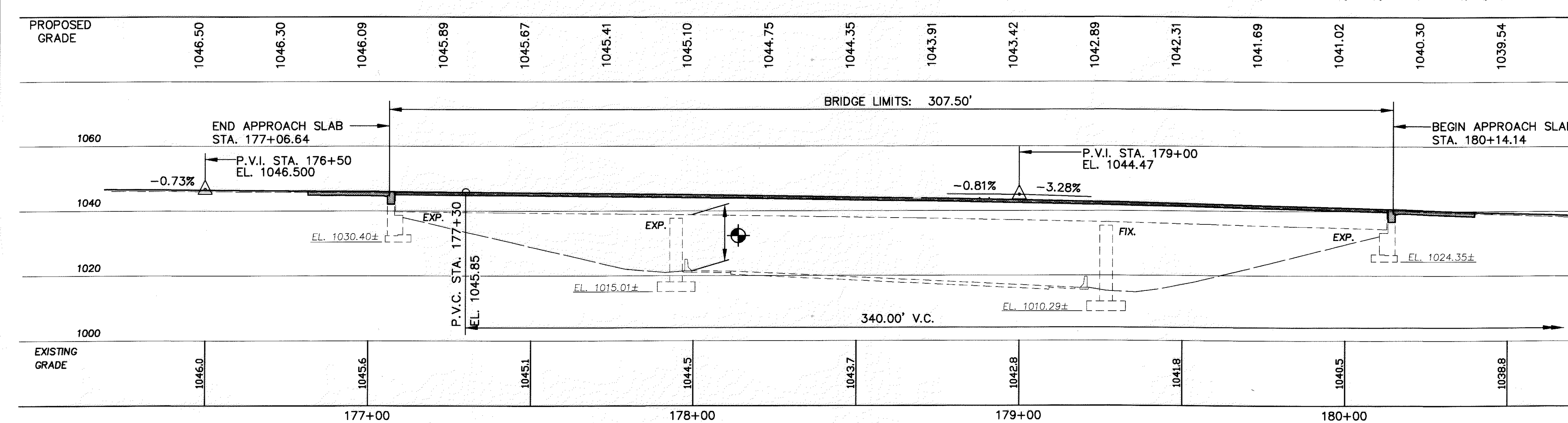




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Technician: RCUUMMINS

DESIGN SPECIFICATIONS

THE PROPOSED REHABILITATION WORK FOR THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE 1997, 1998, 1999 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

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 SS844:	COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C:	COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)
REINFORCING STEEL:	ASTM A615, A616 OR A617 GRADE 60, MINIMUM YIELD STRENGTH, 60,000 PSI
STRUCTURAL STEEL:	ASTM A36/A709 GRADE 36 - YIELD STRENGTH 36,000 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 04-20-01
NO. EXJ-4-87 REVISED 04-20-01
NO. RB-1-55 REVISED 02-02-59
NO. SBR-1-99 DATED 01-12-99

AND TO SUPPLEMENTAL SPECIFICATIONS:
NO. 842 DATED 01-06-99
NO. 844 DATED 01-06-99
NO. 863 DATED 10-12-99
NO. 864 DATED 07-11-00
NO. 899 DATED 10-21-98
NO. 905 DATED 04-01-98
NO. 907 DATED 10-21-98
NO. 911 DATED 07-10-97
NO. 954 DATED 09-09-97

EXISTING STRUCTURE PLANS

THE EXISTING STRUCTURE PLANS ARE ON FILE AND MAY BE REVIEWED IN THE OFFICE OF THE ODOT DISTRICT 4 DEPUTY DIRECTOR, 705 OAKWOOD ST., RAVENNA, OHIO 44266

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.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECK INCLUDING CURBS, PARAPETS, RAILINGS, SCUPPERS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (GIRDERS, CROSS FRAMES, ETC.) 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 GIRDERS, 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 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 INCLUDING THE PAINT THEREON 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. ALL EXISTING REINFORCING STEEL, IN THE REMOVAL AREAS SHALL BE REMOVED. 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.

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 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 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 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, 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 DOMED 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 RAISING 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 AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

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 OR REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

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 TO COMPLETE THIS ITEM OF WORK.

ITEM 503 UNCLASSIFIED EXCAVATION

STRUCTURE EXCAVATION IN ADDITION TO THAT NECESSARY TO REMOVE PORTIONS OF THE EXISTING STRUCTURE, AND ALL NECESSARY BACKFILL, IS INCLUDED IN THE LUMP SUM BID FOR ITEM 503, "UNCLASSIFIED EXCAVATION," FOR PAYMENT.

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 863.07.

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.

PROTECTION OF EXISTING STEEL SURFACES

THE CONTRACTOR SHALL EXERCISE UTMOST CARE TO PROTECT THE EXISTING STEEL SURFACES. ANY SURFACES THAT ARE IMPACTED BY THESE OPERATIONS SHALL BE CLEANED AND/OR REPAIRED AT HIS EXPENSE.

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REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THE CONTRACTOR'S COST.

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 1,000 LBS. IS INCLUDED IN ITEM 509, REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

REQUIRED MINIMUM BAR LAP LENGTHS *

BAR SIZE	OTHER	TOP
#4	1'-11"	2'-9"
#5	2'-5"	3'-5"
#6	2'-11"	4'-1"
#7	3'-8"	5'-2"
#8	4'-11"	6'-10"
#9	6'-2"	8'-8"

* UNLESS NOTED OTHERWISE IN PLANS.

BONDING GROUT

THE BONDING GROUT TO BE USED BETWEEN OLD AND NEW CONCRETE 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; "CONGRESIVE 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.

INSPECTION OF EXISTING STRUCTURAL STEEL

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING TOP FLANGE BUTT WELDS TO ENSURE THE WELDS AND PLATES ARE FREE OF DEFECTS AND CRACKS. IF THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS INTERFERE WITH THE ENGINEER'S INSPECTION THEY SHALL BE REMOVED OR NOT BE ERECTED UNTIL AFTER INSPECTION. THE INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN SS 842.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 842, CLASS S CONCRETE, SUPERSTRUCTURE FOR PAYMENT. ANY CRACKS FOUND SHOULD BE REPORTED TO THE OFFICE OF STRUCTURAL ENGINEERING, 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.

SEALING OF CONCRETE SURFACES

EPOXY-URETHANE SHALL BE THE "BUFF" COLOR MEETING FEDERAL COLOR STANDARD NO. 37722 AS PER THE DETAILS IN THE PLANS.

ITEM 503. UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL PLACED IN 6 INCH LIFTS.

STRUCTURE EXCAVATION IN ADDITION TO THAT NECESSARY TO REMOVE PORTIONS OF THE EXISTING STRUCTURE, AND ALL NECESSARY BACKFILL, IS INCLUDED IN THE LUMP SUM BID FOR ITEM 503, "UNCLASSIFIED EXCAVATION," FOR PAYMENT.

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	GIRD.	GIRDER
SPA.	SPACES		

ESTIMATED QUANTITIES

CALCULATED: M.D.P. DATE: 5/25/00

CHECKED: S.A.M. DATE: 8/21/00

ITEM	EXT	TOTAL	UNITS	DESCRIPTION	ABUT	PIER	SUPER	GENERAL	AS PER PLAN SHT. NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2, 3
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP				3
509	20001	1000	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				1000	3
516	11210	82	LIN FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL (SEE PROPOSAL NOTE)	82				
516	46001	4	EACH	BEARING DEVICE, BOLSTER, AS PER PLAN		4			12
516	46801	12	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	8	4			8
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	2
518	21200	11	CU YD	POROUS BACKFILL WITH FILTER FABRIC	11				
842	45701	38	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	38				3, 6, 7
844	48000	280	CU YD	HIGH PERFORMANCE CONCRETE FOR SUPERSTRUCTURE (DECK)			280		
844	48020	105	CU YD	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET)	9		96		
863	20000	2064	EACH	WELDED STUD SHEAR CONNECTORS			2064		
864	10100	896	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	125		771		

DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT:

ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY GROUT MEETING THE REQUIREMENTS OF CMS 510 AND CMS 705.20. DEPTH OF HOLES SHALL BE AS SHOWN IN THE PLANS. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN ITEM 842-CLASS C COCRETE, ABUTMENT, AS PER PLAN

ITEM 844. HIGH PERFORMANCE CONCRETE TRIAL MIX

ITEM 844. HIGH PERFORMANCE CONCRETE TESTING

THESE ITEMS ARE INCLUDED WITH THE QUANTITIES OF BRIDGE NO. MAH-711-0208 FOR PAYMENT.

ASBESTOS NOTIFICATION:

AN ASBESTOS SURVEY OF THE RAMP B BRIDGE OVER I-80 E.B. & RAMP C SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

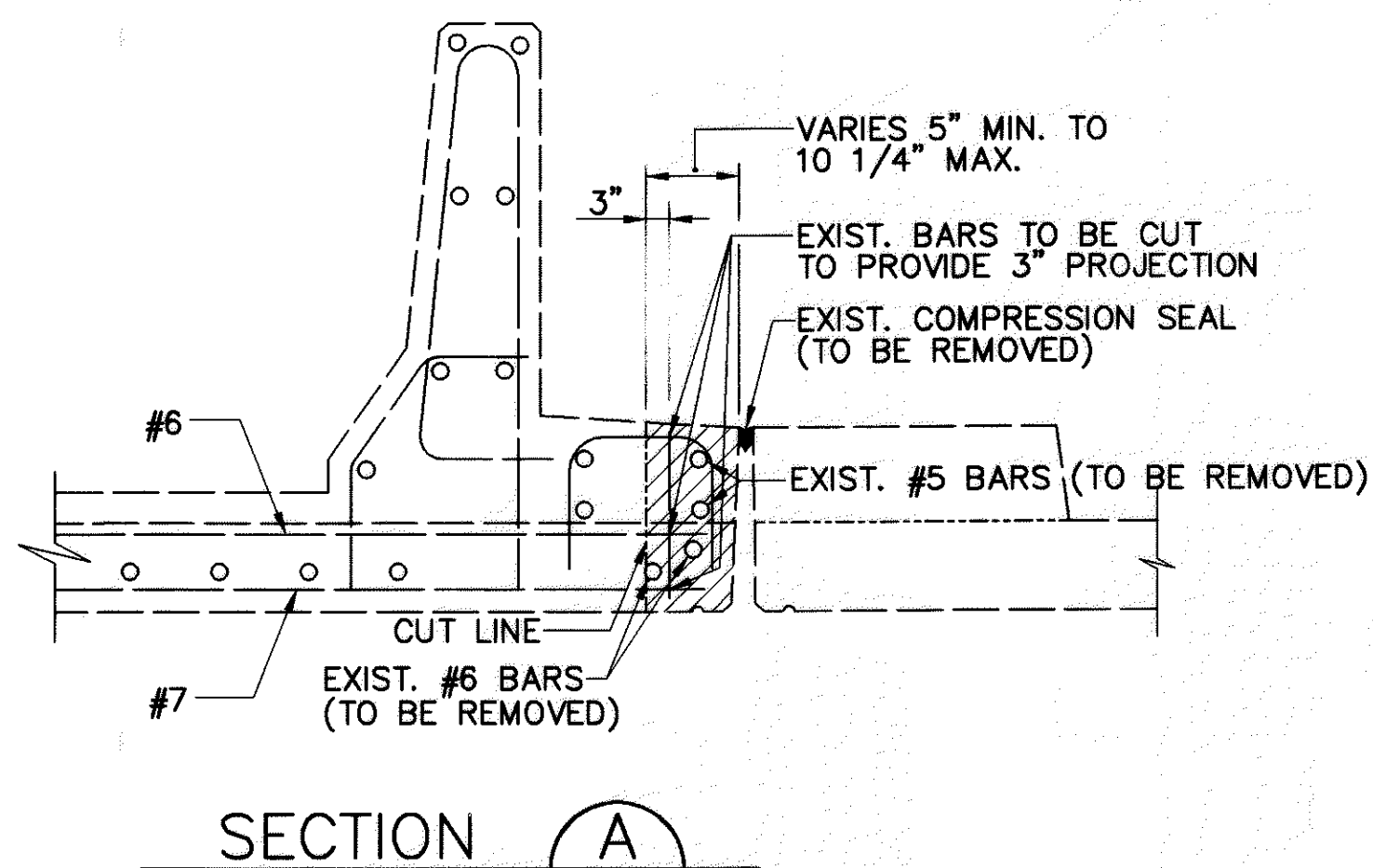
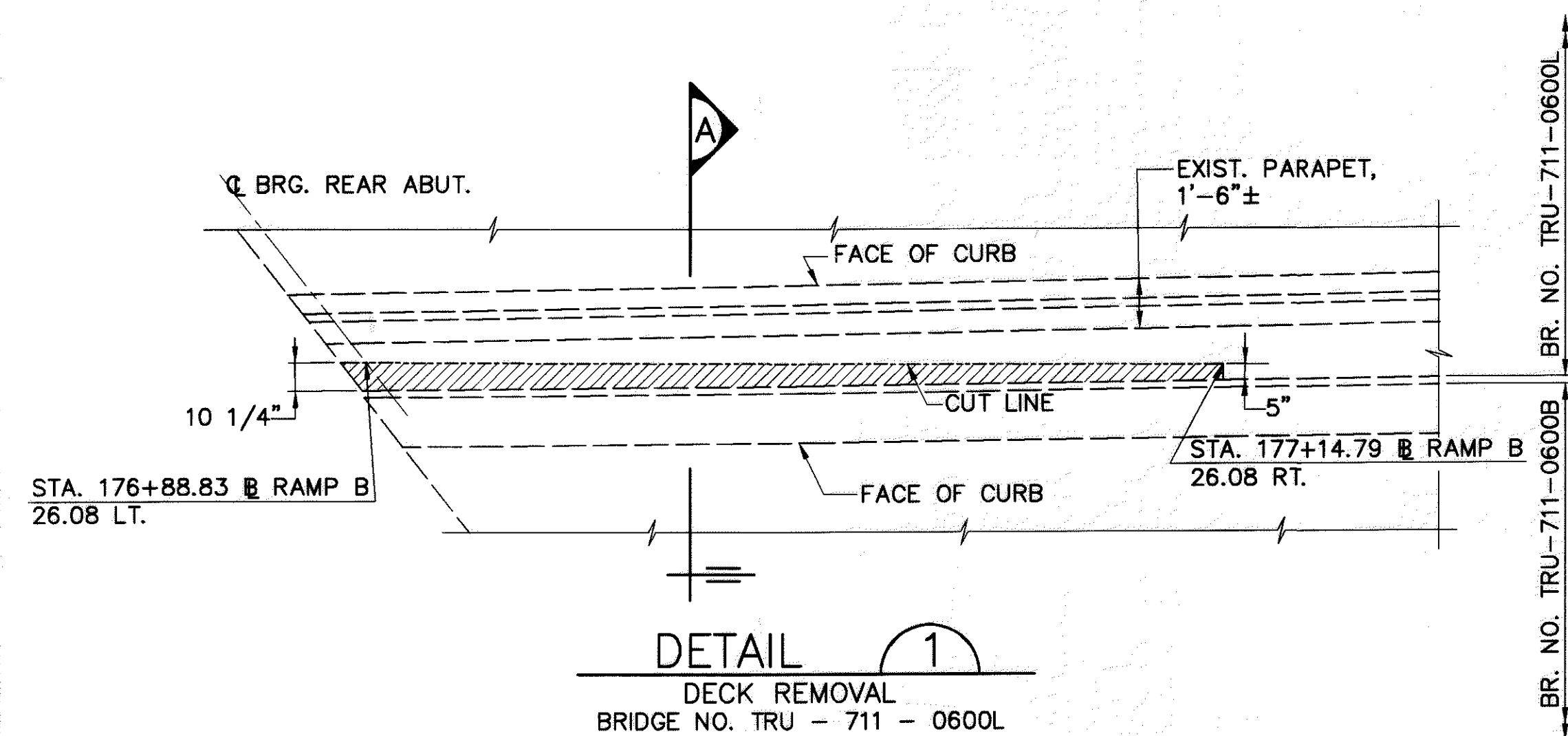
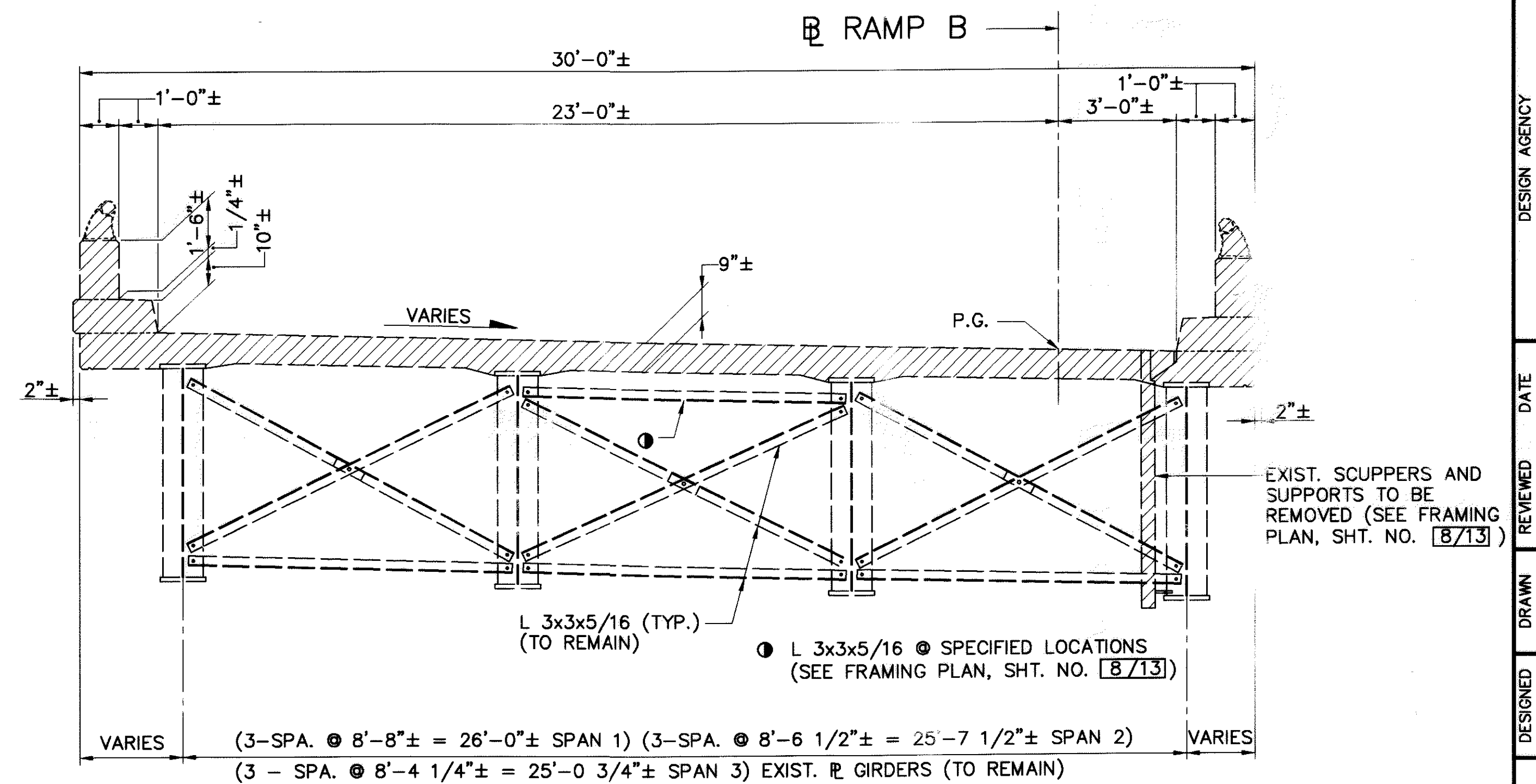
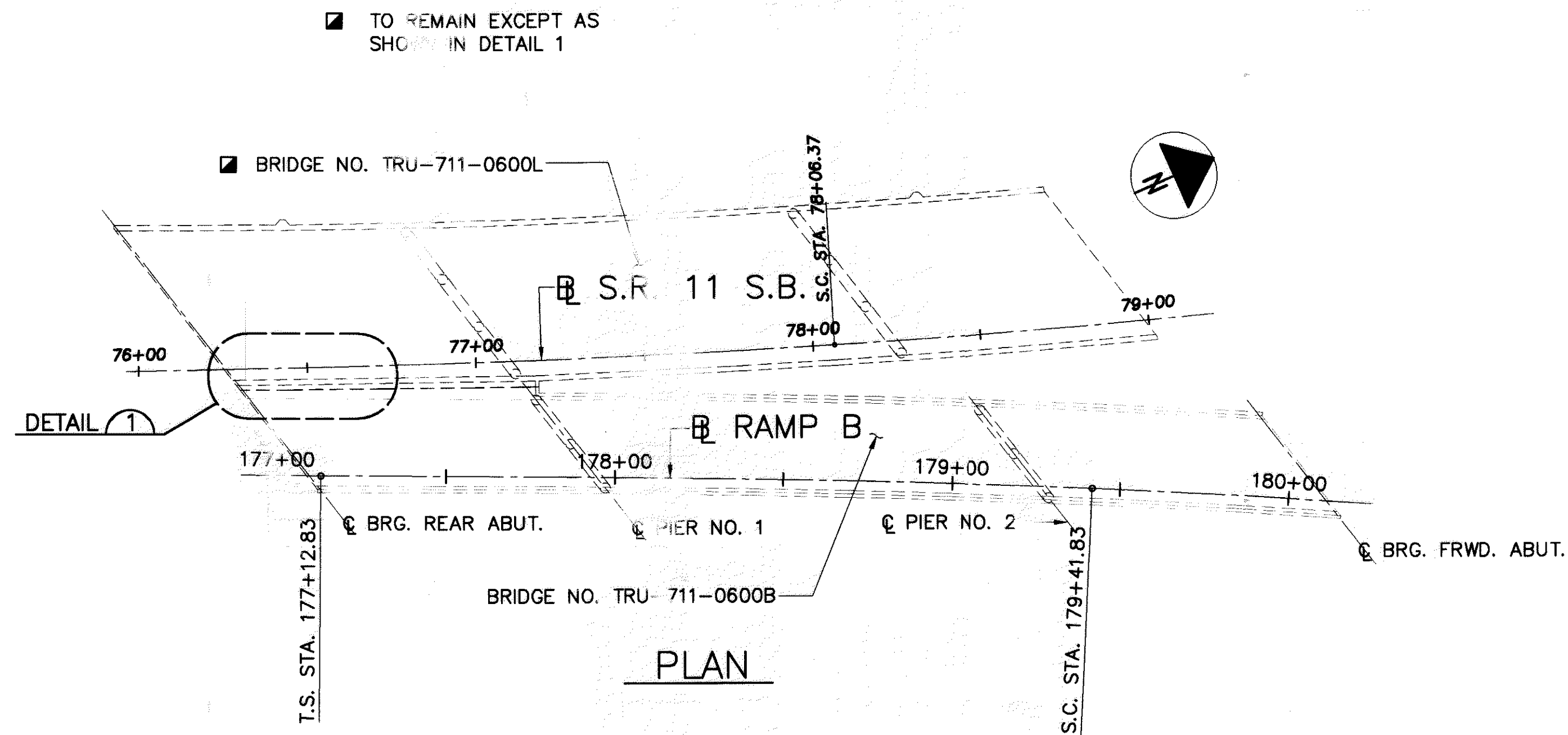
A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF THE DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

