP.)

**NOTES:**

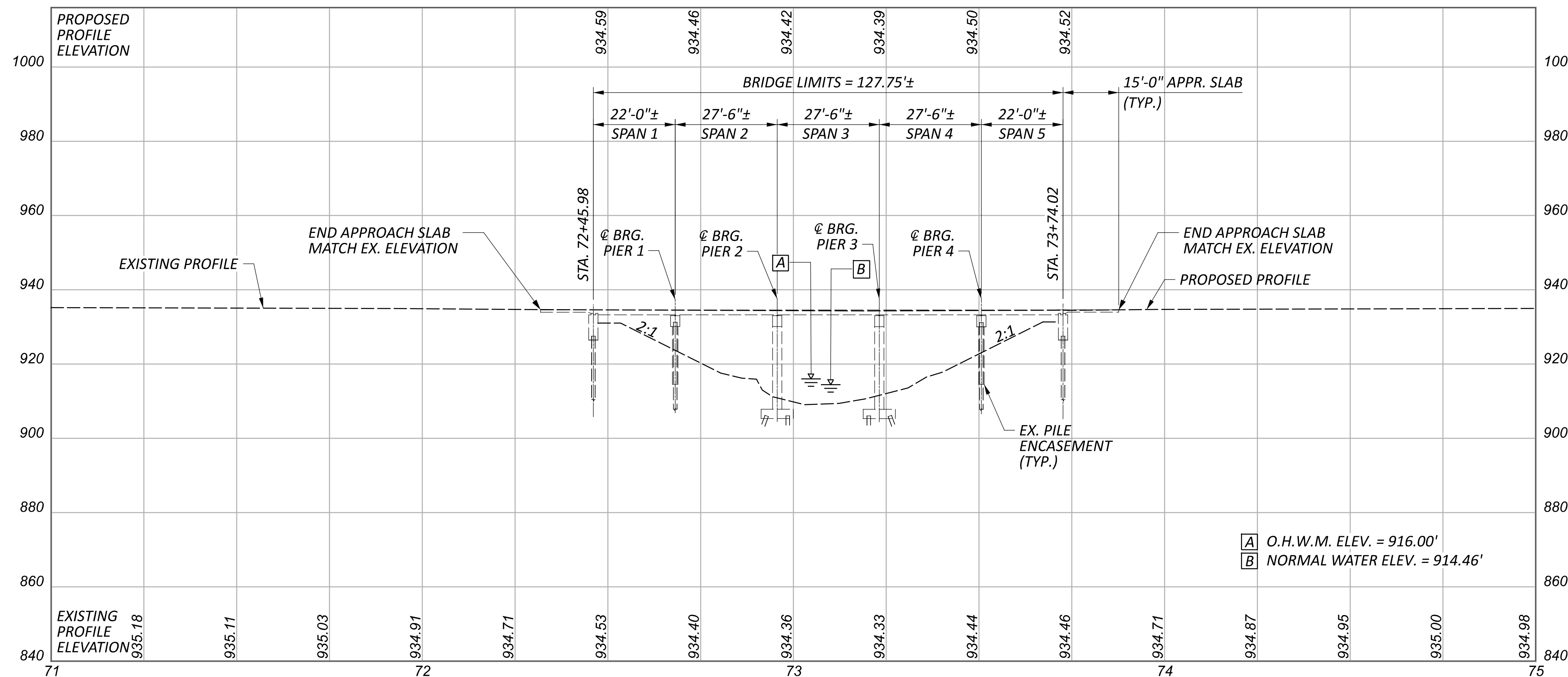
1. DOWELS ARE TO HAVE A MINIMUM EMBEDMENT OF 9".

SFN 2102730	
DESIGN AGENCY <b>B.G.</b> www.bgengr.com 5960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016	
DESIGNER GLA	CHECKER RG
REVIEWER GTB 10-30-24	
PROJECT ID 107754	
SUBSET 7	TOTAL 13
SHEET P.90	TOTAL P.136



PLAN

\* - PHASE 1 CONSTRUCTION = 18'-3"  
 \*\* - PHASE 2 CONSTRUCTION = 18'-3"



