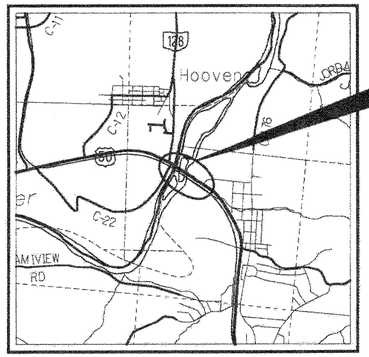
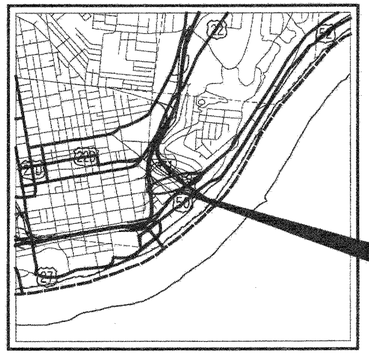


LOCATION MAP - HAM-50-0376L

LATITUDE: 39°10'12.98" N LONGITUDE: 84°45'32.98" W

SCALE IN MILES
0 0.5 1 1.5 2



LOCATION MAP - HAM-50-2180N

LATITUDE: 39°06'07.43" N LONGITUDE: 84°30'04.05" W

SCALE IN MILES
0 0.5 1 1.5 2

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

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:

TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

HAM-50-0376L
HAM-50-2180N

CITY OF CINCINNATI

HAMILTON COUNTY, OH

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DESIGN DESIGNATIONS

US 50 - OVER MIAMI RIVER (HAM-50-0376L)

CURRENT ADT (2009)	10,045
DESIGN YEAR ADT	N/A
DESIGN HOURLY VOLUME	N/A
DIRECTIONAL DISTRIBUTION	
TRUCKS (24 HOUR B&C)	620
DESIGN SPEED	60
LEGAL SPEED	50
DESIGN FUNCTIONAL CLASSIFICATION:	
04 MINOR ARTERIAL (RURAL)	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE REQUIRED

US 50 - COLUMBIA PARKWAY (HAM-50-2180N)

CURRENT ADT (2005)	56,580
DESIGN YEAR ADT	N/A
DESIGN HOURLY VOLUME	N/A
DIRECTIONAL DISTRIBUTION	
TRUCKS (24 HOUR B&C)	1,920
DESIGN SPEED	50
LEGAL SPEED	40
DESIGN FUNCTIONAL CLASSIFICATION:	
03 OTHER PRINCIPAL ARTERIAL (URBAN)	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE REQUIRED

ENGINEERS SEAL:

STATE OF OHIO
PETER J. ANAMASI
E-77527
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 10/4/16

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
DBR-3-11 7/15/11					800 1/20/17	
MGS-1.1 7/19/13						
MGS-2.1 7/19/13						
MGS-3.1 7/18/14						
MGS-4.2 7/19/13						
MGS-4.3 7/18/13						
MGS-6.1 7/19/13						
MT-95.30 7/15/16						
MT-95.31 7/18/14						
MT-95.32 7/18/14						
MT-95.50 10/16/15						
MT-98.30 7/18/14						
MT-105.10 7/19/13						
MT-110.10 7/19/13						

PROJECT DESCRIPTION

THIS PROJECT INCLUDES REPAIR WORK TO TWO STRUCTURES. WORK TO HAM-50-0376L INCLUDES SUPERSTRUCTURE REPAIRS, SUBSTRUCTURE DEBRIS REMOVAL, SPOT PAINTING, AND BRIDGE RAILING AND GUARDRAIL REPLACEMENT. WORK TO HAM-50-2180N INCLUDES JOINT REPAIR, SUPERSTRUCTURE AND SUBSTRUCTURE REPAIRS, SPOT PAINTING AND DRAINAGE SYSTEM REPAIRS AND CLEANOUT.

PROJECT EARTH DISTURBED AREA:	N/A*
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A*
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A*

* REHABILITATION PROJECT

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2016 SPECIFICATIONS

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

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

APPROVED Tony K Campbell
DATE 11/21/2016 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. NON-FEDERAL

PID NO. 91939

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

HAM-50-0376L
HAM-50-2180N

CONSTRUCTION NOTIFICATION

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF:

- TWENTY-ONE (21) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES AND/OR ROAD CLOSURES.

- FOURTEEN (14) DAYS PRIOR TO LANE CLOSURES AND/OR SHIFTS IN TRAFFIC PATTERNS.

THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

- DISTRICT PUBLIC INFORMATION OFFICER (PIO) BY EMAIL AT D08.PIO@dot.ohio.gov

- DISTRICT PERMIT SECTION BY PHONE AT (513) 933-6577 OR EMAIL AT christopher.bass@dot.ohio.gov

- CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR EMAIL AT hauling.permits@dot.ohio.gov

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES.

EVIDENCE OF HUMAN HABITATION UNDER HAM-50-0376L (SFN: 3102521) HAS BEEN PREVIOUSLY OBSERVED. THREE WEEKS PRIOR TO ANY WORK AT THIS LOCATION, NOTIFY DAVID KRAZL BY PHONE AT (513) 933-6641, OR EMAIL AT David.Krazl@dot.ohio.gov SO THAT ANY RESIDENT(S) AT THIS LOCATION CAN BE NOTIFIED OF THE UPCOMING CONSTRUCTION WORK AND HAVE TIME TO REMOVE THEIR BELONGINGS AND SEEK SHELTER ELSEWHERE.

UTILITIES

HAM-50-0376L:

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

CHEVRON, USA
4800 FOURNACE PLACE
BELLAIRE, TX 77401
(877) 596-2800

VILLAGE OF CLEVES
WATERWORKS
92 E. CLEVES AVENUE
CLEVES, OHIO 45002
(513) 941-3490

DUKE ENERGY
139 E. FOURTH ST., RM 467A
CINCINNATI, OHIO 45202
(513) 287-2366

CINCINNATI BELL TELEPHONE
209 W. 7TH STREET FL 1
CINCINNATI, OHIO 45202
(513) 565-2111

SPRINT
11370 ENTERPRISE PARK DR.
SHARONVILLE, OH 45241
(440) 447-6163

THE LOCATIONS OF ALL UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK. THE AGENCIES HAVING INSTALLATIONS IN THE AREA SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY STRUCTURE REPAIR IN AREAS CONTAINING THEIR INSTALLATION. IF ANY UTILITIES ARE DAMAGED DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE APPROPRIATE UTILITY OWNER(S).

HAM-50-2180N:

THERE ARE NO OVERHEAD OR UNDERGROUND UTILITIES SHOWN ON THIS PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ANY UTILITY COMPANY IF THERE IS INTERFERENCE DUE TO THE CONTRACTOR'S MEANS AND METHODS.

SOLE SOURCE AQUIFER

HAM-50-0376L PROJECT IS LOCATED OVER A PORTION OF THE GREAT MIAMI SOLE SOURCE AQUIFER. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE IN THIS SENSITIVE AREA, ALL PROJECT RELATED FUELING AND/OR MAINTENANCE ACTIVITIES SHALL BE CONDUCTED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER. THE CONTRACTOR SHALL UTILIZE PROPER CONTAINMENT AND DIKING IN REFUELING AREAS AND SHALL NOT STORE EQUIPMENT, FUELS, ANY TOXIC/HAZARDOUS MATERIALS OR CHEMICALS, AND IDLE EQUIPMENT NEAR ANY DRAINAGE WAYS, DITCHES, OR STREAMS. A SPILL KIT IS TO BE MAINTAINED ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT FIRE CHIEF STEVE OBER OF THE MIAMI TOWNSHIP FIRE DEPARTMENT, (513) 941-2466.

FOR ANY SPILL OF REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT THE OHIO EPA'S SPILLS HOTLINE 1-800-282-9378.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL THE NEW GUARDRAIL/BARRIER IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL/BARRIER SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL/BARRIER SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606-IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE TYPE 1 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE 1 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

DELINEATION OF PERMANENT GUARDRAIL

BARRIER REFLECTORS SHALL BE INSTALLED ON ALL PERMANENT GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. BARRIER REFLECTORS SHALL CONFORM TO CMS 626.

VERTICAL CLEARANCE

ANY WORK (FALSEWORK, TRAFFIC PROTECTION, CONTAINMENT, ETC.) OVER LIVE TRAFFIC BY THE CONTRACTOR THAT REDUCES THE EXISTING VERTICAL CLEARANCE IS PROHIBITED UNLESS 30 DAYS ADVANCED NOTICE IS PROVIDED WITH NEW PROPOSED VERTICAL CLEARANCES. THE CONTRACTOR SHALL PROVIDE FIELD MEASUREMENTS BEFORE ALLOWING TRAFFIC UNDERNEATH. IF ANY WORK IS TO OCCUR BELOW 15'-6", THEN SIGNS ON THE STRUCTURE AND ADVANCE WARNING SIGNS SHALL BE INSTALLED A MINIMUM OF 2 WEEKS PRIOR TO PERFORMING SUCH WORK. SIGNING SHALL BE IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (OMUTCD) AND THE OHIO "TRAFFIC ENGINEERING MANUAL" (TEM). NO WORK OVER TRAFFIC SHALL OCCUR WITH A VERTICAL CLEARANCE LESS THAN 15'-0". LOWERING THE VERTICAL CLEARANCE DURING CONSTRUCTION IS CONSIDERED THE CONTRACTOR'S MEANS AND METHODS OF ACCOMPLISHING THE WORK, AND THEREFORE THE STATE IS NOT RESPONSIBLE FOR ANY DAMAGE FROM VEHICULAR IMPACTS THAT MAY RESULT AS PER 107.10.

PROTECTION OF VEHICLES, PEDESTRIANS AND PROPERTY

THE CONTRACTOR SHALL ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE PROTECTIVE MEASURES AS NEEDED FOR THE PROTECTION OF VEHICLES, PEDESTRIANS, AND PROPERTY. THE CONTRACTOR SHALL ALSO PROTECT THE GROUND AND ANY EXISTING EQUIPMENT (i.e. ELECTRICAL BOXES, MONEY MACHINES, BRIDGE MOUNTED LIGHTING, ETC.) FROM CONSTRUCTION ACTIVITIES.

ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. TO MINIMIZE THE POTENTIAL FOR DAMAGE, ALL PEDESTRIANS AND VEHICLES SHALL BE CLEARED FROM THE PARKING STALLS IN THE WORK AREA BEFORE ANY BRIDGE WORK CAN COMMENCE.

CALCULATED - CHECKED -

GENERAL NOTES

HAM-50-0376L
HAM-50-2180N

MAINTENANCE OF TRAFFIC - HAM-50-0376L

ITEM 614, MAINTAINING TRAFFIC

ALL EXISTING LANES SHALL BE MAINTAINED AT ALL TIMES, EXCEPT LANE CLOSURES ARE PERMITTED FROM 9AM TO 4PM AND FROM 7PM TO 6AM, BY USE OF THE EXISTING PAVEMENT. IN ORDER TO CONSTRUCT THE PAVEMENT PATCHING ONLY, A MINIMUM OF 1 LANE OF TRAFFIC SHALL BE MAINTAINED FOR A PERIOD OF NO MORE THAN 10 DAYS. DURING THE 10 DAY TIME PERIOD, EXTRA ADVANCE WARNING SIGNS PER MT-95.50 ARE TO BE USED IN ADVANCE OF ANY QUEUED TRAFFIC. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $750 FOR EACH 15 MINUTE TIME PERIOD THE LANE REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPT. OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN THE TRAVELED PAVEMENT SAFELY.

SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK IS BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER WORK HAS STOPPED. PERMITTED LANE CLOSURES SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

SEQUENCE OF CONSTRUCTION - HAM-50-0376L

PHASE 1

* CLOSE THE RIGHT LANE OF WESTBOUND US 50 BETWEEN COOPER AVENUE AND SR 128.
* MAINTAIN THRU TRAFFIC IN THE LEFT LANE OF WESTBOUND US 50 AND BOTH LANES OF EASTBOUND US 50.
* PERFORM STRUCTURAL REPAIRS IN THE RIGHT LANE OF WESTBOUND US 50.
* REMOVE AND REPLACE EXISTING GUARDRAIL ALONG NORTH SIDE OF US 50 WESTBOUND AS SHOWN ON PLAN SHEETS.

PHASE 2

* CLOSE THE LEFT LANE OF WESTBOUND US 50 BETWEEN COOPER AVENUE AND SR 128 AND CLOSE THE LEFT LANE OF EASTBOUND US 50 BETWEEN 1000'± WEST OF SR 128 AND 100'± EAST OF THE NORTHWEST END POST OF THE HAM-50-0376R BRIDGE.
* MAINTAIN THRU TRAFFIC IN THE RIGHT LANE OF WESTBOUND US 50 AND EASTBOUND US 50.
* PERFORM STRUCTURAL REPAIRS IN THE LEFT LANE OF WESTBOUND US 50.
* REMOVE AND REPLACE EXISTING GUARDRAIL WITHIN US 50 MEDIAN AS SHOWN ON PLAN SHEETS.

INTERIM COMPLETION DATE - HAM-50-0376L

THE FOLLOWING INTERIM COMPLETION DATE FOR THE CONSTRUCTION PHASES OF HAM-50-0376L SHALL BE MET:

* NOVEMBER 1, 2017

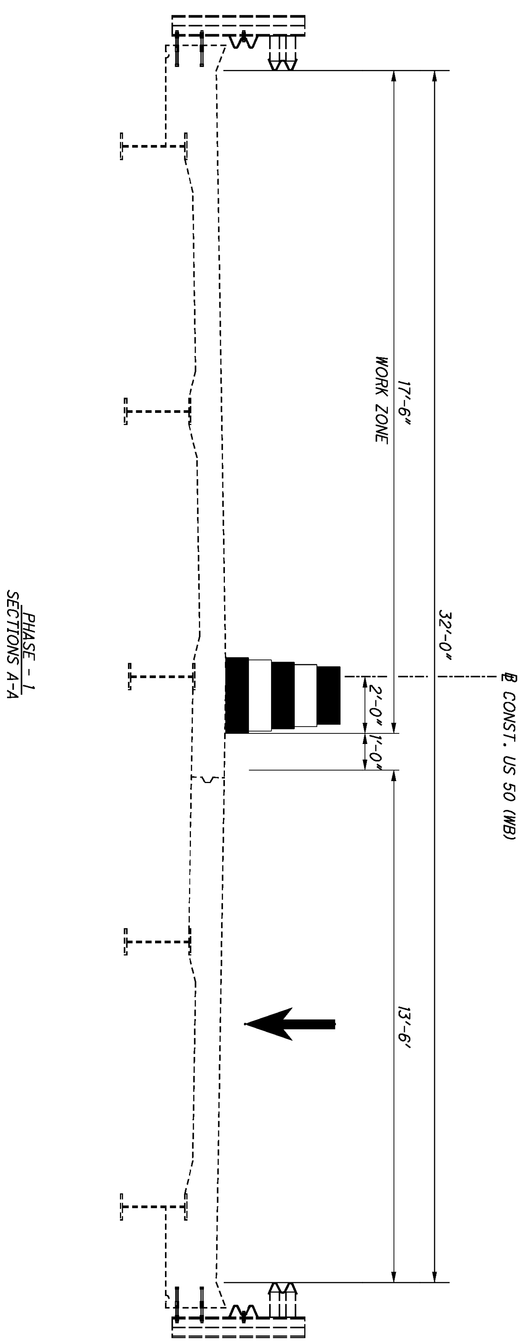
THIS DATE IS IN EFFECT UNLESS OTHERWISE APPROVED BY THE ODOT PROJECT ENGINEER. FAILURE TO COMPLETE THE REQUIRED WORK BY THE TIME SPECIFIED SHALL RESULT IN A DISINCENTIVE AS PER C&MS 108.07 FOR EACH CALENDAR DAY OF OVERRUN. A GRANTED TIME EXTENSION TO THE INTERIM COMPLETION DATE WILL NOT INCLUDE A CORRESPONDING EXTENSION TOT HE FINAL COMPLETION DATE.

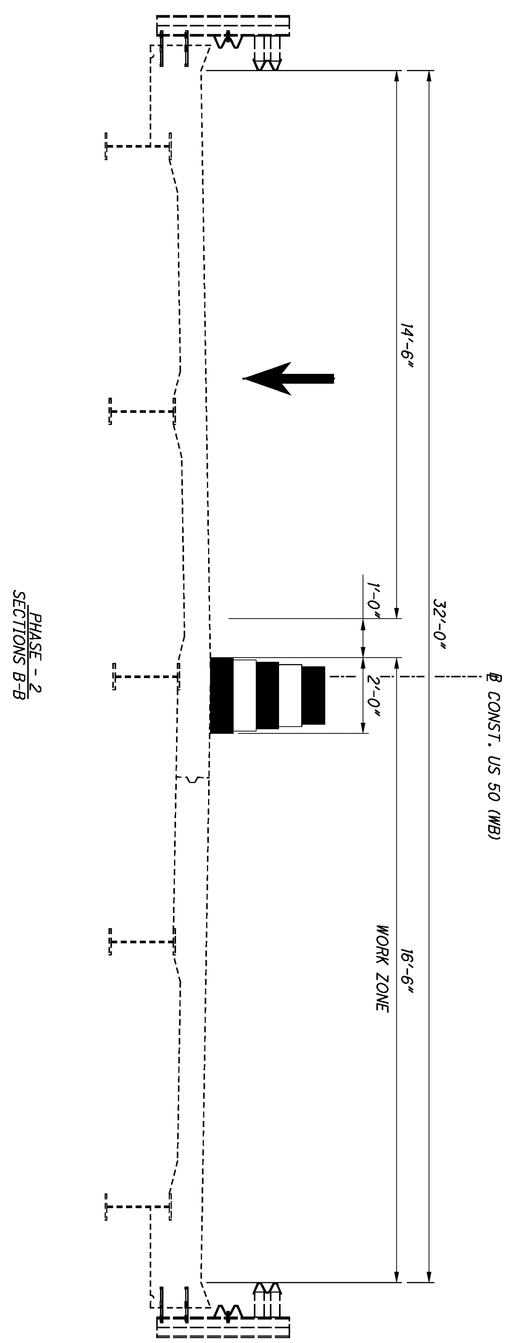
CALCULATED SAT | CHECKED DJW

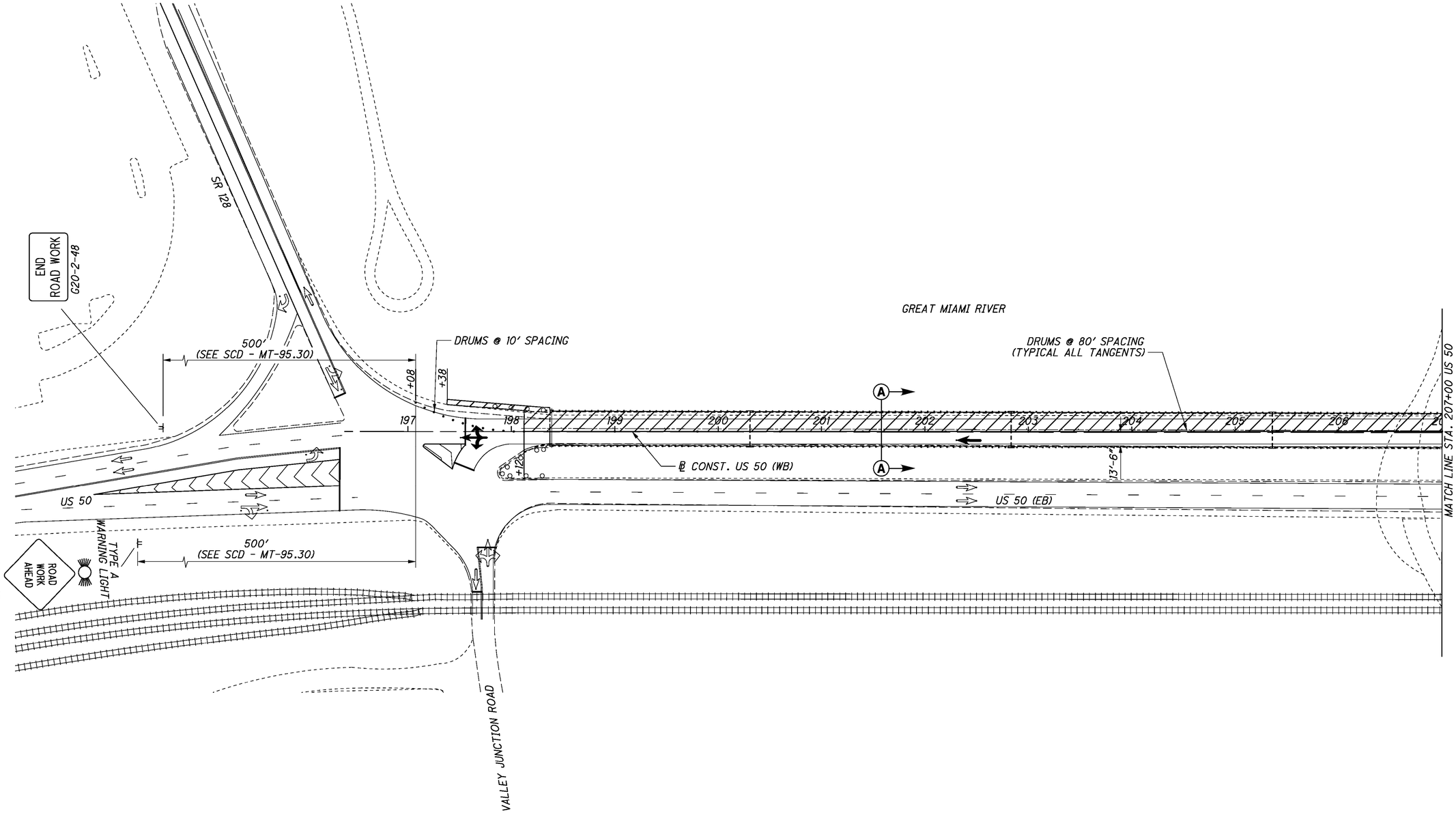
MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-50-0376L

3
199


PHASE - 1
SECTIONS A-A
17'-6"
WORK ZONE
32'-0"
2'-0"
1'-0"
℄ CONST. US 50 (WB)
13'-6'


PHASE - 2
SECTIONS B-B
14'-6"
1'-0"
32'-0"
2'-0"
℄ CONST. US 50 (WB)
16'-6"
WORK ZONE



NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.30.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- (A) → FOR TYPICAL SECTION, SEE SHEET 4

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 1
BRIDGE No. HAM-50-0376L

HAM-50-0376L

5
199

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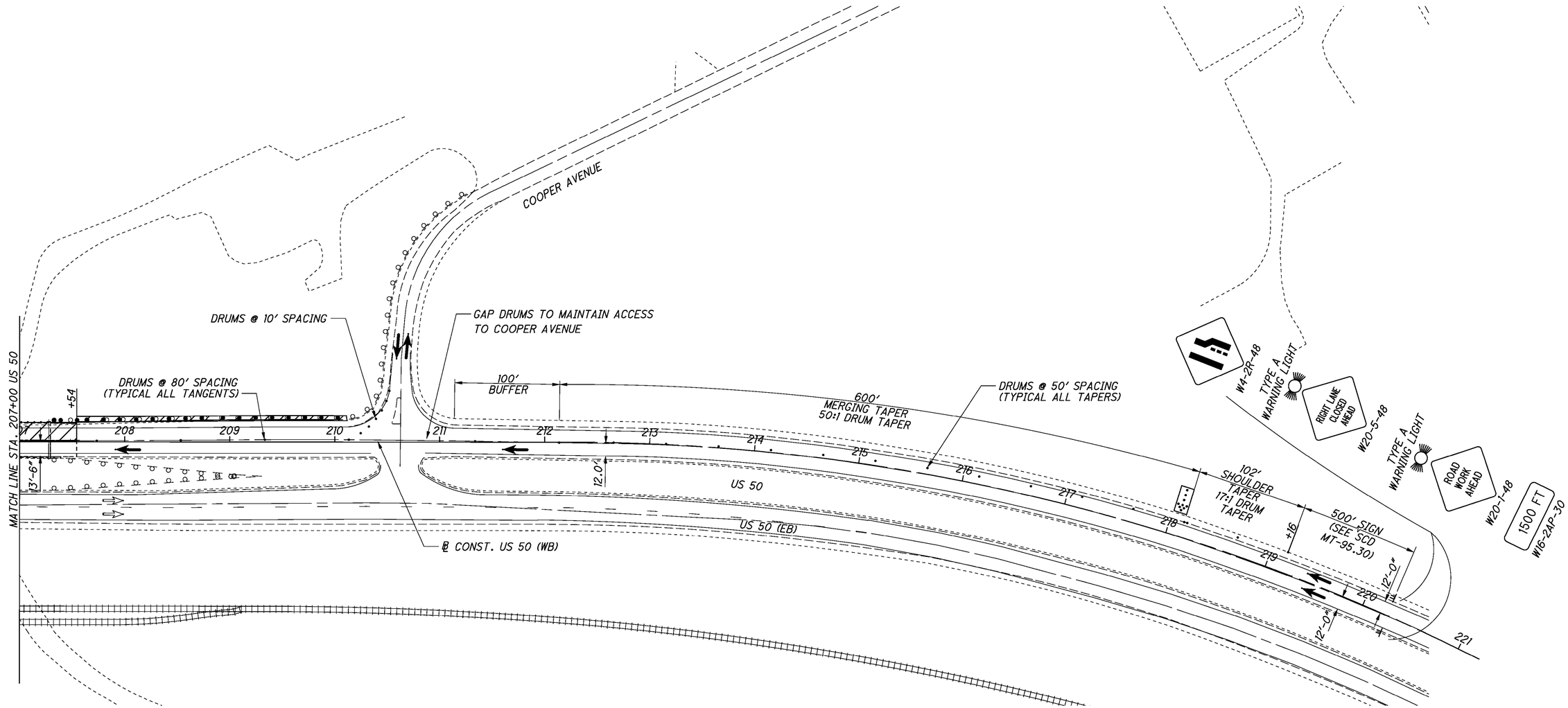

NOTES:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.30.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 1
BRIDGE No. HAM-50-0376L

HAM-50-0376L

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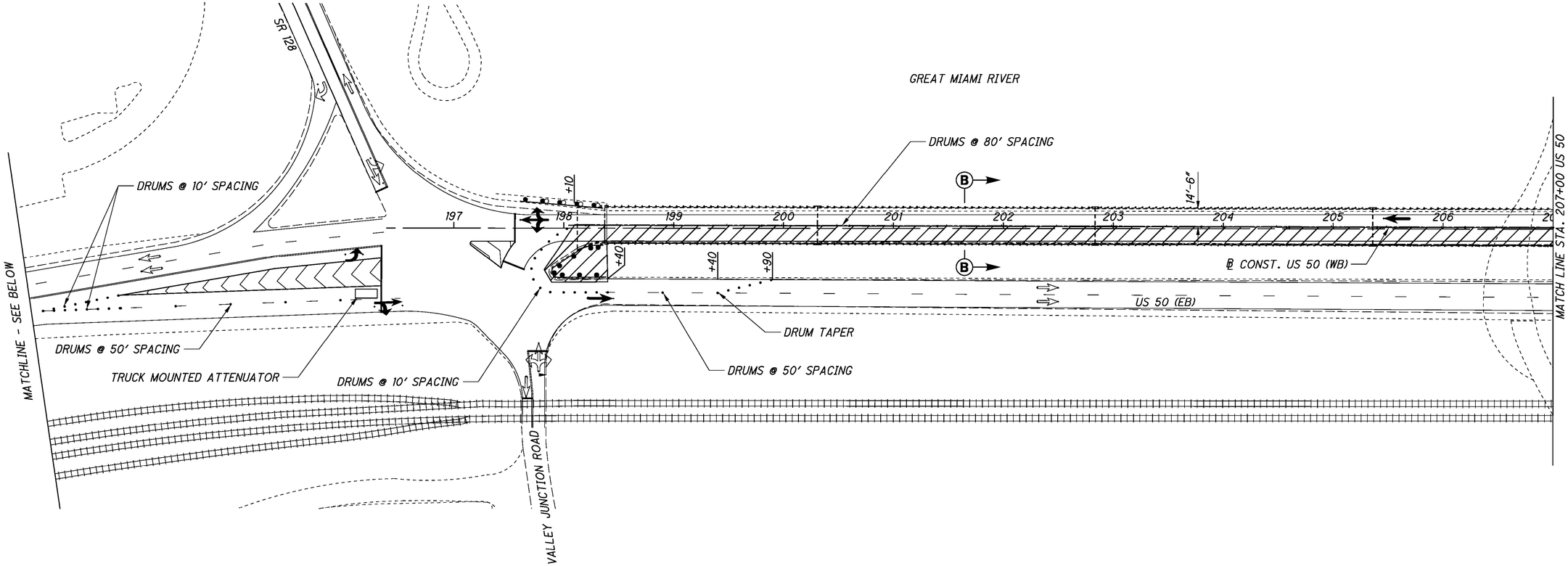

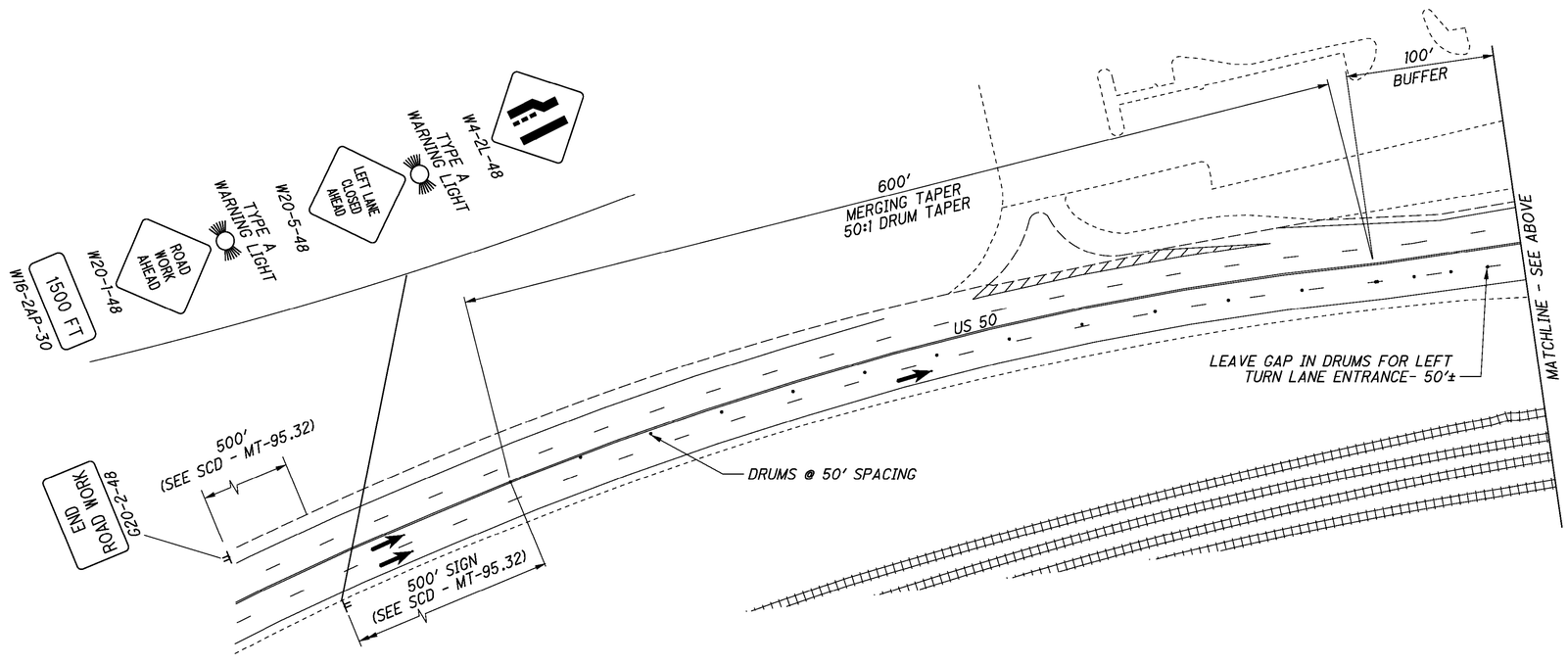

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- (B)→ FOR TYPICAL SECTION, SEE SHEET 4

NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.32.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 2
BRIDGE No. HAM-50-0376L

HAM-50-0376L

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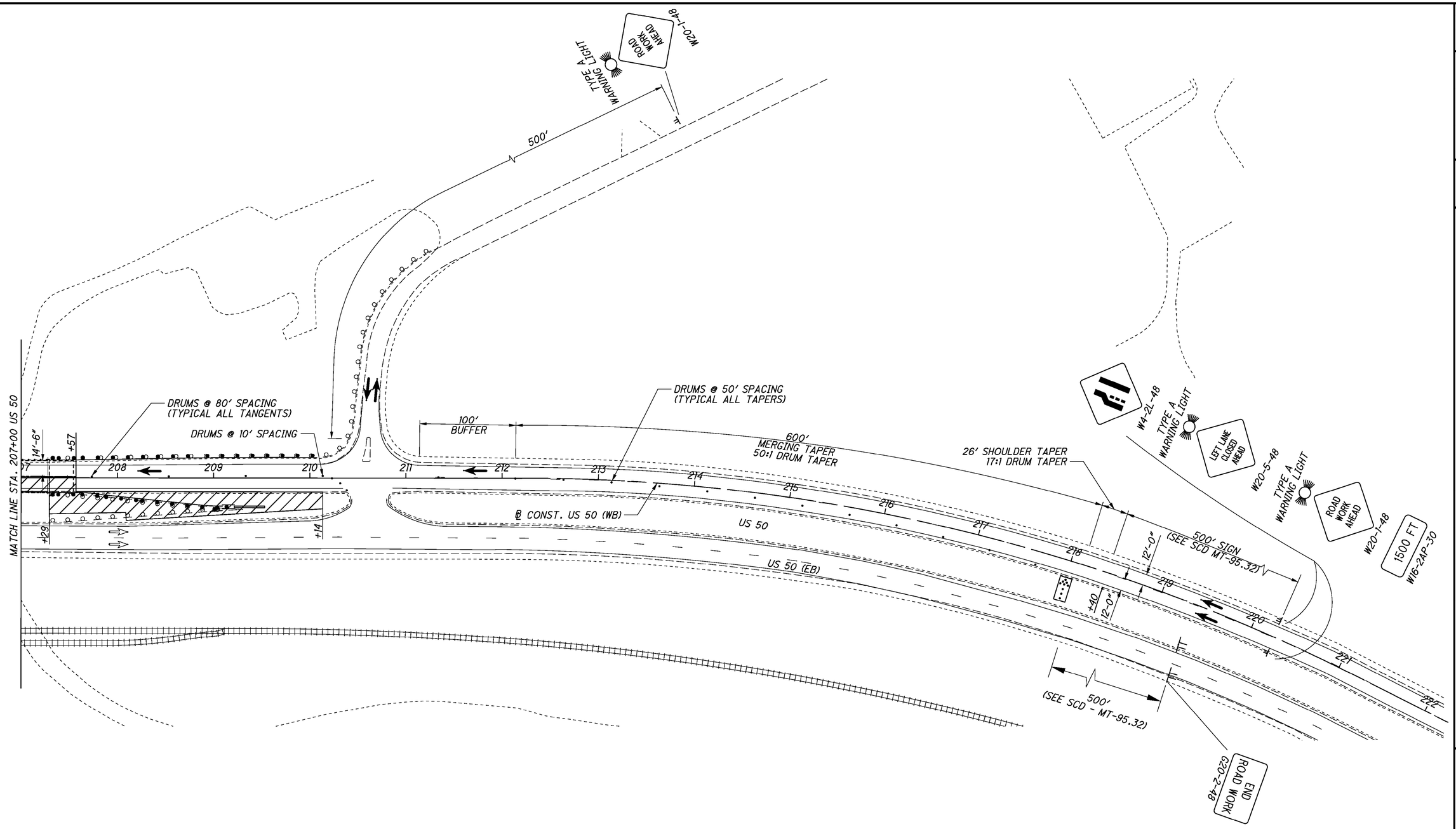


NOTES:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.32.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 2
BRIDGE No. HAM-50-0376L

HAM-50-0376L

91939MP002.dgn 10/7/2016 11:43:05 AM sfhammerschmidt

MAINTENANCE OF TRAFFIC - HAM-50-2180N

ITEM 614, MAINTAINING TRAFFIC

ALL EXISTING LANES SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, EXCEPT AS FOLLOWS:

-LANE CLOSURES ARE PERMITTED ON COLUMBIA PARKWAY, EGGLESTON AVENUE, AND MONASTERY STREET FROM 9AM TO 4PM AND FROM 7PM TO 6AM.

-ENTRANCE RAMP CLOSURES SHOWN IN PHASE 1 ALONG COLUMBIA PARKWAY ARE PERMITTED FROM 7PM TO 6AM. EACH RAMP IS PERMITTED TO BE CLOSED A MAXIMUM OF 5 TIMES.

-ALONG IR-471 SHOULDER CLOSURES ARE PERMITTED FROM 9AM TO 4PM AND FROM 7PM TO 6AM WITH LANE CLOSURES BEING PERMITTED FROM 10PM TO 6AM.

-ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC FROM 2 HOURS BEFORE THROUGH 2 HOURS AFTER EVENTS AT PAUL BROWN STADIUM, GREAT AMERICAN BALL PARK, OR US BANK ARENA.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	BOCKFEST 5K
FOURTH OF JULY	HEART MINI MARATHON
NEW YEARS	MS WALK
LABOR DAY	FLYING PIG MARATHON WEEKEND
MEMORIAL DAY	WRANGLER RUN
THANKSGIVING	SUPER HERO 5K
EASTER	QUEEN BEE HALF MARATHON

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	6 AM FRIDAY THROUGH 7 PM MONDAY
MONDAY	6 AM FRIDAY THROUGH 7 PM TUESDAY
TUESDAY	6 AM MONDAY THROUGH 7 PM WEDNESDAY
WEDNESDAY	6 AM TUESDAY THROUGH 7 PM THURSDAY
THURSDAY	6 AM WEDNESDAY THROUGH 7 PM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6 AM WEDNESDAY THROUGH 7 PM MONDAY
FRIDAY	6 AM THURSDAY THROUGH 7 PM MONDAY
SATURDAY	6 AM FRIDAY THROUGH 7 PM MONDAY

A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $750 FOR EACH 15 MINUTE TIME PERIOD THE LANE REMAINS CLOSED TO TRAFFIC BEYOND THE ABOVE SPECIFIED TIME LIMITS.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPT. OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN THE TRAVELED PAVEMENT SAFELY.

SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK IS BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER WORK HAS STOPPED. PERMITTED LANE CLOSURES SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

CONTRACTORS MUST BE LICENSED. A PERMIT MUST BE OBTAINED FOR THE BRIDGE. PERMIT APPLICATIONS MUST BE SUBMITTED AND APPROVED A MINIMUM OF 2 WEEKS PRIOR TO THE START OF WORK.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

NOTICE OF CLOSURE OF PARKING LOTS UNDER SPAN 5 & 6

THE CONTRACTOR SHALL ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE SIGNAGE ALERTING THE PUBLIC OF PARKING LOT STALL CLOSURES NEEDED TO PERFORM THE BRIDGE REPAIRS.

FLAT SHEET SIGNAGE SHALL BE LOCATED AT THE PARKING LOT ENTRANCES ADJACENT TO THE AFFECTED PARKING STALLS AND ALONG CULVERT STREET FOR THE DURATION OF THE PROJECT. BEGINNING AT 5:00 PM EACH WORK NIGHT, CONES AND NO PARKING SIGNS SHALL ALSO BE ERECTED AROUND THE WORK AREAS (i.e. THE IMPACTED PARKING LOT STALLS). THE SIGNAGE AND CONES NEAR THE IMPACTED PARKING LOST STALLS SHALL BE REMOVED PRIOR TO OPENING THE STALLS FOR USE. THE CONTRACTOR SHALL ERECT ONE FLAT SHEET SIGN AS SHOWN BELOW AT EVERY LOT ENTRANCE. THE CONTRACTOR SHALL ERECT CONES AND NO PARKING SIGNS FOR EACH PARKING STALL CLOSED TO THE PUBLIC FOR USE. PARKING STALL "NO PARKING" SIGNAGE MAY BE METAL OR PAPER.

PAYMENT FOR ERECTIONS AND REMOVAL OF NOTICE OF CLOSURE SIGNAGE SHALL BE INCLUDED WITH ITEM 614 MAINTAINING TRAFFIC.

BRIDGE CONSTRUCTION
IN THIS AREA NIGHTLY
STARTING AT 10:30 PM.
REMOVE VEHICLES FROM
THE DESIGNATED WORK
AREA BEFORE 10:00 PM.

FLAT SHEET SIGN WITH BLACK LETTERS ON ORANGE BACKGROUND PLACED AT PARKING LOT ENTRANCES (36"X48" MINIMUM SIZE)

FULL ACCESS TO THE PARKING LOTS BELOW THE COLUMBIA PARKWAY BRIDGE SHALL BE MAINTAINED DURING THE HOURS OF 5:30 AM TO 10:30 PM.

PARTIAL CLOSURE OF THE PARKING LOTS SHALL BE ALLOWED DURING THE HOURS OF 10:30 PM TO 5:30 AM. IT IS THE INTENT OF THIS PROJECT TO PERFORM THE MAJORITY OF THE WORK ON NON-EVENT NIGHTS. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE PARKING LOT REPRESENTATIVE A MINIMUM OF 30 DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN CONTACT THROUGHOUT THE DURATION OF THE PROJECT AS EVENT SCHEDULES ARE SUBJECT TO CHANGE WITH ONLY MINIMAL PRIOR NOTIFICATION.

NO TRAFFIC/PARKING RESTRICTIONS ARE TO OCCUR FROM 2 HOURS PRIOR TO UNTIL 2 HOURS AFTER ANY EVENTS AT PAUL BROWN STADIUM, GREAT AMERICAN BALL PARK, OR US BANK ARENA AND ANY ADDITIONAL EVENTS (i.e. BOCKFEST 5K, HEART MINI MARATHON, MS WALK, FLYING PIG MARATHON WEEKEND, WRANGLER RUN, SUPER HERO 5K, ETC.) WHICH GENERATE AN ATTENDANCE OF 10,000 OR MORE. THE CITY MAINTAINS A LIST OF KNOWN MAJOR EVENTS AT THE FOLLOWING WEBSITE:
http://cincinnati-oh.gov/police/special-events-regulations-auctions/event-permits/

THE FOLLOWING ARE CONTACTS WITHIN THE CITY OF CINCINNATI THAT OWN OR OPERATE PROPERTY IMPACTED BY OR ADJACENT TO WORK AREAS:

LAUREN WYNN
P&G NORTH AMERICAN
REAL ESTATE MANAGER
(513) 627-2211
wynn.lc@pg.com

CITY OF CINCINNATI
801 PLUM ST.
CINCINNATI, OH 45202-1979

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

IN ADDITION TO THE REQUIREMENT OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR IR-471 LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 120 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

SEQUENCE OF CONSTRUCTION - HAM-50-2180N

PHASE 1

* CLOSE THE RIGHT LANE OF WESTBOUND US 50 BETWEEN PIKE STREET AND STATION 47+00. CLOSE BOTH EXIT RAMPS ALONG WESTBOUND US 50 WITHIN THESE LIMITS.
* MAINTAIN THRU TRAFFIC IN THE LEFT LANE OF WESTBOUND US 50 AND BOTH LANES OF EASTBOUND US 50.
* PERFORM STRUCTURAL JOINT REPAIRS IN THE RIGHT LANE OF WESTBOUND US 50.

PHASE 2

* CLOSE THE LEFT LANES OF EASTBOUND AND WESTBOUND US 50 BETWEEN PIKE STREET AND STATION 47+00.
* MAINTAIN THRU TRAFFIC IN THE RIGHT LANES OF EASTBOUND AND WESTBOUND US 50.
* PERFORM STRUCTURAL JOINT REPAIRS IN THE LEFT LANES OF EASTBOUND AND WESTBOUND US 50.

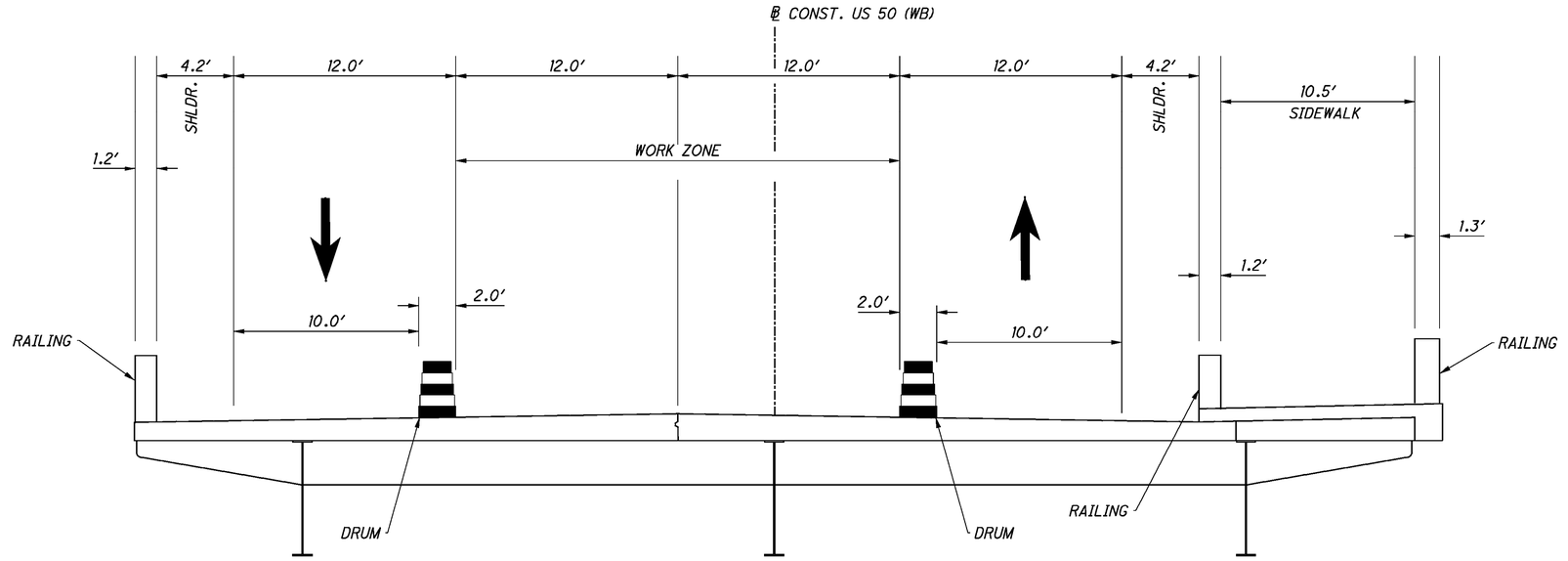
PHASE 3

* CLOSE THE RIGHT LANE OF EASTBOUND US 50 BETWEEN PIKE STREET AND STATION 47+00.
* MAINTAIN THRU TRAFFIC IN THE LEFT LANE OF EASTBOUND US 50 AND BOTH LANES OF WESTBOUND US 50.
* PERFORM STRUCTURAL JOINT REPAIRS IN THE RIGHT LANE OF EASTBOUND US 50 AND IN THE ADJACENT SIDEWALK.

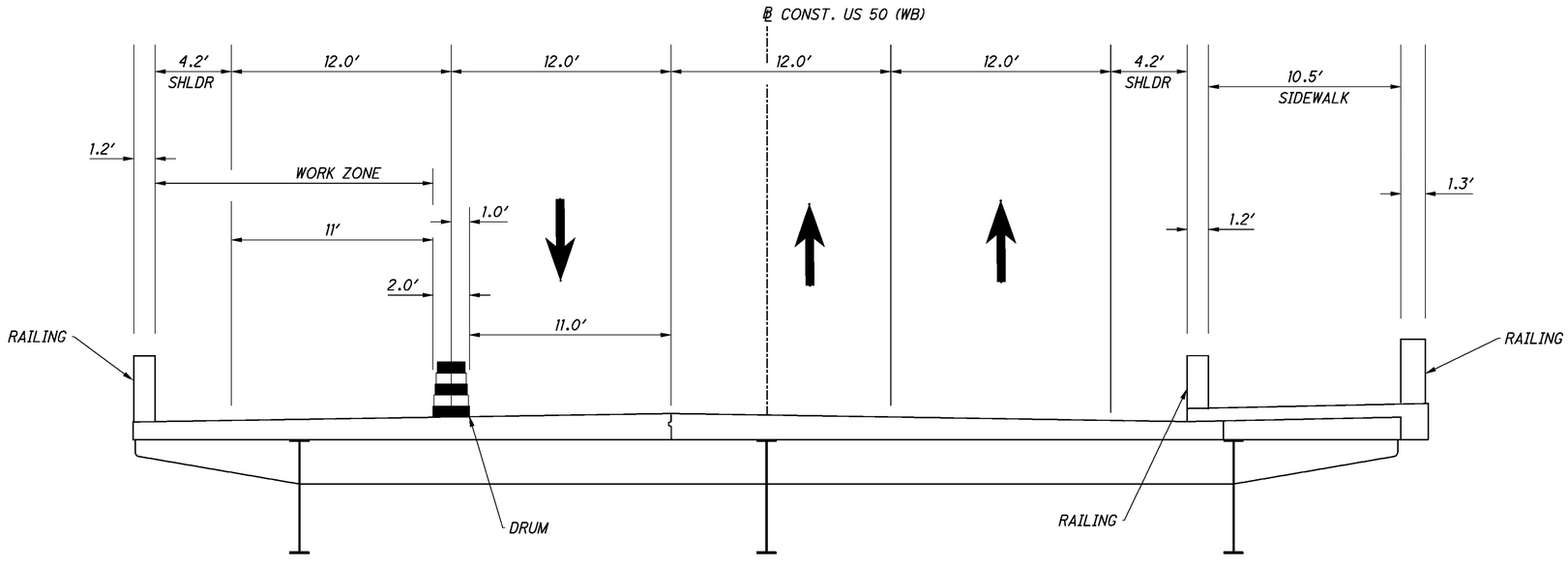
CALCULATED SNP CHECKED DJW

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-50-2180N



MOT PHASE 2 TYPICAL SECTION
(SECTION A-A)
NTS

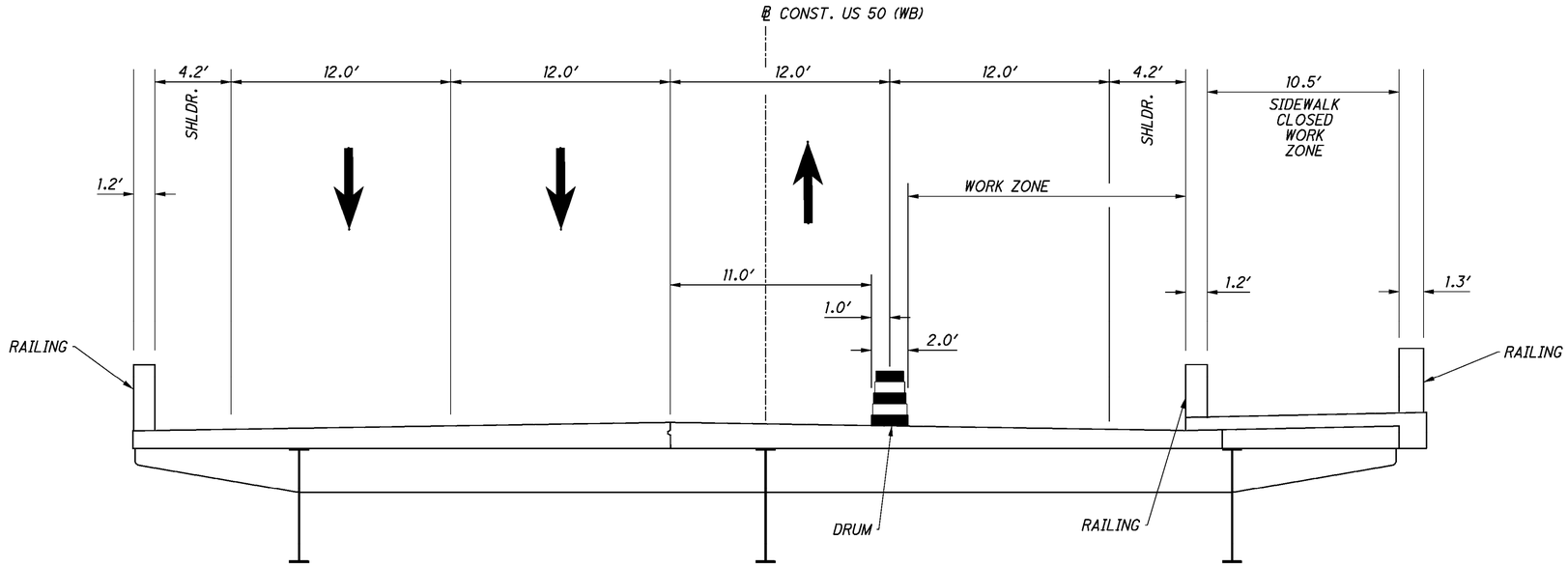


MOT PHASE 1 TYPICAL SECTION
(SECTION A-A)
NTS

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

HAM-50-2180N



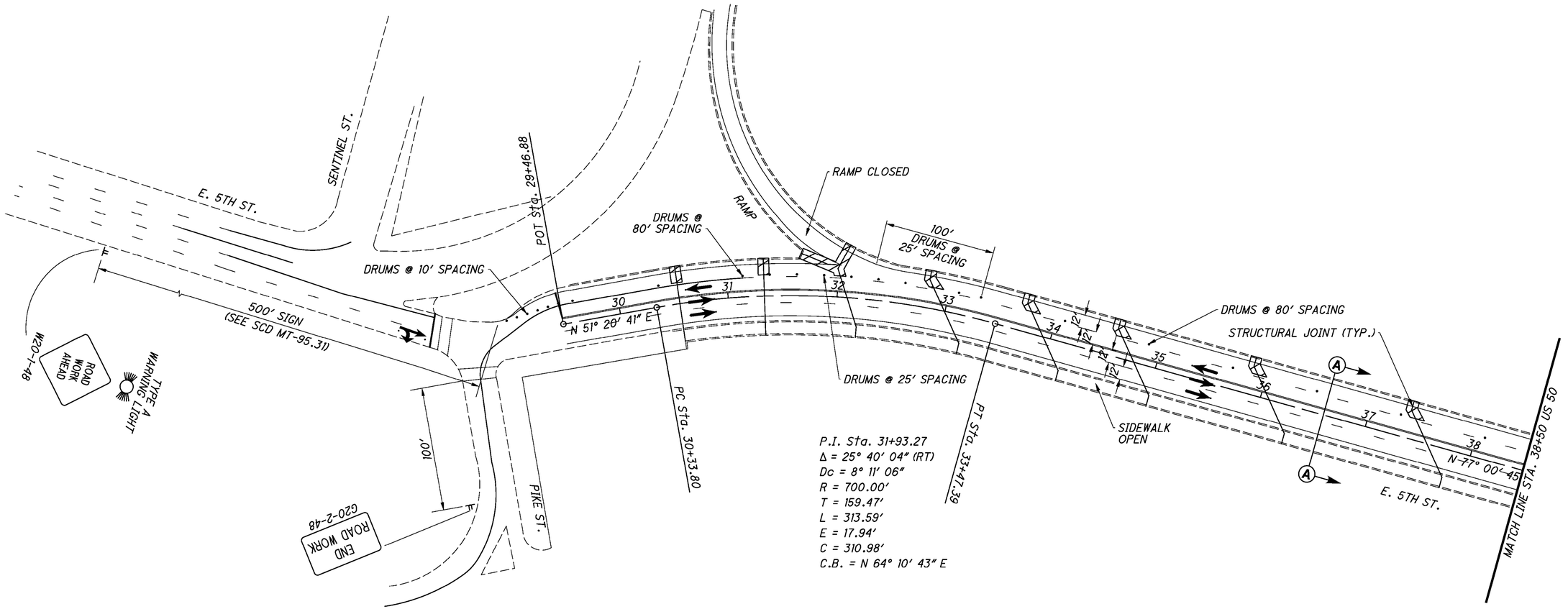
MOT PHASE 3 TYPICAL SECTION
(SECTION A-A)
NTS

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

HAM-50-218ON

91939MY001.dgn 10/7/2016 11:43:07 AM sfhammerschmidt



NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.31.
2. PLACE ALL RAMP CLOSURE SIGNS PER STANDARD CONSTRUCTION DRAWING MT-98.30.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- (A) → FOR TYPICAL SECTION, SEE SHEET 10

HORIZONTAL SCALE IN FEET
0 25 50 100

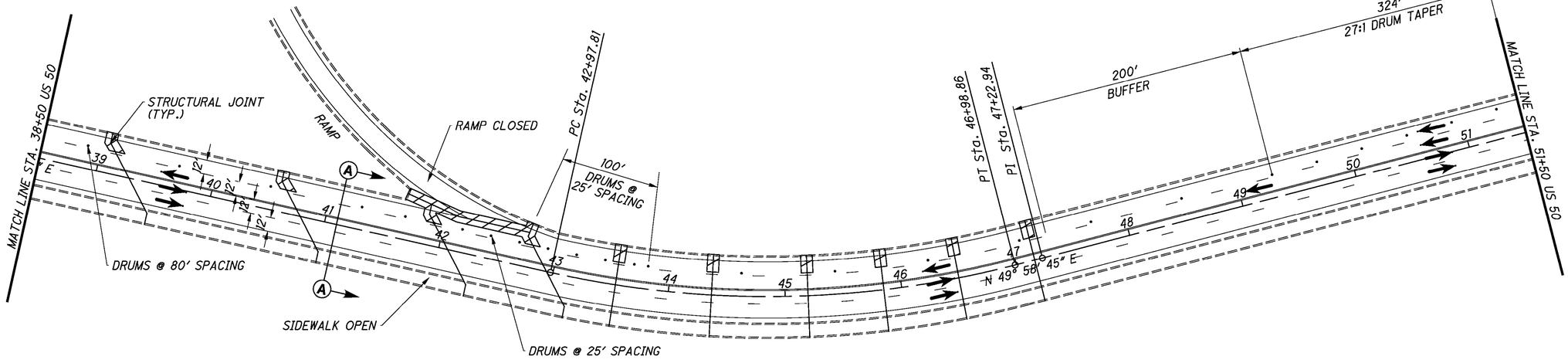
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 1
BEGIN TO STA. 38+50

HAM-50-2180N

12
199

91939WP401.dgn 10/7/2016 11:43:07 AM sfhammerschmidt



P.I. Sta. 45+02.14
Δ = 27° 02' 00" (LT)
Dc = 6° 44' 26"
R = 850.00'
T = 204.33'
L = 401.05'
E = 24.21'
C = 397.34'
C.B. = N 63° 29' 45" E

NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.31.
2. PLACE ALL RAMP CLOSURE SIGNS PER STANDARD CONSTRUCTION DRAWING MT-98.30.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- (A) → FOR TYPICAL SECTION, SEE SHEET 10

HORIZONTAL SCALE IN FEET
0 25 50 100

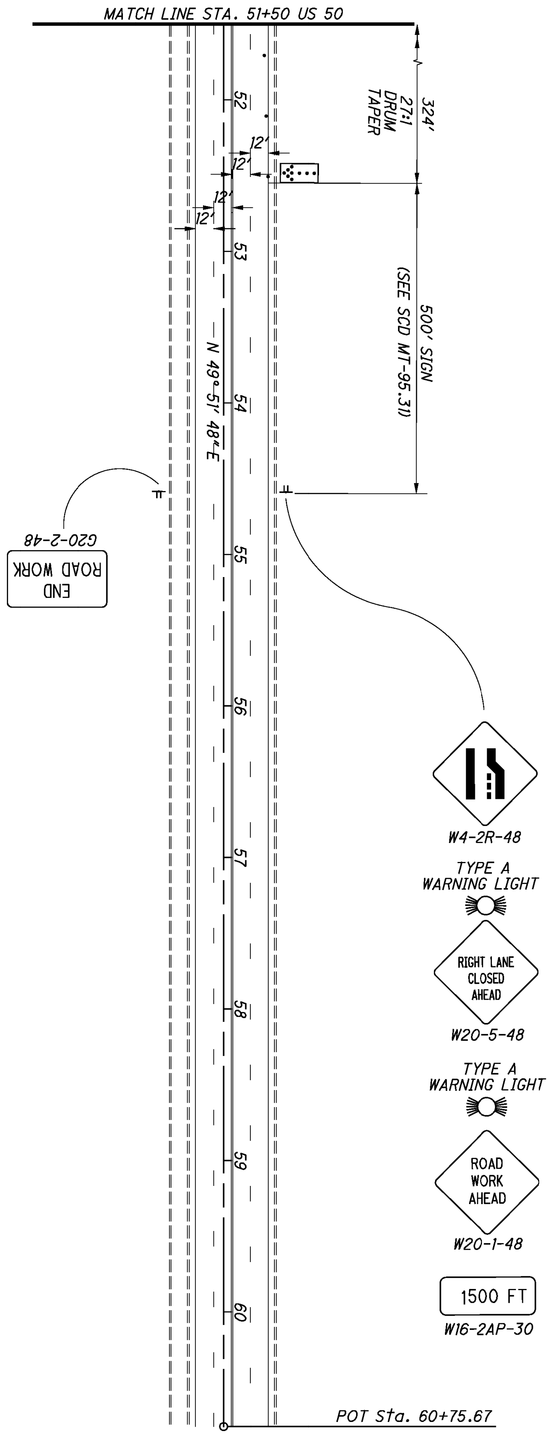
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 38+50 TO STA. 52+50

HAM-50-2180N

13
199

91939MP402.dgn 10/7/2016 11:43:08 AM sfhammerschmidt



NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.31.

LEGEND:

WORK ZONE

DRUMS

DIRECTION OF TRAFFIC

EXISTING DIRECTION OF TRAFFIC

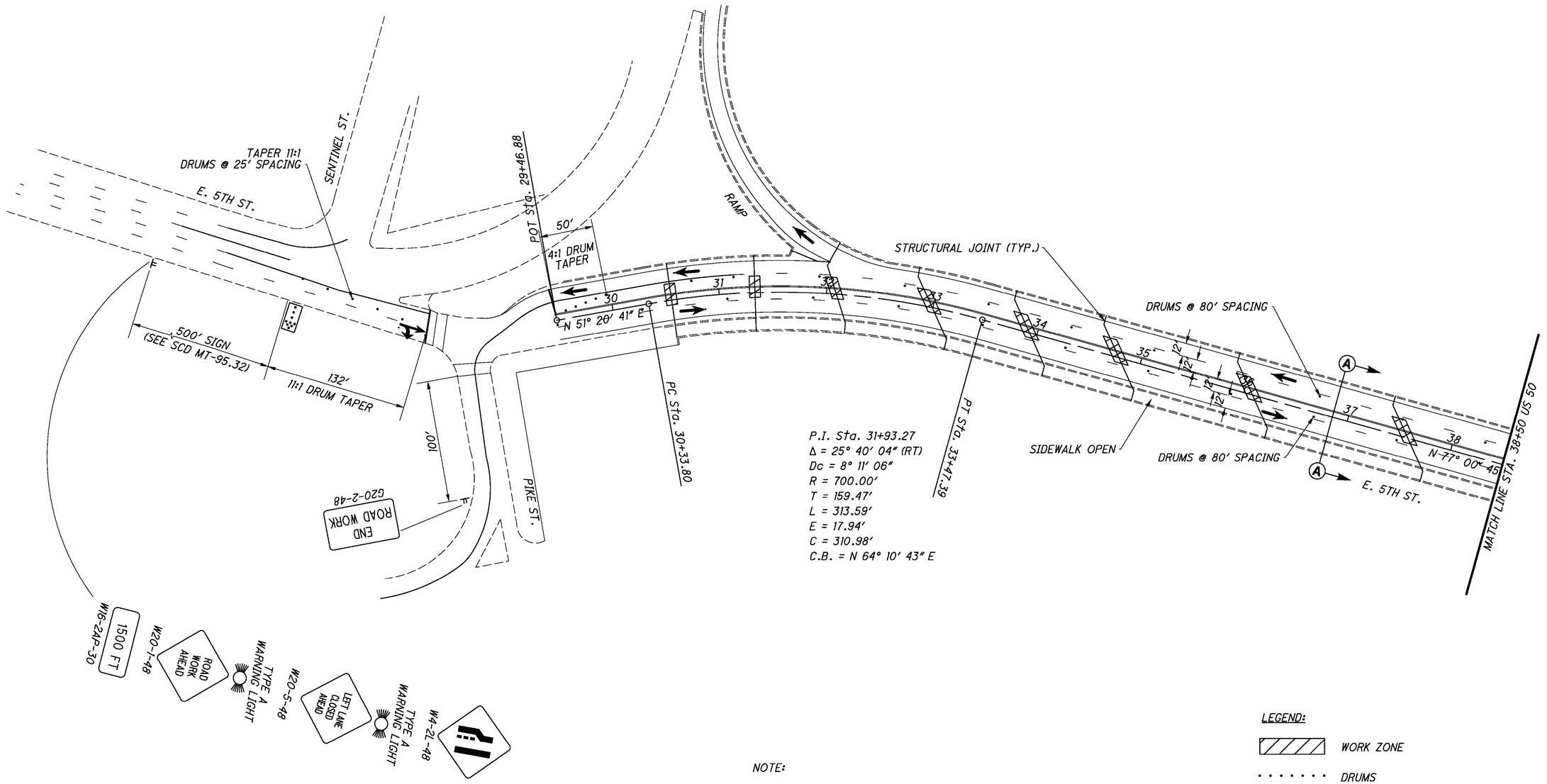
HAM-50-2180N

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 52+50 TO END

CALCULATED

CHECKED

0 25 50 100
HORIZONTAL SCALE IN FEET



NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWINGS MT-95.31 AND MT-95.32.

HORIZONTAL SCALE IN FEET
0 25 50 100

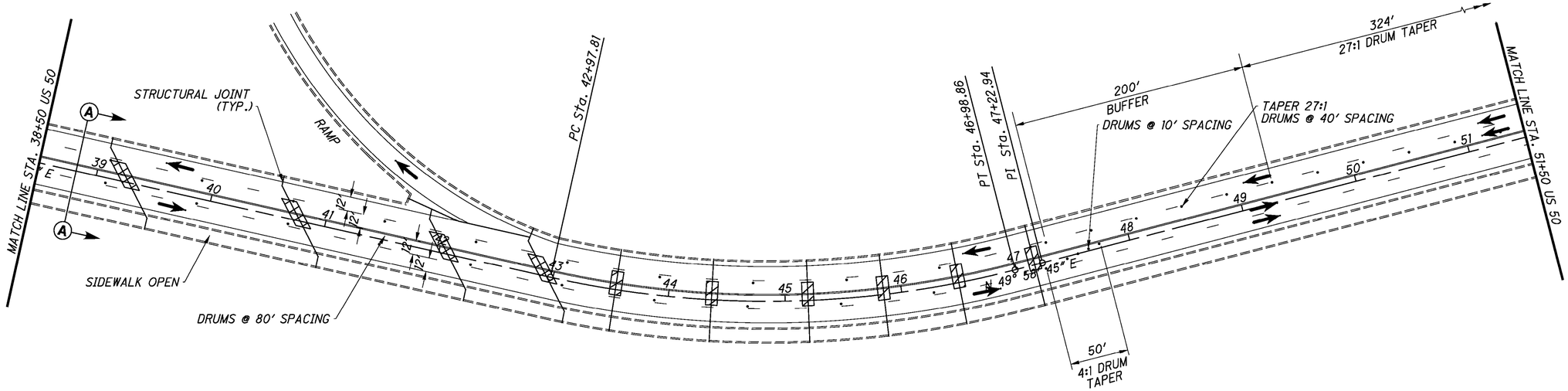
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 2
BEGIN TO STA. 38+50

HAM-50-218ON

15
199

91939MP201.dgn 10/7/2016 11:43:09 AM sfhammerschmidt



P.I. Sta. 45+02.14
Δ = 27° 02' 00" (LT)
Dc = 6° 44' 26"
R = 850.00'
T = 204.33'
L = 401.05'
E = 24.21'
C = 397.34'
C.B. = N 63° 29' 45" E

NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWINGS MT-95.31 AND MT-95.32.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- FOR TYPICAL SECTION, SEE SHEET 10

HORIZONTAL SCALE IN FEET
0 25 50 100

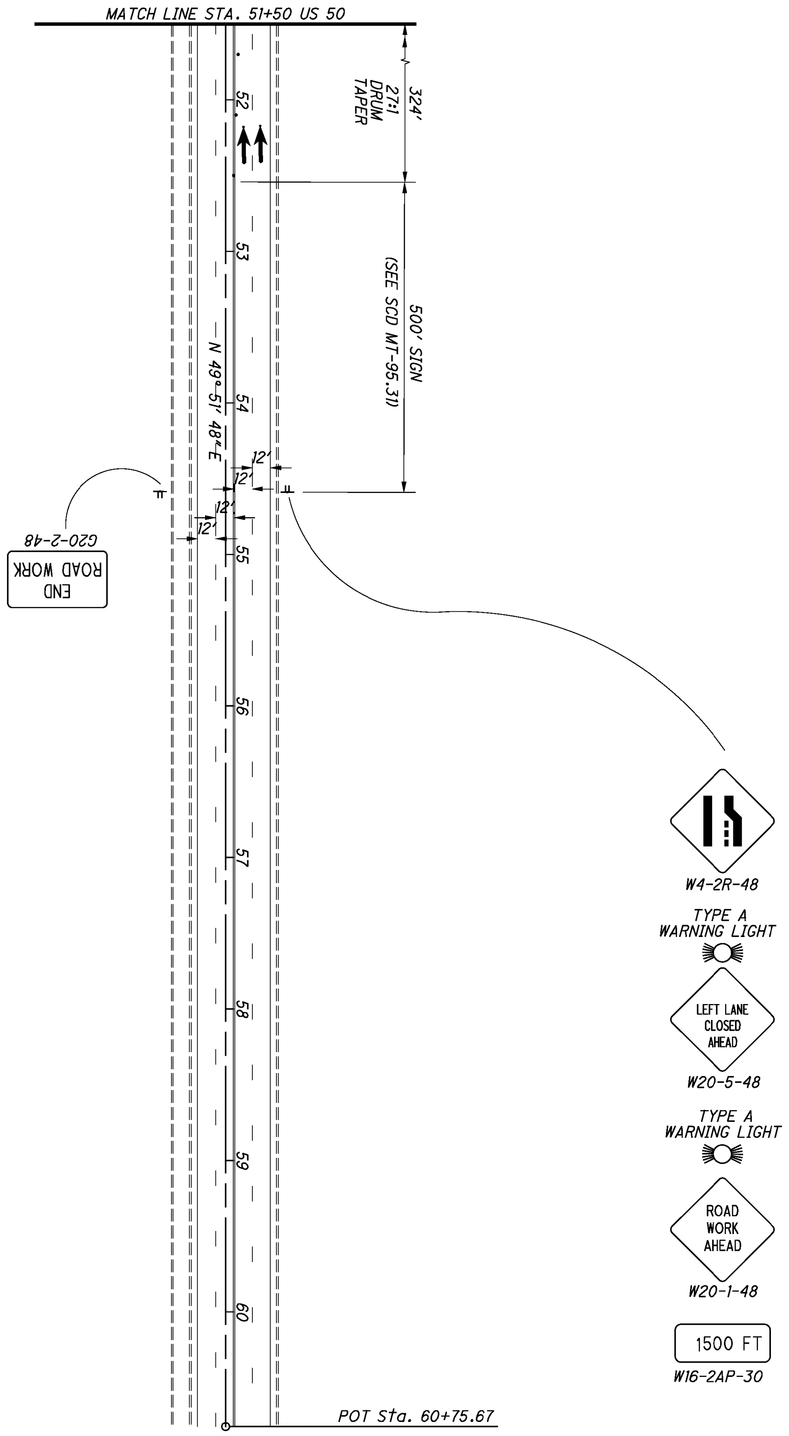
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 38+50 TO STA. 52+50

HAM-50-2180N

16
199

91939MP202.dgn 10/7/2016 11:43:09 AM sfhammerschmidt



NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWINGS MT-95.31 AND MT-95.32.

LEGEND:

WORK ZONE

DRUMS

DIRECTION OF TRAFFIC

EXISTING DIRECTION OF TRAFFIC

17 / 199	HAM-50-2180N	MAINTENANCE OF TRAFFIC - PHASE 2 STA. 52+50 TO END	CALCULATED CHECKED 0 50 25 100 HORIZONTAL SCALE IN FEET

P.I. Sta. 31+93.27
Δ = 25° 40' 04" (RT)
Dc = 8° 11' 06"
R = 700.00'
T = 159.47'
L = 313.59'
E = 17.94'
C = 310.98'
C.B. = N 64° 10' 43" E

NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.31.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- (A) → FOR TYPICAL SECTION, SEE SHEET 11

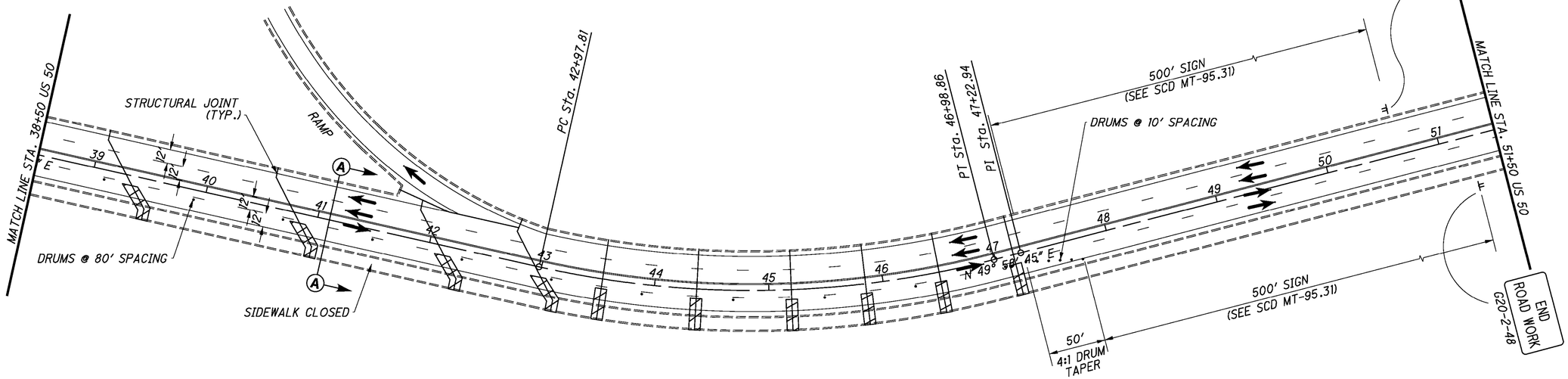
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 3
BEGIN TO STA. 38+50

HAM-50-2180N

91939MP101.dgn 10/7/2016 11:43:10 AM sfhammerschmidt



P.I. Sta. 45+02.14
Δ = 27° 02' 00" (LT)
Dc = 6° 44' 26"
R = 850.00'
T = 204.33'
L = 401.05'
E = 24.21'
C = 397.34'
C.B. = N 63° 29' 45" E

NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-95.31.

LEGEND:

- WORK ZONE
- DRUMS
- DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC
- (A) → FOR TYPICAL SECTION, SEE SHEET 11

HORIZONTAL SCALE IN FEET
0 25 50 100

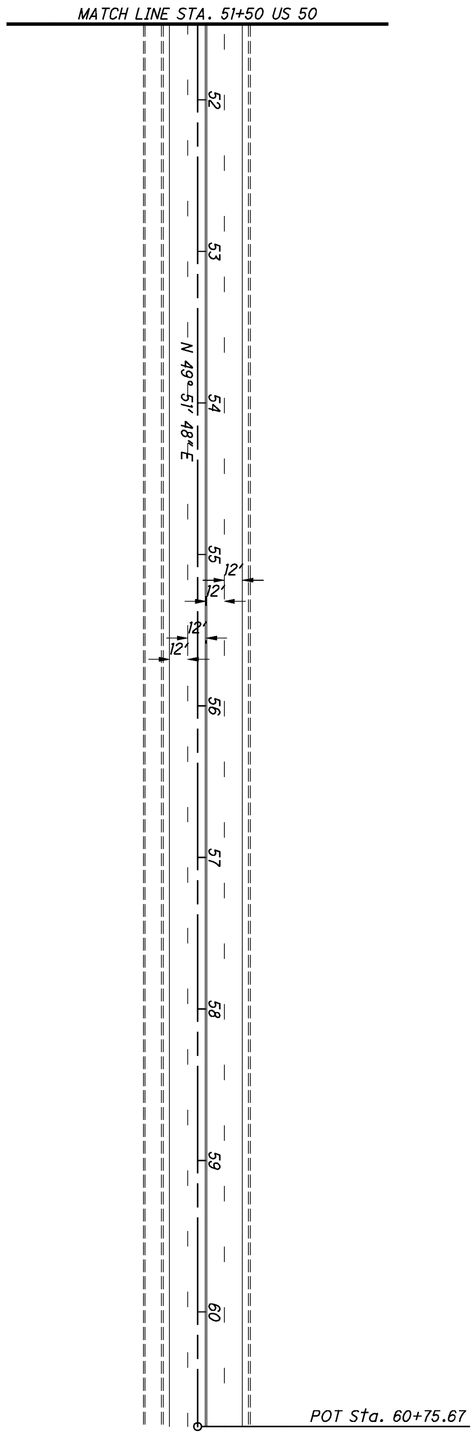
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 38+50 TO STA. 52+50

HAM-50-2180N

19
199

91939WP102.dgn 10/7/2016 11:43:10 AM sfhammerschmidt



NOTE:

1. PLACE ALL ADVANCE WARNING AND TRAILING MAINTENANCE OF TRAFFIC SIGNS PER STANDARD CONSTRUCTION DRAWING MT-96.31.

LEGEND:

WORK ZONE

DRUMS

DIRECTION OF TRAFFIC

EXISTING DIRECTION OF TRAFFIC

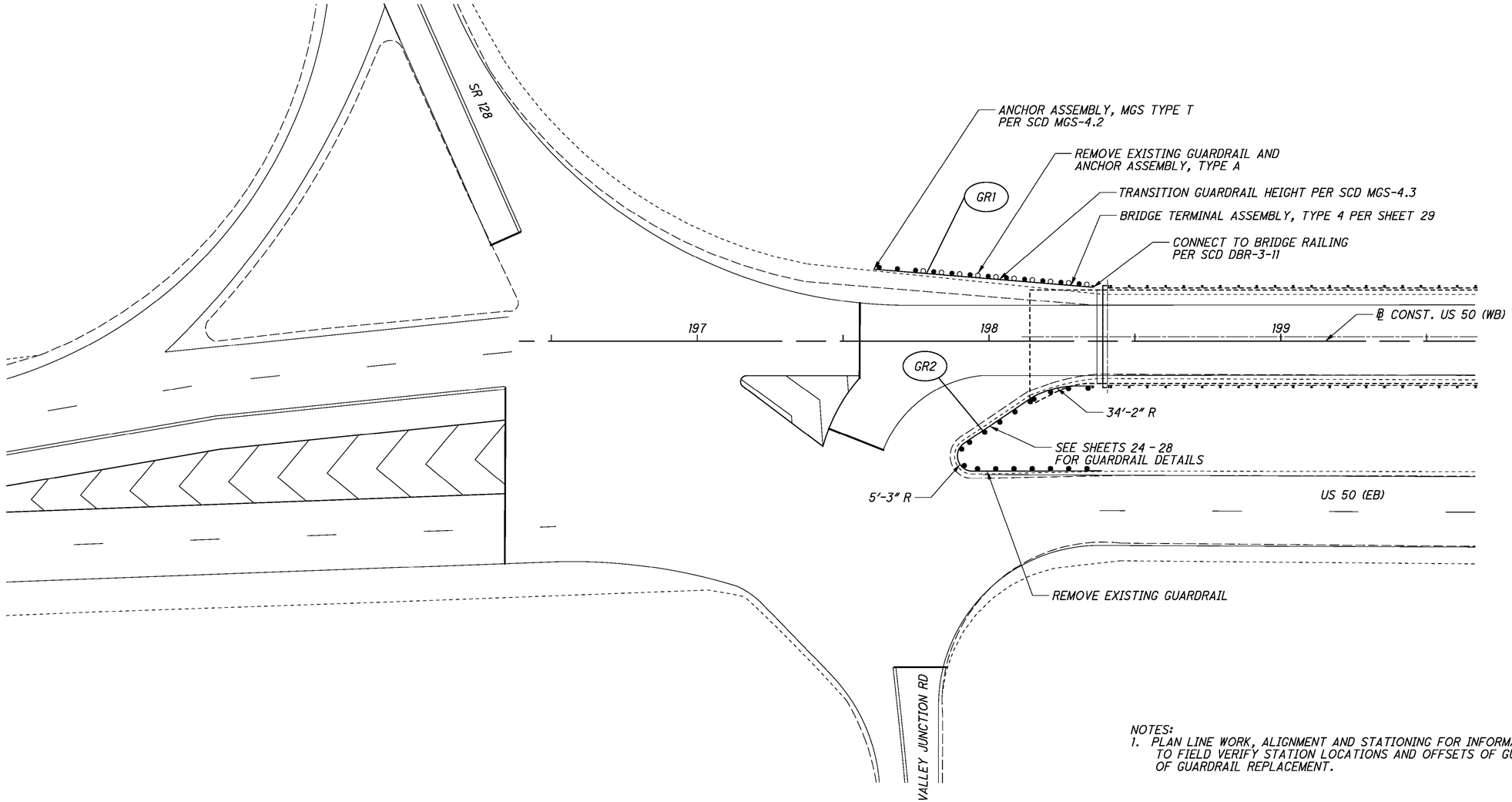
20 / 199	HAM-50-2180N	MAINTENANCE OF TRAFFIC - PHASE 3 STA. 52+50 TO END	CALCULATED CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	9	22	23									01/NHS/BR	02/IMS/BR						
																		ROADWAY	
		157	475									632		202	38000	632	FT	GUARDRAIL REMOVED	
		1	1									2		202	42000	2	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A	
		1										1		202	47000	1	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
		75	450									525		606	15050	525	FT	GUARDRAIL, TYPE MGS	
			13									13		606	15550	13	FT	GUARDRAIL, BARRIER DESIGN, TYPE MGS	
		1	1									2		606	26550	2	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
		1										1		606	35003	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	28
		1	2									3		606	35140	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	29
		1										1		606	35141	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN	27
			1									1		606	60012	1	EACH	IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)	
		1										1		606	98100	1	EACH	GUARDRAIL, MISC.:THRIE BEAM BULLNOSE, AS PER PLAN	24
			2									2		626	00100	2	EACH	BARRIER REFLECTOR	
																		STRUCTURE REPAIR (HAM-50-0376L)	
																		SEE SHEET 35 FOR ESTIMATED QUANTITIES	
																		STRUCTURE REPAIR (HAM-50-2180N)	
																		SEE SHEET 51 FOR ESTIMATED QUANTITIES	
																		MAINTENANCE OF TRAFFIC	
	120												120	614	11110	120	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
																		INCIDENTALS	
												LS	LS	614	11000	LS		MAINTAINING TRAFFIC	
												LS	LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS	LS	624	10000	LS		MOBILIZATION	

CALCULATED SNP
CHECKED DJW

GENERAL SUMMARY

HAM-50-0376L
HAM-50-2180N



NOTES:
1. PLAN LINE WORK, ALIGNMENT AND STATIONING FOR INFORMATION ONLY. CONTRACTOR TO FIELD VERIFY STATION LOCATIONS AND OFFSETS OF GUARDRAIL PRIOR TO START OF GUARDRAIL REPLACEMENT.

REF NO.	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVED	202 ANCHOR ASSEMBLY REMOVED, TYPE A	202 BRIDGE TERMINAL ASSEMBLY, REMOVED	606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, MGS TYPE T	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN	606 THRIE BEAM BULLNOSE, AS PER PLAN
	FROM	TO		FT	EACH	EACH	FT	EACH	EACH	EACH	EACH
GR1	197+60.50	198+35.50	LT	75	1		75	1			
GR2	197+89.50	198+36.00	RT	82		1			1	1	1
TOTALS CARRIED TO GENERAL SUMMARY				157	1	1	75	1	1	1	1

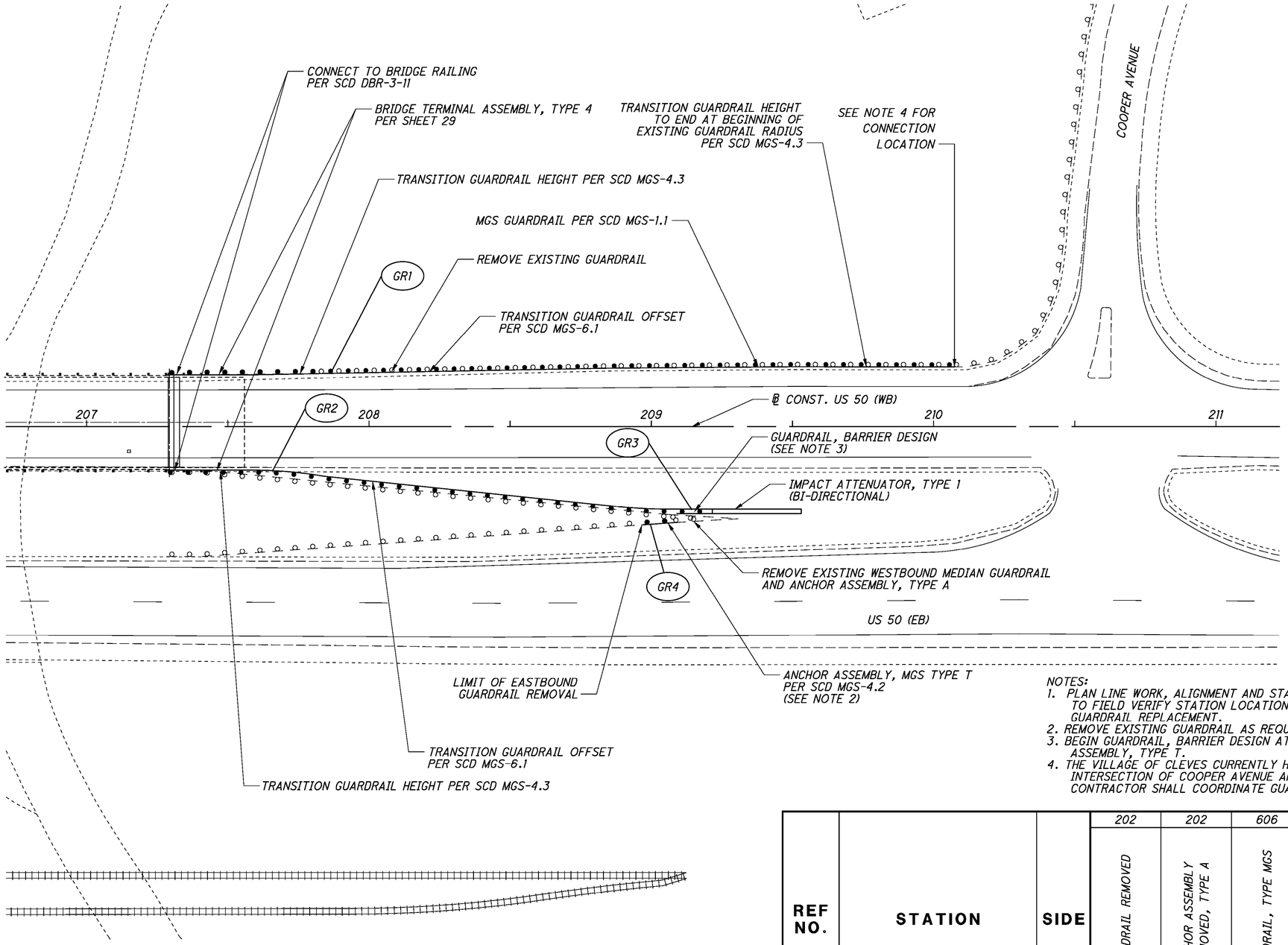
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SAT
CHECKED DJW

PLAN SHEET - US 50
PROPOSED GUARDRAIL REPLACEMENT

HAM-50-0376L

91939GP001.dgn 10/7/2016 11:43:12 AM sfhammerschmidt



NOTES:
1. PLAN LINE WORK, ALIGNMENT AND STATIONING FOR INFORMATION ONLY. CONTRACTOR TO FIELD VERIFY STATION LOCATIONS AND OFFSETS OF GUARDRAIL PRIOR TO START OF GUARDRAIL REPLACEMENT.
2. REMOVE EXISTING GUARDRAIL AS REQUIRED TO PLACE ANCHOR ASSEMBLY, TYPE T.
3. BEGIN GUARDRAIL, BARRIER DESIGN AT THE BEGINNING OF PROPOSED EASTBOUND ANCHOR ASSEMBLY, TYPE T.
4. THE VILLAGE OF CLEVES CURRENTLY HAS A PERMIT PROJECT THAT WILL RELOCATE THE INTERSECTION OF COOPER AVENUE AND US 50 EAST OF THE EXISTING LOCATION. CONTRACTOR SHALL COORDINATE GUARDRAIL CONNECTION LOCATION WITH THE VILLAGE.

REF NO.	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVED	202 ANCHOR ASSEMBLY REMOVED, TYPE A	606 GUARDRAIL, TYPE MGS	606 GUARDRAIL, BARRIER DESIGN, TYPE MGS	606 ANCHOR ASSEMBLY, MGS TYPE T	606 IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 4	626 BARRIER REFLECTOR
				FT	EACH	FT	FT	EACH	EACH	EACH	EACH
GR1	207+34.11	210+07.39	LT	275		275				1	
GR2	207+34.11	209+09.11	RT	175		175				1	2
GR3	209+09.11	209+21.61	RT	12.5	1		12.5		1		
GR4	209+09.11	209+21.61	RT	12.5				1			
TOTALS CARRIED TO GENERAL SUMMARY				475	1	450	12.5	1	1	2	2

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SAT
CHECKED DJW

PLAN SHEET - US 50
PROPOSED GUARDRAIL REPLACEMENT

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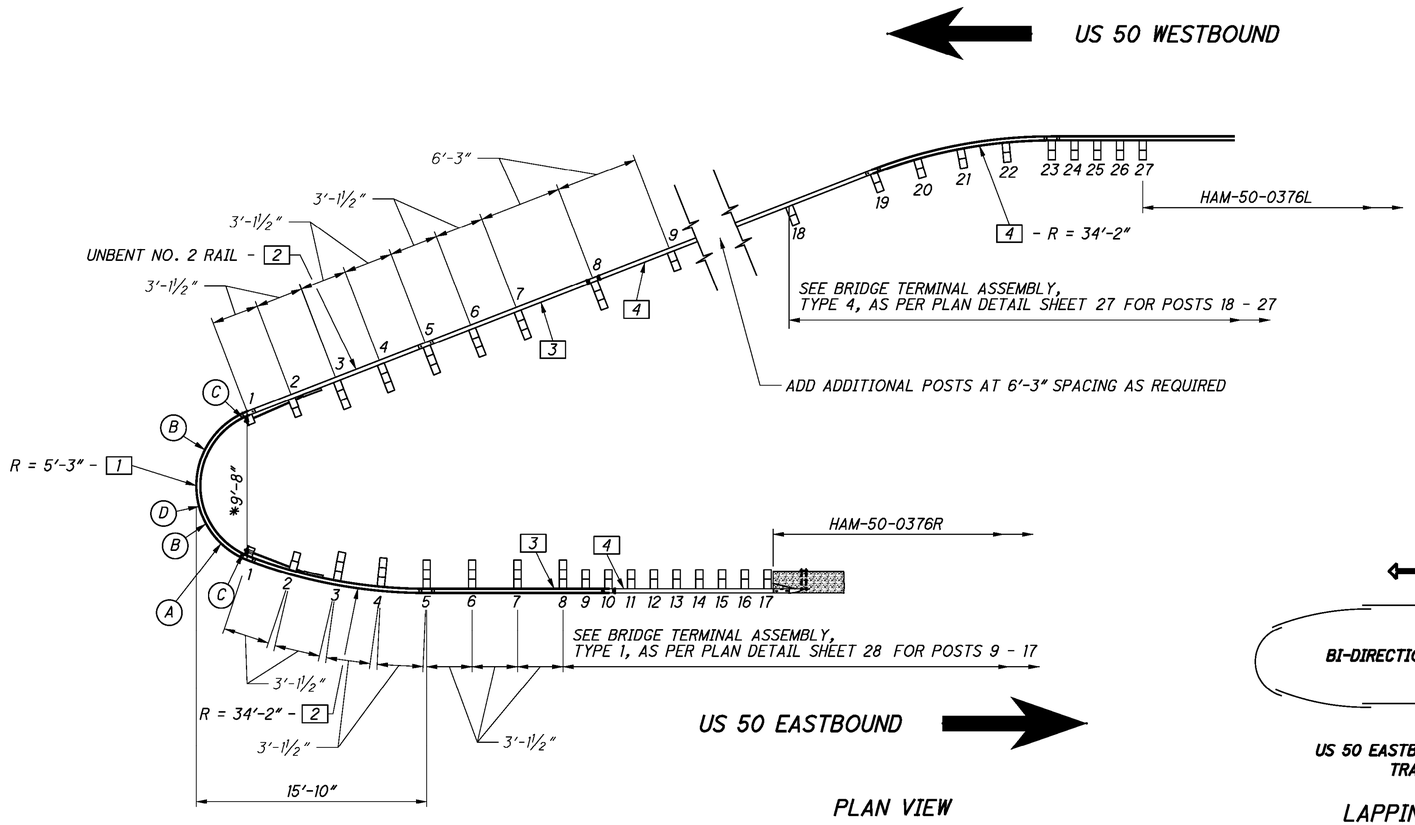
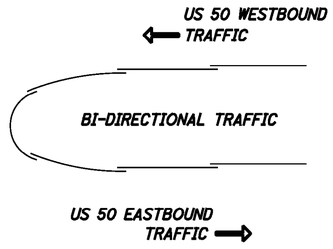


PLAN VIEW
N.T.S.



LAPPING DETAIL

GENERAL NOTES

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND OFFSETS PRIOR TO ORDERING ANY MATERIALS. PROPOSED BULLNOSE FOOTPRINT TO MATCH EXISTING.

PUNCHING, DRILLING, CUTTING OR WELDING IS NOT PERMITTED ON ANY GALVANIZED THRIE BEAM ACCESSORY OR TERMINAL ACCESSORY.

OTHER ANCHOR CABLE ASSEMBLIES HAVING 40,000 LBS. MIN. BREAKING STRENGTH MAY BE USED.

POSTS 2 THROUGH 9, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

THE USE OF STEEL POSTS ON THE BULLNOSE IS NOT ALLOWED.

BOLTS AND ALL NECESSARY HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

ALL THRIE BEAM SHALL BE 12-GAUGE.

FOR ADDITIONAL DETAILS SEE SHEETS 25 - 26

PAYMENT: ITEM 606 - THRIE BEAM BULLNOSE, AS PER PLAN, EACH, INCLUDES THE COST OF EXTRA COMPONENTS IN EXCESS OF NORMAL GUARDRAIL, SUCH AS ADDITIONAL POSTS AND OTHER HARDWARE REQUIRED TO MAKE CONNECTIONS TO BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN AND BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN.

(A) U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.

(B) NOSE CABLE W/SWAGGED END BUTTONS.

(C) NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).

(D) THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

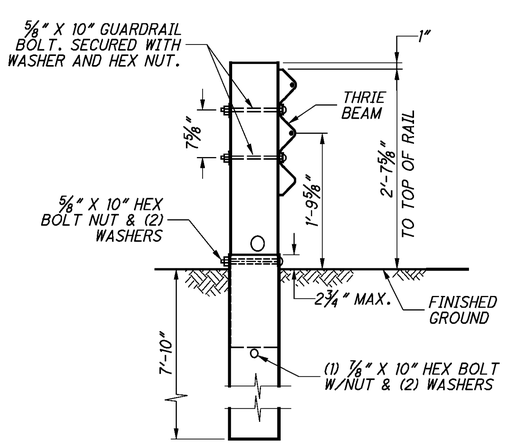
[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2] SLOTTED THRIE BEAM RAIL NO. 2. (POST 1 TO POST 5)

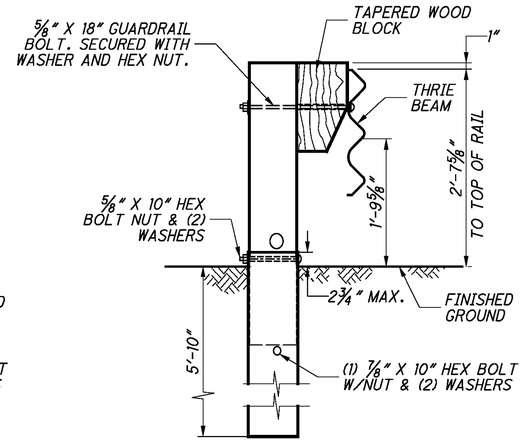
[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

[4] STANDARD THRIE BEAM RAIL NO. 4.

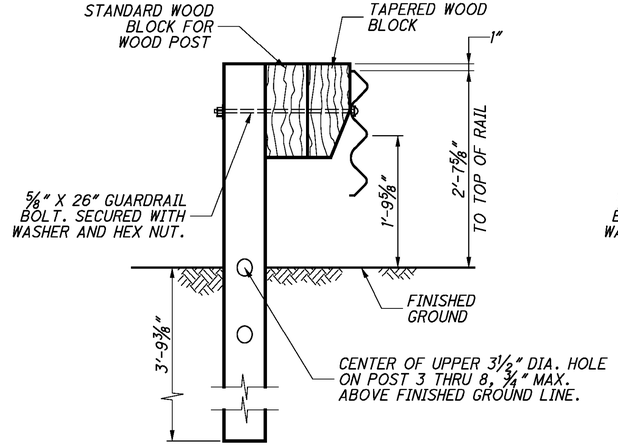
* DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE POSTS ARE BOLTED TO POST OR BLOCK



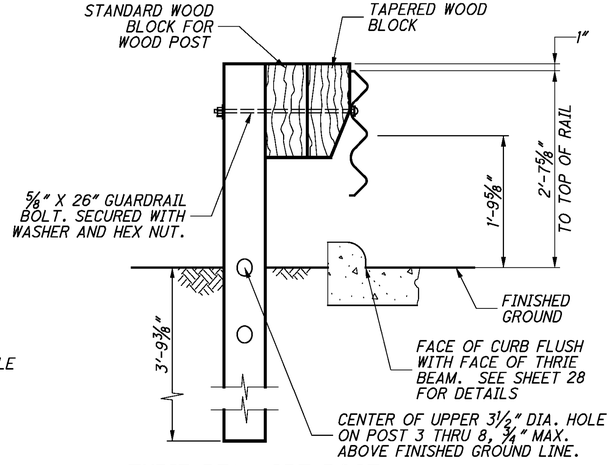
THRIE-BEAM BCT POST
(WITH 8'-0" FOUNDATION TUBE)
POST NO. 1



THRIE-BEAM BCT POST
(WITH 6'-0" FOUNDATION TUBE)
POST NO. 2



THRIE-BEAM CRT POST
(WITH 6'-6" LONG POST)
POST NO. 3, 4, 5, & 6



THRIE-BEAM CRT POST
(WITH 6'-6" LONG POST)
POST NO. 7 & 8

CALCULATED - CHECKED -

PROPOSED GUARDRAIL DETAILS
THRIE BEAM BULLNOSE, AS PER PLAN

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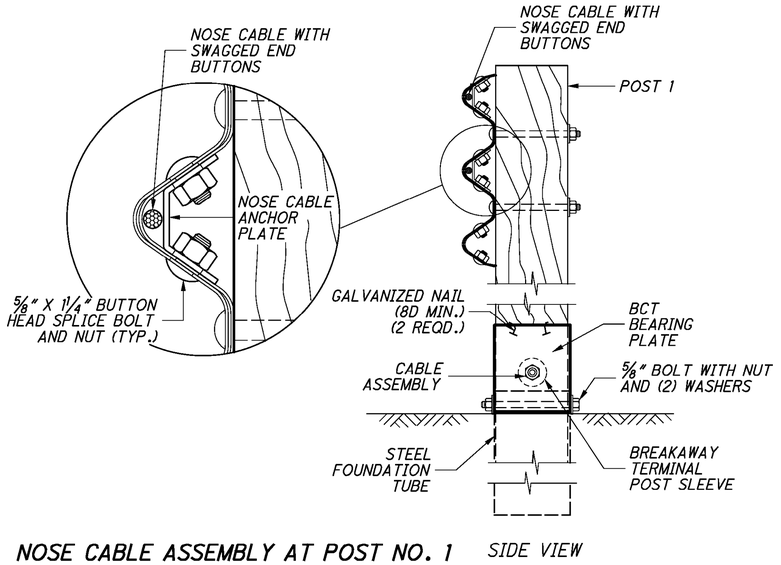
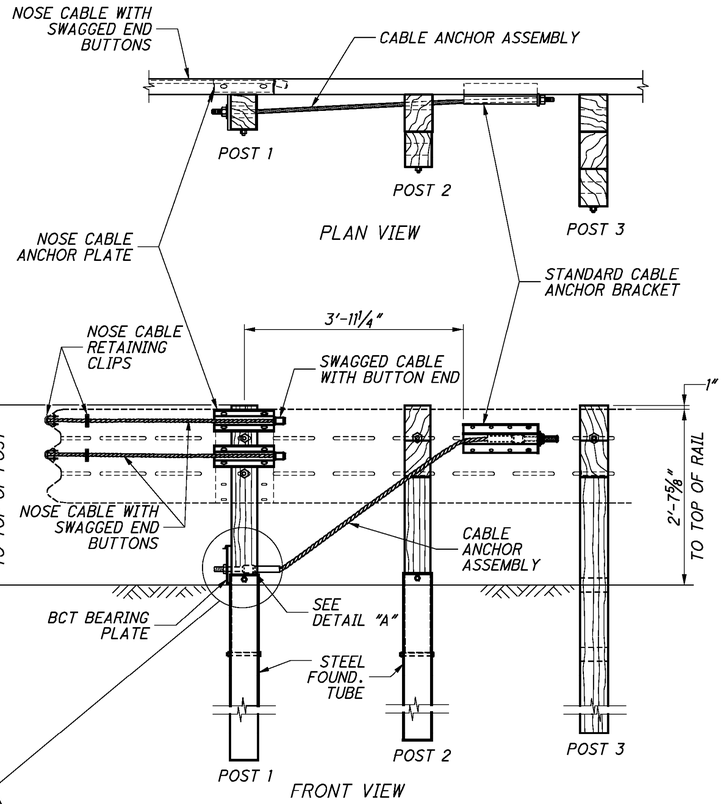
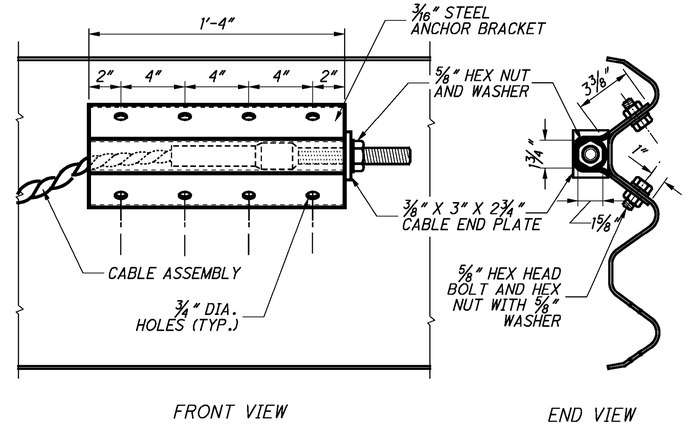


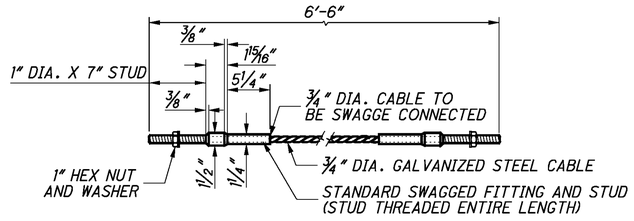
NOSE CABLE ASSEMBLY AT POST NO. 1 SIDE VIEW



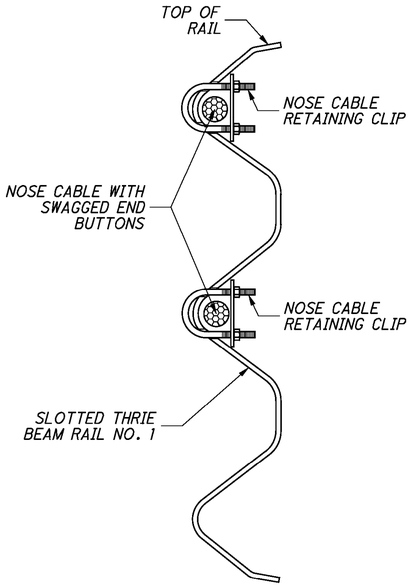
NOSE CABLE ANCHOR AND STANDARD BRACKET ASSEMBLY



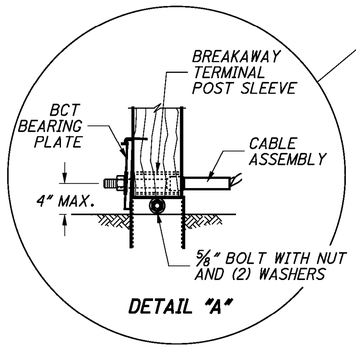
DETAILS OF STANDARD CABLE ANCHOR BRACKET

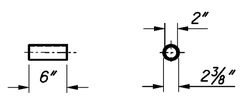


DETAILS OF CABLE ANCHOR ASSEMBLY

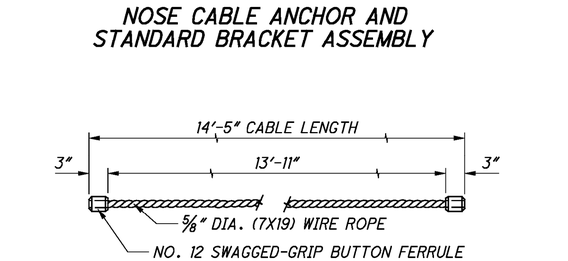


PLACEMENT OF NOSE CABLE RETAINING CLIP



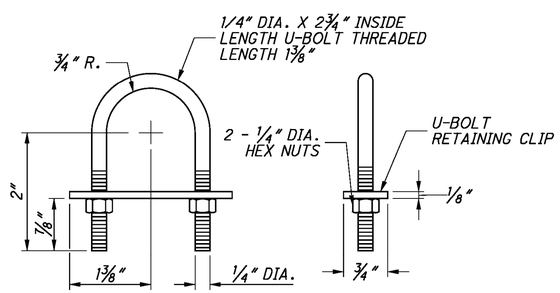


BREAKAWAY TERMINAL POST SLEEVE

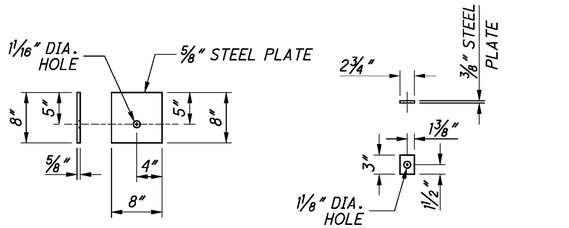


NOSE CABLE WITH SWAGGED END BUTTONS

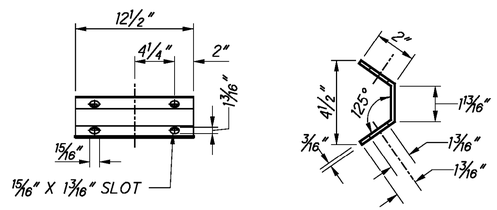
SWAGGED GRIP BUTTON FERRULE CONNECTIONS SHALL HOLD A FORCE EQUAL TO 98% OF THE WIRE ROPE'S BREAKING STRENGTH.



NOSE CABLE RETAINING CLIP



BCT BEARING PLATE CABLE END PLATE



NOSE CABLE ANCHOR PLATE

NOTE: 12 1/2" X 5 13/16" X 3/16" STEEL PLATE (A306)

CALCULATED - CHECKED -

PROPOSED GUARDRAIL DETAILS
THRIE BEAM BULLNOSE, AS PER PLAN

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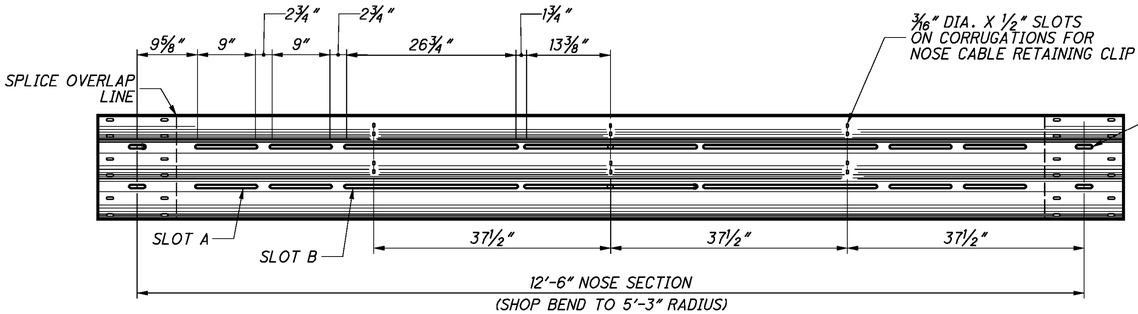
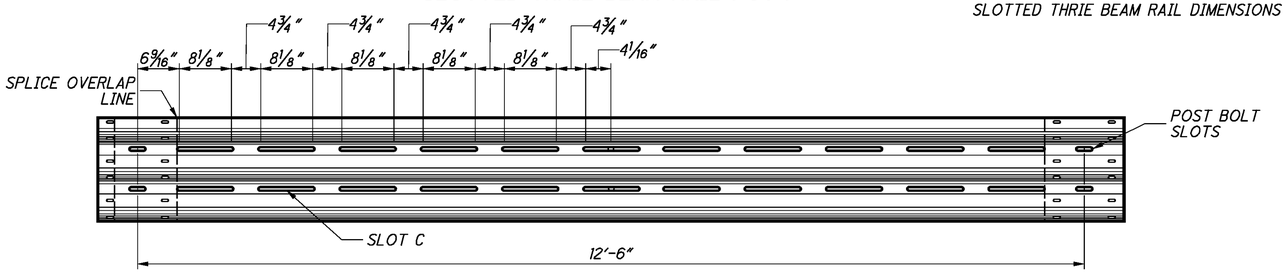
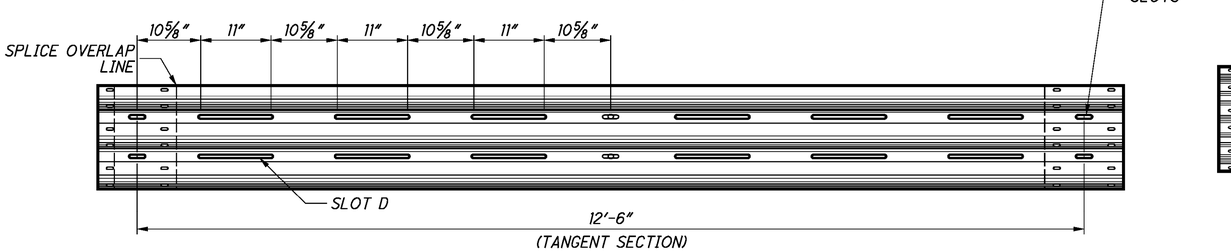


SLOTTED THRIE BEAM RAIL NO. 1



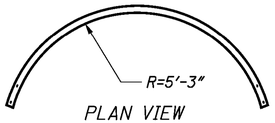
(SHOP BEND TO 34′-2″ RADIUS FOR LOCATIONS SHOWN IN PLAN VIEW)

SLOTTED THRIE BEAM RAILS NO. 2



(TANGENT SECTION)

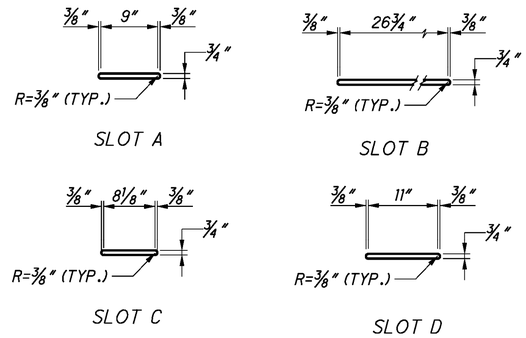
SLOTTED THRIE BEAM RAIL NO. 3



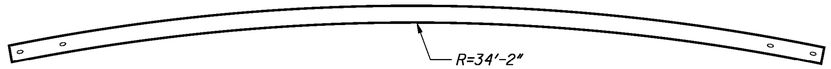
PLAN VIEW

SHOP BEND
SLOTTED THRIE BEAM RAIL NO. 1

SLOTTED THRIE BEAM RAIL DIMENSIONS SHOWN ARE BEFORE BENDING TO THE RADIUS SHOWN.

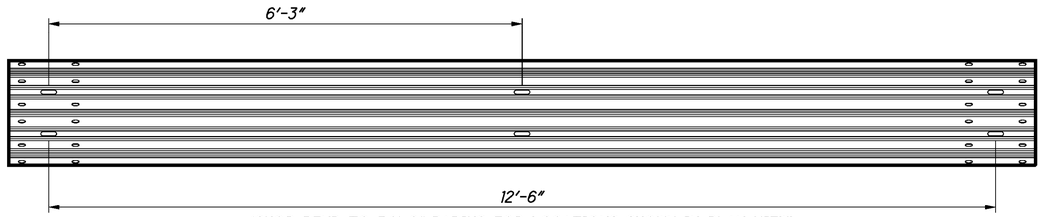


SLOT DETAILS



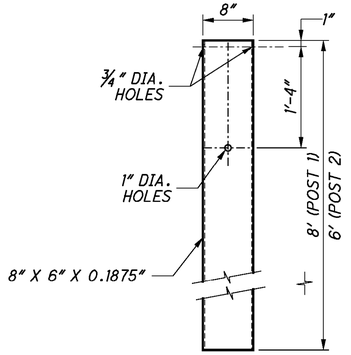
PLAN VIEW

SHOP BEND
SLOTTED THRIE BEAM RAIL NO. 2 AND
STANDARD THRIE BEAM RAIL NO. 4
WHERE SHOWN IN PLAN VIEW SHEET 24

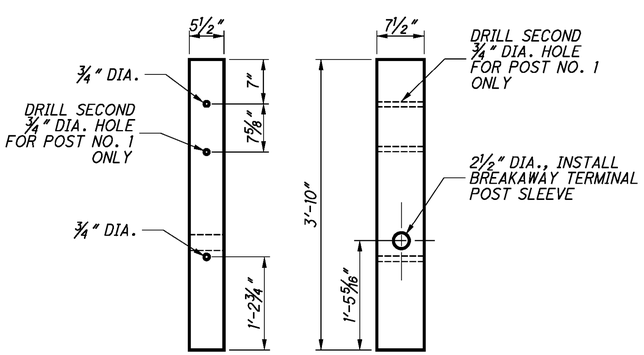


(SHOP BEND TO 34′-2″ RADIUS FOR LOCATIONS SHOWN IN PLAN VIEW)

STANDARD THRIE BEAM RAIL NO. 4

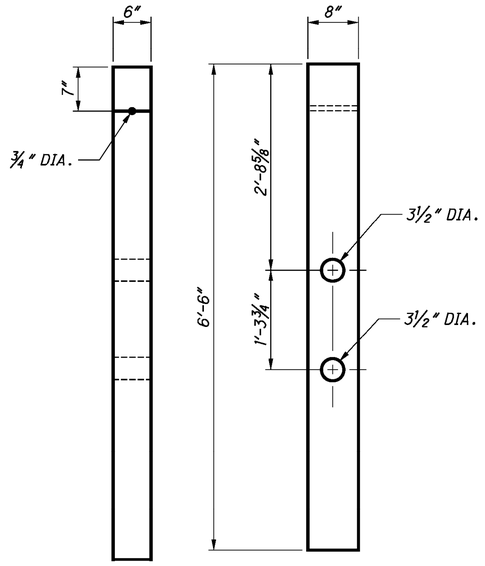


STEEL FOUNDATION TUBE



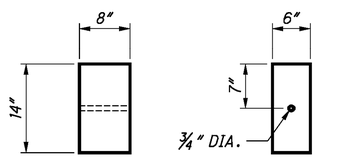
FRONT VIEW SIDE VIEW

THRIE-BEAM BCT POSTS



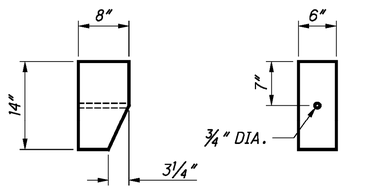
FRONT VIEW SIDE VIEW

THRIE-BEAM CRT WOOD POSTS



SIDE VIEW FRONT VIEW

STANDARD WOOD BLOCK



SIDE VIEW FRONT VIEW

TAPERED WOOD BLOCK

CALCULATED - CHECKED -

PROPOSED GUARDRAIL DETAILS
THRIE BEAM BULLNOSE, AS PER PLAN

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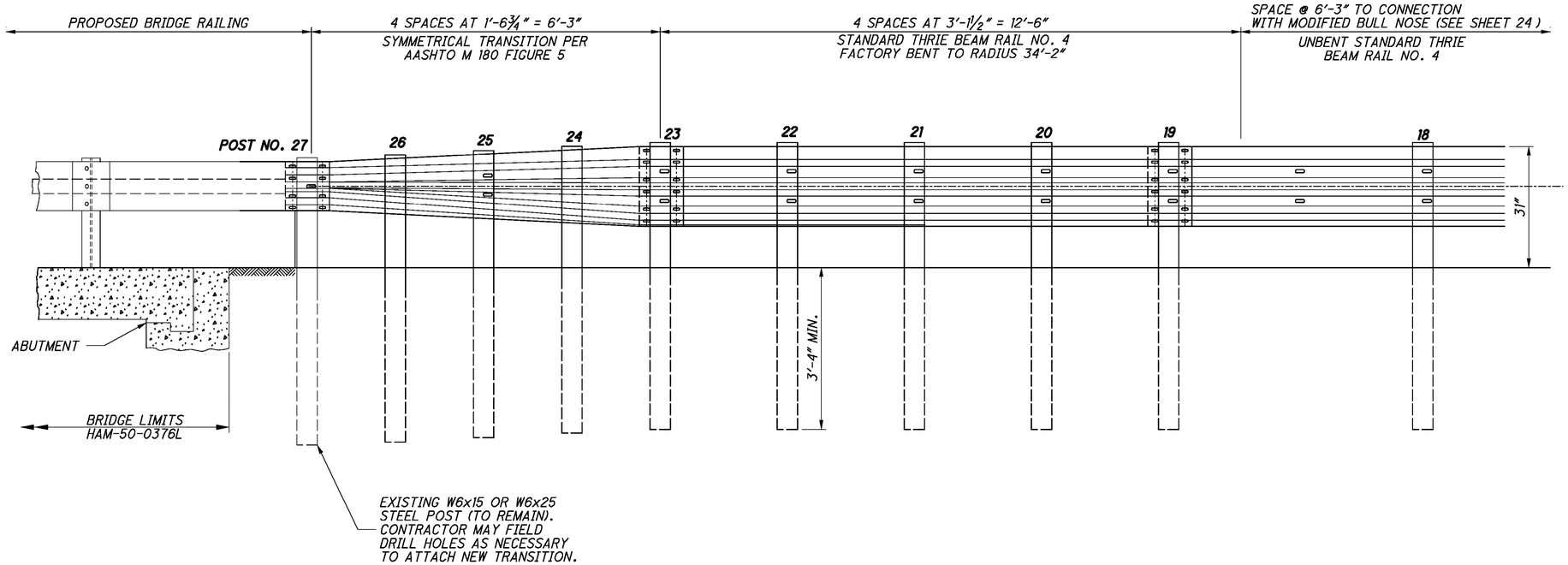

NOTES

GENERAL: FOR ADDITIONAL DETAILS, SEE SCD MGS-1.1.

DETAIL INFORMATION: THE FIRST POST OFF THE BRIDGE SHALL BE STEEL (W6X15 OR W6X25). ALL HOLES IN THE OFF-STRUCTURE END OF THE APPROACH PANEL RAIL SECTION SPANNING THE ABUTMENT ARE SLOTTED ¾" x 2½". TIGHTEN THE BOLTS AS SPECIFIED FOR EXPANSION JOINTS IN ITEM 606.05.

POSTS: POSTS MAY BE SET IN DRILLED HOLES OR DRIVEN TO GRADE. SEE SCD MGS-1.1 FOR ADDITIONAL POST EMBEDMENT DETAILS.

WOOD POSTS - USE SQUARE SAWED PRESSURE TREATED WOOD AS SPECIFIED IN CMS 710.14 AND FABRICATED WITH SQUARE ENDS. BORE BOLT HOLES AND TRIM THE TOPS OF POSTS, IF REQUIRED AFTER THE POSTS ARE SET.

STEEL POSTS - ARE ALLOWED AS AN ALTERNATE. USE W6X9 OR W6X8.5 IN LIEU OF THE 6"X8" WOOD POST. USE SAME POST MATERIAL THROUGHOUT ASSEMBLY.

BLOCKOUTS: USE WOOD BLOCKOUTS ONLY. STEEL OR PLASTIC BLOCKOUTS ARE NOT PERMITTED. NOTCHED WOOD BLOCKOUTS ARE USED WITH STEEL POSTS.

PAYMENT: ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN, EACH, INCLUDES THE COST OF EXTRA COMPONENTS IN EXCESS OF NORMAL GUARDRAIL, SUCH AS ADDITIONAL POSTS AND OTHER HARDWARE.

CALCULATED - CHECKED -

PROPOSED GUARDRAIL DETAILS
BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN

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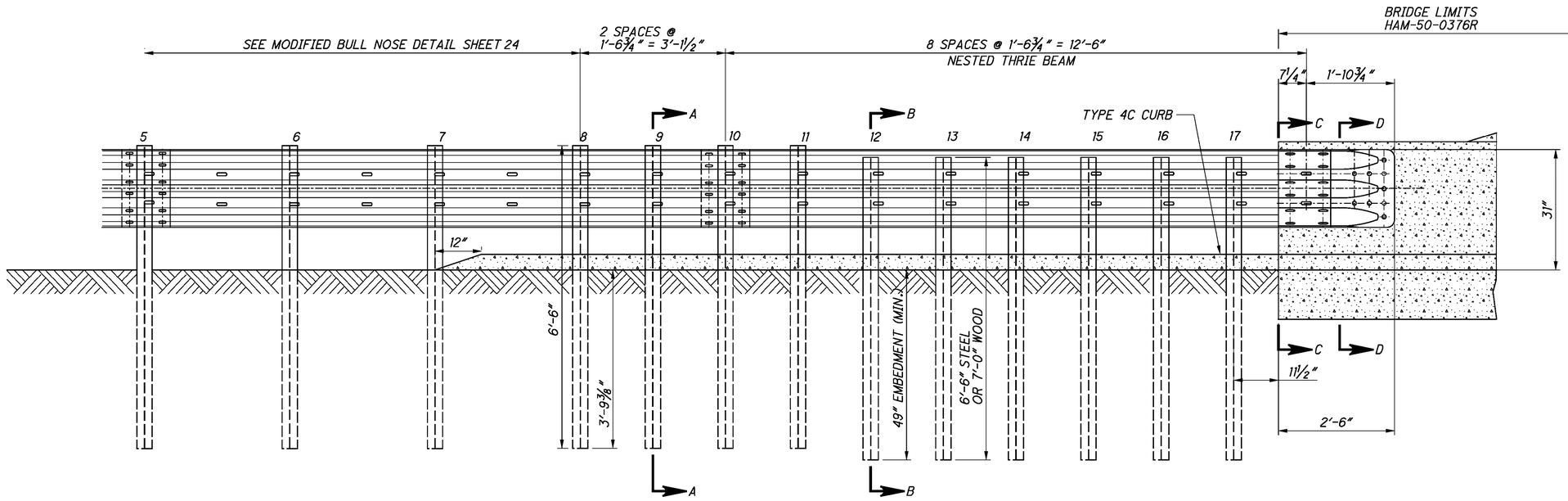
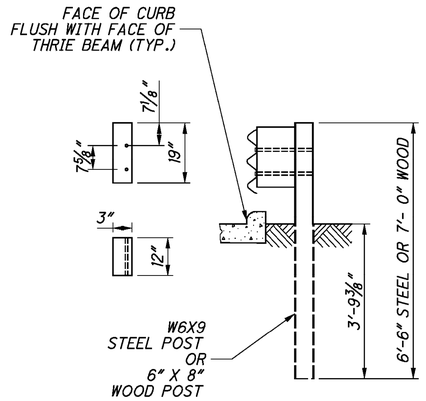
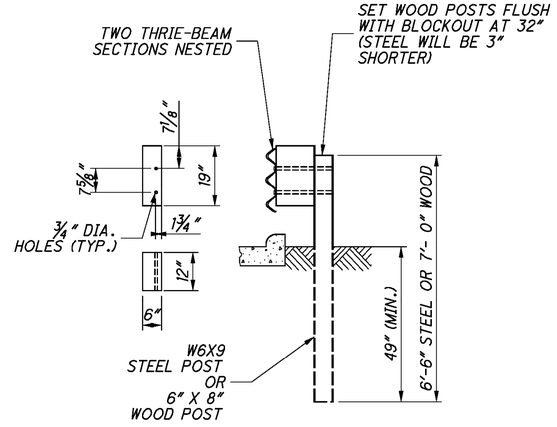


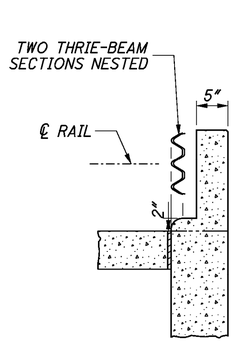
ELEVATION



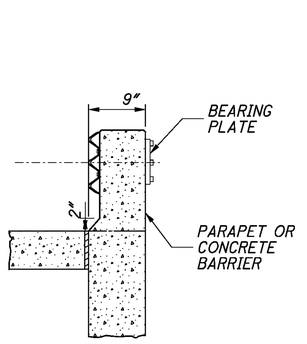
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES

GENERAL: FOR ADDITIONAL DETAILS, SEE SCD MGS-1.1.

THRIE BEAM: WHEN ATTACHING THIS BTA TO PREEXISTING WALLS/PARAPETS, A LONGER THRIE BEAM PANEL (APPROX 1'-6" ADDITIONAL LENGTH) IS PERMITTED TO REACH THE AVAILABLE BOLT HOLE LOCATIONS.

THRIE BEAM TRANSITION: SYMMETRICAL W-BEAM TO THRIE BEAM TRANSITION PANEL SHALL BE 10 GAUGE.

POSTS: POSTS NO. 9-17 ARE 6'-6" W6X9 STEEL OR 6"X8"X84" WOOD.

USE THE SAME POST MATERIAL THROUGHOUT THE LENGTH OF THE TRANSITION UNLESS OTHERWISE SPECIFIED IN THE PLANS OR PERMITTED BY THE ENGINEER (STEEL POSTS SHOWN IN THIS DRAWING).

WOOD POSTS SHALL BE FABRICATED AND PRESSURE-TREATED FOR APPROVED SPECIES AS PER CMS 710.12. BORE BOLT HOLES AND, IF REQUIRED, TRIM THE TOPS OF POSTS AFTER THE POSTS ARE SET.

BLOCKOUTS: USE 6"X12"X19" (OR 6"X12"X22") WOOD BLOCKOUTS AT POSTS NO. 9-17. APPROVED ALTERNATE BLOCKOUTS CAN BE FOUND ON THE OFFICE OF ROADWAY ENGINEERING'S WEBSITE. STEEL BLOCKOUTS ARE NOT PERMITTED.

CURB: TYPE 4C CURB PER SCD BP-5.1 IS REQUIRED UNDER THE THRIE-BEAM PORTION OF THIS TRANSITION WHEN CONNECTING TO CONCRETE BARRIER OR PARAPET, BUT SHALL NOT EXTEND PAST POST NO. 7.

PAYMENT: ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN, EACH, INCLUDES THE COST OF ALL COMPONENTS INCLUDING TYPE 4C CURB, ADDITIONAL AND DIFFERENT SIZE OF POSTS AND BLOCKOUTS, NESTED THRIE-BEAM, TRANSITION AND CONNECTOR SECTIONS, BOLTS, WASHERS, NUTS, AND OTHER HARDWARE.

CALCULATED - CHECKED -

PROPOSED GUARDRAIL DETAILS
BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN

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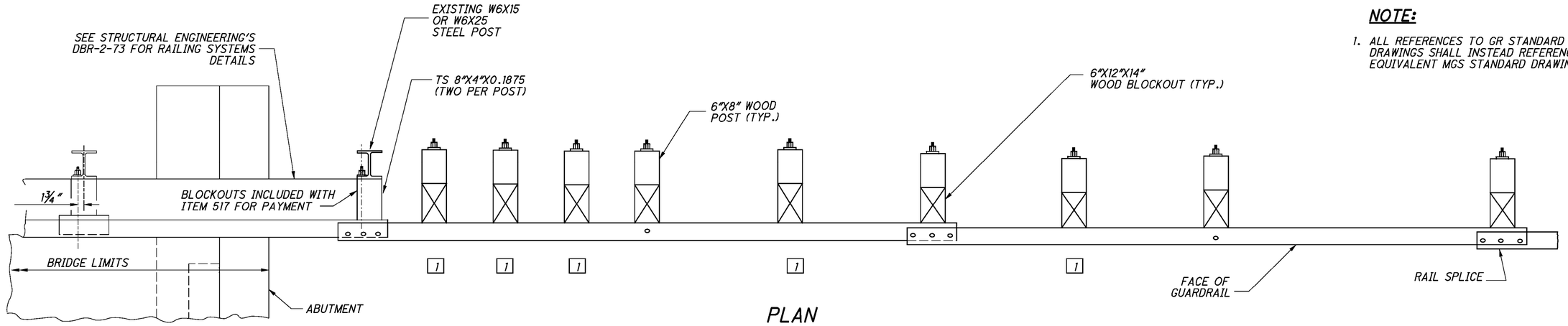
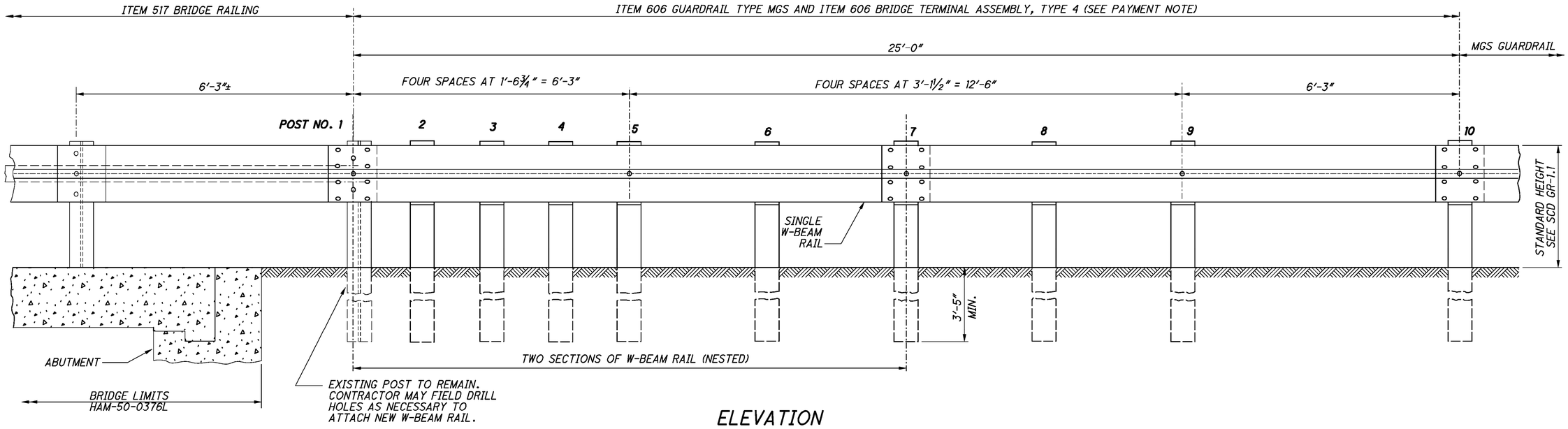


PLAN

NOTE:

1. ALL REFERENCES TO GR STANDARD DRAWINGS SHALL INSTEAD REFERENCE EQUIVALENT MGS STANDARD DRAWINGS.



ELEVATION

NOTES

GENERAL: FOR ADDITIONAL DETAILS, SEE SCD MGS-1.1.

APPLICATION: THE TYPE 4 BRIDGE TERMINAL ASSEMBLY SHALL CONNECT MGS GUARDRAIL RUNS TO DEEP BEAM BRIDGE GUARDRAIL (AS SHOWN ON STRUCTURAL ENGINEERING SCD DBR-2-73).

DETAIL INFORMATION: THE FIRST POST OFF THE BRIDGE SHALL BE STEEL (W6X15 OR W6X25). ALL HOLES IN THE OFF-STRUCTURE END OF THE APPROACH PANEL RAIL SECTION SPANNING THE ABUTMENT ARE SLOTTED ¾" x 2½". TIGHTEN THE BOLTS AS SPECIFIED FOR EXPANSION JOINTS IN ITEM 606.05.

POSTS: POSTS MAY BE SET IN DRILLED HOLES OR DRIVEN TO GRADE. SEE MGS-1.1 FOR ADDITIONAL POST EMBEDMENT DETAILS. GUARDRAIL IS NOT ATTACHED TO CERTAIN POSTS (SEE LEGEND).

WOOD POSTS - USE SQUARE SAWED PRESSURE TREATED WOOD AS SPECIFIED IN CMS 710.14 AND FABRICATED WITH SQUARE ENDS. BORE BOLT HOLES AND TRIM THE TOPS OF POSTS, IF REQUIRED AFTER THE POSTS ARE SET.

STEEL POSTS - ARE ALLOWED AS AN ALTERNATE. USE W6X9 OR W6X8.5 IN LIEU OF THE 6"X8" WOOD POST. USE SAME POST MATERIAL THROUGH-OUT ASSEMBLY.

BLOCKOUTS: USE WOOD BLOCKOUTS ONLY. STEEL OR PLASTIC BLOCKOUTS ARE NOT PERMITTED. NOTCHED WOOD BLOCKOUTS ARE USED WITH STEEL POSTS.

PAYMENT: ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 4, EACH, INCLUDES THE COST OF EXTRA COMPONENTS IN EXCESS OF NORMAL GUARDRAIL, SUCH AS ADDITIONAL POSTS AND OTHER HARDWARE. THE TS 8"X4" SPACERS AND TUBULAR BACKUP RAIL EXTENDING TO THE FIRST POST OFF THE BRIDGE IS INCLUDED WITH ITEM 517 - RAILING FOR PAYMENT.

LEGEND

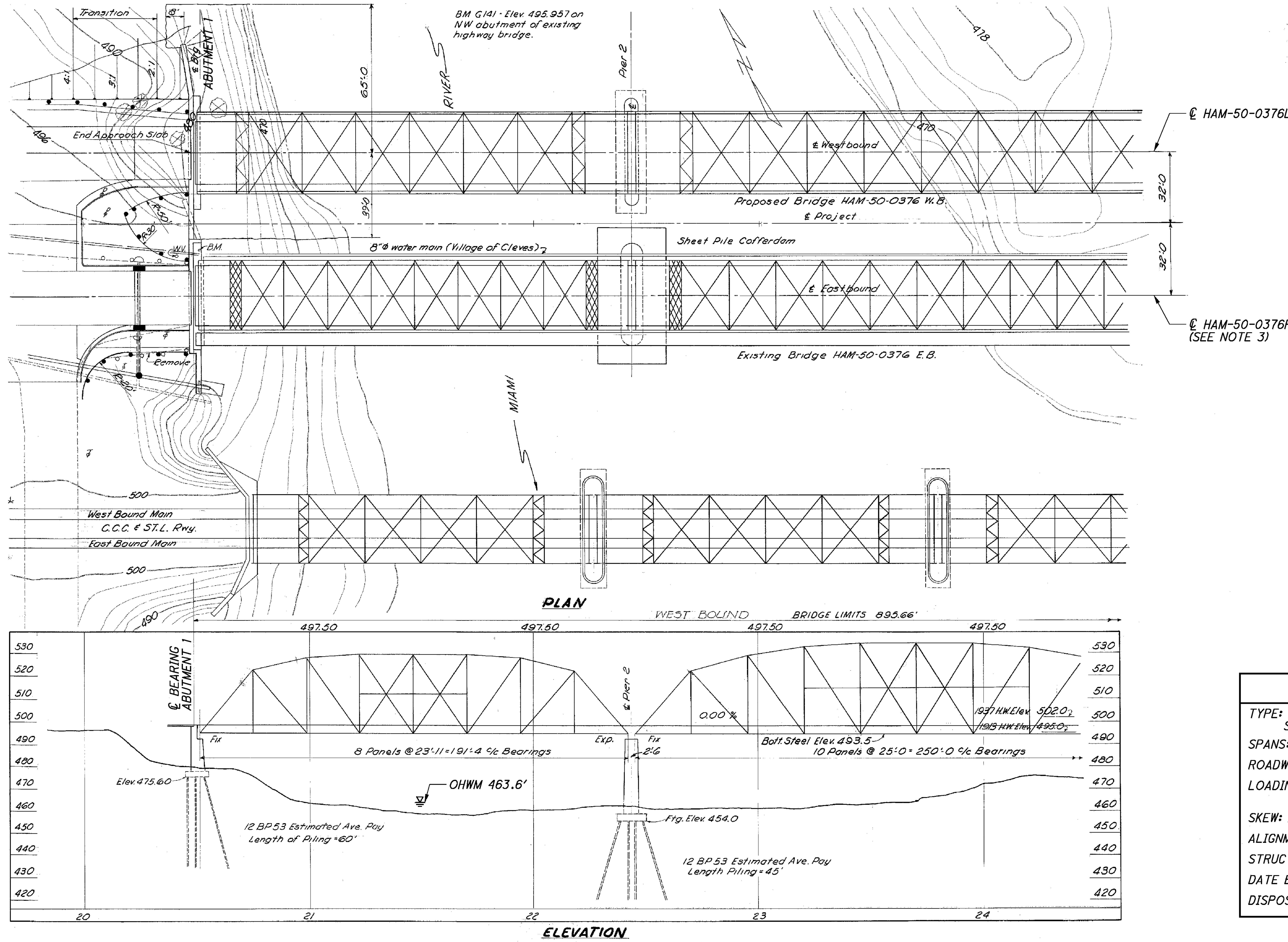
[1] GUARDRAIL IS NOT ATTACHED TO POSTS AT POSTS 2, 3, 4, 6, AND 8. BLOCKOUT IS FASTENED TO POST WITH STANDARD POST BOLT.

CALCULATED - CHECKED -

PROPOSED GUARDRAIL DETAILS BRIDGE TERMINAL ASSEMBLY, TYPE 4

HAM-50-0376L

91939GR006.dgn 10/7/2016 11:43:16 AM sframmerschmidt



EXISTING STRUCTURE - HAM-50-0376L

TYPE: HIGH STEEL TRUSS WITH REINFORCED CONCRETE DECK SUPERSTRUCTURE ON REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 191'-4", 250'-0", 250'-0", 191'-4"

ROADWAY: 32'-0" CURB TO CURB

LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING (1989 REHABILITATION)

SKEW: NONE

ALIGNMENT: TANGENT

STRUCTURE FILE NUMBER: 3102521

DATE BUILT: 1959 ORIGINAL CONSTRUCTION, 1989 REHABILITATION

DISPOSITION: BRIDGE REHABILITATION

NOTES:

1. NO PROPOSED WORK SHOWN ON THIS SHEET.
2. IMAGE IS TAKEN FROM THE 1958 ORIGINAL CONSTRUCTION DRAWINGS, SHEET 272, SITE PLAN BRIDGE NO. HAM-50-0376 EB AND WB U.S. ROUTE 50 OVER GREAT MIAMI RIVER. SOME INFORMATION FROM THE ORIGINAL SHEET HAS BEEN REMOVED OR UPDATED.
3. THE BRIDGE HAM-50-0376R (E.B.) HAS BEEN REPLACED WITH A SIX SPAN STEEL GIRDER BRIDGE IN 1990.
4. SEE SHEET 2 / 14 FOR ADDITIONAL INFORMATION.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

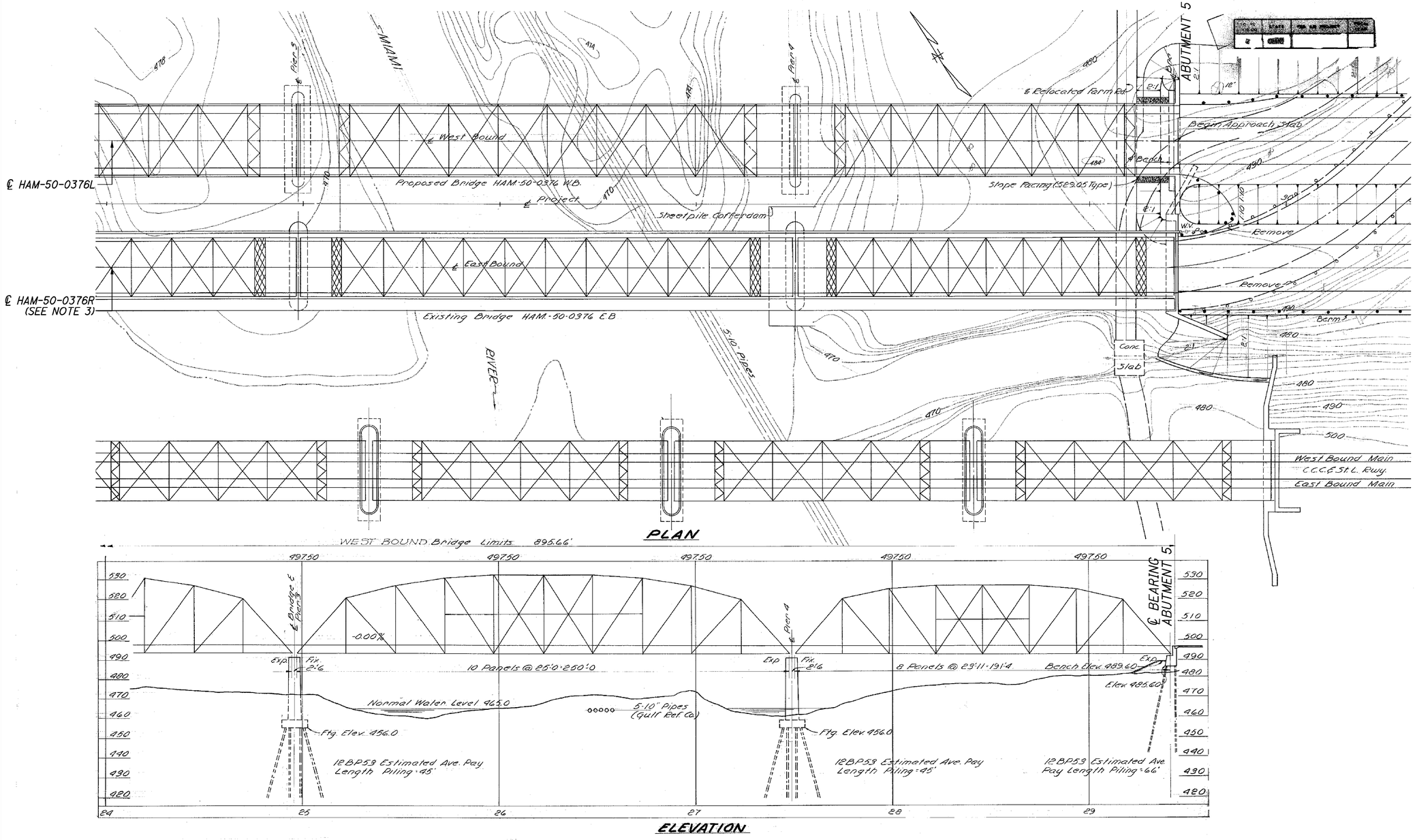
DESIGNED ZTW	CHECKED SFH	DRAWN ZTW	REVISED	REVIEWED PJA	DATE 10-05-16

STRUCTURE FILE NUMBER 3102521

HAMILTON COUNTY
STA. 198+36.29
STA. 207+31.95

SITE PLAN (1 OF 2)
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939



NOTES:

1. NO PROPOSED WORK SHOWN ON THIS SHEET.
2. IMAGE IS TAKEN FROM THE 1958 ORIGINAL CONSTRUCTION DRAWINGS, SHEET 273, SITE PLAN BRIDGE NO. HAM-50-0376 EB AND WB U.S. ROUTE 50 OVER GREAT MIAMI RIVER. SOME INFORMATION FROM THE ORIGINAL SHEET HAS BEEN REMOVED OR UPDATED.
3. THE BRIDGE HAM-50-0376R (E.B.) HAS BEEN REPLACED WITH A SIX SPAN STEEL GIRDER BRIDGE IN 1990.
4. SEE SHEET 1 / 14 FOR ADDITIONAL INFORMATION.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	PJA	10-05-16
CHECKED	REVISED		STRUCTURE FILE NUMBER
SFH			3102521

HAMILTON COUNTY
STA. 198+36.29
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SITE PLAN (2 OF 2)
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

2 / 14

31
199

REFER TO THE FOLLOWING STANDARD DRAWINGS:

DBR-3-11 (REVISED) 7-15-2011

DESIGN SPECIFICATIONS

THE WORK ON THIS STRUCTURE SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 17TH EDITION, INCLUDING THE 2005 INTERIM SPECIFICATIONS, AND THE 2004 ODOT BRIDGE DESIGN MANUAL (BDM), INCLUDING 7-17-15 INTERIMS.

DESIGN LOADING

HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING, NO FUTURE WEARING SURFACE.

DESIGN DATA (NEW MATERIAL)

STRUCTURAL STEEL - ASTM A709 GRADE 50, YIELD STRENGTH 50,000 PSI

STEEL TUBING - ASTM A500 GRADE B, YIELD STRENGTH 46,000 PSI

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

PREVIOUS CONSTRUCTION PLANS

ORIGINAL PLANS	(DATED)	1958
REHABILITATION PLANS	(DATED)	1989

THE EXISTING STRUCTURE PLANS MAY BE REVIEWED AT THE:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 8 OFFICE
505 S. STATE ROUTE 741
LEBANON, OHIO 45036

THE EXISTING PLANS ARE ALSO AVAILABLE ONLINE THROUGH THE FOLLOWING ODOT WEBSITE:

HTTP://WWW.DOT.STATE.OH.US/DIVISIONS/CONTRACTADMIN/CONTRACTS/PAGES/DESIGNFILES.ASPX

IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH ALL PERTINENT EXISTING DRAWINGS AND DETAILS RELEVANT TO THIS PROJECT.

PROPOSED WORK

THE HAM-50-0376L BRIDGE OVER THE GREAT MIAMI RIVER SHALL BE REHABILITATED UNDER THIS CONTRACT. MAJOR ITEMS OF WORK CONTAINED IN THE STRUCTURE PLANS ARE SUMMARIZED BELOW. DETAILS OF ALL WORK ARE SHOWN IN THE PLANS.

1. PATCH THE DECK WEARING SURFACE AS SHOWN IN THE PLANS.
2. REPLACE THE APPROACH GUARDRIAL AND RETROFIT THE EXISTING GUARDRAIL ON THE BRIDGE AS SHOWN IN THE PLANS.
3. REMOVE DEBRIS BUILD-UP AGAINST SUBSTRUCTURE UNITS ON STRUCTURES HAM-50-0376L AND HAM-50-0376R IN THE GREAT MIAMI RIVER AND ADJACENT FLOODPLAIN.
4. SPOT PAINT STRUCTURAL STEEL AS DIRECTED BY THE ENGINEER AND AS SHOWN IN THE PLANS.
5. REPLACE EXISTING RIVETED CONNECTIONS WITH NEW HIGH-STRENGTH BOLTS, AS SHOWN IN THE PLANS.
6. PERFORM WELD REPAIRS AT STRINGER CROSSFRAME CONNECTIONS AS SHOWN IN THE PLANS.
7. REPLACE LACING BARS EXHIBITING ADVANCED SECTION LOSS, AS SHOWN IN THE PLANS.
8. REMOVE EXISTING STRINGER ERECTION ANGLES WELDED TO THE FLOORBEAM WEBS.

CONSTRUCTION PROCEDURES

THE CONTRACTOR SHALL SUBMIT ALL PROPOSED REMOVAL AND REPLACEMENT PROCEDURES TO THE ENGINEER FOR APPROVAL. THE PROCEDURES SHALL INCLUDE PROPOSED METHODS, ORDER OF OPERATION, AND EQUIPMENT. ALL SUBMITTALS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO AND BE SUBMITTED A MINIMUM OF FOUR (4) WEEKS PRIOR TO INTENDED DATE FOR COMMENCEMENT OF WORK. ALL COSTS FOR THIS WORK SHALL BE INCLUDED WITH THE APPROPRIATE BID ITEMS.

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

RIVET REMOVAL PROCEDURE

THE PROCEDURE FOR RIVET REMOVAL AND PREPARATION OF THE EXISTING HOLES FOR NEW BOLTS SHALL BE AS FOLLOWS:

RIVET REMOVAL - EXISTING RIVETS SHALL BE REMOVED BY FIRST SAW CUTTING OR CHISELING HEADS OFF AND THEN REMOVING THE REMAINDER OF THE RIVET BY CHISELING OR OTHER MECHANICAL METHOD APPROVED BY THE ENGINEER. AT NO TIME SHALL THERMAL CUTTING, AIR CARBON ARC, OR GOUGING BE ALLOWED. CARE SHALL BE TAKEN TO ENSURE THAT THE REMOVAL OF THE EXISTING FASTENERS CAUSES NO DAMAGE TO THE CONNECTED ELEMENTS THAT ARE TO REMAIN. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A METHOD OF REPAIR TO THE ENGINEER FOR ANY EXISTING ELEMENTS DAMAGED DURING RIVET REMOVAL. ALL REPAIRS TO DAMAGED STEEL SHALL BE MADE AT NO ADDITIONAL COST TO THE PROJECT.

REAMING - OPEN RIVET HOLES THAT WILL RECEIVE NEW HIGH STRENGTH BOLTS SHALL BE PROPERLY SIZED TO A DIAMETER THAT IS ONE-SIXTEENTH INCH (1/16") LARGER THAN THE NEW BOLTS. IN THE EVENT THAT THE EXISTING RIVET HOLE IS NOT ADEQUATE TO ACCEPT THE NEW SPECIFIED BOLT, THE HOLE SHALL BE DRILLED OR REAMED AS REQUIRED TO PROVIDE A PROPER SIZED HOLE.

