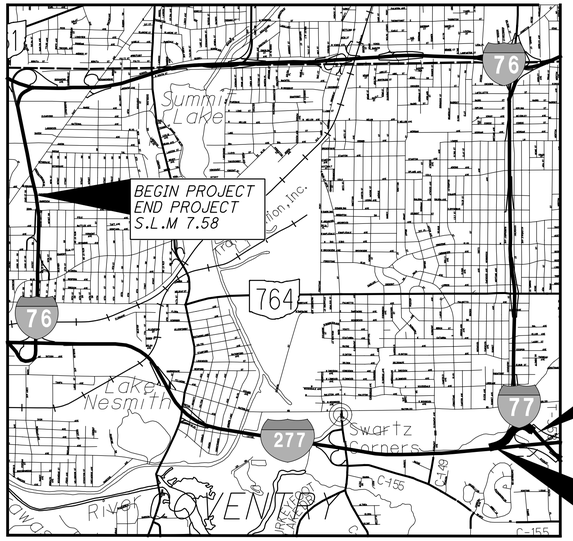
STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

SUM-76/77-7.58/9.59

CITY OF AKRON

SUMMIT COUNTY



LOCATION MAP

LATITUDE: 41°01'32.00" LONGITUDE: 81°30'04.30"

SCALE IN MILES

0 1/2 1 1-1/2 2

N

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY

FEDERAL ROUTES

STATE ROUTES

COUNTY & TOWNSHIP ROADS

OTHER ROADS

DESIGN DESIGNATION

	IR-76	RAMP B-2 (IR-77/IR-277 INTRCHG)
CURRENT ADT (2015)	59,000	12,800
DESIGN YEAR ADT (2035)	60,000	15,500
DESIGN HOURLY VOLUME (2035)	5,400	1,485
DIRECTIONAL DISTRIBUTION	57%	1.0%
TRUCKS (24 HOUR B&C)	14%	9%
DESIGN SPEED	65 M.P.H.	VARIES, MIN 35 M.P.H.
LEGAL SPEED	55 M.P.H.	-
DESIGN FUNCTIONAL CLASSIFICATION:	FREEWAY	FREEWAY
NHS PROJECT	YES	YES

DESIGN EXCEPTIONS

NONE REQUIRED

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE REPLACEMENT OF THE BRIDGE DECK FOR SUM-76-0758. IT ALSO CONSISTS OF THE REPLACEMENT OF THE BRIDGE DECK AND WIDENING OF SUM 77-0959. RAMPS B2 AND B AT THE IR 277- IR 77 INTERCHANGE ARE BEING WIDENED AND RESURFACED AS PART OF THE PROJECT.

EARTH DISTURBED AREA

PROJECT EARTH DISTURBED AREA:	2.41 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	1.20 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	4.90 ACRES

2013 SPECIFICATIONS

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

AS BUILT SHEETS

2

BU6 - APPROVED FOR CONSTRUCTION
SUM-77-0959 SUPERSTRUCTURE
AUGUST 11, 2015

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS UNDERGROUND
PROTECTION SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:
RESOURCE INTERNATIONAL INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

ENGINEERS SEAL:

STATE OF OHIO
JOSEPH L. MELLMAN
E-71911
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Joe Mellman
DATE: 08/11/2015

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
A-1-69	07/19/02					800	10/17/14	
AS-1-81	01/18/13					821	4/20/12	
EXJ-4-87	07/19/02					832	01/17/14	
GSD-1-96	07/19/02							
RB-1-55	07/19/13							
SBR-1-13	01/17/14							

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED IN BUILDABLE UNIT 2.

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

BU6 - AS-BUILT DRAWINGS - 09/12/2016

FEDERAL PROJECT NO. E140 (478)
PID NO. 98061
CONSTRUCTION PROJECT NO. 15-3000
RAILROAD INVOLVEMENT NONE
SUM 76/77-7.58/9.59
1/16

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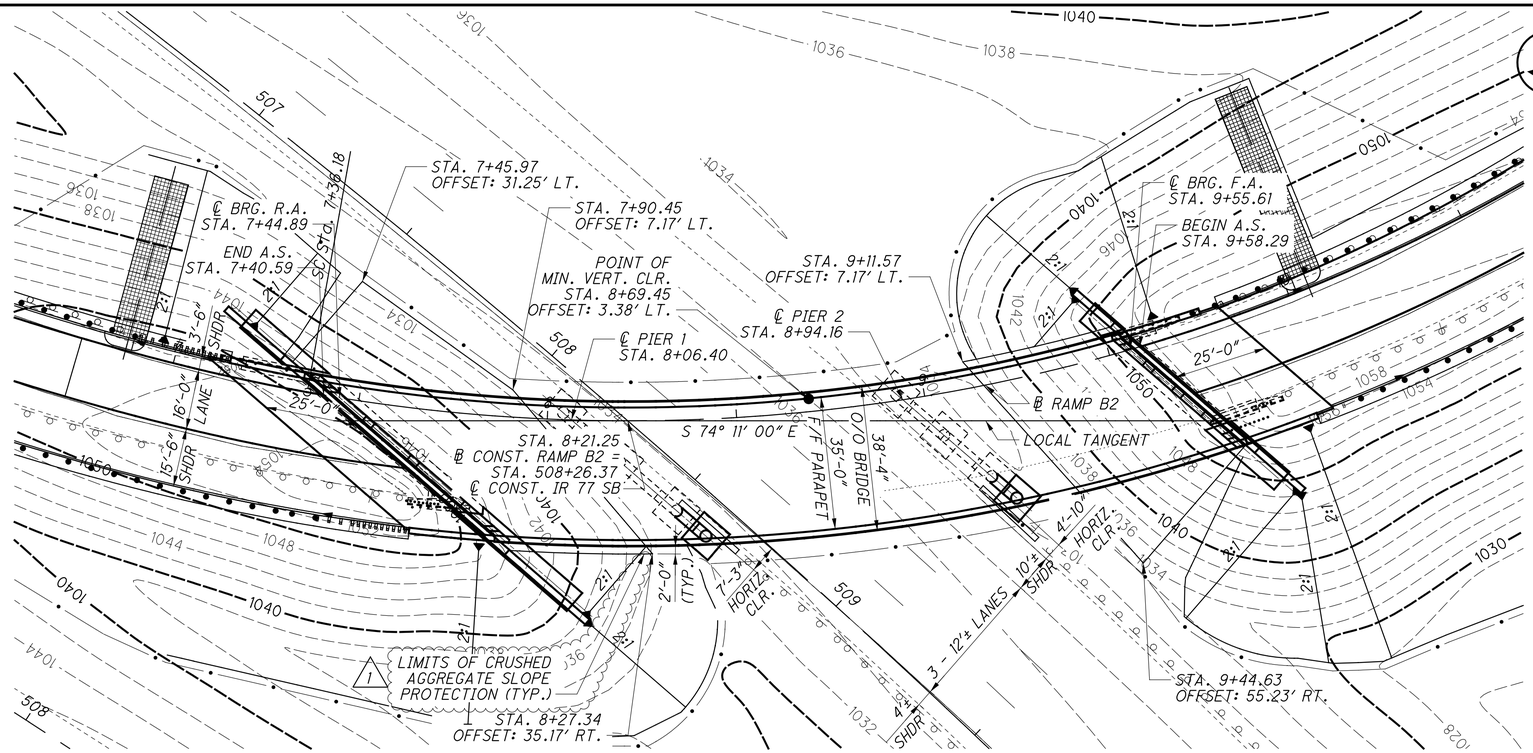
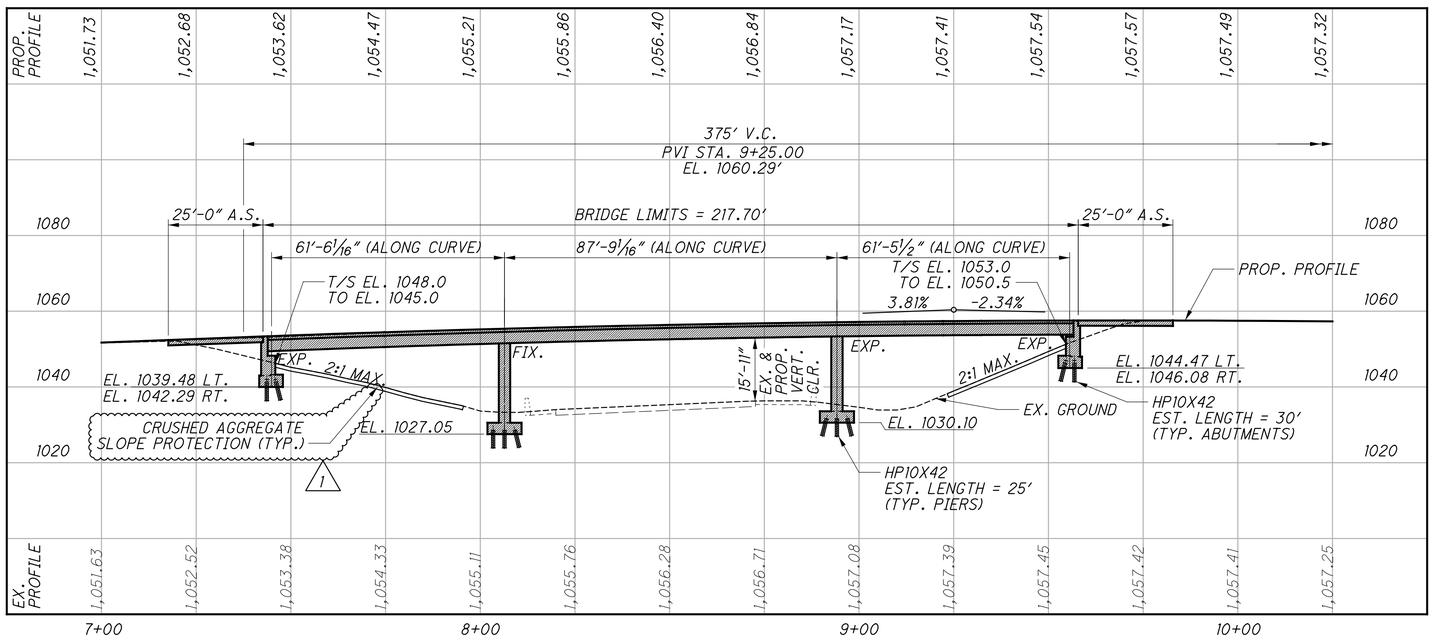


PLAN

CURVE C8
P.I. STA. 10+65.43
Δ = 69°10'46.21" (LT)
Dc = 12°00'00.44"
R = 477.46
T = 329.25'
L = 576.49'
E = 102.52'
PC = 7+36.18
PT = 13+12.67

	DATE	DESCRIPTION
1	9/12/16	AS BUILT



PROFILE

BENCHMARK DATA

BM 5000 STA. 16+94.71, ELEV. 1037.38, OFFSET 92.94', LT.
BM 2000 STA. 4+72.10, ELEV. 1037.38, OFFSET 31.55', RT.

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLANS IN BUILDABLE UNIT 4.

NOTES

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

DESIGN TRAFFIC:

2015 ADT = 12,800 2015 ADTT = 1,152
2035 ADT = 16,500 2035 ADTT = 1,485
DIRECTIONAL DISTRIBUTION = 1.0

LEGEND

- BORING LOCATION
- ● 15'-11" ACTUAL MINIMUM VERTICAL CLEARANCE

PROPOSED WORK

1. REMOVE EXISTING DECK.
2. WIDEN EXISTING ABUTMENT AND PIERS.
3. PATCH SUBSTRUCTURE.
4. CONSTRUCT NEW STEEL BEAM ON NEW ROCKER/ BOLSTER BEARINGS.
5. REPLACE CORRODED CROSSFRAMES AND FATIGUE RETROFIT EXISTING MOMENT PLATES.
6. CONSTRUCT COMPOSITE DECK AND APPROACH SLABS.
7. SEAL CONCRETE SURFACES WITH EPOXY-URETHANE SEALER.
8. INSTALL A POLYMER MODIFED EXPANSION JOINT BETWEEN THE APPROACH SLABS AND THE APPROACH PAVEMENT.
9. REGRADE THE SLOPES AND PLACE NEW SLOPE PROTECTION.
10. INSTALL STRUCTURE IDENTIFICATON SIGN.