YOUNGSTOWN
MAHONING-TRUMBULL AIR
POLLUTION CONTROL
9 WEST FRONT ST. ROOM 107
YOUNGSTOWN, OHIO 44503
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.

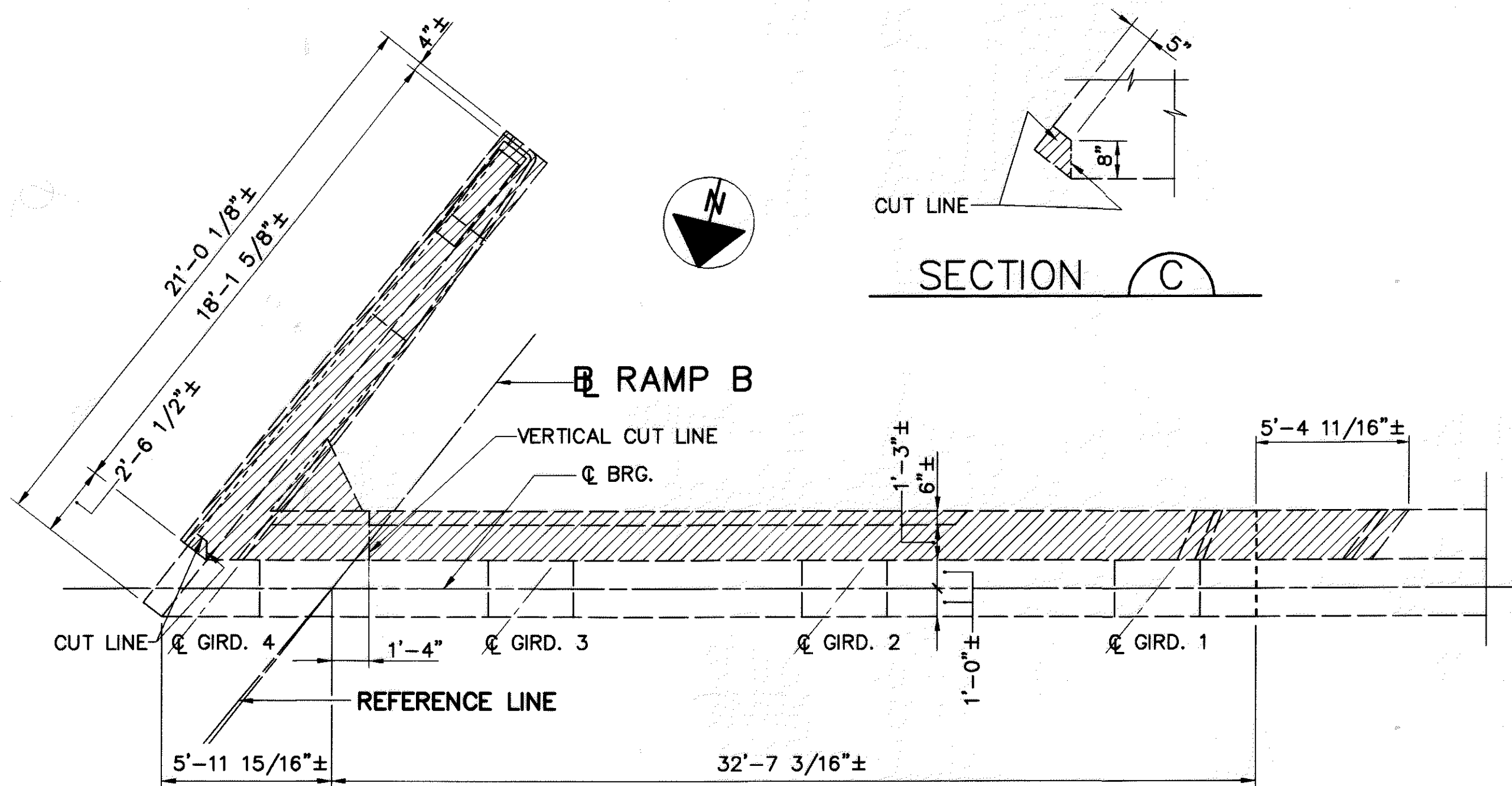
INFORMATION REQUIRED ON THE FORM WILL INCLUDE: THE CONTRACTOR'S NAME AND ADDRESS, THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL OR RENOVATION AND A DESCRIPTION OF THE PLANNED DEMOLITION OR RENOVATION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR 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.

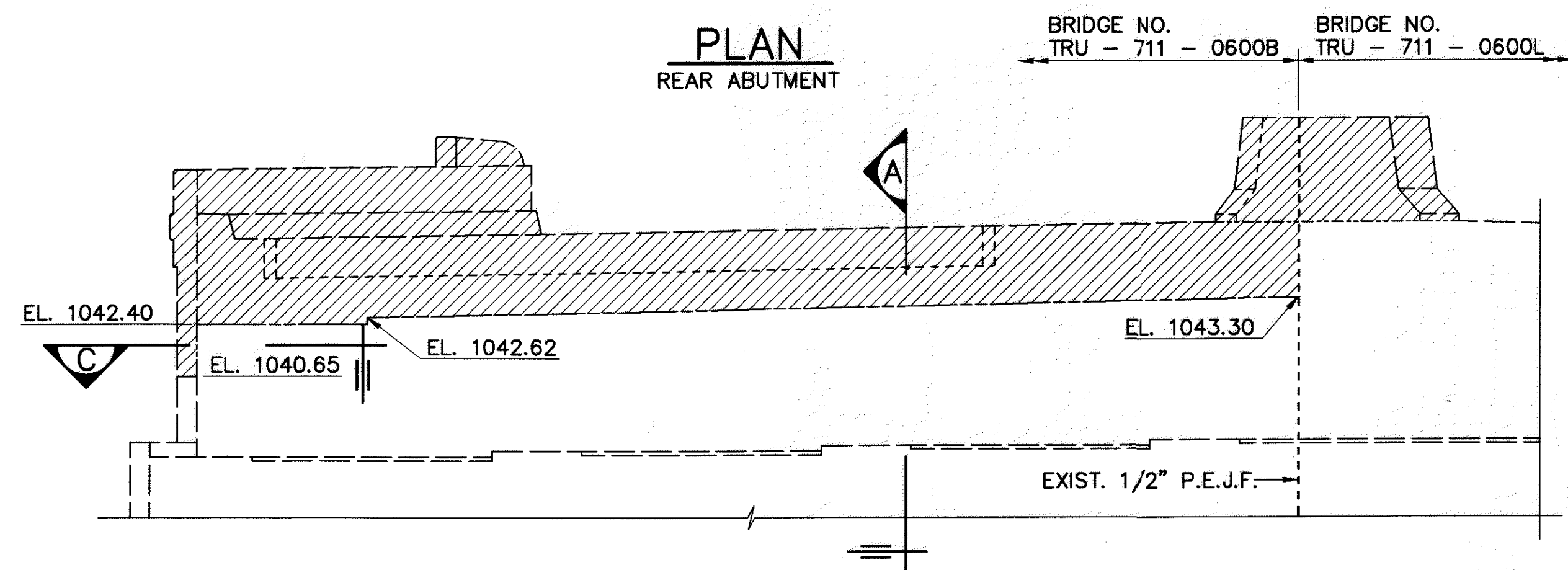


LEGEND

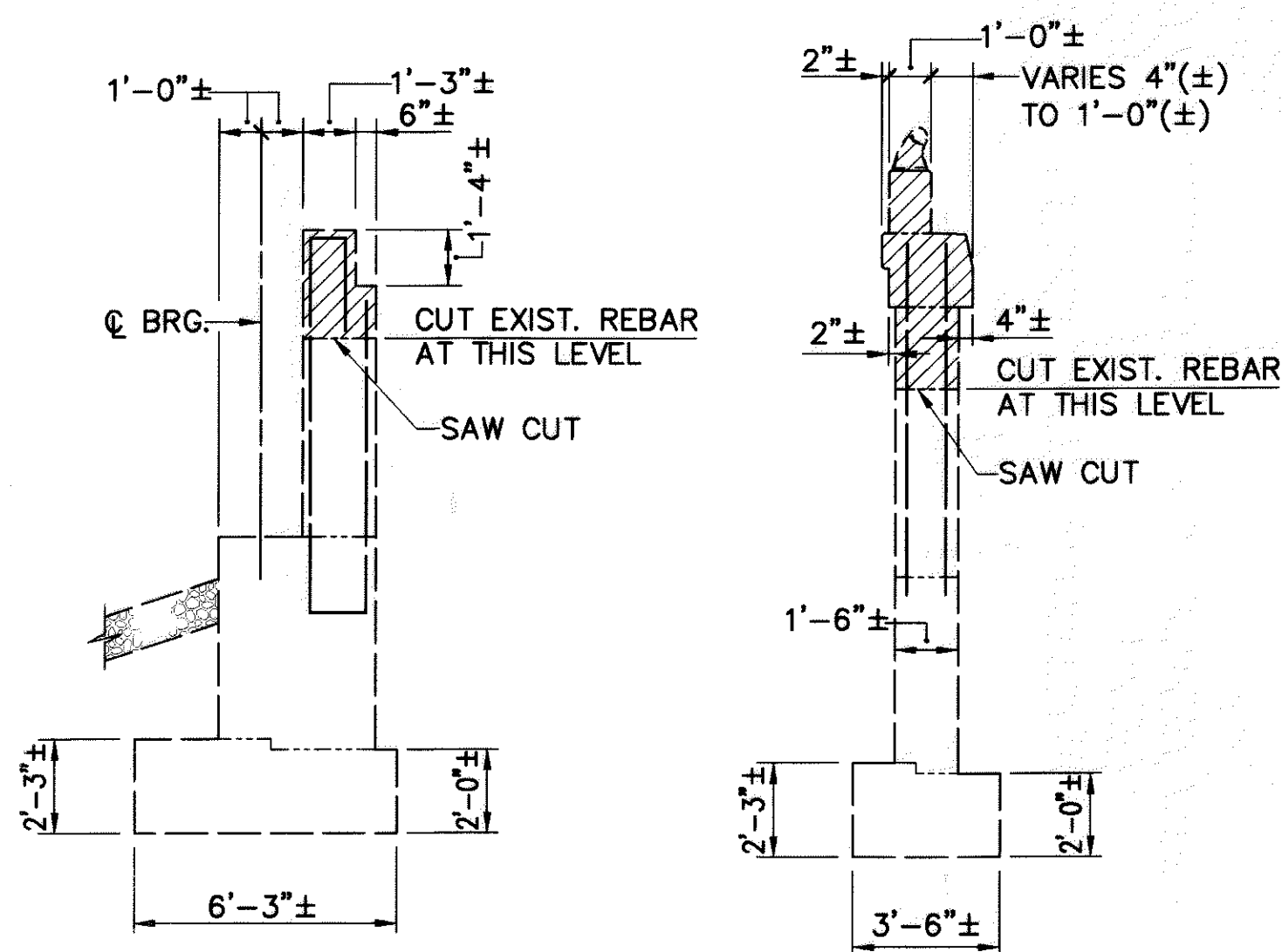
INDICATES REMOVAL LIMITS, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN.