ITEM 202 - REMOVAL MISC.: BRIDGE PIER DEBRIS REMOVAL

DESCRIPTION:
THIS ITEM SHALL INCLUDE THE REMOVAL OF ALL DEBRIS WITHIN THE LIMITS AS SHOWN IN THE PLANS. THE CONTRACTOR, AS DIRECTED BY THE ENGINEER, SHALL FURNISH ALL MATERIAL, EQUIPMENT, LABOR, AND INCIDENTAL ITEMS NECESSARY TO PROPERLY REMOVE AND DISPOSE OF ALL DEBRIS ACCUMULATED BELOW STRUCTURES HAM-50-0376L AND HAM-50-0376R.

PRIOR TO THE INITIATION OF ANY IN-STREAM WORK, ESTABLISH A GROUND MOUNTED MONUMENT (GROUND MOUNTED ROD OR POST) UPSTREAM OF THE BRIDGE TO VISUALLY MONITOR THE WATER ELEVATION IN THE WATERWAY. MAINTAIN THE MONUMENT THROUGHOUT THE PROJECT. PROVIDE A VISUAL MARK ON THE MONUMENT THAT IDENTIFIES THE ORDINARY HIGH WATER MARK (OHWM) AS IDENTIFIED IN THE PLANS. ENSURE THAT THE MONUMENT CAN BE READ FROM THE BANK OF THE WATERWAY. HAVE THESE ELEVATIONS SET AND CERTIFIED BY AN OHIO REGISTERED SURVEYOR.

DEBRIS REMOVAL WORK WILL NOT BE PERMITTED FROM MARCH 15TH THROUGH JUNE 30TH. DEBRIS TO BE REMOVED CAN EITHER BE HAULED OUT OF THE STREAM TO AN UPLAND DISPOSAL SITE THAT WILL NOT IMPACT ANOTHER STREAM, DITCH, NOR WETLAND; OR IT CAN BE CUT UP INTO PIECES MEASURING FIVE FEET OR LESS AND ALLOWED TO DRIFT DOWN STREAM. AT NO POINT SHALL THE STREAM BED BE DISTURBED, WHICH INCLUDES BUT NOT LIMITED TO: DEBRIS BEING DRAGGED ALONG THE STREAM BOTTOM OR WATERCRAFT RUNNING AGROUND. ALL EQUIPMENT MUST BE STAGED ON THE BRIDGE OR ON THE BANK ABOVE THE OHWM. NO CAUSEWAYS, HEAVY MACHINERY OR EQUIPMENT (EXCLUDING WATERCRAFT) WILL BE PERMITTED IN-STREAM BELOW THE OHWM.

WHEN THE WATERWAY ELEVATION IS ABOVE OHWM, THE CONTRACTOR IS REQUIRED TO COMPLETELY REMOVE ALL EQUIPMENT AND STORED MATERIALS FROM THE SITE TO AN ELEVATION AT OR ABOVE ELEVATION 487.40. AT NO TIME SHALL ANY CONSTRUCTION EQUIPMENT BE LEFT IDLE OR ALLOWED TO WORK IN A PARTIALLY SUBMERGED CONDITION. NO DEBRIS SHALL BE LEFT ALONG THE STREAM BANKS.

ITEMS TO BE REMOVED INCLUDE VARIOUS SIZES OF LOGS, BRUSH, AND ANY OTHER DEBRIS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR MAY NEED TO USE TECHNIQUES SUCH AS COME-ALONGS, DIVERS, CHAINSAWS, AND BOATS TO ACCOMPLISH THIS TASK. EXCEPT FOR WATERCRAFT, EQUIPMENT AND HEAVY MACHINERY WILL NOT BE PERMITTED IN A STREAM CHANNEL BELOW THE NORMAL POOL ELEVATION AT ALL LOCATIONS TO PERFORM THIS WORK.

THE CONTRACTOR SHALL FOLLOW ALL STATE AND FEDERAL ENVIRONMENTAL REGULATIONS. ANY DAMAGE TO THE IMMEDIATE ENVIRONMENT OF THE PROJECT BY EQUIPMENT NEEDED FOR CONSTRUCTION OR HAULING WILL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

CARE MUST BE TAKEN THROUGHOUT THE COURSE OF THIS PROJECT TO AVOID THE CREATION OF UNNECESSARY TURBIDITY WHICH MAY DEGRADE WATER QUALITY OR ADVERSELY AFFECT AQUATIC LIFE OUTSIDE THE PROJECT AREAS.

TO THE MAXIMUM EXTENT PRACTICAL, THE ACTIVITY MUST BE DESIGNED TO MAINTAIN PRECONSTRUCTION DOWNSTREAM FLOW CONDITIONS. FURTHERMORE, THE ACTIVITY MUST NOT PERMANENTLY RESTRICT OR IMPEDE THE PASSAGE OF NORMAL OR EXPECTED HIGH FLOWS.

THE ELEVATIONS SHOWN ON THE PLANS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY, INCLUDING STATED NORMAL ELEVATIONS, LOCATION OF GROUND LINE, STATED FLOOD LEVELS, OHWM, ETC. THE CONTRACTOR SHALL BASE HIS BID UPON ACTUAL SITE CONDITIONS.

MEASUREMENT AND PAYMENT:
THE QUANTITIES SHOWN IN THE PLANS REPRESENT AN ESTIMATE BASED ON THE MOST RECENT INSPECTION OF THE STRUCTURE AND SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE ESTIMATED CUBIC YARD QUANTITIES INCLUDE AIR VOIDS INHERENT IN STREAM BORNE/DEPOSITED PILES OF DEBRIS, AND REPRESENT THE VOLUME OF SPACE OCCUPIED BY THE PILES OF DEBRIS, NOT THE VOLUME OF THE DEBRIS MATERIAL TO BE REMOVED. THE VOLUME OF THE DEBRIS SHALL BE AGREED UPON PRIOR TO THE DEBRIS BEING REMOVED. IF THE CONTRACTOR AND THE ENGINEER DO NOT AGREE UPON THE VOLUME, THE CONTRACTOR SHALL SURVEY THE DEBRIS MASS AT HIS EXPENSE. THE SURVEY SHALL INCLUDE DEPTH OF WATER MEASUREMENTS, POOL ELEVATIONS AT THE TIME OF SURVEY RELATIVE TO THE TOP OF PIER, PHOTO(S) OF THE DEBRIS PILES AT THE TIME OF SURVEY, AND SURVEY SHOTS SUFFICIENT TO DEFINE THE LIMITS OF THE DEBRIS PILES.

THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
202	CY	REMOVAL MISC.: BRIDGE PIER DEBRIS REMOVAL

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION:
THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER.

REMOVAL OF STRINGER ERECTION ANGLES:
THIS WORK CONSISTS OF REMOVAL OF THE WELDED STRINGER ERECTION ANGLES, AS SHOWN IN THE PLANS. ALL WELDS ARE TO BE GROUND SMOOTH TO THE BASE METAL. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE OR DAMAGE THE EXISTING BASE METAL TO REMAIN. AIR CARBON ARC, GOUGING, AND THERMAL CUTTING SHALL NOT BE USED AT ANYTIME TO REMOVE EXISTING ANGLE OR WELD.

LOCATIONS WHERE THE ANGLE HAS ALREADY BEEN REMOVED OR IS MISSING, THE CONTRACTOR SHALL GRIND SMOOTH ANY REMAINING WELD MATERIAL.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED SFH | DRAWN SFH | CHECKED ZTW | REVIEWED PJA | DATE 10-05-16 | STRUCTURE FILE NUMBER 3102521 | REVISED

STRUCTURE GENERAL NOTES (1 OF 3)
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

91939GN001.dgn 10/7/2016 11:43:24 AM sfhammerschmidt

MEASUREMENT AND PAYMENT:
THE UNIT "EACH" REFERS TO A SINGLE STRINGER ERECTION ANGLE LOCATION (WITH OR WITHOUT AN ANGLE). THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
202	EACH	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

ITEM 202 - BRIDGE RAILING REMOVED, AS PER PLAN

DESCRIPTION:
THIS WORK CONSISTS OF REMOVAL OF THE EXISTING W-BEAM RAIL AND W-BEAM RAIL SPLASH GUARD WITHIN THE LIMITS OF THE BRIDGE. THE PROVISIONS OF ITEM 202 SHALL APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING W-BEAM REMOVAL TO PROTECT PORTIONS OF THE BRIDGE RAILING TO BE SALVAGED AND INCORPORATED INTO THE NEW STRUCTURE.

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING W-BEAM RAIL AND INSTALL THE NEW W-BEAM RAIL IN A CONTINUOUS OPERATION. NO W-BEAM RAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON SITE AND READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

THE CONTRACTOR SHALL TAKE PRECAUTIONS NOT TO DAMAGE THE EXISTING GALVANIZED COATING ON THE PORTIONS TO REMAIN. THE CONTRACTOR SHALL REPAIR ANY DAMAGED TO THE GALVANIZED COATING PER CMS 711.02 AND TO THE ENGINEER'S SATISFACTION. THIS SHALL BE CONSIDERED INCIDENTAL TO THIS PAYMENT ITEM.

THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE THROUGH LANE IN EACH DIRECTION OF TRAFFIC AT THE WORK OPERATION AREA AT ALL TIMES. FOR ADDITIONAL INFORMATION REGARDING THE MAINTENANCE OF TRAFFIC, REFER TO ITEM 614 ON SHEET 3 / 199.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
202	FT	BRIDGE RAILING REMOVED, AS PER PLAN

ITEM 513 - STRUCTURAL STEEL, MISC.: GUSSET PLATE RIVET REPLACEMENT

DESCRIPTION:
THIS WORK INCLUDES FURNISHING ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE RIVETS WITH HIGH STRENGTH BOLTS AS SHOWN IN THE PLANS. COMPLETED AND IN PLACE WORK SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING ADDITIONAL INFORMATION.

THE CONTRACTOR SHALL REMOVE NO MORE THAN ONE RIVET AT ANY TIME FOLLOWING THE RIVET REMOVAL PROCEDURE.

MATERIAL:
NEW BOLTS SHALL BE GALVANIZED (PER CMS 711.02) ASTM A325 AND MATCH EXISTING RIVET SIZES. NEW MATERIAL SHALL BE CERTIFIED PER CMS 501.06.

SEQUENCE OF CONSTRUCTION:
LIMIT REMOVAL AND CONSTRUCTION OPERATIONS TO ONE GUSSET PLATE ON EITHER THE NORTH OR SOUTH TRUSS AT ANY GIVEN TIME. THIS WORK MAY OCCUR SIMULTANEOUSLY WITH STEEL REPAIRS IN OTHER SPANS.

PERFORM RIVET REPLACEMENT WITH BOLTS AS FOLLOWS:
A. ABRASIVE BLAST AREA ENCOMPASSING GUSSET PLATE CONNECTION IN ACCORDANCE WITH CMS 514.13.C.
B. REMOVE A SINGLE RIVET PER RIVET REMOVAL PROCEDURE.
C. IN THE OPEN RIVET HOLE, INSTALL A NEW BOLT WITH SUFFICIENT GRIP LENGTH TO ACCOMMODATE ALL BEARING SURFACES.
D. PROPERLY TENSION NEW BOLT.
E. REPEAT "B" THROUGH "D" UNTIL ALL SPECIFIED RIVETS ARE REPLACED.
F. THE ENGINEER SHALL INSPECT NEW BOLT TENSION WITH A CALIBRATED TORQUE WRENCH PRIOR TO FIELD PAINTING.
G. FIELD PAINT EXPOSED STEEL PER CMS 514.

MEASUREMENT AND PAYMENT:
PAYMENT FOR SURFACE PREPARATION AND PAINTING SHALL BE INCLUDED FOR PAYMENT WITH ITEM 514.

PAYMENT SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIAL, TOOLS, EQUIPMENT, LABOR, AND ACCESS NECESSARY TO COMPLETE THE REPAIRS. PAYMENT FOR REAMING, GRINDING, AND BOLTING AS PART OF THE REPAIR SHALL BE CONSIDERED INCIDENTAL TO THESE ITEMS. THE UNIT "EACH" REFERS TO A SINGLE GUSSET PLATE AT A PANEL POINT LOCATION.

ANY LABOR AND/OR MATERIALS AND EQUIPMENT INCIDENTAL TO STEEL WORK NOT SPECIFICALLY PAID FOR UNDER ANY OTHER ITEM SHALL BE INCLUDED AND PAID FOR UNDER THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: GUSSET PLATE RIVET REPLACEMENT

ITEM 513 - STRUCTURAL STEEL, MISC.: END POST LACING BAR REPAIRS TYPE 1

ITEM 513 - STRUCTURAL STEEL, MISC.: END POST LACING BAR REPAIRS TYPE 2

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE LACING BARS AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION. EXISTING RIVETS ARE TO BE REMOVED PER THE RIVET REMOVAL PROCEDURE. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS TO FIELD VERIFY ALL MEMBER DIMENSIONS, RIVET/BOLT LAYOUTS, AND LACING BARS TO BE RETROFITTED PRIOR TO PERFORMING THE WORK.

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY CMS 501.06.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIAL, TOOLS, EQUIPMENT, LABOR, AND ACCESS NECESSARY TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THE REPAIR SHALL BE CONSIDERED INCIDENTAL TO THESE ITEMS.

ANY LABOR AND/OR MATERIALS AND EQUIPMENT INCIDENTAL TO STEEL WORK NOT SPECIFICALLY PAID FOR UNDER ANY OTHER ITEM SHALL BE INCLUDED AND PAID FOR UNDER THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: END POST LACING BAR REPAIRS TYPE 1
513	EACH	STRUCTURAL STEEL, MISC.: END POST LACING BAR REPAIRS TYPE 2

ITEM 513 - STRUCTURAL STEEL, MISC.: STRINGER CROSSFRAME REPAIRS

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE THE EXISTING CROSSFRAME WELD AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION.

THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA TO THE SATISFACTION OF THE ENGINEER AND AT NO COST TO THE DEPARTMENT. THE CONTRACTOR SHALL FIELD VERIFY ALL MEMBER DIMENSIONS, AND CRACK LOCATIONS PRIOR TO PERFORMING THE WORK.

FAYING SURFACES AND SURFACES TO BE WELDED SHALL BE PREPARED IN ACCORDANCE WITH CMS 514.13.C IMMEDIATELY WITHIN 24 HOURS BEFORE INSTALLATION OF NEW MATERIAL OR WELDING.

THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF THE CROSSFRAME DURING ALL GRINDING AND WELDING OPERATIONS AND AT ALL TIMES WHEN THE EXISTING CROSSFRAME IS NOT WELDED TO THE STRINGER WEB.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIALS, TOOLS, EQUIPMENT, LABOR, AND ACCESS NECESSARY TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, AND TEMPORARY SUPPORT OF EXISTING CROSSFRAME MEMBER AS PART OF THE REPAIR SHALL BE CONSIDERED INCIDENTAL TO THESE ITEMS.

ANY LABOR AND/OR MATERIALS AND EQUIPMENT INCIDENTAL TO STEEL WORK NOT SPECIFICALLY PAID FOR UNDER ANY OTHER ITEM SHALL BE INCLUDED AND PAID FOR UNDER THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: STRINGER CROSSFRAME REPAIRS

ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN

ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN

THIS ITEM INCLUDES THE SURFACE PREPARATION AND COATING OF THE EXISTING STEEL MEMBERS TO REMAIN TO THE LIMITS DESCRIBED OR SHOWN IN THE PLANS. THIS WORK SHALL BEGIN AFTER THE REMOVALS UNDER ITEM 202 AND 513 ARE FINISHED AT A REPAIR LOCATION, AND BEFORE THE PLACEMENT OF THE NEW MEMBERS.

THE COLOR OF THE FINISH COAT FOR ALL STRUCTURAL STEEL IS TO MATCH THE EXISTING AND THE CONTRACTOR SHALL PROVIDE SAMPLES TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION.

IN ADDITION TO THE AREAS SHOWN ON THE PLANS, A QUANTITY OF 500 SF HAS BEEN ADDED TO THE ESTIMATED QUANTITIES FOR PURPOSES OF ESTABLISHING A UNIT BID PRICE. THIS QUANTITY SHALL BE USED TO PAINT AREAS SUCH AS THE TRUSS CHORD MEMBERS, FLOORBEAM ENDS, LATERAL BRACING MEMBERS, ETC. AT THE DISCRETION OF THE ENGINEER.

THE REQUIREMENTS OF CMS 514 SHALL APPLY WITH THE FOLLOWING ADDITIONS/MODIFICATIONS:

514.13.C - ABRASIVE BLASTING (QCP #3):
PORTIONS OF THE INSIDE OF THE TRUSS MEMBERS ARE IDENTIFIED AS BEING POSSIBLY INACCESSIBLE. THE CONTRACTOR SHALL MAKE A REASONABLE EFFORT TO CLEAN STEEL SURFACES IN THESE AREAS, AND IN ALL OTHER AREAS DETERMINED BY THE ENGINEER AS BEING INACCESSIBLE, ACCORDING TO SSPC-SP 6 (COMMERCIAL BLAST CLEANING) AND AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES IN SSPC-VIS 1.

ALL OTHER ACCESSIBLE STEEL SURFACES SHALL BE BLASTED TO SSPC-SP 10 AS PER CMS 514.13.C.

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DESIGN AGENCY
TranSystems
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CLEVELAND, OHIO 44113

DESIGNED SFH | DRAWN SFH | CHECKED ZTW | REVIEWED PJA | DATE 10-05-16 | REVISED | STRUCTURE FILE NUMBER 3102521

STRUCTURE GENERAL NOTES (2 OF 3)
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

IN ADDITION, THIS WORK WILL INCLUDE THE REPAIR OF PACK-RUSTED AREAS OF THE EXISTING STEEL AS DIRECTED BY THE ENGINEER. PACK RUSTED AREAS ARE DEFINED AS THOSE LOCATIONS WHERE IMPACTED RUST HAS PRODUCED A GAP BETWEEN ADJACENT STEEL PLATES MORE THAN 1/4". PACK RUST SHALL BE REMOVED FROM THE JOINTS RUSTED APART MORE THAN 1/4" BY CHIPPING, HAMMERING, PUNCHING, CHISELING OR BY OTHER SUITABLE MEANS, TO A DEPTH OF AT LEAST EQUAL TO THE WIDTH OF THE GAP. ALL JOINTS SHALL THEN BE VACUUMED WITH A COMMERCIAL VACUUM CLEANER HAVING A NOZZLE OPENING OF 1" TO 1½" OR AIR BLOWN SUCH THAT ALL DUST AND DEBRIS ARE REMOVED TO THE SATISFACTION OF THE ENGINEER.

514.13.D - CONTAINMENT/WASTE DISPOSAL (QCP#4):
THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONTAINMENT SYSTEMS SURROUNDING THE WORK FOR THE PURPOSE OF CONTROLLING EMISSIONS OF DUST AND DEBRIS IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 514. WORKING PLATFORMS AND CONTAINMENT MATERIALS THAT ARE USED SHALL BE FIRM AND STABLE, AND PLATFORMS SHALL BE DESIGNED TO SUPPORT THE WORKERS, INSPECTORS, SPENT SURFACE PREPARATION MEDIA (E.G. ABRASIVES) AND EQUIPMENT DURING ALL PHASES OF SURFACE PREPARATION AND PAINTING. PLATFORMS, CABLES AND OTHER SUPPORTING STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND OSHA. INSPECTION ACCESS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 514.10.

IF THE CONTAINMENT IS PROPOSED TO BE ATTACHED TO THE STRUCTURE, THE CONTAINMENT SHALL BE ATTACHED BY BOLTING, CLAMPING OR SIMILAR MEANS. WELDING ONTO OR DRILLING INTO THE STRUCTURE IS PROHIBITED. THE CONTRACTOR SHALL PROVIDE DRAWINGS SHOWING THE CONTAINMENT SYSTEM AND INDICATING THE METHOD(S) OF SUPPORTING THE WORKING PLATFORMS AND CONTAINMENT MATERIALS.

IN THE EVENT OF SUSTAINED WINDS OF 40 MPH OR GREATER, THE CONTAINMENT SHALL BE DROPPED AND ALL MATERIALS AND EQUIPMENT SHALL BE SECURED TO AVOID OVERSTRESSING AND/OR DAMAGING THE BRIDGE STRUCTURE.

THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DRAWINGS SIGNED, SEALED, AND DATED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER IN THE EMPLOY OF THE CONTRACTOR, ASSURING THE STRUCTURAL INTEGRITY OF THE BRIDGE UNDER LIVE AND DEAD LOADS IMPOSED, INCLUDING THE DESIGN WIND LOADING. DESIGN SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE MOST CURRENT VERSION OF AASHTO'S "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" AND ODOT'S BRIDGE DESIGN MANUAL. THE CONTAINMENT SUBMITTAL SHALL INCLUDE CALCULATIONS THAT ASSURE STRUCTURAL INTEGRITY OF THE BRIDGE WHEN IT SUPPORTS THE CONTAINMENT.

THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

514.17 COATING APPLICATION:
IN ADDITION TO THE REQUIREMENTS OF CMS 514, A STRIPE COATING OF THE PRIME COAT SHALL BE APPLIED TO ALL WELDS, CREVICES, RIVET HEADS, NUTS, BOLT HEADS, BOLT THREADS AND OTHER SURFACE IRREGULARITIES. ALSO, THE AREAS SPECIFIED UNDER THIS CONTRACT FOR SURFACE PREPARATION PER SSPC-SP 2 (HAND TOOL CLEANING), SSPC-SP 3 (POWER TOOL CLEANING) OR SSPC-SP 11 (POWER TOOL CLEANING TO BARE METAL) SHALL HAVE THE EDGES OF THE PREPARED AREAS STRIPE COATED WITH THE PRIME COAT. THE STRIPE COATING SHALL BE APPLIED TO THE SPECIFIED SURFACES BEFORE THE APPLICATION OF THE FULL PRIME COAT OVER THE SAME AREAS AND ADJACENT PREPARED SURFACES. STRIPING SHALL EXTEND A MINIMUM OF 1" FROM THE EDGES REQUIRING STRIPE COATING. THE STRIPE COATING SHALL SET TO TOUCH BEFORE APPLICATION OF THE FULL PRIME COAT OVER THE SAME AREA; HOWEVER, THE STRIPE COATING SHALL NOT BE PERMITTED TO DRY FOR A PERIOD LONG ENOUGH TO ALLOW RUSTING OF THE ADJACENT UNPRIMED STEEL SURFACES BEFORE THE FULL PRIME COAT CAN BE APPLIED TO THE AREA.

THE CONTRACTOR SHALL THOROUGHLY COAT ALL SURFACES RECEIVING A STRIPE COATING, PAYING PARTICULAR ATTENTION TO HARD-TO-REACH AREAS AND IRREGULAR SURFACES, SUCH AS LACING BARS, BOLT HEADS, LAP SPLICES, GUSSET PLATES, PINS, ETC. WHEN STRIPE COATING MULTI-PLANED SURFACE CONFIGURATIONS, SUCH AS ON NUTS AND BOLT THREADS, THE CONTRACTOR SHALL APPLY THE STRIPE COATING FROM MULTIPLE DIRECTIONS TO ENSURE COMPLETE COVERAGE OF ALL SURFACES, CREVICES, CORNERS AND SHARP EDGES.

514.19 CAULKING (QCP#9):
AFTER THE INTERMEDIATE COAT HAS BEEN APPLIED, THE CONTRACTOR SHALL CAULK ALL GAPS OR CREVICES GREATER THAN 1/8". THE INTERMEDIATE COAT SHALL BE FREE OF CONTAMINANTS WHEN THE CAULKING IS APPLIED.

THE CAULKING SHALL BE APPLIED EVENLY TO THE JOINTS AND GAPS. VOIDS SHALL BE COMPLETELY FILLED WITH CAULKING WHICH SHALL BE APPLIED BY TROWEL OR CAULKING GUN AND SHALL BE SPREAD SMOOTHLY USING HEAVY PRESSURE TO DISPLACE AIR BUBBLES. EXCESS MATERIAL SHALL BE REMOVED IMMEDIATELY. ALL PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE MANUFACTURER'S WRITTEN SPECIFICATIONS AND TO THE SATISFACTION OF THE ENGINEER.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEMS (PAY ITEMS):

ITEM	UNIT	DESCRIPTION
514	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN
514	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN
514	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN
514	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN

ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN

DESCRIPTION:
THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RETROFIT THE EXISTING BRIDGE DEEP BEAM GUARDRAIL, REPLACEMENT OF THE W-BEAM RAIL, AND NEW SPLASH GUARD.

NO W-BEAM RAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON SITE AND READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

ANY DAMAGE TO THE EXISTING GALVANIZED COATING ON THE PORTIONS OF THE RAILING TO REMAIN SHALL BE REPAIRED ACCORDING TO ASTM A780, EXCEPT THE DEPARTMENT WILL NOT ALLOW AEROSOL SPRAY APPLICATION OF PAINTS CONTAINING ZINC DUST. THIS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AS THE ACTUAL LINEAR FEET OF BRIDGE RAIL RETROFITTED. THE QUANTITY MEASURED SHALL INCLUDE ALL ACCESS, LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR UNDER THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
517	FT	DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN

ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE

DESCRIPTION:
THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR THE CONCRETE DECK WEARING SURFACE, INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, SURFACE PREPARATION, BONDING COAT AND THE MIXING, PLACING, FINISHING, CURING, COMPRESSIVE STRENGTH TESTING AND SEALING OF ALL PATCHES AS SHOWN IN THE PLANS AND DIRECTED BY THE ENGINEER.

FOR INFORMATION REGARDING MATERIAL REQUIREMENTS AND THE SEQUENCE OF CONSTRUCTION FOR THIS ITEM, REFER TO PROPOSAL NOTE 511.

THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE THROUGH LANE IN EACH DIRECTION OF TRAFFIC AT THE WORK OPERATION AREA AT ALL TIMES. FOR ADDITIONAL INFORMATION REGARDING THE MAINTENANCE OF TRAFFIC, REFER TO ITEM 614 ON SHEET 3 / 199.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AS THE ACTUAL AREA OF BRIDGE DECK REPAIRED. THE QUANTITY MEASURED SHALL INCLUDE ALL ACCESS, LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR UNDER THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	SY	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE

ABBREVIATIONS:

APP.	=	APPROACH
ABUT.	=	ABUTMENT
BRG.	=	BEARING
℄	=	CENTERLINE
CLR.	=	CLEAR
CY	=	CUBIC YARD
CVN	=	CHARPY V-NOTCH
DIA.	=	DIAMETER
E.F.	=	EAST FACE
EL.	=	ELEVATION
EX.	=	EXISTING
FB	=	FLOORBEAM
FT.	=	FOOT/FEET
FWD.	=	FORWARD
LBS.	=	POUNDS
MAX.	=	MAXIMUM
MIN.	=	MINIMUM
N	=	NORTH
N.F.	=	NORTH FACE
NO.	=	NUMBER
N/A	=	NOT APPLICABLE
PC	=	POINT OF CURVATURE
P.E.J.F.	=	PREFORMED EXPANSION JOINT FILLER
ℙ	=	PLATE
PSI	=	POUNDS PER SQUARE INCH
PT.	=	POINT
QTY.	=	QUANTITY
R	=	RADIUS
R.R.	=	RAILROAD
REINF.	=	REINFORCEMENT
S	=	SOUTH
S.F.	=	SOUTH FACE
SF	=	SQUARE FEET
SHLDR.	=	SHOULDER
SPA.	=	SPACE(S)
SQ FT	=	SQUARE FEET
ST.	=	STREET
STA.	=	STATION
STD.	=	STANDARD
STR.	=	STRINGER
SY	=	SQUARE YARD
TYP.	=	TYPICAL
W.F.	=	WEST FACE
W.P.	=	WORKING POINT
CMS	=	ODOT 2016 CONSTRUCTION AND MATERIALS SPECIFICATIONS

INDEX OF SHEETS:

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DESIGN AGENCY
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DESIGNED SFH | DRAWN SFH | REVIEWED PJA | DATE 10-05-16
CHECKED ZTW | REVISED | STRUCTURE FILE NUMBER 3102521

STRUCTURE GENERAL NOTES (3 OF 3)
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

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MADE BY: SFH DATE: 07/07/16
CHECKED BY: RJM DATE: 07/14/16

ESTIMATED QUANTITIES

STRUCTURE FILE NUMBER: 3102521

ITEM	EXTENSION	TOTAL	PLAN SPLITS 01/NHS/BR	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	REFERENCE SHEET NUMBER
202	11501	360	360	EACH	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				360	3 & 4 / 14
202	38501	1818	1818	FT	BRIDGE RAILING REMOVED, AS PER PLAN			1818		4 / 14
202	98500	1094	1094	CY	REMOVAL MISC.: BRIDGE PIER DEBRIS REMOVAL				1094	3 / 14
513	95030	16	16	EACH	STRUCTURAL STEEL, MISC.: GUSSET PLATE RIVET REPLACEMENT			16		4 / 14
513	95030	1	1	EACH	STRUCTURAL STEEL, MISC.: END POST LACING BAR REPAIRS TYPE 1			1		4 / 14
513	95030	4	4	EACH	STRUCTURAL STEEL, MISC.: END POST LACING BAR REPAIRS TYPE 2			4		4 / 14
513	95030	3	3	EACH	STRUCTURAL STEEL, MISC.: STRINGER CROSSFRAME REPAIRS			3		4 / 14
514	00051	1021	1021	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN			1021		4 & 5 / 14
514	00057	1021	1021	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN			1021		4 & 5 / 14
514	00061	1038	1038	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN			1038		4 & 5 / 14
514	00067	1038	1038	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN			1038		4 & 5 / 14
514	00504	20	20	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			20		
514	10000	1	1	EACH	FINAL INSPECTION REPAIR			1		
516	10000	64	64	FT	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL			64		
517	75601	1818	1818	FT	DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN			1818		5 / 14
SPECIAL	51910000	60	60	SY	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE			60		5 / 14

NOTES:

1. FOR STRUCTURE GENERAL NOTES, SEE SHEETS 3 / 14 THRU 5 / 14 .

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CLEVELAND, OHIO 44113

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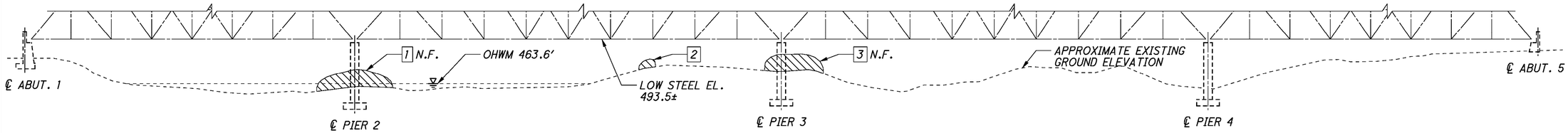
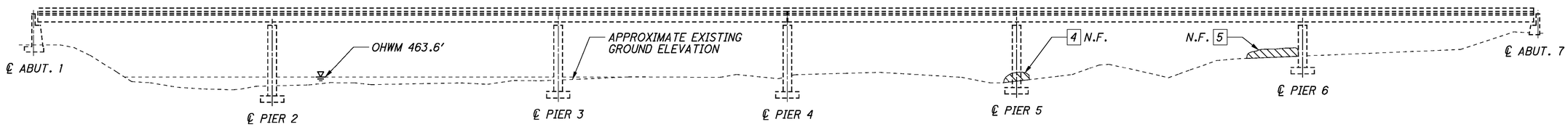
ESTIMATED QUANTITIES
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

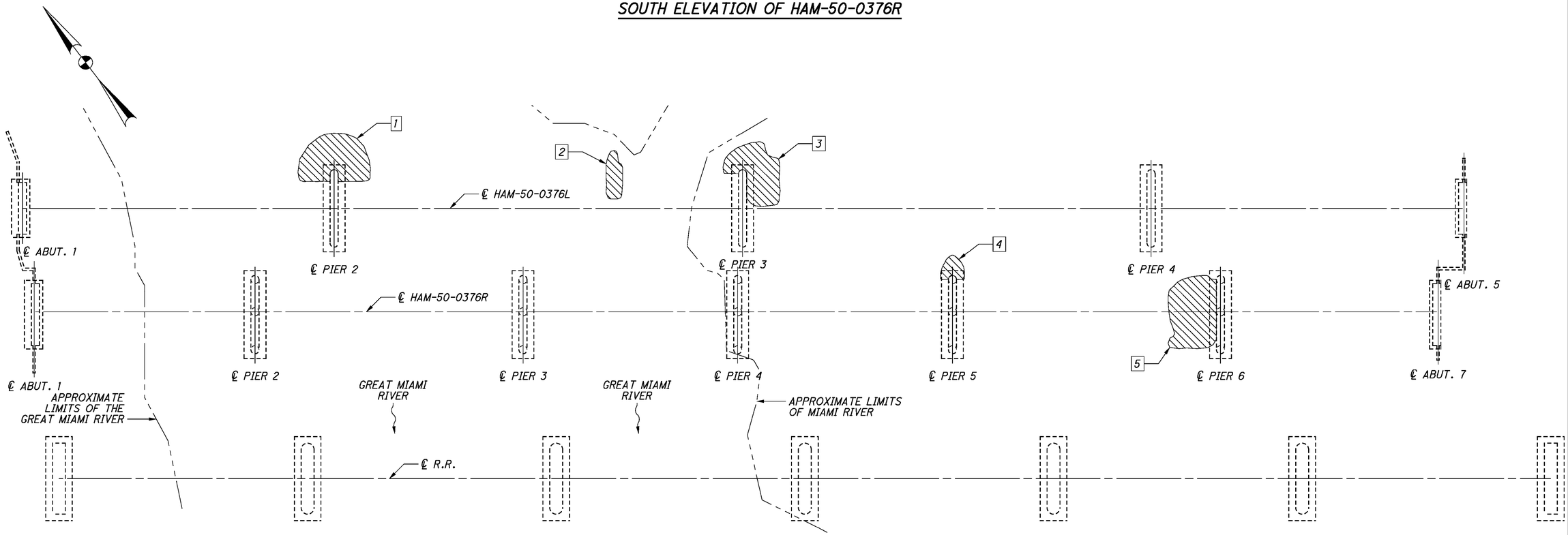
HAM-50-0376L
PID No. 91939



PARTIAL SOUTH ELEVATION OF HAM-50-0376L



SOUTH ELEVATION OF HAM-50-0376R



DEBRIS REMOVAL	
CALLOUT	DEBRIS VOLUME
1	400 CY
2	45 CY
3	415 CY
4	34 CY
5	200 CY
TOTAL	1094 CY

PLAN VIEW OF HAM-50-0376L&R AND EXISTING RAILROAD BRIDGE

(SUBSTRUCTURE UNITS SHOWN)

LEGEND:

- ▨ - DEBRIS TO BE REMOVED
- [X] - DEBRIS CALLOUT

NOTES:

1. ALL DEBRIS SHALL BE REMOVED WITHIN THE LIMITS OF THE EXISING RIGHT-OF-WAY AND AS DIRECTED BY THE ENGINEER.
2. ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO REMOVE THE DEBRIS SHALL BE PAID FOR UNDER ITEM 202 - REMOVAL MISC.: BRIDGE PIER DEBRIS REMOVAL.
3. FOR GENERAL NOTES SEE SHEET [3 / 14].

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		3102521	

BRIDGE PIER DEBRIS REMOVAL
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

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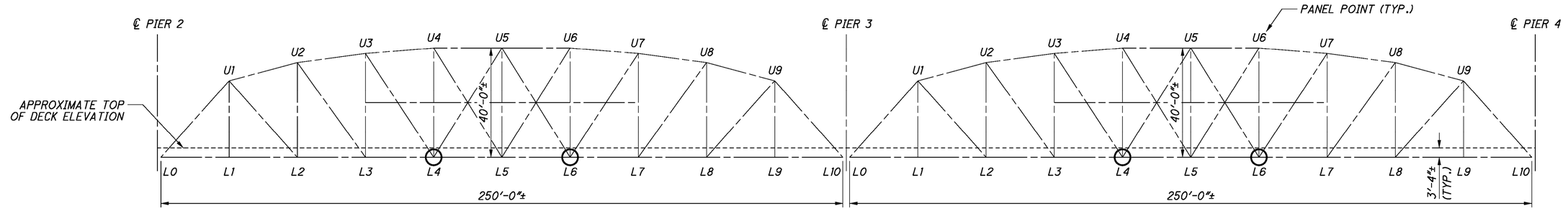
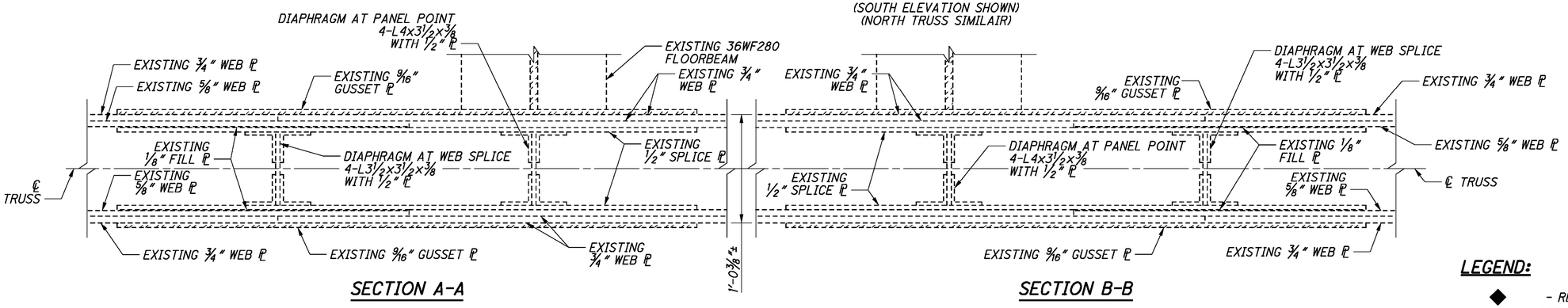


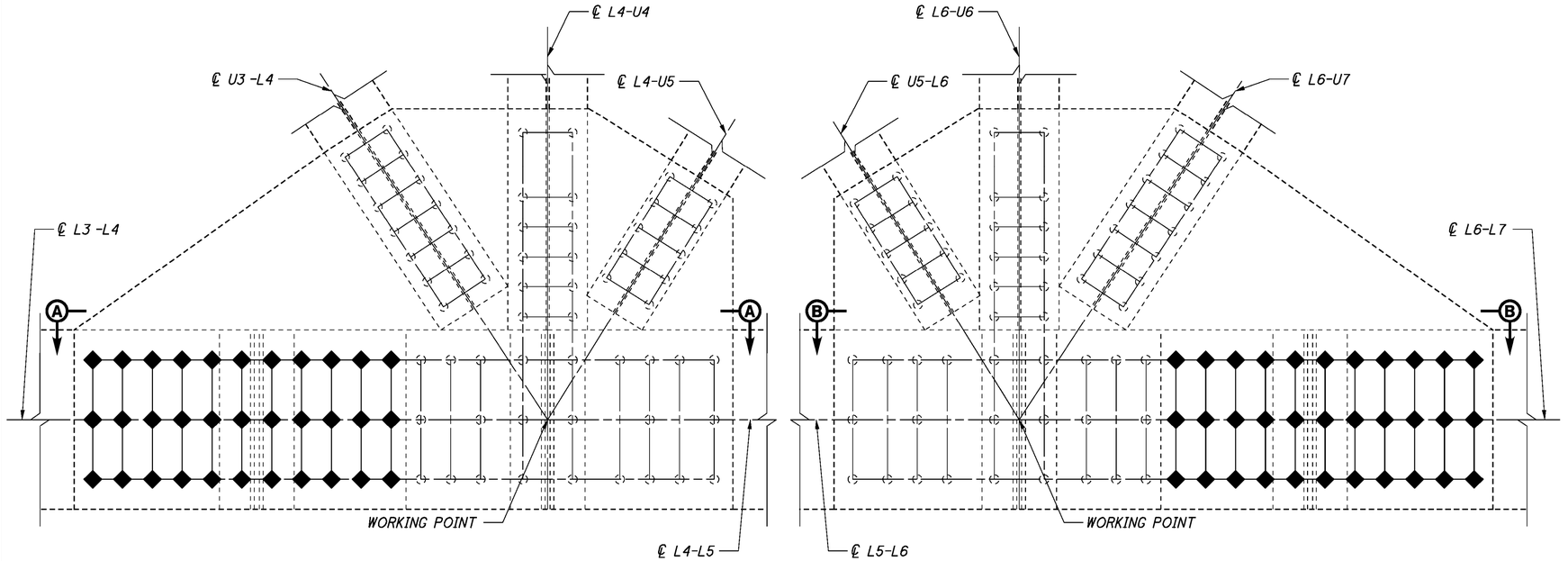
SPAN 2 **SPAN 3**

SOUTH TRUSS - PARTIAL ELEVATION

(SOUTH ELEVATION SHOWN)
(NORTH TRUSS SIMILAIR)



SECTION A-A **SECTION B-B**



SPAN 2 AND 3 - PANEL POINT L4
SOUTH TRUSS, SOUTH GUSSET PLATE - SHOWN
SOUTH TRUSS, NORTH GUSSET PLATE - OPPOSITE HAND
NORTH TRUSS, SOUTH GUSSET PLATE - SIMILAR
NORTH TRUSS, NORTH GUSSET PLATE - OPPOSITE HAND

SPAN 2 AND 3 - PANEL POINT L6
SOUTH TRUSS, SOUTH GUSSET PLATE - SHOWN
SOUTH TRUSS, NORTH GUSSET PLATE - OPPOSITE HAND
NORTH TRUSS, SOUTH GUSSET PLATE - SIMILAR
NORTH TRUSS, NORTH GUSSET PLATE - OPPOSITE HAND

LEGEND:

◆ - REMOVE EXISTING RIVET AND REPLACE WITH NEW A325 BOLT OF SAME SIZE

⊣⊢ - EXISTING FASTENER TO REMAIN IN PLACE UNLESS NOTED OTHERWISE

○ - LOCATION OF REPAIR

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND NUMBER OF FASTENERS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO PERFORMING WORK.
2. RIVETS SHALL BE REMOVED PER RIVET REMOVAL PROCEDURE ON SHEET 4 / 14. AT NO TIME SHALL FLAME CUTTING BE PERMITTED TO REMOVE RIVETS.
3. MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
4. THE REMOVAL OF THE RIVETS AND INSTALLATION OF THE NEW BOLTS SHALL BE INCLUDED FOR PAYMENT IN ITEM 513 - STRUCTURAL STEEL MISC.: GUSSET PLATE RIVET REPLACEMENT
5. RIVET REPLACEMENT SHALL BE COMPLETED BY REMOVING A SINGLE RIVET AND REPLACING WITH A NEW BOLT. THE NEW BOLT SHALL BE PROPERLY TENSIONED PRIOR TO REMOVING ADDITIONAL RIVETS. THE CONTRACTOR SHALL NOT HAVE MORE THAN ONE RIVET REMOVED ON ANY ONE TRUSS SPAN AT A GIVEN TIME.
6. THE PAINTING FOR WORK ON THIS SHEET ENCOMPASSES THE FAYING SURFACES OF THE NEW BOLTS AND 3" AROUND EACH BOLT. ALL PAINTING SHALL BE PAID FOR UNDER ITEM 514.
7. THE TERM OPPOSITE HAND IS USED TO SIGNIFY THAT THE NORTH GUSSET PLATE REQUIRES A SIMILAR DETAIL BUT THAT IS A MIRRORED IMAGE OF THE SOUTH ELEVATION.
8. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 4 / 14.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		3102521	

GUSSET PLATE RIVET REPLACEMENT
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

8 / 14

37
199

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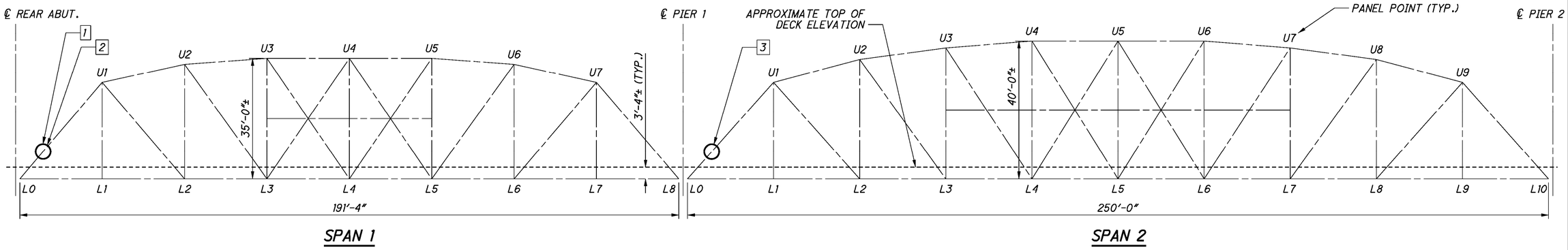
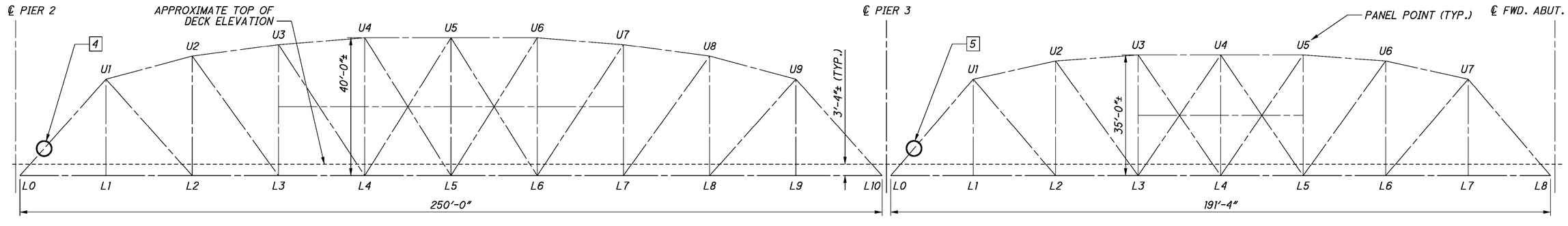


SPAN 1

SPAN 2

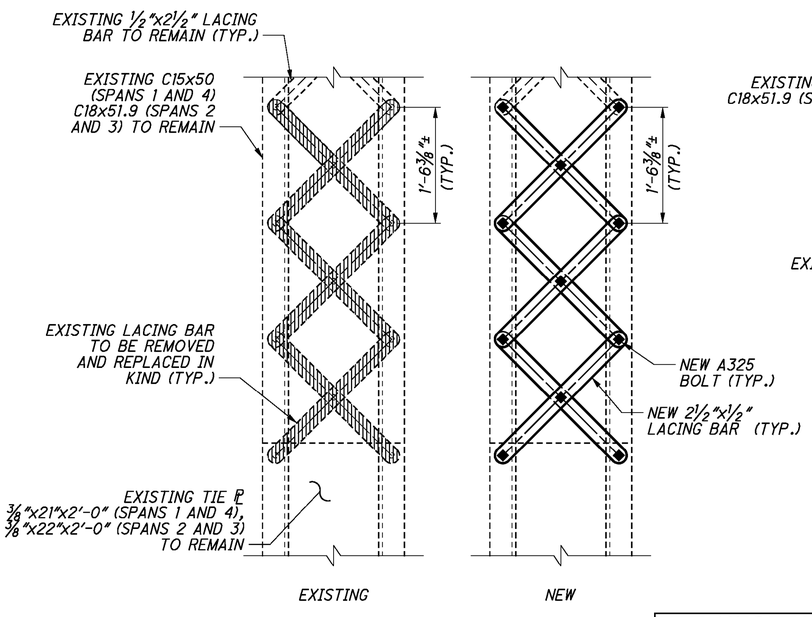


SPAN 3

SPAN 4

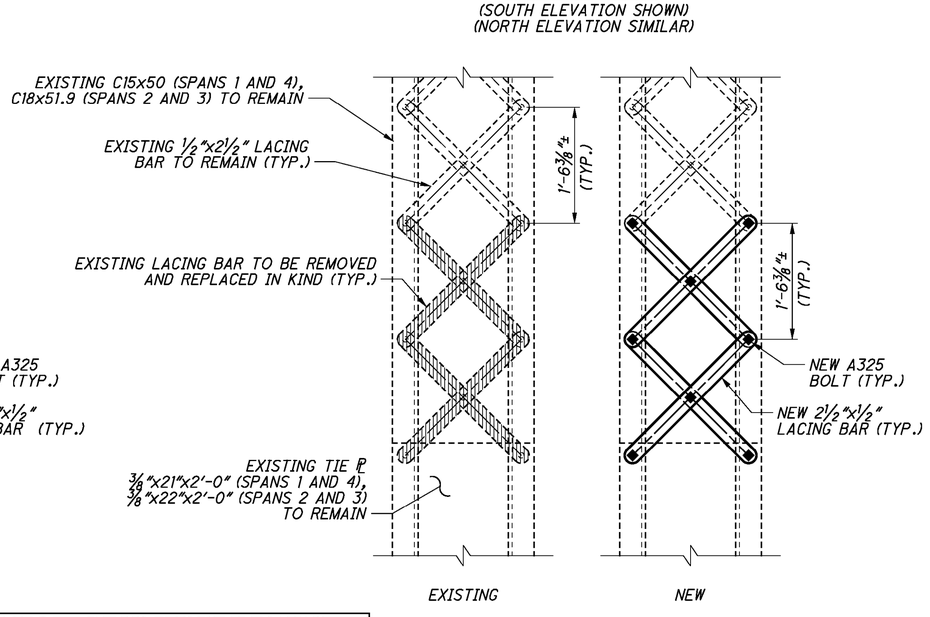
SOUTH TRUSS

(SOUTH ELEVATION SHOWN)
(NORTH ELEVATION SIMILAR)



TYPE 1 LACING BAR REPAIR

(UNDERSIDE OF END POST SHOWN)



TYPE 2 LACING BAR REPAIR

(UNDERSIDE OF END POST SHOWN)

ITEM 513 - END POST LACING BAR REPAIRS				
CALLOUT	SPAN	TRUSS	MEMBER	REPAIR TYPE
1	1	NORTH	L0-U1	TYPE 2
2	1	SOUTH	L0-U1	TYPE 2
3	2	NORTH	L0-U1	TYPE 2
4	3	NORTH	L0-U1	TYPE 1
5	4	NORTH	L0-U1	TYPE 2

LEGEND:

- ▨ - LIMITS OF LACING BAR REMOVAL
- ◆ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞" ϕ A325 BOLT
- ⊕ - EXISTING FASTENER TO REMAIN IN PLACE UNLESS NOTED OTHERWISE
- ○ - STEEL REPAIR LOCATION
- [X] - STEEL REPAIR CALLOUT

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO PERFORMING WORK.
2. MATERIALS SHOWN ARE EXISTING AND TO REMAIN UNLESS OTHERWISE NOTED.
3. THE REMOVAL OF EXISTING LACING BARS, NEW LACING BAR MATERIALS, AND ALL LABOR ASSOCIATED WITH THE LACING BAR REPAIRS SHALL BE INCLUDED FOR PAYMENT IN ITEM 513 - STRUCTURAL STEEL MISC.: END POST LACING BAR REPAIRS. FOR GENERAL REQUIREMENTS AND INSTALLATION INSTRUCTIONS, SEE SHEET [4 / 14].
4. THE PAINT ZONE FOR WORK ON THIS SHEET ENCOMPASSES THE FAYING SURFACE OF THE EXISTING FLANGES, NEW LACING BARS AND FASTENERS, AND ANY SURROUNDING AREAS DAMAGED BY REMOVAL OR INSTALLATION OF NEW LACING BARS. ALL PAINTING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 514.

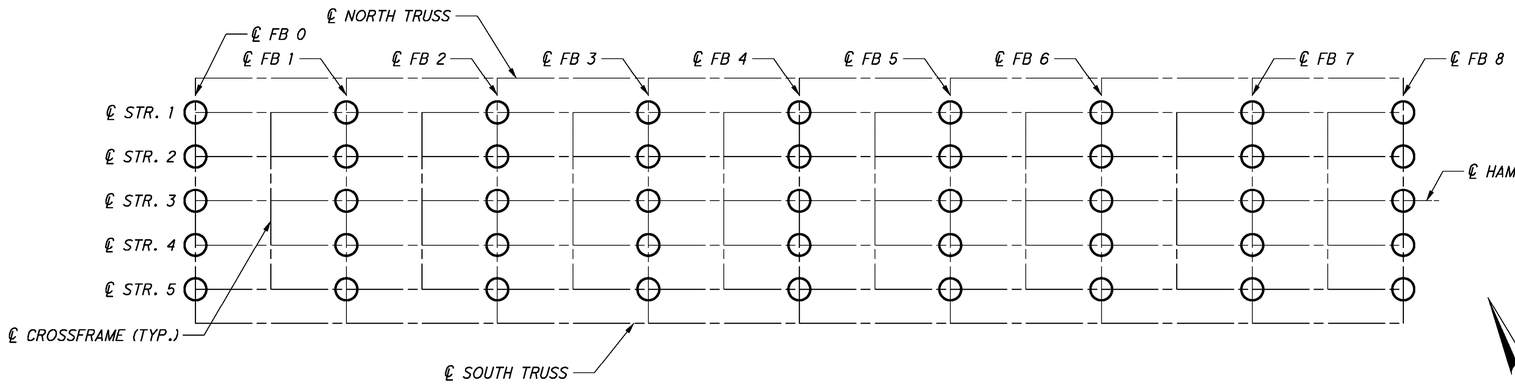
DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED KPH | DRAWN KPH | CHECKED SFH | REVIEWED PJA | DATE 10-05-16
REVISED | STRUCTURE FILE NUMBER 3102521

MISCELLANEOUS STEEL REPAIRS - END POST LACING BAR REPAIRS

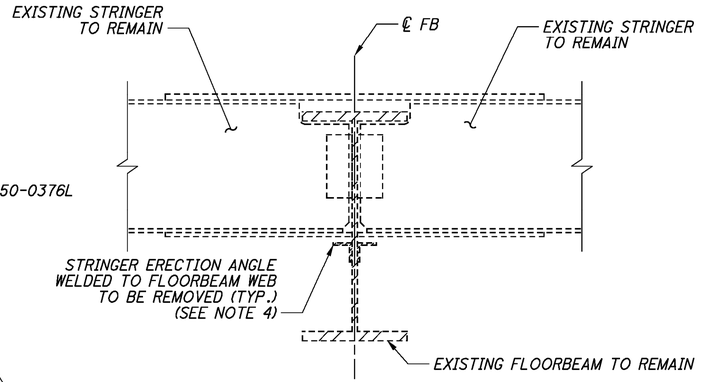
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

91939SD005.dgn 10/7/2016 11:43:28 AM sfhammerschmidt

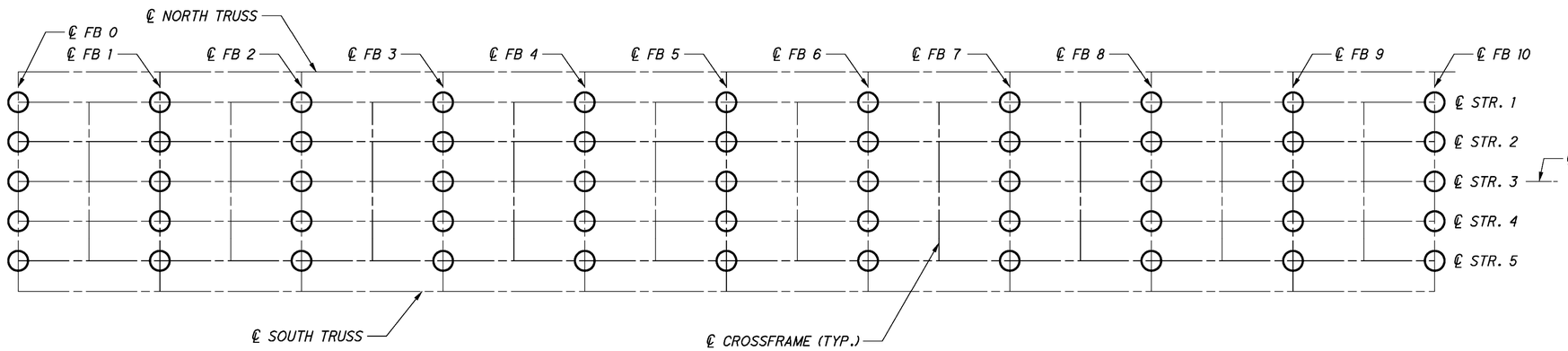


SPAN 1 AND 4 FRAMING PLAN

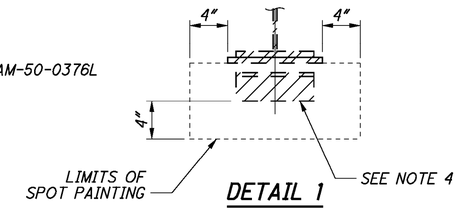


SECTION A-A

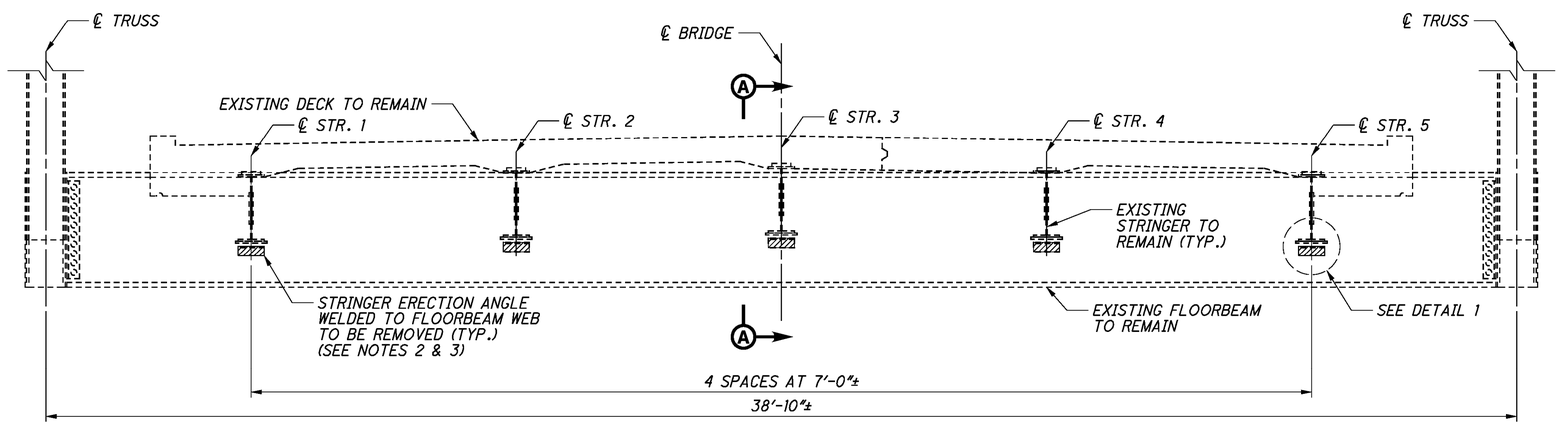
(DECK NOT SHOWN)



SPAN 2 AND 3 FRAMING PLAN



DETAIL 1



TYPICAL FLOORBEAM ELEVATION

LEGEND:

- ▨ - LIMITS OF STRINGER ERECTION ANGLE REMOVAL
- ○ - LOCATION OF STRINGER ERECTION ANGLES

NOTES:

1. REMOVAL OF STRINGER ERECTION ANGLES BY FLAME CUTTING OR CARBON ARC GOUGING SHALL NOT BE PERMITTED.
2. THE REMOVAL OF STRINGER ERECTION ANGLES AND GRINDING OF THE WELDS SMOOTH SHALL BE PAID FOR UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
3. AFTER THE STRINGER ERECTION ANGLES ARE REMOVED AND THE WELDS ARE GROUND SMOOTH, SPOT PAINT THE EXISTING STEEL AT REMOVAL LOCATIONS. THE PAINTING SHALL BE PAID UNDER ITEM 514.
4. IF LOCATION IS WITHOUT STRINGER ERECTION ANGLE, CONTRACTOR SHALL REMOVE REMAINING WELD MATERIAL AND THE LOCATION SHALL BE SPOT PAINTED IN ACCORDANCE WITH ITEM 514.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED KPH | CHECKED SFH
DRAWN KPH | REVISED
REVIEWED PJA | DATE 10-05-16 | STRUCTURE FILE NUMBER 3102521

STRINGER ERECTION ANGLE REMOVAL

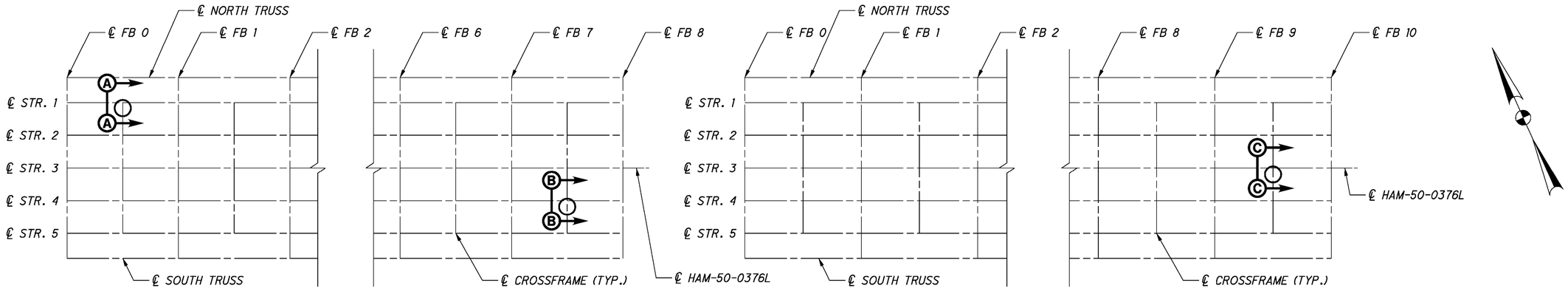
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

10 / 14

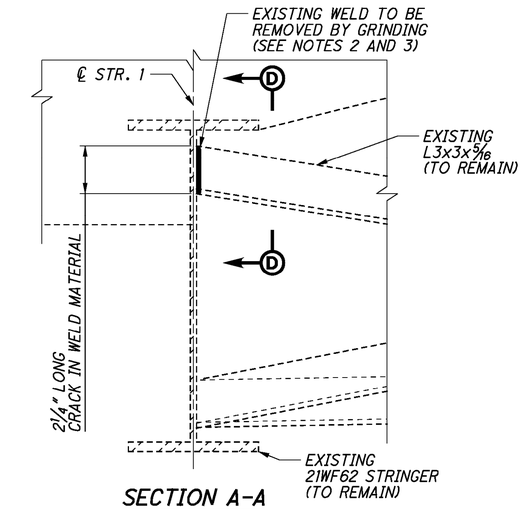
39 / 199

91939SD003.dgn 10/7/2016 11:43:28 AM sfhammerschmidt

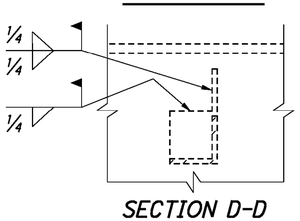


SPAN 1 FRAMING PLAN

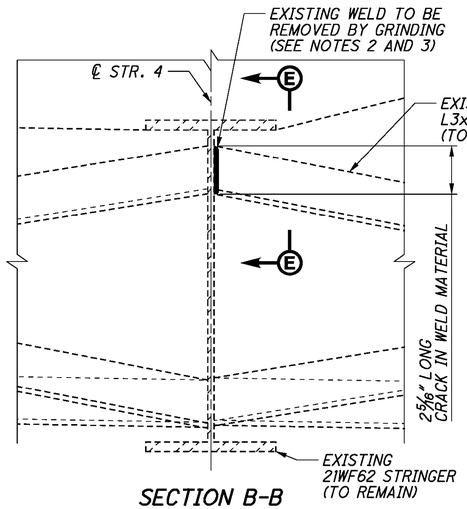
SPAN 3 FRAMING PLAN



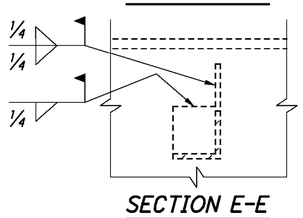
SECTION A-A



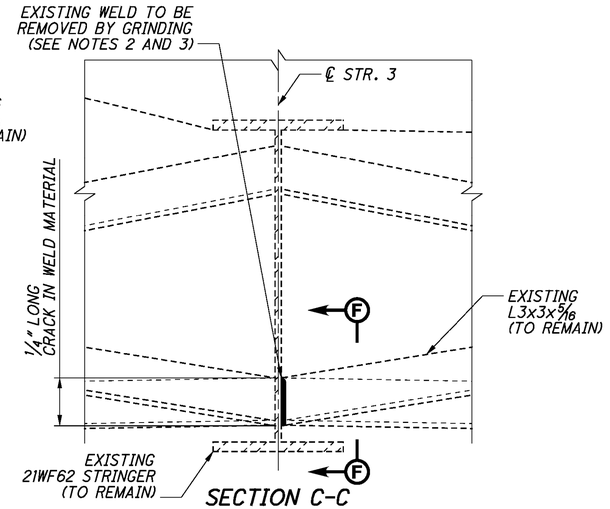
SECTION D-D



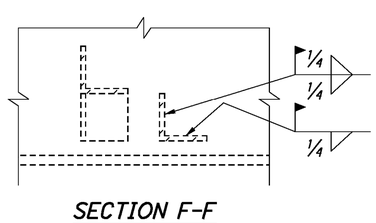
SECTION B-B



SECTION E-E



SECTION C-C



SECTION F-F

LEGEND:

○ - LOCATIONS OF STRINGER CROSSFRAME REPAIRS

NOTES:

1. REMOVE EXISTING FILLET WELD BETWEEN THE CROSSFRAME AND STRINGER WEB BY MECHANICAL GRINDING. GROUND SURFACES SHALL BE RESTORED TO AN ANSI ROUGHNESS OF LESS THAN 500 MICROINCH.

2. EXTREME CARE SHALL BE TAKEN TO NOT DAMAGE EXISTING COMPONENTS TO REMAIN DURING CUTTING AND GRINDING OPERATIONS. AIR CARBON ARC, GOUGING, AND THERMAL CUTTING SHALL NOT BE USED AT ANYTIME TO REMOVE THE EXISTING WELD. THE CONTRACTOR SHALL REPAIR, TO THE SATISFACTION OF THE ENGINEER, ANY DAMAGE CAUSED TO THE STRUCTURE DURING REPAIR OPERATIONS AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO THE PROJECT.

3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL CRACKS SHOWN BETWEEN THE STRINGERS AND CROSSFRAMES. CRACK LOCATIONS SHALL BE RECORDED PRIOR TO REMOVAL AND THE CONTRACTOR SHALL ENSURE THAT NO CRACK HAS PROPAGATED INTO THE STRINGER WEB BASE METAL BEFORE PROCEEDING WITH WORK. IF A CRACK IS FOUND IN THE BASE METAL OF THE STRINGER, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE CRACKS, EXTENTS AND LOCATION TO THE ENGINEER AND AN ALTERNATIVE REPAIR DETAIL WILL BE DESIGNED FOR THE LOCATION.

4. ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO REMOVE THE EXISTING WELD AND INSTALL NEW WELD SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: STRINGER CROSSFRAME REPAIRS.

5. PAINTING LIMITS SHALL EXTEND 6" AROUND THE NEW WELD AND ENCOMPASS ALL EXPOSED STRUCTURAL STEEL SURFACES WITHIN THIS ZONE. PAINTING SHALL BE PERFORMED IN ACCORDANCE AND PAID FOR UNDER ITEM 514.

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 10-05-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3102521

STRINGER CROSSFRAME REPAIRS

HAM-50-0376L
PID No. 91939

BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

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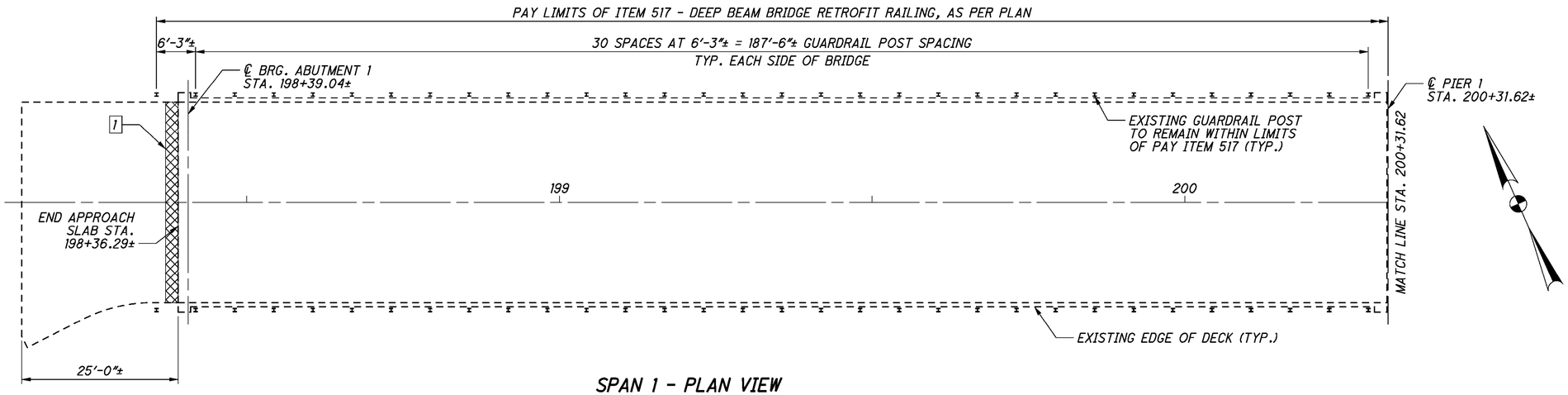
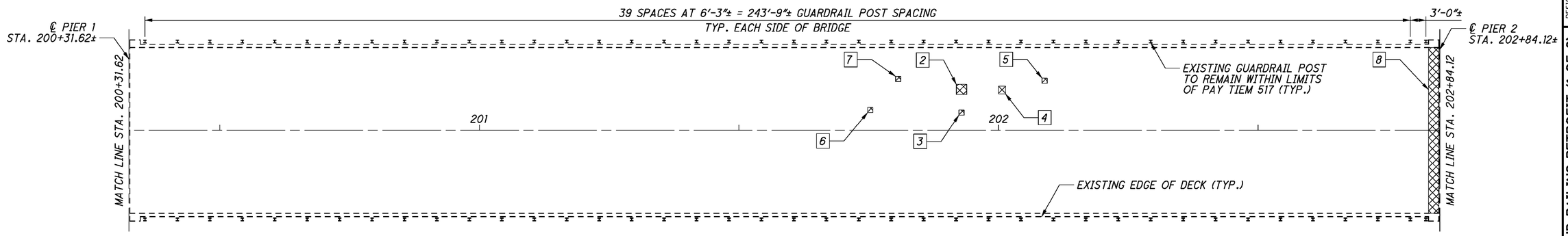
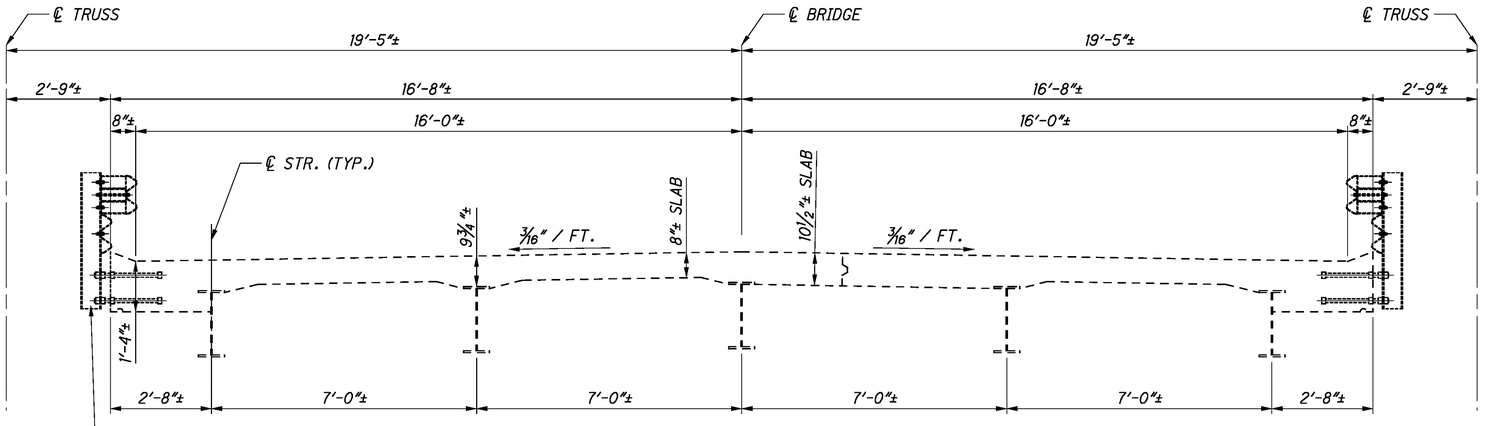


SPAN 1 - PLAN VIEW



SPAN 2 - PLAN VIEW



EXISTING TYPICAL SECTION

WEARING SURFACE PATCHING		
CALLOUT	SPAN	REPAIR AREA
1	1	34 SQ FT
2	2	4 SQ FT
3	2	1 SQ FT
4	2	2 SQ FT
5	2	1 SQ FT
6	2	1 SQ FT
7	2	1 SQ FT
8	2	34 SQ FT

LEGEND:

- LIMITS OF DECK PATCHING

X - REPAIR NUMBER

NOTES:

1. DECK WEARING SURFACE REMOVAL AND PATCHING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE.
2. FOR TYPICAL APPROACH SLAB JOINT, SEE SHEET 13 / 14.
3. REPLACEMENT OF EXISTING BRIDGE RAIL SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN. SEE SHEET 14 / 14 FOR ADDITIONAL DETAILS.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

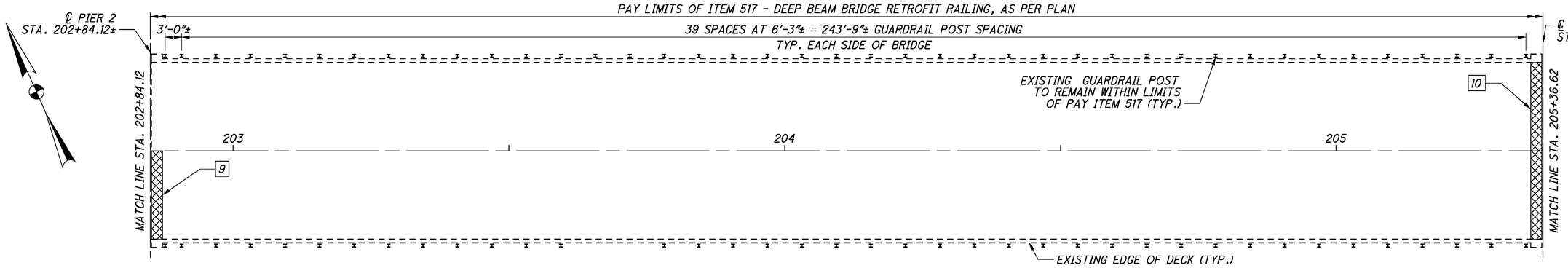
DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		3102521	

DECK WEARING SURFACE PATCHING AND RAILING RETROFIT (1 OF 2)

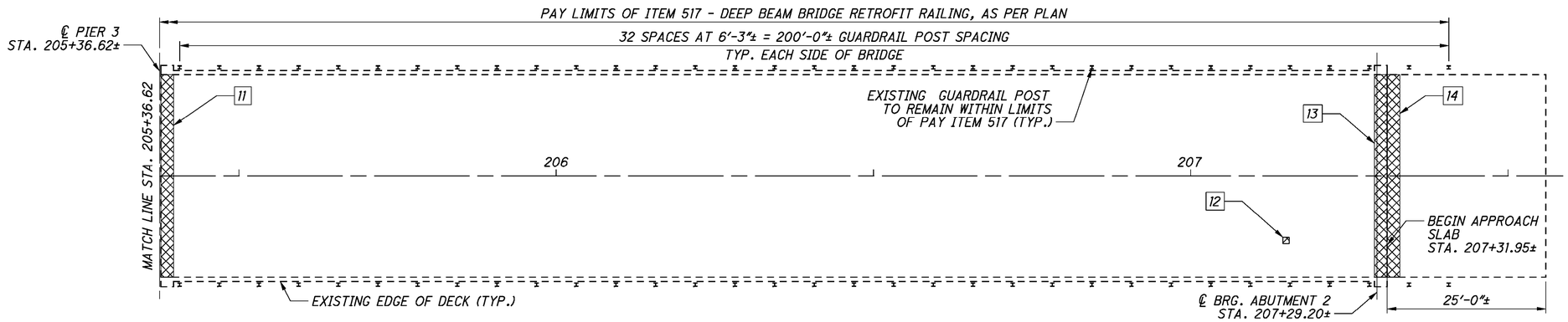
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

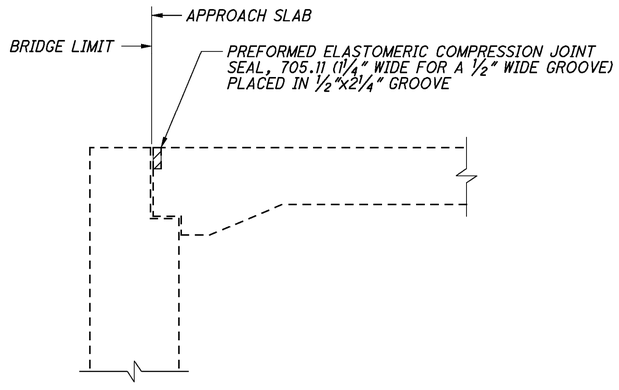
91939DP001.dgn 10/7/2016 11:43:30 AM sfhammerschmidt



SPAN 3 - PLAN VIEW



SPAN 4 - PLAN VIEW



TYPICAL APPROACH SLAB JOINT

WEARING SURFACE PATCHING		
CALLOUT	SPAN	REPAIR AREA
9	3	17 SQ FT
10	3	34 SQ FT
11	4	34 SQ FT
12	4	1 SQ FT
13	4	34 SQ FT
14	E. APP.	68 SQ FT

QUANTITY SUMMARY			
ITEM	UNIT	FIELD MEASURED	PLAN QUANTITY*
DECK PATCHING	SY	30	60

* THE PLAN QUANTITIES INCLUDE AN INCREASE OVER FIELD MEASURED QUANTITIES

LEGEND:

- LIMITS OF DECK PATCHING

[X] - REPAIR NUMBER

NOTES:

1. DECK WEARING SURFACE REMOVAL AND PATCHING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE.
2. ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO REPLACE THE PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 516 - PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL.
3. REPLACEMENT OF EXISTING BRIDGE RAIL SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN. SEE SHEET [14 / 14].

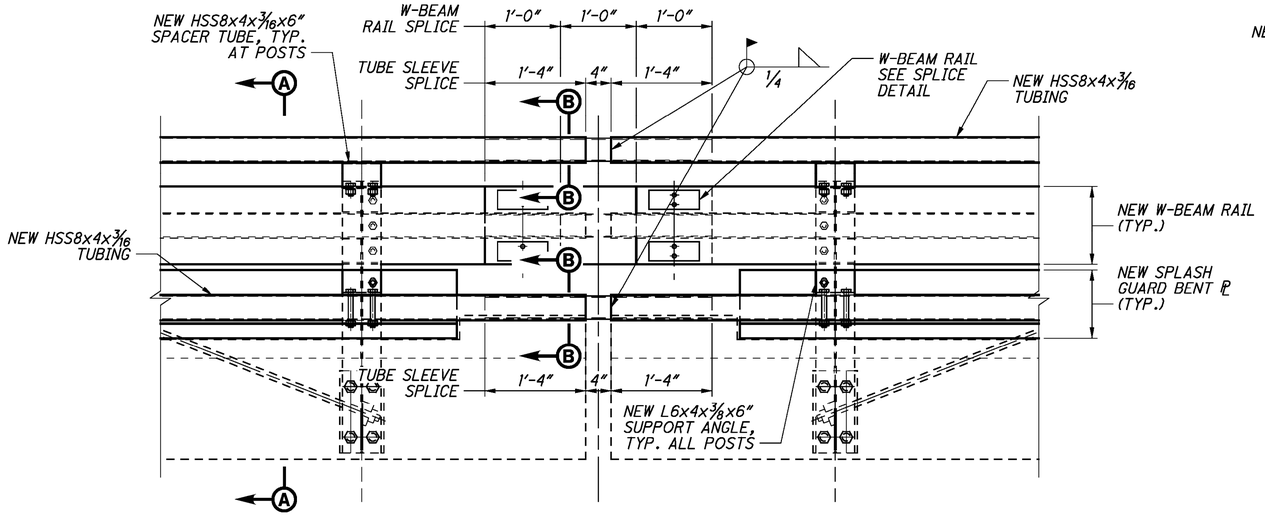
DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 10-05-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3102521

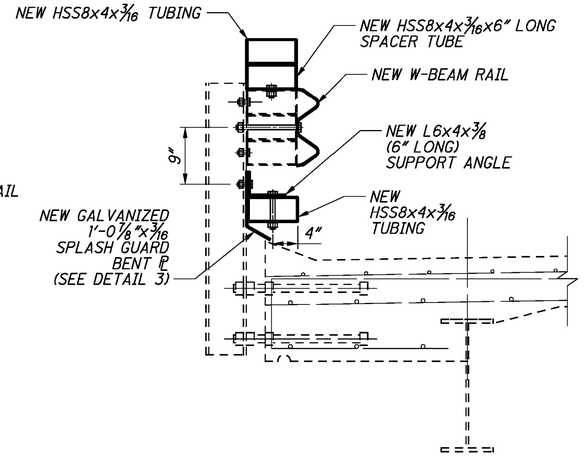
DECK WEARING SURFACE PATCHING AND RAILING RETROFIT (2 OF 2)
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

91939DP002.dgn 10/7/2016 11:43:30 AM sfhammerschmidt

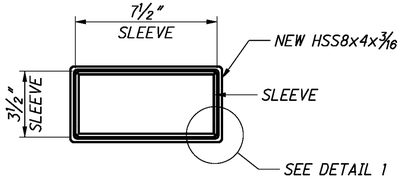


PROPOSED BRIDGE RAIL EXPANSION JOINT AT PIERS

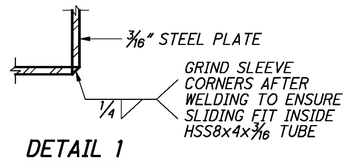


SECTION A-A

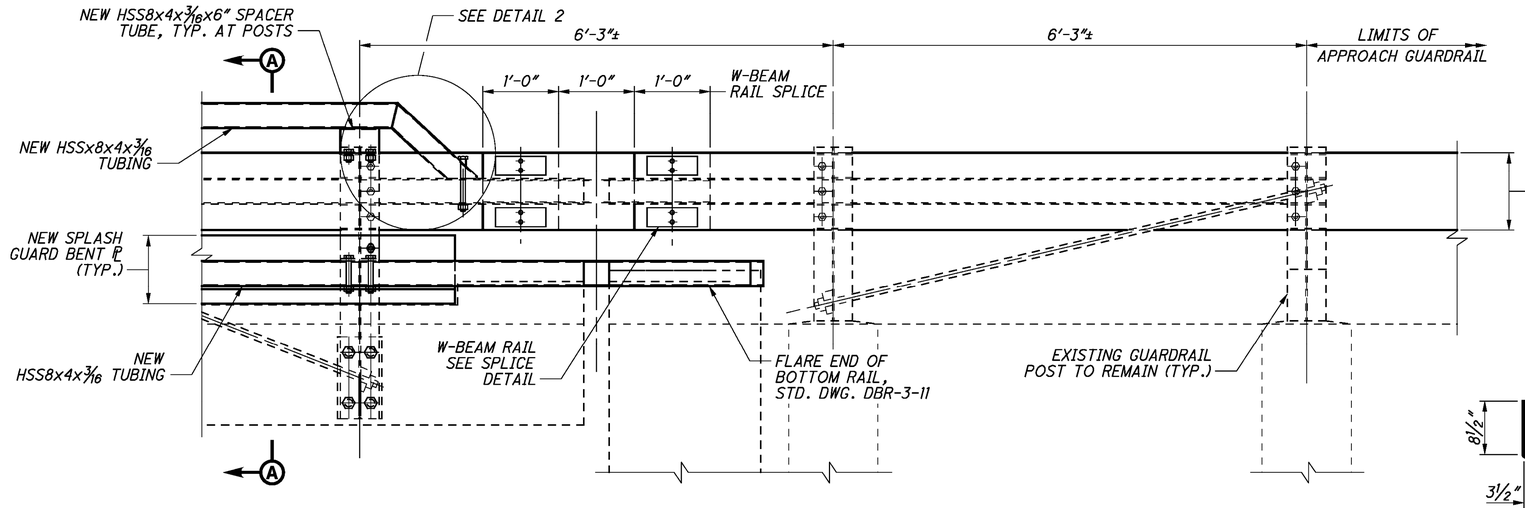
(SEE STD. DWG. DBR-3-11 FOR ADDITIONAL DETAILS)



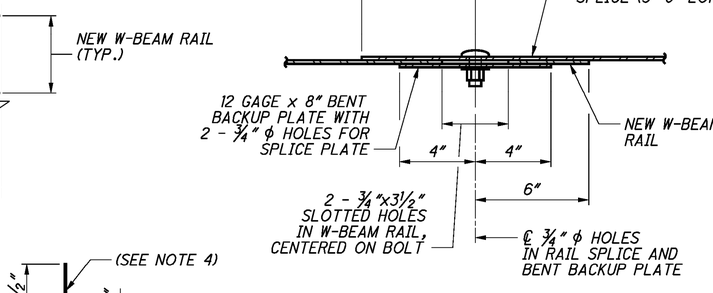
SECTION B-B



DETAIL 1

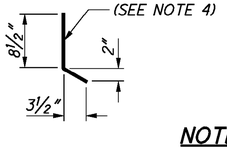


PROPOSED BRIDGE RAIL EXPANSION JOINT AT ABUTMENT 2

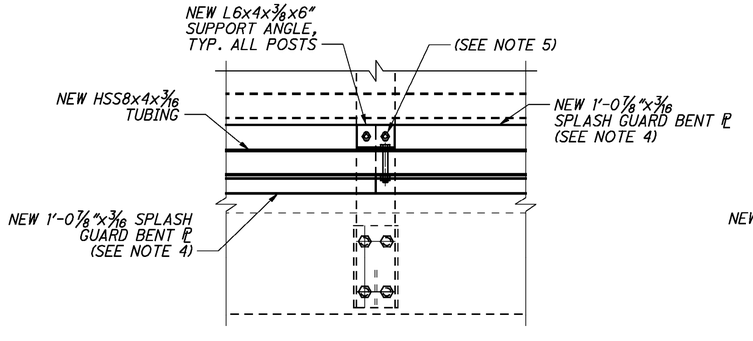


W-BEAM RAIL SPLICE DETAIL

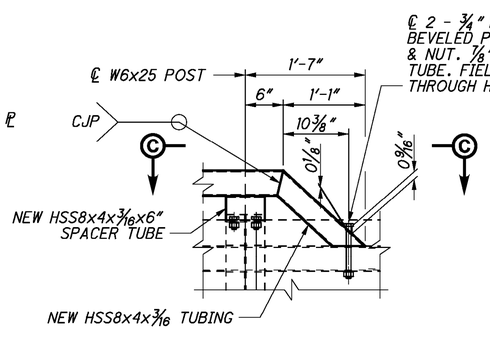
(TYPICAL)



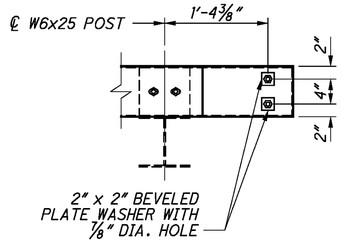
DETAIL 3



TYPICAL ELEVATION OF PROPOSED SPLASH GUARD SPLICE LOCATION



DETAIL 2



SECTION C-C

NOTES:

1. DECK WEARING SURFACE REMOVAL AND PATCHING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE.
2. SEE STANDARD DRAWING DBR-3-11 FOR ADDITIONAL DETAILS.
3. FOR TYPICAL EXISTING TRANSVERSE DECK SECTION SEE SHEET 12/156.
4. NEW SPLASH GUARDS, FIELD DRILLING OF NEW HOLES, AND CONNECTORS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN. THE NEW SPLASH GUARD AND ALL CONNECTORS SHALL BE GALVANIZED PER CMS 711.02 AND CONSIDERED INCIDENTAL TO ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN.
5. THE SPLASH GUARD SHALL BE SPLICED AT THE CENTER OF AN EXISTING POST LOCATION. AT A SPLICE, A SECOND BOLT SHALL BE INSTALLED THROUGH THE NEW ANGLE, SPLASH GUARD, AND EXISTING POST. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 1 1/4" DISTANCE BETWEEN A MEMBER EDGE AND ℄ OF A BOLT.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		3102521	

BRIDGE RAILING REPLACEMENT DETAILS
BRIDGE No. HAM-50-0376L
US 50 OVER THE GREAT MIAMI RIVER

HAM-50-0376L
PID No. 91939

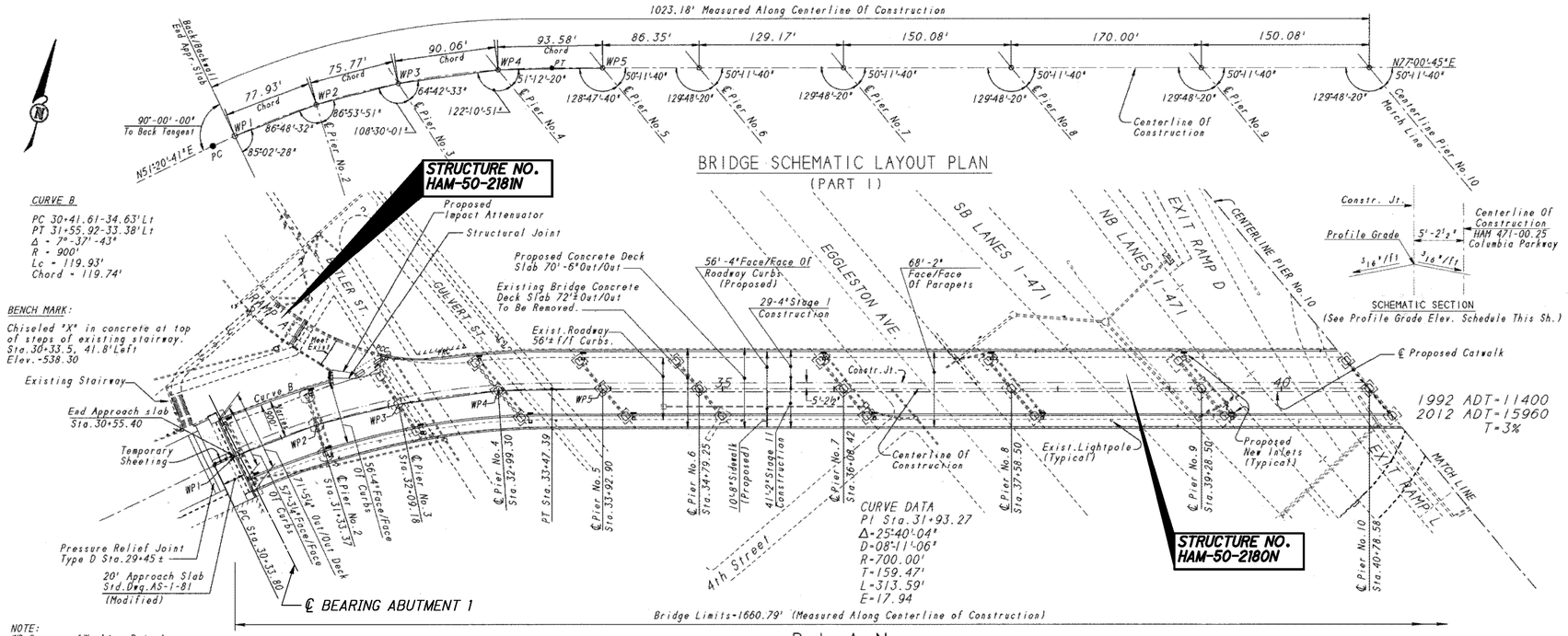
14 / 14

43
199

91939DP003.dgn 10/7/2016 11:43:31 AM sthammerschmidt

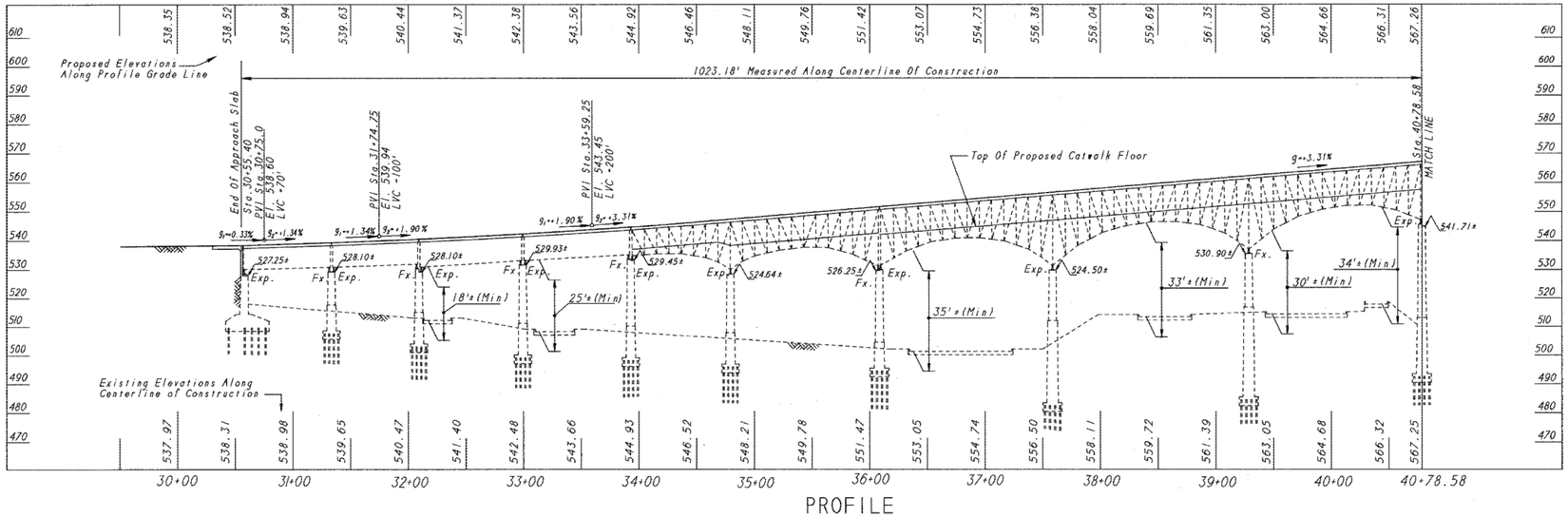
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

HAM-471-00.25



PLAN

REVIEWED BY BURGESS & NIPLE, LIMITED
JLG/JCS 9-18-96



PROFILE

EXISTING STRUCTURE

TYPE: STEEL GIRDERS AND DECK TRUSSES WITH REINFORCED CONCRETE DECK SUPERSTRUCTURE ON REINFORCED CONCRETE SUBSTRUCTURE

SPANS: AS NOTED ON BRIDGE SCHEMATIC LAYOUT PLAN

ROADWAY: 56'-4"± CURB TO CURB WITH 10'-8"± SIDEWALK ON RIGHT SIDE

LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING

SKEW: VARIES

ALIGNMENT: CURVE RIGHT 700'R, THEN TANGENT, THEN CURVE LEFT 850'R, THEN TANGENT

STRUCTURE FILE NUMBER: 3103390

DATE BUILT: 1938 ORIGINAL CONSTRUCTION, 1997 REHABILITATION

DISPOSITION: BRIDGE REHABILITATION

PROFILE GRADE ELEVATIONS SCHEDULE

LOCATION	STATION, OFFSET	ELEVATION
BEGIN BRIDGE	30+55.24, 5.21' LT	538.55
PIER NO. 2	31+33.37, 5.21' LT	539.39
PIER NO. 3	32+07.13, 5.21' LT	540.57
PIER NO. 4	32+95.57, 5.21' LT	542.29
PIER NO. 5	33+88.56, 5.21' LT	544.60
PIER NO. 6	34+74.91, 5.21' LT	547.28
PIER NO. 7	36+04.08, 5.21' LT	551.55
PIER NO. 8	37+54.16, 5.21' LT	556.52
PIER NO. 9	39+24.16, 5.21' LT	562.15
PIER NO. 10	40+74.24, 5.21' LT	567.12
PIER NO. 11	42+03.41, 5.21' LT	571.39
PIER NO. 12	42+89.91, 5.21' LT	574.25
PIER NO. 13	43+54.30, 5.21' LT	576.38
PIER NO. 14	44+36.95, 5.21' LT	579.12
PIER NO. 15	45+19.60, 5.21' LT	581.86
PIER NO. 16	45+84.60, 5.21' LT	584.01
PIER NO. 17	46+49.60, 5.21' LT	586.16
END BRIDGE	47+16.19, 5.21' LT	588.34

NOTES:

1. NO PROPOSED WORK SHOWN ON THIS SHEET.
2. IMAGE IS TAKEN FROM THE 1995 REHABILITATION DRAWINGS, SHEET 76 OF 182, SITE PLAN 1/2 BRIDGE NO. HAM-471-0025 (COLUMBIA PARKWAY VIADUCT OVER I-471). SOME INFORMATION FROM THE ORIGINAL SHEET HAS BEEN REMOVED OR UPDATED.
3. SEE SHEET 2 / 156 FOR ADDITIONAL INFORMATION.

NOTE:
WP Denotes "Working Point"

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DRAWN ZTW | REVIEWED PJA | DATE 10-05-16
DESIGNED DWC | CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3103390

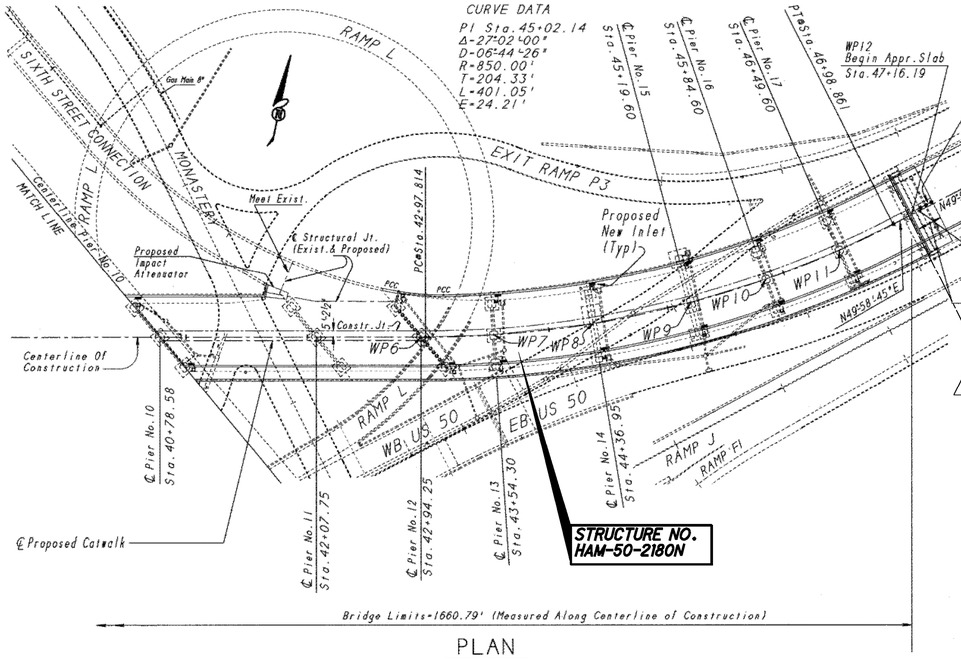
HAMILTON COUNTY
STA. 30+55.40
STA. 47+16.19

SITE PLAN (1 OF 2)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

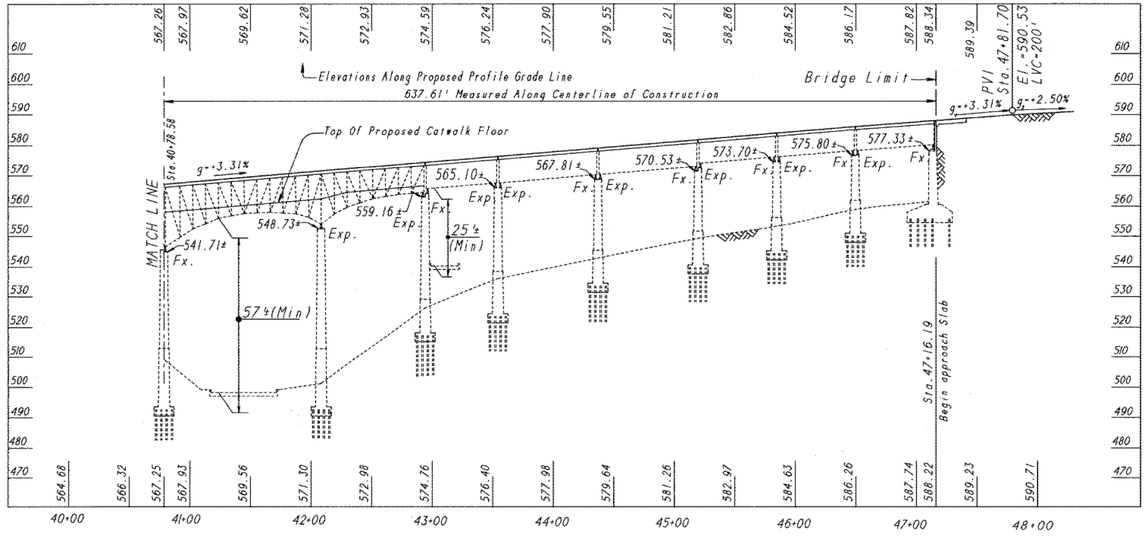
HAM-50-2180N
PID No. 91939

1 / 156

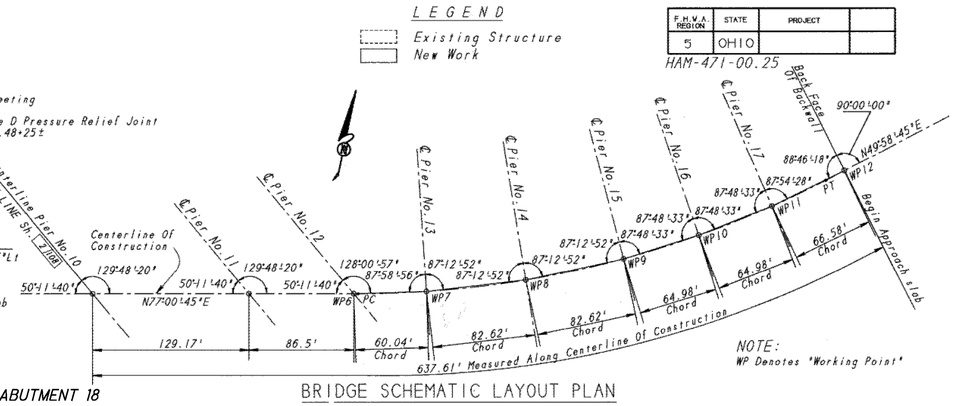
44 / 199



PLAN



PROFILE



BRIDGE SCHEMATIC LAYOUT PLAN
(PART 1)

NOTES:

1. NO PROPOSED WORK SHOWN ON THIS SHEET.
2. IMAGE IS TAKEN FROM THE 1995 REHABILITATION DRAWINGS, SHEET 77 OF 182, SITE PLAN 2/2 BRIDGE NO. HAM-471-0025 (COLUMBIA PARKWAY VIADUCT OVER I-471). SOME INFORMATION FROM THE ORIGINAL SHEET HAS BEEN REMOVED OR UPDATED.
3. SEE SHEET 1 / 156 FOR ADDITIONAL INFORMATION.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	ZTW	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		3103390	

HAMILTON COUNTY
STA. 30+55.40
STA. 47+16.19

SITE PLAN (2 OF 2)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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2 / 156

45 / 199

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SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

845	(DATED)	1-19-2007
902	(DATED)	12-31-2012

DESIGN SPECIFICATIONS

THE WORK ON THIS STRUCTURE SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, INCLUDING THE 2002 INTERIM SPECIFICATIONS, AND THE 2004 ODOT BRIDGE DESIGN MANUAL, INCLUDING THE 7-17-15 INTERIMS.

DESIGN LOADING

HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING, NO FUTURE WEARING SURFACE.

DESIGN DATA (NEW MATERIAL)

CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4500 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI, EPOXY COATED

STRUCTURAL STEEL - ASTM A709 GRADE 50, YIELD STRENGTH 50,000 PSI

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

PREVIOUS CONSTRUCTION PLANS OF EXISTING BRIDGE

ORIGINAL PLANS	(DATED)	1936
SHOP DRAWINGS	(DATED)	1937
RAMP A (HAM-50-2181N)	(DATED)	1972
REHABILITATION PLANS	(DATED)	1996

THE EXISTING STRUCTURE PLANS MAY BE REVIEWED AT THE:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 8 OFFICE
505 S. STATE ROUTE 741
LEBANON, OHIO 45036

THE EXISTING PLANS ARE ALSO AVAILABLE ONLINE THROUGH THE FOLLOWING ODOT WEBSITE:

HTTP://WWW.DOT.STATE.OH.US/DIVISIONS/CONTRACTADMIN/CONTRACTS/PAGES/DESIGNFILES.ASPX

IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH ALL PERTINENT EXISTING DRAWINGS AND DETAILS RELEVANT TO THIS PROJECT.

PROPOSED WORK

THE HAM-50-2180N (COLUMBIA PARKWAY VIADUCT) OVER I-471 BRIDGE SHALL BE REHABILITATED UNDER THIS CONTRACT. MAJOR ITEMS OF WORK CONTAINED IN THE STRUCTURE PLANS ARE SUMMARIZED BELOW. DETAILS OF ALL WORK ARE SHOWN IN THE PLANS.

1. PATCH THE SUBSTRUCTURE AS SHOWN IN THE PLANS.
2. PERFORM GUSSET PLATE EDGE STIFFENING ON SPANS 5-12 AS SHOWN IN THE PLANS.
3. SPOT PAINT STRUCTURAL STEEL AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.
4. REPLACE EXISTING STRIP SEAL GLANDS AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.
5. PERFORM DRAINAGE PIPE CLEAN OUT AND DRAINAGE REPAIRS AS DETAILED IN THE PLANS.

CONSTRUCTION PROCEDURES

THE CONTRACTOR SHALL SUBMIT ALL PROPOSED REMOVAL AND REPLACEMENT PROCEDURES TO THE ENGINEER FOR APPROVAL. THE PROCEDURES SHALL INCLUDE PROPOSED METHODS, ORDER OF OPERATION, EQUIPMENT, AND DETAILS OF ANY REQUIRED PROTECTIVE STRUCTURES. ALL SUBMITTALS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO AND BE SUBMITTED A MINIMUM OF FOUR (4) WEEKS PRIOR TO INTENDED DATE FOR COMMENCEMENT OF WORK. ALL COSTS FOR THIS WORK SHALL BE INCLUDED WITH THE APPROPRIATE BID ITEMS.

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

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

DESCRIPTION:
THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.

ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED.

THE METHOD OF CONCRETE REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND [41 KILOGRAM] CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC:
THE CONTRACTOR IS TO PROVIDE ADEQUATE PROTECTION FOR THE TRAVELING PUBLIC BELOW ALL LOCATIONS OF REMOVAL. SAFE PASSAGE FOR VEHICULAR AND PEDESTRIAN TRAFFIC MUST BE MAINTAINED AT ALL TIMES DURING DEMOLITION. DEMOLISHED MATERIAL IS NOT PERMITTED TO DROP TO THE GROUND. THE CONTRACTOR SHALL SUBMIT TRAFFIC AND PEDESTRIAN PROTECTION PLANS FOR APPROVAL PRIOR TO COMMENCEMENT OF DEMOLITION WORK.

REMOVAL OF STRIP SEAL JOINTS:
THIS WORK CONSISTS OF REMOVAL OF THE EXISTING ELASTOMERIC STRIP SEAL, AS SHOWN IN THE PLANS. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT DAMAGE THE EXISTING STEEL RETAINERS OR JOINT ARMOR TO REMAIN. THE COST ASSOCIATED WITH THE EVALUATION OF EACH JOINT AND DETERMINING THE FEASIBILITY OF REPLACING THE JOINT WITH A NEW STRIP SEAL OR THE PRECOMPRESSED FOAM JOINT SYSTEM (ALTERNATE) SHALL BE CONSIDERED INCIDENTAL TO THE REMOVAL.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
202	LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN

THIS ITEM CONSISTS OF FILLING VOIDS UNDER THE EXISTING CONCRETE SLOPE PROTECTION AND BRINGING THE AREA AT REMOVED SECTIONS BACK TO GRADE. AFTER THE SUBGRADE FOR THE CONCRETE SLOPE PROTECTION HAS BEEN PROPERLY COMPACTED TO ELIMINATE VOIDS AND SOFT SPOTS, IT SHALL BE COVERED WITH FILTER FABRIC CONFORMING TO CMS 712.09, TYPE B. THIS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. BENCH THE SUBGRADE AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES, THE GRANULAR EMBANKMENT IS ASSUMED TO BE ONE FOOT THICK BELOW THE AREAS OF SLOPE PROTECTION THAT IS TO BE REPLACED. THE ACTUAL AMOUNT WILL VARY IF THE THICKNESS IS DIFFERENT OR OTHER VOIDS ARE FOUND.

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 OR SECTION LOSS. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. A QUANTITY OF 1000 HAS BEEN ADDED TO THE ESTIMATED QUANTITIES FOR ADDITIONAL REPAIRS TO BE PERFORMED AS DIRECTED BY THE ENGINEER.

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.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
509	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

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

THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO SEAL REPAIRED CONCRETE AREAS AS SHOWN IN THE PLANS PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN, OR AS DIRECTED BY THE ENGINEER. ALL PROVISIONS OF CMS 512 SHALL APPLY, EXCEPT AS MODIFIED HEREIN.

THE COLOR OF THE EPOXY-URETHANE SEALER AT EACH LOCATION SHALL MATCH THE EXISTING SEALER COLOR. THE CONTRACTOR SHALL PROVIDE SAMPLES TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION.

SURFACE PREPARATION FOR SEALING ALONG THE OUTSIDE PERIMETER OF THE REPAIRED CONCRETE AREAS AS SHOWN IN THE PLANS SHALL BE AS PER CMS 512.03.F.

THE CONTRACTOR IS NOT REQUIRED TO COMPLETELY REMOVE ALL EXISTING EPOXY SEALER FROM THE AREAS TO BE SEALED AS PART OF THIS ITEM. CONTRACTOR WILL ONLY RECEIVE PAYMENT FOR SURFACE PREPARATION AS SPECIFIED IN CMS 512.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
512	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 2

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 3

DESCRIPTION:
THIS WORK INCLUDES FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO ERECT STRUCTURAL STEEL AS SHOWN IN THE PLANS. THE COMPLETED AND IN PLACE WORK SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING ADDITIONAL INFORMATION. ALL REQUIREMENTS OF CMS 513 SHALL APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD-FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN CMS SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE IN ACCORDANCE WITH CMS 501.06 TO THE ENGINEER.

THESE REPAIRS INCLUDE THE STIFFENING OF GUSSET PLATE EDGES BY BOLTING ON ANGLES AS SHOWN IN THE PLANS. THE ANGLES SHALL HAVE AT LEAST 1" CLEARANCE TO ANY CONNECTION WITH PRIMARY TRUSS MEMBERS.

WHERE AN ANGLE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENT AS SPECIFIED IN CMS 711.01.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN ZTW | REVIEWED PJA | DATE 10-05-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3103390

STRUCTURE GENERAL NOTES (1 OF 5)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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NEW BOLTS SHALL BE ASTM A490, TYPE 3. BOLTS SHALL UTILIZE HARDENED WASHERS PER ASTM F436, PLACED UNDER BOTH BOLT HEAD AND ALL NUTS. NUTS SHALL BE TYPE DH3 HEAVY HEX HEAD NUTS AND IN ACCORDANCE WITH ASTM A563. NEW 7/8" DIAMETER ASTM A490 BOLTS SHALL BE TENSIONED TO A MINIMUM OF 49 KIPS. TURN-OF-NUT REQUIREMENTS SPECIFIED IN AASHTO TABLE 11.5B SHALL BE UTILIZED TO ACHIEVE BOLT PRE-TENSION. WHERE NEW BOLTS ARE TO REPLACE EXISTING RIVETS, THE NEW BOLTS SHALL MATCH EXISTING RIVET SIZES.

SURFACE PREPARATION SHALL BE PER CMS 514.13. ALL NEW STEEL SHALL BE SHOP PRIMED WITH AN INORGANIC ZINC PRIME COAT. ADJOINING SURFACES BETWEEN EXISTING STEEL AND NEW STEEL SHALL BE PREPARED PER CMS 514.13. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING PAINT OUTSIDE OF THE RETROFIT AREA. CURRENTLY PAINTED AREAS DAMAGED OR EXPOSED BY THE CONTRACTOR'S SURFACE PREPARATION OR GUSSET PLATE EDGE STIFFENING OPERATION SHALL BE REPAINTED AT NO COST TO THE DEPARTMENT.

RIVET REMOVAL PROCEDURE:
THE PROCEDURE FOR RIVET REMOVAL AND PREPARATION OF THE EXISTING HOLES FOR NEW BOLTS SHALL BE AS FOLLOWS:

RIVET REMOVAL - EXISTING RIVETS SHALL BE REMOVED BY FIRST SAW CUTTING OR CHISELING HEADS OFF AND THEN REMOVING THE REMAINDER OF THE RIVET BY CHISELING OR OTHER MECHANICAL METHOD APPROVED BY THE ENGINEER. AT NO TIME SHALL FLAME CUTTING BE ALLOWED. CARE SHALL BE TAKEN TO ENSURE THAT THE REMOVAL OF THE EXISTING FASTENERS CAUSES NO DAMAGE TO THE CONNECTED ELEMENTS THAT ARE TO REMAIN. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A METHOD OF REPAIR TO THE ENGINEER FOR ANY EXISTING ELEMENTS DAMAGED DURING RIVET REMOVAL. ALL REPAIRS TO DAMAGED STEEL SHALL BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT.

REAMING - OPEN RIVET HOLES THAT WILL RECEIVE NEW HIGH STRENGTH BOLTS SHALL BE PROPERLY SIZED TO A DIAMETER THAT IS ONE-SIXTEENTH INCH (1/16") LARGER THAN THE NEW BOLTS. IN THE EVENT THAT THE EXISTING RIVET HOLE IS NOT ADEQUATE TO ACCEPT THE NEW SPECIFIED BOLT, THE HOLE SHALL BE DRILLED OR REAMED AS REQUIRED TO PROVIDE A PROPER SIZED HOLE.

COST ASSOCIATED WITH RIVET REMOVAL AND PREPARATION OF THE EXISTING HOLES FOR NEW BOLTS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

GUSSET PLATE REPAIR LIMITATIONS:
LIMIT EDGE STIFFENING PROCEDURE TO ONE GUSSET PLATE EDGE AT ANY GIVEN PANEL POINT AT A TIME. A PANEL POINT SHALL CONSIST OF A NORTH AND SOUTH GUSSET PLATE ON THE NORTH, CENTER, OR SOUTH TRUSS. GUSSET PLATE EDGE STIFFENING MAY NOT CONCURRENTLY OCCUR AT THE PRECEDING OR FOLLOWING TWO PANEL POINTS IN EITHER DIRECTION ALONG A TRUSS LINE. THE TERM TRUSS LINE SHALL BE INTERPRETED AS THE NORTH TRUSS, CENTER TRUSS, OR SOUTH TRUSS. THE GUSSET PLATE EDGE

STIFFENING INSTALLATION SHALL NOT BE CONCURRENT AT PANEL POINTS CONNECTED BY A FLOORBEAM BETWEEN TRUSS LINES.

ONCE THE CONTRACTOR BEGINS REMOVING RIVETS OR FIELD DRILLING ANY HOLES, THE CONTRACTOR SHALL CONTINUE UNTIL THE INSTALLATION OF THE ANGLE IS COMPLETE AND ALL THE BOLTS HAVE BEEN PROPERLY TIGHTENED. IF THE CONTRACTOR IS TO CEASE WORK AT ANY TIME DURING THE ANGLE INSTALLATION, THE CONTRACTOR SHALL FILL ANY OPEN HOLES WITH NEW HIGH STRENGTH BOLTS AND HAND TIGHTEN THEM UNTIL WORK RESUMES AT THE LOCATION.

SEQUENCE OF CONSTRUCTION:
PERFORM GUSSET PLATE INSTALLATION AS FOLLOWS:

A. FIELD VERIFY DIMENSIONS AND LOCATIONS OF EDGE STIFFENING ANGLES.
B. FABRICATE NEW ANGLE ACCORDING TO PLANS AND FIELD VERIFICATION.
C. ABRASIVE BLAST AREA ENCOMPASSING THE NEW ANGLE IN ACCORDANCE WITH CMS 514.13.C AND REMOVE ANY PACK RUST BETWEEN THE GUSSET PLATE AND CHORD MEMBER.
D. PREPARE FAYING SURFACES PER CMS 514.13.
E. REMOVE RIVETS AS SHOWN ON THE PLANS UTILIZING THE RIVET REMOVAL PROCEDURE.
F. INSTALL NEW ANGLE AND FILL OPEN HOLES WITH NEW HAND TIGHTENED BOLTS.
G. USE NEW ANGLE AS TEMPLATE TO FIELD DRILL NEW HOLE AND FILL WITH A NEW HAND TIGHTENED BOLT. REPEAT THIS STEP FOR REMAINING BOLTS.
H. PROPERLY TENSION ALL BOLTS.
I. THE ENGINEER SHALL INSPECT NEW BOLT TENSION WITH A CALIBRATED TORQUE WRENCH PRIOR TO FIELD PAINTING.
J. FIELD PAINT EXPOSED STEEL PER ITEM 514.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEMS. PAYMENT SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIAL, TOOLS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE THE REPAIRS, INCLUDING THE REMOVAL OF RIVETS, FABRICATION OF THE STEEL ANGLES, DRILLING OF NEW HOLES, AND INSTALLATION OF THE NEW STIFFENING ANGLE. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THE REPAIR SHALL BE CONSIDERED INCIDENTAL TO THESE ITEMS. ANY LABOR AND/OR MATERIALS AND EQUIPMENT INCIDENTAL TO STEEL WORK NOT SPECIFICALLY PAID FOR UNDER ANY OTHER ITEM SHALL BE INCLUDED AND PAID FOR UNDER THE FOLLOWING CONTRACT ITEMS (PAY ITEMS):

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 1
513	EACH	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 2
513	EACH	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 3

ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN

ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN

THIS ITEM INCLUDES THE SURFACE PREPARATION AND COATING OF THE EXISTING STEEL MEMBERS TO REMAIN AS TO THE LIMITS DESCRIBED OR SHOWN IN THE PLANS. AT LOCATIONS WHERE NEW STEEL IS TO BE INSTALLED PER ITEM 514, THIS WORK SHALL BEGIN BEFORE THE PLACEMENT OF THE NEW MEMBERS.

THE COLOR OF THE FINISH COAT FOR ALL STRUCTURAL STEEL IS TO MATCH THE EXISTING. THE CONTRACTOR SHALL PROVIDE SAMPLES TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION.

THE REQUIREMENTS OF CMS 514 SHALL APPLY WITH THE FOLLOWING ADDITIONS/MODIFICATIONS:

514.13.C - ABRASIVE BLASTING (QCP #3):
PORTIONS OF THE INSIDE OF THE TRUSS MEMBERS ARE IDENTIFIED AS BEING POSSIBLY INACCESSIBLE. THE CONTRACTOR SHALL MAKE A REASONABLE EFFORT TO CLEAN STEEL SURFACES IN THESE AREAS, AND IN ALL OTHER AREAS DETERMINED BY THE ENGINEER AS BEING INACCESSIBLE, ACCORDING TO SSPC-SP 6 (COMMERCIAL BLAST CLEANING) AND AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES IN SSPC-VIS 1.

ALL OTHER ACCESSIBLE STEEL SURFACES SHALL BE BLASTED TO SSPC-SP 10 AS PER CMS 514.13.C.

IN ADDITION, THIS WORK WILL INCLUDE THE REPAIR OF PACK-RUSTED AREAS OF THE EXISTING STEEL AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. PACK RUSTED AREAS ARE DEFINED AS THOSE LOCATIONS WHERE IMPACTED RUST HAS PRODUCED A GAP BETWEEN ADJACENT STEEL PLATES MORE THAN 1/4". PACK RUST SHALL BE REMOVED FROM THE JOINTS RUSTED APART MORE THAN 1/4" BY CHIPPING, HAMMERING, PUNCHING, CHISELING OR BY OTHER SUITABLE MEANS, TO A DEPTH OF AT LEAST EQUAL TO THE WIDTH OF THE GAP. ALL JOINTS SHALL THEN BE VACUUMED WITH A COMMERCIAL VACUUM CLEANER HAVING A NOZZLE OPENING OF 1" TO 1½" OR AIR BLOWN SUCH THAT ALL DUST AND DEBRIS ARE REMOVED TO THE SATISFACTION OF THE ENGINEER.

514.13.D - CONTAINMENT/WASTE DISPOSAL (QCP#4):
THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONTAINMENT SYSTEMS SURROUNDING THE WORK FOR THE PURPOSE OF CONTROLLING EMISSIONS OF DUST AND DEBRIS IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 514. WORKING PLATFORMS AND CONTAINMENT MATERIALS THAT ARE USED SHALL BE FIRM AND STABLE, AND PLATFORMS SHALL BE DESIGNED TO SUPPORT THE WORKERS, INSPECTORS, SPENT SURFACE PREPARATION MEDIA (E.G. ABRASIVES) AND EQUIPMENT DURING ALL PHASES OF SURFACE PREPARATION AND PAINTING. PLATFORMS, CABLES, AND OTHER SUPPORTING STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND OSHA. INSPECTION ACCESS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 514.10.

IF THE CONTAINMENT IS PROPOSED TO BE ATTACHED TO THE STRUCTURE, THE CONTAINMENT SHALL BE ATTACHED BY BOLTING, CLAMPING, OR SIMILAR MEANS. WELDING ONTO OR DRILLING INTO THE STRUCTURE IS PROHIBITED. THE CONTRACTOR SHALL PROVIDE DRAWINGS SHOWING THE CONTAINMENT SYSTEM AND INDICATING THE METHOD(S) OF SUPPORTING THE WORKING PLATFORMS AND CONTAINMENT MATERIALS.

IN THE EVENT OF SUSTAINED WINDS OF 40 MPH OR GREATER, THE CONTAINMENT SHALL BE DROPPED AND ALL MATERIALS AND EQUIPMENT SHALL BE SECURED TO AVOID OVERSTRESSING AND/OR DAMAGING THE BRIDGE STRUCTURE.

THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DRAWINGS SIGNED, SEALED, AND DATED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER IN THE EMPLOY OF THE CONTRACTOR, ASSURING THE STRUCTURAL INTEGRITY OF THE BRIDGE UNDER LIVE AND DEAD LOADS IMPOSED, INCLUDING THE DESIGN WIND LOADING. DESIGN SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE MOST CURRENT VERSION OF THE AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" AND ODOT'S BRIDGE DESIGN MANUAL. THE CONTAINMENT SUBMITTAL SHALL INCLUDE CALCULATIONS THAT ASSURE STRUCTURAL INTEGRITY OF THE BRIDGE WHEN IT SUPPORTS THE CONTAINMENT.

THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13 D.1 MAY APPLY.

514.17 COATING APPLICATION:
IN ADDITION TO THE REQUIREMENTS OF CMS 514, A STRIPE COATING OF THE PRIME COAT SHALL BE APPLIED TO ALL WELDS, CREVICES, RIVET HEADS, NUTS, BOLT HEADS, BOLT THREADS, AND OTHER SURFACE IRREGULARITIES. ALSO, THE AREAS SPECIFIED UNDER THIS CONTRACT FOR SURFACE PREPARATION PER SSPC-SP 2 (HAND TOOL CLEANING), SSPC-SP 3 (POWER TOOL CLEANING), OR SSPC-SP 11 (POWER TOOL CLEANING TO BARE METAL) SHALL HAVE THE EDGES OF THE PREPARED AREAS STRIPE COATED WITH THE PRIME COAT. THE STRIPE COATING SHALL BE APPLIED TO THE SPECIFIED SURFACES BEFORE THE APPLICATION OF THE FULL PRIME COAT OVER THE SAME AREAS AND ADJACENT PREPARED SURFACES. STRIPING SHALL EXTEND A MINIMUM OF 1" FROM THE EDGES REQUIRING STRIPE COATING. THE STRIPE COATING SHALL BE SET TO TOUCH BEFORE APPLICATION OF THE FULL PRIME COAT OVER THE SAME AREA; HOWEVER, THE STRIPE COATING SHALL NOT BE PERMITTED TO DRY FOR A PERIOD LONG ENOUGH TO ALLOW RUSTING OF THE ADJACENT UNPRIMED STEEL SURFACES BEFORE THE FULL PRIME COAT CAN BE APPLIED TO THE AREA.

THE CONTRACTOR SHALL THOROUGHLY COAT ALL SURFACES RECEIVING A STRIPE COATING, PAYING PARTICULAR ATTENTION TO HARD-TO-REACH AREAS AND IRREGULAR SURFACES, SUCH AS LACING BARS, BOLT HEADS, LAP SPLICES, GUSSET PLATES, EYE BARS, PINS, ETC. WHEN STRIPE COATING MULTI-PLANED SURFACE CONFIGURATIONS, SUCH AS ON NUTS AND BOLT THREADS, THE CONTRACTOR SHALL APPLY THE STRIPE COATING FROM MULTIPLE DIRECTIONS TO ENSURE COMPLETE COVERAGE OF ALL SURFACES, CREVICES, CORNERS, AND SHARP EDGES.

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED ZTW | DRAWN ZTW | REVIEWED PJA | DATE 10-05-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3103390

STRUCTURE GENERAL NOTES (2 OF 5)
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HAM-50-2180N
PID No. 91939

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514.19 CAULKING (QCP#9):
AFTER THE INTERMEDIATE COAT HAS BEEN APPLIED, THE CONTRACTOR SHALL CAULK ALL GAPS OR CREVICES GREATER THAN 1/8". THE INTERMEDIATE COAT SHALL BE FREE OF CONTAMINANTS WHEN THE CAULKING IS APPLIED.

THE CAULKING SHALL BE APPLIED EVENLY TO THE JOINTS AND GAPS. VOIDS SHALL BE COMPLETELY FILLED WITH CAULKING WHICH SHALL BE APPLIED BY TROWEL OR CAULKING GUN AND SHALL BE SPREAD SMOOTHLY USING HEAVY PRESSURE TO DISPLACE AIR BUBBLES. EXCESS MATERIAL SHALL BE REMOVED IMMEDIATELY. ALL PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE MANUFACTURER'S WRITTEN SPECIFICATIONS AND TO THE SATISFACTION OF THE ENGINEER.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEMS (PAY ITEMS):

ITEM	UNIT	DESCRIPTION
514	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN
514	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN
514	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN
514	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN

ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN

DESCRIPTION:
THE EXISTING STRIP SEAL SHALL BE REPLACED WITH ONE CONTINUOUS SEAL AT THE LOCATIONS SHOWN IN THE PLANS. AT "T" INTERSECTIONS AND CHANGES IN DIRECTION, THE STRIP SEAL GLAND SHALL BE SHOP VULCANIZED. INSTALLATION SHALL BEGIN AT POINTS OF DIRECTIONAL CHANGE AND INTERSECTIONS.

PRIOR TO ORDERING ANY MATERIALS, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS REGARDING THE REPLACEMENT OF EACH JOINT LOCATION AS SHOWN IN THE PLANS. THE SHOP DRAWINGS SHALL INCLUDE THE TYPE OF THE EXISTING JOINT, THE PROPOSED JOINT, MANUFACTURER'S INSTALLATION PROCEDURES, AND DIMENSIONS OF THE JOINT OPENING.

THE CONTRACTOR SHALL CLEAN STEEL RETAINERS AND ENSURE THE STEEL RETAINERS ARE FREE OF DEBRIS BEFORE INSTALLING THE NEW SEAL. THIS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. INSTALL NEW SEAL USING THE MANUFACTURE'S SPECIFICATIONS.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED AND SHOWN IN THE PLANS WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEMS (PAY ITEMS):

ITEM	UNIT	DESCRIPTION
516	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN

PRECOMPRESSED FOAM JOINT SYSTEM (ALTERNATE BID)

THE ALTERNATE BID PRECOMPRESSED FOAM JOINT SYSTEM SHALL BE USED IN AREAS WHERE ELASTOMERIC STRIP SEAL INSTALLATION IS NOT DEEMED FEASIBLE AND AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL EVALUATE EACH LOCATION IN REGARDS TO THE CONDITION OF THE EXISTING JOINT ARMOR, STEEL RETAINERS, JOINT OPENING, ETC. IF THE CONTRACTOR DETERMINES REPLACEMENT OF THE EXISTING STRIP SEAL WITH A NEW STRIP SEAL IS NOT FEASIBLE, THE CONTRACTOR SHALL DOCUMENT THE FINDINGS AND SUBMIT FOR APPROVAL TO THE ENGINEER, A REQUEST TO UTILIZE THE PRECOMPRESSED FOAM JOINT SYSTEM (ALTERNATE) AT THE LOCATION.

EVALUATION OF THE EXISTING JOINT REQUESTING APPROVAL FOR THE ALTERNATE SHALL BE CONSIDERED INCIDENTAL TO THE REMOVAL OF THE EXISTING JOINT AND PAID FOR UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: PRECOMPRESSED FOAM JOINT SYSTEM (ALTERNATE BID)

THE CONTRACTOR IS TO INCLUDE AN ALTERNATE BID FOR THE ELASTOMERIC STRIP SEAL. THE ALTERNATE CONSISTS OF A PRECOMPRESSED FOAM JOINT SYSTEM.

PRIOR TO ORDERING ANY MATERIALS, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS REGARDING THE REPLACEMENT OF EACH JOINT LOCATION UTILIZING THE PRECOMPRESSED FOAM JOINT SYSTEM. THE SHOP DRAWING SHALL INCLUDE THE TYPE OF THE EXISTING JOINT, THE PROPOSED JOINT, LOCATIONS OF ANY FIELD SPLICES AND SPLICE METHODS, MANUFACTURER'S INSTALLATIONS PROCEDURES, AND DIMENSIONS OF THE JOINT OPENING.

THE PRECOMPRESSED FOAM JOINT SYSTEM SHALL BE SELECTED FROM ONE OF THE FOLLOWING MANUFACTURERS:

WABO HSEAL
WATSON BOWMAN ACME CORP.
95 PINEVIEW DRIVE
AMHERST, NY 14228
PHONE: (800) 677-4922

OR

BEJS SYSTEM
EMSEAL JOINT SYSTEMS, LTD
25 BRIDLE LANE
WESTBOROUGH, MA 01581
PHONE: (508) 836-0280

OR AN APPROVED EQUAL.

USE EPOXY ADHESIVE AND SILICONE SEALANT PER THE MANUFACTURER'S RECOMMENDATIONS.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED AND SHOWN IN THE PLANS WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEMS (PAY ITEMS):

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: PRECOMPRESSED FOAM JOINT SYSTEM

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL RETAINER REPAIR

DESCRIPTION:
THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY REPLACE DAMAGED SECTIONS OF THE STRIP SEAL STEEL RETAINER. CARE SHALL BE TAKEN TO NOT DAMAGE THE EXISTING ANCHORAGE. ANY DAMAGE TO THE EXISTING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER, AND AT NO COST TO THE DEPARTMENT. A NEW SECTION OF THE SAME SHAPE AS

THE EXISTING STEEL RETAINER SHALL BE WELDED IN PLACE PER THE DETAILS SHOWN ON SHEET 152/156. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL RETAINER REPAIR

ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEANING BRIDGE DRAINAGE SYSTEM

DESCRIPTION:
THIS ITEM CONSISTS OF REMOVING ALL DIRT AND DEBRIS FROM DECK INLETS, CROSS DRAINS, DRAINAGE PIPES, HORIZONTAL CONDUCTORS, DOWNSPOUTS, STORM SEWERS, AND CATCH BASINS TO THE NEAREST DRAINAGE STRUCTURE AS SHOWN IN THE PLANS. AFTER THE DIRT AND DEBRIS ARE REMOVED, THE ENTIRE SYSTEM SHALL BE FLUSHED OUT WITH CLEAN WATER MAKING CERTAIN THAT WATER FLOWS SMOOTHLY TO ITS OUTLET. ADDITIONALLY, THIS ITEM INCLUDES THE SCOPING OF THE UNDERGROUND PORTIONS OF THE DRAINAGE SYSTEM UP TO THE NEAREST DRAINAGE STRUCTURE.

ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE BRIDGE SITE AND PROPERLY DISPOSED OF AS PER CMS SECTION 105.16 AND 105.17. EQUIPMENT FOR COLLECTING TRASH AND OTHER DEBRIS FROM THE BRIDGE SITE SHALL BE DETERMINED BY THE CONTRACTOR AND BE SUBJECT TO APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL NOT CAUSE OR ALLOW TRASH AND/OR DEBRIS FROM THE BRIDGE SITE TO BE DEPOSITED INTO A WETLAND, STREAM, OR ANY OTHER BODY OF WATER OR ACTIVE TRAFFIC LANES DURING THE CLEANING OF THE BRIDGE DRAINAGE SYSTEM.

SCOPING REQUIREMENTS:
PERFORM VIDEO INSPECTIONS OF THE DRAINAGE PIPES TO DETERMINE PIPE CONDITION AND REPLACEMENT NEEDS. THE WORK SHALL PROCEED AS OUTLINED IN THE DRAINAGE PLANS.

THE CONTRACTOR SHALL COMMENCE INSPECTION WORK WITHIN THIRTY DAYS AFTER OBTAINING A SIGNED CONSTRUCTION CONTRACT AND AUTHORIZATION TO BEGIN CONSTRUCTION. THE ENGINEER SHALL BE ALERTED IMMEDIATELY REGARDING ANY PORTIONS OF THE DRAINAGE PIPE AND/OR STORM SEWER NEEDING REPLACEMENT. AT LEAST 48 HOURS PRIOR TO THE REPLACEMENT OF ANY UNDERGROUND STORM SEWER, THE CONTRACTOR SHALL CONTACT OUPS AND HAVE ALL BURIED UTILITIES IN THE VICINITY MARKED TO ENSURE MINIMAL IMPACT TO OTHER UTILITY OWNERS.

MEASUREMENT AND PAYMENT:
ALL COSTS FOR LABOR, TOOLS, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE CLEANING OF THE DRAINAGE SYSTEM, REQUIRED SCOPING OF THE UNDERGROUND PORTIONS OF THE DRAINAGE SYSTEM, AND THE DISPOSAL OF THE DIRT AND DEBRIS SHALL BE INCLUDED WITH THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
518	LS	STRUCTURE DRAINAGE MISC.: CLEANING BRIDGE DRAINAGE SYSTEM

ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION:
THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A COMPOSITE FIBER WRAP SYSTEM INCLUDING PREPARATION,

WRAPPING, AND ALL INCIDENTALS NECESSARY TO COMPLETE THIS WORK. THE INSTALLATION SHALL BE PER THE MANUFACTURER'S REQUIREMENTS.

THE CONCRETE IS TO BE PATCHED PER ITEM 519, THEN CLEANED AND PREPARED TO THE INSTALLERS' SATISFACTION PRIOR TO THE INSTALLATION OF THE COMPOSITE FIBER WRAP SYSTEM.

MATERIALS:
SUPPLIERS SHALL HAVE A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3000-HOUR DURABILITY TESTS FOR 140°F WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE, AND OTHER FACTORS (REFER TO TABLE).

POLYESTER OR OTHER RESINS WILL NOT BE ALLOWED AS A SUBSTITUTE TO EPOXY RESINS.

SURFACE PREPARATION:
THE REPAIRED CONCRETE SURFACES SHALL BE ALLOWED TO CURE A MINIMUM OF 14 DAYS. THE SURFACES SHALL BE CLEAN AND FREE OF FINS, SHARP EDGES, DEPRESSIONS, OR OTHER CONDITIONS THAT MAY EFFECT THE INTENDED PERFORMANCE OF THE COMPOSITE FIBER WRAP SYSTEM. IF FIBERS ARE TO WRAP AROUND CORNERS OF RECTANGULAR CROSS-SECTIONS, THE CORNERS SHALL BE ROUNDED TO A 3/4" RADIUS. THE CERTIFIED AND EXPERIENCED INSTALLER RESPONSIBLE SHALL VERIFY THAT ALL REQUIRED SURFACE PREPARATION HAS BEEN COMPLETED PROPERLY.

COMPOSITE APPLICATION:
THE COMPOSITE FIBER WRAP SYSTEM SHALL ONLY BE INSTALLED BY INDIVIDUALS CERTIFIED IN WRITING BY THE MATERIAL SUPPLIER. THE CERTIFIED INSTALLER SHALL HAVE COMPLETED A MINIMUM OF 10 PROJECTS IN THE PAST TWO YEARS. REFERENCES OF THESE INSTALLATIONS INCLUDING DESCRIPTIONS AND CONTACT INFORMATION WILL BE REVIEWED. INSTALLERS WITHOUT THE PROPER CERTIFICATIONS, EXPERIENCE, AND REFERENCES WILL NOT BE ALLOWED TO COMPLETE THIS WORK.

TEMPERATURES OF THE SUBSTRATE TO RECEIVE THE COMPOSITE, AMBIENT TEMPERATURE, AND THE TEMPERATURE OF THE COMPOSITE FIBER WRAP SYSTEM MATERIALS SHALL BE BETWEEN 55 °F AND 95 °F AT THE TIME OF MIXING OF EPOXY. THE FIBER WRAP SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SUBSTRATE TEMPERATURE IS MORE THAN 5 °F ABOVE THE DEW POINT. APPLICATION OF THE FIBER WRAP SHALL BEGIN WITHIN ONE HOUR OF THE MIXING OF EPOXIES.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN ZTW | REVIEWED PJA | DATE 10-05-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3103390

STRUCTURE GENERAL NOTES (3 OF 5)
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THE MANUFACTURER SHALL DESIGNATE THE PROPER MIXING PROCEDURE FOR THE EPOXY RESINS.

APPLY A PRIMER COATING OF EPOXY TO SURFACES OF THE SUBSTRATE TO RECEIVE THE COMPOSITE FIBER WRAP SYSTEM.

SATURATE THE COMPOSITE FIBER IN A DOCUMENTED MANNER THAT ENSURES FULL SATURATION OF THE COMPOSITE FIBER PRIOR TO INSTALLATION. SATURATION OF THE COMPOSITE FIBER IN PLACE IS PROHIBITED. APPLY THE COMPOSITE FIBER TO THE PREPARED AND PRIMERED SUBSTRATE USING METHODS THAT PROVIDE A UNIFORM TENSILE FORCE OVER THE WIDTH OF THE SATURATED COMPOSITE FABRIC. STRONG FIBERS SHALL NOT DEVIATE FROM THE INTENDED FIBER DIRECTION MORE THAN 1#2" PER 12" LENGTH OF COMPOSITE. INSPECTION OF THE INSTALLED COMPOSITE SHALL BE COMPLETED PRIOR TO THE CURING OF THE FIBER WRAP TO ENSURE THAT ALL EDGES, SEAMS, AND OTHER AREAS ARE PROPERLY ADHERED. DURING THIS INSPECTION PROCESS, RELEASING OF ENTRAPPED AIR AND OTHER IDENTIFIED DEFICIENCIES SHALL BE ADDRESSED.

AFTER THE COMPOSITE FIBER WRAP SYSTEM HAS BEEN INSTALLED, USE THICKENED EPOXY TO DETAIL ALL EDGES AND SEAMS TO PROVIDE A SMOOTH FINISH. APPLY A FINAL LAYER OF THICKENED EPOXY TO THE INSTALLED COMPOSITE FIBER WRAP SYSTEM FOR PROTECTION.

COATING SYSTEM APPLICATION:
A FINAL INSPECTION SHALL BE PERFORMED ON ALL FIBER WRAP AFTER THE EPOXY SETS YET PRIOR TO THE APPLICATION OF THE EPOXY-URETHANE TOP COAT. ALL DEFECTS (INCLUDING BUBBLES, DELAMINATIONS, AND FABRIC TEARS) MORE THAN 1 SQUARE INCH OF THE SURFACE AREA, OR AS SPECIFIED BY THE ENGINEER, SHALL BE REPAIRED AS SUCH:

1. SMALL DEFECTS (ON THE ORDER OF 6" DIAMETER) SHALL BE INJECTED OR BACK FILLED WITH EPOXY.

2. BUBBLES LESS THAN 12" DIAMETER SHALL BE REPAIRED BY INJECTING WITH EPOXY. TWO HOLES SHALL BE DRILLED INTO THE BUBBLE TO ALLOW INJECTION OF THE EPOXY AND ESCAPE OF ENTRAPPED AIR.

3. BUBBLES, DELAMINATIONS, AND FABRIC TEARS GREATER THAN 12" IN DIAMETER SHALL BE REPAIRED BY REMOVING AND REAPPLYING THE FIBER WRAP AND FINISH COATING. ALL REPAIRS SHALL BE APPROVED BY THE ENGINEER.

AFTER 96 HOURS FROM THE FINAL APPLICATION OF EPOXY, IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED, THE EXTERIOR SURFACES OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY AND FREE OF DUST, DIRT, OIL, WAX, CURING COMPOUNDS, EFFLORESCENCE, LAITANCE, AND OTHER FOREIGN MATERIAL BEFORE APPLYING THE EPOXY-URETHANE SEALANT. EPOXY-URETHANE SEALANT SHALL BE PAID FOR WITH ITEM 512.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED AND SHOWN IN THE PLANS WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	SF	COMPOSITE FIBER WRAP SYSTEM

PROPERTY	REQUIREMENT	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI, MIN. IN PRIMARY FIBER DIRECTION	60,000 PSI	D3039, AVERAGE OF 7, 1" BY 10" NORMALIZED TO 0.80" THICK 0.01" PER MINUTE TESTING SPEED
ULTIMATE TENSILE STRENGTH, PSI, MIN. IN ORTHOGONAL FIBER DIRECTION	3,000 PSI	D3039, AVERAGE OF 7, 1" BY 10" NORMALIZED TO 0.80" THICK 0.01" PER MINUTE TESTING SPEED
TENSILE STRENGTH (MIN. AFTER TEST) 3000 HOURS EXPOSURE TO 100% HUMIDITY	60,000 PSI	C581
TENSILE STRENGTH (MIN. AFTER TEST) 3000 HOURS EXPOSURE TO OZONE	60,000 PSI	D1149 EXCEPT NOT UNDER STRESS DURING OZONE EXPOSURE
TENSILE STRENGTH (MIN. AFTER TEST) 3000 HOURS EXPOSURE TO ALKALI	60,000 PSI	D3083 USING SOIL BURIAL WATER CONTENT OF 73% ± 3%
TENSILE STRENGTH (MIN. AFTER TEST) 3000 HOURS EXPOSURE TO SALT	60,000 PSI	C581 AND D1141 OMITTING ADDITION OF HEAVY METAL REAGENTS
TENSILE STRENGTH (MIN. AFTER TEST) 3000 HOURS EXPOSURE AT 140° F	60,000 PSI	D3045
TENSILE STRENGTH (MIN. AFTER TEST) ULTRAVIOLET (UV) EXPOSURE	60,000 PSI	G154 USING FS40 UV-B BULBS FOR A MIN. 40 CYCLES. THE CYCLE SHALL BE 4 HOURS OF CONDENSATE EXPOSURE AT 104° F.
ELONGATION PERCENT, MIN. PERCENT, MAX.	1.7% 5.0%	
TENSILE MODULUS, PSI MIN. OF PRIMARY FIBERS (E)	3,000,000	D3039
VISUAL DEFECTS	ACCEPTANCE LEVEL III	D2563
COEFFICIENT OF THERMAL EXPANSION IN PRIMARY DIRECTION	4,300,000 PPM / °F (+15%)	D696

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

ESTIMATED QUANTITIES ARE BASED ON THE MOST RECENT IN-DEPTH INSPECTION OF THE STRUCTURE. AREAS TO BE PATCHED HAVE BEEN DETAILED IN THE PLANS.

IT IS POSSIBLE THAT ADDITIONAL AREAS REQUIRING PATCHING MAY HAVE DEVELOPED SINCE THE MOST RECENT INSPECTION OF THE STRUCTURE. THEREFORE, THE CONTRACTOR SHALL SOUND THE SURROUNDING PERIMETER OF THE AREA TO BE PATCHED AND PATCH NEW AREAS APPROVED BY THE ENGINEER THAT HAVE NOT BEEN DETAILED IN THE PLANS.

THIS ITEM OF WORK SHALL BE PER ITEM 519 WITH THE FOLLOWING MODIFICATIONS:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN CMS 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.

ALL CONCRETE REPAIRS REQUIRE ¾" SAWCUTS ALONG THE LIMITS OF REMOVAL BEFORE CHIPPING. CONCRETE PATCHING AREAS MUST BE INSPECTED AFTER SAWCUTTING AND AGAIN AFTER DETERIORATED CONCRETE IS REMOVED.

SUBMIT FORM WORK AND PUMPING PROCEDURES FOR CONCRETE PATCHING FOR APPROVAL PRIOR TO STARTING WORK. THIS SUBMISSION SHALL INCLUDE STEPS FOR INSTALLATION OF FORMS, PUMPING PATCHING MATERIAL, REMOVAL OF FORM WORK, AND METHOD OF PREVENTING VOIDS WITHIN THE PATCHING AREAS. SUBMIT ANY CHANGES IN CONCRETE MIX DESIGN WITH SMALL AGGREGATE FOR PUMPING PROCEDURE FOR APPROVAL PRIOR TO STARTING WORK. FINISHED PATCHES MUST BE INSPECTED FOR SURFACE PROFILE, QUALITY OF PATCH, AND TO ENSURE THERE ARE NO VOIDS IN THE CONCRETE PATCHES.

MEASUREMENT AND PAYMENT:
THE PLAN QUANTITIES INCLUDE AN INCREASE OVER THE FIELD MEASURED QUANTITIES. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
519	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM SPECIAL - STRUCTURES, MISC.: TEMPORARY PROTECTIVE STRUCTURES

DESCRIPTION:
THIS ITEM SHALL CONSIST OF CONSTRUCTING, MAINTAINING, AND REMOVING TEMPORARY PROTECTIVE STRUCTURES AS NOTED IN THE PLANS, AND AS REQUIRED TO COMPLETE THE PERMANENT WORK. THE WORK INCLUDES TEMPORARY PLATFORMS OR OTHER MEANS TO PREVENT LOOSE MATERIALS FROM FALLING DURING RECONSTRUCTION OF THE STRUCTURE OVER ACTIVE AREAS BELOW AND EXISTING FACILITIES SCHEDULED TO REMAIN. THIS ITEM ALSO INCLUDES PLATFORMS OR STAGING AS REQUIRED TO PERMIT ACCESS FOR INSPECTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY PROTECTIVE STRUCTURES AS REQUIRED TO PROTECT ACTIVE AREAS BELOW AND EXISTING FACILITIES SCHEDULED TO REMAIN. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROVIDE TEMPORARY PROTECTIVE STRUCTURES DURING REMOVAL, RECONSTRUCTION, AND CONSTRUCTION OPERATIONS.

IN ORDER TO PROTECT VEHICULAR TRAFFIC, PEDESTRIAN TRAFFIC, EXISTING STRUCTURES, AND PAVEMENT AGAINST DAMAGE FROM FALLING MATERIAL AND DEBRIS WHILE THE CONTRACTOR IS WORKING OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT A TEMPORARY PROTECTIVE STRUCTURE DIRECTLY UNDER THE AREA WHERE THE CONTRACTOR IS PERFORMING WORK, PLUS ENOUGH ADDITIONAL COVERAGE IN THE AREA TO PREVENT ANY FALLING MATERIAL FROM REACHING THESE AREAS.

THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PROTECT THE FINISHED PAINTED SURFACE FROM DAMAGE DURING THE INSTALLATION AND REMOVAL OF THE TEMPORARY PROTECTIVE STRUCTURES. THIS PROTECTION SHALL INCLUDE THE USE OF PADDING ON BRACKETS AND SUPPORTS AND OTHER PROTECTIVE METHODS THE CONTRACTOR MAY DEEM NECESSARY FOR PROTECTING THE PAINTED SURFACES. THE ENGINEER MAY DELAY THE START OF THE CONTRACTOR'S OPERATIONS, OR SUSPEND HIS OPERATIONS IN WHOLE OR IN PART IF THE CONTRACTOR DOES NOT UTILIZE PROPER CARE OR MEANS TO PROTECT THE PAINTED STEEL DURING ERECTION OR REMOVAL OF TEMPORARY PROTECTIVE STRUCTURES AT NO ADDITIONAL COST TO THE DEPARTMENT.

WHEN SUPPORTING THE TEMPORARY PROTECTIVE STRUCTURES FROM THE STEELWORK OF THE BRIDGE, ALL CONNECTIONS THERETO SHALL BE MADE BY MEANS OF APPROVED CLAMPS ON BOTH SIDES OF THE STEEL MEMBER. THE DRILLING OF HOLES IN THE STEELWORK, OR WELDING THERETO, FOR THIS PURPOSE WILL NOT BE PERMITTED. IF, IN THE OPINION OF THE ENGINEER, ADDITIONAL SUPPORTS ARE REQUIRED, THEY SHALL BE PROVIDED BY THE CONTRACTOR AT HIS OWN EXPENSE. FOR MINIMUM UNDERCLEARANCE REQUIREMENTS, SEE SHEET 2 / 199.

AFTER THE TEMPORARY PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR.

THE CALCULATIONS AND DETAILS OF THE TEMPORARY PROTECTIVE STRUCTURES SHALL BE PREPARED BY THE CONTRACTOR AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO AND SUBMITTED TO THE ENGINEER FOR APPROVAL. IF ANY TEMPORARY PROTECTIVE STRUCTURES ARE ATTACHED TO THE STRUCTURE, THE CONTRACTOR SHALL PROVIDE CALCULATIONS ASSURING THE STRUCTURAL INTEGRITY OF THE BRIDGE UNDER LIVE AND DEAD LOADS IMPOSED, INCLUDING THE DESIGN WIND LOADING. DESIGN SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE MOST CURRENT VERSION OF AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" AND ODOT'S BRIDGE DESIGN MANUAL.

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TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN ZTW | CHECKED SFH | REVIEWED PJA | DATE 10-05-16 | REVISED | STRUCTURE FILE NUMBER 3103390

STRUCTURE GENERAL NOTES (4 OF 5)
BRIDGE No. HAM-50-2180N
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ALL PLATFORMS, STAGING, AND PROTECTIVE STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND OSHA. INSPECTION ACCESS SHALL BE PROVIDED FOR THE INSPECTOR TO OBSERVE ALL WORK BEING PERFORMED UTILIZING THE TEMPORARY PLATFORMS AND STAGING.

