

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
FRA - 315 - 5.18

FRA-315-5.18		OHIO F.H.W.A. 5 REGION
FEDERAL PROJECT		STATE PROJECT

P.I.D. 7583

REVISED SPEED LIMIT

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (1) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR SPEED LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

CITY OF COLUMBUS, SHARON & CLINTON TOWNSHIP
CITY OF WORTHINGTON, SHARON TOWNSHIP
FRANKLIN COUNTY

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 SECTION 5511.002 OF THE REVISED CODE OF OHIO.

1995 SPECIFICATIONS

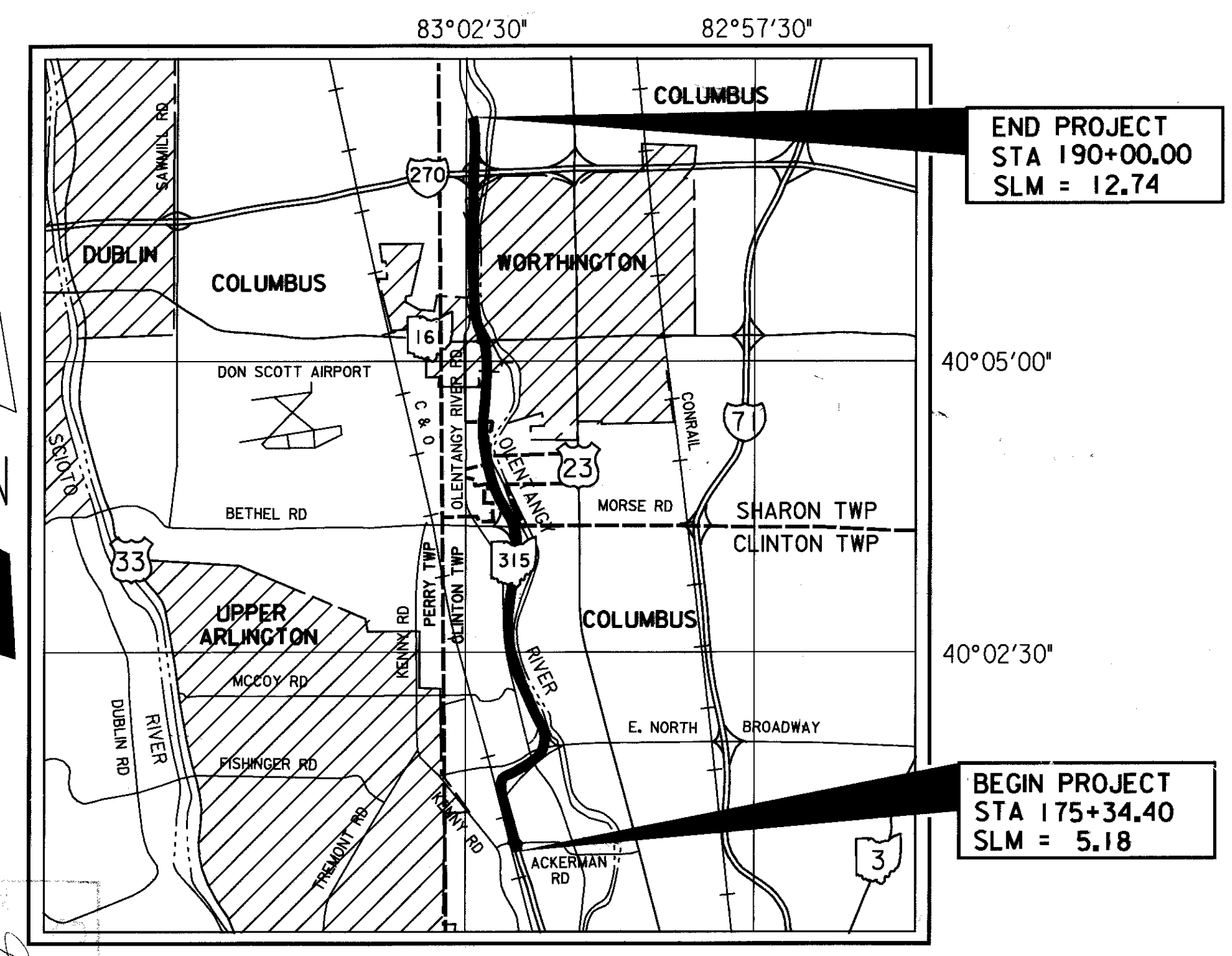
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

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

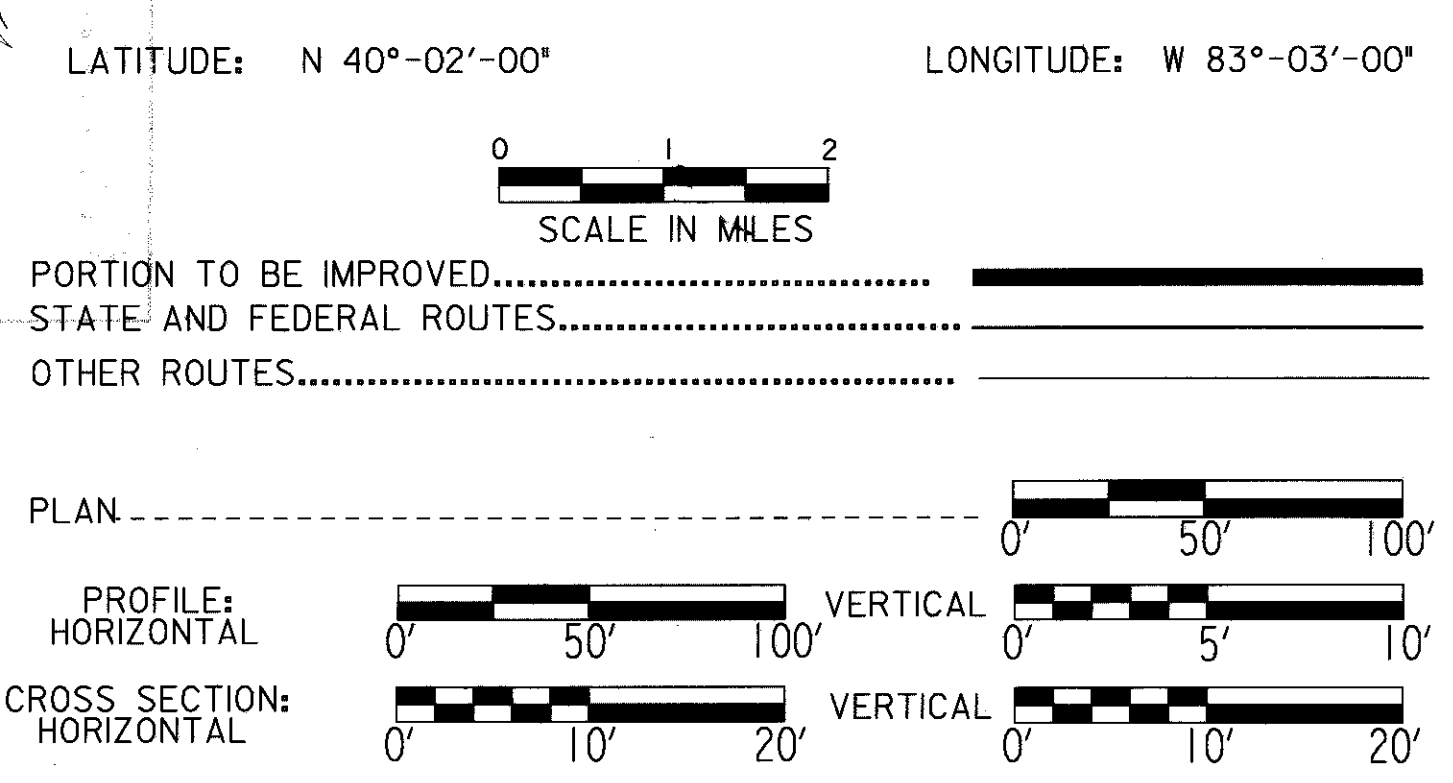
APPROVED Jack R. Marchbanks
DATE 1/20/99 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

PLANS CERTIFIED BY:
NAME: Eric J. Bann DATE: 1/20/99
DISTRICT 6
OHIO DEPT. OF TRANSPORTATION

APPROVED Gordon Proctor
DATE 2-8-99 DIRECTOR, DEPARTMENT OF TRANSPORTATION



LOCATION MAP



INDEX OF SHEETS:

