

#### DESIGN DATA

**DESIGN LOADING:** 

HS 20-44 (CASE II) AND THE ALTERNATE MILITARY LOADING FUTURE WEARING SURFACE

(FWS) OF 60 PSF

HIGH PERFORMANCE CONCRETE HPC:

**COMPRESSIVE STRENGTH 4500** PSI (SUPERSTRUCTURE)

CONCRETE CLASS C:

COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL:

ASTM A615 OR A996 GRADE 60, MINIMUM YIELD STRENGTH, 60,000 PSI.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL, 2 1/2" CONCRETE COVER, HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

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

#### REFERENCES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

NO. AS-1-81 REVISED 07-19-02

NO. HL-20.14 DATED 01-17-03

NO. HL-30.32 DATED 04-19-02

NO. SICD-1-96 REVISED 07-19-02

NO. VPF-1-90 REVISED 07-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

864 DATED 07-11-00 954 DATED 09-09-97

#### EXISTING STRUCTURE PLANS

THE EXISTING STRUCTURE PLANS (PROJECT NO. MAH-680-6.98) ARE ON FILE AND MAY BE REVIEWED IN THE OFFICE OF THE ODOT DISTRICT 4 DEPUTY DIRECTOR, 705 OAKWOOD ST., RAVENNA, OHIO

#### CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION IN THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

#### UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

#### UTILITY LINES

THE UTILITIES SHALL BEAR ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

#### PROPOSED WORK

- REMOVE ENTIRE EXISTING DECK ABOVE THE BEAMS, INCLUDING ASPHALT CONCRETE WEARING SURFACE, EXPANSION JOINTS, SCUPPERS AND LIGHTING POLE.
- 2. REMOVE EXISTING APPROACH SLABS.
- 3. REMOVE EXISTING ABUTMENT BACKWALLS AND PORTIONS OF WINGWALLS.
- 4. REMOVE EXISTING END CROSSFRAMES.
- 5. WELD SHEAR CONNECTORS TO EXISTING BEAMS.
- 6. RAISE EXISTING BEAMS, REMOVE BEARINGS AND CONSTRUCT ABUTMENT AND PIER BRIDGE SEAT CAPS.
- 7. FIELD DRILL HOLES IN BEAM ENDS AS PER PLAN.
- 8. SET NEW LAMINATED ELASTOMERIC BEARINGS WITH LOAD PLATE AND HP 10X42 STEEL SHAPE AT ABUTMENTS AND WITH LOAD PLATE AT PIERS, AND PLACE BEAMS ON BEARINGS.
- 9. CONSTRUCT DECK AS PER PLAN.
- 10. RECONSTRUCT ABUTMENT BACKWALLS AND PORTIONS OF WINGWALLS AS PER PLAN.
- 11. PATCH PORTIONS OF ABUTMENTS AND PIERS AS REQUIRED.
- 12. SEAL CONCRETE SURFACES AS PER PLAN.
- 13. CONSTRUCT APPROACH SLABS AS PER PLAN.
- 14. INSTALL VANDAL FENCE.
- 15. REPAIR CONCRETE SLOPE PROTECTION.
- 16. SPOT PAINT EXISTING AND NEW STEEL.

#### PORTIONS OF STRUCTURE REMOVED. OVER 20 FOOT SPAN. AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECK INCLUDING CURBS, PARAPETS, RAILINGS, LIGHT POLE, DECK JOINTS, SCUPPERS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, CROSS FRAMES, ETC.), END CROSSFRAMES AND PORTIONS OF THE ABUTMENTS AND WINGWALLS TO THE LIMITS INDICATED IN 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 OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE. THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC ADJACENT TO AND/OR 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.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STEEL BEAMS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING OF THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT. BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

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, HAMMERS NOT EXCEEDING 90 POUNDS, MAY BE USED UPON 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.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS AND THE SUPPORT FOR SCUPPERS WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

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 OHIO REGISTERED PROFESSIONAL ENGINEER. 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 THE 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.

#### 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 PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

#### SEALING OF CONCRETE SURFACES

EPOXY-URETHANE SHALL BE THE "LIGHT NEUTRAL" COLOR MEETING FEDERAL COLOR STANDARD NO. 17778 AS PER THE DETAILS IN THE PLANS.

#### **ASBESTOS NOTIFICATION:**

AN ASBESTOS SURVEY OF THE INDIANOLA AVE. BRIDGE OVER 1-680 SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF THE DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

MAHONING-TRUMBULL AIR POLLUTION CONTROL OAK HILL/RENAISSANCE PLACE SECOND FLOOR, ROOM 25 345 OAK HILL AVENUE YOUNGSTOWN, OHIO 44502 ROBERT RAMHOFF, DIRECTOR (330)744-1928 FAX (330)744-1928

AT LEAST TEN (10) WORKING DAYS PRIOR TO START OF THE BRIDGE DEMOLITION WORK, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

INFORMATION REQUIRED ON THE FORM WILL INCLUDE: THE CONTRACTOR'S NAME AND ADDRESS, THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL OR RENOVATION AND A DESCRIPTION OF THE PLANNED DEMOLITION OR RENOVATION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO 44266.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED. OVER 20' SPAN, AS PER PLAN.

#### REQUIRED MINIMUM BAR LAP LENGTHS \*

BAR SIZE	OTHER	TOP
#4	1'-11"	2'-9"
<b>#</b> 5	2'-5"	3'-5"
#6	2'-11"	4'-1"
 <b>#</b> 7	3'-8"	5'-2"
 #8	4'-11"	6'-10"
#9	6'-2"	8'-8"
#10	7'-10"	11'-0"
<i>#</i> 11	9'-8"	13'-6"

\* UNLESS NOTED OTHERWISE IN PLANS.

#### INSPECTION OF EXISTING STRUCTURAL STEEL

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS ARE FREE OF DEFECTS AND CRACKS. IF NECESSARY. REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, SUPERSTRUCTURE CONCRETE. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

#### **ABBREVIATIONS**

B.S.	BOTH SIDES	U.N.	UNLESS NOTED
N.S.	NEAR SIDE	SPL.	SPLICE
F.S.	FAR SIDE	CLR.	CLEAR
SER.	SERIES	EA.	EACH
TYP.	TYPICAL	MIN.	MINIMUM
EQ.	EQUAL	EXIST.	EXISTING
DIM.	DIMENSION	BM.	BEAM
SPA.	SPACES	вот.	BOTTOM
FRWD.	FORWARD	P.E.J.F.	PREFORMED EXPANSION
ABUT.	ABUTMENT		JOINT FILLER
REHAB.	REHABILITATION	PERF.	PERFORATED
VAR.	VARIES	C.P.P.	CORRUGATED PLASTIC
SIM.	SIMILAR		PIPE
OPP.	OPPOSITE	ur Aren	

 $\infty$ 

0

68

NOTE:

ENERAL 1 - 680 -E. OVER 1-6

Q ₹ ₹

STRUCTURE BRIDGE NO. M.

ASSOCIATES

ASSOCIATES
in Street, Suite 2531 Akron, Ohio 44311

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

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

- 1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
- 2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE 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 ABUTMENT 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.

#### JACKING SYSTEM REQUIREMENTS:

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

#### **JACKING OPERATION REQUIREMENTS:**

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS: NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/2 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. 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 ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". 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.

#### METHOD OF MEASUREMENT:

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

#### BASIS OF PAYMENT:

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 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL. AS PER PLAN

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES. +/-. FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E. I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST THICKNESS, INCHES	ASTM METHOD D 751	REQUIREMENT 0.094" +/01
BREAKING STRENGTH, GRAB, LBS, MIN.(LONG X TR	D 751 RANS.)	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS. MIN.	D 751	9
BURST STRENGTH PSI, MIN.	D 751	1400
HEAT AGING 70 HOURS, 212° F , 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS, 1 HR, -40° F	D 2136	NO CRACKING OF COATING

#### METHOD OF MEASUREMENT:

BEND AROUND 1/4" MANDREL

THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

#### BASIS OF PAYMENT:

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

#### BONDING GROUT

THE BONDING GROUT TO BE USED BETWEEN OLD AND NEW CONCRETE WALLS AT THE FORWARD ABUTMENT SHALL BE "SIKA ARMATEC 110" AS MANUFACTURED BY SIKA CORPORATION, 201 POLITO AVENUE, LYNDHURST, NEW JERSEY 07071: "EUCO NO. 452 EPOXY SYSTEM" AS MANUFACTURED BY THE EUCLID CHEMICAL CO., 19218 REDWOOD ROAD, CLEVELAND, OHIO 44110: "CONCRESIVE STANDARD LIQUID" AS MANUFACTURED BY MASTER BUILDERS, INC., 23700 CHAGRIN BOULEVARD, CLEVELAND, OHIO 44122; OR AN APPROVED ALTERNATE. SURFACE PREPARATION MIXING AND PLACING OF GROUT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION. BONDING GROUT IS INCLUDED WITH ITEM 511, CLASS C CONCRETE, ABUTMENT.

## ESTIMATED QUANTITIES

					LOTTINITED QUITTITES		OFFICE	(LD <u>. 1.0.1</u>	DATE	7727700	¥ .
	ITEM	EXT	TOTAL	UNITS	DESCRIPTION	ABUT	PIER	SUPER	GENERAL	A.P.P. REF. SHT. NO.	DESIGN AGENCY GLAUS PYLE SCHOMER BURNS & DEHAVE
	202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2	AGENCY SCHOMER BUR
	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP			2		FIG.
	509	10000	104,372	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	10,461	2,164	91,747			Z. S.
	510	10000	373		DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT	265	108				DESIGN GLAUS PYLE
	511	43200	25		CLASS C CONCRETE, PIER		25				<b>ä</b> ₫∶'
											16
	511	45700	99	CU YD	CLASS C CONCRETE, ABUTMENT	99					
	511	50001	365	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN		- 1	365		3	1
_	511	50100	<b>3</b> 6		CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			36			
_		a 6	· · · · · · · · · · · · · · · · · · ·					1/1/			
	513	20000	2,700	EACH	WELDED STUD SHEAR CONNECTORS			2,700			F S
											DATE
	514	00050	1,000	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL				1,000		DATE 8-1-03
	514	00056	1,000		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT				1,000		
	514	00060	1,000		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT				1,000		REVIEWED K.S.J.
	514	00066	1,000		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT				1,000		₩.S.
					SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, PRESSURE						F _
	514	00101	LUMP		WASHING, AS PER PLAN				LUMP	3	
											ن ≩
-	514	00504		MAN HR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			J	8		DRAWN R.H.C.
***	516	13600	16		1" PREFORMED EXPANSION JOINT FILLER			16			
	516	13900	182		2" PREFORMED EXPANSION JOINT FILLER	182					
-	516	14021	101		SEMI-INTEGRAL ABUTMENT JOINT SEAL, AS PER PLAN	101				3	。 回 。
•	516	44101	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (9"x 13"x 2.78" THICK), AS PER PLAN			6		12	DESIGNED R.H.C.
					ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE						
	516	44101	6	EACH	(10"x 16"x 2.30" THICK), AS PER PLAN		<u>.</u>	6		12	
	516	44101	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (10.5"x 18"x 1.99" THICK), AS PER PLAN			6		12	NOTES
	516	44101	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (9.5"x 14.5"x 2.94" THICK), AS PER PLAN			6		12	8
	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	3	-1
	518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC	LUMP					GENERAL
	519	11101	199		PATCHING CONCRETE STRUCTURE, AS PER PLAN	70	63		66	3	I H
		15001	98		REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN			98		18,19	13
	526		4 4 7	I SO VA	REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN			147		18,19	1
	526 526	30001	147	טו אַכּ	THE OTTO DE TOTAL TOTAL CONTROL ( TOTAL ) A TOTAL CONTROL CONT						1 1.1
	526	30001 60739930			SPECIAL-VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC	<u></u>		471			CTURE

- ▲ ITEM 514 AN ALLOWANCE OF 1,000 SQ. FT. HAS BEEN INCLUDED FOR SPOT PAINTING OF EXISTING STRUCTURAL STEEL.
- ITEM 514 AN ALLOWANCE OF 8 MAN HOUR HAS BEEN INCLUDED FOR SPOT PAINTING OF EXISTING STRUCTURAL STEEL.
- ☐ ITEM 519 AN ALLOWANCE OF 66 SQ, FT. HAS BEEN INCLUDED FOR FUTURE DETERIORATION.

#### CONCRETE PARAPETS

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAW CUT 1 1/4 INCH DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT SIDEWALK. PLACE THE SAWCUTS AT THE SPACINGS SHOWN IN THE PLANS. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT. TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2" OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

# ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER

EXPANDED POLYSTYRENE FILLER OR REMOVABLE FORMS SHALL BE USED IN FORMING TO PROVIDE THE CLEARANCE REQUIRED BETWEEN THE ABUTMENT AND SUPERSTRUCTURE AND SHALL BE INCLUDED WITH ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN.

#### ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH

#### ITEM 514—SURFACE PREPARATION OF EXISTING STEEL PRESSURE WASHING, AS PER PLAN

THIS WORK CONSISTS OF A PRESSURE WASHING OF THE ENTIRE EXISTING STEEL STRUCTURE IN ACCORDANCE WITH THE PROVISIONS LISTED IN 514.12 AND IS TO INCLUDE ALL LABOR AND MATERIALS TO COMPLETE THE WASHING. PRESSURE WASHING WILL OCCUR PRIOR TO ANY REQUIRED REPAIR PAINTING SURFACE PREPARATION AND REPAIR FIELD PAINTING. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO SCHEDULE THE WASHING WITHIN THE GUIDELINES ESTABLISHED IN THE MAINTENANCE OF TRAFFIC PLAN UNLESS A SEPARATE SCHEDULE IS APPROVED BY THE ENGINEER.

CALCULATED: R.H.C. DATE: 11/14/02

CHECKED: P.J.W. DATE: 7/24/03

#### ITEM 514 - FIELD PAINTING OF STRUCTURAL STEEL

THE CONTRACTOR SHALL MATCH EXISTING COLOR AND FINISH FOR AREAS TO BE SPOT PAINTED TO THE SATISFACTION OF THE ENGINEER. ODOT RECORDS INDICATE THAT THE STRUCTURE WAS PREVIOUSLY PAINTED WITH "BLUE" COLOR MEETING FEDERAL COLOR STANDARD NO. 15450.

## ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN

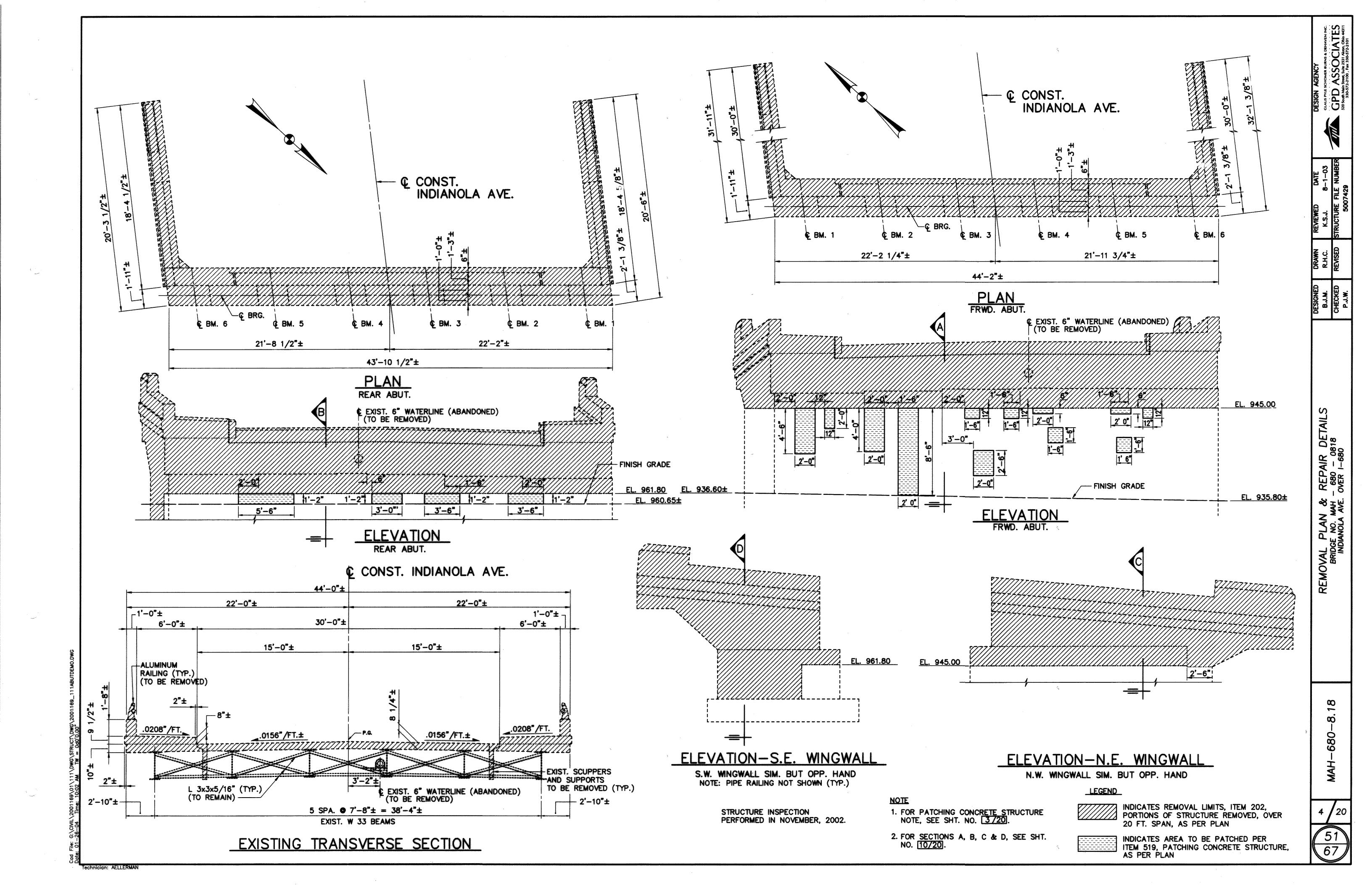
PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT.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

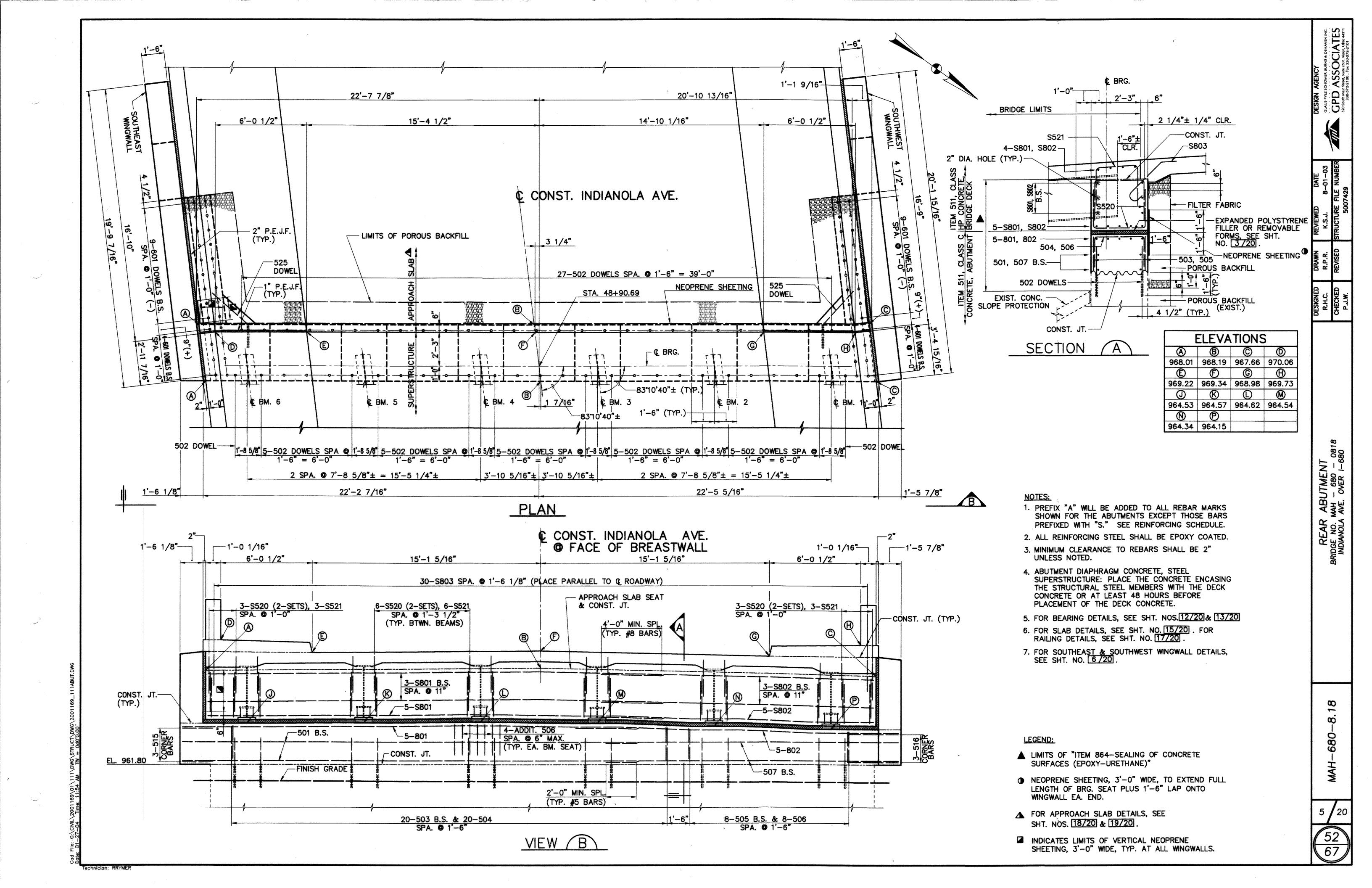
50

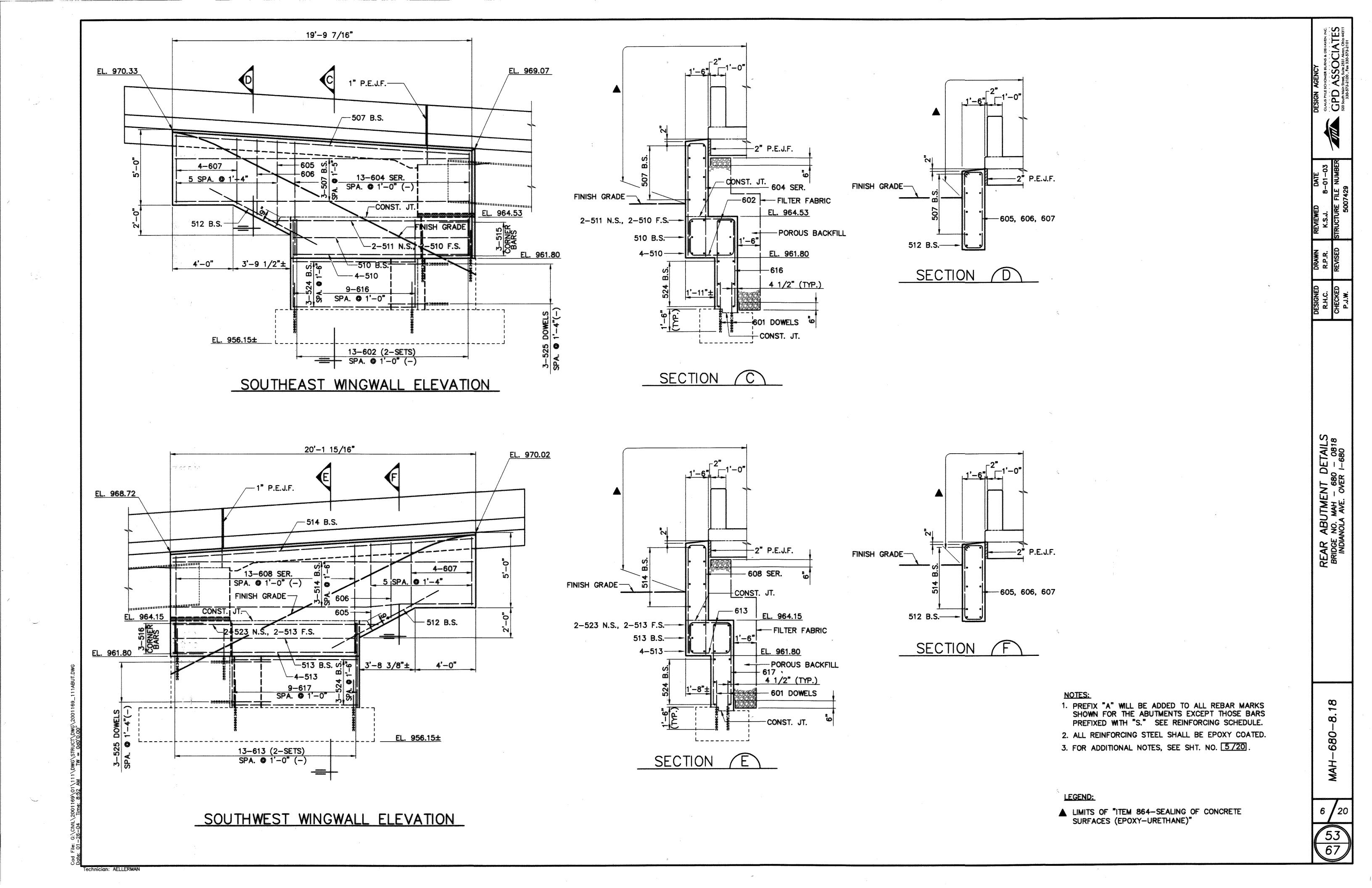
& STRUCTURE 5. MAH - 680 - 081 1.A AVE. OVER 1-680