DETAILS OF THE TEMPORARY PROTECTIVE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. DETAILS SHALL INCLUDE THE EXISTING AND PROPOSED TEMPORARY UNDERCLEARANCES TO THE TRAVELED WAY OF A HIGHWAY, ROAD, OR PARKING LOT ON WHICH TRAFFIC IS BEING MAINTAINED. APPROVAL OF THESE PLANS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY OF PROVIDING A SAFE PROTECTION SYSTEM.

MEASUREMENT AND PAYMENT:
THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, AND TO THE SATISFACTION OF THE ENGINEER, AND SHALL BE PAID FOR UNDER THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	LS	STRUCTURES, MISC.: TEMPORARY PROTECTIVE STRUCTURES

ITEM 845 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL

ITEM 845 - FIELD METALLIZING, MISC.: METALLIZING OF EXISTING STRIP SEAL EXPANSION JOINT ARMOR AND RETAINERS

DESCRIPTION:
THIS WORK CONSISTS OF PERFORMING ABRASIVE BLASTING AND FIELD METALLIZING OF THE FOLLOWING ITEMS:

- EXISTING STRIP SEAL EXPANSION JOINT ARMOR

- EXISTING STRIP SEAL STEEL RETAINERS

THE CONTRACTOR SHALL ADHERE TO ALL PORTIONS OF SUPPLEMENTAL SPECIFICATION 845 FOR METALLIZING OF STRUCTURAL STEEL WITH THE FOLLOWING EXCEPTIONS:

SS 845.13 SECTION C & SS 845.17
FOR FIELD BLASTING USE A RECYCLABLE STEEL GRIT, OR A RECYCLABLE NATURAL MINERAL, LOW DUSTING ABRASIVE. DO NOT USE SILICA SANDS, MINERAL SLAGS, AND OTHER TYPES OF NON-METALLIC ABRASIVES THAT CONTAIN MORE THAN 0.5 PERCENT FREE SILICA, BY WEIGHT, HAVE A CHLORIDES SALTS CONTENT MORE THAN 25 PPM, AND CONTAIN ANY ORGANIC MATERIAL.

SS 845.14 SECTION A
A 12 MIL THICKNESS OF METALLIZING SHALL BE APPLIED TO ALL SURFACES OF THE EXPANSION JOINT ARMOR AND STEEL RETAINERS INCLUDING THE TRAVELED SURFACES.

SS 845.14 SECTION H
STENCILING REQUIREMENT SHALL BE WAIVED THIS INSTANCE.

ALL OTHER REQUIREMENTS OF SS 845 SHALL BE ENFORCED.

MEASUREMENT AND PAYMENT:
THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEMS (PAY ITEMS):

ITEM	UNIT	DESCRIPTION
845	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL
845	SF	FIELD METALLIZING, MISC.: METALLIZING OF EXISTING STRIP SEAL EXPANSION JOINT ARMOR AND RETAINERS

ABBREVIATIONS:

APP.	=	APPROACH
ABUT.	=	ABUTMENT
BRG.	=	BEARING
℄	=	CENTERLINE
CLR.	=	CLEAR
CY	=	CUBIC YARD
CVN	=	CHARPY V-NOTCH
DIA.	=	DIAMETER
DIM.	=	DIMENSION
E.F.	=	EAST FACE
EL.	=	ELEVATION
EX.	=	EXISTING
FT.	=	FOOT/FEET
FWD.	=	FORWARD
LBS.	=	POUNDS
LF	=	LINEAR FEET
MAX.	=	MAXIMUM
MIN.	=	MINIMUM
N	=	NORTH
N.F.	=	NORTH FACE
NO.	=	NUMBER
N/A	=	NOT APPLICABLE
PC	=	POINT OF CURVATURE
P.E.J.F.	=	PREFORMED EXPANSION JOINT FILLER
PL	=	PLATE
PSI	=	POUNDS PER SQUARE INCH
PT.	=	POINT
QTY.	=	QUANTITY
R	=	RADIUS
R.R.	=	RAILROAD
REINF.	=	REINFORCEMENT
S	=	SOUTH
S.F.	=	SOUTH FACE
SF	=	SQUARE FEET
SHLDR.	=	SHOULDER
SPA.	=	SPACE(S)
SQ FT	=	SQUARE FEET
ST.	=	STREET
STA.	=	STATION
STD.	=	STANDARD
SY	=	SQUARE YARD
TYP.	=	TYPICAL
W.F.	=	WEST FACE
W.P.	=	WORKING POINT
CMS	=	ODOT 2016 CONSTRUCTION AND MATERIALS SPECIFICATIONS

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DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DATE 10-05-16
REVIEWED PJA
STRUCTURE FILE NUMBER 3103390
DRAWN ZTW
REVISED
DESIGNED ZTW
CHECKED SFH

STRUCTURE GENERAL NOTES (5 OF 5)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

MADE BY: ZTW DATE: 07/12/16
CHECKED BY: RJM DATE: 07/14/16

ESTIMATED QUANTITIES

STRUCTURE FILE NUMBER: 3103390

ITEM	EXTENSION	TOTAL	PLAN SPLITS 02/IMS/BR	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	REFERENCE SHEET NUMBER
202	11203	LS	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	3 /156
202	35101	68	68	FT	PIPE REMOVED, 24" AND UNDER, AS PER PLAN				68	154/156
203	22000	22	22	CY	EMBANKMENT, USING NATURAL SOILS, 703.16.A				22	
203	35001	30	30	CY	GRANULAR EMBANKMENT, AS PER PLAN				30	3 /156
509	20001	100	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				100	3 /156
512	10101	894	894	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	17	877			3 /156
512	10300	163	163	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN			163		
512	10600	381	381	FT	CONCRETE REPAIR BY EPOXY INJECTION	69	312			
513	95030	203	203	EACH	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 1			203		3 & 4 /156
513	95030	1541	1541	EACH	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 2			1541		3 & 4 /156
513	95030	212	212	EACH	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 3			212		3 & 4 /156
514	00051	11778	11778	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN			11778		4 & 5 /156
514	00057	11778	11778	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN			11778		4 & 5 /156
514	00061	15804	15804	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN			15804		4 & 5 /156
514	00067	15804	15804	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN			15804		4 & 5 /156
514	00504	196	196	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			196		
514	10000	14	14	EACH	FINAL INSPECTION REPAIR			14		
516	01301	766	766	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN			766		5 /156
516	14600	15	15	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL RETAINER REPAIR			15		5 /156
516	14600	766	766	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: PRECOMPRESSED FOAM JOINT SYSTEM (ALTERNATE BID)			766		5 /156
518	12801	1	1	EACH	SCUPPER, MODIFICATION, AS PER PLAN				1	154/156
518	51101	14	14	FT	8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN				14	155/156
518	63300	LS	LS		STRUCTURE DRAINAGE, MISC.: CLEANING BRIDGE DRAINAGE SYSTEM				LS	5 /156
SPECIAL	51900100	3568	3568	SF	COMPOSITE FIBER WRAP SYSTEM		3568			5 & 6 /156
519	11101	1114	1114	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	30	1084			6 /156
SPECIAL	53000200	LS	LS		STRUCTURES, MISC.: TEMPORARY PROTECTIVE STRUCTURES				LS	6 & 7 /156
601	21000	90	90	SY	CONCRETE SLOPE PROTECTION				90	
611	04601	32	32	FT	12" CONDUIT, TYPE C, AS PER PLAN				32	154/156
611	99900	3	3	EACH	DRAINAGE STRUCTURE, MISC.: CLEANOUT BOX COVER				3	154/156
845	60000	1374	1374	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			1374		7 /156
845	61000	25	25	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			25		
845	98000	1374	1374	SF	FIELD METALLIZING, MISC.: METALLIZING OF EXISTING STRIP SEAL EXPANSION JOINT ARMOR AND RETAINERS			1374		7 /156

NOTES:

1. FOR STRUCTURE GENERAL NOTES, SEE SHEETS 3 /156 THRU 7 /156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN ZTW | REVIEWED PJA | DATE 10-05-16
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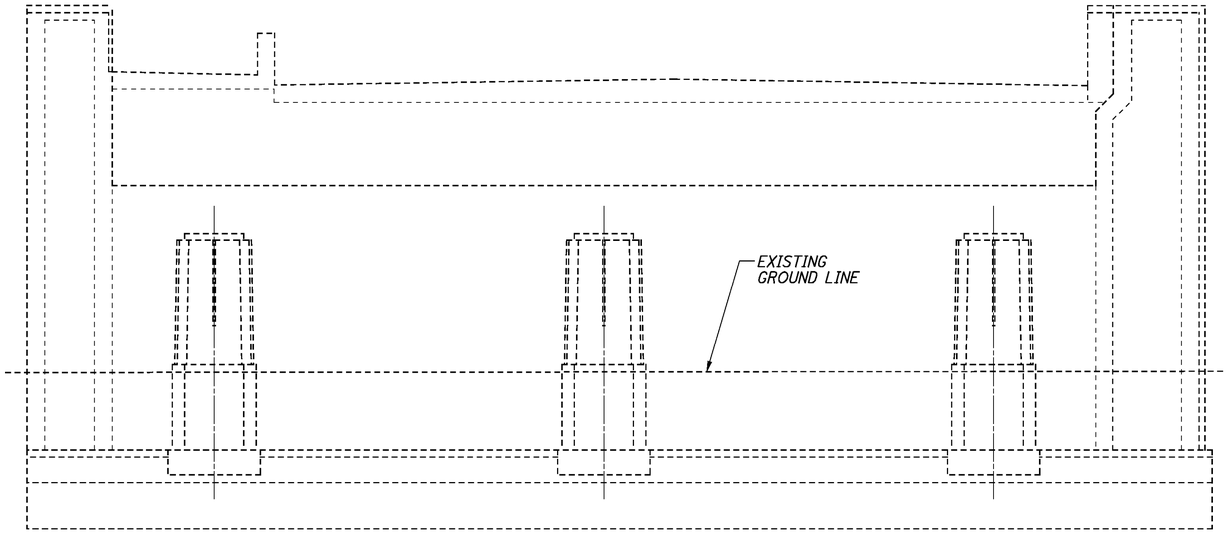
ESTIMATED QUANTITIES
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

8 /156

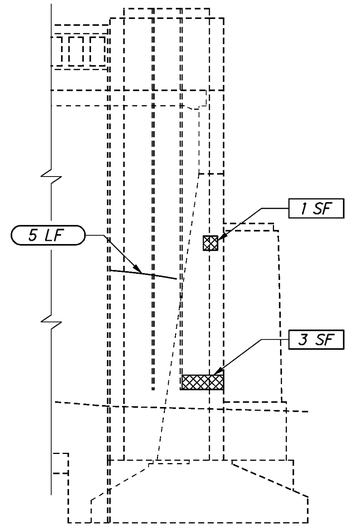
51
199

91939EQ001.dgn 10/7/2016 11:43:48 AM sfhammerschmidt

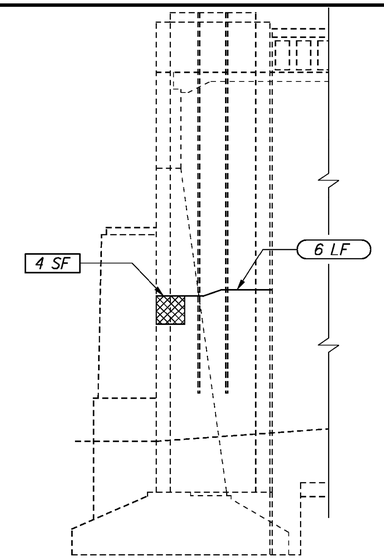


ABUTMENT 1 ELEVATION

(DOWNSPOUTS NOT SHOWN)



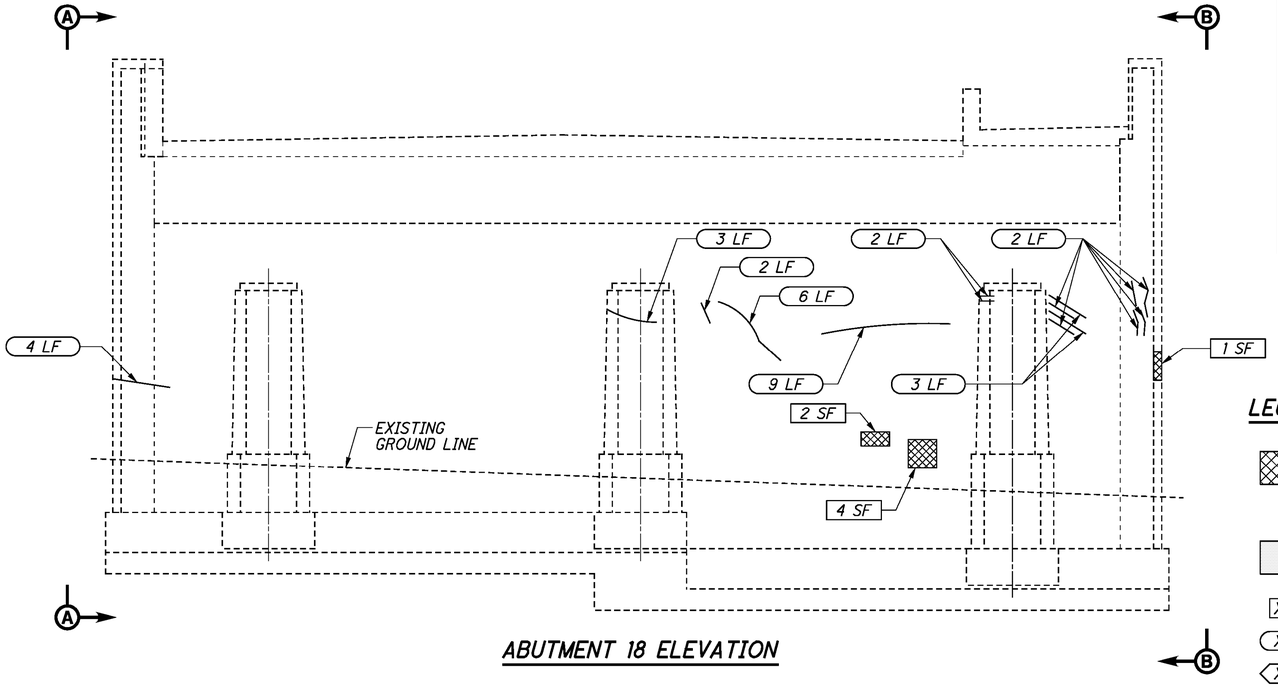
VIEW A-A



VIEW B-B

LOCATION	CONCRETE REPAIR BY EPOXY INJECTION SUMMARY		CONCRETE PATCHING REPAIR SUMMARY		CONCRETE FIBER WRAP SUMMARY	
	* FIELD MEASURED REPAIR LENGTH	PLAN QUANTITY	* FIELD MEASURED REPAIR AREA	PLAN QUANTITY	* FIELD MEASURED REPAIR AREA	PLAN QUANTITY
ABUTMENT 1	0 LF	0 LF	0 SF	0 SF	0 SF	0 SF
PIER 2	0 LF	0 LF	40 SF	80 SF	140 SF	280 SF
PIER 3	6 LF	8 LF	50 SF	100 SF	182 SF	364 SF
PIER 4	10 LF	12 LF	24 SF	48 SF	70 SF	140 SF
PIER 5	15 LF	18 LF	49 SF	98 SF	181 SF	362 SF
PIER 6	0 LF	0 LF	0 SF	0 SF	0 SF	0 SF
PIER 7	15 LF	18 LF	69 SF	138 SF	264 SF	528 SF
PIER 8	50 LF	60 LF	14 SF	28 SF	54 SF	108 SF
PIER 9	56 LF	68 LF	14 SF	28 SF	78 SF	156 SF
PIER 10	33 LF	40 LF	119 SF	238 SF	334 SF	668 SF
PIER 11	0 LF	0 LF	8 SF	16 SF	36 SF	72 SF
PIER 12	36 LF	44 LF	71 SF	142 SF	300 SF	600 SF
PIER 13	9 LF	11 LF	12 SF	24 SF	58 SF	116 SF
PIER 14	16 LF	20 LF	4 SF	8 SF	18 SF	36 SF
PIER 15	0 LF	0 LF	18 SF	36 SF	69 SF	138 SF
PIER 16	4 LF	5 LF	24 SF	48 SF	0 SF	0 SF
PIER 17	6 LF	8 LF	26 SF	52 SF	0 SF	0 SF
ABUTMENT 18	57 LF	69 LF	15 SF	30 SF	0 SF	0 SF
TOTAL	313 LF	381 LF	557 SF	1114 SF	1784 SF	3568 SF

* FROM FIELD INSPECTION DATED SEPT. 25, 2014



ABUTMENT 18 ELEVATION

LEGEND:

- INDICATES AREA OF DETERIORATED CONCRETE TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN. THESE AREAS ARE APPROXIMATE.
- INDICATES AREA OF CONCRETE TO BE WRAPPED WITH A COMPOSITE FIBER WRAP SYSTEM PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM.
- XX SF - PATCHING QUANTITY
- XX LF - CRACK REPAIR QUANTITY
- XX SF - FIBER WRAP QUANTITY

NOTES:

1. ALL ABUTMENT AND PIER PATCHES ARE TO BE SEALED WITH EPOXY-URETHANE SEALANT. FOR PATCHES WITHOUT FIBER WRAP, THE SEALANT SHALL COVER THE AREA OF THE NEW PATCH AS WELL AS A 12" STRIP SURROUNDING THE NEW PATCH, WHERE FEASIBLE. FOR PATCHES WITH FIBER WRAP, THE SEALANT SHALL COVER THE AREA OF THE NEW FIBER WRAP AS WELL AS A 12" STRIP SURROUNDING THE NEW FIBER WRAP, WHERE FEASIBLE. SEALING OF THE REPAIR PATCHES, FIBER WRAP AND SURROUNDING AREAS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN.
2. WHERE INDICATED IN THE PLANS, CONCRETE REPAIRS SHALL HAVE A COMPOSITE FIBER WRAP SYSTEM APPLIED. THE FIBER WRAP SYSTEM SHALL COVER THE AREA OF THE NEW PATCH AS WELL AS A 12" STRIP SURROUNDING THE NEW PATCH AREA, WHERE FEASIBLE. SEE SHEET 5/156 AND 6/156 FOR ADDITIONAL DETAILS.

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN JLV | REVIEWED PJA | DATE 10-05-16
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CONCRETE PATCHING DETAILS (1 OF 10)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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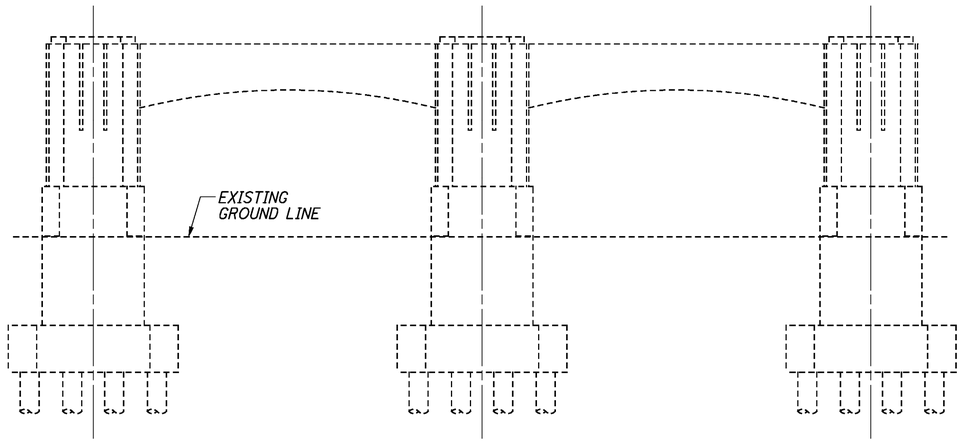
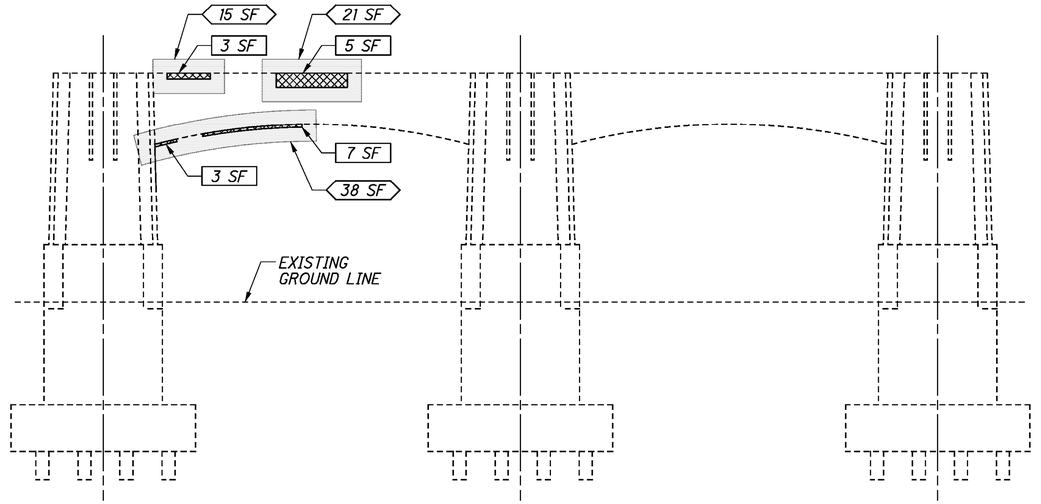


PIER 2 - WEST ELEVATION



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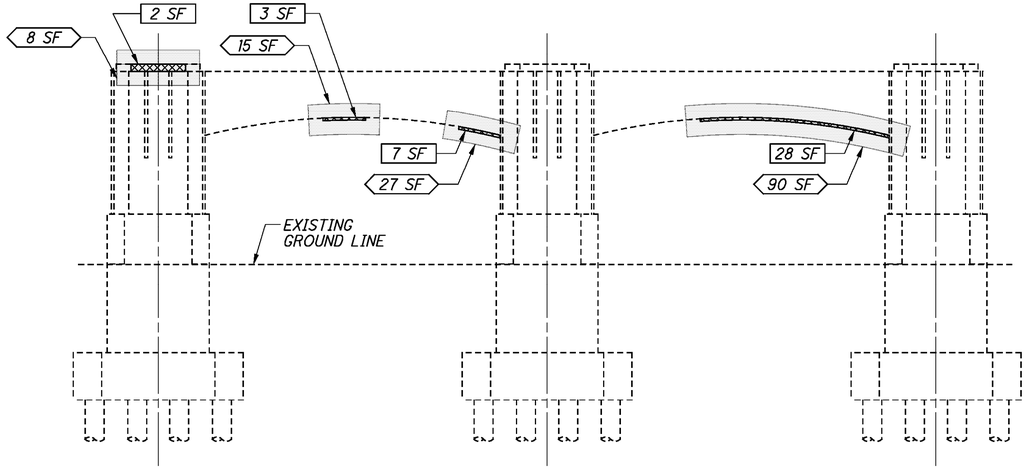
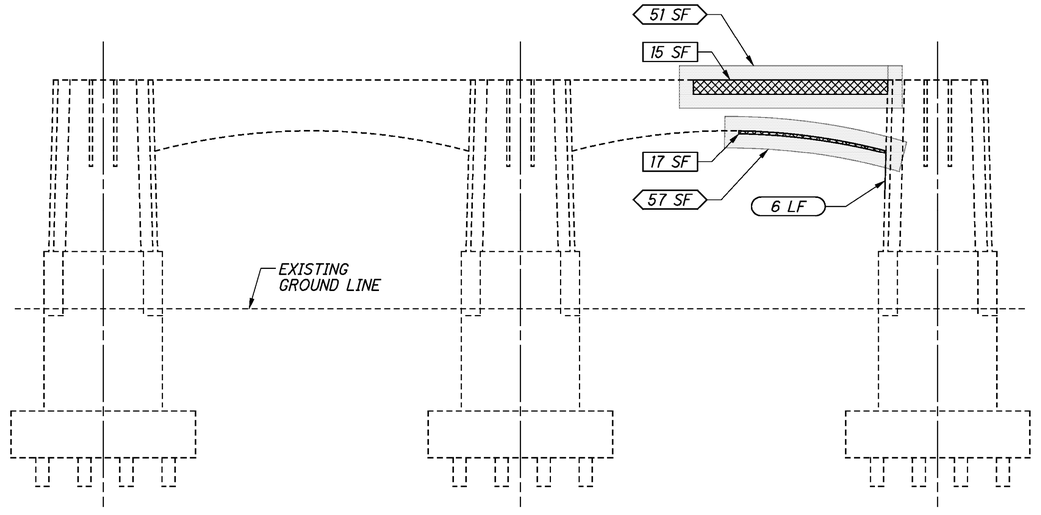


PIER 2 - EAST ELEVATION

(DOWNSPOUTS NOT SHOWN)



PIER 3 - EAST ELEVATION

(DOWNSPOUTS NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

CONCRETE PATCHING DETAILS (2 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

10 / 156

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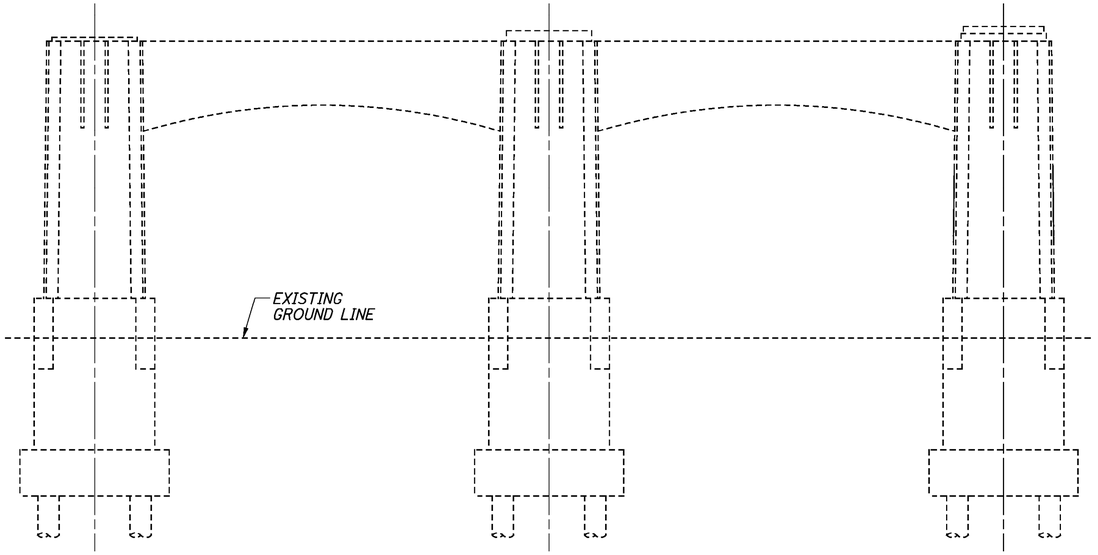

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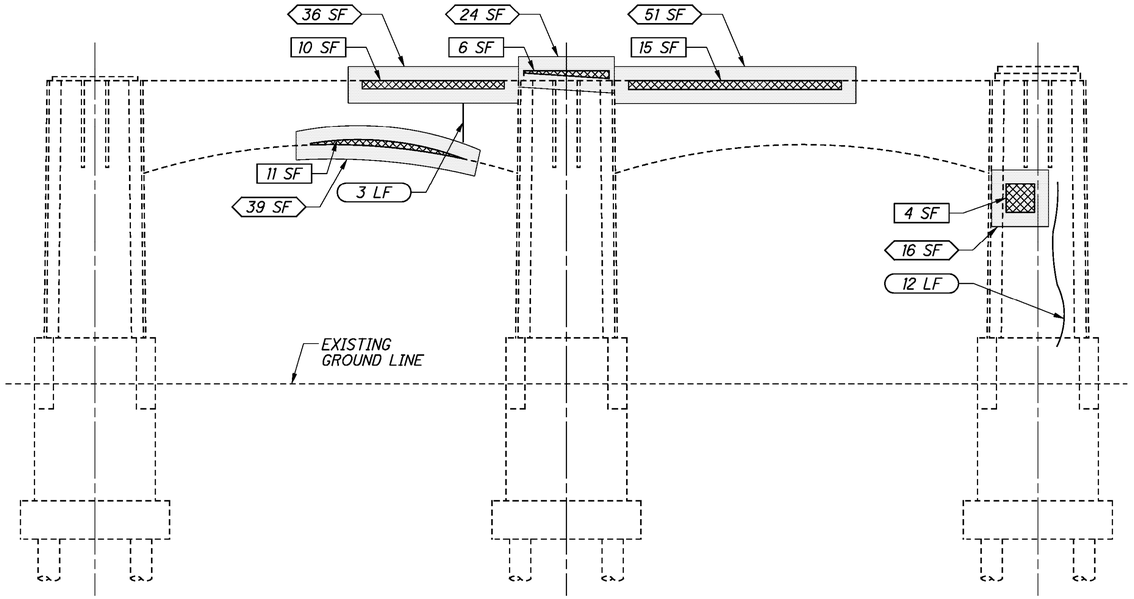
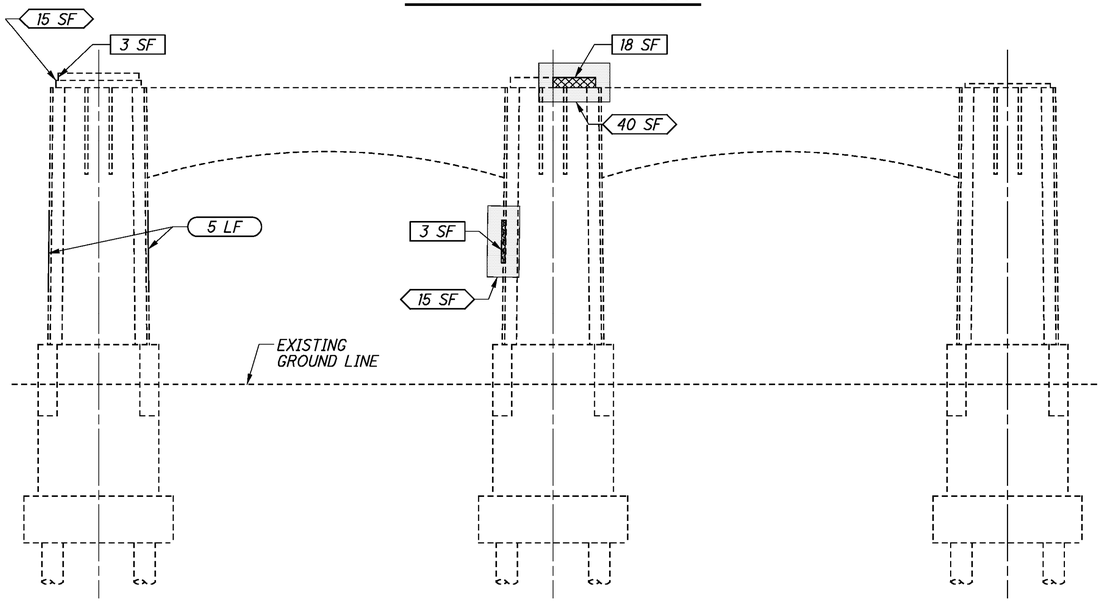
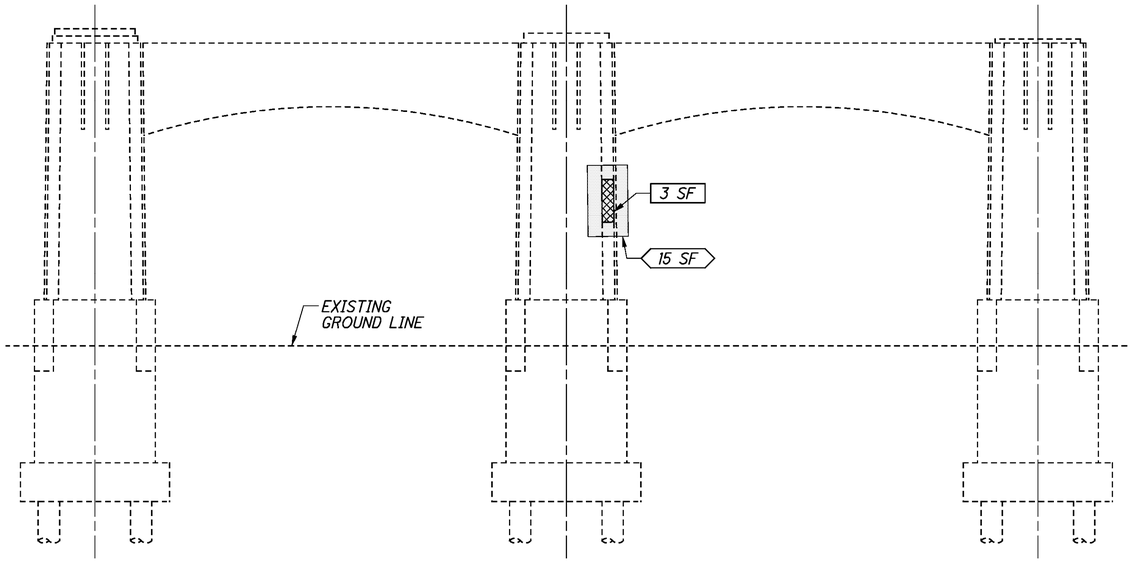


PIER 5 - WEST ELEVATION



PIER 4 - EAST ELEVATION

(DOWNSPOUTS NOT SHOWN)



PIER 5 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

CONCRETE PATCHING DETAILS (3 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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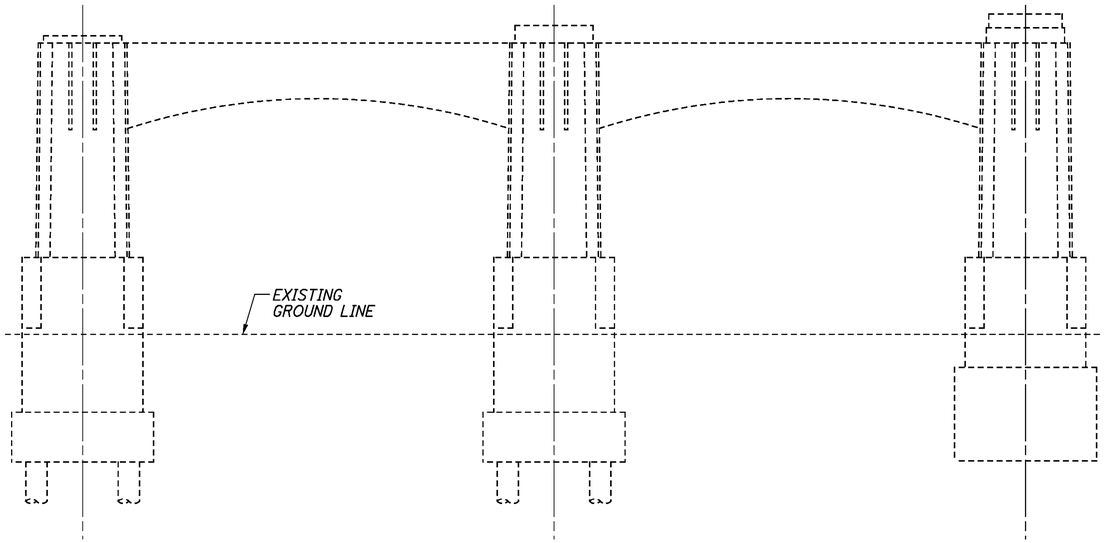
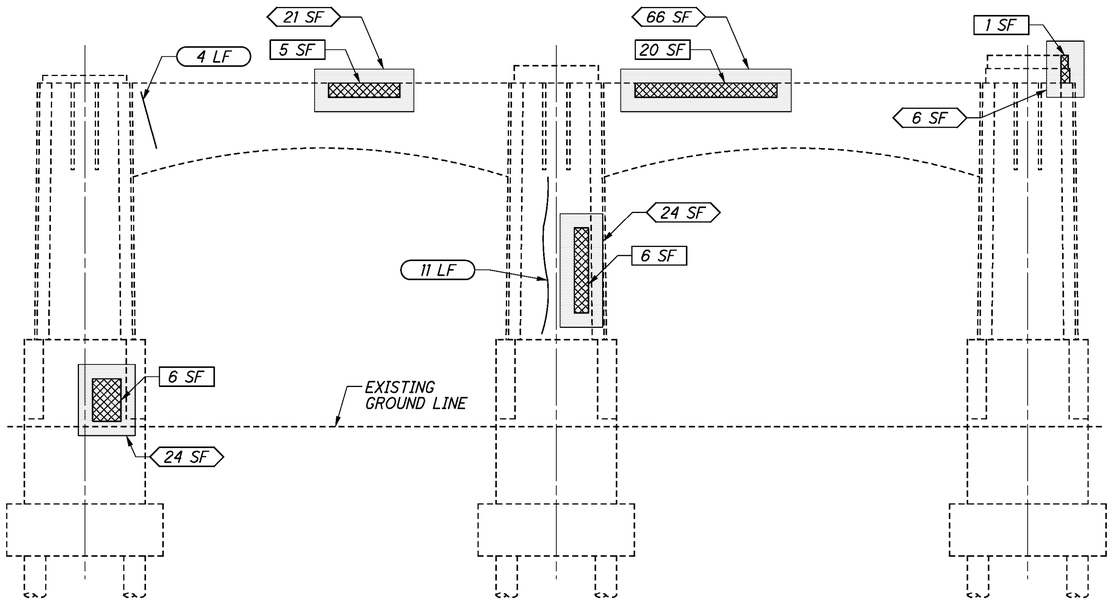
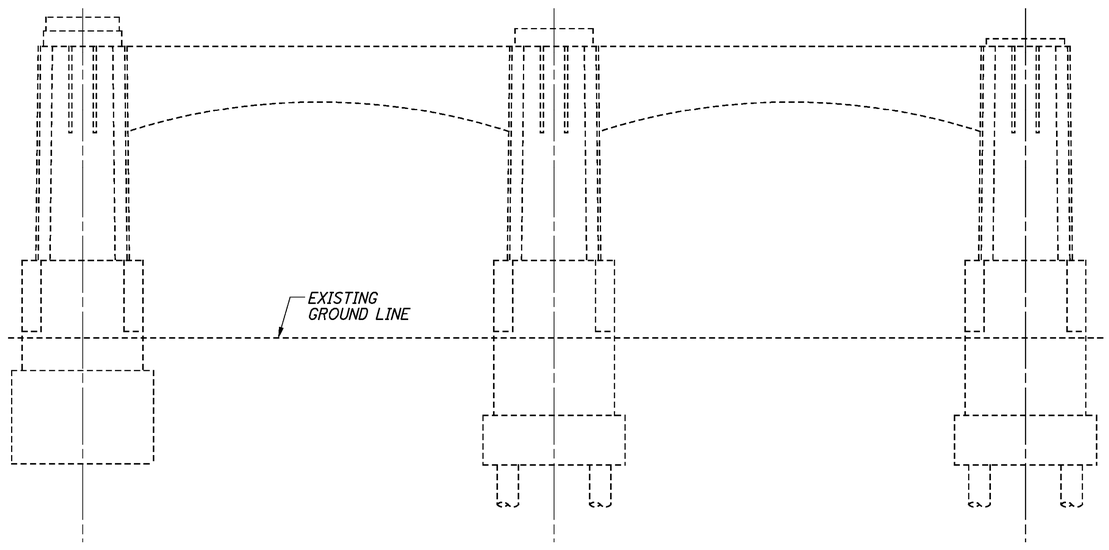


PIER 6 - WEST ELEVATION



PIER 7 - WEST ELEVATION



PIER 6 - EAST ELEVATION
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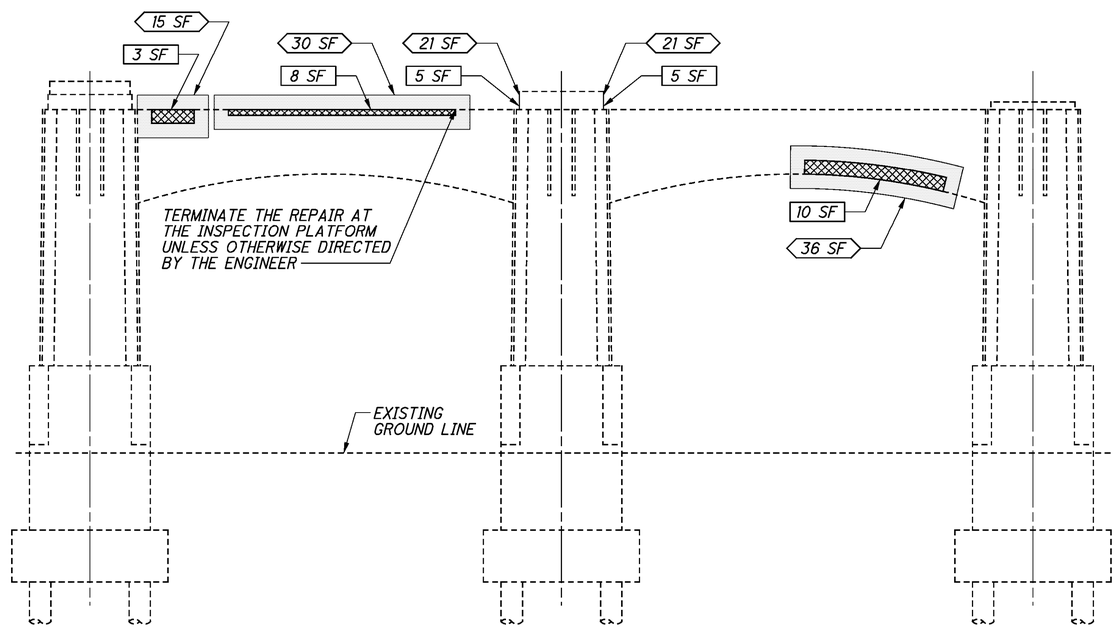

PIER 7 - EAST ELEVATION
(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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ZTW	JLV	PJA	10-05-16
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CONCRETE PATCHING DETAILS (4 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

12 / 156

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199

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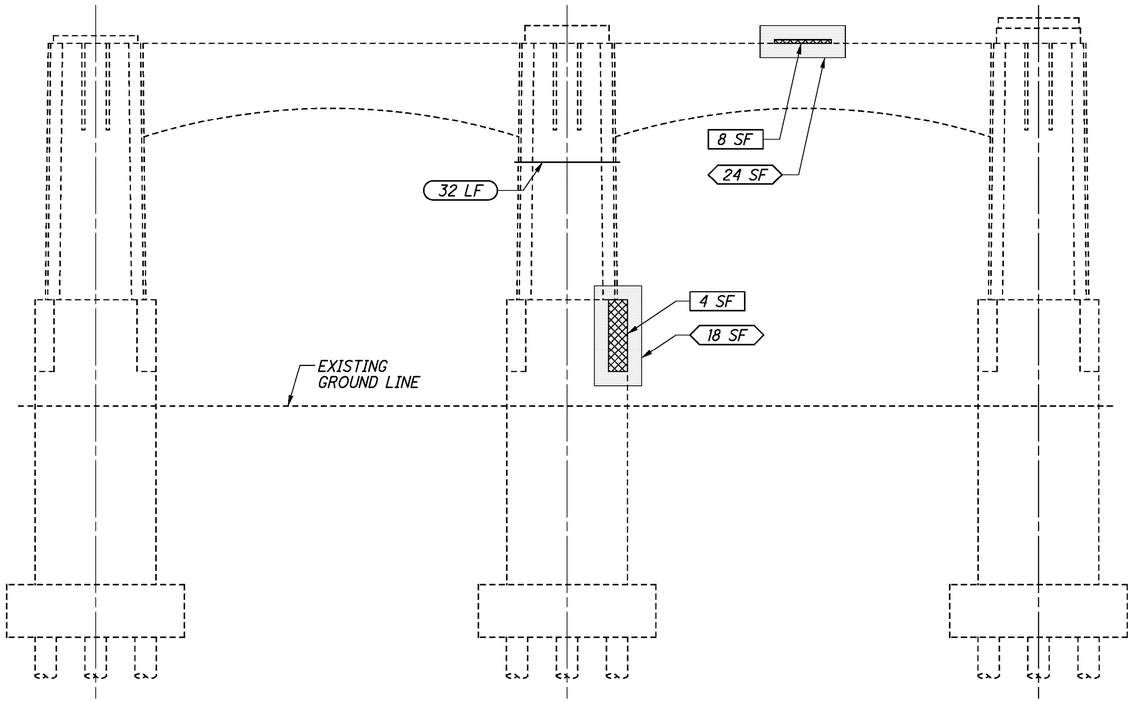
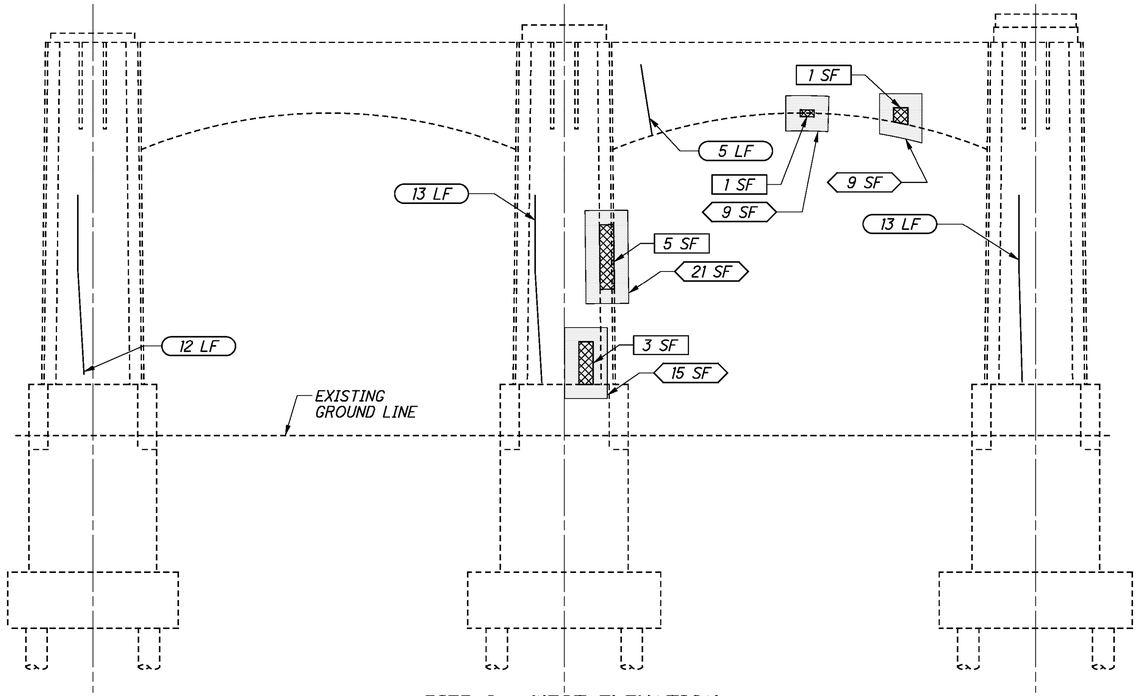
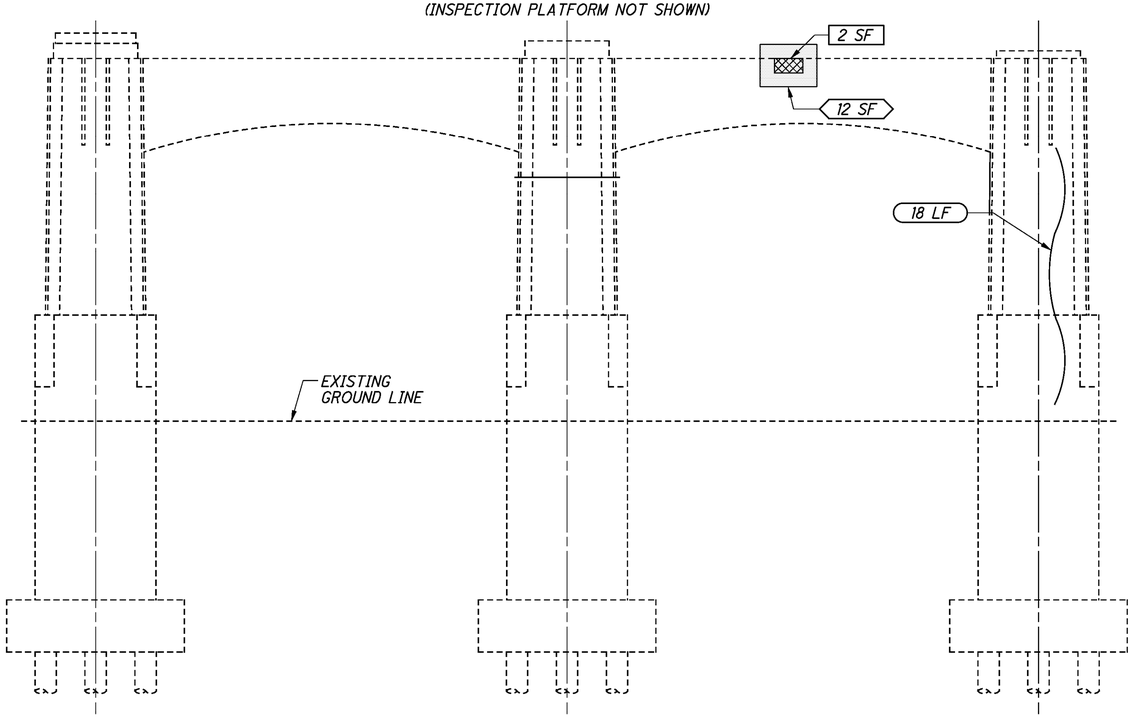


PIER 8 - WEST ELEVATION

(INSPECTION PLATFORM NOT SHOWN)

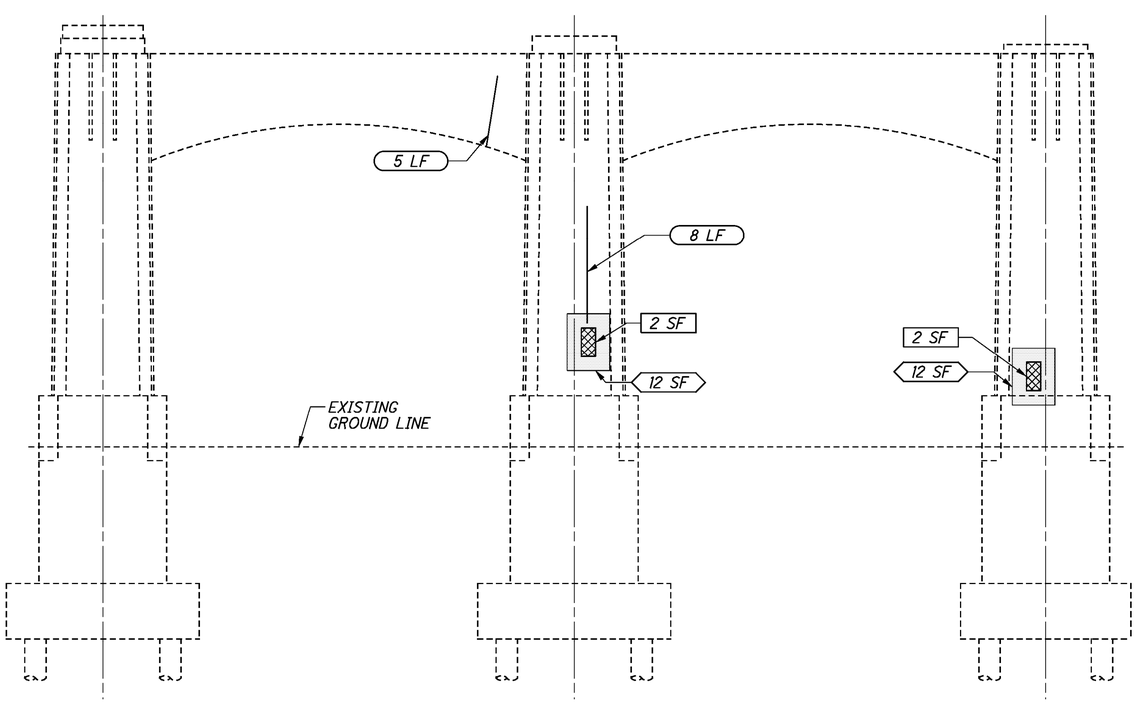


PIER 9 - WEST ELEVATION



PIER 8 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)



PIER 9 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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CONCRETE PATCHING DETAILS (5 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

13 / 156

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199

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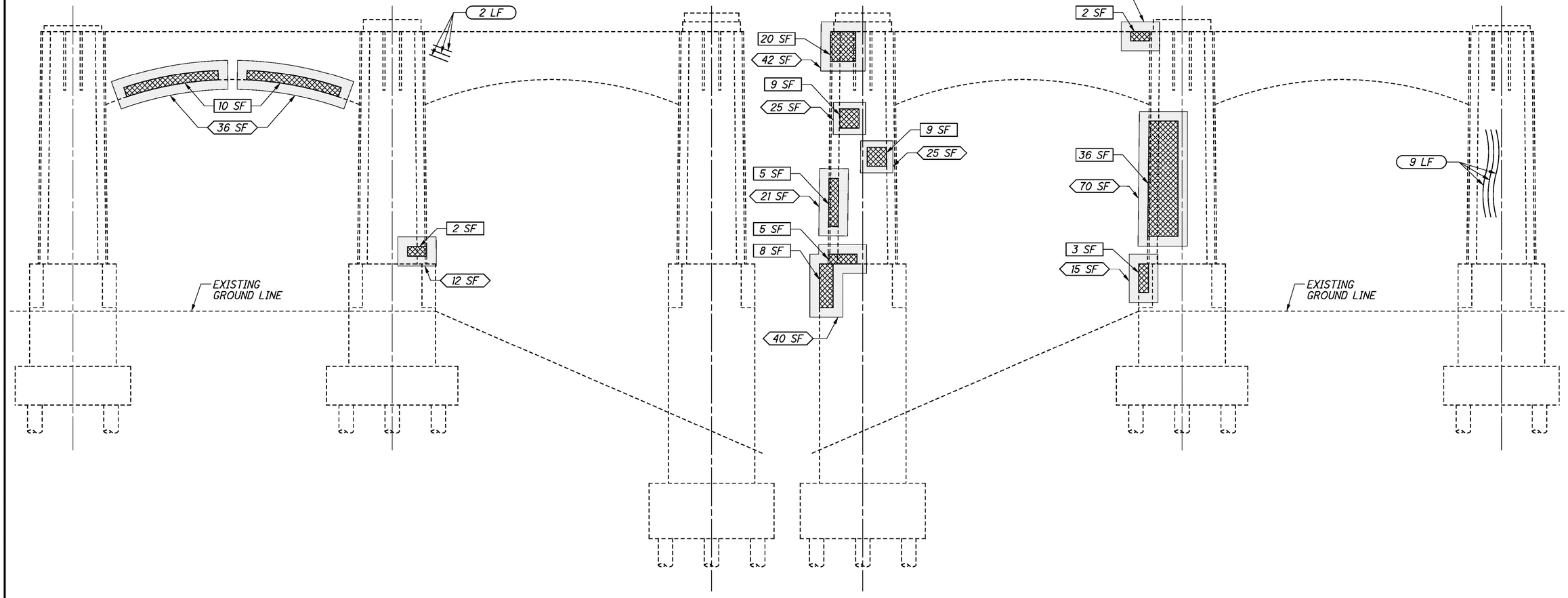

PIER 10 - WEST ELEVATION

PIER 10 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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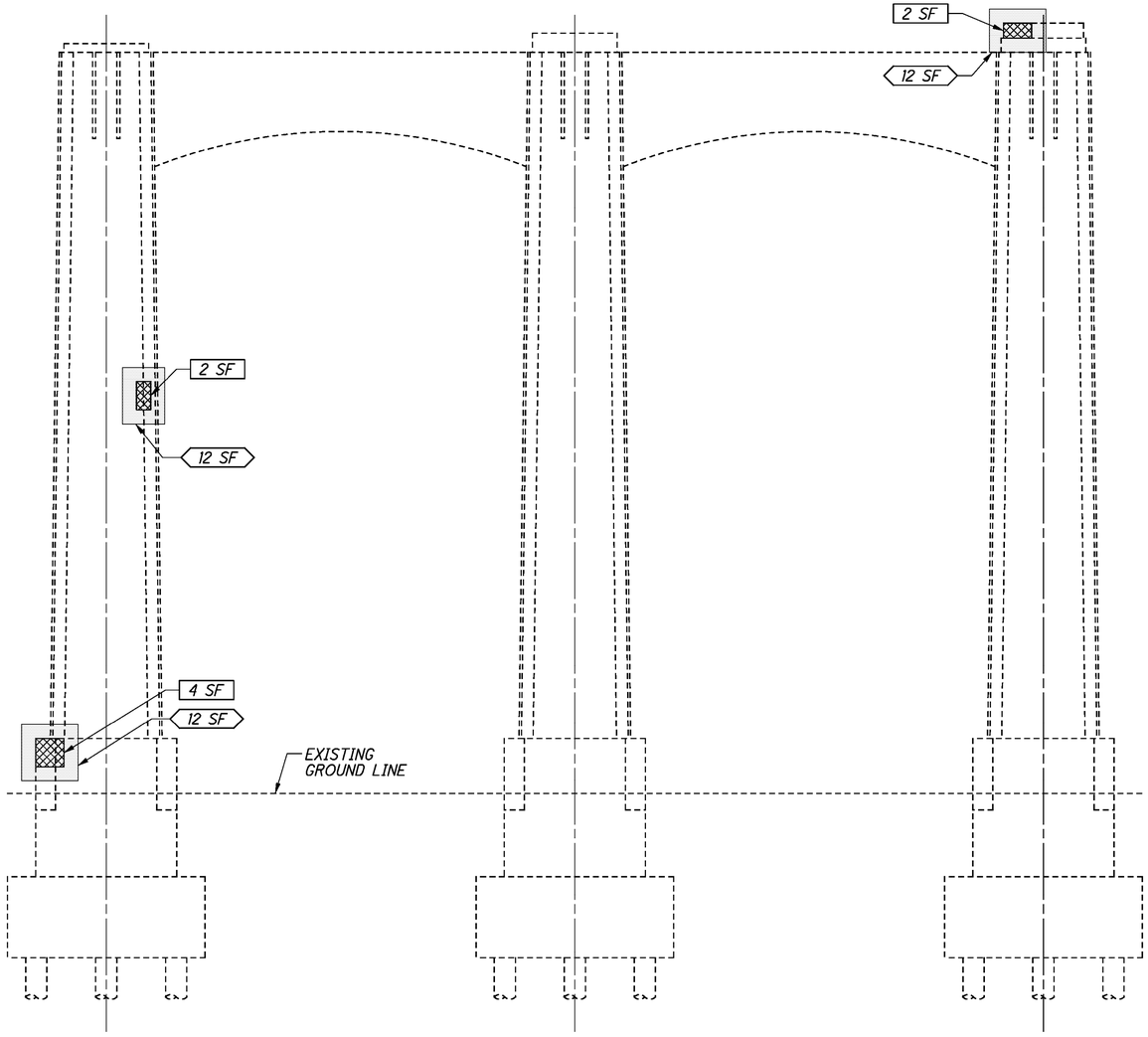
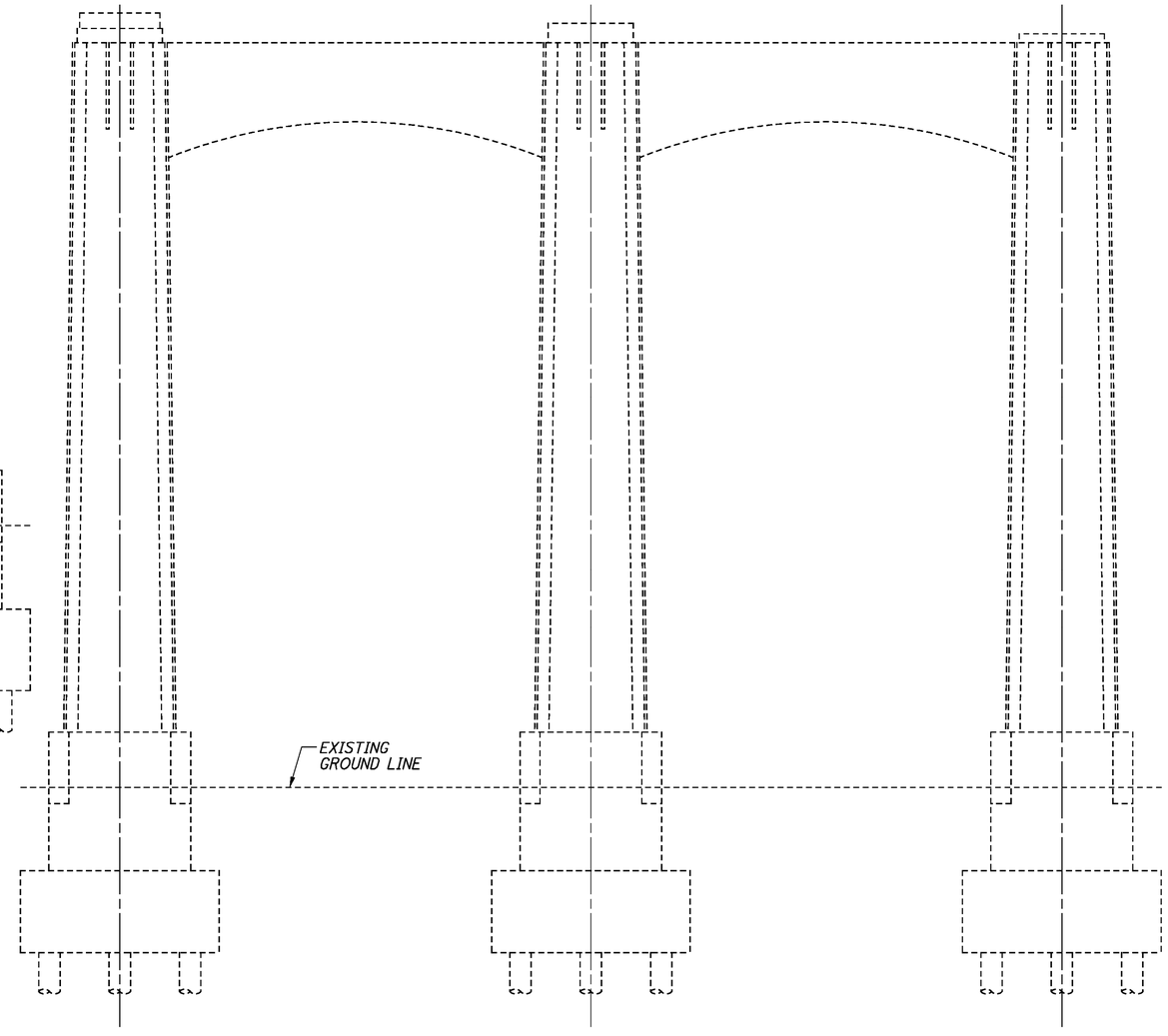
CONCRETE PATCHING DETAILS (6 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939



PIER 11 - WEST ELEVATION



PIER 11 - EAST ELEVATION
(INSPECTION PLATFORM NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

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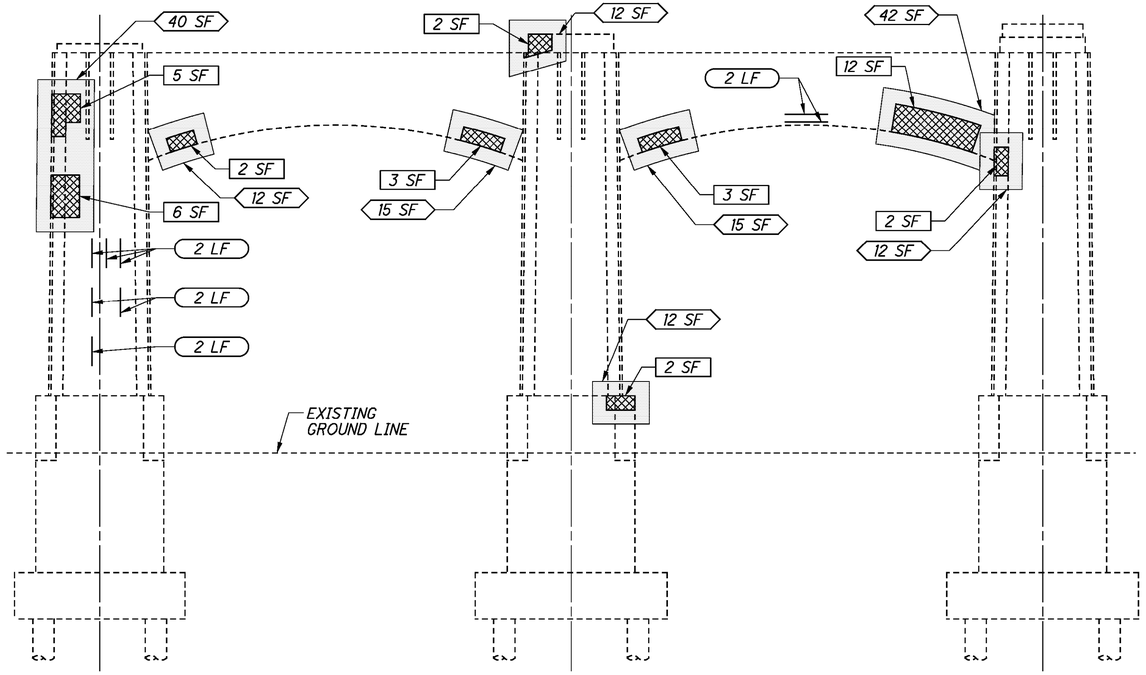
DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

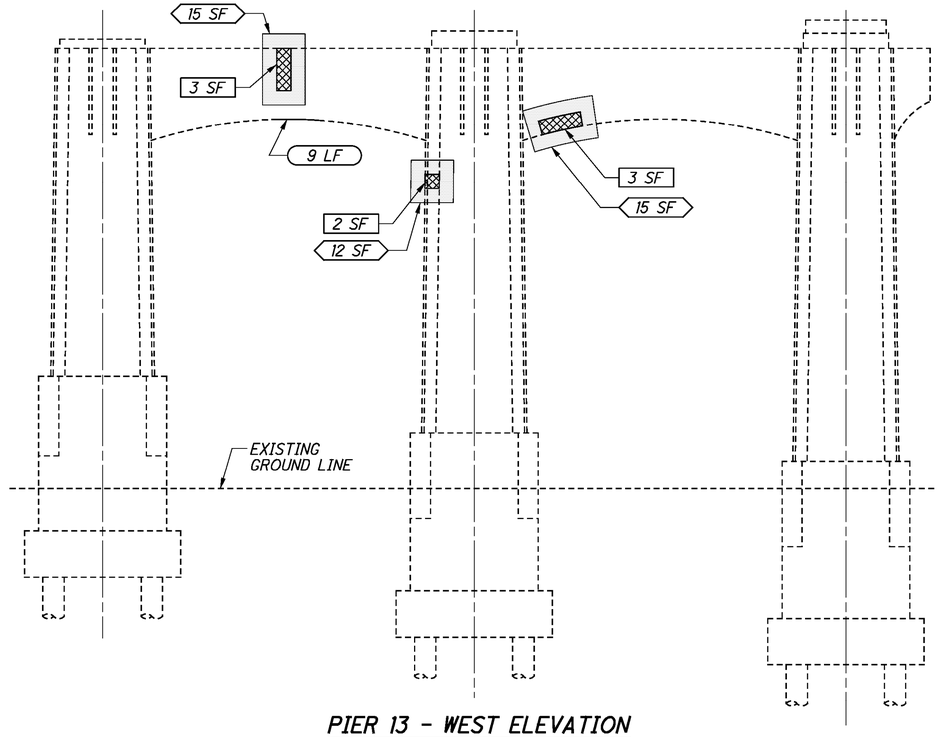
CONCRETE PATCHING DETAILS (7 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

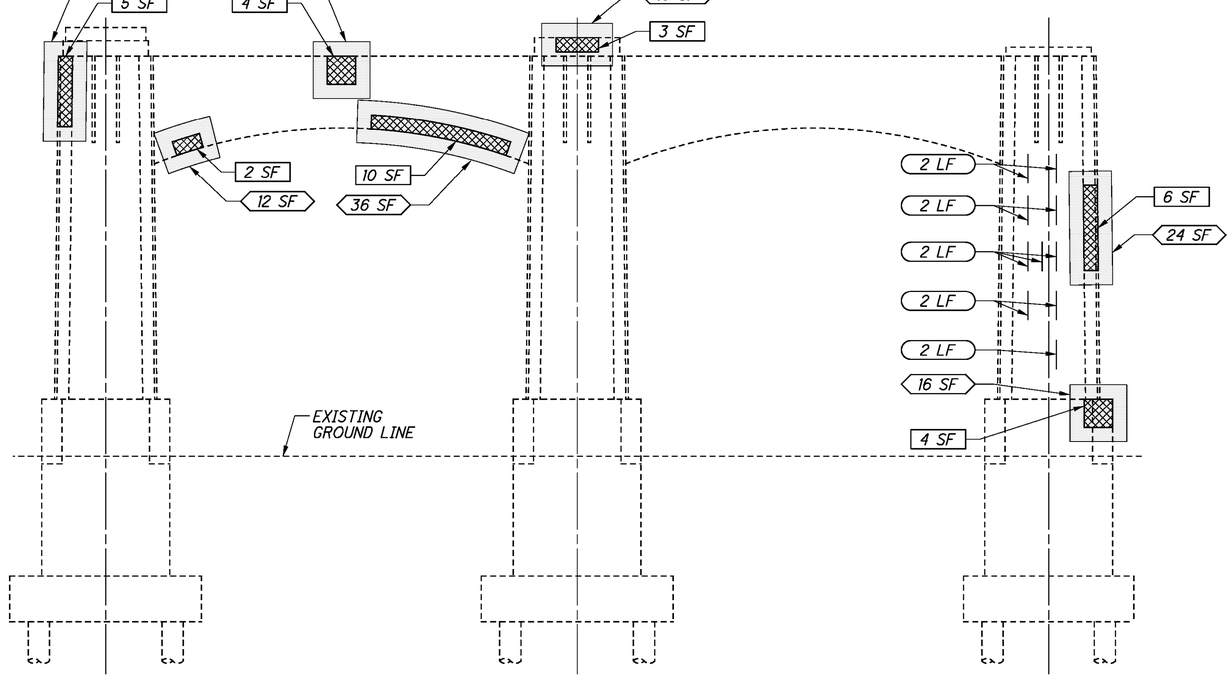


PIER 12 - WEST ELEVATION

(INSPECTION PLATFORM NOT SHOWN)

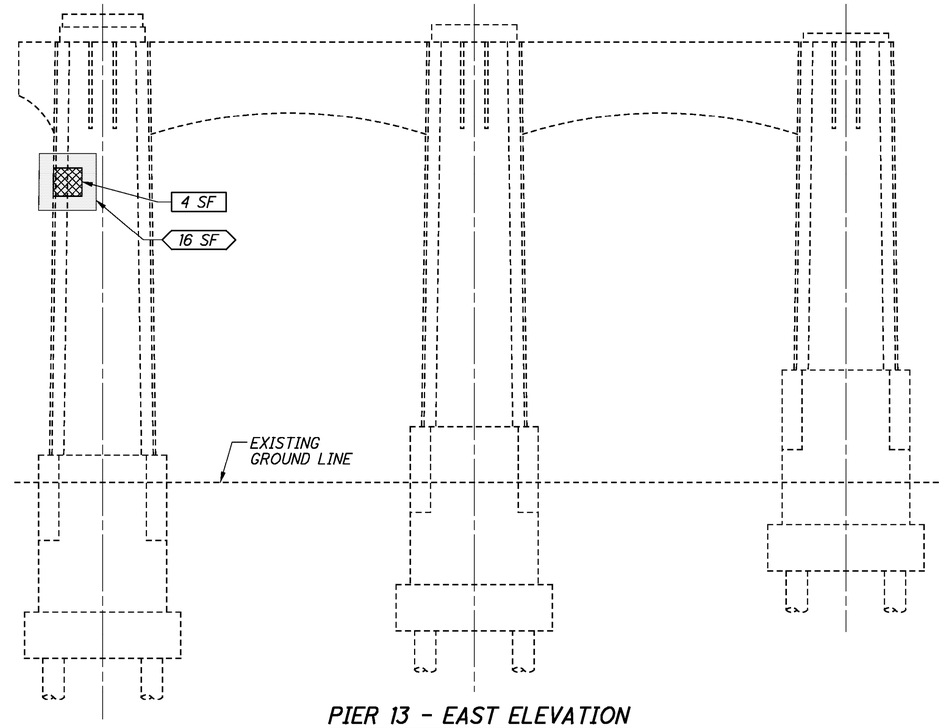


PIER 13 - WEST ELEVATION



PIER 12 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)



PIER 13 - EAST ELEVATION

(DOWNSPOUTS NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

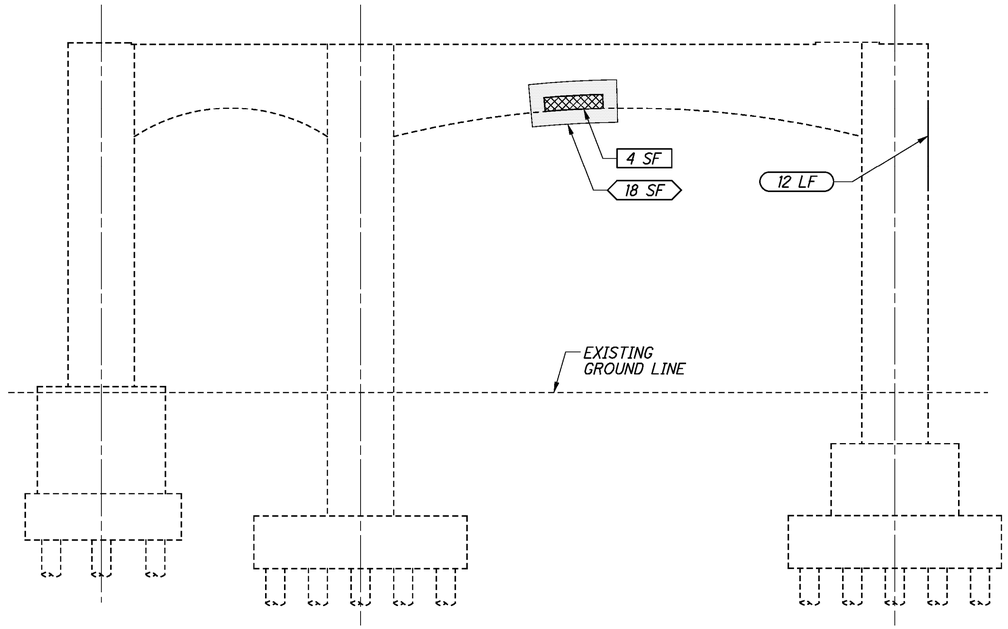
CONCRETE PATCHING DETAILS (8 OF 10)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

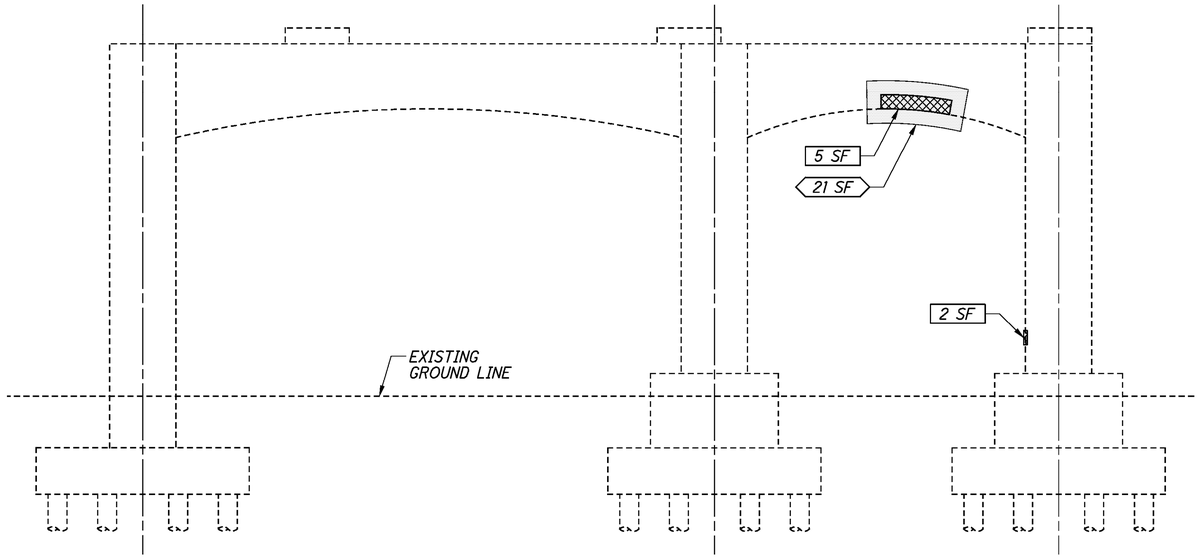
16 / 156

59 / 199

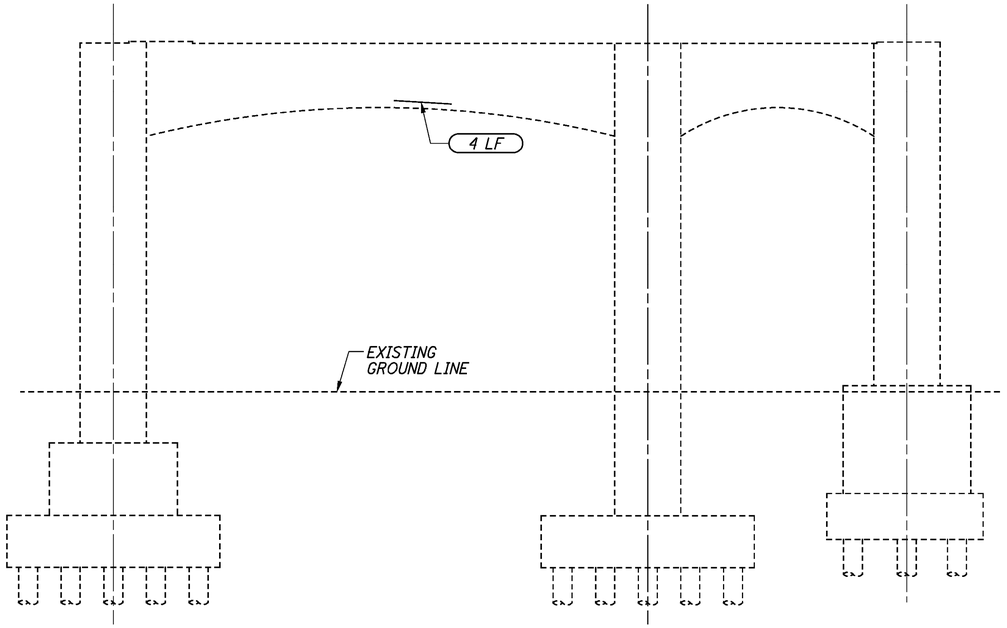
91939MD008.dgn 10/7/2016 11:43:53 AM sfhammerschmidt



PIER 14 - WEST ELEVATION

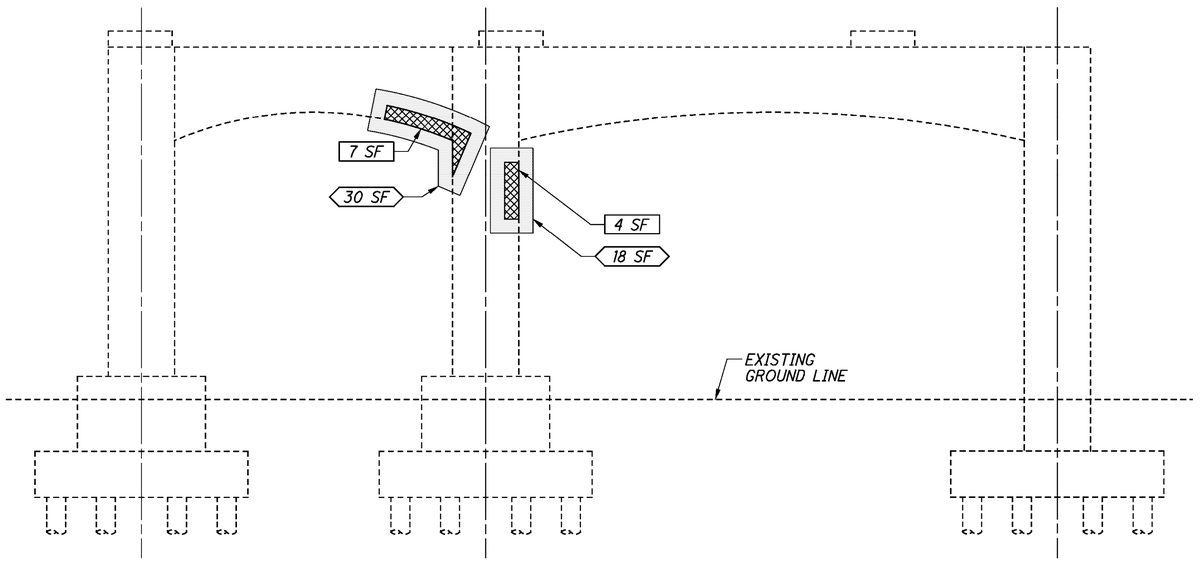


PIER 15 - WEST ELEVATION



PIER 14 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)



PIER 15 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN JLV | REVIEWED PJA | DATE 10-05-16
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 3103390

CONCRETE PATCHING DETAILS (9 OF 10)

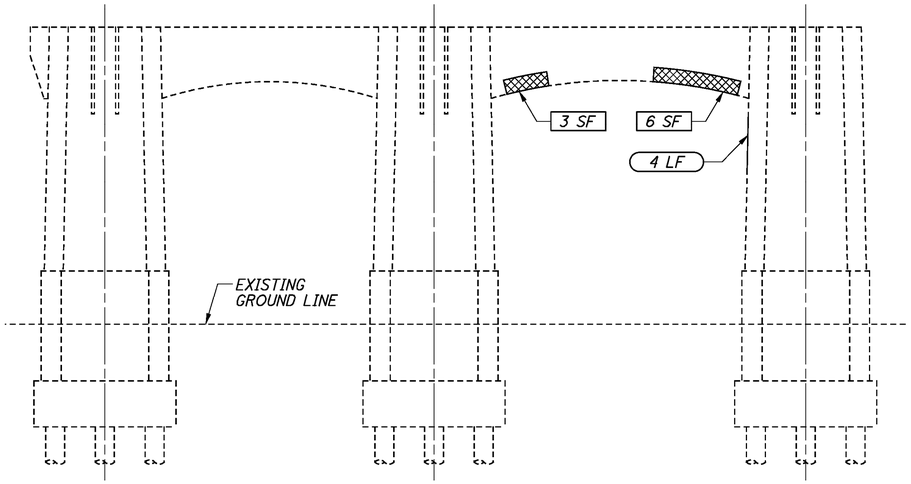
BRIDGE No. HAM-50-2180N

COLUMBIA PARKWAY VIADUCT OVER I-471

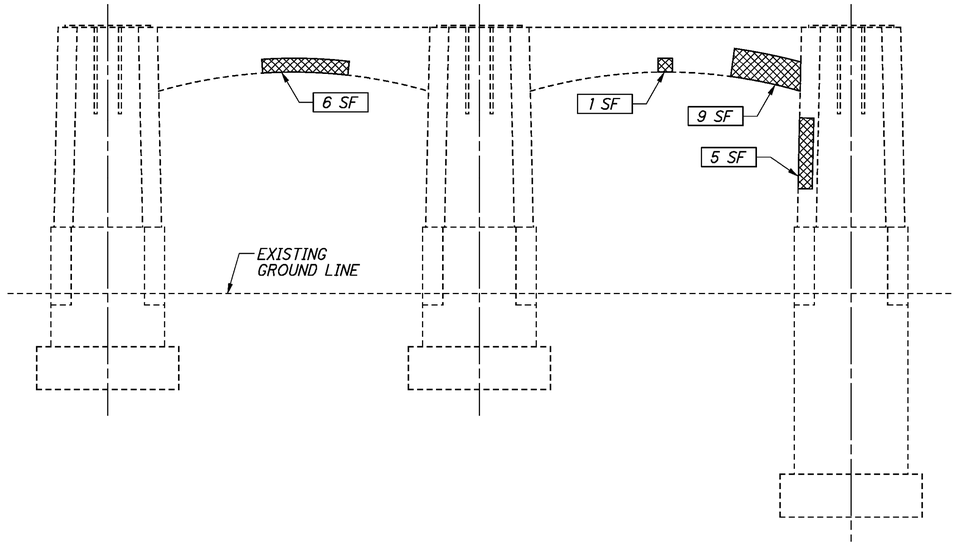
HAM-50-2180N

PID No. 91939

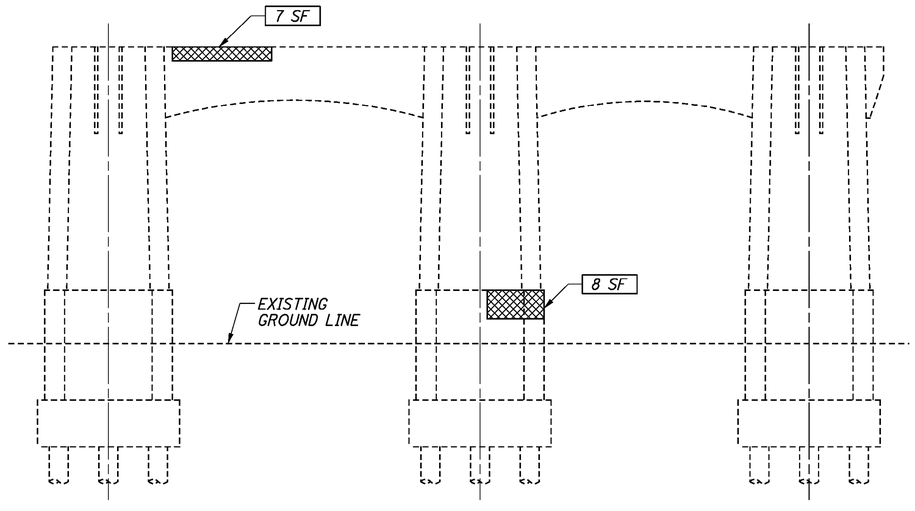
91939MD009.dgn 10/7/2016 11:43:53 AM sfhammerschmidt



PIER 16 - WEST ELEVATION

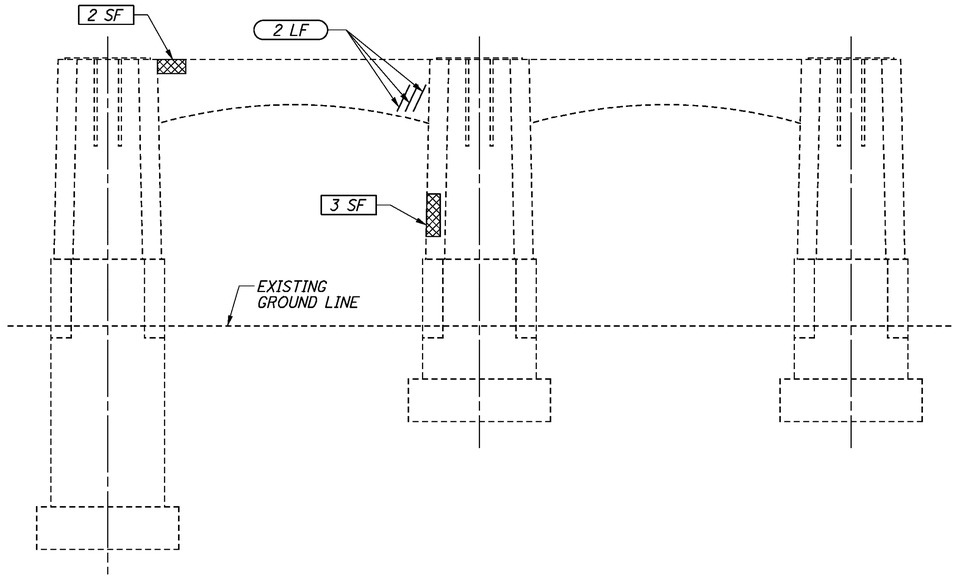


PIER 17 - WEST ELEVATION



PIER 16 - EAST ELEVATION

(DOWNSPOUTS AND INSPECTION PLATFORM NOT SHOWN)



PIER 17 - EAST ELEVATION

(DOWNSPOUTS NOT SHOWN)

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET 9 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

CONCRETE PATCHING DETAILS (10 OF 10)

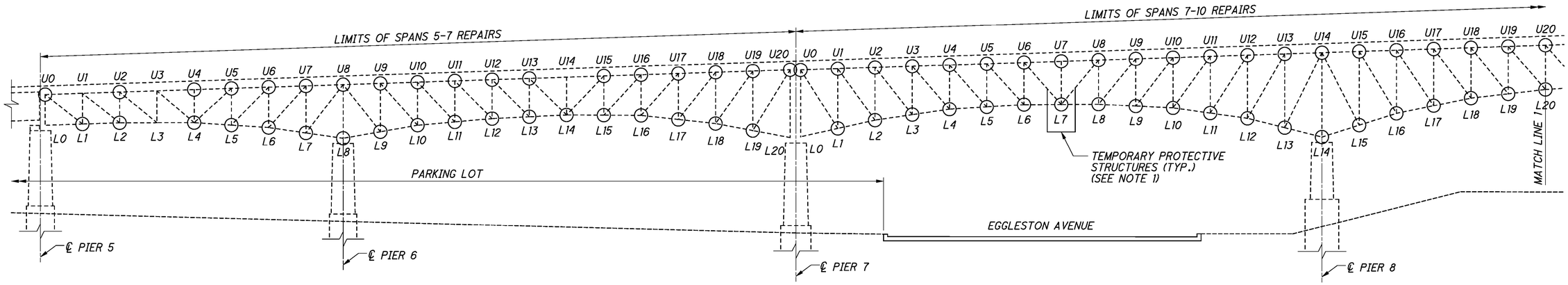
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

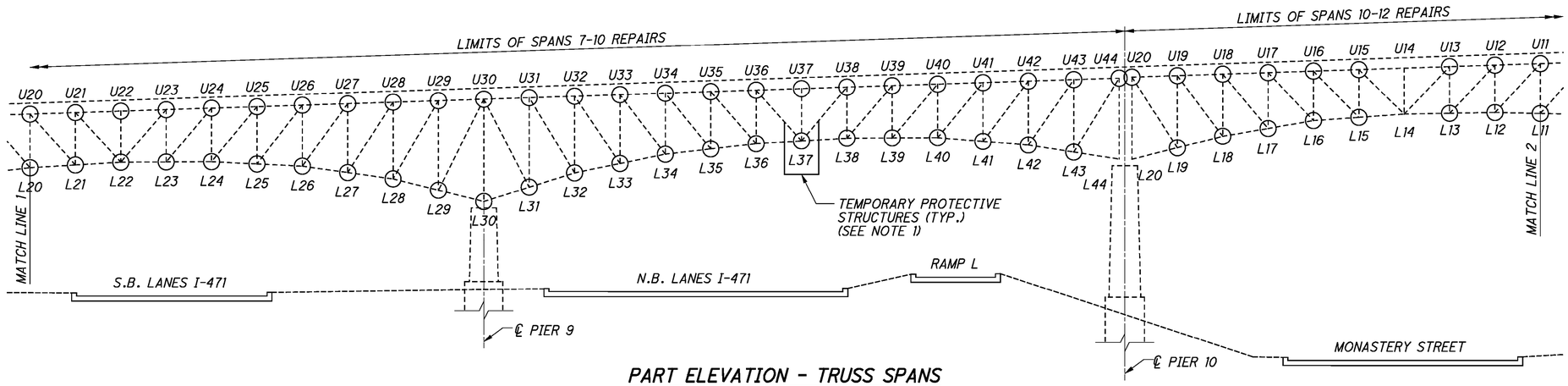
18 / 156

61
199

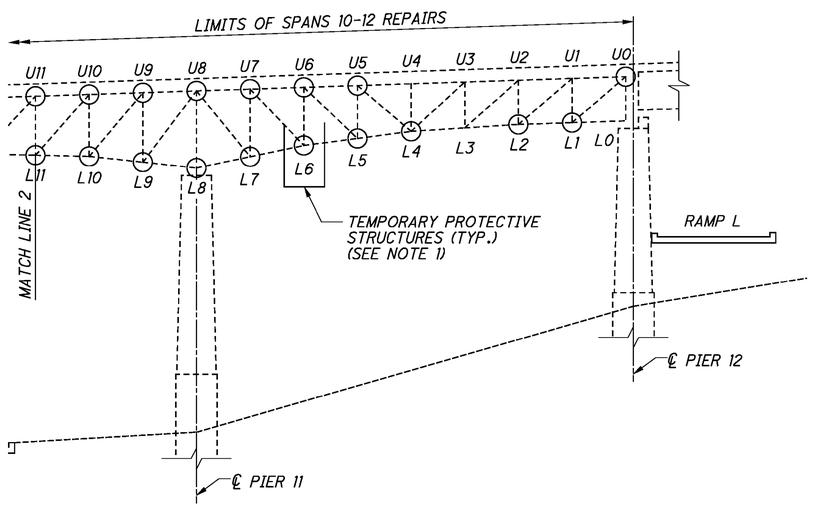
91939MD010.dgn 10/7/2016 11:43:54 AM sthammerschmidt



PART ELEVATION - TRUSS SPANS



PART ELEVATION - TRUSS SPANS



PART ELEVATION - TRUSS SPANS

LEGEND

◯ - INDICATES LOCATION OF GUSSET PLATE EDGE STIFFENING REPAIR

NOTES:

1. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTIVE STRUCTURES TO PROTECT THE TRAVELING PUBLIC AND THE PROPERTY BELOW THE STRUCTURE. THE TEMPORARY PROTECTIVE STRUCTURES MUST ALSO ALLOW ACCESS FOR THE ENGINEER FOR INSPECTION PURPOSES. ALL WORK AND MATERIALS ASSOCIATED WITH THE TEMPORARY PROTECTIVE STRUCTURES SHALL BE PAID FOR UNDER ITEM SPECIAL - STRUCTURE, MISC.: TEMPORARY PROTECTIVE STRUCTURES.
2. FOR THE GUSSET PLATE REPAIR TABLES, SEE SHEETS 20 / 156 AND 21 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

TRUSS SPANS ELEVATION - REPAIR LOCATIONS

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

UPPER CHORD GUSSET PLATE REPAIR TABLE

SPAN	PANEL POINT	NORTH TRUSS REPAIR TYPE ①	NORTH TRUSS REPAIR TYPE ②	NORTH TRUSS REPAIR TYPE ③		NORTH TRUSS SEE SHEET /156	CENTER TRUSS REPAIR TYPE ①	CENTER TRUSS REPAIR TYPE ②	CENTER TRUSS REPAIR TYPE ③		CENTER TRUSS SEE SHEET /156	SOUTH TRUSS REPAIR TYPE ①	SOUTH TRUSS REPAIR TYPE ②	SOUTH TRUSS REPAIR TYPE ③		SOUTH TRUSS SEE SHEET /156
5-7	U0		4	2		23		3	2		23 - 24		3	2		23 - 24
5-7	U1	—	—	—			—	—	—			—	—	—		
5-7	U2	—	—	—			—	—	—			4		2		24 - 25
5-7	U3	—	—	—			—	—	—			—	—	—		
5-7	U4	4				25 - 26	—	—	—			—	—	—		
5-7	U5		4	2		26		4	2		26		4	2		26
5-7	U6		4			27		4			27		4			27
5-7	U7		4			28 - 29	2	2			28	4				28 - 29
5-7	U8		4			30		4			30	4				30
5-7	U9	2	2			31		4			31		4			31
5-7	U10		4			32		4			32		4			32
5-7	U11		4	2		32		4	2		32		4	2		32
5-7	U12		4			33		4			33		4			33
5-7	U13		4			34	2	2			34	2	2			34
5-7	U14	—	—	—			—	—	—			—	—	—		
5-7	U15		4			35		4			35		4			35
5-7	U16		4			36		4			36	2	2			35 - 36
5-7	U17		4	2		36		4	2		36		4	2		36
5-7	U18		4			37		4			37	4				37
5-7	U19	2	2			38		4			38		4			38
5-7	U20		3			39 - 40		3			40	2	2			39 - 40
7-10	U0		2			41		2			41		2			41
7-10	U1		4			41		4			41		4			41
7-10	U2	2	2			42		4			42		4			42
7-10	U3		4	2		43		4	2		43		4	2		43
7-10	U4		4			43		4			43		4			43
7-10	U5		4			44	2	2			44		4			44
7-10	U6		4			45		4			45		4			45
7-10	U7		4			45		4			45		4			45
7-10	U8		4			46		4			46		4			46
7-10	U9		4			47	4				46		4			47
7-10	U10		4			47		4			47		4			47
7-10	U11		4			48		4			48		4			48
7-10	U12		4			49	2	2			48 - 49		4			49
7-10	U13		4			49		4			49		4			49
7-10	U14		4			50		4			50		4			50
7-10	U15		4			50		4			50		4			50
7-10	U16		4			51		4			51	2	2			51
7-10	U17		4			52		4			52		4			52
7-10	U18		4			53	2	2			52 - 53		4			53
7-10	U19		4			53		4			53		4			53
7-10	U20		4			54		4			54		4			54
7-10	U21		4			54		4			54		4			54
7-10	U22		4			55		4			55		4			55
7-10	U23		4			55		4			55		4			55
7-10	U24		4			56		4			56		4			56
7-10	U25		4			56		4			56		4			56
7-10	U26		4			57		4			57		4			57
7-10	U27		4			57		4			57		4			57
7-10	U28		4			58		4			58		4			58
7-10	U29		4			58		4			58		4			58
7-10	U30		4			59		4			59		4			59
7-10	U31		4			59		4			59		4			59
7-10	U32		4			60		4			60		4			60
7-10	U33		4	2		61	2	2	2		60 - 61	2	2	2		60 - 61
7-10	U34		4	2		61		4	2		61		4	2		61
7-10	U35		4			62		4			62		4			62
7-10	U36		4			62		4			62		4			62
7-10	U37		4			63		4			63		4			63
7-10	U38		4			64	2	2			63 - 64		4			64
7-10	U39	2	2			64 - 65		4			65		4			65
7-10	U40		4			65		4			65		4			65
7-10	U41		4	2		66		4	2		66		4	2		66
7-10	U42	2	2			66 - 67		4			67		4			67
7-10	U43		4			67		4			67		4			67
7-10	U44		2			68		2			68		2			68

UPPER CHORD GUSSET PLATE REPAIR TABLE

SPAN	PANEL POINT	NORTH TRUSS REPAIR TYPE ①	NORTH TRUSS REPAIR TYPE ②	NORTH TRUSS REPAIR TYPE ③		NORTH TRUSS SEE SHEET /156	CENTER TRUSS REPAIR TYPE ①	CENTER TRUSS REPAIR TYPE ②	CENTER TRUSS REPAIR TYPE ③		CENTER TRUSS SEE SHEET /156	SOUTH TRUSS REPAIR TYPE ①	SOUTH TRUSS REPAIR TYPE ②	SOUTH TRUSS REPAIR TYPE ③		SOUTH TRUSS SEE SHEET /156
10-12	U20		2	2		69		2	2		69		2	2		69
10-12	U19		4			70	2	2			69 - 70		4			70
10-12	U18		4	2		70		4	2		70		4	2		70
10-12	U17		4	2		71	2	2	2		71	2	2	2		71
10-12	U16		4			72		4			72		4			72
10-12	U15		4			72		4			72		4			72
10-12	U14	—	—	—			—	—	—			—	—	—		
10-12	U13		4			73	2	2			73		4			73
10-12	U12		4			74		4			74		4			74
10-12	U11		4			75		4			75		4			75
10-12	U10		4	2		75		4	2		75		4	2		75
10-12	U9		4	2		76		4	2		76		4	2		76
10-12	U8		4			77	4				76		4			77
10-12	U7		4			77 - 78		4			78		4			77 - 78
10-12	U6		4	2		78 - 79		4	2		79		4	2		78 - 79
10-12	U5		4	2		79		4	2		79		4	2		79
10-12	U4	—	—	—			—	—	—			—	—	—		
10-12	U3	—	—	—			—	—	—			—	—	—		
10-12	U2	—	—	—			—	—	—			—	—	—		
10-12	U1	—	—	—			—	—	—			—	—	—		
10-12	U0		3	2		81		3	2		80 - 81		4	2		80 - 81
TOTAL		14	290	32			28	271	32			28	277	34		

NOTES:

1. PAYMENT FOR EACH GUSSET REPAIR TYPE 1 SHALL BE INCLUDED UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 1.
2. PAYMENT FOR EACH GUSSET REPAIR TYPE 2 SHALL BE INCLUDED UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 2.
3. PAYMENT FOR EACH GUSSET REPAIR TYPE 3 SHALL BE INCLUDED UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 3.
4. FOR TRUSS SPANS ELEVATION - REPAIR LOCATIONS, SEE SHEET 19 / 156.
5. FOR LOWER CHORD GUSSET PLATE REPAIR TABLES, SEE SHEET 21 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

REVIEWED PJA | DATE 10-05-16
STRUCTURE FILE NUMBER 3103390
DRAWN JLV | REVISED
DESIGNED ZTW | CHECKED RJM

GUSSET PLATE REPAIR TABLE - UPPER CHORD
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

20/156

LOWER CHORD GUSSET PLATE REPAIR TABLE

SPAN	PANEL POINT	NORTH TRUSS REPAIR TYPE (1)	(2)	(3)	SEE SHEET /156	CENTER TRUSS REPAIR TYPE (1)	(2)	(3)	SEE SHEET /156	SOUTH TRUSS REPAIR TYPE (1)	(2)	(3)	SEE SHEET /156
5-7	L0	—	—	—		—	—	—		—	—	—	
5-7	L1		4	2	82		4	2	82		4	2	82
5-7	L2	3	1		82 - 83		4		83		4		83
5-7	L3	—	—	—		—	—	—		—	—	—	
5-7	L4		4	4	84		4	4	84		4	4	84
5-7	L5		4		84		4		84		4		84
5-7	L6		4		85		4		85		4		85
5-7	L7		4		85		4		85		4		85
5-7	L8			4	86			4	86			4	86
5-7	L9		4		87		4		87		4		87
5-7	L10		4	2	87		4	2	87		4	2	87
5-7	L11		4		88		4		88		4		88
5-7	L12		4		88		4		88		4		88
5-7	L13	2	2		89		4		89		4		89
5-7	L14	2			90	—	—	—		2			90
5-7	L15	4			90	—	—	—		—	—	—	
5-7	L16	2	2	2	91		4	2	91	2	2	2	91
5-7	L17	2	2		92		4		92	2	2		92
5-7	L18		4		93		4		93	2	2		93
5-7	L19		4		94		4		94	2	2		94
5-7	L20	—	—	—		—	—	—		—	—	—	
7-10	L0	—	—	—		—	—	—		—	—	—	
7-10	L1		4		95		4		95		4		95
7-10	L2	2	2		95 - 96		4		95		4		95
7-10	L3	2	2		96 - 97		4		96		4		96
7-10	L4		4	2	97		4	2	97		4	2	97
7-10	L5		4		98		4		98		4		98
7-10	L6		4		98		4		98		4		98
7-10	L7	4			99		2		99	—	—	—	
7-10	L8		4		100		4		100		4		100
7-10	L9		4		100		4		100		4		100
7-10	L10		4		101		4		101		4		101
7-10	L11	2	2		101 - 102		4		101		4		101
7-10	L12		4		102		4		102		4		102
7-10	L13		4		103		4		103		4		103
7-10	L14			4	104			4	104			4	104
7-10	L15		4		105		4		105	2	2		105
7-10	L16		4		106		4		106	1	3		106
7-10	L17		4		107		4		107		4		107
7-10	L18		4		107	2	2		107 - 108		4		107
7-10	L19		2		108		2		108	2			109
7-10	L20		4		109		4		109		4		109
7-10	L21		4		110		4		110		4		110
7-10	L22	2	2		110 - 111		4		110	2	2		110 - 111
7-10	L23		4		111		4		111		4		111
7-10	L24		4		112		4		112		4		112
7-10	L25	1	1		112 - 113		2		112		2		112
7-10	L26		4		113		4		113		4		113
7-10	L27		4		114	2	2		114		4		114
7-10	L28	2	2		115		4		115		4		115
7-10	L29	2	2		116	4			116	2	2		116
7-10	L30			4	117			4	117			4	117
7-10	L31	2	2		118		4		118	2	2		118
7-10	L32		4		119	2	2		119		4		119
7-10	L33	2	2		120		4		120	4			120
7-10	L34	2	2		121	2	2		121		4		121
7-10	L35	2	2		122		4		122		4		122
7-10	L36		4		123		4		123		4		123
7-10	L37	2			124	—	—	—		2			124
7-10	L38	2	2		125		4		125		4		125
7-10	L39	2	2		126		4		126	2	2		126
7-10	L40		4		127	2	2		127	2	2		127
7-10	L41	4			128		4		128		4		128
7-10	L42	2	2		129		4		129		4		129
7-10	L43		4		130		4		130	4			130
7-10	L44	—	—	—		—	—	—		—	—	—	

LOWER CHORD GUSSET PLATE REPAIR TABLE

SPAN	PANEL POINT	NORTH TRUSS REPAIR TYPE (1)	(2)	(3)	SEE SHEET /156	CENTER TRUSS REPAIR TYPE (1)	(2)	(3)	SEE SHEET /156	SOUTH TRUSS REPAIR TYPE (1)	(2)	(3)	SEE SHEET /156
10-12	L20	—	—	—		—	—	—		—	—	—	
10-12	L19	4			131		4		131		4		131
10-12	L18		4		132		4		132		4		132
10-12	L17		4		132	2	2		132 - 133	4			133
10-12	L16		4	2	133		4	2	133		4	2	133
10-12	L15	2			134	—	—	—		—	—	—	
10-12	L14	—	—	—		—	—	—		—	—	—	
10-12	L13	2	2		135		4		135		4		135
10-12	L12	2	2		136		4		136		4		136
10-12	L11	2	2		137		4		137		4		137
10-12	L10		4		138		4		138	4			138
10-12	L9	2	2		139		4		139		4		139
10-12	L8			4	140			4	140			4	140
10-12	L7		4		141	2	2		141		4		141
10-12	L6		4		142		4		142		4		142
10-12	L5	2	2	2	143		4	2	143		4	2	143
10-12	L4		4	4	144		4	4	144		4	4	144
10-12	L3	—	—	—		—	—	—		—	—	—	
10-12	L2		4		144		4		144		4		144
10-12	L1	4		2	145		4	2	145		4	2	145
10-12	L0	—	—	—		—	—	—		—	—	—	
TOTAL		72	214	38		18	256	38		43	233	38	

NOTES:

1. PAYMENT FOR EACH GUSSET REPAIR TYPE 1 SHALL BE INCLUDED UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 1.
2. PAYMENT FOR EACH GUSSET REPAIR TYPE 2 SHALL BE INCLUDED UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 2.
3. PAYMENT FOR EACH GUSSET REPAIR TYPE 3 SHALL BE INCLUDED UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR TYPE 3.
4. FOR TRUSS SPANS ELEVATION - REPAIR LOCATIONS, SEE SHEET 19 / 156.
5. FOR UPPER CHORD GUSSET PLATE REPAIR TABLES, SEE SHEET 20 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ZTW | DRAWN JLV | REVIEWED PJA | DATE 10-05-16
CHECKED RJM | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE REPAIR TABLE - LOWER CHORD
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

21 / 156

64
199

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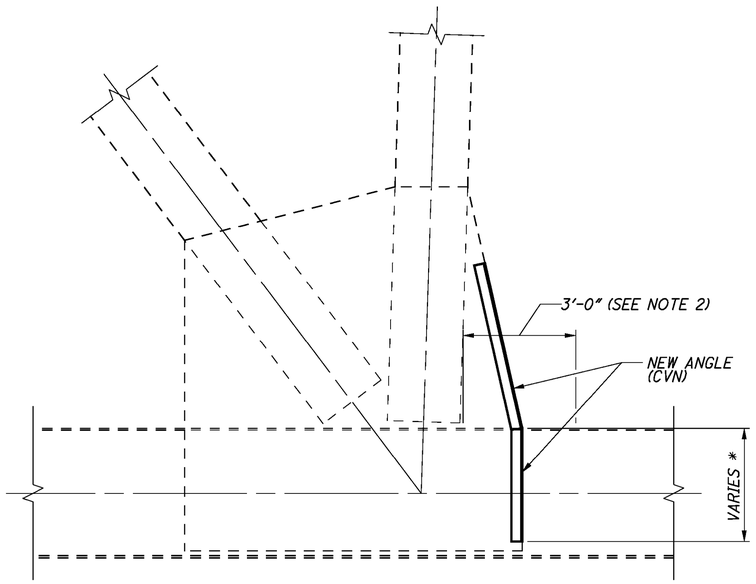
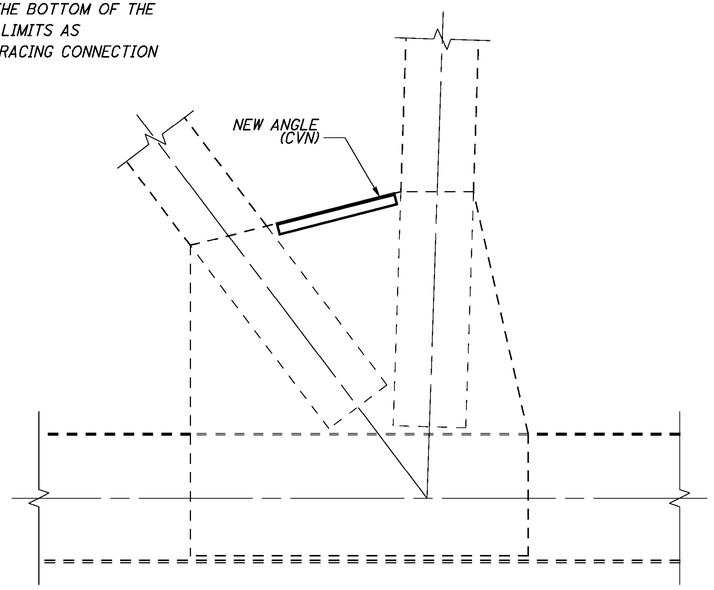


REPAIR TYPE ①

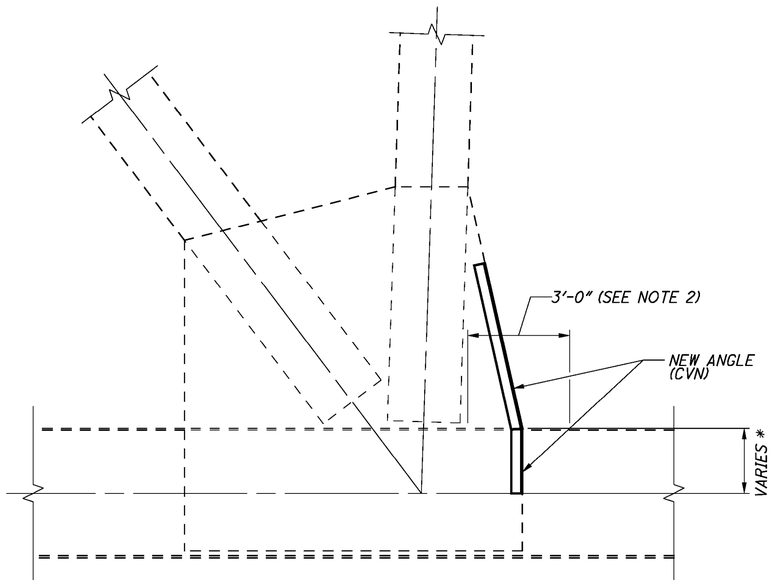
BOW IN EXISTING GUSSET PLATE >= 1/4"
(LOWER GUSSET PLATES)

BOW IN EXISTING GUSSET PLATE >= 3/16"
(UPPER GUSSET PLATES)

* EXTEND THE ANGLE TO THE BOTTOM OF THE GUSSET PLATE OR TO THE LIMITS AS RESTRICTED BY LATERAL BRACING CONNECTION PLATES.



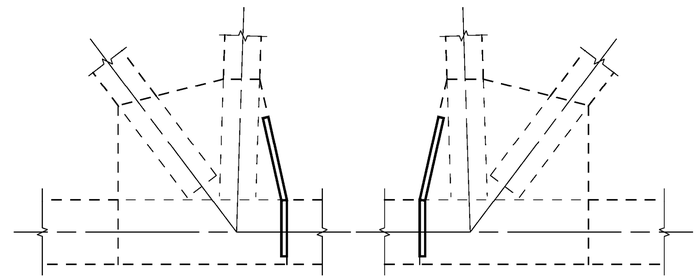
REPAIR TYPE ③



REPAIR TYPE ②

GUSSET PLATE EDGE STIFFENING REQUIRED

* ANGLE EXTENDED TO THE WORKING LINE



SOUTH ELEVATION

NORTH ELEVATION

(OPPOSITE HAND OF SOUTH ELEVATION) (SEE NOTE 3)

DEFINITION OF OPPOSITE HAND

NOTES:

1. LOWER CHORD GUSSET PLATE SHOWN, UPPER CHORD GUSSET PLATES ARE SIMILAR
2. PACK RUST SHALL BE REMOVED IN ACCORDANCE WITH ITEM 514. THE LIMITS OF PACK RUST REMOVAL SHALL ENCOMPASS 3'-0" OF THE TOP CORNERS OF THE LOWER CHORD CENTERED ABOUT THE EDGE OF THE GUSSET PLATE.
3. ALL ELEVATIONS OF GUSSET PLATES SHOWN ARE SOUTH ELEVATIONS. THE TERM OPPOSITE HAND IS USED TO SIGNIFY THAT THE NORTH ELEVATION REQUIRES A SIMILAR DETAIL BUT ONE THAT IS A MIRRORED IMAGE OF THE SOUTH ELEVATION.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED DWC | DRAWN BJM | REVIEWED PJA | DATE 10-05-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING TYPES

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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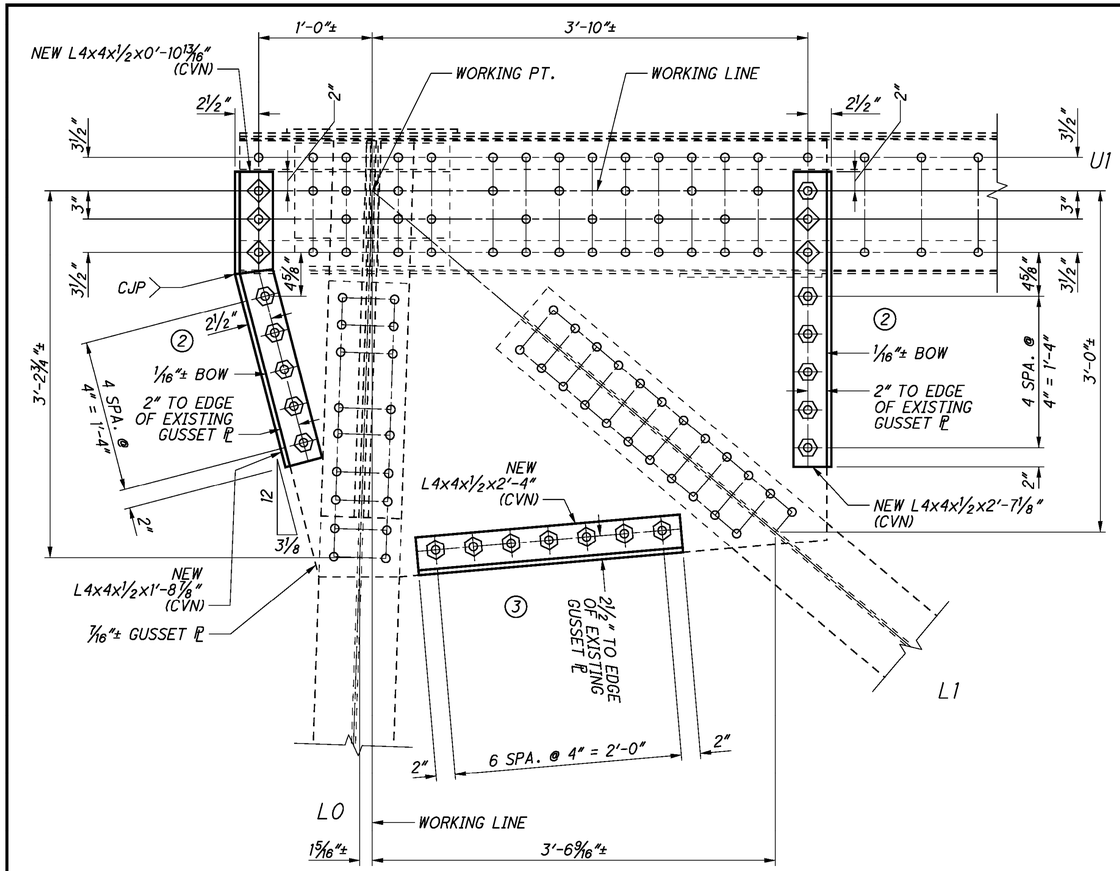
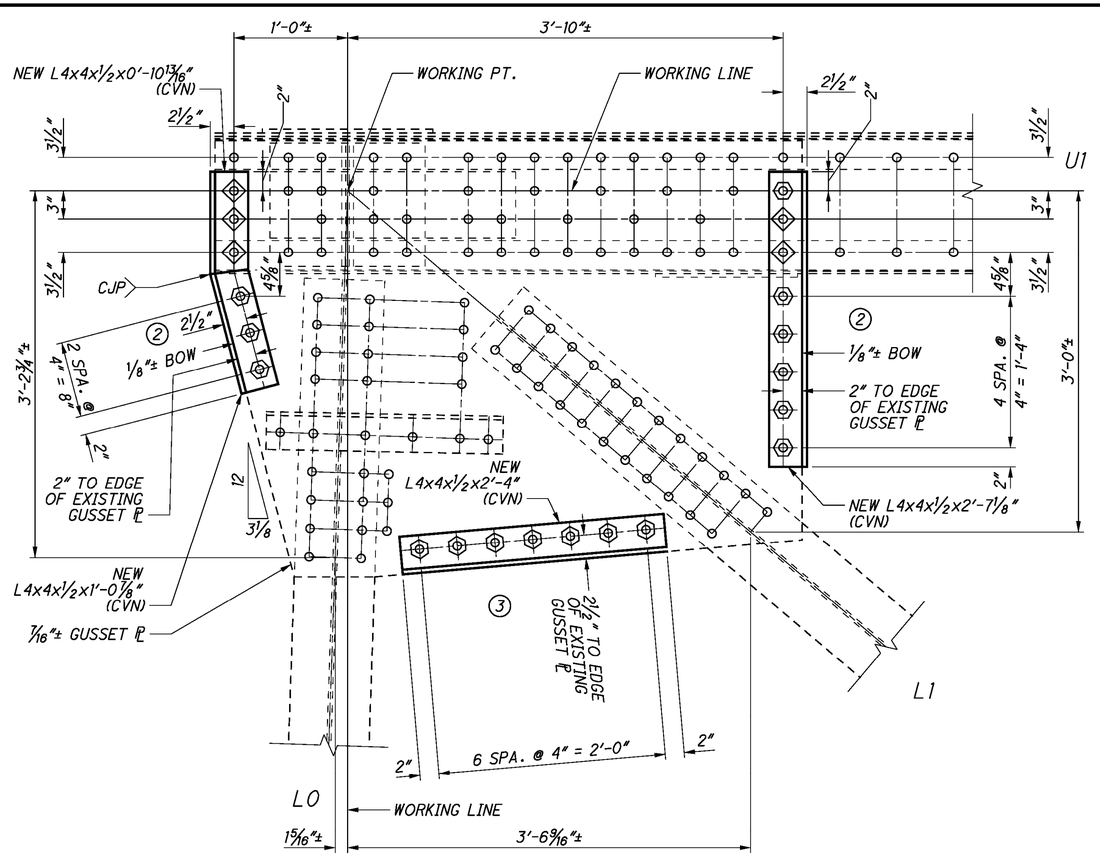


SPANS 5-7 - PANEL POINT U0
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U0
SOUTH GUSSET PLATE - NORTH TRUSS
SOUTH GUSSET PLATE - CENTER TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. SOME CONNECTION ANGLES AND PLATES HAVE BEEN OMITTED FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY EACH NEW ANGLE LOCATION AND ENSURE NO CONFLICTS EXIST. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF ANY CONFLICTS EXIST.
3. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS: U = UPPER PANEL POINT
   L = LOWER PANEL POINT
4. CJP - COMPLETE JOINT PENETRATION WELD (ANGLES ONLY)
5. ALL NEW BOLTS SHALL BE 7/8" DIAMETER A490, TYPE 3 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE 15/16" DIAMETER. BOLT LENGTH REQUIREMENTS SHALL BE DETERMINED FROM ORIGINAL SHOP DRAWING AND FIELD VERIFICATION.
6. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
8. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING AND BOLTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1, TYPE 2, OR TYPE 3.
9. THE PAINT ZONE FOR THE GUSSET PLATE EDGE STIFFENING SHALL ENCOMPASSES THE FAYING SURFACE OF THE GUSSET PLATE AND UPPER CHORD, THE NEW STIFFENING ANGLES, LOCATIONS OF PACK RUST REMOVAL, AND ANY SURROUNDING AREAS DAMAGED BY THE INSTALLATION OF THE RETROFITS. ALL PAINTING IS TO BE INCLUDED FOR PAYMENT UNDER ITEM 514.
10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET [3 / 156] THRU [5 / 156].
11. FOR ADDITIONAL DETAILS REGARDING REPAIR TYPES SEE SHEET [22 / 156].

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (1 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

23/156

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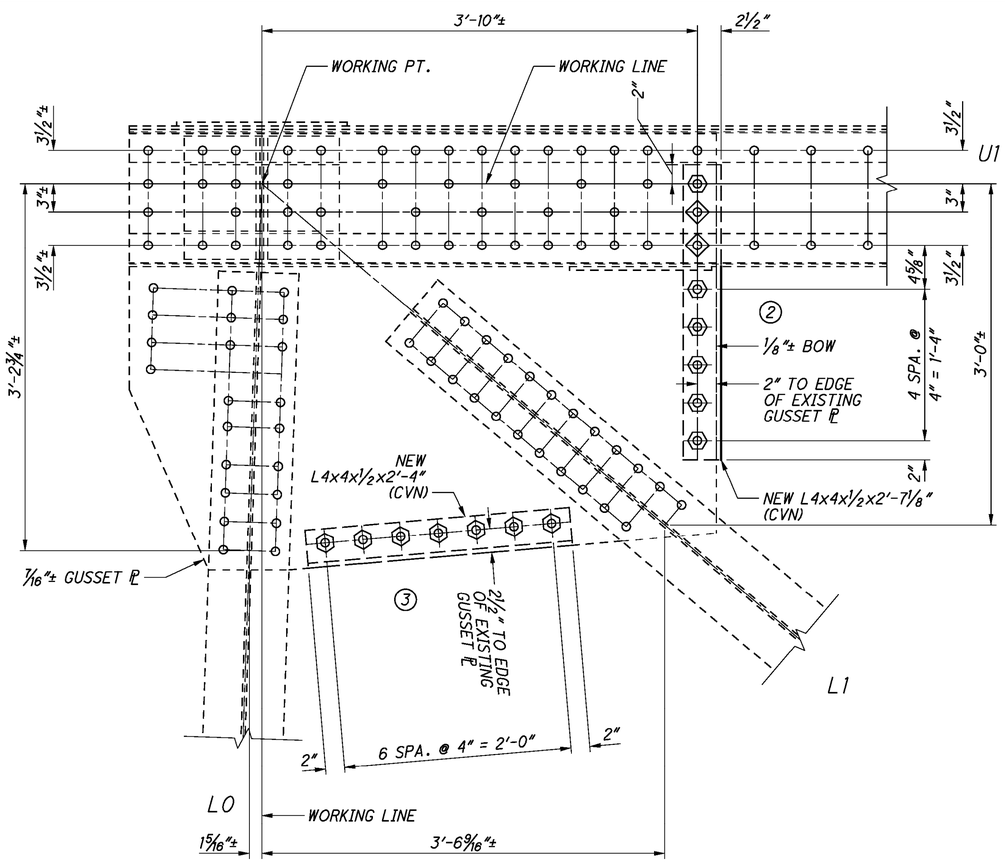
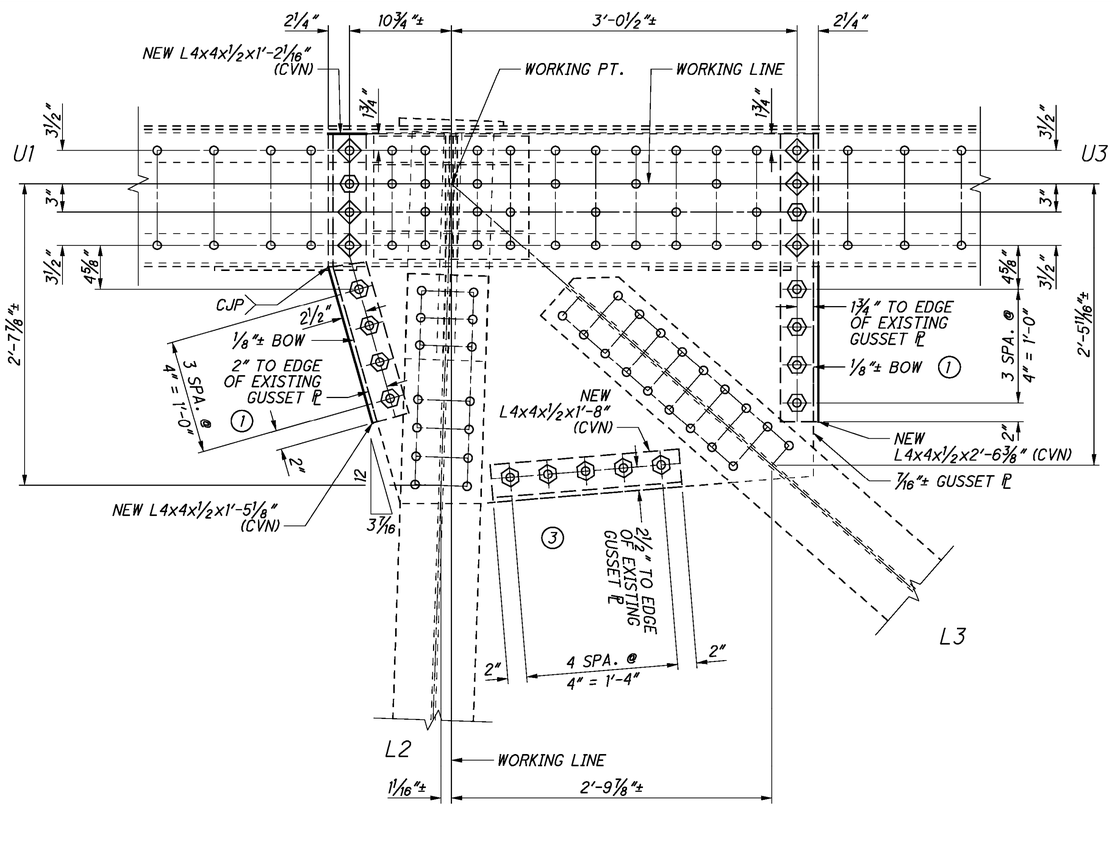


SPANS 5-7 - PANEL POINT U0
NORTH GUSSET PLATE - CENTER TRUSS
NORTH GUSSET PLATE - SOUTH TRUSS



SPANS 5-7 - PANEL POINT U2
NORTH GUSSET PLATE - SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 1⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (2 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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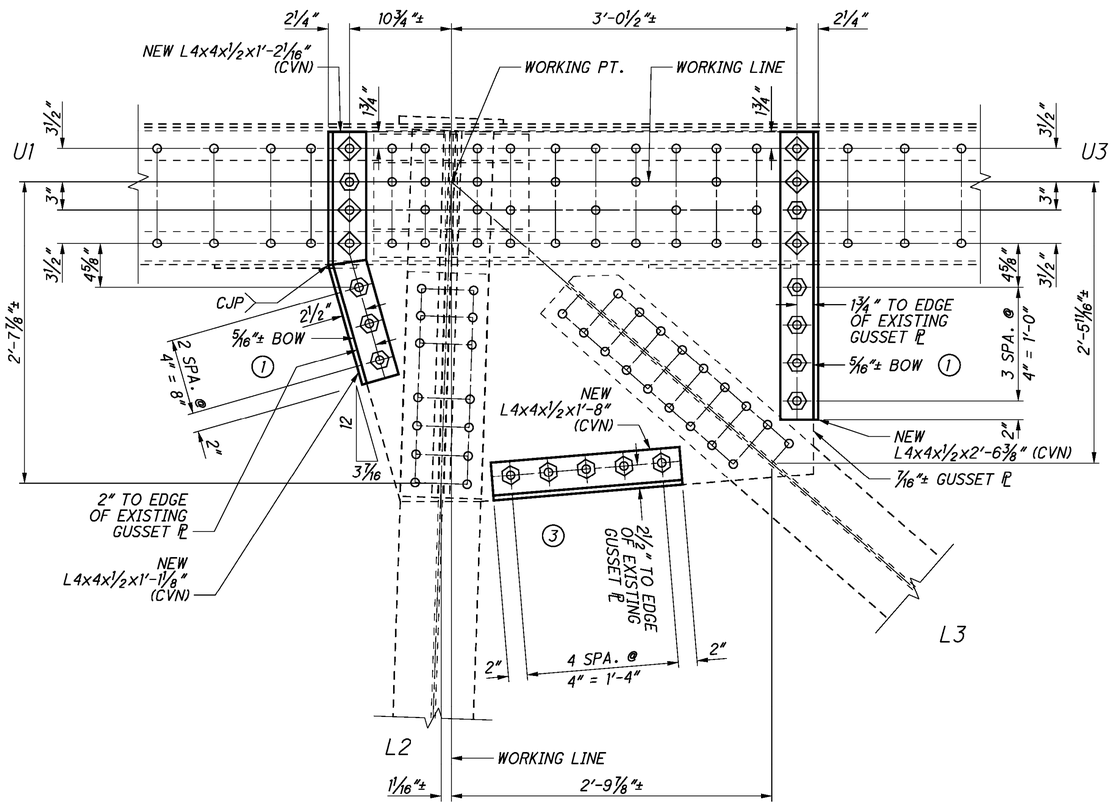

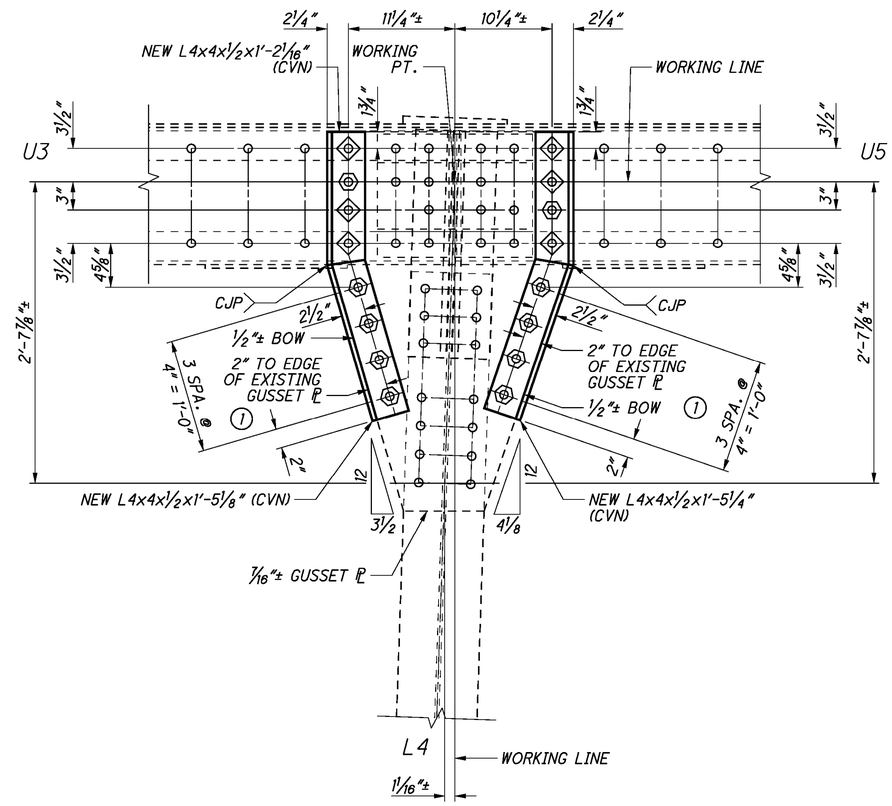

SPANS 5-7 - PANEL POINT U2
SOUTH GUSSET PLATE - SOUTH TRUSS

SPANS 5-7 - PANEL POINT U4
SOUTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 23 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (3 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

25 / 156

68 / 199

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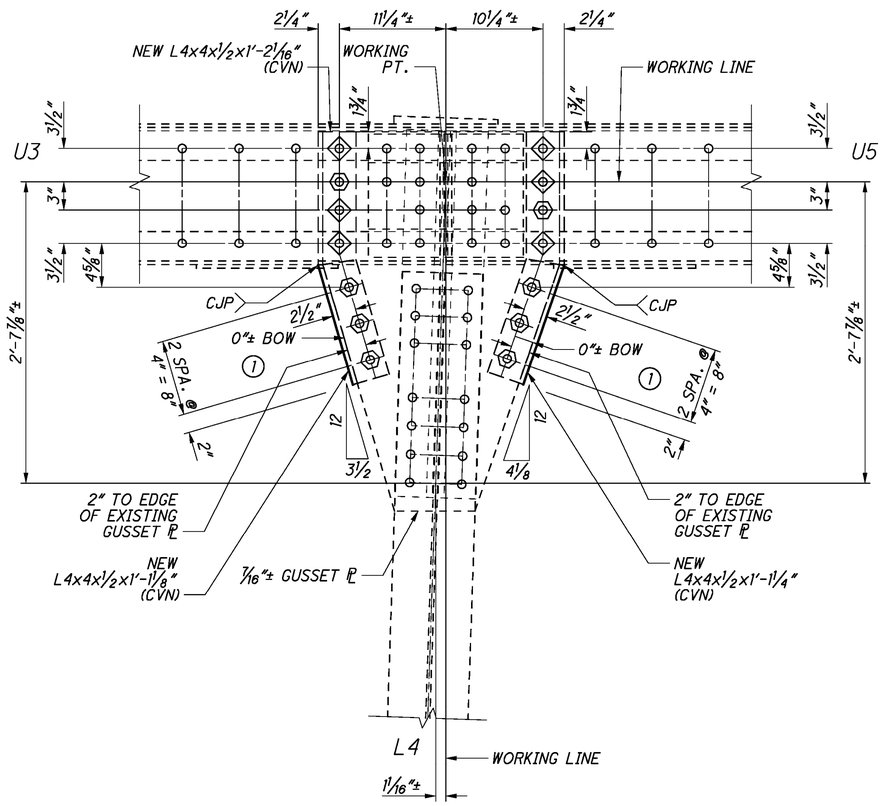
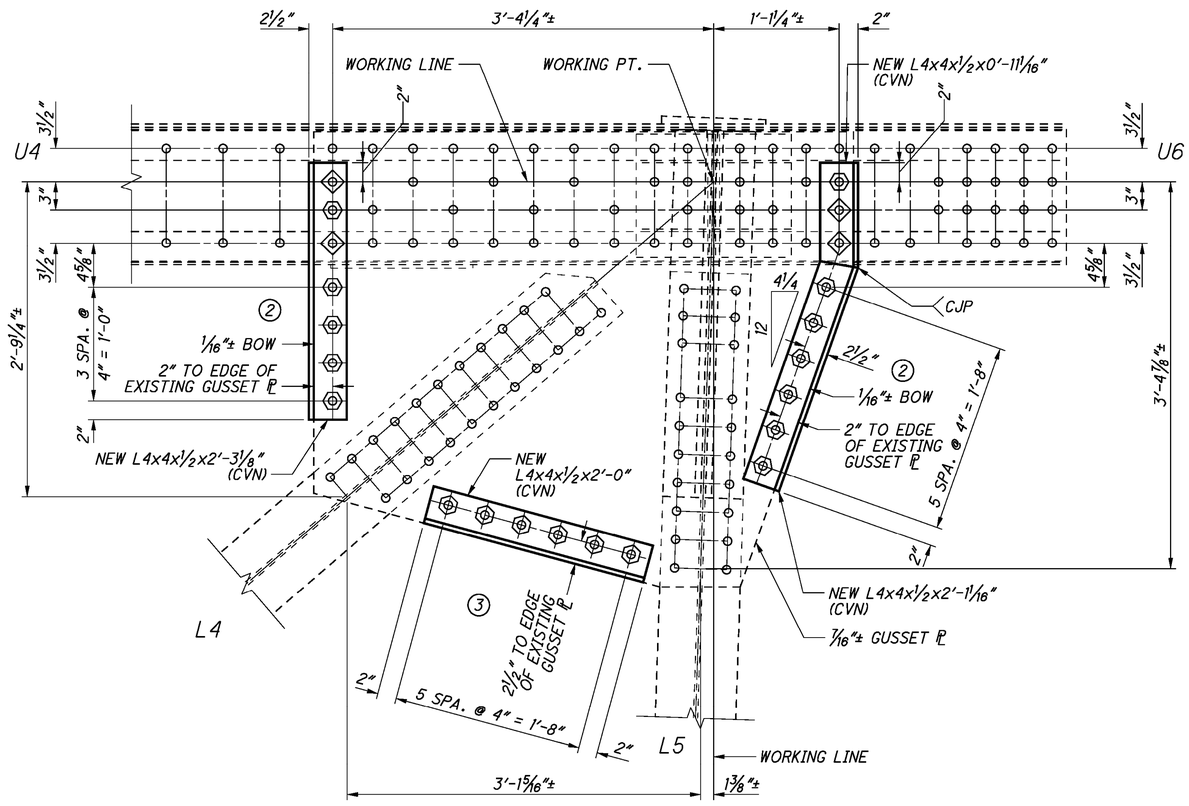


SPANS 5-7 - PANEL POINT U4
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 5-7 - PANEL POINT U5 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW $15/16$"ϕ HOLE FOR NEW $7/8$"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW $7/8$"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (4 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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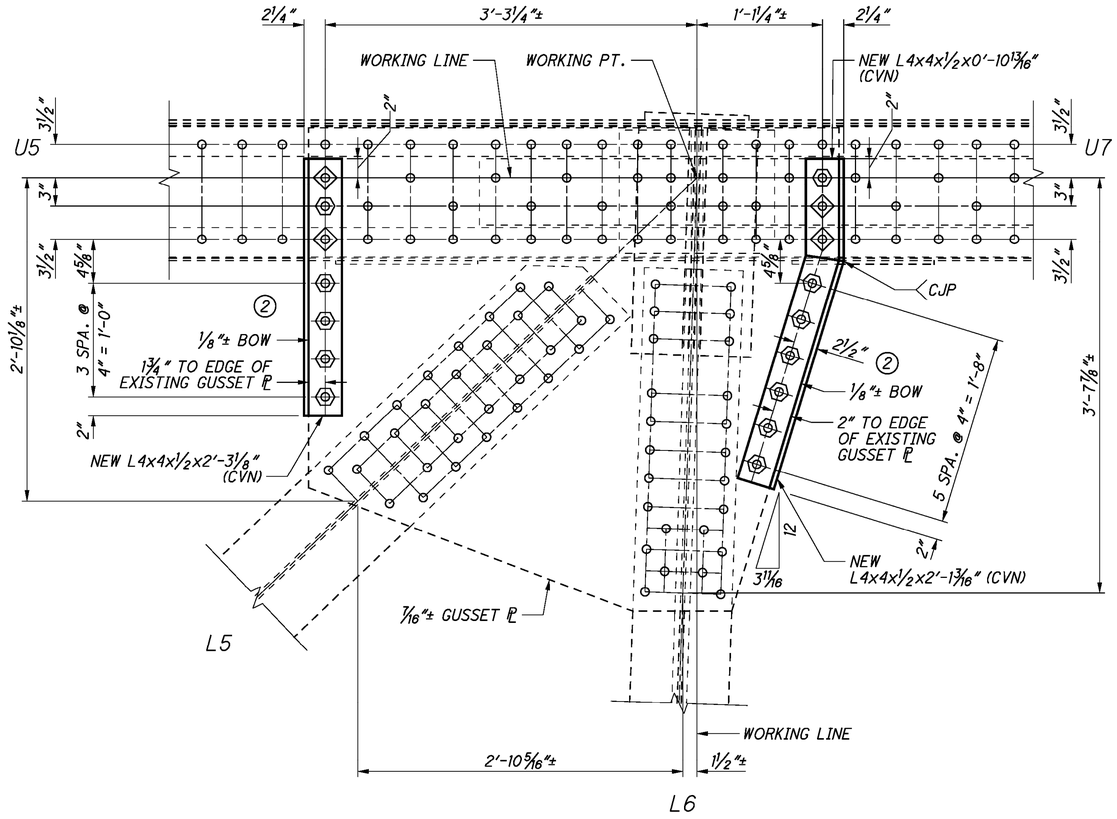
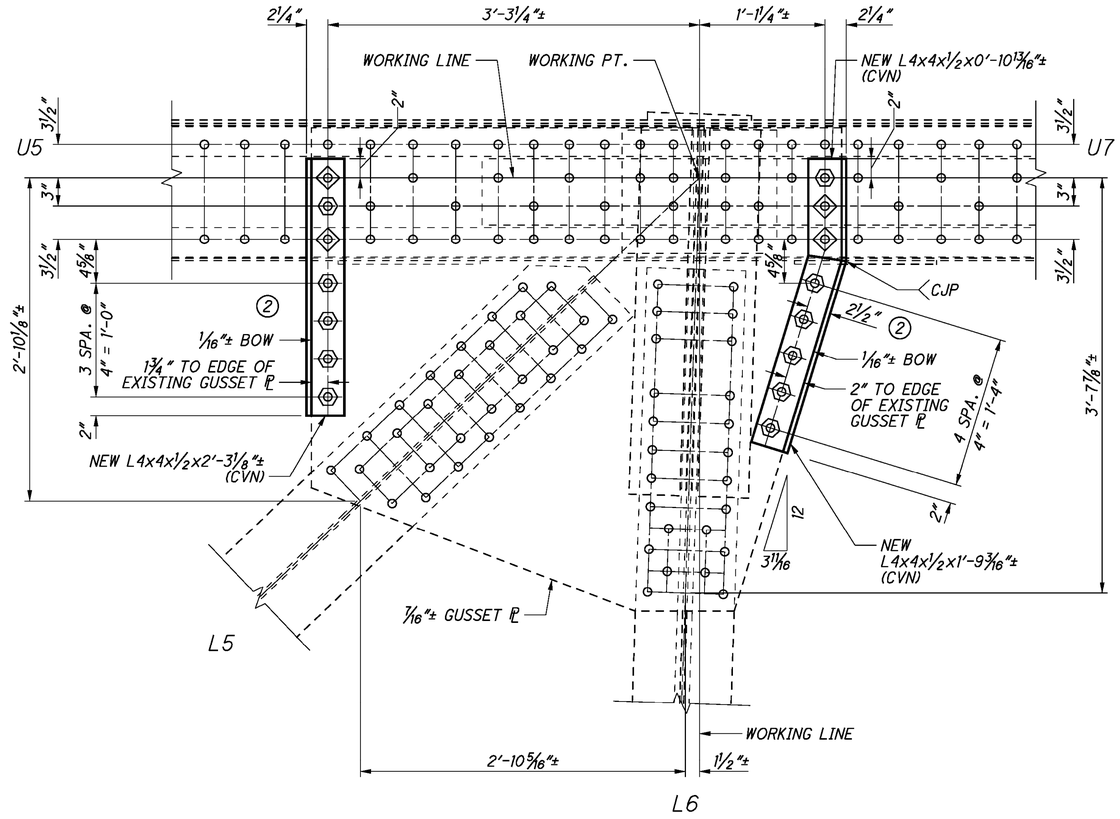


SPANS 5-7 - PANEL POINT U6
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U6
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

Ⓧ - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 23 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (5 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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70
199

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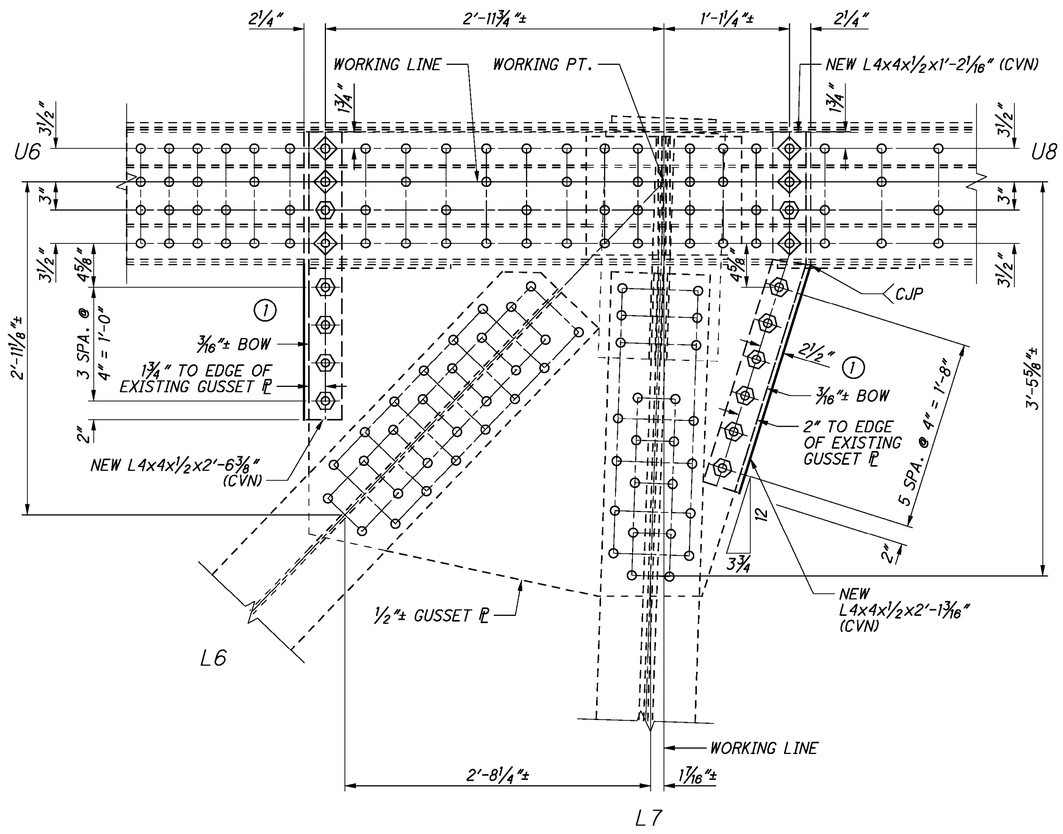
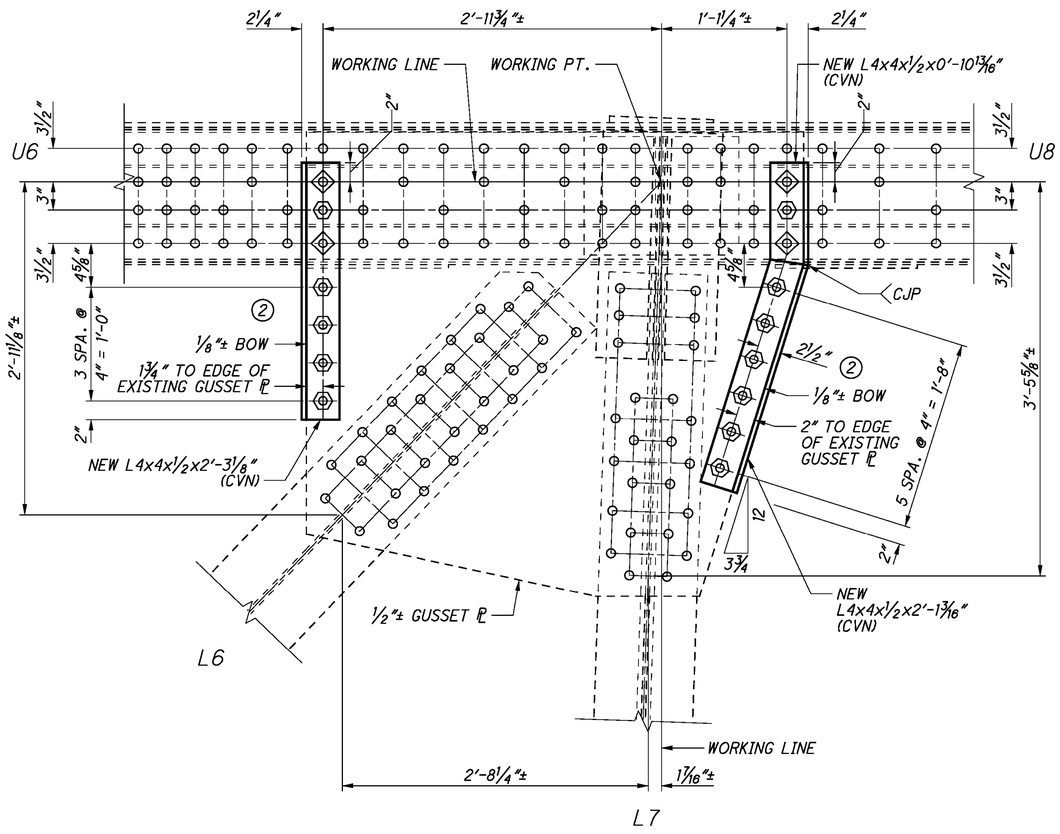


SPANS 5-7 - PANEL POINT U7
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS



SPANS 5-7 - PANEL POINT U7
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
R.JM	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (6 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