PLAN
REAR ABUTMENT

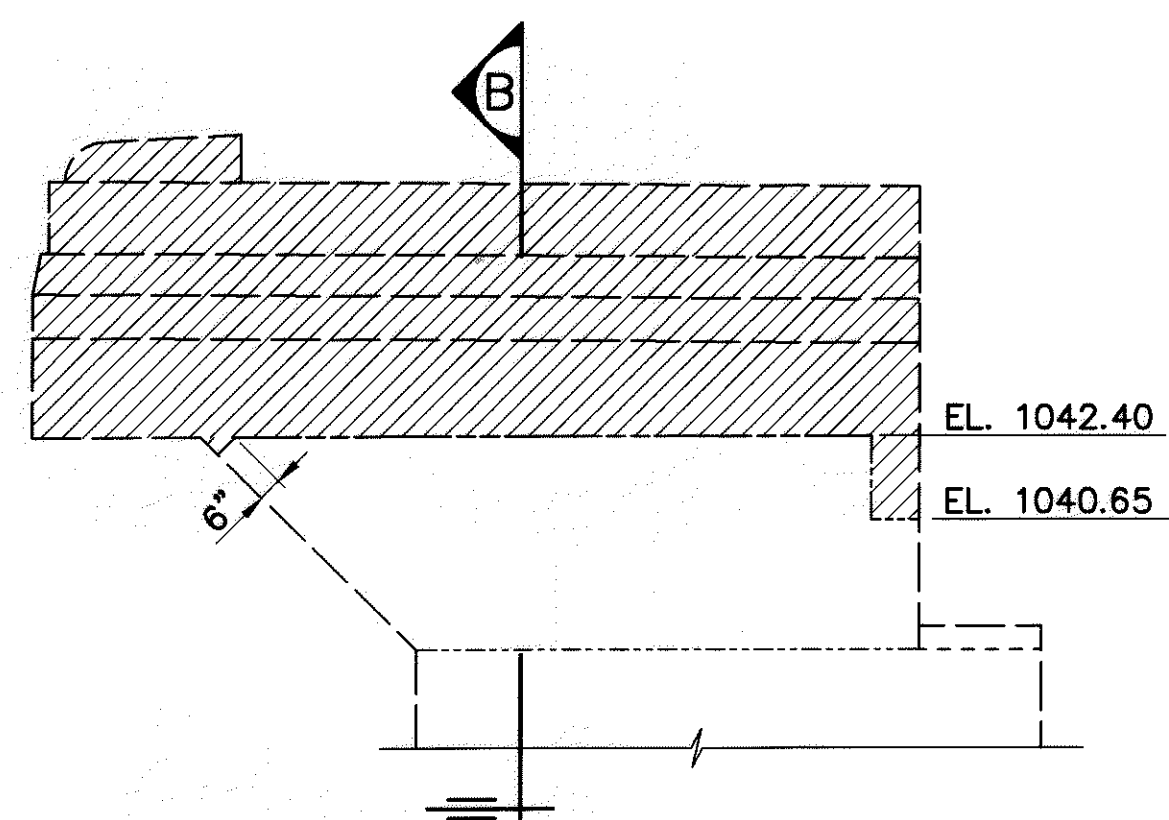


ELEVATION
REAR ABUTMENT



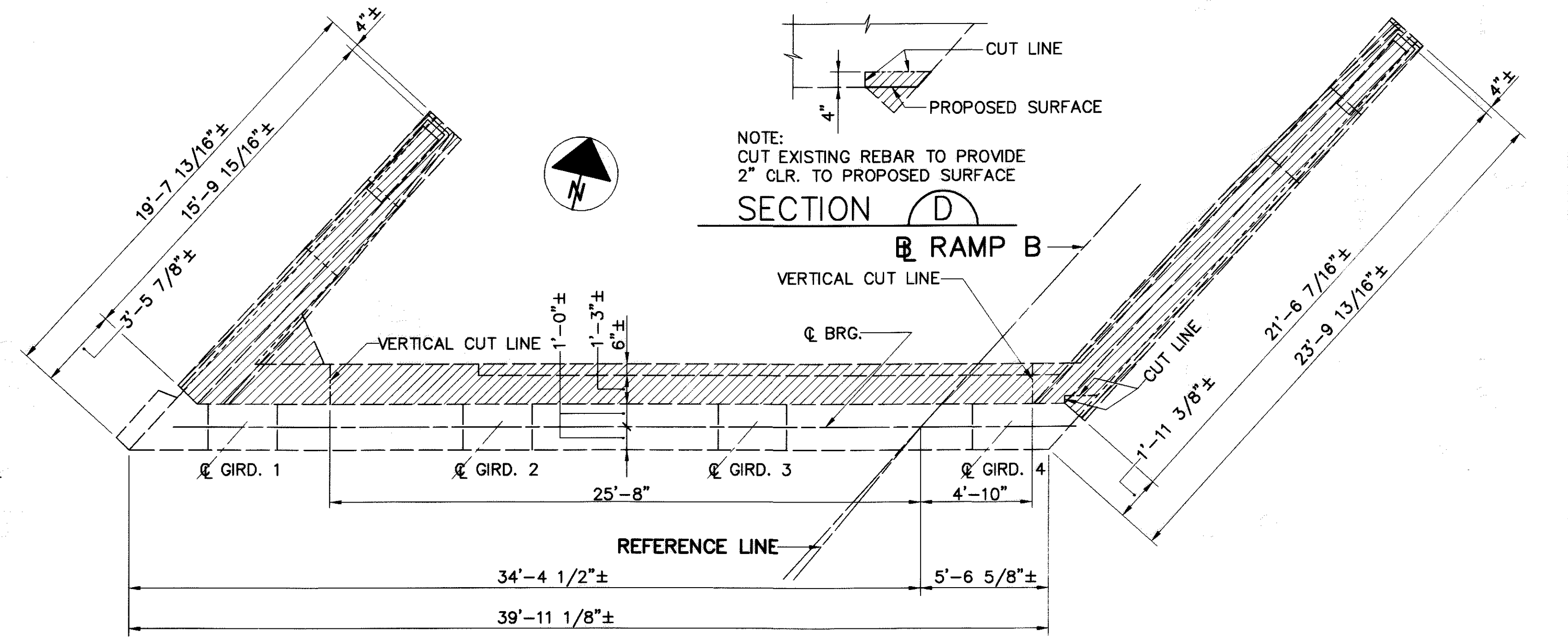
SECTION A

SECTION B

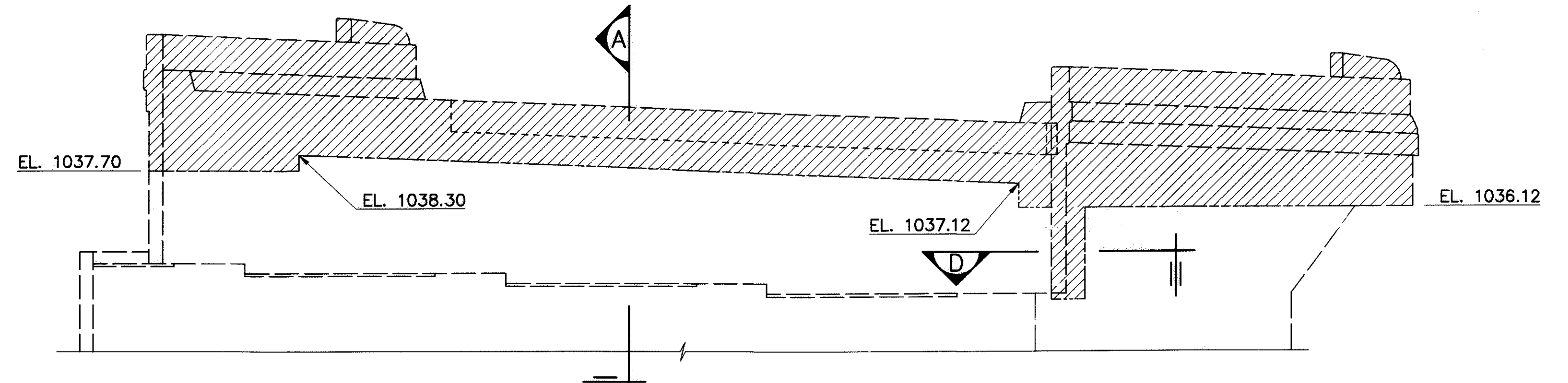


ELEVATION
SOUTHEAST WINGWALL

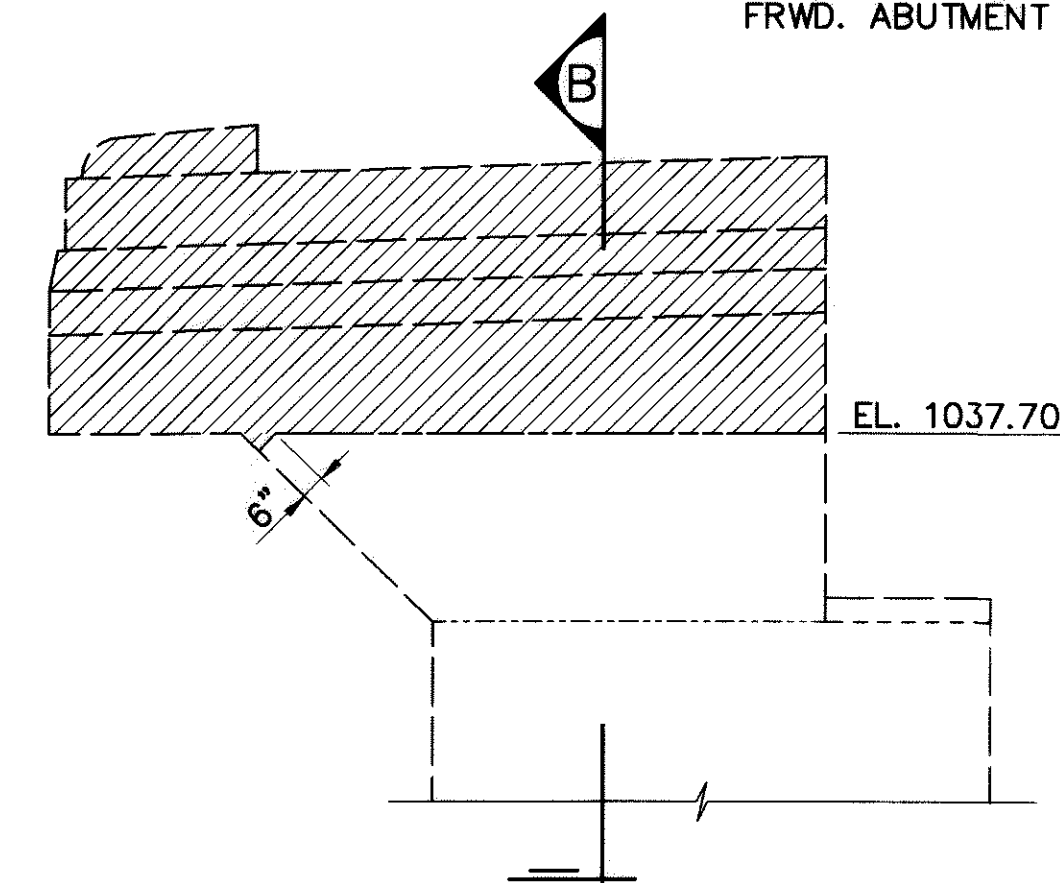
NOTE: PIPE RAILING NOT SHOWN
(TYP.)