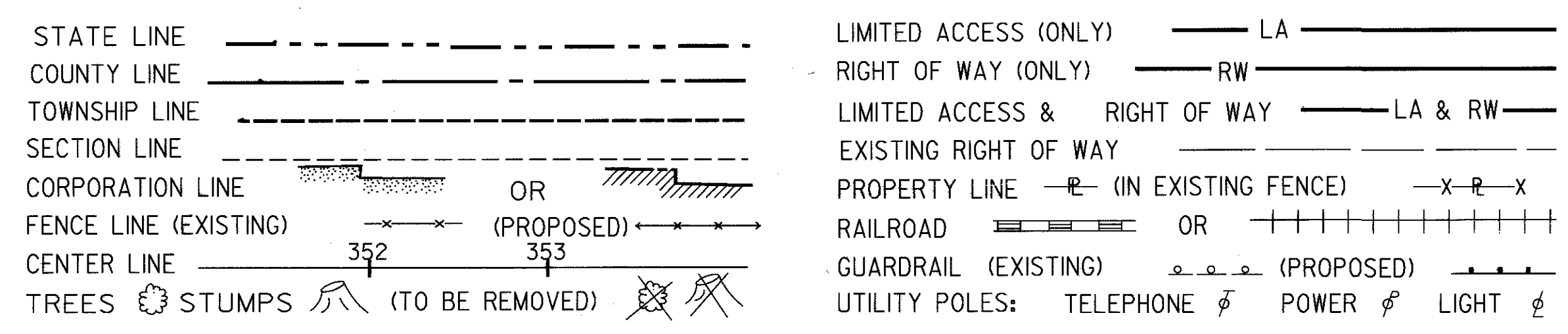
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*THE FOLLOWING SHEETS ARE OMITTED:
16, 27, 60, 83, 127-144, 239, 249, 250, 281-286

*RAMP "H" WAS REMOVED, TO BE BUILT WITH FRA-270-27.400 PID 12495

**SHEETS ADDED: 23A, 23B, 236A, 237A

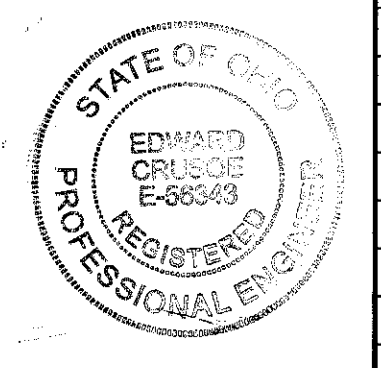
CONVENTIONAL SIGNS



DESIGN EXCEPTIONS
SEE SHEET NO. 2 SCHEMATIC PLAN

DESIGN DESIGNATIONS
SEE SHEET NO. 2 SCHEMATIC PLAN

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY



SEAL

PROJECT:
DATE OF LETTING ;
CONTRACT NO.

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS											
AS-1-81	9-15-94	F-2	5-1-76	GR-5.3	10-30-92	HL-20.22	5-1-87	LA-1	6-1-79	MT-95.30	10-10-88
BP-1.1	2-21-92	F-3	5-1-76	GR-6	2-5-82	HL-20.23	5-1-87	MC-1	6-13-69	MT-95.31	10-10-88
BP-2.1	10-28-94	F-4	11-10-83	GR-7.1	10-30-92	HL-30.11	5-1-87	MC-4	7-26-76	MT-95.32	8-25-89
BP-2.2	10-28-94	F-5	5-1-76	GR-8.1	1-31-94	HL-30.21	5-1-87	MC-7	10-15-76	MT-95.40	10-1-92
BP-2.3	2-21-92	GR-1.1	5-6-91	I-3A&B	4-1-80	HL-30.22	5-1-87	MC-9.1	10-30-92	MT-95.41	10-1-92
BP-2.4	2-21-92	GR-1.2	10-30-92	I-3C&D	4-1-80	HL-30.31	5-1-87	MC-9.2	5-6-91	MT-97.11	10-4-89
BP-2.5	2-21-92	GR-1.3	2-21-92	HL-50.11	5-1-87	HL-30.33	5-1-87	MC-9.3	10-30-92	MT-98.12	8-25-89
BP-3.1	2-21-92	GR-2.1	5-6-91	HL-10.11	5-1-87	HL-40.10	5-1-87	MC-9.4	10-30-92	MT-98.13	8-25-89
BP-6.1	2-21-92	GR-2.2	10-30-92	HL-10.12	5-1-87	HL-50.21	5-1-87	MC-10	5-1-76	MT-98.14	8-25-89
BP-8.1	10-28-94	GR-3.1	5-6-91	HL-10.13	5-1-87	HL-60.11	5-1-87	MC-11	8-1-78	MT-98.15	8-25-89
CB-2-2 A&B	5-1-79	GR-3.2	5-6-91	HL-10.31	5-1-87	HL-60.12	5-1-87	MH-3	12-18-84	MT-99.10	11-14-86
CB-4	11-10-83	GR-4.2	5-6-91	HL-20.11	5-1-87	HL-60.21	5-1-87			MT-99.20	4-29-88
CB-5	11-10-83	GR-5.1	10-30-92	HL-20.13	5-1-87	HL-60.31	5-1-87			MT-101.60	7-1-92
F-1	11-10-83	GR-5.2	10-30-92	HL-20.21	5-1-87	HW-3	6-1-65			MT-102.20	8-25-89
										MT-98.16	6-24-93

SUPPLEMENTAL PROPOSAL NOTES	
142(92)	6-24-92

SUPPLEMENTAL SPECIFICATIONS			
802	4-13-90	931	6-18-85
825	10-2-89	942	11-27-89
		944	5-2-94
850	5-31-88		
910	5-20-91		

BRIDGE GENERAL NOTES

REFERENCE: SHALL BE MADE TO STANDARD DRAWINGS
AS-I-81, SHEETS I-3 (DATED 11-27-81)
DBR-2-73 (DATED 4-10-73)
AND TO SUPPLEMENTAL SPECIFICATIONS
820 (DATE 03-18-92)

910 (DATED 5-20-91)
933 (DATED 7-22-94)
944 (DATED 05-02-94)

DESIGN SPECIFICATIONS: THESE STRUCTURES CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1992 INCLUDING THE 1993 AND 1994 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESSES

CONCRETE CLASS S - UNIT STRESS 1500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C - UNIT STRESS 1333 PSI (SUBSTRUCTURE)

PSI. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM
A82 OR A615

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, MICRO SILICA MODIFIED CONCRETE OVERLAYS, 2 1/2" CONCRETE COVER AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND 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.M.S. SECTIONS 102.5, 105.02 AND 513.02. THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGES ARE AVAILABLE UPON REQUEST AT THE DISTRICT 6 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, DELAWARE, OHIO.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES BY THE CONTRACTOR, HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT AND PIER PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS WHICH ARE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 800 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE FOR TWIN BRIDGES, AND LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE THE EXISTING REINFORCING STEEL AS DETAILED IN THE PLAN DRAWINGS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS AS SPECIFIED. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE 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, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

EXISTING REINFORCING STEEL: PARTIALLY EXPOSED BY CONCRETE REMOVAL SHOULD BE LEFT IN PLACE, EXCEPT THAT IT SHALL BE BENT AS NECESSARY TO CLEAR PROPOSED CONCRETE SURFACES BY AT LEAST 2 INCHES.

REINFORCING BAR SPLICE LENGTHS: SHALL CONFORM TO THE MINIMUM LENGTHS IN 509.08 UNLESS OTHERWISE NOTED ON THE PLANS.

ITEM SPECIAL-SEALING OF CONCRETE SURFACES (EPOXY) THE PROPOSED CONCRETE PARAPET SURFACES FOR MAINLINE BRIDGES SHALL BE SEALED USING AN EPOXY SEALER. SEE THE DETAILS OF INDIVIDUAL BRIDGES FOR AREAS TO BE SEALED. SEE THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

CONCRETE SLOPE PROTECTION, AS PER PLAN (FRA-315-0984 L/R): AFTER COMPLETION OF MAJOR MODIFICATION ITEMS, EXISTING EMBANKMENT SURFACES SHALL BE RESTORED TO A UNIFORM PLANE SURFACE WITH CONCRETE SLOPE PROTECTION AS SPECIFIED IN 601.06.

