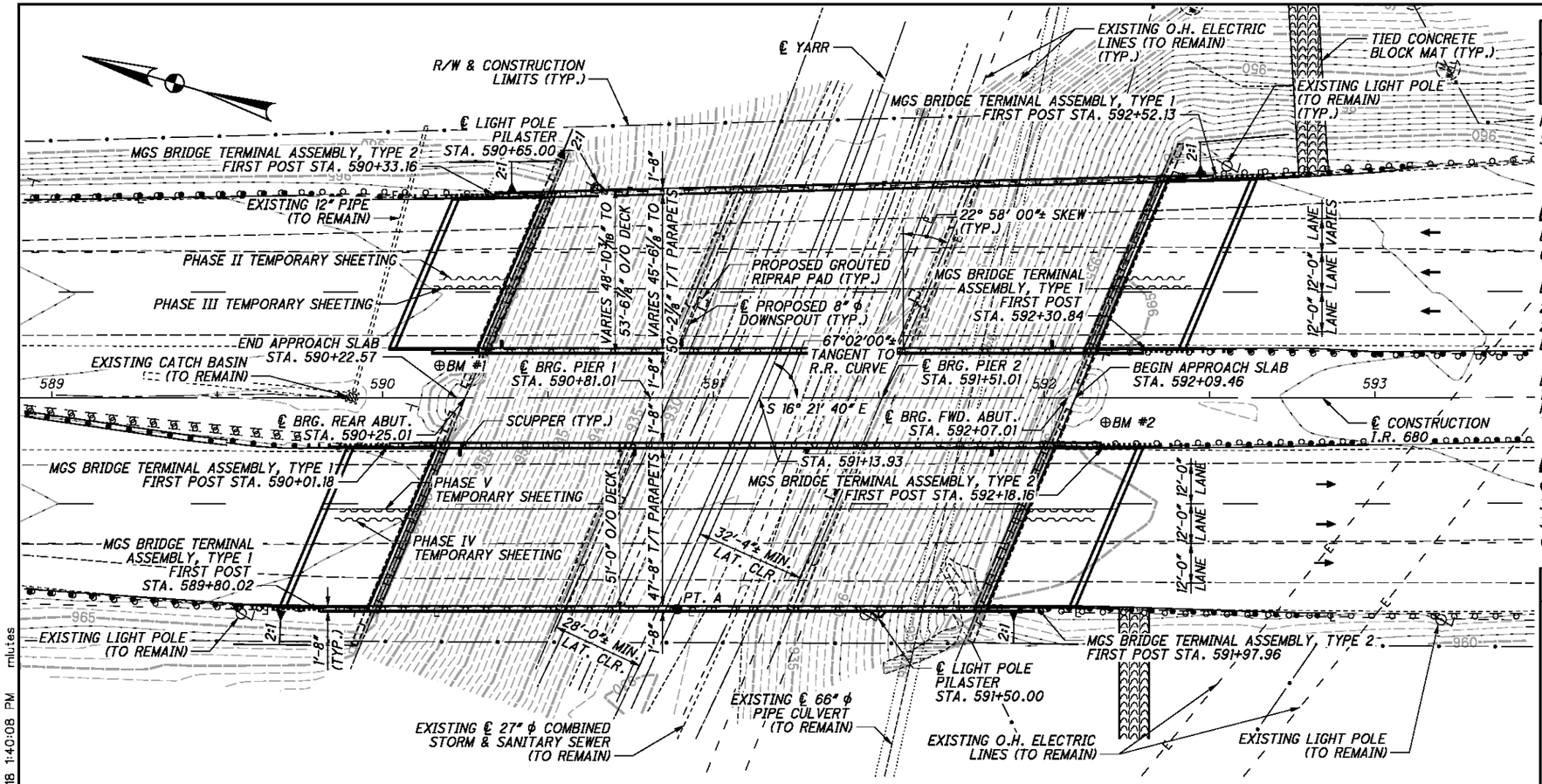
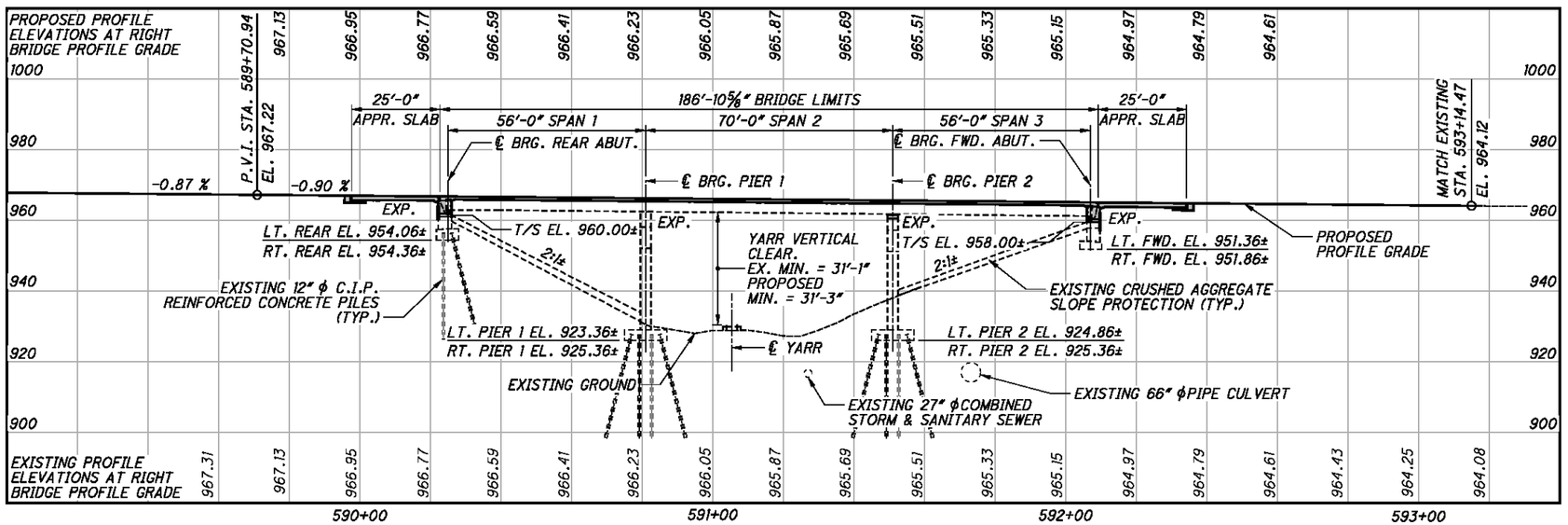


PLAN



PROFILE ALONG PROFILE GRADE

BENCHMARK DATA

BM #1 STA. 590+17.22, 9.82 LT., EL. 966.58, IRON PIN SET
BM #2 STA. 592+18.57, 7.33 RT., EL. 964.68, IRON PIN SET

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 2/167

NOTES

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

DESIGN TRAFFIC:
2020 ADT = 48,000 2020 ADTT = 4320
2040 ADT = 49,000 2040 ADTT = 4410
DIRECTIONAL DISTRIBUTION = 53%

DATUM ADJUSTMENT: ELEVATIONS FROM THE EXISTING PLANS CIRCA 1965 ARE BASED ON AN OLDER SURVEY DATUM. ELEVATIONS USED FROM THE EXISTING PLANS ARE ADJUSTED BY SUBTRACTING 0.64 FEET TO BE CONSISTENT WITH THE CURRENT (2015) SURVEY DATUM.

LEGEND

● 23'-0" REQUIRED MINIMUM VERTICAL CLEARANCE
31'-1" ACTUAL EX. MINIMUM VERTICAL CLEARANCE
31'-3" PROPOSED MINIMUM VERTICAL CLEARANCE
⊕ BENCHMARK

EXISTING STRUCTURE

TYPE: 3-SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 56'-0"±, 70'-0"±, 56'-0"± C/C BEARING
ROADWAY: RIGHT 47'-8" T/T CURBS, LEFT VARIES.
LOADING: CF 2000 (57)
SKEW: 22° 58' 00"± LEFT FORWARD
APPROACH SLABS: 25'-0"± AS-1-54
ALIGNMENT: TANGENT
WEARING SURFACE: 3"± ASPHALT CONCRETE
CROWN: 0.016 FT/FT
STRUCTURE FILE NUMBER: 5006724 (R), 5006694 (L)
DATE BUILT: 07/01/1967
DISPOSITION: TO BE REHABILITATED

PROPOSED STRUCTURE

PROPOSED WORK: PROVIDE MOMENT PLATE RETROFITS, COMPOSITE CONCRETE DECK, RAISE PIER CAPS, RAISE ABUTMENT BEAM SEATS, REPLACE BEARINGS, AND CONVERT ABUTMENTS TO SEMI-INTEGRAL

SPANS: 56'-0"±, 70'-0"±, 56'-0"± C/C BEARING
ROADWAY: 47'-8" (R) TOE/TOE PARAPET, VARIES 45'-6⅛" TO 50'-2⅞" (L) TOE/TOE PARAPET
LOADING: HS25 CASE II AND 60 PSF FWS - BEAMS, DECK, & BEARINGS
CF 2000 (57) - ABUTMENTS & PIERS
SKEW: 22° 58' 00"± LEFT FORWARD
WEARING SURFACE: 1" MONOLITHIC WEARING SURFACE
APPROACH SLABS: 25'-0" LONG (AS-1-15 & AS-2-15) TYPE C INSTALLATION
ALIGNMENT: TANGENT
CROWN: 0.016 FT/FT AND 0.04 FT/FT
COORDINATES: LATITUDE (R) N 41° 06' 45.72" (L) N 41° 06' 45.72"
LONGITUDE (R) W 80° 41' 31.24" (L) W 80° 41' 29.59"

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1484 West 6th Street Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		5006724/5006694	

MAHONING COUNTY
STA. 590+22.57
STA. 592+09.46

SITE PLAN
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

1/47
123/169

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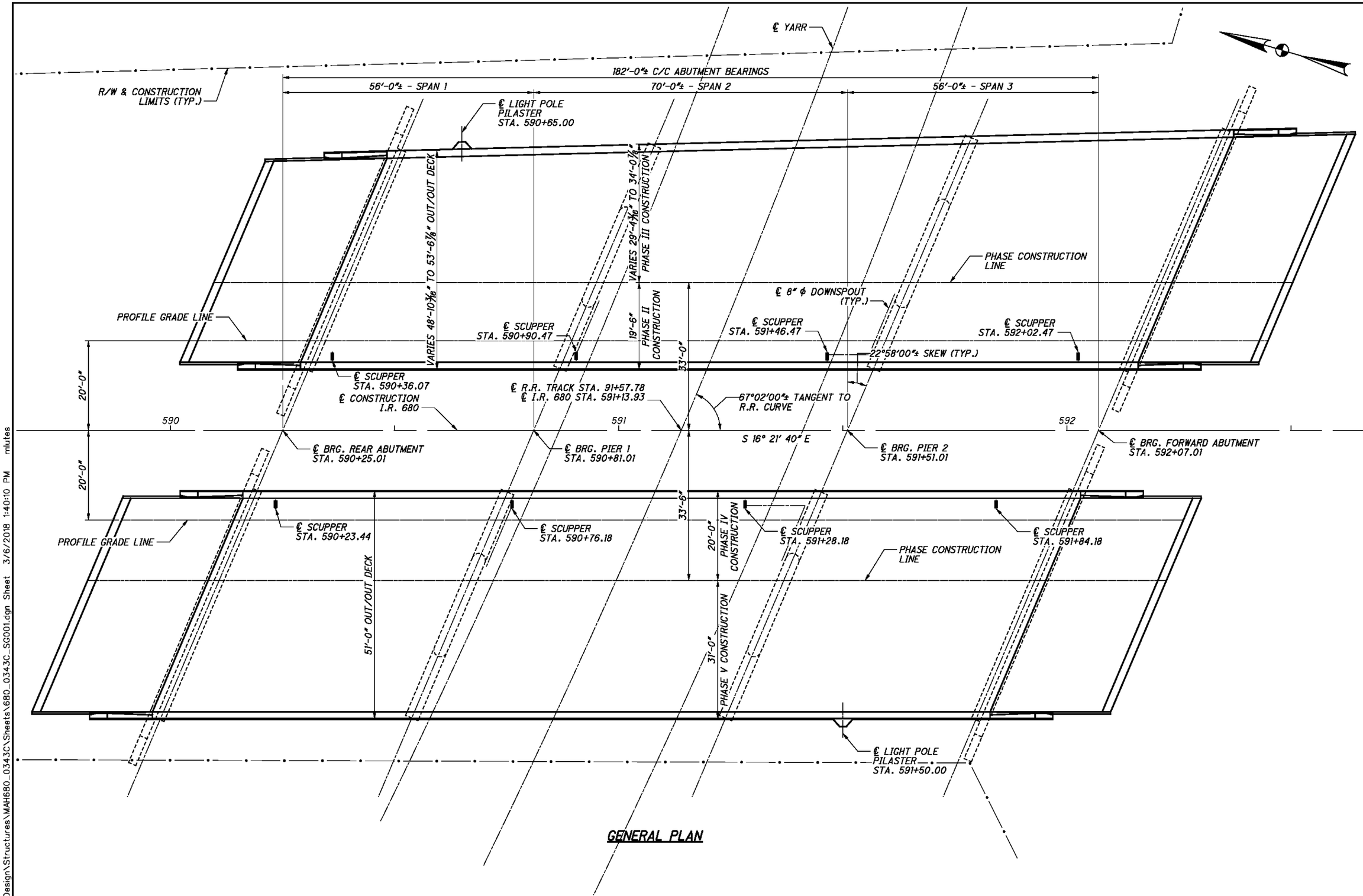

GENERAL PLAN

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DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1480 West 9th Street - Cleveland, Ohio 44113
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DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		5006724/5006694	

GENERAL PLAN
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

2 / 47

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-15	REVISED 7-17-15
AS-2-15	REVISED 7-17-15
GSD-1-96	REVISED 7-19-02
SBR-1-13	REVISED 1-17-14
SICD-1-96	REVISED 7-18-14
SICD-2-14	REVISED 7-18-14
PCB-91	REVISED 1-18-13

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

800	DATED 7-21-17
869	DATED 10-17-14

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002 - 17TH EDITION AND THE ODOT BRIDGE DESIGN MANUAL, 2004.

DESIGN LOADING:

HS25 CASE I AND THE ALTERNATE MILITARY LOADING
FUTURE WEARING SURFACE (FWS) OF 60 PSF - BEAMS, DECK, AND BEARINGS
CF 2000 (57) - ABUTMENTS AND PIERS

DESIGN STRESSES:

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)
REINFORCING STEEL - ASTM A615 OR A996 GRADE 60
MINIMUM YIELD STRENGTH 60,000 PSI
PROPOSED CROSSFRAMES AND BOLTED COVER PLATE RETROFITS STEEL - ASTM A709 GRADE 50
MINIMUM YIELD STRENGTH 50,000 PSI
EXISTING STRUCTURAL STEEL - ASTM A36
MINIMUM YIELD STRENGTH 36,000 PSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

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

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

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

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.6 KIPS FOR A TOTAL MACHINE LOAD OF 20.8 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48".

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

PROPOSED WORK:

THE FOLLOWING IS A GENERAL SUMMARY OF THE PROPOSED WORK FOR THIS STRUCTURE; INCIDENTAL ITEMS ARE NOT INCLUDED.

1. REMOVE EXISTING DECK OVERLAY, DECK, APPROACH SLABS, PARAPETS, BACKWALLS, PORTIONS OF BEAM SEATS, EXPANSION JOINTS, AND END DIAPHRAGMS.
2. JACK SUPERSTRUCTURE AND REMOVE EXISTING ABUTMENT AND PIER BEARINGS.
3. RECONSTRUCT BEAM SEATS.
4. PLACE NEW ELASTOMERIC BEARINGS.
5. ERECT NEW MOMENT PLATE RETROFITS AND ADJUST CROSSFRAMES AS NECESSARY.
6. PREPARE SURFACES AND PAINT STRUCTURAL STEEL.
7. WELD NEW SHEAR STUDS.
8. CONSTRUCT ABUTMENT DIAPHRAGMS.
9. CONSTRUCT NEW DECK AND APPROACH SLABS, AND INSTALL CROSS FRAMES.
10. CONSTRUCT NEW PARAPETS AND SEAL CONCRETE SURFACES WITH EPOXY-URETHANE.
11. OPEN BRIDGE TO TRAFFIC.

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

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING PARAPETS, RAILINGS, DECK JOINTS, PLYWOOD DECKING, AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS:
BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT.

AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PREFORMING THE REPAIR.

EXISTING WELDED ATTACHMENTS:
REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

CUT LINE CONSTRUCTION JOINT PREPARATION FOR SUBSTRUCTURES:
SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE DIRECTED IN THE PLANS LEAVE EXISTING REINFORCING STEEL IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING REINFORCEMENT TO REMOVE LOOSE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL:
REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

MEASUREMENT & PAYMENT:
THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ITEM 503, COFFERDAMS AND EXCAVATION BRACING:

THE DESIGN SHOWN IN THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN IN THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH CMS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

THE STEEL SHEET PILING SHALL CONFORM TO ASTM A328 AND SHALL HAVE THE FOLLOWING:

LOCATION	REAR & FORWARD ABUTMENTS
SECTION MODULUS REQUIRED (CU. IN/FT.) (MIN.)	26
MINIMUM YIELD STRESS, Fy (KSI)	39
DESIGN EXCAVATION DEPTH (FT.)	12
DESIGN EMBEDMENT DEPTH (FT.)	20
DESIGN TOTAL DEPTH (FT.)	32

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

PLACE AND COMPACT BACKFILL MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE BACKFILL BEHIND THE ABUTMENTS.

ITEM 509, EPOXY COATED REINFORCING STEEL, AS PER PLAN:

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00

ITEM 510, DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT:

DRILL DOWEL HOLES WHERE SHOWN IN THE PLANS. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING EPOXY GROUT, 705.20. PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

ITEM 513, STRUCTURAL STEEL MISC.: REPLACEMENT OF CROSSFRAMES:

THIS WORK CONSISTS OF REPLACING CROSSFRAMES AS INDICATED IN THE PLANS IN ORDER TO FACILITATE PARTIAL WIDTH CONSTRUCTION. THIS ITEM WILL INCLUDE SUPPLYING NEW CROSSFRAMES AND WELDING THEM BACK TO THE ORIGINAL POSITIONS OF THE CROSSFRAMES THAT ARE BEING REPLACED. AFTER REMOVAL, ALL WELDS WILL BE GROUND SMOOTH IN PREPARATION OF WELDING THE NEW CROSSFRAMES IN PLACE. ALL CROSSFRAMES TO BE REPLACED WILL BE FIELD MEASURED TO VERIFY SIZE AND LENGTHS PRIOR TO ORDERING MATERIAL. THE NEW CROSSFRAMES WILL BE WELDED TO THE GIRDERS OR BEAMS ON BOTH SIDES OF THE VERTICAL LEG AND ON THE TOP SIDE OF THE HORIZONTAL LEG. THE ANGLE WILL BE WELDED USING A ¼" CONTINUOUS FILLET WELD. STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. AISC CERTIFICATION IS NOT REQUIRED. THE CONTRACTOR WILL TAKE THE NECESSARY FIELD MEASUREMENTS TO VERIFY MEASUREMENTS BEFORE ORDERING MATERIALS. THE ENGINEER WILL HAVE THE AUTHORITY AND THE RESPONSIBILITY FOR ENSURING THAT THE STEEL IS ACCEPTABLE. AFTER FABRICATION THE PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH ITEM 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM, EXCEPT FOR PAINT, WILL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL MISC.: REPLACEMENT OF CROSSFRAMES.

ITEM 514, PAINTING OF EXISTING STRUCTURAL STEEL:

ALL EXISTING STRUCTURAL STEEL SHALL BE PAINTED USING THE OZEU PAINT SYSTEM. THE PAINT COLOR SHALL MEET FEDERAL COLOR #15526 (BLUE).

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1480 West 9th Street - Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724/5006694	

GENERAL NOTES - 1
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

3 / 47

125
169

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS. SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, 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. THE DEPARTMENT WILL NOT PAY FOR THE COST OF REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE BRIDGE SHALL BE RAISED UNIFORMLY IN A TRANSVERSE DIRECTION IN ORDER TO AVOID INDUCING STRESSES INTO THE SUPERSTRUCTURE. DIFFERENTIAL MOVEMENT BETWEEN STRINGERS SHALL BE LIMITED TO 1/4 INCH.

THE ESTIMATED JACKING LOADS ARE 3.8 KIPS/BEAM AT THE ABUTMENTS AND 13.3 KIPS/BEAM AT THE PIERS. THESE LOADS INCLUDE THE WEIGHT OF THE EXISTING STRUCTURAL STEEL ONLY. THE ESTIMATED JACKING AMOUNT IS 2"±.

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

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 519, PATCHING CONCRETE SURFACES, 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.

MECHANICAL CONNECTORS FOR REINFORCING STEEL:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED WHERE REQUIRED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS SHOWN ON THE PLAN.

CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATING FOR BOTH THE CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY, MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTOR AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509. THE COST OF FURNISHING THE CONNECTORS AND EXTENSIONS SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN.

RAILROAD NOTES

I. DEMOLITION OF EXISTING STRUCTURES:

RAILROAD TRACKS SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION OF PORTIONS OF EXISTING STRUCTURE AND REPLACEMENT OF SUPERSTRUCTURE. GEO-FABRIC OR CANVAS SHALL BE PLACED OVER THE TRACK STRUCTURE TO KEEP THE BALLAST CLEAN.

DURING DEMOLITION OF THE DECKS, A PROTECTION SHIELD SHALL BE ERECTED OVER THE TRACK TO CATCH FALLING DEBRIS. THE PROTECTION SHIELD SHALL BE SUPPORTED FROM GIRDERS OR BEAMS AND SHALL NOT BE LOWER THAN ALLOWED TEMPORARY CLEARANCE. THE DECK SHALL BE REMOVED BY CUTTING IT IN SECTIONS AND LIFTING OUT. LARGE PIECES OF DECK SHALL NOT BE ALLOWED TO FALL ON THE PROTECTION SHIELD. NO DEBRIS SHALL FALL TO THE TRACKS OR PROPERTY BELOW.

THE CONTRACTOR SHALL SUBMIT DETAILED PLANS OF THE PROTECTION SHIELD TO THE RAILROAD FOR APPROVAL PRIOR TO THE START OF DEMOLITION. THE PLANS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SEAL AND SIGNATURE.

BLASTING WILL NOT BE PERMITTED TO DEMOLISH A STRUCTURE OVER OR WITHIN RAILROAD RIGHT-OF-WAY.

THE CONTRACTOR WILL NEED CONSTRUCTION ACCESS UNDERNEATH THE BRIDGE IN CASE MATERIAL FALLS DURING DEMOLITION.

II. TEMPORARY CONSTRUCTION CLEARANCE:

TEMPORARY MINIMUM CONSTRUCTION CLEARANCE OF 22 FT. VERTICAL ABOVE TOP OF RAIL SHALL BE MAINTAINED AT ALL TIMES. A TEMPORARY HORIZONTAL CLEARANCE OF 13 FT. MUST BE MAINTAINED FOR ANY FORMWORK, FALSEWORK, OR TEMPORARY OBSTRUCTION.

RAILROAD MANTENANCE DRIVES MUST BE KEPT IN SERVICE AT ALL TIMES.

III. OTHER RAILROAD REQUIREMENTS:

SEE SPECIAL CLAUSES IN THE PROPOSAL.

IV. RAILROAD COORDINATION:

ALL MOVEMENTS OF EQUIPMENT WITHIN RAILROAD RIGHT-OF-WAY MUST BE COORDINATED WITH THE RAILROAD FLAGGER.

THE ROADWAY AUTHORITY, OR DESIGNATED CONTRACTOR, SHALL COORDINATE WITH THE RAILROAD WHENEVER THE CONTRACTOR'S WORK ACTIVITIES ARE LOCATED OVER, UNDER, OR WITHIN THE RAILROAD RIGHT-OF-WAY. TO SCHEDULE A RAILROAD FLAGGER OR COORDINATE ALL RAILROAD ACTIVITIES, CONTACT THE FOLLOWING RAILROAD PERSONNEL:

JERRY KLEIN - YARR - YOUNGSTOWN & AUSTINTOWN RAILROAD, INC (YARR),
47849 PAPERMILL ROAD, COSHOCTON, OH 43812
OFFICE: 904-314-4007
EMAIL: JKLEIN@GWRR.COM

AND JOSEPH BOLZENIUS, PATRICK ENGINEERING
3650 OLENTANGY RIVER ROAD, SUITE 110 COLUMBUS, OH 43214
OFFICE: 614-498-0339
EMAIL: JBOLZENIUS@PATRICKCO.COM

DURING TRAIN MOVEMENTS THROUGH THE PROJECT LOCATION, VEHICLES, EQUIPMENT, AND PERSONNEL WILL NOT BE ALLOWED TO OPERATE WITHIN 25 FEET OF THE TRACK.

ANY DAMAGE CAUSED BY THE ROADWAY WORK TO THE TRACK OR RAILROAD PROPERTY WILL REQUIRE REPAIR IMMEDIATELY UPON NOTIFICATION FROM THE RAILROAD OR THEIR DESIGNATED PERSONNEL OR CONTRACTOR. IF THE DAMAGE AFFECTS THE TRACK, TRACK STRUCTURE, RAILROAD FACILITIES, OR TRAIN OPERATIONS AS DETERMINED BY THE RAILROAD, THE REPAIRS WILL BE PERFORMED BY THE RAILROAD AT THE ROADWAY AUTHORITY'S EXPRENSE INCLUDING ALL ASSOCIATED COSTS OF DELAYS OF THE RAILROAD.

V. PAINTING:

THE BEAM PREPARATION/PAINTING OPERATIONS SHALL INCLUDE PROVISIONS FOR CONTAINMENT OF MATERIALS, AND THE RAILROAD WILL REQUIRE A PLAN OF OPERATIONS INCLUDING WORKING DRAWINGS.

OBJECT MARKERS AND STRUCTURE IDENTIFICATION SIGNS

OBJECT MARKERS WILL BE PLACED ON EACH APPROACH OFF THE LEFT AND RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. ONE OM-3L AND ONE OM-3R WILL BE INSTALLED AT EACH APPROACH. THE SIGNS WILL BE MOUNTED ON NEW NO.2 POSTS AND SHALL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 10.5' IN LENGTH.

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE INSTALLED ON THE SAME POST AND DIRECTLY BELOW THE OBJECT MARKER OFF THE RIGHT SHOULDER ON EACH APPROACH. A QUANTITY OF ONE SIGN WILL BE INSTALLED AT EACH APPROACH. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

FOR ADDITIONAL SIGN INFORMATION AND LOCATIONS, SEE SHEETS 71 TO 72.

THE FOLLOWING QUANITITES HAVE BEEN INCLUDED FOR EACH APPROACH:

LEFT BRIDGE:
ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 21 FT
ITEM 630 - SIGN, FLAT SHEET, 6 SF
ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SF
ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 3 EA
ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 2 EA

RIGHT BRIDGE:
ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 21 FT
ITEM 630 - SIGN, FLAT SHEET, 6 SF
ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SF
ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 3 EA
ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 2 EA

ASBESTOS NOTIFICATION STRUCTURE NO. MAH-680-0343L (SFN: 5006694)

AN ASBESTOS SURVEY OF THE IR-680 BRIDGE OVER CSX RAILROAD (SFN: 5006694) FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, 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
345 OAK HILL AVE., SUITE 200
YOUNGSTOWN, OH 44502
ATTN.: TARA CIOFFI
(330) 743-3333
FAX: (330) 743-3960

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON, AKRON, OHIO 44306.

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 FOOT SPAN, AS PER PLAN.

ASBESTOS NOTIFICATION STRUCTURE NO. MAH-680-0343R (SFN: 5006724)

AN ASBESTOS SURVEY OF THE IR-680 BRIDGE OVER CSX RAILROAD (SFN: 5006724) FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, 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:

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ATTN.: TARA CIOFFI
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AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON, AKRON, OHIO 44306

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 FOOT SPAN, AS PER PLAN.

ABBREVIATIONS:

ABUT. - ABUTMENT
APPR. - APPROACH
B - BOTTOM
BOT. - BOTTOM
BRG. - BEARING
CLR. - CLEAR
C.J. - CONSTRUCTION JOINT
CVN - CHARPY V-NOTCH
DIA. - DIAMETER
DL - DEAD LOAD
EA. - EACH
EL. OR ELEV. - ELEVATION
EQ. - EQUAL
E.F. - EACH FACE
E.S. - EACH SIDE
EX. - EXISTING
EXP. - EXPANSION
F.A. - FORWARD ABUTMENT
F/F - FACE TO FACE
F.S. - FAR SIDE
FT. - FOOT OR FEET
FWD. - FORWARD
FWS - FUTURE WEARING SURFACE
IN - INCH
I.R. - INTERSTATE ROUTE
JT. - JOINT
LT. - LEFT
LL - LIVE LOAD
MAX. - MAXIMUM
MIN. - MINIMUM
NO. - NUMBER
N.S. - NEAR SIDE
O/O - OUT TO OUT
P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R.A. - REAR ABUTMENT
RT. - RIGHT
REQ'D. - REQUIRED
SER. - SERIES
SPA. - SPACE OR SPACES
STA. - STATION
T - TOP
T/T - TOE TO TOE
TYP. - TYPICAL
YARR - YOUNGSTOWN & AUSTINTOWN RAILROAD

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724/5006694	

GENERAL NOTES - 2
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

4 / 47

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MADE BY: AEK DATE: 11/9/2016
CHECKED BY: LAH DATE: 11/20/2016

ESTIMATED QUANTITIES - BRIDGE NO. MAH-680-0343L

STRUCTURE FILE NUMBER: 5006694

ITEM	EXTENSION	TOTAL 01/BMS/BR	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER	GEN.	REFERENCE SHEET NO.
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3/47, 4/47, and 11/47
202	22900	202	SY	APPROACH SLAB REMOVED				202	
202	23500	1,270	SY	WEARING COURSE REMOVED				1,270	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING					
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN					3/47
509	10001	116,888	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2,142	978	113,768		3/47
510	10000	234	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	158	76			
511	21522	389	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE			389		
511	33500	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE	2				
511	34450	65	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			65		
511	41010	3	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS		3			
511	44110	11	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	11				
512	10100	1,047	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	124	483	441		
512	33000	3	SY	TYPE 2 WATERPROOFING	3				
512	74000	508	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	37	471			
513	10200	8,673	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF			8,673		
513	20000	3,720	EACH	WELDED STUD SHEAR CONNECTORS			3,720		
513	90000	3,952	LB	STRUCTURAL STEEL, MISC.: (REPLACEMENT OF CROSSFRAMES)			3,952		3/47
514	00100	LS		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL					
514	00200	LS		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT					
514	00300	LS		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT					
514	00400	LS		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT					
514	00504	22	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			22		
514	10000	11	EACH	FINAL INSPECTION REPAIR			11		
516	10010	104	FT	ARMORLESS PREFORMED JOINT SEAL				104	
516	13600	53	SF	1" PREFORMED EXPANSION JOINT FILLER	53				
516	13900	127	SF	2" PREFORMED EXPANSION JOINT FILLER	127				
516	14020	132	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	132				
516	44100	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (13" x 17" x 2.95" WITH 14" x 18" x VARIES LOAD PLATE)		14			
516	44101	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (11" x 15" x 2.5" WITH 12" x 16" x 1.50" LOAD PLATE)	14				24/47
516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					4/47
518	12200	2	EACH	SCUPPERS, INCLUDING SUPPORTS			2		
518	12201	2	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			2		44/47
518	21200	101	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	101				
518	40000	153	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	153				
518	40011	46	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	46				16/47, 17/47, 18/47, and 19/47
518	51101	42	FT	8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN				42	44/47
518	60031	41	FT	PIPE HORIZONTAL CONDUCTOR, AS PER PLAN				41	44/47
519	11101	11	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	11				4/47
526	25000	289	SY	REINFORCED CONCRETE APPROACH SLABS (T=15")				289	
526	90030	104	FT	TYPE C INSTALLATION				104	
601	12000	2	SY	RIPRAP, WITH GROUT				2	
607	39900	365	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			365		
630	02100	21	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				21	
630	80100	6	SF	SIGN, FLAT SHEET				6	
630	80101	1	SF	SIGN, FLAT SHEET, AS PER PLAN (730.2)				1	4/47
630	84900	3	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				3	
630	86002	2	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL				2	

MAH-680-3.25		
1	3/3/18	ADJUSTED QUANTITIES
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

REVIEWED RER DATE 11/27/2015
STRUCTURE FILE NUMBER 5006694
DRAWN AEK REVISED
DESIGNED AEK CHECKED JOL

ESTIMATED QUANTITIES - LEFT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

MADE BY: AEK DATE: 11/9/2016
CHECKED BY: LAH DATE: 11/20/2016

ESTIMATED QUANTITIES - BRIDGE NO. MAH-680-0343R

STRUCTURE FILE NUMBER: 5006724

ITEM	EXTENSION	TOTAL OVMS/BR	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER	GEN.	REFERENCE SHEET NO.
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3/47, 4/47, and 11/47
202	22900	200	SY	APPROACH SLAB REMOVED				200	
202	23500	1,155	SY	WEARING COURSE REMOVED				1,155	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING					
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN					3/47
509	10001	110,709	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2,131	955	107,623		3/47
510	10000	230	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	156	74			
511	21522	381	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE			381		
511	33500	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE	2				
511	34450	65	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			65		
511	41010	3	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS		3			
511	44110	10	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	10				
512	10100	1,049	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	128	483	438		
512	33000	3	SY	TYPE 2 WATERPROOFING	3				
512	74000	484	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	38	446			
513	10200	8,673	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF			8,673		
513	20000	3,696	EACH	WELDED STUD SHEAR CONNECTORS			3,696		
513	90000	3,934	LB	STRUCTURAL STEEL, MISC.: (REPLACEMENT OF CROSSFRAMES)			3,934		3/47
514	00100	LS		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL					
514	00200	LS		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT					
514	00300	LS		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT					
514	00400	LS		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT					
514	00504	22	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			22		
514	10000	11	EACH	FINAL INSPECTION REPAIR			11		
516	10010	104	FT	ARMORLESS PREFORMED JOINT SEAL				104	
516	13600	16	SF	1" PREFORMED EXPANSION JOINT FILLER	16				
516	13900	125	SF	2" PREFORMED EXPANSION JOINT FILLER	125				
516	14020	131	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	131				
516	44100	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (13" x 17" x 2.95" WITH 14" x 18" x VARIES LOAD PLATE)		14			
516	44101	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (11" x 15" x 2.5" WITH 12" x 16" x 1.50" LOAD PLATE)	14				24/47
516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					4/47
518	12200	2	EACH	SCUPPERS, INCLUDING SUPPORTS			2		
518	12201	2	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			2		44/47
518	21200	99	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	99				
518	40000	152	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	152				
518	40011	46	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	46				16/47, 17/47, 18/47, and 19/47
518	51101	42	FT	8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN				42	44/47
518	60031	42	FT	PIPE HORIZONTAL CONDUCTOR, AS PER PLAN				42	44/47
519	11101	29	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	29				4/47
526	25000	288	SY	REINFORCED CONCRETE APPROACH SLABS (T=15")				288	
526	90030	104	FT	TYPE C INSTALLATION				104	
601	12000	2	SY	RIPRAP, WITH GROUT				2	
607	39900	370	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			370		
630	02100	21	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				21	
630	80100	6	SF	SIGN, FLAT SHEET				6	
630	80101	1	SF	SIGN, FLAT SHEET, AS PER PLAN (730.2)				1	4/47
630	84900	3	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				3	
630	86002	2	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL				2	

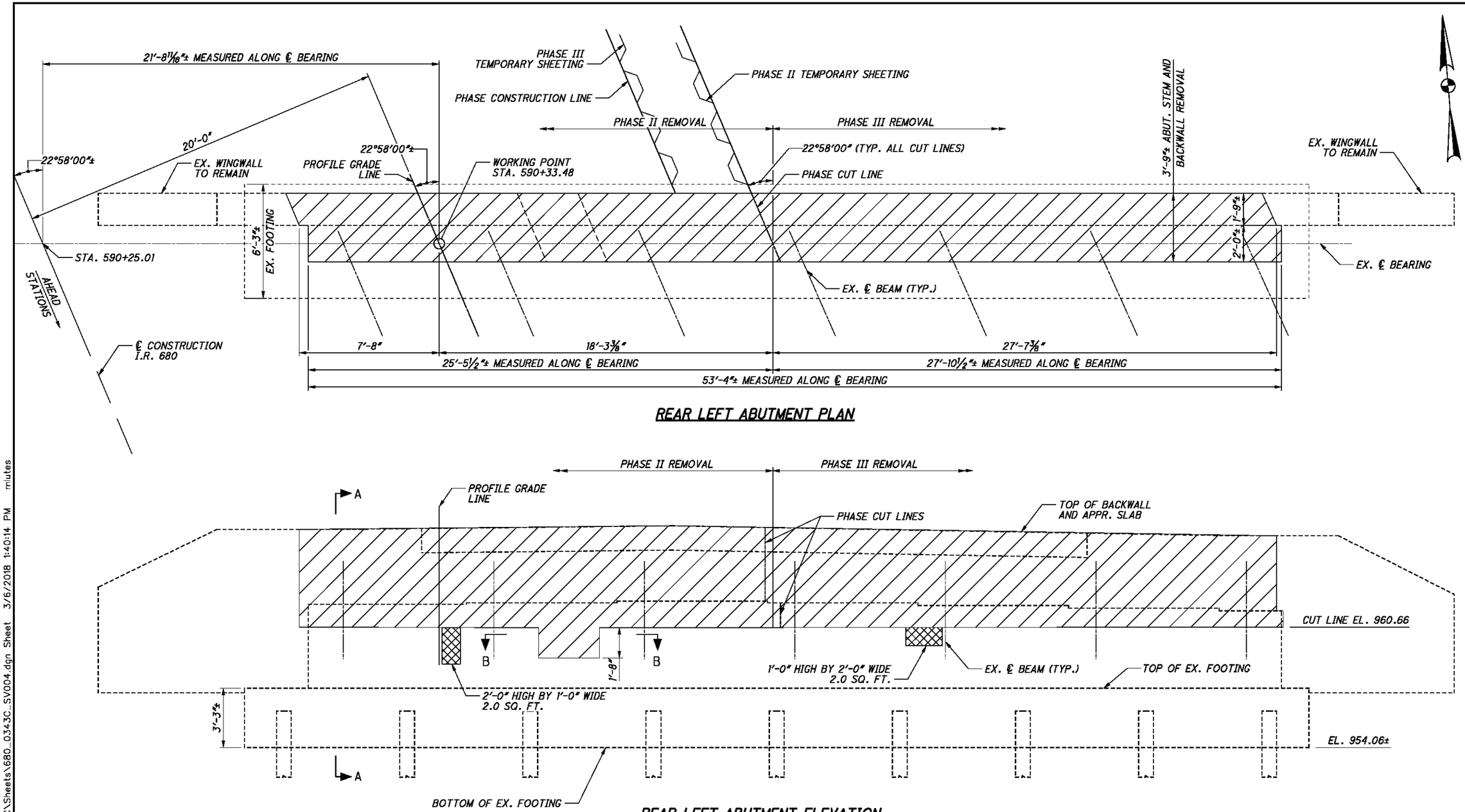
MAH-680-3.25		
1	3/3/18	ADJUSTED QUANTITIES
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

REVIEWED RER DATE 11/27/2015
STRUCTURE FILE NUMBER 5006724
DRAWN AEK REVISED
DESIGNED AEK CHECKED JOL

ESTIMATED QUANTITIES - RIGHT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



LEGEND:

- INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES PATCHING PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

SUMMARY OF PATCHING QUANTITIES		
BRIDGE	ABUTMENT	SQ. FT.
LEFT	REAR	4
RIGHT	REAR	0
LEFT	FORWARD	3
RIGHT	FORWARD	19
	TOTAL	26
	ADJUSTED TOTAL	39

NOTES:

1. FOR SECTIONS A-A AND B-B, SEE SHEET 11/47.
2. THE TOTAL ESTIMATED QUANTITY FOR ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN, HAS BEEN ADJUSTED BY 50% OVER FIELD MEASURED AREAS. FINAL AREAS TO BE REPAIRED WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
3. THE ANCHOR RODS FOR THE EXISTING BEARINGS SHALL BE CUT FLUSH WITH THE CUT LINE.