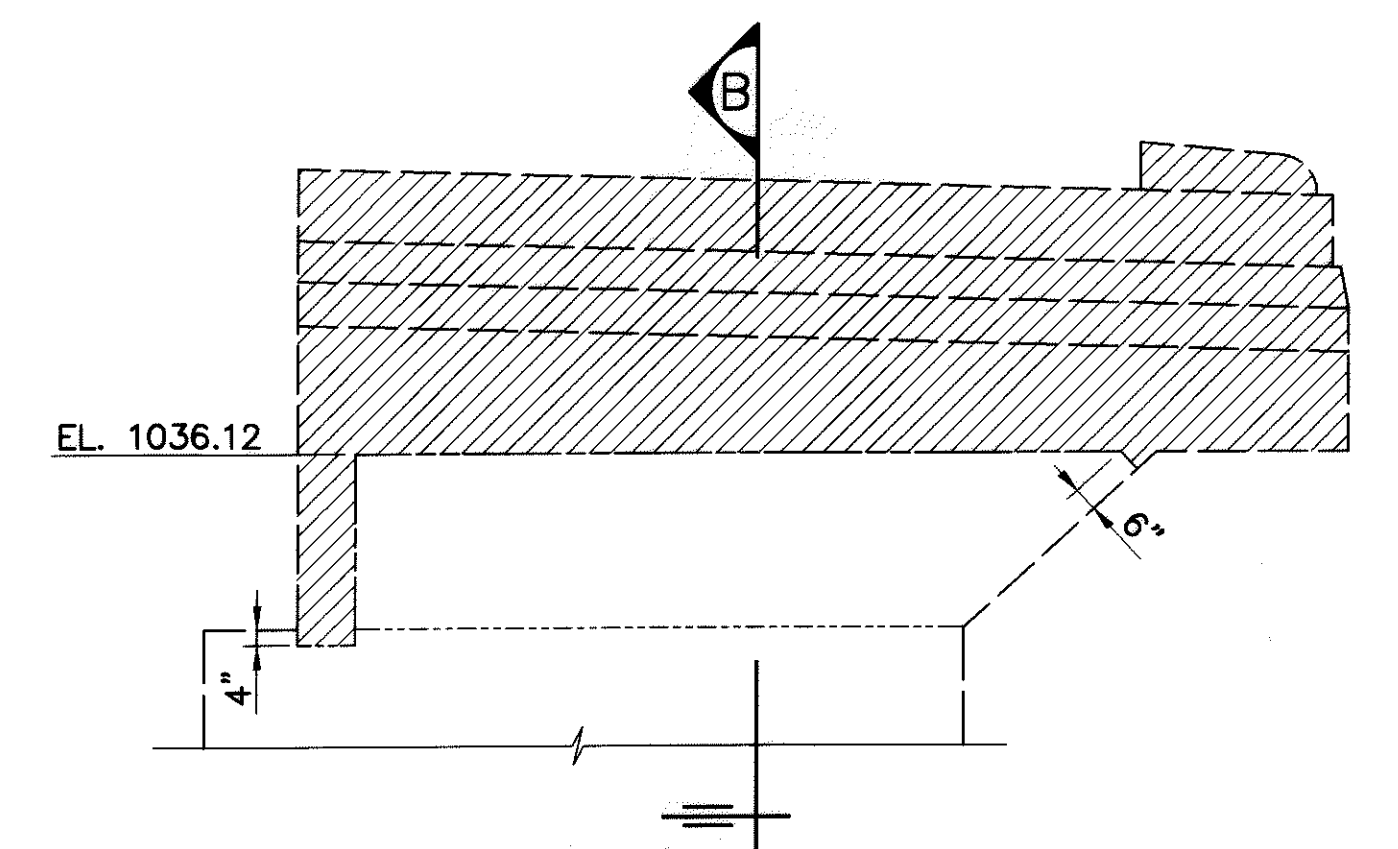
PLAN
FRWD. ABUTMENT



ELEVATION
FRWD. ABUTMENT



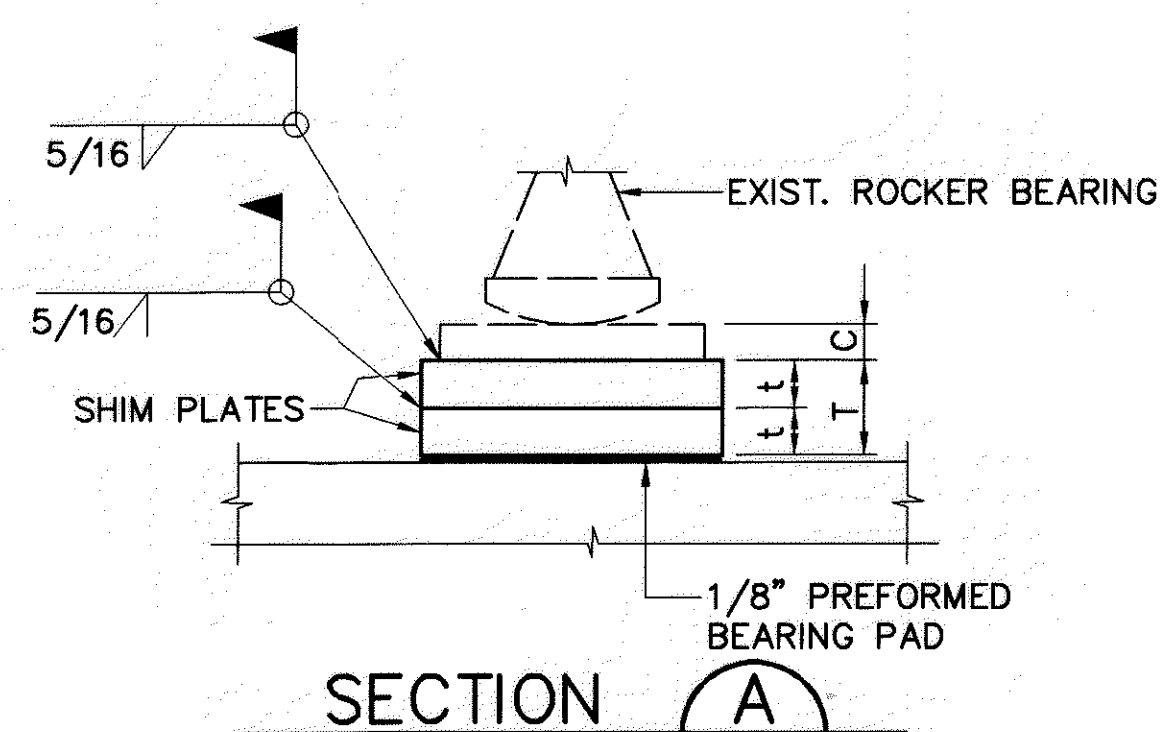
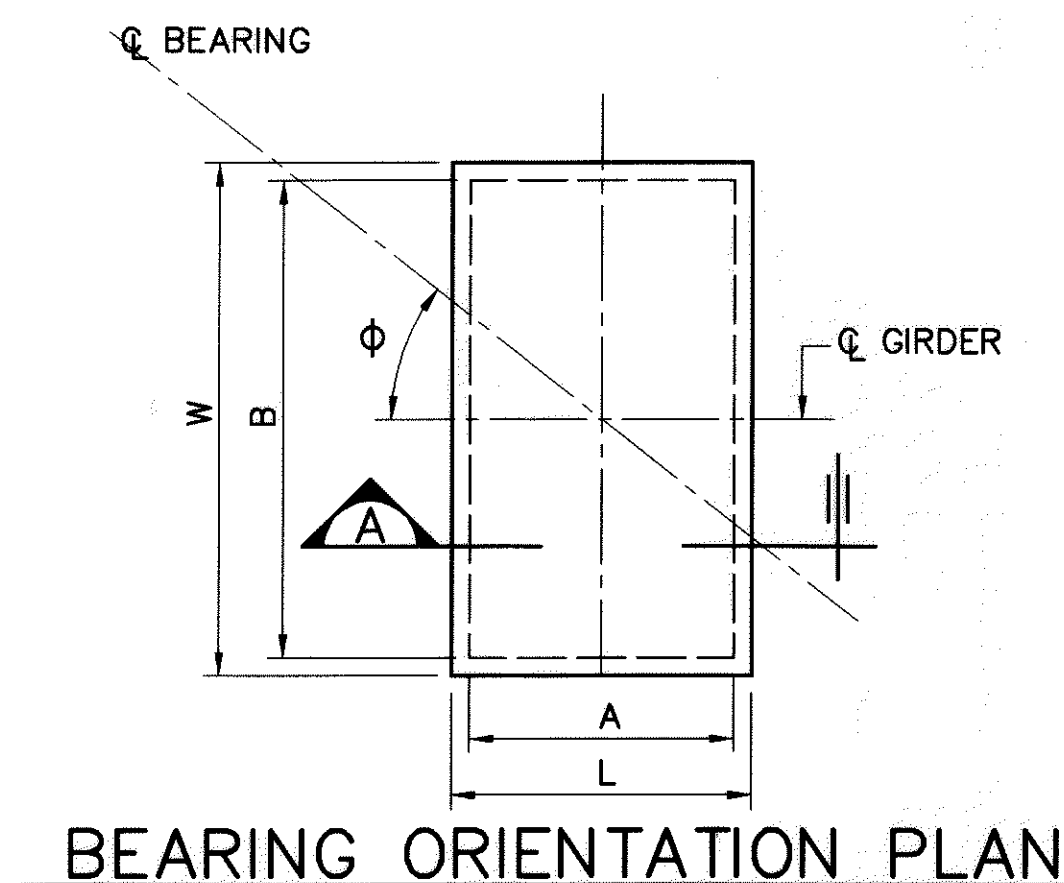
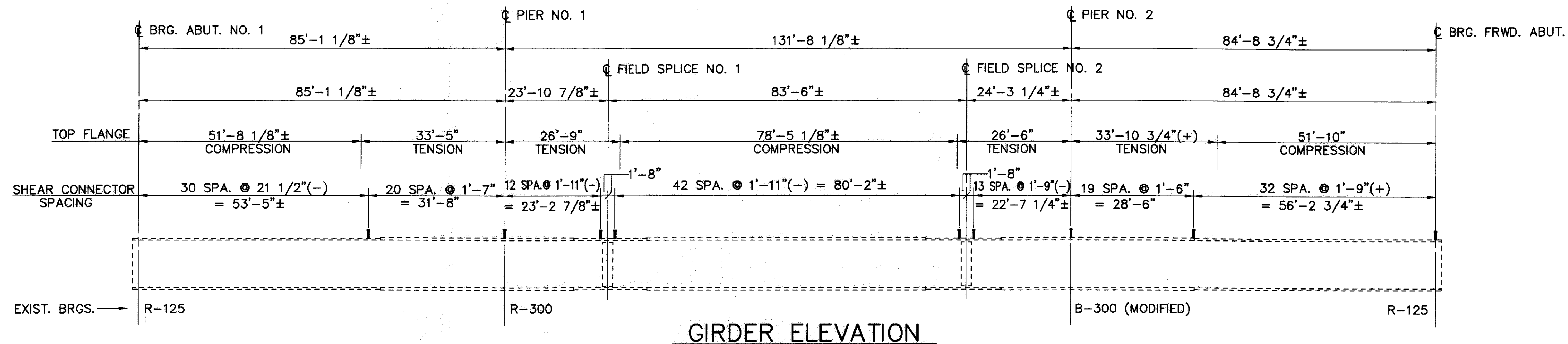
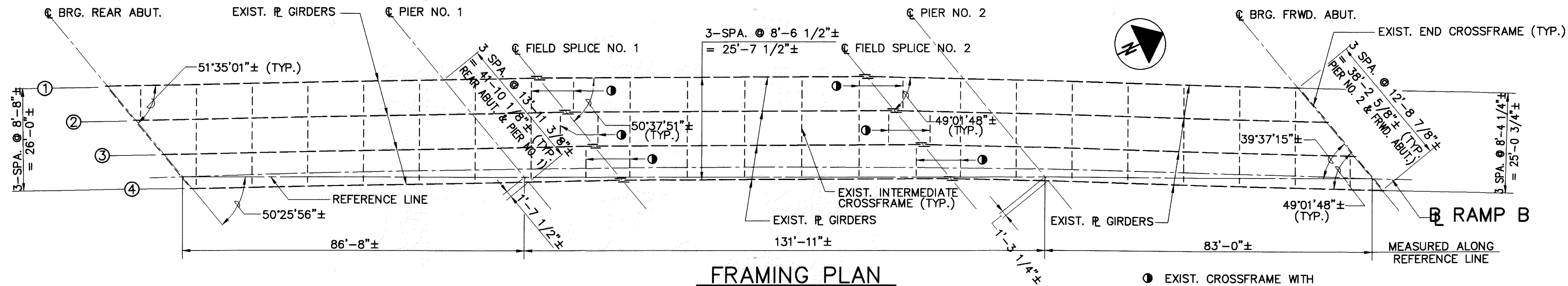
ELEVATION
NORTHWEST WINGWALL



ELEVATION
NORTHEAST WINGWALL

LEGEND

INDICATES REMOVAL LIMITS, ITEM 202,
PORTIONS OF STRUCTURE REMOVED, OVER
20 FT. SPAN, AS PER PLAN



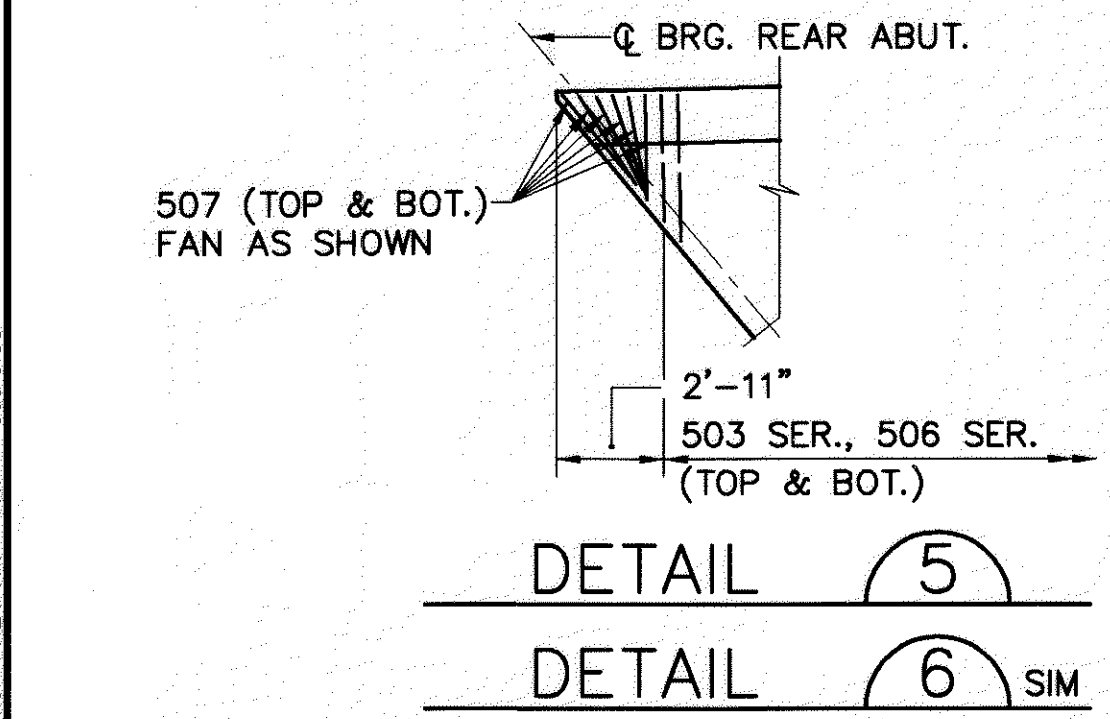
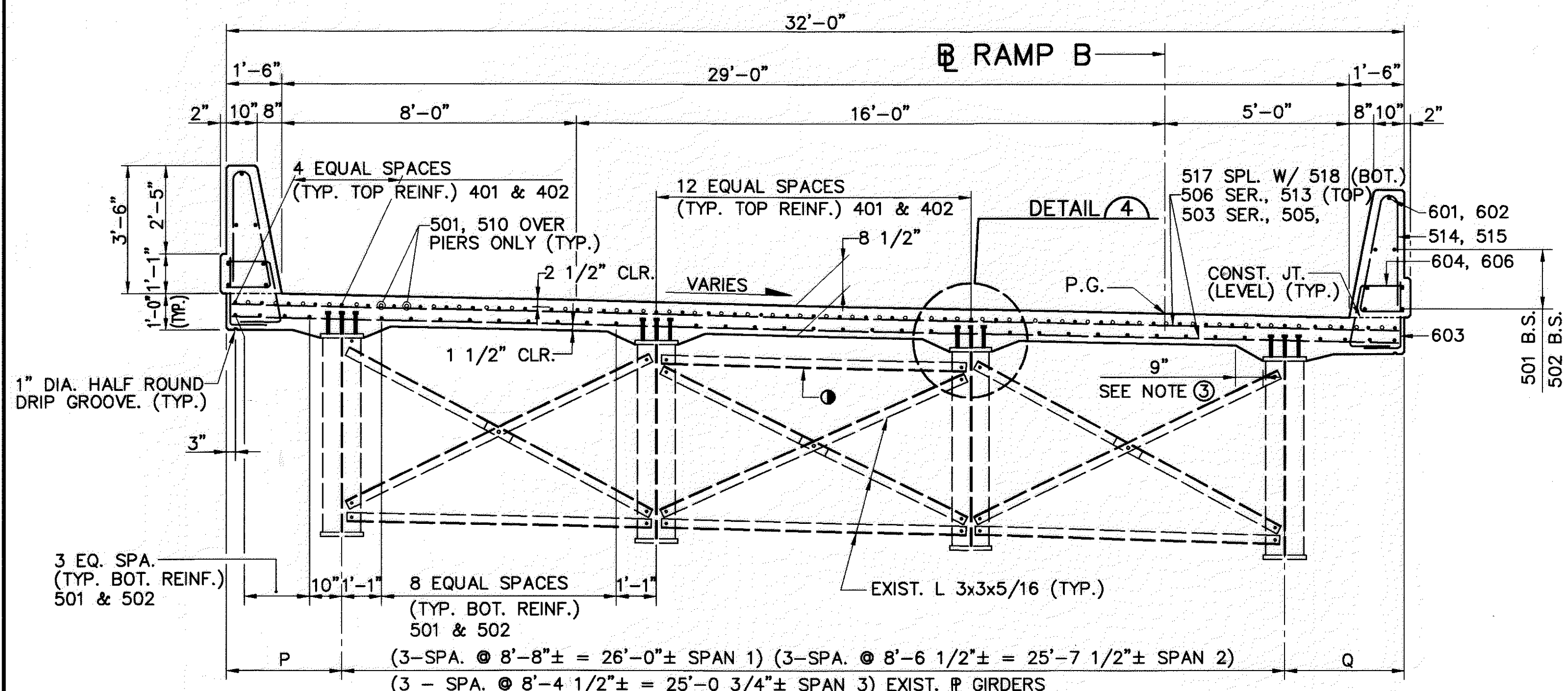
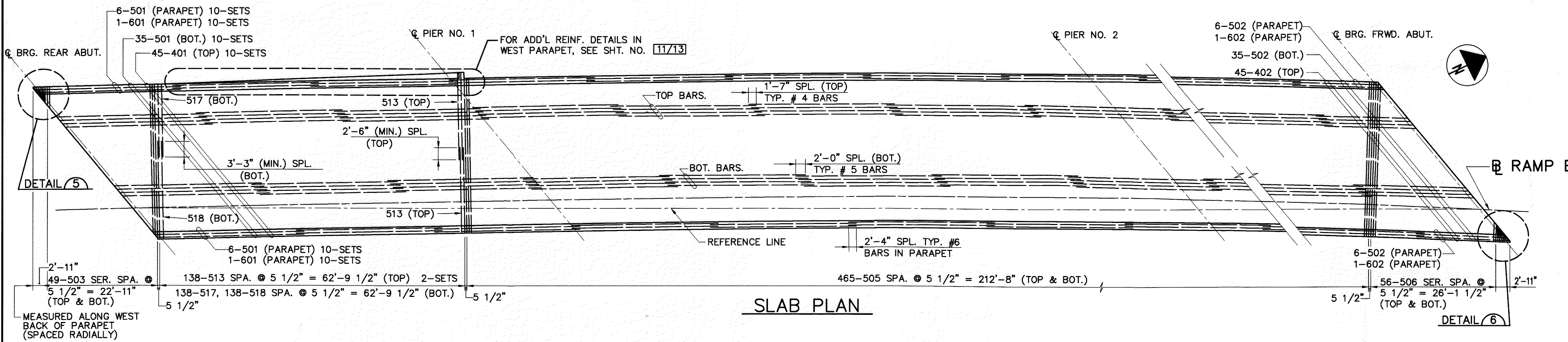
BEARINGS RETROFIT

SUBSTRUCTURE LOCATION	Ø	PLATE DIMENSIONS						
		SHIM PLATES				EXIST. MASONRY PLATE		
		L	W	t	T	A	B	C
REAR ABUTMENT	51'35'01"±	1'-0 1/2"	1'-9 1/2"	2"	4"	11"±	1'-8"±	1 1/2"±
PIER NO. 1	51'35'01"±	1'-10"	2'-6"	2"	4"	1'-8"±	2'-4"±	3"±
PIER NO. 2	SEE FIXED BEARING MODIFICATION DETAILS SHEET [12/13]							
FORWARD ABUTMENT	49'01'48"±	1'-0 1/2"	1'-9 1/2"	2"	4"	11"±	1'-8"±	1 1/2"±