STRUCTURE EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED IN 503.11 EXCEPT THAT THERE SHALL BE NO DEDUCTION FOR REMOVALS MADE AS PART OF 202. EXCAVATION OUTSIDE THE LIMITS NECESSARY TO REMOVE THE EXISTING STRUCTURE IS INCLUDED IN 202 FOR PAYMENT.

FIELD PAINTING OF STRUCTURAL STEEL: EXISTING STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE AND FINISH COAT OF PAINT USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED THE SEVERAL OZEU PAINTING ITEMS FOR PAINTING.

FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU: THE SURFACE AREA PAY QUANTITIES ARE BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY 10 PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES. BEARINGS AND OTHER STRUCTURAL STEEL INCIDENTALS ARE TO BE CLEANED AND PAINTED.

CONCRETE PARAPETS : WITHIN 48 HOURS AFTER PLACEMENT OF PARAPET CONCRETE SAWCUT 1 INCH DEEP JOINTS INTO THE CONCRETE PARAPET AT LOCATIONS AS DETAILED IN THE PLANS. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK, AND THE COMPLETED SAWCUT SHALL BE FILLED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM HALF INCH OF THE ONE INCH DEEP SAWED JOINT IN BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE. THE COST OF SAWING AND SEALING SHALL BE INCLUDED WITH ITEM 511, CLASS S CONCRETE, SUPERSTRUCTURE, FOR BRIDGES WITH DEFLECTOR PARAPETS.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS AND DECK JOINTS. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURE ANALYSIS COMPUTATIONS, BY AN ENGINEER REGISTERED BY THE STATE OF OHIO, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 518, 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN; CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN; CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

ITEM 516, RESET BEARINGS:

A. DESCRIPTION
THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RESET EXISTING BEARINGS ON THE STRUCTURES AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

B. GENERAL PROCEDURE

THE BEARINGS SHALL BE RESET, USING THE FOLLOWING PROCEDURE:

1. RAISE THE BEAM AT THE BEARING BY JACKING,% MAXIMUM.
2. RESET THE BEARING BY SHIFTING THE SOLE PLATE AND ROCKER SO THAT THE ROCKER IS VERTICAL AND AT THE CENTER OF BOTH THE SOLE PLATE AND THE MASONRY PLATE AT 60° F. FOR SETTING THE ROCKER AT TEMPERATURE OTHER THAN 60° F, THE ROCKERS SHALL BE TILTED 1/16- INCH FOR EACH 10 DEGREE VARIATION FROM 60 DEGREES. LOWER THE END OF THE BEAM MAKING SURE THE ROCKER IS PROPERLY IN ITS SOCKET.

C. REQUIREMENTS

ANY DAMAGE TO STRUCTURAL MEMBERS, CONNECTIONS OR PARTS THAT ARE TO REMAIN AS PART OF THE PERMANENT CONSTRUCTION SHALL BE CORRECTED BY AND/OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR'S DETAILED PROCEDURES FOR RESETTING THE BEARINGS SHALL BE SUBMITTED, IN TRIPLICATE, TO THE ENGINEER FOR APPROVAL.

D. METHOD OF MEASUREMENT
THE QUANTITY WILL BE MEASURED AS THE ACTUAL NUMBER OF BEARINGS RESET.

E. BASIS OF PAYMENT
PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516, RESET BEARINGS.

FRA-315-5.18

OHIO
F.H.W.A.
REGION 5

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ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN. THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABATEMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS FOR LIFTS GREATER THAN 1". JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED. SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED. SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAIING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER. AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS ON ANY ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

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, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FORM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

BENATEC ASSOCIATES, INC.					
119 DILLMONT DRIVE COLUMBUS, OHIO 43235					
BRIDGE GENERAL NOTES					
BRIDGE NOS. FRA-315-0591,-0617,-0617B, -0629,-0777,-0856,-0984 L/R, -1042,-1166, -1175,-1177,-1215,-1220 L/R AND -1220H					
FRANKLIN COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
RAK	RAK	CJK	ELC	RWM	4-95
REVISED					

FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE GENERAL NOTES

FRA-315-5.18

OHIO
F.H.W.A.
REGION 5

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REFERENCE SHALL BE MADE TO STANDARD DRAWINGS
AS-1-B1, SHEETS I-3 (DATED 11-27-81)
DBR-2-73 (DATED 4-12-73)

AND TO SUPPLEMENTAL SPECIFICATIONS

852 (DATED 7-3-93)
944 (DATED 5-2-94)

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS
FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY
AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 AND 1994 INTERIM
SPECIFICATION AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S - UNIT STRESS 1500 PSI (SUPERSTRUCTURE)
ORIGINAL DESIGN CONCRETE CLASS C, UNIT STRESS 1200 PSI
REINFORCING STEEL - ASTM A615, A616, OR A616- GRADE 60 - UNIT STRESS
24,000 PSI. ORIGINAL DESIGN GRADE 40 (NON-EPOXY COATED) - UNIT
STRESS 20,000 PSI.

DECK PROTECTION: EPOXY COATED REINFORCING STEEL, MICRO-SILICA MODIFIED
CONCRETE OVERLAY OF EXISTING DECK, AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED
TO THE CONCRETE SURFACES SHOWN ON SHEET [7 / 8] AND [8 / 8].
SEE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES,
MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS
WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE
BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW
STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE
UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE
OF 400 POUNDS FOR EACH BRIDGE IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED
IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS
PERTAINING TO THE EXISTING STRUCTURES AND/OR FROM FIELD OBSERVATIONS AND
MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE BY
THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE.
THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.5 AND 105.2.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES
DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY
THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS
AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

SCOPE OF WORK:

DEMOLITION: REMOVAL OF EXISTING GUARDRAIL, 2 FEET OF OUTSIDE PORTIONS OF
EXISTING DECKS AND TOPS OF EXISTING ABUTMENTS AND RETAINING WALLS.
CONSTRUCTION: MICRO-SILICA CONCRETE OVERLAY OF REMAINING EXISTING CONCRETE
SLABS, WIDENING OF EXISTING CONCRETE SLABS, NEW DEEP BEAM BRIDGE
GUARDRAIL WITH TUBULAR BACKUP AND TYPE 2 POSTS.
TRAFFIC: TO BE MAINTAINED DURING CONSTRUCTION BY USE OF STAGED CONSTRUCTION.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED
CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE
PRACTICABLE, AT LEAST A 1'-10" LENGTH OF PROTRUDING REINFORCING STEEL SHALL BE
LEFT IN PLACE. INSTALL DOWEL BARS AS SPECIFIED. PRIOR TO CONCRETE PLACEMENT,
ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND
DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED
REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, RUST, OR OTHER FOREIGN
MATERIALS BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHOD THAT
PRODUCES SATISFACTORY RESULTS TO THE ENGINEER. THE CONCRETE BONDING SURFACES
SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE 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, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS, MAY BE
USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN
DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT
STRUCTURE.

EXISTING REINFORCING STEEL PARTIALLY EXPOSED BY CONCRETE REMOVAL SHOULD BE
LEFT IN PLACE, EXCEPT THAT IT SHALL BE BENT AS NECESSARY TO CLEAR PROPOSED
CONCRETE SURFACES BY AT LEAST 2 INCHES.

STRUCTURE EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED
IN 503.11 EXCEPT THAT THERE SHALL BE NO DEDUCTION FOR REMOVALS MADE AS PART OF
202. EXCAVATION OUTSIDE THESE LIMITS NECESSARY TO REMOVE THE EXISTING
STRUCTURE IS INCLUDED IN 202 FOR PAYMENT.

REINFORCING BAR SPLICE LENGTHS SHALL CONFORM TO THE MINIMUM LENGTHS SPECIFIED
IN 509.08 UNLESS OTHERWISE NOTED ON THE PLANS.

PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN

DESCRIPTION: THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF THE
CONCRETE DECKS AND OTHER REMOVALS INDICATED ON THE PLANS. CARE SHALL BE
TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE
SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE
USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE EQUIPMENT IS PROHIBITED.

