

CUY - SR 10 - 16.13 Steel  
 190109 PID - 96986  
 Dist 12 2/21/2019

Contract Proposal Available @  
 www.contracts.dot.state.oh.us/home

STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION

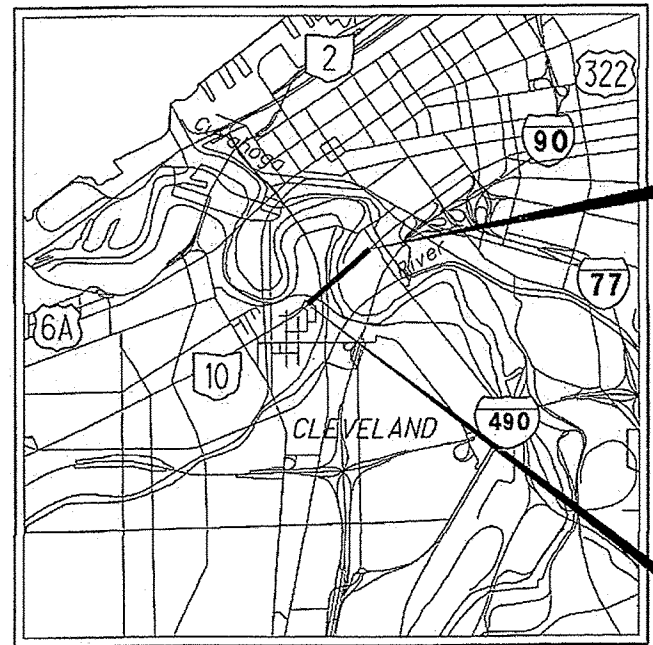
**CUY-10-16.13**

**CITY OF CLEVELAND  
 CUYAHOGA COUNTY**

PROJECT DESCRIPTION

THE PROJECT IS THE CONSTRUCTION OF MAINTENANCE REPAIRS ON BRIDGE NO. CUY-10-1613. REPAIRS INCLUDE CONCRETE DECK, STEEL MEMBERS, PARTIAL PAINTING, RIVER PROTECTION, ELECTRICAL TRANSMISSION RELOCATION, AND RE-ERECTION OF EXISTING LIGHTING.

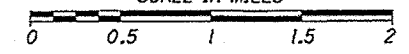
PROJECT LENGTH = 0.62 MILE



LOCATION MAP

LATITUDE: 41°29'20" LONGITUDE: 81°41'40"

SCALE IN MILES



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

DESIGN DESIGNATIONS

CURRENT ADT.....	11,210
DESIGN YEAR ADT.....	N/A
DESIGN HOURLY VOLUME.....	N/A
DIRECTIONAL DISTRIBUTION.....	N/A
TRUCKS (24 HOUR B&C).....	750
DESIGN SPEED.....	35
LEGAL SPEED.....	35
DESIGN FUNCTIONAL CLASSIFICATION:	
URBAN MINOR ARTERIAL	
NHS PROJECT.....	NO

DESIGN EXCEPTIONS

NONE

**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 PROTECTIVE  
 SERVICE CALL: 1-800-925-0988

END PROJECT  
 STA. 55+04.56±  
 E140 (539)

BEGIN PROJECT  
 STA. 22+19.19±  
 E140 (539)

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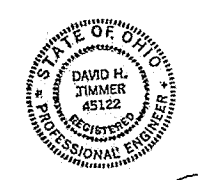
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PROJECT NO. 2

PLAN PREPARED BY:

**RICHLAND ENGINEERING LIMITED**  
 29 NORTH PARK STREET  
 MANSFIELD OHIO 44902  
 PHONE: (419) 524-0074 FAX: (419) 524-1812

ENGINEERS SEAL:

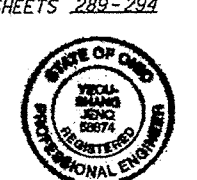


SIGNED: *David H. Zimmer*  
 DATE: 3/12/2018

PLAN PREPARED BY:

**COLUMBUS ENGINEERING CONSULTANTS, INC.**  
 840 MICHIGAN AVENUE, COLUMBUS, OH 43215  
 TEL: 614/228-3500

ENGINEERS SEAL:

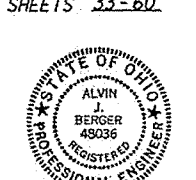


SIGNED: *Yee-Chang Jung*  
 DATE: 03/05/2018

PLAN PREPARED BY:

**AJB ENGINEERING CONSULTANTS, LLC**  
 1664 WESTOVER LN.  
 MANSFIELD, OHIO  
 419-564-1644

ENGINEERS SEAL:



SIGNED: *Alvin J. Berger*  
 DATE: 3-9-18

STANDARD CONSTRUCTION DRAWINGS							SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS	
BP-2.6	7-15-16	MT-95.30	7-21-17	TC-41.40	10-18-13	EXJ-4-87	1-19-18	800 10-19-18	WATERWAY
BP-3.1	7-18-14	MT-95.31	7-21-17	TC-52.10	10-18-13			821 4-20-12	PERMIT
		MT-95.32	7-21-17	TC-52.20	1-19-18			832 1-17-14	5-8-17
RM-4.2	4-18-14	MT-95.41	7-21-17	TC-71.10	1-19-18			847 1-20-17	
F-1.1	7-19-13	MT-97.10	7-18-14					902 12-31-12	
HL-10.12	1-20-17	MT-97.12	1-20-17					921 4-20-12	
HL-20.14	1-19-18	MT-98.10	1-20-17						
HL-30.11	1-19-18	MT-98.11	1-20-17						
HL-30.31	1-17-14	MT-99.20	7-21-17						
HL-30.32	1-17-14	MT-101.70	1-17-14						
HL-30.33	1-17-14	MT-101.75	7-15-16						
HL-50.11	1-16-15	MT-105.10	7-19-13						
		MT-110.10	7-19-13						

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 APPROVE 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: *M. S. K.*  
 DATE: 04-25-18 DISTRICT DEPUTY DIRECTOR

APPROVED: *James Whipple*  
 DATE: 5-8-18 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E140 (539)  
 PID NO. 96986  
 CONSTRUCTION PROJECT NO.  
 RAILROAD INVOLVEMENT  
 INDUSTRIAL RAILROAD  
 FLATS INDUSTRIAL RAILROAD  
 CSX RAILROAD  
 CUY-10-16.13  
 1/308

**UTILITIES**

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

**ELECTRIC:**

CITY OF CLEVELAND DIVISION OF CLEVELAND PUBLIC POWER (CPP) (CONDUITS ON STRUCTURE) 1300 LAKESIDE AVE. CLEVELAND, OHIO 44114 ATTN: CHRIS HIRZEL PHONE: (216) 664-3922, EXT. 115 FAX: (216) 664-2972 EMAIL: CHIRZEL@CPP.ORG

DIVISION OF CLEVELAND PUBLIC POWER (CPP) CLEVELAND PUBLIC POWER CIRCUITS: STREET LIGHTING 1300 LAKESIDE AVENUE CLEVELAND, OHIO 44114 ATTN: JAMES FERGUSON, CHIEF, BUREAU OF STREET LIGHTING PHONE: (216) 420-7704, EXT. 183

ILLUMINATING COMPANY (FIRST ENERGY) (NO CONFLICT WITH STRUCTURE) 6896 MILLER ROAD BRECKSVILLE, OHIO 44141 ATTN: TED RADER, ENGINEERING SUPERVISOR PHONE: (440) 546-8738 EMAIL: RADERT@FIRSTENERGYCORP.COM

**WATER:**

CITY OF CLEVELAND DIVISION OF WATER (NO CONFLICT WITH STRUCTURE) 1201 LAKESIDE AVENUE CLEVELAND, OHIO 44114 ATTN: FRED ROBERTS PHONE: (216) 664-2444, EXT. 5590 FAX: (216) 664-2838

**SEWER:**

CITY OF CLEVELAND DIVISION OF WATER POLLUTION CONTROL (NO CONFLICT WITH STRUCTURE) 12302 KIRBY ROAD CLEVELAND, OHIO 44108 ATTN: RACHID ZOHAIB PHONE: (216) 664-3785

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NEORS) (NO CONFLICT WITH STRUCTURE) 3900 EUCLID AVENUE CLEVELAND, OHIO 44115-2504 ATTN: MARY MACIEJOWSKI PHONE: (216) 881-6600 EXT. 6466

**GAS:**

DOMINION ENERGY OHIO TRANSMISSION & STORAGE & GATHERING FACILITIES (20" PIPELINE ON STRUCTURE) 320 SPRINGSIDE DRIVE, SUITE 320 AKRON, OHIO 44333 ATTN: MIKE ANTONIUS, PROJECT MANAGER GAS DESIGN PHONE: (330) 664-2488 FAX: (330) 664-2686 EMAIL: RELOCATION@DOM.COM

DOMINION ENERGY OHIO (CONFLICT UNKNOWN) 320 SPRINGSIDE DRIVE AKRON, OHIO 44333 ATTN: PAUL KOSKO PROJECT MANAGER PHONE: (330) 664-2478

**COMMUNICATIONS:**

AT&T OHIO (SBC) (72 - 4" PLASTIC CONDUIT ON STRUCTURE) 13630 LORAIN AVENUE, 2ND FLOOR CLEVELAND, OHIO 44111 ATTN: JAMES JANIS, DESIGN MANAGER PHONE (216) 476-6142 FAX: (216) 476-6013 EMAIL: PJ8191@ATT.COM

AT&T LONG DISTANCE (FIBER-OPTIC CABLE IN AT&T CONDUIT) THAYER POWER AND COMMUNICATION LINE CONSTRUCTION CO. LLC 950 FREEWAY DRIVE N. COLUMBUS, OHIO 43229 ATTN: CHRISTOPHER McCLOSKEY SENIOR PROJECT MANAGER PHONE: 614-431-9292 FAX: 614-431-9595 MOBILE: 614-312-2226

LIGHTOWER FIBER NETWORKS (FIBER-OPTIC CABLE IN AT&T CONDUIT) 15565 NEO PARKWAY GARFIELD HEIGHTS, OHIO 44128 ATTN: ED DALY CELL: 585-397-5988 EMAIL: EDALY@FIBERTECH.COM

VERIZON (NO CONFLICT WITH STRUCTURE) 120 RAVINE ST. AKRON, OHIO 44303 ATTN: AL GUEST PHONE: (330) 253-8267 ALLAN.GUEST@VERIZON.COM

SPRINT NEXTEL (NO CONFLICT WITH STRUCTURE) 875 GREENTREE RD. STE. 410, BUILDING 7 PITTSBURGH, PA 15220 ATTN: LUKE BRYAN - NTWK / PROJECT MANAGER PHONE: (412) 960-4071 CELL: (412) 505-3139 EMAIL: LUKE.BRYAN@SPRINT.COM

WINDSTREAM (FIBER-OPTIC CABLE IN AT&T CONDUIT) 560 TERNES AVE. ELYRIA, OHIO 44035 ATTN: GEOFFREY HAMM OSP ENGINEER II PHONE: (440) 329-4245 (OFFICE) PHONE: (330) 256-6133 (CELL) EMAIL: GEOFFREY.P.HAMM@WINDSTREAM.COM

CENTURYLINK CORE NETWORK (CONFLICT UNKNOWN) 441 W. BROAD STREET PATASKALA, OHIO 43062 ATTN: CHRIS STRAYER PHONE: (303) 886-1299 EMAIL: CHRISTOPHER.STRAYER@CENTURYLINK.COM

CROWN CASTLE: (NEW FIBER OPTIC CABLE, CONFLICT UNKNOWN) 2000 CORPORATE DRIVE CANONSBURG, PA 15317 ATTN: MARK HARTZ, PROGRAM MANAGER - CENTRAL REGION PHONE (724) 416-2963

**CABLE:**

CHARTER COMMUNICATIONS (UNDETERMINED) 8179 DOW CIRCLE STRONGSVILLE, OHIO 44136 SUPERVISOR: GARY NAUMANN PHONE: (216) 575-8016, EXT. 5033 FIELD ENGINEER: PAUL SILVESTRO PHONE: (216) 575-8016, EXT. 5034 FAX: (440) 826-2940

**DOMINION ENERGY OHIO GENERAL REQUIREMENTS**

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DOMINION'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, SUBPART P, (SAFE EXCAVATION AND SHORING). ONE-FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN DOMINION ENERGY OHIO'S (DEO) EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY (PIPELINES, ETC.) OR APPURTENANCE (PIPE COATING, TRACER WIRE, CATHODIC PROTECTION TEST STATION WIRES & DEVICES, VALVE BOXES, ETC.) DEO FACILITIES MUST BE PROTECTED WITH A TARP DURING BRIDGE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE AND LIABLE FOR ENSURING THAT ALL DEO EXISTING FACILITIES, ABOVE AND BELOW GROUND, REMAIN UNDAMAGED, ACCESSIBLE AND IN WORKING ORDER. THE CROSSING OF DEO'S PIPELINE WITH ANOTHER STEEL FACILITY MAY CREATE A POTENTIAL CORROSION ISSUE FOR THE PROPOSED FACILITY AND THE EXISTING DEO FACILITY. PLEASE CONTACT DOMINION'S CORROSION DEPARTMENT: DAVE CUTLIP (330-266-2121), RICK McDONALD (330-266-2122), OR AL HUMRICHOUER (330-478-3757).

**AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS**

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 85 FEET ABOVE THE SURFACE OF THE BRIDGE DECK. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND THE ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

EXPRESS PROCESSING CENTER THE FEDERAL AVIATION ADMINISTRATION SOUTHWEST REGIONAL OFFICE AIR TRAFFIC AIRSPACE BRANCH ASW-520 2601 MEACHAM BLVD. FORT WORTH, TX 76137-4298

OHIO DEPARTMENT OF TRANSPORTATION OFFICE OF AVIATION 2829 WEST DUBLIN-GRANVILLE ROAD COLUMBUS, OHIO 43235 (614) 387-2346

**PEREGRINE FALCON NESTS**

A KNOWN PEREGRINE FALCON NEST IS LOCATED ON THE EXISTING LORAIN CARNEGIE BRIDGE STRUCTURE. PEREGRINE FALCONS ARE PROTECTED AS A STATE THREATENED SPECIES AND UNDER THE FEDERAL MIGRATORY BIRD TREATY ACT OF 1918. NO FORCE OR DETERRENTS ARE PERMITTED AGAINST THE PEREGRINE FALCON. ANY ACTIVITY THAT RESULTS IN A PURSUIT, HUNT, SHOOT, WOUND, KILL, CAPTURE, OR COLLECTION OF A PEREGRINE FALCON OR ANY ATTEMPT TO CARRY OUT THESE ACTIVITIES IS A STATE AND FEDERAL VIOLATION. THE CONTRACTOR SHALL CONDUCT A MEETING AT LEAST 30 DAYS BEFORE THE SCHEDULED START OF ANY CONSTRUCTION ON THE EXISTING LORAIN CARNEGIE BRIDGE STRUCTURE WITH THE DEPARTMENT AND THE OHIO DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WILDLIFE (ODNR-DOW) PEREGRINE FALCON STATEWIDE COORDINATOR, AND U.S. FISH AND WILDLIFE (USFWS) ODOT LIAISON TO DISCUSS POSSIBLE INTERACTIONS WITH THE PEREGRINE FALCON AND AVOIDANCE AND MINIMIZATION TECHNIQUES THAT ODNR, THE DEPARTMENT, AND THE CONTRACTOR CAN EMPLOY TOGETHER TO REDUCE THE LIKELIHOOD OF IMPACTING THE BIRDS. IF THE CONTRACTOR ENCOUNTERS A PEREGRINE FALCON PRIOR TO OR DURING THE WORK, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT AND STOP ALL WORK ON THE AFFECTED BRIDGE SPAN AND WITHIN 300 FEET OF WHERE THE FALCON WAS ENCOUNTERED. WITHIN 24 HOURS, THE DEPARTMENT WILL NOTIFY ODNR-DOW OF THE ENCOUNTER. AFTER AN ENCOUNTER WITH A PEREGRINE FALCON AND WORK STOPPAGE, THE WORK SHALL NOT PROCEED IN THAT SPAN UNLESS APPROVED BY THE DEPARTMENT. ENCOUNTERS INCLUDE ACTIVE NESTS ON THE BRIDGE, AGGRESSIVE BEHAVIOR SHOWN BY FALCONS TOWARD WORKERS ON THE BRIDGE, AND ATTEMPTS BY FALCONS TO NEST ANYWHERE ON THE BRIDGE.

THE CONTRACTOR SHALL PROVIDE ANY EQUIPMENT, INCLUDING A POSSIBLE JLG LIFT, NEEDED FOR THE DEPARTMENT AND /OR ODNR TO ACCESS AND REVIEW A PEREGRINE FALCON NESTING LOCATION ANYWHERE ON THE STRUCTURE. THE CONTRACTOR, IN COORDINATION WITH THE DEPARTMENT, SHALL PROPOSE AN ALTERNATIVE WORK PLAN TO COMPLETE THE PROJECT WORK WITHOUT IMPACTING A FALCON NESTING LOCATION. THE FALCON'S BREEDING SEASON IS FROM FEBRUARY 1 TO AUGUST 31 AND THE CONTRACTOR SHALL SCHEDULE NO WORK IN ANY SPAN OR WITHIN 300' OF WHERE A FALCON NEST RESIDES DURING THIS TIME FRAME. ALL WORK AND COORDINATION ASSOCIATED WITH THIS NOTE SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE DEPARTMENT.

**ITEM 202 - WALK REMOVED, AS PER PLAN**

THIS ITEM OF WORK SHALL CONSIST OF REMOVING THE EXISTING WALK AT THE LOCATIONS DEFINED IN THE PLANS. THE THICKNESS OF THE EXISTING WALK IS UNKNOWN. THIS ITEM SHALL INCLUDE THE REMOVAL OF THE ENTIRE CONCRETE WALK AND THE SUBSEQUENT EXCAVATION OF ANY EMBANKMENT MATERIAL TO A MINIMUM DEPTH OF 9 INCHES BELOW THE EXISTING TOP OF CURB. THE INTENT OF THIS ITEM IS TO REMOVE THE PORTION OF THE EXISTING ELECTRICAL CONDUITS INSTALLED IN THE EXISTING WALK TO THE LOCATION WHERE THEY DROP OUT OF THE EXISTING WALK INTO THE EMBANKMENT BENEATH. AN ESTIMATED QUANTITY OF 25 FEET OF WALK HAS BEEN PROVIDED IN THE PLANS ON SHEET 21 TO ACCOMPLISH THIS WORK. BECAUSE THE EXACT LOCATION WHERE THE EXISTING CONDUITS DROP OUT OF THE WALK INTO THE EMBANKMENT IS UNKNOWN AN ADDITIONAL CONTINGENCY QUANTITY OF 25 FEET OF WALK REMOVAL HAS BEEN PROVIDED BELOW FOR USE AS DIRECTED BY THE ENGINEER TO EXPOSE THE ELECTRICAL CONDUITS AT THIS LOCATION.

ITEM 202 - WALK REMOVED, AS PER PLAN 150 S.F.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 202 - WALK REMOVED, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 202 - GRANITE CURB REMOVED FOR REUSE**

THIS ITEM SHALL CONFORM TO CMS 202 AND SHALL INCLUDE THE CAREFUL REMOVAL AND STORAGE OF THE EXISTING GRANITE CURB AS INDICATED IN THE PLANS FOR REINSTALLATION.

**ITEM 304 - 4 1/2" AGGREGATE BASE, AS PER PLAN**

THIS ITEM SHALL CONFORM TO CMS 304 AND SHALL CONSIST OF PLACING A MINIMUM OF 4 1/2 INCHES OF 304 AGGREGATE BASE BENEATH THE NEW 4 1/2 INCH CONCRETE WALK TO FILL THE VOID FROM THE 9 INCHES OF REMOVAL SPECIFIED THROUGH THE AREA OF NEW WALK DEFINED IN THE PLANS. ADDITIONAL 304 AGGREGATE BASE MAY BE REQUIRED IF THE THICKNESS OF THE EXISTING WALK IS GREATER THAN 9 INCHES THICK. THE INTENT OF THIS ITEM IS TO FILL THE VOID AREA BENEATH THE REPLACED WALK THROUGH THE LIMITS OF THE EXISTING ELECTRICAL CONDUITS INSTALLED IN THE EXISTING WALK TO THE LOCATION WHERE THEY DROP OUT OF THE EXISTING WALK INTO THE EMBANKMENT BENEATH. AN ESTIMATED QUANTITY OF 25 FEET OF WALK HAS BEEN PROVIDED IN THE PLANS ON SHEET 21 TO ACCOMPLISH THIS WORK. BECAUSE THE EXACT LOCATION WHERE THE EXISTING CONDUITS DROP OUT OF THE WALK INTO THE EMBANKMENT IS UNKNOWN AN ADDITIONAL CONTINGENCY QUANTITY OF 25 FEET OF NEW 4 1/2" AGGREGATE BASE HAS BEEN PROVIDED BELOW FOR USE AS DIRECTED BY THE ENGINEER TO FILL THE VOID BENEATH AN ADDITIONAL 25 FEET OF WALK REMOVED TO EXPOSE THE ELECTRICAL CONDUITS AT THIS LOCATION.

ITEM 304 - 4 1/2" AGGREGATE BASE, AS PER PLAN 3 C.Y.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 304 - 4 1/2" AGGREGATE BASE, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 608 - 4 1/2" CONCRETE WALK, AS PER PLAN**

THIS ITEM SHALL CONFORM TO CMS 608 AND SHALL CONSIST OF PLACING NEW 4 1/2" CONCRETE WALK AT THE LOCATIONS DEFINED IN THE PLANS. THIS ITEM SHALL INCLUDE THE COST FOR THE 1/2 INCH PREFORMED EXPANSION JOINT FILLER AS DETAILED IN THE PLANS AND ANY ADDITIONAL COST TO CONSTRUCT THE WALK TO THE DIMENSIONS DETAILED ON SHEET 21. THE NEW CONCRETE WALK SHALL SIMULATE THE EXISTING CONCRETE WALK JOINT PATTERN. THE EXISTING 9" GRANITE CURB SHALL NOT BE DISTURBED. THIS ITEM SHALL INCLUDE ALL COSTS TO SUPPORT THE EXISTING GRANITE CURB IN PLACE FROM THE TIME THE EXISTING WALK IS REMOVED UNTIL THE PROPOSED WALK IS PLACED. THE INTENT OF THIS ITEM IS TO REPLACE WALK THROUGH THE LIMITS OF THE EXISTING ELECTRICAL CONDUITS INSTALLED IN THE EXISTING WALK TO THE LOCATION WHERE THEY DROP OUT OF THE EXISTING WALK INTO THE EMBANKMENT BENEATH. AN ESTIMATED QUANTITY OF 25 FEET OF WALK HAS BEEN PROVIDED IN THE PLANS ON SHEET 21 TO ACCOMPLISH THIS WORK. BECAUSE THE EXACT LOCATION WHERE THE EXISTING CONDUITS DROP OUT OF THE WALK INTO THE EMBANKMENT IS UNKNOWN AN ADDITIONAL CONTINGENCY QUANTITY OF 25 FEET OF NEW 4 1/2" WALK HAS BEEN PROVIDED BELOW FOR USE AS DIRECTED BY THE ENGINEER TO REPLACE AN ADDITIONAL 25 FEET OF WALK REMOVED TO EXPOSE THE ELECTRICAL CONDUITS AT THIS LOCATION.

ITEM 608 - 4 1/2" CONCRETE WALK, AS PER PLAN 150 S.F.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 608 - 4 1/2" CONCRETE WALK, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 609 - CURB, MISC.: GRANITE CURB REINSTALLED**

THIS ITEM SHALL CONFORM TO CMS 609 AND SHALL INCLUDE THE PREPARATION OF THE EXISTING SUBGRADE TO REINSTALL THE EXISTING GRANITE CURB SALVAGED ON THE PROJECT AS PER 609.03. ALL COSTS ASSOCIATED WITH PREPARING THE SUBGRADE, AND REINSTALLING THE GRANITE CURB INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT FOR ITEM 609 CURB, MISC.: GRANITE CURB REINSTALLED.

**ITEM 619 - FIELD OFFICE, TYPE C, AS PER PLAN**

A TYPE C FIELD OFFICE IS REQUIRED FOR THIS PROJECT. THE FOLLOWING REVISIONS TO EQUIPMENT SUPPLIED WITH THE TYPE C FIELD OFFICE, AS SPECIFIED IN TABLE 619.02-1, FIELD OFFICE, SHALL APPLY:

THE BROADBAND INTERNET CONNECTION MUST MEET A MINIMUM DOWNLOAD SPEED OF 10MB PER SECOND AND A MINIMUM UPLOAD SPEED OF 5MB PER SECOND.

THE CONTRACTOR SHALL FURNISH, SET-UP AND MAINTAIN A WI-FI ROUTER MEETING THE REQUIREMENTS OF IEEE 802.11ac FOR THE EXCLUSIVE USE OF THE DEPARTMENT.

ALL OTHER FIELD OFFICE ITEMS SUPPLIED SHALL MEET THE REQUIREMENTS OF A TYPE C FIELD OFFICE.

ITEM 619 - FIELD OFFICE, TYPE C, AS PER PLAN 24 MNTH

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CALCULATED  
JDL  
CHECKED  
MES

GENERAL NOTES

CUY - 10 - 16 . 13

2  
308

**VERTICAL DATUM**

ELEVATIONS WERE TRANSFERRED BY RTK GLOBAL POSITIONING TRAVERSE ORIGINATING ON THE ODOT CORS VRS NETWORK, AND ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, NAD83(2011), NORTH ZONE, GEOID12A, NORTH AMERICAN VERTICAL DATUM OF 1988.

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE TABLE ON THIS SHEET CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL (ESTABLISHED BY ODOT D-3)

POSITIONING METHOD: RTK VRS GPS  
MONUMENT TYPE: B

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD 88  
GEOID: 12A

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAD83(2011)  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONIC CONFORMAL  
COORDINATE SYSTEM: OHIO STATE PLANE NORTH ZONE  
COMBINED SCALE FACTOR: 0.999944080  
PROJECT ADJUSTMENT FACTOR (PAF) = 1.000055923  
ORIGIN OF COORDINATE SYSTEM: X=0, Y=0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

**PROJECT BEARINGS**

BEARINGS WERE TRANSFERRED BY RTK GLOBAL POSITIONING TRAVERSE ORIGINATING ON THE ODOT CORS VRS NETWORK, AND ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, NAD83(2011), NORTH ZONE.

**STATE ROUTE CUY-10-16.13 PROJECT CONTROL - HORIZONTAL DATUM**

NAD83(2011), THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE, PROJECT GROUND. PROJECT ADJUSTMENT FACTOR = 1.000055923.

**ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A (448), PG76-22M, AS PER PLAN**

THE COARSE VIRGIN AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO A BLEND OF AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO AND LIMESTONE. THE CONTRACTOR SHALL USE A MINIMUM OF 60% OF ACBFS OR TRAP ROCK FROM ONTARIO WITH LIMESTONE COMPRISING THE REMAINING PERCENTAGE. AT LEAST 50% OF FINE VIRGIN AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO ACBFS OR TRAP ROCK FROM ONTARIO.

TABLE 442.02-2 APPLIES EXCEPT NO. 4 SIEVE REQUIREMENTS ARE 52 TO 60 TOTAL PERCENTAGE PASSING. FOR THE NO. 4 SIEVE DO NOT EXCEED 63 IN PRODUCTION.

WHEN ACBFS IS USED FOR A FRACTION OF THE COARSE AGGREGATE, PROVIDE A TOTAL ASPHALT BINDER CONTENT GREATER THAN OR EQUAL TO 6.2 PERCENT. IF ACBFS MAKES UP 100% OF THE COARSE AGGREGATE, APPLY THE BINDER CONTENT REQUIREMENTS OF C&MS 442.

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. THE CITY OF CLEVELAND NOISE ORDINANCE SHALL APPLY TO THE WORK ON THIS PROJECT.

**PROJECT CONTROL**

C of RIGHT OF WAY AND CONSTRUCTION CUY-10-16.13		PROJECT GROUND COORDINATES PAF =1.000055923		STATE PLANE COORDINATES NAD83(2011) DATUM		DESCRIPTION
STATION	OFFSET	NORTH (Y) U.S. FT.	EAST (X) U.S. FT.	NORTH (Y) U.S. FT.	EAST (X) U.S. FT.	
<b>PROJECT CONTROL</b>						
14+64.78	33.28 LT.	663985.3530	2188131.3107	663948.2230	2188008.9507	MAG NAIL SET
19+41.41	35.13 RT.	664197.7597	2188564.9593	664160.6178	2188442.5750	MAG NAIL SET
20+03.54	107.44 RT.	664184.4200	2188659.3556	664147.2789	2188536.9660	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
23+51.91	65.93 RT.	664445.4809	2188893.7418	664408.3252	2188771.3391	MAG NAIL SET
25+40.85	16.29 RT.	664607.4389	2189002.9637	664570.2741	2188880.5549	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
27+64.70	38.98 RT.	664738.0918	2189186.1422	664700.9197	2189063.7232	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
27+85.57	248.99 RT.	664594.0593	2189340.3950	664556.8953	2189217.9674	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
30+01.23	55.95 RT.	664881.4060	2189375.0687	664844.2259	2189252.6391	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
31+00.42	792.90 RT.	664393.1043	2189935.8594	664355.9515	2189813.3985	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
31+69.61	88.38 LT.	665100.9634	2189406.3564	665063.7710	2189283.9251	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
32+39.00	293.26 RT.	664859.9808	2189710.3161	664822.8019	2189587.8678	MAG NAIL SET
35+97.15	615.08 LT.	665778.8380	2189380.0969	665741.6078	2189257.6670	3/4" REBAR SET WITH A 2" DIA CAP STAMPED "PRIMARY"
41+09.54	133.95 LT.	665755.3968	2190082.5744	665718.1678	2189960.1053	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
41+25.39	88.83 RT.	665598.4517	2190241.4807	665561.2315	2190119.0027	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
42+20.93	609.87 RT.	665269.9716	2190657.0711	665232.7698	2190534.5698	MAG NAIL SET
42+32.47	963.85 LT.	666460.1085	2189627.3590	666422.8401	2189504.9153	3/4" REBAR SET WITH 2" DIA CAP STAMPED "AZIMUTH"
45+01.39	423.51 RT.	665595.0616	2190744.8507	665557.8416	2190622.3445	MAG NAIL SET
45+25.33	75.31 LT.	665985.6827	2190433.6972	665948.4409	2190311.2084	MAG NAIL SET
47+71.17	18.70 LT.	666105.3494	2190655.7794	666068.1009	2190533.2782	MAG NAIL SET
51+12.26	395.68 RT.	666019.0319	2191185.5046	665981.7882	2191062.9738	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
51+60.31	32.44 RT.	666323.6915	2190981.9292	666286.4308	2190859.4098	5/8"X30" REBAR WITH CAP STAMPED "REL TRAVERSE" SET
54+92.29	612.14 LT.	667027.0914	2190806.0741	666989.7913	2190683.5645	MAG NAIL SET
55+11.57	24.28 LT.	666598.0856	2191208.4480	666560.8095	2191085.9159	MAG NAIL SET
<b>EXISTING CENTERLINE RIGHT OF WAY CUY-10-16.13</b>						
13+92.30	CL	663919.1636	2188086.819	663882.0373	2187964.4616	MON BOX WITH 1" IRON PIN, INT CUY-10 AND W. 20TH STREET
17+17.38	CL	664088.6826	2188364.199	664051.5468	2188241.8262	CALPT, PC
18+96.57	CL	664194.7836	2188508.329	664157.6419	2188385.9474	MON BOX WITH 1" IRON PIN, PT
50+07.98	1041.74 LT.	664977.5689	2187820.962	664940.3834	2187698.6195	CALPT, RADIUS PT
55+69.68	CL	666618.1797	2191268.136	666580.9025	2191145.6006	CALPT, POT

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GENERAL NOTES

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**ITEM 614 - MAINTAINING TRAFFIC**

**A. GENERAL**

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON THE STATE ROUTE 10 (CARNEGIE AVENUE) BRIDGE AND THE CITY STREETS BENEATH THE BRIDGE. THE CONTRACTOR MAY CLOSE ONE LANE OF TRAFFIC IN EACH DIRECTION ON THE STATE ROUTE 10 (CARNEGIE AVENUE) BRIDGE TO CONSTRUCT THE PROPOSED DECK REPLACEMENT, SCUPPER CLEANOUT, AND JOINT REPLACEMENT SUBJECT TO RESTRICTIONS AND EXCEPTIONS LISTED HEREIN.

THE CONTRACTOR SHALL MAINTAIN ROADWAY AND PEDESTRIAN LIGHTING ON BOTH SIDES OF THE BRIDGE AT ALL TIMES THROUGH THE USE OF THE EXISTING LIGHTING CIRCUITS, POLES, AND LUMINAIRES; THE PROPOSED LIGHTING CIRCUITS, POLES, AND LUMINAIRES; AND TEMPORARY LIGHTING CIRCUITS INSTALLED BY THE CONTRACTOR.

THE CONTRACTOR SHALL MAINTAIN THE CPP 6-BANK ELECTRICAL SYSTEM EMBEDDED IN THE SOUTH SIDE SIDEWALK THROUGH THE USE OF THE EXISTING FACILITIES, TEMPORARY FACILITIES INSTALLED BY THE CONTRACTOR, OR THE NEW FACILITIES.

THE CONTRACTOR MAY CLOSE ONE LANE OF TRAFFIC OR SHOULDERS ON CITY STREETS BENEATH THE STATE ROUTE 10 (CARNEGIE AVENUE) BRIDGE FOR EQUIPMENT ACCESS USING FLAGGERS SUBJECT TO RESTRICTIONS AND EXCEPTIONS LISTED IN THESE NOTES.

THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN TRAFFIC ON ONE SIDE OF THE BRIDGE AT ALL TIMES. SIDEWALK CLOSED SIGNS SHALL BE INSTALLED IN THE SIDEWALK WHEN PEDESTRIAN ACCESS IS RESTRICTED FOR CONSTRUCTION ACTIVITIES. SIDEWALK CLOSURES AND PEDESTRIAN DETOURS SHALL BE AS PER STANDARD CONSTRUCTION DRAWING MT-110.10.

THE CONTRACTOR SHALL MAINTAIN BICYCLE TRAFFIC AT ALL TIMES THROUGH THE USE OF EXISTING, TEMPORARY AND PROPOSED MULTI-USE PAVEMENT.

ADDITIONAL TRAFFIC CONTROL ITEMS MAY BE DEEMED NECESSARY BY THE ENGINEER TO ENSURE THE SAFETY OF THE TRAVELING PUBLIC AND SAFETY OF WORKERS WITHIN THE CONSTRUCTION ZONE. ANY ADDITIONAL WORK INCLUDING LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NOT SPECIFICALLY ITEMIZED BUT REQUIRED FOR MAINTAINING TRAFFIC AND SAFETY DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

THE CONTRACTOR SHALL PROVIDE STEEL PLATES OR OTHER ACCEPTABLE MEANS THROUGH THE PROPOSED CONSTRUCTION AREA TO ADEQUATELY PROVIDE SAFETY FOR OPERATIONS DURING CONSTRUCTION IN COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS INCLUDING SAFETY FOR POTENTIAL UNAUTHORIZED PEDESTRIAN USAGE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ERECT, MAINTAIN, ADJUST, AND REMOVE THE SAFETY DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

GENERALLY THE CONTRACTOR SHALL CONDUCT HIS/HER OPERATIONS AS TO PERFORM THE PROPOSED CONSTRUCTION WITH A MINIMUM OF HAZARD, DELAY AND INCONVENIENCE TO THE MOTORISTS USING THE HIGHWAY. FURTHERMORE, IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

**B. NOTIFICATION**

SINCE FUNCTIONAL TRAFFIC CONTROL IS A MAJOR CONCERN ON THIS PROJECT, IT IS ESSENTIAL THAT THE MOTORING PUBLIC BE ADEQUATELY FOREWARNED OF FUTURE LANE CLOSURES AND TRAFFIC CONSTRUCTIONS. THEREFORE, THE CONTRACTOR SHALL SUBMIT A SCHEDULE TO THE OHIO DEPARTMENT OF TRANSPORTATION PUBLIC INFORMATION OFFICER INDICATING THE LOCATIONS AND DATES OF THE LANE CLOSURES AT LEAST FOURTEEN (14) DAYS PRIOR TO THE IMPLEMENTATION OF ANY SUCH CLOSURES. THE CONTRACTOR SHALL ALSO NOTIFY THE LOCAL AGENCIES LISTED BELOW OF LANE CLOSURES AT LEAST FOURTEEN (14) DAYS PRIOR TO IMPLEMENTATION.

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**C. CONSTRUCTION PHASES**

**EAST END DECK REPLACEMENT:**

THE SEQUENCE OF CONSTRUCTION SHALL BE IN 6 PHASES COMPLETED IN ONE SEASON.

- PRE-PHASE 1: CLOSE THE OUTSIDE TRAVEL LANES AND SHOULDERS WITH DRUMS AS PER MT-95.31 AND MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION IN THE EXISTING 11'-0" INSIDE LANES. MAINTAIN THE EXISTING MULTI-USE PATH TRAFFIC IN A REDUCED 11'-9" WIDE PATH AND PROTECT THE MULTI-USE PATH USER FROM THE CONSTRUCTION ZONE WITH A 6'-0" CHAIN LINK CONSTRUCTION FENCE (SIMILAR TO PHASE 1B). REMOVE TWO 30'-0" SECTIONS OF THE EXISTING MULTI-USE PATH RAILING AND CONSTRUCT TEMPORARY RAMPS FOR MULTI-USE PATH TRAFFIC TO BE USED IN PHASE 1A. AFTER THE CONSTRUCTION OF THE TEMPORARY MULTI-USE PATH RAMPS THE WESTBOUND OUTSIDE LANE MUST REMAIN CLOSED UNTIL THE COMPLETION OF PHASE 1B. CLOSE THE WALK ON THE RIGHT SIDE OF THE STRUCTURE AND REMOVE A PORTION OF THE STEEL AND GRANITE CURBS, AND DECK WEARING SURFACE ON THE SHOULDER AND WALK AS DETAILED IN THE PLANS. PLACE A TEMPORARY WEARING SURFACE AND PAVEMENT FOR MAINTAINING TRAFFIC FOR USE IN PHASE 2. THE RIGHT SIDEWALK SHALL REMAIN CLOSED THROUGH THE COMPLETION OF PHASE 3. PRE-PHASE 1 DURATION APPROXIMATELY 1 WEEK.
- PHASE 1: PHASE 1 SHALL BE COMPLETED IN TWO SUB PHASES, PHASE 1A AND 1B, TO MAINTAIN THE EXISTING MULTI-USE PATH TRAFFIC THROUGHOUT THE DURATION OF THE PROJECT.
  - PHASE 1A: CLOSE THE LEFT SIDE OF THE EAST END DECK REPLACEMENT AND MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION IN TWO 10'-6" WIDE LANES SEPARATED BY A CHANNELIZING DEVICE ON THE RIGHT SIDE OF THE BRIDGE. CLOSE THE EXISTING MULTI-USE PATH AND MAINTAIN PEDESTRIAN/BIKE TRAFFIC THROUGH THE USE OF THE RAILING OPENINGS AND TEMPORARY RAMPS CONSTRUCTED IN PRE-PHASE 1. THE MULTI-USE PATH TRAFFIC SHALL BE SEPARATED FROM THE WORK ZONE WITH 6'-0" ANCHORED CHAIN LINK CONSTRUCTION FENCE. THE MULTI-USE PATH TRAFFIC SHALL BE SEPARATED FROM VEHICULAR TRAFFIC WITH 32" PORTABLE BARRIER. SIGNS SHALL BE ERECTED IN ADVANCE OF THE TEMPORARY MULTI-USE PATH RUN-AROUND DIRECTING BIKE TRAFFIC TO "WALK BICYCLES" THROUGH THE CONSTRUCTION ZONE. CONSTRUCT THE MULTI-USE PATH PORTION OF THE EAST END DECK. PHASE 1A DURATION APPROXIMATELY 5 WEEKS.
  - PHASE 1B: VEHICULAR TRAFFIC SHALL BE MAINTAINED IN THE SAME LOCATION AS PHASE 1A. THE MULTI-USE PATH SHALL BE RE-OPENED AND THE MULTI-USE PATH TRAFFIC CAN RESUME NORMAL OPERATIONS. THE TEMPORARY RAILING OPENINGS SHALL BE RECONSTRUCTED AND THE TEMPORARY MULTI-USE PATH RAMP PAVEMENT SHALL BE REMOVED. A 6'-0" CHAIN LINK CONSTRUCTION FENCE SHALL BE ERECTED ON THE MULTI-USE PATH ADJACENT TO THE RAILING TO PROTECT THE PEDESTRIAN TRAFFIC FROM THE WORK ZONE. CONSTRUCT THE LEFT PORTION OF THE EAST END DECK WITHIN THE VEHICULAR TRAVEL LANES. PHASE 1B DURATION APPROXIMATELY 5 WEEKS.
- PHASE 2: CLOSE THE CENTER PORTION OF THE EAST END DECK REPLACEMENT. MAINTAIN WESTBOUND TRAFFIC IN A SINGLE 12'-0" LANE ON THE LEFT SIDE OF THE WORK ZONE. MAINTAIN EASTBOUND TRAFFIC IN A SINGLE 10'-0" LANE ON THE RIGHT SIDE OF THE WORK ZONE THROUGH THE USE OF THE TEMPORARY PAVEMENT CONSTRUCTED IN PRE-PHASE 1. THE SIDEWALK ON THE RIGHT SIDE OF THE BRIDGE SHALL REMAIN CLOSED AND ALL PEDESTRIAN AND BICYCLE TRAFFIC SHALL BE MAINTAINED ON THE MULTI-USE PATH ON THE LEFT SIDE OF THE BRIDGE. CONSTRUCT THE CENTER PORTION OF THE EAST END DECK. PHASE 2 DURATION APPROXIMATELY 5 WEEKS.
- PHASE 3: CLOSE THE RIGHT SIDE OF THE EAST END DECK, TRAVEL LANE AND SIDEWALK. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION IN TWO 12'-0" WIDE LANES SEPARATED BY A CHANNELIZING DEVICE ON THE LEFT SIDE OF THE BRIDGE. CONSTRUCT THE RIGHT PORTION OF THE EAST END DECK. REPLACE THE STEEL CURB PLATE, ROADWAY AND SIDEWALK WEARING SURFACE, GRANITE CURB AND 4 1/2" SIDEWALK REMOVED IN PRE-PHASE 1. RELOCATE THE CPP 6-BANK ELECTRICAL DUCTS EMBEDDED IN THE SIDEWALK ON THE RIGHT SIDE. PHASE 3 DURATION APPROXIMATELY 5 WEEKS.
- PHASE 4: REMOVE ALL TEMPORARY MARKINGS, PLANE AND RESURFACE THE EAST APPROACH TO THE EAST END DECK AND PLACE FINAL PAVEMENT MARKINGS.

**JOINT SEAL REPLACEMENT:**

THE JOINT SEAL REPLACEMENT AT STATION 41+90 +/- SHALL BE INSTALLED IN ONE CONTINUOUS INSTALLATION USING LANE CLOSURES WITH DRUMS AS PER MT-95.31 AND MT-95.32 DURING NON-PEAK TRAFFIC TIMES, BY DIRECTION. A MINIMUM OF ONE 10 FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL NOT BE PERFORMED CONCURRENTLY WITH THE EAST END DECK REPLACEMENT. THE LANE CLOSURES TO PERFORM THE JOINT SEAL REPLACEMENT MAY NOT BE IMPLEMENTED CONCURRENTLY WITH OTHER LANE CLOSURES ON THE CUY-10-1613 BRIDGE OR APPROACHES.

**SCUPPER CLEANOUT:**

THE SCUPPER CLEANOUT WORK SHALL BE PERFORMED AT THE LOCATIONS INDICATED IN THE STRUCTURE PLANS USING LANE CLOSURES WITH DRUMS AS PER MT-95.31. A MINIMUM OF ONE 10 FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL NOT BE PERFORMED CONCURRENTLY WITH THE EAST END DECK REPLACEMENT. THE LANE CLOSURES TO PERFORM THE SCUPPER CLEANOUT MAY NOT BE IMPLEMENTED CONCURRENTLY WITH OTHER LANE CLOSURES ON THE CUY-10-1613 BRIDGE OR APPROACHES.

**D. RESTRICTIONS AND EXCEPTIONS**

- THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF ONE 10 FOOT WIDE TRAVEL LANE IN EACH DIRECTION AND A MINIMUM 1 FOOT OFFSET TO ALL TRAFFIC CONTROL CONES, DRUMS, CHANNELIZERS, PARAPETS, BARRIERS, GUARDRAIL, CURBS OR EDGES OF PAVED SURFACES.
- WITH THE EXCEPTION OF STATE ROUTE 10 (CARNEGIE AVENUE) EAST END DECK REPLACEMENT MAINTENANCE OF TRAFFIC AND THE JOINT SEAL REPLACEMENT AT STA. 41+90+/-, LANE CLOSURES SHALL BE RESTRICTED TO DAY TIME HOURS WHILE WORK IS BEING PERFORMED. NO OVERNIGHT LANE CLOSURES SHALL BE ALLOWED.
- WITH THE EXCEPTION OF STATE ROUTE 10 (CARNEGIE AVENUE) EAST END DECK REPLACEMENT MAINTENANCE OF TRAFFIC, LANE CLOSURES ARE PROHIBITED ON STATE ROUTE 10 (CARNEGIE AVENUE) EASTBOUND FROM 7:00 AM TO 9:00 AM AND WESTBOUND FROM 3:30 PM TO 6:00 PM WEEKDAYS.
- WITH THE EXCEPTION OF STATE ROUTE 10 (CARNEGIE AVENUE) EAST END DECK REPLACEMENT MAINTENANCE OF TRAFFIC, ALL LANE CLOSURES SHALL BE SHORT TERM CLOSURES USING DRUMS OR CONES. LONG TERM CLOSURES WITH PORTABLE BARRIER SHALL NOT BE ALLOWED.
- THE CONTRACTOR MAY CLOSE THE CURB LANE ONLY TO TRAFFIC ON STATE ROUTE 10 (CARNEGIE AVENUE) BRIDGE TO PERFORM THE SCUPPER CLEAN OUT WORK.
- IF THE CONTRACTOR CANNOT MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON SCRANTON ROAD, WEST FOURTH STREET, WEST THIRD STREET, AND CANAL ROAD, THE CONTRACTOR SHALL MAINTAIN ONE LANE TWO WAY TRAFFIC WITH FLAGGERS AS PER STANDARD CONSTRUCTION DRAWING MT-97.10.
- LANE CLOSURES ARE PROHIBITED ON WEST THIRD STREET BETWEEN 7:00 AM AND 9:00 AM, AND BETWEEN 3:30 PM AND 6:00 PM WEEKDAYS.
- COMMERCIAL ROAD CONTRACTOR ACCESS OVER CEI TUNNEL: THE CONTRACTOR SHALL HAVE ACCESS TO THE AREA BELOW SPAN 20 AND THE EAST CELLULAR ABUTMENT FROM AN ACCESS DRIVE OFF OF COMMERCIAL ROAD ACROSS PROPERTY OWNED BY ODOT. THE ACCESS ROUTE IS DIRECTLY OVER TOP OF THE CEI HORIZON TUNNEL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM HIS/HER CONSTRUCTION ACTIVITIES IN A MANNER THAT WILL NOT CAUSE DAMAGE TO THE CEI HORIZON TUNNEL BEYOND ITS CURRENT CONDITION. THE CONTRACTOR, A REPRESENTATIVE FROM CEI, AND A REPRESENTATIVE FROM ODOT SHALL INSPECT THE CEI HORIZON TUNNEL PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE. THE INSPECTION SHALL INCLUDE A VIDEO RECORDING OF THE TUNNEL FOR VISUAL RECORD. AFTER CONSTRUCTION IS COMPLETE THE CONTRACTOR, A REPRESENTATIVE FROM CEI, AND A REPRESENTATIVE FROM ODOT SHALL CONDUCT A POST CONSTRUCTION INSPECTION. ANY DAMAGE CAUSED TO THE CEI HORIZON TUNNEL BY THE CONTRACTOR'S CONSTRUCTION ACTIVITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR TO THE SATISFACTION OF THE ENGINEER AND CEI AT NO ADDITIONAL COST TO THE PROJECT. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE ITEMIZED COSTS ARE INCLUDED. COMPENSATION FOR PRECONSTRUCTION/POSTCONSTRUCTION AUDIO-VIDEO COLOR RECORDING AND VIBRATION CONTROL AND MONITORING WILL BE PAID FOR UNDER THE ITEMS PROVIDED IN THESE PLANS.

THE CONTRACTOR SHALL ALSO REPAIR OR REPLACE ANY DAMAGED PAVEMENT AREAS ON THE ACCESS DRIVE AND ACCESS PROPERTY BETWEEN COMMERCIAL ROAD AND THE PROJECT LOCATION CAUSED BY THEIR CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT.

MAINTENANCE OF TRAFFIC NOTES

CUY-10-16.13

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**ITEM 614 - MAINTAINING TRAFFIC NOTE (CONTINUED FROM PREVIOUS SHEET)**

9. THE FOLLOWING ARE RESTRICTIONS TO THE CONTRACTORS CONSTRUCTION ACTIVITIES REGARDING THE PUBLIC TRAILS AND PARKS. ALL COSTS ASSOCIATED WITH THE FOLLOWING WORK SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM COST FOR ITEM 614 - MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED IN THESE PLANS:

- a) THE CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO SCRANTON FLATS PARK DURING NORMAL PARK HOURS EXCEPT FOR AREAS WITHIN THE TEMPORARY RIGHT OF WAY.
- b) THE CONTRACTOR SHALL NOT CLOSE THE LAKE LINK CONNECTOR TRAIL OR THE TOWPATH TRAIL BENEATH THE CUY-10-16.13 STRUCTURE TO BIKE OR PEDESTRIAN TRAFFIC AT ANY TIME DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A PROTECTIVE SHIELD TO PROTECT THE LAKE LINK CONNECTOR TRAIL AND THE TOWPATH TRAIL DURING CONSTRUCTION. THE PROTECTIVE SHIELD SHALL BE A MINIMUM OF 10 FEET VERTICAL CLEARANCE ABOVE THE TRAIL; 2 FOOT MINIMUM HORIZONTAL CLEARANCE FROM THE LEFT AND RIGHT SIDE OF THE TRAIL EDGE OF PAVEMENT AND A MINIMUM OF 10 FEET LONGITUDINAL BEYOND THE LIMITS OF THE EXISTING BRIDGE DECK.
- c) NO STAGING AND/ OR STORAGE OF CONSTRUCTION EQUIPMENT SHALL BE PERMITTED WITHIN THE KNOWN BOUNDARIES OF THE SECTION 4(F) PROPERTY.
- d) TEMPORARY CONSTRUCTION FENCING SHALL BE INSTALLED ALONG PROPOSED CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES TO PROTECT THE EXISTING 4(F) PROPERTY AND THE PUBLIC.
- e) SECURITY CONSTRUCTION FENCING WILL BE INSTALLED ALONG THE CONSTRUCTION LIMITS OF THE PROJECT AND ALONG BOTH SIDES OF THE TRAILS, EXCEPT DESIGNATED CROSSINGS FOR THE CONTRACTOR.
- f) APPROPRIATE PARK CLOSURE SIGNAGE, AS APPROVED BY THE ENGINEER, SHALL BE FURNISHED, INSTALLED, AND REMOVED BY THE CONTRACTOR TO ALERT USERS OF PARK CLOSURE PERIODS.
- g) THE CONTRACTOR AND ODOT WILL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE CITY OF CLEVELAND AND CLEVELAND METRO PARKS PRIOR TO THE COMMENCEMENT OF ANY WORK ABOVE OR ADJACENT TO THE TRAILS.
- h) THE CONTRACTOR SHALL MAINTAIN THE EXISTING ROADSIDE DITCH ADJACENT TO SCRANTON RD. THROUGH THE USE OF A TEMPORARY STRUCTURE (STEEL PLATES) OR AN AGGREGATE ACCESS DR. OVER A TEMPORARY CULVERT TO ACCESS THE CUY-10 BRIDGE PIERS AND THE RIVER BULKHEAD BETWEEN SCRANTON RD. AND THE CUYAHOGA RIVER. ALL DISTURBED AREAS WILL BE REPAIRED AND RETURNED TO THEIR ORIGINAL CONDITIONS AND RESEEDING USING THE CUYAHOGA COUNTY "LOW-MOW" MIX.
- i) THE CONTRACTOR SHALL PLACE TEMPORARY CHAIN LINK FENCE AROUND THE RAINGARDEN AND FROM SCRANTON RD. TO THE RIVER BULKHEAD ALONG THE TEMPORARY RIGHT OF WAY LINE. THE RAINGARDEN TO BE PROTECTED WITH FENCE IS RAINGARDEN #2 FROM TOWPATH TRAIL STA. 24+41.5 TO TOWPATH TRAIL STA. 24+68.5 SHOWN IN THE CUYAHOGA AOC URBAN RIPARIAN HABITAT RESTORATION PLANS. THE FENCE AROUND THE RAIN GARDEN SHALL BE A MINIMUM DIMENSION OF 20 FEET BY 40 FEET SQUARE AND 6 FEET HIGH AND SHALL CONFORM TO ODOT STANDARD CONSTRUCTION DRAWING F-1.1.
- j) ALL DISTURBED AREAS WITHIN THE TEMPORARY EASEMENT BETWEEN SCRANTON RD. AND THE CUYHOGA RIVER SHALL BE REPAIRED AND RESTORED TO THEIR ORIGINAL CONDITIONS AND RESEEDING USING THE CUYAHOGA COUNTY "LOW-MOW" MIX.
- k) THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING, INSTALLING, AND REMOVING APPROPRIATE ADVANCE SIGNAGE TO ALERT TRAVEL USERS TO THE PRESENCE OF FLAGGERS AND POSSIBLE SHORT TERM CLOSURES.
- l) THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM CLEVELAND METRO PARKS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY INVOLVING THE TOWPATH TRAIL, CENTENNIAL LAKE TRAIL, OR OTHER METRO PARK PROPERTY.

BOARD OF PARK COMMISSIONERS OF THE  
CLEVELAND METROPOLITAN PARK DISTRICT  
4101 FULTON PARKWAY  
CLEVELAND, OHIO 44144  
(216) 351-6300

10. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL BUSINESS AND RESIDENTIAL DRIVES AT ALL TIMES. MAINTENANCE OF DRIVEWAY ACCESS SHALL BE SUBMITTED TO THE ENGINEER 7 DAYS PRIOR TO IMPLEMENTATION FOR APPROVAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, BUSINESS AND RESIDENTIAL OWNER IN WRITING A MINIMUM OF 14 DAYS PRIOR TO IMPLEMENTING THE DRIVE MAINTENANCE. THE CONTRACTOR SHALL WORK WITH BUSINESS OWNERS TO ACCOMMODATE ANY ACCESS NEEDS PRIOR TO AND DURING THE IMPLEMENTATION OF THE DRIVE MAINTENANCE AS APPROVED BY THE ENGINEER.

**MAINTAINING FULL PROPERTY ACCESS**

SOME PROPERTIES, SUCH AS THE MID-CONTINENT COAL & COKE CO. (PARCEL 20), ARE DIVIDED BY THE TEMPORARY WORK EASEMENT BENEATH THE CUY-10-1613 BRIDGE. THE BUSINESS CONDUCTS OPERATIONS ON PROPERTY TO THE NORTH AND THE SOUTH SIDES OF THE BRIDGE IN SPANS 10 THROUGH 13; HOWEVER, THE BUSINESS ONLY HAS DRIVE ACCESS TO THE PROPERTY FROM THE NORTH. THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION OPERATIONS TO AFFORD PROPERTY OWNERS ACCESS TO THE PORTIONS OF THEIR PROPERTIES BOTH TO THE NORTH AND SOUTH OF THE TEMPORARY EASEMENT BELOW THE BRIDGE AT ALL TIMES.

11. THE CONTRACTOR SHALL NOT PERFORM WORK ON BOTH SIDES OF PIER 17 OVER THE TOWER CITY PARKING LOT AT THE SAME TIME. THE CONTRACTOR SHALL RESTRICT HIS/HER WORK ACTIVITIES TO OVER NIGHT WHILE WORKING WITHIN THE LIMITS OF THE PARKING LOT. NO PARKING LOT LANES OR SPACES SHALL BE CLOSED DURING THE DAY TIME WHEN NO WORK IS BEING PERFORMED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING PARKING LOT CLOSURES, RESTRICTIONS, AND TRAFFIC PATTERNS WITH THE PARKING LOT OWNER PRIOR TO COMMENCEMENT OF ANY WORK OVER THE PARKING LOT.

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

**HOLIDAYS**

CHRISTMAS	FOURTH OF JULY
NEW YEAR'S EVE	LABOR DAY
MEMORIAL DAY	THANKSGIVING
EASTER	

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

DAY OF HOLIDAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00AM FRIDAY
THANKSGIVING	6:00AM WEDNESDAY THROUGH 6:00AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY

**EVENTS**

LANE CLOSURE TIMES SHALL BE ADJUSTED FOR SPECIAL EVENTS THAT HAVE A SEATING CAPACITY OF 10,000 IN THE DOWNTOWN CLEVELAND AREA. THE CONTRACTOR SHALL NOT CLOSE A LANE(S) IN THE INBOUND DIRECTION 2 HOURS BEFORE AN EVENT AND IN THE OUTBOUND DIRECTION 2 HOURS AFTER AN EVENT ENDS.

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

**E. REFERENCES**

TEMPORARY LANE CLOSURES: SEE STANDARD CONSTRUCTION DRAWINGS MT-95.31, MT-95.32, MT-95.41, MT-97.10 AND MT-97.12.

SIDEWALK CLOSURES AND PEDESTRIAN DETOURS: SEE STANDARD CONSTRUCTION DRAWING MT-110.10.

ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH MAINTAINING TRAFFIC THROUGH THE WORK ZONE SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

**F. MAINTENANCE OF TRAFFIC SYSTEMS**

**1. WHEN REQUIRED**

WHENEVER ANY PART OF THE TRAVELED SURFACE IS BEING WORKED UPON OR IS OTHERWISE NOT SUITABLE FOR SAFE AND CONVENIENT USE BY VEHICLES, TRAFFIC CONTROL DEVICES SUFFICIENT TO PROTECT SUCH AREAS TO ASSURE THE SAFE AND CONVENIENT PASSAGE OF VEHICULAR TRAFFIC SHALL BE INSTALLED AND MAINTAINED. SUCH TRAFFIC CONTROL DEVICES AND THE MANNER IN WHICH THEY ARE USED SHALL BE CONSISTENT WITH THESE PLANS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS THEREINAFTER REFERRED TO AS THE "MANUAL". THE TRAFFIC CONTROL DEVICE SYSTEM SHALL CONSTITUTE THE MINIMUM PROVISIONS FOR TRAFFIC CONTROL FOR EACH PARTICULAR SITUATION. WHENEVER THE ENGINEER DEEMS IT NECESSARY, ESPECIALLY WHERE A GRADE, CURVE, OR MERGE CONDITION EXISTS, HE/SHE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED.

**2. CONDITIONS**

DURING ALL PARTS OF THIS PROJECT, SIGNING, BARRICADES, FLASHING ARROWS, ETC. SHALL BE LOCATED AS INDICATED IN THE MANUAL, AS SHOWN ON THE MAINTENANCE OF TRAFFIC SHEETS OR AS SHOWN ON STANDARD DRAWING MT-97.10 AND MT-95.31.

**3. ADVANCE WARNING SIGNS**

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE.

**4. FLASHING ARROW REQUIREMENT**

FLASHING ARROWS SHALL BE FURNISHED AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS OR ON STANDARD DRAWINGS.

**5. PROTECTION OF PUBLIC**

WHENEVER ANY WORK IS BEING DONE OVER A TRAVELED LANE, SHOULDER, TRAIL, OR SIDE-WALK. THE CONTRACTOR SHALL SUPPLY SUFFICIENT SAFETY EQUIPMENT AS APPROVED BY THE DIRECTOR TO PROTECT THE TRAVELING PUBLIC FROM ANY CONSTRUCTION DEBRIS. IF TRAVELED LANES, TRAILS, OR WALKS UNDER STRUCTURES ARE TO BE CLOSED FOR REASONS OF SAFETY, METHOD AND TIME OF CLOSURE, THEY MUST BE APPROVED PRIOR TO IMPLEMENTATION. PERSONAL CARS SHALL NOT BE PARKED WITHIN THE LIMITED ACCESS RIGHT OF WAY.

**6. FLAGGERS**

FLAGGERS SHALL BE IN ACCORDANCE WITH MT-97.10. THE MAINTENANCE OF TRAFFIC REQUIRES THE USE OF TWO (2) FLAGGERS. ADDITIONAL FLAGGERS SHALL BE USED AS DIRECTED BY THE ENGINEER.

**7. FAILURE TO COMPLY**

IF THERE IS ANY FAILURE TO COMPLY WITH PROVISIONS FOR TRAFFIC CONTROL SET OUT IN THESE PLANS AND NOTES, WITH THE PROVISIONS OF THE "MANUAL" OR FAILURE TO KEEP THE HIGHWAY IN THE VICINITY OF THE WORK AREA IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC SHALL BE CONSIDERED A BREACH OF THIS CONTRACT. WORK SHALL BE SUSPENDED UNTIL THE CONTRACTOR COMPLIES WITH THE PROVISIONS OF THE AFORE MENTIONED ITEMS.

**G. TRAFFIC CONTROL MATERIALS**

**1. SIGNS**

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES SHALL BE AS PROVIDED IN THE "MANUAL", OR IN STANDARD CONSTRUCTION DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THIS PROJECT.

**2. SIGN SUPPORTS**

SIGN SUPPORTS SHALL BE AS SHOWN ON THE STANDARD DRAWINGS MT- 105.10.

**3. FLASHING ARROW PANEL**

THE ELECTRIC FLASHING ARROW PANELS SHALL BE AS NOTED IN SUPPLEMENTAL SPECIFICATION 821.

**4. CONES**

CONES SHALL BE LOCATED AS SHOWN IN THE "MANUAL" AND THE TRAFFIC CONTROL PLANS.

**5. DRUMS**

DRUMS SHALL BE LOCATED AS SHOWN ON THE TRAFFIC CONTROL PLANS AND ARE REQUIRED FOR NIGHTTIME CLOSURES.

**6. MARKINGS**

TEMPORARY LONGITUDINAL SUPPLEMENTAL LANE USE MAKINGS, INCLUDING SHARROWS SHALL BE LOCATED AS SHOWN IN THE MANUAL AS DIRECTED BY THE ENGINEER.

**H. WORK VEHICLES**

ALL WORK VEHICLES LICENSED TO OPERATE ON THE HIGHWAY, INCLUDING TRUCKS, SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC FOR A MINIMUM OF 1600 FEET IN BRIGHT SUNLIGHT AND SHALL BE OPERATED WITH LIGHTED HEAD AND TAIL LAMPS. THE AMBER LIGHT SHALL BE IN OPERATION AT ALL TIMES WITHIN THE WORK ZONE AND WHILE TRAVELING TO AND FROM THE WORK ZONE WHENEVER THE VEHICLE SPEED IS BELOW 55 MPH. VEHICLE HAZARD LAMPS DO NOT SATISFY THIS REQUIREMENT. ALL OTHER EQUIPMENT SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE IN ALL DIRECTIONS OF TRAFFIC FOR A MINIMUM OF 1600 FEET IN BRIGHT SUNLIGHT. THE AMBER LIGHT SHALL BE IN OPERATION WHILE THE EQUIPMENT IS WITHIN THE WORK ZONE.

**I. PAYMENT**

1. 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 FOR MAINTAINING VEHICULAR, PEDESTRIAN, AND TRAIL TRAFFIC AND THE ERECTION, MAINTENANCE AND REMOVAL OF THE PROTECTIVE SHIELDS OVER THE TRAILS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

**ITEM 614 - LONGITUDINAL CHANNELIZER**

LONGITUDINAL CHANNELIZERS SHALL BE PROVIDED AS CALLED FOR IN THE PLANS. A LONGITUDINAL CHANNELIZER CONSISTS OF A COMBINATION OF VERTICAL COMPONENTS AND LONGITUDINAL BASE COMPONENTS, FIT TOGETHER TO CREATE A CONTINUOUS CHANNELIZING DEVICE, AS DETAILED IN TRAFFIC PIS 2010180 INCLUDED IN THE PLANS ON SHEET 18. USE OF TUBULAR MARKERS, AS IDENTIFIED IN THE OMUTCD, FIGURE 6F-7, SHALL NOT QUALIFY FOR USE AS A LONGITUDINAL CHANNELIZER.

THE VERTICAL COMPONENT SHALL BE EQUIPPED WITH TWO 3-INCH WIDE RETROREFLECTIVE BANDS, PLACED A MAXIMUM OF 2 INCHES FROM THE TOP, WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. THE LONGITUDINAL BASE COMPONENTS SHALL BE EQUIPPED WITH REFLECTORS.

LONGITUDINAL CHANNELIZERS SHALL COMPLY WITH THE REQUIREMENTS CONTAINED WITHIN TRAFFIC PIS 2010180 ON SHEET 18.

FURNISH LONGITUDINAL CHANNELIZERS FROM THE APPROVED LIST FOUND ON THE OFFICE OF MATERIALS MANAGEMENT WEBSITE. FOR INSTALLATION PROCEDURES, FOLLOW THE MANUFACTURER'S INSTRUCTIONS.

LONGITUDINAL CHANNELIZERS SHALL BE MONITORED TO DETERMINE WHETHER THERE IS SIGNIFICANT DAMAGE FROM ERRANT VEHICLES.

PAYMENT FOR PROVIDING, INSTALLING, MAINTAINING AND REMOVING LONGITUDINAL CHANNELIZERS WILL BE MADE AT THE UNIT PRICE PER FOOT. SEE MAINTENANCE OF TRAFFIC SUBSUMMARY FOR QUANTITY.

**ITEM SPECIAL - MAINTAIN EXISTING LIGHTING (ROADWAY AND PEDESTRIAN)**

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

\* MAINTAIN ROADWAY AND PEDESTRIAN LIGHTING ON ONE SIDE OF THE ROADWAY AT ALL TIMES THROUGH THE USE OF THE EXISTING LIGHTING CIRCUITS, POLES, AND LUMINAIRES; THE PROPOSED LIGHTING CIRCUITS, POLES, AND LUMINAIRES; AND TEMPORARY LIGHTING CIRCUITS.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

ALL MATERIALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS DEFINED IN THIS PLAN SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING ITEMS INSTALLED BY THE CONTRACTOR SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE OF THE LIGHTING WORK. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

**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 C&MS 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.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 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 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 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. 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 40 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.

**WORK ZONE MARKINGS AND SIGNS**

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF C&MS 614.04 AND 614.11.

ITEM 614 - WORK ZONE LANE LINE, CLASS I, 4"	0.76 MILE
ITEM 614 - WORK ZONE CENER LINE, CLASS I	0.51 MILE
ITEM 614 - WORK ZONE CHANNELIZING LINE, CLASS I, 8"	577 FT.
ITEM 614 - WORL ZONE ARROW, CLASS I	10 EACH

**FLOODLIGHTING**

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

**ITEM 614 - WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN**

THIS ITEM SHALL CONFORM TO C&MS 614 WITH THE EXCEPTION THAT IT SHALL INCLUDE THE COST FOR REMOVAL AND DISPOSAL OF THE ASPHALT CONCRETE WHEN NO LONGER NEEDED FOR MOT PHASED CONSTRUCTION. PAYMENT SHALL BE MADE AT THE UNIT CONTRACT PRICE BID PER CUBIC YARD FOR ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

**ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN**

THIS ITEM SHALL CONFORM TO C&MS 615 WITH THE EXCEPTION THAT IT SHALL INCLUDE FILLING OF THE VOID LEFT BY THE REMOVAL OF THE GRANITE CURB WITH 304 AGGREGATE BASE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER. THIS ITEM SHALL ALSO INCLUDE THE CONSTRUCTION OF A 9" HIGH CURB AT THE REVISED OFFSET AS SHOWN IN THE MOT PLANS. THE CURB SHALL BE FORMED USING PORTLAND CEMENT CONCRETE AND MEET THE REQUIREMENTS OF C&MS 609 UNLESS OTHERWISE APPROVED BY THE ENGINEER. WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE CONTRACTOR SHALL REMOVE THE PAVEMENT FOR MAINTAINING TRAFFIC AND THE CURB UNDER THIS ITEM. PAYMENT SHALL BE MADE AT THE UNIT CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

**ITEM 607 FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION AND ITEM 607 FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION, ANCHORED**

THIS ITEM SHALL CONFORM TO C&MS 607, TYPE CL, AND SHALL BE 6 FEET TALL. THIS ITEM SHALL ALSO BE ERECTED IN A MANNER THAT WILL KEEP THE FENCE UPRIGHT WITHOUT THE USE OF A CONCRETE FOUNDATION OR SETTING OF THE POST IN THE BRIDGE DECK. THE FENCE SHALL BE SUPPORTED AT THE BASE TO KEEP IT FROM FALLING OR BEING BLOWN OVER. WHERE CALLED FOR IN THE PLANS THE FENCE SHALL BE ANCHORED TO THE EXISTING OR PROPOSED CONCRETE DECK IN A MANNER TO KEEP IT FROM SHIFTING INTO THE WORK AREA IF A PEDESTRIAN, CONSTRUCTION WORKER, CONSTRUCTION MATERIAL OR EQUIPMENT WERE TO FALL AGAINST IT. FINAL PLACEMENT, SUPPORT, AND ANCHORING OF THE FENCE SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER. PAYMENT SHALL BE MADE AT THE UNIT CONTRACT PRICE BID FOR ITEM 607 - FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION AND ITEM 607 - FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION, ANCHORED AND SHALL BE INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO FURNISH, ERECT, MAINTAIN, AND REMOVE THE FENCE WHEN NO LONGER REQUIRED. ANY REPAIRS TO THE BRIDGE NECESSARY DUE TO THE INSTALLATION AND ANCHORING OF THE FENCE SHALL BE INCLUDED IN THE COST OF THE PERTINENT FENCE ITEM.

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**ITEM SPECIAL - PRECONSTRUCTION / POSTCONSTRUCTION AUDIO - VIDEO COLOR RECORDING**

THE CONTRACTOR SHALL PROVIDE THE DEPARTMENT WITH DIGITAL PRECONSTRUCTION AND POSTCONSTRUCTION AUDIO-VIDEO COLOR RECORDING AS FOLLOWS FOR THE CEI HORIZON TUNNEL:

**GENERAL**

- A. **RECORDING.** ACCESS THROUGH THE CONSTRUCTION AREA SHALL NOT BE PERMITTED UNTIL THE AREA HAS BEEN RECORDED AND THE ELECTRONIC FILES SUBMITTED TO DEPARTMENT.
- B. **VISUAL INSPECTION.** PRIOR TO THE RECORDING, ALL AREAS TO BE DOCUMENTED SHALL BE INVESTIGATED VISUALLY WITH NOTATIONS MADE OF FEATURES NOT READILY VISIBLE BY VIDEO RECORDING METHODS. THIS WOULD INCLUDE, BUT NOT BE LIMITED TO, MANHOLES THAT MAY BE PARTIALLY BURIED. RECORD ALL MEASUREMENTS MADE DURING THE INSPECTION.
- C. **APPROVALS.** ALL RECORDING SHALL BE CONDUCTED IN THE PRESENCE OF THE DEPARTMENT UNLESS WAIVED BY THE DEPARTMENT. AT THE START OF RECORDING, THE CONTRACTOR SHALL SUBMIT A SAMPLE RECORDING OF A PORTION OF THIS PROJECT FOR THE DEPARTMENT TO REVIEW. THE CONTRACTOR MUST OBTAIN APPROVAL OF THE SAMPLE RECORDING BEFORE ANY OTHER RECORDING IS ALLOWED.
- D. **CERTIFICATION.** UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE CERTIFICATION IN WRITING TO THE DEPARTMENT THAT ALL THE REQUIREMENTS OF THE AUDIO-VIDEO COLOR RECORDING FOR THIS PROJECT WERE ACCOMPLISHED IN ACCORDANCE WITH THESE SPECIFICATIONS.
  - 1. **IDENTIFICATION.** ALL RECORDINGS (DVDS AND CASES) SHALL BE PROPERLY IDENTIFIED BY RECORDING NUMBER, LOCATION, AND PROJECT NAME IN A MANNER ACCEPTABLE TO THE DEPARTMENT.
  - 2. **RECORD.** A RECORD OF THE CONTENTS OF EACH RECORDING SHALL BE SUPPLIED ON A RUN SHEET IDENTIFYING EACH SEGMENT IN THE RECORDING NUMBER, LOCATION, AND PROJECT NAME IN A MANNER ACCEPTABLE TO THE DEPARTMENT.
  - 3. **INVENTORY.** A BRIEF REPORT AND INVENTORY OF ALL RECORDINGS COMPLETED, REFERENCED BY LOCATION AND RECORDING NUMBER, SHALL BE FURNISHED TO THE DEPARTMENT UPON COMPLETION OF THE WORK AND DELIVERY OF THE RECORDINGS. ALL RECORDINGS AND WRITTEN RECORDS SHALL BECOME THE PROPERTY OF THE DEPARTMENT.

**VIDEO INFORMATION**

- A. **AUDIO PREAMBLE.** EACH RECORDING SHALL BEGIN WITH THE CURRENT DATE, PROJECT NAME, AND MUNICIPALITY AND BE FOLLOWED BY THE GENERAL LOCATION (E.G., NAME OF THE STREET OR PROPERTY OWNER, LOCATION OF CROSS COUNTRY LINE, VIEWING SIDE, AND DIRECTION OF PROGRESS).
- B. **DATE AND TIME.** TO PRECLUDE THE RESPONSIBILITY OF TAMPERING OR EDITING IN ANY MANNER, ALL VIDEO RECORDINGS SHALL, BY ELECTRONIC MEANS, DISPLAY CONTINUOUSLY AND SIMULTANEOUSLY GENERATED TRANSPARENT DIGITAL INFORMATION TO INCLUDE THE DATE AND TIME OF RECORDING. THE DATE INFORMATION WILL CONTAIN THE MONTH, DAY AND YEAR; FOR EXAMPLE, 10/05/13. THE TIME INFORMATION SHALL CONSIST OF HOURS, MINUTES, AND SECONDS SEPARATED BY COLONS; FOR EXAMPLE, 10:35:18.
- C. **STATIONING.** THE ENGINEERING STATIONING SHALL CORRESPOND TO THE PROJECT STATIONING AND INCLUDE THE STANDARD ENGINEERING SYMBOLS (E.G., 14+84). THE ENGINEERING STATIONING SHALL REPRESENT THE LOCATION OF THE CAMERA. IF THE ENGINEERING STATIONING IS NOT RECORDED SIMULTANEOUSLY WITH RECORDING, THE STATIONING SHALL BE NOTED ON AUDIO TRACK 1. THIS TRANSPARENT INFORMATION SHALL APPEAR IN THE LOWER HALF OF THE VIEWING SCREEN. HOUSES AND BUILDINGS SHALL BE IDENTIFIED BY AN ADDRESS WHEN VISIBLE. THE CONTRACTOR SHALL MARK AND RECORD THE JOINTS (WITH NUMBERING) AS THE VIDEO PROGRESSES THROUGH THE TUNNEL FOR REFERENCE AND COMPARISON BETWEEN THE PRE AND POST CONSTRUCTION VIDEOS.
- D. **INFORMATION.** BELOW THE ENGINEERING STATIONING, PERIODIC TRANSPARENT ALPHA NUMERIC INFORMATION CONSISTING OF THE NAMES OF THE PROJECT, NAME OF THE AREA COVERED, DIRECTION OF TRAVEL, VIEWING SIDE, ETC., SHALL APPEAR.

**COVERAGE**

- A. **GENERAL.** RECORDED COVERAGE SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL EXISTING DRIVEWAYS, SIDEWALKS, CURBS, DITCHES (DRAINAGE PATTERNS ARE OF PARTICULAR CONCERN), STREETS (INCLUDING CONDITION OF PAVING FOR FULL WIDTH), LANDSCAPING, TREES, CULVERTS, CATCH BASINS, HEADWALLS, FENCES, AND VISIBLE UTILITIES LOCATED WITHIN THE ZONE OF INFLUENCE OF CONSTRUCTION. OF PARTICULAR CONCERN ARE EXISTING FAULTS, FRACTURES, DEFECTS OR OTHER IMPERFECTIONS ON THE SURFACE OR WITHIN THE CEI HORIZON TUNNEL AND AT THE JOINTS BETWEEN THE TUNNEL SECTIONS.
- B. **STREETS.** UNLESS OTHERWISE NOTED, STREETS AND STREET AREAS SHALL BE RECORDED BY AUDIO-VIDEO FOR FULL WIDTH OF THE ZONE OF INFLUENCE OF CONSTRUCTION, INCLUDING BOTH SIDES OF THE STREET. THE TERM "STREET" SHALL BE UNDERSTOOD TO MEAN STREET, HIGHWAY, AVENUE, BOULEVARD ROAD, ALLEY, LANE, DRIVEWAY, PARKING LOT, ACCESS/HAUL ROADS, AND ALL ADJACENT AREAS WITHIN THE POSSIBLE ZONE OF THE INFLUENCE OF CONSTRUCTION.

**DELIVERABLES**

DELIVERABLE	FOR ACCEPTANCE, APPROVAL, OR SUBMITTAL	NUMBER OF COPIES		SUBMITTAL SCHEDULE
		HARD COPY	ELECTRONIC	
SAMPLE PRECONSTRUCTION AUDIO-VIDEO RECORDING	APPROVAL	N/A	1	PRIOR TO RECORDING OF EACH SPECIFIC AREA
PRECONSTRUCTION AUDIO-VIDEO RECORDING	SUBMITTAL	N/A	1	PRIOR TO CONSTRUCTION IN EACH SPECIFIC AREA
POSTCONSTRUCTION AUDIO-VIDEO RECORDING	SUBMITTAL	N/A	1	AFTER COMPLETION OF CONSTRUCTION IN EACH SPECIFIC AREA
CERTIFICATION OF AUDIO-VIDEO RECORDINGS	SUBMITTAL	1	N/A	UPON COMPLETION OF WORK

**PAYMENT**

PAYMENT SHALL BE MADE AT THE UNIT CONTRACT LUMP SUM PRICE BID FOR ITEM SPECIAL - PRECONSTRUCTION / POSTCONSTRUCTION AUDIO - VIDEO COLOR RECORDING AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM AS DESCRIBED IN THIS NOTE.

**ITEM 208 - VIBRATION CONTROL AND MONITORING, AS PER PLAN**

THIS ITEM SHALL CONFORM TO C&MS SECTION 208 AND SHALL INCLUDE THE FOLLOWING PLAN SPECIFIC REQUIREMENTS:

**MONITORING AND CONTROL REQUIREMENTS**

THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTROL VIBRATION AND GROUND SETTLEMENT AND MONITOR ALL, STRUCTURES, TUNNELS, ELECTRICAL SUBSTATIONS AND OTHER UTILITIES, CRITICAL LOCATIONS, AND OTHER AREAS THAT MAY BE SUBJECT TO DAMAGE OR IMPACTED BY CONSTRUCTION-INDUCED VIBRATION OR SETTLEMENT WITHIN EMBANKMENT FILLS OR ZONES OF INFLUENCE FOR SPECIFIC CONSTRUCTION ACTIVITIES. AS A MINIMUM THE CEI HORIZON TUNNEL, ODOT'S COMMERCIAL ROAD DRIVEWAY AND THE ADJACENT CONSTRUCTION ACCESS DRIVE AS INDICATED IN THESE PLANS WILL BE MONITORED.

VIBRATION CONTROL AND MONITORING SHALL CONFORM TO C&MS 208.15, EXCEPT AS MODIFIED BELOW:

- A. ALL REFERENCES TO BLASTING SHALL INSTEAD APPLY TO CONSTRUCTION ACTIVITIES.
- B. THE VIBRATION SPECIALIST'S EXPERIENCE REQUIREMENT SHALL APPLY FOR VIBRATION MONITORING AND NEED NOT BE SPECIFIC TO ROCK BLASTING PROJECTS.

BLASTING AND EXPLOSIVES ARE NOT ALLOWED ON THIS PROJECT.

THE CONTRACTOR SHALL PREPARE A SETTLEMENT AND VIBRATION MONITORING PLAN THAT IDENTIFIES CRITICAL LOCATIONS WITHIN THE ZONE OF INFLUENCE OF EMBANKMENT FILLS OR CONSTRUCTION EQUIPMENT LOADS AND WITHIN LIMITS DETERMINED BY THE VIBRATION SPECIALIST. THE SETTLEMENT AND VIBRATION MONITORING PLAN SHALL ESTABLISH PROPOSED INSTRUMENT LOCATIONS, INSTALLATION PROCEDURES AND REQUIREMENTS, CRITICAL OR LIMITING READINGS, FREQUENCY OF READINGS, THRESHOLD SETTLEMENT OR OTHER MOVEMENT CRITERIA, AND PROCEDURES TO MODIFY CONSTRUCTION METHODS SHOULD THRESHOLD CRITERIA BE EXCEEDED. THE CONTRACTOR SHALL PREPARE VIBRATION-RELATED DELIVERABLES IN ACCORDANCE WITH C&MS 208.

THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ALL, STRUCTURES, UTILITIES, AND CRITICAL LOCATIONS WITHIN THE ZONE OF INFLUENCE AND LIMITS AS DETERMINED BY THE VIBRATION SPECIALIST OR THESE NOTES. THE CONTRACTOR SHALL USE SURVEY METHODS ACCEPTABLE TO ITS INSURANCE COMPANY. IF OWNERS OR OCCUPANTS FAIL TO ALLOW ACCESS TO A PROPERTY FOR THE PRE-CONSTRUCTION SURVEY, THE CONTRACTOR SHALL SEND A CERTIFIED LETTER TO THE OWNER OR OCCUPANT, AND SHALL MAKE THE NOTIFICATION EFFORT AND THE CERTIFIED LETTER PART OF THE PRE-CONSTRUCTION SURVEY RECORDS. THE CONTRACTOR SHALL DELIVER A COPY OF THE PRE-CONSTRUCTION SURVEY TO THE DEPARTMENT BEFORE BEGINNING CONSTRUCTION OPERATIONS AT CRITICAL LOCATIONS. PRE-CONSTRUCTION AND POST-CONSTRUCTION SURVEYS OF THE CEI HORIZON TUNNEL SHALL INCLUDE VIDEO MONITORING EXTENDING FROM THE NEAREST MANHOLE WEST OF THE CUY-10-1613 BRIDGE TO THE NEAREST MANHOLE EAST OF COMMERCIAL ROAD. ALL DEFECTS AND CRACKS SHALL BE IDENTIFIED, MEASURED, AND DOCUMENTED WITH EACH REPORT. THE CONTRACTOR SHALL PROVIDE A CRAWLER-MOUNTED CAMERA AND EQUIPMENT IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 902. THE CONTRACTOR SHALL HAVE A TECHNICIAN CONTINUOUSLY VIDEO MONITOR AND RECORD THE INSIDE OF THE CEI HORIZON TUNNEL DURING CONSTRUCTION ACTIVITIES ON THE SURFACE ABOVE THE CEI HORIZON TUNNEL WHICH SHALL INCLUDE BUT IS NOT LIMITED TO HAULING OF EQUIPMENT AND MATERIALS TO AND FROM THE PROJECT AND STORING OF MATERIALS OVER TOP OR NEAR THE CEI HORIZON TUNNEL.

PAYMENT SHALL BE MADE AT THE UNIT CONTRACT LUMP SUM PRICE BID FOR ITEM 208 - VIBRATION CONTROL AND MONITORING, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO COMPLETE THE WORK DESCRIBED IN THIS NOTE.

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MAINTENANCE OF TRAFFIC NOTES

CUY - 10 - 16 . 13

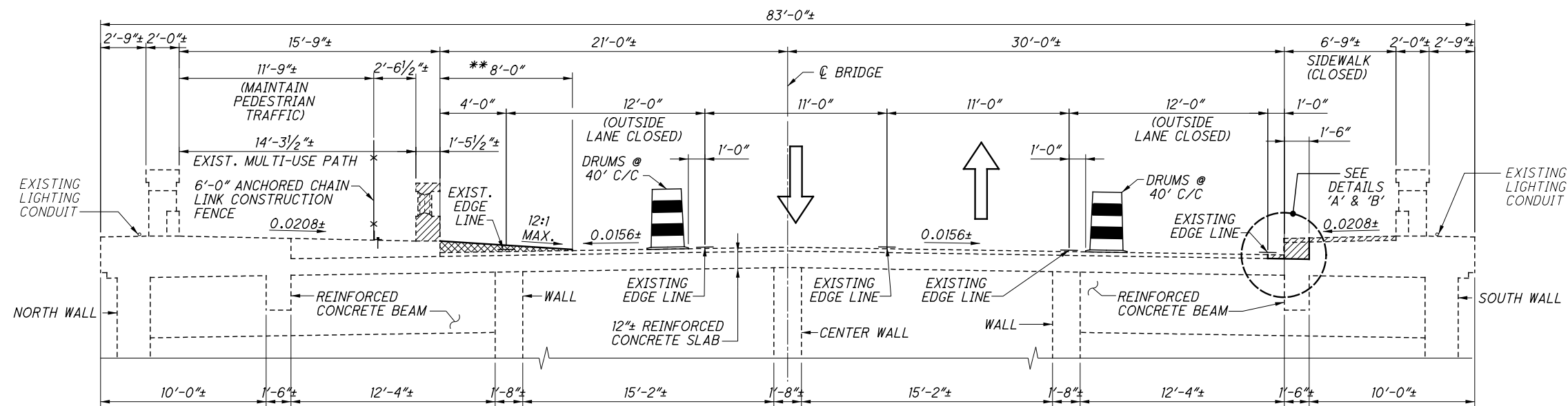
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STATION	LENGTH	AVG. WIDTH	202	254	407	442	607		EACH	CY	EACH	614		FT	FT	615	622			
			GRANITE CURB REMOVED FOR REUSE FT	PAVEMENT PLANING, ASPHALT CONCRETE (1-1/2" AVG.) SY	NON-TRACKING TACK COAT (0.09 GAL/SY) GAL	1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), PG76-22M, AS PER PLAN CY	FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION FT	FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION, ANCHORED FT				WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN CY			BARRIER REFLECTOR, TYPE 1, ONE WAY EACH	OBJECT MARKER, ONE WAY EACH	WORK ZONE EDGE LINE, CLASS 1, 4", 740.06, TYPE I MILE		
FROM	TO											W	Y	W				2-ANCHORS		
<b>PRE-PHASE 1</b>																				
52+92.84 LT	53+31.84 LT	39.00								4.33										
55+56.56 LT	55+95.56 LT	39.00								4.33										
52+67.84 LT	56+20.56 LT	352.72					193.00	160.00												
53+74.00 RT	55+04.56 RT	130.56								2.77										
55+04.56 RT	55+30.00 RT	25.44	25.00													6				
<b>PHASE 1</b>																				
45+27.50	47+90.00	262.50										262.50	262.50	262.50						
47+90.00	50+40.00	250.00										250.00	250.00							
50+40.00	55+05.00	465.00										930.00	930.00		465.00					
55+05.00	57+15.16	210.16										210.16	420.32		210.16					
57+15.16	57+49.80	34.64										34.64	34.64		34.64					
57+49.80	58+65.74	115.94										115.94	115.94							
MARKING THROUGH INTERSECTION		260.00												260.00						
52+14.00	56+71.00	457.00															460			
<b>PHASE 1A</b>																				
52+93.84	55+94.56	300.72					159.00	153.00				601.44								
<b>PHASE 1B</b>																				
52+67.84	56+20.56	352.72					193.00	160.00												
<b>PHASE 2</b>																				
45+27.50	47+90.00	262.50										262.50	262.50	262.50						
47+90.00	50+80.00	290.00										290.00	290.00							
50+80.00	55+30.00	450.00										900.00	900.00							
55+30.00	57+15.16	185.16										185.16	370.32							
57+15.16	59+00.00	184.84										184.84	184.84							
51+45.00	56+46.00	501.00														500				
51+64.50	56+46.00	481.50							1							390	90			
<b>PHASE 3</b>																				
43+10.00	45+62.00	252.00										252.00		252.00						
45+62.00	48+00.00	238.00										238.00								
48+00.00	49+80.00	180.00										180.00	360.00							
49+80.00	55+63.00	583.00										1166.00	1166.00		583.00					
55+63.00	56+00.00	37.00										74.00	74.00							
56+00.00	57+00.00	100.00										200.00	200.00	100.00						
57+00.00	57+36.00	36.00										36.00	72.00	36.00						
57+36.00	57+98.00	62.00										62.00	124.00							
57+98.00	59+00.00	102.00										102.00	102.00							
51+61.00	55+40.00	379.00							1							380				
<b>RESURFACING FOR MOT MARKINGS</b>																				
55+04.56	57+00.00	62.50		1357.22	122.15	56.55														
57+00.00	59+00.00	81.50		1811.11	163.00	75.46														
<b>SUBTOTALS</b>																				
			25	3169	286	133	545	473	2	11.43	42	42	6538	6120	1173	1293	6	1730	90	
<b>CONVERT TO MILES</b>																				
													1.24	1.16						
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>																				
			25	3169	286	133	545	473	2	12	42	42	2.40		1173	1293	6	1730	90	

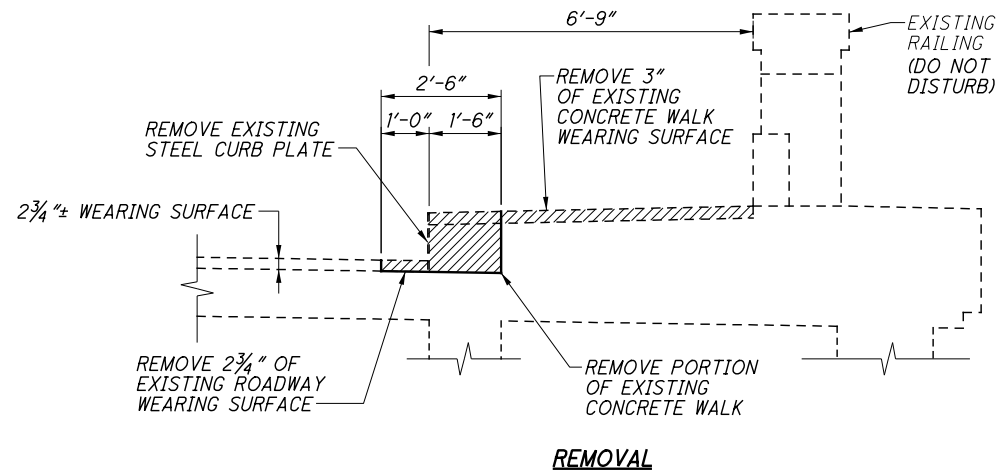
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**MAINTENANCE OF TRAFFIC SUBSUMMARY**  
**CUY - 10 - 16 . 13**  
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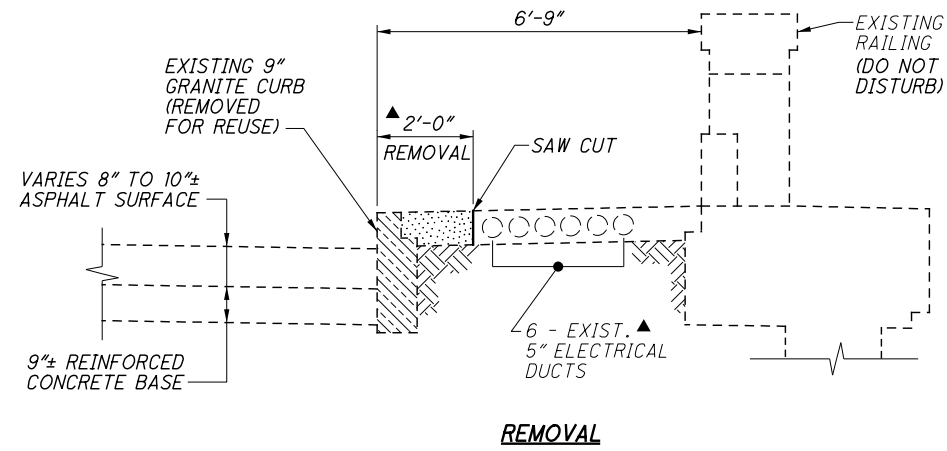


\*\* TEMPORARY RAMP USING  
ITEM 614 - ASPHALT CONCRETE  
FOR MAINTAINING TRAFFIC,  
AS PER PLAN

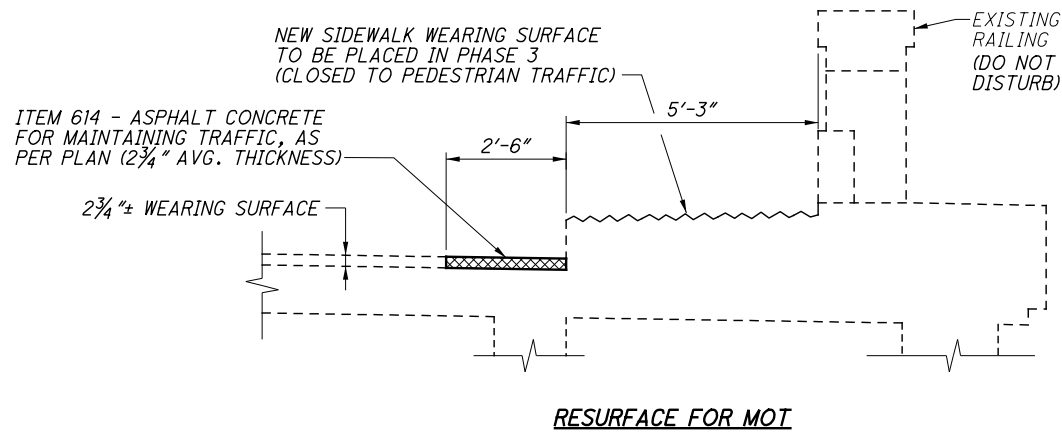
**MOT PRE-PHASE 1 EAST ABUTMENT TRANSVERSE SECTION**



**REMOVAL**



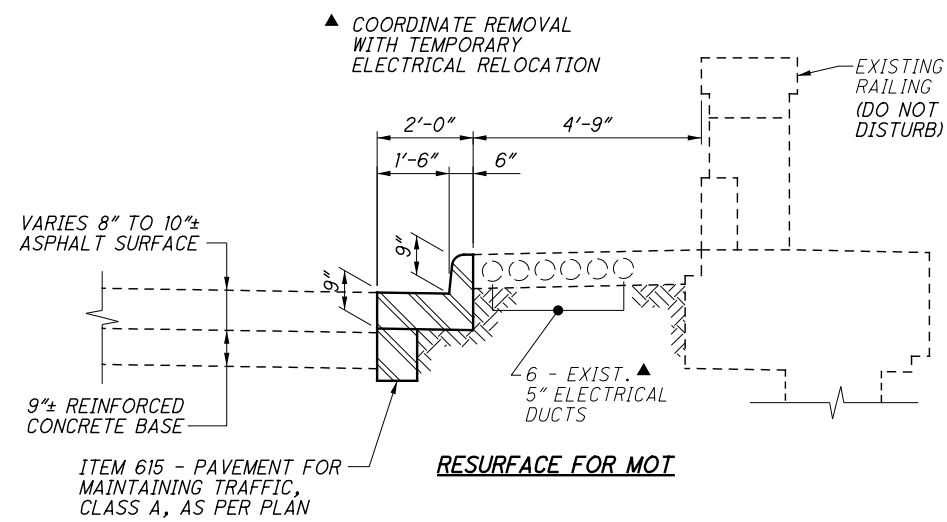
**REMOVAL**



**RESURFACE FOR MOT**

**DETAIL 'A'**

STA. 53+74.00± TO STA. 55+04.56±



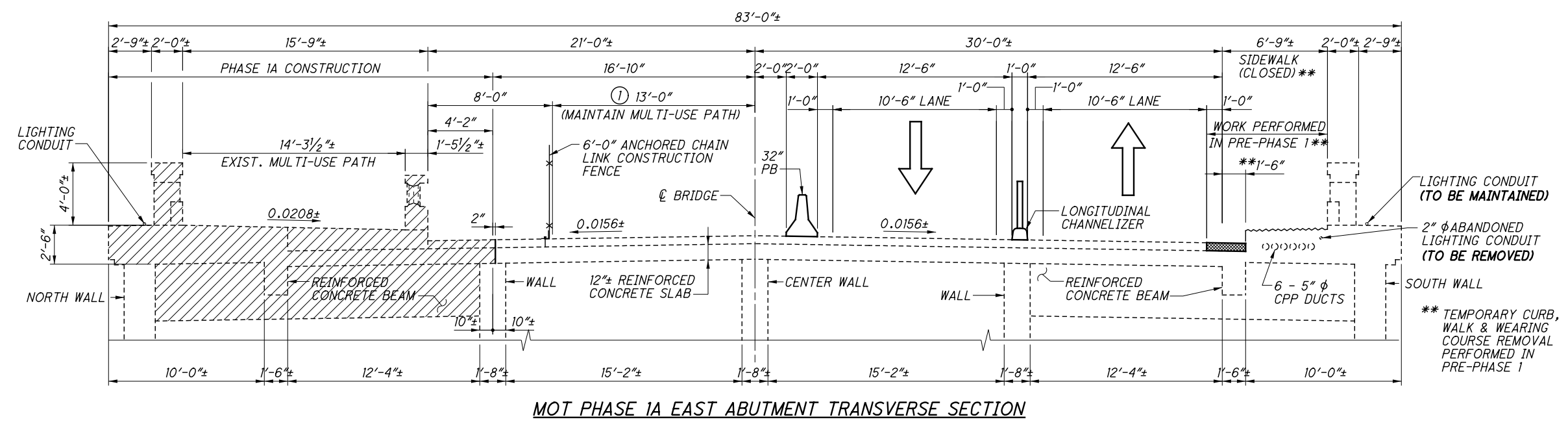
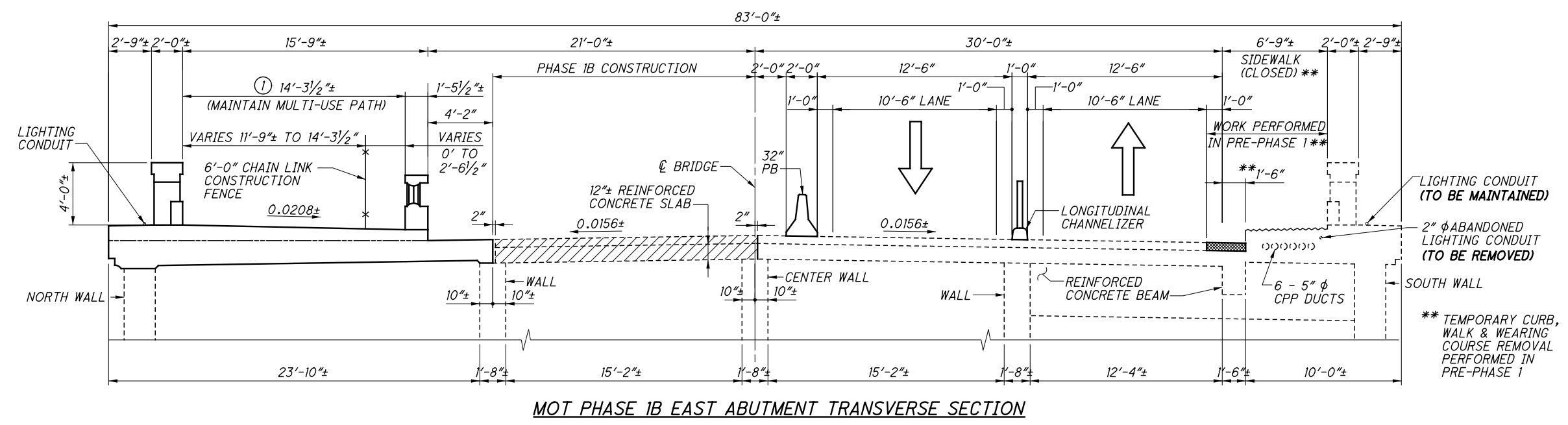
**RESURFACE FOR MOT**

**DETAIL 'B'**

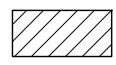
STA. 55+04.56± TO STA. 55+30.00±

**LEGEND**

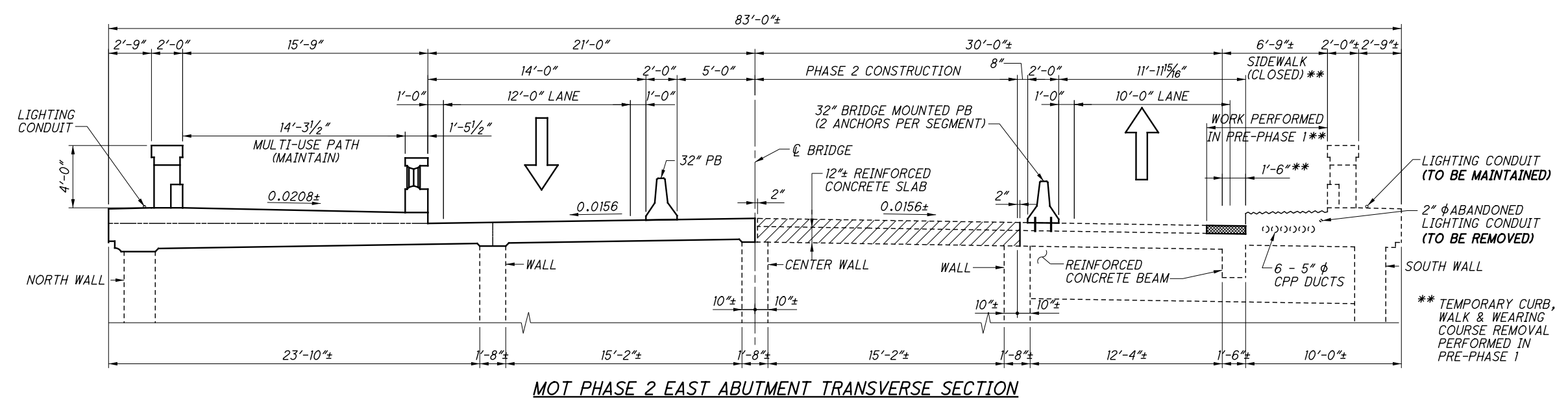
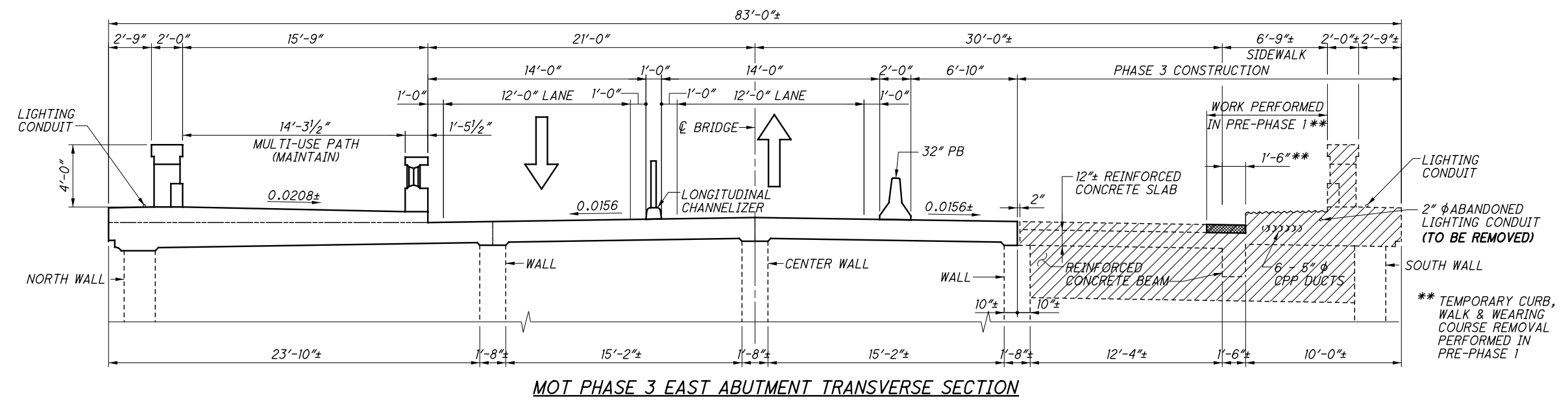
- INDICATES MATERIALS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- INDICATES GRANITE CURB TO BE REMOVED AND REUSED PER ITEM 202 - GRANITE CURB REMOVED FOR REUSE
- INDICATES ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN
- INDICATES ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
- INDICATES WALK REMOVED PER ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN



① SEE SHEET 17 FOR PHASE 1A & 1B DETAILS

**LEGEND**  
 INDICATES MATERIALS TO BE REMOVED PER ITEM 202-PORCTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

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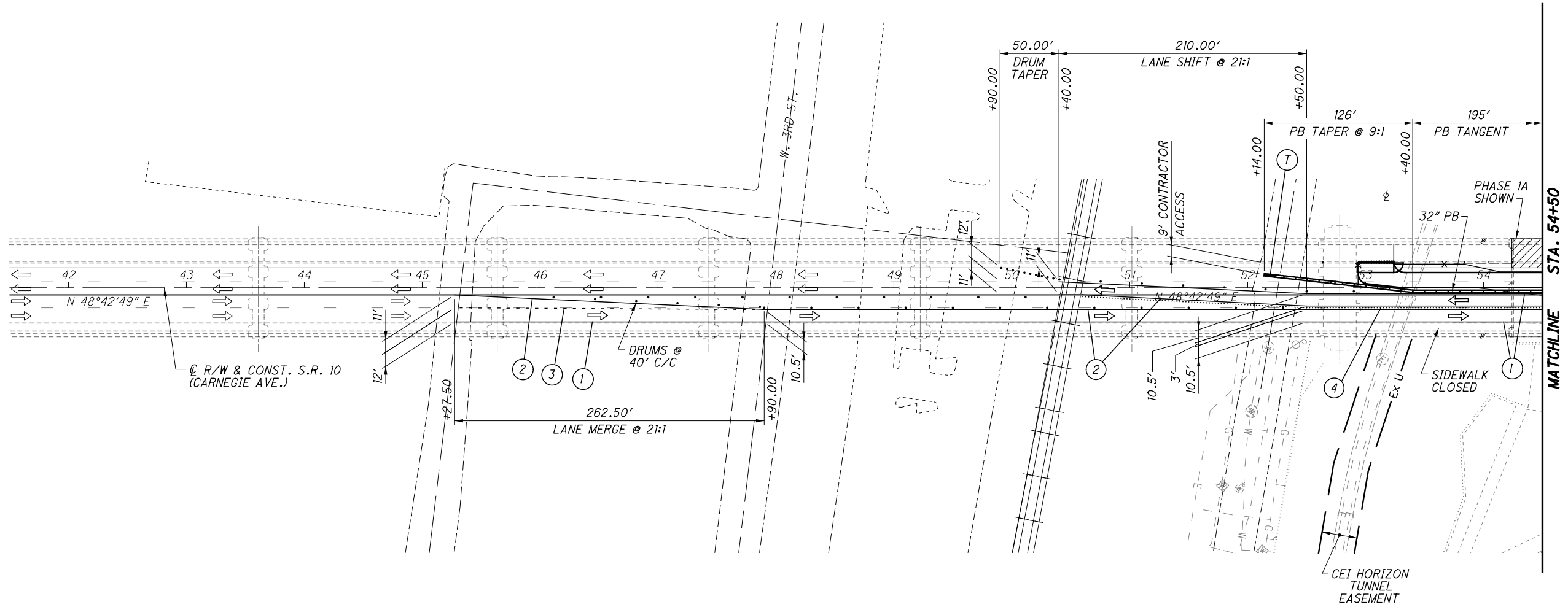
**LEGEND**  
 INDICATES MATERIALS TO BE REMOVED PER ITEM 202-PORIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

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**WORK ZONE MARKING LEGEND**

- ① WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ② WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)
- ③ WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ④ LONGITUDINAL CHANNELIZER
- C 15' CLEAR DISTANCE
- T 10' TAPERED END SECTION
- ← TRAFFIC DIRECTION



**NOTES:**

- 1) FOR ADDITIONAL DETAILS SEE O.D.O.T STD. CONSTRUCTION DWG. MT-95.41
- 2) SEE SHEET 17 FOR SUB-PHASE 1A AND 1B

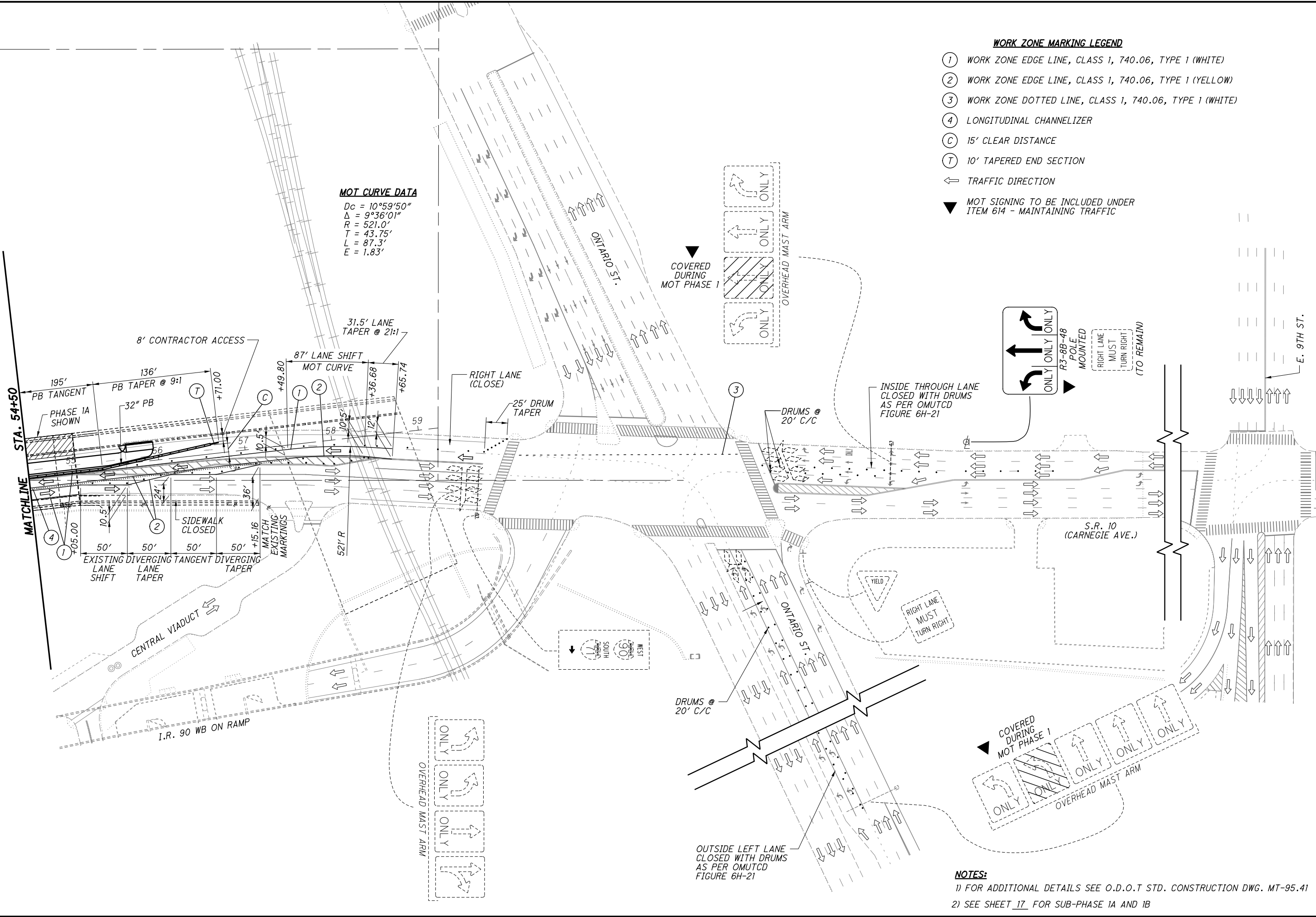


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MES

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 1 - STA. 41+50.00 TO STA. 54+50**

**CUY-10-16.13**

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**MOT CURVE DATA**  
 $D_c = 10^\circ 59' 50''$   
 $\Delta = 9^\circ 36' 01''$   
 $R = 521.0'$   
 $T = 43.75'$   
 $L = 87.3'$   
 $E = 1.83'$

**WORK ZONE MARKING LEGEND**

- ① WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ② WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)
- ③ WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ④ LONGITUDINAL CHANNELIZER
- Ⓢ 15' CLEAR DISTANCE
- Ⓣ 10' TAPERED END SECTION
- ↔ TRAFFIC DIRECTION
- ▼ MOT SIGNING TO BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC

CALCULATED JDL CHECKED MES

0 50 100  
 25  
 HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
 PHASE 1 - STA. 54+50 TO INTERSECTION**

**CUY-10-16.13**

**NOTES:**  
 1) FOR ADDITIONAL DETAILS SEE O.D.O.T STD. CONSTRUCTION DWG. MT-95.41  
 2) SEE SHEET 17 FOR SUB-PHASE 1A AND 1B



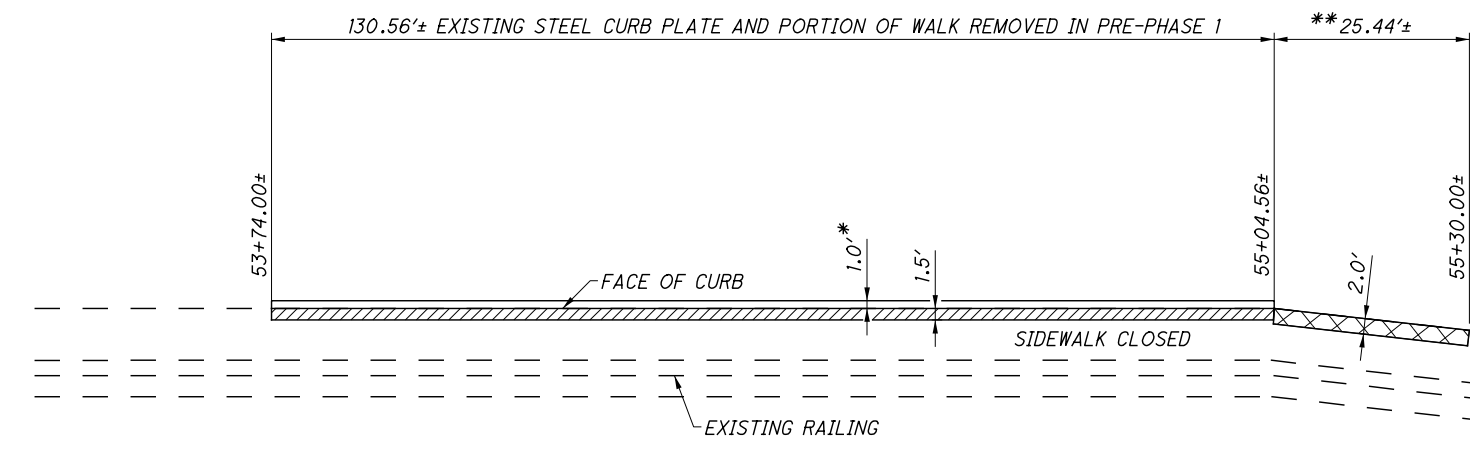
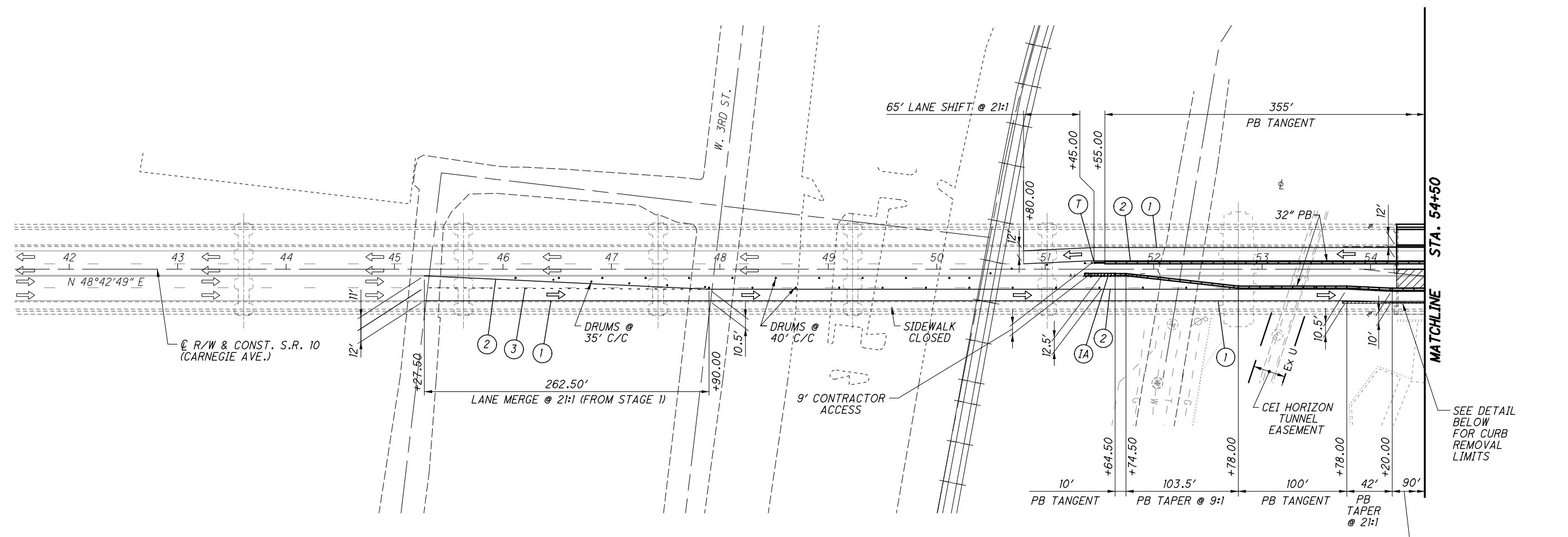
CALCULATED  
JDL  
CHECKED  
MES

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 2 - STA. 41+50.00 TO STA. 54+50**

**CUY-10-16.13**

**WORK ZONE MARKING LEGEND**

- ① WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ② WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)
- ③ WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ④ LONGITUDINAL CHANNELIZER
- ⑦ 10' TAPERED END SECTION
- ⑩A WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
- ← TRAFFIC DIRECTION



**CURB REMOVAL DETAIL**

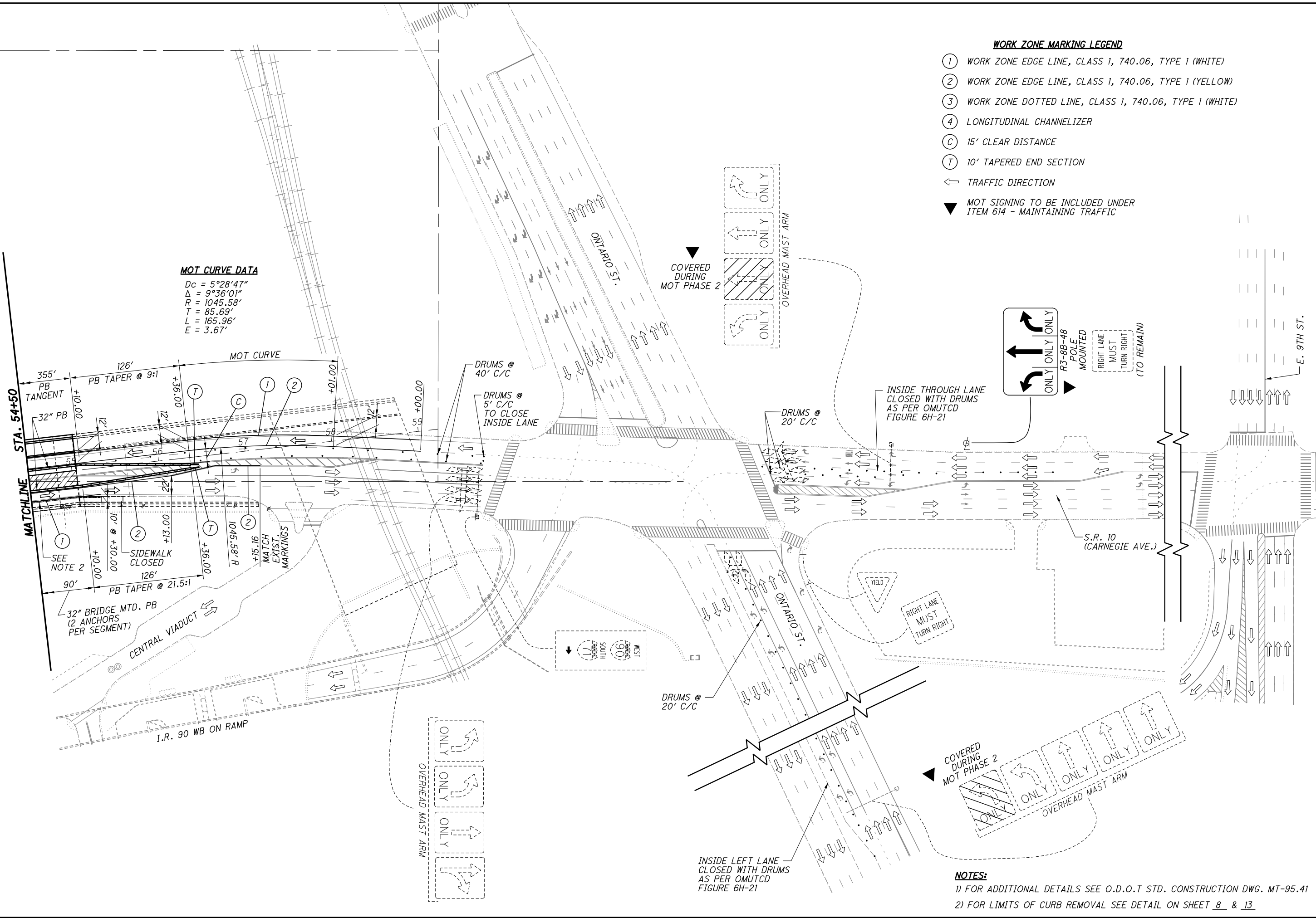
- \*\* EXISTING GRANITE CURB AND PORTION OF WALK REMOVED IN PRE-PHASE 1 AND REPLACED WITH ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
- \* REMOVE EXISTING DECK WEARING COURSE AND REPLACE WITH ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN

**NOTES:**

1) FOR ADDITIONAL DETAILS SEE O.D.O.T STD. CONSTRUCTION DWG. MT-95.41

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**MOT CURVE DATA**  
 $D_c = 5^{\circ}28'47''$   
 $\Delta = 9^{\circ}36'01''$   
 $R = 1045.58'$   
 $T = 85.69'$   
 $L = 165.96'$   
 $E = 3.67'$

**WORK ZONE MARKING LEGEND**

- ① WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ② WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)
- ③ WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ④ LONGITUDINAL CHANNELIZER
- ⊙ 15' CLEAR DISTANCE
- ⊙ 10' TAPERED END SECTION
- ↔ TRAFFIC DIRECTION
- ▼ MOT SIGNING TO BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC

CALCULATED JDL  
 CHECKED MES

0 50 100  
 HORIZONTAL SCALE IN FEET

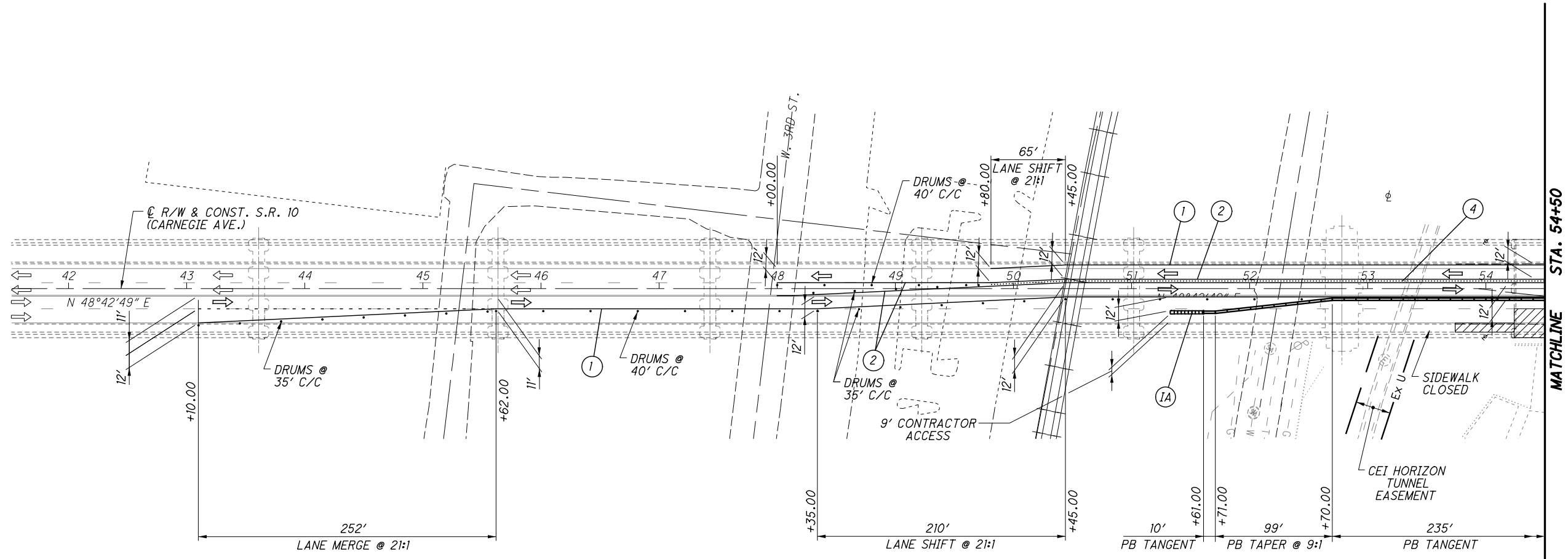
**MAINTENANCE OF TRAFFIC PLAN  
 PHASE 2 - STA. 54+50 TO INTERSECTION**

**CUY-10-16.13**

**NOTES:**  
 1) FOR ADDITIONAL DETAILS SEE O.D.O.T STD. CONSTRUCTION DWG. MT-95.41  
 2) FOR LIMITS OF CURB REMOVAL SEE DETAIL ON SHEET 8 & 13

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- WORK ZONE MARKING LEGEND**
- ① WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
  - ② WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)
  - ③ WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
  - ④ LONGITUDINAL CHANNELIZER
  - ⊓ 10' TAPERED END SECTION
  - ⒾA WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
  - ← TRAFFIC DIRECTION



**NOTES:**  
1) FOR ADDITIONAL DETAILS SEE O.D.O.T STD. CONSTRUCTION DWG. MT-95.41

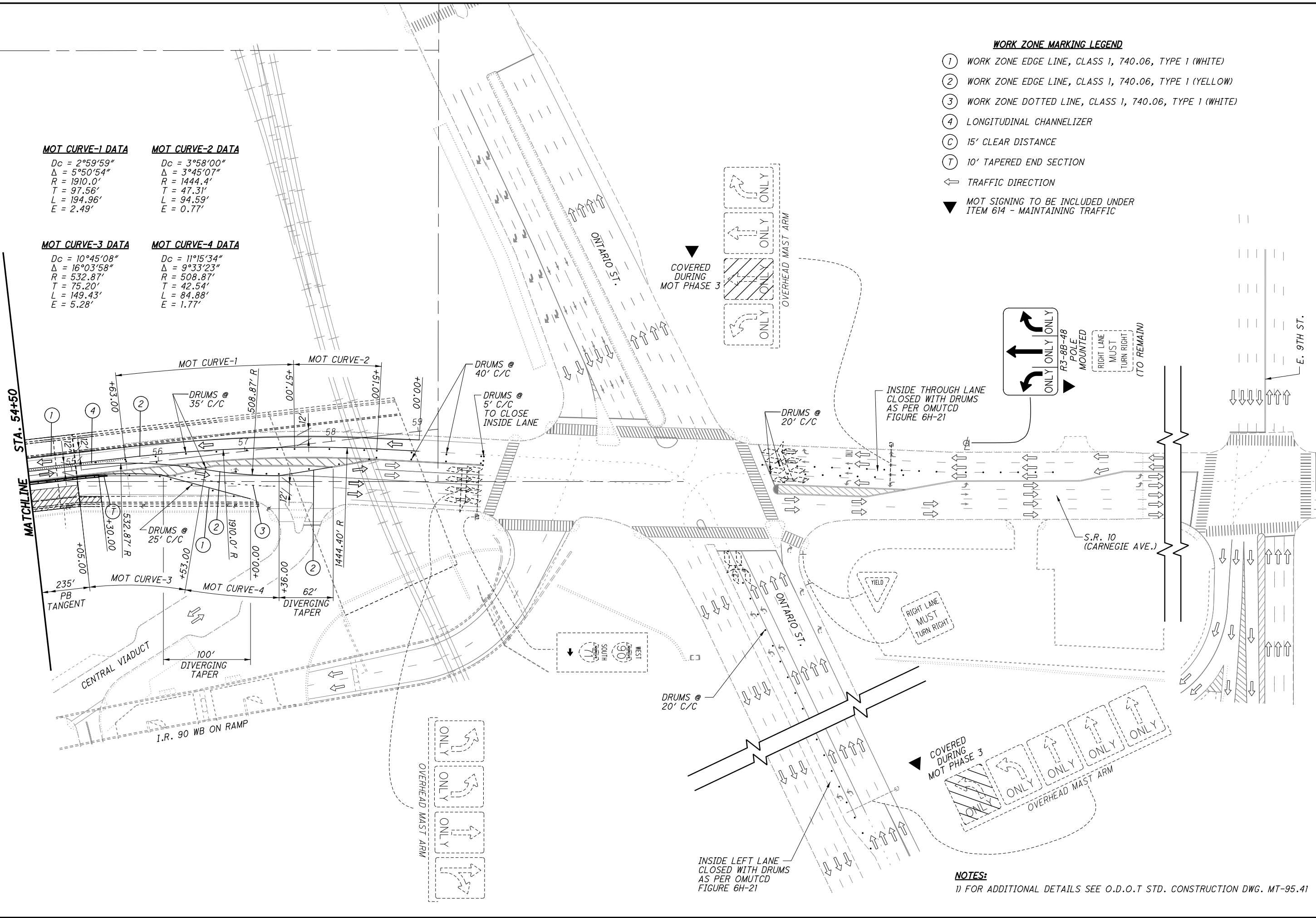
CALCULATED JDL  
CHECKED MES

0 50 100  
25  
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 3 - STA. 41+50.00 TO STA. 54+50**

**CUY-10-16.13**





**MOT CURVE-1 DATA**

$Dc = 2^{\circ}59'59''$   
 $\Delta = 5^{\circ}50'54''$   
 $R = 1910.0'$   
 $T = 97.56'$   
 $L = 194.96'$   
 $E = 2.49'$

**MOT CURVE-2 DATA**

$Dc = 3^{\circ}58'00''$   
 $\Delta = 3^{\circ}45'07''$   
 $R = 1444.4'$   
 $T = 47.31'$   
 $L = 94.59'$   
 $E = 0.77'$

**MOT CURVE-3 DATA**

$Dc = 10^{\circ}45'08''$   
 $\Delta = 16^{\circ}03'58''$   
 $R = 532.87'$   
 $T = 75.20'$   
 $L = 149.43'$   
 $E = 5.28'$

**MOT CURVE-4 DATA**

$Dc = 11^{\circ}15'34''$   
 $\Delta = 9^{\circ}33'23''$   
 $R = 508.87'$   
 $T = 42.54'$   
 $L = 84.88'$   
 $E = 1.77'$

**WORK ZONE MARKING LEGEND**

- ① WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ② WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)
- ③ WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- ④ LONGITUDINAL CHANNELIZER
- ⊙ 15' CLEAR DISTANCE
- ⊙ 10' TAPERED END SECTION
- ↔ TRAFFIC DIRECTION
- ▼ MOT SIGNING TO BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC

CALCULATED JDJ  
 CHECKED MES

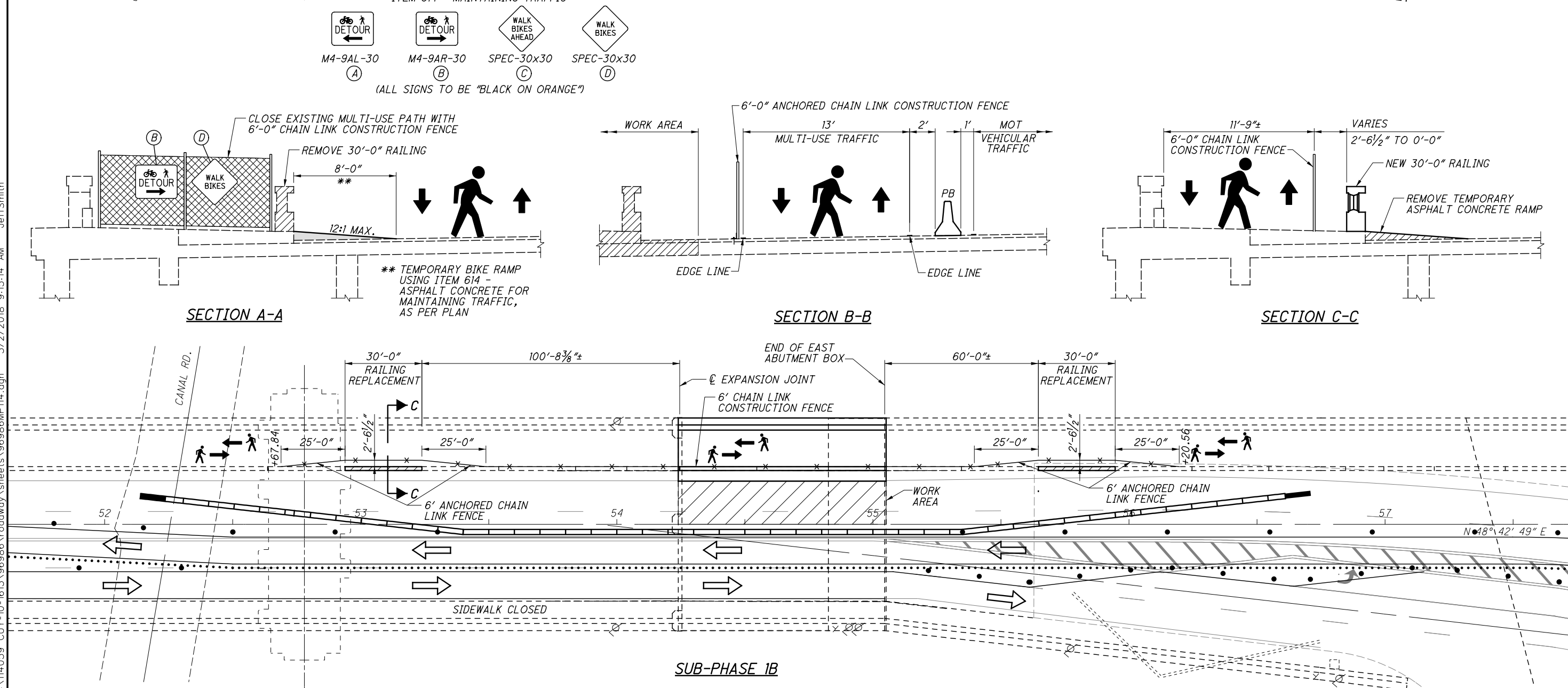
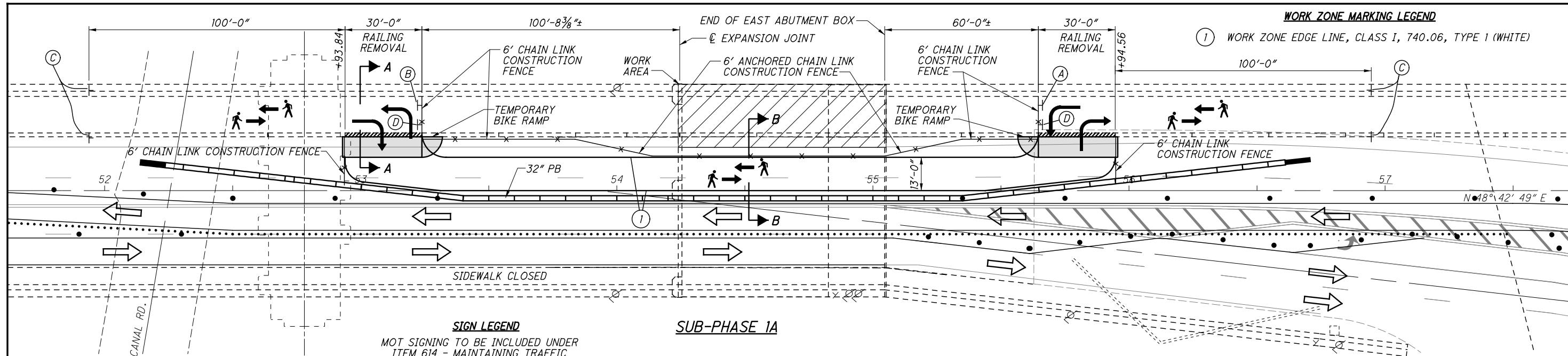
0 50 100  
 HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
 PHASE 3 - STA. 54+50 TO INTERSECTION**

**CUY-10-16.13**

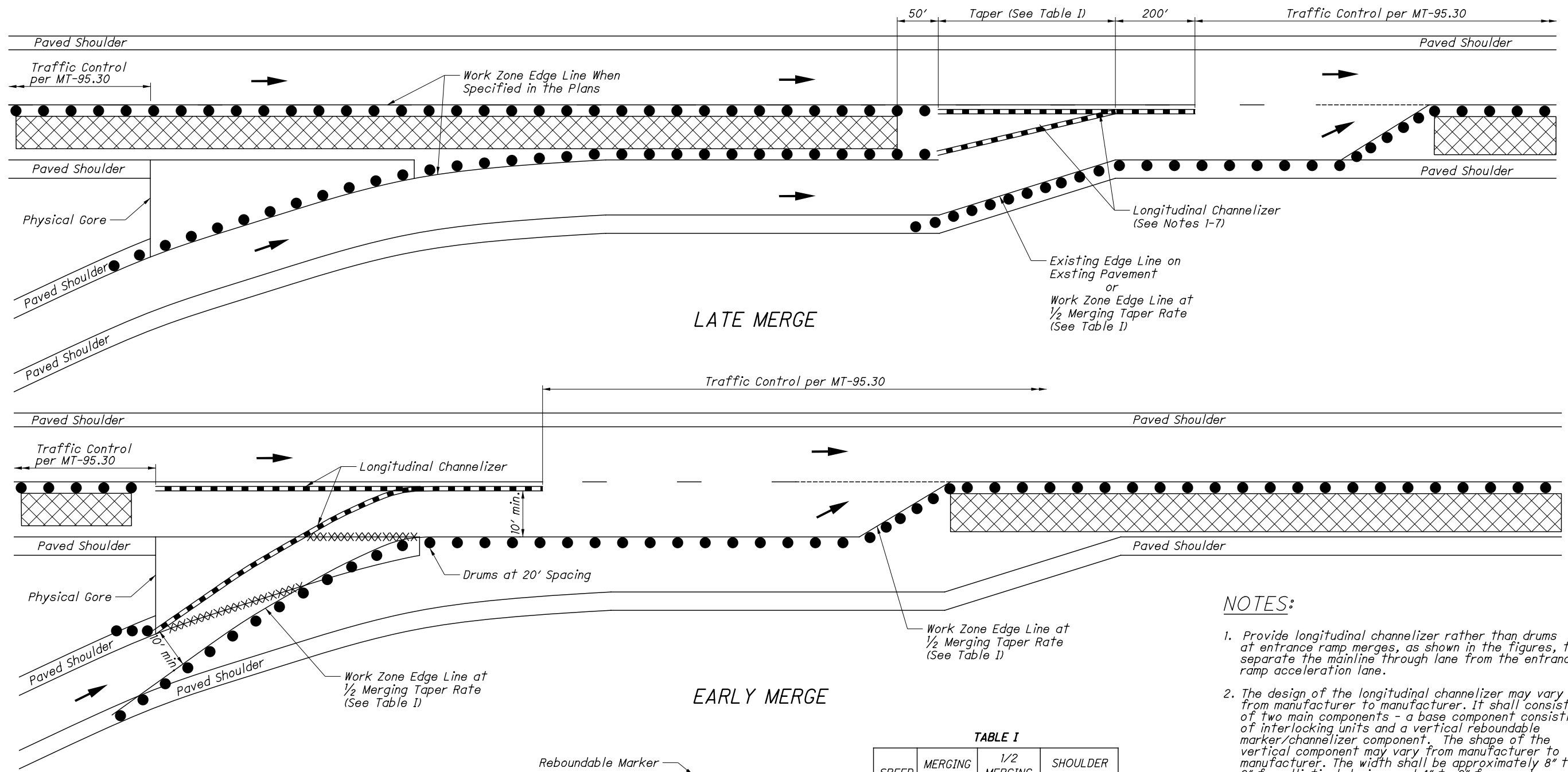
**NOTES:**  
 1) FOR ADDITIONAL DETAILS SEE O.D.O.T STD. CONSTRUCTION DWG. MT-95.41

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NOTE: SEE SHEETS 11-12 FOR PHASE I TRAFFIC MOT

CALCULATED JDL  
 CHECKED MES  
 HORIZONTAL SCALE IN FEET  
 0 10 20 40  
 MAINTENANCE OF TRAFFIC PLAN  
 SUB-PHASE 1A & 1B  
 CUY-10-16.13  
 17  
 308

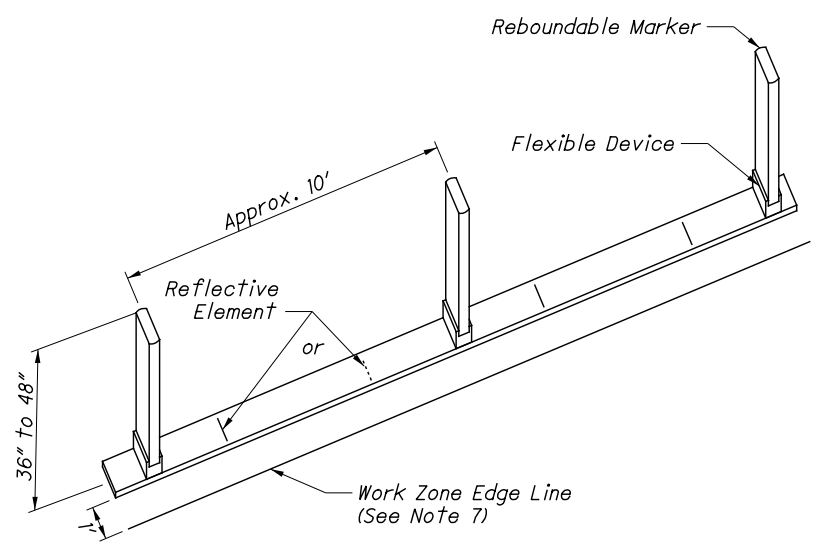


NOTES:

1. Provide longitudinal channelizer rather than drums at entrance ramp merges, as shown in the figures, to separate the mainline through lane from the entrance ramp acceleration lane.
2. The design of the longitudinal channelizer may vary from manufacturer to manufacturer. It shall consist of two main components - a base component consisting of interlocking units and a vertical reboundable marker/channelizer component. The shape of the vertical component may vary from manufacturer to manufacturer. The width shall be approximately 8" to 9" for elliptical designs and 4" to 6" for round (tubular) designs. The height of the vertical component shall be within the range of 36" minimum to 48" maximum.
3. The longitudinal channelizer shall be NCHRP 350 compliant.
4. The vertical component shall be equipped with retroreflective sheeting or with retroreflective stripes. Where stripes are used, the stripes shall consist of two 3" wide bands placed a maximum of 2" from the top with a maximum of 6" between the bands.
5. The base component shall be equipped with reflectors.
6. The color of the base component, including the attached reflectors, and of the retroreflective sheeting or bands for the vertical components shall be in conformance with the pavement marking colors established in the Ohio Manual of Uniform Traffic Control Devices.
7. Where edge line is provided adjacent to the longitudinal channelizer, the edge line should be located 1' from the longitudinal channelizer. The edge line should be provided if the resulting lane width would be 11' or greater.
8. For additional information regarding traffic control at entrance ramps, see Standard Construction Drawings MT-98.10 and MT-98.11.

TABLE I

SPEED LIMIT (MPH)	MERGING TAPER RATE MINIMUM	1/2 MERGING TAPER RATE MINIMUM	SHOULDER TAPER RATE MINIMUM
25	11:1	6:1	4:1
30	15:1	8:1	5:1
35	21:1	11:1	7:1
40	27:1	14:1	9:1
45	45:1	23:1	15:1
50	50:1	25:1	17:1
55	55:1	28:1	19:1
60	60:1	30:1	20:1
65	65:1	33:1	22:1
70	70:1	35:1	24:1



LONGITUDINAL CHANNELIZER

**LEGEND**

- WORK AREA
- DRUMS
- LONGITUDINAL CHANNELIZER
- REMOVE EXISTING MARKINGS
- DIRECTION OF TRAVEL

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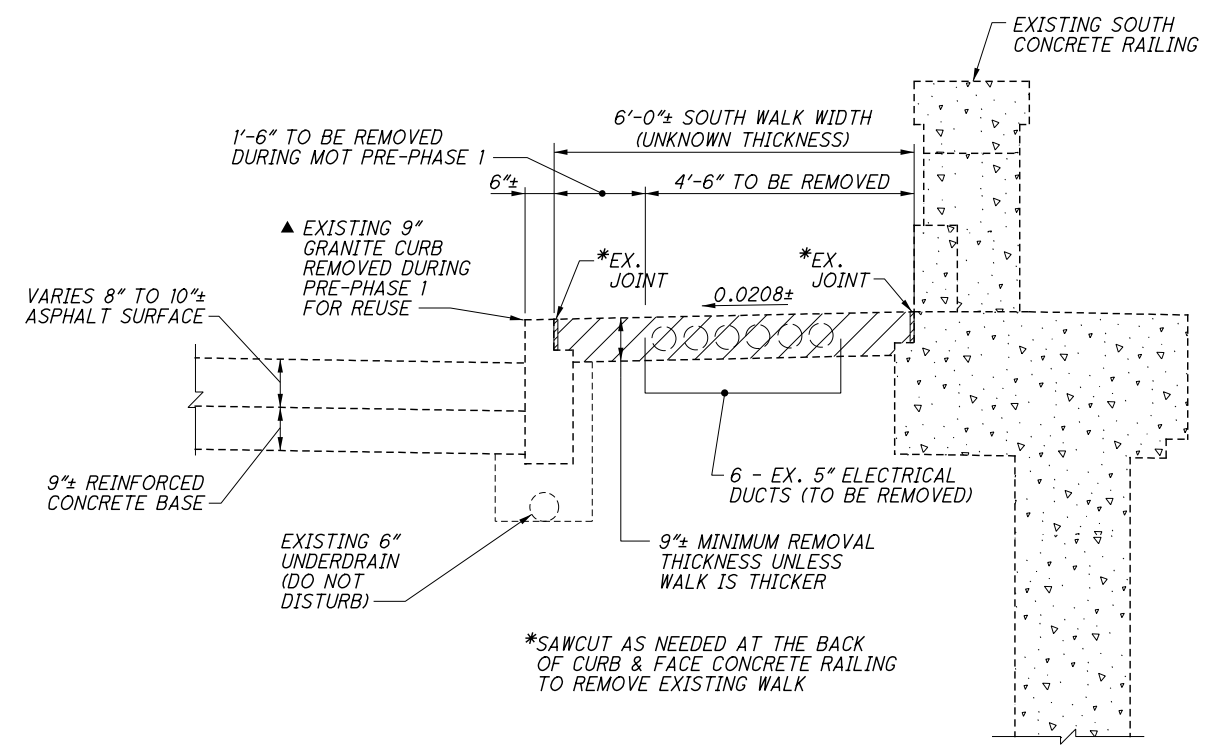
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SHEET NUMBER									PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED MES	CHECKED JDL
2-3	4-6A	7	21	22	28	34-39	01/BRO/BR												
<b>ROADWAY</b>																			
150			150					300		202	30001	300	SF	WALK REMOVED, AS PER PLAN	2				
		25						25		202	32300	25	FT	GRANITE CURB REMOVED FOR REUSE	2				
	LS							LS		208	14001	LS		VIBRATION CONTROL AND MONITORING, AS PER PLAN	6A				
		545						545		607	20100	545	FT	FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION	6				
		473						473		607	20100	473	FT	FENCE, TYPE CL, MISC.: 6 FOOT FENCE FOR CONSTRUCTION, ANCHORED	6				
150			150					300		608	11001	300	SF	4-1/2" CONCRETE WALK, AS PER PLAN	2				
<b>EROSION CONTROL</b>																			
								25,000		832	30000	25,000	EACH	EROSION CONTROL					
<b>PAVEMENT</b>																			
3		3169	3					3169		254	01000	3169	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1-1/2" AVG					
								6		304	20001	6	CY	AGGREGATE BASE, AS PER PLAN	2				
		286						286		407	20000	286	GAL	NON-TRACKING TACK COAT					
		133						133		442	20001	133	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), PG76-22M, AS PER PLAN	3				
			25					25		609	98000	25	FT	CURB, MISC.: GRANITE CURB REINSTALLED	2				
<b>LIGHTING</b>																			
					4			4		202	62001	4	EACH	JUNCTION BOX REMOVED, AS PER PLAN	26				
					20			20		625	00450	20	EACH	CONNECTION, FUSED PULL APART					
					10			10		625	00480	10	EACH	CONNECTION, UNFUSED PERMANENT					
					8			8		625	10615	8	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE, AS PER PLAN	27				
					3939			3939		625	23201	3939	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN	26				
					336			336		625	23401	336	FT	NO. 10 AWG POLE AND BRACKET CABLE, AS PER PLAN	26				
					359			359		625	25409	359	FT	CONDUIT, 2", T25.051, AS PER PLAN	26				
					10			10		625	25920	10	FT	CONDUIT, MISC.: 1" WATERTIGHT, FLEXIBLE CONDUIT	26				
					12			12		625	25920	12	FT	CONDUIT, MISC.: 2" WATERTIGHT, FLEXIBLE CONDUIT	26				
					381			381		625	25920	381	FT	CONDUIT, MISC.: CONDUIT REMOVED	26				
					4			4		625	29901	4	EACH	JUNCTION BOX, AS PER PLAN	26				
					2			2		625	32000	2	EACH	GROUND ROD					
					2			2		625	35001	2	EACH	REERECT EXISTING LIGHT POLE, AS PER PLAN	27				
					2			2		625	35100	2	EACH	REERECT EXISTING LUMINAIRE					
	LS							LS		SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	6				
					2			2		625	75411	2	EACH	LIGHT POLE REMOVED FOR REUSE, AS PER PLAN	26				
					2			2		625	75508	2	EACH	LUMINAIRE REMOVED FOR REUSE					
					3939			3939		625	75550	3939	FT	DISTRIBUTION CABLE REMOVED					
					8			8		625	75801	8	EACH	DISCONNECT CIRCUIT, AS PER PLAN	26				
					5			5		625	98000	5	EACH	LIGHTING, MISC.: BRIDGE-MOUNTED MARINE NAVIGATION LIGHTING, LED, SOLAR POWERED	27				
<b>ELECTRICAL</b>																			
						LS		LS		625	98200	LS		LIGHTING, MISC.: REMOVAL OF EXISTING ELECTRICAL FACILITIES	34				
						LS		LS		625	98200	LS		LIGHTING, MISC.: TEMPORARY ELECTRICAL FACILITIES	37				
						LS		LS		625	98200	LS		LIGHTING, MISC.: FINAL PROPOSED ELECTRICAL FACILITIES	37				

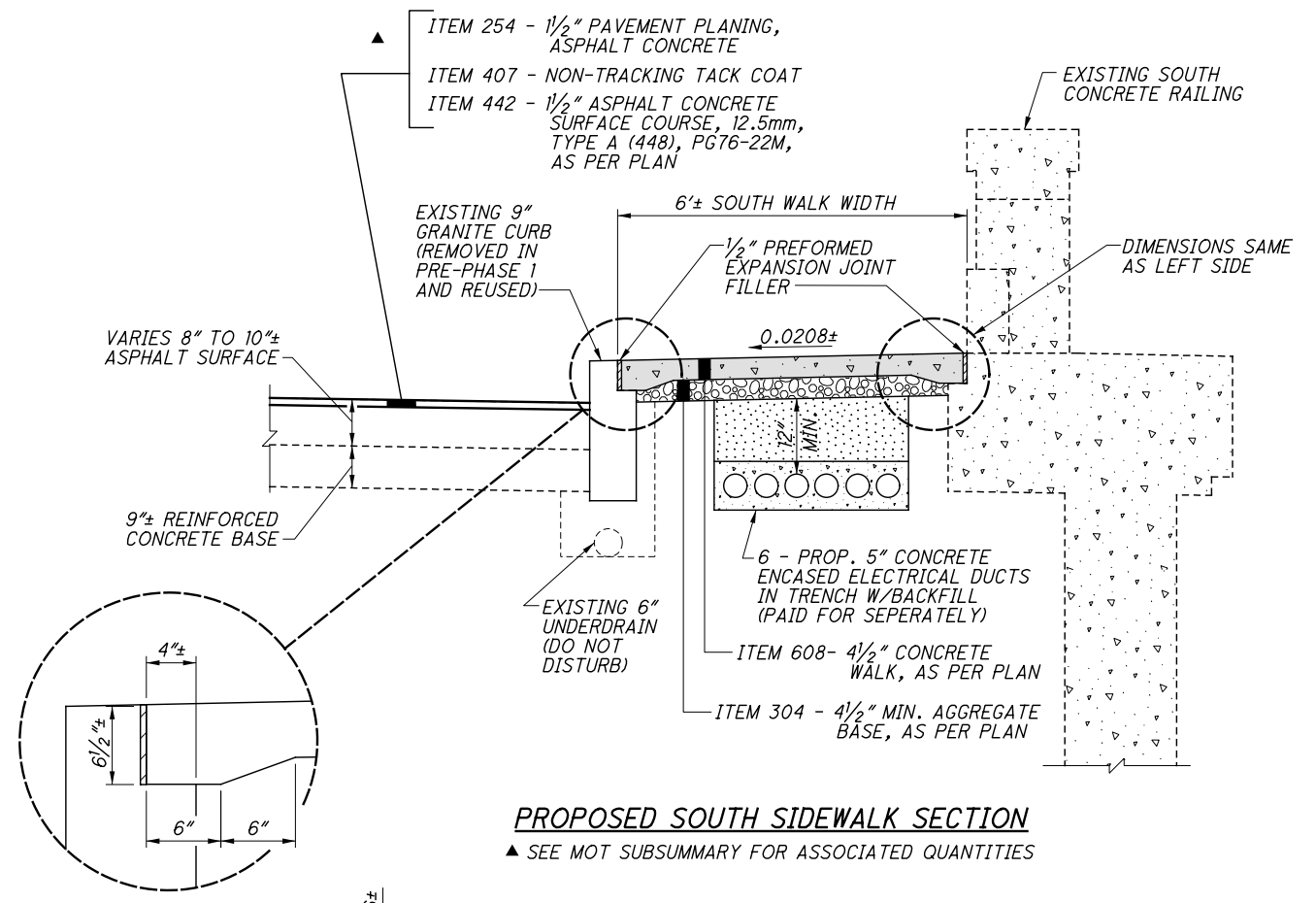
GENERAL SUMMARY

CUY - 10 - 16 . 13





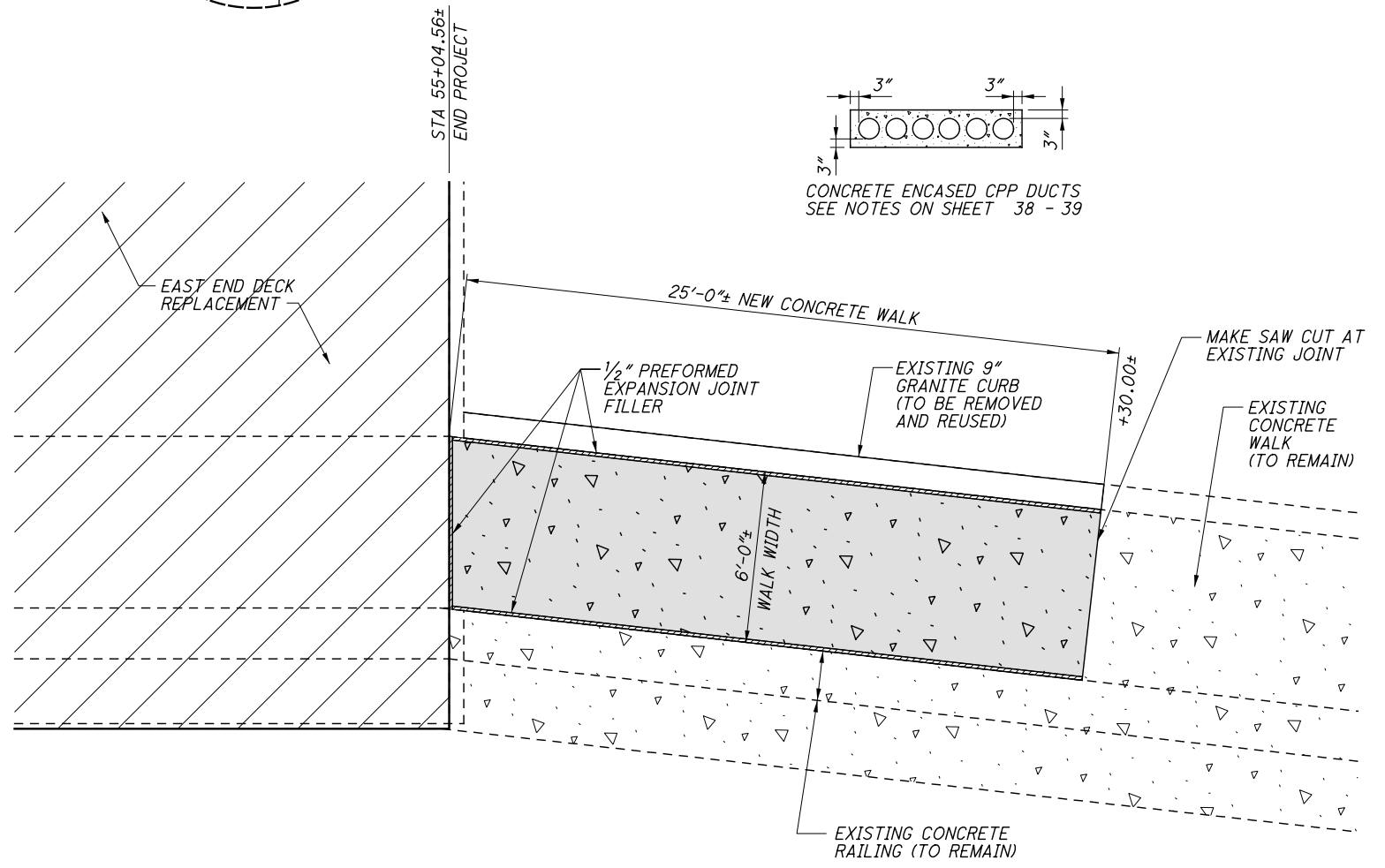
EXISTING SOUTH SIDEWALK SECTION



PROPOSED SOUTH SIDEWALK SECTION

▲ SEE MOT SUBSUMMARY FOR ASSOCIATED QUANTITIES

ROADWAY SUBSUMMARY					
STATION	202	304	608	609	
	WALK REMOVED, AS PER PLAN	AGGREGATE BASE, AS PER PLAN	4 1/2" CONCRETE WALK, AS PER PLAN	CURB, MISC.: GRANITE CURB REINSTALLED	
	SF	CY	SF	FT	
55+05±	55+30±	150.00	2.08	150.00	25
<b>SUBTOTALS</b>		150.00	2.08	150.00	25
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>		150	3	150	25



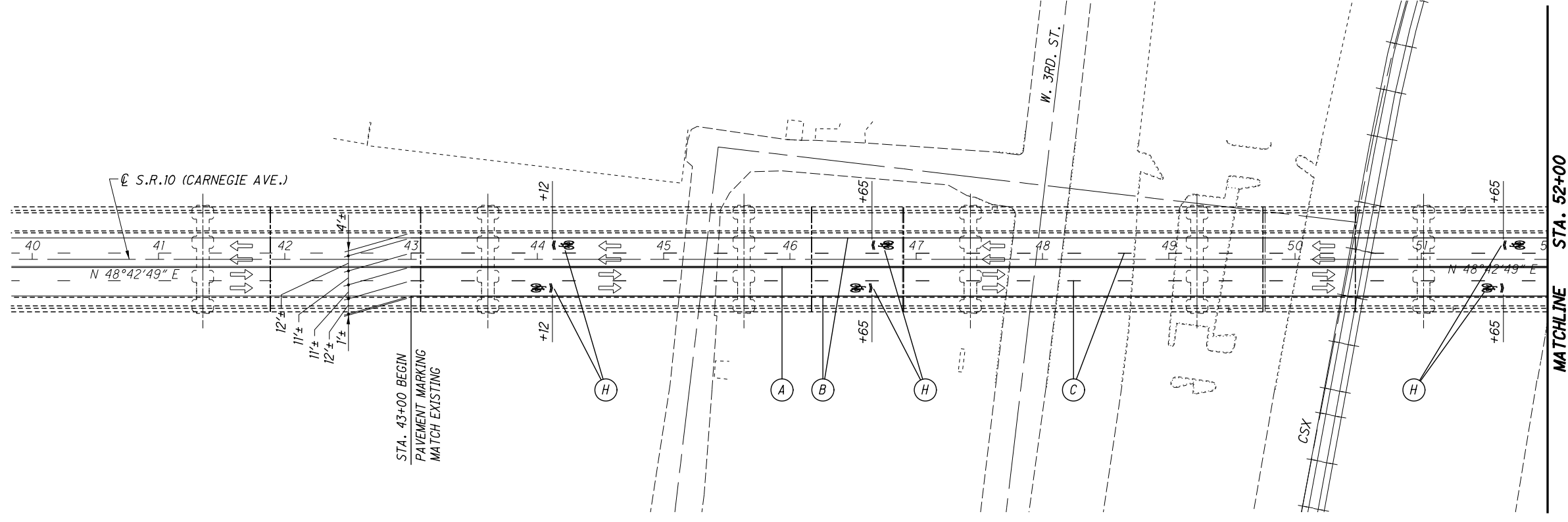
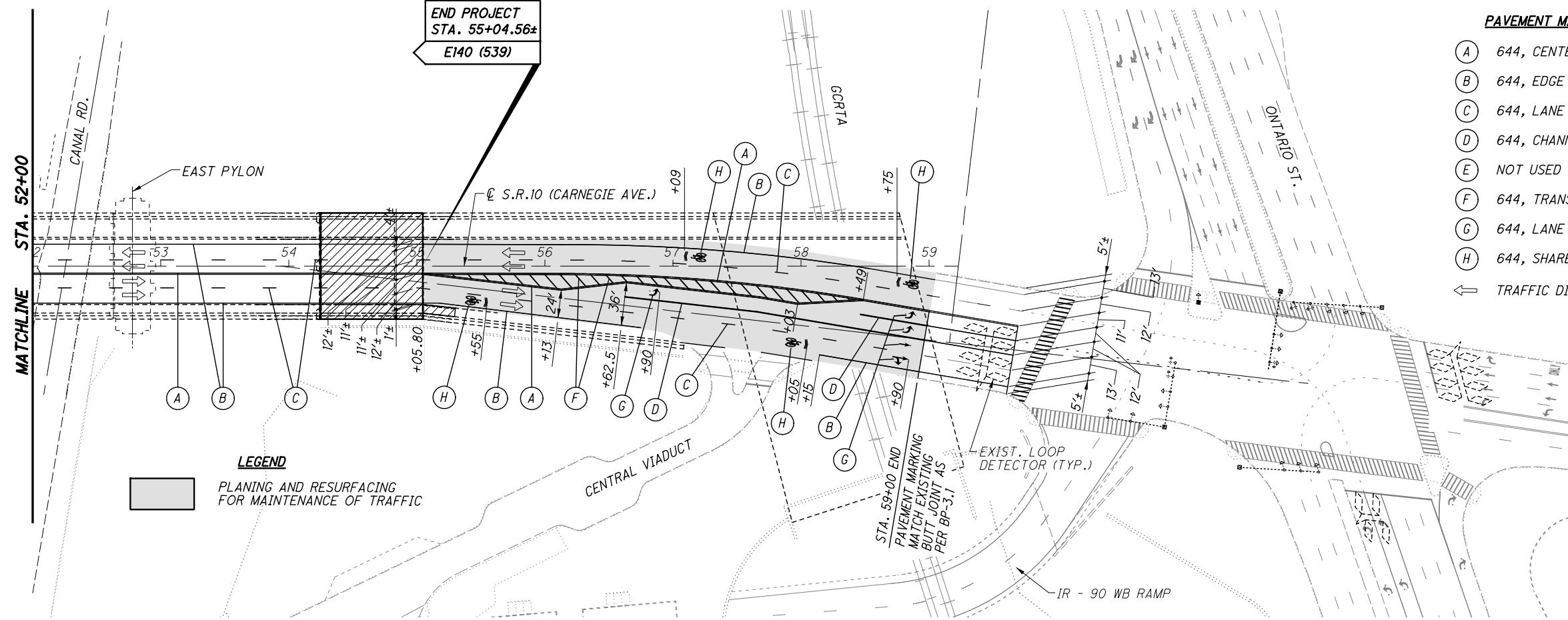
PLAN VIEW DETAIL


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PAVEMENT MARKING SUBSUMMARY											
STATION		SIDE	LENGTH	644							
				EDGE LINE, 4"		LANE LINE, 4"	CENTER LINE	CHANNELIZING LINE, 8"	TRANSVERSE/DIAGONAL LINE	LANE ARROW	SHARED LANE MARKING
				YELLOW	WHITE						
FROM	TO		MILE	MILE	MILE	FT	FT	EACH	EACH		
43+00.00	55+05.80	LT/RT	1205.8		2411.60	2411.60	1205.80				
55+05.80	56+13.00	LT/RT	107.2		214.40	214.40	214.40		72		
56+13.00	56+62.50	LT/RT	49.5		99.00	99.00	99.00		56.6		
56+62.50	58+49.00	LT/RT	186.5		373.00	373.00	373.00	186.50	173.7		
58+49.00	59+00.00	LT/RT	51.0		102.00	102.00	51.00	102.00			
LANE ARROWS											
56+90.00		RT							1		
58+90.00		RT							4		
BIKE MARKINGS											
44+12.00		LT/RT								2.00	
46+65.00		LT/RT								2.00	
51+65.00		LT/RT								2.00	
55+55.00		RT								1.00	
57+09.00		LT								1.00	
58+05.00		RT								1.00	
58+75.00		LT								1.00	
<b>SUBTOTALS</b>					3200	3200	1943.2	288.5	302.3	5	10
<b>CONVERT TO MILES</b>					0.61	0.61	0.37				
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>					0.61	0.61	0.37	289	303	5	10

SIGNING SUBSUMMARY					
STATION		SIDE	630		
			EXISTING	PROPOSED	REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION, AS PER PLAN
			EACH		
<i>CUY-10</i>					
54+90.00±	55+10.00±	LT			1
54+90.00±	53+95.00	RT			1
<b>SUBTOTALS</b>					2
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>					2

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**LEGEND**  
 PLANING AND RESURFACING FOR MAINTENANCE OF TRAFFIC

- PAVEMENT MARKING LEGEND**
- (A) 644, CENTER LINE: SOLID, DOUBLE
  - (B) 644, EDGE LINE, WHITE
  - (C) 644, LANE LINE
  - (D) 644, CHANNELIZING LINE
  - (E) NOT USED
  - (F) 644, TRANSVERSE DIAGONAL LINE (YELLOW)
  - (G) 644, LANE ARROW
  - (H) 644, SHARED LANE MARKING
  - ↑ TRAFFIC DIRECTION

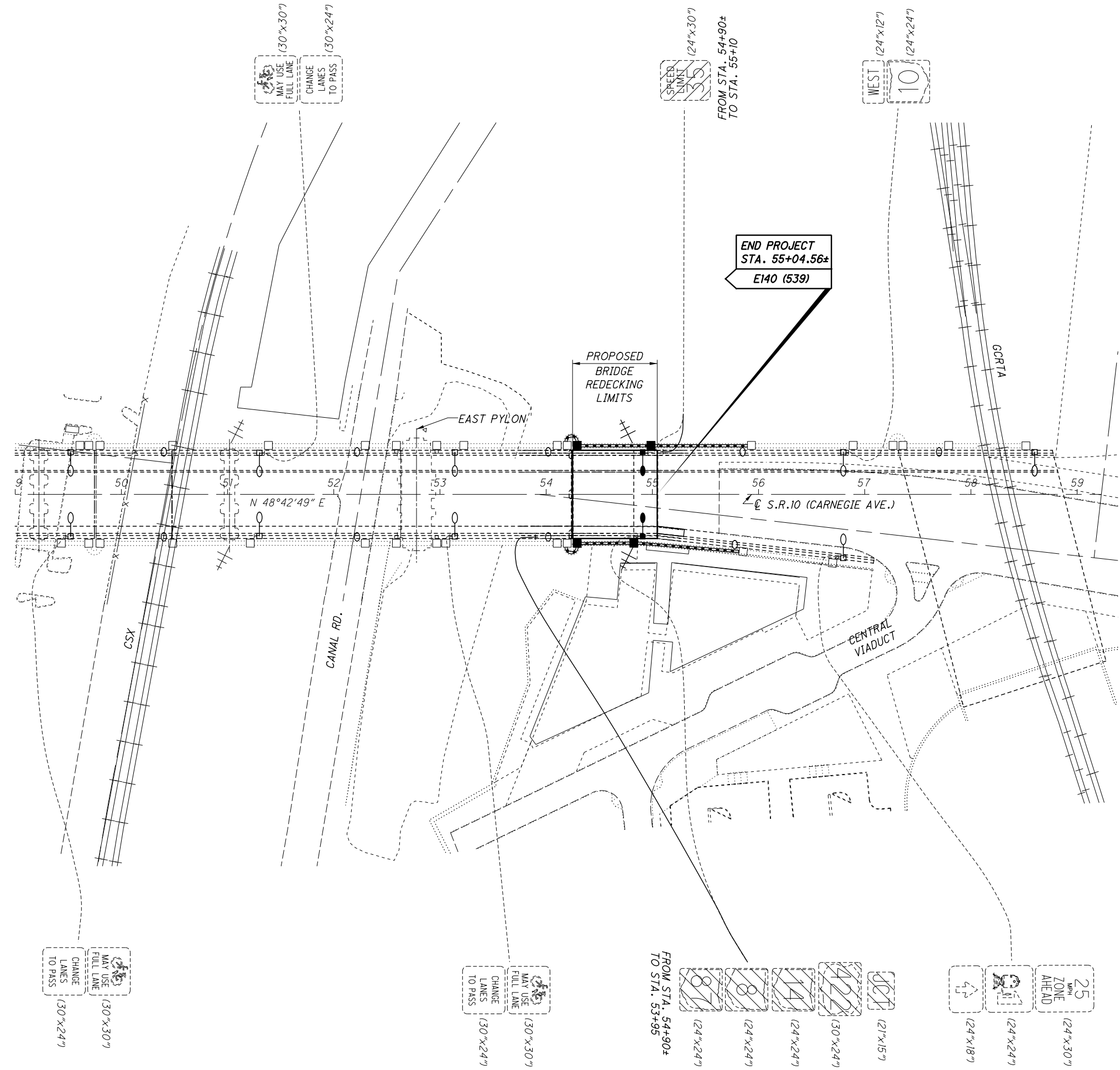
CALCULATED JDL  
 CHECKED MES

0 50 100  
 HORIZONTAL SCALE IN FEET

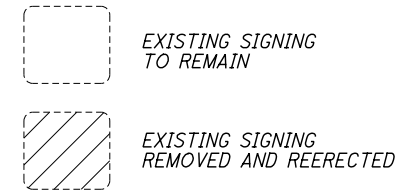
**PAVEMENT MARKING PLAN  
 STA. 40+00.00 TO ONTARIO ST.**



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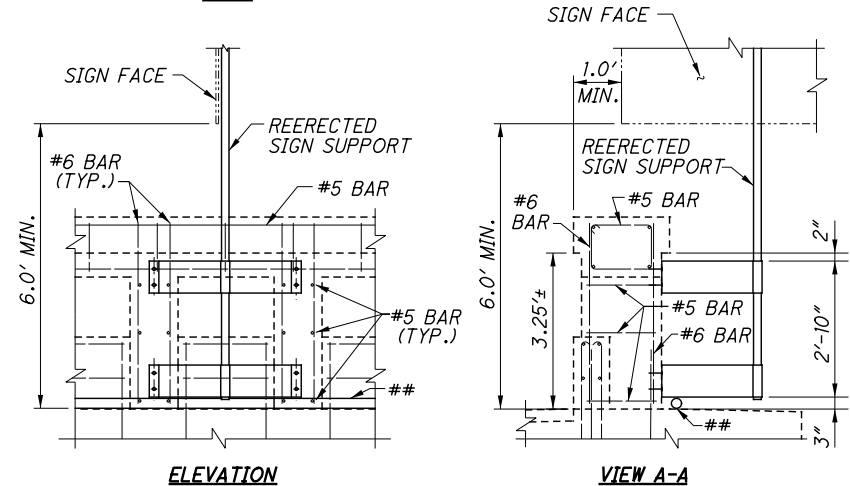
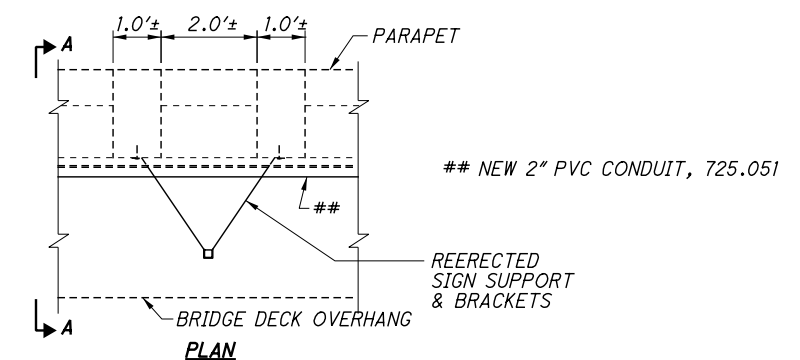
**SIGNING LEGEND**



**ITEM 630 - REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION, AS PER PLAN**

THERE IS EXISTING SIGNING ATTACHED TO THE EXISTING CONCRETE RAILING. PRIOR TO REMOVING THE RAILING THE CONTRACTOR SHALL RELOCATE THE EXISTING SIGNING AND ATTACH IT TO THE BACKSIDE OF THE EXISTING RAILING OUTSIDE OF THE PROPOSED BRIDGE REDECKING LIMITS. THE SIGNS SHALL BE RELOCATED A MINIMUM OF 5 FEET BEYOND THE LIMITS OF THE PROPOSED REDECKING WORK. THE CONTRACTOR SHALL ENSURE THAT THE NEW SIGN LOCATION IS NOT OBSTRUCTED FROM VIEW OF THE DRIVER BY OTHER ITEMS ATTACHED TO THE BRIDGE (i.e. LIGHT POLES). THE CONTRACTOR SHALL LAY OUT THE NEW SIGN LOCATIONS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION. ALL COSTS ASSOCIATED WITH RELOCATING THE PERMANENT SIGNS INCLUDING THE COST FOR THE LAYOUT, REVIEW AND APPROVAL OF THE FINAL LOCATIONS SHALL BE INCLUDED IN THE COST OF ITEM 630 - REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION, AS PER PLAN.