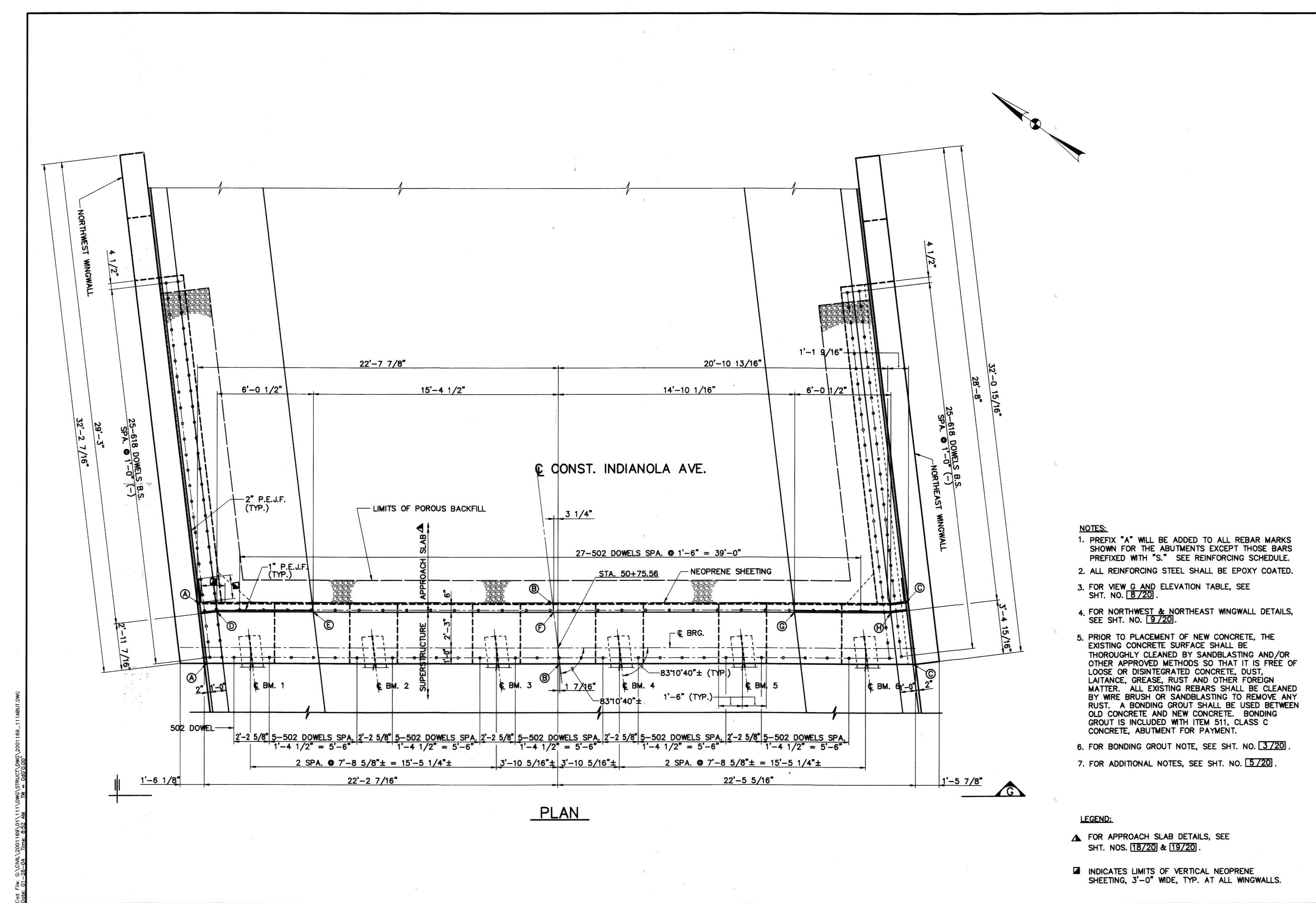
QUANTITIES BRIDGE

STIMATED





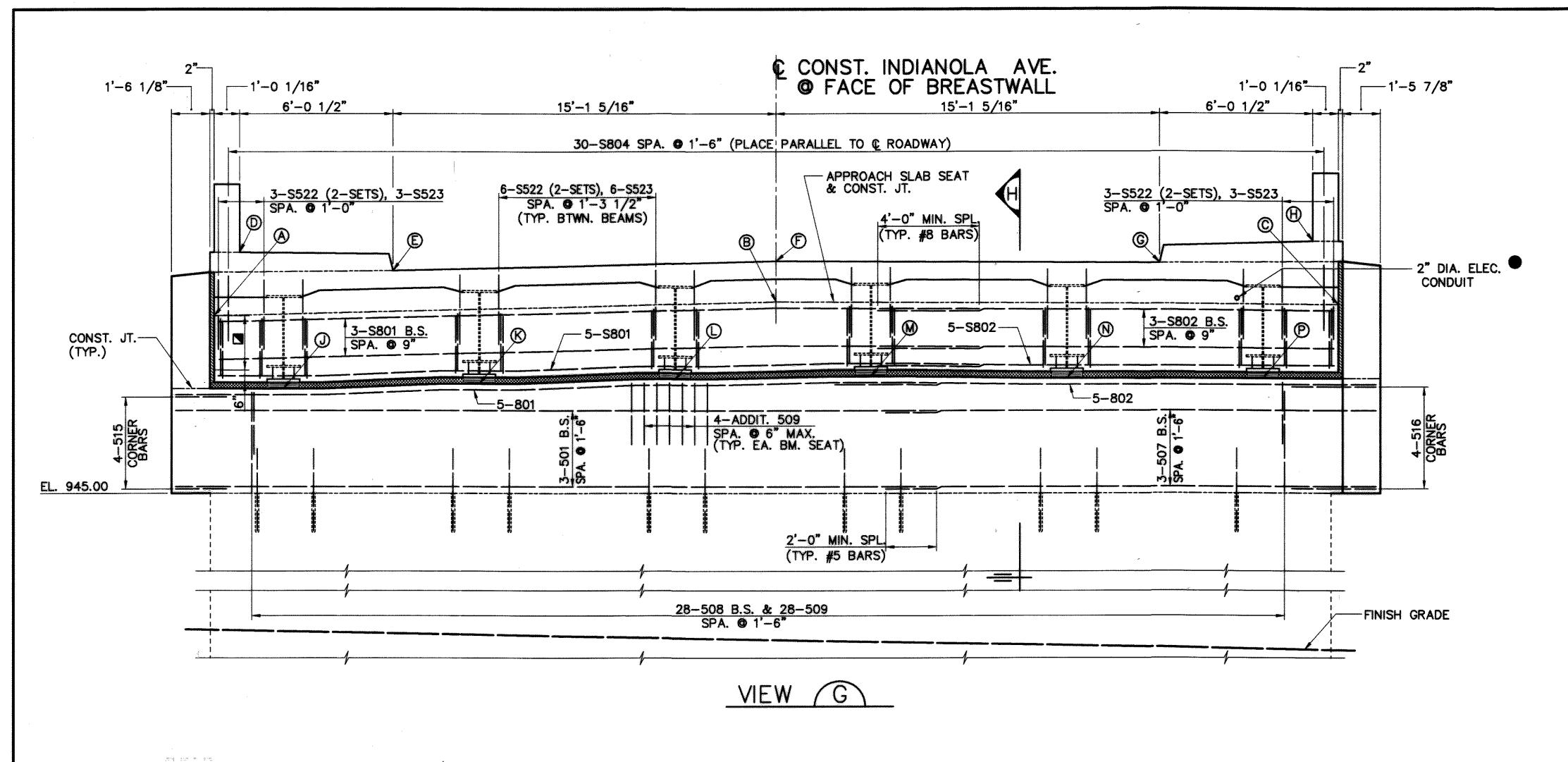


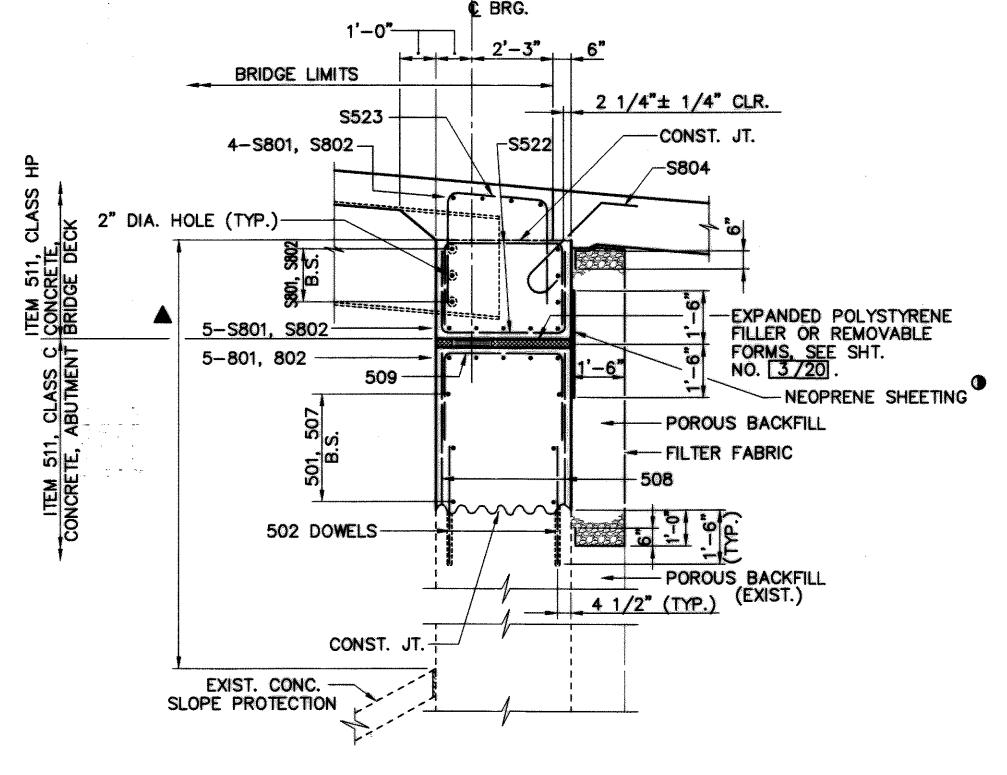


Technician: AELLERMAN

FRWD. ABUTMENT IDGE NO. MAH — 680 — 08 INDIANOLA AVE. OVER 1—680

680





(	ELEVA	TIONS	}
(A)	₿	(C)	0
952.00	952.56	952.44	954.33
Ð	Ð	<b>©</b>	$\Theta$
953.60	953.98	953.90	954.75
<u> </u>	<b>®</b>	(L)	(A)
949.12	949.32	949.50	949.61
(0)	P		
949.53	949.52		

#### NOTES:

- 1. PREFIX "A" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE ABUTMENTS EXCEPT THOSE BARS PREFIXED WITH "S." SEE REINFORCING SCHEDULE.
- 2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- 3. FOR FRWD. ABUT. PLAN, SEE SHT. NO. 7/20
- 4. FOR SLAB DETAILS, SEE SHT. NO. 15/20. FOR RAILING DETAILS, SEE SHT. NO. 17/20.
- 5. FOR ADDITIONAL NOTES, SEE SHT. NO. 5/20.

#### LEGEND:

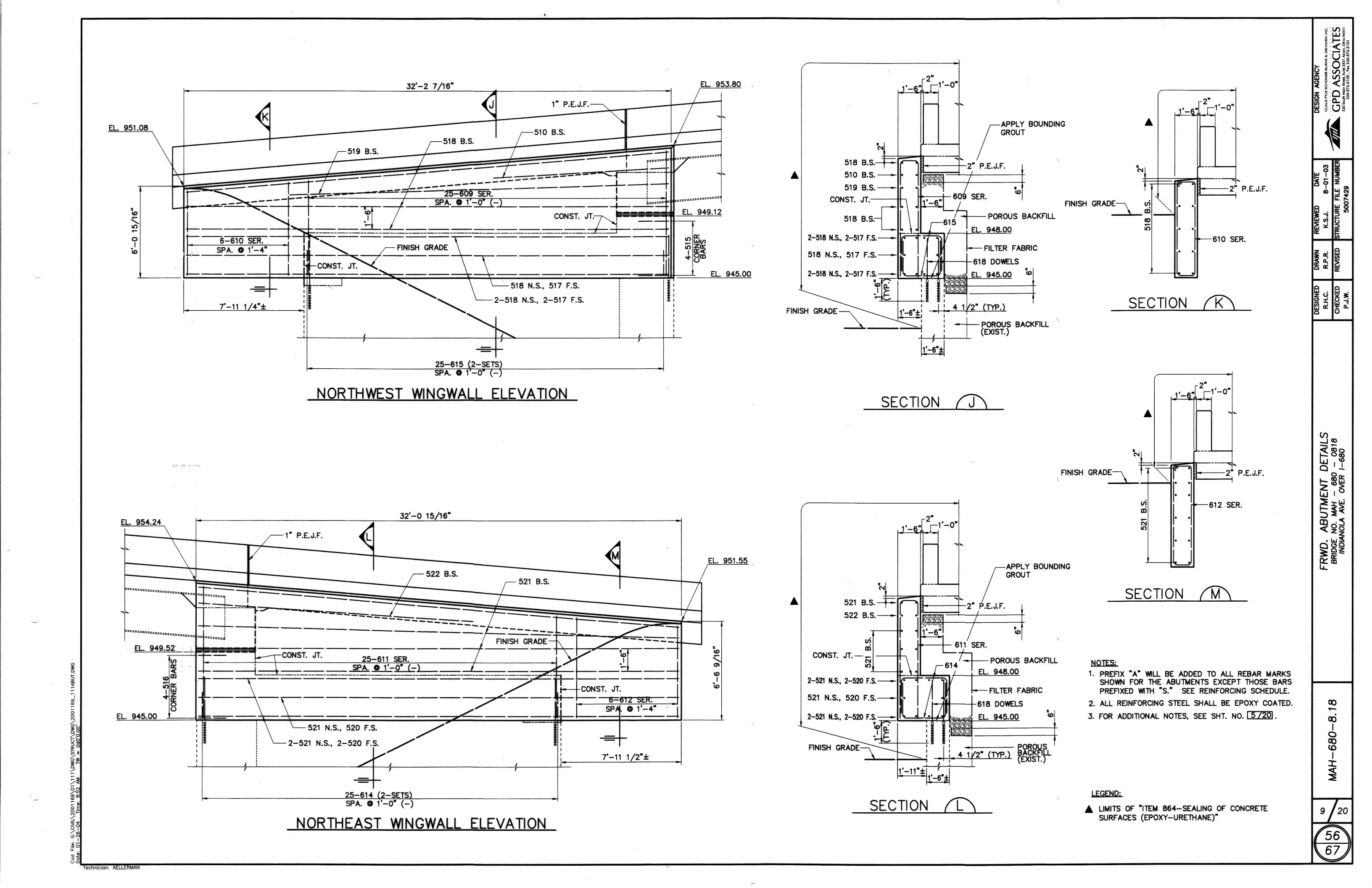
- ▲ LIMITS OF "ITEM 864-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)"
- NEOPRENE SHEETING, 3'-0" WIDE, TO EXTEND FULL LENGTH OF BRG. SEAT PLUS 1'-6" LAP ONTO WINGWALL EA. END.
- INDICATES LIMITS OF VERTICAL NEOPRENE SHEETING, 3'-0" WIDE, TYP. AT ALL WINGWALLS.
- INCLUDED WITH LIGHTING QUANTITIES, SHT. NO.  $\frac{47}{67}$ .