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: 61'-6"±, 88'-0"±, 61'-6"± C/C BEARINGS
ROADWAY: 28'-0"± F/F PARAPET
LOADING: CF 2000 ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 49° 10' 19" R.F. TO LOCAL TANGENT
APPROACH SLABS: 25' LONG (AS-1-54)
WEARING SURFACE: 1" CONCRETE OVERLAY
ALIGNMENT: 12° 00' 00.44" CURVE LEFT
SUPERELEVATION: 0.0833
STRUCTURAL FILE NUMBER: 7702671
DATE BUILT: 1966
DISPOSITION: TO BE REHABILITATED

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH COMPOSITE REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: 61'-6", 88'-0", 61'-6" C/C BEARINGS
ROADWAY: 35'-0" TOE/TOE PARAPET
LOADING: HS-25 CASE II AND ALTERNATE MILITARY
EX. SUBSTRUCTURE: CF 2000 ADEQUATE FOR AASHTO ALTERNATE LOADING AND HS-25-44
FUTURE WEARING SURFACE: 60 PSF
SKEW: 49° 10' 19" TO LOCAL TANGENT
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLABS: 25'-0" LONG (AS-1-81)
ALIGNMENT: 12° 00' 00.44" CURVE LEFT
SUPERELEVATION: 0.0833
COORDINATES: LATITUDE 41° 01' 38"
LONGITUDE 81° 30' 14"

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED JGM | DRAWN JGM | REVIEWED SSK | DATE 8/2015
CHECKED NCK | REVISED — | STRUCTURE FILE NUMBER 7702671

SUMMIT COUNTY
STA. 7+40.59
STA. 9+58.29

SITE PLAN
BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

1 / 15
2 / 16

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REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

A-1-69	REVISED	07-19-02
AS-1-81	REVISED	01-18-13
EXJ-4-87	REVISED	07-19-02
GSD-1-96	REVISED	07-19-02
RB-1-55	REVISED	07-19-13
SBR-1-13	REVISED	01-17-14

DESIGN SPECIFICATIONS:

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

DESIGN LOADING:

HS-25-44 CASE II AND ALTERNATE MILITARY LOADING
FUTURE WEARING SURFACE (FWS) OF 60 PSF

EX. SUBSTRUCTURE: CF 2000 ADEQUATE FOR AASHTO ALTERNATE LOADING AND HS-25-44

DESIGN DATA:

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

STRUCTURAL STEEL - ASTM A709 GRADE 50W - YIELD STRENGTH 50 KSI

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 REMOVAL NOTES:

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 REBUILT STRUCTURE.

CONCRETE DECK REMOVAL PROJECTS:

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING, PARAPETS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (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 OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN BOTTOM LAYER DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. 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 DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS:

THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS POINTED OR BLUNTED CHISEL TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL GIRDER), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.
DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (EG., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DEMAGED BY THE REMOVAL 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 DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING 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:

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

REHABILITATION OF EXISTING STRUCTURES:

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.

REINFORCING STEEL REPLACEMENT:

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT:

THE FINISH COAT OF PAINT ON THE STRUCTURAL STEEL IS TO BE FEDERAL COLOR - BUFF (#13522).

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN:

THE COLOR OF SEALER SHALL CONFORM TO FEDERAL COLOR NUMBER 17778 (LIGHT NEUTRAL).

ITEM 513 - CROSSFRAMES

REMOVE AND REPLACE CROSSFRAMES AS DIRECTED BY THE PROJECT ENGINEER. THE DBT WILL INCLUDE IN THE BID AN ESTIMATED QUANTITY OF 10 CROSSFRAMES (DEFINED AS THE ENTIRE CROSSFRAME INCLUDING ALL THREE ANGLES) TO BE REMOVED AND REPLACED.

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 LOAD OF 2.6 KIPS FOR A TOTAL MACHINE LOAD OF 21 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 IN.

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

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED WHEN THE PILE PENETRATION IS AN INCH OR LESS AFTER RECEIVING AT LEAST 20 BLOWS FROM THE PILE HAMMER. SELECT THE HAMMER SIZE TO ACHEIVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE TOTAL FACTORED LOAD IS 40 KIPS PER PILE FOR THE ABUTMENT PILES. THE TOTAL FACTORED LOAD IS 72 KIPS PER PILE FOR THE PIER PILES.

PILE SPLICES:

IN LIEU OF USING THE FULL PENETRATION BUTT WELDS SPECIFIED IN CMS 507.09 TO SPLICE STEEL H-PILES, THE CONTRACTOR MAY USE A MANUFACTURED H-PILE SPLICER. FURNISH SPLICERS FROM THE FOLLOWING MANUFACTURER:

ASSOCIATED PILE AND FITTING CORPORATION
8 WOOD HOLLOW RD. PLAZA 1
PARSIPPANY, NEW JERSEY 07054

INSTALL AND WELD THE SPLICER TO THE PILE SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN ASSEMBLY PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN: THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN EXISTING PIER BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPER-STRUCTURE, 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.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPER-STRUCTURE, AS PER PLAN CONTINUED:

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

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

INSPECTION OF EXISTING STRUCTURAL STEEL

INSPECTION OF EXISTING STRUCTURAL STEEL: THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS AND CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE. WORK ALSO INCLUDES REMOVING AND REPLACING CORRODED CROSSFRAMES AS DIRECTED BY THE PROJECT ENGINEER. AN ESTIMATED QUANTITY OF TEN (10) CROSSFRAMES IS PROVIDED.

ASBESTOS NOTIFICATION:

AN ASBESTOS SURVEY OF THE SUM-077-0959 BRIDGE 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:

AKRON REGIONAL AIR QUALITY MANAGEMENT DISTRICT
146 S. HIGH ST. SUITE 904
AKRON, OHIO 44308
BOB HASENYAGER, ACTING ADMIN.
(330) 375-2480
FAX: (330) 375-2402

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 FORMS IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON, AKRON, OHIO 44306.

THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM.

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

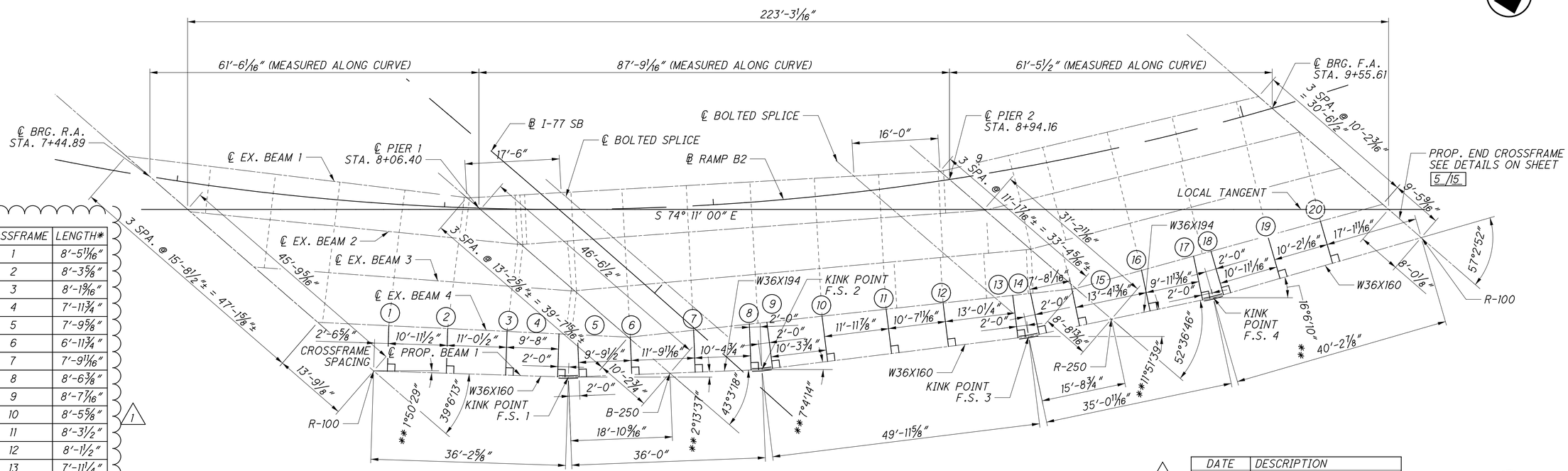
DESIGNED	DRAWN	REVIEWED	DATE
FTB	FTB	NCK	8/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JGM	—	7702671	

GENERAL NOTES

BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

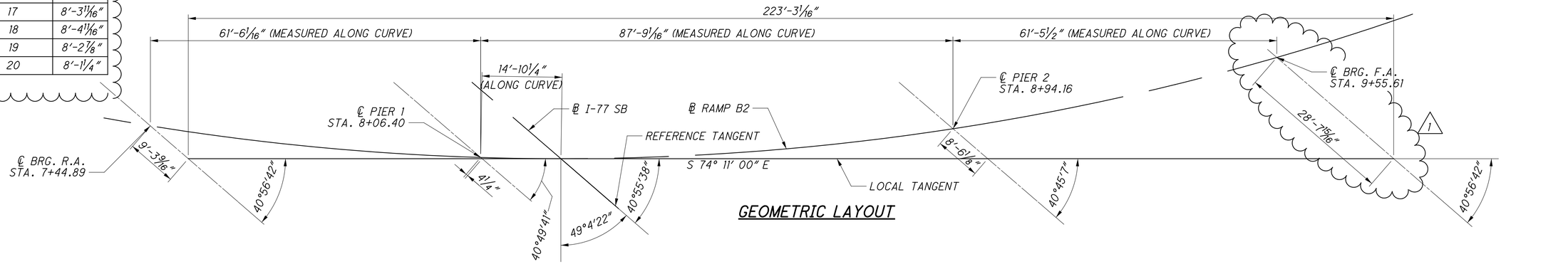
SUM 76/77-7.58/9.59
PID No. 98061

CROSSFRAME	LENGTH*
1	8′-5 11/16″
2	8′-3 3/8″
3	8′-1 9/16″
4	7′-11 3/4″
5	7′-9 5/8″
6	6′-11 3/4″
7	7′-9 1/16″
8	8′-6 3/8″
9	8′-7 7/16″
10	8′-5 5/8″
11	8′-3 1/2″
12	8′-1 1/2″
13	7′-11 1/4″
14	7′-9″
15	6′-11 15/16″
16	7′-8 7/16″
17	8′-3 11/16″
18	8′-4 11/16″
19	8′-2 7/8″
20	8′-1 1/4″

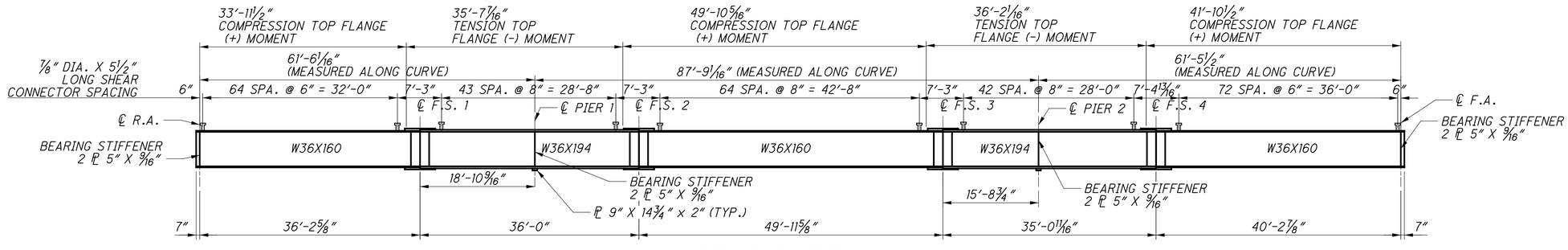


FRAMING PLAN

DATE	DESCRIPTION
8-26-15	REVISION



GEOMETRIC LAYOUT



BEAM ELEVATION

NOTES:

1. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FACIAL GIRDER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE 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.

2.) SHEAR STUD SPACING SHOWN MAY BE ADJUSTED RADIALLY TO AVOID INTERFERENCE WITH TRANSVERSE DECK REINFORCING.

LEGEND:

* - LENGTH OF CROSSFRAME IS MEASURED FROM THE CENTERLINE OF EXISTING BEAM 4 TO CENTERLINE OF PROPOSED BEAM 1.