DESIGN AGENCY
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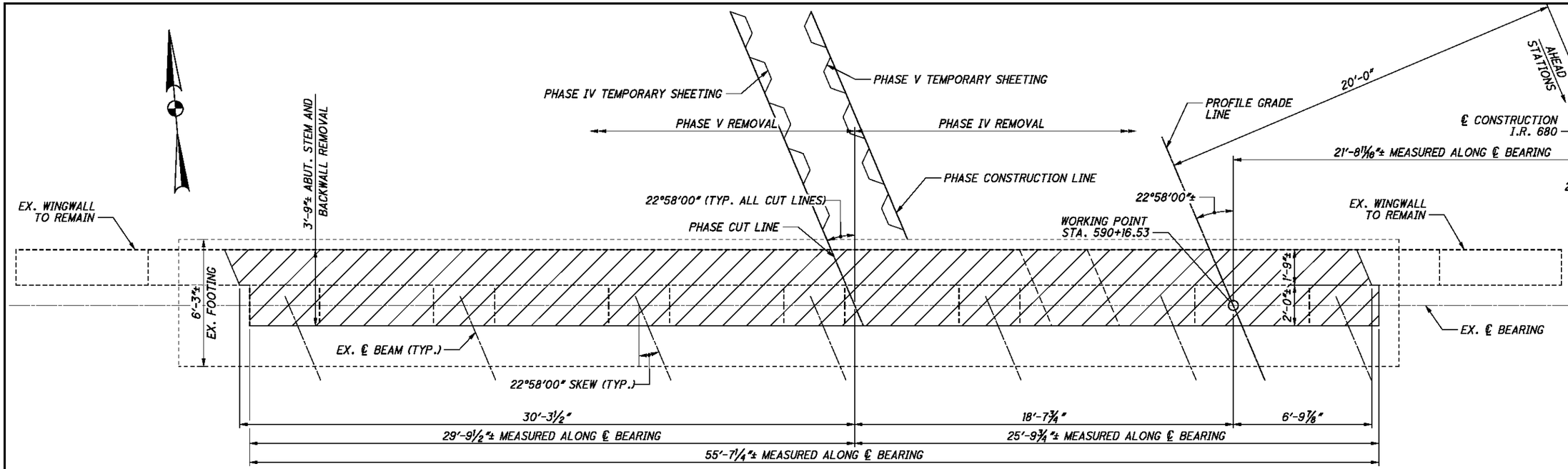
DESIGNED AEK | DRAWN AEK | REVIEWED RER | DATE 11/27/2015
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 5006694

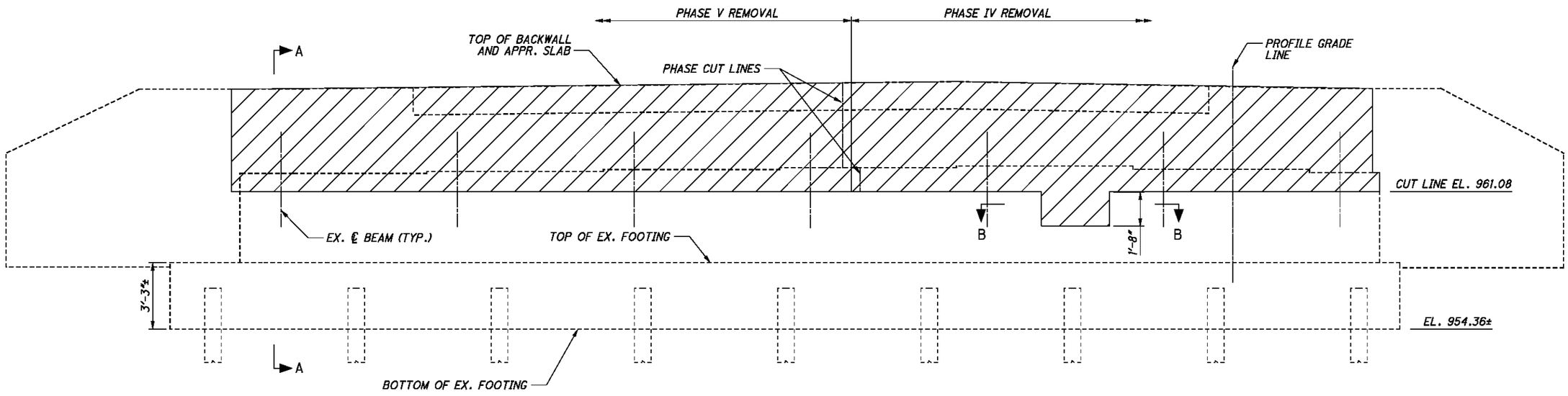
REAR LEFT ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



REAR RIGHT ABUTMENT PLAN



REAR RIGHT ABUTMENT ELEVATION

LEGEND:

▨ INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

NOTES:

1. FOR SECTIONS A-A AND B-B, SEE SHEET 11/47.
2. THE ANCHOR RODS FOR THE EXISTING BEARINGS SHALL BE CUT FLUSH WITH THE CUT LINE.

DESIGN AGENCY
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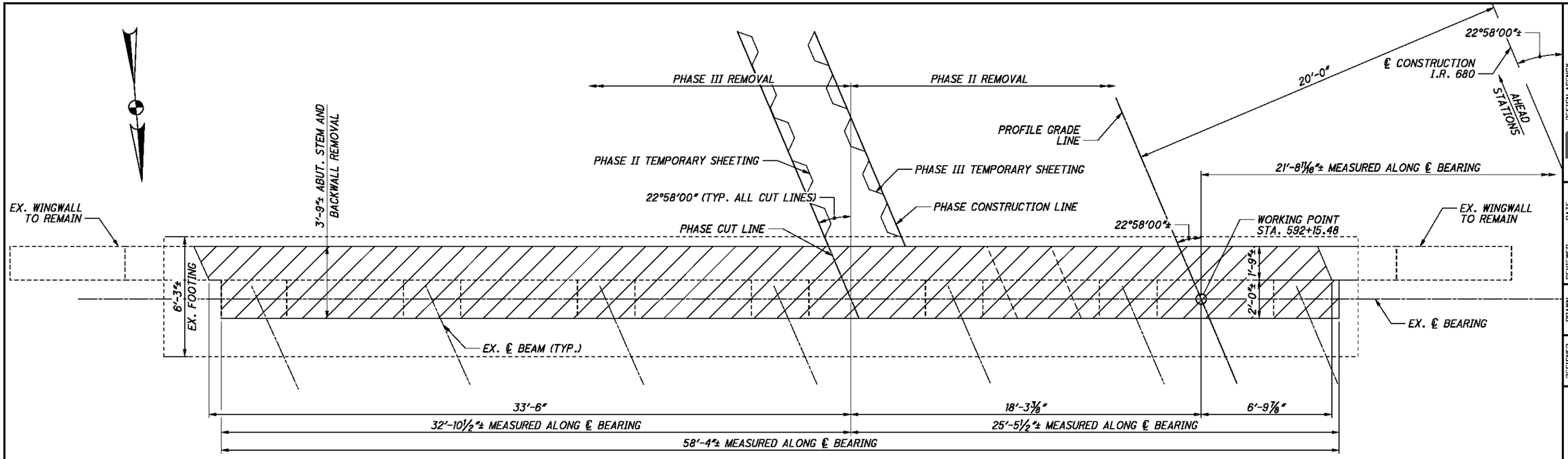
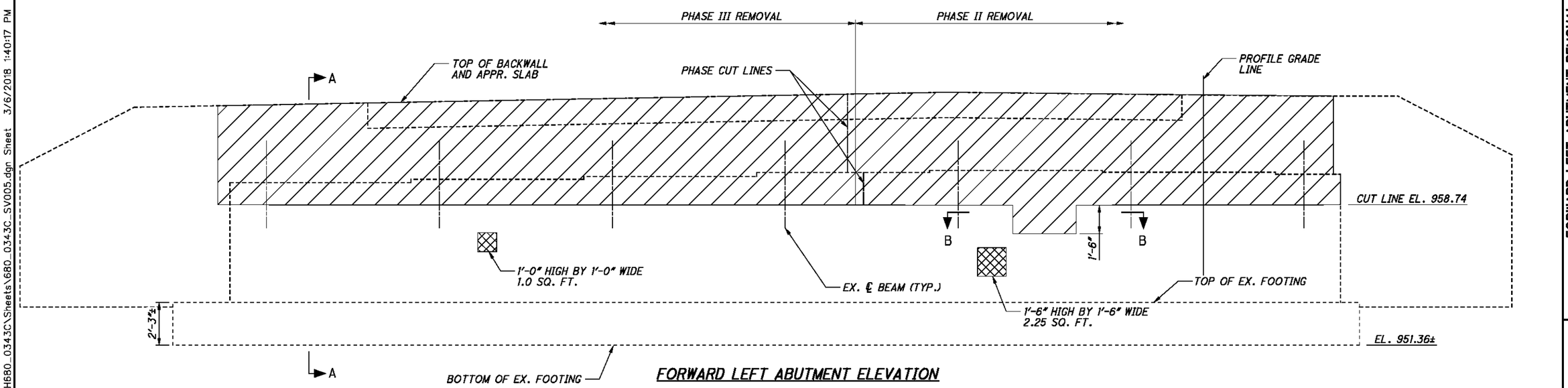
DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724	

REAR RIGHT ABUTMENT REMOVAL DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



FORWARD LEFT ABUTMENT PLAN



FORWARD LEFT ABUTMENT ELEVATION

LEGEND:

- INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES PATCHING PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

NOTES:

1. FOR SECTIONS A-A AND B-B, SEE SHEET 11/47.
2. REMOVE SOIL BEHIND EXISTING WINGWALLS PRIOR TO ABUTMENT STEM & BACKWALL REMOVAL. DO NOT BACKFILL UNTIL AFTER NEW STEM CONCRETE HAS BEEN CURED.
3. FOR SUMMARY OF PATCHING QUANTITIES SEE SHEET 7/47.
4. THE ANCHOR RODS FOR THE EXISTING BEARINGS SHALL BE CUT FLUSH WITH THE CUT LINE.

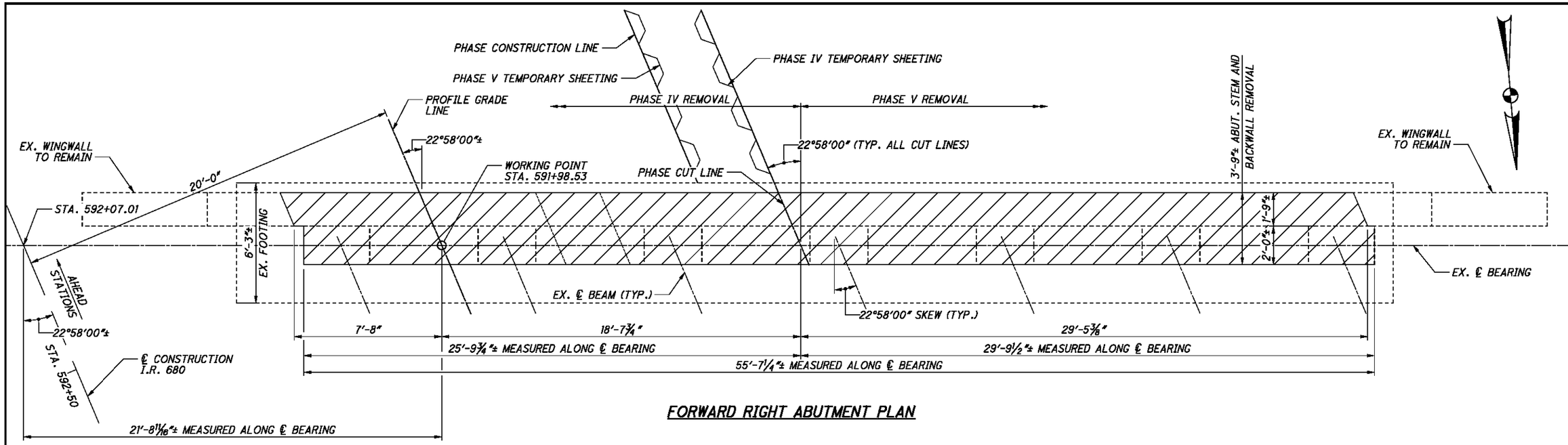
DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED AEK | DRAWN AEK | REVIEWED RER | DATE 11/27/2015
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 5006694

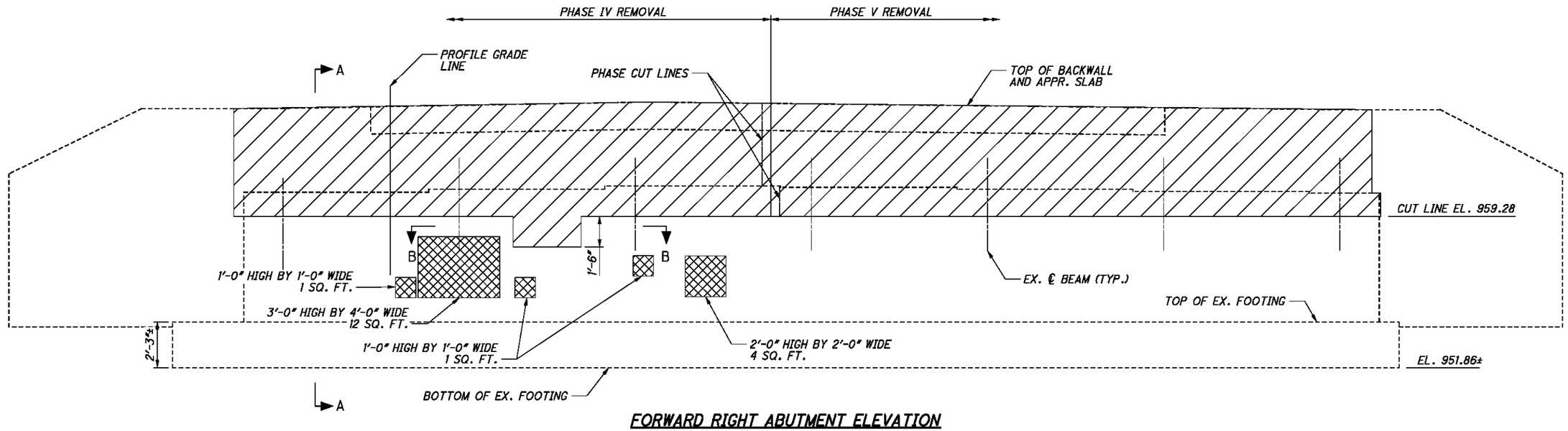
FORWARD LEFT ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



FORWARD RIGHT ABUTMENT PLAN



FORWARD RIGHT ABUTMENT ELEVATION

LEGEND:

- INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES PATCHING PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

NOTES:

1. FOR SECTIONS A-A AND B-B, SEE SHEET 11/47.
2. FOR SUMMARY OF THE PATCHING QUANTITIES SEE SHEET 1/47.
3. THE ANCHOR RODS FOR THE EXISTING BEARINGS SHALL BE CUT FLUSH WITH THE CUT LINE.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724	

FORWARD RIGHT ABUTMENT REMOVAL DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

10 / 47

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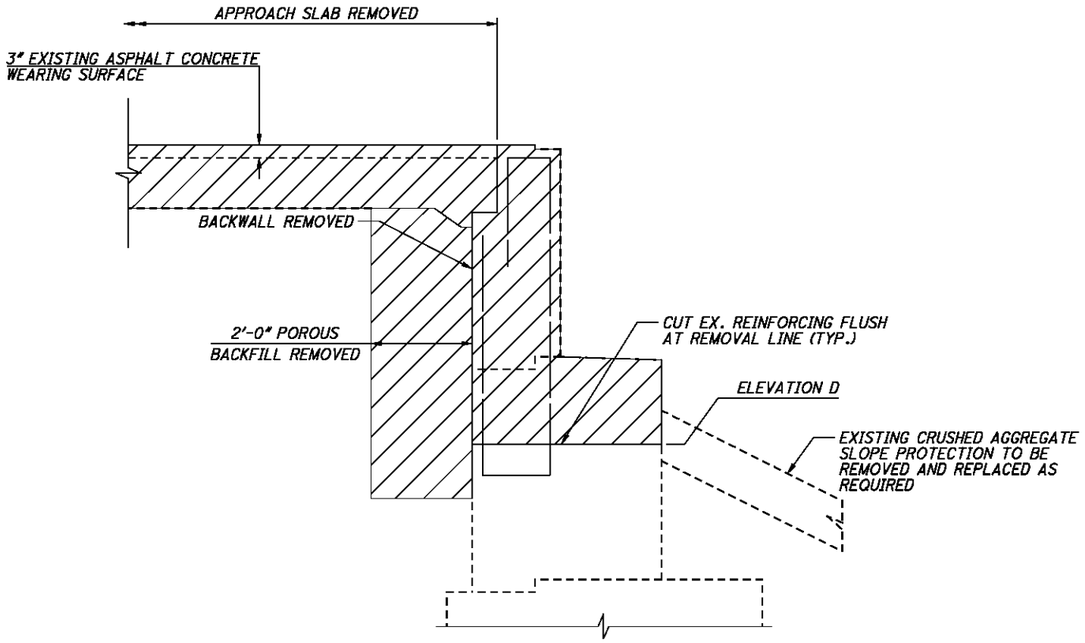
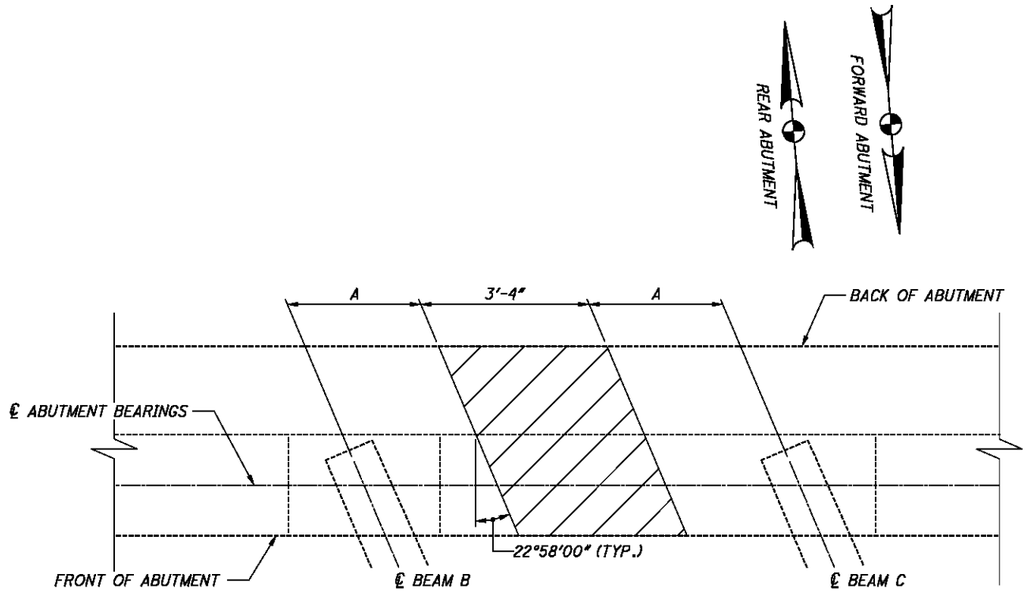


SECTION A-A

(EX. FOUNDATION, BEAMS AND BEARINGS NOT SHOWN)

TABLE OF ELEVATIONS		
BRIDGE	ABUTMENT	"D"
LEFT	REAR	960.66
RIGHT	REAR	961.08
LEFT	FORWARD	958.74
RIGHT	FORWARD	959.28



SECTION B-B

(LEFT REAR SHOWN, OTHERS SIMILAR)

TABLE OF BEAMS AND DIMENSIONS				
BRIDGE	ABUTMENT	"A"	"B"	"C"
LEFT	REAR	2'-5½"	BEAM 6	BEAM 5
RIGHT	REAR	2'-7¾"	BEAM 10	BEAM 9
LEFT	FORWARD	2'-10½"	BEAM 5	BEAM 6
RIGHT	FORWARD	2'-7¾"	BEAM 9	BEAM 10

LEGEND:

//// INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

NOTES:

1. FOR LOCATIONS OF SECTIONS A-A AND B-B, SEE SHEETS 7/47 THRU 10/47 .

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724/5006694	

ABUTMENT REMOVAL DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

11 / 47

133
169

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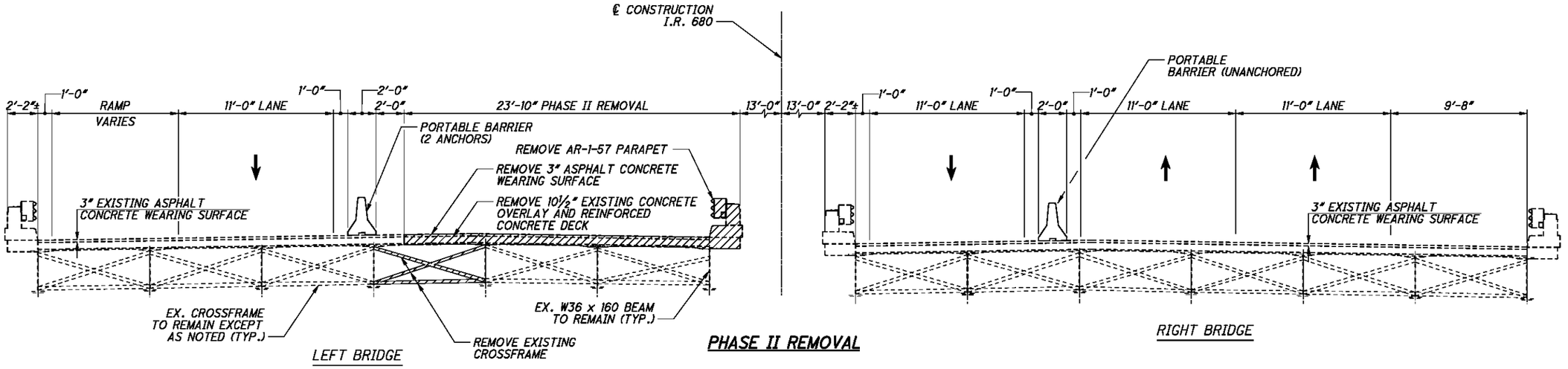
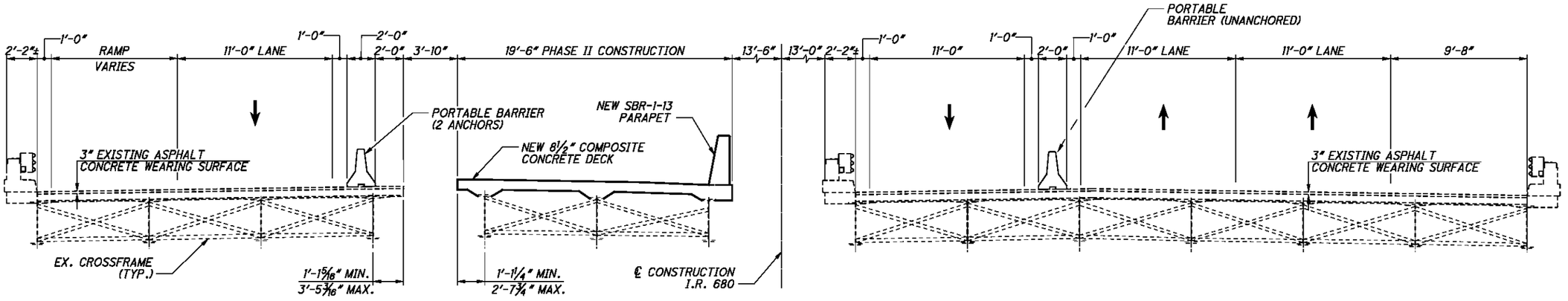


PHASE II REMOVAL



PHASE II CONSTRUCTION

PHASE II CONSTRUCTION SEQUENCE:

1. INSTALL PORTABLE BARRIERS AND MAINTAIN 4 LANES OF TRAFFIC AS SHOWN.
2. REMOVE EXISTING CONCRETE DECK, HAUNCHES, PARAPET, SCUPPERS, SCUPPER SUPPORTS, AND APPROACH SLABS TO THE LIMITS SHOWN IN THE PLANS. REMOVE CROSSFRAMES BETWEEN BEAMS 4 AND 5.
3. JACK PHASE II SUPERSTRUCTURE TO PROPOSED PROFILE GRADE.
4. REMOVE EXISTING PHASE II BEARINGS, END CROSSFRAMES, AND CROSSFRAMES THAT WILL INTERFERE WITH INSTALLATION OF THE NEW WELDED SPLICE RETROFIT PLATES AT BEAMS 5, 6, AND 7 AS SHOWN IN THE PLANS.
5. INSTALL TEMPORARY SHEETING, AS NECESSARY.
6. REMOVE EXISTING PHASE II ABUTMENT BACKWALL AND STEM TO THE LIMITS SHOWN IN THE PLANS.
7. CONSTRUCT PHASE II ABUTMENT AND PIER CAP AND INSTALL NEW BEARINGS.
8. LOWER PHASE II SUPERSTRUCTURE ONTO NEW BEARINGS AND WELD BEARINGS TO BEAMS.
9. WELD NEW SHEAR STUDS TO BEAMS AND INSTALL WELDED COVER PLATE RETROFITS AND ASSOCIATED CROSSFRAME REPLACEMENTS.
10. CONSTRUCT NEW PHASE II CONCRETE DECK AND SEMI-INTEGRAL DIAPHRAGM.
11. POUR NEW PHASE II PARAPET.

NOTES:

1. PHASE CONSTRUCTION DETAILS CONTINUED ON SHEETS 13/47 THRU 15/47.

LEGEND:

▨ = INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

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JOL		5006724/5006694	

PHASE CONSTRUCTION DETAILS - 1
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

12/47

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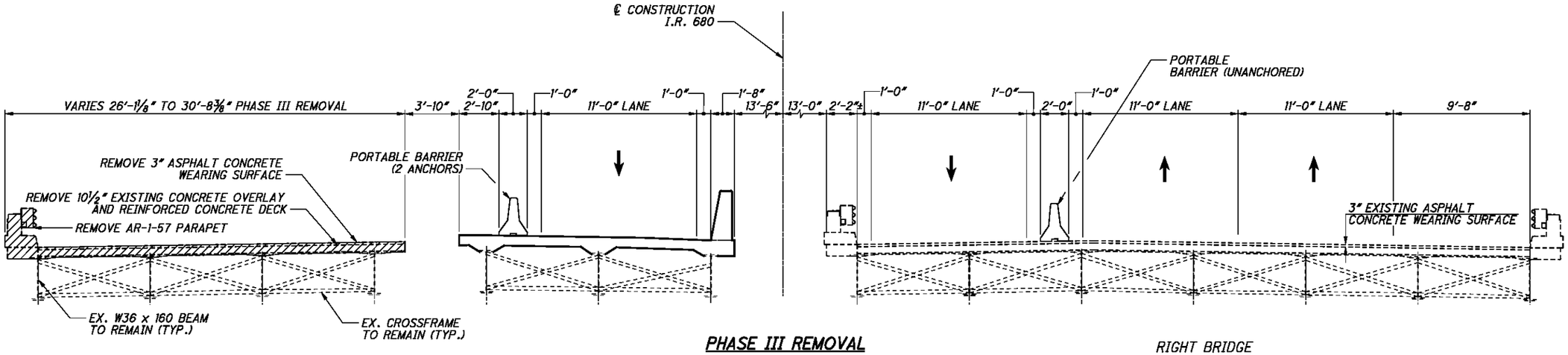
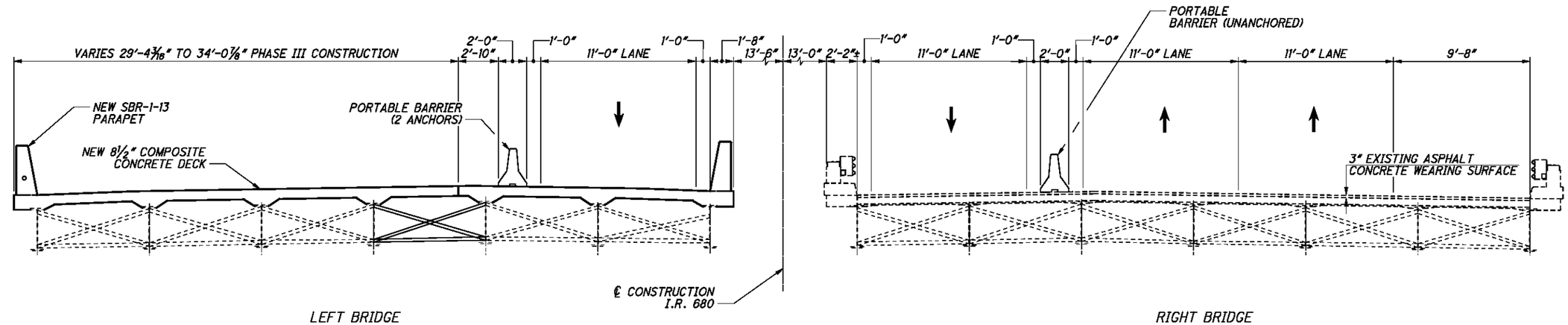


PHASE III REMOVAL



PHASE III CONSTRUCTION

PHASE III CONSTRUCTION SEQUENCE:

1. INSTALL PORTABLE BARRIER AND MAINTAIN 4 LANES OF TRAFFIC AS SHOWN.
2. REMOVE EXISTING CONCRETE DECK, HAUNCHES, PARAPET, LIGHT POLE, SCUPPERS, SCUPPER SUPPORTS, AND APPROACH SLABS TO THE LIMITS SHOWN IN THE PLANS.
3. JACK PHASE III SUPERSTRUCTURE TO PROPOSED PROFILE GRADE.
4. REMOVE EXISTING PHASE III BEARINGS, END CROSSFRAMES, AND CROSSFRAMES THAT WILL INTERFERE WITH INSTALLATION OF THE NEW WELDED SPLICE RETROFIT PLATES AT BEAMS 1 THROUGH 4 AS SHOWN IN THE PLANS.
5. INSTALL TEMPORARY SHEETING, AS NECESSARY.
6. REMOVE EXISTING PHASE III ABUTMENT BACKWALL AND STEM TO THE LIMITS SHOWN IN THE PLANS.
7. CONSTRUCT PHASE III ABUTMENT AND PIER CAP AND INSTALL NEW BEARINGS.
8. LOWER PHASE III SUPERSTRUCTURE ONTO NEW BEARINGS AND WELD BEARINGS TO BEAMS. INSTALL NEW CROSSFRAMES BETWEEN BEAMS 4 AND 5.
9. WELD NEW SHEAR STUDS TO BEAMS AND INSTALL WELDED COVER PLATE RETROFITS AND ASSOCIATED CROSSFRAME REPLACEMENTS.
10. CONSTRUCT NEW PHASE III CONCRETE DECK AND SEMI-INTEGRAL DIAPHRAGM.
11. POUR NEW PHASE III PARAPET.