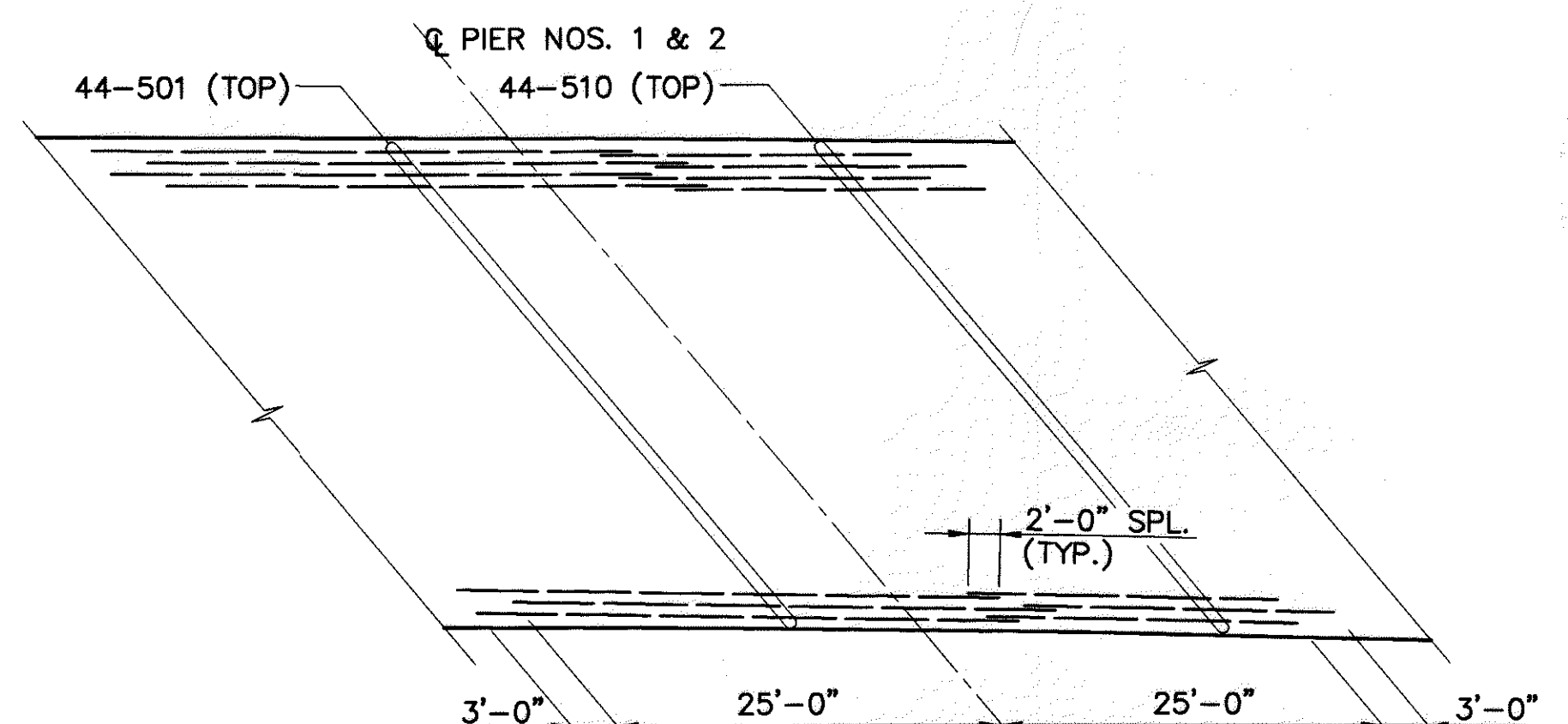
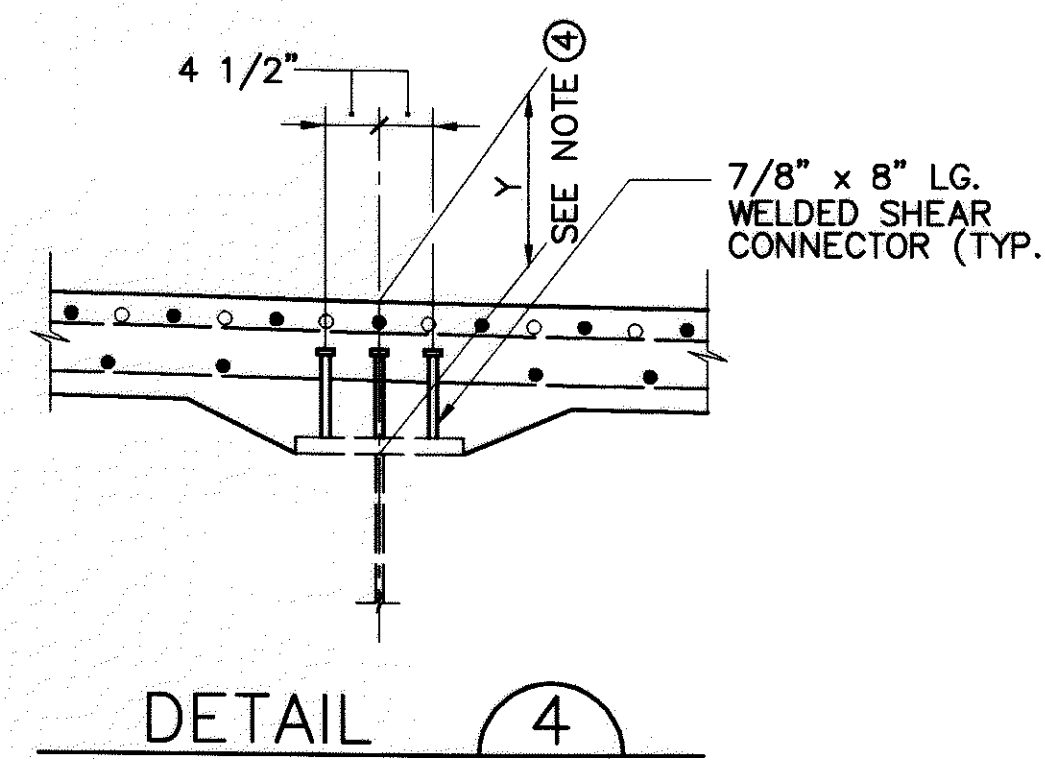
NOTES:

1. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN 1/4" FOR THICKNESSES UP TO 3/4" AND 5/16" FOR GREATER THAN 3/4".
2. **ITEM 516 REFURBISH AND RESET BEARING, AS PER PLAN**
THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN AND SHIM BRIDGE BEARINGS AT ABUTMENTS AND AT PIER NO. 1, AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING WITH SYSTEM OZEU, REPLACEMENT OF SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF (2)-2" THICK STEEL SHIMS AS DETAILED PLUS ANY ADDITIONAL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60F, AND REASSEMBLY OF THE BEARINGS. THE CONTRACTOR SHALL ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO GIRDERS AND / OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISH AND RESET BEARING, AS PER PLAN.
3. FOR ADDITIONAL BEARING DETAILS SEE STD. DWG. NO. RB-1-55.
4. FOR BEARINGS AT PIER NO. 2 SEE SHEET [12/13].

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Date: 02-22-02 Time: 11:24 AM TW = 000.000
Technician: ROUNMINS



SLAB DEPTH, Y				
LOCATION	REAR ABUT.	PIER NO. 1	PIER NO. 2	FRWD. ABUT.
B-1	1'-2 1/2"	1'-3 3/8"	1'-1 15/16"	1'-0 5/8"
B-2	1'-1 11/16"	1'-3 1/4"	1'-2 1/16"	1'-0 13/16"
B-3	1'-0 13/16"	1'-2 5/8"	1'-1 7/16"	1'-0 3/8"
B-4	1'-0"	1'-1 9/16"	1'-0 13/16"	1'-0 7/8"



- NOTES:
- PREFIX "S" SHALL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
 - ALL REINFORCING STEEL SHALL BE EPOXY COATED.
 - A HAUNCH OF 9 INCHES SHALL BE USED. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12".
 - DECK SLAB DEPTH (Y) FOR CONCRETE QUANTITY: THE DIMENSION SHOWN FROM THE TOP OF THE CONCRETE DECK TO THE BOTTOM OF THE TOP FLANGE, MINUS THE AVERAGE DESIGN HAUNCH THICKNESS OF 3 INCHES, MINUS TOP FLANGE THICKNESS HAS BEEN USED FOR COMPUTING THE DECK CONCRETE QUANTITIES. CONCRETE REQUIRED TO FILL THE HAUNCHES, INCLUDING ADDITIONAL OR LESS MATERIAL REQUIRED DUE TO HAUNCH CONSTRUCTION TOLERANCES, SHALL BE CONSIDERED AS INCIDENTAL AND WILL NOT BE INCLUDED IN THE QUANTITY CALCULATIONS FOR PAYMENT.
 - FOR OVERHANG DIMENSIONS P & Q, SEE SHT. NO. 10/13.
 - FOR SCREED ELEVATIONS, SEE SHT. NO. 10/13.
 - FOR PARAPET REINF. STEEL, SEE SHT. NO. 11/13.
 - QUANTITIES OF CONCRETE AND REINFORCING STEEL FOR PARAPETS ARE INCLUDED WITH ITEM 844, HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET), FOR PAYMENT.

LEGEND
● L3x3x5/16 AT SPECIFIED LOCATIONS (SEE FRAMING PLAN, SHT. NO. 8/13).

DESIGN AGENCY
CLAUDETTE SCHUBERT & JOHNSON, INC.
GPD ASSOCIATES
330 South Main Street, Suite 2331, Akron, Ohio 44311
330 S. Main St., Suite 2331, Akron, Ohio 44311

DATE
12-26-00

REVIEWED
K.S.J.

DRAWN
F.V.

DESIGNED
M.D.P.

FILE NUMBER
7803664

STRUCTURE
REVISED

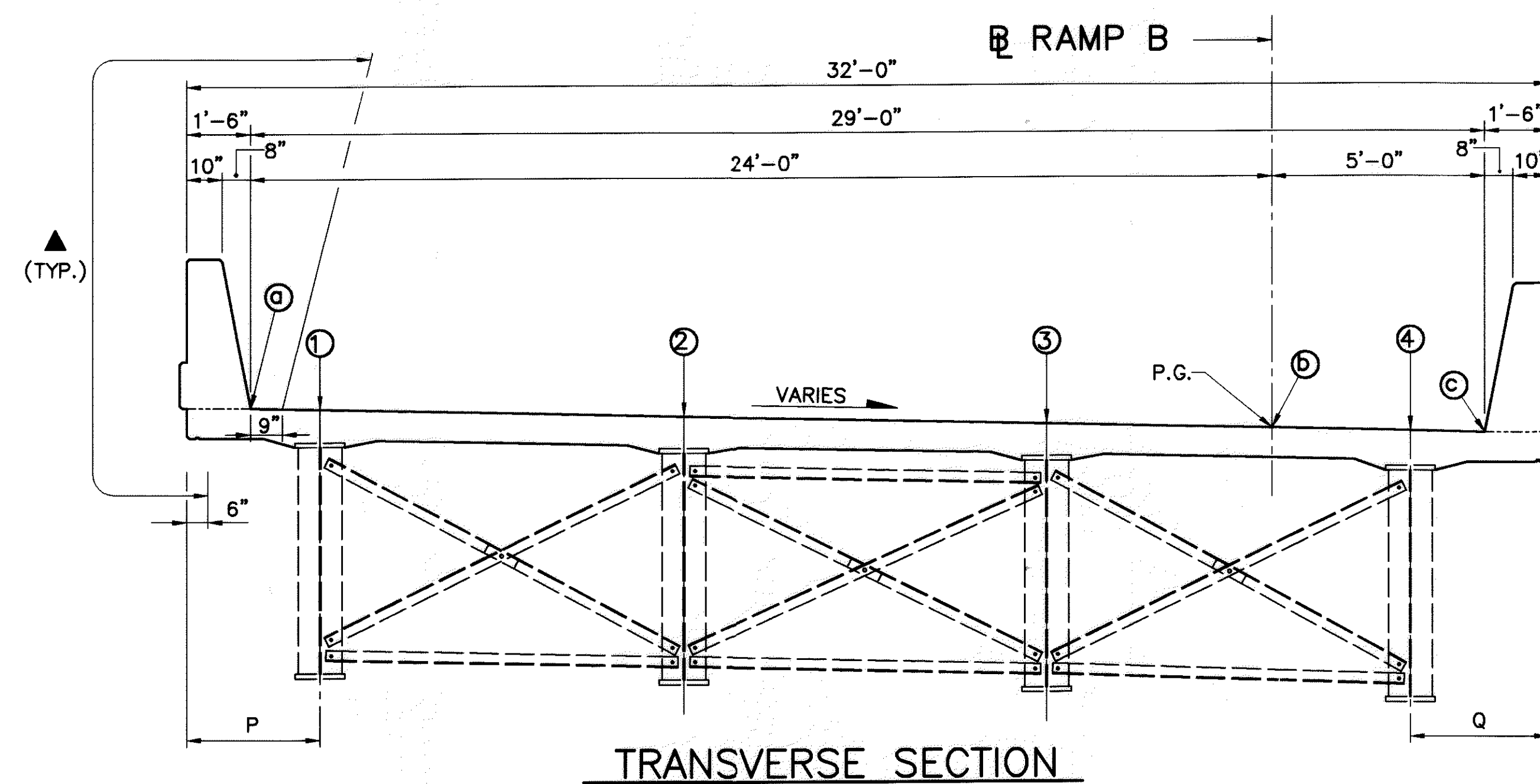
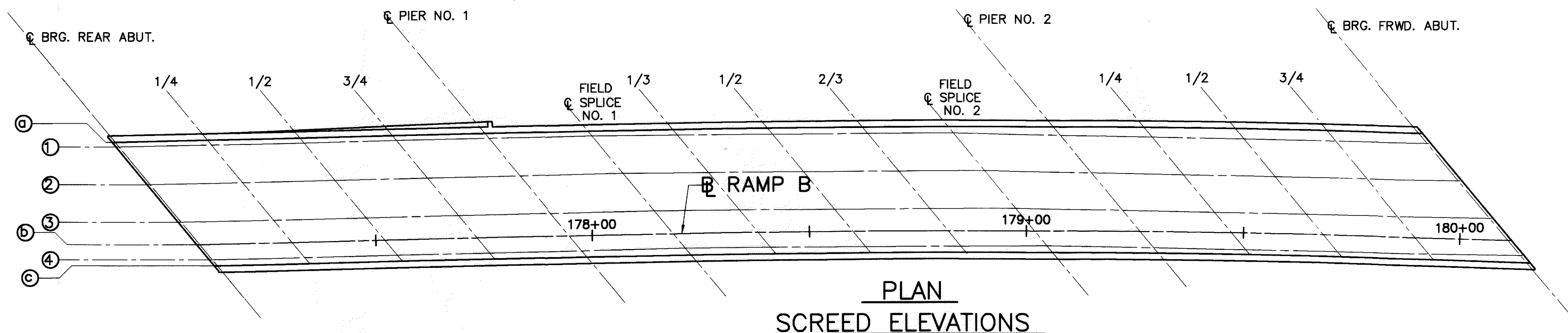
S.A.M.

SLAB PLAN
BRIDGE NO. TRU - 711 - 0600B
RAMP B OVER I-80 E.B. & RAMP C

MAH/TRU-711-1.23/0.00

9/13

969
1194



DECK SCREED ELEVATION TABLE															
LOCATION	REAR ABUT.	SPAN No. 1			℄ PIER 1	SPAN No. 2					℄ PIER 2	SPAN No. 3			FRWD. ABUT
		1/4	1/2	3/4		FIELD SPLICE NO. 1	1/3	1/2	2/3	FIELD SPLICE NO. 2		1/4	1/2	3/4	
Ⓐ	1046.73	1046.61	1046.44	1046.25	1046.02	1045.78	1045.55	1045.25	1044.88	1044.52	1043.99	1043.56	1043.09	1042.58	1041.99
Ⓑ	1046.70	1046.57	1046.40	1046.21	1045.99	1045.74	1045.50	1045.20	1044.81	1044.46	1043.90	1043.45	1042.98	1042.46	1041.88
Ⓒ	1046.44	1046.31	1046.14	1045.92	1045.69	1045.43	1045.18	1044.86	1044.46	1044.07	1043.51	1043.04	1042.55	1042.03	1041.45
Ⓓ	1046.19	1046.05	1045.86	1045.63	1045.38	1045.11	1044.84	1044.50	1044.09	1043.68	1043.11	1042.63	1042.13	1041.60	1041.00
Ⓔ	1046.02	1045.87	1045.68	1045.44	1045.17	1044.89	1044.62	1044.27	1043.85	1043.42	1042.86	1042.38	1041.88	1041.33	1040.75
Ⓕ	1045.92	1045.78	1045.58	1045.32	1045.06	1044.77	1044.50	1044.15	1043.71	1043.28	1042.71	1042.21	1041.70	1041.16	1040.55
Ⓖ	1045.86	1045.72	1045.52	1045.26	1044.99	1044.69	1044.42	1044.07	1043.63	1043.18	1042.62	1042.13	1041.62	1041.06	1040.43

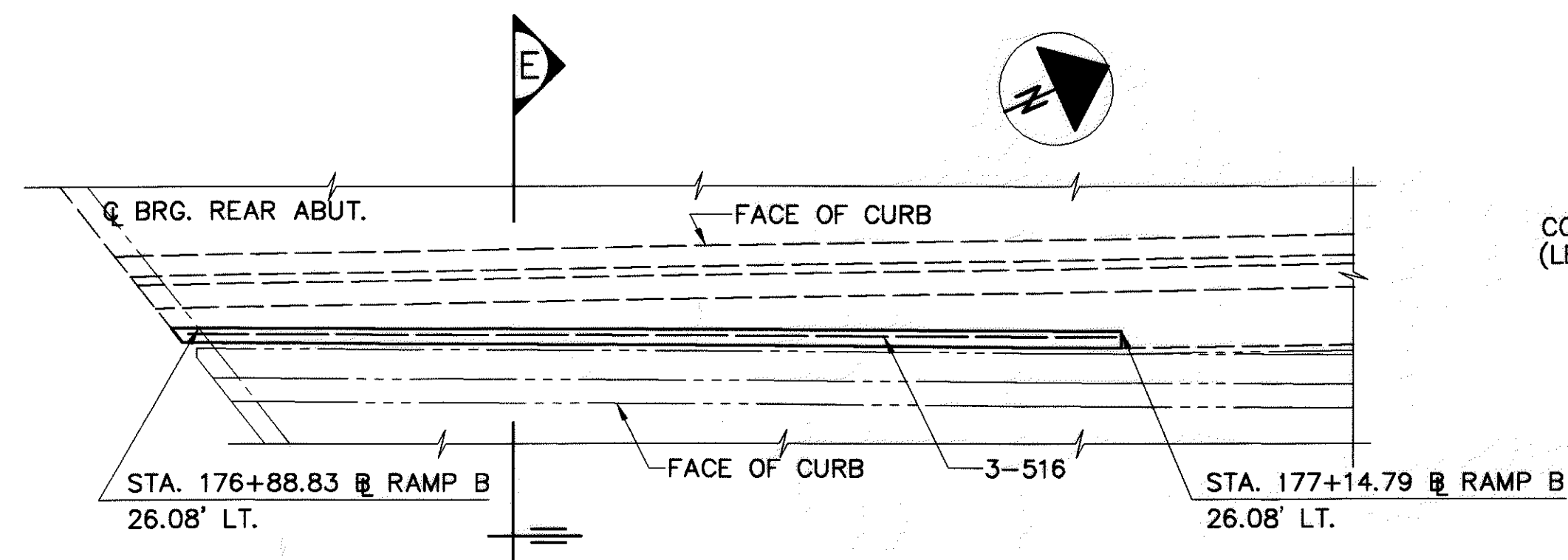
SLAB OVERHANG TABLE															
LOCATION	REAR ABUT.	SPAN No. 1			PIER 1	SPAN No. 2					SPAN No. 3				
		1/4	1/2	3/4		FIELD SPLICE NO. 1	1/3	1/2	2/3	FIELD SPLICE NO. 2	PIER 2	1/4	1/2	3/4	FRWD. ABUT.
DIM. 'P'	2'-7 3/4"	2'-8 1/4"	2'-11 3/8"	3'-3 7/8"	3'-8 3/4"	2'-8 5/8"	2'-11 1/2"	3'-1 1/2"	3'-2 5/8"	3'-2 3/8"	3'-9 3/8"	4'-1 1/2"	4'-3 3/8"	4'-1 3/8"	4'-0 1/8"
DIM. 'Q'	3'-4 7/8"	3'-4 3/4"	3'-4 3/4"	3'-5 1/8"	3'-6"	3'-7 7/8"	3'-5 3/4"	3'-4 1/2"	3'-4 5/8"	3'-6"	3'-2 5/8"	3'-1 3/8"	3'-6 1/8"	3'-4 1/4"	3'-8 1/2"