PROFILE ALONG @ CONSTRUCTION S.R. 229

**BENCHMARK DATA**

BM #1 STA. 72+47.36 ELEV. 936.22' OFFSET 21.91' LT

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET P.19

**NOTES**

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

**DESIGN TRAFFIC:**

2025 ADT = 3600      2025 ADTT = 540  
 2045 ADT = 5000      2045 ADTT = 750  
 DIRECTIONAL DISTRIBUTION = 62%

**LEGEND**

- PROPOSED DECK EDGE REPLACEMENT
- PROPOSED DECK OVERLAY
- PROPOSED APPROACH SLAB OVERLAY

**PROPOSED WORK**

1. REMOVE DECK EDGE AND RAILING AND REPLACE WITH NEW DECK EDGE TST-2-21 RAILING.
2. USE HYDRODEMOLITION TO REMOVE 1 1/4" OF EXISTING CONCRETE OVERLAY AND CONSTRUCT 2" SUPERPLASTICIZED DENSE OVERLAY.
3. VARIABLE MILL 1 1/2" AT BEGINNING APPROACH SLAB TO 3/4" END APPROACH SLAB AND RESURFACE WITH 1 1/2" THICKNESS OF ITEM 441- ASPHALT CONCRETE SURFACE COURSE

**EXISTING STRUCTURE**

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE WITH CAPPED-PILE ABUTMENTS AND CAPPED-PILE AND CONCRETE PIERS

SPANS: 22'-0" - 27'-6" - 27'-6" - 27'-6" - 22'-0" C/C OF BEARINGS  
 ROADWAY: 36'-6" F/F GUARDRAIL

LOADING: H20

SKEW: 00°00'00"

WEARING SURFACE: INTEGRAL CONCRETE

APPROACH SLABS: 15'-0" REINFORCED CONCRETE SLAB

ALIGNMENT: 3°-30' RIGHT CURVE

SUPER ELEVATION: 0.058 FT/FT

STRUCTURE FILE NUMBER: 2102765

DATE BUILT: 1954

DISPOSITION: DECK OVERLAY AND BRIDGE REPAIR

**PROPOSED STRUCTURE**

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE WITH CAPPED-PILE ABUTMENTS AND CAPPED-PILE AND CONCRETE PIERS

SPANS: 22'-0" - 27'-6" - 27'-6" - 27'-6" - 22'-0" C/C OF BEARINGS  
 ROADWAY: 36'-6" F/F GUARDRAIL

LOADING: H20

SKEW: 00°00'00"

WEARING SURFACE: 1.75" SUPERPLASTICIZED CONCRETE OVERLAY

APPROACH SLABS: 15'-0" REINFORCED CONCRETE SLAB

ALIGNMENT: 3°-30' RIGHT CURVE

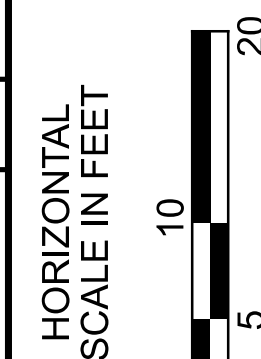
SUPERELEVATION: 0.058 FT/FT

DECK AREA: 4674 SF

COORDINATES: LATITUDE 40°26'03.14" N

LONGITUDE 83°02'57.10" W

SITE PLAN  
 BRIDGE NO. DEL-00229-01.490  
 S.R. 229 OVER BRONDIGE RUN



SFN	2102765
DESIGN AGENCY	B.G. ENGINEERING GROUP, INC. 5960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016
DESIGNER/CHECKER	MS / RG
REVIEWER	GTB 10-30-24
PROJECT ID	107754
SUBSET	TOTAL
1	13
SHEET	TOTAL
P.97	P.136

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:**

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

DS-1-92	REVISED	07/15/2022
PCB-91	REVISED	07/17/2020
TST-2-21	REVISED	01/17/2025

REFER TO THE FOLLOWING SPECIFICATIONS:

800	DATED	01/17/2025
848	DATED	07/19/2024

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 9TH EDITION, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**DESIGN LOADING:**

VEHICULAR LIVE LOAD: HS-20

**DESIGN DATA:**

CONCRETE, QC/QA CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)  
 CONCRETE, CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)  
 REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI (EPOXY COATED)

**MAINTENANCE OF TRAFFIC:**

FOR MAINTENANCE PLANS, SEE ROADWAY SHEETS.

**UTILITIES:**

FOR UTILITY NOTES, SEE ROADWAY SHEETS.

**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 C&MS 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.

**ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:**

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

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 ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

**SUBSTRUCTURE CONCRETE REMOVAL:**

REMOVE CONCRETE 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.

**ITEM 509 - CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN:**

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT CONCRETE REINFORCEMENT BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING STEEL REINFORCEMENT BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW CONCRETE REINFORCEMENT OF THE SAME SIZE, COATING, AND MATERIAL AT NO COST TO THE DEPARTMENT.

**ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN:**

PRIOR TO THE SURFACE CLEANING SPECIFIED IN C&MS 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED STEEL REINFORCEMENT. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

**ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION AS PER PLAN, 2" THICK**

**ITEM 848 - SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN**

**ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN**

**ITEM 848 - HAND CHIPPING, AS PER PLAN**

**ITEM 848 TEST SLAB, AS PER PLAN**

WORK MUST BE PERFORMED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 848, "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRO-DEMOLITION" ON STRUCTURE DEL-229-0.93 WITH THE FOLLOWING REVISIONS.

THE INTENT OF THIS ITEM IS TO REPAIR THE EXISTING BRIDGE DECK TO THE LIMITS SHOWN ON THE PLAN WITHIN THE PERMITTED CLOSURE PERIOD SPECIFIED IN THE MAINTENANCE OF TRAFFIC SHEETS.

THE REMOVAL OPERATIONS MUST NOT BEGIN IF SUSTAINED RAINS (5 HOURS OR MORE WITH BREAKS BETWEEN SHOWERS LESS THAN 1½ HOURS) ARE PREDICTED WITHIN 48 HOURS OF COMMENCEMENT.

REMOVAL OF EXISTING CONCRETE DECK SURFACE (1¼") MAY INCLUDE SCARIFYING ¾" OF EXISTING SURFACE. HYDRODEMOLITION MUST BE PERFORMED ON THE REMAINING ¼" AS WELL AS AREAS DEEPER DUE TO EXISTING DEBONDED CONCRETE. IDENTIFY THE LIMITS OF POSSIBLE FULL DEPTH REMOVAL PRIOR TO COMMENCING HYDRODEMOLITION AND DURING REMOVALS, IF THE DECK CONCRETE IS UNSOUND MORE THAN ½ OF THE BRIDGE DECK, FULL DEPTH REMOVAL IS TO BE EXPECTED EITHER THROUGH THE HYDRODEMOLITION PROCESS OR HANDCHIPPING. LOCATIONS OF EXPECTED FULL DEPTH REPAIRS HAVE BEEN IDENTIFIED IN THE PLANS.

DURING HYDRODEMOLITION ONLY HYDRODEMOLITION REMOVAL EQUIPMENT IS PERMITTED TO DRIVE/OPERATE ON REMOVED SURFACES. THE INTENT IS TO NOT DAMAGE EXISTING REBAR OR CAUSE UNNECESSARY DAMAGE TO THE EXISTING DECK. EQUIPMENT MUST BE OPERATED FROM A SAFE DISTANCE ON THE BRIDGE DECK AND A VACUUM TRUCK CAPABLE OF OPERATING WITH A BOOM FROM A SAFE DISTANCE MUST BE PROVIDED FOR CLEANING HYDRODEMOLITION DEBRIS. DRIVING DIRECTLY ON EXPOSED REBAR WILL NOT BE PERMITTED.

HAND CHIPPING OF AREAS WHERE THE HYDRODEMOLITION MACHINE DOES NOT HAVE ACCESS IS INCIDENTAL TO THE REMOVAL.

THE CONTRACTOR MUST PROVIDE A MIX DESIGN AND MAKE ONE OR MORE, ONE CUBIC YARD, TRIAL BATCHES OF OVERLAY MATERIAL AT LEAST TWO WEEKS BEFORE THE OVERLAY IS PLACED DEMONSTRATING THE ABILITY TO MEET 848.26 AND 848.31. DEVELOP BEAM BREAK MATURITY CURVES.

REVISE 848.29. THE CONTRACTOR MUST CONTINUE THE WET CURE FOR THE MAXIMUM HOURS POSSIBLE DURING THE PERMITTED CLOSURE. TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL A MINIMUM WET CURE OF 12 HOURS, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 600 PSI.

THE CONTRACTOR MUST PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS. PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS AND THE MODULUS OF RUPTURE OF EACH BEAM.