NOTES:

1. PHASE CONSTRUCTION DETAILS CONTINUED ON SHEETS 14/47 and 15/47.

LEGEND:

▨ = INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

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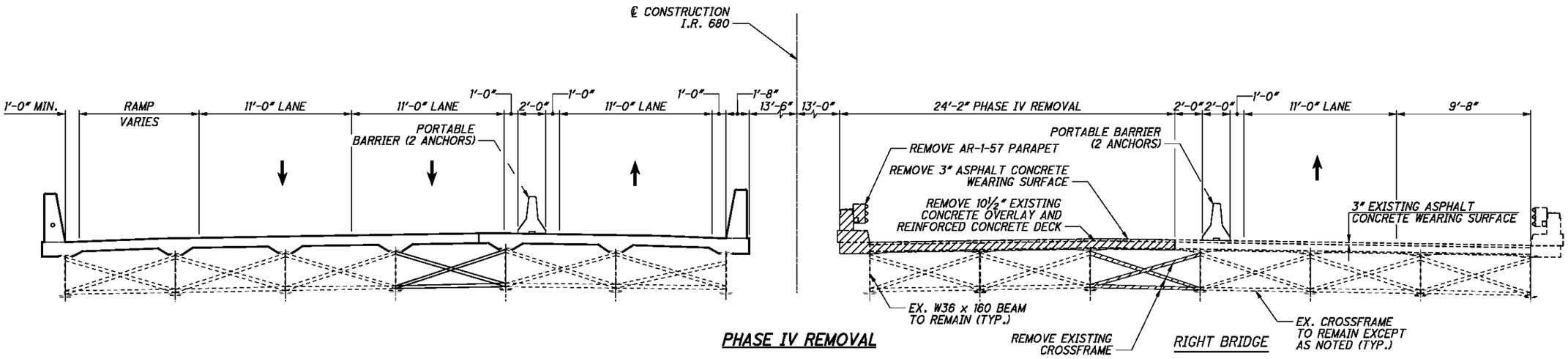
PHASE CONSTRUCTION DETAILS - 2
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

13/47

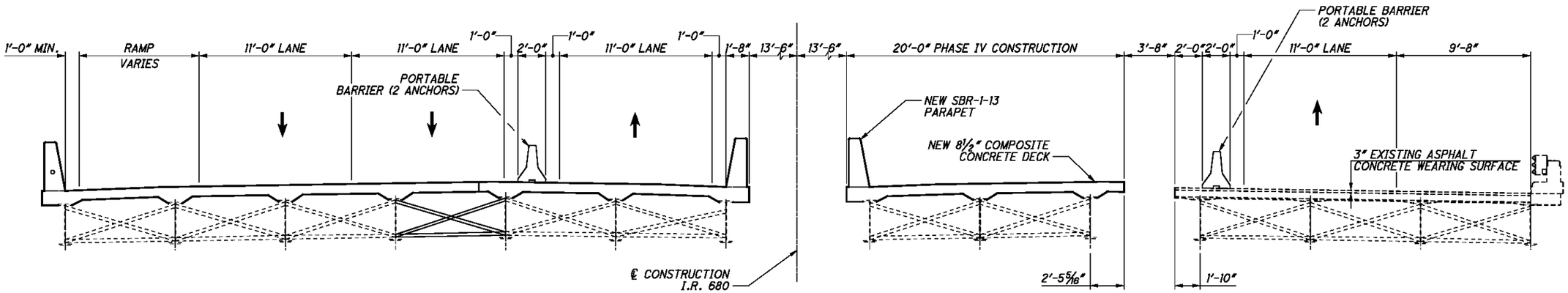
135/169



PHASE IV REMOVAL

LEFT BRIDGE

RIGHT BRIDGE



LEFT BRIDGE

PHASE IV CONSTRUCTION

RIGHT BRIDGE

PHASE IV CONSTRUCTION SEQUENCE:

1. INSTALL PORTABLE BARRIERS AND MAINTAIN 4 LANES OF TRAFFIC AS SHOWN.
2. REMOVE EXISTING CONCRETE DECK, HAUNCHES, PARAPET, SCUPPERS, SCUPPER SUPPORTS, AND APPROACH SLABS TO THE LIMITS SHOWN IN THE PLANS. REMOVE CROSSFRAMES BETWEEN BEAMS 10 AND 11.
3. JACK PHASE IV SUPERSTRUCTURE TO PROPOSED PROFILE GRADE.
4. REMOVE EXISTING PHASE IV BEARINGS, END CROSSFRAMES, AND CROSSFRAMES THAT WILL INTERFERE WITH INSTALLATION OF THE NEW WELDED SPLICE RETROFIT PLATES AT BEAMS 8, 9, AND 10, AS SHOWN IN THE PLANS.
5. INSTALL TEMPORARY SHEETING, AS NECESSARY.
6. REMOVE EXISTING PHASE IV ABUTMENT BACKWALL AND STEM TO THE LIMITS SHOWN IN THE PLANS.
7. CONSTRUCT PHASE IV ABUTMENT AND PIER CAP AND INSTALL NEW BEARINGS.
8. LOWER PHASE IV SUPERSTRUCTURE ONTO NEW BEARINGS AND WELD BEARINGS TO BEAMS.
9. WELD NEW SHEAR STUDS TO BEAMS AND INSTALL WELDED COVER PLATE RETROFITS AND ASSOCIATED CROSSFRAME REPLACEMENTS.
10. CONSTRUCT NEW PHASE IV CONCRETE DECK AND SEMI-INTEGRAL DIAPHRAGM.
11. POUR NEW PHASE IV PARAPET.

NOTES:

1. PHASE CONSTRUCTION DETAILS CONTINUED ON SHEET 15/47.

LEGEND:

▨ = INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

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PHASE CONSTRUCTION DETAILS - 3
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

14/47

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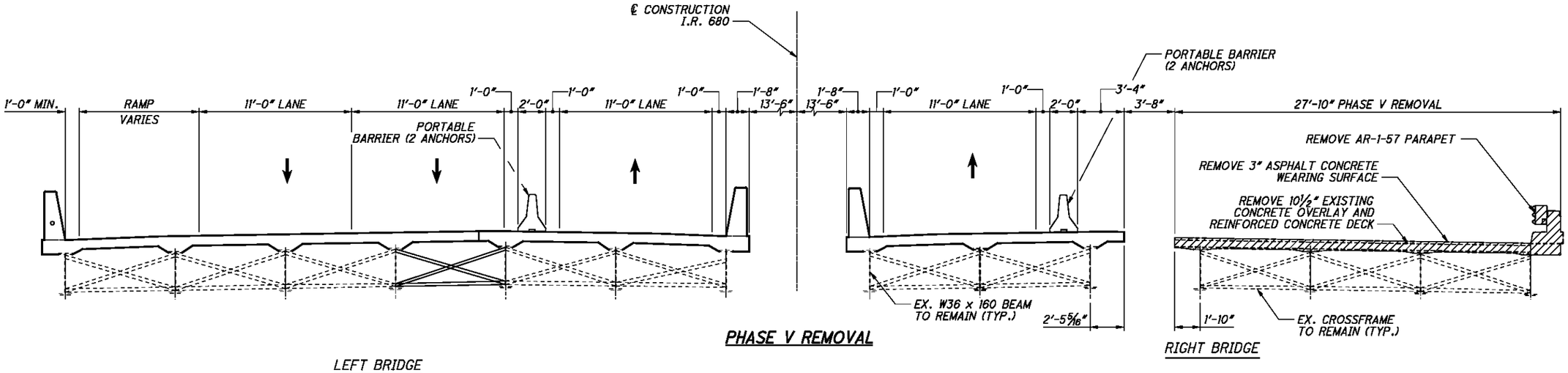
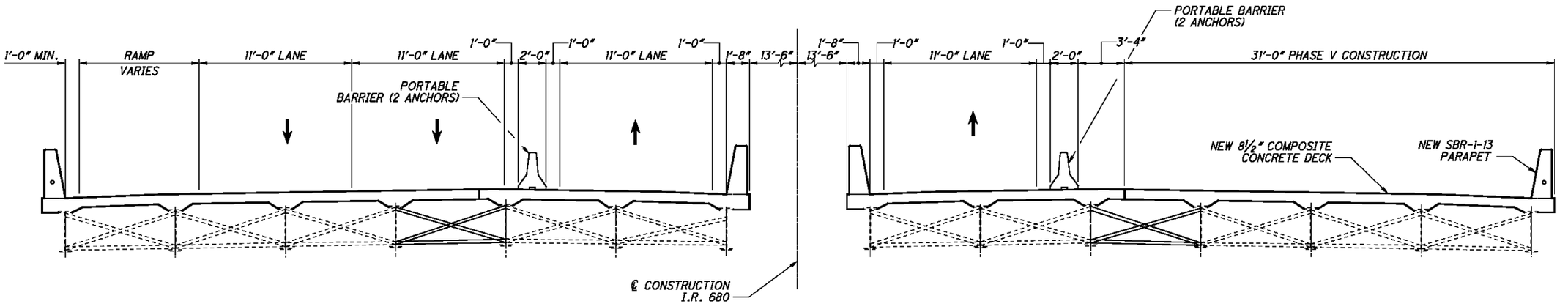


PHASE V REMOVAL

LEFT BRIDGE

RIGHT BRIDGE



LEFT BRIDGE

RIGHT BRIDGE

PHASE V CONSTRUCTION

PHASE V CONSTRUCTION SEQUENCE:

1. INSTALL PORTABLE BARRIERS AND MAINTAIN 4 LANES OF TRAFFIC AS SHOWN.
2. REMOVE EXISTING CONCRETE DECK, HAUNCHES, PARAPET, LIGHT POLE, SCUPPERS, SCUPPER SUPPORTS, AND APPROACH SLABS TO THE LIMITS SHOWN IN THE PLANS.
3. JACK PHASE V SUPERSTRUCTURE TO PROPOSED PROFILE GRADE.
4. REMOVE EXISTING PHASE V BEARINGS, END CROSSFRAMES, AND CROSSFRAMES THAT WILL INTERFERE WITH INSTALLATION OF THE NEW WELDED SPLICE RETROFIT PLATES AT BEAMS 11 THROUGH 14 AS SHOWN IN THE PLANS.
5. INSTALL TEMPORARY SHEETING, AS NECESSARY.
6. REMOVE EXISTING PHASE V ABUTMENT BACKWALL TO THE LIMITS SHOWN IN THE PLANS.
7. CONSTRUCT PHASE V ABUTMENT AND PIER CAP AND INSTALL NEW BEARINGS.
8. LOWER PHASE V SUPERSTRUCTURE ONTO NEW BEARINGS AND WELD BEARINGS TO BEAMS. INSTALL NEW CROSSFRAMES BETWEEN BEAMS 10 AND 11.
9. WELD NEW SHEAR STUDS TO BEAMS AND INSTALL WELDED COVER PLATE RETROFITS AND ASSOCIATED CROSSFRAME REPLACEMENTS.
10. CONSTRUCT NEW PHASE V CONCRETE DECK AND SEMI-INTEGRAL DIAPHRAGM.
11. POUR NEW PHASE V PARAPET.
12. REMOVE PORTABLE CONCRETE BARRIERS AND SEAL ANCHOR HOLES IN DECK.
13. PLACE ROADWAY STRIPING.
14. SEAL PARAPETS AND DECK OVERHANGS WITH EPOXY-URETHANE.

NOTES:

1. FOR ADDITIONAL PHASE CONSTRUCTION DETAILS SEE SHEETS 12/47 THRU 14/47.

LEGEND:

▨ = INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

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PHASE CONSTRUCTION DETAILS - 4
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

15 / 47

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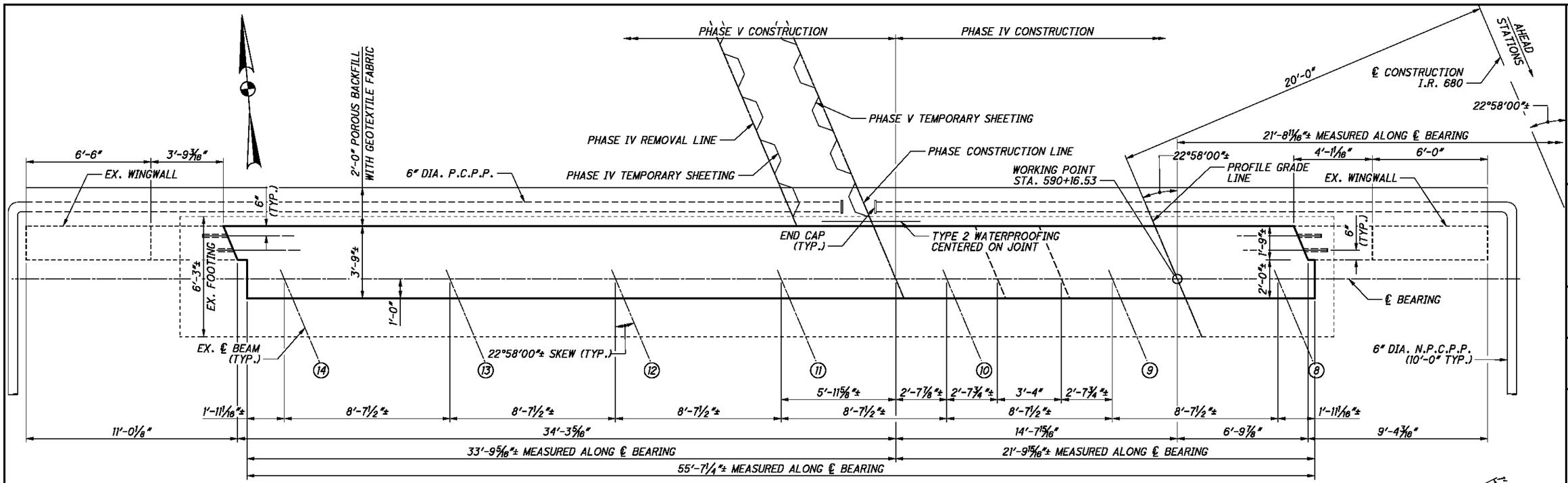
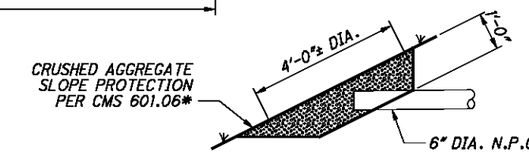
169



REAR RIGHT ABUTMENT PLAN



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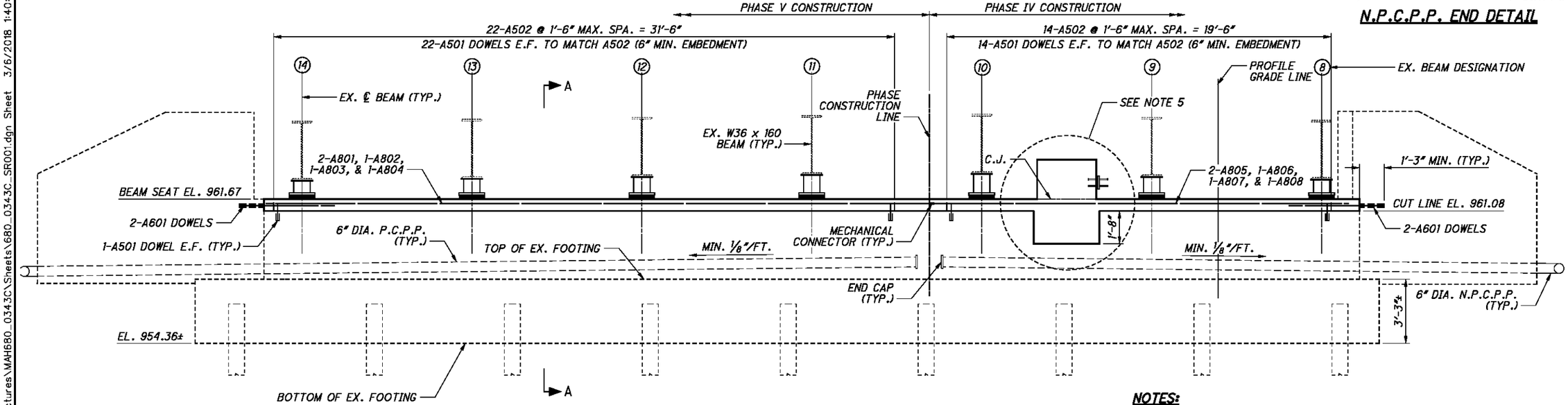

REAR RIGHT ABUTMENT ELEVATION

NOTES:

1. FOR SECTION A-A, SEE SHEET 20/47 .
2. FOR ELASTOMERIC BEARING AND BEARING PEDESTAL DETAILS, SEE SHEET 24/47 .
3. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 32/47 .
4. FOR DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SICD-1-96.
5. FOR DIAPHRAGM GUIDE DETAILS, SEE SHEET 21/47.

* INCLUDE WITH ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

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REAR RIGHT ABUTMENT PLAN AND ELEVATION
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

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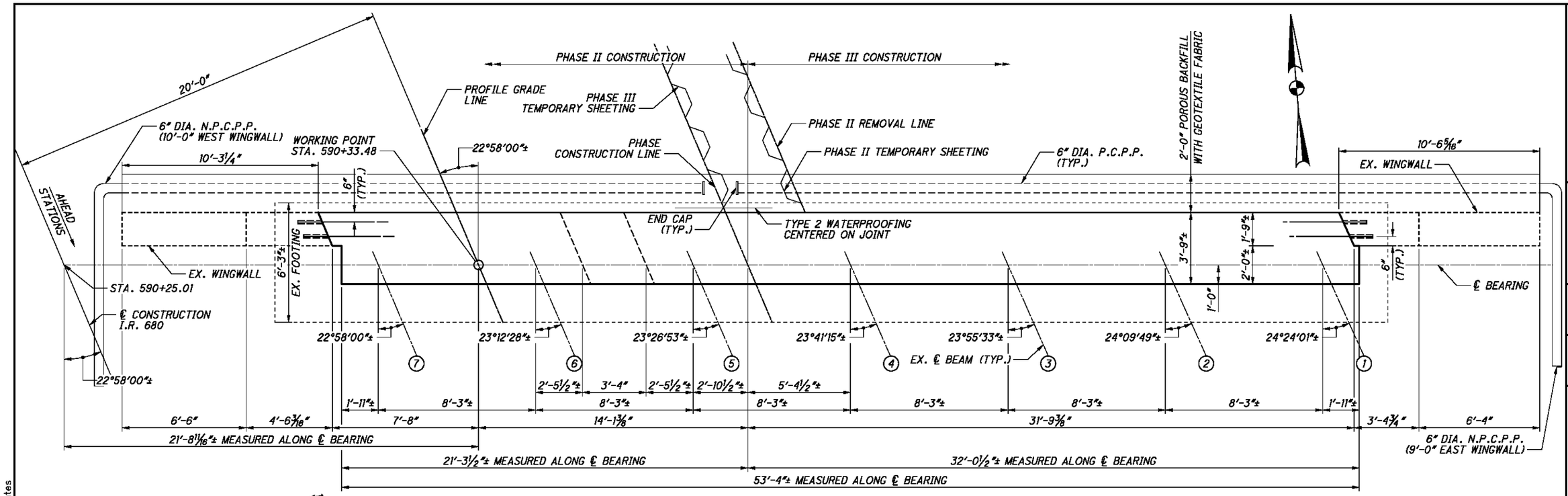
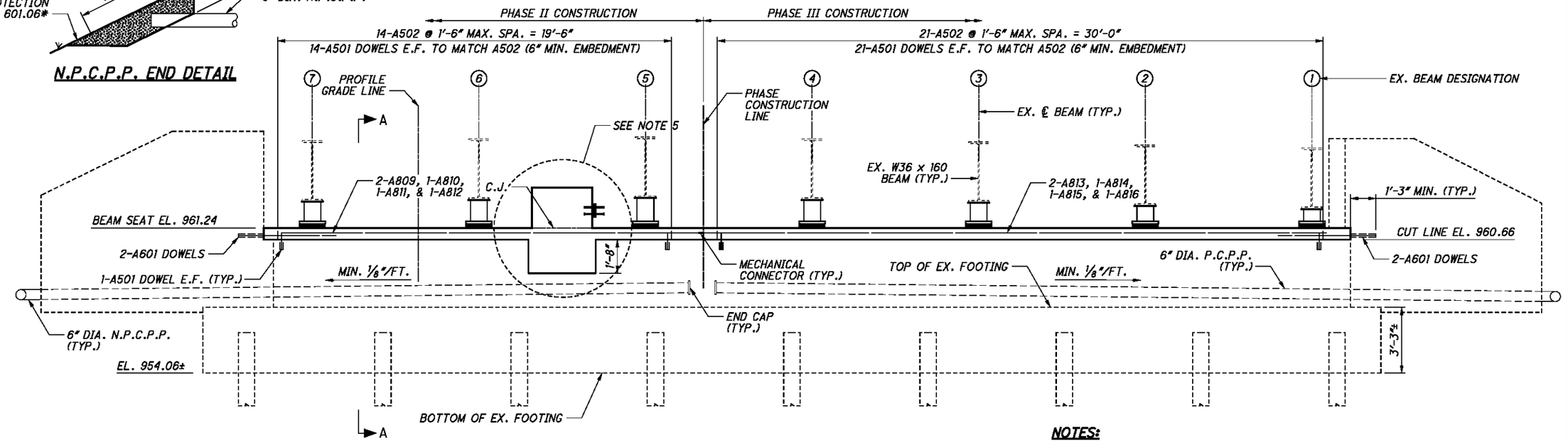


REAR LEFT ABUTMENT PLAN

N.P.C.P.P. END DETAIL



REAR LEFT ABUTMENT ELEVATION

* INCLUDE WITH ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

NOTES:

1. FOR SECTION A-A, SEE SHEET 20/47.
2. FOR ELASTOMERIC BEARING AND BEARING PEDESTAL DETAILS, SEE SHEET 24/47.
3. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEETS 31/47.
4. FOR DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SICD-1-96.
5. FOR DIAPHRAGM GUIDE DETAILS, SEE SHEET 21/47.

DESIGN AGENCY
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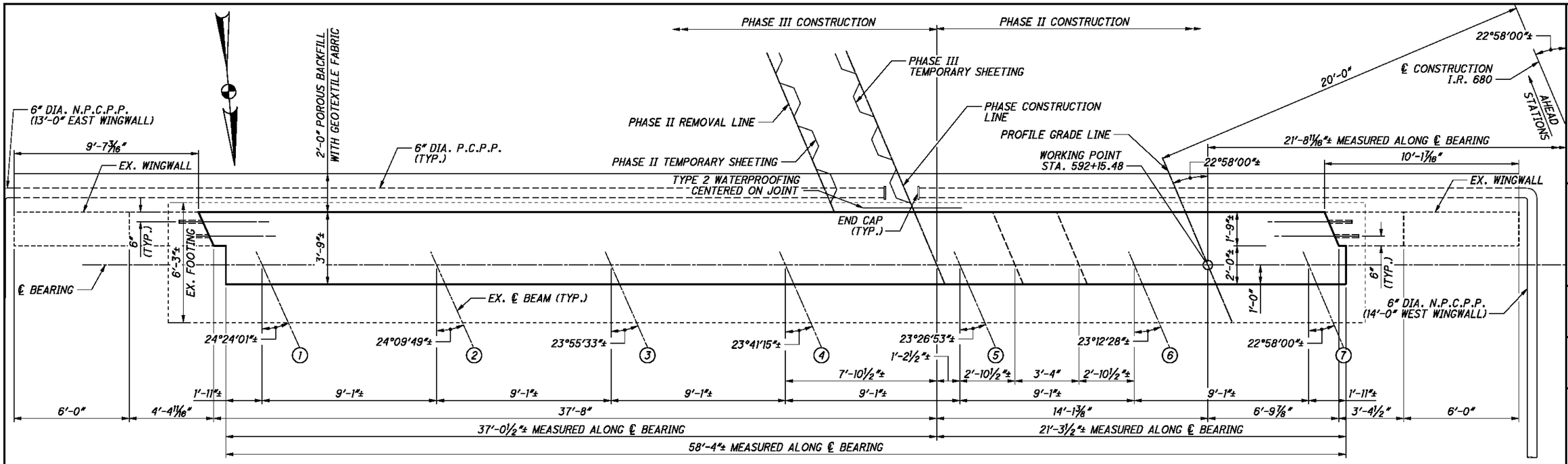
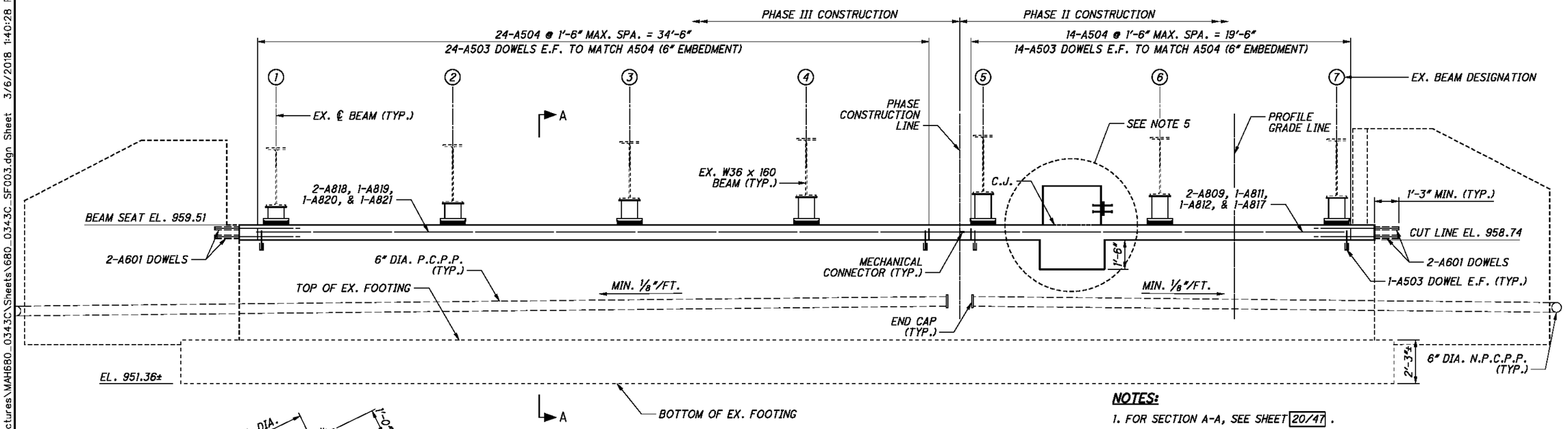
DESIGNED AEK | DRAWN AEK | CHECKED JOL | REVIEWED RER | DATE 11/30/2015 | REVISED | STRUCTURE FILE NUMBER 5006694

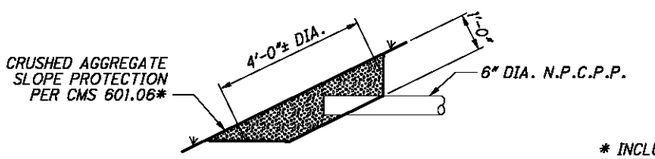
REAR LEFT ABUTMENT PLAN AND ELEVATION
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



FORWARD LEFT ABUTMENT PLAN





N.P.C.P.P. END DETAIL

FORWARD LEFT ABUTMENT ELEVATION

* INCLUDE WITH ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

NOTES:

1. FOR SECTION A-A, SEE SHEET 20/47 .
2. FOR ELASTOMERIC BEARING AND BEARING PEDESTAL DETAILS, SEE SHEET 24/47 .
3. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 31/47 .
4. FOR DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SICD-1-96.
5. FOR DIAPHRAGM GUIDE DETAILS, SEE SHEET 21/47 .
6. DO NOT BACKFILL BEHIND WINGWALLS UNTIL AFTER NEW STEM CONCRETE HAS BEEN CURED.

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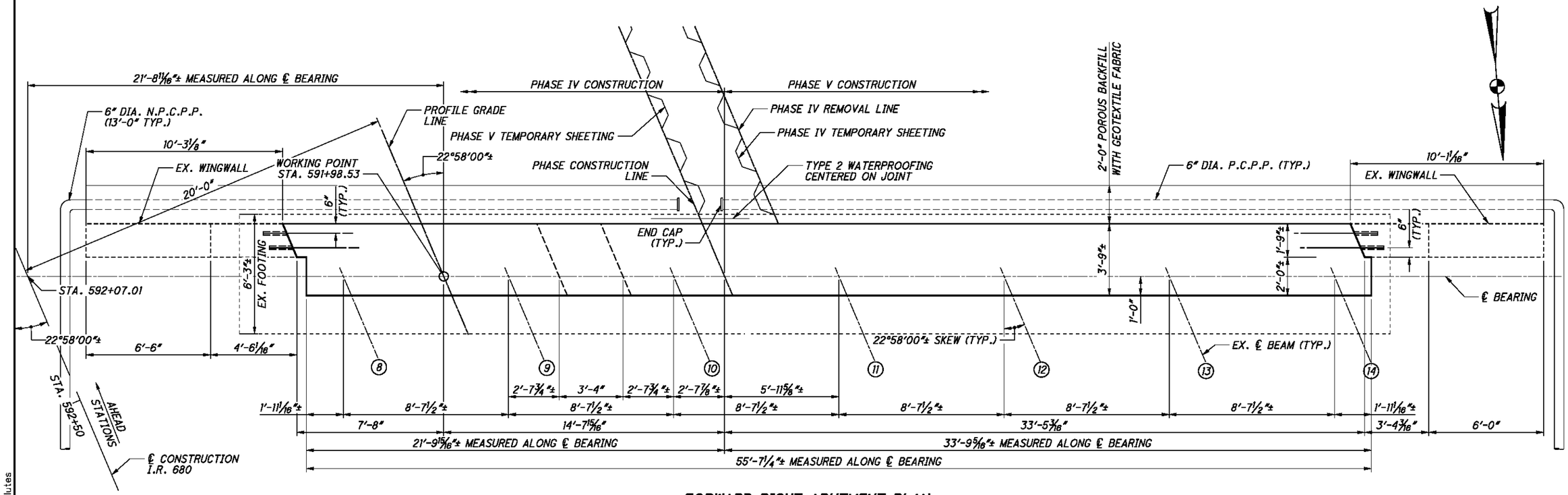
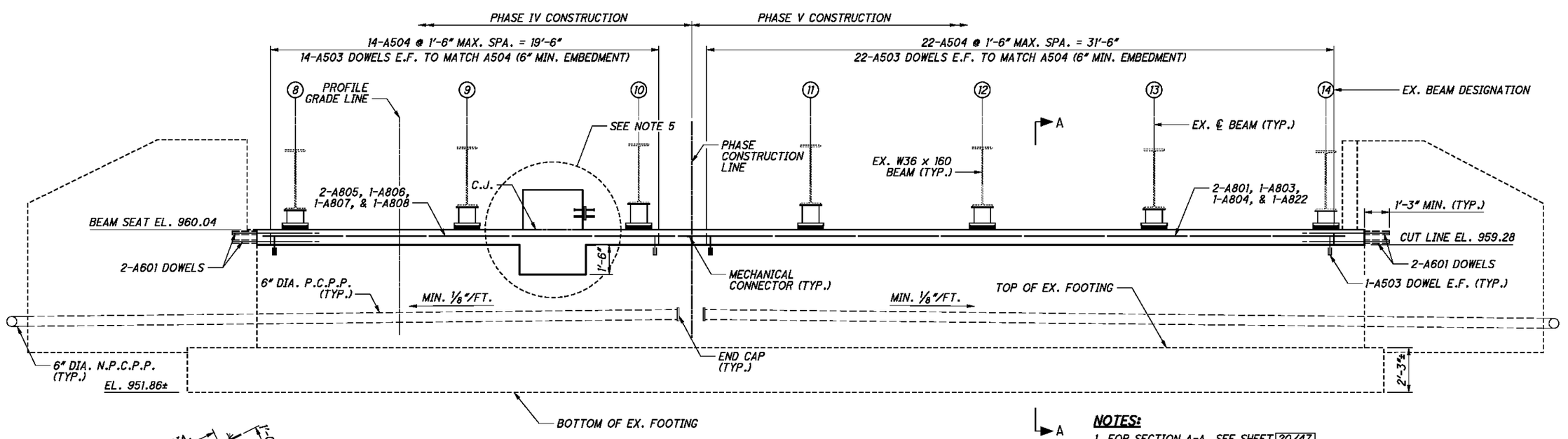
FORWARD LEFT ABUTMENT PLAN AND ELEVATION
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

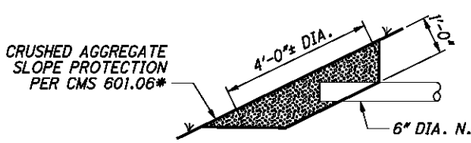
MAH-680-3.25
PID No. 96637



FORWARD RIGHT ABUTMENT PLAN



FORWARD RIGHT ABUTMENT ELEVATION



N.P.C.P.P. END DETAIL

* INCLUDE WITH ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

NOTES:

1. FOR SECTION A-A, SEE SHEET 20/47.
2. FOR ELASTOMERIC BEARING AND BEARING PEDESTAL DETAILS, SEE SHEET 24/47.
3. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 32/47.
4. FOR DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SICD-1-96.
5. FOR DIAPHRAGM GUIDE DETAILS, SEE SHEET 21/47.