ITEM 630 - REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION, AS PER PLAN SHALL CONFORM TO CMS 630 WITH THE EXCEPTION THAT IT SHALL INCLUDE THE REMOVAL AND REERECTION OF THE STRUCTURE MOUNTED SIGN SUPPORT, BRACKETS, MISCELLANEOUS HARDWARE, AND ALL SIGNING ATTACHED TO A SINGLE SUPPORT AS 1 SIGN EACH. THIS ITEM SHALL INCLUDE THE COST FOR NEW ANCHORING HARDWARE TO ATTACH THE EXISTING SIGN SUPPORT BRACKET TO THE EXISTING BRIDGE RAILING AS SHOWN IN THE DETAIL BELOW.



**SIGN SUPPORT DETAIL**  
(FOR ADDITIONAL INFORMATION SEE STD. CONST. DRAWING TC-41.40)



CALCULATED  
JDJ  
CHECKED  
MES

**SIGNING PLAN**  
**STA. 49+00.00 TO STA. 59+00.00**

**CUY-10-16.13**



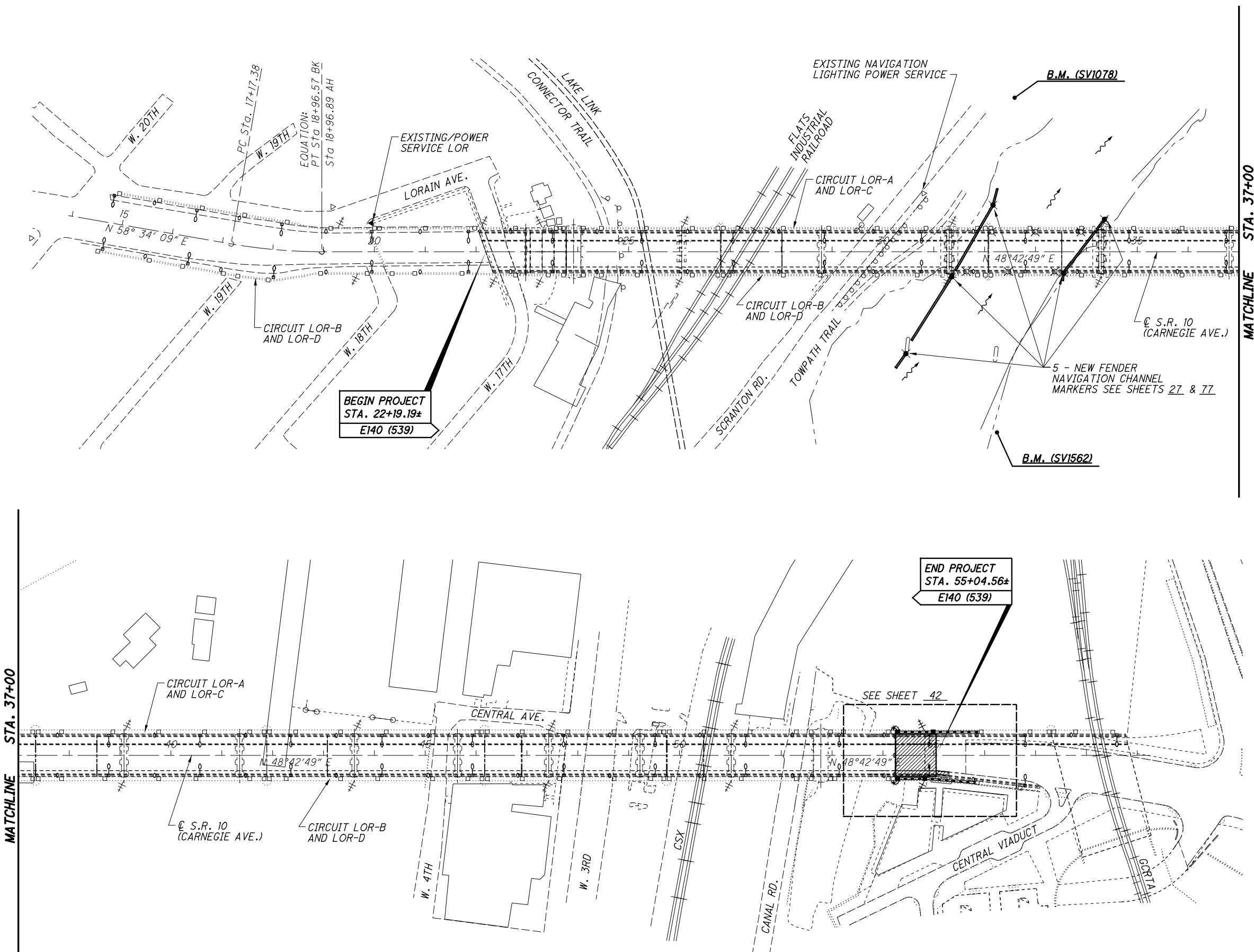
**LIGHTING SCHEMATIC PLAN**

**CUY-10-16.13**

**LIGHTING SYMBOL LEGEND**

- CIRCUIT NO. \_\_\_\_\_
- CONTROL CENTER LOR - A - R3 OR P3
- ROADWAY LIGHTING POLE NO. \_\_\_\_\_
- PEDESTRIAN LIGHTING POLE NO. \_\_\_\_\_
- EXISTING ROADWAY LUMINAIRE
- REMOVED AND REERECTED ROADWAY LUMINAIRE
- EXISTING JUNCTION BOX
- \*NEW JUNCTION BOX
- EXISTING PULL BOX
- \*NEW PULL BOX
- \*NEW CONDUIT, BY SIZE, BY TYPE
- EXISTING PEDESTRIAN LUMINAIRE
- EXISTING UTILITY POLE
- EXISTING POWER SERVICE
- EXISTING NAVIGATION CHANNEL MARKERS
- NEW FENDER NAVIGATION CHANNEL MARKERS
- EJ BRIDGE EXPANSION JOINT
- DJ BRIDGE DEFLECTION JOINT
- EXISTING STRUCTURE GROUND
- 8 \*8" RIGID NON-METALLIC CONDUIT EXPANSION JOINT
- 4 \*4" RIGID NON-METALLIC CONDUIT EXPANSION JOINT
- S \*SPECIAL STRUCTURE EXPANSION JOINT (SEE DETAIL ON SHEET 31).

\*NEW ITEMS MAY CONSIST OF EXISTING EQUIPMENT AND MATERIALS CAREFULLY REMOVED AND STORED TO AVOID DAMAGE AND REUSED AS APPROVED BY THE ENGINEER.



**B.M. (SV1):** 3/4" REBAR WITH 2" ALUMINUM CAP STAMPED "PRIMARY PROJECT CONTROL" SET, ELEV. = 579.43, STA. 35+97.15, 615.08' LT.

**B.M. (SV2):** 3/4" REBAR WITH 2" ALUMINUM CAP STAMPED "AZIMUTH MARK" SET, ELEV. = 578.28, STA. 42+32.47, 963.85' LT.

**B.M. (SV1078):** 5/8" x 40" REBAR WITH PLASTIC CAP STAMPED "BENCH MARK" SET, OPPOSITE BUSINESS AT 1970 SCRANTON RD. WEST OF WEST EDGE OF PAVEMENT OF BIKE PATH BY 1'-0", IN A RADIUS (WEST SIDE OF CUYAHOGA RIVER), ELEV. = 579.33, STA. 32+58.99, 302.66' LT.

**B.M. (SV1562):** MAG NAIL SET IN TOP OF 3RD. BOLLARD SOUTH SIDE OF BRIDGE (EAST SIDE OF CUYAHOGA RIVER), ELEV. = 580.06, STA. 32+24.35, 355.38' RT.

**PROPOSED WORK**

THE FOLLOWING MAJOR WORK ITEMS ARE PROPOSED:

1. WITH THE EXCEPTION OF THE 2 ROADWAY LIGHTS TO BE REMOVED AND RE-ERECTED ALL THE ROADWAY AND PEDESTRIAN LIGHTING SHALL BE MAINTAINED THROUGH THE DURATION OF THE REPAIR PROJECT THROUGH THE USE OF THE EXISTING, THE RELOCATED, OR TEMPORARY CIRCUITS INSTALLED BY THE CONTRACTOR.
2. REMOVE THE EXISTING ROADWAY LIGHT POLES, LUMINAIRES, JUNCTION BOXES WITH VANDAL PROTECTION SHIELDS, CONDUITS, AND WIRING AS NEEDED WITHIN THE LIMITS OF THE PROPOSED BRIDGE DECK REPLACEMENT AS SHOWN IN THE LIGHTING PLANS.
3. THE CONTRACTOR SHALL STORE THE LIGHT POLES, AND LUMINAIRES FOR RE-ERECTION. THE CONTRACTOR MAY STORE THE JUNCTION BOXES, VANDAL PROTECTION SHIELDS, CONDUIT AND WIRING ON THE PROJECT AND MAY REUSE THE STORED LIGHTING MATERIAL AND EQUIPMENT FOR THE FINAL CONDITION AS APPROVED BY THE ENGINEER.
4. RE-ERECT THE STORED LIGHT POLES, LUMINAIRES, AND OTHER LIGHTING EQUIPMENT APPROVED FOR REUSE. PROVIDE A POSITIVE GROUND FOR THE RE-ERECTED LIGHT POLES AS SHOWN IN THE PLANS OR AS APPROVED BY THE ENGINEER.
5. INSTALL NEW SOLAR POWERED LED NAVIGATION LIGHTS ON THE NEW FENDERS INSTALLED ADJACENT TO THE CUYAHOGA RIVER.

**EXISTING LIGHTING CIRCUITS**

THE EXISTING CITY OF CLEVELAND (CPP) ROADWAY AND PEDESTRIAN LIGHTING CIRCUITS ARE 240 VOLT. EACH CIRCUIT IS 2 WIRE (NO. 4 AWG COPPER) PHASE TO PHASE CONNECTION, WITH A NO. 4 AWG COPPER GROUND CONDUCTOR. EACH CIRCUIT AND WIRE IS COLOR CODED (PEDESTRIAN & ROADWAY) AND TAGGED IN EACH JUNCTION BOX OR PULL BOX TO BE EASILY IDENTIFIED. THE COLOR CODING SCHEME CAN BE ACQUIRED FROM THE MAINTAINING AGENCY.

**MAINTAINING AGENCY**

CITY OF CLEVELAND DIVISION OF PUBLIC POWER (CPP)  
STREET LIGHTING  
1300 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
ATTN: JAMES FERGUSON  
CHIEF, BUREAU OF STREET LIGHTING  
PHONE: (216) 420-7704, EXT. 183

**EXISTING LIGHTING ITEMS, POLES, JUNCTION BOXES, CABLE AND CONDUIT**

THE LOCATIONS OF EXISTING LIGHTING ITEMS, CONDUIT AND DUCT CABLE SHOWN ON THE PLANS HAVE BEEN OBTAINED BY SEARCHES OF AVAILABLE RECORDS AND FIELD CHECKS. THE CONTRACTOR SHALL FIELD VERIFY ALL CIRCUITS.

**REMOVAL OF EXISTING CONDUIT AND JUNCTION BOXES**

THE EXISTING CONDUIT AND JUNCTION BOXES INCLUDING THE VANDAL PROTECTION SHROUDS ATTACHED TO THE EXISTING BRIDGE DECK LEDGE AND OTHER BRIDGE SURFACES SHALL BE REMOVED AS INDICATED IN THESE PLANS. ALL VOIDS FROM EXISTING ANCHORING SYSTEMS SHALL BE CLEANED AND FILLED WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO 705.20. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED UNDER THE ASSOCIATED REMOVAL ITEM.

**ITEM 202 - JUNCTION BOX REMOVED, AS PER PLAN**

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF THE EXISTING PVC JUNCTION BOXES, VANDAL PROTECTION SHROUDS AND ANCHORING EQUIPMENT. THE CONTRACTOR SHALL CAREFULLY STORE THE JUNCTION BOXES AND VANDAL PROTECTION SHROUDS ON SITE FOR REUSE AND DISPOSE OF ALL DAMAGED OR NON-REUSABLE EQUIPMENT AND MATERIALS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 202, JUNCTION BOX REMOVED, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 625 - JUNCTION BOX, AS PER PLAN**

THIS ITEM SHALL CONFORM TO 625.11 WITH THE EXCEPTION THAT THE JUNCTION BOXES SHALL BE PVC AND SHALL BE RATED FOR OUTDOOR INSTALLATION IN DAMP LOCATIONS. THE JUNCTION BOX SHALL BE SURFACE MOUNTED TO THE OUTSIDE LEDGE, AND THE BRIDGE SURFACES AS DETAILED IN THE PLANS. IN ADDITION TO THE JUNCTION BOX THE CONTRACTOR SHALL PROVIDE AND INSTALL A STAINLESS STEEL VANDAL PROTECTION SHROUD AS DETAILED ON SHEET 31 FOR ALL JUNCTION BOXES UNLESS NOTED OTHERWISE IN THE PLANS. THE SHROUDS SHALL BE A MINIMUM OF 1" LARGER THAN THE JUNCTION BOXES ON ALL SIDES AND SHALL HAVE CUTOUTS TO ACCOMMODATE THE CONDUIT ENTRANCES.

THE CONTRACTOR HAS THE OPTION TO REUSE THE EXISTING PVC JUNCTION BOX AND VANDAL PROTECTION SHROUD FROM THE EXISTING ROADWAY AND PEDESTRIAN LIGHTING CIRCUIT IF THE MATERIAL IS IN GOOD CONDITION. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO REUSE OF ANY EXISTING JUNCTION BOXES OR VANDAL PROTECTION SHROUDS AND MISCELLANEOUS ASSOCIATED MATERIALS. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED JOINTS AND CONNECTIONS, ANCHORING EQUIPMENT AND OTHER ITEMS INCIDENTAL TO JUNCTION BOX AND VANDAL PROTECTION SHROUD INSTALLATION AS PER CMS 625 FOR ALL REUSED EQUIPMENT. NO ADJUSTMENT IN PROJECT QUANTITY OR UNIT PRICE BID WILL BE MADE FOR JUNCTION BOX AND VANDAL PROTECTION SHROUD EQUIPMENT THAT IS REUSED.

PAYMENT SHALL BE MADE AT THE UNIT CONTRACT PRICE BID FOR EACH ITEM 625 - JUNCTION BOX, AS PER PLAN AND SHALL INCLUDE THE COST TO FURNISH AND INSTALL THE JUNCTION BOX, STAINLESS STEEL VANDAL PROTECTIVE SHROUD, AND ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM IN A SATISFACTORY MANNER.

**ITEM 625 - DISCONNECT CIRCUIT, AS PER PLAN**

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A JUNCTION BOX OR TRANSFORMER BASE.

DISCONNECTION AT A JUNCTION BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED FROM THE JUNCTION BOX SO THAT NO CABLE IS LEFT IN THE BOX. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RECONNECTION.

DISCONNECTION AT A TRANSFORMER BASE SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. ALL CABLE NOT TO BE REUSED SHALL BE REMOVED FROM THE TRANSFORMER BASE AND THE EXISTING CONDUIT IN THE FOUNDATION SHALL BE CLEANED OF ALL CABLE AND DEBRIS SO THAT THE NEW CABLE CAN BE INSTALLED. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RECONNECTION.

THOSE WIRES THAT ARE TO REMAIN ON ACTIVE CIRCUITS SHALL HAVE A WATER-RESISTANT SEAL AT THE CUT END. THE WATER-RESISTANT SEAL SHALL BE ACCOMPLISHED BY PLUGGING THE DEACTIVATED PORT OF AN EXISTING CONNECTOR KIT OR BY INSTALLING A CABLE SPLICE KIT ON THE CUT END OF THE CABLE.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE UNDER CMS ITEM 625, "DISCONNECT CIRCUIT, AS PER PLAN" AT EACH LOCATION WHERE DISCONNECTION IS REQUIRED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 625 - CONDUIT, MISC.: CONDUIT REMOVED**

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF 2" ELECTRICAL CONDUIT, CONNECTORS, CLAMPS, BRACKETS AND SUPPORTS AS CALLED FOR ON THE PLANS. THE CONTRACTOR SHALL CAREFULLY STORE CONDUIT ON SITE FOR REUSE AND DISPOSE OF ALL DAMAGED OR NON-REUSABLE EQUIPMENT AND MATERIAL. DISPOSAL SHALL BE OFF THE PROJECT SITE IN AN ACCEPTABLE DISPOSAL OR RECYCLING CENTER.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 625, CONDUIT, MISC.: CONDUIT REMOVED, WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 625 - CONDUIT, 2", 725.051, AS PER PLAN  
ITEM 625 - CONDUIT, MISC.: 1", WATERTIGHT, FLEXIBLE CONDUIT  
ITEM 625 - CONDUIT, MISC.: 2", WATERTIGHT, FLEXIBLE CONDUIT**

THIS ITEM SHALL CONFORM WITH ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATION 625.12, 725.051 AND 731.08 WITH THE EXCEPTION THAT THE CONTRACTOR HAS THE OPTION TO REUSE THE EXISTING 1" AND 2" FLEXIBLE AND RIGID PVC CONDUIT FROM THE EXISTING PEDESTRIAN AND ROADWAY LIGHTING CIRCUITS IF IT IS IN GOOD CONDITION. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO REUSE OF ANY EXISTING FLEXIBLE OR RIGID PVC CONDUIT. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED CONDUIT JOINTS AND CONNECTIONS, CONDUIT ANCHORING EQUIPMENT AND OTHER ITEMS INCIDENTAL TO CONDUIT INSTALLATION AS PER CMS 625 FOR ALL REUSED CONDUIT. THE CONTRACTOR SHALL NOT REUSE ANY EXISTING EXPANSION OR DEFLECTION JOINTS WITHOUT PRIOR APPROVAL. NO ADJUSTMENT IN PROJECT QUANTITY OR UNIT PRICE BID WILL BE MADE FOR CONDUIT THAT IS REUSED.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT CONTRACT PRICE BID PER FOOT FOR ITEM 625 - CONDUIT, MISC.: 1", WATERTIGHT, FLEXIBLE CONDUIT; ITEM 625 - CONDUIT, MISC.: 2", WATERTIGHT, FLEXIBLE CONDUIT; AND ITEM 625 - CONDUIT, 2", 725.051, AS PER PLAN AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO FURNISH NEW OR REUSE EXISTING MATERIALS AND INSTALL THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 625 - NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN  
ITEM 625 - NO. 10 AWG POLE AND BRACKET CABLE, AS PER PLAN**

THIS ITEM SHALL CONFORM WITH ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATION 625 AND 725.02 WITH THE EXCEPTION THAT THE CONTRACTOR HAS THE OPTION TO REUSE THE EXISTING NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE AND THE NO. 10 AWG POLE AND BRACKET CABLE FROM THE EXISTING ROADWAY AND PEDESTRIAN LIGHTING CIRCUITS IF THE MATERIAL IS IN GOOD CONDITION. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO REUSE OF ANY EXISTING CABLE. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED INCIDENTAL CABLE ITEMS AS PER CMS 625 FOR THE REUSED CABLE. NO IN-LINE SPLICES SHALL BE ALLOWED. NO ADJUSTMENT IN PROJECT QUANTITY OR UNIT PRICE BID WILL BE MADE FOR WIRING THAT IS REUSED.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT CONTRACT PRICE BID PER FOOT FOR ITEM 625 - NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN AND ITEM 625 - NO. 10 AWG POLE AND BRACKET CABLE, AS PER PLAN AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO FURNISH NEW OR REUSE EXISTING MATERIALS AND INSTALL THESE ITEMS IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 625 - LIGHT POLE REMOVED FOR REUSE, AS PER PLAN**

THIS ITEM SHALL CONFORM TO CMS 625 WITH THE EXCEPTION THAT IN ADDITION TO THE LIGHT POLE IT SHALL INCLUDE THE REMOVAL AND STORAGE OF ALL THE MISCELLANEOUS POLE ITEMS INCLUDING BUT NOT LIMITED TO THE BASE COVER, BRACKET ARM, VIBRATION DAMPENER, POLE AND BRACKET CABLE, AND ANY MISCELLANEOUS ITEMS ATTACHED TO THE POLE. PRIOR TO REMOVAL, THE CONTRACTOR, THE ENGINEER AND A REPRESENTATIVE FROM THE MAINTAINING AGENCY SHALL INSPECT THE EXISTING EQUIPMENT FOR DAMAGE. ANY DAMAGED MATERIALS SHALL BE REPAIRED BY THE MAINTAINING AGENCY PRIOR TO REMOVAL. THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING POLE AND ASSOCIATED EQUIPMENT AND STORE IT ON SITE FOR RE-ERECTION. ANY EQUIPMENT OR MATERIALS DAMAGED BY THE CONTRACTOR DURING REMOVAL OR STORAGE SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 625 - LIGHT POLE REMOVED FOR REUSE, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

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LIGHTING NOTES

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**ITEM 625 - REERECT EXISTING LIGHT POLE, AS PER PLAN**

THIS ITEM SHALL CONFORM TO CMS 625 WITH THE EXCEPTION THAT IN ADDITION TO THE LIGHT POLE IT SHALL INCLUDE THE REINSTALLATION OF ALL POLE ACCESSORIES REMOVED INCLUDING BUT NOT LIMITED TO THE BASE COVER, BRACKET ARM, VIBRATION DAMPENER, POLE AND BRACKET CABLE, AND ANY MISCELLANEOUS ITEMS ATTACHED TO THE POLE. ANY EQUIPMENT OR MATERIALS DAMAGED BY THE CONTRACTOR DURING REERECTION SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 625 - REERECT EXISTING LIGHT POLE, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**ITEM 625 - LIGHT POLE ANCHOR BOLTS ON STRUCTURE, AS PER PLAN**

THIS ITEM SHALL CONFORM TO CMS 625 AND 725.21 WITH THE EXCEPTION THAT THE ANCHOR BOLTS SUPPLIED SHALL BE AS CALLED FOR IN THESE PLANS. THIS ITEM SHALL INCLUDE THE SETTING OF THE ANCHOR BOLTS INTO THE NEW CONCRETE DECK AT THE BOLT CIRCLE INDICATED IN THESE PLANS. NEW ANCHORING AND LEVELING NUTS AND BOLT CIRCLE TEMPLATES AS REQUIRED SHALL ALSO BE INCLUDED WITH THIS ITEM.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 625 -, LIGHT POLE ANCHOR BOLTS ON STRUCTURE, AS PER PLAN WHICH PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

**CONDUIT EXPANSION AND DEFLECTION**

RIGID METALLIC CONDUIT EXPANSION FITTINGS:

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, APPLETON TYPE AX, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

RIGID NON-METALLIC CONDUIT EXPANSION FITTINGS:

EXPANSION FITTINGS SHALL BE CARLON TYPE E945, KRALOY TYPE EJ, OR AN EQUAL AS APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS. PVC EXPANSION FITTINGS SHALL BE PLACED WHERE SHOWN IN THE PLANS, AT JUNCTION BOXES, AT STRUCTURE EXPANSION/ DEFLECTION JOINTS, AS PER SECTION 352.44 OF THE NATIONAL ELECTRIC CODE, AND AS DIRECTED BY THE ENGINEER.

RIGID METALLIC AND NON-METALLIC CONDUIT DEFLECTION COUPLINGS:

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, APPLETON TYPE DF, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

**GROUNDING AND BONDING**

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
  - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
  - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
  - C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
  - D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
  - E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.

- F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.
2. CONDUITS.
  - A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
  - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
  - C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
  - D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
3. WIRE FOR GROUNDING AND BONDING.
  - A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
    - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
    - II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
    - III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
    - IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
  - B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.
4. GROUND ROD.
  - A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
  - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.
5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:
 

COND. NO.	COLOR	VEHICLE SIGNAL	SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED
6. POWER SERVICE AND DISCONNECT SWITCH.
  - A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UN-SPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.

- B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
  - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
  - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

**625 - LIGHTING, MISC.: BRIDGE-MOUNTED MARINE NAVIGATION LIGHTING, LED, SOLAR POWERED**

THIS ITEM CONSISTS OF INSTALLATION AND TESTING OF IALA/AISM-COMPLIANT, U.S. COAST GUARD APPROVED MARINE NAVIGATION LIGHTING FOR MARKING OF STRUCTURES OVER/ADJACENT TO NAVIGABLE WATERS. LOCATION AND WIRING SHALL BE AS SHOWN IN THE BRIDGE PLANS ON SHEET \_\_\_ZZ\_\_\_.

EACH MARINE NAVIGATION LAMP SHALL UTILIZE LIGHT EMITTING DIODES (LEDS). THE MARINE NAVIGATION LAMP SHALL HAVE A WRITTEN MINIMUM 5-YEAR MANUFACTURER WARRANTY. THE LAMP SHALL MEET THE COLOR, BRIGHTNESS (RANGE), SECTORING, AND DIVERGENCE REQUIREMENTS AS SHOWN IN THE PLANS AND APPROVED BY THE APPLICABLE COAST GUARD DISTRICT. THE LAMP SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS OR AN APPROVED EQUAL:

1. TIDELAND SIGNAL CORPORATION, HOUSTON, TX
2. B&B ROADWAY, RUSSELLVILLE, AL
3. PHAROS MARINE AUTOMATIC POWER, HOUSTON TX

EACH MARINE NAVIGATION LAMP SHALL BE A STAND ALONE LIGHT AND SHALL HAVE ITS OWN SOLAR POWER SUPPLY. THE BATTERY SHALL BE SIZED FOR THE LOCATION BENEATH THE EXISTING BRIDGE TO OPERATE THE MARINE NAVIGATION LAMP CONTINUOUSLY TWENTY-FOUR (24) HOURS PER DAY, 365 DAYS PER YEAR. EACH UNIT SHALL BE EQUIPPED WITH THE ABILITY TO BE REMOTELY MONITORED AND CONTROLLED TO CHECK THE BATTERY HEALTH AND CHANGE OPERATIONAL SETTINGS.

THE CONTRACTOR SHALL FULLY TEST THE SYSTEM AND ARRANGE FOR ACCEPTANCE INSPECTION OF THE MARINE NAVIGATION LIGHTING INSTALLATION BY ODOT DISTRICT SIGNAL MAINTENANCE PERSONNEL AFTER THE SYSTEM IS OPERATIONAL. DURING ACCEPTANCE INSPECTION, THE CONTRACTOR SHALL DEMONSTRATE THE PROPER OPERATION OF ALL LAMPS AND ALARMS. CONTRACTOR SHALL PROVIDE WRITTEN MANUFACTURER WARRANTY AND ALL OPERATING MANUALS FOR MARINE NAVIGATION LIGHTING CONTROLLER AND LAMP TO ODOT DISTRICT SIGNAL MAINTENANCE PERSONNEL AT THE TIME OF INSPECTION.

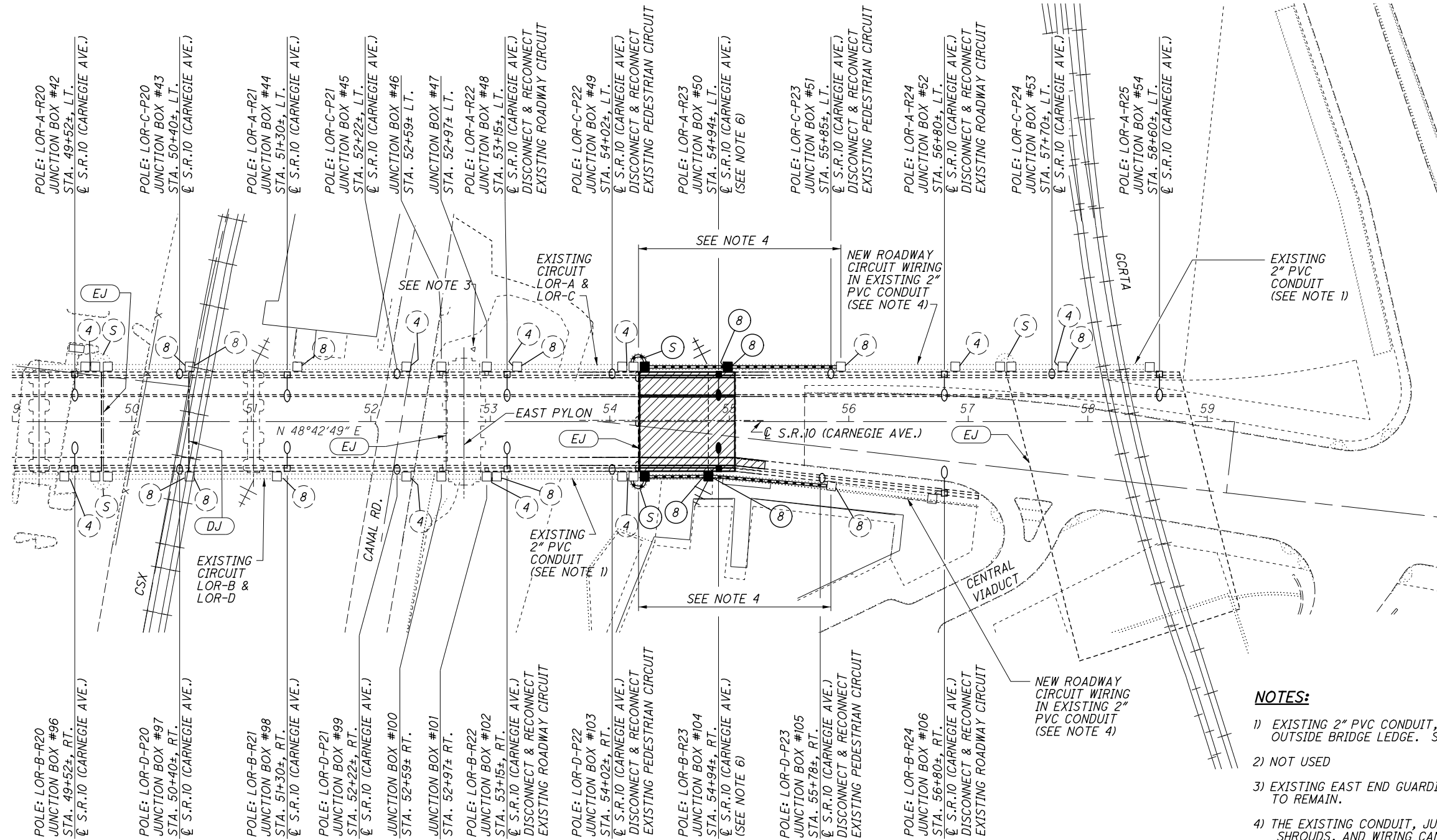
THE DEPARTMENT SHALL MEASURE BRIDGE-MOUNTED MARINE NAVIGATION LIGHTING BY EACH INDIVIDUAL MARINE NAVIGATION LIGHT, COMPLETE AND INSTALLED INCLUDING ANY CONTROL DEVICES AND ALL ACCESSORIES.

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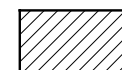
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CI-2	54+02.00	LT	SR 10	54+94.00	LT	SR 10	92	1				768		92		6	98	1																																						
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LOR-A-R24	56+80.00	LT	SR 10						2	1																																														
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C2-4	55+78.00	RT	SR 10	56+80.00	RT	SR 10	102					336																																												
LOR-B-R24	56+80.00	RT	SR 10						2	1																																														
NEW FENDER NAVIGATION LIGHTING																																																								
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>								<b>4</b>	<b>20</b>	<b>10</b>	<b>8</b>	<b>3939</b>	<b>336</b>	<b>359</b>	<b>10</b>	<b>12</b>	<b>381</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3939</b>	<b>2</b>	<b>8</b>	<b>5</b>																														

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<b>LIGHTING SUBSUMMARY</b>	
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**LIGHTING SYMBOL LEGEND**

SEE SHEET 25 FOR LIGHTING LEGEND



PROPOSED DECK REPLACEMENT

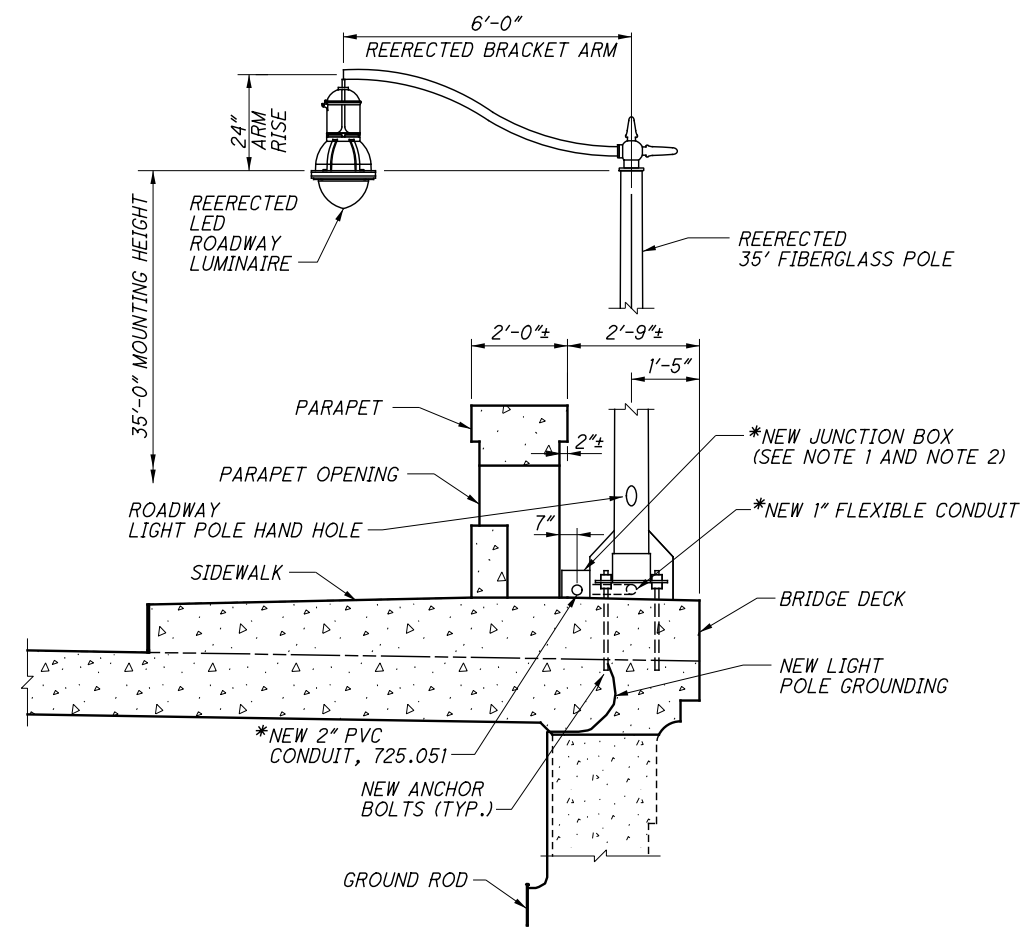
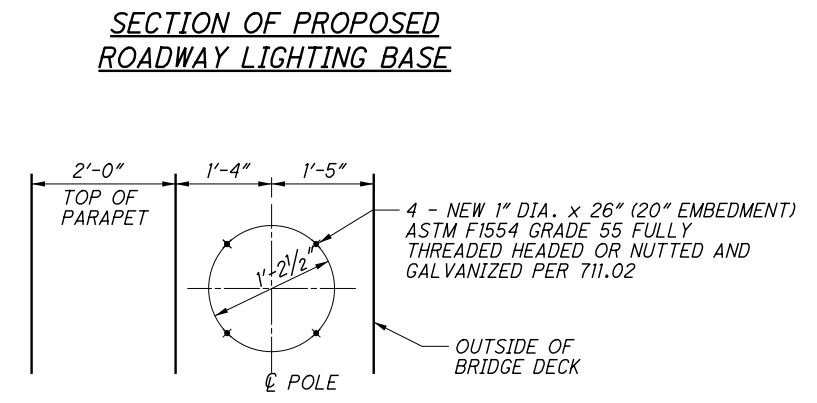
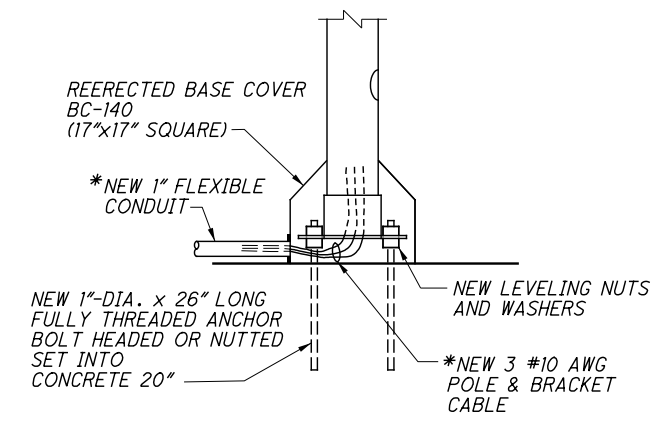
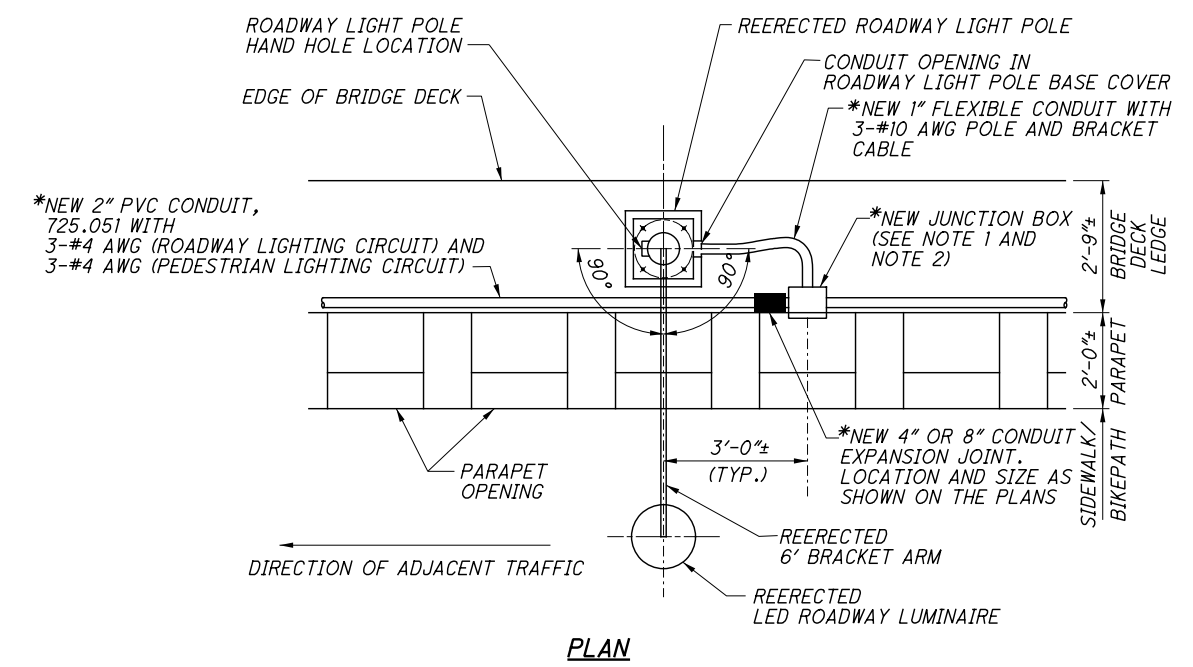
**NOTES:**

- 1) EXISTING 2" PVC CONDUIT, 725.051 ATTACHED TO THE OUTSIDE BRIDGE LEDGE. SEE DETAILS ON SHEET 30.
- 2) NOT USED
- 3) EXISTING EAST END GUARDIAN LIGHTING POWER SERVICE TO REMAIN.
- 4) THE EXISTING CONDUIT, JUNCTION BOXES, PROTECTIVE SHROUDS, AND WIRING CAN BE CAREFULLY REMOVED AND STORED BY THE CONTRACTOR FOR REUSE IN THE FINAL CONDITION AT THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A TEMPORARY LIGHTING CIRCUIT TO MAINTAIN THE EXISTING ROADWAY AND PEDESTRIAN LIGHTING TO REMAIN IN PLACE DURING THE DECK REPLACEMENT.
- 5) STATIONING SHOWN FOR ALL ROADWAY AND PEDESTRIAN LIGHT POLES IS APPROXIMATE EXISTING STATION. PROPOSED ROADWAY POLES SHALL BE LOCATED AS PER DETAIL ON SHEET 30.
- 6) THE EXISTING ROADWAY LIGHT POLE, BRACKET ARM, LED LUMINAIRE, JUNCTION BOX, FLEXIBLE CONDUIT, POLE AND BRACKET CABLE, VIBRATION DAMPENERS, AND OTHER APPURTENANCES SHALL BE CAREFULLY REMOVED AND STORED FOR RE-ERECTION BY THE CONTRACTOR. ANY ITEMS DAMAGED SHALL BE REPLACED BY THE CONTRACTOR.

CALCULATED 0  
 JDL 50  
 CHECKED 25  
 DLR 100  
 HORIZONTAL SCALE IN FEET

**LIGHTING PLAN  
 STA. 49+00.00 TO STA. 59+00.00**

**CUY-10-16.13**



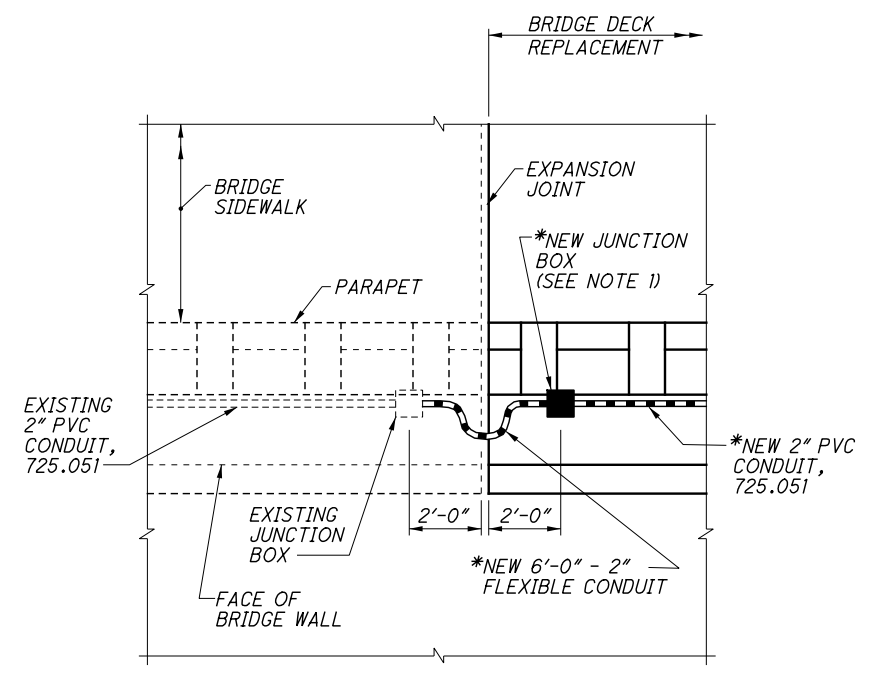
\*NEW ITEMS MAY CONSIST OF EXISTING EQUIPMENT AND MATERIALS CAREFULLY REMOVED AND STORED TO AVOID DAMAGE AND REUSED AS APPROVED BY THE ENGINEER.

**NOTES:**

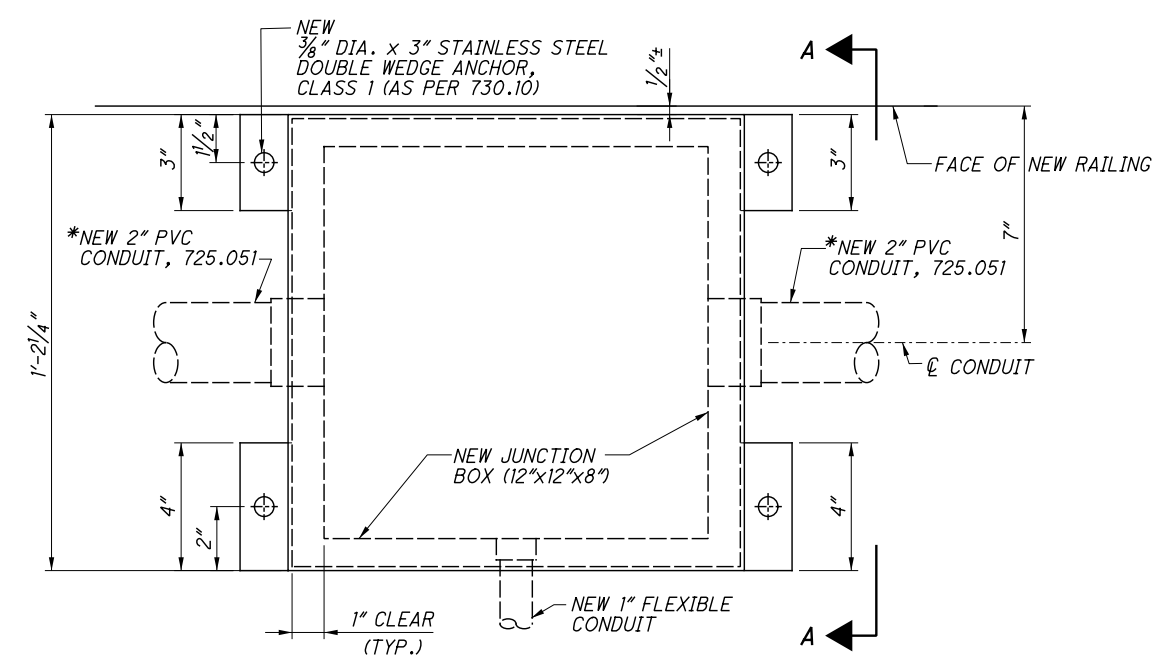
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- 1) NEW JUNCTION BOXES SHALL BE MINIMUM 12"x12"x8" PVC WITH A STAINLESS STEEL VANDAL PROTECTION SHROUD ANCHORED TO THE LEDGE. SEE DETAIL ON SHEET 31.
  - 2) MAKE CONNECTIONS TO POLE AND BRACKET CABLES INSIDE NEW JUNCTION BOXES.

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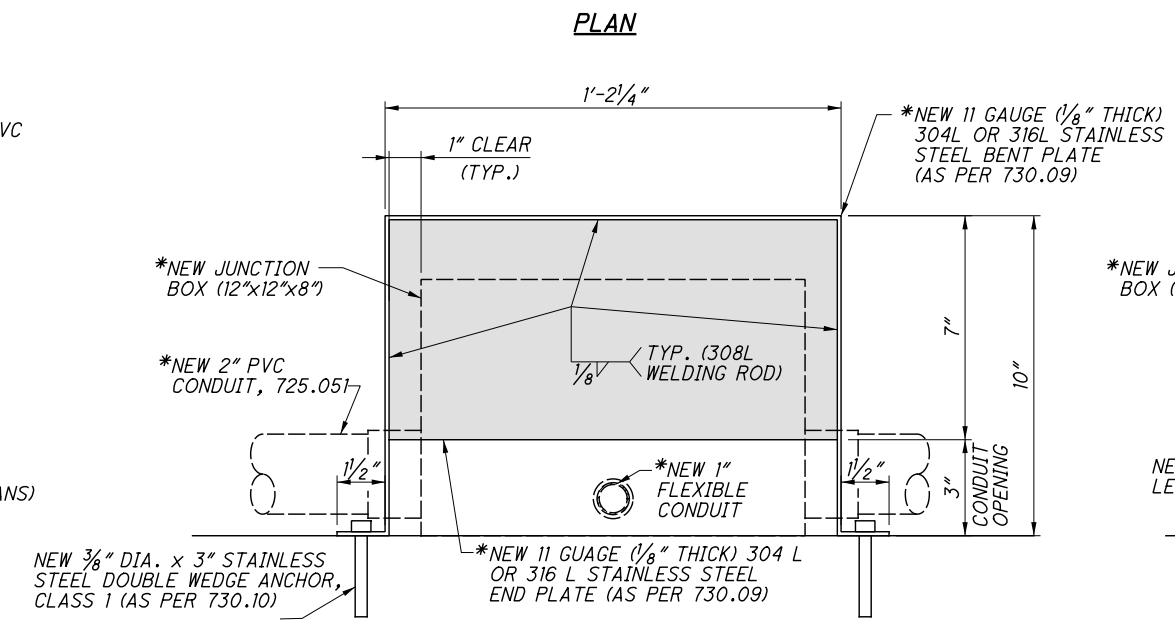
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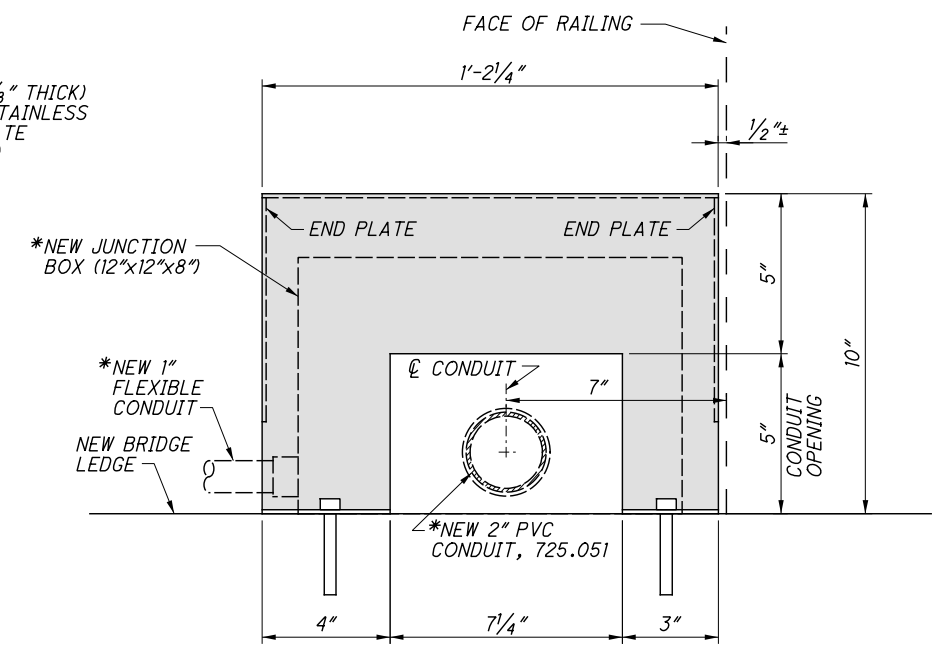
**PLAN**  
**MAIN STRUCTURE SPECIAL EXPANSION JOINT DETAIL**  
(NEW CONDUIT TYPICAL LAYOUT AT EXPANSION JOINT WHERE SHOWN ON THE PLANS)



**PLAN**



**ELEVATION**



**VIEW A-A**

**JUNCTION BOX VANDAL PROTECTION SHROUD DETAIL**

(OUTER SHROUD DIMENSIONS ARE FOR A 12"x12"x8" PVC JUNCTION BOX. CONTRACTOR SHALL CONFIRM SHROUD DIMENSIONS SHOWN WILL WORK WITH THE JUNCTION BOX PROVIDED AND ADJUST AS NECESSARY PRIOR TO ORDERING)

\*NEW ITEMS MAY CONSIST OF EXISTING EQUIPMENT AND MATERIALS CAREFULLY REMOVED AND STORED TO AVOID DAMAGE AND REUSED AS APPROVED BY THE ENGINEER.

**NOTES:**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

1) NEW JUNCTION BOXES SHALL BE MINIMUM 12"x12"x8" PVC WITH A STAINLESS STEEL VANDAL PROTECTION SHROUD ANCHORED TO THE LEDGE. SEE DETAIL ABOVE.

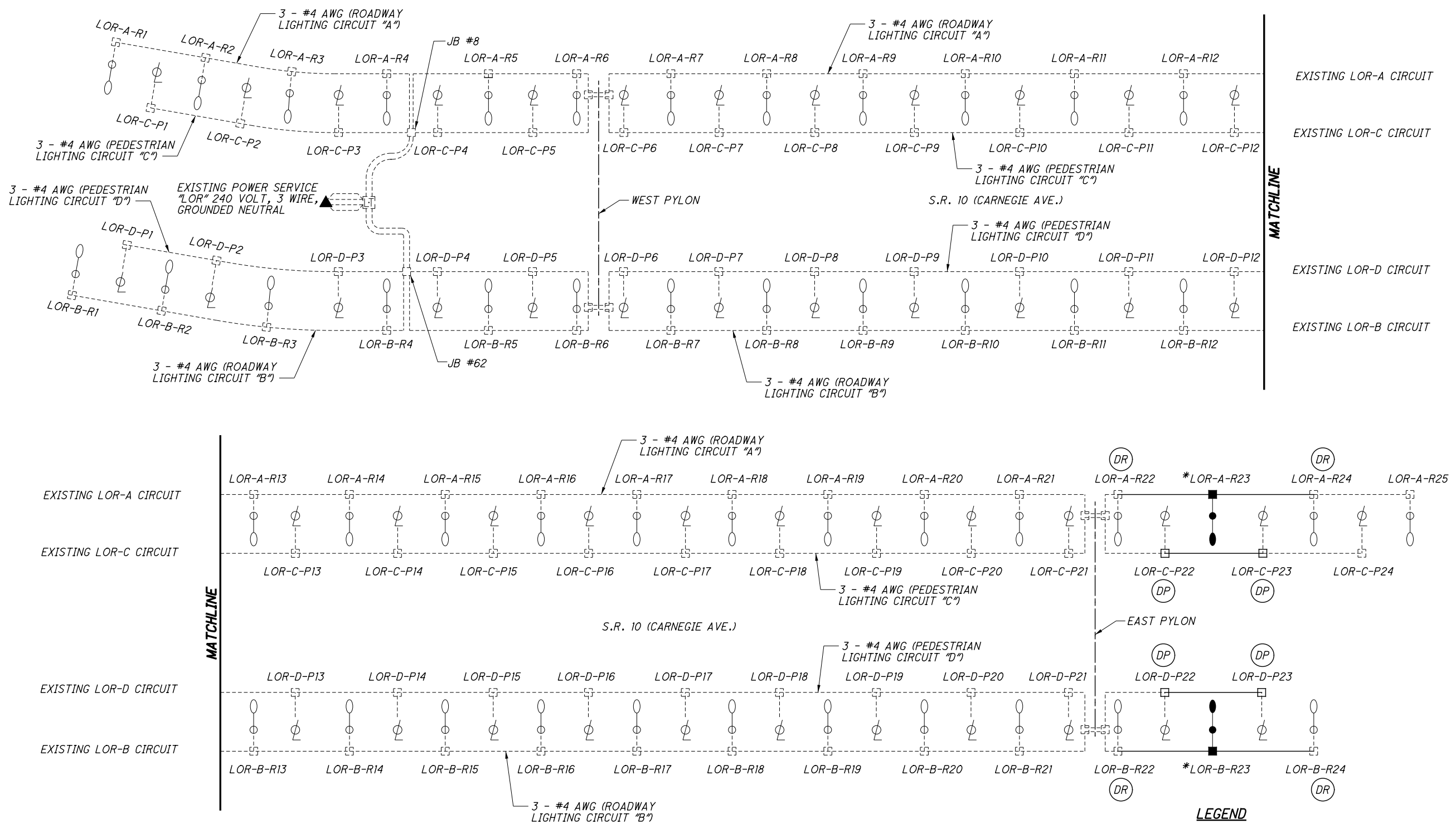




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LIGHTING CIRCUIT PLAN

CUY-10-16-13



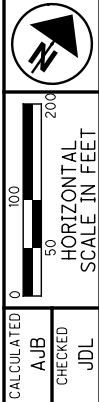
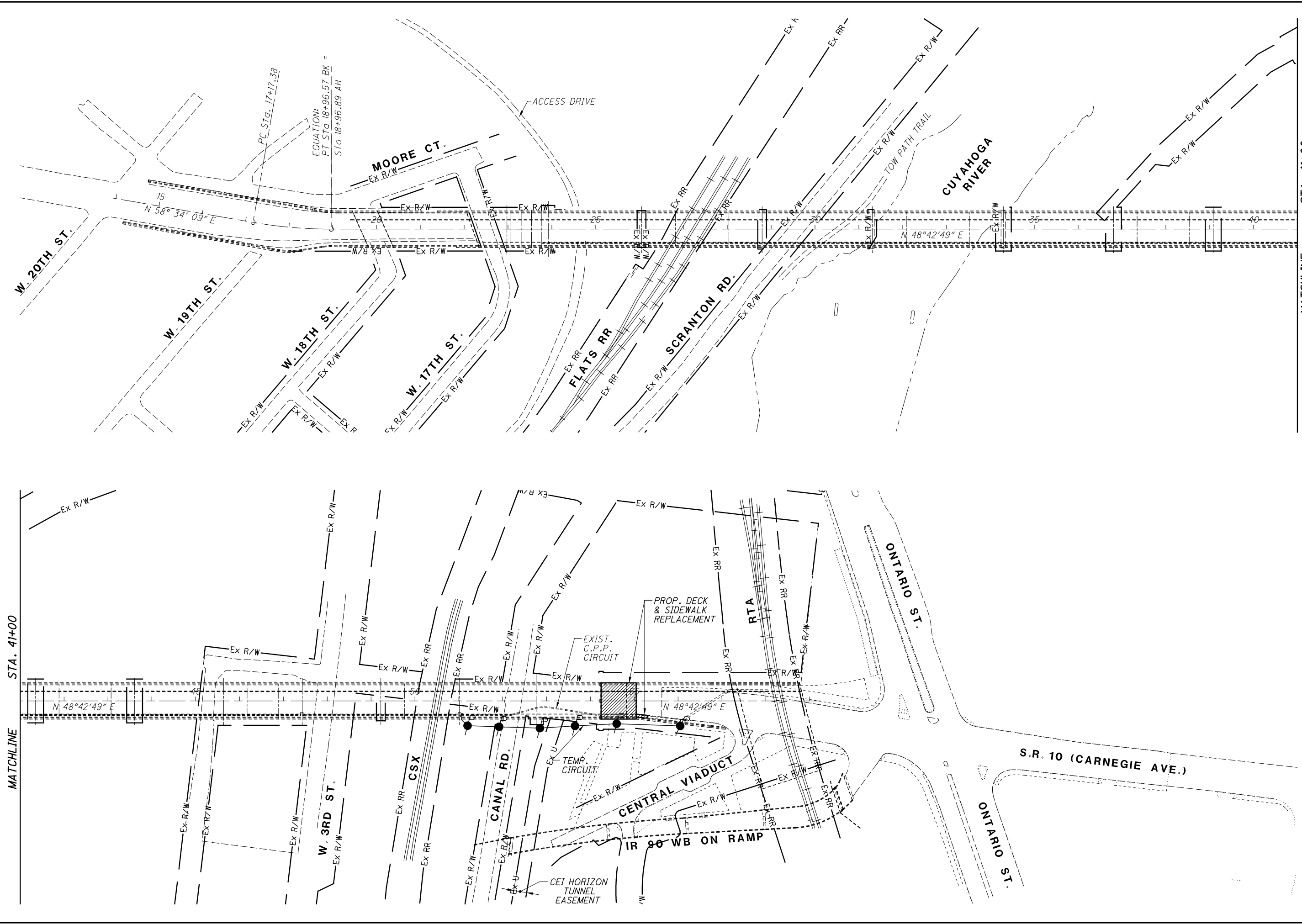
EXISTING POWER SERVICE DATA									
CONTROL CENTER	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
LOR	240	19.8	#4 ♦	125	A	30.0	40	#4	CLEVELAND PUBLIC POWER
					B	28.8	40	#4	
					C	12.0	20	#4	
					D	11.5	20	#4	

♦ EXISTING INFORMATION TAKEN FROM CUY-10-15.96, PID: 89194 PLANS

- LEGEND**
- EXISTING ROADWAY LIGHTING
  - REMOVED & REERECTED ROADWAY LIGHTING
  - EXISTING JUNCTION BOX
  - \*NEW JUNCTION BOX
  - EXISTING PEDESTRIAN LIGHT POLE
  - EXISTING LIGHTING PULL BOX
  - EXISTING CIRCUITS (3-WIRE, 240 VOLT, GROUNDED NEUTRAL)
  - \*NEW CIRCUITS (3-WIRE, 240 VOLT, GROUNDED NEUTRAL)
  - DISCONNECT & RECONNECT EXISTING ROADWAY LIGHTING CIRCUIT
  - DISCONNECT & RECONNECT EXISTING PEDESTRIAN LIGHTING CIRCUIT

\*NEW ITEMS MAY CONSIST OF EXISTING EQUIPMENT AND MATERIALS CAREFULLY REMOVED AND STORED TO AVOID DAMAGE AND REUSED AS APPROVED BY THE ENGINEER.

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CALCULATED	AJB
CHECKED	JDL

**ELECTRICAL SCHEMATIC PLAN**  
**S.R. 10 (CARNEGIE AVE. BRIDGE)**

**CLEVELAND PUBLIC POWER (CPP) GENERAL CONSTRUCTION NOTES:**

ALL CONSTRUCTION NOTES ARE MINIMUM DESIRABLE STANDARDS, ALL EXCEPTIONS TO BE APPROVED BY CLEVELAND PUBLIC POWER REPRESENTATIVE TO COMPLY WITH ALL SAFETY CODES AND REGULATIONS. THE PERMANENT WORK WITHIN THIS PROJECT WILL EVENTUALLY BECOME THE PROPERTY OF CPP OTHER THAN THE TEMPORARY OVERHEAD CIRCUITS INSTALLED TO ALLOW FOR THE FINAL ELECTRICAL FACILITIES INSTALLATION.

CONTACT OHIO UTILITIES PROTECTION SERVICE, TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION. IN OHIO, CALL TOLL FREE 1-800-362-2764. IT'S THE LAW.

UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATION, AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THIS PLAN OR NOT.

**PROPOSED WORK**

A. THE CONTRACTOR SHALL PROVIDE TEMPORARY OVERHEAD 15KV CIRCUITS AND TEMPORARY OVERHEAD DATA CIRCUIT TO ENABLE THE INSTALLATION OF THE REPLACEMENTS TO THE EXISTING CPP FACILITIES LOCATED ON THE BRIDGE AND UNDER THE EXISTING EAST APPROACH AS INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THESE TEMPORARY CIRCUITS WILL ALLOW FOR THE PERMANENT REPLACEMENT OF THE EXISTING CIRCUITS CURRENTLY INSTALLED ON THE BRIDGE AND UNDER THE EXISTING EAST APPROACH.

THIS WORK SHALL BE PROPERLY COMPLETED, INCLUDING INCIDENTALS, AS SHOWN ON THE DRAWINGS AND HEREINAFTER SPECIFIED.

UPON COMPLETION OF THE TEMPORARY OVERHEAD CIRCUITS THE EXISTING CPP 15KV AND DATA CIRCUITS SHALL BE DISCONNECTED AND REMOVED FROM THE EXISTING BRIDGE MOUNTED SPLICING CHAMBER #SC 67-90 TO THE MANHOLE #MH 67-42 ON THE EAST APPROACH. THE TWO EXISTING CIRCUITS CONSIST OF 3/C PAPER INSULATED LEAD COVERED CABLES (PILC).

UPON COMPLETION OF THE INSTALLATION OF THE TWO NEW 15KV CIRCUITS AND DATA CIRCUIT ON THE BRIDGE AND UNDER THE EAST APPROACH DECK, THE CONTRACTOR SHALL REMOVE THE TEMPORARY OVERHEAD CIRCUITS AND REPAIR SURFACES TO MATCH EXISTING. CPP PERSONNEL WILL PROVIDE AND SPLICE THE NEW 15KV AND DATA CIRCUITS TO THE EXISTING PILC CABLES ON EACH END IN SPLICING CHAMBER #SP 67-89 AND MANHOLE #MH 67-42. THE CONTRACTOR SHALL BE REQUIRED TO CONTACT AND SCHEDULE THE PILC SPLICES AND FIBER SPLICES WITH CPP.

B. ALL WORK IN THIS CONTRACT SHALL CONFORM TO THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) NATIONAL ELECTRIC SAFETY CODE (NEC) AND OSHA, EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT, IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN. ALL WORK SHALL BE IN CONFORMANCE WITH CPP REGULATIONS.

C. THE MAJOR ITEMS TO BE PERFORMED BY THE CONTRACTOR SHALL BE AS FOLLOWS:

1. FURNISH & INSTALL TEMPORARY OVERHEAD POLE LINE CONSTRUCTION.
2. FURNISH & INSTALL THE NEW 15KV CIRCUIT RACEWAYS UNDER THE NEW EAST APPROACH AND SPLICE RACEWAYS TO EXISTING RACEWAYS ON THE BRIDGE AND AT THE EAST END OF THE NEW EAST DECK TO BE REPLACED. PROVIDE TRENCHING AND BACKFILL TO ACCOMMODATE THE NEW RACEWAYS AS INDICATED AND AS REQUIRED.
3. FURNISH AND INSTALL THE NEW 15KV CIRCUIT CONDUCTORS FROM THE EXISTING BRIDGE MOUNTED SPLICING CHAMBER #SC 67-89 TO THE MANHOLE #MH 67-42 ON THE EAST APPROACH.
4. TEST 15KV CONDUCTORS AS INDICATED PRIOR TO CPP SPLICING TO THEIR PILC CABLES.
5. REMOVE TEMPORARY OVERHEAD FACILITIES.

**CONSTRUCTION SCHEDULING WITH CPP**

THE CONTRACTOR SHALL BE REQUIRED TO CONTACT AND SCHEDULE CONNECTION SPLICES WITH CPP AND TO INCLUDE ALL CPP COSTS OF MATERIALS AND LABOR WITHIN THE PROJECT COST OF WORK.

**MAINTAINING EXISTING POWER AND DATA**

THE CONTRACTOR SHALL NOT INTERRUPT EXISTING POWER OR DATA EXCEPT FOR SUCH PERIODS AS REQUIRED FOR THE CONNECTION OF THE TEMPORARY OVERHEAD 15KV CIRCUITS TO THE EXISTING BRIDGE MOUNTED 15KV CIRCUITS AT EACH END, AND FOR THE CONNECTION OF THE TEMPORARY DATA CIRCUIT TO THE EXISTING DATA CIRCUIT AT EACH END. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH CPP PERSONNEL FOR SHUT DOWN OF EXISTING 15KV CIRCUITS. FINAL SPLICES AND CONNECTIONS SHALL BE MADE BY CPP AFTER ALL TESTING HAS BEEN CONDUCTED AND FACILITIES HAVE BEEN ACCEPTED BY CPP.

**ITEM 625 LIGHTING, MISC.: REMOVAL OF EXISTING ELECTRICAL FACILITIES**

EXISTING ELECTRICAL FACILITIES TO BE REMOVED, INCLUDING BUT NOT LIMITED TO, THE 15KV FEEDER(S) AND THE DATA CIRCUIT ON THE BRIDGE FROM THE SPLICING CHAMBER #SC 67-89 TO THE MANHOLE #MH 67-42 EAST OF THE BRIDGE. THE CIRCUITS SHALL BE DISCONNECTED AND REMOVED IN THEIR ENTIRETY.

ALL EXISTING MATERIALS SHALL BE REMOVED AS INDICATED ON THE PLANS BUT NOT LIMITED TO: 15KV CABLES, ETC., AND THE CIRCUIT. ALL EXISTING MATERIALS INDICATED ON THE PLANS TO BE REMOVED SHALL BE OFFERED TO CPP FOR THEIR USE. IF ACCEPTED BY CPP, REMOVE FROM SITE AND DELIVER TO CPP FACILITIES WITHIN CLEVELAND. ALL MATERIALS NOT ACCEPTED BY CPP SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED.

PRIOR TO ANY DISCONNECTION AND REMOVAL, THE TEMPORARY OVERHEAD CIRCUITS SHALL BE INSTALLED AND MADE READY FOR USE. ALSO INCLUDED WITHIN THIS ITEM IS THE REMOVAL OF THE TEMPORARY OVERHEAD ELECTRICAL FACILITIES AND REPAIR TO EXISTING SURFACES, GRADES ETC. TO MATCH EXISTING CONDITIONS AFTER THE INSTALLATION, CONNECTIONS AND OPERATION OF THE FINAL ELECTRICAL FACILITIES AS INDICATED WITH THESE SPECIFICATIONS AND ON PLANS. REMOVAL OF THE TEMPORARY OVERHEAD ELECTRICAL FACILITIES SHALL NOT COMMENCE WITHOUT WRITTEN APPROVAL OF THE PROJECT ENGINEER.

PAYMENT: THE COST OF ALL LABOR, MATERIAL, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY FOR THE COMPLETE REMOVAL OF THE INDICATED ELECTRICAL FACILITIES OR PARTIAL COMPONENTS THEREOF FOR THE INSTALLATIONS WITHIN THE LIMITS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED FOR PAYMENT AT THE CONTRACT LUMP SUM PRICE, WHICH SHALL BE FULL COMPENSATION FOR ITEM 625 LIGHTING, MISC.: REMOVAL OF EXISTING ELECTRICAL FACILITIES.

**GENERAL OVERHEAD UTILITY POWER CONSTRUCTION ITEMS**

**OC.01 SCOPE OF WORK**

A. ALL OVERHEAD CONSTRUCTION WORK UNDER THIS PART OF THE CONTRACT SHALL BE PERFORMED IN A SAFE, THOROUGH AND WORKMANLIKE MANNER IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CONSTRUCTION DRAWINGS.

B. THE LATEST EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC) SHALL BE FOLLOWED EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT, IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN. ALL WORK SHALL ALSO BE IN CONFORMANCE WITH CPP REGULATIONS. THE CHARACTER OF THE OVERHEAD LINE, LOCATION OF THE LINE, AND DETAILS OF THE VARIOUS STRUCTURES ARE SHOWN ON THE DRAWINGS HEREIN. THESE PLANS AND DRAWINGS ARE INTENDED TO BE COMPLETE AND FINAL AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DIMENSIONS AS INDICATED ARE NOT GUARANTEED AND THE CONTRACTOR SHALL VERIFY THEIR ACCURACY BEFORE PROCEEDING WITH THE WORK.

C. CLEARING FOR OVERHEAD CIRCUIT. THE CONTRACTOR SHALL STAKE THE PATH OF THE CLEARING LIMITS FOR REVIEW AND APPROVAL OF THE ENGINEER PRIOR TO ACTUAL CLEARING OPERATIONS. ADJUST CLEARING AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CLEAR THE ENTIRE PATH OF THE OVERHEAD CIRCUIT INCLUDING 25' ON EACH SIDE OF THE CENTERLINE. CLEAR ALL OBSTRUCTIONS THAT MAY INTERFERE WITH THE OPERATION OF THE OVERHEAD LINE BY CUTTING AND/OR TRIMMING OF ALL TREES AND BRUSH WITHIN THE PATH. ALL TREES, BRUSH, STUMPS AND OTHER FLAMMABLE MATERIAL SHALL BE REMOVED UNLESS THE CONTRACTOR IS DIRECTED OTHERWISE BY THE ENGINEER. REMOVE ALL TREES AND BRUSH TO WITHIN 3' OR LESS FROM THE GROUND LINE. ALL STUMPS SHALL BE CUT SO THAT PASSAGE OF TRUCKS AND EQUIPMENT WILL NOT BE HINDERED. ANY STUMPS THAT INTERFERE WITH THE INSTALLATION SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR. THE CONTRACTOR SHALL DISPOSE OF ALL TREES AND BRUSH BY EITHER CHIPPING AND SPREADING OR HAULING AWAY AND SO AS TO BE IN CONFORMANCE WITH STATE AND LOCAL LAWS AND REGULATIONS. OBTAIN ALL NECESSARY PERMITS. ANY DAMAGE TO ADJOINING PROPERTIES, BY THE CONTRACTOR, SHALL BE REPAIRED TO THE ACCEPTANCE OF THE ENGINEER. ALL LOGS AND BRUSH SHALL BE THE CONTRACTORS PROPERTY. WHERE THE REMOVAL OF TREES AND BRUSH REQUIRES THE REMOVAL OF FENCING, THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO REPAIR AND REPLACE FENCING AS SOON AS POSSIBLE TO MAINTAIN SECURITY DURING THE WORK.

D. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY OVERHEAD FACILITIES AND MISCELLANEOUS CONNECTIONS AND AS INDICATED ON THE PLANS AND THE POLE DETAILS. THE CONTRACTOR SHALL VERIFY ALL LOCAL CONDITIONS AFFECTING THE WORK AND SHALL MAKE A THOROUGH EXAMINATION OF THE ROUTE OF THE OVERHEAD TEMPORARY CIRCUITS IN ORDER TO BE ENTIRELY FAMILIAR WITH THE DETAILS AND CONSTRUCTION OF THE INSTALLATION. THE CONTRACTOR SHALL STAKE THE INTENDED LOCATION OF EACH POLE FOR REVIEW BY THE ENGINEER PRIOR TO THE INSTALLATION OF ANY POLES. THE STAKES SHALL BE MARKED WITH THE POLE NUMBER AS INDICATED ON THE PLANS. ANY POLES WITHIN A CLOSE PROXIMITY TO THE DOMINION EAST GAS LINE SHALL HAVE A TEST HOLE EXCAVATED PRIOR TO EXCAVATION FOR THE TEMPORARY POLE TO CONFIRM THE GAS LINE WILL NOT BE DISTURBED.

E. OVERHEAD DISTRIBUTION CIRCUITS SHALL BE CONSTRUCTED WITH NOT LESS THAN THE GRADE C STRENGTH REQUIREMENTS AS DESCRIBED IN SECTION 26, STRENGTH REQUIREMENTS, OF THE NEC WHEN SUBJECTED TO THE LOADS SPECIFIED IN NESC SECTION 25, LOADINGS FOR GRADES B AND C. DISTRIBUTION LINES THAT UNDERBUILD TRANSMISSION CIRCUITS OR THAT CROSS OVER LIMITED ACCESS HIGHWAYS AND RAILROAD TRACKS SHALL BE CONSTRUCTED WITH NOT LESS THAN THE GRADE B STRENGTH REQUIREMENTS AS DESCRIBED IN NESC SECTION 26.

**OC.02 POLES**

A. POLES SHALL BE CLASS 3 WESTERN RED CEDAR, SOUTHERN PINE OR DOUGLAS FIR AND SHALL BE MANUFACTURED AND MARKED AND SHALL CONFORM IN TREATMENT AND LIMITATION OF DEFECTS FOR WOOD POLES ANSI 05.1-1992, EXCEPT AS NOTED BELOW. POLES SHALL BE MINIMUM 50' HIGH.

1. SPIRAL GRAIN (TWIST GRAIN); NO POLE SHALL HAVE MORE THAN 1-TWIST IN ANY 20 FEET.
2. KNOTS; POLES WITH 3 OR MORE KNOTS IN A CLUSTER ARE NOT ACCEPTABLE.
3. SWEEP; SWEEP OF POLES SHALL BE MEASURED BETWEEN BUTT AND TOP OF POLE AND SHALL BE NO MORE THAN 1 INCH FOR EVERY 10 FEET OF TOTAL LENGTH.
4. SHORT CROOK; NO MORE THAN 1 INCH DEVIATION IN ANY FIVE FOOT SECTION WILL BE ALLOWED.

B. ALL POLES SHALL BE INCISED OVER AN AREA STARTING FROM TWO FEET BELOW GROUND LINE AND EXTENDING TO ONE FOOT ABOVE GROUND LINE. ALL POLES SHALL BE MACHINE SHAVED FULL LENGTH ABOVE THE INCISED AREA. ALL POLES SHALL BE ROOFED AT A 15 DEGREE ANGLE, GAINED AND DRILLED AS DETAILED ON DRAWINGS AND IN ACCORDANCE WITH CPP DRAWING. SEE CPP GUIDELINES SHEET [27/28].

**C. PRESERVATION TREATMENT:**

1. PRESERVATIVE: THE PRESERVATIVE USED IN THE TREATMENT OF POLES, CROSS ARMS AND CROSS ARM BRACES SHALL BE PENTACHLOROPHENOL MEETING THE REQUIREMENTS OF AWPA P8. THE SOLVENT USED TO PREPARE SOLUTIONS OF PENTACHLOROPHENOL SHALL COMPLY WITH AWPA STANDARD P9. ALL POLES SHALL BE BORED, ROOFED AND GAINED BEFORE TREATMENT.
2. PROCESS: ALL WOOD PRODUCTS SHALL BE FULL-LENGTH TREATED BY AN EMPTY-CELL PROCESS IN ACCORDANCE WITH AWPA C1 AND C4. POLES SHALL BE CLEAN AND DRY AFTER TREATMENT. BLEEDERS SHALL BE REJECTED.
3. THE PROCESS SHALL PRODUCE AND GUARANTEE AN AVERAGE MINIMUM FINAL RETENTION OF PRESERVATIVE IN POUNDS PER CUBIC FOOT OF WOOD IN ACCORDANCE WITH THE FOLLOWING:

	SOUTHERN PINE	WESTERN CEDAR	DOUGLAS FIR	
			NORMAL BRAND AREA	DEEP INCISED AREA
PENETRATION INCHES	3.0"	0.5"	0.75"	2.5"
% OF SAPWOOD	90%	100%	85%	100%
RETENTION MIN.	0.38	0.80	0.60	0.30

**OC.03 POLE SETTING**

A. THE MINIMUM DEPTH FOR SETTING POLES SHALL BE AS FOLLOWS:

LENGTH OF POLE (FEET)	SETTING IN SOIL (FEET)	SETTING IN ALL SOLID ROCK (FEET)	
		ROCK	ROCK
30	5.5	3.5	3.5
35	6.0	4.0	4.0
40	6.0	4.0	4.0
45	6.5	4.5	4.5
50	7.0	4.5	4.5

B. "SETTING IN SOIL" DEPTHS SHALL APPLY WHERE:

1. POLES ARE TO BE SET IN SOIL.
2. THERE IS A LAYER OF SOIL OF MORE THAN TWO (2) FEET IN DEPTH OVER SOLID ROCK.
3. THE HOLE IN SOLID ROCK IS NOT SUBSTANTIALLY VERTICAL OR THE DIAMETER OF THE HOLE AT THE SURFACE OF THE ROCK EXCEEDS APPROXIMATELY TWICE THE DIAMETER OF THE POLE AT THE SAME LEVEL.

C. "SETTING IN ALL SOLID ROCK" SPECIFICATIONS SHALL APPLY WHERE POLES ARE TO BE SET IN SOLID ROCK AND WHERE THE HOLE IS SUBSTANTIALLY VERTICAL, APPROXIMATELY UNIFORM IN DIAMETER AND LARGE ENOUGH TO PERMIT THE USE OF TAMPING BARS THE FULL DEPTH OF THE HOLE.

D. WHERE THERE IS A LAYER OF SOIL TWO (2) FEET OR LESS IN DEPTH OVER SOLID ROCK, THE DEPTH OF THE POLE SHALL BE THE DEPTH OF THE SOIL IN ADDITION TO THE DEPTH SPECIFIED UNDER "SETTING IN ALL SOLID ROCK" PROVIDED, HOWEVER, THAT SUCH DEPTH SHALL NOT EXCEED THE DEPTH SPECIFIED UNDER "SETTING IN SOIL".

E. ON SLOPING GROUND, THE DEPTH OF THE HOLE ALWAYS SHALL BE MEASURED FROM THE LOW SIDE OF THE HOLE.

F. POLES SHALL BE SET SO THAT ALTERNATE CROSS ARM GAINS FACE IN OPPOSITE DIRECTIONS, EXCEPT AT TERMINALS AND DEPENDS WHERE THE GAINS OF THE LAST TWO POLES SHALL BE ON THE SIDE FACING THE TERMINAL OR DEADENDED. ON UNUSUALLY LONG SPANS, THE POLES SHALL BE SET SO THAT THE CROSS ARM COMES ON THE SIDE OF THE POLE AWAY FROM THE LONG SPAN. WHERE POLE TOP PINS ARE USED, THEY SHALL BE ON THE OPPOSITE SIDE OF THE POLE FROM THE GAIN, WITH THE FLAT SIDE AGAINST THE POLE.

G. POLES SHALL BE SET IN ALIGNMENT AND PLUMB EXCEPT AT CORNERS, TERMINALS, ANGLES, JUNCTIONS, OR OTHER POINTS OF STRAIN, WHERE THEY SHALL BE SET AND RAKED AGAINST THE STRAIN SO THAT THE CONDUCTORS SHALL BE IN LINE.

H. POLES SHALL BE RAKED AGAINST STRAIN NOT LESS THAN ONE INCH FOR EACH TEN FEET OF POLE LENGTH NOR MORE THAN TWO INCHES FOR EACH TEN FEET OF POLE LENGTH AFTER CONDUCTORS ARE INSTALLED AT THE REQUIRED TENSION.

I. HOLES SHALL BE DUG OF SUFFICIENT SIZE TO PERMIT FREE INSERTION OF TAMPING BAR ON ALL SIDES OF THE POLE AFTER THE POLES ARE SET. WHILE BACKFILLING, TAMPERS SHALL CONTINUOUSLY TAMP IN EARTH UNTIL THE HOLE IS COMPLETELY FILLED. POLE BACKFILL MUST BE THOROUGHLY TAMPED THE FULL DEPTH. EXCESS DIRT MUST BE BANKED AROUND THE POLE. REMOVE EXCESS SURROUNDING DIRT AND RESTORE SIDEWALK, PARKING LOT, OR SOD AFTER SETTING.

J. LINE POLES SHALL BE SET PERPENDICULAR WHEN LINE IS COMPLETED. POLES AT ANGLES SHALL BE SET WITH A RAKE OF APPROXIMATELY 1/4" FOR EACH FOOT OF HEIGHT OF POLE ABOVE GROUND.

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CPP UTILITY NOTES

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2. FIBERGLASS (EPOXY-GLASS ROD) DIELECTRIC CENTRAL STRENGTH MEMBER, ARAMID FIBER YARN OR FIBERGLASS OVERALL STRENGTH MEMBER. MAXIMUM TENSILE LOAD 600 LBS. DURING INSTALLATION AND IN SERVICE.
3. DUAL JACKET CONSTRUCTION WITH BLACK UV AND MOISTURE RESISTANT POLYETHYLENE (PE) INNER AND OUTER JACKETS.
4. THE FIBER OPTIC CABLE SHALL COMPLY WITH THE FOLLOWING, ANSI/TIA/EIA 568A, ICEA S-87-640 AND BE ETL VERIFIED.
5. GENERAL CABLE PART NUMBER AT0244H1A-DWB OR APPROVED EQUAL.

#### OC.09 SAGGING OF CONDUCTORS

A. CONDUCTORS SHALL BE SAGGED IN ACCORDANCE WITH THE CONDUCTOR MANUFACTURER'S RECOMMENDATION. ALL CONDUCTORS SHALL BE SAGGED EVENLY. THE AIR TEMPERATURE AT THE TIME AND PLACE OF SAGGING SHALL BE DETERMINED BY A CERTIFIED ETCHED GLASS THERMOMETER.

B. THE SAG OF ALL CONDUCTORS AFTER STRINGING SHALL BE IN ACCORDANCE WITH THE CONDUCTOR MANUFACTURER'S RECOMMENDATIONS, EXCEPT THAT A MAXIMUM INCREASE OF THREE INCHES OF THE SPECIFIED SAG IN ANY SPAN WILL BE ACCEPTABLE. HOWEVER, UNDER NO CIRCUMSTANCES WILL A DECREASE IN MANUFACTURER'S RECOMMENDATIONS SAG BE ALLOWED.

C. THE HEIGHT OF ATTACHMENTS WAS BASED ON A 2' MAXIMUM SAG OF LINE CONDUCTORS. SHOULD MANUFACTURER'S RECOMMENDATIONS EXCEED THIS AMOUNT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO ORDERING OF POLES FOR ADJUSTMENT AS NECESSARY.

#### OC.10 TAPS AND JUMPERS

A. JUMPERS AND OTHER LEADS CONNECTED TO LINE CONDUCTORS SHALL HAVE SUFFICIENT SLACK TO ALLOW FREE MOVEMENT OF THE CONDUCTORS WITHOUT CAUSING THE JUMPERS TO BE PULLED FROM THEIR CONNECTORS. WHERE SLACK IS NOT SHOWN ON THE CONSTRUCTION DRAWINGS IT WILL BE PROVIDED BY AT LEAST TWO BENDS IN A VERTICAL PLANE, OR ONE IN A HORIZONTAL PLANE, OR THE EQUIVALENT.

B. ALL LEADS ON EQUIPMENT SUCH AS LIGHTNING ARRESTERS, CUTOUTS, ETC. SHALL BE A MINIMUM OF #4 COPPER INSULATED CONDUCTORS.

#### OC.11 HOT-LINE CLAMPS AND CONNECTORS

CONNECTORS AND HOT-LINE CLAMPS SUITABLE FOR THE PURPOSE SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND ALSO IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. ON ALL HOT-LINE CLAMP INSTALLATIONS, THE CLAMP AND JUMPER SHALL BE SO INSTALLED SO THAT THEY ARE PERMANENTLY BONDED TO THE LOAD SIDE OF THE LINE, ALLOWING THE JUMPER TO BE DE-ENERGIZED WHEN THE CLAMP IS DISCONNECTED.

#### OC.12 DEADEND INSULATORS

INSULATORS SHALL BE 15 KV CLASS POLYMER DISTRIBUTION DEADEND OR SUSPENSION INSULATORS CONFORMING TO THE LATEST EDITION OF THE ANSI/IEEE STANDARDS 1024, IEC-1109 AND MANUFACTURED WITH ISO 9002-1994 AS MANUFACTURED BY HUBBELL/OHIO BRASS, COOPER OR APPROVED EQUAL.

PIN TYPE INSULATOR FOR THE HENDRIX AERIAL SYSTEM SHALL BE MOLDED FROM GRAY TRACK RESISTANT HIGH DENSITY POLYETHYLENE WHICH SHALL COMPLY WITH ASTM 1248 FOR TYPE III, CLASS B, CATEGORY 4, GRADE E9 OF J4 MATERIAL. THE DIELECTRIC CONSTANT SHALL BE EQUAL TO THAT OF THE CABLE INSULATION. THE INSULATOR SHALL HAVE AN INSULATING CAPACITY EQUAL TO OR GREATER THAN THAT OF AN ANSI CLASS 55-4 FOR 15 KV SYSTEMS. THE INSULATOR SHALL FIT ON A STANDARD 1" INSULATOR PIN.

#### OC.13 GUYS

A. GUYS SHALL BE PLACED AND TIGHTENED BY TURNBUCKLE BEFORE THE CONDUCTORS ARE STRUNG AND SHALL BE ATTACHED TO THE POLE AND CONSTRUCTED AS SHOWN ON THE PLANS AND AS NOTED HERE AND AS PER CPP GUIDELINES.

B. THE DISTANCE FROM THE POLE TO THE ANCHOR ROD (THE GUY LEAD) IS RECOMMENDED TO BE THE SAME DISTANCE AS FROM THE GROUND TO THE GUY ATTACHMENT ON THE POLE. THIS 1:1 GUY SLOPE IS ESPECIALLY RECOMMENDED ON DEADEND STRUCTURES.

C. IF THE SEPARATION ON THE POLE BETWEEN ANY GUY ATTACHMENT BOLT OR HARDWARE AND ANY PHASE CONDUCTOR ATTACHMENT BOLT IS LESS THAN 15 INCHES, THEN A GUY STRAIN INSULATOR ASSEMBLY SHALL BE INSTALLED AT THE TOP OF THE GUY AND THE GUY WIRE SHALL BE EFFECTIVELY GROUNDED BELOW THE INSULATOR BY BONDING THE GUY WIRE TO THE SYSTEM NEUTRAL AND THE POLE GROUND IF PRESENT. ALTERNATIVELY, AN INSULATED EXTENSION LINK SHALL BE INSTALLED IN THE PRIMARY CONDUCTOR TAP, DEADEND, OR SUSPENSION ANGLE SUB-ASSEMBLY WHERE IT ATTACHES TO THE POLE.

D. ALL ANCHORS AND RODS SHALL BE IN ACCORDANCE WITH CONSTRUCTION DRAWINGS AND IN LINE WITH AND IN THE OPPOSITE DIRECTION OF, THE RESULTANT STRAIN OF THE CONDUCTORS. ANCHOR ASSEMBLIES SHALL BE INSTALLED SO THAT APPROXIMATELY SIX INCHES OF THE ROD REMAIN OUT OF THE GROUND. IN CULTIVATED FIELDS OR OTHER LOCATIONS AS DEEMED NECESSARY, THE PROJECTION OF THE ANCHOR ROD ABOVE EARTH MAY BE INCREASED TO A MAXIMUM OF 12 INCHES TO PREVENT BURIAL OF THE ROD EYE. THE BACKFILL OF ALL ANCHOR HOLES MUST BE THOROUGHLY TAMPED THE FULL DEPTH.

E. GUY HOOKS: GUY HOOK SHALL BE THE COMBINATION TYPE TO TERMINATE GUY WIRE OR FIBERGLASS GUY STRAIN INSULATOR, FOR USE ON ROUND OR FLAT SURFACES. HOOK SHALL BE MADE OF DUCTILE IRON AND SHALL BE HOT-DIPPED GALVANIZED AS PER CMS 711.02. GUY HOOK SHALL HAVE A MINIMUM ULTIMATE STRENGTH OF 35,000 LBS. GUY HOOK SHALL BE MANUFACTURED BY: A.B CHANCE-HUBBELL POWER SYSTEMS, MACLEAN POWER SYSTEMS, HENDRIX OR APPROVED EQUAL.

F. GUY STRAIN INSULATOR: GUY STRAIN INSULATOR SHALL HAVE A ROD LENGTH OF 36"; THE FIBERGLASS ROD SHALL BE COATED IN SILICONE RUBBER. GUY STRAIN INSULATOR SHALL HAVE A MINIMUM ULTIMATE STRENGTH OF 30,000 LBS. GUY STRAIN INSULATOR SHALL BE MANUFACTURED BY: A.B CHANCE-HUBBELL POWER SYSTEMS, MACLEAN POWER SYSTEMS, HENDRIX OR APPROVED EQUAL.

#### G. GUY WIRE STRAND:

1. GUY WIRE SHALL BE UTILITIES GRADE; TWISTED STRAND GALVANIZED COATED STEEL WIRE CONFORMING TO ASTM A475 CLASS B AND GALVANIZED AS PER CMS 711.02.
2. THE STRAND WIRE SHALL BE A MINIMUM 3/8" DIAMETER CONFORMING TO ASTM A475.
3. THE ACTUAL TENSION OF THE CABLE SHALL BE DETERMINED BY THE GUY WIRE AND SHALL NEVER EXCEED 20 PERCENT OF THE BREAKING STRENGTH ON THE GUY CABLE USED.

H. ANCHOR RODS: ANCHOR RODS SHALL BE COMPLETE WITH EYENUT, THREADED HOT-DIPPED GALVANIZED AS PER CMS 711.02. RODS SHALL BE A MINIMUM OF 1" DIA. X 7' LONG.

I. ANCHORS: ANCHORS SHALL BE DOUBLE HELIX TYPE, 10" SIZE CAPABLE OF WITHSTANDING A GUY TENSION OF 7000 LBS AND SHALL BE HOT-DIPPED GALVANIZED AS PER CMS 711.02. ANCHORS SHALL BE MANUFACTURED BY: A.B CHANCE-HUBBELL POWER SYSTEMS, COOPER POWER SYSTEMS, HENDRIX OR APPROVED EQUAL.

#### J. GUY GRIPS:

1. GUY GRIPS SHALL BE MADE OF HARD DRAWN ALUMINUM CLAD STEEL WIRE. THE HOLDING POWER OF THE GRIP SHALL BE IN EXCESS OF THE RATED BREAKING STRENGTH OF THE GUY WIRE ON WHICH IT CAN BE USED. EACH GUY GRIP SHALL HAVE A TAG ATTACHED SHOWING MANUFACTURER'S NAME, CATALOG NUMBER, AND THE SIZE GUY WIRE TO WHICH IT CAN BE ATTACHED.

K. GUY WIRE GUARDS (MARKERS): GUARDS TO BE MADE OF RIGID VINYL AND SHALL COMPLETELY ENCIRCLE THE GUY STRAND. THE CLAMPS MUST NOT WEAKEN THE GUARD AND SHALL BE YELLOW PLASTIC TYPE COMPLETE WITH GALVANIZED MOUNTING HARDWARE. GUARDS SHALL BE 8"-0" LONG. GUARDS SHALL BE MANUFACTURED BY: A.B CHANCE-HUBBELL POWER SYSTEMS, MACLEAN POWER SYSTEMS, HENDRIX OR APPROVED EQUAL.

#### OC.14 GROUNDING

A. GROUND RODS SHALL BE COPPERCLAD STEEL OR STAINLESS STEEL, UL LISTED, DRIVEN FULL LENGTH IN AN UNDISTURBED EARTH A MINIMUM OF 2 FEET FROM THE FACE OF THE POLE AS SHOWN ON THE PLANS IN ACCORDANCE WITH THE SPECIFICATIONS. THE TOP SHALL BE BURIED AT LEAST 12" BELOW THE SURFACE OF THE EARTH. THE MAXIMUM ACCEPTABLE EARTH RESISTANCE VALUE SHALL BE 25 OHMS. IF THE 25 OHM MAXIMUM RESISTANCE IS EXCEEDED BY THE USE OF A SINGLE GROUND ROD A SECOND 5/8" DIAMETER BY 8 FOOT ROD SHALL BE COUPLED OR WELDED TO THE FIRST ROD AND DRIVEN INTO THE EARTH. IF THE MAXIMUM RESISTANCE IS STILL EXCEEDED A THIRD 5/8" DIAMETER BY 8 FOOT LONG ROD SHALL BE DRIVEN APPROXIMATELY 4' FROM INITIAL ROD AND CONNECTED IN PARALLEL WITH THE FIRST SET. PROCEDURE SHALL CONTINUE UNTIL RESISTANCE OF 25 OHMS OR LESS IS OBTAINED. THE GROUND WIRE SHALL BE ATTACHED TO THE ROD WITH A CLAMP AND SECURED TO THE POLE WITH COPPERCLAD ROLLED POINT STAPLES OF ADEQUATE SIZE TOP AND BOTTOM. THE GROUND WIRE SHALL BE COVERED BY A GROUND MOLDING. THE STAPLES ON THE GROUND MOLDING SHALL BE SPACED TWO FEET APART EXCEPT FOR THE FIRST EIGHT FEET ABOVE THE GROUND AND EIGHT FEET DOWN FROM THE TOP OF THE POLE WHERE THEY SHALL BE SIX INCHES APART. THE CONTRACTOR SHALL TEST EACH POLE AND MANHOLE GROUNDING SYSTEM PER CMS 625.19.

B. THE CONNECTION BETWEEN THE GROUND ROD AND THE SYSTEM NEUTRAL SHOULD BE MADE BY ONE CONTINUOUS PIECE OF CONDUCTOR (THE POLE GROUND WIRE), AND SHALL BE INSTALLED IN THE SHORTEST AND MOST DIRECT PATH ACCORDING TO THE CONSTRUCTION DRAWINGS. SPLICES, IF REQUIRED, SHALL BE MADE USING A COMPRESSION TYPE CONNECTOR AND SHALL BE INSTALLED A MINIMUM OF 6 INCHES ABOVE THE GROUND LINE. THE POLE GROUND WIRE SHALL BE CONNECTED TO THE SYSTEM NEUTRAL USING A COMPRESSION TYPE CONNECTOR.

C. ALL EQUIPMENT SHALL HAVE AT LEAST 2 CONNECTIONS FROM THE FRAME, CASE, OR TANK TO THE MULTI-GROUNDED SYSTEM NEUTRAL CONDUCTOR AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE POLE GROUND WIRE MAY BE USED FOR ONE OR BOTH OF THESE CONNECTIONS.

D. ALL NEUTRAL CONDUCTORS ON THE POLE SHALL BE BONDED DIRECTLY TO EACH OTHER, AND CONNECTED TO THE POLE GROUND WIRE IF PRESENT. ALL EQUIPMENT GROUND WIRES, NEUTRAL CONDUCTORS, DOWNGUYS, MESSENGER WIRES, AND LIGHTNING-PROTECTION GROUND WIRES SHALL BE INTERCONNECTED AND ATTACHED TO A COMMON (POLE) GROUND WIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC).

E. IN ADDITION TO GROUND ROD(S), EACH LINE POLE SHALL BE EQUIPPED WITH A "BUTT GROUND" AS DETAILED IN THE PLANS. THE BUTT GROUND SHALL BE CONSIDERED SUPPLEMENTARY AND SHALL BE SEPARATE FROM THE RESISTANCE TESTING SPECIFIED ABOVE. THE BUTT GROUND SHALL BE ATTACHED TO THE GROUND ROD.

#### F. ELECTRICAL GROUNDING STANDARDS:

1. NO PHASE CONDUCTORS SHALL BE GROUNDED.
2. ALL METALLIC EQUIPMENT SUPPORTS, RACKS AND HOUSINGS SHALL BE BONDED TO THE POLE GROUND DOWN CONDUCTOR.

G. THE NEUTRAL WIRES, DOWN GUYS AND LIGHTNING-PROTECTIVE EQUIPMENT SHALL BE INTERCONNECTED AND BONDED TO THE POLE GROUND DOWN CONDUCTOR.

H. PROVIDE ALL GROUND RODS AND GROUND WIRES AS INDICATED ON THE DRAWINGS. ALL CONNECTIONS AT THE ROD SHALL BE MADE WITH A CAST BRONZE CLAMP HAVING BRONZE SET SCREW, ALL GROUNDING CLAMPS INSTALLED BELOW GRADE SHALL BE HEAVY DUTY CLAMP LISTED FOR DIRECT BURIAL. WIRE SHALL BE MINIMUM #4 COPPER WEATHERPROOF TYPE AND #3/0 COPPER WEATHERPROOF TYPE WHERE DETAILED ON THE DRAWINGS IN MANHOLES. GROUND MOLDING SHALL BE WOOD OR PLASTIC MIN. 8 FOOT IN LENGTH OF SUFFICIENT WIDTH AND GROOVE DEPTH TO COMPLETELY ENCLOSE THE GROUNDING DOWN CONDUCTOR.

#### OC.15 MEDIUM VOLTAGE CABLE TERMINATIONS

A. TERMINATION KITS SHALL BE CAPABLE OF PROPERLY TERMINATING 15KV CLASS SINGLE CONDUCTOR EPR INSULATED CABLE FOR OUTDOOR APPLICATIONS PER ASTM D2303. KITS SHALL ACCOMMODATE ANY COMMON FORM OF CABLE SHIELDING/CONSTRUCTION WITHOUT THE NEED FOR LIGHTNING ADAPTORS OR ACCESSORIES. TERMINATIONS FOR SINGLE-CONDUCTOR CABLES SHALL CONSIST OF HOT OR COLD SHRINKABLE STRESS CONTROL AND OUTER NON-TRACKING INSULATION TUBINGS ALONG WITH A HIGH RELATIVE PERMITTIVITY STRESS RELIEF MASTIC FOR INSULATION SHIELD CUTBACK TREATMENT FOR ENVIRONMENTAL SEALING. PROVIDE PROPER CONNECTOR FOR TERMINATION TO CUTOUT. GROUND WIRE/SHIELD LEADS SHALL BE GROUNDED TO POLE GROUND. CABLE TERMINATORS SHALL BE BY RAYCHEM TYPE HVT-150 OR 3M QT SERIES OR APPROVED EQUAL.

#### B. CABLE SUPPORT BRACKET:

1. CABLE SUPPORT BRACKET SHALL BE COMPLETE FOR POLE MOUNTING, NON-METALLIC ARMS.
2. ALL STEEL MATERIALS AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED AS PER CMS 711.02.
3. BRACKET SHALL BE ARRANGED AS DETAILED ON THE DRAWINGS.

#### OC.16 LIGHTNING ARRESTER

A. LIGHTNING ARRESTERS SHALL BE AN IEEE RISER POLE DISTRIBUTION ARRESTER; POLYMER HOUSED METAL OXIDE VARISTOR WITH TOP AND BOTTOM CONNECTION TERMINALS (NO PIG-TAILS). EXPULSION TYPE WILL NOT BE ACCEPTED. LIGHTNING ARRESTER SHALL CONFORM TO ALL APPLICABLE NEMA STANDARDS AND ANSI IEEE C62.11.

#### B. TERMINALS:

1. THE TERMINALS SHALL BE STAINLESS STEEL TO BE COMPATIBLE TO BOTH COPPER AND ALUMINUM CONDUCTORS FROM #6 SOLID TO #2 STRANDED. INSULATING TOP CAP MUST BE FIRMLY ATTACHED OR CLIPPED TO THE TERMINAL AND MUST BE GUARANTEED TO STAY FIRMLY IN PLACE FOR THE LIFE OF THE ARRESTER.
2. BOTTOM TERMINAL SHALL BE STAINLESS STEEL TO BE COMPATIBLE TO BOTH COPPER AND ALUMINUM CONDUCTORS FROM #6 SOLID TO #2 STRANDED.

C. DROPOUT DEVICE OR GROUND LEAD DISCONNECTOR: THE ARRESTER SHALL BE EQUIPPED WITH A NON-EXPLOSIVE DROP-OUT ASSEMBLY TO ISOLATE THE ARRESTER FROM THE GROUND LEAD IN EVENT OF FAILURE, AND TO GIVE A VISIBLE INDICATION OF FAILURE.

#### D. CONSTRUCTION:

1. SEALING GASKETS MUST BE POSITIVE TO INSURE MOISTURE PROOF SEAL FOR THE LIFE OF THE ARRESTER.
2. LIGHTNING ARRESTERS SHALL BE RATED AS FOLLOWS: NOMINAL SYSTEM VOLTAGE 12.5 KV, MAXIMUM 13.1 KV, MIN. MCOV 7.57 KV. EFFECTIVELY GROUNDED CIRCUIT. COORDINATE ARRESTER BRACKET WITH CROSS ARM SIZE OR EQUIPMENT MOUNT.

#### E. MOUNTING BRACKET:

1. A CROSS ARM MOUNTING BRACKET OR EQUIPMENT MOUNT SHALL BE COMPLETE FOR POLE MOUNTING EACH ARRESTER TO ACCOMMODATE STANDARD CROSS ARM SECTIONS OR THE HENDRIX AERIAL SYSTEM. STANDARD NEMA TYPE WITH LOCKNUTS FOR ARRESTER MOUNTING AND GROUND CLAMP. ALL MOUNTING HARDWARE AND ARRESTERS SHALL BE PROVIDED AS A SINGLE UNIT BY THE SAME EQUIPMENT MANUFACTURER.

2. ALL STEEL MATERIALS AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED AS PER CMS 711.02.

3. BRACKET SHALL BE ARRANGED AS DETAILED ON THE DRAWINGS.

F. LIGHTNING ARRESTERS SHALL BE HUBBELL POWER SYSTEMS- OHIO BRASS TYPE PVR-OPTIMA, COOPER POWER SYSTEMS VARISTAR OR APPROVED EQUAL.

**OC.17 CABLE SPLICES**

A. ALL MATERIALS & LABOR FOR CABLE SPLICES SHALL BE PROVIDED BY THE CONTRACTOR AND INSTALLED BY CPP PERSONNEL. THE CONTRACTOR SHALL COORDINATE WITH CPP AND SHALL INCLUDE ALL COSTS FOR THIS WORK IN THIS PAY ITEM.

B. MOLDED SPLICES SHALL BE DESIGNED AND TESTED PER IEEE STANDARD 404 WITH THE FOLLOWING RATINGS:

1. 15 KV CLASS (8.7 KV PHASE-TO-GROUND)
2. IMPULSE WITHSTAND: A=110 KV, 1.2x50 MICROSECOND WAVE.
3. CORONA EXTINCTION VOLTAGE: A=13 KV, MINIMUM, 3PC SENSITIVITY.
4. DC WITHSTAND: DURING INSTALLATION: 56KV
5. DC WITHSTAND: 18 KV FOR XLPE INSULATED CABLES  
45 KV FOR EPR INSULATED CABLES  
REFERENCE AEIC CS6 AND CS8, SECTION L.2.0
6. FOR THIS PROJECT: SPLICE FOR 4/0 AWG, 15 KV URD,  
ELASTIMOLD 15 PCJ 1 H 2 270.

C. THE FIBER SPLICE KIT SHALL BE THE COYOTE SPLICE CASE AS MANUFACTURED BY PREFORMED LINE PRODUCTS AND AS INTENDED FOR VAULT APPLICATIONS AND MEETING THE REQUIREMENTS OF BELLCORE GR-771-CORE. SIZE AS APPROPRIATE FOR THE APPLICATION. PROVIDE WITH A STAINLESS STEEL CASE, END PLATES, MAINFRAME, GROUNDING INSERT, AND ALL NECESSARY ACCESSORIES TO COMPLETE THE INSTALLATION INCLUDING A MANHOLE SUPPORT KIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SELECTION OF THE SPLICE KIT AND TO GET APPROVAL FROM CPP OF SELECTED MATERIALS PRIOR TO PURCHASE. PROVIDE SPLICE KIT TO CPP PERSONNEL FOR INSTALLATION.

D. CABLE SPLICES SHALL BE PERMITTED WHERE IDENTIFIED IN MANHOLE AND SPLICING CHAMBER LOCATION ONLY. CONDUCTORS SHALL BE CONTINUOUS FROM POINT TO POINT.

E. PROTECTION OF CABLES: THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND CARE OF THE EXISTING AND NEW CABLES DURING THE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND INSTALL PROTECTIVE TEMPORARY CABLE ENDS TO SEAL OUT MOISTURE AND CONTAMINANTS AS RECOMMENDED BY THE CABLE MANUFACTURER. THE CABLES SHALL BE PROTECTED FROM DAMAGE AND ABRASION. COORDINATE WITH AND COMPLY WITH ALL CPP REQUIREMENTS FOR PROTECTION OF CABLES/ENDS.

F. CABLE SPLICES (IN MANHOLE AND SPLICE CHAMBERS) SHALL BE PROVIDED BY THE CONTRACTOR AND INSTALLED BY CPP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING GROUND/SHIELD LEADS TO THE MANHOLE GROUNDING SYSTEM IN ACCORDANCE WITH OC.15.

G. CABLE LUBRICANTS: THE LUBRICANT SHALL BE SUITABLE FOR THE CABLE INSULATION TO BE PULLED. THE CONTRACTOR SHALL SUBMIT CERTIFIED TEST DATA THAT THE LUBRICANT IS ACCEPTABLE FOR GIVEN USE.

H. BONDING WIRE: BONDING WIRE SHALL BE NO. 4 AND NO. 3/0 AWG COPPER BARE CONDUCTOR INSTALLED IN ACCORDANCE WITH OC.15.

I. CABLE PULLING: BEFORE STARTING CABLE INSTALLATION, THE DUCTS TO BE OCCUPIED SHOULD BE SELECTED THROUGHOUT THE ENTIRE LENGTH OF THE RUN AND THE DUCTS SELECTED MUST BE CHECKED TO SEE THAT THEY ARE CLEAN AND FREE FROM ALL OBSTRUCTIONS. IF REELS ARE LEFT IN THE STREET, WARNING LIGHTS SHALL BE PLACED AROUND THEM. LUBRICANT SHALL BE APPLIED TO THE CABLE PER MANUFACTURERS RECOMMENDATIONS JUST BEFORE IT ENTERS THE FEEDING TUBE. NO LUBRICANT SHALL BE APPLIED TO THE FIRST AND LAST FIVE FEET OF CABLE FOR CONVENIENCE AND CLEANLINESS IN SPLICING. THE REEL OF CABLE MUST BE PROPERLY PLACED AT THE FEEDING END TO CAUSE MINIMUM FLEXING OF THE CABLE. IT SHOULD ALWAYS BE LOCATED ON THE SIDE OF THE MANHOLE TOWARD WHICH THE CABLE IS PULLED. WHERE THERE IS A BEND IN THE DUCT LINE THE PULLING SET UP WHEREVER POSSIBLE SHOULD BE PLANNED FOR FEEDING-IN AT THE MANHOLE OR POLE NEAREST THE BEND. THE AMOUNT OF SLACK IN THE CABLE AT THE FEEDING END SHALL BE REQUIRED BY PERSONNEL STATIONED AT THE CABLE REEL SO THAT THE CABLE PASSES FREELY INTO THE FEEDING TUBE WITHOUT BEING LOOSE ON THE REEL AND WITHOUT SCRAPING THE MANHOLE FRAME THE CABLE SHALL BE DRAWN INTO THE DUCT JUST FAST ENOUGH TO KEEP THE CABLE REEL MOVING SMOOTHLY AND SO IT CAN BE PROPERLY INSPECTED AND LUBRICATED. EYES OR SEALS DAMAGED DURING PULLING SHALL BE REPAIRED UNLESS SPLICING FOLLOWS IMMEDIATELY. WHEN A CABLE IS CUT, UNLESS SPLICING IS OTHERWISE PERMITTED, THE CONTRACTOR SHALL REMOVE DAMAGED CABLE AND REPLACE AT HIS/HER OWN EXPENSE. THE PERSONNEL IN THE PULLING GANG SHOULD PLACE THE CABLE IN THE MANHOLES ON THE CABLE RACKS WITHOUT TRYING TO TRAIN INTO ITS FINAL POSITION AND SHALL TIE THE CABLE TO THE SUPPORTS TO PREVENT IT FROM FALLING. THE ENDS SHALL BE TRAINED AS HIGH AS POSSIBLE TO KEEP THEM OUT OF ANY WATER. A PULLING TENSION READING SHALL BE AVAILABLE THROUGHOUT CABLE PULLING PROCESS. PULLING TENSION SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.

J. CABLE RACKING AND TRAINING: CABLE SHALL NOT BE BENT WHEN TEMPERATURE IS BELOW 14 DEGREES F. UNLESS CABLE IS HEATED SO THAT IT IS WARM ALL THE WAY THROUGH. AT LEAST SIX (6) INCHES OF STRAIGHT CABLE OUT OF THE DUCT SHALL BE ALLOWED BEFORE STARTING THE OFFSET BEND IN MANHOLES. BENDING RADIUS OF CABLE SHALL BE MINIMUM OF EIGHT (8) TIMES OVERALL CABLE DIAMETER. AT LEAST SIX (6) INCHES OF STRAIGHT CABLE SHOULD EXTEND BEYOND EACH END OF THE SPLICE TO PROVIDE SPACE FOR RESTING ON THE SADDLES OF THE SUPPORTING RACKS. ALL CABLES AND SPLICES SHALL BE SO RACKED IN THE MANHOLE THAT THEY ARE NOT DIRECTLY UNDER THE MANHOLE COVER. CABLES SHALL BE INSTALLED ON RISER POLE AS SHOWN ON CONTRACT DRAWINGS

**OC.18 FUSED CUTOUTS**

A. STANDARD TYPE CUTOUT SHALL HAVE AN ALL COPPER CURRENT PATH WITH SILVER PLATED CONTACTS. TERMINALS SHALL BE TIN PLATED BRONZE FOR USE WITH COPPER OR ALUMINUM CONDUCTORS. LOAD BREAK HOOKS OF GALVANIZED STEEL AND MOUNTED ON TOP SUPPORT. ASSEMBLY COMPLETE WITH BIRD PROOFED ONE-PIECE SOLID POLYMER OR PORCELAIN INSULATOR, CAST BRONZE HINGE, STAINLESS STEEL SPRINGS FOR PROPER TOGGLE ACTION AND TO MAINTAIN CONTACT PRESSURE, HIGH STRENGTH FIBERGLASS FUSE TUBE AND 15 KV, 110 KV BIL. CUTOUTS SHALL BE TYPE C STYLE PER CPP RECOMMENDATIONS. ALL NON-STAINLESS STEEL MATERIALS AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED AS PER CMS 711.02. CUTOUTS SHALL BE HUBBELL POWER SYSTEMS- CHANCE TYPE C, COOPER POWER SYSTEMS HX-CB OR APPROVED EQUAL.

B. ALL FUSES AND CUTOUTS SHALL BE 15 KV RATED AND NEC AND NESC COMPLIANT. SUBMIT SHOP DRAWINGS TO CPP FOR REVIEW AND APPROVAL PRIOR TO PURCHASE OF MATERIALS.

**OC.19 FUSES FOR CUTOUTS**

A. FUSES FOR CUTOUTS SHALL BE THE TYPE & STYLE COMPATIBLE WITH CUTOUT PROVIDED AND AS REQUIRED PER CPP RECOMMENDATIONS. EXACT AMPERE AND VOLTAGE RATING SHALL BE DETERMINED BY CPP. PROVIDE FUSES BY THE SAME MANUFACTURER AS THE CUTOUT.

B. ALL FUSES AND CUTOUTS SHALL BE 15 KV RATED AND NEC AND NESC COMPLIANT. SUBMIT SHOP DRAWINGS TO CPP FOR REVIEW AND APPROVAL PRIOR TO PURCHASE OF MATERIALS.

**OC.20 CONDUIT RISER**

A. THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING A CONDUIT RISER ASSEMBLY FOR TERMINATION OF UNDERGROUND CONDUITS AND OVERHEAD CIRCUITS. WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND HANGERS ETC. NECESSARY FOR A COMPLETE ACCEPTED INSTALLATION.

B. MATERIALS SHALL BE: RIGID NON-METALLIC RISER SYSTEM, PVC SCHEDULE 80 AS DETAILED ON THE PLANS AND AS MANUFACTURED BY PRIME, T&B OR APPROVED EQUAL.

C. RISERS SHALL BE ATTACHED TO POLES BY CLAMPS, STRAPS OR OTHER ACCEPTABLE DEVICES AT INTERVALS NOT TO EXCEED 5 FEET.

D. RISERS SHALL TERMINATE AT GRADE LEVEL WITH APPROVED COUPLING TO UNDERGROUND DUCTS. RISERS SHALL TERMINATE ABOVE GRADE AT THE ELEVATION SHOWN IN THE PLANS.

**ITEM 625 LIGHTING, MISC.: TEMPORARY ELECTRICAL FACILITIES**

PAYMENT FOR TEMPORARY ELECTRICAL FACILITIES SHALL INCLUDE BUT NOT BE LIMITED TO NEW POLES, SET IN PLACE, ALL HARDWARE & LOCKNUTS, CROSSARMS & BRACES, NEW 15 KV OVERHEAD CONDUCTORS AND THE DATA CIRCUIT INCLUDING GRIPS AND CLEVIS, WITH PROPER SAGGING, ALL TAPS, JUMPERS SPLICES, DEADEND INSULATORS, HOTLINE CLAMPS AND CONNECTORS, GUYS AND GROUNDING.

PAYMENT FOR THE TEMPORARY ELECTRICAL FACILITIES SHALL INCLUDE THE COST OF ALL LABOR, MATERIAL, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY FOR THE COMPLETE INSTALLATION OF THE NEW TEMPORARY OVERHEAD 15 KV CIRCUITS AND DATA CIRCUIT INCLUDING ALL PROPOSED WORK ITEMS ENUMERATED IN THESE DOCUMENTS AND ALL APPLICABLE GENERAL OVERHEAD TEMPORARY POWER CONSTRUCTION ITEMS OC.01 THROUGH OC.20 AND GENERAL UNDERGROUND POWER CONSTRUCTION ITEMS UC.01 THROUGH UC.10 FOR THE INSTALLATIONS WITHIN THE LIMITS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL ALSO INCLUDE THE REMOVAL OF ALL TEMPORARY ITEMS INSTALLED AS PART OF THIS PAY ITEM AND THE RESTORATION OF ALL SURFACES AFFECTED AT NO ADDITIONAL COST TO THE PROJECT. PAYMENT WILL BE MADE AT THE CONTRACT LUMP SUM PRICE, WHICH SHALL BE FULL COMPENSATION FOR ITEM 625 LIGHTING, MISC.: TEMPORARY ELECTRICAL FACILITIES.

**ITEM 625 LIGHTING, MISC.: FINAL PROPOSED ELECTRICAL FACILITIES**

PAYMENT FOR THE FINAL ELECTRICAL FACILITIES SHALL INCLUDE BUT NOT BE LIMITED TO NEW POLE, SET IN PLACE, ALL HARDWARE & LOCKNUTS, 15KV OVERHEAD CONDUCTORS AND DATA CIRCUIT INCLUDING NEW CONCRETE ENCASED CONDUIT, SUPPORTS AND CONNECTORS, GUYS AND CABLE TERMINATORS, FROM THE SPLICING CHAMBER #SC 67-89 THROUGH AND TO THE MANHOLE MH 67-41 EAST OF THE BRIDGE.

PAYMENT FOR THE FINAL ELECTRICAL FACILITIES SHALL INCLUDE THE COST OF ALL LABOR, MATERIAL, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY FOR THE COMPLETE INSTALLATION OF THE FINAL ELECTRICAL FACILITIES INCLUDING ALL SCOPE OF WORK ITEMS ENUMERATED IN THESE DOCUMENTS AND ALL APPLICABLE GENERAL OVERHEAD POWER CONSTRUCTION ITEMS OC.01 THROUGH OC.20 AND GENERAL UNDERGROUND POWER CONSTRUCTION ITEMS UC.01 THROUGH UC.10 FOR THE INSTALLATIONS WITHIN THE LIMITS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE AT THE CONTRACT LUMP SUM PRICE, WHICH SHALL BE FULL COMPENSATION FOR ITEM 625 LIGHTING, MISC.: FINAL ELECTRICAL FACILITIES.

**GENERAL UNDERGROUND POWER CONSTRUCTION ITEMS**

**UC.01 SCOPE OF WORK**

A. ALL UNDERGROUND CONSTRUCTION WORK UNDER THIS PART OF THE CONTRACT SHALL BE DONE IN A THOROUGH AND WORKMANLIKE MANNER IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CONSTRUCTION DRAWINGS.

B. THE LATEST EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE (NESC) SHALL BE FOLLOWED EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT, IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN. ALL WORK SHALL BE IN CONFORMANCE WITH CPP REGULATIONS.

C. THE WORK TO BE DONE UNDER THIS PART OF THE CONTRACT COMPRISES OF THE FURNISHING AND INSTALLING OF THE FOLLOWING:

1. UNDERGROUND CONDUITS INCLUDING TRENCHING AND ENCASEMENT.
2. REQUIRED WORK WITHIN EXISTING PRECAST CONCRETE MANHOLE.
3. REQUIRED WORK WITHIN EXISTING SPLICING CHAMBERS ON THE BRIDGE.
4. PVC SCHEDULE 80 CONDUIT AND FITTINGS.
5. CONCRETE ENCASED PVC SCHEDULE 20/TYPE EB CONDUIT AND FITTINGS.

D. THE CONTRACTOR SHALL PROVIDE CPP WITH AS-BUILT PLANS OF THE NEWLY INSTALLED CONDUIT SYSTEM, SHOWING BOTH VERTICAL AND HORIZONTAL LOCATIONS. THESE LOCATIONS SHALL BE AT 50' INTERVALS. ALL ELEVATIONS ARE TO BE BASED ON CUYAHOGA COUNTY REGIONAL GEODETIC SURVEYS.

**UC.02 EXCAVATION**

A. THE CONTRACTOR SHALL REMOVE ALL EXISTING ROADWAYS, DRIVEWAYS AND OTHER SIMILAR MATERIALS AND MEET THE LINES AND GRADES GIVEN, ALL EXCAVATION NECESSARY FOR THE PROPER CONSTRUCTION OF THE CONTRACT WORK. THE EXCAVATION SHALL INCLUDE THE REMOVAL, HANDLING, REHANDLING AND DISPOSAL OF MATERIALS ENCOUNTERED IN THE WORK AND SHALL INCLUDE ALL PUMPING, BAILING, DRAINING, SHEETING AND BRACING. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY ADDED EXPENSE OF OTHER LIABILITIES WHICH MAY ARISE BY MEANS OF QUICKSAND, OBSTACLES OR CONDITIONS FORESEEN OR UNFORESEEN AND ENCOUNTERED IN THE WORK OF THIS CONTRACT.

B. TRENCHES SHALL BE OF SUFFICIENT WIDTH TO PERMIT A UNIFORM PLACEMENT OF CONCRETE ENCASEMENT UNDER AND AROUND THE CONDUIT, AND SATISFACTORY CONSTRUCTION OF ALL APPURTENANCES, AND FOR SUCH SHEETING AND SHORING, PUMPING AND DRAINING AS MAY BE NECESSARY.

C. ANY DAMAGE IN WORKING AREA CAUSED BY THE CONTRACTOR AS PART OF THE WORK OR AS AN ACCIDENT SHALL BE REPAIRED AND AREA SHALL BE RESTORED TO THE EXISTING CONDITION FOR NEAT APPEARANCE AS REQUIRED.

D. THE TRENCH SHALL BE DUG TO THE ALIGNMENT AND DEPTH REQUIRED AND ONLY SO FAR IN ADVANCE OF LAYING OF THE CONDUIT LINE AS THE PROJECT ENGINEER SHALL PERMIT. THE TRENCH SHALL BE SO BRACED AND DRAINED THAT WORKMEN MAY WORK THEREIN SAFELY AND EFFICIENTLY. IT IS ESSENTIAL THAT THE DISCHARGE FROM PUMPS BE LED TO NATURAL DRAINAGE CHANNELS, TO DRAINS, OR TO STORM SEWERS.

E. THE TRENCH WIDTH MAY VARY WITH AND DEPEND UPON THE DEPTH OF TRENCH AND THE NATURE OF THE EXCAVATED MATERIAL ENCOUNTERED; BUT IN ANY CASE SHALL BE OF AMPLE WIDTH TO PERMIT THE CONDUIT LINE TO BE LAID AND JOINED PROPERLY AND THE BACKFILL TO BE PLACED AND COMPACTED PROPERLY. THE MINIMUM WIDTH OF TRENCH SHALL BE THREE FEET (3'-0"). WHEN SHEETING AND BRACING IS USED, THE TRENCH WIDTH SHALL BE INCREASED ACCORDINGLY.

F. THE TRENCH, UNLESS OTHERWISE SPECIFIED, SHALL HAVE A FLAT BOTTOM CONFORMING TO THE REQUIRED GRADE.

G. ANY PART OF THE TRENCH EXCAVATED BELOW GRADE SHALL BE CORRECTED WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.

H. WHEN THE SUBGRADE IS SOFT AND IN THE OPINION OF THE PROJECT ENGINEER CANNOT SUPPORT THE INSTALLATION, A FURTHER DEPTH AND/OR WIDTH SHALL BE EXCAVATED AND REFILLED TO GRADE AS REQUIRED AT THE CONTRACTOR'S EXPENSE.

I. LARGE ROCK, BOULDERS, LARGE STONES, DEBRIS AND SHALE SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST SIX INCHES BELOW CONDUIT LINES OR OTHER PARTS OF THE WORK AND TO CLEAR WIDTH OF SIX INCHES AT CONTRACTOR'S EXPENSE.

J. EXCAVATION BELOW SUBGRADE IN ROCK, SHALE OR IN BOULDERS SHALL BE REFILLED TO SUBGRADE WITH APPROVED MATERIALS, THOROUGHLY COMPACTED.

K. THE USE OF EXCAVATING MACHINERY WILL BE PERMITTED EXCEPT IN PLACES WHERE OPERATION OF SAME WILL CAUSE DAMAGE TO TREES, BUILDING, OR EXISTING STRUCTURES ABOVE OR BELOW GRADE, IN WHICH CASE HAND METHODS SHALL BE EMPLOYED.

L. HYDRANTS UNDER PRESSURE, VALVE PIT COVERS, VALVE BOXES, CURB STOP BOXES, FIRE OR POLICE CALL BOXES, OR OTHER UTILITY CONTROL SHALL BE LEFT UNOBSERVED AND ACCESSIBLE DURING THE CONSTRUCTION PERIOD.

M. TREES, FENCES, POLES AND ALL OTHER PROPERTY SHALL BE PROTECTED UNLESS THEIR REMOVAL IS AUTHORIZED AND ANY PROPERTY DAMAGE SHALL BE SATISFACTORILY RESTORED BY THE CONTRACTOR.

N. THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATIONS IN GOOD ORDER DURING THE CONSTRUCTION, SO AS NOT TO HINDER OR INJURE THE CONDUIT LAYING, MASONRY OR OTHER WORK. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT MOVEMENT OF THE SIDES OF SUCH EXCAVATION AND SHALL REMOVE AT HIS/HER OWN EXPENSE ANY MATERIAL SLIDING INTO THE EXCAVATION.

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**UC.03 SHEETING AND BRACING**

A. THE CONTRACTOR SHALL FURNISH AND PUT IN PLACE SUCH SHEETING AND BRACING AS MAY BE REQUIRED TO SUPPORT THE SIDES OF TRENCHES OR OTHER EXCAVATION AND SHALL REMOVE SUCH SHEETING AND BRACINGS, AS THE TRENCH OR EXCAVATION IS FILLED UP, UNLESS THE PROJECT ENGINEER SHALL ORDER IT LEFT IN PLACE, IN WHICH CASE, THE CONTRACTOR SHALL CUT THE PLANK OFF AT A HEIGHT AS ORDERED BY THE PROJECT ENGINEER, OR AS CALLED FOR ON THE CONTRACT DRAWINGS.

B. WHENEVER THE EXCAVATIONS FOR THE WORK HEREIN TO BE DONE ARE IMMEDIATELY ADJACENT TO OTHER SUBSURFACE STRUCTURES, THE CONTRACTOR SHALL FURNISH AND PLACE SHEETING AND BRACING WHERE NOTED ON CONTRACT DRAWINGS AND AS MAY BE NECESSARY, SO AS TO REDUCE TO A MINIMUM THE POSSIBILITY OF INJURING OR DAMAGING THE SAME.

C. IF THE PROJECT ENGINEER IS OF THE OPINION THAT AT ANY POINT SUFFICIENT OR PROPER SUPPORTS, SHEETINGS, OR BRACINGS HAVE NOT BEEN PROVIDED, THE PROJECT ENGINEER MAY ORDER SUPPORTS, SHEETING OR BRACING AT THE EXPENSE OF THE CONTRACTOR, AND THE COMPLIANCE WITH SUCH ORDERS BY THE CONTRACTOR SHALL NOT RELIEVE OR RELEASE THE CONTRACTOR FROM THE RESPONSIBILITY FOR SUFFICIENCY OR SUCH SUPPORTS.

**UC.04 REMOVAL OF EXCAVATED MATERIAL**

A. ALL SURPLUS MATERIAL AND SUCH OTHER MATERIAL AS THE PROJECT ENGINEER MAY DEEM UNFIT FOR USE AS BACKFILL SHALL BE DISPOSED OF BY THE CONTRACTOR SO AS TO GIVE A MINIMUM OF INCONVENIENCE TO THE PUBLIC. IN CASE OF SETTLEMENT AFTER BACKFILL, THE CONTRACTOR SHALL SUPPLY SUFFICIENT MATERIAL SATISFACTORY TO THE PROJECT ENGINEER TO MAKE UP FOR THE DEFICIENCY.

B. IN THE STORING OF EXCAVATED MATERIAL, WHICH IS TO BE USED AS A BACKFILL, THE CONTRACTOR SHALL EXERCISE CARE SO AS TO AVOID INCONVENIENCING THE PUBLIC. IF, IN THE OPINION OF THE PROJECT ENGINEER, IT IS NECESSARY TO REMOVE THIS EXCAVATED MATERIAL FROM THE STREETS OR LOTS, THE CONTRACTOR SHALL BE REQUIRED TO DO SO.

C. ANY MATERIAL WHICH MAY SPILL OR DRIP FROM VEHICLES BY HAULING IN THE STREETS, SHALL BE REMOVED AND THE STREETS CLEANED BY THE CONTRACTOR, TO THE SATISFACTION OF THE MUNICIPALITY OR TOWNSHIP IN WHICH THE WORK IS BEING DONE.

D. WHEN SO DIRECTED BY THE PROJECT ENGINEER, THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL EXCAVATED MATERIALS FROM THE SITE AND DISPOSE OF THE SAME.

**UC.05 BACKFILL MATERIAL AND BACKFILLING PROCEDURES**

ALL BACKFILL MATERIAL USED UNDER ANY PAVEMENT SHALL BE CRUSHED LIMESTONE OR GRAVEL AS PER ODOT ITEM 304-AGGREGATE BASE. CRUSHED AIR-COOLED SLAG MEETING #304 GRADATION MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE DIVISION OF ENGINEERING AND CONSTRUCTION INSPECTOR. THE USE OF SAND OR #57 AGGREGATE AS A PREMIUM BACKFILL IS PROHIBITED. SAND MAY ONLY BE USED AS INDICATED ON THE PLAN DETAILS FOR ITEMS SUCH AS CONDUIT COVER. THE SAND MATERIAL SHALL BE NATURAL RIVER OR BANK SAND; FREE OF SILT, CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER. THE BACKFILL SHALL BE INSTALLED IN 4 INCH (4") LIFTS AND COMPACTED USING MECHANICAL MEANS ONLY. COMPACT TO WITHIN 12" OF SUBGRADE AND EACH LAYER OF BACKFILL TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR TEST (ASTM D698). THE USE OF WATER FOR COMPACTION IS PROHIBITED, E.G. FLOODING OR PUDDLING. SAND USED AS EMBANKMENT CONSTRUCTION AND AS BACKFILL AROUND STRUCTURES SHALL BE ODOT ITEM 203 - EMBANKMENT OR MEETING THE REQUIREMENTS OF 703 - STRUCTURAL BACKFILL MATERIAL OF THE SECTION.

EMPLOY A PLACEMENT METHOD THAT DOES NOT DISTURB OR DAMAGE CONDUIT ENCASEMENT.

DO NOT BACKFILL OVER WET, FROZEN OR UNSTABLE SUBGRADE SURFACES.

**FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES**

PART I CERTIFICATE OF COMPLIANCE:  
MATERIAL MUST COME FROM A PLANT WITH A CURRENT CERTIFICATE OF COMPLIANCE DEMONSTRATING THE ABILITY OF THE MIX DESIGN TO MEET THE SPECIFIED REQUIREMENTS. CERTIFICATES IN EXCESS OF ONE YEAR WILL NOT BE ACCEPTED. CERTIFICATES MUST CONTAIN THE NAME OF SUPPLIER, DATE, CONTRACT NUMBER AND MIX DESIGN DATA ON EACH DELIVERY TICKET.

PART II MATERIALS:  
ALL MATERIALS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS STATED HEREIN.

- 1. CEMENT SHALL BE ASTM C-150 TYPE I.
- 2. THE USE OF FLY ASH IS STRICTLY PROHIBITED.
- 3. FINE AGGREGATE SHALL CONFORM TO ODOT SPECIFICATION 703.03. FINE AGGREGATE FOR MORTAR OR GROUT. (ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS MOST CURRENT EDITION). THE USE OF SPENT FOUNDRY SAND OR CORE SAND IS STRICTLY PROHIBITED.

PART III PERFORMANCE ENHANCING ADMIXTURE:  
AN AIR-ENHANCING ADMIXTURE SHALL BE INCORPORATED IN THE MIX THAT WILL HAVE THE EFFECT OF LOWERING THE WATER/CEMENT RATIO TO BETWEEN 95 AND 105 LBS/CUBIC FOOT. THE AIR ENTRAINMENT CONTENT FOR THE MIX SHALL BE 30% TO ELIMINATE/MINIMIZE THE EXCESSIVE WATER AND SEGREGATION. COMPRESSIVE STRENGTHS SHALL HAVE A RANGE OF 50 PSI TO 80 PSI AT 28 DAYS WILL BE REQUIRED IF ADDITIONAL EXCAVATION BY MACHINE OR HAND IS REQUIRED.

**APPROVED ADMIXTURES:**

MANUFACTURER	PRODUCT
A. MASTER BUILDERS	RHEOFILL
B. AXIM	FLOW AIR
C. W.R. GRACE	DARAFILL
D. OR APPROVED EQUAL	

**PART IV FLOWABLE FILL MIX DESIGN:**

THE MIX DESIGN SHALL BE PROPORTIONED AS FOLLOWS:

CEMENT (TYPE I)	50 LBS/CUBIC YARD
SAND (SSD)	2475 LBS/CUBIC YARD
WATER	25 GALLONS/CUBIC YARD
ADMIXTURE (AIR)	3 OZ/CUBIC YARD

VARIATIONS OF THE AFOREMENTIONED MIX DESIGN ARE STRICTLY PROHIBITED.

**PART V APPLICATION:**

- 1. FLOWABLE FILL SHALL BEGIN 12 INCHES ABOVE THE TOP OF PIPE AND CONTINUE IN THE TRENCH TO THE CONCRETE BASE.
- 2. MATERIAL FOR PIPE BEDDING AND PIPE ZONE TO A MAXIMUM DEPTH OF 12 INCHES OVER THE TOP OF PIPE SHALL BE AS SPECIFIED BY THE UTILITY.
- 3. EXPOSED BOLTS AND VALVES EXPOSED IN THE TRENCH SHOULD BE WRAPPED WITH POLYETHYLENE MATERIAL CONFORMING TO ODOT 748.07 (8 MIL THICK).
- 4. COVER ALL JOINTS IN CLAY PIPE IN THE TRENCH AREA WITH POLYETHYLENE MATERIAL BEFORE POURING FLOWABLE FILL. REPAIR ALL OBSERVED OPENINGS IN ANY PIPE OR MANHOLE IN THE TRENCH AREA PRIOR TO BACKFILLING WITH FLOWABLE FILL. REPAIR TECHNIQUES SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARD REPAIR PROCEDURES.
- 5. CONTACT THE RESPECTIVE UTILITY OWNER FOR REPAIR PROCEDURES.

**UC.06 LAYING CONDUIT**

A. PROPER IMPLEMENTS, TOOLS, AND FACILITIES, SATISFACTORY TO THE PROJECT ENGINEER SHALL BE PROVIDED AND USED BY THE CONTRACTOR FOR THE SAFE AND CONVENIENT PROSECUTION OF THE WORK. ALL CONDUITS AND FITTINGS SHALL BE CAREFULLY LOWERED INTO THE TRENCH PIECE BY PIECE, IN SUCH MANNER AS TO PREVENT DAMAGE TO CONDUIT, AND UNDER NO CIRCUMSTANCES SHALL CONDUIT OR ACCESSORIES BE DROPPED OR DUMPED INTO THE TRENCH. IF ANY DEFECTIVE CONDUIT OR MATERIAL BE DISCOVERED WHILE CONDUIT IS BEING LAID, A NEW PIECE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT THE SITE OF THE WORK.

B. ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE INSIDE OF THE CONDUIT BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH, AND IT SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING.

C. VERTICAL AND HORIZONTAL CURVES SHALL HAVE A MINIMUM RADIUS OF NO LESS THAN 30 FEET. THESE CURVES ARE TO BE CONSTRUCTED BY USING THE APPROPRIATE 5° COUPLINGS, AND ASSOCIATED CHORD LENGTHS OF CONDUITS AS NOTED ON THE PLAN VIEW AND/OR AS SHOWN ON THE CONDUIT CURVE CONSTRUCTION CHART. ANY OTHER CURVE DESIGN, FIELD CHANGES, OR THE USE OF PREFORMED RADIUS BENDS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER.

D. NO CONDUIT SHALL BE LAID IN WATER, OR WHEN THE TRENCH CONDITIONS OR THE WEATHER IS UNSUITABLE FOR SUCH WORK, EXCEPT BY PERMISSION OF THE PROJECT ENGINEER.

E. THE SAND LAYER UNDER DUCT BANK SHALL BE COMPACTED AS PER CMS 625.13, SAND SHALL BE AS PER CMS 703.06.

F. ALL CONDUIT RUNS ARE TO HAVE A MINIMUM CLEARANCE OF 5' (FACE TO FACE), HORIZONTALLY FROM ALL WATER LINES. VERTICAL CLEARANCE SHALL BE AT A MINIMUM OF 1'-6", OR AS SHOWN ON THE PROFILE SHEETS OF THE PROJECT. CLEARANCE BETWEEN OTHER UTILITIES SHALL BE 1 FOOT, UNLESS NOTED OTHERWISE. CPP'S DUCT BANK EXTENSION SHALL CROSS OVER OR UNDER OTHER UTILITIES AT AN ANGLE OF NO LESS THAN 45°.

G. ANY CONDUIT RUNS THAT ARE CROSSING ANY STEAM LINES SHALL HAVE A MINIMUM CLEARANCE OF 5', OR AS SHOWN ON THE PROFILE SHEET OF THE PROJECT. IN THE EVENT THAT THIS CAN NOT BE ACCOMPLISHED, NOTIFY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER PRIOR TO THE INSTALLATION OF OUR CONDUITS.

H. ALL CONDUIT RUNS ARE TO BE INSTALLED AT A MINIMUM DEPTH OF 2'-6" BELOW THE EXISTING AND/OR PROPOSED GRADES, OR AS SHOWN IN THESE PLANS EXCEPT THOSE THAT ARE UNDER ANY RAILROAD OR RTA TRACKS. THE CONDUITS WILL BE INSTALLED AT A MINIMUM DEPTH OF 60" BELOW THE RAIL TIES. ALSO, AT ANY RAILROAD CROSSINGS, CONDUITS ARE TO BE ENCASED IN A STEEL PIPE. SEE DRAWINGS ISSUED BY CLEVELAND PUBLIC POWER FOR DETAILS.

**UC.07 FLOATING**

THE CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST FLOATING OF THE CONCRETE ENCASED CONDUITS DUE TO WATER ENTERING THE TRENCH, OR THROUGH CAVING IN, FLUSHING OR PUDDLING. IN CASE OF SUCH FLOATING THE CONTRACTOR SHALL REPLACE THE CONCRETE ENCASED CONDUIT AT HIS/HER OWN EXPENSE, AND MAKE GOOD ANY INJURY OR DAMAGE WHICH MAY HAVE RESULTED.

**UC.08 PLAIN AND REINFORCED CONCRETE MASONRY**

THE MATERIALS FURNISHED BY THE CONTRACTOR FOR THE VARIOUS KINDS OF PLAIN AND REINFORCED MASONRY CONSTRUCTION TO BE PERFORMED, SHALL CONFORM TO CMS 602.

**UC.09 CONCRETE MANHOLES**

A. WORK INCLUDED:  
THE CONTRACTOR SHALL FURNISH ALL MATERIALS & LABOR FOR INDICATED WORK WITHIN THE EXISTING MANHOLE #MH 67-42 AND SHALL CONSTRUCT AT THE LOCATIONS, TO THE LINE AND GRADE, AND TO THE DIMENSIONS AND DETAILS AS SHOWN ON THE PLANS AND ACCORDANCE TO THESE SPECIFICATIONS

B. CABLE RACKS/SUPPORTS:

- 1. CABLE RACKS SHALL CONSIST OF THE QUANTITY OF 48" HIGH MINIMUM RACKS AS DETAILED ON THE DRAWINGS, THE CONTRACTOR SHALL PROVIDE NUMBER OF CABLE SUPPORTS AND INSULATORS SIZED TO MATCH CABLE DIAMETER TO ADEQUATELY SUPPORT CABLE AS PER THE ENGINEER AND CPP REQUIREMENTS. RACKS AND SUPPORTS SHALL BE HOT-DIPPED GALVANIZED AS PER CMS 711.02.
- 2. CABLE RACKS/SUPPORTS SHALL BE MANUFACTURED BY: A.B CHANCE-HUBBELL POWER SYSTEMS, MACLEAN POWER SYSTEMS OR APPROVED EQUAL.

C. EXCAVATION AND BACKFILL:

- 1. THE EXCAVATION SHALL BE OF SUCH DIMENSIONS IN ALL CASES AS WILL GIVE AMPLE ROOM FOR CONSTRUCTION. THIS SHALL INCLUDE CLEARING AND GRUBBING AND THE REMOVAL OF ALL MATERIALS NECESSARY FOR PLACING THE ITEM EXCEPT REMOVALS LISTED SEPARATELY.
- 2. IF THE MATERIAL FOUND AT GRADE IS NOT SUITABLE FOR FOUNDATION A FURTHER DEPTH SHALL BE EXCAVATED AND FILLED WITH SUITABLE MATERIAL.
- 3. THE BACKFILLING SHALL FOLLOW THE COMPLETION OF THE WORK AS CLOSELY AS THE TYPE OF CONSTRUCTION WILL PERMIT. SPECIAL CARE MUST BE TAKEN NOT TO DISTURB THE WORK. ALL STRUCTURES LOCATED IN THE PAVEMENT SHALL BE BACKFILLED WITH GRANULAR MATERIAL.
- 4. ALL SURPLUS FROM EXCAVATION SHALL BE DISPOSED OF AT NO ADDITIONAL EXPENSE TO THE OWNER.

D. CLEANING & INSPECTION OF THE EXISTING MANHOLE AND SPLICING CHAMBERS: PRIOR TO ANY WORK WITHIN THE MANHOLE OR SPLICING CHAMBERS THE CONTRACTOR SHALL REMOVE ALL DIRT, SAND, MUD, RUBBISH, DEBRIS, EXCESS MATERIALS, FALSE WORK, TEMPORARY STRUCTURES AND EQUIPMENT OUT OF THE MANHOLE AND SPLICING CHAMBERS AND ALL PARTS OF THE WORK SHALL BE LEFT IN A NEAT AND PRESENTABLE CONDITION SATISFACTORY TO THE PROJECT ENGINEER. INSPECT THE EXISTING INSTALLATIONS AND REPORT ANY ISSUES THAT WILL PROHIBIT ANY SPECIFIED WORK TO BE COMPLETED WITHIN THE MANHOLE OR SPLICING CHAMBERS.

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**UC.10 CONDUITS**

A. WORK INCLUDED: THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT TO MANHOLES, TO SPLICE CHAMBERS AS SHOWN ON DRAWINGS OR AS DIRECTED, AND ALL NON-REINFORCED CONCRETE ENCASED PVC CONDUIT DUCT BANKS AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

B. GENERAL: CONDUIT AND FITTINGS SUPPLIED AS PART OF THIS CONTRACT SHALL BE RIGID NON-METALLIC SCHEDULE 80 PVC FOR DIRECT BURIED CONCRETE ENCASED CONDUIT APPLICATIONS.

**C. MATERIAL SPECIFICATIONS:**

1. PVC SCHEDULE 80 CONDUIT, UL 651 SHALL BE USED WHERE RACEWAYS ARE INSTALLED EXPOSED.
2. PVC SCHEDULE 20/TYPE EB CONDUIT SHALL BE USED IN ALL AREAS WHERE CONCRETE ENCASEMENT IS SPECIFIED. THE CONCRETE ENCASEMENT SHALL BE AT LEAST A MINIMUM OF 3" ALL AROUND UNLESS OTHERWISE DETAILED.
3. PVC CONDUIT SHALL BE MANUFACTURED BY ALLIED, CANTEX, NATIONAL OR PRIME CONDUIT. ALL RACEWAYS SHALL BE RATED FOR 90 DEGREES C WIRE, MADE FROM VIRGIN POLYVINYL CHLORIDE WHICH MEETS OR EXCEEDS ASTM CELL CLASSIFICATION 13364 WITH IMPROVED IMPACT STRENGTH AND HIGHER HEAT DISTORTION TEMPERATURE CAPABILITIES. EXPANSION FITTINGS SHALL BE SUPPLIED AND INSTALLED AS PER THE NEC AND THE MANUFACTURER'S RECOMMENDATIONS.
  - A. ALL PVC RACEWAY, FITTINGS AND CEMENT SHALL BE BY THE SAME MANUFACTURER AND SHALL COMPLY WITH NEMA TC13 AND UL 1653.
4. ALL UNDERGROUND DUCTS SHALL CONTAIN A 3/8" NYLON PULL LINE WITH MINIMUM 25 FEET SURPLUS ON EACH END, COILED AND LEFT HANGING FOR FUTURE USE.

D: CONCRETE ENCASEMENT: ALL POWER CONDUIT RUNS ARE TO BE CONSTRUCTED BY USING 2", 4", 5", OR 6" PVC SCHEDULE 20/TYPE EB CONDUITS, AS DEPICTED ON THE PLANS, ENCASED WITH A 3" CONCRETE ENVELOPE, UNLESS OTHERWISE NOTED ON THE PLANS OR SPECIFICATIONS. THE CONCRETE ENVELOPE IS TO BE 4000 PSI (CITY OF CLEVELAND CONCRETE MIX).

**E. INSTALLATION:**

1. CONDUIT SHALL BE INSTALLED BY THE BUILT UP METHODS AS FOLLOWS: NECESSARY BASE AND/OR INTERMEDIATE SPACERS SHALL BE PLACED AT NOT GREATER THAN FIVE (5) FOOT INTERVALS TO HOLD DUCTS IN THE CONFIGURATION DESIRED, WITH THE DUCT BANK BRACED SECURELY TO KEEP FROM SHIFTING AND FLOATING WHILE CONCRETE IS BEING POURED. EACH SECTION OF DUCT WITH ITS COUPLING SHALL BE TAPPED SECURELY INTO PLACE IN THE PREVIOUS COUPLING TO SET UP THE JOINTS TIGHT AND LEAK PROOF.
2. CONCRETE SHALL BE WORKED INTO THE SPACES BETWEEN DUCTS SO THAT THE CONDUIT BANK IS EFFECTIVELY ENCASED IN CONCRETE WITHOUT VOIDS OR EMPTY SPACES.
3. CONDUIT WHICH IS CUT TO FIT SHORT SECTIONS SHALL BE DEBURRED ON THE DUCT END AND THE END OF THE BELL REAMED IN THE INSIDE DIAMETER FOR EASY ENTRY OF THE DUCT INTO THE COUPLING TO PRODUCE THE SAME JOINTING CONDITIONS AS PROVIDED BY FACTORY MADE CONDUIT SECTIONS.
4. THE END BELLS SHALL BE INSTALLED WITH THE EDGE OF THE FLARED ENDS FLUSH WITH THE INSIDE WALL OF THE MANHOLES.
5. ALL END BELLS SHALL BE GROUTED IN PLACE.
6. ALL VACANT AND EMERGENCY DUCTS AT LATERAL POLES SHALL BE CAPPED AND SEALED IN ADDITION TO AN OVERALL CEMENT COVERING TO DISCOURAGE FUTURE DAMAGES OR VANDALISM.
7. A RUGGED POLYETHYLENE MATERIAL WARNING TAPE CAPABLE OF RESISTING HIGH OR LOW PH CONDITIONS MUST BE PLACED ABOVE THE ELECTRICAL CONDUIT BANK. THIS WARNING TAPE IS TO BE SIX INCHES WIDE, RED IN COLOR, AND IMPRINTED WITH THE WORDS, DANGER BURIED HIGH VOLTAGE CABLES BELOW. THIS TAPE IS TO BE PLACED 6" ABOVE THE NEWLY INSTALLED DUCT BANK. THIS SHALL CONFORM WITH THE STANDARDS AS SET BY THE OHIO UTILITIES PROTECTION SERVICES.
8. AS AN OPTION, THE CONTRACTOR MAY ELECT TO ENCASE CPP'S CONDUITS IN RED CONCRETE. BOTH METHODS ARE APPROVED BY CLEVELAND PUBLIC POWER AND ARE RECOMMENDED BY OHIO UTILITIES PROTECTION SERVICE.

**UC.11 CONCRETE DESIGN MIX (CITY OF CLEVELAND MIX)**

UNDER THIS SECTION OF THESE SPECIFICATIONS THE CONTRACTOR IS REQUIRED TO SUBMIT A SEPARATE MIX DESIGN FOR EACH COMBINATION OF CEMENT TYPE, AGGREGATE TYPE, AND CONCRETE SUPPLIER THEY WILL USE UNDER THIS CONTRACT. EACH MIX SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C94-94 OPTION C AND AS HEREIN MODIFIED.

REQUIREMENT:  
MINIMUM TWENTY-EIGHT (28) 4000 PSI FOR 28 DAYS COMPRESSIVE STRENGTH TEST. FOUR CYLINDERS WILL BE TAKEN AND TESTED AS PER ASTM C-39-94. ONE TO BE TESTED AT SEVEN DAYS AND THE REMAINING THREE WILL BE TESTED AT TWENTY-EIGHT DAYS. ACCEPTANCE WILL BE BASED ON THE AVERAGE RESULTS OF THE THREE CYLINDERS.

MINIMUM CEMENT CONSTANT:  
650 LBS. PER CUBIC YARD. THE CEMENT SHALL CONFORM TO ASTM C-150-94 OR C-595-94.

WATER CEMENT RATIO:  
0.45 MAXIMUM.

SLUMP:  
NOMINAL THREE INCHES (3") AS PER ASTM C-94-94 (2"-4" ACTUAL). THE USE OF CHEMICAL ADMIXTURES MEETING ASTM C-494, TO INCREASE THE SLUMP TO A MAXIMUM OF 7", MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE DIVISION OF ENGINEERING AND CONSTRUCTION INSPECTOR. IF THIS OPTION IS SELECTED THE ADMIXTURE AND RESULTANT MAXIMUM SLUMP SHALL BE SUBMITTED FOR APPROVAL.

AIR CONTENT:  
FOUR PERCENT (4%) TO SEVEN AND ONE-HALF PERCENT (7 1/2 %) ASTM C-173-94 OR C-231-94.

AGGREGATE SIZE:  
NO. 57 FOR COARSE AGGREGATE SHALL BE LIMESTONE, GRAVEL OR CRUSHED AIR-COOLED BLAST FURNACE SLAG. BOTH COARSE AND FINE AGGREGATE AS PER ASTM C-33-94.

IF CRUSHED AIR-COOLED BLAST FURNACE SLAG IS USED IT SHALL MEET ALL OF THE REQUIREMENTS OF ODOT 703.01 AND ODOT 703.02. COPIES OF ALL TESTS AND CERTIFICATIONS FOR THE CRUSHED AIR-COOLED BLAST FURNACE SLAG, IF USED, SHALL BE SUBMITTED AS PART OF THE CONCRETE MIX DESIGN.

WHEN HIGH EARLY STRENGTH IS REQUIRED, ASTM C-150-94 TYPE III A CEMENT OR ADMIXTURES IN ACCORDANCE WITH ASTM C-494-94 SHALL BE USED.

**UC. 12 PAVEMENT REPAIR**

CONCRETE PAVEMENT

ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES.

DOWELS SHALL BE REQUIRED AS BP-2.6.

CONCRETE REPAVING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE AND/OR SLAB IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE AND/OR SLAB, THAT LANE OR SLAB SHALL ALSO BE REPAVED.

ASPHALT PAVEMENT

ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES.

ASPHALT RESURFACING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE IN WHICH THE REPAIRS ARE LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE, THAT LANE SHALL ALSO BE RESURFACED FOR PAVEMENTS WITH A WIDTH OF 40' OR LESS, A LANE SHALL BE CONSIDERED 1/2 THE PAVEMENT WIDTH.

EXTEND OVERCUT IN LONGITUDINAL DIRECTION TWO FEET (2') INTO UNDISTURBED SUBGRADE.

BRICK PAVEMENT

ALL STREETS WITHIN THE CITY OF CLEVELAND THAT ARE CURRENTLY BRICK PAVED, SHALL BE REPLACED WITH BRICK, OR AS DIRECTED BY THE INSPECTOR REPRESENTING THE DIVISION OF ENGINEERING AND CONSTRUCTION OF THE CITY OF CLEVELAND.

THE CONTRACTOR UNDER THIS SECTION OF THE SPECIFICATIONS SHALL CONSTRUCT CONCRETE BASE, PAVEMENT, SIDEWALK, DRIVEWAY APRONS, CURB, CURB AND GUTTER SECTIONS, HANDICAP RAMPS, AND INTEGRAL RADIUS CURB AND WALK. THIS INCLUDES THE RESTORATION OF ALL ADJACENT SURFACES WHICH ARE DISTURBED BY THIS CONSTRUCTION AT NO COST TO THE CITY OF CLEVELAND AND/OR CLEVELAND PUBLIC POWER. THE CONTRACTOR SHALL TAKE ANY AND ALL MEASURES NECESSARY TO ENSURE CONCRETE IS NOT DEFACED WITH GRAFFITI, FOOT PRINTS, TIRE TRACKS, AND ROCKS, ETC. BY VANDALS.

**UC. 13 REGULATIONS GOVERNING THE LAYING OF CONCRETE SIDEWALKS, APRONS, AND CURBING**

CONCRETE WALKS SHALL BE OF ONE-COURSE CONSTRUCTION AND SHALL BE FOUR INCHES (4") IN THICKNESS, EXCEPT IN THE DOWNTOWN DISTRICT WHERE THEY MUST BE SIX INCHES (6") IN THICKNESS UNLESS OTHERWISE SHOWN ON THE PLANS. CONCRETE FOR WALKS, CURBS, DRIVES, AND APRONS SHALL BE CLASS "C" CONCRETE AS PER ITEM 608 AND SPECIAL OF THE "SUPPLEMENTAL TO STATE SPECIFICATIONS FOR CITY OF CLEVELAND - 1967".

WHEN CONCRETE WALKS ARE LAID ON CLAY, AND EXTRA EXCAVATION TO A DEPTH OF ONE-AND-ONE-HALF INCHES (1-1/2") MUST BE MADE AND FILLED WITH SAND OR GRAVEL, TO ACT AS A FOUNDATION TO THE FOUR INCHES (4") OF SIDEWALK PROPER.

NO BLOCKS OF CONCRETE SHALL BE LARGER THAN SIX FEET (6') AND THE JOINTS MUST BE CUT BY THE USE OF AN APPROVED GROOVING TOOL MAKING A GROOVE ONE-FOURTH INCHES (1/4") DEEP. ALL EDGES SHALL BE ROUNDED WITH AN APPROVED EDGING TOOL TO A RADIUS OF ONE-FOURTH INCH (1/4").

EXISTING APRONS AND "DRIVE AREAS" OF THE WALK MUST BE CONSTRUCTED OF CONCRETE. APRONS AND THE AREA OF WALK OVER WHICH VEHICLES DRIVE MUST BE LESS THAN SIX INCHES (6") IN THICKNESS, AND MUST BE LAID IN ACCORDANCE WITH SUPPLEMENTAL TO STATE SPECIFICATIONS FOR THE CITY OF CLEVELAND.

AT ALL WATER-METER COVERS, GAS BOXES, HYDRANTS, OR OTHER OBSTRUCTIONS, NEATLY FITTED OPENINGS SHALL BE CUT IN THE SIDEWALK. NO WALK SHALL BE LAID UNTIL ALL THESE OBSTRUCTIONS HAVE BEEN RAISED OR LOWERED TO THE CORRECT ELEVATIONS.

NO OBSTRUCTIONS SHALL BE PLACED IN FRONT OF ANY CATCH-BASIN, FIRE HYDRANT, FIRE ALARM BOX OR LETTER BOX, OR NEAR ENOUGH TO THE SAME TO INTERFERE WITH THEIR USE.

NO CHANGE IN THE WIDTH OF THE WALK TO BE LAID SHALL BE MADE FROM THAT OF EXISTING WALKS ON THE STREET AT THE TIME WORK IS DONE UNDER THIS PERMIT, UNLESS SPECIALLY PERMITTED BY THE DIRECTOR OF PUBLIC SERVICE. TREES, LAWNS, AND SHRUBBERY SHALL NOT BE INTERFERED WITH OR DESTROYED BY ANY WORK PERFORMED BY THE CONTRACTOR. WALKS MUST BE LAID TO THE SAME GRADE AS EXISTING WALKS ON THE STREET, UNLESS PERMISSION FOR CHANGE OF GRADE IS OBTAINED FROM THE DIRECTOR OF PUBLIC SERVICE.

ONLY ONE-HALF (1/2) OF THE SIDEWALK IN THE BUSINESS DISTRICT CAN BE OBSTRUCTED AT ONE TIME, UNLESS THE CONTRACTOR HAS AN OBSTRUCTION PERMIT. GUTTERS MUST BE LEFT OPEN AT ALL TIMES.

THE SPACING BETWEEN THE WALK AND THE CURB LINE MUST BE GRADED TO ALLOW WATER DRAINAGE, AND MUST BE OF A GRADUAL SLOPE FROM THE WALK TO THE CURB LINE.

THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DIRT AND RUBBISH CAUSED BY HIS/HER WORK.

FAILURE OF A CONTRACTOR TO COMPLY WITH THESE REGULATIONS SHALL RESULT IN THE WITHHOLDING OF FUTURE PERMITS AND SHALL SUBJECT THE HOLDER OF THIS PERMIT TO THE PENALTIES PRESCRIBED IN THE SIDEWALK ORDINANCE.

CURBING: CURBING SHALL CONFORM TO THE STANDARDS ESTABLISHED FOR SIZE AND QUALITY IN THE DISTRICT IN WHICH IT IS TO BE INSTALLED. CAST-IN-PLACE CONCRETE CURBS AND INTEGRAL CURBS, WHERE USED, SHALL CONFORM TO DETAIL PLAN NO. ME-246 OF THE CITY OF CLEVELAND.

COPIES OF THESE SPECIFICATIONS AND PLANS FOR PAVEMENT REPAIR AND LAYING OF CONCRETE SIDEWALKS MAY BE OBTAINED, UPON REQUEST, FROM THE DIVISION OF ENGINEERING AND CONSTRUCTION OF THE CITY OF CLEVELAND.