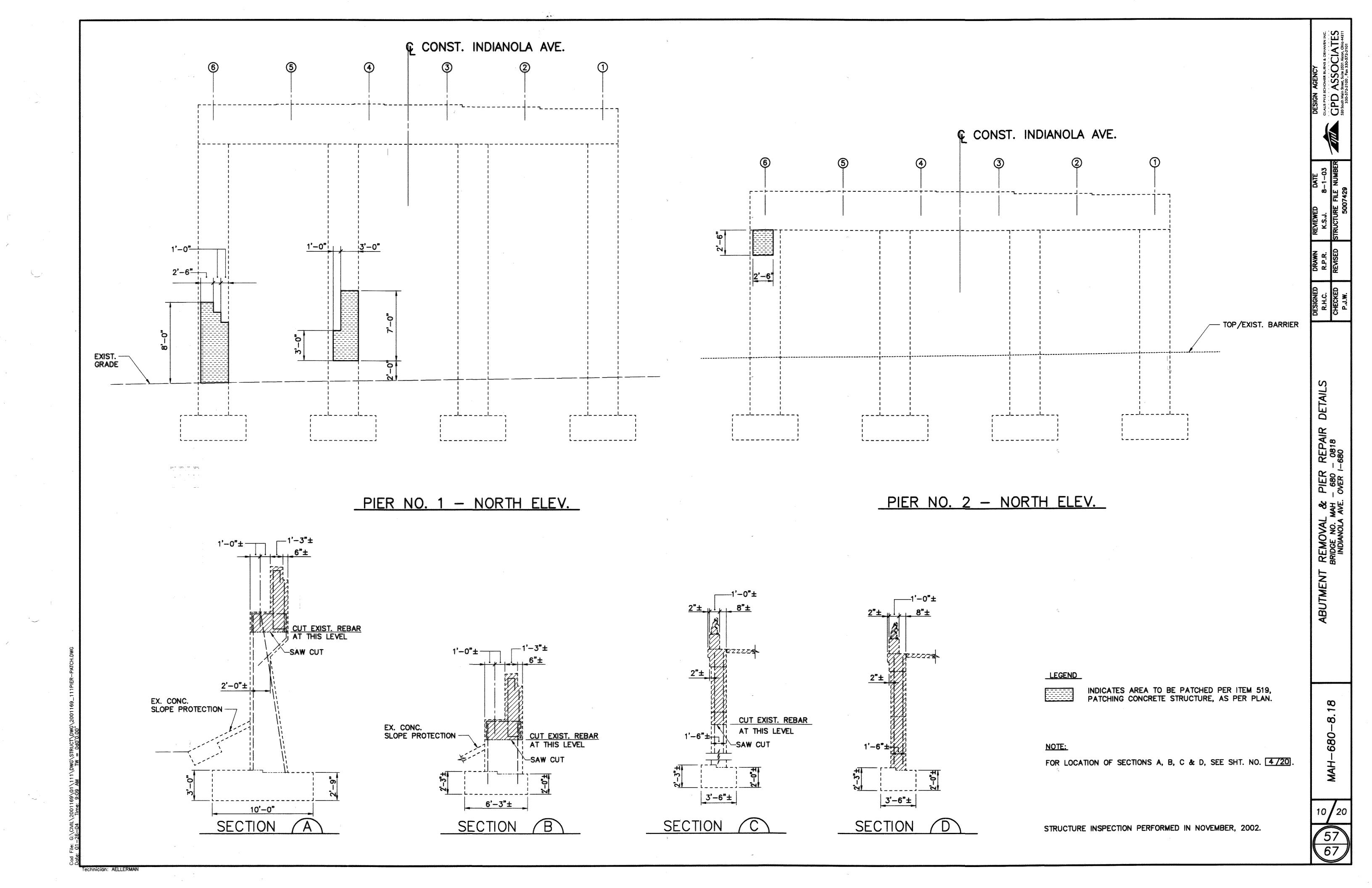


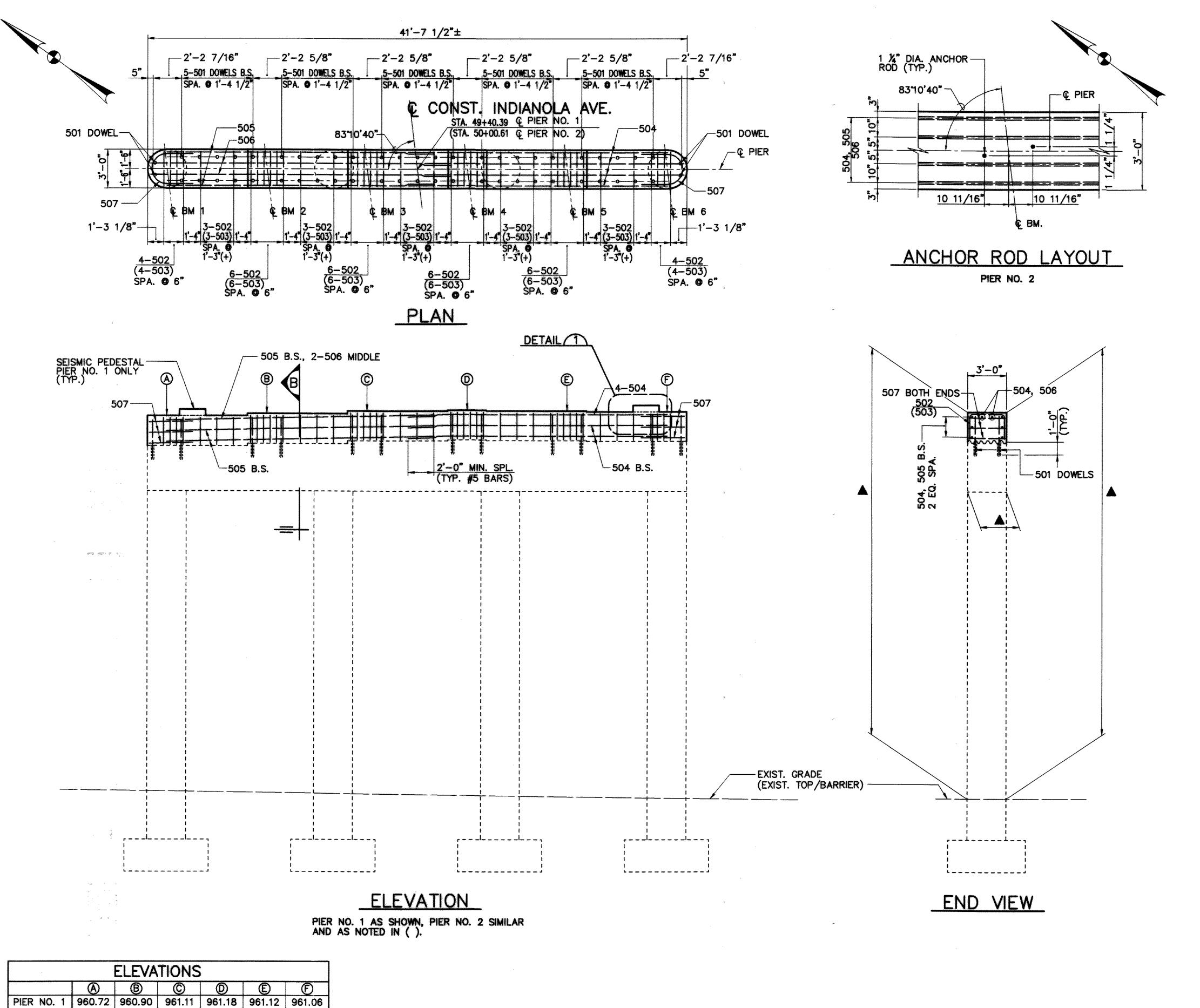
FRWD. ABUTMENT BRIDGE NO. MAH - 680 - 0818 INDIANOLA AVE. OVER 1-680

Technician: AELLERMAN

SECTION

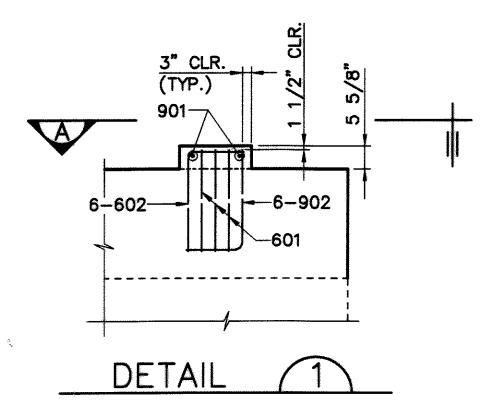


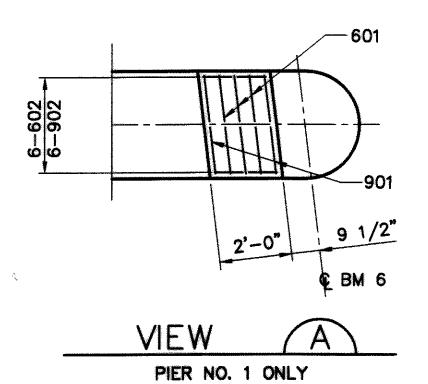


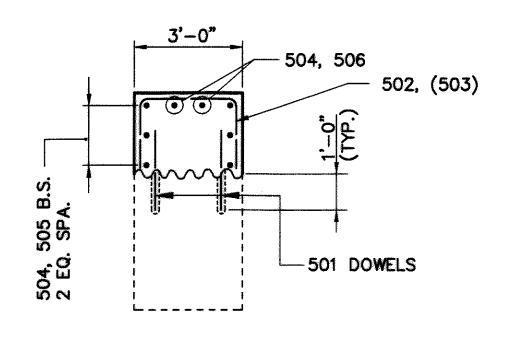


PIER NO. 2 955.84 955.98 956.17 956.24 956.20 956.14

Technicion: AELLERMAN







PIER REHAE BRIDGE NO. MAH INDIANOLA AVE.

680

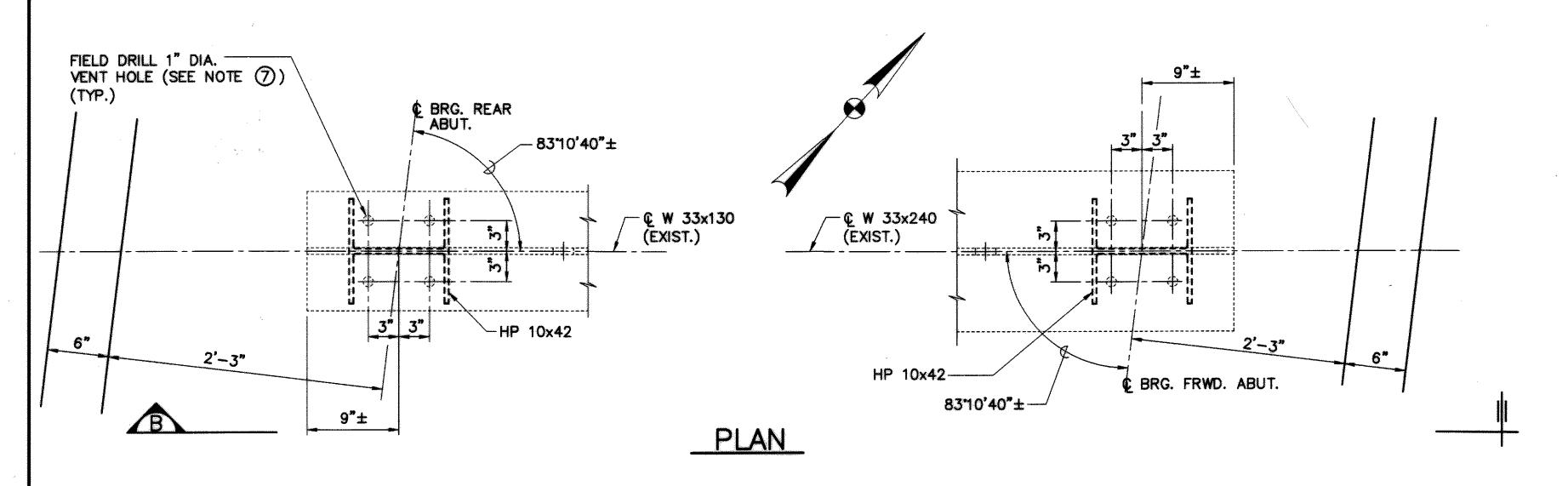
SECTION B

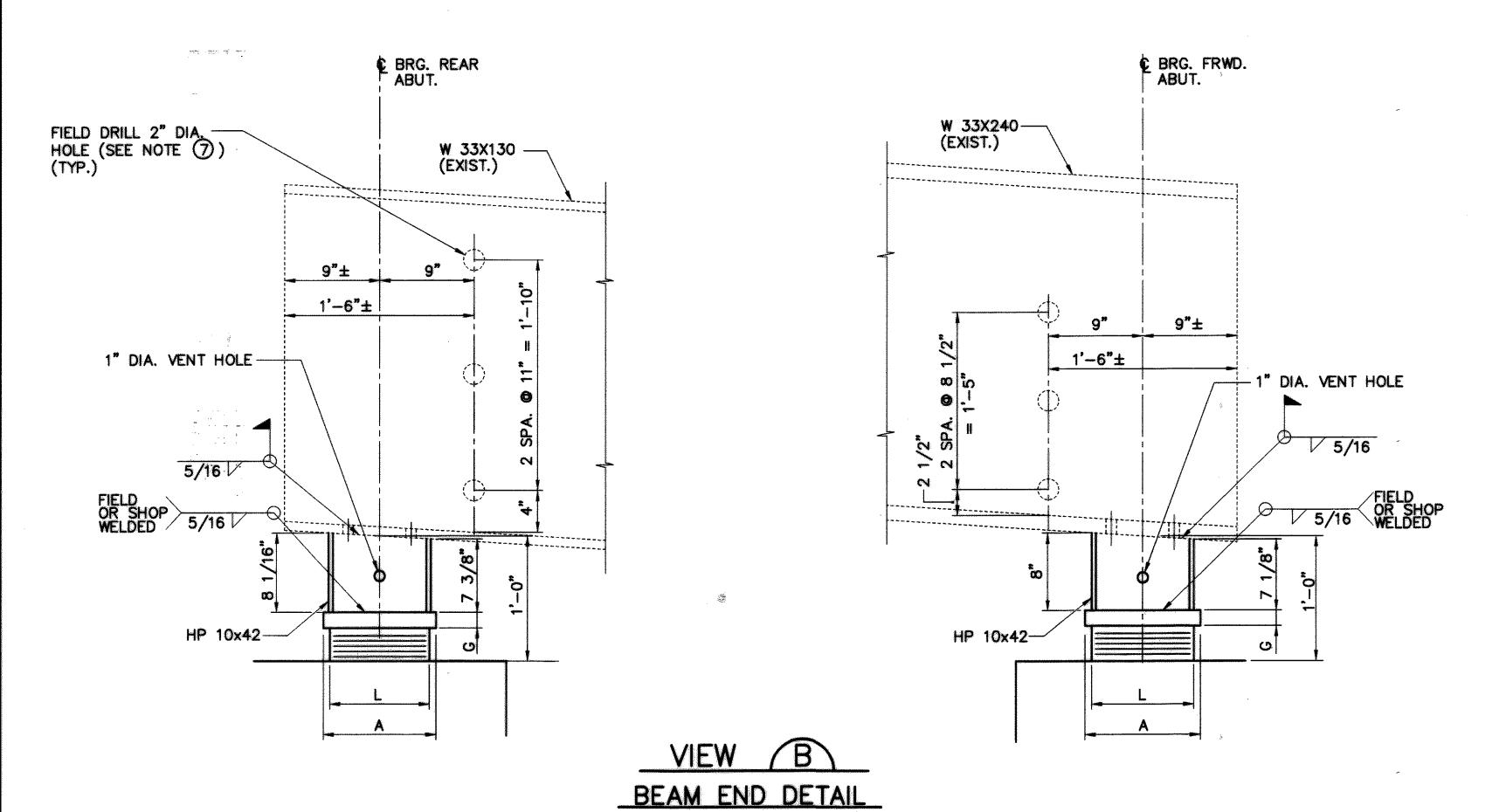
#### NOTES:

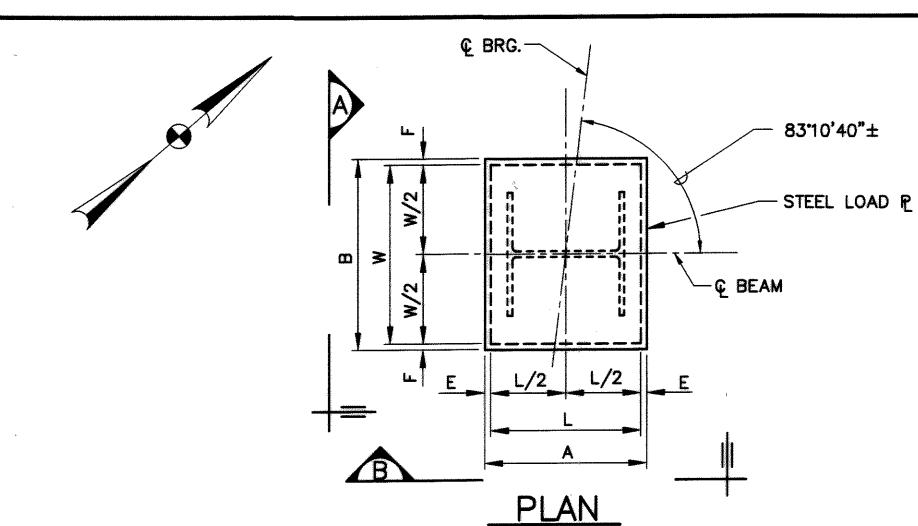
- 1. PREFIX "P" WILL BE ADDED TO ALL REBAR MARKS FOR THE PIERS. SEE REINFORCING SCHEDULE.
- 2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- 3. MINIMUM CLEARANCE TO REBARS SHALL BE 2" UNLESS NOTED OTHERWISE.
- BRIDGE SEAT REINFORCING, SETTING ANCHORS (PIER NO. 2):
  ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF
  THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE
  DRILLING OF THE BEARING ANCHOR HOLES OR THE
  PRE-SETTING OF BEARING ANCHORS.
- 5. FOR BEARING DETAILS, SEE SHT. NOS. 12/20 & 13/20

#### LEGEND:

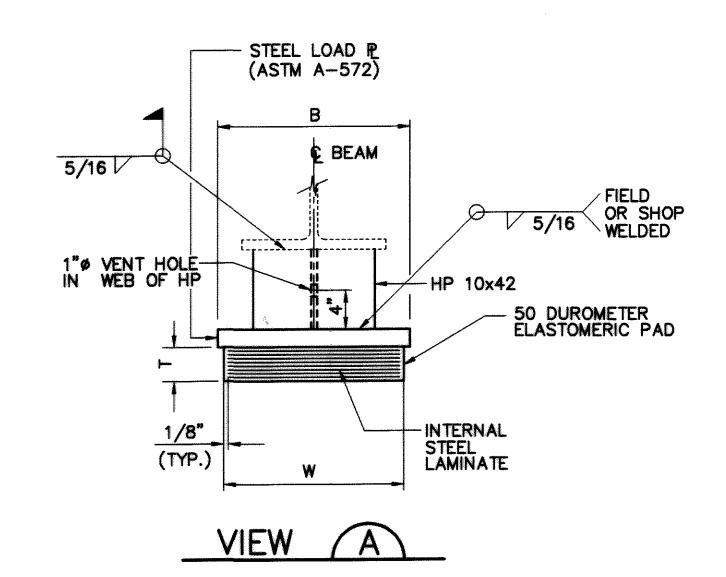
LIMITS OF "ITEM 864 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)."