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724	

FORWARD RIGHT ABUTMENT PLAN AND ELEVATION
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

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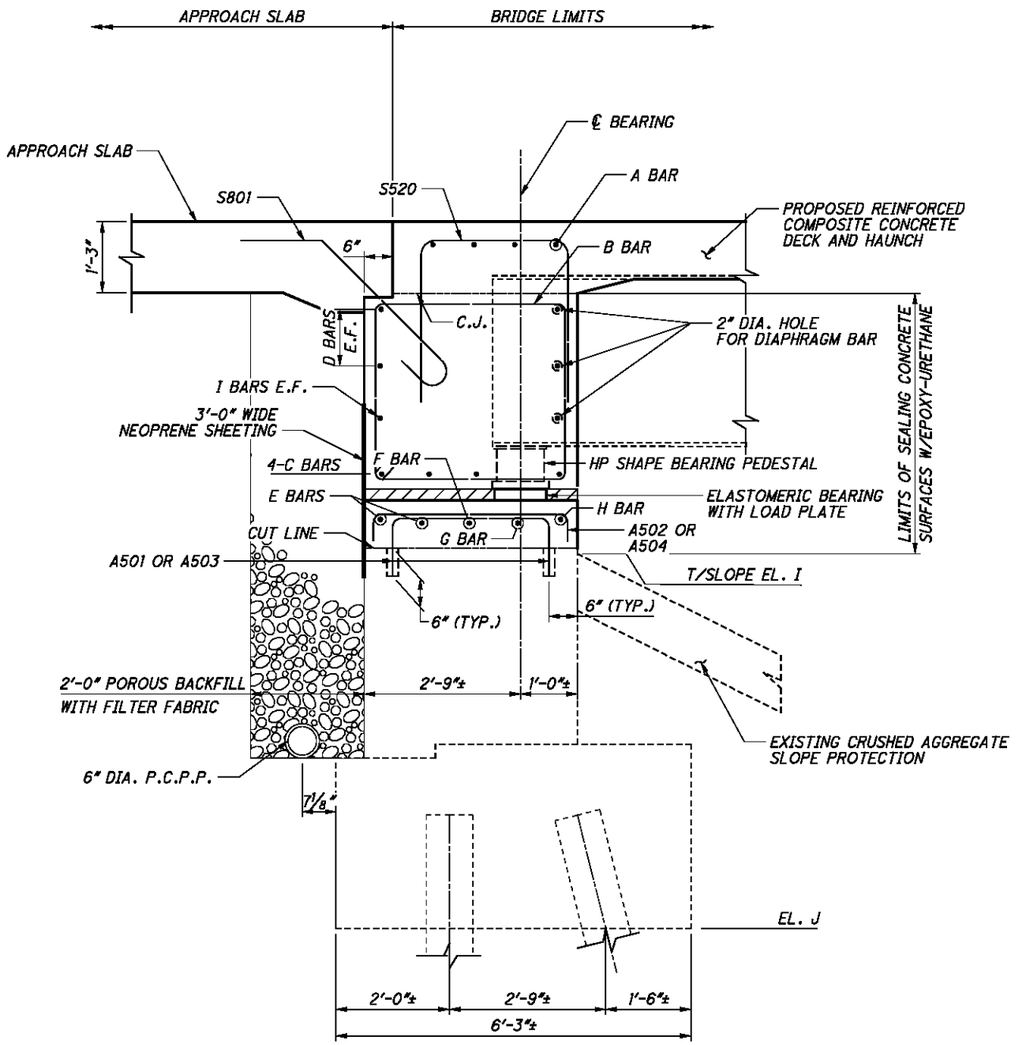

SECTION A-A

(REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR)

REINFORCEMENT TABLE											
BRIDGE	ABUTMENT	PHASE	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"
LEFT	REAR	II	S807	S523 OR S524	S809 OR S810	S807	A809	A810	A811	A812	S814 OR S815
		III	S808	S524	S808	S808	A813	A814	A815	A816	S808
RIGHT	REAR	IV	S803	S521 OR S522	S804 OR S805	S803	A805	A806	A807	A808	S815 OR S818
		V	S802	S521	S802	S802	A801	A802	A803	A804	S802
LEFT	FORWARD	II	S807	S523 OR S524	S812 OR S813	S807	A809	A812	A811	A817	S816 OR S817
		III	S811	S524	S811	S811	A818	A819	A820	A821	S811
RIGHT	FORWARD	IV	S803	S521 OR S522	S804 OR S805	S803	A805	A808	A807	A806	S815 OR S818
		V	S802	S521	S802	S802	A801	A804	A803	A822	S802

TABLE OF ELEVATIONS			
BRIDGE	ABUTMENT	"I"	"J"
LEFT	REAR	960.00±	954.06±
RIGHT	REAR	960.00±	954.36±
LEFT	FORWARD	958.00±	951.36±
RIGHT	FORWARD	958.00±	951.86±

NOTES:

1. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEETS 31/47 AND 32/47.
2. FOR BEARING DETAILS, SEE SHEET 24/47.
3. FOR ABUTMENT PLAN AND ELEVATIONS, SEE SHEETS 17/47 THRU 19/47.
4. FOR DETAILS OF THE VERTICAL JOINT AT THE APPROACH SLAB, SEE ODOT STANDARD DRAWING AS-1-15, DETAIL B.

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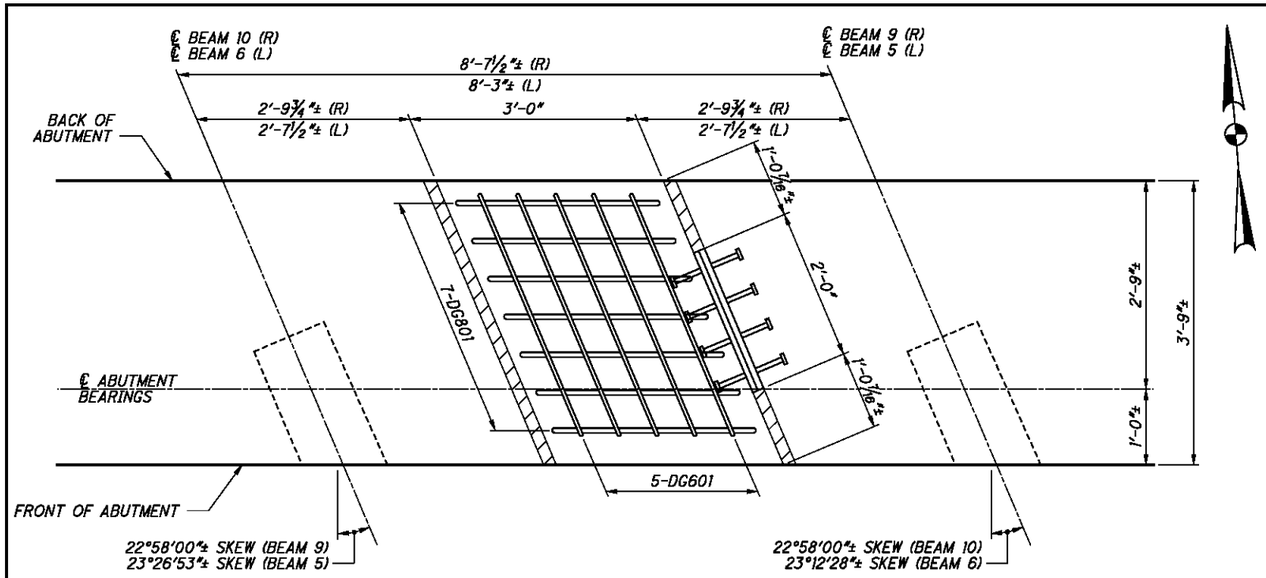
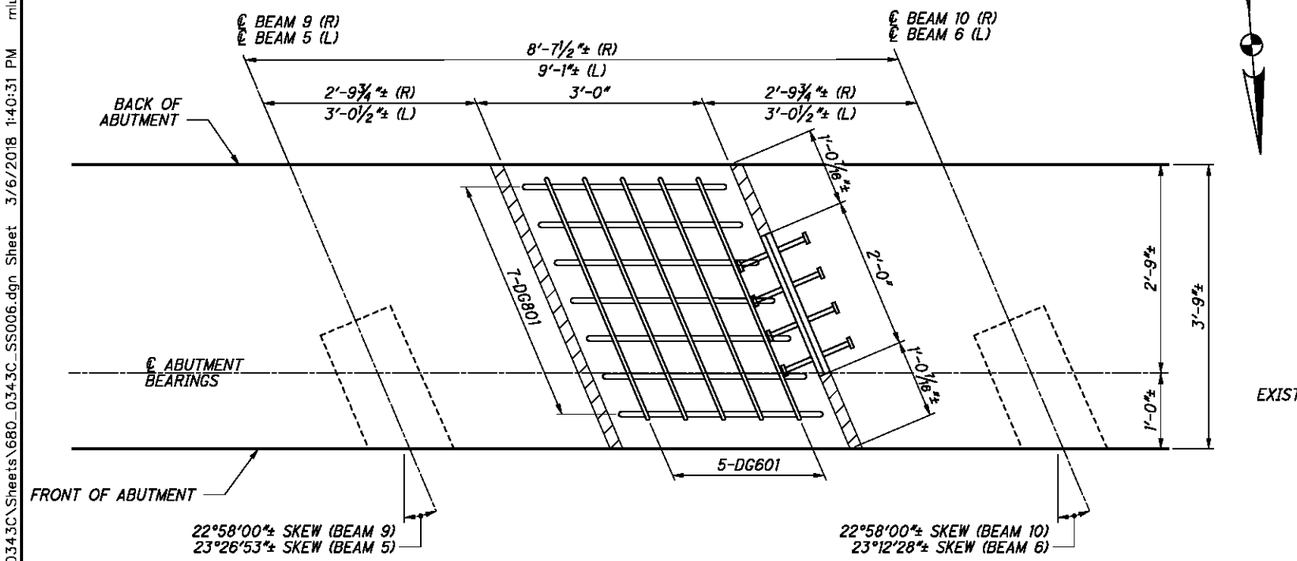
ABUTMENT DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



REAR ABUTMENT DIAPHRAGM GUIDE PLAN

(R = RIGHT BRIDGE, L = LEFT BRIDGE)

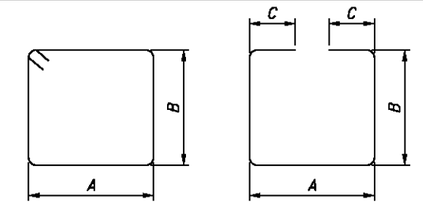


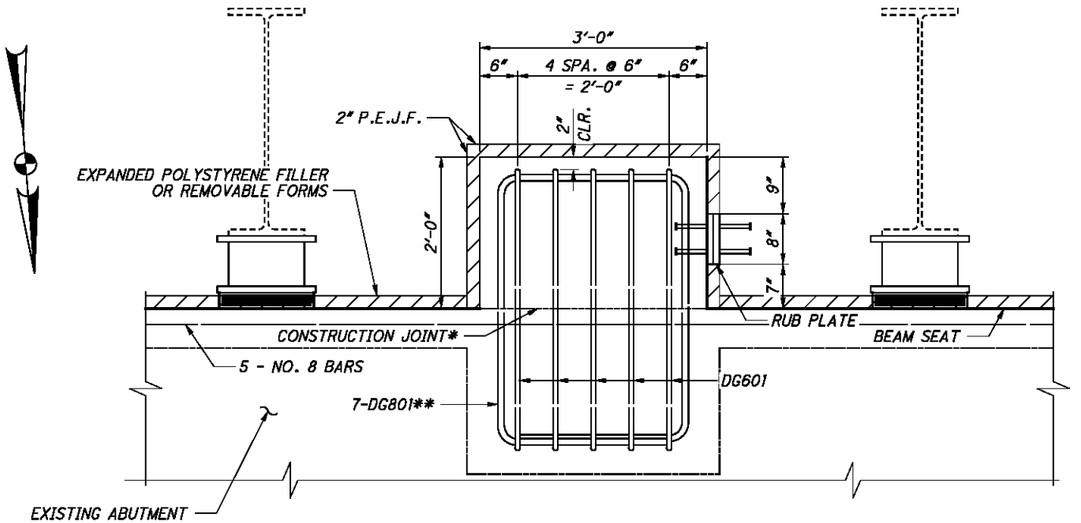
FORWARD ABUTMENT DIAPHRAGM GUIDE PLAN

(R = RIGHT BRIDGE, L = LEFT BRIDGE)

MARK	NUMBER TOTAL	TYPE	DIMENSIONS A	B	C
DG601	20	3	3'-8½"	3'-8½"	
DG801	28	5	2'-8"	3'-7"	2'-4"

BENDING DIAGRAMS





DIAPHRAGM GUIDE ELEVATION

* - FINISH THE SURFACE OF THE CONSTRUCTION JOINT WITH A SERRATED TROWEL. THE SERRATIONS SHALL BE ¼" DEEP MINIMUM.

** - PLACE TO AVOID INTERFERENCE WITH LONGITUDINAL REINFORCEMENT IN THE BEAM SEAT.

NOTES:

1. FOR RUB PLATE DETAILS AND ADDITIONAL INFORMATION, SEE STANDARD DRAWING SICD-2-14.
2. THE COST OF THE DIAPHRAGM GUIDE CAULK, P.E.J.F., CONCRETE, REINFORCEMENT, AND RUB PLATES SHALL BE INCLUDED WITH ITEM 511, SEMI-INTEGRAL DIAPHRAGM GUIDE.

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DIAPHRAGM GUIDE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

21/47

143/169

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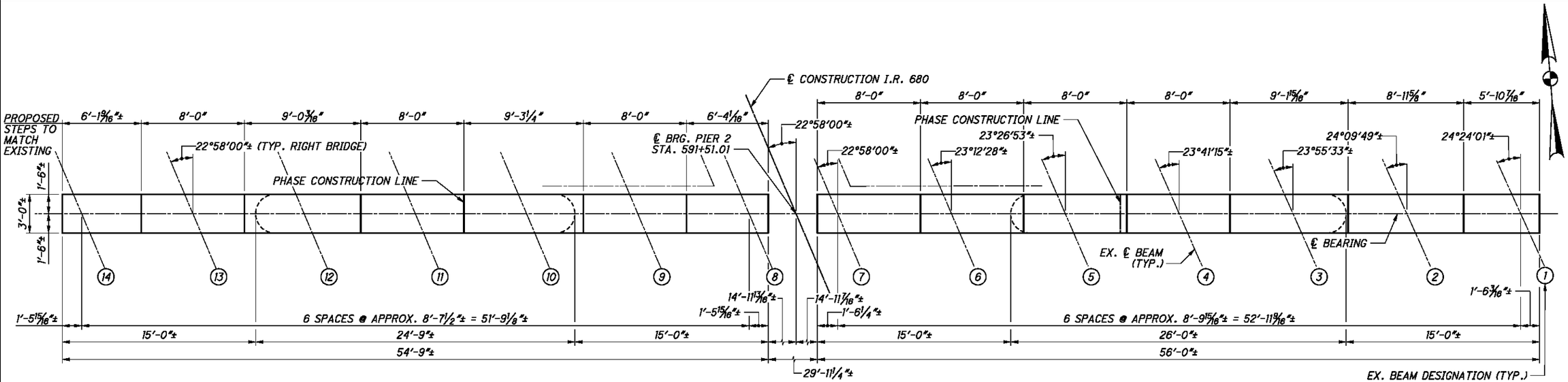
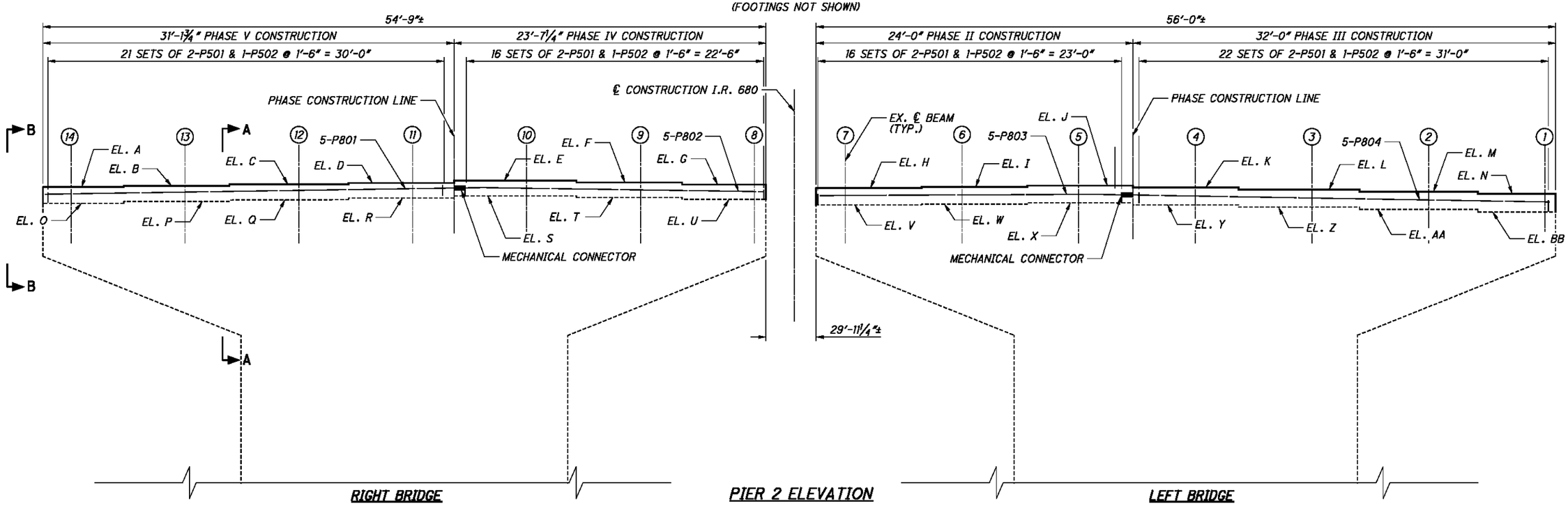


PIER 2 PLAN

(FOOTINGS NOT SHOWN)



RIGHT BRIDGE

PIER 2 ELEVATION

(LOOKING DOWNSTATION)

LEFT BRIDGE

PIER 2 ELEVATION TABLE													
PROPOSED TOP OF PIER CAP													
EL. A	EL. B	EL. C	EL. D	EL. E	EL. F	EL. G	EL. H	EL. I	EL. J	EL. K	EL. L	EL. M	EL. N
961.09	961.18	961.28	961.37	961.44	961.28	961.13	961.02	961.11	961.21	961.07	960.90	960.74	960.58
SURVEYED TOP OF PIER CAP*													
EL. O	EL. P	EL. Q	EL. R	EL. S	EL. T	EL. U	EL. V	EL. W	EL. X	EL. Y	EL. Z	EL. AA	EL. BB
960.57	960.71	960.81	960.95	961.00	960.85	960.73	960.60	960.65	960.76	960.60	960.42	960.25	960.05

* VERIFY EXISTING ELEVATIONS PRIOR TO FORMING PIER CAP.

NOTES:

1. FOR SECTION A-A AND VIEW B-B, SEE SHEET 23/47.
2. FOR PHASE CONSTRUCTION DETAILS, SEE SHEETS 12/47 THRU 15/47.
3. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 25/47.
4. INSTALL STRUCTURE GROUNDING SYSTEM BY CONNECTING TO EXISTING GROUND WIRES, EXTENDING THROUGH NEW CAP, AND CONNECTING TO BEAMS, OR PROVIDE NEW GROUND WIRES. SEE LIGHTING PLANS AND ODOT STANDARD DRAWING HL-50.21 FOR ADDITIONAL DETAILS.
5. THE ANCHOR RODS FOR THE EXISTING BEARINGS ON PIERS 1 AND 2 SHALL BE CUT FLUSH WITH THE TOP OF THE EXISTING PIER.

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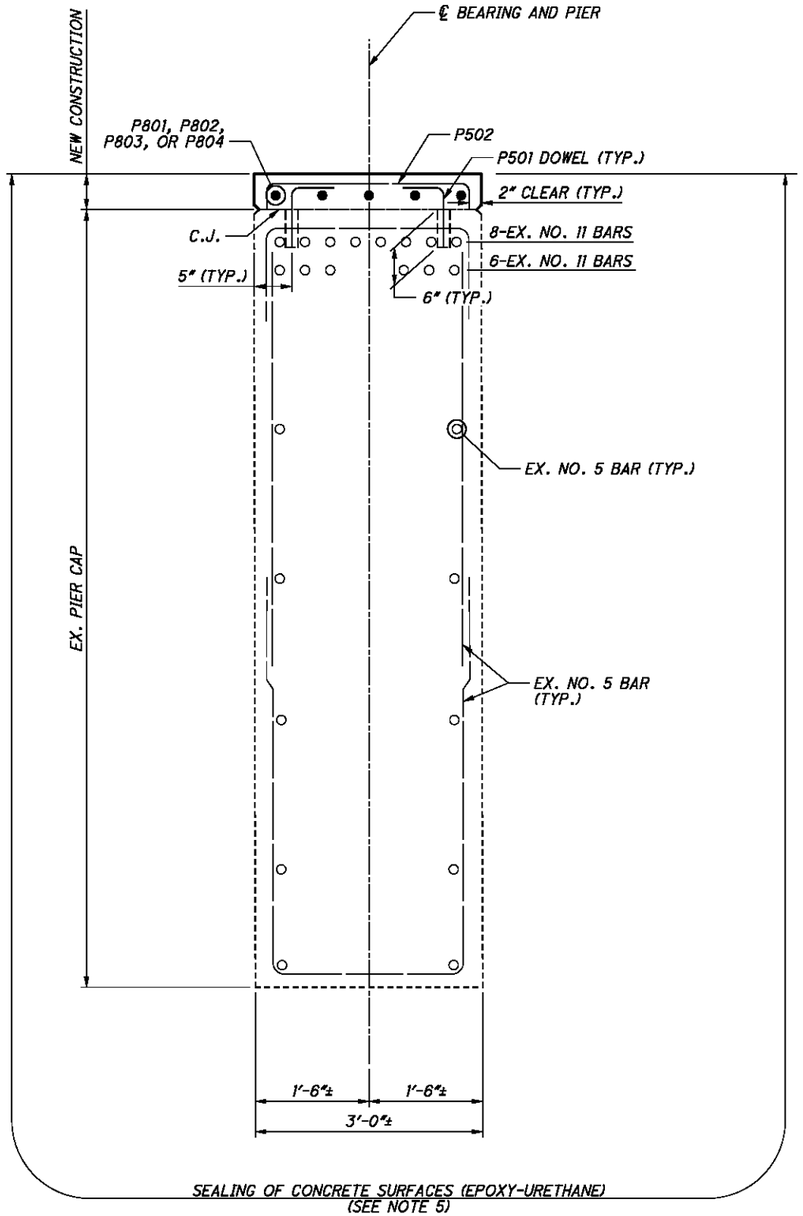
PIER 2 PLAN AND ELEVATION
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

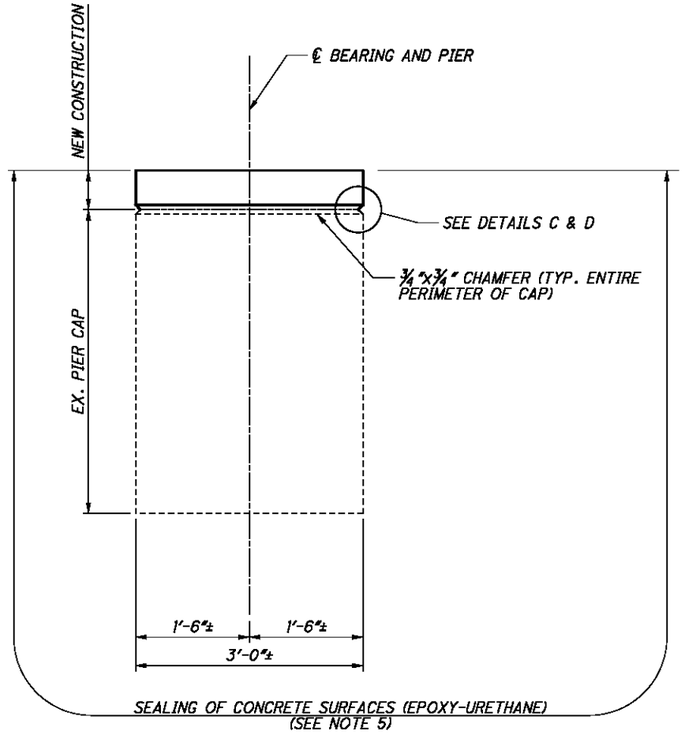
MAH-680-3.25
PID No. 96637

22/47

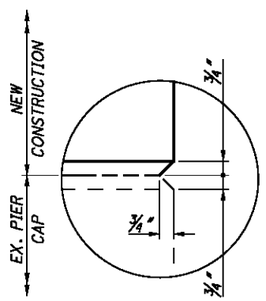
144/169



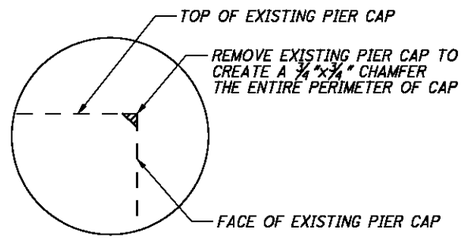
SECTION A-A



VIEW B-B



DETAIL C



DETAIL D

NOTES:

1. THE EXISTING REINFORCING STEEL IN THE PIER CAP SHALL BE ACCURATELY LOCATED PRIOR TO THE DRILLING OF DOWEL HOLES. SEE GENERAL NOTES, SHEETS 3/47 AND 4/47.
2. FOR LOCATIONS OF SECTION A-A AND VIEW B-B, SEE SHEET 22/47.
3. FOR PHASE CONSTRUCTION DETAILS, SEE SHEETS 12/47 THRU 15/47.
4. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 25/47.
5. ALL EXPOSED CONCRETE SURFACES, INCLUDING THE ENDS OF THE PIERS, SHALL BE SEALED WITH THE EXCEPTION OF THE BEAM SEAT.

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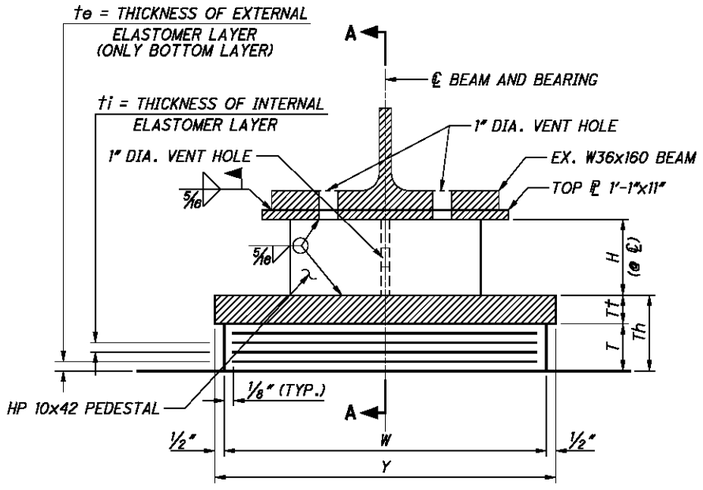
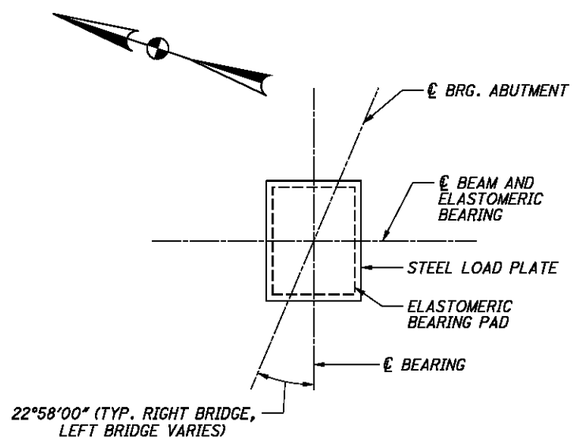
JOL		5006724/5006694	

PIER SECTIONS AND DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

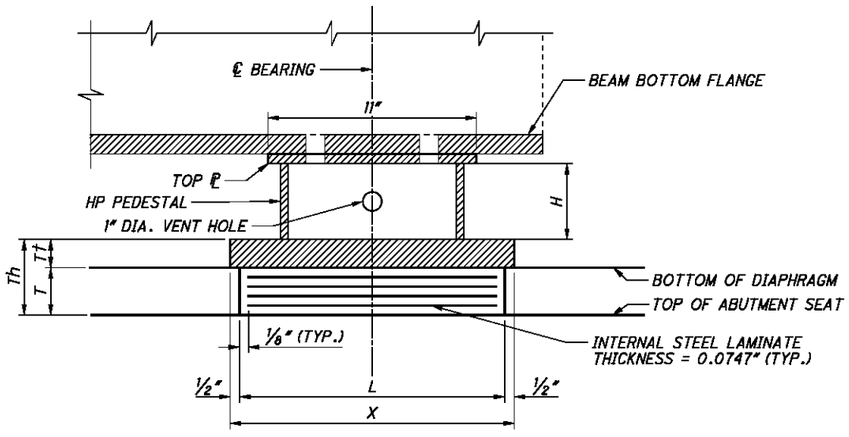


BEARINGS AT ABUTMENTS

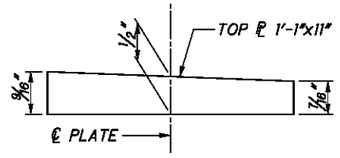


BEARING ORIENTATION PLAN

UPSTATION



SECTION A-A



TOP PLATE DETAIL

HP PEDESTAL DIMENSION TABLE							
LEFT BRIDGE - REAR ABUTMENT							
	BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7
H	7"	8 3/4"	10 9/16"	12 3/8"	13 9/16"	12 7/16"	11 3/16"
RIGHT BRIDGE - REAR ABUTMENT							
	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14
H	7 9/16"	9 3/8"	11 3/8"	10 7/16"	9 5/16"	8 1/8"	7"
LEFT BRIDGE - FORWARD ABUTMENT							
	BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7
H	7"	8 15/16"	10 15/16"	12 15/16"	14 7/8"	13 5/8"	12 1/2"
RIGHT BRIDGE - FORWARD ABUTMENT							
	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14
H	7 9/16"	9 3/8"	11 1/4"	10 7/16"	9 5/16"	8 1/8"	7"

ELASTOMERIC BEARING DATA																
LOCATION	TYPE	NO. REQ'D.	DL (KIPS)	LL W/O IMPACT (KIPS)	MAX DESIGN LOAD (DL+LL) (KIP)	L (IN)	W (IN)	ti (IN)	te (IN)	NO. OF ti's	NO. INTERNAL LAMINATES	T (IN)	STEEL LOAD PLATE X (IN)	STEEL LOAD PLATE Y (IN)	STEEL LOAD PLATE Tt (IN)	Th (IN)
ABUTMENTS	EXP.	28	65	58	123	11	15	0.375	0.25	5	5	2.499	12	16	1.50	4.00

NOTES:

1. 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. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
2. THE STEEL LOAD PLATES AND HP SHAPES SHALL BE ASTM A709 GRADE 50 STEEL AND PAINTED IN ACCORDANCE WITH ITEM 514 TO MATCH PROPOSED BEAM COLOR.
3. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
4. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THEY SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
5. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING TABLE. IMPACT IS NOT INCLUDED. LOADS ARE UNFACTORED.
6. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE THE TOP PLATE, LOAD PLATE, HP SHAPE, AND ALL MATERIALS, LABOR, TESTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.
7. FOR PIER BEARING DETAILS SEE SHEET 25/47.

DESIGN AGENCY
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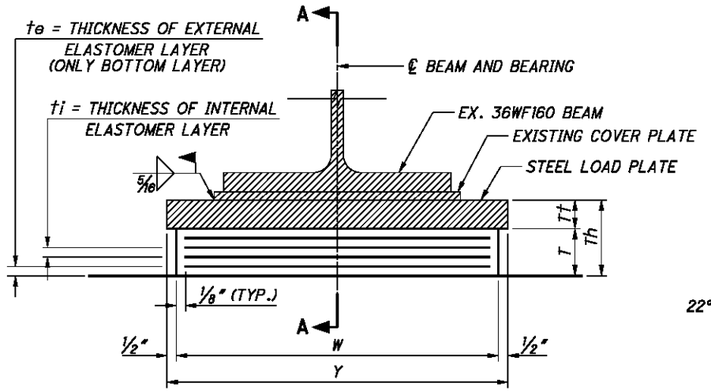
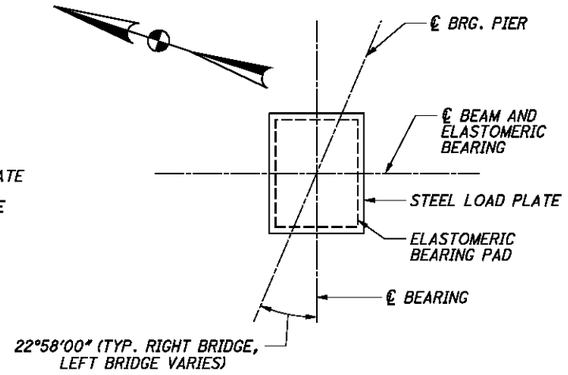
ABUTMENT ELASTOMERIC BEARING DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

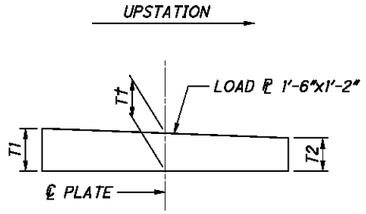
MAH-680-3.25
PID No. 96637



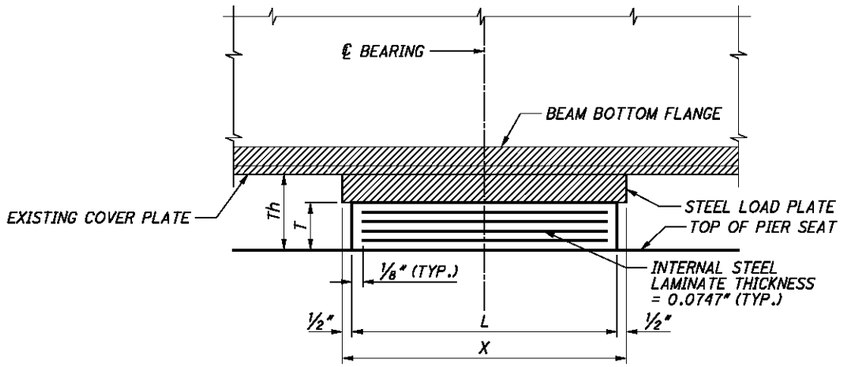
BEARINGS AT PIERS



BEARING ORIENTATION PLAN



STEEL LOAD PLATE DETAIL



SECTION A-A

PIER 1 BEARING THICKNESS	
BEAM	Th (IN)
1	6.64
2	7.14
3	7.20
4	7.64
5	7.82
6	7.89
7	6.57
8	7.01
9	7.51
10	7.57
11	7.01
12	7.64
13	7.82
14	7.51

PIER 1 ELEVATION TABLE		
BEAM	PROPOSED BOTTOM OF BEAM	SURVEYED TOP OF PIER CAP*
1	961.62	961.07
2	961.77	961.18
3	961.93	961.33
4	962.08	961.45
5	962.20	961.55
6	962.11	961.45
7	962.02	961.47
8	962.14	961.55
9	962.28	961.66
10	962.44	961.81
11	962.38	961.79
12	962.28	961.64
13	962.18	961.53
14	962.09	961.46

* VERIFY SURVEYED TOP OF CAP ELEVATIONS PRIOR TO BEARING FABRICATION.

STEEL LOAD PLATE DIMENSIONS				
	BEAM	Tt (IN)	T1 (IN)	T2 (IN)
PIER 1	1	3 11/16	3 3/4	3 5/8
	2	4 3/16	4 1/4	4 1/8
	3	4 1/4	4 5/16	4 3/16
	4	4 11/16	4 3/4	4 5/8
	5	4 1/8	4 15/16	4 13/16
	6	4 15/16	5	4 1/8
	7	3 5/8	3 11/16	3 9/16
	8	4 1/16	4 1/8	4
	9	4 9/16	4 5/8	4 1/2
	10	4 5/8	4 11/16	4 9/16
	11	4 1/16	4 1/8	4
	12	4 11/16	4 3/4	4 5/8
	13	4 1/8	4 15/16	4 13/16
	14	4 9/16	4 5/8	4 1/2
PIER 2	1-14	1 1/2	1 9/16	1 7/16

ELASTOMERIC BEARING DATA																
LOCATION	TYPE	NO. REQ'D.	DL (KIPS)	LL W/O IMPACT (KIPS)	MAX DESIGN LOAD (DL+LL) (KIP)	L (IN)	W (IN)	ti (IN)	te (IN)	NO. OF ti's	NO. INTERNAL LAMINATES	T (IN)	STEEL LOAD PLATE X (IN)	STEEL LOAD PLATE Y (IN)	STEEL LOAD PLATE Tt (IN)	STEEL LOAD PLATE Th (IN)
PIER 1	EXP.	14	128	69	197	13	17	0.375	0.25	6	6	2.948	14	18	VARIES	VARIES
PIER 2	EXP.	14	128	69	197	13	17	0.375	0.25	6	6	2.948	14	18	1.50	4.45

NOTES:

1. 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. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
2. THE STEEL LOAD PLATES SHALL BE ASTM A709 GRADE 50 OR GRADE 50W STEEL AND PAINTED IN ACCORDANCE WITH ITEM 514 TO MATCH PROPOSED BEAM COLOR.
3. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
4. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THEY SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
5. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING TABLE. IMPACT IS NOT INCLUDED. LOADS ARE UNFACTORED.
6. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE THE LOAD PLATE, AND ALL MATERIALS, LABOR, TESTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).
7. FOR ABUTMENT BEARING DETAILS SEE SHEET 24/47.