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CALCULATED  
AJB  
CHECKED  
JDL

CPP UTILITY NOTES

CUY -10-16.13

7/28

39  
308





0 10 20 30 40  
 HORIZONTAL  
 SCALE IN FEET

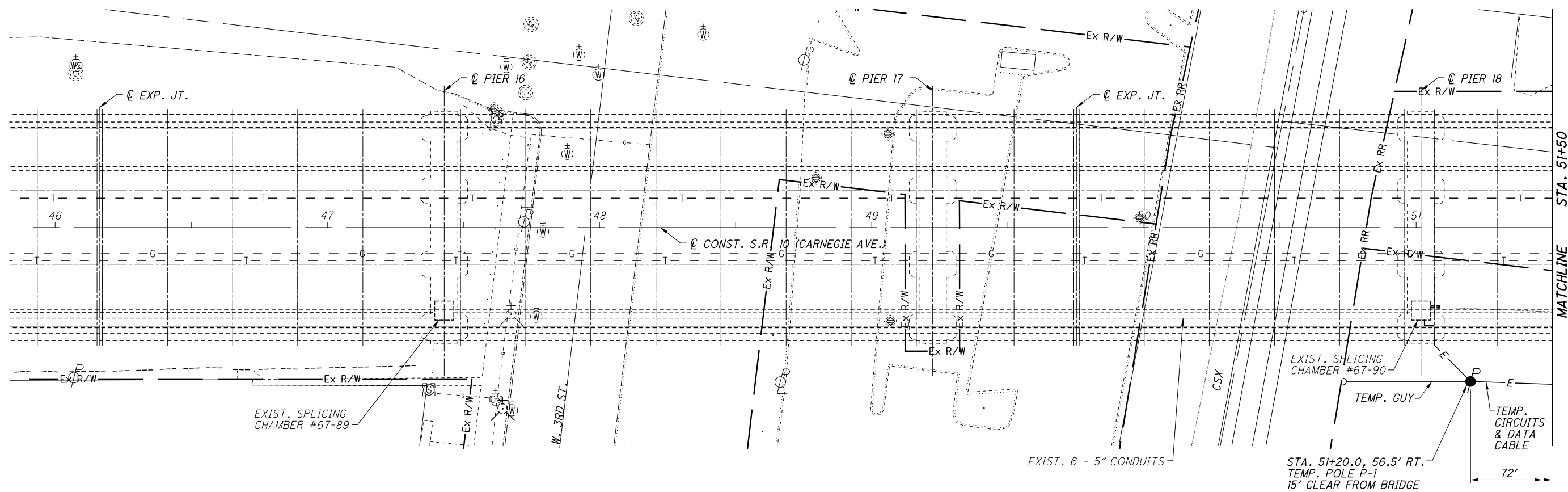
CALCULATED  
 AJB  
 CHECKED  
 JDL

**PLAN AND ELEVATION - 1**  
**S.R. 10 (CARNEGIE AVE. BRIDGE)**

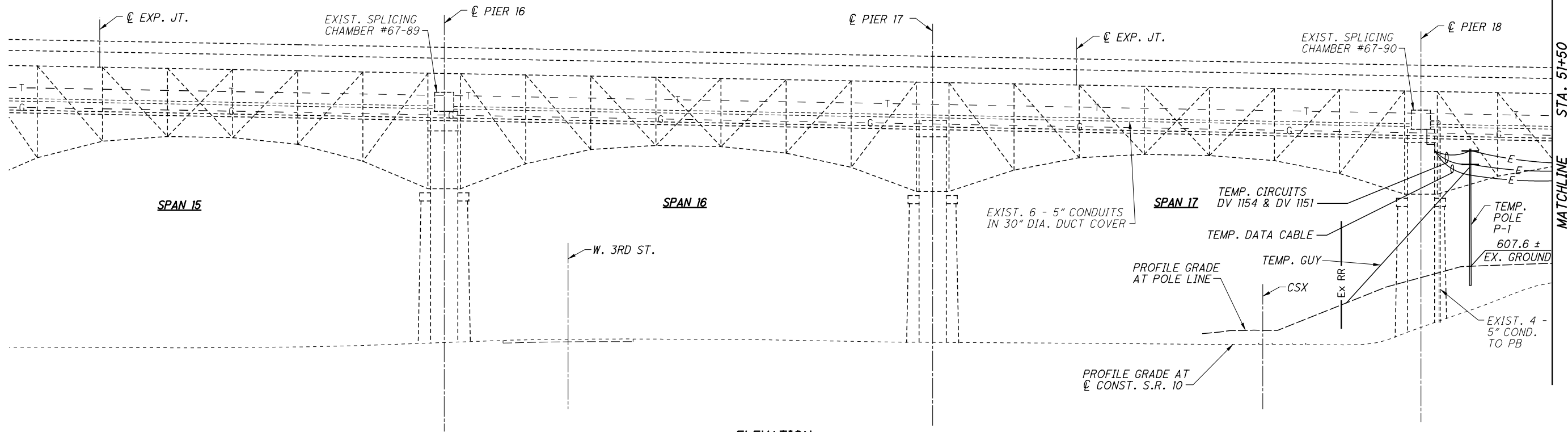
**CUY-10-16.13**

8 / 28

40  
 308

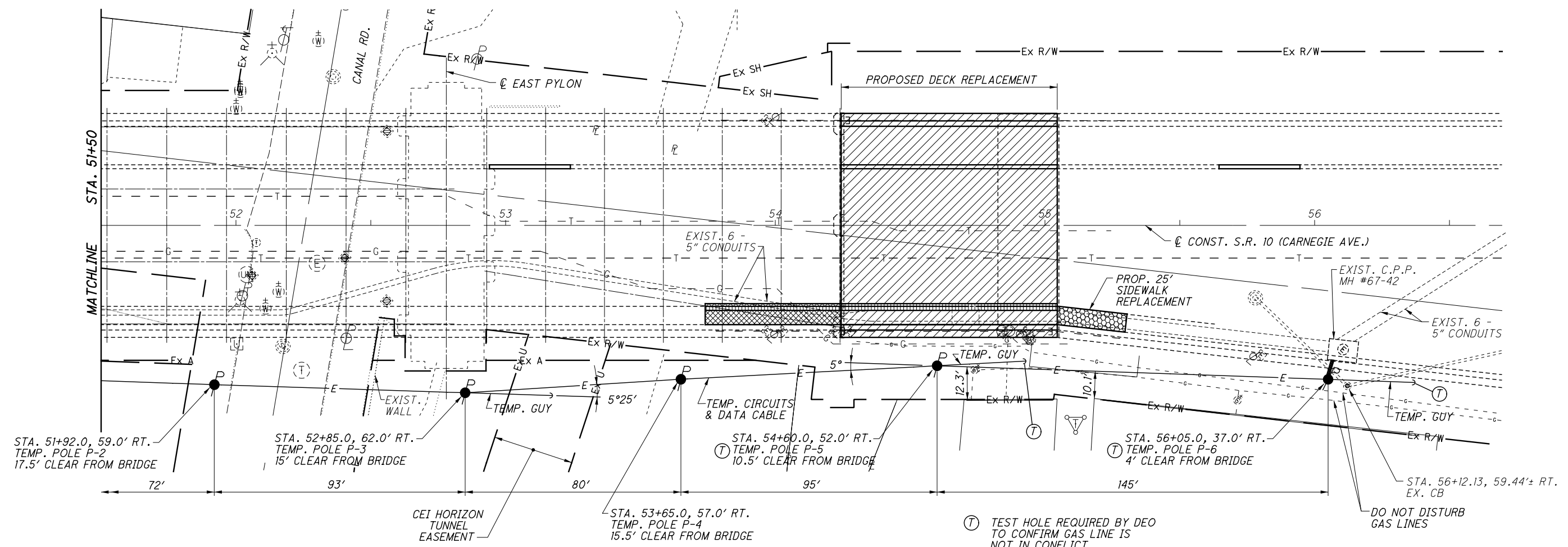


**PLAN**

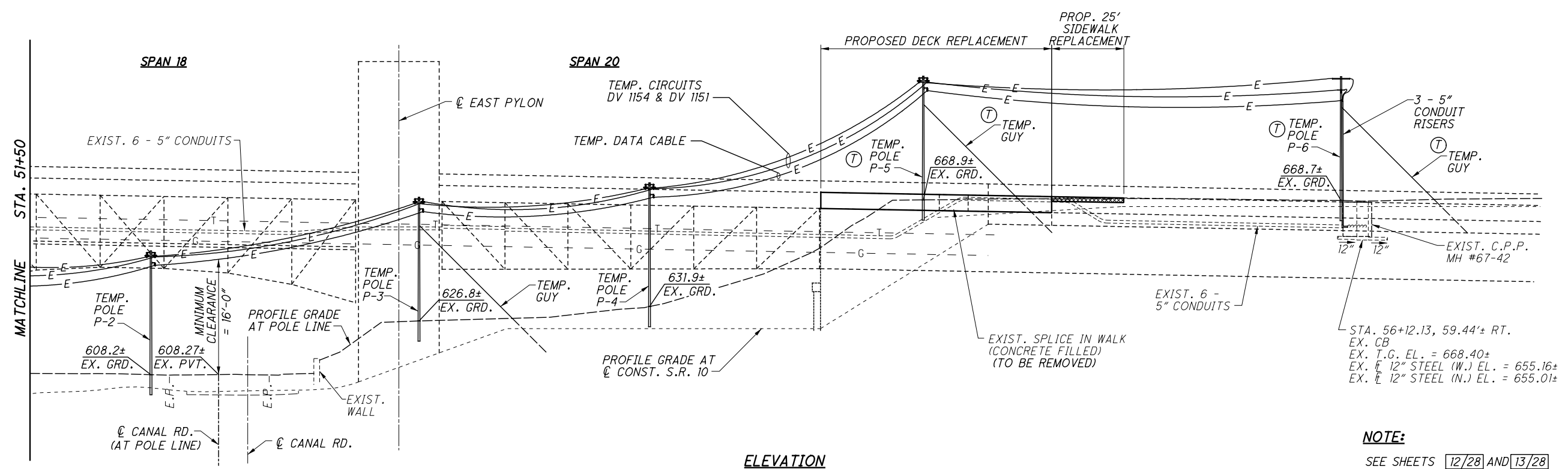


**ELEVATION**

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PLAN



ELEVATION

**NOTE:**  
SEE SHEETS 12/28 AND 13/28  
FOR EXISTING AND TEMPORARY  
CONDITIONS IN MANHOLE MH #67-42.  
SEE SHEET 10/28 FOR LEGEND.

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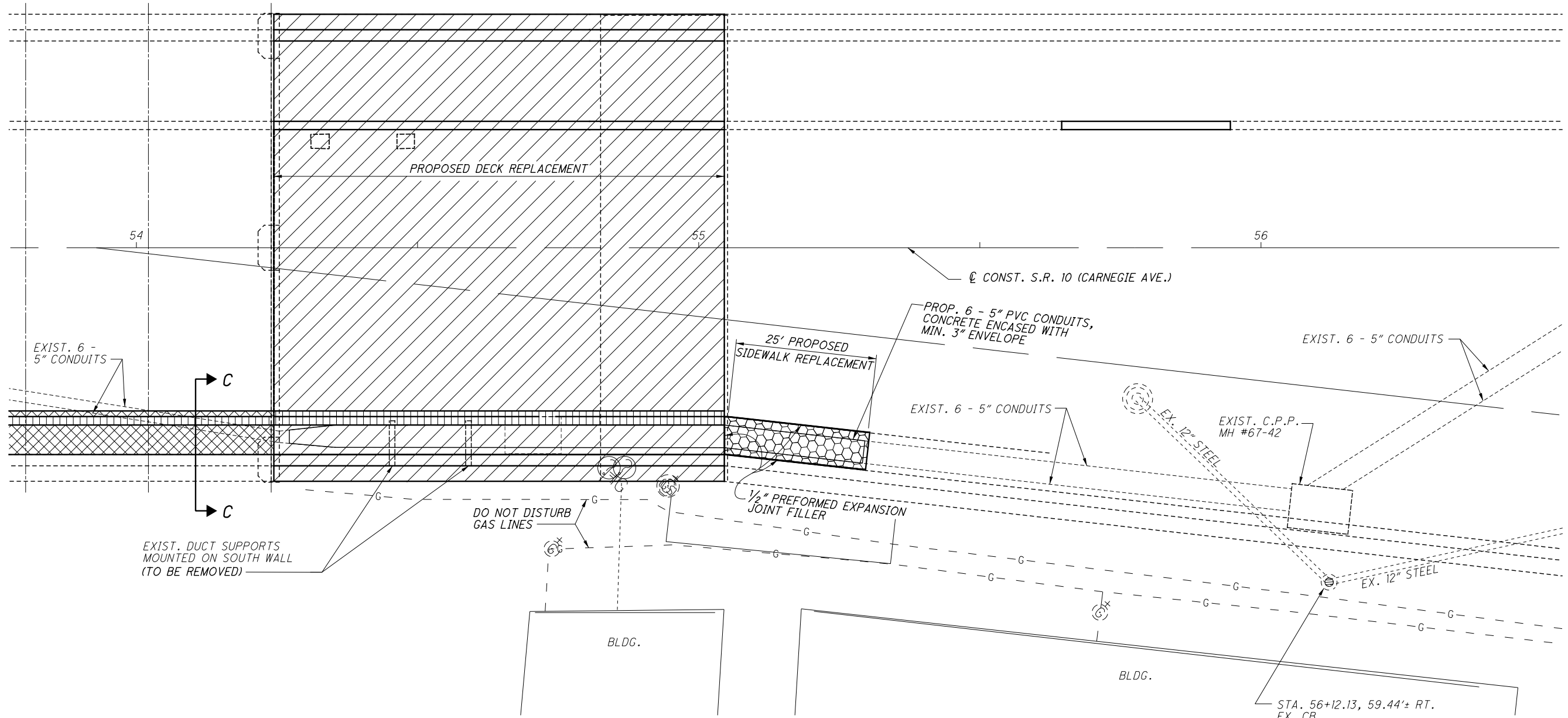
CALCULATED  
AJB  
CHECKED  
JDL

**CPP RELOCATION  
DETAILS**

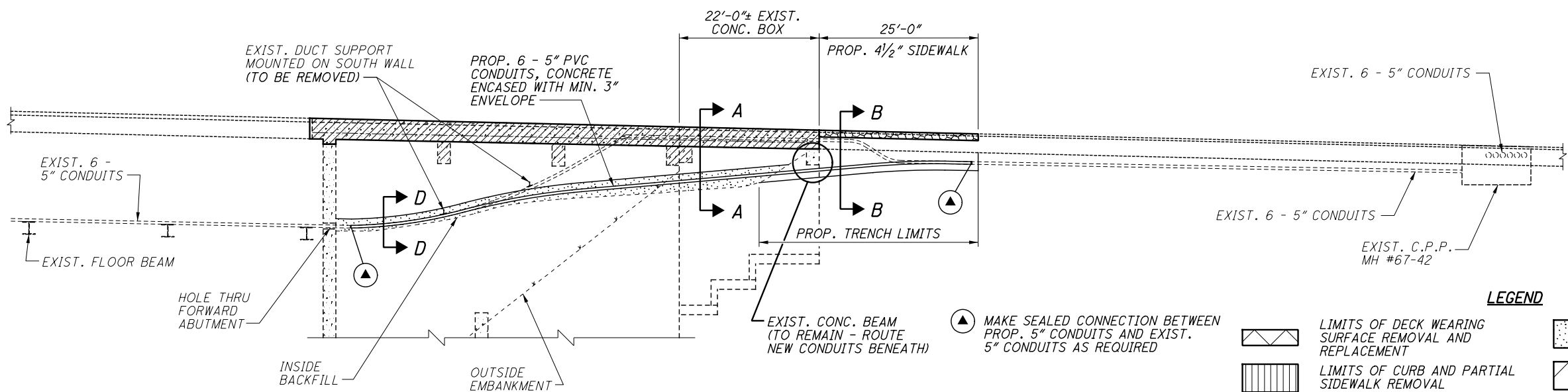
**CUY-10-16.13**

10 / 28

42  
308



**PLAN**



**ELEVATION**

(SOUTH WALL SHOWN, NORTH WALL SIMILAR)

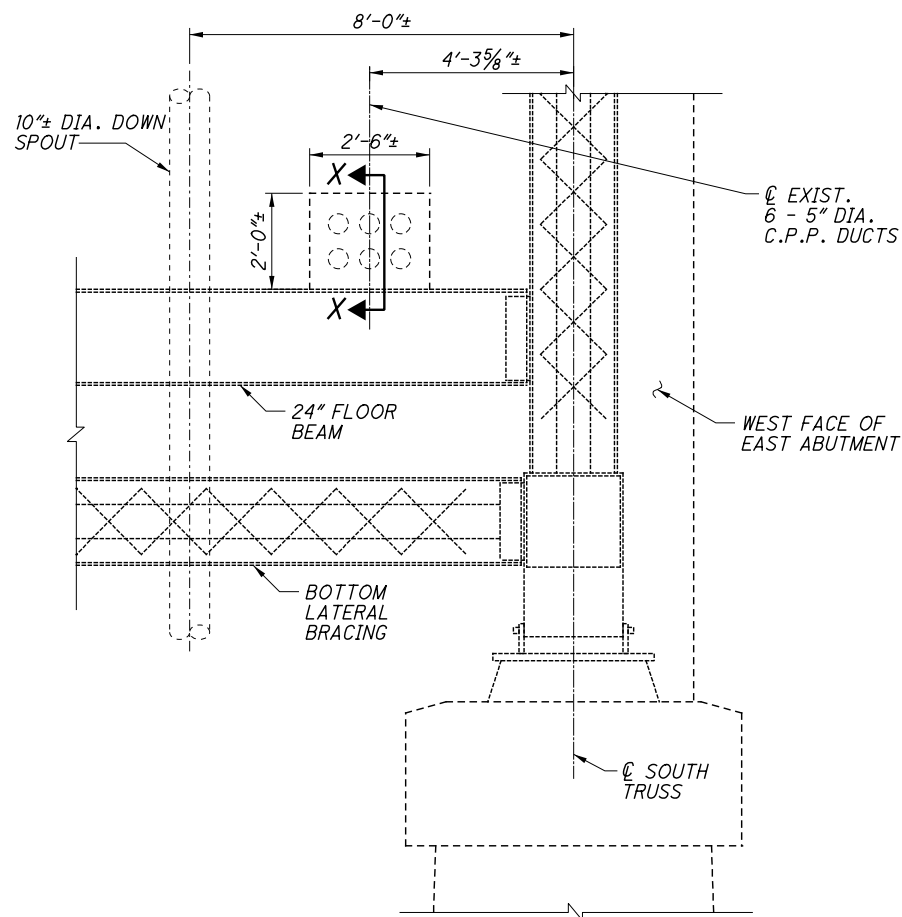
**NOTATION:**  
C.P.P. - CLEVELAND PUBLIC POWER  
PVC - POLYVINYL CHLORIDE  
EXIST. - EXISTING  
PROP. - PROPOSED

**NOTES:**  
**SECTIONS A-A, B-B, C-C AND D-D:**  
SEE SHEET 11/28.  
SEE SHEETS 12/28 AND 13/28  
FOR EXISTING AND TEMPORARY  
CONDITIONS IN MANHOLE MH #67-42.

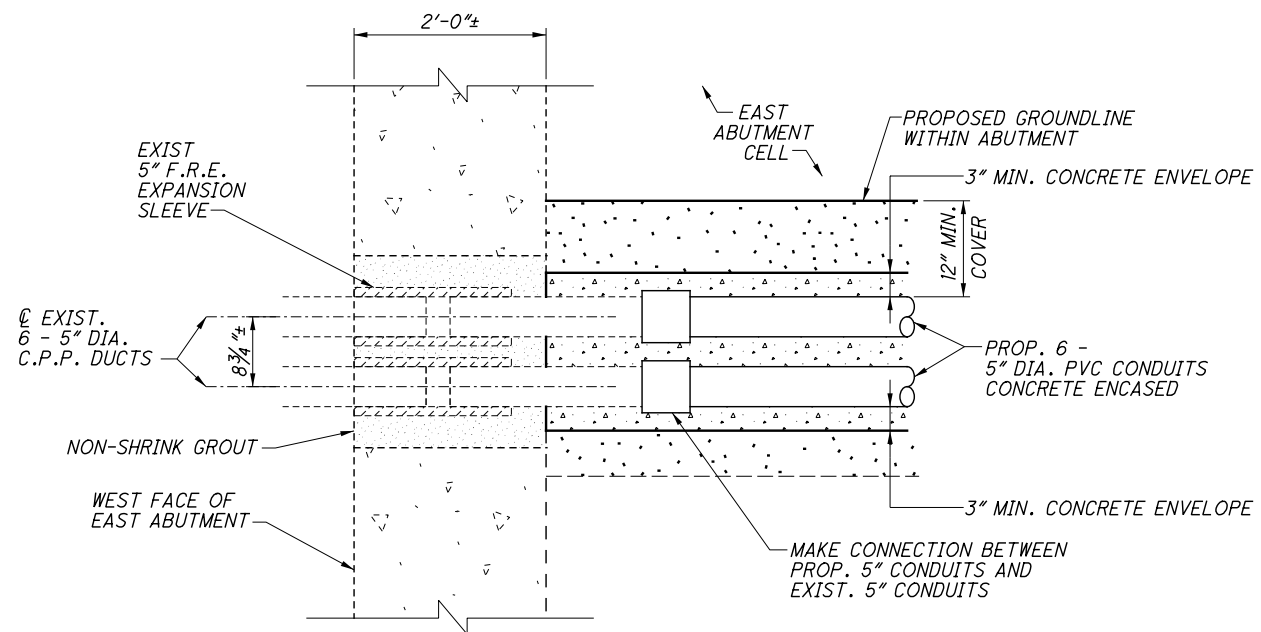
**LEGEND**

	LIMITS OF DECK WEARING SURFACE REMOVAL AND REPLACEMENT		PROPOSED BACKFILL TO COVER PROPOSED CONCRETE ENCASED CONDUITS
	LIMITS OF CURB AND PARTIAL SIDEWALK REMOVAL		PROPOSED DECK REPLACEMENT
	LIMITS OF SIDEWALK WEARING SURFACE REMOVAL AND REPLACEMENT		ITEM 608 - PROPOSED 4 1/2\"/>

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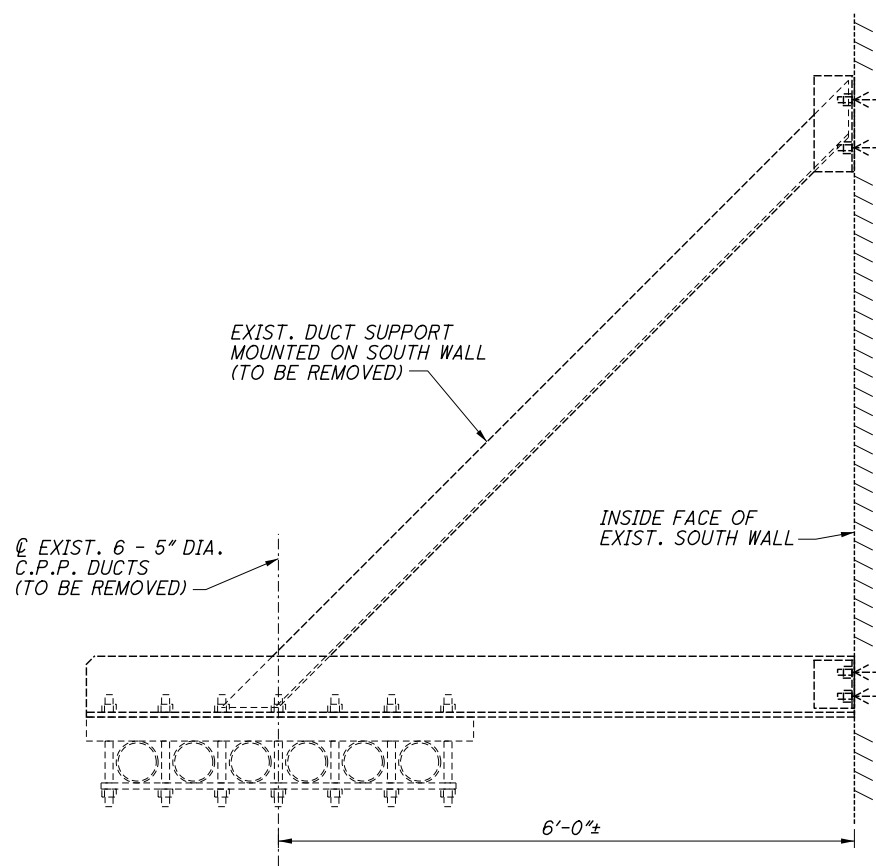


**SECTION C-C**

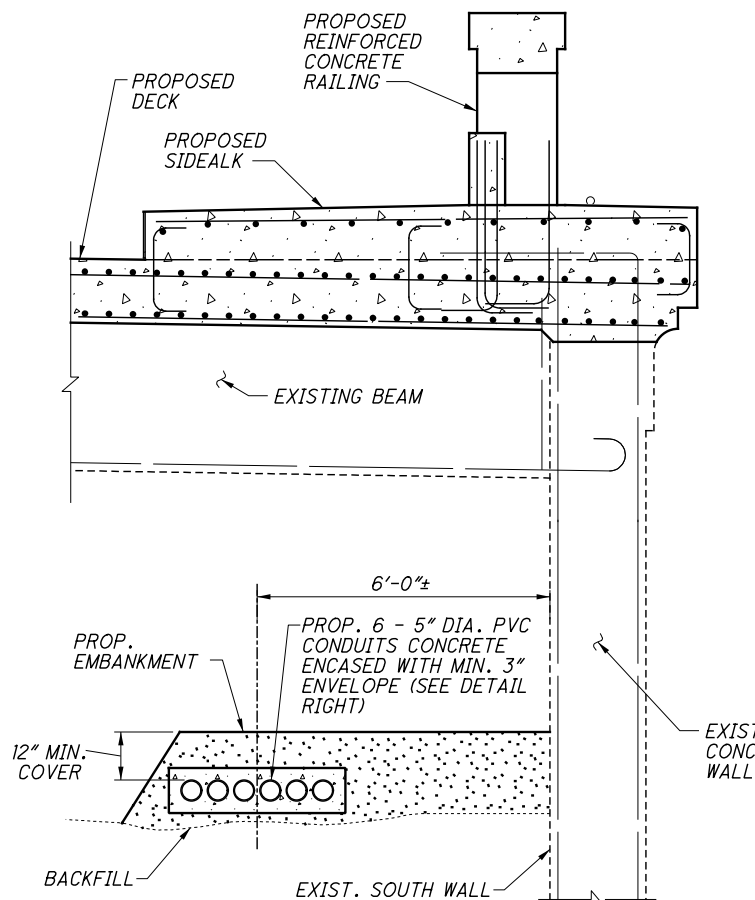


**SECTION X-X**

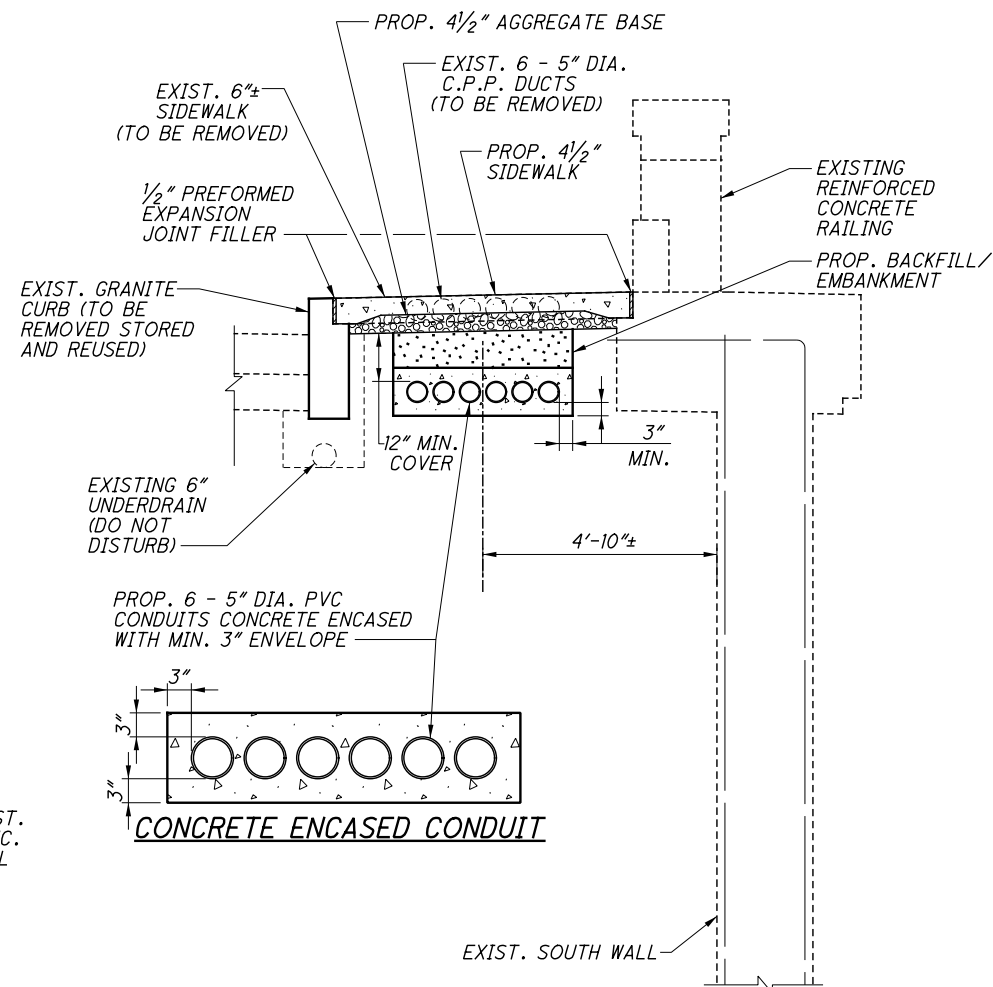
**NOTES:**  
SECTIONS A-A, B-B, C-C AND D-D LOCATION:  
SEE SHEETS 10 28.



**SECTION D-D**

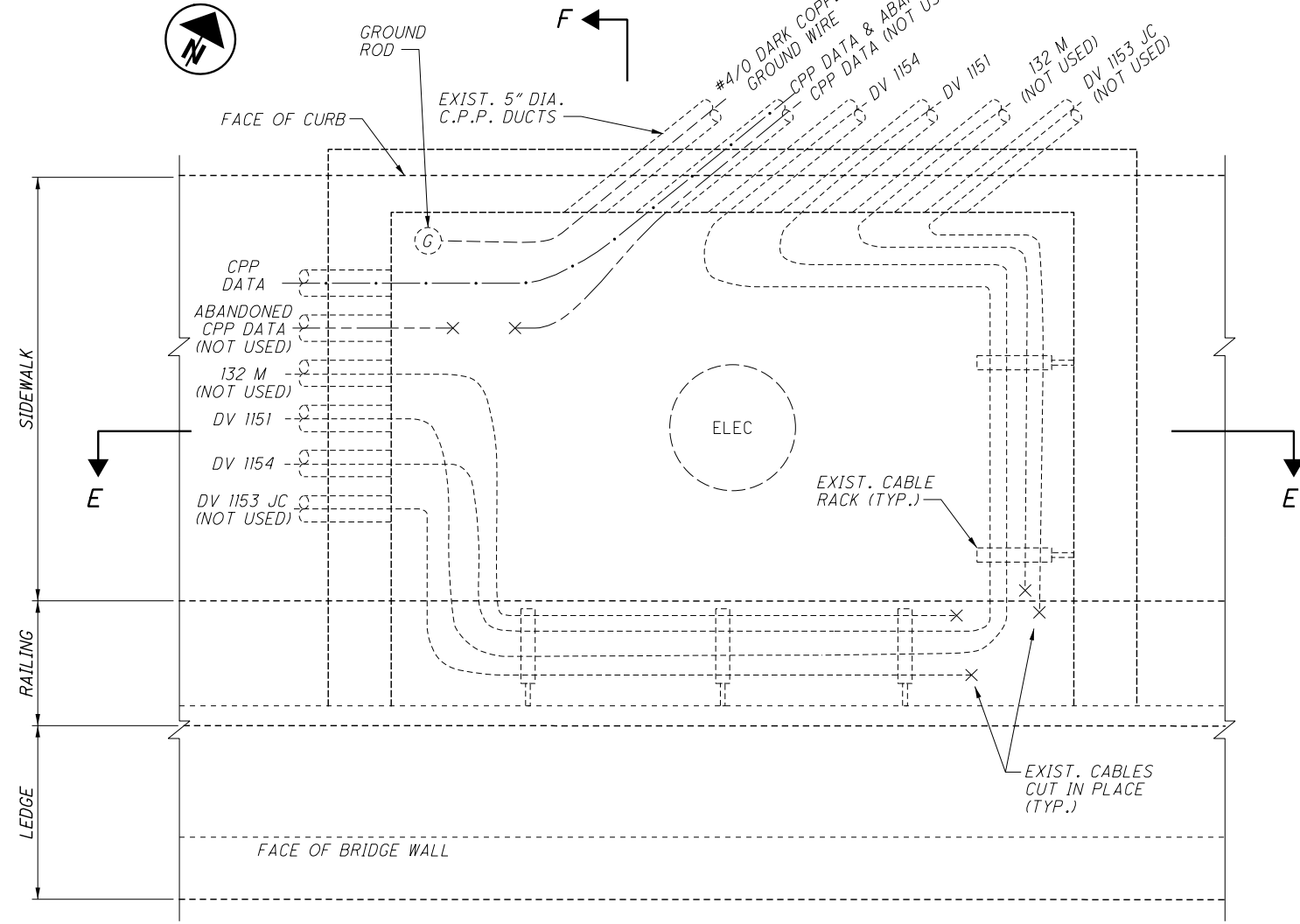


**SECTION A-A**

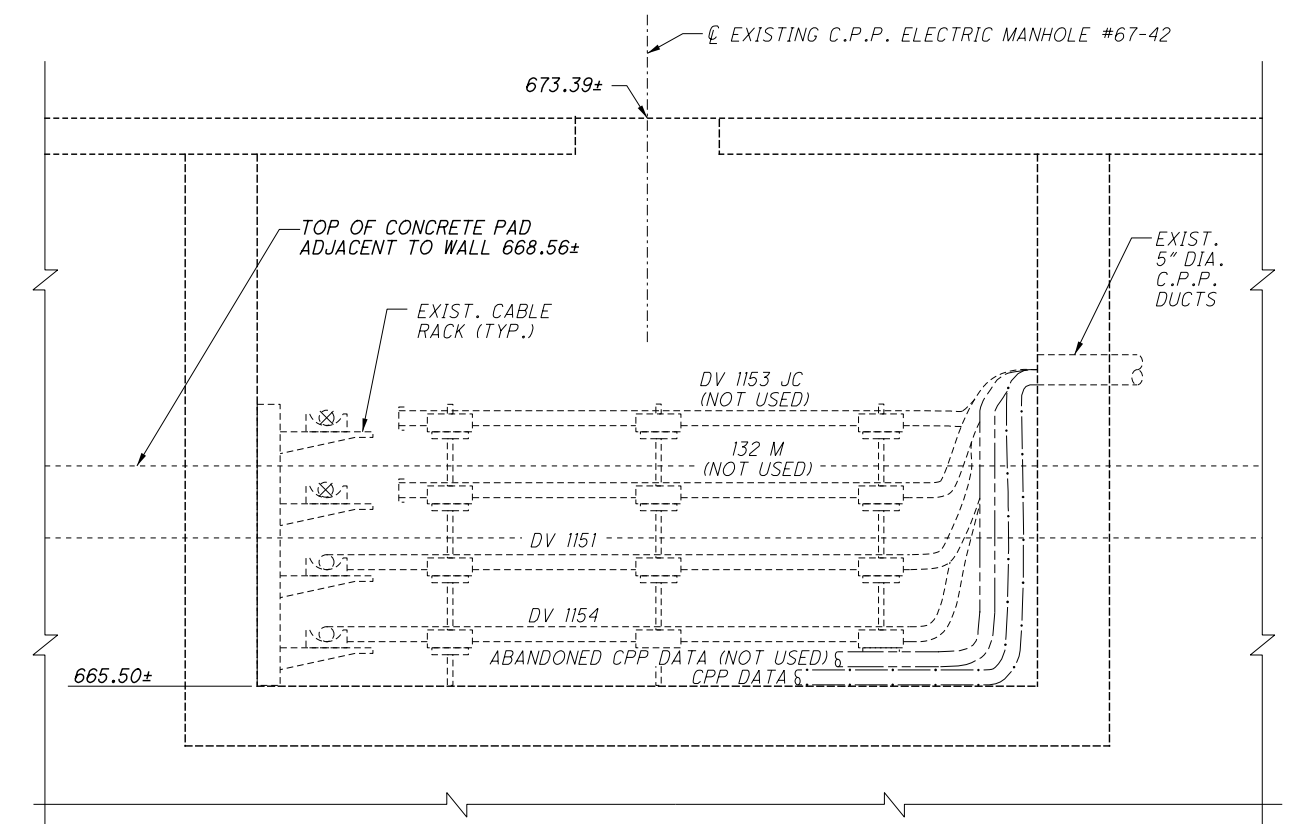


**SECTION B-B**

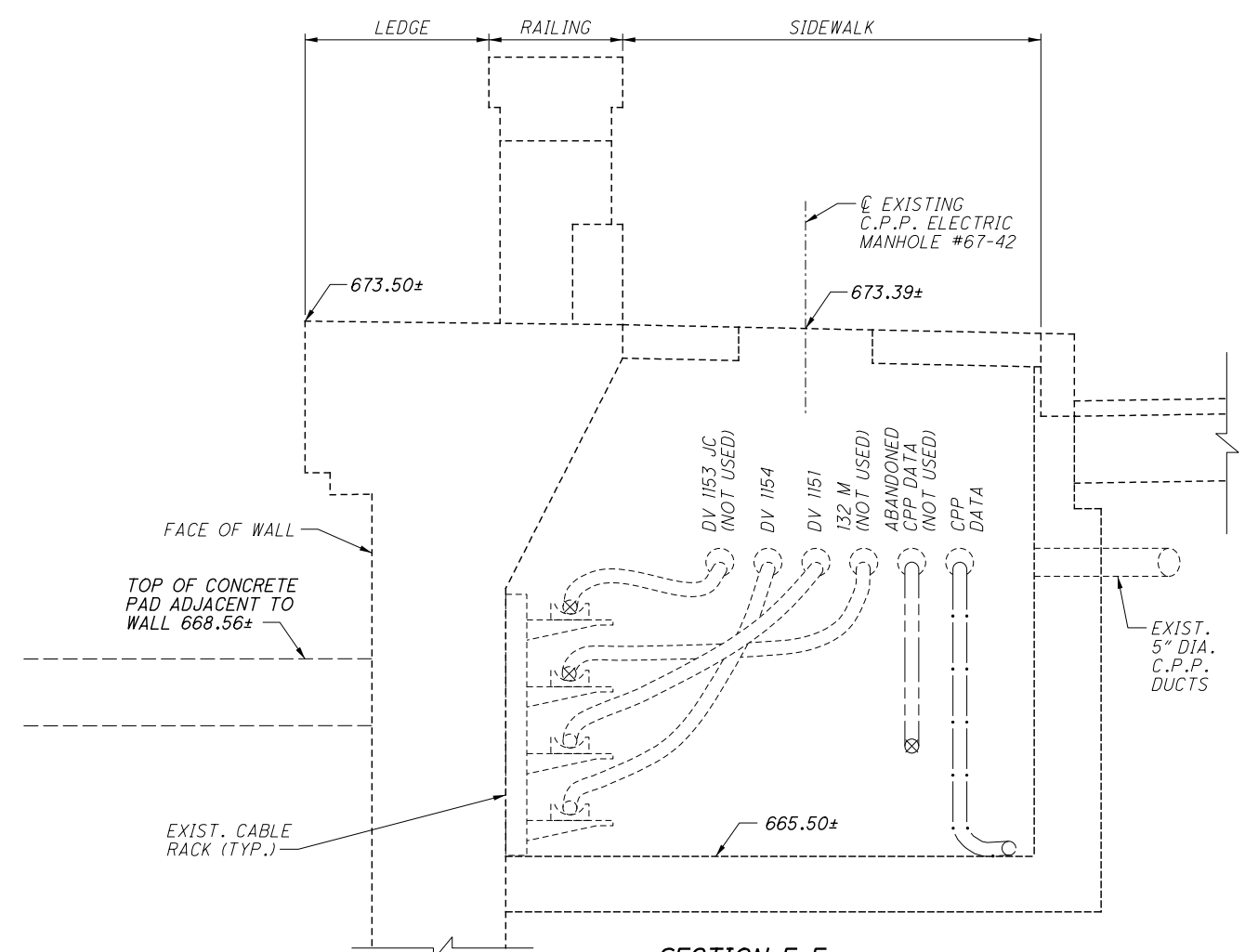
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**EXISTING C.P.P. ELECTRIC MANHOLE #67-42 DETAIL**  
 (10.83'± x 7.83'± x 6.0'± HIGH)



**SECTION E-E**  
 (RAILING NOT SHOWN)



**SECTION F-F**  
 (RAILING NOT SHOWN)

CALCULATED  
 AJB  
 CHECKED  
 JDL

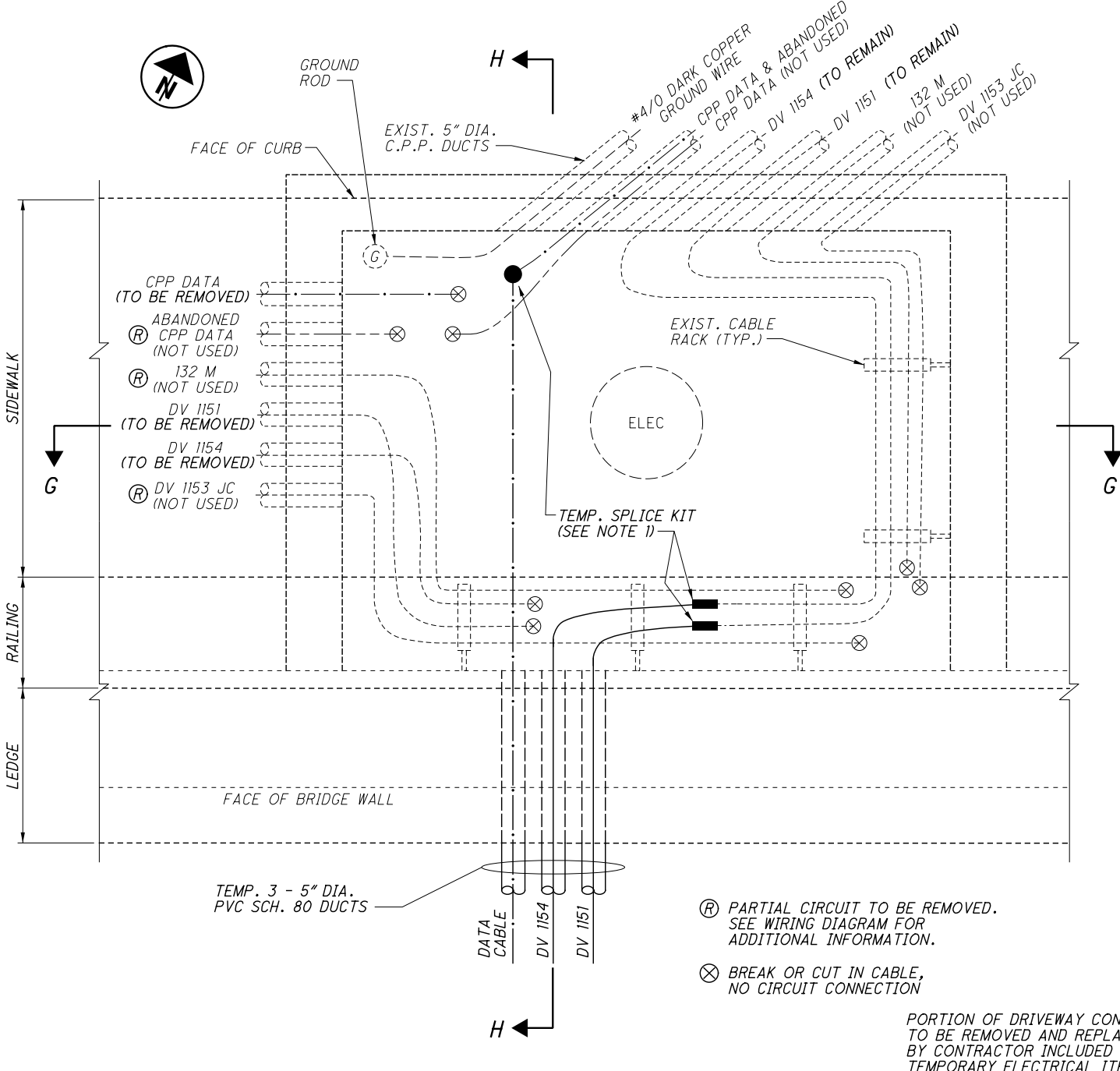
**CPP ELECTRIC MANHOLE #67-42**  
**EXISTING CONDITION DETAILS**

**CUY-10-16-13**

12 / 28

44  
 308

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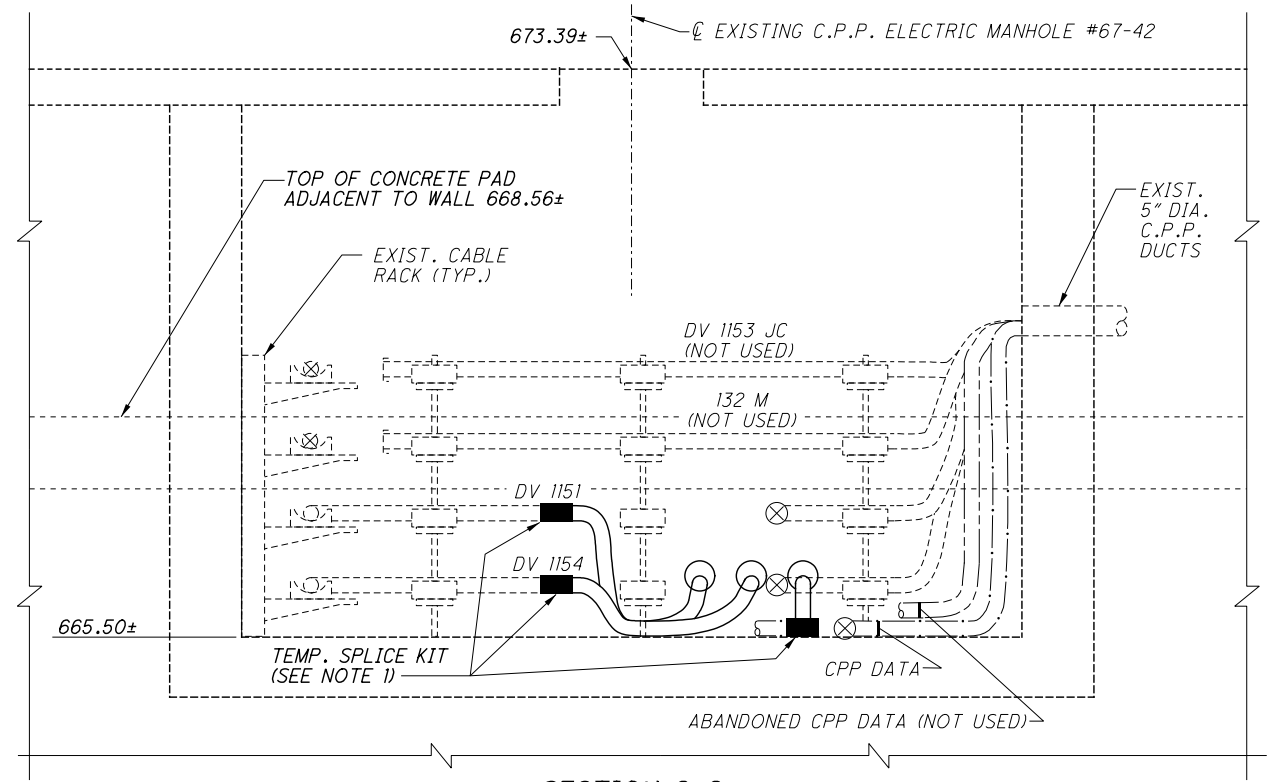


**PLAN**  
**TEMPORARY CONDITIONS - C.P.P. ELECTRIC MANHOLE #67-42 DETAIL**  
 (10.83'± x 7.83'± x 6.0'± HIGH)

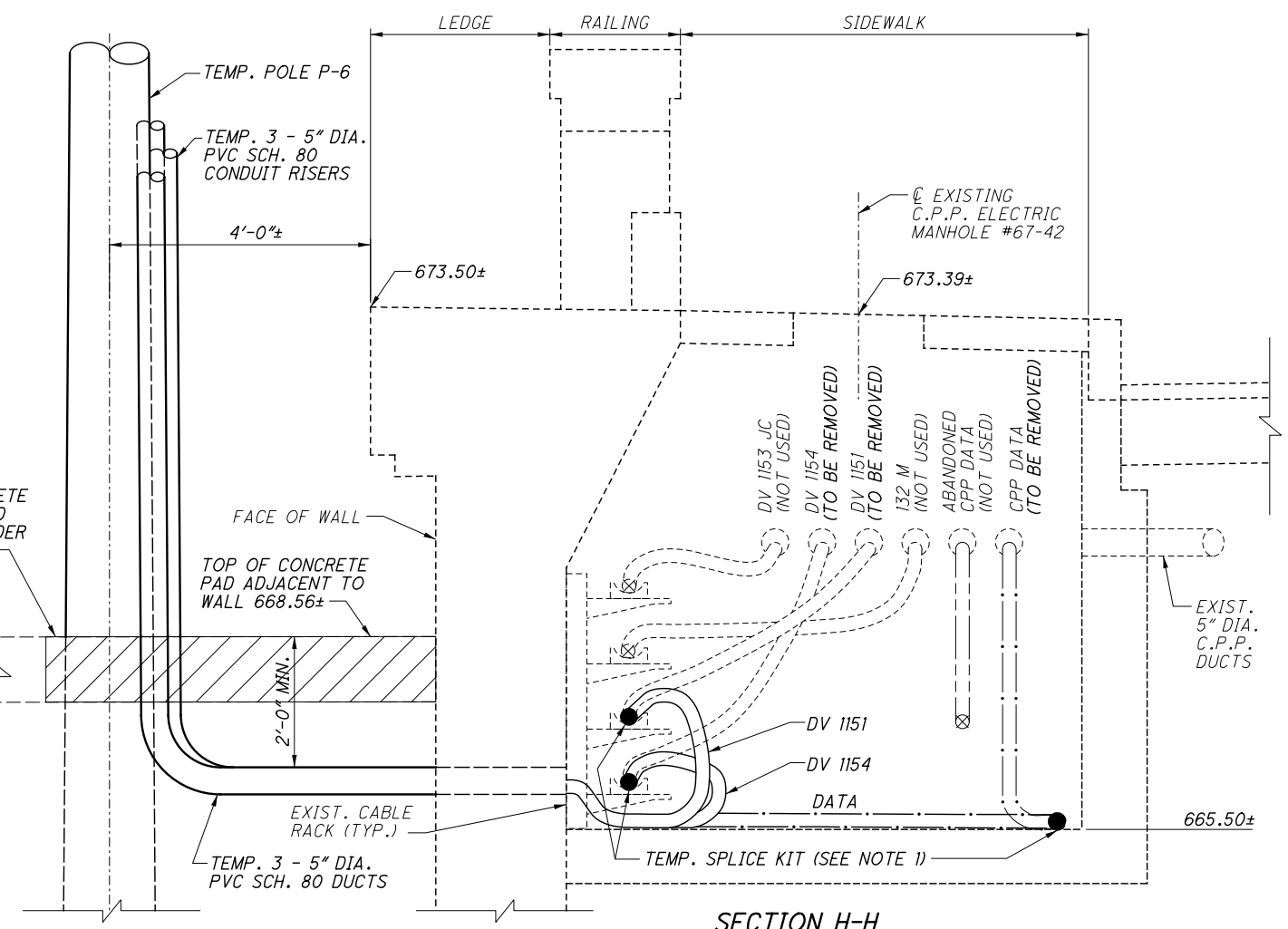
**NOTE 1:**  
 C.P.P. PERSONNEL TO INSTALL ALL CABLE SPLICES WITHIN MANHOLE.

- Ⓜ PARTIAL CIRCUIT TO BE REMOVED. SEE WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
- ⊗ BREAK OR CUT IN CABLE, NO CIRCUIT CONNECTION

PORTION OF DRIVEWAY CONCRETE TO BE REMOVED AND REPLACED BY CONTRACTOR INCLUDED UNDER TEMPORARY ELECTRICAL ITEM



**SECTION G-G**  
 (RAILING NOT SHOWN)  
 (ONLY ACTIVE CIRCUITS SHOWN FOR CLARITY)



**SECTION H-H**  
 (RAILING NOT SHOWN)

CALCULATED  
 AJB  
 CHECKED  
 JDL

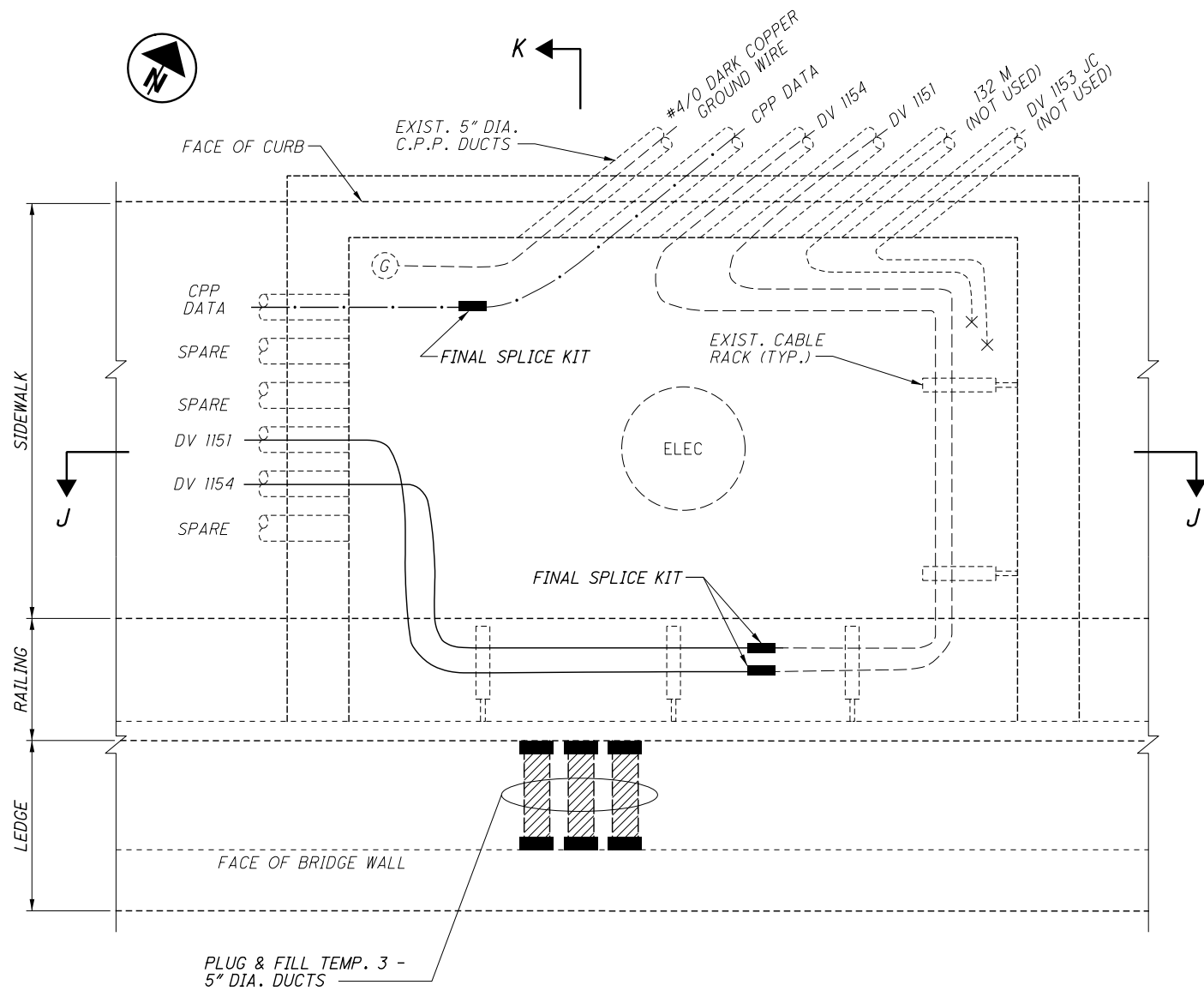
**CPP ELECTRIC MANHOLE #67-42**  
**TEMPORARY CONDITION DETAILS**

**CUY-10-16-13**

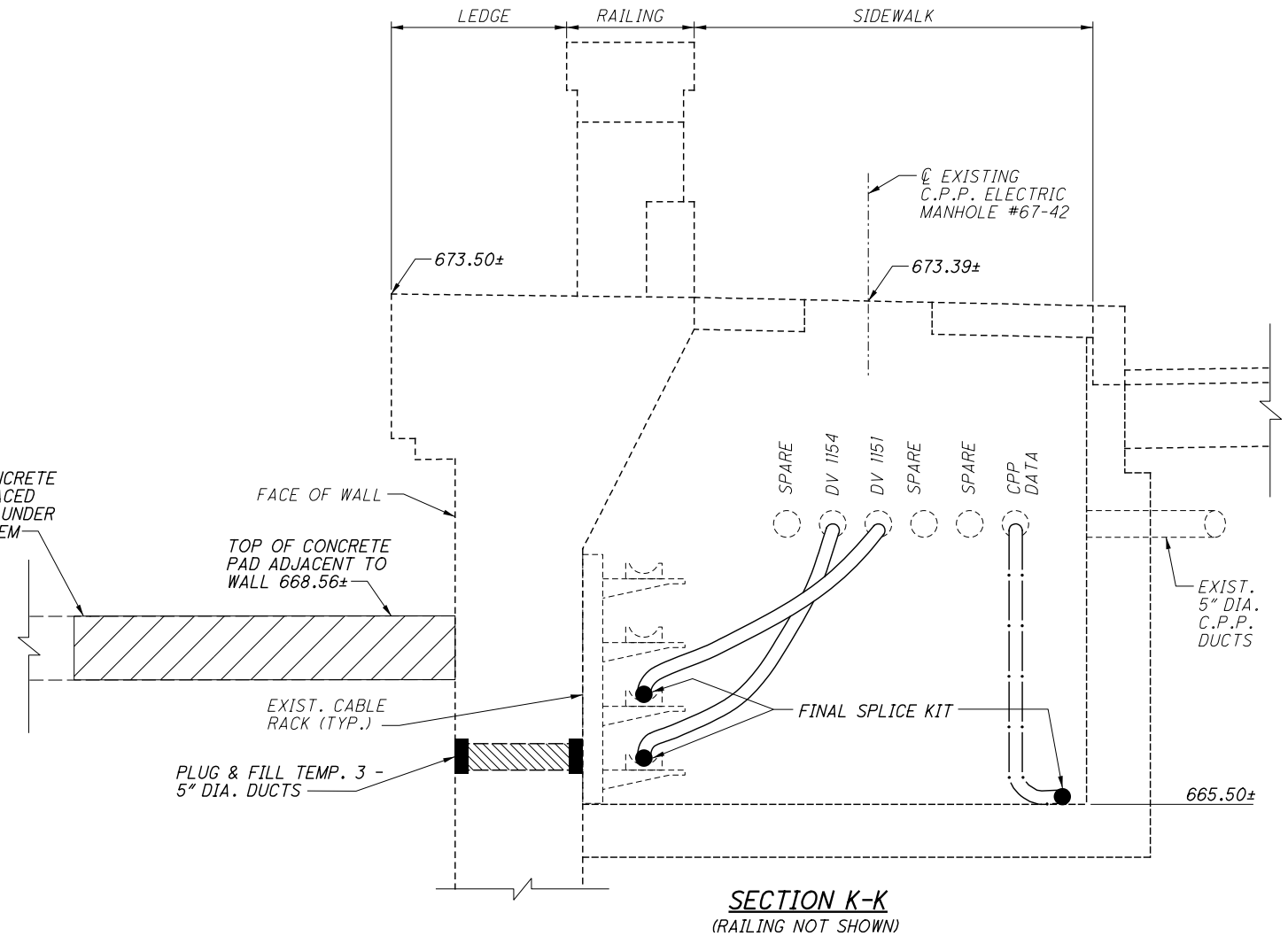
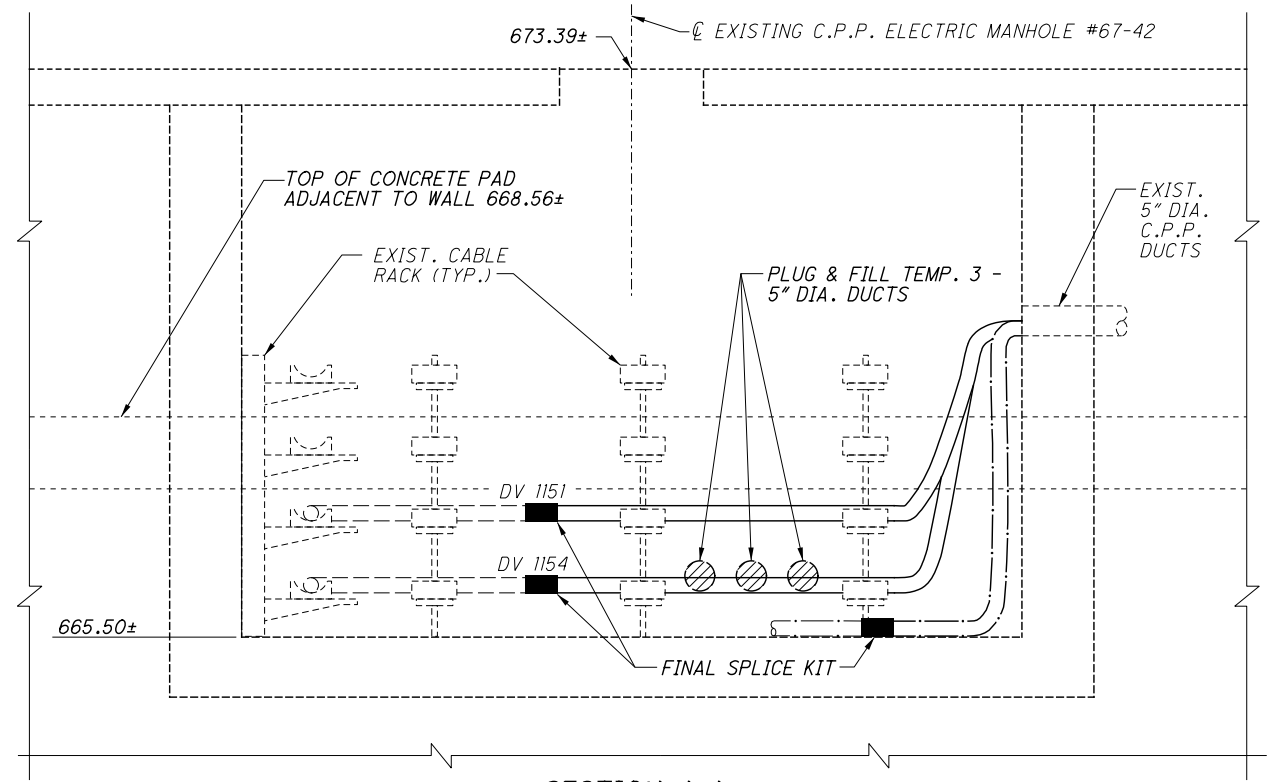
13 / 28

45  
 308

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**NOTE 1:**  
 C.P.P. PERSONNEL TO INSTALL ALL CABLE SPLICES WITHIN MANHOLE.



CALCULATED  
 AJB  
 CHECKED  
 JDL

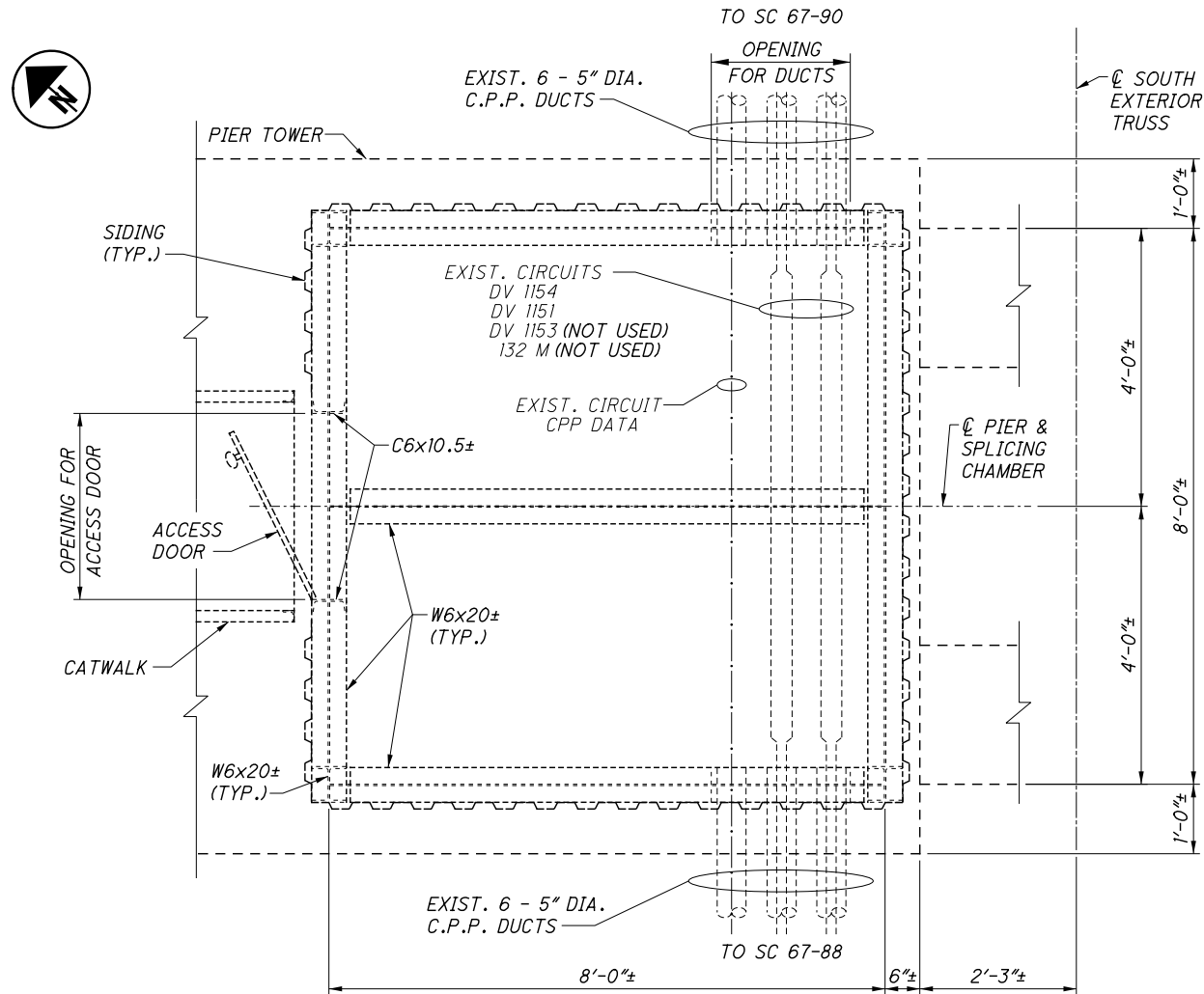
CPP ELECTRIC MANHOLE #67-42  
 FINAL CONDITION DETAILS

CUY-10-16-13

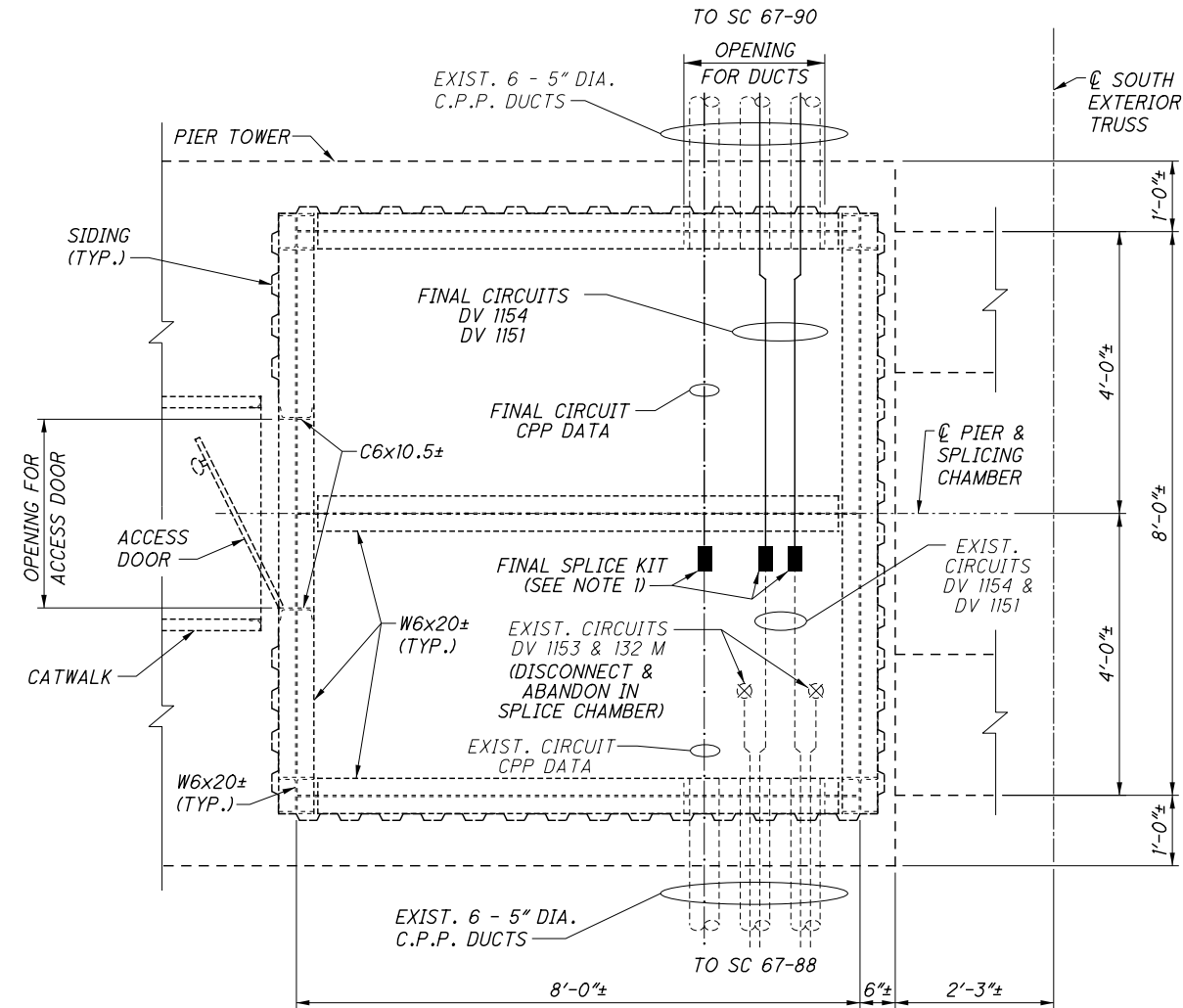
14 / 28

46  
 308

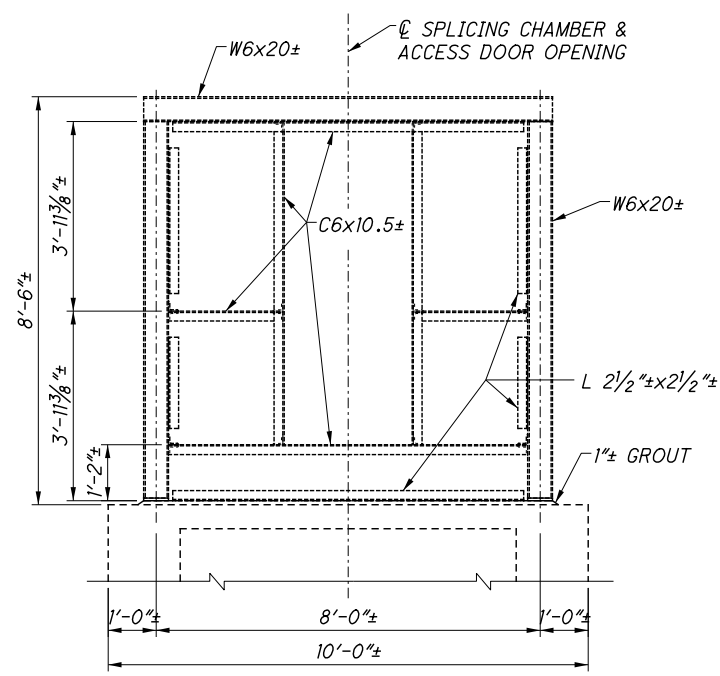
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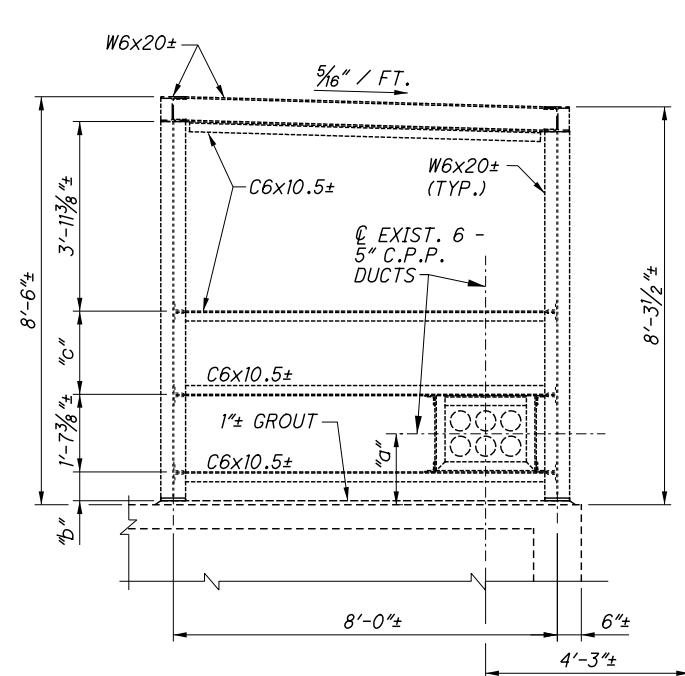
**EXISTING CONDITION PLAN**



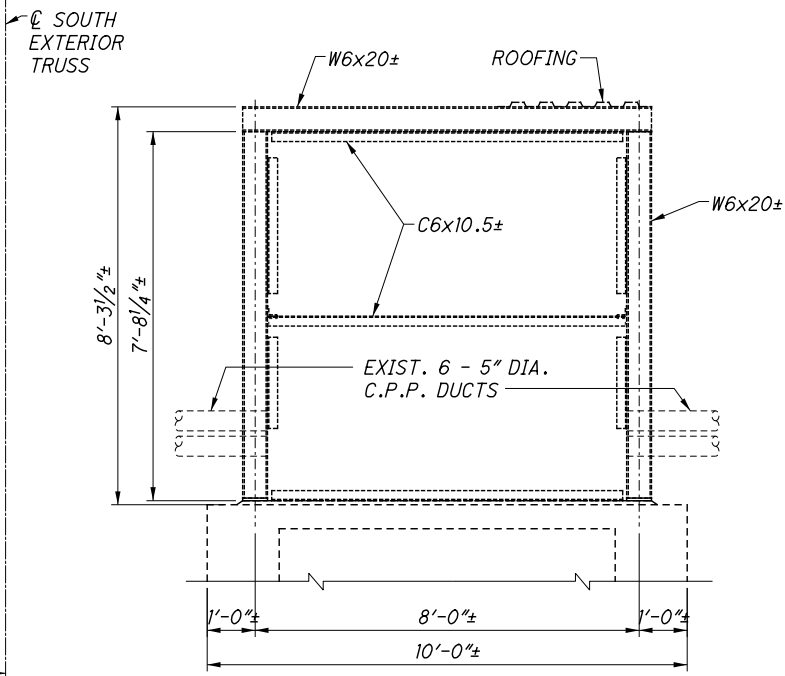
**FINAL CONDITION PLAN**



**NORTH ELEVATION**  
(SIDING NOT SHOWN)



**WEST ELEVATION**  
(SIDING NOT SHOWN)  
(EAST ELEVATION SIMILAR)



**EXISTING SOUTH ELEVATION**  
(SIDING NOT SHOWN)

**NOTE 1:**  
C.P.P. PERSONNEL TO INSTALL ALL CABLE SPLICES WITHIN SPLICING CHAMBER.

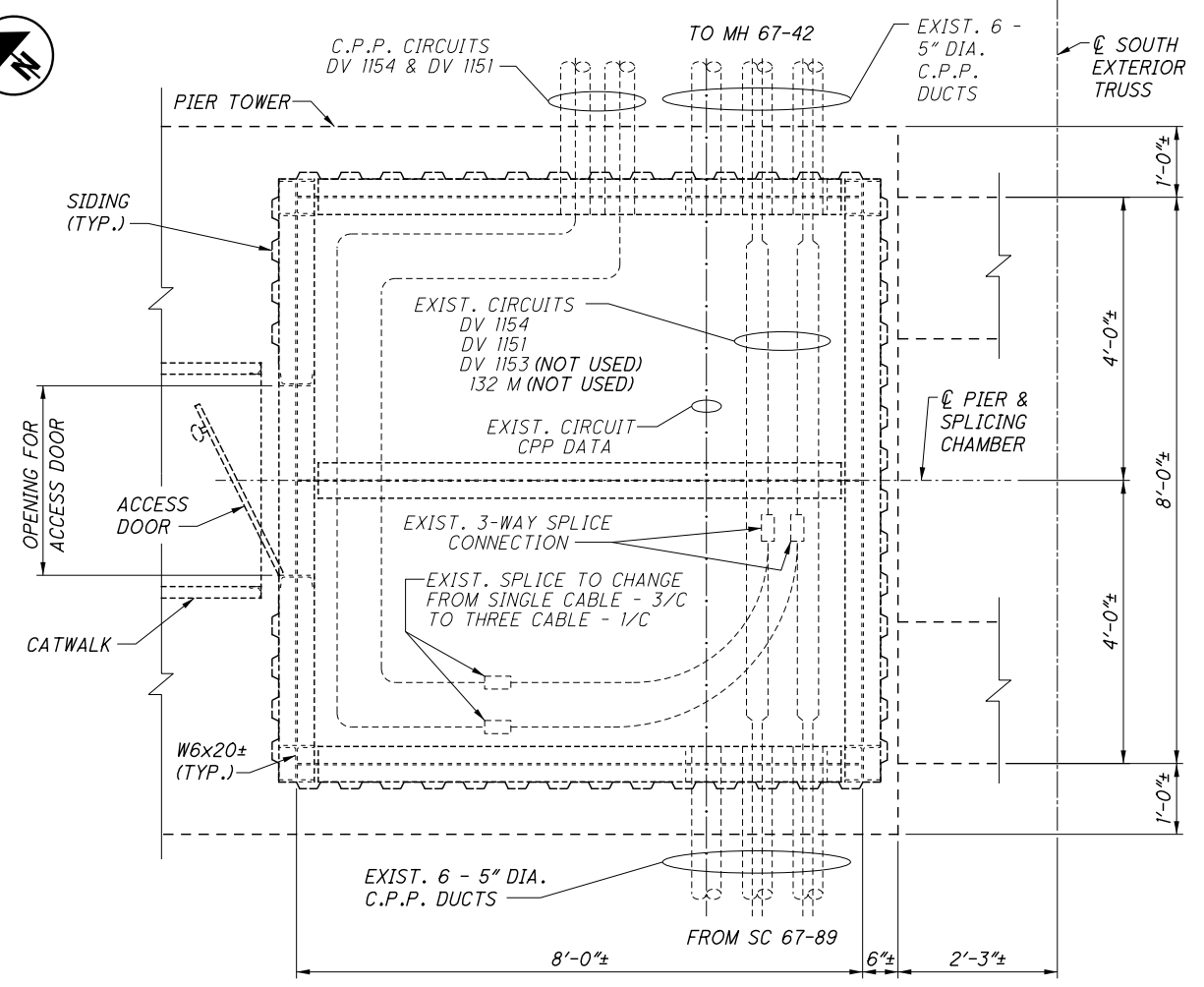
DIMENSION		SC 67-89
WEST ELEV.	"a"	1'-5 7/8"
	"b"	7 1/4"
	"c"	1'-8 3/4"
EAST ELEV.	"a"	1'-3 1/8"
	"b"	4 1/2"
	"c"	1'-11 1/2"

SEE WEST ELEVATION DETAIL FOR LOCATIONS OF DIMENSIONS

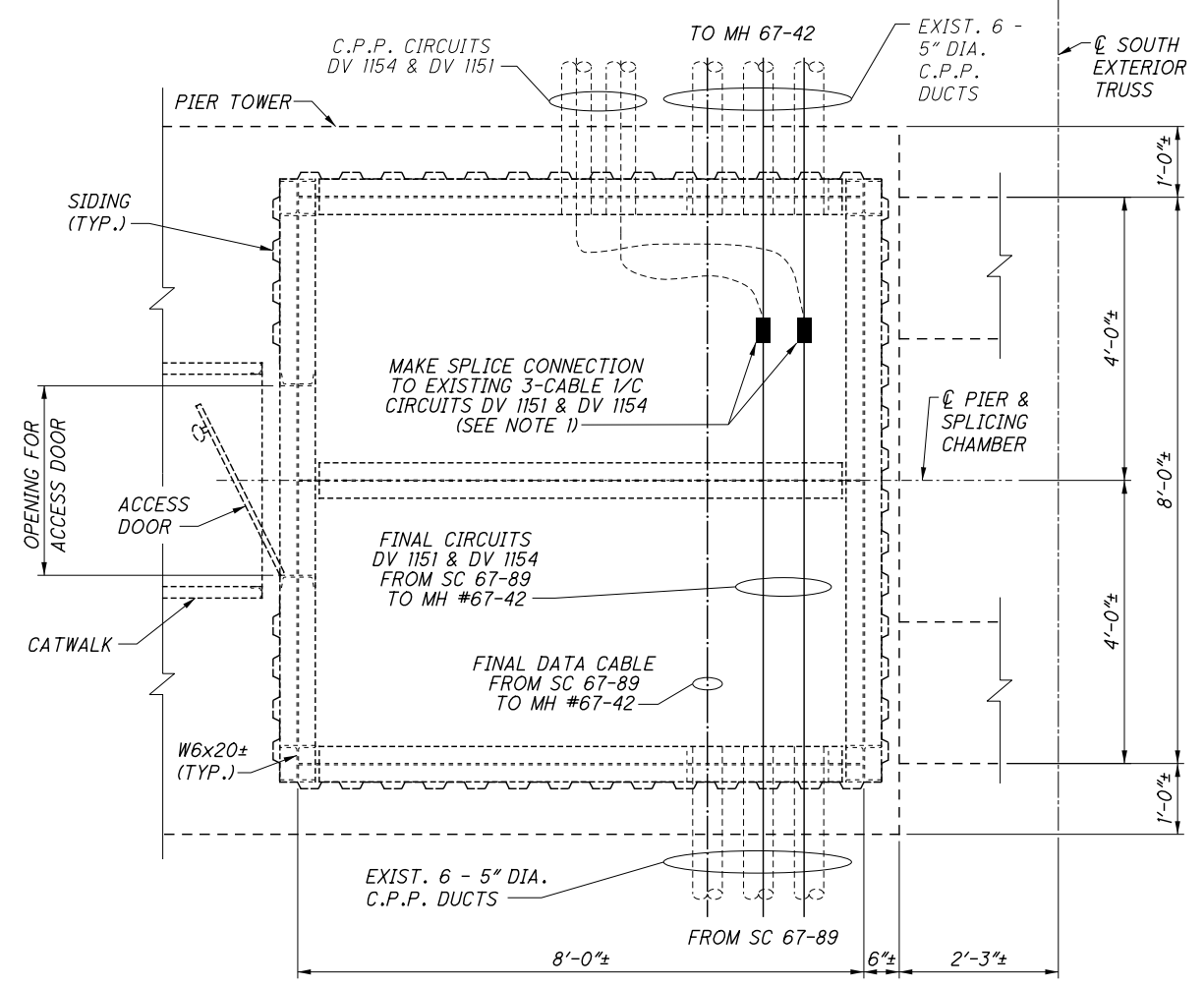
CALCULATED: AJB  
 CHECKED: JDL  
**CPP SPLICE CHAMBER #SC-67-89**  
**EXISTING AND FINAL CONDITIONS**

**CUY-10-16.13**

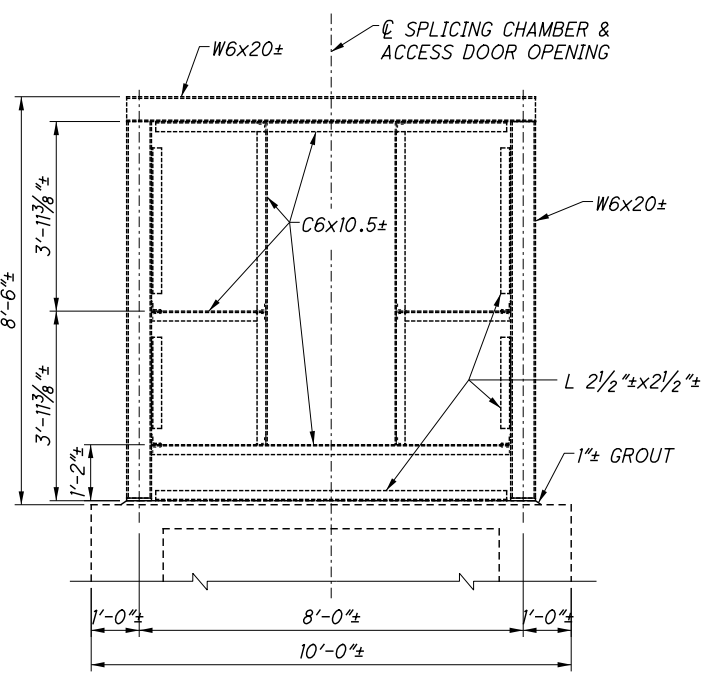




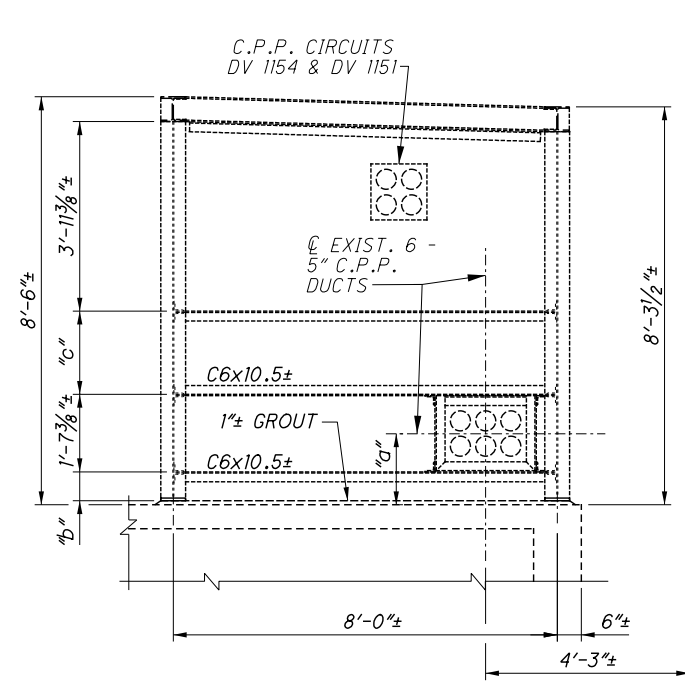
**EXISTING CONDITION PLAN**



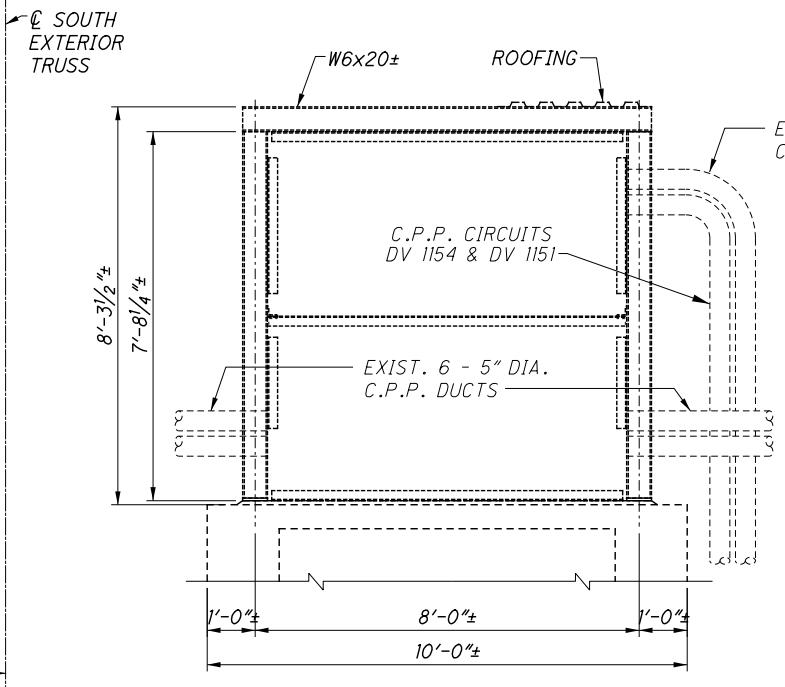
**FINAL CONDITION PLAN**



**NORTH ELEVATION**  
(SIDING NOT SHOWN)



**WEST ELEVATION**  
(SIDING NOT SHOWN)  
(EAST ELEVATION SIMILAR)



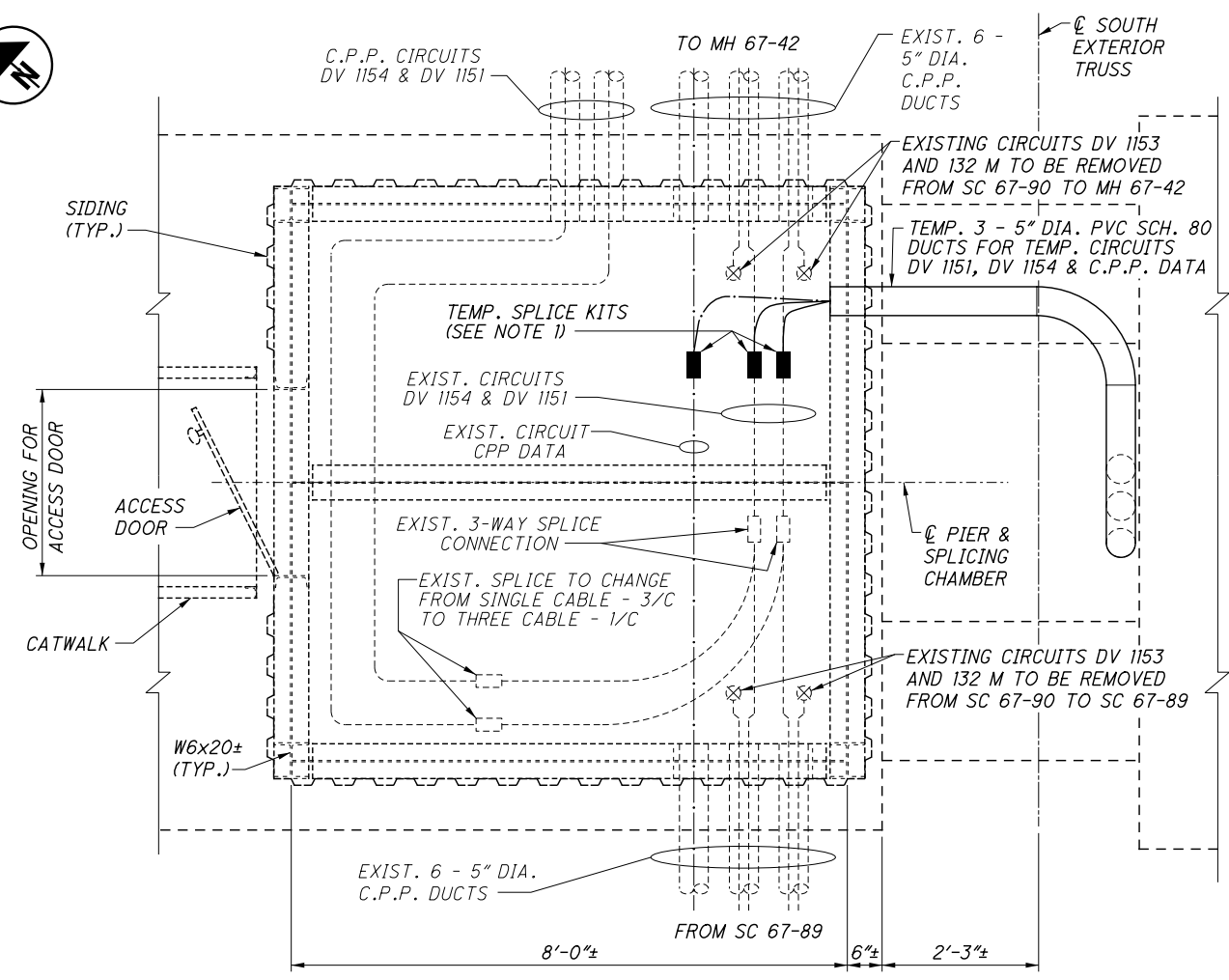
**EXISTING SOUTH ELEVATION**  
(SIDING NOT SHOWN)

**NOTE 1:**  
C.P.P. PERSONNEL TO INSTALL ALL CABLE SPLICES WITHIN SPLICING CHAMBER.

DIMENSION		SC 67-90
WEST ELEV.	"a"	1'-6 3/8"
	"b"	7 3/4"
	"c"	1'-8 1/4"
EAST ELEV.	"a"	1'-3 5/8"
	"b"	5"
	"c"	1'-11"

SEE WEST ELEVATION DETAIL FOR LOCATIONS OF DIMENSIONS

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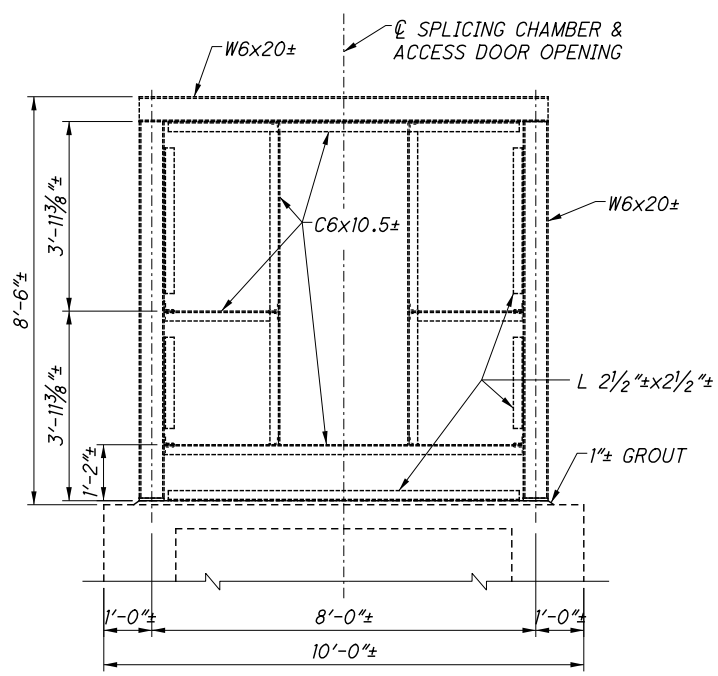


**TEMPORARY CONDITION PLAN**

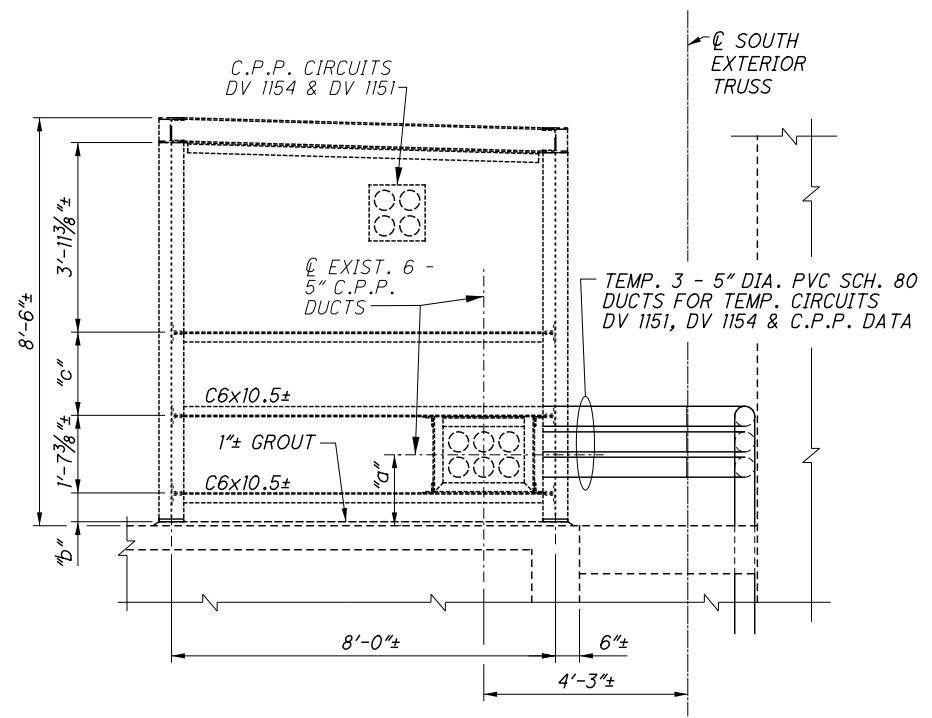
**NOTE 1:**  
C.P.P. PERSONNEL TO INSTALL ALL CABLE SPLICES WITHIN SPLICING CHAMBER.

DIMENSION		SC 67-90
WEST ELEV.	"a"	1'-6 <sup>3</sup> / <sub>8</sub> "
	"b"	7 <sup>3</sup> / <sub>4</sub> "
	"c"	1'-8 <sup>1</sup> / <sub>4</sub> "
EAST ELEV.	"a"	1'-3 <sup>5</sup> / <sub>8</sub> "
	"b"	5"
	"c"	1'-11"

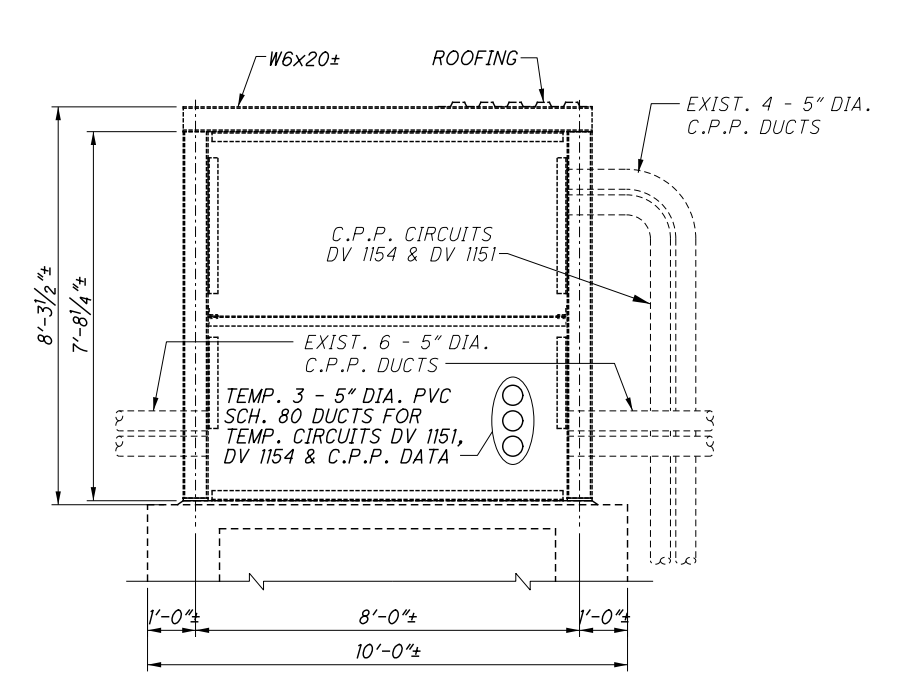
SEE WEST ELEVATION DETAIL FOR LOCATIONS OF DIMENSIONS



**NORTH ELEVATION**  
(SIDING NOT SHOWN)

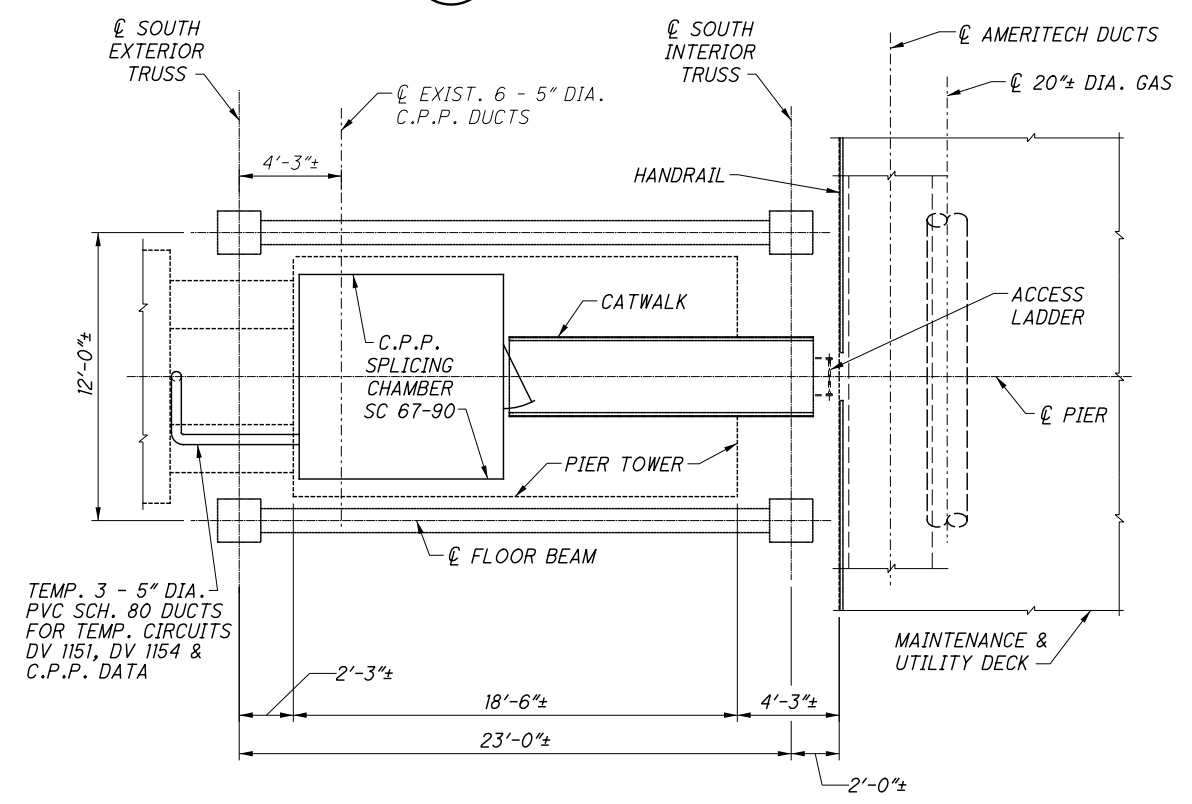


**TEMPORARY WEST ELEVATION**  
(SIDING NOT SHOWN)  
(EAST ELEVATION SIMILAR)

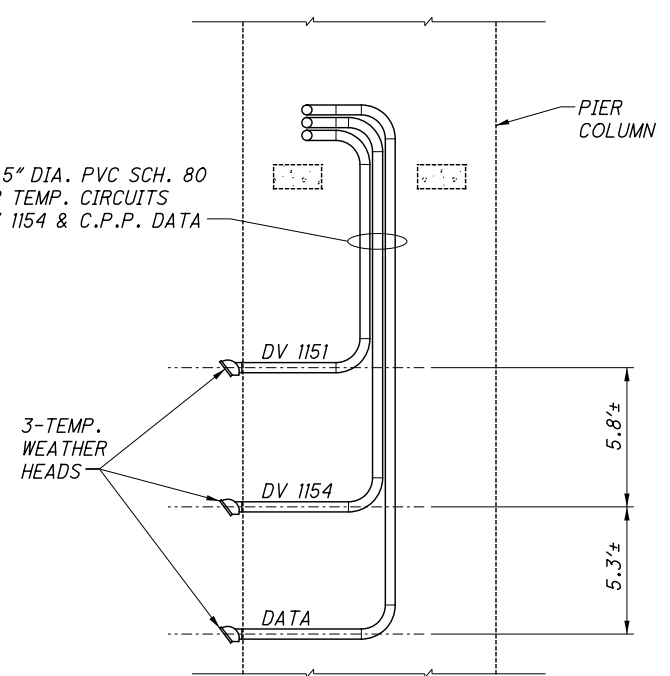


**TEMPORARY SOUTH ELEVATION**  
(SIDING NOT SHOWN)

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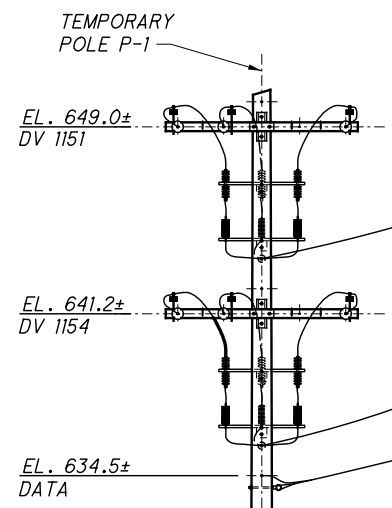


PLAN VIEW A-A

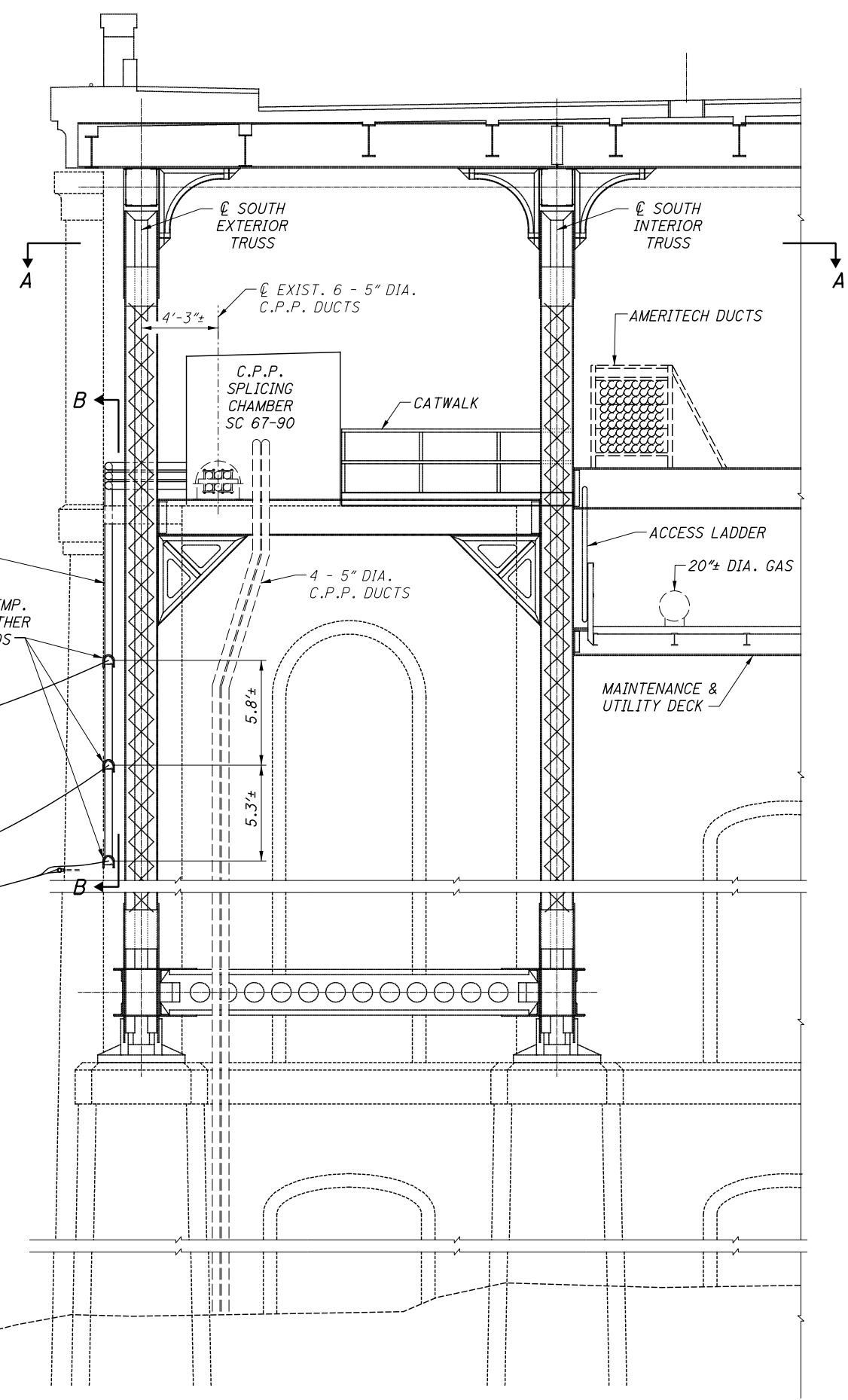


SECTION B-B  
(LOOKING SOUTH)

TEMP. 3 - 5" DIA. PVC SCH. 80  
DUCTS FOR TEMP. CIRCUITS  
DV 1151, DV 1154 & C.P.P. DATA

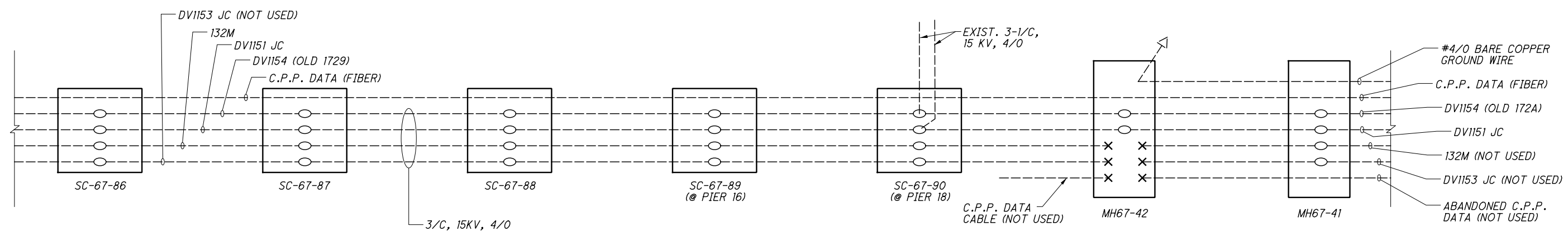


EL. 607.6±  
EX. GROUND

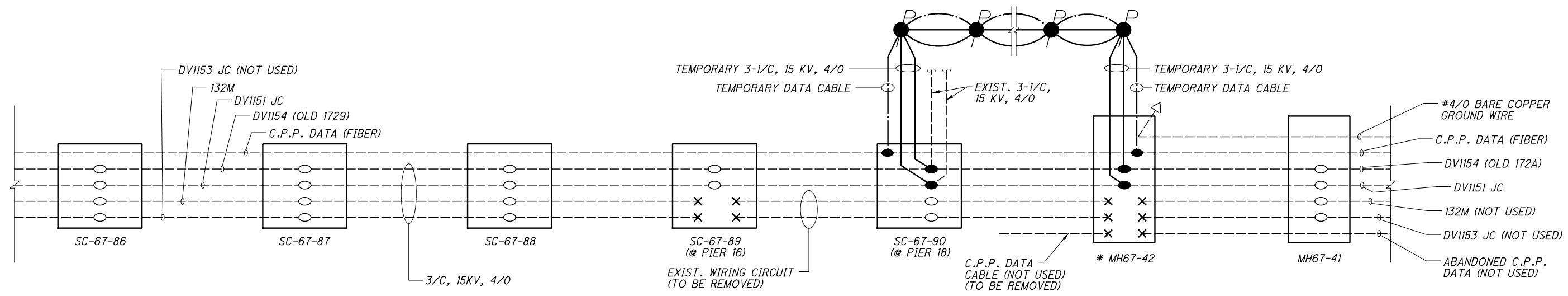


ELEVATION AT PIER 18  
(LOOKING WEST)

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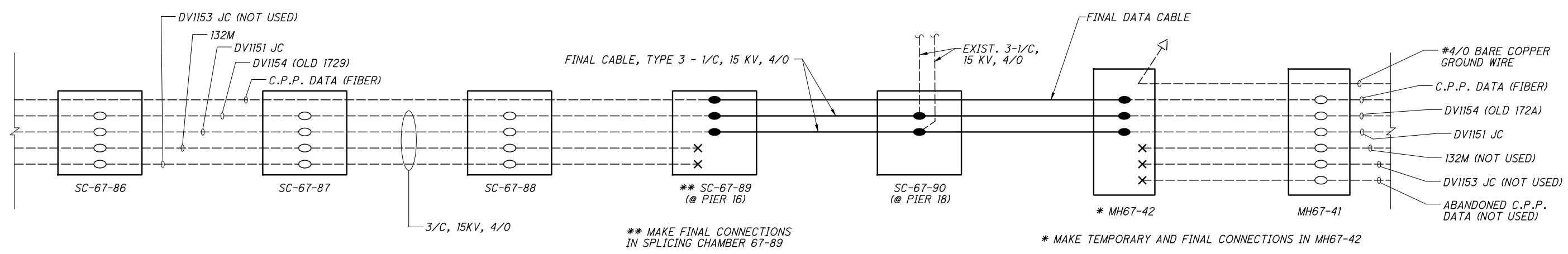


**HOPE MEMORIAL BRIDGE  
EXISTING CONDITION WIRING DIAGRAM**



**HOPE MEMORIAL BRIDGE  
TEMPORARY CONDITION WIRING DIAGRAM**

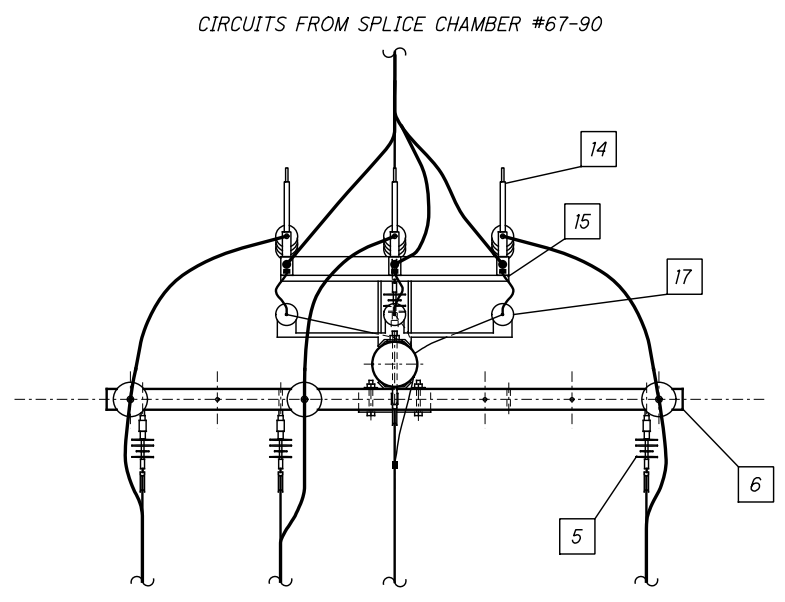
\* MAKE TEMPORARY AND FINAL CONNECTIONS IN MH67-42



**HOPE MEMORIAL BRIDGE  
FINAL CONDITION WIRING DIAGRAM**

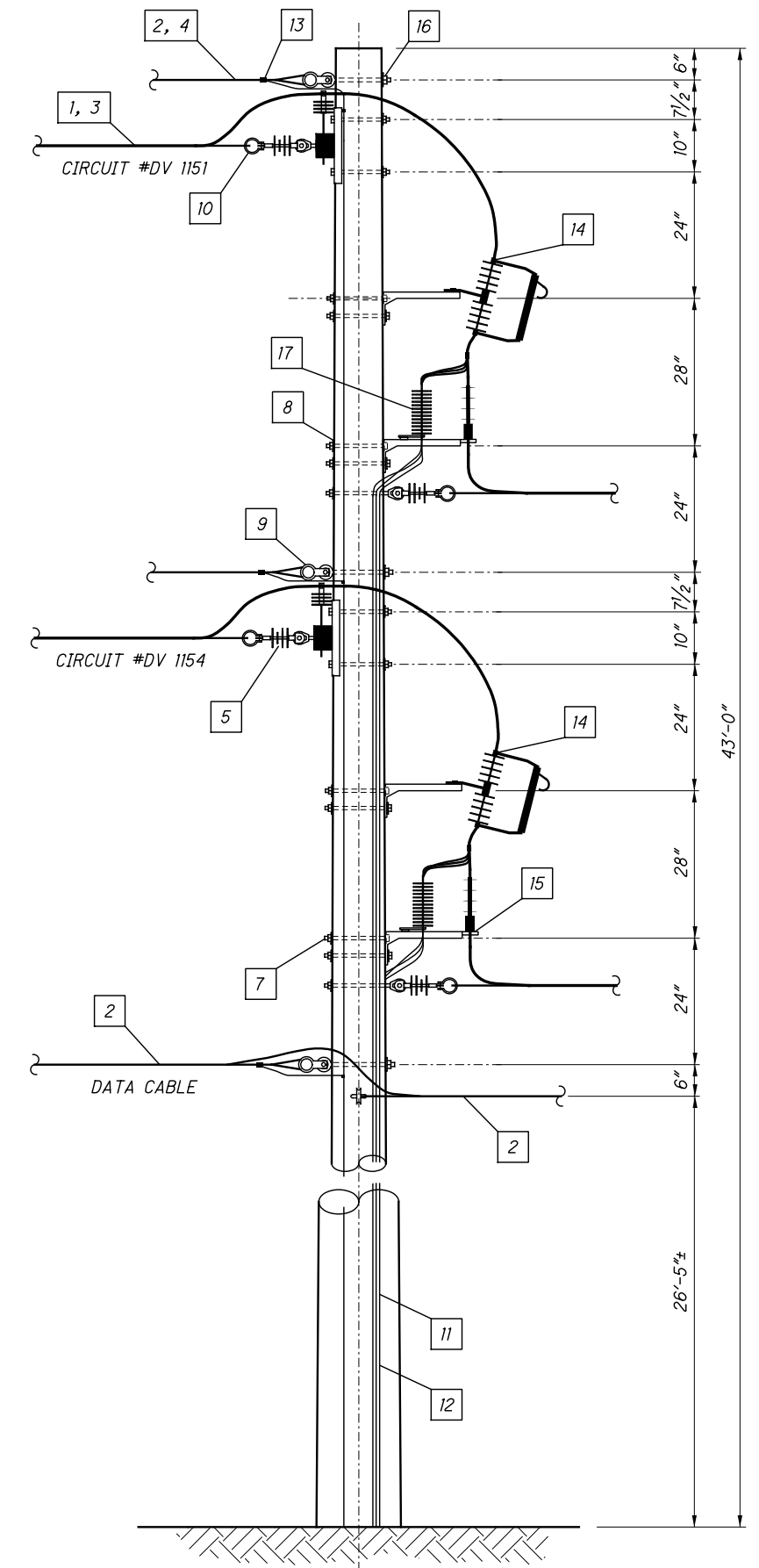
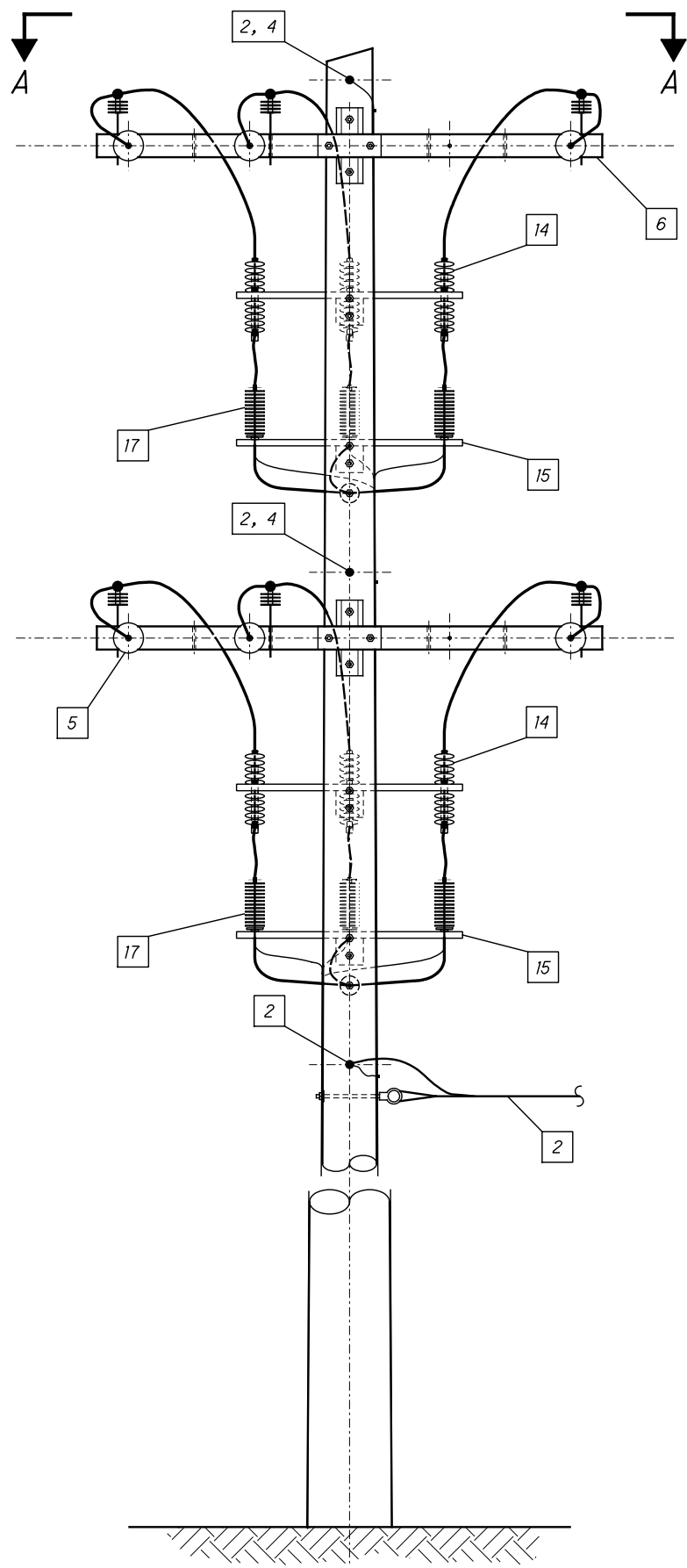
- LEGEND**
- ⚡ GROUND ROD
  - × CABLE CUT, NO CONNECTION
  - EXIST. SPLICE CONNECTION
  - PROP. SPLICE CONNECTION (CPP PERSONNEL TO MAKE ALL SPLICE CONNECTIONS)

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- NOTES:**
1. ALL DIMENSIONS SHOWN ARE MINIMUM.
  2. PROVIDE ALL NECESSARY HARDWARE AND CONNECTORS.
  3. BOND AND GROUND ALL COMPONENT MOUNTING BRACKETS.
  4. REFER TO CPP POLE DETAILS ON 23/28 TO 28/28

ITEM	MATERIAL
1	HENDRIX AERIAL CABLE (SIZE AND VOLTAGE RATING AS INDICATED)
2	MESSENGER (SIZE AND TYPE AS REQ'D.)
3	PRESHAPED CONDUCTOR GRIP, COATED
4	PRESHAPED MESSENGER GRIP
5	INSULATOR, POLYMER DEAD-END TYPE, 15KV
6	CROSS-ARM, 8 FT. LONG
7	MACHINE BOLT, 5/8" x REQ'D. LENGTH
8	SQUARE WASHER, 2 1/4" x 2 1/4" x 3/16"
9	HEAVY-DUTY THIMBLE CLEVIS, HENDRIX CAT. NO. HDTC
10	STANDARD-DUTY THIMBLE CLEVIS, HENDRIX CAT. NO. TC
11	GROUND WIRE, SOFT DRAWN COPPER, SOLID #6 AWG MIN.
12	GROUND WIRE STAPLE
13	CONNECTORS (SIZE AND TYPE AS REQ'D.)
14	FUSED CUTOUTS
15	EQUIPMENT MOUNT
16	EYEBOLT, 3/4" x REQ'D. LENGTH
17	LIGHTNING ARRESTERS

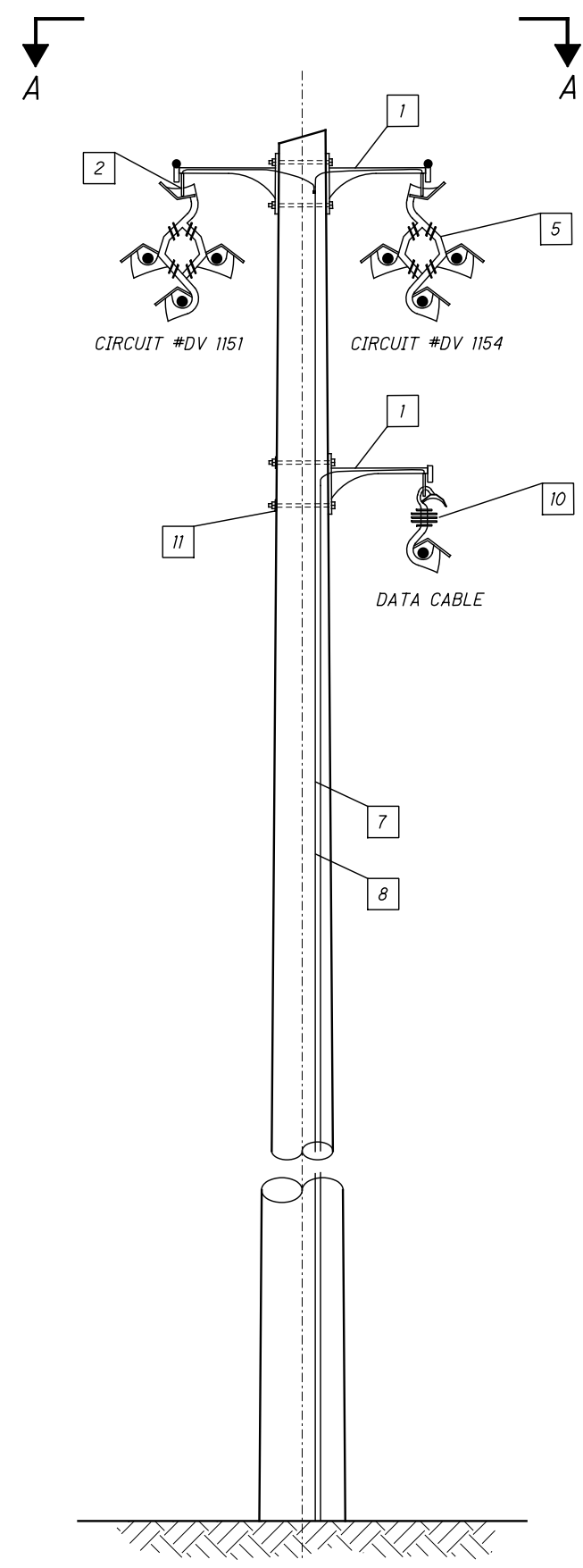
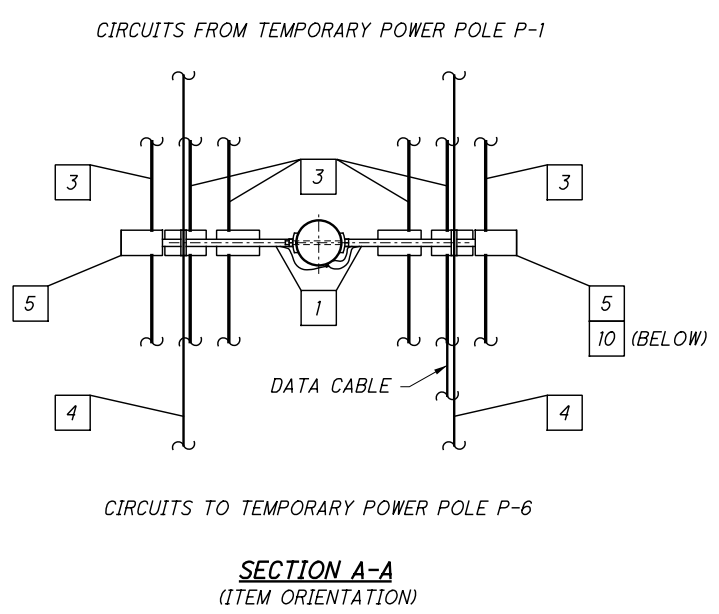


POLE REFERENCE NUMBER (P-1)

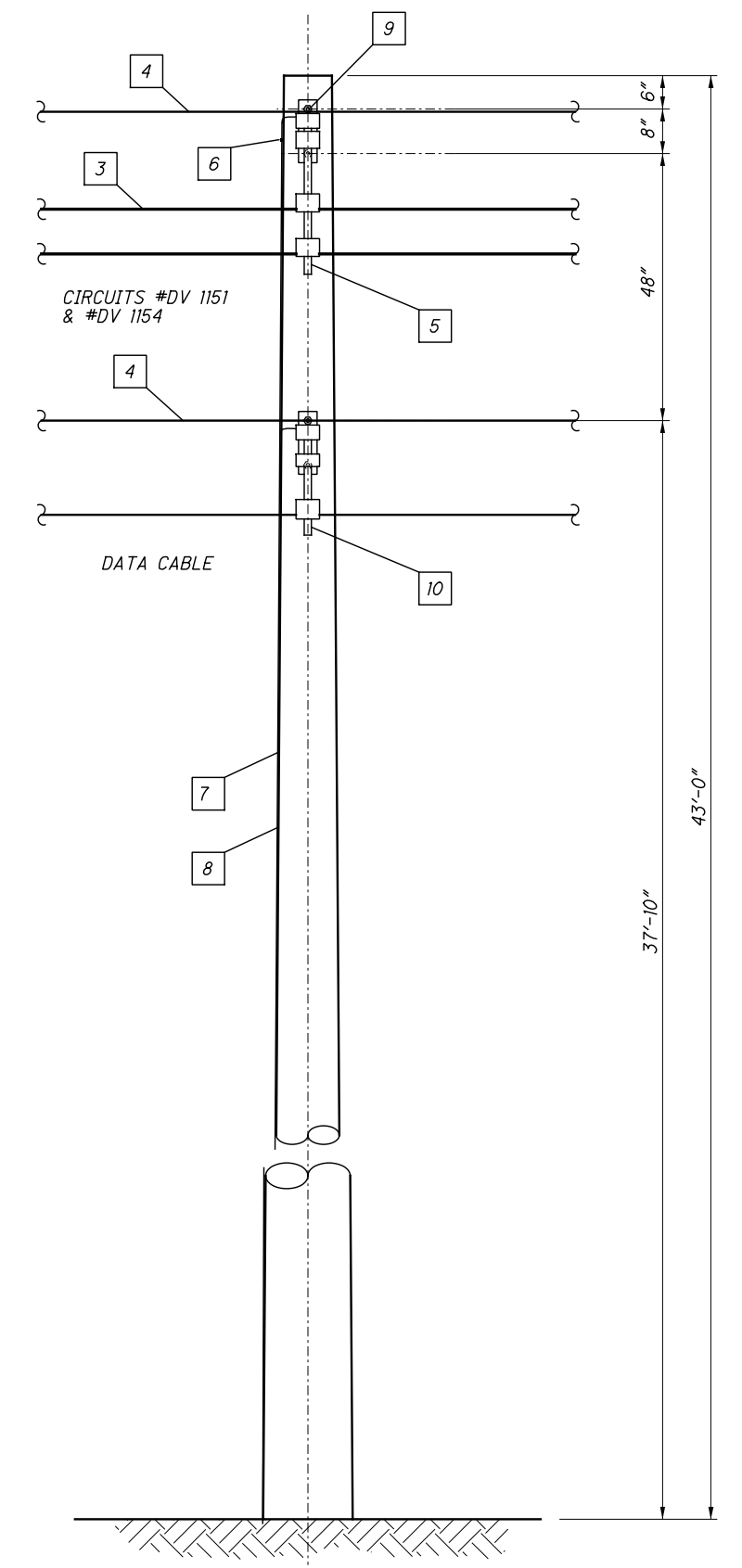
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TEMPORARY POLES P-2 TO P-5 DETAIL

CUY-10-16.13



EAST SIDE ELEVATION



NORTH SIDE ELEVATION

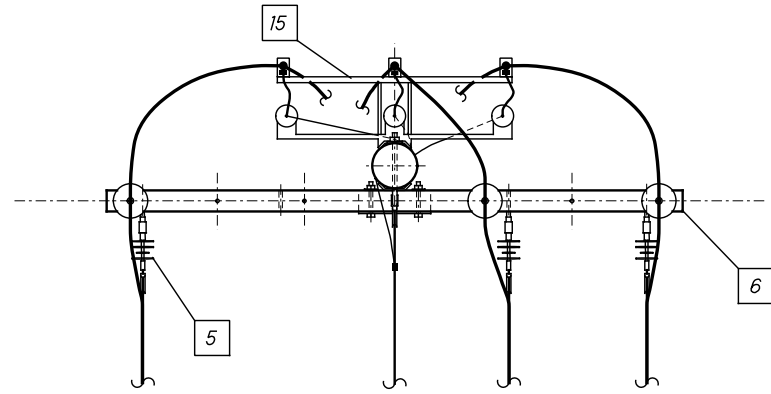
- NOTES:**
1. ALL DIMENSIONS SHOWN ARE MINIMUM.
  2. PROVIDE ALL NECESSARY HARDWARE AND CONNECTORS.
  3. BOND AND GROUND ALL COMPONENT MOUNTING BRACKETS.
  4. REFER TO CPP POLE DETAILS ON 23/28 TO 28/28

ITEM	MATERIAL
1	MESSENGER BRACKET, HENDRIX TYPE BM-14
2	STIRRUP, HENDRIX TYPE TS-1
3	HENDRIX AERIAL CABLE (SIZE AND VOLTAGE RATING AS INDICATED)
4	MESSENGER (SIZE AND TYPE AS REQ'D.)
5	HENDRIX RTL-15 SPACER
6	CONNECTOR (SIZE AND TYPE AS REQ'D.)
7	GROUND WIRE, SOFT DRAWN COPPER, SOLID, #6 AWG
8	GROUND WIRE STAPLE
9	MACHINE BOLT, 5/8" x REQ'D. LENGTH
10	HENDRIX RTL-20V SPACER
11	SQUARE WASHER, 2 1/4" x 2 1/4" x 3/16"

POLE REFERENCE NUMBERS (P-2) TO (P-5)

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CIRCUITS TO PROPOSED RISERS INTO EXISTING C.P.P. MH #67-42  
(NOT SHOWN FOR CLARITY)

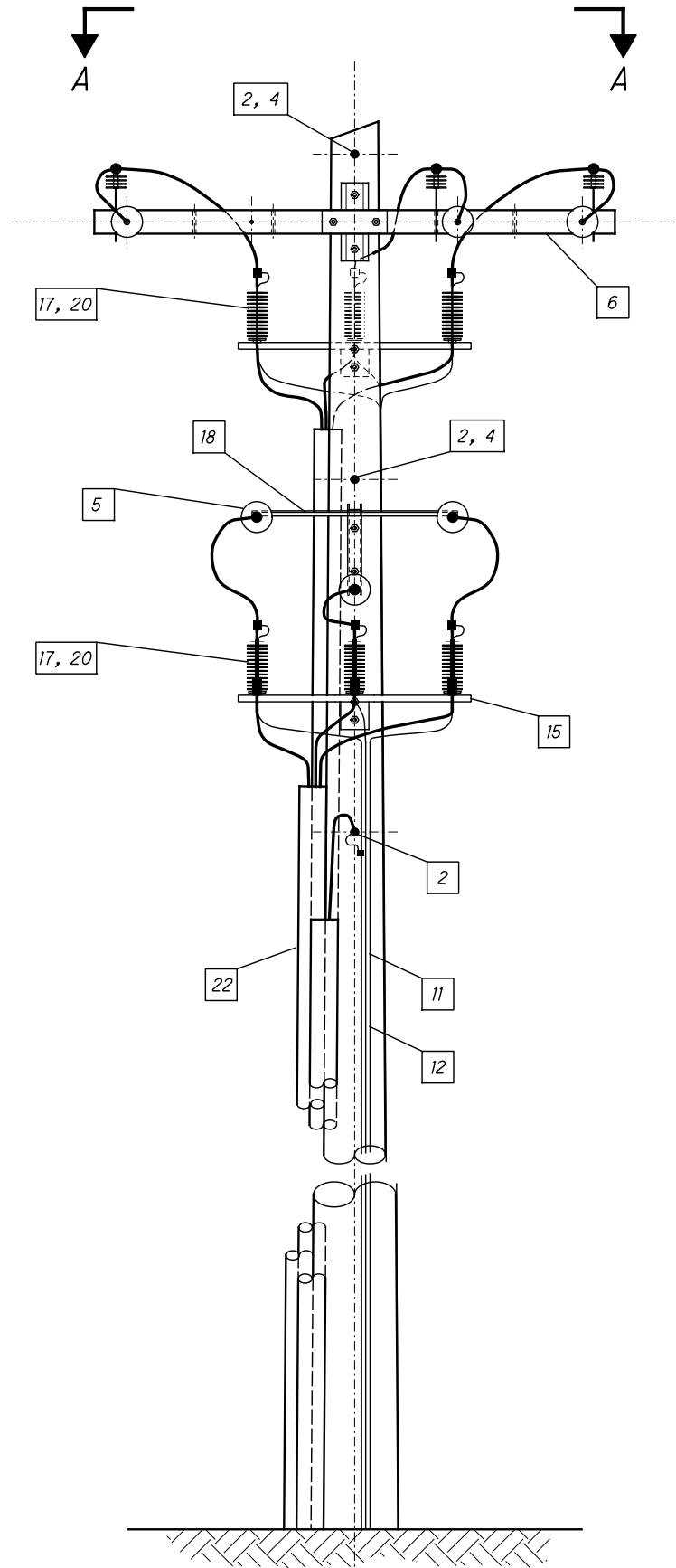


CIRCUITS FROM TEMPORARY POWER POLE P-5  
(CIRCUIT #DV 1154 NOT SHOWN FOR CLARITY)

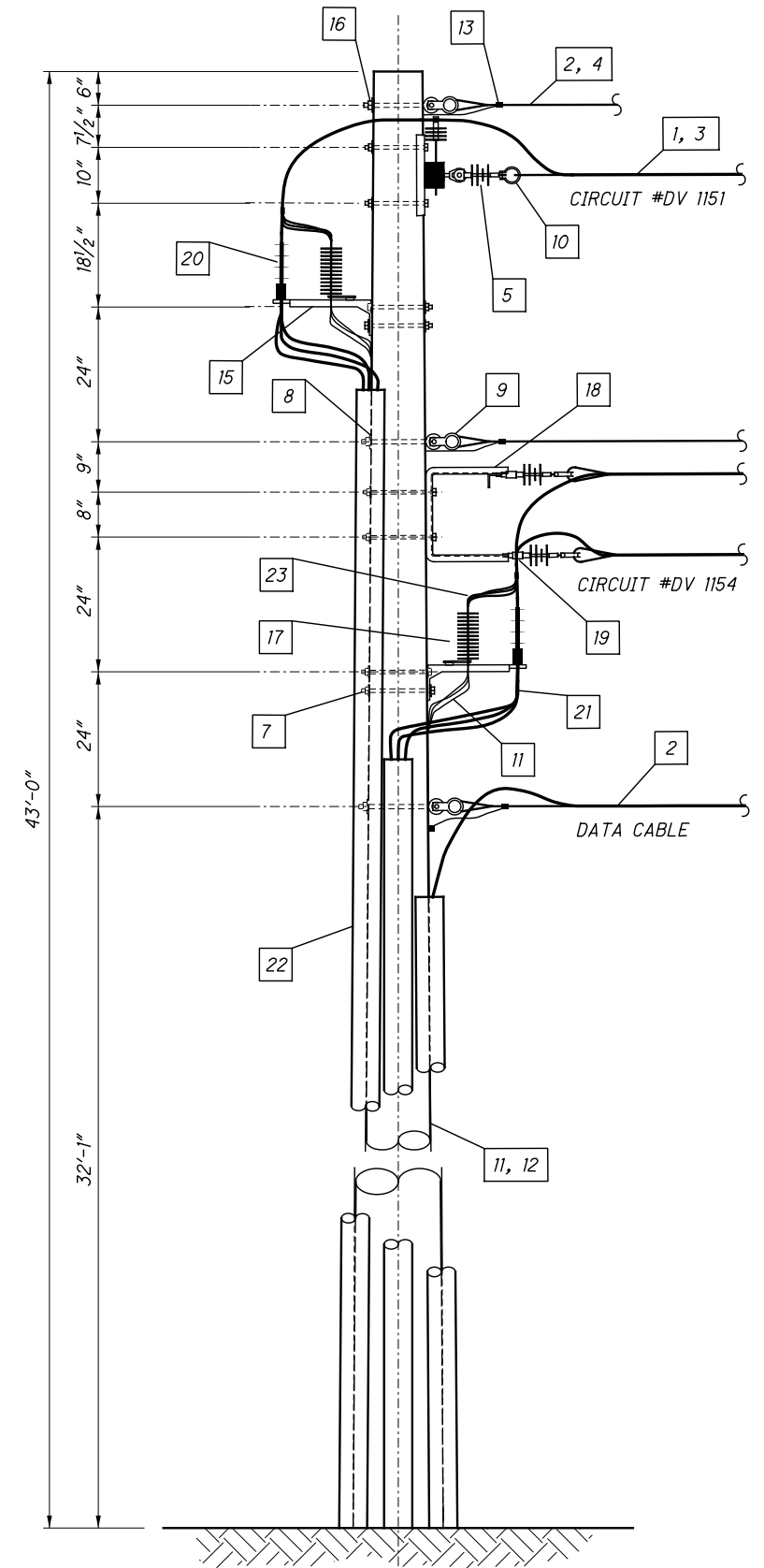
**SECTION A-A**  
(ITEM ORIENTATION)

- NOTES:**
1. ALL DIMENSIONS SHOWN ARE MINIMUM.
  2. PROVIDE ALL NECESSARY HARDWARE AND CONNECTORS.
  3. BOND AND GROUND ALL COMPONENT MOUNTING BRACKETS.
  4. REFER TO CPP POLE DETAILS ON [23/28] TO [28/28]

ITEM	MATERIAL
1	HENDRIX AERIAL CABLE (SIZE AND VOLTAGE RATING AS INDICATED)
2	MESSENGER (SIZE AND TYPE AS REQ'D.)
3	PRESHAPED CONDUCTOR GRIP, COATED
4	PRESHAPED MESSENGER GRIP
5	INSULATOR, POLYMER DEAD-END TYPE, 15KV
6	CROSS-ARM, 8 FT. LONG
7	MACHINE BOLT, 5/8" x REQ'D. LENGTH
8	SQUARE WASHER, 2 1/4" x 2 1/4" x 3/16"
9	HEAVY-DUTY THIMBLE CLEVIS, HENDRIX CAT. NO. HDTC
10	STANDARD-DUTY THIMBLE CLEVIS, HENDRIX CAT. NO. TC
11	GROUND WIRE, SOFT DRAWN COPPER, SOLID #6 AWG MIN.
12	GROUND WIRE STAPLE
13	CONNECTORS (SIZE AND TYPE AS REQ'D.)
14	NOT USED
15	EQUIPMENT MOUNT
16	EYEBOLT, 3/4" x REQ'D. LENGTH
17	LIGHTNING ARRESTERS
18	DEAD END BRACKET, HENDRIX TYPE BD-35
19	SHACKLE CLEVIS, HENDRIX CAT. NO. SC
20	UNDERGROUND CABLE TERMINATOR
21	UNDERGROUND RISER CABLE
22	CONDUIT-PVC SCHEDULE 80
23	COVERED TAP WIRE



WEST SIDE ELEVATION



NORTH SIDE ELEVATION

POLE REFERENCE NUMBER (P-6)

CALCULATED  
AJB  
CHECKED  
JDL

TEMPORARY POLE P-6 DETAIL

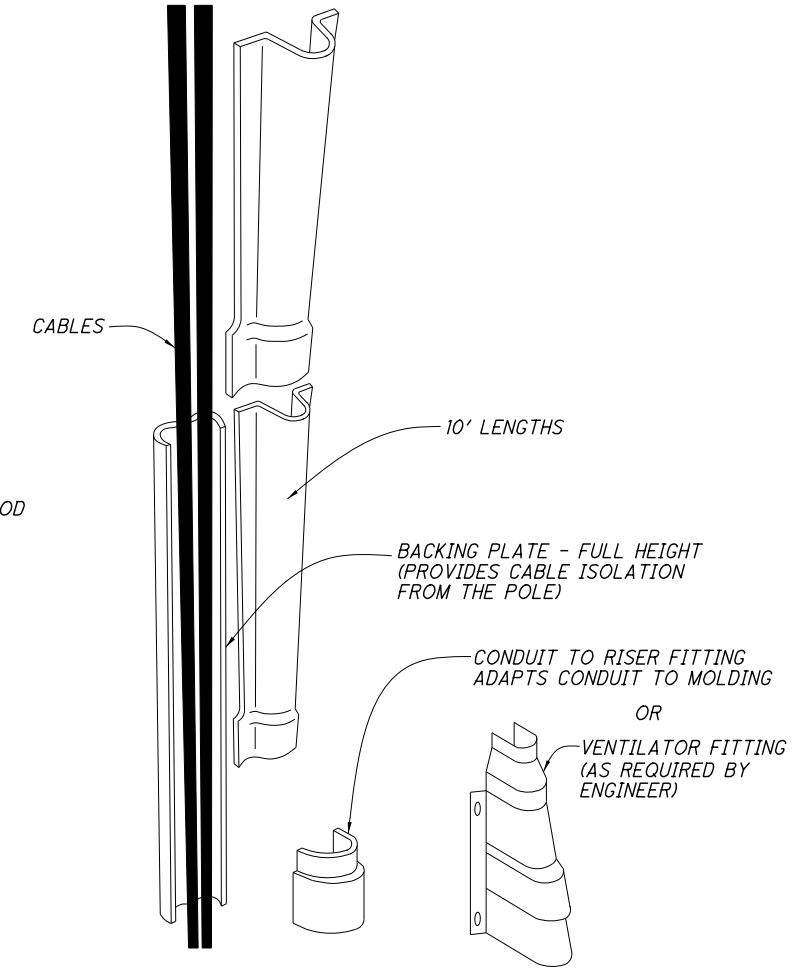
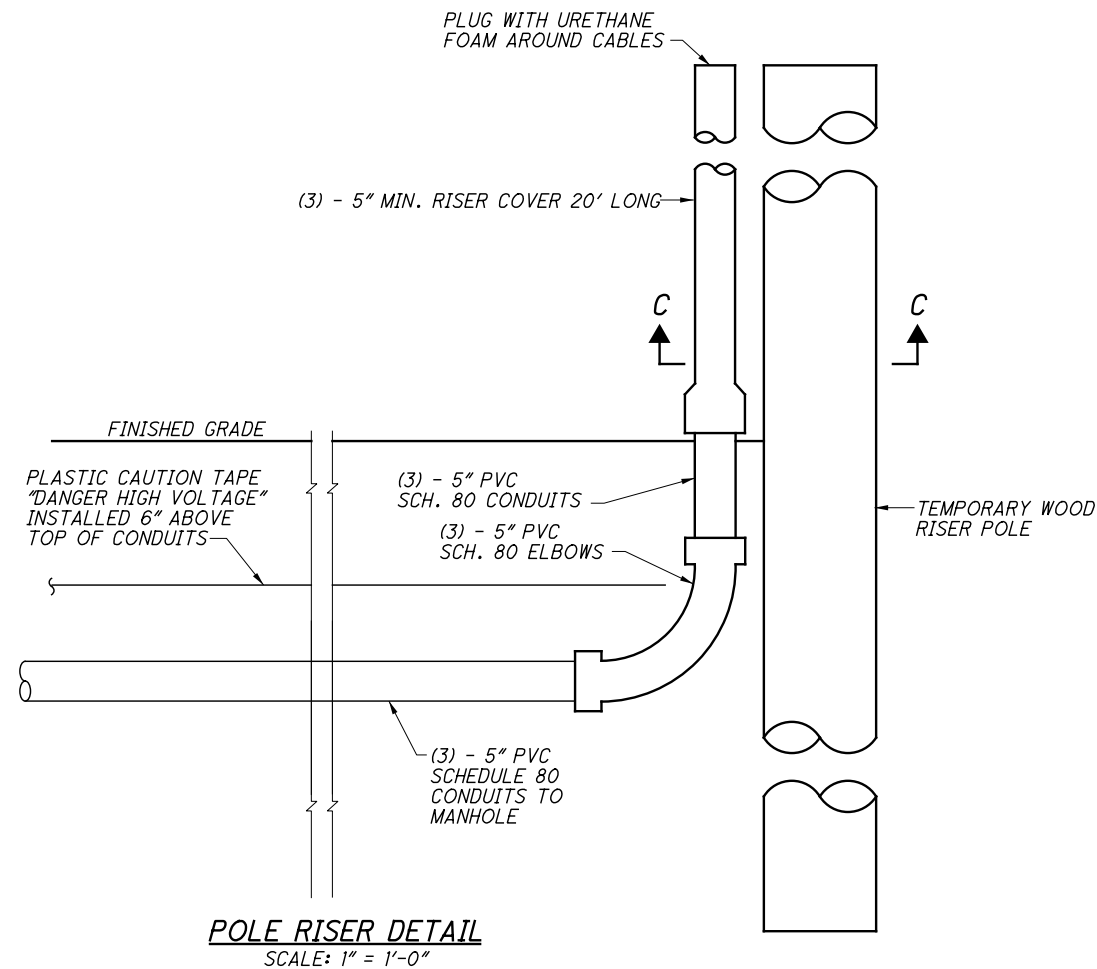
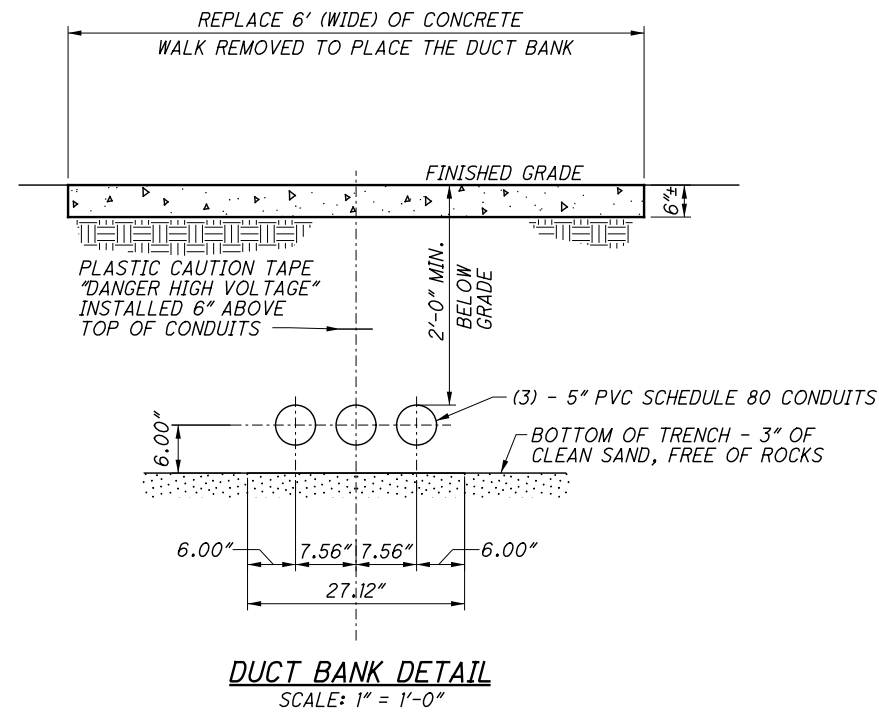
CUY-10-16.13

22/28

54  
308

**NOTE:**

1. DETAIL BASED ON THE USE OF PREFABRICATED NON-METALLIC CONDUIT SPACERS, WITH 2" CONDUIT TO CONDUIT SEPARATION.
2. PRIMARY CONDUCTORS: 3 #4/0 AWG, 15 KV, INSTALLED IN (1) - 5" CONDUIT.
3. FOR ADDITIONAL DETAILS SEE CPP GUIDELINES SHEETS [24/28] TO [28/28].
4. INSTALL PULL ROPE IN EACH CONDUIT AFTER CLEANING.



**NOTES:**

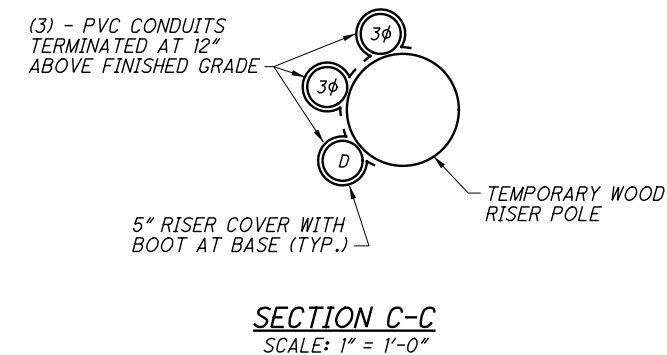
1. INSTALL VENTILATOR OR CONDUIT TO RISER FITTINGS AT THE BASE OF THE POLE.
2. NAIL BACKING PLATE SECTIONS TO THE SURFACE OF THE POLE. THREE NAIL HOLES PROVIDED IN EACH SECTION. PLACE THE "U" SECTIONS OVER THE CABLE AND BALL PLATE, WITH BELLED END AT THE BOTTOM, AND ATTACH USING 1/4" LAG BOLTS, GALVANIZED PER CMS 711.02
3. PRIME PV-MOLD SCHEDULE 80 POLE RISER SYSTEM OR EQUAL.
4. SIZE AS REQUIRED BY CONDUCTORS OR CONDUITS.
5. REFER TO POLE RISER DETAIL FOR ADDITIONAL INFORMATION.

**NOTES:**

SEE RISER COVER DETAIL FOR ADDITIONAL INFORMATION.

**LEGEND:**

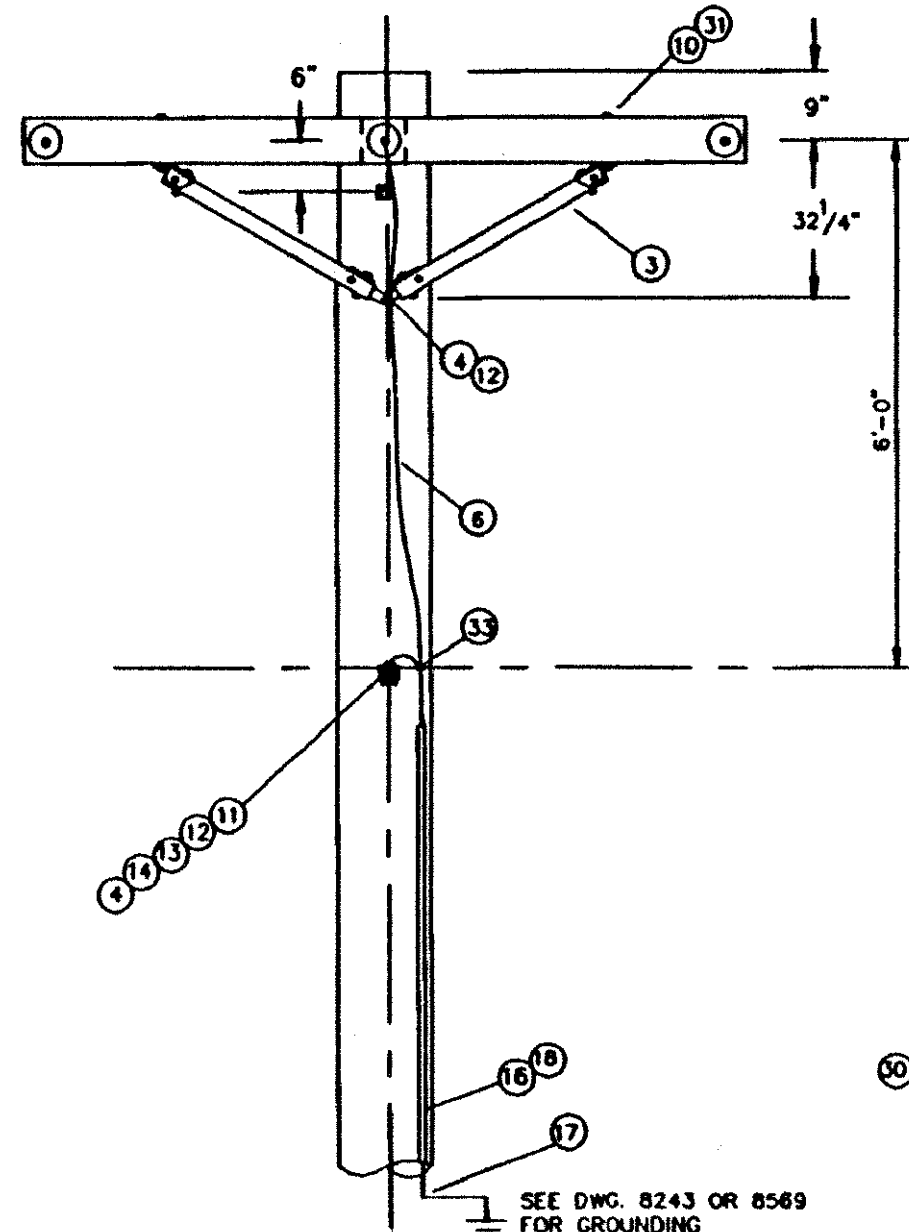
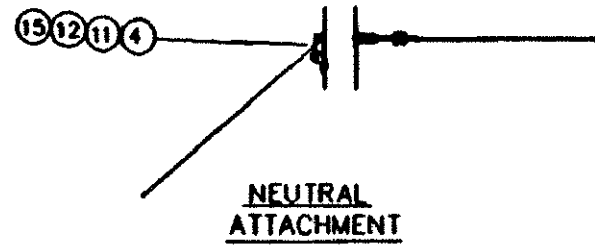
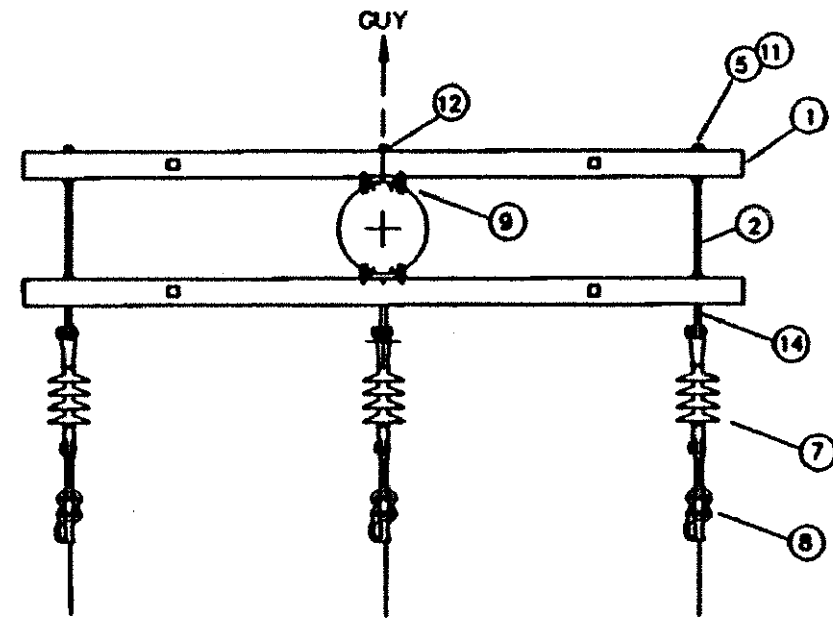
- PVC - POLY VINYL CHLORIDE  
D - DATA CABLE



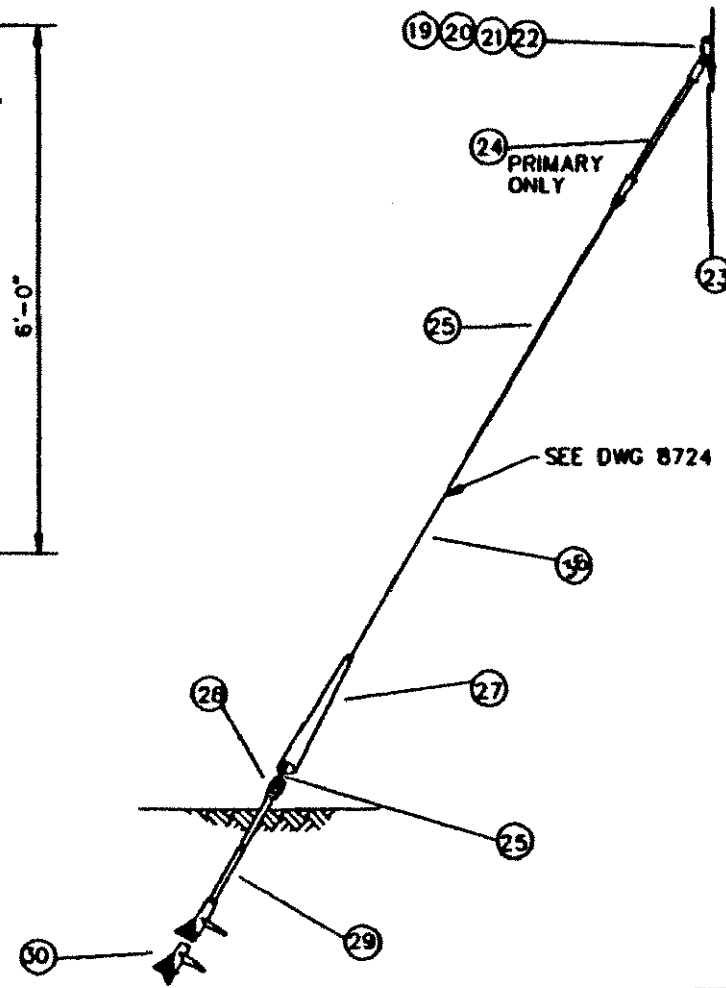


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15 - 6



SEE DWG. 8243 OR 8569 FOR GROUNDING



BILL OF MATERIALS			
ITEM NO.	ITEM	STOCK NO.	NO. REQ'D
1	3 1/2 X 4 1/2 X 8'-0" STL. PIN CROSSARM		2
2	DBL. ARMING EYEBOLT, 5/8" X LENGTH REQ'D	JOSLYN J9814 TO J9828	3
3	WOOD BRACE, 60" SPAN	JOSLYN J4730W-R	4
4	BOLT, 5/8" X LENGTH REQ'D, MACHINE	JOSLYN J8808 TO 8824	5
5	WASHER, 5/8", ROUND FLAT	HUGHES RW3-80	8
6	#4 W.P. CU SOLID		AS REQ'D
7	INSULATORS, SUSPENSION 13KV, PDI-15 TYPE	O.B. 233194	3
8	DEADEND CLAMP	PER CONDUCTOR SIZE	3
9	GRID GAIN	FLAGE PX122	2
10	BOLT, 1/2 X 6", MACHINE	JOSLYN J8708	4
11	SPRING WASHER, FOR 5/8" BOLT	JOSLYN J3540	3
12	WASHER, CURVED 11/16" HOLE 3X3X1/4	JOSLYN J113	4
13	CONNECTOR #4CU TO NEUTRAL/MESSENGER	PER NEUT/MESS SIZE	1
14	EYENUT FOR 5/8", OVALEYE	JOSLYN J1093	4
15	GUY HOOK	FLAGG P135A	1
16	WOOD MOULDING, 8' LENGTHS	HUGHES 2501.8	3
17	STAPLES, ROLLED	JOSLYN J6497	100
18	STAPLES, GALV.	HUGHES 2501.4	50
19	MACHINE BOLT 7/8" X LENGTH REQ'D.	JOSLYN J9062-9074	1
20	WASHER, SPRING FOR 7/8" BOLT	JOSLYN J3542	1
21	WASHER, SQ. CURVED 3 1/2 X 3 1/2 X 3/8 15/16" HOLE	JOSLYN J6828	1
22	GUY HOOK, COMBINATION TYPE, MIN. ULT. 35K	FLAGG P139	1
23	LAG SCREW, 3 X 1/2", FETTER DRIVE & POINT	JOSLYN J8753P	1
24	FIBERGLASS GUY STRAIN INSULATOR, 36", 30K MIN.	FLAGG 300-36	1
25	GUY GRIP	PER STRAND SIZE	4
26	GUY STRAND	PER ENGINEER	AS REQ'D.
27	GUY GUARD, PLASTIC 8" YELLOW	JOSLYN J1493Y	AS REQ'D.
28	EYENUT FOR 1" ANCHOR ROD	CHANCE 6562	2
29	ANCHOR ROD 7" X 1"	CHANCE 12334P	2
30	ANCHOR, SINGLE OR DOUBLE HELIX	CHANCE E102-08207 TO 0823	2
31	WASHER, 1/2", ROUND FLAT	JOSLYN J1086	4
32	DEADEND CLAMP	PER NEUT. SIZE	1
33	CONNECTOR #4 CU - #4 CU	BURNDY YC4CA	1

NOTE: 1. ALL STOCK ITEMS ARE "OR EQUIVALENT" WITH ENGINEER APPROVAL.  
2. BOND ALL HARDWARE TO NEUTRAL.