SUPERSTRUCTURE: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND
OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT
STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO
STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION
OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION
EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY AN
ENGINEER REGISTERED BY THE STATE OF OHIO, SHOWING THE ALLOWABLE STRESSES AND
THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL
BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR
TO THE START OF WORK.

PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE
SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP PRICE BID,
WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT,
MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH
THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION
OF THE ENGINEER.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS
INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR
PAYMENT. 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 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 THE HAMMER SHALL BE APPROVED BY THE ENGINEER.
ALL WORK SHALL BE DONE 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.

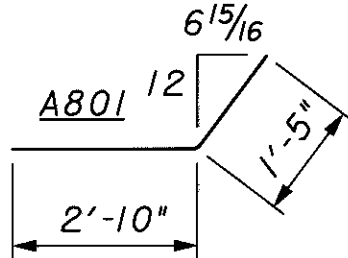
BRIDGE ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS.	GEN'L
202	11203	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	LUMP	LUMP	
509	15820	8676	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	7447	829	400
510	09950	76	EACH	DOWEL HOLES WITH CEMENT GROUT		76	
511	33400	37	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE, 10 FT. THICK	37		
SPEC 51267500		38	SQ.YD.	SEALING OF CONCRETE SURFACES *	38		
516	13200	18	SQ.FT.	1/2" PREFORMED EXPANSION JOINT FILLER		18	
517	72300	62.50	LIN.FT.	RAILING (DEEP BEAM RAIL WITH STEEL TUB- ULAR BACKUP AND TYPE 2 STEEL POSTS) AND ANCHOR BOLTS	62.50		
517	72306	62.50	LIN.FT.	RAILING (DEEP BEAM RAIL WITH STEEL TUB- ULAR BACKUP AND TYPE 2 STEEL POSTS)	62.50		
SPEC 51922020		255	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 2 1/2" THICK*	255		
SPEC 51922130		36	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	36		
SPEC 51922134		5	SQ. YD.	HAND CHIPPING*	5		
SPEC 51922300		LUMP	LUMP	TEST SLAB*	LUMP		
SPEC 51922400		255	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	255		

* - SEE PROPOSAL NOTE

REINFORCING STEEL - ABUTMENTS

MARK	TOTAL NO.	LENGTH	WEIGHT	SHAPE	LEFT REAR	RIGHT REAR	LEFT FORWARD	RIGHT FORWARD
A801	74	4'-1"	806	BENT	18	19	18	19
		TOTAL	806					



BENATEC ASSOCIATES, INC. 2 / 8
1119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

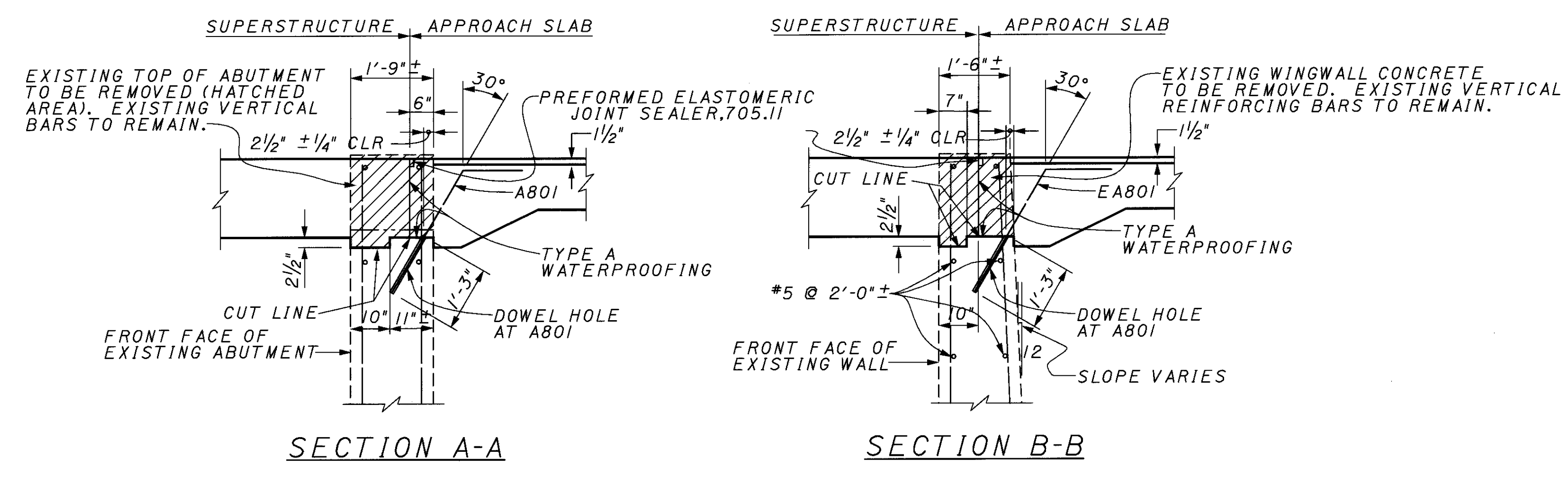
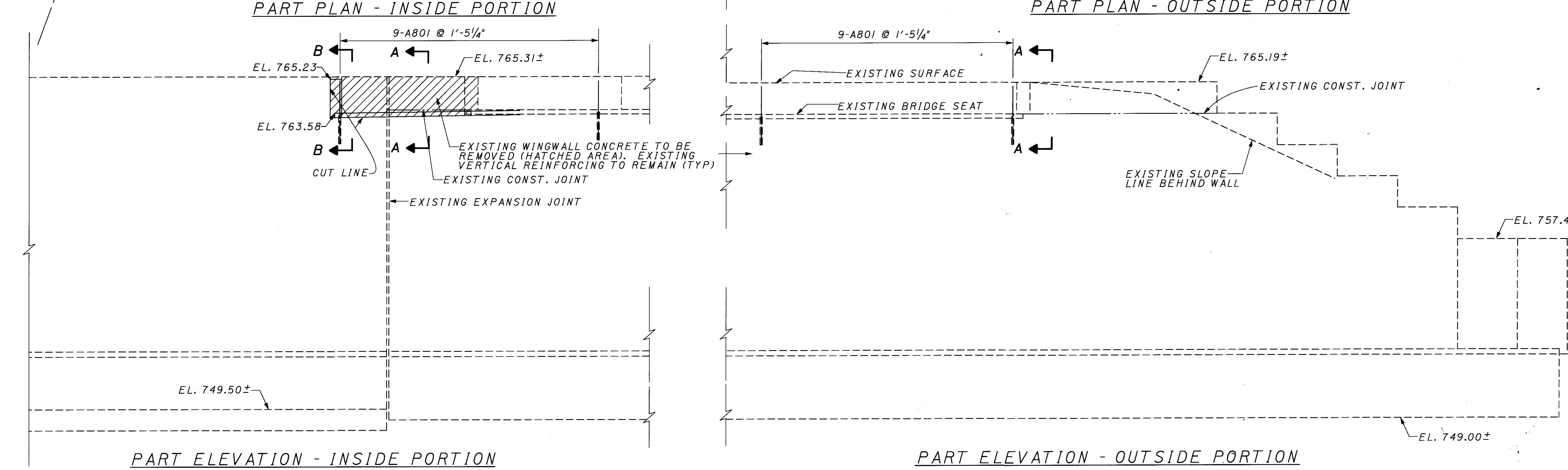
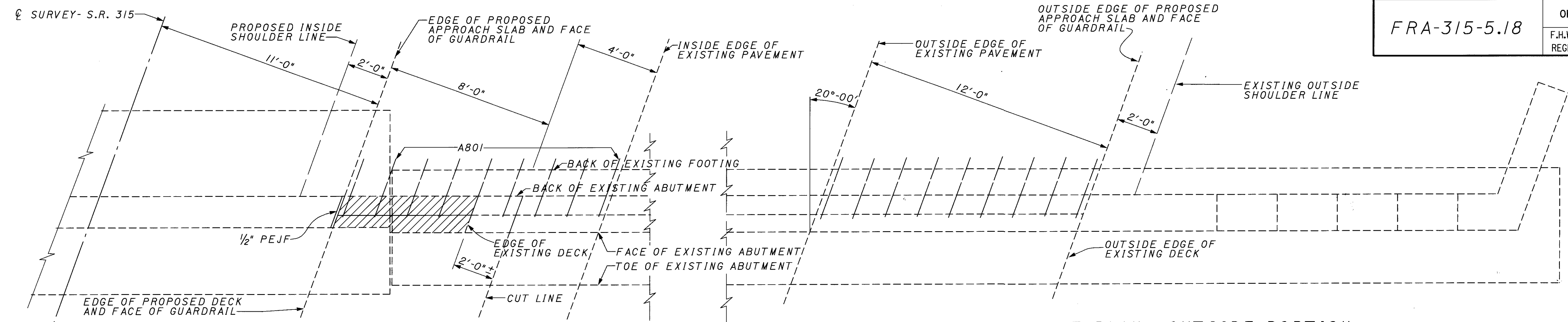
GENERAL NOTES, ESTIMATED
QUANTITIES

BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

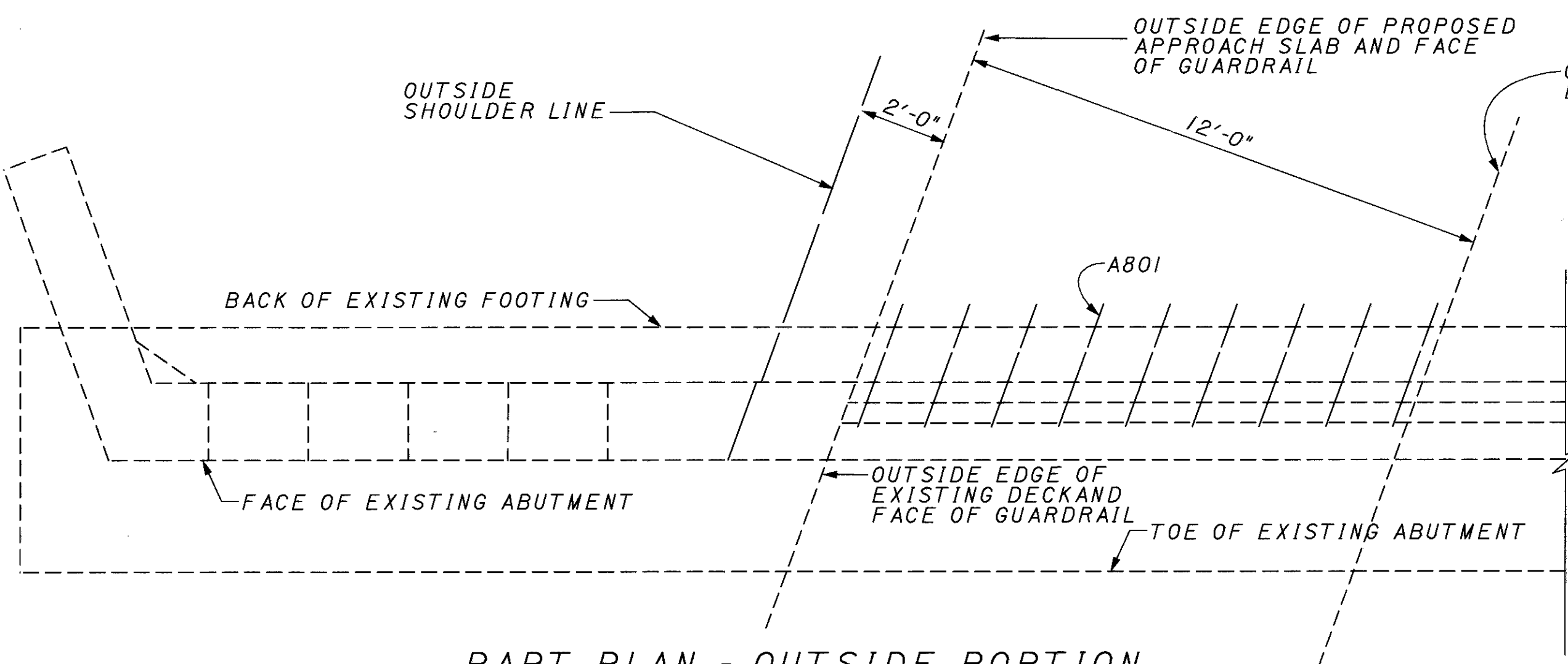
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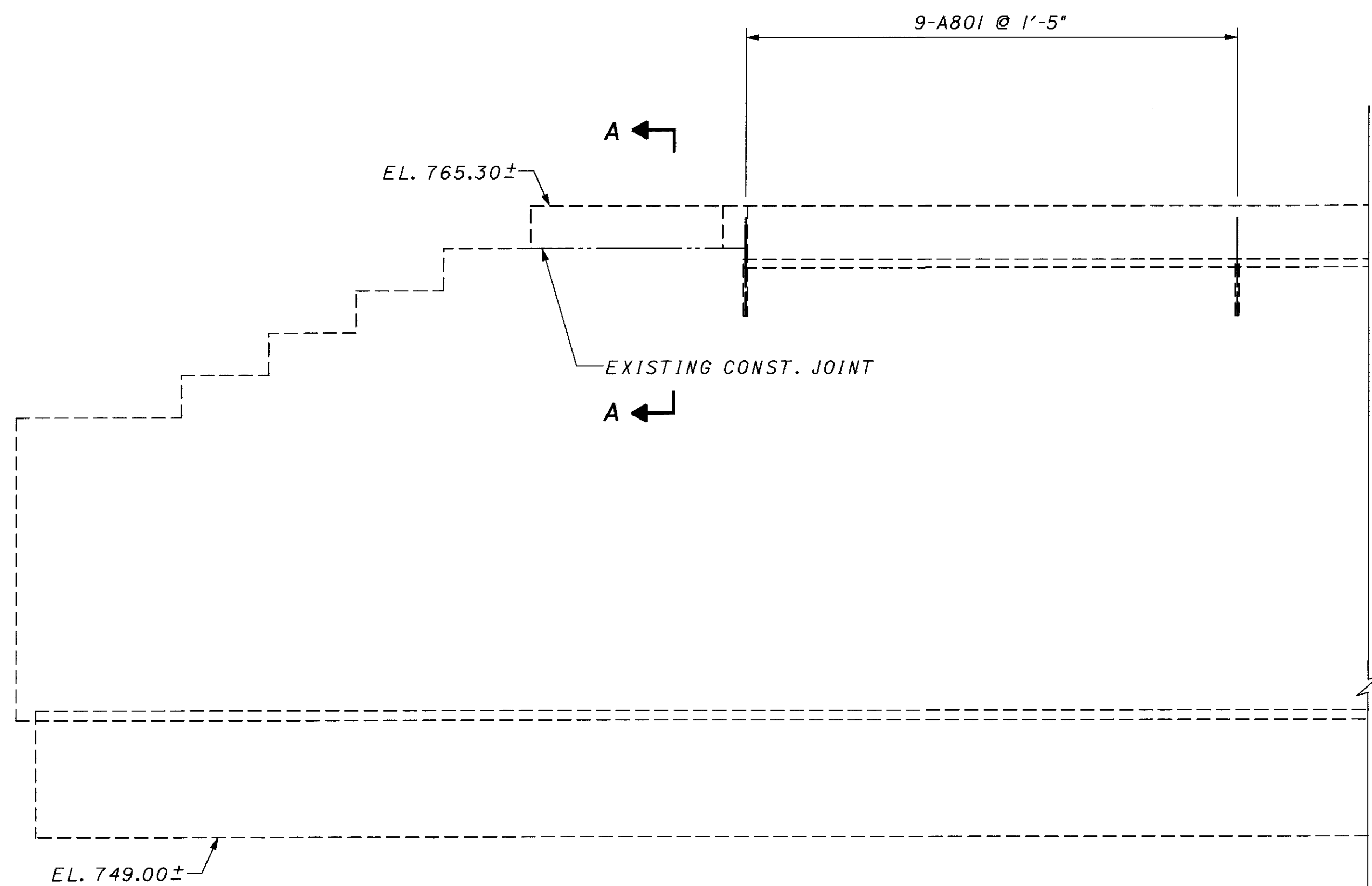
PEJF: PREFORMED EXPANSION JOINT