** - DEFLECTION ANGLES AT KINK POINTS MEASURED FROM PROPOSED BEAM TO THE LOCAL TANGENT.

- 90 DEGREE ANGLE

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED TOM | DRAWN JGM | CHECKED JGM | REVIEWED NCK | DATE 8/2015 | REVISED — | STRUCTURE FILE NUMBER 7702671

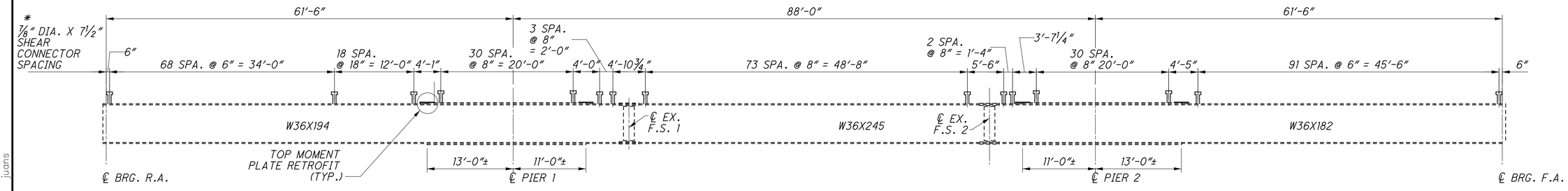
BU6 - AS-BUILT DRAWINGS - 09/12/2016

FRAMING PLAN
BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

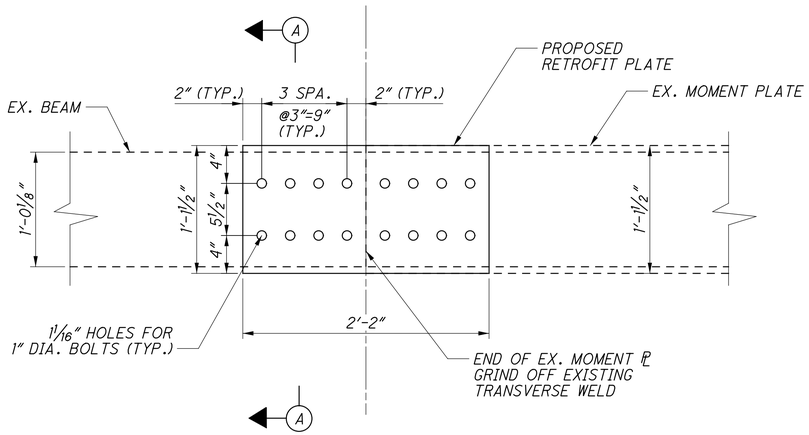
3 / 15

4 / 16



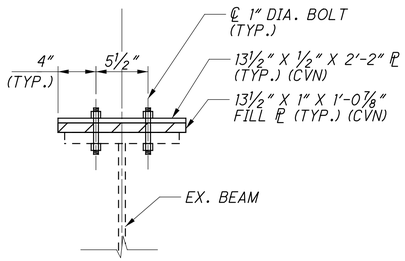
EXISTING BEAM ELEVATION

* SHEAR CONNECTORS ON TOP OF EXISTING MOMENT PLATES SHALL BE 6 1/2" IN LENGTH.



TOP RETROFIT PLAN

(AT PIERS)



SECTION A-A

NOTE:

1.) SHEAR CONNECTOR SPACING SHOWN MAY BE ADJUSTED RADIALLY TO AVOID INTERFERENCE FROM TRANSVERSE DECK REINFORCING.

SUBSTRUCTURE UNIT	NO. OF LOCATIONS	EX. MOMENT PLATES	REQ'D MOMENT RETROFIT PLATES	REQ'D FILL PLATES
PIER 1 - TOP	8	13 1/2" X 1" X 11'-0" 13 1/2" X 1" X 13'-0"	2 - 13 1/2" X 1/2" X 2'-2"	2 - 13 1/2" X 1" X 1'-0 7/8"
PIER 2 - TOP	8	13 1/2" X 1" X 11'-0" 13 1/2" X 1" X 13'-0"	2 - 13 1/2" X 1/2" X 2'-2"	2 - 13 1/2" X 1" X 1'-0 7/8"

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED JGM | DRAWN JGM | REVIEWED SSK | DATE 8/2015
CHECKED NCK | REVISED — | STRUCTURE FILE NUMBER 7702671

FATIGUE RETROFIT DETAILS
BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

4 / 15

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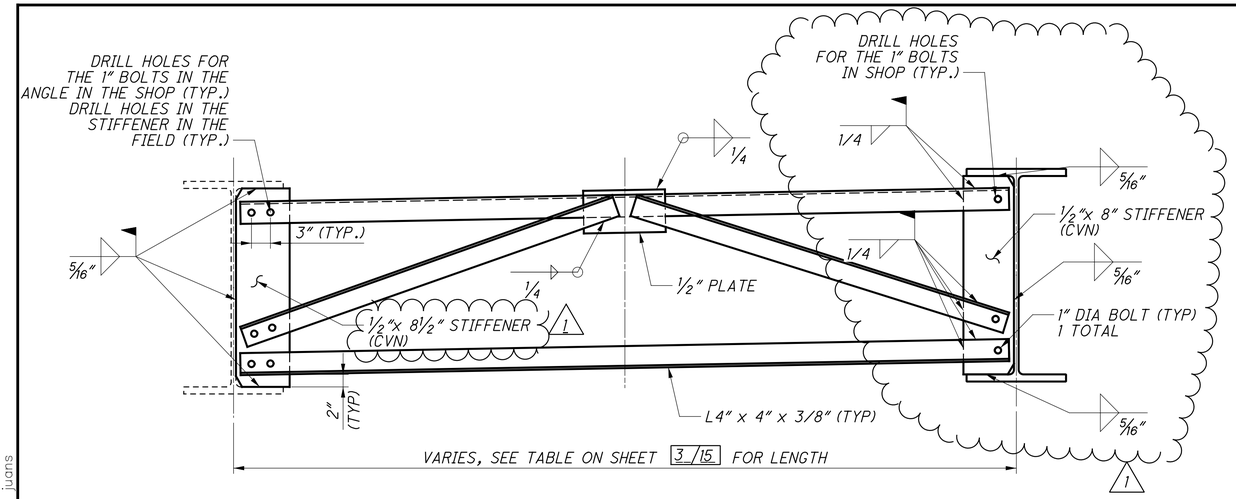
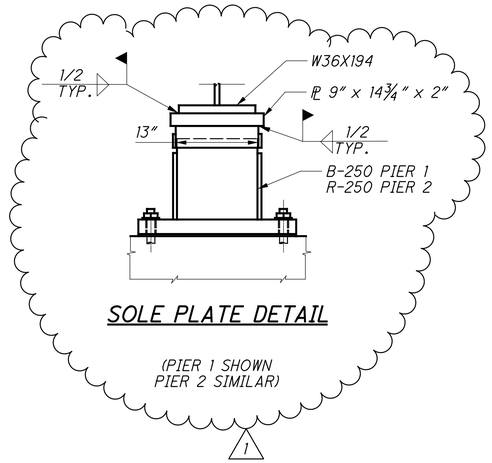
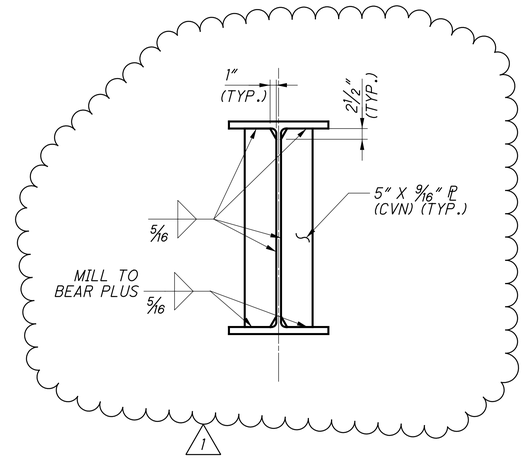


PROP. INTERMEDIATE CROSSFRAME

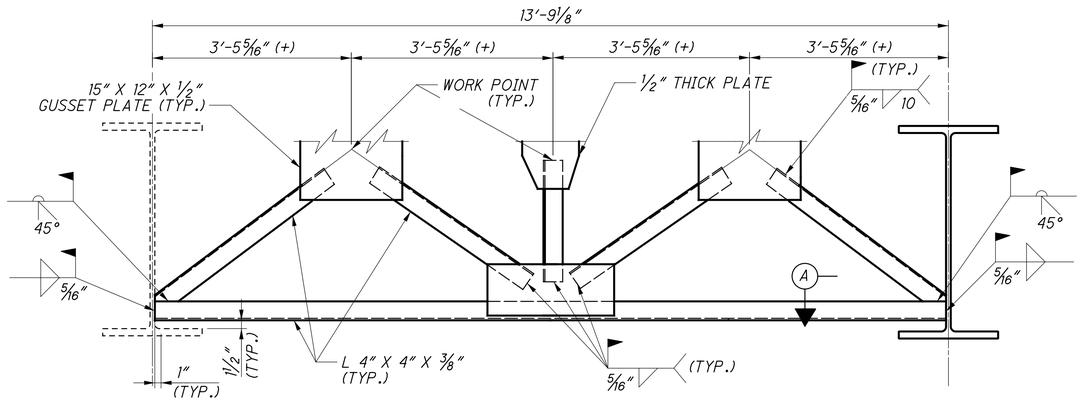


SOLE PLATE DETAIL

(PIER 1 SHOWN PIER 2 SIMILAR)

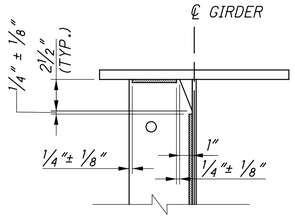


BEARING STIFFENER DETAILS



PROP. END CROSSFRAME AT R.A.

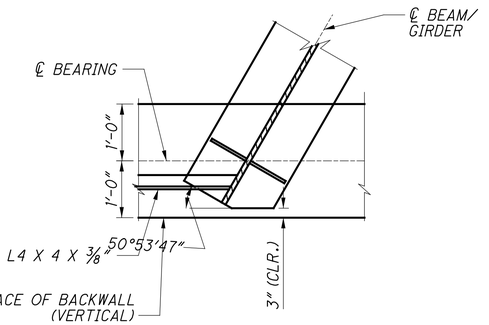
(LOOKING UPSTATION)



WELD TERMINATION DETAIL

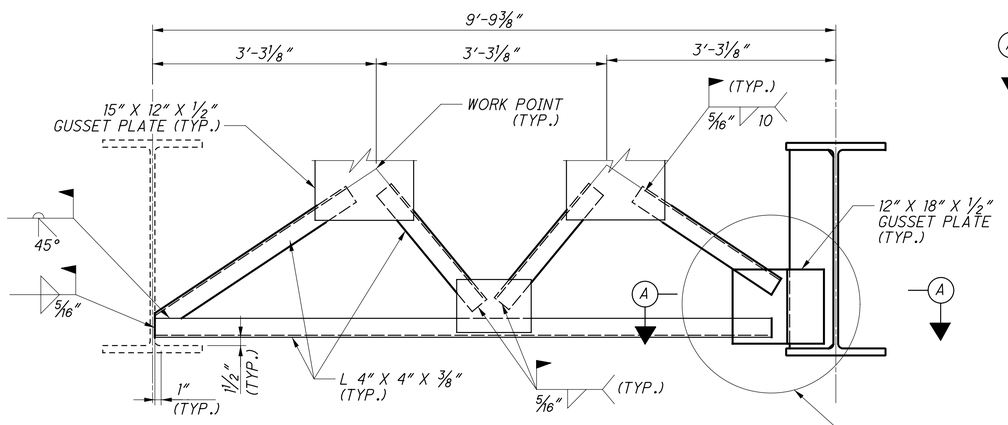
(ONE STIFFENER SHOWN TWO STIFFENERS SIMILAR)

1	DATE	DESCRIPTION
	10/23/15	REVISION



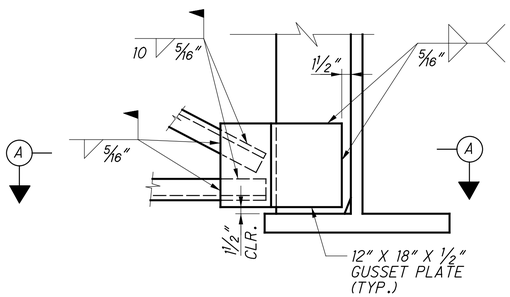
SECTION A-A

(REAR ABUTMENT)



PROP. END CROSSFRAME AT F.A.

(LOOKING UPSTATION)

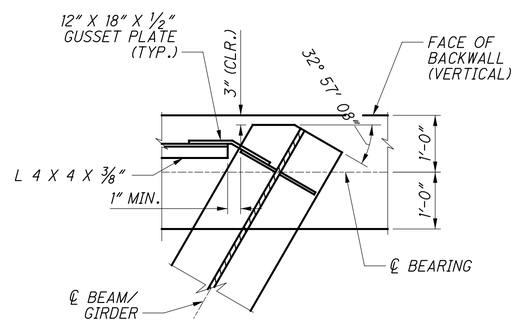


DETAIL B

(FORWARD ABUTMENT)

NOTES:

1. REMOVE AND REPLACE PAINT ON EXISTING BEAMS FOR WELDING STIFFENERS IN ACCORDANCE WITH CMS ITEM 514.
2. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.