# EXPANSION BEARING DETAIL **ABUTMENTS**



## NOTES:

- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
- WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- THE STEEL LOAD PLATE AND HP SHAPE FOR BEARINGS SHALL BE ASTM A572 STEEL, GRADE 50, PAINTED.
- 4. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- 5. FOR EXPANSION AND FIXED BEARING DETAILS AT PIERS, SEE SHT. NO. 13/20
- ANCHOR RODS SHALL BE GALVANIZED AS PER C&MS 711.02.
  ANCHOR RODS SHALL EXTEND 1" ABOVE THE LOAD PLATE (PIER NO. 2 BEARINGS).
- 7. FIELD DRILLING OF HOLES IN BEAM ENDS AND THE COST OF FURNISHING AND INSTALLING HP 10X42 STEEL SHAPES AT THE ABUTMENT BEARINGS ARE INCLUDED WITH "ITEM 516-ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN," FOR PAYMENT.
- BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40'F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60F (±) 10F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

Technician: AELLERMAN

12/20 59 67

 $\infty$ 

680

CAUS PYLE SCHOMER BURNS & DEHAVEN INC.

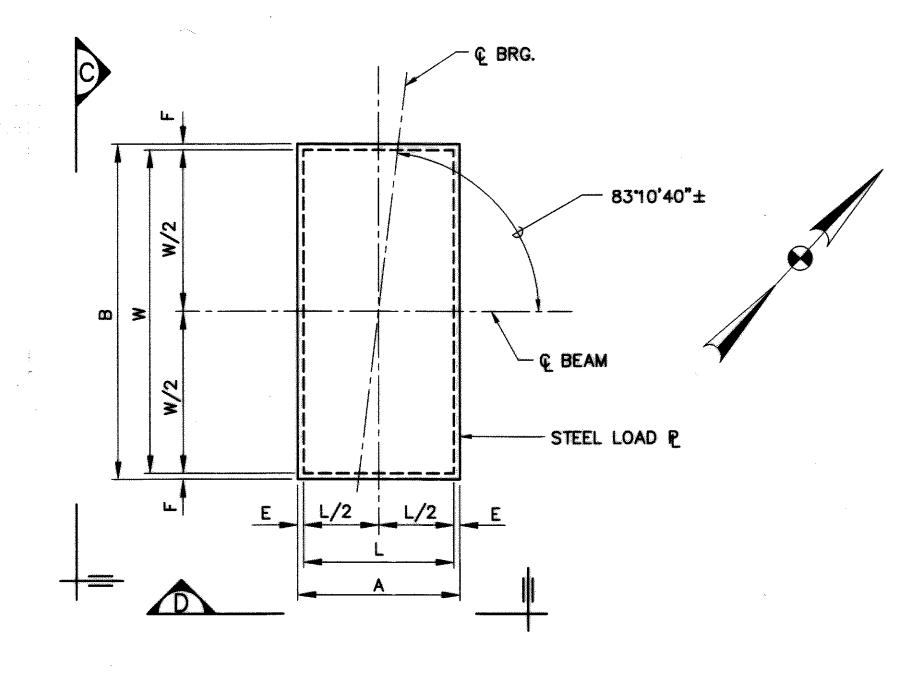
GPD ASSOCIATES

320 South Main Street, Suite 2831 Akron, Ohio 44311

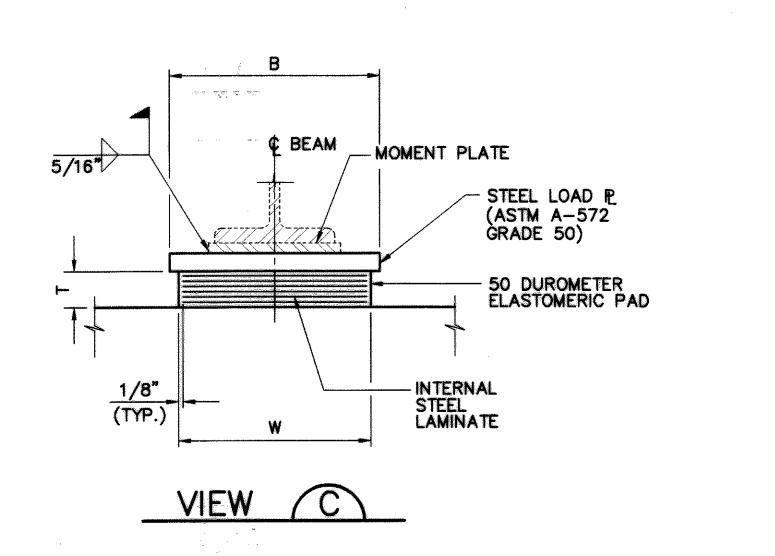
BEARINGS - 0818 - 680

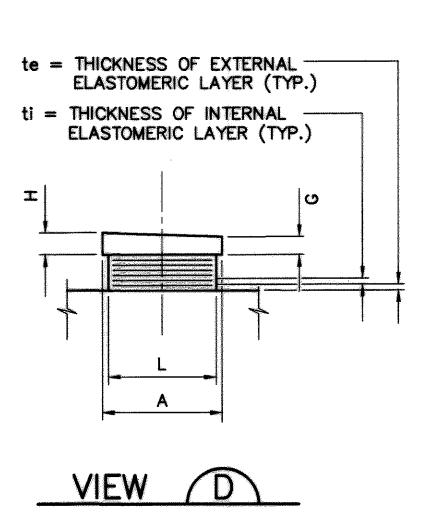
ELASTOMERIC I NO. MAH - 680 - ( ANOLA AVE. OVER 1-68