BENATEC ASSOCIATES, INC. 3 / 8						
118 DILLMONT DRIVE COLUMBUS, OHIO 43235						
LEFT BRIDGE-REAR ABUTMENT						
BRIDGE NO. FRA-315-1220 L/R OVER WILSON RUN						
FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

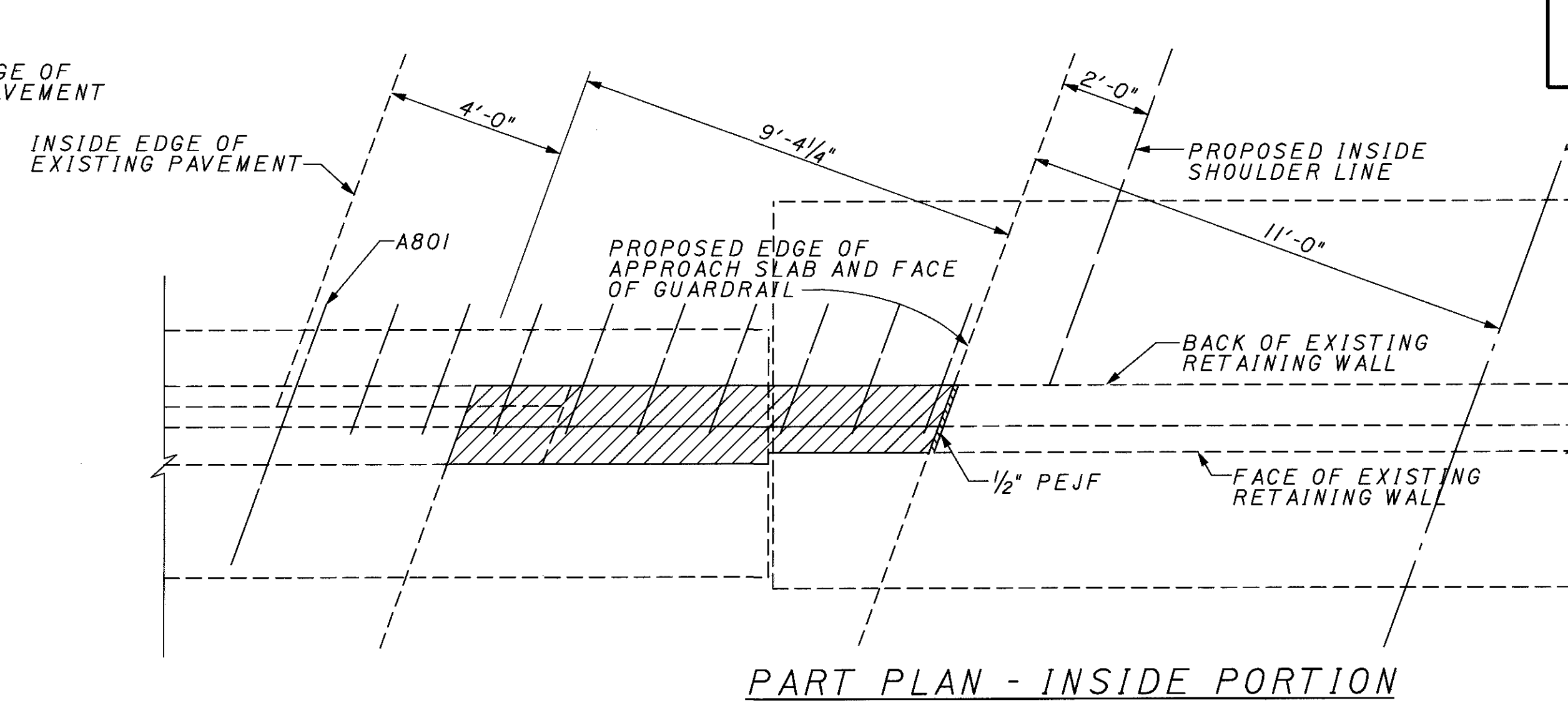
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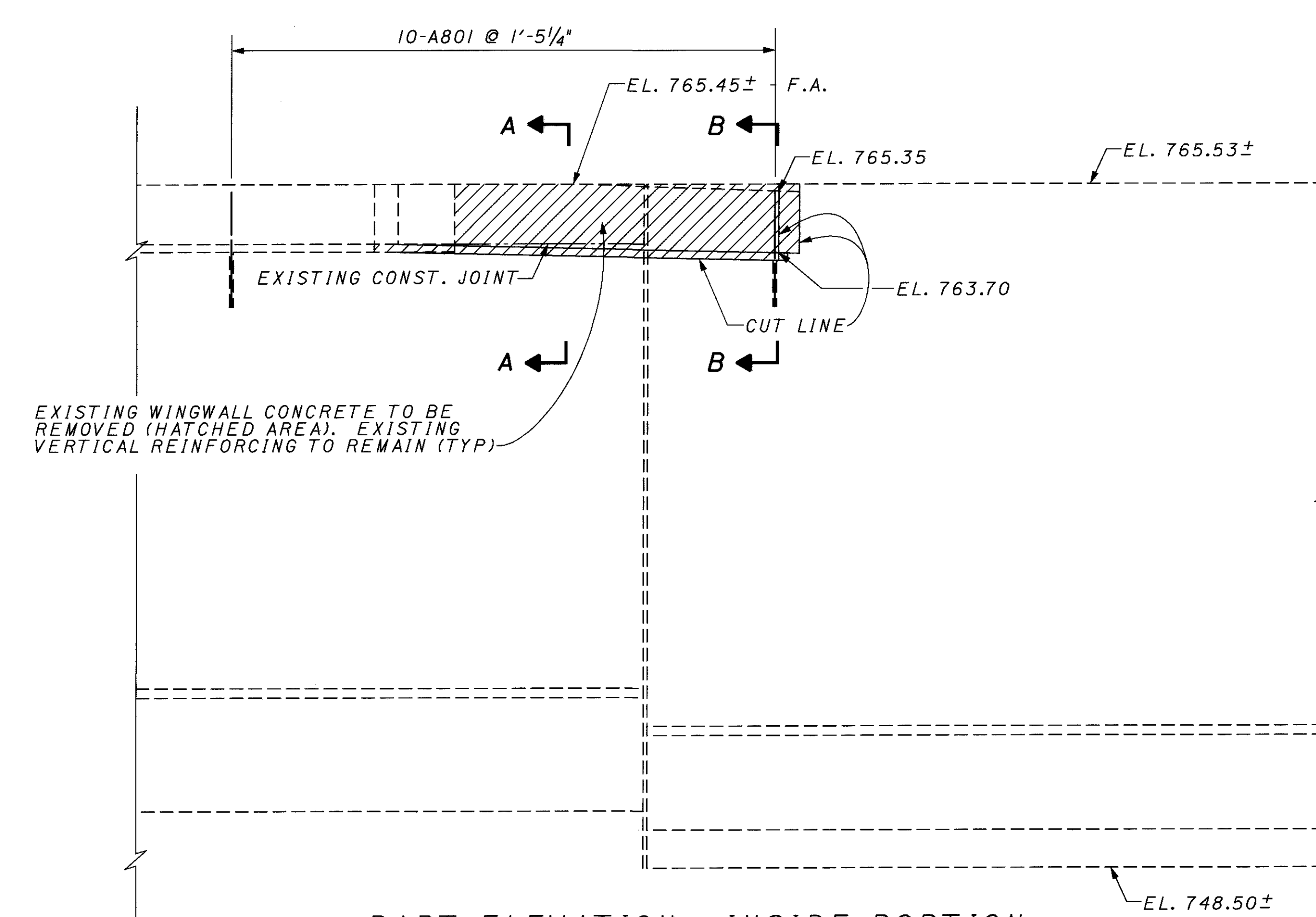
PART PLAN - OUTSIDE PORTION