28/156

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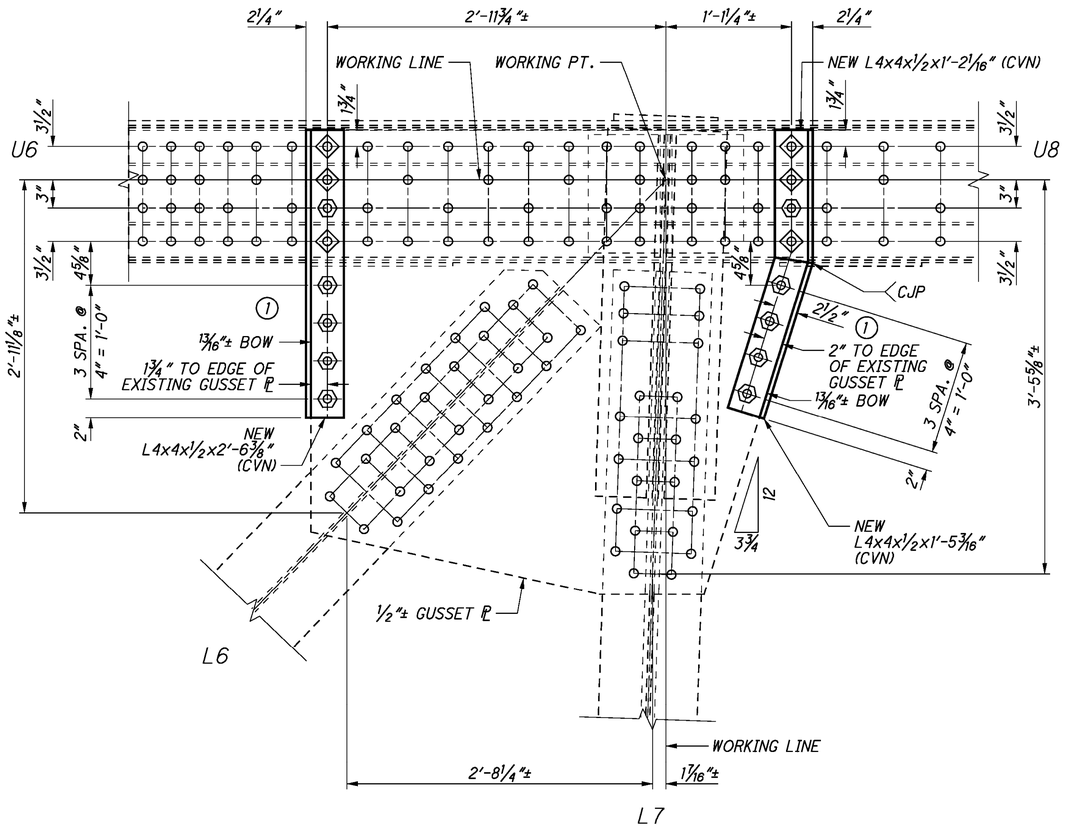
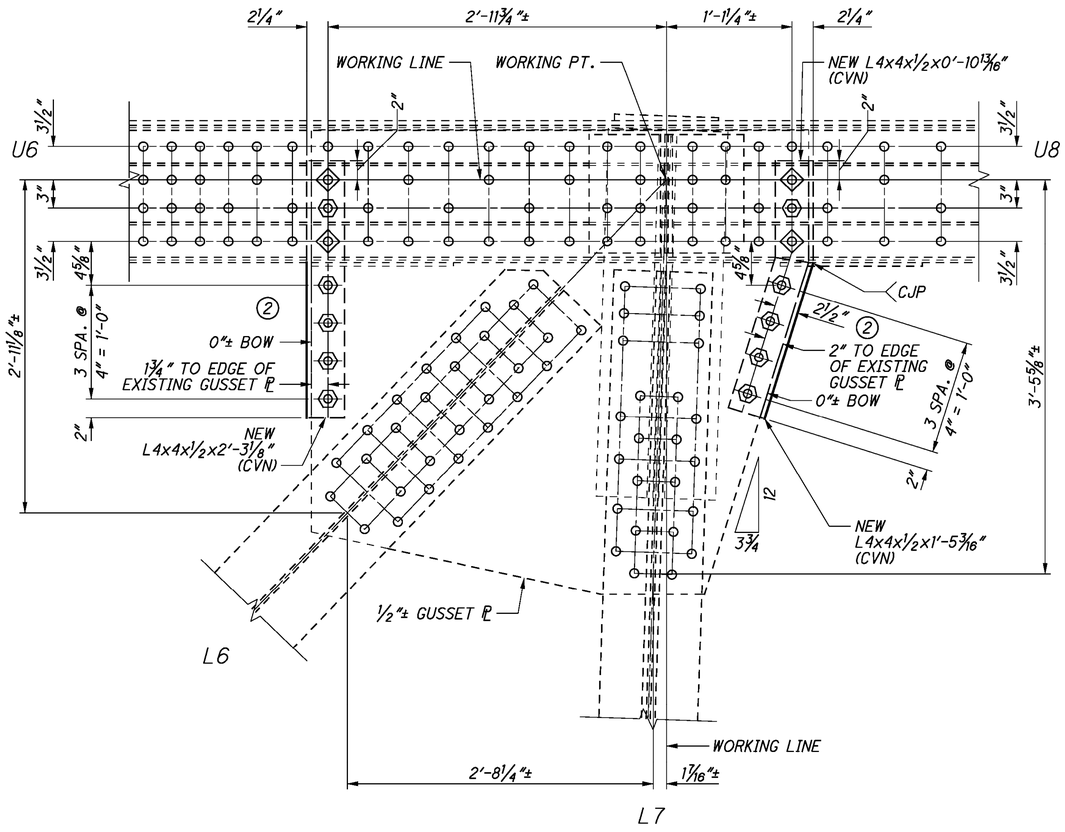


L7

SPANS 5-7 - PANEL POINT U7
SOUTH GUSSET PLATE - SOUTH TRUSS



L7

SPANS 5-7 - PANEL POINT U7
NORTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW ⅞"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"Φ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (7 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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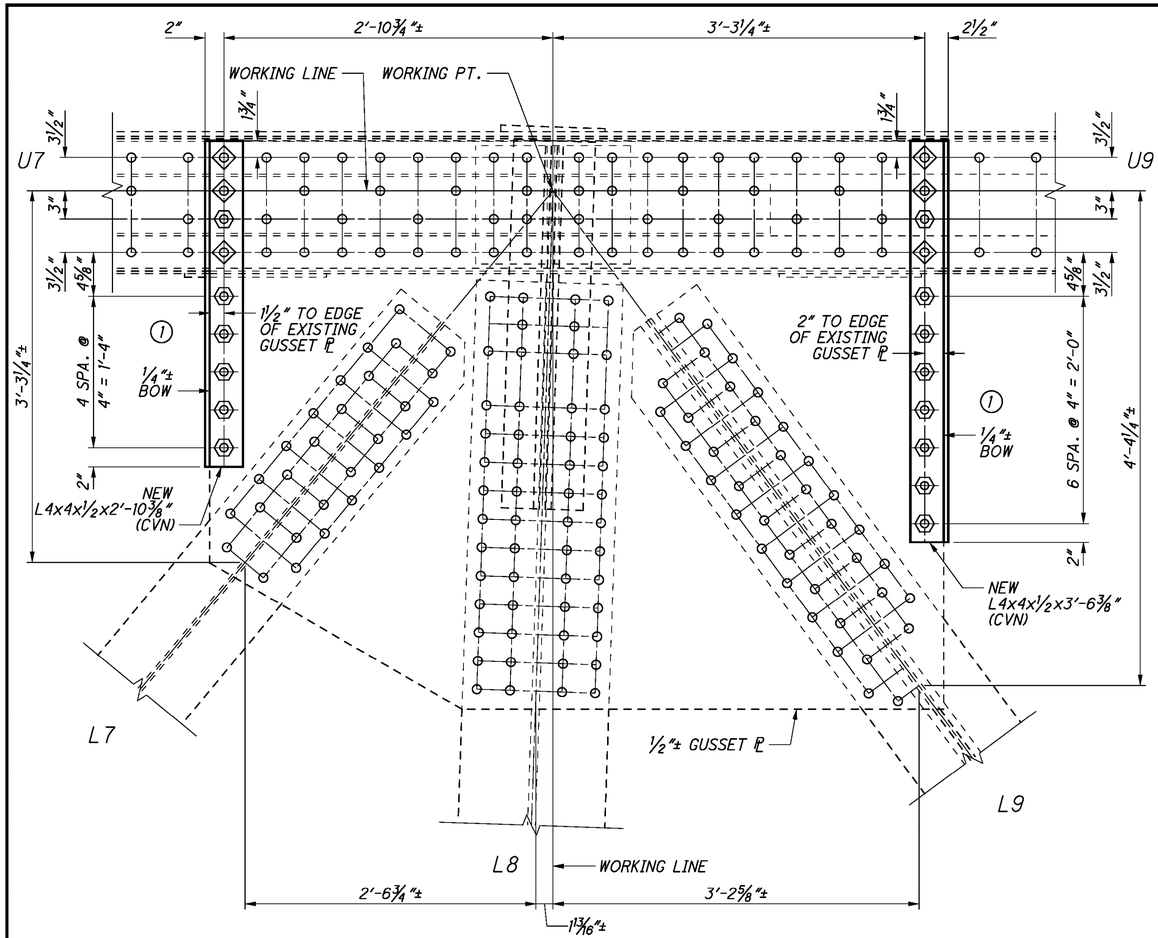
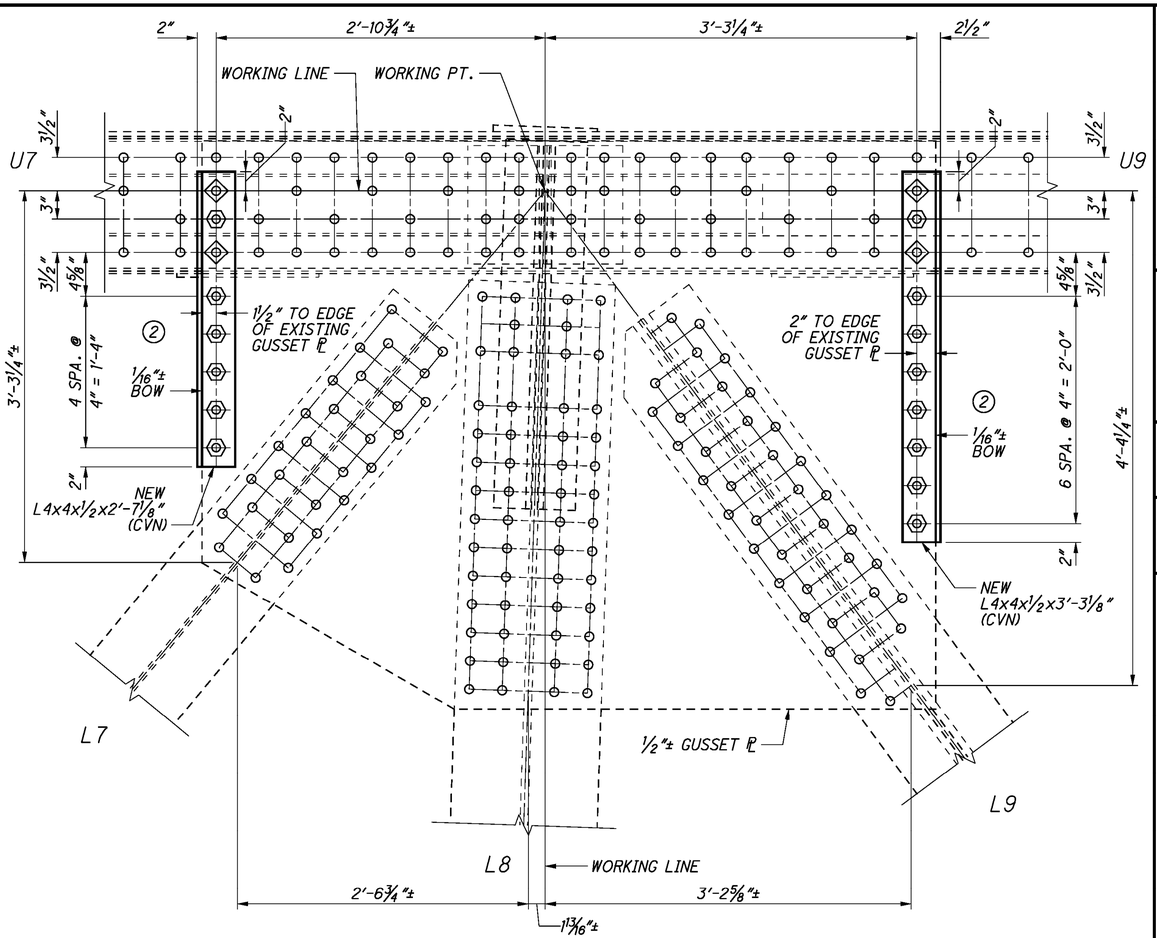


SPANS 5-7 - PANEL POINT U8 - NORTH AND SOUTH GUSSET PLATES
SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U8 - NORTH AND SOUTH GUSSET PLATES
NORTH AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (8 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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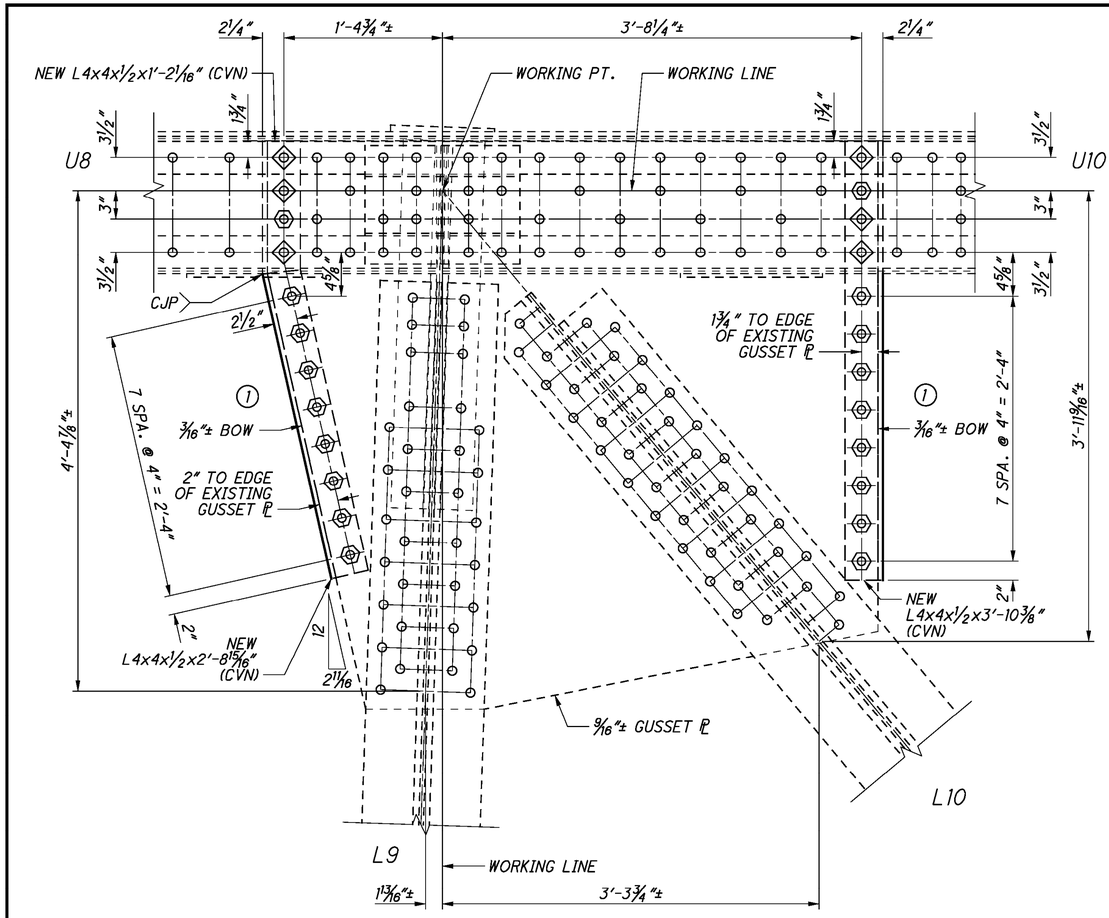
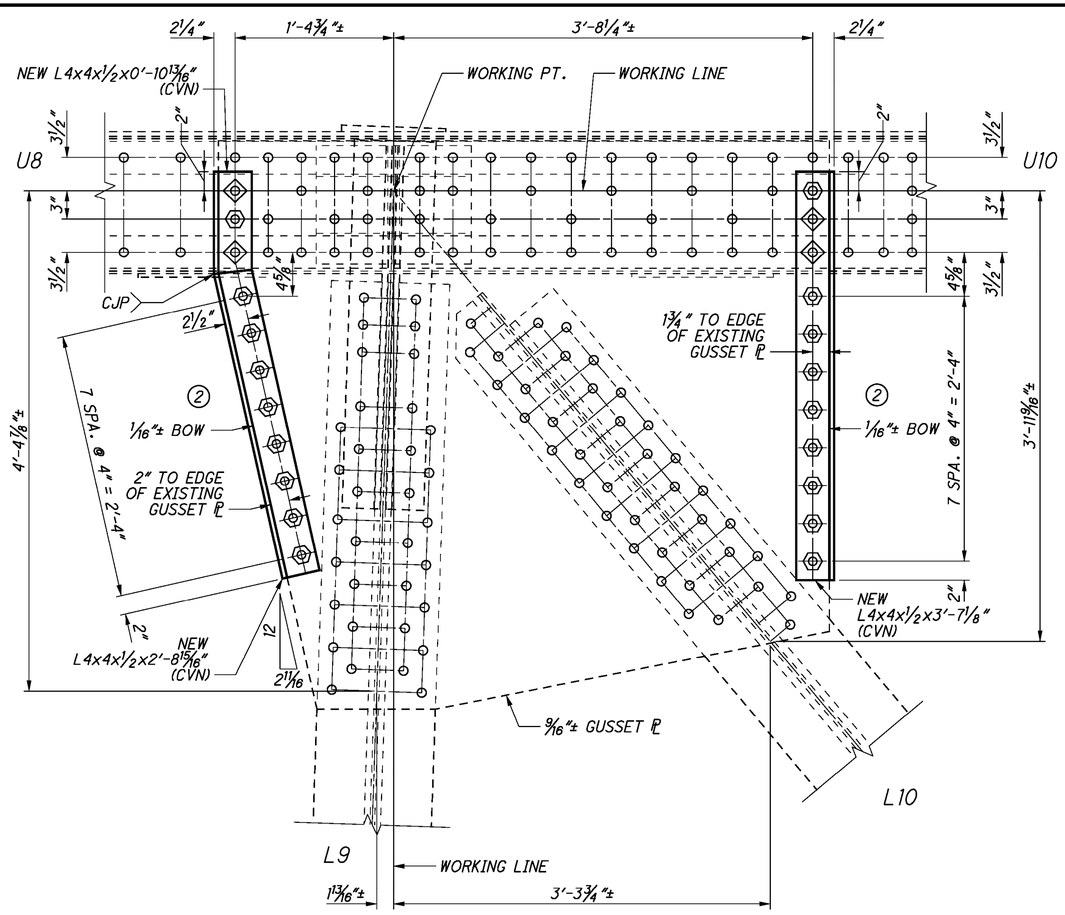


SPANS 5-7 - PANEL POINT U9
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 5-7 - PANEL POINT U9
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (9 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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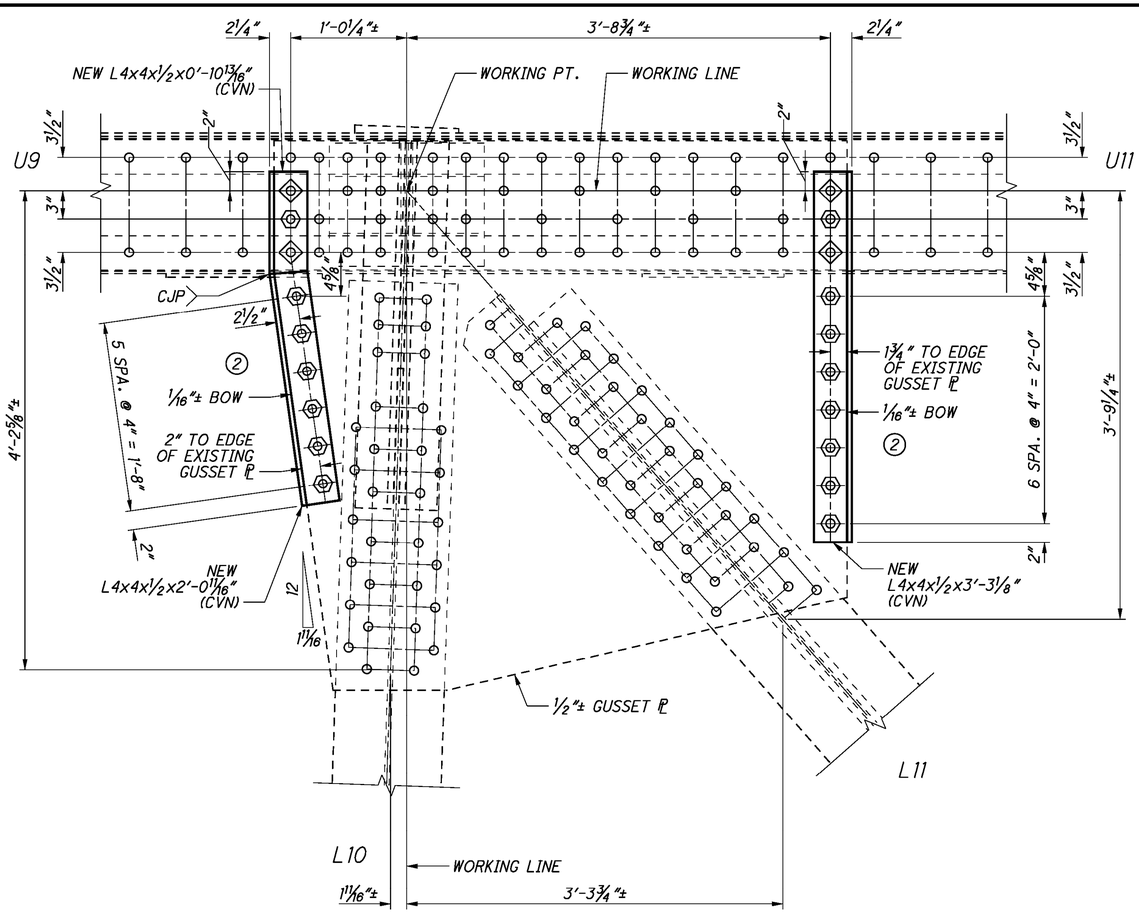
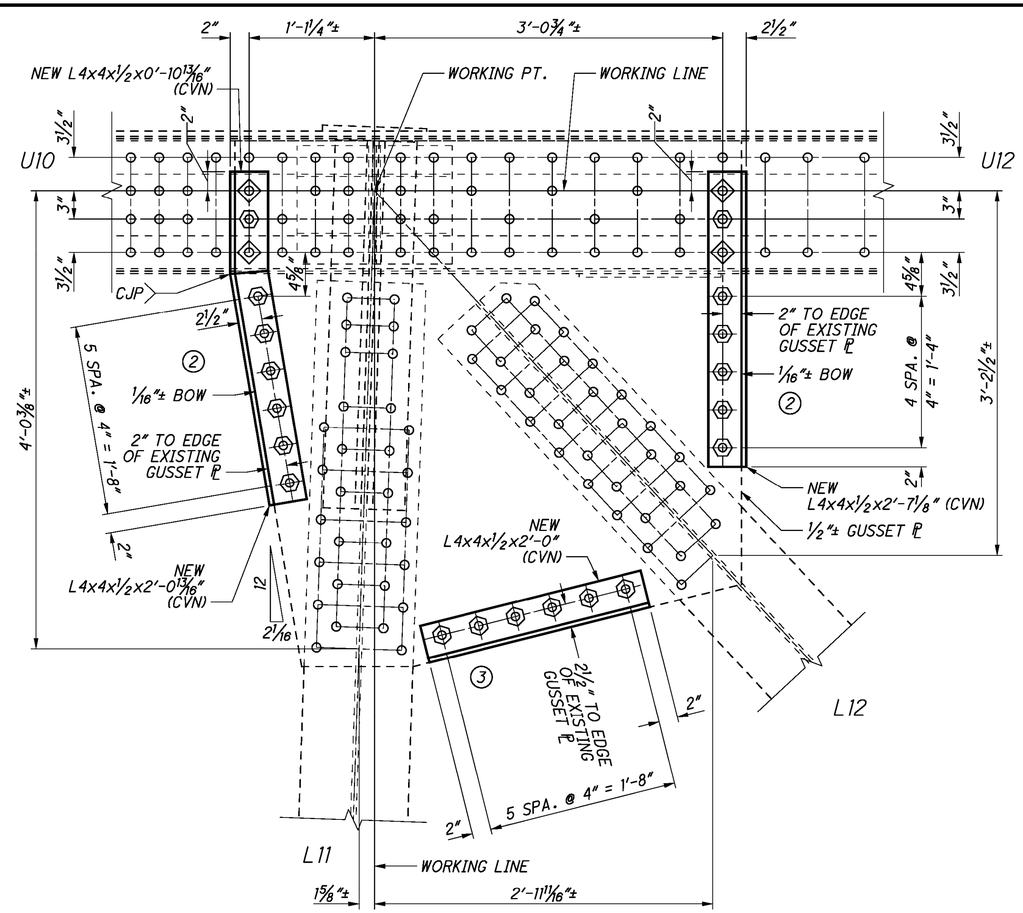


SPANS 5-7 - PANEL POINT U10 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U11 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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RJM	GJZ	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (10 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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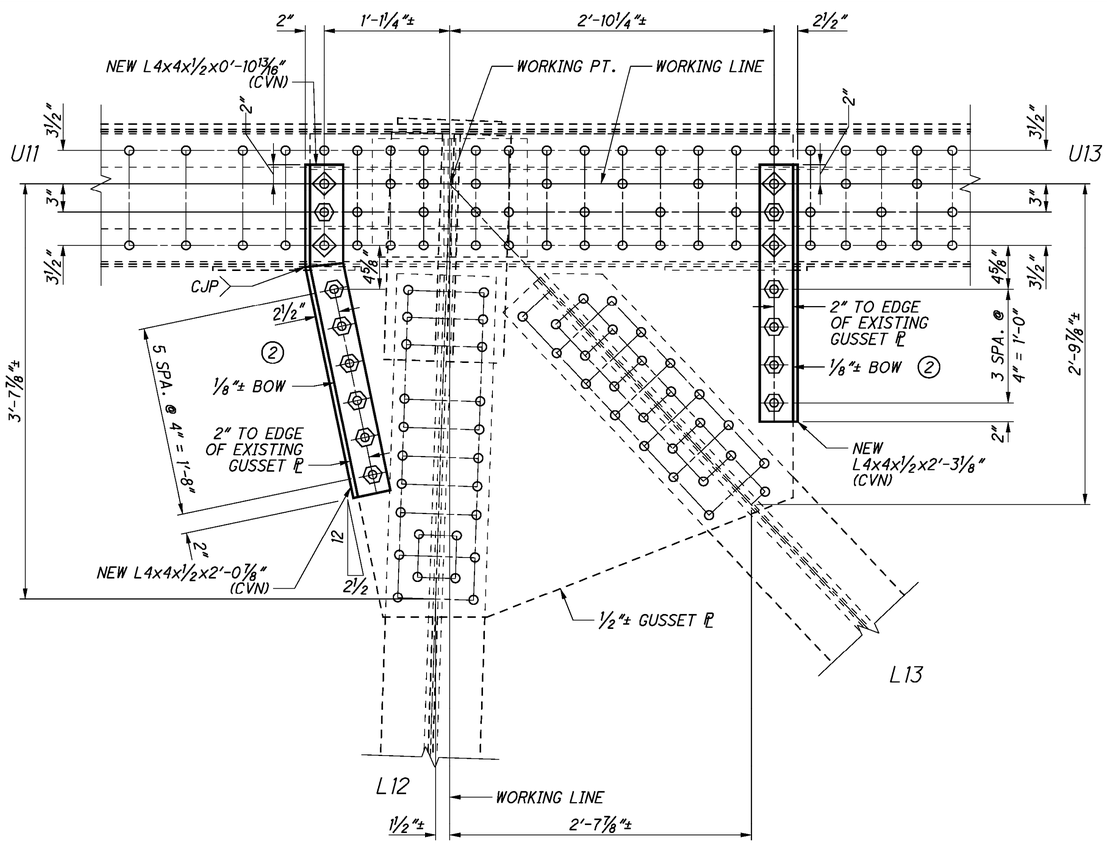
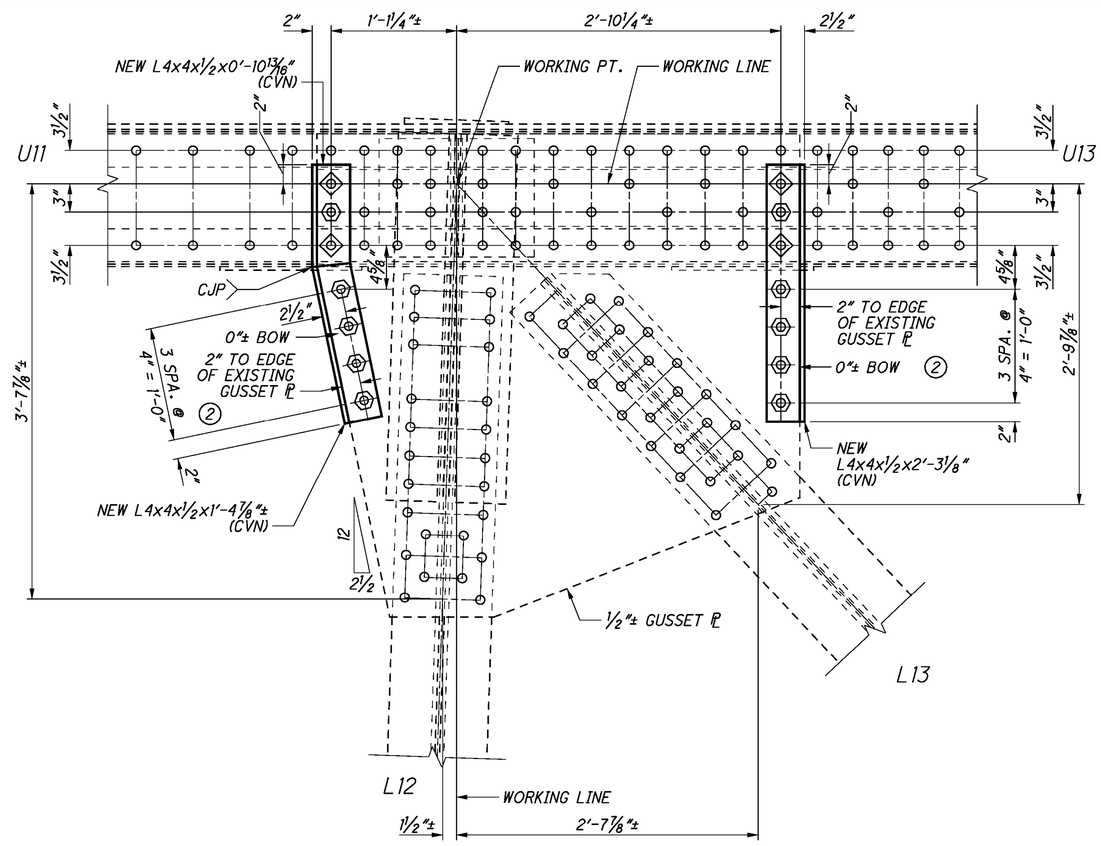


SPANS 5-7 - PANEL POINT U12
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U12
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (11 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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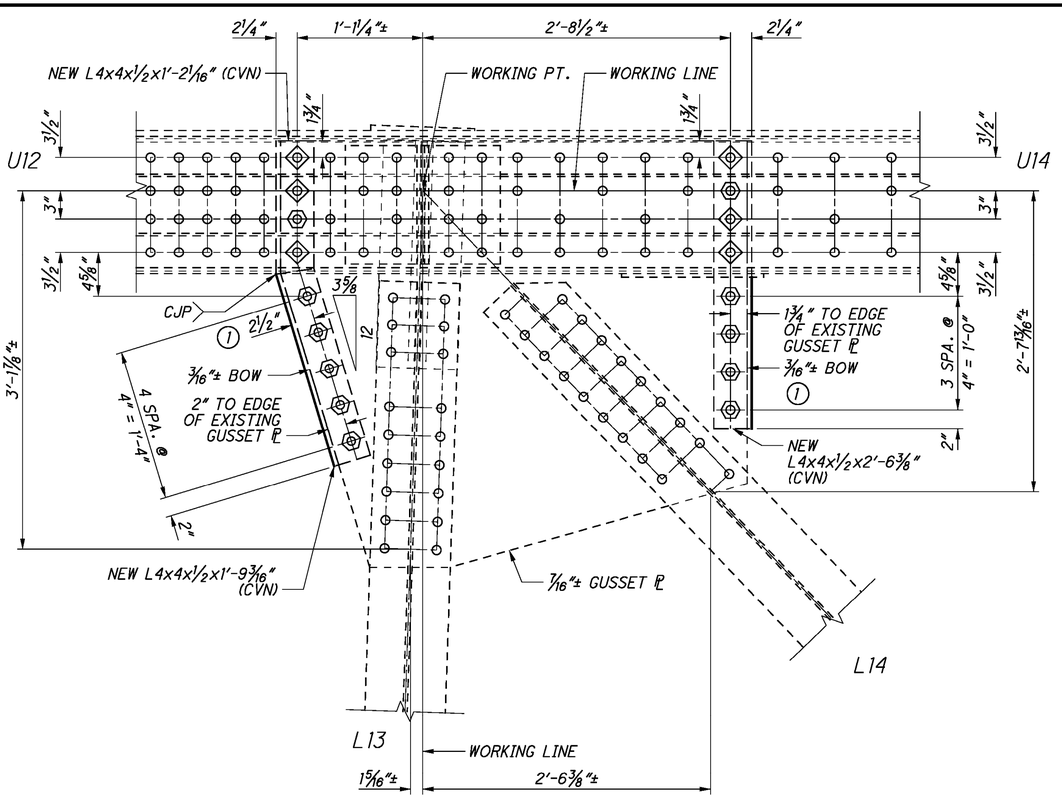
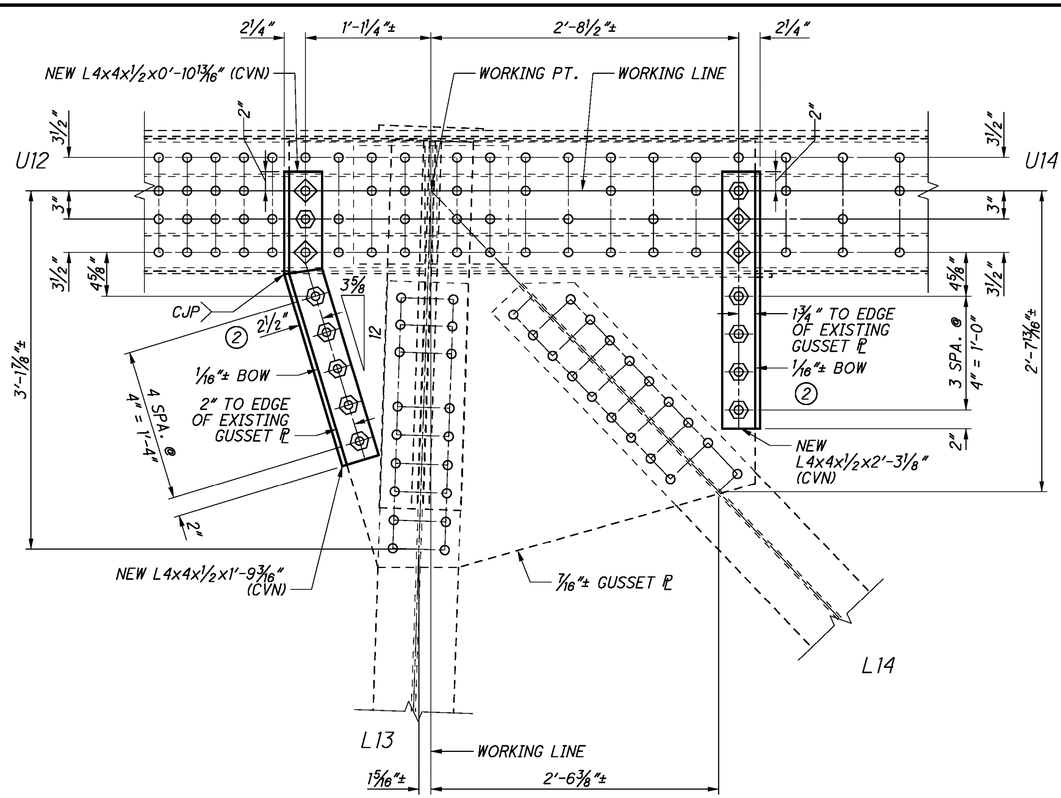


SPANS 5-7 - PANEL POINT U13
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS



SPANS 5-7 - PANEL POINT U13
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (12 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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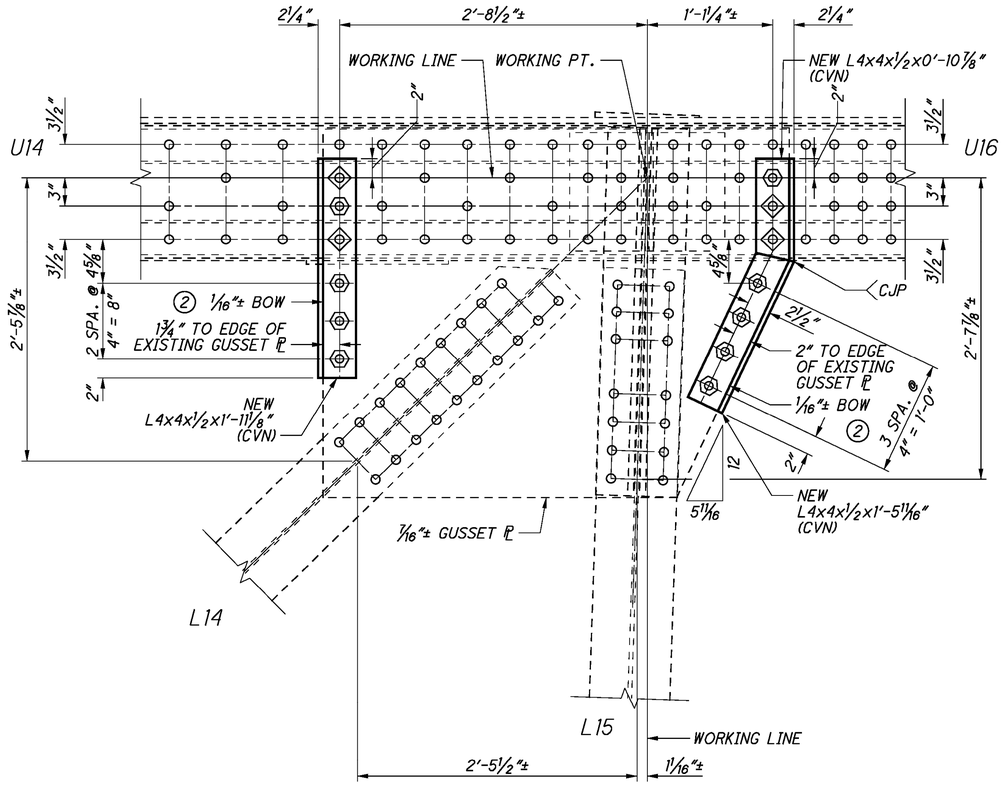
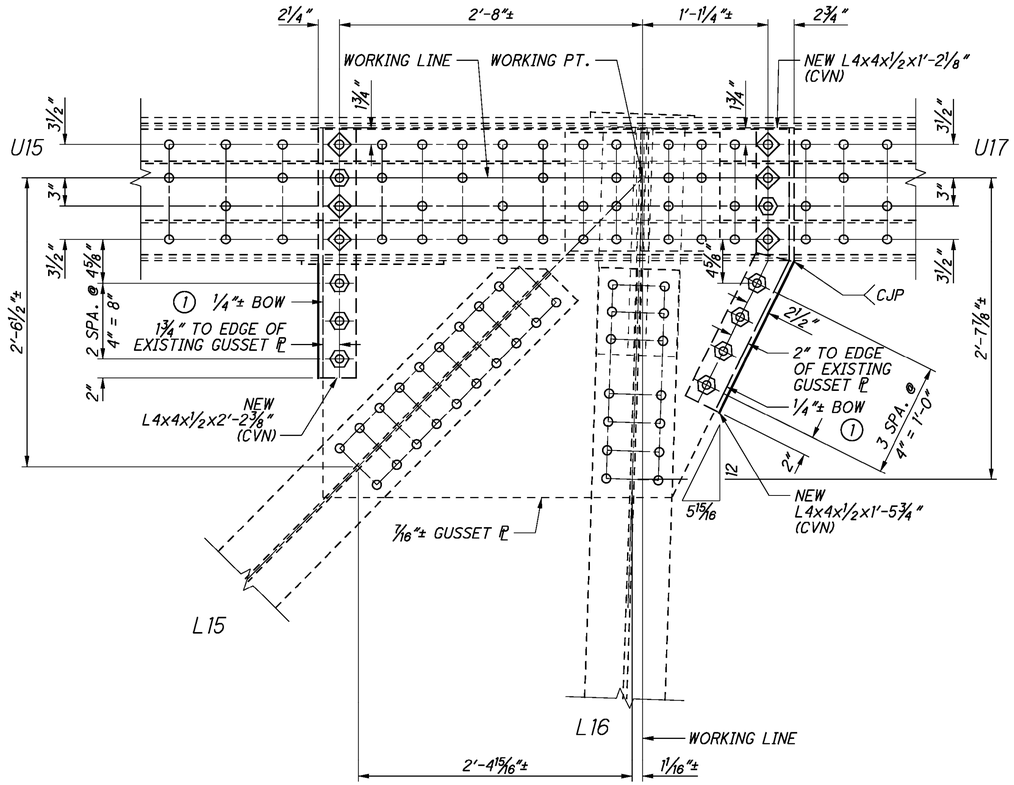


SPANS 5-7 - PANEL POINT U15 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U16 NORTH GUSSET PLATE - SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (13 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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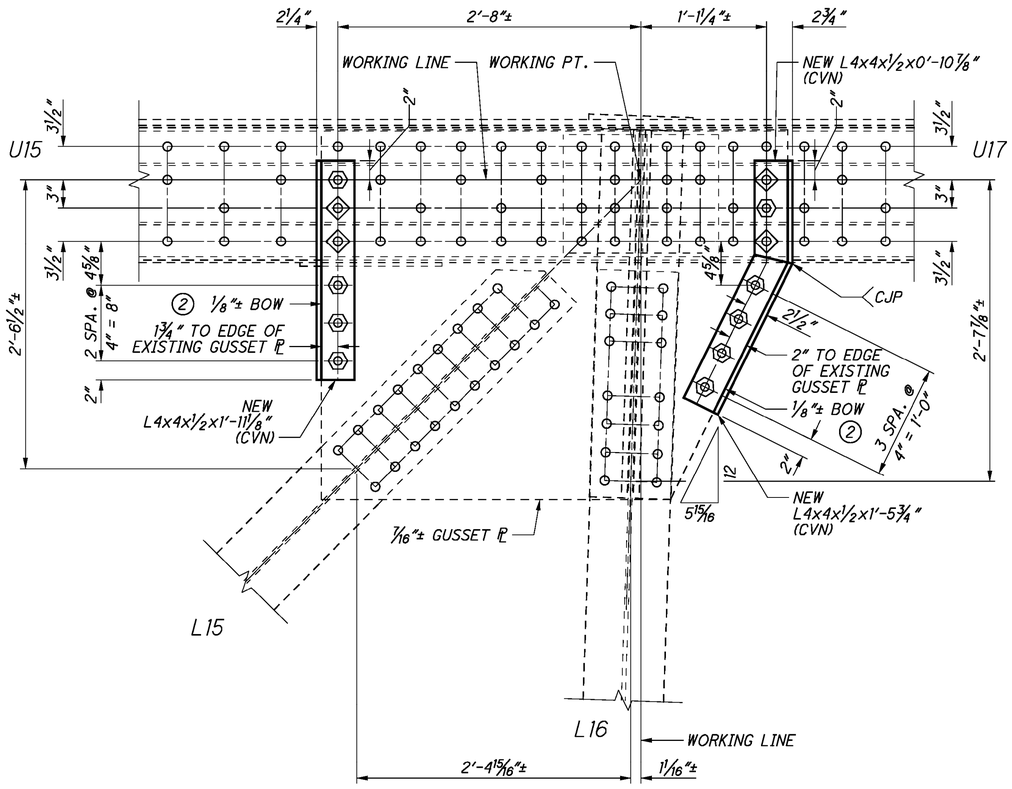

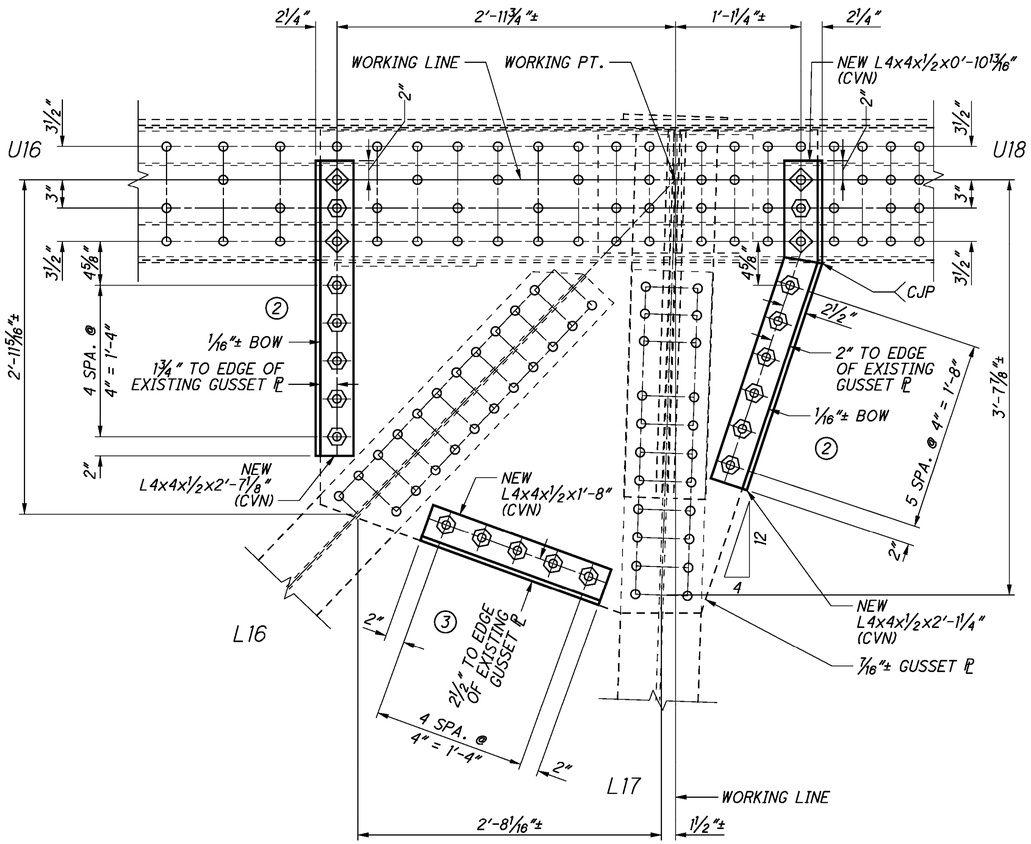

SPANS 5-7 - PANEL POINT U16
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND CENTER TRUSS - OPPOSITE HAND

SPANS 5-7 - PANEL POINT U17 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
R.JM	G.JZ	P.JA	10-05-16
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RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (14 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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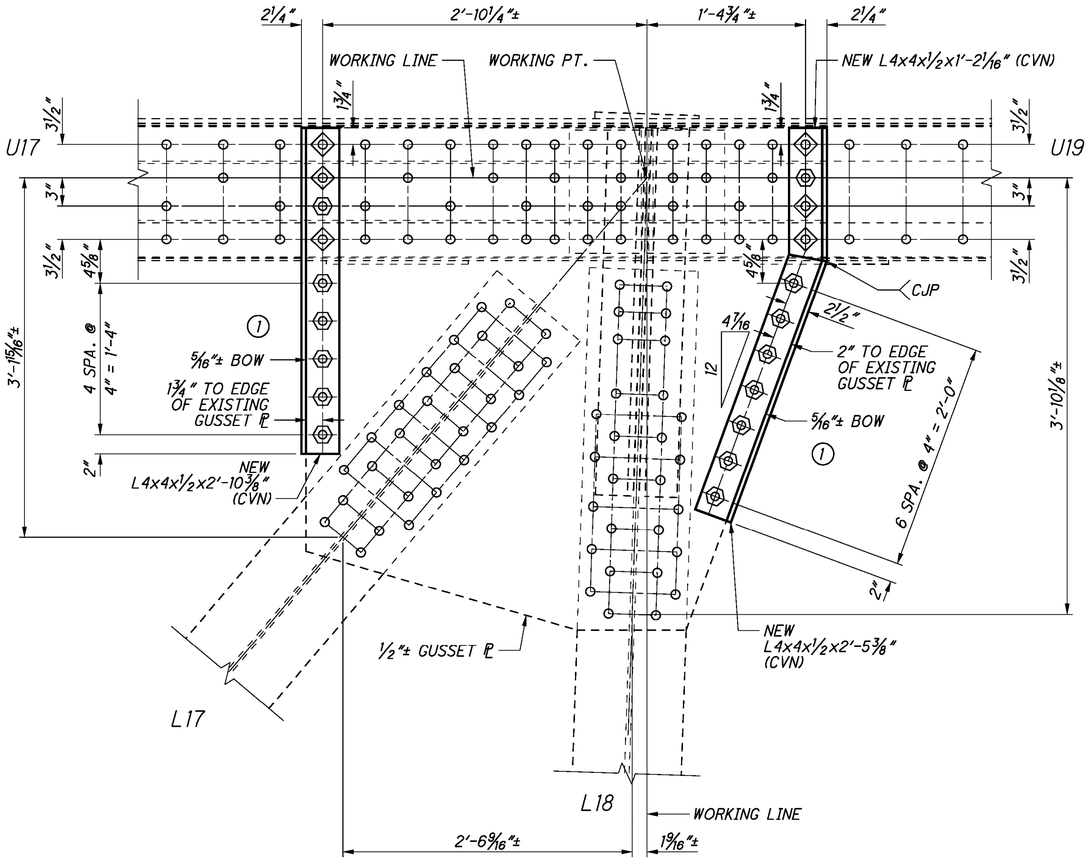
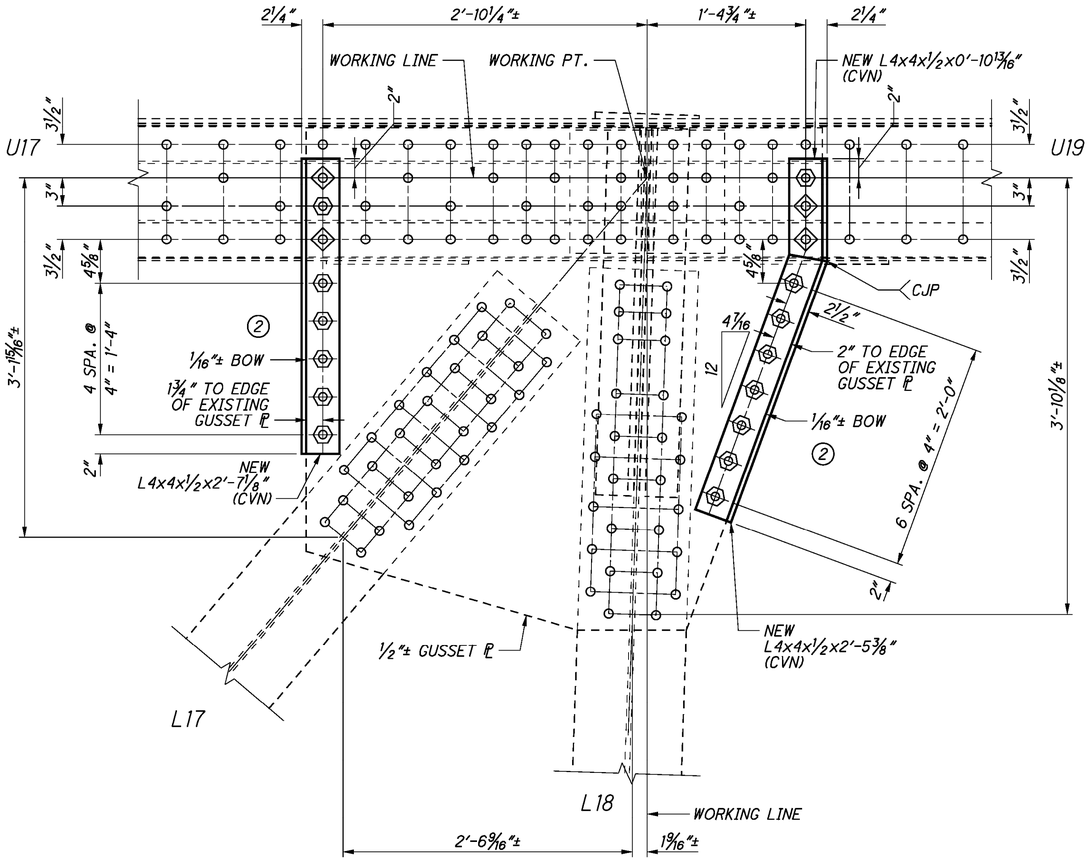


SPANS 5-7 - PANEL POINT U18 - NORTH AND SOUTH GUSSET PLATES
SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT U18 - NORTH AND SOUTH GUSSET PLATES
NORTH AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (15 OF 123)

BRIDGE No. HAM-50-2180N

COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N

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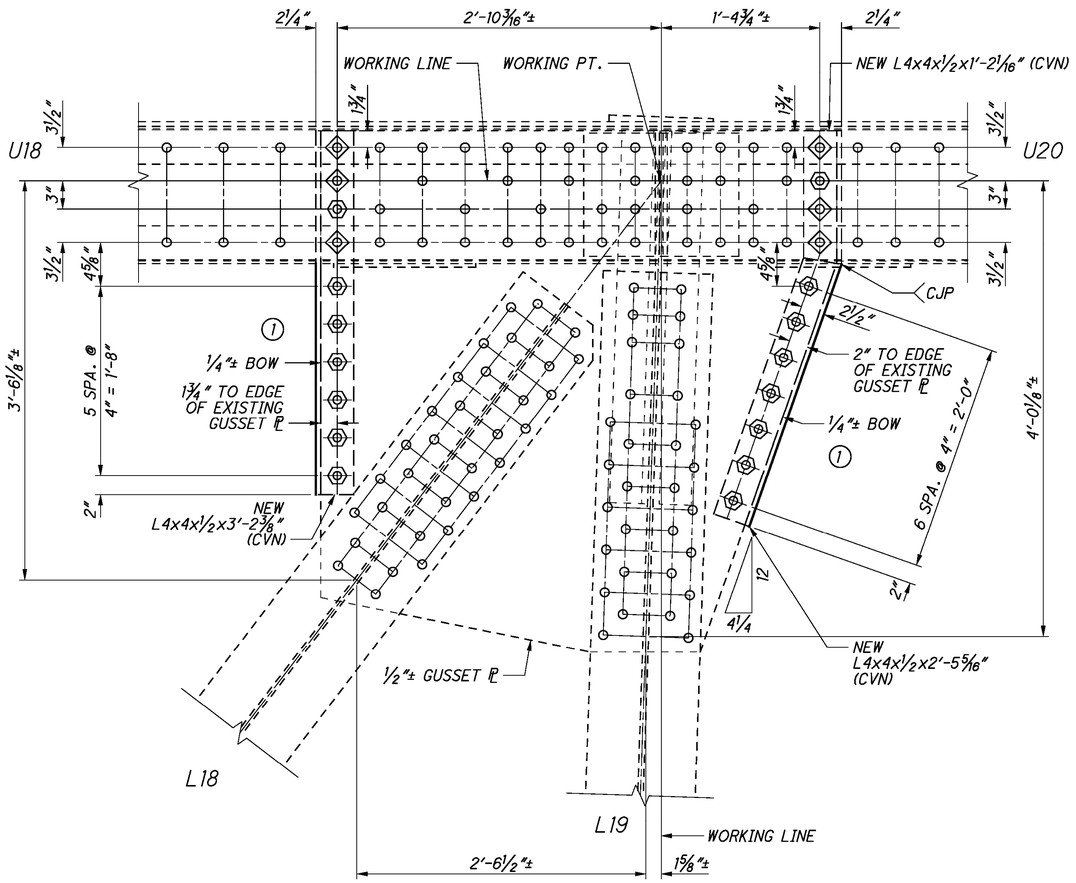
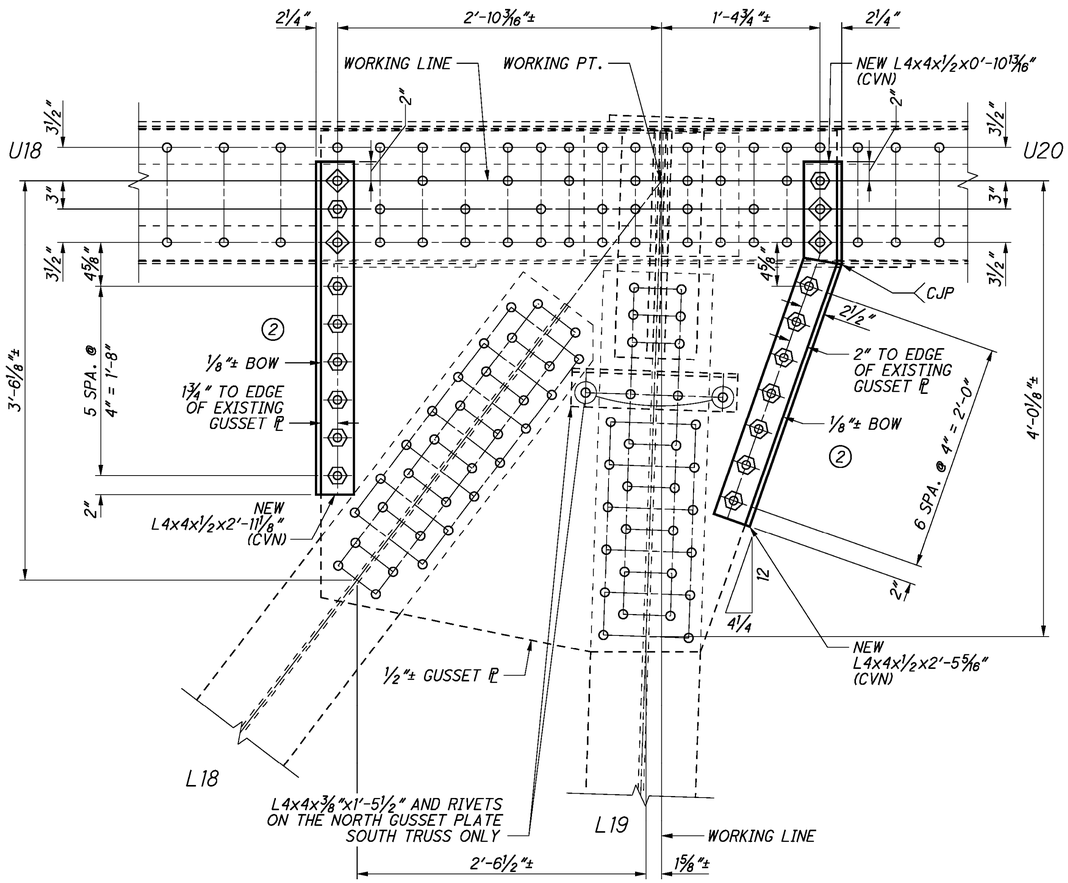


SPANS 5-7 - PANEL POINT U19
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 5-7 - PANEL POINT U19
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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R.JM	G.JZ	P.JA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (16 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

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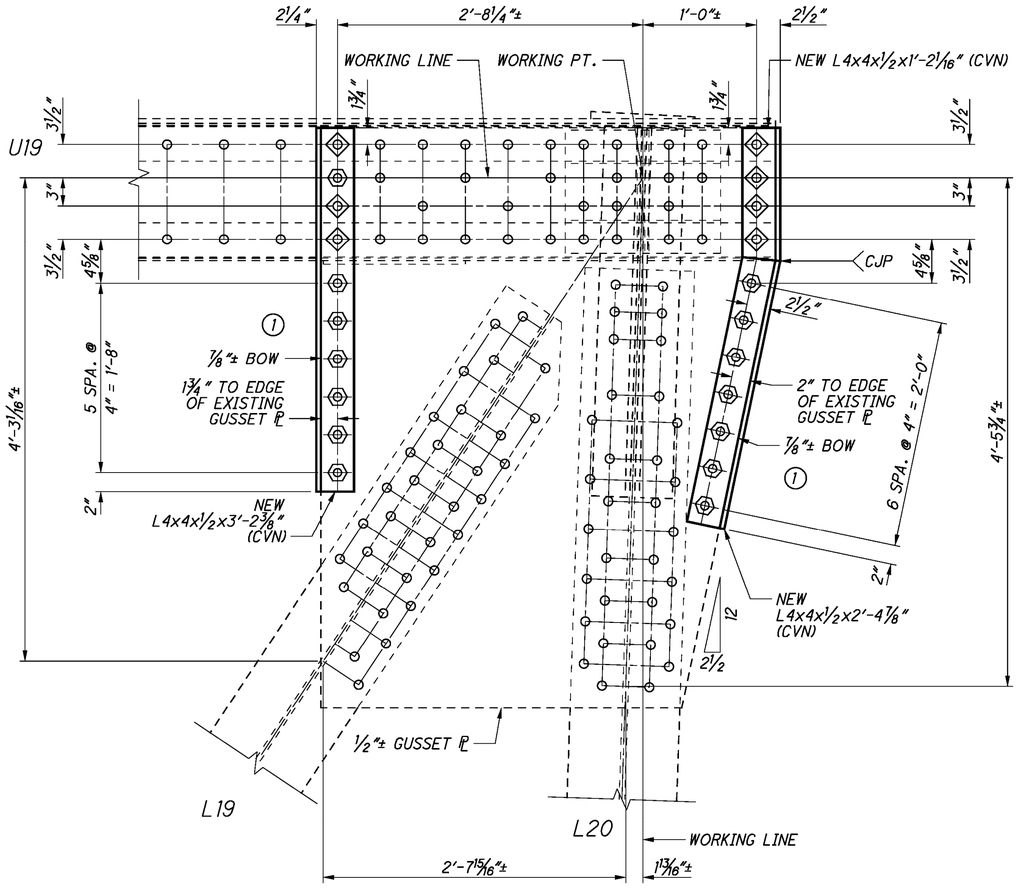
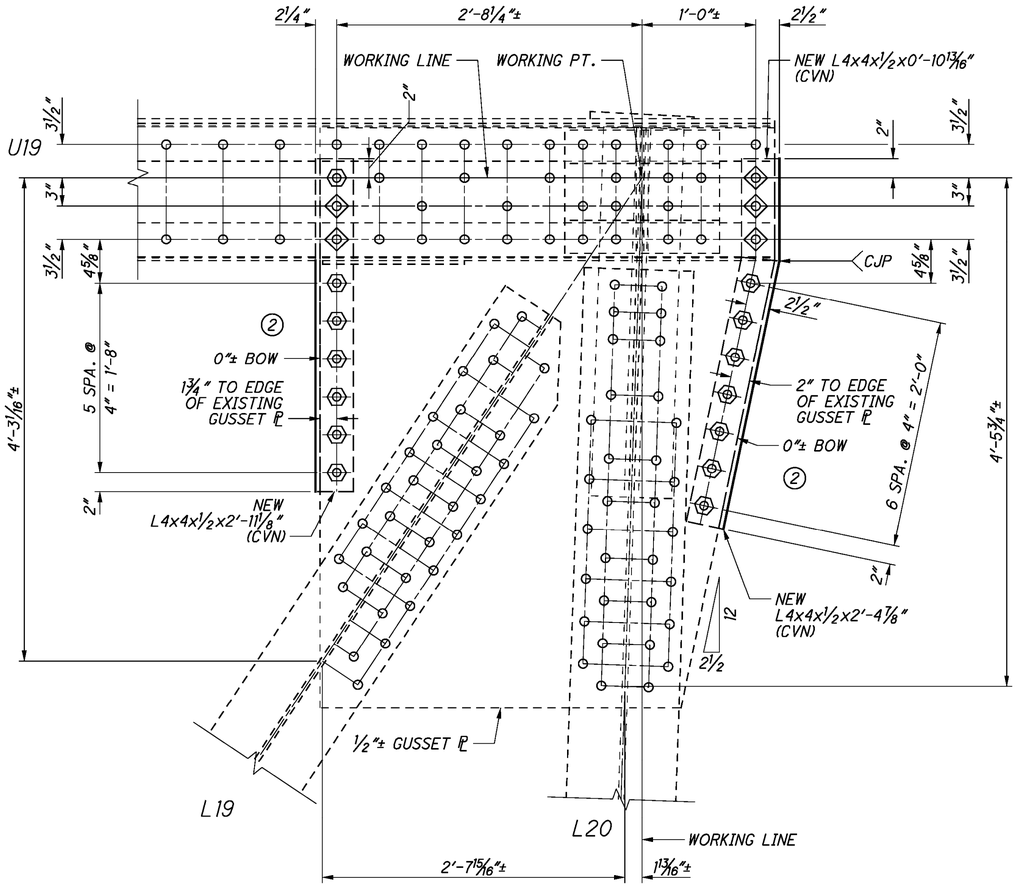


SPANS 5-7 - PANEL POINT U20
SOUTH GUSSET PLATE - SOUTH TRUSS



SPANS 5-7 - PANEL POINT U20
NORTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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GUSSET PLATE EDGE STIFFENING DETAILS (17 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

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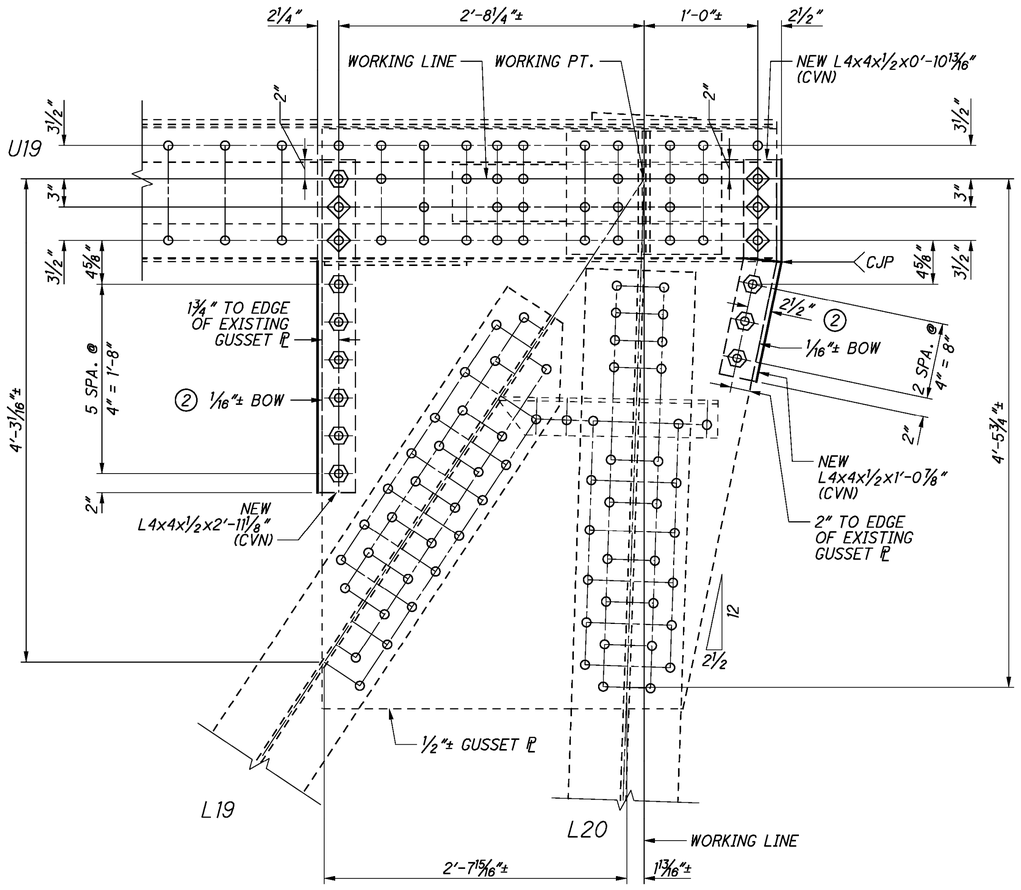
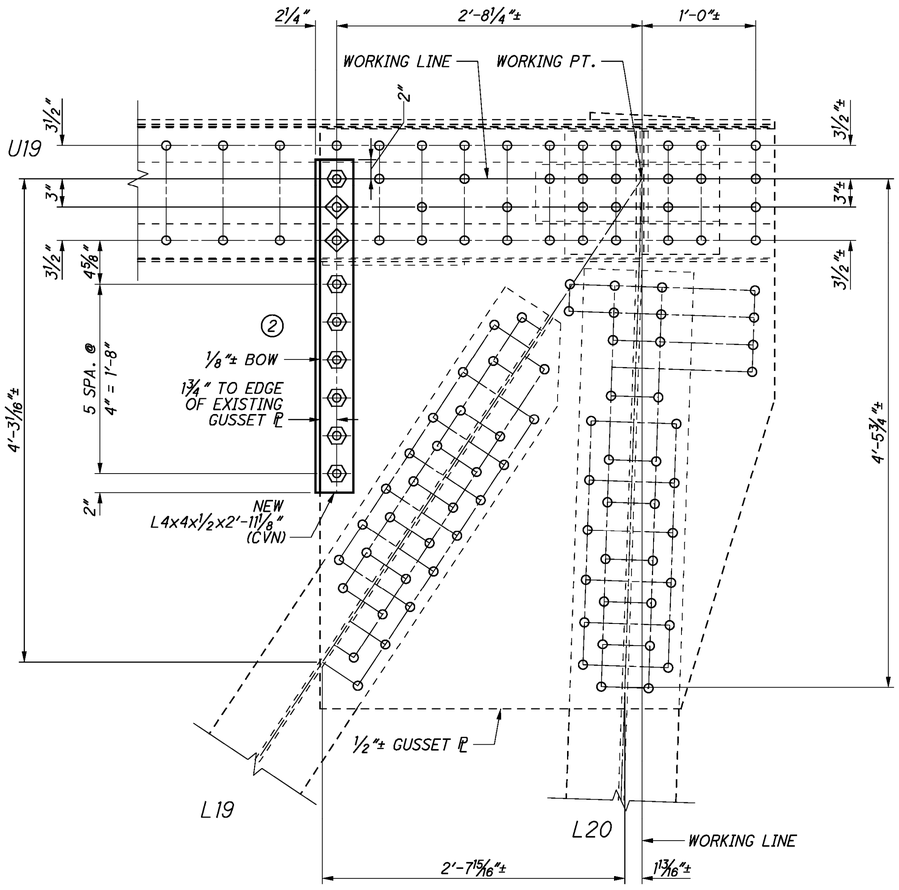


SPANS 5-7 - PANEL POINT U20
NORTH GUSSET PLATE - CENTER TRUSS
NORTH GUSSET PLATE - SOUTH TRUSS



SPANS 5-7 - PANEL POINT U20
SOUTH GUSSET PLATE - NORTH TRUSS
SOUTH GUSSET PLATE - CENTER TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◈ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 23 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (18 OF 123)
BRIDGE No. HAM-50-2180N
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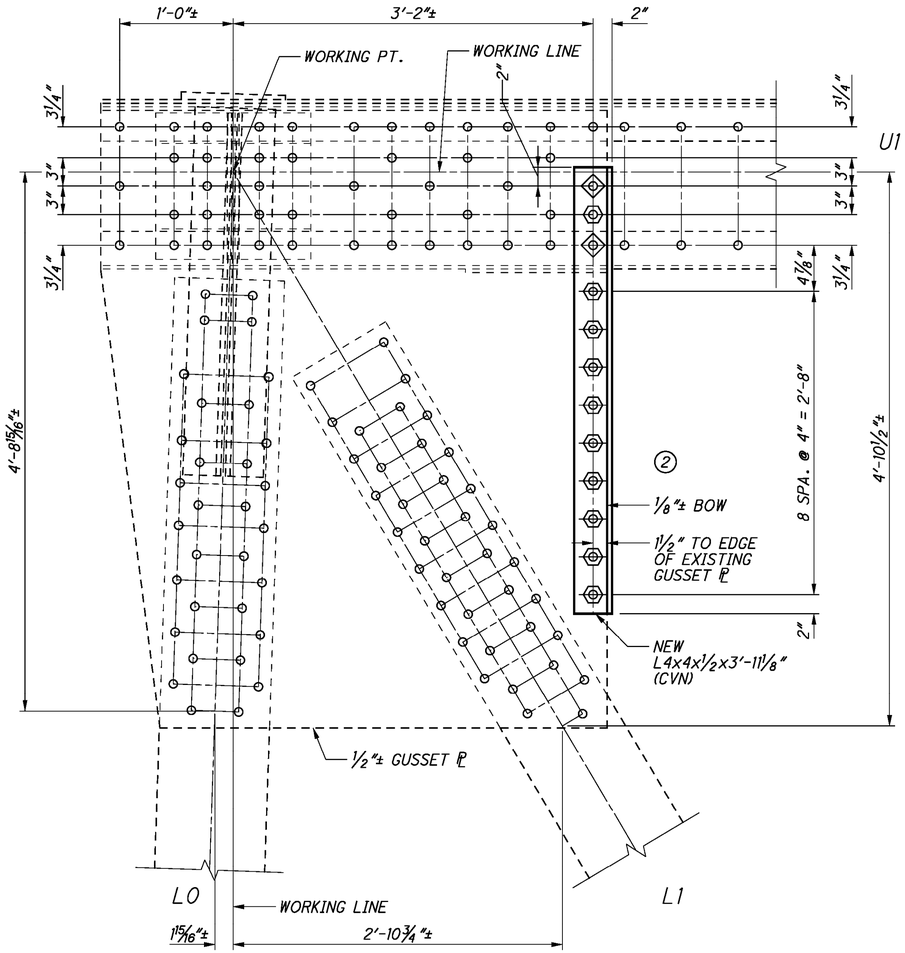
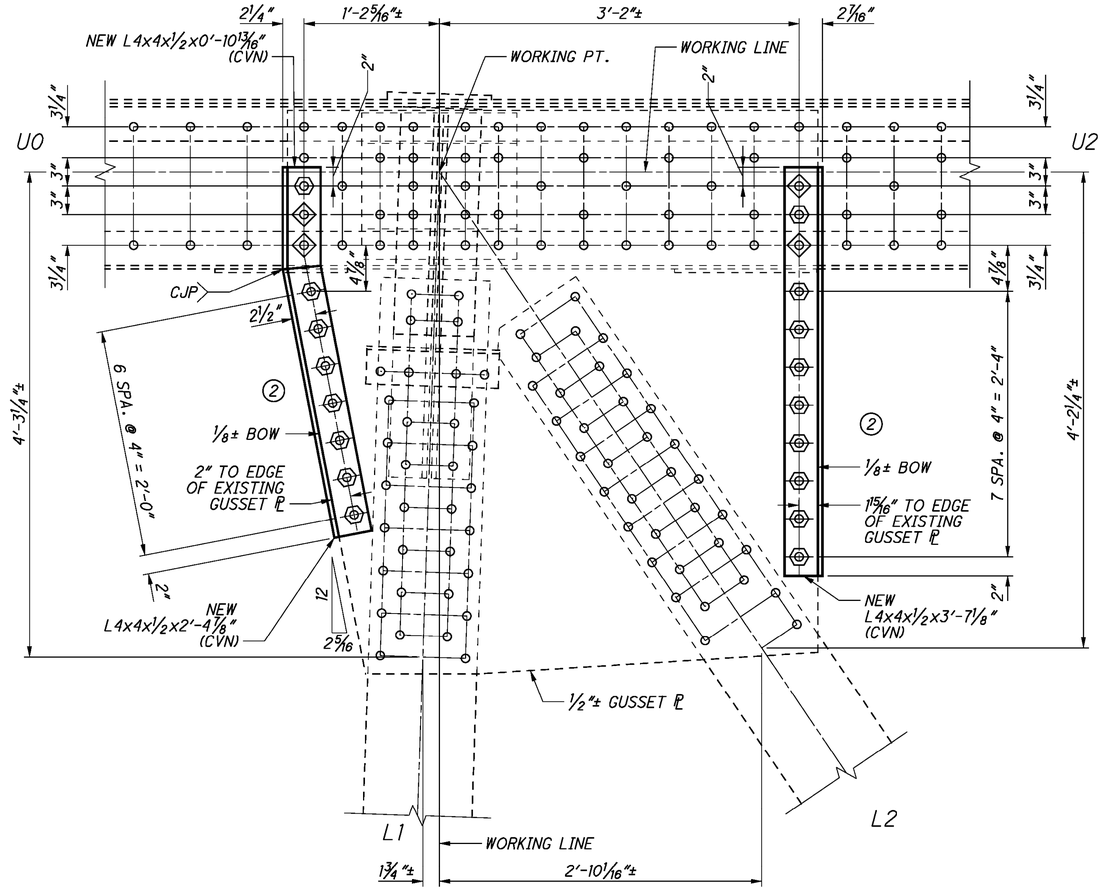


SPANS 7-10 - PANEL POINT U0 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U1 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. SOME CONNECTION ANGLES AND PLATES HAVE BEEN OMITTED FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY EACH NEW ANGLE LOCATION AND ENSURE NO CONFLICTS EXIST. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF ANY CONFLICTS EXIST.
3. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS: U = UPPER PANEL POINT
   L = LOWER PANEL POINT
4. CJP - COMPLETE JOINT PENETRATION WELD (ANGLES ONLY)
5. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A490, TYPE 3 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE 15⁄16" DIAMETER. BOLT LENGTH REQUIREMENTS SHALL BE DETERMINED FROM ORIGINAL SHOP DRAWING AND FIELD VERIFICATION.
6. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
8. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING AND BOLTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1, TYPE 2, OR TYPE 3.
9. THE PAINT ZONE FOR THE GUSSET PLATE EDGE STIFFENING SHALL ENCOMPASSES THE FAYING SURFACE OF THE GUSSET PLATE AND UPPER CHORD, THE NEW STIFFENING ANGLES, LOCATIONS OF PACK RUST REMOVAL, AND ANY SURROUNDING AREAS DAMAGED BY THE INSTALLATION OF THE RETROFITS. ALL PAINTING IS TOBE INCLUDED FOR PAYMENT UNDER ITEM 514.
10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET [3 / 156] THRU [5 / 156].
11. FOR ADDITIONAL DETAILS REGARDING REPAIR TYPES SEE SHEET [22 / 156].

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (19 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

41 / 156

84 / 199

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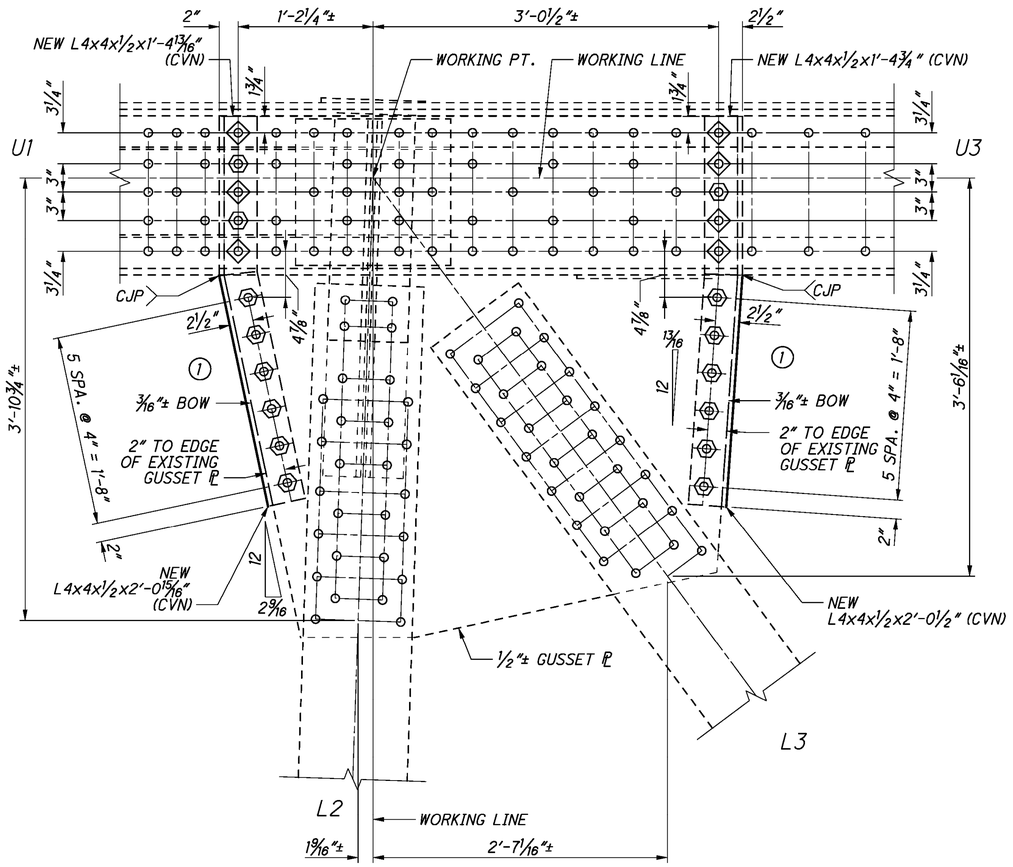
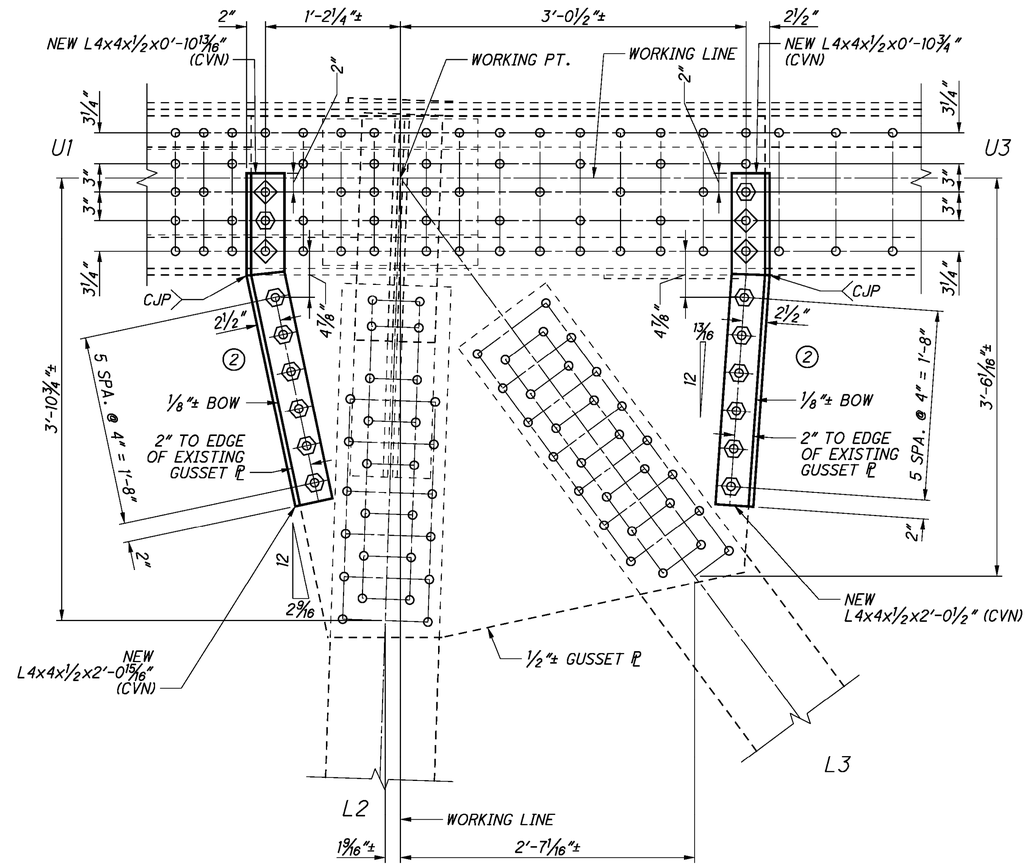


SPANS 7-10 - PANEL POINT U2
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT U2
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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CLEVELAND, OHIO 44113

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G.JZ	G.JZ	P.JA	10-05-16
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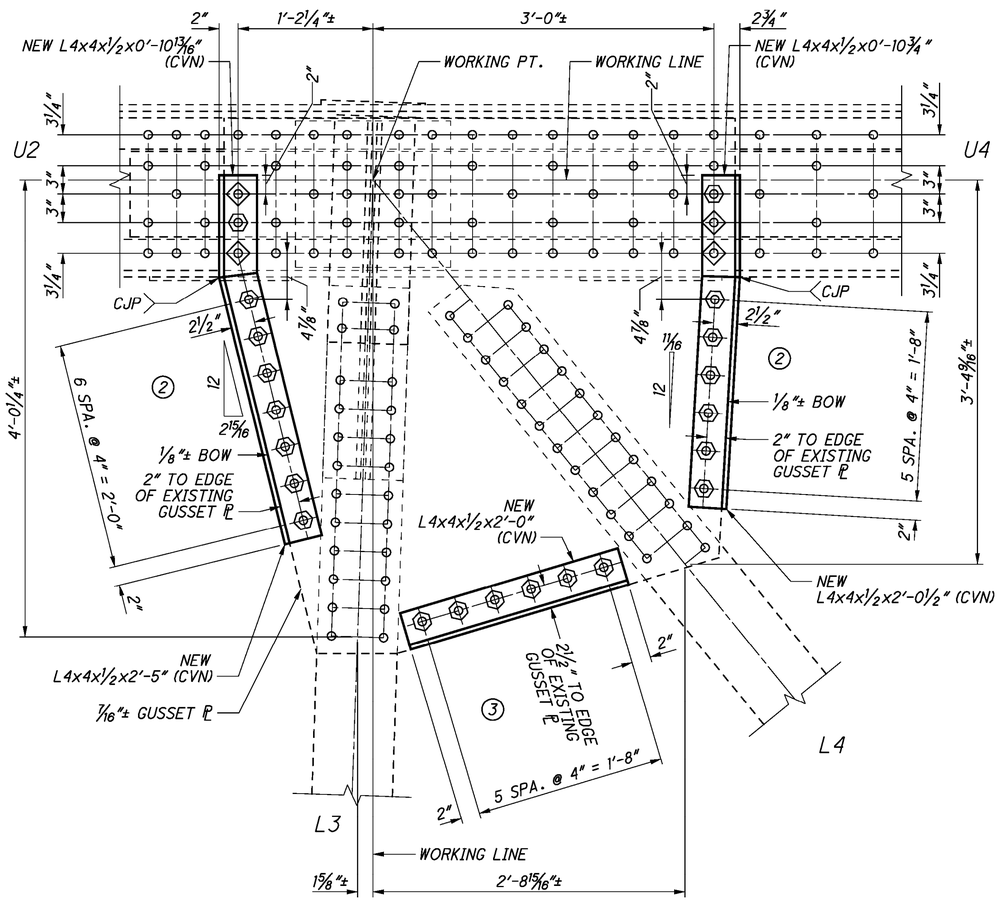
GUSSET PLATE EDGE STIFFENING DETAILS (20 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

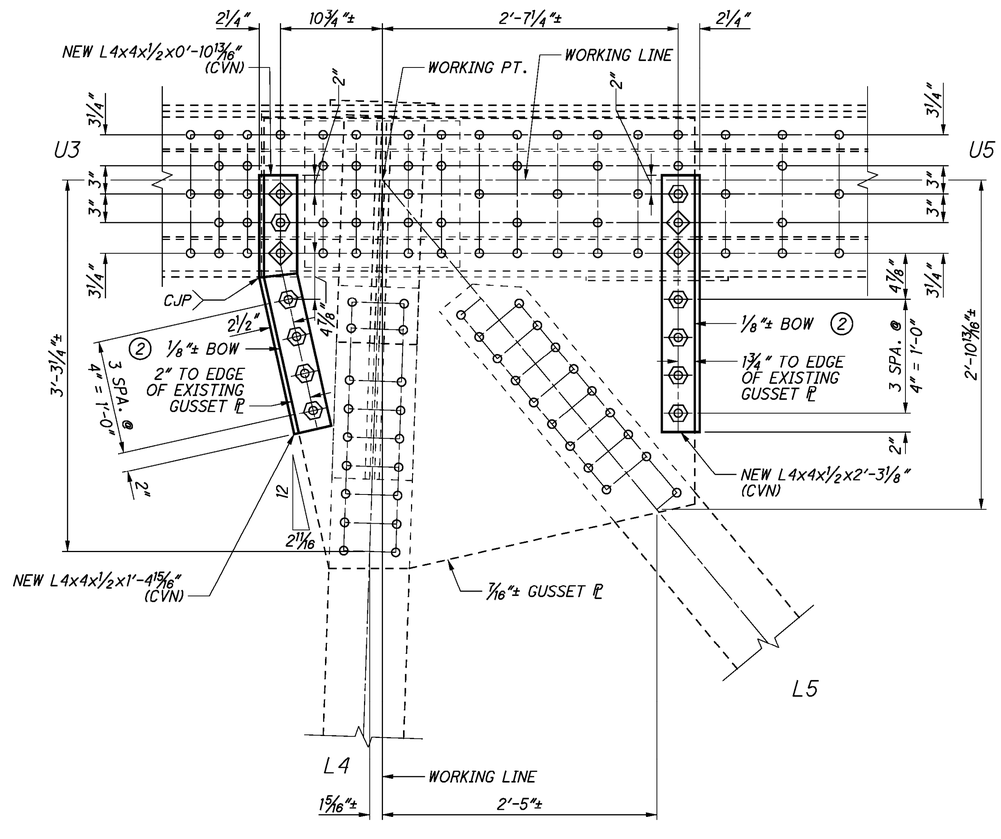
HAM-50-2180N
PID No. 91939

42 / 156

85 / 199



SPANS 7-10 - PANEL POINT U3 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U4 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (21 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

43 / 156

86 / 199

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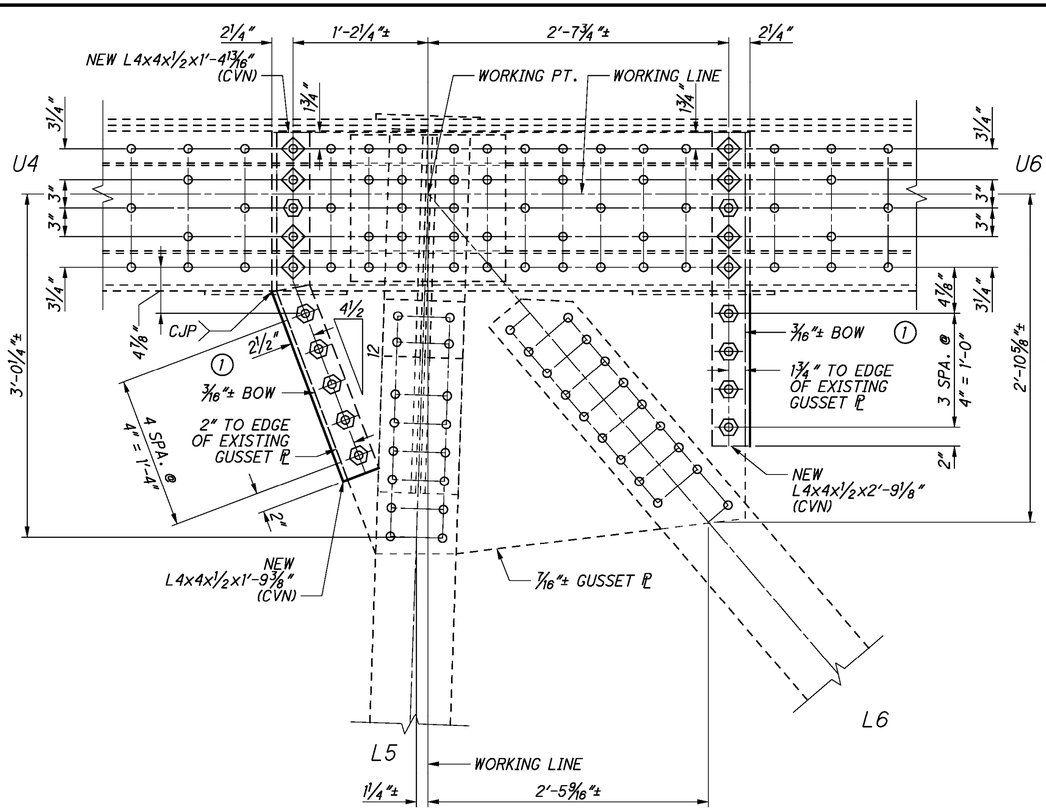

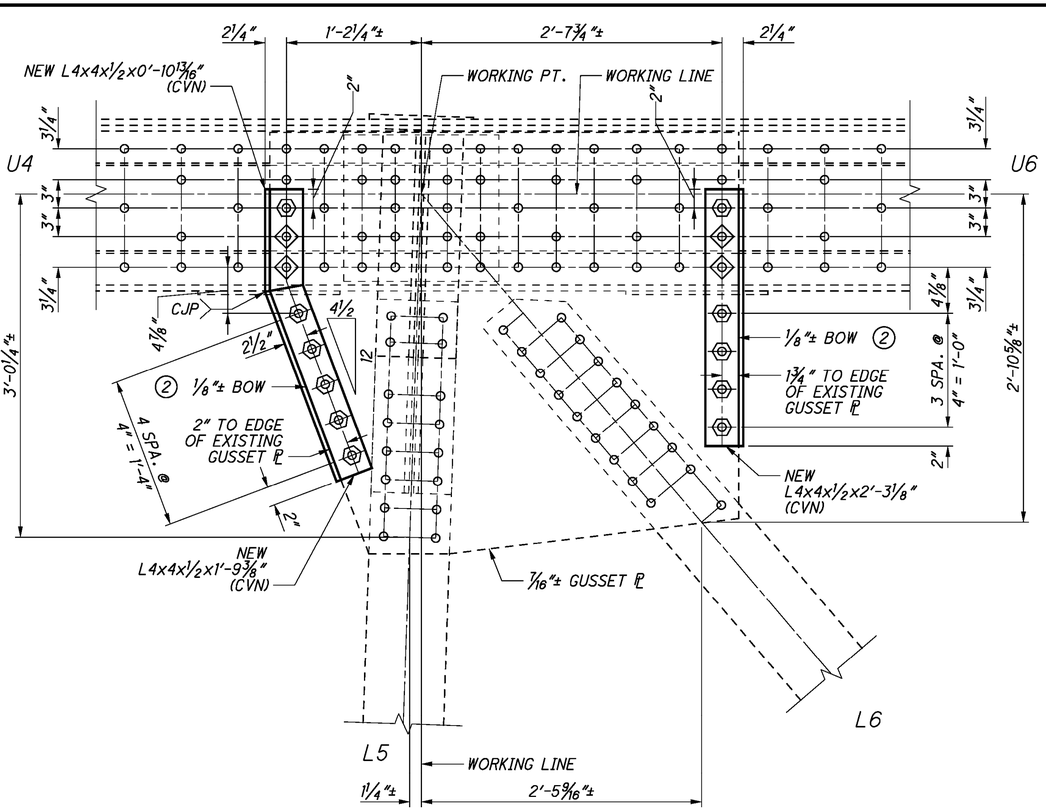

SPANS 7-10 - PANEL POINT U5
NORTH GUSSET PLATE - CENTER TRUSS

SPANS 7-10 - PANEL POINT U5
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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GUSSET PLATE EDGE STIFFENING DETAILS (22 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

44 / 156

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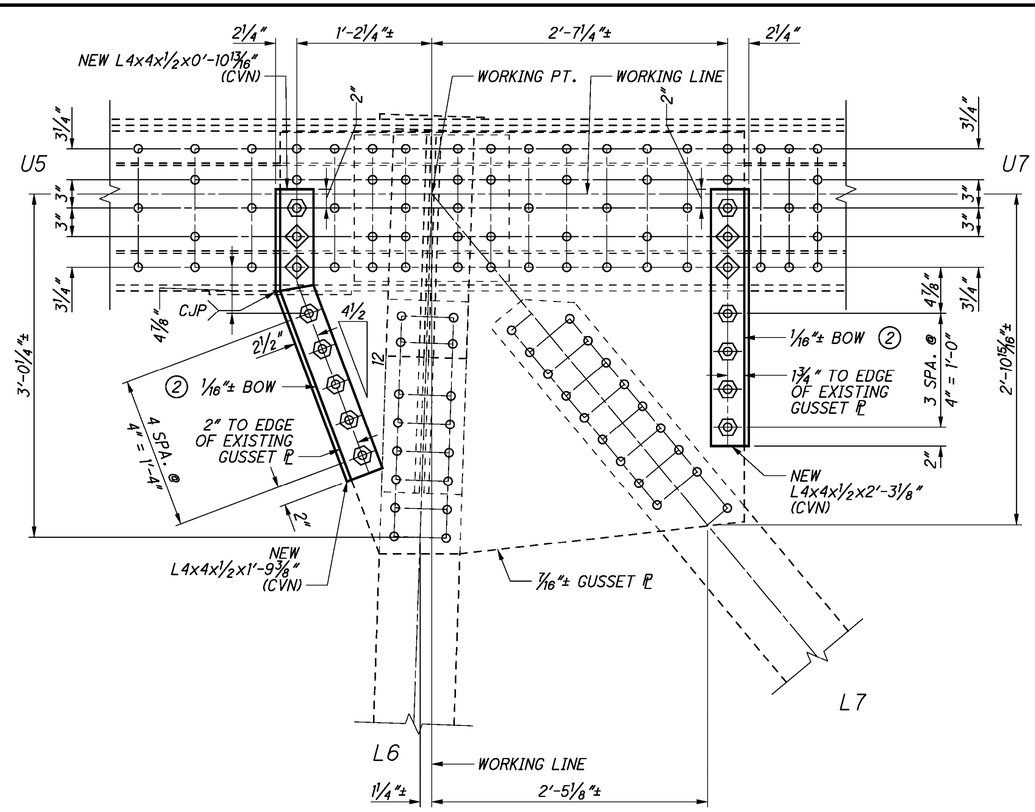

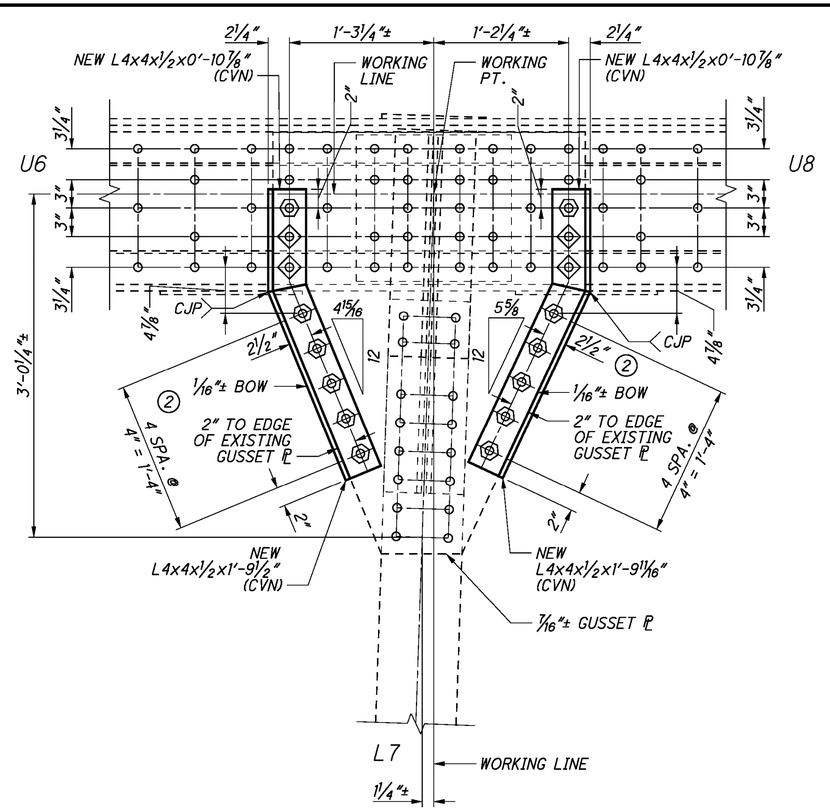

SPANS 7-10 - PANEL POINT U6 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND

SPANS 7-10 - PANEL POINT U7 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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CLEVELAND, OHIO 44113

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G.JZ	G.JZ	P.JA	10-05-16

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GUSSET PLATE EDGE STIFFENING DETAILS (23 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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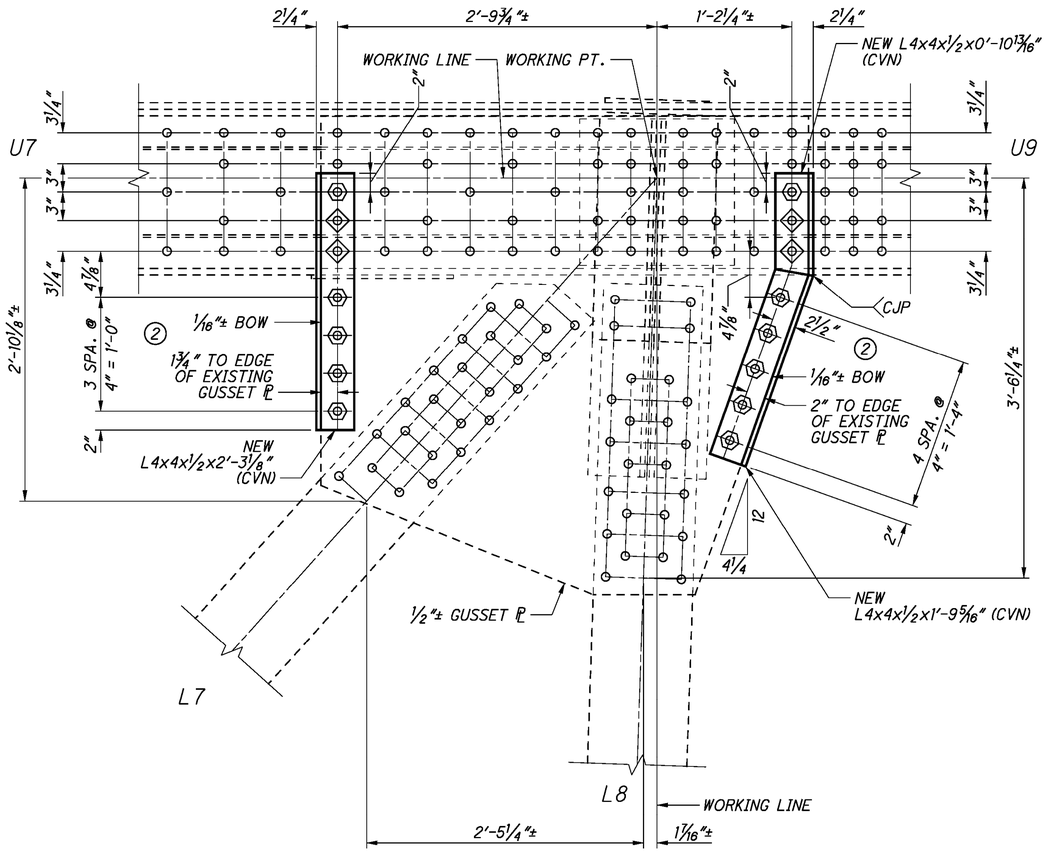
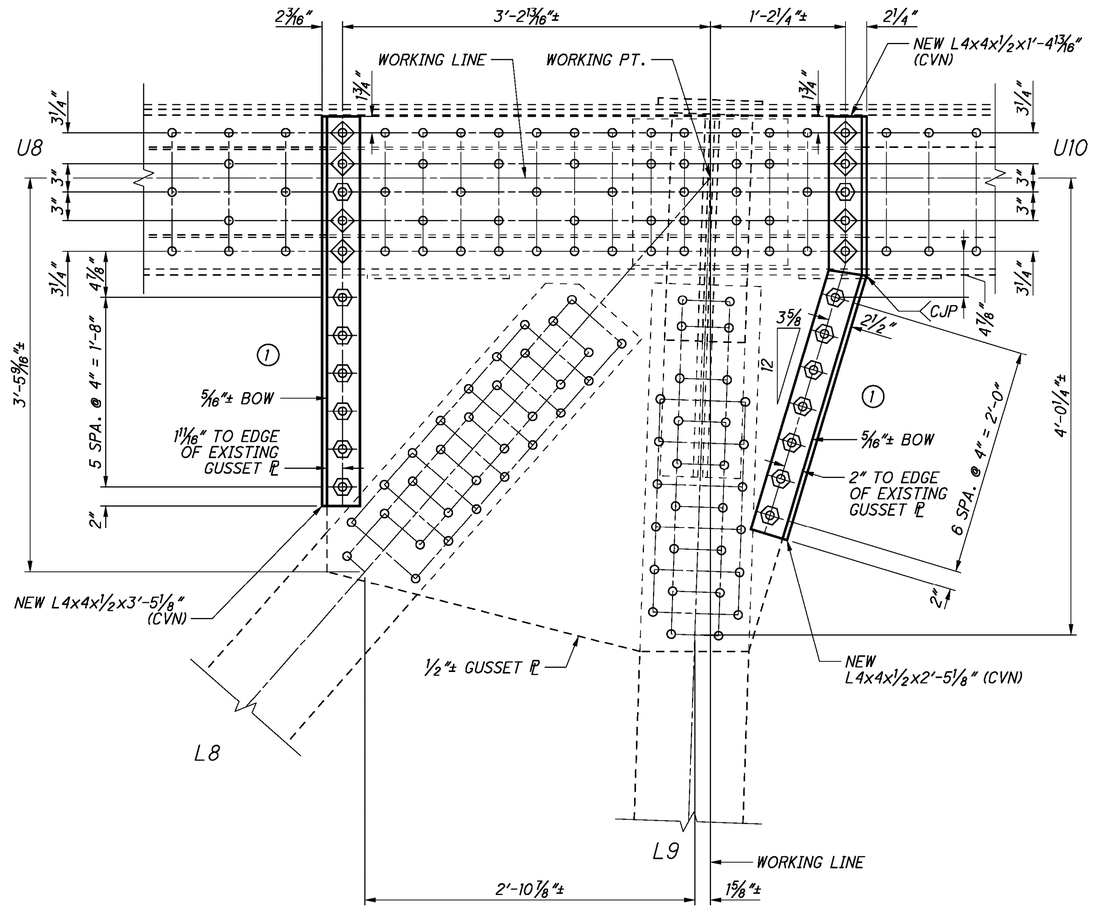


SPANS 7-10 - PANEL POINT U8 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U9 - NORTH AND SOUTH GUSSET PLATES
CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED G.JZ | DRAWN G.JZ | REVIEWED P.JA | DATE 10-05-16
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (24 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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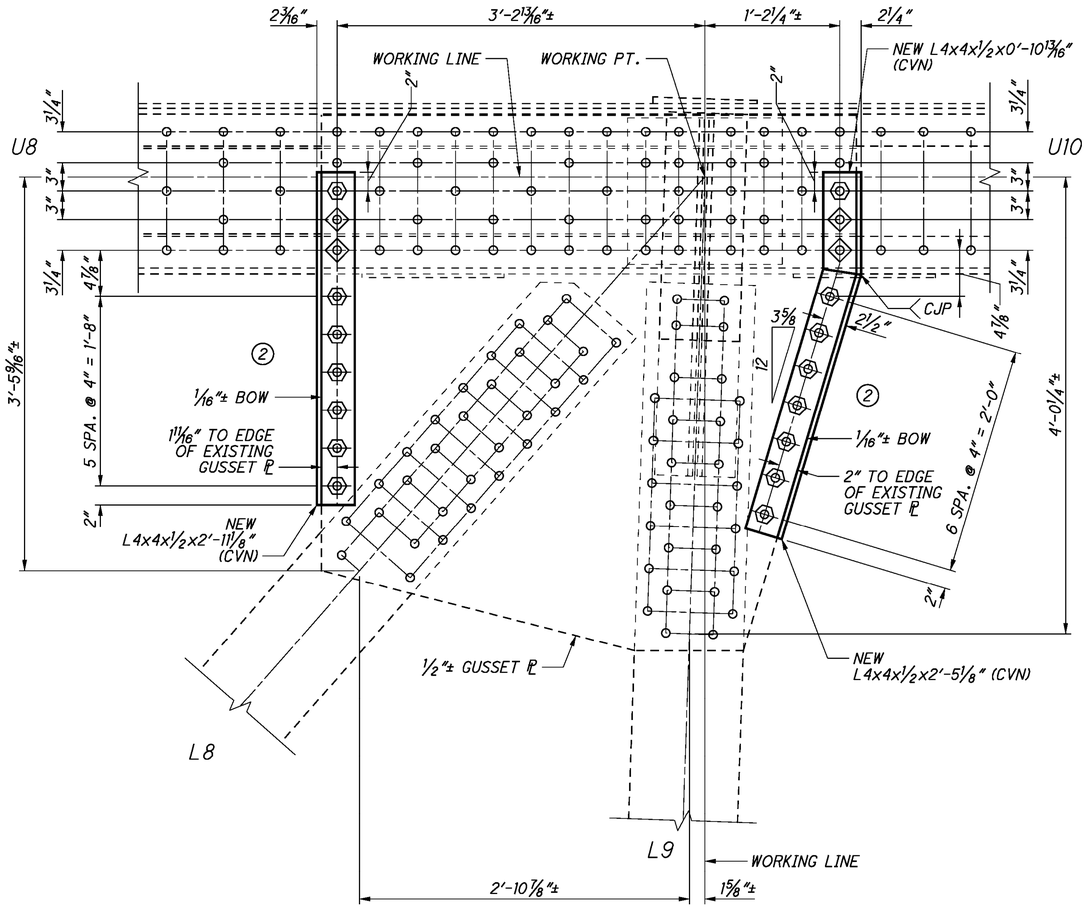
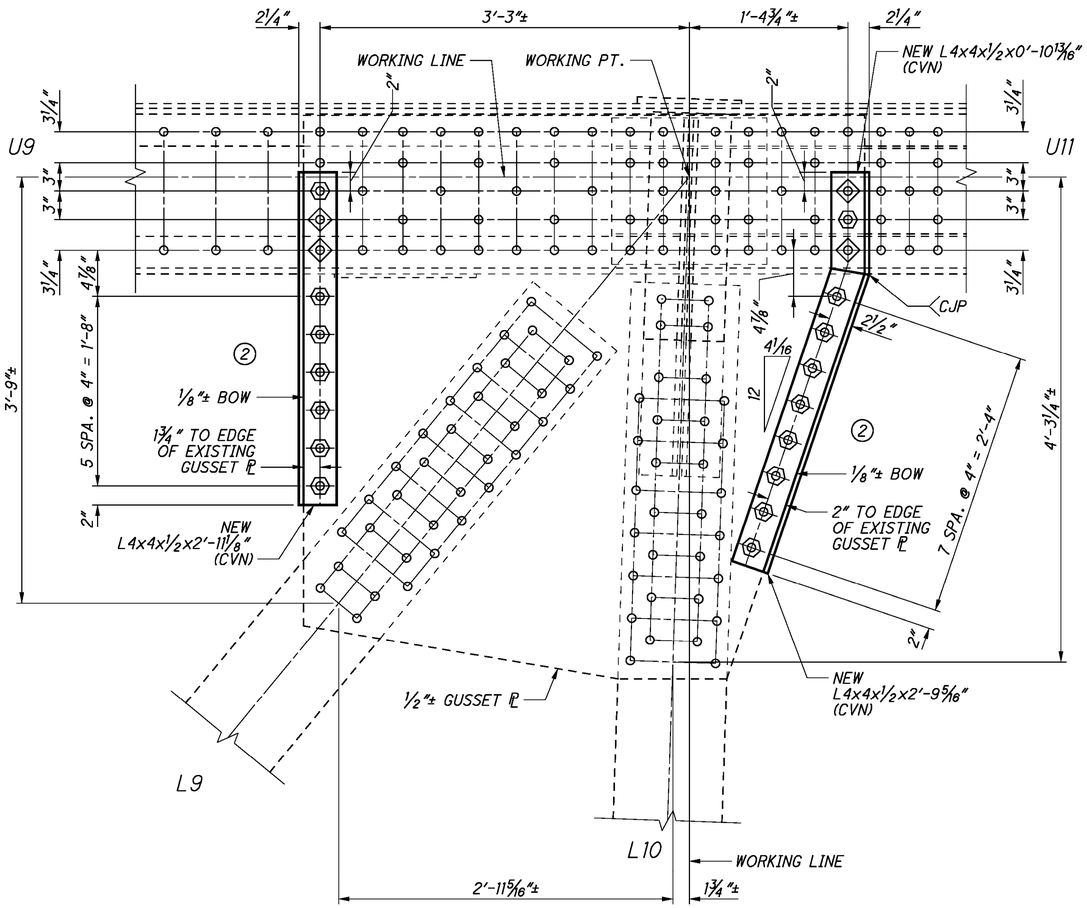


SPANS 7-10 - PANEL POINT U9 - NORTH AND SOUTH GUSSET PLATES
NORTH AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U10 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (25 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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90 / 199

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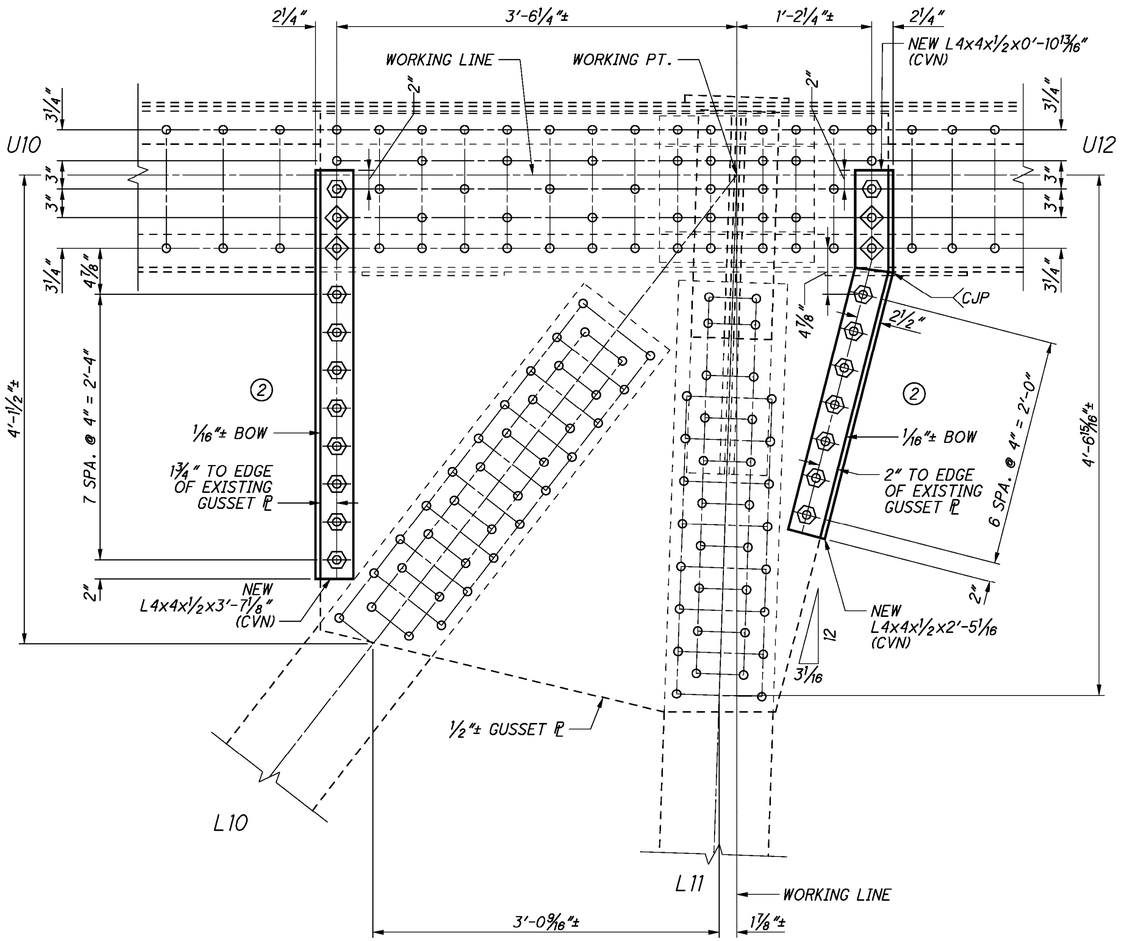
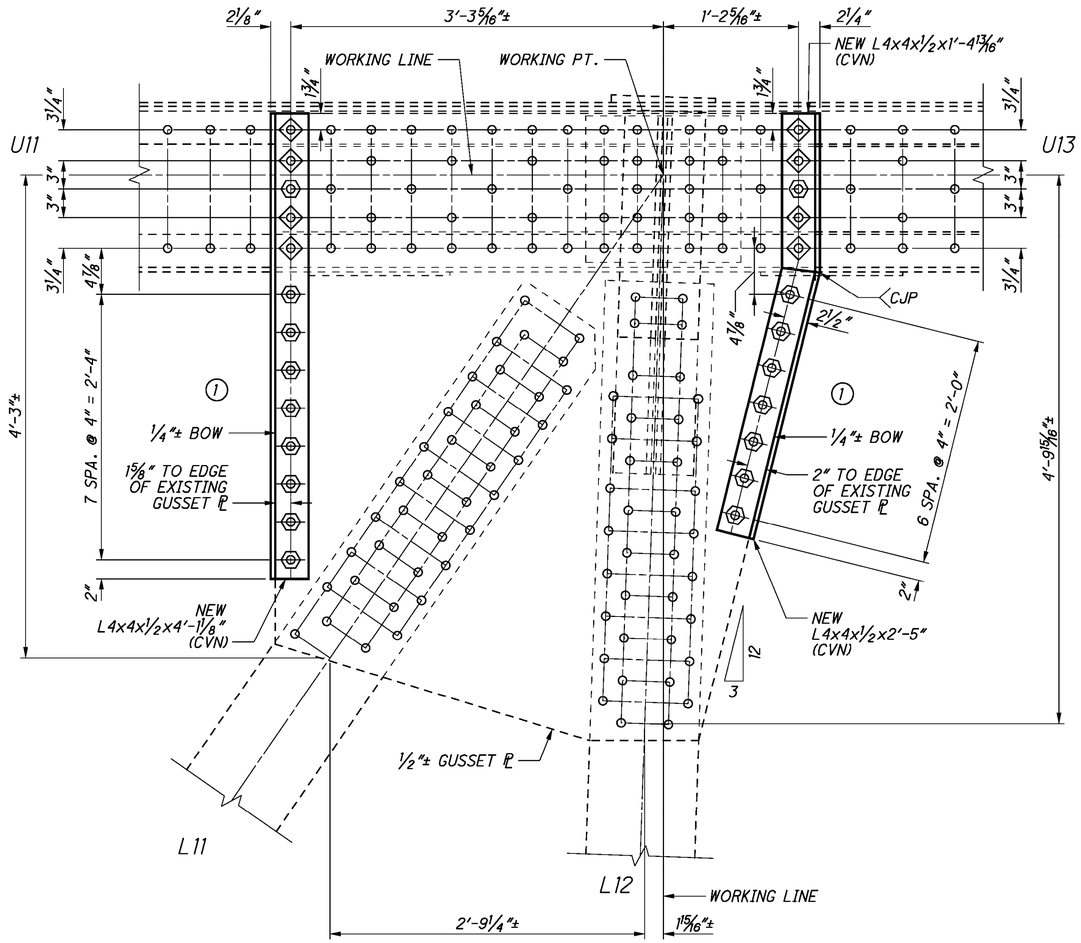


SPANS 7-10 - PANEL POINT U11 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U12
SOUTH GUSSET PLATE - CENTER TRUSS

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
B.JM	B.JM	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (26 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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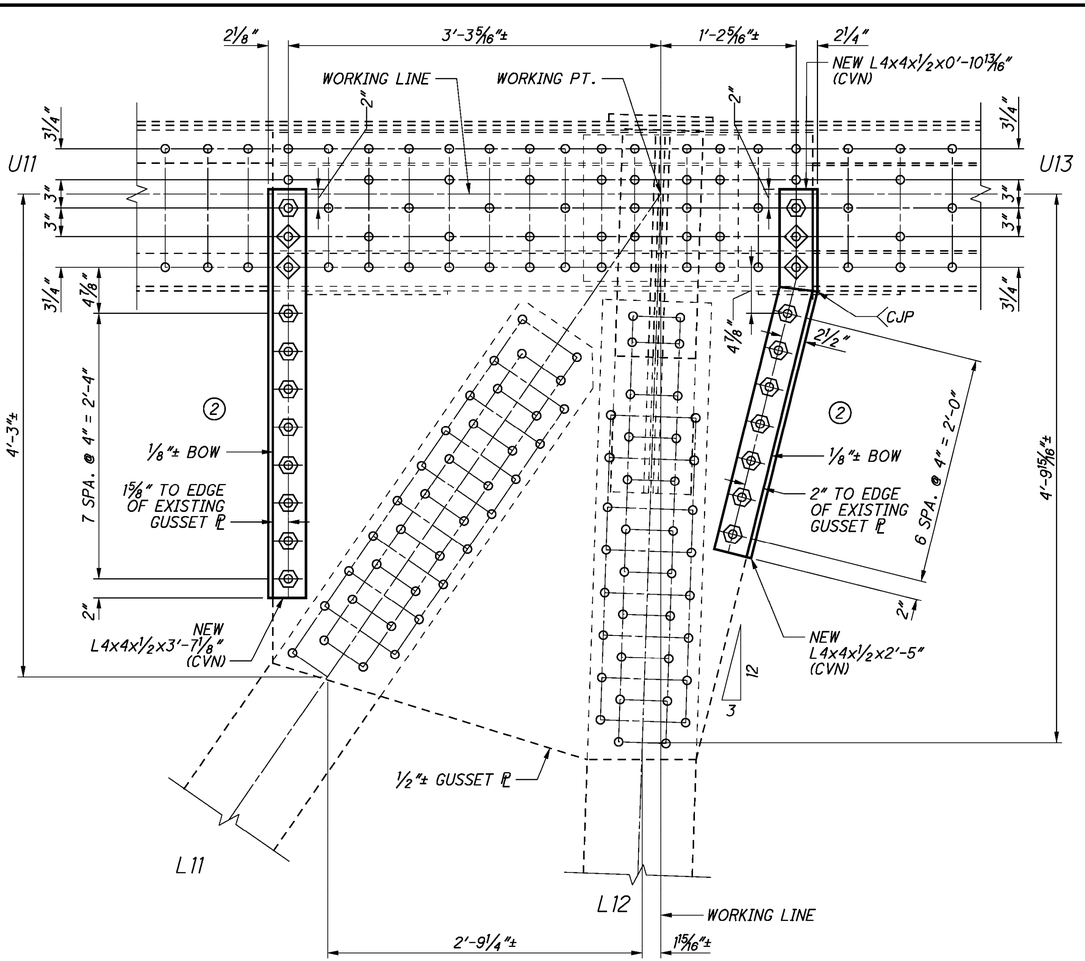
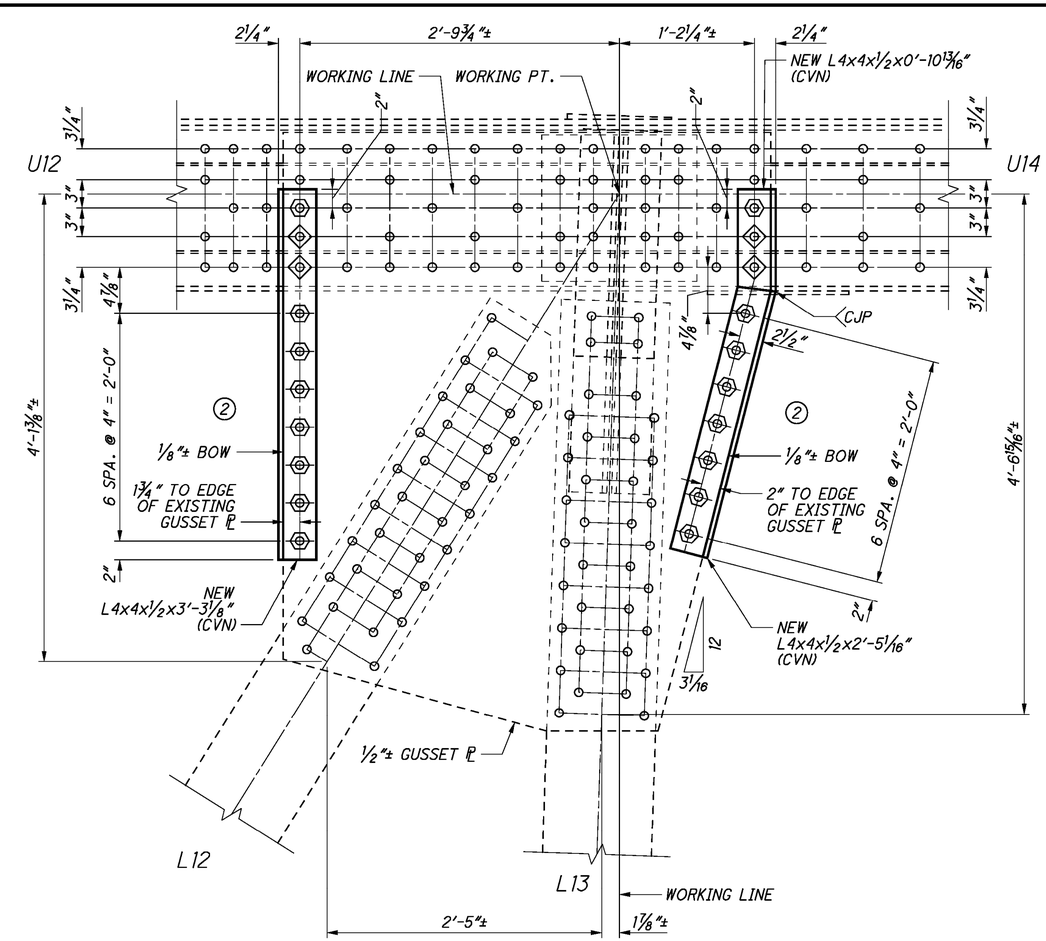


SPANS 7-10 - PANEL POINT U12
SOUTH GUSSET PLATE - NORTH AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U13 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED BJM | DRAWN BJM | CHECKED RSB | REVIEWED PJA | DATE 10-05-16 | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (27 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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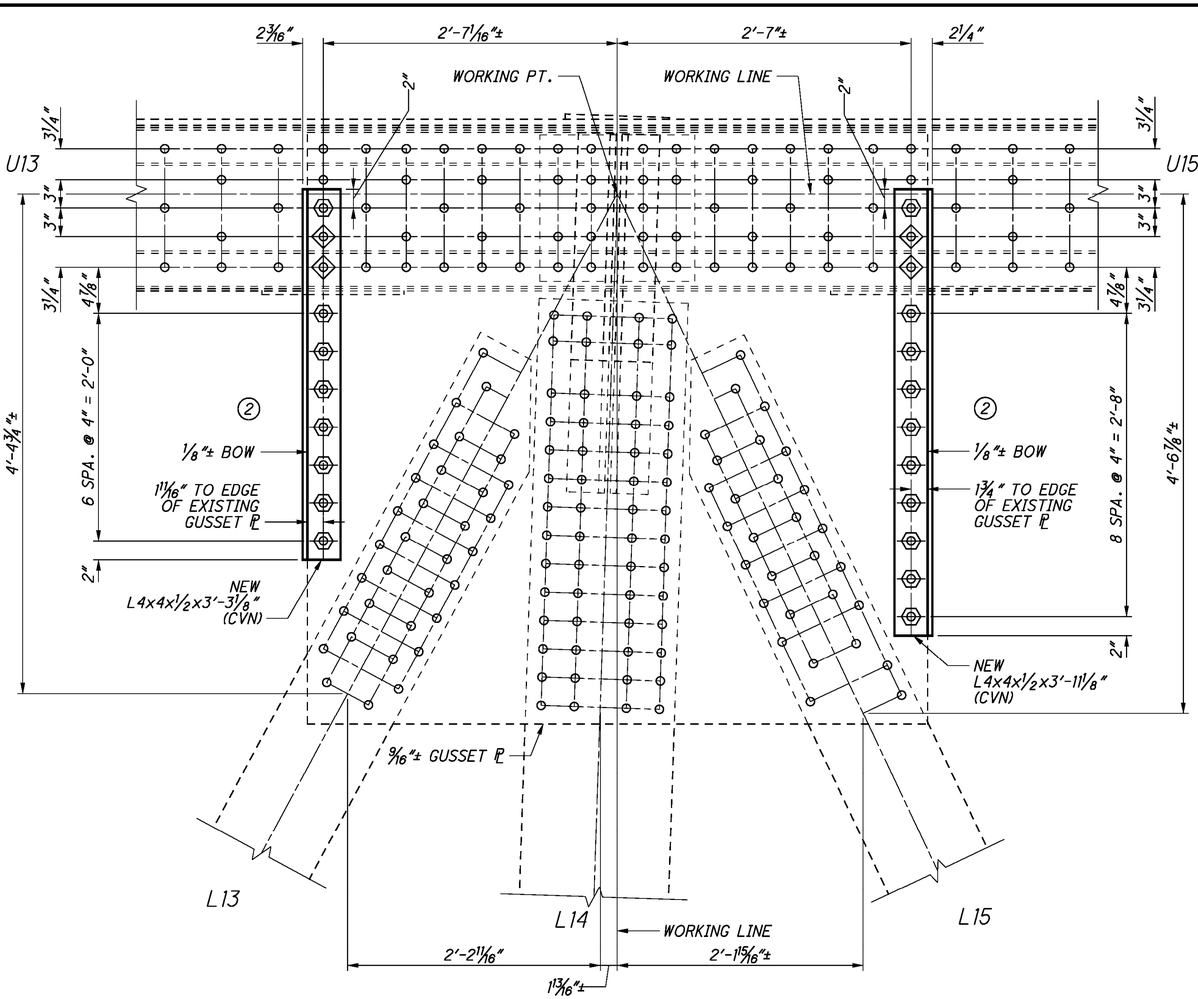
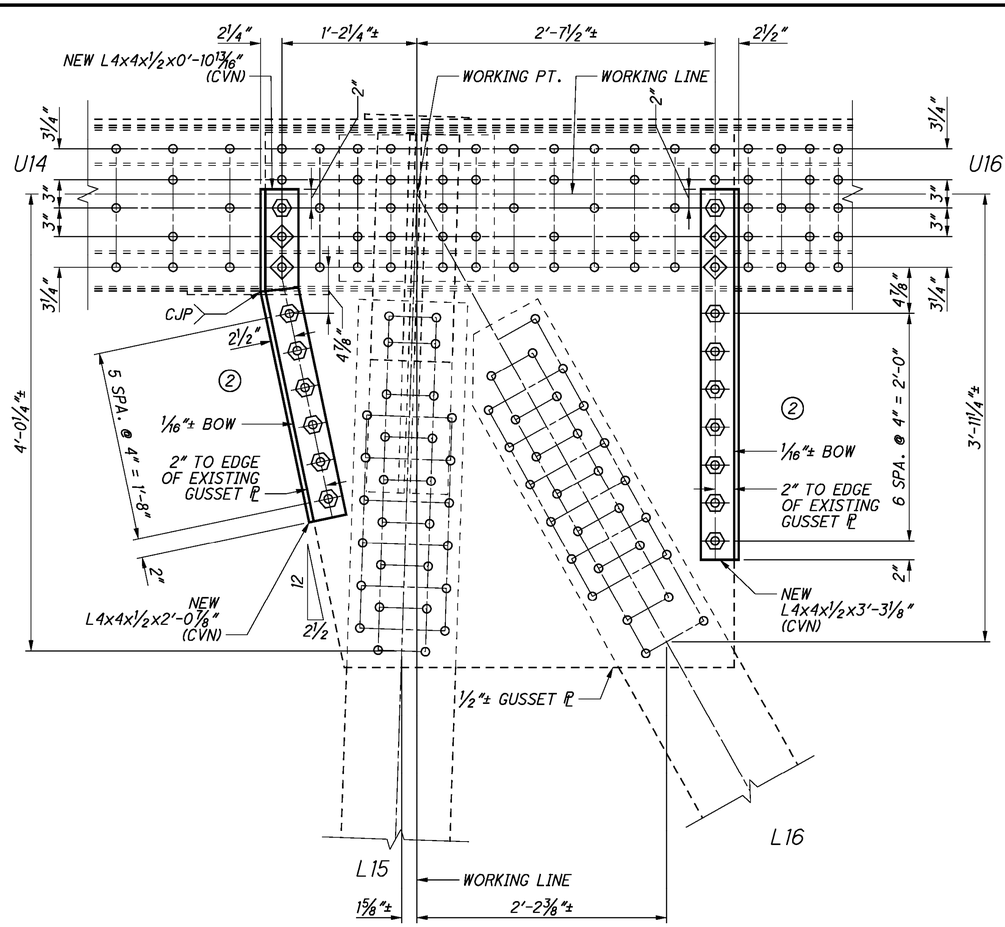


SPANS 7-10 - PANEL POINT U14 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U15 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BJM	BJM	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (28 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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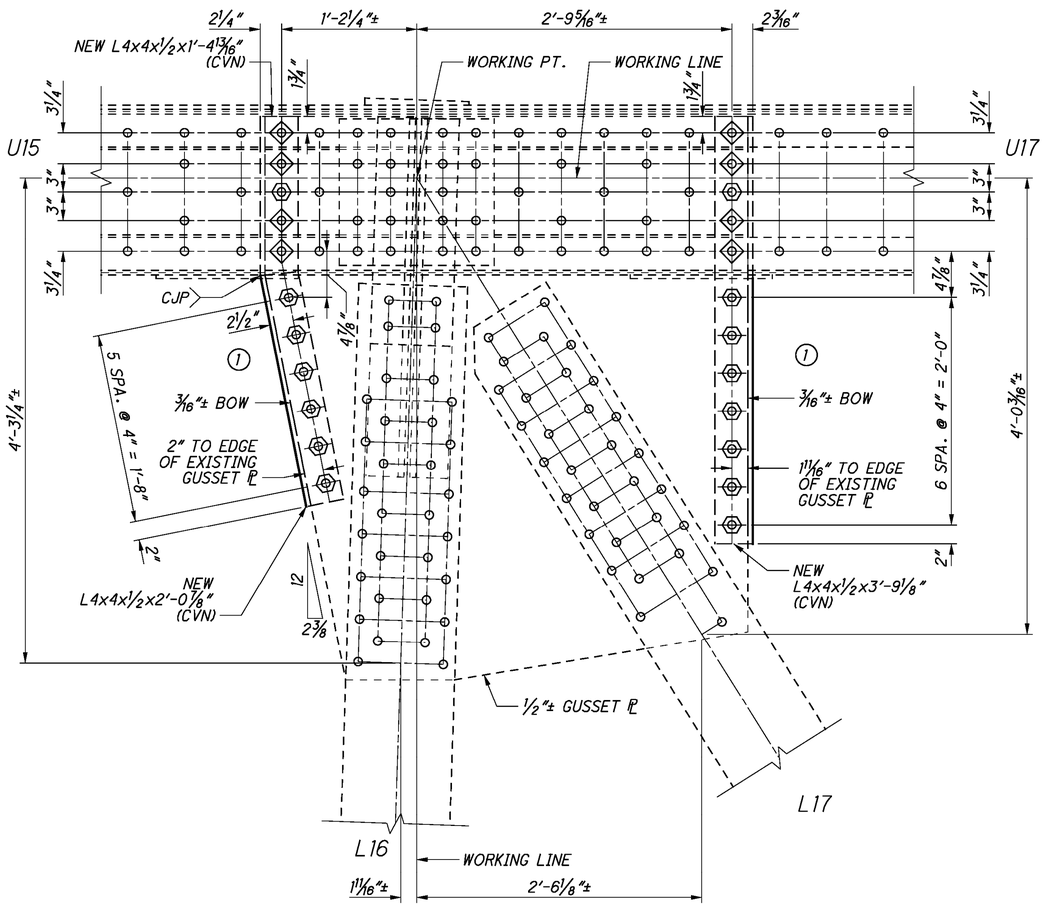
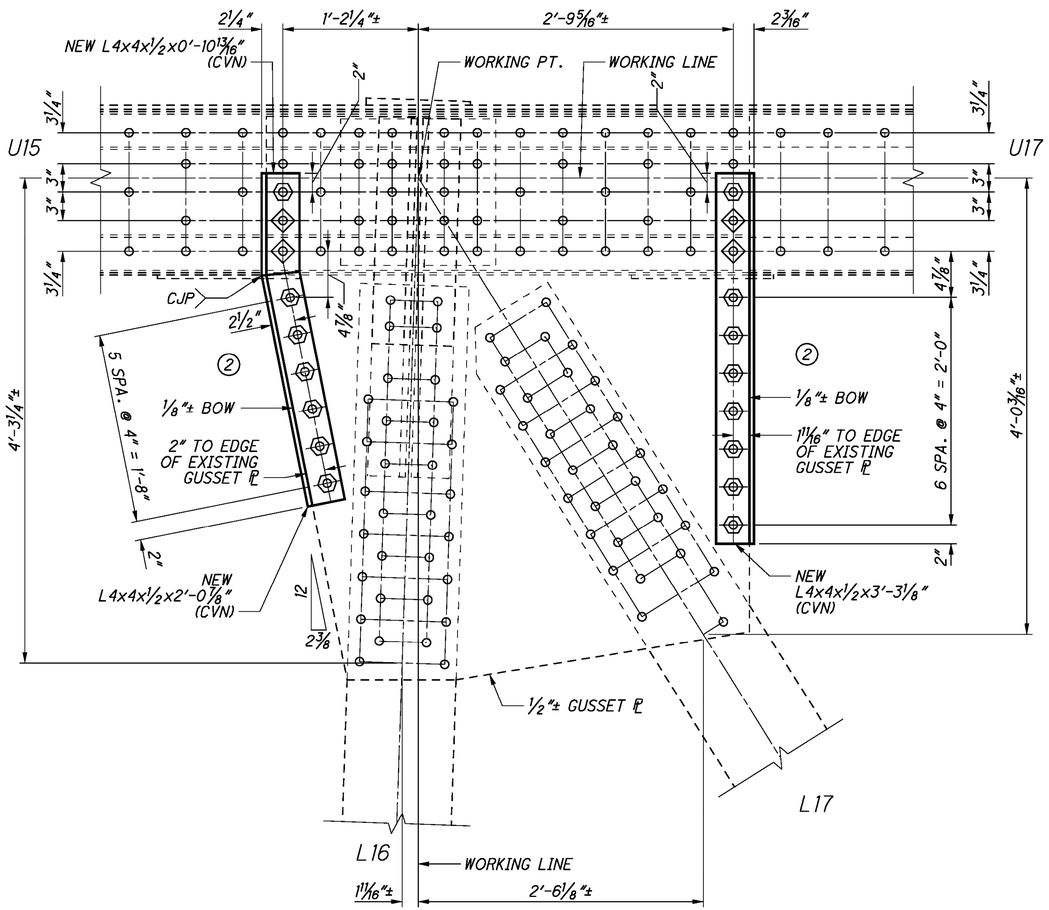


SPANS 7-10 - PANEL POINT U16
NORTH GUSSET PLATE - SOUTH TRUSS



SPANS 7-10 - PANEL POINT U16
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND CENTER TRUSS - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M	B.J.M	P.J.A	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
R.S.B		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (29 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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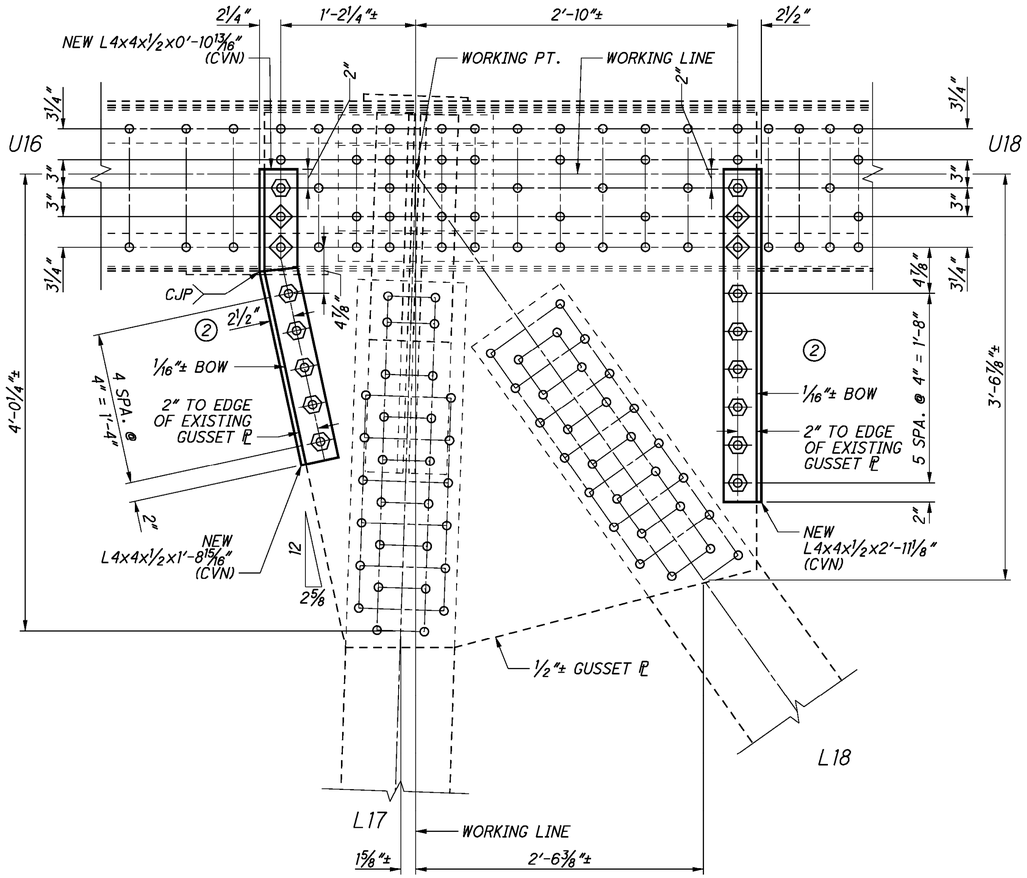
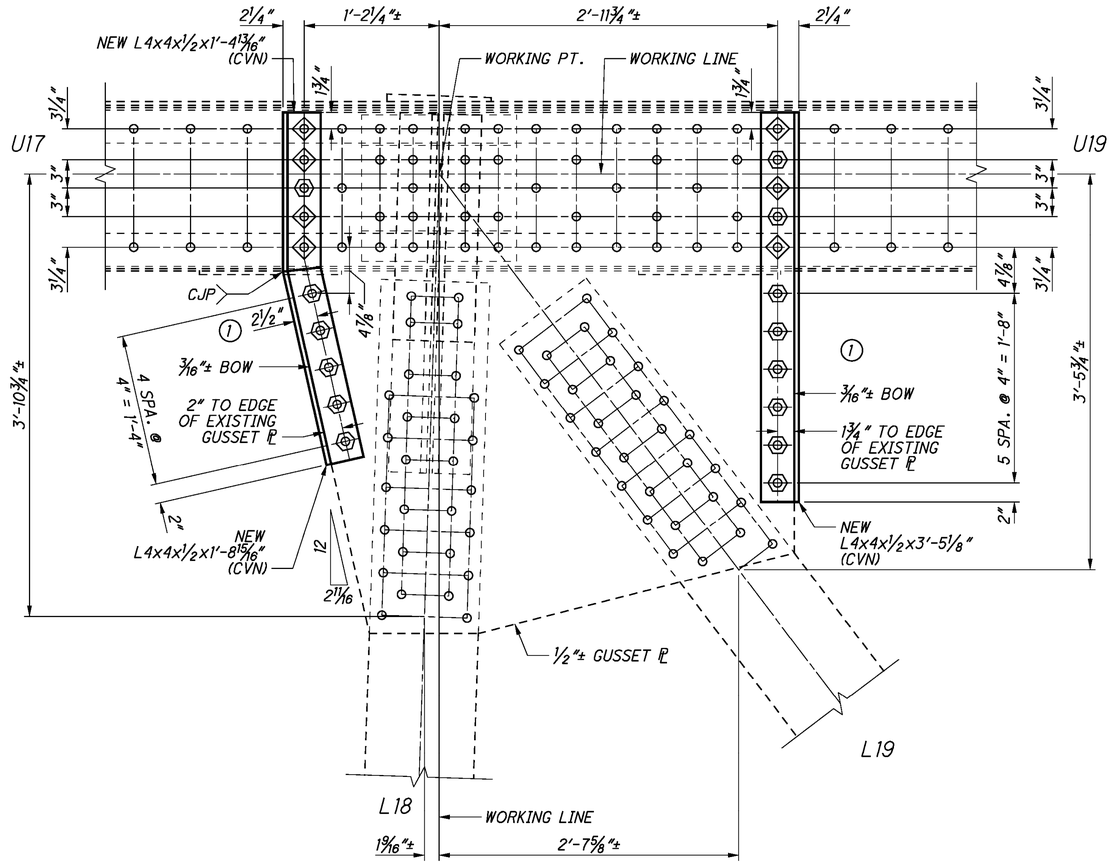


SPANS 7-10 - PANEL POINT U17 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U18
SOUTH GUSSET PLATE - CENTER TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED BJM | DRAWN BJM | CHECKED RSB | REVIEWED PJA | DATE 10-05-16 | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (30 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

52 / 156

95 / 199

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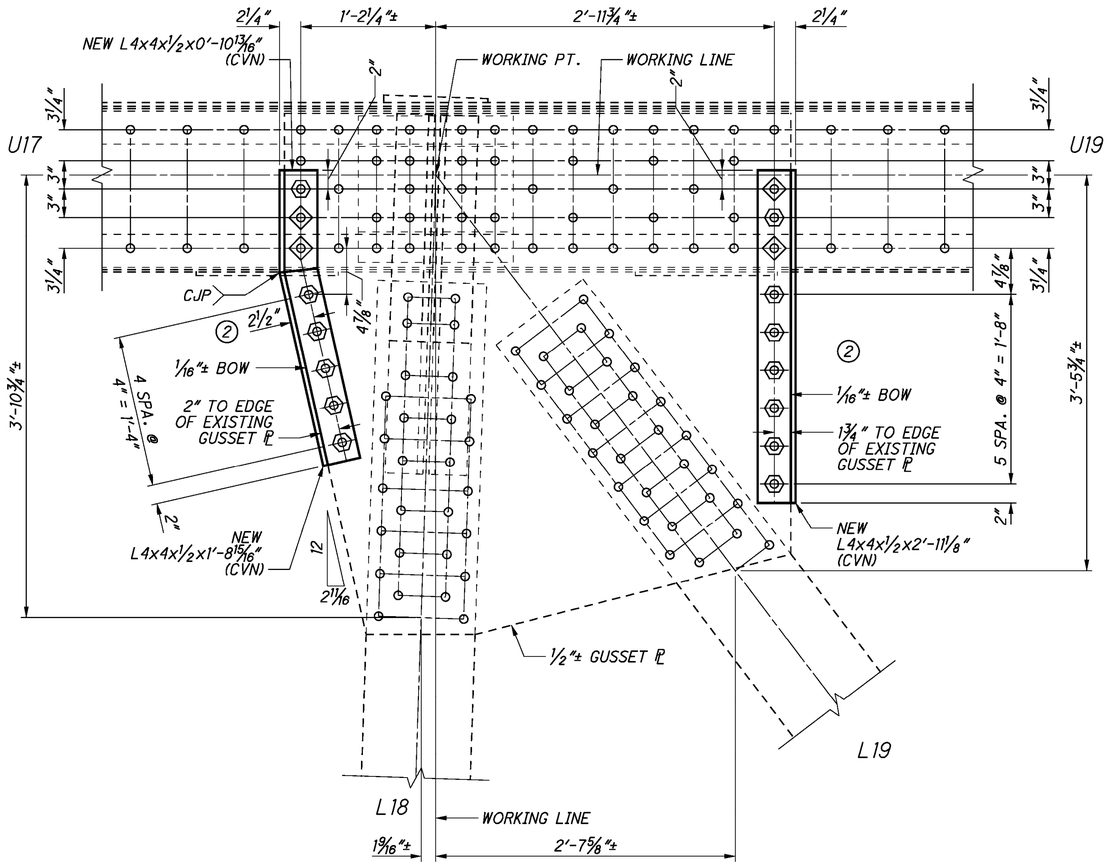
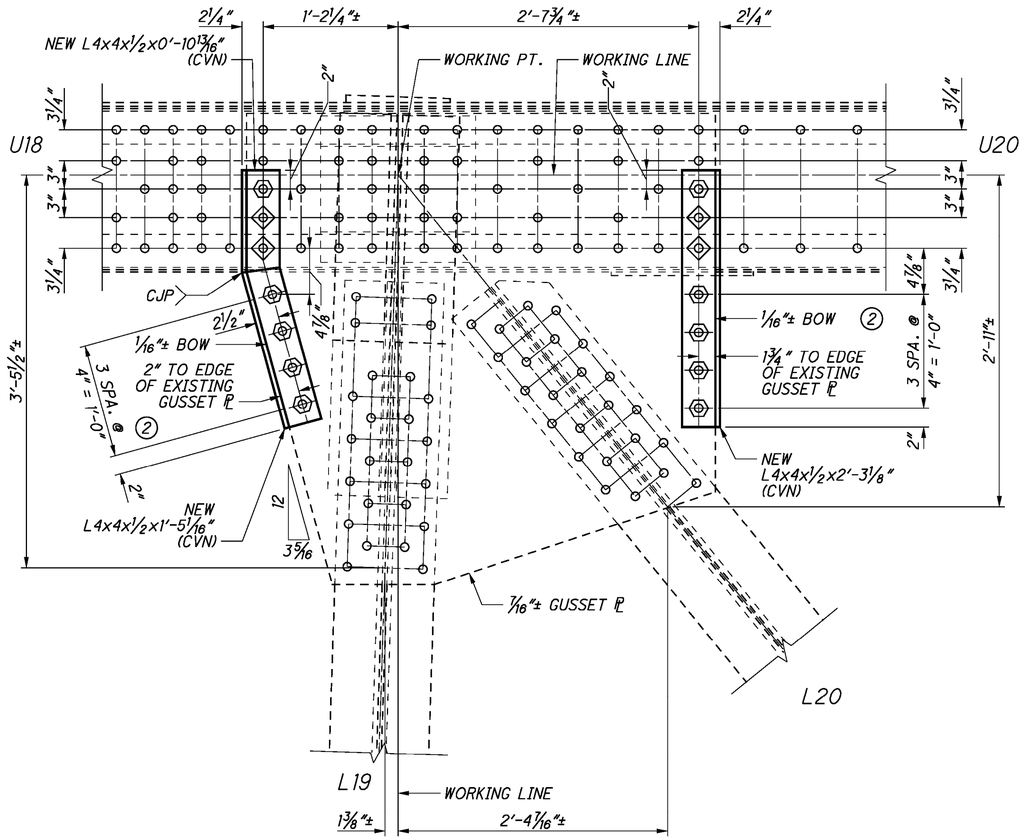


SPANS 7-10 - PANEL POINT U18
SOUTH GUSSET PLATE - NORTH AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U19 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BJM	BJM	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (31 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