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

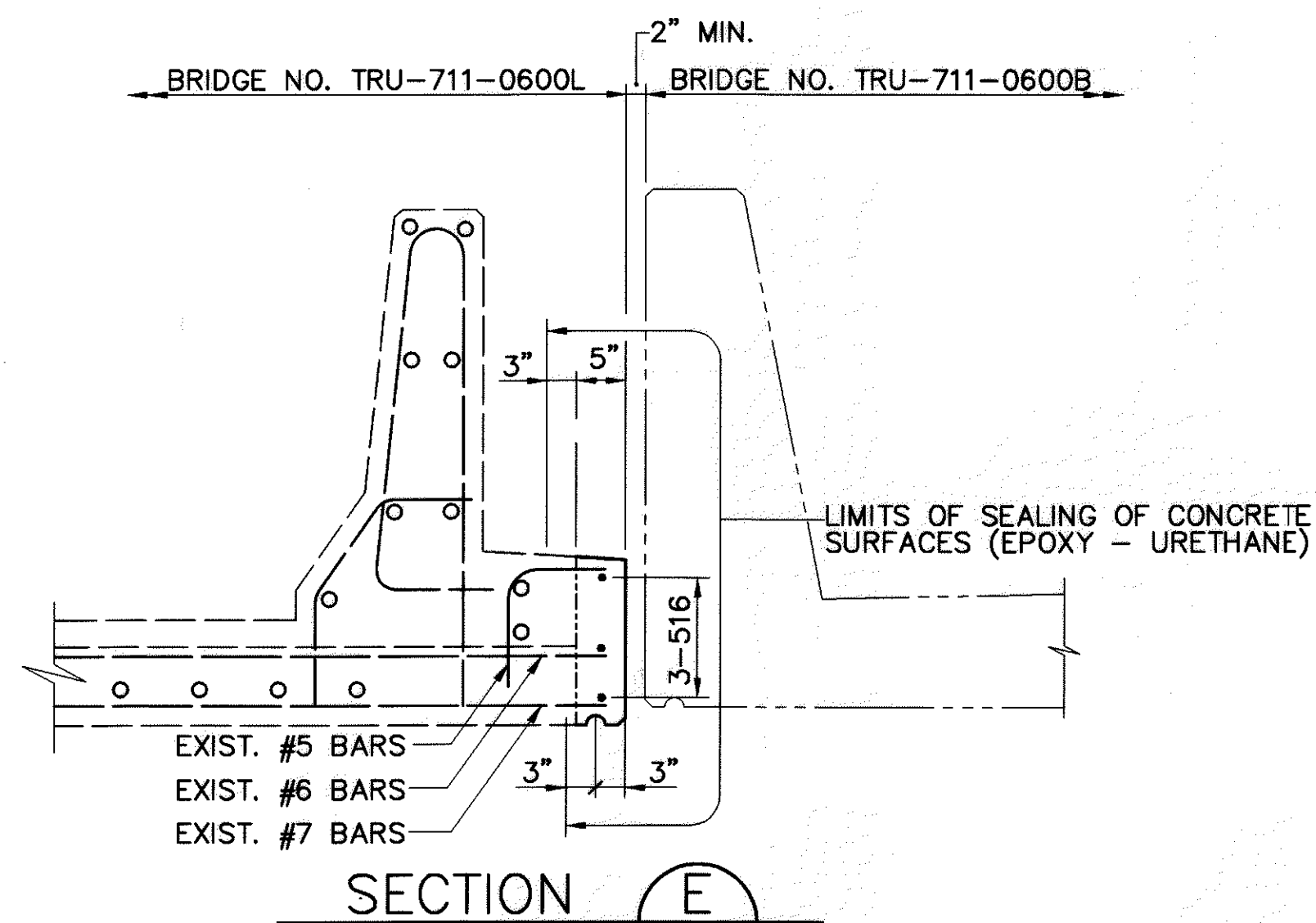
▲ LIMITS OF ITEM 864, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

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Date: 02-20-02 Time: 8:20 AM TW = 06070.00

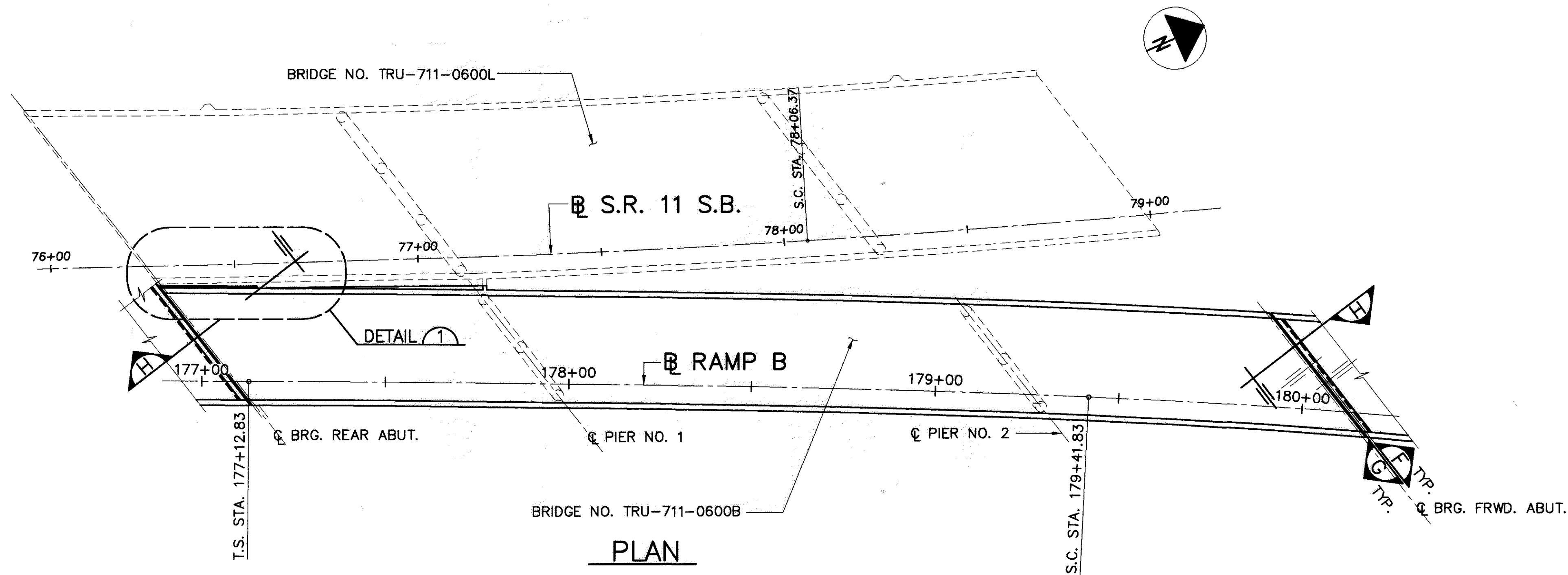
Technician: RCUMMINS



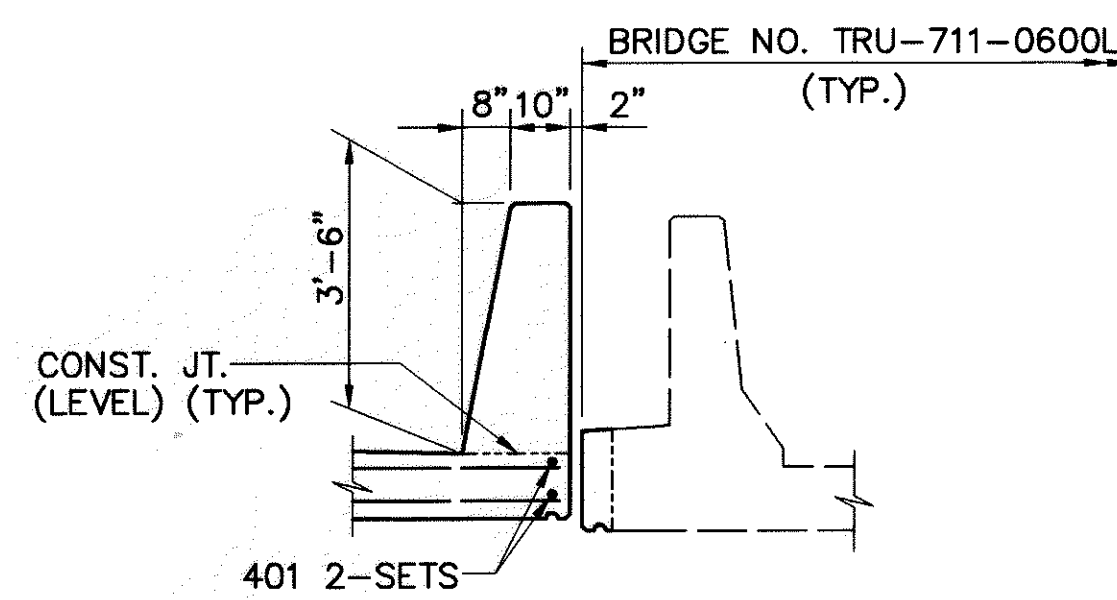
DETAIL 1
DECK MODIFICATION
BRIDGE NO. TRU - 711 - 0600L