DESIGN AGENCY
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PIER ELASTOMERIC BEARING DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

25/47

147/169

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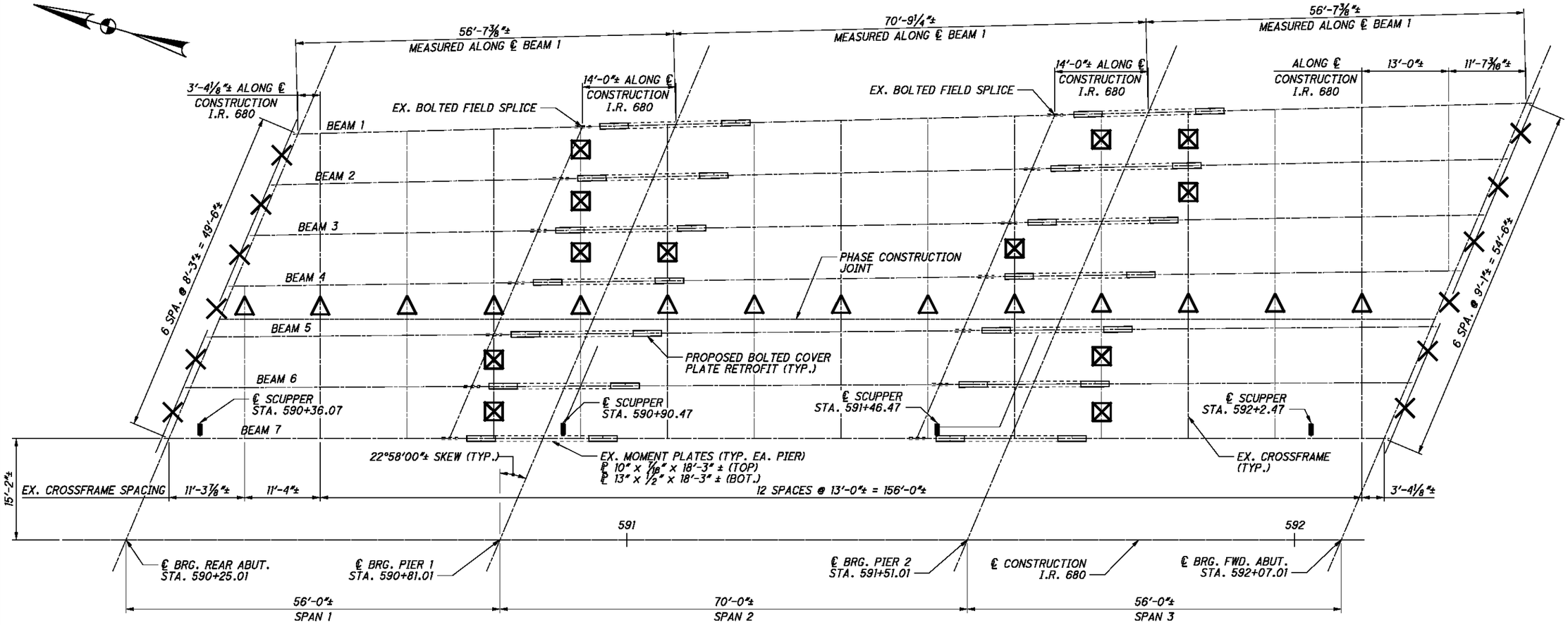

FRAMING PLAN - LEFT BRIDGE

LEGEND:

- X — EX. END CROSSFRAME TO BE REMOVED
- ⊠ — EX. CROSSFRAME TO BE REMOVED AND REPLACED IF NECESSARY (SEE NOTE 8)
- △ — EX. CROSSFRAME TO BE REMOVED FOR JACKING AND REPLACED (SEE NOTE 7)

NOTES:

1. FOR STEEL BEAM ELEVATION, SEE SHEET 27/47 .
2. FOR BOLTED COVER PLATE RETROFITS, SEE SHEET 30/47 .
3. FOR DECK PLAN, SEE SHEET 33/47 .
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 31/47 .
5. FOR TRANSVERSE SECTION, SEE SHEET 34/47 .
6. FOR STEEL DETAILS NOT SHOWN, SEE ODOT STD. DWG. GSD-1-96.
7. FOR JACKING NOTES, SEE SHEETS 3/47 AND 4/47 .
8. EXISTING CROSSFRAMES THAT WILL INTERFERE WITH INSTALLATION OF THE NEW BOLTED COVER PLATE RETROFITS SHALL BE REMOVED AND ANY REMAINING WELD GROUND SMOOTH. AFTER INSTALLATION OF THE RETROFIT PLATES, THE CROSSFRAMES SHALL BE REPLACED PER ITEM 513 STRUCTURAL STEEL MISC.: REPLACEMENT OF CROSSFRAMES.
9. FOR REPLACEMENT OF CROSSFRAMES, ADJUST CROSSFRAME SPACING TO AVOID INTERFERENCE WITH EXISTING SPLICE PLATES.

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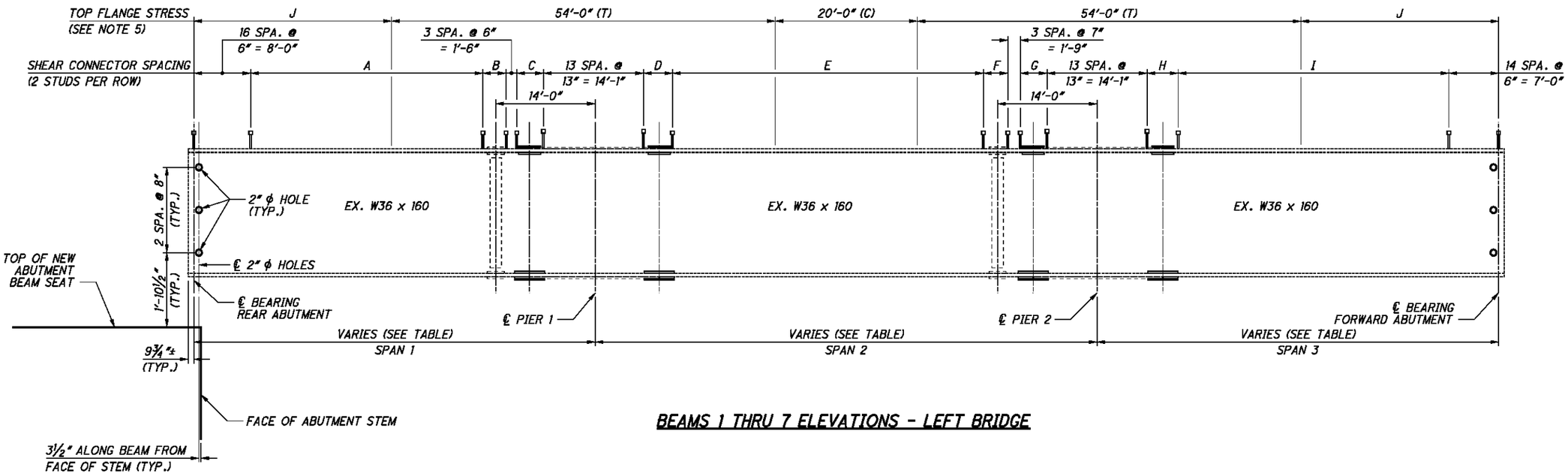
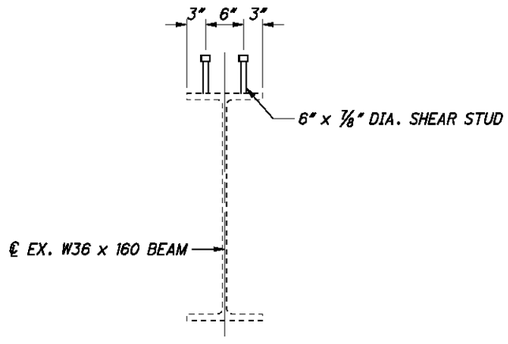
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		5006694	

FRAMING PLAN - LEFT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



BEAMS 1 THRU 7 ELEVATIONS - LEFT BRIDGE



SHEAR CONNECTOR DETAIL

NOTE: SHEAR CONNECTOR PLACEMENT ON FLANGE SPLICE PLATES AND BOLTED COVER PLATE RETROFITS ARE NOT PERMITTED. ADJUST SPACINGS IF NECESSARY TO AVOID INTERFERENCE WITH SPLICE PLATES AND CONNECTION BOLTS.

SHEAR STUD SPACING TABLE

	A	B	C	D	E	F	G	H	I
BEAM 1	56 SPA. @ 7" = 32'-8"	3'-4¾"	3'-10¹¹⁄₁₆"	3'-11¹¹⁄₁₆"	76 SPA. @ 7" = 44'-4"	2'-11⅞"	3'-10¹¹⁄₁₆"	3'-11⁵⁄₁₆"	66 SPA. @ 7" = 38'-6"
BEAM 2	56 SPA. @ 7" = 32'-8"	3'-3½"	3'-10¹¹⁄₁₆"	3'-10¹⁵⁄₁₆"	76 SPA. @ 7" = 44'-4"	2'-11⅛"	3'-10¹¹⁄₁₆"	3'-10¹⁄₁₆"	66 SPA. @ 7" = 38'-6"
BEAM 3	56 SPA. @ 7" = 32'-8"	3'-2¼"	3'-10⅝"	3'-9⅝"	76 SPA. @ 7" = 44'-4"	2'-10¹³⁄₁₆"	3'-10¹¹⁄₁₆"	3'-9"	66 SPA. @ 7" = 38'-6"
BEAM 4	56 SPA. @ 7" = 32'-8"	3'-1"	3'-10⅝"	4'-⅛"	75 SPA. @ 7" = 43'-9"	3'-1"	3'-10¹¹⁄₁₆"	4'-2⁹⁄₁₆"	65 SPA. @ 7" = 37'-11"
BEAM 5	56 SPA. @ 7" = 32'-8"	2'-11¾"	3'-10⅝"	4'-⅛"	75 SPA. @ 7" = 43'-9"	3'-¼"	3'-10¹¹⁄₁₆"	4'-1⁵⁄₁₆"	65 SPA. @ 7" = 37'-11"
BEAM 6	56 SPA. @ 7" = 32'-8"	2'-10⁹⁄₁₆"	3'-10⅝"	3'-11⅜"	75 SPA. @ 7" = 43'-9"	2'-11½"	3'-10¹¹⁄₁₆"	4'-⅛"	65 SPA. @ 7" = 37'-11"
BEAM 7	55 SPA. @ 7" = 32'-1"	3'-4⅜"	3'-9⅛"	3'-8½"	75 SPA. @ 7" = 43'-9"	3'-3¹¹⁄₁₆"	3'-10¹³⁄₁₆"	3'-9½"	65 SPA. @ 7" = 37'-11"

SPAN LENGTH TABLE

	SPAN 1	SPAN 2	SPAN 3
BEAM 1	56'-7¹⁵⁄₁₆"±	70'-9¼"±	56'-7¹⁵⁄₁₆"±
BEAM 2	56'-6⅛"±	70'-7¹¹⁄₁₆"±	56'-6⅛"±
BEAM 3	56'-4⅛"±	70'-6⅛"±	56'-4⅛"±
BEAM 4	56'-3⅝"±	70'-4⁹⁄₁₆"±	56'-3⅝"±
BEAM 5	56'-2⁷⁄₁₆"±	70'-3¹⁄₁₆"±	56'-2⁷⁄₁₆"±
BEAM 6	56'-1³⁄₁₆"±	70'-1½"±	56'-1³⁄₁₆"±
BEAM 7	56'-0"±	70'-0"±	56'-0"±

TOP FLANGE STRESS LENGTH TABLE

	J
BEAM 1	28'-0" (C)
BEAM 2	27'-10" (C)
BEAM 3	27'-7⅞" (C)
BEAM 4	27'-6" (C)
BEAM 5	27'-3⅞" (C)
BEAM 6	27'-1⅞" (C)
BEAM 7	27'-0" (C)

NOTES:

1. FOR FRAMING PLAN, SEE SHEET 26/47.
2. FOR BEARING DETAILS, SEE SHEETS 24/47 AND 25/47.
3. FOR DECK PLAN, SEE SHEET 33/47.
4. FOR TRANSVERSE SECTION, SEE SHEET 34/47.
5. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "C" FOR COMPRESSION. DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "T" FOR TENSION. FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST ¼" FOR THICKNESSES UP TO ¾" OR ⅝" FOR GREATER THAN ¾" THICK.
6. INCLUDE PAYMENT FOR 2" ϕ HOLES IN EXISTING BEAMS UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
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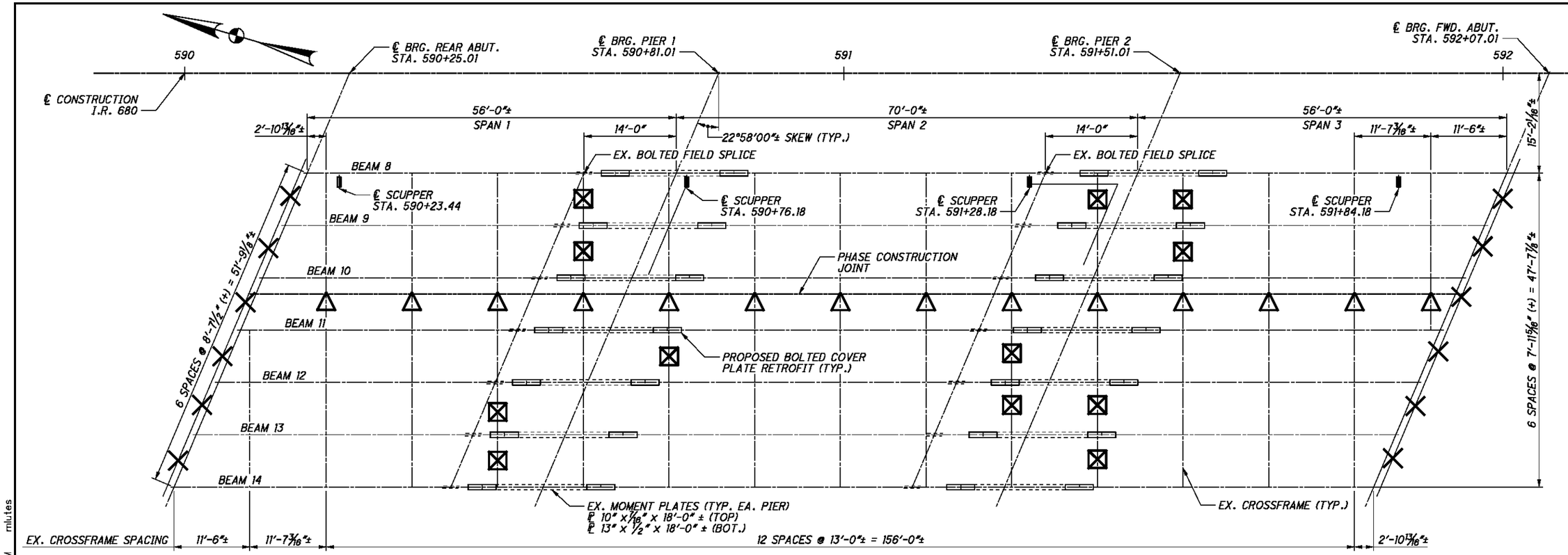
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		5006694	

BEAM ELEVATION - LEFT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



FRAMING PLAN - RIGHT BRIDGE

LEGEND:

- X — EX. END CROSSFRAME TO BE REMOVED
- ⊠ — EX. CROSSFRAME TO BE REMOVED AND REPLACED IF NECESSARY (SEE NOTE 8)
- △ — EX. CROSSFRAME TO BE REMOVED FOR JACKING AND REPLACED (SEE NOTE 7)

NOTES:

1. FOR STEEL BEAM ELEVATION, SEE SHEET 29/47.
2. FOR BOLTED COVER PLATE RETROFITS, SEE SHEET 30/47.
3. FOR DECK PLAN, SEE SHEET 35/47.
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 32/47.
5. FOR TRANSVERSE SECTION, SEE SHEET 36/47.
6. FOR STEEL DETAILS NOT SHOWN, SEE ODOT STD. DWG. GSD-1-96.
7. FOR JACKING NOTES, SEE SHEETS 3/47 AND 4/47.
8. EXISTING CROSSFRAMES THAT WILL INTERFERE WITH INSTALLATION OF THE NEW BOLTED COVER PLATE RETROFITS SHALL BE REMOVED AND ANY REMAINING WELD GROUND SMOOTH. AFTER INSTALLATION OF THE RETROFIT PLATES, THE CROSSFRAMES SHALL BE REPLACED PER ITEM 513 STRUCTURAL STEEL MISC.: REPLACEMENT OF CROSSFRAMES.
9. FOR REPLACEMENT OF CROSSFRAMES, ADJUST CROSSFRAME SPACING TO AVOID INTERFERENCE WITH EXISTING SPLICE PLATES.

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FRAMING PLAN - RIGHT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

28/47

150
169

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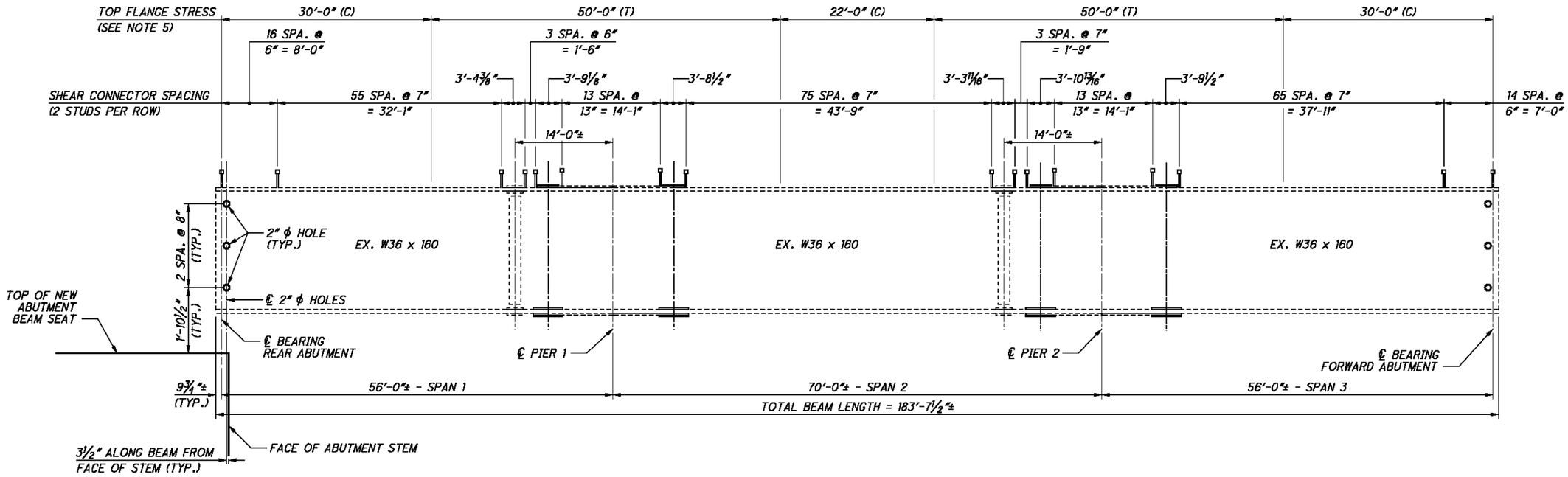
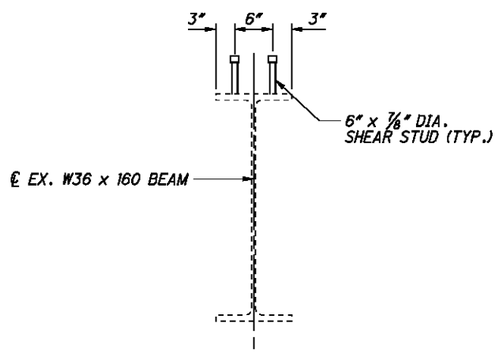


BEAMS 8 THRU 14 ELEVATIONS - RIGHT BRIDGE



SHEAR CONNECTOR DETAIL

NOTE: SHEAR CONNECTOR PLACEMENT ON FLANGE SPLICE PLATES AND BOLTED COVER PLATE RETROFITS ARE NOT PERMITTED. ADJUST SPACINGS IF NECESSARY TO AVOID INTERFERENCE WITH SPLICE PLATES AND CONNECTION BOLTS.

NOTES:

1. FOR FRAMING PLAN, SEE SHEET 28/47.
2. FOR BEARING DETAILS, SEE SHEETS 24/47 AND 25/47.
3. FOR DECK PLAN, SEE SHEET 35/47.
4. FOR TRANSVERSE SECTION, SEE SHEET 36/47.
5. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "C" FOR COMPRESSION. DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "T" FOR TENSION. FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
6. INCLUDE PAYMENT FOR 2" ϕ HOLES IN EXISTING BEAMS UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

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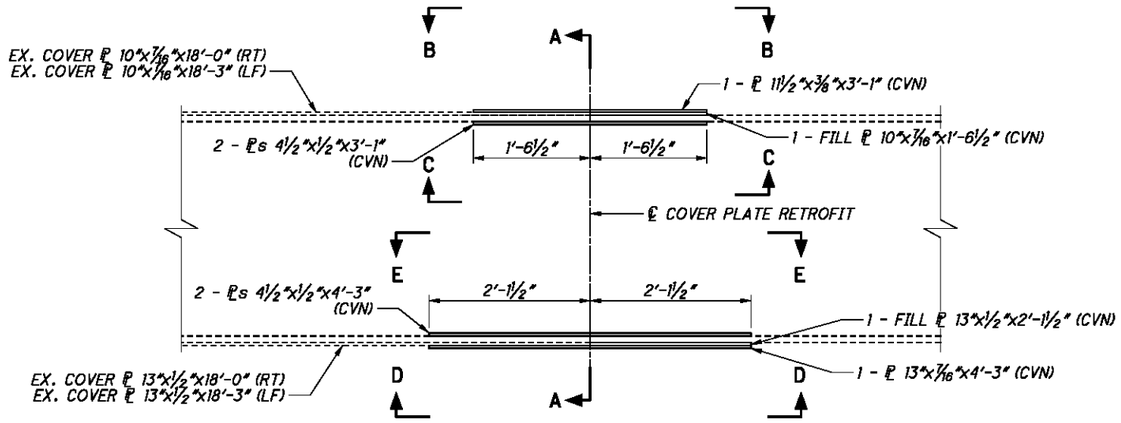
NBR		5006724	

BEAM ELEVATION - RIGHT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

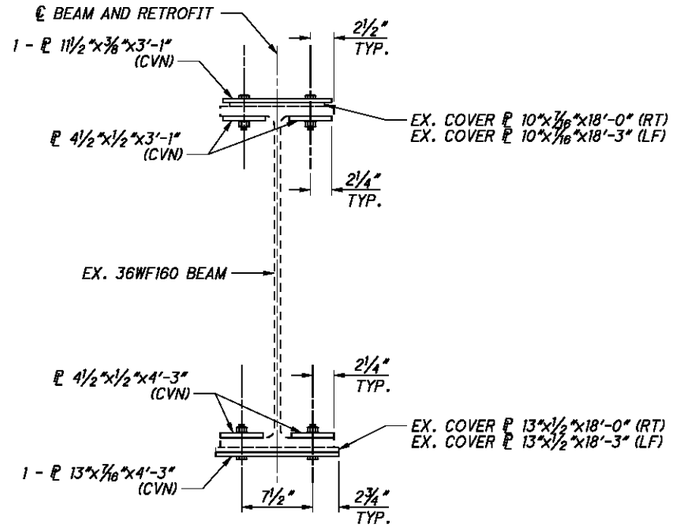
29/47

151/169

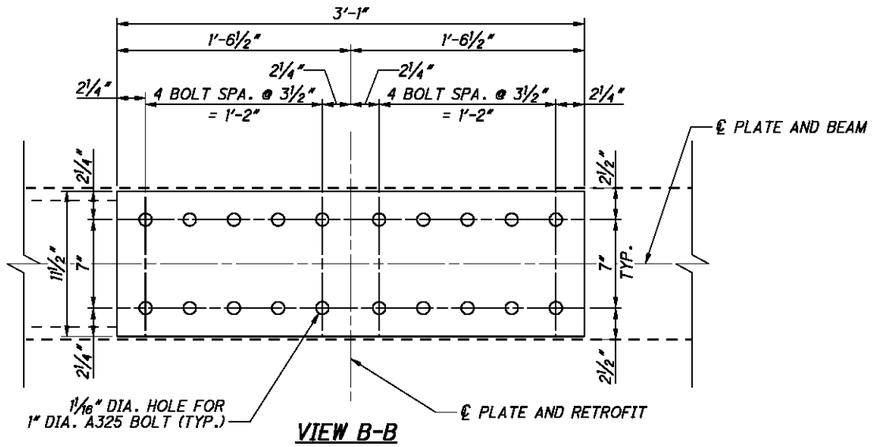


BOLTED COVER PLATE RETROFIT

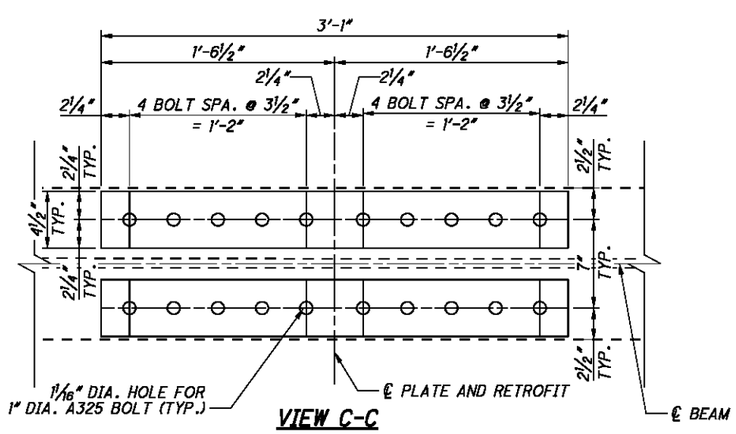
(ONE RETROFIT SHOWN, 2 RETROFITS PER LOCATION)
(TYPICAL AT ALL COVER PLATE LOCATIONS)



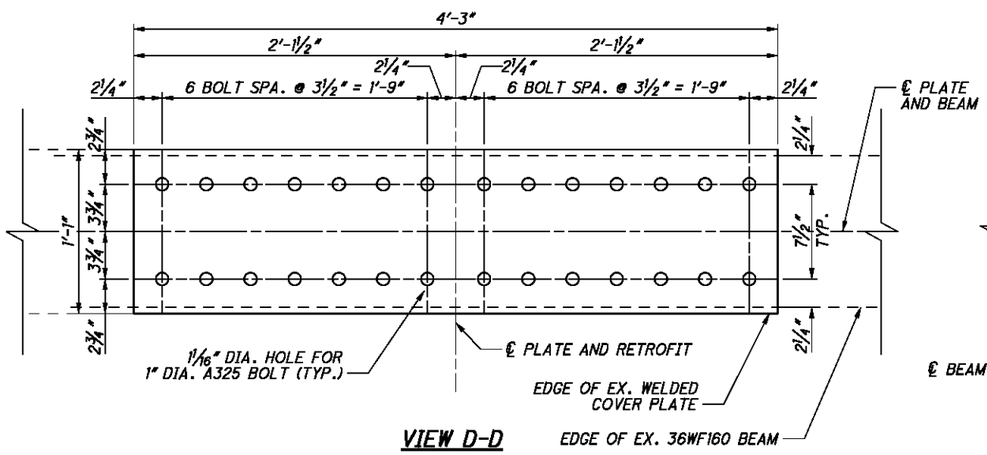
SECTION A-A



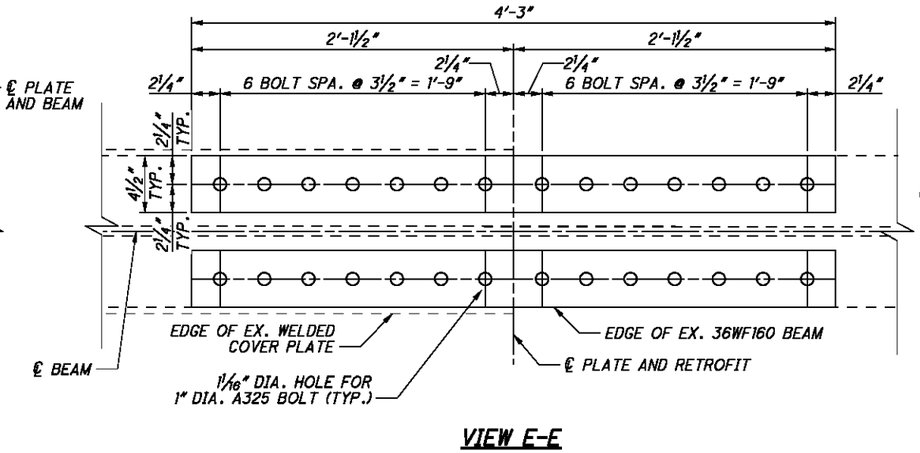
VIEW B-B



VIEW C-C



VIEW D-D



VIEW E-E

NOTES:

1. FOR STEEL FRAMING PLAN, SEE SHEETS 26/47 AND 28/47.
2. FOR ADDITIONAL STRUCTURAL STEEL DETAILS, SEE SHEETS 27/47 AND 29/47.
3. FOR ADDITIONAL NOTES, SEE SHEETS 3/47 AND 4/47.
4. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
5. HIGH STRENGTH BOLTS SHALL BE 1" ϕ A325 UNLESS OTHERWISE NOTED.

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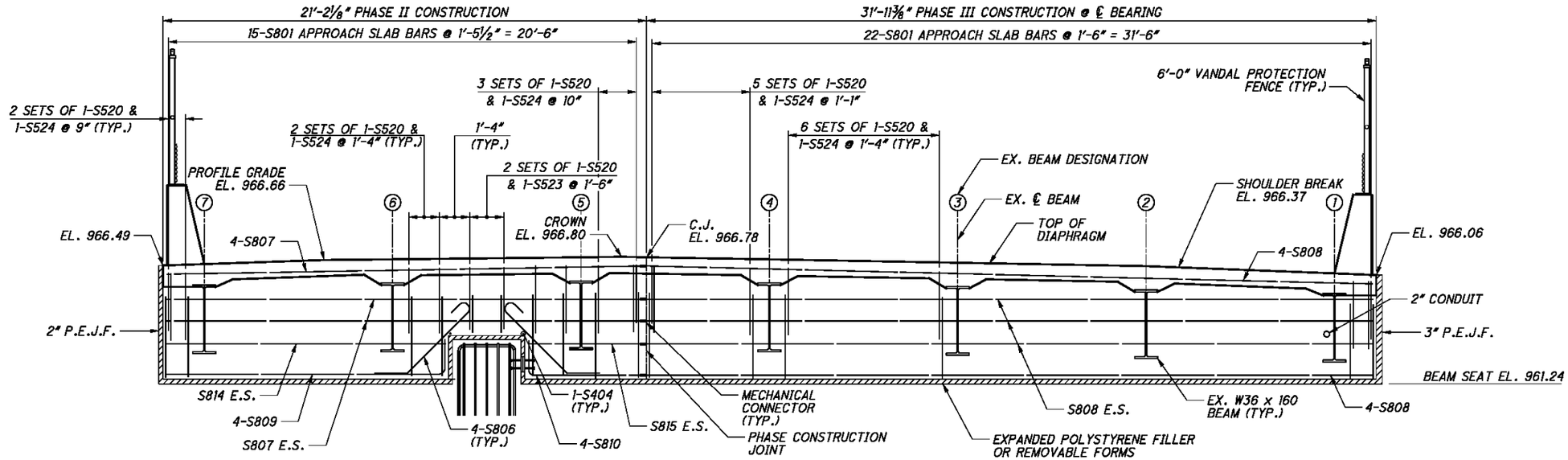
NBR		5006724/5006694	

BOLTED COVER PLATE RETROFITS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

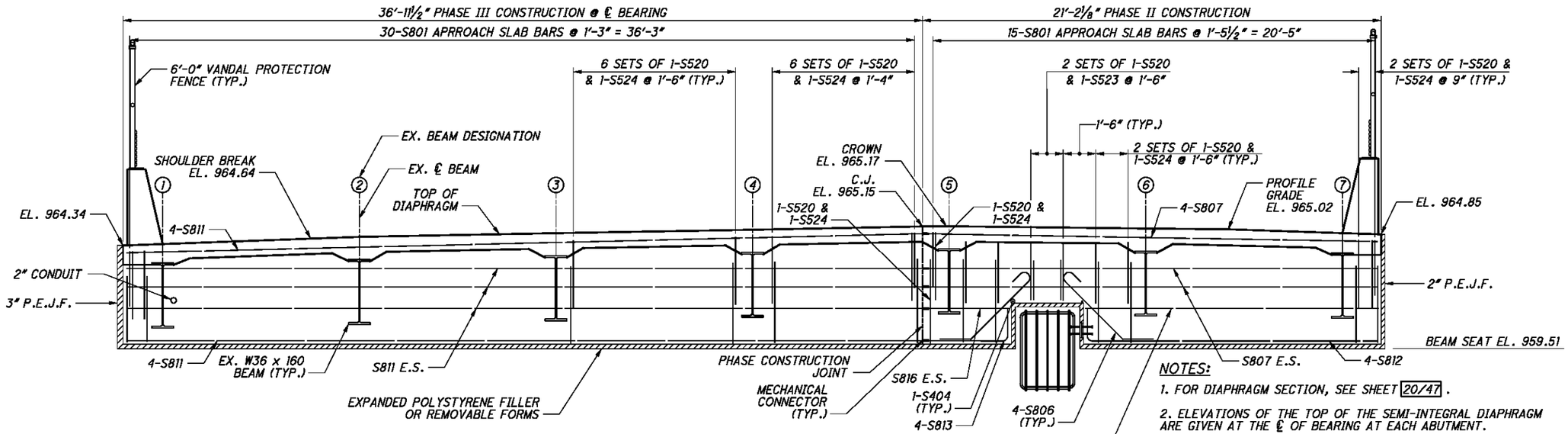
30 / 47

152 / 169



REAR LEFT ABUTMENT DIAPHRAGM ELEVATION

(BEARINGS AND PEDESTALS NOT SHOWN)



FORWARD LEFT ABUTMENT DIAPHRAGM ELEVATION

(BEARINGS AND PEDESTALS NOT SHOWN)

NOTES:

1. FOR DIAPHRAGM SECTION, SEE SHEET 20/47 .
2. ELEVATIONS OF THE TOP OF THE SEMI-INTEGRAL DIAPHRAGM ARE GIVEN AT THE ℄ OF BEARING AT EACH ABUTMENT.
3. FOR BEARING DETAILS, SEE SHEET 24/47 .
4. PLACE VERTICAL BARS PARALLEL TO BEAMS.
5. FOR ABUTMENT DETAILS, SEE SHEETS 17/47 THRU 20/47 .
6. FOR FRAMING PLAN AND BEAM DETAILS, SEE SHEETS 26/47 THRU 27/47 .
7. FOR DIAPHRAGM GUIDE DETAILS, SEE SHEET 21/47 .
8. PLACE THE DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER ENDS OF AN INDIVIDUAL PHASE WITH THE DECK CONCRETE.