SECTION A-A

(FORWARD ABUTMENT)

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED	DRAWN	REVIEWED	DATE
TOM	JGM	NCK	8/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JGM	—	7702671	

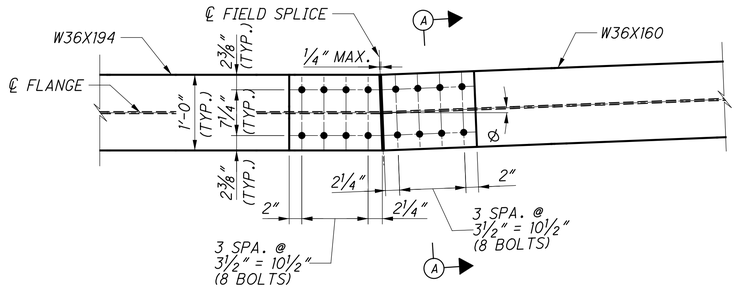
TTRANSVERSE SECTION

BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

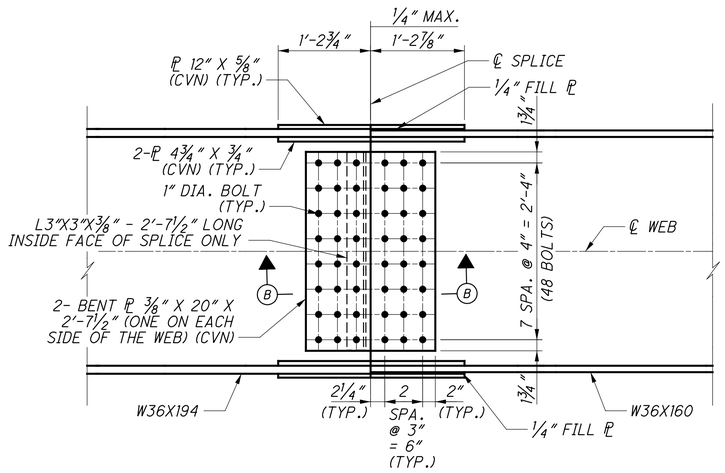
SUM 76/77-7.58/9.59 PID No. 98061

5 / 15

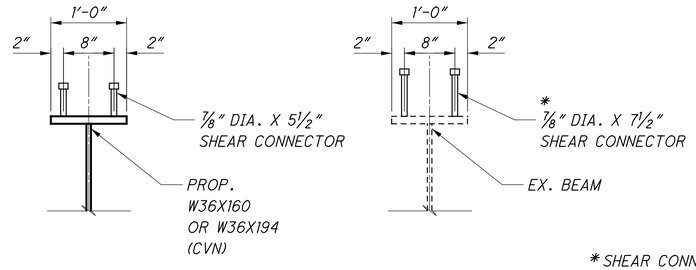
6 / 16



PLAN

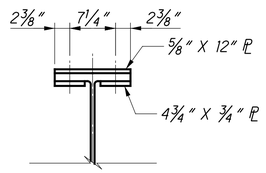


ELEVATION

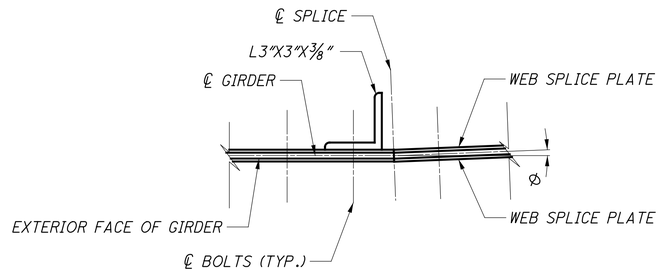


SHEAR CONNECTOR DETAILS

* SHEAR CONNECTORS ON TOP OF EXISTING MOMENT PLATES SHALL BE 6½" IN LENGTH



SECTION A-A



SECTION B-B

NOTES:

1. ALL BOLTED SPLICE FASTENERS ARE 1" DIAMETER, TYPE 3 HIGH STRENGTH BOLTS, ASTM - A325.
2. CHARPY-V-NOTCH TOUGHNESS: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. PLACE BOLT HEAD ON EXPOSED SIDE OF FASCIA GIRDER.
4. FOR FIELD SPLICE LOCATIONS, SEE FRAMING PLAN SHEET 3/15

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED	DRAWN	REVIEWED	DATE
JGM	JGM	NCK	8/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLM		77026671	

SUPERSTRUCTURE DETAILS
BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

6 / 15

7 / 16

SCREED ELEVATIONS

LOCATION	SPAN 1												SPAN 2													
	BRG. R.A.		.25 SPAN		.5 SPAN		PROP. F.S. 1		.75 SPAN		BRG.PIER 1		EX. F.S. 1		.25 SPAN		PROP. F.S. 2		.5 SPAN		PROP. F.S. 3		.75 SPAN		EX. F.S. 2		BRG. PIER 2	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
TOE OF PARAPET	7+39.15	1052.97	7+54.87	1053.55	7+70.59	1054.06	N/A	N/A	7+86.31	1054.53	8+02.03	1054.97	8+21.23	1055.50	8+24.31	1055.58	N/A	N/A	8+46.59	1056.10	N/A	N/A	8+68.86	1056.48	8+76.13	1056.59	8+91.14	1056.77
BASELINE	7+44.89	1053.43	7+60.27	1054.00	7+75.65	1054.51	N/A	N/A	7+91.02	1054.96	8+06.40	1055.38	8+25.27	1055.89	8+28.34	1055.97	N/A	N/A	8+50.28	1056.46	N/A	N/A	8+72.22	1056.83	8+79.34	1056.93	8+94.16	1057.10
TOE OF PARAPET	7+89.32	1057.52	8+02.31	1057.90	8+15.31	1058.24	8+23.27	1058.43	8+28.30	1058.54	8+41.29	1058.83	N/A	N/A	8+60.68	1059.25	8+57.02	1059.18	8+80.08	1059.60	9+03.89	1059.86	9+99.47	1059.82	N/A	N/A	9+18.86	1059.97

LOCATION	SPAN 3									
	.25 SPAN		PROP. F.S. 4		.5 SPAN		.75 SPAN		BRG. F.A.	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
TOE OF PARAPET	9+06.69	1056.96	N/A	N/A	9+22.24	1057.11	9+37.78	1057.21	9+53.33	1057.25
BASELINE	9+09.52	1057.28	N/A	N/A	9+24.89	1057.42	9+40.25	1057.52	9+55.61	1057.55
TOE OF PARAPET	9+32.78	1060.08	9+36.77	1060.11	9+46.69	1060.16	9+60.61	1060.20	9+74.52	1060.18

TOP OF HAUNCH ELEVATIONS

LOCATION	SPAN 1												SPAN 2													
	BRG. R.A.		.25 SPAN		.5 SPAN		PROP. F.S. 1		.75 SPAN		BRG.PIER 1		EX. F.S. 1		.25 SPAN		PROP. F.S. 2		.5 SPAN		PROP. F.S. 3		.75 SPAN		EX. F.S. 2		BRG. PIER 2	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
EX. BEAM 1	7+39.91	1052.32	7+55.97	1052.87	7+72.03	1053.39	N/A	N/A	7+88.08	1053.92	8+04.07	1054.46	8+21.68	1054.83	8+26.16	1054.93	N/A	N/A	8+48.35	1055.39	N/A	N/A	8+70.53	1055.81	8+76.58	1055.93	8+92.62	1056.22
EX. BEAM 2	7+53.29	1053.42	7+68.56	1053.96	7+83.84	1054.46	N/A	N/A	7+99.10	1054.94	8+14.31	1055.43	8+31.25	1055.76	8+35.63	1055.85	N/A	N/A	8+57.03	1056.26	N/A	N/A	8+78.43	1056.64	8+84.27	1056.74	8+99.75	1057.01
EX. BEAM 3	7+66.07	1054.58	7+80.51	1055.07	7+94.96	1055.50	N/A	N/A	8+09.39	1055.93	8+24.09	1056.38	8+40.46	1056.68	8+44.69	1056.76	N/A	N/A	8+65.37	1057.13	N/A	N/A	8+86.05	1057.46	8+91.70	1057.56	9+06.65	1057.80
EX. BEAM 4	7+78.43	1055.77	7+92.21	1056.16	8+06.00	1056.55	N/A	N/A	8+19.79	1056.93	8+33.53	1057.32	8+49.38	1057.60	8+53.46	1057.67	N/A	N/A	8+73.43	1058.00	N/A	N/A	8+93.43	1058.29	8+98.89	1058.38	9+13.33	1058.59
PROP. BEAM 1	7+88.90	1056.77	8+01.83	1057.12	8+14.77	1057.47	8+22.91	1057.69	8+27.71	1057.78	8+40.64	1058.05	N/A	N/A	8+60.08	1058.49	8+56.71	1058.44	8+79.53	1058.80	9+03.64	1059.12	8+98.98	1059.06	N/A	N/A	9+18.40	1059.20

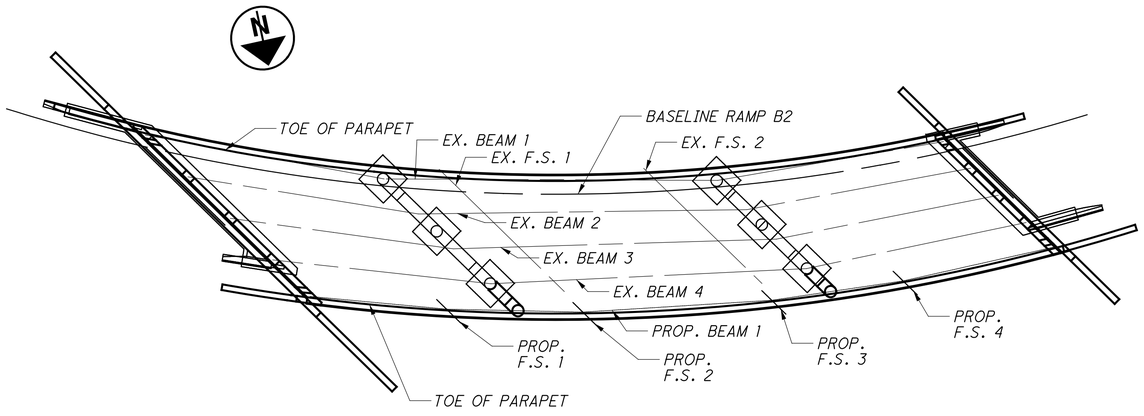
LOCATION	SPAN 3									
	.25 SPAN		PROP. F.S. 4		.5 SPAN		.75 SPAN		BRG. F.A.	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
EX. BEAM 1	9+07.87	1056.33	N/A	N/A	9+23.17	1056.43	9+38.49	1056.53	9+53.79	1056.60
EX. BEAM 2	9+14.57	1057.09	N/A	N/A	9+29.44	1057.18	9+44.33	1057.26	9+59.23	1057.32
EX. BEAM 3	9+21.09	1057.86	N/A	N/A	9+35.57	1057.93	9+50.09	1057.99	9+64.55	1058.04
EX. BEAM 4	9+27.41	1058.63	N/A	N/A	9+41.51	1058.69	9+55.62	1058.74	9+69.73	1058.77
PROP. BEAM 1	9+32.39	1059.33	9+36.55	1059.37	9+46.36	1059.40	9+60.35	1059.43	9+74.33	1059.44

SCREED ELEVATION

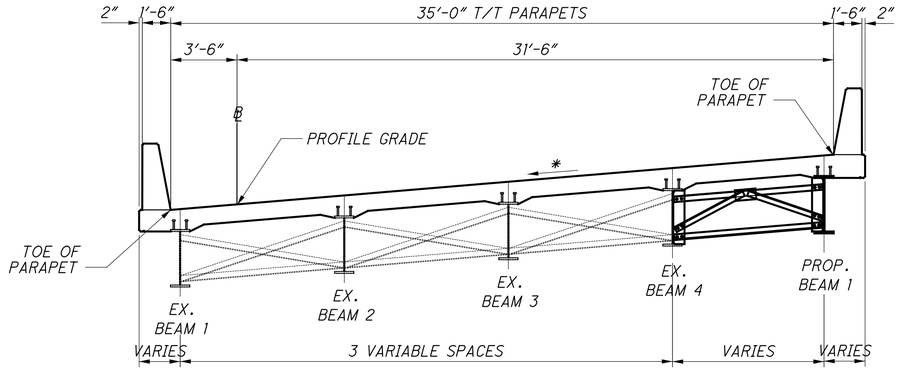
SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

TOP OF HAUNCH ELEVATIONS

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.