NO.	DATE	DESCRIPTION	BY	APPROVED
1	11/20/14	ISSUED FOR CONSTRUCTION	JL	
2	12/18/14	ISSUED FOR TO BIDS	JL	
3	01/07/15	ISSUED FOR CONSTRUCTION	JL	
4	02/20/15	ISSUED FOR BIDS	JL	

BECK POLYTECH

CLEVELAND PUBLIC POWER

THREE PH. DEADEND WOOD CROSSARM ASSEMBLY

8564.3

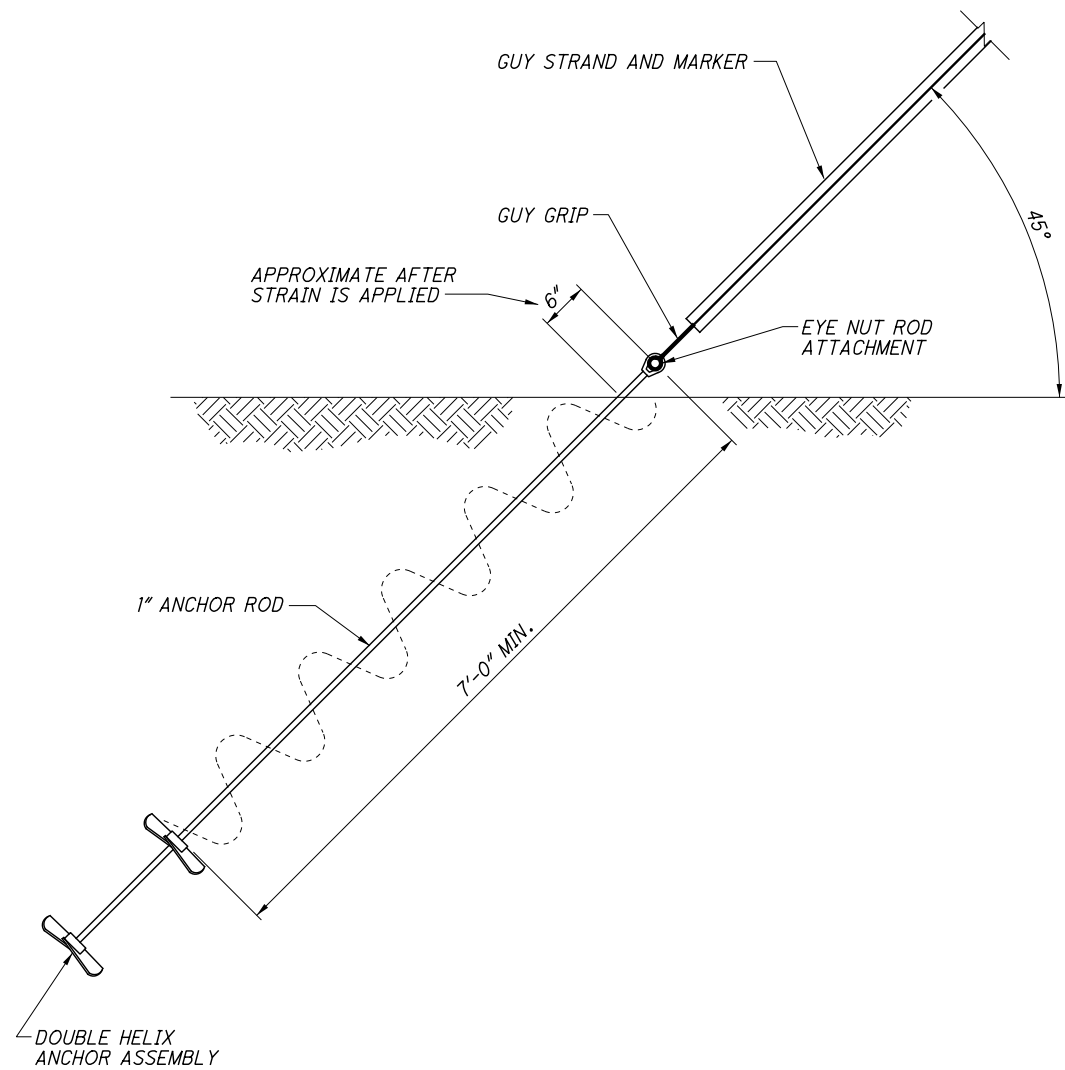
CPP GUIDELINES

CUY-10-16.13

24/28

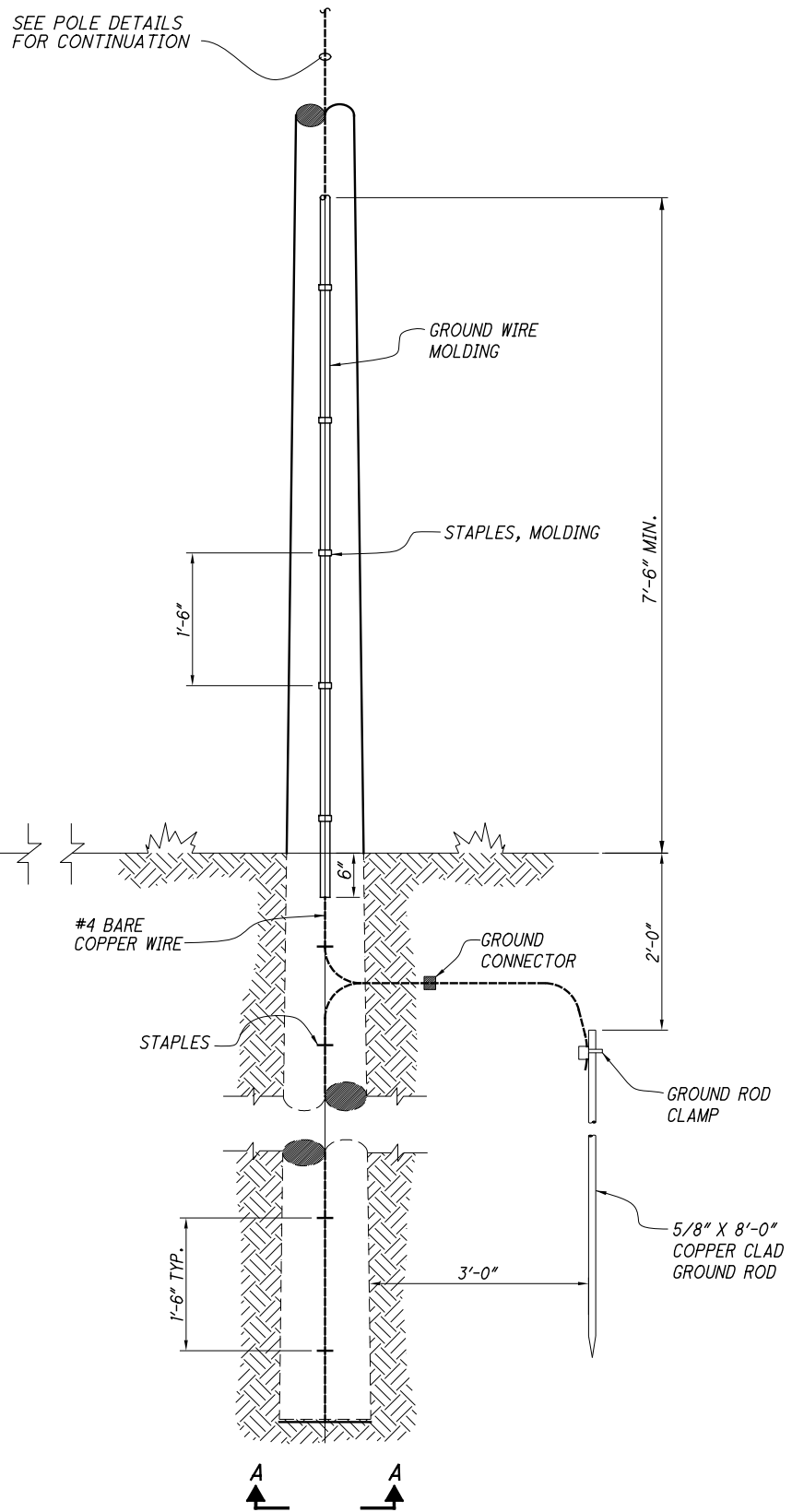
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308

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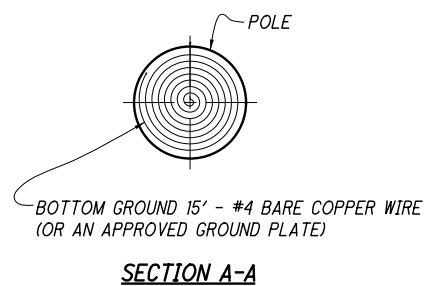


**TYPICAL GUY ANCHOR DETAIL**

**NOTE:**  
REFER TO CPP POLE DETAIL ON 24/28.



**POLE GROUNDING DETAIL**  
(TYPICAL ALL POLES)

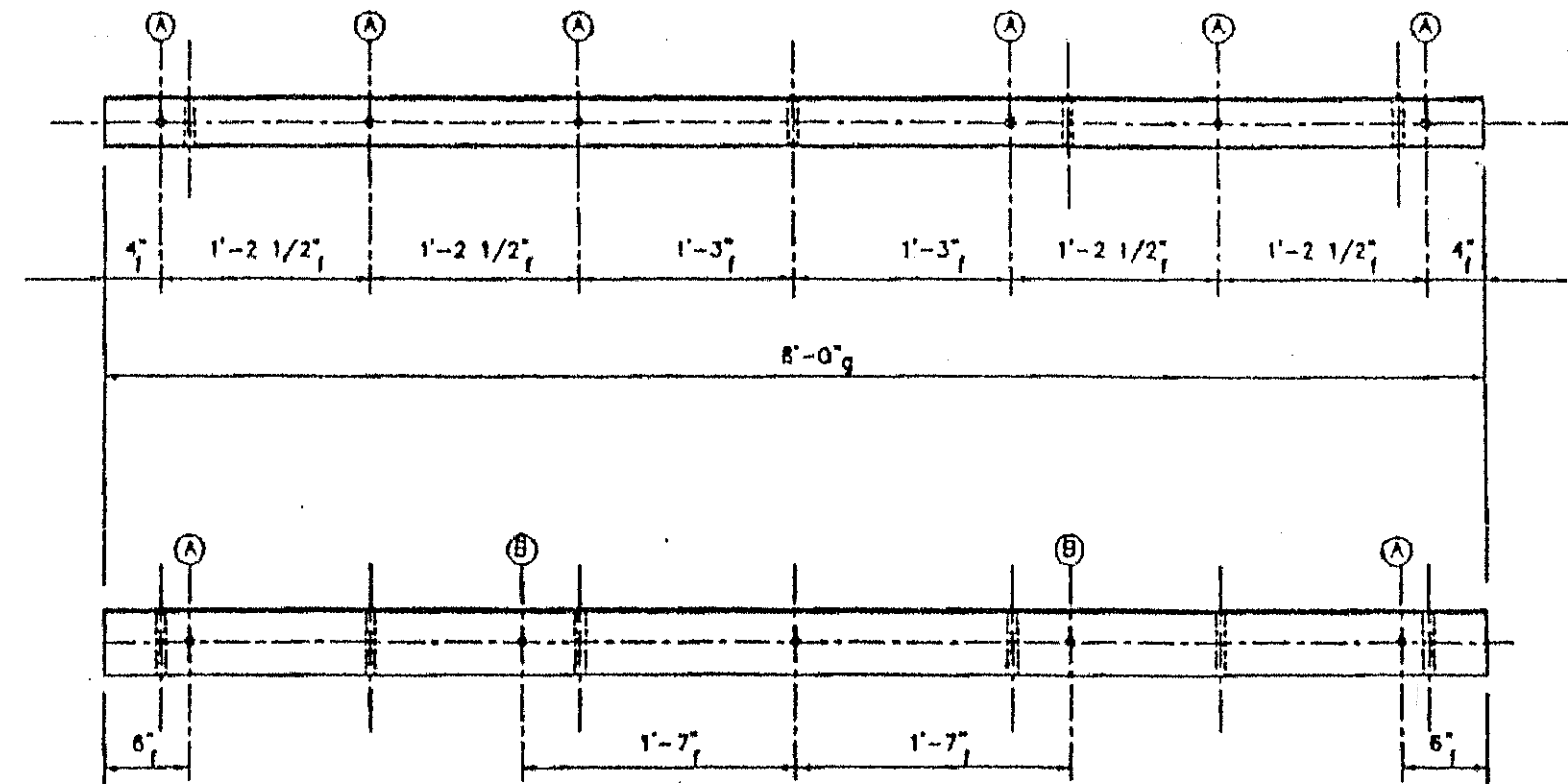


CALCULATED  
AJB  
CHECKED  
JDL

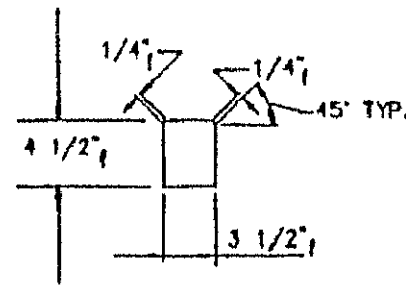
**CPP RELOCATION  
TYPICAL POLE DETAILS**

**CUY-10-16.13**

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**8'-0" CROSSARM**



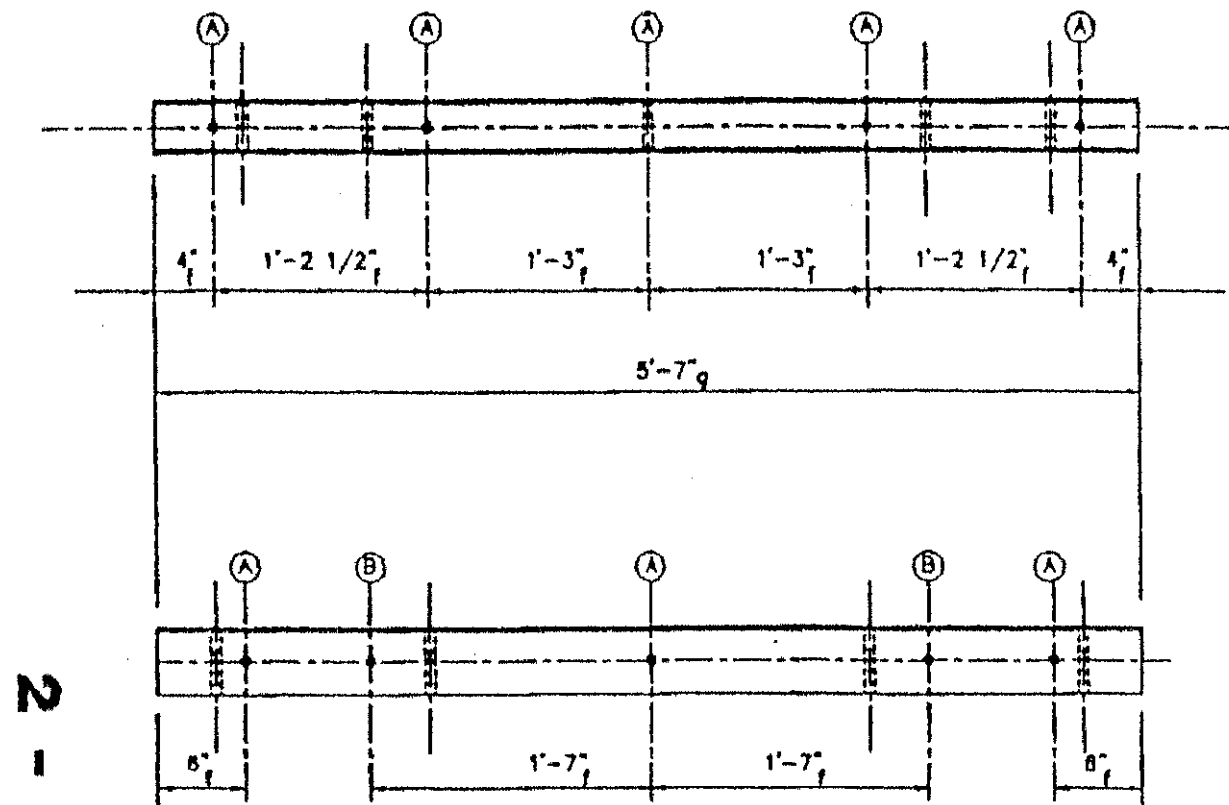
TOLERANCES SIZES OF HOLES

	NOMINAL	GO	NO GO
(A)	11/16"	5/8"	3/4"
(A)	7/16"	3/8"	1/2"

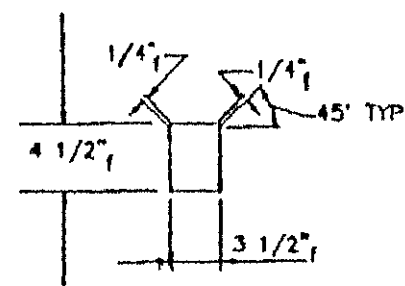
f ----- ± 1/8"

g ----- ± 1/4"

NOTE: THIS CROSSARM IS THE SAME AS REA SPEC. DT-5B DWG. M-19 TYPE 04



**5'-7" CROSSARM**



NO.	DATE	BY	DESCRIPTION	APP'D.	CHK'D.
1	11/16/10	JEFF SMITH	DESIGNED FOR CONSTRUCTION	LAC	LOH
2	03/09/17	JEFF SMITH	REVISED FOR CPB	LAC	LOH
3	04/01/17	JEFF SMITH	REVISED FOR CONSTRUCTION	NEW	LOH
4	1/29/18	JEFF SMITH	REVISED FOR CPB	NEW	LOH

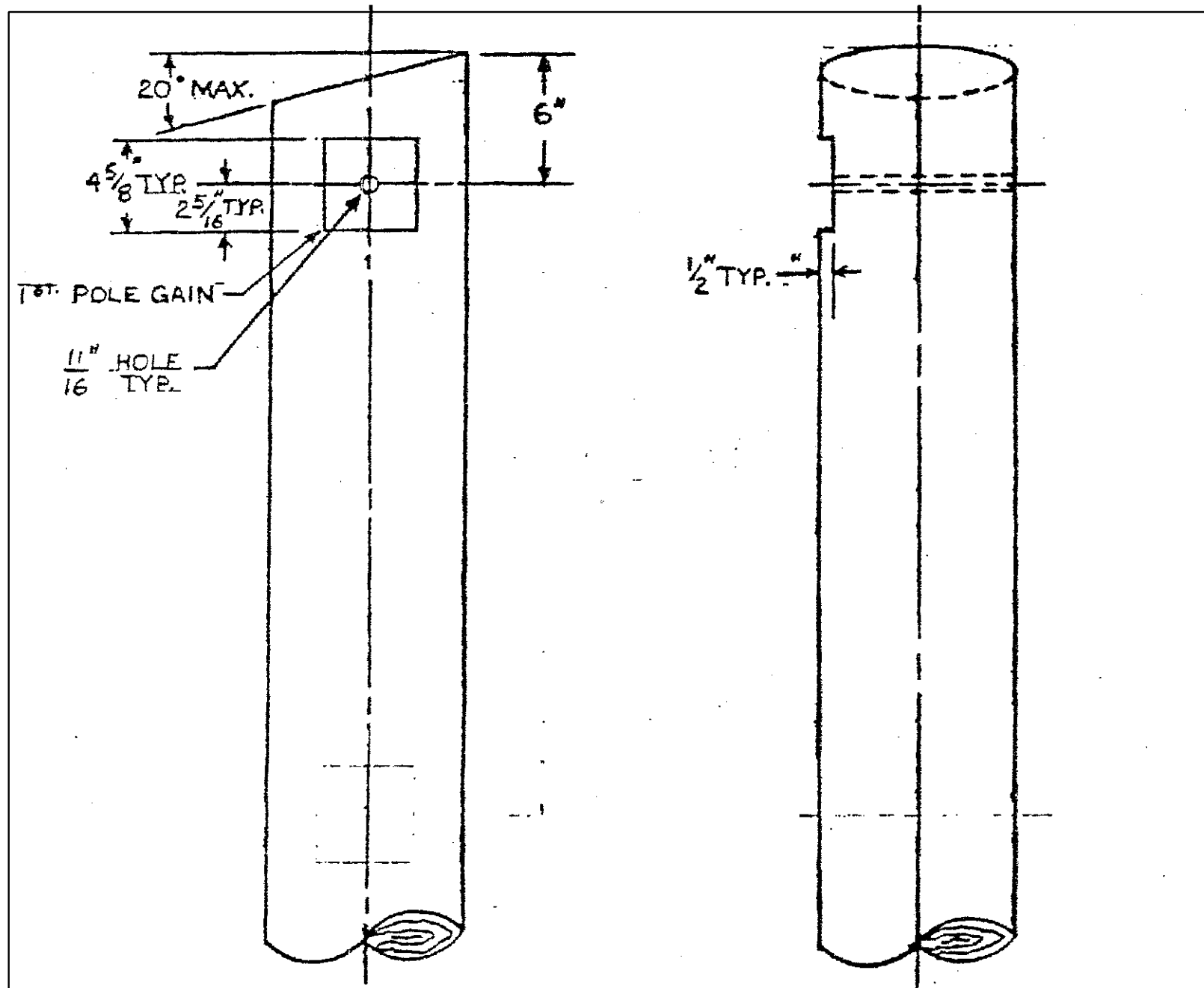
**BECK POLYTECH**  
INCORPORATED

**CLEVELAND PUBLIC POWER**

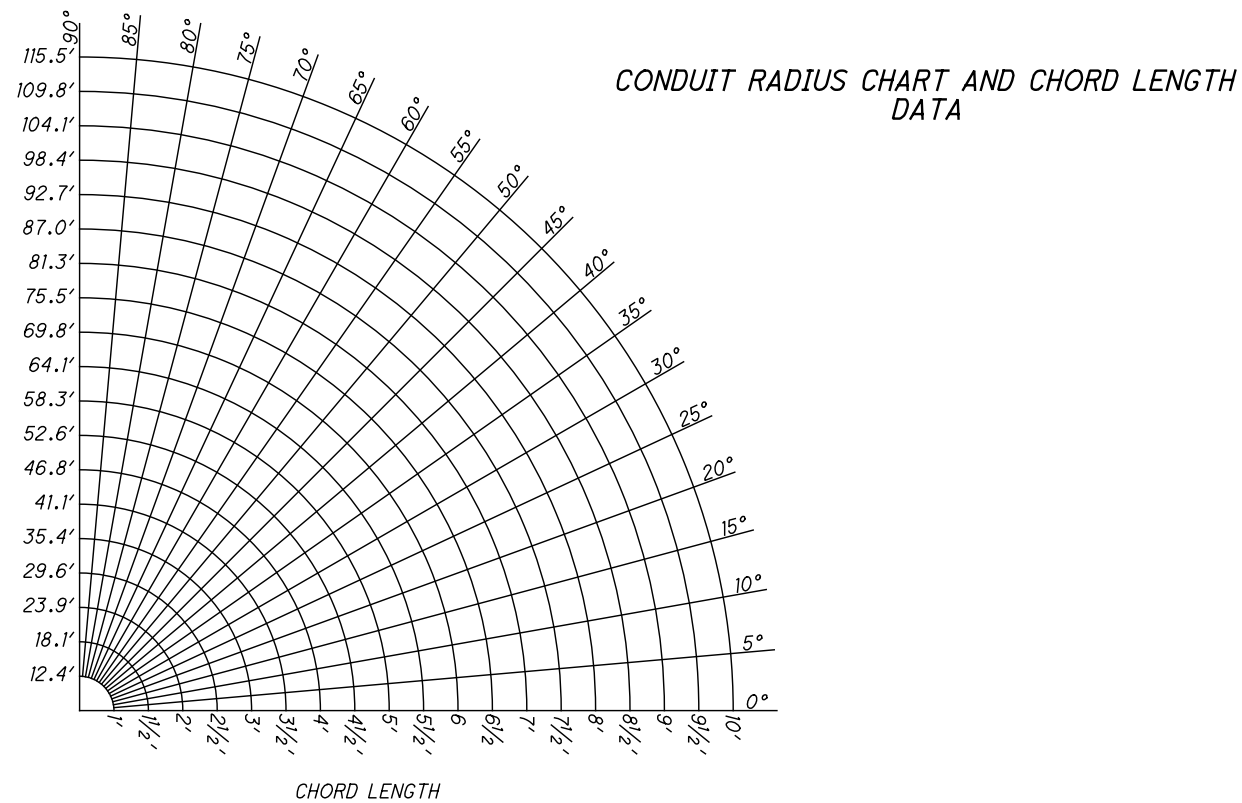
**STANDARD CROSSARM FRAMING**  
5'-7" & 8'-0" CROSSARM

8288.J

**2-4**

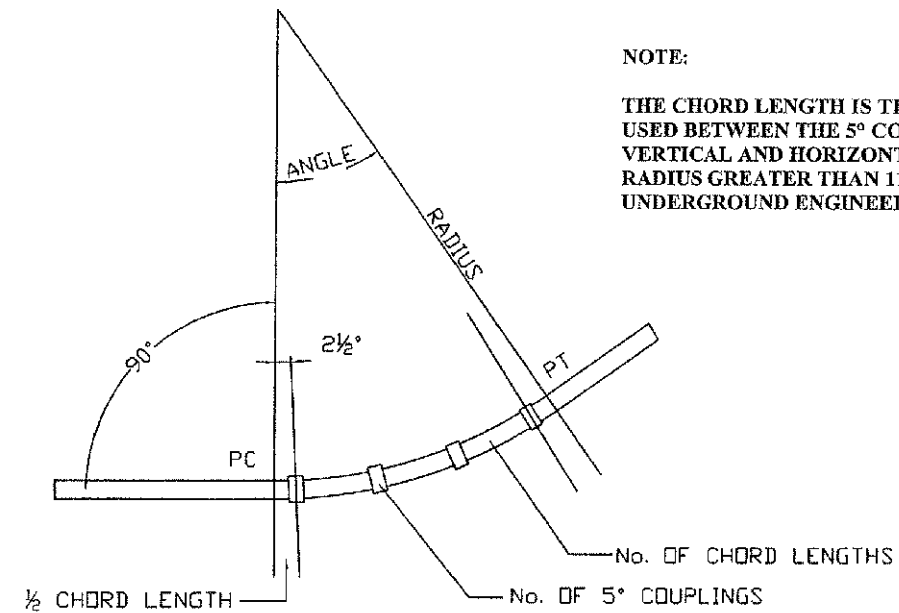


		<b>WOOD POLES</b>	
		SPECIFICATIONS FOR DRILLING HOLES & GAINING	
7-3-85	F.J.R.	DIVISION OF LIGHT & POWER CLEVELAND, OHIO	
DATE	BY		
REVISION	DRAWN BY J.M.N.	CHECKED BY <i>MXT</i>	DATE 12-4-72
			1-2-1-3

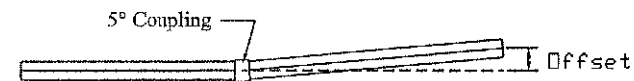


ANGLE	5° COUPLINGS	No. OF CHORDS
10°	2	1
15°	3	2
20°	4	3
25°	5	4
30°	6	5
35°	7	6
40°	8	7
45°	9	8
50°	10	9
55°	11	10
60°	12	11
65°	13	12
70°	14	13
75°	15	14
80°	16	15
85°	17	16
90°	18	17

MIN. RADIUS	LENGTH OF CHORD
12.4'	1'
18.1	1 1/2'
23.9'	2'
29.6'	2 1/2'
35.4'	3'
41.1'	3 1/2'
46.8'	4'
52.6'	4 1/2'
58.3'	5'
64.1'	5 1/2'
69.8'	6'
75.5'	6 1/2'
81.3'	7'
87.0'	7 1/2'
95.7'	8'
98.4'	8 1/2'
104.1'	9'
109.8'	9 1/2'
115.5'	10'



**NOTE:**  
 THE CHORD LENGTH IS THE SPECIFIED LENGTH OF DUCT TO BE USED BETWEEN THE 5° COUPLINGS TO CONSTRUCT BOTH VERTICAL AND HORIZONTAL CURVES. FOR CURVES HAVING A RADIUS GREATER THAN 115.5 FEET, PLEASE CONSULT WITH UNDERGROUND ENGINEERING.



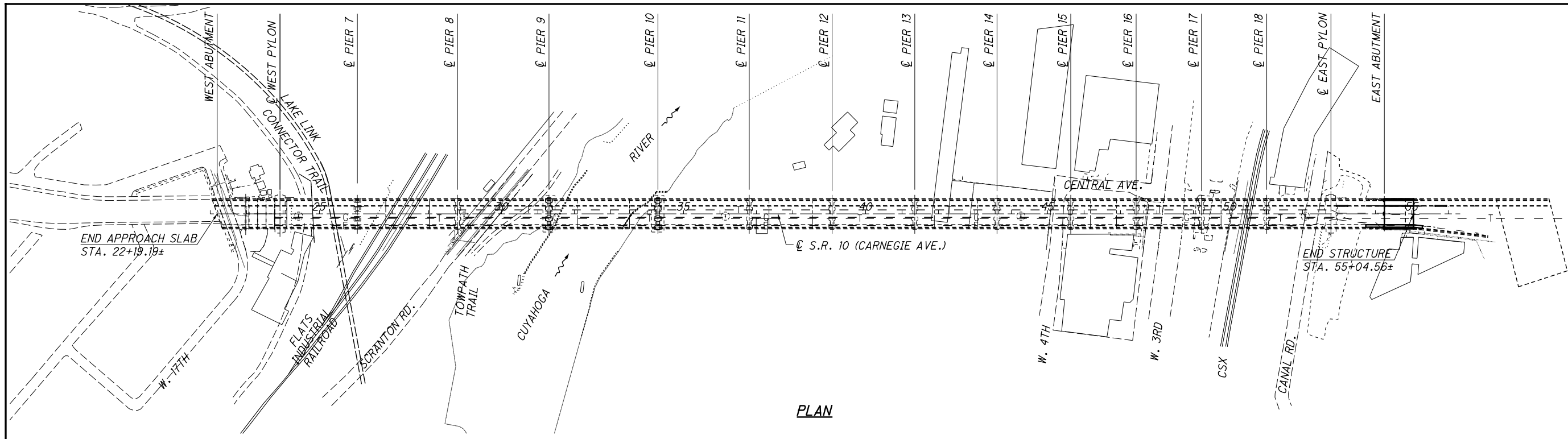
CONDUIT LENGTH	APPROX. OFFSET
1'	0'-1"
5'	0'-5"
10'	0'-10"
15'	1'-4"
20'	1'-9"

**NOTE: OFFSET = APPROX. 1" PER CONDUIT FOOT**

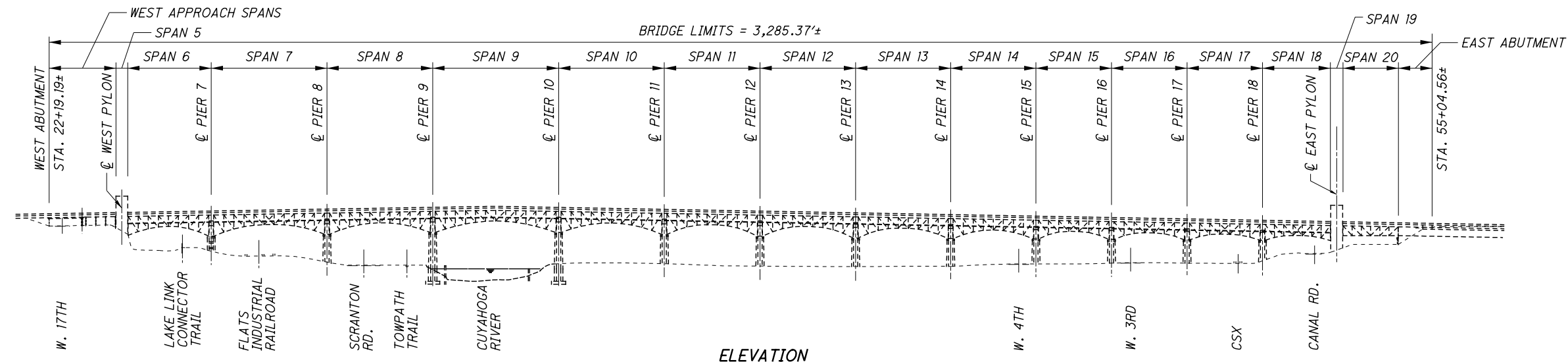
**NOTE:**

VERTICAL AND HORIZONTAL CURVES SHALL HAVE A MINIMUM RADIUS OF NO LESS THAN 30 FEET. THESE CURVES ARE TO BE CONSTRUCTED BY USING THE APPROPRIATE 5° COUPLINGS, AND ASSOCIATED CHORD LENGTHS OF CONDUITS AS NOTED ON THE PLAN VIEW AND/OR AS SHOWN ON THE CONDUIT CURVE CONSTRUCTION CHART. ANY OTHER CURVE DESIGN, FIELD CHANGES, OR THE USE OF PREFORMED RADIUS BENDS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER.

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PLAN



ELEVATION

EXISTING STRUCTURE - WEST APPROACH SPANS
TYPE: WELDED STEEL GIRDER AND STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 75'-8½"±, 8'-0"± CANTILEVER; 3 SPANS @ 23'-5¾"±
ROADWAY: 14'-3½"± MULTI-USE PATH; 51'-0"± ROADWAY FACE TO FACE CURBS; 6'-9"± SIDEWALK
DESIGN LOADING: HS 20-44, CASE II AND ALTERNATE MILITARY LOADING
SKEW: VARIES 19°22'37" R.F. TO NONE
WEARING SURFACE: 1¼"± MICRO-SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
CROWN RATE: 0.0156±
CONDITION: GOOD
YEAR BUILT: 1983, REHABILITATED 2000
STRUCTURE FILE NO.: 1801503
DISPOSITION: NO WORK

EXISTING STRUCTURE - TRUSS SPANS
TYPE: STEEL DECK TRUSSES WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 198'-4"±, 275'-1"±, 251'-2"±, 299'-0"±, 251'-2"±, 227'-3"±, 227'-3"±, 225'-9"±, 202'-8"±, 179'-5"±, 179'-5"±, 162'-2"±, 132'-2"±
ROADWAY: 14'-3½"± MULTI-USE PATH; 51'-0"± ROADWAY FACE TO FACE CURBS; 6'-9"± SIDEWALK
DESIGN LOADING: EQUIVALENT HS 16.8
SKEW: NONE
WEARING SURFACE: 1¼"± MICRO-SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
CROWN RATE: 0.0156±
CONDITION: FAIR
YEAR BUILT: 1932, REHABILITATED 1983, 2000
STRUCTURE FILE NO.: 1801503
DISPOSITION: REPAIR

EXISTING STRUCTURE - EAST ABUTMENT
TYPE: REINFORCED CONCRETE SLAB AND BEAMS ON REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 58'-7"±, 22'-0"±
ROADWAY: 14'-3½"± MULTI-USE PATH; 51'-0"± ROADWAY FACE TO FACE CURBS; 6'-9"± SIDEWALK
DESIGN LOADING: EQUIVALENT HS 10.8
SKEW: NONE
WEARING SURFACE: 1¼"± MICRO-SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
CROWN RATE: 0.0156±
CONDITION: FAIR
YEAR BUILT: 1932, REHABILITATED 1983, 2000
STRUCTURE FILE NO.: 1801503
DISPOSITION: REPAIR

PROPOSED STRUCTURE
TYPE: SAME AS EXISTING
SPANS: 75'-8½"±, 8'-0"± CANTILEVER; 3 SPANS @ 23'-5¾"±, 198'-4"±, 275'-1"±, 251'-2"±, 299'-0"±, 251'-2"±, 227'-3"±, 227'-3"±, 225'-9"±, 202'-8"±, 179'-5"±, 179'-5"±, 162'-2"±, 132'-2"±, 58'-7"±, 22'-0"±
ROADWAY: 14'-3½"± MULTI-USE PATH; 51'-0"± ROADWAY FACE TO FACE CURBS; 6'-9"± SIDEWALK
DESIGN LOADING: HS 20-44, CASE II AND ALTERNATE MILITARY LOADING
SKEW: VARIES 19°22'37" R.F. TO NONE
WEARING SURFACE: 1¼"± MICRO-SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
CROWN RATE: 0.0156±
COORDINATES: LATITUDE 41°29'20"
LONGITUDE 81°41'40"



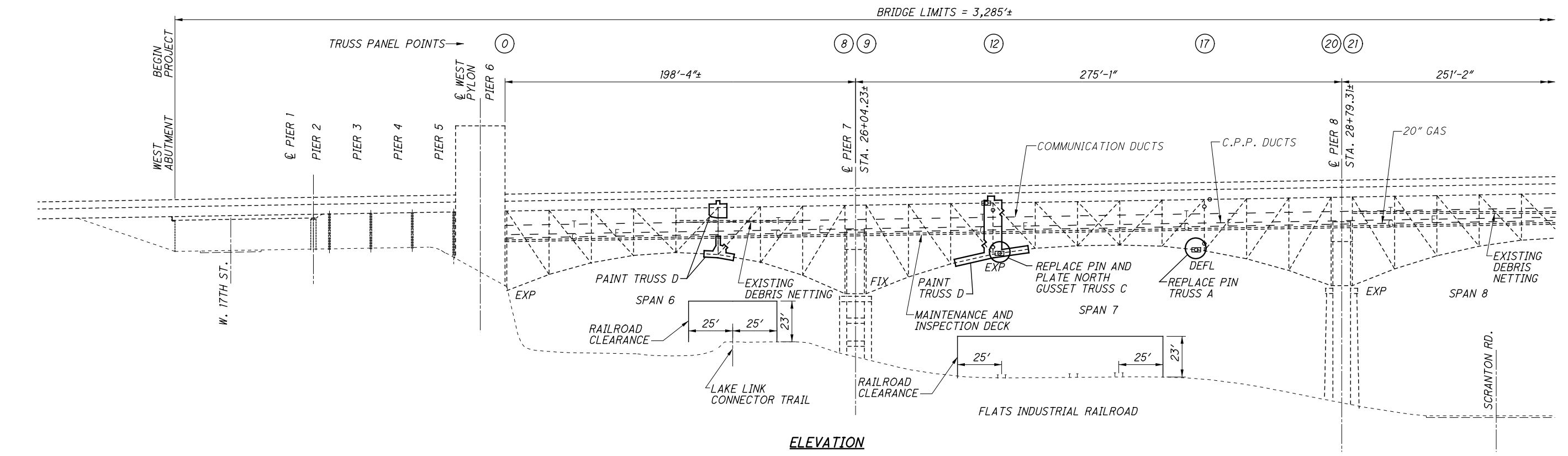
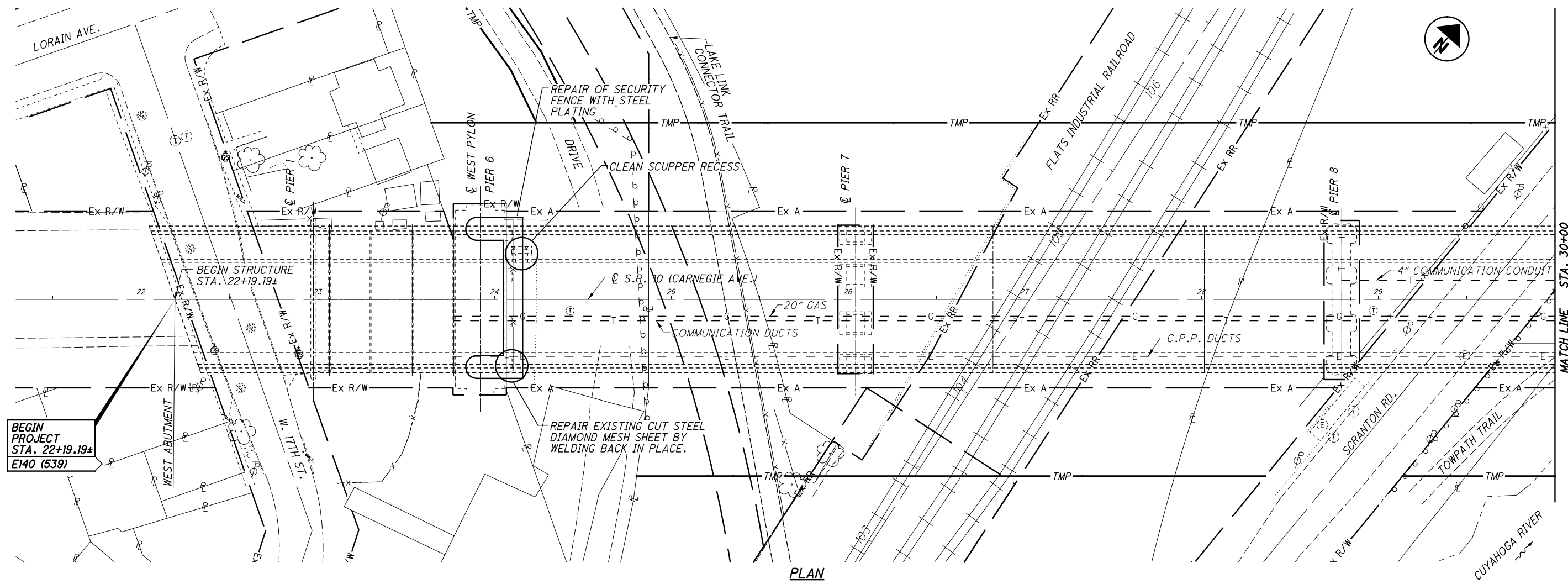
RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

DATE: 1/30/18  
REVIEWED: DLR  
DRAWN: RB  
DESIGNED: KAK  
CHECKED: DAP

KEY PLAN  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16-13  
PID No. 96986  
1/238  
61  
308

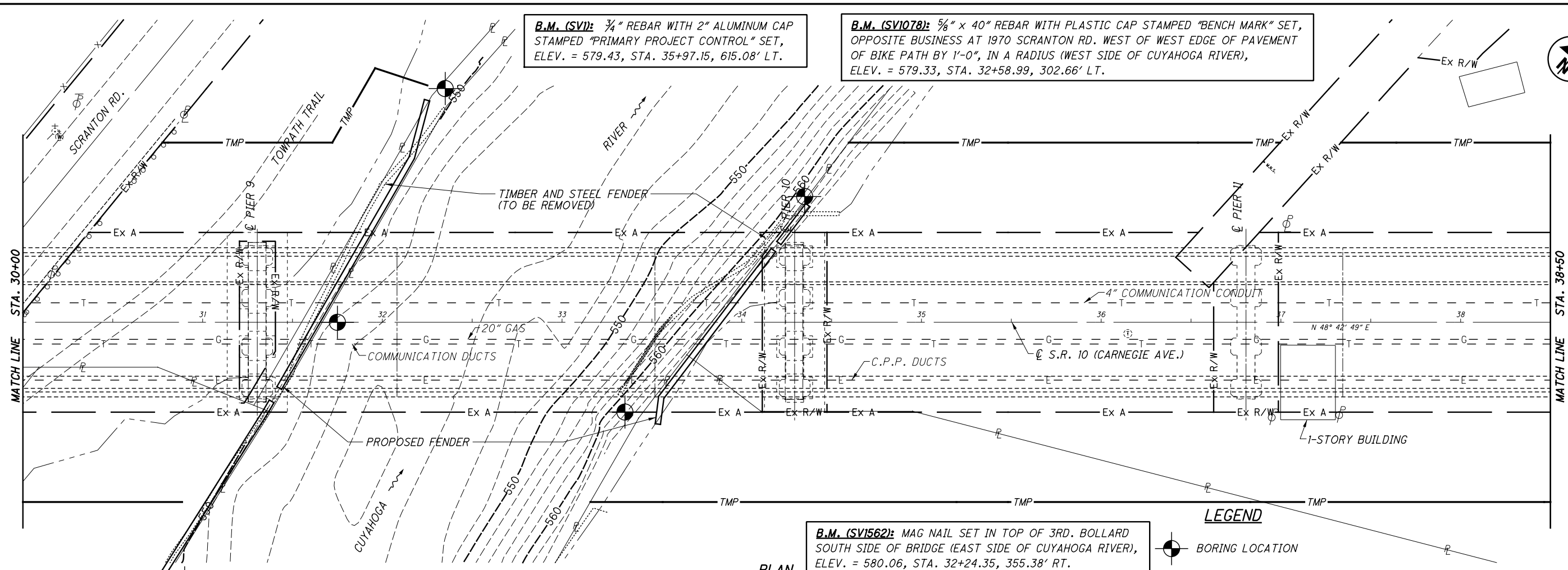
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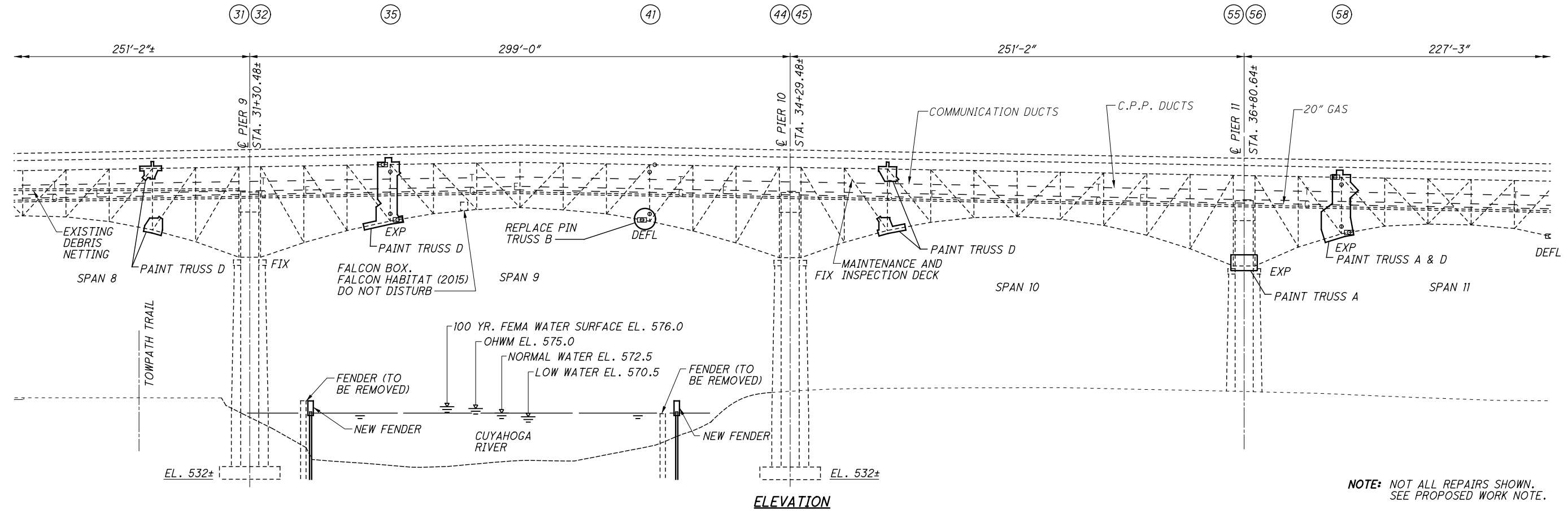
NOTE: NOT ALL REPAIRS SHOWN. SEE PROPOSED WORK NOTE.

<b>GENERAL PLAN - 1</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED KAK	CHECKED DAP	DATE 1/30/18
DRAWN RB	REVISED (None)	STRUCTURE FILE NUMBER 1801503
<b>CUY-10-16.13</b> PID No. 96986		2 / 238
62 308		

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BRIDGE LIMITS = 3,285'±



ELEVATION

NOTE: NOT ALL REPAIRS SHOWN. SEE PROPOSED WORK NOTE.

**GENERAL PLAN - 2**  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
 PID No. 96986

3 / 238

63 / 308

DESIGNED: KAK  
 CHECKED: DAP

DRAWN: RB  
 REVISED:

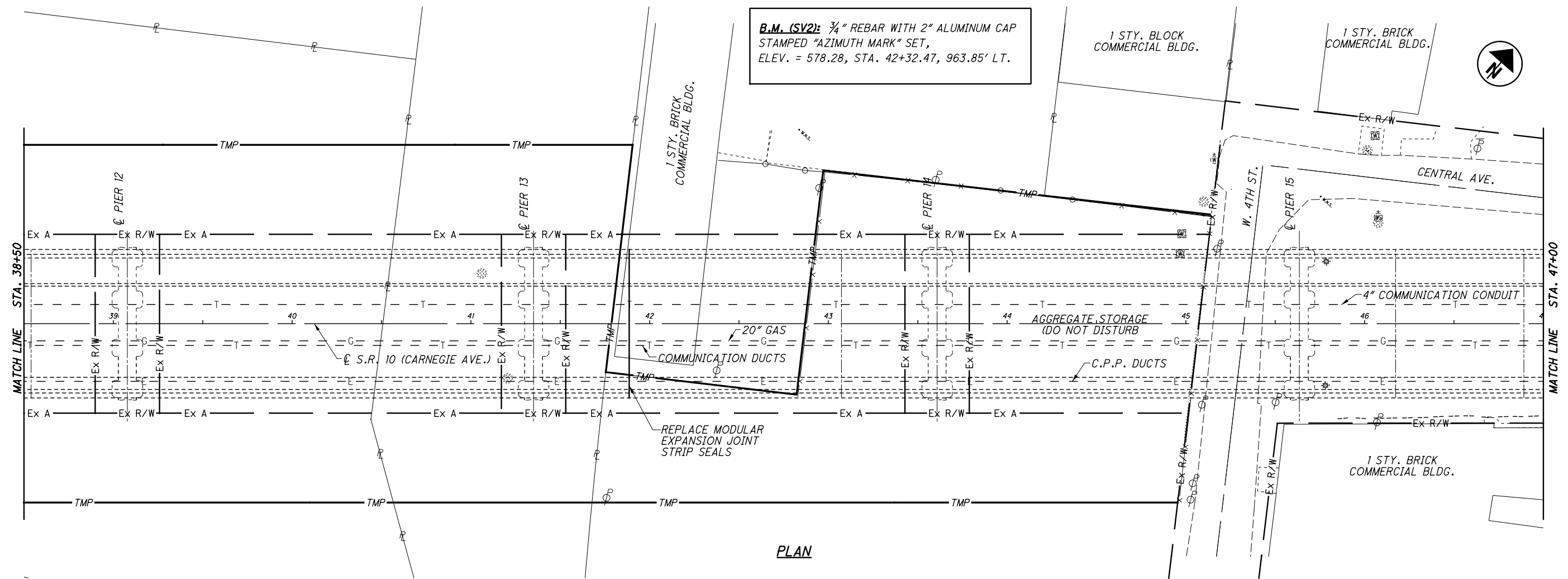
REVIEWED: DLR  
 DATE: 1/30/18

STRUCTURE FILE NUMBER: 1801503

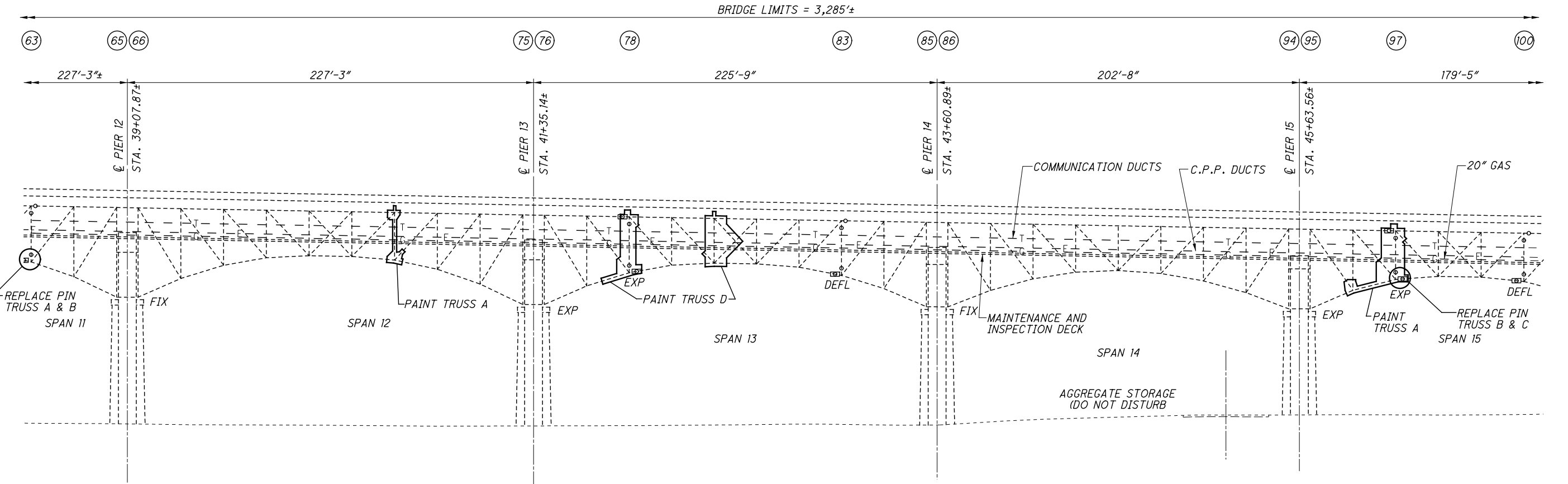
RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902



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**B.M. (SV2):** 3/4" REBAR WITH 2" ALUMINUM CAP  
 STAMPED "AZIMUTH MARK" SET,  
 ELEV. = 578.28, STA. 42+32.47, 963.85' LT.



**NOTE:** NOT ALL REPAIRS SHOWN.  
 SEE PROPOSED WORK NOTE.

**RICHLAND ENGINEERING LIMITED**  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902

DATE: 1/30/18  
 REVIEWED: DLR  
 STRUCTURE FILE NUMBER: 1801503

DRAWN: RB  
 CHECKED: KAK  
 REVISED: DAP

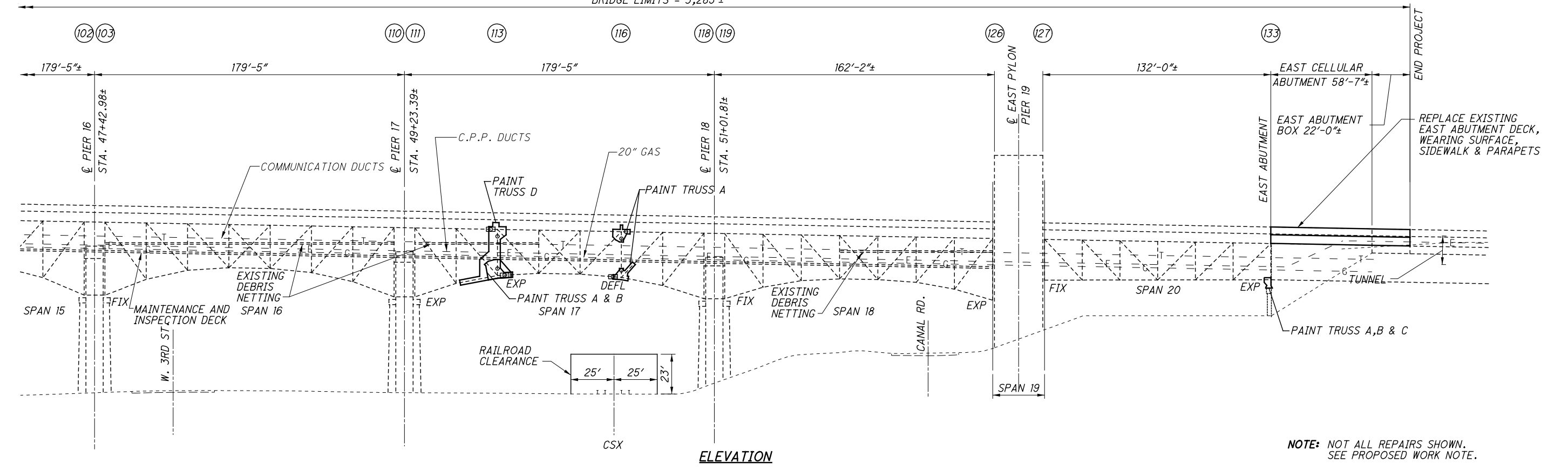
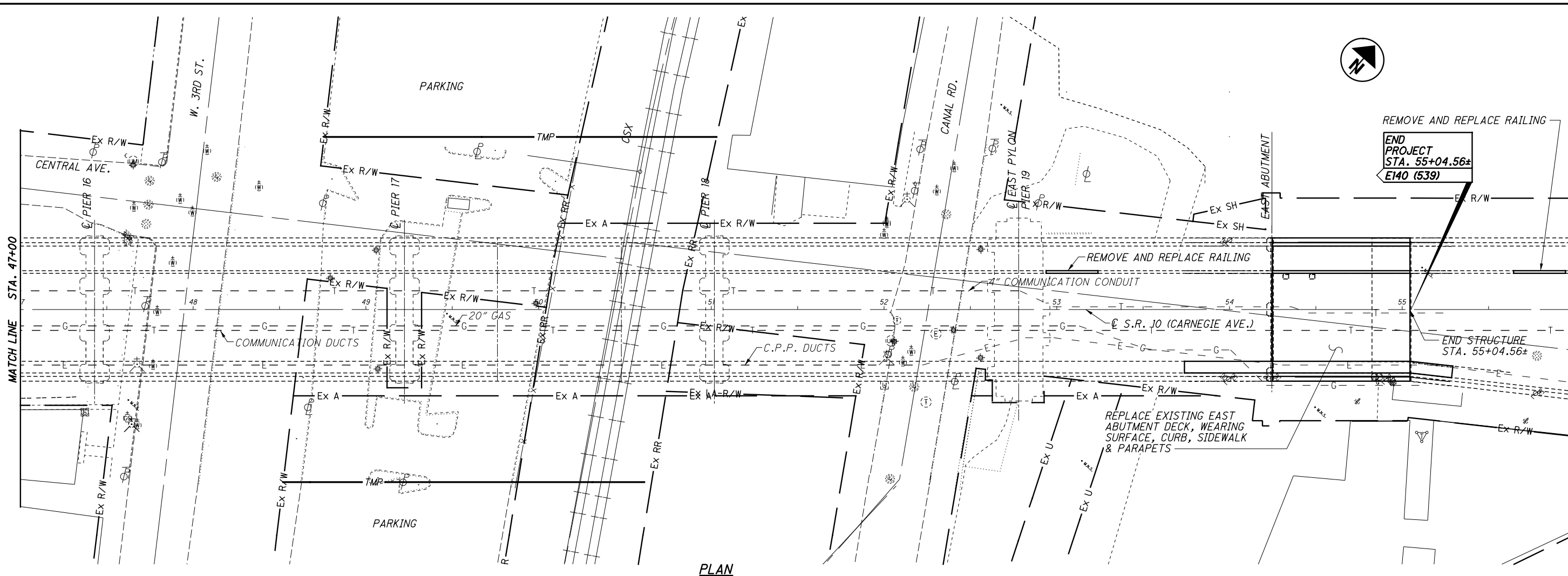
**GENERAL PLAN - 3**  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
 PID No. 96986

4 / 238

64 / 308

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NOTE: NOT ALL REPAIRS SHOWN. SEE PROPOSED WORK NOTE.

<b>GENERAL PLAN - 4</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		DATE: 1/30/18 REVIEWED: DLR DRAWN: RB DESIGNED: KAK CHECKED: DAP	STRUCTURE FILE NUMBER: 1801503 RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
<b>CUY-10-16.13</b> PID No. 96986		5 / 238	65 / 308

**REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:**

EXJ-4-87 (REVISED 1-19-18)

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

800 (REVISED 10-19-18)  
847 (REVISED 1-20-17)

**DESIGN SPECIFICATIONS**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, 2002, INCLUDING ALL SUBSEQUENT INTERIM SPECIFICATIONS; AND THE 2004 ODOT BRIDGE DESIGN MANUAL INCLUDING QUARTERLY UPDATES.

**DESIGN LOADING**

HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING  
60 PSF FUTURE WEARING SURFACE (NEW EAST CELLULAR ABUTMENT DECK)

**DESIGN DATA**

CONCRETE CLASS QC2	COMPRESSIVE STRENGTH 4,500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS QC1	COMPRESSIVE STRENGTH 4,000 PSI (FENDER CAP)
REINFORCING STEEL	ASTM A615 OR A996, GRADE 60 MINIMUM YIELD STRENGTH OF 60,000 PSI ALL REINFORCING STEEL SHALL BE EPOXY COATED PER CMS 709. SPLICES INDICATED ARE FOR GRADE 60 STEEL
CONCRETE FOR PRESTRESSED PILES	COMPRESSIVE STRENGTH FINAL 6.0 KSI COMPRESSIVE STRENGTH RELEASE 4.0 KSI
PRESTRESSING STRAND	ULTIMATE STRENGTH 270 KSI INITIAL STRESS 202.5 KSI LOW RELAXATION STRANDS
PROPOSED STRUCTURAL STEEL	ASTM 709, GRADE 50, YIELD STRENGTH 50,000 PSI

**DECK PROTECTION METHOD:**

EPOXY COATED REINFORCING STEEL, 2 1/2" CONCRETE COVER AND CLASS QC2 CONCRETE.

**MONOLITHIC WEARING SURFACE**

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

**PROPOSED WORK**

1. REMOVE NAVIGATION GUIDANCE FENDERS IN RIVER. REPLACE WITH NEW FENDERS.
2. REPAIR SECURITY FENCE AT WEST PYLON IN SPAN 6.
3. REMOVE DELAMINATED CONCRETE FROM ARCHITECTURAL TOWERS ON PIERS.
4. STRUCTURAL STEEL REPAIRS INCLUDING:
  - 4A. DRILL ISOLATED CRACKS IN BRIDGE ROADWAY STRINGERS (3 LOCATIONS).
  - 4B. RESTORE HOLES AND SECTION LOSS IN ROADWAY STRINGERS (3 PANEL POINTS).
  - 4C. REPAIR SECTION LOSS ON EXTERIOR FLOORBEAM AT PANEL POINT 43 IN SPAN 9.
  - 4D. RESTORE SECTION LOSS IN STEEL STIFFENERS AT FLOORBEAMS (3 PANEL POINTS).
  - 4E. REPLACE END OF MAINTENANCE AND INSPECTION DECK STRINGER (L17-L18) AT FLOORBEAM 17.
  - 4F. DRILL FLOORBEAM CONNECTION CRACKS IN MAINTENANCE AND INSPECTION DECK (18 CRACK ENDS)
  - 4G. REPLACE CRACKED FLOORBEAM CONNECTION ANGLE IN MAINTENANCE AND INSPECTION DECK AT PANEL POINT 97.
  - 4H. MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS INCLUDING:
    - 4H-1. JACKING AND RESETTING BEARING. (18 LOCATIONS)
    - 4H-2. REINFORCE BEARING SEAT STIFFENERS WITH NEW MATERIAL. (7 LOCATIONS)
    - 4H-3. REPLACE FAILING BEARING SUPPORT CHANNEL. (1 LOCATION)
    - 4H-4. REPAIR CRACKED WELDS IN STRINGER SUPPORTS. (5 LOCATIONS)
  - 4J. STIFFEN GUSSET PLATE EDGES THROUGHOUT TRUSSES WITH ANGLES OR STRUTS. (1756 NEW STIFFENING ANGLES)
  - 4K. STIFFEN BOWED SOUTH GUSSET PLATE EDGE AT TRUSS PANEL CL43.
  - 4L. TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES (7 LOCATIONS).
  - 4M. REPAIR LAMELLAR TEAR IN GUSSET PLATE CL70S.
  - 4N. REPAIR HOLES IN STEEL MEMBERS THROUGHOUT THE TRUSS MEMBERS INCLUDING:
    - 4N-1. BOLTED SUPPLEMENTAL ANGLE. (4 LOCATIONS)
    - 4N-2. BOLTED SUPPLEMENTAL ANGLE AND BATTEN PLATE REPLACEMENT. (1 LOCATION)
    - 4N-3. BOLTED SUPPLEMENTAL PLATES. (13 LOCATIONS)
    - 4N-4. WELDED SUPPLEMENTAL PLATES. (3 LOCATIONS)
    - 4N-5. BATTEN PLATE REPLACEMENT. (1 LOCATION)
  - 4P. REPLACE DETERIORATED RIVETS WITH BOLTS AT VARIOUS LOCATIONS ON THE TRUSS MEMBERS (8 LOCATIONS).
  - 4Q. DRILL ISOLATED CRACKS IN BRIDGE TRUSS MEMBERS (2 LOCATIONS).
  - 4R. RESTORE SECTION LOSS IN STEEL STIFFENERS AT TRUSS MEMBERS (1 PANEL POINT).
  - 4S. REPAIR BROKEN WELDED FENCE CONNECTION ON TRUSS C AT PANEL POINT CL133 IN SPAN 20.
  - 4T. STRENGTHEN DIAGONAL TRUSS MEMBER CONNECTION IN SPAN 20 BY REPLACING RIVETS WITH BOLTS.

- 4U. REPLACE TRUSS LOWER CHORD EXPANSION JOINT PINS AND MEMBER ENDS AT PANEL POINT CL12, BL97, AND CL 97.
  - 4V. REPLACE TRUSS LOWER CHORD DEFLECTION JOINT PINS AND MEMBER ENDS AT PANEL POINT AL17, BL41, AL63 AND BL63.
  - 4W. WELDED REPAIR OF THE STEEL JOINT ON THE MAINTENANCE AND INSPECTION DECK AT PANEL POINT 58.
- (NOTE 41 AND 40 NOT USED)

5. PARTIAL PAINTING OF STEEL TRUSS MEMBERS BELOW JOINTS, DECK DRAINS, OR TRUSS BEARINGS (17 LOCATIONS).
6. TRUSS BEARING REPAIRS INCLUDING BEARING DEBRIS CLEANING AND PACK RUST REMOVAL.
7. COMPLETE EAST ABUTMENT DECK REPLACEMENT. SEE MOT PLAN SHEETS 4-18 OF 308.
8. REPLACE LEAKING NEOPRENE TROUGH AT PANEL POINT 35 JOINT END. (2 LOCATIONS)
9. PLUG EXISTING LEAKING ROADWAY DECK SUBDRAINS. (16 LOCATIONS)
10. REPLACE ELASTOMERIC STRIP SEALS IN MODULAR EXPANSION JOINT 10. SEE MOT PLAN SHEETS 4-18 OF 308.
11. CLEAN ROADWAY DECK DRAINAGE SCUPPERS. (7 LOCATIONS) SEE MOT PLAN SHEETS 4-18 OF 308.
12. PATCH SPALLED AND DELAMINATED CONCRETE AT CONCRETE FLOORBEAM AT THE WEST PYLON.
13. REPLACE DETERIORATED PORTIONS OF THE MAINTENANCE AND INSPECTION DECK.
14. REPAIR DEFICIENCIES IN THE RAILING ON THE MAINTENANCE AND INSPECTION DECK.

**RAILROAD CLEARANCE REQUIREMENTS**

MAINTAIN A CONSTRUCTION CLEARANCE OF 13 FEET HORIZONTALLY FROM THE CENTER OF TRACKS AND 22 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AT ALL TIMES.

ADDITIONAL REQUIREMENTS AND SPECIAL CLAUSES ARE GIVEN IN THE PROPOSAL.

**UTILITY LINES**

OTHER THAN THE CLEVELAND PUBLIC POWER CONDUITS, THE UTILITY(IES) SHALL BEAR ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

**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.

**ESTIMATED QUANTITIES**

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

**EXISTING STRUCTURE PLANS**

ORIGINAL CONSTRUCTION, SHOP DRAWINGS, AND REHABILITATION PLANS MAY BE VIEWED BY PROSPECTIVE BIDDERS AT THE ODOT DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO.

**ASBESTOS ABATEMENT**

AN ASBESTOS SURVEY OF THE CUY-10-16.13 BRIDGE OVER THE CUYAHOGA RIVER VALLEY WAS COMPLETED IN NOVEMBER 2014 BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. ASBESTOS COATING WAS DISCOVERED ON 21,600 SQUARE FEET OF THE CORRUGATED METAL ROOF OF THE 72-CONDUIT SUPPORT TRUSS. THE SUPPORT TRUSS IS BELOW THE ROADWAY DECK AND RUNS THE LENGTH OF THE BRIDGE.

THE PROJECT DOES NOT REQUIRE THE REMOVAL OF THE ASBESTOS-COATED ROOF. THE ROOF SHALL BE AVOIDED DURING CONSTRUCTION AND SHALL NOT BE CUT OR DAMAGED IN ANY WAY.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM WITH SECTIONS I-IV, VI, VII, AND XVI COMPLETED IS INCLUDED WITH THE BID PACKAGE. THE CONTRACTOR SHALL COMPLETE SECTIONS V, VIII-XVIII OF THE SIGNED FORM AND SUBMIT THE COMPLETED FORM TO THE OHIO EPA TO ONE OF THE ADDRESSES BELOW AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION OF THE BRIDGE. THE CONTRACTOR SHALL ALSO PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

ASBESTOS PROGRAM OHIO EPA, DAPC P.O. BOX 1049 COLUMBUS, OHIO 43216-1049	OR	ASBESTOS PROGRAM OHIO EPA, DAPC 50 W. TOWN ST., SUITE 700 COLUMBUS, OHIO 43215
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THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE, SUBMIT, AND COMPLY WITH THE OEPA NOTIFICATION FORM. PAYMENT OF THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT COST.

**CUYAHOGA RIVER FENDER DEBRIS CONTINGENCY PLAN**

IN THE EVENT THAT A SECTION OF THE EXISTING RIVER CHANNEL FENDER PROTECTION SYSTEM FALLS INTO THE SHIPPING CHANNEL, A CONTINGENCY PLAN FOR SECURING OF RIVER TRAFFIC AND RETRIEVAL OF DEBRIS SHALL BE DEVELOPED.

THE CONSTRUCTION CONTRACTOR THAT IS AWARDED THE PROJECT WILL DEVELOP THE CONTINGENCY PLAN PRIOR TO THE START OF THE CONSTRUCTION.

THE CONTINGENCY PLAN WILL INCLUDE THE FOLLOWING ELEMENTS:

- THE U.S. COAST GUARD (USCG) WILL BE IMMEDIATELY NOTIFIED, FOLLOWED BY THE U.S. ARMY CORPS OF ENGINEERS (USACE), AND A TEMPORARY CHANNEL SHUTDOWN WILL BE COORDINATED.
- A DIVE TEAM WILL BE MOBILIZED TO LOCATED ANY FALLEN STEEL OR WOODEN PILES AND WALERS.
- THE DEBRIS WILL BE SECURED AND WILL BE IMMEDIATELY REMOVED FROM THE SHIPPING CHANNEL.
- ANY DEBRIS SECURED FROM THE SHIPPING CHANNEL WILL THEN BE REMOVED BY A CRANE OR OTHER METHODS ON THE CONSTRUCTION SITE.
- UPON DEBRIS REMOVAL, THE DIVE TEAM WILL CONFIRM THAT THE CHANNEL IS CLEAR OF DEBRIS, AT WHICH POINT THE USACE AND USCG WILL BE NOTIFIED TO RE-OPEN THE RIVER.

**TEMPORARY REMOVAL AND REINSTALLATION OF PROTECTIVE NETTING**

PROTECTIVE NETTING HAS BEEN INSTALLED BENEATH THE CONCRETE ROADWAY, AND MAINTENANCE AND INSPECTION DECKS IN LOCATIONS SHOWN ON THE FRAMING PLANS. THE NETTING IS ATTACHED BY CARABINER CLIPS AND IS REMOVABLE.

SOME WORK ON THE BRIDGE WILL REQUIRE THAT PORTIONS OF THE NETTING BE REMOVED TO ACCESS AREAS TO BE REPAIRED. THE NETTING SHALL BE REMOVED FROM THESE AREAS AS NEEDED AND SECURED IN A MANNER THAT WILL NOT DAMAGE THE NETTING OR ALLOW IT TO INTERFERE WITH THE ROADWAYS AND BIKE TRAILS BELOW. WHEN THE BRIDGE REPAIR WORK IS COMPLETE, THE NETTING SHALL BE REINSTALLED TO ITS ORIGINAL LOCATIONS.

ALL LABOR, TOOLS, MATERIALS AND ACCESS NEEDED TO TEMPORARILY REMOVE AND REINSTALL THE NETTING SHALL BE CONSIDERED INCIDENTAL TO THE REPAIR ITEMS UNDER CONSIDERATION. NO SEPARATE OR ADDITIONAL PAYMENTS FOR THIS WORK SHALL BE MADE.

**TEMPORARY REMOVAL AND REINSTALLATION OF TIMBER SUBDECKING**

TIMBER SUBDECKING HAS BEEN INSTALLED AT ROADWAY SCUPPERS BENEATH THE CONCRETE ROADWAY DECK IN LOCATIONS SHOWN ON THE FRAMING PLANS.

SOME WORK ON THE BRIDGE WILL REQUIRE THAT PORTIONS OF THE SUBDECKING BE REMOVED TO ACCESS AREAS TO BE REPAIRED. AFTER THE REPAIR IS COMPLETE AND APPROVED, THE SUBDECKING SHALL BE REINSTALLED TO ITS ORIGINAL LOCATIONS.

ALL LABOR, TOOLS, MATERIALS AND ACCESS NEEDED TO TEMPORARILY REMOVE AND REINSTALL THE SUBDECKING SHALL BE CONSIDERED INCIDENTAL TO THE REPAIR ITEMS UNDER CONSIDERATION. NO SEPARATE OR ADDITIONAL PAYMENTS FOR THIS WORK SHALL BE MADE.

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RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	REVIEWED DLR
DRAWN RB	STRUCTURE FILE NUMBER 1801503
DESIGNED KAK	CHECKED DAP
GENERAL NOTES - 1 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
PID No. 96986	
6 / 238	
66 308	

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**CONNECTION BOLTS**

CONNECTION BOLTS 1/2 INCH DIAMETER AND LARGER SHALL BE ASTM A325 HIGH STRENGTH STEEL BOLTS, TYPE 1, HOT DIPPED GALVANIZED UNLESS OTHERWISE NOTED.

ASTM A490 AND SAE J429 GRADE 8 HIGH STRENGTH STEEL BOLTS SHALL NOT BE GALVANIZED.

HEX HEAD BOLTS 1/2 INCH DIAMETER AND SMALLER SHALL BE GALVANIZED SAE J429 GRADE 5 OR GALVANIZED ASTM A449, TYPE 1.

COUNTERSUNK HEAD BOLTS SHALL BE SAE J429 GRADE 5 OR ASTM A449, TYPE 1. COUNTERSUNK BOLTS SHALL HAVE SLOTTED HEADS AND CONFORM TO ANSI 18.5. COUNTERSUNK BOLTS SHALL BE PAINTED AND NOT GALVANIZED.

NEW CONNECTION BOLTS SHALL BE INCLUDED FOR PAYMENT WITH THE PERTINENT NEW MATERIAL PAY ITEM.

**WELDING**

WELDING TO THE EXISTING STRUCTURE IS NOT PERMITTED EXCEPT AS SPECIFIED HEREIN. WELDING IN LIEU OF REPLACEMENT OF RIVETED/BOLTED CONNECTIONS IS NOT PERMITTED.

**BOLTED CONNECTION TO EXISTING STEEL**

AT LOCATIONS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER, NEW STRUCTURAL STEEL SHALL BE CONNECTED TO EXISTING STRUCTURAL STEEL USING EXISTING RIVET OR BOLT HOLES AND NEW BOLTS. RIVET AND BOLT REMOVAL PROCEDURES ARE DESCRIBED IN THE GENERAL NOTES. SEE GENERAL NOTE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" FOR SPECIFIC REQUIREMENTS.

HOLES IN NEW MATERIAL SHALL BE MADE BY ANY OF THE FOLLOWING METHODS (TO BE SELECTED BY THE CONTRACTOR):

- 1. CAREFUL FIELD MEASUREMENT BY THE CONTRACTOR SHALL BE USED FOR LOCATING HOLES IN NEW MATERIAL TO BE SUBPUNCHED OR DRILLED UNDERSIZE IN THE SHOP. THE HOLE SHALL BE 3/16-INCH LESS IN DIAMETER THAN THE NOMINAL DIAMETER OF THE NEW BOLT. THE HOLES SHALL BE REAMED TO PROPER SIZE IN THE FIELD AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES.
2. MAKE TEMPLATES IN THE FIELD OF HOLE PATTERNS AND LOCATIONS AFTER REMOVAL OF RIVETS OR BOLTS. USE THE FIELD TEMPLATES IN THE SHOP TO SUBPUNCH OR DRILL UNDERSIZE HOLES. THE HOLES SHALL BE REAMED IN THE FIELD AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES.
3. FURNISH NEW STRUCTURAL STEEL WITHOUT SHOP HOLES FOR RECONNECTION TO EXISTING RIVET OR BOLT HOLES. HOLES IN NEW MATERIAL TO BE FIELD DRILLED AND REAMED TO MATCH EXISTING RIVET OR BOLT LOCATION.

RIVET HOLES NOT USED FOR BOLTED CONNECTIONS OF NEW STRUCTURAL STEEL SHALL BE FILLED WITH A BOLT UNLESS OTHERWISE NOTED.

EXISTING MATERIAL WITHOUT HOLES FOR CONNECTION TO NEW MATERIAL SHALL BE FIELD DRILLED.

ALL HOLES THROUGH NEW AND EXISTING MATERIAL SHALL BE REAMED AFTER ASSEMBLY.

THE FINAL HOLES SHALL BE STANDARD SIZE, 1/16-INCH LARGER IN DIAMETER THAN THE NOMINAL BOLT DIAMETER, UNLESS OTHERWISE NOTED.

ADDITIONAL REQUIREMENTS FOR HOLES SHALL BE PER CMS 513.19. SHOP FABRICATED HOLES THAT DO NOT MATCH EXISTING RIVET HOLE LOCATIONS SHALL BE FIELD DRILLED AT THE LOCATION TO MATCH THE EXISTING HOLES.

THE COST OF ALL LABOR, MATERIAL, AND EQUIPMENT FOR CONNECTING NEW MATERIAL TO EXISTING MATERIAL, INCLUDING REAMING NEW OR EXISTING HOLES, AND DRILLING NEW HOLES, SHALL BE INCIDENTAL TO THE PERTINENT NEW MATERIAL PAY ITEM.

**PENCIL ABRASIVE BLASTING**

THE PENCIL ABRASIVE BLASTING REFERRED TO IN THE VARIOUS NOTES AND REPAIR ITEMS IN THESE PLANS SHALL CONFORM TO THE FOLLOWING:

CLEAN THE DESIGNATED AREAS OF ALL PAINT, RUST, AND FOREIGN MATERIAL BY ABRASIVE BLASTING TO A SURFACE QUALITY EQUAL TO SSPC-SP10 PREPARATION GRADE SA 2 ACCORDING TO AND AS SHOWN IN SSPC-VIS 1-89. PERFORM THE ABRASIVE BLASTING USING A MAXIMUM COMPRESSED AIR PRESSURE OF 100 PSI, A HOSE NOZZLE DIAMETER OF 1/4-INCH (+/- 1/16-INCH), AND A GRADE 30/60 COAL SLAG ABRASIVE OR EQUIVALENT. DO NOT USE BLASTING ABRASIVES CONTAINING MORE THAN ONE-PERCENT FREE SILICA. BLASTERS USED FOR SURFACE PREPARATION FOR STRUCTURAL STEEL COATING CANNOT BE USED FOR PENCIL BLASTING. AFTER THE ABRASIVE BLASTING IS COMPLETE, AIR BLOW THE AREA CLEAN.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT PENCIL ABRASIVE BLASTING CAN SATISFACTORILY BE PERFORMED ACCORDING TO THESE SPECIFICATIONS PRIOR TO THE START OF THE WORK. THE COST OF THE PENCIL ABRASIVE BLASTING SHALL BE INCLUDED FOR PAYMENT IN THE APPROPRIATE REPAIR ITEMS, UNLESS NOTED OTHERWISE.

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

PORTIONS OF STRUCTURE REMOVED ITEMS INCLUDE, BUT ARE NOT LIMITED TO:

- EAST ABUTMENT CONCRETE ROADWAY DECK, SIDEWALKS, RAILINGS AND DESIGNATED SUPPORT BEAMS
EAST ABUTMENT SUPPORT WALL ACCESS HOLES
EAST ABUTMENT DECK EXPANSION JOINT
CONCRETE RAIL, CURB AND SIDEWALK REMOVAL NEAR EAST ABUTMENT AND APPROACH FOR MAINTENANCE OF TRAFFIC PHASES.
PORTIONS OF THE CONCRETE MAINTENANCE AND INSPECTION DECK
REMOVAL OF EXISTING NEOPRENE TROUGH BELOW JOINT AT PANEL POINT 35
PORTIONS OF LOWER CHORD AND PINS AT PANEL POINTS CL12, BL97, CL97, AL17, BL41, AL63, BL63
EXISTING ANGLE FLANGE PARTIAL REMOVALS FOR GUSSET PLATE SECTION LOSS REPAIR AT TRUSS PANEL POINT CL12 NORTH GUSSET, AND DL14 SOUTH GUSSET
EXISTING STIFFENERS DESIGNATED FOR REPLACEMENT ON FLOORBEAMS, AND TRUSS MEMBERS.
DETERIORATED END OF MAINTENANCE AND INSPECTION DECK STRINGER END AT PANEL POINT 17.
PORTIONS OF THE TOP CHORD, BATTEN PLATE AND LACING BAR ON TRUSS A AT FLOORBEAM I20
BATTEN PLATE ON TRUSS C ON LOWER CHORD AT PANEL POINT 133

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

PROTECTION OF CONCRETE SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY CONCRETE MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING CONCRETE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR CONCRETE MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER CONCRETE STRUCTURAL MEMBERS. THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS OR REINFORCING STEEL TO REMAIN.

DUE TO THE PRESENCE OF COMPOSITE REINFORCING STEEL BETWEEN THE DECK AND THE CONCRETE SUPPORT BEAMS, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE ENGINEER AT LEAST 7 DAYS BEFORE CONSTRUCTION BEGINS. DEPARTMENT ACCEPTANCE IS NOT REQUIRED. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS OF REMOVAL OVER THE BEAMS AND AROUND THE COMPOSITE REINFORCING STEEL. REPLACE OR REPAIR CONCRETE MEMBERS AND COMPOSITE REINFORCING DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

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

EXISTING STEEL SHALL BE REMOVED BY REMOVING CONNECTION BOLTS OR RIVETS FROM MEMBERS THAT ARE TO REMAIN IN PLACE.

MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN**

WORK UNDER THIS ITEM SHALL INCLUDE THE CAREFUL REMOVAL OF DELAMINATED AND HEAVILY CRACKED CONCRETE THAT MAY SPALL AND IS CONSIDERED A FALLING HAZARD TO PERSONS AND PROPERTY BELOW. THE WORK IS TO BE PERFORMED ON THE MAIN TRUSS PIERS, PIER 7 TO PIER 18, WITH THE MAJORITY OF THE PRESENT DELAMINATION CONCENTRATED ON THE ARCHITECTURAL CONCRETE FEATURES ABOVE THE TRUSS SEATS, SUCH AS THE ARCHES AND EXTERIOR PILASTERS. SOME WORK MAY BE PERFORMED ON THE CAPS AND COLUMNS OF THE PIERS BELOW THE TRUSS BEARINGS. THE AREAS, AS DETERMINED IN THE SPRING OF 2016, ARE DEPICTED IN THE PLANS.

NO PATCHING OR CONCRETE SEALING IS INCLUDED IN THIS PROJECT FOR THE AREAS OF CONCRETE REMOVED UNDER THIS PAY ITEM.

REMOVE ALL LOOSE AND DISINTEGRATED CONCRETE AREAS IN SUCH A MANNER AND TO SUCH EXTENT AS TO EXPOSE A SOUND CONCRETE SURFACE. THE CONCRETE IN THE ARCHITECTURAL FEATURES OF THE PIERS APPEARS TO BE LIGHTLY REINFORCED AND OF LOW DURABILITY. DO NOT REMOVE SOFT, BUT SOUND CONCRETE AS PART OF THE WORK. THE WORK IN AN AREA SHALL BE CONSIDERED COMPLETE WHEN ALL LOOSE MATERIAL HAS BEEN REMOVED FROM THE CONCRETE SURFACE.

ALTHOUGH NOT NECESSARILY A PRESENT FALLING HAZARD, REMOVE UNSIGHTLY DANGLING OR OTHERWISE PROTRUDING REINFORCING STEEL THAT HAS ONE END COMPLETELY FREE OF THE CONCRETE IN AREAS OF CONCRETE DESIGNATED FOR REMOVAL. THE INTENT OF THE REBAR REMOVAL IS TO REMOVE SINGULAR BARS WITH AT LEAST ONE FOOT OF PROTRUSION FROM THE FACE OF CONCRETE TO THE FREE END OF THE BAR. THE BARS WILL BE IDENTIFIED BY THE ENGINEER AT THE TIME OF THE WORK. THESE BARS ARE TYPICALLY LOCATED AT THE EDGES OF THE REVEALS OF THE ARCHES ON THE ARCHITECTURAL FEATURES ABOVE THE TRUSS SEATS. CUT THE BARS AS CLOSE AS PRACTICABLE TO THE FACE OF THE REMAINING CONCRETE.

DISPOSE OF ALL REMOVED CONCRETE AND REINFORCING STEEL OFF-SITE IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIALS SPECIFICATION.

THE REMOVALS SHALL BE PAID FOR BY THE SQUARE YARD FOR AREAS OF CONCRETE REMOVAL, REGARDLESS OF REMOVAL DEPTH. IF THE REMOVAL IS PERFORMED ON A CORNER OR EDGE OF A CONCRETE MEMBER, THE MEASUREMENT SHALL INCLUDE ALL REMOVAL SURFACES.

ACCEPTED AREAS OF CONCRETE REMOVAL, INCLUDING INCIDENTAL REINFORCING STEEL REMOVAL, SHALL BE PAID FOR UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

**ITEM 202 - REMOVAL, MISC.: FENDERS**

THE REMOVAL ITEMS INCLUDE, BUT ARE NOT LIMITED TO:

- TIMBER WALERS
- STEEL WALERS
- STEEL PILES
- TIMBER PILES
- CONNECTORS AND MISCELLANEOUS SUPPORTS
- NAVIGATION LIGHTS AND CONDUITS

THE PROVISIONS OF ITEM 202 APPLY IN ADDITION TO FOLLOWING NOTES:

THE ORIGINAL 1932 CONSTRUCTION WAS 45 FEET LONG TIMBER PILES AT 2'-6" SPACING WITH THREE ROWS OF 10" X 12" TIMBER WALERS ON EACH SIDE. STEEL PILES 10BP57 BY 65 FEET LONG WERE ADDED BETWEEN THE TIMBER PILES AT 5'-0" SPACING IN 1961. TWO OR MORE STEEL ANGLES WERE ADDED TO CONNECT TO EXISTING TIMBER WALERS. DETERIORATED TIMBER WALERS WERE REPLACED.

THE EXISTING FENDER PILES SHOULD NOT BE REMOVED UNTIL THE NEW PILES HAVE BEEN DRIVEN UNLESS THEY INTERFERE WITH THE NEW PILES. THE EXISTING FENDER MATERIALS SHALL BE COMPLETELY REMOVED FROM THE RIVER. PILES SHALL BE EXTRACTED FROM THE RIVERBED. PAYMENT SHALL BE MADE PER LUMP SUM UNDER ITEM 202 - REMOVAL, MISC.: FENDERS.

**ITEM 202 - REMOVAL, MISC.: REMOVAL, STORAGE AND REINSTALLATION OF EXISTING MANHOLE LID AND FRAME**

WORK UNDER THIS ITEM INCLUDES THE CAREFUL REMOVAL, STORAGE AND REINSTALLATION OF TWO MANHOLE LIDS AND FRAMES IN THE REPLACED EAST ABUTMENT DECK. MATERIALS DAMAGED DURING THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF THE ENGINEER.

PAYMENT SHALL BE MADE PER EACH UNDER ITEM 202 - REMOVAL, MISC.: REMOVAL, STORAGE, AND REINSTALLATION OF EXISTING MANHOLE LID AND FRAME.



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- ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT - LUMP.
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT - LUMP.
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN - LUMP.
- ITEM 514 - GRINDING FINIS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL - MANHOUR
- ITEM 514 - FINAL INSPECTION REPAIR - EACH
- ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN - LUMP.

**REPLACE TRUSS DEFLECTION JOINT PINS AL17, BL41, AL63, AND BL63 AND REBUILD MEMBER ENDS**

THE PINS AT THE TRUSS CHORD DEFLECTION JOINT CONNECTIONS AT PANEL POINTS AL17, BL41, AL63, AND BL63 HAVE MOVED AND ARE NOT PROPERLY ALIGNED IN THE CONNECTING MEMBERS. THE CONNECTIONS ARE LOCATED IN AN AREA BELOW DECK DEFLECTION JOINTS THAT HAVE SUBJECTED THE STEEL TO CORROSIVE DRAINAGE IN THE PAST AND THE CONNECTIONS HAVE DETERIORATED WITH SECTION LOSS AND PACK RUST. PACK RUST HAS BUILT UP BETWEEN THE PARTS IN CONTACT, AND BOWED AND BENT PLATES AND ANGLES. THE AFFECTED MEMBERS ARE THE PINS AND THE END OF LOWER CHORDS AL16-AL17, BL40-BL41, AL62-AL63, AND BL62-BL63. MEMBERS L16-L17, L40-L41, AND L62-L63 ARE ZERO FORCE MEMBERS THAT ARE IN PLACE TO MAINTAIN ALIGNMENT OF THE STRUCTURE. THEY CARRY NO DEAD LOAD OR LIVE LOAD. THE MEMBERS CAN DEVELOP A LARGE THERMAL FORCE IF MOVEMENT IN THE JOINT IS RESTRICTED.

THE PROPOSED REPAIR IS TO REMOVE THE DETERIORATED AND DAMAGED STEEL ENDS OF LOWER CHORDS L16-L17, L40-L41, AND L62-L63 AND THE PINS AND REPLACE WITH NEW MATERIAL. THE REPAIR PROCEDURE IS:

1. REMOVE THE SOUTH SIDE WEB PLATE AND ANGLES OF THE LOWER CHORD WITH A VERTICAL CUT AT THE LOCATION DETAILED IN THE PLANS.
2. REMOVE THE SOUTH HALF OF THE PIN. LEAVE THE NORTH HALF OF THE PIN IN PLACE FOR ALIGNMENT.
3. BLAST CLEAN THE EXPOSED GUSSET PLATE FACE AND CHORD FAYING SURFACE. PRIME PAINT THE FAYING SURFACE AND FULLY PAINT THE GUSSET PLATE FACE.
4. INSTALL AND SPLICE THE NEW SOUTH SIDE PLATES AND ANGLES OF THE LOWER CHORD.
5. PLACE A TEMPORARY PIN IN THE SOUTH SIDE. THE TEMPORARY PIN DOES NOT NEED TO BE STAINLESS STEEL.
6. REMOVE THE NORTH HALF OF THE PIN.
7. REMOVE THE NORTH SIDE WEB PLATE AND ANGLES OF THE LOWER CHORD WITH A VERTICAL CUT AT THE LOCATION DETAILED IN THE PLANS.
8. BLAST CLEAN THE EXPOSED GUSSET PLATE FACE AND CHORD FAYING SURFACE. PRIME PAINT THE FAYING SURFACE AND FULLY PAINT THE GUSSET PLATE FACE.
9. INSTALL AND SPLICE THE NEW NORTH SIDE PLATES AND ANGLES OF THE LOWER CHORD.
10. INSTALL THE COMPLETE NEW PIN.
11. INSTALL THE PIN RETAINING PLATES.
12. FINISH PAINTING THE CONNECTION.

THE CONTRACTOR WILL NEED TO PROVIDE TEMPORARY SUPPORTS TO MAINTAIN AND ADJUST ALIGNMENT OF THE MEMBERS. THE WORK CAN BE PERFORMED UNDER TRAFFIC.

THE PROPOSED REPAIR IS DETAILED IN THE ATTACHED DRAWINGS.

**PAYMENT**

PAYMENT FOR THE PROPOSED WORK SHALL BE INCLUDED IN THE FOLLOWING CONTRACT UNIT BID ITEMS:

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN - LUMP.
- ITEM 202 - REMOVAL MISC.: RIVET - PER EACH.
- ITEM 513 - STRUCTURAL STEEL, MISC.: LOWER CHORD MEMBERS - PER POUND.
- ITEM 513 - STRUCTURAL STEEL, MISC.: STAINLESS STEEL PIN - PER POUND.
- ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL - LUMP.
- ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT - LUMP.
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT - LUMP.
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN - LUMP.
- ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN - LUMP.
- ITEM 514 - GRINDING FINIS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL - MANHOUR
- ITEM 514 - FINAL INSPECTION REPAIR - EACH

**TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES**

SEVEN TRUSS CONNECTION GUSSET PLATES HAVE BEEN IDENTIFIED WITH SIGNIFICANT SECTION LOSS AND ARE TO BE STRENGTHENED BY PLATING. PLATING LOCATIONS AND DETAILS ARE SHOWN IN THE PLANS. DEPENDING ON THE SIZE OF THE NEW PLATE, SINGLE NUT PLATE INSTALLATIONS OR DOUBLE NUT INSTALLATIONS ARE SPECIFIED. INSTALLATION INSTRUCTIONS ARE GIVEN IN THIS NOTE.

**MATERIAL**

1. NEW MATERIAL SHALL BE ASTM A709, GRADE 50.
2. NEW BOLTS FOR THE SINGLE NUT METHOD SHALL BE ASTM A325, TYPE 1, HOT DIPPED GALVANIZED.
3. NEW BOLTS FOR THE DOUBLE NUT METHOD SHALL BE ASTM A490, TYPE 1. THE BOLTS SHALL UTILIZE HARDENED WASHERS PER ASTM F436, PLACED UNDER BOTH THE BOLT HEAD AND ALL NUTS. THE NUT USED FOR THE ASTM A490 BOLTS SHALL BE IN ACCORDANCE WITH ASTM A563. ALL HEAVY HEX HEAD NUTS SHALL BE TYPE DH3. NEW 1-INCH DIAMETER ASTM A490 BOLTS SHALL BE TENSIONED TO A MINIMUM OF 64 KIPS. THE TURN-OF-NUT REQUIREMENTS SPECIFIED IN TABLE 513.20-3 MAY BE USED TO ACHIEVE THE BOLT PRE-TENSION.
4. NEW BOLTS SHALL MATCH EXISTING RIVET SIZES.
5. NEW MATERIALS SHALL BE CERTIFIED PER CMS 501.06.

**STEEL SURFACE PREPARATION**

FAYING SURFACES BETWEEN EXISTING STEEL AND NEW STEEL BEING BOLTED TOGETHER WILL BE CLEANED AND PRIMED PRIOR TO FINAL ASSEMBLY. NEW STEEL WILL BE SHOP CLEANED AND RECEIVE A SHOP APPLIED PRIME COAT PER CMS 514.17. THE EXISTING STEEL WILL BE CLEANED USING THE "PENCIL ABRASIVE BLASTING" GENERAL NOTE. THE CLEANED SURFACE OF EXISTING STEEL WILL RECEIVE A PRIME COAT PER ITEM 514 - IZEU PAINT SYSTEM.

**SHOP DRAWINGS**

STRUCTURAL STEEL PLATES WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE THE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, AND TABLES. THE ENGINEER SHALL HAVE THE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING THE STEEL ITEMS INTO THE WORK, AS REQUIRED BY CMS 501.06. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET OF SHOP DRAWINGS TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION. THE FABRICATOR SHALL FURNISH THE DIRECTOR A DIGITAL MEDIA COPY OF EACH APPROVED SHOP DRAWING. THE DIGITAL MEDIA SHALL BE AS SPECIFIED IN CMS 501.04.

**FABRICATION**

1. NEW MATERIAL MAY BE SHOP FABRICATED OR FIELD FABRICATED AT A FACILITY APPROVED BY THE ENGINEER. NO SHOP CERTIFICATION IS REQUIRED. WELDERS SHALL BE PREQUALIFIED.
2. ALL STEEL MEMBERS INCLUDED IN THESE ITEMS SHALL BE FABRICATED UNDER CMS 513 UF LEVEL OF FABRICATION.
3. FABRICATE NEW PLATES USING DIMENSIONS SHOWN IN THE DESIGN DRAWINGS AND CONTRACTOR-VERIFIED FIELD MEASUREMENTS.
4. EDGE DISTANCE FROM THE CENTER OF A FASTENER TO THE FIELD CUT EDGE OF THE NEW MATERIAL SHALL BE 2 INCHES UNLESS NOTED OTHERWISE IN THE DRAWINGS. IF THE ORIGINAL BOLT OR RIVET HOLES ARE BEING RE-USED, THE MINIMUM EDGE DISTANCE WILL BE 1/2 INCHES.

**BOLT INSTALLATION**

WHERE PRACTICABLE, INSTALL THE HEAD OF THE NEW BOLT TO OUTSIDE OF THE GUSSET PLATE. THE OUTSIDE FACES OF THE GUSSET PLATES ARE CONSIDERED AWAY FROM THE CENTERLINES OF EACH TRUSS LINE.

**SINGLE NUT PLATE INSTALLATION SEQUENCE**

GENERAL: THE INSTALLATION SEQUENCE FOR THE NEW MATERIAL TO BE ADDED ON THE PLATES GUSSET IS AS FOLLOWS:

- A. PREPARE FAYING SURFACES IN ACCORDANCE WITH "PENCIL ABRASIVE BLASTING" REQUIREMENTS.
- B. REMOVE NO MORE RIVETS FROM A CONNECTION THAN ARE NECESSARY FOR CONNECTING EACH NEW MEMBER PIECE.
- C. FABRICATE NEW PLATE.
- D. ERECT NEW PLATE.
- E. SECURE NEW PLATE WITH PROPERLY TENSIONED NUTS WITH WASHERS ON THE NEW BOLTS.
- F. FIELD DRILL ONE NEW STANDARD SIZE BOLT HOLE FOR NEW BOLT THROUGH THE NEW PLATE AND EXISTING GUSSETS, ANGLES AND CHORD MEMBERS.
- G. INSTALL PROPERLY TENSIONED BOLT AT THE NEW HOLE LOCATION.
- H. REPEAT "F" AND "G" AS NEEDED FOR EACH OF THE NEW BOLT HOLES TO BE FIELD DRILLED IN EXISTING MATERIAL.

**DOUBLE NUT PLATE INSTALLATION SEQUENCE**

GENERAL: THE INSTALLATION SEQUENCE FOR THE NEW MATERIAL TO BE ADDED ON THE PLATES GUSSET IS AS FOLLOWS: (SEE DOUBLE NUT CONNECTION DETAIL ON PLAN DETAIL SHEETS WITH THIS CONNECTION)

- A. PREPARE FAYING SURFACES IN ACCORDANCE WITH "PENCIL ABRASIVE BLASTING" REQUIREMENTS.
- B. REMOVE A SINGLE RIVET.
- C. IN THE OPEN RIVET HOLE, INSTALL A NEW PROPERLY TENSIONED BOLT WITH GRIP SUFFICIENT TO ACCOMMODATE THE EXISTING GUSSETS, ANGLES, CHORD MEMBERS AND NEW PLATE AND FILLS. THE THREAD LENGTH MUST BE SUFFICIENT TO ALLOW FOR THE DOUBLE NUT CONNECTION METHOD.
- D. REPEAT "B" AND "C" FOR ALL EXISTING RIVETS TO BE REMOVED TO CONNECT THE NEW PLATE AND FILL PLATES.
- E. FABRICATE NEW FILL PLATES WITH HOLES AS DETAILED TO FIT AROUND THE NEW NUTS AND WASHERS. ERECT NEW FILL PLATES.
- F. ERECT NEW FILL PLATE WITH OVERSIZE BOLT HOLES TO FIT THE NEWLY INSTALLED BOLTS.
- G. SECURE NEW PLATE AND FILLS WITH PROPERLY TENSIONED NUTS WITH WASHERS ON THE NEW BOLTS.
- H. FIELD DRILL ONE NEW STANDARD SIZE BOLT HOLE FOR NEW BOLT THROUGH THE NEW PLATE, NEW FILL PLATES AND EXISTING GUSSETS, ANGLES AND CHORD MEMBERS.
- I. INSTALL PROPERLY TENSIONED BOLT AT THE NEW HOLE LOCATION.
- J. REPEAT "H" AND "I" AS NEEDED FOR EACH OF THE NEW BOLT HOLES TO BE FIELD DRILLED IN EXISTING MATERIAL.

**PAYMENT**

PAYMENT FOR THE PROPOSED WORK SHALL BE INCLUDED IN THE FOLLOWING CONTRACT UNIT BID ITEMS:

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN - LUMP. (CL12 NORTH GUSSET AND DL14 SOUTH GUSSET)
- ITEM 202 - REMOVAL MISC.: RIVET - PER EACH.
- ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATING - PER POUND.
- ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL - LUMP.
- ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT - LUMP.
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT - LUMP.
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN - LUMP.
- ITEM 514 - GRINDING FINIS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL - MANHOUR
- ITEM 514 - FINAL INSPECTION REPAIR - EACH

GENERAL NOTES CONTINUED: SEE SHEET 10/238.

 <b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE 1/30/18	REVIEWED DLR	STRUCTURE FILE NUMBER 1801503	DRAWN RB	REVISED	DESIGNED KAK	CHECKED DAP
<b>GENERAL NOTES - 4</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOCA RIVER							
<b>CUY-10-16.13</b> PID No. 96986							
9 / 238							
69 308							

**FLOORBEAM AND TRUSS STIFFENER REPLACEMENT**

THE PROPOSED REPAIRS AND ANY WORK RESTRICTIONS ARE DEPICTED ON THE DETAIL PLAN SHEETS.

REFER TO THE "ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE STIFFENER ANGLES OR STRUTS" GENERAL NOTE FOR REQUIREMENTS FOR MATERIALS, SURFACE PREPARATION, SHOP DRAWINGS, FABRICATION, AND BOLT INSTALLATION.

PAYMENT FOR THE PROPOSED WORK SHALL BE INCLUDED IN THE FOLLOWING CONTRACT UNIT BID ITEMS:

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

ITEM 202 - REMOVAL, MISC.: RIVET - PER EACH.

ITEM 513 - STRUCTURAL STEEL, MISC.: STIFFENER REPLACEMENT - PER POUND.

ITEM 514 - FIELD PAINTING, MISC.: SOLVENT CLEANING AND PRIME COAT ON CONNECTION BOLTS

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT - LUMP.

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

ITEM 514 - GRINDING FINIS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL - MANHOUR

ITEM 514 - FINAL INSPECTION REPAIR - EACH

**FLOORBEAM SECTION LOSS REPAIR**

THE PROPOSED WORK STRENGTHENS THE DETERIORATED SOUTH FLOORBEAM CANTILEVER SUPPORTING THE SIDEWALK AT PANEL POINT 43. A BRACKET WILL BE INSTALLED BENEATH THE EXISTING STEEL CANTILEVERED BEAM TO AID IN THE SUPPORT OF THE CONCRETE WALK ABOVE.

PAYMENT AND DESCRIPTIONS FOR THE PROPOSED WORK SHALL BE INCLUDED IN THE FOLLOWING CONTRACT UNIT BID ITEMS:

ITEM 202 - REMOVAL, MISC.: RIVET - PER EACH.

ITEM 513 - STRUCTURAL STEEL, MISC.: FLOORBEAM SECTION LOSS REPAIR

ITEM 514 - FIELD PAINTING, MISC.: SOLVENT CLEANING AND PRIME COAT ON CONNECTION BOLTS - LUMP.

**ITEM 513 - STRUCTURAL STEEL, MISC.: BOLTED TRUSS REPAIRS**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW PLATES, FILL PLATES, ANGLES AND CONNECTION BOLTS ON VARIOUS TRUSS MEMBERS AS LOCATED AND DETAIL IN THE PLANS. THE WORK ALSO INCLUDES SURFACE PREPARATION OF EXISTING STEEL AND FABRICATION.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS ON THE MATERIALS, SURFACE PREPARATION, SHOP DRAWINGS, FABRICATION, BOLT INSTALLATION AND OTHER PAY ITEMS ASSOCIATED WITH THE REPAIR.

THESE AREAS SHALL BE PAINTED AND PAID FOR AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER POUND, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: BOLTED TRUSS REPAIRS.

**ITEM 513 - STRUCTURAL STEEL, MISC.: FLOORBEAM SECTION LOSS REPAIR**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL THE NEW EXTERIOR FLOORBEAM STRENGTHENING BRACKET INCLUDING NEW PLATES, AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; AND FABRICATION.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS. THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER POUND, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: FLOORBEAM SECTION LOSS REPAIR.

**ITEM 513 - STRUCTURAL STEEL, MISC.: LOWER CHORD MEMBERS**

WORK UNDER THIS ITEM SHALL INCLUDE PROVIDING STRUCTURAL STEEL IN ACCORDANCE WITH 513 FOR THE LOWER CHORD REPLACEMENTS IN THE PIN REPLACEMENT DETAILS SHOWN IN THE PLANS.

THE NEW STEEL SHALL BE PAID PER POUND UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: LOWER CHORD MEMBERS.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK FLOORBEAM REPAIRS**

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS**

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER REPAIRS**

**ITEM 513 - STRUCTURAL STEEL, MISC.: ROADWAY STRINGER REPAIRS**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW STRUCTURAL STEEL TO REPAIR DEFICIENCIES IN THE MAINTENANCE AND INSPECTION DECK STRINGER BEARINGS AND FLOORBEAMS; AND ROADWAY AND MAINTENANCE AND INSPECTION DECK STRINGERS AS LOCATED IN THESE PLANS.

THIS PAY ITEM APPLIES TO THE TYPE A, TYPE C, AND TYPE F MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS; MAINTENANCE AND INSPECTION DECK FLOORBEAM 97 ANGLE REPLACEMENT; AND ROADWAY STRINGER REPAIRS AT FLOORBEAMS 83, 106 AND 118; AND MAINTENANCE AND INSPECTION DECK STRINGER AT PANEL POINT 17 AS DETAILED IN THESE PLANS.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS ON THE MATERIALS, SURFACE PREPARATION, SHOP DRAWINGS AND FABRICATION.

PREPARE THE EXISTING STEEL SURFACES FOR WELDING AS DESCRIBED IN THE "PENCIL ABRASIVE BLASTING" NOTE. SURFACE PREPARATION OF THE EXISTING STEEL SURFACES TO BE WELDED INCLUDES GRINDING THE UNEVEN FAYING SURFACE AS NEEDED TO PROVIDE A UNIFORM CONTACT SURFACE FOR WELDING BETWEEN THE NEW PLATES AND EXISTING STRINGER WEB. PROVIDE PROTECTIVE PAINT COATING AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER POUND, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK FLOORBEAM REPAIRS; 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS; ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER REPAIRS; OR ITEM 513 - STRUCTURAL STEEL, MISC.: ROADWAY STRINGER REPAIRS.

**ITEM 513 - STRUCTURAL STEEL, MISC.: STAINLESS STEEL PIN**

THE STEEL PINS SHALL BE STAINLESS STEEL CONFORMING TO ASTM A240, UNS 21800; OR ASTM A276, UNS 21800.

STAINLESS STEEL PINS SHALL HAVE A SURFACE FINISH CONFORMING TO 513.12. THE PINS SHALL MEET THE SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS FOR A572 STEEL AS SPECIFIED IN 711.01.

ALL PIN HOLE SURFACES SHALL CONFORM TO THE SURFACE FINISH DEFINED IN SECTION 513.12.

THE FABRICATOR QUALIFICATION LEVEL FOR THE PINS SHALL BE LEVEL UF.

PINS SHALL BE INCLUDED FOR PAYMENT PER POUND WITH ITEM 513 - STRUCTURAL STEEL, MISC.: STAINLESS STEEL PIN.

**ITEM 513 - STRUCTURAL STEEL, MISC.: STIFFENER REPLACEMENT**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW STIFFENING ANGLES, AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; AND FABRICATION.

REFER TO THE "FLOORBEAM AND TRUSS STIFFENER REPLACEMENT" NOTE FOR DETAILS. THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER POUND, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: STIFFENER REPLACEMENT.

**ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATING**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW TRUSS GUSSET PLATING REPAIRS INCLUDING NEW PLATES, FILL PLATES, AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; AND FABRICATION.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS. THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER POUND, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATING.

**ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED TRUSS REPAIR**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW WELDED PLATING REPAIRS TO TRUSS MEMBERS AS LOCATED AND DETAILED IN THESE PLANS.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS ON THE MATERIALS, SURFACE PREPARATION, SHOP DRAWINGS AND FABRICATION.

PREPARE THE EXISTING STEEL SURFACES FOR WELDING AS DESCRIBED IN THE "PENCIL ABRASIVE BLASTING" NOTE. PROVIDE PROTECTIVE PAINT COATING AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER POUND, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED TRUSS REPAIR.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK JOINT STEEL REPAIR**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO REATTACH, BY WELDING, THE BROKEN EXPANSION JOINT STEEL IN THE MAINTENANCE AND INSPECTION DECK AT PANEL POINT 58 AS DETAILED IN THESE PLANS.

PREPARE THE EXISTING STEEL SURFACES FOR WELDING AS DESCRIBED IN THE "PENCIL ABRASIVE BLASTING" NOTE. REPOSITION THE BROKEN JOINTS BETWEEN STEEL MEMBERS TO ALLOW FOR WELDING.

PROVIDE PROTECTIVE PAINT COATING AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER LUMP SUM, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK JOINT STEEL REPAIR.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING GRINDING AND WELDING REPAIRS**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO GRIND EXISTING CRACKED WELDS AND RE-WELD THE MATERIAL IN THE MAINTENANCE AND INSPECTION DECK STRINGER BEARINGS AS LOCATED IN THESE PLANS. THIS PAY ITEM APPLIES TO TYPE E, AND TYPE G REPAIRS AS DETAILED IN THESE PLANS.

PREPARE THE EXISTING STEEL SURFACES FOR WELDING AS DESCRIBED IN THE "PENCIL ABRASIVE BLASTING" NOTE. PROVIDE PROTECTIVE PAINT COATING AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER LUMP SUM, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING GRINDING AND WELDING REPAIRS.

**ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED FENCE SUPPORT REPAIR**

WORK UNDER THIS ITEM SHALL INCLUDE THE PREPARATION OF EXISTING SURFACES AND REATTACHMENT OF A SECURITY FENCE SUPPORT TO A TRUSS GUSSET PLATE AT THE EAST ABUTMENT.

THE EXISTING ATTACHMENT WELD HAS CRACKED AND THE FENCE SUPPORT MUST BE REATTACHED. THE EXISTING WELD SHALL BE GROUND OFF TO ALLOW FOR NEW WELDING BETWEEN THE STEEL MEMBERS. DETAILS OF THE REPAIR ARE DEPICTED ON THE DETAIL PLAN SHEET.

BARE STEEL SURFACES AND DAMAGED PAINT FROM THE GRINDING AND GENERAL REPAIR OPERATIONS SHALL BE REPAIRED UNDER THE ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINTING ITEM.

LUMP SUM PAYMENT FOR ALL MATERIALS, LABOR, TOOLS, AND ACCESS FOR THE WELDED SUPPORT REPAIR SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED FENCE SUPPORT REPAIR.

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RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	
DATE 1/30/18	REVIEWED DLR
DRAWN RB	CHECKED DAP
STRUCTURE FILE NUMBER 1801503	GENERAL NOTES - 5 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOCA RIVER
CUY-10-16-13 PID No. 96986	10/238 70 308

**ITEM 513 - STRUCTURAL STEEL, MISC.: BOWED TRUSS GUSSET PLATE REPAIR**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL THE NEW ANGLE AT THE BOWED GUSSET PLATE EDGE INCLUDING NEW ANGLES, AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; AND FABRICATION.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS. THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER EACH, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: BOWED TRUSS GUSSET PLATE REPAIR.

**ITEM 513 - STRUCTURAL STEEL, MISC.: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT**

WORK UNDER THIS ITEM INCLUDES THE REMOVAL OF DETERIORATED RIVETS AND REPLACEMENT WITH HIGH STRENGTH BOLTS AT LOCATIONS IDENTIFIED IN THE PLANS.

EXISTING RIVETS SHALL BE REMOVED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE "ITEM 202 - REMOVAL MISC.: RIVET" GENERAL NOTE. NEW BOLTS SHALL BE INSTALLED PER CMS 513.

THESE AREAS SHALL BE PAINTED AND PAID FOR AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

PAYMENT FOR THE RIVET REMOVAL AND INSTALLATION OF THE NEW BOLT SHALL BE MADE PER EACH UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT.

**ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (MAINTENANCE AND INSPECTION DECK FLOORBEAMS)**

**ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (STRINGER)**

**ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (TRUSS)**

THIS WORK CONSISTS OF DRILLING HOLES AT THE ENDS OF CRACKS, GRINDING TO SMOOTH HOLES, AND NON-DESTRUCTIVE TESTING (NDT) IN THE STEELWORK AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

DRILL HOLES TO REMOVE THE APPARENT ENDS OF THE CRACKS REVEALED BY THE INITIAL NDT OR VISUAL INSPECTION AT LOCATIONS INDICATED IN THE PLANS. GRIND SMOOTH THE EXPOSED CIRCUMFERENCE OF EACH DRILLED HOLE AND CAREFULLY INSPECT FOR CRACKS AROUND THE PERIMETER OF THE HOLE USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRATION. CONTINUE DRILLING, GRINDING, AND TESTING UNTIL ALL CRACK ENDS ARE REMOVED.

CRACK ENDS SHALL BE REMOVED BY A SINGLE HOLE WHEN PRACTICAL. ENDS OF CRACKS SHALL BE DRILLED WITH MINIMUM 1-INCH DIAMETER DRILL BIT, UNLESS NOTED OTHERWISE IN THE PLANS.

DRILL HOLES IN THE CRACKED STEEL MEMBER ONLY. FOR LOCATIONS IN WHICH THE HOLE WILL BE LOCATED AT BUILT-UP STEEL SECTIONS, TAKE CARE TO STOP DRILLING AT THE INTERFACE BETWEEN THE CRACKED STEEL MEMBER AND THE ADJACENT UNCRACKED STEEL MEMBER.

THE LOCATION OF ALL HOLES SHALL BE DETERMINED BY AND DRILLED UNDER THE DIRECTION OF THE ENGINEER.

PROVIDE PROTECTIVE PAINT OF THE DAMAGED STEELWORK PER THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

PAYMENT FOR ALL LABOR, MATERIALS, AND EQUIPMENT, INCLUDING DRILLING, GRINDING, AND TESTING SHALL BE INCLUDED IN THE CONTRACT BID PRICE PER EACH REPAIR LOCATION, REGARDLESS OF THE NUMBER OF HOLES NEEDED TO ARREST THE CRACKS. PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (MAINTENANCE AND INSPECTION DECK FLOORBEAMS); ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (STRINGER); AND ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (TRUSS).

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK RAILING REPAIRS**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO REPAIR THE MAINTENANCE AND INSPECTION DECK STEEL RAILING AS LOCATED AND DETAILED IN THESE PLANS.

PROVIDE NEW PRIMED STEEL, NEW BOLTS, PLATE BENDING AND WELDING AS NEEDED TO REPAIR AND STIFFEN BUCKLED AND BENT HANDRAILS, RUBRAILS AND TOE PLATES, WHILE ALLOWING FOR EXPANSION AND CONTRACTION OF THE RAILING. ALL STEEL MEMBERS INCLUDED IN THESE ITEMS SHALL BE FABRICATED UNDER CMS 513 UP LEVEL OF FABRICATION. REMOVAL OF EXISTING RAILING PLATES IS INCIDENTAL TO THIS PAY ITEM.

REMOVAL OF EXISTING RIVETS SHALL BE INCLUDED PER EACH WITH ITEM 202 - REMOVAL, MISC.: RIVET. PROTECTIVE PAINT COATING SHALL BE APPLIED AS DESCRIBED IN THE "ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE.

REPAIRS TO THE RAILING SHALL BE MADE AT THE CONTRACT BID PRICE PER EACH PANEL POINT LOCATION UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK RAILING REPAIRS.

**ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE LAMELLAR TEAR REPAIR**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW TRUSS GUSSET PLATING TO REPAIR THE LAMELLAR TEAR IN THE GUSSET PLATE AT PANEL POINT CL70, SOUTH GUSSET PLATE. THIS INCLUDES NEW PLATES, FILL PLATES, AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; AND FABRICATION.

REFER TO THE PROJECT PLANS FOR REPAIR PROCEDURE.

REFER TO THE "TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES" NOTE FOR DETAILS ON THE MATERIALS, SURFACE PREPARATION, SHOP DRAWINGS, FABRICATION, BOLT INSTALLATION AND OTHER PAY ITEMS ASSOCIATED WITH THE REPAIR.

THE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE, PER EACH, FOR ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE LAMELLAR TEAR REPAIR.

**ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE STIFFENER ANGLES OR STRUTS**

WORK UNDER THIS ITEM INCLUDES INSTALLATION OF NEW STEEL ANGLES OR STRUTS ON EXISTING GUSSET PLATES TO STIFFEN UNSUPPORTED EDGES. WORK AT PANEL POINT CL43, SOUTH GUSSET WILL STIFFEN A BOWED GUSSET PLATE. THE PANEL POINT CL43 REPAIR IS DESCRIBED HEREIN, BUT PAID FOR IN ANOTHER PAY ITEM.

**MATERIAL**

1. NEW MATERIAL SHALL BE ASTM A709, GRADE 50.
2. NEW BOLTS SHALL BE ASTM A325, TYPE 1, HOT DIPPED GALVANIZED.
3. NEW BOLTS SHALL MATCH EXISTING RIVET SIZES.
4. NEW MATERIALS SHALL BE CERTIFIED PER CMS 501.06.

**STEEL SURFACE PREPARATION**

FAYING SURFACES BETWEEN EXISTING STEEL AND NEW STEEL BEING BOLTED TOGETHER WILL BE CLEANED AND PRIMED PRIOR TO FINAL ASSEMBLY. NEW STEEL WILL BE SHOP CLEANED AND RECEIVE A SHOP APPLIED PRIME COAT PER CMS 514.17. THE EXISTING STEEL WILL BE CLEANED USING THE "PENCIL ABRASIVE BLASTING" GENERAL NOTE. THE CLEANED SURFACE OF EXISTING STEEL WILL RECEIVE A PRIME COAT PER ITEM 514 - IZEU PAINT SYSTEM.

**SHOP DRAWINGS**

STRUCTURAL STEEL ANGLES OR STRUT MEMBERS WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE THE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, AND TABLES. THE ENGINEER SHALL HAVE THE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING THE STEEL ITEMS INTO THE WORK, AS REQUIRED BY CMS 501.06. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET OF SHOP DRAWINGS TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION. THE FABRICATOR SHALL FURNISH THE DIRECTOR A DIGITAL MEDIA COPY OF EACH APPROVED SHOP DRAWING. THE DIGITAL MEDIA SHALL BE AS SPECIFIED IN CMS 501.04.

**FABRICATION**

1. NEW MATERIAL MAY BE SHOP FABRICATED OR FIELD FABRICATED AT A FACILITY APPROVED BY THE ENGINEER. NO SHOP CERTIFICATION IS REQUIRED. WELDERS SHALL BE PREQUALIFIED.
2. FABRICATE NEW STIFFENING ANGLES AS SHOWN IN THE DESIGN DRAWINGS.
3. NEW ANGLE MATERIAL SHALL BE DEFLECTED TO CONFORM TO THE SHAPE IN THE DESIGN DRAWINGS. THE ANGLE LEGS CUT TO FACILITATE THIS SHALL BE RE-ATTACHED WITH COMPLETE PENETRATION GROOVE WELDS GROUND SMOOTH ON THE OUTSIDE OF THE ANGLE LEG THAT WILL BE ATTACHED TO THE EXISTING GUSSET PLATE. (BOWED GUSSET REPAIR AT PANEL POINT CL43, SOUTH GUSSET ONLY.)
4. EDGE DISTANCE FROM THE CENTER OF A FASTENER TO THE FIELD CUT EDGE OF THE NEW MATERIAL SHALL BE 2 INCHES UNLESS NOTED OTHERWISE. IF THE ORIGINAL BOLT OR RIVET HOLES ARE BEING RE-USED, THE MINIMUM EDGE DISTANCE WILL BE 1/2 INCHES.

**BOLT INSTALLATION**

WHERE PRACTICABLE, INSTALL THE HEAD OF THE NEW BOLT TO OUTSIDE OF THE GUSSET PLATE. THE OUTSIDE FACES OF THE GUSSET PLATES ARE CONSIDERED AWAY FROM THE CENTERLINES OF EACH TRUSS LINE.

**ANGLE AND STRUT INSTALLATION SEQUENCE**

GENERAL: WHILE WORKING AT A PANEL POINT, LIMIT REMOVALS AND CONSTRUCTION TO ONE GUSSET PLATE ON ONE TRUSS AT ANY ONE TIME. THE EXCEPTION IS AT THE INSTALLATION ON NEW STRUTS WHICH REQUIRE WORK ON BOTH GUSSET PLATES SIMULTANEOUSLY. THE INSTALLATION SEQUENCE FOR THE NEW MATERIAL TO BE ADDED ON THE INTERIOR AND EXTERIOR GUSSET IS DETAILED BELOW. THE SEQUENCE SHALL BE COMPLETED AT ONE ANGLE LOCATION PRIOR TO BEGINNING CONSTRUCTION ON THE NEXT NEW ANGLE, EXCEPT AT THE NEW STRUT LOCATIONS.

PERFORM THE INSTALLATION ON ONE TRUSS AS FOLLOWS. INSTALL NEW EDGE ANGLE ON THE INSIDE AND OUTSIDE GUSSET PLATES PER THE FOLLOWING INSTRUCTIONS:

- A. FABRICATE NEW ANGLES AND STRUTS PER THE PLANS.
- B. REMOVE NO MORE RIVETS FROM A CONNECTION THAN ARE NECESSARY FOR CONNECTING THE NEW ANGLE. (BOWED GUSSET AT PANEL POINT CL43, SOUTH GUSSET PLATE.)
- C. PREPARE FAYING SURFACES IN ACCORDANCE WITH "PENCIL ABRASIVE BLASTING" REQUIREMENTS.
- D. ERECT NEW STIFFENING ANGLE OR STIFFENING STRUT.
- E. SECURE NEW ANGLE WITH PROPERLY TENSIONED NUTS WITH WASHERS ON THE NEW BOLTS. (BOWED GUSSET AT PANEL POINT CL43, SOUTH GUSSET PLATE).
- F. FIELD DRILL ONE NEW STANDARD SIZE BOLT HOLE FOR NEW BOLT THROUGH THE NEW ANGLE AND EXISTING GUSSET PLATE. INSTALL PROPERLY TENSIONED BOLT AT THE NEW HOLE LOCATION.
- G. REPEAT "F" AS NEEDED FOR EACH OF THE NEW BOLT HOLES TO BE FIELD DRILLED IN EXISTING MATERIAL.

**PAYMENT**

PAYMENT FOR FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW TRUSS GUSSET PLATE REPAIRS INCLUDING NEW ANGLES, CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; AND FABRICATION SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE PER EACH FOR:

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE STIFFENER ANGLES OR STRUTS.

STRUT INSTALLATION INVOLVES STIFFENING TWO GUSSET PLATES AND IS CONSIDERED AS TWO - EACH IN THE QUANTITY.

PAYMENT AND DESCRIPTIONS FOR ADDITIONAL COMPONENTS OF THE WORK SHALL BE INCLUDED IN THE FOLLOWING ITEMS:

- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN
- ITEM 514 - FIELD PAINTING, MISC.: SOLVENT CLEANING AND PRIME COAT ON CONNETION BOLTS

- ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL**
- ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT**
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT**
- ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN**

ESTIMATED QUANTITIES PAID PER LUMP SUM ARE BASED ON THE FOLLOWING PAINTING AREAS:

1. REPLACEMENT OF TRUSS LOWER CHORD EXPANSION JOINT PINS AND MEMBER ENDS AT PANEL POINT CL12, BL97, AND CL 97.
2. REPLACEMENT OF TRUSS LOWER CHORD DEFLECTION JOINT PINS AND MEMBER ENDS AT PANEL POINT AL17, BL41, AL63 AND BL63.
3. TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES (7 LOCATIONS).
4. BOWED TRUSS GUSSET PLATE REPAIR AT CL43.
5. TRUSS GUSSET PLATE LAMELLAR TEAR REPAIR AT CL70.
6. FLOORBEAM 43 SECTION LOSS REPAIR.
7. TRUSS GUSSET PLATE EDGE STIFFENING ANGLES OR STRUTS.
8. FLOORBEAM AND TRUSS STIFFENER REPLACEMENT ANGLES. (4 LOCATIONS)
9. STEEL TRUSS MEMBERS BELOW JOINTS OR DECK DRAINS (17 LOCATIONS).

SURFACE PREPARATION AND PRIME COATING ARE COVERED UNDER OTHER PAY ITEMS FOR THE FOLLOWING PAINTING AREAS LISTED ABOVE: #4, #5, #6, #7, AND #8. THESE LOCATIONS ARE ALSO NOT INCLUDED IN THE ITEM 514 - FINAL INSPECTION REPAIR AND ITEM 514 - GRINDING FINIS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL PAY QUANTITIES.

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

THE COLOR OF THE FINISH COAT ON THE STEELWORK SHALL CLOSELY MATCH THE CURRENT COLOR OF THE EXISTING FINISH PAINT. THE CONTRACTOR SHALL SUBMIT DRIED PAINT SAMPLES OF THE PROPOSED FINAL PAINT COLOR AND SHALL RECEIVE APPROVAL FROM THE ENGINEER PRIOR TO THE START OF PAINTING.

THE 2000 REPAIR PLAN PAINTING NOTES INDICATE THAT THE FINISH COAT COLOR IS FEDERAL STANDARD COLOR NUMBER 595B-26493 (GRAY); HOWEVER, THE PROPOSED COLOR OF THE NEW FINISH PAINT SHALL BE GOVERNED BY ACTUAL FIELD SAMPLES TAKEN FROM THE BRIDGE.

GENERAL NOTES CONTINUED: SEE SHEET 12/238.

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RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

DATE 1/30/18  
REVIEWED DLR  
STRUCTURE FILE NUMBER 1801503

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GENERAL NOTES - 6  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOCA RIVER

CUY-10-16-13  
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**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT**

PROVISIONS OF CMS 514 SHALL APPLY, EXCEPT AS NOTED. WORK UNDER THIS ITEM INCLUDES THE FIELD PAINTING OF SMALL QUANTITIES OF REPAIRS TO DAMAGED PAINTED AREAS ON NEW STEEL INSTALLED ON THE STRUCTURE AND REPAIRS TO EXISTING PAINTED AREAS DAMAGED AS PART OF THE WORK ON THE REPAIR ITEMS. THE AREAS TO BE COATED UNDER THIS ITEM INCLUDE:

PROPOSED STRUCTURE WORK ITEM #	DESCRIPTION
4P (8 LOCATIONS)	DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLTS
4T	STRENGTHEN TRUSS CONNECTION BY RIVET REPLACEMENT WITH HIGH STRENGTH BOLTS AT BL132 AND BUI33
4N-4	WELDED TRUSS REPAIRS AT BL12-13; DL112-113; AND BL113-114
4Q	ARRESTING HOLES ON TRUSS LOWER CHORD ANGLE AT DL15-DL16 NEAR DL15
4Q	ARRESTING HOLES ON TRUSS LOWER CHORD ANGLE AT BL100-BL101
4A	ARRESTING HOLES ON ROADWAY STRINGERS NEAR TRUSS PANEL AU24 AND AU25
4N (19 LOCATIONS)	BOLTED TRUSS REPAIRS
4F (18 CRACKS AT 16 LOCATIONS)	ARRESTING HOLES ON MAINTENANCE AND INSPECTION DECK FLOORBEAM CRACKS
4S	WELDED FENCE SUPPORT REPAIR AT CL133
6	SPAN 20 TRUSS A AND B BEARINGS
REPAIR TYPE A, C, D, E, F & G	MAINTENANCE AND INSPECTION DECK STRINGER REPAIRS
4G	MAINTENANCE AND INSPECTION DECK FLOORBEAM ANGLE REPLACEMENT AT PANEL POINT 97
4E	MAINTENANCE AND INSPECTION DECK STRINGER END REPLACEMENT AT PANEL POINT 17
4B	WELDED ROADWAY STRINGER WEB REPAIR AT FLOORBEAM 106
4B	ROADWAY STRINGER END STRENGTHENING AT PANEL POINT 118
4B	WELDED ROADWAY STRINGER WEB REPAIRS AT FLOORBEAM 83
4A	ARRESTING HOLES ON ROADWAY STRINGER AT PANEL POINT 83
4W	MAINTENANCE AND INSPECTION DECK PANEL 58 WELDED JOINT REPAIR
14	MAINTENANCE AND INSPECTION DECK RAILING REPAIRS

IF THE SHOP APPLIED SYSTEM IZEU COAT ON THE NEW STEEL NEEDS TO BE REPAIRED IT WILL BE DONE PER SYSTEM IZEU REQUIREMENTS.

THE FIELD TOUCH-UP SHALL INCLUDE THE FOLLOWING WORK:

1. REMOVE ALL DIRT, DEBRIS, OIL AND GREASE FROM THE AREAS TO BE PAINTED PER SSPC-SP1, SOLVENT CLEANING. REMOVE ANY FACTORY INSTALLED COATINGS, LUBRICANTS AND OTHER FOREIGN MATTER FROM THE NEW BOLTS EXPOSED SURFACES IN ACCORDANCE WITH SSPC-SP1, SOLVENT CLEANING.
2. REMOVE ALL LOOSE MILL SCALE, RUST OR PAINT FROM THE AREAS TO BE PAINTED WITH HAND TOOLS PER SSPC SP2.
3. BRUSH-APPLY PRIME COAT PER ITEM 514 - IZEU PAINT SYSTEM.
4. BRUSH-APPLY REMAINING TWO COATS PER ITEM 514 - IZEU PAINT SYSTEM.

TEMPERATURE, RELATIVE HUMIDITY AND CURE TIME LIMITATIONS FOR THE VARIOUS TYPES OF PAINT SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS.

PAYMENT FOR THE INCIDENTAL PAINTING IN THE AREAS DESCRIBED ABOVE SHALL BE MADE PER LUMP SUM UNDER ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT.

**ITEM 514 - FIELD PAINTING, MISC.: SOLVENT CLEANING AND PRIME COAT ON CONNECTION BOLTS**

WORK UNDER THIS ITEM INCLUDES THE SURFACE PREPARATION AND FIELD PRIME PAINTING OF INDIVIDUAL NEW CONNECTION BOLTS USED TO CONNECT NEW PRIMED MATERIAL TO THE EXISTING STRUCTURAL STEEL MEMBERS.

THIS SITUATION OCCURS AT MULTIPLE STRUCTURAL STEEL REPAIR LOCATIONS INCLUDING, BUT NOT LIMITED TO:

- INSTALLATION OF GUSSET PLATE STIFFENING ANGLES AND STRUTS
- INSTALLATION OF BOWED GUSSET PLATE STIFFENING ANGLE
- INSTALLATION OF REPLACEMENT STIFFENING ANGLES ON FLOORBEAMS, AND TRUSS MEMBERS
- FLOORBEAM 43 SECTION LOSS REPAIR.

REMOVE ANY FACTORY INSTALLED COATINGS, LUBRICANTS AND OTHER FOREIGN MATTER FROM THE NEW BOLTS EXPOSED SURFACES IN ACCORDANCE WITH SSPC-SP1, SOLVENT CLEANING. UPON COMPLETION OF THE SOLVENT CLEANING, PRIME PAINT THE EXPOSED BOLT SURFACES WITH ITEM 514 - FIELD PAINTING MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT.

THE WORK SHALL BE PAID PER LUMP SUM UNDER ITEM 514 - FIELD PAINTING, MISC.: SOLVENT CLEANING AND PRIME COAT ON CONNECTION BOLTS.

**ITEM 516 - RESET BEARING, AS PER PLAN**

WORK UNDER THIS ITEM INCLUDES FURNISHING ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO CLEAN THE SLIDING SURFACE OF THE FASCIA STRINGER CHANNEL AND RESET THE STRINGER CHANNEL ON THE SUPPORT CHANNEL. SHIMS SHALL BE ADDED AS NEEDED TO ENSURE FIRM CONTACT WITH THE STRINGER CHANNEL. THE COST OF THE SHIMS IS INCIDENTAL TO THIS ITEM.

THIS PAY ITEM APPLIES TO THE TYPE D, TYPE E AND TYPE H MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS AS DETAILED IN THESE PLANS.

THIS WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR ITEM 516 - RESET BEARING, AS PER PLAN.

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

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

WORK UNDER THIS PAY ITEM INCLUDES THE FOLLOWING REPAIRS:

- REPLACE TRUSS EXPANSION JOINT PINS CL12, BL97, AND CL97 AND REBUILD MEMBER ENDS; REPLACE TRUSS DEFLECTION JOINT PINS AL17, BL41, AL63, AND BL63 AND REBUILD MEMBER ENDS (APPROXIMATE LOAD = 9,000 LBS. AT POINT OF THE PIN).
- MAINTENANCE AND INSPECTION DECK STRINGER REPAIR TYPES B, C, D, E, F, AND H (APPROXIMATE END STRINGER LOAD = 4,000 LBS.)
- MAINTENANCE AND INSPECTION DECK STRINGER END REPLACEMENT AT PANEL POINT 17 (APPROXIMATE END STRINGER LOAD = 4,000 LBS.)
- MAINTENANCE AND INSPECTION DECK FLOORBEAM CONNECTION ANGLE REPLACEMENT AT PANEL POINT 97 (APPROXIMATE LOAD = 12,000 LBS.)
- ROADWAY STRINGER END STRENGTHENING AT PANEL POINT 118 (APPROXIMATE LOAD = 26,000 LBS.)

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

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

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

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

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: PLUGGING ROADWAY SUBDRAINS**

WORK UNDER THIS ITEM INCLUDES THE PLUGGING OF SUBDRAIN OUTLETS BELOW THE EXISTING ROADWAY DECK. ALL SUBDRAINS WERE ORIGINALLY PLUGGED IN AN EARLIER REHABILITATION. RECENT INSPECTION REPORTS HAVE IDENTIFIED THOSE LISTED IN THESE PLANS AS CONTINUING TO LEAK MOISTURE, WHICH IS ACTIVELY CORRODING THE STRUCTURAL STEEL BELOW. THE LEAKING SUBDRAINS ARE LOCATED AT THE SOUTH CURB LINE, ORIGINAL NORTH CURB LINE AND BENEATH DEFUNCT UTILITY BOXES IN THE SIDEWALK ABOVE THE EXTERIOR TRUSS LINES.

THE WORK WILL INVOLVE TRIMMING THE SUBDRAIN OUTLET PIPE, COMPLETELY FILLING THE PIPE FROM BELOW WITH NON-SHRINK GROUT AND CAPPING THE PIPE OUTLET TO RETAIN THE GROUT.

THE COST OF ACCESS TO THE WORK AREAS WILL BE INCLUDED IN THE BID PRICE FOR THE ITEM. SOME DRAINS ARE LOCATED IN THE IMMEDIATE VICINITY OF OTHER PROJECT WORK, WHILE OTHER DRAINS ARE LOCATED WHERE NO OTHER WORK IS TO BE PERFORMED.

PAYMENT FOR ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO ACCESS AND PERFORM THE WORK SHALL BE MADE PER UNIT EACH UNDER ITEM 518 - STRUCTURE DRAINAGE, MISC.: PLUGGING ROADWAY SUBDRAINS.

**ITEM SPECIAL - STRUCTURES: PACK RUST REPAIRS AND CAULKING**

DESCRIPTION:

WORK UNDER THIS ITEM SHALL INCLUDE THE REPAIR OF PACK RUST FOUND ON THE TRUSS AT TWO BEARINGS OF THE EAST PYLON AND THE THREE BEARINGS AT THE EAST ABUTMENT IN SPAN 20. THIS WORK WILL ALSO INCLUDE CAULKING OF THE JOINTS BETWEEN ADJACENT STEEL PIECES OF THESE PACK-RUSTED BUILT-UP MEMBERS AND JOINTS AS DIRECTED BY THE ENGINEER. PACK-RUSTED AREAS ARE DEFINED AS THOSE LOCATIONS WHERE ADJACENT STEEL PLATES ARE RUSTED APART MORE THAN 1/8". APPROXIMATE LOCATIONS AT THESE LOCATIONS ARE SHOWN IN THE PLANS.

PACK RUST REMOVAL, ABRASIVE BLASTING OF THE MEMBER AND APPLICATION OF THE PRIME AND INTERMEDIATE COATS, ACCORDING TO THE SURFACE PREPARATION GENERAL NOTE AND THIS NOTE SHALL BE COMPLETED BEFORE CAULKING OF THE JOINT IS PERFORMED AT THE EAST ABUTMENT BEARINGS. THE OZEU FINISH COAT SHALL BE APPLIED AFTER THE CAULKING MATERIAL HAS INITIALLY CURED AND BEFORE IT IS FULLY CURED.

CAULKING AT THE EAST PYLON BEARINGS, WHICH ARE NOT SCHEDULED TO BE ABRASIVELY BLASTED AND PAINTED WITH THE 3-COAT OZEU SYSTEM, SHALL BE CAULKED AFTER THE APPLICATION OF THE EPOXY-MASTIC PRIME COAT AND BEFORE THE APPLICATION OF THE FINISH PAINT COAT. PAINTING WORK ON THE EAST PYLON BEARINGS SHALL BE PAID FOR UNDER ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT.

**SURFACE PREPARATION:**

PORTIONS OF JOINTS THAT HAVE PACK-RUST SHALL RECEIVE PREPARATION IN ADDITION TO THE ABRASIVE BLAST REQUIRED BY THE OZEU SPECIFICATION. PACK RUST SHALL BE REMOVED FROM JOINTS RUSTED APART MORE THAN 1/4" BY CHIPPING, HEATING, HAMMERING, PUNCHING, CHISELING OR BY OTHER SUITABLE MEANS TO A DEPTH AT LEAST EQUAL TO THE WIDTH OF THE GAP PRIOR TO ANY ABRASIVE BLASTING. ALL AREAS RECEIVING PACK RUST REPAIR SHALL BE CLEANED BY ABRASIVE BLASTING TO THE NEAR-WHITE SURFACE PREPARATION GRADE (SA 2 1/2 SSPC-SP10). MAKING SURE THAT THE AREAS WITH GAPS FROM 1/8" TO 1/4" ARE CLEANED TO A DEPTH AT LEAST EQUAL TO THE GAP WIDTH. ALL JOINTS SHALL THEN BE VACUUMED WITH A COMMERCIAL VACUUM CLEANER HAVING A NOZZLE OPENING OF 1" TO 1 1/2" OR AIR BLOWN SUCH THAT ALL DUST AND DEBRIS ARE REMOVED TO THE SATISFACTION OF THE ENGINEER. THE PRIME COAT AND INTERMEDIATE SHALL BE APPLIED TO THE MEMBER ACCORDING TO THE OZEU SPECIFICATION AND THE PRIME COAT SHALL BE FREE OF SOLVENT AND FULLY CURED WHEN THE CAULKING IS APPLIED.

**MATERIALS:**

THE CAULKING MATERIAL SHALL BE PER CMS 514.02.

**APPLICATION:**

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.

**PAYMENT:**

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE SHALL BE MADE AT THE CONTRACT PRICE BID PER LUMP SUM FOR ITEM SPECIAL - STRUCTURES: PACK RUST REPAIR AND CAULKING. THIS SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK AS DESCRIBED AND TO THE SATISFACTION OF THE ENGINEER.

GENERAL NOTES CONTINUED: SEE SHEET 13/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	RB
DESIGNED	KAK
CHECKED	DAP
STRUCTURE FILE NUMBER	1801503
GENERAL NOTES - 7	
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOCA RIVER	
CUY-10-16.13	PID No. 96986
12/238	72/308

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**ITEM SPECIAL - STRUCTURES: GAS LINE SUPPORT**

WORK UNDER THIS ITEM SHALL INCLUDE THE TEMPORARY SUPPORT OF THE GAS LINE AND COORDINATION WITH THE UTILITY OWNER, DOMINION EAST OHIO GAS COMPANY (DEO), DURING THE PARTIAL REPLACEMENT OF THE MAINTENANCE AND INSPECTION DECK. THE DEO REPRESENTATIVE FOR THIS WORK IS AS FOLLOWS:

MR. ZACHARY GOODSON, P.E.  
SUPERVISOR GAS DISTRIBUTION DESIGN  
DOMINION EAST OHIO GAS COMPANY  
320 SPRINGSIDE DRIVE, SUITE 320  
AKRON, OH 44333  
TEL: (330)-664-4452  
CELL: (330)-437-6787  
zachary.r.goodson@dom.com

PRIOR TO DECK DEMOLITION ACTIVITIES, THE CONTRACTOR SHALL IDENTIFY WHICH GAS LINE SUPPORTS WILL BE REMOVED TO FACILITATE CONCRETE DECK REPLACEMENT. THE DOMINION EAST OHIO GAS COMPANY CONTACT LISTED ABOVE SHALL BE CONTACTED TO ARRANGE A TIME FOR THE GAS COMPANY TO REMOVE THE AFFECTED SUPPORTS FROM BENEATH THE PIPE.

THE CONTRACTOR WILL FURTHER MEASURE THE DISTANCES BETWEEN GAS LINE SUPPORTS IN THE VICINITY OF THE DECK REMOVALS EXTENDING UNDER THE LINE AND DETERMINE IF REMOVAL OF THE SUPPORTS WILL CREATE A CONDITION IN WHICH THE UNSUPPORTED SPAN OF THE GAS LINE EXCEEDS 46'-0". SHOULD THE CONTRACTOR'S DECK RECONSTRUCTION SEQUENCE CREATE AN UNSUPPORTED LENGTH OF GAS LINE MORE THAN 46'-0", THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT FOR THE LINE UNTIL NEW SUPPORTS ARE INSTALLED ON THE NEW DECK.

TEMPORARY SUPPORT DETAILS CONSISTING OF A SIMPLE SPAN CARRIER BEAM ATTACHED TO THE UNDERSIDE OF THE FLOORBEAMS ABOVE THE MAINTENANCE AND INSPECTION DECK IS INCLUDED IN THE PLANS ON SHEET 235/238. THE CONTRACTOR MAY PROPOSE ALTERNATE TEMPORARY SUPPORT MEANS; HOWEVER, ANY DESIGN IS SUBJECT TO APPROVAL FROM DOMINION EAST OHIO GAS AND ODOT. REGARDLESS OF THE SUPPORT MEANS, THE CONTRACTOR SHALL SUBMIT THE PROPOSED SUPPORT DETAILS AND LOCATIONS TO DEO AND ODOT FOR REVIEW AND APPROVAL AT LEAST TWO MONTHS IN ADVANCE OF THE CONSTRUCTION OF THE TEMPORARY SUPPORT. THE CONTRACTOR SHALL ALSO INFORM THE DEO REPRESENTATIVE WHEN HE INTENDS TO INSTALL THE TEMPORARY SUPPORTS SO THAT DEO HAS THE OPPORTUNITY TO BE PRESENT DURING THE INSTALLATION.

TEMPORARY SUPPORTS MUST ADEQUATELY CARRY A PIPE DEAD LOAD OF 53 LBS/FT, DEAD LOADS OF THE TEMPORARY SUPPORTS, PLUS ANY LOADINGS CAUSED BY THE BRIDGE CONSTRUCTION OPERATIONS. NO DYNAMIC LOAD FROM THE PIPE IS ANTICIPATED. EXISTING ELEMENTS OF THE BRIDGE UTILIZED IN THE TEMPORARY SUPPORT SHALL BE ANALYZED TO ENSURE NO DAMAGE IS INCURRED. TEMPORARY SUPPORTS SHALL INCLUDE A ROLLING SYSTEM TO ALLOW THERMAL MOVEMENT OF THE PIPE, WITH A SUSPENDED ROLLER SYSTEM CONFORMING TO THE MODEL SPECIFIED IN THE PLANS.

NO DEMOLITION WORK WILL BE PERFORMED ON THE DECK WITHIN 10 FEET OF A PIPE SUPPORT TO BE REMOVED UNLESS THE PIPE'S TEMPORARY SUPPORT IS IN PLACE AND IS READY TO SUPPORT THE FULL PIPE LOAD.

NO DEMOLITION OR CONSTRUCTION WORK SHALL BE PERFORMED ON THE MAINTENANCE AND INSPECTION DECK UNLESS ALL PIPE WITHIN 20 FEET OF THE WORK AREA IS WRAPPED WITH A PROTECTIVE JACKET. USE DENSO ROCK SHIELD HD, AS MANUFACTURED BY DENSO NORTH AMERICA, 9747 WHITHORN DRIVE, HOUSTON, TX, 779095, TEL. 281-821-3355, WWW.DENSONA.COM OR EQUIVALENT; TUFF N NUFF PIPE/COATING PROTECTION AS MANUFACTURED BY TUFF N NUFF, 3400 TREE COURT INDUSTRIAL BLVD., ST. LOUIS, MO, 63122, TEL. 1-800-325-3605; WWW.TUFF-N-NUFF.COM OR EQUIVALENT.

THE CONTRACTOR SHALL INFORM DOMINION EAST OHIO GAS OF THE DATE WHEN THE NEW MAINTENANCE AND INSPECTION DECK HAS ADEQUATELY CURED AND IS CAPABLE OF SUPPORTING THE GAS LINE. THE CONTRACTOR AND DEO SHALL ARRANGE DAYS FOR THE GAS COMPANY TO INSTALL NEW SUPPORTS FOR THE GAS LINE. THE CONTRACTOR SHALL LEAVE IN PLACE THE TEMPORARY GAS LINE SUPPORTS UNTIL COMPLETION OF THE PERMANENT SUPPORTS.

THE CONTRACTOR SHALL COMPLETELY REMOVE ALL TEMPORARY SUPPORTS FROM THE BRIDGE AFTER APPROVAL BY DEO AND ODOT. ANY BOLT HOLES DRILLED INTO THE EXISTING STEELWORK SHALL BE FILLED WITH A FINGER-TIGHT BOLT SIZED TO FIT THE DRILLED HOLE.

IN ADDITION TO THE SPECIFIC COORDINATION OUTLINED ABOVE, THE CONTRACTOR SHALL PROVIDE DOMINION EAST OHIO GAS WITH STATUS REPORTS ON THE MAINTENANCE AND INSPECTION DECK CONSTRUCTION ACTIVITIES 6 MONTHS, 1 MONTH AND TWO WEEKS PRIOR TO COMMENCEMENT OF DEMOLITION OF THE DECK.

ALL LABOR, TOOLS, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK OUTLINED IN THE GENERAL NOTE SHALL BE INCLUDED IN THE PAY ITEM. THE PAY ITEM SHALL ALSO INCLUDE COORDINATION EFFORTS WITH THE DOMINION EAST OHIO GAS COMPANY, AS WELL AS ANY ANTICIPATED DELAYS IN THE MAINTENANCE AND INSPECTION DECK WORK CAUSED BY COORDINATION OF THE COMBINED CONSTRUCTION EFFORTS OF DEO AND THE CONTRACTOR. WORK SHALL BE PAID PER LUMP SUM UNDER ITEM SPECIAL - STRUCTURES: GAS LINE SUPPORT.

**ITEM SPECIAL - STRUCTURES: CLEANING DRAIN HOLES AND CLEANING DEBRIS FROM TRUSS BEARINGS**

WORK UNDER THIS ITEM INCLUDES THE CLEANING OF DEBRIS OUT OF THE TRUSS BEARING LOWER SHOES AND CLEANING OUT DRAIN HOLES IN THE WALLS OF THE LOWER SHOES TO FACILITATE DRAINAGE OF THE BEARINGS.

REMOVE AND PROPERLY DISPOSE OF ALL LOOSE DELETERIOUS MATERIALS, INCLUDING ACCUMULATION OF PIGEON DROPPINGS, FROM THE POCKETS FORMED BY THE VERTICAL WALLS OF THE LOWER BEARING SHOE CASTING. AFTER REMOVAL OF THIS DEBRIS, APPLY A LIGHT WATER RINSE TO THE POCKETS TO CLEAN THE BEARING POCKET SURFACES. POWER WASHING THE DEBRIS OUT OF THE POCKETS IS NOT RECOMMENDED. IF USED, ALL DEBRIS MUST BE CONTAINED.

ANY CONCRETE FOUND FILLING THE BEARING POCKETS THAT IS NOT LOOSE CAN REMAIN IN PLACE.


MANY DRAIN HOLES IN THE BEARING CASTING LOWER SHOES ARE PLUGGED WITH DEBRIS OR RUST. THE EXISTING HOLES IN EACH BEARING SHALL BE RE-OPENED TO ALLOW FOR DRAINAGE OF THE POCKETS WITHIN THE BEARINGS. THE CONTRACTOR SHALL EMPLOY SMALL HAND TOOLS OR CAREFUL DRILLING WITH A POWER DRILL TO REMOVE THE OBSTRUCTIONS FROM THE HOLES.

FIELD PAINTING THE REPAIRED BEARING AREAS IS NOT REQUIRED AS PART OF THIS REPAIR SEQUENCE.

ALL MATERIALS, TOOLS, LABOR AND ACCESS SHALL BE PAID FOR PER EACH BEARING UNDER ITEM SPECIAL - STRUCTURES: CLEANING DRAIN HOLES AND CLEANING DEBRIS FROM TRUSS BEARINGS FOR THE WORK DESCRIBED ABOVE.

**ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN**

THIS ITEM IS FOR THE REQUIRED REMOVALS OF THE SIDEWALK CURB AND CURB PLATE NORTH OF THE EAST ABUTMENT JOINT ON THE SUPERSTRUCTURE FOR MAINTENANCE OF TRAFFIC. 12 INCHES OF REMOVAL IS ASSUMED FROM THE FACE OF THE EXISTING CURB FOR THE PLAN QUANTITY. IF A GREATER AREA IS DAMAGED THIS WILL BE REPAIRED AT THE CONTRACTORS EXPENSE. PLANS INDICATE THE EXISTING WEARING SURFACE IS AT LEAST 1/4" THICK BUT MAY BE AS THICK AS 2 3/4" AND WILL LIKELY HAVE TO BE REMOVED IN ORDER TO REMOVE THE EXISTING CURB PLATE. THIS WORK AND THE SUBSEQUENT REPLACEMENT OF THE WEARING SURFACE PER SUPPLEMENTAL SPECIFICATION 847 IS INCLUDED IN THIS ITEM.

<b>GENERAL NOTES - 8</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOCA RIVER		RICHLAND ENGINEERING LIMITED  29 NORTH PARK STREET MANSFIELD, OHIO 44902
<b>CUY-10-16.13</b> PID No. 96986	13/238 73 308	DATE 1/30/18 STRUCTURE FILE NUMBER 1801503
DESIGNED KAK CHECKED DAP	DRAWN RB REVISED	REVIEWED DLR STRUCTURE FILE NUMBER 1801503

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ESTIMATED QUANTITIES  
(FUNDING PARTICIPATION: 01/BRO/BR)

CALCULATED TGW/dht DATED 7/16  
CHECKED JSB/SJK DATED 7/16

Table with columns: ITEM, ITEM EXT., TOTAL, UNIT, DESCRIPTION, SUPERSTRUCTURE, ABUTS., PIER, GEN'L, SEE SHEET. Includes rows for structure removal, pile driving, reinforcing steel, and structural steel repairs.

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RIVET AND BOLT LEGEND

- FIELD BOLT, NUT AND FULL HEAD. NEW MATERIAL TO NEW MATERIAL.
FIELD DRILL EXISTING MATERIAL FOR NEW CONNECTION BOLT. NEW OR EXISTING MATERIAL TO EXISTING MATERIAL.
REMOVE EXISTING RIVET OR BOLT FOR NEW BOLTED CONNECTION. NEW MATERIAL TO EXISTING MATERIAL.
EXISTING RIVET OR BOLT TO REMAIN IN PLACE.
FIELD BOLT, NUT AND COUNTERSUNK HEAD NEAR SIDE. NEW MATERIAL TO NEW MATERIAL.
FIELD BOLT, NUT AND COUNTERSUNK HEAD FAR SIDE. NEW MATERIAL TO NEW MATERIAL.
COUNTERSUNK BOLT OR RIVET TO REMAIN IN PLACE.
REMOVE EXISTING COUNTERSUNK RIVET OR BOLT FOR NEW COUNTERSUNK BOLTED CONNECTION. NEW OR EXISTING MATERIAL.

NOTATION

ABUTS. - ABUTMENTS
RET. - RETAINING

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

REVIEWED DATE 1/30/18
DLR 1801503

DRAWN DPH

DESIGNED KAK
CHECKED BLN

ESTIMATED QUANTITIES - 1
BRIDGE NO. CUY-10-1613
S.R. 10 OVER THE CUYAHOCA RIVER

CUY-10-16-13
PID No. 96986

14/238

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308

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**ESTIMATED QUANTITIES**  
(FUNDING PARTICIPATION: 01/BRO/BR)

CALCULATED TGW/dht DATED 7/16  
CHECKED JSB/SJK DATED 7/16

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE	ABUTS.	PIER	GEN'L	SEE SHEET
514	00100	LS		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	LS				11
514	00200	LS		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	LS				11
514	00300	LS		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	LS				11
514	00401	LS		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	LS				11
514	00504	31	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	31				
514	10000	17	EACH	FINAL INSPECTION REPAIR	17				
514	27800	LS		FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT	LS				12
514	27800	LS		FIELD PAINTING, MISC.: SOLVENT CLEANING AND PRIME COAT ON CONNECTION BOLTS	LS				12
516	01301	148	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, MODULAR EXPANSION JOINT REPLACEMENT SEALS, AS PER PLAN	148				226
516	11211	74	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN		74			211, 212
516	46700	4	EACH	RESET BEARING	4				
516	46701	12	EACH	RESET BEARING, AS PER PLAN	12				12
516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	LS				12
518	62200	2	EACH	STRUCTURE DRAINAGE, MISC.: 3/32" NRNS FLASHING, PANEL POINT 35 TOP CHORD EXPANSION JOINT DRAINAGE PROTECTION	2				224
518	62200	16	EACH	STRUCTURE DRAINAGE, MISC.: PLUGGING ROADWAY SUBDRAINS	16				12
519	11100	70	SF	PATCHING CONCRETE STRUCTURE	70				
SPECIAL	530E00200	LS		STRUCTURES: PACK RUST REPAIRS AND CAULKING	LS				12
SPECIAL	530E00200	LS		STRUCTURES: GAS LINE SUPPORT	LS			LS	13
SPECIAL	530E00200	LS		STRUCTURES: REPAIR AND STEEL PLATING OF SECURITY FENCE					27
SPECIAL	530E00400	110	EACH	STRUCTURES: CLEANING DRAIN HOLES AND CLEANING DEBRIS FROM TRUSS BEARINGS	110				13
SPECIAL	530E00400	7	EACH	STRUCTURES: CLEANING DECK SCUPPER RECESS	7				227
847	10001	6	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN	6				13

**TRUSS LOCATION IDENTIFICATION KEY**

REPAIR LOCATIONS IN THESE PLANS ARE OFTEN IDENTIFIED BY THE FOLLOWING INFORMATION:


A) TRUSS LINE: TRUSS A, B, C, OR D  
AS LOCATED ON THE TRANSVERSE SECTIONS

B) TRUSS CHORD: "U" - UPPER TRUSS CHORD  
"L" - LOWER TRUSS CHORD

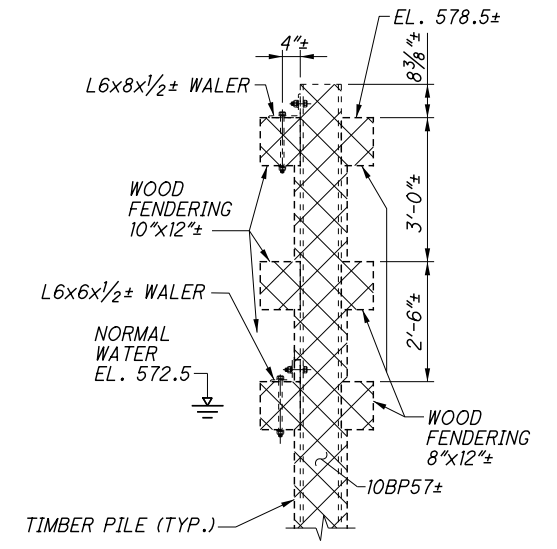
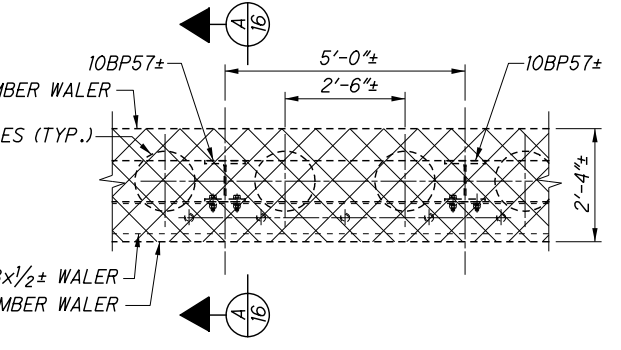
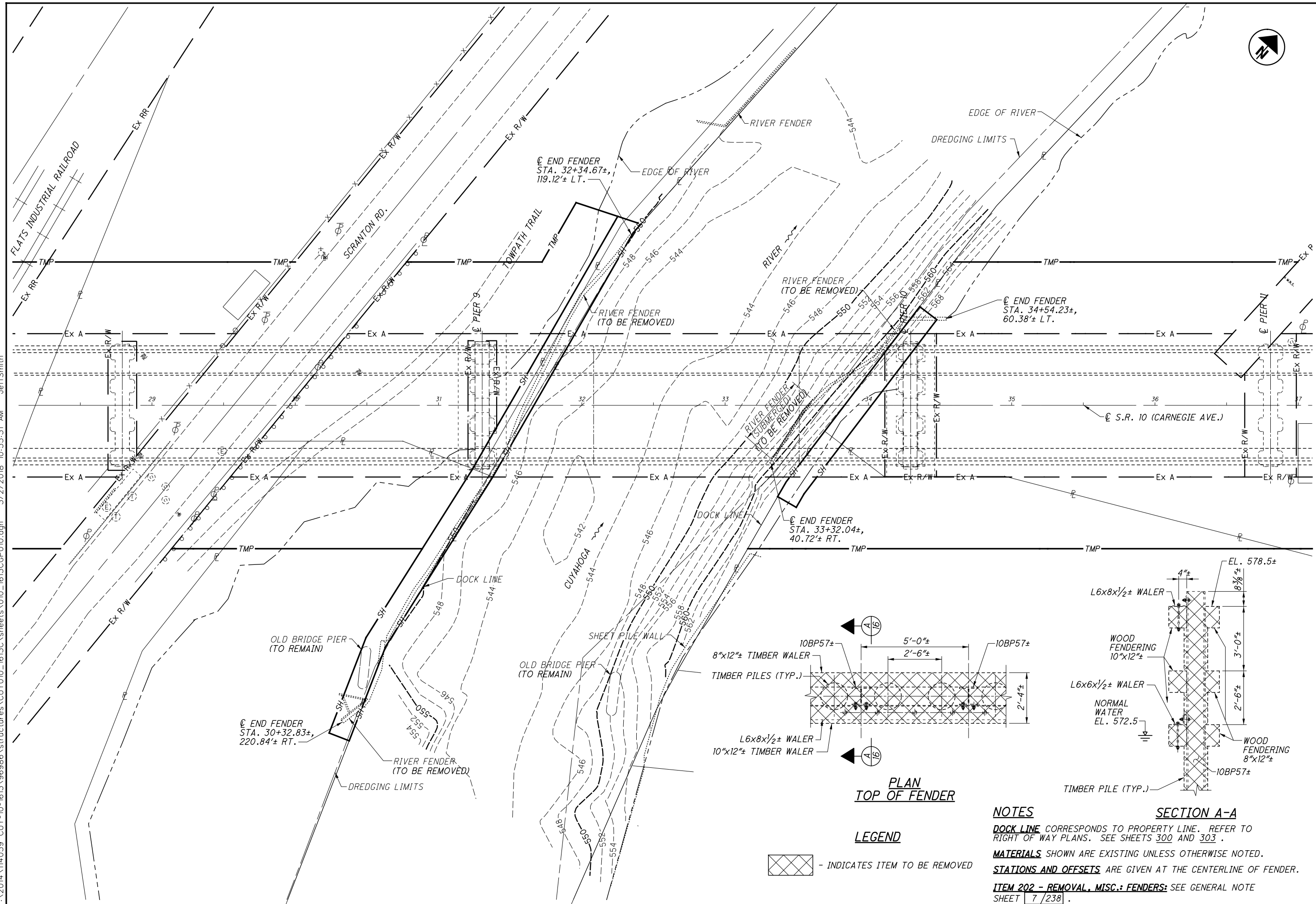
C) TRUSS PANEL POINT NUMBER: PANEL POINTS ARE NUMBERED FROM "0" IN SPAN 6 AT THE WEST PYLON THROUGH "133" IN SPAN 20 AT THE EAST ABUTMENT AS SHOWN IN THE GENERAL PLAN.

EXAMPLES:  
"CL12" REPRESENTS LOWER CHORD PANEL POINT NUMBER 12 ON TRUSS LINE C (IN SPAN 7).

"AL99 - AU100" REPRESENTS THE TRUSS DIAGONAL MEMBER BETWEEN LOWER CHORD PANEL POINT 99 AND UPPER CHORD PANEL POINT 100 ON TRUSS LINE A (IN SPAN 15).

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DPH REVISED
DESIGNED KAK	CHECKED BLN
ESTIMATED QUANTITIES - 2 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	
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PLAN TOP OF FENDER

SECTION A-A

LEGEND

- INDICATES ITEM TO BE REMOVED

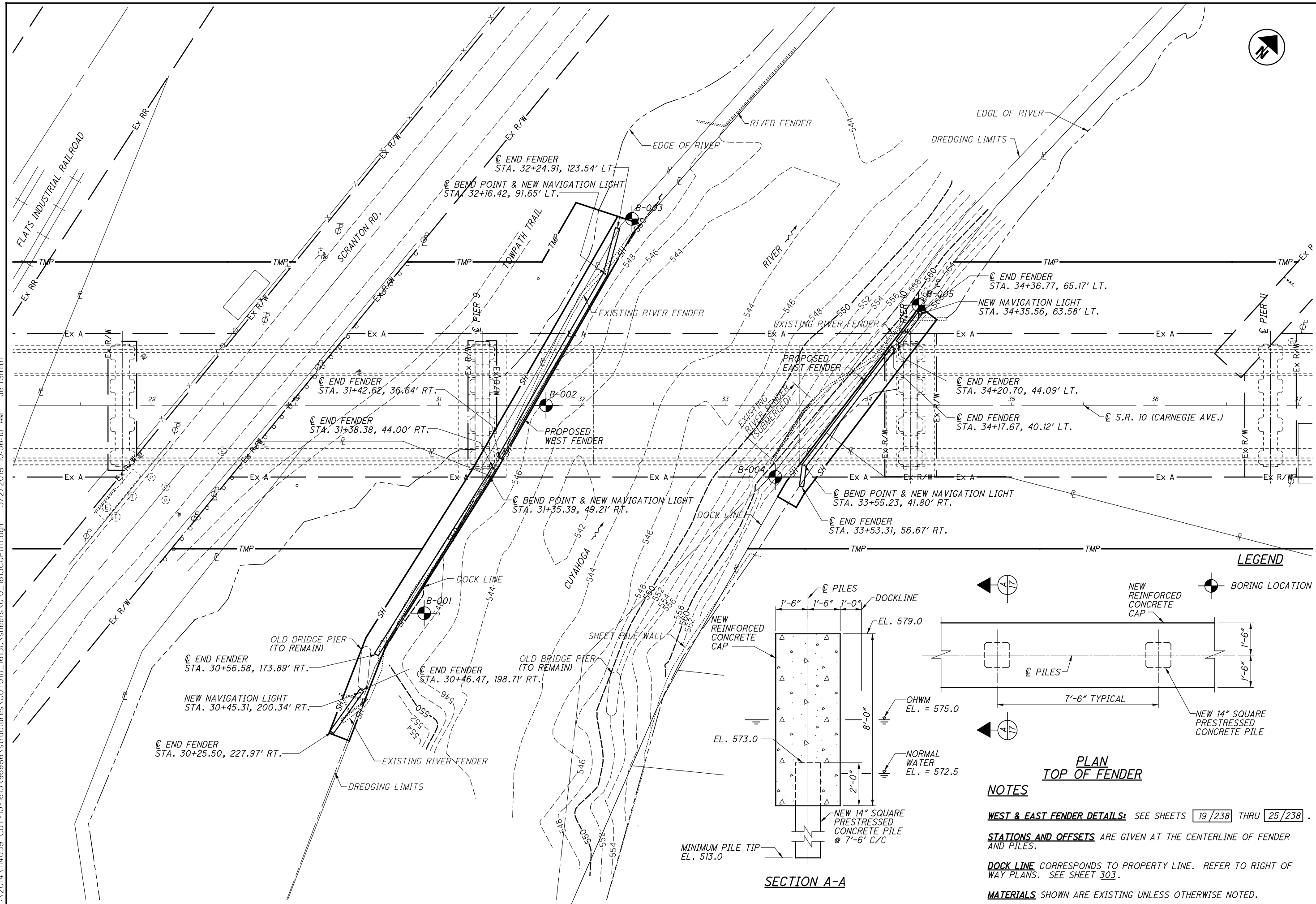
NOTES

- DOCK LINE** CORRESPONDS TO PROPERTY LINE. REFER TO RIGHT OF WAY PLANS. SEE SHEETS 300 AND 303.
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- STATIONS AND OFFSETS** ARE GIVEN AT THE CENTERLINE OF FENDER.
- ITEM 202 - REMOVAL, MISC.: FENDERS:** SEE GENERAL NOTE SHEET 7/238.