53 / 156

96 / 199

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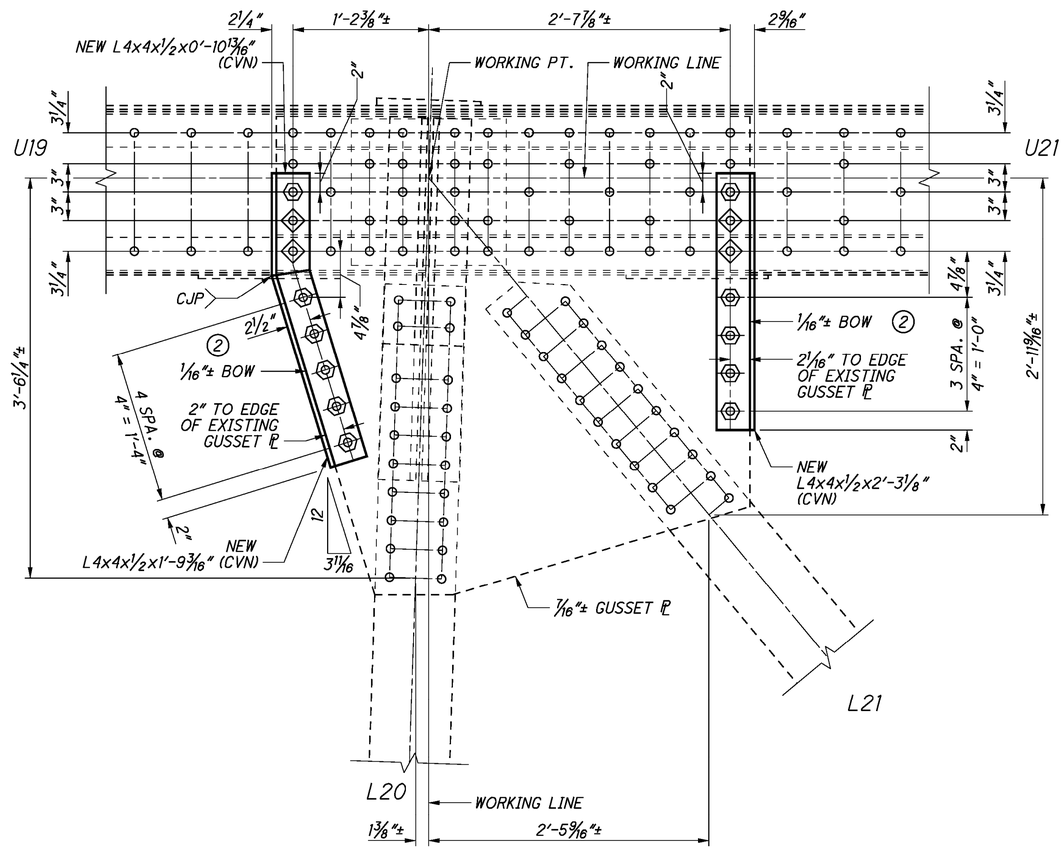
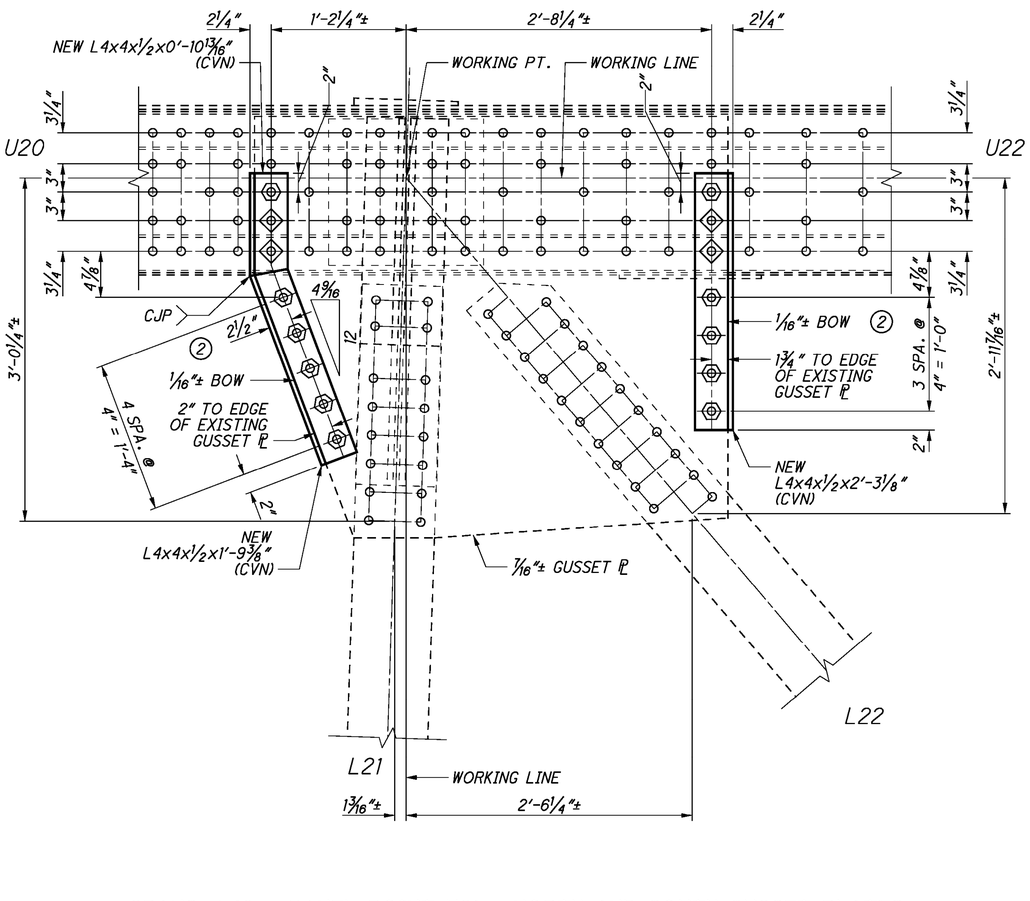


SPANS 7-10 - PANEL POINT U20 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U21 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BJM	BJM	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (32 OF 123)

BRIDGE No. HAM-50-2180N

COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N

PID No. 91939

54/156

97/199

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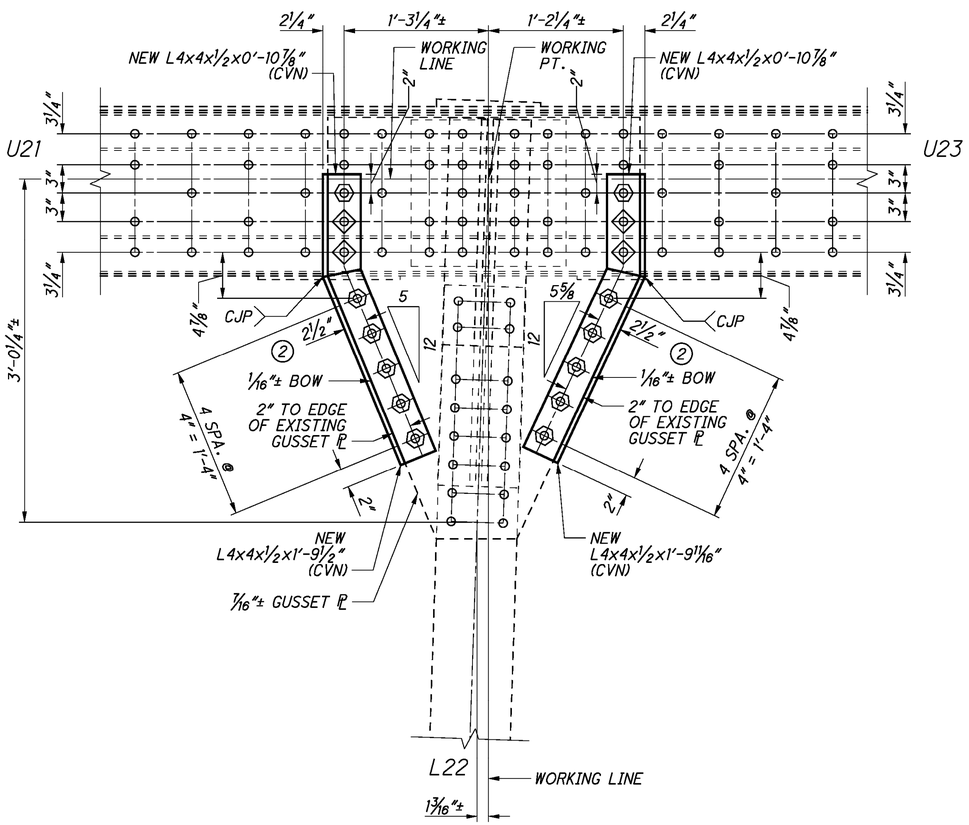

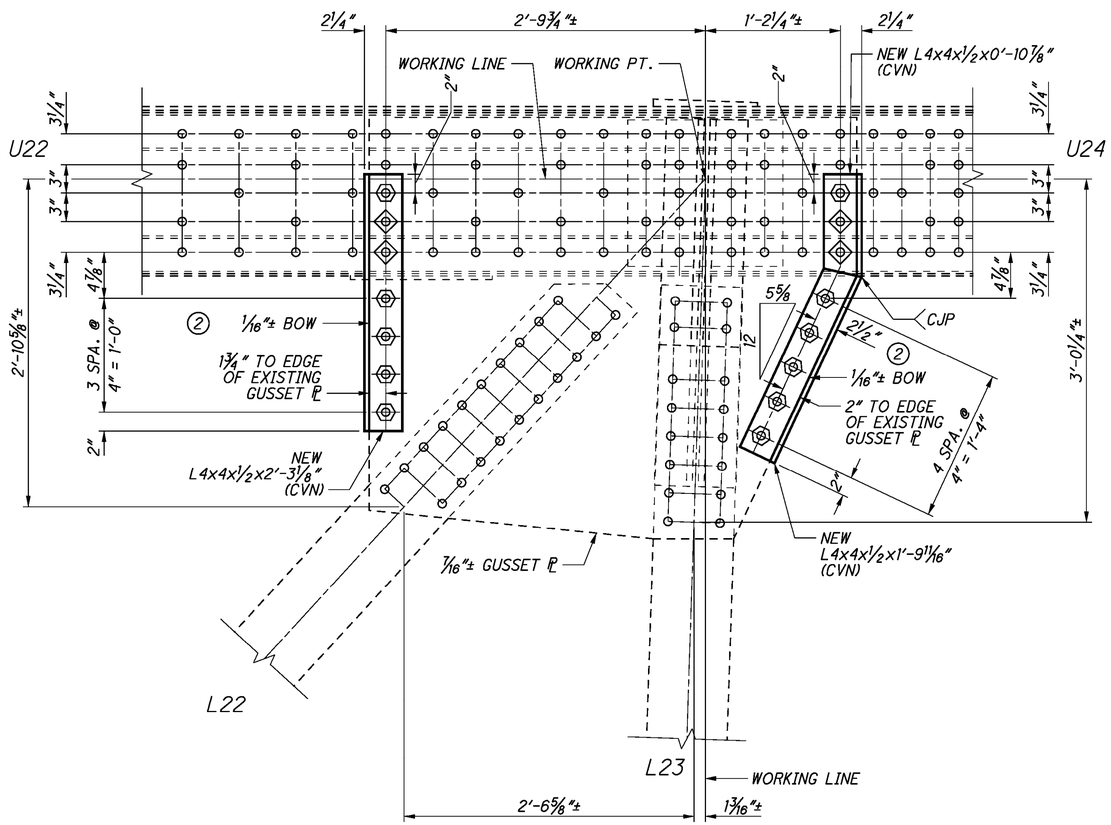

SPANS 7-10 - PANEL POINT U22 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

SPANS 7-10 - PANEL POINT U23 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16

CHECKED	REVISED	STRUCTURE FILE NUMBER
RSB		3103390

GUSSET PLATE EDGE STIFFENING DETAILS (33 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

55 / 156

98 / 199

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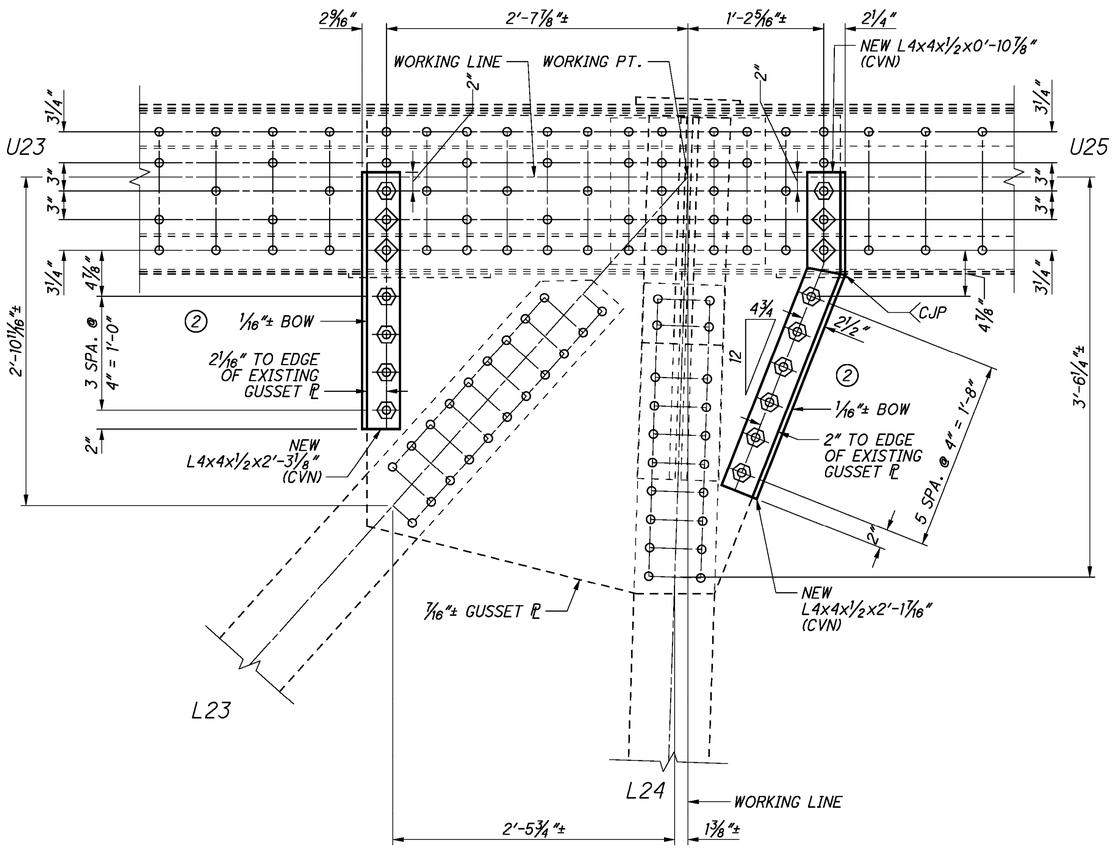
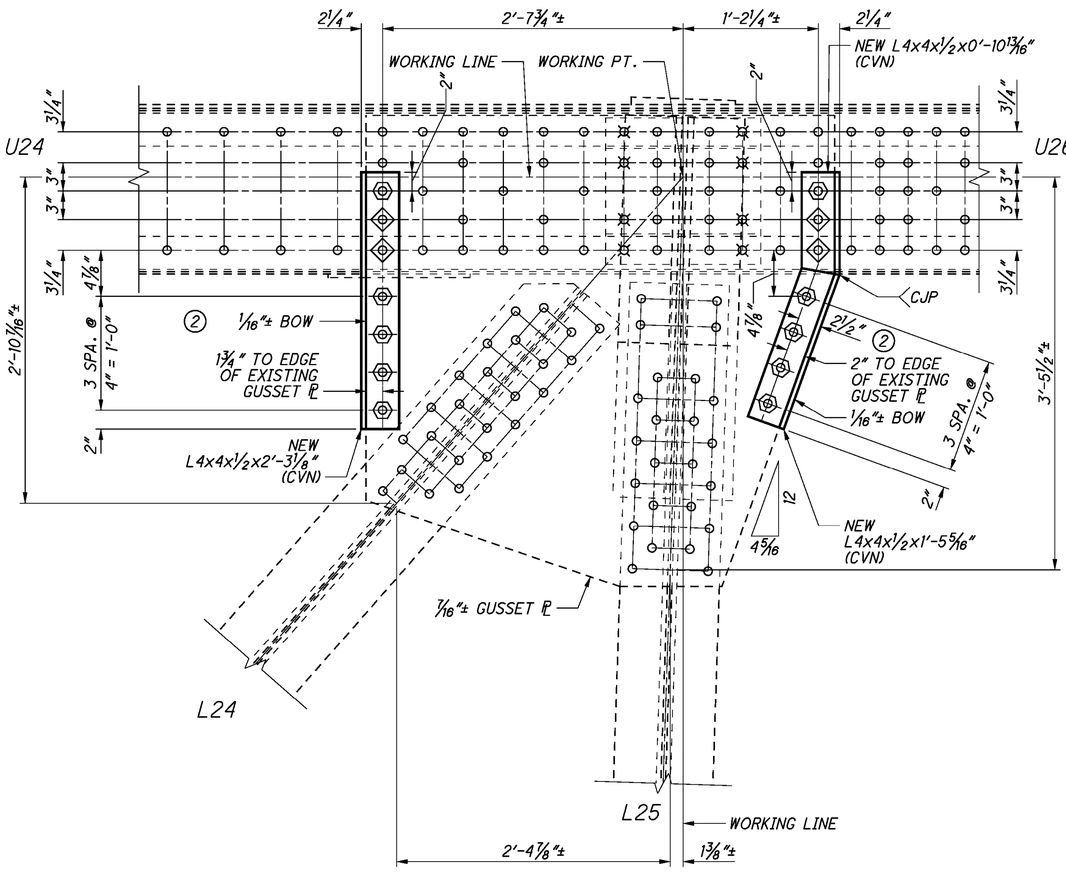


SPANS 7-10 - PANEL POINT U24 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U25 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
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GUSSET PLATE EDGE STIFFENING DETAILS (34 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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99
199

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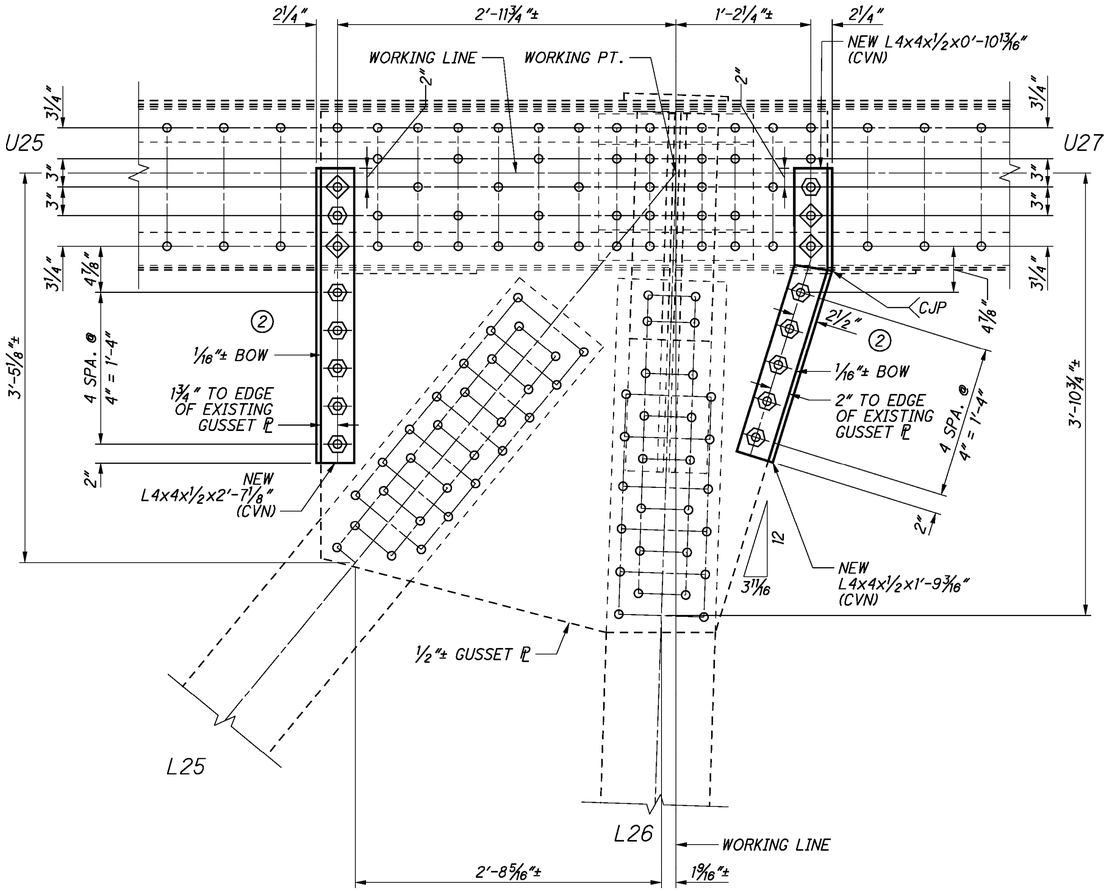
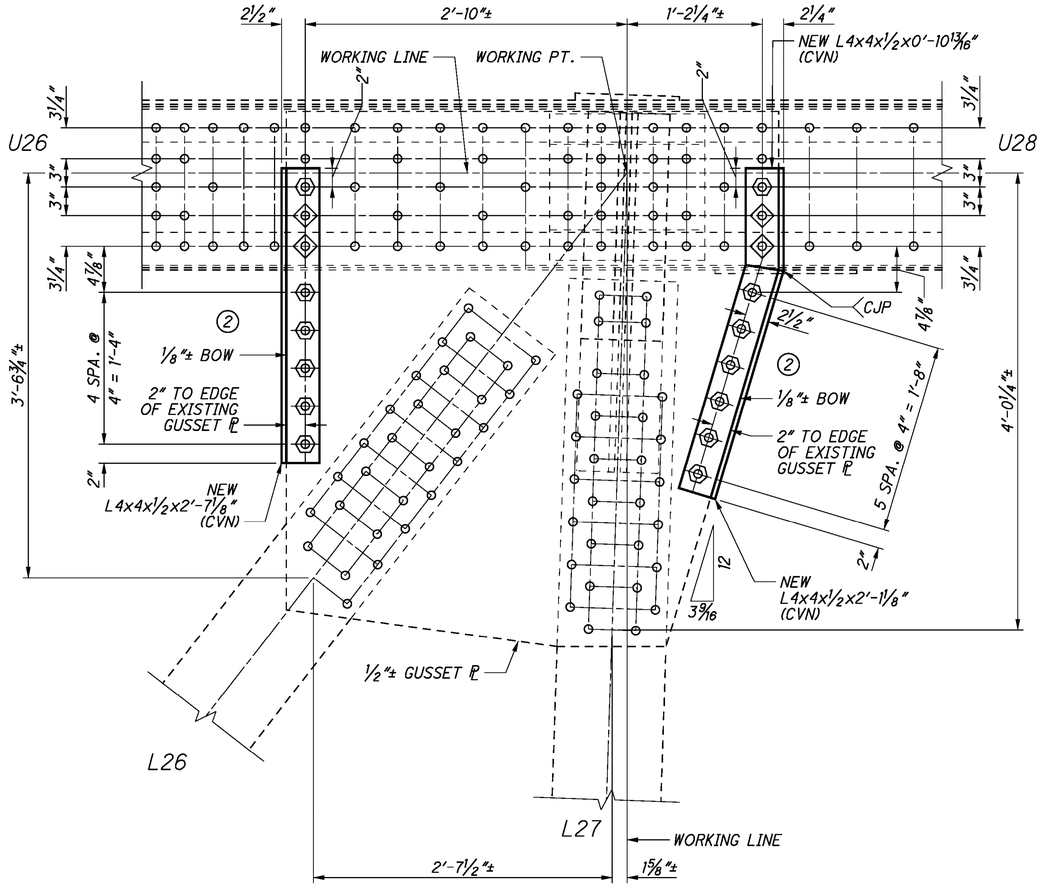


SPANS 7-10 - PANEL POINT U26 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U27 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 1⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (35 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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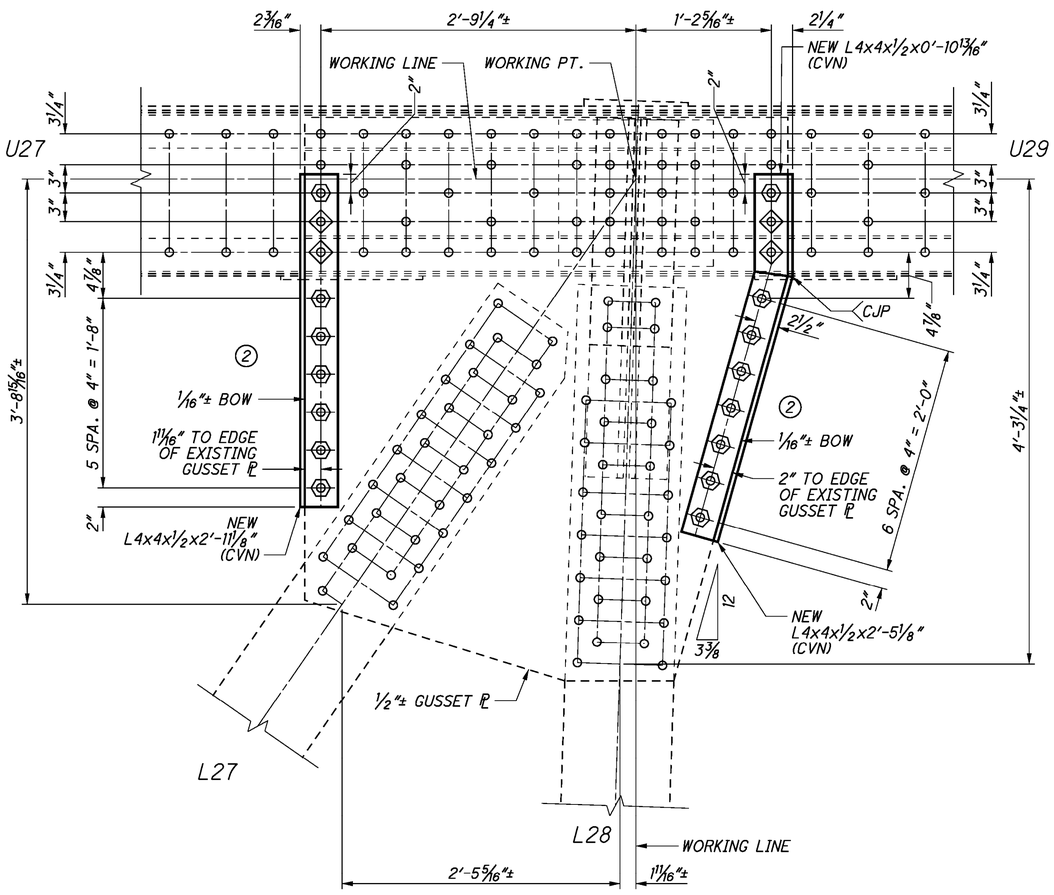
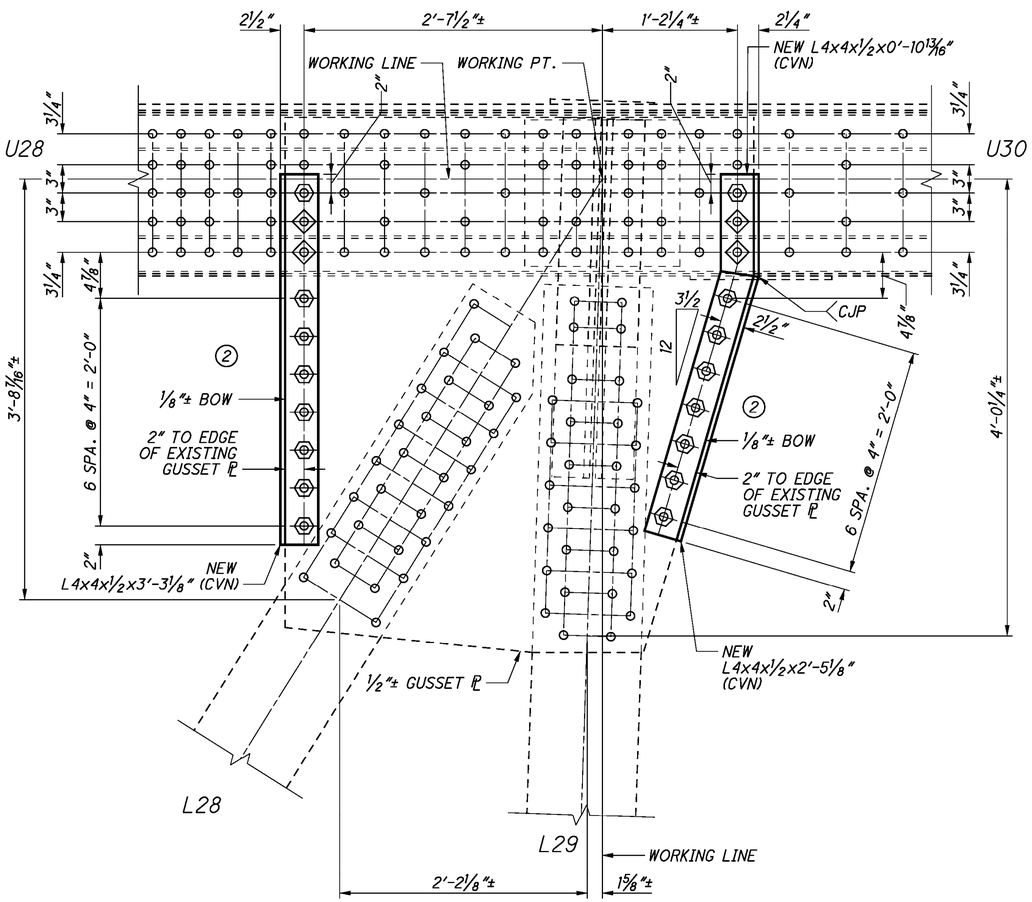


SPANS 7-10 - PANEL POINT U28 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U29 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (36 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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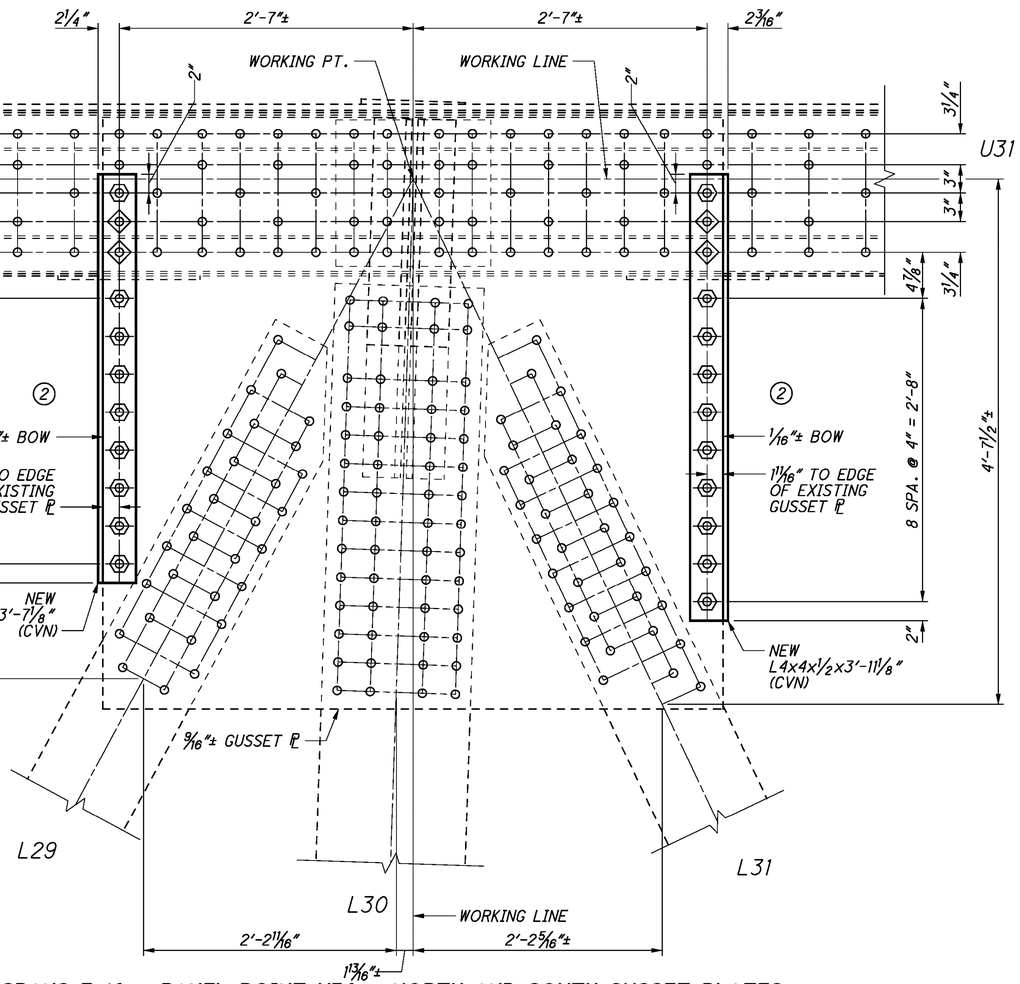
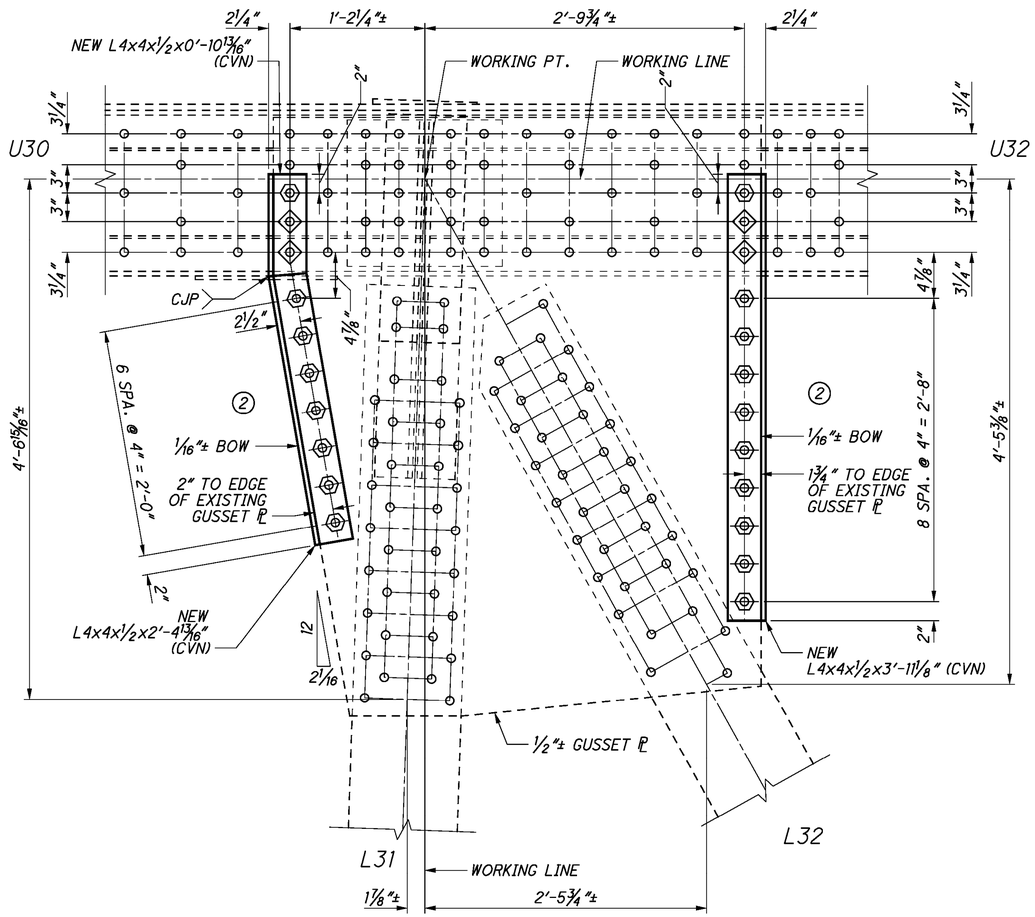


SPANS 7-10 - PANEL POINT U30 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U31 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (37 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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199

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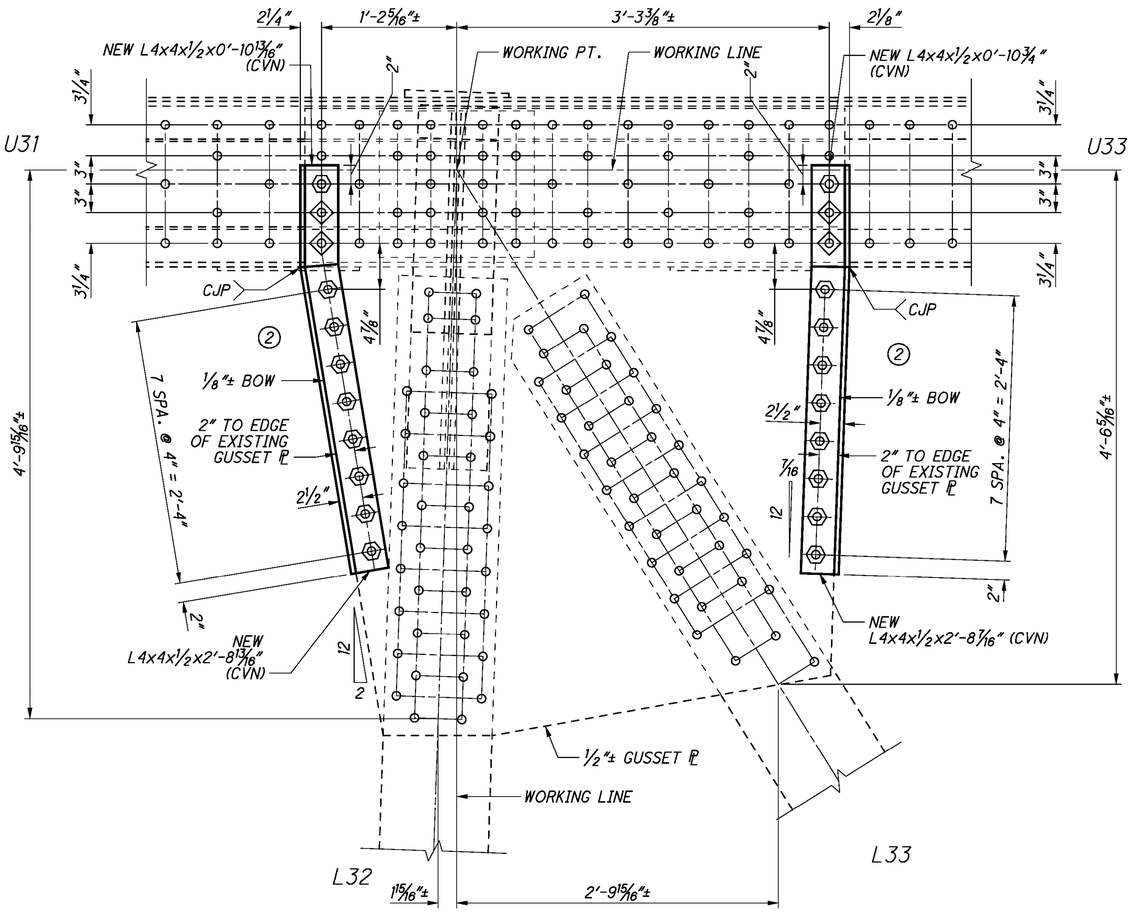
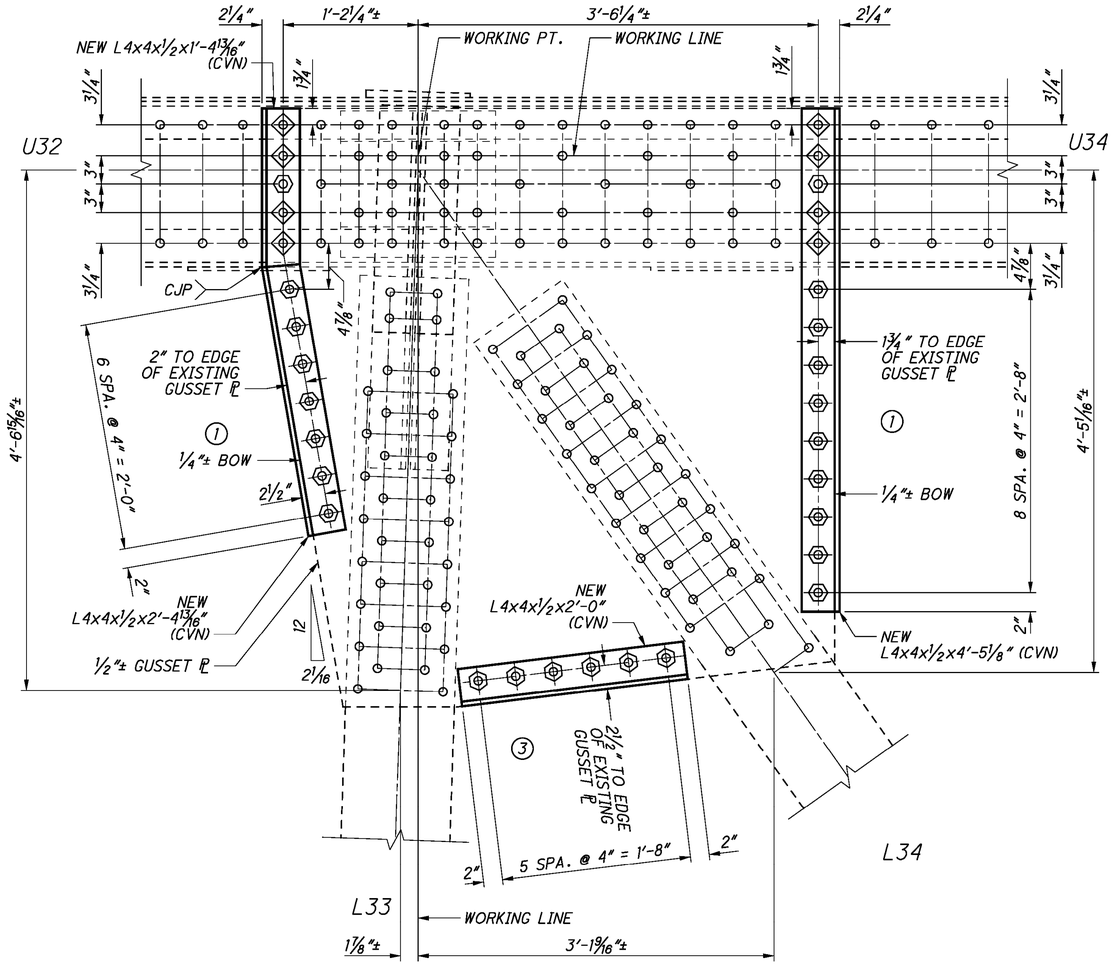


SPANS 7-10 - PANEL POINT U32 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U33
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - CENTER TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BJM	BJM	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (38 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

60 / 156

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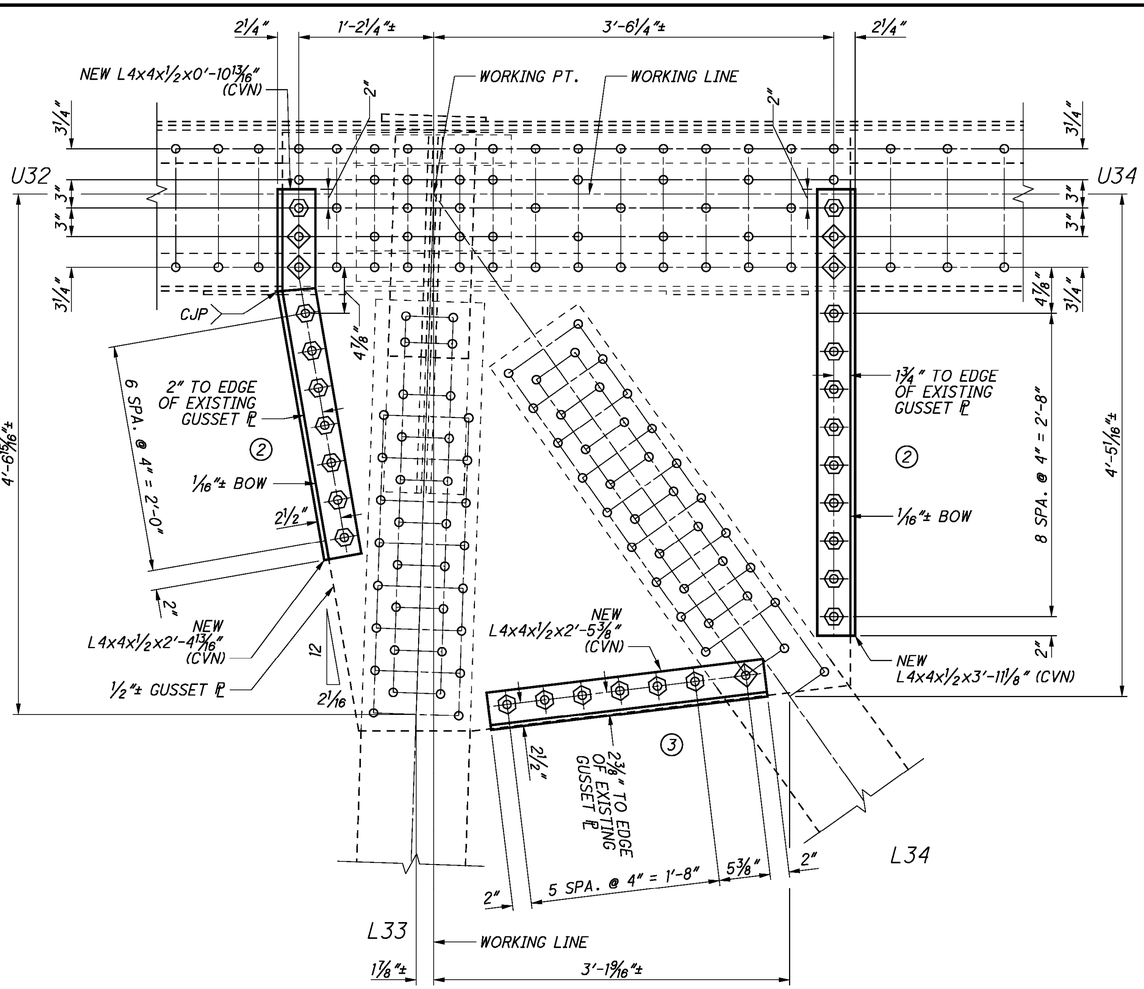
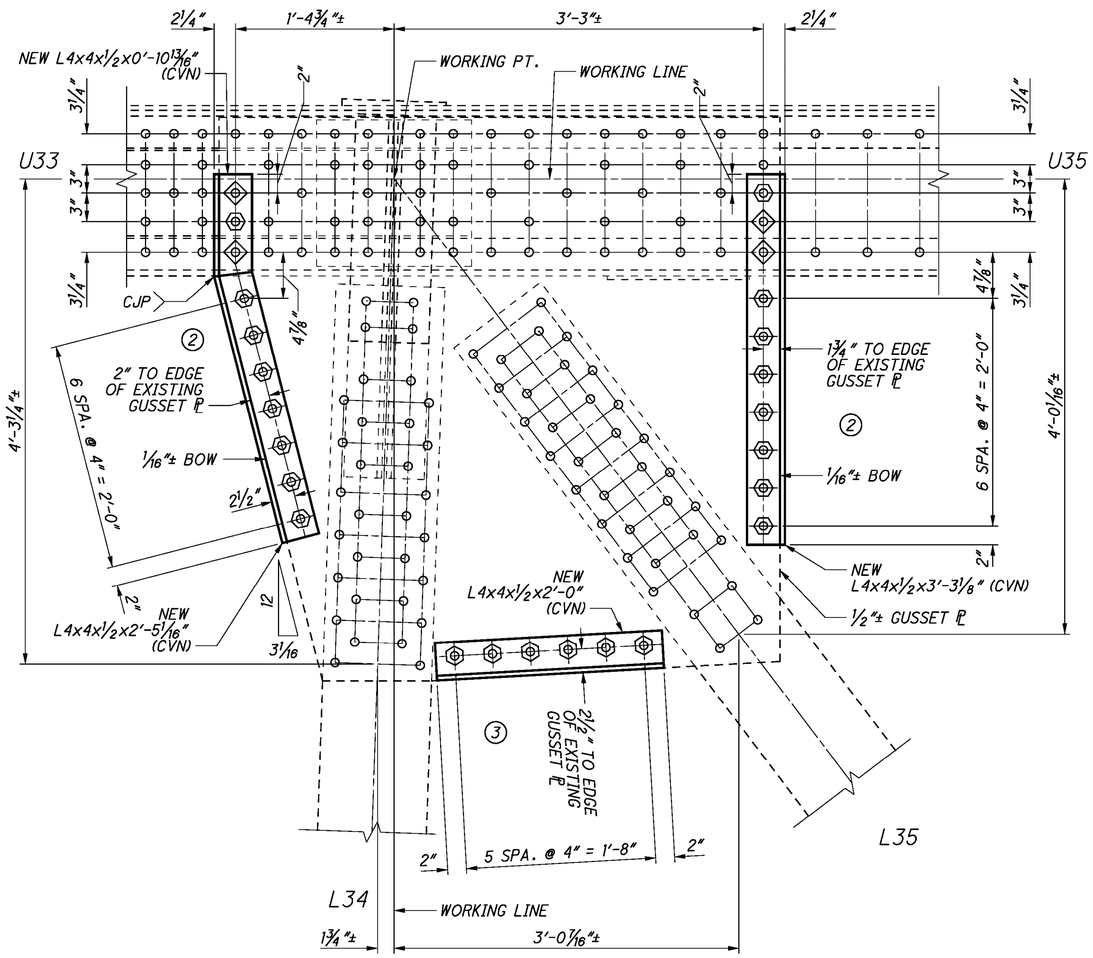


SPANS 7-10 - PANEL POINT U33
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U34 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 41 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PSP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (39 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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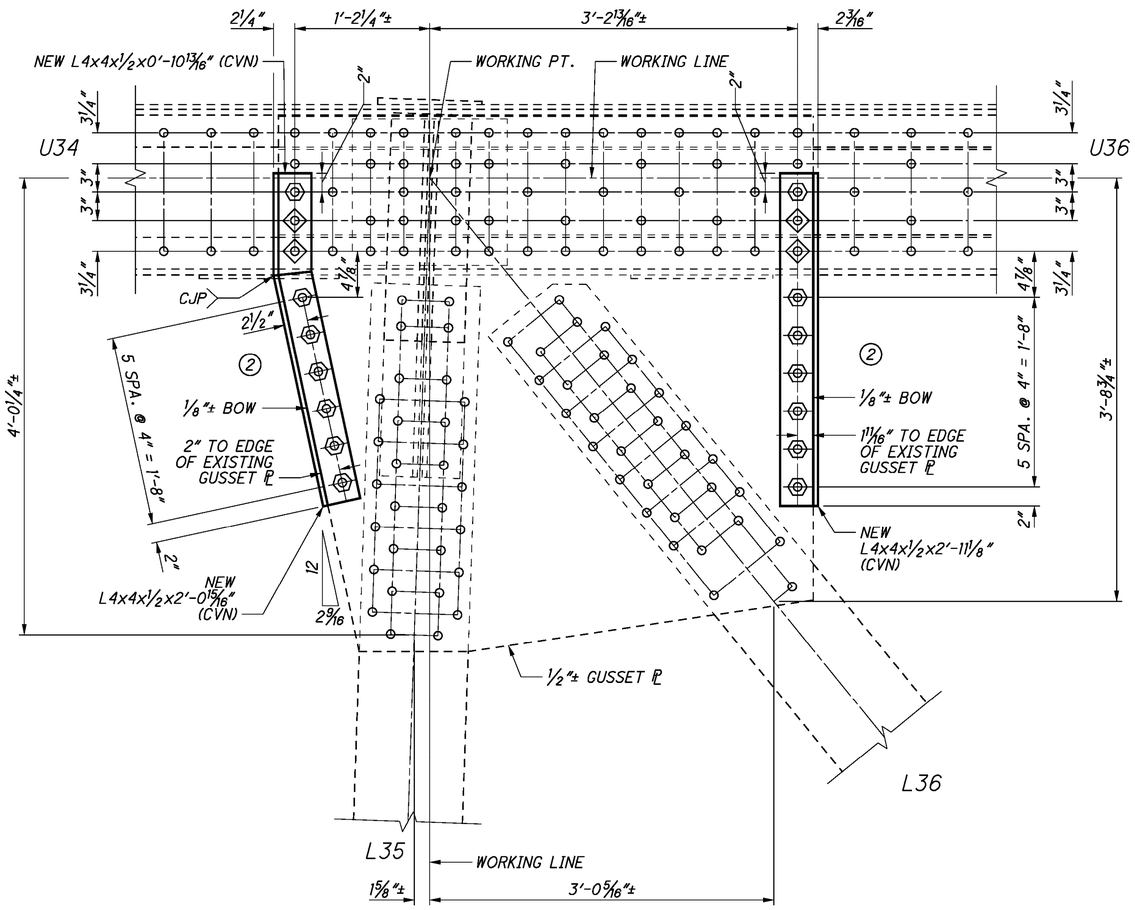
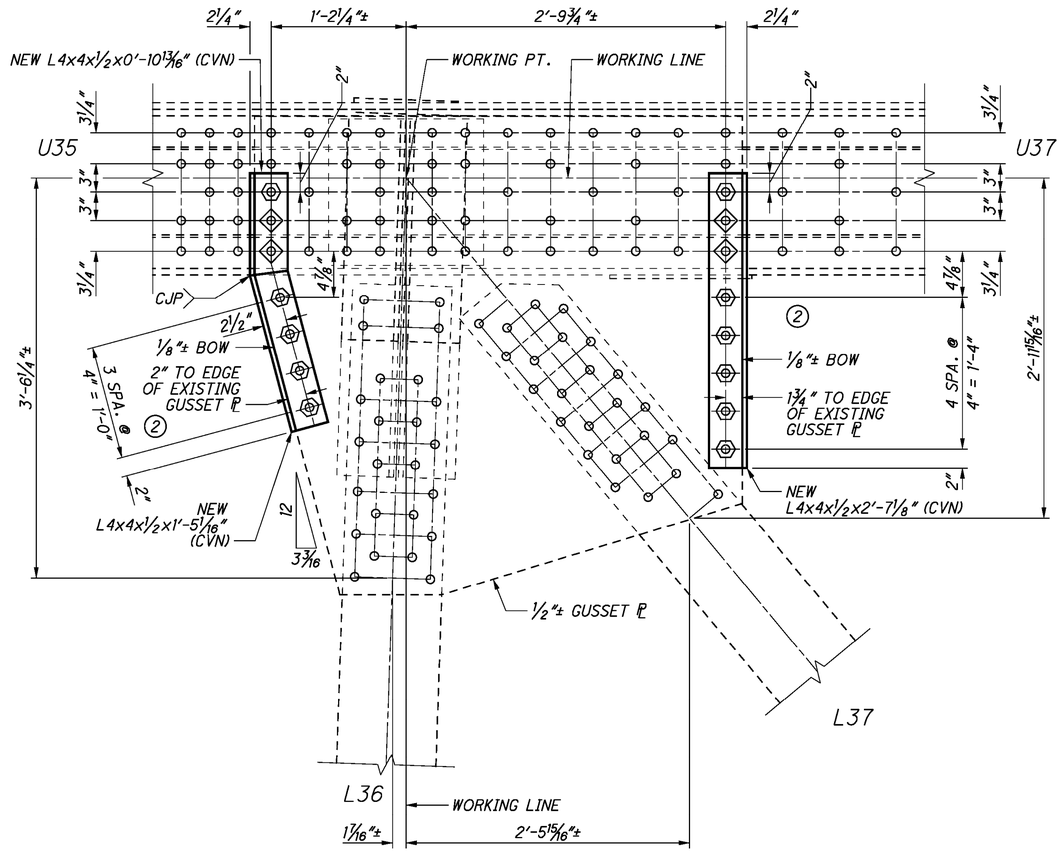


SPANS 7-10 - PANEL POINT U35 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U36 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCS		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (40 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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199

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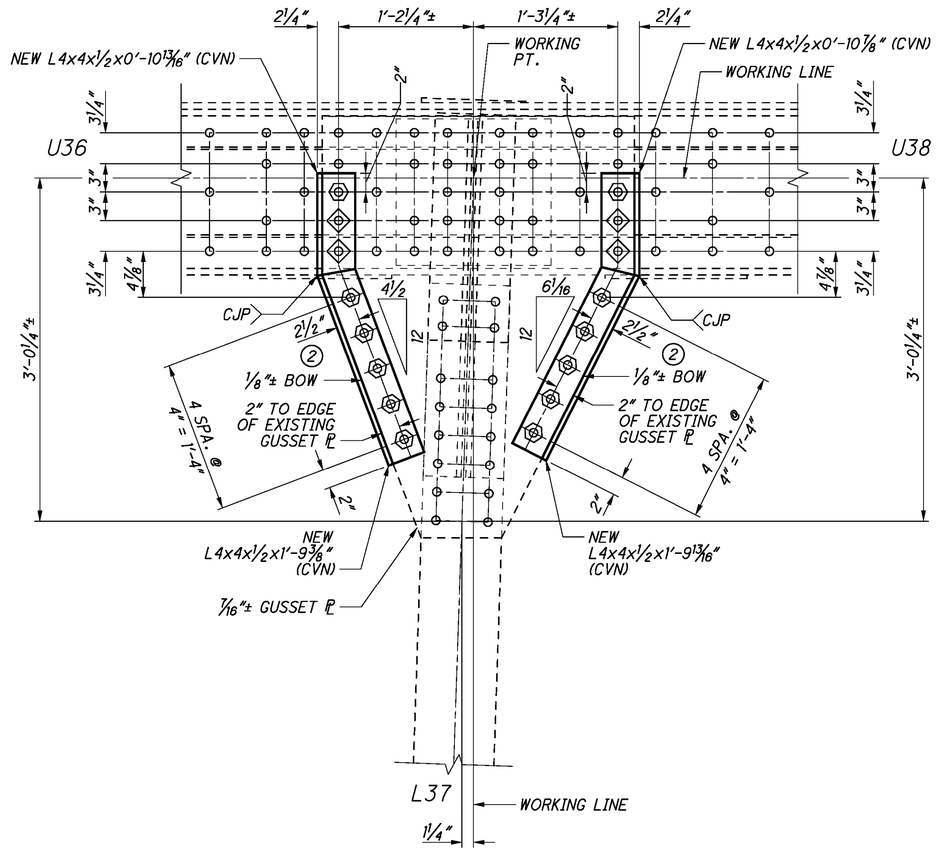

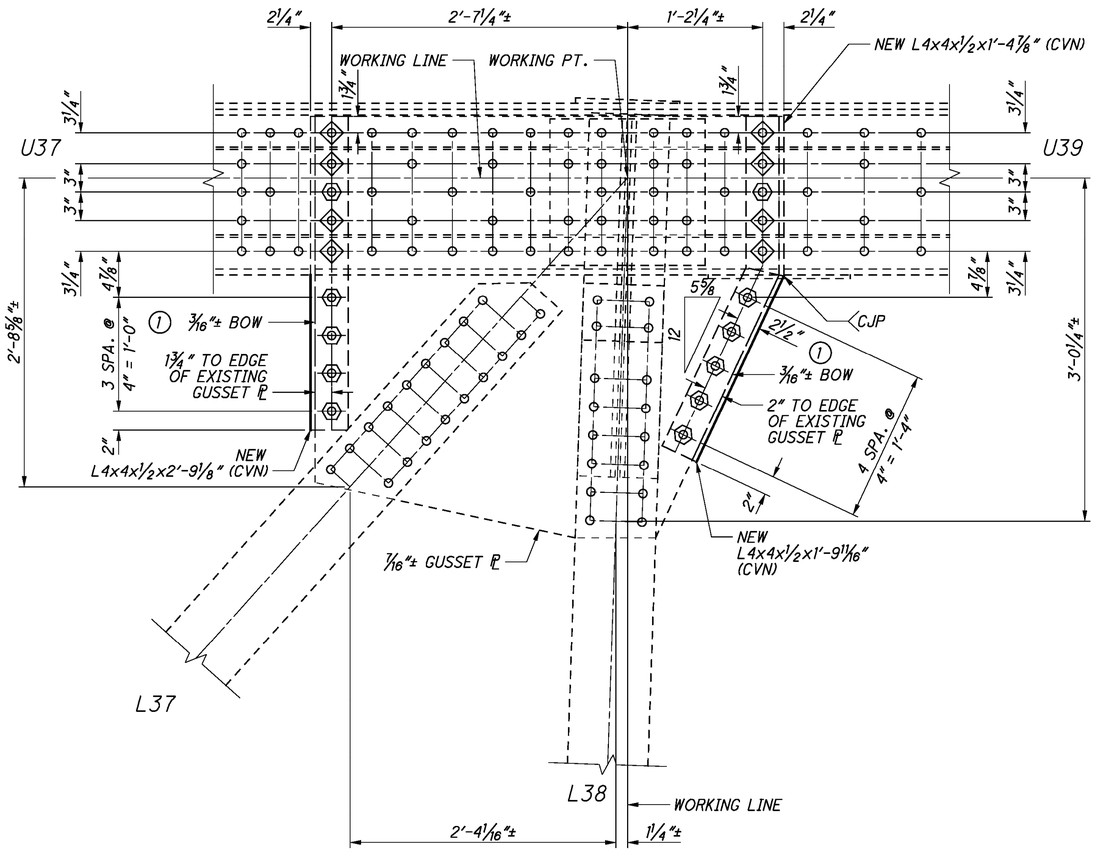

SPANS 7-10 - PANEL POINT U37 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND

SPANS 7-10 - PANEL POINT U38 NORTH GUSSET PLATE - CENTER TRUSS

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	PJA	10-05-16
CHECKED	REVISED		STRUCTURE FILE NUMBER
BCS			3103390

GUSSET PLATE EDGE STIFFENING DETAILS (41 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

63 / 156

106 / 199

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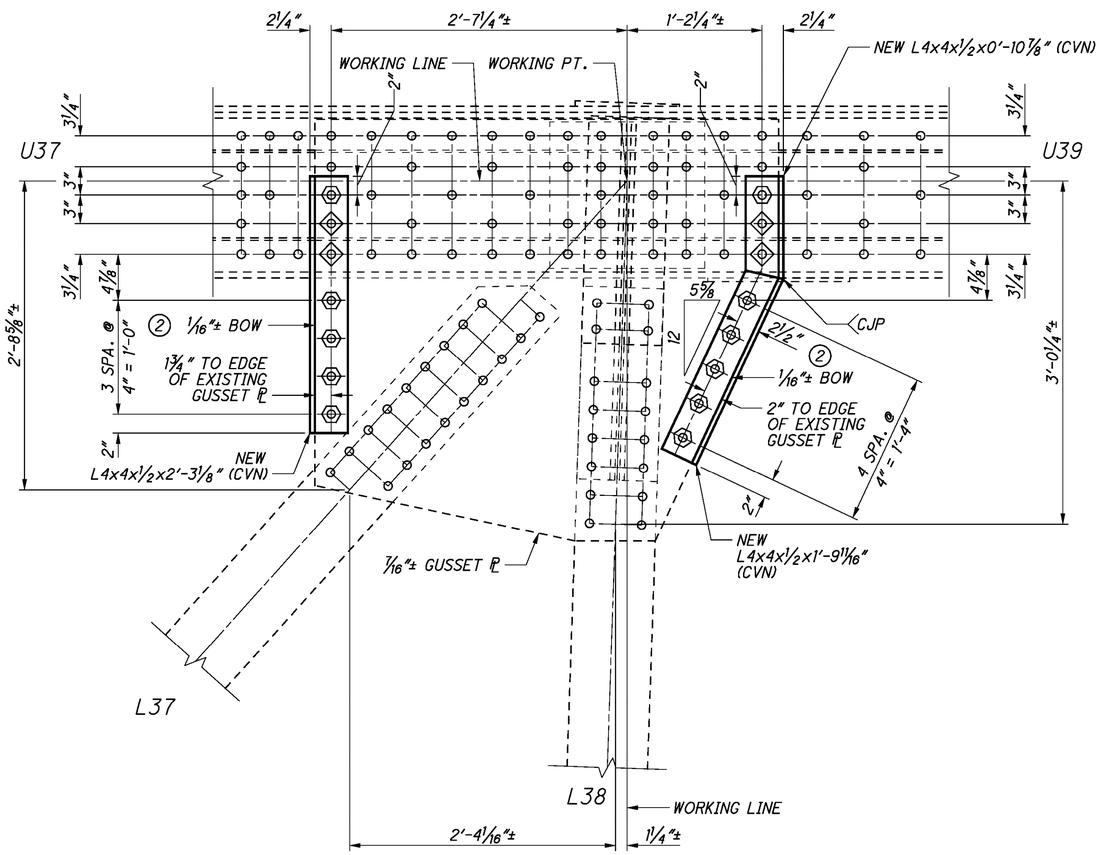
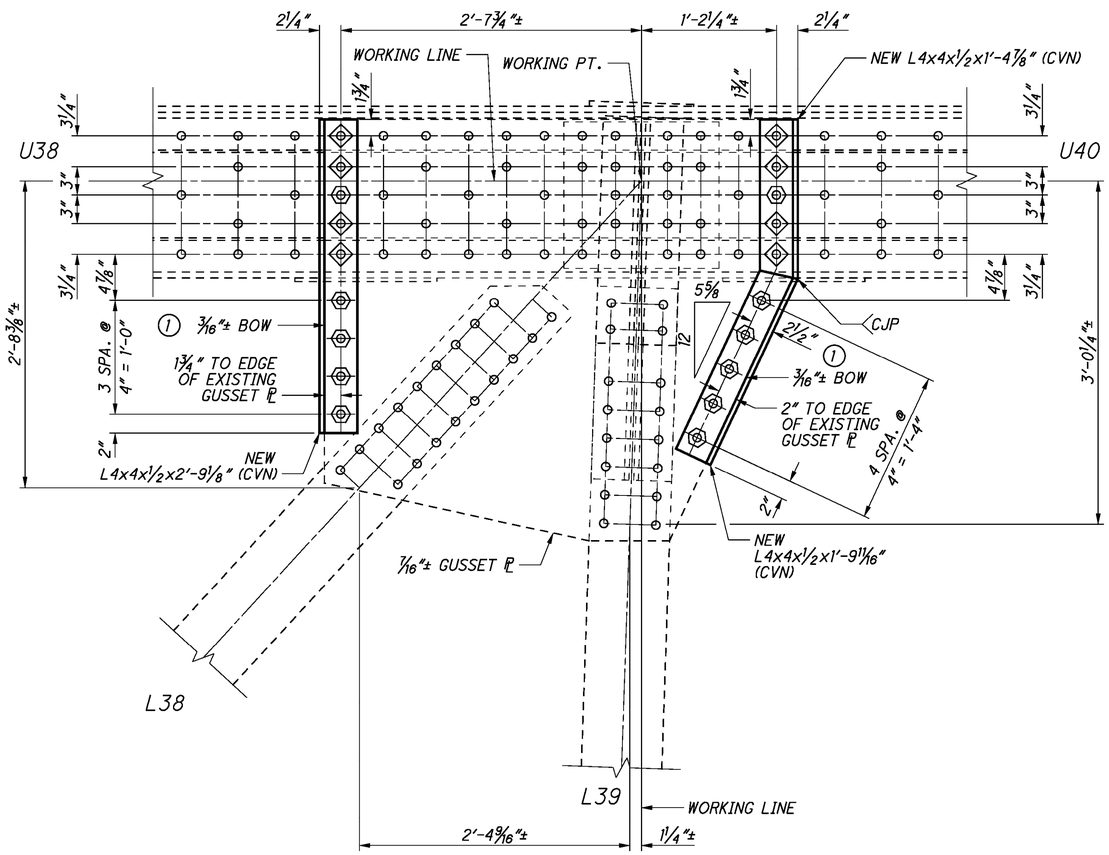


SPANS 7-10 - PANEL POINT U38
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U39
SOUTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
G.JZ	G.JZ	P.JA	10-05-16

CHECKED	REVISED	STRUCTURE FILE NUMBER
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GUSSET PLATE EDGE STIFFENING DETAILS (42 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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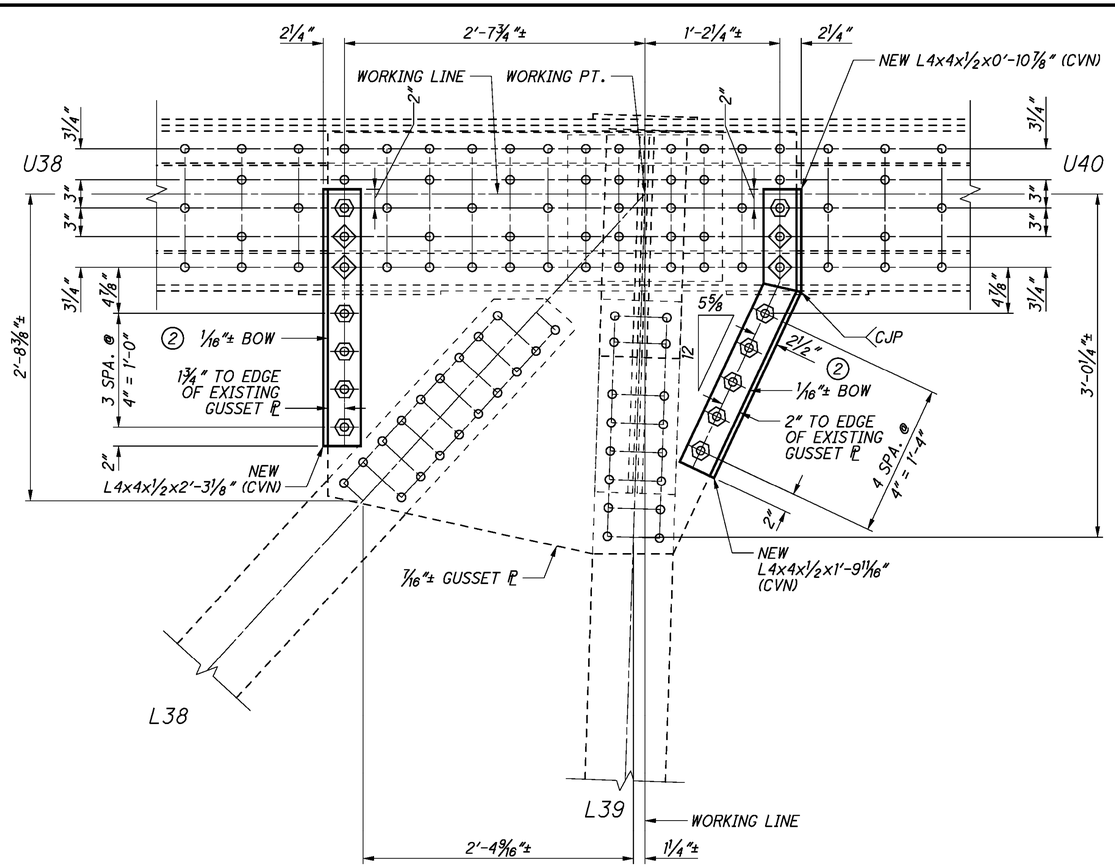
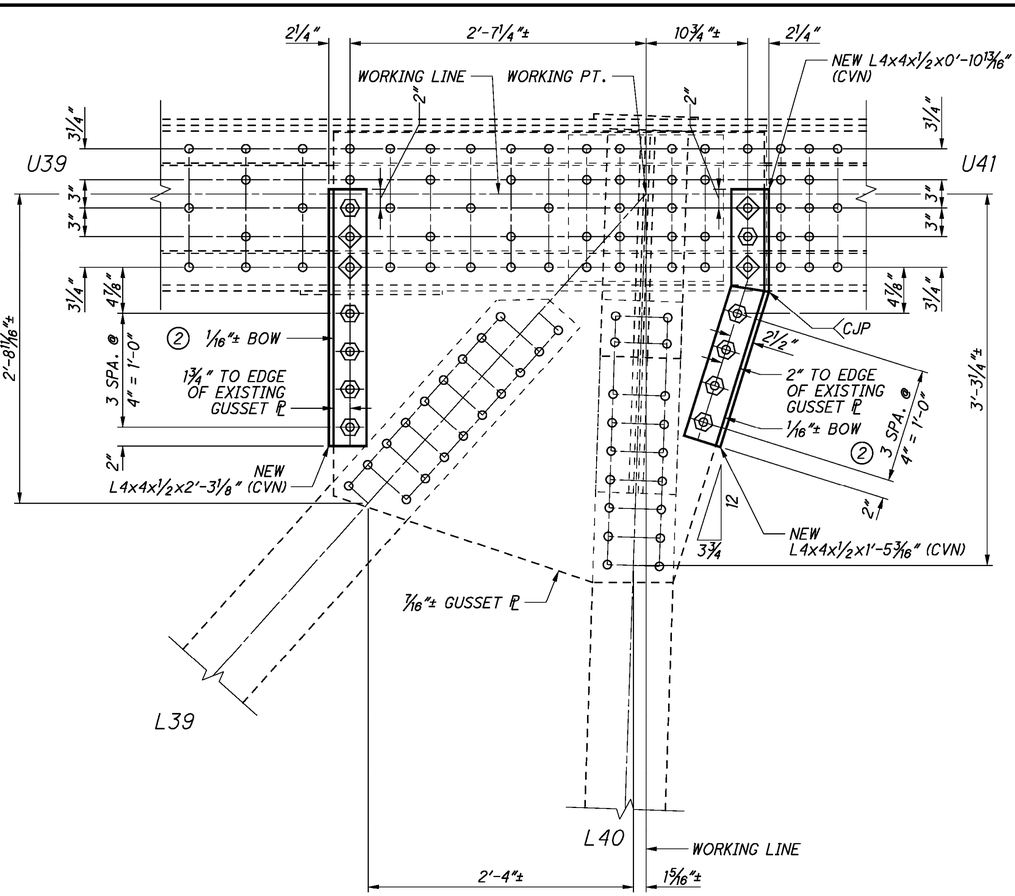


SPANS 7-10 - PANEL POINT U39
SOUTH GUSSET PLATE - CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U40 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 1⁵/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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G.JZ	G.JZ	P.JA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (43 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

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PID No. 91939

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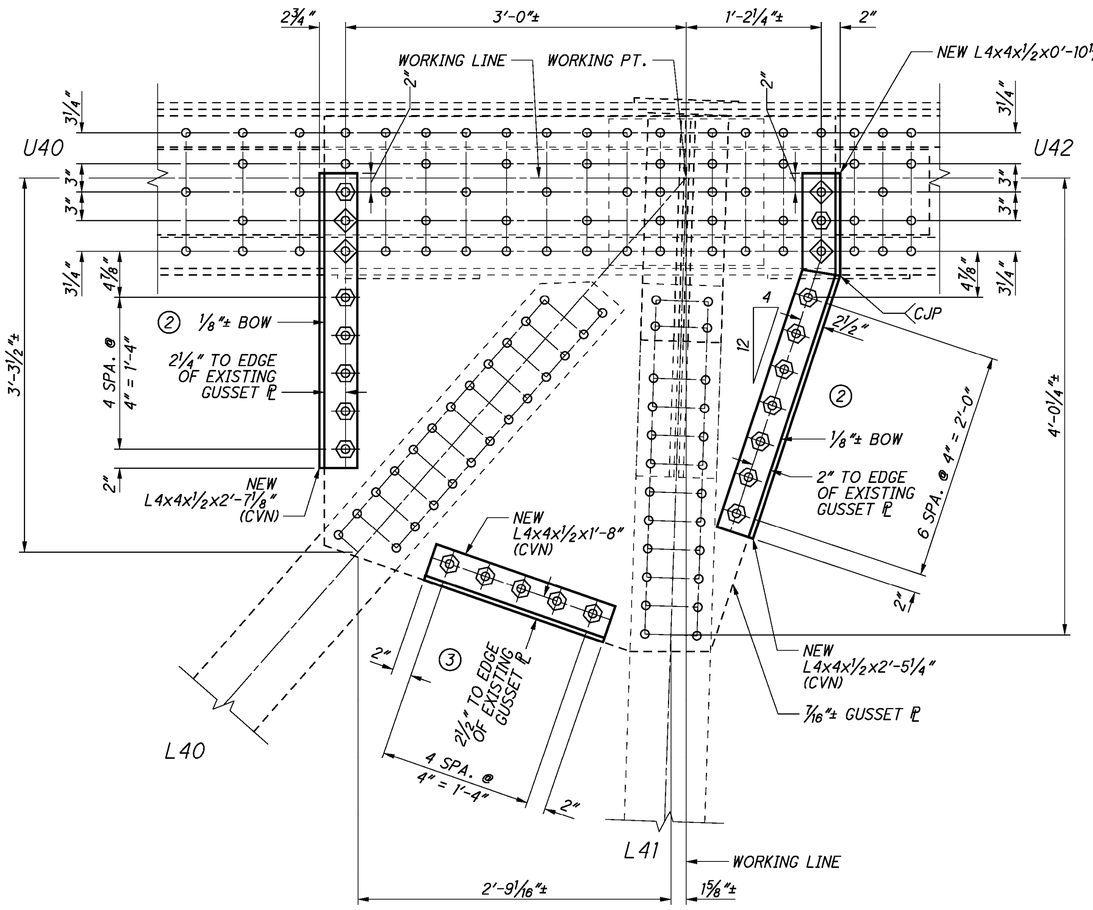
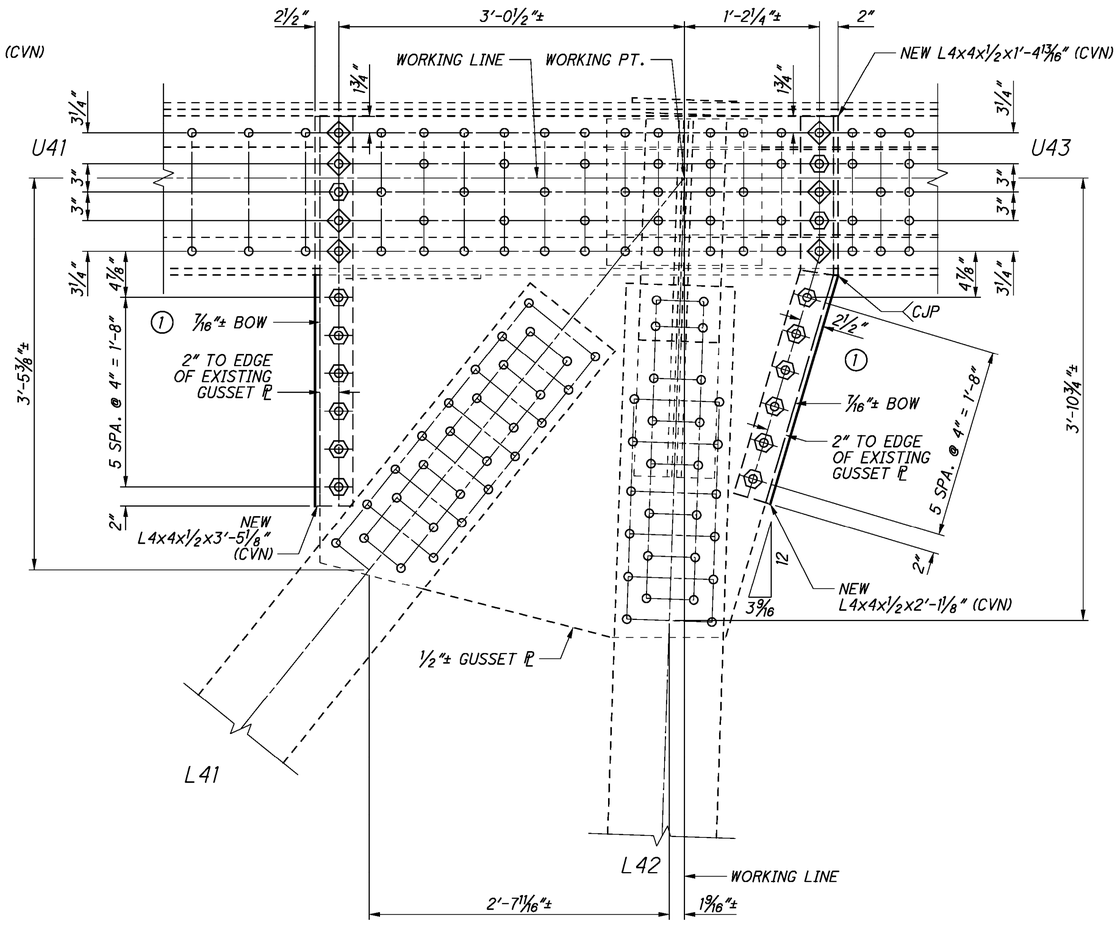


SPANS 7-10 - PANEL POINT U41 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U42
NORTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
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GUSSET PLATE EDGE STIFFENING DETAILS (44 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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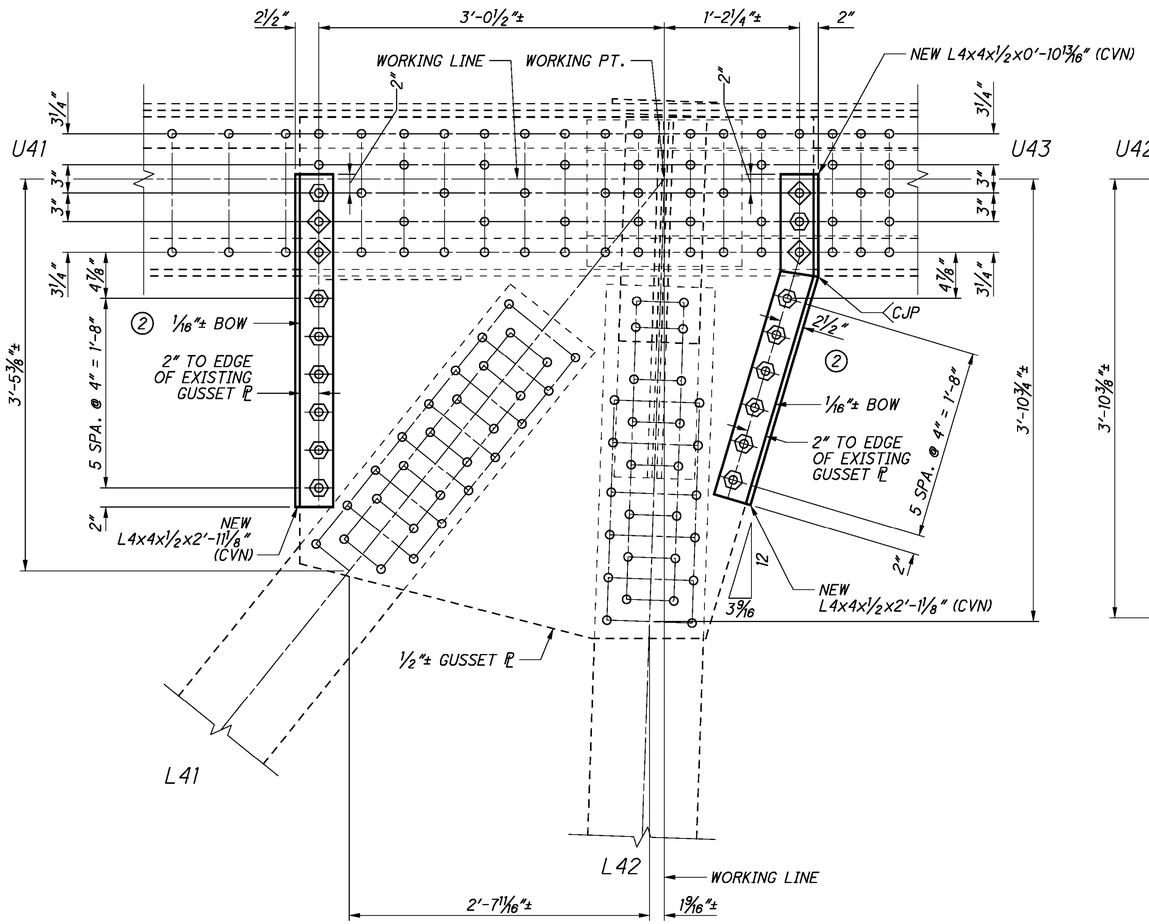
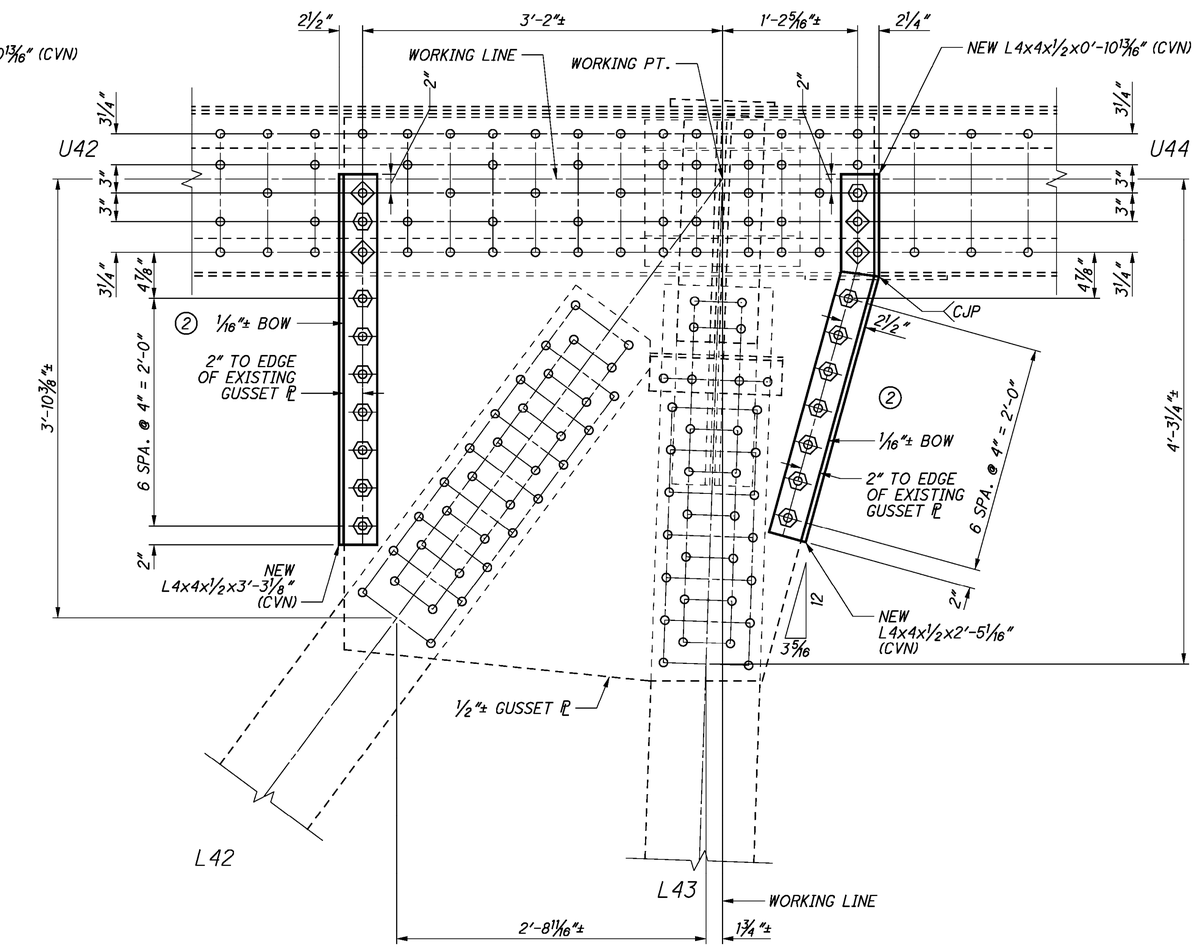


SPANS 7-10 - PANEL POINT U42
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT U43 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (45 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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199

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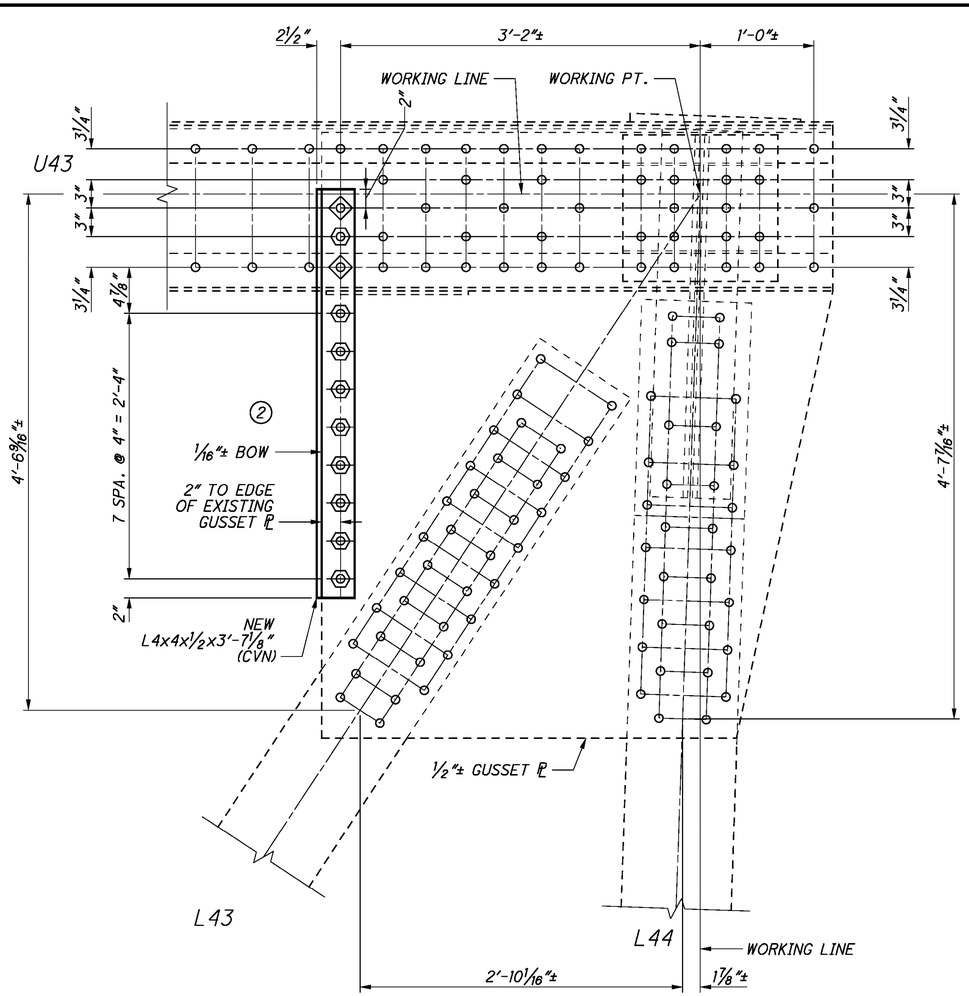

SPANS 7-10 - PANEL POINT U44 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 41 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (46 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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199

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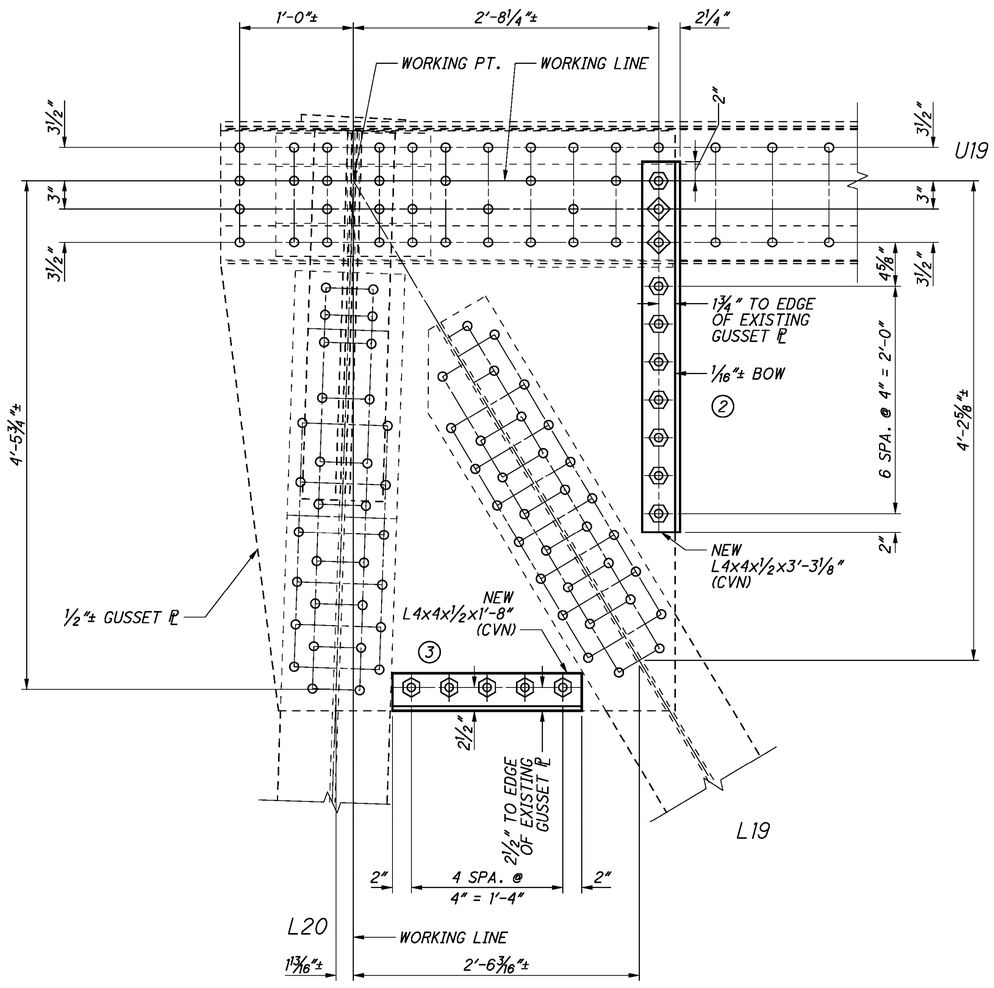
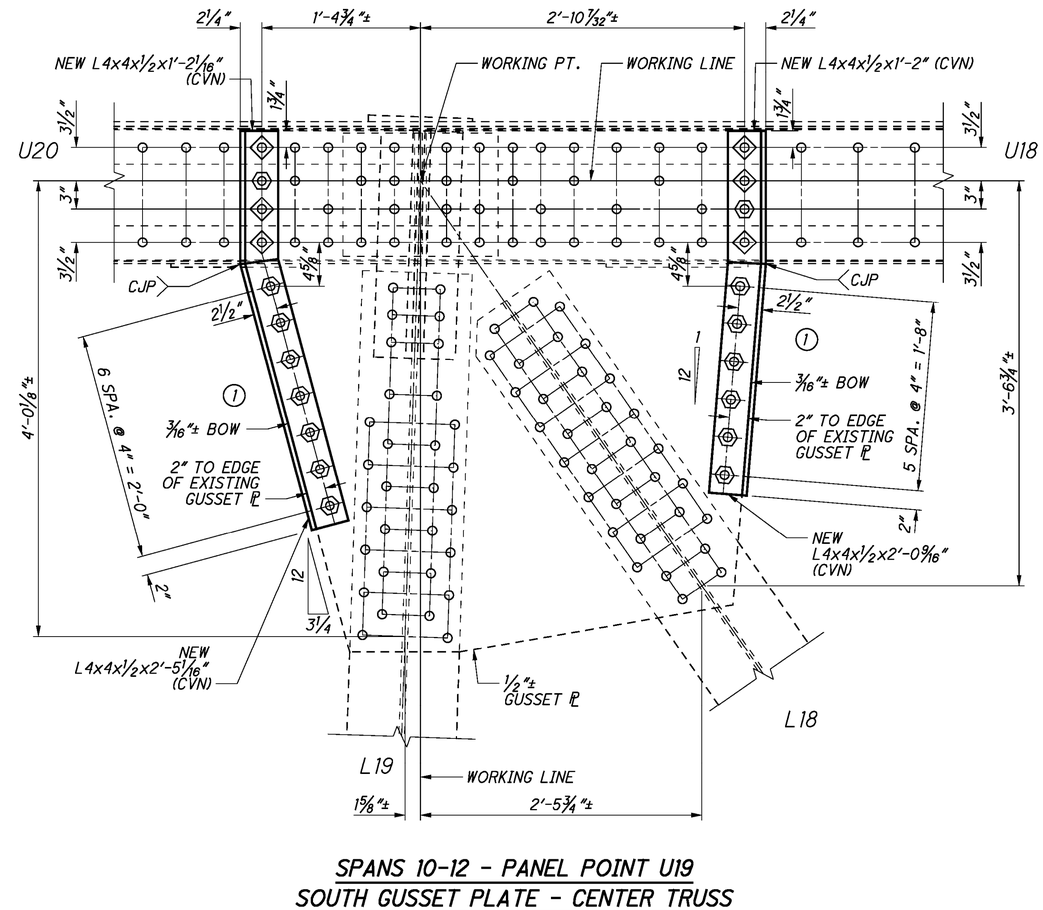


SPANS 10-12 - PANEL POINT U20 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U19
SOUTH GUSSET PLATE - CENTER TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. SOME CONNECTION ANGLES AND PLATES HAVE BEEN OMITTED FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY EACH NEW ANGLE LOCATION AND ENSURE NO CONFLICTS EXIST. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF ANY CONFLICTS EXIST.
3. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS: U = UPPER PANEL POINT
   L = LOWER PANEL POINT
4. CJP - COMPLETE JOINT PENETRATION WELD (ANGLES ONLY)
5. ALL NEW BOLTS SHALL BE 7/8" DIAMETER A490, TYPE 3 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE 15/16" DIAMETER. BOLT LENGTH REQUIREMENTS SHALL BE DETERMINED FROM ORIGINAL SHOP DRAWING AND FIELD VERIFICATION.
6. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
8. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING AND BOLTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1, TYPE 2, OR TYPE 3.
9. THE PAINT ZONE FOR THE GUSSET PLATE EDGE STIFFENING SHALL ENCOMPASSES THE FAYING SURFACE OF THE GUSSET PLATE AND UPPER CHORD, THE NEW STIFFENING ANGLES, LOCATIONS OF PACK RUST REMOVAL, AND ANY SURROUNDING AREAS DAMAGED BY THE INSTALLATION OF THE RETROFITS. ALL PAINTING IS TO BE INCLUDED FOR PAYMENT UNDER ITEM 514.
10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET [3 / 156] THRU [5 / 156].
11. FOR ADDITIONAL DETAILS REGARDING REPAIR TYPES SEE SHEET [22 / 156].

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
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GUSSET PLATE EDGE STIFFENING DETAILS (47 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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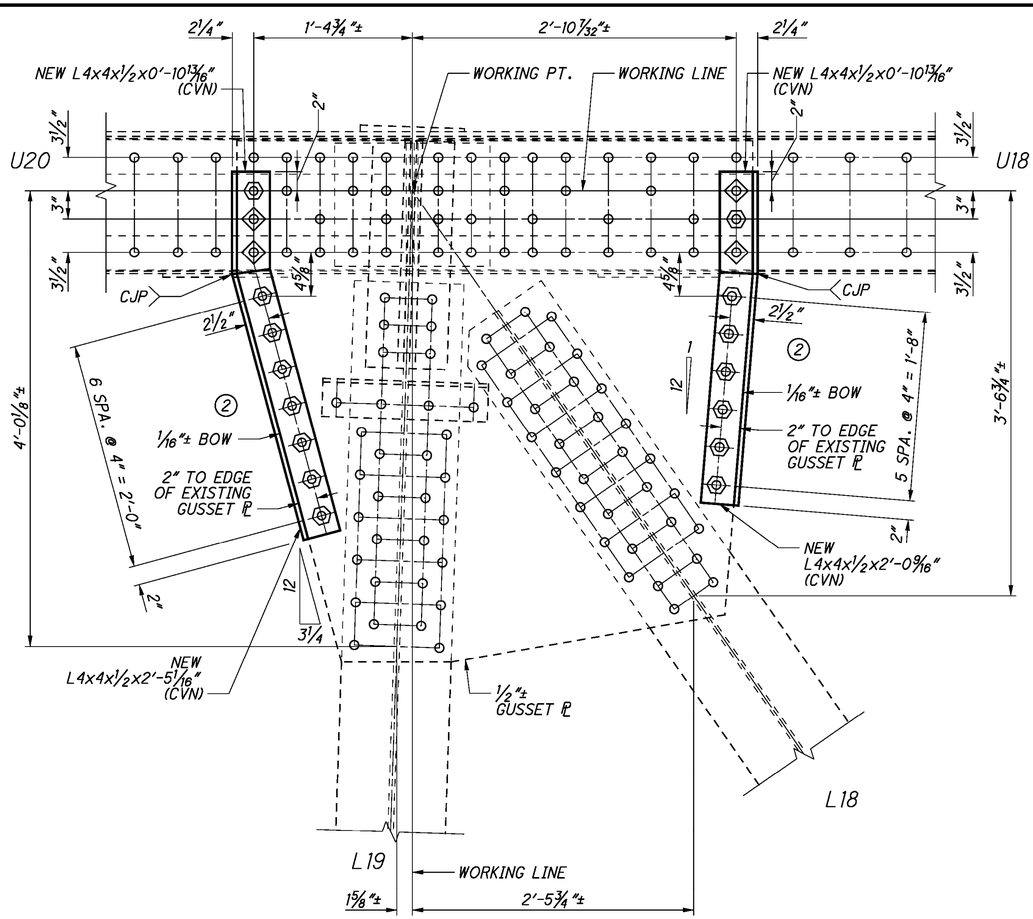
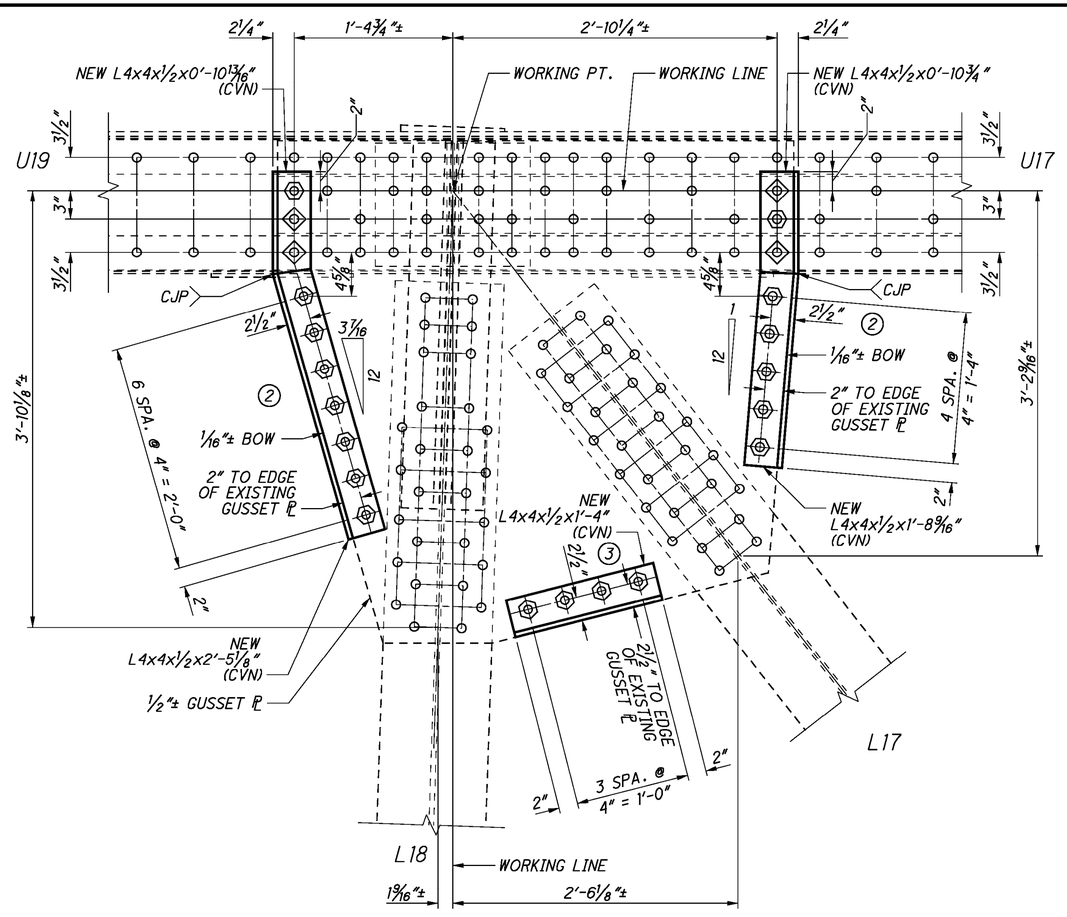


SPANS 10-12 - PANEL POINT U19
SOUTH GUSSET PLATE - NORTH AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U18 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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GUSSET PLATE EDGE STIFFENING DETAILS (48 OF 123)
BRIDGE No. HAM-50-2180N
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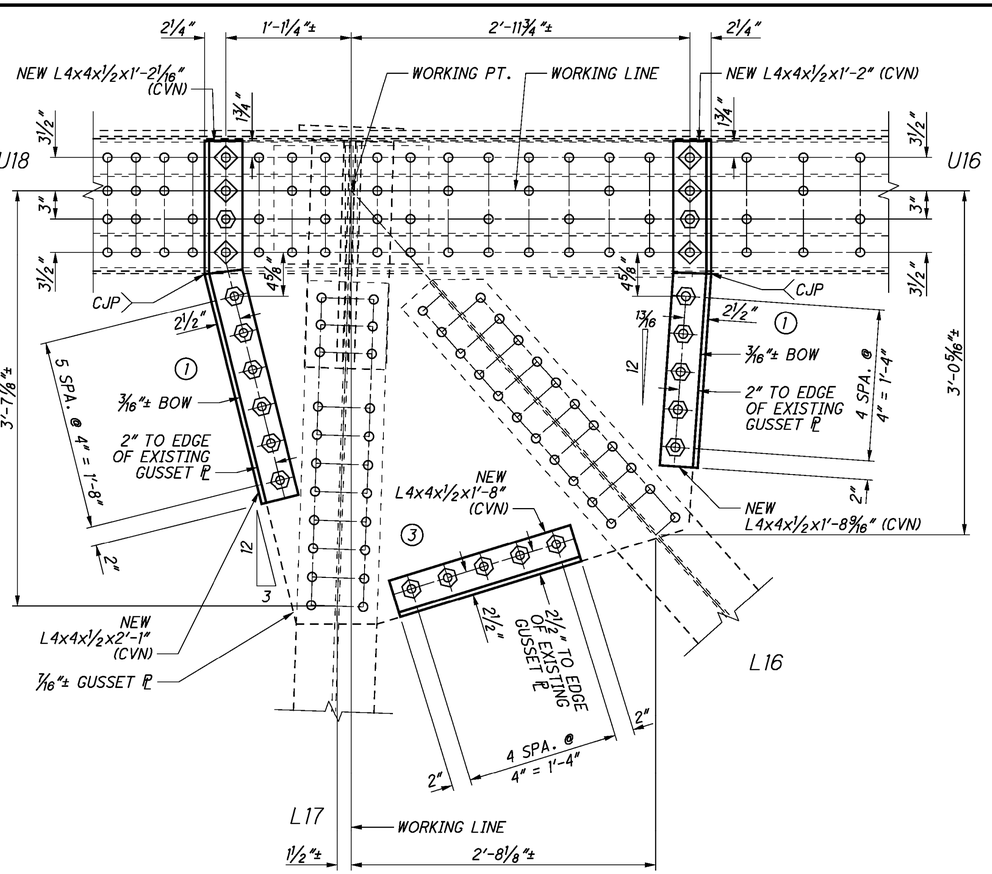
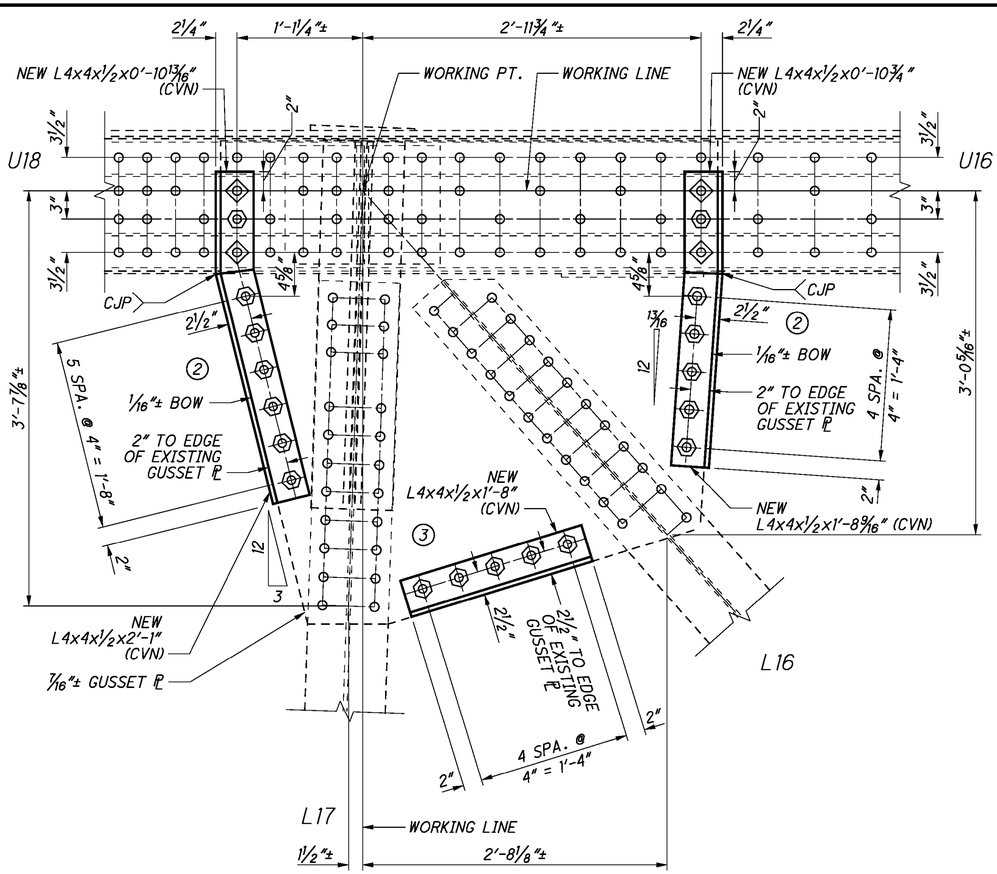


SPANS 10-12 - PANEL POINT U17
SOUTH GUSSET PLATE - CENTER TRUSS
NORTH GUSSET PLATE - SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U17
SOUTH GUSSET PLATE - NORTH AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND CENTER TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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GUSSET PLATE EDGE STIFFENING DETAILS (49 OF 123)
BRIDGE No. HAM-50-2180N
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HAM-50-2180N
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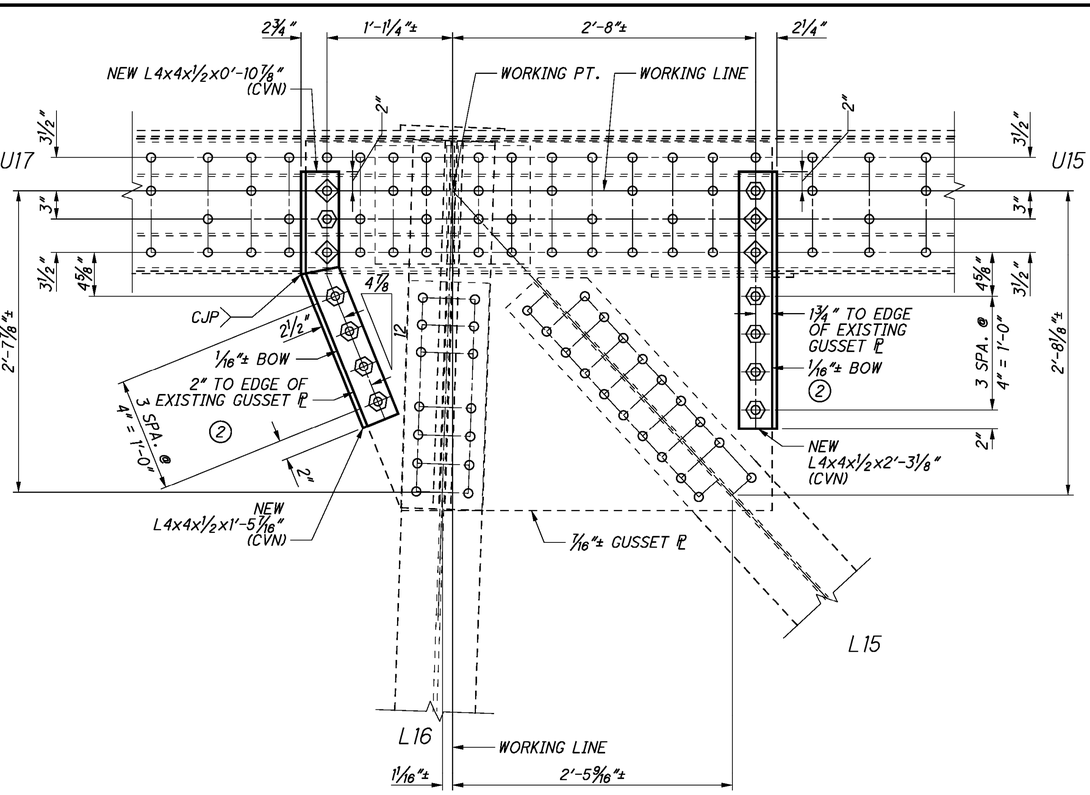

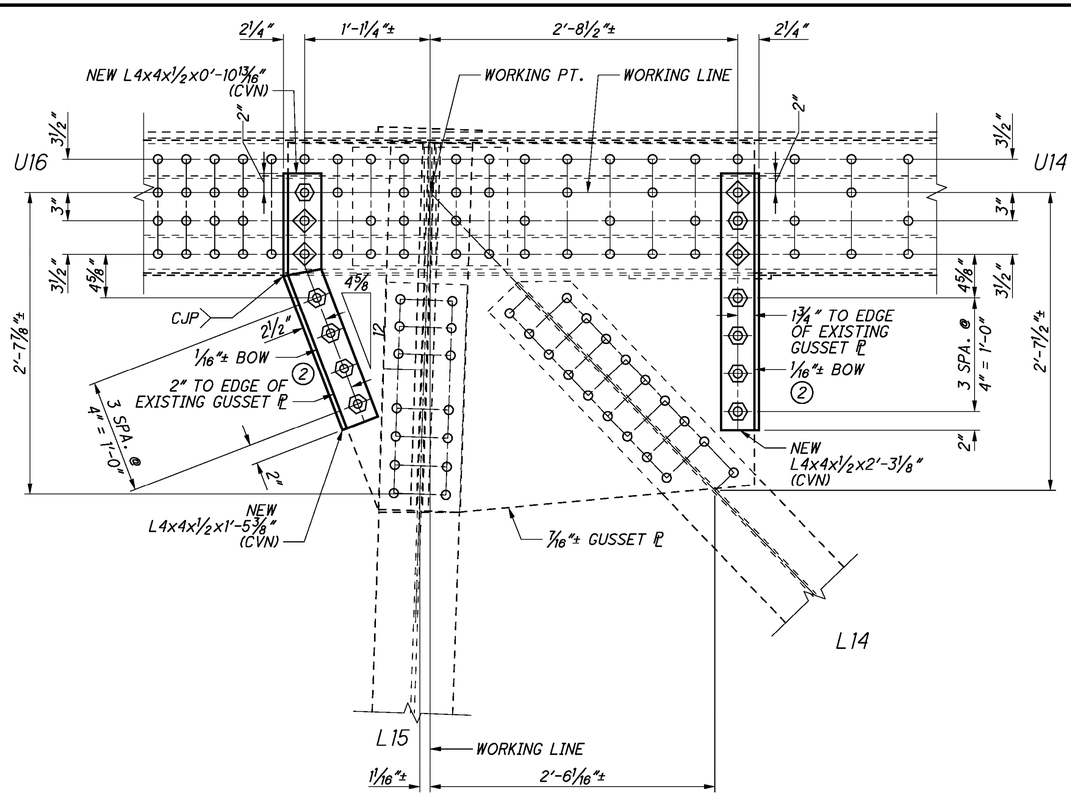

SPANS 10-12 - PANEL POINT U16 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

SPANS 10-12 - PANEL POINT U15 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16

CHECKED: RSB | REVISED: | STRUCTURE FILE NUMBER: 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (50 OF 123)
BRIDGE No. HAM-50-2180N
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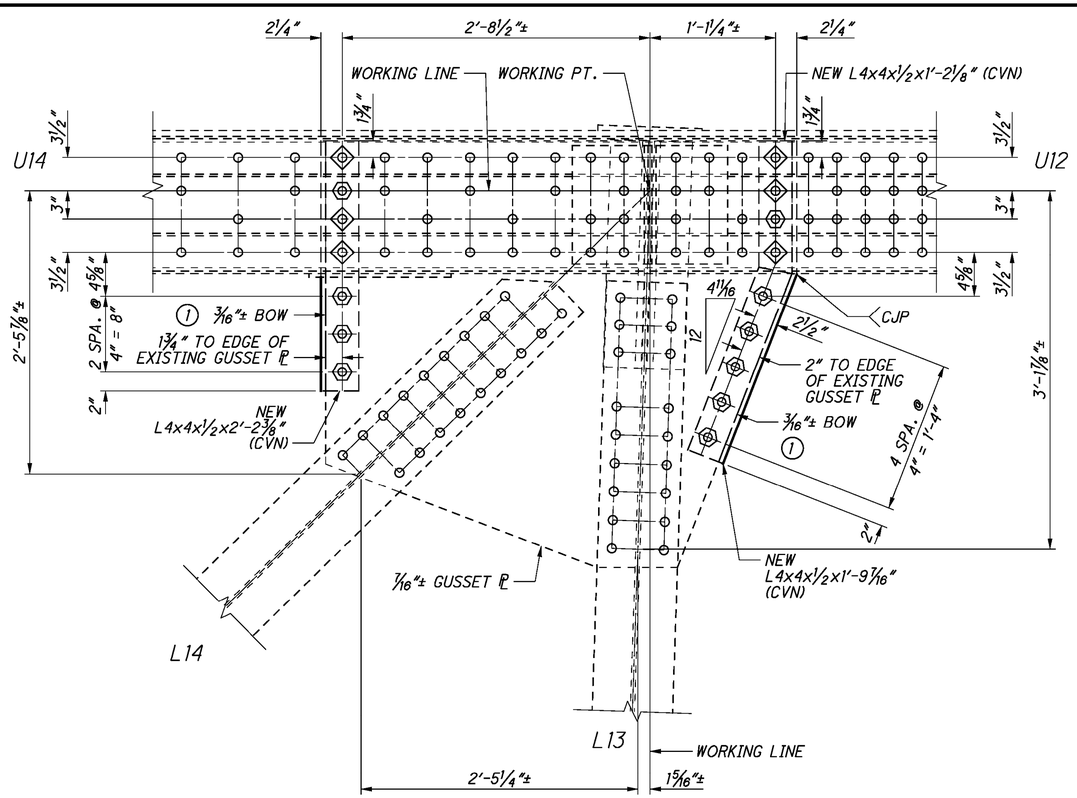
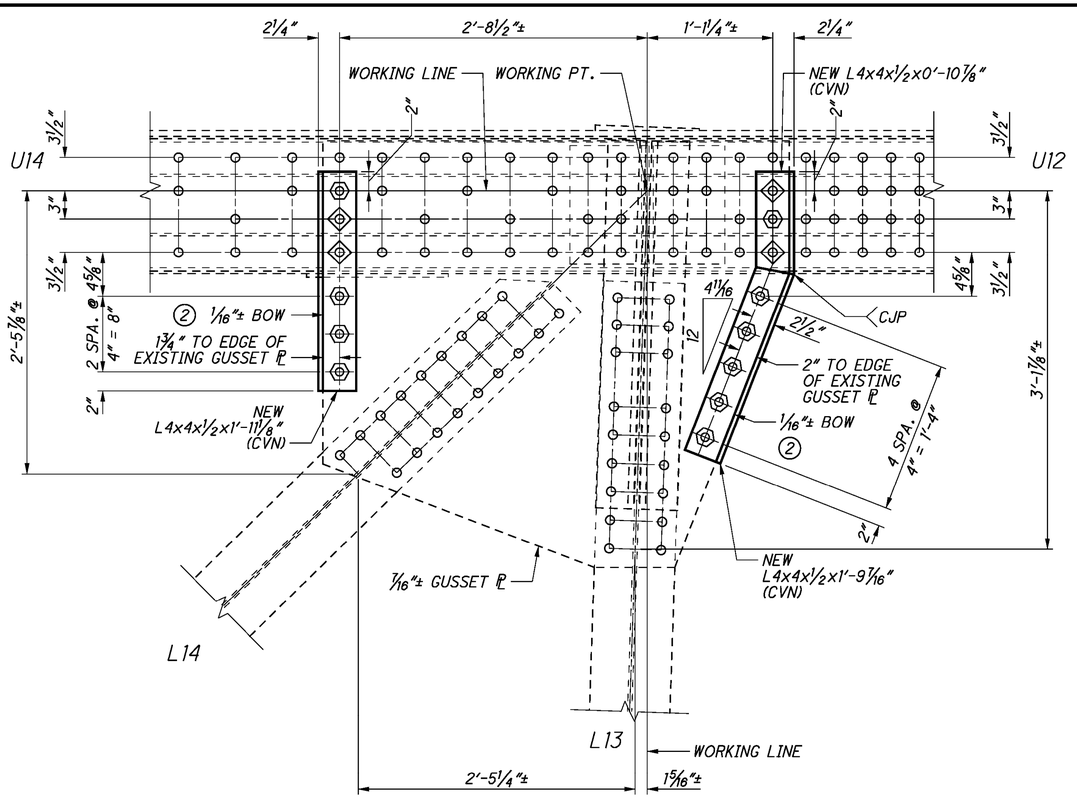


SPANS 10-12 - PANEL POINT U13
NORTH GUSSET PLATE - CENTER TRUSS



SPANS 10-12 - PANEL POINT U13
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 1⁵⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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GUSSET PLATE EDGE STIFFENING DETAILS (51 OF 123)
BRIDGE No. HAM-50-2180N
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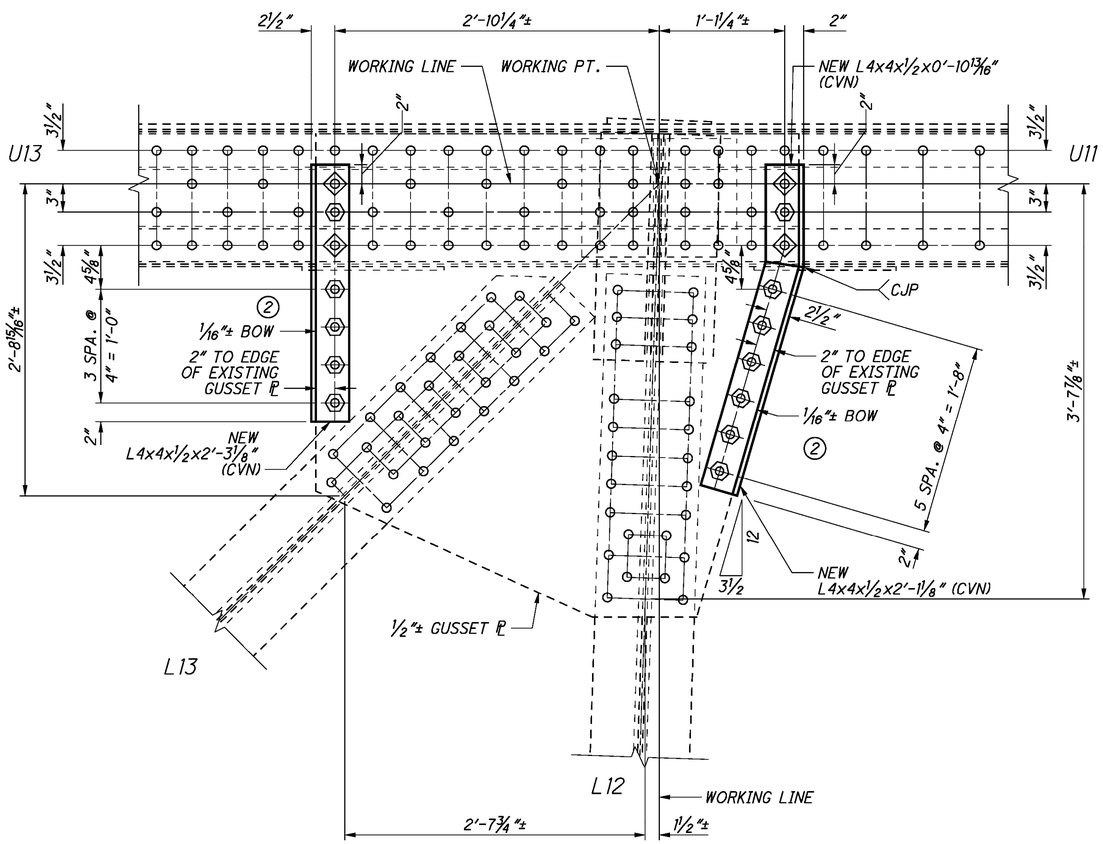
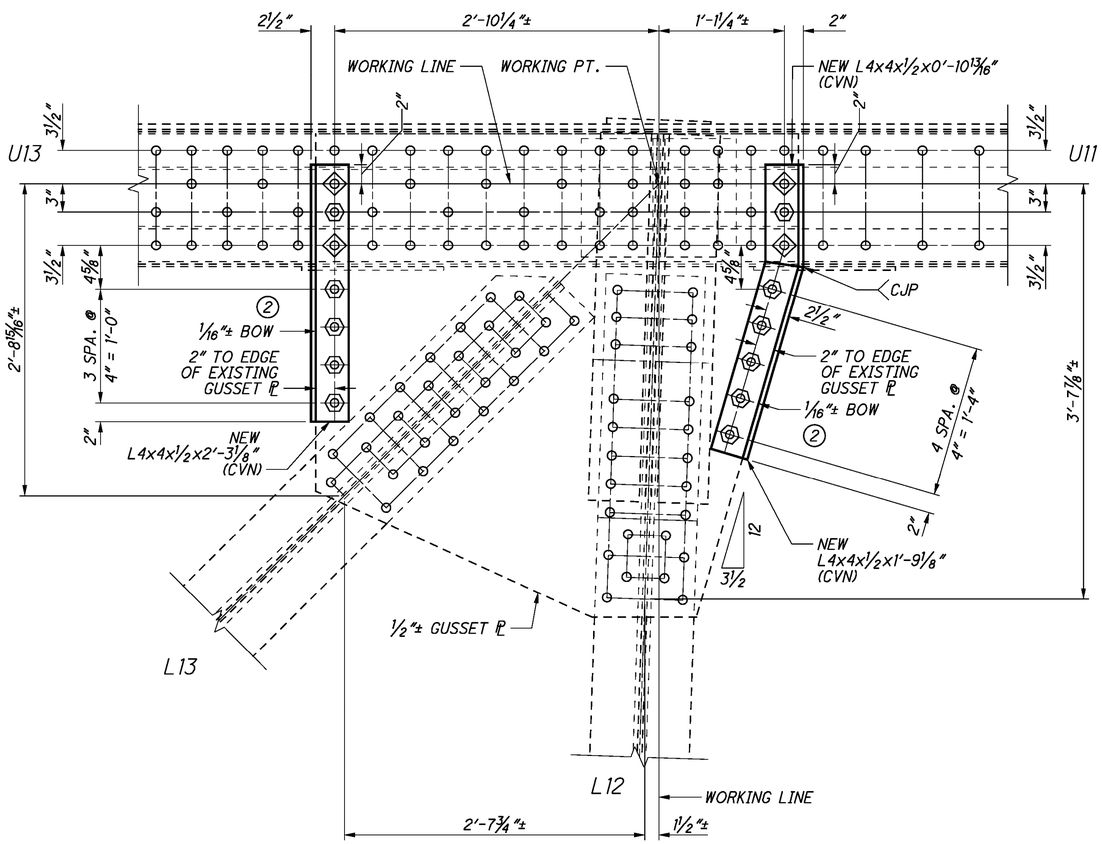


SPANS 10-12 - PANEL POINT U12
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U12
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

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RJM	GJZ	PJA	10-05-16
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RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (52 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

74 / 156

117 / 199

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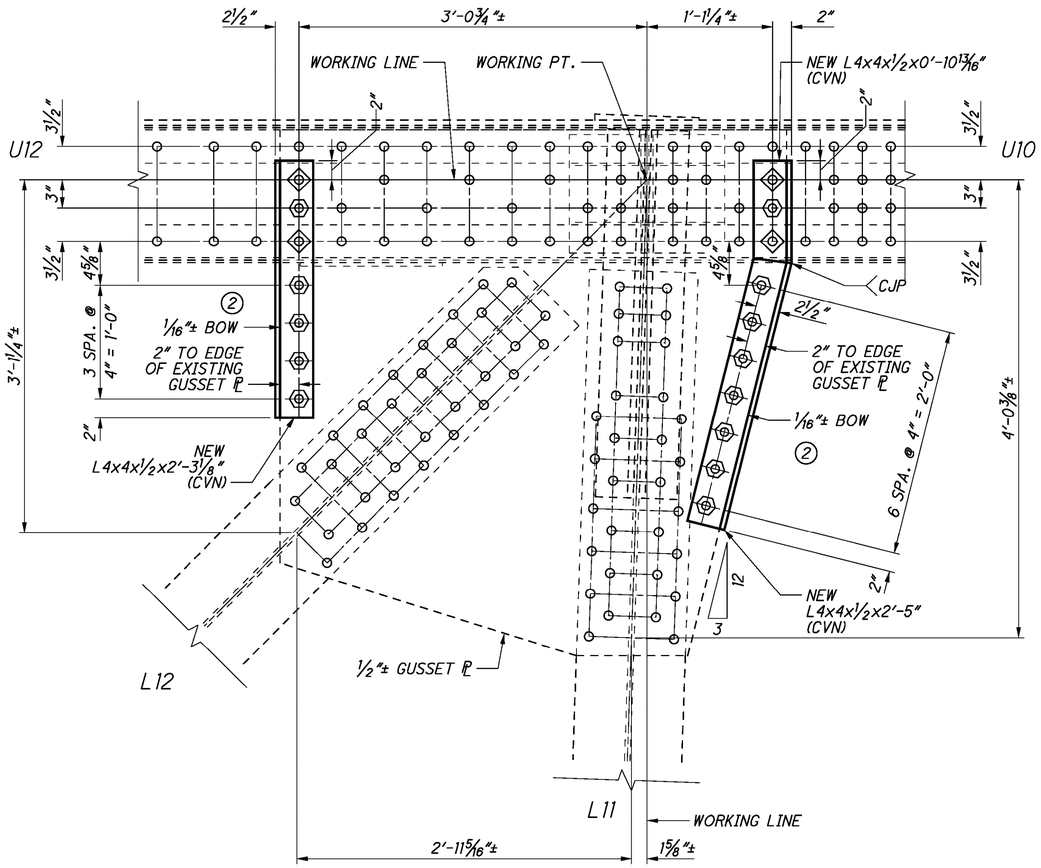
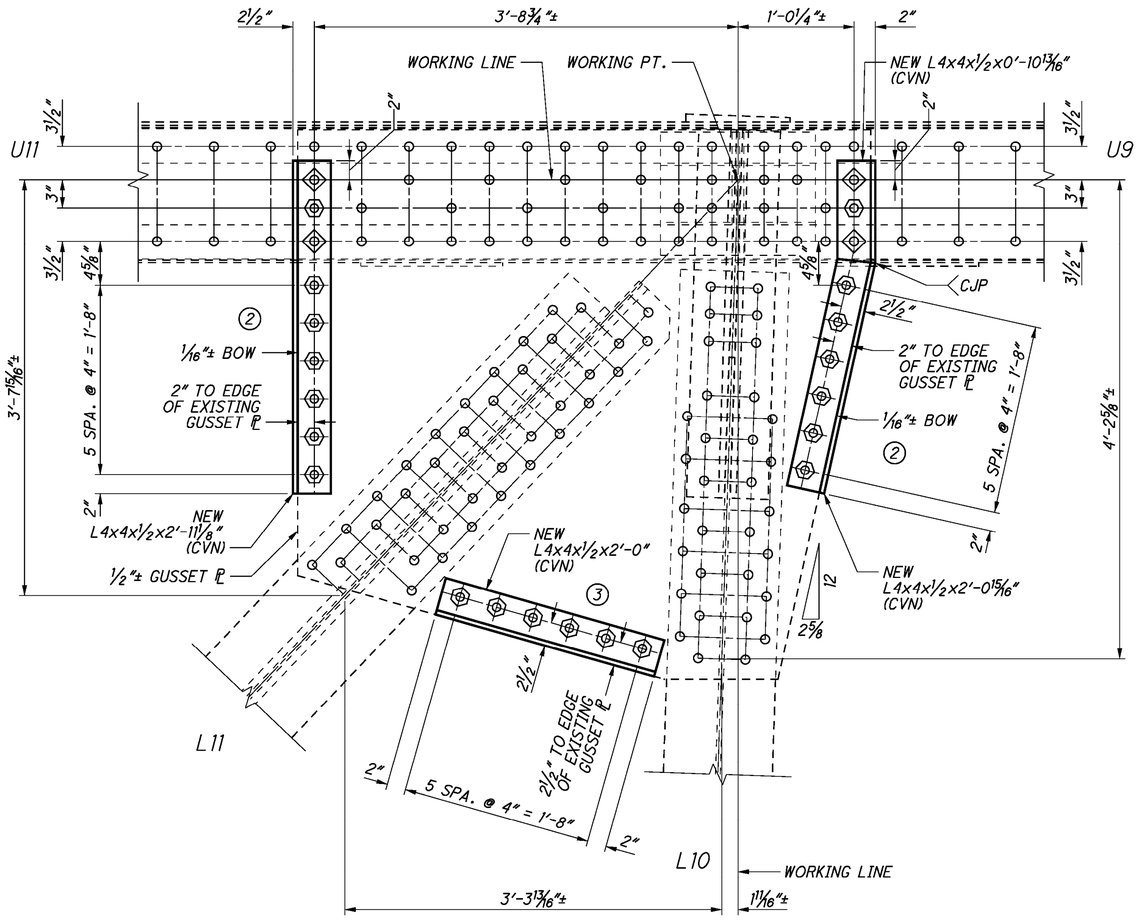


SPANS 10-12 - PANEL POINT U11 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U10 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 1⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
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RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (53 OF 123)

BRIDGE No. HAM-50-2180N

COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N

PID No. 91939

75 / 156

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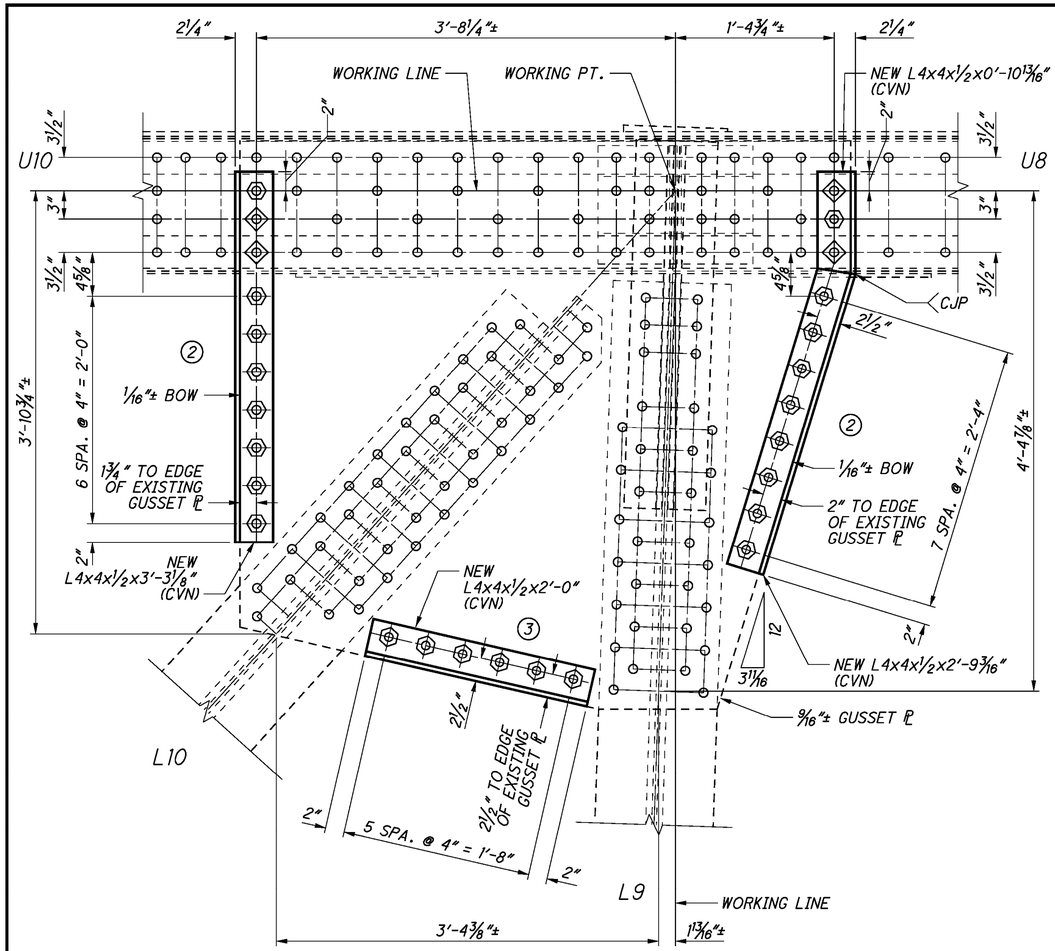
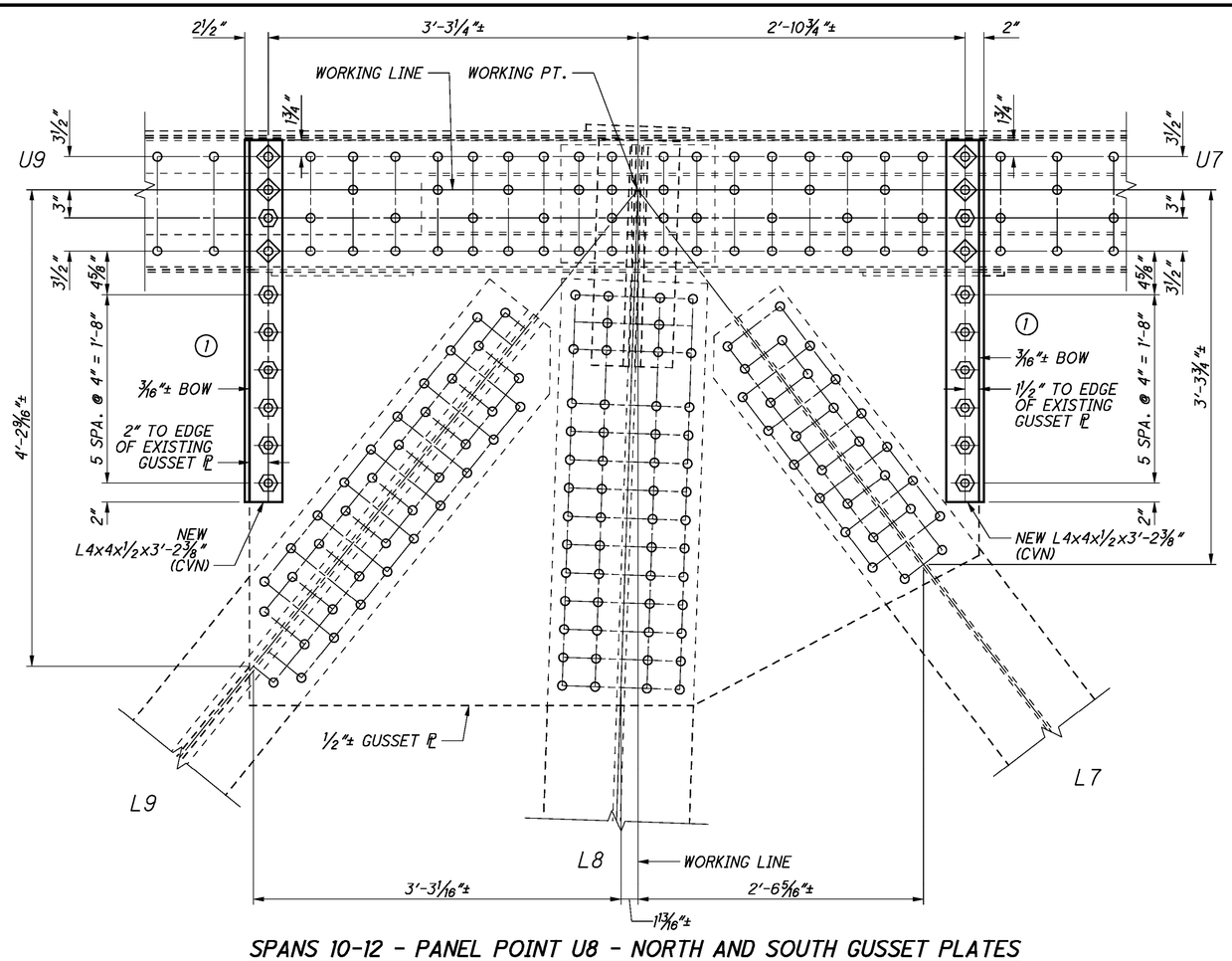


SPANS 10-12 - PANEL POINT U9 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U8 - NORTH AND SOUTH GUSSET PLATES
CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (54 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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76 / 156

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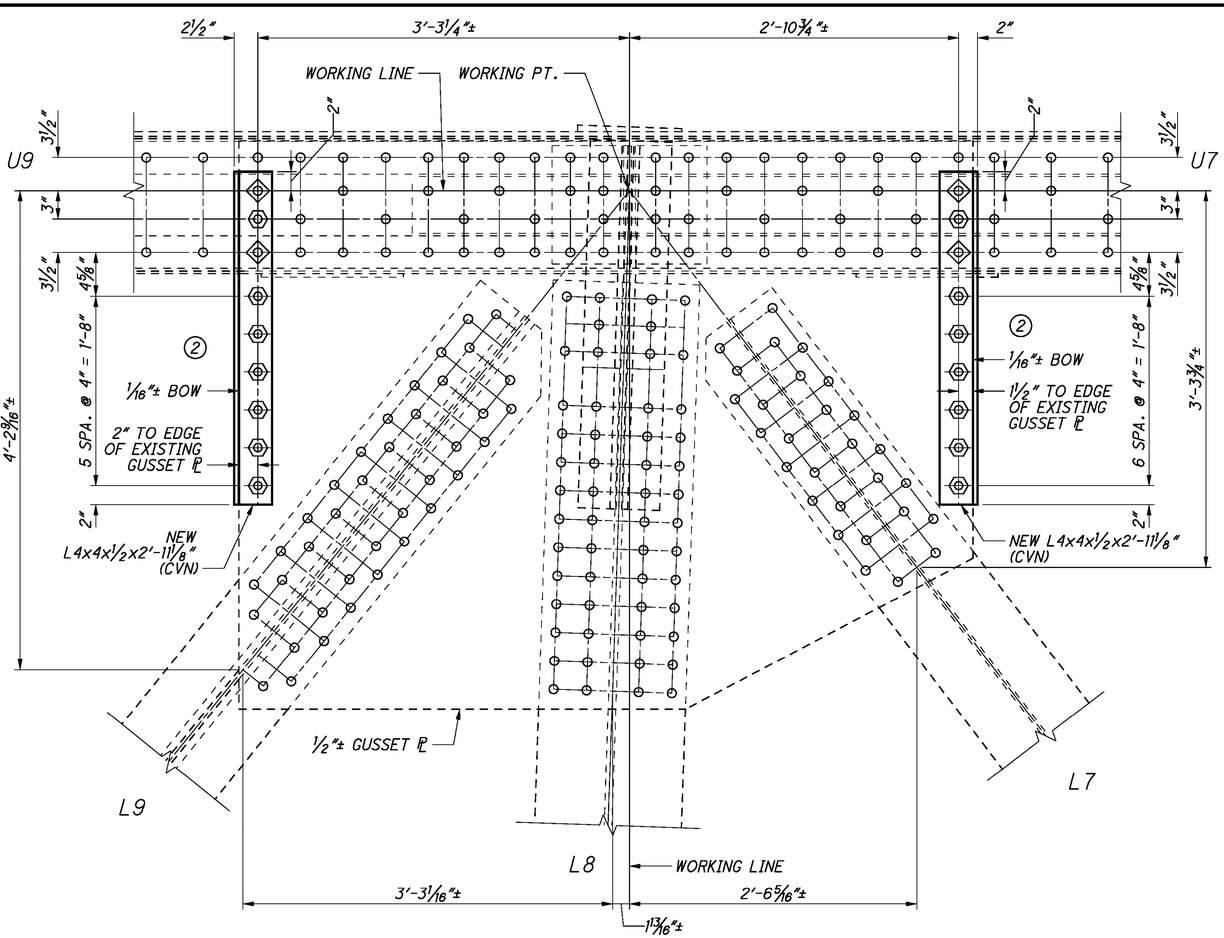
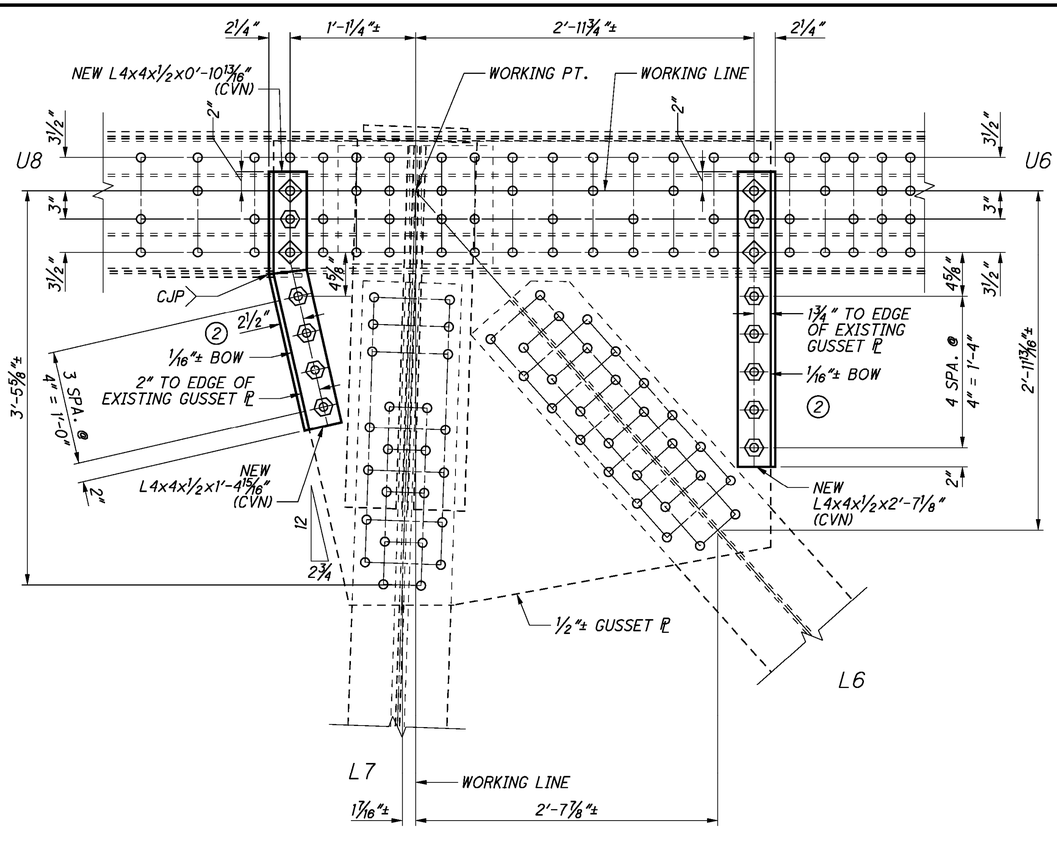


SPANS 10-12 - PANEL POINT U8 - NORTH AND SOUTH GUSSET PLATES
NORTH AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U7
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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GUSSET PLATE EDGE STIFFENING DETAILS (55 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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120 / 199

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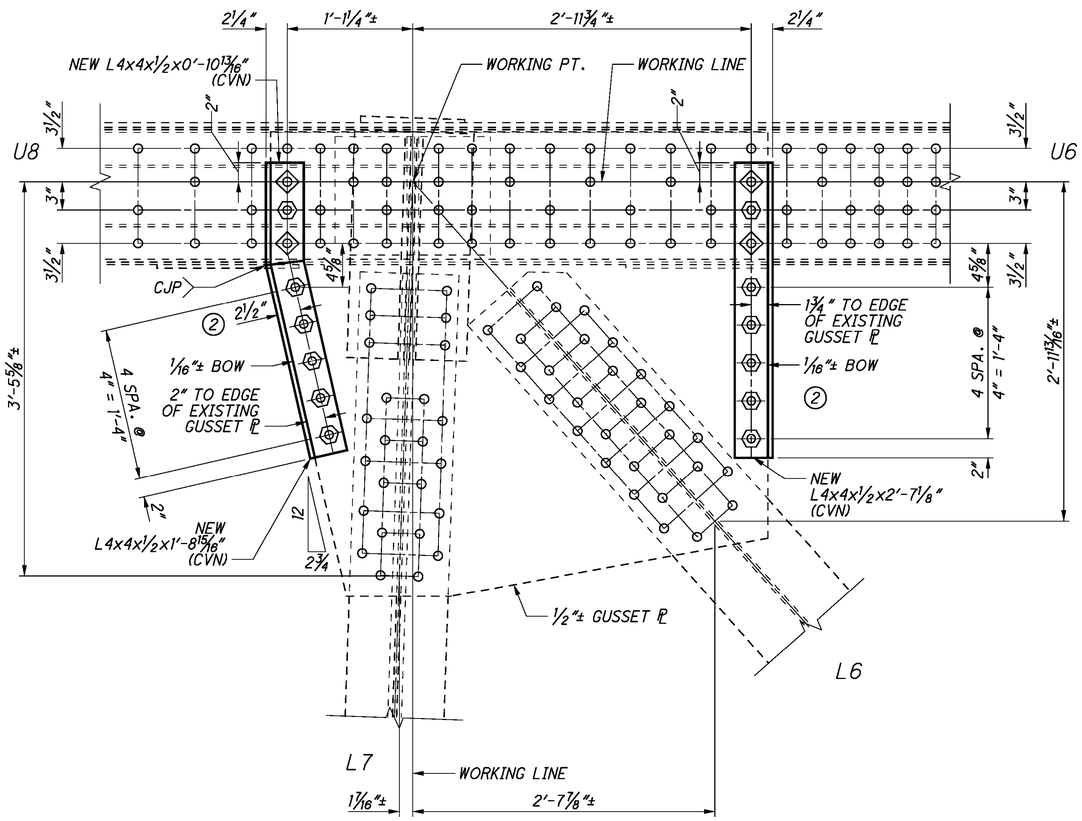
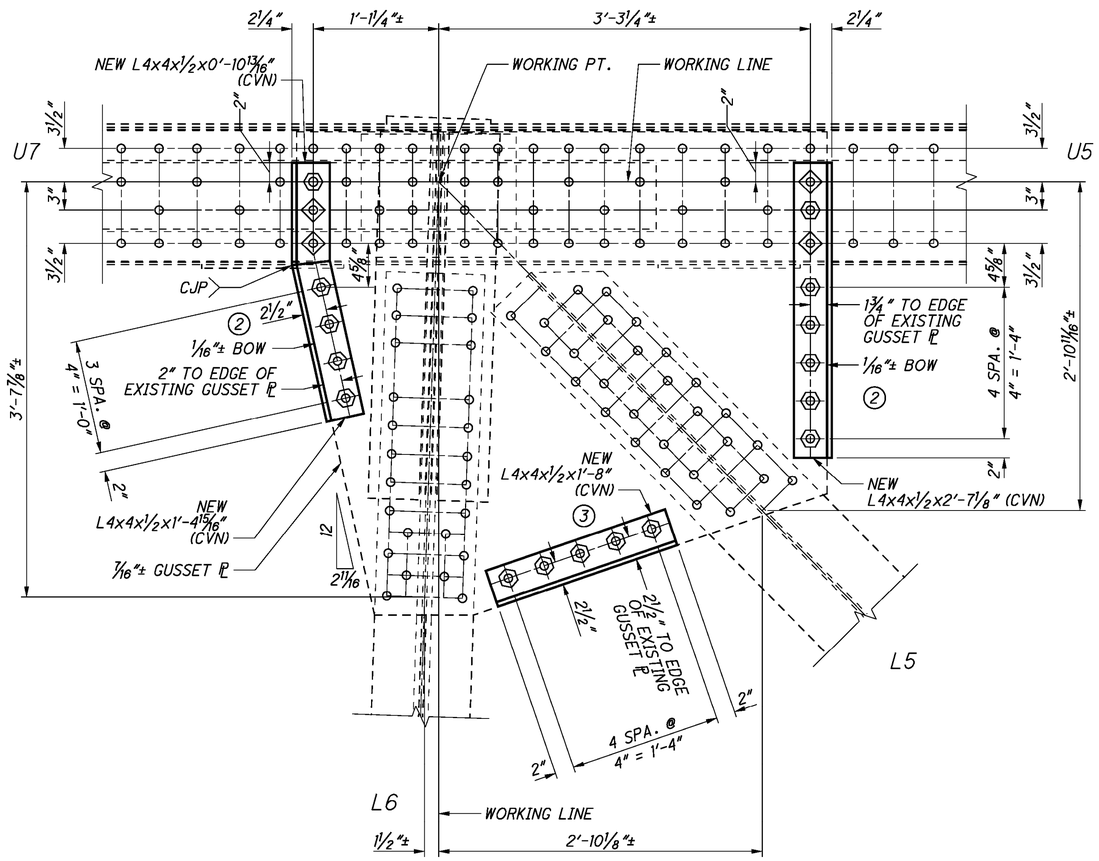