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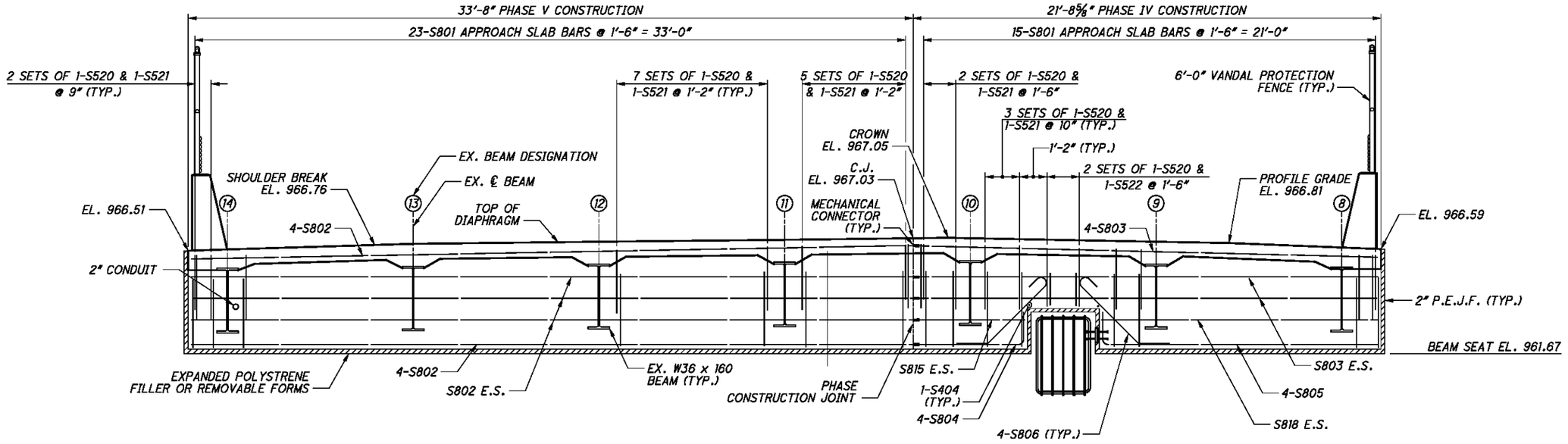
JOL		5006694	

SEMI-INTEGRAL DIAPHRAGM DETAILS - LEFT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

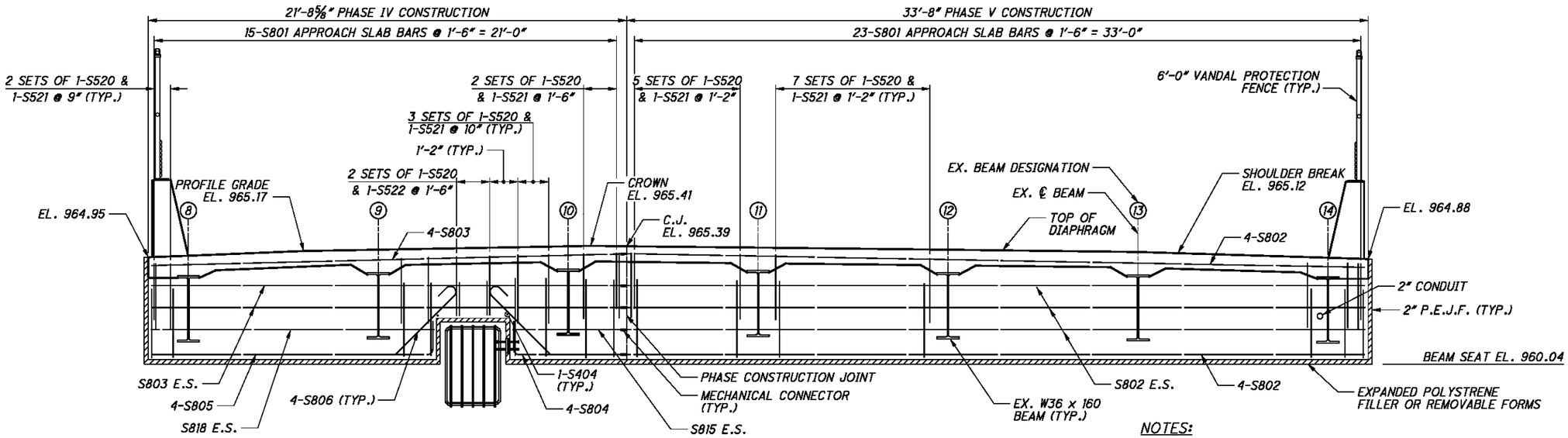
31 / 47

153 / 169



REAR RIGHT ABUTMENT DIAPHRAGM ELEVATION

(BEARINGS AND PEDESTALS NOT SHOWN)



FORWARD RIGHT ABUTMENT DIAPHRAGM ELEVATION

(BEARINGS AND PEDESTALS NOT SHOWN)

NOTES:

1. FOR DIAPHRAGM SECTION, SEE SHEET 20/47 .
2. ELEVATIONS OF THE TOP OF THE SEMI-INTEGRAL DIAPHRAGM ARE GIVEN AT THE ℄ OF BEARING AT EACH ABUTMENT.
3. FOR BEARING DETAILS, SEE SHEET 24/47 .
4. PLACE VERTICAL BARS PARALLEL TO BEAMS.
5. FOR ABUTMENT DETAILS, SEE SHEETS 17/47 THRU 20/47 .
6. FOR FRAMING PLAN AND BEAM DETAILS, SEE SHEETS 28/47 THRU 29/47 .
7. FOR DIAPHRAGM GUIDE DETAILS, SEE SHEET 21/47 .
8. PLACE THE DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER ENDS OF AN INDIVIDUAL PHASE WITH THE DECK CONCRETE.

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AEK	AEK	RER	11/30/2015
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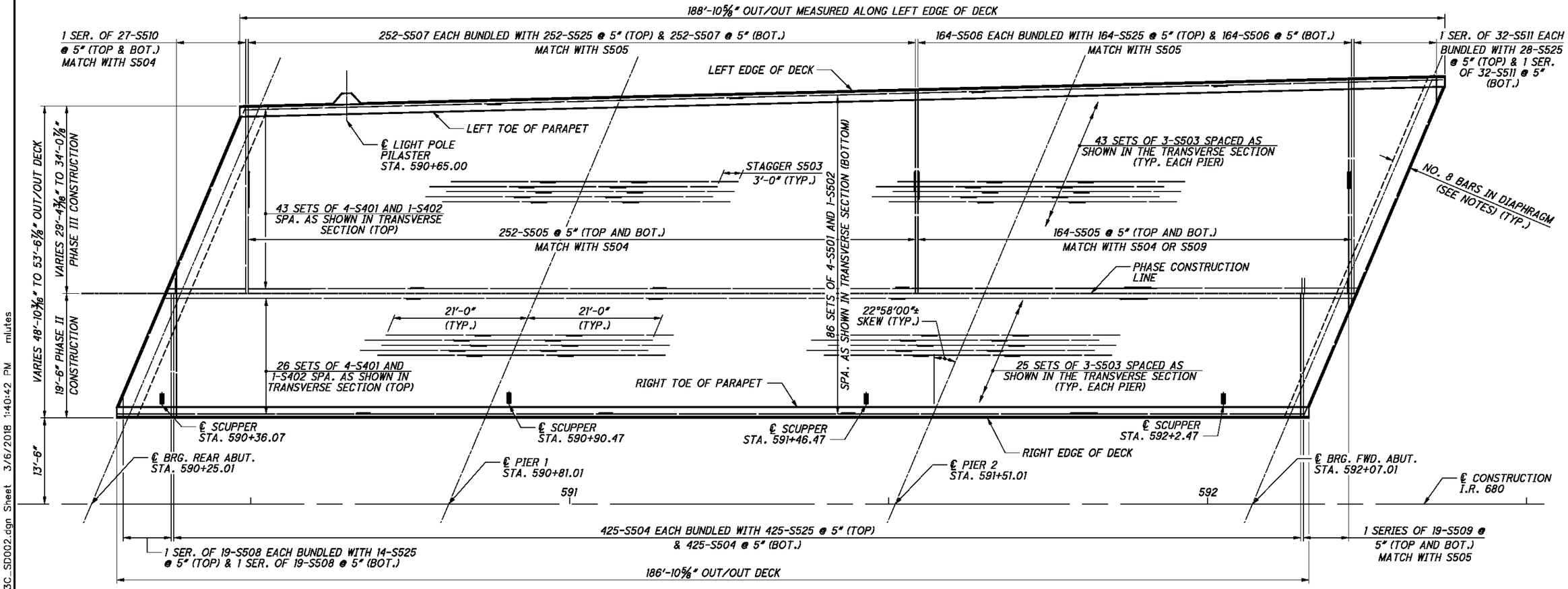
JOL		5006724	

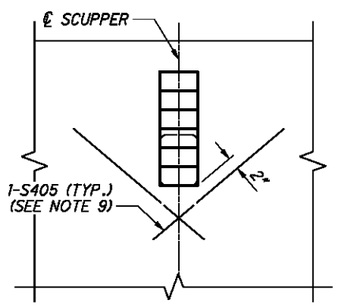
SEMI-INTEGRAL DIAPHRAGM DETAILS - RIGHT BRIDGE

BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



DECK PLAN - LEFT BRIDGE



ADDITIONAL REINFORCING AT SCUPPERS

(NORMAL LONGITUDINAL REINFORCEMENT, NOT SHOWN FOR CLARITY)

REQUIRED LAP LENGTHS	
NO. 4 BARS	2'-0" MIN.
NO. 5 BARS	2'-6" MIN.

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEET 34/47.
2. FOR PARAPET DETAILS, SEE SHEET 40/47.
3. FOR SCREED, TOP OF HAUNCH, AND FINAL DECK ELEVATIONS, SEE SHEETS 37/47 THRU 39/47.
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 31/47.
5. FOR PHASE CONSTRUCTION DETAILS, SEE SHEETS 12/47 THRU 15/47.
6. FOR APPROACH SLAB PLAN, SEE SHEET 42/47.
7. FOR REINFORCEMENT SCHEDULE, SEE SHEETS 45/47 AND 46/47.
8. FOR LIGHT POLE PILASTER DETAILS, SEE SHEET 40/47.
9. S405 BARS SHALL BE ORIENTED AT 45° TO THE LONG AXIS OF THE SCUPPER AND LOCATED JUST BELOW THE TRANSVERSE BARS IN THE TOP MAT OF STEEL.
10. FIELD CUT REINFORCING TO ACCOMODATE SCUPPERS.
11. FOR ADDITIONAL SCUPPER DETAILS, SEE SHEET 44/47.

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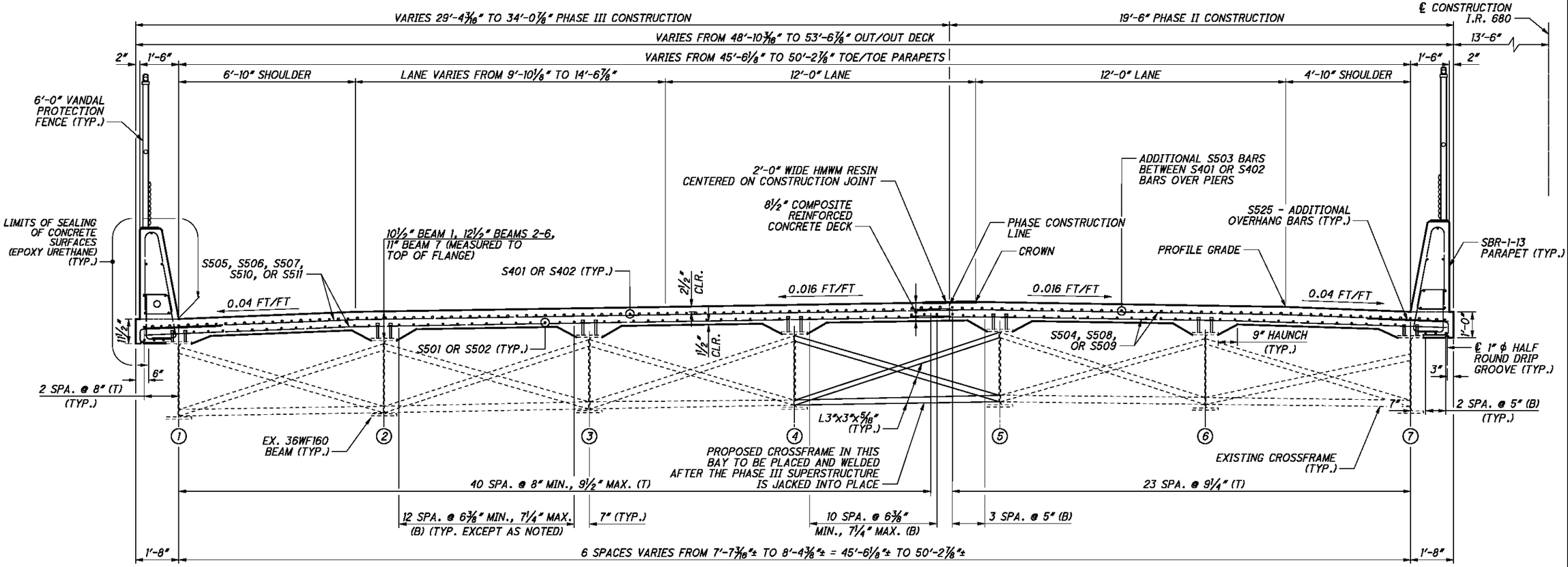
NBR		5006694	

DECK PLAN - LEFT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



TRANSVERSE SECTION - LEFT BRIDGE

MIN. LAP LENGTHS	
NO. 5 BAR	2'-6"

NOTES:

1. FOR DECK PLAN, SEE SHEET 33/47 .
2. FOR REINFORCING STEEL SCHEDULE, SEE SHEETS 45/47 AND 46/47 .
3. 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 2 INCHES FOR BEAM 1, 4 INCHES FOR BEAMS 2-6, AND 2 1/2 INCHES FOR BEAM 7 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 IS ±3 INCHES.
4. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.
5. FOR PARAPET DETAILS, SEE SHEET 40/47 .
6. STRUCTURE TO BE GROUNDED IN ACCORDANCE WITH CMS 625.16.
7. SEE ODOT STANDARD DRAWING, GSD-1-96, FOR ADDITIONAL CROSSFRAME DETAILS.

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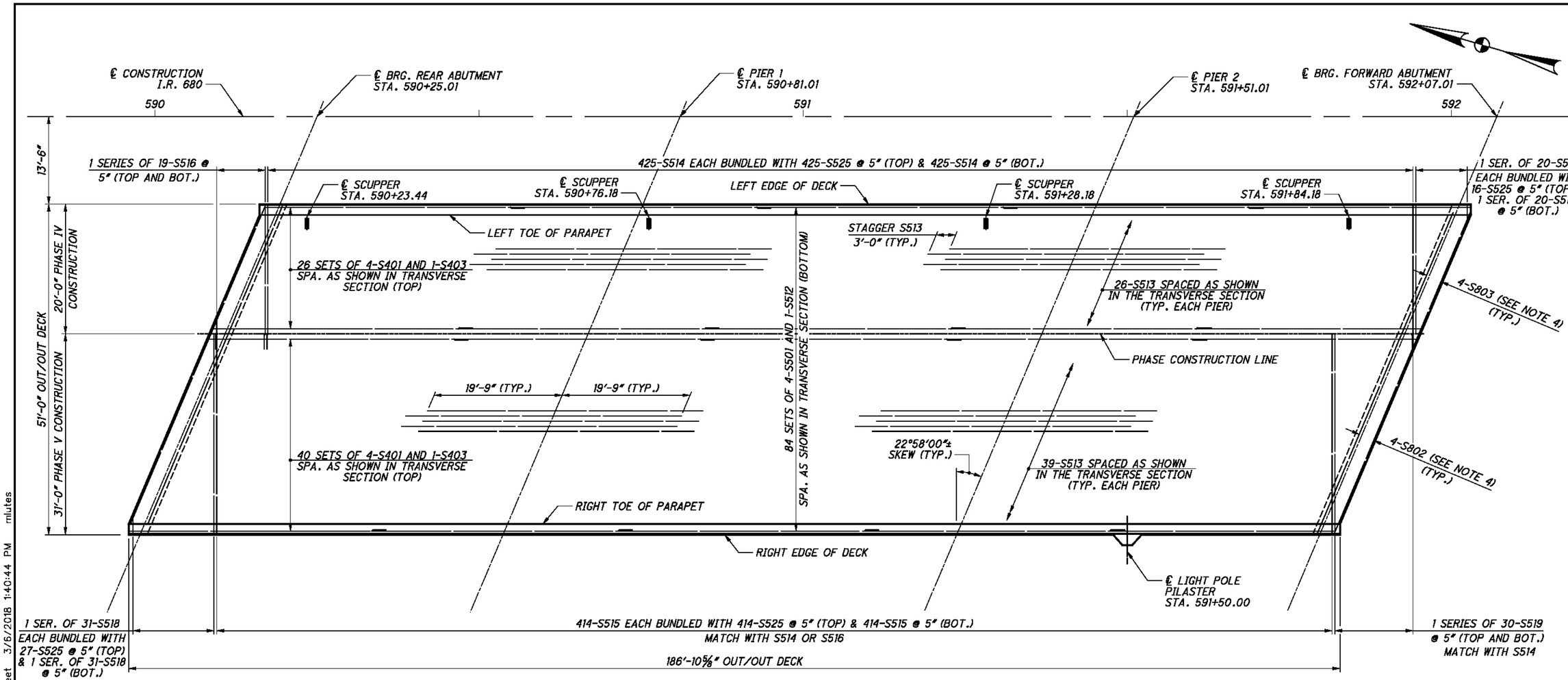
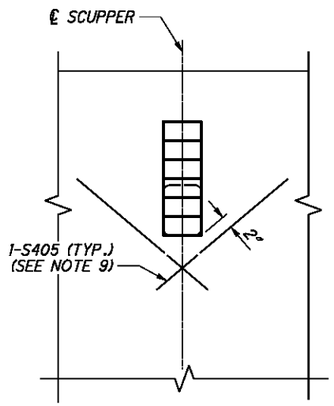
NBR		5006694	

TRANSVERSE SECTION - LEFT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637



DECK PLAN - RIGHT BRIDGE



ADDITIONAL REINFORCING AT SCUPPERS

(NORMAL LONGITUDINAL REINFORCEMENT, NOT SHOWN FOR CLARITY)

REQUIRED LAP LENGTHS	
NO. 4 BARS	2'-0" MIN.
NO. 5 BARS	2'-6" MIN.

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEET 36/47.
2. FOR PARAPET DETAILS, SEE SHEET 40/47.
3. FOR SCREED, TOP OF HAUNCH, AND FINAL DECK ELEVATIONS, SEE SHEETS 37/47 THRU 39/47.
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS, SEE SHEET 32/47.
5. FOR PHASE CONSTRUCTION DETAILS, SEE SHEETS 12/47 THRU 15/47.
6. FOR APPROACH SLAB PLAN, SEE SHEET 42/47.
7. FOR REINFORCEMENT SCHEDULE, SEE SHEETS 45/47 AND 46/47.
8. FOR LIGHT POLE PILASTER DETAILS, SEE SHEET 40/47.
9. S405 BARS SHALL BE ORIENTED AT 45° TO THE LONG AXIS OF THE SCUPPER AND LOCATED JUST BELOW THE TRANSVERSE BARS IN THE TOP MAT OF STEEL.
10. FIELD CUT REINFORCING TO ACCOMODATE SCUPPERS.
11. FOR ADDITIONAL SCUPPER DETAILS, SEE SHEET 44/47.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		5006724	

DECK PLAN - RIGHT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

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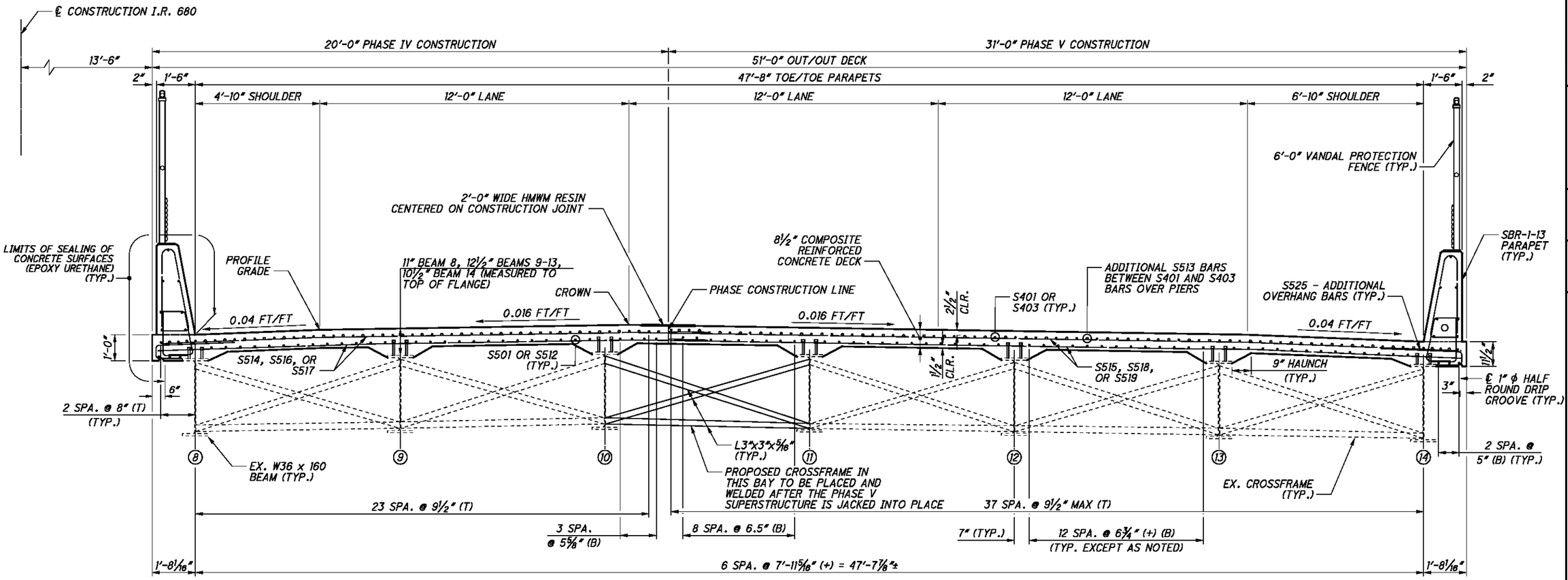

TRANSVERSE SECTION - RIGHT BRIDGE

MIN. LAP LENGTHS	
NO. 5 BAR	2'-6"

NOTES:

1. FOR DECK PLAN, SEE SHEET 35/47.
2. FOR REINFORCING STEEL SCHEDULE, SEE SHEETS 45/47 AND 46/47.
3. 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 2½ INCHES FOR BEAM 8, 4 INCHES FOR BEAMS 9-13, AND 2 INCHES FOR BEAM 14 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 IS ±3 INCHES.
4. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.
5. FOR PARAPET DETAILS, SEE SHEET 40/47.
6. STRUCTURE TO BE GROUNDED IN ACCORDANCE WITH CMS 625.16.
7. SEE ODOT STANDARD DRAWING, GSD-1-96, FOR ADDITIONAL CROSSFRAME DETAILS.

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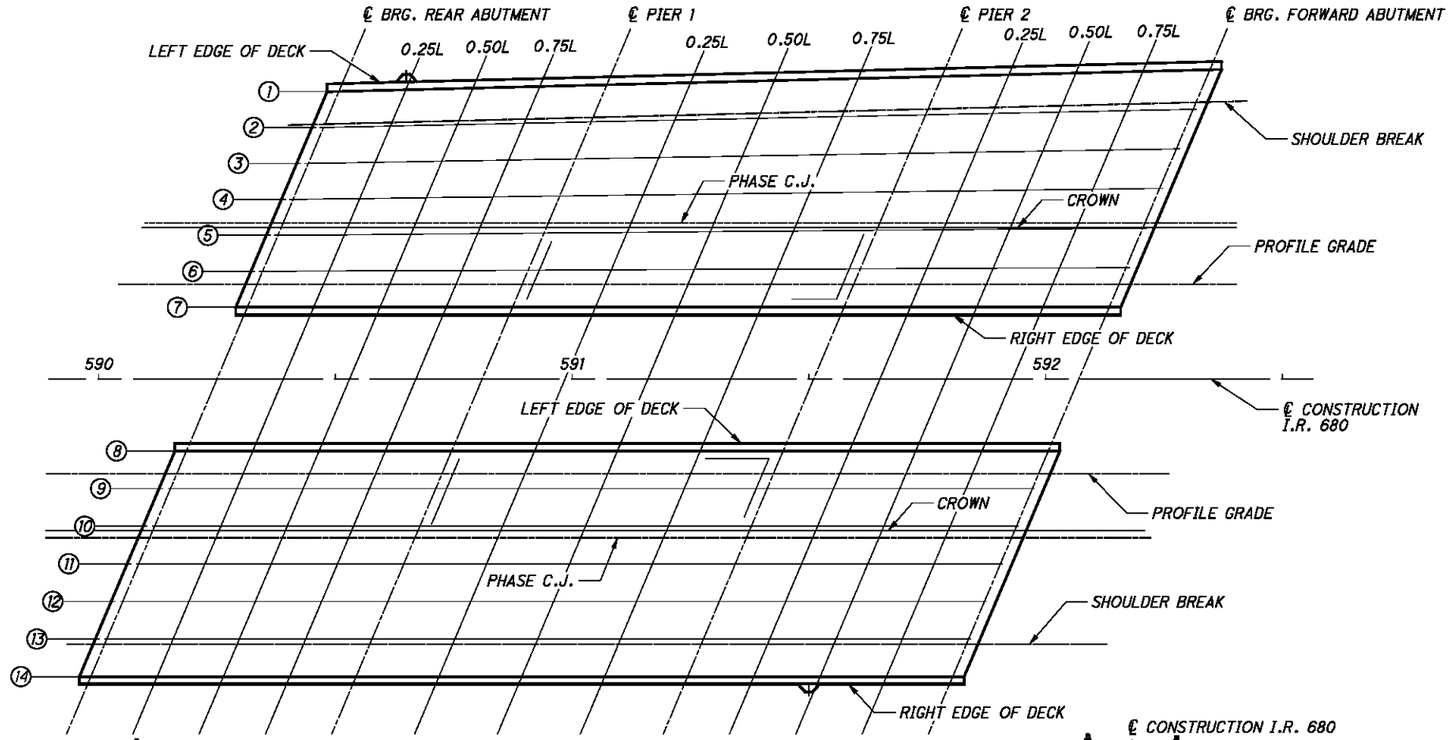
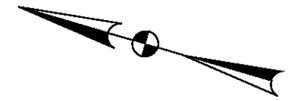
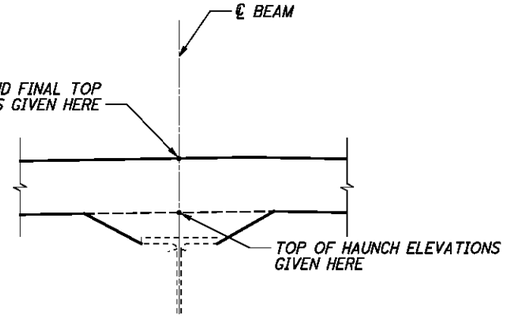
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		5006724	

TRANSVERSE SECTION - RIGHT BRIDGE
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

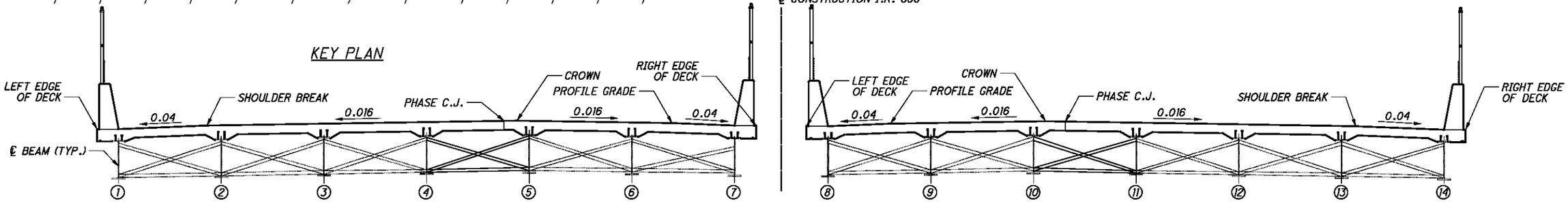
MAH-680-3.25
PID No. 96637







HAUCH ELEVATION DETAIL



LEFT BRIDGE

RIGHT BRIDGE

TYPICAL CROSS SECTION

SCREED ELEVATIONS - LEFT BRIDGE

		℄ BRG. REAR ABUT.	0.25L	0.50L	0.75L	℄ PIER 1	0.25L	0.50L	0.75L	℄ PIER 2	0.25L	0.50L	0.75L	℄ BEARING FWD. ABUT.
LEFT EDGE OF DECK	STATION	590+51.46	590+65.61	590+79.76	590+93.91	591+08.06	591+25.75	591+43.43	591+61.12	591+78.81	591+92.96	592+07.11	592+21.26	592+35.41
	ELEVATION	966.06	965.95	965.82	965.68	965.53	965.38	965.23	965.05	964.87	964.75	964.63	964.49	964.34
SHOULDER BREAK	STATION	590+47.82	590+61.97	590+76.12	590+90.27	591+04.42	591+22.11	591+39.79	591+57.48	591+75.17	591+89.32	592+03.47	592+17.62	592+31.76
	ELEVATION	966.37	966.26	966.14	965.98	965.84	965.69	965.54	965.36	965.17	965.05	964.94	964.80	964.64
PHASE C.J.	STATION	590+39.00	590+53.00	590+67.00	590+81.00	590+95.00	591+12.50	591+30.00	591+47.50	591+65.00	591+79.00	591+93.00	592+07.00	592+21.00
	ELEVATION	966.78	966.68	966.56	966.42	966.28	966.14	966.00	965.83	965.65	965.54	965.43	965.30	965.15
CROWN	STATION	590+38.57	590+52.57	590+66.57	590+80.57	590+94.57	591+12.07	591+29.57	591+47.07	591+64.57	591+78.57	591+92.57	592+06.57	592+20.57
	ELEVATION	966.80	966.70	966.58	966.44	966.30	966.16	966.02	965.85	965.67	965.56	965.45	965.32	965.17
PROFILE GRADE	STATION	590+33.48	590+47.48	590+61.48	590+75.48	590+89.48	591+06.98	591+24.48	591+41.98	591+59.48	591+73.48	591+87.48	592+01.48	592+15.48
	ELEVATION	966.66	966.56	966.44	966.29	966.15	966.02	965.88	965.70	965.52	965.41	965.30	965.17	965.02
RIGHT EDGE OF DECK	STATION	590+30.73	590+44.73	590+58.73	590+72.73	590+86.73	591+04.23	591+21.73	591+39.23	591+56.73	591+70.73	591+84.73	591+98.73	592+12.73
	ELEVATION	966.49	966.39	966.26	966.12	965.99	965.84	965.70	965.53	965.36	965.24	965.13	965.00	964.85

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR SCREED, TOP OF HAUNCH, AND FINAL DECK ELEVATIONS, SEE SHEETS 38/47 AND 39/47.
3. FOR DECK PLANS, SEE SHEETS 33/47 AND 35/47.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724/5006694	

DECK ELEVATION KEY PLAN
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

37/47

159/169

SCREED ELEVATIONS - RIGHT BRIDGE

		℄ BRG. REAR ABUT.	0.25L	0.50L	0.75L	℄ PIER 1	0.25L	0.50L	0.75L	℄ PIER 2	0.25L	0.50L	0.75L	℄ BEARING FWD. ABUT.
LEFT EDGE OF DECK	STATION	590+19.29	590+33.29	590+47.29	590+61.29	590+75.29	590+92.79	591+10.29	591+27.79	591+45.29	591+59.29	591+73.29	591+87.29	592+01.29
	ELEVATION	966.59	966.49	966.37	966.23	966.09	965.95	965.80	965.63	965.46	965.34	965.23	965.10	964.95
PROFILE GRADE	STATION	590+16.53	590+30.53	590+44.53	590+58.53	590+72.53	590+90.03	591+07.53	591+25.03	591+42.53	591+56.53	591+70.53	591+84.53	591+98.53
	ELEVATION	966.81	966.71	966.59	966.45	966.31	966.17	966.03	965.85	965.68	965.56	965.45	965.32	965.17
CROWN	STATION	590+11.45	590+25.45	590+39.45	590+53.45	590+67.45	590+84.95	591+02.45	591+19.95	591+37.45	591+51.45	591+65.45	591+79.45	591+93.45
	ELEVATION	967.05	966.95	966.83	966.68	966.54	966.41	966.26	966.09	965.91	965.80	965.69	965.56	965.41
PHASE C.J.	STATION	590+10.80	590+24.80	590+38.80	590+52.80	590+66.80	590+84.30	591+01.80	591+19.30	591+36.80	591+50.80	591+64.80	591+78.80	591+92.80
	ELEVATION	967.03	966.93	966.81	966.66	966.53	966.39	966.25	966.07	965.90	965.78	965.67	965.54	965.39
SHOULDER BREAK	STATION	590+01.28	590+15.28	590+29.28	590+43.28	590+57.28	590+74.78	590+92.28	591+09.78	591+27.28	591+41.28	591+55.28	591+69.28	591+83.28
	ELEVATION	966.76	966.65	966.53	966.39	966.25	966.11	965.97	965.80	965.62	965.51	965.40	965.27	965.12
RIGHT EDGE OF DECK	STATION	589+97.68	590+11.68	590+25.68	590+39.68	590+53.68	590+71.18	590+88.68	591+06.18	591+23.68	591+37.68	591+51.68	591+65.68	591+79.68
	ELEVATION	966.51	966.41	966.29	966.15	966.01	965.87	965.73	965.55	965.38	965.27	965.15	965.02	964.88