<b>RIVER CHANNEL PROTECTION - EXISTING</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED DAP	DRAWN RB	REVIEWED DLR
CHECKED BLN	REVISED	DATE 1/30/18
STRUCTURE FILE NUMBER 1801503		PROJECT FILE NUMBER 1801503
<b>CUY-10-16.13</b> PID No. 96986	16/238	76 308

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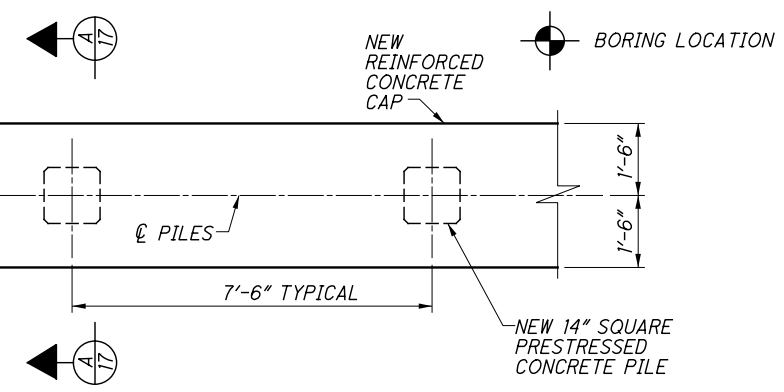
RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 1/30/18  
 REVIEWED: DLR  
 DRAWN: RB  
 DESIGNED: DAP  
 CHECKED: BLN

BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

RIVER CHANNEL PROTECTION - NEW FENDERS  
 STRUCTURE FILE NUMBER: 1801503

CUY-10-16.13  
 PID No. 96986  
 17/238  
 77  
 308

**LEGEND**

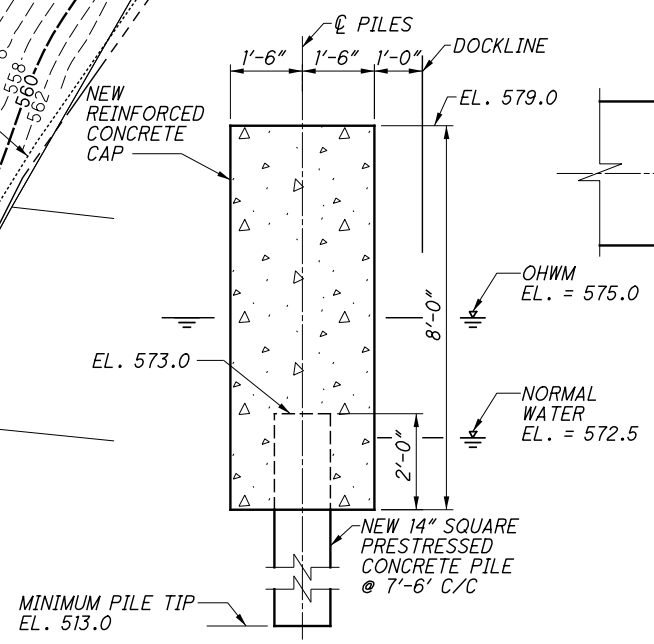


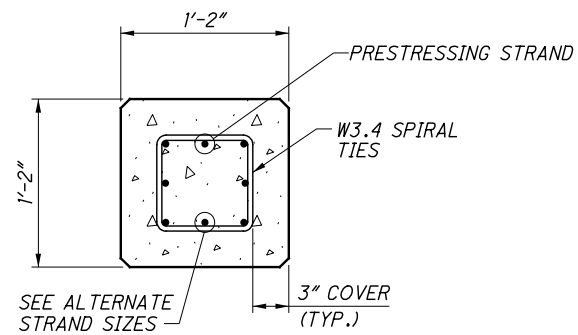
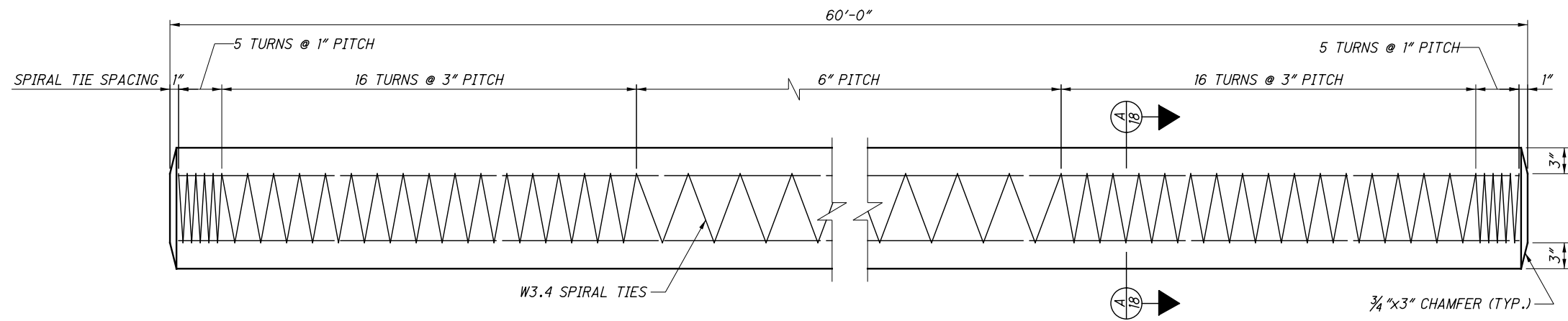
**PLAN TOP OF FENDER**

**NOTES**

- WEST & EAST FENDER DETAILS:** SEE SHEETS 19/238 THRU 25/238.
- STATIONS AND OFFSETS** ARE GIVEN AT THE CENTERLINE OF FENDER AND PILES.
- DOCK LINE** CORRESPONDS TO PROPERTY LINE. REFER TO RIGHT OF WAY PLANS. SEE SHEET 303.
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**SECTION A-A**





SECTION A-A

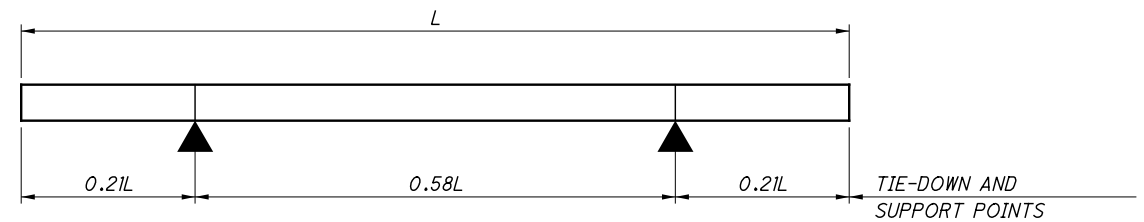
PILE ELEVATION

ALTERNATE STRAND SIZES

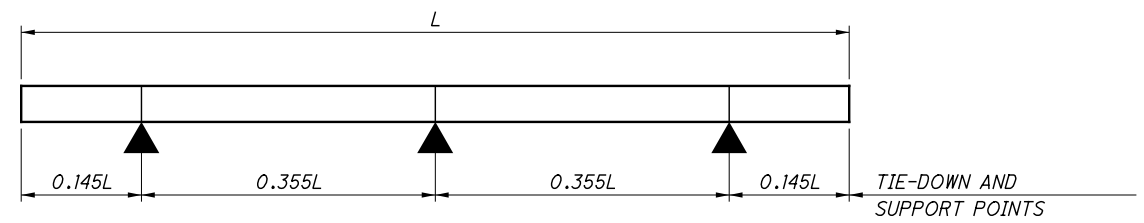
- 8 - 0.6" DIA., GRADE 270, AT 33 KIPS PRESTRESSING FORCE
- 8 - 1/2" DIA., GRADE 270, AT 31 KIPS PRESTRESSING FORCE

14" SQUARE PRESTRESSED CONCRETE PILE

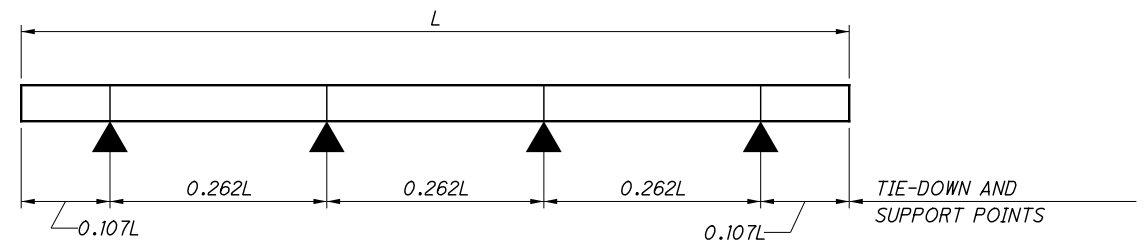
(MINIMUM SECTION AND REINFORCING)



2-POINT SUPPORT

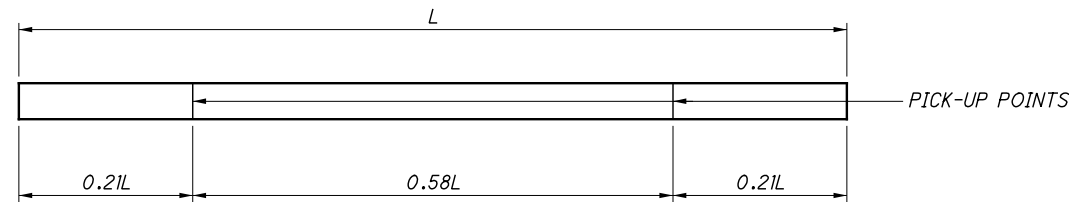


3-POINT SUPPORT



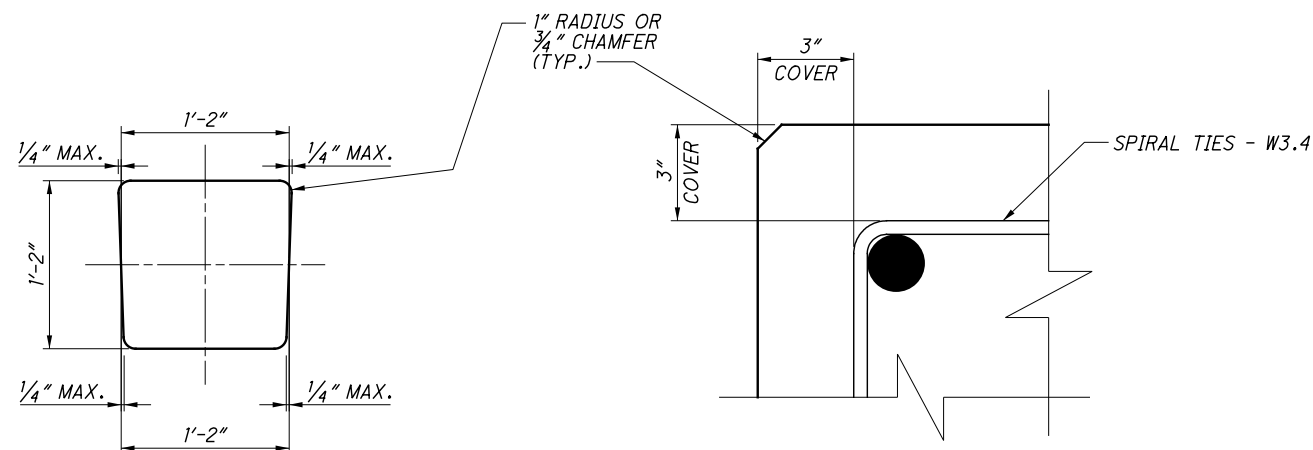
4-POINT SUPPORT

STORAGE AND TRANSPORTATION SUPPORT DETAILS



2-POINT PICK-UP

PILE PICK-UP DETAILS



TYPICAL PILE SHAPE FOR MOLD FORMS

DETAIL SHOWING TYPICAL COVER

NOTES

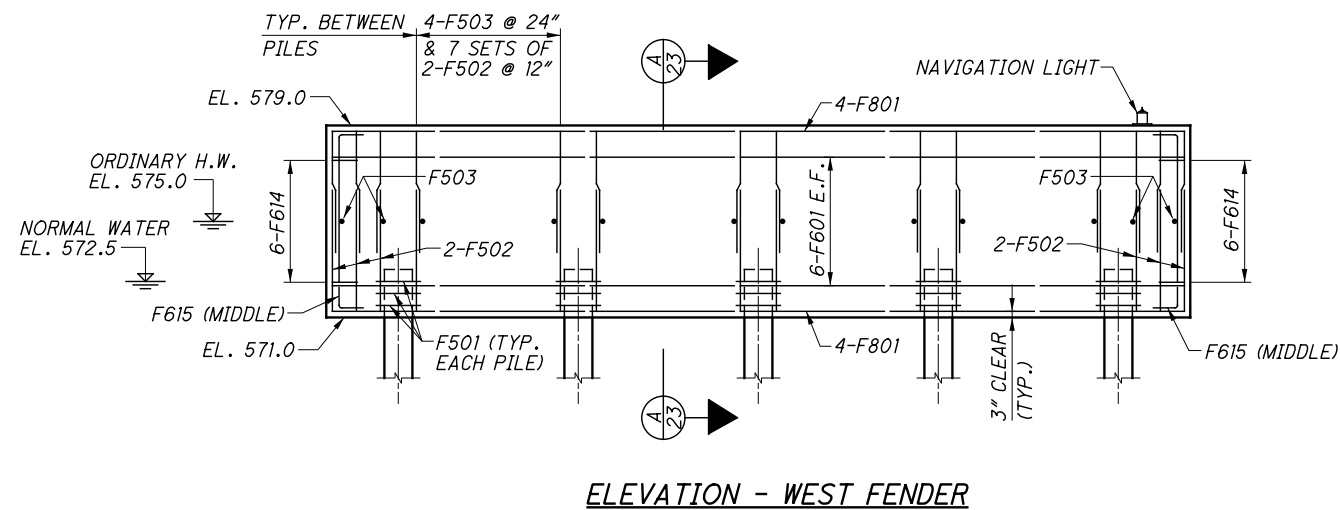
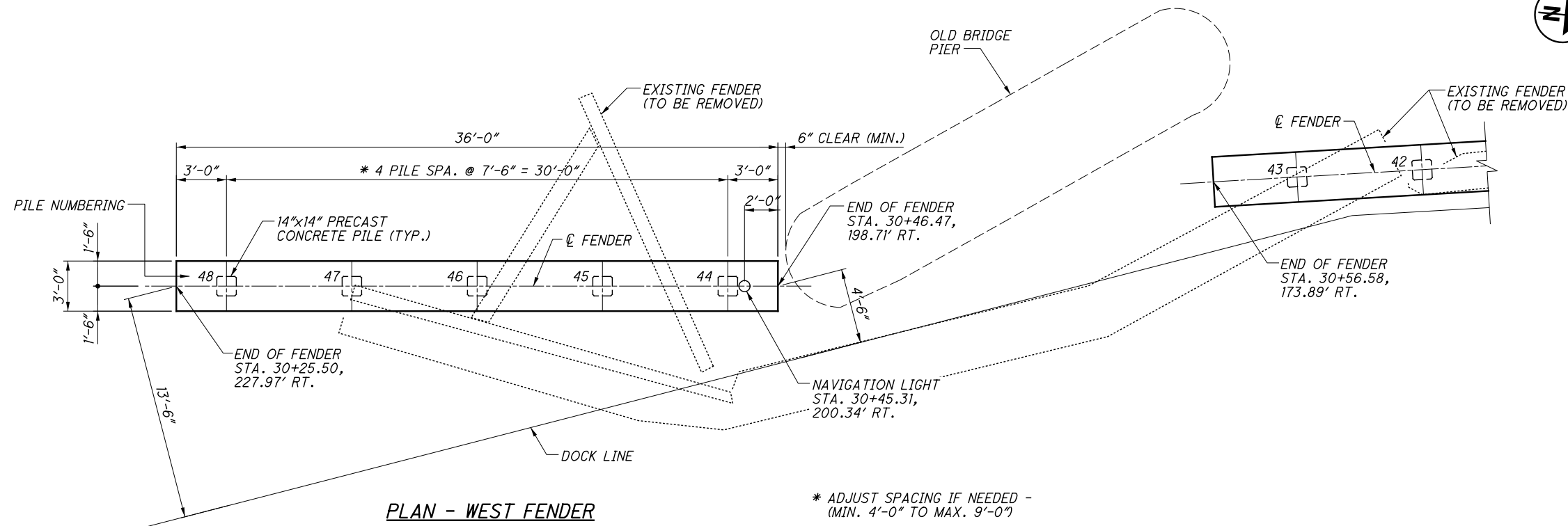
14" SQUARE PRESTRESSED CONCRETE PILE SPACING: SEE SHEETS 19/238 THRU 25/238.

ADDITIONAL NOTES AND DETAILS: SEE SHEET 17/238.

ITEM 507 - PILING, MISC.: PRESTRESSED CONCRETE FENDER PILES: SEE GENERAL NOTE SHEET 8/238.

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**NOTES**

**REINFORCING STEEL SPLICE LENGTHS** SHALL BE 2'-7" FOR VERTICAL #5 BARS, 3'-6" FOR HORIZONTAL #6 BARS, 5'-8" FOR HORIZONTAL #8 BARS AND 7'-3" FOR HORIZONTAL #9 BARS.

**14"x14" PRESTRESSED CONCRETE PILE LENGTH** SHALL BE 60' FOR BOTH THE WEST FENDER AND EAST FENDER.

**FENDER LOCATIONS:** SEE RIVER CHANNEL PROTECTION PLAN, SHEET 17/238.

**NAVIGATION LIGHTING INFORMATION:** SEE LIGHTING GENERAL NOTE SHEET 27.

**REINFORCING STEEL LIST:** SEE SHEET 23/238.

**ITEM 511 - CLASS QC1 CONCRETE, MISC.: FENDER CAP CONCRETE WITH QC/QA:**

**GENERAL REQUIREMENTS:**

THE PROVISIONS OF CMS 511 SHALL APPLY EXCEPT AS NOTED.

**MIX DESIGN:**

ALL COURSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127.

**ADDITIONAL REQUIREMENTS:**

CMS 511.11 PROHIBITS PLACEMENT OF CONCRETE UNDERWATER. THE MORTAR TIGHT REQUIREMENT OF 508.03 IS NOT SUFFICIENT. FORMWORK FOR THE CONCRETE FENDERS SHALL BE WATERTIGHT.

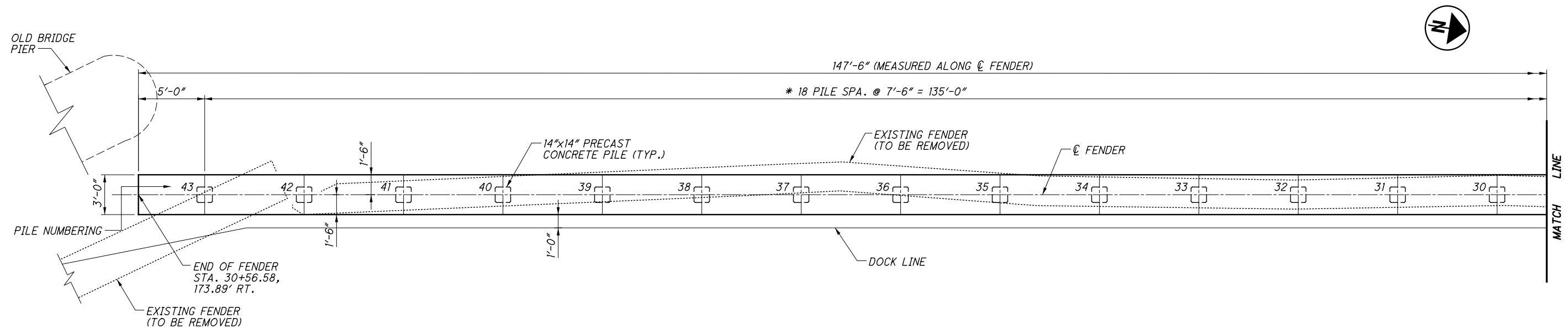
BEFORE PLACING CONCRETE, REMOVE ALL WATER FROM THE FORMS; THOROUGHLY CLEAN THE FORMS, THE EMBEDDED PORTION OF THE PILES, AND THE REINFORCING STEEL; ENSURE THAT THE SPACE TO BE OCCUPIED BY THE CONCRETE IS FREE OF LAITANCE, SILT, DIRT, SHAVINGS, SAWDUST, BROKEN CONCRETE, AND OTHER DEBRIS; AND MAINTAIN THE FORMS IN THE CLEAN AND WATER-FREE STATE THROUGHOUT THE CONCRETE PLACEMENT.

**WEST FENDER** CONTINUES ON NEXT SHEET.



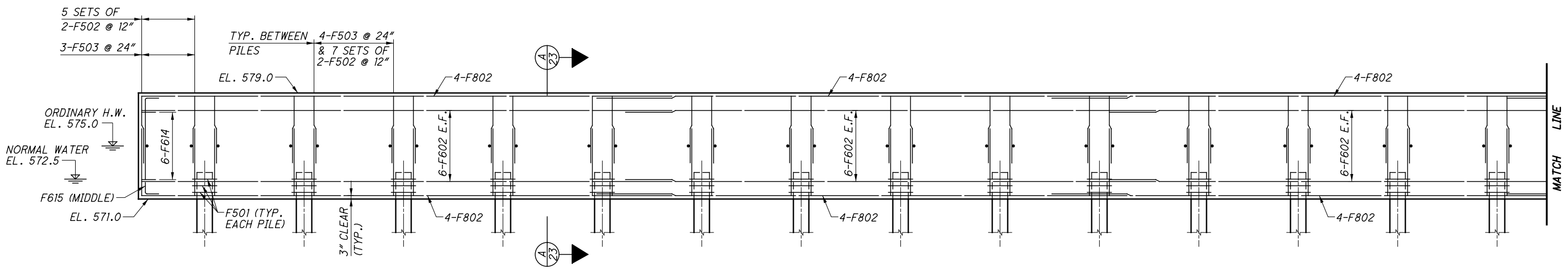


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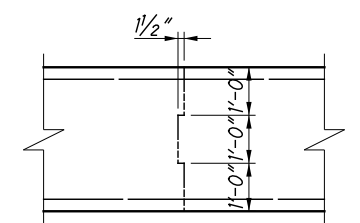


**PLAN - WEST FENDER**

\* ADJUST SPACING IF NEEDED -  
 (MIN. 4'-0" TO MAX. 9'-0")



**ELEVATION - WEST FENDER**



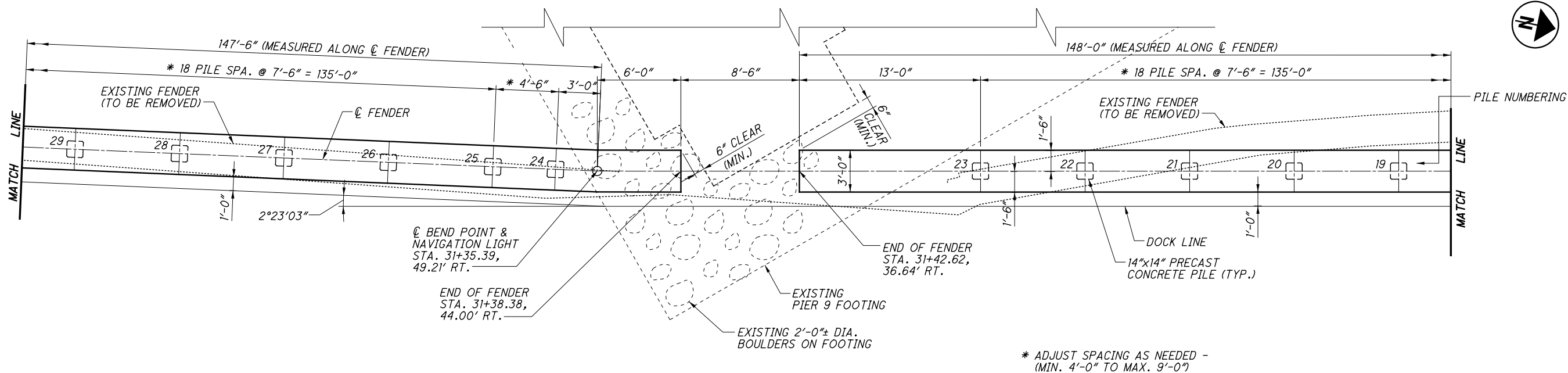
**PLAN - OPTIONAL CONSTRUCTION JOINT**

MINIMUM SPACING 30'-0"

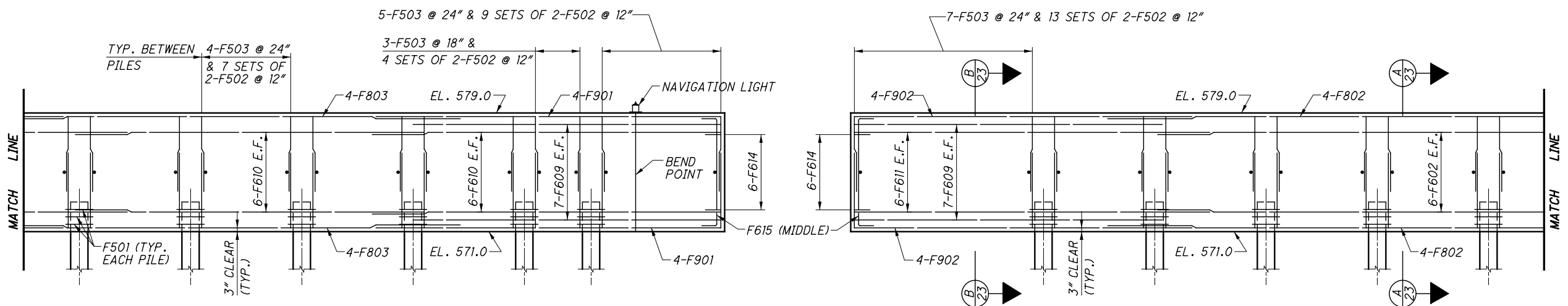
**NOTES**

**ADDITIONAL NOTES:** SEE SHEET 19/238.  
**WEST FENDER** CONTINUES ON NEXT SHEET.

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PLAN - WEST FENDER



ELEVATION - WEST FENDER

\* ADJUST SPACING AS NEEDED -  
(MIN. 4'-0" TO MAX. 9'-0")



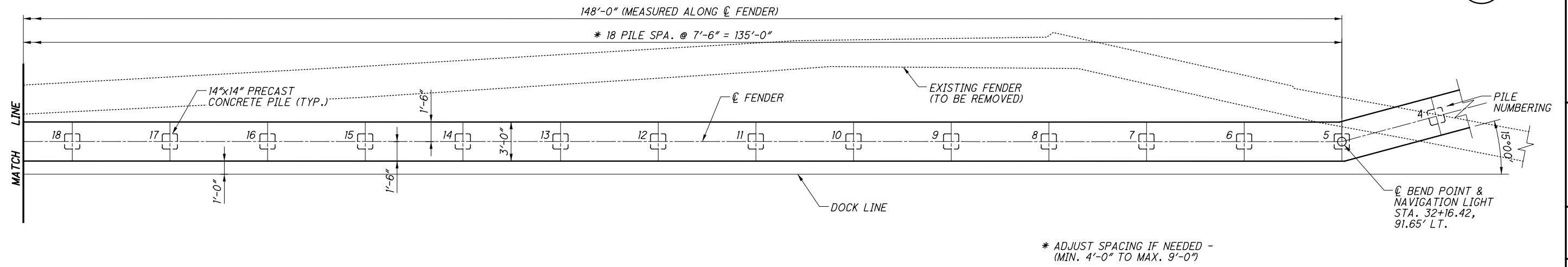
<b>WEST FENDER PLAN &amp; ELEVATION - 3</b>	DATE 1/30/18	REVIEWED DLR	DESIGNED BLN	DRAWN JLS	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
	BRIDGE NO. CUY-10-1613		STRUCTURE FILE NUMBER 1801503		
S.R. 10 OVER THE CUYAHOGA RIVER		CHECKED DAP		REVISER	
PID No. 96986					

**NOTES**

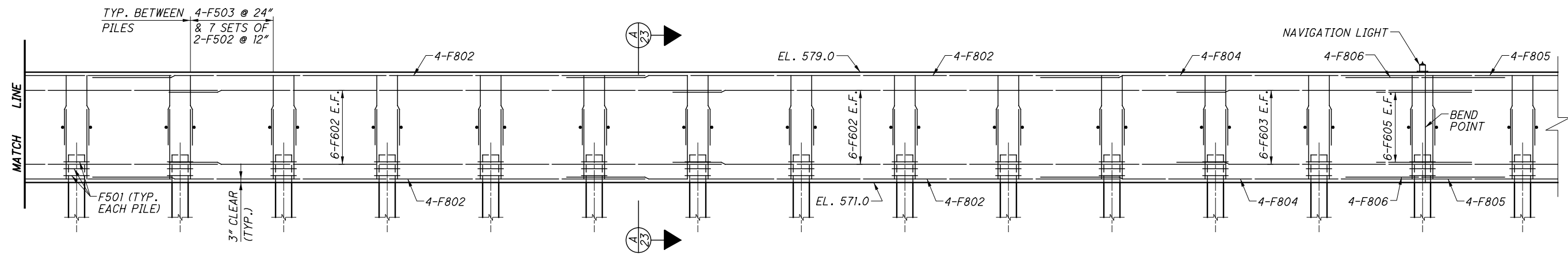
ADDITIONAL NOTES: SEE SHEET 19/238.

WEST FENDER CONTINUES ON NEXT SHEET.

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PLAN - WEST FENDER



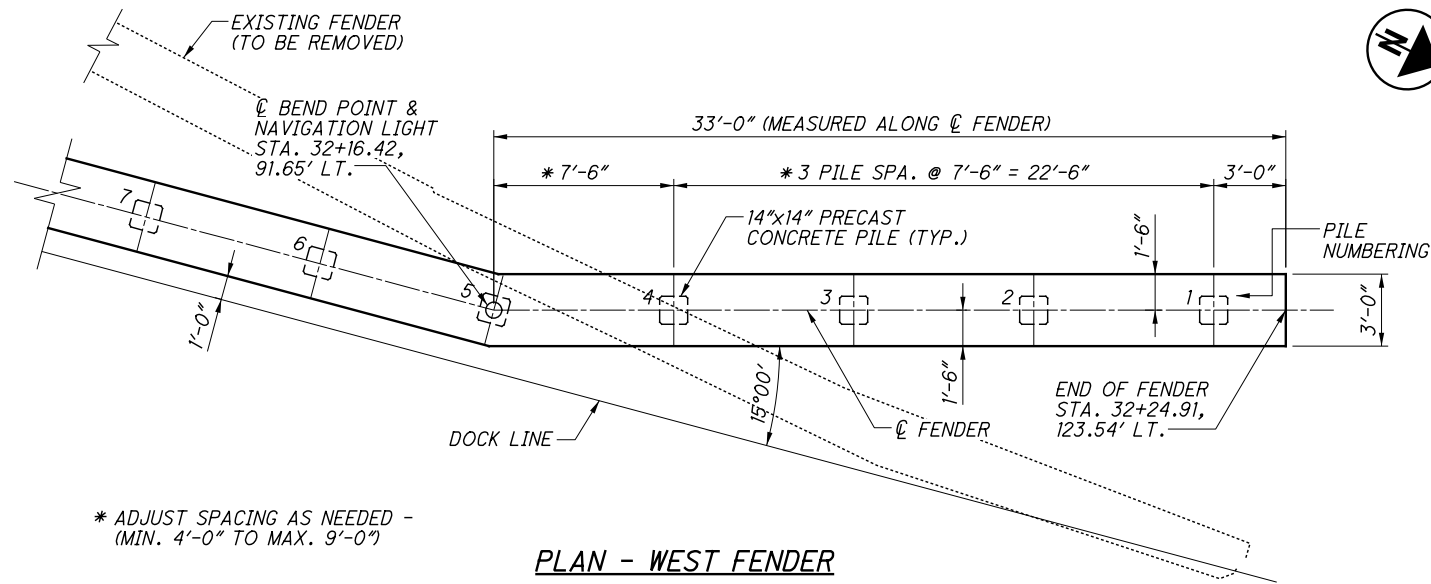
ELEVATION - WEST FENDER

**NOTES**

**ADDITIONAL NOTES:** SEE SHEET 19/238.

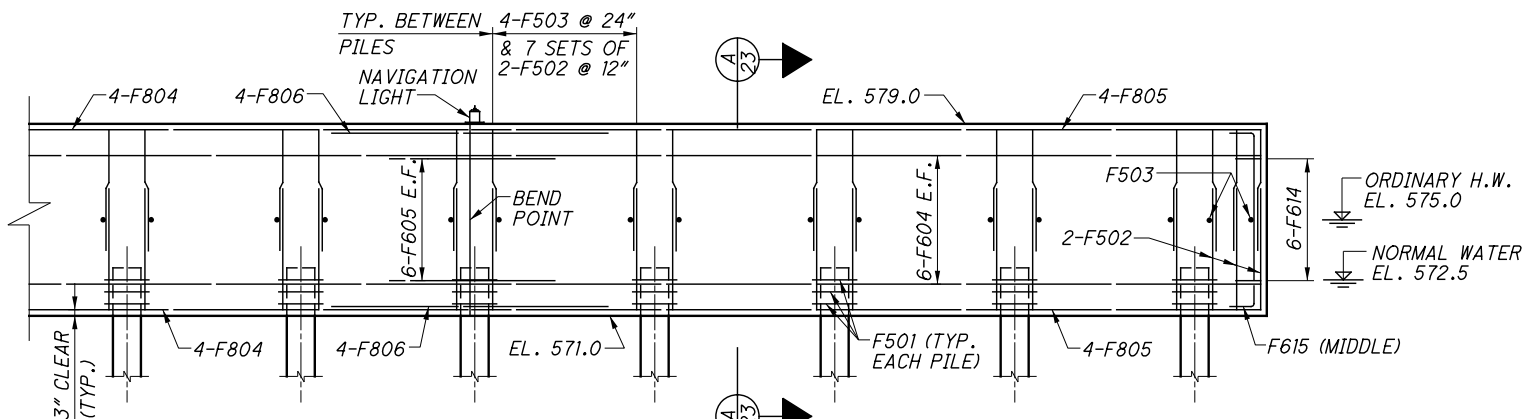
**WEST FENDER** CONTINUED ON NEXT SHEET.

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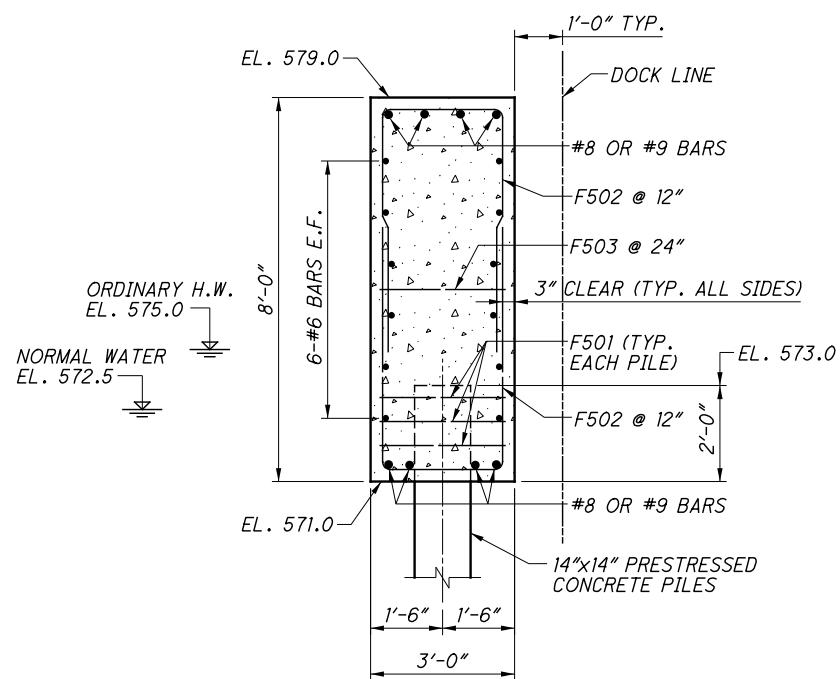


\* ADJUST SPACING AS NEEDED - (MIN. 4'-0" TO MAX. 9'-0")

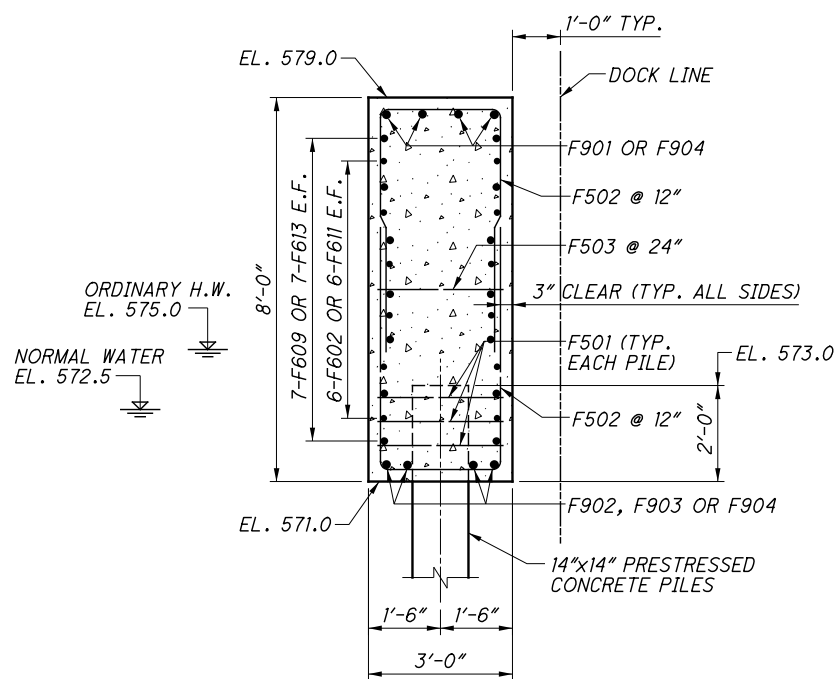
PLAN - WEST FENDER



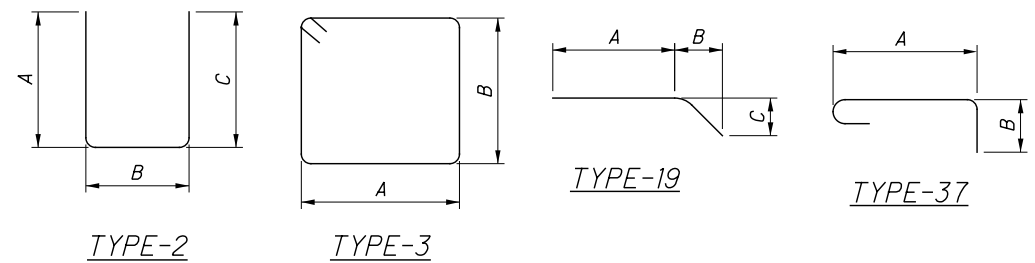
ELEVATION - WEST FENDER



SECTION A-A



SECTION B-B



NOTES

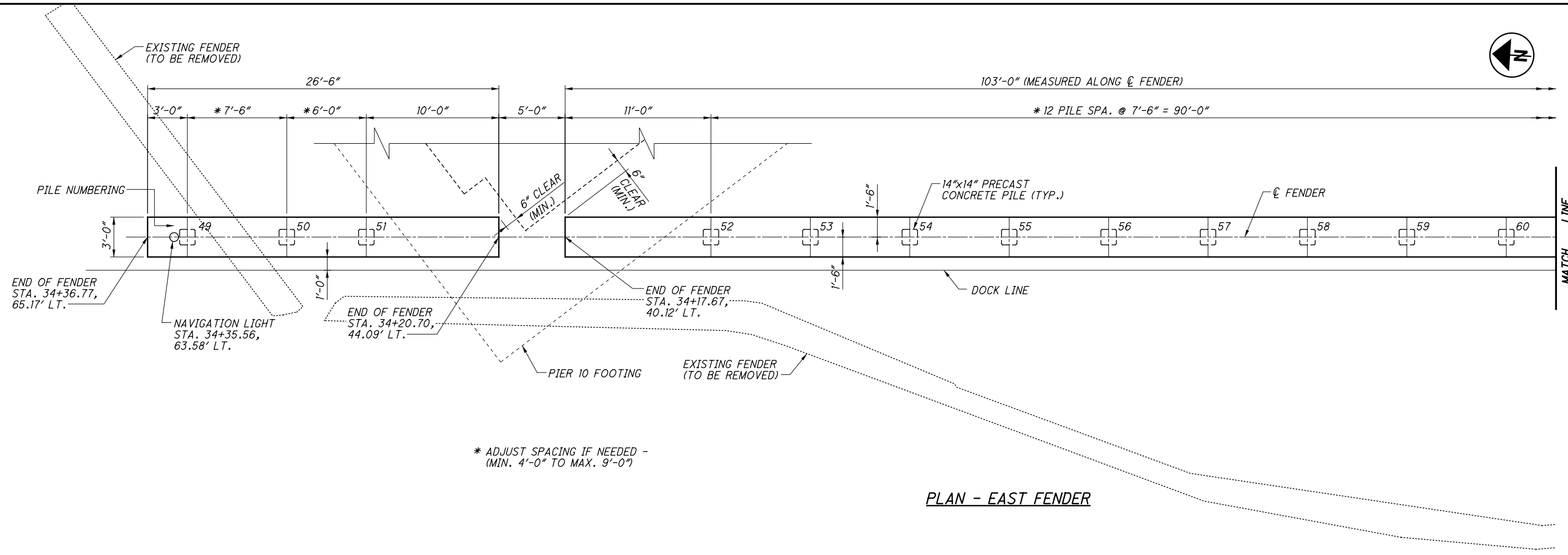
ADDITIONAL NOTES: SEE SHEET 19/238.

SECTION A-A: FOR LOCATIONS SEE SHEETS 19/238 THROUGH 25/238.

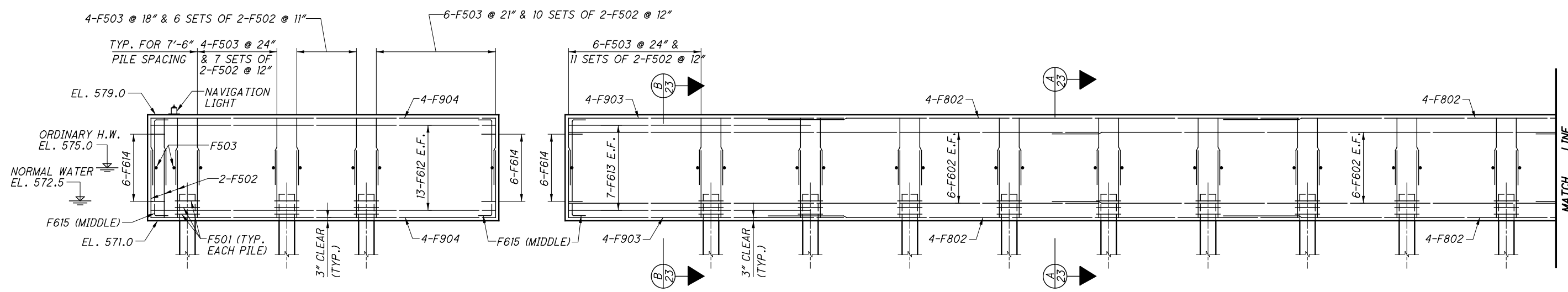
SECTION B-B: FOR LOCATIONS SEE SHEETS 21/238 AND 24/238.

MARK	NUMBER			LENGTH	WEIGHT (LBS.)	TYPE	DIMENSIONS			
	WEST	EAST	TOTAL				A	B	C	D
<b>FENDERS</b>										
F501	144	54	198	10'-8"	2203	3	2'-6"	2'-6"		
F502	696	276	972	12'-5"	12,588	2	5'-1"	2'-6"	5'-1"	
F503	200	80	280	3'-10"	1119	37	2'-6"	0'-10"		
F601	12		12	35'-6"	640	STR				
F602	72	24	96	40'-0"	5768	STR				
F603	12		12	17'-11"	323	STR				
F604	12		12	32'-11"	593	STR				
F605	12		12	7'-2"	129	19	3'-7"	3'-5 1/2"	0'-11"	
F606		12	12	30'-1"	542	STR				
F607		12	12	15'-1"	272	STR				
F608		12	12	7'-2"	129	19	3'-7"	3'-1 1/4"	1'-9 1/2"	
F609	28		28	20'-9"	873	STR				
F610	24		24	23'-7"	850	STR				
F611	12		12	24'-0"	433	STR				
F612		26	26	26'-0"	1015	STR				
F613		14	14	18'-3"	384	STR				
F614	36	24	60	4'-2"	376	2	1'-0"	2'-6"	1'-0"	
F615	6	4	10	9'-2"	138	2	1'-0"	7'-6"	1'-0"	
F801	8		8	35'-6"	758	STR				
F802	48	16	64	40'-0"	6835	STR				
F803	8		8	32'-5"	692	STR				
F804	8		8	17'-11"	383	STR				
F805	8		8	32'-11"	703	STR				
F806	8		8	11'-6"	246	19	5'-9"	5'-6 1/2"	1'-6"	
F807		8	8	19'-4"	413	STR				
F808		8	8	15'-1"	322	STR				
F809		8	8	11'-6"	246	19	5'-9"	4'-11 3/4"	2'-10 1/2"	
F901	8		8	23'-3"	632	STR				
F902	8		8	22'-9"	619	STR				
F903		8	8	20'-9"	564	STR				
F904		8	8	26'-0"	707	STR				
<b>TOTAL</b>					41,495					

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PLAN - EAST FENDER

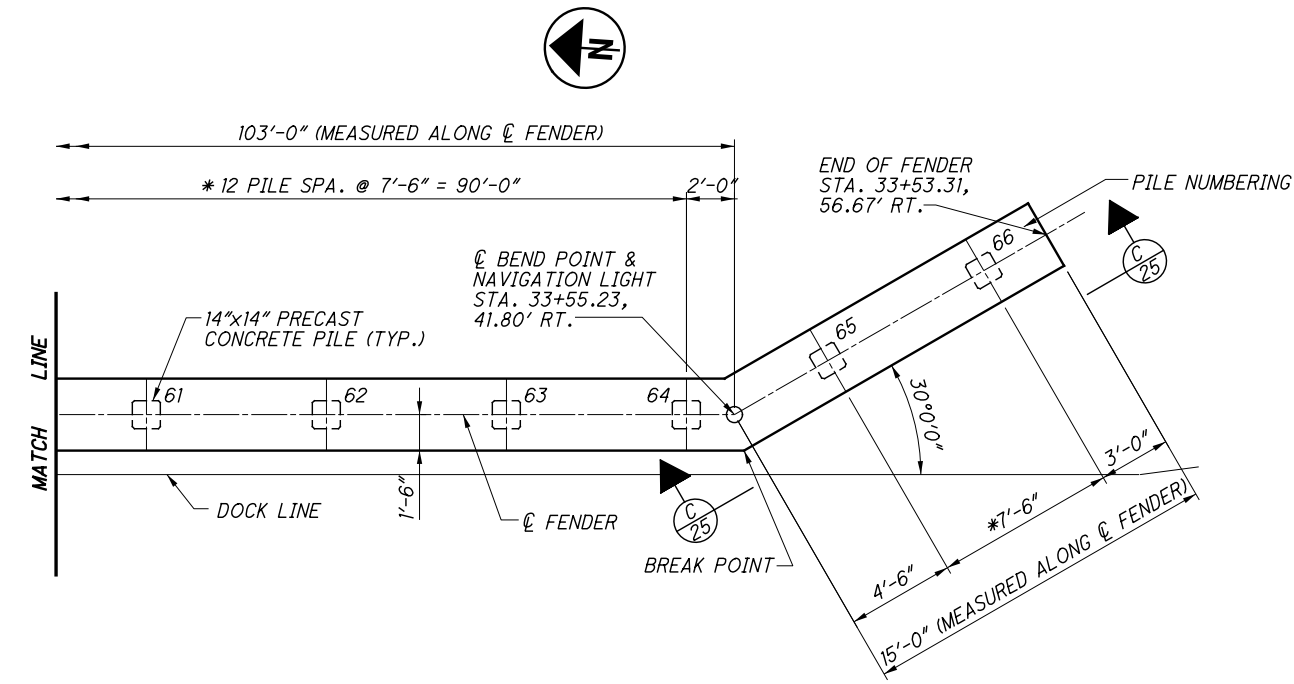


ELEVATION - EAST FENDER

**NOTES**  
**ADDITIONAL NOTES:** SEE SHEET 19/238.  
**EAST FENDER** CONTINUES ON NEXT SHEET.

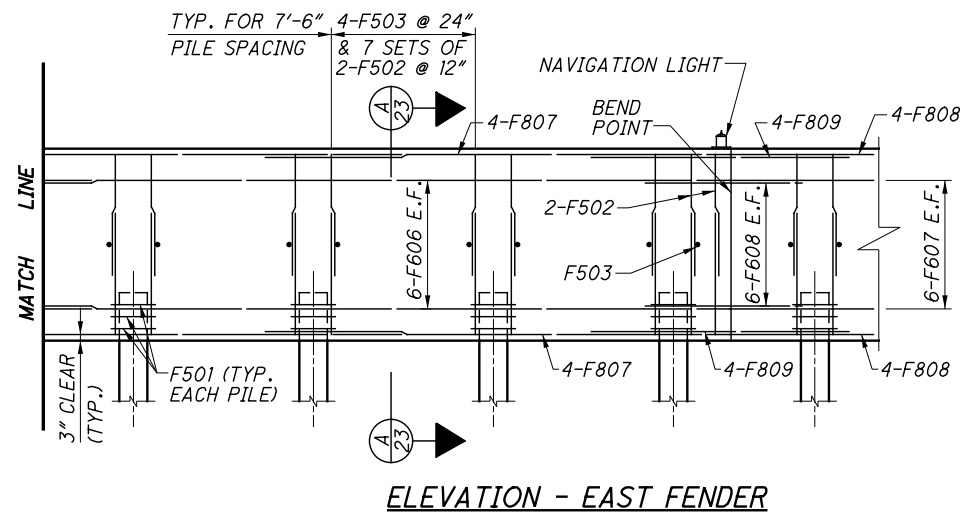
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	CHECKED DAP
DRAWN JLS	REVISED
DESIGNED BLN	CHECKED DAP
<b>EAST FENDER PLAN &amp; ELEVATION - 1</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	
24/238	
84 308	

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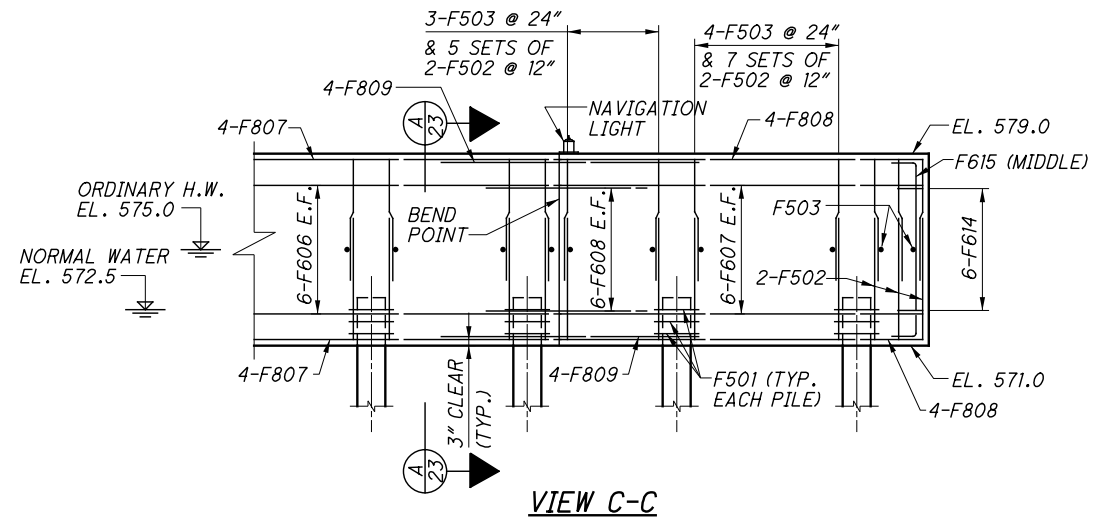


PLAN - EAST FENDER

\* ADJUST SPACING IF NEEDED - (MIN. 4'-0" TO MAX. 9'-0")



ELEVATION - EAST FENDER

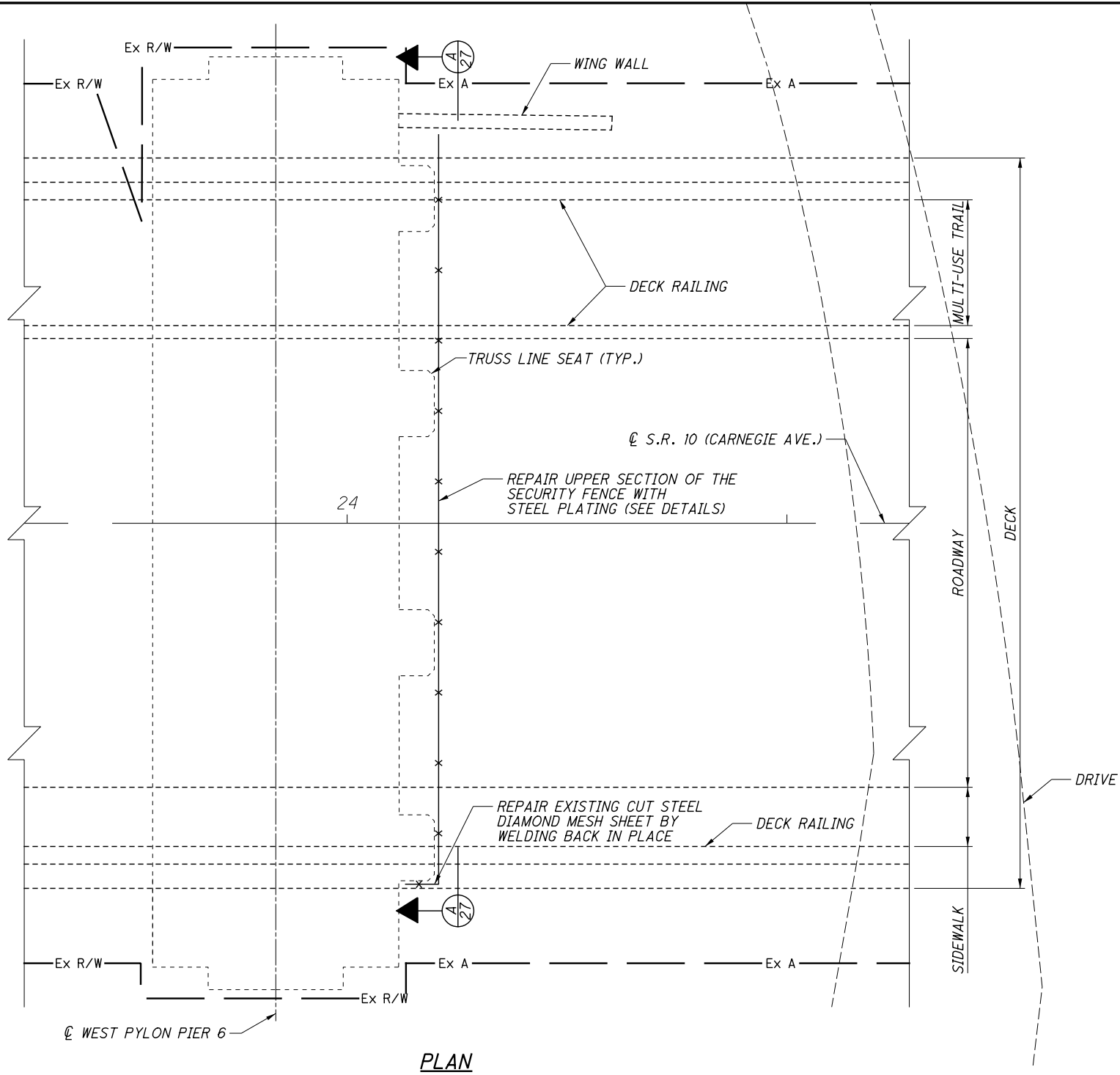


VIEW C-C

NOTES

ADDITIONAL NOTES: SEE SHEET 19/238.

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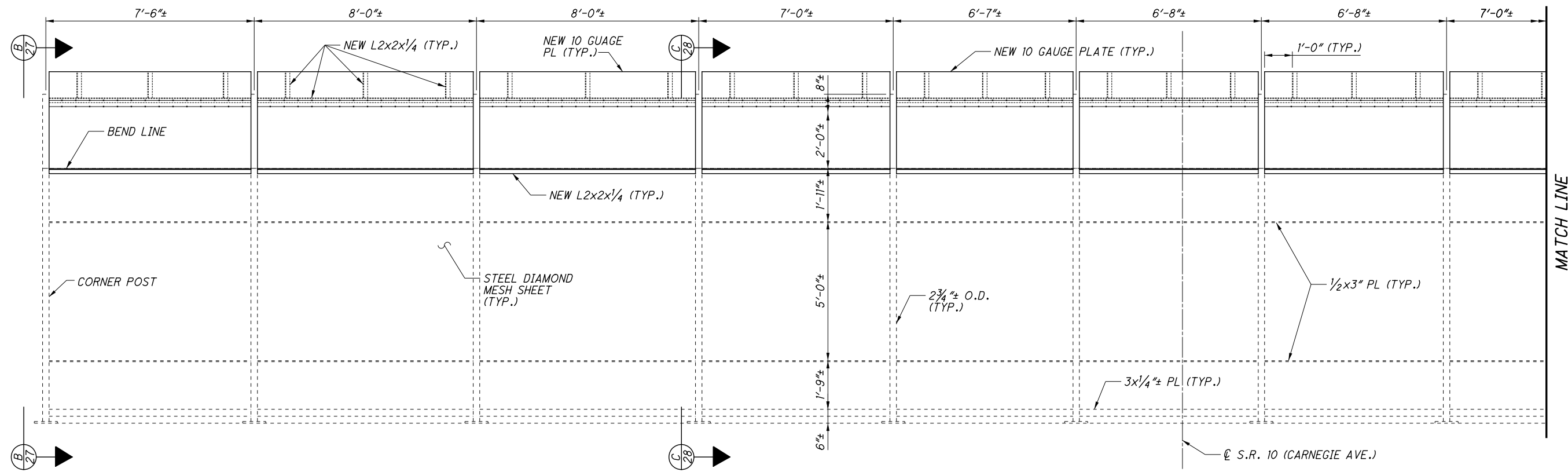


PLAN

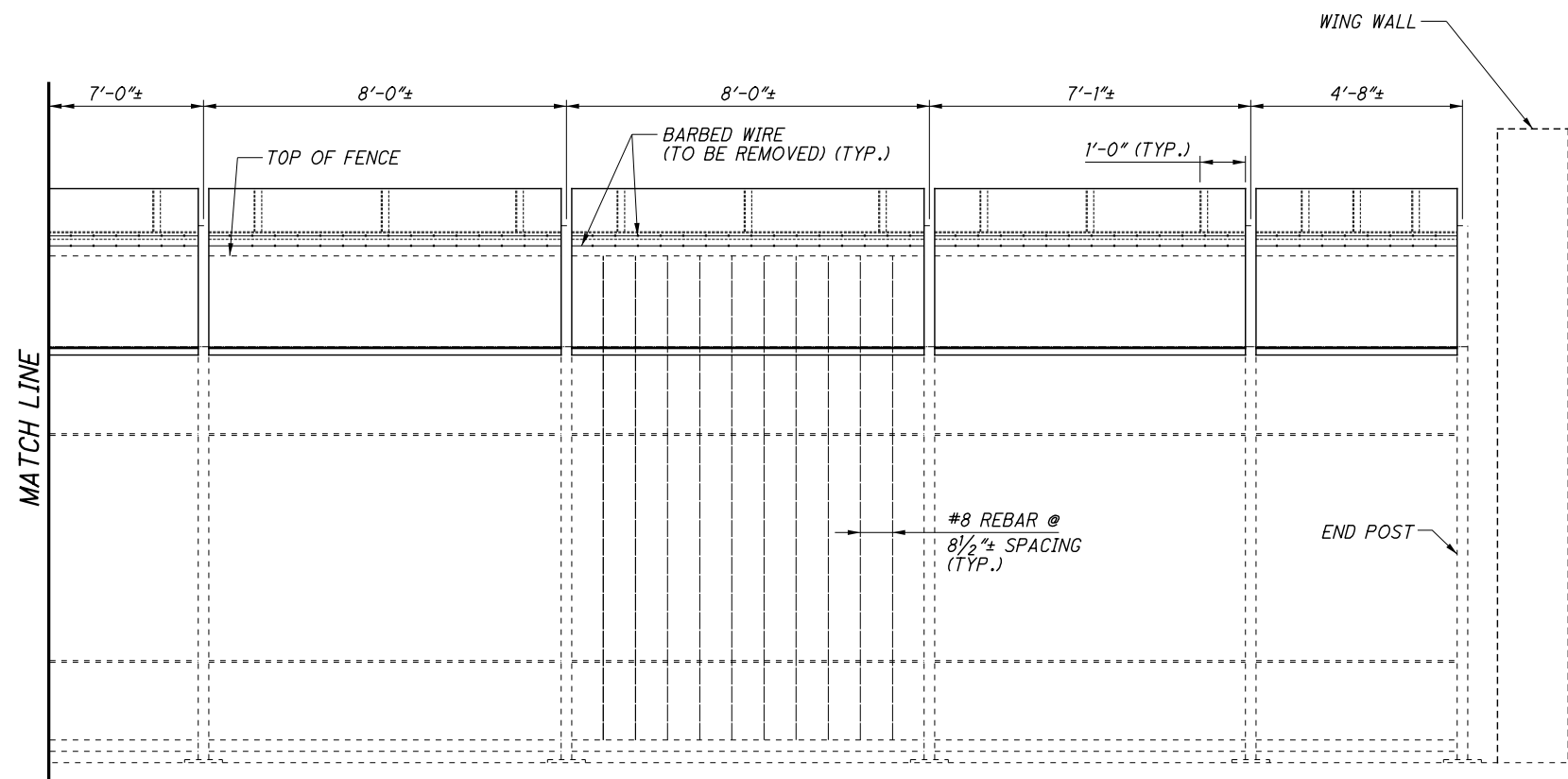
NOTES

SECURITY FENCE REPAIR DETAILS: SEE SHEETS 27/238 AND 28/238.

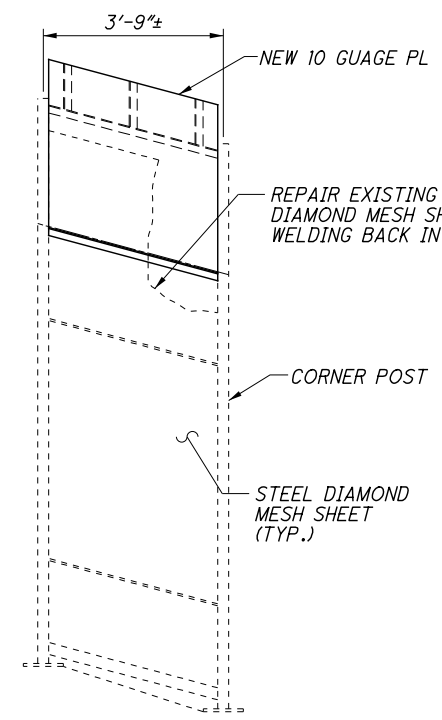
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VIEW A-A



VIEW A-A



VIEW B-B

**NOTES**

**MATERIALS:** PLATES SHALL BE 10 GAGE (0.135") MINIMUM, A569/ASTM A1011, FY 36 KSI MINIMUM. ANGLES SHALL BE ASTM A709, GRADE 36 MINIMUM.

**PAINTING NEW STEEL AND DAMAGED EXISTING FENCE MATERIAL:** AT MINIMUM USE A RUST INHIBITOR ALKYD PRIMER (2 MILS MINIMUM). TOP COAT SHALL CLOSELY MATCH EXISTING BRIDGE AND FENCE COLOR AND SHALL BE INDUSTRIAL ENAMEL, ACRYLIC OR URETHANE.

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**ITEM SPECIAL - STRUCTURES: REPAIR AND STEEL PLATING OF SECURITY FENCE:** WORK UNDER THIS ITEM INCLUDES REPAIRING TORN STEEL DIAMOND MESH SHEET BY WELDING. WELD NEW 10 GAGE STEEL PLATE TO THE EXISTING FENCE POSTS ALONG WITH NEW STEEL BRACING PER PLAN DETAILS. THE NEW MATERIAL AND DAMAGED PAINT AREA SHALL BE COATED WITH A TWO COAT PAINT SYSTEM APPROXIMATING THE EXISTING COLOR.

REMOVAL OF BARBED WIRE IS CONSIDERED INCIDENTAL TO THIS WORK ITEM. NO EXTRA PAYMENT WILL BE MADE.

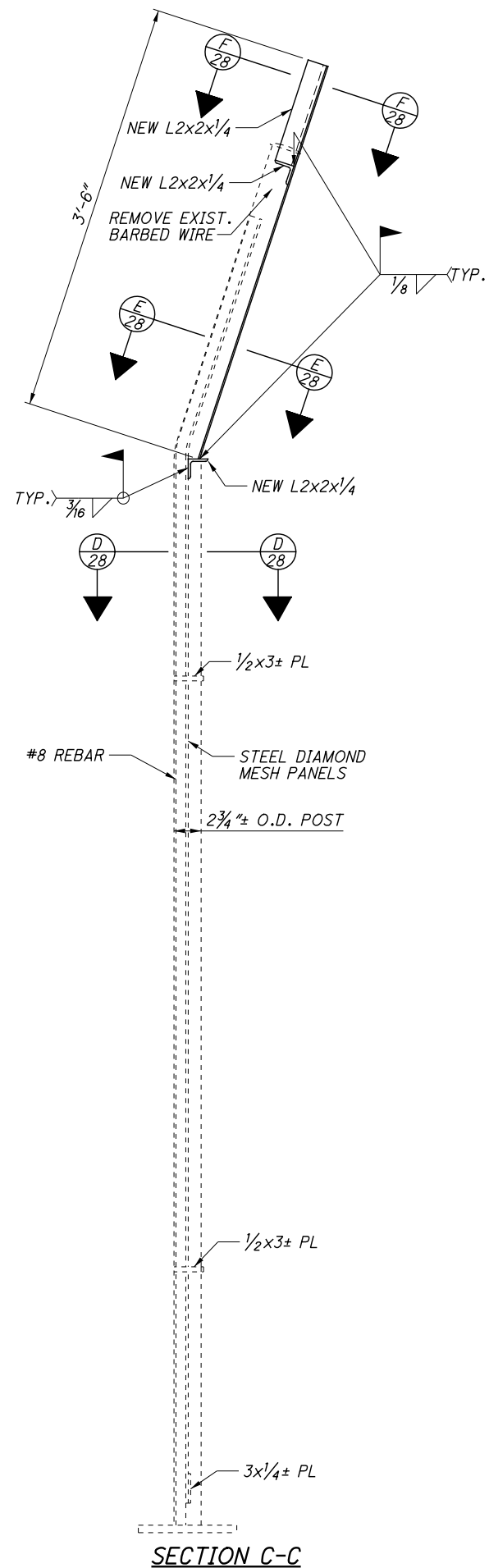
PAYMENT FOR THIS WORK SHALL BE INCLUDED AS A LUMP SUM FOR ITEM SPECIAL - STRUCTURES: REPAIR AND STEEL PLATING OF SECURITY FENCE.

**VIEW A-A:** FOR LOCATION SEE SHEET 26/238.

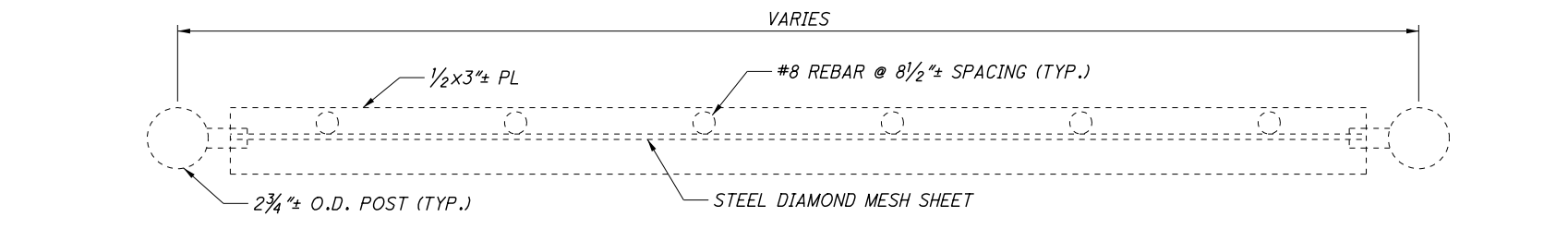
<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>REVIEWED DLR</p>	<p>DATE 1/30/18</p>
<p>DRAWN JSB</p>	<p>STRUCTURE FILE NUMBER 1801503</p>
<p>DESIGNED BLN</p>	<p>CHECKED KAK</p>
<p><b>SECURITY FENCE REPAIR - 2</b></p>	
<p>BRIDGE NO. CUY-10-1613</p>	
<p>S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p>CUY-10-16.13</p>	<p>PID No. 96986</p>
<p>27/238</p>	
<p>87</p>	
<p>308</p>	



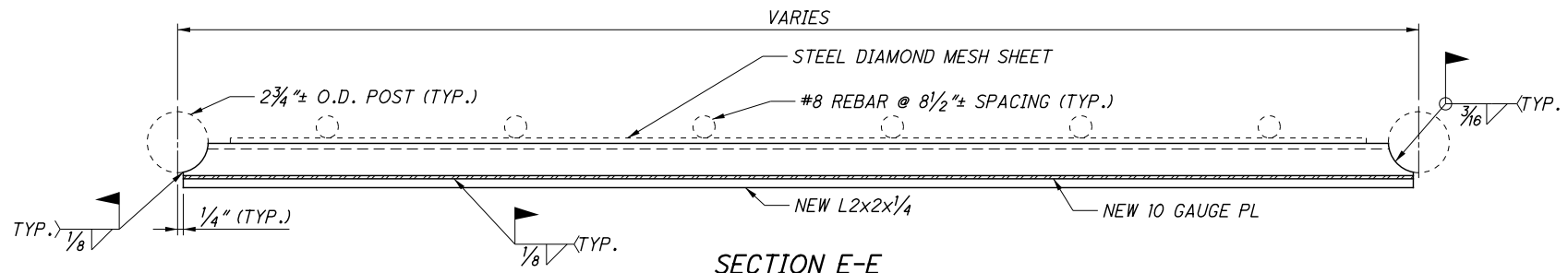
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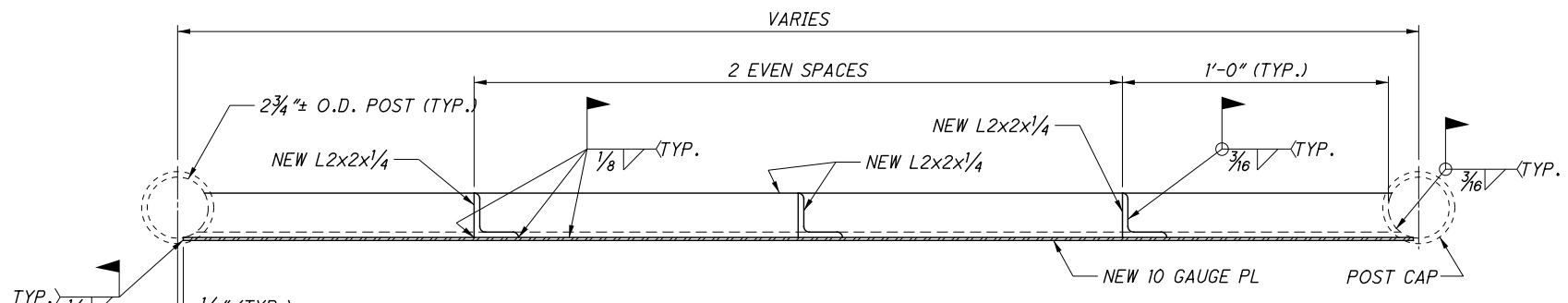
**SECTION C-C**



**SECTION D-D**



**SECTION E-E**



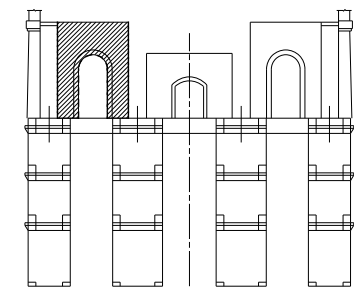
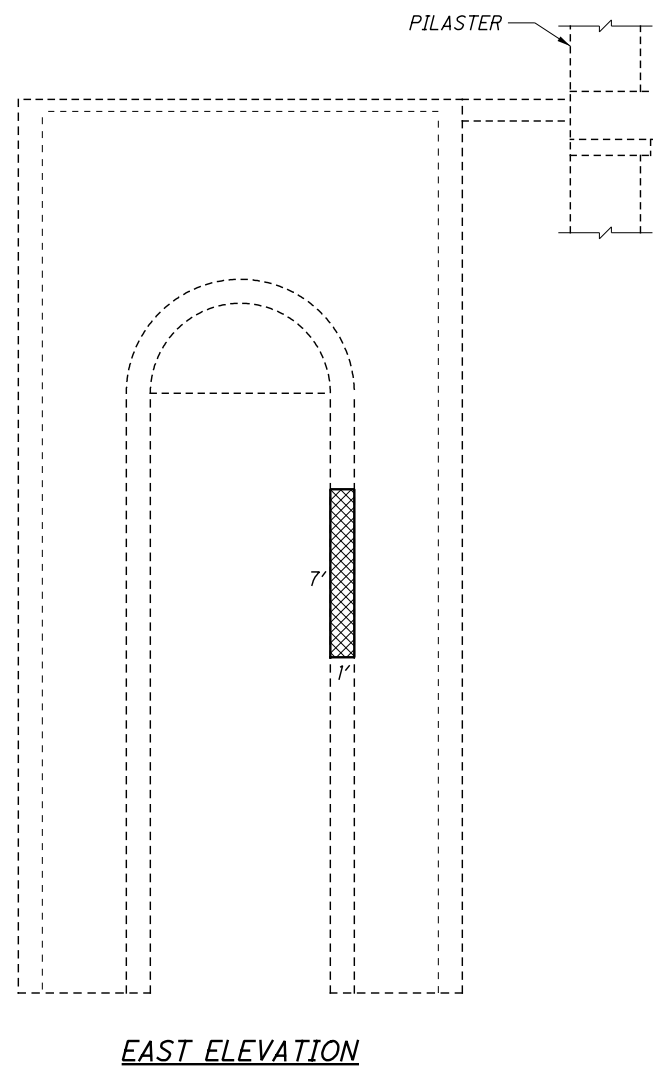
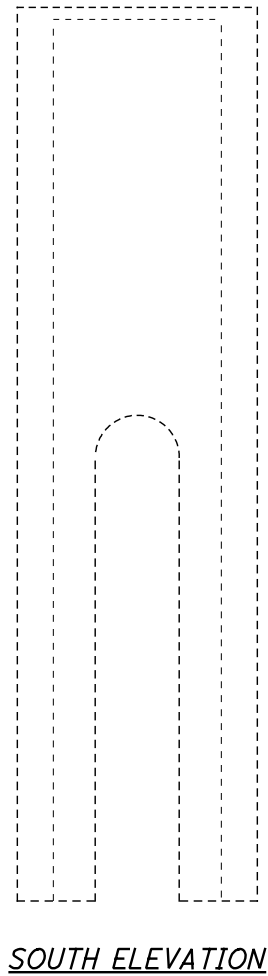
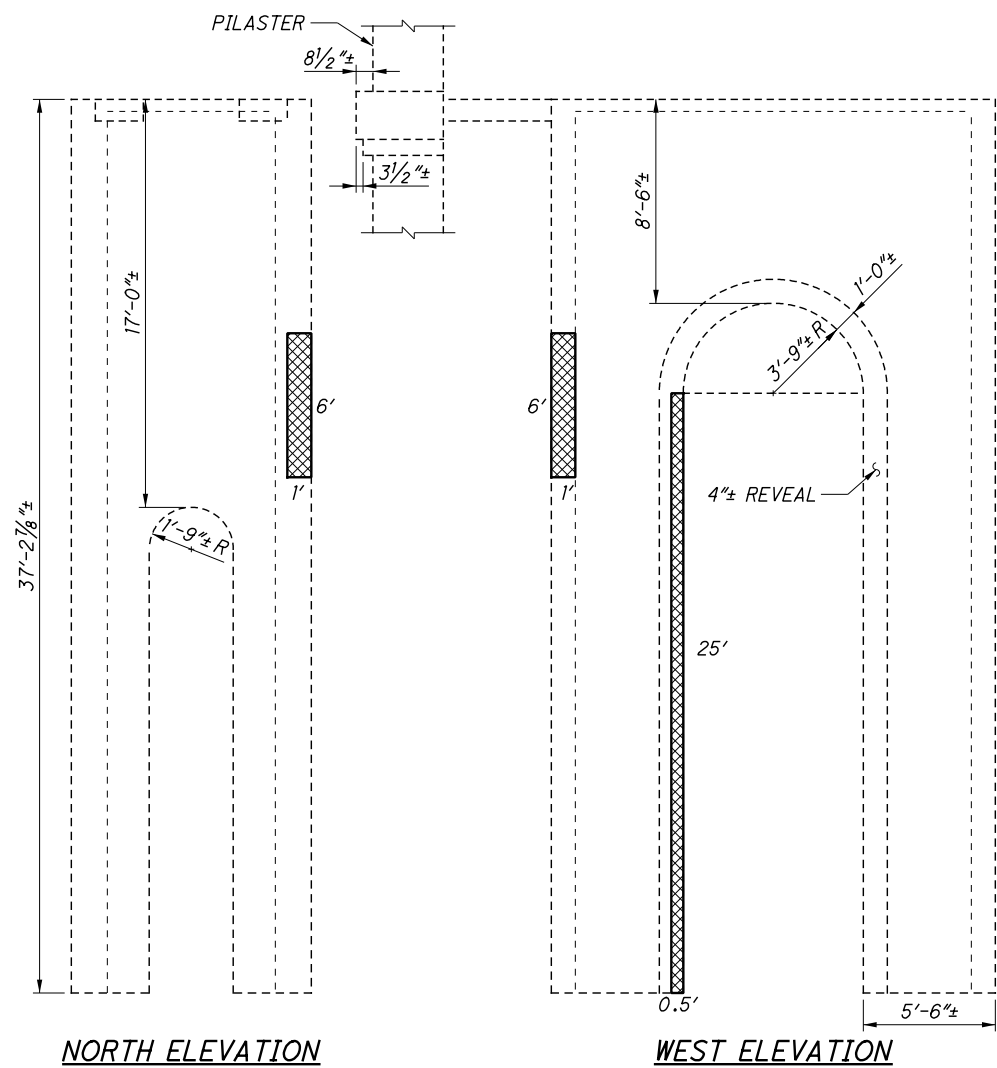
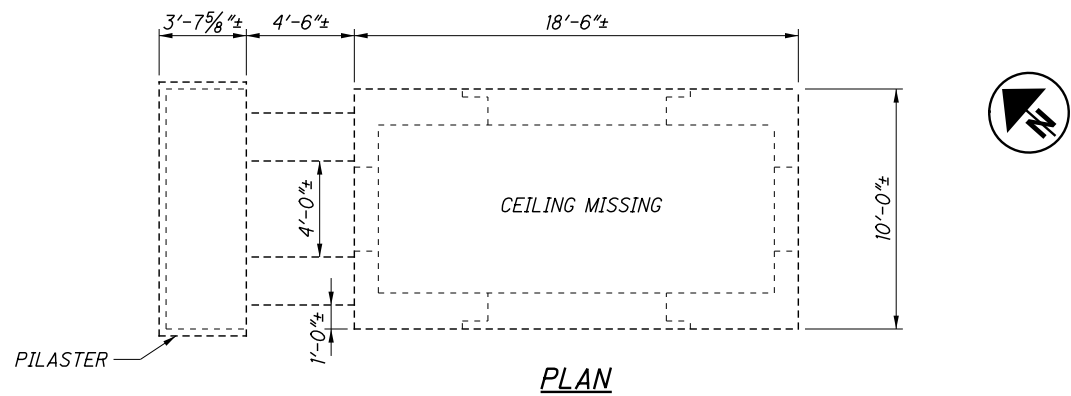
**SECTION F-F**

**NOTES**

**SECTION C-C:** FOR LOCATION SEE SHEET 27/238 .  
**ADDITIONAL NOTES:** SEE SHEET 27/238 .

<p><b>RICHLAND ENGINEERING LIMITED</b>                  29 NORTH PARK STREET                  MANSFIELD, OHIO 44902</p>	
<p>REVIEWED                  DLR</p>	<p>DATE                  1/30/18</p>
<p>DRAWN                  USB</p>	<p>STRUCTURE FILE NUMBER                  1801503</p>
<p>DESIGNED                  BLN</p>	<p>CHECKED                  KAK</p>
<p><b>SECURITY FENCE REPAIR - 3</b>                  BRIDGE NO. CUY-10-1613                  S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p><b>CUY-10-16.13</b></p>	<p>PID No. 96986</p>
<p>28/238</p>	<p>88                  308</p>

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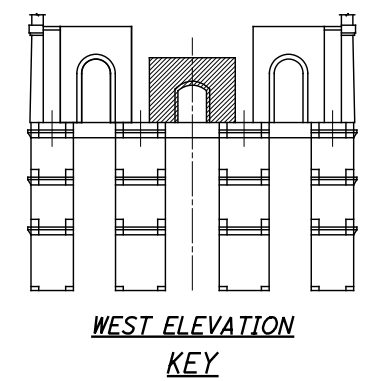
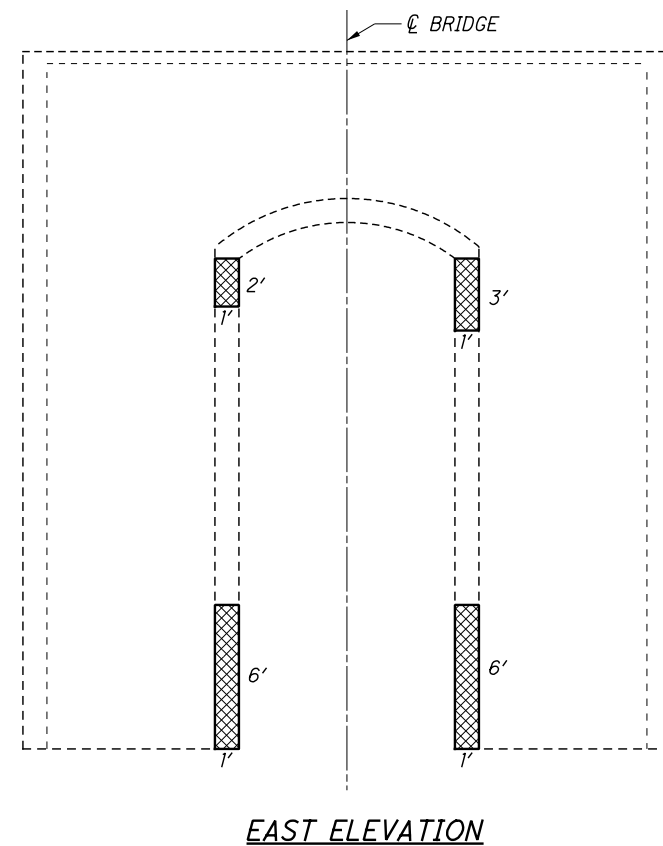
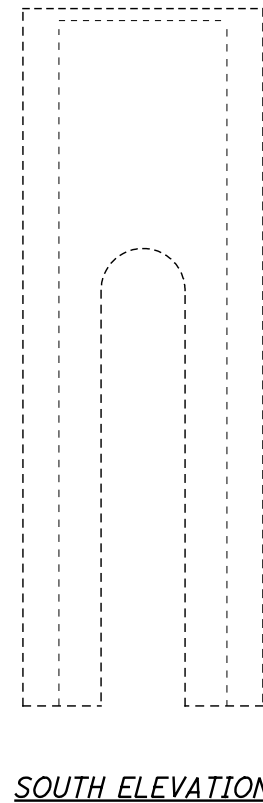
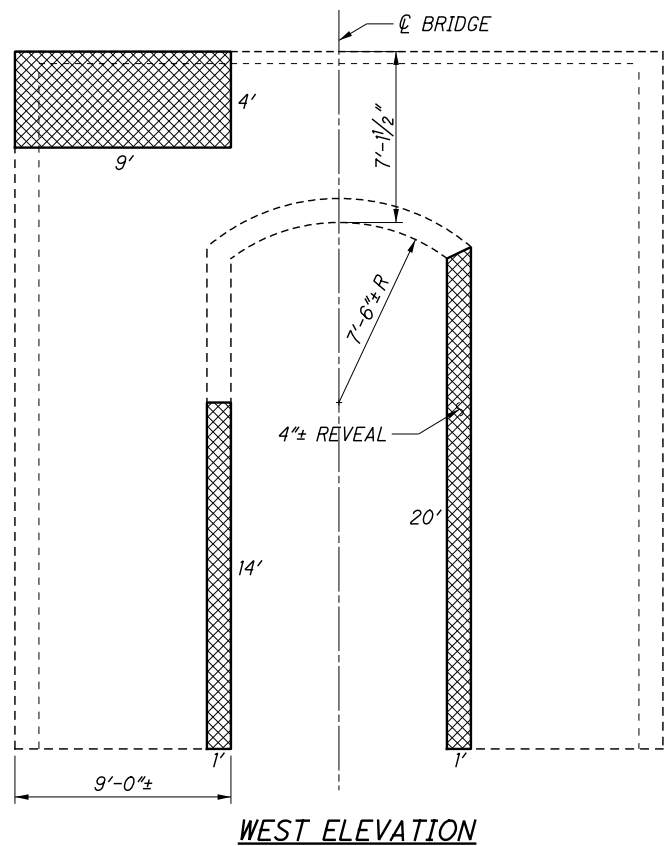
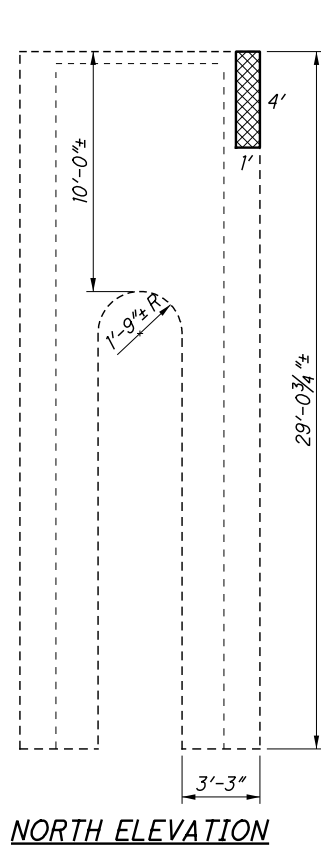
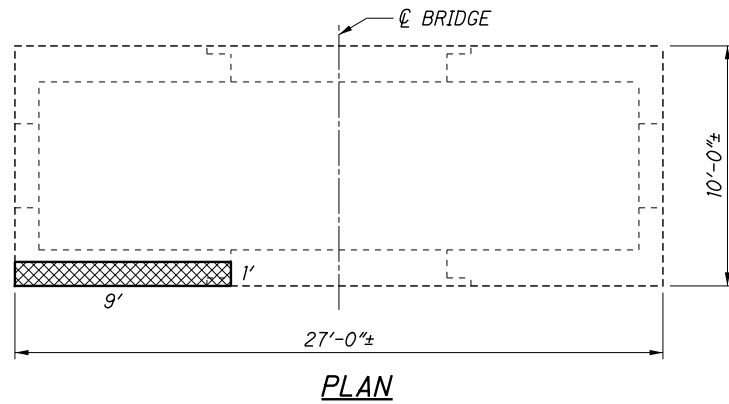
**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET [7/238].  
**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.  
**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**  
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.  
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.  
**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 7 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 7 TOWER - 1	SQ YD	7.1	8	
PIER 7 TOWER - 2	SQ YD	16.8	20	
PIER 7 TOWER - 3	SQ YD	14.9	18	
PIER 7 TOWER - 4	SQ YD	3.6	4.3	
PIER 7 TOWER - 5	SQ YD	6.9	8.3	
PIER 7 TOWER - 6	SQ YD	6.8	8.1	
<b>PIER 7 TOTALS</b>	<b>SQ YD</b>	<b>56.1</b>	<b>66.7</b>	

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**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

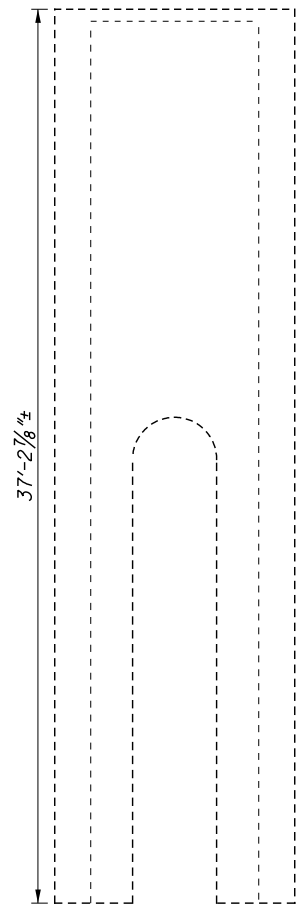
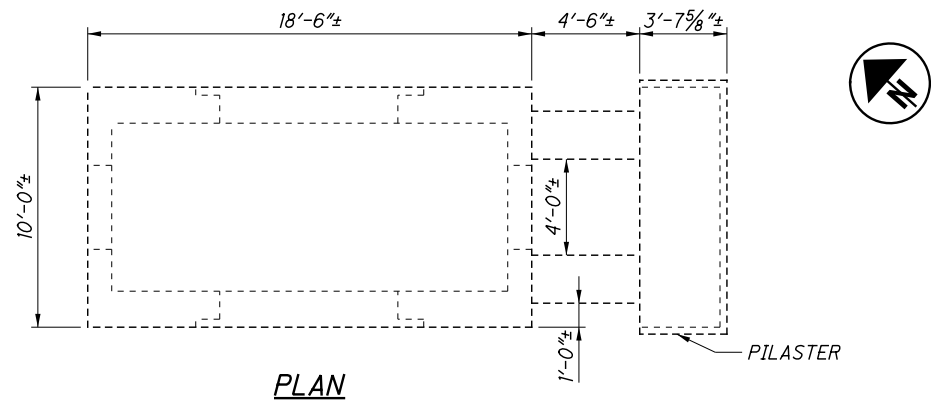
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

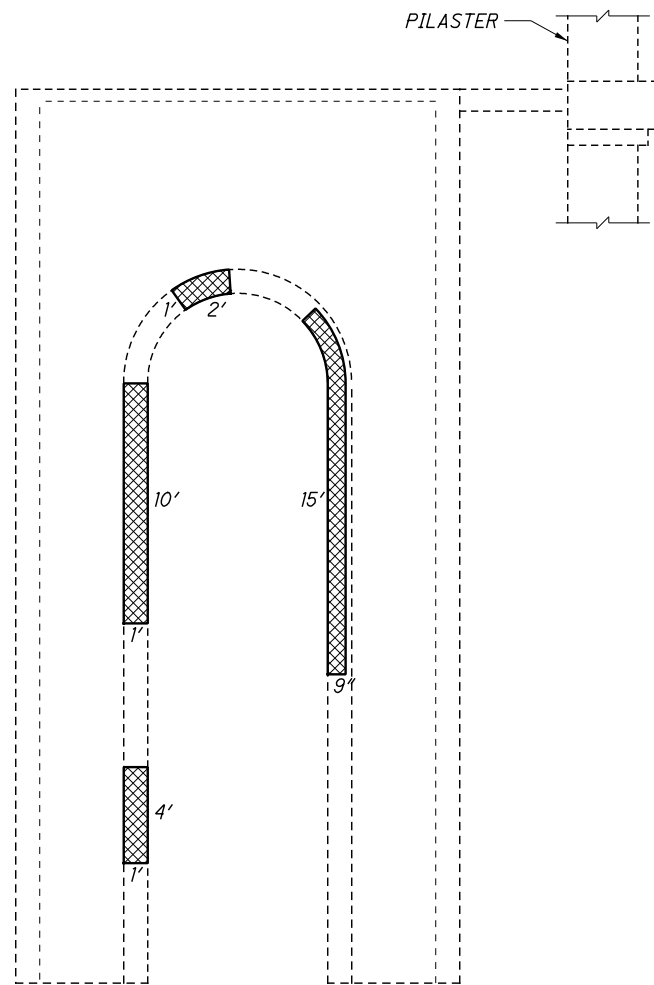
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 29/238.

**ADDITIONAL NOTES:** SEE SHEET 29/238.

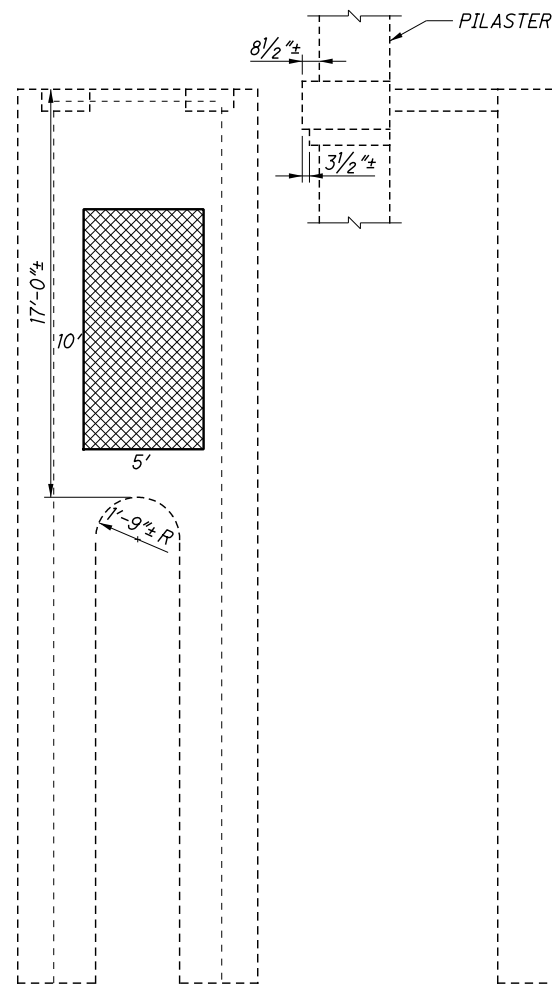
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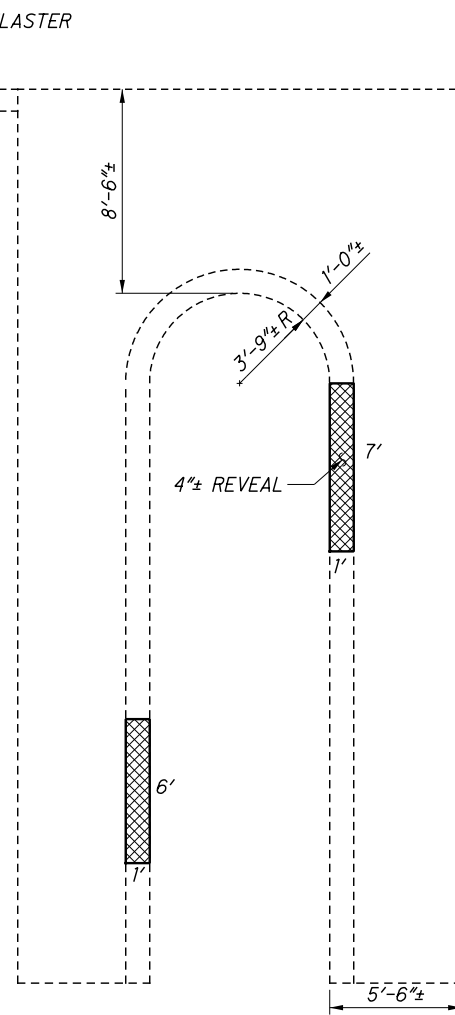
NORTH ELEVATION



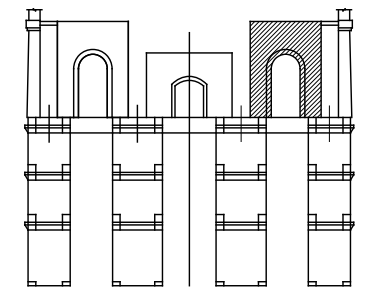
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



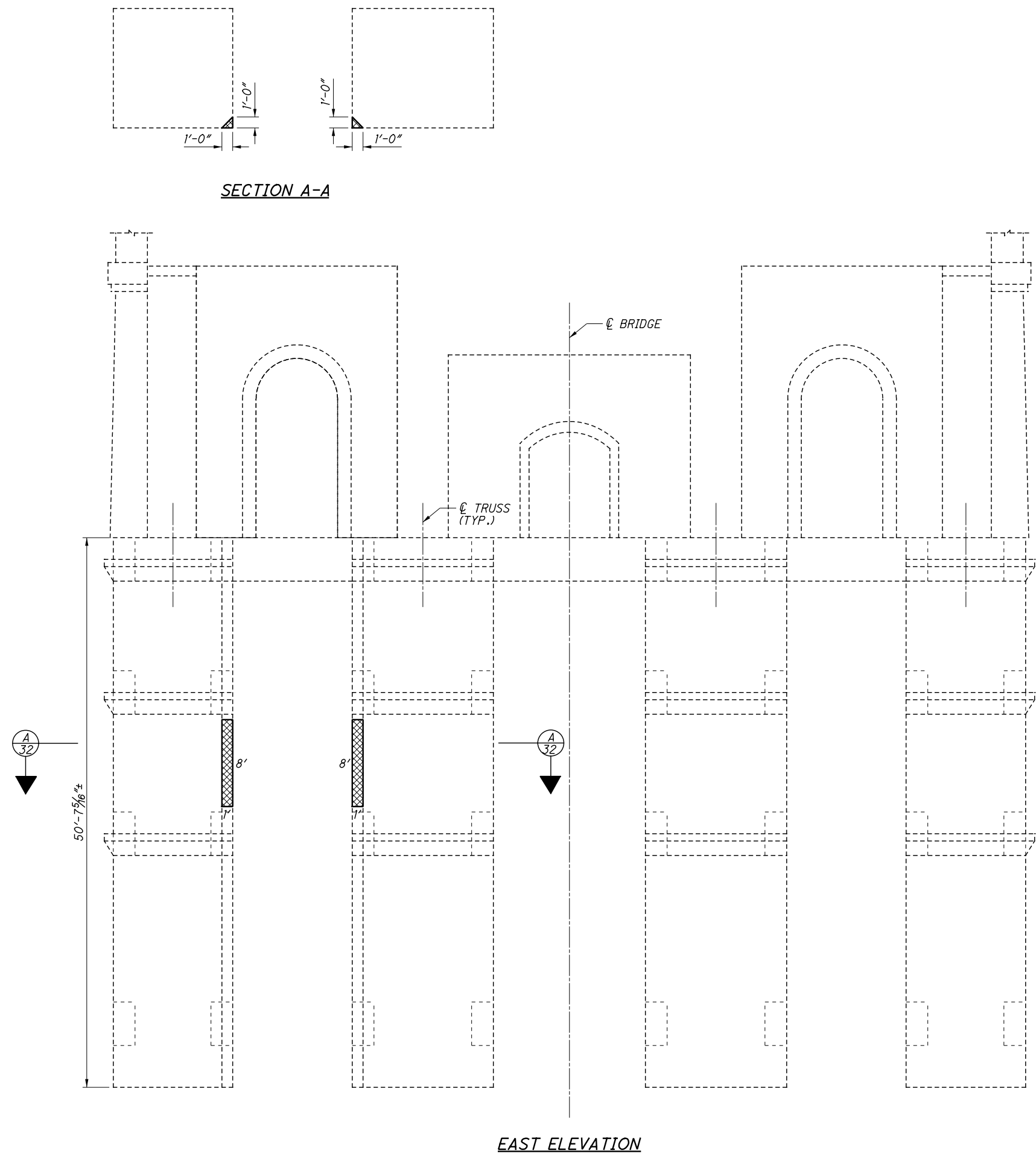
WEST ELEVATION KEY

LEGEND

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 29/238.
- ADDITIONAL NOTES:** SEE SHEET 29/238.



**EAST ELEVATION**

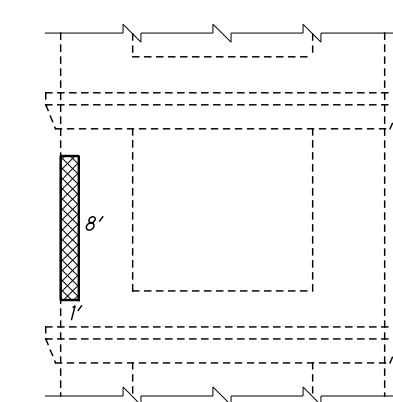
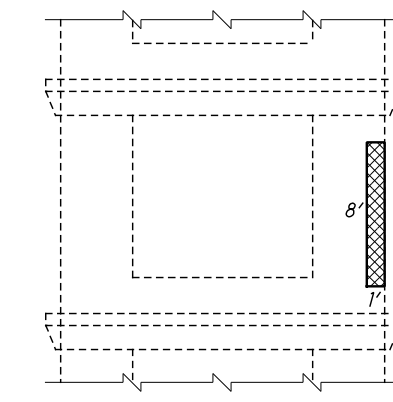
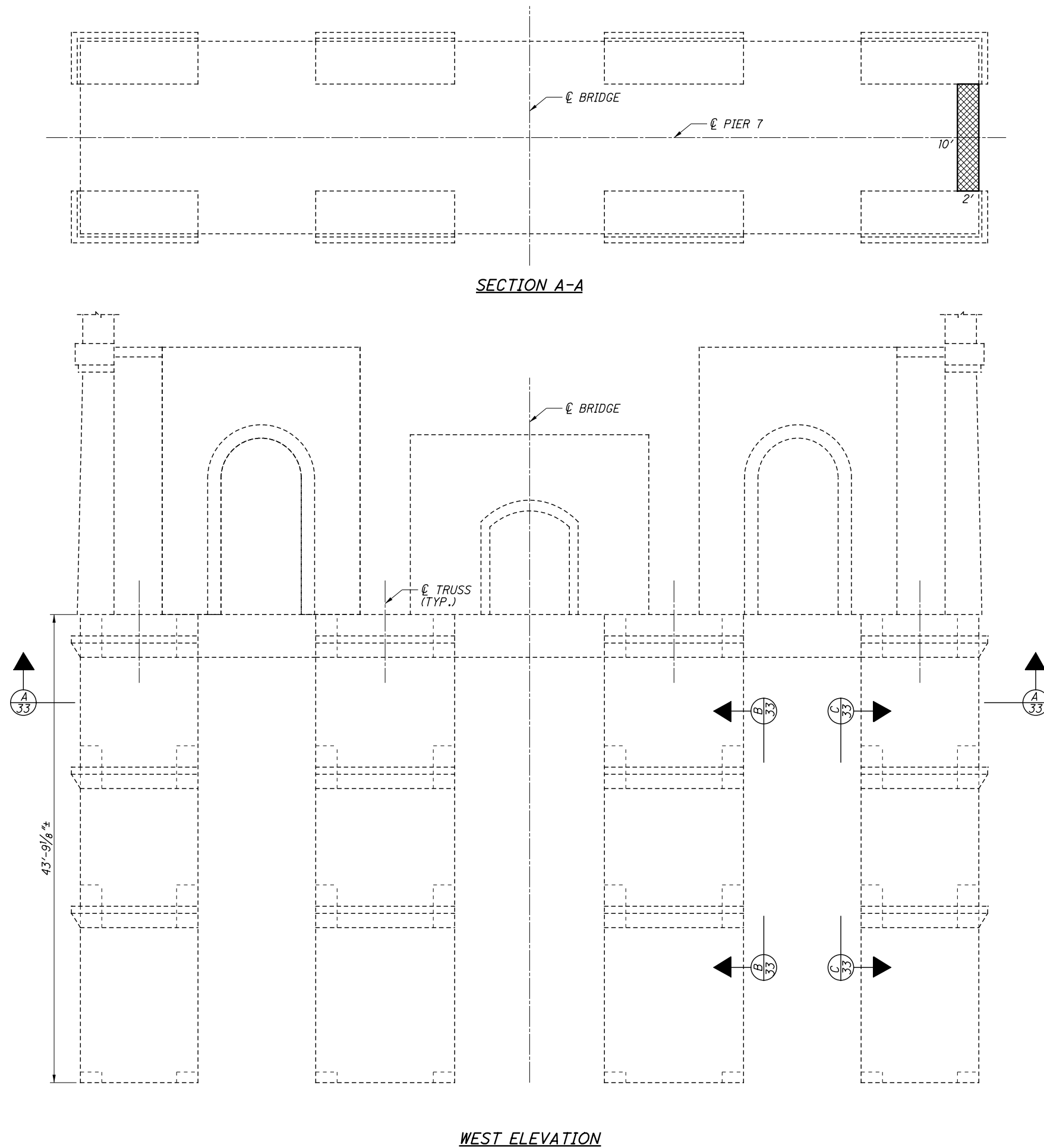
**SECTION A-A**


**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

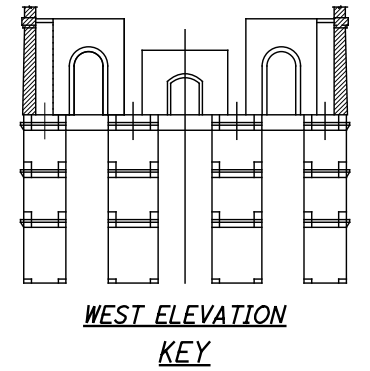
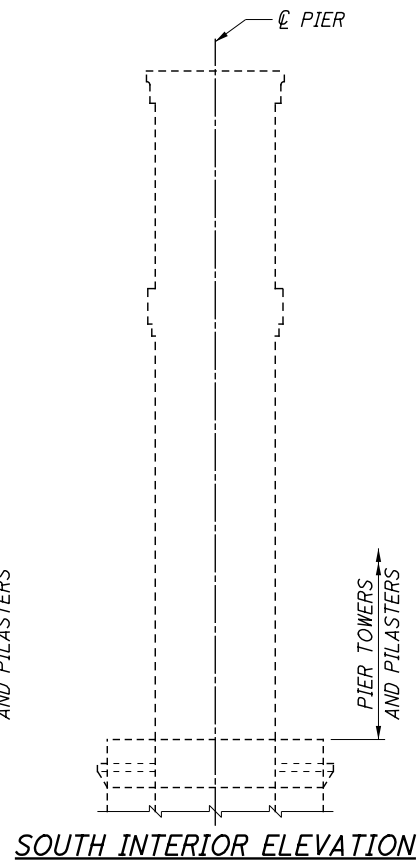
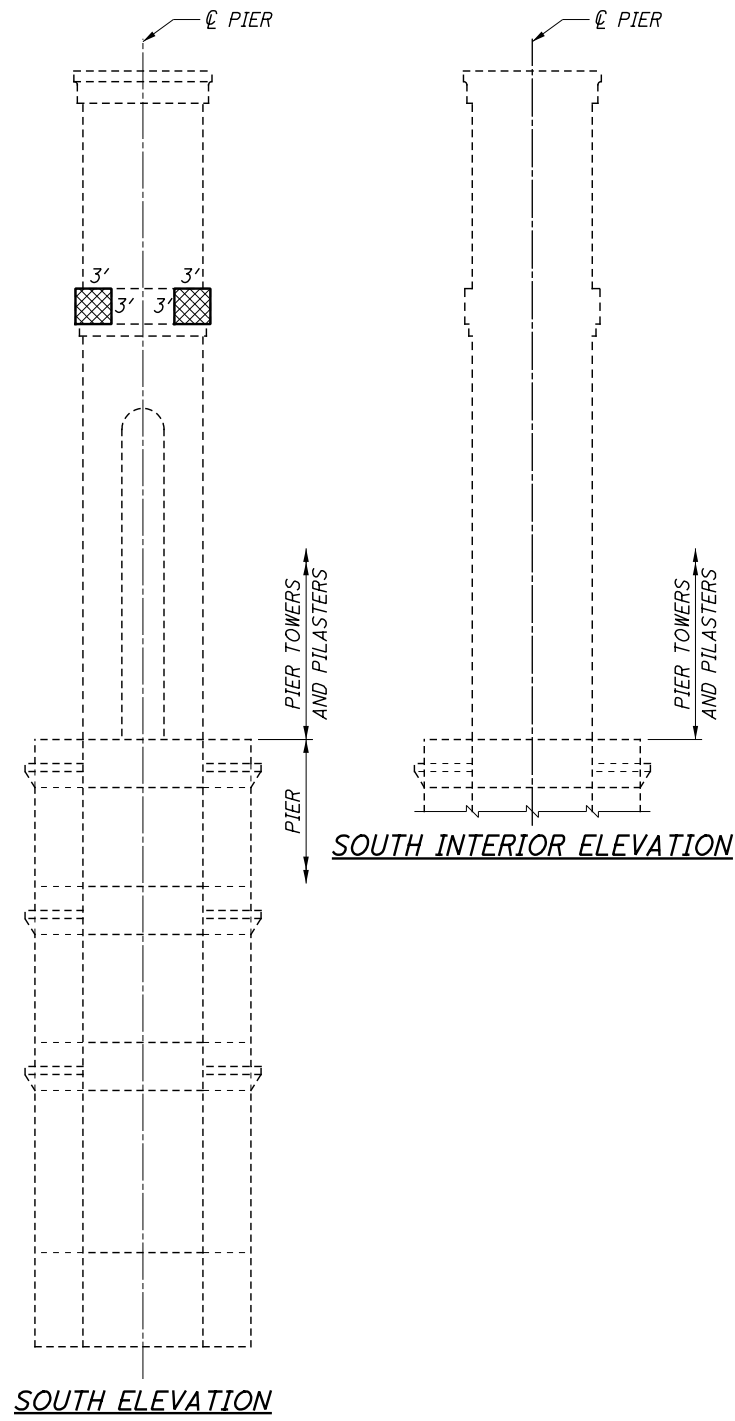
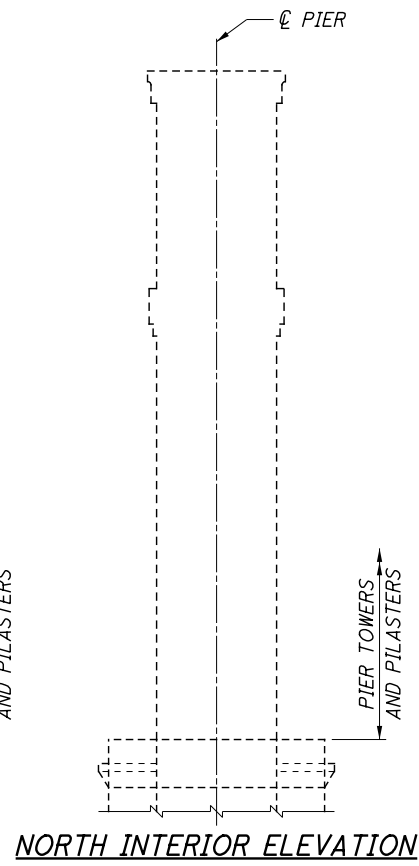
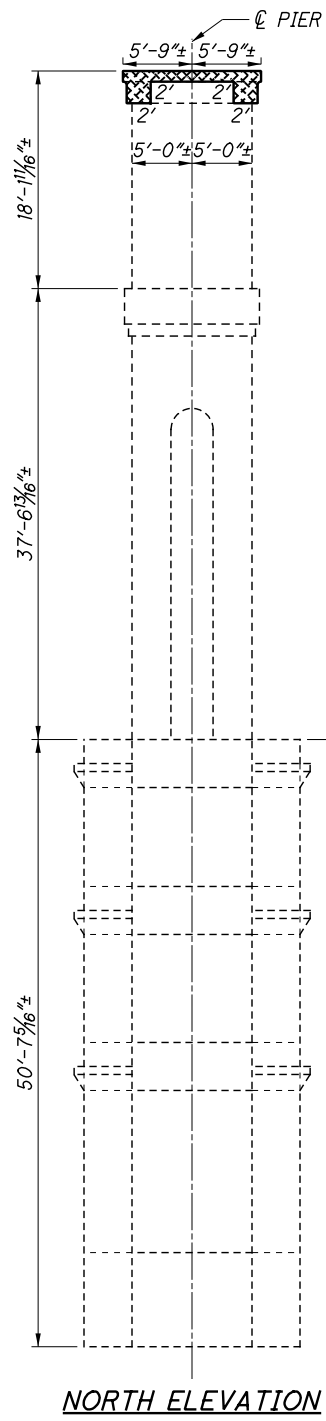
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET [29/238].  
**ADDITIONAL NOTES:** SEE SHEET [29/238].



**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 29/238.  
**ADDITIONAL NOTES:** SEE SHEET 29/238.

<b>CUY-10-16.13</b> PID No. 96986	<b>PIER 7 TOWER - 5</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	DESIGNED TGW	CHECKED KAK	DRAWN USB	REVISED	REVIEWED DLR	DATE 1/30/18	STRUCTURE FILE NUMBER 1801503	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
		33 / 238	93 / 308						

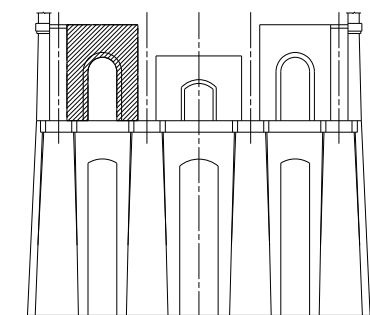
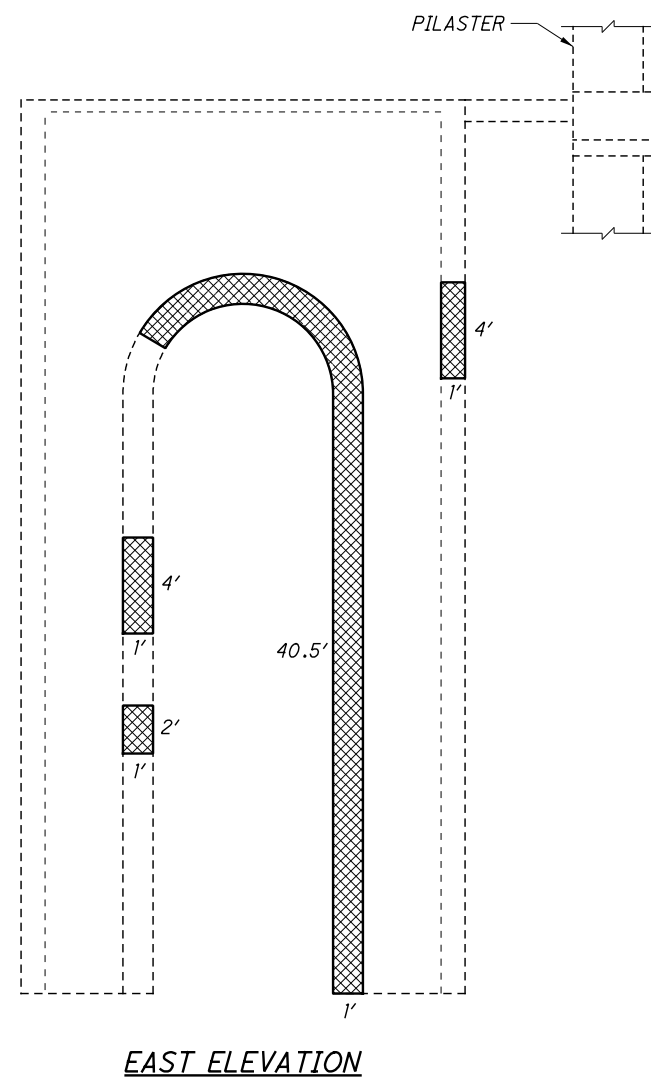
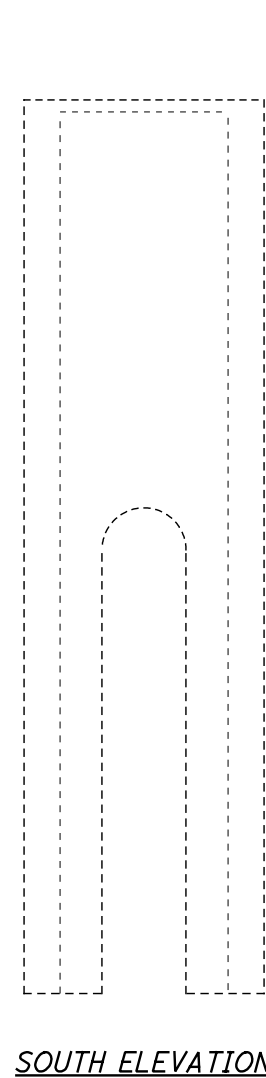
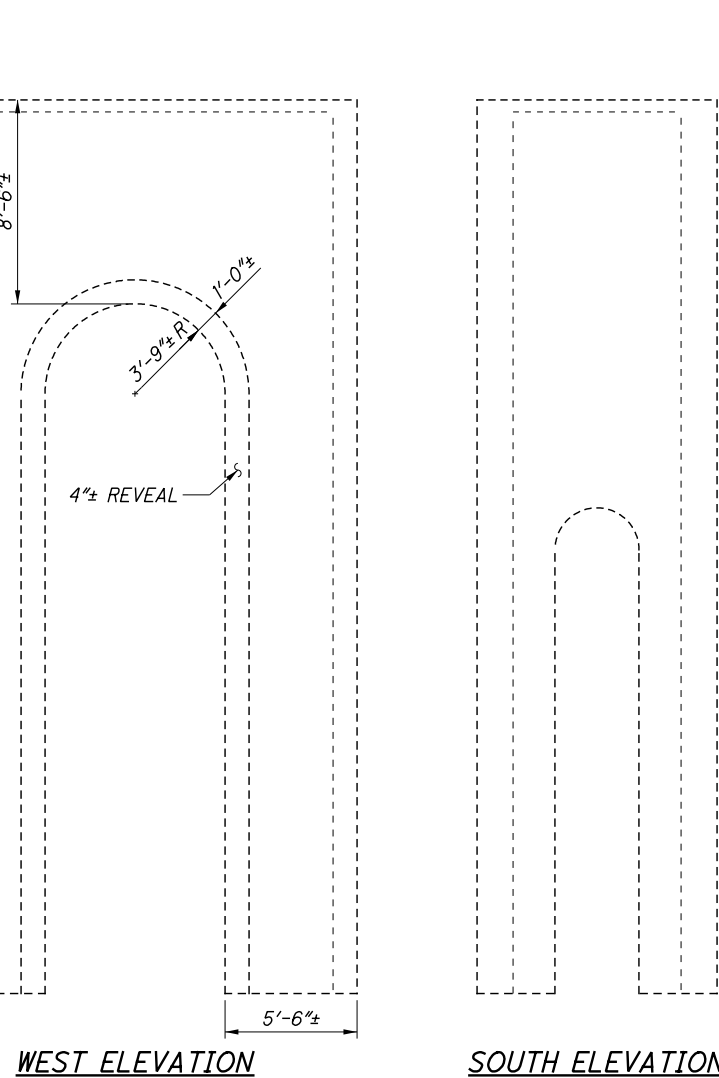
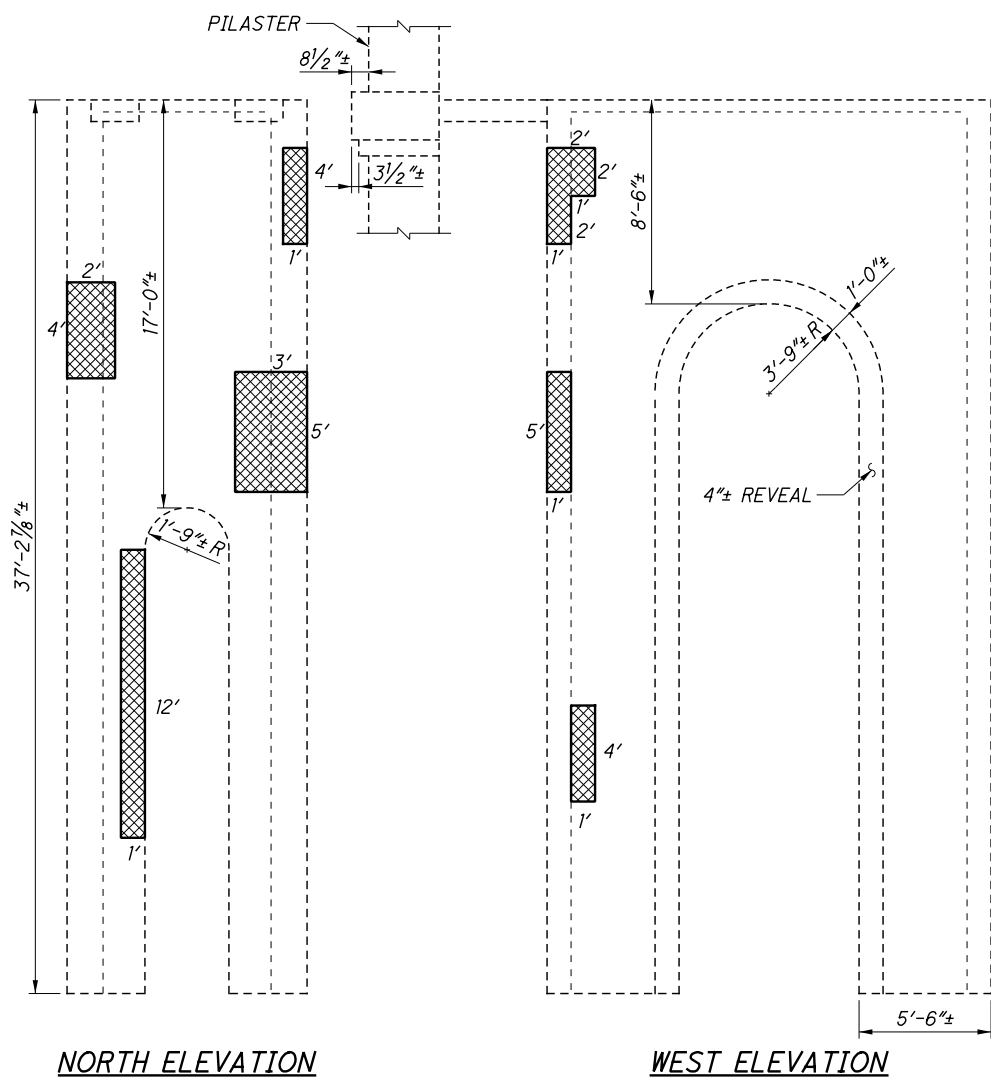
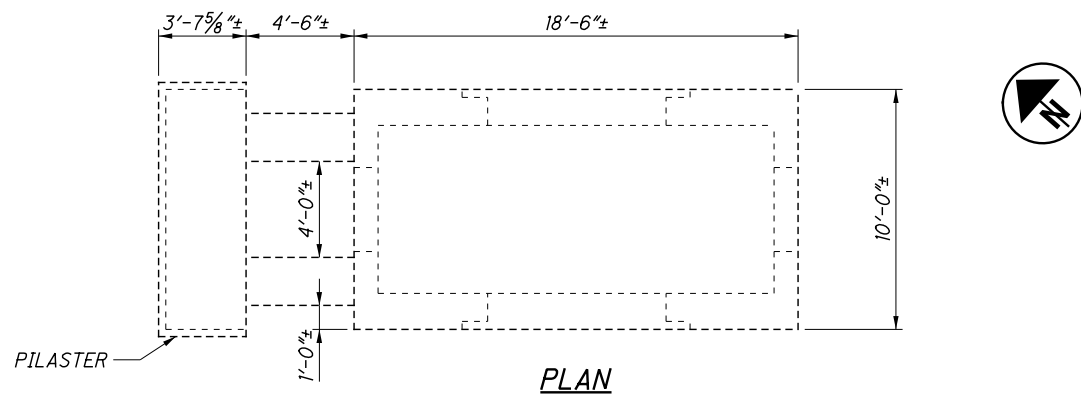


**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 29/238.  
**ADDITIONAL NOTES:** SEE SHEET 29/238.



**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET 7/238.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

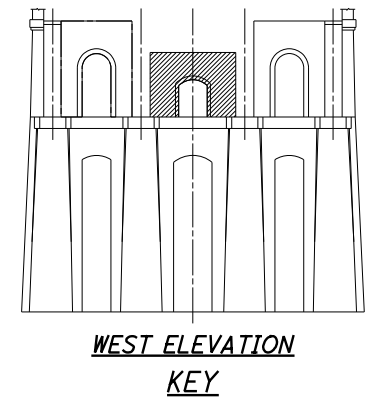
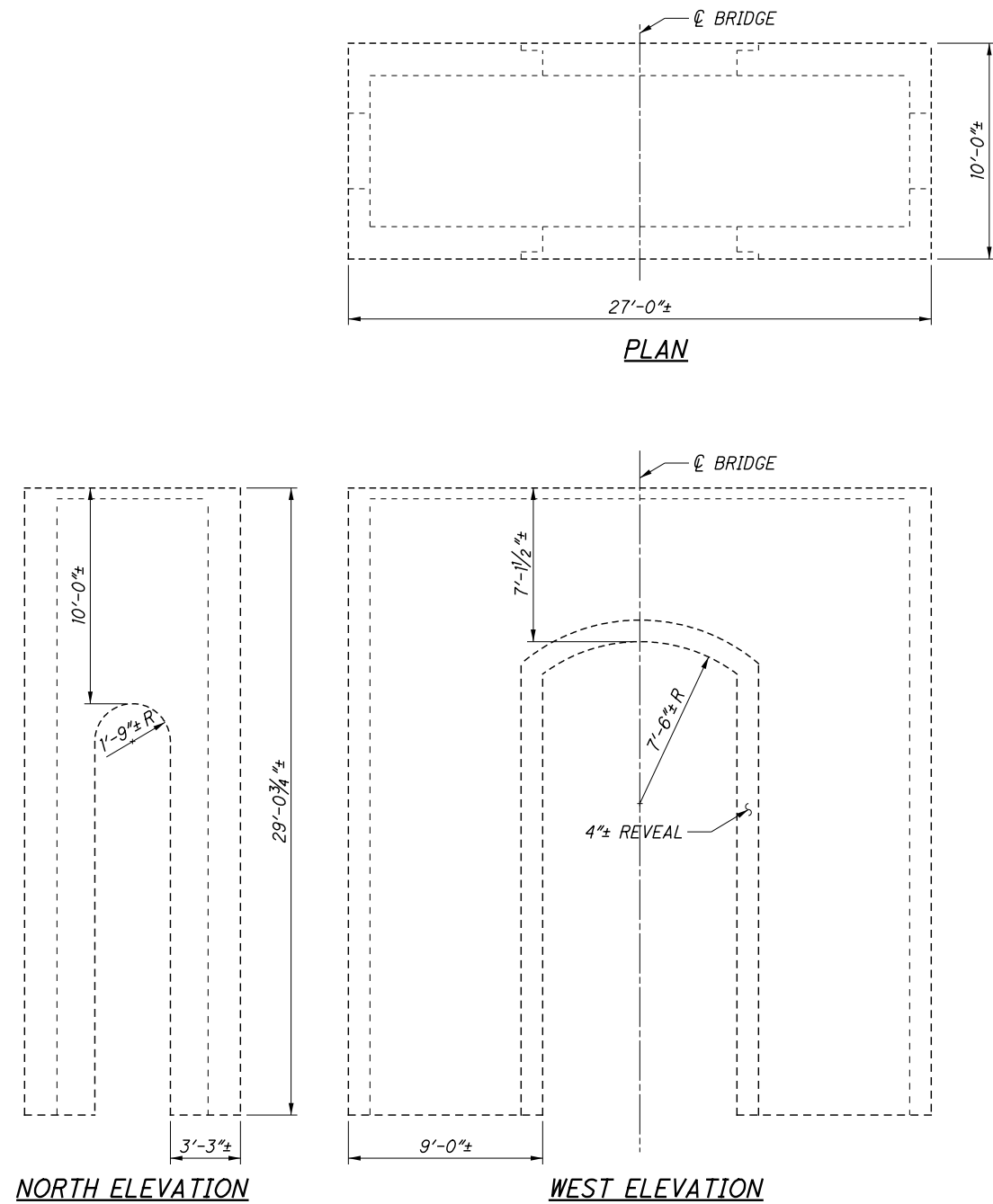
**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**  
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.  
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.  
**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 8 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 8 TOWER - 1	SQ YD	14.1	16.9	
PIER 8 TOWER - 2	SQ YD	0.0	0	
PIER 8 TOWER - 3	SQ YD	8.3	10	
PIER 8 TOTALS	SQ YD	22.4	26.9	



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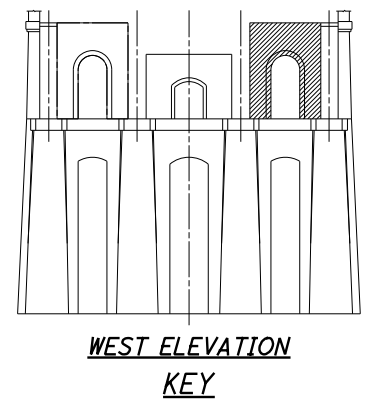
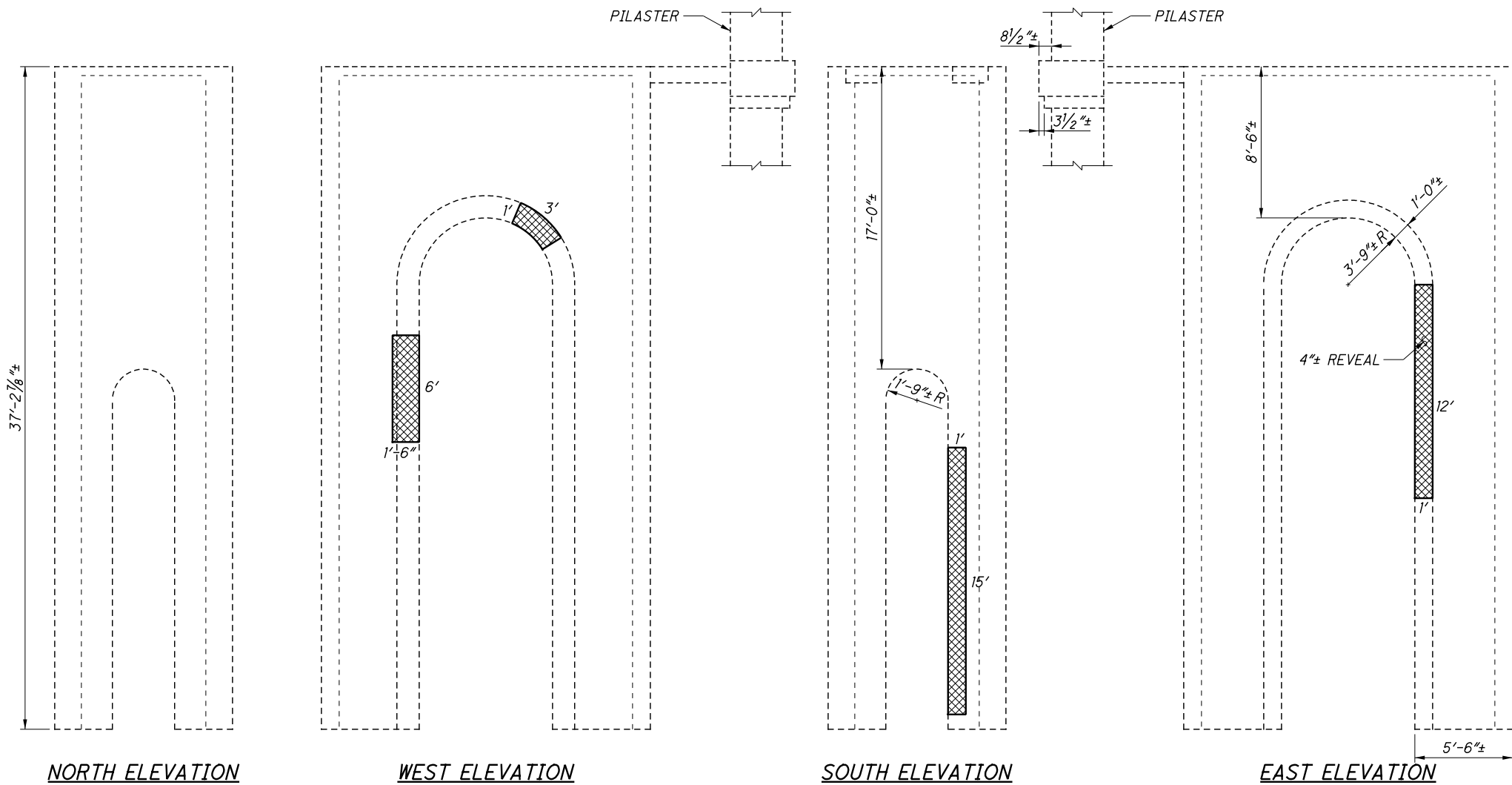
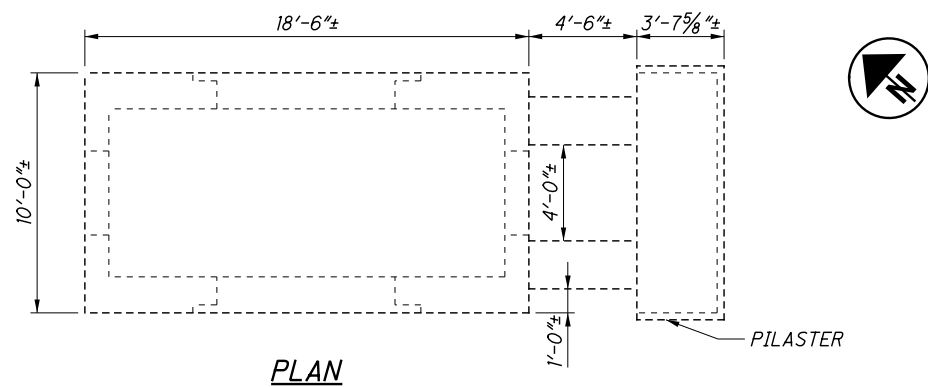


**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 35/238.  
**ADDITIONAL NOTES:** SEE SHEET 35/238.

<b>CUY-10-16-13</b> PID No. 96986	<b>PIER 8 TOWER - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	RICHLAND ENGINEERING LIMITED  29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE: 1/30/18 REVIEWED: DLR DRAWN: USB DESIGNED: TGW CHECKED: KAK
36	238	96	308

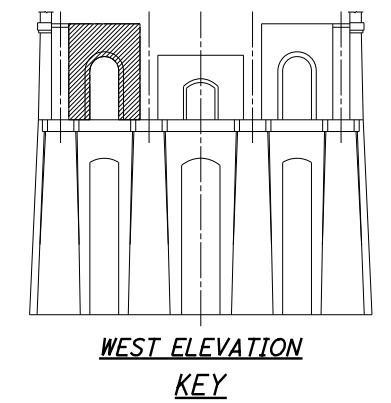
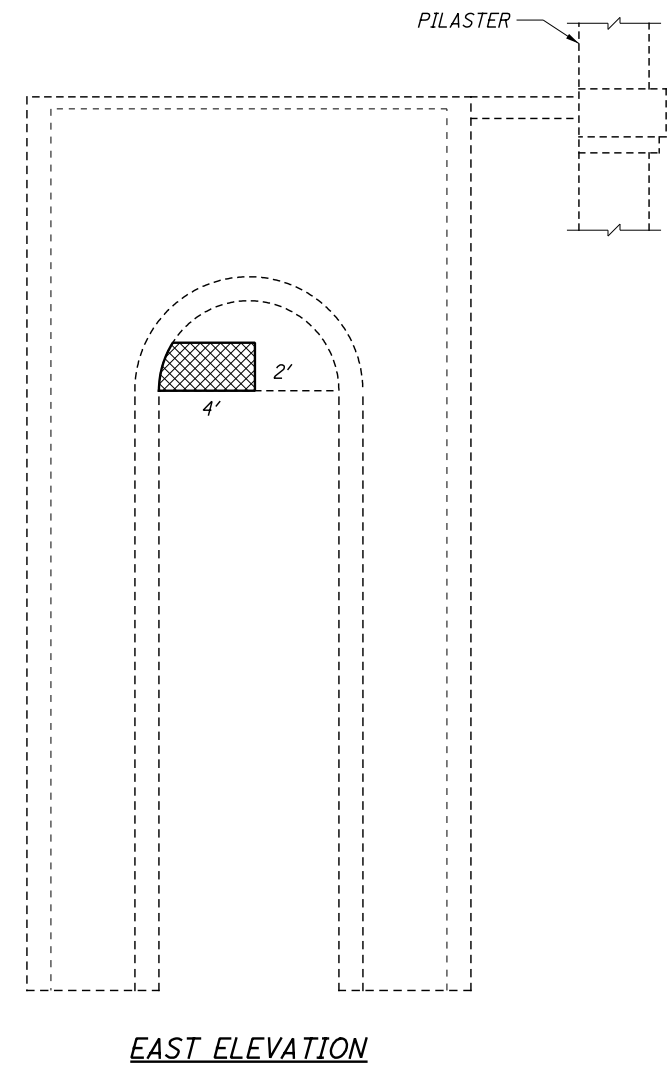
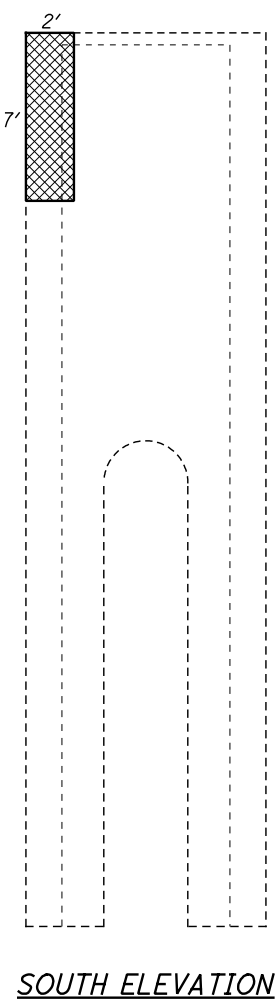
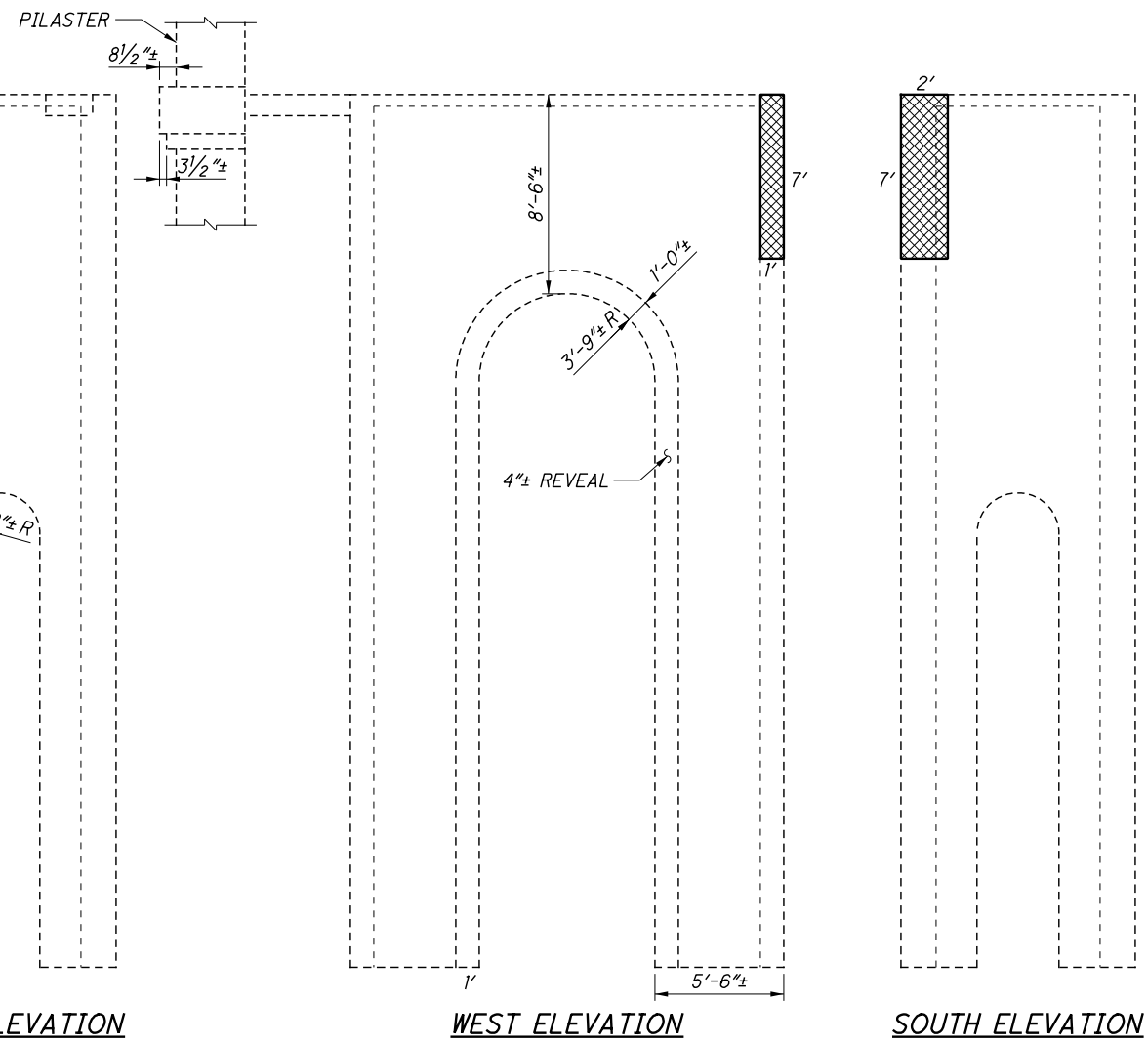
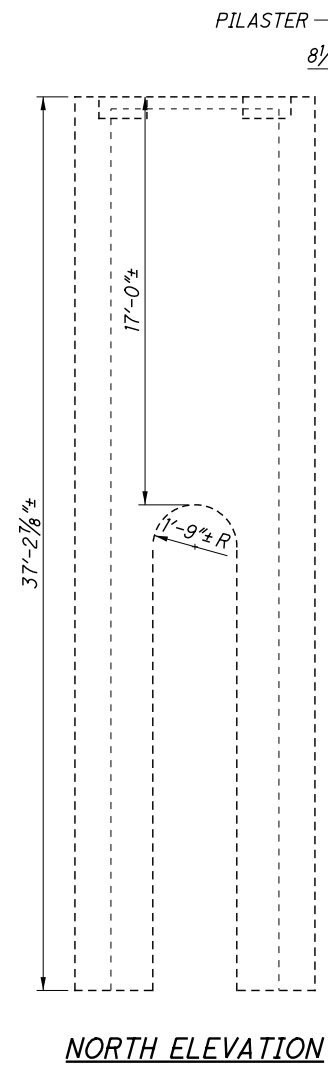
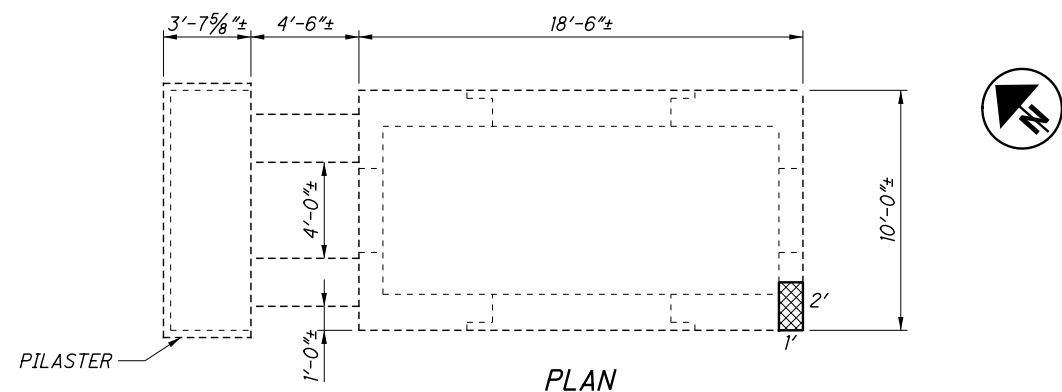
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**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 35/238.  
**ADDITIONAL NOTES:** SEE SHEET 35/238.

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**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET 7/238.  
**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.  
**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**  
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.  
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.  
**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 9 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 9 TOWER - 1	SQ YD	3.7	4.4	
PIER 9 TOWER - 2	SQ YD	1.8	2	
PIER 9 TOWER - 3	SQ YD	3.3	4	
PIER 9 TOTALS	SQ YD	8.8	10.4	

**PIER 9 TOWER - 1**  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

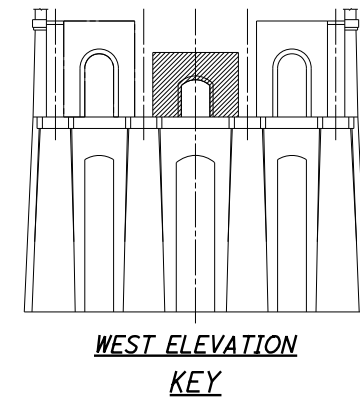
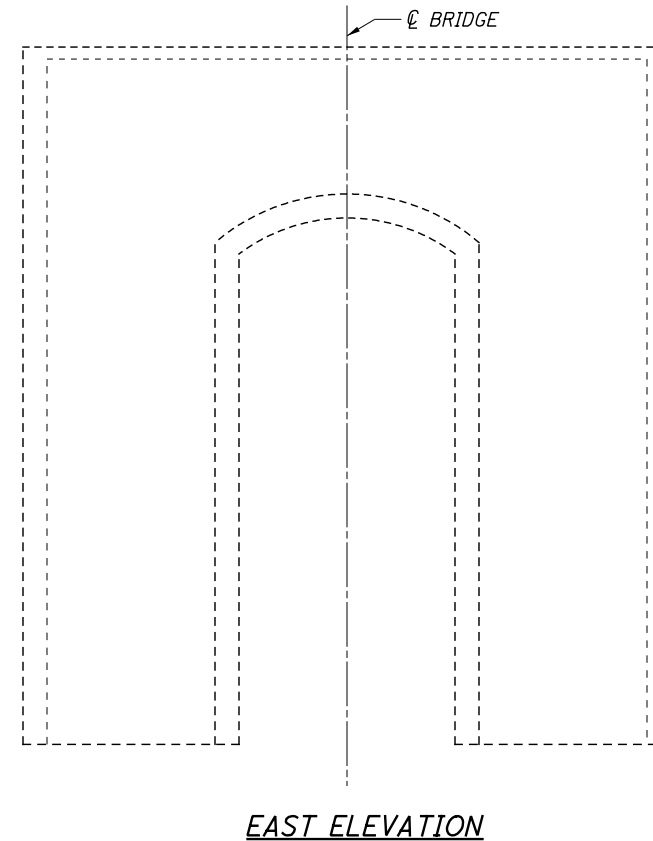
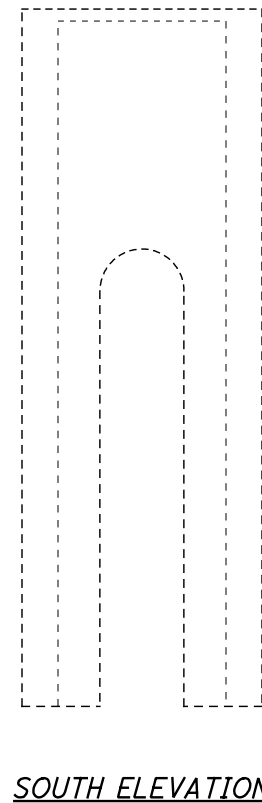
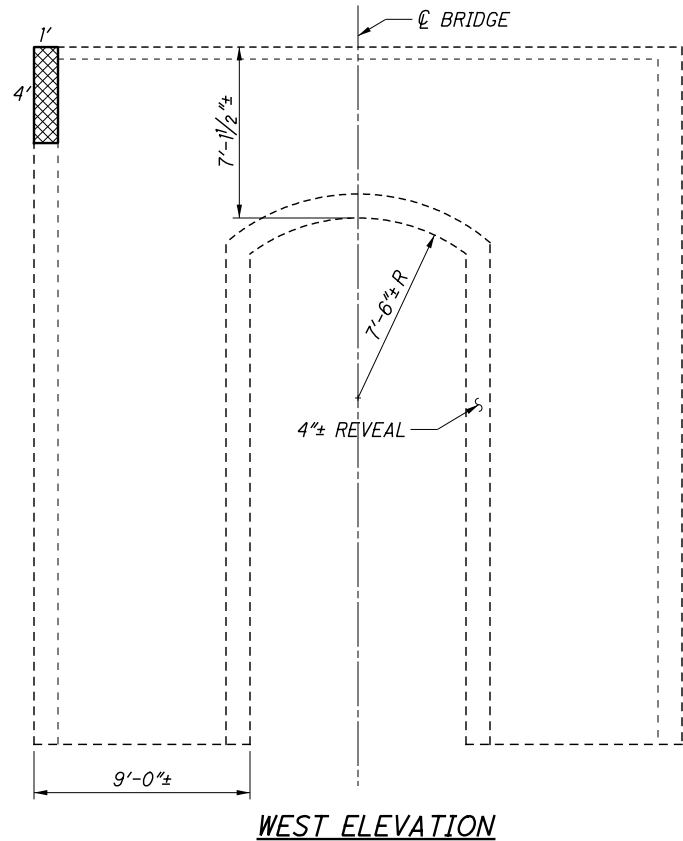
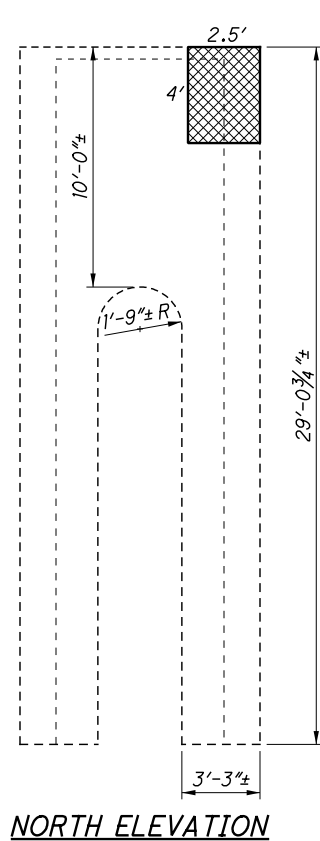
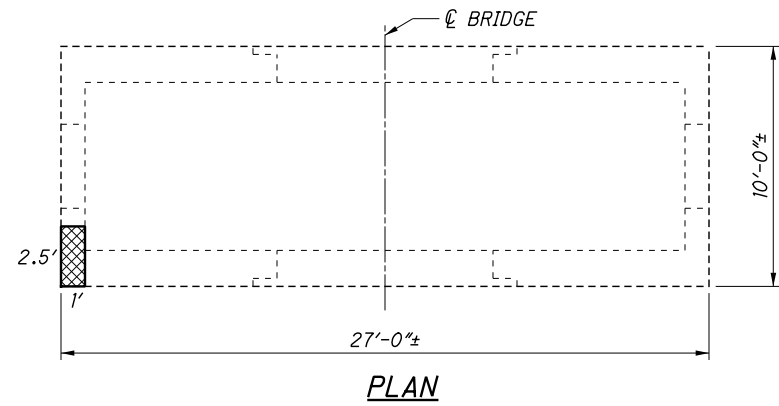
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 PID No. 96986

38 / 238

98  
308

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 1/30/18  
 REVIEWED: DLR  
 DRAWN: JSB  
 DESIGNED: TGW  
 CHECKED: KAK  
 STRUCTURE FILE NUMBER: 1801503  
 REVISED:

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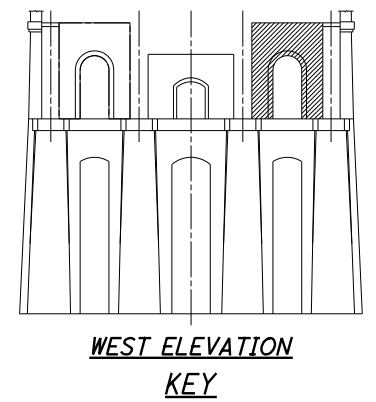
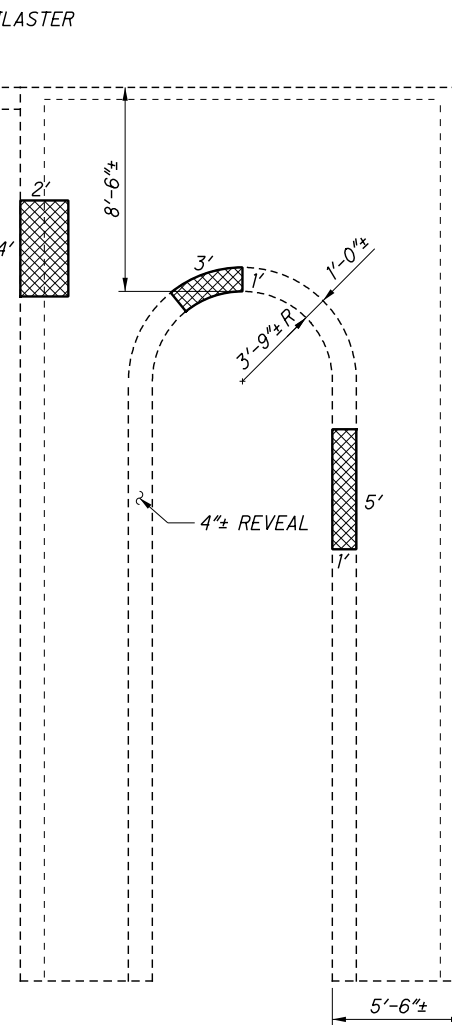
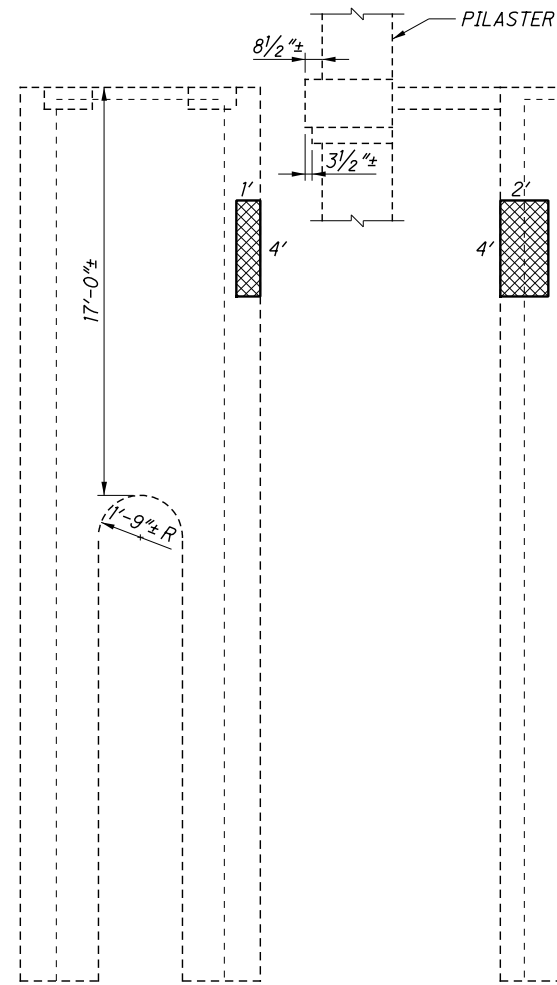
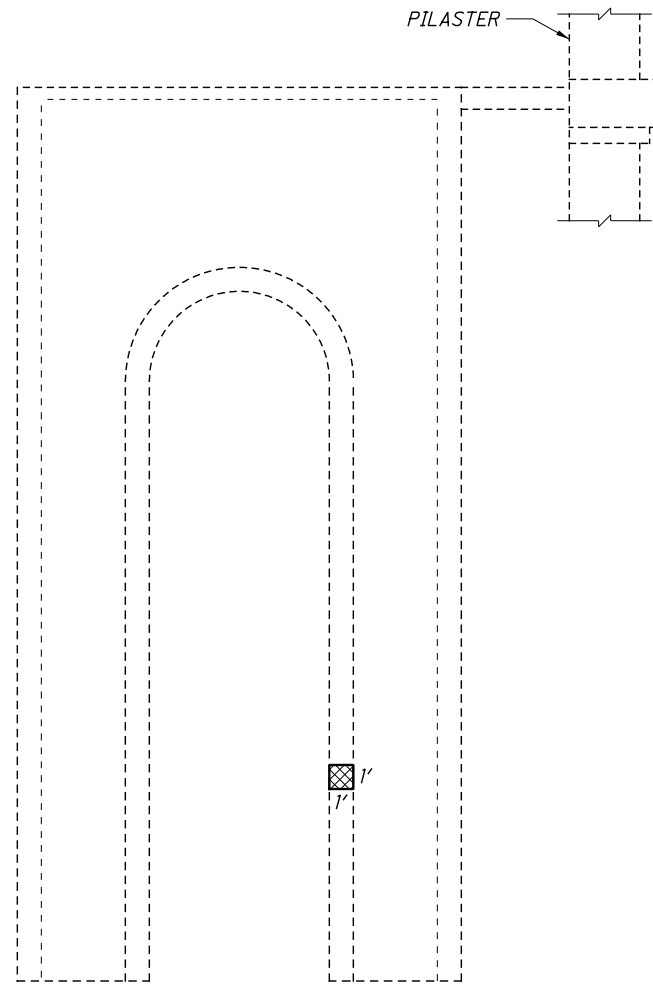
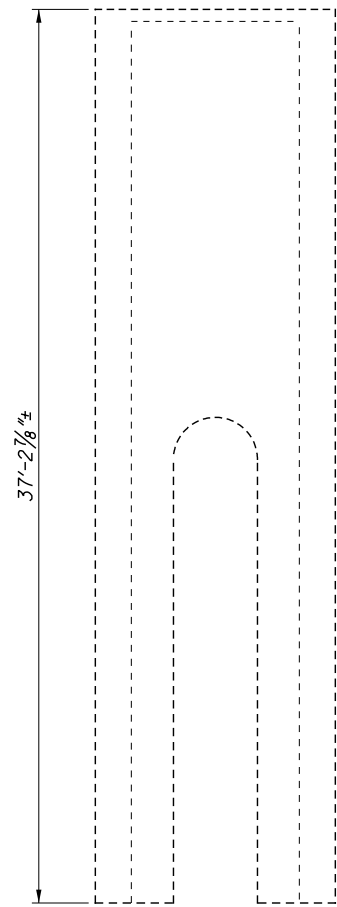
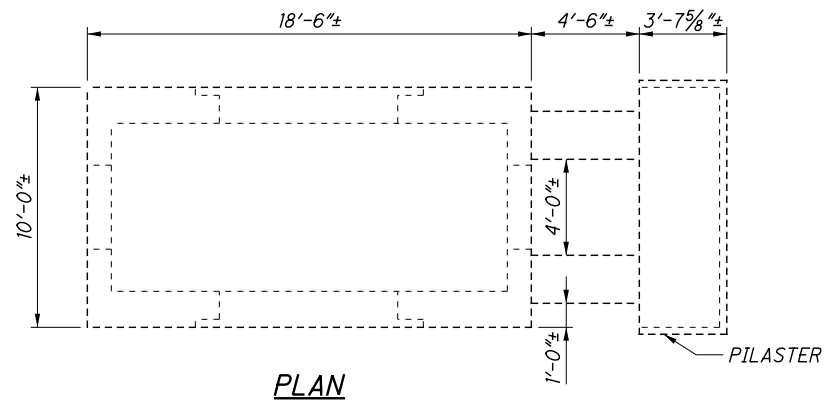


- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 38/238.  
**ADDITIONAL NOTES:** SEE SHEET 38/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
REVIEWED DLR	DATE 1/30/18
DRAWN USB	STRUCTURE FILE NUMBER 1801503
DESIGNED TGV	CHECKED KAK
PIER 9 TOWER - 2 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	39/238
99 308	

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**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

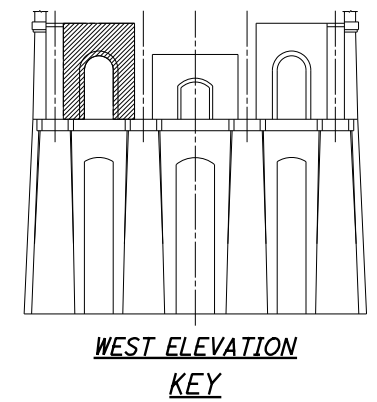
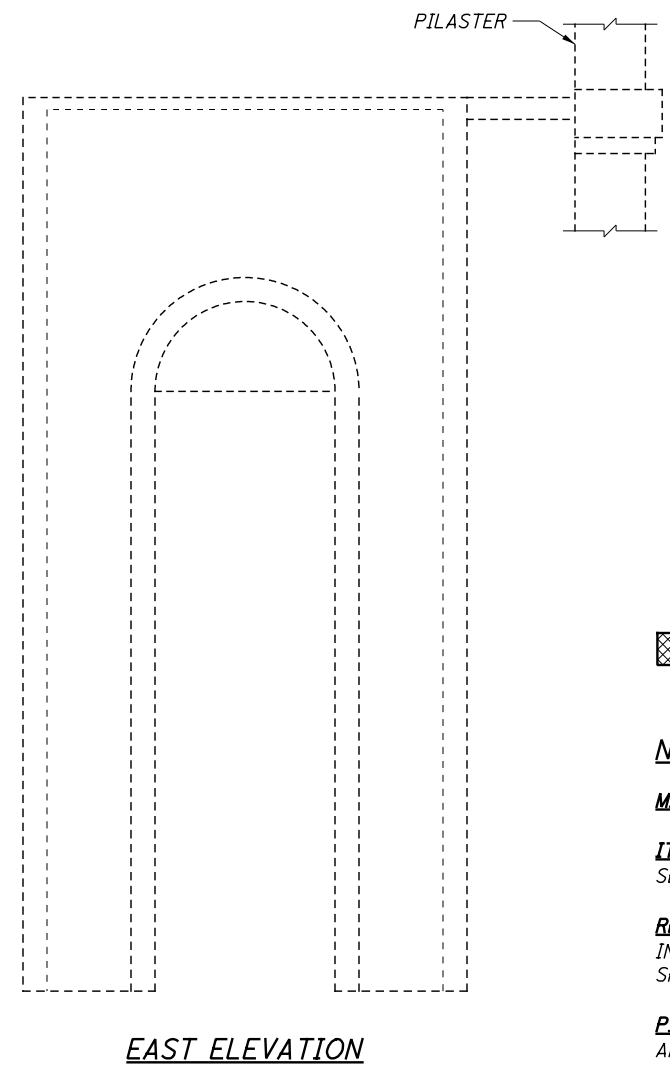
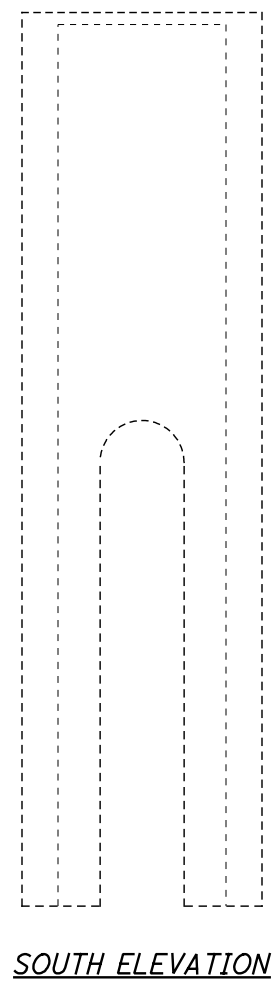
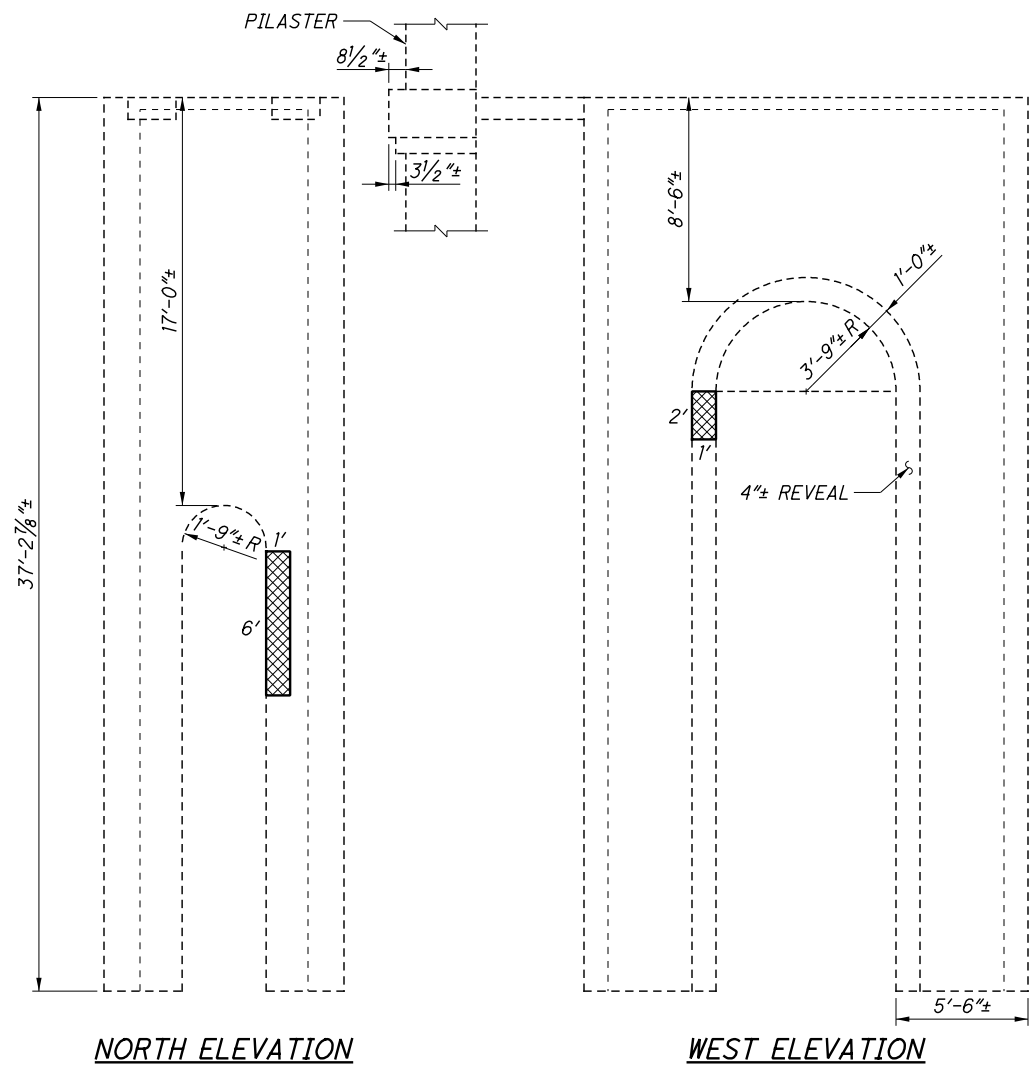
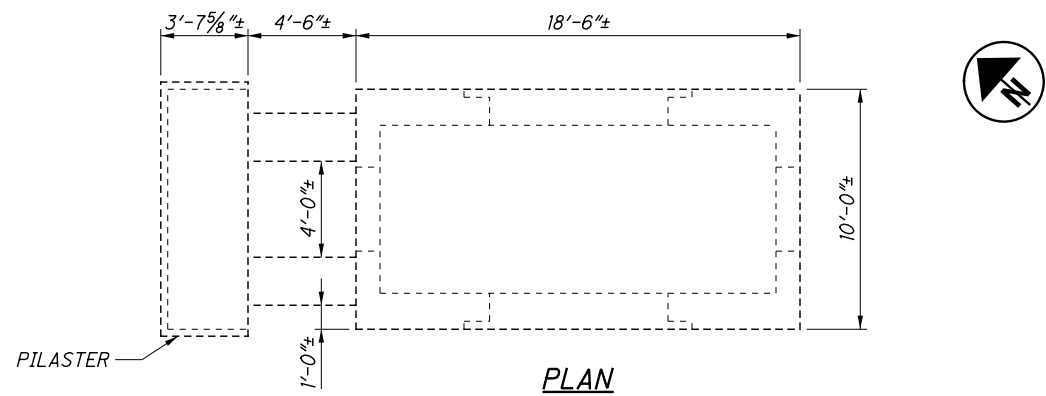
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET **38/238**.