PART ELEVATION - OUTSIDE PORTION



PART PLAN - INSIDE PORTION

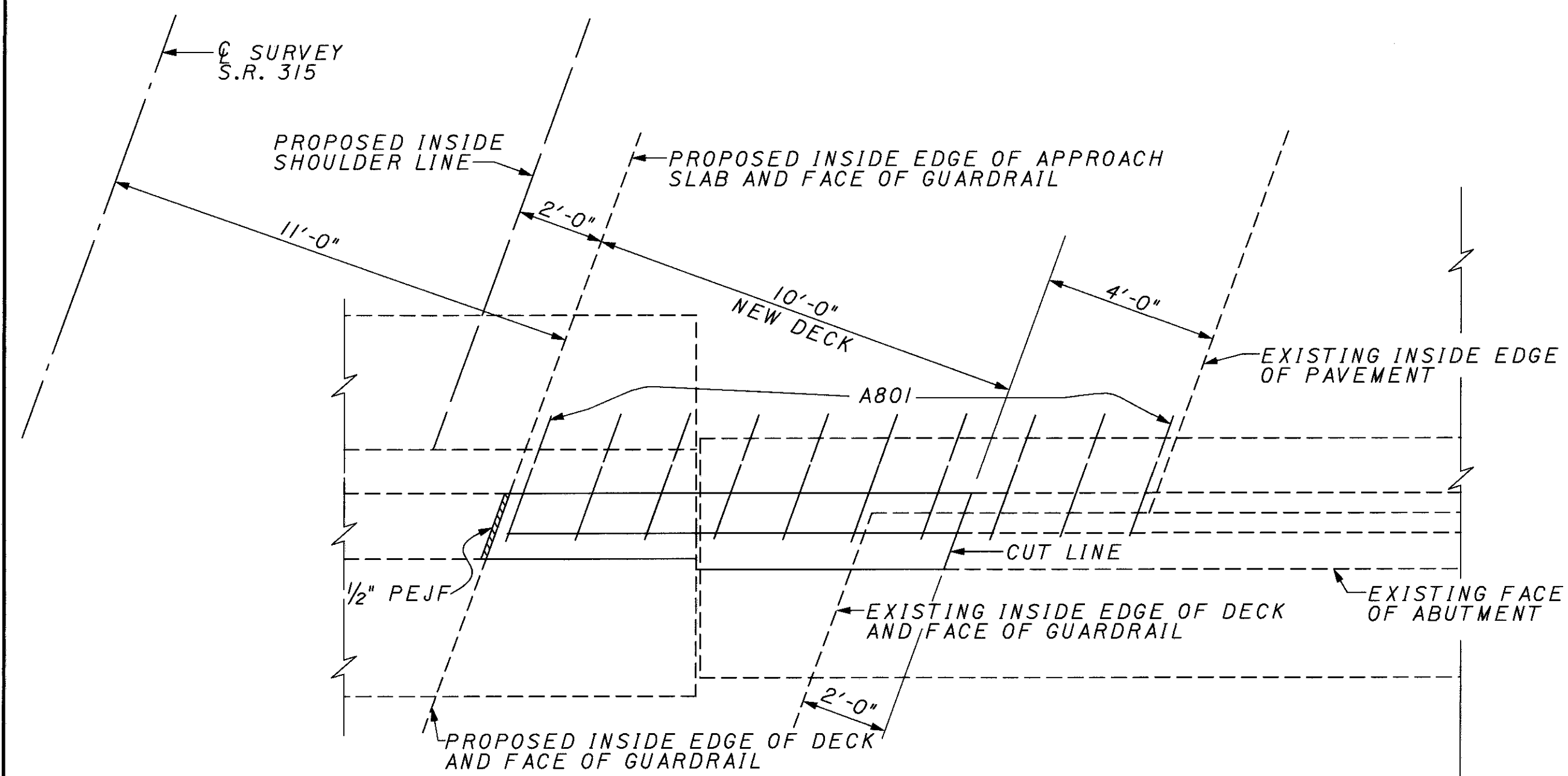


PART ELEVATION - INSIDE PORTION

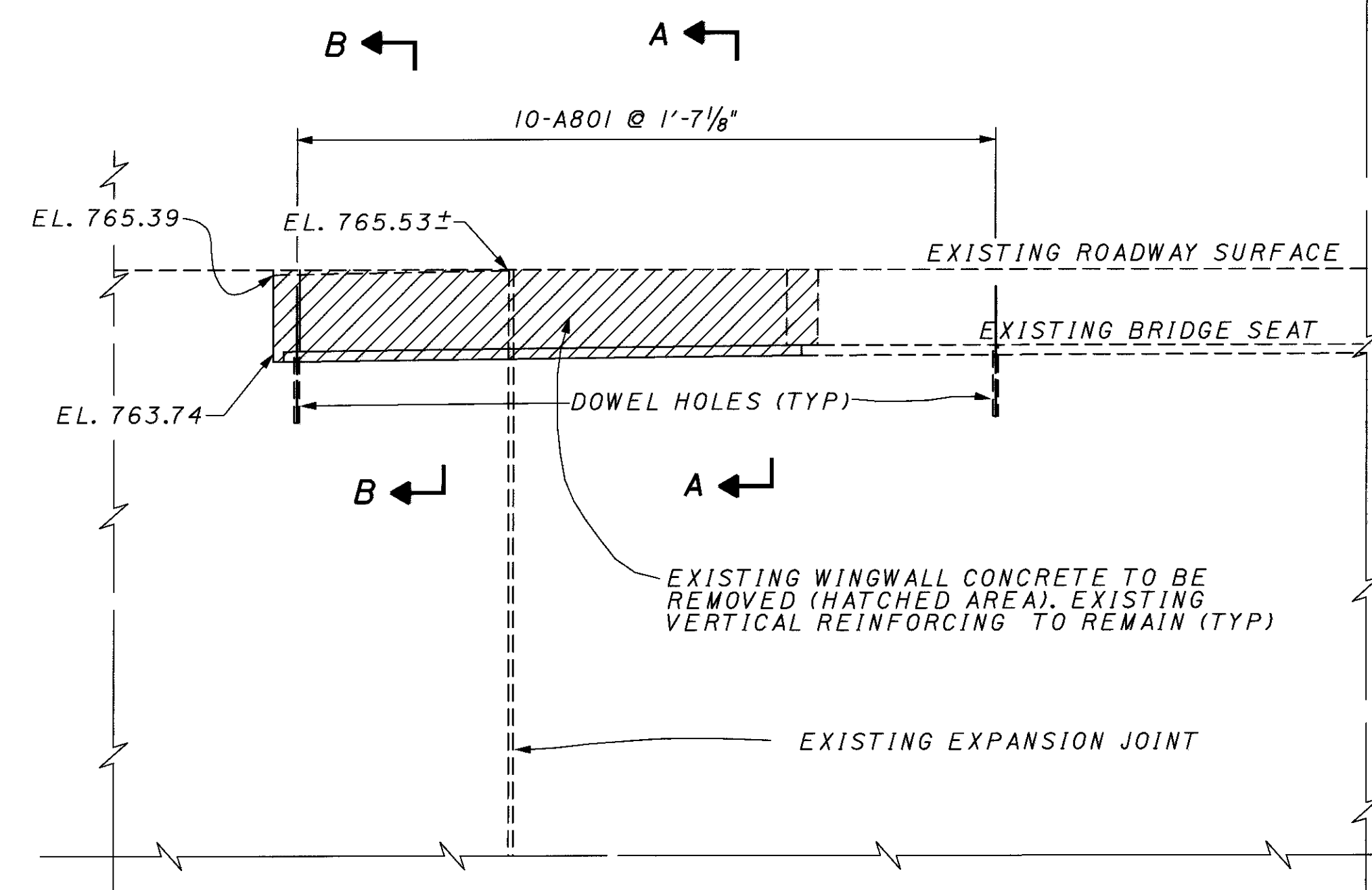
CL SURVEY- S.R. 315

SECTIONS A-A AND B-B:
SEE SHEET 3 / 8

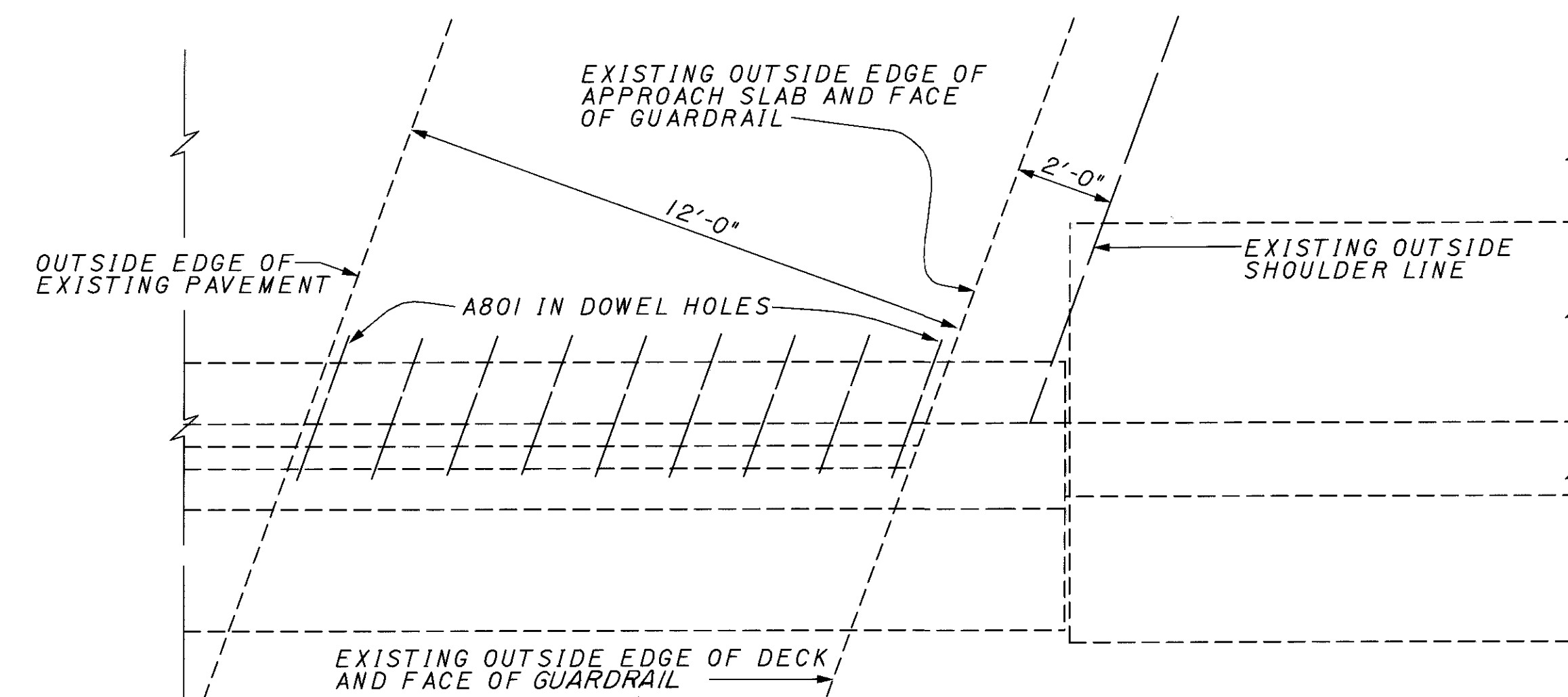
BENATEC ASSOCIATES, INC. 4 / 8						
119 DILLMONT DRIVE COLUMBUS, OHIO 43235						
LEFT BRIDGE-FORWARD ABUTMENT						
BRIDGE NO. FRA-315-1220 L/R OVER WILSON RUN						
FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



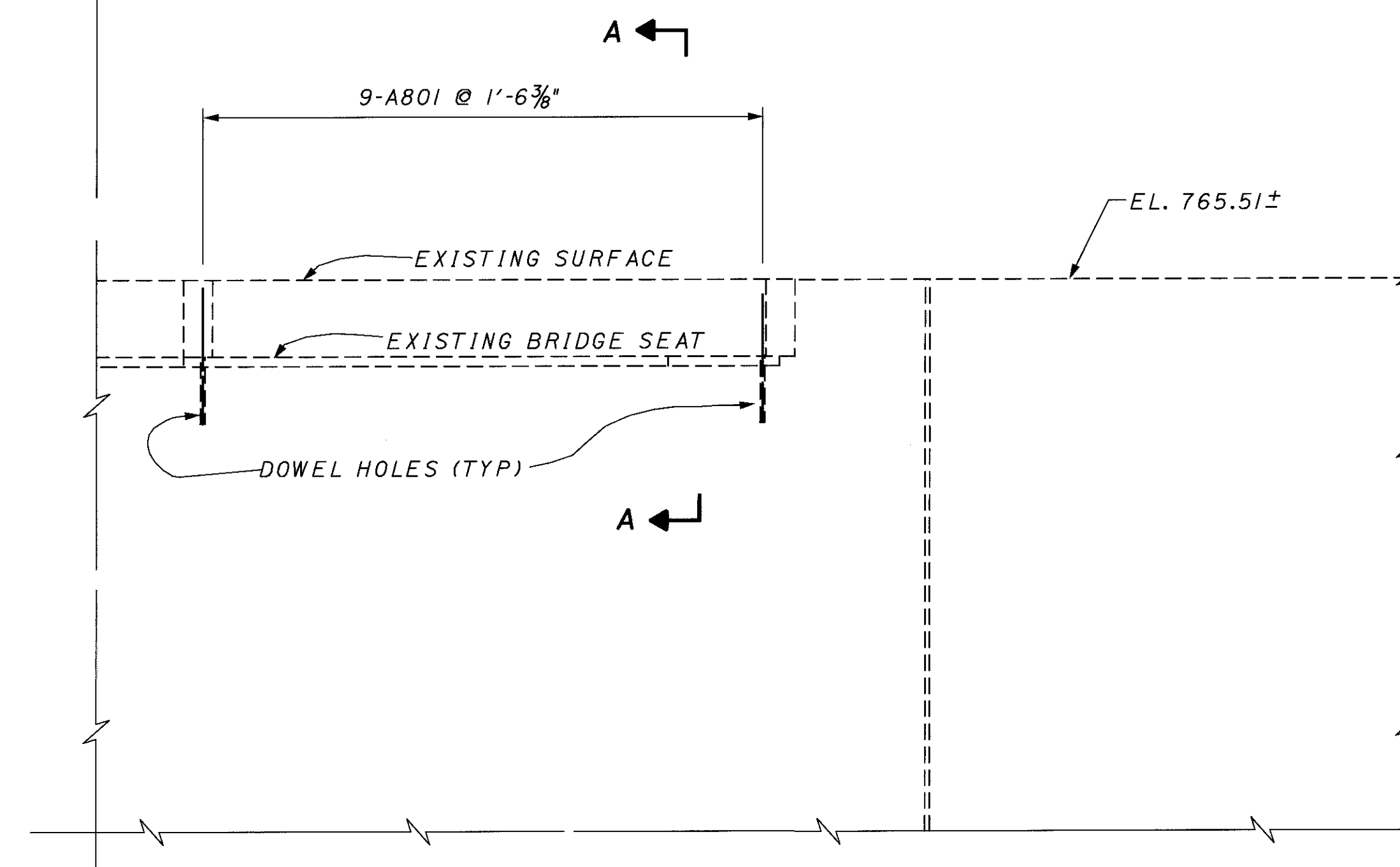
PART PLAN - INSIDE PORTION