LAMINATED BRIDGE INDIAN

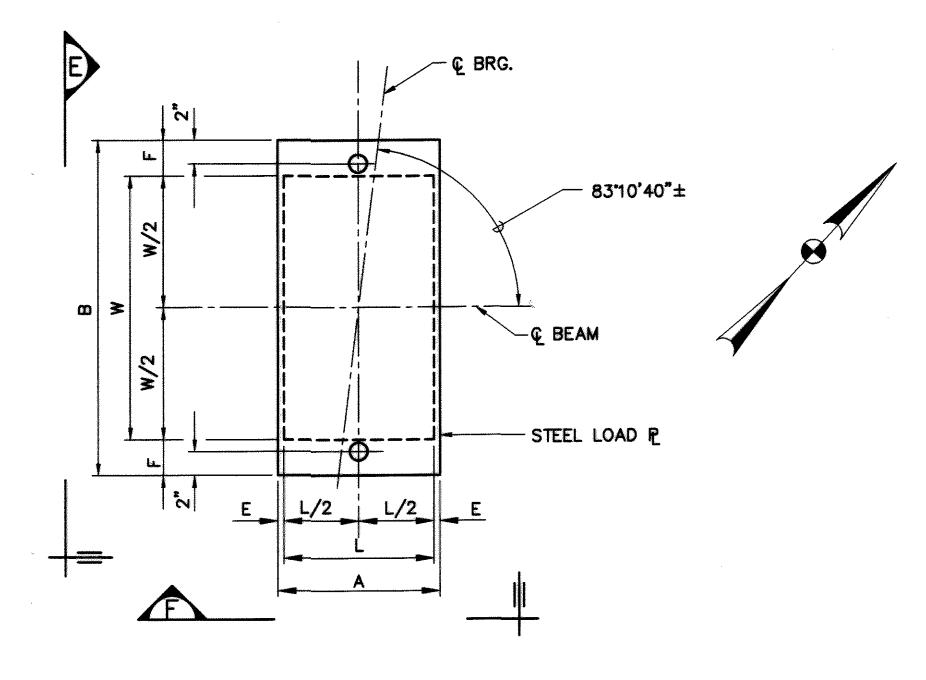


# <u>PLAN</u>

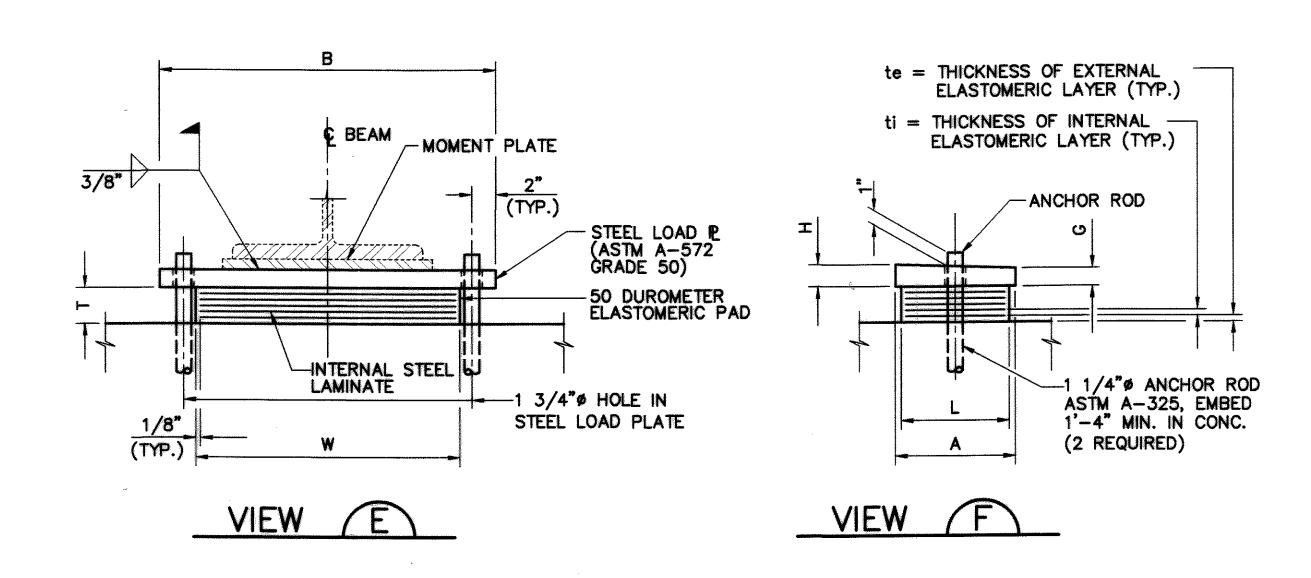




# EXPANSION BEARING DETAIL PIER NO. 1



# <u>PLAN</u>

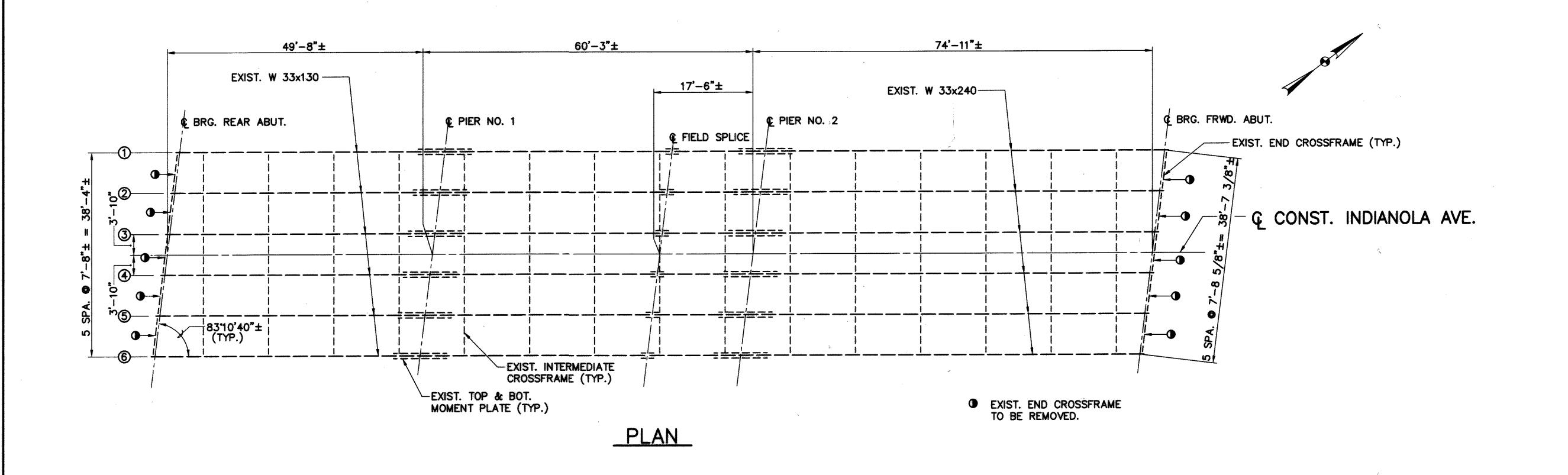


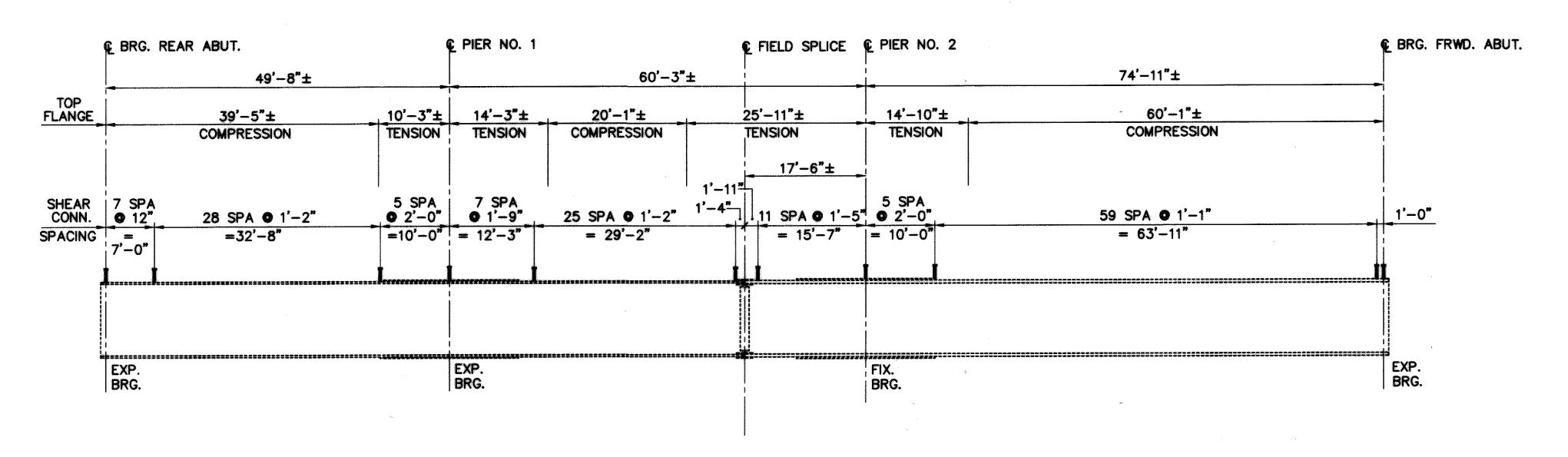
FIXED BEARING DETAIL
PIER NO. 2

#### NOTES:

1. FOR NOTES AND ADDITIONAL BEARING DETAILS, SEE SHT. NO. 12/20.

Technicion: AELLERMAN





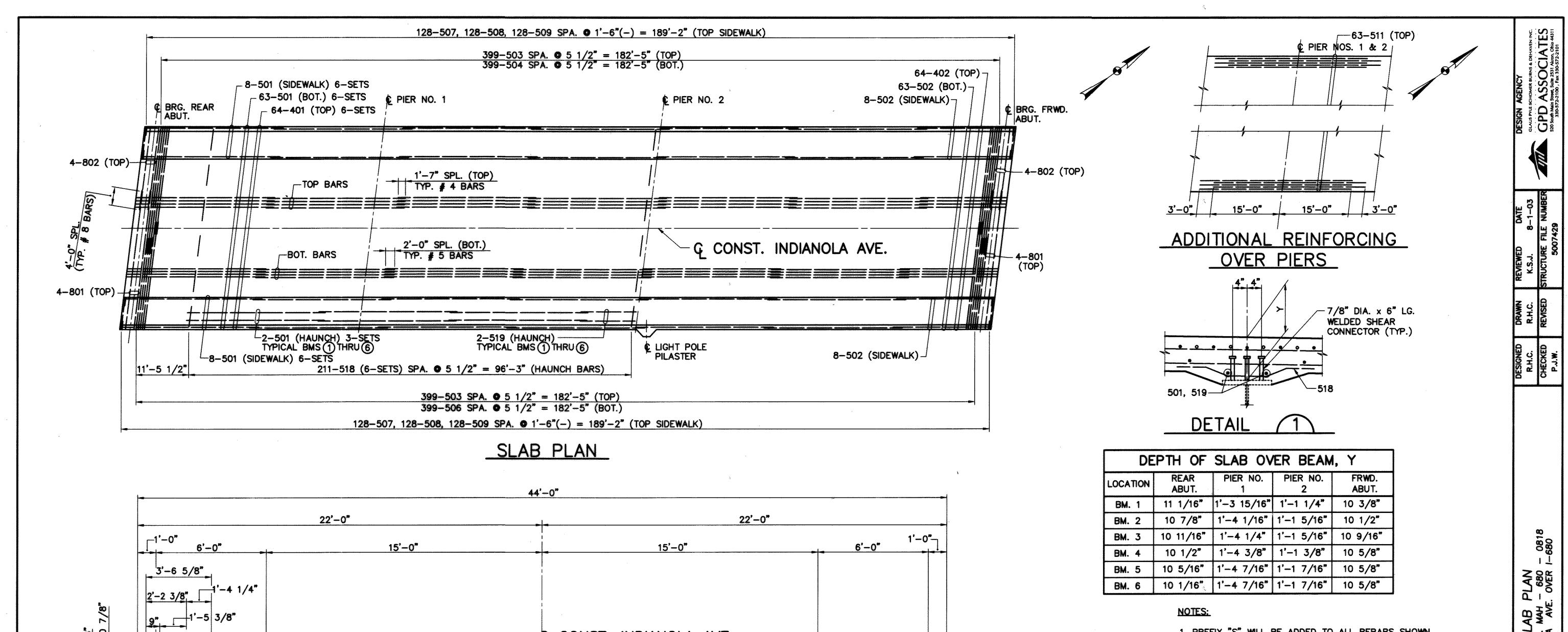
# ELEVATION

EX. BMS. 1 THRU. 6

## NOTES:

- 1. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG, AND AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" THICK OR 5/16" FOR GREATER THAN 3/4" THICK.
- 2. FOR BEARING DETAILS, SEE SHT. NOS. 12/20 & 13/20 .

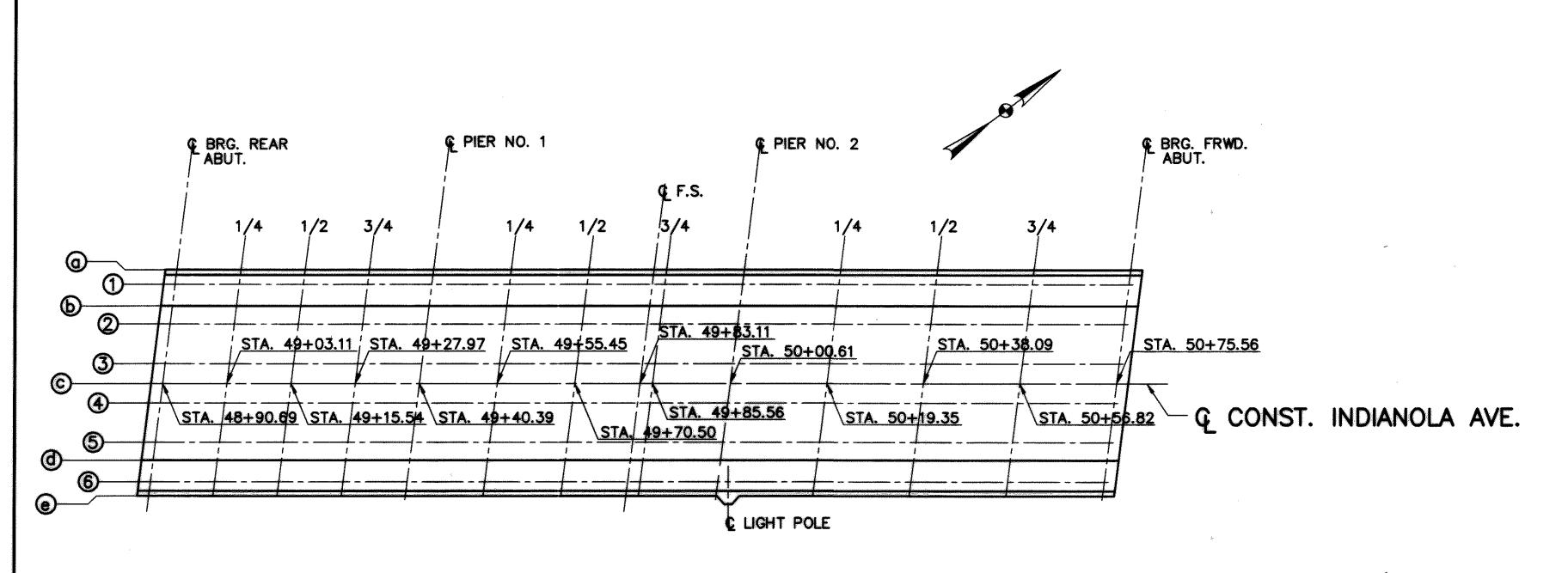
14/20 61 67



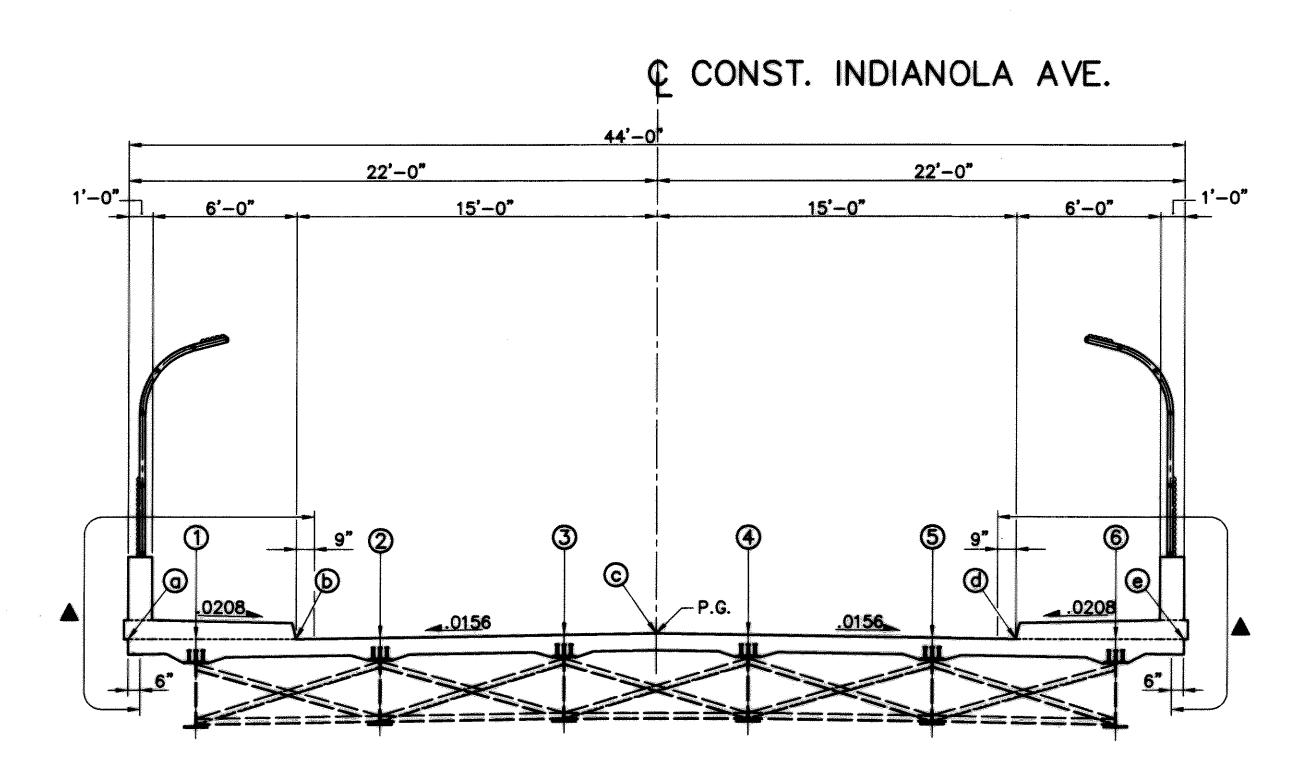
- 1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
- 2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- 3. MINIMUM CLEARANCE TO REBARS SHALL BE 2" UNLESS NOTED OTHERWISE.
- 4. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 4.6 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.
- 5. DECK SLAB DEPTH (Y): FOR TABULATION OF "Y", SEE DETAIL 1.
- 6. FOR SCREED ELEVATIONS AND SEALING OF CONCRETE SURFACES, SEE SHT. NO. 16/20.
- 7. QUANTITY OF CONCRETE FOR SIDEWALK IS INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN FOR PAYMENT.

- 8. QUANTITY OF CONCRETE FOR RAILING IS INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK (PARAPET), FOR PAYMENT.
- 9. FOR RAILING AND PILASTER DETAILS AND POST SPACINGS, SEE SHT. 17/20.
- 10. FOR CHAIN LINK FENCE DETAILS, SEE STD. DWG. NO. VPF-1-90.
- 11. FOR ADDITIONAL ELEC. CONDUIT DETAILS, SEE STD DWG. NO. HL-30.32.

	6'-0"	15'-0"	15'-0"	6'-0"	
2'-9 7/8" 4"	3'-6 5/8" 2'-2 3/8" 1'-4 1/4" 9" 1'-5 3/8" R = 2'-8"		G CONST. INDIANOLA AVE.		
2'-8" 8'-5 7/8"	7 SPA. • 11"(+) (SIDEWALK) 501 4 SPA. • 7 3/4 (TOP REINF.) 401 2" 0208	& 502 DETAIL 1	" SPL. 11 SPA. © 8 3/8"(-) = 7'-8"  (TOP REINF.) 401 & 402  S) 3'-3" SPL.  (TYP. BOT. BARS)	CONST. JT. (LEVEL) (TYP.)  503  508  .0208	201 B.S. 502
1" DIA. HALF ROUND DRIP GROOVE (TYP.)  3" 3 SPA. • 7" = (BOT. REINF.) 501 &	1 - 9" 2 502 10"	1 1/2" CLR. 518 (1 3'-10"± 11" 10 SPA. •		507 EXIST. L 3X3X5/16* (TYP.)	2" DIA. ELEC. CONDUIT
	2'-10"±	EXIST. W 3	B"± = 38'-4"± 33 BEAMS SE SECTION	2'-10"±  ■ INCLUDED WITH LIGHTING QU	ANTITIES, SHT. NO. $\frac{47}{67}$ .