**ADDITIONAL NOTES:** SEE SHEET **38/238**.

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**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET 7/238.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

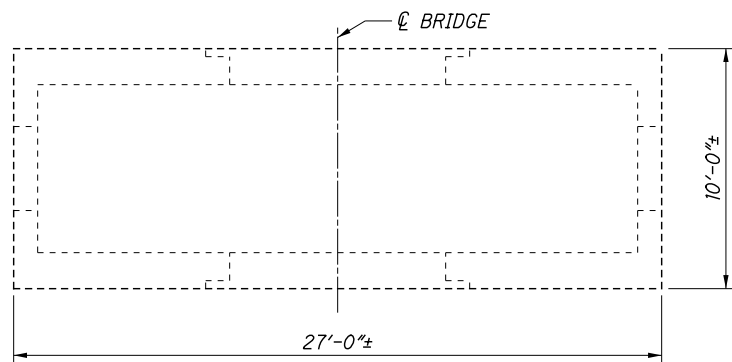
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

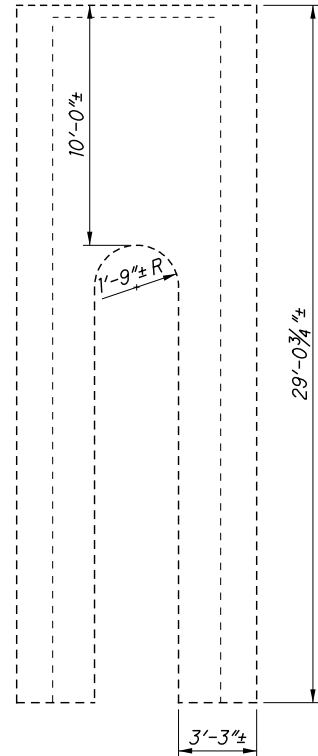
SUMMARY OF PIER 10 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 10 TOWER - 1	SQ YD	1.8	2.1	
PIER 10 TOWER - 2	SQ YD	2.0	2.5	
PIER 10 TOWER - 3	SQ YD	2.2	2.6	
PIER 10 TOWER - 4	SQ YD	2.0	2.5	
PIER 10 TOTALS	SQ YD	8.0	9.7	

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE 1/30/18  
 REVIEWED DLR  
 DRAWN JSB  
 DESIGNED TGW  
 CHECKED KAK  
 STRUCTURE FILE NUMBER 1801503  
 PIER 10 TOWER - 1  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 CUY-10-16.13  
 PID No. 96986  
 41/238  
 101/308

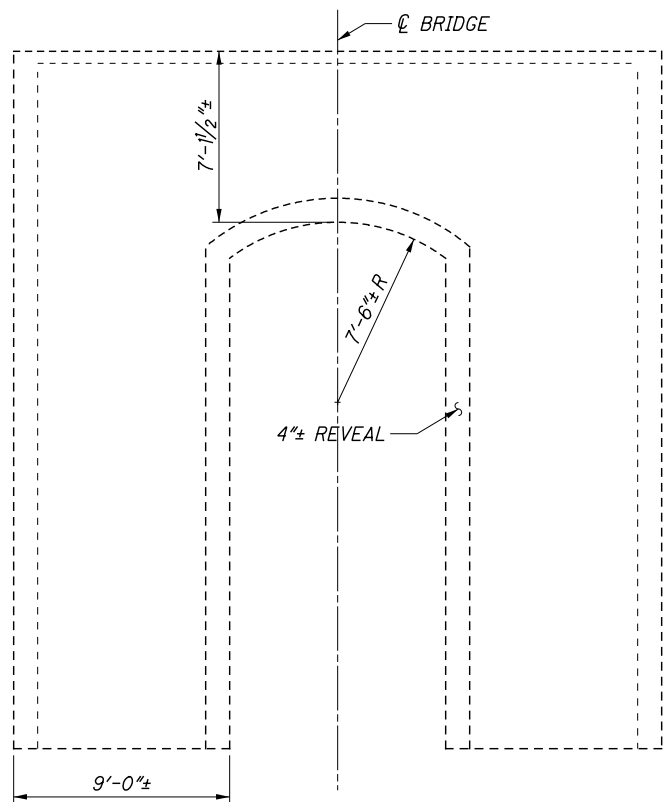
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613CP1020.dgn 3/2/2018 11:15:14 AM JeffSmith



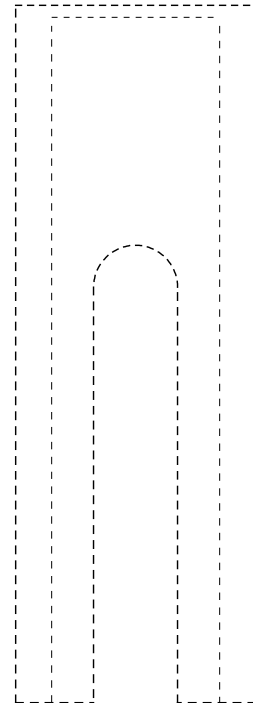
PLAN



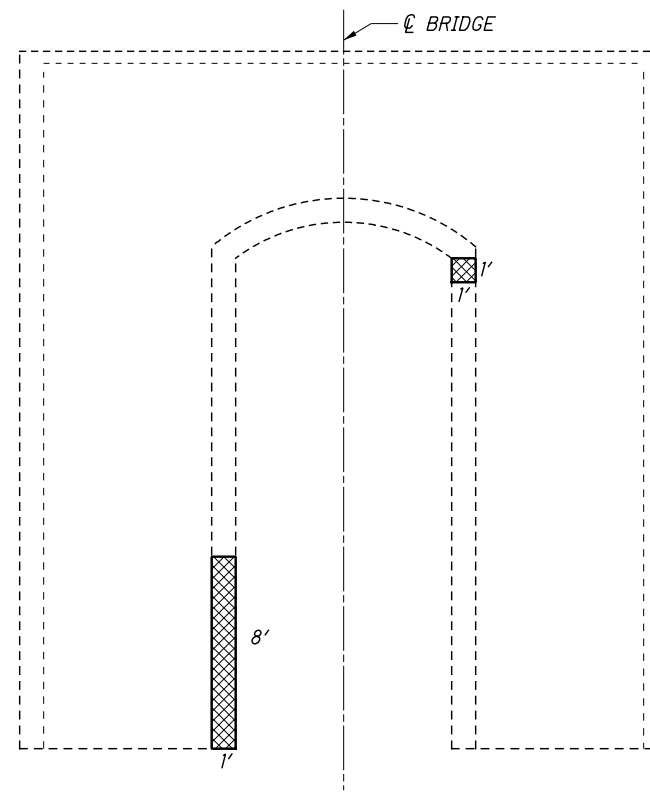
NORTH ELEVATION



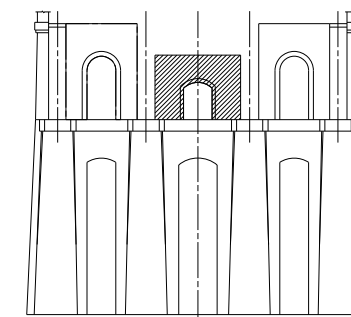
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION KEY

LEGEND

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

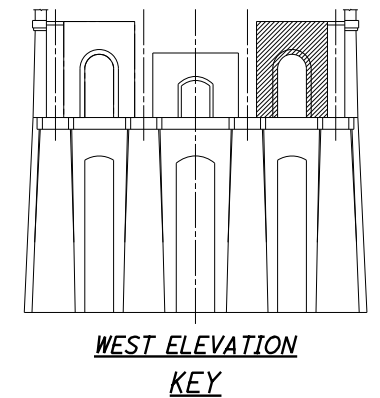
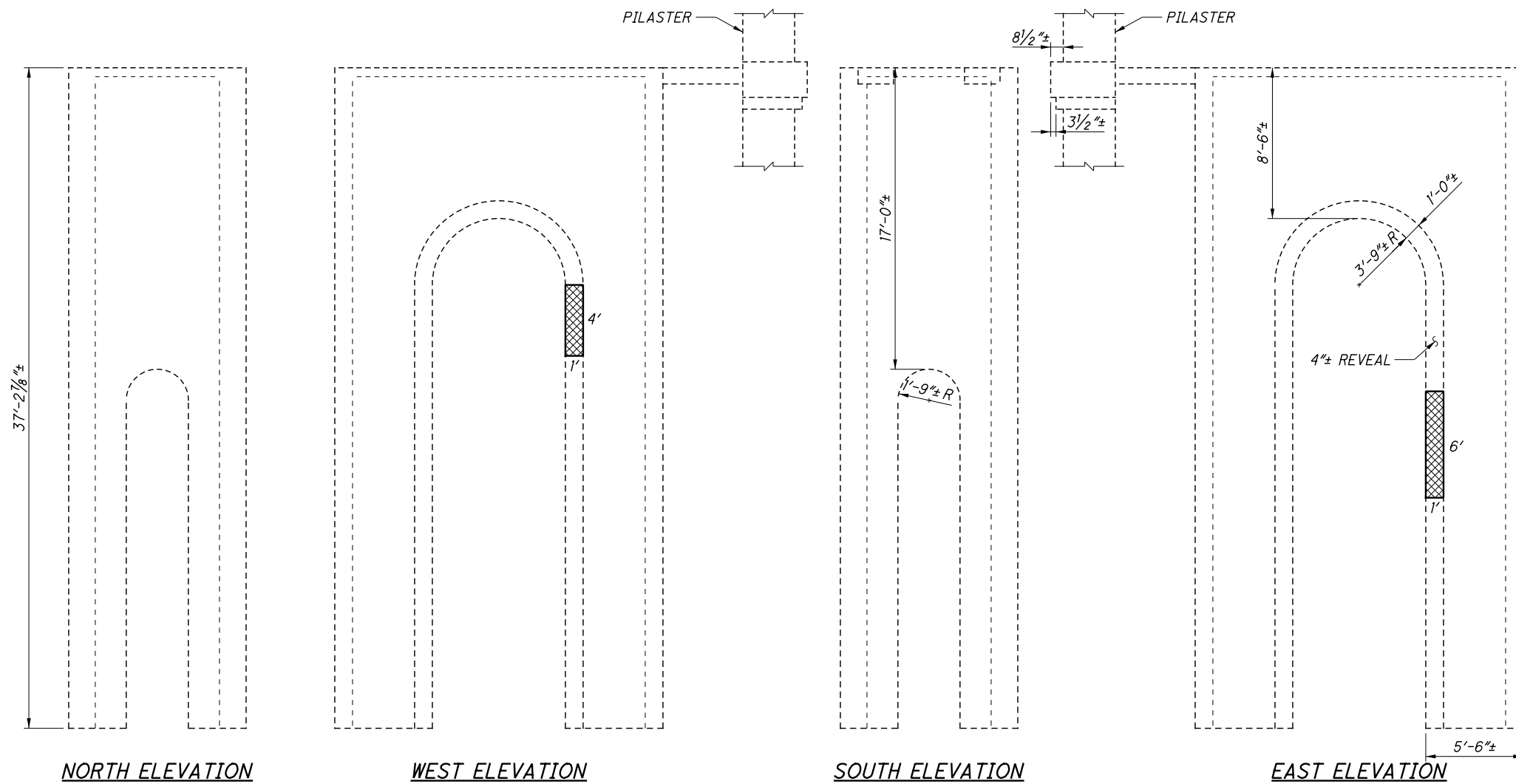
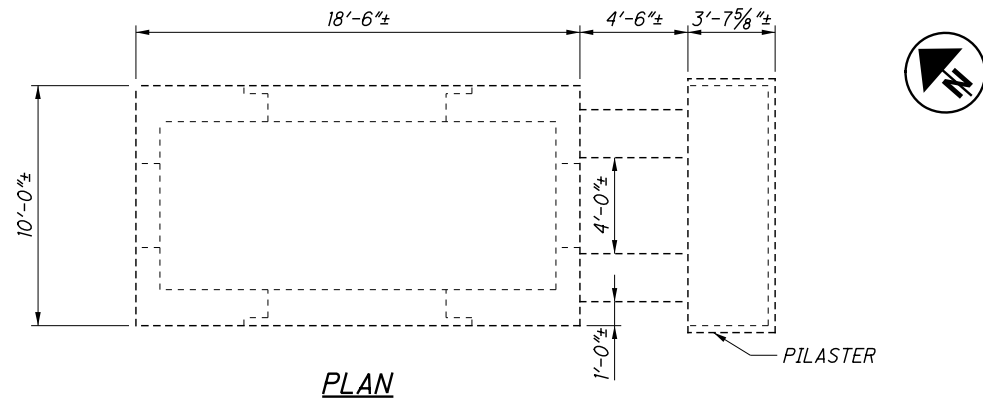
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 41/238.

**ADDITIONAL NOTES:** SEE SHEET 41/238.

<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>PIER 10 TOWER - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DESIGNED TGW CHECKED KAK</p>	<p>DRAWN JSB REVISED</p>	<p>REVIEWED DLR STRUCTURE FILE NUMBER 1801503</p>	<p>DATE 1/30/18</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
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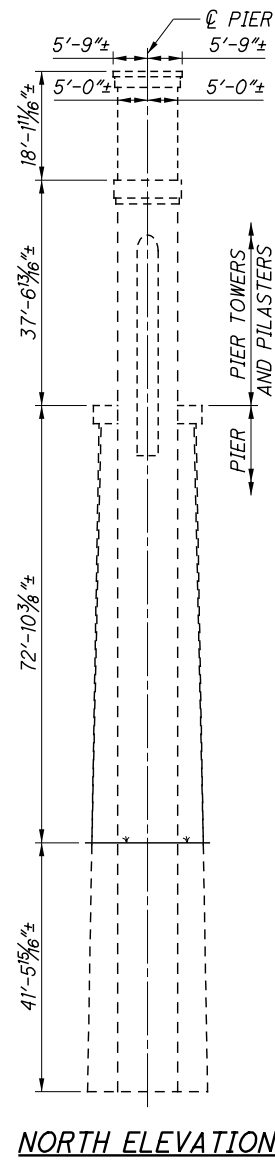


**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

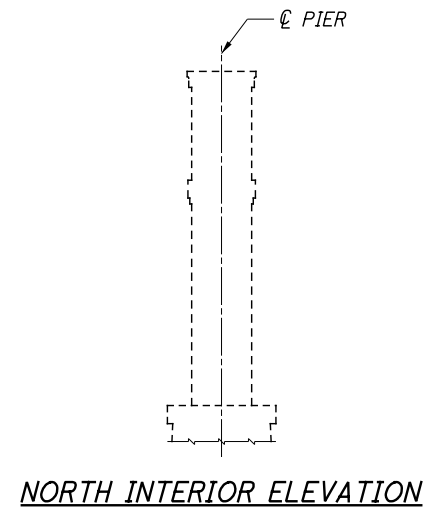
**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 41/238.  
**ADDITIONAL NOTES:** SEE SHEET 41/238.

<b>PIER 10 TOWER - 3</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED  29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED TGW CHECKED KAK	DRAWN USB REVISED	REVIEWED DLR STRUCTURE FILE NUMBER 1801503
CUY-10-16-13 PID No. 96986	DATE 1/30/18	DATE 1/30/18
43/238	103/308	41/238

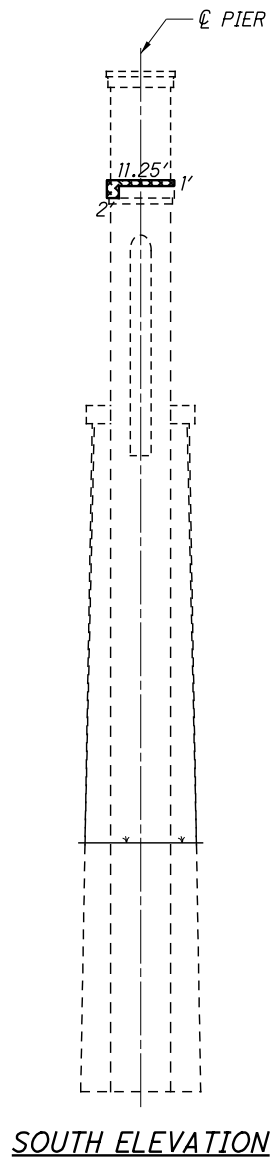




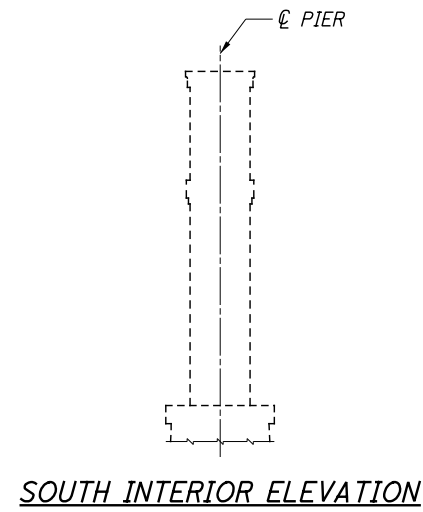
NORTH ELEVATION



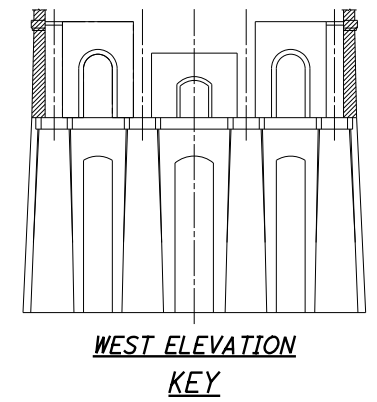
NORTH INTERIOR ELEVATION



SOUTH ELEVATION



SOUTH INTERIOR ELEVATION



WEST ELEVATION KEY

LEGEND


 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

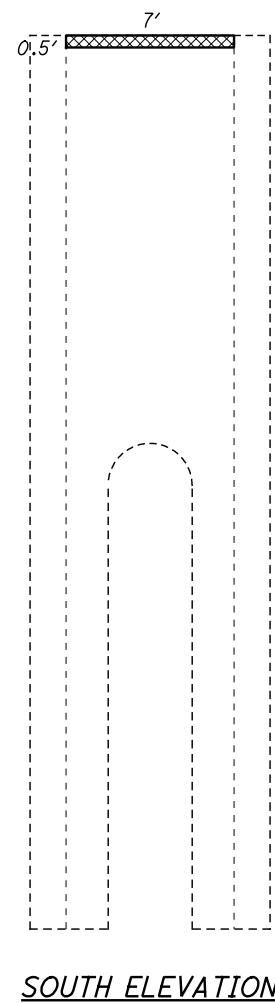
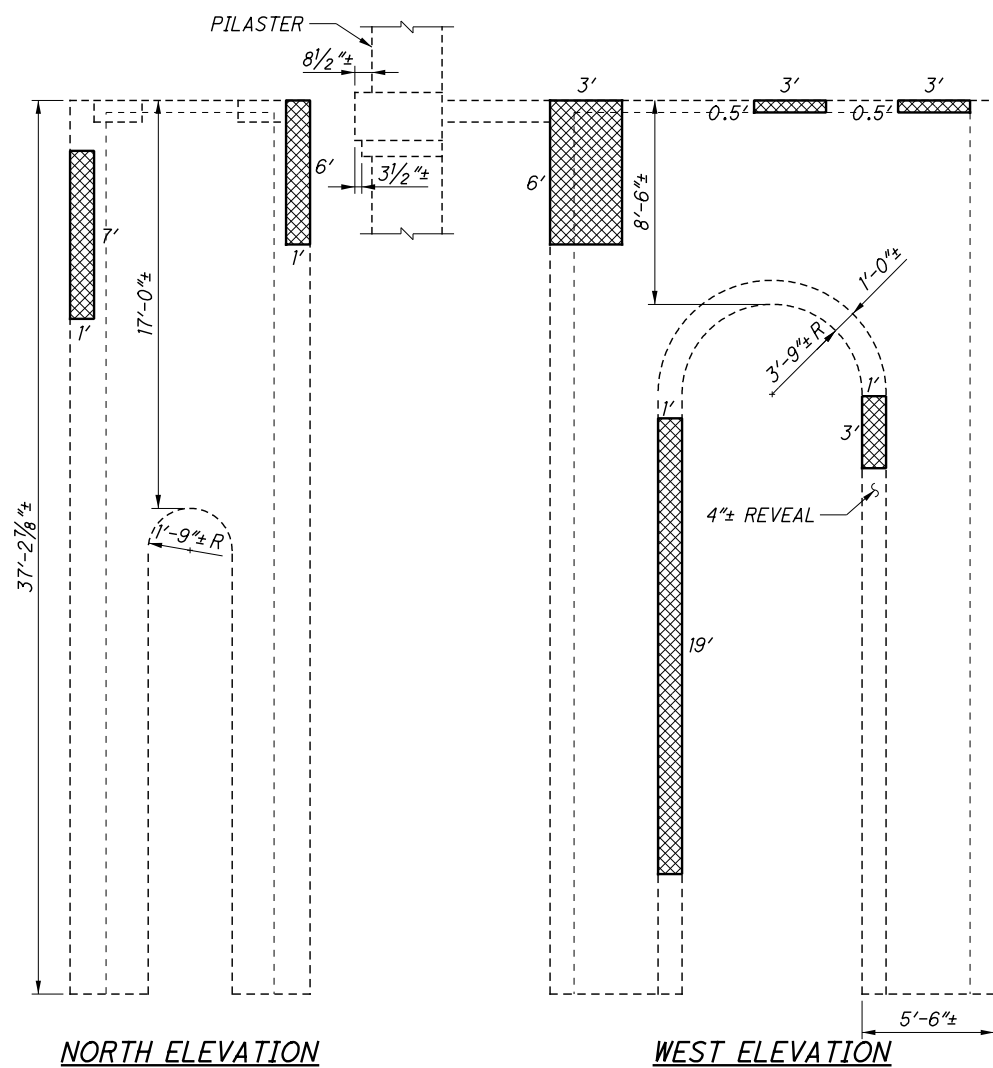
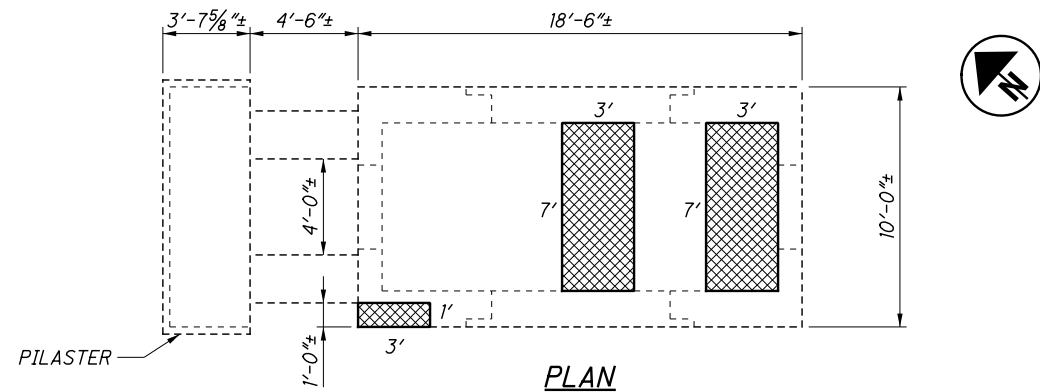
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET [41/238].

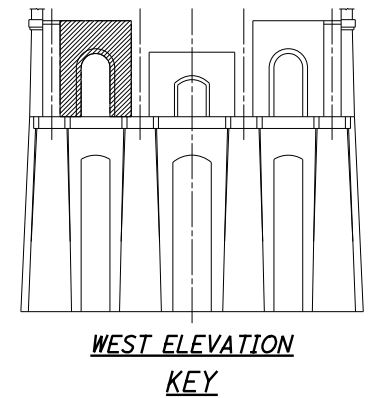
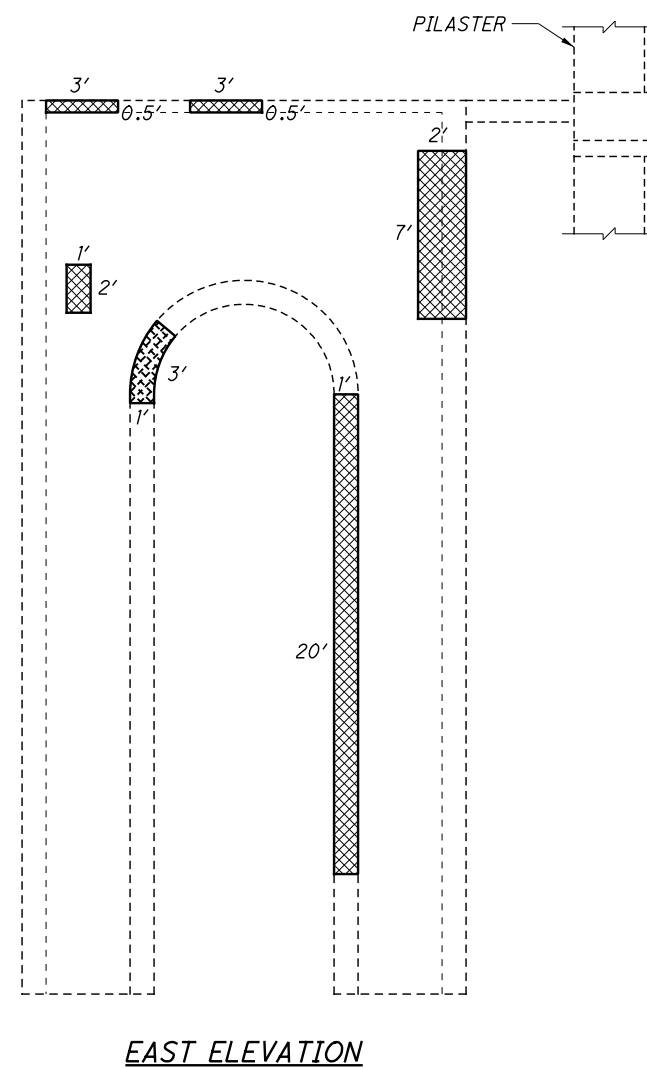
**ADDITIONAL NOTES:** SEE SHEET [41/238].

RICHLAND ENGINEERING LIMITED  29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE 1/30/18
	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DRAWN USB
DESIGNED TGW	CHECKED KAK
PIER 10 TOWER - 4 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	44/238
104 308	

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**SOUTH ELEVATION**



**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET **7/238**.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

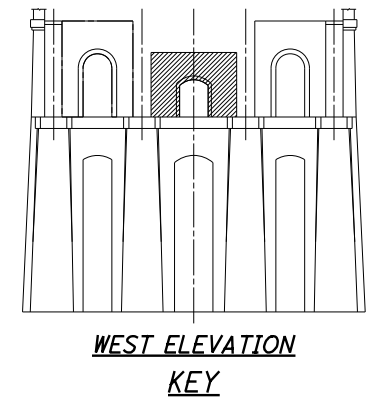
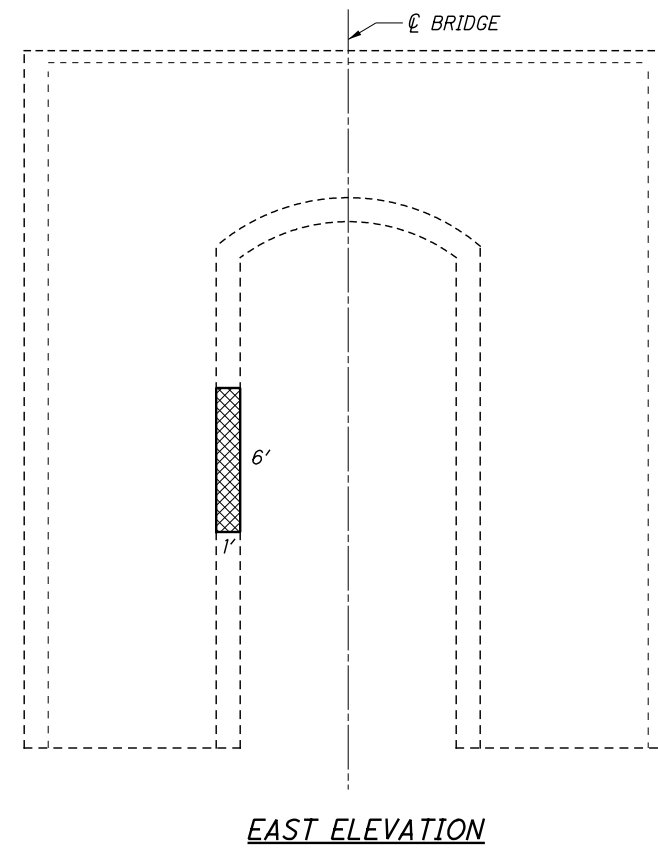
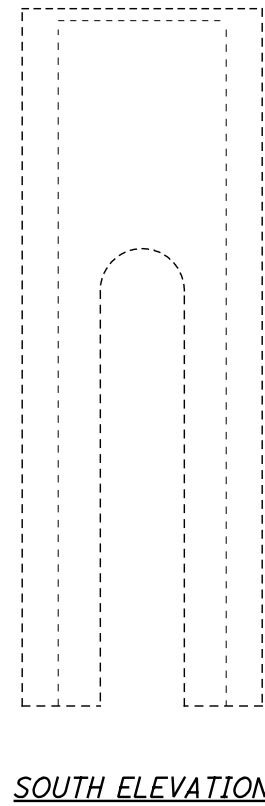
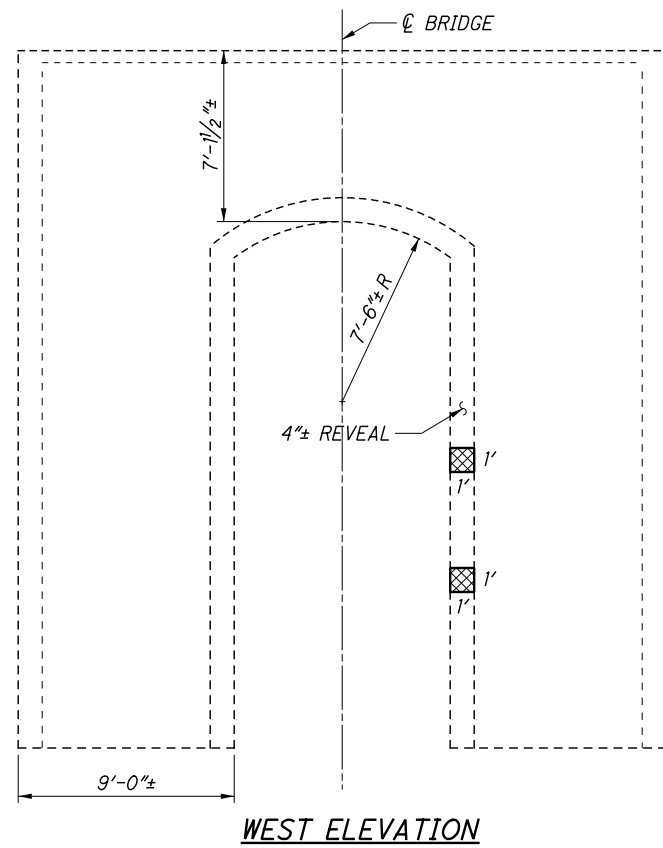
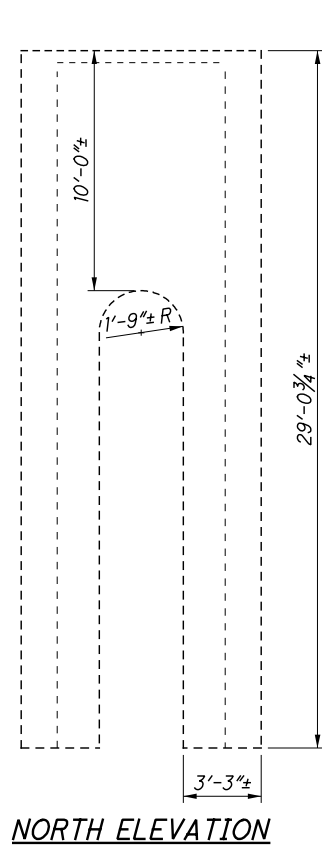
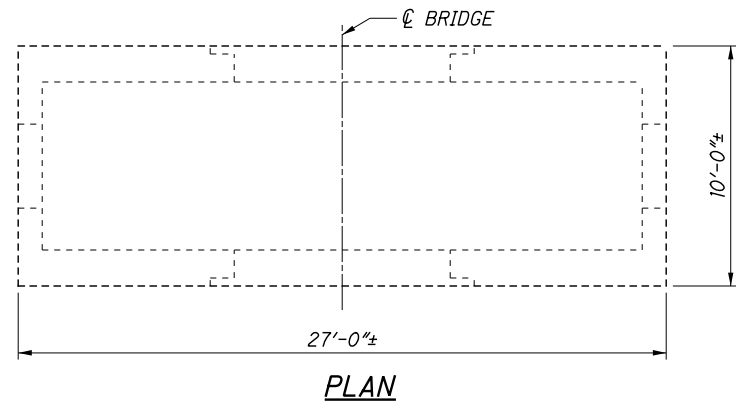
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 11 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 11 TOWER - 1	SQ YD	21.3	25.5	
PIER 11 TOWER - 2	SQ YD	1.8	2	
PIER 11 TOWER - 3	SQ YD	7.6	9	
PIER 11 TOWER - 4	SQ YD	2.0	2	
PIER 11 TOTALS	SQ YD	32.7	38.5	

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE 1/30/18  
 REVIEWED DLR  
 DRAWN JSB  
 DESIGNED TGW  
 CHECKED KAK  
 STRUCTURE FILE NUMBER 1801503  
 PIER 11 TOWER - 1  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 CUY-10-16.13  
 PID No. 96986  
 45/238  
 105/308

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**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

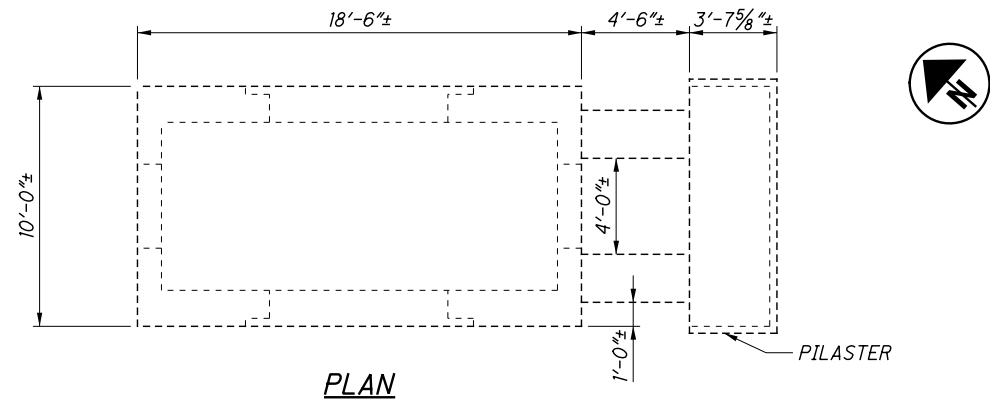
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

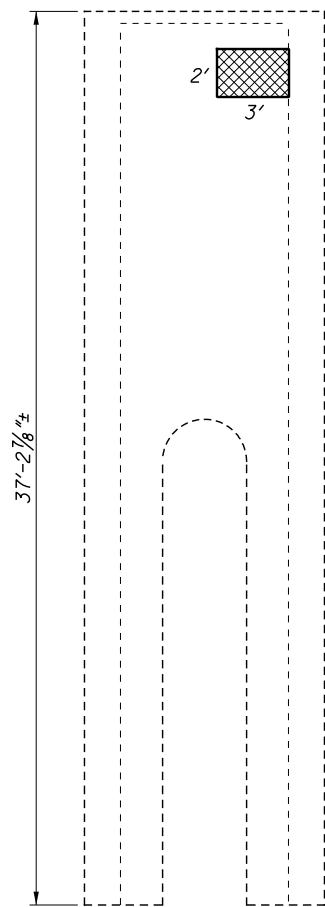
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 45/238.

**ADDITIONAL NOTES:** SEE SHEET 45/238.

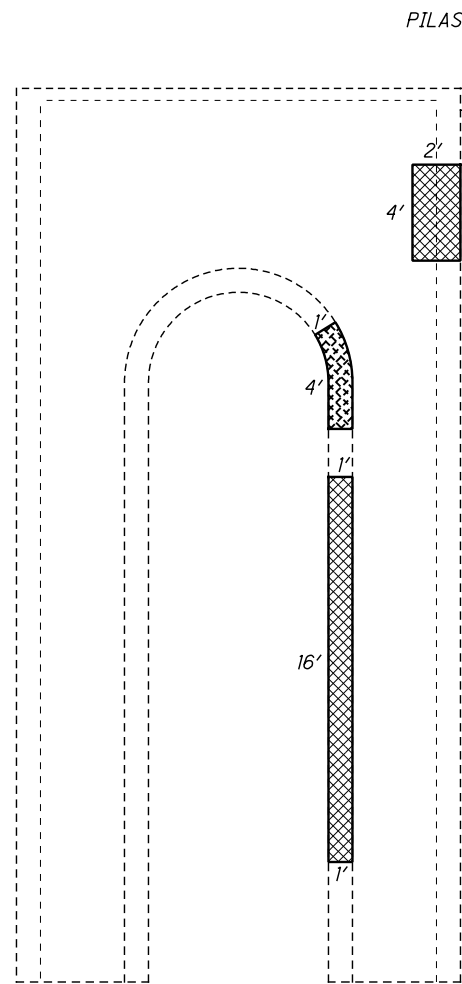
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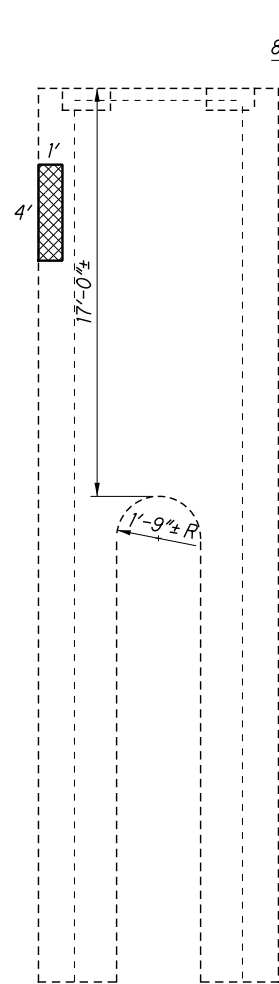
PLAN



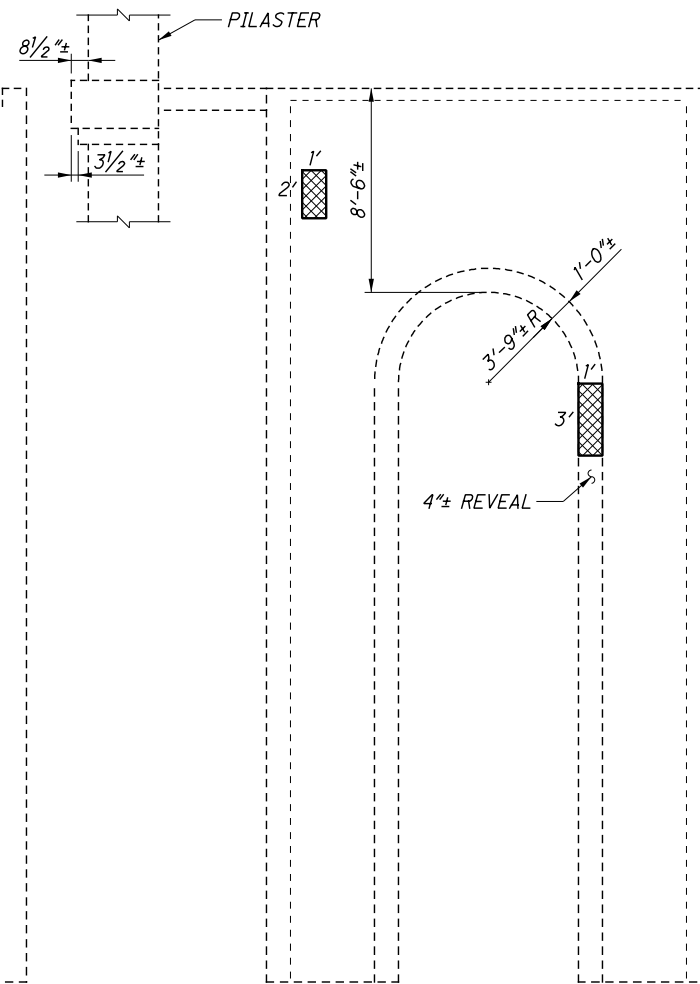
NORTH ELEVATION



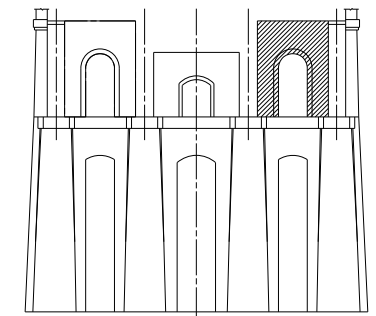
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



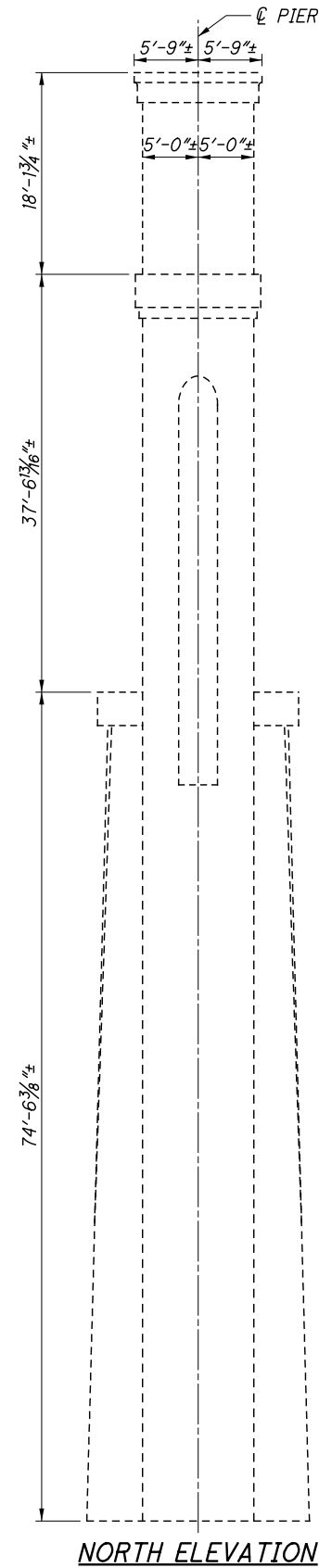
WEST ELEVATION KEY

LEGEND

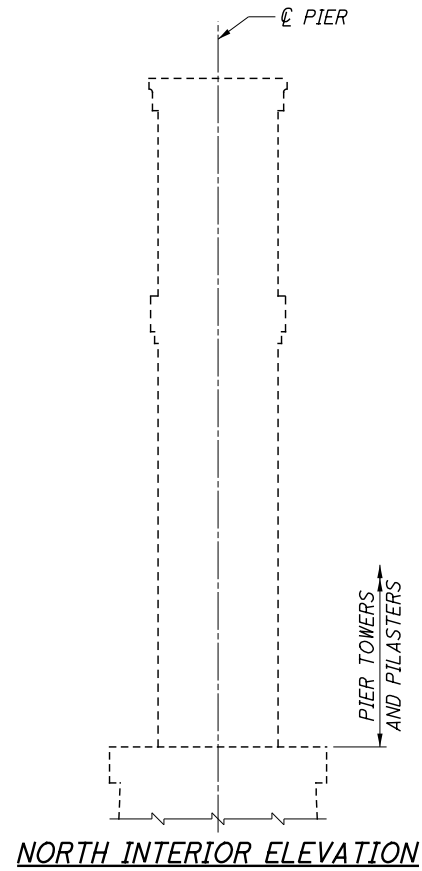
- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

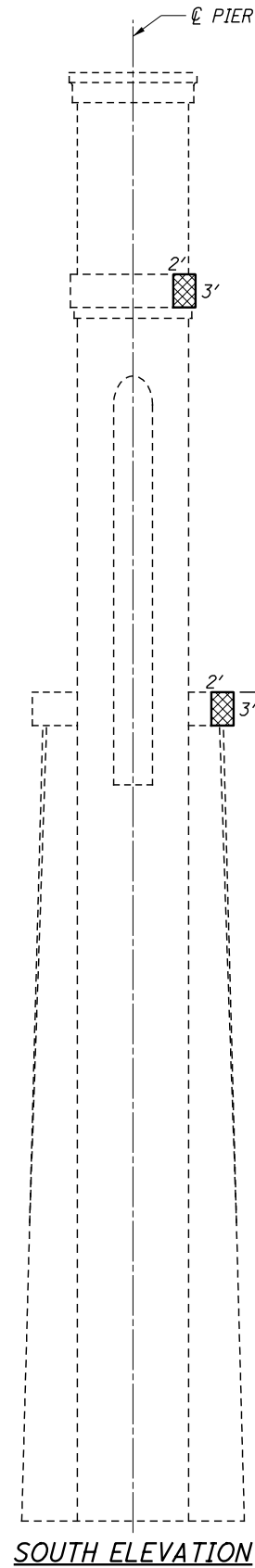
- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 45/238.
- ADDITIONAL NOTES:** SEE SHEET 45/238.



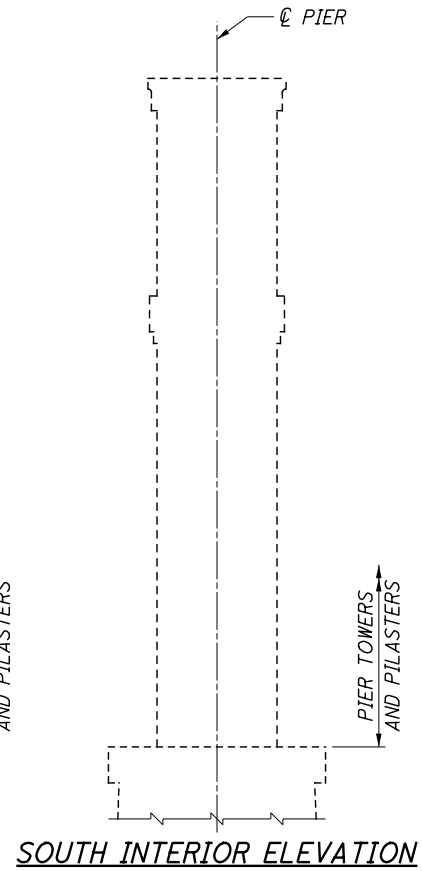
NORTH ELEVATION



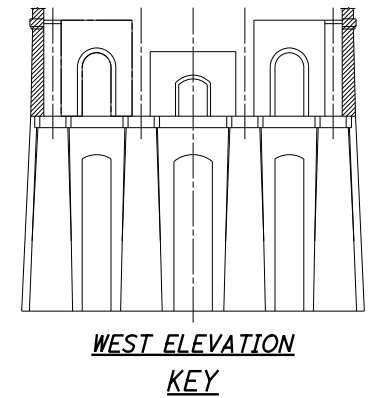
NORTH INTERIOR ELEVATION



SOUTH ELEVATION



SOUTH INTERIOR ELEVATION



LEGEND

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

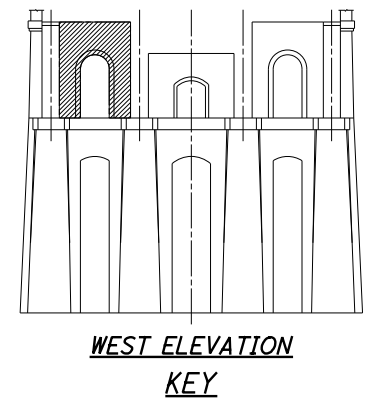
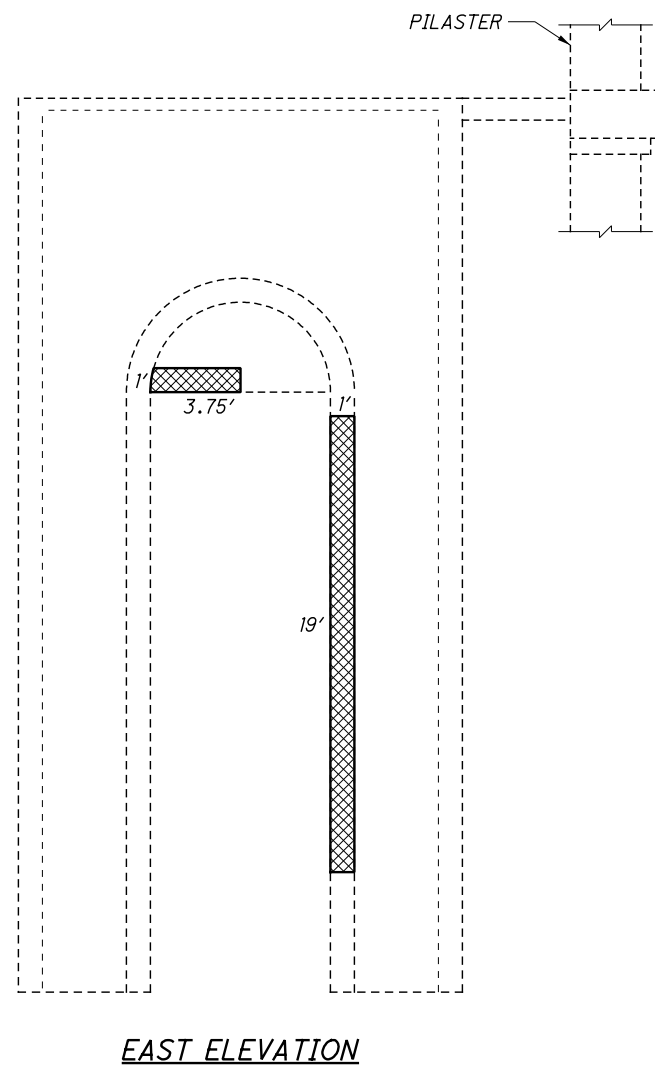
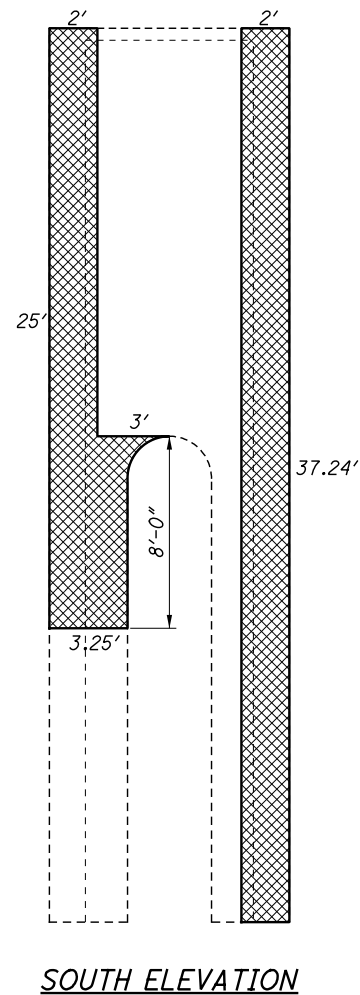
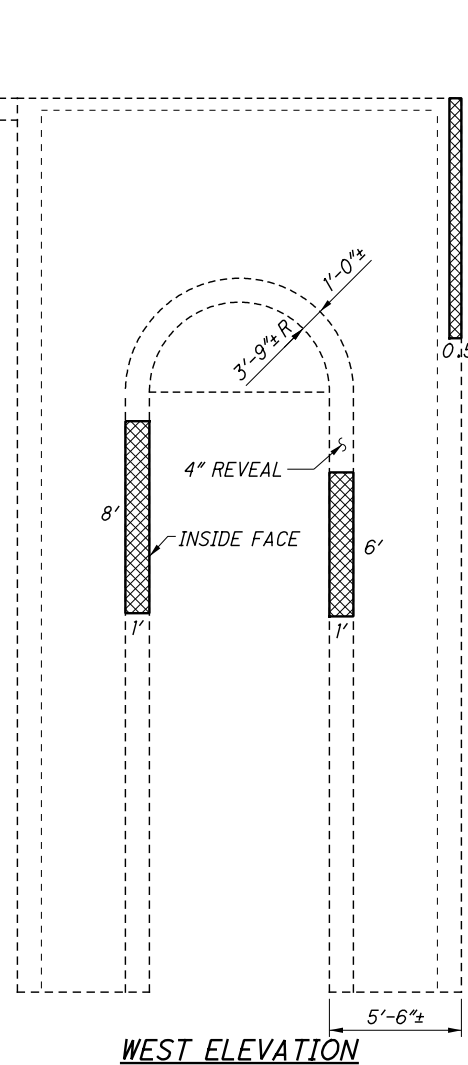
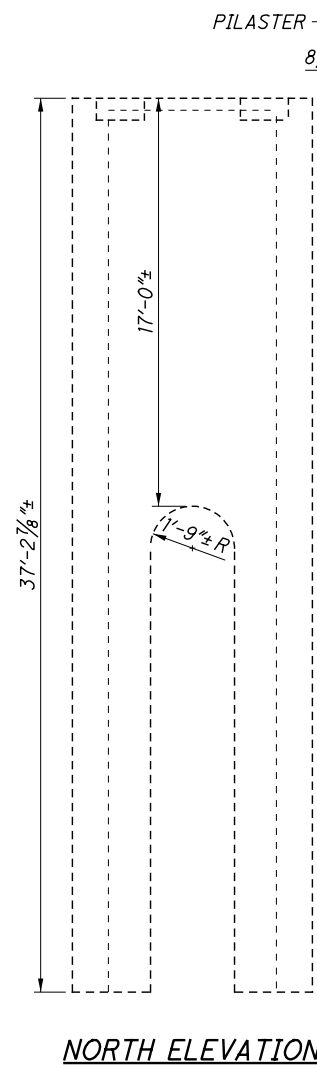
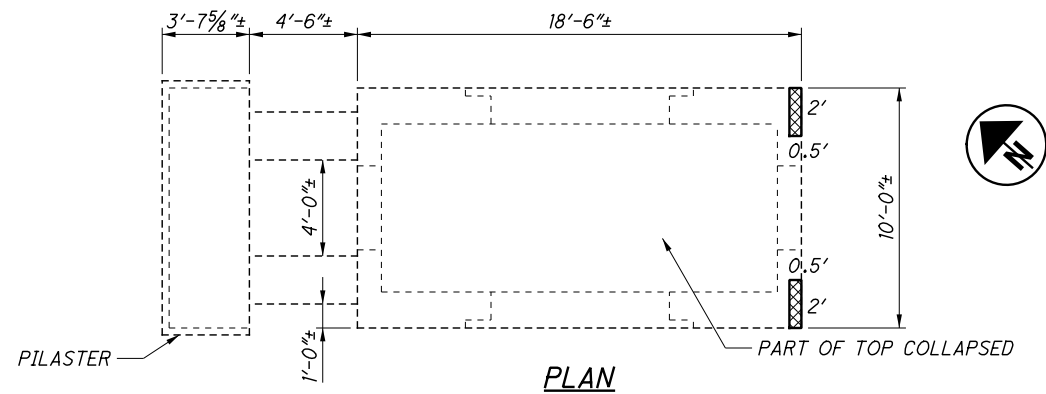
NOTES

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 45/238.

**ADDITIONAL NOTES:** SEE SHEET 45/238.

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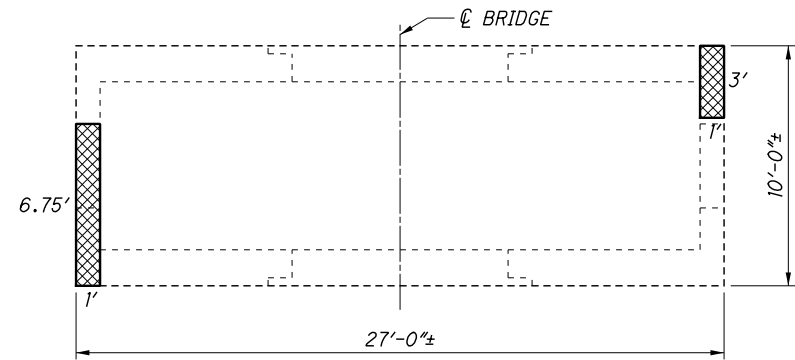
**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET [7/238].  
**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.  
**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

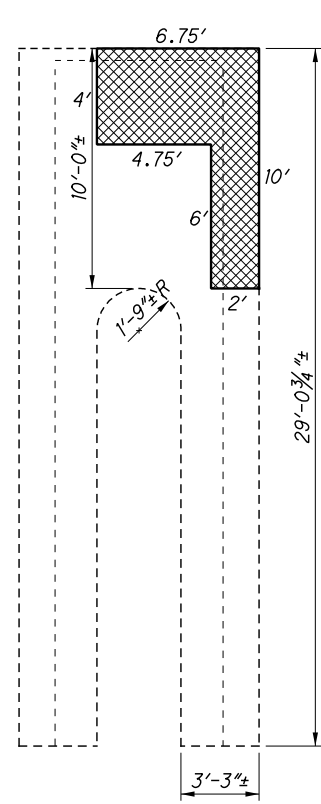
**QUANTITY DESCRIPTIONS**  
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.  
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.  
**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 12 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 12 TOWER - 1	SQ YD	32.8	39.4	
PIER 12 TOWER - 2	SQ YD	21.9	26	
PIER 12 TOWER - 3	SQ YD	10.4	13	
PIER 12 TOWER - 4	SQ YD	4.6	5	
<b>PIER 12 TOTALS</b>	<b>SQ YD</b>	<b>69.7</b>	<b>83.4</b>	

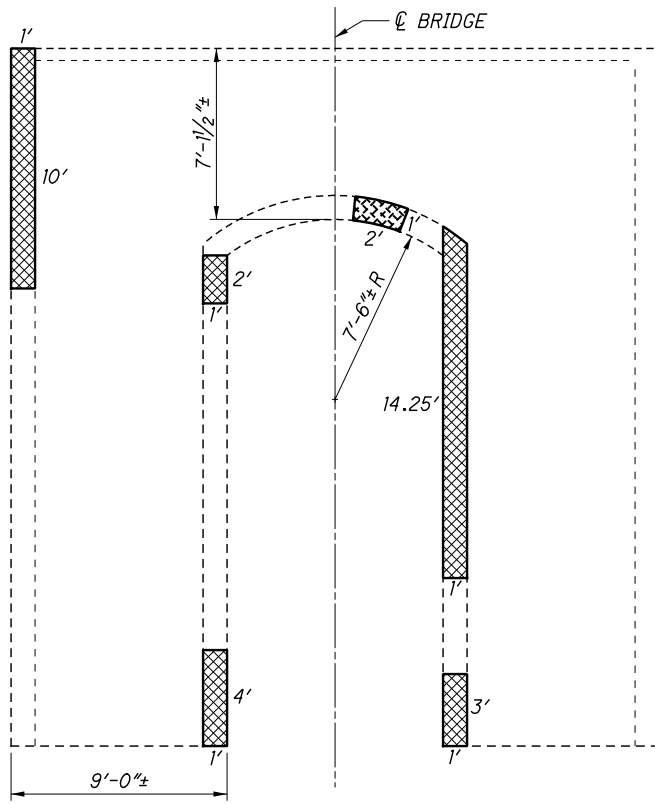
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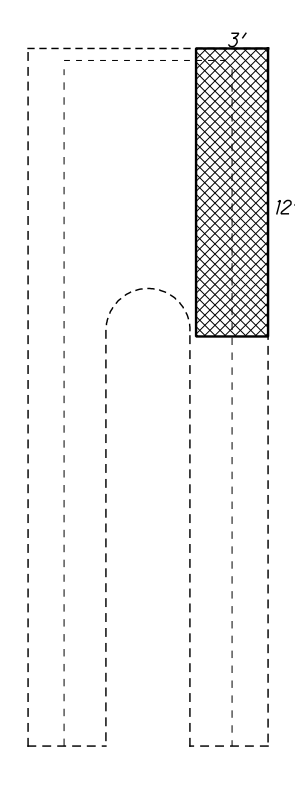
**PLAN**



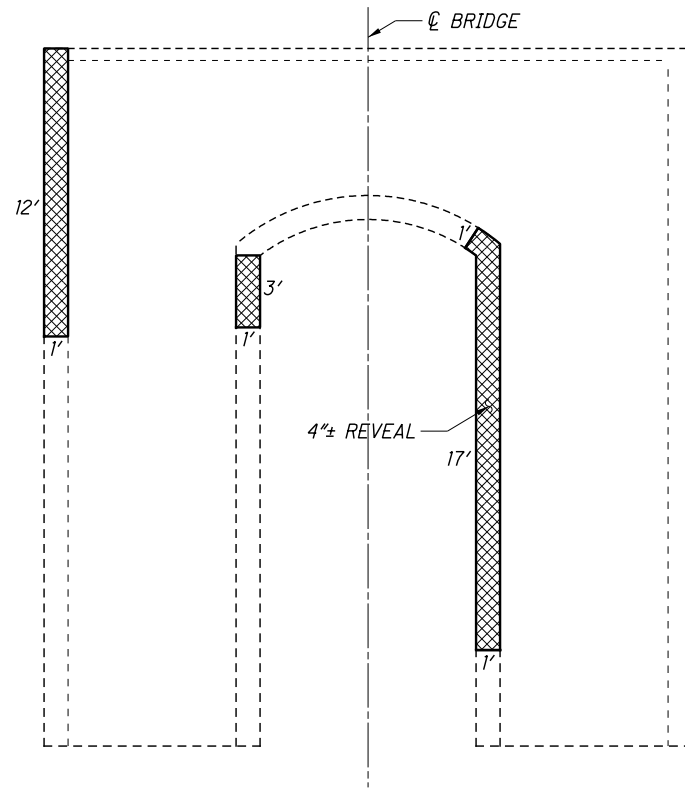
**NORTH ELEVATION**



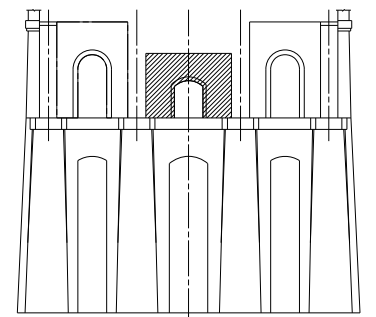
**WEST ELEVATION**



**SOUTH ELEVATION**



**EAST ELEVATION**



**WEST ELEVATION KEY**

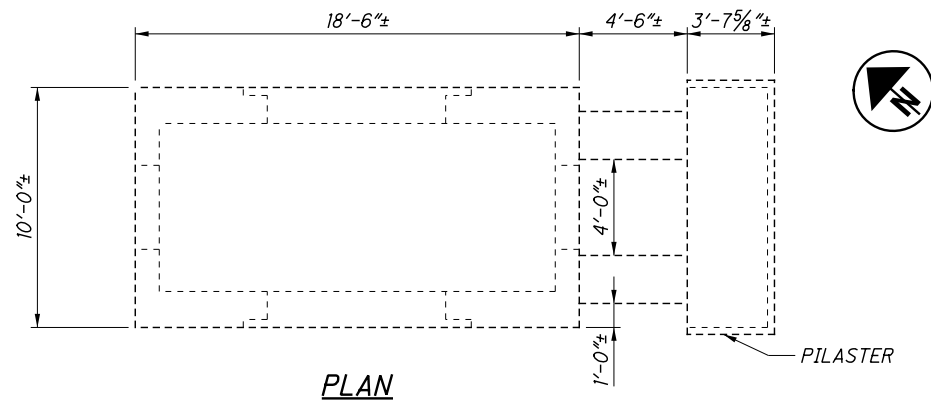
**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

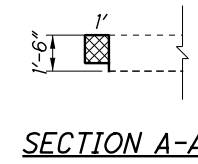
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 49/238.
- ADDITIONAL NOTES:** SEE SHEET 49/238.

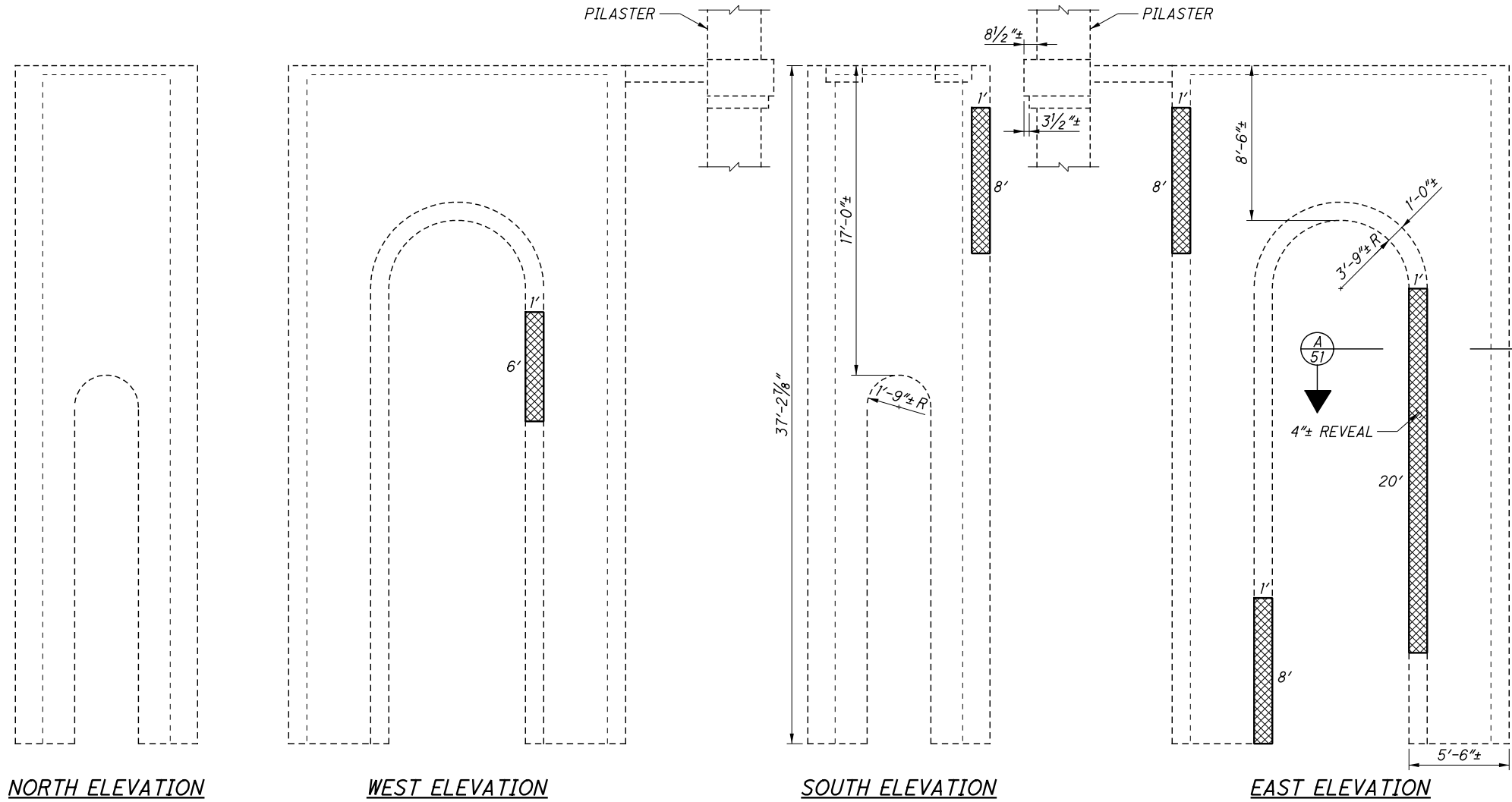
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**PLAN**



**SECTION A-A**

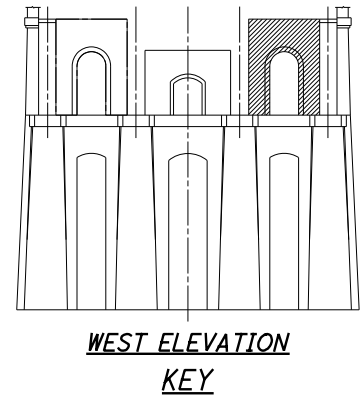


**NORTH ELEVATION**

**WEST ELEVATION**

**SOUTH ELEVATION**

**EAST ELEVATION**



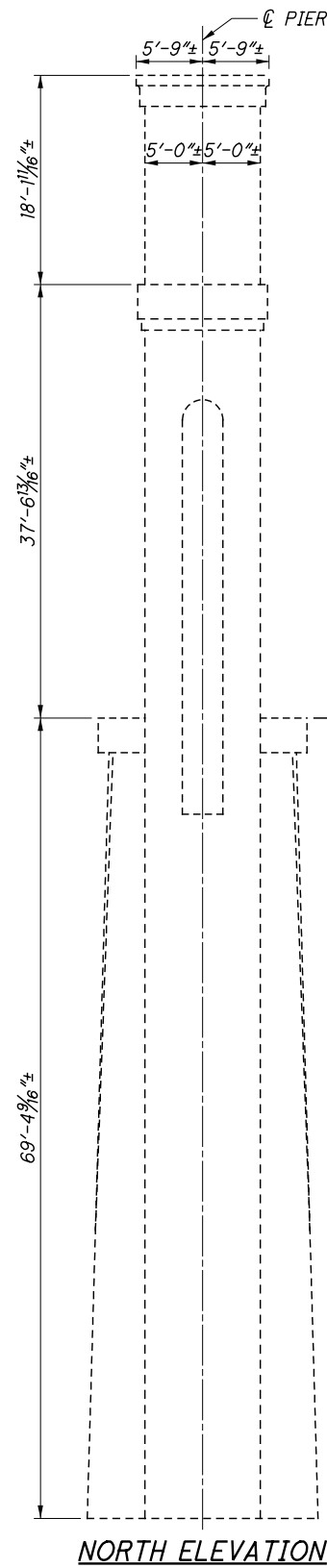
**WEST ELEVATION KEY**

**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

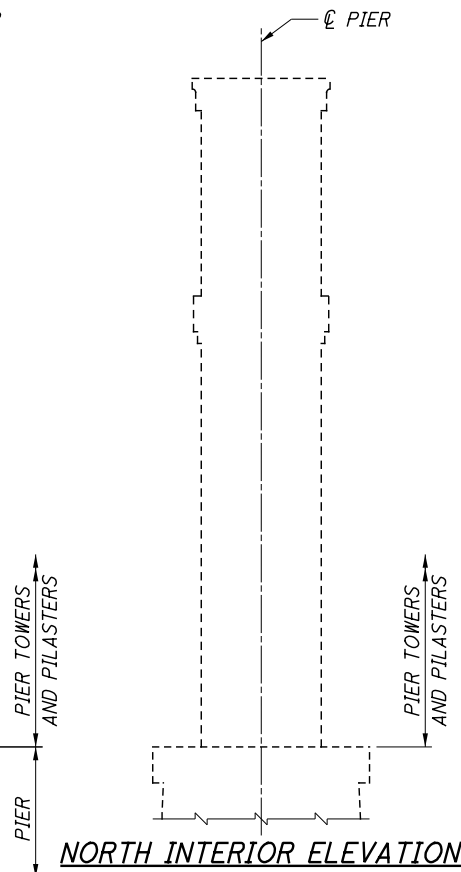
**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET **49/238**.  
**ADDITIONAL NOTES:** SEE SHEET **49/238**.

DESIGNED TGW	CHECKED KAK	DRAWN JSB	REVISER	REVIEWED DLR	DATE 1/30/18	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
PIER 12 TOWER - 3			BRIDGE NO. CUY-10-1613			
S.R. 10 OVER THE CUYAHOGA RIVER			PID No. 96986			
CUY-10-16-13			51/238			
111			308			

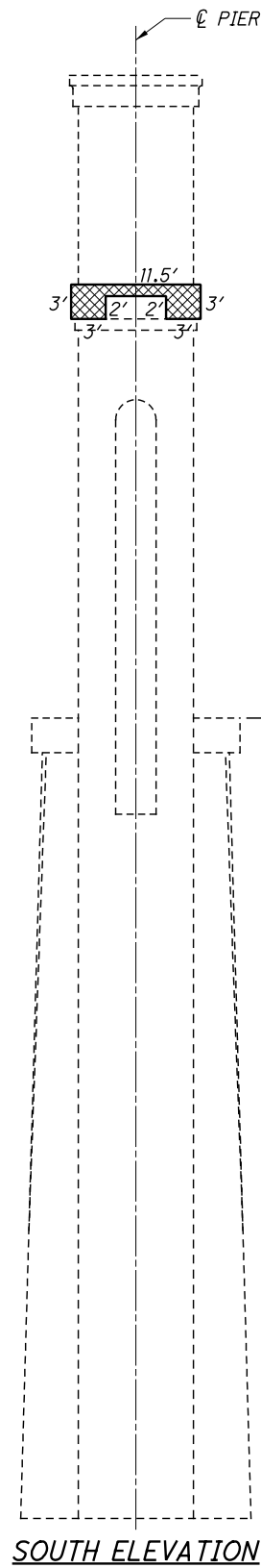




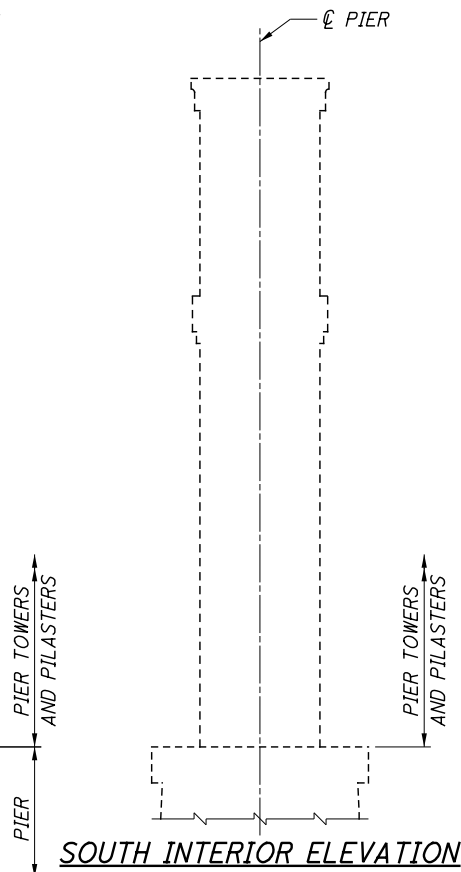
**NORTH ELEVATION**



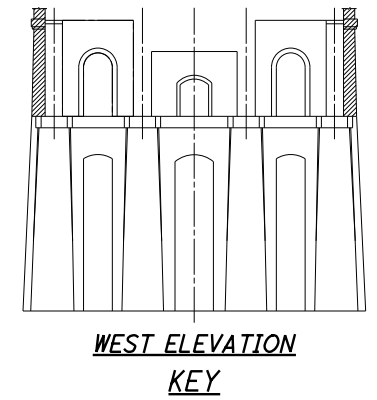
**NORTH INTERIOR ELEVATION**



**SOUTH ELEVATION**



**SOUTH INTERIOR ELEVATION**



**WEST ELEVATION  
KEY**

**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

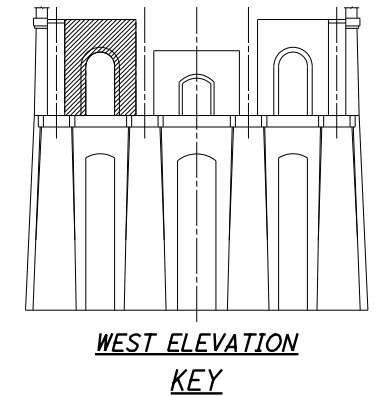
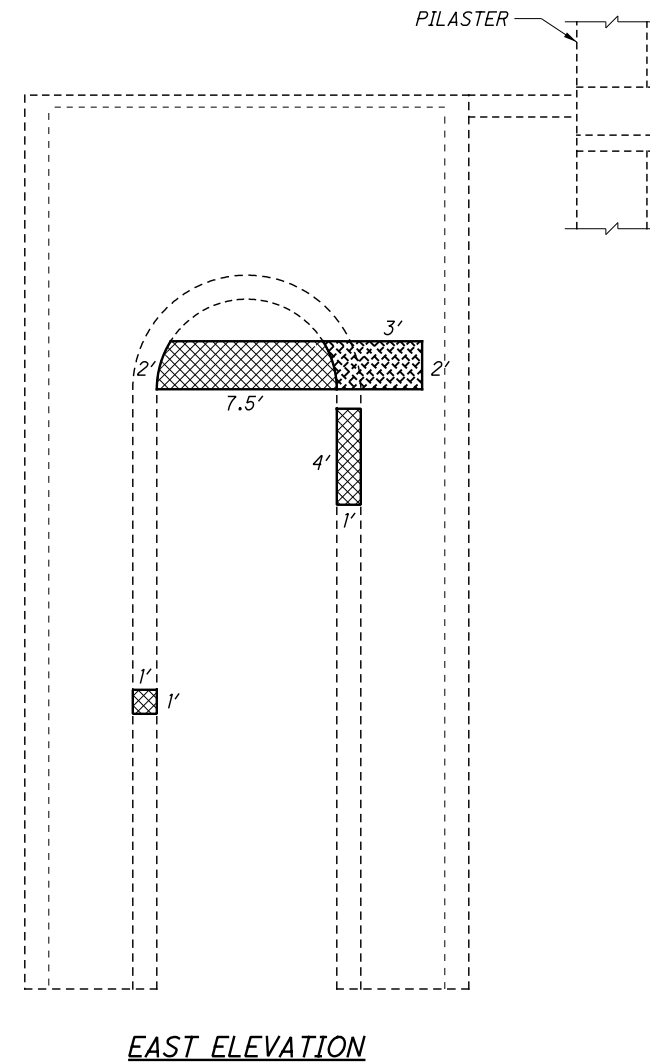
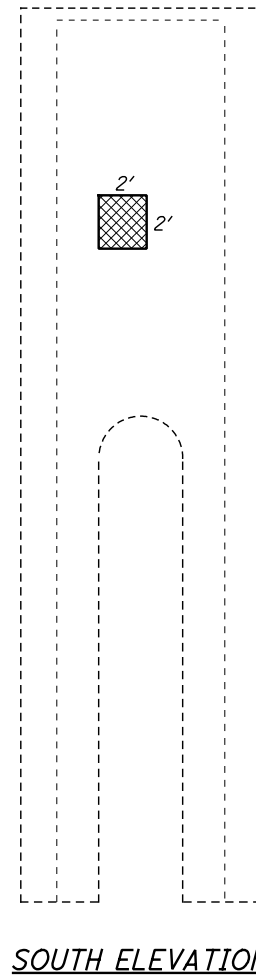
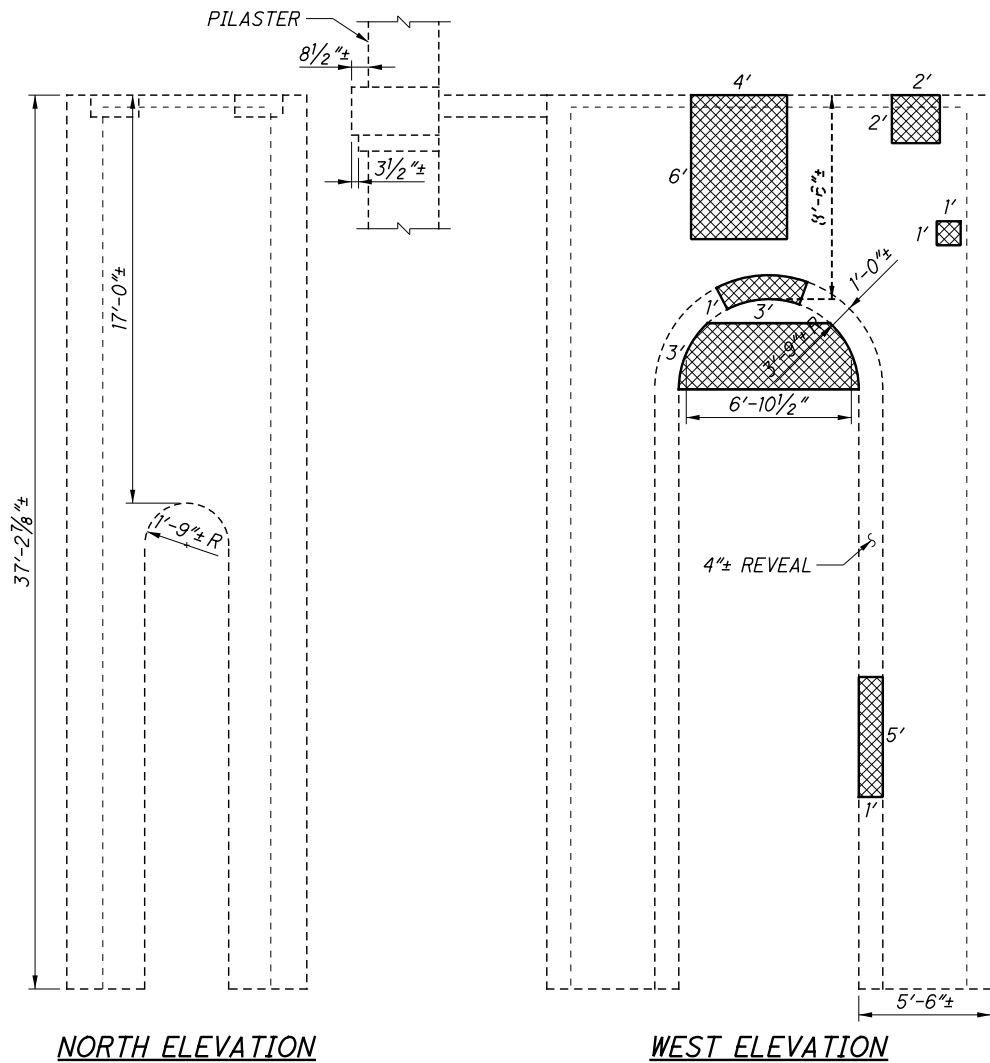
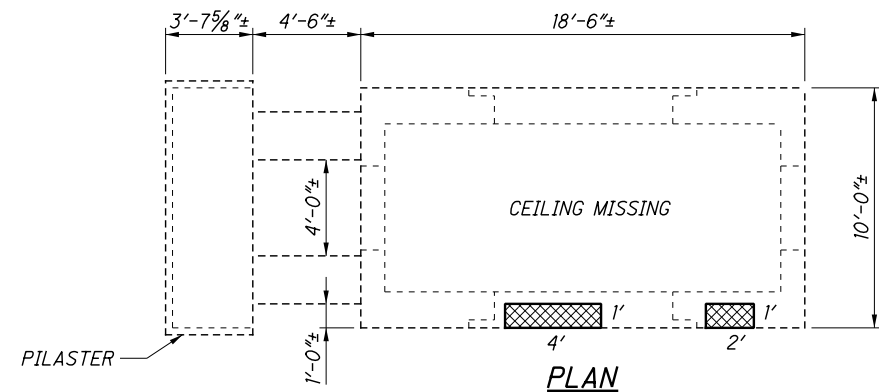
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET **49/238**.

**ADDITIONAL NOTES:** SEE SHEET **49/238**.

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**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET **7/238**.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 13 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 13 TOWER - 1	SQ YD	13.4	16.1	
PIER 13 TOWER - 2	SQ YD	3.2	4	
PIER 13 TOWER - 3	SQ YD	17.5	21	
PIER 13 TOWER - 4	SQ YD	4.6	6	
PIER 13 TOTALS	SQ YD	38.7	47.1	

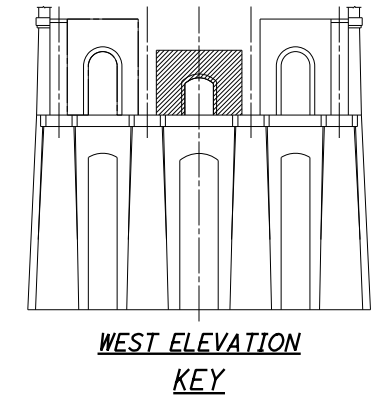
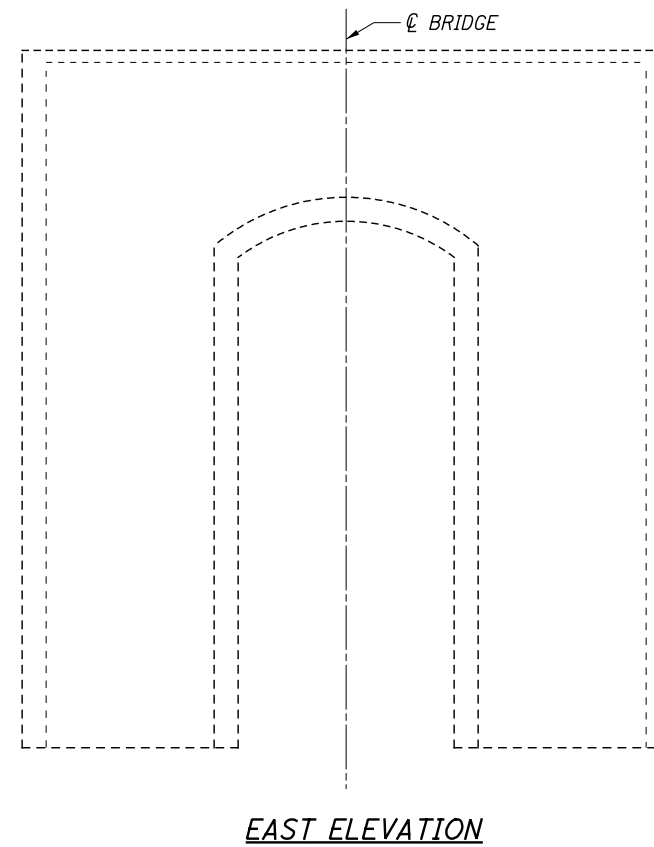
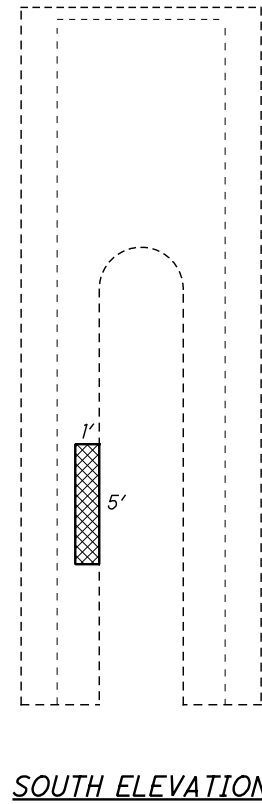
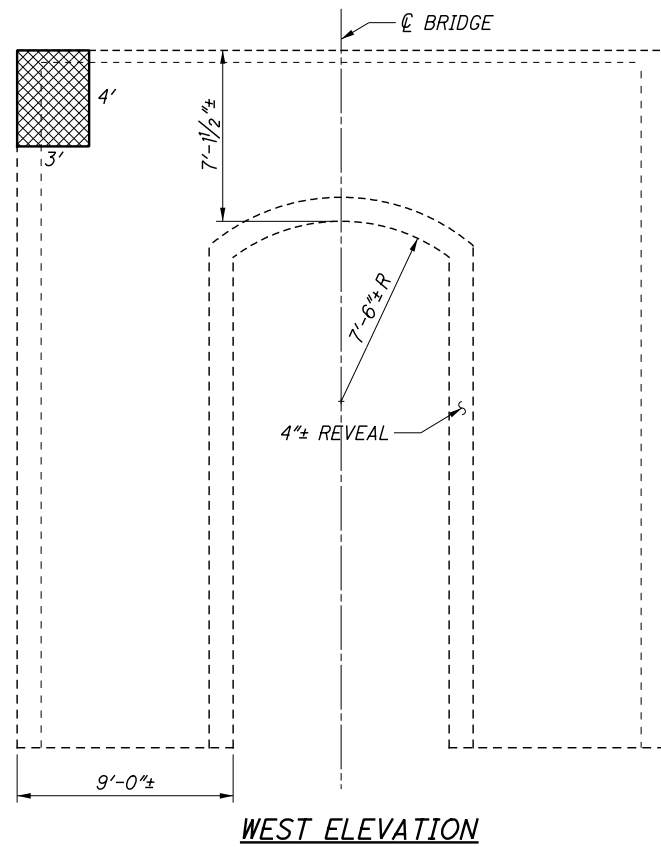
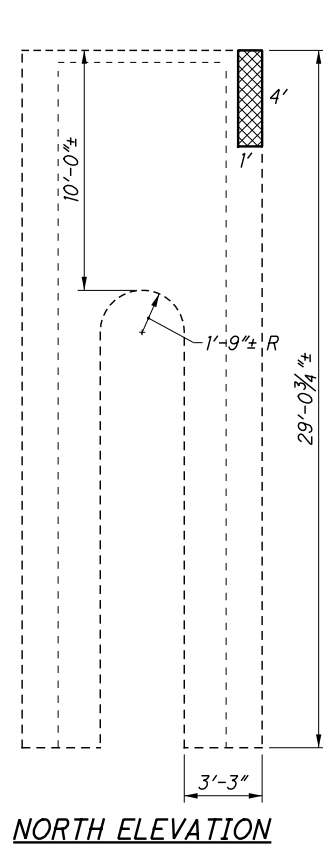
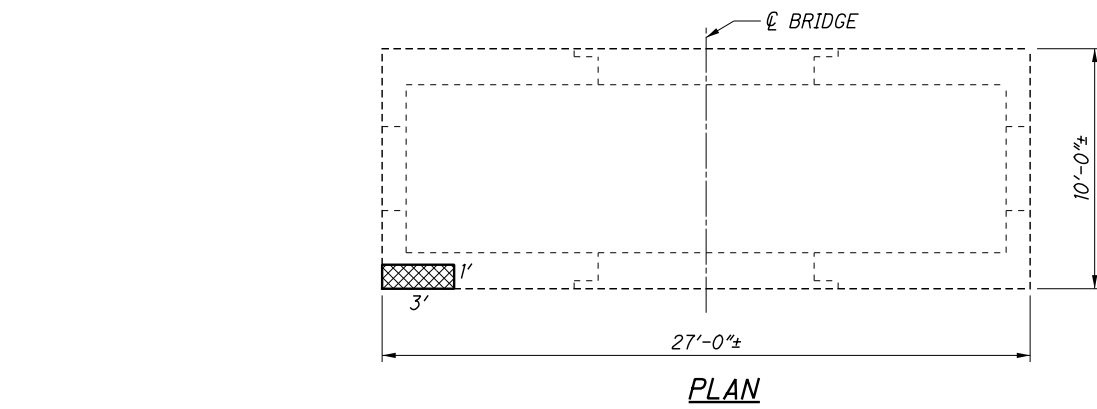
RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

DATE 1/30/18  
REVIEWED DLR  
DRAWN JSB  
DESIGNED TGW  
CHECKED KAK

PIER 13 TOWER - 1  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16-13  
PID No. 96986  
53/238  
113/308

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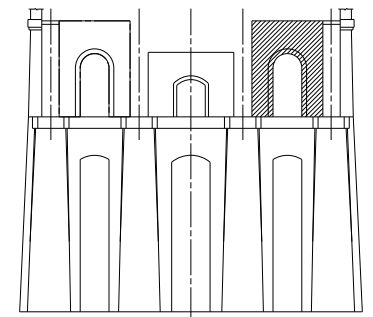
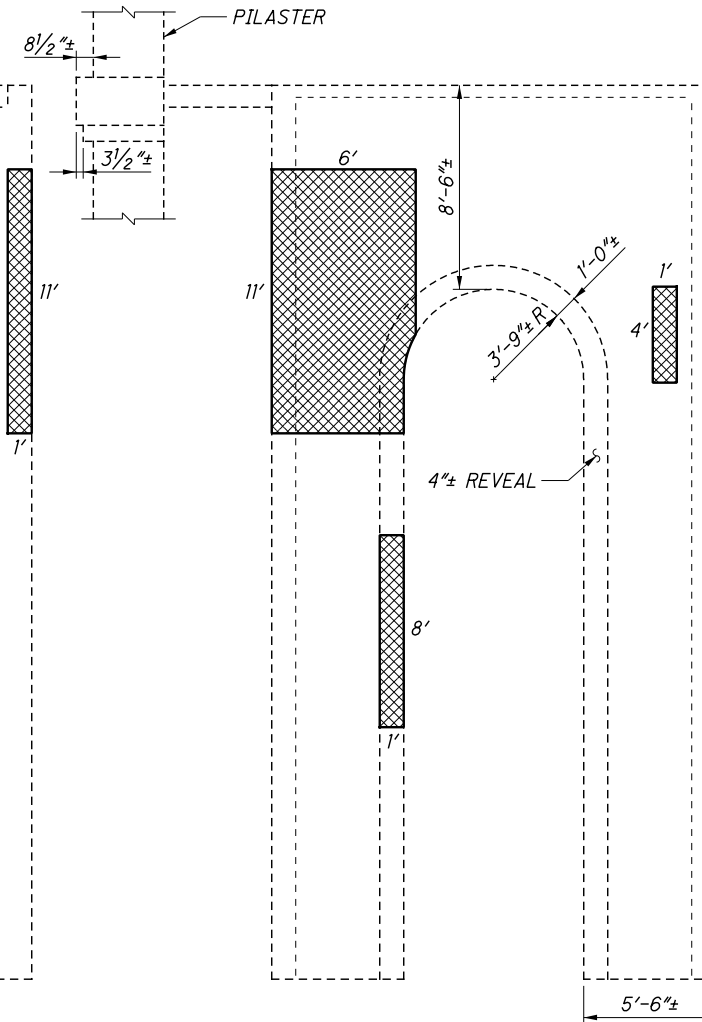
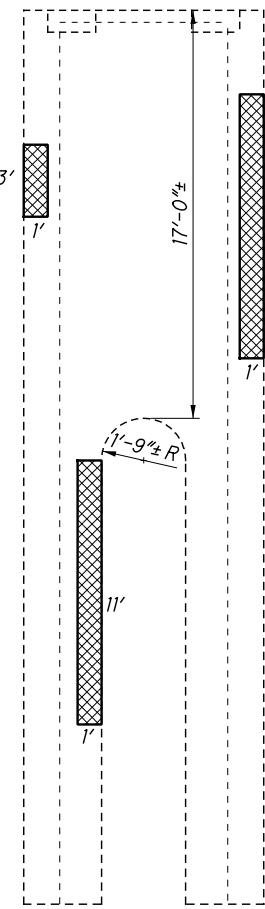
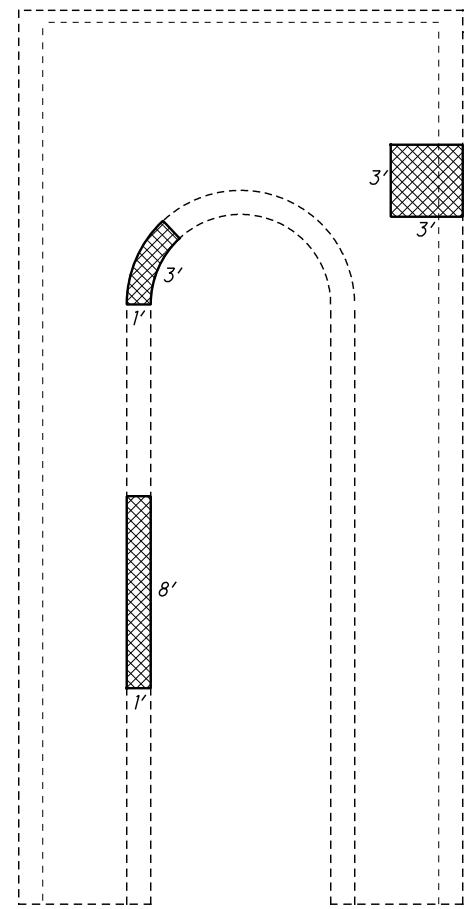
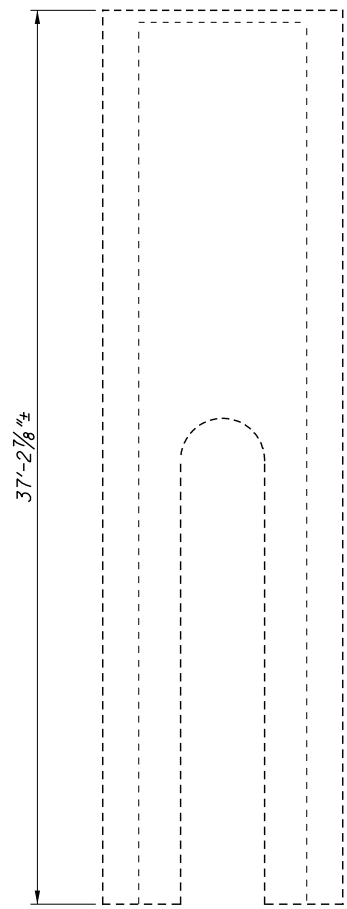
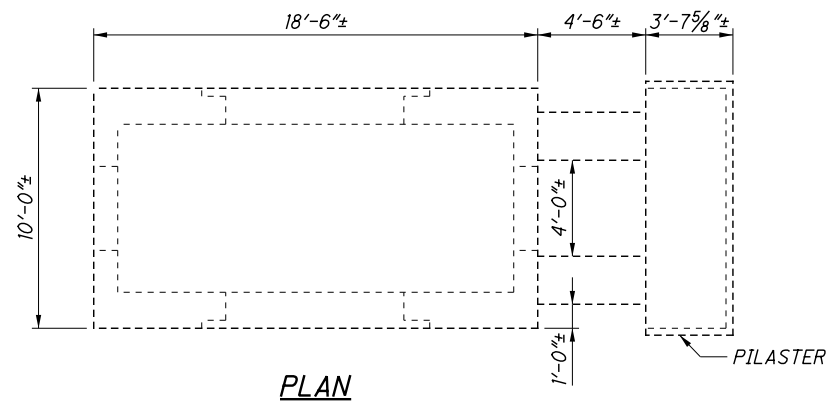


**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 53/238.  
**ADDITIONAL NOTES:** SEE SHEET 53/238.

<b>PIER 13 TOWER - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	<b>CUY-10-16.13</b> PID No. 96986	54 / 238 <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">             114              308           </div>	<b>RICHLAND ENGINEERING LIMITED</b>  29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED TGW CHECKED KAK	DRAWN JSB REVISED	REVIEWED DLR STRUCTURE FILE NUMBER 1801503	DATE 1/30/18

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**LEGEND**

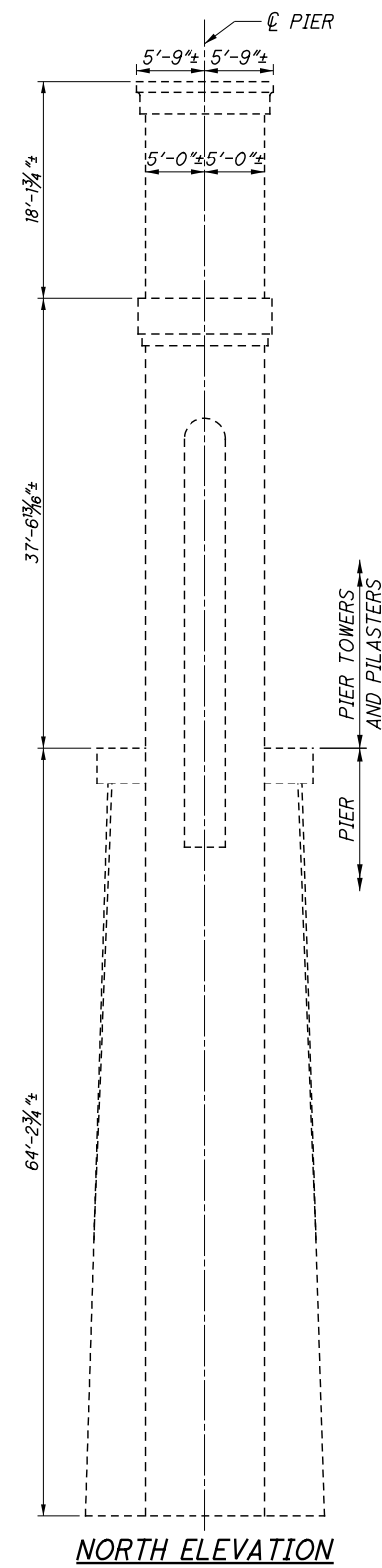
- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

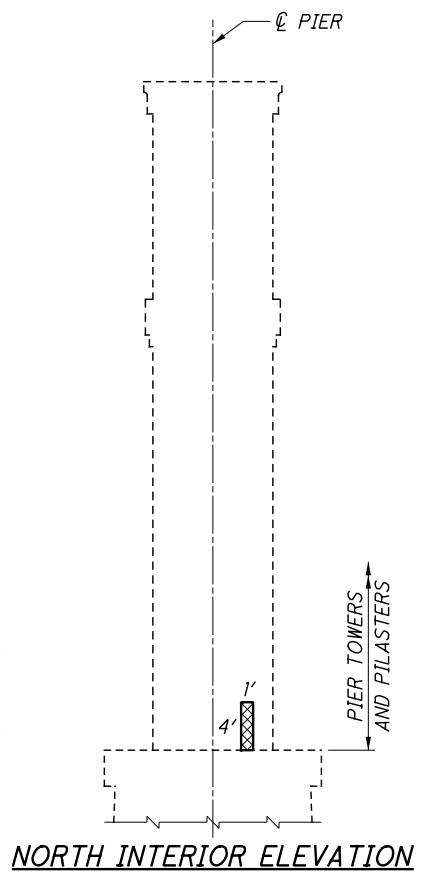
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 53/238.

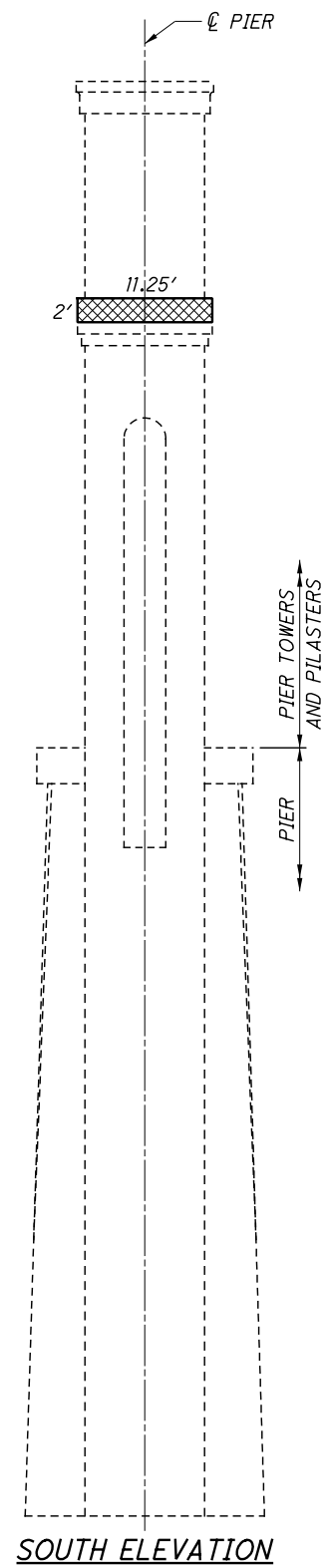
**ADDITIONAL NOTES:** SEE SHEET 53/238.



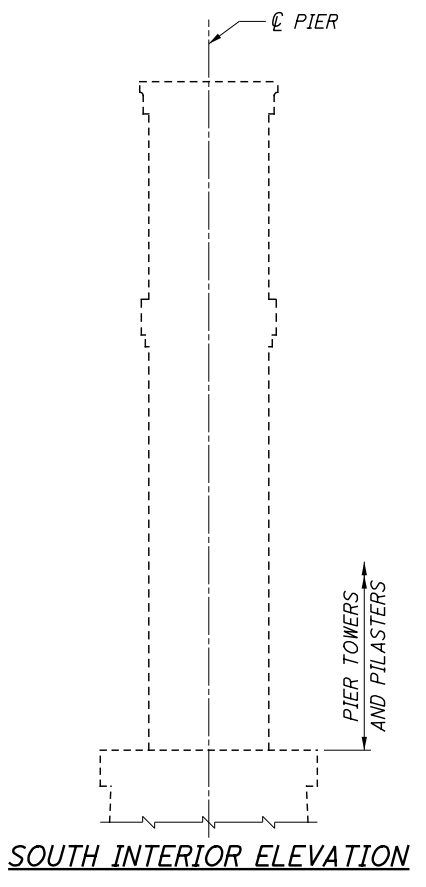
NORTH ELEVATION



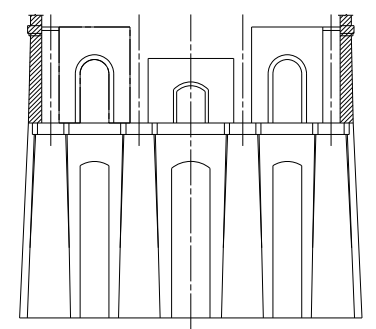
NORTH INTERIOR ELEVATION



SOUTH ELEVATION



SOUTH INTERIOR ELEVATION



WEST ELEVATION KEY

LEGEND

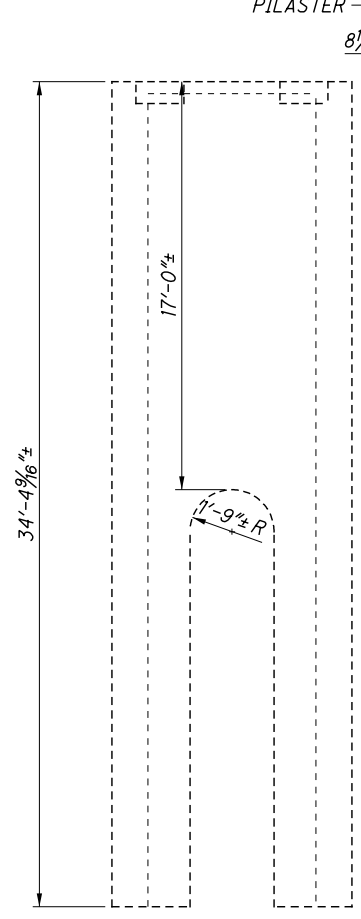
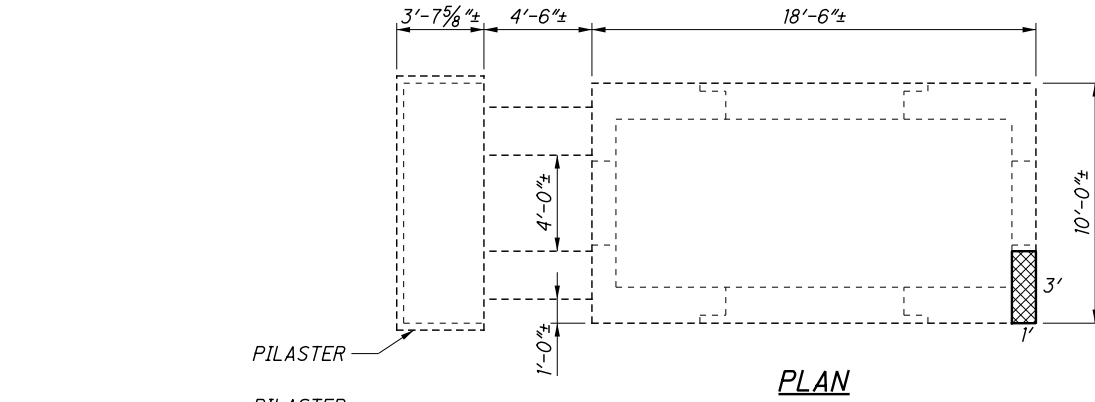
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

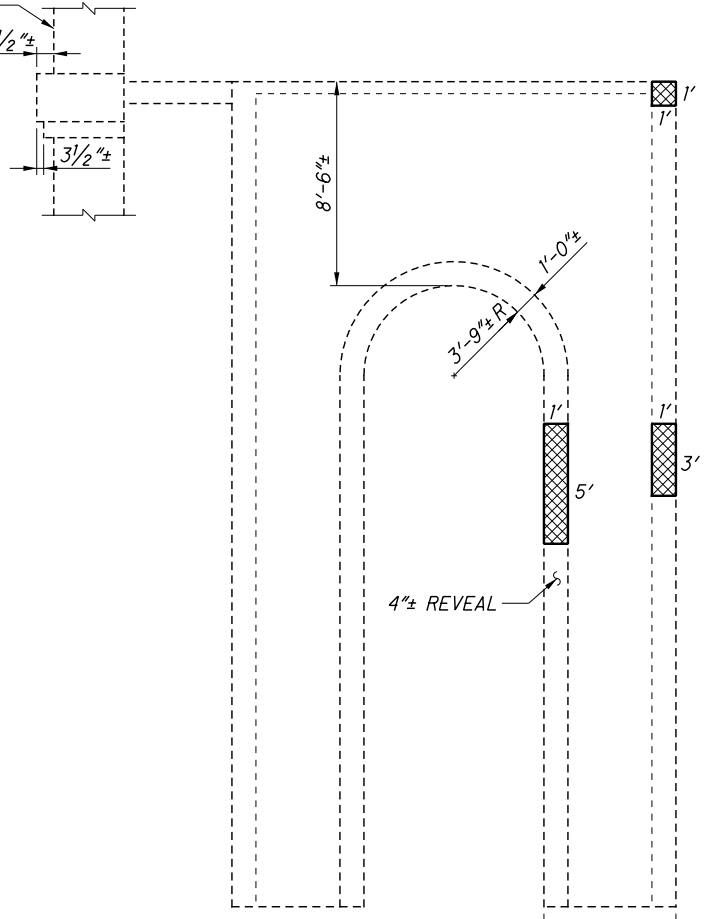
- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 53/238.
- ADDITIONAL NOTES:** SEE SHEET 53/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	
REVIEWED DLR	DATE 1/30/18
DRAWN USB	STRUCTURE FILE NUMBER 1801503
DESIGNED TGW	CHECKED KAK
PIER 13 TOWER - 4 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16-13 PID No. 96986	56/238
116 308	

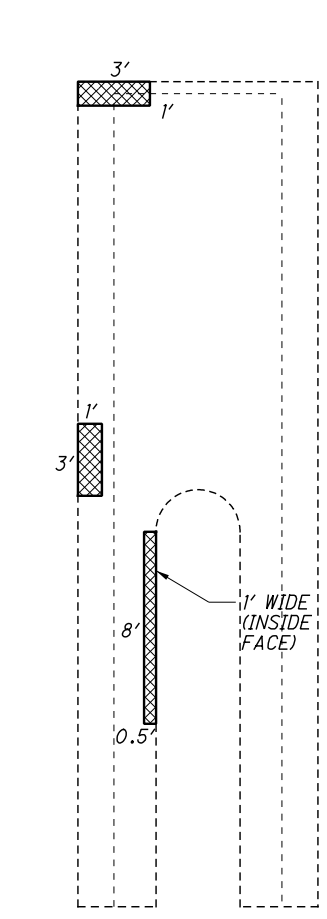
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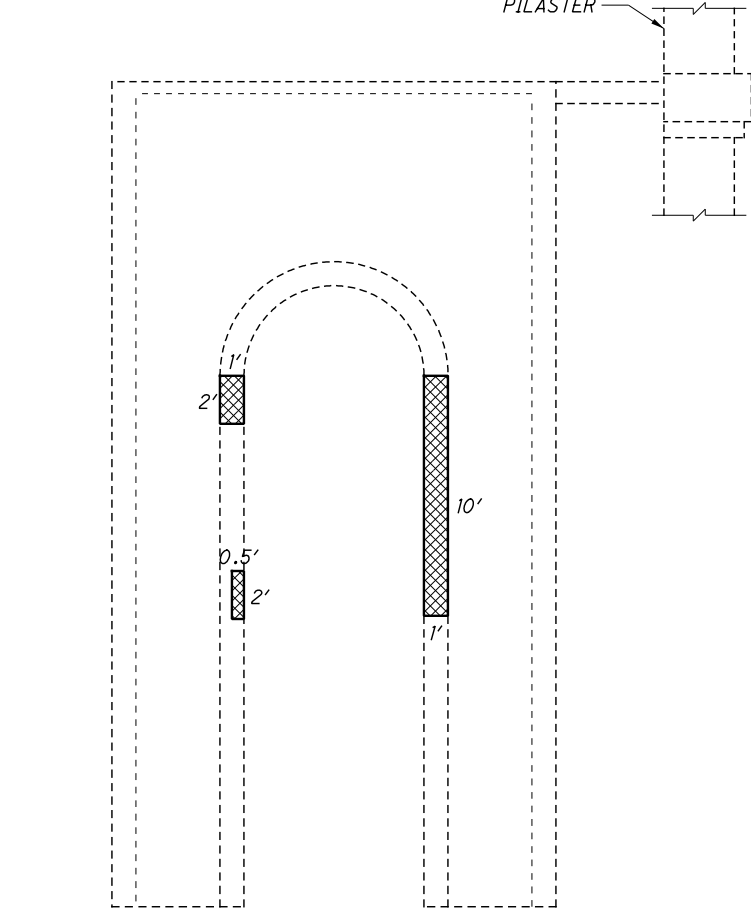
**NORTH ELEVATION**



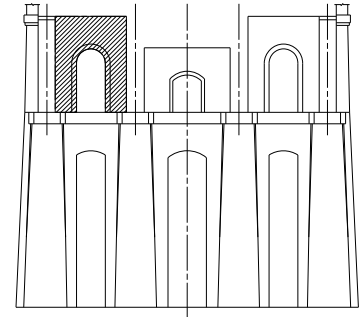
**WEST ELEVATION**



**SOUTH ELEVATION**



**EAST ELEVATION**



**WEST ELEVATION KEY**

**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET 7/238.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 14 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 14 TOWER - 1	SQ YD	6.9	8.3	
PIER 14 TOWER - 2	SQ YD	9.6	11.5	
PIER 14 TOWER - 3	SQ YD	4.8	6	
PIER 14 TOTALS	SQ YD	21.3	25.8	

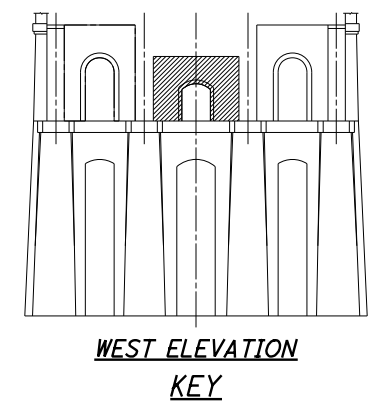
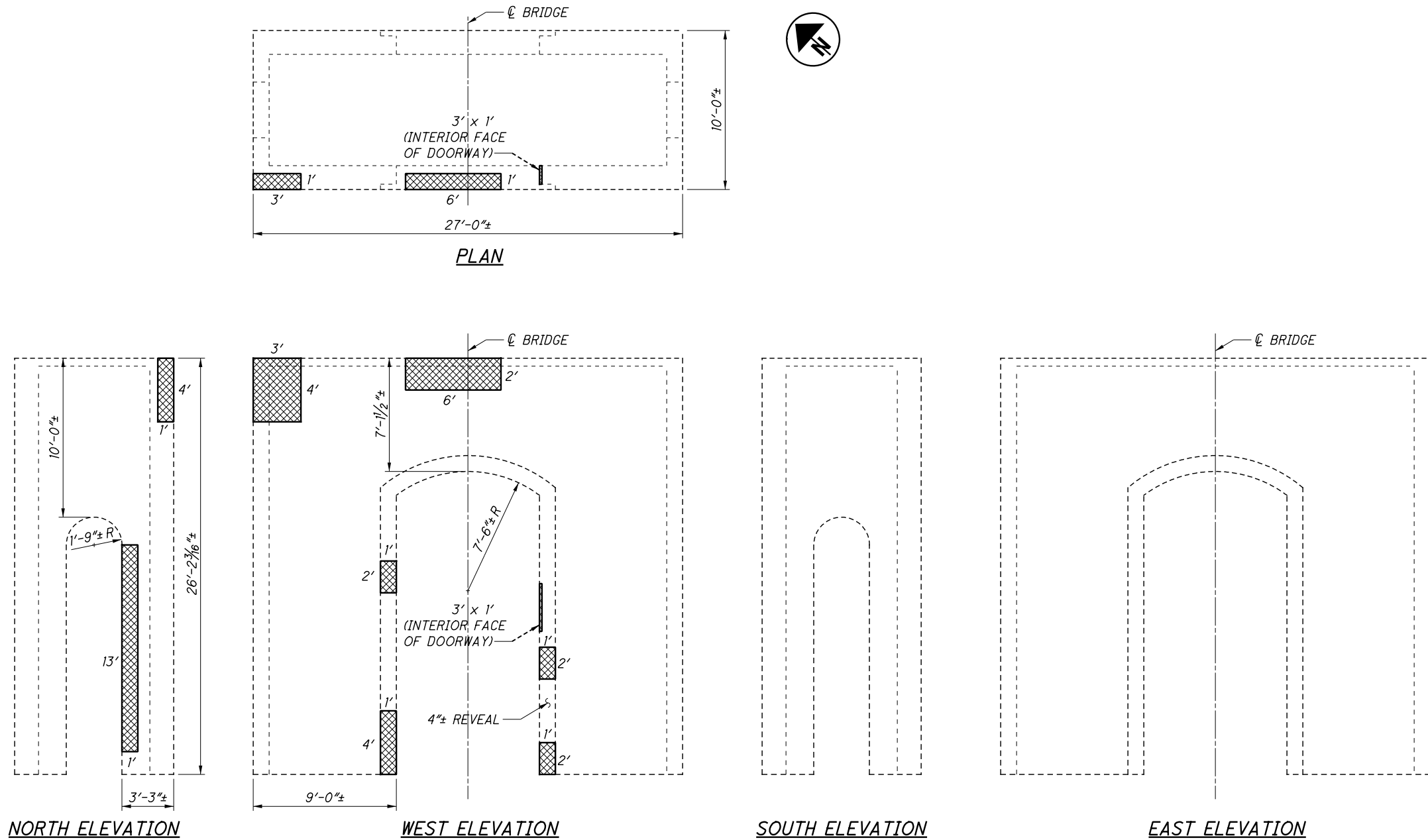
**PIER 14 TOWER - 1**  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
 PID No. 96986

57 / 238  
 117 / 308

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE 1/30/18  
 REVIEWED DLR  
 DRAWN JSB  
 DESIGNED TGW  
 CHECKED KAK

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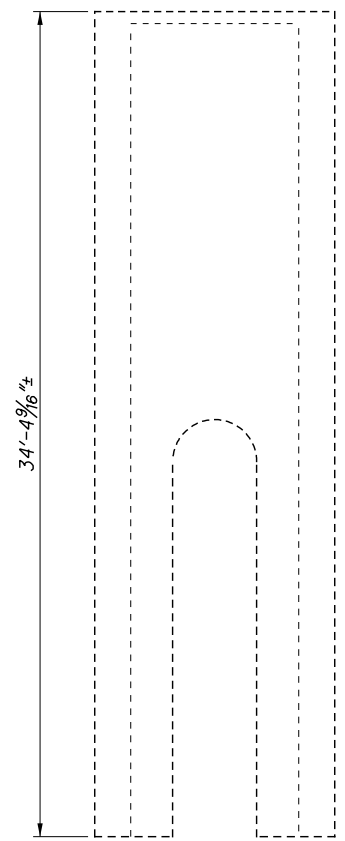
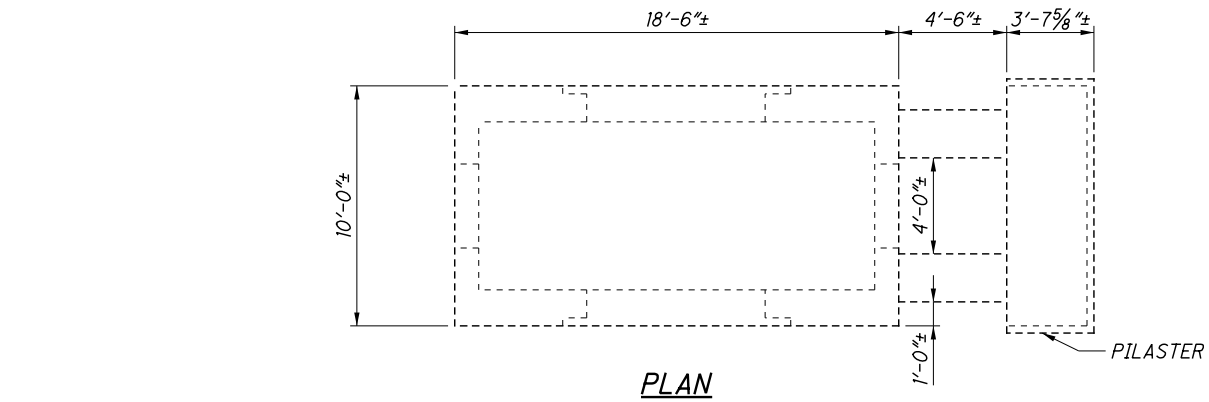


**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

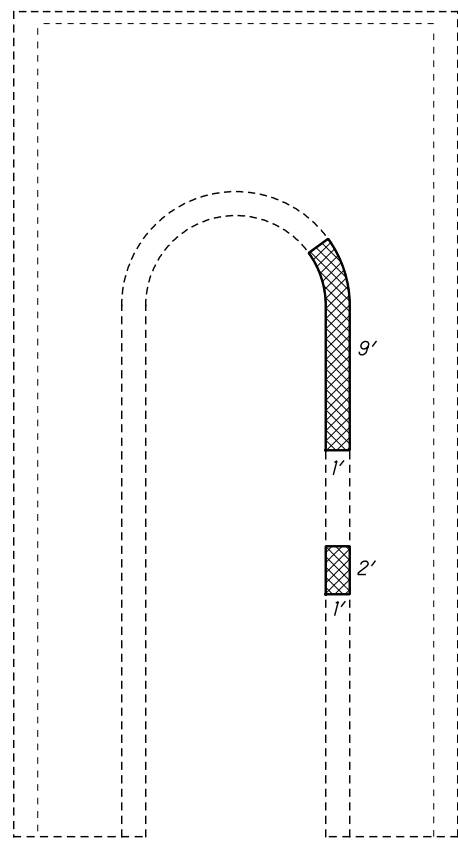
**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 57/238.  
**ADDITIONAL NOTES:** SEE SHEET 57/238.

<b>PIER 14 TOWER - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	DESIGNED TGW	DRAWN USB	REVIEWED DLR	DATE 1/30/18	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
	CHECKED KAK	REVISED	STRUCTURE FILE NUMBER 1801503	PID No. 96986	CUY-10-16.13
58 / 238	118 / 308				

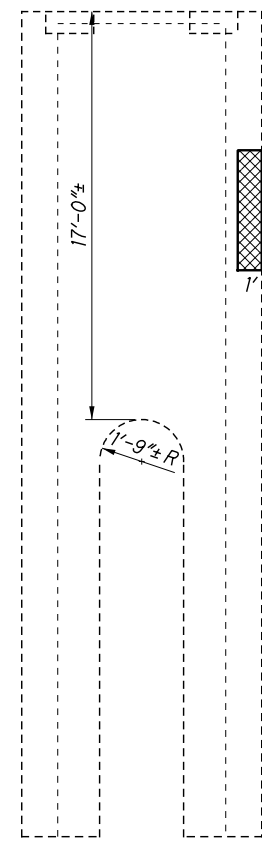
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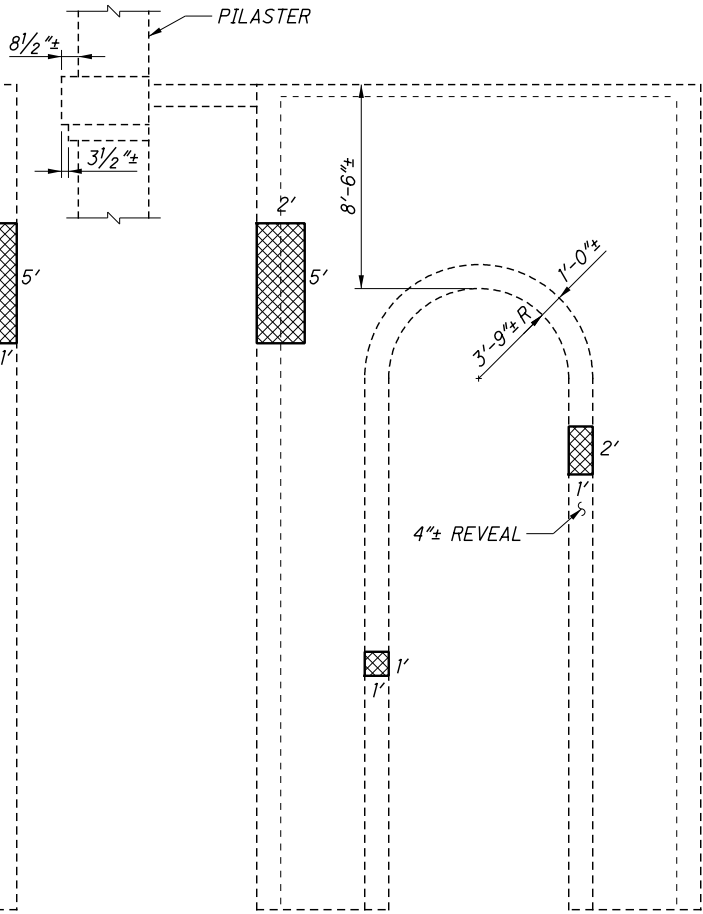
NORTH ELEVATION



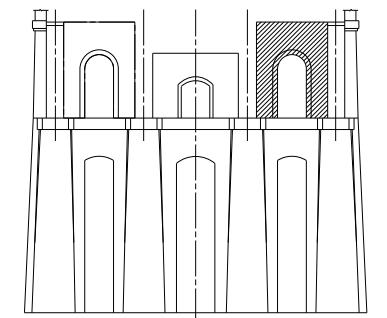
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION KEY

LEGEND

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

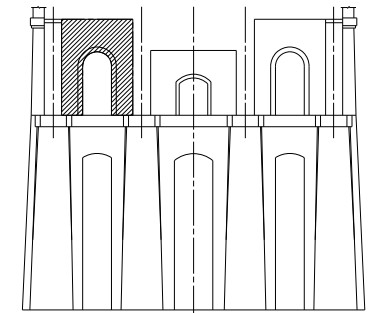
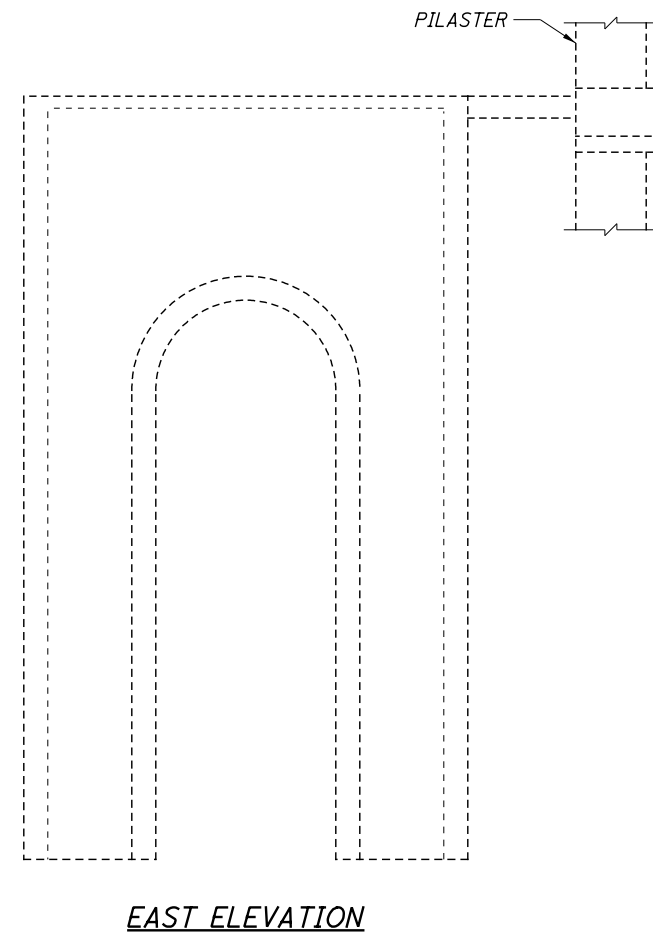
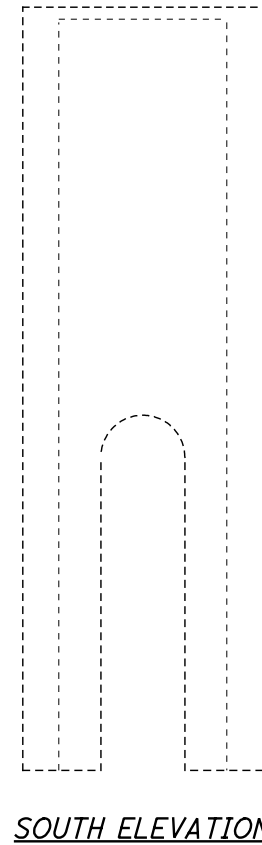
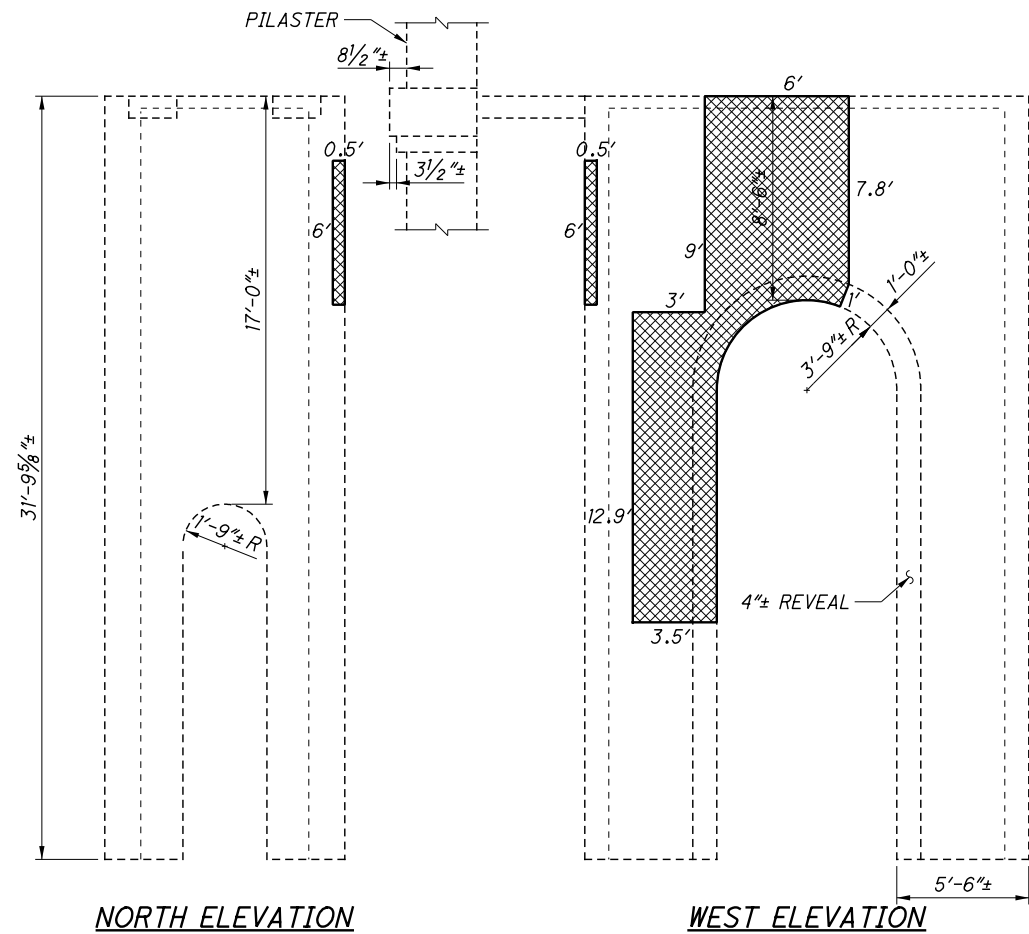
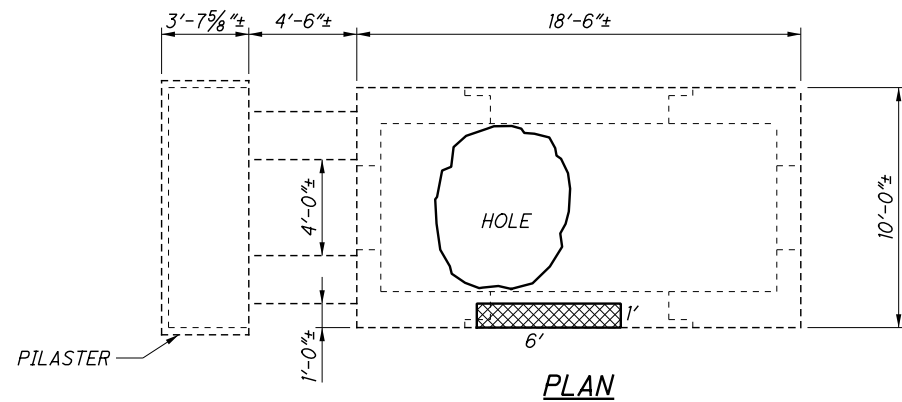
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 57/238.

**ADDITIONAL NOTES:** SEE SHEET 57/238.



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**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET 7/238.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

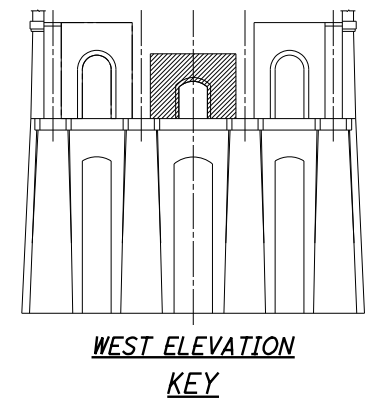
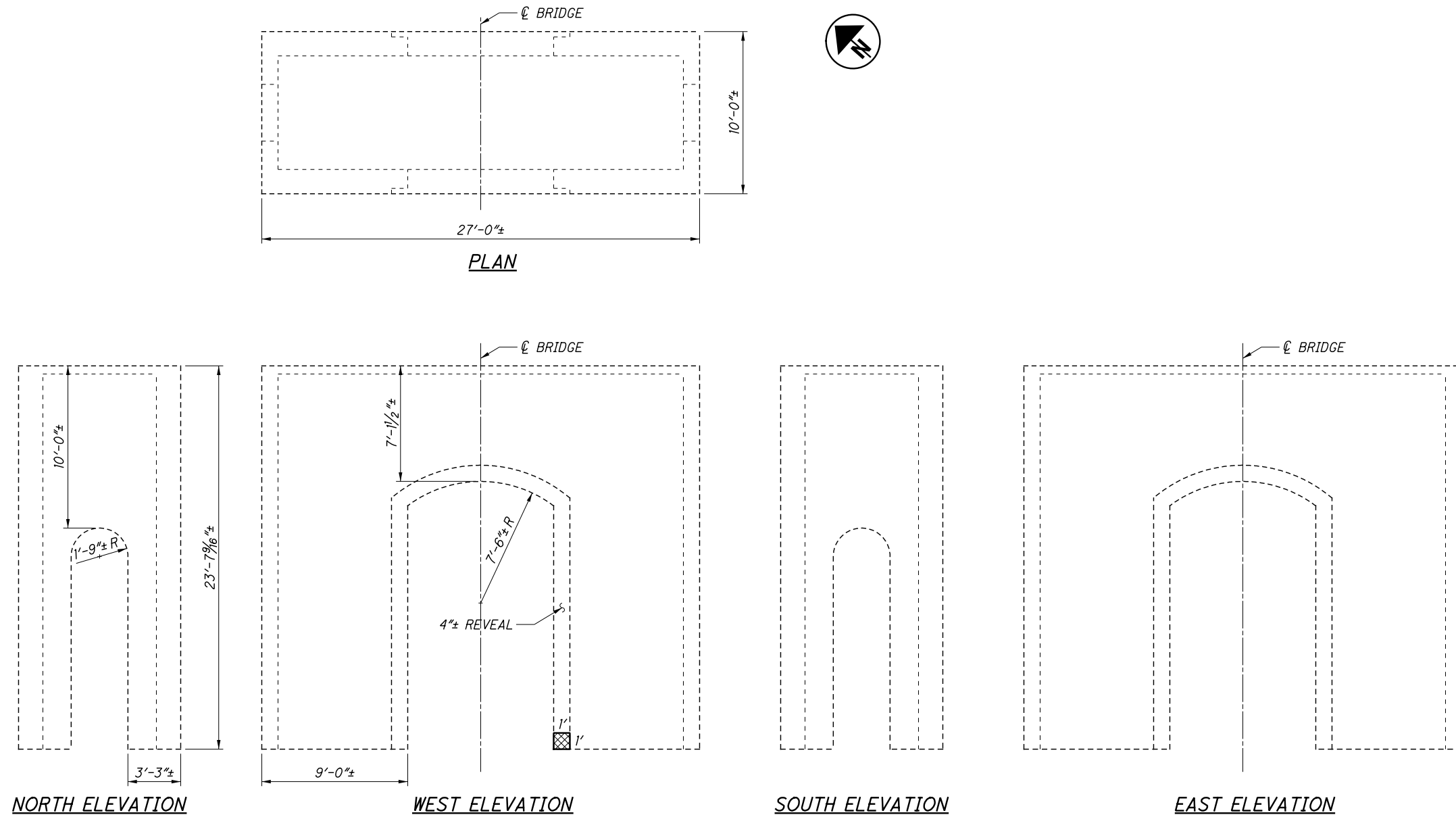
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.


**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 15 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 15 TOWER - 1	SQ YD	14.6	17.5	
PIER 15 TOWER - 2	SQ YD	0.2	0.3	
PIER 15 TOWER - 3	SQ YD	13.1	16	
PIER 15 TOTALS	SQ YD	27.9	33.8	

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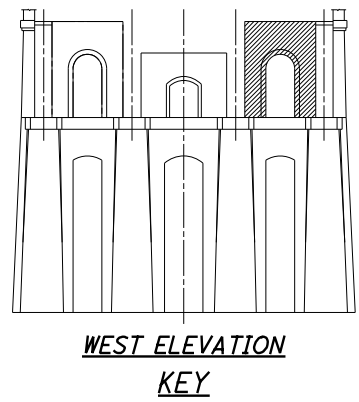
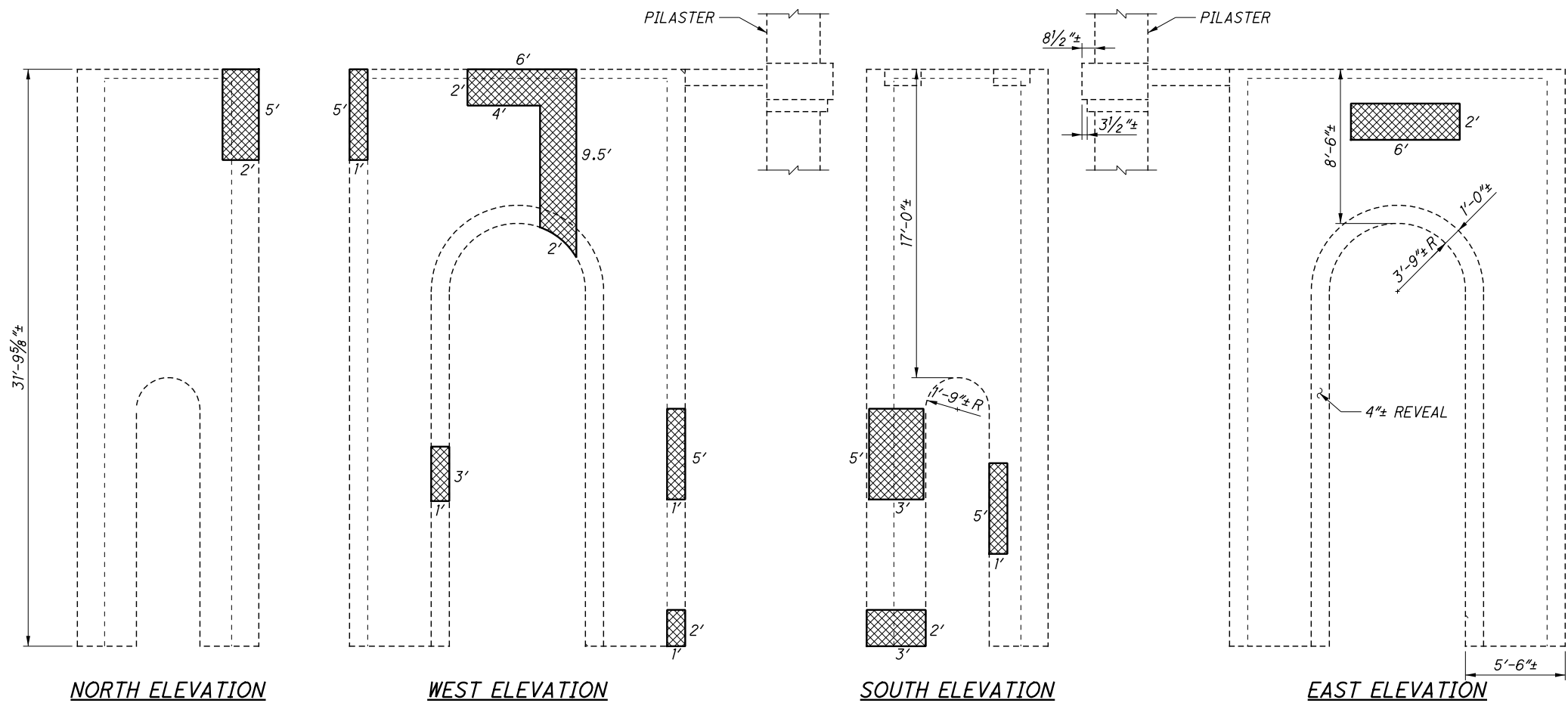
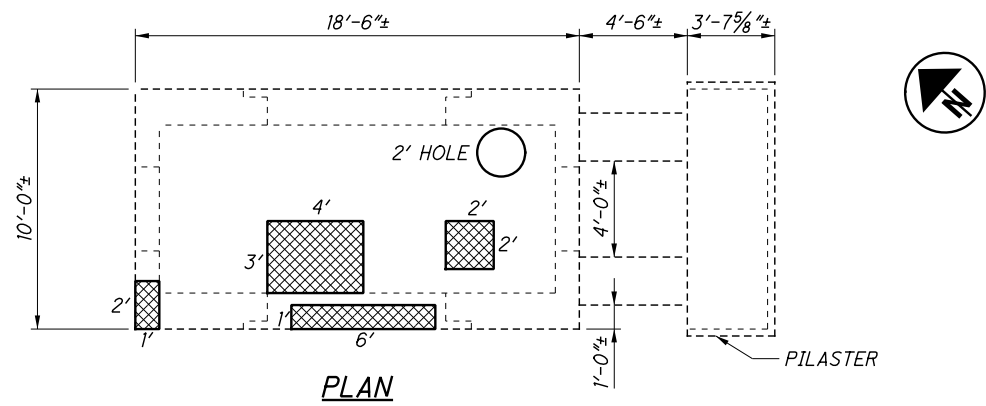


**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 60/238.  
**ADDITIONAL NOTES:** SEE SHEET 60/238.

<b>PIER 15 TOWER - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED  29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED TGW	DRAWN JSB	REVIEWED DLR
CHECKED KAK	REVISED	DATE 1/30/18
CUY-10-16.13 PID No. 96986		STRUCTURE FILE NUMBER 1801503
61/238		121 308

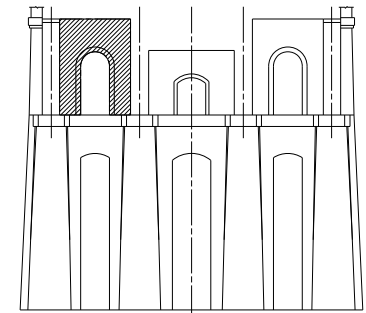
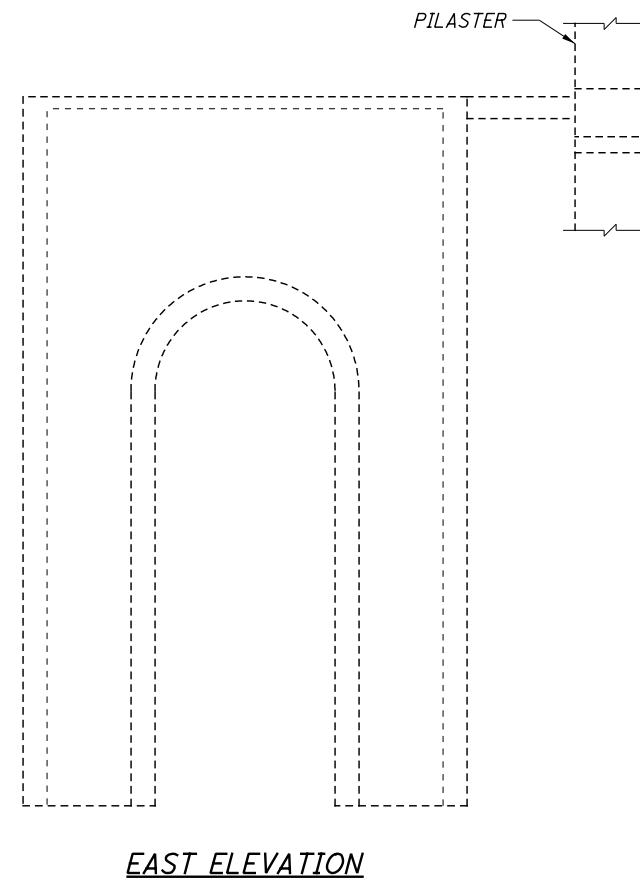
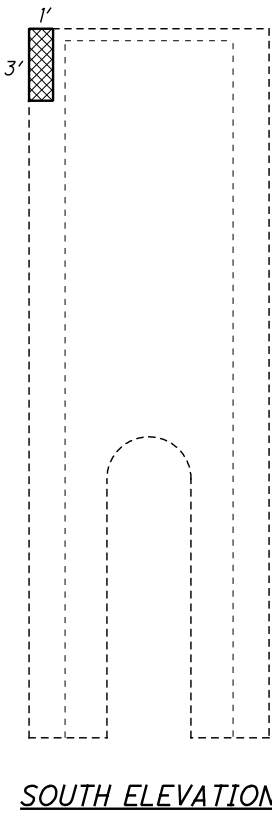
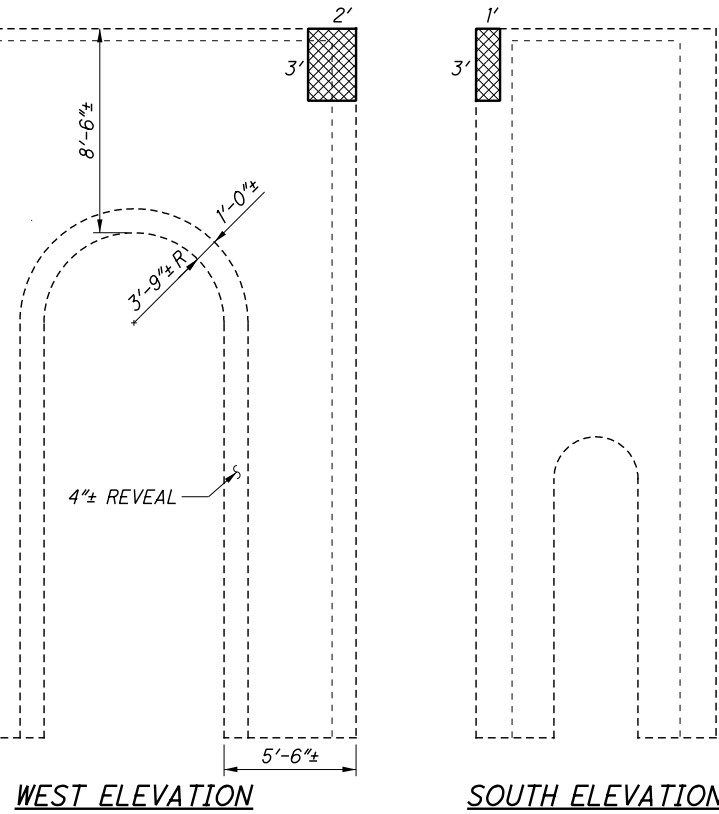
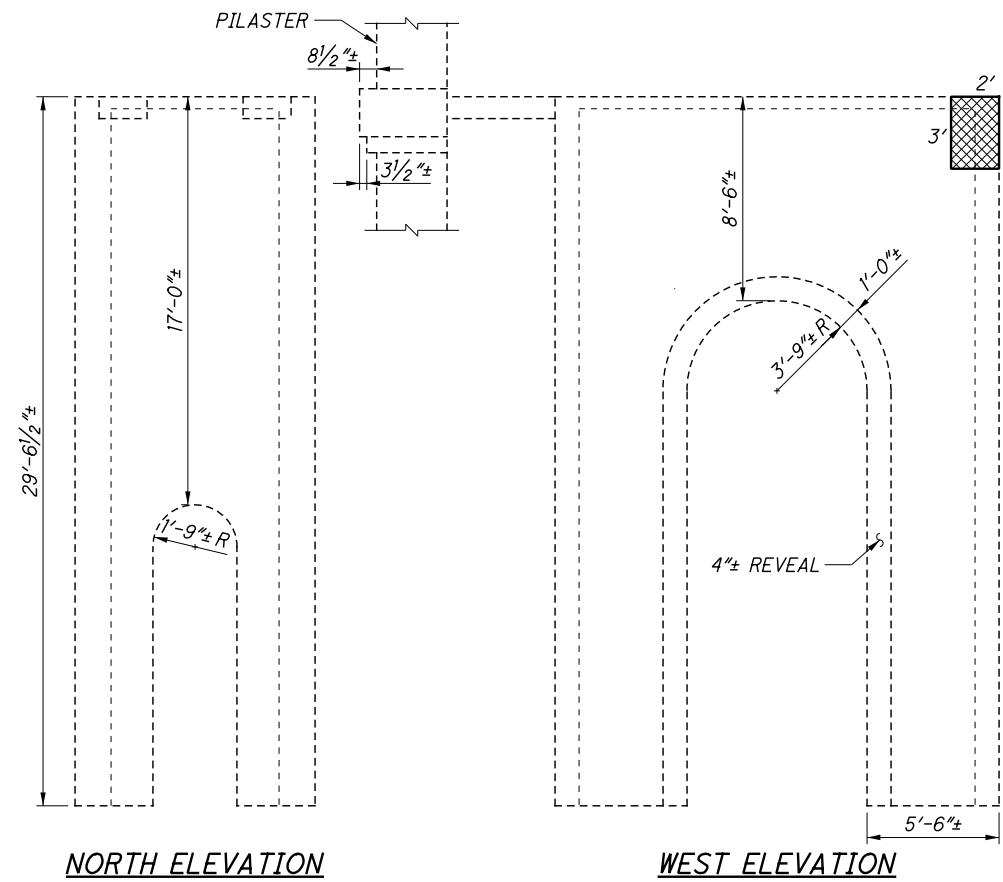
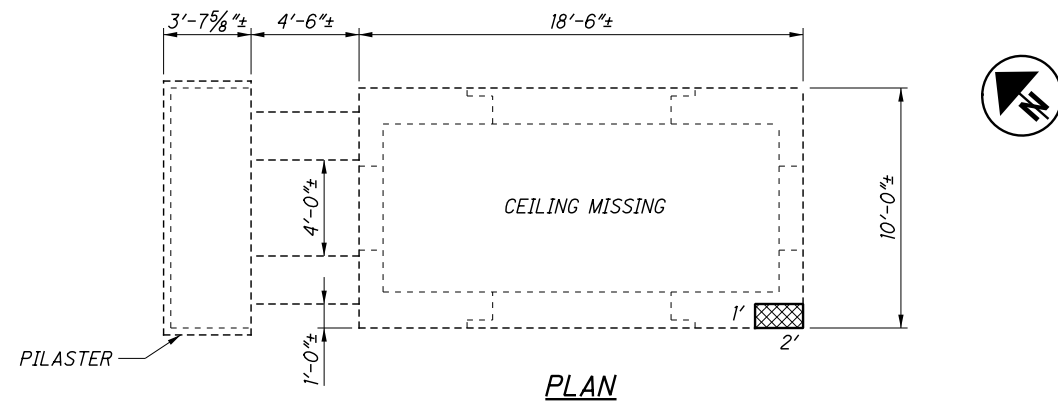
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613CP1051.dgn 3/2/2018 11:33:34 AM JeffSmith



**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET [60/238].  
**ADDITIONAL NOTES:** SEE SHEET [60/238].

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**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET **7/238**.

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

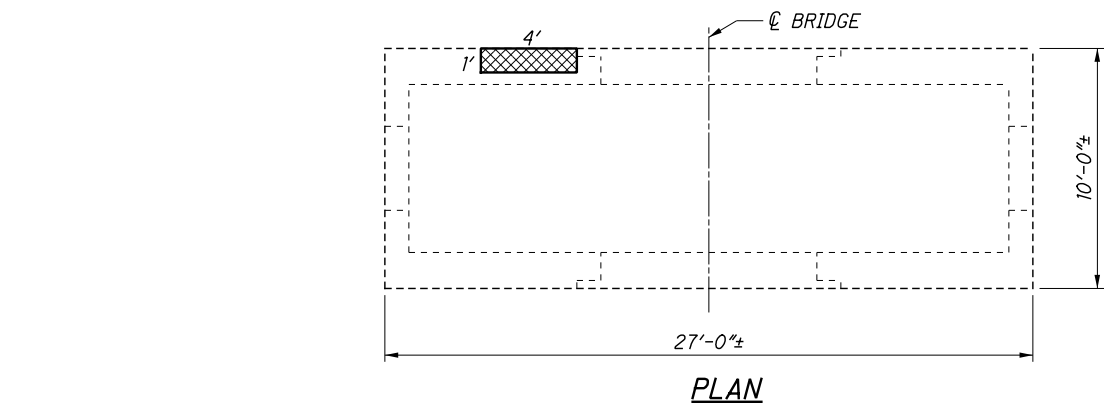
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

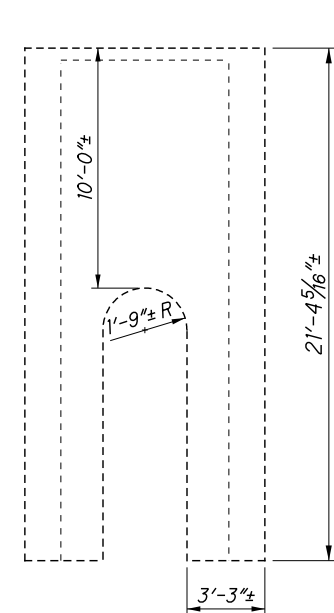
**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 16 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 16 TOWER - 1	SQ YD	1.2	1.5	
PIER 16 TOWER - 2	SQ YD	2.2	3	
PIER 16 TOWER - 3	SQ YD	3.2	4	
PIER 16 TOWER - 4	SQ YD	1.0	1	
PIER 16 TOWER - 5	SQ YD	12.0	14	
<b>PIER 16 TOTALS</b>	<b>SQ YD</b>	<b>19.6</b>	<b>23.5</b>	

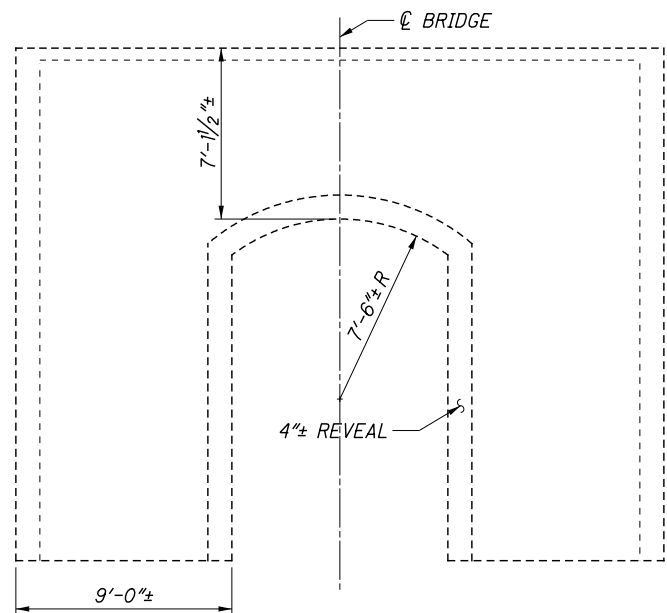
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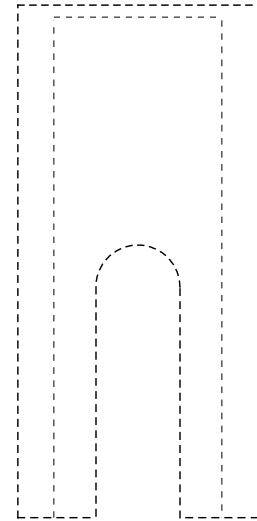
PLAN



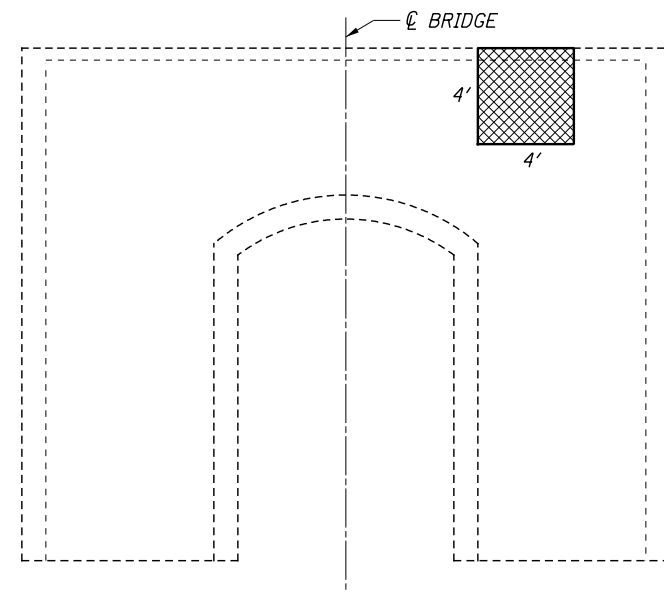
NORTH ELEVATION



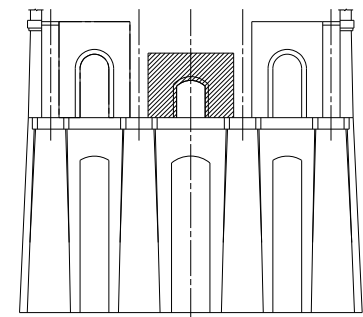
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION KEY

LEGEND

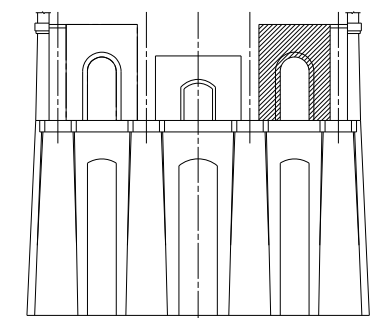
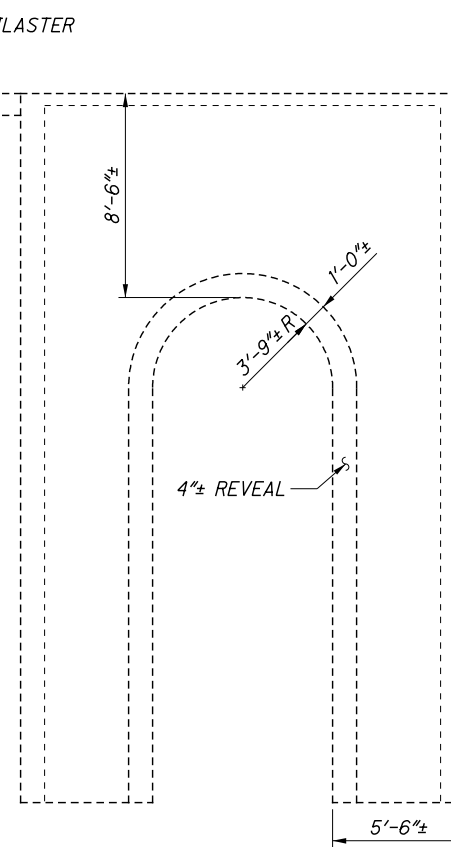
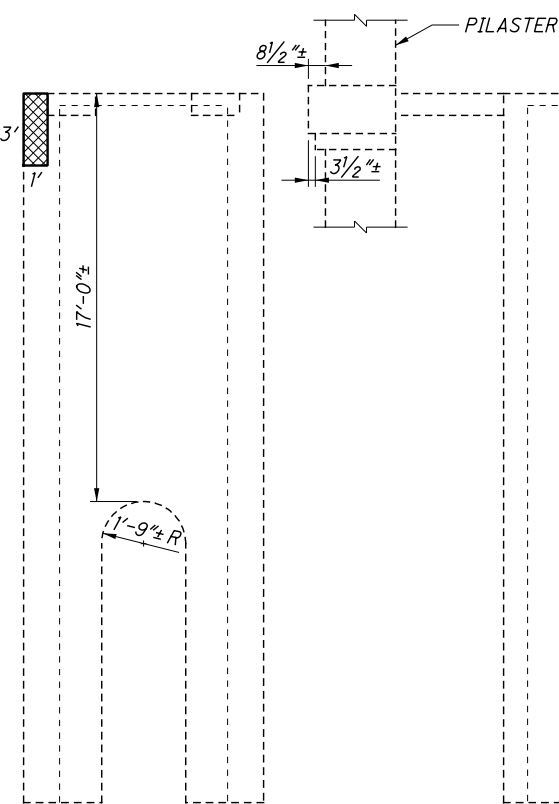
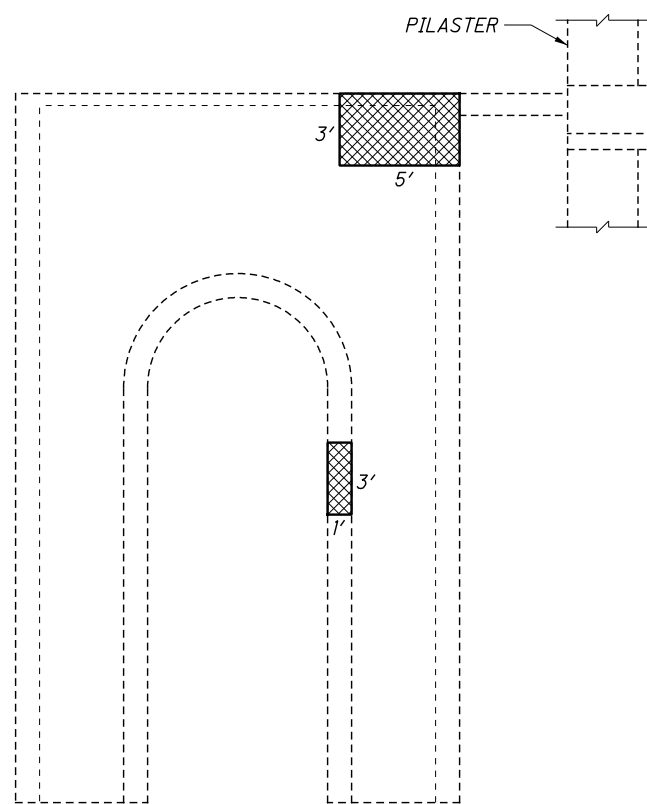
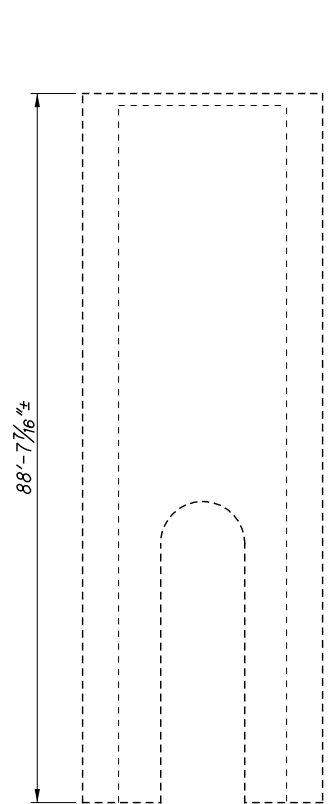
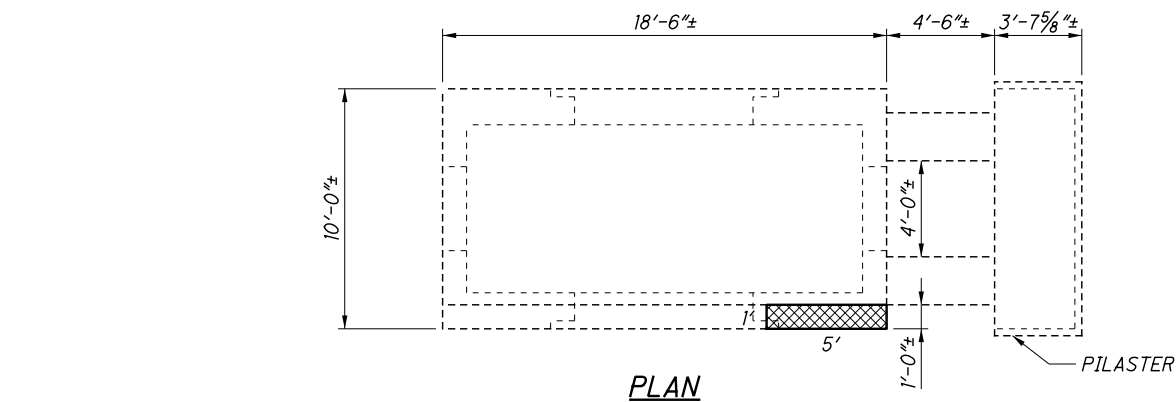
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 63/238.

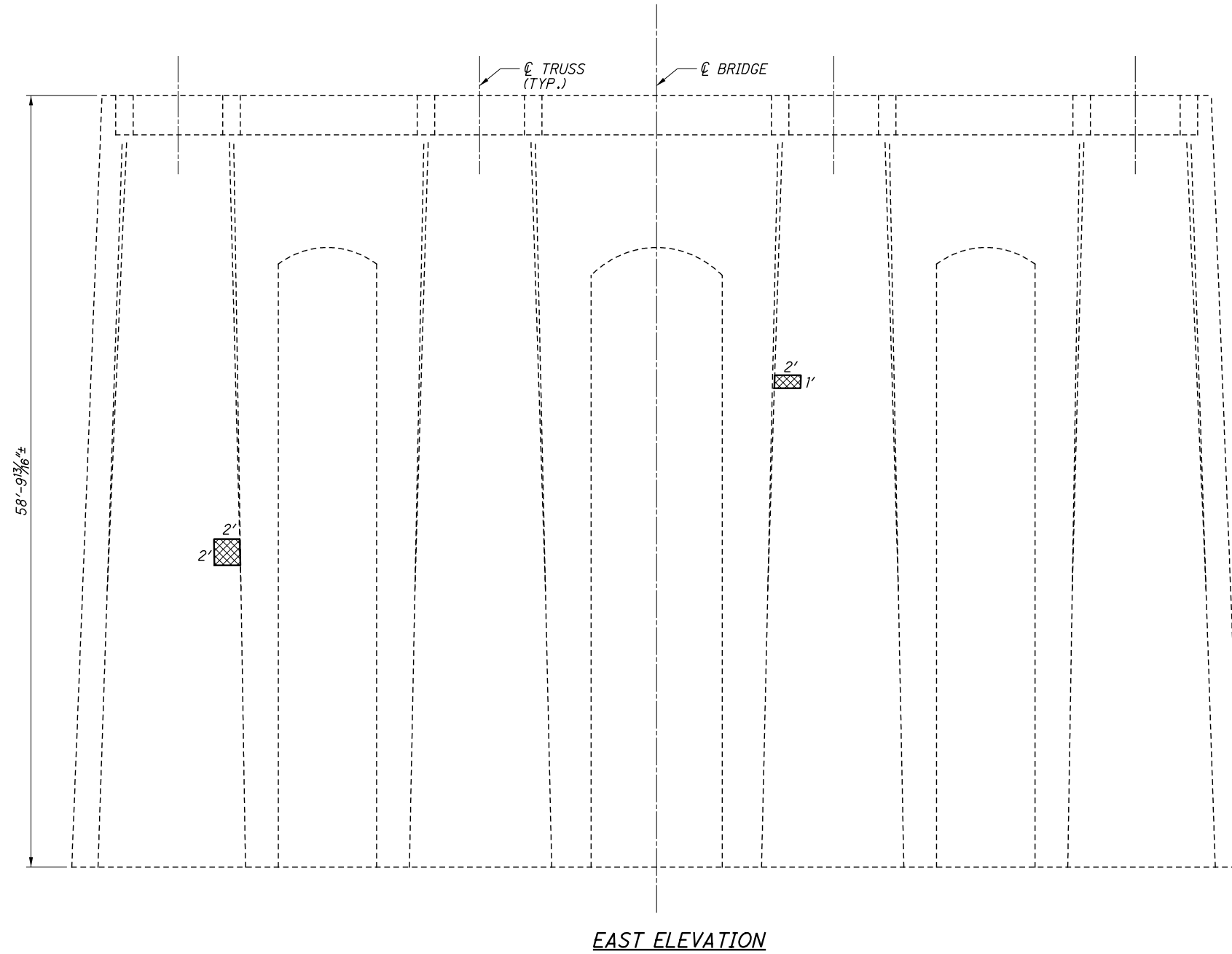
**ADDITIONAL NOTES:** SEE SHEET 63/238.