PLAN



TRANSVERSE SECTION

* 0.0694 TO 0.0833
STA. 7+39.15 TO STA. 7+75.00
0.0833
STA. 7+75.00 TO STA. 9+74.52

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED JLM | DRAWN JLM | REVIEWED NCK | DATE 8/2015
CHECKED JGM | REVISED | STRUCTURE FILE NUMBER 7702671

SUPERSTRUCTURE DETAILS
BRIDGE NO. SUM-77-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

7 / 15

8 / 16

G:\projects\2015\W-15-001 SUM77-76 DB with S&S\98061\structures\SUM077_0959C\sheets\077_0959CSD003.dgn 9/12/2016 3:20:22 PM juans

FINAL DECK SURFACE ELEVATIONS

LOCATION	SPAN 1												SPAN 2													
	BRG. R.A.		.25 SPAN		.5 SPAN		PROP. F.S. 1		.75 SPAN		BRG.PIER 1		EX. F.S. 1		.25 SPAN		PROP. F.S. 2		.5 SPAN		PROP. F.S. 3		.75 SPAN		EX. F.S. 2		BRG. PIER 2	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
TOE OF PARAPET	7+39.15	1052.97	7+54.87	1053.52	7+70.59	1054.03	N/A	N/A	7+86.31	1054.52	8+02.03	1054.97	8+21.23	1055.47	8+24.31	1055.55	N/A	N/A	8+46.59	1056.04	N/A	N/A	8+68.86	1056.44	8+76.13	1056.56	8+91.14	1056.77
EX. BEAM 1	7+39.91	1053.03	7+55.97	1053.56	7+72.03	1054.07	N/A	N/A	7+88.08	1054.62	8+04.07	1055.16	8+21.68	1055.51	8+26.16	1055.60	N/A	N/A	8+48.35	1056.04	N/A	N/A	8+70.53	1056.49	8+76.58	1056.61	8+92.62	1056.93
BASELINE	7+44.89	1053.43	7+60.27	1053.97	7+75.65	1054.48	N/A	N/A	7+91.02	1054.95	8+06.40	1055.38	8+25.27	1055.86	8+28.34	1055.93	N/A	N/A	8+50.28	1056.40	N/A	N/A	8+72.22	1056.79	8+79.34	1056.90	8+94.16	1057.10
EX. BEAM 2	7+53.29	1054.13	7+68.56	1054.65	7+83.84	1055.15	N/A	N/A	7+99.10	1055.64	8+14.31	1056.13	8+31.25	1056.44	8+35.63	1056.52	N/A	N/A	8+57.03	1056.92	N/A	N/A	8+78.43	1057.32	8+84.27	1057.43	8+99.75	1057.72
EX. BEAM 3	7+66.07	1055.28	7+80.51	1055.76	7+94.96	1056.20	N/A	N/A	8+09.39	1056.64	8+24.09	1057.09	8+40.46	1057.36	8+44.69	1057.43	N/A	N/A	8+65.37	1057.79	N/A	N/A	8+86.05	1058.14	8+91.70	1058.24	9+06.65	1058.51
EX. BEAM 4	7+78.43	1056.48	7+92.21	1056.86	8+06.00	1057.25	N/A	N/A	8+19.79	1057.64	8+33.53	1058.03	8+49.38	1058.28	8+53.46	1058.34	N/A	N/A	8+73.43	1058.65	N/A	N/A	8+93.43	1058.97	8+98.89	1059.06	9+13.33	1059.30
PROP. BEAM 1	7+88.90	1057.48	8+01.83	1057.82	8+14.77	1058.17	8+22.91	1058.39	8+27.71	1058.49	8+40.64	1058.76	N/A	N/A	8+60.08	1059.16	8+56.71	1059.11	8+79.53	1059.44	9+03.64	1059.80	8+98.98	1059.73	N/A	N/A	9+18.40	1059.91
TOE OF PARAPET	7+89.32	1057.52	8+02.31	1057.89	8+15.31	1058.23	8+23.27	1058.43	8+28.30	1058.54	8+41.29	1058.83	N/A	N/A	8+60.68	1059.21	8+57.02	1059.14	8+80.08	1059.52	9+03.89	1059.83	8+99.47	1059.78	N/A	N/A	9+18.86	1059.97

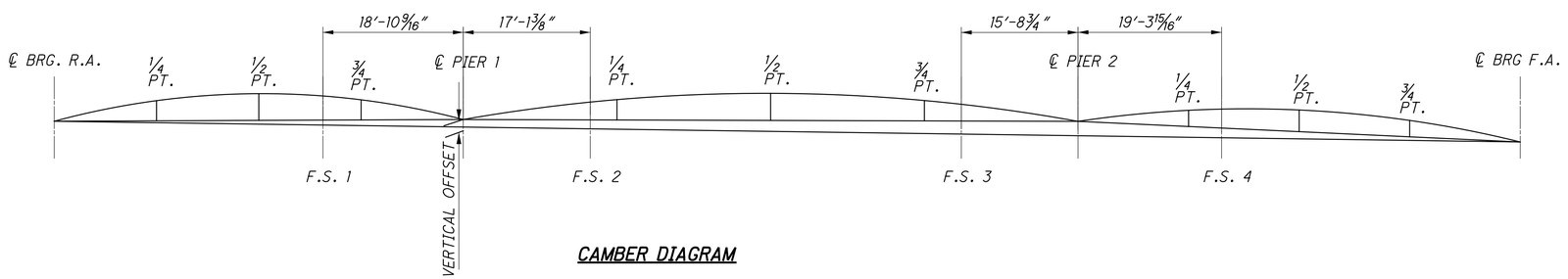
LOCATION	SPAN 3									
	.25 SPAN		PROP. F.S. 4		.5 SPAN		.75 SPAN		BRG. F.A.	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
TOE OF PARAPET	9+06.69	1056.95	N/A	N/A	9+22.24	1057.09	9+37.78	1057.19	9+53.33	1057.25
EX. BEAM 1	9+07.87	1057.03	N/A	N/A	9+23.17	1057.12	9+38.49	1057.22	9+53.79	1057.31
BASELINE	9+09.52	1057.27	N/A	N/A	9+24.89	1057.40	9+40.25	1057.50	9+55.61	1057.55
EX. BEAM 2	9+14.57	1057.79	N/A	N/A	9+29.44	1057.87	9+44.33	1057.95	9+59.23	1058.03
EX. BEAM 3	9+21.09	1058.56	N/A	N/A	9+35.57	1058.62	9+50.09	1058.69	9+64.55	1058.75
EX. BEAM 4	9+27.41	1059.34	N/A	N/A	9+41.51	1059.38	9+55.62	1059.43	9+69.73	1059.48
PROP. BEAM 1	9+32.39	1060.03	9+36.55	1060.06	9+46.36	1060.08	9+60.35	1060.12	9+74.33	1060.15
TOE OF PARAPET	9+32.78	1060.07	9+36.77	1060.09	9+46.69	1060.14	9+60.61	1060.17	9+74.52	1060.18

CAMBER

PROPOSED GIRDER 1	SPAN 1						SPAN 2						SPAN 3				
LOCATION	BRG. R.A.	1/4 SPAN	1/2 SPAN	F.S. 1	3/4 SPAN	BRG. PIER 1	1/4 SPAN	F.S. 2	1/2 SPAN	F.S. 3	3/4 SPAN	BRG. PIER 2	1/4 SPAN	F.S. 4	1/2 SPAN	3/4 SPAN	BRG. F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	1/8	1/8	3/16	1/8	1/8	0	0	0	1/16	1/16	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/8	1/8	1/16	0	0	9/16	1/2	7/8	7/16	1/2	0	1/8	3/16	5/16	5/16	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	4/16	5/8	13/16	9/16	0	1 1/4	1 5/16	1 3/16	1 1/4	1 3/16	0	11/16	7/8	5/8	5/16	0
REQUIRED SHOP CAMBER (IN)=	0	7/16	3/4	7/8	9/16	0	1 15/16	1 7/8	2 1/4	1 3/4	1 13/16	0	13/16	1 1/16	1	5/8	0

VERTICAL OFFSET

PROPOSED GIRDER 1	BRG. R.A.	BRG. PIER 1	BRG. PIER 2	BRG. F.A.
VERTICAL OFFSET	0	6 1/2	6 13/16	0



CAMBER DIAGRAM

FINAL DECK SURFACE ELEVATIONS

FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

NOTES:

1.) VERTICAL OFFSETS ARE GIVEN AT THE TOP OF WEB.

2.) DISTANCE BETWEEN QUARTER POINTS IS MEASURED ALONG THE LENGTH OF THE BEAMS.

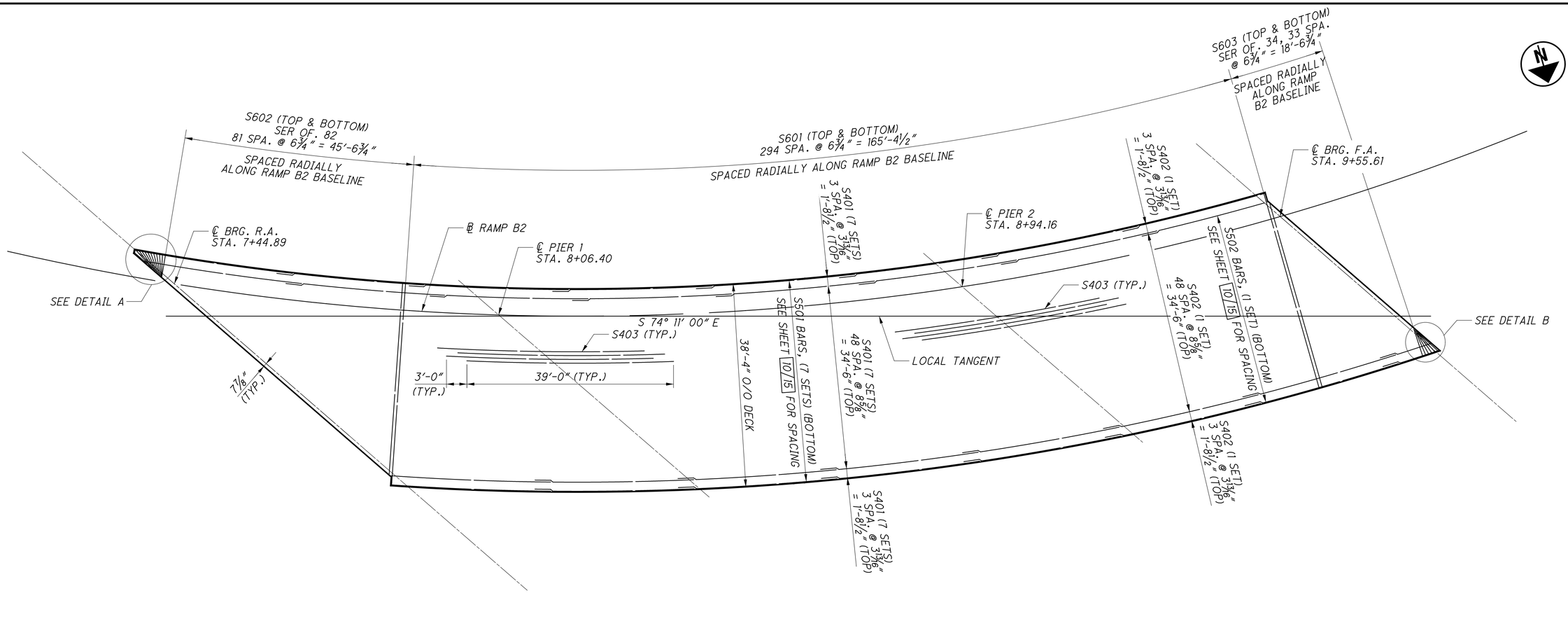
RESOURCE INTERNATIONAL INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED JLM | DRAWN JLM | REVIEWED NCK | DATE 8/2015
CHECKED JGM | REVISED | STRUCTURE FILE NUMBER 7702671

SUPERSTRUCTURE DETAILS

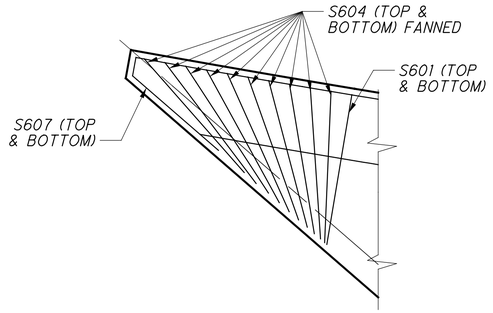
BRIDGE NO. SUM-77-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

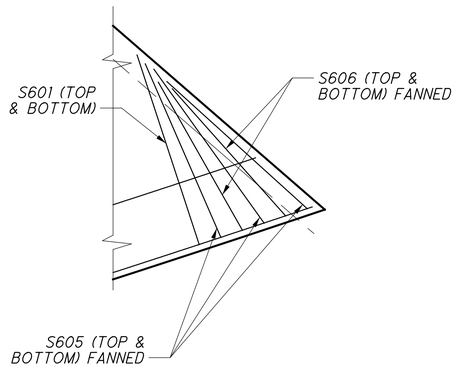


DECK REINFORCING PLAN

(PARAPET REINFORCEING NOT SHOWN FOR CLARITY)



DETAIL A



DETAIL B

	DATE	DESCRIPTION
1	10/23/15	REVISION

NOTES:

1. THE BOTTOM MAT OF LONGITUDINAL BARS SHALL BE FIELD BENT TO CONFORM TO THE GEOMETRY. IT CAN ALSO BE ADJUSTED TO AVOID INTERFERENCE WITH THE BEAMS.
2. THE TRANSVERSE BARS SHALL BE PLACED RADIALLY. THE BOTTOM MAT CAN ALSO BE ADJUSTED TO AVOID INTERFERENCE WITH THE BEAMS.
3. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A VARIABLE HAUNCH THICKNESS AND (1) A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM/GIRDER 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/GIRDER FLANGE IS +/- 3 INCHES.

   THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, 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.
4. LAP NO. 4 BAR: 1'-11" MIN.
   LAP NO. 5 BAR: 2'-5" MIN.

BU6 - AS-BUILT DRAWINGS - 09/12/2016

DECK REINFORCING
BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
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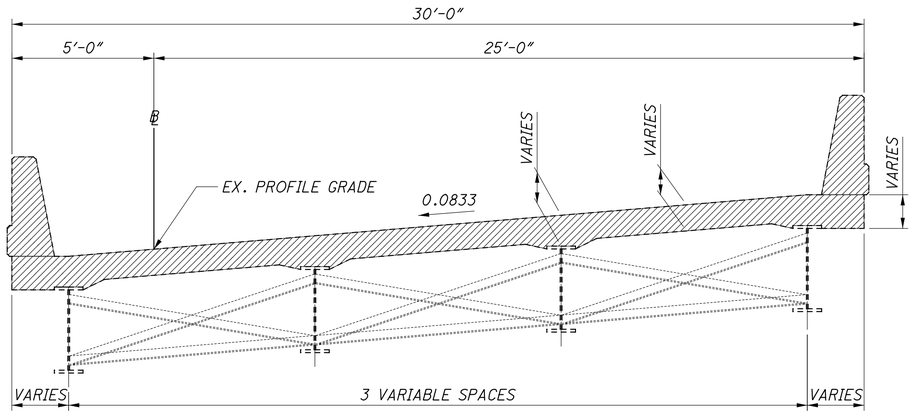
(614) 823-4949

DESIGNED	DRAWN	REVIEWED	DATE
JGM	JGM	NCK	8/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLM	—	7702671	

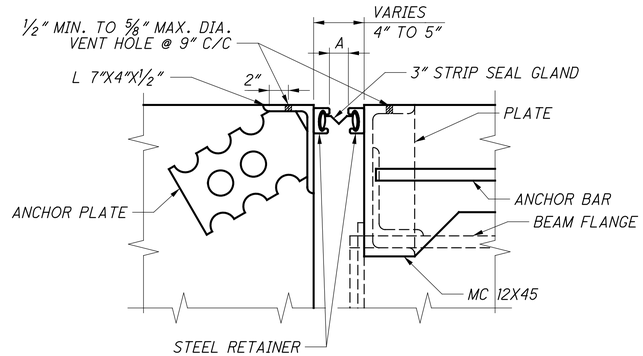
SUM 76/77-7.58/9.59
PID No. 98061

9 / 15

10 / 16

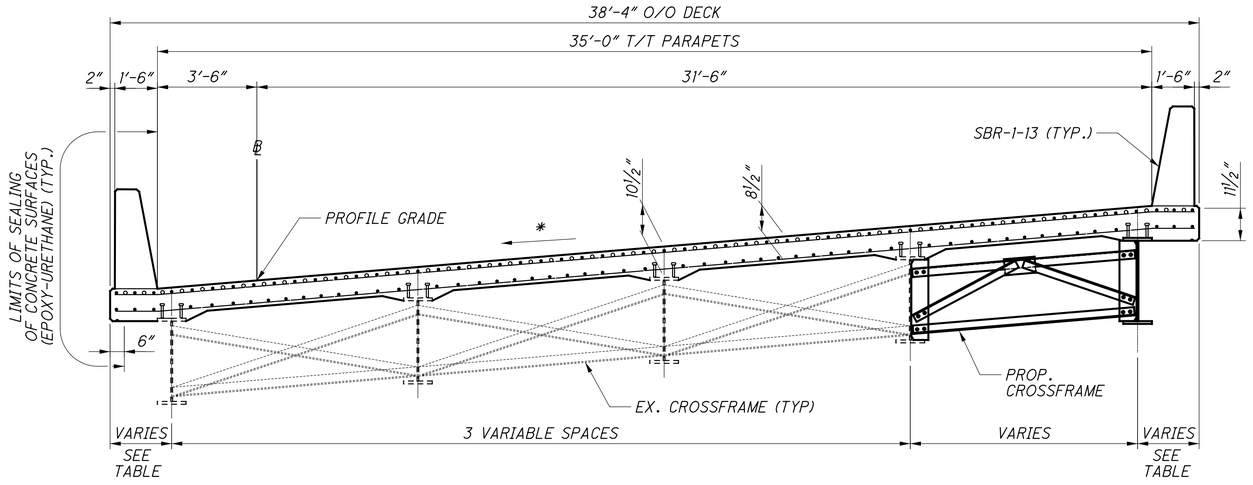


EX. TRANSVERSE SECTION - REMOVAL



SECTION D-D

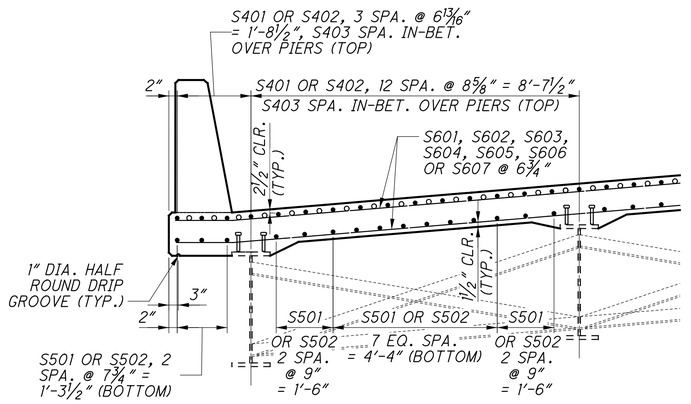
TEMPERATURE (°F)	REAR ABUTMENT DIMENSION "A" INCHES	FORWARD ABUTMENT DIMENSION "A" INCHES
30	1 7/8"	2"
40	1 13/16"	1 3/16"
50	1 11/16"	1 1/16"
60	1 5/8"	1 1/2"
70	1 9/16"	1 5/16"
80	1 1/2"	1 3/16"
90	1 7/16"	1"



* - VARIES 0.0694 TO 0.0833
STA. 7+39.15 TO STA. 7+75.00

0.0833
STA. 7+75.00 TO STA. 9+74.52

PROP. TRANSVERSE SECTION - WIDENING



TYPICAL BAY DETAILS

SLAB OVERHANG TABLE							
SIDE	R.A.	1/2 SPAN 1	PIER 1	1/2 SPAN 2	PIER 2	1/2 SPAN 3	F.A.
LEFT	2'-1 1/2"	1'-7 5/8"	3'-3 5/16"	1'-3 7/8"	3'-4 3/8"	1'-11 1/8"	2'-4 7/16"
RIGHT	2'-0"	2'-2 13/16"	2'-3 13/16"	2'-7 3/8"	2'-3 9/16"	2'-3 5/8"	2'-0"

NOTE:

1.) SLAB OVERHANG DIMENSIONS ARE MEASURED PERPENDICULAR TO THE FASCIA BEAMS. WHERE MEASURMENTS ARE LOCATED AT A BEAM DEFLECTION ANGLE THE SLAB OVERHANG DIMENSION IS MEASURED AT THE DOWNSTATION SIDE.

BU6 - AS-BUILT DRAWINGS - 09/12/2016

TTRANSVERSE SECTION

BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

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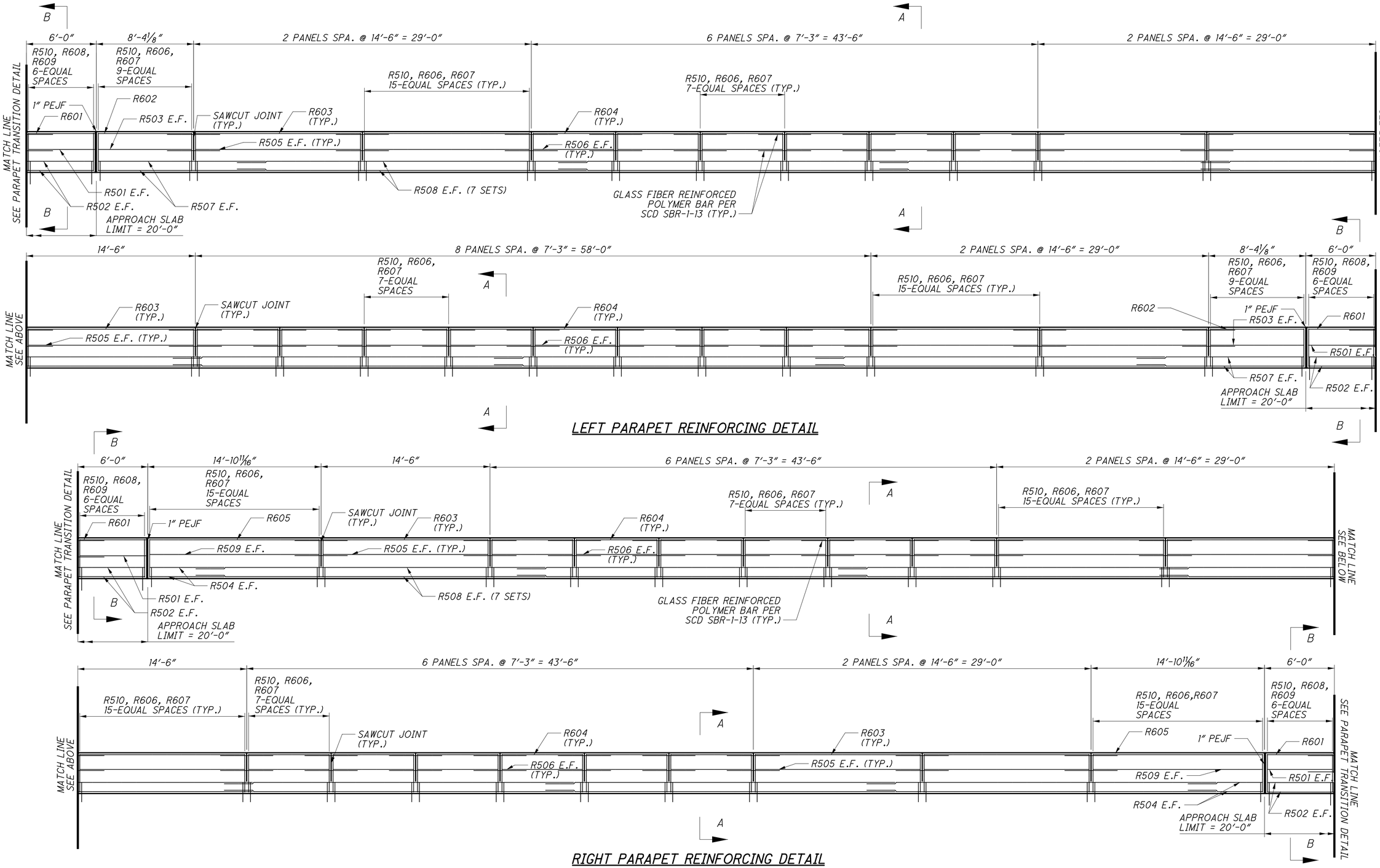

LEFT PARAPET REINFORCING DETAIL

RIGHT PARAPET REINFORCING DETAIL

MINIMUM LAP LENGTHS:
#5 BARS - 2'-5"
#6 BARS - 2'-11"

NOTES:
1.) SEE SHEET 12 / 15 FOR PARAPET TRANSITIONS DETAILS AND SECTION VIEWS.
2.) DISTANCES GIVEN ARE ALONG THE INSIDE FACES OF THE PARAPETS.