SPANS 10-12 - PANEL POINT U7
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U6
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 69 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (56 OF 123)

BRIDGE No. HAM-50-2180N
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HAM-50-2180N
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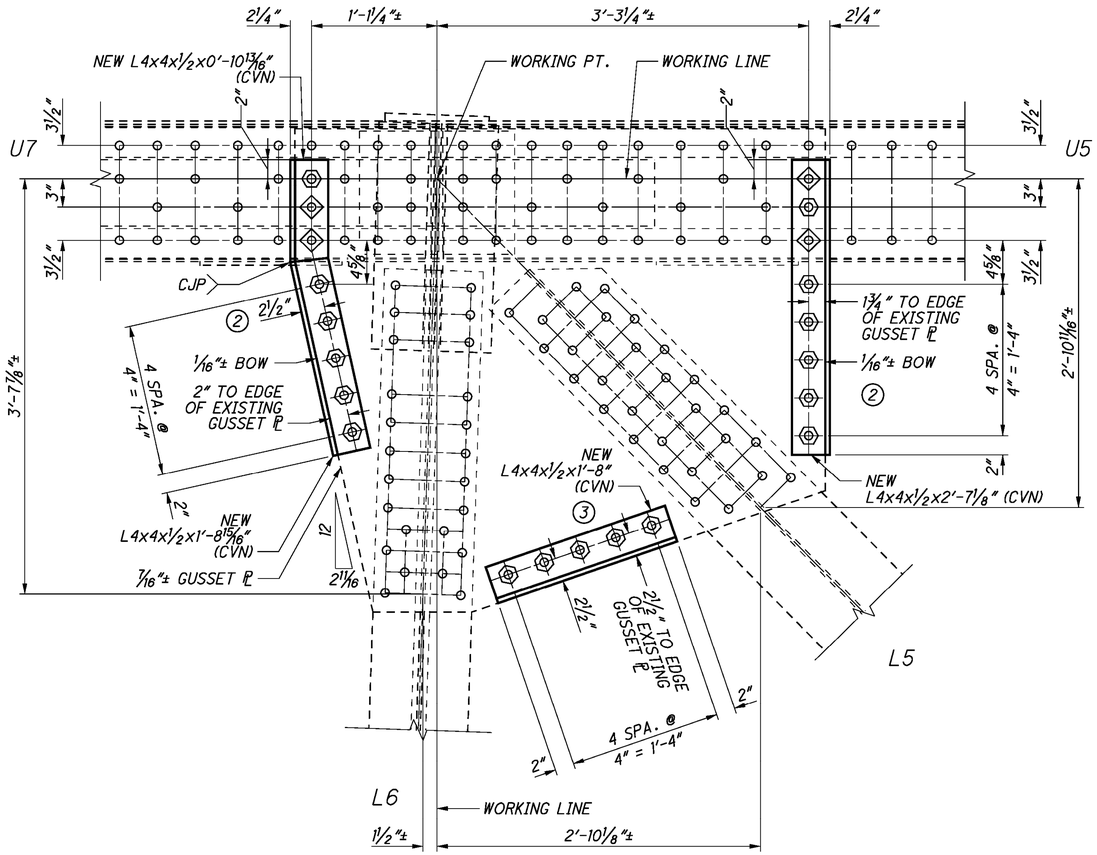
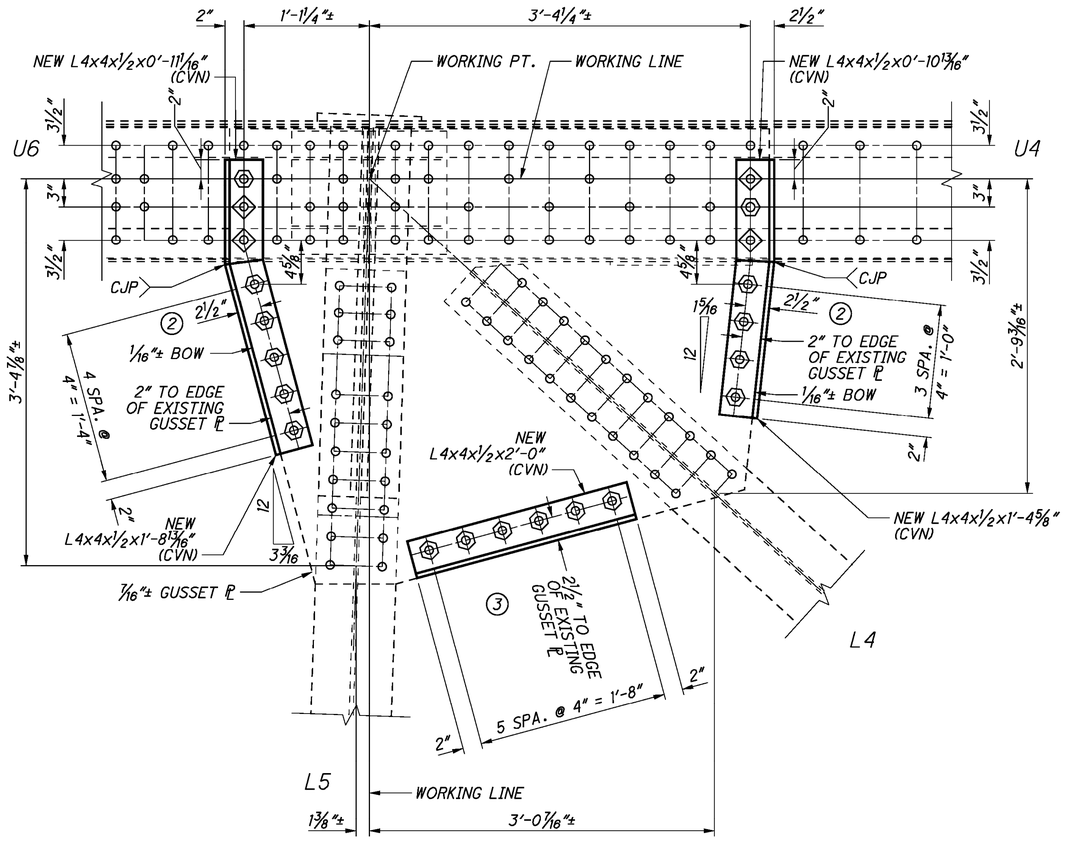


SPANS 10-12 - PANEL POINT U6
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U5 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (57 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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199

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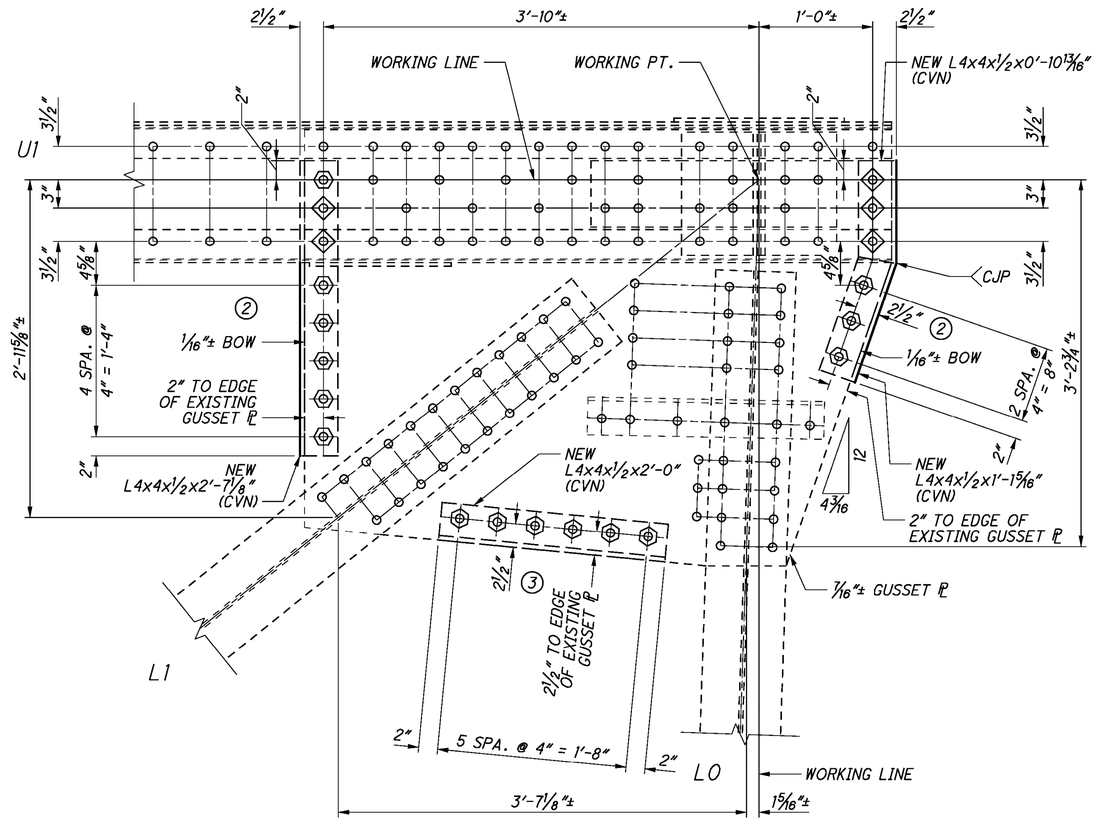

SPANS 10-12 - PANEL POINT U0
NORTH GUSSET PLATE - CENTER TRUSS
NORTH GUSSET PLATE - SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 69 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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GUSSET PLATE EDGE STIFFENING DETAILS (58 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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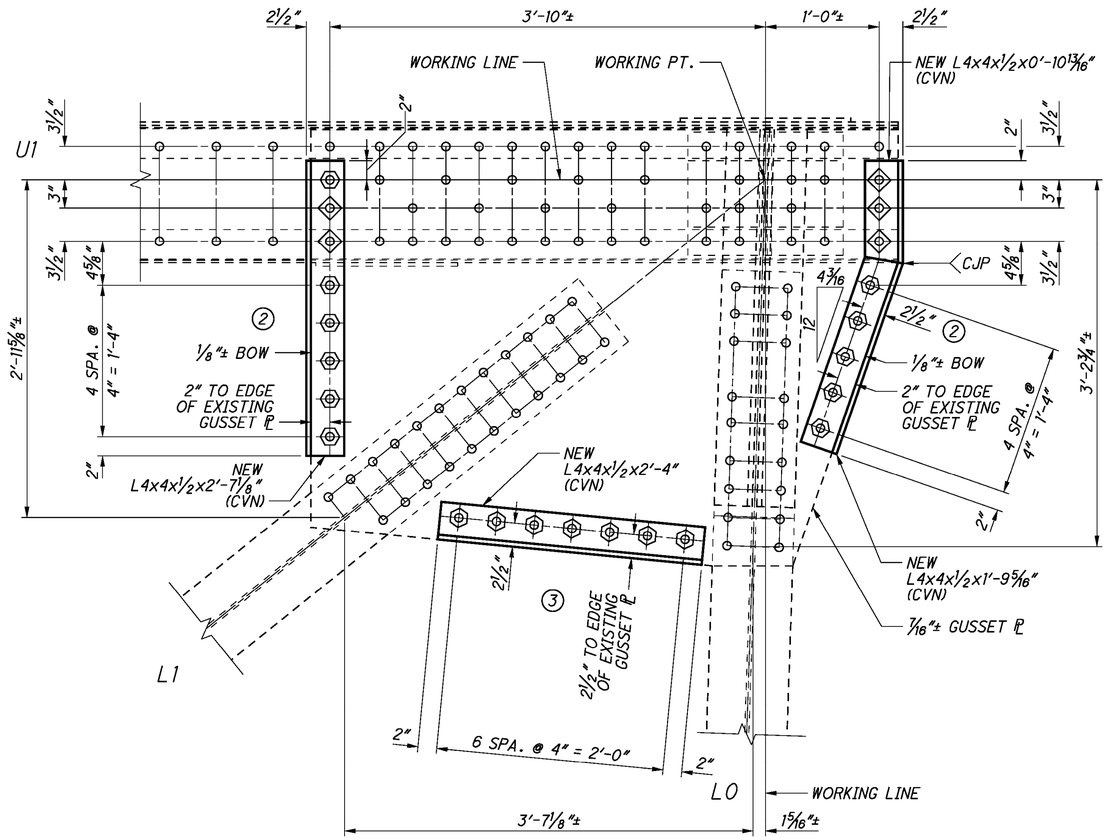
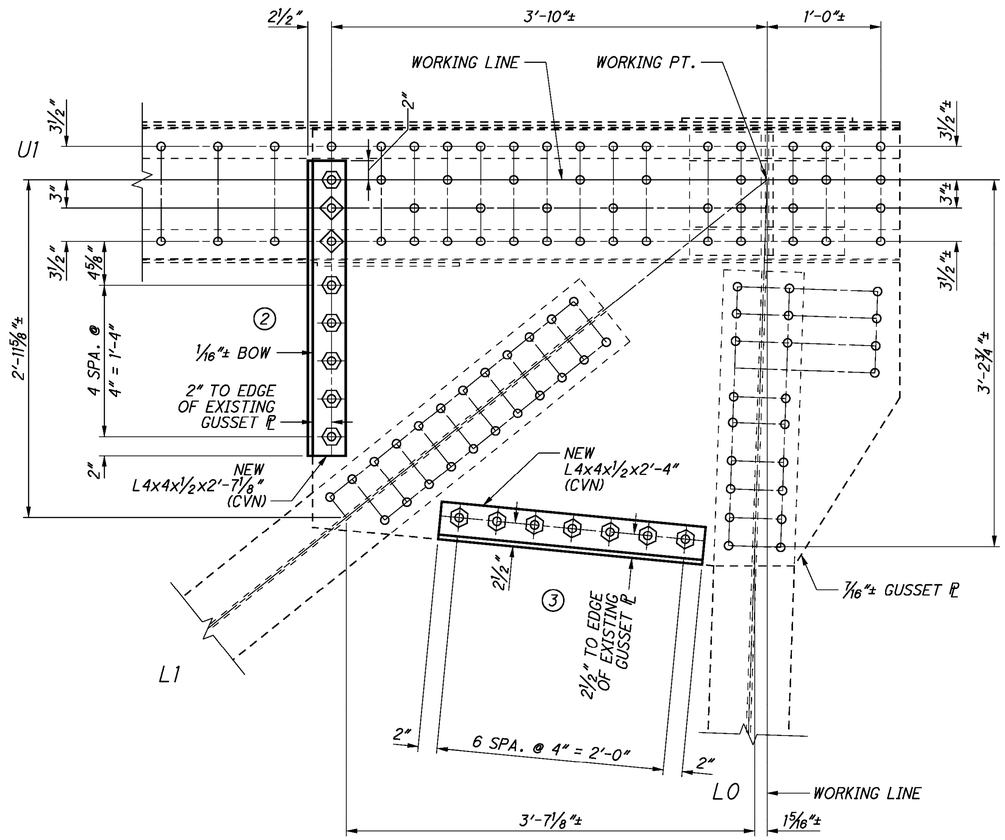


SPANS 10-12 - PANEL POINT U0
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT U0
SOUTH GUSSET PLATE - NORTH TRUSS
SOUTH GUSSET PLATE - CENTER TRUSS

LEGEND

Ⓧ - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 69 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

GUSSET PLATE EDGE STIFFENING DETAILS (59 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

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RJM	GJZ	PJA	10-05-16
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RSB		3103390	

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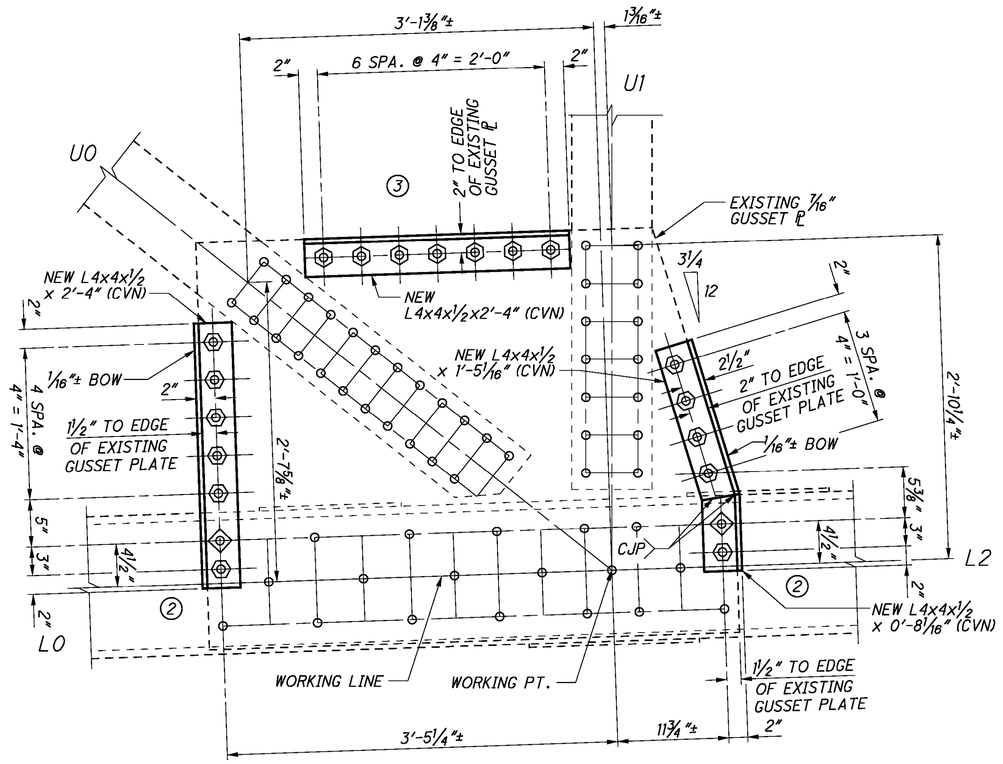
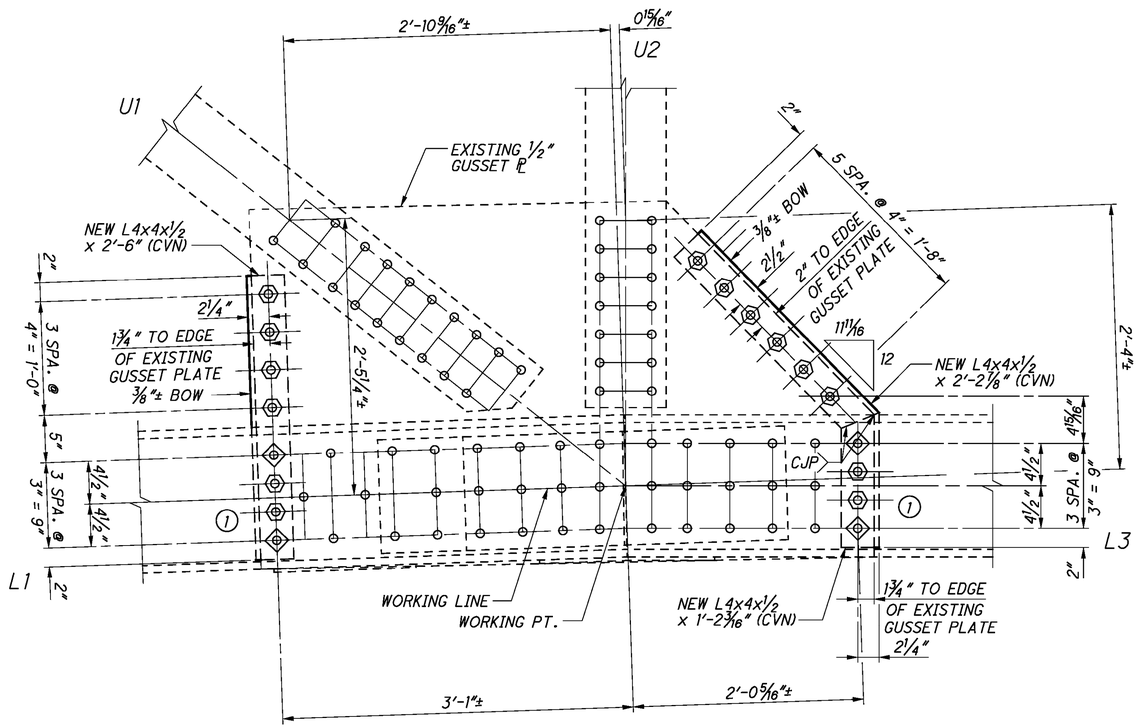


SPANS 5-7 - PANEL POINT L1 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L2 - NORTH GUSSET PLATE
NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. SOME CONNECTION ANGLES AND PLATES HAVE BEEN OMITTED FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY EACH NEW ANGLE LOCATION AND ENSURE NO CONFLICTS EXIST. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF ANY CONFLICTS EXIST.
3. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS: U = UPPER PANEL POINT
   L = LOWER PANEL POINT
4. CJP - COMPLETE JOINT PENETRATION WELD (ANGLES ONLY)
5. ALL NEW BOLTS SHALL BE 7/8" DIAMETER A490, TYPE 3 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE 15/16" DIAMETER. BOLT LENGTH REQUIREMENTS SHALL BE DETERMINED FROM ORIGINAL SHOP DRAWING AND FIELD VERIFICATION.
6. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
8. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING AND BOLTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1, TYPE 2, OR TYPE 3.
9. THE PAINT ZONE FOR THE GUSSET PLATE EDGE STIFFENING SHALL ENCOMPASSES THE FAYING SURFACE OF THE GUSSET PLATE AND LOWER CHORD, THE NEW STIFFENING ANGLES, LOCATIONS OF PACK RUST REMOVAL, AND ANY SURROUNDING AREAS DAMAGED BY THE INSTALLATION OF THE RETROFITS. ALL PAINTING IS TO BE INCLUDED FOR PAYMENT UNDER ITEM 514.
10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156.
11. FOR ADDITIONAL DETAILS REGARDING REPAIR TYPES SEE SHEET 22 / 156.

DESIGN AGENCY
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GUSSET PLATE EDGE STIFFENING DETAILS (60 OF 123)
BRIDGE No. HAM-50-2180N
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HAM-50-2180N
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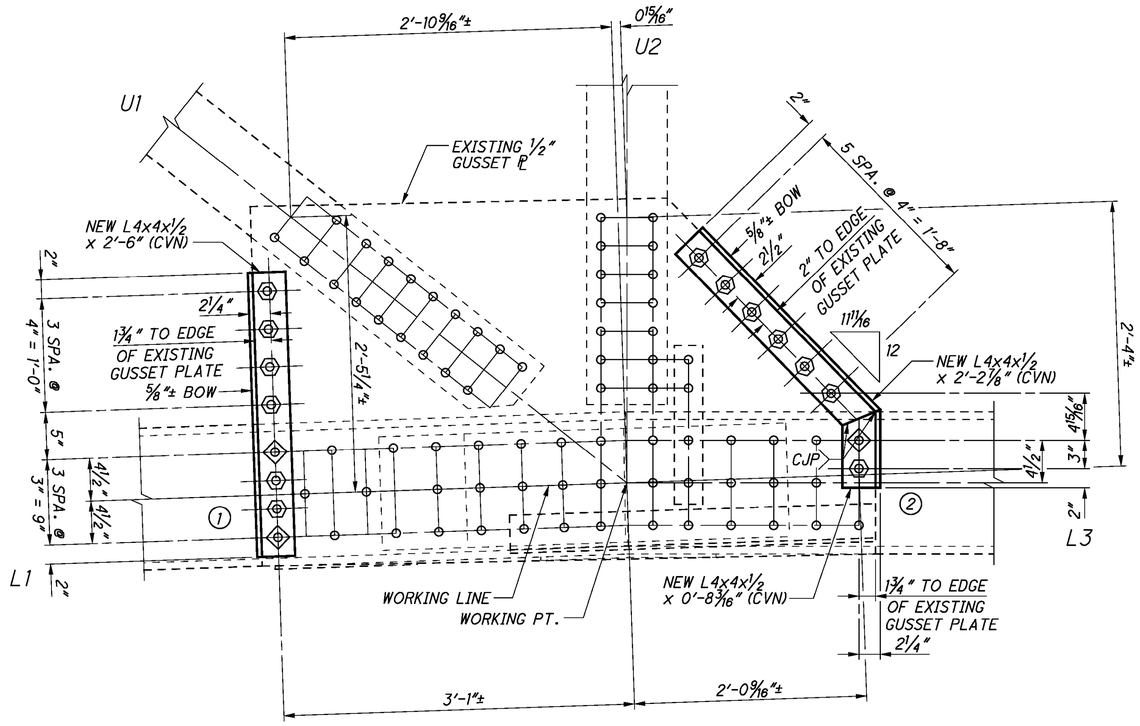
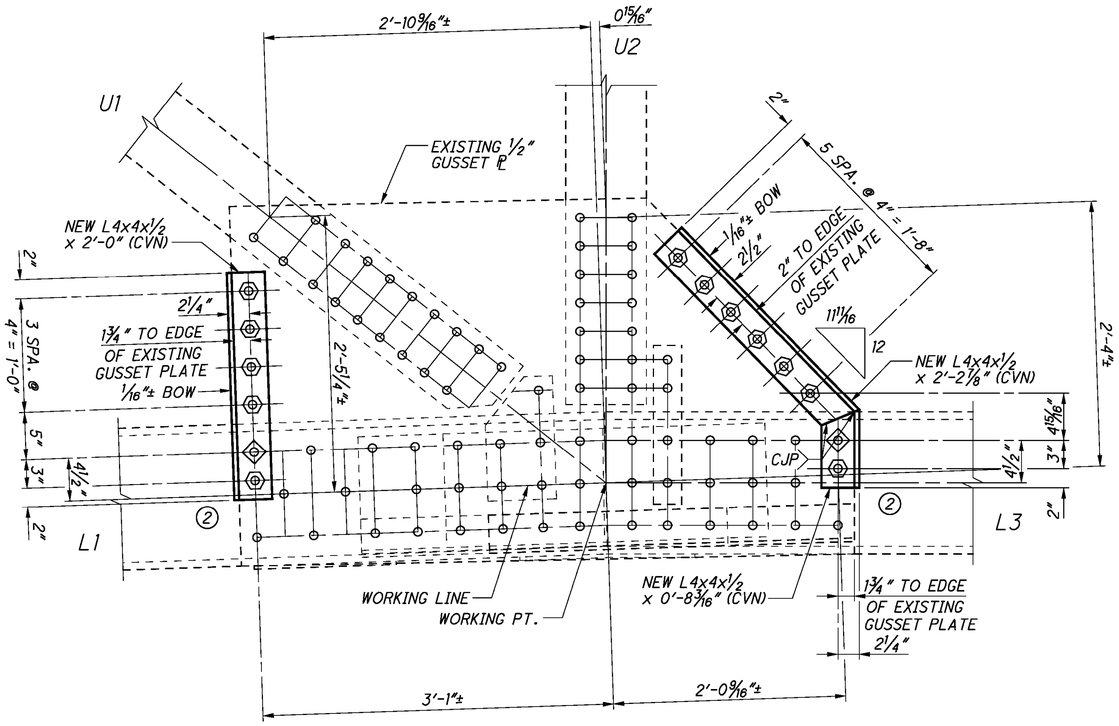


SPANS 5-7 - PANEL POINT L2 - SOUTH GUSSET PLATE
NORTH TRUSS



SPANS 5-7 - PANEL POINT L2 - NORTH AND SOUTH GUSSET PLATES
CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL SPANS 5-7 - PANEL POINT L2 GUSSET PLATE DETAILS, SEE SHEET 82 / 156 .
3. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (61 OF 123)

BRIDGE No. HAM-50-2180N
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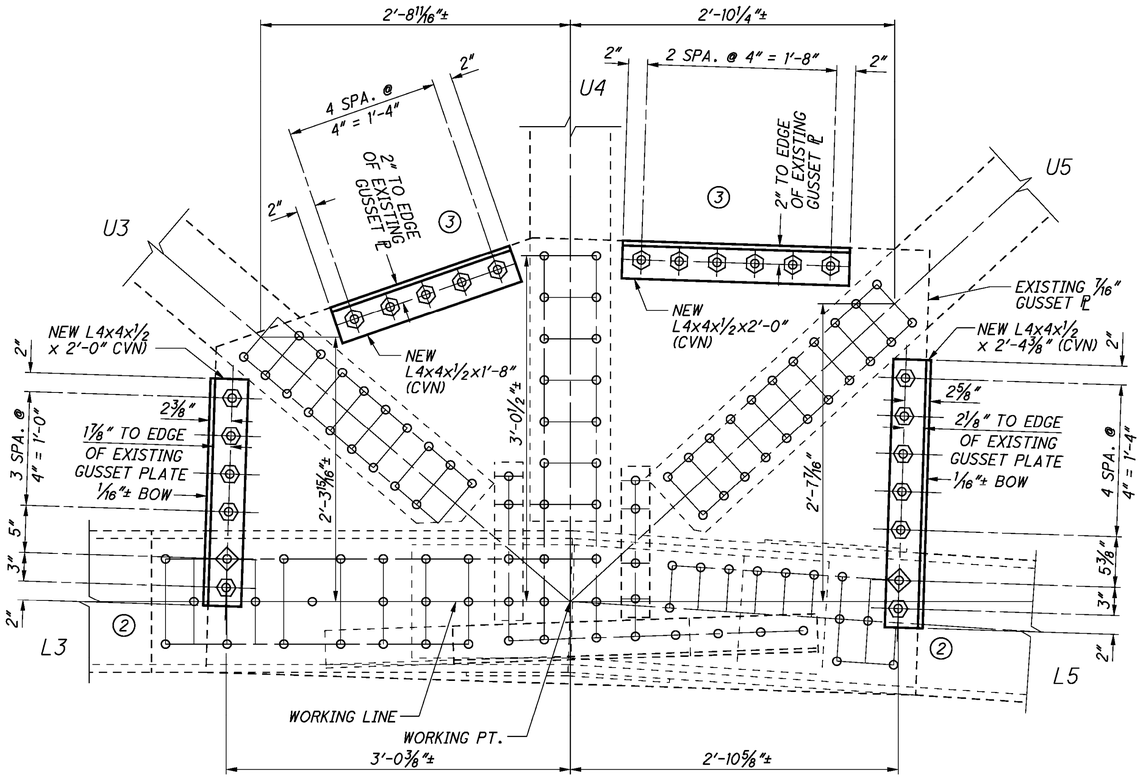
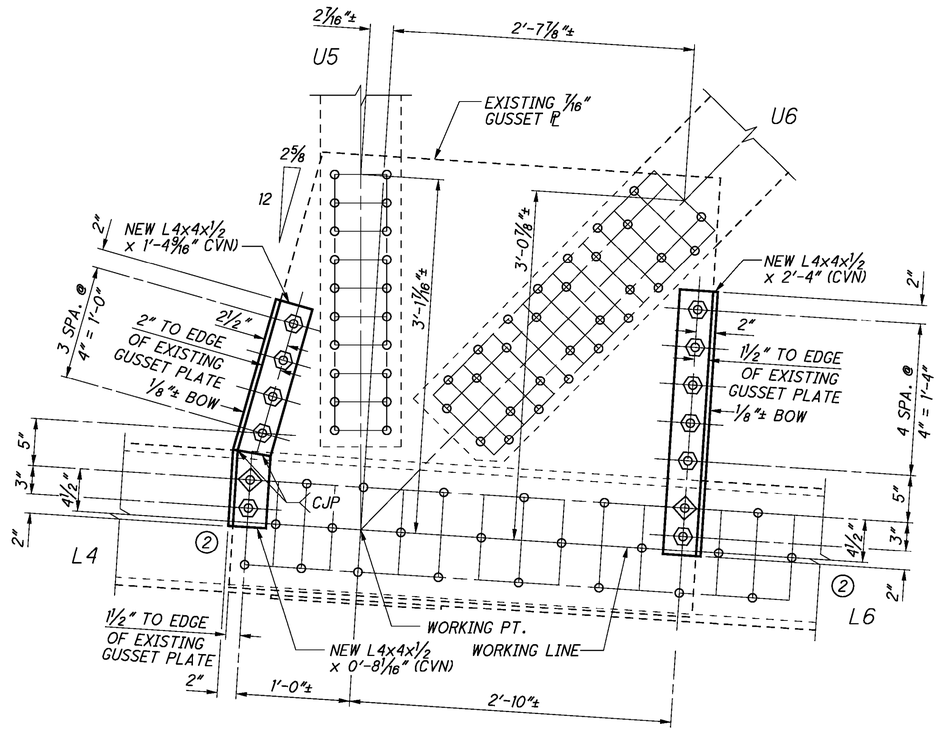


SPANS 5-7 - PANEL POINT L4 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L5- NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (62 OF 123)
BRIDGE No. HAM-50-2180N
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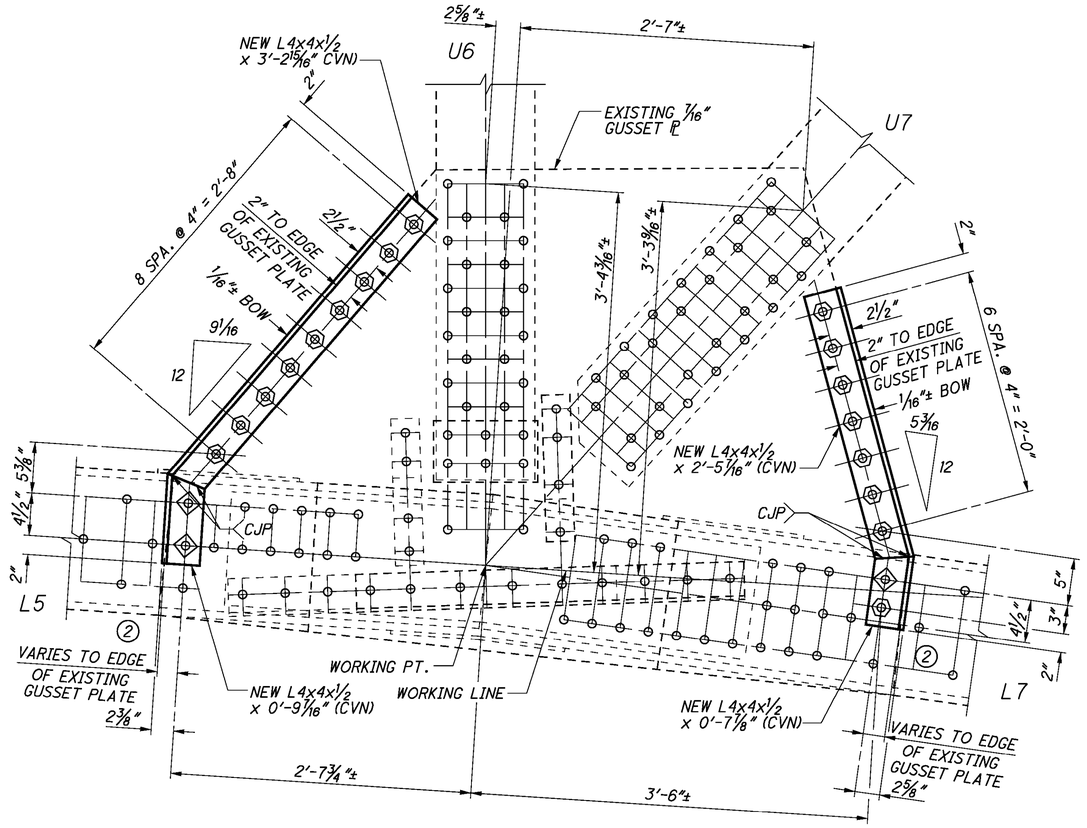
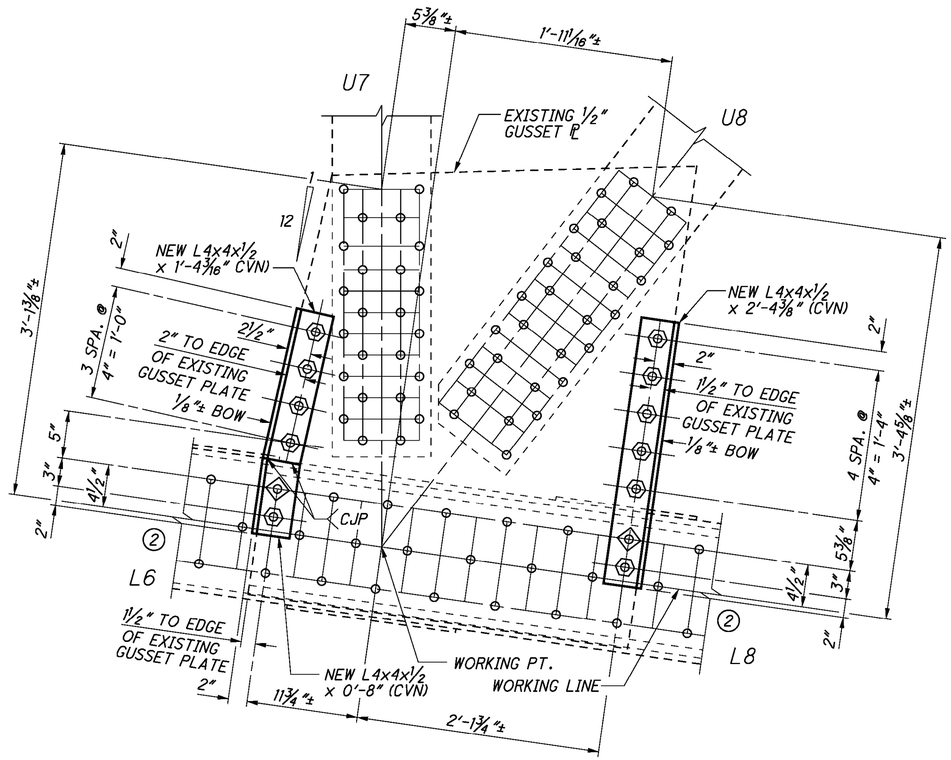


SPANS 5-7 - PANEL POINT L6 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L7 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7⁄8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (63 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

85 / 156

128 / 199

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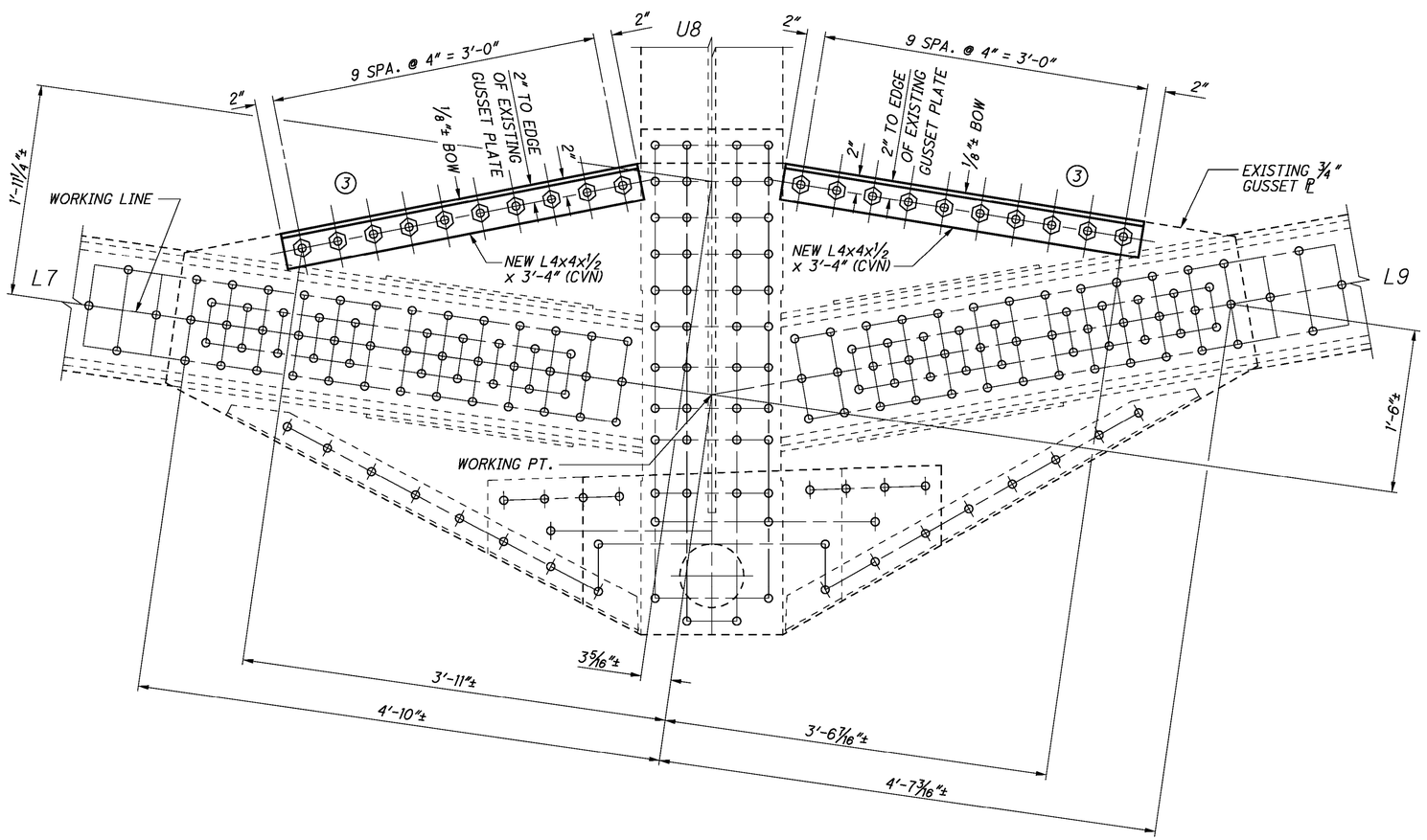

SPANS 5-7 - PANEL POINT L8 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (64 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

86 / 156
129 / 199

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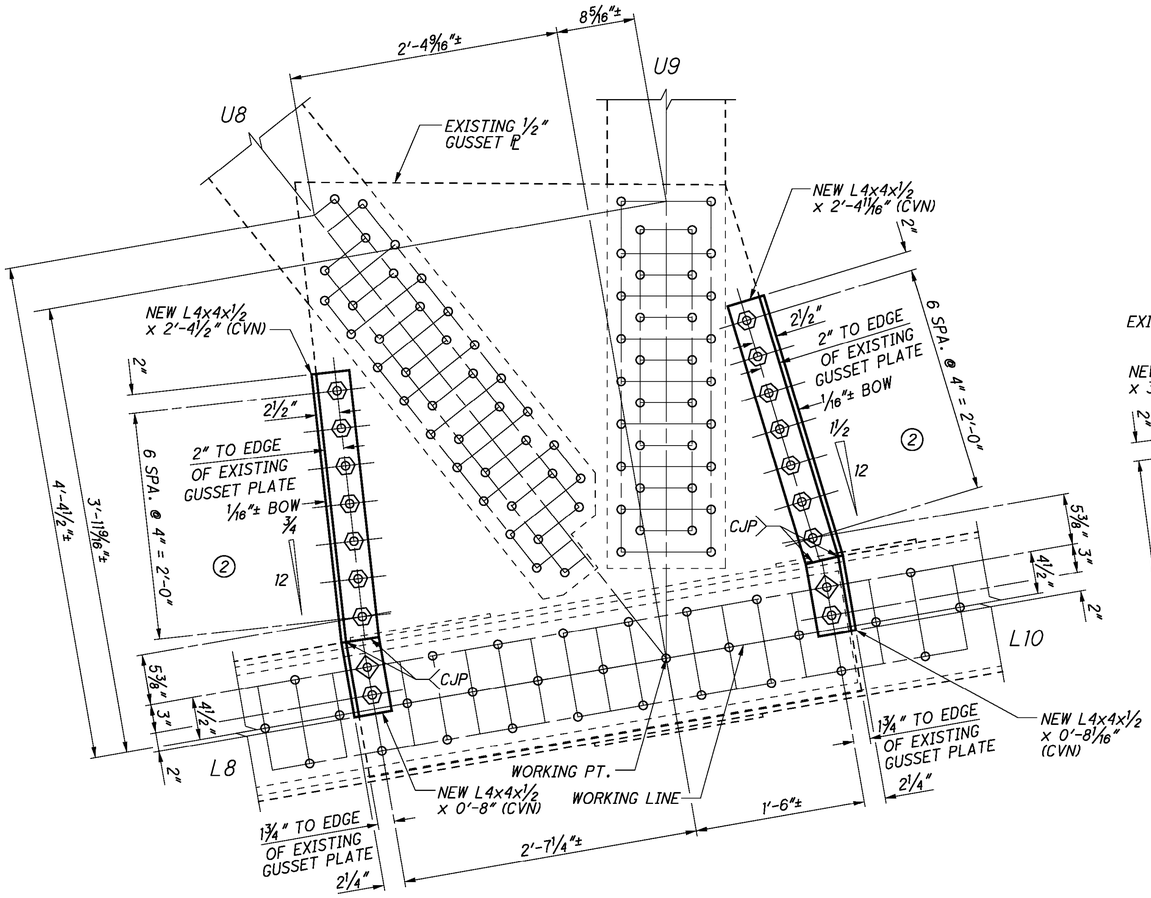
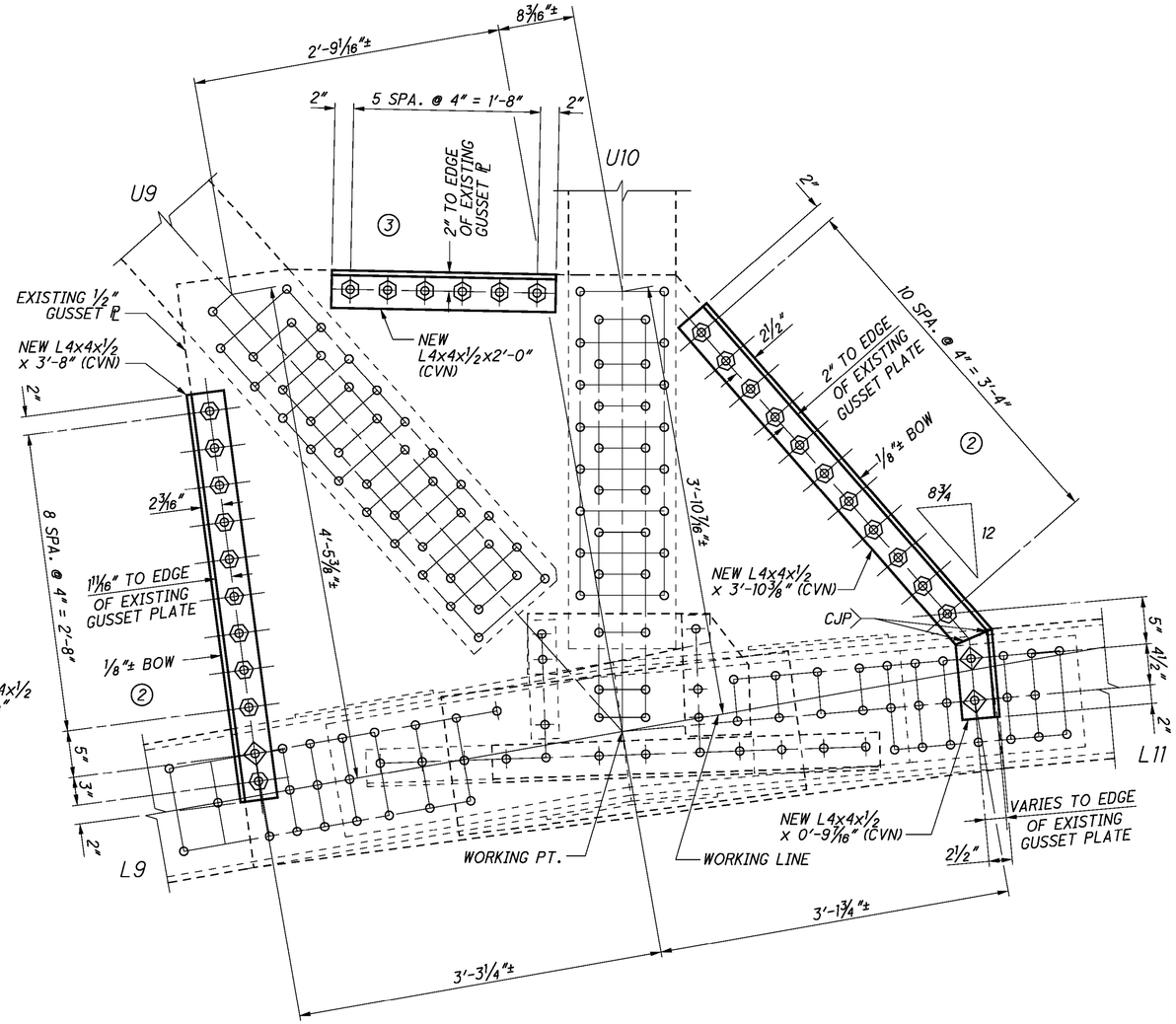


SPANS 5-7 - PANEL POINT L9 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L10 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (65 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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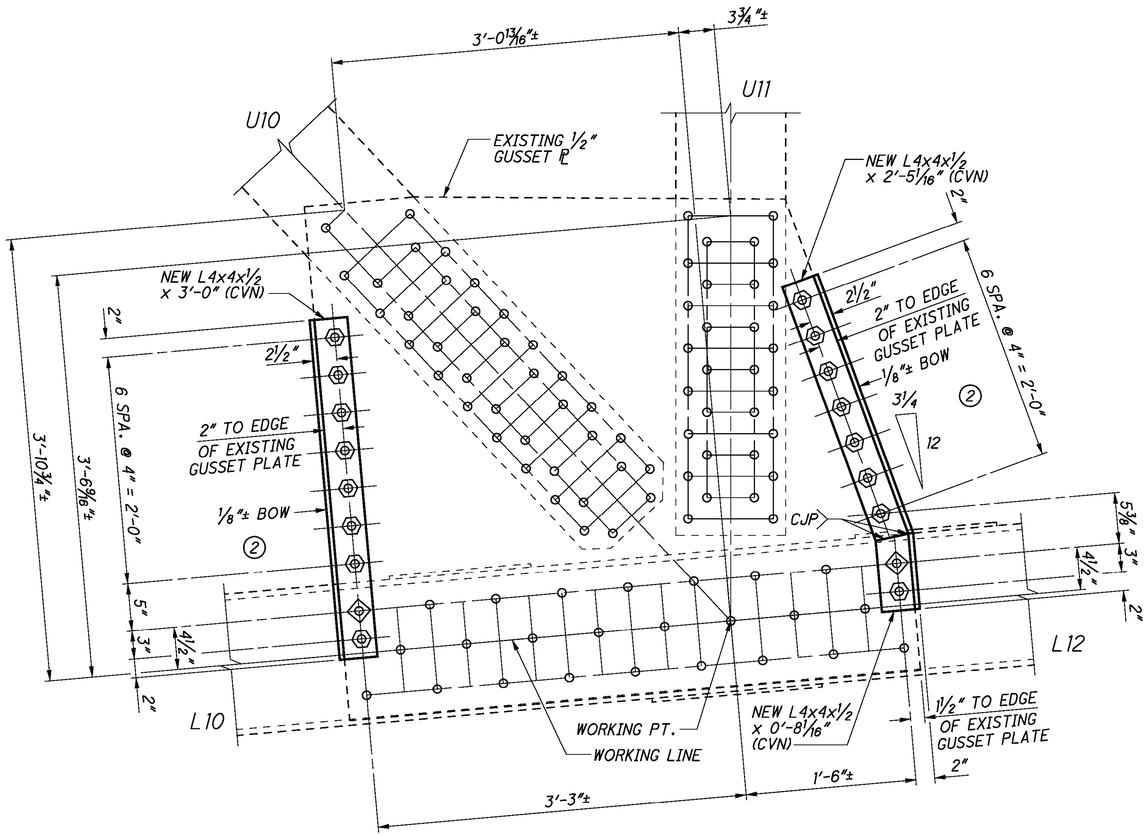
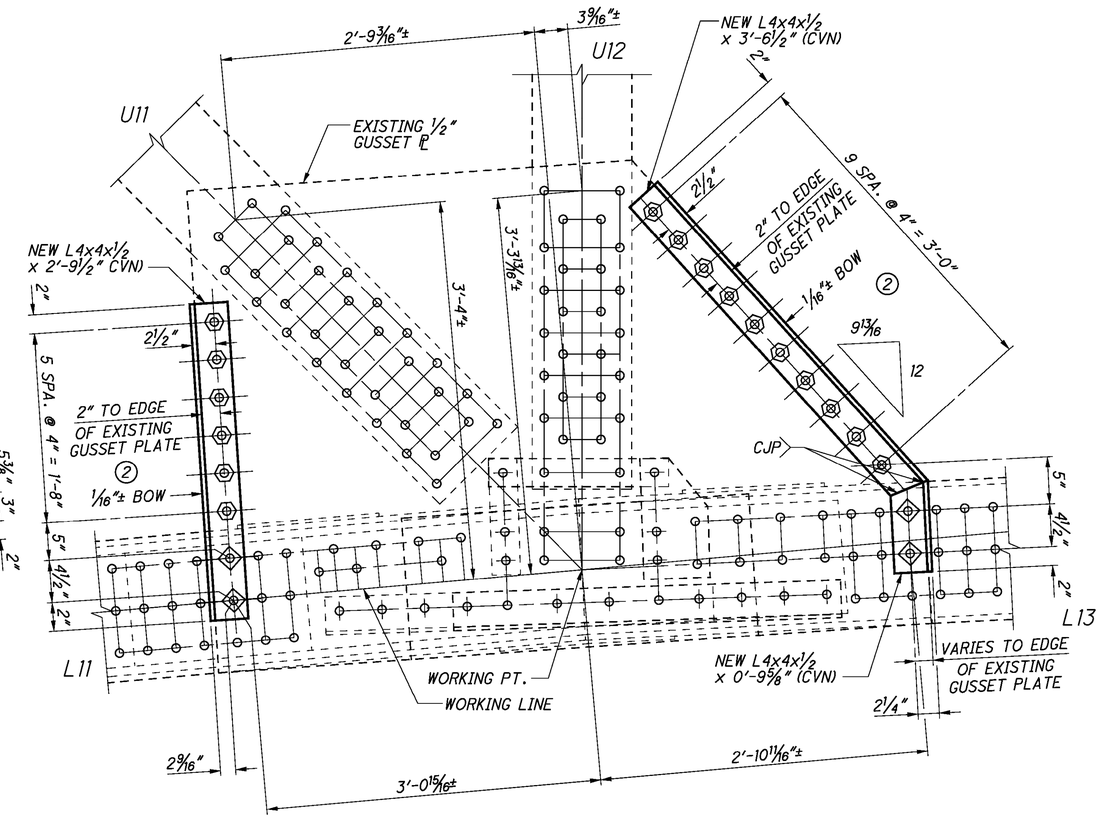


SPANS 5-7 - PANEL POINT L11 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L12 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 82 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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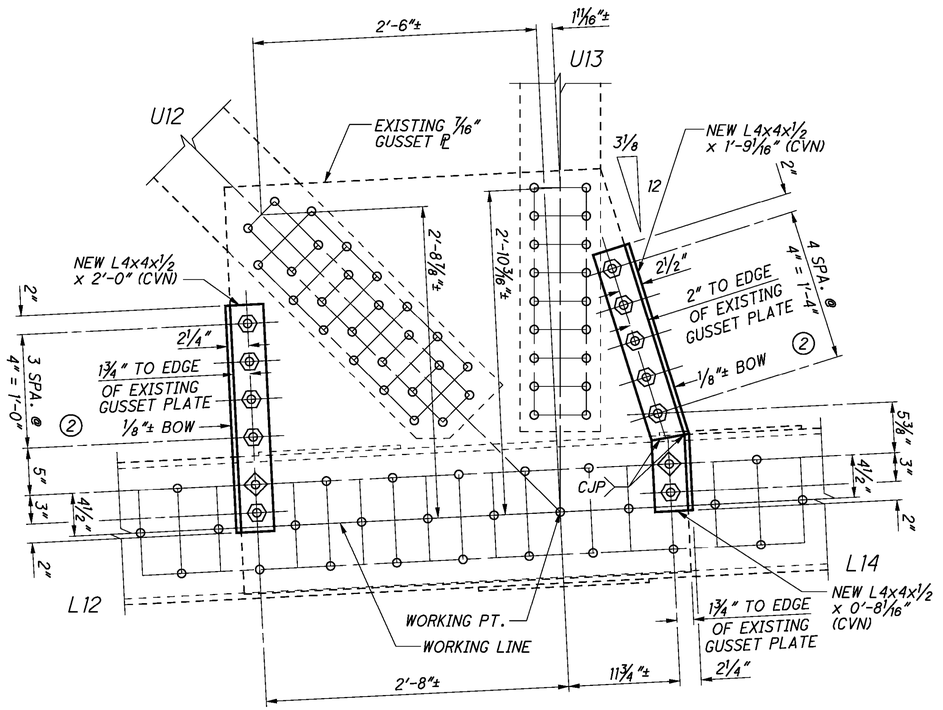
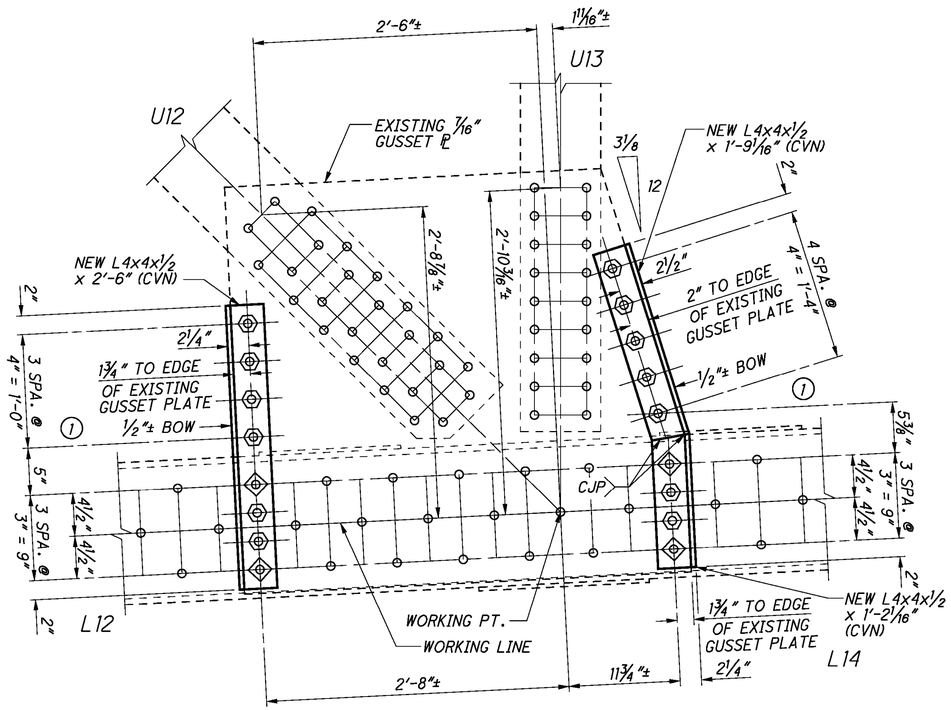


SPANS 5-7 - PANEL POINT L13
NORTH GUSSET PLATE - NORTH, CENTER, AND SOUTH TRUSS
SOUTH GUSSET PLATE - CENTER TRUSS AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L13 - SOUTH GUSSET PLATE
NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (67 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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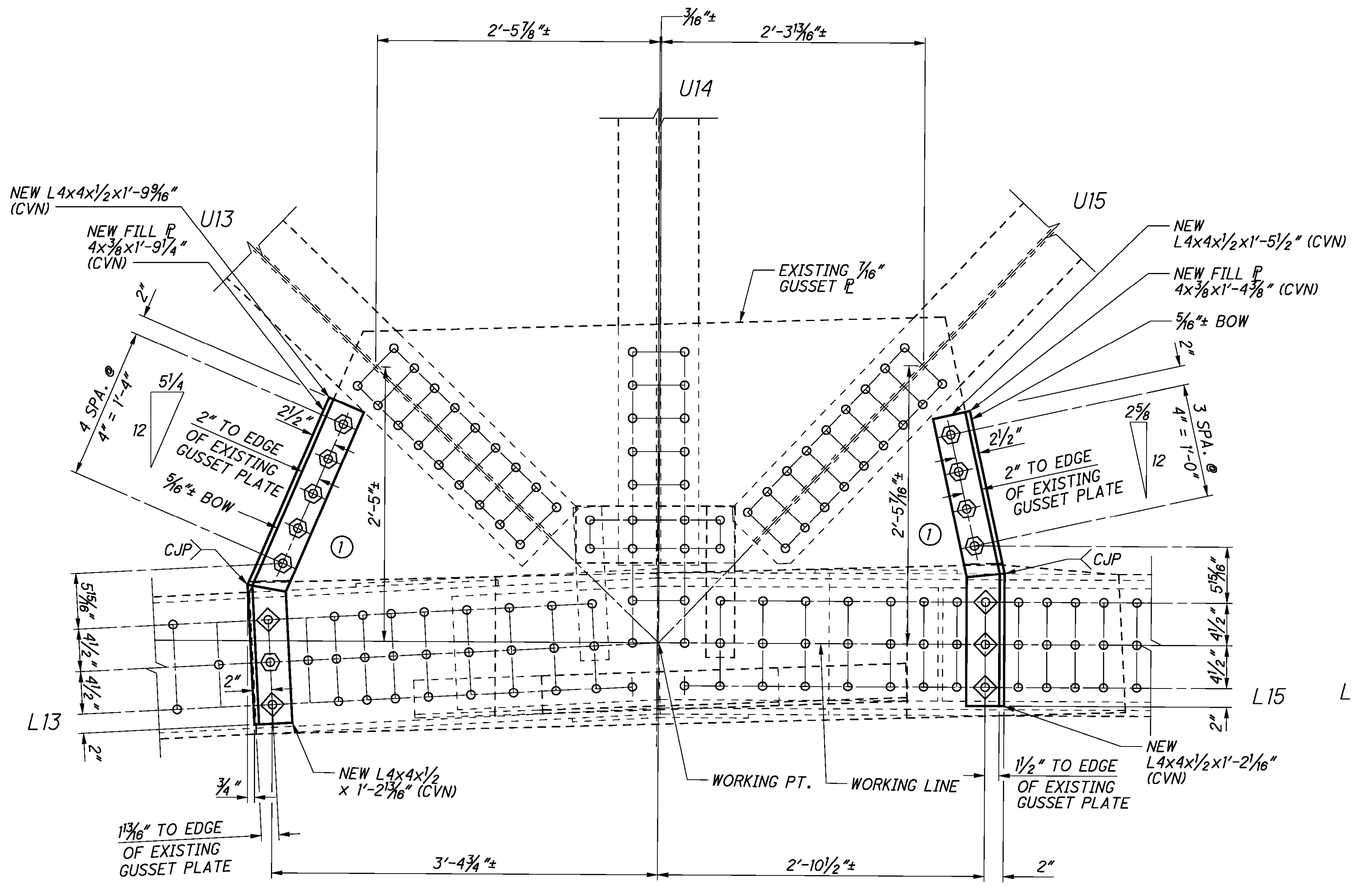
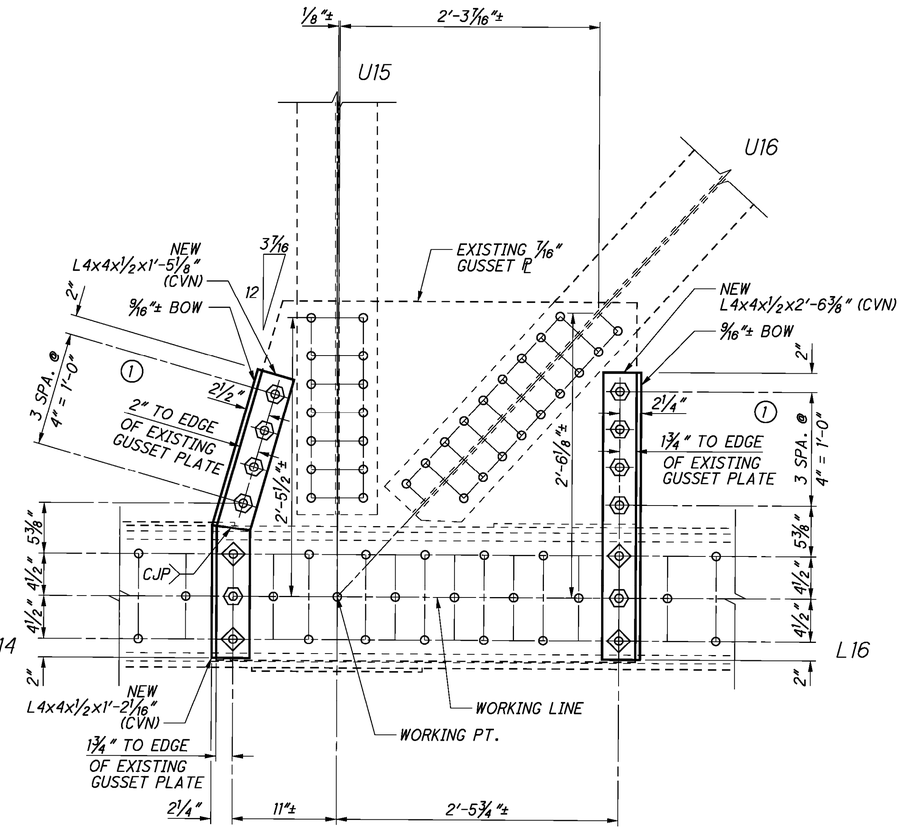


SPANS 5-7 - PANEL POINT L14 - SOUTH GUSSET PLATE
NORTH AND SOUTH TRUSS



SPANS 5-7 - PANEL POINT L15 - NORTH AND SOUTH GUSSET PLATES
NORTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED RJM | DRAWN GJZ | CHECKED PJP | REVIEWED PJA | DATE 10-05-16 | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (68 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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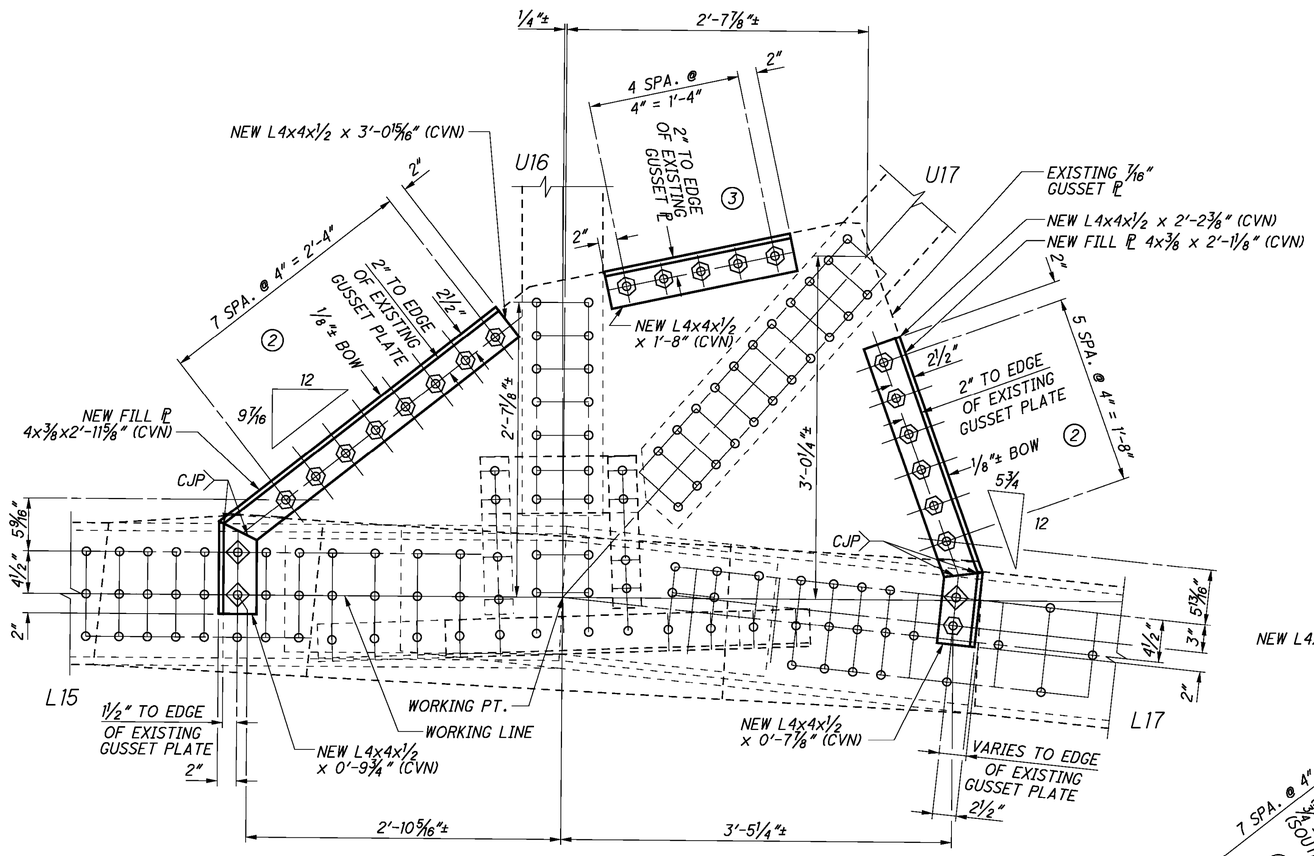
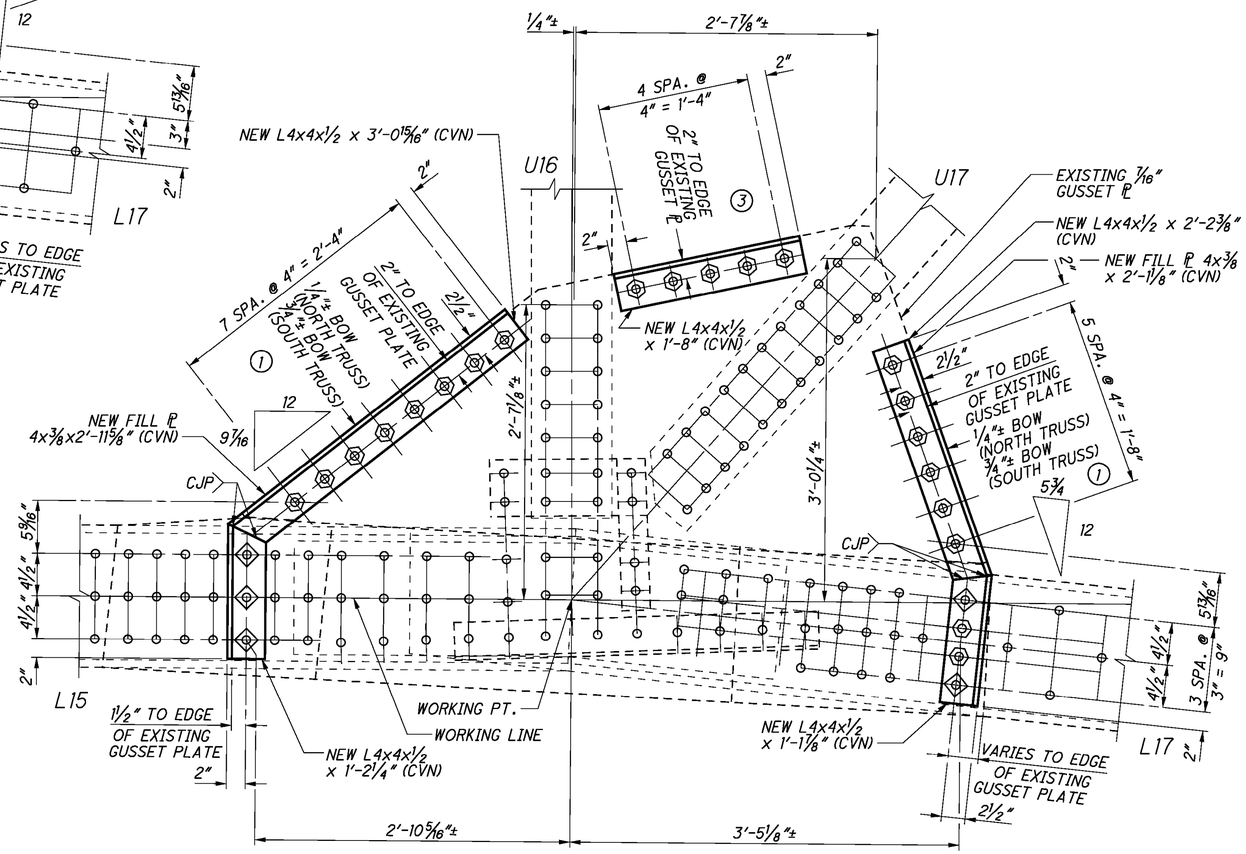


SPANS 5-7 - PANEL POINT L16
NORTH GUSSET PLATE - NORTH, CENTER, AND SOUTH TRUSS
SOUTH GUSSET PLATE - CENTER TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L16 - SOUTH GUSSET PLATE
NORTH TRUSS AND SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (69 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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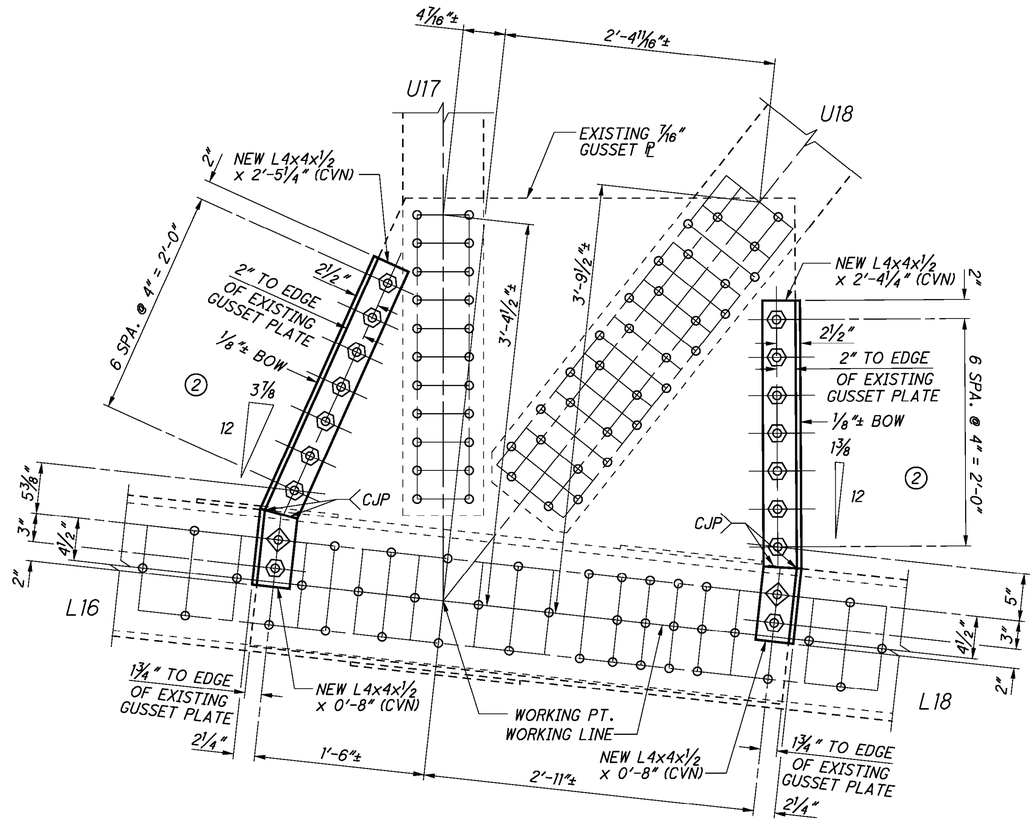
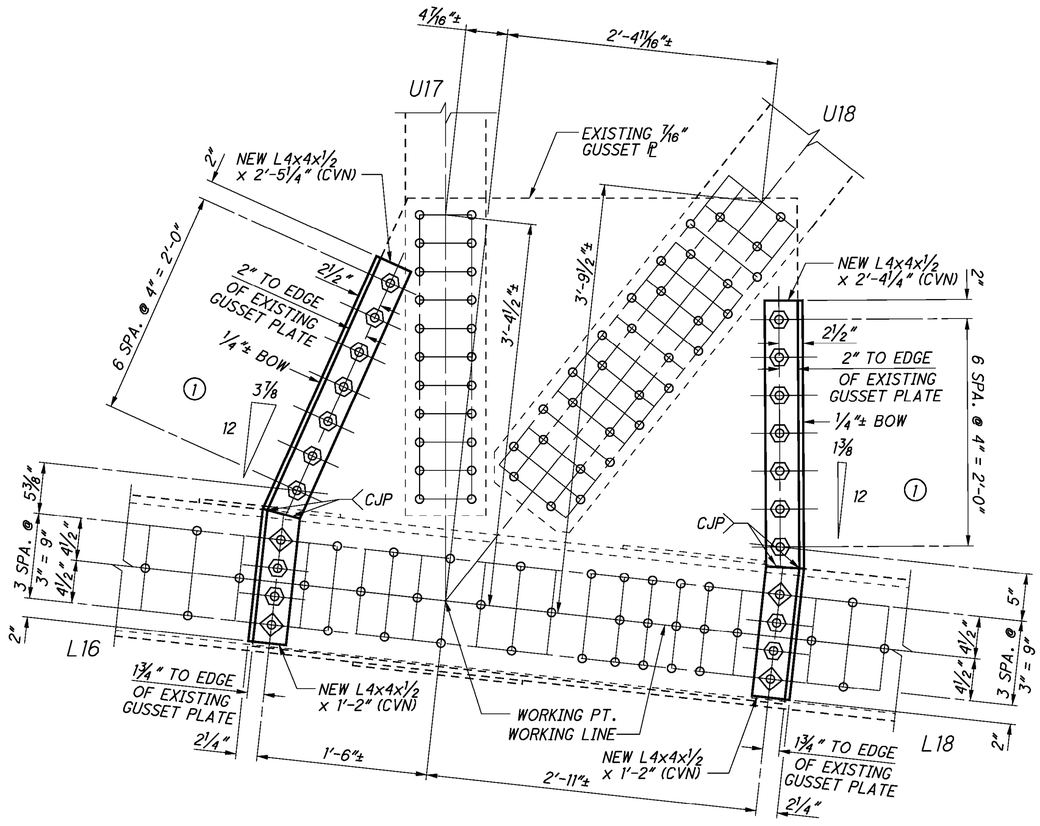


SPANS 5-7 - PANEL POINT L17
NORTH GUSSET PLATE - NORTH, CENTER, AND SOUTH TRUSS
SOUTH GUSSET PLATE - CENTER TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L17 - SOUTH GUSSET PLATE
NORTH TRUSS AND SOUTH TRUSS

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 82 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (70 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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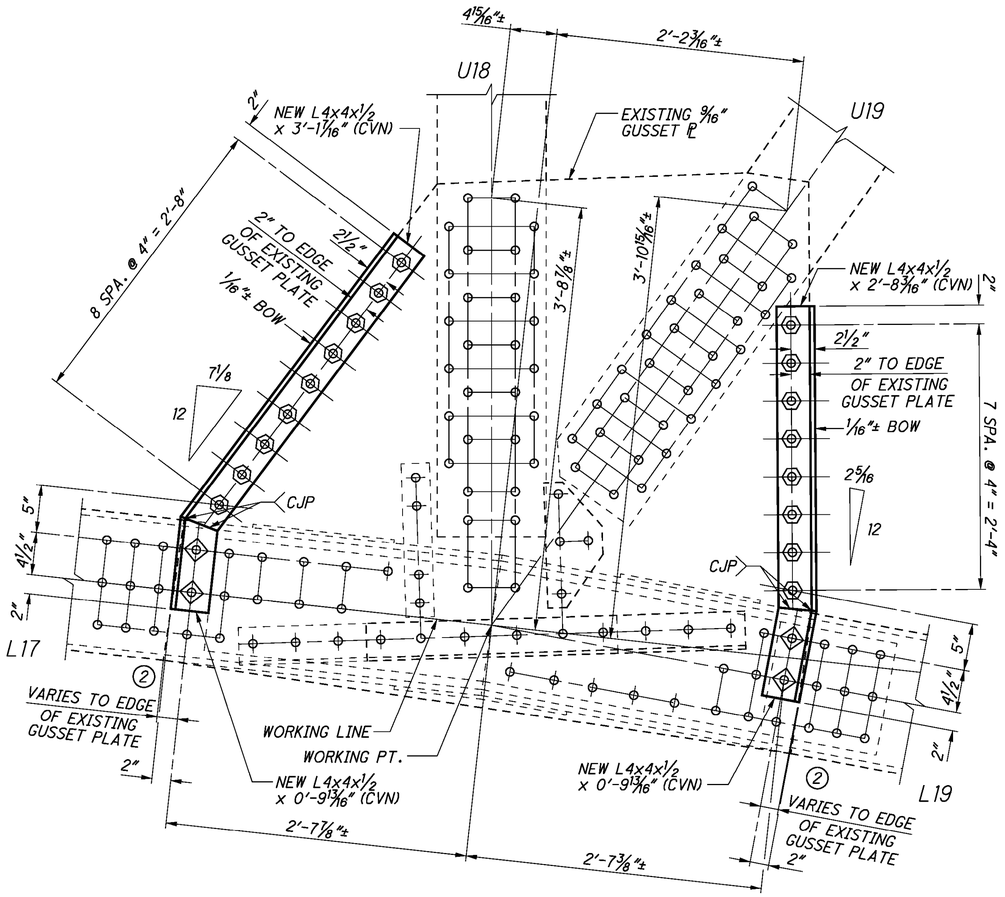
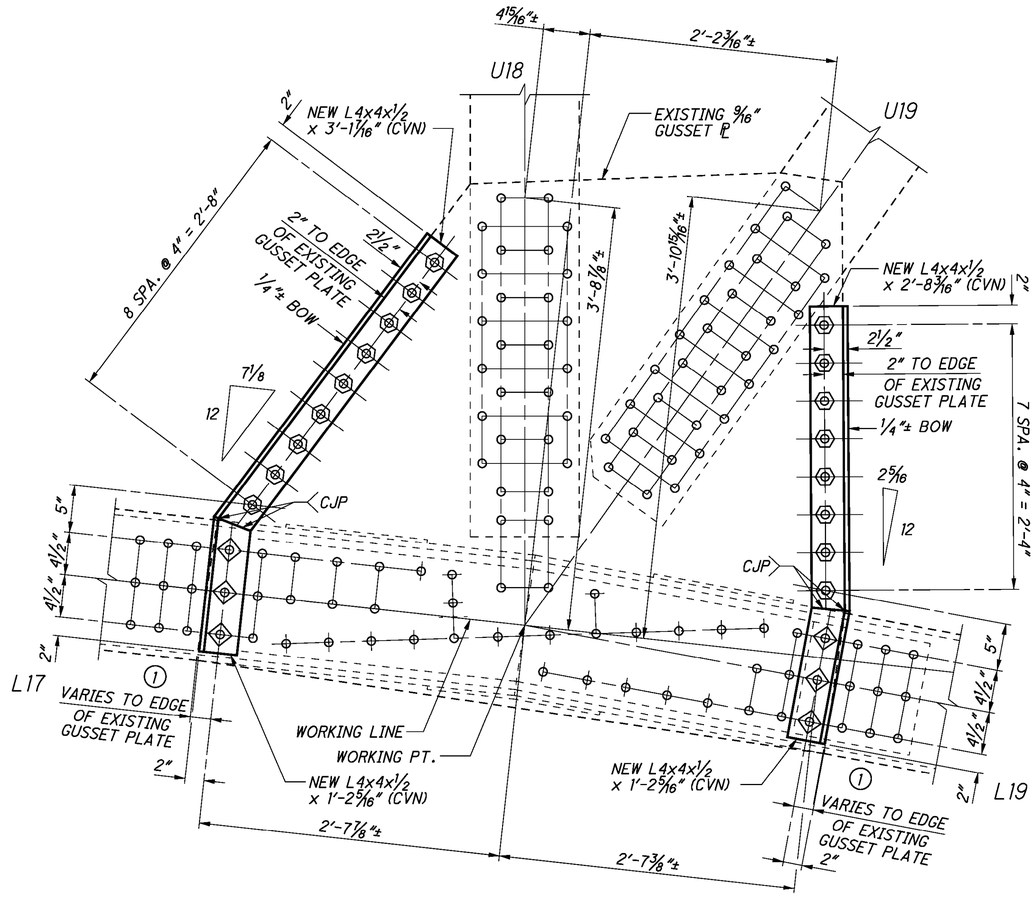


SPANS 5-7 - PANEL POINT L18
NORTH GUSSET PLATE - NORTH, CENTER, AND SOUTH TRUSS
SOUTH GUSSET PLATE - NORTH TRUSS AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L18 - SOUTH GUSSET PLATE
SOUTH TRUSS

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 82 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (71 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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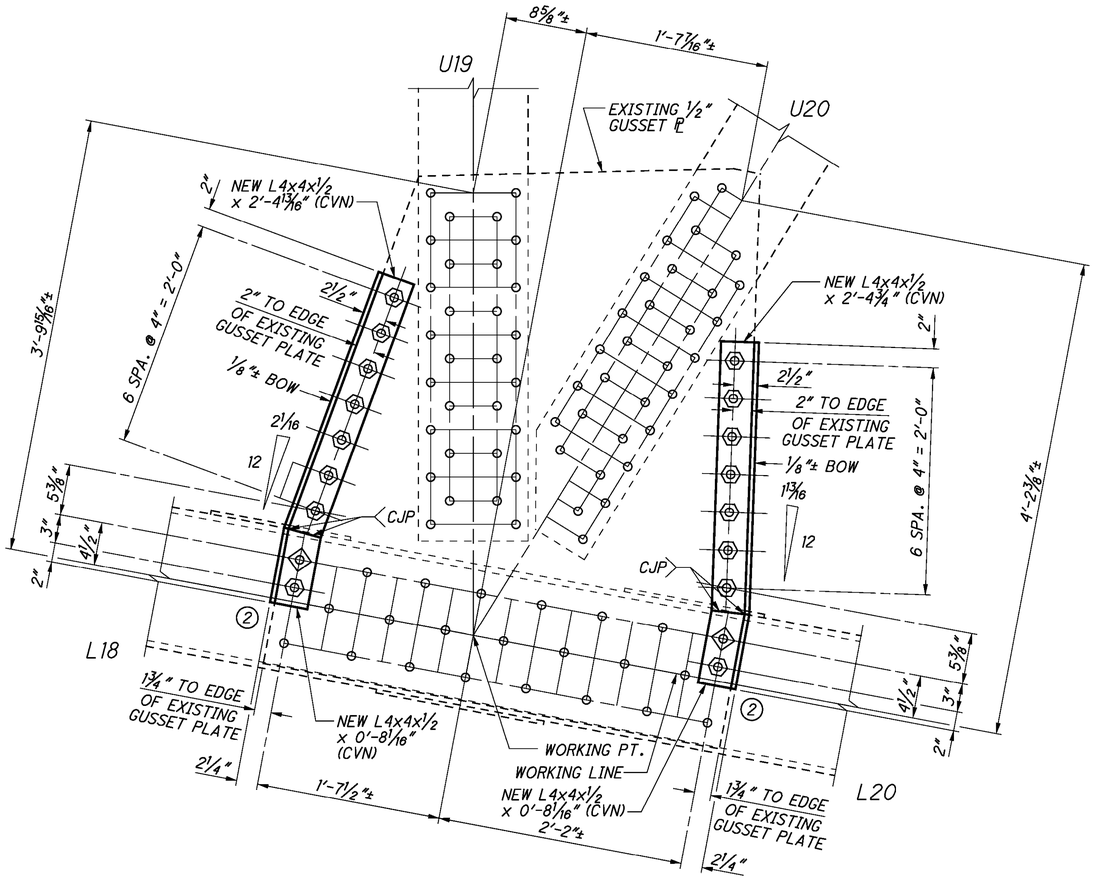
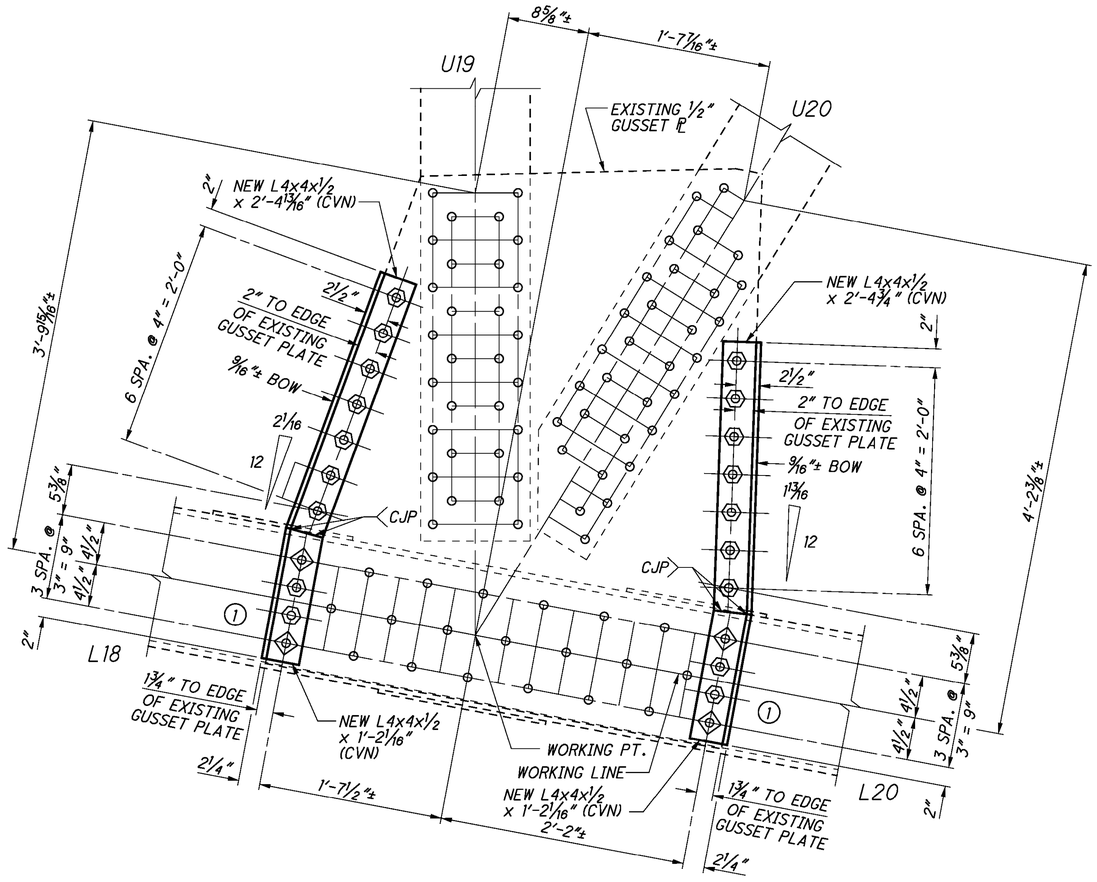


SPANS 5-7 - PANEL POINT L19
NORTH GUSSET PLATE - NORTH, CENTER, AND SOUTH TRUSS
SOUTH GUSSET PLATE - NORTH TRUSS AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 5-7 - PANEL POINT L19 - SOUTH GUSSET PLATE
SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 82 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
R.JM	J.L.V	P.J.A	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.P		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (72 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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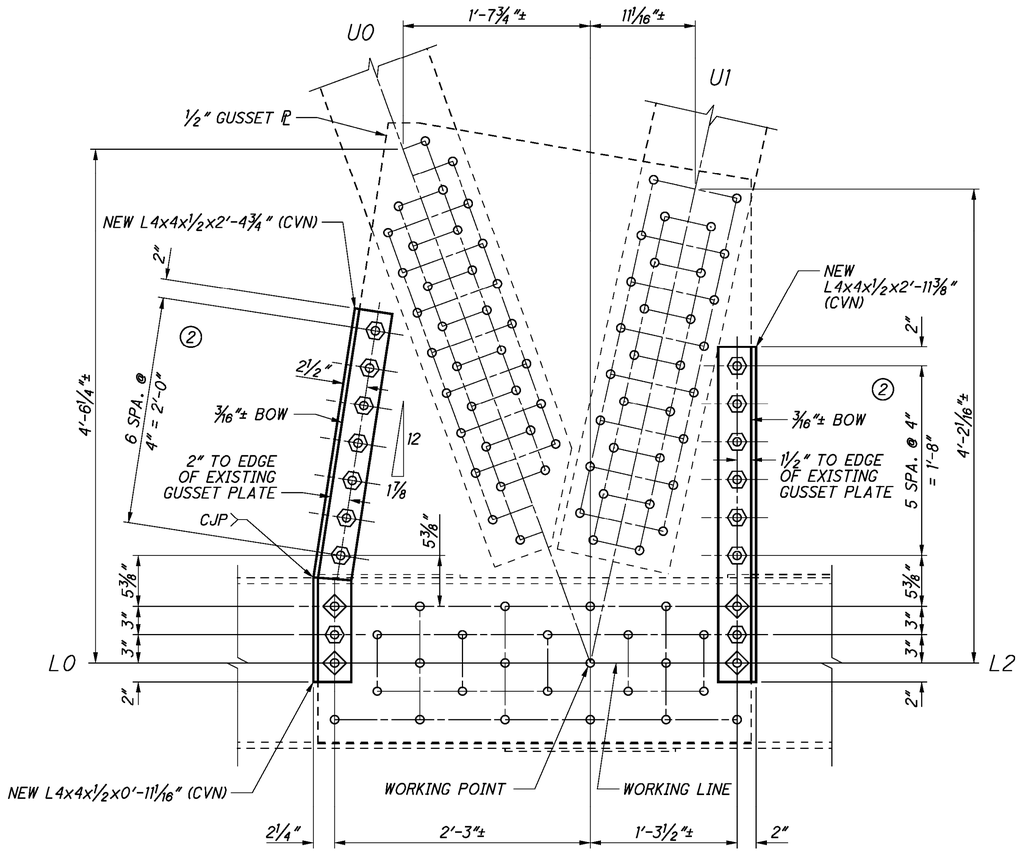
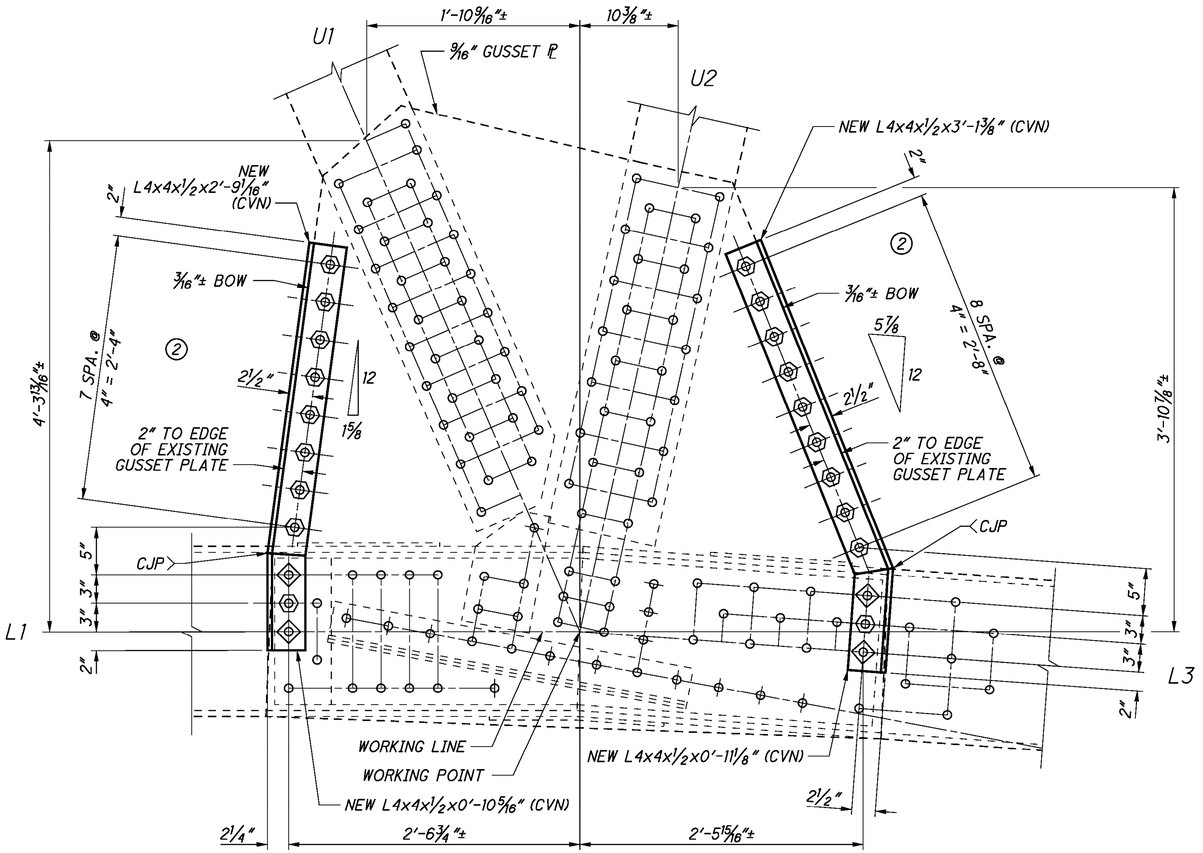


SPANS 7-10 - PANEL POINT L1 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L2
SOUTH GUSSET PLATE - CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW ¹⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:
1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. SOME CONNECTION ANGLES AND PLATES HAVE BEEN OMITTED FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY EACH NEW ANGLE LOCATION AND ENSURE NO CONFLICTS EXIST. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF ANY CONFLICTS EXIST.
3. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS: U = UPPER PANEL POINT, L = LOWER PANEL POINT
4. CJP - COMPLETE JOINT PENETRATION WELD (ANGLES ONLY)
5. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A490, TYPE 3 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE ¹⁵⁄₁₆" DIAMETER. BOLT LENGTH REQUIREMENTS SHALL BE DETERMINED FROM ORIGINAL SHOP DRAWING AND FIELD VERIFICATION.
6. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
8. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING AND BOLTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1, TYPE 2, OR TYPE 3.
9. THE PAINT ZONE FOR THE GUSSET PLATE EDGE STIFFENING SHALL ENCOMPASSES THE FAYING SURFACE OF THE GUSSET PLATE AND LOWER CHORD, THE NEW STIFFENING ANGLES, LOCATIONS OF PACK RUST REMOVAL, AND ANY SURROUNDING AREAS DAMAGED BY THE INSTALLATION OF THE RETROFITS. ALL PAINTING IS TO BE INCLUDED FOR PAYMENT UNDER ITEM 514.
10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .
11. FOR ADDITIONAL DETAILS REGARDING REPAIR TYPES SEE SHEET 22 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED DWC | DRAWN JKG | REVIEWED PJA | DATE 10-05-16
CHECKED RJM | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (73 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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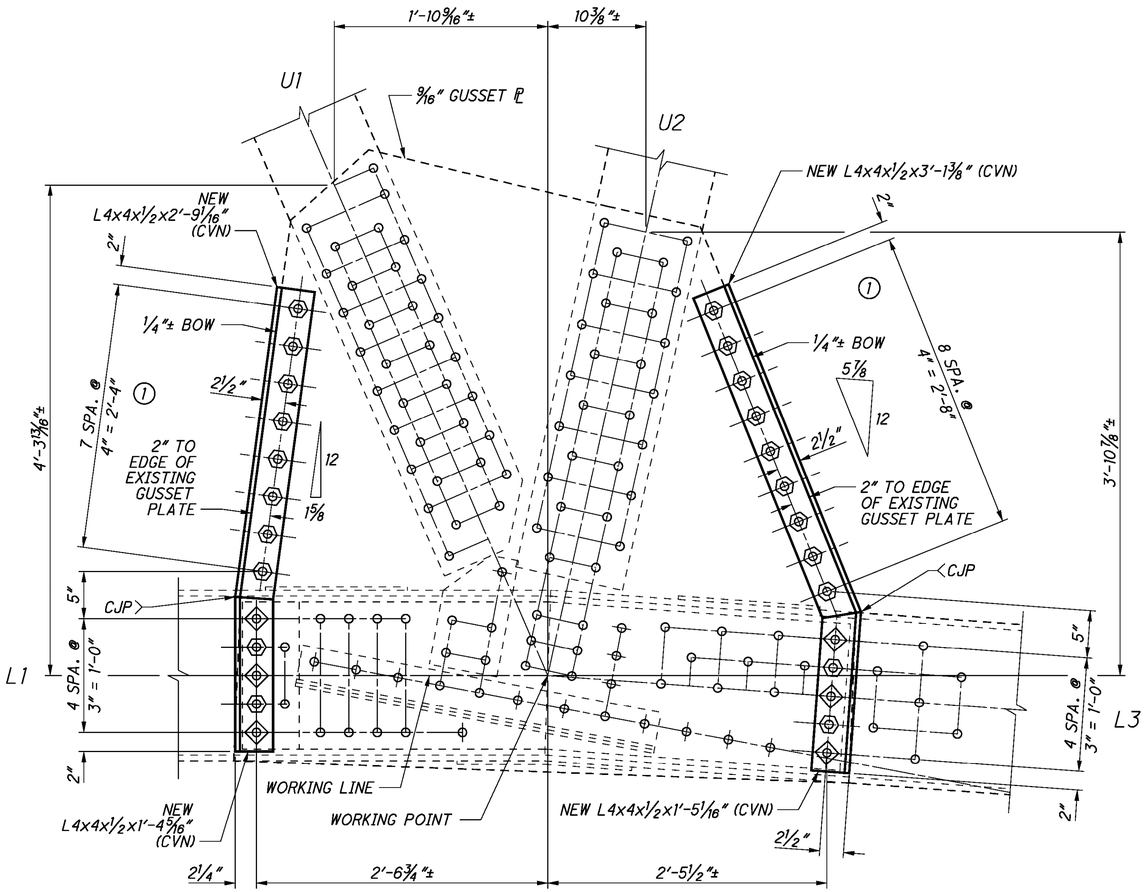
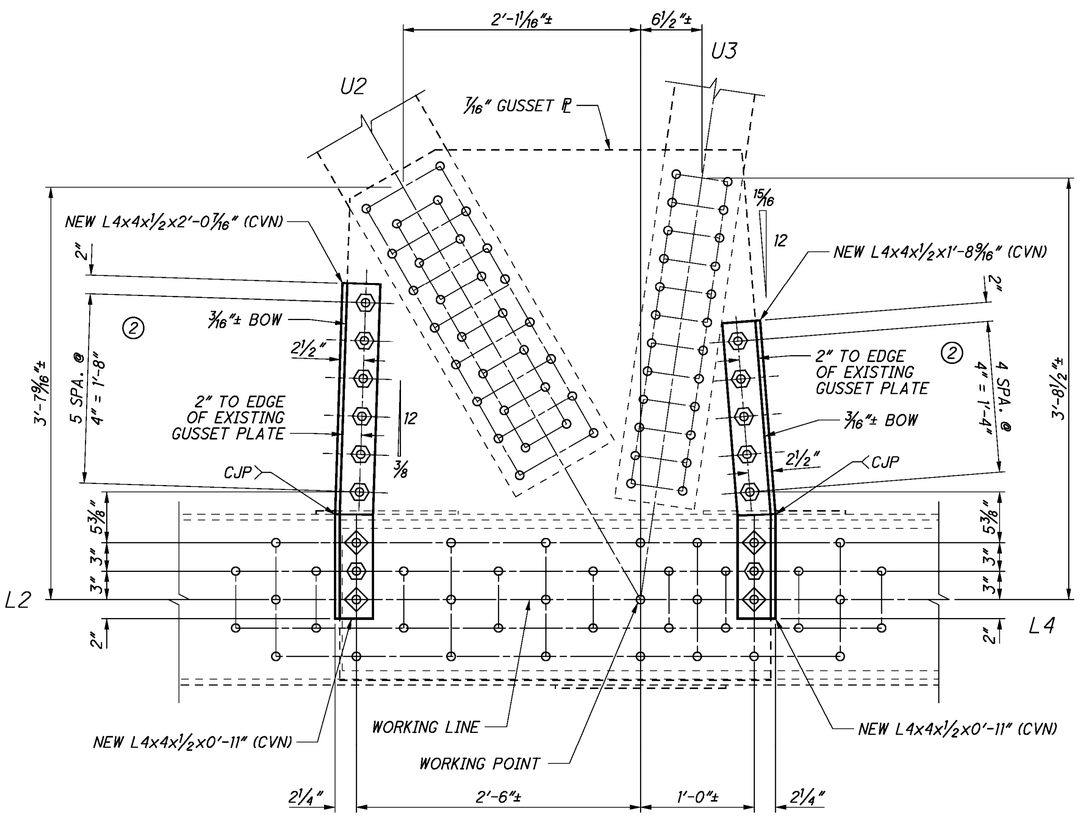


SPANS 7-10 - PANEL POINT L2
SOUTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L3
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED DWC | DRAWN JKG | REVIEWED PJA | DATE 10-05-16
CHECKED RJM | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (74 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

96 / 156

139 / 199

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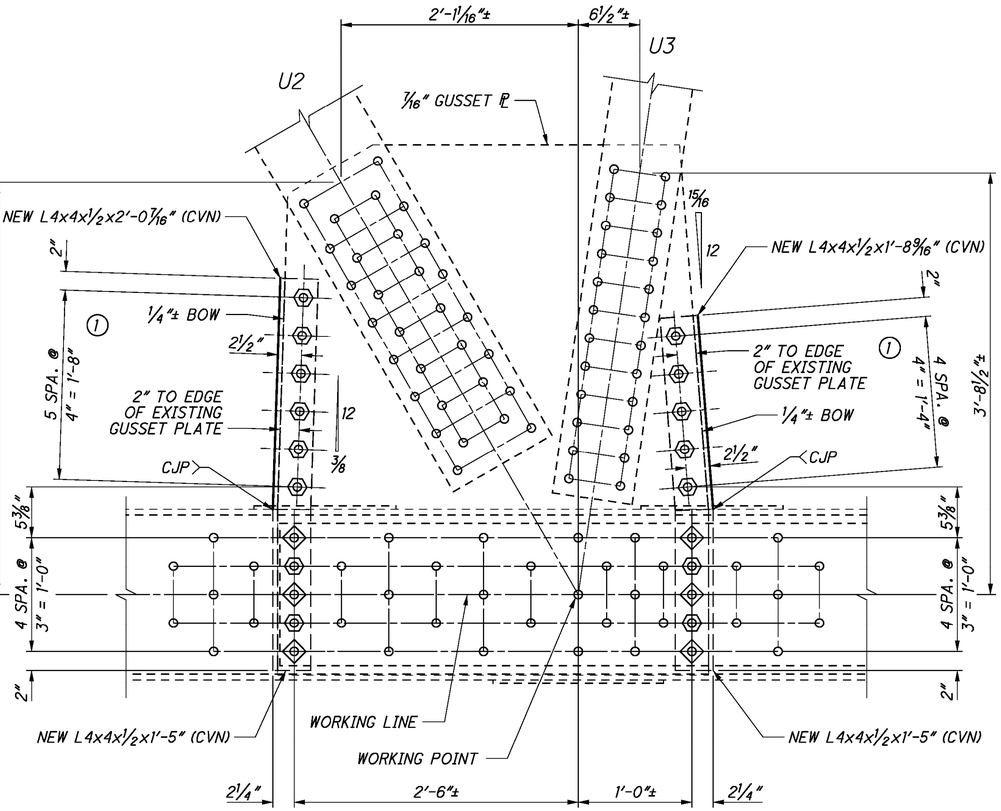
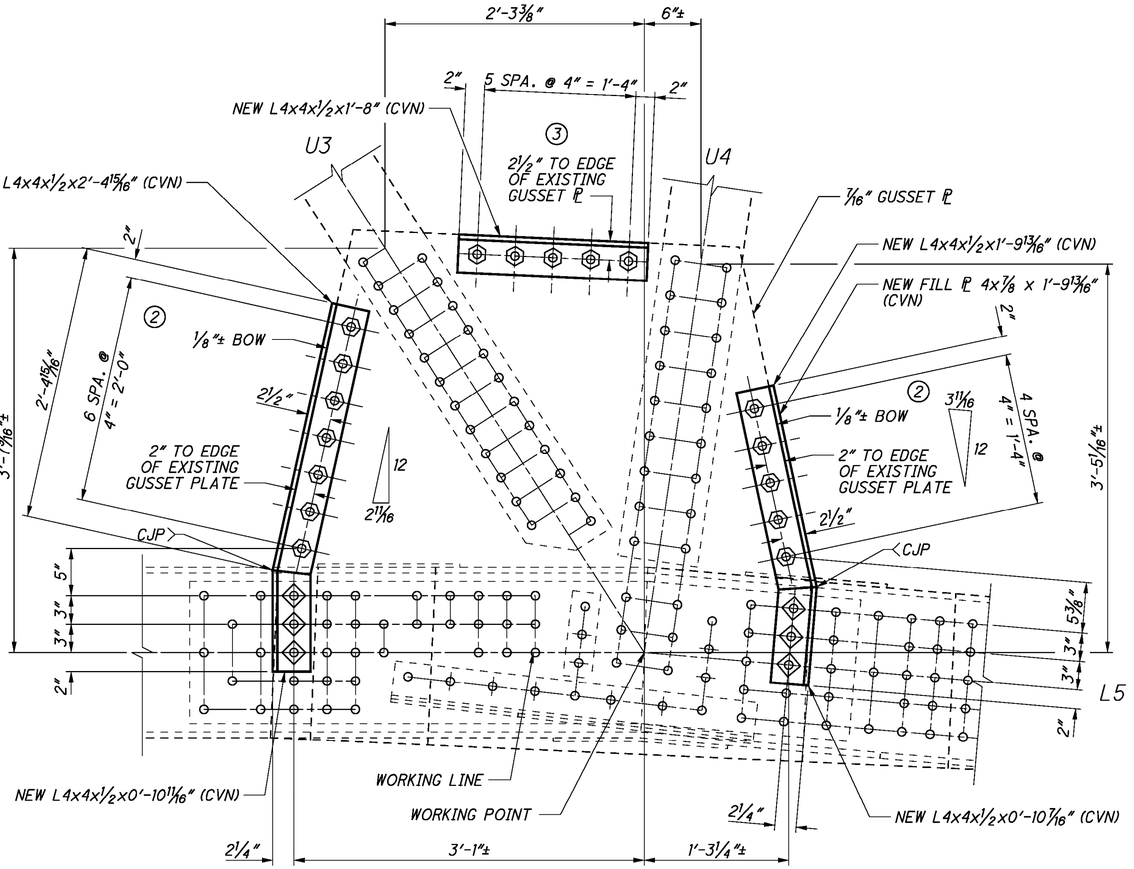


SPANS 7-10 - PANEL POINT L3
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L4 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (75 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

97 / 156

140 / 199

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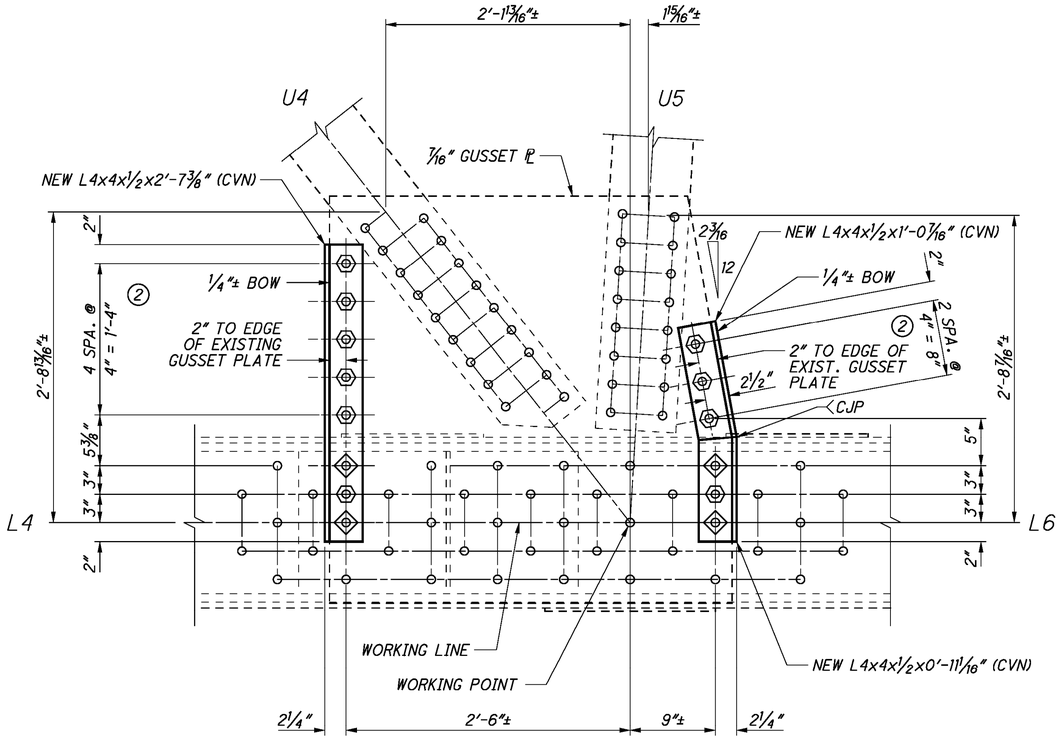
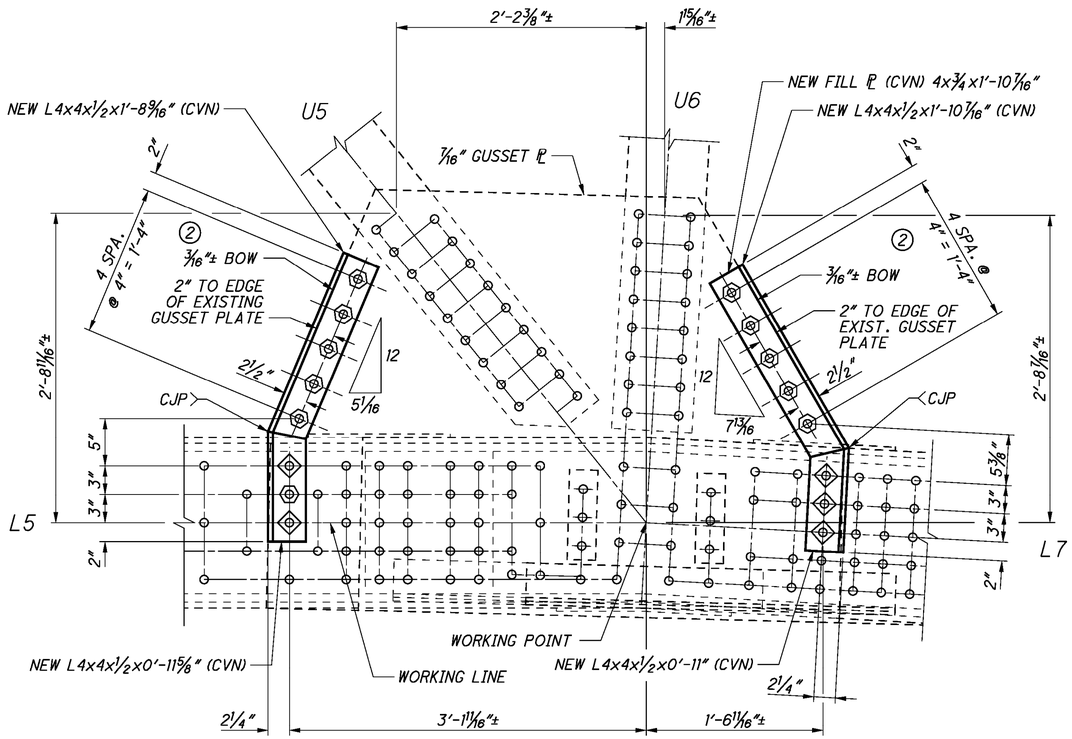


SPANS 7-10 - PANEL POINT L5 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L6 - NORTH AND SOUTH GUSSET PLATES NORTH, CENTER AND SOUTH TRUSS NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (76 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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141 / 199

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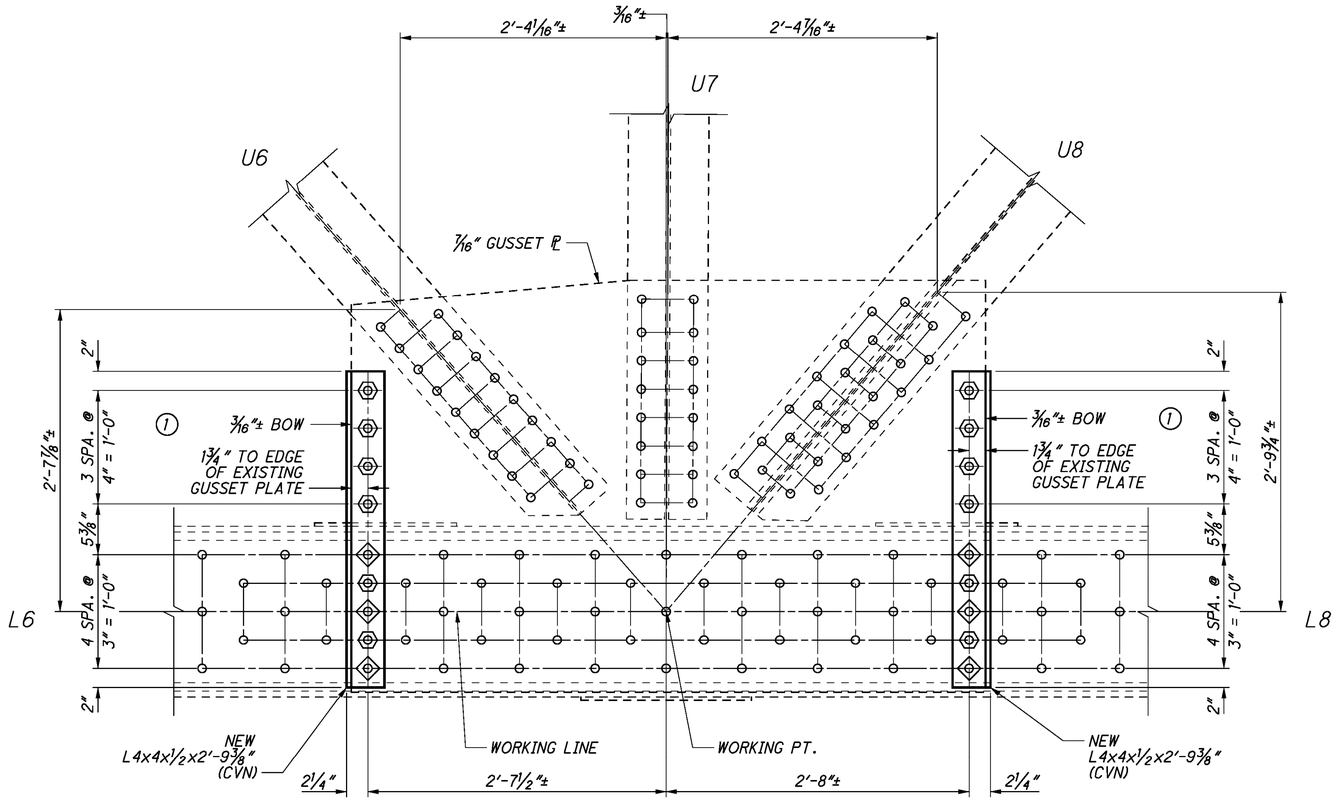

SPANS 7-10 - PANEL POINT L7
SOUTH GUSSET PLATE - NORTH TRUSS
NORTH GUSSET PLATE - NORTH AND CENTER TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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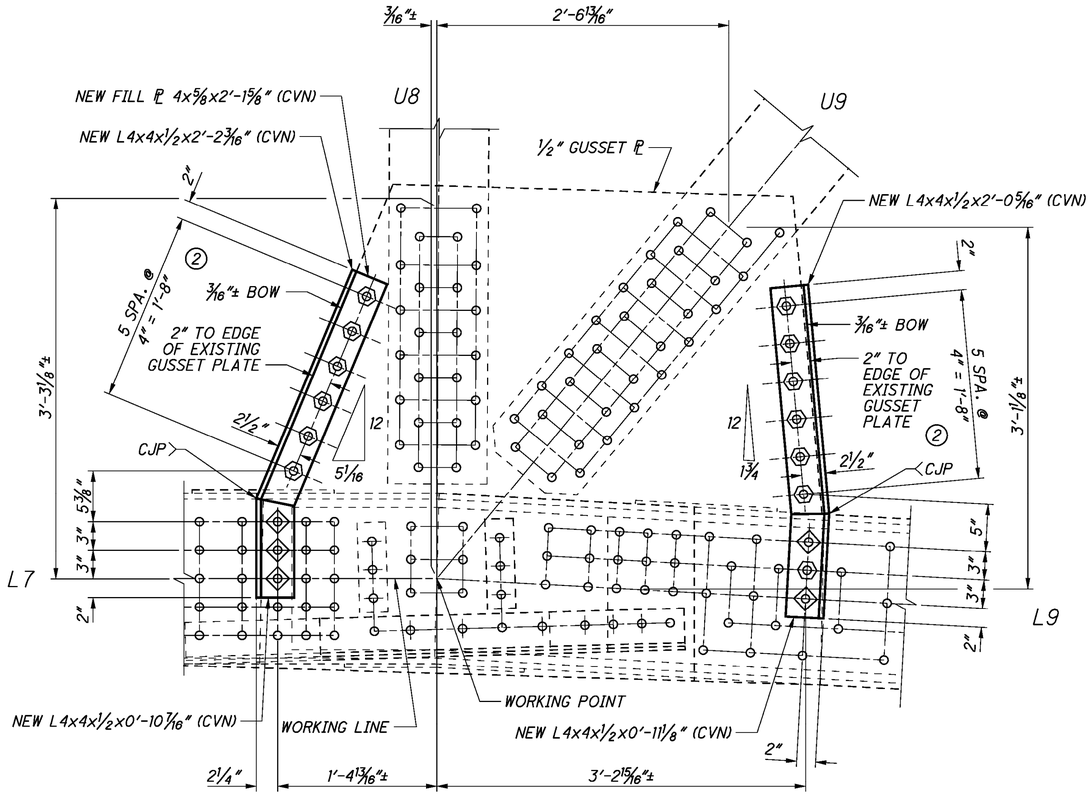
DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

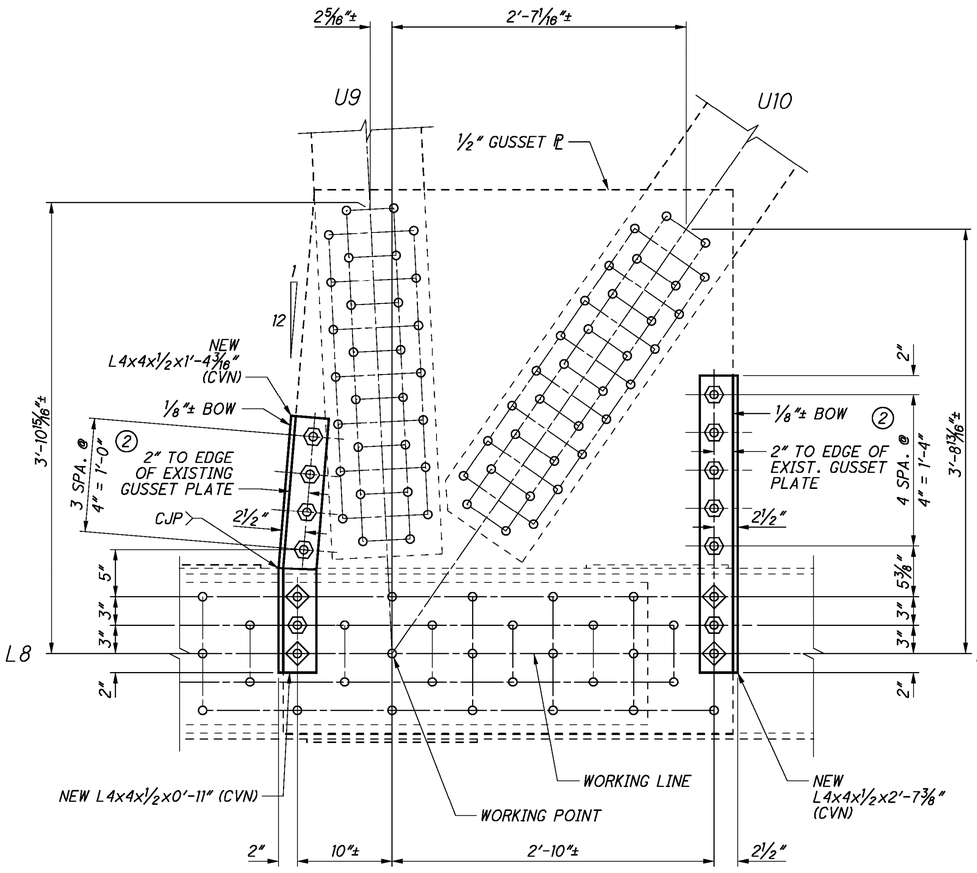
DESIGNED	DRAWN	REVIEWED	DATE
RJM	JDG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (77 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939



SPANS 7-10 - PANEL POINT L8 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L9 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⊚ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

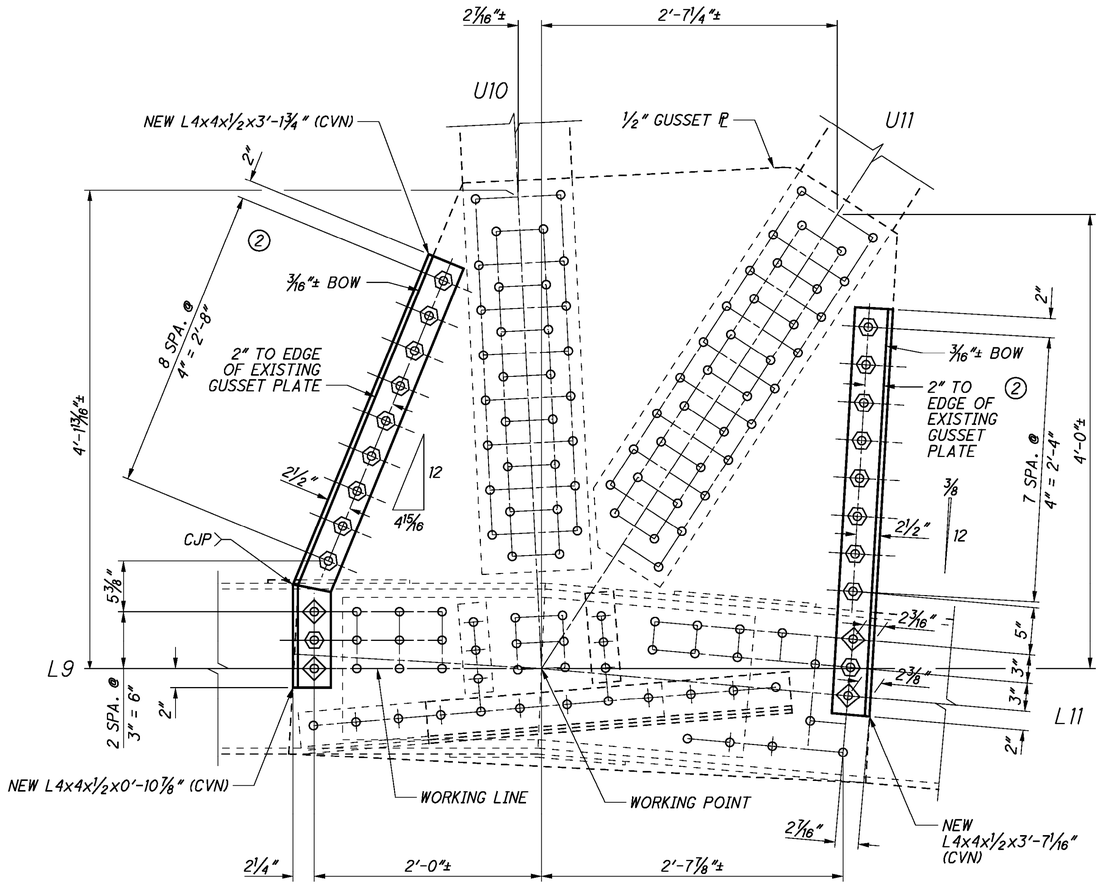
DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (78 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

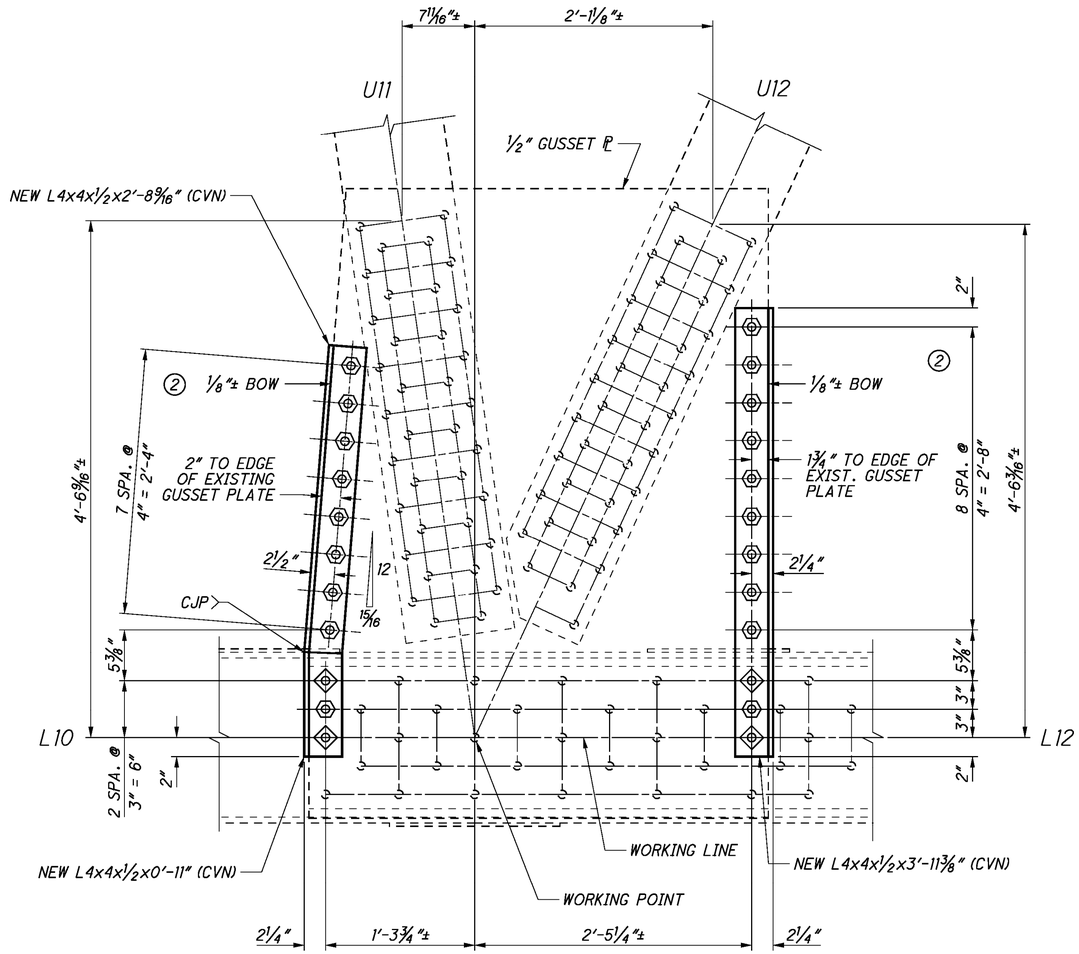
HAM-50-2180N
PID No. 91939

100 / 156

143 / 199



SPANS 7-10 - PANEL POINT L10 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L11
SOUTH GUSSET PLATE - CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (79 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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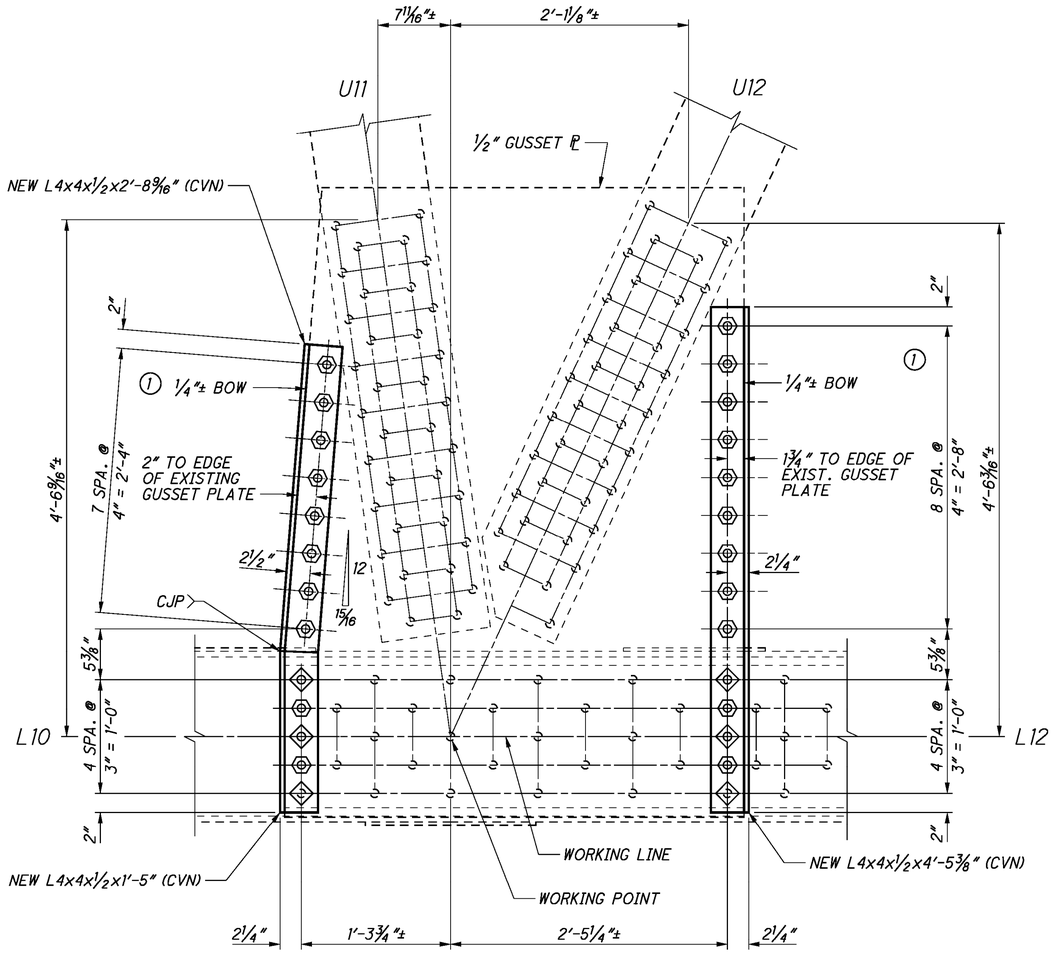
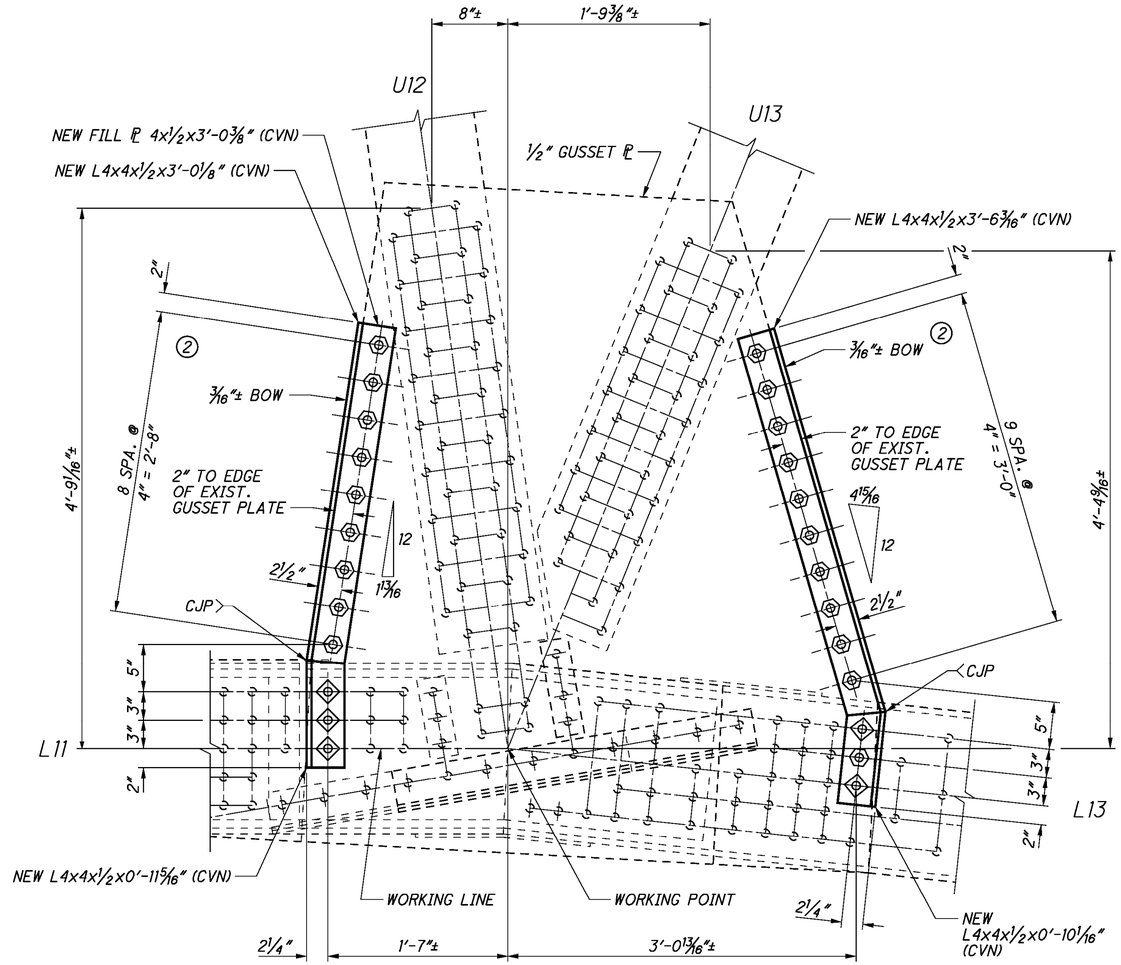


SPANS 7-10 - PANEL POINT L11
SOUTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L12 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (80 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

102 / 156

145
199

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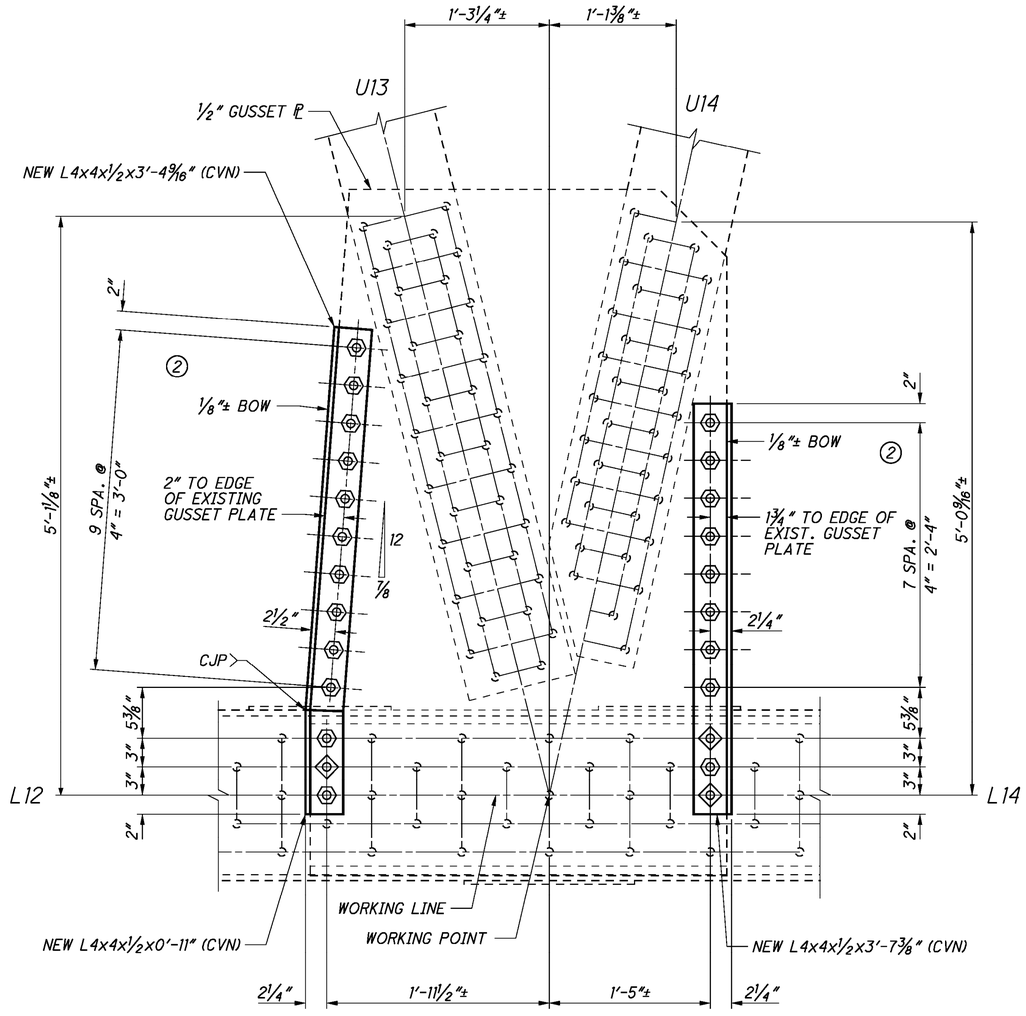

SPANS 7-10 - PANEL POINT L13 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◈ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (81 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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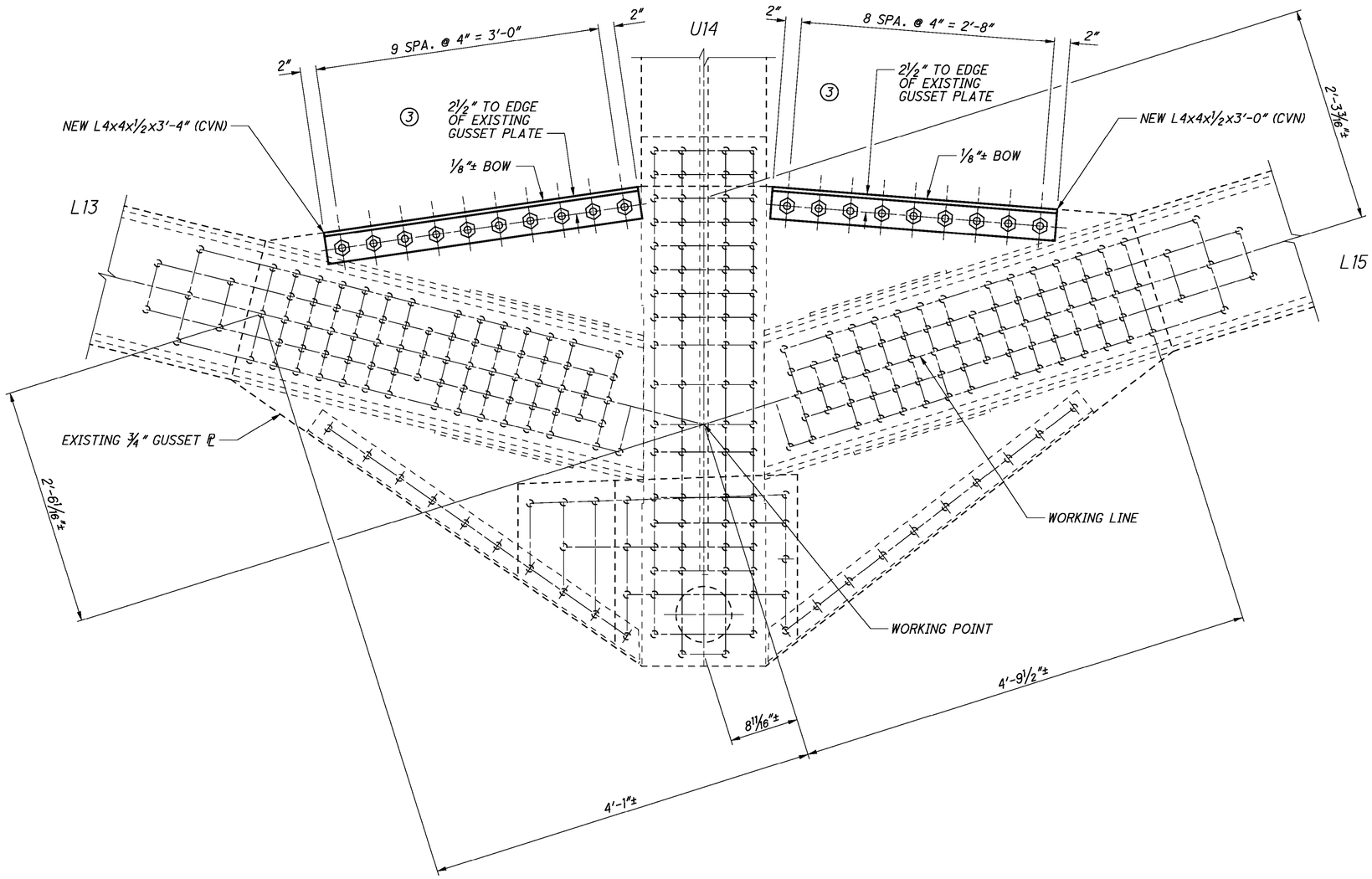

SPANS 7-10 - PANEL POINT L14 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (82 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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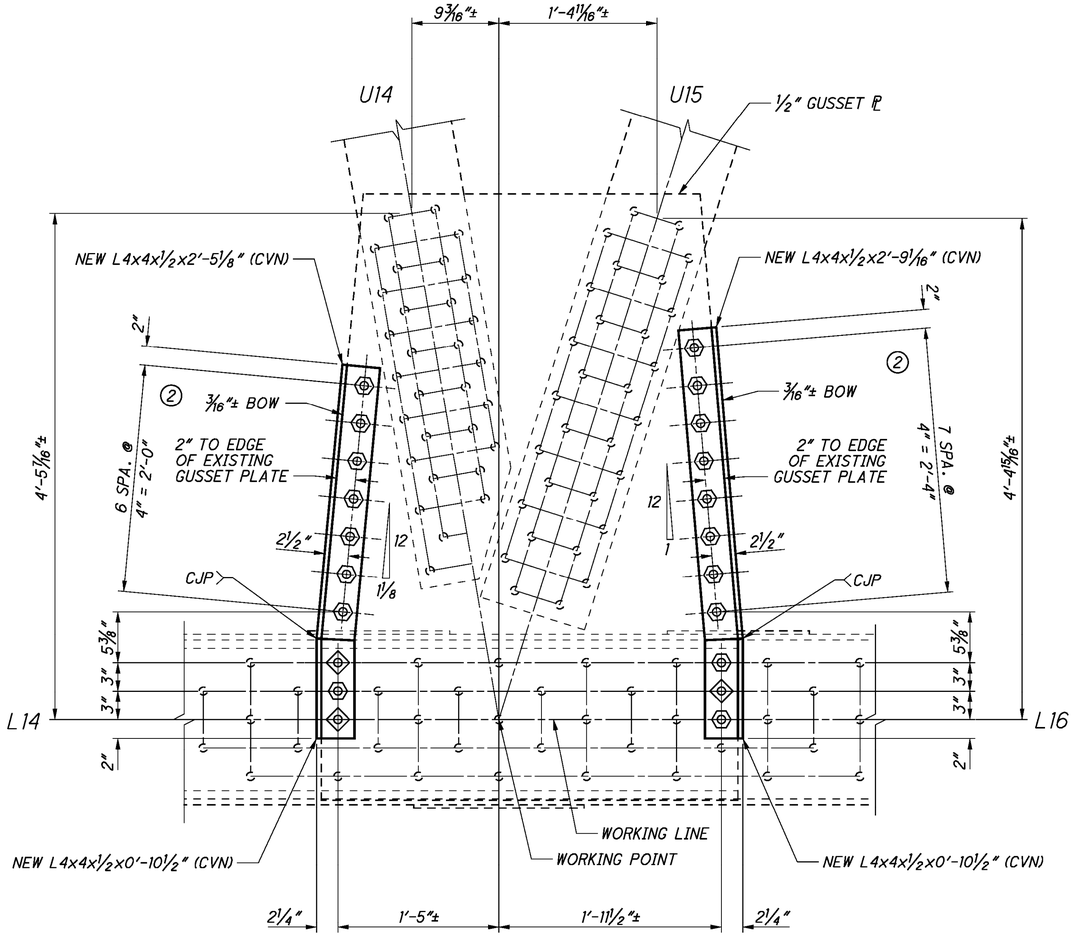
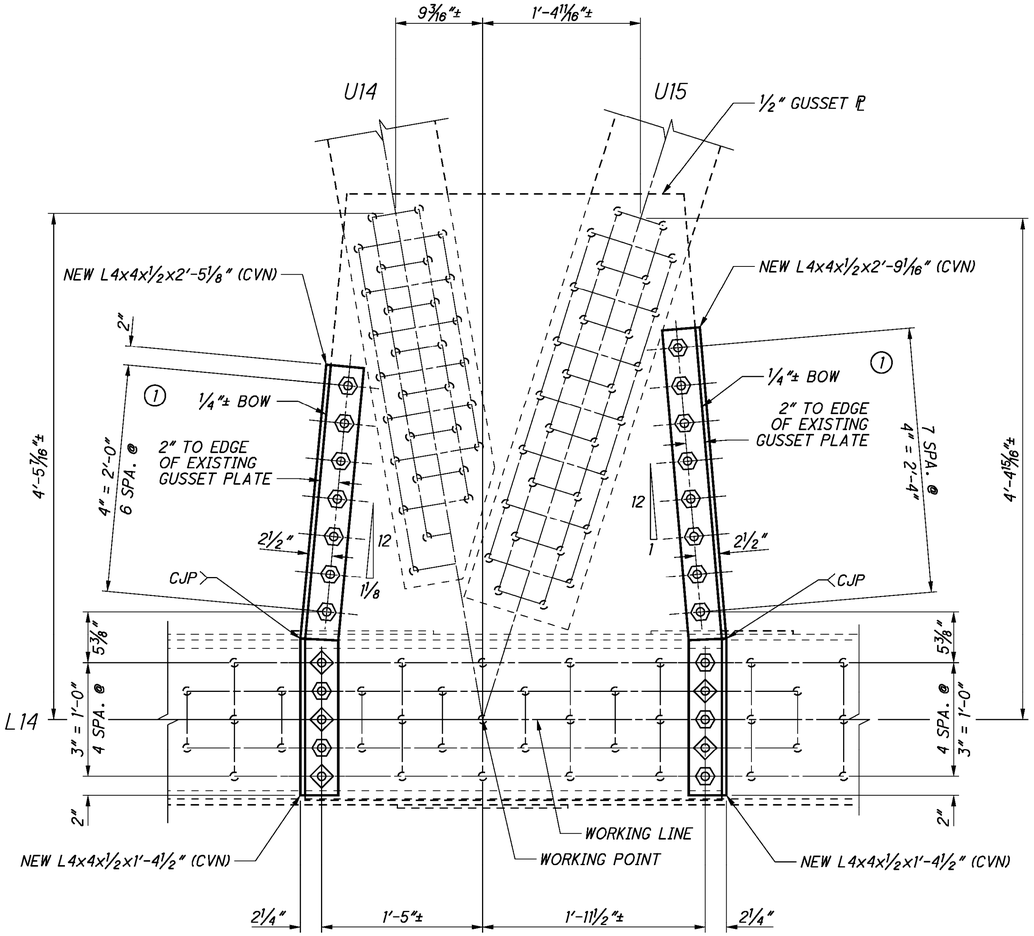