TOP OF HAUNCH ELEVATIONS - LEFT BRIDGE

		℄ BRG. REAR ABUT.	0.25L	0.50L	0.75L	℄ PIER 1	0.25L	0.50L	0.75L	℄ PIER 2	0.25L	0.50L	0.75L	℄ BEARING FWD. ABUT.
BEAM 1	STATION	590+50.75	590+64.90	590+79.05	590+93.20	591+07.35	591+25.03	591+42.72	591+60.41	591+78.09	591+92.24	592+06.39	592+20.54	592+34.69
	ELEVATION	965.36	965.26	965.13	964.98	964.83	964.68	964.53	964.35	964.17	964.05	963.93	963.79	963.63
BEAM 2	STATION	590+47.53	590+61.65	590+75.78	590+89.90	591+04.03	591+21.68	591+39.34	591+56.99	591+74.65	591+88.77	592+02.90	592+17.02	592+31.15
	ELEVATION	965.68	965.57	965.44	965.29	965.15	965.00	964.86	964.68	964.49	964.37	964.26	964.12	963.96
BEAM 3	STATION	590+44.31	590+58.41	590+72.51	590+86.61	591+00.71	591+18.33	591+35.96	591+53.58	591+71.21	591+85.31	591+99.40	592+13.50	592+27.60
	ELEVATION	965.83	965.72	965.60	965.45	965.31	965.16	965.01	964.83	964.65	964.53	964.42	964.29	964.13
BEAM 4	STATION	590+41.09	590+55.17	590+69.24	590+83.32	590+97.39	591+14.98	591+32.58	591+50.17	591+67.76	591+81.84	591+95.91	592+09.98	592+24.06
	ELEVATION	965.98	965.87	965.75	965.60	965.46	965.32	965.17	964.99	964.81	964.70	964.58	964.45	964.29
BEAM 5	STATION	590+37.87	590+51.92	590+65.97	590+80.02	590+94.07	591+11.63	591+29.19	591+46.76	591+64.32	591+78.37	591+92.42	592+06.47	592+20.52
	ELEVATION	966.08	965.98	965.86	965.72	965.58	965.44	965.30	965.13	964.95	964.84	964.74	964.61	964.46
BEAM 6	STATION	590+34.66	590+48.68	590+62.70	590+76.73	590+90.75	591+08.28	591+25.81	591+43.34	591+60.87	591+74.90	591+88.92	592+02.95	592+16.97
	ELEVATION	965.98	965.88	965.76	965.62	965.48	965.35	965.21	965.03	964.86	964.74	964.64	964.51	964.35
BEAM 7	STATION	590+31.44	590+45.44	590+59.43	590+73.43	590+87.43	591+04.93	591+22.43	591+39.93	591+57.43	591+71.43	591+85.43	591+99.43	592+13.43
	ELEVATION	965.78	965.67	965.55	965.41	965.27	965.13	964.99	964.82	964.64	964.53	964.42	964.29	964.14

TOP OF HAUNCH ELEVATIONS - RIGHT BRIDGE

		℄ BRG. REAR ABUT.	0.25L	0.50L	0.75L	℄ PIER 1	0.25L	0.50L	0.75L	℄ PIER 2	0.25L	0.50L	0.75L	℄ BEARING FWD. ABUT.
BEAM 8	STATION	590+18.58	590+32.58	590+46.58	590+60.58	590+74.58	590+92.08	591+09.58	591+27.08	591+44.58	591+58.58	591+72.58	591+86.58	592+00.58
	ELEVATION	965.89	965.79	965.67	965.53	965.39	965.25	965.11	964.93	964.76	964.64	964.53	964.40	964.25
BEAM 9	STATION	590+15.21	590+29.21	590+43.21	590+57.21	590+71.21	590+88.71	591+06.21	591+23.71	591+41.21	591+55.21	591+69.21	591+83.21	591+97.21
	ELEVATION	966.16	966.06	965.94	965.80	965.66	965.52	965.38	965.21	965.03	964.92	964.81	964.68	964.53
BEAM 10	STATION	590+11.85	590+25.85	590+39.85	590+53.85	590+67.85	590+85.35	591+02.85	591+20.35	591+37.85	591+51.85	591+65.85	591+79.85	591+93.85
	ELEVATION	966.32	966.22	966.10	965.96	965.82	965.68	965.54	965.36	965.19	965.07	964.96	964.83	964.68
BEAM 11	STATION	590+08.48	590+22.48	590+36.48	590+50.48	590+64.48	590+81.98	590+99.48	591+16.98	591+34.48	591+48.48	591+62.48	591+76.48	591+90.48
	ELEVATION	966.25	966.15	966.03	965.89	965.75	965.61	965.47	965.30	965.12	965.01	964.90	964.77	964.62
BEAM 12	STATION	590+05.12	590+19.12	590+33.12	590+47.12	590+61.12	590+78.62	590+96.12	591+13.62	591+31.12	591+45.12	591+59.12	591+73.12	591+87.12
	ELEVATION	966.16	966.06	965.94	965.79	965.65	965.52	965.37	965.20	965.02	964.91	964.80	964.67	964.52
BEAM 13	STATION	590+01.75	590+15.75	590+29.75	590+43.75	590+57.75	590+75.25	590+92.75	591+10.25	591+27.75	591+41.75	591+55.75	591+69.75	591+83.75
	ELEVATION	966.06	965.96	965.84	965.70	965.56	965.42	965.28	965.10	964.93	964.81	964.70	964.57	964.42
BEAM 14	STATION	589+98.39	590+12.39	590+26.39	590+40.39	590+54.39	590+71.89	590+89.39	591+06.89	591+24.39	591+38.39	591+52.39	591+66.39	591+80.39
	ELEVATION	965.80	965.70	965.58	965.44	965.30	965.16	965.02	964.84	964.67	964.55	964.44	964.31	964.16

NOTES:

1. FOR DECK ELEVATION LOCATION DETAILS, SEE SHEET 37/47 .
2. FOR FINAL DECK SURFACE ELEVATIONS, SEE SHEET 39/47 .
3. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
4. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

DESIGN AGENCY
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DESIGNED AEK | DRAWN AEK | REVIEWED RER | DATE 11/27/2015
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 50067247/5006694

SCREED AND TOP OF HAUNCH ELEVATIONS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25 PID No. 96637

FINAL DECK SURFACE ELEVATIONS - LEFT BRIDGE

		℄ BRG. REAR ABUT.	0.25L	0.50L	0.75L	℄ PIER 1	0.25L	0.50L	0.75L	℄ PIER 2	0.25L	0.50L	0.75L	℄ BEARING FWD. ABUT.
LEFT EDGE OF DECK	STATION	590+51.46	590+65.61	590+79.76	590+93.91	591+08.06	591+25.75	591+43.43	591+61.12	591+78.81	591+92.96	592+07.11	592+21.26	592+35.41
	ELEVATION	966.06	965.93	965.80	965.67	965.53	965.37	965.20	965.03	964.87	964.73	964.60	964.47	964.34
BEAM 1	STATION	590+50.75	590+64.90	590+79.05	590+93.20	591+07.35	591+25.03	591+42.72	591+60.41	591+78.09	591+92.24	592+06.39	592+20.54	592+34.69
	ELEVATION	966.07	965.94	965.80	965.67	965.54	965.37	965.21	965.04	964.87	964.74	964.61	964.48	964.34
SHOULDER BREAK	STATION	590+47.82	590+61.97	590+76.12	590+90.27	591+04.42	591+22.11	591+39.79	591+57.48	591+75.17	591+89.32	592+03.47	592+17.62	592+31.76
	ELEVATION	966.37	966.24	966.10	965.97	965.84	965.67	965.51	965.34	965.17	965.04	964.91	964.77	964.64
BEAM 2	STATION	590+47.53	590+61.65	590+75.78	590+89.90	591+04.03	591+21.68	591+39.34	591+56.99	591+74.65	591+88.77	592+02.90	592+17.02	592+31.15
	ELEVATION	966.39	966.25	966.12	965.99	965.86	965.69	965.53	965.36	965.20	965.07	964.94	964.80	964.67
BEAM 3	STATION	590+44.31	590+58.41	590+72.51	590+86.61	591+00.71	591+18.33	591+35.96	591+53.58	591+71.21	591+85.31	591+99.40	592+13.50	592+27.60
	ELEVATION	966.54	966.41	966.27	966.14	966.01	965.85	965.69	965.52	965.36	965.23	965.10	964.97	964.84
BEAM 4	STATION	590+41.09	590+55.17	590+69.24	590+83.32	590+97.39	591+14.98	591+32.58	591+50.17	591+67.76	591+81.84	591+95.91	592+09.98	592+24.06
	ELEVATION	966.69	966.56	966.43	966.30	966.17	966.01	965.84	965.68	965.52	965.39	965.26	965.13	965.00
PHASE C.J.	STATION	590+39.00	590+53.00	590+67.00	590+81.00	590+95.00	591+12.50	591+30.00	591+47.50	591+65.00	591+79.00	591+93.00	592+07.00	592+21.00
	ELEVATION	966.78	966.66	966.53	966.41	966.28	966.12	965.97	965.81	965.65	965.52	965.40	965.27	965.15
CROWN	STATION	590+38.57	590+52.57	590+66.57	590+80.57	590+94.57	591+12.07	591+29.57	591+47.07	591+64.57	591+78.57	591+92.57	592+06.57	592+20.57
	ELEVATION	966.80	966.68	966.55	966.43	966.30	966.14	965.99	965.83	965.67	965.54	965.42	965.29	965.17
BEAM 5	STATION	590+37.87	590+51.92	590+65.97	590+80.02	590+94.07	591+11.63	591+29.19	591+46.76	591+64.32	591+78.37	591+92.42	592+06.47	592+20.52
	ELEVATION	966.78	966.66	966.54	966.41	966.29	966.13	965.97	965.82	965.66	965.54	965.41	965.29	965.16
BEAM 6	STATION	590+34.66	590+48.68	590+62.70	590+76.73	590+90.75	591+08.28	591+25.81	591+43.34	591+60.87	591+74.90	591+88.92	592+02.95	592+16.97
	ELEVATION	966.69	966.57	966.44	966.32	966.19	966.03	965.88	965.72	965.56	965.44	965.31	965.19	965.06
PROFILE GRADE	STATION	590+33.48	590+47.48	590+61.48	590+75.48	590+89.48	591+06.98	591+24.48	591+41.98	591+59.48	591+73.48	591+87.48	592+01.48	592+15.48
	ELEVATION	966.66	966.53	966.41	966.28	966.15	966.00	965.84	965.68	965.52	965.40	965.27	965.15	965.02
BEAM 7	STATION	590+31.44	590+45.44	590+59.43	590+73.43	590+87.43	591+04.93	591+22.43	591+39.93	591+57.43	591+71.43	591+85.43	591+99.43	592+13.43
	ELEVATION	966.48	966.36	966.23	966.11	965.98	965.82	965.66	965.51	965.35	965.22	965.10	964.97	964.84
RIGHT EDGE OF DECK	STATION	590+30.73	590+44.73	590+58.73	590+72.73	590+86.73	591+04.23	591+21.73	591+39.23	591+56.73	591+70.73	591+84.73	591+98.73	592+12.73
	ELEVATION	966.49	966.36	966.24	966.11	965.99	965.83	965.67	965.51	965.36	965.23	965.10	964.98	964.85

FINAL DECK SURFACE ELEVATIONS - RIGHT BRIDGE

		℄ BRG. REAR ABUT.	0.25L	0.50L	0.75L	℄ PIER 1	0.25L	0.50L	0.75L	℄ PIER 2	0.25L	0.50L	0.75L	℄ BEARING FWD. ABUT.
LEFT EDGE OF DECK	STATION	590+19.29	590+33.29	590+47.29	590+61.29	590+75.29	590+92.79	591+10.29	591+27.79	591+45.29	591+59.29	591+73.29	591+87.29	592+01.29
	ELEVATION	966.59	966.47	966.34	966.21	966.09	965.93	965.77	965.62	965.46	965.33	965.21	965.08	964.95
BEAM 8	STATION	590+18.58	590+32.58	590+46.58	590+60.58	590+74.58	590+92.08	591+09.58	591+27.08	591+44.58	591+58.58	591+72.58	591+86.58	592+00.58
	ELEVATION	966.60	966.47	966.35	966.22	966.10	965.94	965.78	965.62	965.47	965.34	965.21	965.09	964.96
PROFILE GRADE	STATION	590+16.53	590+30.53	590+44.53	590+58.53	590+72.53	590+90.03	591+07.53	591+25.03	591+42.53	591+56.53	591+70.53	591+84.53	591+98.53
	ELEVATION	966.81	966.68	966.56	966.43	966.31	966.15	965.99	965.83	965.68	965.55	965.42	965.30	965.17
BEAM 9	STATION	590+15.21	590+29.21	590+43.21	590+57.21	590+71.21	590+88.71	591+06.21	591+23.71	591+41.21	591+55.21	591+69.21	591+83.21	591+97.21
	ELEVATION	966.87	966.75	966.62	966.49	966.37	966.21	966.05	965.90	965.74	965.61	965.49	965.36	965.23
BEAM 10	STATION	590+11.85	590+25.85	590+39.85	590+53.85	590+67.85	590+85.35	591+02.85	591+20.35	591+37.85	591+51.85	591+65.85	591+79.85	591+93.85
	ELEVATION	967.03	966.90	966.78	966.65	966.53	966.37	966.21	966.05	965.90	965.77	965.64	965.52	965.39
CROWN	STATION	590+11.45	590+25.45	590+39.45	590+53.45	590+67.45	590+84.95	591+02.45	591+19.95	591+37.45	591+51.45	591+65.45	591+79.45	591+93.45
	ELEVATION	967.05	966.92	966.80	966.67	966.54	966.39	966.23	966.07	965.91	965.79	965.66	965.54	965.41
PHASE C.J.	STATION	590+10.80	590+24.80	590+38.80	590+52.80	590+66.80	590+84.30	591+01.80	591+19.30	591+36.80	591+50.80	591+64.80	591+78.80	591+92.80
	ELEVATION	967.03	966.90	966.78	966.65	966.53	966.37	966.21	966.05	965.90	965.77	965.64	965.52	965.39
BEAM 11	STATION	590+08.48	590+22.48	590+36.48	590+50.48	590+64.48	590+81.98	590+99.48	591+16.98	591+34.48	591+48.48	591+62.48	591+76.48	591+90.48
	ELEVATION	966.96	966.84	966.71	966.59	966.46	966.30	966.14	965.99	965.83	965.70	965.58	965.45	965.33
BEAM 12	STATION	590+05.12	590+19.12	590+33.12	590+47.12	590+61.12	590+78.62	590+96.12	591+13.62	591+31.12	591+45.12	591+59.12	591+73.12	591+87.12
	ELEVATION	966.87	966.74	966.61	966.49	966.36	966.21	966.05	965.89	965.73	965.61	965.48	965.35	965.23
BEAM 13	STATION	590+01.75	590+15.75	590+29.75	590+43.75	590+57.75	590+75.25	590+92.75	591+10.25	591+27.75	591+41.75	591+55.75	591+69.75	591+83.75
	ELEVATION	966.77	966.64	966.52	966.39	966.27	966.11	965.95	965.79	965.64	965.51	965.38	965.26	965.13
SHOULDER BREAK	STATION	590+01.28	590+15.28	590+29.28	590+43.28	590+57.28	590+74.78	590+92.28	591+09.78	591+27.28	591+41.28	591+55.28	591+69.28	591+83.28
	ELEVATION	966.76	966.63	966.50	966.38	966.25	966.09	965.94	965.78	965.62	965.50	965.37	965.24	965.12
BEAM 14	STATION	589+98.39	590+12.39	590+26.39	590+40.39	590+54.39	590+71.89	590+89.39	591+06.89	591+24.39	591+38.39	591+52.39	591+66.39	591+80.39
	ELEVATION	966.51	966.38	966.26	966.13	966.00	965.85	965.69	965.53	965.37	965.25	965.12	965.00	964.87
RIGHT EDGE OF DECK	STATION	589+97.68	590+11.68	590+25.68	590+39.68	590+53.68	590+71.18	590+88.68	591+06.18	591+23.68	591+37.68	591+51.68	591+65.68	591+79.68
	ELEVATION	966.51	966.39	966.26	966.14	966.01	965.85	965.70	965.54	965.38	965.25	965.13	965.00	964.88

NOTES:

1. FOR DECK ELEVATION LOCATION DETAILS, SEE SHEET 37/47.
2. FOR TOP OF HAUCH ELEVATIONS, SEE SHEET 38/47.
3. FOR SCREED ELEVATIONS, SEE SHEETS 37/47 AND 38/47.
4. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

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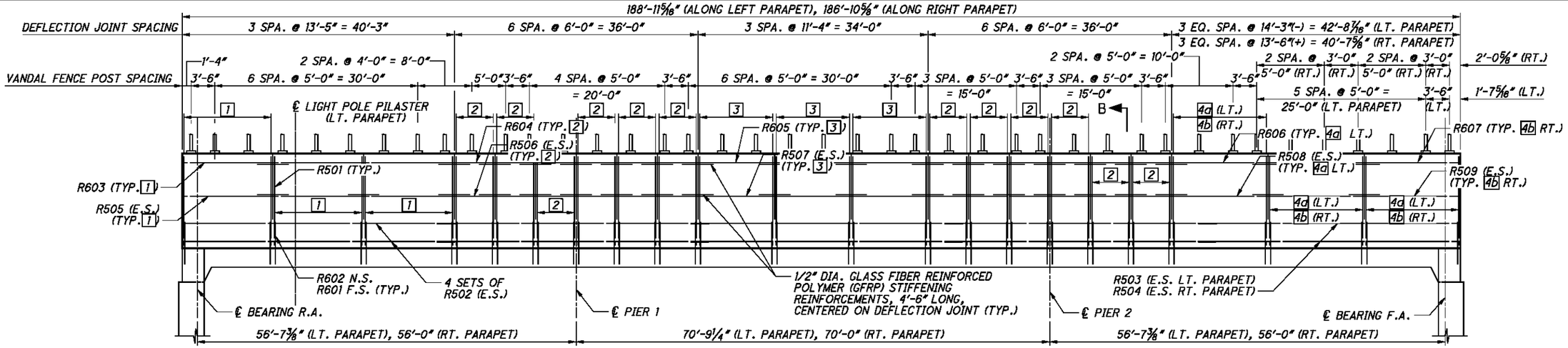
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		50066724/50066894	

FINAL DECK SURFACE ELEVATIONS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

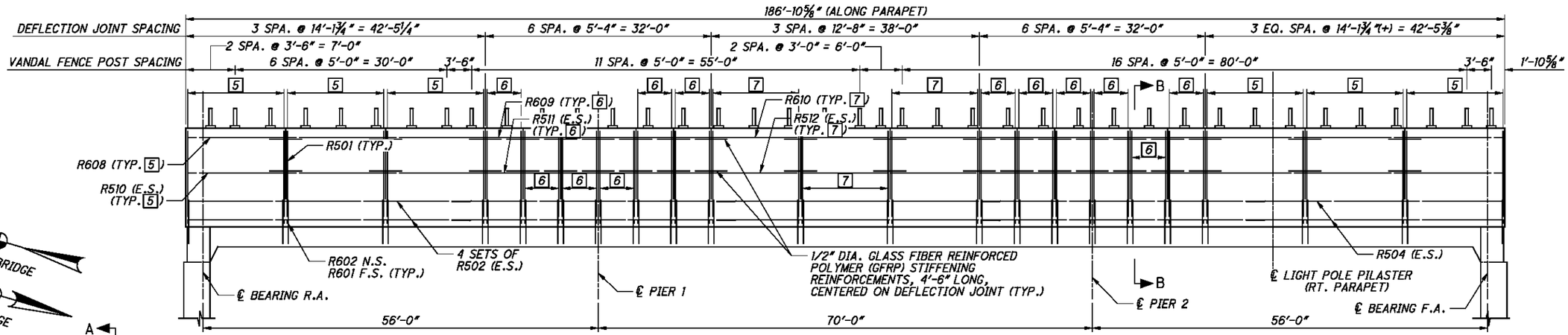
39/47

161/169



PARAPET ELEVATION - LEFT BRIDGE

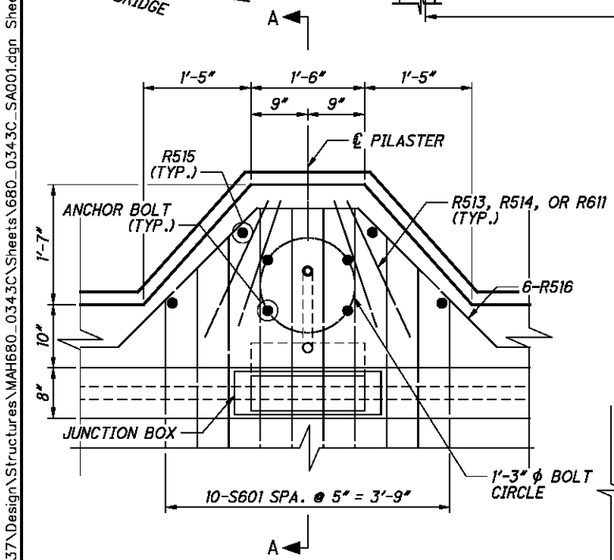
TYPICAL BOTH PARAPETS UNLESS NOTED OTHERWISE
(LIGHT POLE PILASTER REINFORCING NOT SHOWN FOR CLARITY)



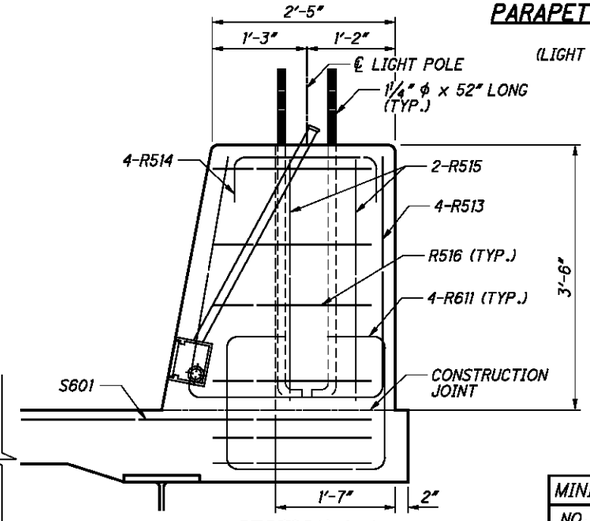
LEFT BRIDGE
RIGHT BRIDGE

PARAPET ELEVATION - RIGHT BRIDGE

TYPICAL BOTH PARAPETS
(LIGHT POLE PILASTER REINFORCING NOT SHOWN FOR CLARITY)



LIGHT POLE PILASTER PLAN



SECTION A-A

(MAIN SLAB REINFORCING NOT SHOWN FOR CLARITY)

MINIMUM LAP LENGTHS	
NO. 5 BAR	2'-6"
NO. 6 BAR	3'-0"

LEGEND:

- [1] 14 SETS OF R501, R601, & R602 SPA. @ 12" = 13'-0" (3 SETS OF [1] TOTAL PER PARAPET)
- [2] 7 SETS OF R501, R601, & R602 SPA. @ 11" = 5'-6" (12 SETS OF [2] TOTAL PER PARAPET)
- [3] 14 SETS OF R501, R601, & R602 SPA. @ 10" = 10'-10" (3 SETS OF [3] TOTAL PER PARAPET)
- [4a] 16 SETS OF R501, R601, & R602 SPA. @ 11" = 13'-9" (3 SETS OF [4a] TOTAL PER PARAPET)
- [4b] 14 SETS OF R501, R601, & R602 SPA. @ 12" = 13'-0" (3 SETS OF [4b] TOTAL PER PARAPET)
- [5] 15 SETS OF R501, R601, & R602 SPA. @ 12" MAX = 13'-7" (6 SETS OF [5] TOTAL PER PARAPET)
- [6] 6 SETS OF R501, R601, & R602 SPA. @ 12" MAX = 4'-10" (12 SETS OF [6] TOTAL PER PARAPET)
- [7] 13 SETS OF R501, R601, & R602 SPA. @ 12" MAX = 12'-0" (3 SETS OF [7] TOTAL PER PARAPET)

NOTES:

1. FOR DETAILS NOT SHOWN, SEE STD. DWG. SBR-1-13.
2. FOR SLAB PLAN, SEE SHEETS [33/47] AND [35/47].
3. STRUCTURE TO BE GROUNDED IN ACCORDANCE WITH CMS 625.16.
4. FOR ADDITIONAL LIGHT POLE PILASTER DETAILS, SEE ODOT STANDARD DRAWING HL-20.14 AND LIGHTING PLANS.
5. FOR POLE BASE PLATE DETAILS, SEE ODOT STANDARD DRAWING HL-10.13.
6. FOR PAYMENT OF MATERIAL AND LABOR ASSOCIATED WITH LIGHT POLE AND LUMINAIRE, SEE LIGHTNG PLANS.
7. FOR PARAPET CONTROL JOINT DETAILS AND ADDITIONAL PARAPET TRANSITION DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SBR-1-13.
8. FOR SECTION B-B, SEE SHEET [41/47].
9. REFER TO LIGHTING PLANS FOR PARAPET CONDUIT AND JUNCTION BOX DETAILS.

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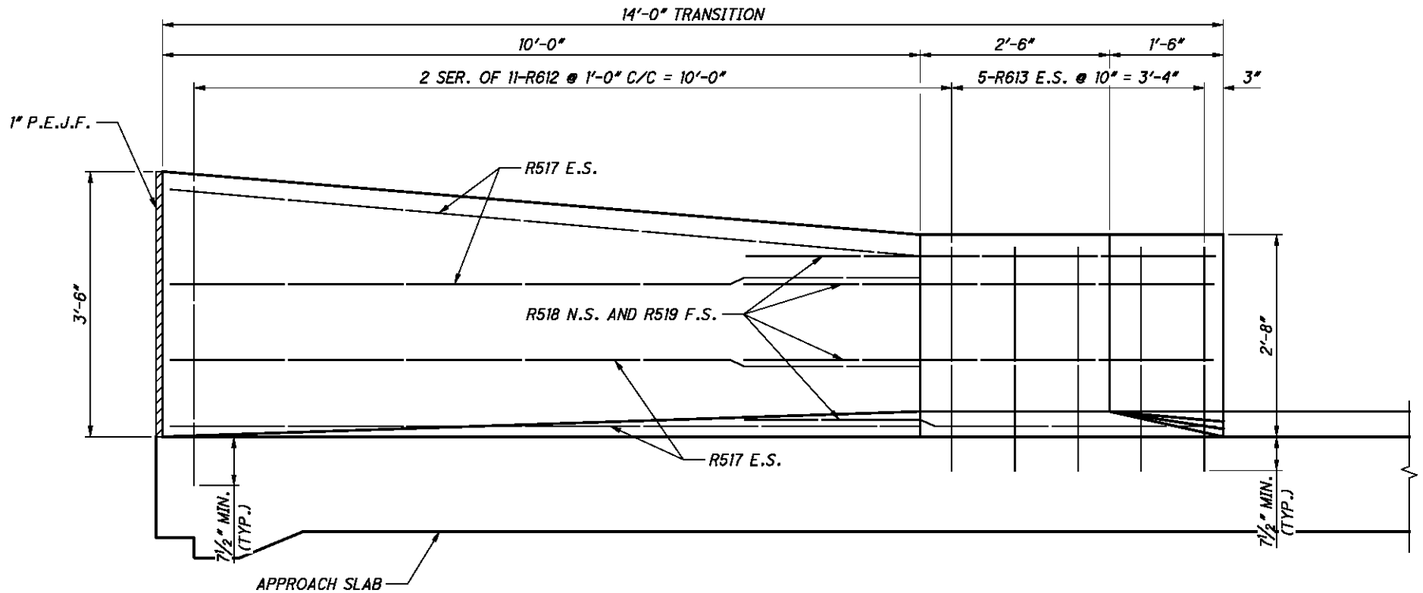
NBR		50067247/5006694	

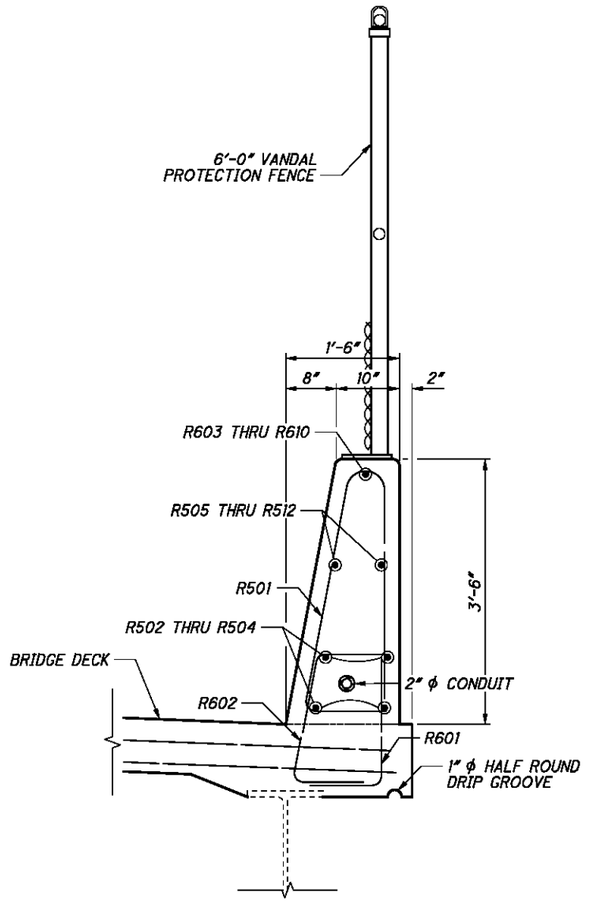
PARAPET DETAILS - 1
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

40/47
162/169



PARAPET TRANSITION ELEVATION



SECTION B-B

MINIMUM LAP LENGTHS	
NO. 5 BAR	2'-6"

NOTES:

1. FOR SLAB PLAN, SEE SHEETS 33/47 AND 35/47.
2. FOR APPROACH SLAB DETAILS, SEE SHEET 42/47 AND ODOT STANDARD DRAWINGS AS-1-15 AND AS-2-15.
3. FOR ADDITIONAL PARAPET TRANSITION DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SBR-1-13.
4. FOR REINFORCING SCHEDULES, SEE SHEETS 45/47 AND 46/47.
5. REFER TO LIGHTING PLANS FOR PARAPET CONDUIT AND JUNCTION BOX DETAILS.
6. PAYMENT FOR THE PARAPET TRANSITION CONCRETE ON THE APPROACH SLAB SHALL BE INCLUDED UNDER ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET). REINFORCEMENT SHALL BE INCLUDED WITH THE BRIDGE PARAPET REINFORCEMENT UNDER ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN.
7. SEAL THE ENTIRE PERIMITER OF THE 14'-0" PARAPET TRANSITION WITH EPOXY URETHANE SEALER.

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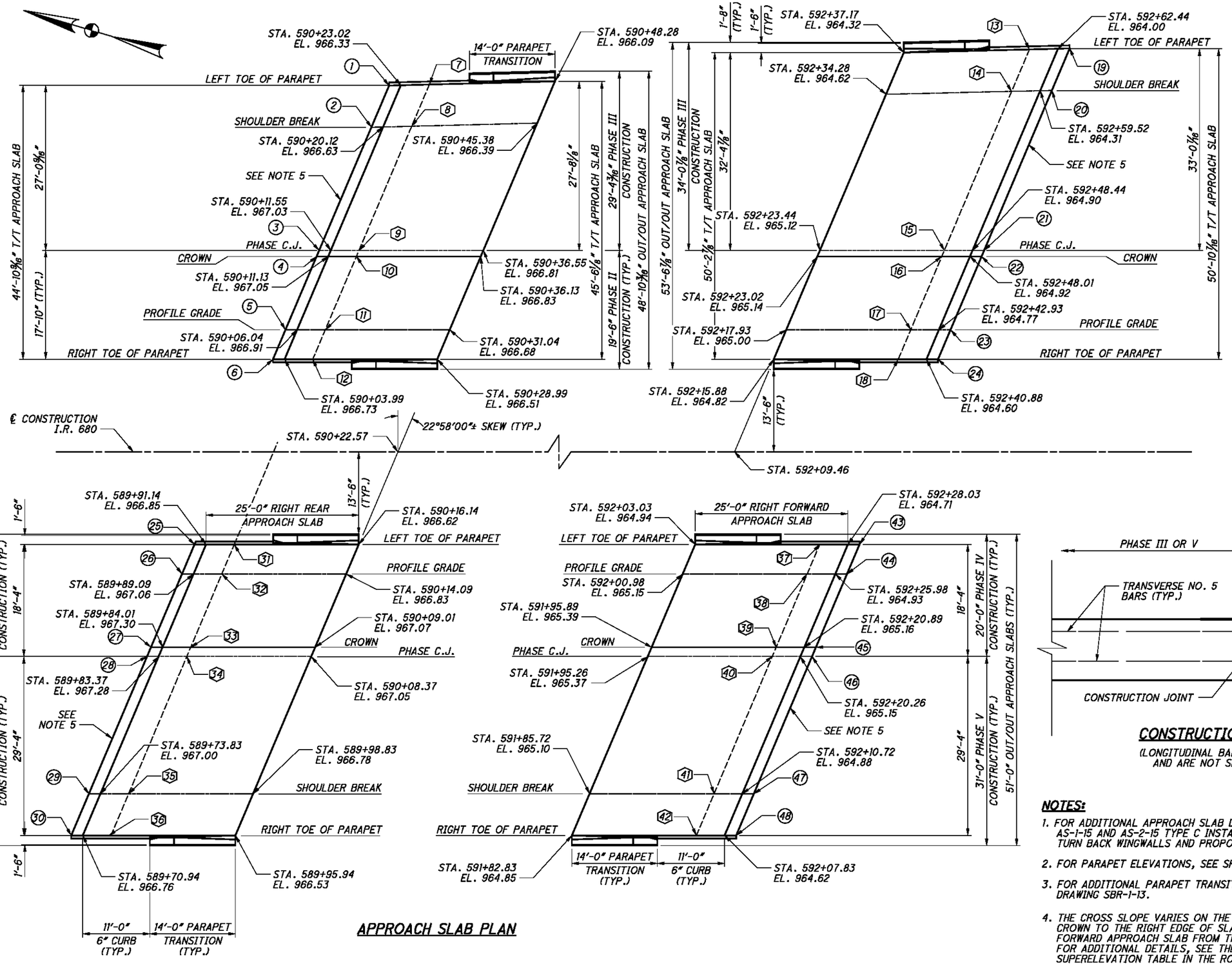
JOL		5006724/5006694	

PARAPET DETAILS - 2
BRIDGE NO. MAH-680-0343R&L
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

41/47

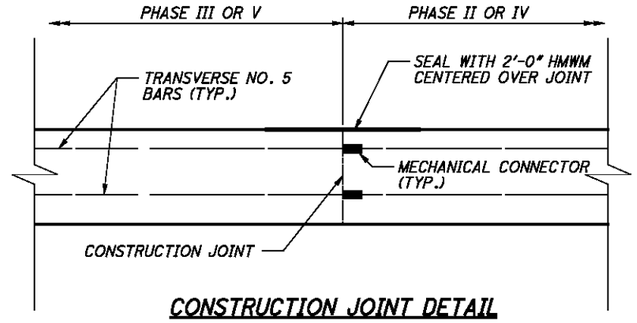
163/169



APPROACH SLAB PLAN

SLEEPER SLAB SURFACE ELEVATIONS AT ROADWAY			
1	966.35	25	966.86
2	966.64	26	967.07
3	967.04	27	967.31
4	967.06	28	967.29
5	966.92	29	967.02
6	966.75	30	966.77
19	963.97	43	964.70
20	964.29	44	964.92
21	964.88	45	965.15
22	964.90	46	965.13
23	964.76	47	964.86
24	964.58	48	964.61

SLEEPER SLAB SURFACE ELEVATIONS UNDER APPR. SLAB			
7	965.04	31	965.55
8	965.34	32	965.77
9	965.74	33	966.00
10	965.76	34	965.99
11	965.61	35	965.71
12	965.44	36	965.46
13	962.82	37	963.51
14	963.13	38	963.72
15	963.69	39	963.96
16	963.71	40	963.94
17	963.56	41	963.66
18	963.39	42	963.42



CONSTRUCTION JOINT DETAIL

(LONGITUDINAL BARS ARE PER STANDARD AND ARE NOT SHOWN FOR CLARITY)

NOTES:

1. FOR ADDITIONAL APPROACH SLAB DETAILS, SEE ODOT STANDARD DRAWINGS AS-1-15 AND AS-2-15 TYPE C INSTALLATION (WITH CAST-IN-PLACE CONCRETE TURN BACK WINGWALLS AND PROPOSED RIGID PAVEMENT).
2. FOR PARAPET ELEVATIONS, SEE SHEET 40/47 .
3. FOR ADDITIONAL PARAPET TRANSITION DETAILS, SEE ODOT STANDARD DRAWING SBR-1-13.
4. THE CROSS SLOPE VARIES ON THE RIGHT FORWARD APPROACH SLAB FROM THE CROWN TO THE RIGHT EDGE OF SLAB. THE CROSS SLOPE VARIES ON THE LEFT FORWARD APPROACH SLAB FROM THE PROFILE GRADE TO LEFT EDGE OF SLAB. FOR ADDITIONAL DETAILS, SEE THE SUPERELEVATION TABLE IN THE ROADWAY PLANS, SHEET 67 .
5. SLEEPER SLAB FOR TYPE C INSTALLATION AS PER AS-2-15 EXCEPT THAT THE TRANSVERSE NO. 5 BARS SHALL BE LAPPED AT THE PHASE CONSTRUCTION JOINT SIMILAR TO APPROACH SLAB JOINT DETAIL.