<u>PLAN</u> SCREED ELEVATIONS



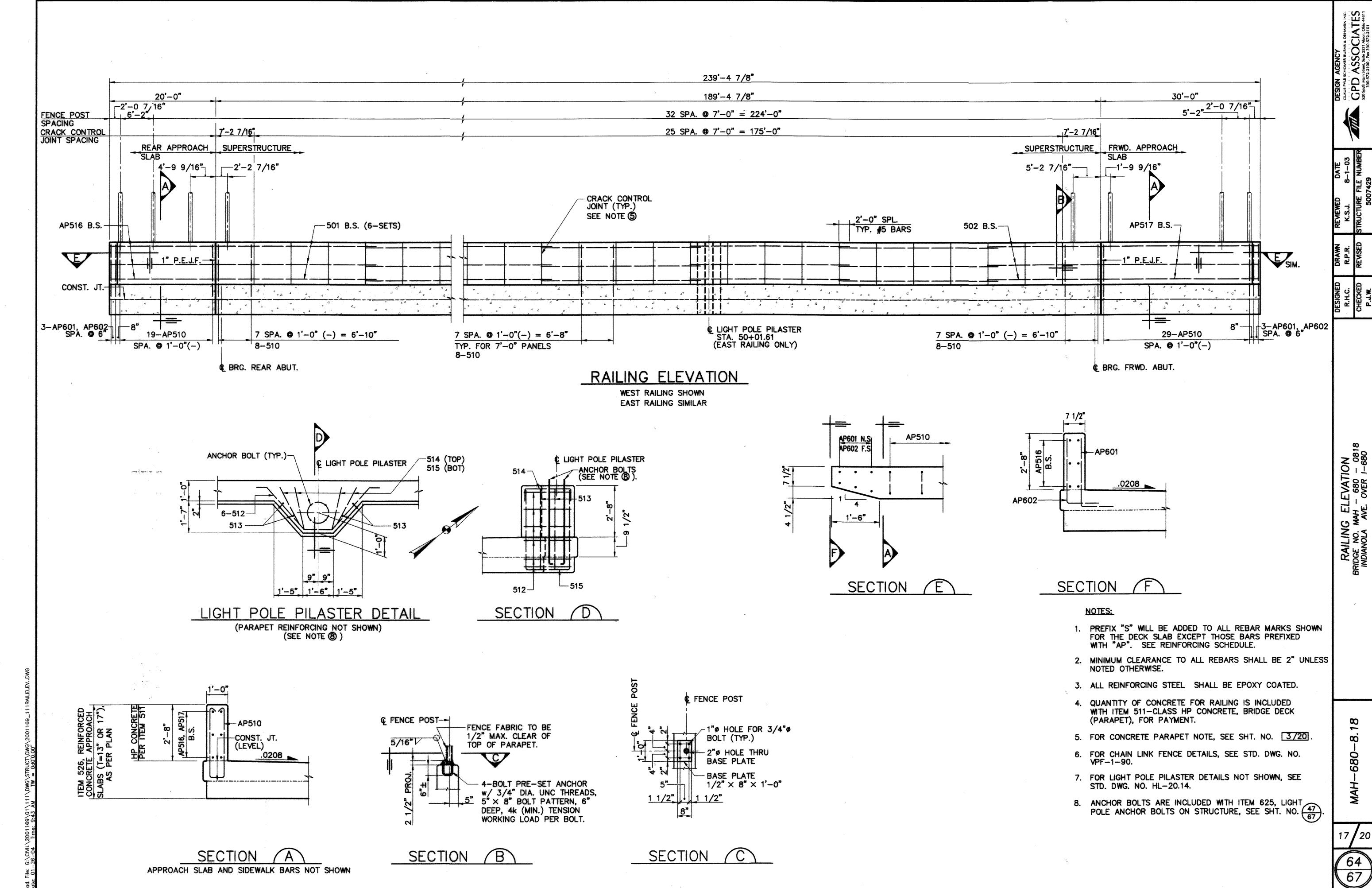
TR	ANS	VER	SE	SEC	TION

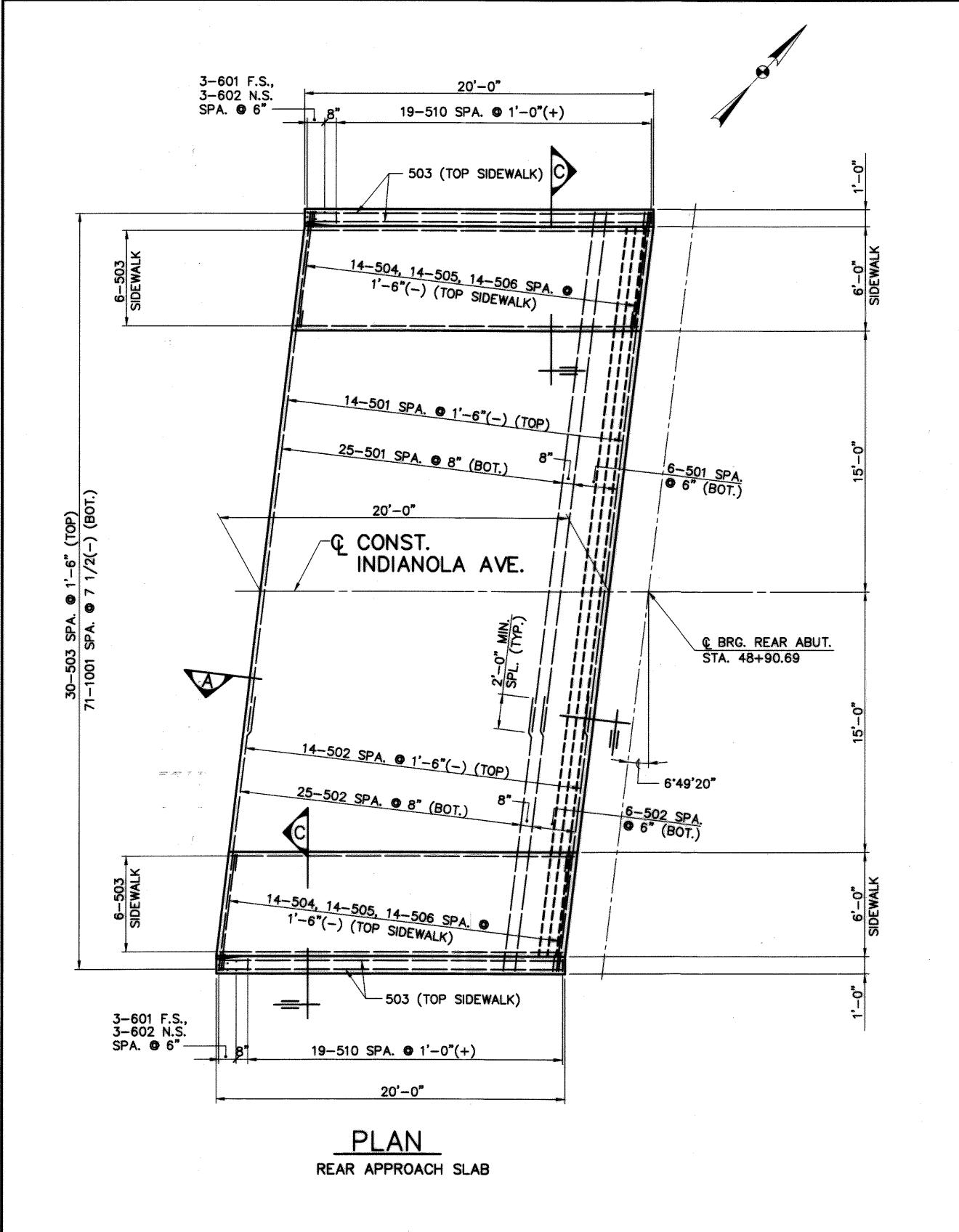
				-	DECK	SCREEL	ELEV	ATION 1	TABLE					
	REAR	S	PAN NO.	1	e died		SPA	N NO. 2		C PIER	S	PAN NO.	3	5040
LOCATION ABUT.	1/4	1/2	3/4	© PIER NO. 1	1/4	1/2	F.S.	3/4	NO.2	1/4	1/2	3/4	FRWD. ABUT	
0	968.66	967.83	966.93	965.96	964.95	963.69	962.42	961.36	961.15	959.89	958.37	956.84	955.25	953.60
0	968.73	967.89	966.99	966.03	965.02	963.76	962.49	961.43	961.22	959.97	958.44	956.91	955.32	953.67
<b>(b)</b>	968.83	967.99	967.10	966.14	965.12	963.87	962.60	961.53	961.33	960.07	958.55	957.02	955.42	953.78
2	968.91	968.08	967.18	966.22	965.21	963.96	962.69	961.62	961.42	960.16	958.64	957.11	955.51	953.87
<b>3</b>	969.09	968.26	967.37	966.41	965.41	964.15	962.89	961.82	961.62	960.36	958.84	957.30	955.71	954.07
0	969.18	968.36	967.46	966.51	965.51	964.25	962.99	961.92	961.71	960.46	958.94	957.40	955.81	954.17
4	969.15	968.33	967.44	966.48	965.48	964.23	962.96	961.90	961.69	960.44	958.91	957.38	955.79	954.14
(5)	969.10	968.27	967.39	966.44	965.44	964.19	962.92	961.86	961.65	960.40	958.87	957.34	955.75	954.10
0	969.07	968.25	967.36	966.41	965.42	964.17	962.90	961.84	961.63	960.38	958.85	957.32	955.73	954.08
<b>©</b>	969.04	968.22	967.33	966.39	965.39	964.15	962.88	961.81	961.61	960.35	958.83	957.30	955.70	954.06
<u> </u>	969.02	968.20	967.32	966.37	965.37	964.13	962.86	961.80	961.59	960.34	958.81	957.28	955.69	954.04

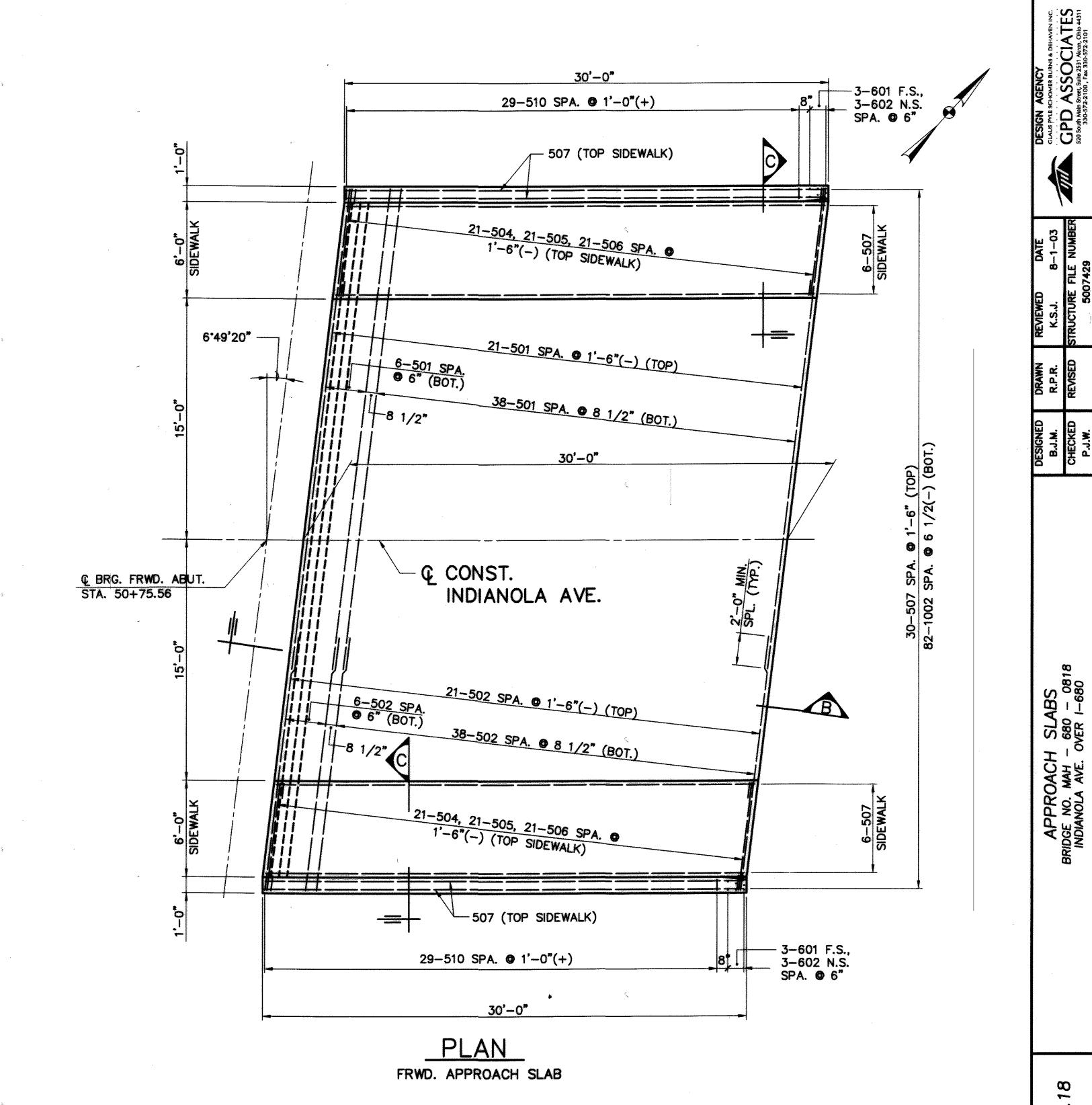
#### NOTE:

SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED DEAD LOAD DEFLECTIONS.

▲ LIMITS OF ITEM 864, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

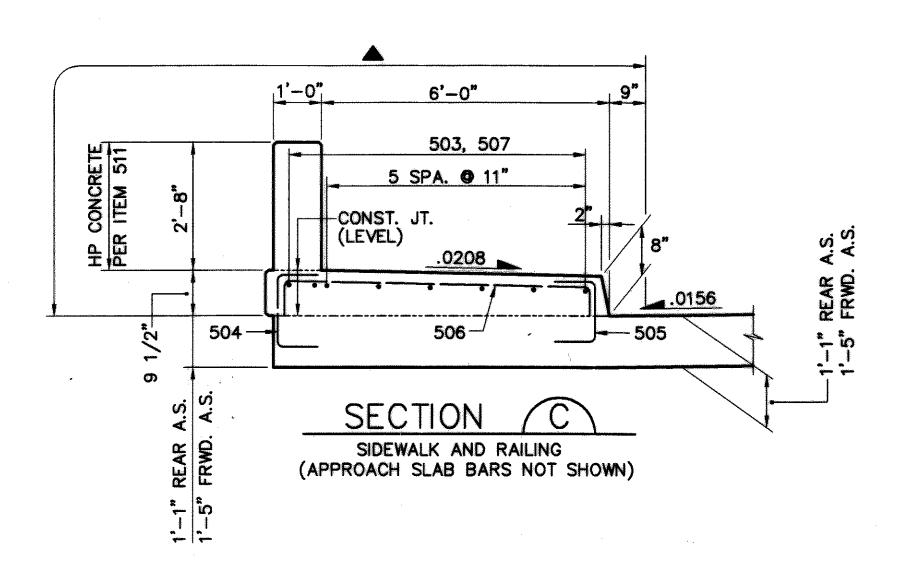




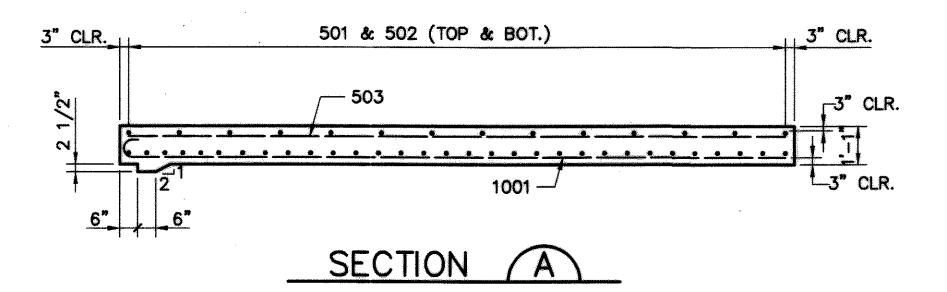


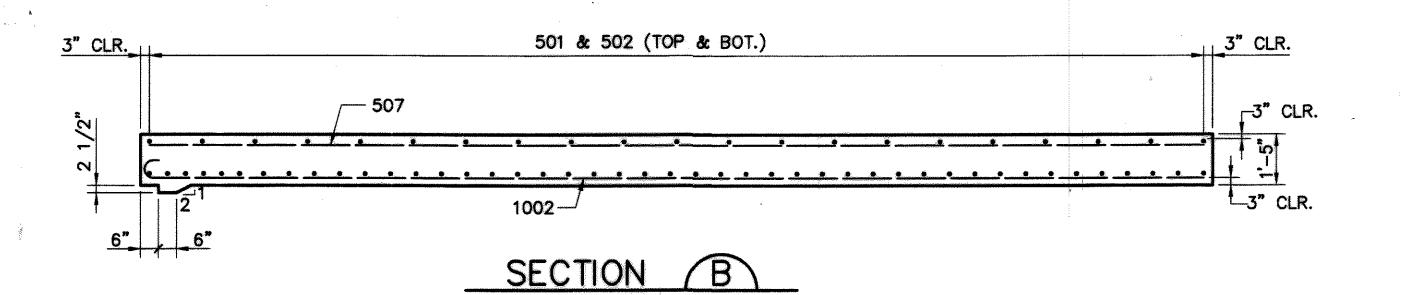
NOTES:

- 1. PREFIX "AP" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE APPROACH SLABS.
- 2. MINIMUM CLEARANCE TO REBARS SHALL BE 2" UNLESS NOTED.
- 3. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- 4. FOR SECTIONS A, B, AND C, SEE SHT. NO. 19/20 .
- 5. FOR DETAILS NOT SHOWN, SEE STD. DWG. NO. AS-1-81.