SPANS 7-10 - PANEL POINT L15
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L15
SOUTH GUSSET PLATE - SOUTH TRUSS

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

- *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*
- *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*
- *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 95 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (83 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

105 / 156

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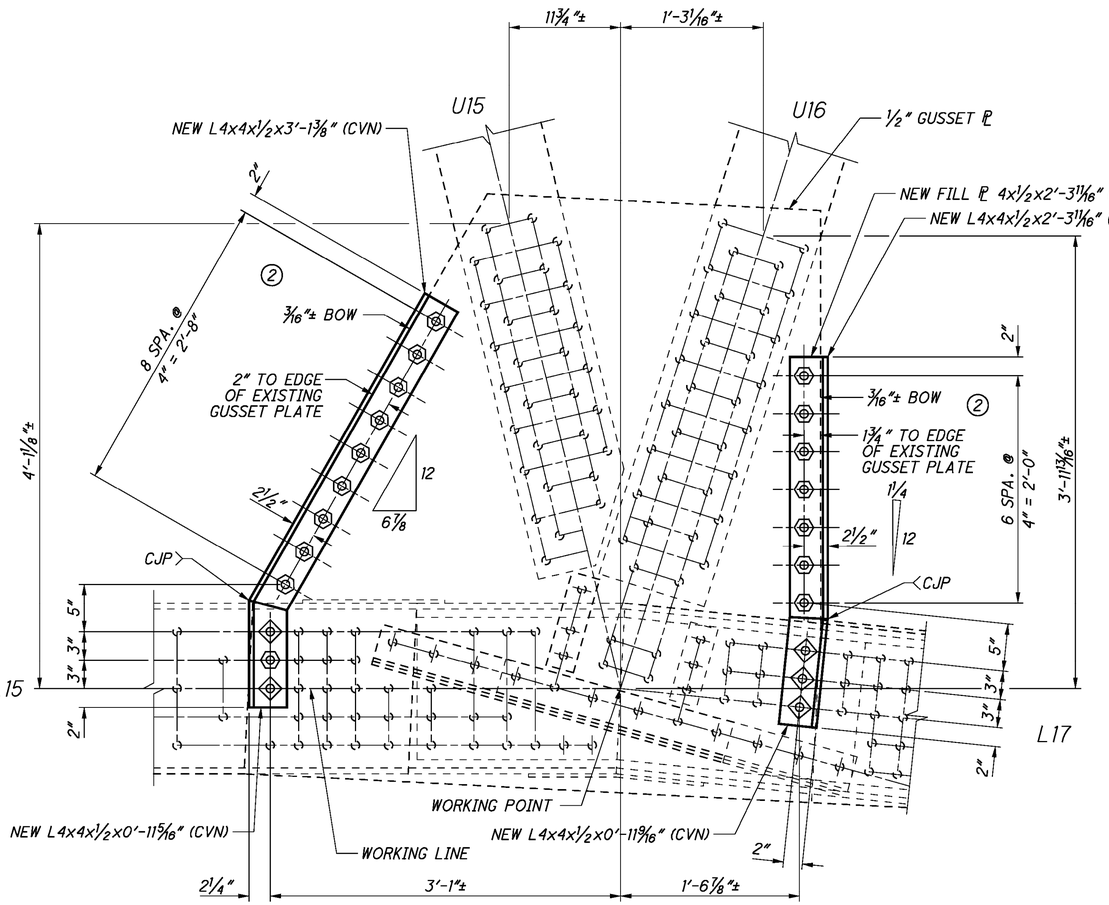
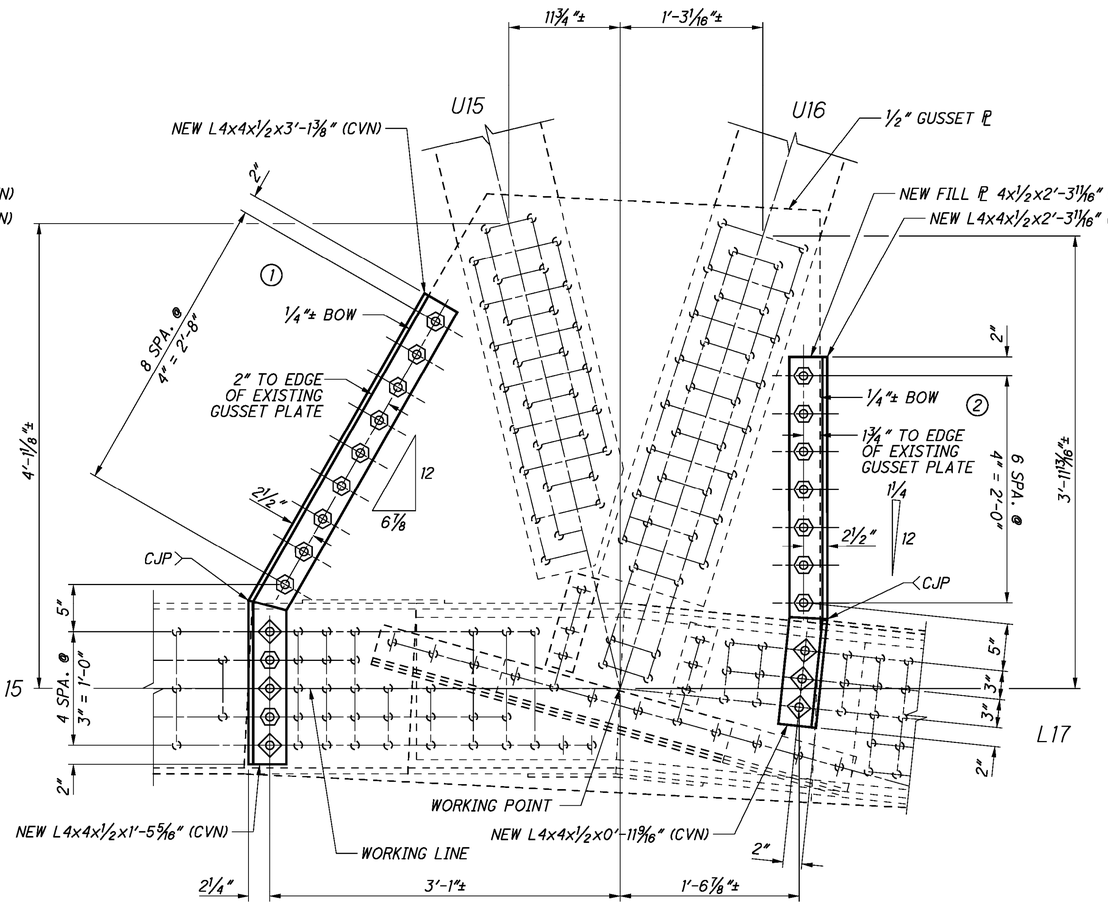


SPANS 7-10 - PANEL POINT L16
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L16
SOUTH GUSSET PLATE - SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

⬡ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (84 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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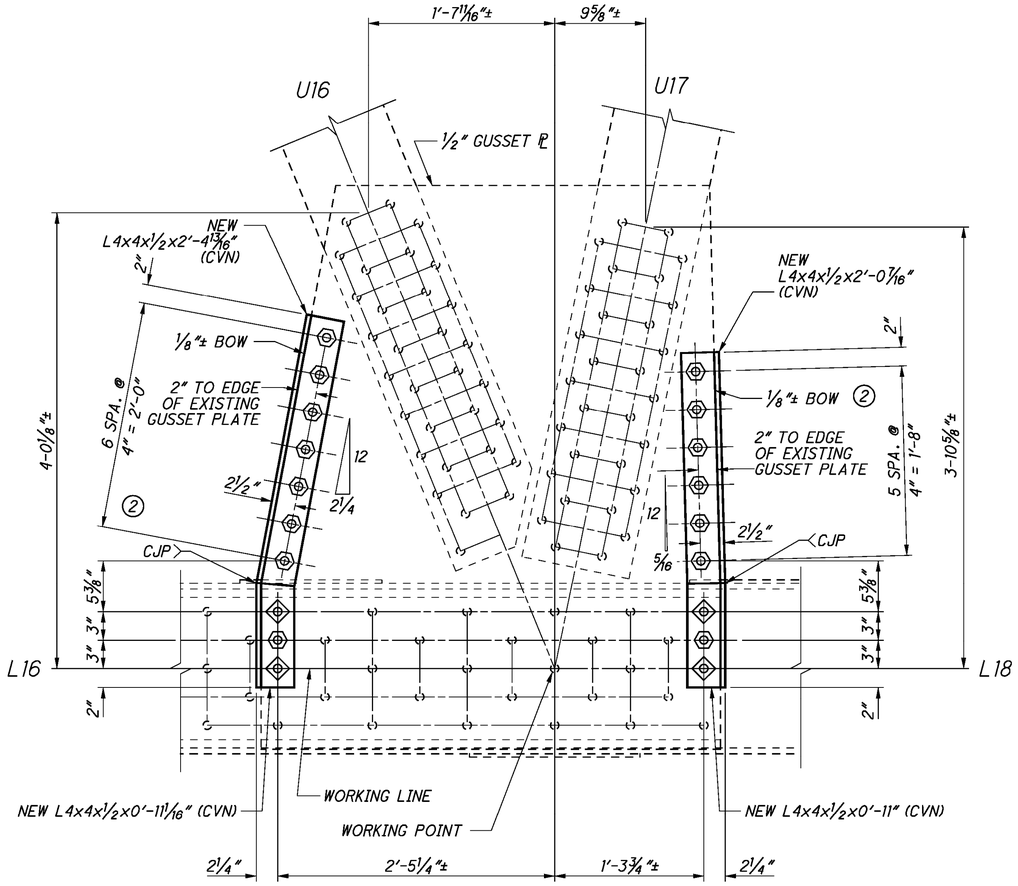
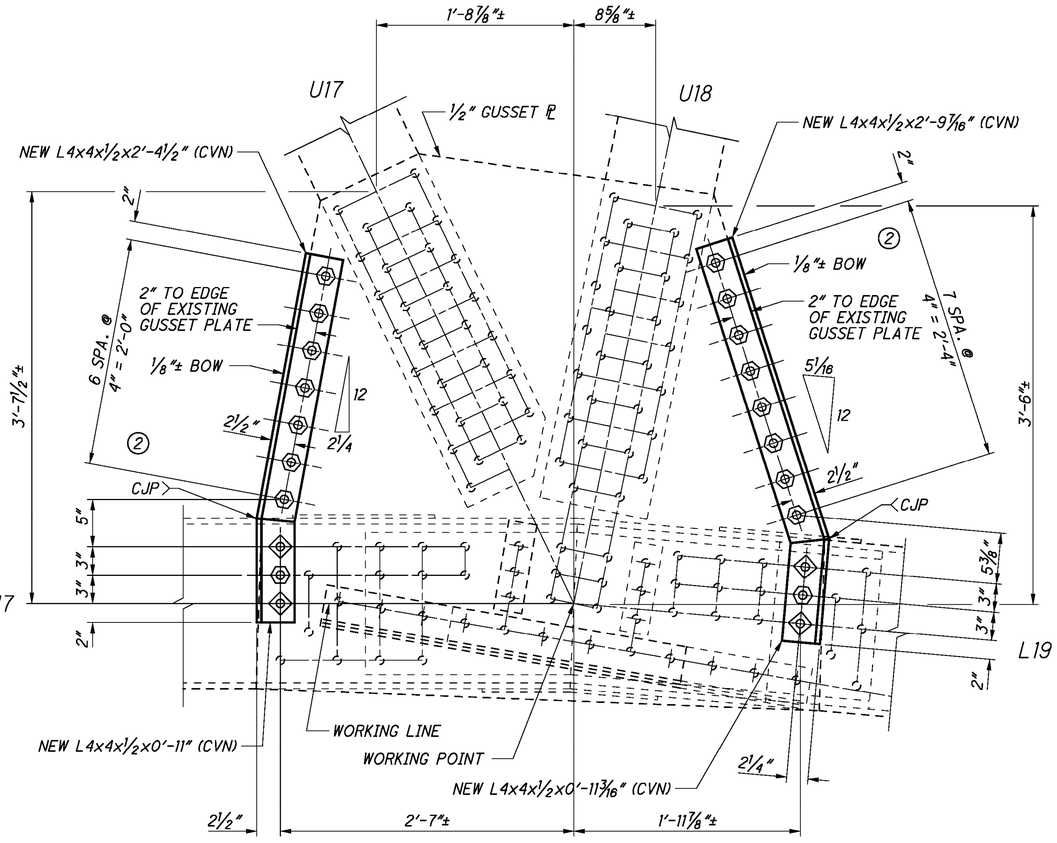


SPANS 7-10 - PANEL POINT L17 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L18
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (85 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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150 / 199

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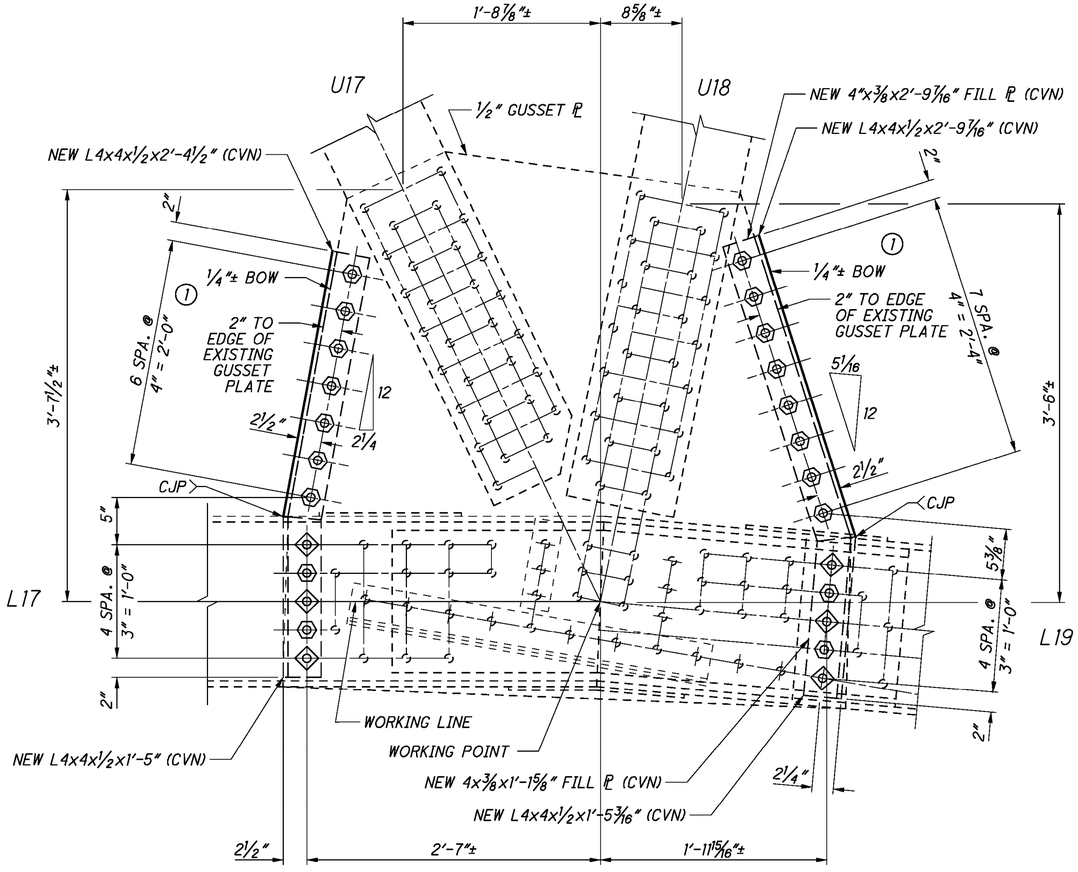
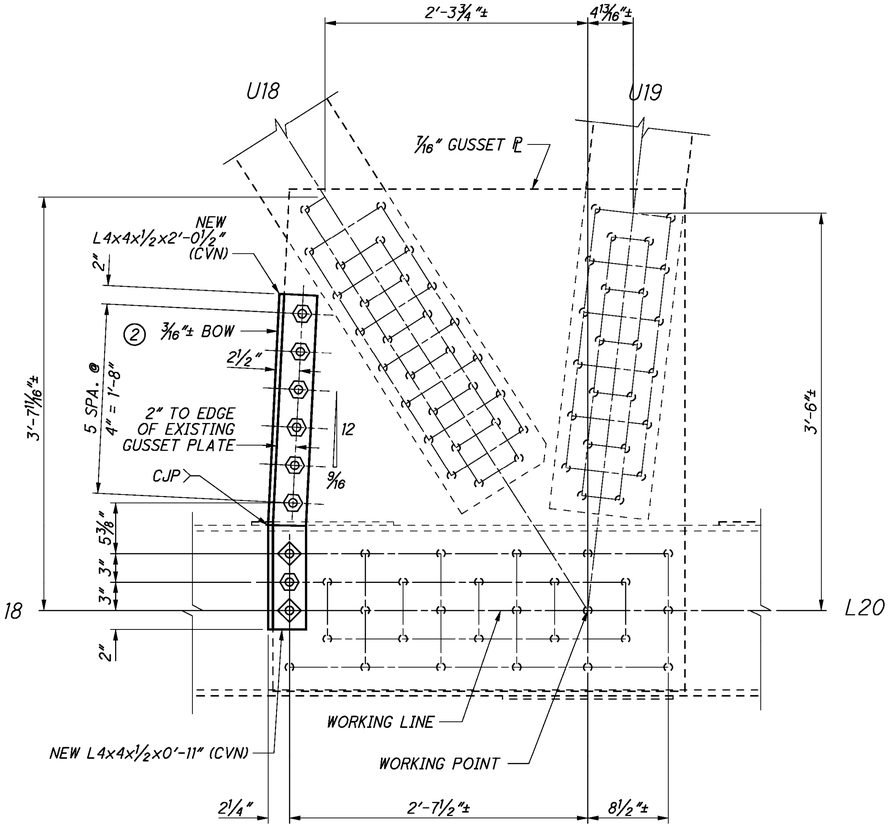


SPANS 7-10 - PANEL POINT L18
NORTH GUSSET PLATE - CENTER TRUSS



SPANS 7-10 - PANEL POINT L19 - NORTH AND SOUTH GUSSET PLATES
NORTH AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (86 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

108 / 156

151 / 199

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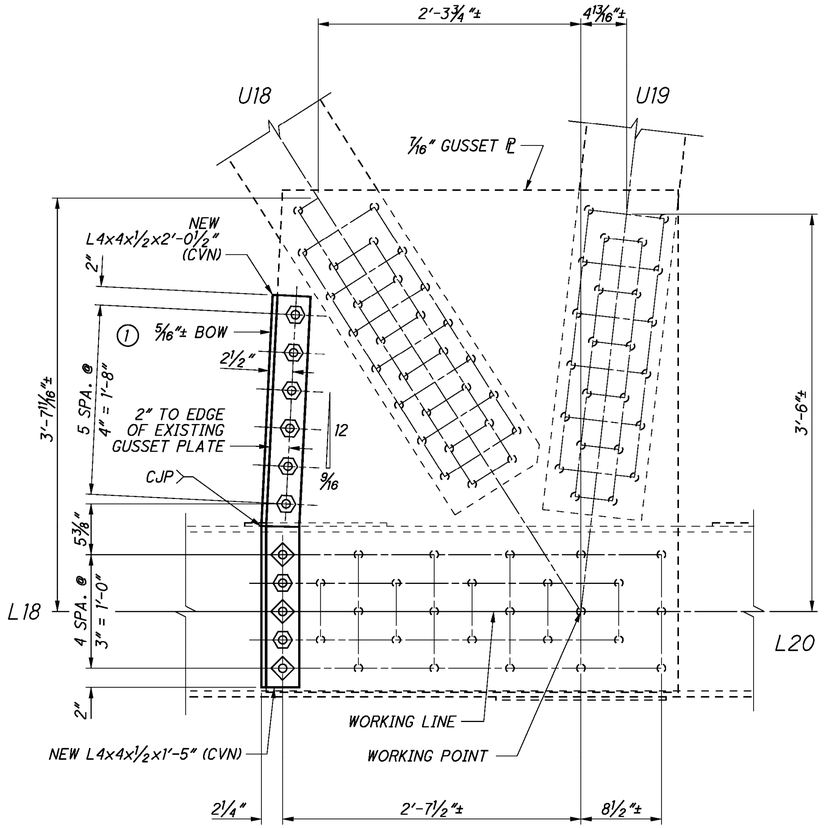
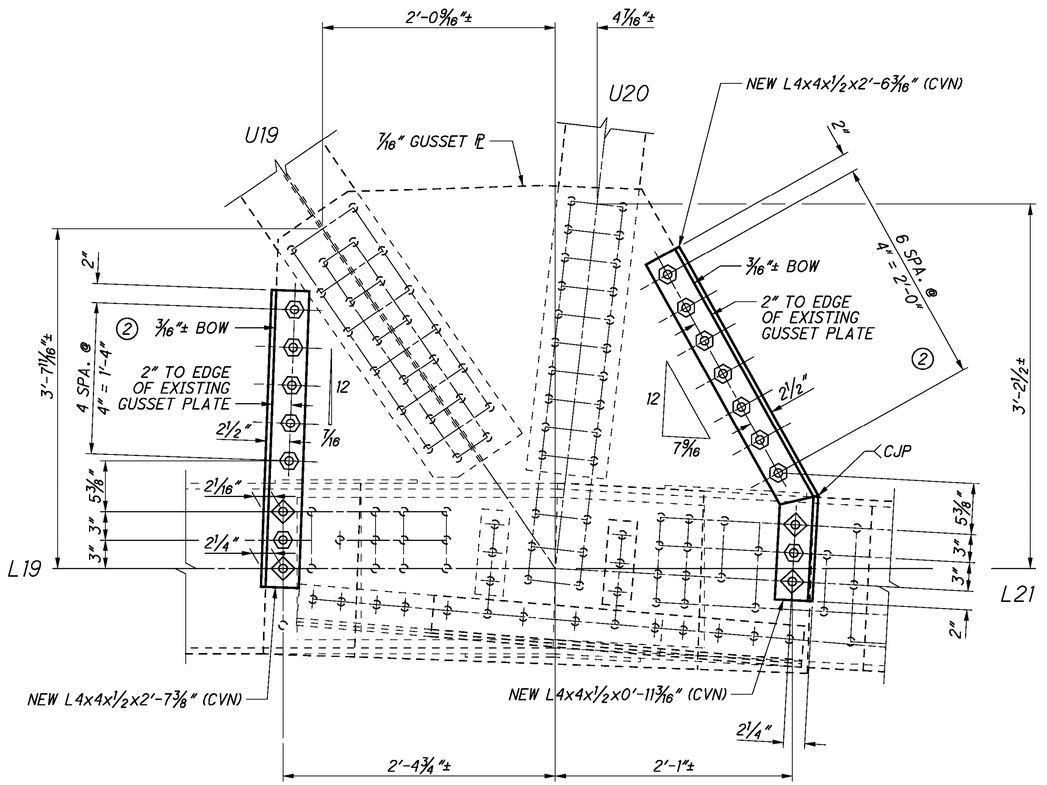


SPANS 7-10 - PANEL POINT L19 - NORTH AND SOUTH GUSSET PLATES
SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L20 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⊚ - FIELD DRILL NEW ¹⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (87 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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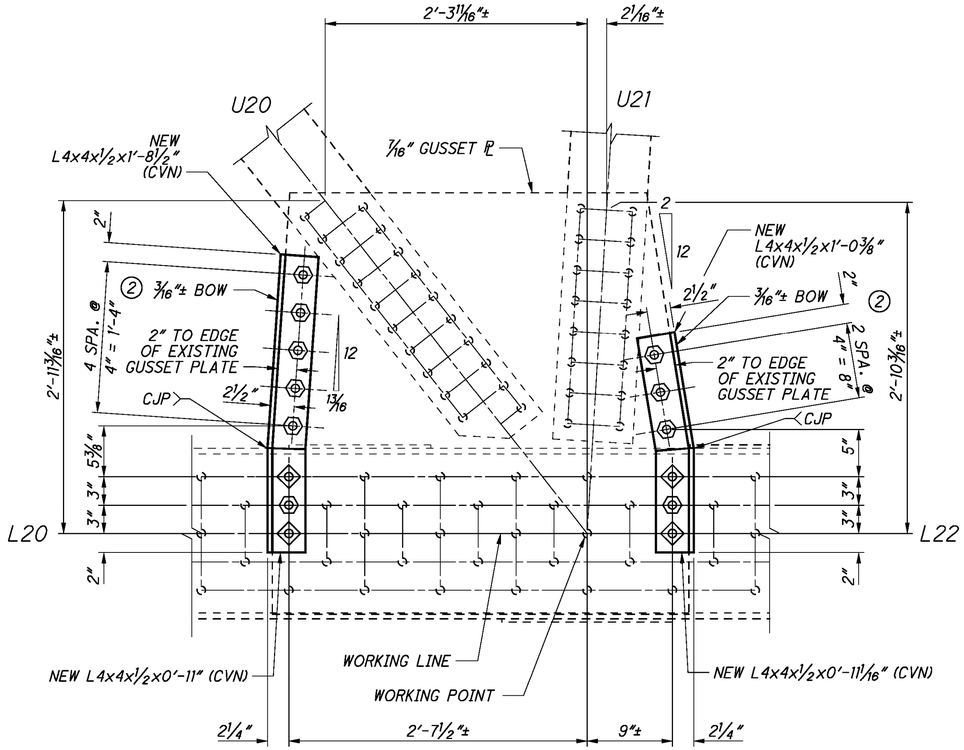
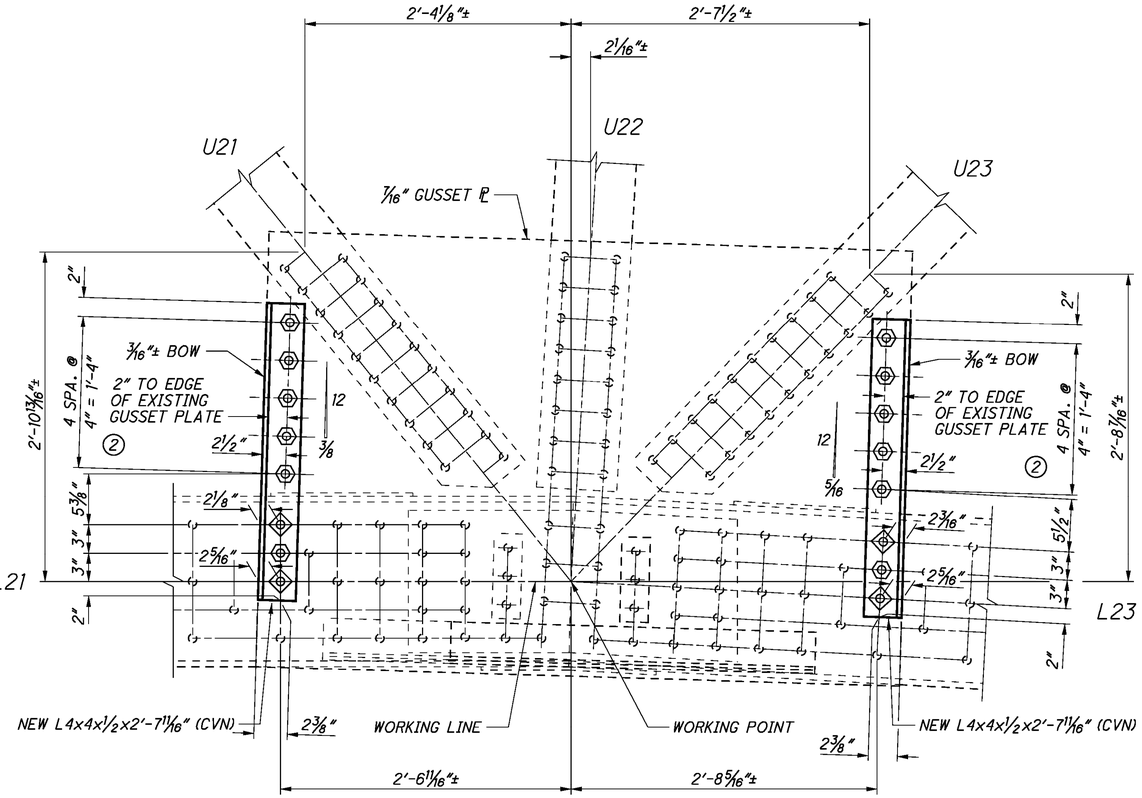


SPANS 7-10 - PANEL POINT L21 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L22
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⌀ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◇ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (88 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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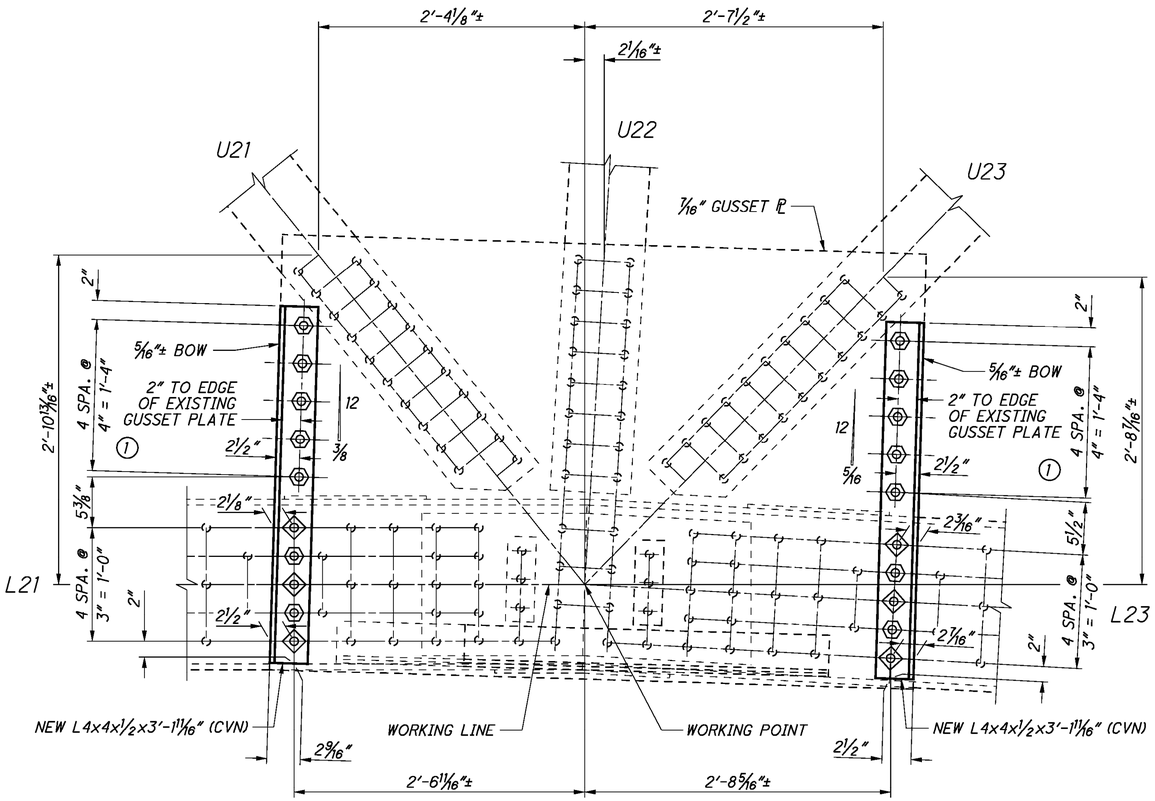
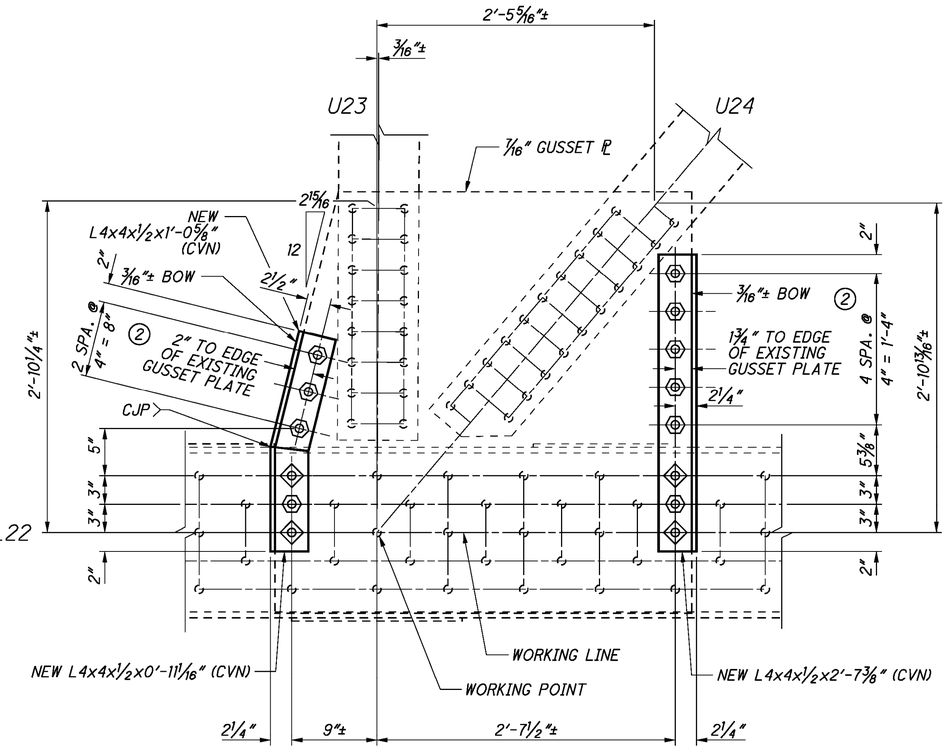


SPANS 7-10 - PANEL POINT L22
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L23 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (89 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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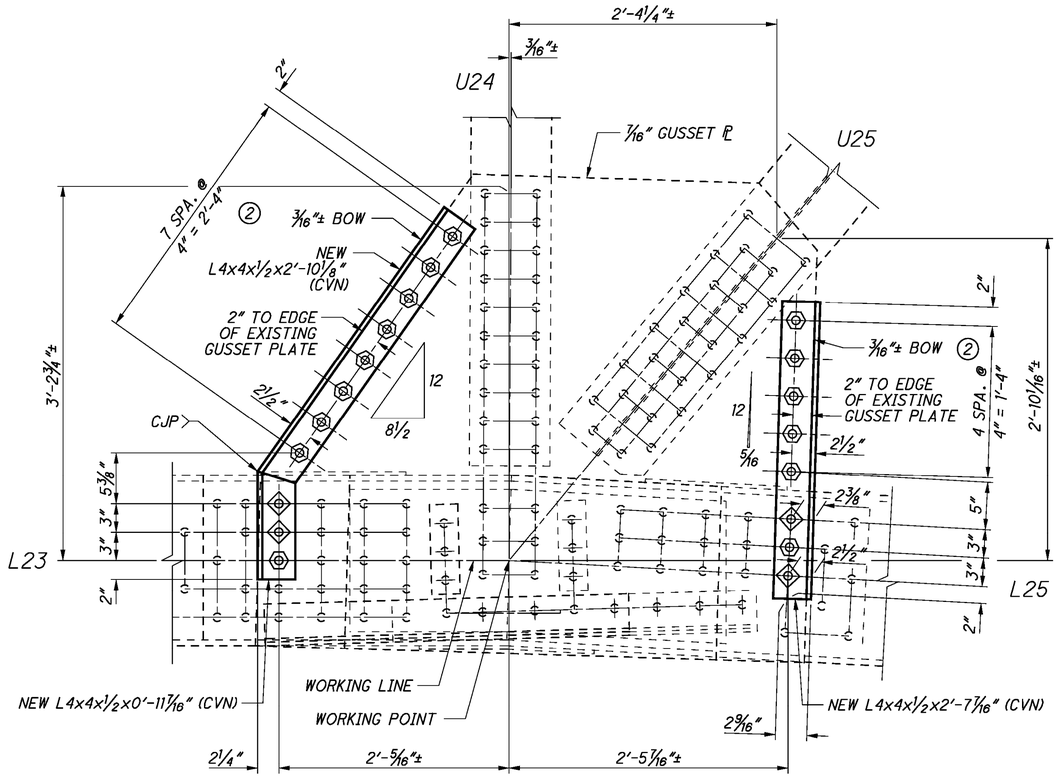
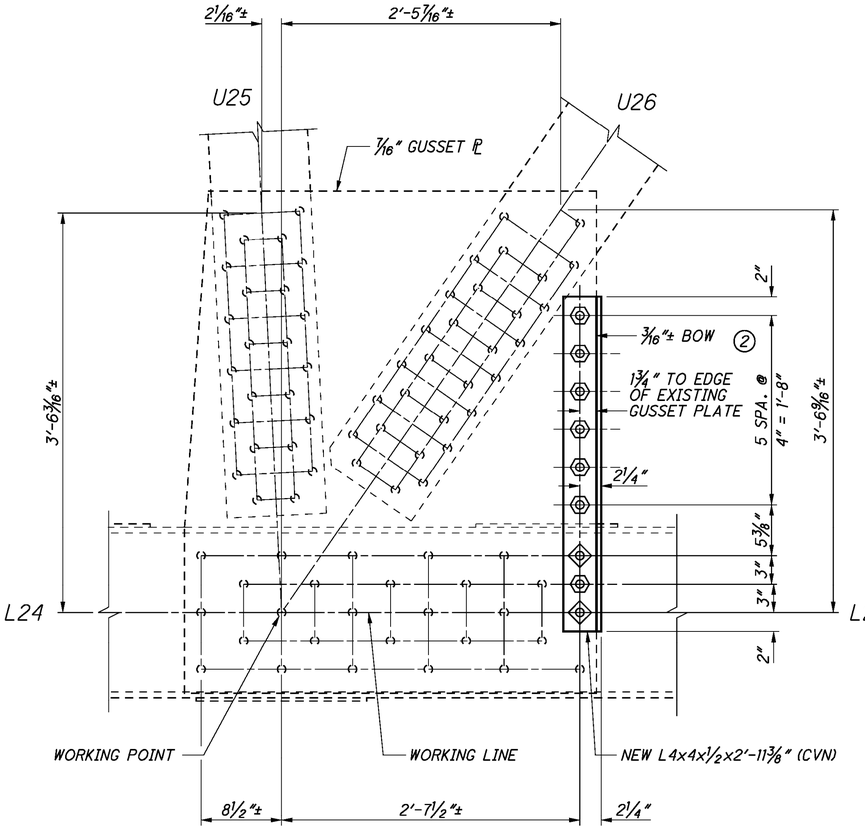


SPANS 7-10 - PANEL POINT L24 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L25
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
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RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (90 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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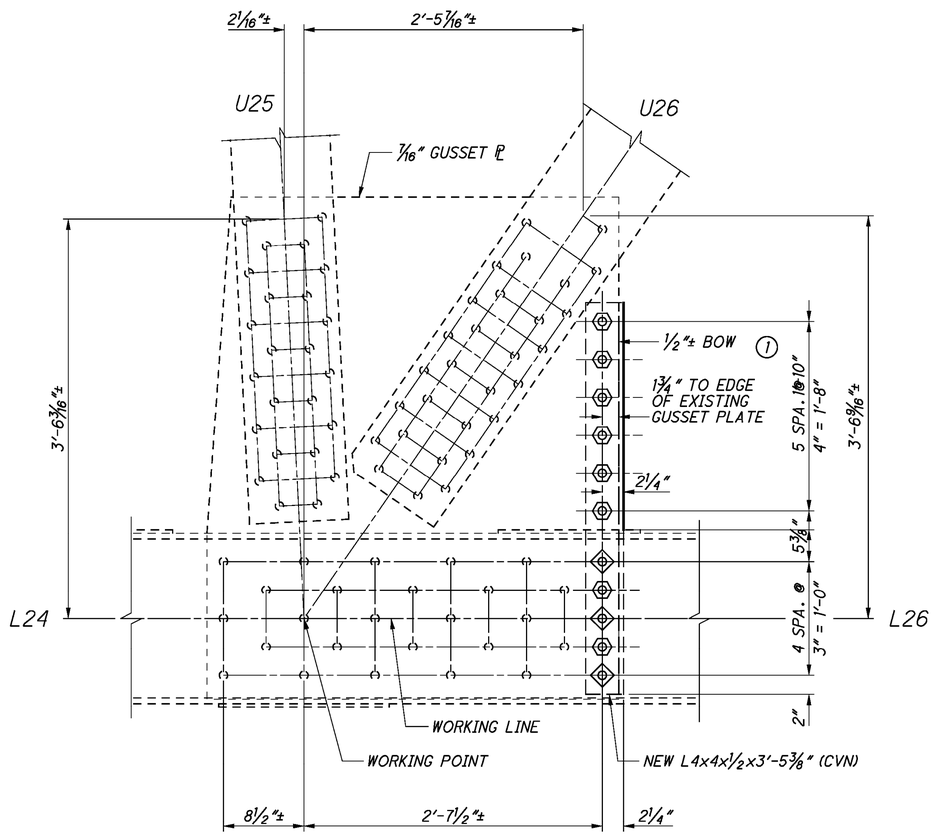
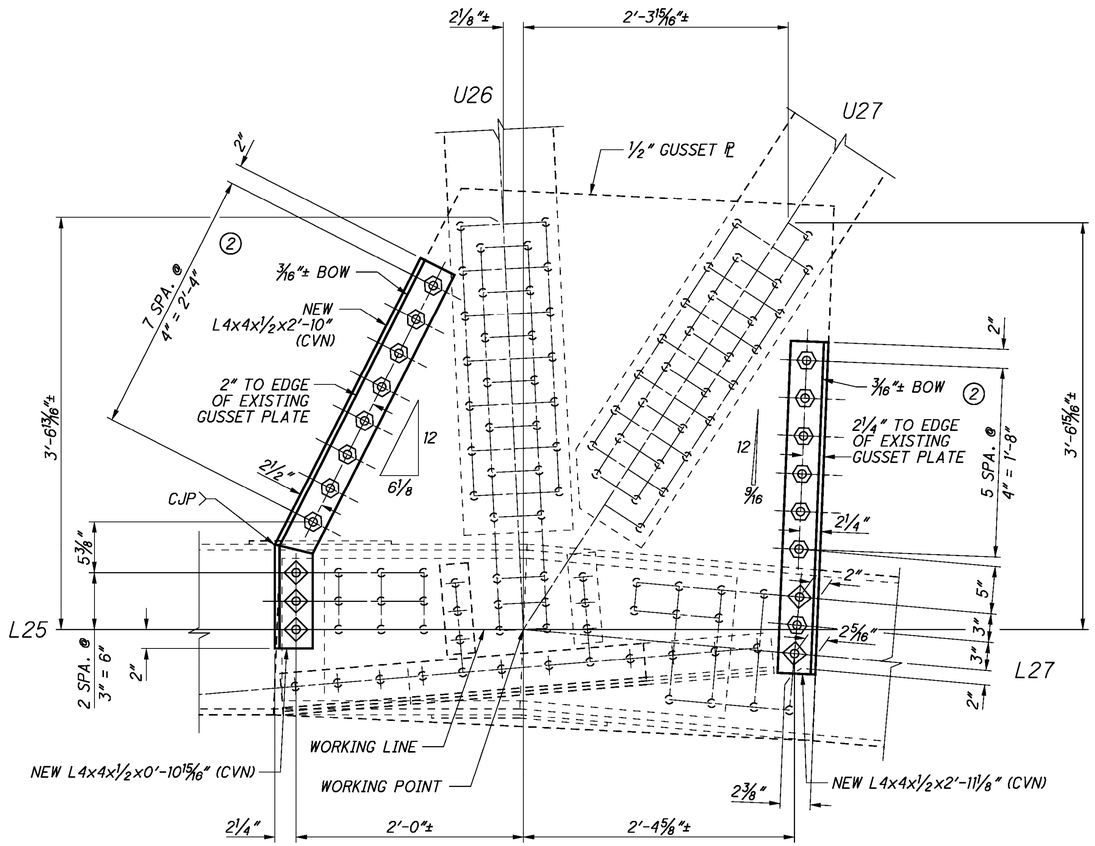


SPANS 7-10 - PANEL POINT L25
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L26 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
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RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (91 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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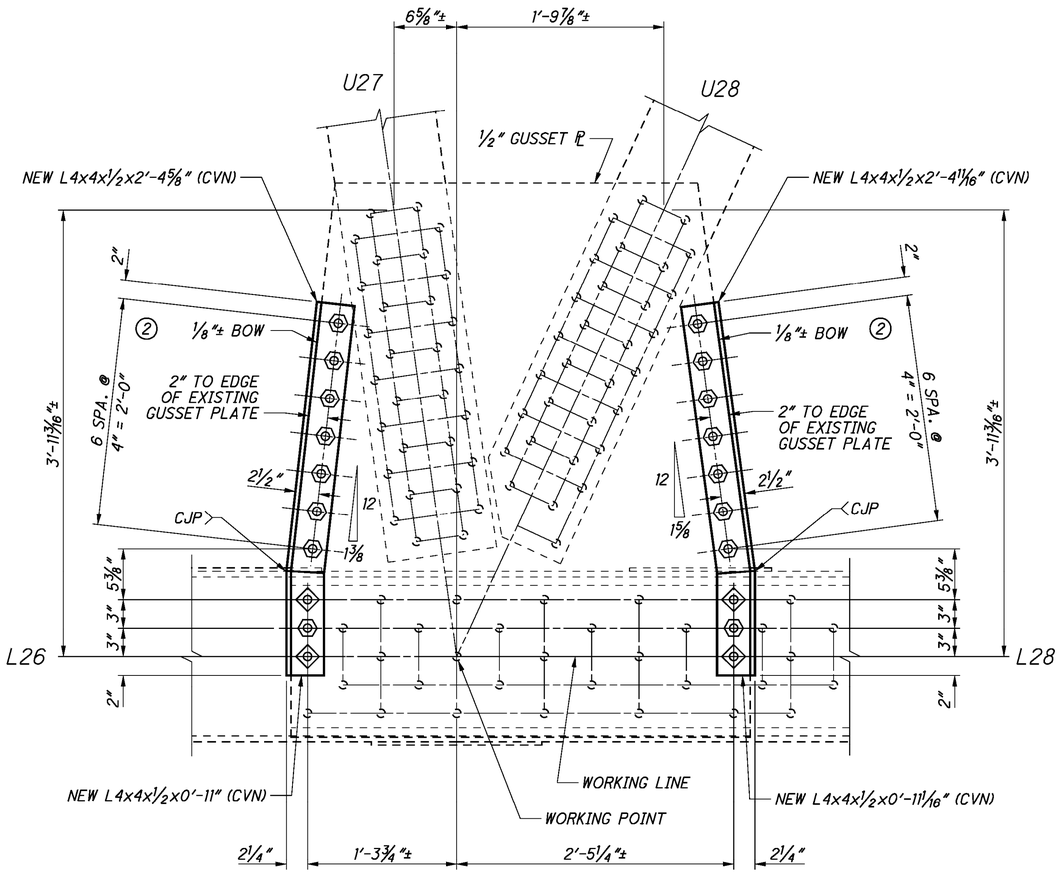
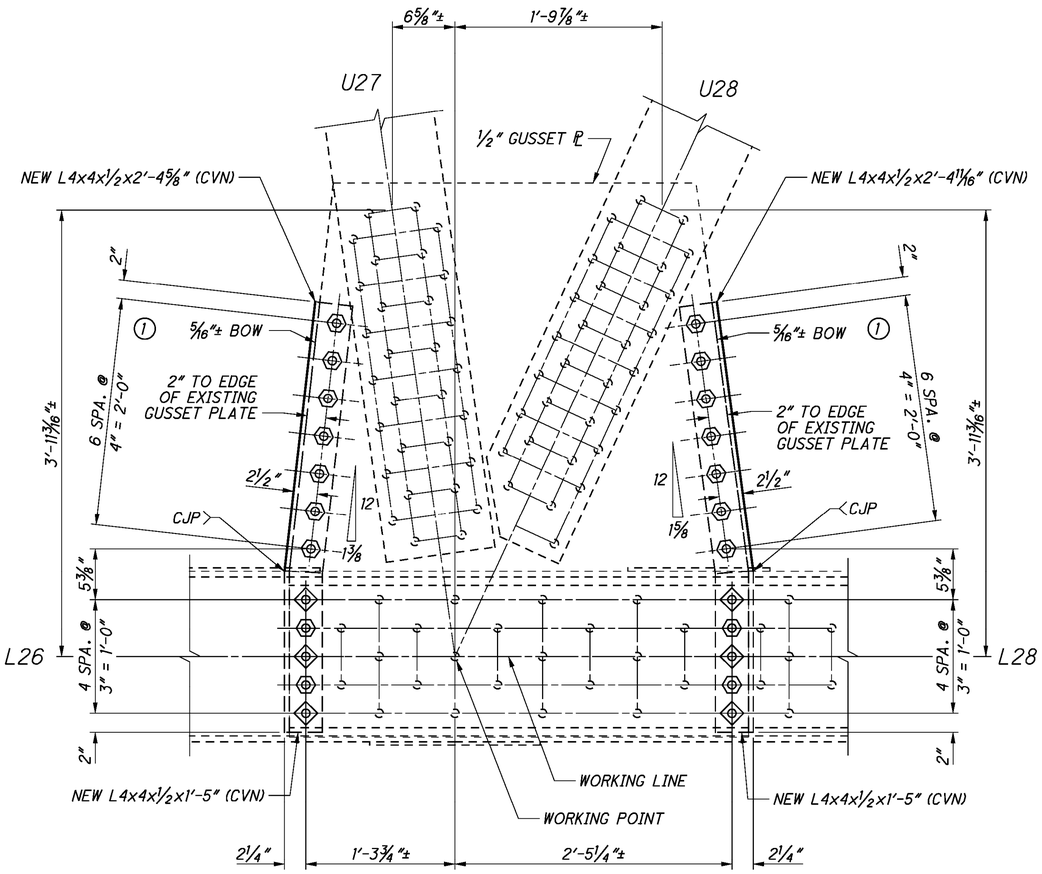


SPANS 7-10 - PANEL POINT L27
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L27
NORTH GUSSET PLATE - CENTER TRUSS

LEGEND

Ⓧ - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

⬡ - *FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 95 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (92 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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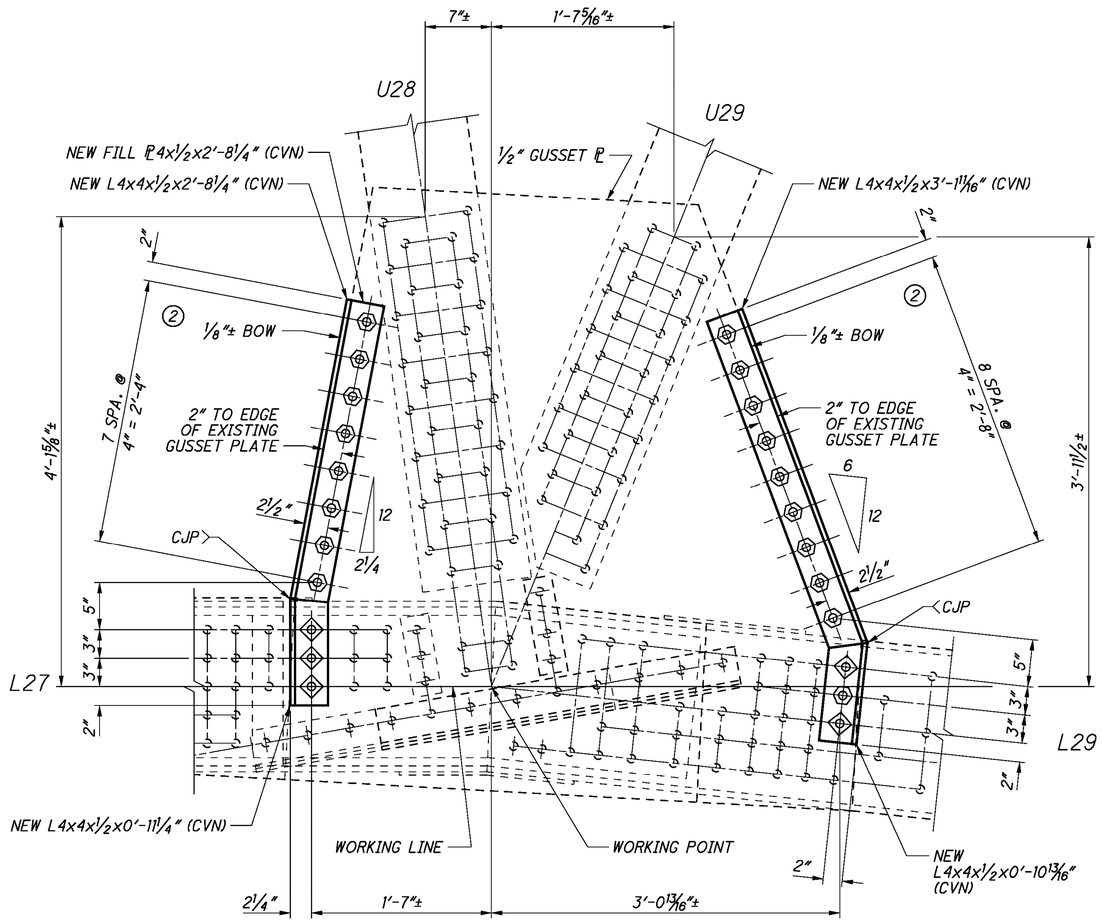
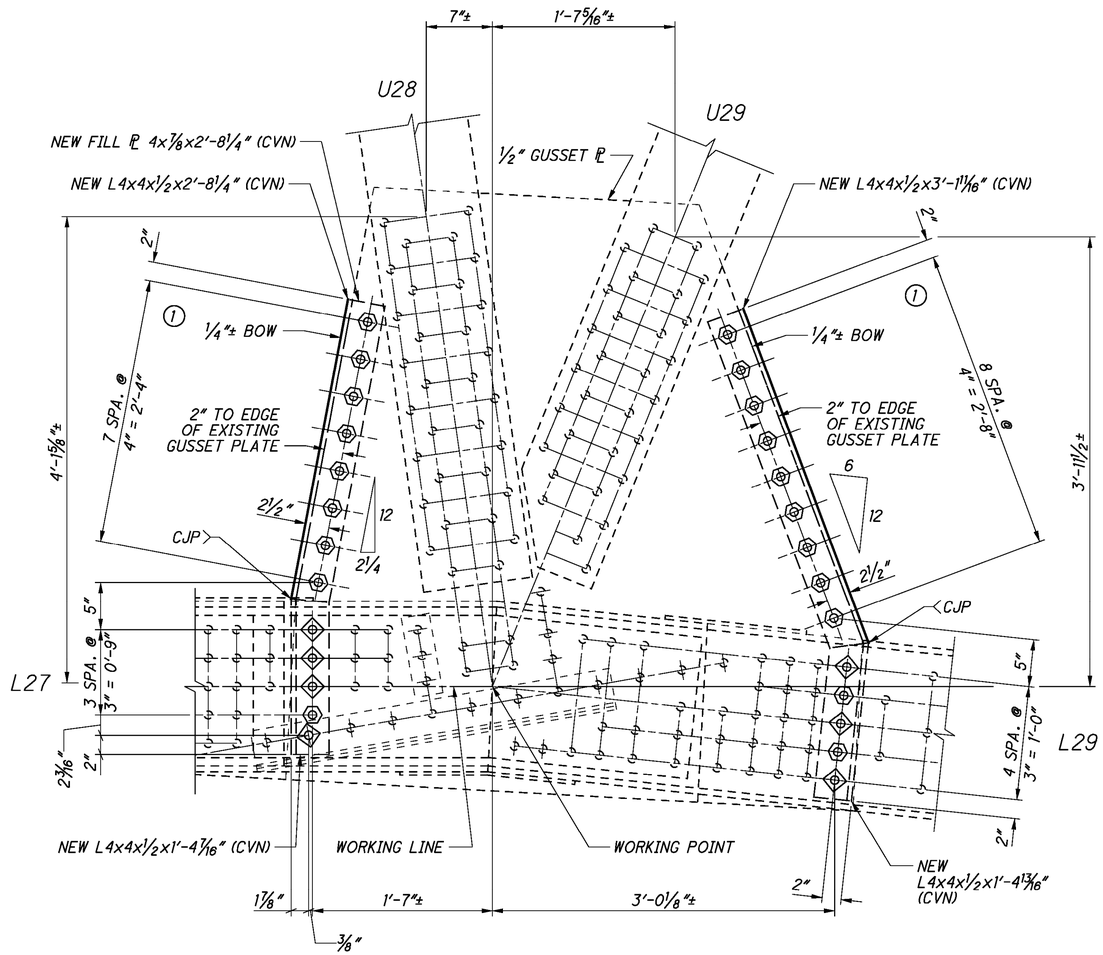


SPANS 7-10 - PANEL POINT L28
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L28
NORTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
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GUSSET PLATE EDGE STIFFENING DETAILS (93 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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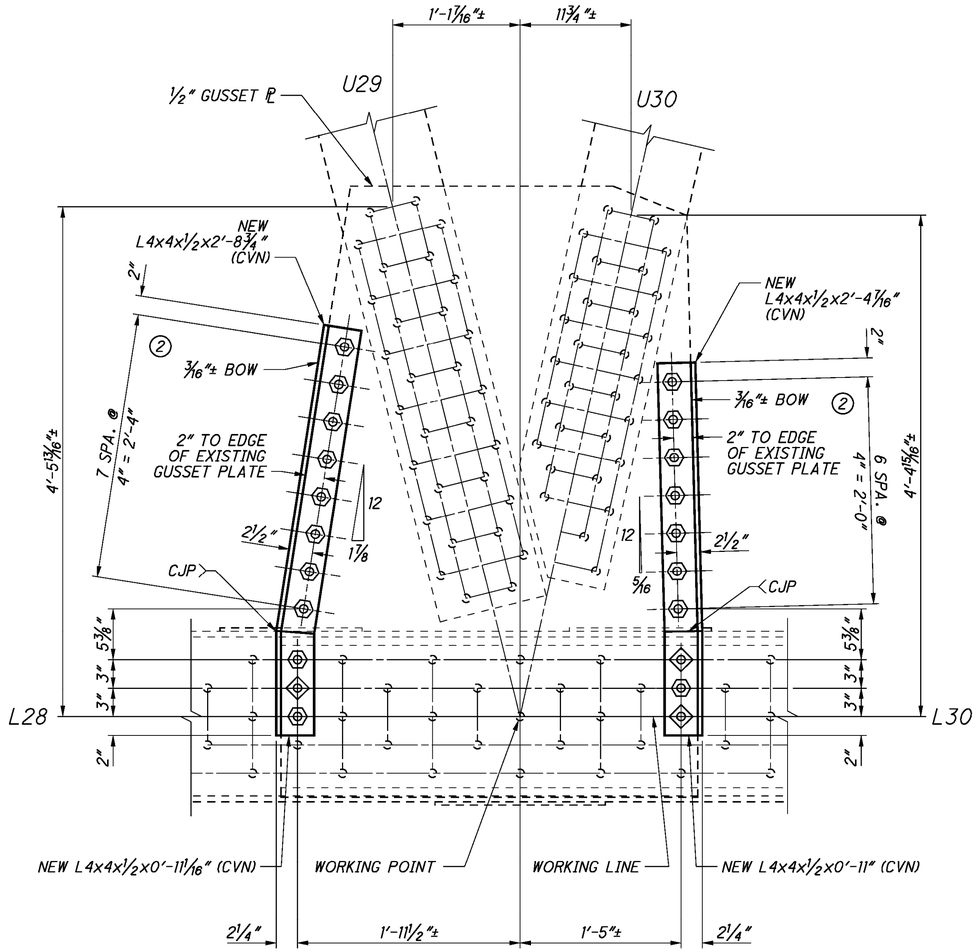
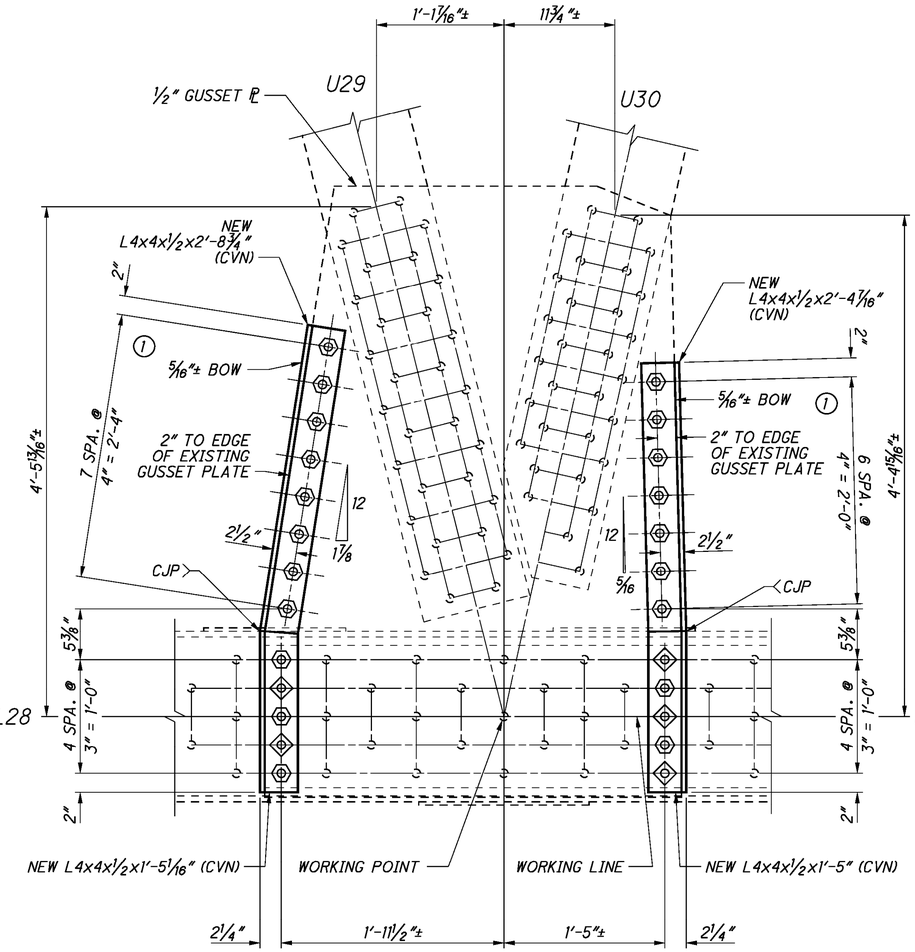


SPANS 7-10 - PANEL POINT L29
SOUTH GUSSET PLATE - NORTH TRUSS
NORTH GUSSET PLATE - SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L29
SOUTH GUSSET PLATE - CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND CENTER TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (94 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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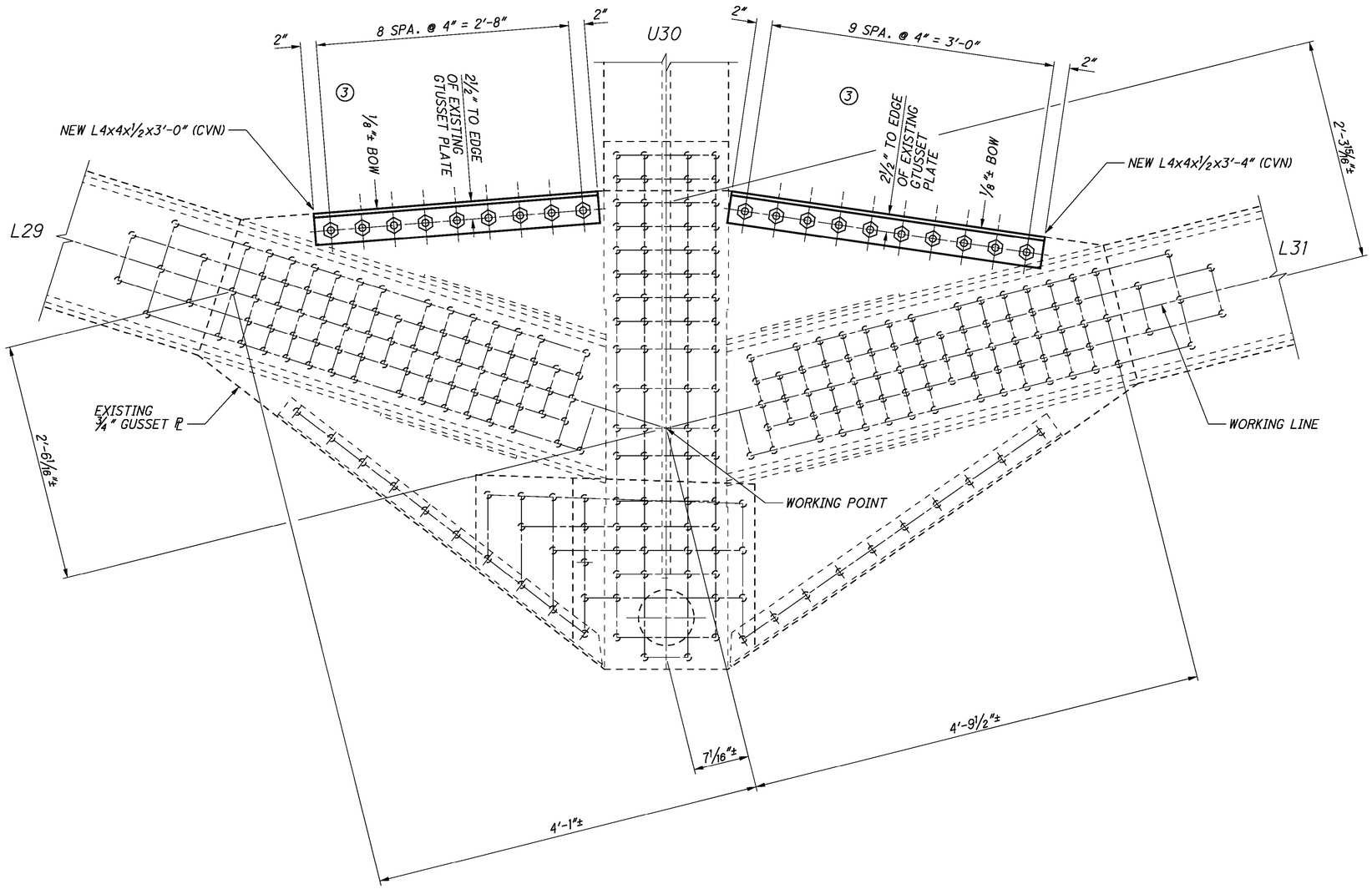

SPANS 7-10 - PANEL POINT L30 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
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RJM		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (95 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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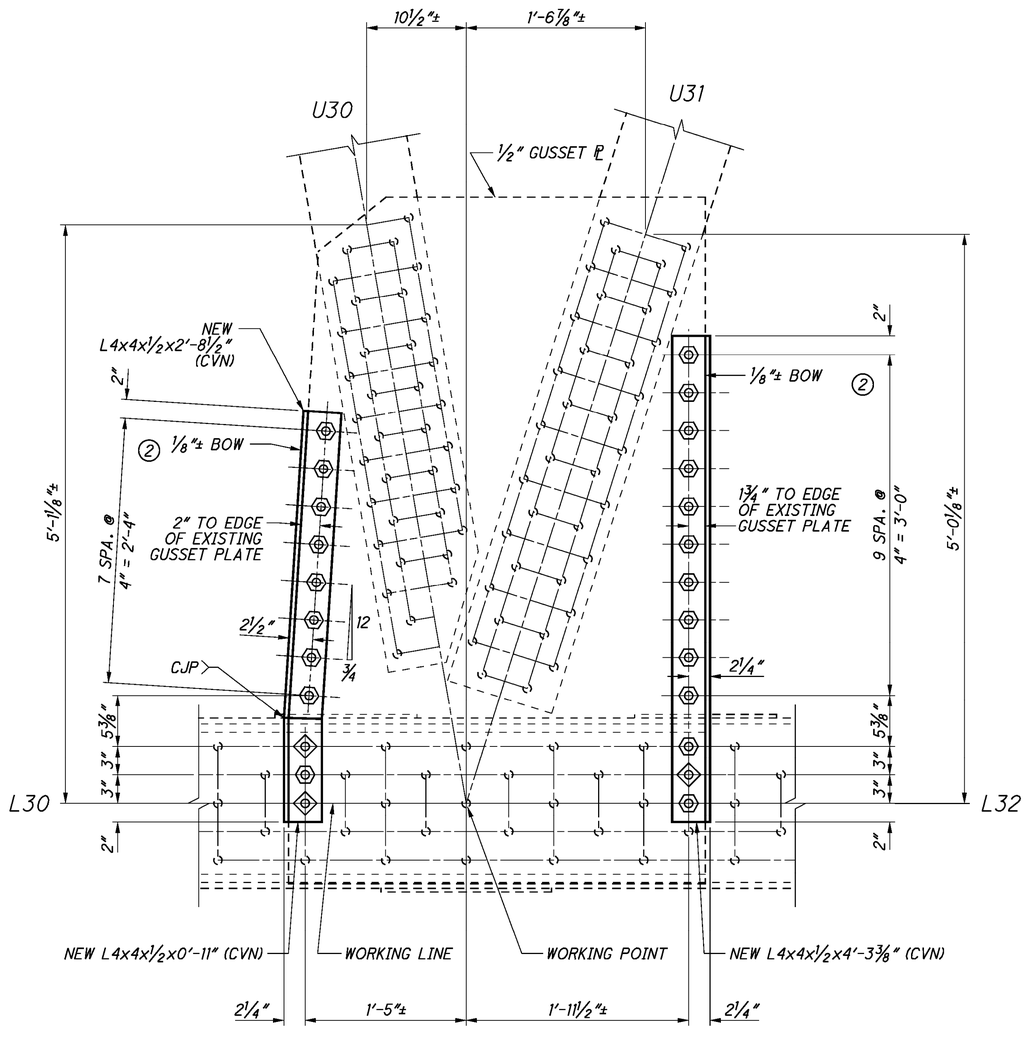
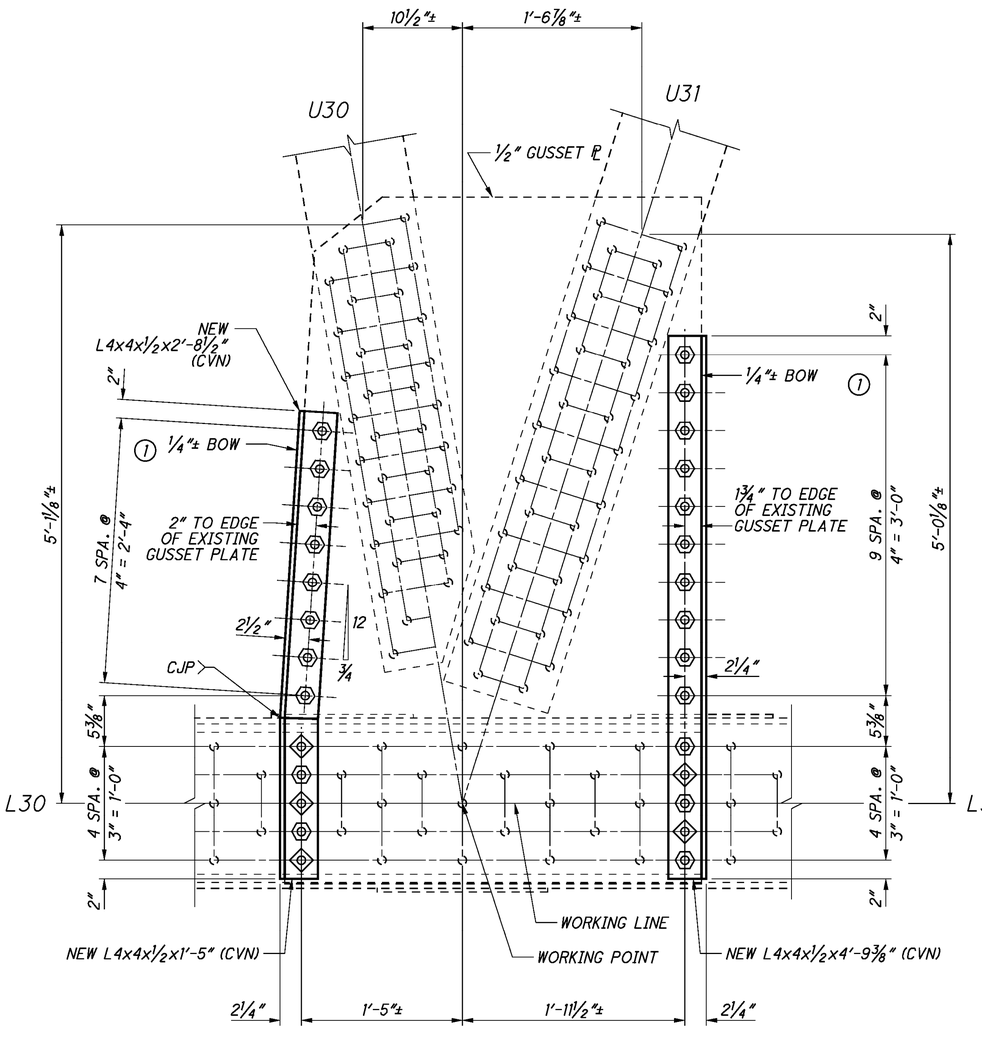


SPANS 7-10 - PANEL POINT L31
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L31
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

Ⓧ - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DWC	JKG	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (96 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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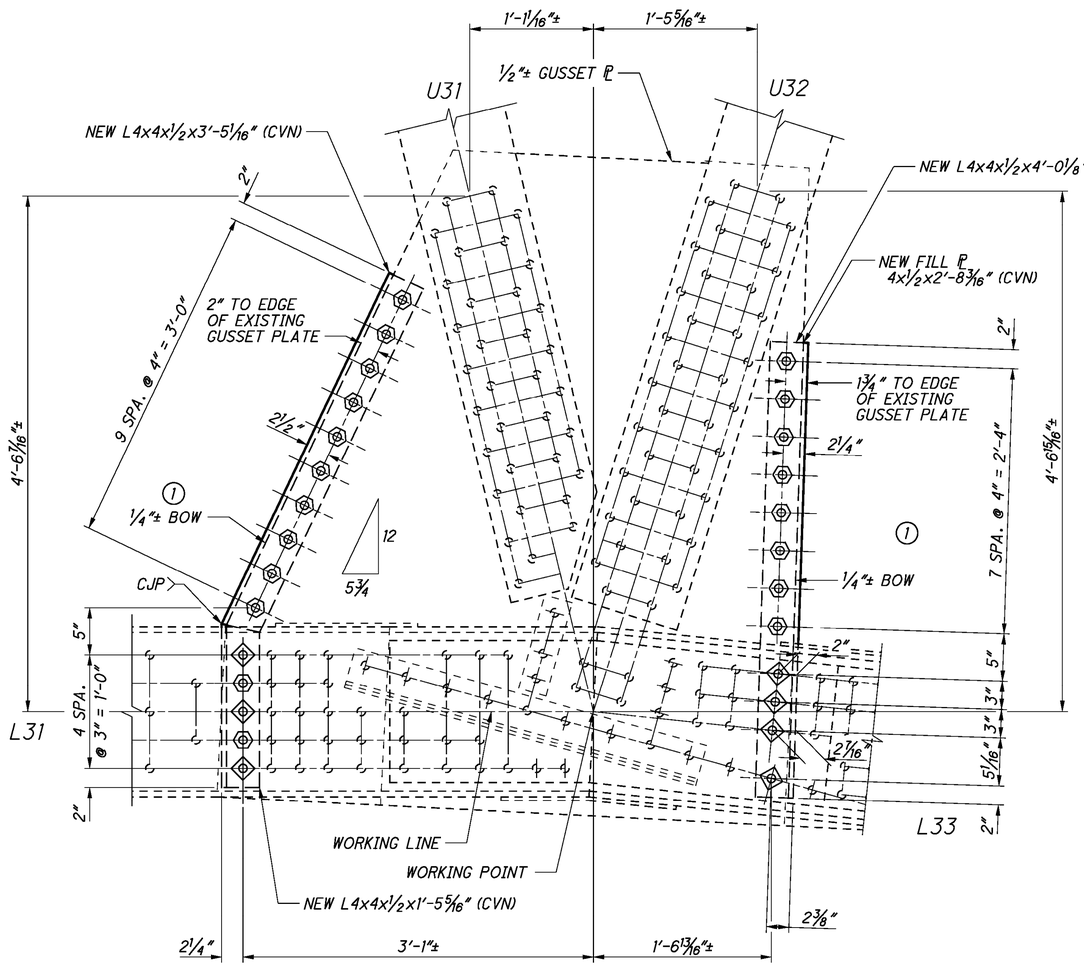
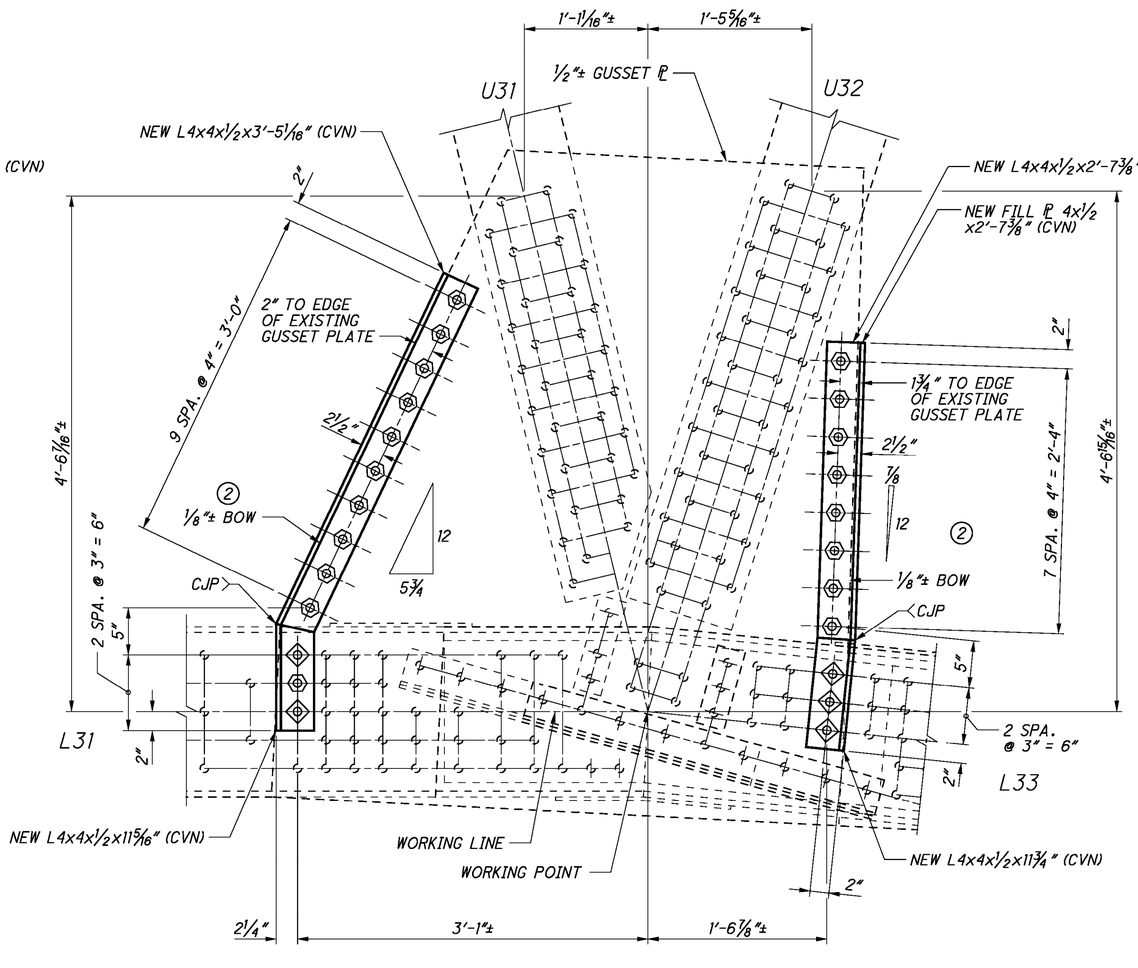


SPANS 7-10 - PANEL POINT L32
NORTH GUSSET PLATE - CENTER TRUSS



SPANS 7-10 - PANEL POINT L32
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

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DWC	JDG	PJA	10-05-16
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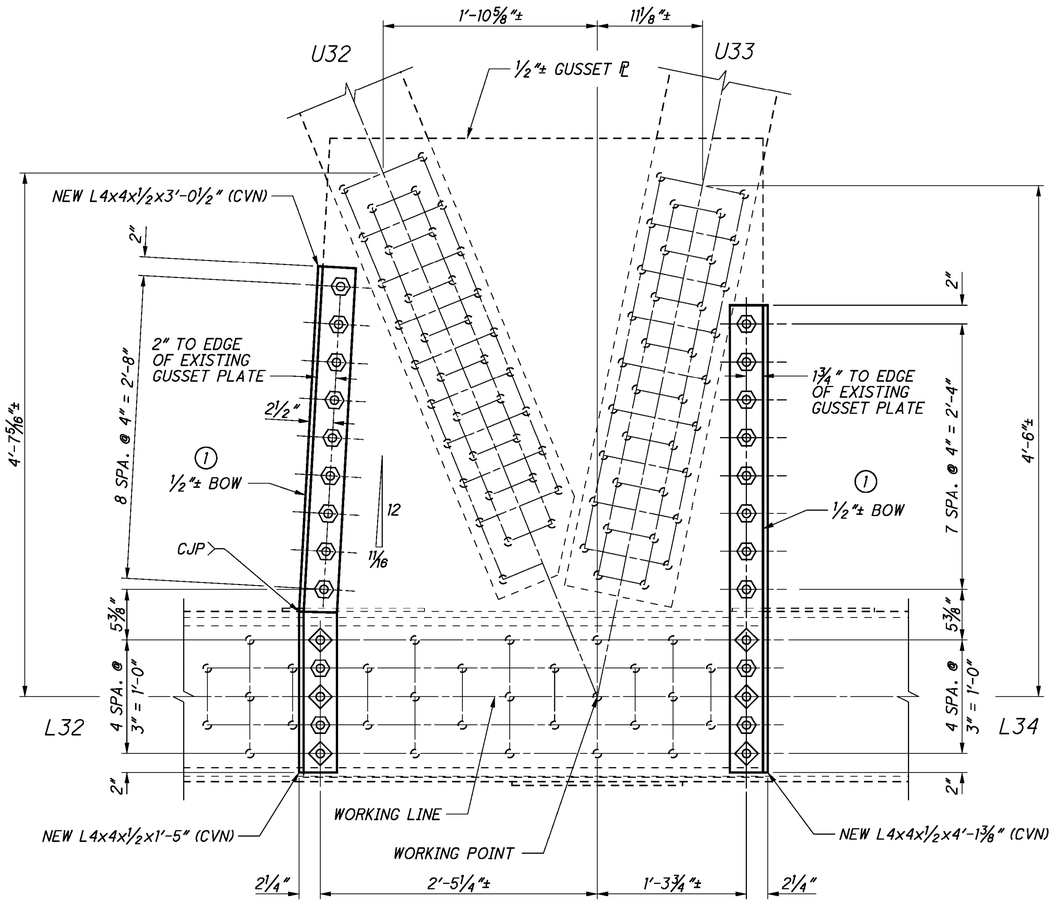
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (97 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

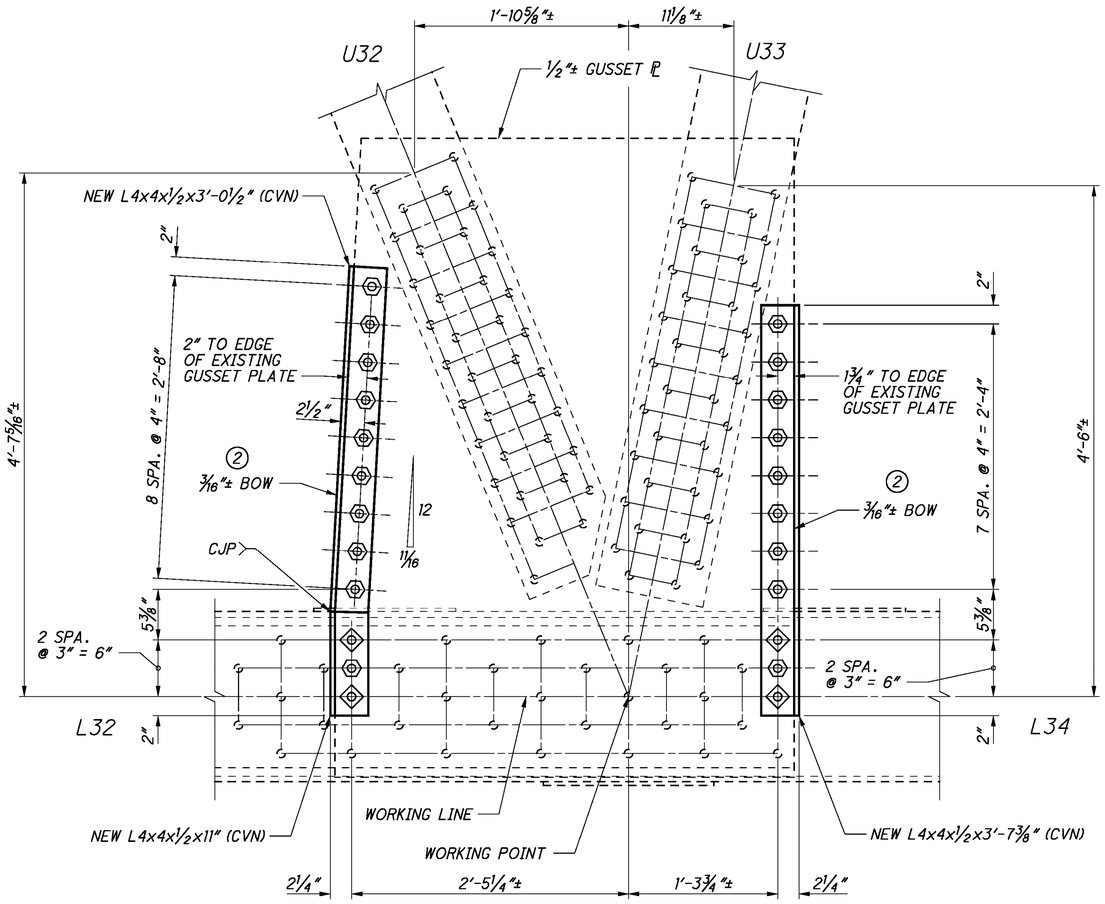
HAM-50-2180N
PID No. 91939

119 / 156

162 / 199



SPANS 7-10 - PANEL POINT L33
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L33
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - CENTER TRUSS - OPPOSITE HAND

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

- ○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*
- ⬡ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*
- ◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 95 / 156 .
2. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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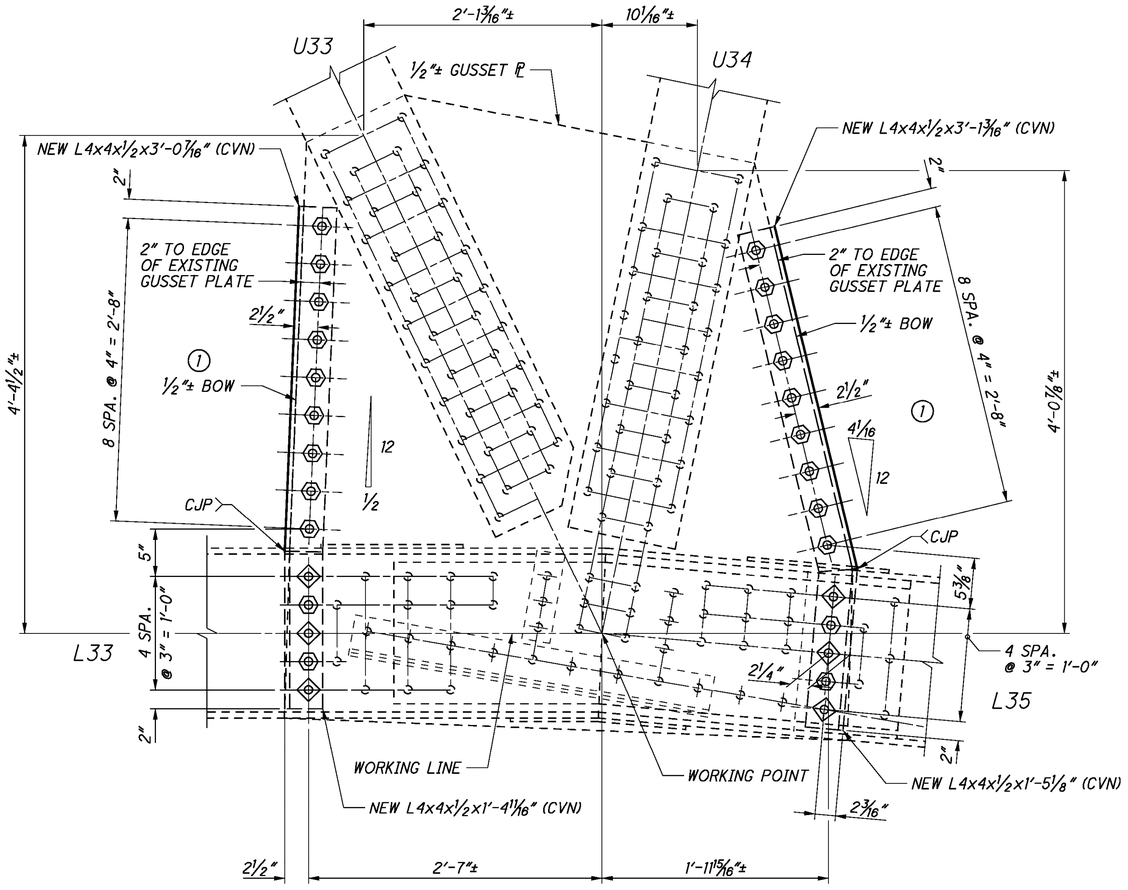
GUSSET PLATE EDGE STIFFENING DETAILS (98 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

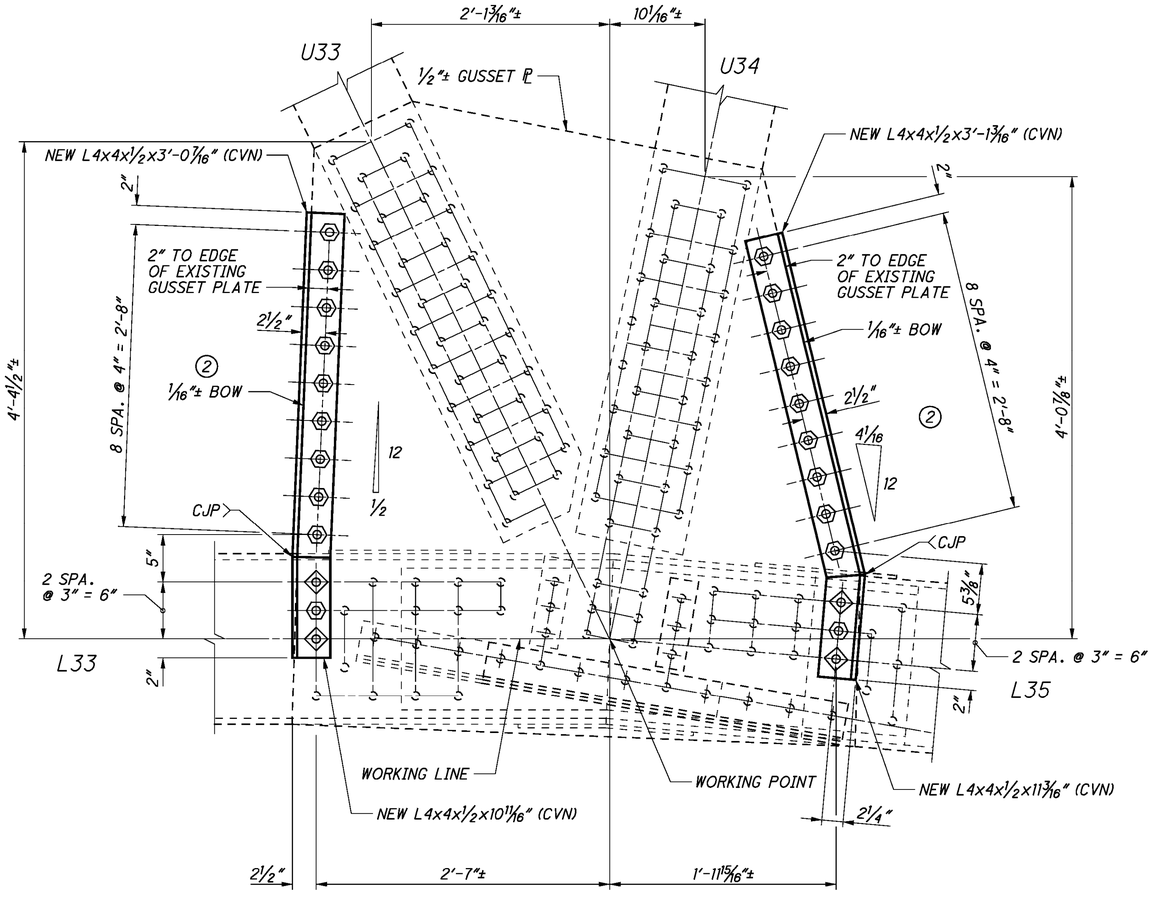
HAM-50-2180N
PID No. 91939

120 / 156

163 / 199



SPANS 7-10 - PANEL POINT L34
NORTH GUSSET PLATE - CENTER AND NORTH TRUSS



SPANS 7-10 - PANEL POINT L34
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (99 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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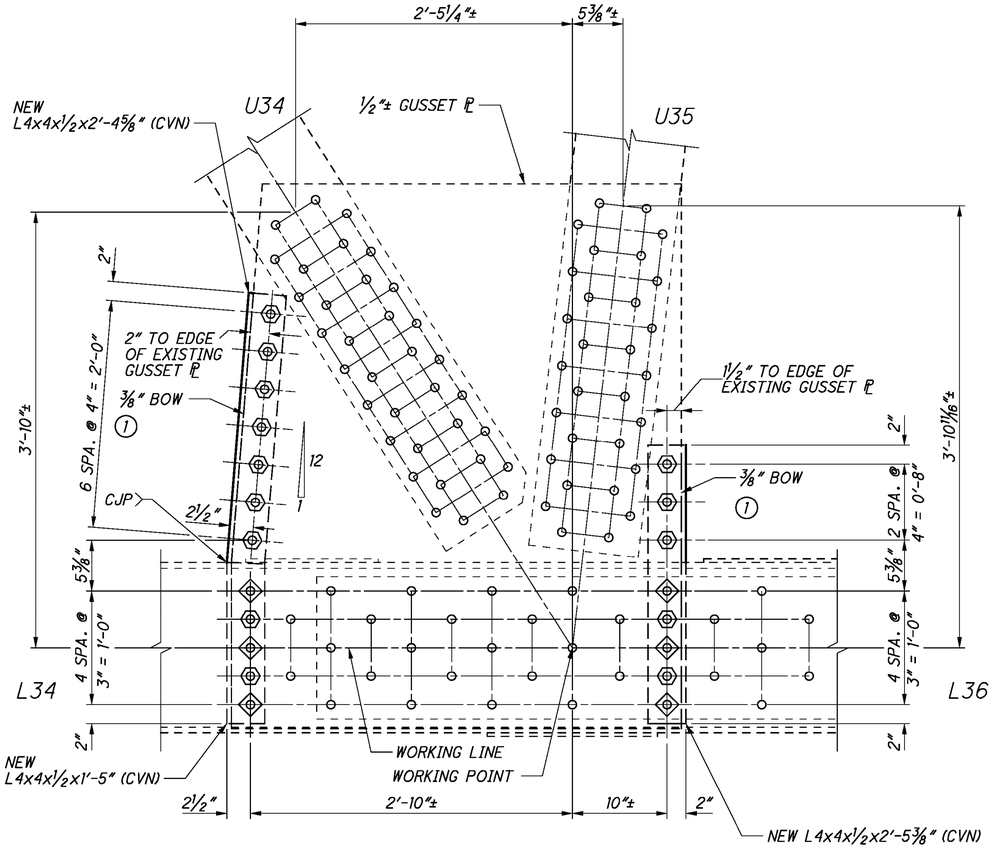
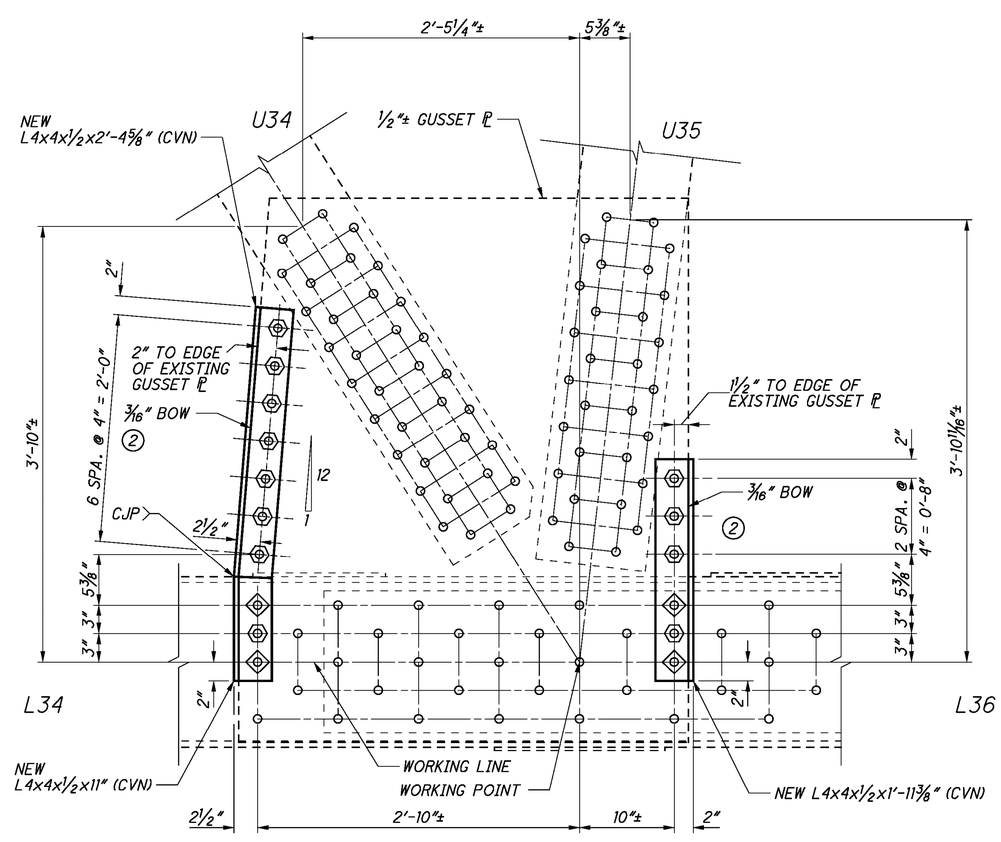


SPANS 7-10 - PANEL POINT L35
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L35
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⌬ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (100OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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199

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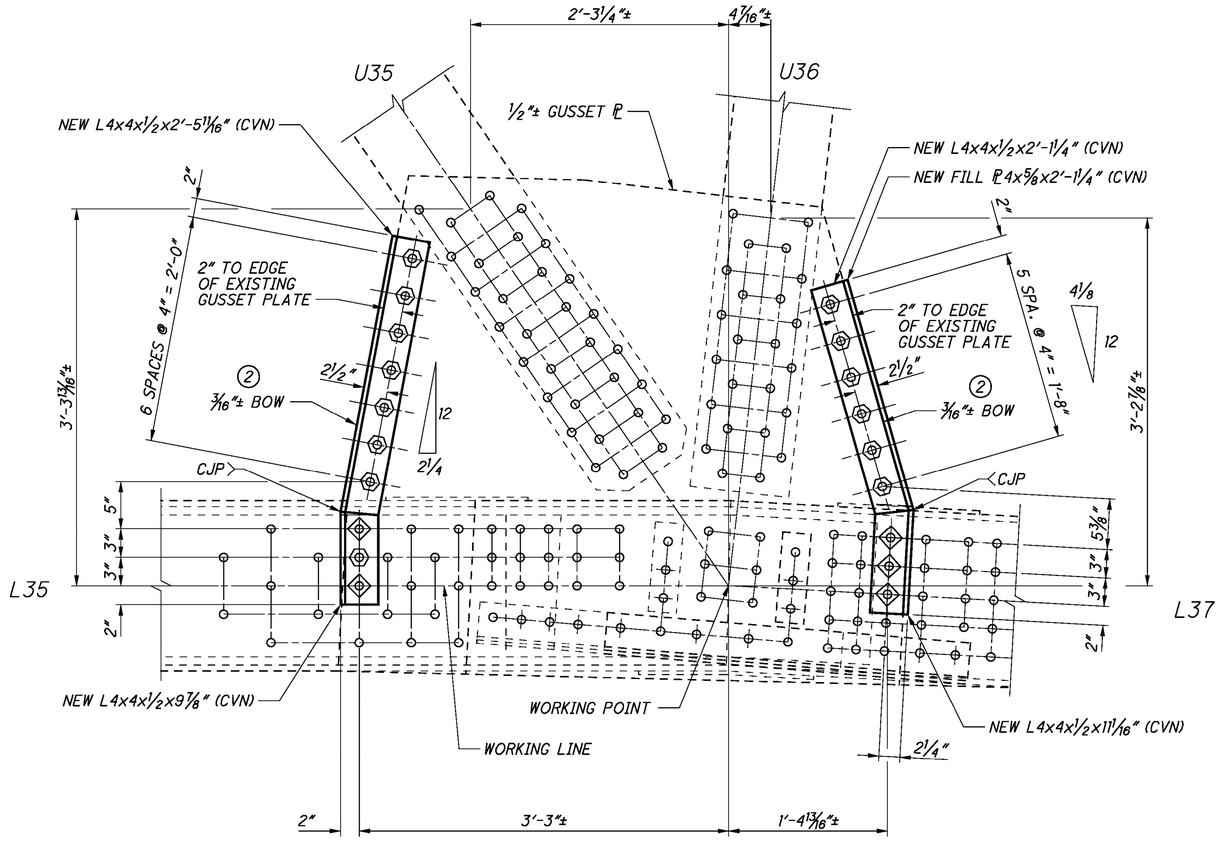

SPANS 7-10 - PANEL POINT L36 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (101 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

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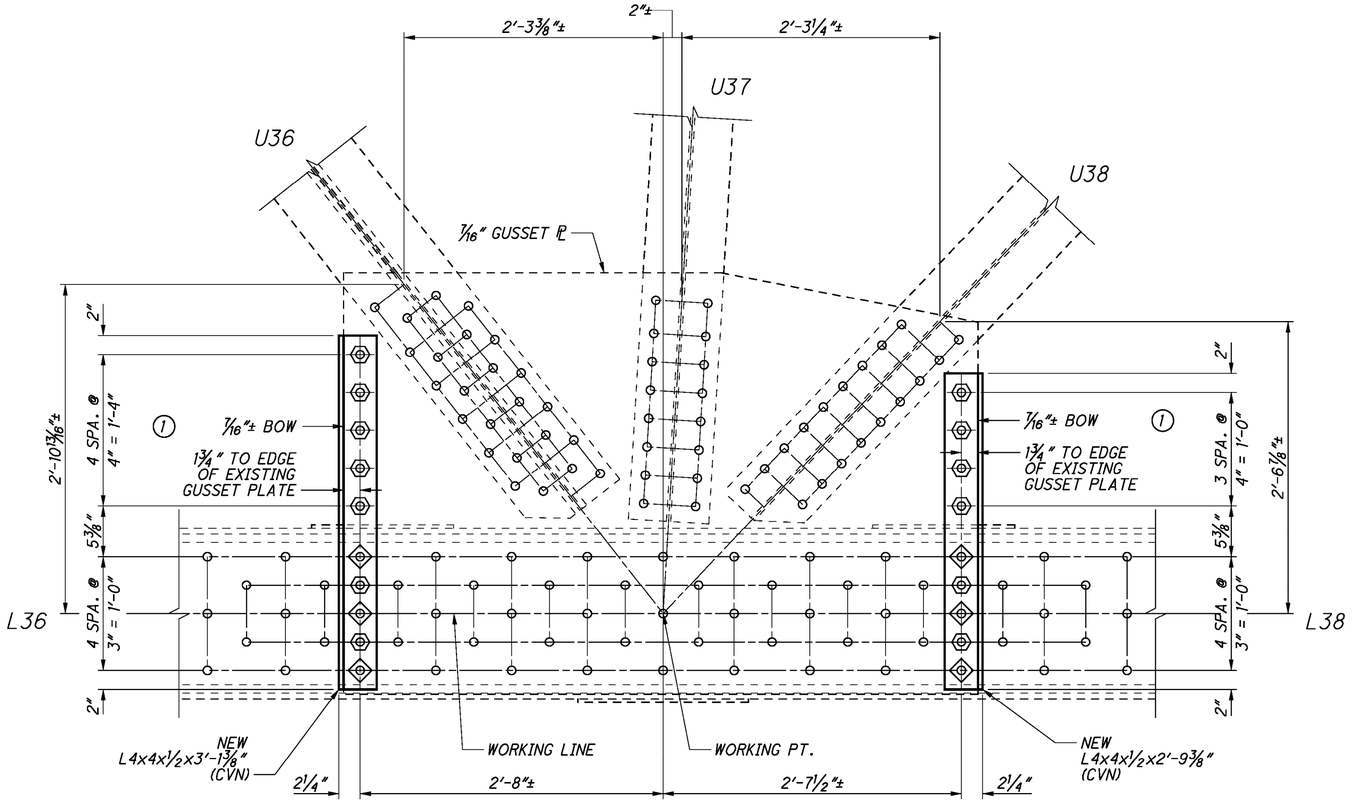

SPANS 7-10 - PANEL POINT L37
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◈ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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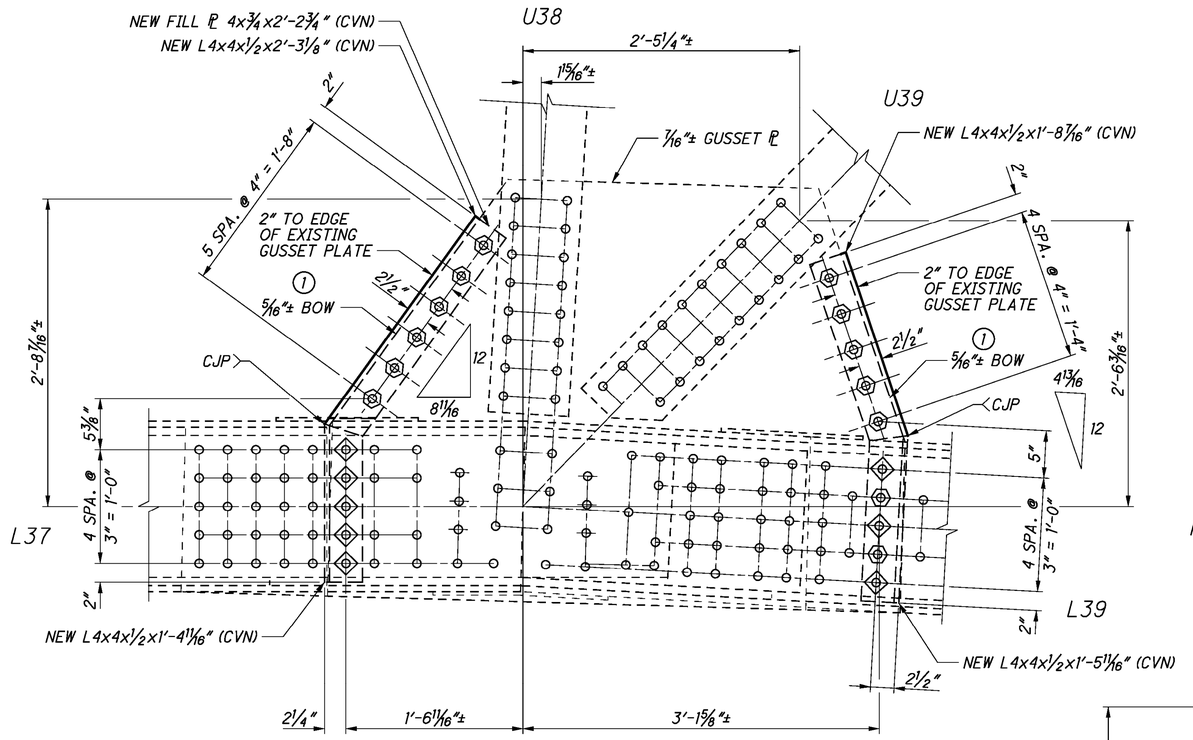
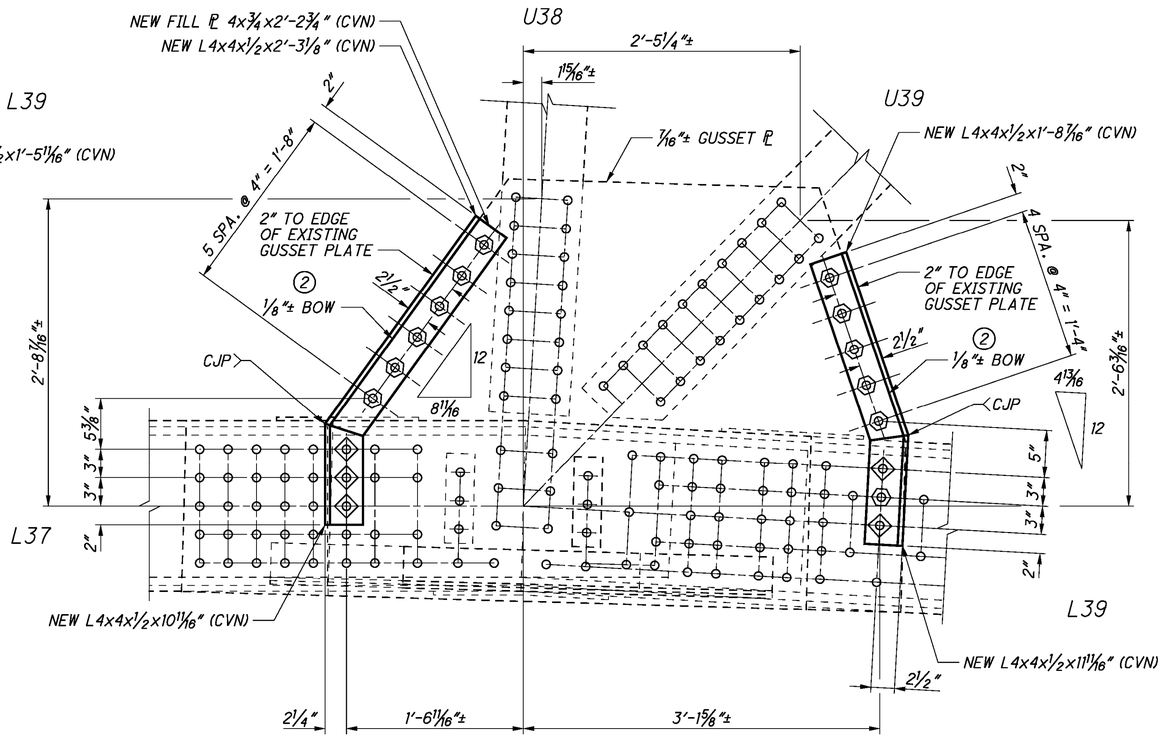
GUSSET PLATE EDGE STIFFENING DETAILS (102 OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939



SPANS 7-10 - PANEL POINT L38
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L38
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (103OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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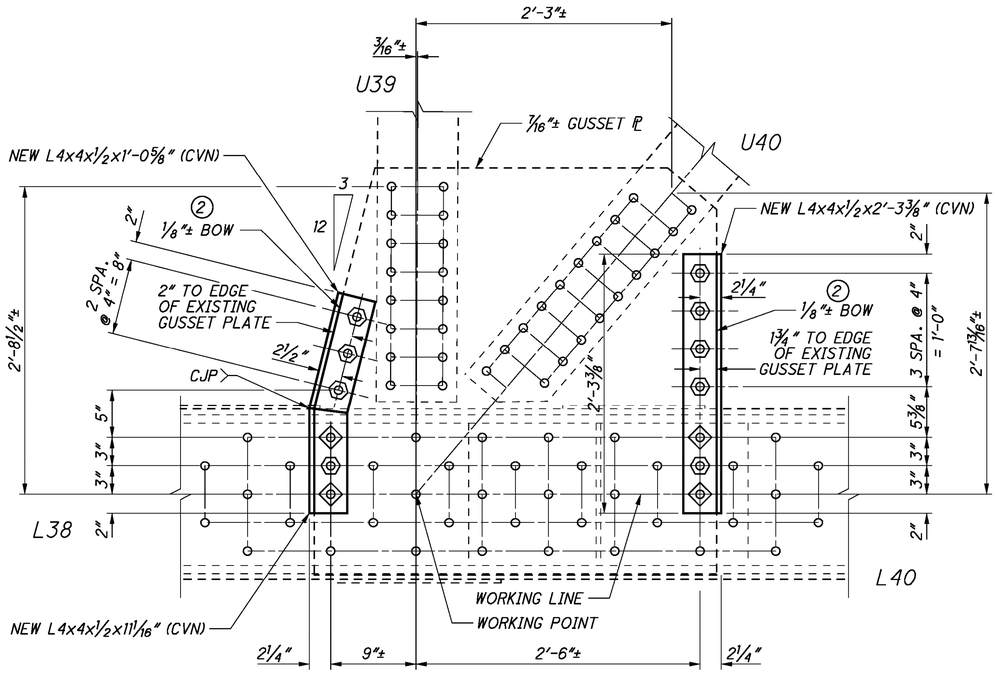
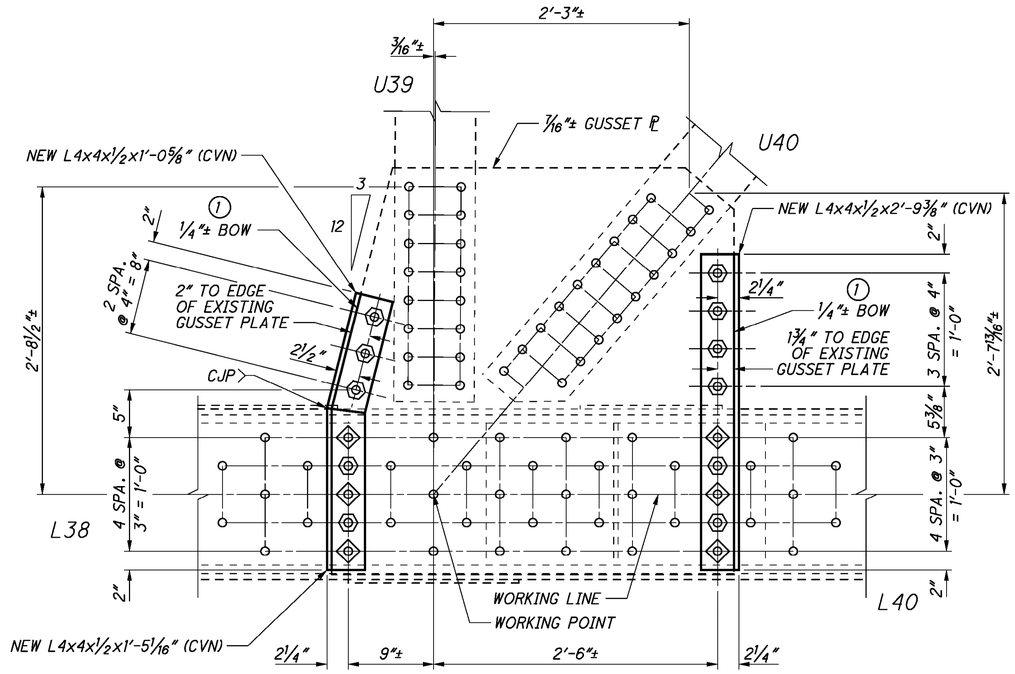


SPANS 7-10 - PANEL POINT L39
SOUTH GUSSET PLATE - CENTER TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L39
SOUTH GUSSET PLATE - NORTH AND SOUTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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GUSSET PLATE EDGE STIFFENING DETAILS (104OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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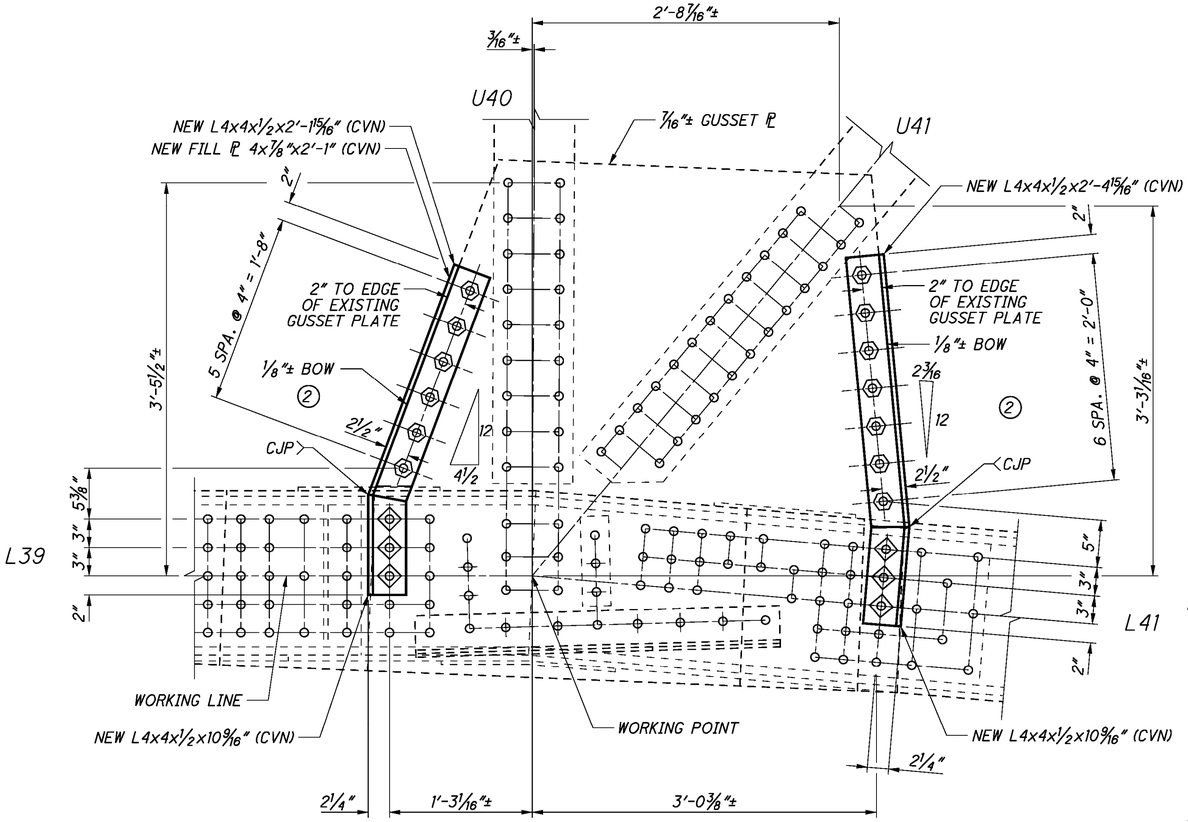
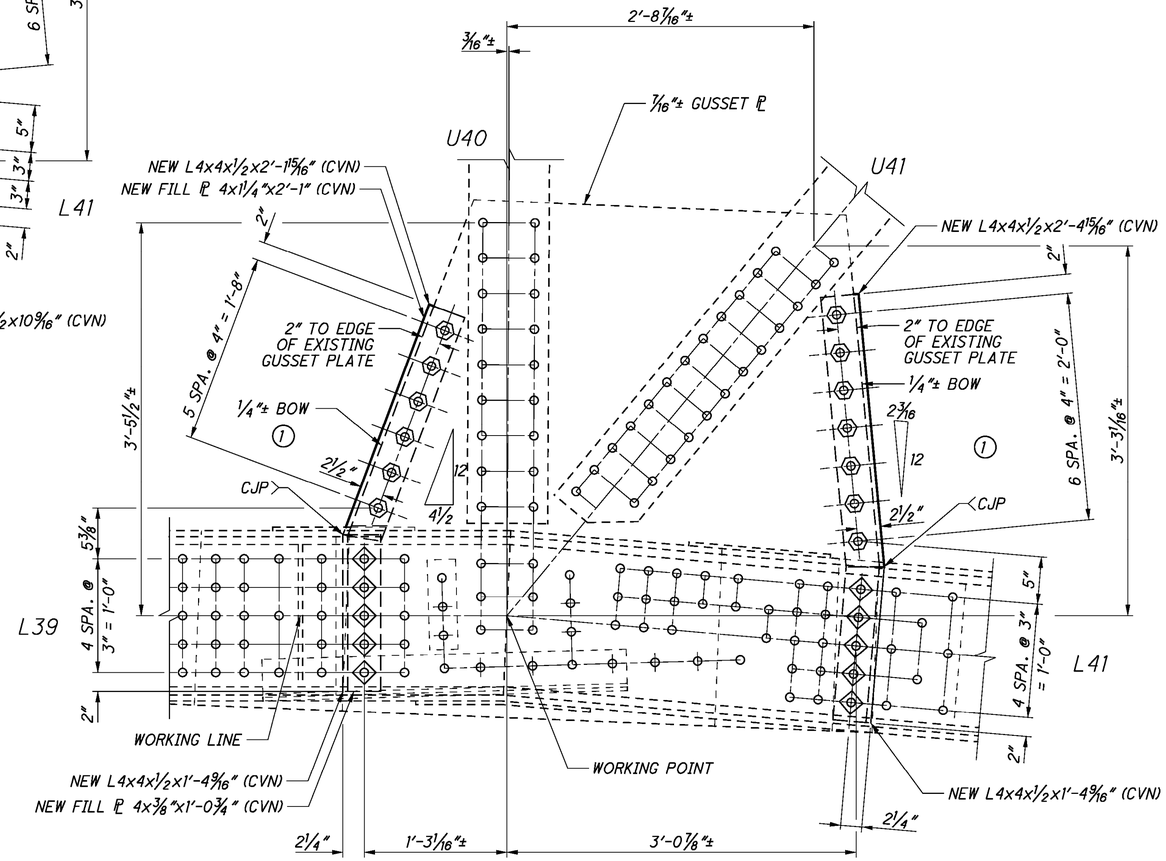


SPANS 7-10 - PANEL POINT L40
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L40
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (105 OF 123)
BRIDGE No. HAM-50-2180N
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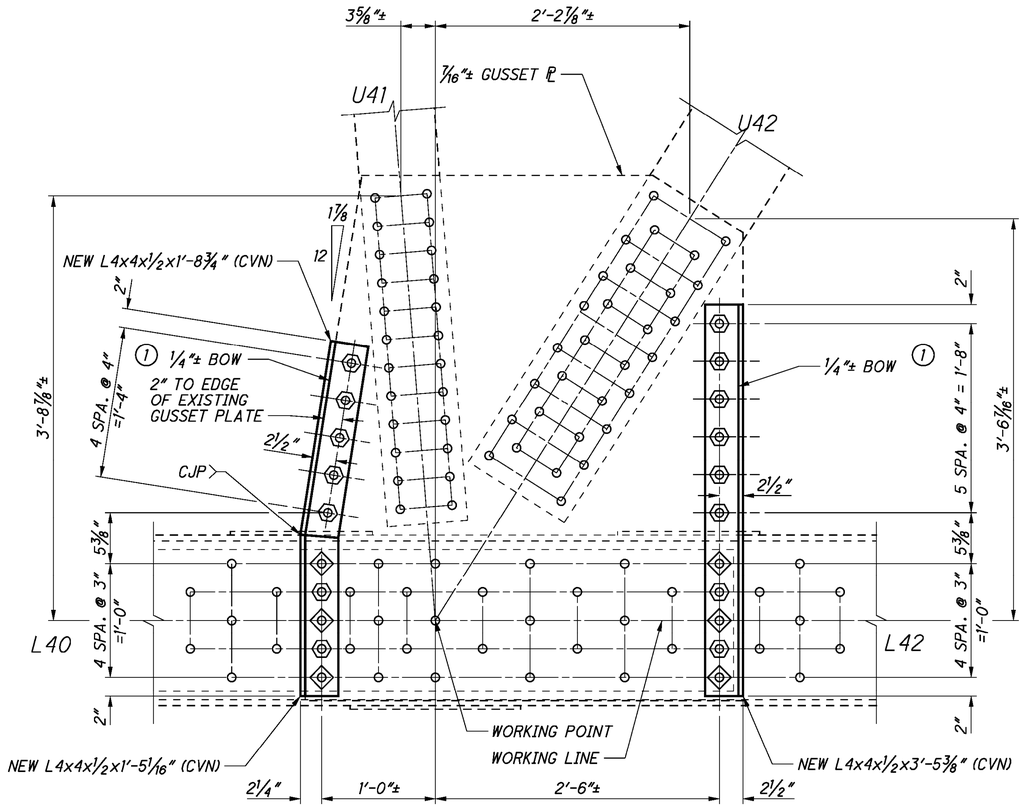
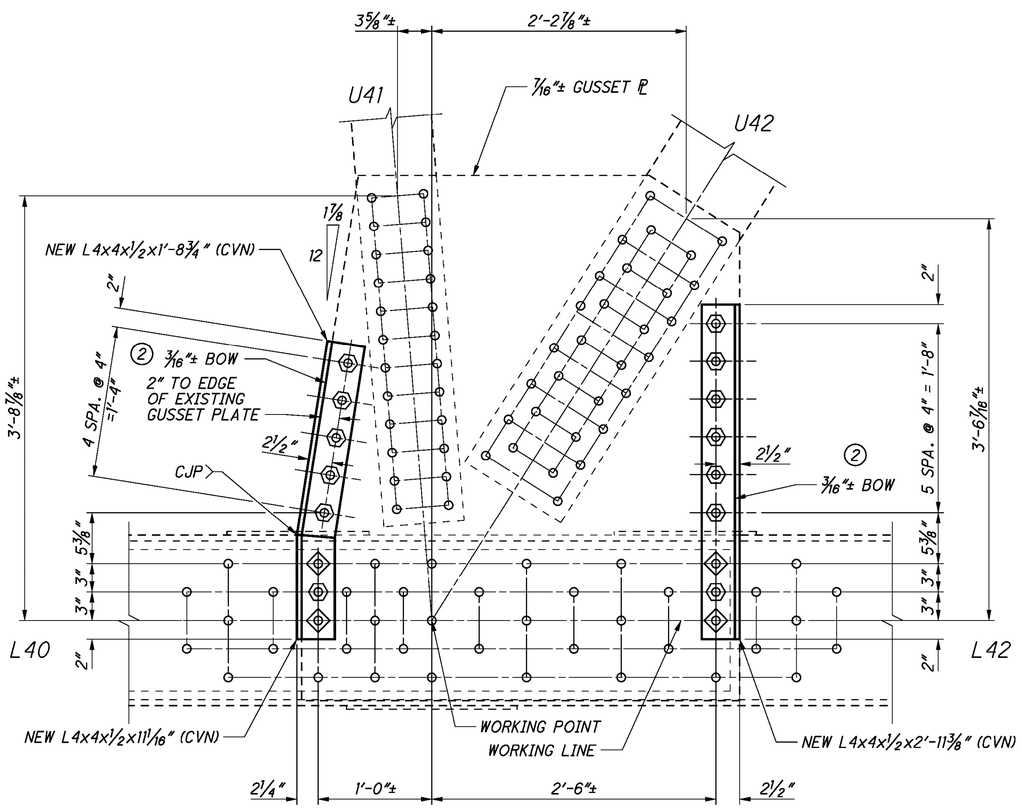


SPANS 7-10 - PANEL POINT L41 - NORTH AND SOUTH GUSSET PLATES
NORTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L41 - NORTH AND SOUTH GUSSET PLATES
SOUTH AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

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GUSSET PLATE EDGE STIFFENING DETAILS (106OF 123)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

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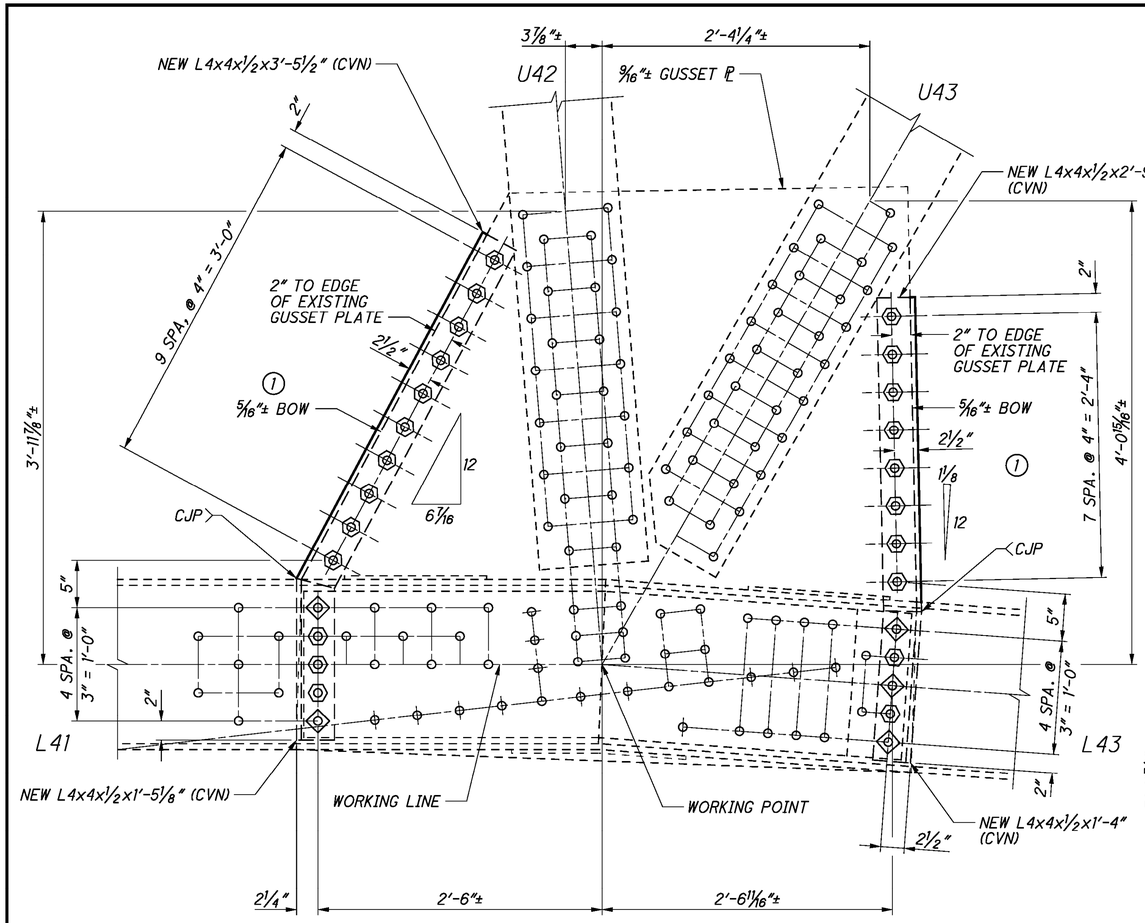
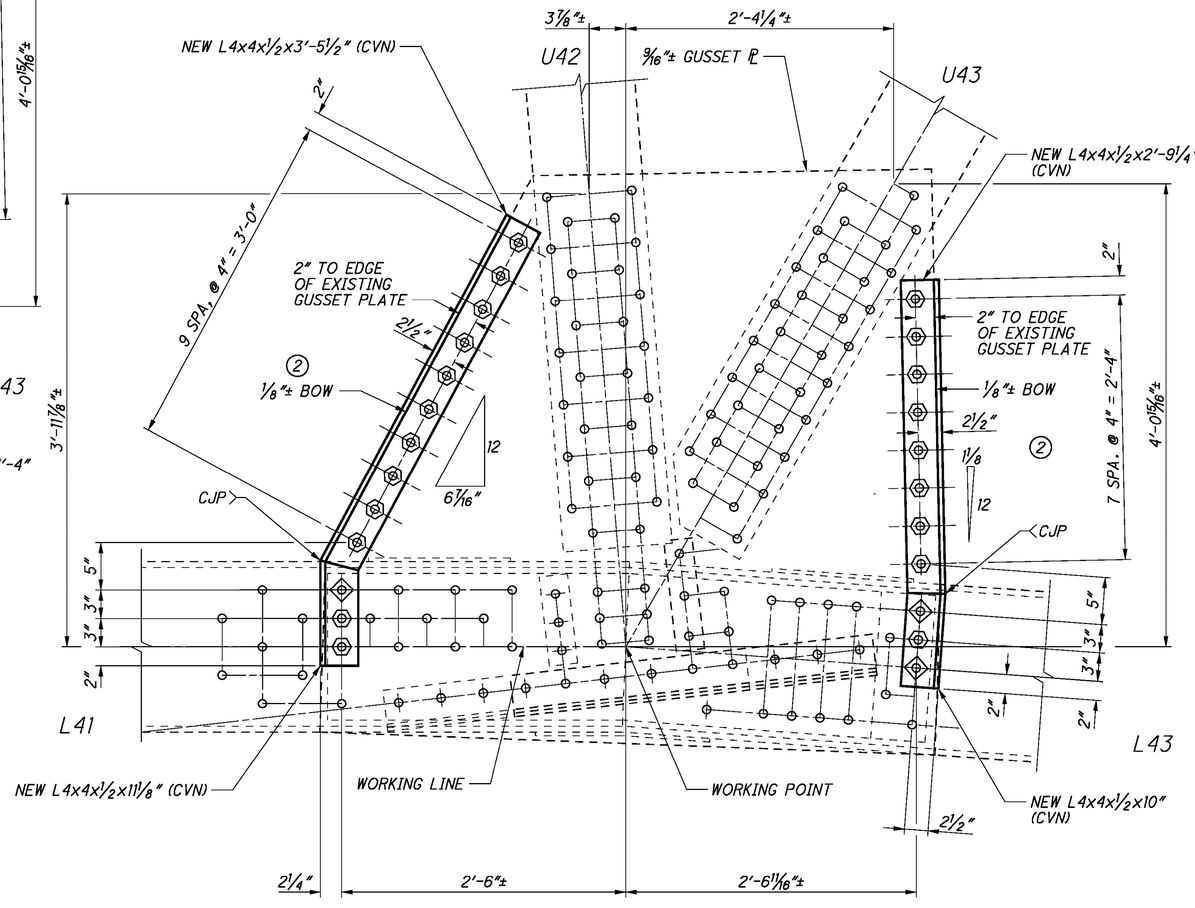


SPANS 7-10 - PANEL POINT L42
NORTH GUSSET PLATE - NORTH TRUSS



SPANS 7-10 - PANEL POINT L42
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⊚ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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GUSSET PLATE EDGE STIFFENING DETAILS (107 OF 123)
BRIDGE No. HAM-50-2180N
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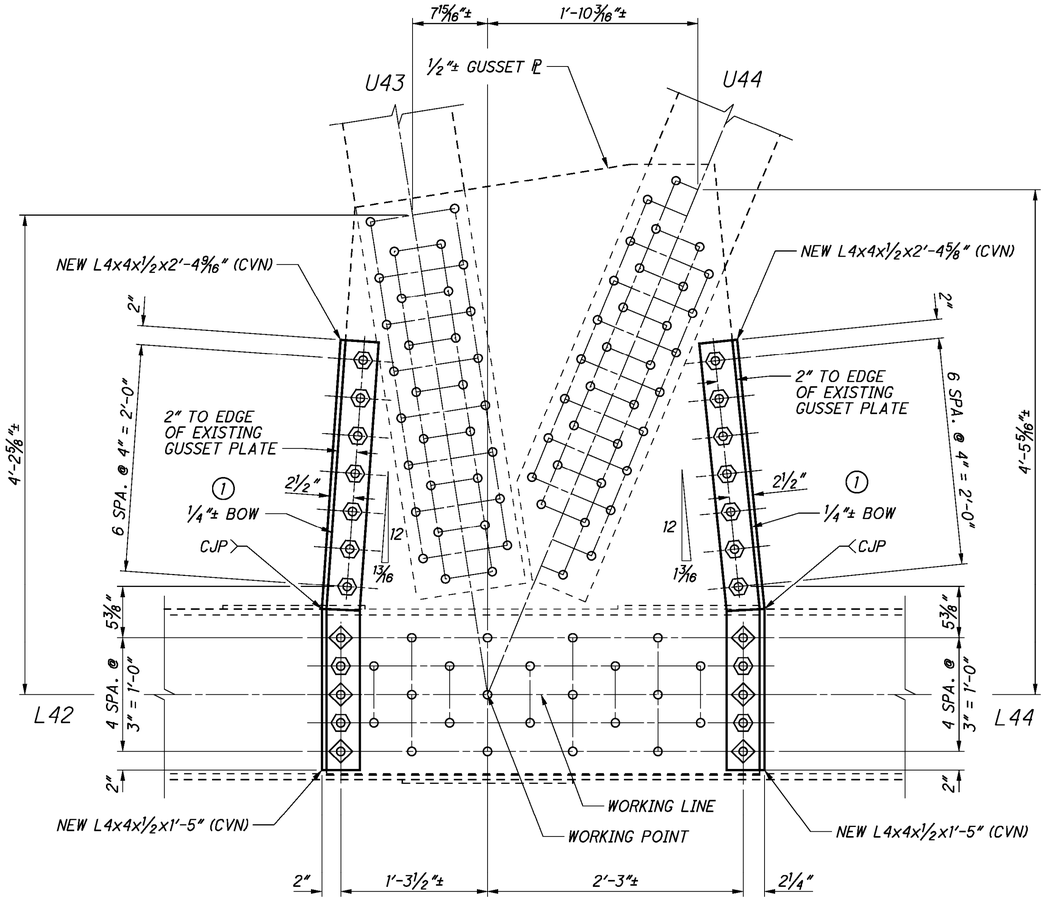
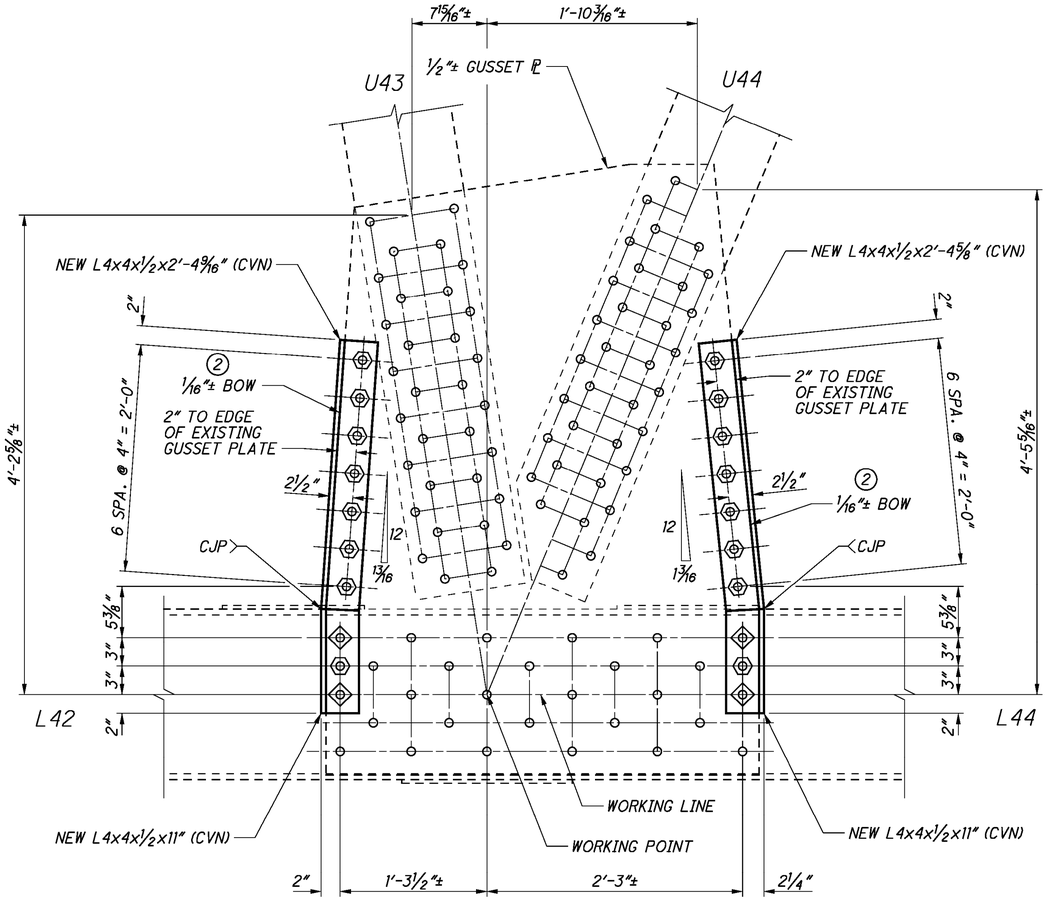


SPANS 7-10 - PANEL POINT L43 - NORTH AND SOUTH GUSSET PLATES
SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 7-10 - PANEL POINT L43 - NORTH AND SOUTH GUSSET PLATES
NORTH AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND
(X) - REPAIR TYPE

BOLT LEGEND:
- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⬡ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.
- ◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:
1. FOR GUSSET PLATE NOTES, SEE SHEET 95 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
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GUSSET PLATE EDGE STIFFENING DETAILS (108 OF 123)
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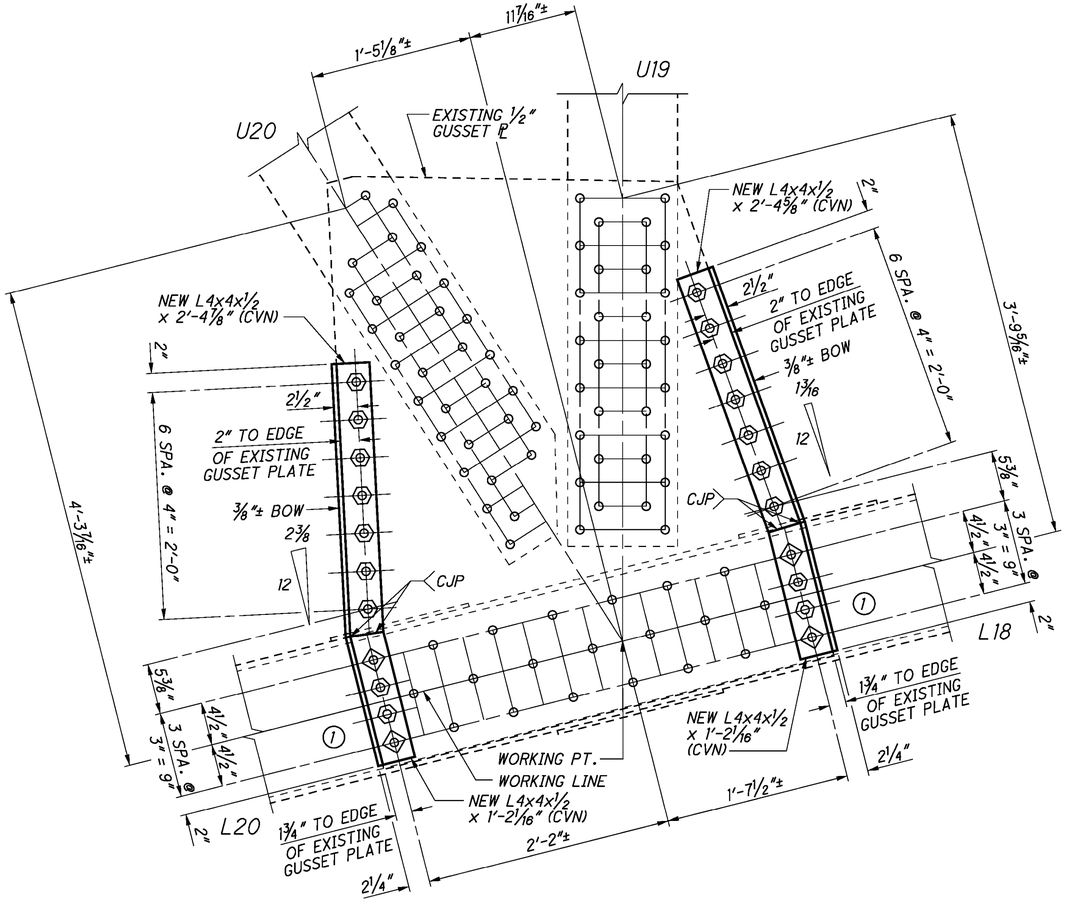
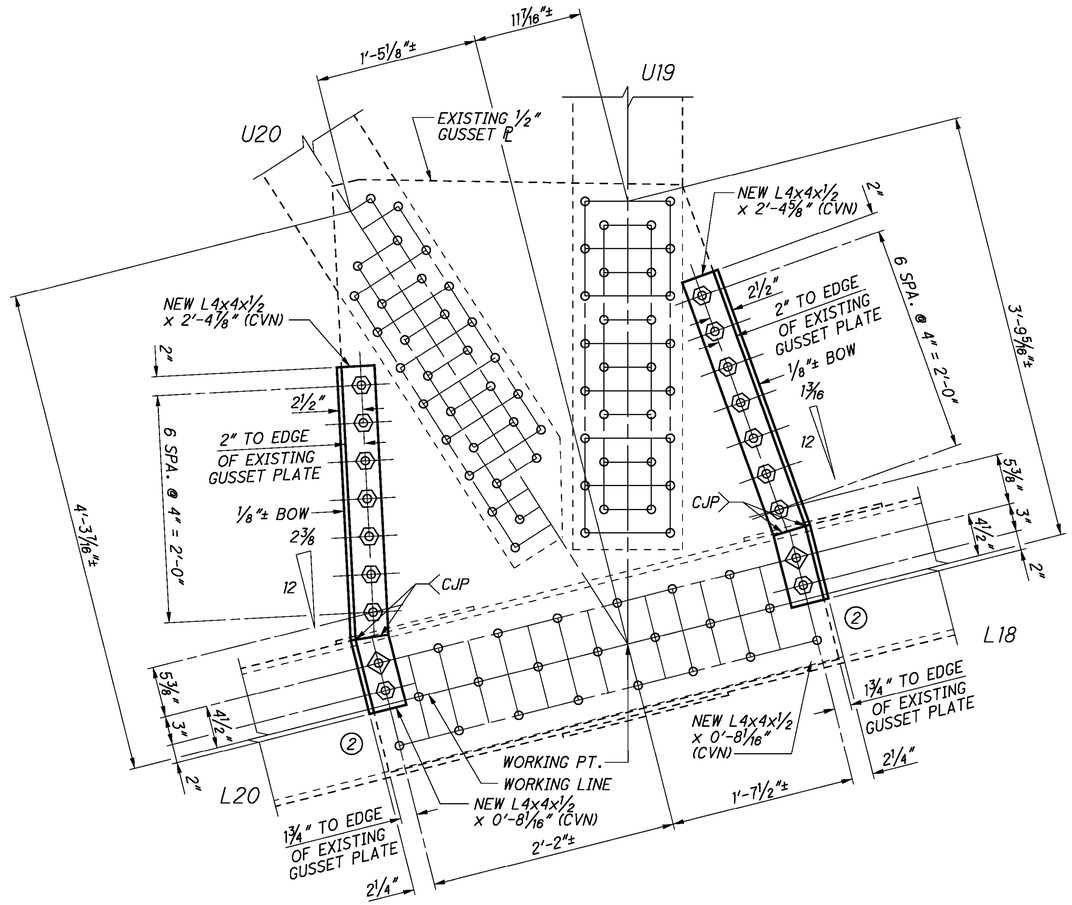


SPANS 10-12 - PANEL POINT L19 - NORTH AND SOUTH GUSSET PLATES
NORTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L19 - NORTH AND SOUTH GUSSET PLATES
CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. SOME CONNECTION ANGLES AND PLATES HAVE BEEN OMITTED FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY EACH NEW ANGLE LOCATION AND ENSURE NO CONFLICTS EXIST. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF ANY CONFLICTS EXIST.
3. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS: U = UPPER PANEL POINT
   L = LOWER PANEL POINT
4. CJP - COMPLETE JOINT PENETRATION WELD (ANGLES ONLY)
5. ALL NEW BOLTS SHALL BE 7/8" DIAMETER A490, TYPE 3 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE 15/16" DIAMETER. BOLT LENGTH REQUIREMENTS SHALL BE DETERMINED FROM ORIGINAL SHOP DRAWING AND FIELD VERIFICATION.
6. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
8. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING AND BOLTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE REPAIR TYPE 1, TYPE 2, OR TYPE 3.
9. THE PAINT ZONE FOR THE GUSSET PLATE EDGE STIFFENING SHALL ENCOMPASSES THE FAYING SURFACE OF THE GUSSET PLATE AND LOWER CHORD, THE NEW STIFFENING ANGLES, LOCATIONS OF PACK RUST REMOVAL, AND ANY SURROUNDING AREAS DAMAGED BY THE INSTALLATION OF THE RETROFITS. ALL PAINTING IS TO BE INCLUDED FOR PAYMENT UNDER ITEM 514.
10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET [3 / 156] THRU [5 / 156].
11. FOR ADDITIONAL DETAILS REGARDING REPAIR TYPES SEE SHEET [22 / 156].