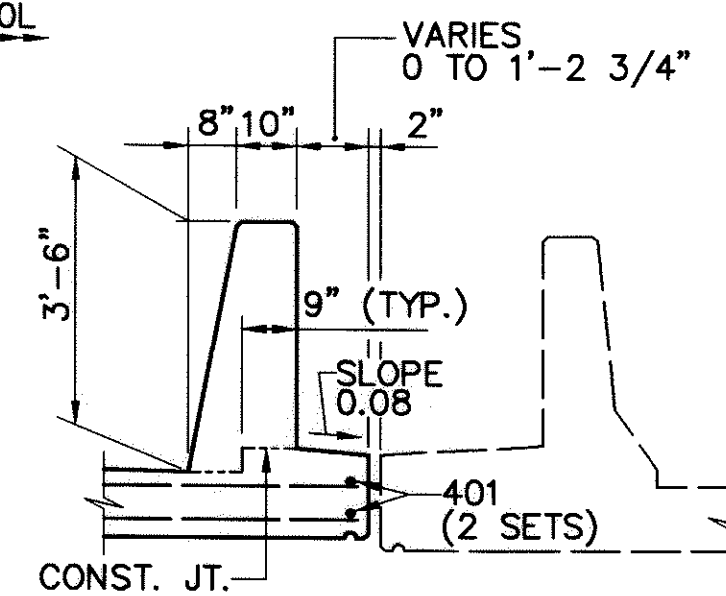
SECTION E



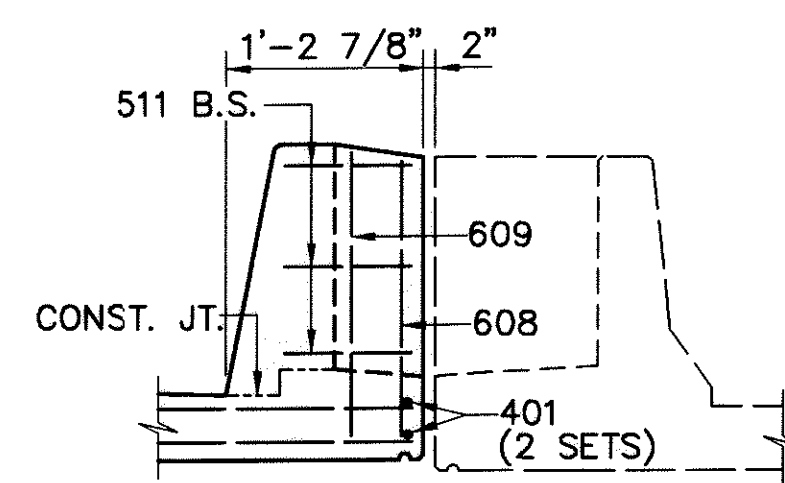
PLAN



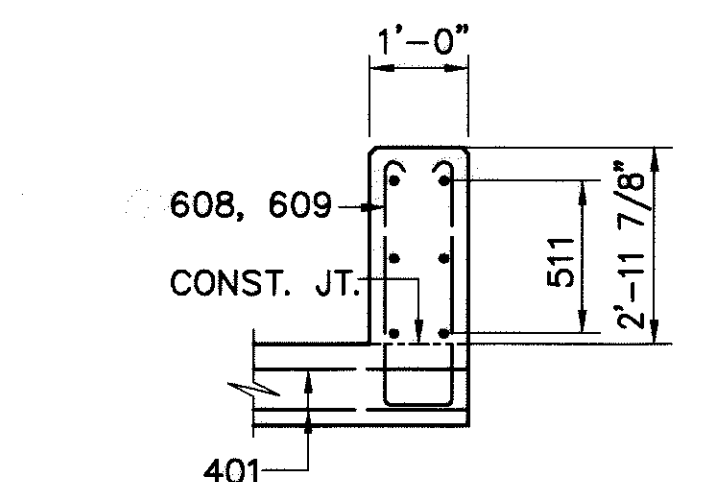
SECTION A



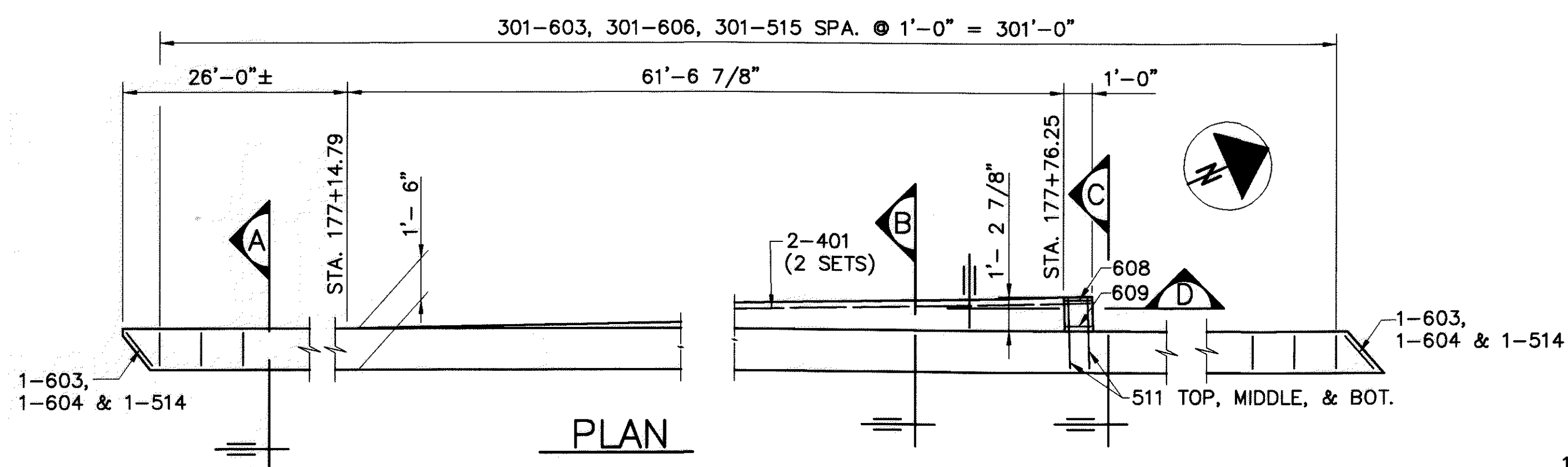
SECTION B



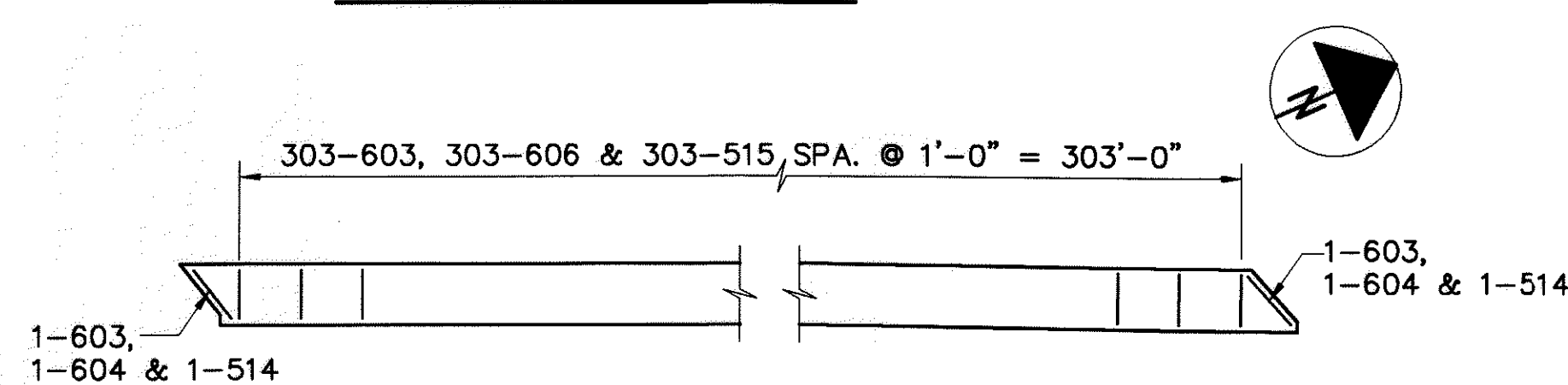
SECTION C



SECTION D



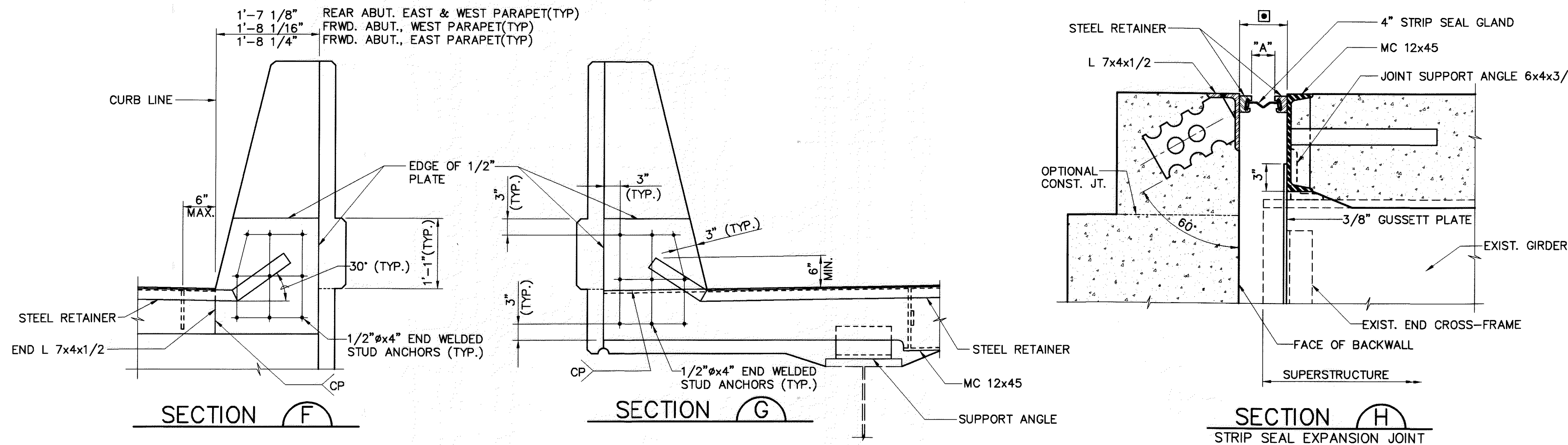
PLAN
WEST PARAPET



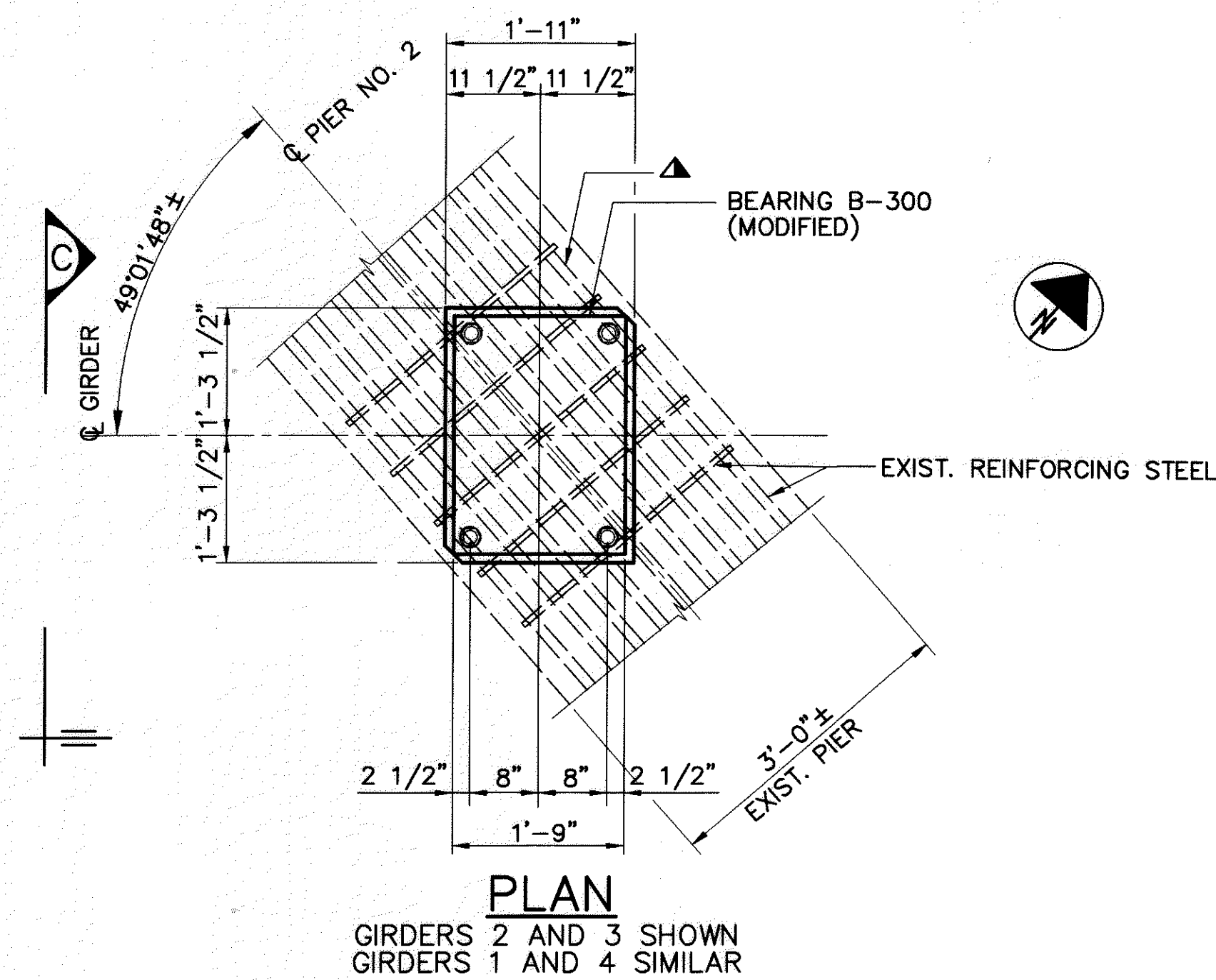
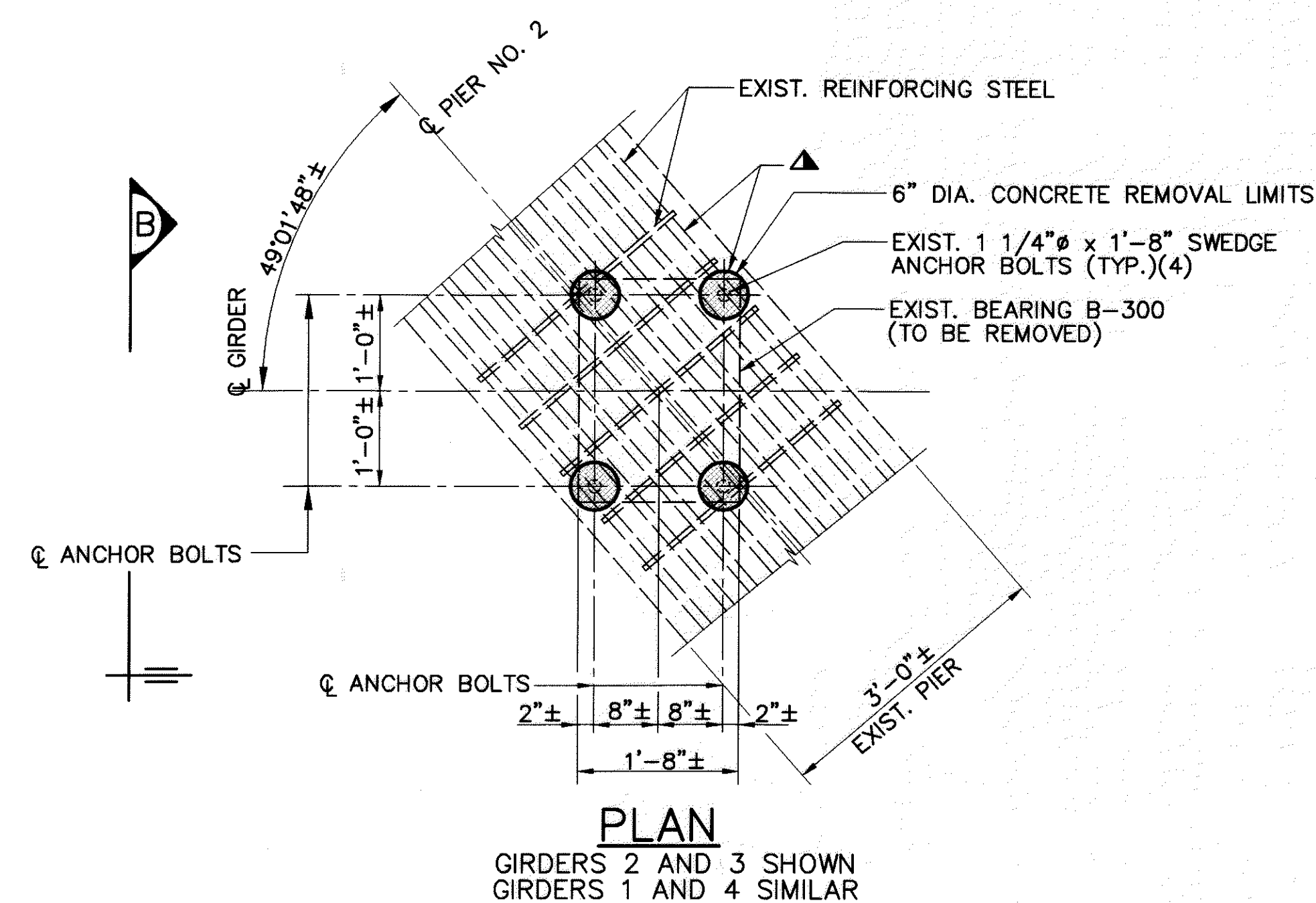
PLAN
EAST PARAPET

NOTES:

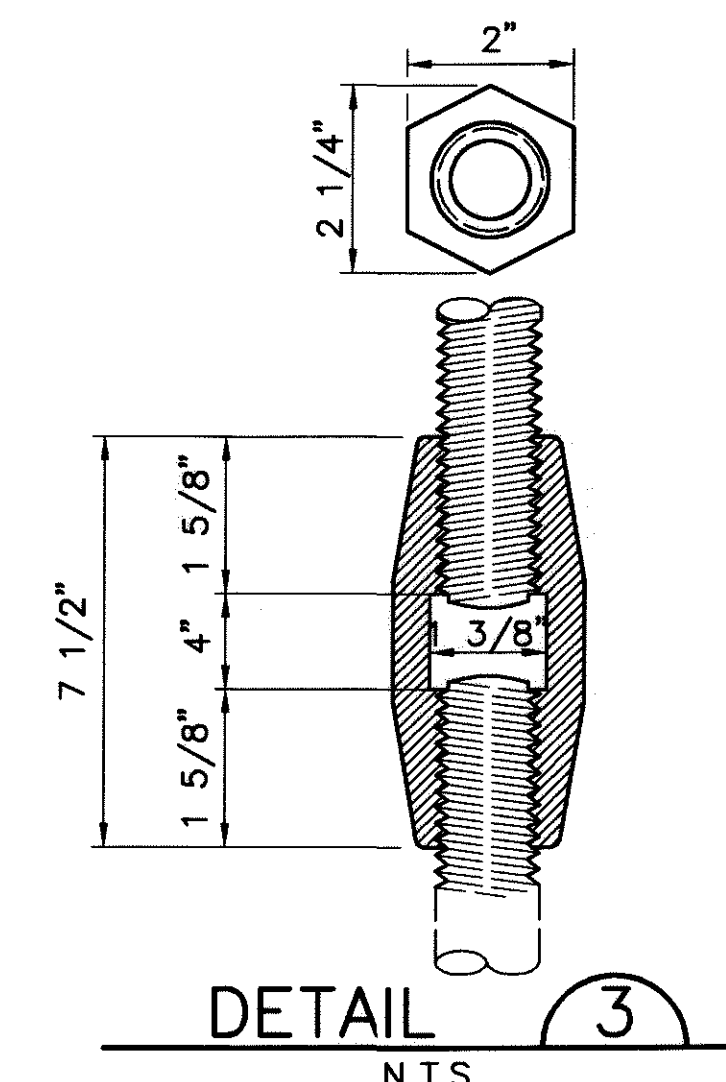
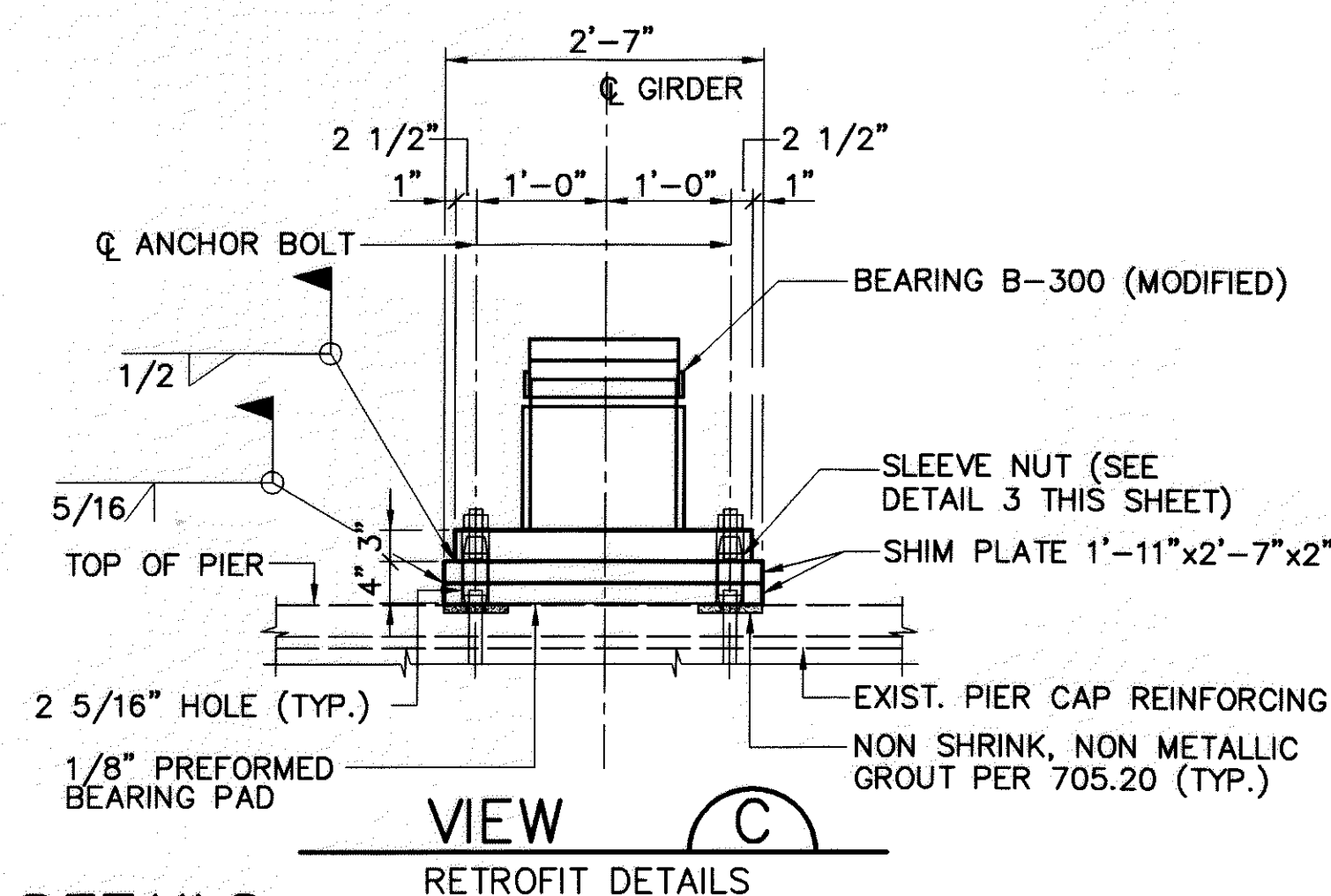
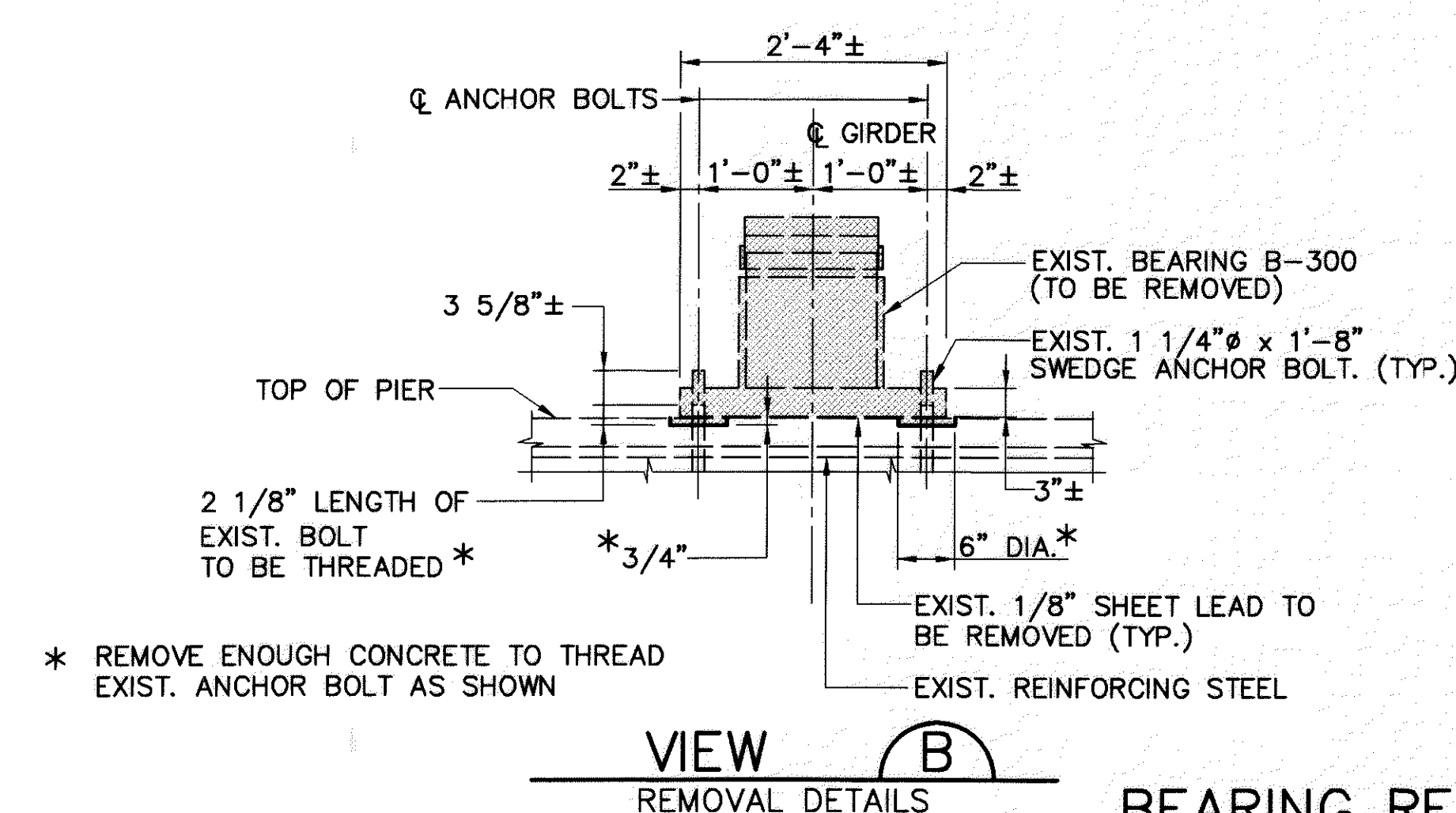
1. PREFIX "S" SHALL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINF. STEEL SHALL BE EPOXY COATED.
3. FOR SECTIONS F, G, AND H, SEE SHT. NO. 12/13.
4. FOR ADDITIONAL NOTES, SEE SHT. NO. 9/13.