BU6 - AS-BUILT DRAWINGS 10/12/2016

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JLM	JLM	NCK	8/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JGM		7702671	

PARAPET & TRANSITION DETAILS
BRIDGE NO. SUM-77-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

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12 / 16

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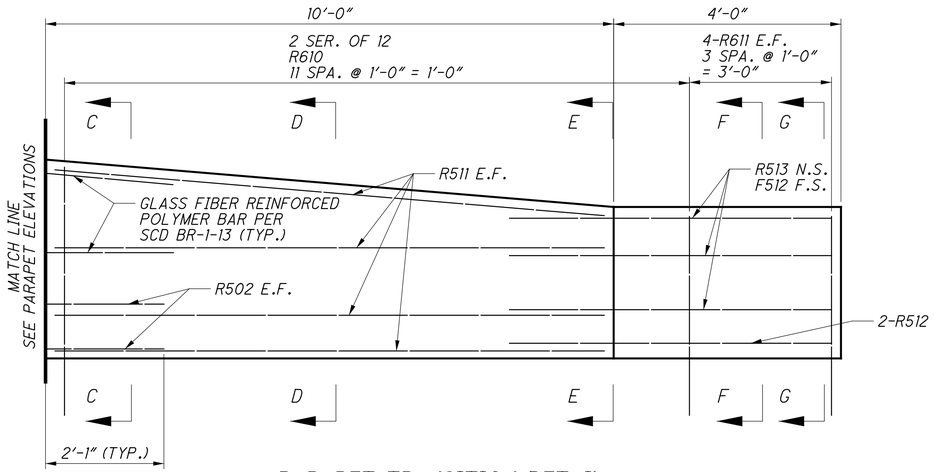
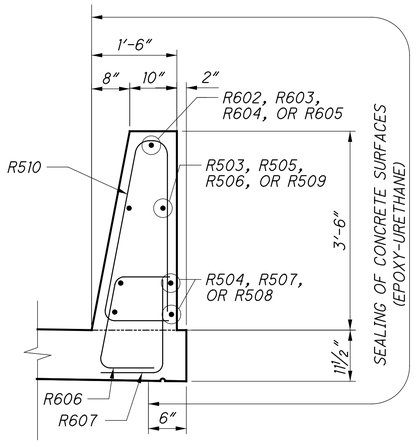
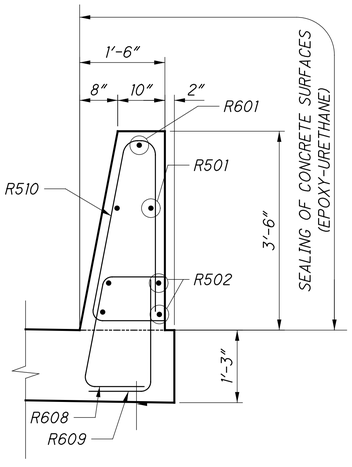


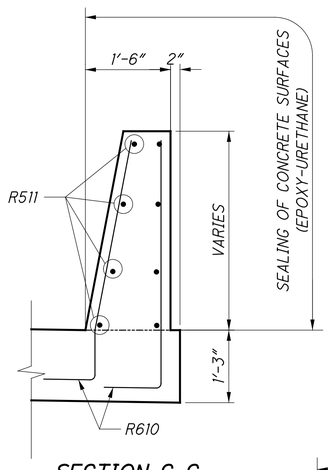
PARAPET TRANSITION DETAIL



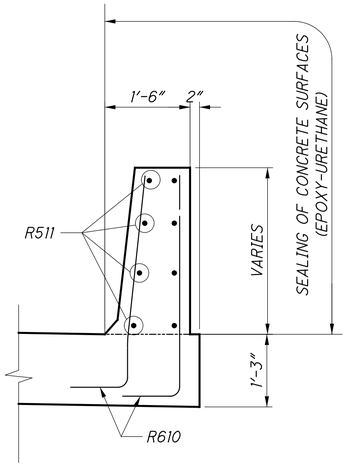
SECTION A-A



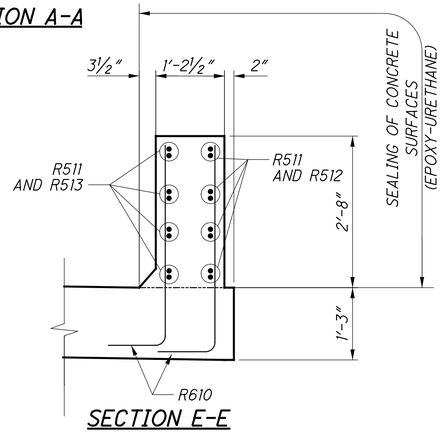
SECTION B-B



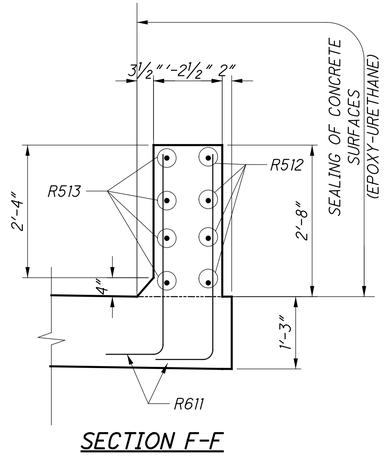
SECTION C-C



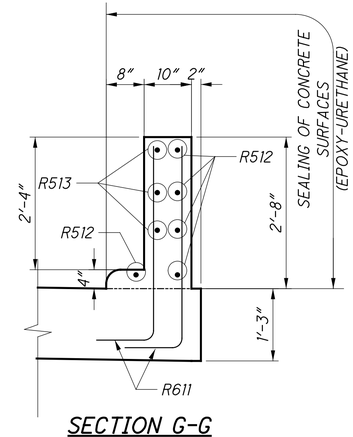
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

NOTES:
1.) SEE SHEET 11/15 FOR PARAPET ELEVATIONS.

BU6 - AS-BUILT DRAWINGS - 09/12/2016

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JGM		7702671	

PARAPET & TRANSITION DETAILS

BRIDGE NO. SUM-77-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

12/15

13/16

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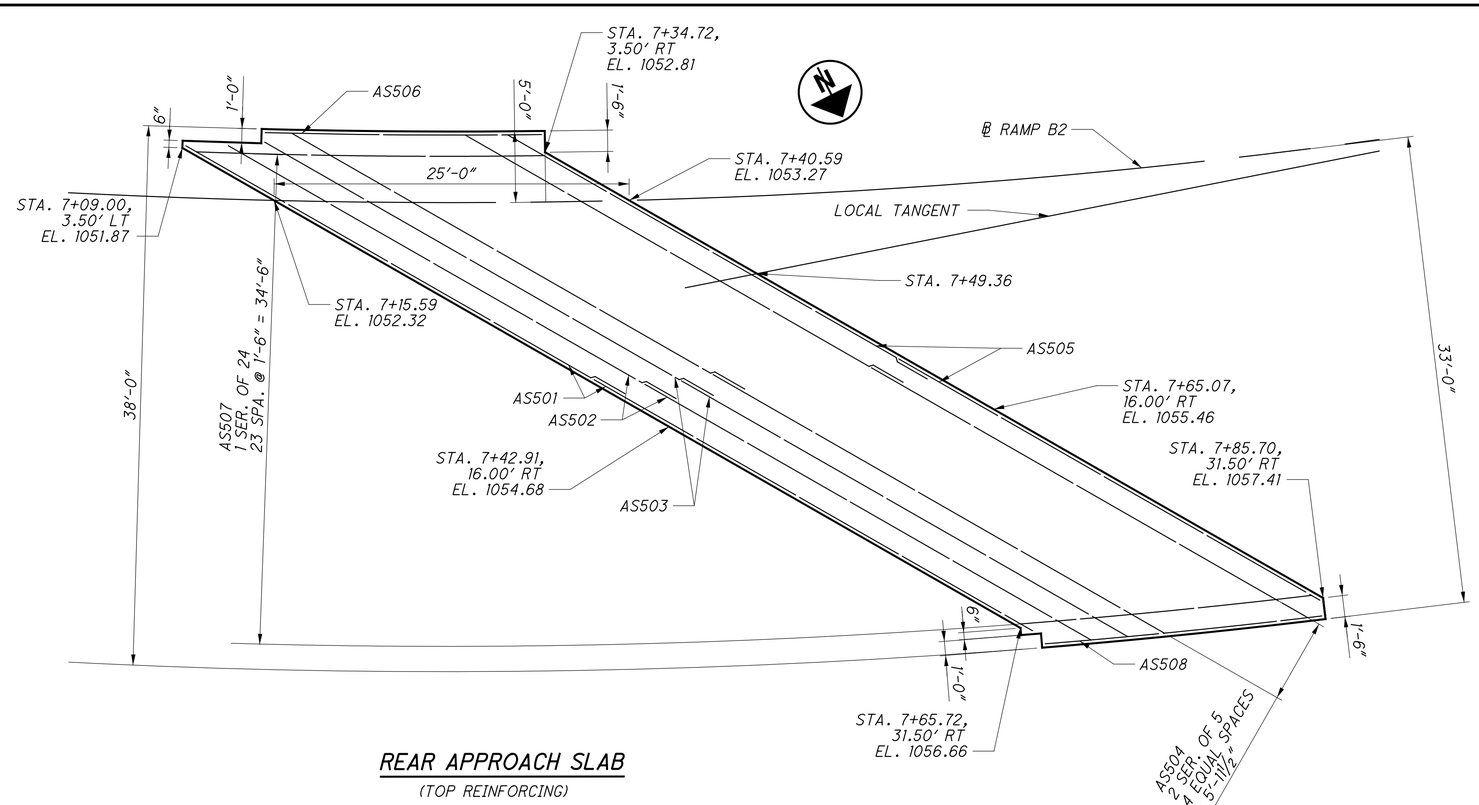
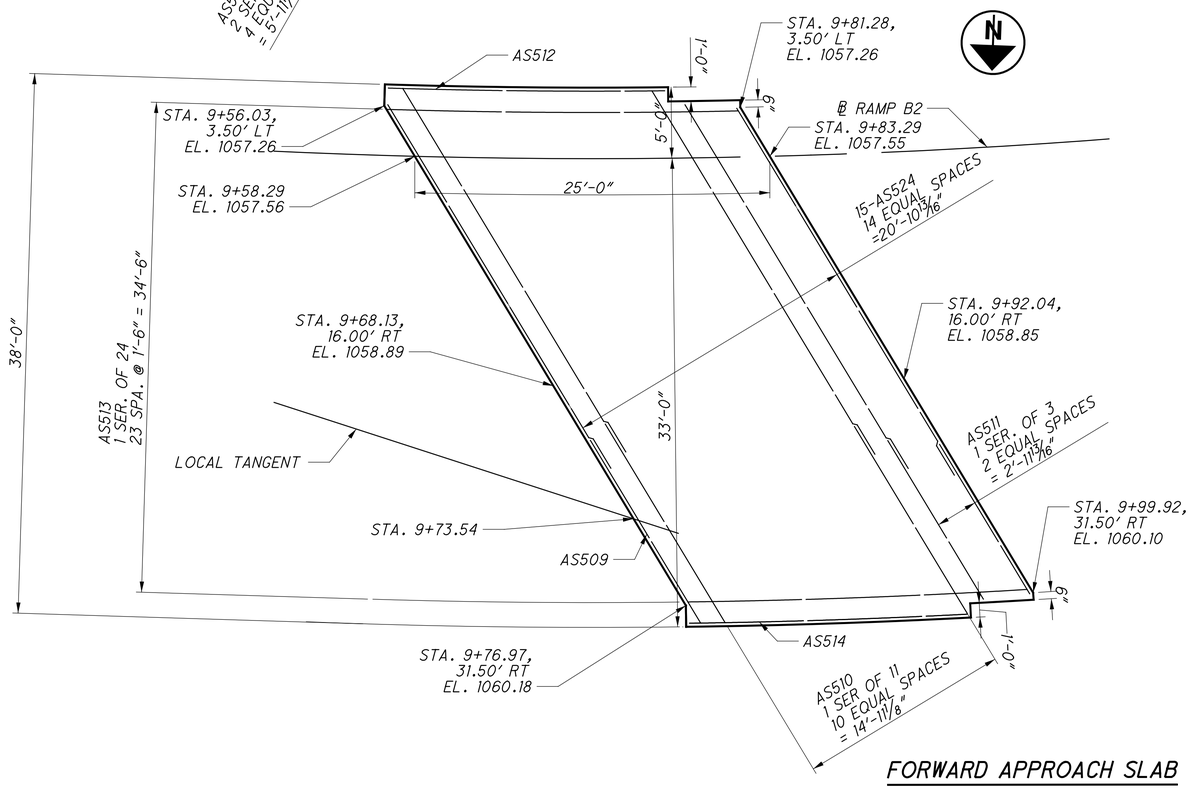


REAR APPROACH SLAB

(TOP REINFORCING)



FORWARD APPROACH SLAB

(TOP REINFORCING)

NOTES:

1.) FOR PARAPET ON APPROACH SLAB DETAILS SEE SHEETS 11 /15 AND 12 /15 .

MINIMUM LAP LENGTHS:

#5 BAR = 2'-5"
#10 BAR = 7'-10"

BU6 - AS-BUILT DRAWINGS - 09/12/2016

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APPROACH SLAB DETAILS

BRIDGE NO. SUM-077-0959
RAMP B2 OVER IR-77 S.B.