A WATER FOG SHALL BE CONTINUOUSLY APPLIED OVER THE SURFACE OF THE FRESHLY PLACED CONCRETE IN SUCH A MANNER THAT THE ENTIRE SURFACE IS KEPT AT A RELATIVE HUMIDITY OF 90% OR GREATER. THE AREA TO BE FOGGED SHALL BE THE ENTIRE AREA OF THE FRESHLY PLACED CONCRETE, WHICH HAS NOT HAD THE FINAL FINISH APPLIED. THIS FOG SHALL BE DELIVERED THROUGH A NETWORK OF NOZZLES, WHICH ARE PROPERLY SPACED TO PROVIDE A UNIFORM FOG AT THE SURFACE OF THE CONCRETE. THE NOZZLES USED SHALL BE OF THE TYPE WHICH ATOMIZES THE WATER SO THAT THERE ARE NO VISUALLY DISCERNIBLE DROPLETS OF WATER. THE FOGGING EQUIPMENT SHALL BE CAPABLE OF APPLY WATER IN A MIST, NOT A SPRAY, TO FINE TO DAMAGE THE CONCRETE SURFACE. THE AREA OF COVERAGE FROM EACH NOZZLE SHALL OVERLAP ALL ADJACENT COVERAGES BY AT LEAST 12 INCHES. IT SHALL BE DEMONSTRATED PRIOR TO THE PLACEMENT OF THE CONCRETE THAT THE INTENDED SYSTEM IS CAPABLE OF DELIVERING THE REQUIRED FOGGING ENVIRONMENT FOR AT LEAST TWICE THE ANTICIPATED REQUIRED TIME. THE INTENDED SYSTEM MUST BE PROPERLY FIELD TESTED.

CARE SHALL BE EXERCISED DURING FINISHING TO PREVENT FOGGED WATER FROM BECOMING PART OF THE CONCRETE AND TO PREVENT INCREASING THE WATER CONTENT IN THE CONCRETE BY THE WATER USED IN THE CURING PROCESS.

FOGGING CONTINUE UNTIL THE SURFACE IS COVERED WITH WET BURLAP. THE WET BURLAP SHALL NOT BE APPLIED UNTIL THE DECK CAN RECEIVE THE WET BURLAP AND PLACEMENT LOADS WITHOUT DEFORMATION.

REVISIONS TO 848.26. GROOVES SHALL BE SAWED IN THE CONCRETE SURFACE IN THE SAME DIRECTION OF THE EXISTING SAWED LINES PER 511.20 AFTER THE WET CURE IS COMPLETED. AFTER THE TEXTURING OF THE CONCRETE SURFACE, CLEAN THE SURFACE AND SPRAY A UNIFORM APPLICATION OF CURING MATERIAL 705.07, TYPE 1 OR 1D AS PER CMS 511.17 METHOD B OF MEMBRANE CURING. THE DECK SURFACE MUST BE DRY PRIOR TO PLACEMENT OF THE CURING MATERIAL. IF THE SAWING OF THE GROOVES CANNOT BE DONE WITHIN THE SAME WEEKEND AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY AFTER THE CURING COMPOUND HAS BEEN APPLIED AND COMPLETE THIS WORK AT A SEPARATE TIME, AND REAPPLY THE MEMBRANE COMPOUND.

PRIOR TO CONSTRUCTION OF PROPOSED OVERLAY, HOLD A PRE-PLACEMENT MEETING. ITEMS TO BE DISCUSSED INCLUDE BUT ARE NOT LIMITED TO:

- SEQUENCE OF CONSTRUCTION AND MOT
- STAGING OF EQUIPMENT DURING HYDRODEMOLITION AND PLACEMENT OF PROPOSED OVERLAY
- ANTICIPATED WEATHER CONDITIONS AND EMERGENCY COVERING MATERIALS IN CASE OF INCLEMENT WEATHER
- RATE OF DELIVERY OF THE CONCRETE TO ENSURE COMPLETION
- PROCEDURES FOR INSTALLATION OF FORMWORK FOR FULL DEPTH AREAS
- CONSOLIDATION AND FINISHING OF CONCRETE
- NUMBER OF FINISHERS AND THEIR DUTIES
- FINISHING TOOLS AND EQUIPMENT AVAILABLE
- TIMING OF FOGGING AND PLACEMENT OF WET CURE
- REMOVAL OF WET CURE
- APPLICATION OF SPRAY CURE
- ANY OTHER APPROPRIATE SUBJECTS

PAYMENT FOR THIS WORK INCLUDES ALL EQUIPMENT, TOOLS, MATERIAL, LABOR, AND INCIDENTALS NECESSARY TO PERFORM THIS WORK AND WILL BE MADE AT THE CONTRACT PRICE BID FOR THE ITEMS OF WORK ESTABLISHED IN SS 848