AMBIENT TEMPERATURE AT JOINT INSTALLATION (°F)	DIMENSION "A" (IN.)	
	REAR ABUT.	FRWD. ABUT.
90	1 5/8"	1 7/8"
80	1 3/4"	1 7/8"
70	1 7/8"	1 15/16"
60	2"	2"
50	2 1/8"	2 1/16"
40	2 1/4"	2 1/8"
30	2 3/8"	2 1/8"



- NOTES:**
- ITEM 516 - BEARING DEVICE, BOLSTER, AS PER PLAN. THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROVIDE B-300 (MODIFIED) BEARINGS AND SHIM PLATES AT PIER NO. 2 IN ACCORDANCE WITH ITEM 516 AND AS MODIFIED HEREIN. THE BEARINGS SHALL BE IN ACCORDANCE WITH STD. DWG. NO. RB-1-55 EXCEPT THAT THE MASONRY PLATE AND 1/8" PERFORMED BEARING PAD ELEMENTS SHALL BE AS DETAILED. INCLUDED SHALL BE THE INSTALLATION OF (2)-2" THICK STEEL SHIMS AS DETAILED PLUS ANY ADDITIONAL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT. THE CONTRACTOR SHALL ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO GIRDERS AND / OR BEARING DEVICES ARE "FLOATING". ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - BEARING DEVICE, BOLSTER, AS PER PLAN.
 - FOR ADDITIONAL DETAILS AND NOTES, REFER TO STD. DWG. NO. EXJ-4-87.
 - INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF GIRDERS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER OF THE SUPPORT/ARMOR SHALL BY ADJUSTING THE CONNECTION ANGLES AND BOLTS BETWEEN GIRDER' AND EXPANSION JOINT.
 - FOR LOCATION OF SECTIONS F, G, AND H, SEE SHT. NO. 11/13.



- LEGEND**
- ▲ REINF. STEEL AND ANCHOR BOLT LOCATIONS AS SHOWN ARE BASED ON EXIST. PLAN AND STANDARD DRAWING INFORMATION. DURING CONSTRUCTION THE REBARS OR ANCHOR BOLTS MAY HAVE BEEN MOVED TO AVOID INTERFERENCE. CONTRACTOR SHALL THEREFORE FIELD VERIFY THE LOCATION OF ANCHOR BOLTS PRIOR TO FABRICATING THE BEARINGS AND SHIM PLATES.
 - = THIS DIMENSION IS THE SUM OF (2 X STEEL RETAINER WIDTH + DIM. "A")
 - = INDICATES REMOVAL LIMITS

ABUTMENT

MARK	NUMBER			LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS			SERIES INC.
	REAR	FRWD	TOTAL				A	B	C	
A501	5	8	13	7' 5"	101	132	0' 2 3/4"	5 1/4"	1' 1"	
A502	3	6	9	5' 6"	52	134				
A503	5	10	15	5' 6"	86	ST				
A504	1	7	8	30' 0"	250	ST				
A505	3		3	39' 6"	124	ST				
A506	3		3	38' 5"	120	ST				
A507	1		1	13' 2"	14	ST				
A508	4	4	8	3' 6"	29	122	2' 0"	2' 0"	1' 6 1/2"	
A509	1		1	4' 0"	4	122	2' 6"	2' 0"	1' 6 1/2"	
A510	1		1	8' 3"	9	102	4' 11"	3' 6"		
A511	1		1	10' 9"	11	103	1' 2"	4' 11"		
A512	1		1	11' 0"	11	103	1' 5"	4' 11"		
A513	9		9	7' 2"	67	102	4' 11"	2' 5"		
A514	16		16	5' 3"	88	103	2' 8'	1' 5"		
A515	10	16	26	2' 7"	70	ST				
A516	1		1	8' 9"	9	103	1' 2"	3' 11"		
A517	3		3	7' 5"	23	103	1' 2'	3' 3"		
A518	2		2	3' 4"	7	102	2' 0"	1' 6"		
A519	1		1	14' 4"	15	ST				
A520	1		1	13' 6"	14	ST				
A521	4		4	19' 10"	83	ST				
A522	2		2	14' 2"	30	ST				
A523	4		4	18' 11"	79	ST				
A524	2	2	4	6' 0"	25	ST				
A525	3		3	8' 0"	25	ST				
A526	3		3	7' 0"	22	ST				
A527	1		1	38' 11"	41	ST				
A528	2	2	4	5' 10"	24	105	2' 0"	3' 10"	2' 8"	
A529	1	1	2	8' 0"	17	132	0' 3 1/2"	6 3/4"	1' 5"	
A530		7	7	14' 6"	106	ST				
A531		1	1	40' 0"	42	ST				
A532		6	6	4' 8"	29	103	1' 9"	1' 9"		
A533		6	6	6' 10"	43	104	1' 9"	3' 9"	1' 9"	
A534		3	3	7' 11"	25	103	1' 2"	3' 6"		
A535		1	1	9' 1"	9	103	1' 6"	3' 11"		
A536		3	3	5' 0"	16	ST				
A537		3	3	4' 0"	13	ST				
A538		2	2	8' 9"	18	103	1' 2"	3' 11"		
A539		3	3	16' 11"	53	ST				
A540		3	3	15' 10"	50	ST				
A541		2	2	11' 3"	23	ST				
A542		4	4	13' 0"	54	ST				
A543		20	20	5' 9"	120	103	2' 8"	1' 8"		
A544	8	16	24	10' 0"	250	ST				
A545		9	9	2' 10"	27	ST				
A546S		1 SER OF 10	1 SER OF 10	7' 6" TO 7' 11"	80	102	5' 2" TO 5' 7"	2' 6"		0' 1/2"
A547		1	1	8' 7"	9	103	1' 2"	3' 10"		
A548		3	3	7' 5"	23	103	1' 2"	3' 3"		
A549		1	1	13' 9"	14	ST				
A550		1	1	14' 8"	15	ST				
A551		3	3	19' 5"	61	ST				
A552		3	3	20' 4"	64	ST				
A553		2	2	17' 10"	37	ST				
A554		3	3	7' 7"	24	ST				
A555		3	3	8' 7"	27	ST				
A557	1		1	6' 2"	6	104	3' 2"	2' 5"	0' 10"	
A558	1		1	4' 10"	5	104	3' 2"	1' 1"	0' 10"	
A559	1		1	7' 6"	8	135				
A560	1		1	7' 3"	8	136	0' 4"			
A561	1		1	8' 6"	9	136	1' 8"			
A562	6		6	1' 5"	9	ST				
A563	9		9	1' 9"	16	ST				
A564		4	4	4' 0"	17	105	2' 0"	2' 0"	1' 6"	

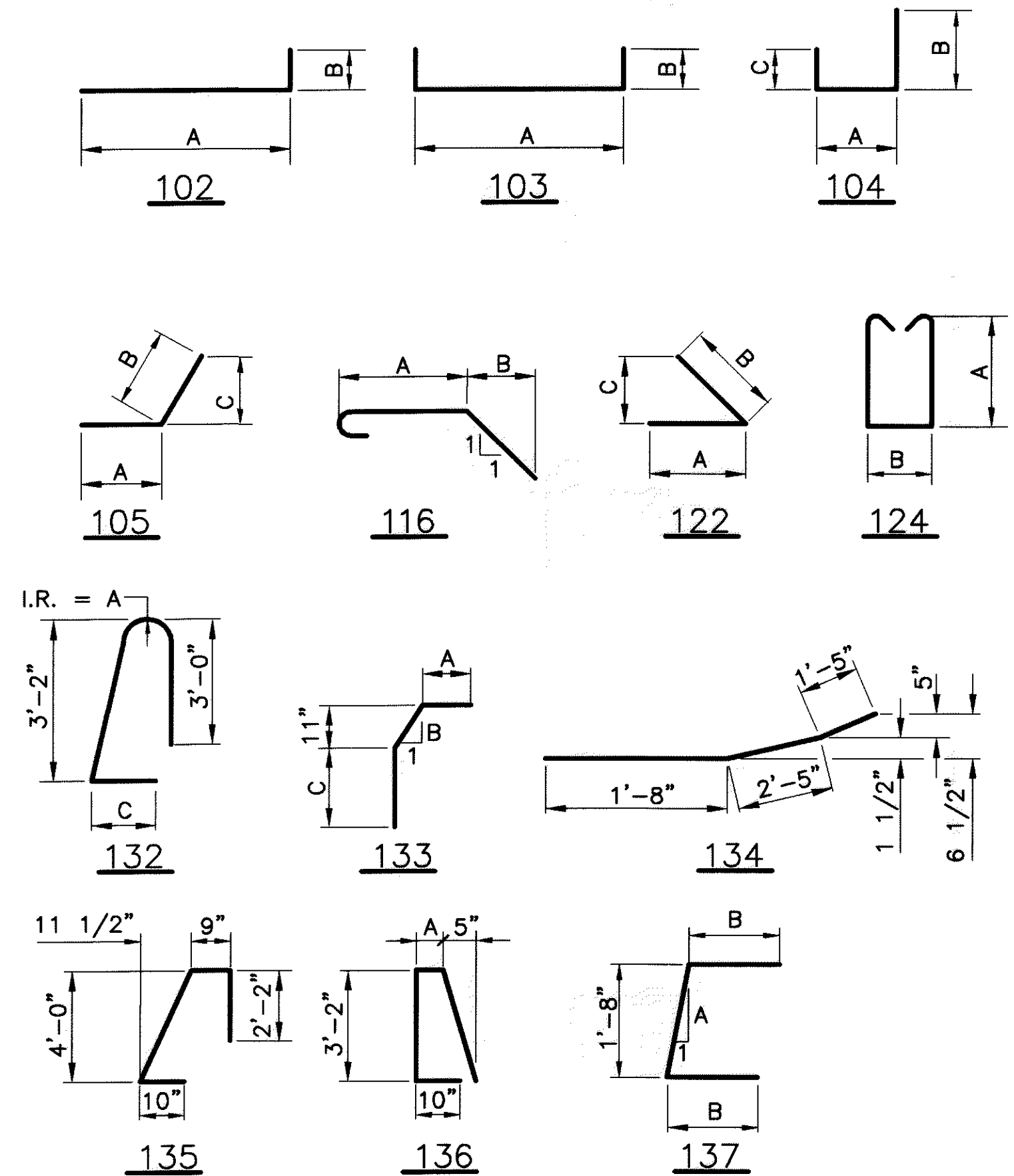
ABUTMENT

MARK	NUMBER			LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS			SERIES INC.
	REAR	FRWD	TOTAL				A	B	C	
A602	5		5	5' 4"	40	133	1' 1"	5 1/4"	3' 5"	
A603	10	20	30	5' 0"	225	ST				
A604S	2 SER OF 10	4 SER OF 10	6 SER OF 10	5' 10" TO 6' 7"	559	ST				0' 1"
A605	6	9	15	4' 2"	94	ST				
A606	31		31	6' 10"	318	104	0' 11"	4' 3"	2' 0"	
A607	7		7	6' 11"	73	104	0' 11"	4' 4"	2' 0"	
A608	31		31	4' 3"	198	102	3' 0"	1' 5"		
A609	6		6	4' 4"	39	102	3' 1"	1' 5"		
A610	1	1	2	6' 0"	18	133	1' 5"	6 3/4"	3' 5"	
A611	1		1	7' 10"	12	ST				
A614		30	30	6' 9"	304	104	0' 11"	4' 2"	2' 0"	
A615		30	30	4' 2"	188	102	2' 11"	1' 5"		
A616		5	5	7' 5"	56	104	0' 11"	4' 10"	2' 0"	
A617		5	5	4' 10"	36	102	3' 7"	1' 5"		
A619		3	3	7' 8"	35	104	0' 11"	5' 1"	2' 0"	
A620		4	4	5' 8"	34	102	3' 10"	1' 5"		
A621		1	1	5' 0"	8	ST				
A622		6	6	5' 4"	48	133	1' 1"	5 1/4"	3' 4"	
A623		2	2	5' 5"	16	133	1' 1"	5 1/4"	3' 5"	
A624		1	1	8' 2"	12	ST				
A625	3		3	3' 0"	14	ST				
A626	2		2	3' 2"	10	105	1' 2"	2' 0"	1' 4"	
A627		1	1	6' 10"	10	104	0' 11"	3' 11"	2' 0"	
A801	20	20	40	5' 7"	596	116	3' 4"	1' 0"		

SLAB

MARK	NO.	LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS			SERIES INC.
					A	B	C	
S401	454	30' 0"	9,098	ST				
S402	45	18' 10"	566	ST				
S501	558	30' 0"	17,460	ST				
S502	47	23' 0"	1,127	ST				
S503S	2 SER OF 49	3' 6" TO 31' 4"	1,780	ST				0' 7"
S505	465	31' 8"	15,358	ST				
S506S	2 SER OF 56	3' 0 1/4" TO 31' 4"	2,007	ST				0' 6 1/8"
S507	24	2' 11"	73	ST				
S510	88	20' 0"	1,836	ST				
S511	6	2' 5"	15	ST				
S513	276	17' 8"	5,086	ST				
S514	4	7' 2"	30	132	0' 3 1/2"	5 1/4"	1' 4 1/2"	
S515	604	7' 9"	4,882	132	0' 2 3/4"	5 1/4"	1' 11"	
S516	3	25' 7"	80	ST				
S517	138	13' 7"	1,955	ST				
S518	138	22' 6"	3,239	ST				
S601	20	30' 0"	901	ST				
S602	2	26' 4"	79	ST				
S603	608	2' 7"	2,359	102	1' 1"	1' 8"		
S604	4	4' 4"	26	137	5 1/4"	1' 6"		
S606	604	3' 7"	3,251	137	5 1/4"	1' 1"		
S608	1	5' 10"	9	124	2' 9"	0' 8"		
S609	1	6' 6"	10	124	3' 1"	0' 8"		

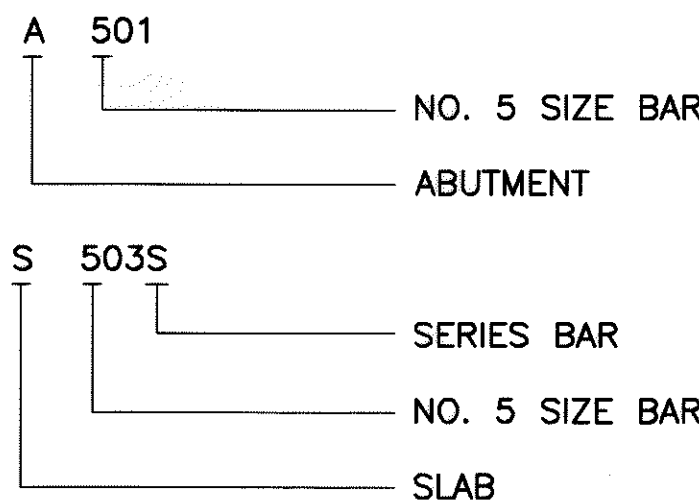
STANDARD BAR TYPES



REINFORCING STEEL NOTES:

1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
2. ALL BARS ARE EPOXY COATED.
3. I.R. DENOTES INSIDE RADIUS
4. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST ALPHABETICAL LETTER INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES INDICATES BAR SIZE NUMBER.

EXAMPLES:



SUMMARY AND GRAND TOTAL OF BAR WEIGHTS

ABUTMENTS	5,703
SLAB	71,227
GRAND TOTAL	76,930