SUM 76/77-7.58/9.59
PID No. 98061

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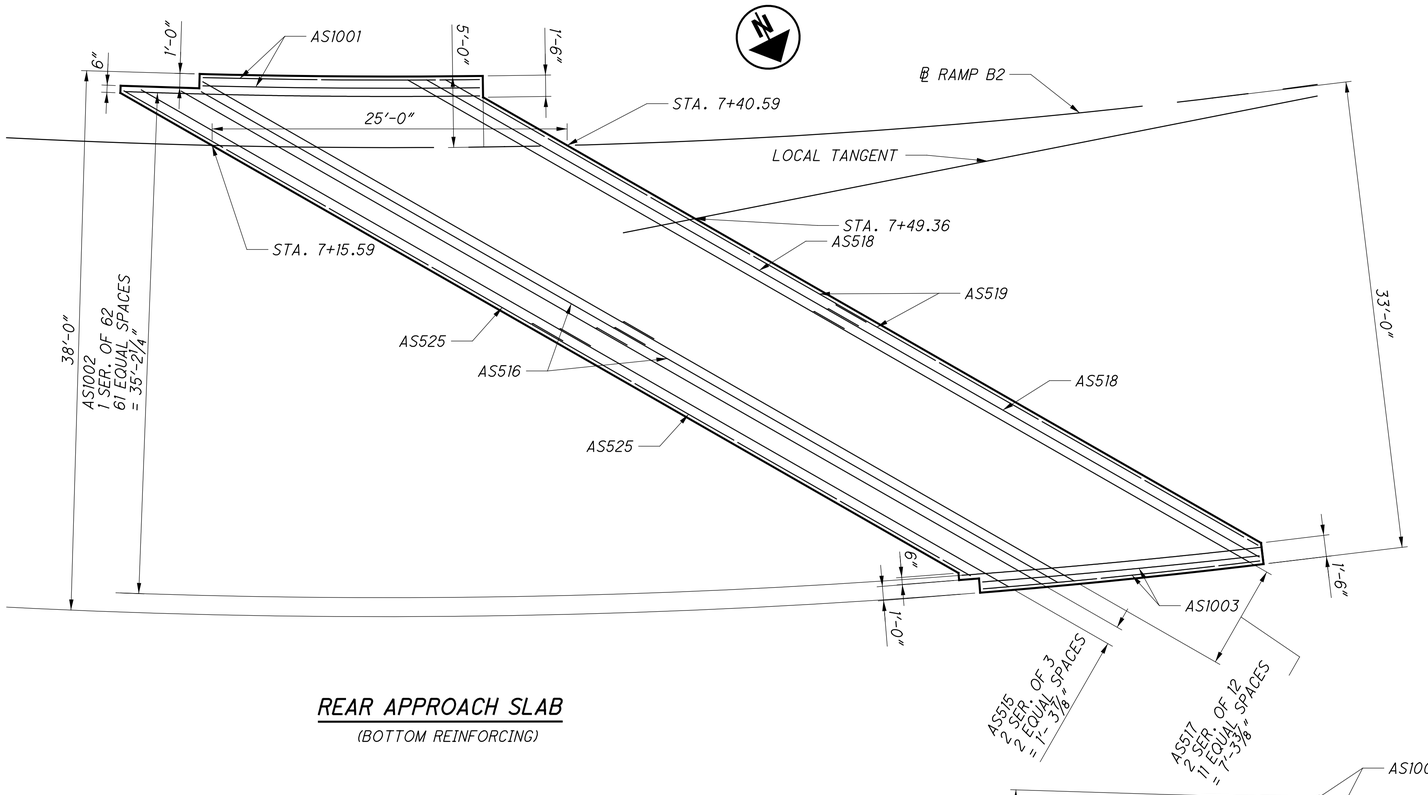
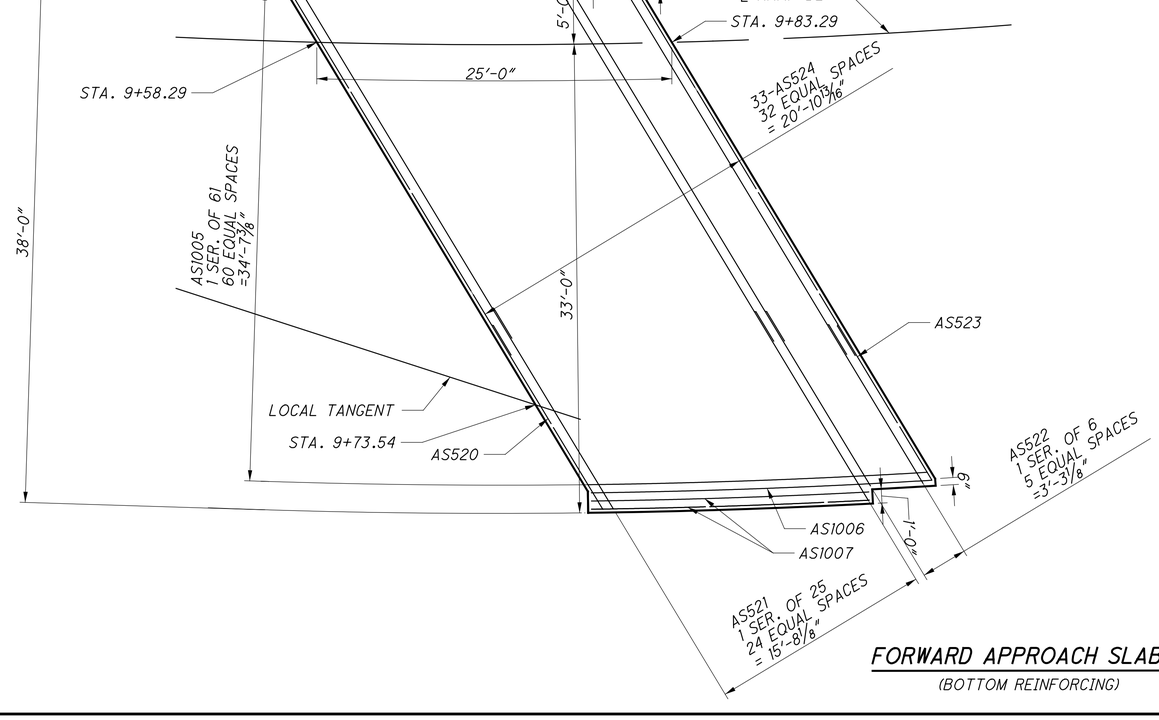


REAR APPROACH SLAB

(BOTTOM REINFORCING)



FORWARD APPROACH SLAB

(BOTTOM REINFORCING)

NOTES:

1.) FOR PARAPET ON APPROACH SLAB DETAILS SEE SHEETS 11/15 AND 12/15 .

MINIMUM LAP LENGTHS:

#5 BAR = 2'-5"
#10 BAR = 7'-10"

BU6 - AS-BUILT DRAWINGS - 09/12/2016

APPROACH SLAB DETAILS

BRIDGE NO. SUM-077-0959
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15 / 16

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DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JGM	—	7702671	

SUPERSTRUCTURE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
S401	385	30'-0"	7715	ST.							
S402	55	19'-0"	698	ST.							
S403	108	39'-0"	2814	ST.							
S501	378	30'-0"	11828	ST.							
S502	54	22'-6"	1267	ST.							
S601	590	38'-0"	33675	ST.							
S602	2 SER. OF 82	4'-0" TO 35'-8"	4882	ST.							4 11/16"
S603	2 SER. OF 34	5'-3" TO 35'-8"	2090	ST.							11 1/16"
S604	20	4'-0"	120	ST.							
S605	6	5'-0"	45	ST.							
S606	4	4'-6"	27	ST.							
S607	2	3'-5"	10	19	3'-0"	3"	5"				
		SUBTOTAL	65172								

PARAPETS

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
R501	8	5'-8"	47	ST.							
R502	16	7'-10"	131	ST.							
R503	4	8'-0"	33	ST.							
R504	8	6'-5"	54	ST.							
R505	26	14'-2"	384	ST.							
R506	52	6'-11"	375	ST.							
R507	8	14'-4"	120	ST.							
R508	56	30'-0"	1752	ST.							
R509	4	14'-6"	60	ST.							
R510	496	7'-4"	3794	23	11"	3'-3"	3'-0'			2 3/4"	
R511	32	10'-0"	334	ST.							
R512	20	5'-8"	118	ST.							
R513	12	5'-8"	71	25	1'-10"	2'-5"	1'-4 1/4"	1 1/2"	5"		
R601	4	5'-8"	34	ST.							
R602	2	8'-0"	24	ST.							
R603	13	14'-2"	277	ST.							
R604	26	6'-11"	270	ST.							
R605	4	14'-6"	87	ST.							
R606	468	3'-4"	2343	28	1'-8 1/2"	11"	1'-0"				
R607	468	2'-7"	1816	1	1'-8 1/2"	1'-0"					
R608	28	3'-6"	147	28	1'-11"	11"	1'-0"				
R609	28	2'-9"	116	1	1'-11"	1'-0"					
R610	8 SER. OF 12	4'-3" TO 5'-2"	679	1	3'-5" TO 4'-4"	1'-0"					1"
R611	32	4'-3"	204	1	3'-5"	1'-0"					
		SUBTOTAL	13270								
		TOTAL	78442								
GFRP	135	4'-6"									

APPROACH SLABS

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
AS501	2	35'-6"	74	ST.							
AS502	2	36'-2"	75	ST.							
AS503	1	36'-3"	38	ST.							
AS504	2 SER. OF 5	35'-4" TO 36'-7"	375	ST.							3 3/4"
AS505	2	34'-2"	71	ST.							
AS506	1	19'-5"		ST.							
AS507	1 SER. OF 24	20'-7" TO 24'-5"	563	ST.							2"
AS508	1	19'-6"	20	ST.							
AS509	1	15'-0"	16	ST.							
AS510	1 SER. OF 11	15'-4" TO 16'-4"	182	ST.							1 3/16"
	1	12'-3"									
AS511	SER. OF 3	TO 13'-0"	40	ST.							4 1/2"
AS512	1	19'-5"		ST.							
AS513	1 SER. OF 24	23'-11" TO 24'-8"	608	ST.							3/8"
AS514	1	19'-7"		ST.							
AS515	2 SER. OF 3	36'-1" TO 36'-4"	227	ST.							1 1/2"
AS516	2	35'-11"	75	ST.							
AS517	2 SER. OF 12	35'-4" TO 36'-6"	899	ST.							1 1/4"
AS518	2	35'-0"	73	ST.							
AS519	2	34'-2"	71	ST.							
AS520	1	15'-1"	16	ST.							
AS521	1 SER. OF 25	15'-5" TO 16'-4"	414	ST.							5 1/2"
AS522	1 SER. OF 6	12'-11" TO 14'-3"	85	ST.							3 3/16"
AS523	1	12'-8"	13	ST.							
AS524	48	30'-0"	1502								
AS525	2	35'-6"	74								
AS1001	2	20'-10"	179	16	19'-5"						
AS1002	1 SER. OF 62	22'-7" TO 26'-4"	6525	16	21'-2" TO 24'-11"						3/4"
AS1003	2	20'-11"	180	16	19'-6"						
AS1004	2	20'-10"		16	19'-5"						
AS1005	1 SER. OF 61	25'-4" TO 25'-11"	6726	16	23'-11' TO 24'-6"						1/8"
AS1006	1	25'-5"	109	16	24'-0"						
AS1007	2	20'-11"	180	16	19'-6"						
		SUBTOTAL	19,411								

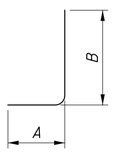
NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE 3 DIGITS ARE USED, AND THE FIRST 2 DIGITS WHERE FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

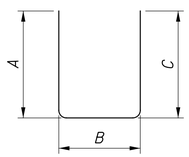
2. ALL REINFORCING STEEL TO BE EPOXY COATED, UNLESS NOTED OTHERWISE.

3. REBAR FOR APPROACH SLABS IS NOT INCLUDED IN TOTAL WEIGHT OF REBAR.

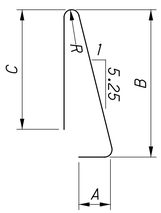
BENDING DIAGRAMS



TYPE-1



TYPE-2



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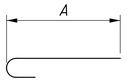

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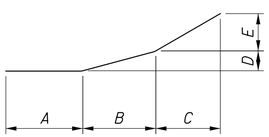

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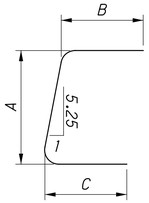

TYPE-28

BU6 - AS-BUILT DRAWINGS - 09/12/2016

RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

REINFORCING STEEL LIST
BRIDGE NO. SUM-77-0959
RAMP B2 OVER IR-77 S.B.

DESIGNED JLM | DRAWN JLM | REVIEWED NCK | DATE 8/2015
CHECKED JGM | REVISED --- | STRUCTURE FILE NUMBER 7702671

SUM 76/77 7.58/9.59
PID No. 98061

15 / 15

16 / 16

G:\projects\2015\W-15-001 SUM77-76 DB with S&S\98061\structures\SUM077_0959C\sheets\077_0959RL003.dgn 9/12/2016 3:20:28 PM juans