PART ELEVATION - INSIDE PORTION



PART PLAN - OUTSIDE PORTION

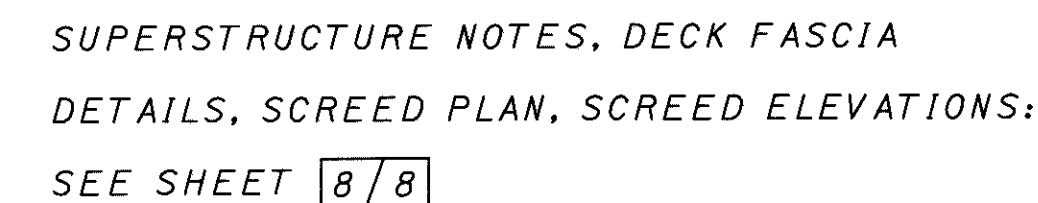


PART ELEVATION - OUTSIDE PORTION

SECTIONS A-A AND B-B:
SEE SHEET 3 / 8BENATEC ASSOCIATES, INC. 6 / 8
1119 DILLMONT DRIVE
COLUMBUS, OHIO 43235RIGHT BRIDGE-FORWARD ABUTMENT
BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



BENATEC ASSOCIATES, INC. 7/8
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

SUPERSTRUCTURE
 LEFT BRIDGE
 BRIDGE NO. FRA-315-1220 L & R
 OVER WILSON RUN

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