▲ LIMITS OF ITEM 864 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)





### NOTES:

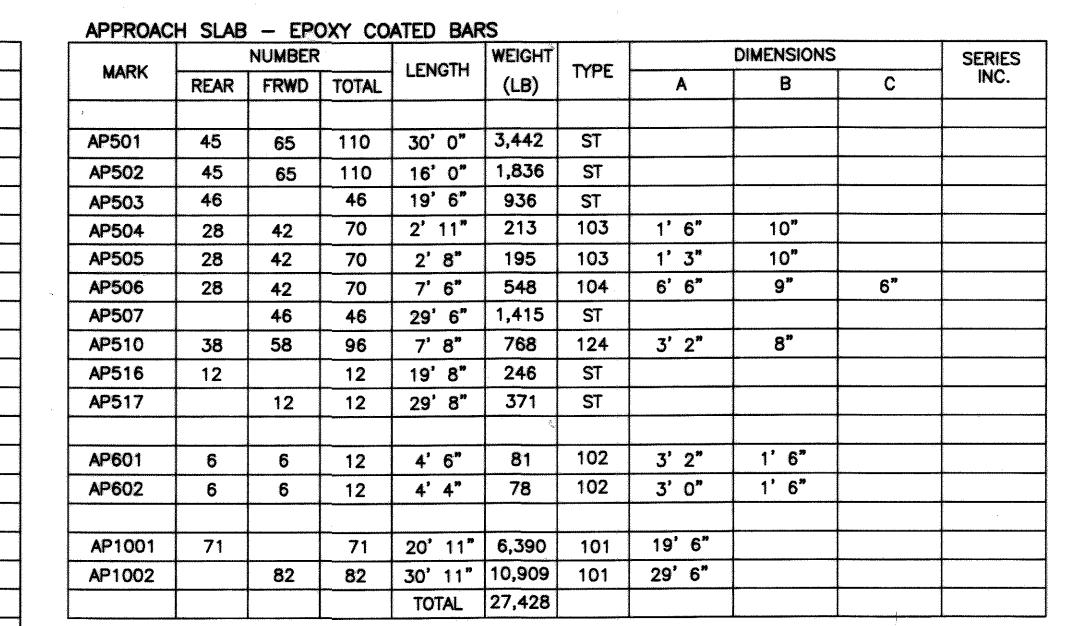
- 1. PREFIX "AP" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE APPROACH SLABS.
- 2. FOR APPROACH SLAB RAILING AND FENCE DETAILS, SEE SHT. NO. 17/20
- 3. FOR DETAILS NOT SHOWN, SEE STD. DWG. NO. AS-1-81.
- 4. ITEM 526. REINFORCED CONCRETE APPROACH SLAB. AS PER PLAN RAILING ON APPROACH SLAB SHALL BE HIGH PERFORMANCE CONCRETE AS PER ITEM 511. APPROACH SLAB RAILING CONCRETE, REINFORCING STEEL, AND SEALING IS INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN FOR BASSACTION. FOR PAYMENT.
- 5. FOR LOCATIONS OF SECTIONS A, B & C, SEE SHT. NO. 18/20.

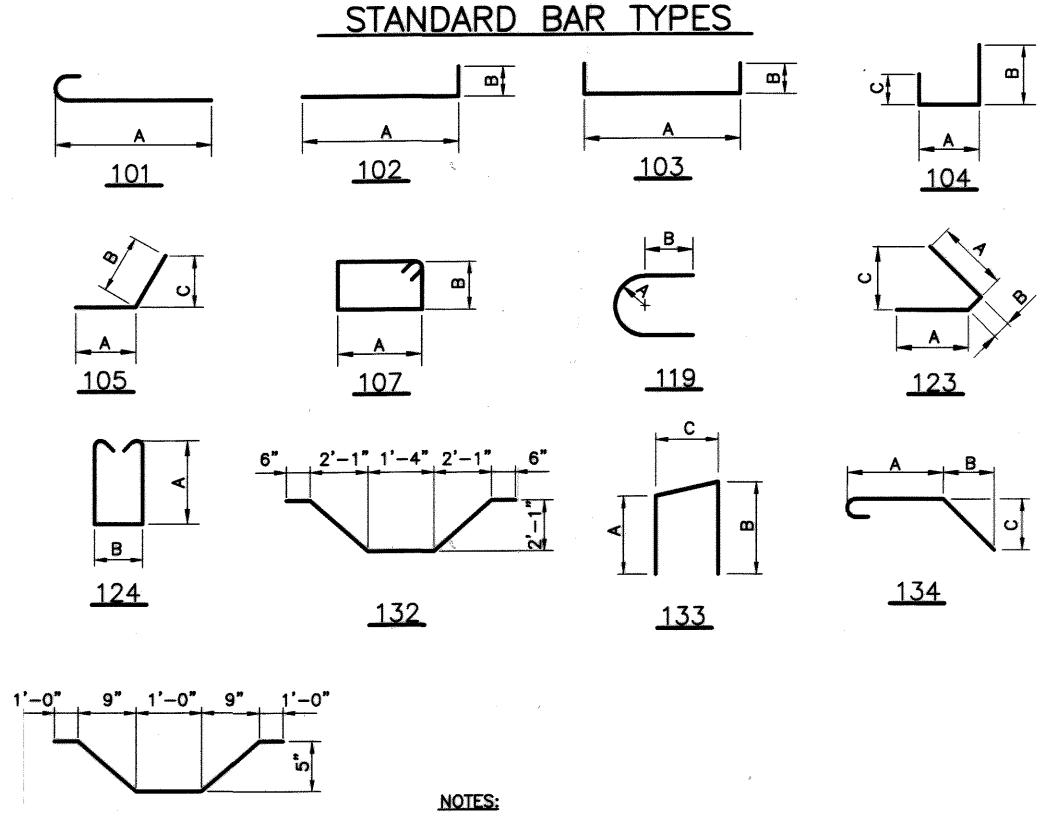
್ವಾ ಕೃತಿಕೆ

		NUMBER		BARS	WEIGHT		DIMENSIONS			SERIES	
MARK	REAR	FRWD	TOTAL	LENGTH	(LB)	TYPE	Α	8	C	INC.	
										<u> </u>	
4501	4	6	10	30' 0"	313	ST					
A502	54	53	107	3' 3"	363	ST					
A503	40		40	2' 5"	101	ST					
<b>4504</b>	20		20	7' 6"	156	103	3' 5"	2' 2"			
<b>A505</b>	16		16	2' 2"	36	ST					
<b>A506</b>	32	<u></u>	32	7' 2"	239	103	3′ 5″	2' 0"			
<b>A507</b>	12	6	18	19' 5"	365	ST					
<b>4508</b>		56	56	3' 11"	229	ST					
<b>4509</b>		52	52	8' 0"	434	103	3' 5"	2' 5"		-	
A510	8	2	10	11' 7"	121	ST					
<b>N</b> 511	2		.2	13' 3"	28	ST					
A512	4		4	8' 0"	33	ST					
A513	8		8	12' 1"	101	ST	Survivor de la constantina della constantina del				
A514	8	·	8	19' 9"	165	ST					
A515	3	4	7	4' 0"	29	105	2' 0"	2' 0"	1' 11 7/8"	NAME OF THE PROPERTY OF THE PR	
A516	3	4	7	5' 2"	38	123	2' 0"	1' 4"	2' 2"		
A517		5	5	23' 11"	125	ST			4 4		
4518		11	11	31' 10"	365	ST					
A519		2	2	25' 0"	52	ST					
A520		5	5	23' 9"	124	ST					
4521		13	13	31' 8"	429	ST					
A522		2	2	18' 2"	38	ST				· · · · · · · · · · · · · · · · · · ·	
4523	2		2	13' 6"	28	ST					
4524	12		12	8' 0"	100	ST					
4525	6		6	4' 6"	28	105	3' 0"	1' 6"	1, 0,		
				<u> </u>							
<b>A601</b>	52		52	3' 3"	254	ST					
A602	26		26	7' 0"	273	103	3' 0"	2' 2"			
4603	26	50	76	5' 8"	647	103	2' 8"	1' 8"			
	1		1	14' 4"				6' 9"			
<b>4604</b> S	SER		SER	ТО	295	103	1' 2"	то		1 1/2"	
	OF 13		OF 13	15' 10"				7' 6"		-	
<b>4605</b>	2	1206) wa sawai	2	13' 11"	42	107	5' 6"	1' 2"		<u> </u>	
<b>4606</b>	2		2	12' 9"	38	107	4' 11"	1' 2"			
A607	8		8	11' 5"	137	107	4' 3"	1' 2"	4 · · · · · · · · · · · · · · · · · · ·		
	1		1	13' 8"				6' 5"	<u> </u>	W44844444	
A608S	SER		SER	то	281	103	1' 2"	то		1 1/2"	
	OF 13		OF 13	15' 2"				7' 2"			
			1	13' 4"				6' 3"			
A609S		SER	SER	ТО	576	103	1'-2"	то		2"	
		OF 25	OF 25	17' 4"				8' 3"			
		111	1	14' 1"			5' 7"				
4610S		S BER	SER	ТО	131	107	ТО	1' 2"		2 3/8	
			OF 6	15' 1"			6' 1"				
		1	1.	14' 2"				6' 8"			
4611S		SER	SER	ТО	607	103	1' 2"	то		2"	
		OF 25	OF 25	18' 2"				8' 8"			
		1	1	14' 11"			6' 0"			, and the control of	
A612S		SER	SER	то	140	107	то	1' 2"		2 3/4	
		OF 6	OF 6	16' 1"			6' 7"				
4613	26		26	6' 5"	251	103	2' 9"	2' 0"			
4614		50	50	7' 4"	551	103	3' 0"	2' 4"			
4615		50	50	6'11"	519	103	2' 7"	2' 4"			
4616	9		9	12' 6"	169	103	1' 8"	5' 10"			
A617	9		9	11' 8"	158	103	1' 8"	5' 5"			
4618	_	100	100	4' 2"	626	ST					
						))					
4801	5	· · · · · · · · · · · · · · · · · · ·	10	30' 0"	801	ST				)	
4802	5	5		21' 5"	572	ST				ŽINA ANNO III.	
	1 23	<b>3</b>	10	. 2.1 3	1 3/1/	ا∷ات	T.	1			

			WEIGHT			DIMENSIONS	
MARK	NO.	LENGTH	(LB)	TYPE	Α	<b>B</b>	С
				-			
S401	384	30' 0"	7,695	ST			
S402	64	20' 0"	855	ST			<u></u>
S501	582	30' 0"	18,211	ST			
S502	91	22' 5"	2,128	ST			
S503	798	23' 3"	19,351	ST			
S504	399	27' 6"	11,444	ST			·
S506	399	19' 10"	8,254	ST			
S507	256	2' 9"	734	103	1' 4"	10"	
S508	256	7' 5"	1,980	103	6'8"	6"	
S509	256	2' 5"	645	103	1'0"	10"	
S510	432	7' 8"	3,454	124	3' 2"	8"	
S511	126	33' 0"	4,337	ST			
S512	6	8' 1"	51	132			
S513	4	4' 0"	17	ST			
S514	4	3' 0"	13	103	2' 1"	7"	
S515	4	9' 10"	41	103	2' 1"	4' 0"	
S518	1,266	4' 7"	6,052	135			
S519	12	12' 0"	150	ST			
S520	72	8' 2"	613	103	3' 5"	2' 6"	
S521	36	7' 0"	263	133	2' 1"	2' 3"	2' 11"
S522	72	7' 8"	576	103	3' 5"	2' 3"	
S523	376	8' 1"	304	133	2' 7"	2' 10"	2' 11"
S801	30	30' 0"	2,403	ST			
S802	30	18' 0"	1,442	ST			
S803	30	4' 5"	354	134	2' 6"	9"	8"
S804	30	4' 9"	380	134	2' 10"	8"	9"

MARK		NUMBER		LENGTH	WEIGHT	TVDE	DIMEN	SIONS
MARK	PIER 1	PIER 2	TOTAL	EBNOIN	(LB)	TYPE	Α	8
P501	54	54	108	3' 0"	<i>33</i> 8	গ		
P502	47		47	6' 7"	323	103	2' 8"	2' 1"
P503		47	47	7' 11"	388	103	2' 8"	2' 9"
P504	8	8	16	20' 0"	334	ST		
P505	6	6	12	20' 8"	259	ST		
P506	2	2	4	23' 2"	97	ST		
P507	6	6	12	8' 1"	101	119	1' 3"	2' 0"
P601	6		6	7' 4"	66	103	2' 8"	2' 6'
P602	12		12	3' 10"	69	102	2' 6"	1' 6'
P901	4		4	2' 8"	36	ST		
P902	12		12	3' 9"	153	102	2' 6"	1' 6





<u>135</u>

SUMMARY AND GRAND TOTAL OF BAR WEIGHTS

**ABUTMENTS** 

10,461

SLAB

91,747

PIER

2,164

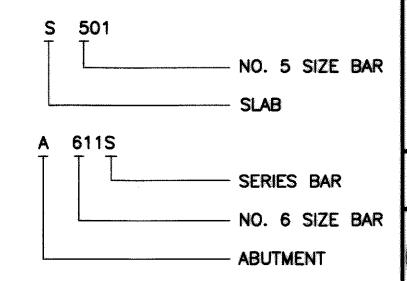
GRAND TOTAL

104,372

- 1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
- 2. ALL BARS ARE EPOXY COATED.
- 3. I.R. DENOTES INSIDE RADIUS

**EXAMPLES:** 

- 4. WHEN NO BAR LEG DIMENSIONS ARE SHOWN, IT INDICATES STANDARD BEND.
- 5. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST ALPHABETICAL LETTER INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.



2.2

-680-18/8.

Technician: AELLERMAN