**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET **63/238**.  
**ADDITIONAL NOTES:** SEE SHEET **63/238**.



**LEGEND**

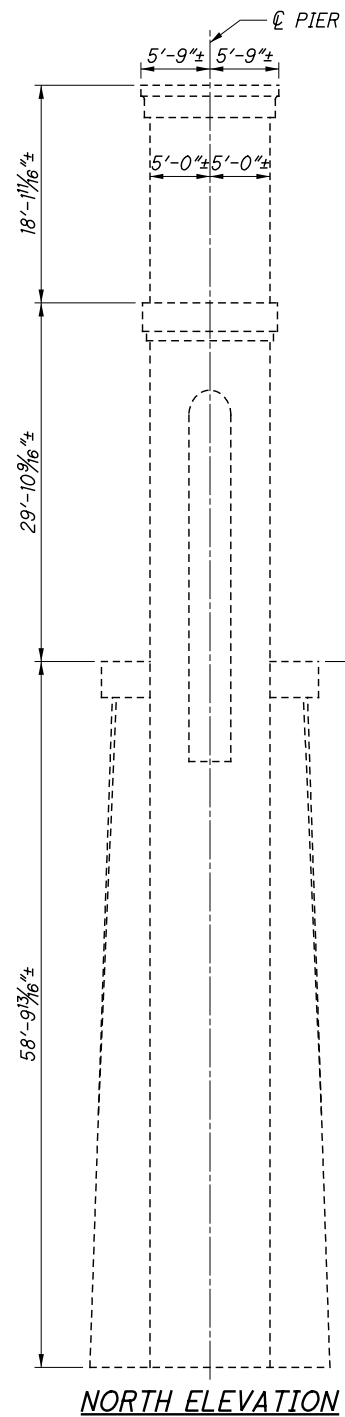
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

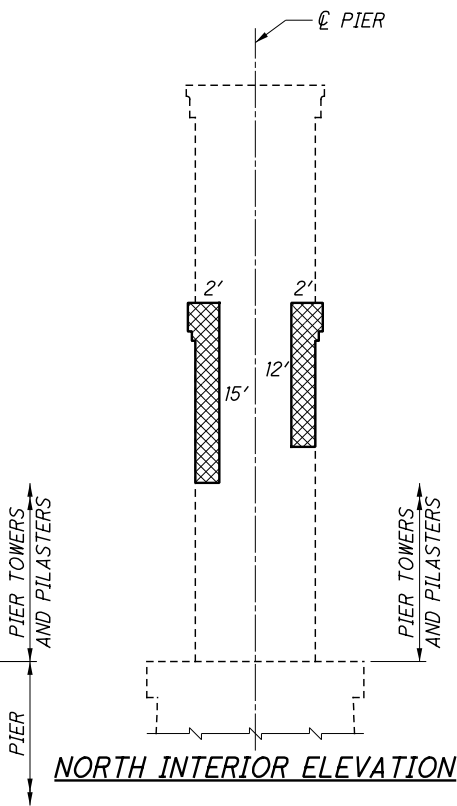
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 63/238.

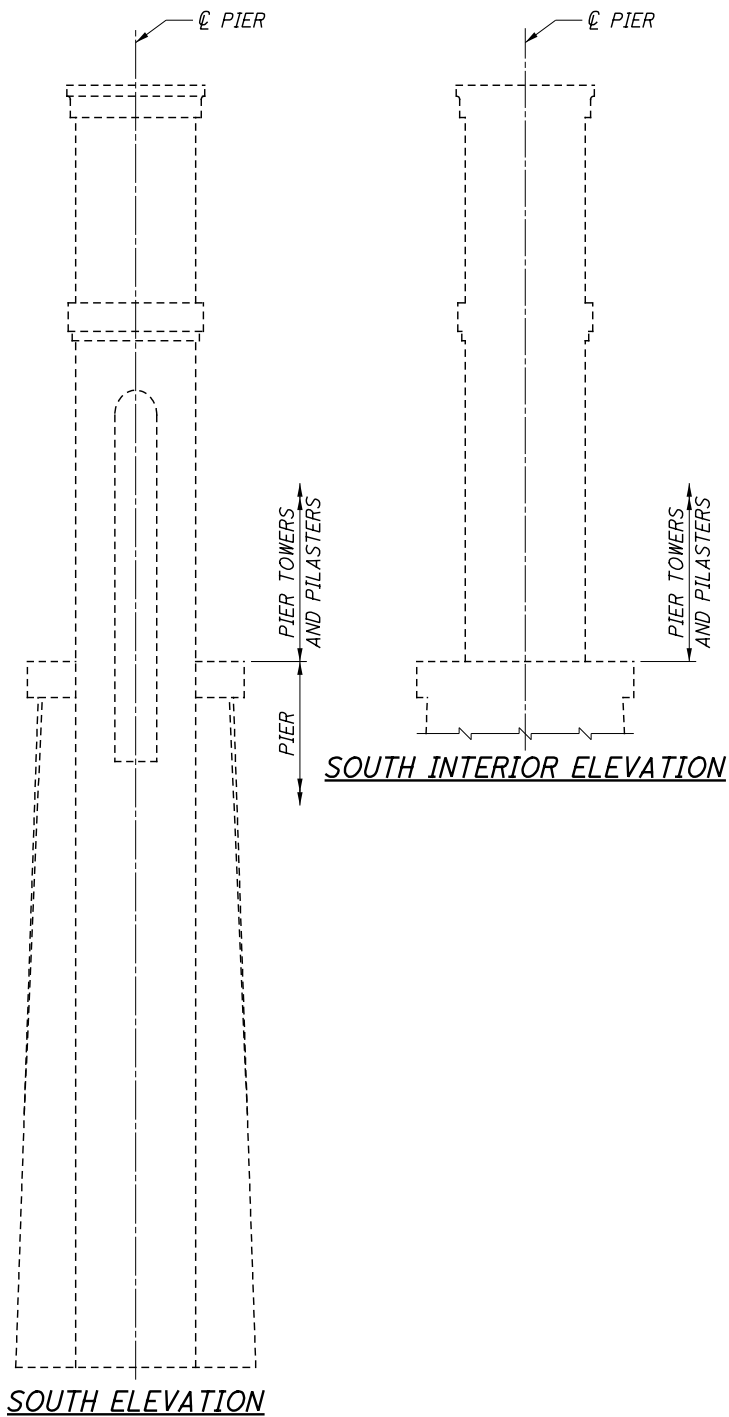
**ADDITIONAL NOTES:** SEE SHEET 63/238.



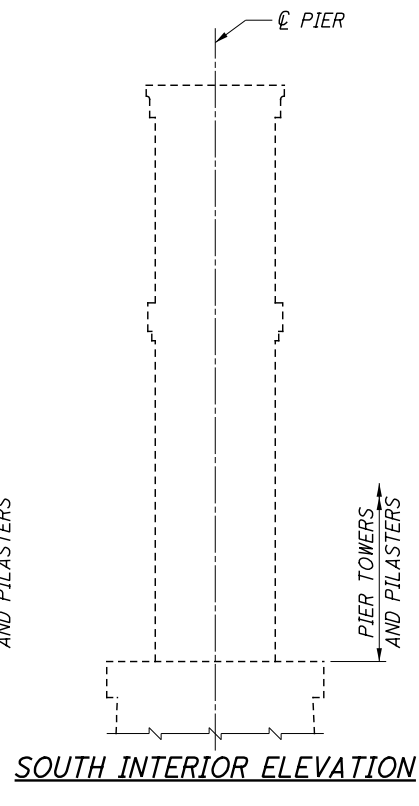
NORTH ELEVATION



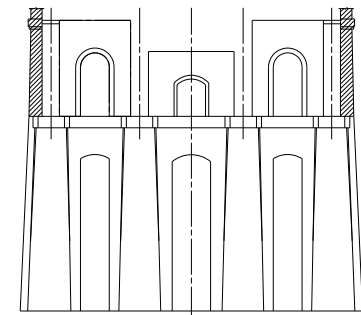
NORTH INTERIOR ELEVATION



SOUTH ELEVATION



SOUTH INTERIOR ELEVATION



WEST ELEVATION KEY

**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

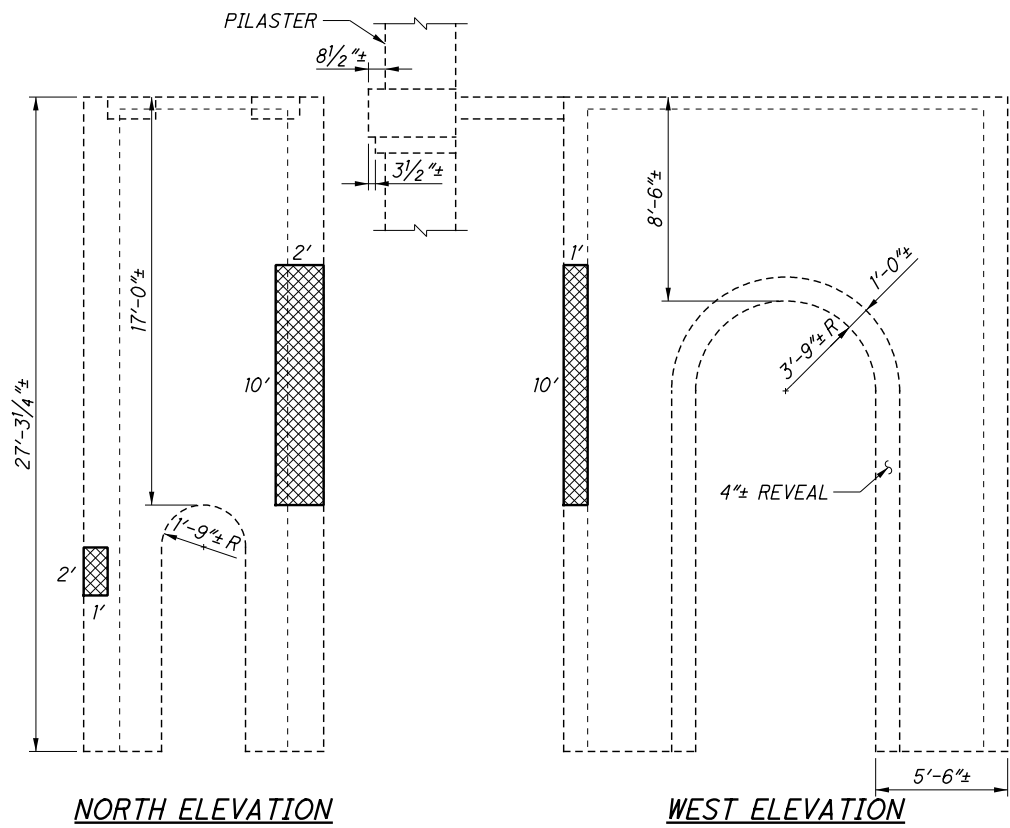
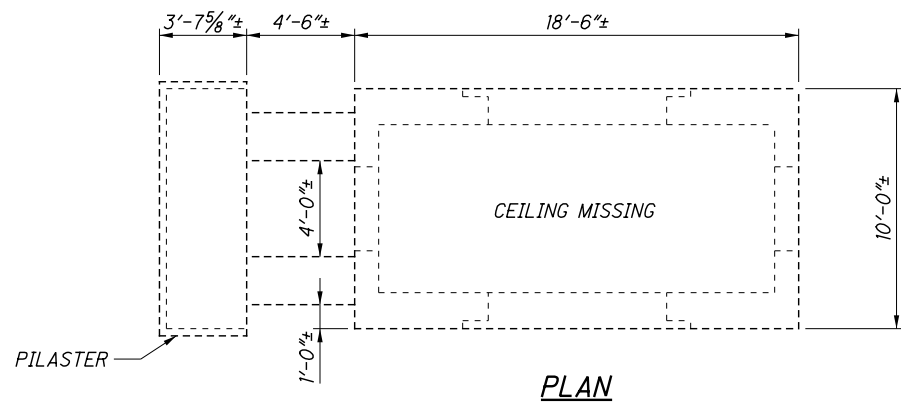
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 63/238.

**ADDITIONAL NOTES:** SEE SHEET 63/238.

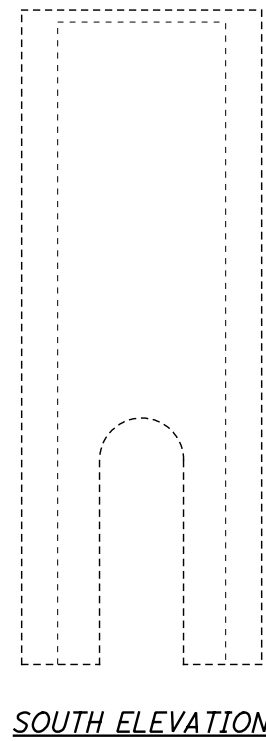
<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>PIER 16 TOWER - 5</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DESIGNED TGW</p>	<p>DRAWN JSB</p>	<p>REVIEWED DLR</p>	<p>DATE 1/30/18</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
		<p>CHECKED KAK</p>	<p>REVISED</p>	<p>STRUCTURE FILE NUMBER 1801503</p>	<p>67/238</p>	<p>127 308</p>



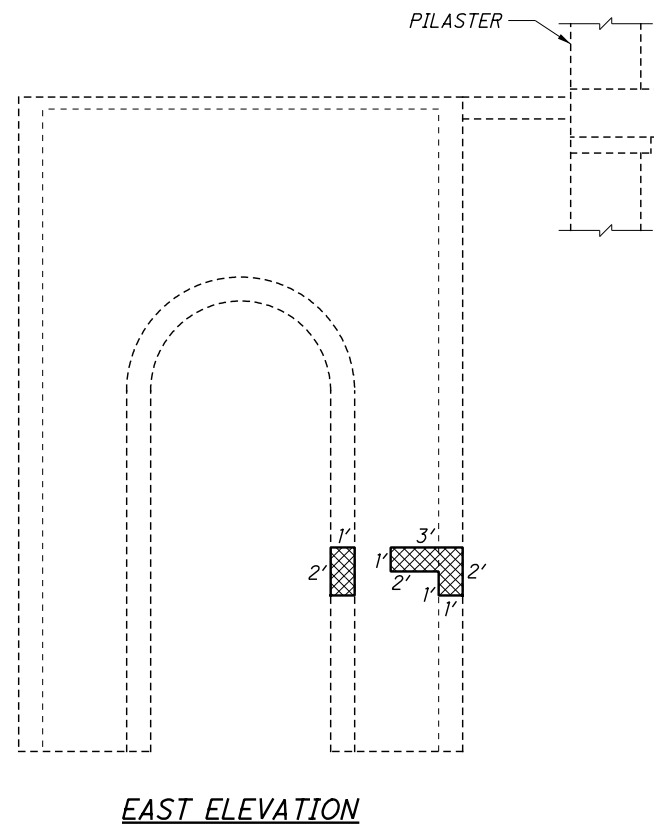
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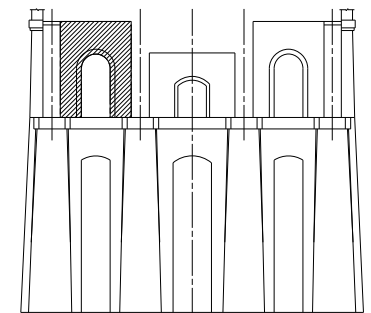
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET [7/238].

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

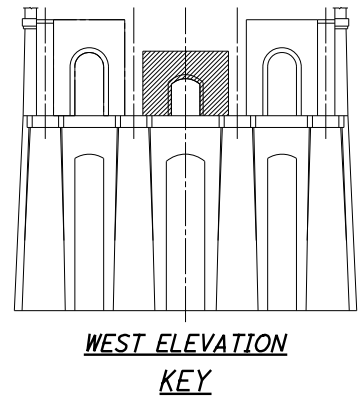
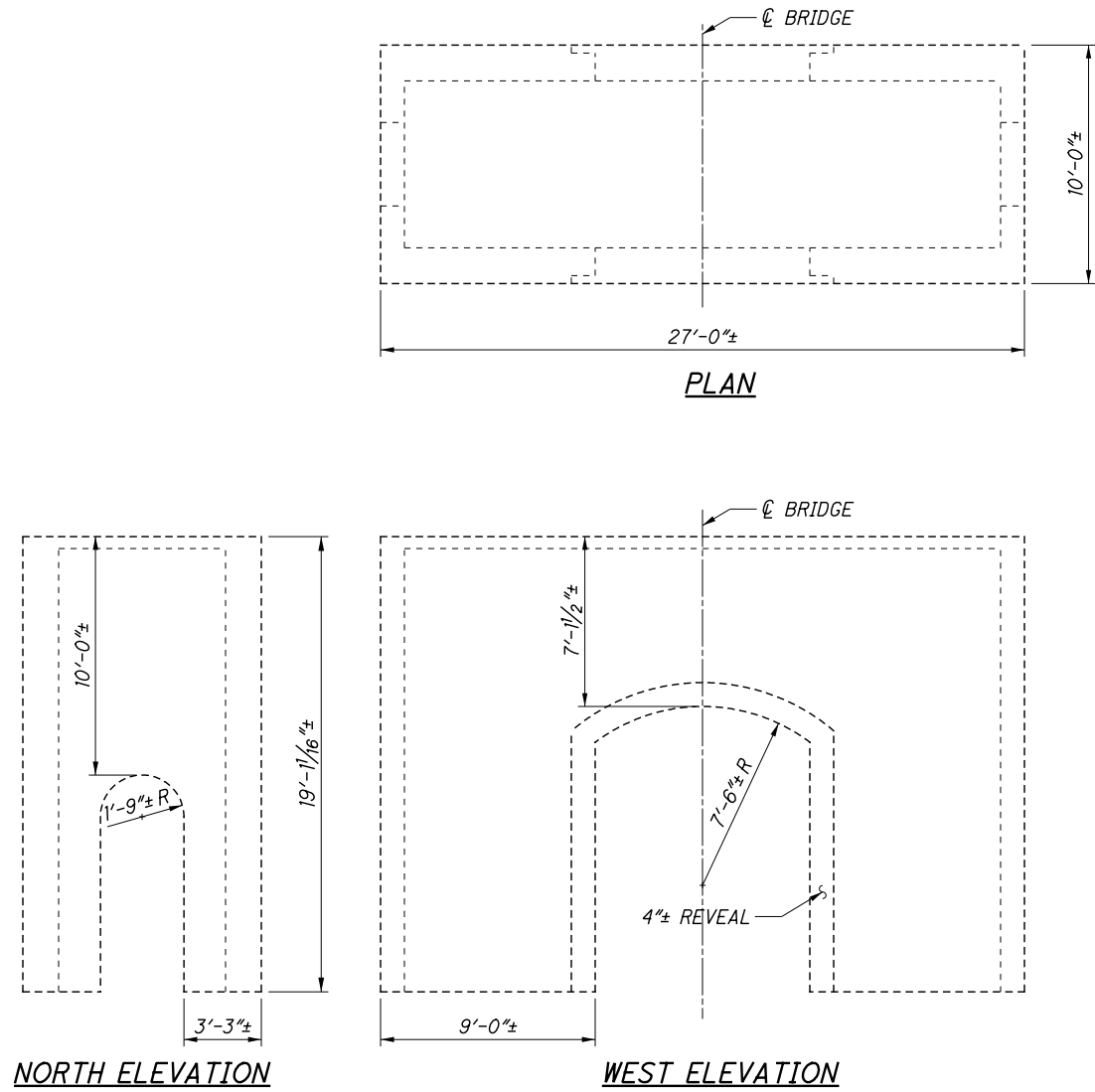
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.


**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

SUMMARY OF PIER 17 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 17 TOWER - 1	SQ YD	4.4	5.3	
PIER 17 TOWER - 2	SQ YD	0.0	0	
PIER 17 TOWER - 3	SQ YD	0.8	1	
PIER 17 TOWER - 4	SQ YD	2.5	3	
PIER 17 TOTALS	SQ YD	7.7	9.3	

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 1/30/18  
 REVIEWED: DLR  
 DRAWN: USB  
 DESIGNED: TGW  
 CHECKED: KAK  
 STRUCTURE FILE NUMBER: 1801503  
 PIER 17 TOWER - 1  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 CUY-10-16.13  
 PID No. 96986  
 68/238  
 128  
 308

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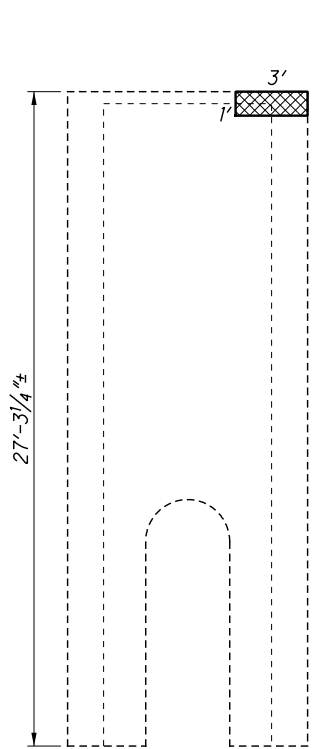
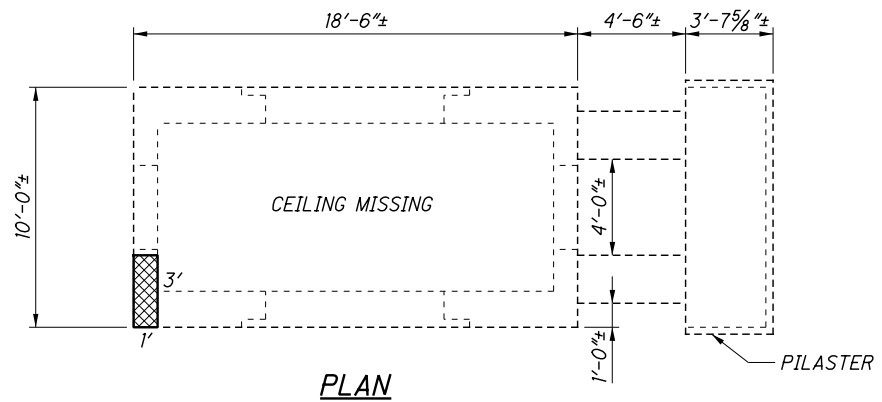


**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

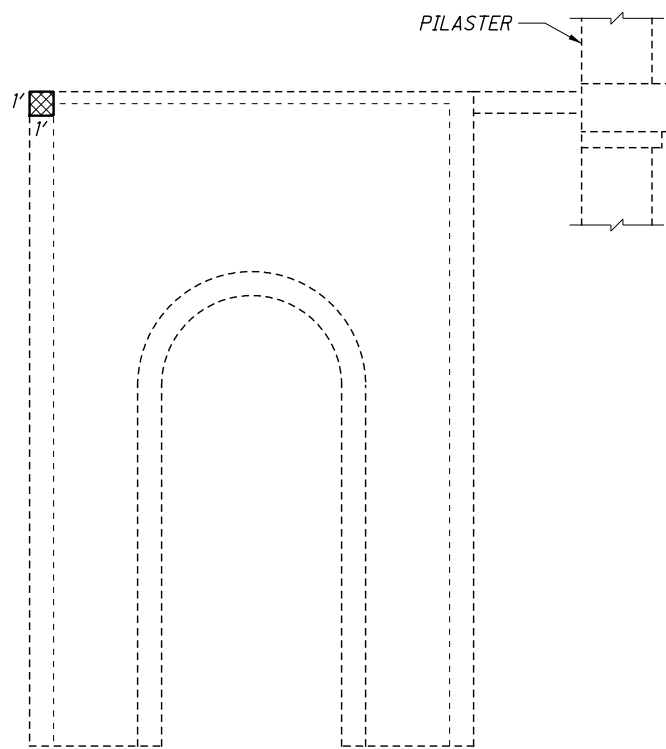
**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET [68/238].  
**ADDITIONAL NOTES:** SEE SHEET [68/238].

<b>PIER 17 TOWER - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	RICHLAND ENGINEERING LIMITED  29 NORTH PARK STREET MANSFIELD, OHIO 44902
	DATE: 1/30/18 REVIEWED: DLR DRAWN: USB DESIGNED: TGW CHECKED: KAK
CUY-10-16.13 PID No. 96986	STRUCTURE FILE NUMBER: 1801503
69 / 238	129 / 308

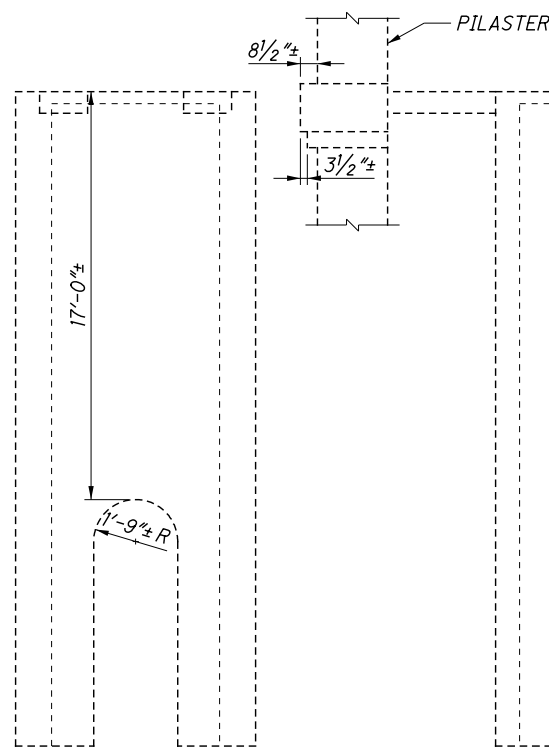
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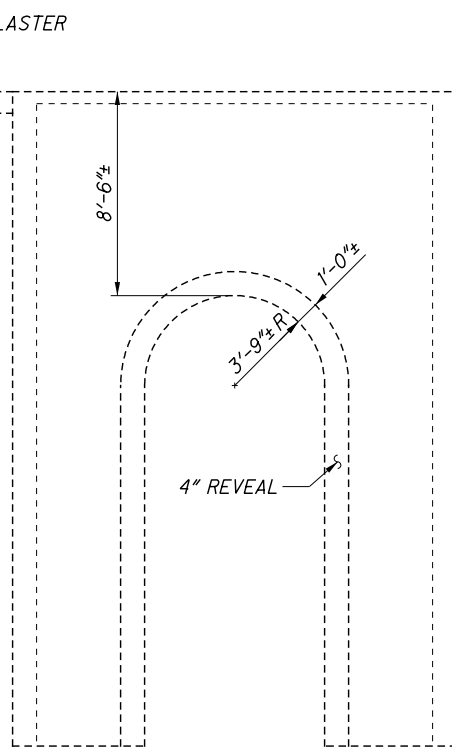
NORTH ELEVATION



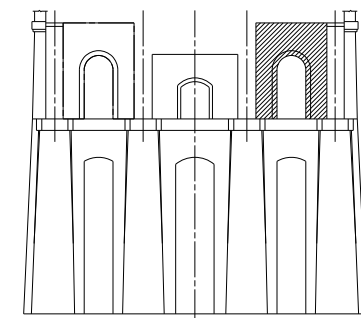
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION KEY

**LEGEND**

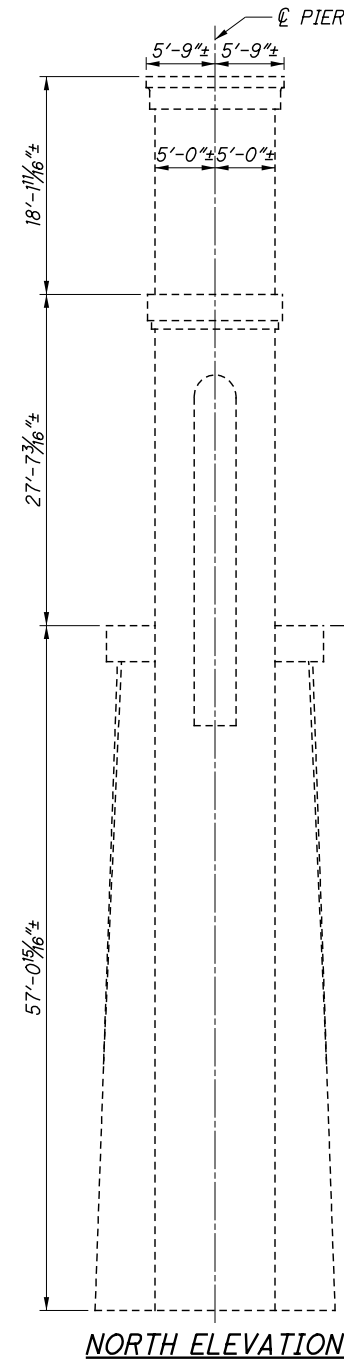
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

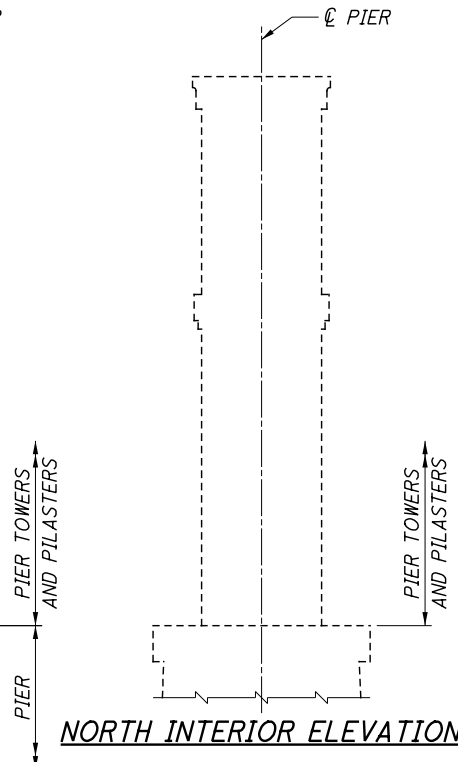
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET [68/238].

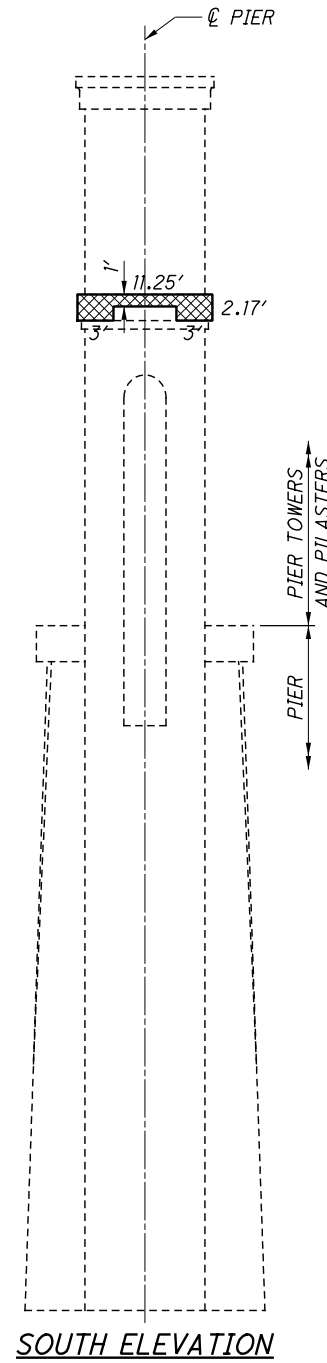
**ADDITIONAL NOTES:** SEE SHEET [68/238].



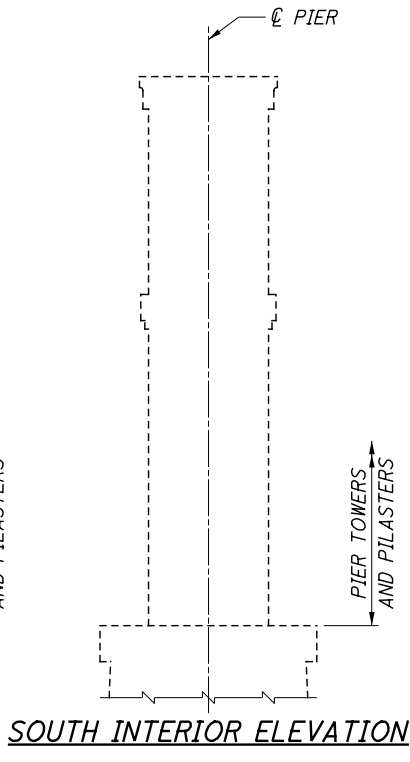
NORTH ELEVATION



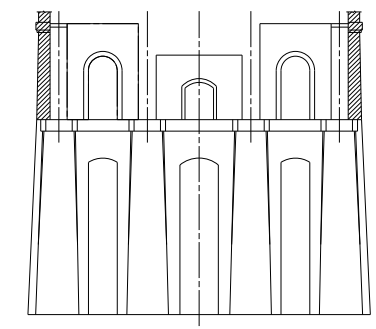
NORTH INTERIOR ELEVATION



SOUTH ELEVATION



SOUTH INTERIOR ELEVATION



WEST ELEVATION  
KEY

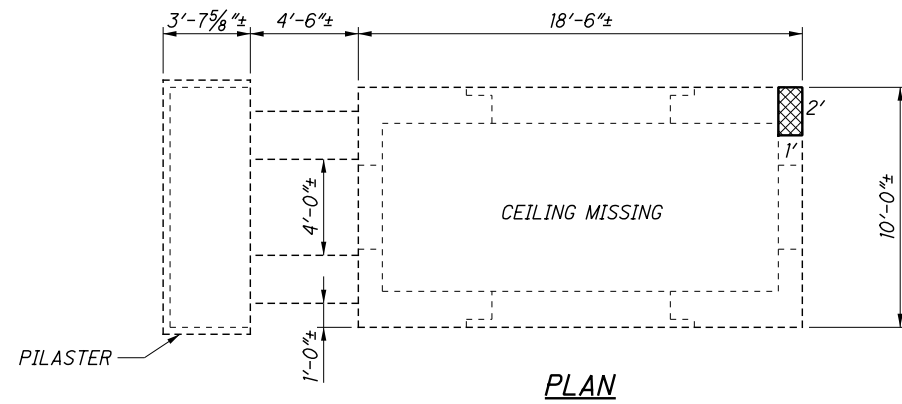
LEGEND

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

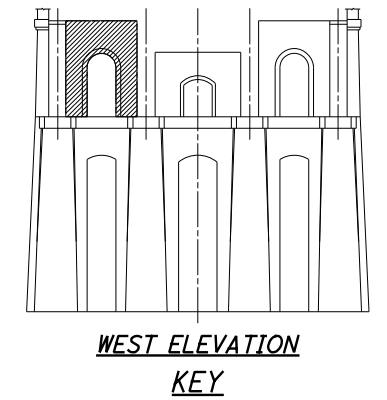
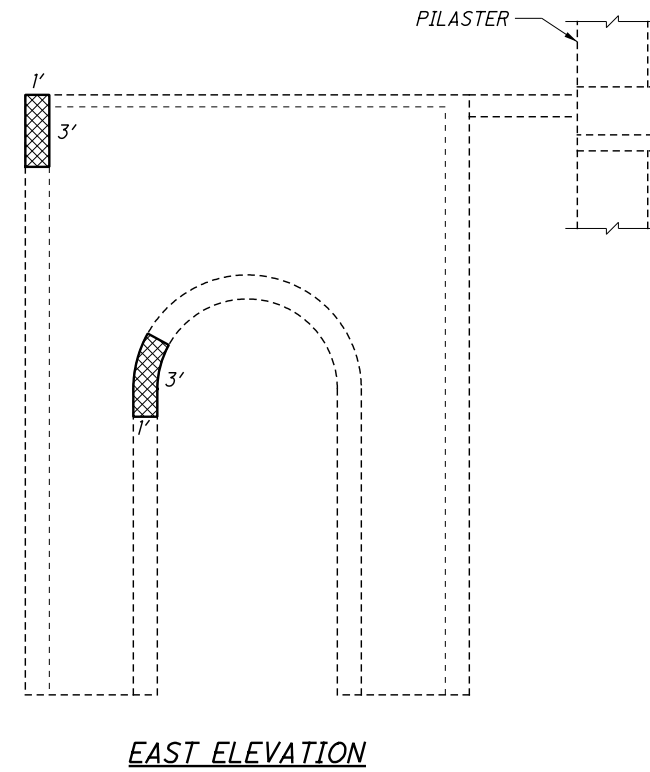
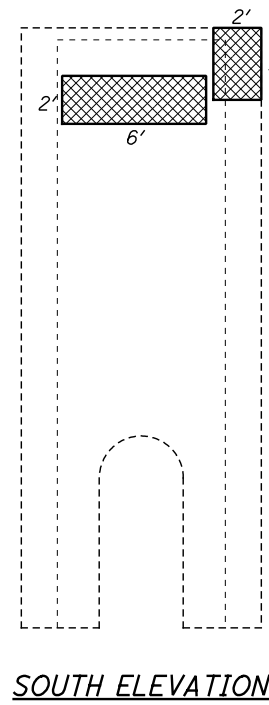
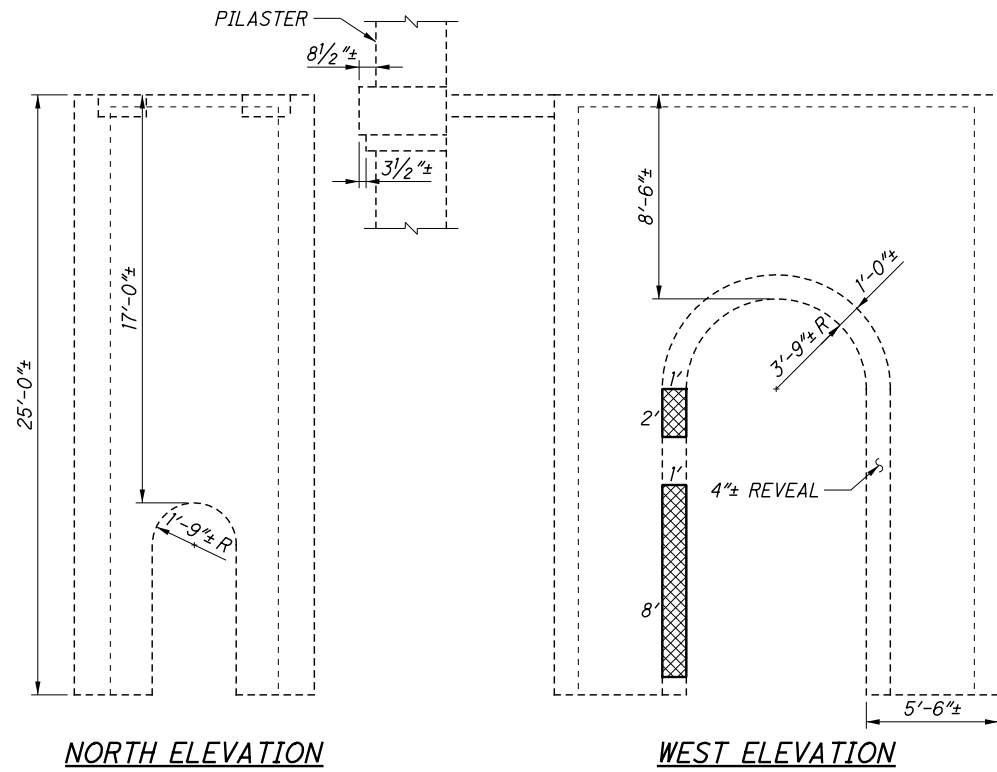
NOTES

- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 68/238.
- ADDITIONAL NOTES:** SEE SHEET 68/238.

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SUMMARY OF PIER 18 CONCRETE REMOVAL QUANTITIES				
PLAN SHEET	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	ACTUAL REPAIR QUANTITY
PIER 18 TOWER - 1	SQ YD	5.4	6.5	
PIER 18 TOWER - 2	SQ YD	2.2	3	
PIER 18 TOWER - 3	SQ YD	0.0	0	
PIER 18 TOWER - 4	SQ YD	1.5	2	
PIER 18 TOWER - 5	SQ YD	1.7	2	
<b>PIER 18 TOTALS</b>	<b>SQ YD</b>	<b>10.8</b>	<b>13.5</b>	



**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:** SEE GENERAL NOTES SHEET [7/238].

**REMOVAL QUANTITIES** AT CONCRETE CORNERS MAY NOT BE SHOWN. INCLUDE A ONE FOOT WIDTH AREA AROUND THE CORNERS NOT SHOWN ON THE SHEETS.

**PIER ELEVATION VIEWS** WITH NO DOCUMENTED CONCRETE REMOVAL ARE NOT INCLUDED IN THE PLAN SET.

**QUANTITY DESCRIPTIONS**

**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.

**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.

**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

PIER 18 TOWER - 1  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

DATE 1/30/18  
 STRUCTURE FILE NUMBER 1801503

REVIEWED DLR  
 CHECKED TGV  
 DESIGNED TGV

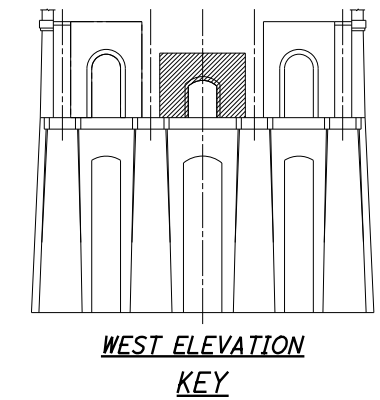
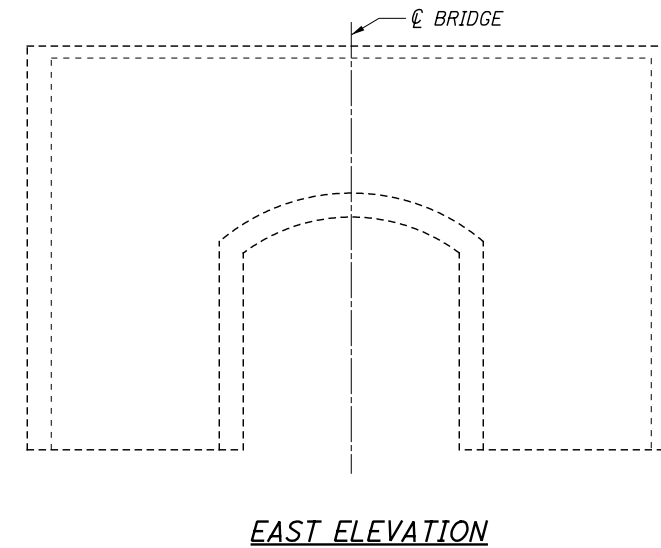
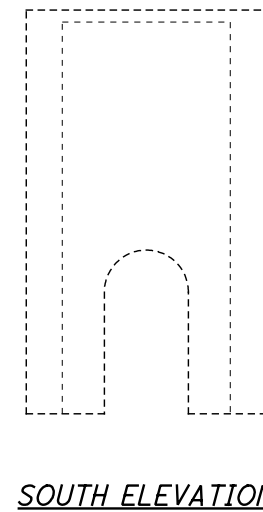
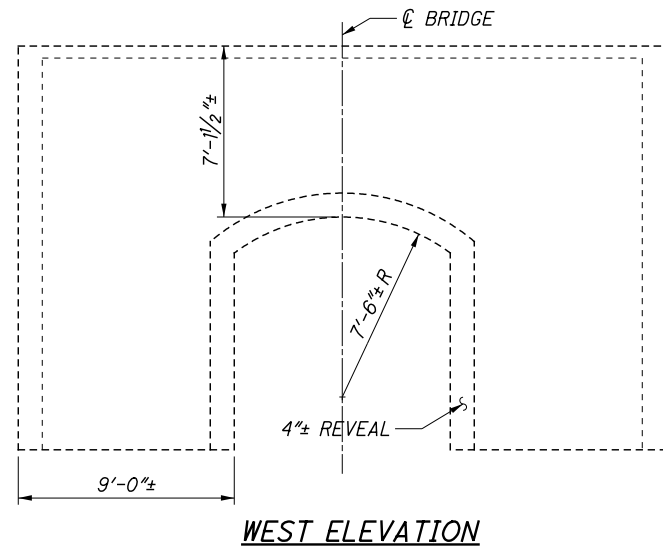
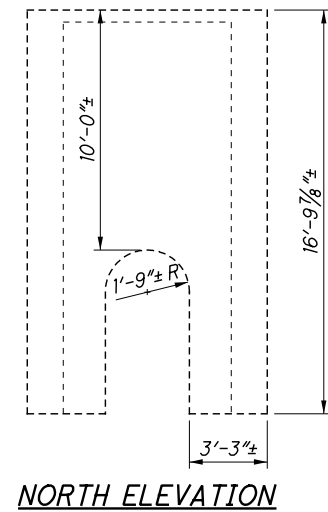
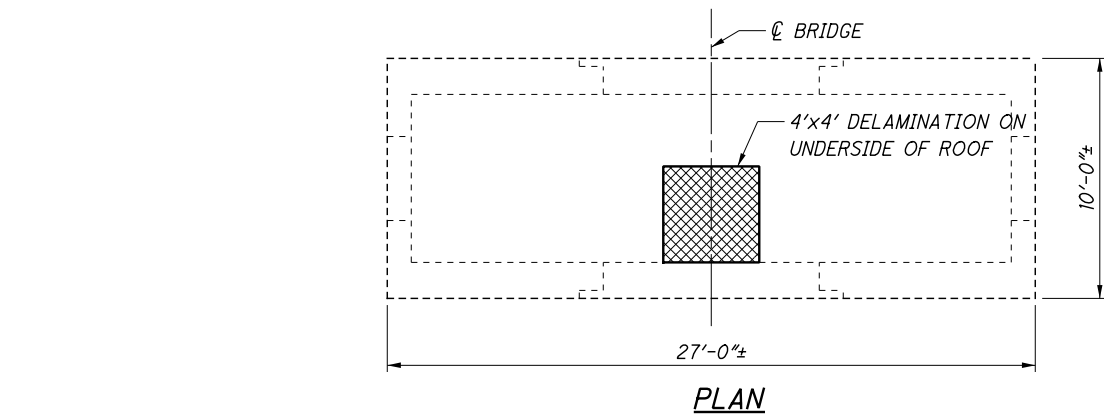
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 REVISED REVISED

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902

CUY-10-16.13  
 PID No. 96986

72/238  
 132/308

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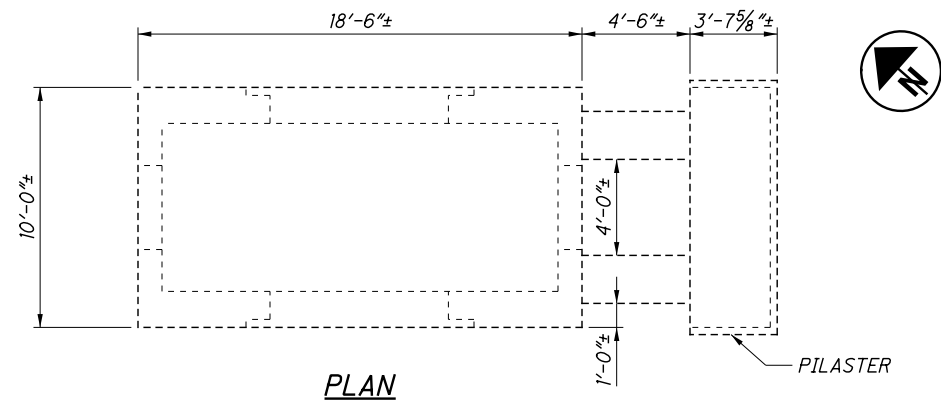
**LEGEND**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

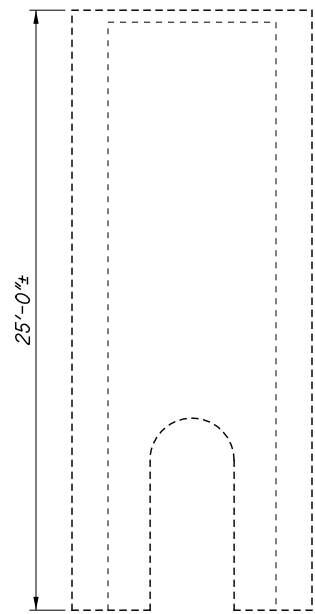
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 72/238.
- ADDITIONAL NOTES:** SEE SHEET 72/238.

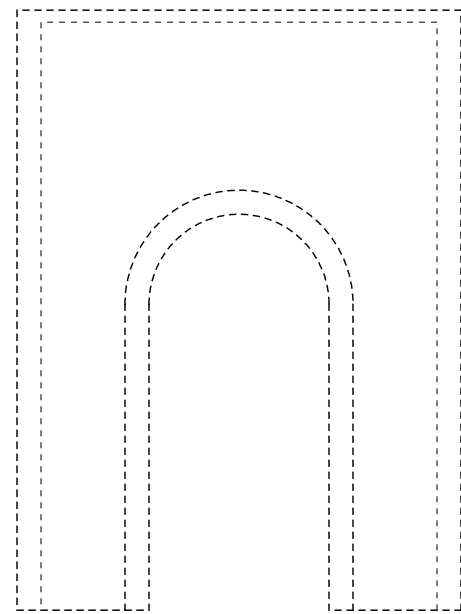
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613CPI069.dgn 3/2/2018 11:41:45 AM JeffSmith



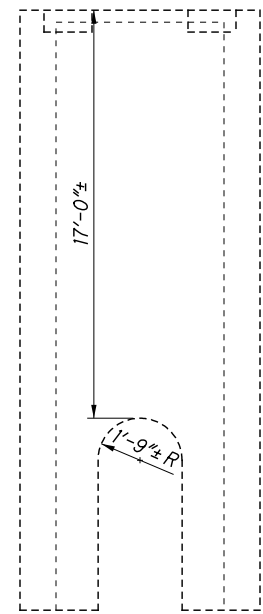
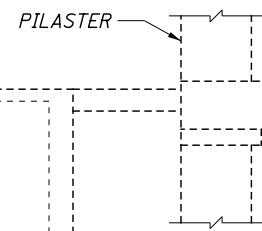
PLAN



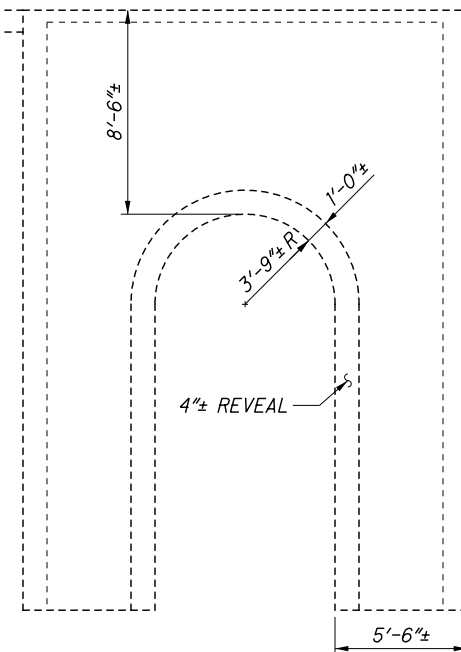
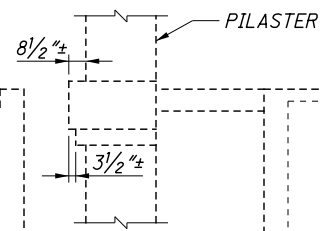
NORTH ELEVATION



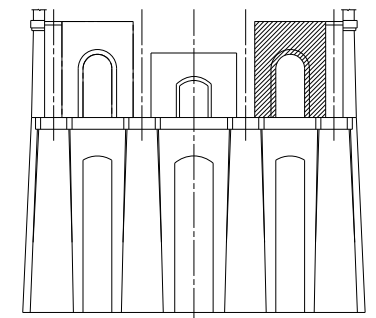
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION KEY

LEGEND

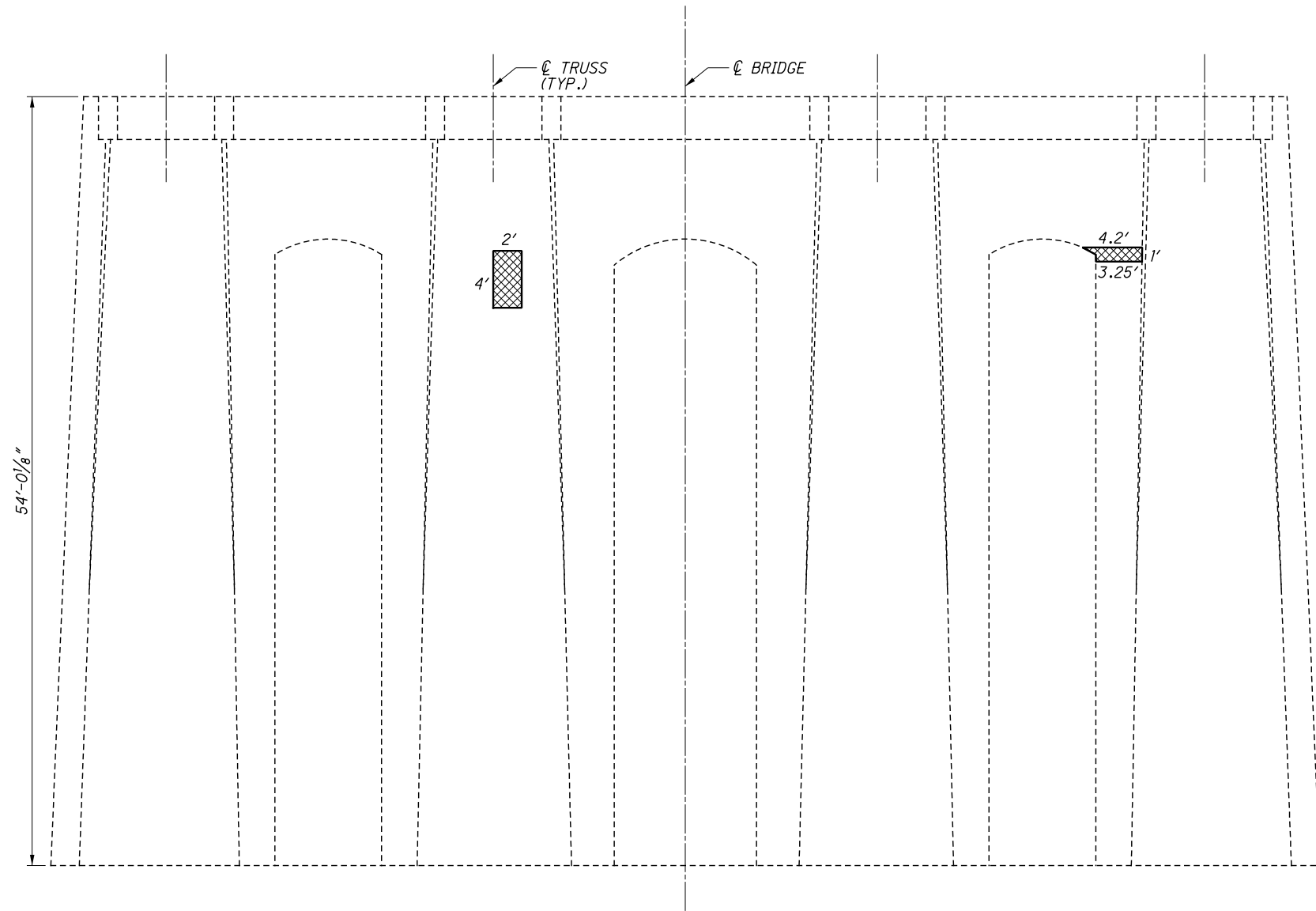
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

- MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
- ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 72/238.
- ADDITIONAL NOTES:** SEE SHEET 72/238.

<b>PIER 18 TOWER - 3</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	<b>CUY-10-16.13</b> PID No. 96986	<b>134</b> <b>308</b>
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE: 1/30/18 REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503	DESIGNED: TGW CHECKED: KAK
DRAWN: JSB REVISED:	REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503	DATE: 1/30/18 REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503

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**WEST ELEVATION**

**LEGEND**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 72/238.

**ADDITIONAL NOTES:** SEE SHEET 72/238.

**CUY-10-16-13**  
PID No. 96986

**PIER 18 TOWER - 4**  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

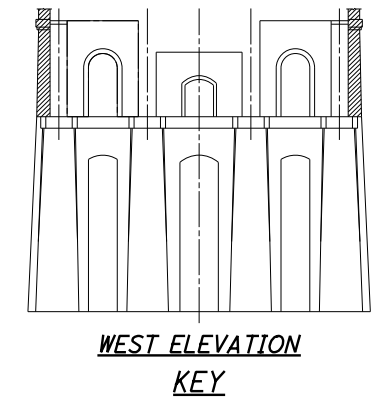
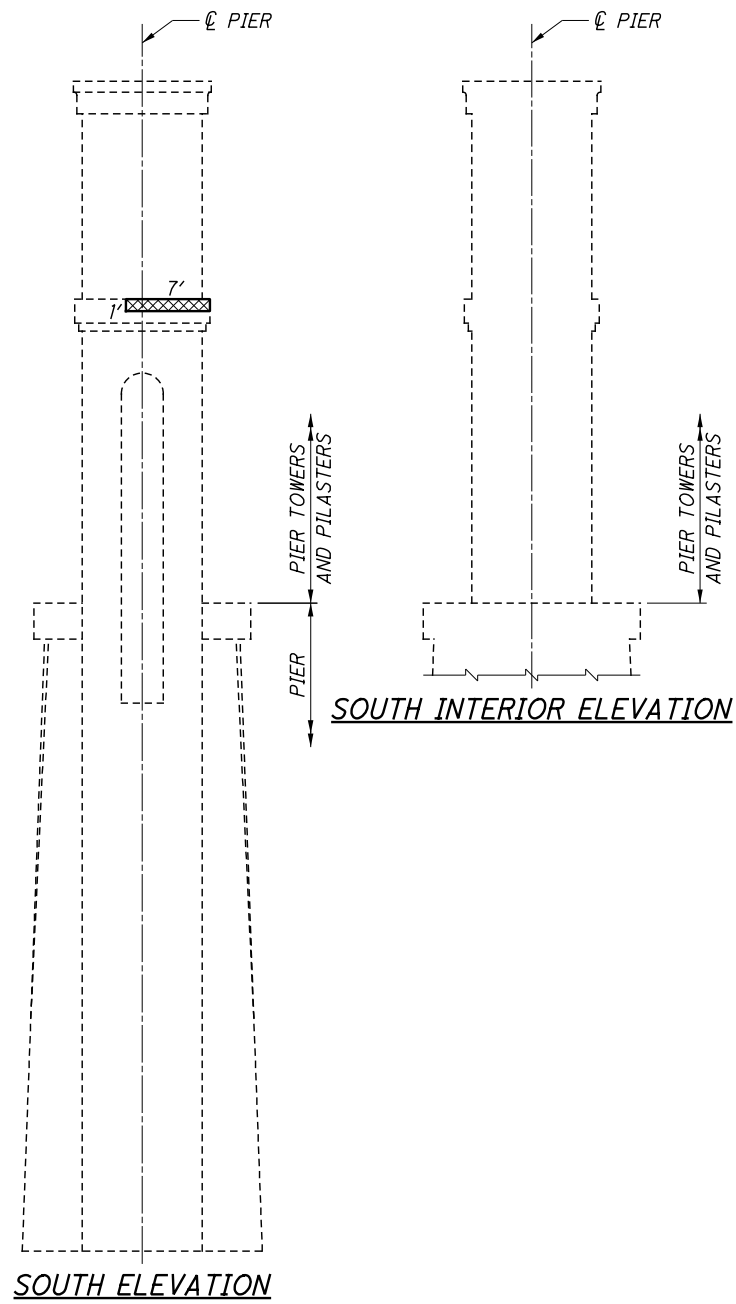
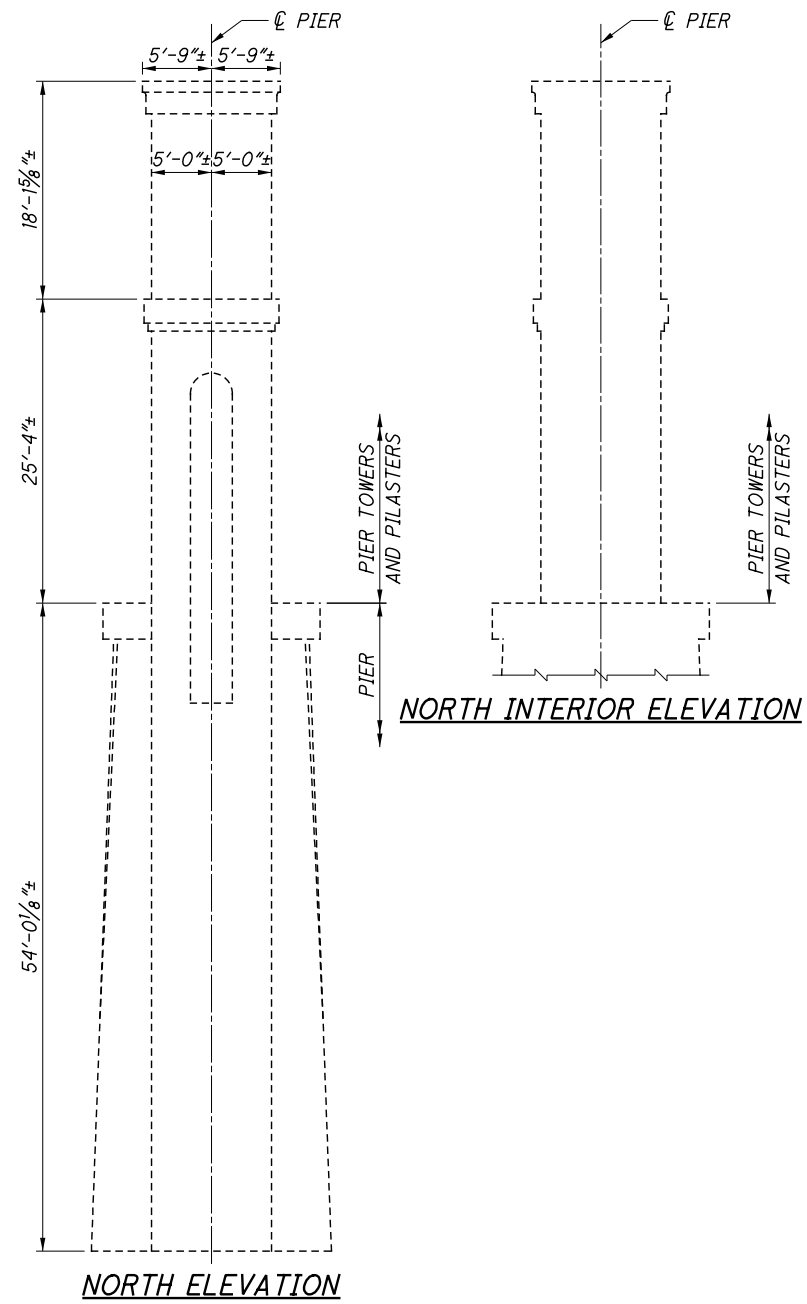
DESIGNED	TGW	CHECKED	KAK
DRAWN	JSB	REVISED	
REVIEWED	DLR	STRUCTURE FILE NUMBER	1801503
DATE	1/30/18		


**RICHLAND ENGINEERING LIMITED**  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

75 / 238

135  
308

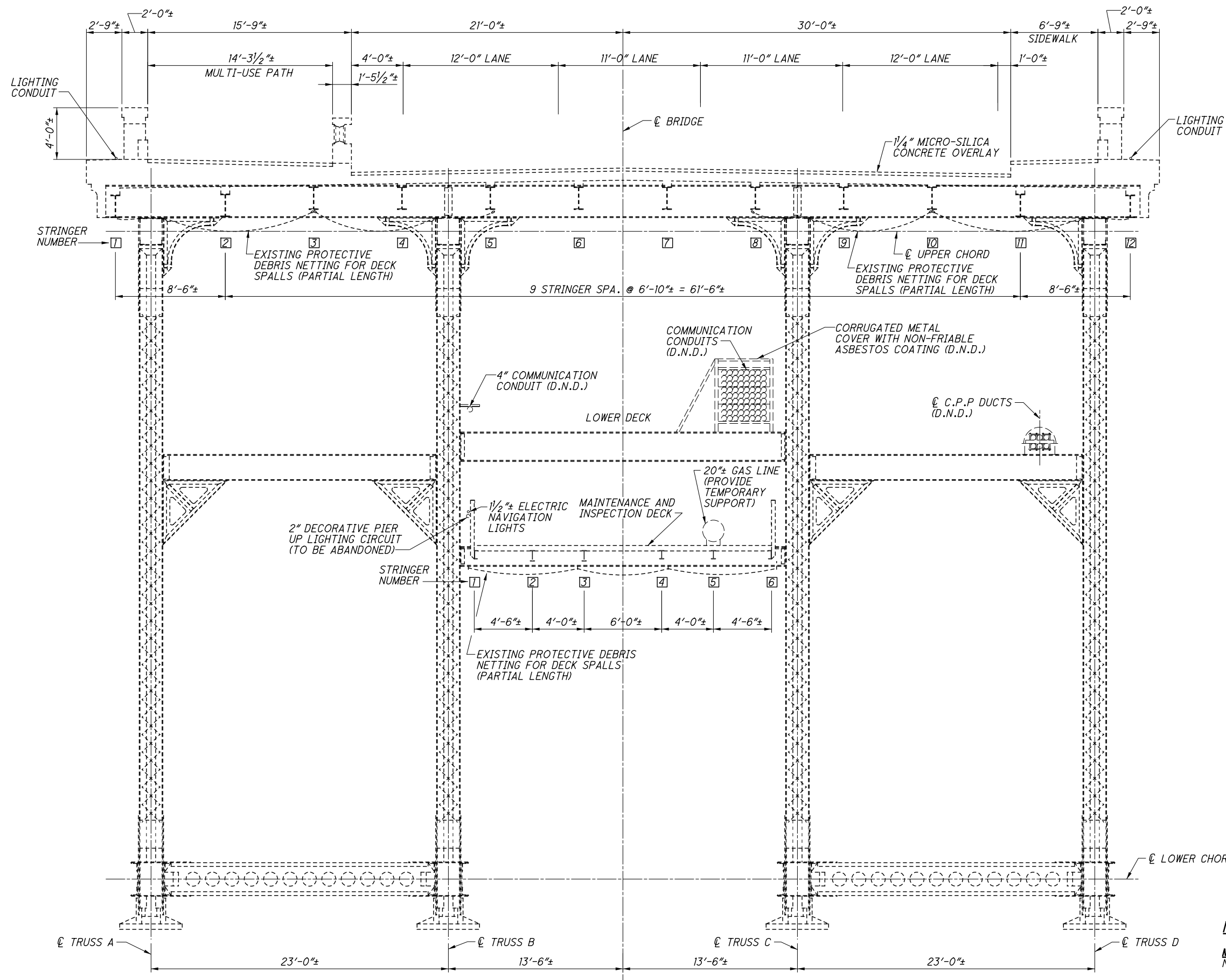




**LEGEND**  
 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**ESTIMATED REMOVAL QUANTITIES** CARRIED TO SHEET 72/238.  
**ADDITIONAL NOTES:** SEE SHEET 72/238.

F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\sheets\010\_1613CTS004.dgn 3/2/2018 11:43:42 AM JeffSmith

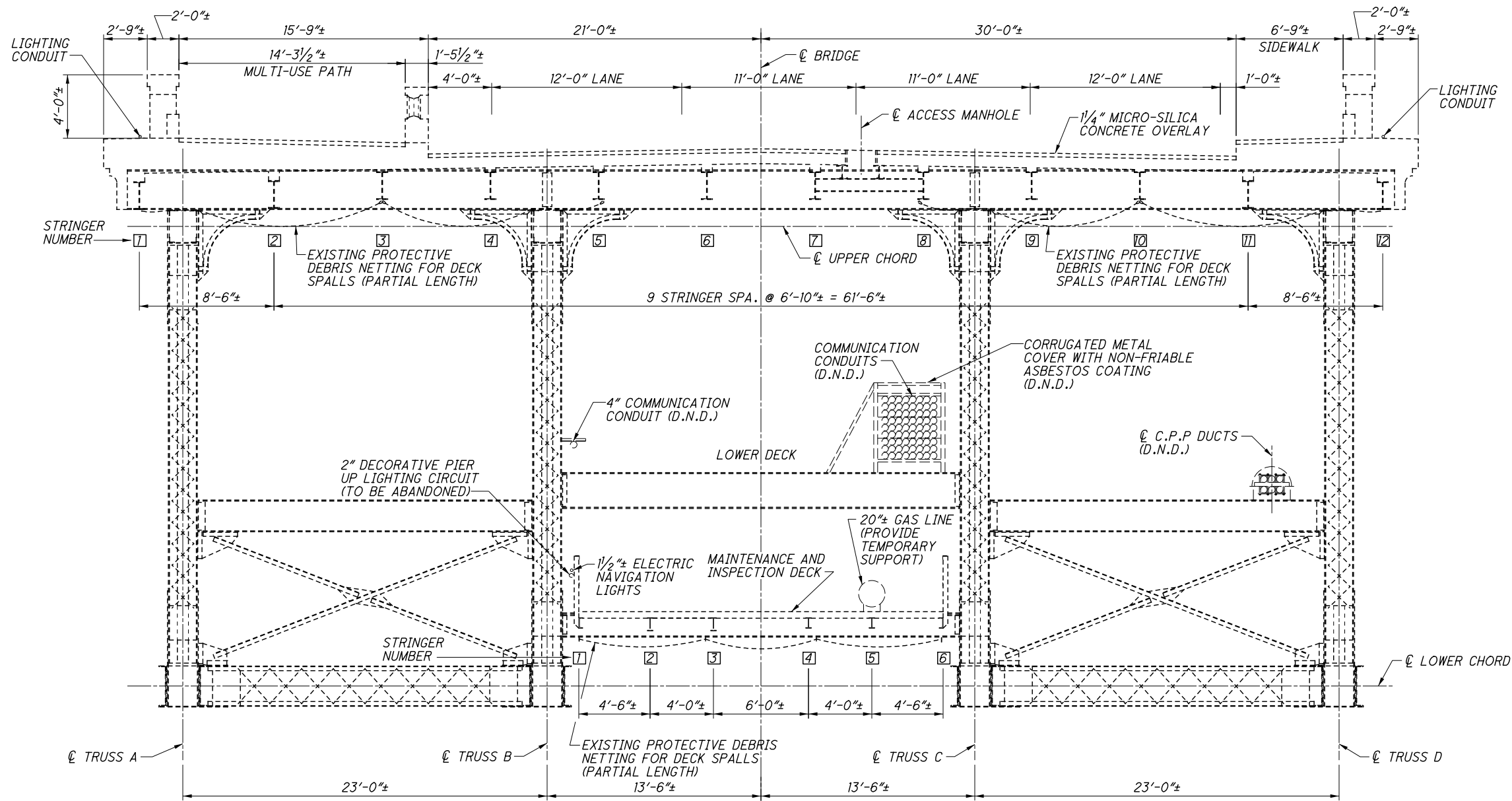


EXISTING TRANSVERSE SECTION AT PIER

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- PROPOSED REPAIRS:** SEE PROPOSED WORK LIST ON SHEET [ 6 / 238 ].
- NOTATION:** C.P.P. - CLEVELAND PUBLIC POWER  
D.N.D. - DO NOT DISTURB

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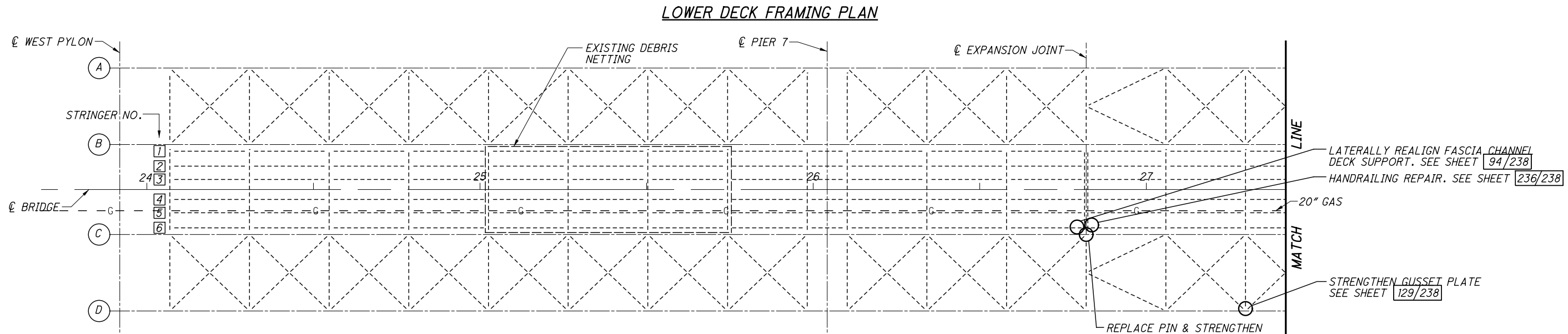
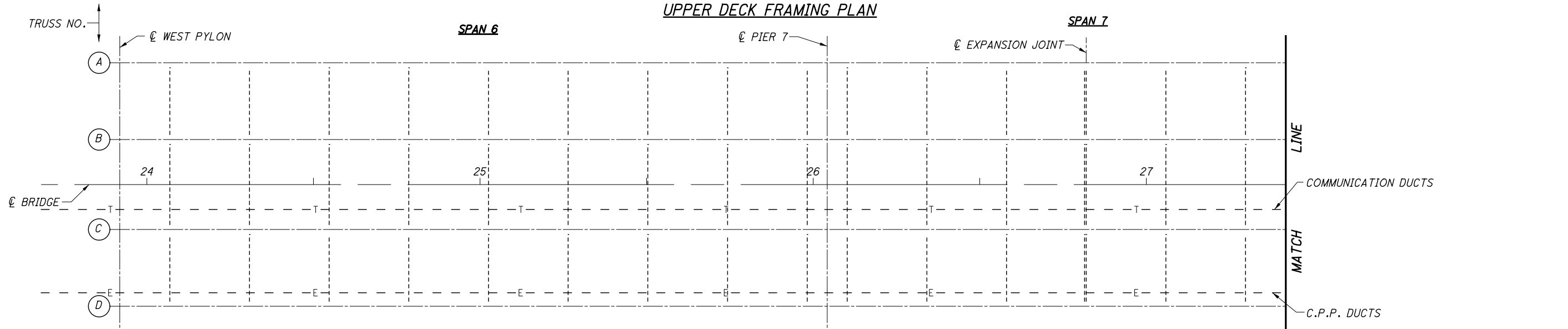
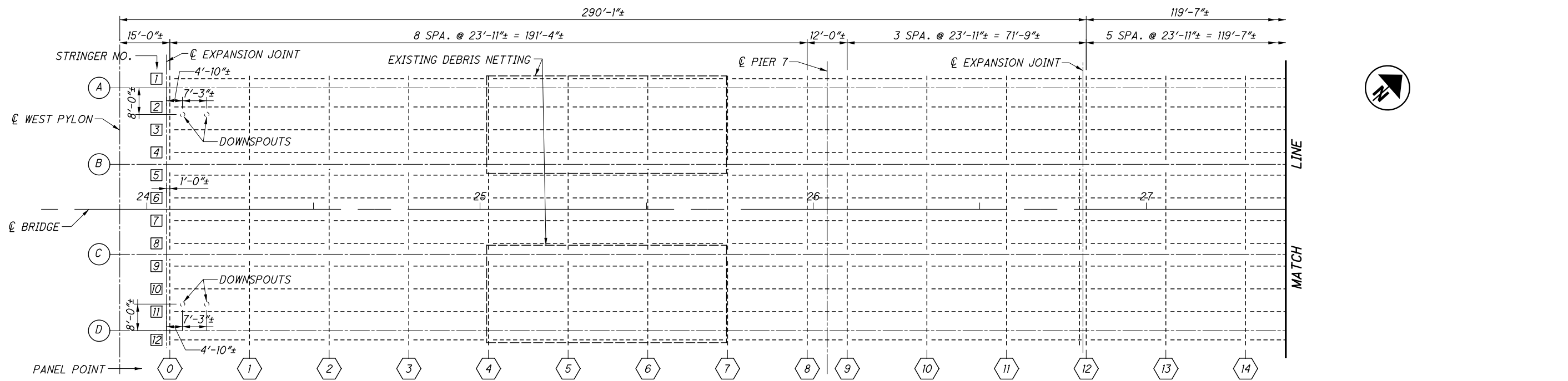
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**PROPOSED REPAIRS:** SEE PROPOSED WORK LIST ON SHEET 6/238.

**NOTATION:** C.P.P. - CLEVELAND PUBLIC POWER  
D.N.D. - DO NOT DISTURB

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REPLACE PIN & STRENGTHEN GUSSET PLATE SEE SHEETS 160/238, 161/238, 127/238 AND 128/238



RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

DATE 1/30/18  
REVIEWED DLR  
STRUCTURE FILE NUMBER 1801503

DRAWN JLS  
CHECKED DAP

DESIGNED KAK  
CHECKED DAP

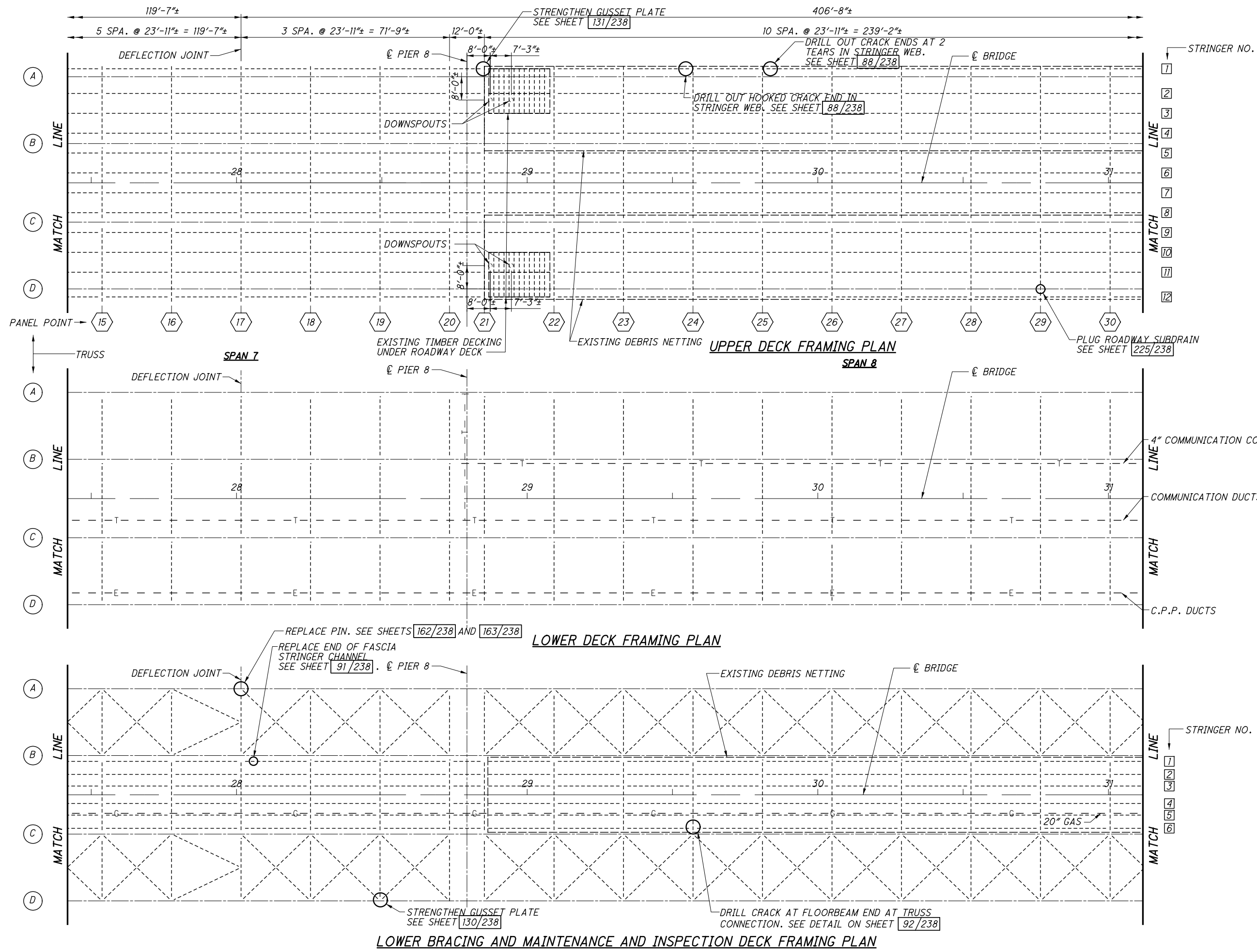
FRAMING PLAN - 1  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16.13  
PID No. 96986

79/238

139  
308

F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613C\002.dgn 3/2/2018 11:45:45 AM JeffSmith



RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

DESIGNED KAK  
CHECKED DAP  
DRAWN JLS  
REVISED  
REVIEWED DLR  
DATE 1/30/18  
STRUCTURE FILE NUMBER 1801503

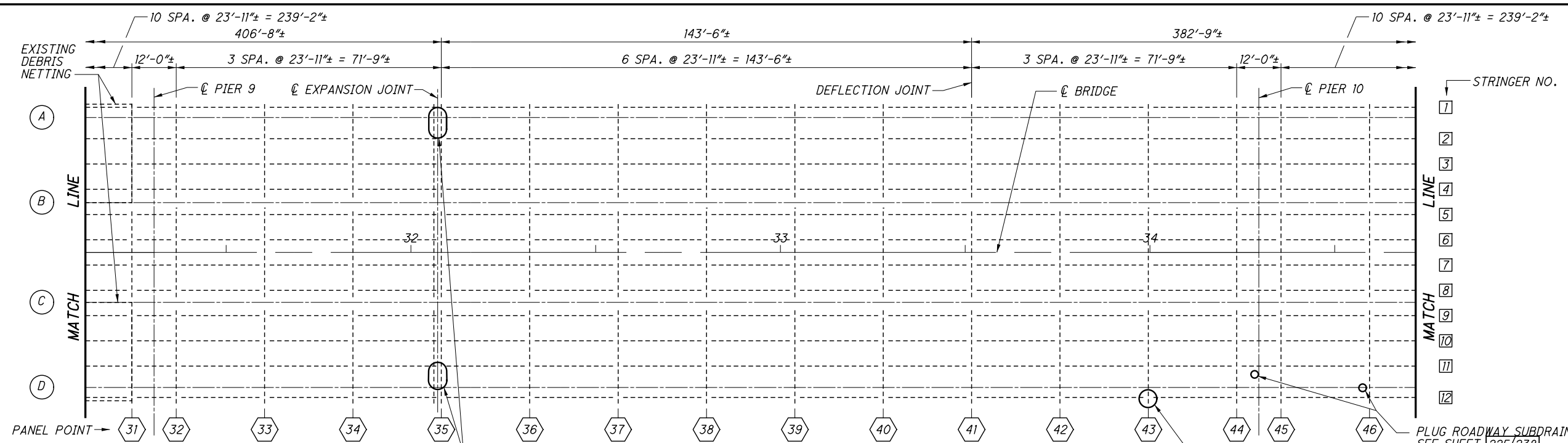
FRAMING PLAN - 2  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16.13  
PID No. 96986

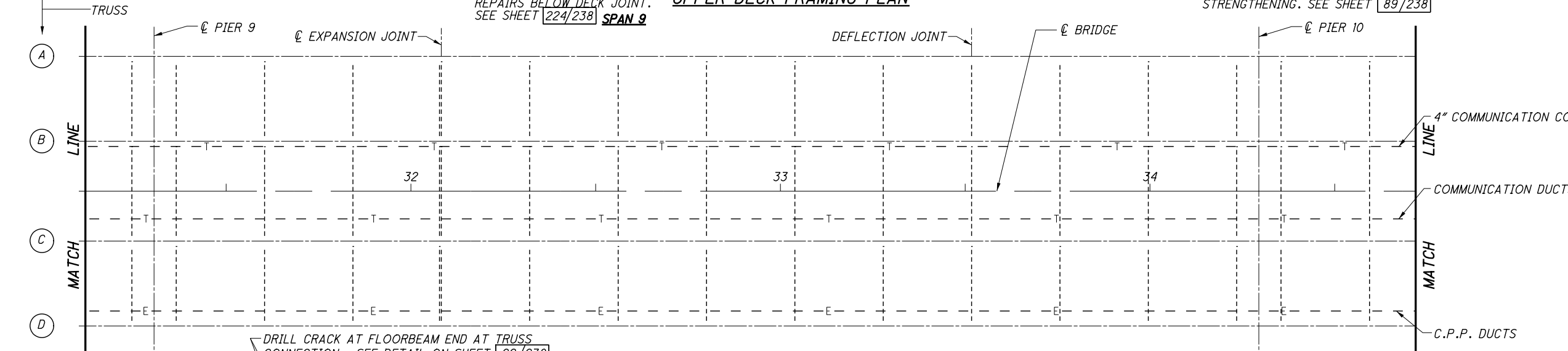
80/238

140  
308

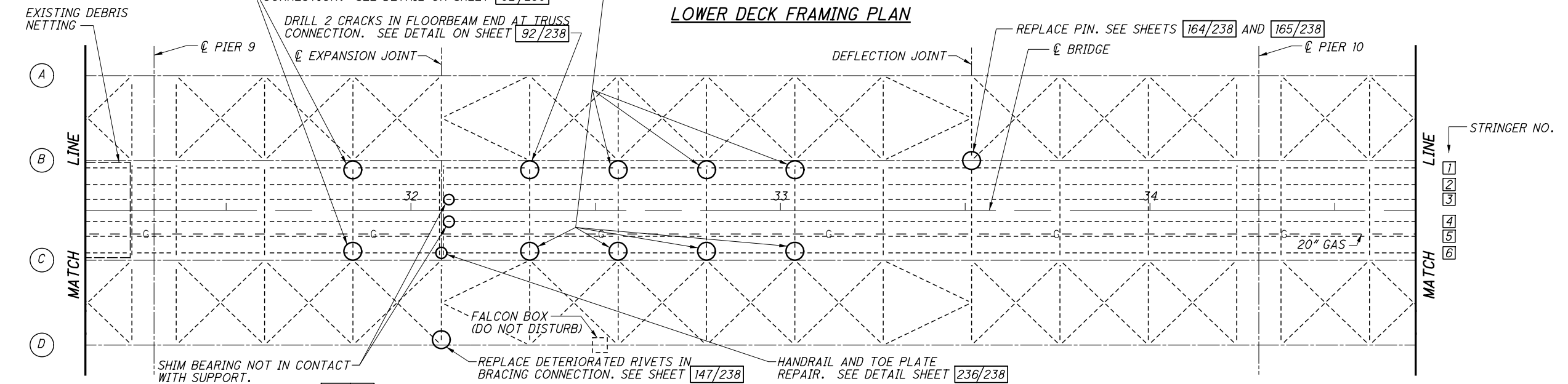
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD003.dgn 3/2/2018 11:46:50 AM JeffSmith



**UPPER DECK FRAMING PLAN**



**LOWER DECK FRAMING PLAN**

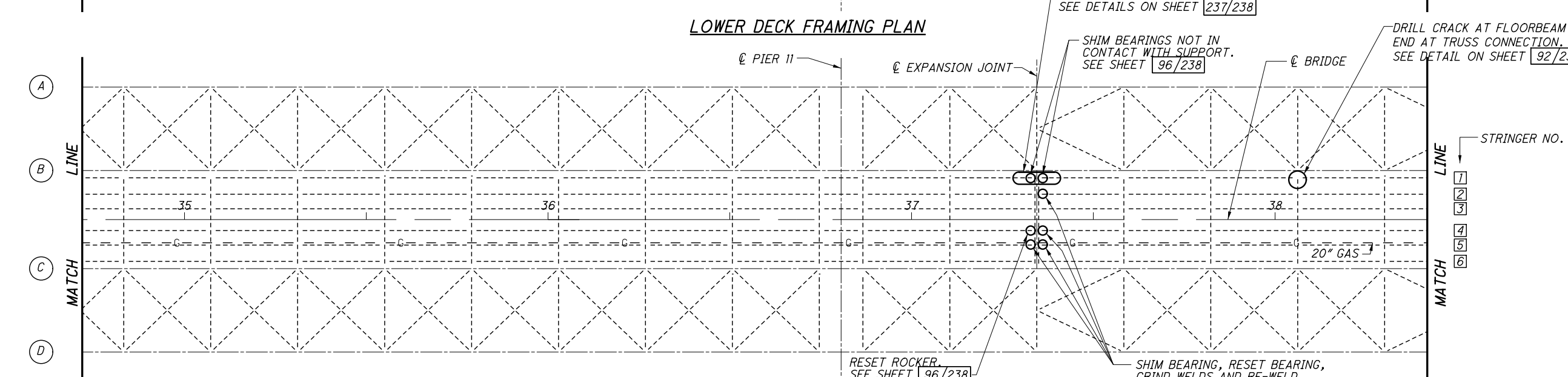
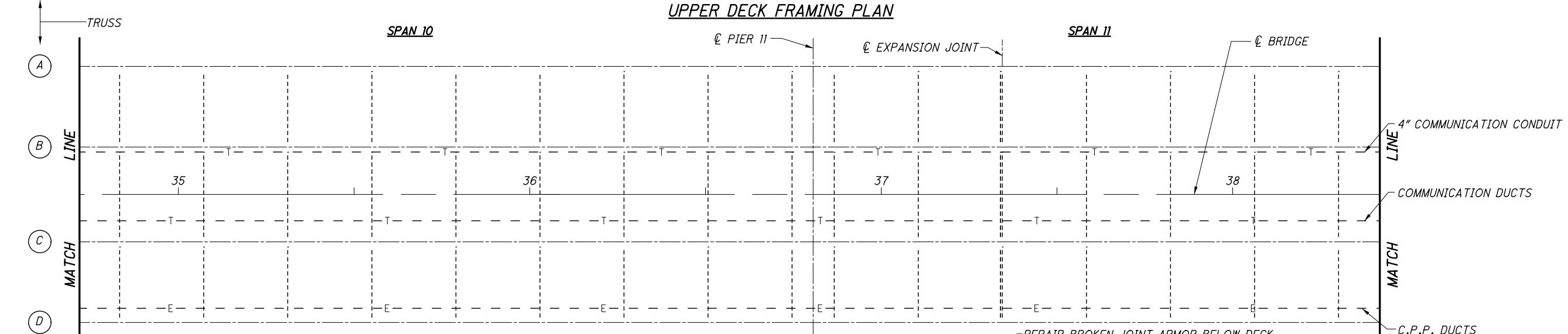
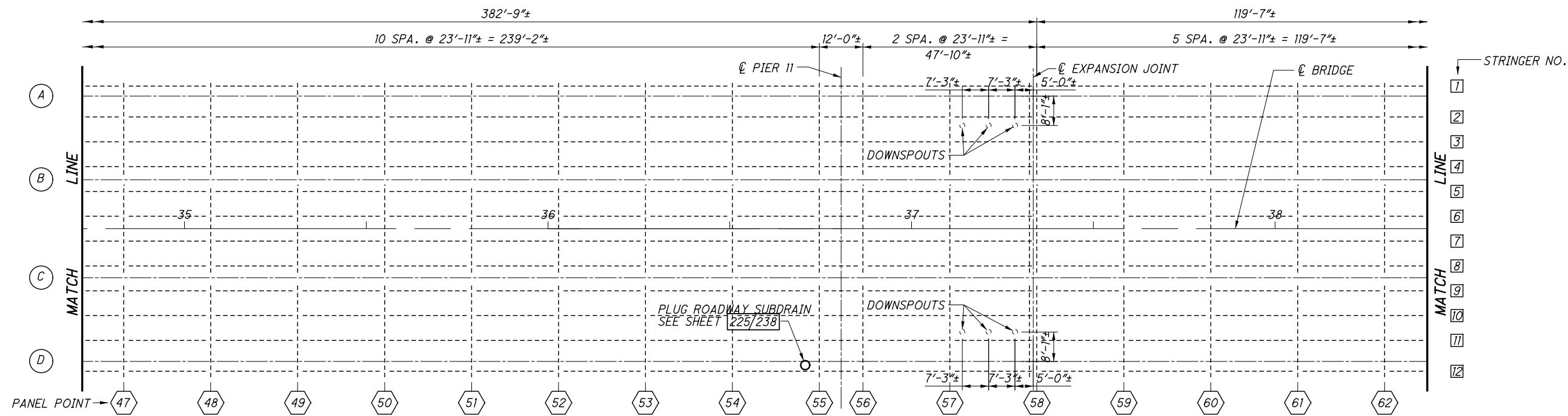


**LOWER BRACING AND MAINTENANCE AND INSPECTION DECK FRAMING PLAN**



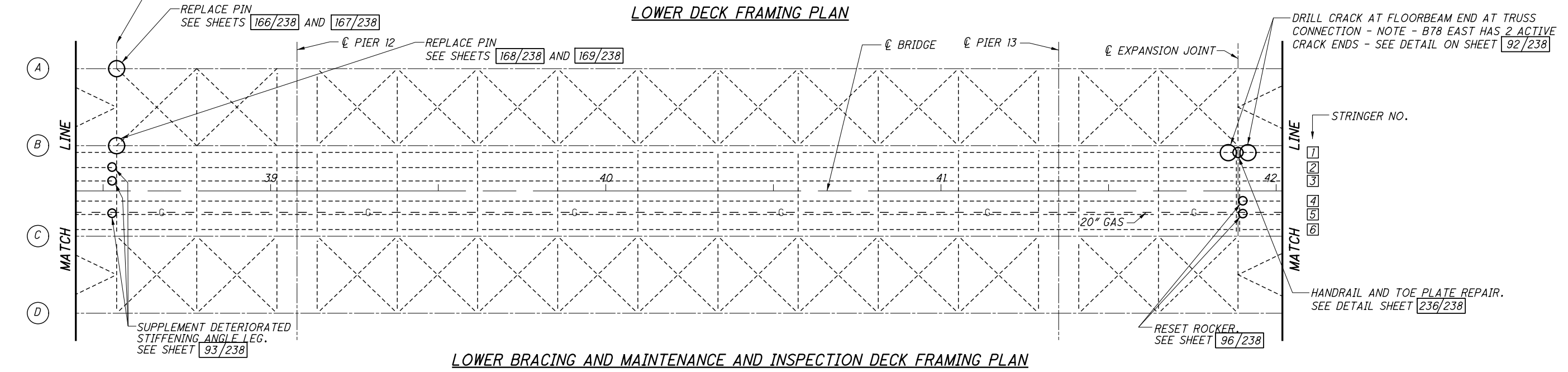
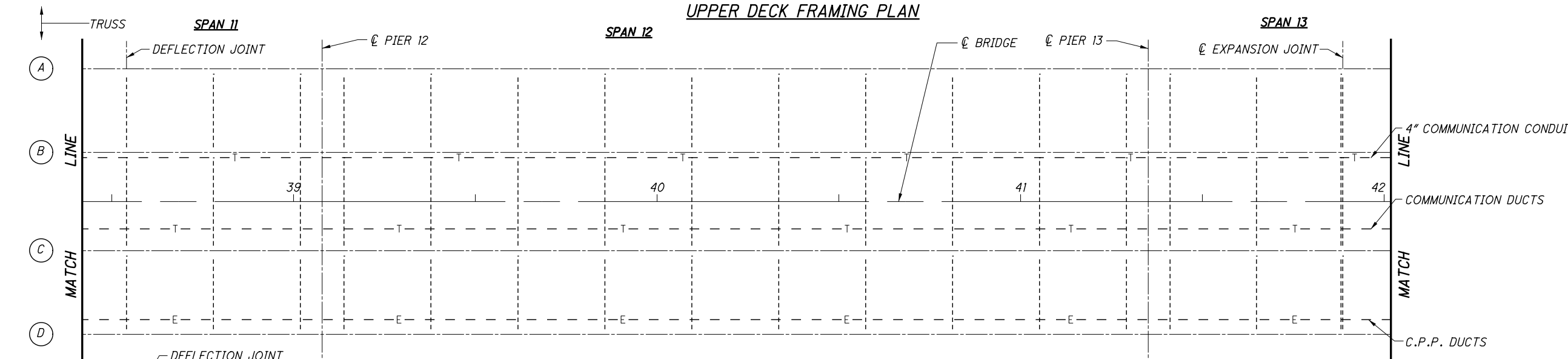
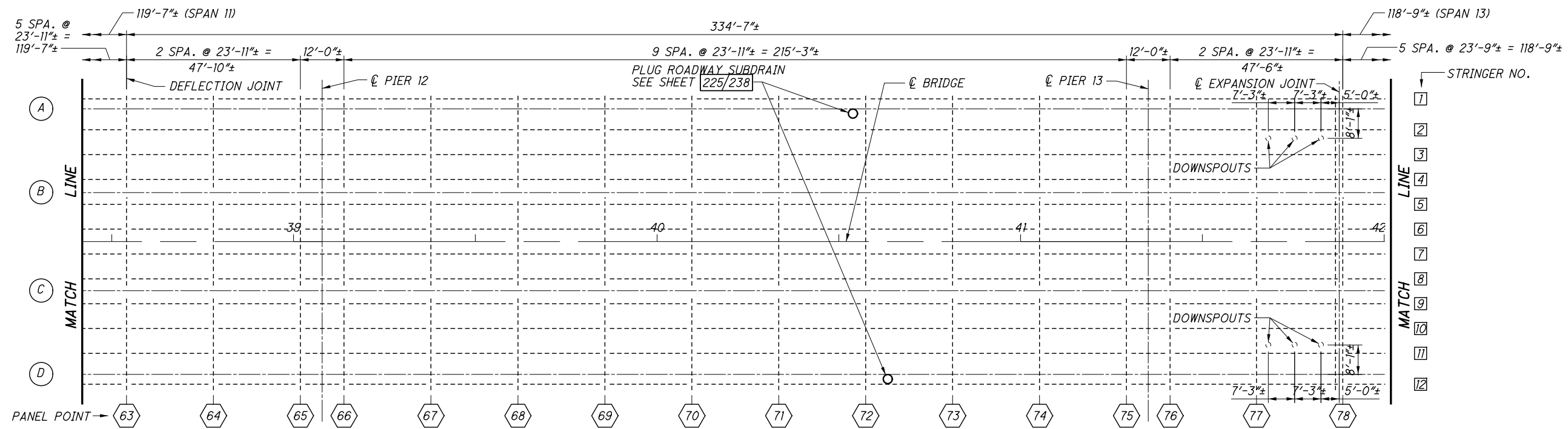
<p><b>FRAMING PLAN - 3</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>		<p>DATE 1/30/18 REVIEWED DLR DRAWN JLS DESIGNED KAK</p>	<p>STRUCTURE FILE NUMBER 1801503 REVISED CHECKED DAP</p>
<p><b>CUY-10-16.13</b> PID No. 96986</p>		<p>81/238</p>	
<p>141 308</p>		<p>1801503</p>	

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<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE: 1/30/18 REVIEWED: DLR DRAWN: JLS DESIGNED: KAK	STRUCTURE FILE NUMBER: 1801503 REVISIONS: 10, 11, 12 CHECKED: DAP
<b>FRAMING PLAN - 4</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
<b>CUY-10-16.13</b> PID No. 96986	
82/238	
142/308	

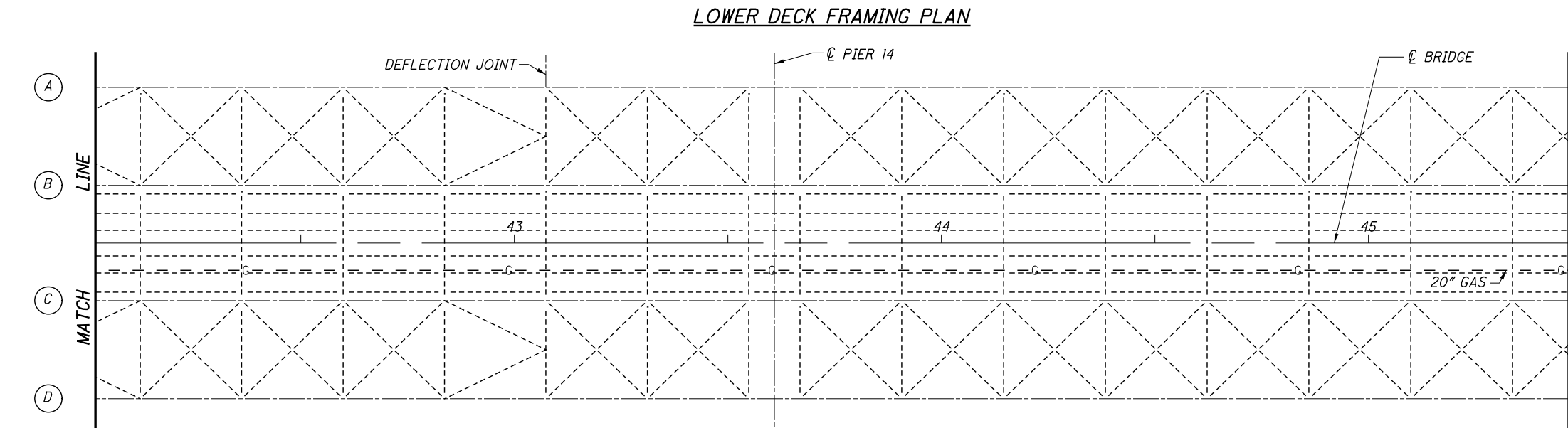
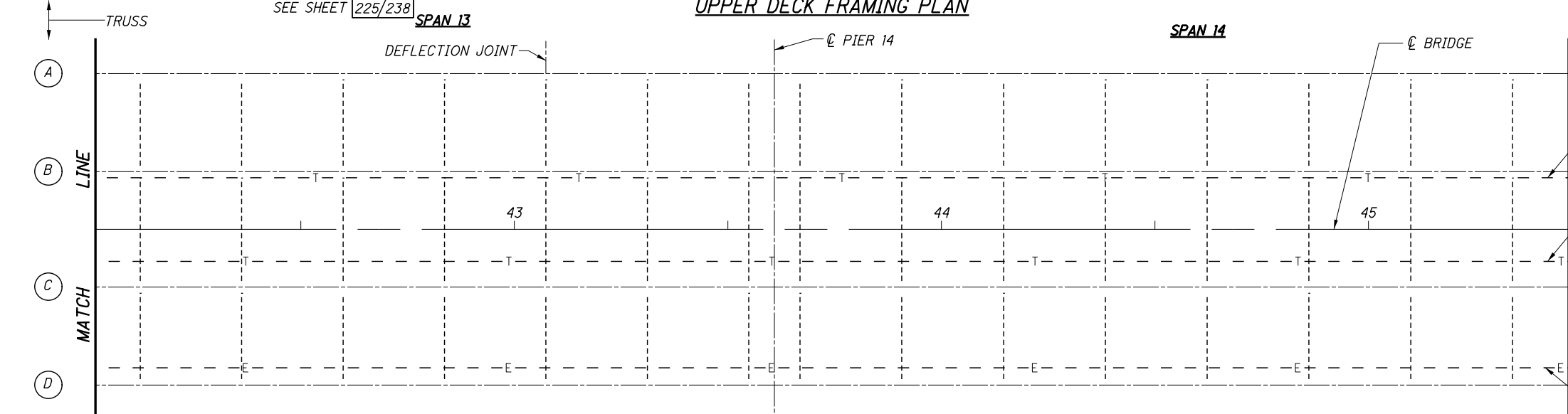
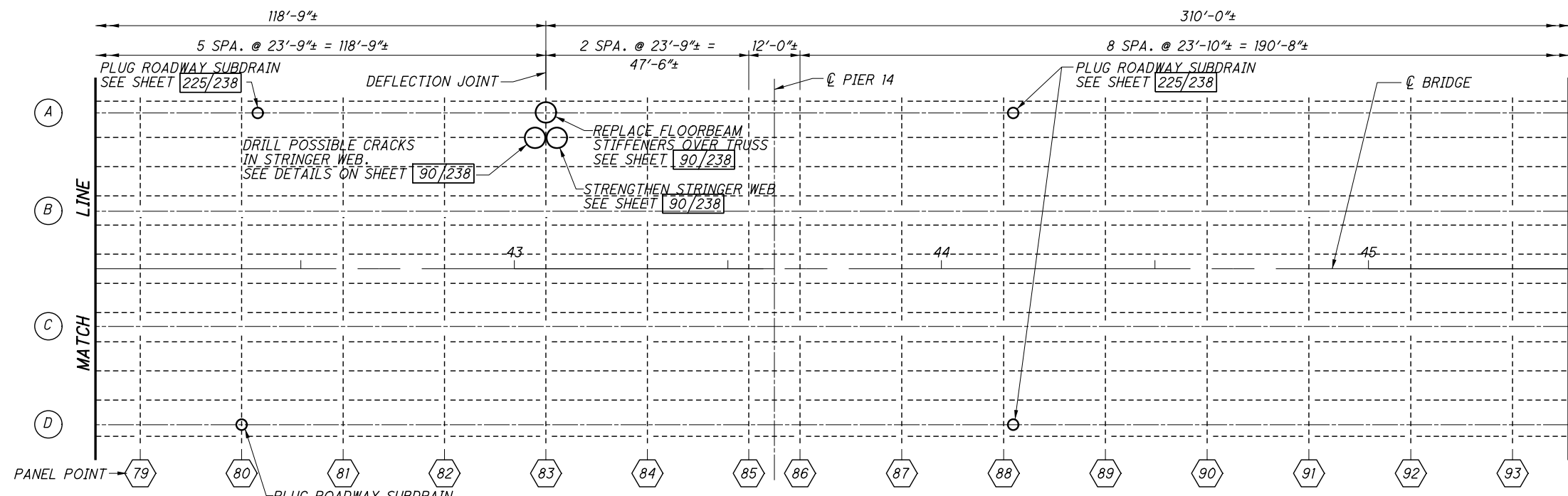
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<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	REVIEWED DLR
STRUCTURE FILE NUMBER 1801503	DRAWN JLS
DESIGNED KAK	CHECKED DAP
<b>FRAMING PLAN - 5</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
<b>CUY-10-16.13</b> PID No. 96986	
83 / 238	
143 / 308	



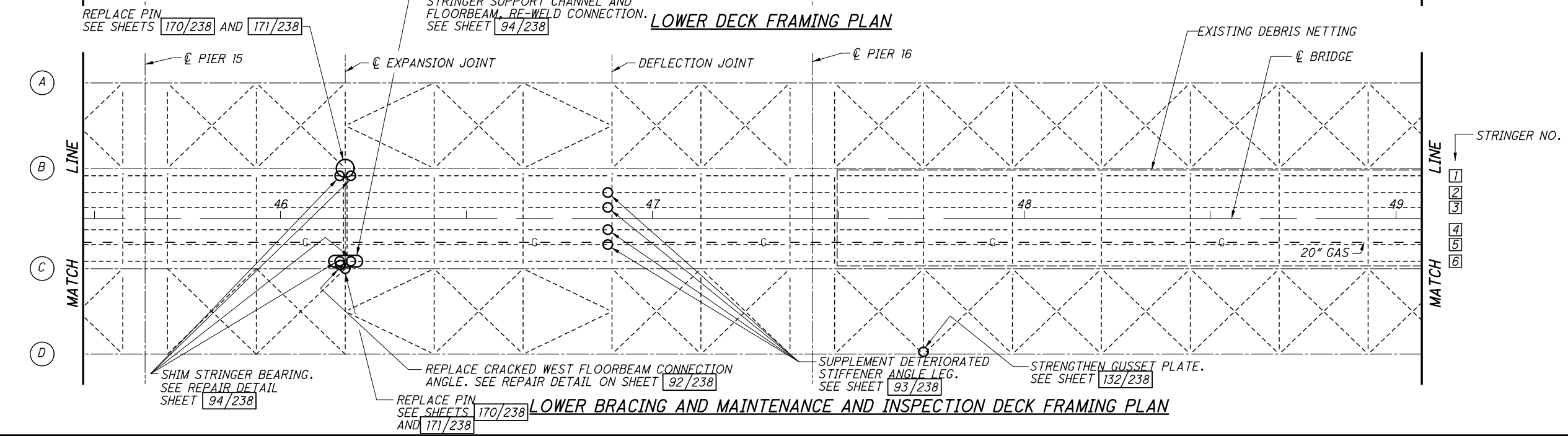
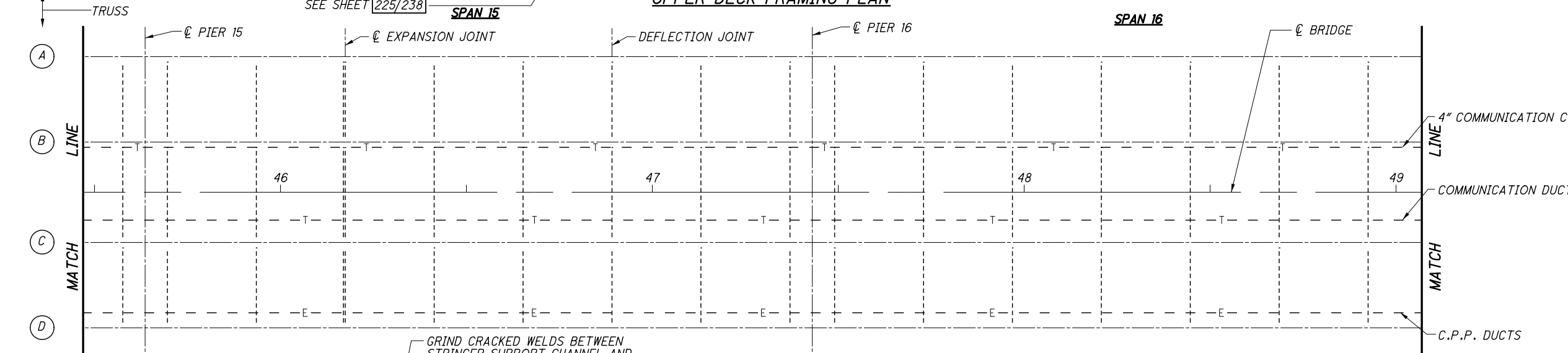
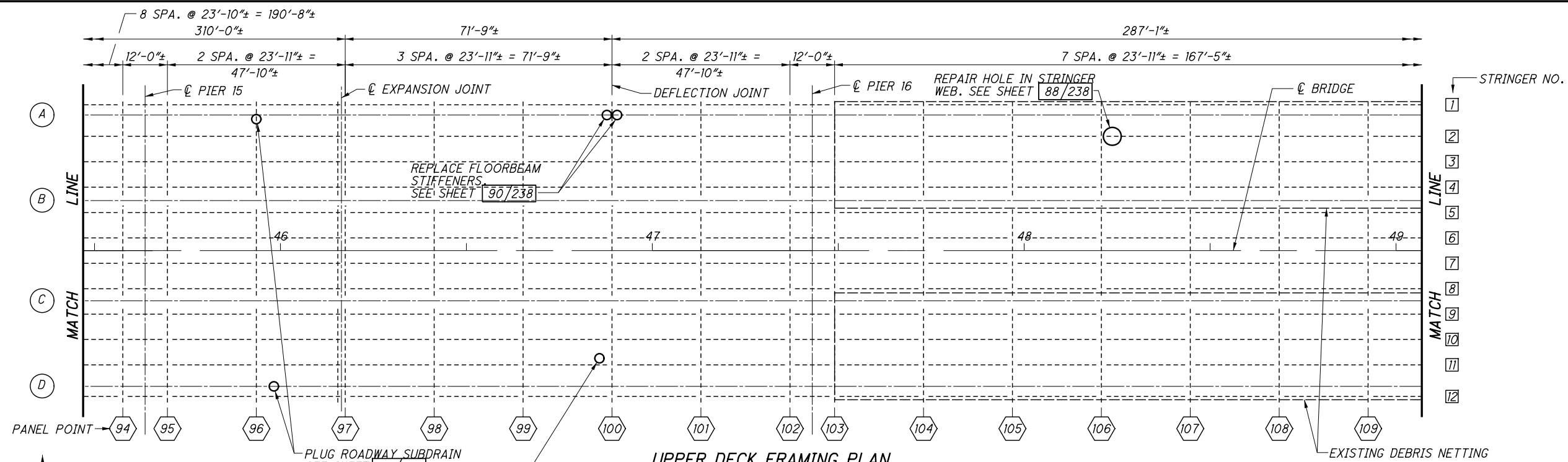
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NOTE: DO NOT DISTURB THE AGGREGATE PILE BELOW SPAN 14.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE: 1/30/18 REVIEWED: DLR DRAWN: JLS DESIGNED: KAK	STRUCTURE FILE NUMBER: 1801503 BRIDGE NO.: CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER
FRAMING PLAN - 6	
CUY-10-16.13 PID No. 96986	
84/238	
144 308	

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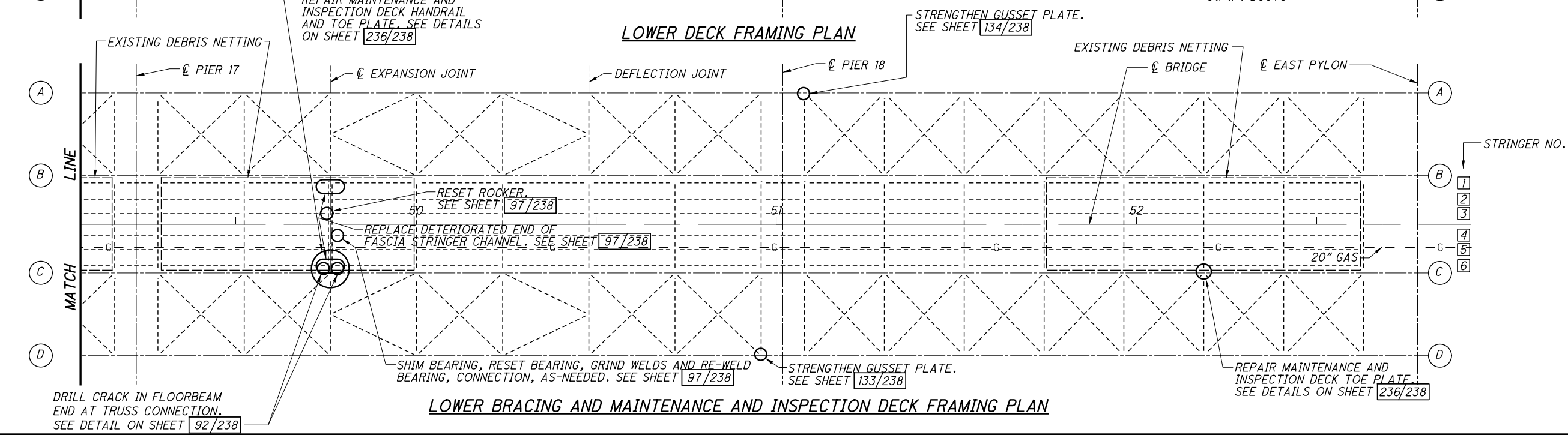
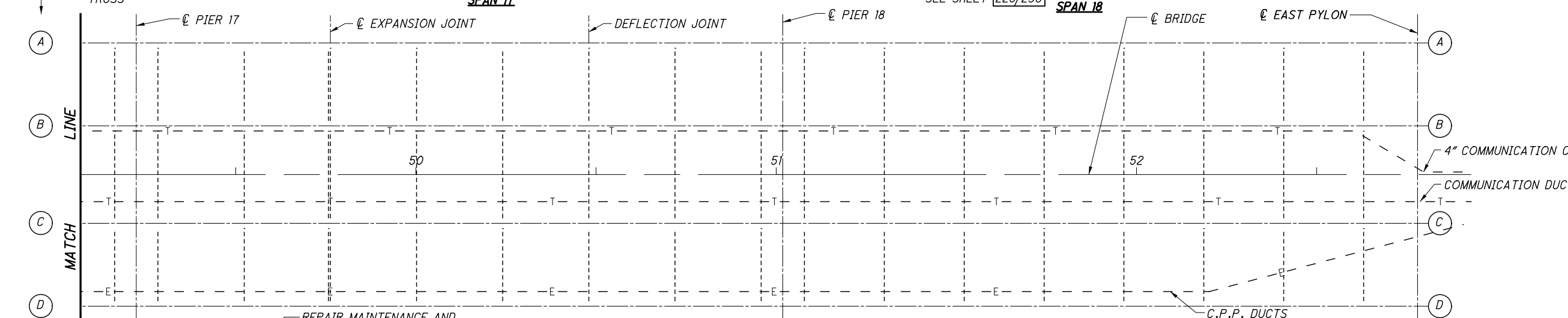
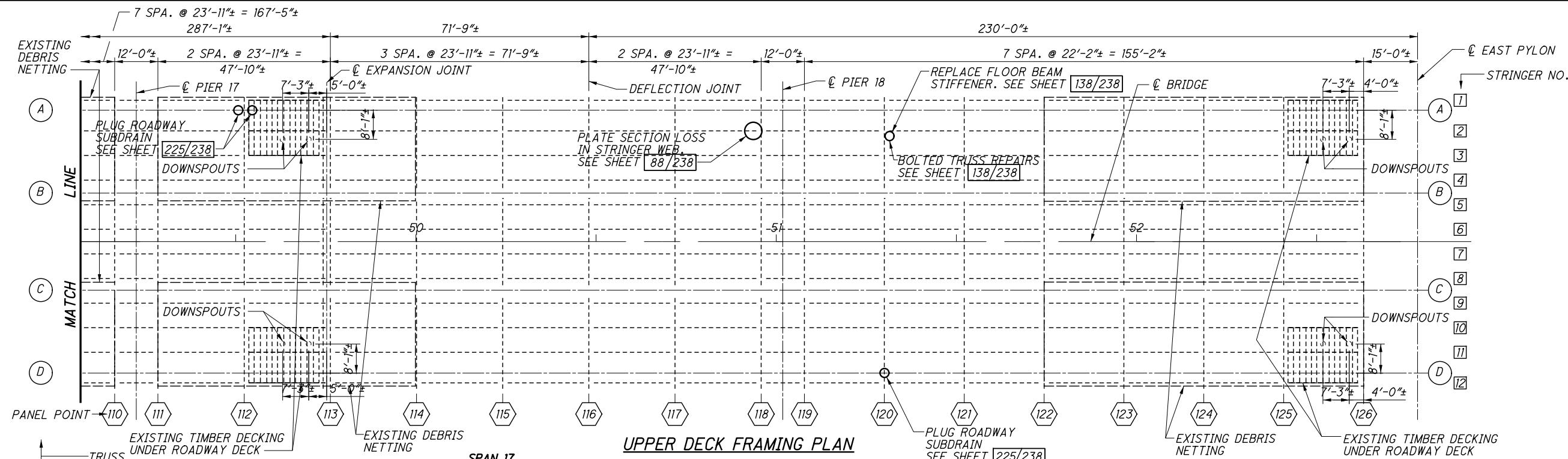
**RICHLAND ENGINEERING LIMITED**  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

DATE: 1/30/18  
REVIEWED: DLR  
DRAWN: JLS  
DESIGNED: KAK  
CHECKED: DAP

FRAMING PLAN - 7  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

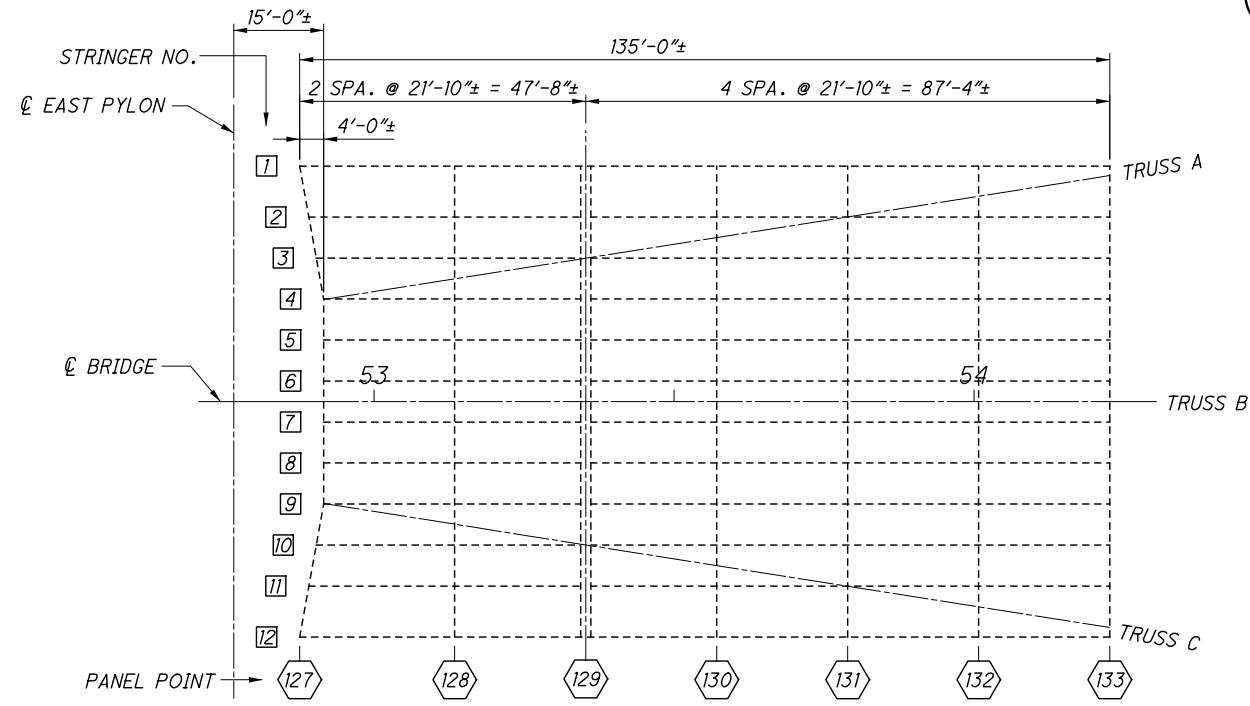
CUY-10-16.13  
PID No. 96986  
85/238  
145/308

F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613CSD008.dgn 3/2/2018 11:50:04 AM JeffSmith

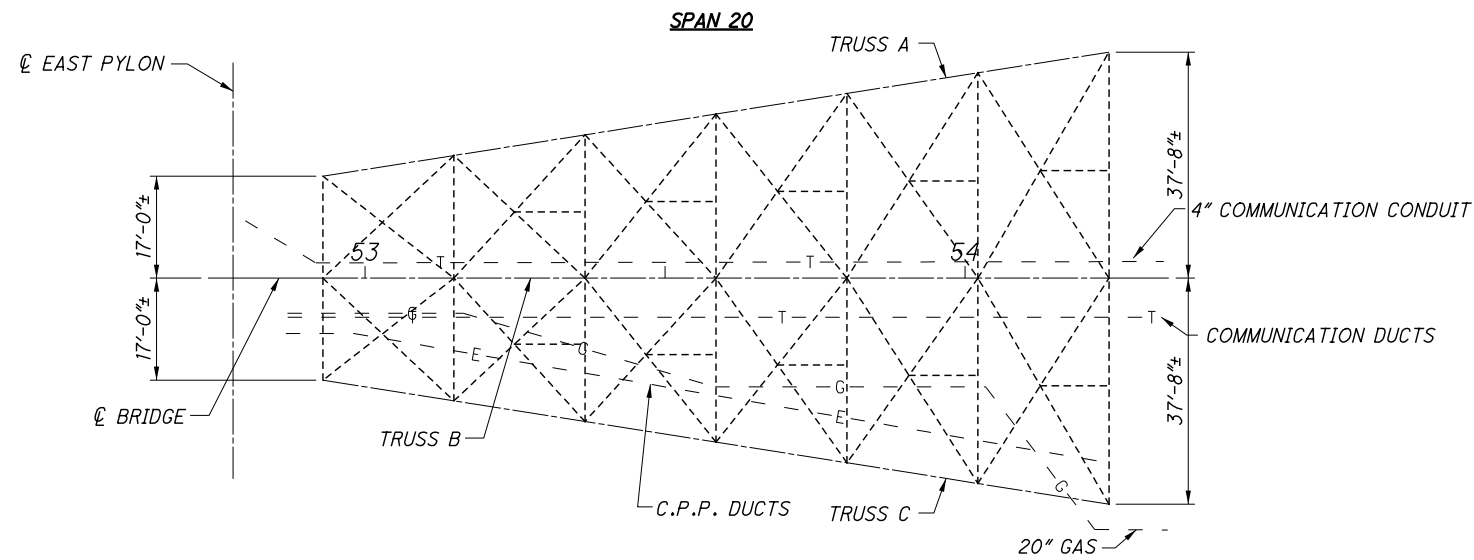


<b>FRAMING PLAN - 8</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
DESIGNED <b>KAK</b>	CHECKED <b>DAP</b>
DRAWN <b>JLS</b>	REVISED
REVIEWED <b>DLR</b>	STRUCTURE FILE NUMBER <b>1801503</b>
DATE <b>1/30/18</b>	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
<b>CUY-10-16.13</b> PID No. 96986	86/238 146/308

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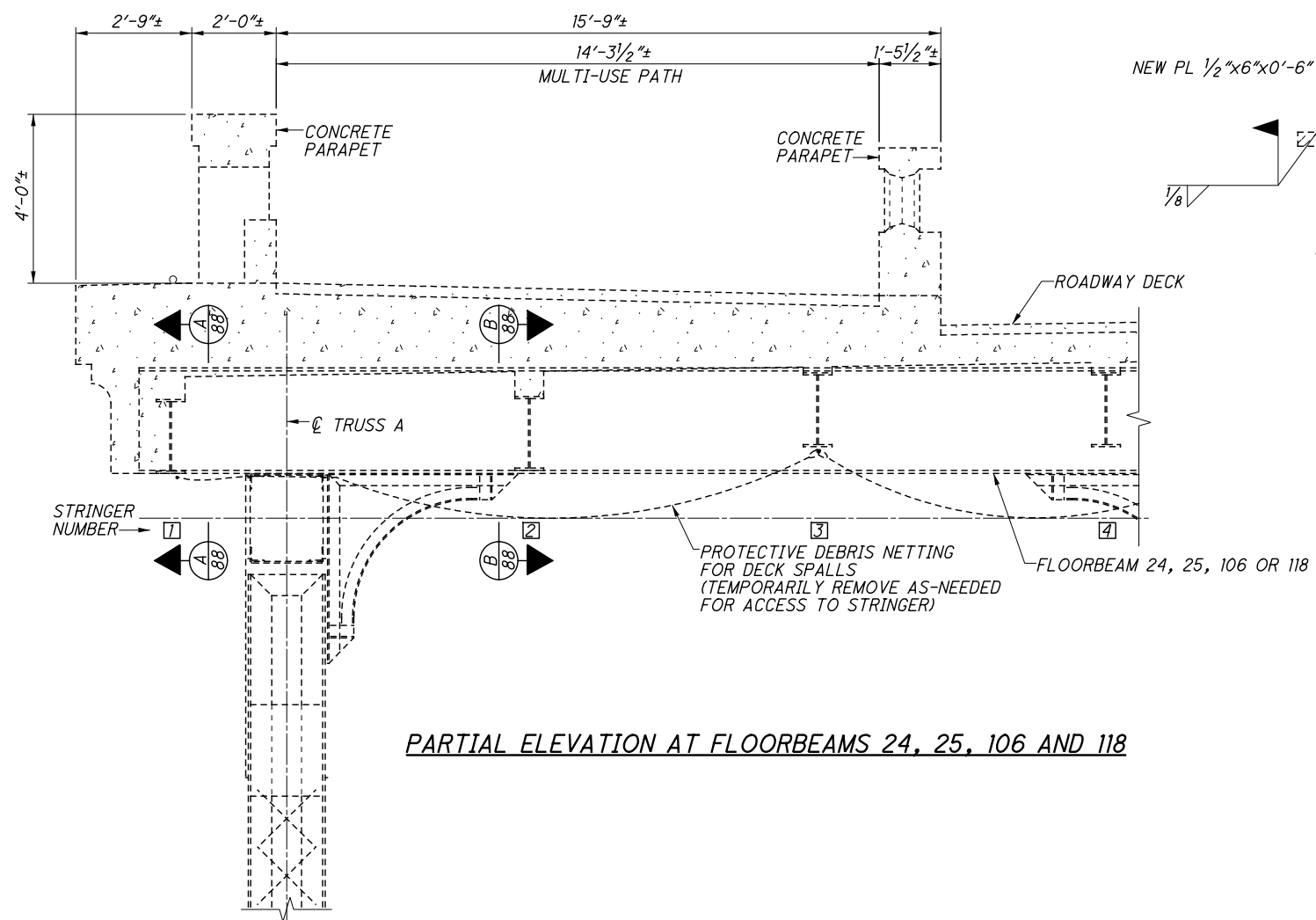


**UPPER DECK FRAMING PLAN**

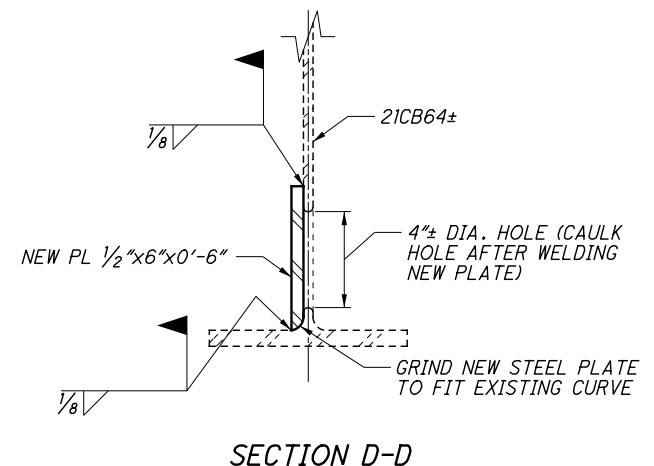


**LOWER LATERAL BRACING FRAMING PLAN**

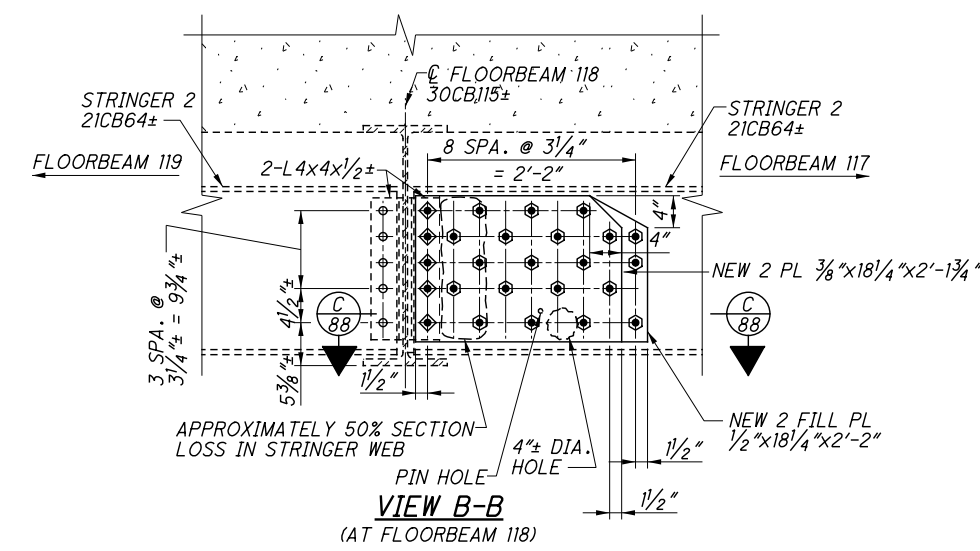
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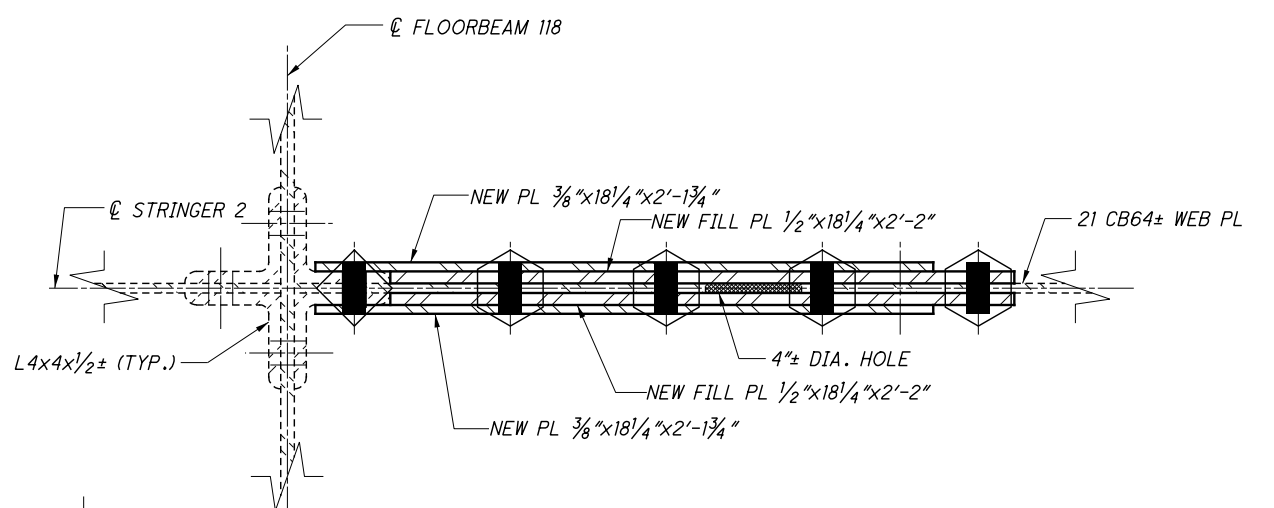
PARTIAL ELEVATION AT FLOORBEAMS 24, 25, 106 AND 118



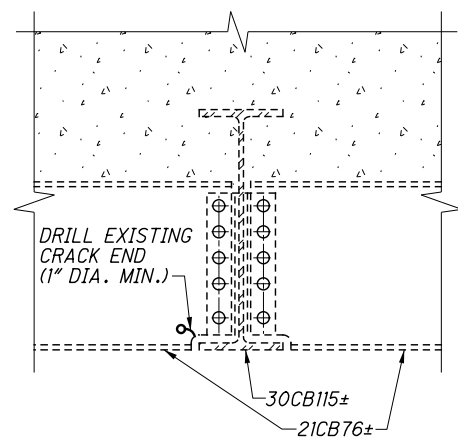
SECTION D-D



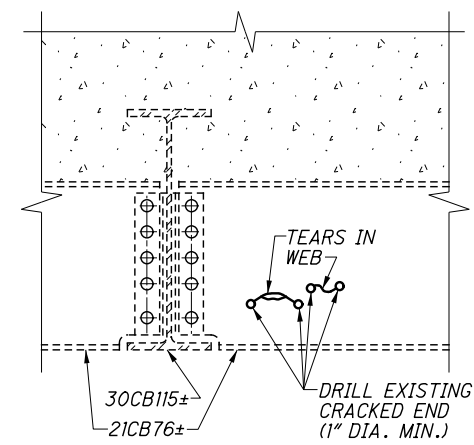
VIEW B-B (AT FLOORBEAM 118)



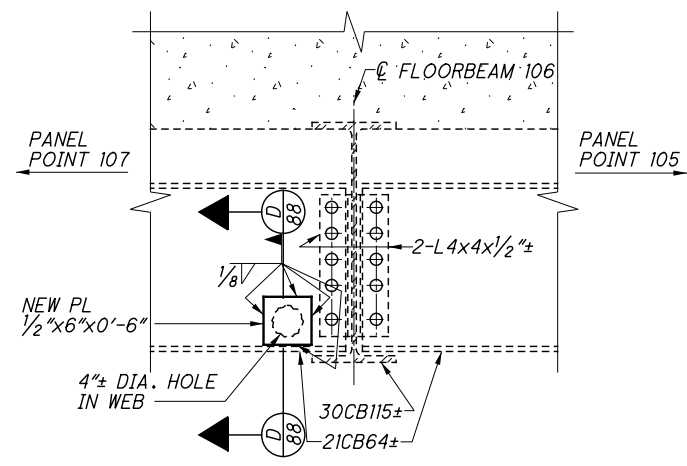
SECTION C-C



VIEW A-A (AT FLOORBEAM 24)



VIEW A-A (AT FLOORBEAM 25)



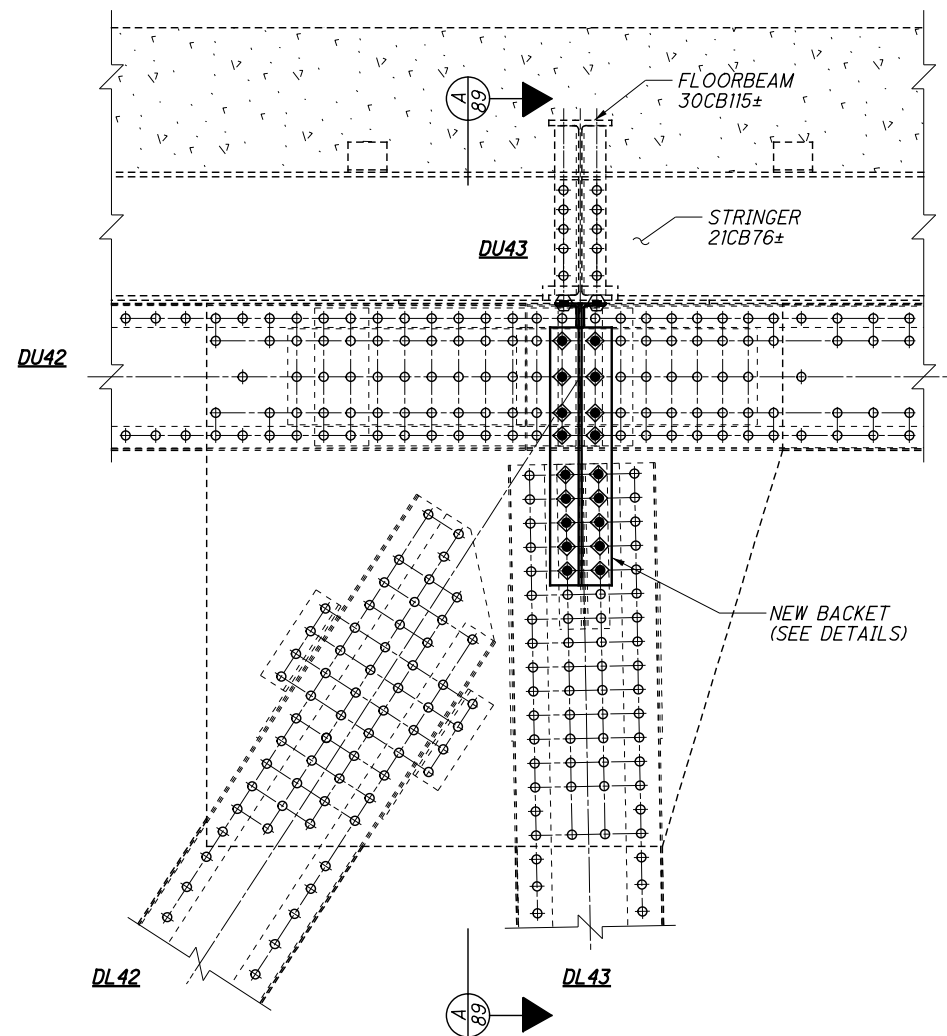
VIEW B-B (AT FLOORBEAM 106)

**NOTES**

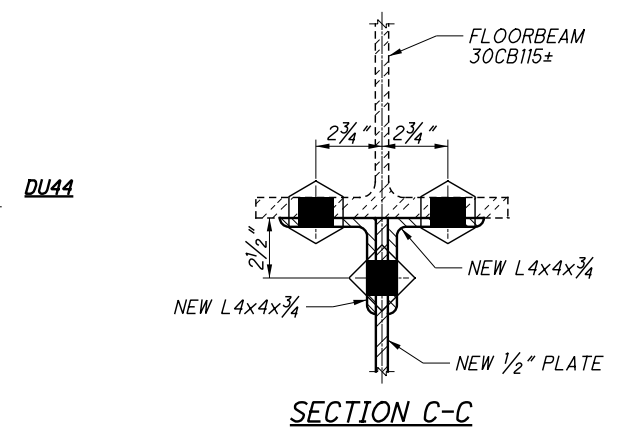
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- BOLT SIZE** IS 1" DIAMETER ASTM A325, TYPE 1.
- NORTH SIDE OF STRINGER 1** IS EMBEDDED IN DECK CONCRETE.
- EXISTING PROTECTIVE NETTING:** TEMPORARY REMOVAL AND REINSTALLATION FOR ACCESS TO THE STRINGERS SHALL BE CONSIDERED INCIDENTAL TO ITEM 513 - STRUCTURAL STEEL, MISC. PAY ITEM
- REPAIR LOCATIONS:** SEE FRAMING PLANS [79/238] THROUGH [87/238].
- ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET [8/238]. (FLOORBEAM 118 REPAIR)
- ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING AND NDT (STRINGER):** SEE GENERAL NOTE SHEET [11/238]. (FLOORBEAMS 24 AND 25 REPAIRS)
- ITEM 513 - STRUCTURAL STEEL, MISC.: ROADWAY STRINGERS REPAIRS:** SEE GENERAL NOTE SHEET [10/238]. (FLOORBEAMS 106 AND 118 REPAIRS)
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET [12/238].
- ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:** SEE GENERAL NOTE SHEET [12/238]. (FLOORBEAM 118 REPAIR)
- BOLT LEGEND:** SEE SHEET [14/238].

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DRAWN SUK
DESIGNED TGW	CHECKED KAK
ROADWAY STRINGERS REPAIRS BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	
88/238	
148 308	

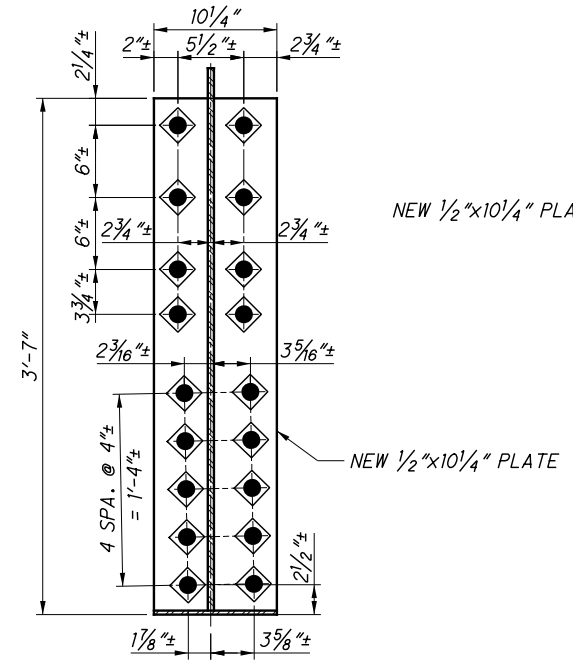
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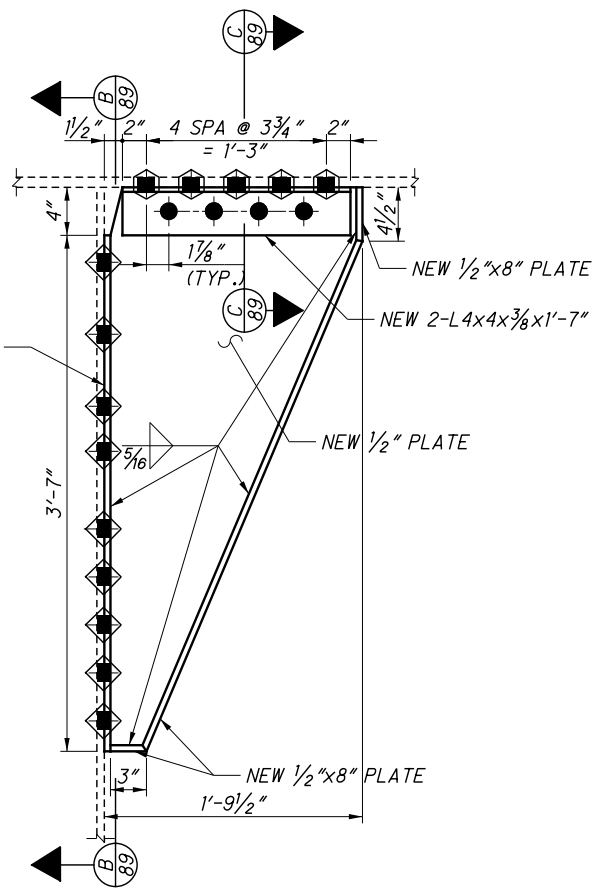
**ELEVATION - PANEL POINT DU43**  
(CONNECTION TO TRUSS SHOWN)  
(LOOKING NORTH)



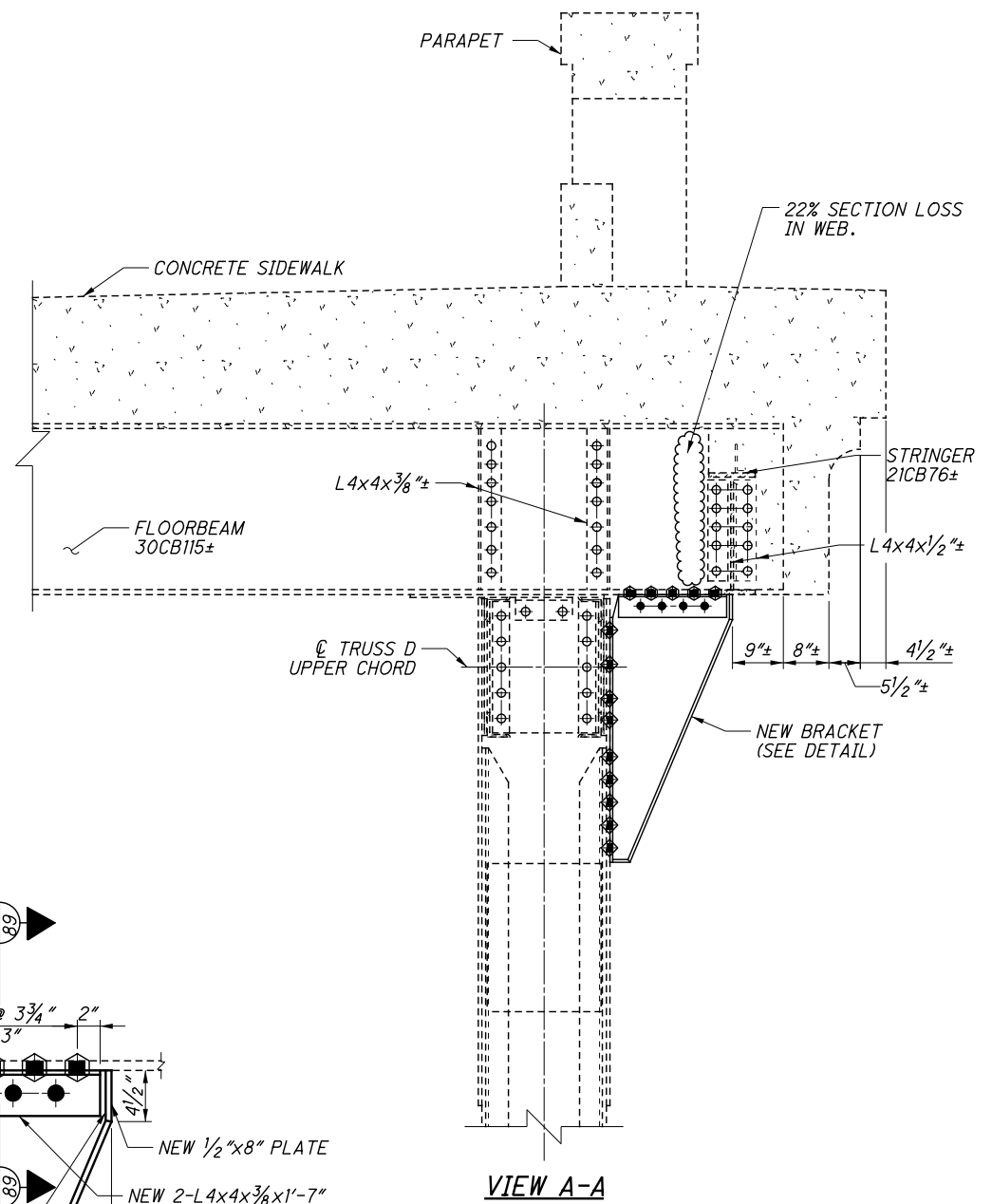
**SECTION C-C**



**SECTION B-B**



**BRACKET DETAIL**



**VIEW A-A**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED

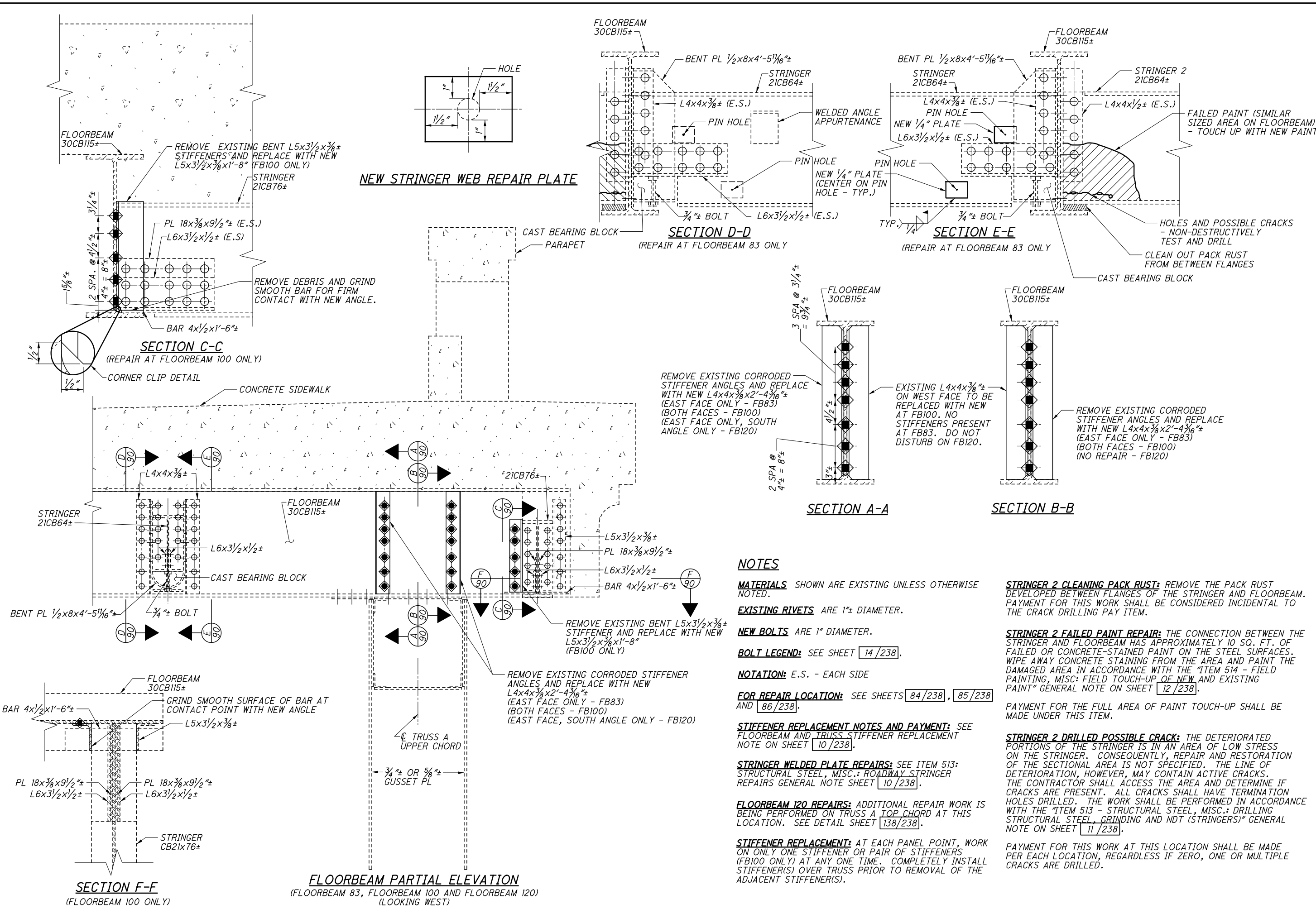
**NEW BOLTS** REPLACING EXISTING RIVETS SHALL MATCH THE EXISTING SIZE OF THE CONNECTOR. THE DIAMETER IS ESTIMATED TO BE 1". NEW BOLTS IN DRILLED HOLES WILL BE 1" DIAMETER. BOLTS SHALL BE ASTM A325.

**BOLT LEGEND** SEE SHEET 14/238.

**FOR REPAIR LOCATION:** SEE SHEET 81/238.

**SEE "FLOORBEAM SECTION LOSS REPAIR"** GENERAL NOTE FOR PAYMENT AND REPAIR DETAILS ON SHEET 10/238.

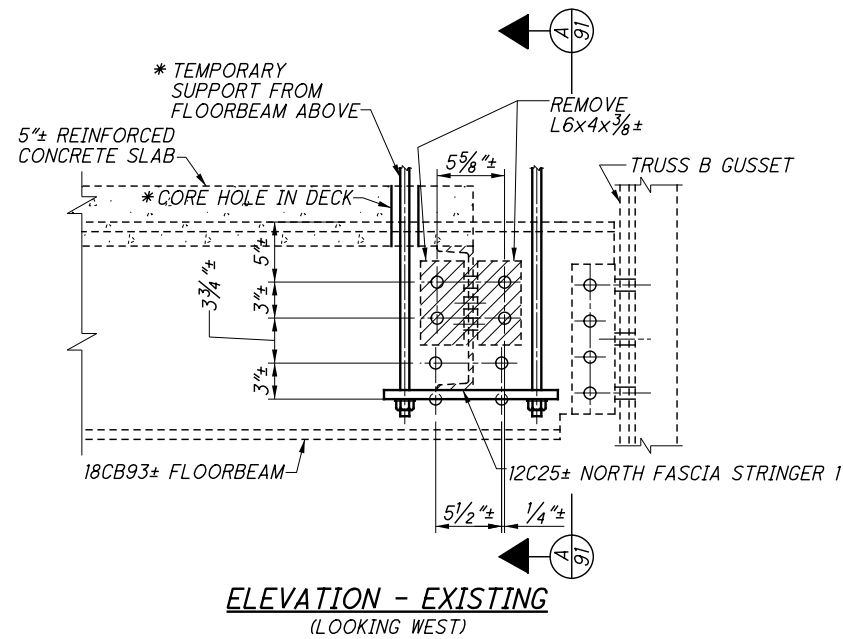
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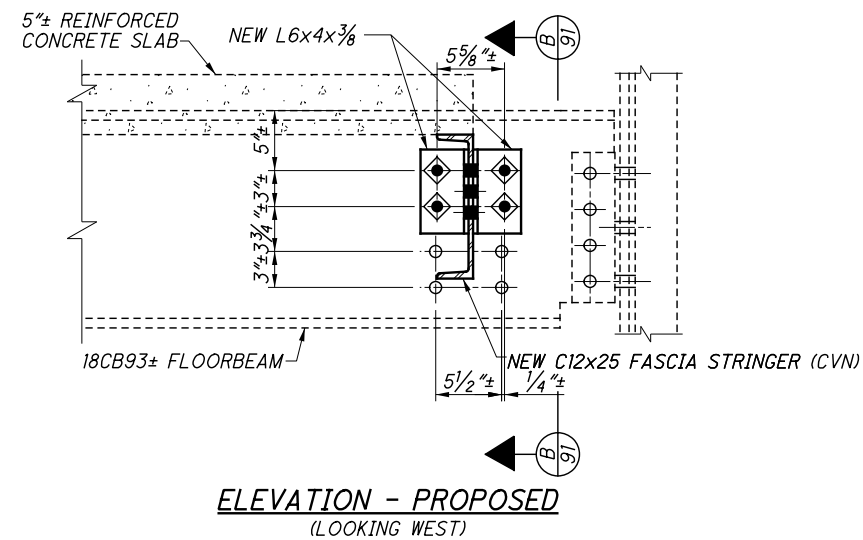
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- NOTATION:** E.S. - EACH SIDE
- FOR REPAIR LOCATION:** SEE SHEETS 84/238, 85/238 AND 86/238.
- STIFFENER REPLACEMENT NOTES AND PAYMENT:** SEE FLOORBEAM AND TRUSS STIFFENER REPLACEMENT NOTE ON SHEET 10/238.
- STRINGER WELDED PLATE REPAIRS:** SEE ITEM 513: STRUCTURAL STEEL, MISC.: ROADWAY STRINGER REPAIRS GENERAL NOTE SHEET 10/238.
- FLOORBEAM 120 REPAIRS:** ADDITIONAL REPAIR WORK IS BEING PERFORMED ON TRUSS A TOP CHORD AT THIS LOCATION. SEE DETAIL SHEET 138/238.
- STIFFENER REPLACEMENT:** AT EACH PANEL POINT, WORK ON ONLY ONE STIFFENER OR PAIR OF STIFFENERS (FB100 ONLY) AT ANY ONE TIME. COMPLETELY INSTALL STIFFENER(S) OVER TRUSS PRIOR TO REMOVAL OF THE ADJACENT STIFFENER(S).
- STRINGER 2 CLEANING PACK RUST:** REMOVE THE PACK RUST DEVELOPED BETWEEN FLANGES OF THE STRINGER AND FLOORBEAM. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CRACK DRILLING PAY ITEM.
- STRINGER 2 FAILED PAINT REPAIR:** THE CONNECTION BETWEEN THE STRINGER AND FLOORBEAM HAS APPROXIMATELY 10 SQ. FT. OF FAILED OR CONCRETE-STAINED PAINT ON THE STEEL SURFACES. WIPE AWAY CONCRETE STAINING FROM THE AREA AND PAINT THE DAMAGED AREA IN ACCORDANCE WITH THE ITEM 514 - FIELD PAINTING, MISC: FIELD TOUCH-UP OF NEW AND EXISTING PAINT" GENERAL NOTE ON SHEET 12/238.
- PAYMENT FOR THE FULL AREA OF PAINT TOUCH-UP SHALL BE MADE UNDER THIS ITEM.
- STRINGER 2 DRILLED POSSIBLE CRACK:** THE DETERIORATED PORTIONS OF THE STRINGER IS IN AN AREA OF LOW STRESS ON THE STRINGER. CONSEQUENTLY, REPAIR AND RESTORATION OF THE SECTIONAL AREA IS NOT SPECIFIED. THE LINE OF DETERIORATION, HOWEVER, MAY CONTAIN ACTIVE CRACKS. THE CONTRACTOR SHALL ACCESS THE AREA AND DETERMINE IF CRACKS ARE PRESENT. ALL CRACKS SHALL HAVE TERMINATION HOLES DRILLED. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING AND NDT (STRINGERS)" GENERAL NOTE ON SHEET 11/238.
- PAYMENT FOR THIS WORK AT THIS LOCATION SHALL BE MADE PER EACH LOCATION, REGARDLESS IF ZERO, ONE OR MULTIPLE CRACKS ARE DRILLED.

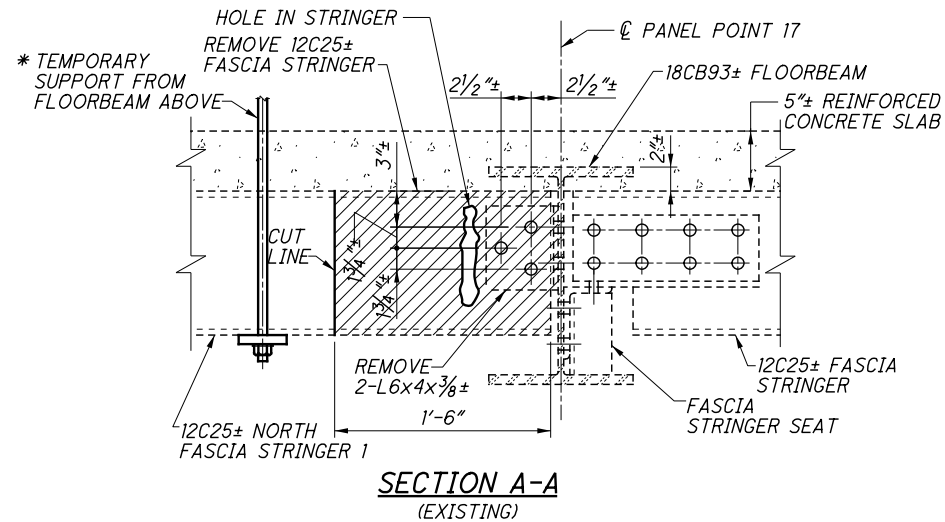
<p><b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>DATE: 1/30/18</p>	<p>REVIEWED: DLR</p>
<p>STRUCTURE FILE NUMBER: 1801503</p>	<p>DESIGNED: TGW</p>
<p>DRAWN: USB</p>	<p>CHECKED: KAK</p>
<p><b>ROADWAY FLOORBEAM AND STRINGER TYPICAL REPAIRS</b></p>	
<p>BRIDGE NO. CUY-10-1613</p>	
<p>S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p><b>CUY-10-16.13</b></p>	<p>PID No. 96986</p>
<p>90/238</p>	
<p>150/308</p>	



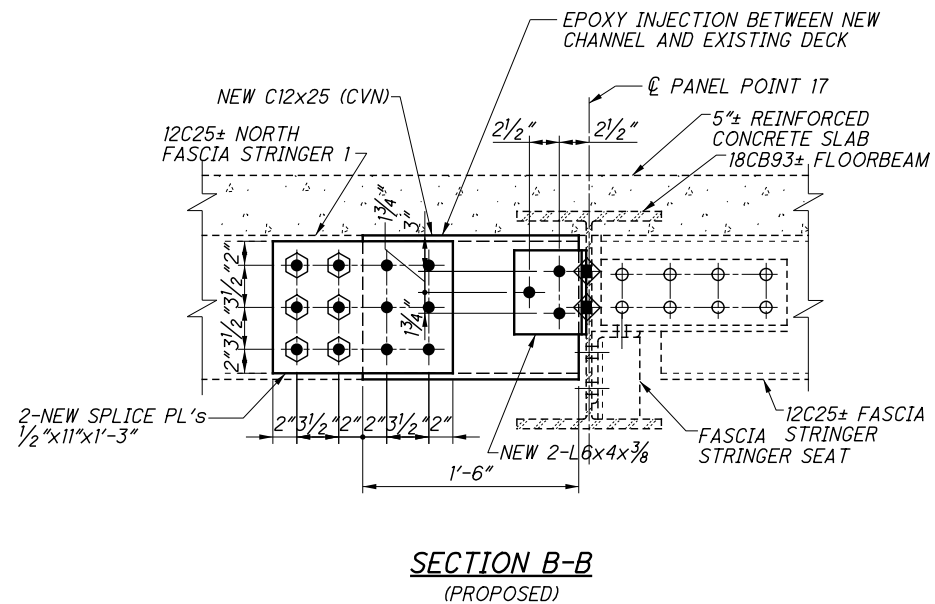
**ELEVATION - EXISTING**  
(LOOKING WEST)



**ELEVATION - PROPOSED**  
(LOOKING WEST)



**SECTION A-A**  
(EXISTING)



**SECTION B-B**  
(PROPOSED)

**LEGEND**

 - INDICATES MATERIALS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

\* - POSSIBLE SUPPORT DETAIL SHOWN. CONTRACTOR TO DESIGN SUPPORT FOR MINIMUM 3.0 KIPS DEAD LOAD + CONTRACTOR-INDUCED LIVE LOAD REACTION AT FLOORBEAM.

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1"± DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET **14/238**.

**FOR REPAIR LOCATION:** SEE FRAMING PLAN SHEET **80/238**.

**CORE HOLES** DRILLED THROUGH THE DECK TO FACILITATE TEMPORARY SUPPORT SHALL BE FILLED WITH A CEMENT GROUT UPON COMPLETION OF THE WORK.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:** SEE GENERAL NOTE SHEET **7/238**.

**ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET **8/238**.

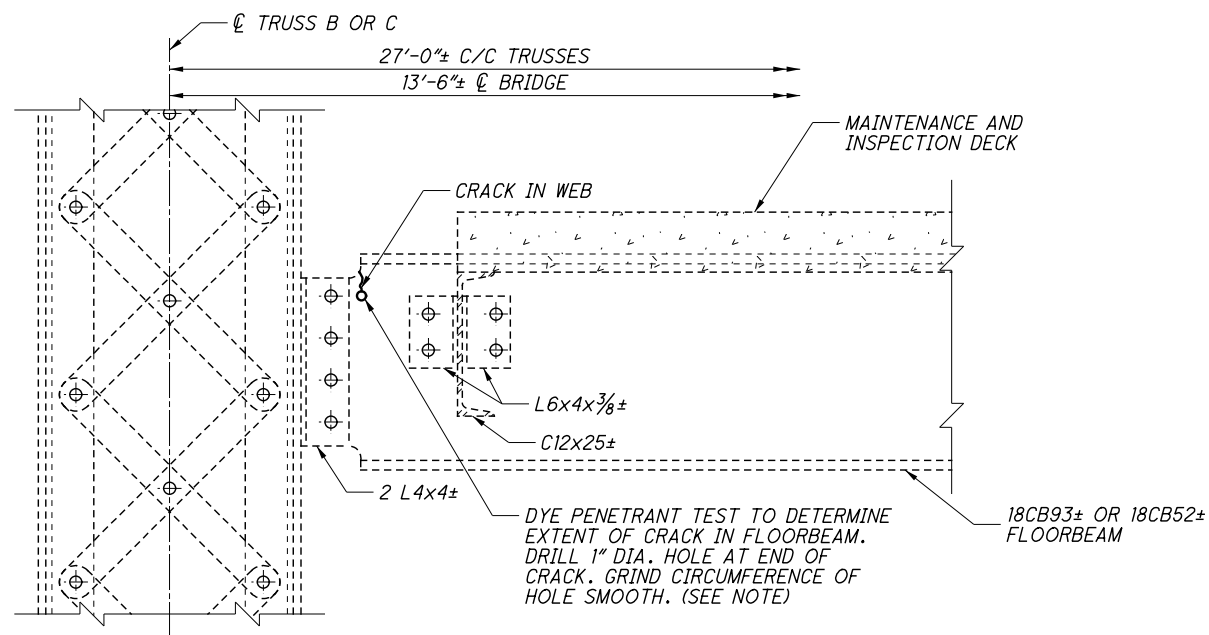
**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTAINANCE AND INSPECTION DECK STRINGER REPAIRS:** SEE GENERAL NOTE SHEET **10/238**.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET **12/238**.