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (109 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

131 / 156

174 / 199

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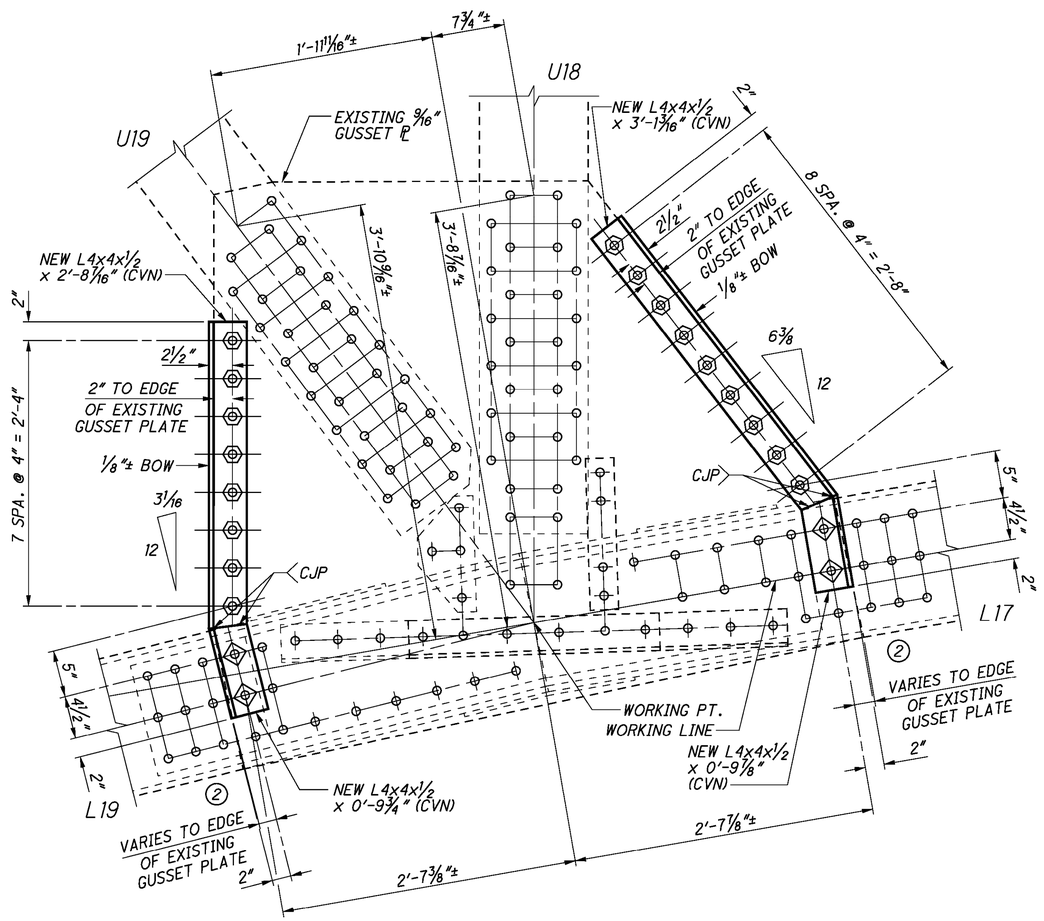
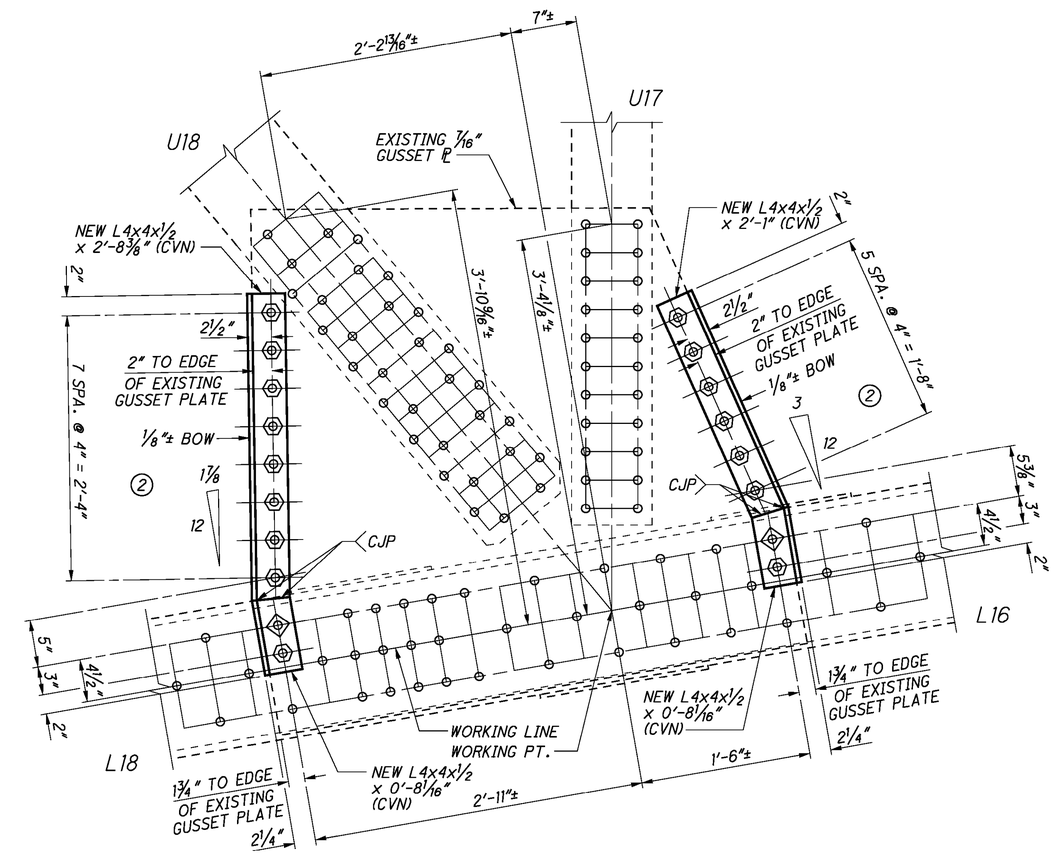


SPANS 10-12 - PANEL POINT L18 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L17
SOUTH GUSSET PLATE - NORTH AND CENTER TRUSS
NORTH GUSSET PLATE - NORTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL SPANS 10-12 - PANEL POINT L17 GUSSET PLATE DETAILS, SEE SHEET 133 / 156 .
3. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (110 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

132 / 156

175 / 199

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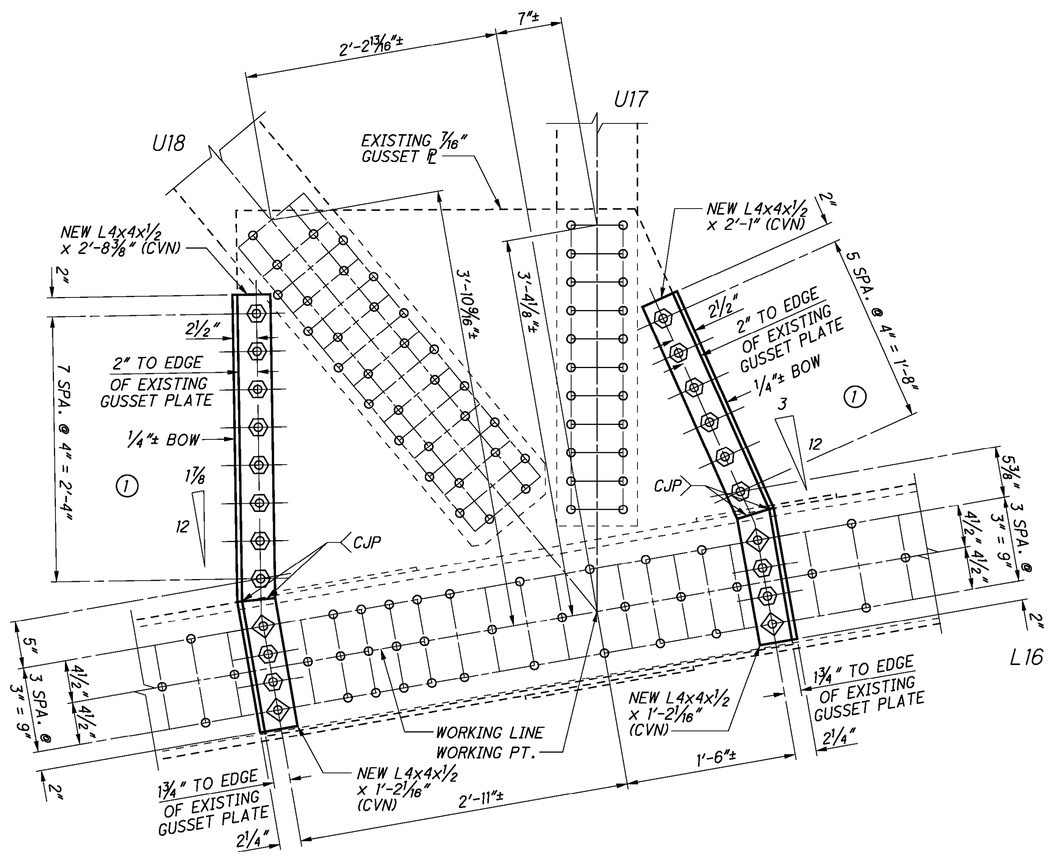
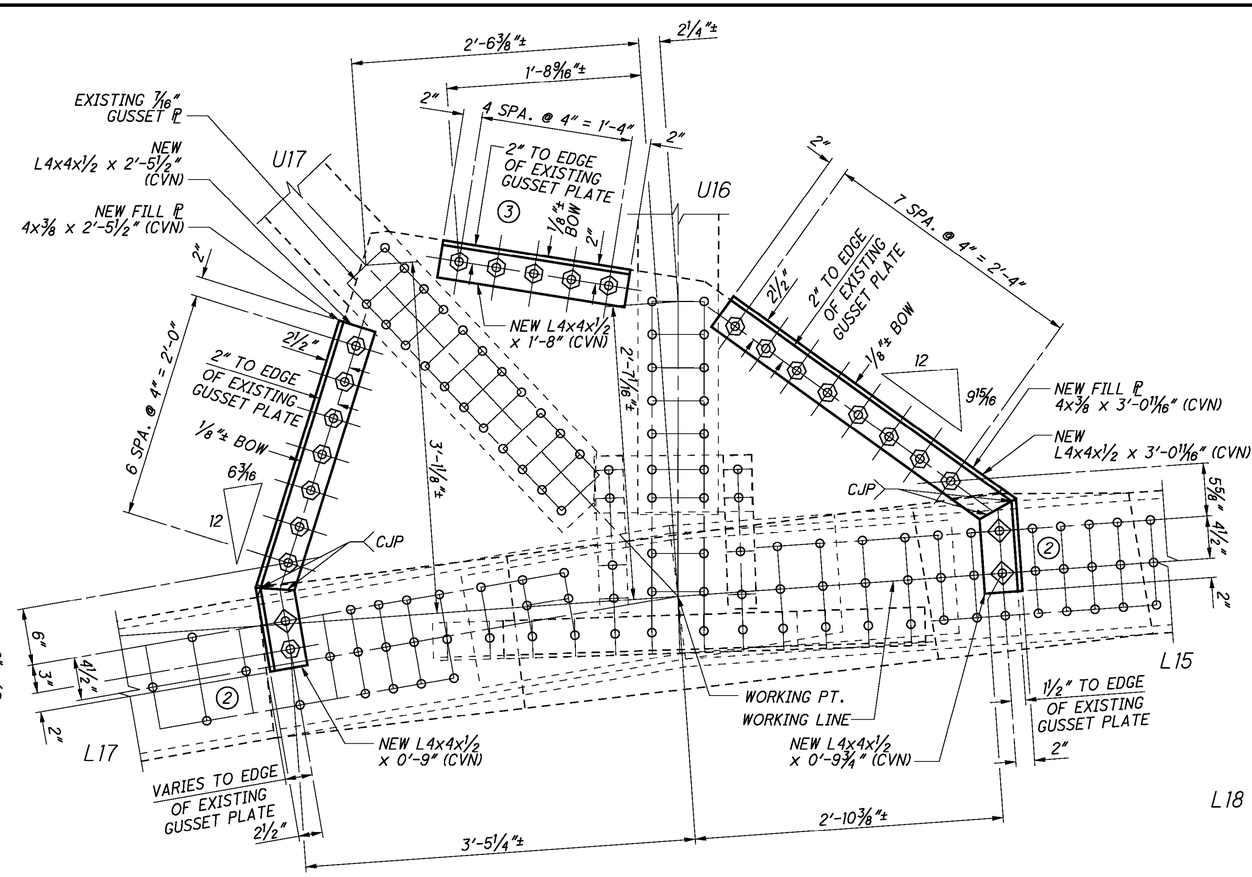


SPANS 10-12 - PANEL POINT L17
SOUTH GUSSET PLATE - SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L16 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - *REPAIR TYPE*

BOLT LEGEND:

○ - *EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.*

◎ - *FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.*

◈ - *REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.*

NOTES:

1. *FOR GUSSET PLATE NOTES, SEE SHEET* 131 / 156 .
2. *FOR ADDITIONAL SPANS 10-12 - PANEL POINT L17 GUSSET PLATE DETAILS, SEE SHEET* 132 / 156 .
3. *FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET* 3 / 156 *THRU* 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED: RJM | DRAWN: JLV | CHECKED: PJP | REVIEWED: PJA | DATE: 10-05-16 | REVISED: | STRUCTURE FILE NUMBER: 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (111 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

133 / 156
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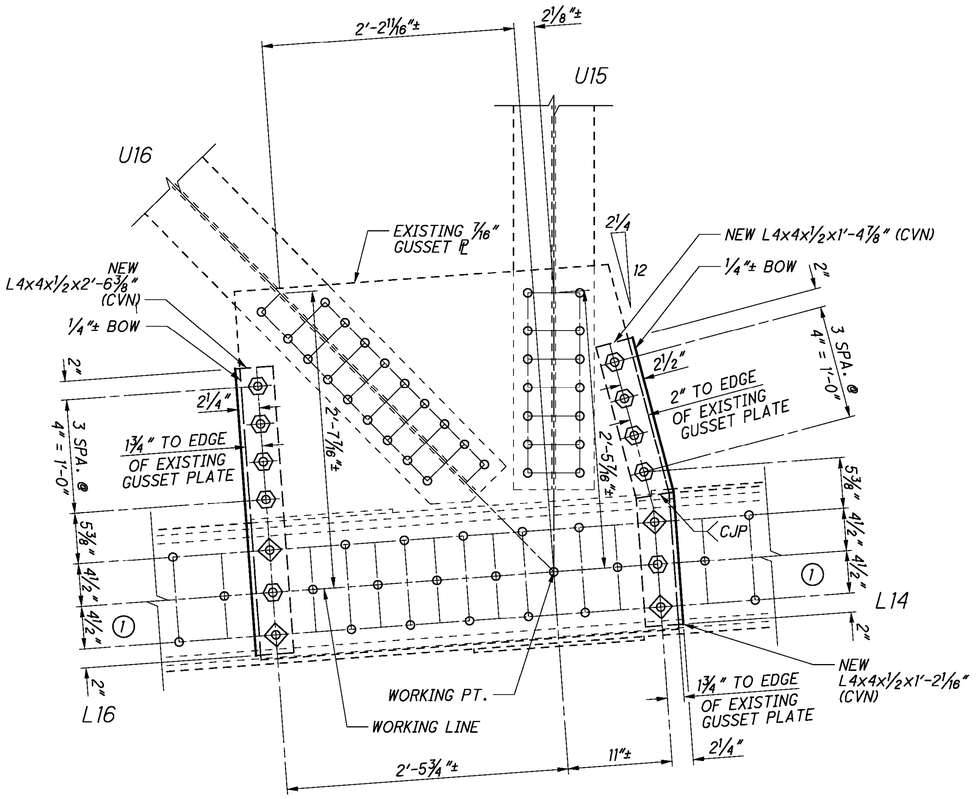

SPANS 10-12 - PANEL POINT L15
NORTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

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DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	GJZ	PJA	10-05-16
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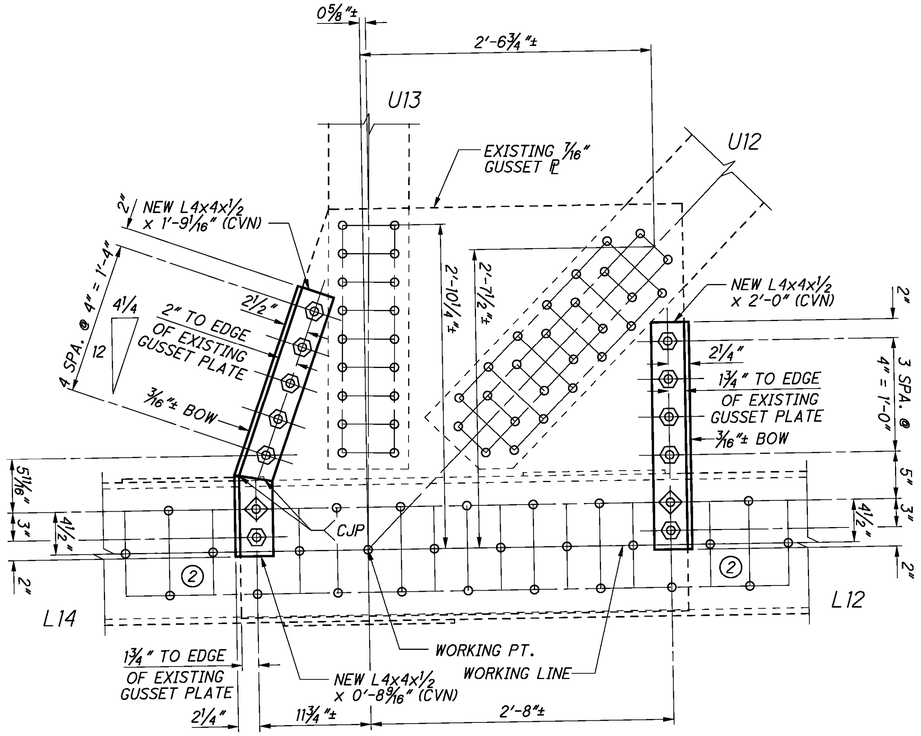
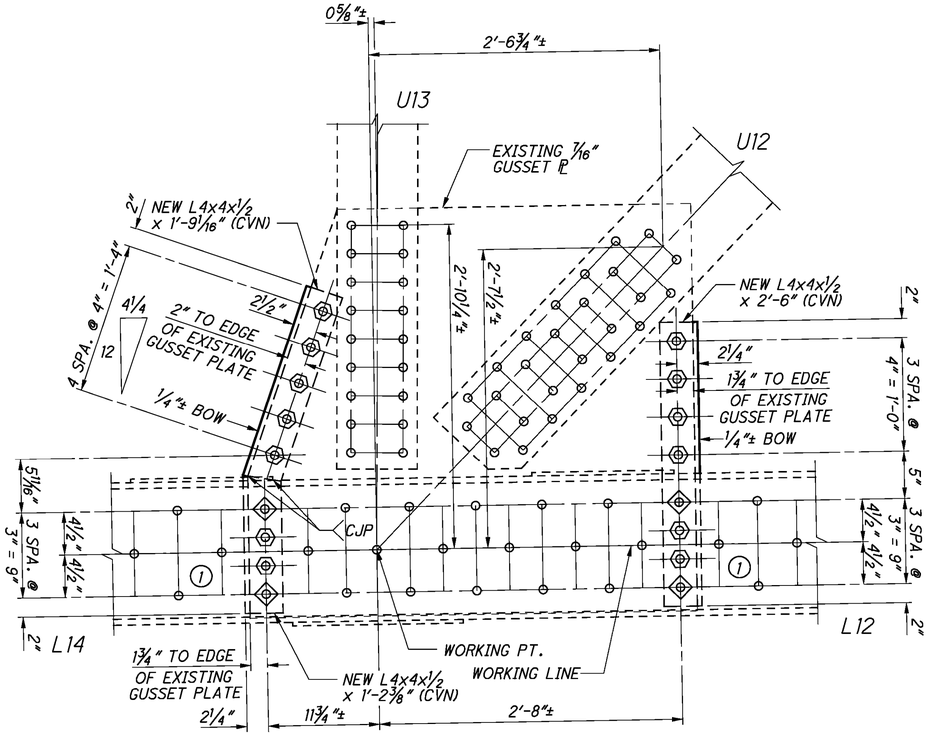
GUSSET PLATE EDGE STIFFENING DETAILS (112 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939



SPANS 10-12 - PANEL POINT L13

SPANS 10-12 - PANEL POINT L13
SOUTH GUSSET PLATE - CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L13
SOUTH GUSSET PLATE - NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
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GUSSET PLATE EDGE STIFFENING DETAILS (113 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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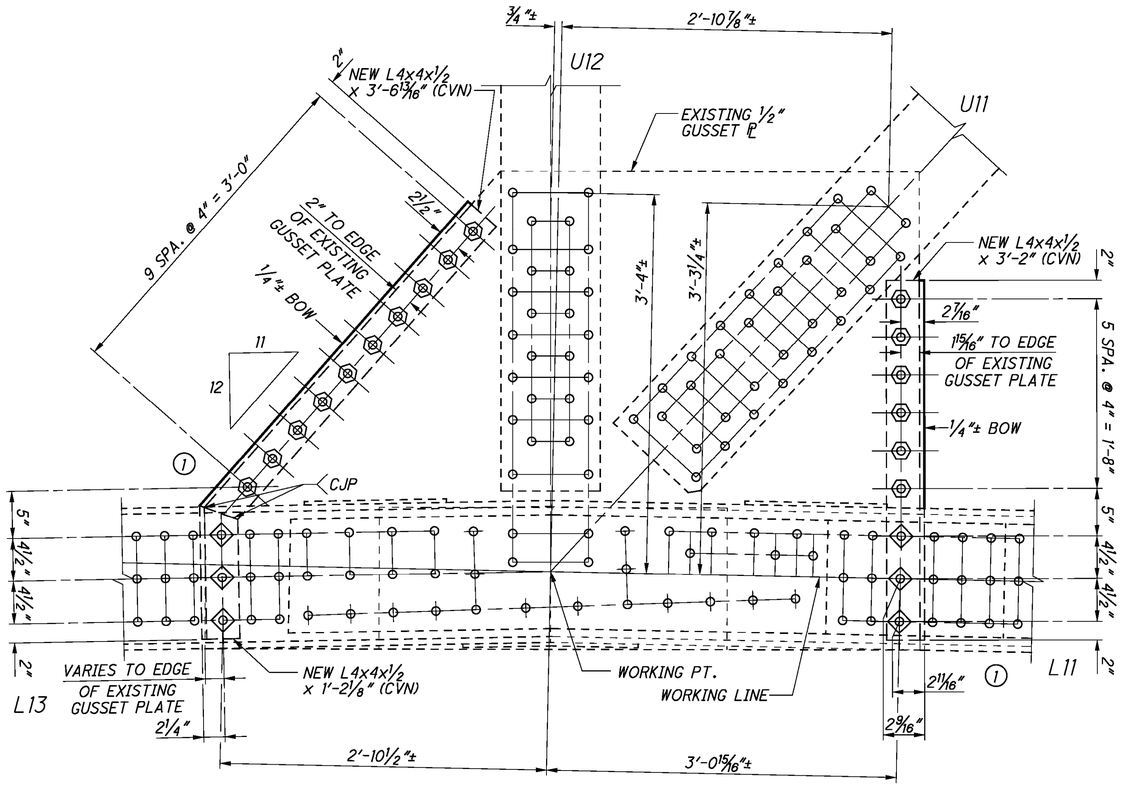
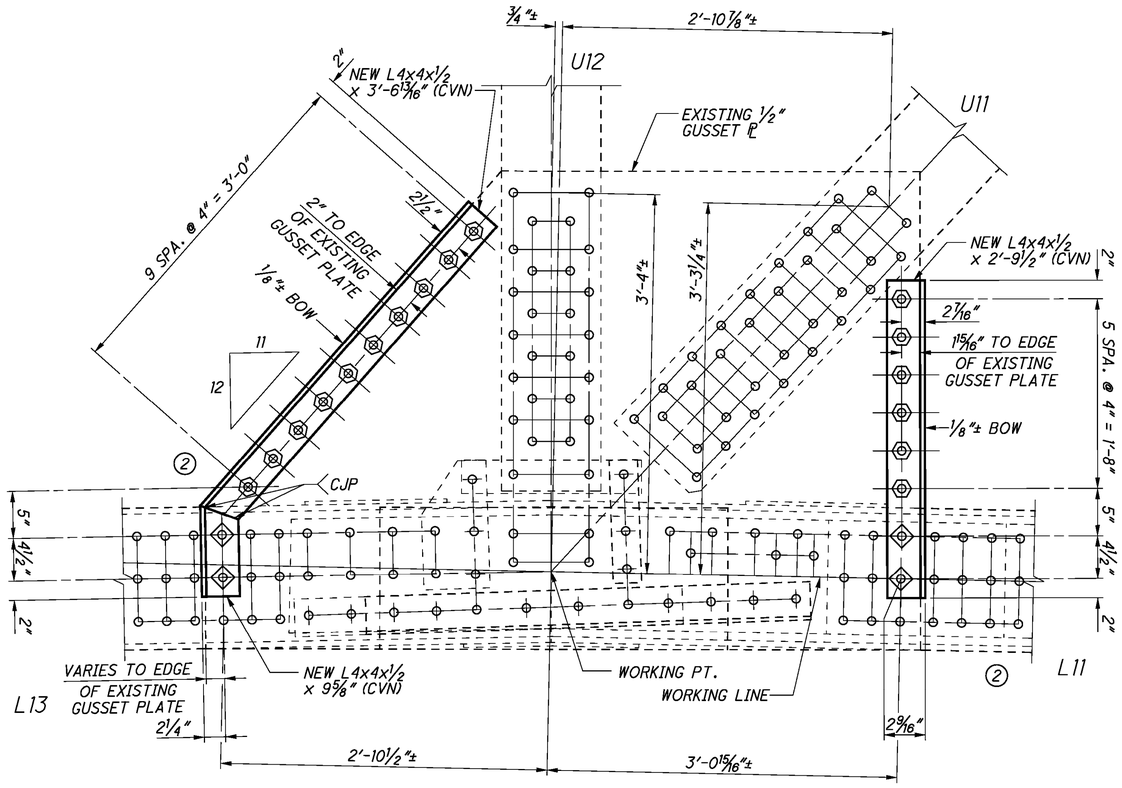


SPANS 10-12 - PANEL POINT L12 - NORTH GUSSET PLATE NORTH TRUSS



SPANS 10-12 - PANEL POINT L12 SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (114 OF 123)

BRIDGE No. HAM-50-2180N

COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N

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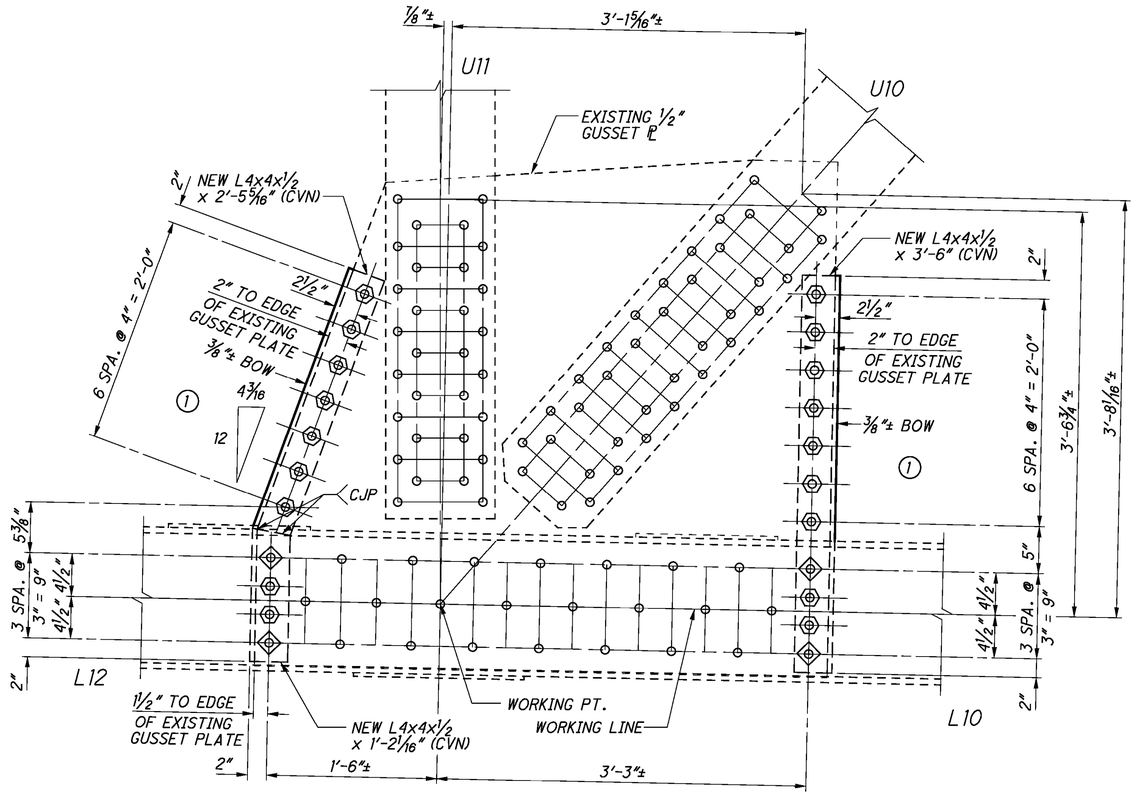
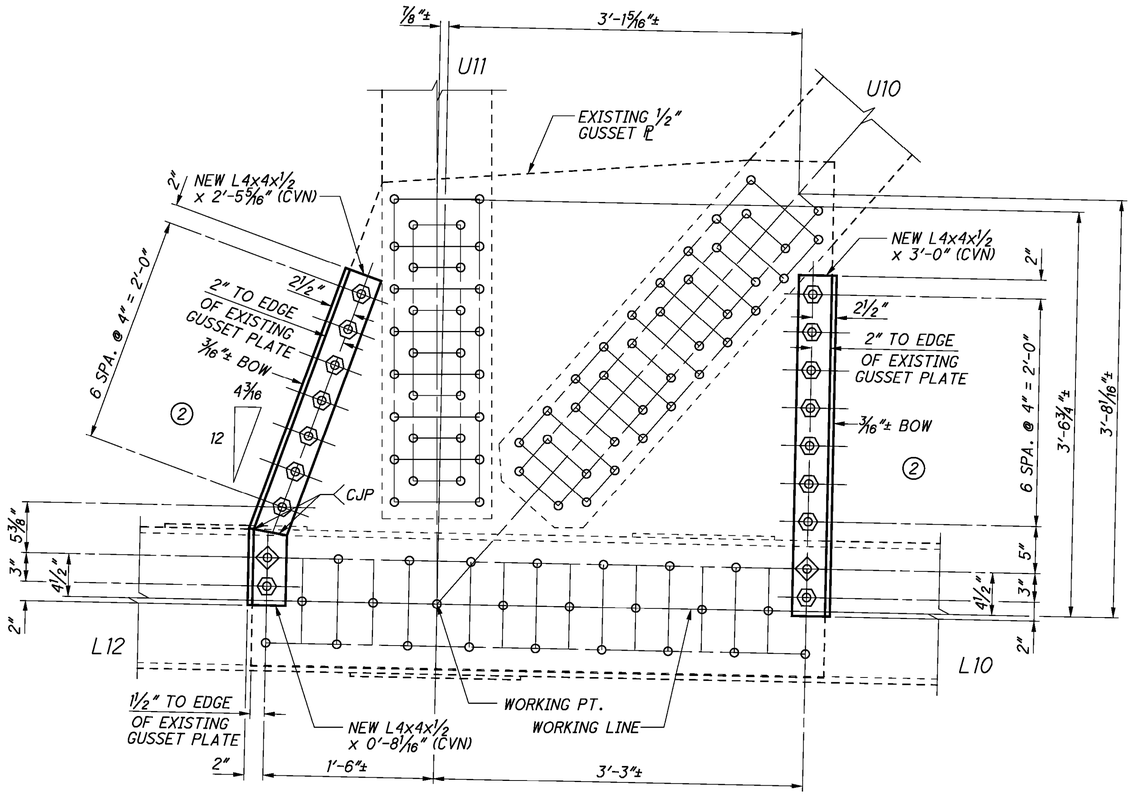


SPANS 10-12 - PANEL POINT L11 - NORTH GUSSET PLATE
NORTH TRUSS



SPANS 10-12 - PANEL POINT L11
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (115 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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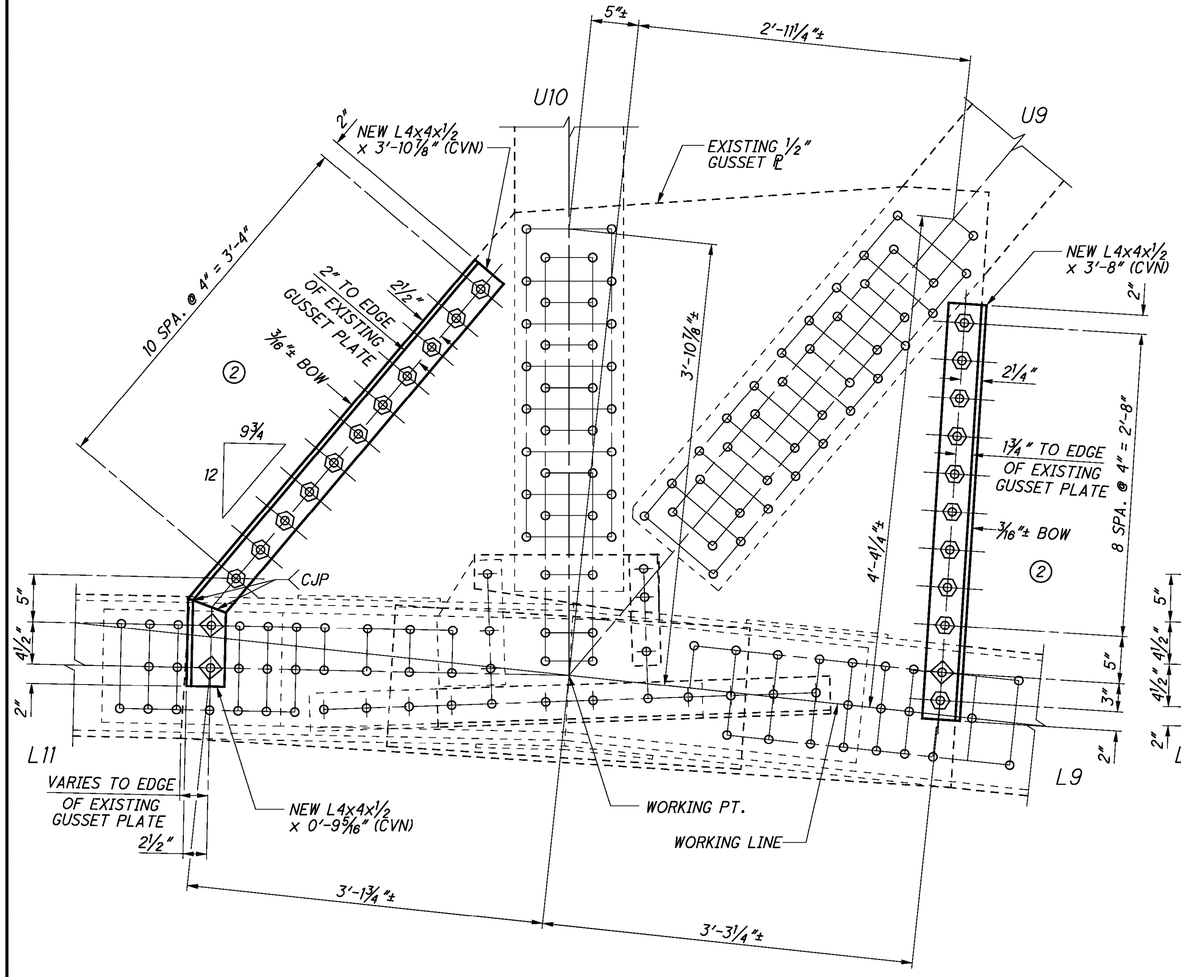
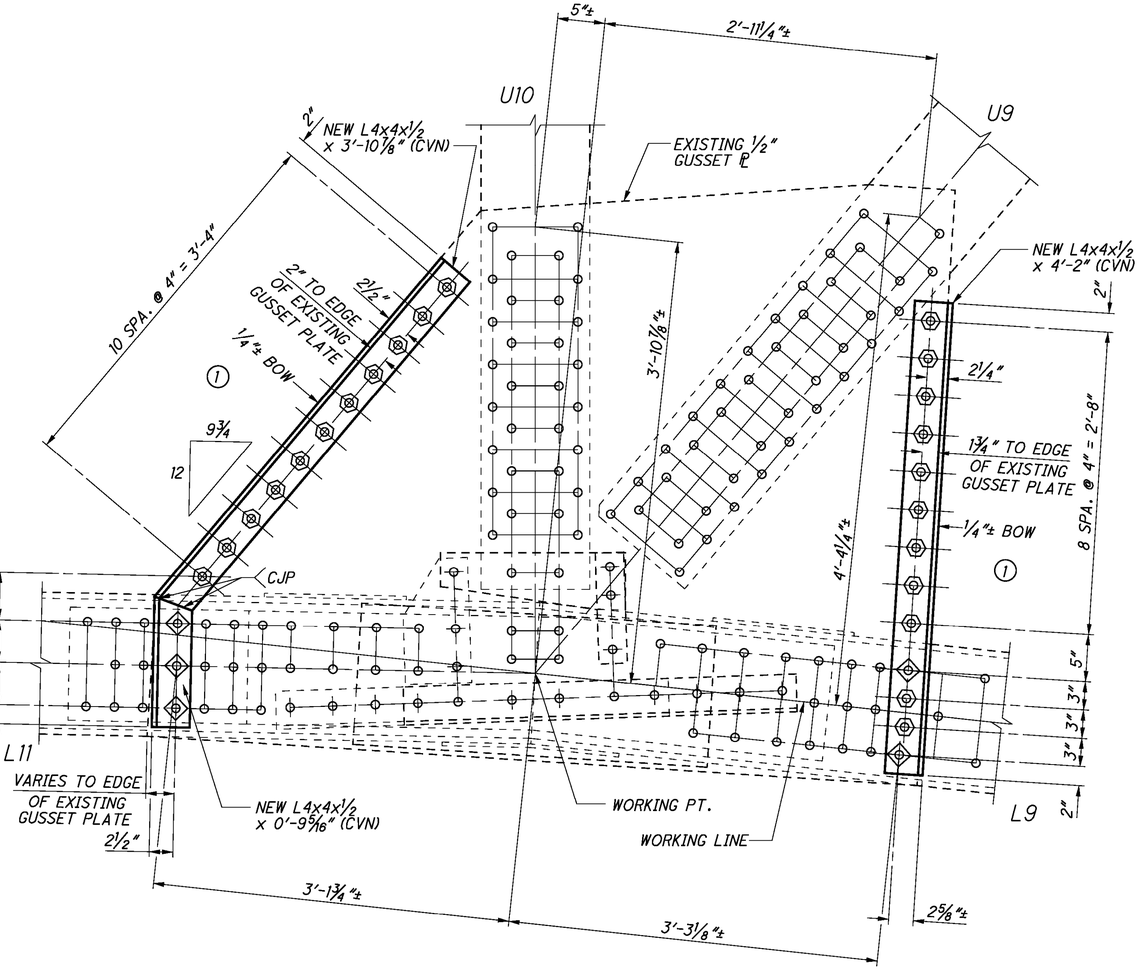


SPANS 10-12 - PANEL POINT L10 - NORTH AND SOUTH GUSSET PLATES
NORTH AND CENTER TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L10 - NORTH AND SOUTH GUSSET PLATES
SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
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GUSSET PLATE EDGE STIFFENING DETAILS (116 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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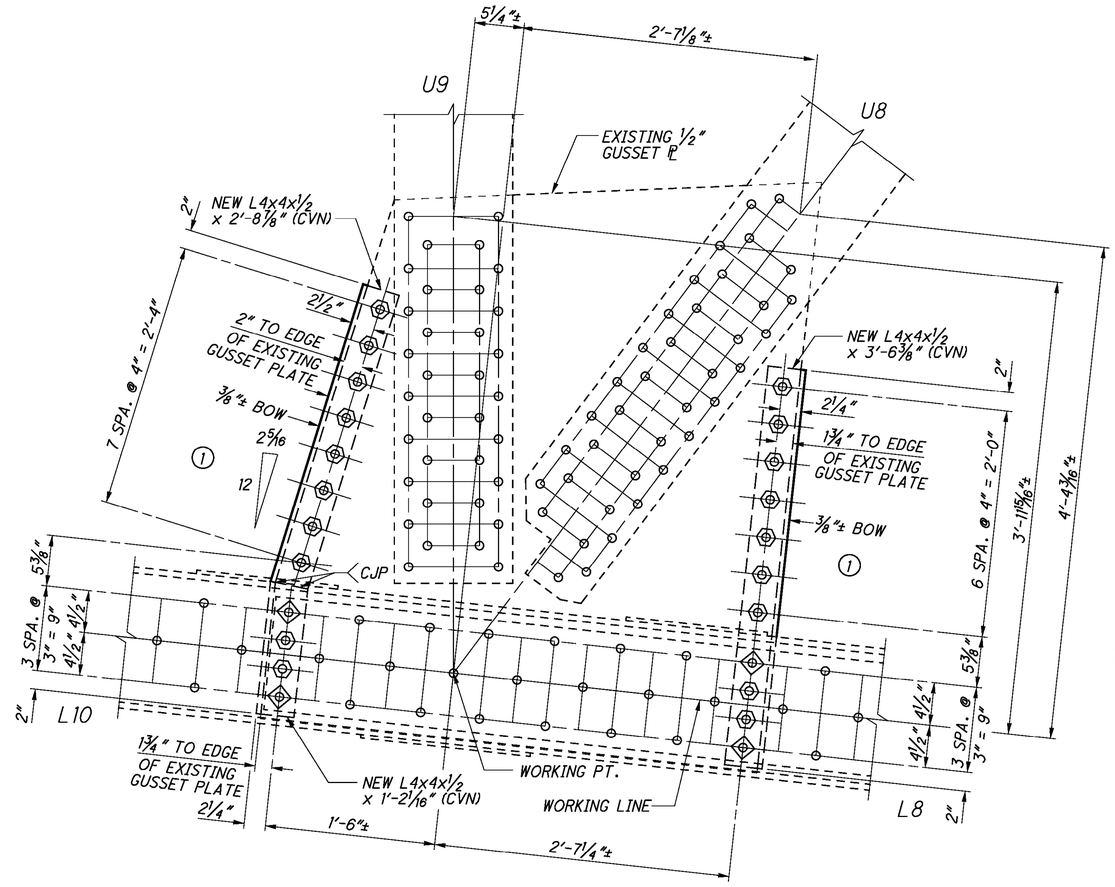
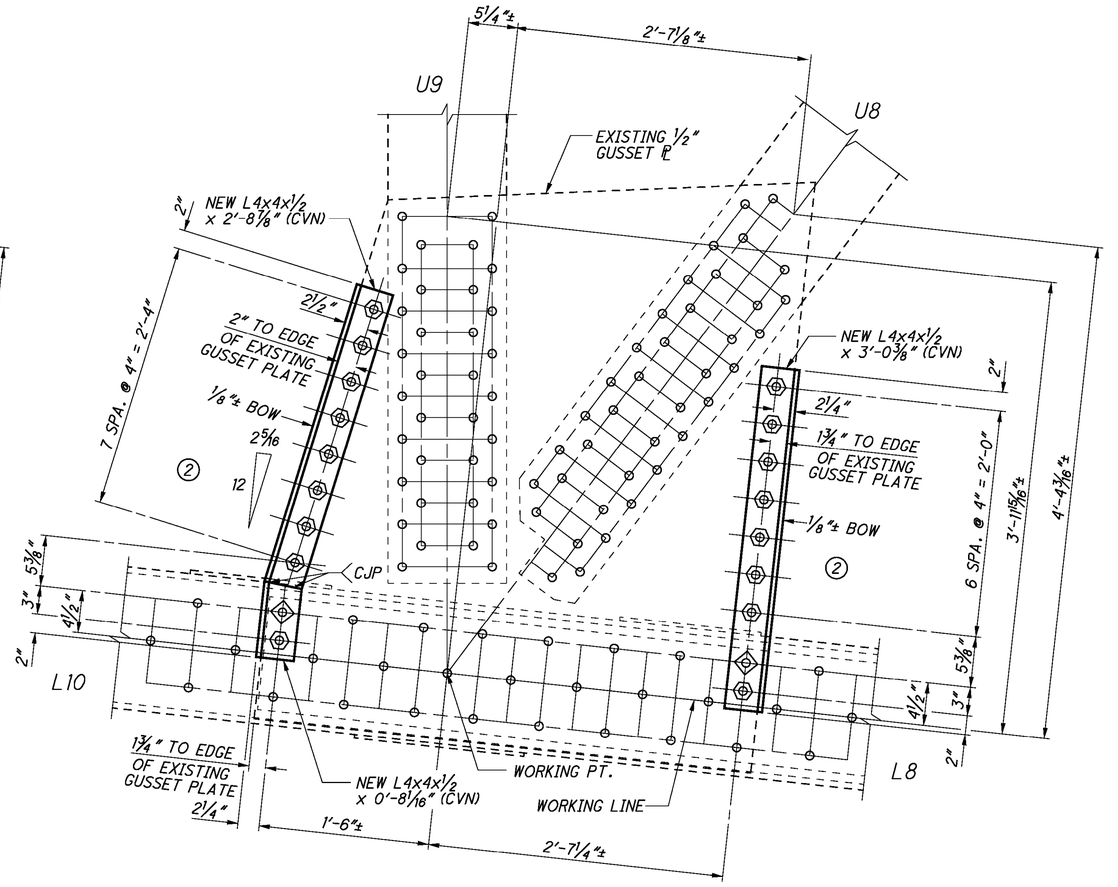


SPANS 10-12 - PANEL POINT L9 - NORTH GUSSET PLATE
NORTH TRUSS



SPANS 10-12 - PANEL POINT L9
SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS
NORTH GUSSET PLATE - CENTER AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW ⅞"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
R.J.M	J.L.V	P.J.A	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.P		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (117 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
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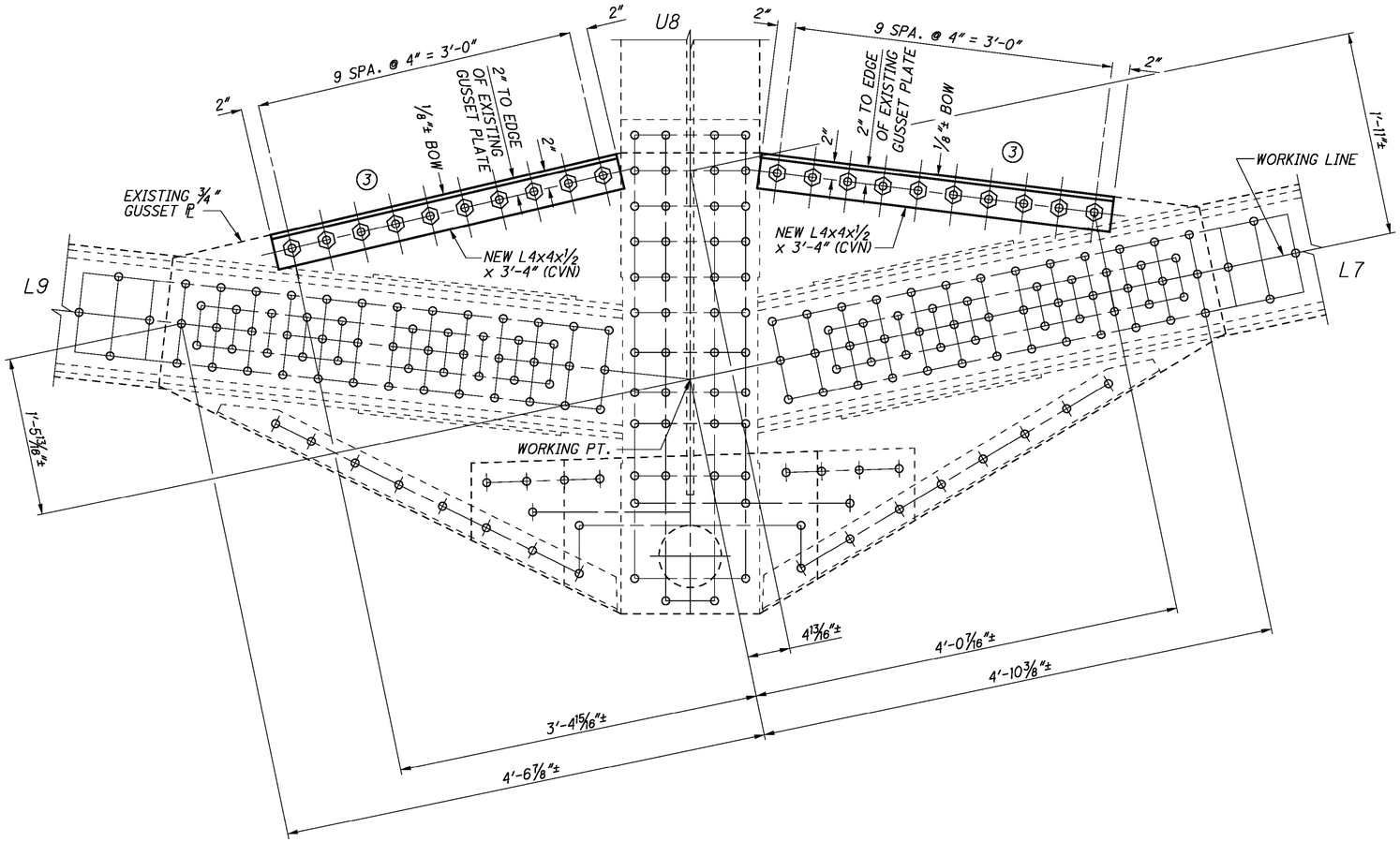

SPANS 10-12 - PANEL POINT L8 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PJP		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (118 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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183
199

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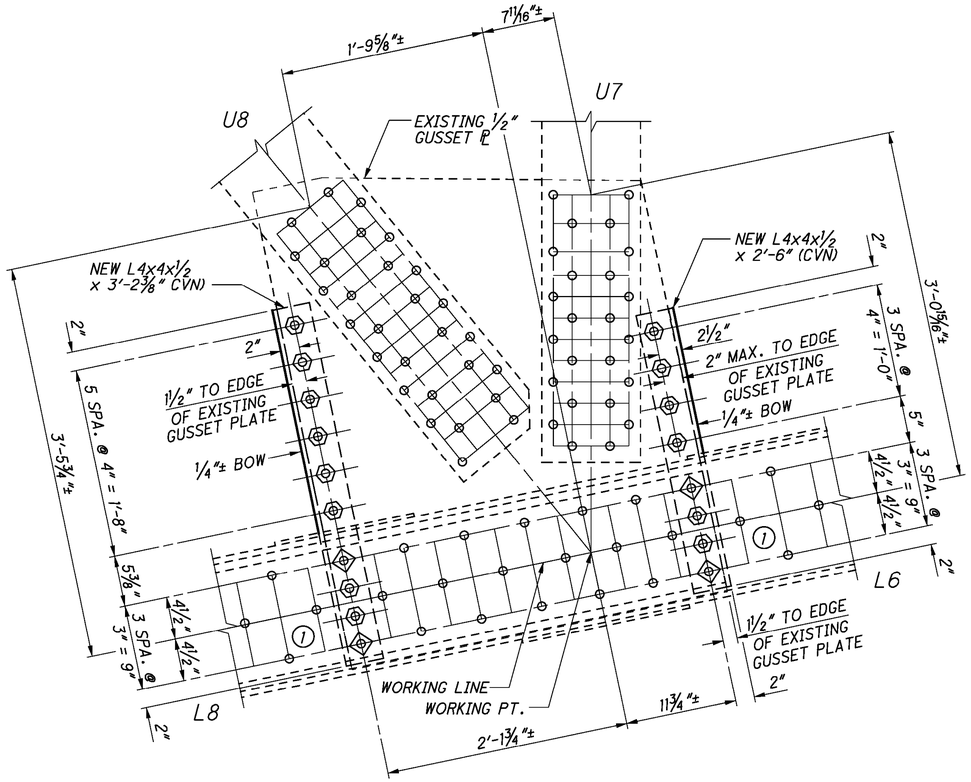
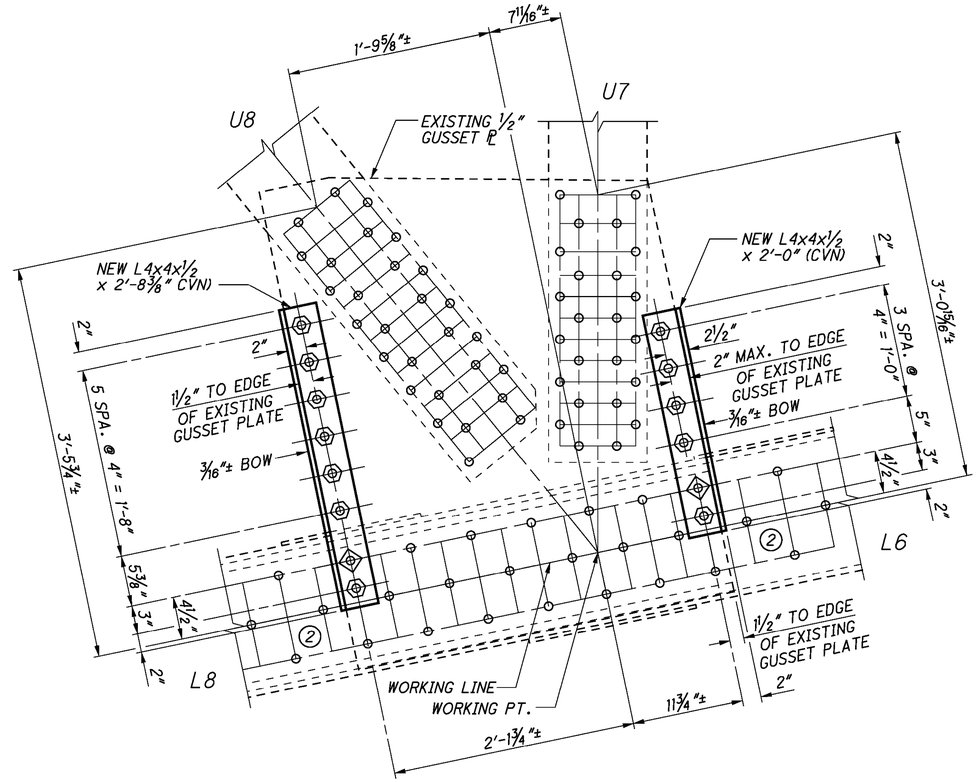


SPANS 10-12 - PANEL POINT L7 - NORTH GUSSET PLATE CENTER TRUSS



SPANS 10-12 - PANEL POINT L7 SOUTH GUSSET PLATE - NORTH, CENTER AND SOUTH TRUSS NORTH GUSSET PLATE - NORTH AND SOUTH TRUSS - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED RJM | DRAWN JLV | REVIEWED PJA | DATE 10-05-16
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (119 OF 123)
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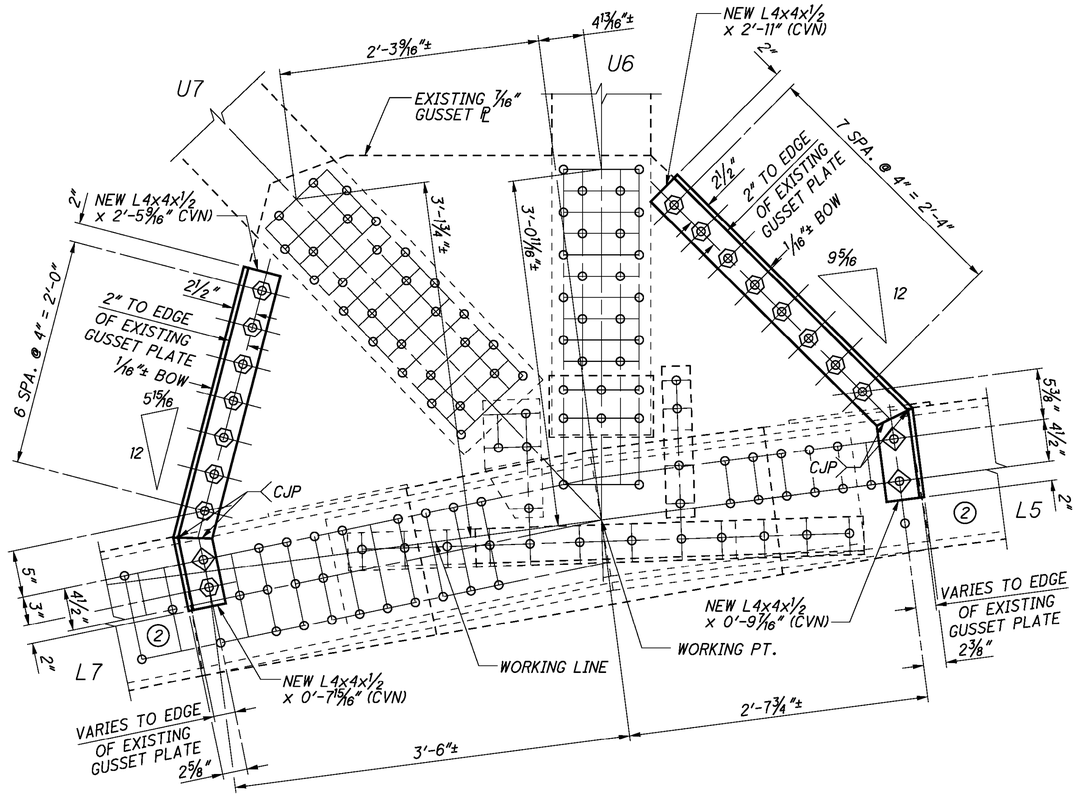


SPANS 10-12 - PANEL POINT L6 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

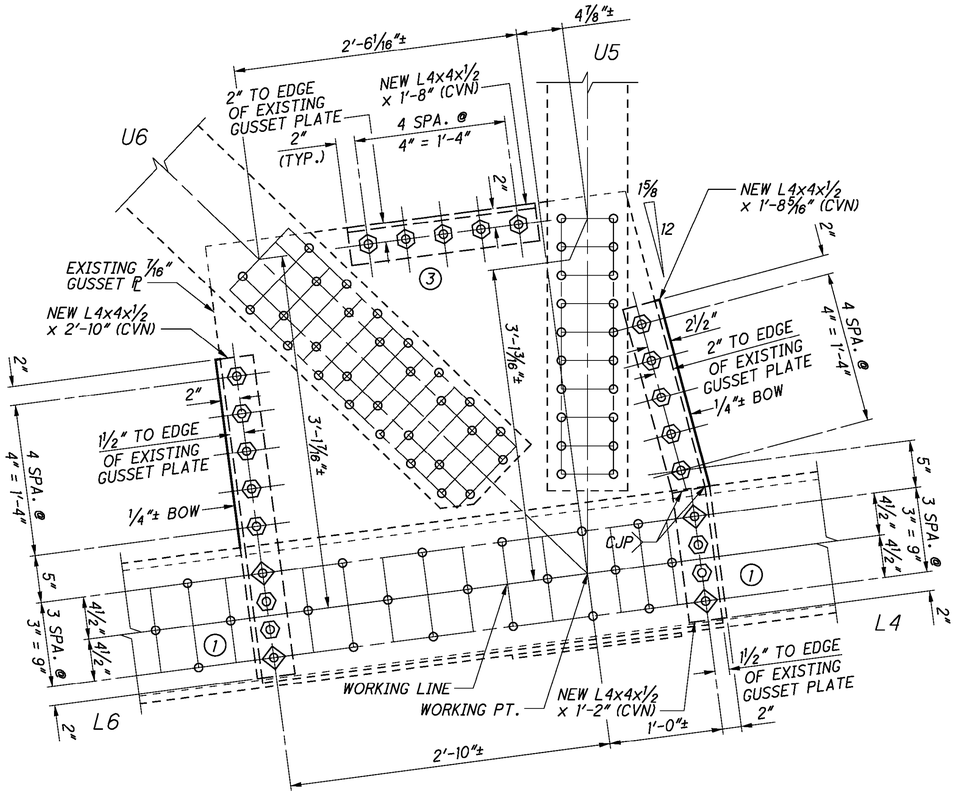
GUSSET PLATE EDGE STIFFENING DETAILS (120 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

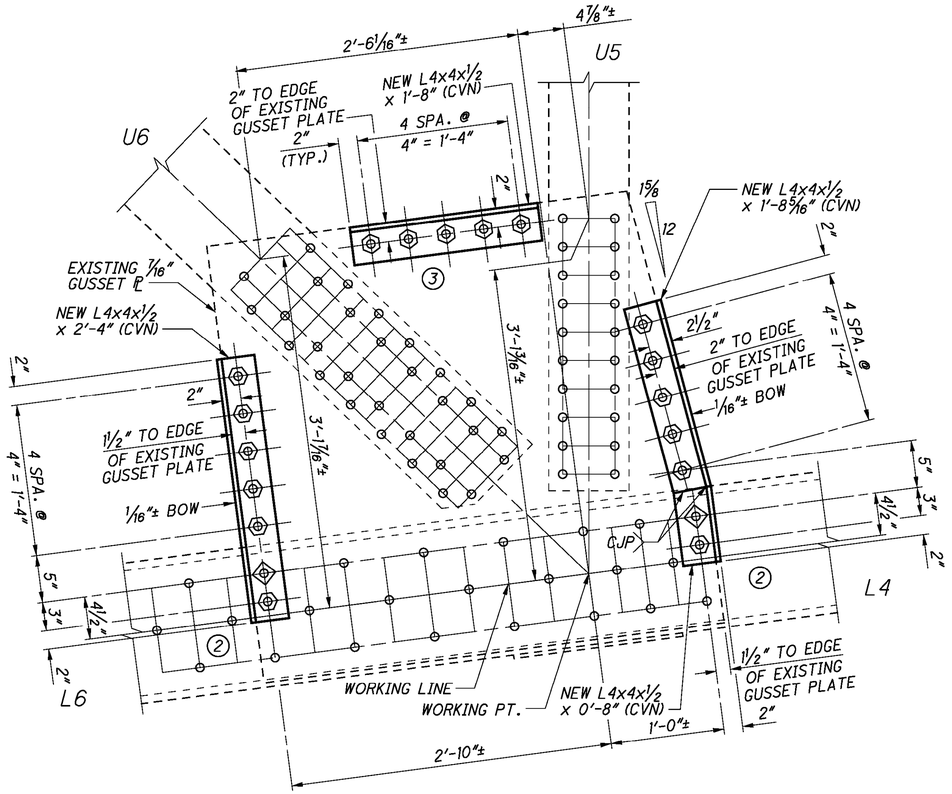
142 / 156

185 / 199

91939SD601.dgn 10/7/2016 11:44:50 AM sfhammerschmidt



SPANS 10-12 - PANEL POINT L5 - NORTH GUSSET PLATE
NORTH TRUSS



SPANS 10-12 - PANEL POINT L5 - NORTH AND SOUTH GUSSET PLATES
CENTER TRUSS AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

SPANS 10-12 - PANEL POINT L5 - SOUTH GUSSET PLATE
NORTH TRUSS

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◈ - FIELD DRILL NEW 15/16"Φ HOLE FOR NEW 7/8"Φ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"Φ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
RJM	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (121 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

143 / 156

186 / 199

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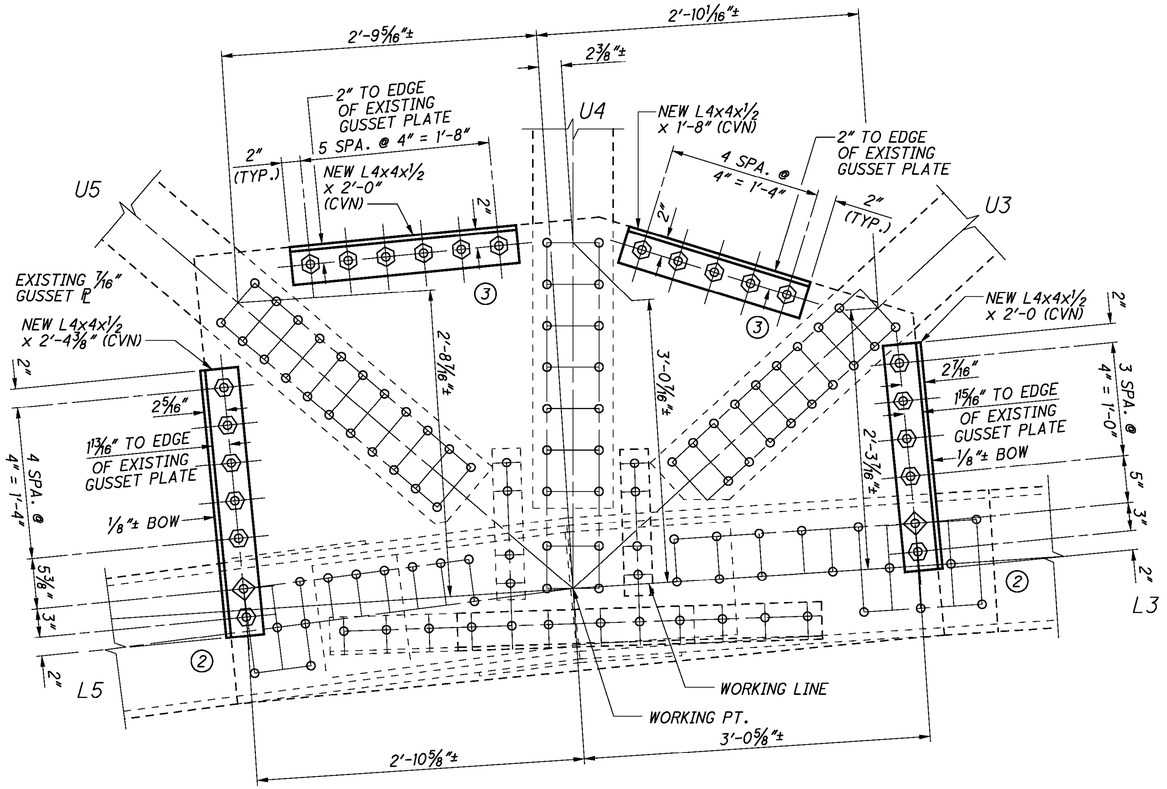
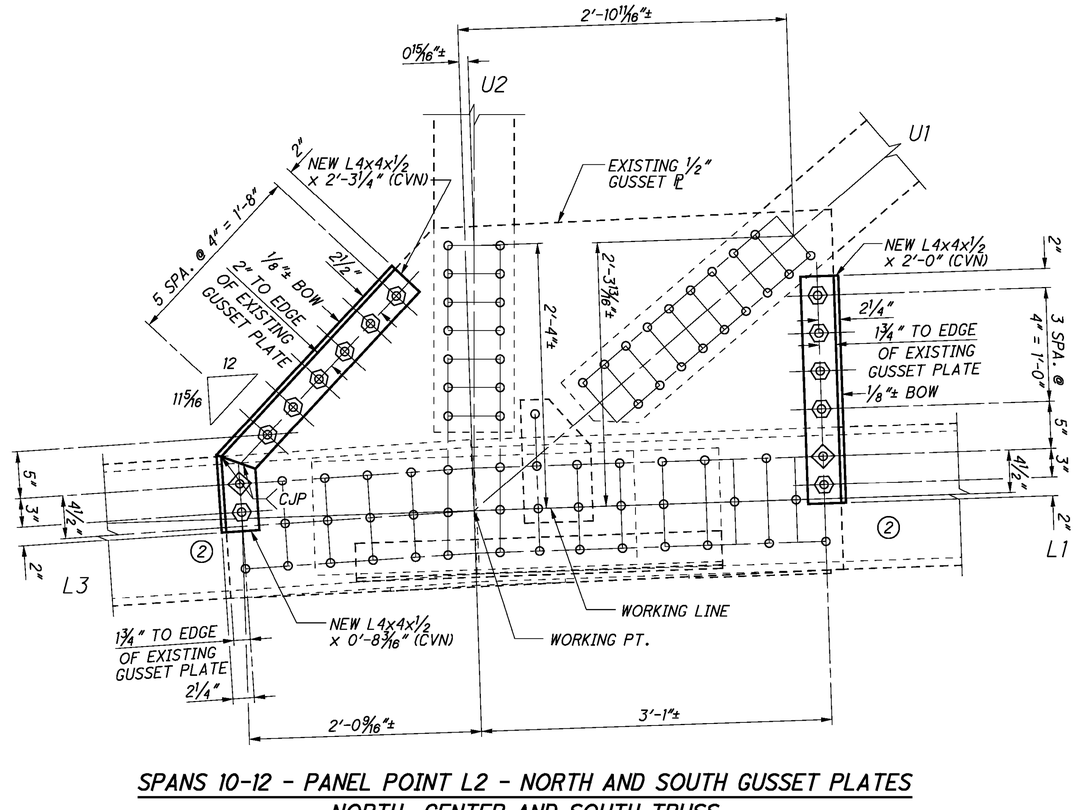


SPANS 10-12 - PANEL POINT L4 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L2 - NORTH AND SOUTH GUSSET PLATES
NORTH, CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

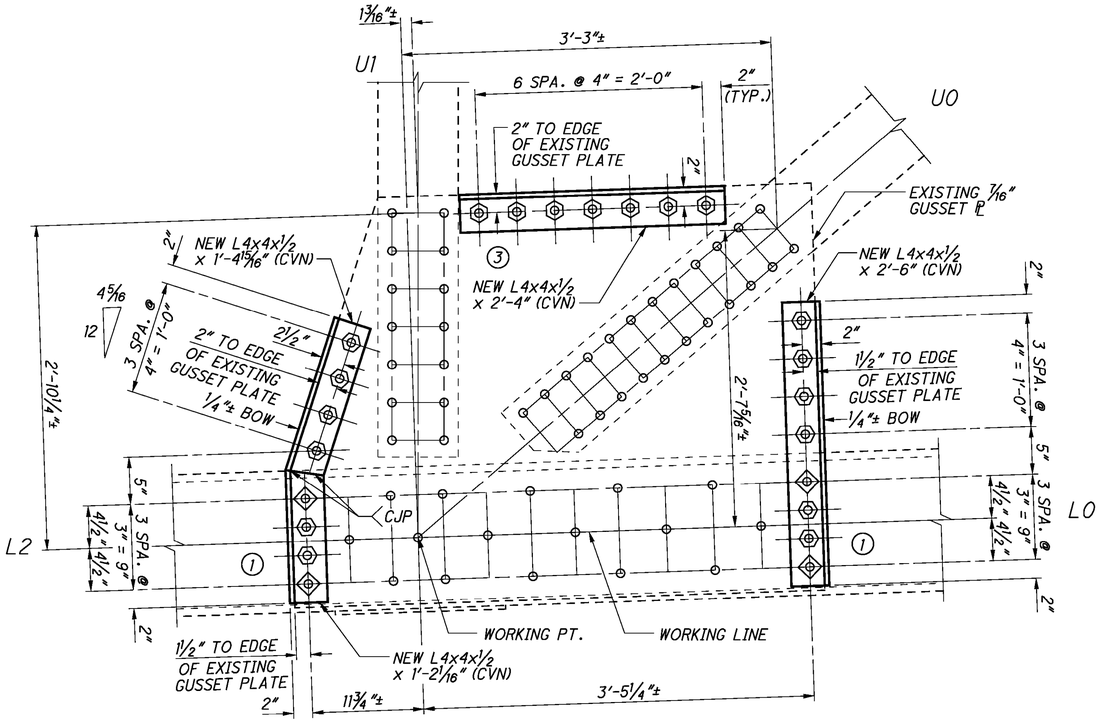
DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED RJM | DRAWN JLV/GJZ | REVIEWED PJA | DATE 10-05-16
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 3103390

GUSSET PLATE EDGE STIFFENING DETAILS (122 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

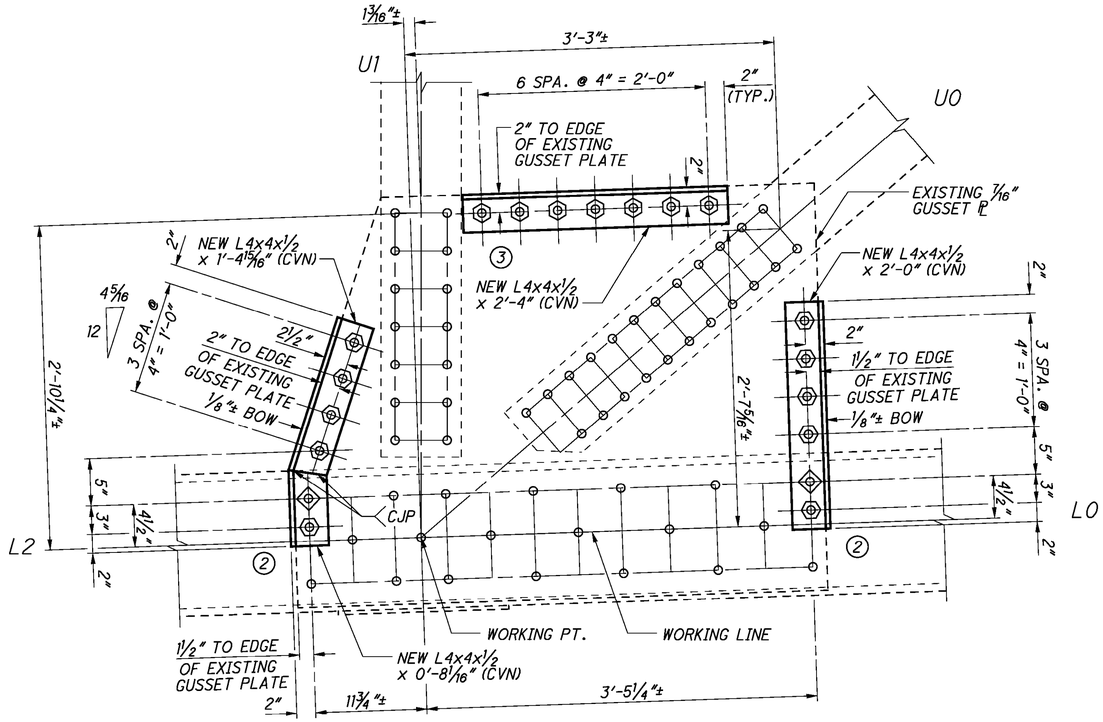
HAM-50-2180N
PID No. 91939

144 / 156
187 / 199

91939SD601.dgn 10/7/2016 11:44:50 AM sfhammerschmidt



SPANS 10-12 - PANEL POINT L1 - NORTH AND SOUTH GUSSET PLATES
NORTH TRUSS
NORTH FACE - OPPOSITE HAND



SPANS 10-12 - PANEL POINT L1 - NORTH AND SOUTH GUSSET PLATES
CENTER AND SOUTH TRUSS
NORTH FACE - OPPOSITE HAND

LEGEND

(X) - REPAIR TYPE

BOLT LEGEND:

○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

◎ - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A490, TYPE 3 BOLT.

◈ - REMOVE EXISTING RIVET OR BOLT AND REPLACE WITH A NEW 7/8"ϕ A490, TYPE 3 BOLT.

NOTES:

1. FOR GUSSET PLATE NOTES, SEE SHEET 131 / 156 .
2. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3 / 156 THRU 5 / 156 .

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
R.JM	J.L.V	P.J.A	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
R.S.B		3103390	

GUSSET PLATE EDGE STIFFENING DETAILS (123 OF 123)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

145 / 156

188 / 199

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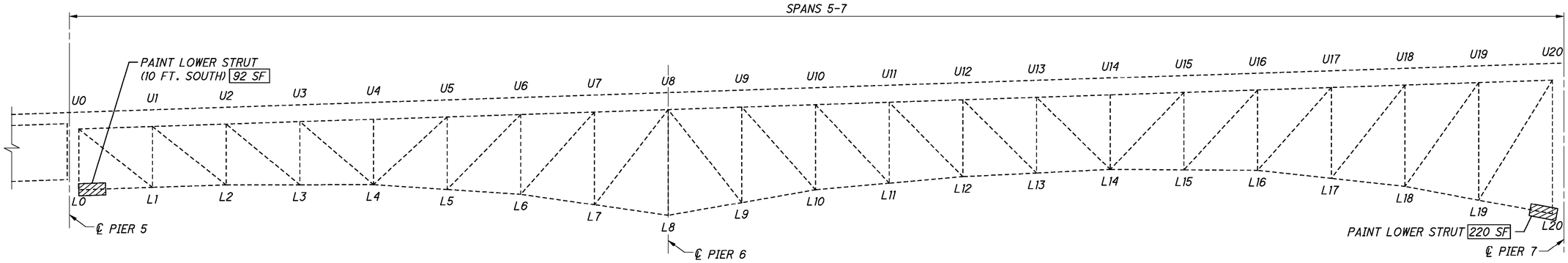
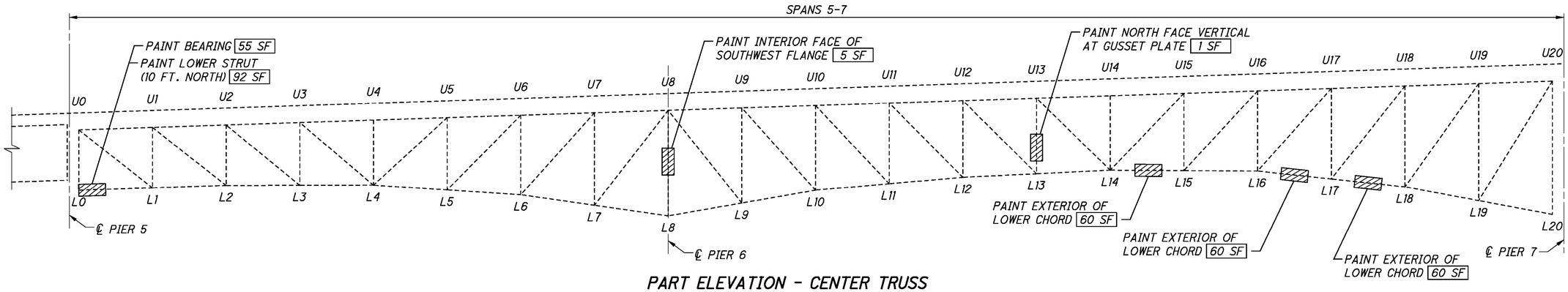
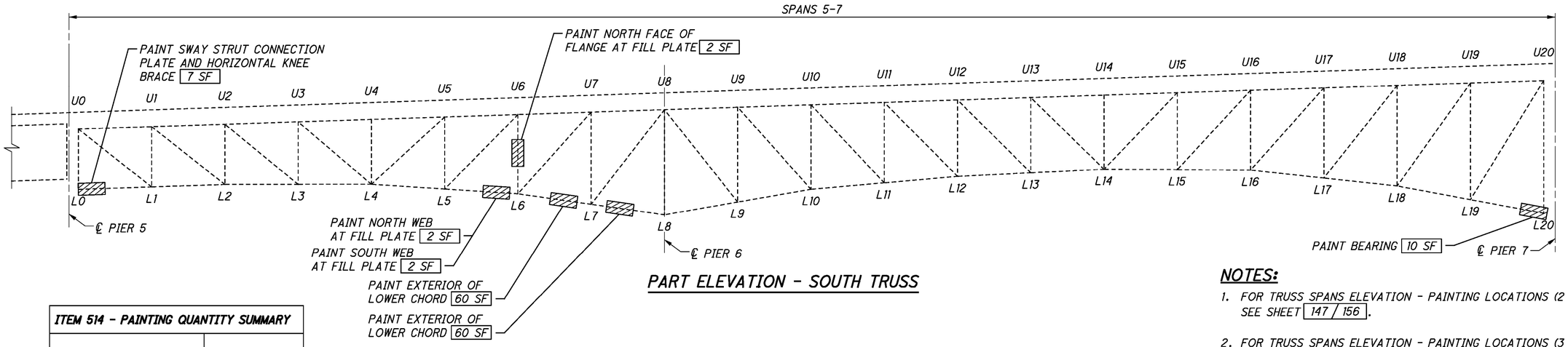


PART ELEVATION - NORTH TRUSS



PART ELEVATION - CENTER TRUSS



PART ELEVATION - SOUTH TRUSS

ITEM 514 - PAINTING QUANTITY SUMMARY	
LOCATION	PLAN QUANTITY
NORTH TRUSS	1236 SF
CENTER TRUSS	1365 SF
SOUTH TRUSS	1626 SF
SPANS 1-2 THRU 4-5	25 SF
SPANS 12-13 THRU 17-18	350 SF
TOTAL	4602 SF

LEGEND:

INDICATES AREA OF STRUCTURAL STEEL WITH SURFACE CORROSION OR REACTIVATED PACK RUST TO BE PAINTED IN ACCORDANCE WITH ITEM 514. THESE AREAS ARE APPROXIMATE.

XX SF - PAINTING QUANTITY

NOTES:

1. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (2 OF 4), SEE SHEET 147 / 156.
2. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (3 OF 4), SEE SHEET 148 / 156.
3. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (4 OF 4), SEE SHEET 149 / 156.
4. FOR GIRDER SPANS FRAMING - PAINTING LOCATIONS, SEE SHEET 150 / 156.
5. FOR ADDITIONAL ITEM 514 NOTES, SEE GENERAL NOTES SHEETS 4 / 156 AND 5 / 156.

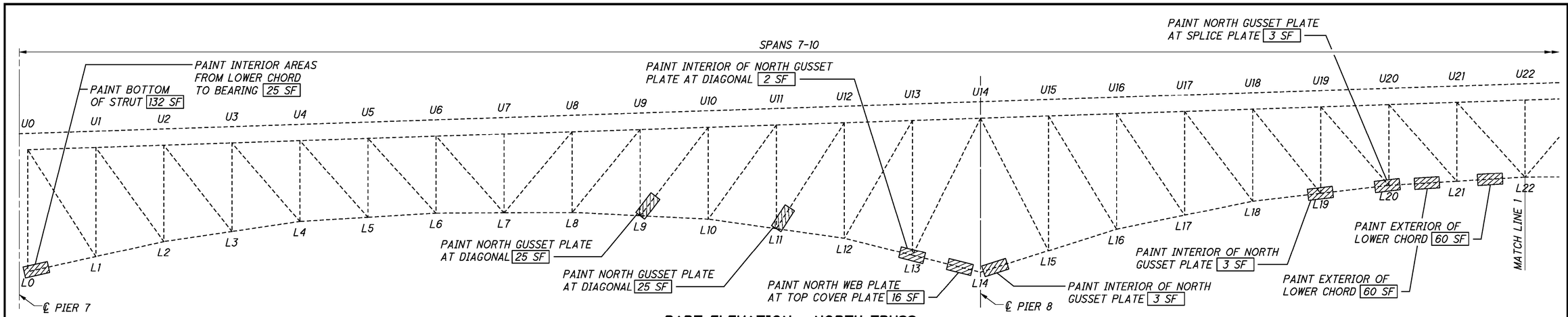
DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DATE 10-05-16
REVIEWED PJA
STRUCTURE FILE NUMBER 3103390
DRAWN JLV
REVISED
DESIGNED SFH
CHECKED ZTW

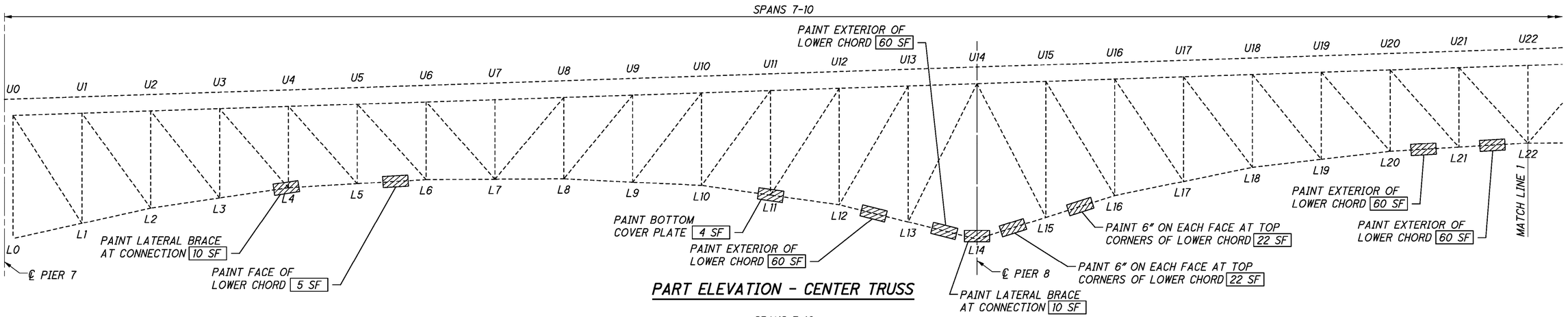
TRUSS SPANS ELEVATION - PAINTING LOCATIONS (1 OF 4)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

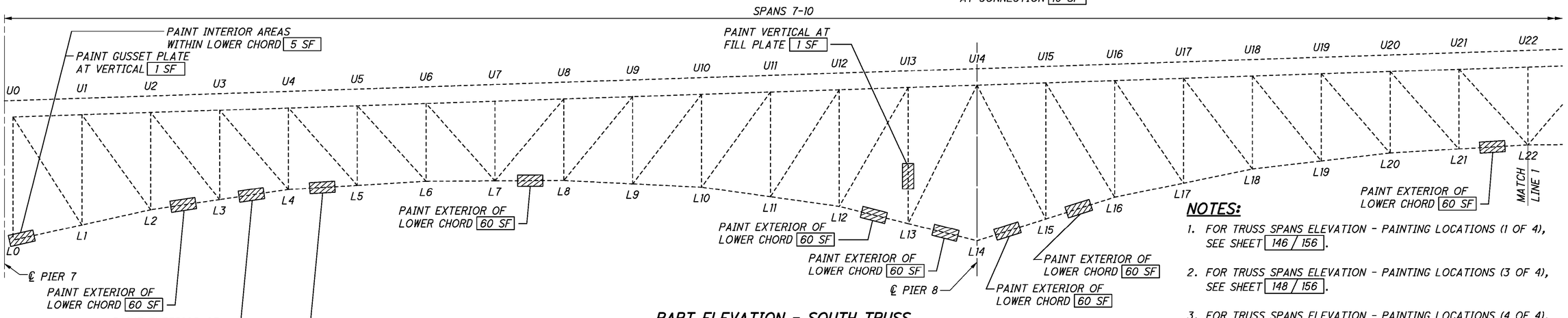
HAM-50-2180N
PID No. 91939



PART ELEVATION - NORTH TRUSS



PART ELEVATION - CENTER TRUSS



PART ELEVATION - SOUTH TRUSS

LEGEND:

- INDICATES AREA OF STRUCTURAL STEEL WITH SURFACE CORROSION OR REACTIVATED PACK RUST TO BE PAINTED IN ACCORDANCE WITH ITEM 514. THESE AREAS ARE APPROXIMATE.
- XX SF - PAINTING QUANTITY

NOTES:

1. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (1 OF 4), SEE SHEET 146 / 156.
2. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (3 OF 4), SEE SHEET 148 / 156.
3. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (4 OF 4), SEE SHEET 149 / 156.
4. FOR GIRDER SPANS FRAMING - PAINTING LOCATIONS, SEE SHEET 150 / 156.
5. FOR ADDITIONAL ITEM 514 NOTES, SEE GENERAL NOTES SHEETS 4 / 156 AND 5 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
SFH	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		3103390	

TRUSS SPANS ELEVATION - PAINTING LOCATIONS (2 OF 4)

BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

147 / 156

190 / 199

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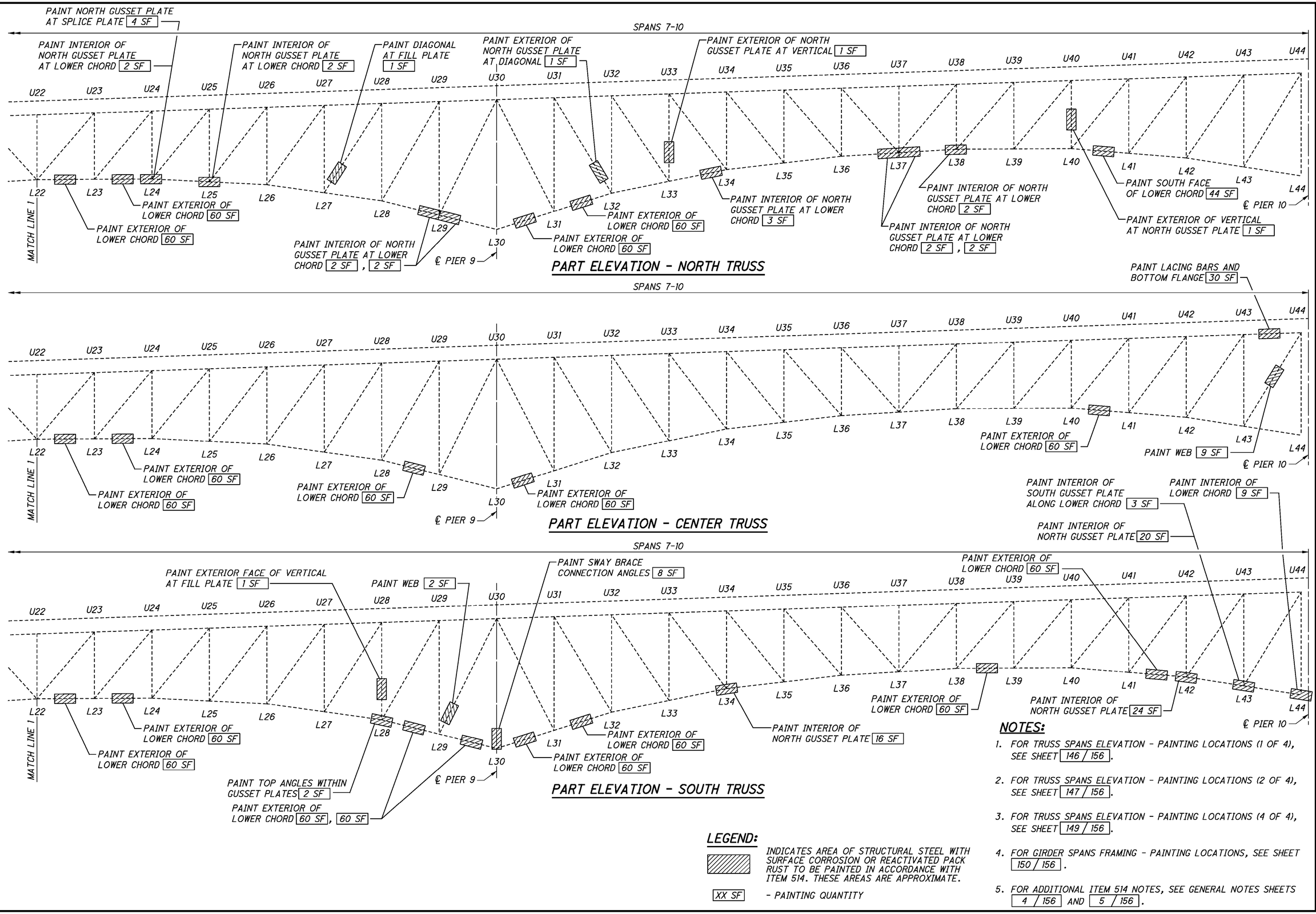

LEGEND:

▨ INDICATES AREA OF STRUCTURAL STEEL WITH SURFACE CORROSION OR REACTIVATED PACK RUST TO BE PAINTED IN ACCORDANCE WITH ITEM 514. THESE AREAS ARE APPROXIMATE.

XX SF - PAINTING QUANTITY

NOTES:

1. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (1 OF 4), SEE SHEET 146 / 156.
2. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (2 OF 4), SEE SHEET 147 / 156.
3. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (4 OF 4), SEE SHEET 149 / 156.
4. FOR GIRDER SPANS FRAMING - PAINTING LOCATIONS, SEE SHEET 150 / 156.
5. FOR ADDITIONAL ITEM 514 NOTES, SEE GENERAL NOTES SHEETS 4 / 156 AND 5 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
SFH	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		3103390	

TRUSS SPANS ELEVATION - PAINTING LOCATIONS (3 OF 4)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

148 / 156

191 / 199

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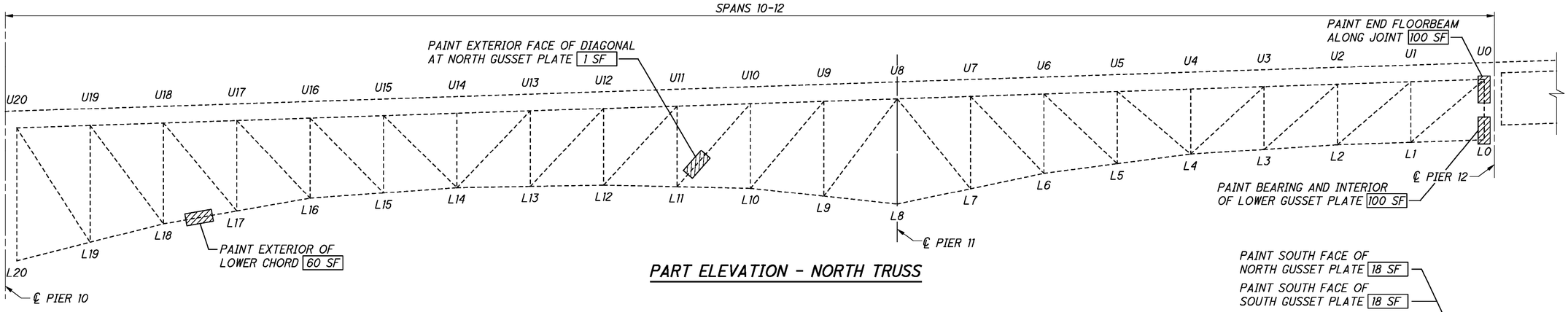
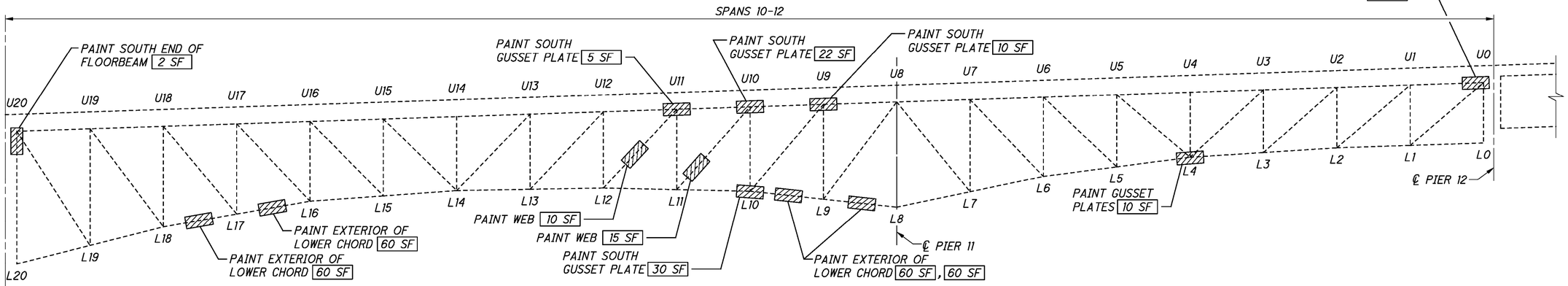
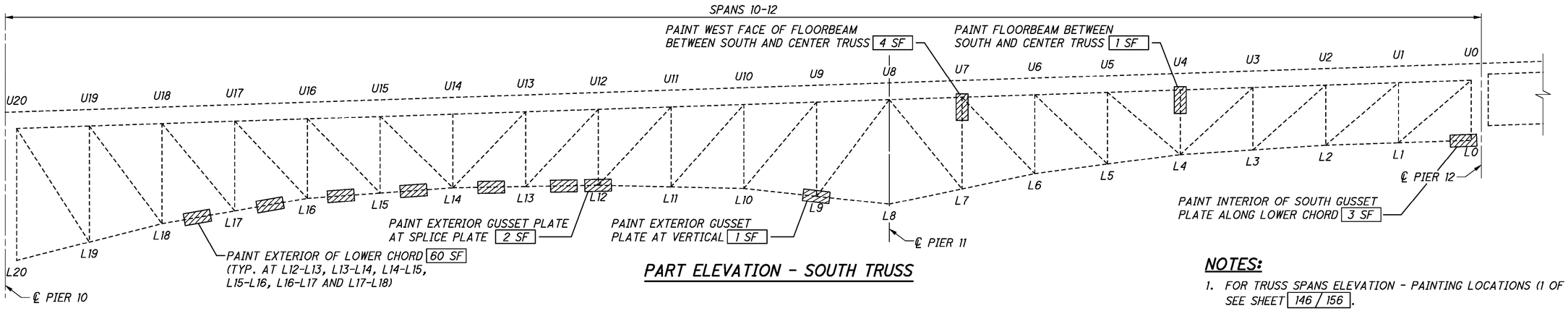


PART ELEVATION - NORTH TRUSS



PART ELEVATION - CENTER TRUSS



PART ELEVATION - SOUTH TRUSS

NOTES:

1. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (1 OF 4), SEE SHEET 146 / 156.
2. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (2 OF 4), SEE SHEET 147 / 156.
3. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (3 OF 4), SEE SHEET 148 / 156.
4. FOR GIRDER SPANS FRAMING - PAINTING LOCATIONS, SEE SHEET 150 / 156.
5. FOR ADDITIONAL ITEM 514 NOTES, SEE GENERAL NOTES SHEETS 4 / 156 AND 5 / 156.

LEGEND:

INDICATES AREA OF STRUCTURAL STEEL WITH SURFACE CORROSION OR REACTIVATED PACK RUST TO BE PAINTED IN ACCORDANCE WITH ITEM 514. THESE AREAS ARE APPROXIMATE.

XX SF - PAINTING QUANTITY

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
SFH	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		3103390	

TRUSS SPANS ELEVATION - PAINTING LOCATIONS (4 OF 4)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

149 / 156

192 / 199

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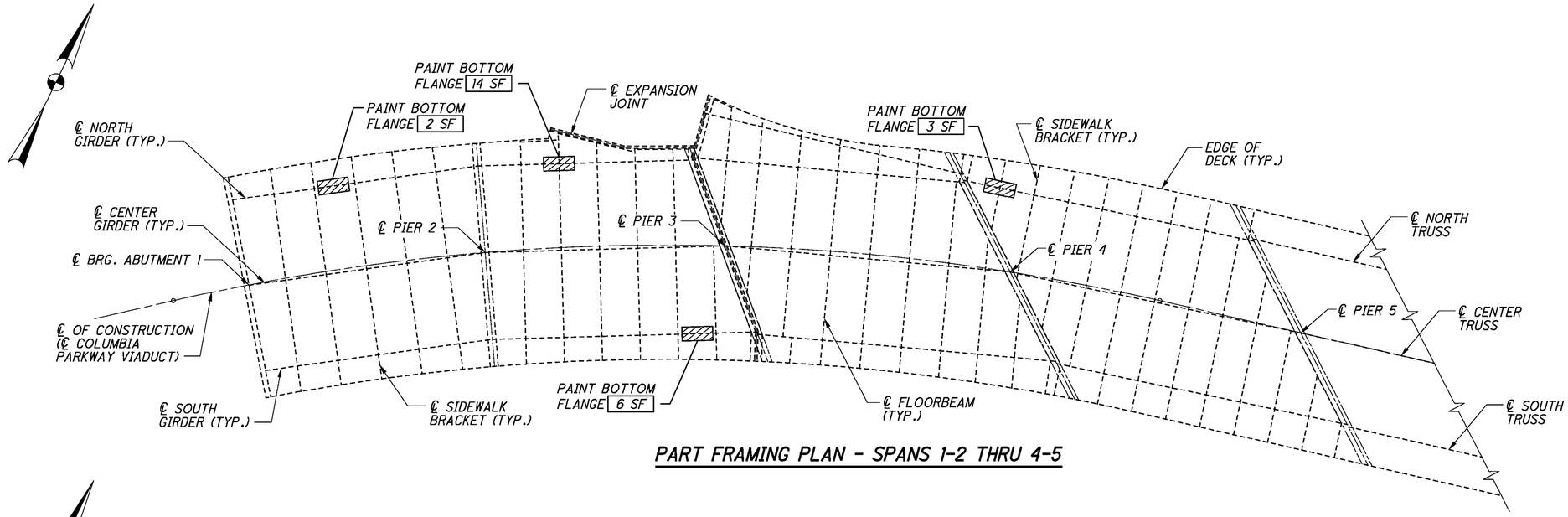
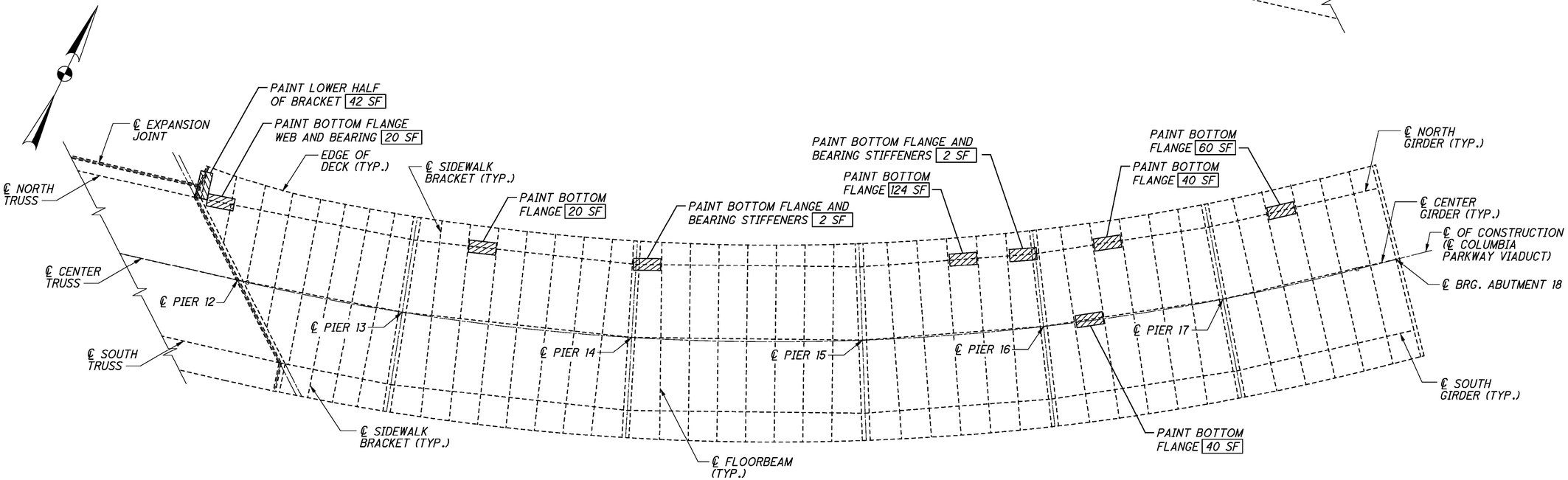


PART FRAMING PLAN - SPANS 1-2 THRU 4-5



PART FRAMING PLAN - SPANS 12-13 THRU 17-18

LEGEND:

INDICATES AREA OF STRUCTURAL STEEL WITH SURFACE CORROSION OR REACTIVATED PACK RUST TO BE PAINTED IN ACCORDANCE WITH ITEM 514. THESE AREAS ARE APPROXIMATE.

XX SF - PAINTING QUANTITY

NOTES:

1. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (1 OF 4), SEE SHEET 146 / 156.
2. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (2 OF 4), SEE SHEET 147 / 156.
3. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (3 OF 4), SEE SHEET 148 / 156.
4. FOR TRUSS SPANS ELEVATION - PAINTING LOCATIONS (4 OF 4), SEE SHEET 149 / 156.
5. FOR ADDITIONAL ITEM 514 NOTES, SEE GENERAL NOTES SHEETS 4 / 156 AND 5 / 156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
SFH	JLV	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		3103390	

GIRDER SPANS FRAMING - PAINTING LOCATIONS
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

150 / 156

193 / 199

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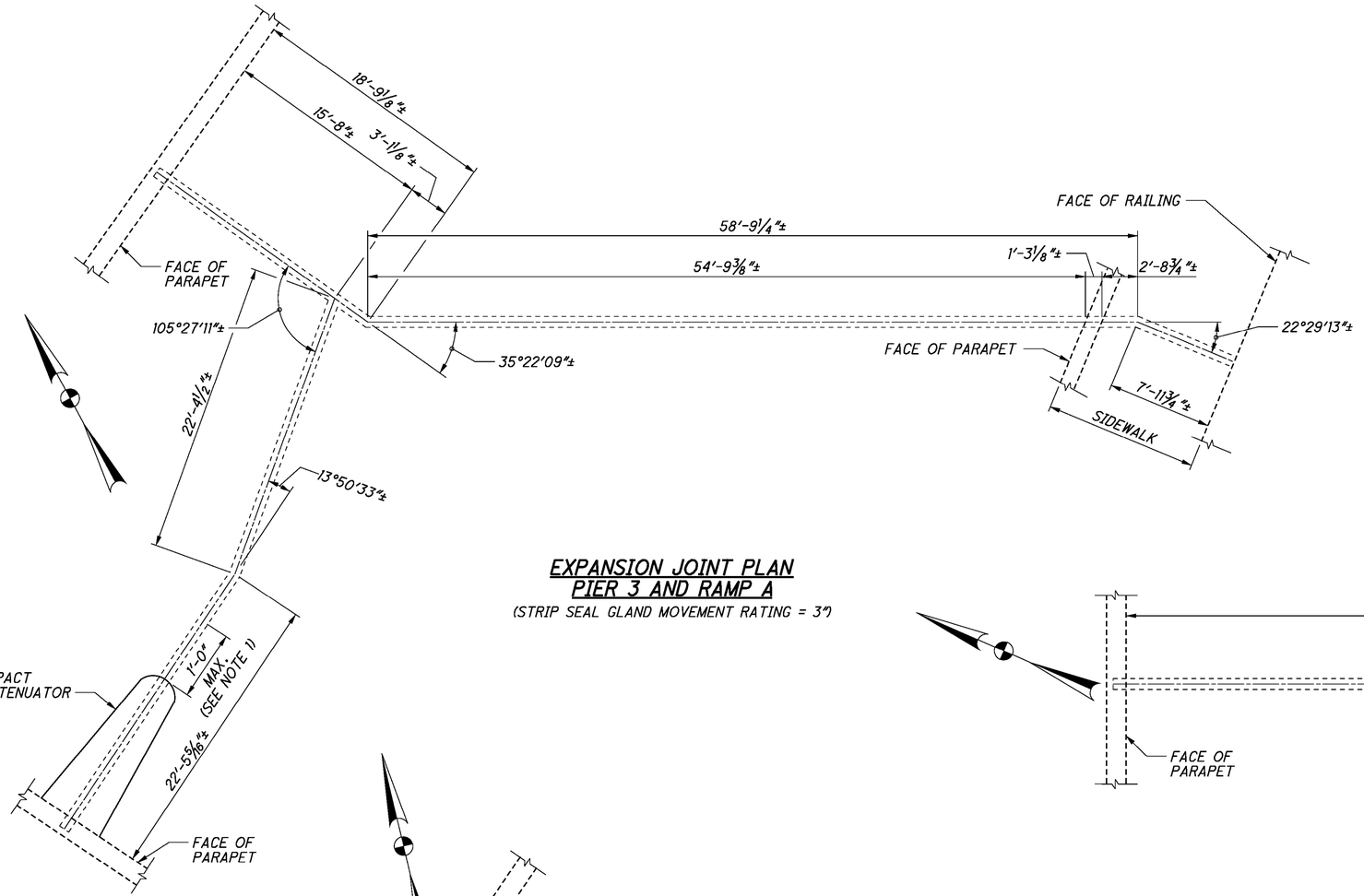
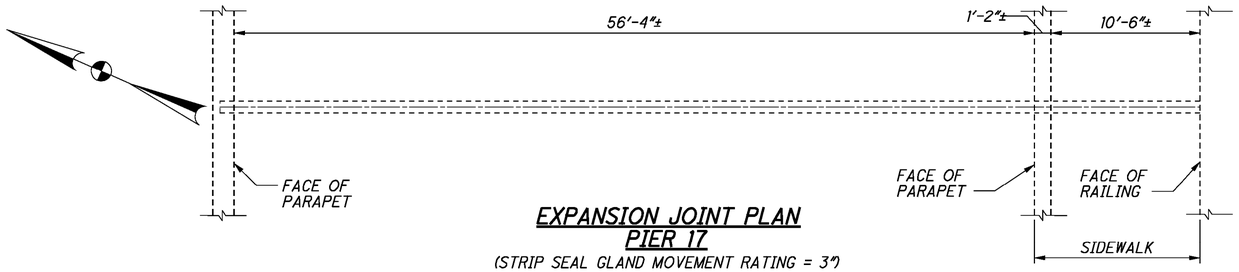


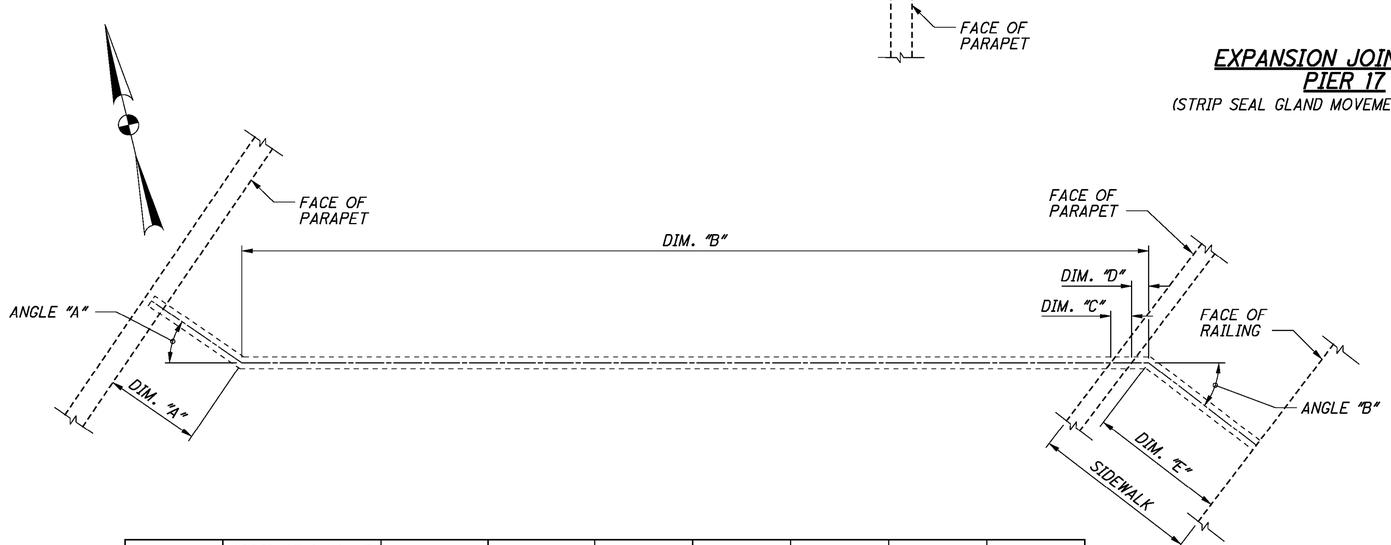
EXPANSION JOINT PLAN
PIER 3 AND RAMP A

(STRIP SEAL GLAND MOVEMENT RATING = 3")



EXPANSION JOINT PLAN
PIER 17

(STRIP SEAL GLAND MOVEMENT RATING = 3")



LOCATION	STRIP SEAL GLAND MOVEMENT RATING	ANGLE "A"	ANGLE "B"	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"
PIER 4	3"	34°21'49.3"±	37°25'25.8"±	6'-8 5/8"±	63'-10"±	1'-5 5/8"±	1'-2 3/8"±	9'-6 5/8"±
PIER 5	4"	39°48'20"±	39°48'20"±	7'-10 1/2"±	65'-7"±	1'-6 1/4"±	11 3/4"±	9'-9"±
PIER 7	5"	39°48'20"±	39°48'20"±	7'-10 1/2"±	66'-4 3/4"±	1'-6 1/4"±	1'-9 1/2"±	9'-11 1/2"±
PIER 10	3"	39°48'20"±	39°48'20"±	7'-10 1/2"±	66'-4 3/4"±	1'-6 1/4"±	1'-9 1/2"±	9'-11 1/2"±

EXPANSION JOINT PLAN
PIERS 4, 5, 7 AND 10

NOTES:

1. CONTRACTOR SHALL COMMENCE STRIP SEAL GLAND REPLACEMENT A MAXIMUM OF 1'-0" OUTSIDE THE LIMITS OF THE EXISTING IMPACT ATTENUATOR, OR AS DIRECTED BY THE ENGINEER. A FIELD SPLICE WILL BE REQUIRED AT THIS LOCATION.
2. PAYMENT FOR REMOVAL OF THE EXISTING STRIP SEAL GLAND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
3. FOR SEQUENCE OF CONSTRUCTION AND ADDITIONAL DETAILS, SEE SHEETS 152/156 AND 153/156.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED PJP | DRAWN JDG | REVIEWED PJA | DATE 10-05-16
CHECKED ZTW | REVISED | STRUCTURE FILE NUMBER 3103390

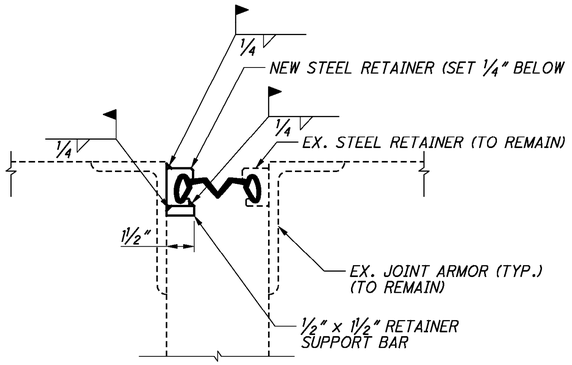
DECK JOINT SEAL REPLACEMENT DETAILS (1 OF 3)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

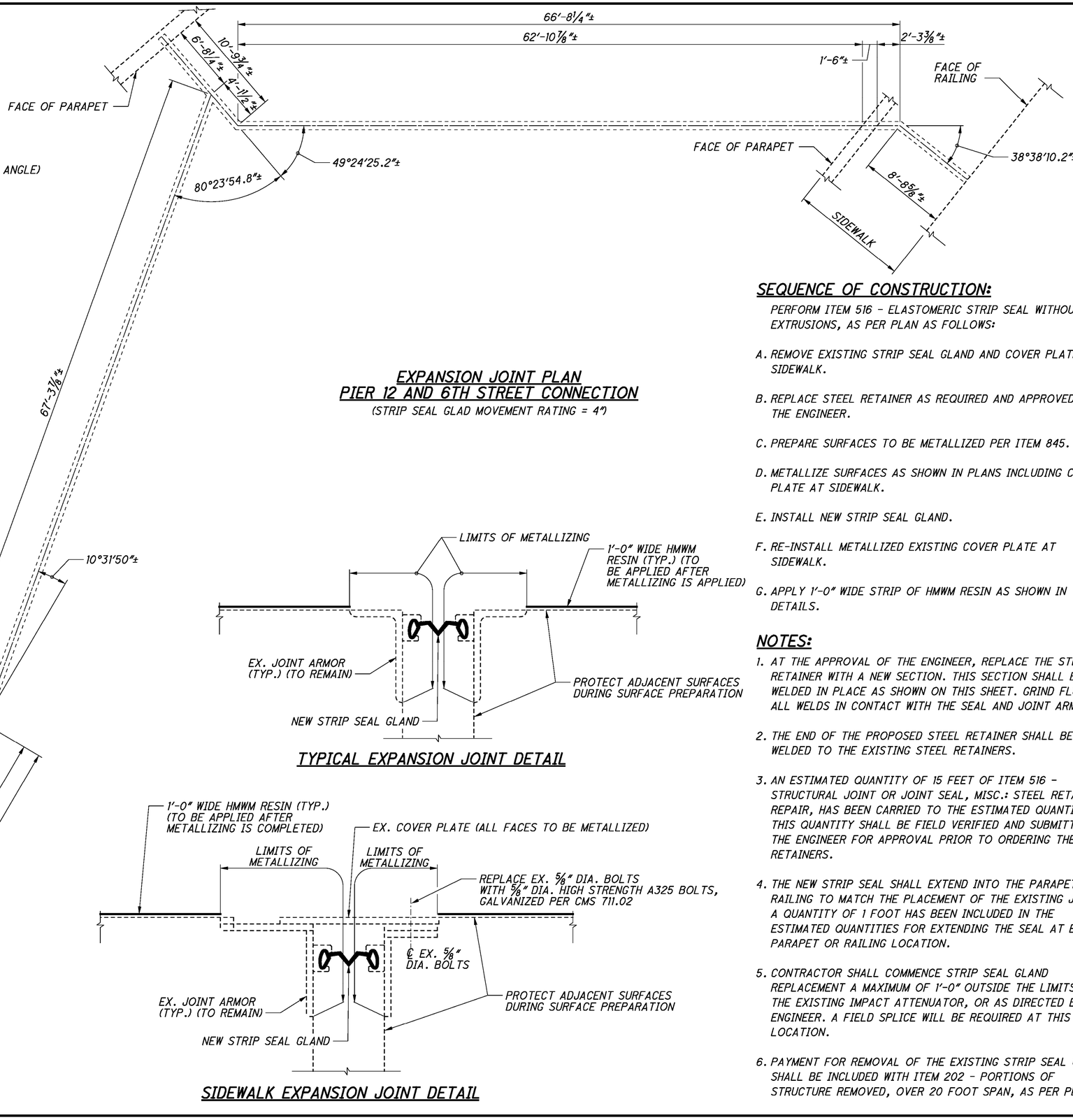
151/156

194/199

91939MD104.dgn 10/7/2016 11:44:54 AM sthammerschmidt



STEEL RETAINER REPLACEMENT DETAIL



EXPANSION JOINT PLAN
PIER 12 AND 6TH STREET CONNECTION

(STRIP SEAL GLAD MOVEMENT RATING = 4")

TYPICAL EXPANSION JOINT DETAIL

SIDEWALK EXPANSION JOINT DETAIL

SEQUENCE OF CONSTRUCTION:

PERFORM ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT EXTRUSIONS, AS PER PLAN AS FOLLOWS:

A. REMOVE EXISTING STRIP SEAL GLAND AND COVER PLATE AT SIDEWALK.

B. REPLACE STEEL RETAINER AS REQUIRED AND APPROVED BY THE ENGINEER.

C. PREPARE SURFACES TO BE METALLIZED PER ITEM 845.

D. METALLIZE SURFACES AS SHOWN IN PLANS INCLUDING COVER PLATE AT SIDEWALK.

E. INSTALL NEW STRIP SEAL GLAND.

F. RE-INSTALL METALLIZED EXISTING COVER PLATE AT SIDEWALK.

G. APPLY 1'-0" WIDE STRIP OF HMWM RESIN AS SHOWN IN DETAILS.

NOTES:

1. AT THE APPROVAL OF THE ENGINEER, REPLACE THE STEEL RETAINER WITH A NEW SECTION. THIS SECTION SHALL BE WELDED IN PLACE AS SHOWN ON THIS SHEET. GRIND FLUSH ALL WELDS IN CONTACT WITH THE SEAL AND JOINT ARMOR.

2. THE END OF THE PROPOSED STEEL RETAINER SHALL BE BUTT WELDED TO THE EXISTING STEEL RETAINERS.

3. AN ESTIMATED QUANTITY OF 15 FEET OF ITEM 516 - STRUCTURAL JOINT OR JOINT SEAL, MISC.: STEEL RETAINER REPAIR, HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES. THIS QUANTITY SHALL BE FIELD VERIFIED AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE STEEL RETAINERS.

4. THE NEW STRIP SEAL SHALL EXTEND INTO THE PARAPET OR RAILING TO MATCH THE PLACEMENT OF THE EXISTING JOINT. A QUANTITY OF 1 FOOT HAS BEEN INCLUDED IN THE ESTIMATED QUANTITIES FOR EXTENDING THE SEAL AT EACH PARAPET OR RAILING LOCATION.

5. CONTRACTOR SHALL COMMENCE STRIP SEAL GLAND REPLACEMENT A MAXIMUM OF 1'-0" OUTSIDE THE LIMITS OF THE EXISTING IMPACT ATTENUATOR, OR AS DIRECTED BY THE ENGINEER. A FIELD SPLICE WILL BE REQUIRED AT THIS LOCATION.

6. PAYMENT FOR REMOVAL OF THE EXISTING STRIP SEAL GLAND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED PJP | DRAWN JDG | REVIEWED PJA | DATE 10-05-16
CHECKED ZTW | REVISED SFH | STRUCTURE FILE NUMBER 3103390

DECK JOINT SEAL REPLACEMENT DETAILS (2 OF 3)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

152/156
195/199

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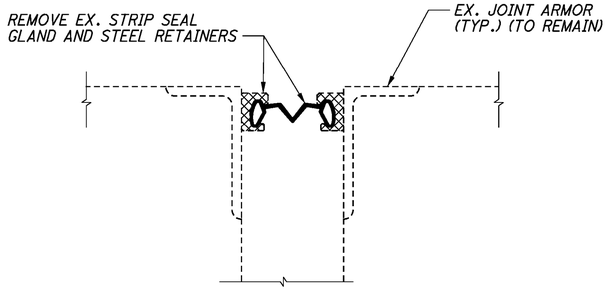
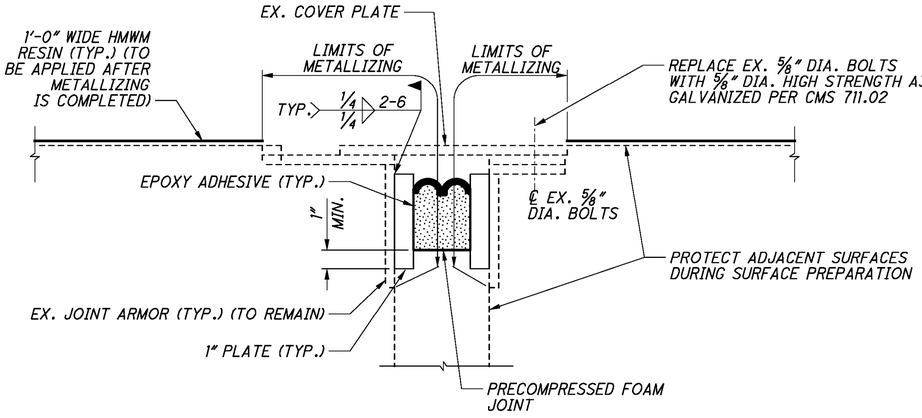
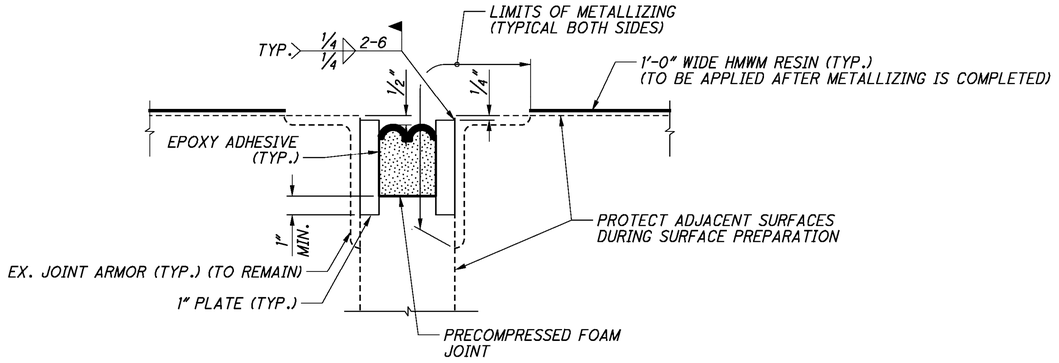


REMOVAL DETAIL



SIDEWALK EXPANSION JOINT DETAIL



PRECOMPRESSED FOAM JOINT DETAIL

SEQUENCE OF CONSTRUCTION:

PERFORM ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: PRECOMPRESSED FOAM JOINT SYSTEM AS FOLLOWS:

A. REMOVE EXISTING STRIP SEAL GLAND, STEEL RETAINERS, AND COVER PLATE OF SIDEWALK.

B. WELD NEW 1" PLATES TO EXISTING JOINT ARMOR.

C. PREPARE SURFACES TO BE METALLIZED PER ITEM 845.

D. METALLIZE SURFACES AS SHOWN IN DETAILS INCLUDING COVER PLATE AT SIDEWALK.

E. INSTALL PRECOMPRESSED FOAM JOINT SYSTEM.

F. RE-INSTALL METALLIZED EXISTING COVER PLATE AT SIDEWALK.

G. APPLY 1'-0" WIDE STRIP OF HMWM RESIN AS SHOWN IN DETAILS.

NOTES:

1. PRECOMPRESSED FOAM JOINT SYSTEM SHALL BE USED AS AN ALTERNATIVE WHEN THE CONTRACTOR DEEMS THE NEW STRIP SEAL JOINT INFEASIBLE TO INSTALL AT THE LOCATION AND HAS RECEIVED APPROVAL FROM THE ENGINEER.

2. THE ENDS OF THE PROPOSED PLATES SHALL BE BUTT WELDED TOGETHER.

3. THE PRECOMPRESSED FOAM JOINT AND EPOXY ADHESIVE ARE CONSIDERED AN INTEGRAL SYSTEM AND SHALL COME FROM THE SAME SUPPLIER.

4. PAYMENT FOR REMOVAL OF EXISTING STEEL RETAINERS, LABOR, MATERIAL AND INSTALLATION FOR CONSTRUCTION OF THE PRECOMPRESSED FOAM JOINT SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEAL, MISC.: PRECOMPRESSED FOAM JOINT SYSTEM.

5. THE NEW STRIP SEAL SHALL EXTEND INTO THE PARAPET OR RAILING TO MATCH THE PLACEMENT OF THE EXISTING JOINT. A QUANTITY OF 1 FOOT HAS BEEN INCLUDED IN THE ESTIMATED QUANTITIES FOR EXTENDING THE SEAL AT EACH PARAPET OR RAILING LOCATION.

6. PAYMENT FOR REMOVAL OF THE EXISTING STRIP SEAL GLAND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED PJP | DRAWN JDG | CHECKED ZTW | REVIEWED PJA | REVISED SFH | DATE 10-05-16 | STRUCTURE FILE NUMBER 3103390

DECK JOINT SEAL REPLACEMENT DETAILS (3 OF 3)
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

153 156
196 199

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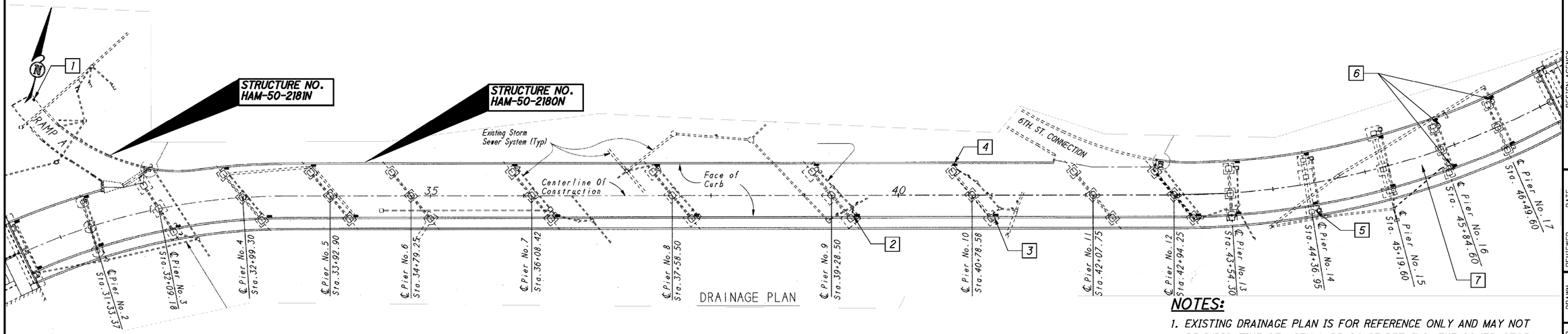
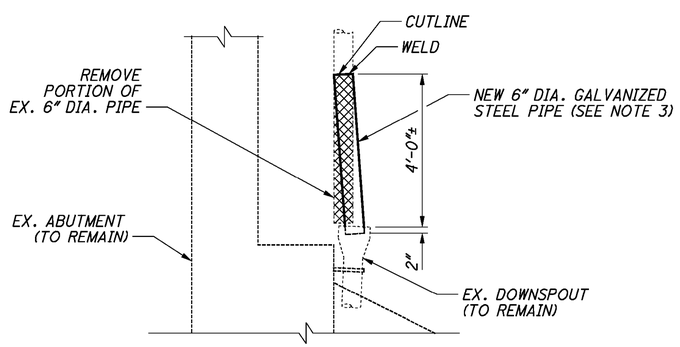


DRAINAGE PLAN

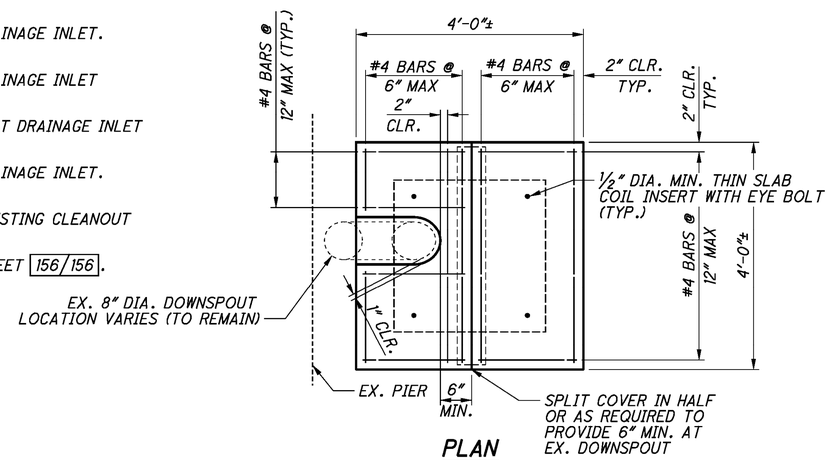
DRAINAGE REPAIR LIST:

1. EXTEND EXISTING DOWNSPOUT. SEE DETAIL ON THIS SHEET.
2. CLEAN OUT EXISTING DOWNSPOUT AND UNDERGROUND PORTION OF STORM SEWER TO NEAREST DRAINAGE INLET. SEE GENERAL NOTES ON SHEET 5/156.
3. CLEAN OUT EXISTING DOWNSPOUT AND UNDERGROUND PORTION OF STORM SEWER TO NEAREST DRAINAGE INLET AND REPLACE SLOPE PROTECTION. SEE DETAILS ON SHEET 155/156.
4. EXTEND EXISTING DOWNSPOUT AND REPLACE UNDERGROUND PORTION OF STORM SEWER TO NEAREST DRAINAGE INLET AND REPLACE SLOPE PROTECTION. SEE DETAILS ON SHEET 155/156.
5. CLEAN OUT EXISTING DOWNSPOUT AND UNDERGROUND PORTION OF STORM SEWER TO NEAREST DRAINAGE INLET. SEE GENERAL NOTES ON SHEET 5/156.
6. CLEAN OUT EXISTING UNDERGROUND STORM SEWER TO NEAREST DRAINAGE INLET AND REPLACE EXISTING CLEANOUT BOX COVER. SEE DETAILS THIS SHEET.
7. RE-GRADE ERODED AREA AND PLACE CRUSHED AGGREGATE SLOPE PROTECTION. SEE DETAIL ON SHEET 156/156.

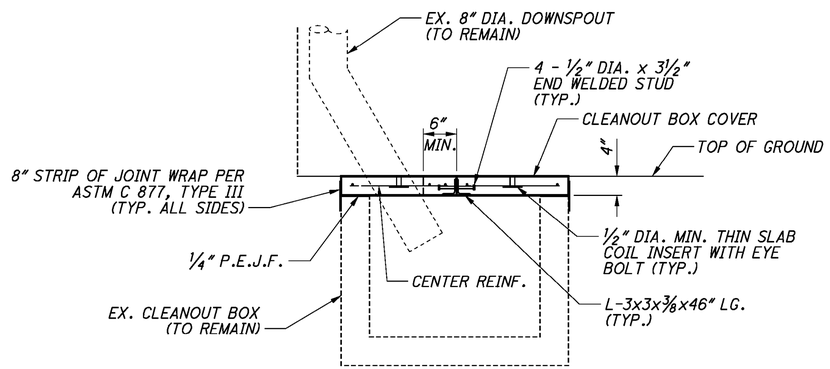


DOWNSPOUT DETAIL

(HAM-50-2181N)



PLAN



ELEVATION

CLEANOUT BOX COVER

NOTES:

1. EXISTING DRAINAGE PLAN IS FOR REFERENCE ONLY AND MAY NOT BE INDICATIVE OF ACTUAL DRAINAGE DETAILS. THE CONTRACTOR SHALL FIELD VERIFY ALL REMOVAL/REPLACEMENT QUANTITIES PRIOR TO ORDERING MATERIALS.

2. THE UNDERGROUND PORTIONS OF DRAINAGE PIPES SHALL BE CLEANED TO THE NEAREST DRAINAGE INLET. THE PORTIONS THAT ARE TO BE CLEANED BELOW GROUND SHALL ALSO BE INSPECTED USING REMOTE VIDEO INSPECTION EQUIPMENT TO ENSURE THAT THEY ARE INTACT AND FREE OF DEBRIS. THE CONTRACTOR SHALL COORDINATE ALL DRAINAGE REPAIR TO PREVENT ANY DRAINAGE ONTO TRAFFIC, PARKED VEHICLES, LANDSCAPED AREAS OR OTHER OCCUPIED AREAS BELOW.

   PROVIDE A CRAWLER MOUNTED CAMERA AND EQUIPMENT IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 902 CONDUIT INSPECTION EQUIPMENT.

   THE CONTRACTOR SHALL CONDUCT A SURVEY OF THE UNDERGROUND PORTIONS OF DRAINAGE PIPES TO THE CLOSEST DRAINAGE INLET. THE CONTRACTOR SHALL DELIVER THREE COPIES OF THE SURVEY IN DIGITAL FORMAT TO THE ENGINEER. ALL DRAINAGE PIPE DEFECTS SHALL BE IDENTIFIED, MEASURED AND DOCUMENTED. REPLACEMENT OF ANY DAMAGED PIPES CAN NOT BEGIN UNTIL APPROVAL OF THE ENGINEER. THE SIZE OF THE REPLACEMENT PIPE SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO INSTALLATION SO AS TO MATCH EXISTING CONDITIONS.

   THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR REPLACEMENT OF UNDERGROUND DRAINAGE PIPES AS REQUIRED AND APPROVED BY THE ENGINEER.

ITEM	UNIT	DESCRIPTION
202	FT	PIPE REMOVED, 24" AND UNDER, AS PER PLAN
611	FT	12" CONDUIT, TYPE C, AS PER PLAN

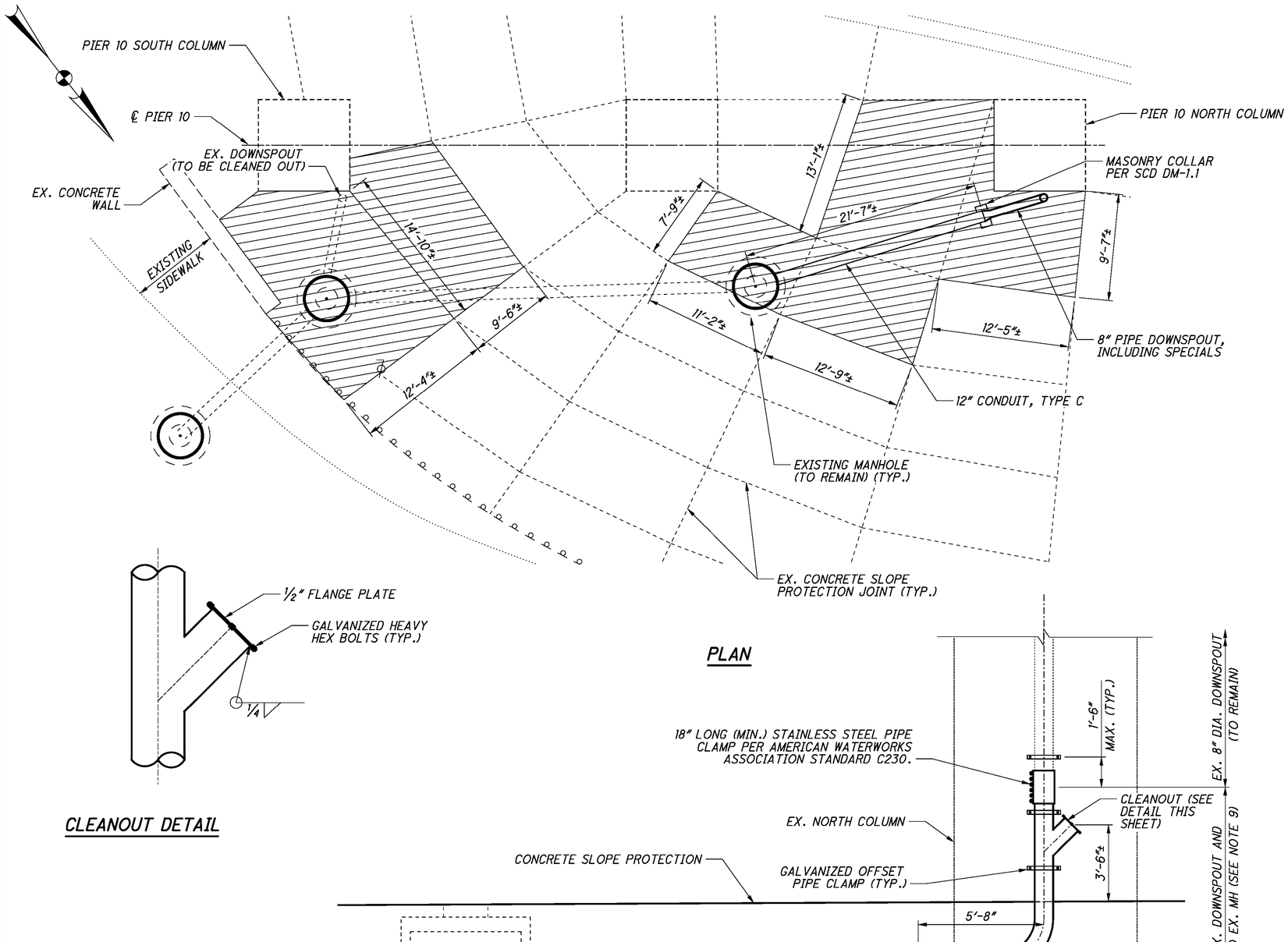
3. ALL LABOR AND MATERIALS REQUIRED FOR THE REMOVAL OF THE EXISTING 6 INCH DIAMETER DOWNSPOUT AND REPLACEMENT WITH THE NEW 6 INCH DIAMETER GALVANIZED STEEL PIPE AT STRUCTURE NO. HAM-50-2181N SHALL BE INCLUDED WITH ITEM 518 - SCUPPER, MODIFICATION, AS PER PLAN.

4. CLEANOUT BOX COVERS SHALL BE CLASS QC 1. IF CONTRACTOR ELECTS TO USE A PRECAST COVER, THEY MAY BE FORMED AND CAST WITHIN THE PROJECT CONSTRUCTION LIMITS.

5. ALL LABOR AND MATERIALS REQUIRED FOR THE CLEANOUT BOX COVERS SHALL BE INCLUDED WITH ITEM 611 - DRAINAGE STRUCTURE, MISC.: CLEANOUT BOX COVER.

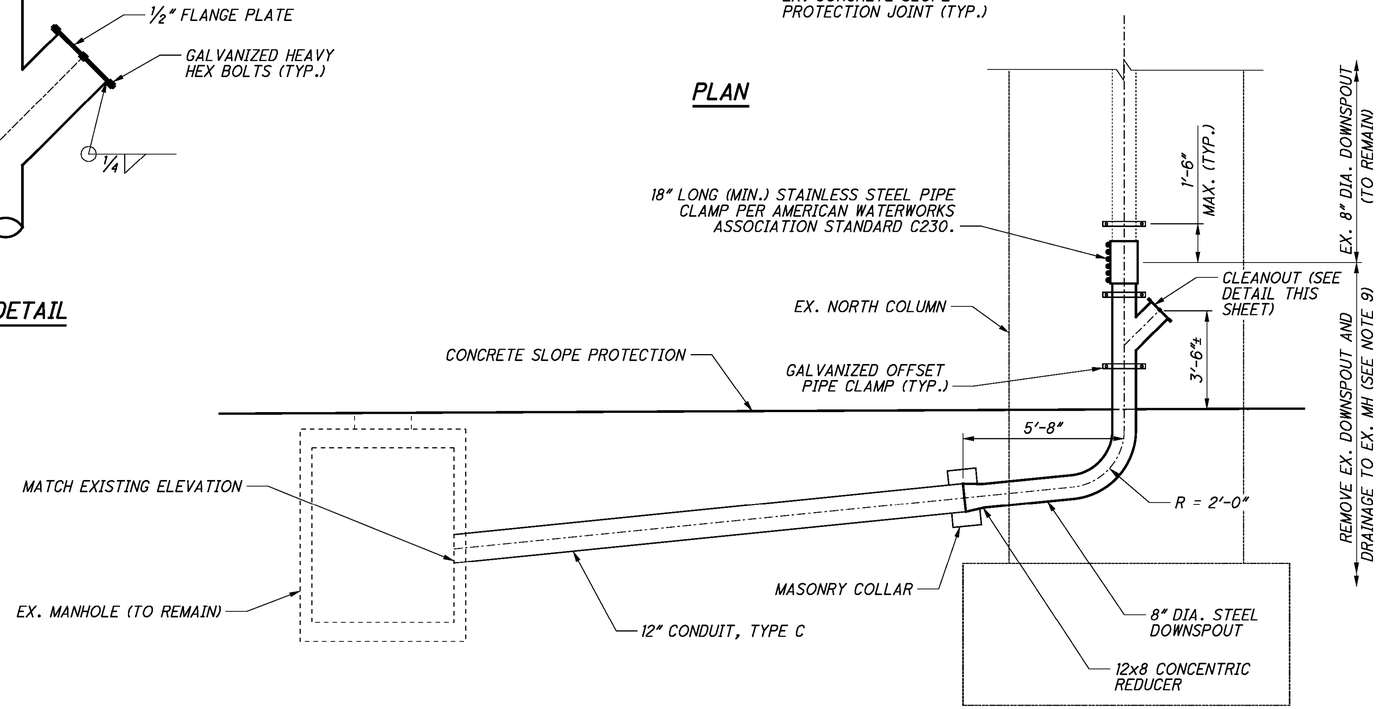
6. SEE ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEANING BRIDGE DRAINAGE SYSTEM GENERAL NOTE ON SHEET 5/156 FOR ADDITIONAL INFORMATION AND PAYMENT.

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113
DESIGNED PJP | DRAWN PJP | CHECKED ZTW | REVIEWED PJA | DATE 10-05-16 | REVISED | STRUCTURE FILE NUMBER 3103390
DRAINAGE PLAN
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471
HAM-50-2180N
PID No. 91939
154/156
197/199
91939MD101.dgn 10/7/2016 11:44:56 AM sfhammerschmidt



CLEANOUT DETAIL

PLAN



PIER 10 NORTH DOWNSPOUT ELEVATION

LEGEND:

EXISTING CONCRETE SLOPE PROTECTION TO BE REMOVED AND REPLACED

NOTES:

1. FOR REMOVAL, SAW CUT THE EXISTING CONCRETE SLOPE PROTECTION AT THE NEAREST EXISTING EXPANSION OR CONTRACTION JOINT TO THE LIMITS SHOWN.
2. CONCRETE SLOPE PROTECTION REMOVAL LIMITS SHOWN ARE BASED UPON THE APPROXIMATE LOCATIONS OF EXISTING JOINTS AND THE EXISTING CONDITIONS AS NOTED DURING FIELD OBSERVATIONS IN MARCH AND JUNE 2016. THE FINAL REMOVAL LIMITS SHALL BE DETERMINED BY THE ENGINEER BASED UPON CONDITIONS ENCOUNTERED AT THE BEGINNING OF CONSTRUCTION. THE QUANTITIES SHOWN IN THE ESTIMATED QUANTITY SHEET HAVE BEEN ADJUSTED UPWARD BY 10% TO COVER ADDITIONAL DETERIORATION SINCE THE FIELD OBSERVATIONS.
3. 8" DIA. PIPE AND SPECIALS, CLEANOUTS, REDUCERS, AND SUPPORT SYSTEMS SHALL BE LOW OR MILD CARBON STEEL CONFORMING TO ITEM 513, AVAILABLE COMMERCIALLY AND SHALL BE GALVANIZED ACCORDING TO CMS 711.02.
4. THE 8" DIA. STEEL DOWNSPOUT PIPES WITH SPECIALS, CLEANOUTS, AND CLAMPS SHALL BE INCLUDED WITH ITEM 518 - 8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN, FOR PAYMENT.
5. PIPE JOINTS FOR STEEL DOWNSPOUT PIPE SHALL BE MADE BY WELDING OR BY USE OF CLAMP-TYPE COUPLINGS HAVING A RING GASKET. ALL WELDING SHALL BE DONE BEFORE GALVANIZING.
6. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO CMS 711.02.
7. FOR ATTACHMENT TO COLUMN, BOLTS SHALL BE ½" DIAMETER EXPANSION GALVANIZED BOLT ANCHORS DRILLED IN PLACE. BOLTS SHALL BE CAPABLE OF DEVELOPING A PULLOUT RESISTANCE OF NOT LESS THAN 6,000 LBS.
8. SUBMIT SHOP DRAWINGS ACCORDING TO CMS 501.04 FOR APPROVAL. PREPARATION OF SHOP DRAWINGS SHALL BE INCIDENTAL TO ITEM 518 - 8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN, FOR PAYMENT.
9. REMOVE EXISTING DOWNSPOUT AND UNDERGROUND DRAINAGE ITEMS TO THE EXISTING MANHOLE. REPAIR THE END OF THE EXISTING DOWNSPOUT TO REMAIN IN ACCORDANCE WITH CMS 711.02. ALL WORK NECESSARY FOR REMOVAL AND REPAIR OF EXISTING PIPE TO REMAIN TO BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
PJP	PJP	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		3103390	

DRAINAGE DETAILS - PIER 10
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

HAM-50-2180N
PID No. 91939

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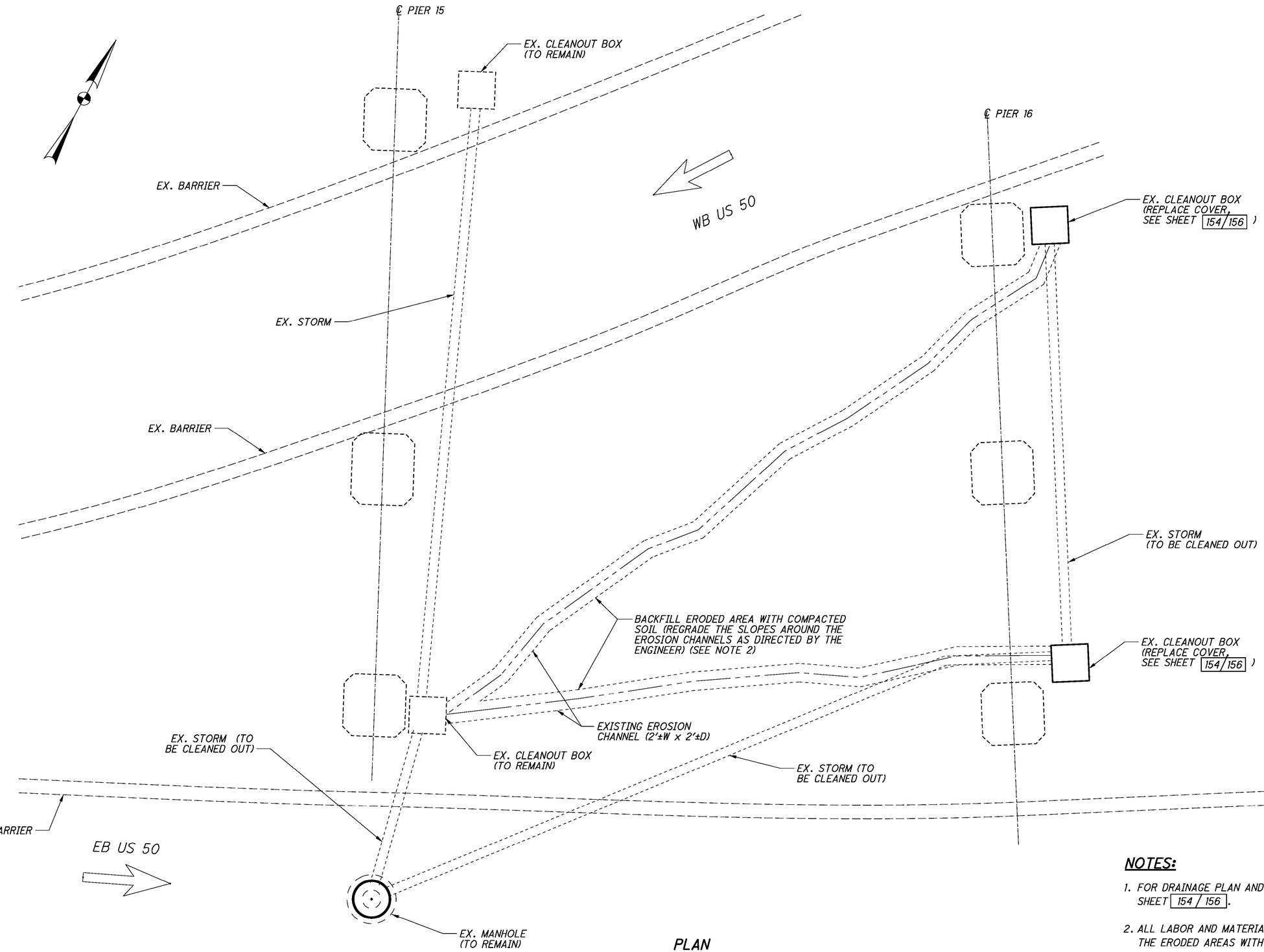

PLAN

(DOWNSPOUTS NOT SHOWN)

NOTES:

1. FOR DRAINAGE PLAN AND ADDITIONAL DETAILS, SEE SHEET 154 / 156 .
2. ALL LABOR AND MATERIAL REQUIRED TO BACKFILL THE ERODED AREAS WITH COMPACTED SOIL AND TO REGRADE THE SLOPE SHALL BE INCLUDED WITH ITEM 203 - EMBANKMENT, USING NATURAL SOILS, 703.16.A.

DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
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DESIGNED	DRAWN	REVIEWED	DATE
PJP	PJP	PJA	10-05-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		3103390	

DRAINAGE DETAILS - SPAN 15
BRIDGE No. HAM-50-2180N
COLUMBIA PARKWAY VIADUCT OVER I-471

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