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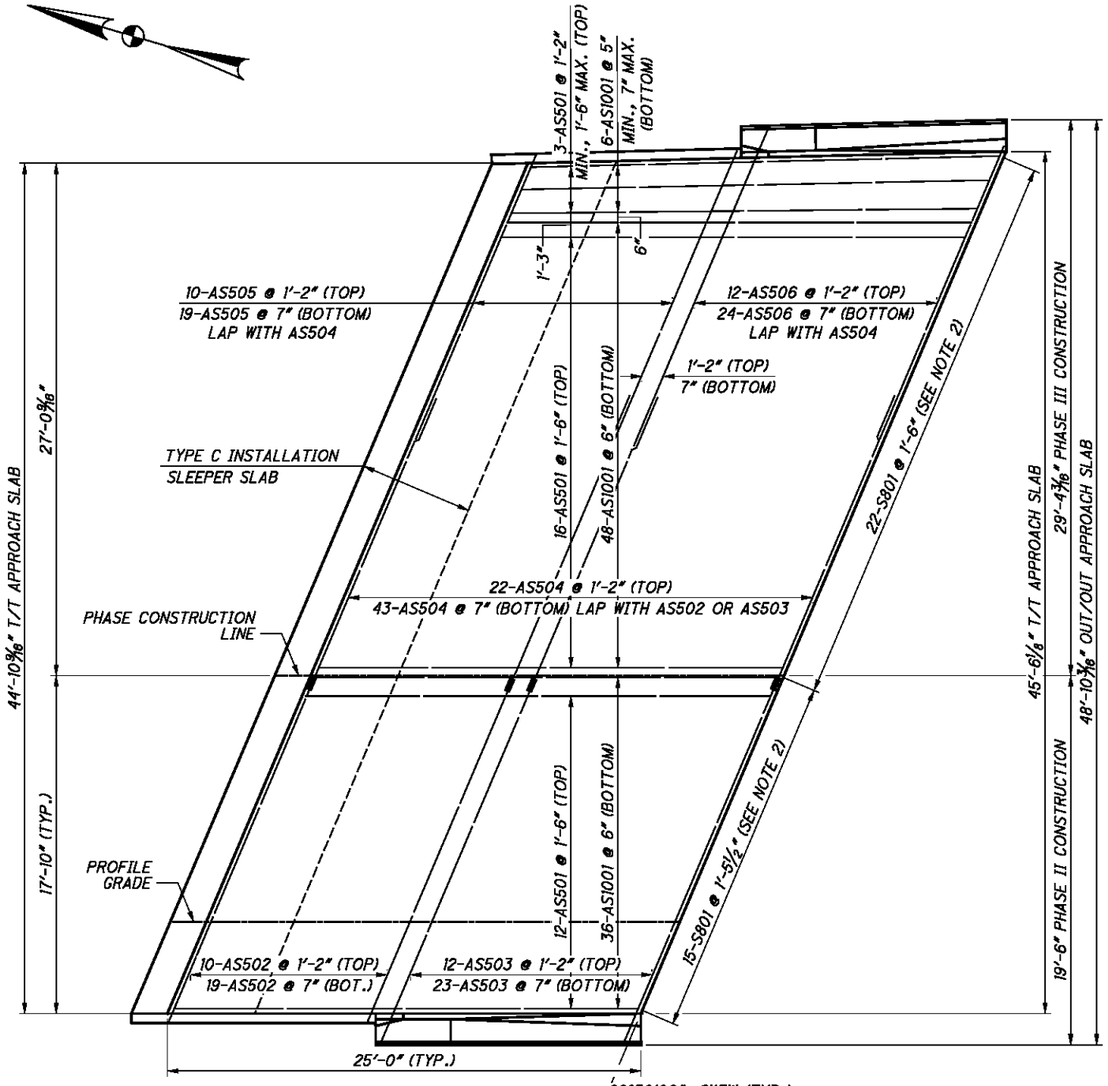
CHECKED NBR | REVISED | STRUCTURE FILE NUMBER 5006724/5006694

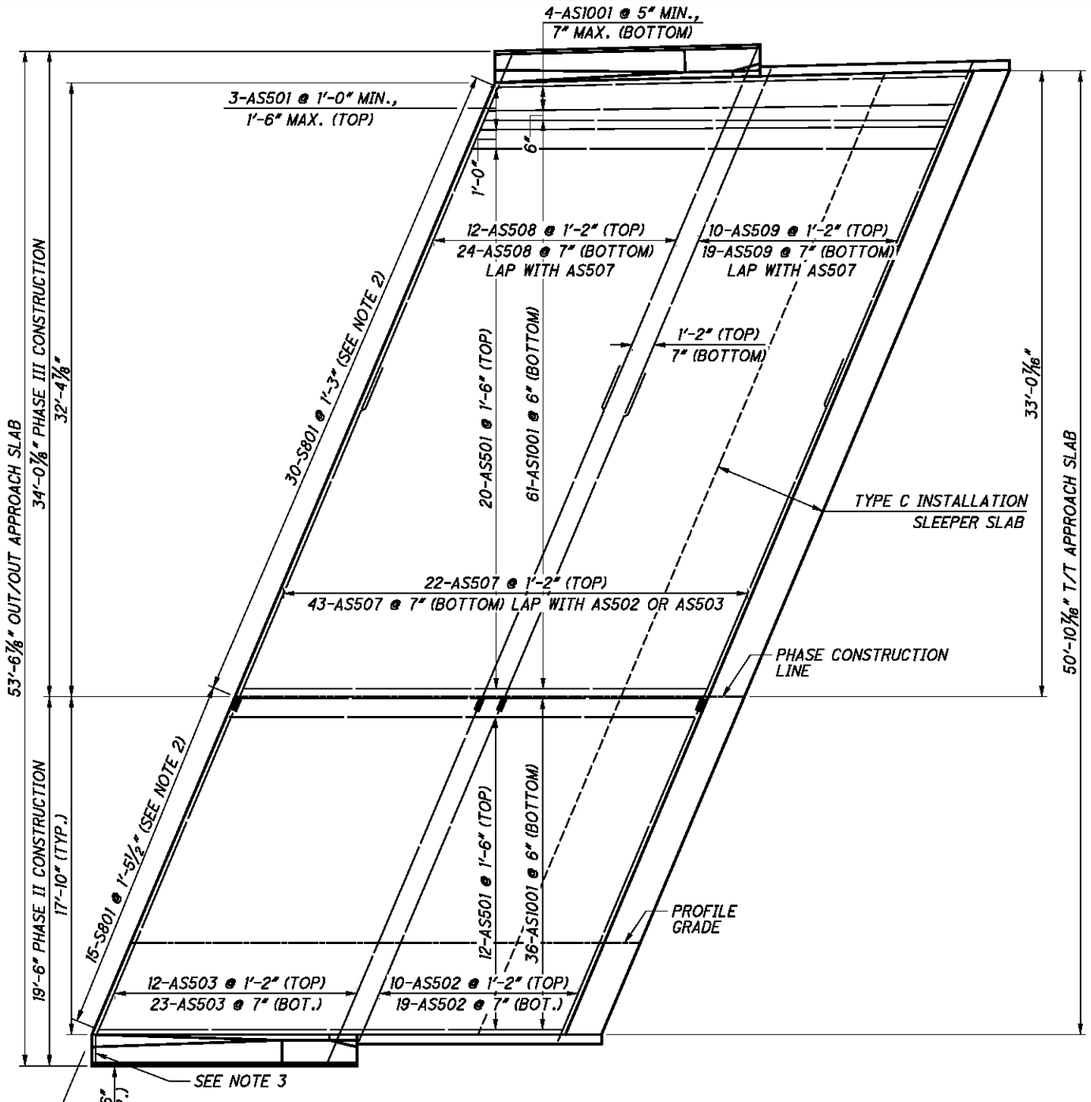
APPROACH SLAB PLAN
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

42/47
164/169



REAR APPROACH SLAB PLAN



FORWARD APPROACH SLAB PLAN

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE II	PHASE III	TOTAL				A	B	C	D	E	R	INC
AS501	24	42	66	24'-6"	1687	STR							
AS502	58		58	19'-6"	1180	44							
AS503	70		70	20'-10"	1521	44							
AS504		65	65	15'-11"	1079	43							
AS505		29	29	16'-3"	492	STR							
AS506		36	36	18'-0"	676	STR							
AS507		65	65	18'-11"	1282	43							
AS508		36	36	20'-3"	760	STR							
AS509		29	29	19'-6"	590	STR							
AS1001	72	119	191	25'-11"	21300	16	24'-6"						
			* SUB-TOTAL		30567								

* FOR INFORMATION ONLY (SEE NOTE 2)

REQUIRED LAP LENGTHS	
NO. 5 BARS	2'-6" MIN.

NOTES:

1. FOR ADDITIONAL APPROACH SLAB DETAILS, SEE ODOT STANDARD DRAWINGS AS-1-15 AND AS-2-15 TYPE C INSTALLATION.
2. REINFORCEMENT SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 526 - REINFORCED CONCRETE APPROACH SLABS. S801 BARS SHALL BE INCLUDED WITH ITEM 509, SEE SHEET 31/47, FOR ADDITIONAL DETAILS.
3. FIELD BEND AS503 BARS AT NORTH END OF FORWARD APPROACH SLAB IN PHASE II TO EXTEND THE REINFORCEMENT INTO THE PARAPET TRANSITION.

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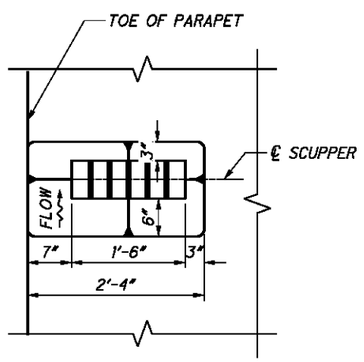
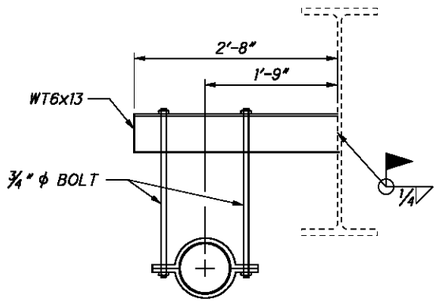
APPROACH SLAB PLAN DETAILS - LEFT BRIDGE

BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

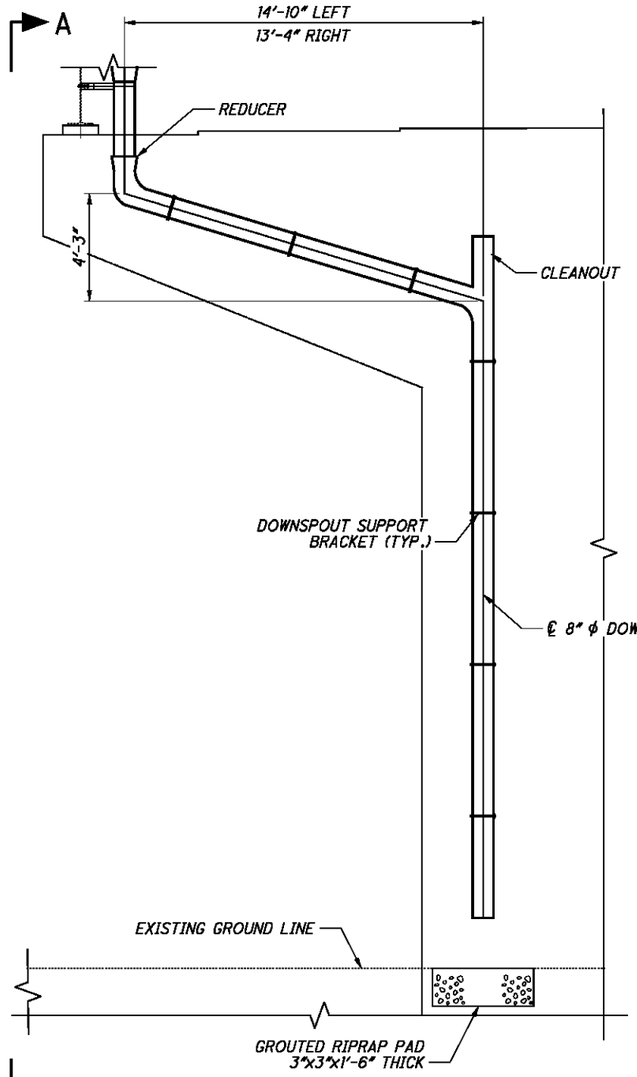
MAH-680-3.25
PID No. 96637



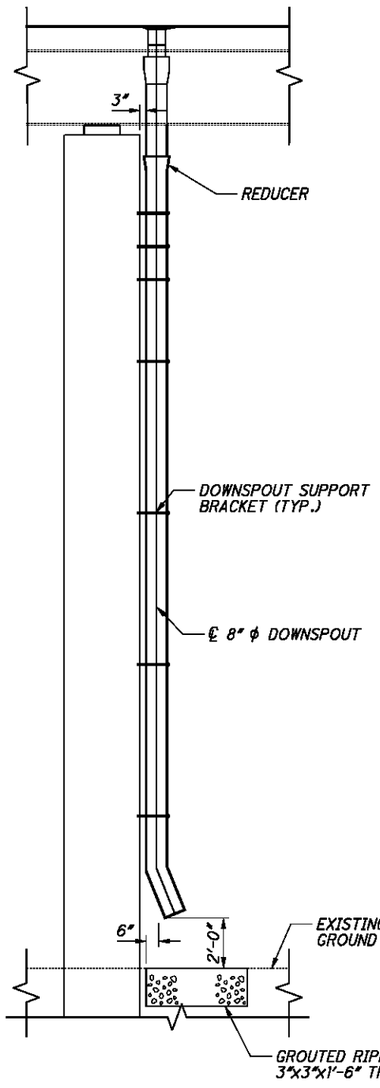
PLAN



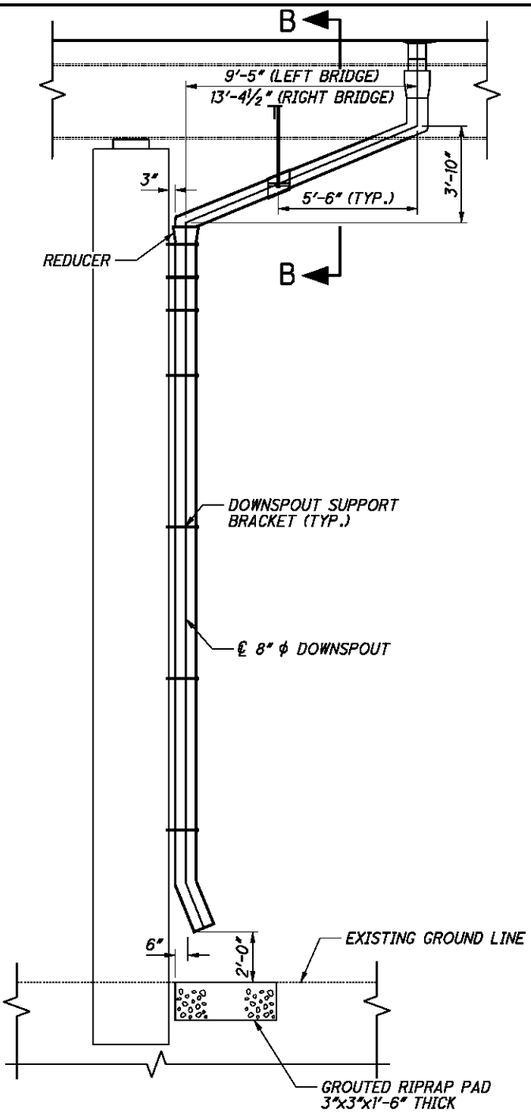
SECTION B-B



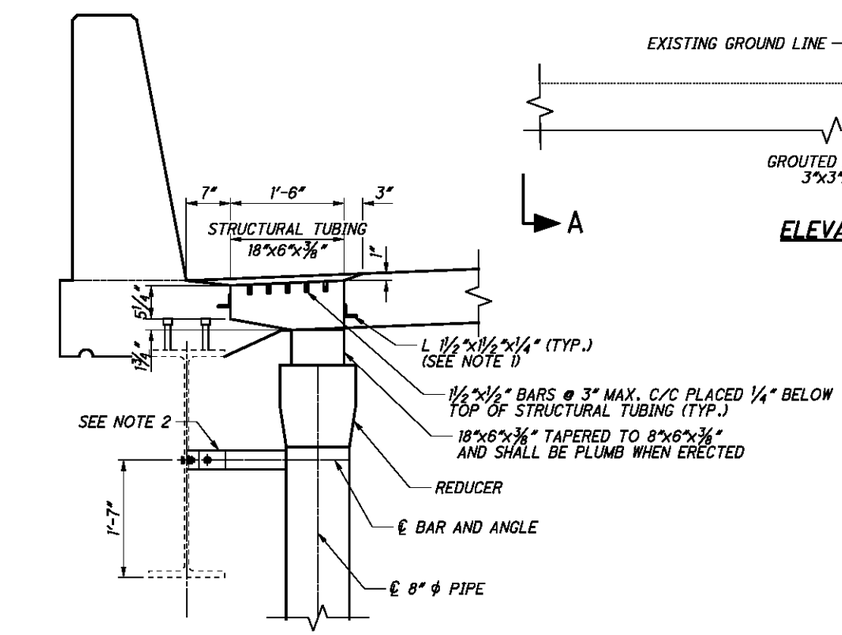
ELEVATION



VIEW A-A AT PIER 1



VIEW A-A AT PIER 2



SCUPPER DETAIL AT STA. 590+76.18, 590+90.47, 591+28.18, AND 591+46.47

NOTES:

1. REFER TO SECTION E-E IN ODOT STANDARD DRAWING GSD-1-96 FOR ADDITIONAL ANGLE DETAILS.
2. REFER TO SECTION F-F IN ODOT STANDARD DRAWING GSD-1-96 FOR CONNECTION DETAILS.
3. SEE STANDARD DRAWING GSD-1-96 FOR DETAILS OF SCUPPERS AT STA. 590+23.44 AND STA. 591+84.18 ON THE RIGHT BRIDGE, AND AT STA. 590+36.07 AND STA. 592+2.47 ON THE LEFT BRIDGE.
4. INCLUDE SCUPPERS AT STA. 590+76.18, 590+90.47, 591+28.18, AND 591+46.47 WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN. INCLUDE ALL OTHER SCUPPERS WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS.
5. ALL PIPE SHALL BE GALVANIZED ASTM A53.
6. INCLUDE THE COST OF ALL SUPPORTS, REDUCERS, CLEANOUTS, ECT. WITH ITEM 518 - 8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN OR ITEM 518 - PIPE HORIZONTAL CONDUCTOR, AS PER PLAN.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
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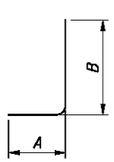
DESIGNED	DRAWN	REVIEWED	DATE
LAH	LAH	RER	11/27/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006724	

DRAINAGE DETAILS
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

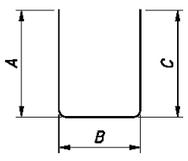
MAH-680-3.25
PID No. 96637

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE II	PHASE III	TOTAL				A	B	C	D	E	R	INC
REAR ABUTMENT - LEFT BRIDGE													
A501	28	42	70	1'-9"	128	1	11"	11"					
A502	14	21	35	4'-0"	146	2	5"	3'-5"	5"				
A601	2	2	4	3'-6"	21	STR							
A809	2		2	21'-2"	113	44							
A810	1		1	20'-8"	55	44							
A811	1		1	21'-1"	56	44							
A812	1		1	21'-5"	57	44							
A813		2	2	32'-0"	171	43							
A814		1	1	32'-2"	86	43							
A815		1	1	31'-10"	85	43							
A816		1	1	31'-6"	84	43							
SUB-TOTAL					1002								
FORWARD ABUTMENT - LEFT BRIDGE													
A503	28	48	76	1'-11"	152	1	11"	13"					
A504	14	24	38	4'-4"	172	2	7"	3'-5"	7"				
A601	4	4	8	3'-6"	42	STR							
A809	2		2	21'-2"	113	44							
A811	1		1	21'-1"	56	44							
A812	1		1	21'-5"	57	44							
A817	1		1	20'-10"	56	44							
A818		2	2	37'-1"	198	43							
A819		1	1	36'-6"	97	43							
A820		1	1	36'-10"	98	43							
A821		1	1	37'-2"	99	43							
SUB-TOTAL					1140								
PIERS - LEFT BRIDGE													
P501	32	44	76	1'-6"	119	1	9"	10"					
P502	16	22	38	2'-11"	116	2	3"	2'-8"	3"				
P803	5		5	23'-10"	318	44							
P804		5	5	31'-10"	425	43							
SUB-TOTAL					978								

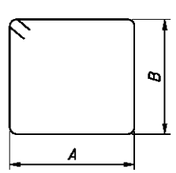
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE IV	PHASE V	TOTAL				A	B	C	D	E	R	INC
REAR ABUTMENT - RIGHT BRIDGE													
A501	28	44	72	1'-9"	131	1	11"	11"					
A502	14	22	36	4'-0"	150	2	5"	3'-5"	5"				
A601	2	2	4	3'-6"	21	STR							
A801		2	2	33'-8"	180	43							
A802		1	1	33'-3"	89	43							
A803		1	1	33'-7"	90	43							
A804		1	1	33'-11"	91	43							
A805	2		2	21'-9"	116	44							
A806	1		1	22'-0"	59	44							
A807	1		1	21'-8"	58	44							
A808	1		1	21'-3"	57	44							
SUB-TOTAL					1042								
FORWARD ABUTMENT - RIGHT BRIDGE													
A503	28	44	72	1'-11"	144	1	11"	13"					
A504	14	22	36	4'-4"	163	2	7"	3'-5"	7"				
A601	4	4	8	3'-6"	42	STR							
A801		2	2	33'-8"	180	43							
A803		1	1	33'-7"	90	43							
A804		1	1	33'-11"	91	43							
A805	2		2	21'-9"	116	44							
A806	1		1	22'-0"	59	44							
A807	1		1	21'-8"	58	44							
A808	1		1	21'-3"	57	44							
A822		1	1	33'-2"	89	43							
SUB-TOTAL					1089								
PIERS - RIGHT BRIDGE													
P501	32	42	74	1'-6"	116	1	9"	10"					
P502	16	21	37	2'-11"	113	2	3"	2'-8"	3"				
P801		5	5	30'-11"	413	43							
P802	5		5	23'-5"	313	44							
SUB-TOTAL					955								



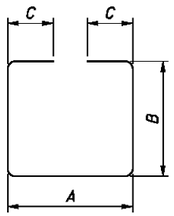
TYPE-1



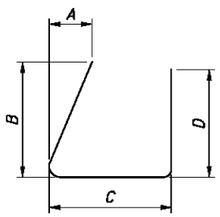
TYPE-2



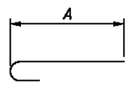
TYPE-3



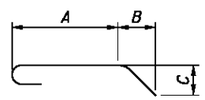
TYPE-5



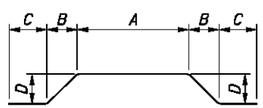
TYPE-9



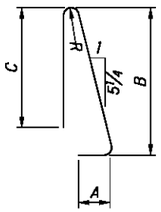
TYPE-16



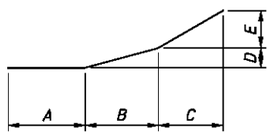
TYPE-18



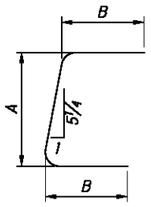
TYPE-21



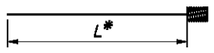
TYPE-23



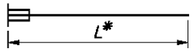
TYPE-25



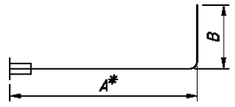
TYPE-28



TYPE-43



TYPE-44



TYPE-45

*REINFORCING BAR UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH ADJUSTMENT AND/OR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF CONNECTOR USED.

NOTES:

1. FOR REINFORCING STEEL NOTES, SEE SHEETS 3/47 AND 4/47.
2. FOR ADDITIONAL REINFORCING SCHEDULES, SEE SHEET 46/47.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street - Cleveland, Ohio 44113
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DESIGNED AEK | DRAWN AEK | REVIEWED RER 11/30/2015 | DATE | CHECKED NBR | REVISED | STRUCTURE FILE NUMBER 5006724/5006694

REINFORCING LIST - 1

BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE II	PHASE III	TOTAL				A	B	C	D	E	R	INC
SUPERSTRUCTURE - LEFT BRIDGE													
S401	104	172	276	40'-0"	7375	STR							
S402	26	43	69	36'-7"	1686	STR							
S404	4		4	3'-8"	10	STR							
S405	8		8	2'-3"	12	STR							
S501	132	212	344	40'-0"	14352	STR							
S502	33	53	86	38'-7"	3461	STR							
S503	150	258	408	16'-8"	7092	STR							
S504	850		850	21'-10"	19356	STR							
S505		832	832	19'-0"	16488	STR							
S506		328	328	17'-0"	5816	STR							
S507		504	504	15'-7"	8192	STR							
	2 SR		2 SR	2'-10"									
S508	OF		OF	TO	439	STR							11"
	19		19	19'-4"									
	2 SR		2 SR	4'-6"									
S509	OF		OF	TO	523	STR							11 5/8"
	19		19	21'-11"									
		2 SR	2 SR	3'-2"									
S510		OF	OF	TO	911	STR							1'-0"
		27	27	29'-2"									
		2 SR	2 SR	4'-0"									
S511		OF	OF	TO	1246	STR							11 3/8"
		32	32	33'-4"									
S520	32	51	83	7'-8"	664	2	2'-8"	2'-7"	2'-8"				
S523	4		4	10'-9"	45	3	3'-8"	1'-5"					
S524	28	51	79	13'-11"	1147	3	3'-8"	3'-0"					
S525	439	444	883	8'-10"	8135	2	7'-6"	7"	1'-0"				
S601		10	10	4'-0"	60	STR							
S801	30	52	82	5'-2"	1131	18	2'-10"	1'-0"	1'-0"				
S806	16		16	6'-3"	267	18	4'-0"	1'-0"	1'-0"				
S807	16		16	21'-0"	897	44							
S808		14	14	31'-9"	1187	43							
S809	4		4	14'-0"	150	1	2'-0"	12'-2"					
S810	4		4	6'-10"	73	45	2'-0"	5'-0"					
S811		14	14	36'-10"	1377	43							
S812	4		4	14'-9"	158	1	2'-0"	12'-11"					
S813	4		4	5'-7"	60	45	2'-0"	3'-9"					
S814	2		2	12'-2"	65	STR							
S815	2		2	5'-0"	27	44							
S816	2		2	3'-9"	20	44							
S817	2		2	12'-11"	69	STR							
SUB-TOTAL					102,491								

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE IV	PHASE V	TOTAL				A	B	C	D	E	R	INC
SUPERSTRUCTURE - RIGHT BRIDGE													
S401	104	160	264	40'-0"	7054	STR							
S403	26	40	66	34'-6"	1521	STR							
S404	4		4	3'-8"	10	STR							
S405	8		8	2'-3"	12	STR							
S501	132	204	336	40'-0"	14018	STR							
S512	33	51	84	36'-7"	3205	STR							
S513	52	78	130	42'-6"	5763	STR							
S514	850		850	22'-4"	19800	STR							
S515		828	828	30'-10"	26628	STR							
	2 SR		2 SR	4'-2"									
S516	OF		OF	TO	522	STR							12"
	19		19	22'-2"									
	2 SR		2 SR	2'-4"									
S517	OF		OF	TO	461	STR							11"
	20		20	19'-9"									
		2 SR	2 SR	2'-1"									
S518		OF	OF	TO	1064	STR							11 1/2"
		31	31	30'-10"									
		2 SR	2 SR	1'-10"									
S519		OF	OF	TO	1022	STR							12"
		30	30	30'-10"									
S520	38	56	94	7'-8"	752	2	2'-8"	2'-7"	2'-8"				
S521	34	56	90	14'-1"	1322	3	3'-8"	3'-1"					
S522	4		4	10'-7"	44	3	3'-8"	1'-4"					
S525	441	441	882	8'-10"	8126	2	7'-6"	7"	1'-0"				
S601		10	10	4'-0"	60	STR							
S801	30	46	76	5'-2"	1048	18	2'-10"	1'-0"	1'-0"				
S802		28	28	33'-6"	2504	43							
S803	16		16	21'-6"	918	44							
S804	8		8	6'-9"	144	45	2'-0"	4'-11"					
S805	8		8	14'-1"	301	45	2'-0"	12'-3"					
S806	16		16	6'-3"	267	18	4'-0"	1'-0"	1'-0"				
S815	4		4	4'-11"	53	44							
S818	4		4	12'-3"	131	STR							
SUB-TOTAL					96,750								

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, S601:
   - S: LOCATION OF THE BAR WITHIN THE STRUCTURE
   - 6: BAR SIZE NUMBER (NO. 6 BAR)
   - 01: SEQUENCE NUMBER
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BAR BEND AT THE END OF A BAR. STRAIGHT BARS ARE INDICATED BY "STR". SERIES BARS ARE INDICATED BY "SR".
3. STANDARD BENDS SHALL BE PER CMS 509.05.
4. ALL REINFORCING STEEL SHALL BE EPOXY COATED, GRADE 60 (MINIMUM YIELD STRENGTH OF 60 KSI).
5. FOR BAR BENDING DIAGRAMS, SEE SHEET 45/47.
6. FOR ADDITIONAL REINFORCING SCHEDULES, SEE SHEET 47/47.
7. REINFORCING FOR THE ABUTMENT DIAPHRAGMS IS INCLUDED IN THE SUPERSTRUCTURE TABLE.

DESIGN AGENCY
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DESIGNED AEK | DRAWN AEK | REVIEWED RER | DATE 11/30/2015
CHECKED NBR | REVISED | STRUCTURE FILE NUMBER 5006724/5006694

REINFORCING LIST - 2
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE II	PHASE III	TOTAL				A	B	C	D	E	R	INC
PARAPETS - LEFT BRIDGE													
R501	210	216	426	7'-4"	3258	23	11"	3'-3"	3'-0"			2 3/4"	
R502	16	16	32	40'-0"	1335	STR							
R503		4	4	38'-8"	161	STR							
R504	4		4	36'-7"	153	STR							
R505	6	6	12	13'-1"	164	STR							
R506	24	24	48	5'-8"	284	STR							
R507	6	6	12	11'-0"	138	STR							
R508		6	6	13'-11"	87	STR							
R509	6		6	13'-2"	82	STR							
R513		4	4	8'-5"	35	9	7"	3'-2"	2'-4"	3'-2"			
R514		4	4	2'-10"	12	2	7"	1'-10"	7"				
R515		4	4	3'-2"	13	STR							
R516		6	6	7'-3"	45	21	1'-4"	1'-10"	6"	1'-10"			
R517	16	16	32	10'-0"	334	STR							
R518	8	8	16	5'-8"	95	25	1'-10"	2'-5"	1'-5"	1 1/2"	5"		
R519	8	8	16	5'-8"	95	STR							
R601	210	216	426	2'-5"	1546	1	1'-0"	1'-7"					
R602	210	216	426	3'-2"	2026	28	1'-7"	1'-0"					
R603	3	3	6	13'-1"	118	STR							
R604	12	12	24	5'-8"	204	STR							
R605	3	3	6	11'-0"	99	STR							
R606		3	3	13'-11"	63	STR							
R607	3		3	13'-2"	59	STR							
R611		4	4	7'-10"	47	5	2'-2"	2'-2"	1'-0"				
	4 SR	4 SR	8 SR	4'-0"				3'-2"					
R612	OF	OF	OF	TO	584	1	1'-0"	TO					1"
	11	11	11	4'-10"				4'-0"					
R613	20	20	40	4'-0"	240	1	1'-0"	3'-2"					
				SUB-TOTAL	11277								

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PHASE IV	PHASE V	TOTAL				A	B	C	D	E	R	INC
PARAPETS - RIGHT BRIDGE													
R501	201	201	402	7'-4"	3075	23	11"	3'-3"	3'-0"			2¾"	
R502	16	16	32	40'-0"	1335	STR							
R504	4	4	8	36'-7"	305	STR							
R510	12	12	24	13'-9"	344	STR							
R511	24	24	48	5'-0"	250	STR							
R512	6	6	12	12'-4"	154	STR							
R513		4	4	8'-5"	35	9	7"	3'-2"	2'-4"	3'-2"			
R514		4	4	2'-10"	12	2	7"	1'-10"	7"				
R515		4	4	3'-2"	13	STR							
R516		6	6	7'-3"	45	21	1'-4"	1'-10"	6"	1'-10"			
R517	16	16	32	10'-0"	334	STR							
R518	8	8	16	5'-8"	95	25	1'-10"	2'-5"	1'-5"	1½"	5"		
R519	8	8	16	5'-8"	95	STR							
R601	201	201	402	2'-5"	1459	1	1'-0"	1'-7"					
R602	201	201	402	3'-2"	1912	28	1'-7"	1'-0"					
R608	6	6	12	13'-9"	248	STR							
R609	12	12	24	5'-0"	180	STR							
R610	3	3	6	12'-4"	111	STR							
R611		4	4	7'-10"	47	5	2'-2"	2'-2"	1'-0"				
	4 SR	4 SR	8 SR	4'-0"				3'-2"					
R612	OF	OF	OF	TO	584	1	1'-0"	TO					1"
	11	11	11	4'-10"				4'-0"					
R613	20	20	40	4'-0"	240	1	1'-0"	3'-2"					
				SUB-TOTAL	10873								

NOTES:

1. FOR BAR BENDING DIAGRAMS, SEE SHEET 45/47.
2. FOR ADDITIONAL REINFORCING SCHEDULES SEE SHEET 46/47.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
AEK	AEK	RER	11/30/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NBR		50066724/50066694	

REINFORCING LIST - 3
BRIDGE NO. MAH-680-0343L&R
I.R. 680 OVER YARR

MAH-680-3.25
PID No. 96637

47/47

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