**ABBREVIATIONS:**

ABUT. - ABUTMENT	N.F - NEAR FACE
ADT - AVERAGE DAILY TRAFFIC	NO. - NUMBER
ADTT - AVERAGE DAILY TRUCK TRAFFIC	N.P.C.P.P. - NON-PERFORATED CORRUGATED PLASTIC PIPE
APPR. - APPROACH	OHWM - ORDINARY HIGH WATER MARK
B - BOTTOM	O/O - OUT TO OUT
BM - BENCHMARK	P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE
BOT. OR BTM. - BOTTOM	P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
BRGS. - BEARINGS	PG - PROFILE GRADE
Ⓞ - CENTERLINE	PROP. - PROPOSED
C/C - CENTER TO CENTER	PSF - POUNDS PER SQUARE FOOT
C.J. - CONSTRUCTION JOINT	P.V.I. - POINT OF VERTICAL INTERSECTION
CLR. - CLEAR	Q - FLOW RATE
CMS - CONSTRUCTION AND MATERIAL SPECIFICATIONS	R - RADIUS
CONC. - CONCRETE	R.A. - REAR ABUTMENT
CONSTR. - CONSTRUCTION	RCP - ROCK CHANNEL PROTECTION
DIA. - DIAMETER	REQD. - REQUIRED
DIM. - DIMENSION	R/W - RIGHT OF WAY
DWG. - DRAWING	SER. - SERIES
EL. OR ELEV. - ELEVATION	SHLDR - SHOULDER
E/P - EDGE OF PAVEMENT	SPA. - SPACE OR SPACES
EQ. - EQUAL	STA. - STATION
EST. - ESTIMATED	STD. - STANDARD
EX. - EXISTING	STR - STRAIGHT
F.A. - FORWARD ABUTMENT	T&B - TOP & BOTTOM
F/F - FACE TO FACE	TBR - TO BE REMOVED
FT. - FOOT OR FEET	TEMP. - TEMPORARY
FWD. - FORWARD	TYP. - TYPICAL
HW - HIGH WATER	U.N.O. - UNLESS NOTED OTHERWISE
JT. - JOINT	VAR. - VARIES
LT. - LEFT	V - VELOCITY
MAX. - MAXIMUM	
MIN. - MINIMUM	
MISC. - MISCELLANEOUS	

GENERAL NOTES - 1  
 BRIDGE NO. DEL-00229-01.490  
 S.R. 229 OVER BRONDIGE RUN

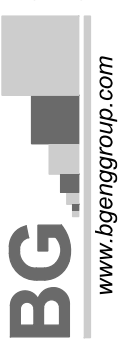
SFN	2102765
DESIGN AGENCY	B.G. GROUP, INC. www.bggroupp.com 5960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016
DESIGNER	CHECKER
GLA	RG
REVIEWER	
GTB	10-30-24
PROJECT ID	107754
SUBSET	TOTAL
2	13
SHEET	TOTAL
P.98	P.136

ESTIMATED QUANTITIES						CALCULATED BY GLA DATE 10/16/2024		CHECKED BY SB DATE 10/23/2024		
ITEM	ITEM EXT.	TOTAL	PART. 01/STR	UNITS	DESCRIPTION	STRUCTURE FILE NUMBER 2102765				
						ABUTS.	PIERS	SUPER.	GENERAL	SHT. REF.
202	11203	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2, 4
202	23500	67	67	SY	WEARING COURSE REMOVED				67	
509	10000	22922	22922	LB	EPOXY COATED STEEL REINFORCEMENT			22922		
509	20001	580	580	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN			580		2
511	32210	74	74	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE			74		
512	10050	62	62	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)			62		
512	10600	28	28	FT	CONCRETE REPAIR BY EPOXY INJECTION	28				
517	70100	272	272	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)			272		
518	22300	314	314	FT	SPECIAL - STEEL DRIP STRIP			314		
519	11101	100	100	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	100				2
601	32100	5	5	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	5				
848	10201	520	520	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2" THICK)			520		
848	20001	380	380	SY	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN			380		
848	30201	4	4	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN			4		
848	50001	57	57	SY	HAND CHIPPING, AS PER PLAN			57		
848	50101	LUMP	LUMP		TEST SLAB, AS PER PLAN			LUMP		
848	50201	380	380	CY	FULL DEPTH REPAIR, AS PER PLAN			11		11
848	50320	380	380	SY	EXISTING CONCRETE OVERLAY REMOVED (1 ¼" THICK)			380		

NOTE: PORTABLE BARRIER QUANTITIES CARRIED WITH ROADWAY QUANTITIES.

ESTIMATED QUANTITIES  
 BRIDGE NO. DEL-00229-01.490  
 S.R. 229 OVER BRONDIGE RUN

SFN  
2102765

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 www.bggroup.com  
 6960 WILCOX PLACE, SUITE C  
 DUBLIN, OHIO 43016

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REVIEWER  
 GTB 10-30-24

PROJECT ID  
 107754

SUBSET	TOTAL
3	13

SHEET	TOTAL
P.99	P.136