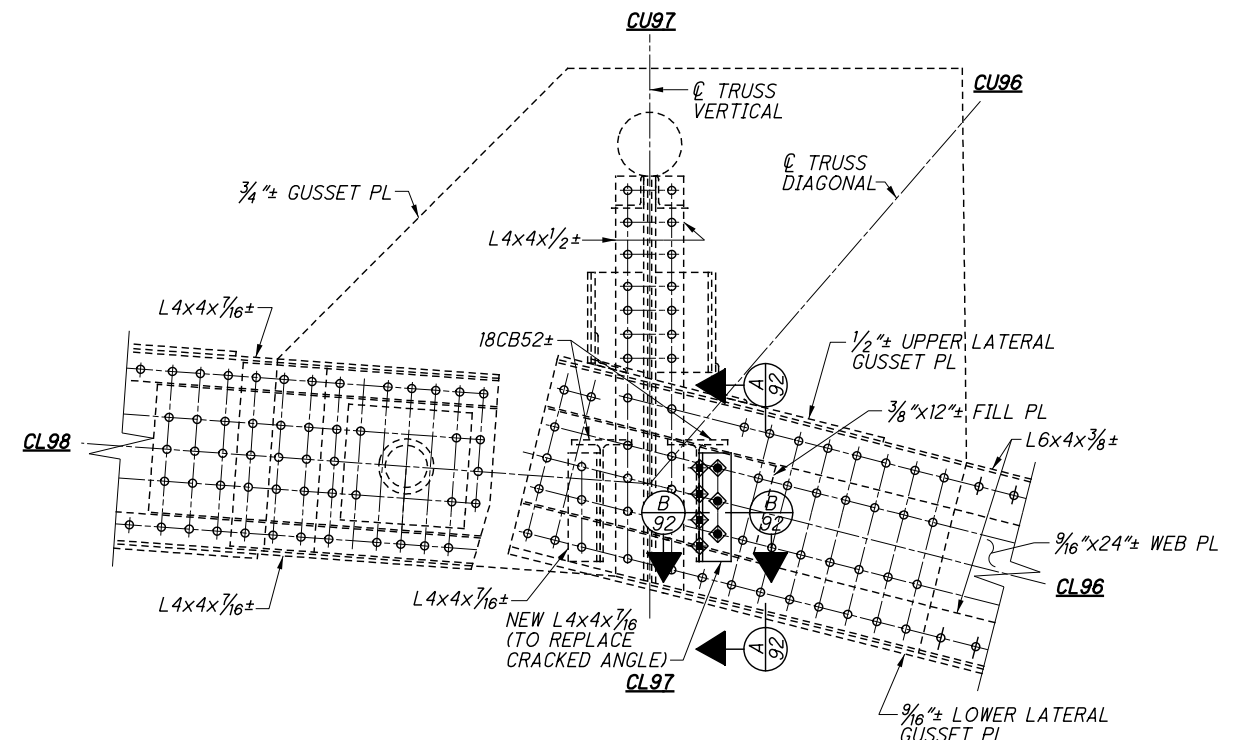
**ITEM 516 - JACKING AND TEMPORARY SUPPORT, AS PER PLAN:** SEE GENERAL NOTE SHEET **12/238**.



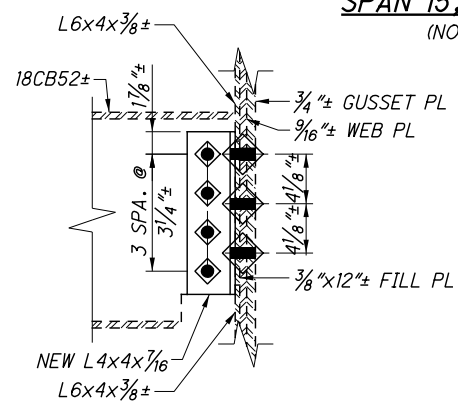
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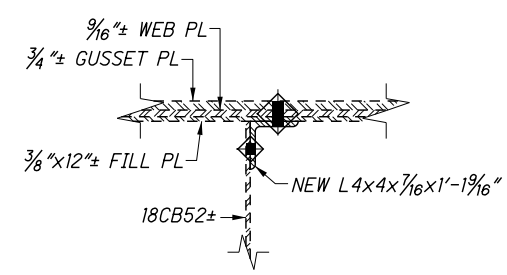
**MAINTENANCE & INSPECTION DECK DETAIL**



**SPAN 15, TRUSS C, PANEL POINT 97  
(NORTH GUSSET LOOKING SOUTH)**



**SECTION A-A**



**SECTION B-B**

MAINTENANCE AND INSPECTION DECK FLOORBEAM CONNECTION REPAIRS					
TRUSS SPAN	TRUSS PANEL POINT	CRACK LOCATION ON FRAMING PLAN (SEE SHEET)	CRACK DESCRIPTION	FLOORBEAM TYPE	DISPOSITION
8	C24	80/238	1/4" CRACK	18CB93	DRILL CRACK END
9	B34	81/238	4 1/4" BELOW FB TOP FLANGE	18CB93	DRILL CRACK END
9	C34	81/238	4 1/4" CRACK	18CB93	DRILL CRACK END
9	B36	81/238	2" VERTICAL/1 1/2" HORIZONTAL TEE CRACK	18CB93	DRILL BOTH ENDS
9	C36	81/238	3 3/8" CRACK	18CB93	DRILL CRACK END
9	B37	81/238	1 1/8" VERTICAL CRACK	18CB93	DRILL CRACK END
9	C37	81/238	2" CRACK	18CB93	DRILL CRACK END
9	B38	81/238	1 1/8" VERTICAL CRACK	18CB93	DRILL CRACK END
9	C38	81/238	3/4" CRACK	18CB93	DRILL CRACK END
9	B39	81/238	1" VERTICAL CRACK	18CB93	DRILL CRACK END
9	C39	81/238	3/4" CRACK	18CB93	DRILL CRACK END
11	B61	82/238	1 1/8" VERTICAL CRACK	18CB93	DRILL CRACK END
13	B78 WEST	83/238	7 1/2" HORIZONTAL CRACK	18CB52	DRILL CRACK END
13	B78 EAST	83/238	5 1/2" HORIZONTAL CRACK	18CB52	DRILL 2 CRACK ENDS
15	C97 WEST	85/238	2" CRACK IN CONNECTION ANGLE	18CB52	REPLACE ANGLE
17	C113 EAST	86/238	2 1/4" HORIZONTAL CRACK AT BOTTOM OF WEB	18CB52	DRILL CRACK END
17	C113 WEST	86/238	1 5/8" VERTICAL CRACK AT BOTTOM OF WEB	18CB52	DRILL CRACK END

**ESTIMATED QUANTITY**

CRACK STOPPING HOLES - 18 AT 16 LOCATIONS

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**THE DIAMETER OF THE CRACK STOPPING HOLE** MAY BE ADJUSTED TO ALLOW PROPER CLEARANCE FROM FLANGES OR CONNECTION ANGLES OR TO PROVIDE A MINIMUM OF 1/4" OF STEEL BETWEEN THE EDGE OF THE HOLE AND THE ADJACENT MEMBER EDGE.

**CRACKS OCCUR** HORIZONTALLY OR VERTICALLY AT EITHER TOP OR BOTTOM OF CONNECTION.

**CONNECTION ANGLE AT C97** IS CRACKED AND IS TO BE REPLACED.

**EXISTING RIVETS** ARE 1"± DIAMETER.

**BOLT SIZE:** 1" DIAMETER

**BOLT LEGEND:** SEE SHEET 14/238.

**REPAIR LOCATIONS:** SEE FRAMING PLAN SHEETS 79/238 THROUGH 87/238.

**ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.

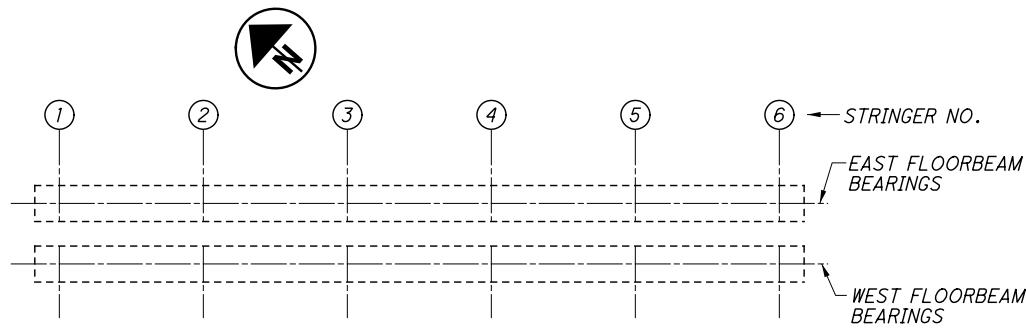
**ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURE STEEL, GRINDING, AND NDT (MAINTENANCE AND INSPECTION DECK FLOORBEAMS):** SEE GENERAL NOTE SHEET 11/238.

**ITEM 513 STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK FLOORBEAM REPAIRS:** SEE GENERAL NOTE SHEET 10/238.

**ITEM 514 - FIELD PAINTING, MISC.: TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

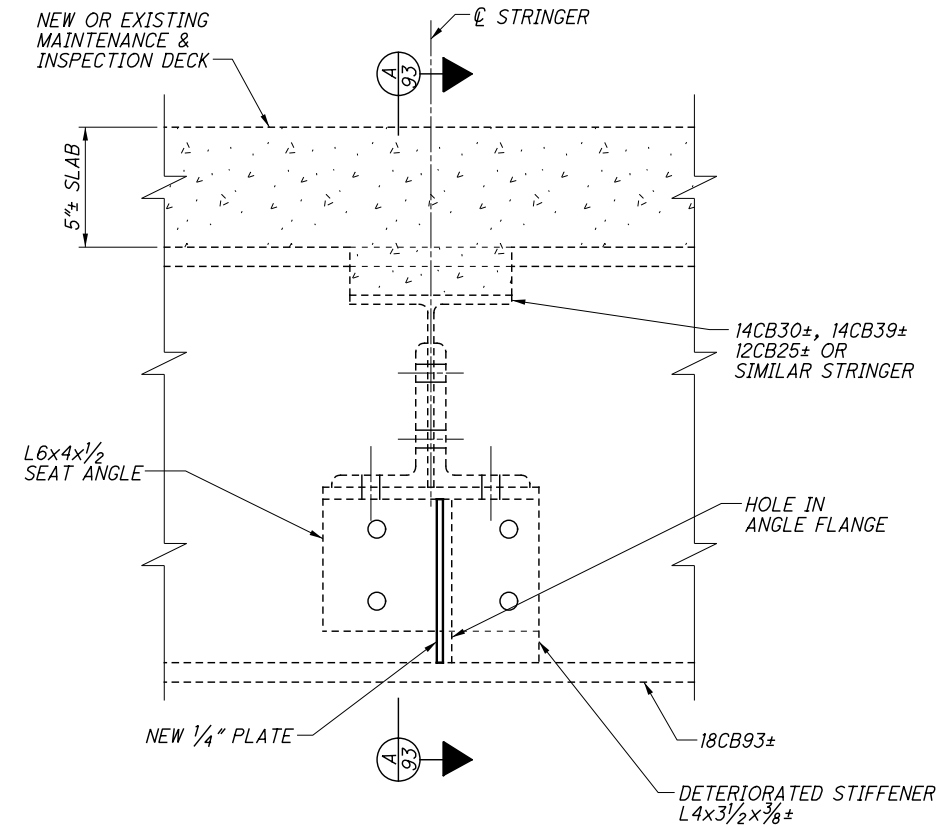
**ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:** SEE GENERAL NOTE SHEET 12/238.

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 1/30/18  
 REVIEWED: DLR  
 DRAWN: JSB  
 DESIGNED: KAK  
 CHECKED: DAP  
 STRUCTURE FILE NUMBER: 1801503  
 MAINTENANCE & INSPECTION DECK FLOORBEAM CONNECTION REPAIR  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 CUY-10-16-13  
 PID No. 96986  
 92/238  
 152/308



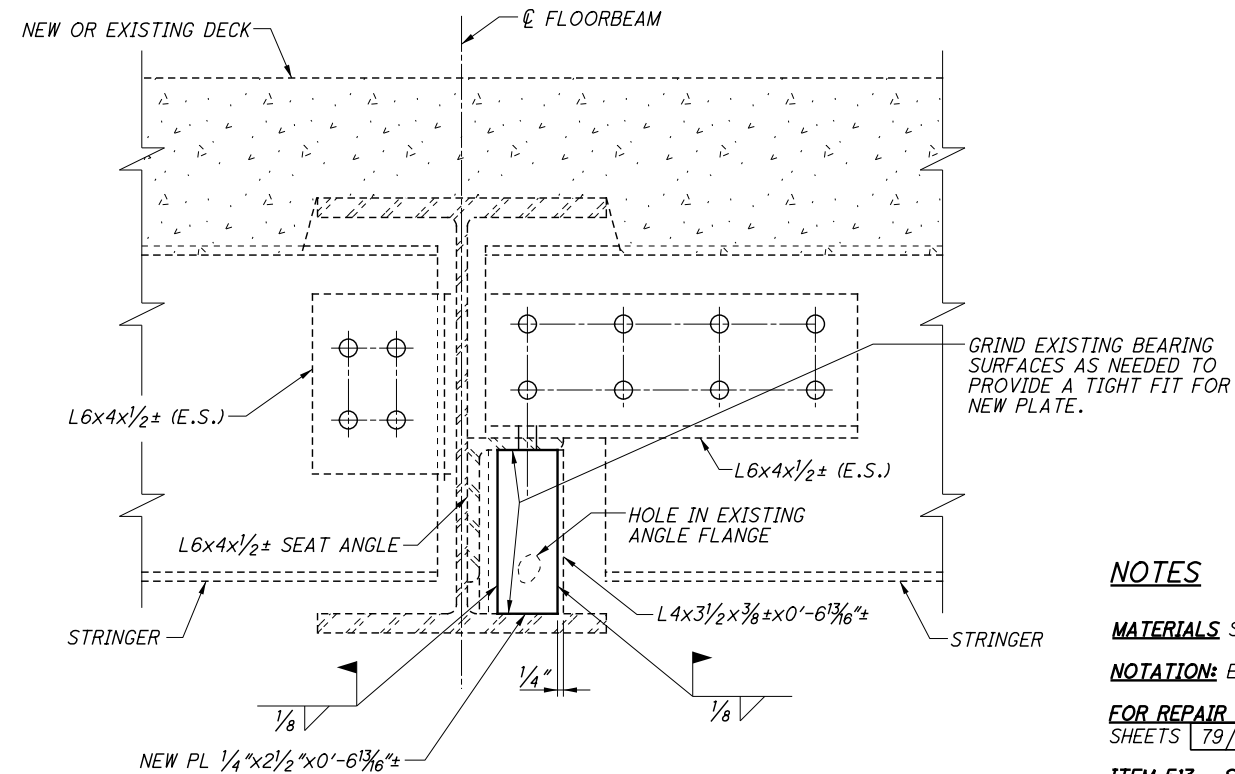
PROPOSED STRINGER BEARING REPAIR TYPES AND LOCATIONS									
STRINGER #	SIDE OF FLOORBEAM	PANEL POINT							
		12	35	58	63	78	97	100	113
STRINGER 1	WEST	-	-	D	-	-	D	-	F
	EAST	-	-	D	-	-	D	-	
	SUPPORT	-	-	-	-	-	-	-	
STRINGER 2	WEST	-	-	-	A	-	-	A	-
	EAST	-	-	E	-	-	-	-	-
STRINGER 3	WEST	-	-	-	A	-	-	A	B
	EAST	-	C	-	-	-	-	-	-
STRINGER 4	WEST	-	-	B	-	-	-	A	-
	EAST	-	C	E	-	B	-	-	E
STRINGER 5	WEST	-	-	E	A	-	-	A	-
	EAST	-	-	E	-	B	-	-	-
STRINGER 6	WEST	H	-	-	-	-	D	-	F
	EAST	-	-	-	-	-	D	-	
	SUPPORT	-	-	-	-	-	G	-	

- TYPE A - SUPPLEMENT DETERIORATED OUTSTANDING STIFFENER ANGLE LEG WITH WELDED PLATE.
- TYPE B - JACK EXISTING STRINGER AND RESET OVERLY TILTED ROCKER.
- TYPE C - JACK EXISTING STRINGER AND ROCKER; CLEAN SLIDING/ROCKING SURFACE AND SHIM BEARING PLATE UNTIL IN FIRM CONTACT WITH ROCKER.
- TYPE D - JACK EXISTING FASCIA STRINGER CHANNEL; CLEAN SLIDING SURFACE; SHIM SUPPORT CHANNEL UNTIL IN FIRM CONTACT WITH STRINGER CHANNEL.
- TYPE E - JACK EXISTING STRINGER AND PEDESTAL BEARING; CLEAN SLIDING SUPPORT; RESET ROCKER BEARING IF NECESSARY; SHIM BEARING AS NEEDED UNTIL IN FIRM CONTACT WITH PEDESTAL BEARING; GRIND CRACKED WELDS IF NECESSARY; RE-WELD CONNECTION IF NECESSARY.
- TYPE F - TEMPORARILY SUPPORT EXISTING FASCIA STRINGER CHANNELS; REMOVE EXISTING FAILING STRINGER SUPPORT CHANNEL FROM FLOORBEAM; REPLACE WITH NEW.
- TYPE G - GRIND CRACKED WELDS BETWEEN STRINGER SUPPORT CHANNEL AND FLOORBEAM TOP FLANGE; RE-WELD GROUND PORTIONS OF CONNECTION.
- TYPE H - JACK FASCIA STRINGER CHANNEL LATERALLY BACK TO FIRM SEATING ON SUPPORT CHANNEL. (THE CAUSE OF PROBLEM, HANDRAIL BUCKLING ABOVE STRINGER, IS ADDRESSED ON SHEET 236/238).



**STRINGER BEARING AT DECK DEFLECTION JOINT ELEVATION - LOOKING WEST**

REPAIR LOCATIONS - SPAN 11, FLOORBEAM 63, STRINGER 2 WEST  
 SPAN 11, FLOORBEAM 63, STRINGER 3 WEST  
 SPAN 11, FLOORBEAM 63, STRINGER 5 WEST  
 SPAN 15, FLOORBEAM 100, STRINGER 2 WEST  
 SPAN 15, FLOORBEAM 100, STRINGER 3 WEST  
 SPAN 15, FLOORBEAM 100, STRINGER 4 WEST  
 SPAN 15, FLOORBEAM 100, STRINGER 5 WEST



**SECTION A-A**

**TYPE A REPAIR**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**NOTATION:** E.S. - EACH SIDE

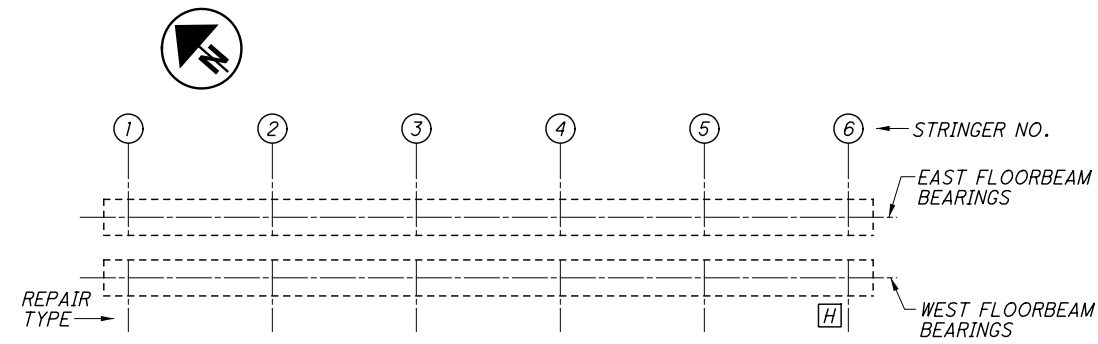
**FOR REPAIR LOCATIONS:** SEE FRAMING PLAN SHEETS 79/238 THROUGH 87/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS:** SEE GENERAL NOTE SHEET 10/238.

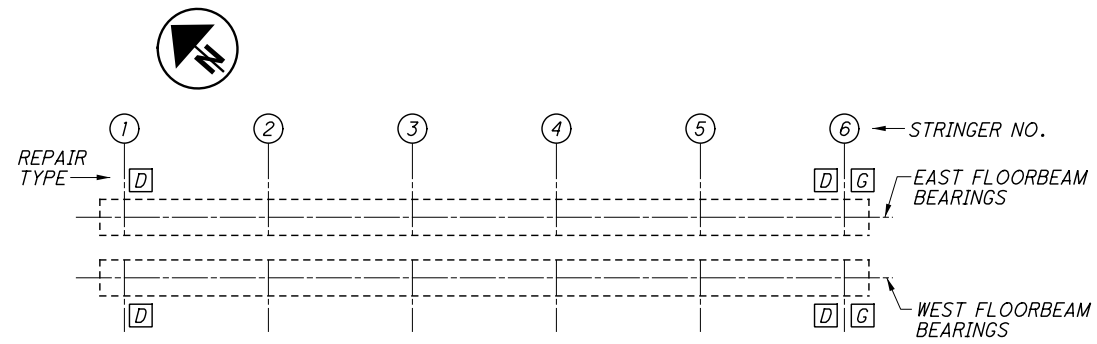
**BOLT LEGEND:** SEE SHEET 14/238.

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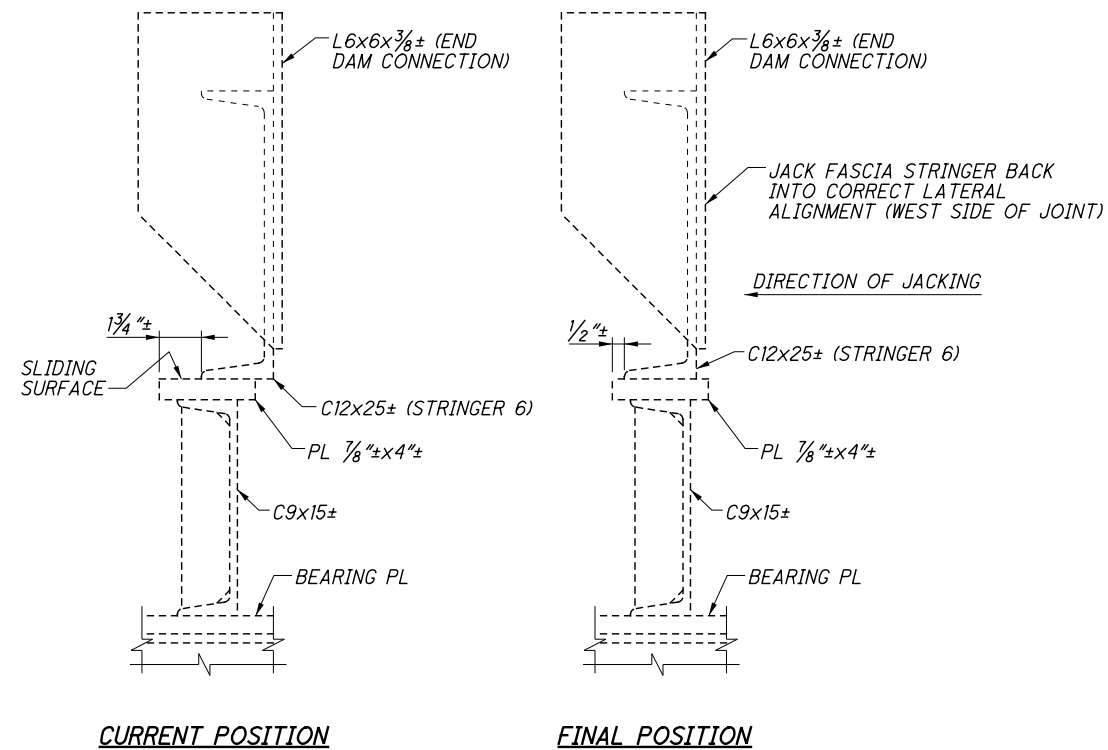
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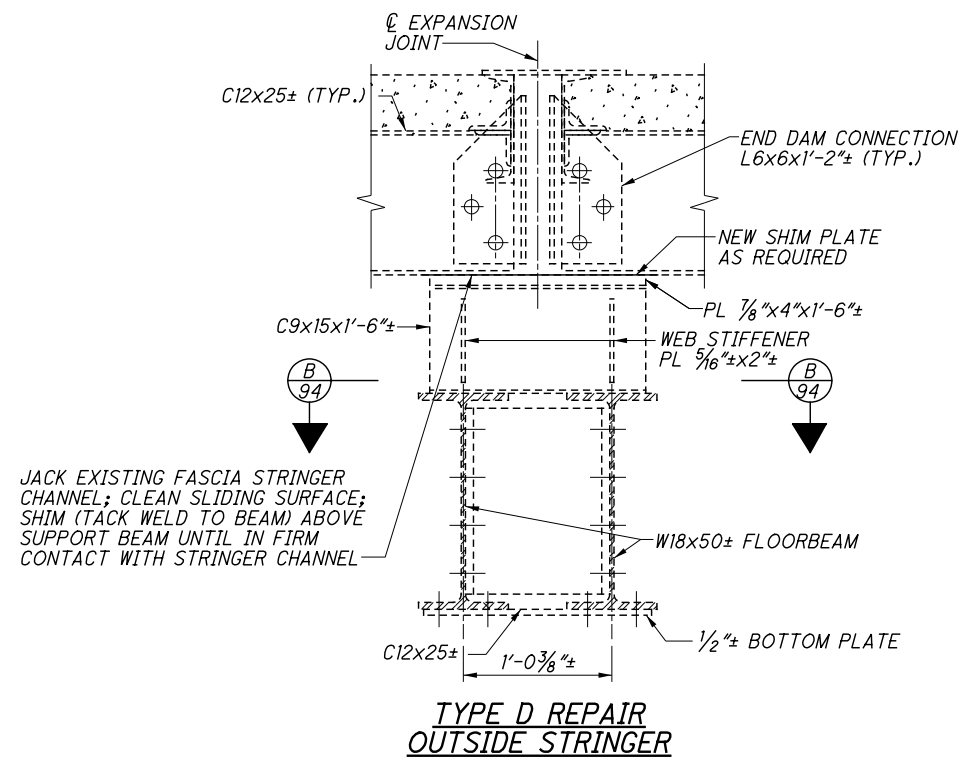
PANEL POINT 12 PLAN VIEW



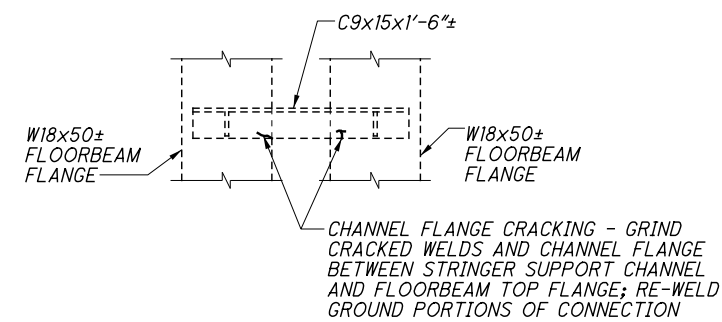
PANEL POINT 97 PLAN VIEW



TYPE H REPAIR  
OUTSIDE STRINGER



TYPE D REPAIR  
OUTSIDE STRINGER



SECTION B-B  
TYPE G REPAIR  
OUTSIDE STRINGER

**NOTES:**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE SHOWN.

**PANEL POINT 12 REPAIR:** RELEASE THE BUCKLED RAILING ABOVE STRINGER 6 PRIOR TO REALIGNING THE STRINGER CHANNEL BEARING.

**FOR REPAIR TYPE A THROUGH H DEFINITIONS** SEE SHEET 93/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION STRINGER BEARING GRINDING AND WELDING REPAIRS:** REPAIR G - SEE GENERAL NOTE SHEET 10/238.

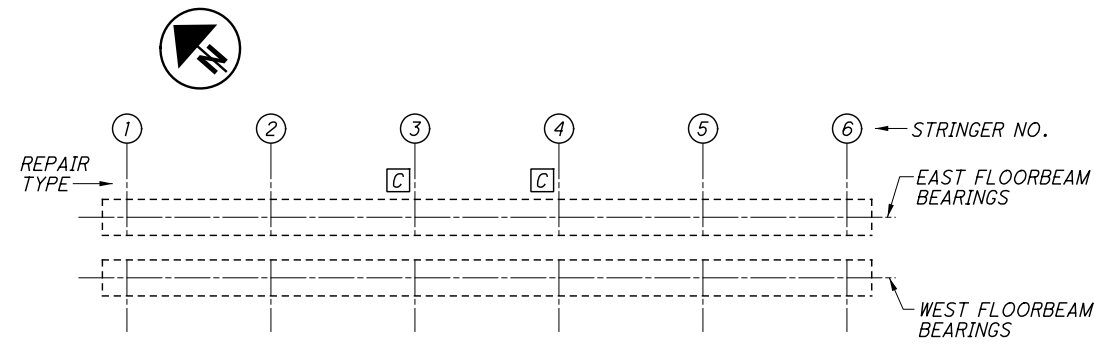
**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** REPAIRS D AND G - SEE GENERAL NOTE SHEET 12/238.

**ITEM 516 - JACKING AND TEMPORARY SUPPORT, AS PER PLAN:** REPAIRS D AND H - SEE GENERAL NOTE SHEET 12/238.

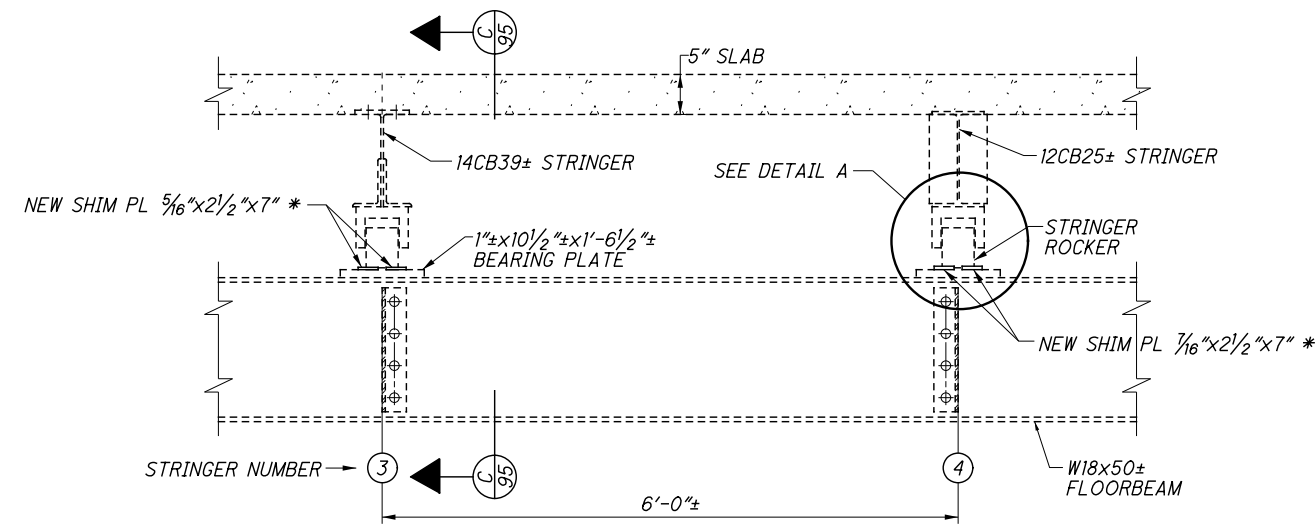
**ITEM 516 - RESET BEARING, AS PER PLAN:** REPAIRS D AND H - SEE GENERAL NOTE SHEET 12/238.

**ADDITIONAL NOTES:** SEE SHEET 93/238.

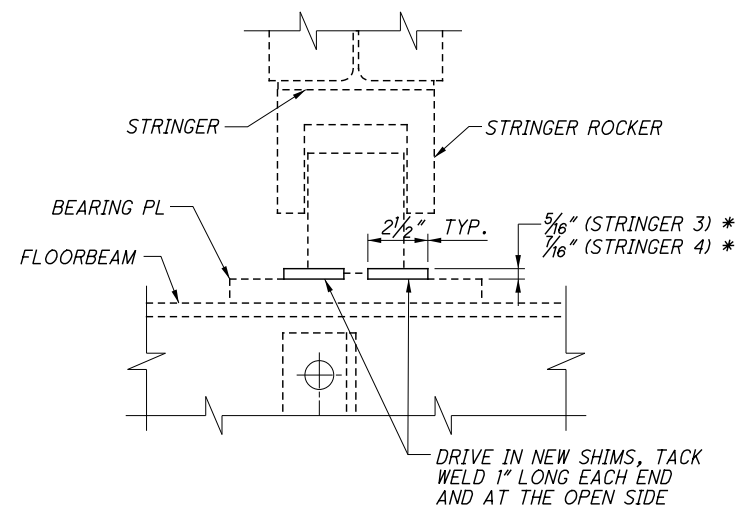
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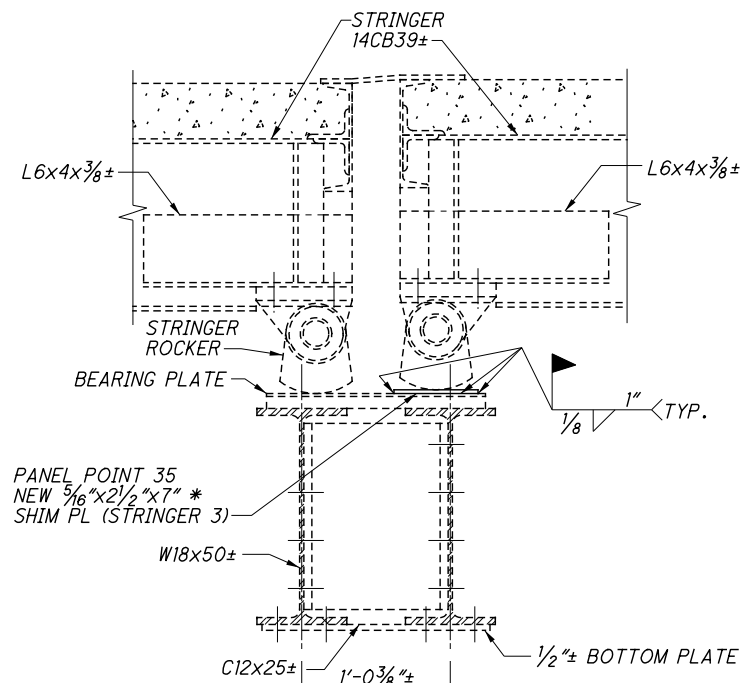
PANEL POINT 35 PLAN VIEW



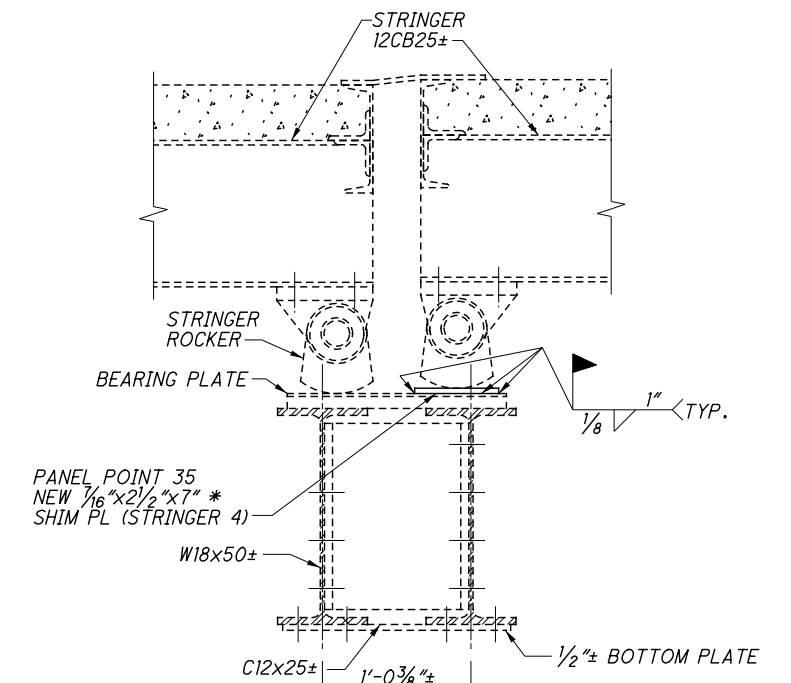
REPAIR TYPE C



DETAIL A



SECTION C-C STRINGER 3



SECTION C-C STRINGER 4

\* ESTIMATED PLATE. ADJUST PLATE DIMENSION TO PROVIDE FOR SNUG FIT.

**NOTES:**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE SHOWN.

**FOR REPAIR TYPE A THROUGH H DEFINITIONS** SEE SHEET 93/238.

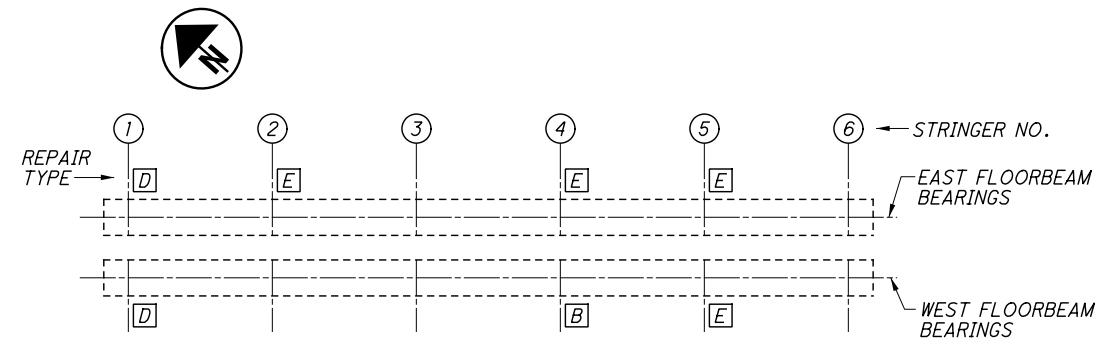
**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS:** SEE GENERAL NOTE SHEET 10/238.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

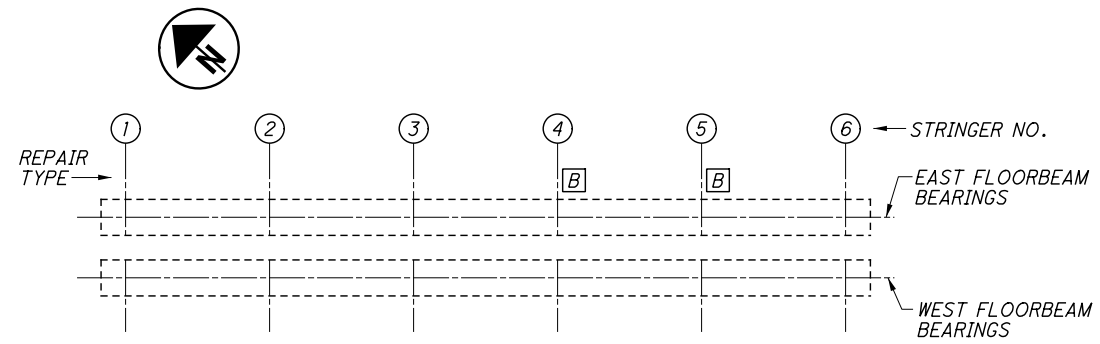
**ITEM 516 - JACKING AND TEMPORARY SUPPORT OF STRUCTURE, AS PER PLAN:** SEE GENERAL NOTE SHEET 12/238.

**ADDITIONAL NOTES:** SEE SHEET 93/238.

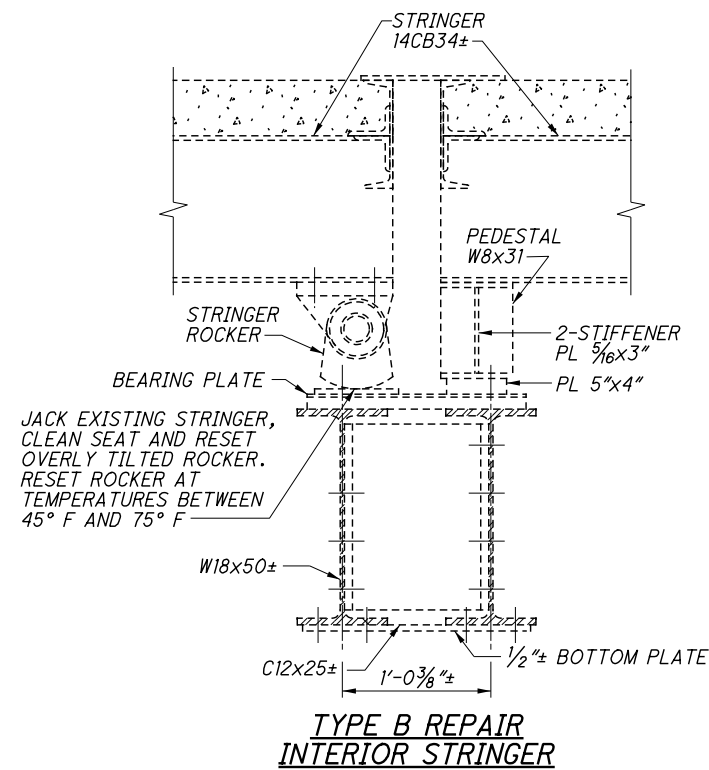
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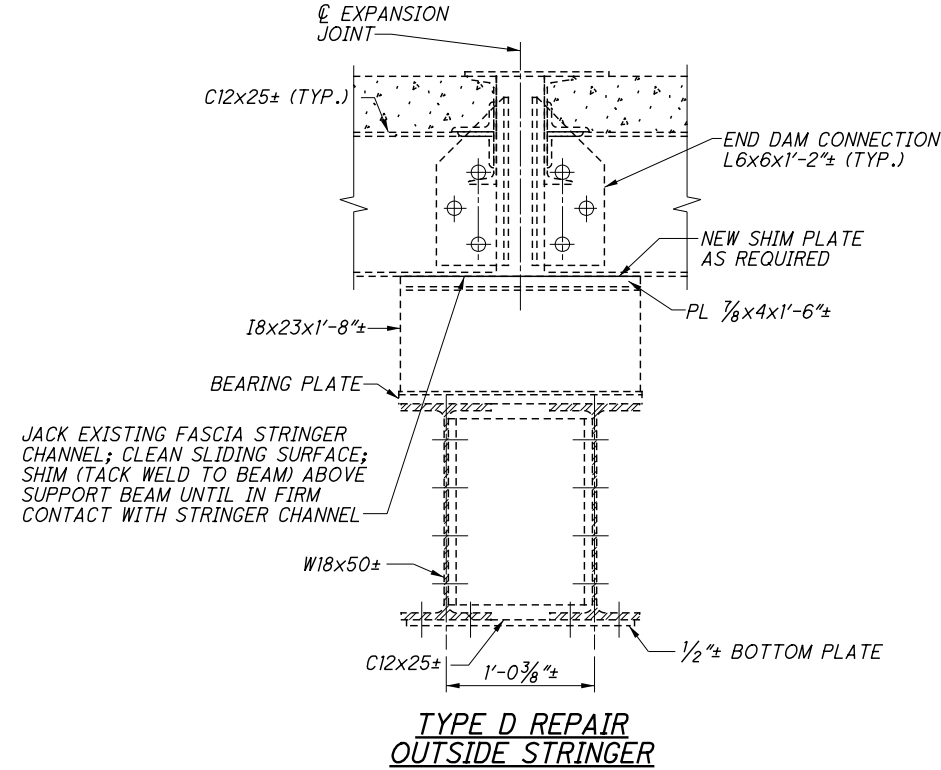
PANEL POINT 58 PLAN VIEW



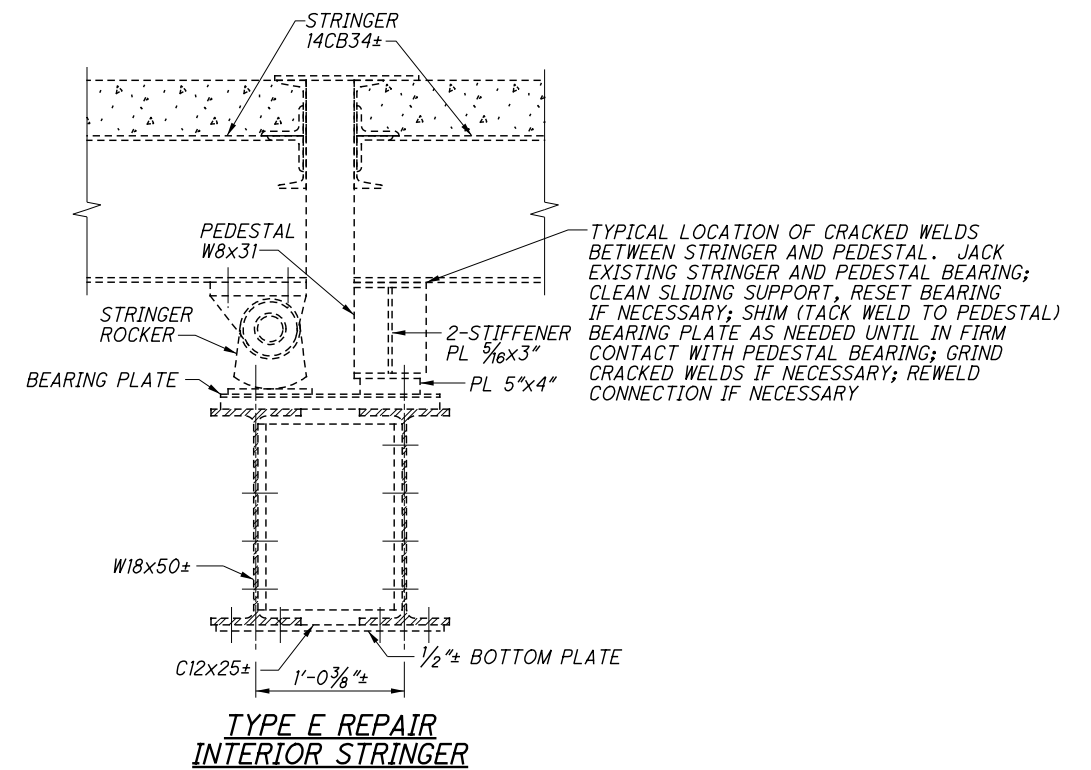
PANEL POINT 78 PLAN VIEW



TYPE B REPAIR INTERIOR STRINGER



TYPE D REPAIR OUTSIDE STRINGER



TYPE E REPAIR INTERIOR STRINGER

**NOTES:**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**FOR REPAIR TYPE A THROUGH H DEFINITIONS** SEE SHEET 93/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING GRINDING AND WELDING REPAIRS:** REPAIR E - SEE GENERAL NOTE SHEET 10/238.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** REPAIRS D AND E - SEE GENERAL NOTE SHEET 12/238.

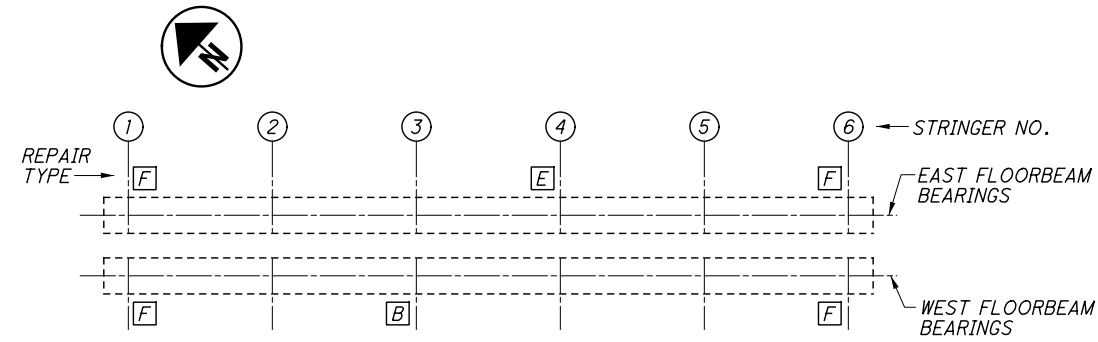
**ITEM 516 - RESET BEARING:** REPAIR B.

**ITEM 516 - RESET BEARING, AS PER PLAN:** REPAIRS D AND E - SEE GENERAL NOTE SHEET 12/238.

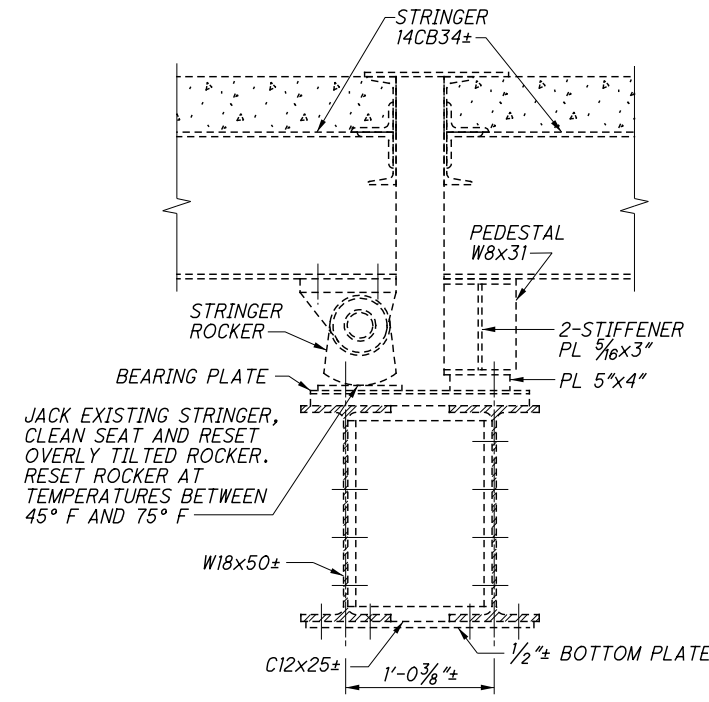
**ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:** REPAIRS B, D AND E - SEE GENERAL NOTE SHEET 12/238.

**ADDITIONAL NOTES:** SEE SHEET 93/238.

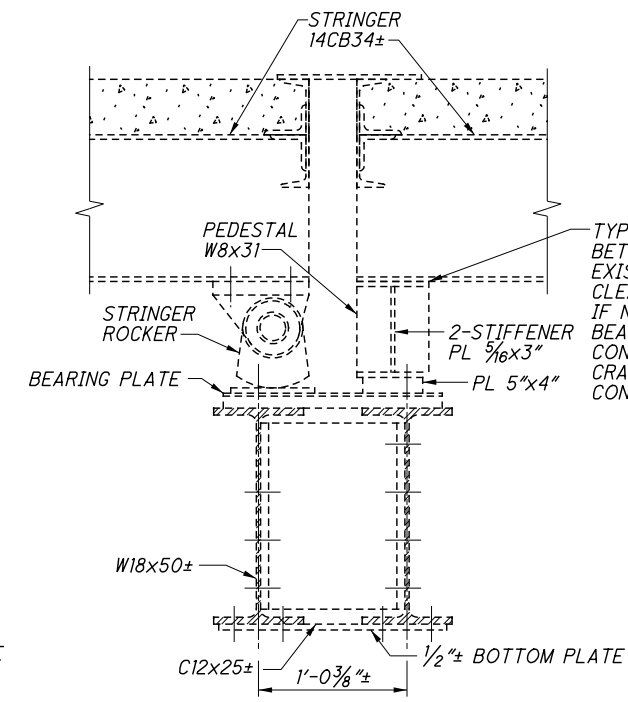
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**PANEL POINT 113 PLAN VIEW**

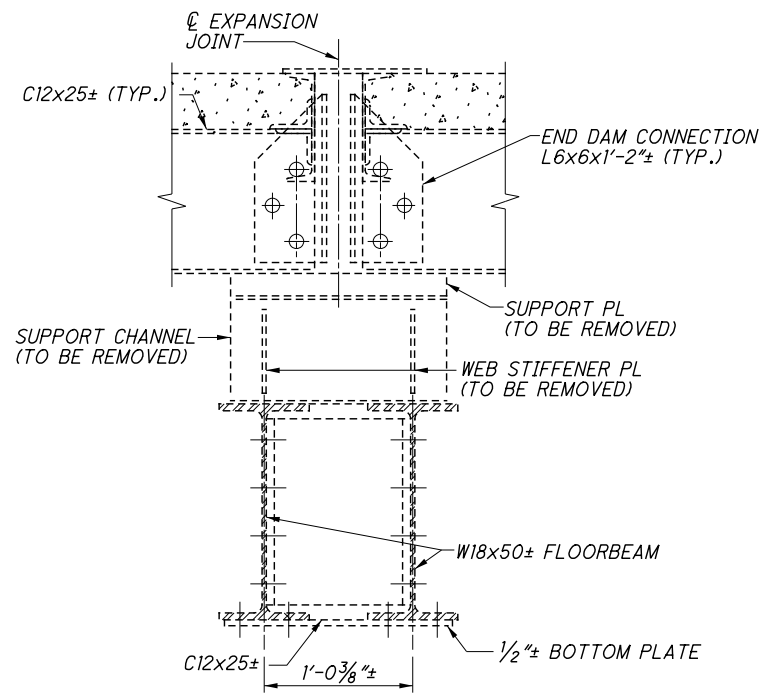


**TYPE B REPAIR INTERIOR STRINGER**

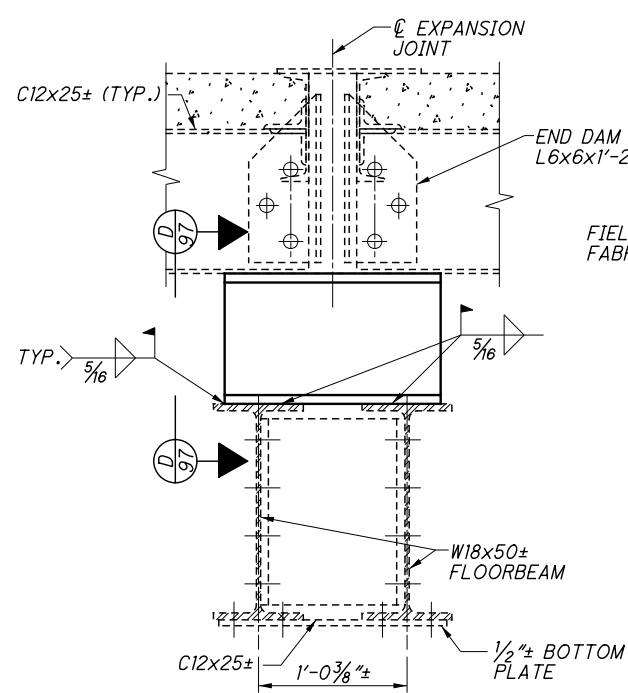


**TYPE E REPAIR INTERIOR STRINGER**

TYPICAL LOCATION OF CRACKED WELDS BETWEEN STRINGER AND PEDESTAL. JACK EXISTING STRINGER SUPPORT AND PEDESTAL BEARING; CLEAN SLIDING SUPPORT, RESET BEARING IF NECESSARY; SHIM (TACK WELD TO PEDESTAL) BEARING PLATE AS NEEDED UNTIL IN FIRM CONTACT WITH PEDESTAL BEARING; GRIND CRACKED WELDS IF NECESSARY; REWELD CONNECTION IF NECESSARY

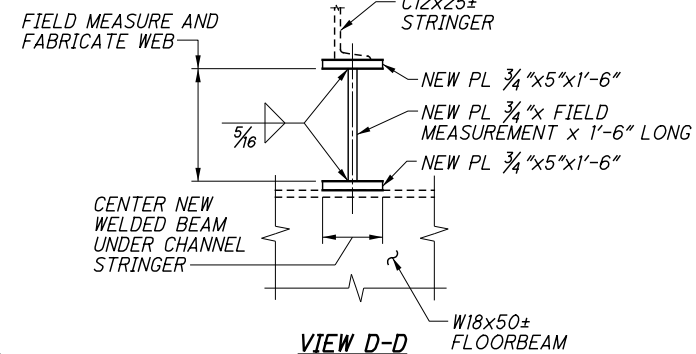


**CURRENT CONDITION**



**NEW CONDITION**

**TYPE F REPAIR - OUTSIDE STRINGER**



TYPE F REPAIR - TEMPORARILY SUPPORT EXISTING FASCIA STRINGER CHANNELS; REMOVE EXISTING FAILING STRINGER SUPPORT AND REPLACE WITH NEW FABRICATED WELDED BEAM BASED ON FIELD HEIGHT MEASUREMENT.

**NOTES:**

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

FOR REPAIR TYPE A THROUGH H DEFINITIONS SEE SHEET 93/238.

ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING REPAIRS: REPAIR F - SEE GENERAL NOTE SHEET 10/238.

ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK STRINGER BEARING GRINDING AND WELDING REPAIRS: REPAIR E - SEE GENERAL NOTE SHEET 10/238.

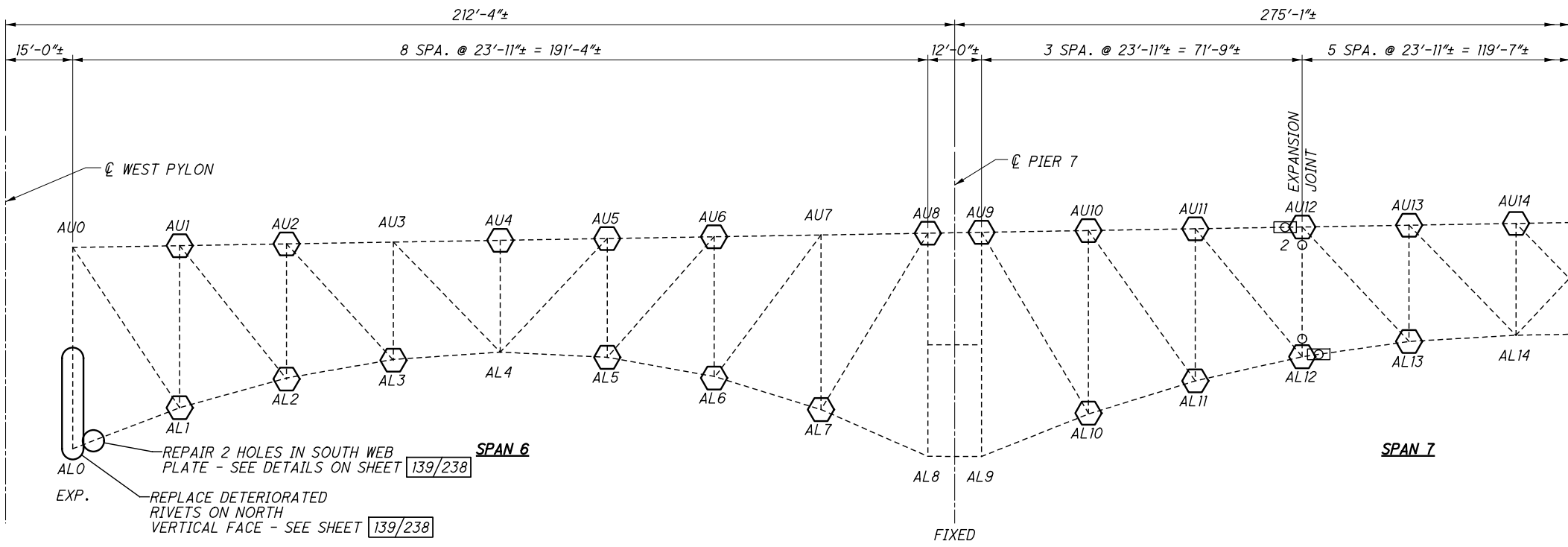
ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT: REPAIRS E AND F - SEE GENERAL NOTE SHEET 12/238.

ITEM 516 - RESET BEARING: REPAIR B.

ITEM 516 - RESET BEARING, AS PER PLAN: REPAIR E.

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN: REPAIRS B, E AND F - SEE GENERAL NOTE SHEET 12/238.

ADDITIONAL NOTES: SEE SHEET 93/238.



TRUSS A ELEVATION

**TRUSS LOCATION IDENTIFICATION KEY**

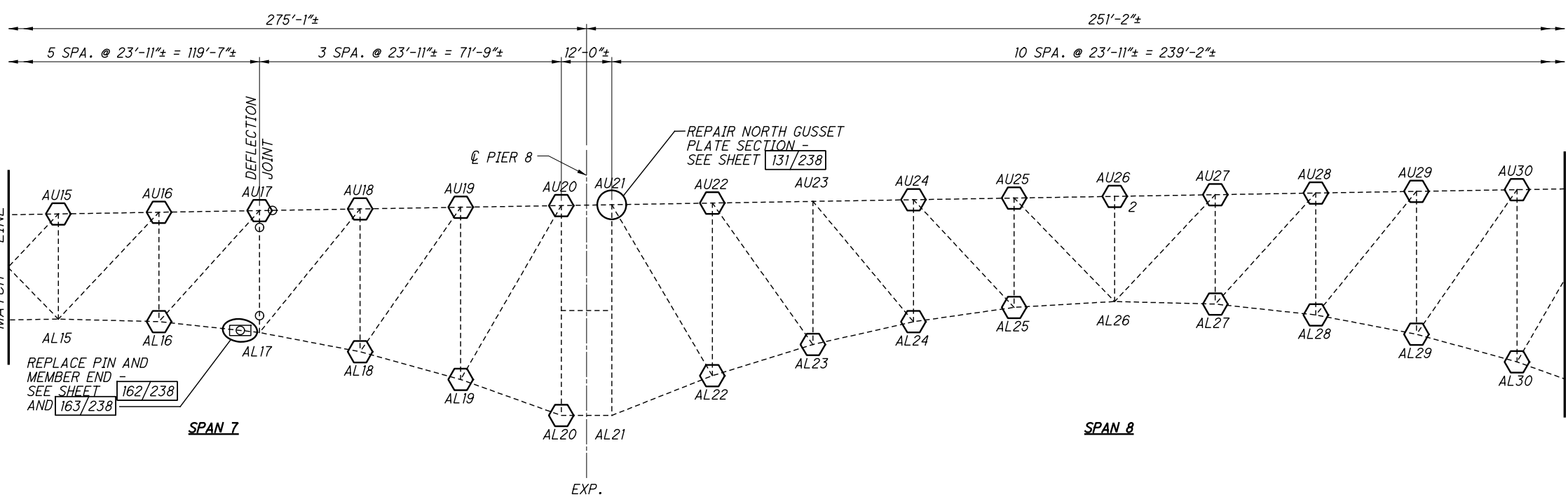
REPAIR LOCATIONS IN THESE PLANS ARE OFTEN IDENTIFIED BY THE FOLLOWING INFORMATION:

A) TRUSS LINE: TRUSS A, B, C, OR D AS LOCATED ON THE TRANSVERSE SECTIONS

B) TRUSS CHORD: "U" - UPPER TRUSS CHORD  
"L" - LOWER TRUSS CHORD

C) TRUSS PANEL POINT NUMBER: PANEL POINTS ARE NUMBERED FROM "0" IN SPAN 6 AT THE WEST PYLON THROUGH "133" IN SPAN 20 AT THE EAST ABUTMENT AS SHOWN IN THE GENERAL PLAN.

EXAMPLES:  
 "CL12" REPRESENTS LOWER CHORD PANEL POINT 12 ON TRUSS LINE C (IN SPAN 7).  
 "AL99 - AU100" REPRESENTS THE TRUSS DIAGONAL MEMBER BETWEEN LOWER CHORD PANEL POINT 99 AND UPPER CHORD PANEL POINT 100 ON TRUSS LINE A (IN SPAN 15).



TRUSS A ELEVATION

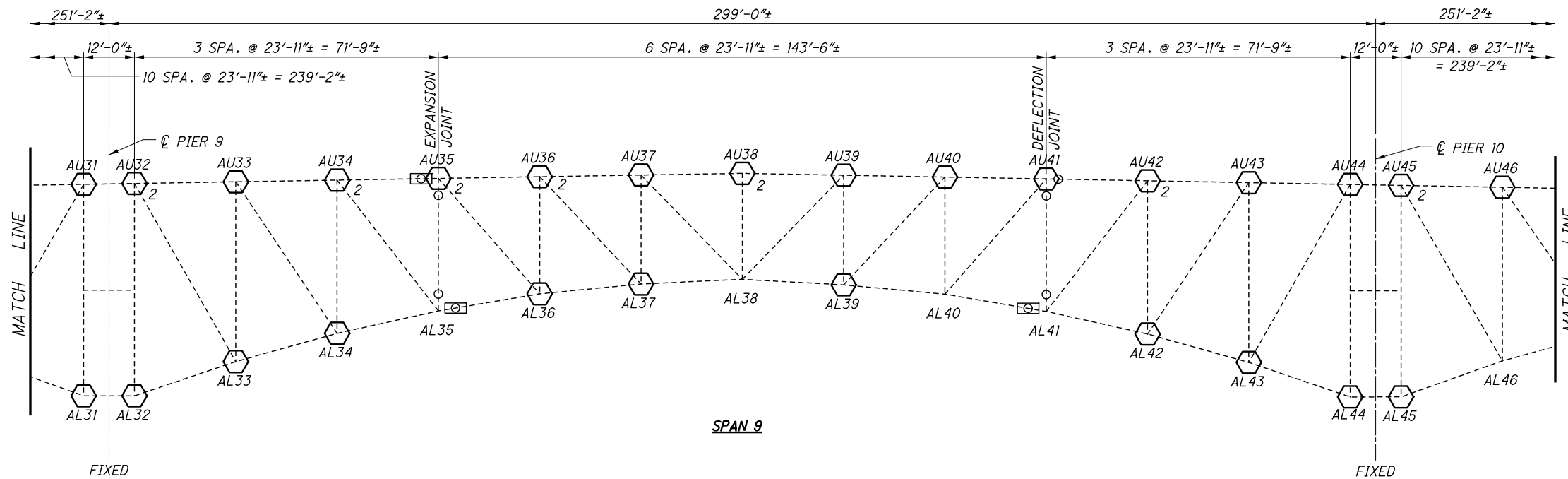
**NOTES**  
 ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.  
 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

**LEGEND**

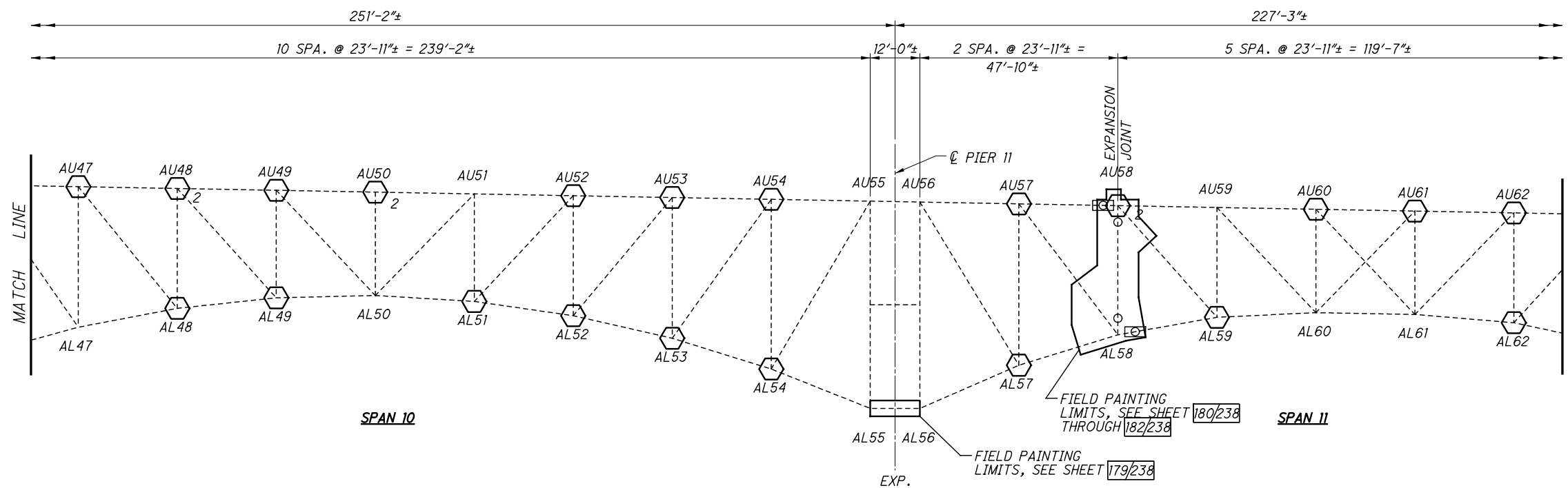
- - INDICATES PIN LOCATION
- ⊠ - INDICATES PIN AND SLOTTED HOLE LOCATION
- ⬡ - INDICATES NEW EDGE STIFFENING LOCATION (INSIDE & OUTSIDE GUSSET PLATES). ONE ANGLE PER GUSSET PLATE UNLESS NOTED AS 2 OR 3.
- - INDICATES REPAIR LOCATION

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**TRUSS A ELEVATION**



**TRUSS A ELEVATION**

**NOTES**

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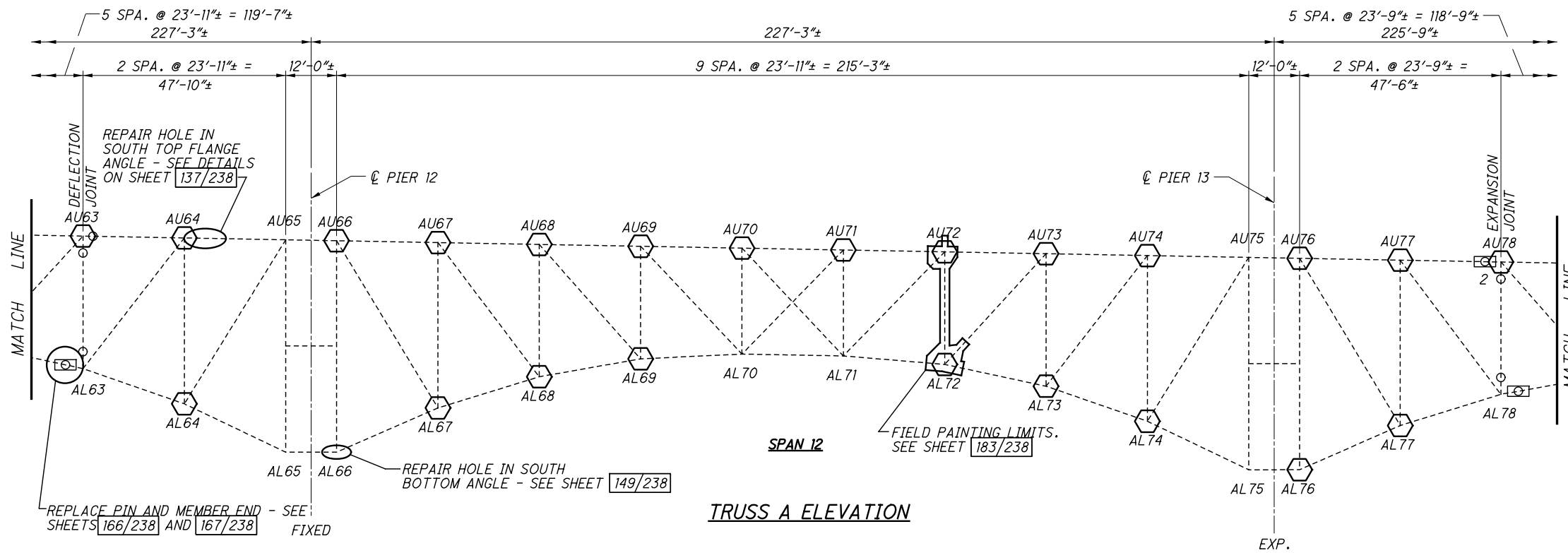
FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

**LEGEND**

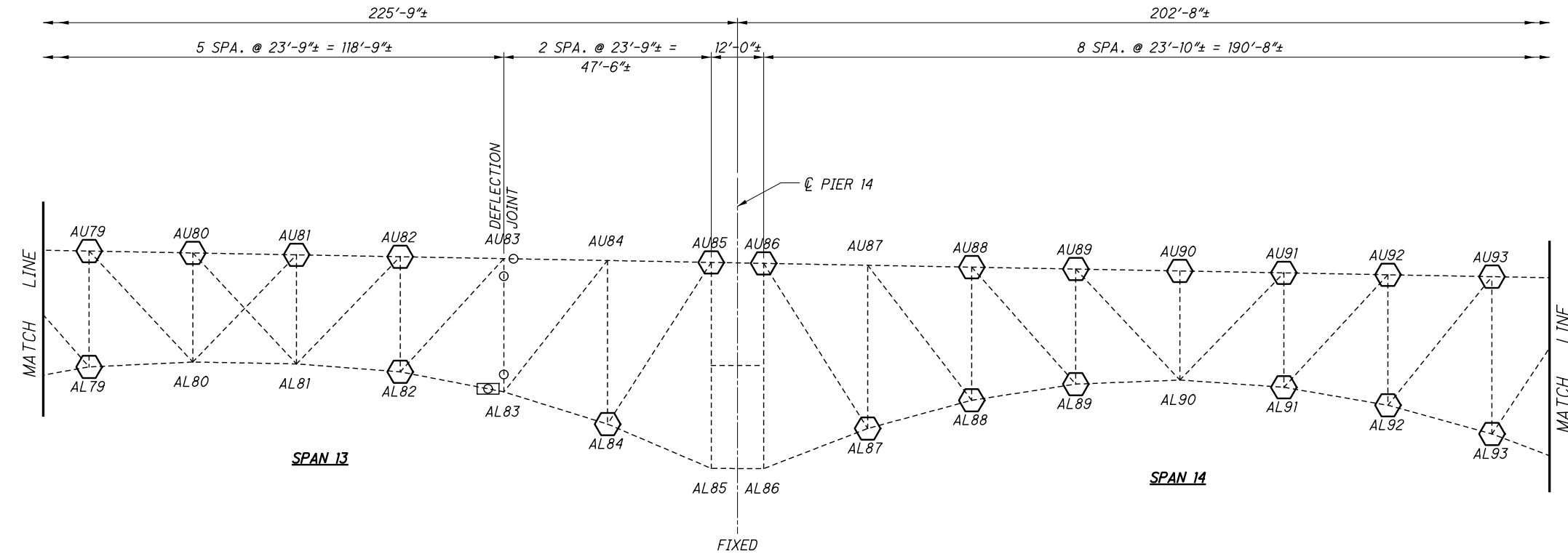
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**TRUSS A ELEVATION**

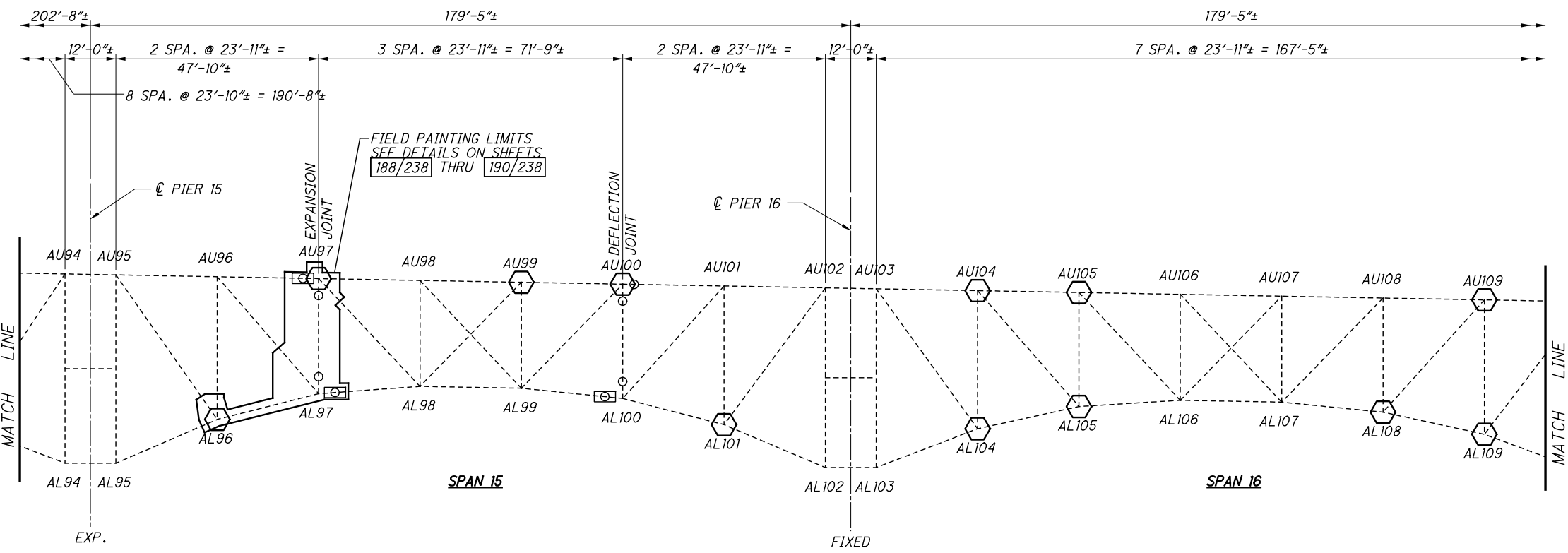


**TRUSS A ELEVATION**

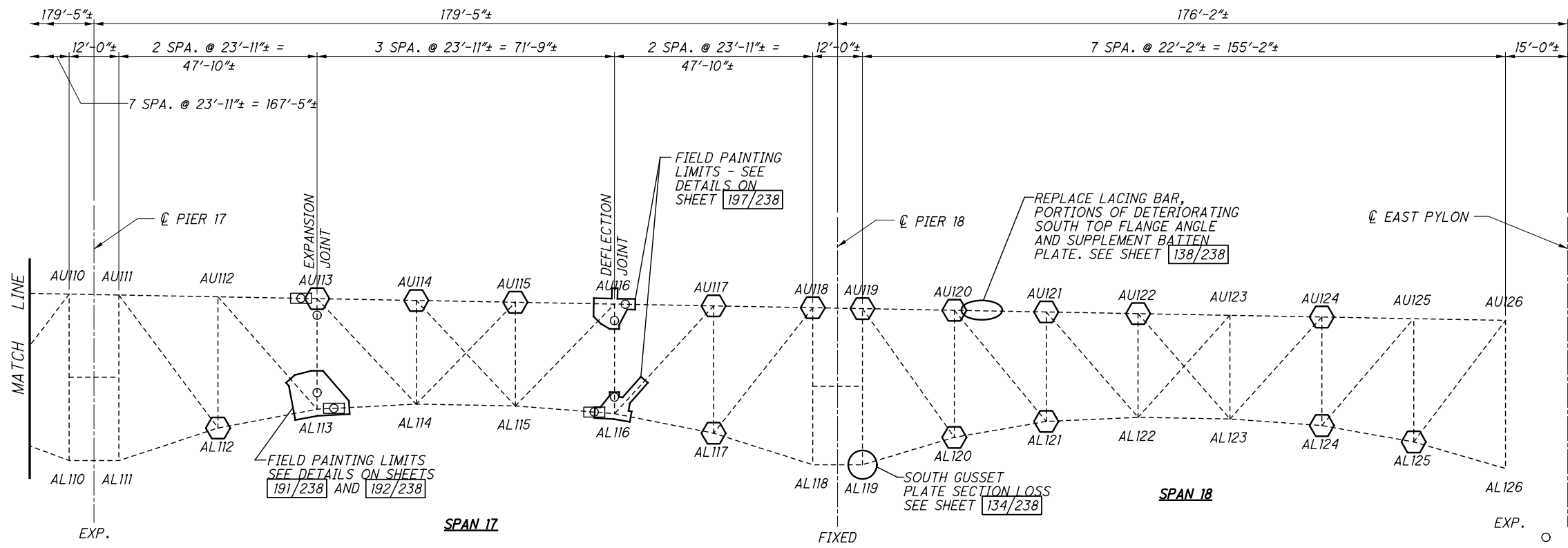
**NOTES**  
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 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

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- - INDICATES PIN LOCATION
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  - - INDICATES REPAIR LOCATION

<b>TRUSS A ELEVATION - 3</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	
DESIGNED DAP	DRAWN JLS	REVIEWED DLR	DATE 1/30/18
CHECKED KAK	REVISED	STRUCTURE FILE NUMBER 1801503	
<b>CUY-10-16-13</b> PID No. 96986		100/238 <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="border-bottom: 1px solid black; width: 100%; text-align: center;">160</div> <div style="width: 100%; text-align: center;">308</div> </div>	



TRUSS A ELEVATION



TRUSS A ELEVATION

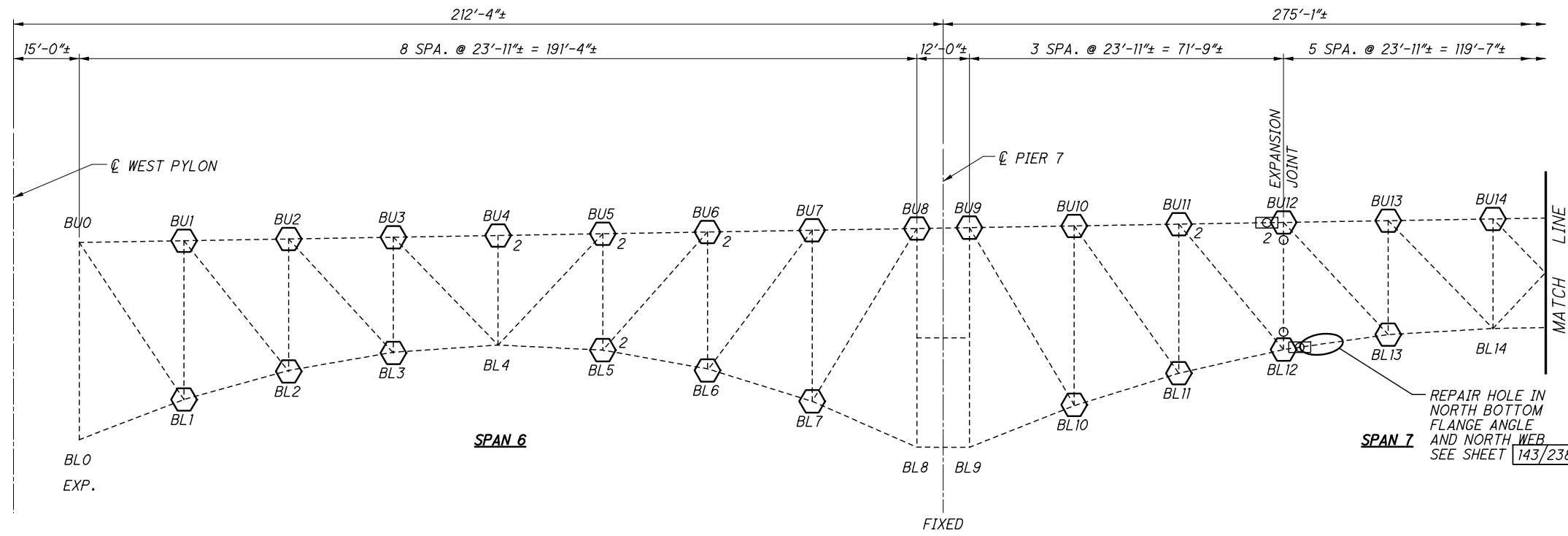
**NOTES**  
 ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.  
 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

- LEGEND**
- - INDICATES PIN LOCATION
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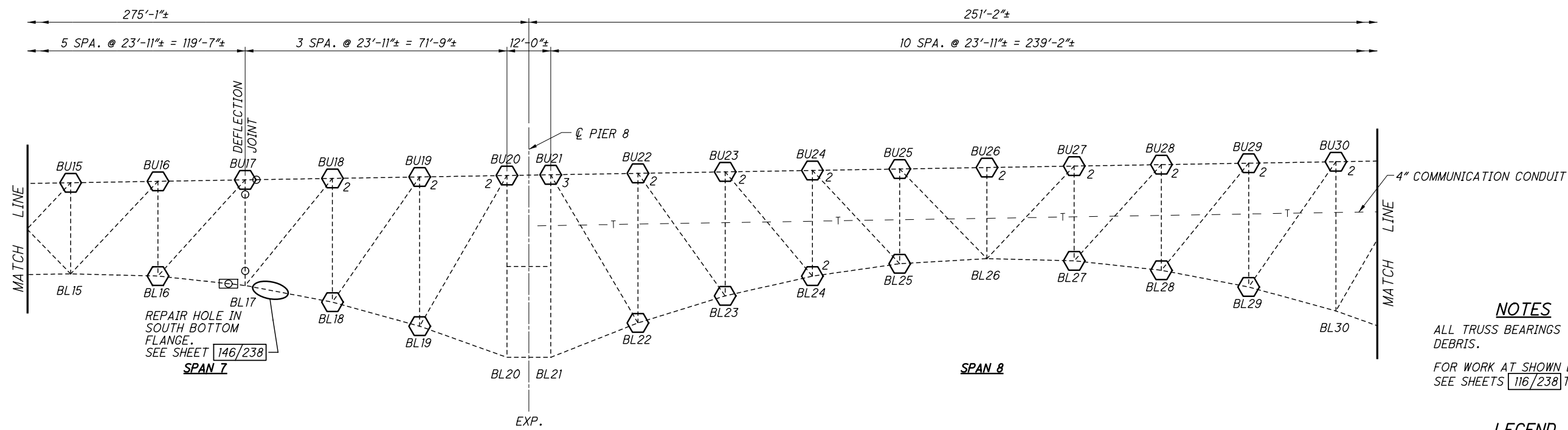
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DESIGNED	DAP	CHECKED	KAK
DRAWN	JLS	REVISED	
REVIEWED	DLR	STRUCTURE FILE NUMBER	1801503
DATE	1/30/18		

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TRUSS B ELEVATION



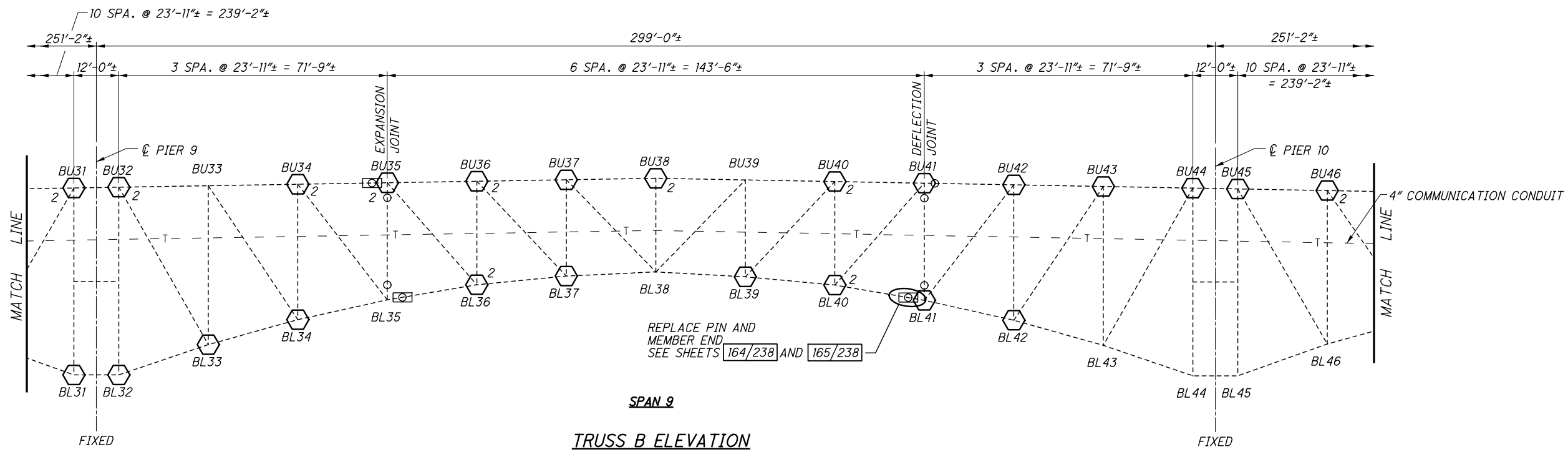
TRUSS B ELEVATION

**NOTES**  
ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.  
FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

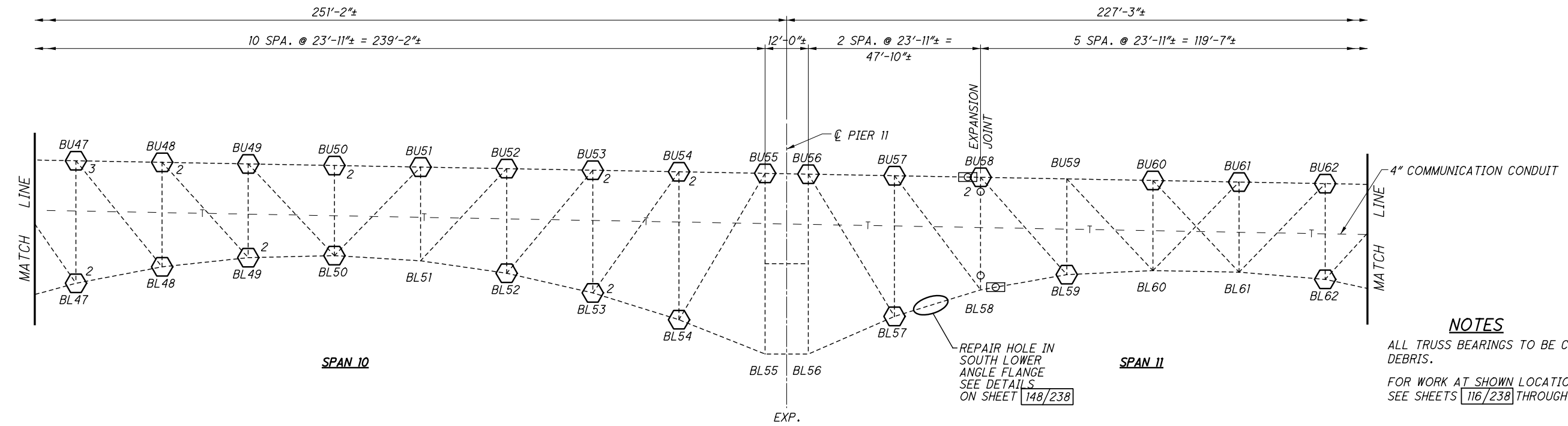
- LEGEND**
- - INDICATES PIN LOCATION
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<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>REVIEWED DLR</p>	<p>DATE 1/30/18</p>
<p>DRAWN JLS</p>	<p>STRUCTURE FILE NUMBER 1801503</p>
<p>DESIGNED DAP</p>	<p>CHECKED KAK</p>
<p>TRUSS B ELEVATION - 1 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p>CUY-10-16-13 PID No. 96986</p>	
<p>102/238</p>	
<p>162 308</p>	

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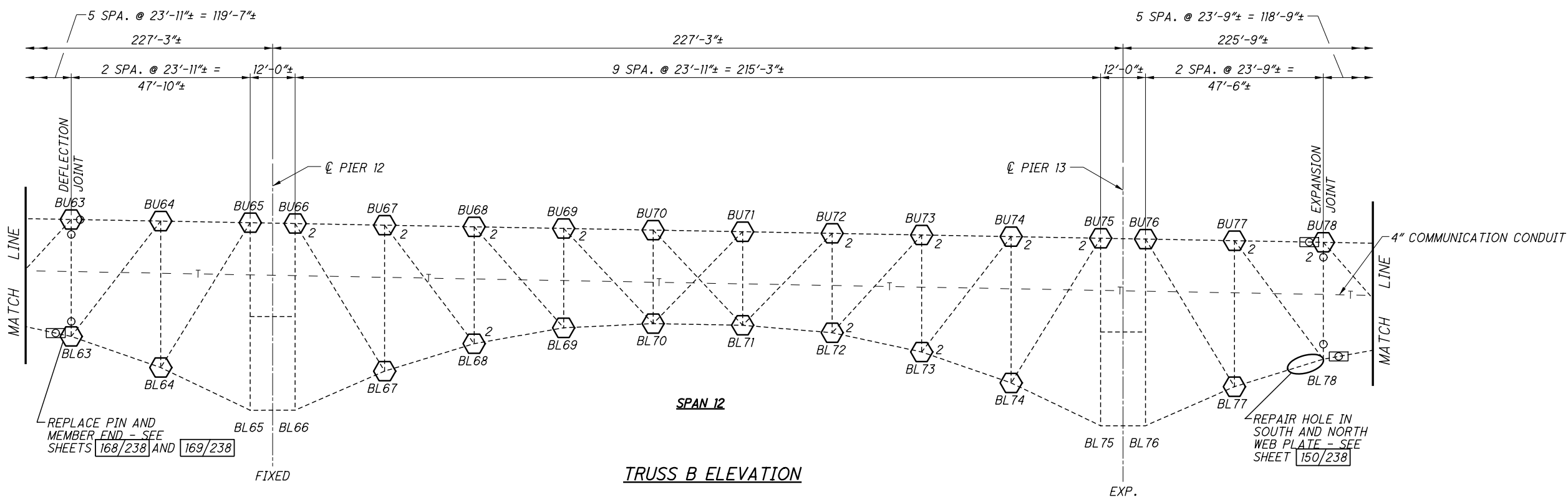
**SPAN 9**  
**TRUSS B ELEVATION**



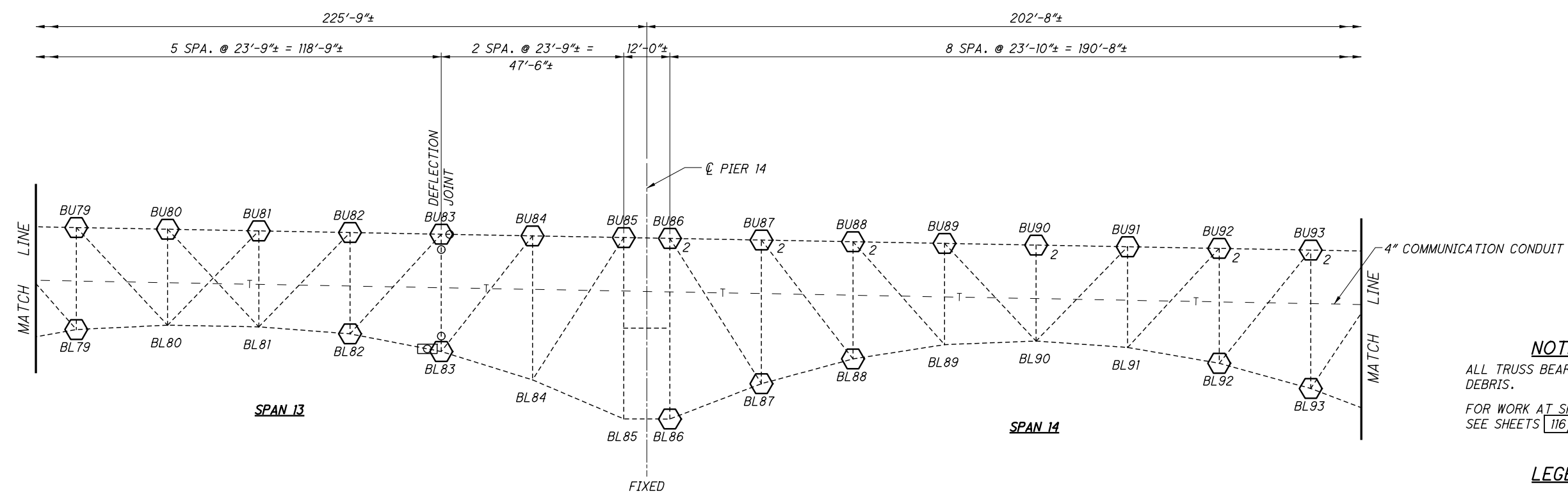
**SPAN 10**  
**SPAN 11**  
**TRUSS B ELEVATION**

**NOTES**  
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FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

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**TRUSS B ELEVATION**



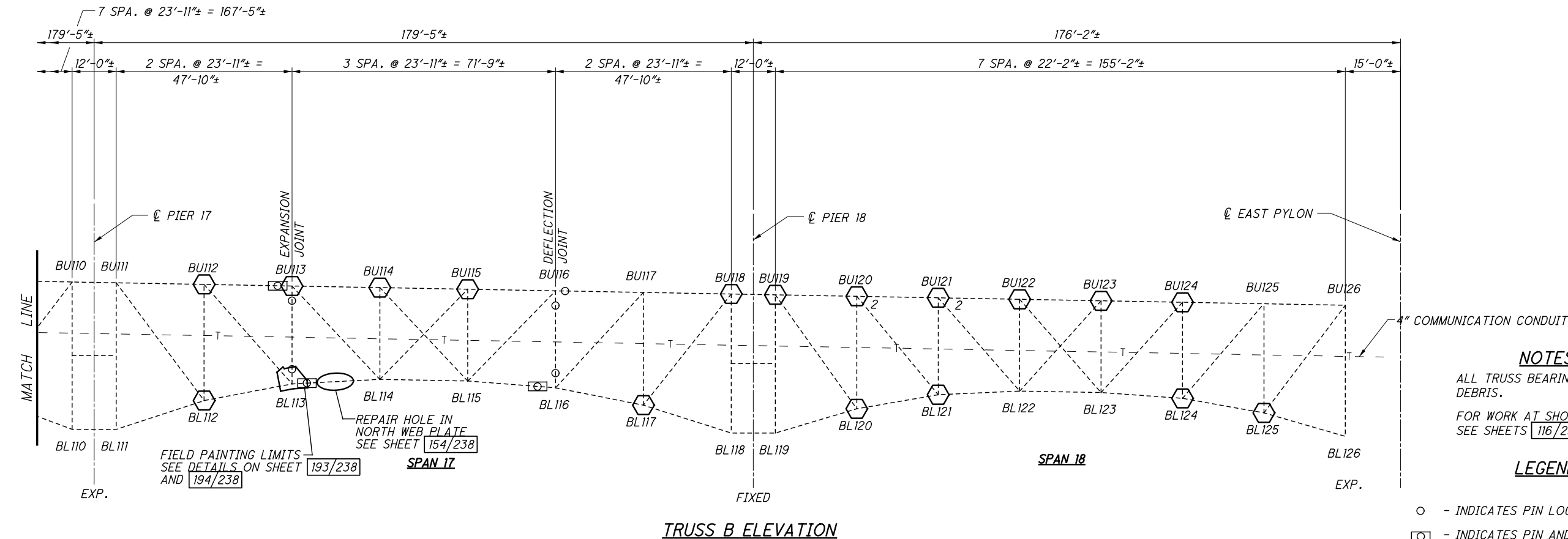
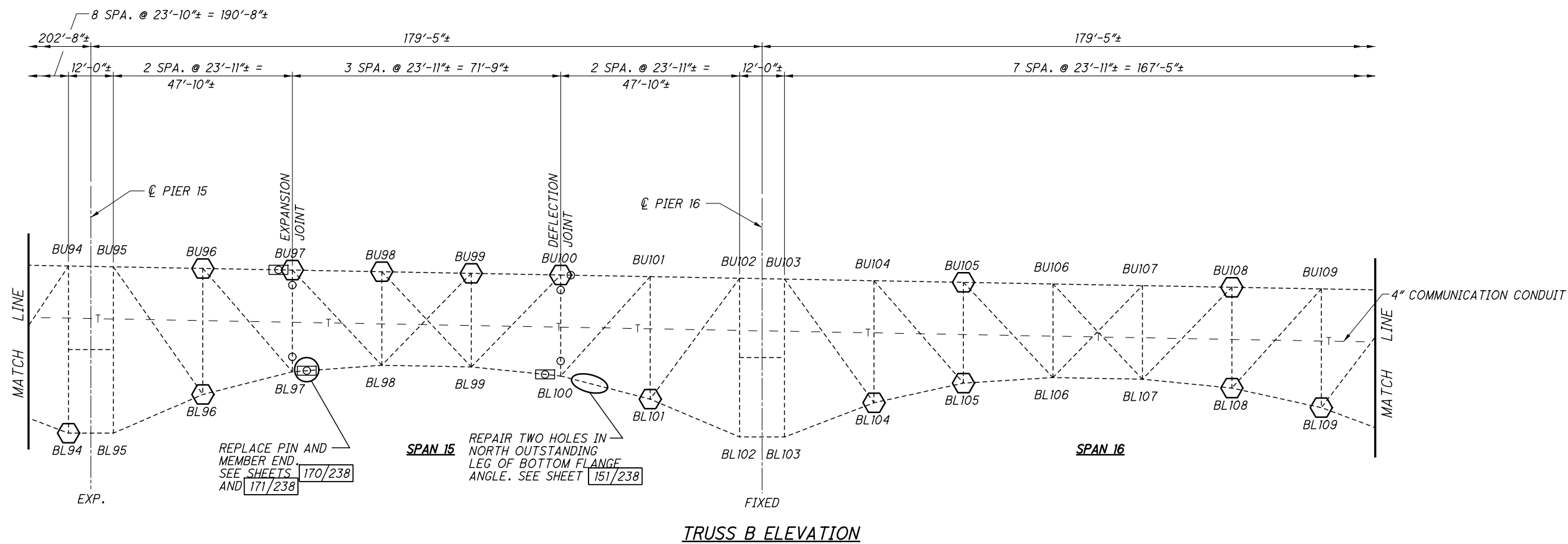
**TRUSS B ELEVATION**

**NOTES**  
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 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

- LEGEND**
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  - - INDICATES REPAIR LOCATION

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**NOTES**

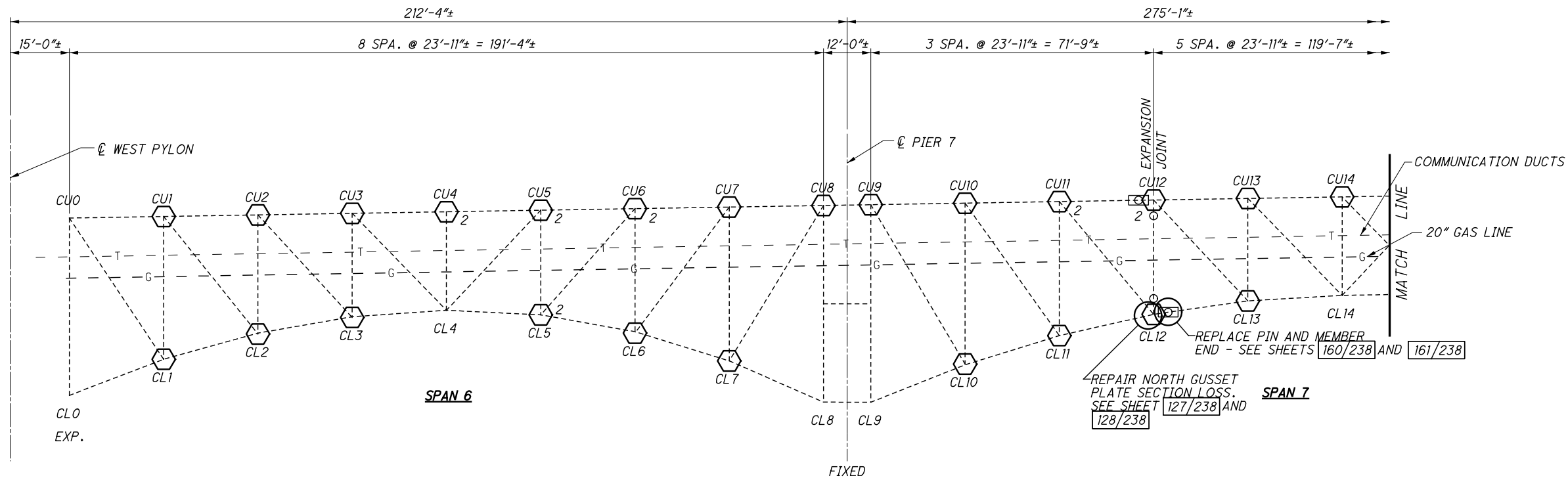
ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.

FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

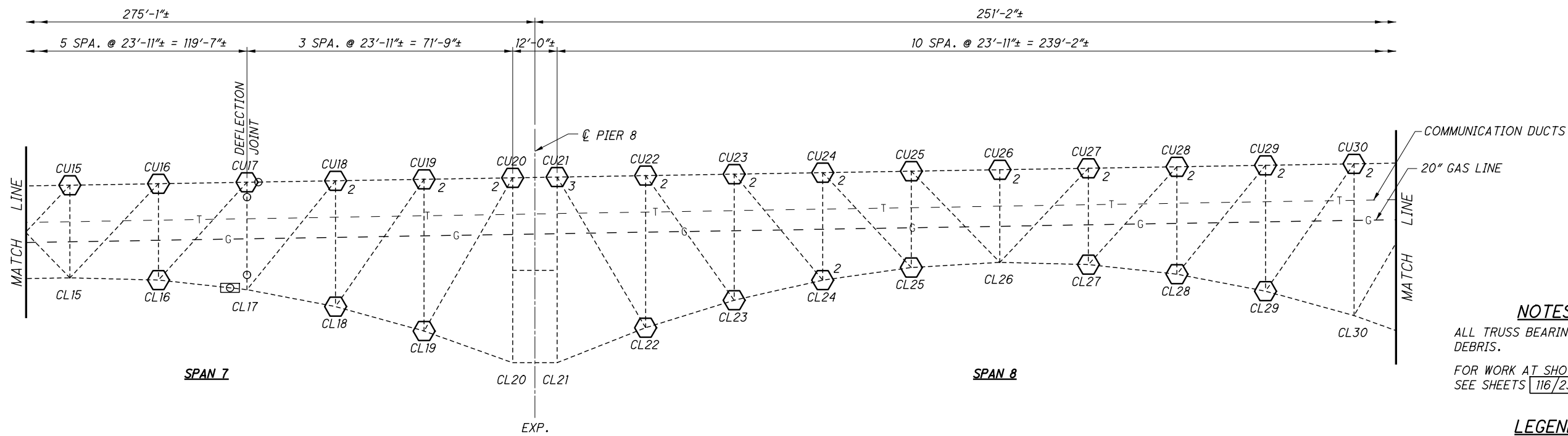
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<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>DATE 1/30/18</p>	<p>REVIEWED DLR</p>
<p>DESIGNED DAP</p>	<p>DRAWN JLS</p>
<p>CHECKED KAK</p>	<p>REVISED</p>
<p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p>TRUSS B ELEVATION - 4</p>	
<p>PID No. 96986</p>	
<p>105/238</p>	
<p>165/308</p>	

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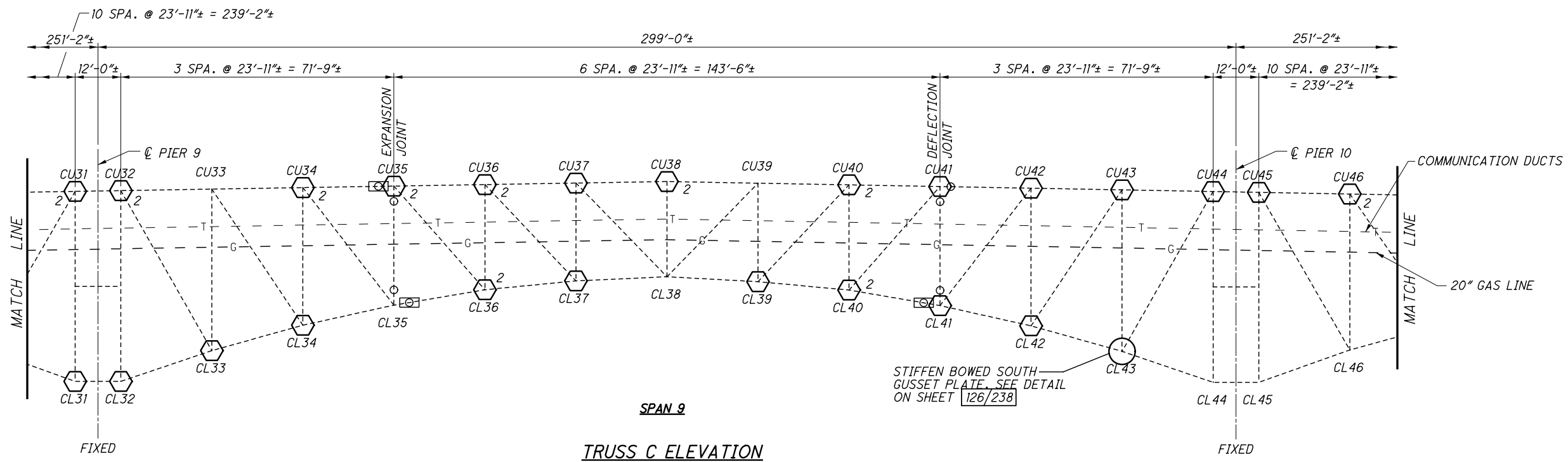
TRUSS C ELEVATION



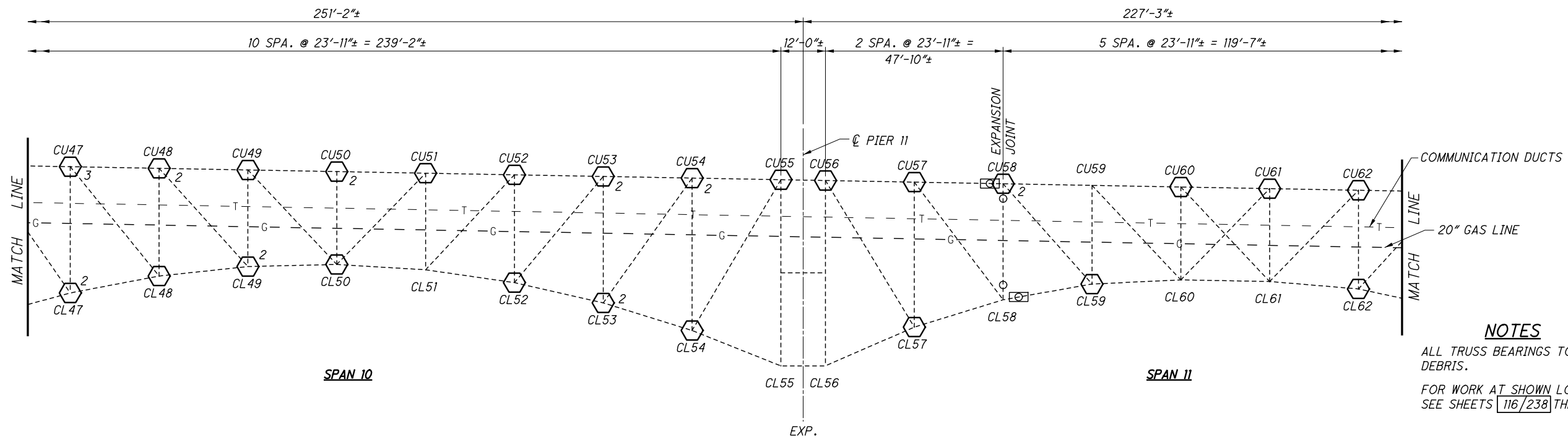
TRUSS C ELEVATION

**NOTES**  
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 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

- LEGEND**
- - INDICATES PIN LOCATION
  - ◻ - INDICATES PIN AND SLOTTED HOLE LOCATION
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**SPAN 9**  
**TRUSS C ELEVATION**



**SPAN 10**  
**SPAN 11**  
**TRUSS C ELEVATION**

**NOTES**  
ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.  
FOR WORK AT SHOWN LOCATIONS  
SEE SHEETS 116/238 THROUGH 120/238

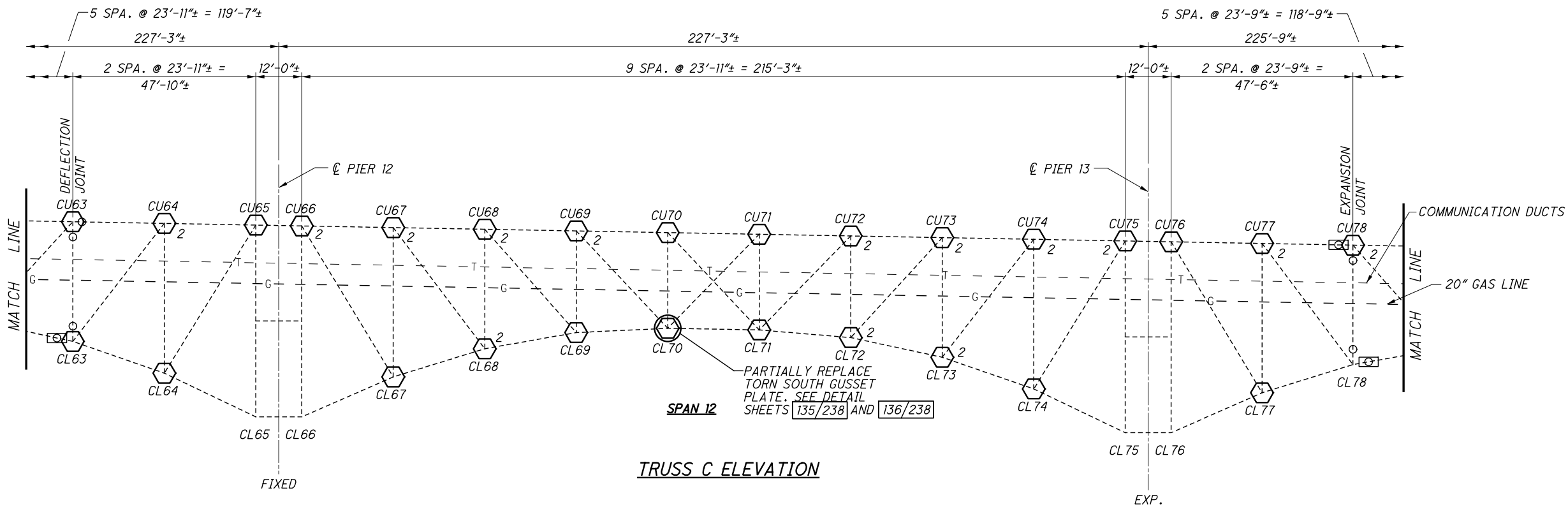
**LEGEND**

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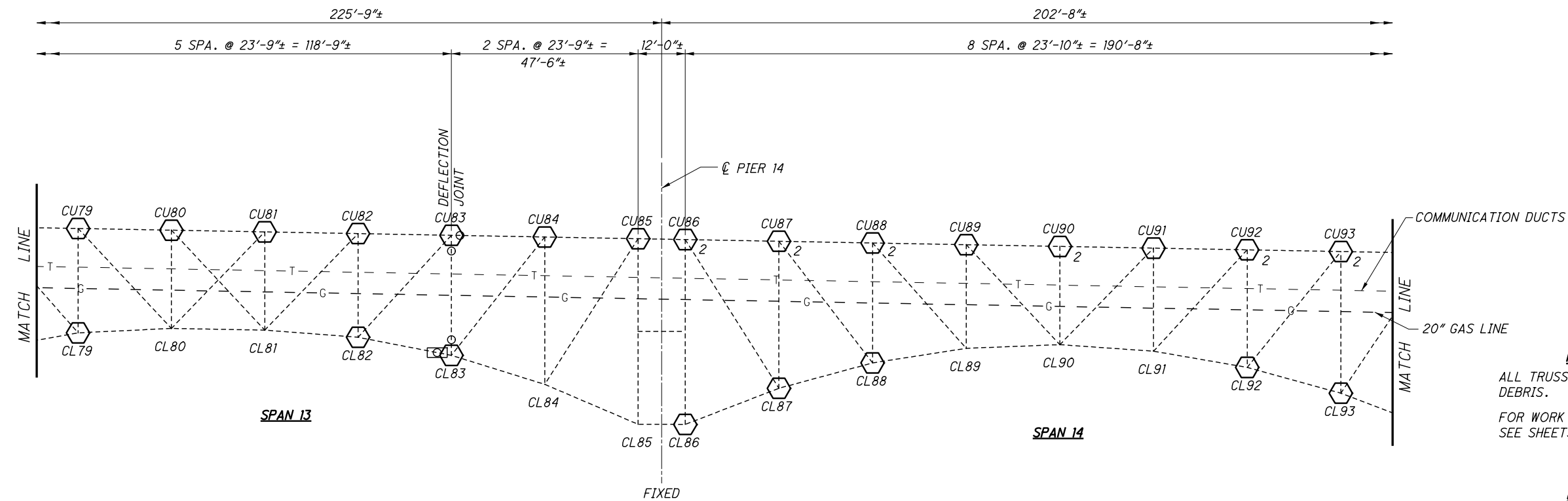
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**TRUSS C ELEVATION**



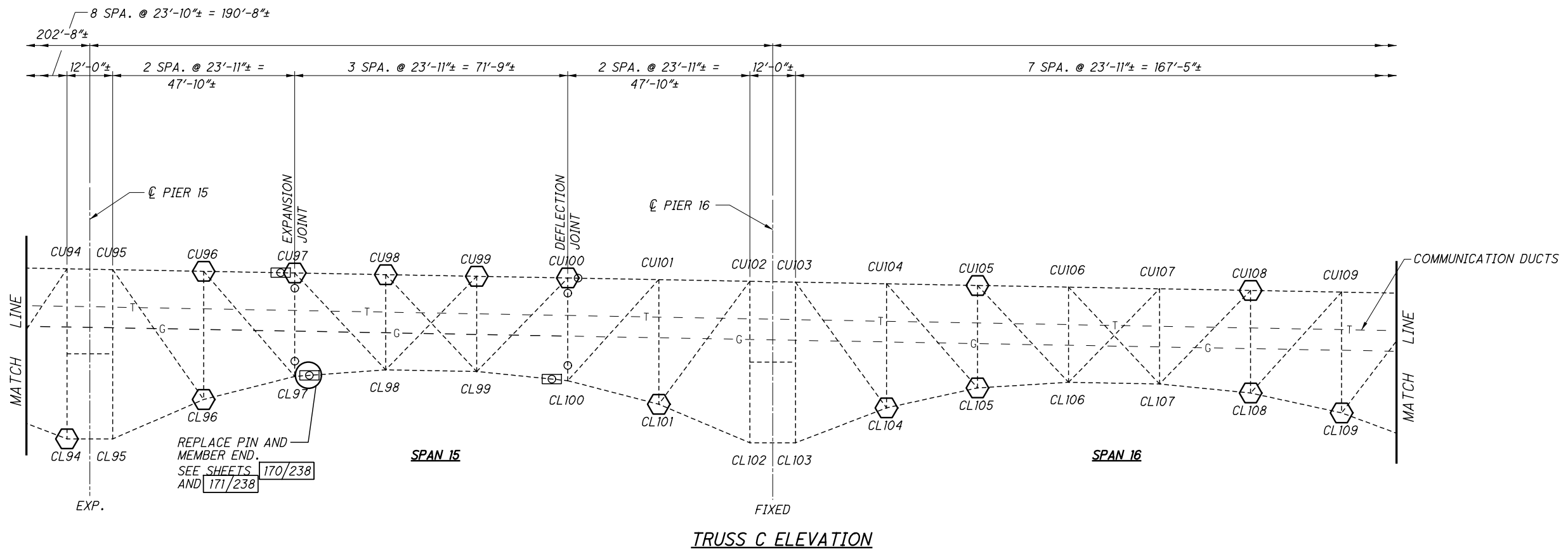
**TRUSS C ELEVATION**

**NOTES**  
 ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.  
 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

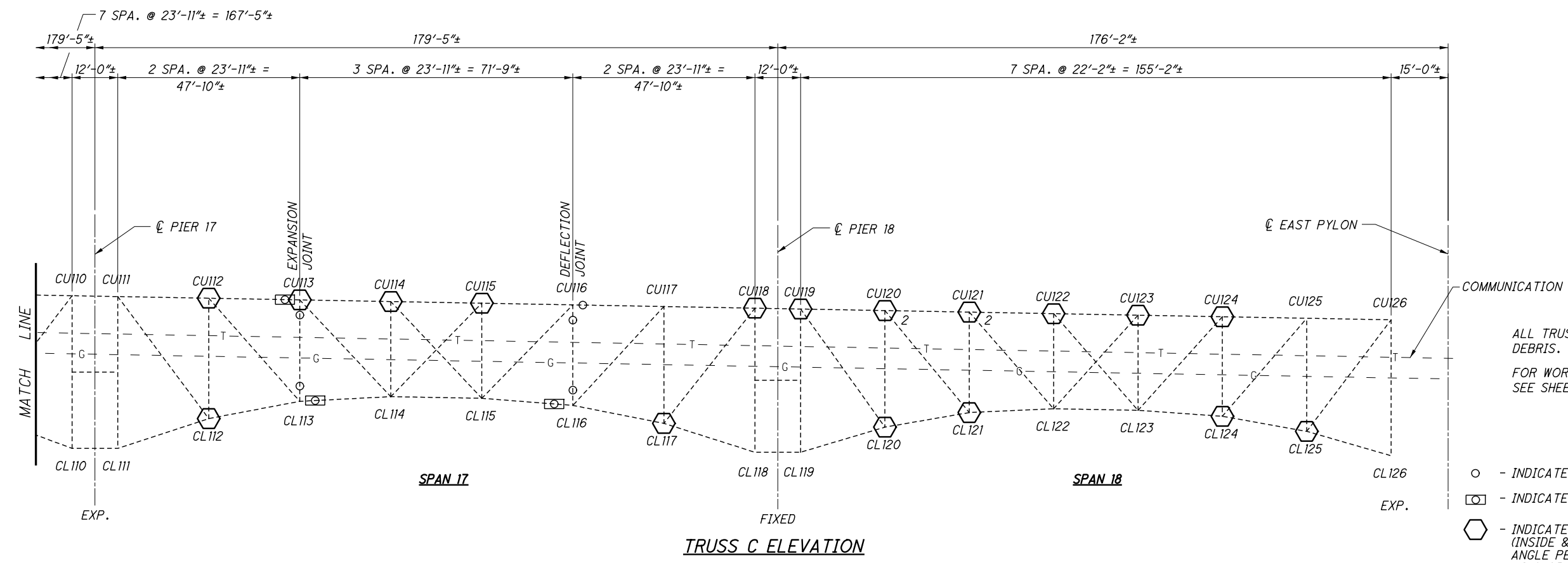
**LEGEND**

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**TRUSS C ELEVATION**

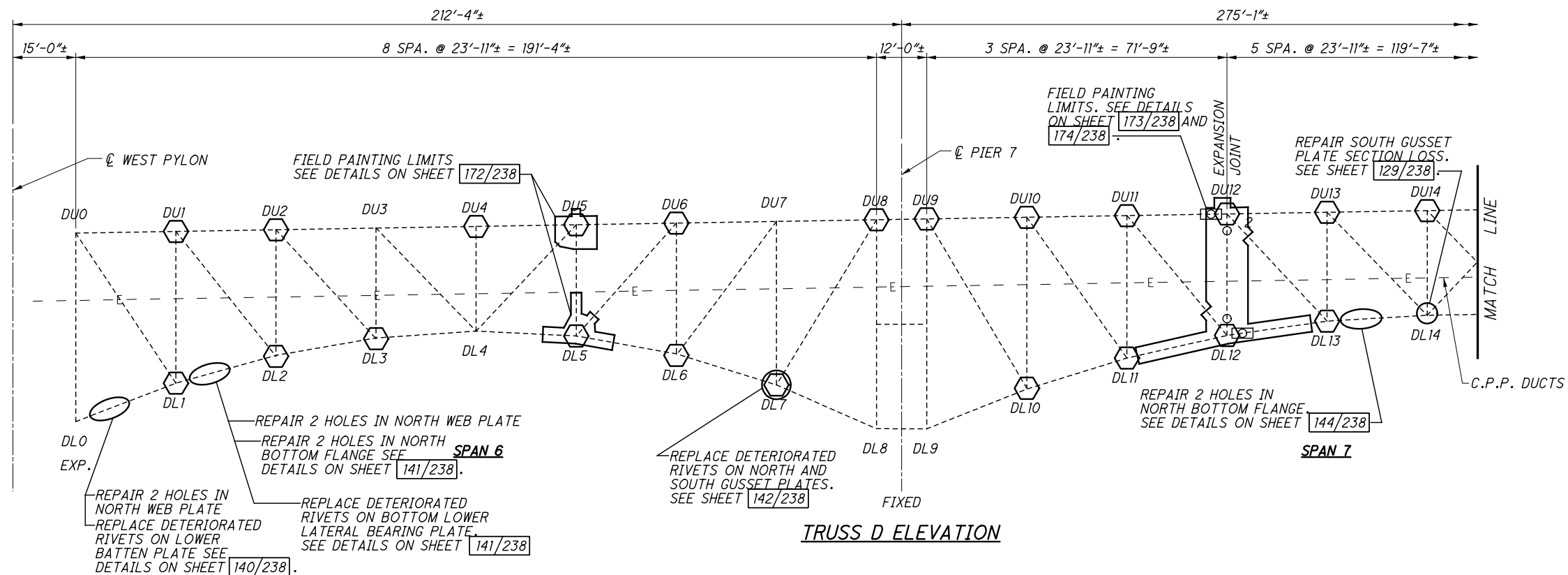


**TRUSS C ELEVATION**

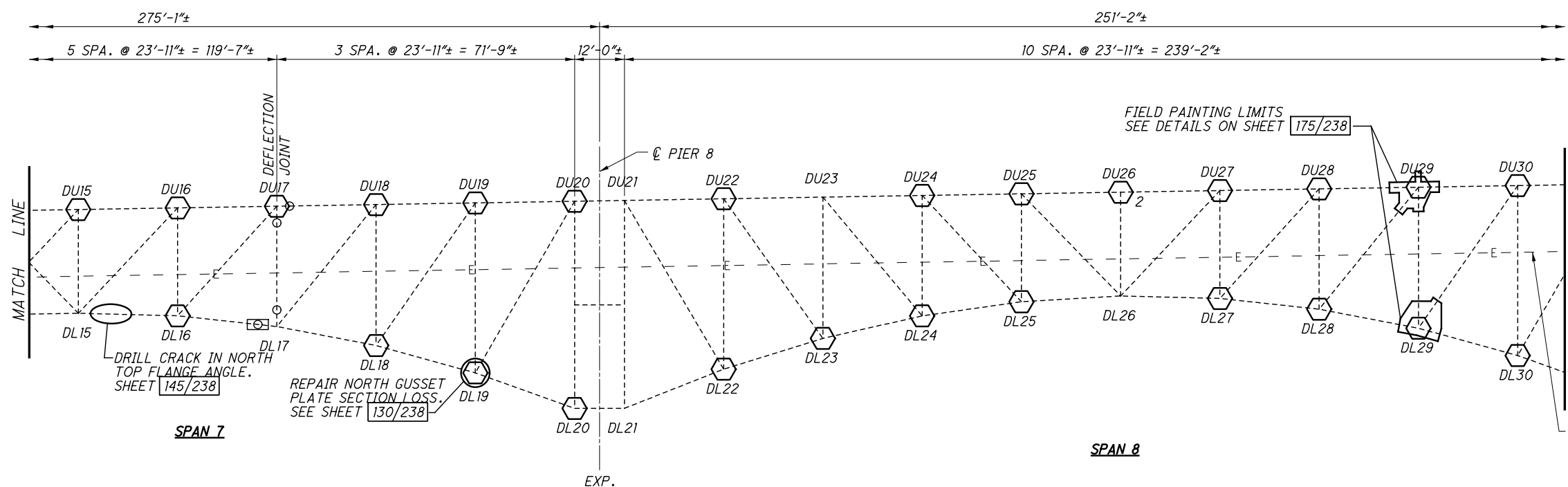
- NOTES**
- ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.
  - FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238
- LEGEND**
- - INDICATES PIN LOCATION
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<p><b>TRUSS C ELEVATION - 4</b>          BRIDGE NO. CUY-10-1613          S.R. 10 OVER THE CUYAHOGA RIVER</p>		<p>DATE: 1/30/18          REVIEWED: DLR          DRAWN: JLS          DESIGNED: DAP          CHECKED: KAK</p>	<p>STRUCTURE FILE NUMBER: 1801503          RICHLAND ENGINEERING LIMITED          29 NORTH PARK STREET          MANSFIELD, OHIO 44902</p>
<p>CUY-10-16.13          PID No. 96986</p>		<p>109/238</p>	<p>169          308</p>

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**TRUSS D ELEVATION**



**TRUSS D ELEVATION**

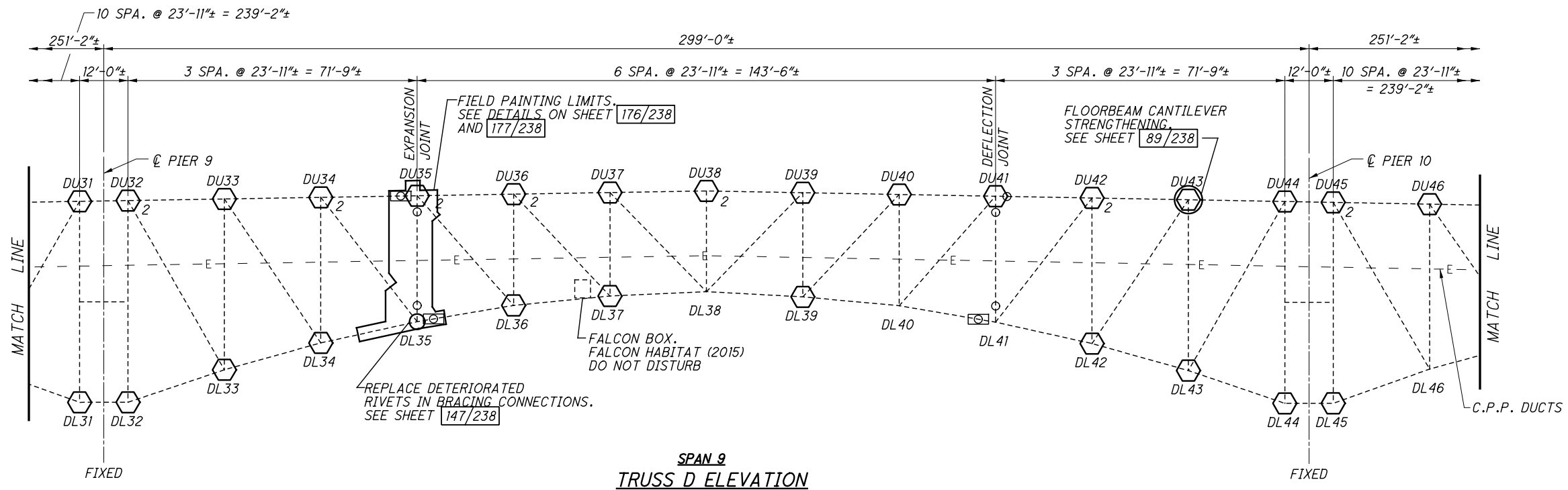
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 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

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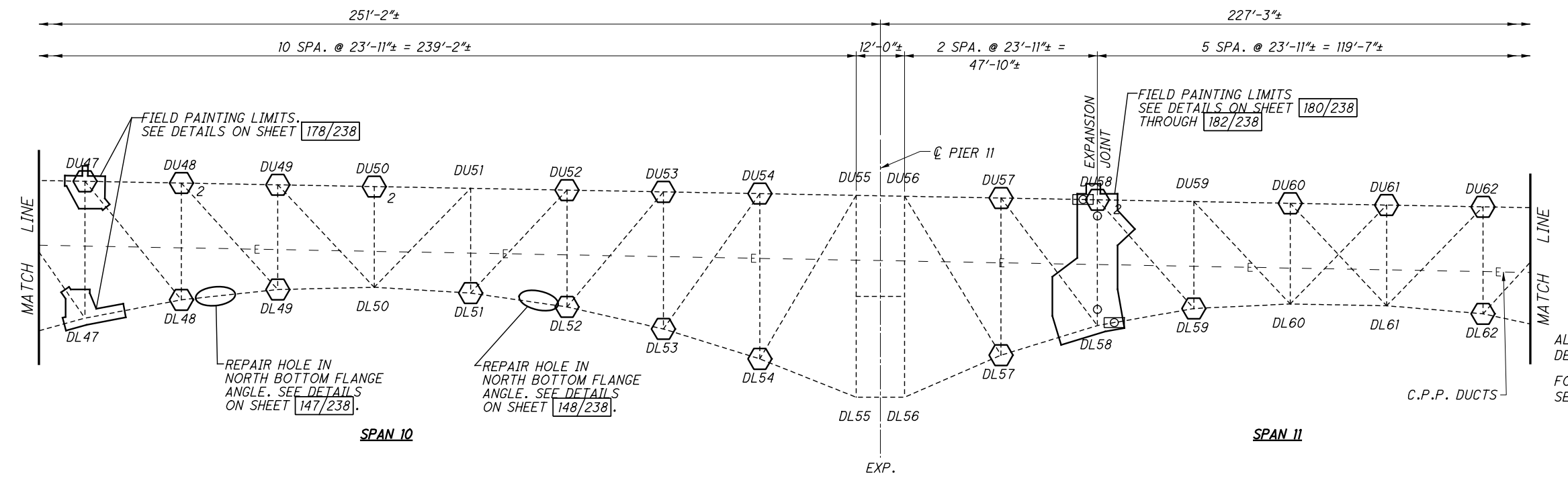
DESIGNED	DAP	CHECKED	KAK
DRAWN	JLS	REVISED	
REVIEWED	DLR	STRUCTURE FILE NUMBER	1801503
DATE	1/30/18		

**TRUSS D ELEVATION - 1**  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

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**SPAN 9**  
**TRUSS D ELEVATION**

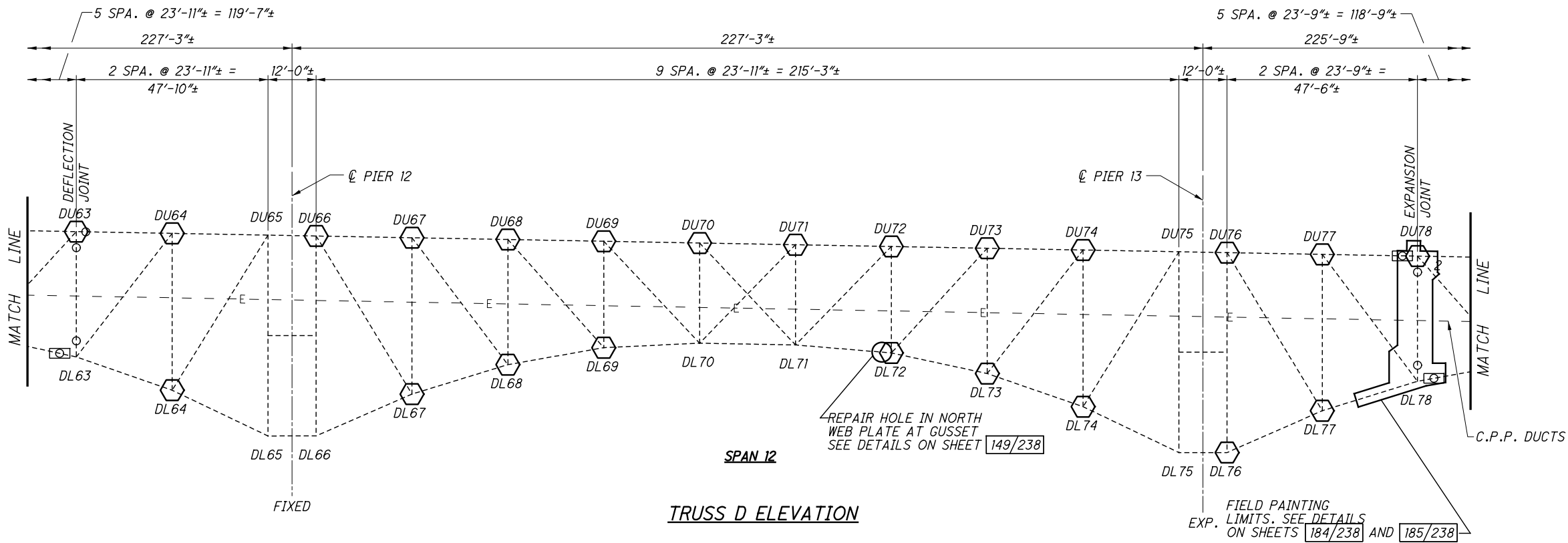


**TRUSS D ELEVATION**

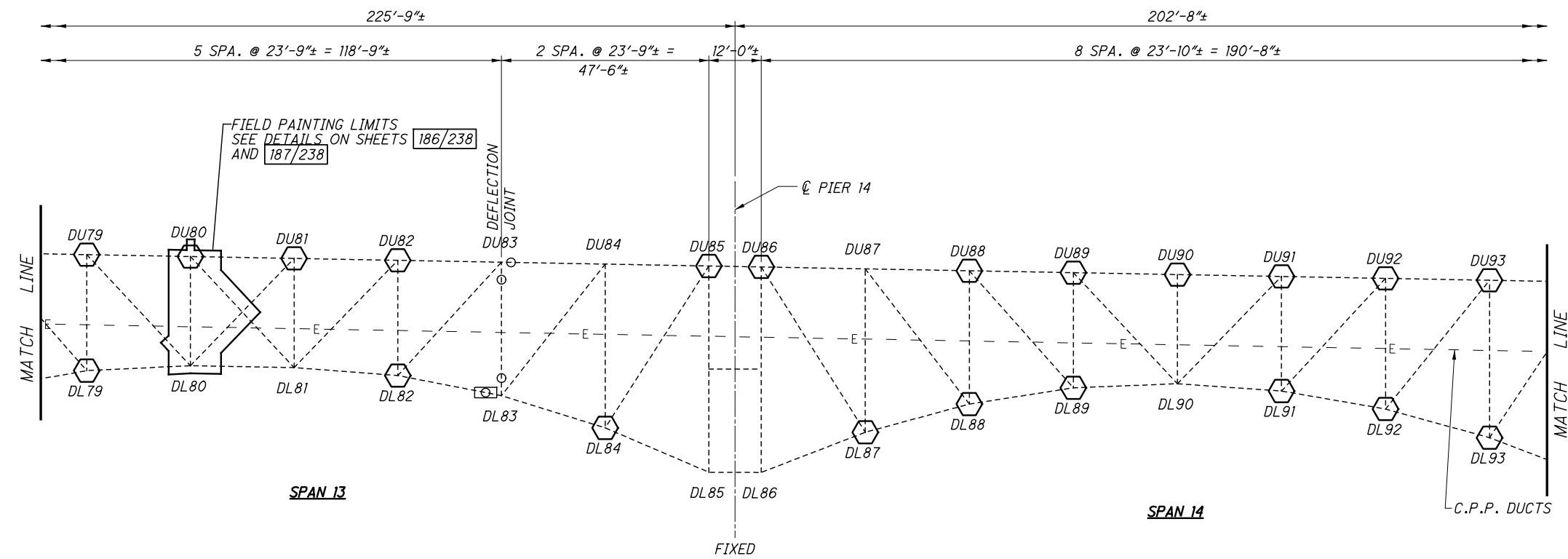
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FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

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**TRUSS D ELEVATION**



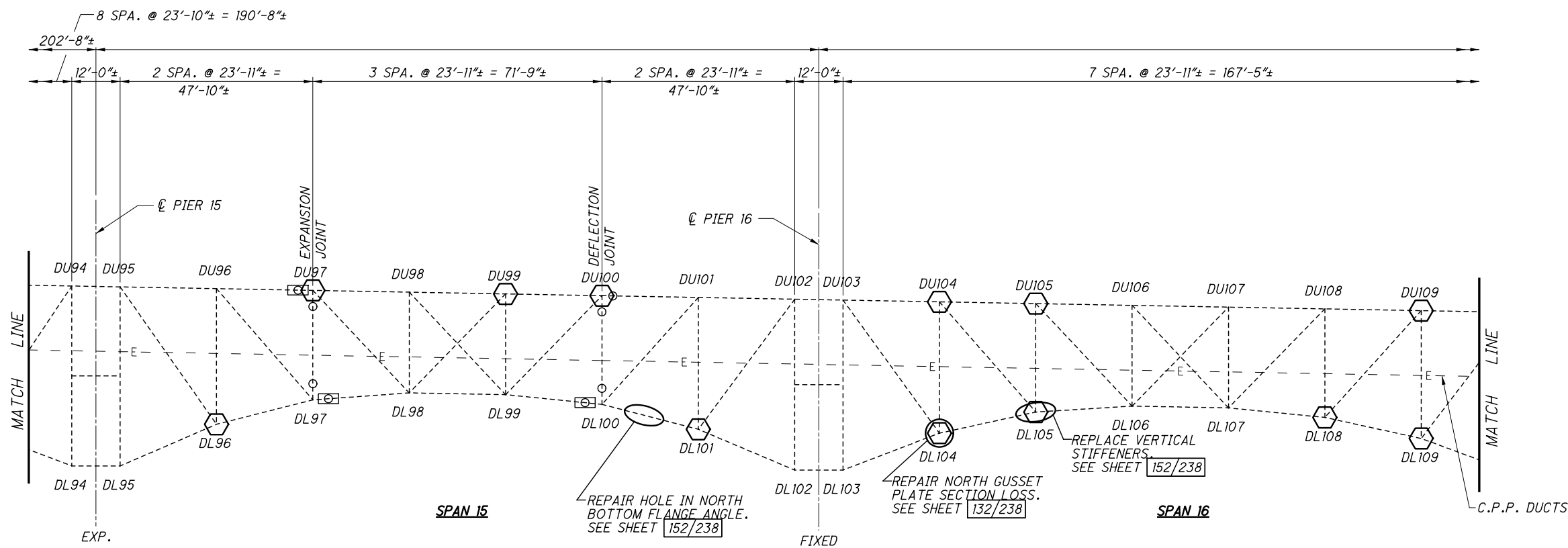
**TRUSS D ELEVATION**

**NOTES**  
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 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

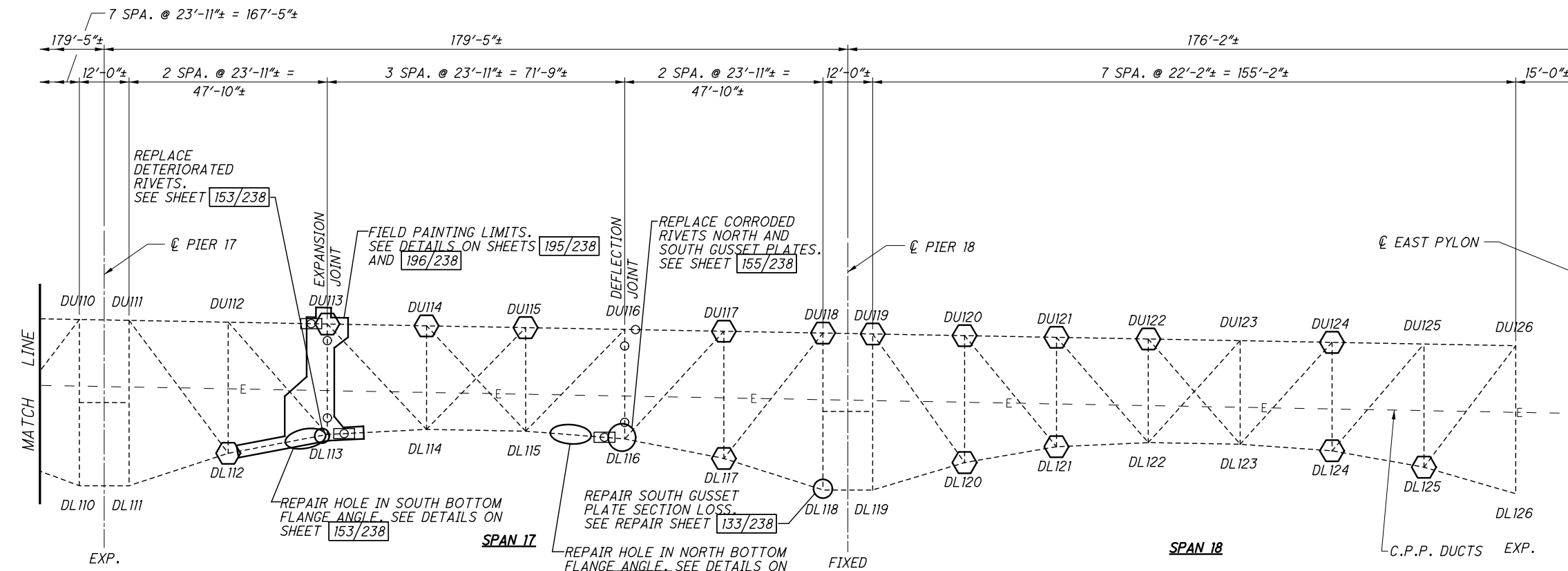
- LEGEND**
- - INDICATES PIN LOCATION
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<b>TRUSS D ELEVATION - 3</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	DATE: 1/30/18 REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503 DRAWN: JLS REVISED: DESIGNED: DAP CHECKED: KAK
<b>CUY-10-16-13</b> PID No. 96986	112/238 172/308	

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TRUSS D ELEVATION



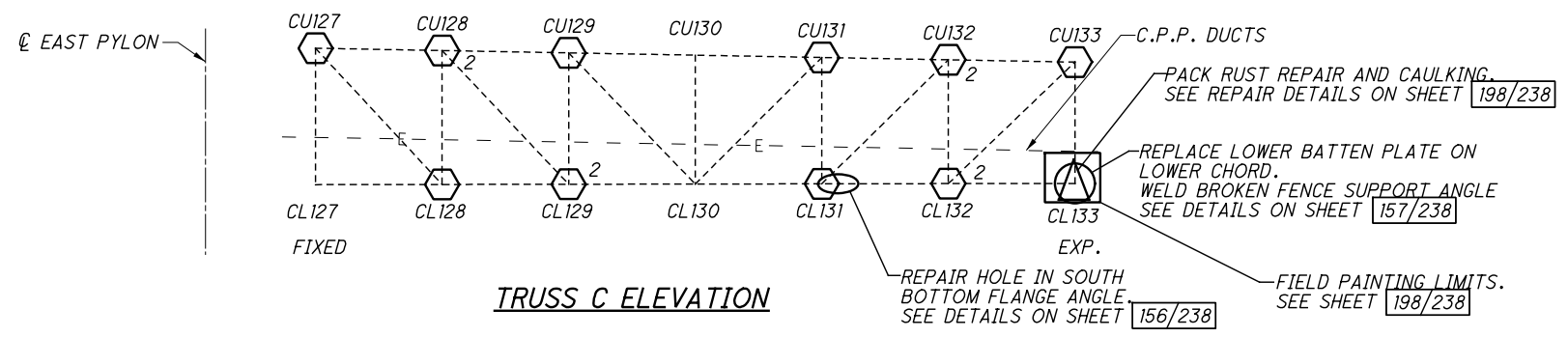
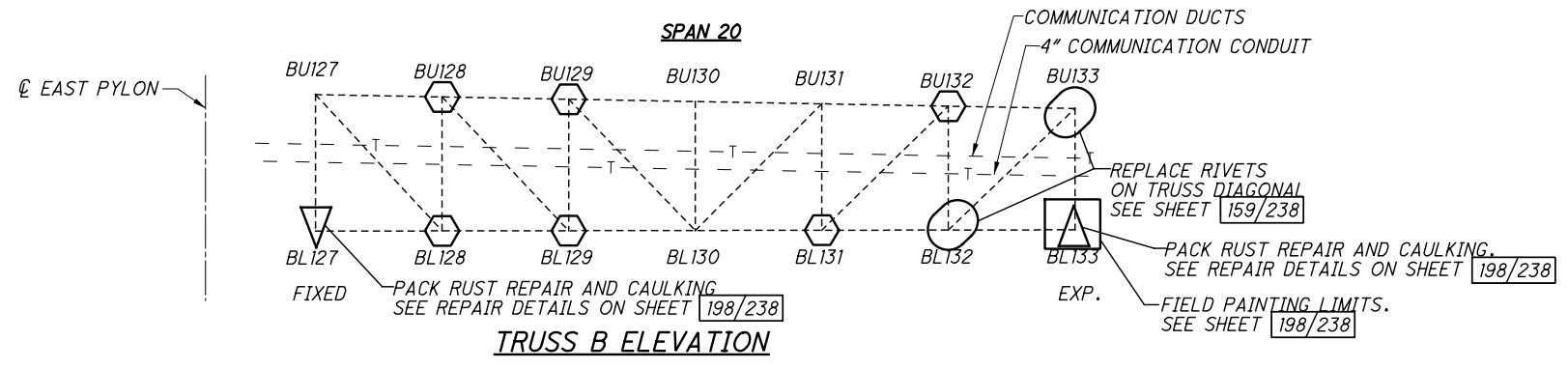
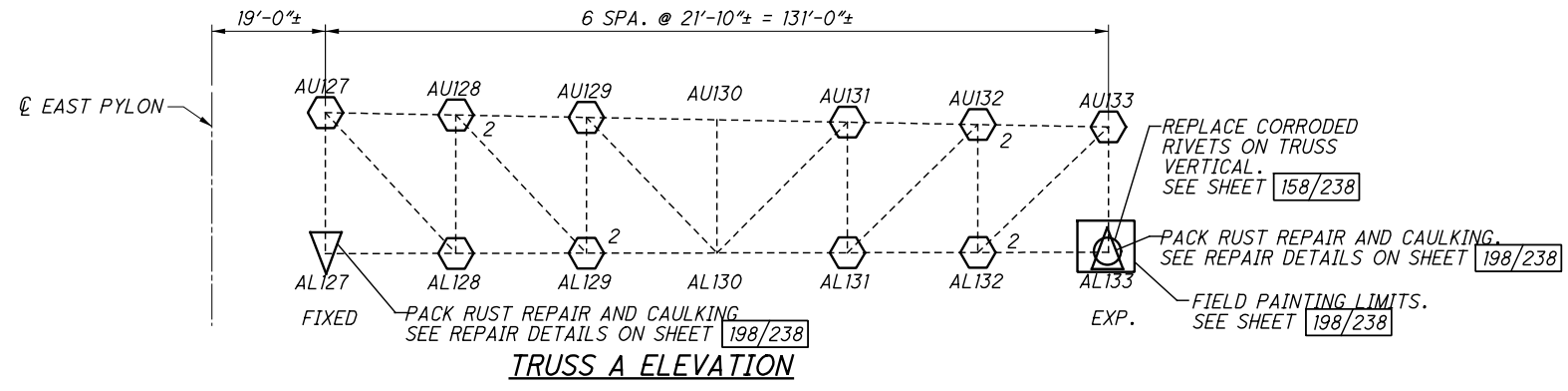
TRUSS D ELEVATION

**NOTES**  
 ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.  
 FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

- LEGEND**
- - INDICATES PIN LOCATION
  - ◻ - INDICATES PIN AND SLOTTED HOLE LOCATION
  - ⬡ - INDICATES NEW EDGE STIFFENING LOCATION (INSIDE & OUTSIDE GUSSET PLATES). ONE ANGLE PER GUSSET PLATE UNLESS NOTED AS 2 OR 3.
  - - INDICATES REPAIR LOCATION

<b>TRUSS D ELEVATION - 4</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	DATE: 1/30/18 REVIEWED: DLR DRAWN: JLS DESIGNED: DAP CHECKED: KAK
		STRUCTURE FILE NUMBER: 1801503
		113 / 238 173 / 308

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**NOTES**

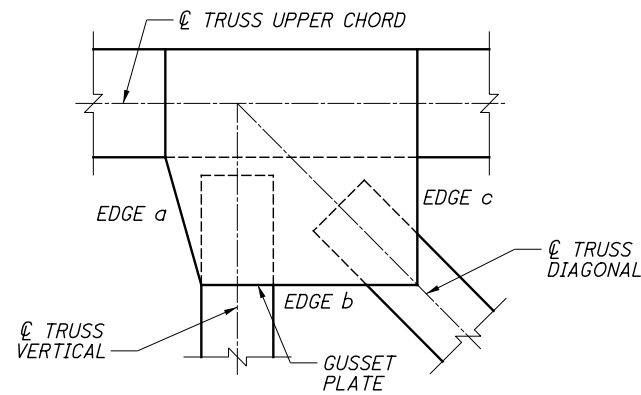
ALL TRUSS BEARINGS TO BE CLEANED OF DEBRIS.

FOR WORK AT SHOWN LOCATIONS SEE SHEETS 116/238 THROUGH 120/238

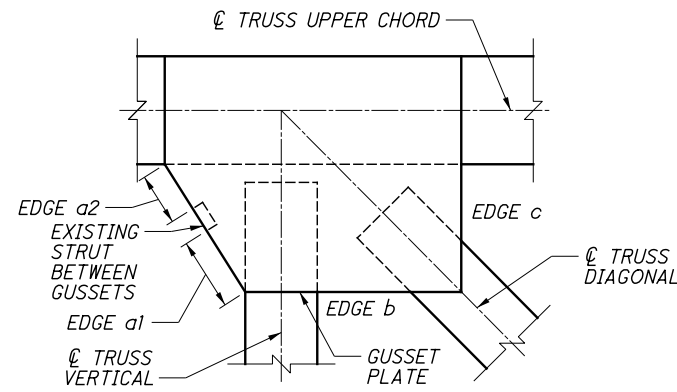
- LEGEND**
- - INDICATES PIN LOCATION
  - ⊕ - INDICATES PIN AND SLOTTED HOLE LOCATION
  - ⬡ - INDICATES NEW EDGE STIFFENING LOCATION (INSIDE & OUTSIDE GUSSET PLATES). ONE ANGLE PER GUSSET PLATE UNLESS NOTED AS 2 OR 3.
  - - INDICATES REPAIR LOCATION
  - △ - INDICATES TRUSS BEARING PACK RUST REPAIR AND CAULKING
  - - INDICATES ABRASIVE BLASTING AND FIELD PAINTING LOCATION
  - ▽ - INDICATES TRUSS BEARING PACK RUST REPAIR AND CAULKING WITH FIELD PAINTING TOUCH-UP

<p><b>SPAN 20 TRUSS ELEVATIONS</b></p> <p>BRIDGE NO. CUY-10-1613</p> <p>S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p><b>CUY-10-16.13</b></p> <p>PID No. 96986</p>	<p>114/238</p> <p>174/308</p>
<p>DESIGNED: DAP    CHECKED: KAK</p> <p>DRAWN: JLS        REVISED:</p> <p>REVIEWED: DLR    DATE: 1/30/18</p> <p>STRUCTURE FILE NUMBER: 1801503</p>	<p>RICHLAND ENGINEERING LIMITED</p> <p>29 NORTH PARK STREET</p> <p>MANSFIELD, OHIO 44902</p>	

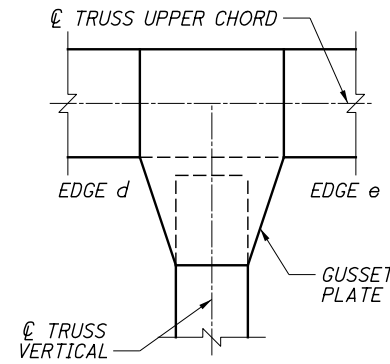
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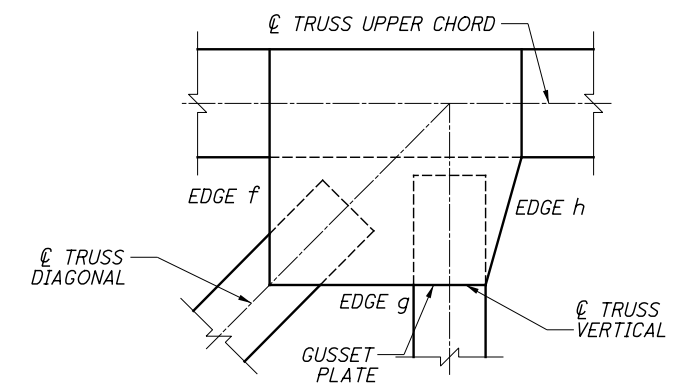
REPAIR TYPES 1 & 2



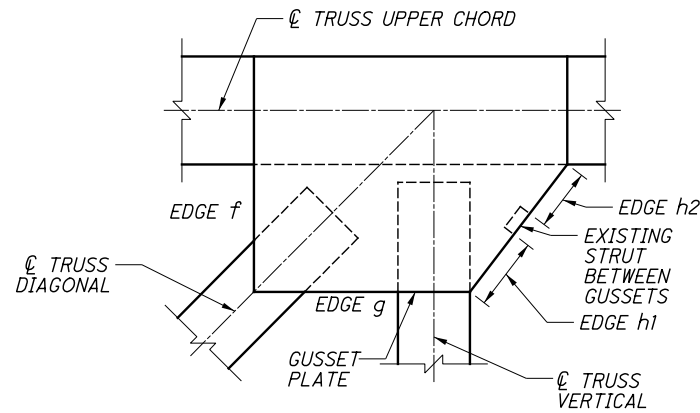
REPAIR TYPE 3



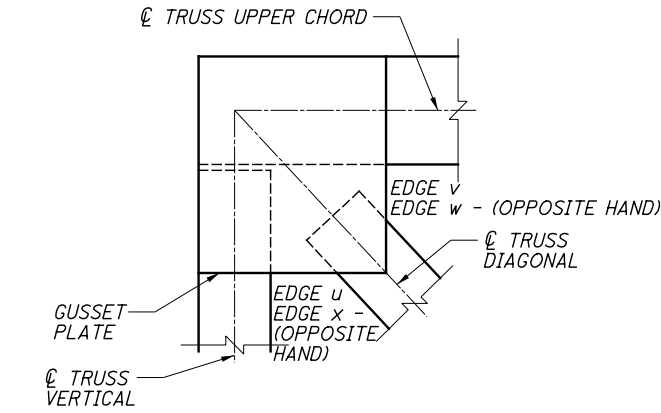
REPAIR TYPE 4



REPAIR TYPES 5 & 6

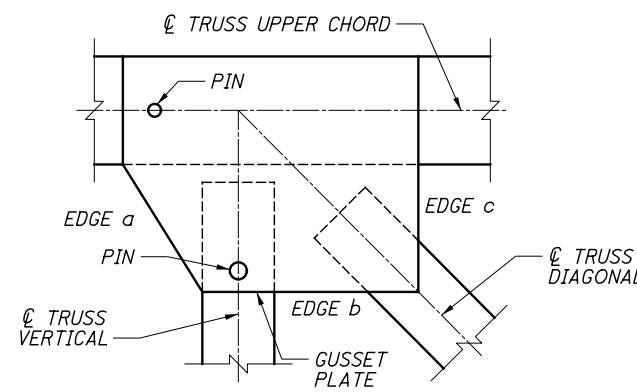


REPAIR TYPE 7

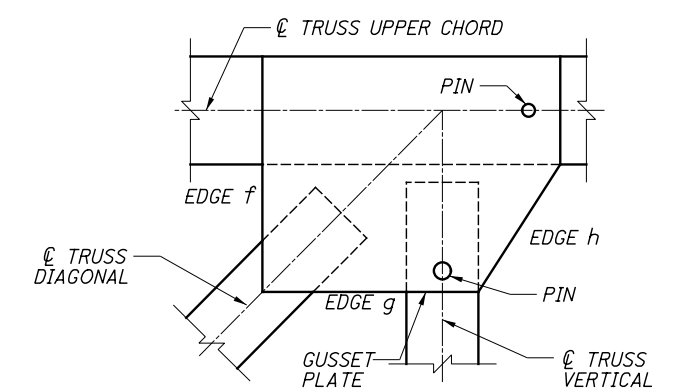


REPAIR TYPE 8

(GUSSET PLATE ARRANGEMENT AS SHOWN OR OPPOSITE HAND)

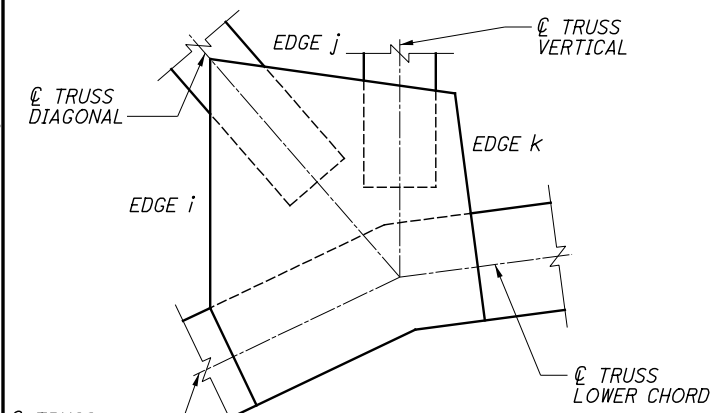


REPAIR TYPE 9

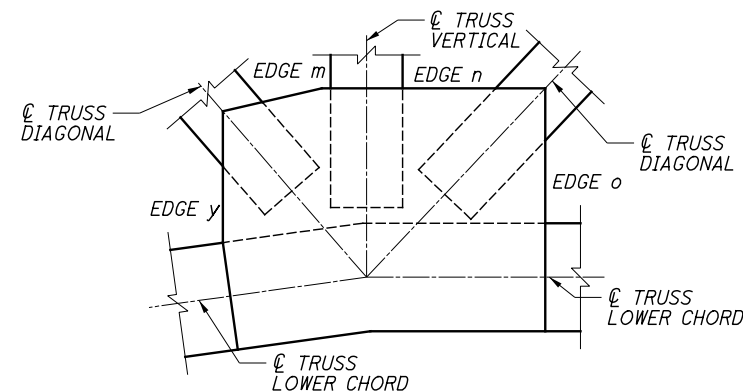


REPAIR TYPE 10

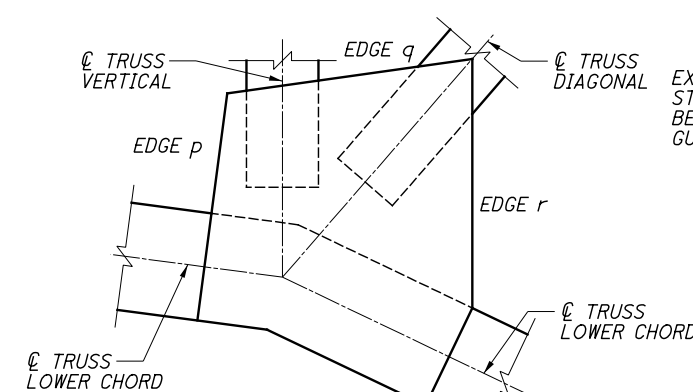
UPPER CHORD GUSSET PLATE ARRANGEMENTS



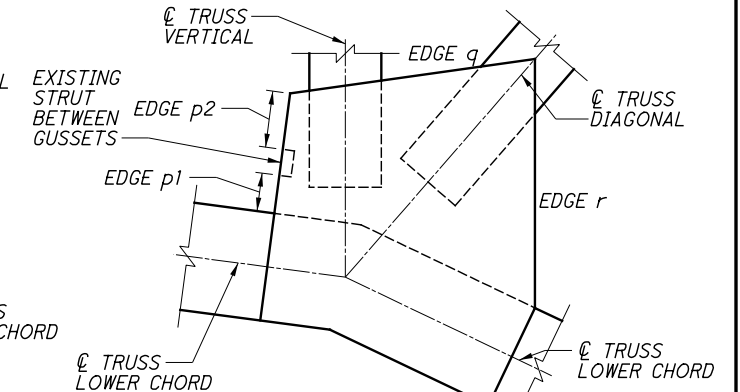
REPAIR TYPES 11 & 12



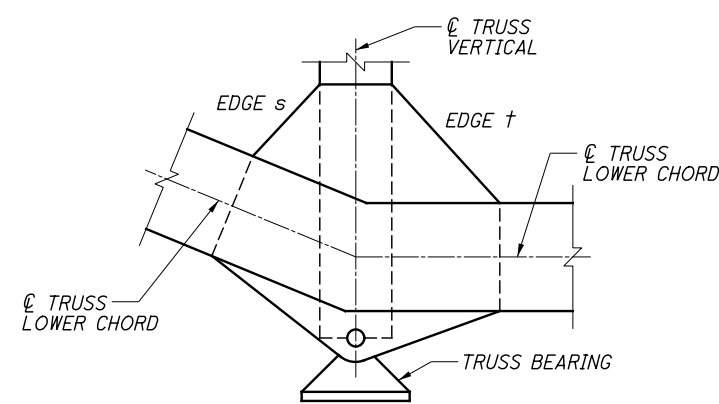
REPAIR TYPE 13



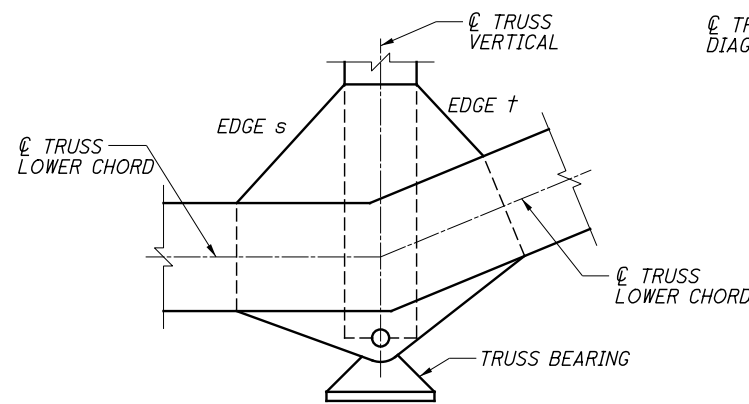
REPAIR TYPES 14 & 15



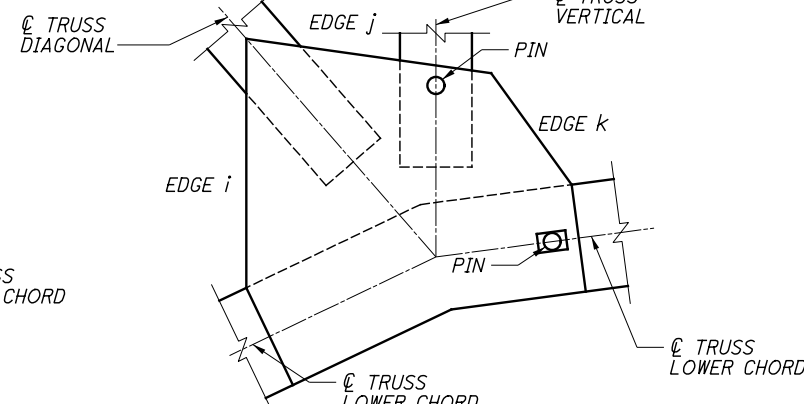
REPAIR TYPE 16



REPAIR TYPE 17



REPAIR TYPE 18



REPAIR TYPE 19

LOWER CHORD GUSSET PLATE ARRANGEMENTS

NOTES:

THE SCHEMATIC DRAWINGS ON THIS SHEET DEPICT THE VARIOUS TRUSS GUSSET PLATE ARRANGEMENTS REQUIRING GUSSET PLATE EDGE STIFFENING. THE STIFFENING WILL OCCUR AT ONE OR MORE OF THE EDGES LABELED ON THE DRAWINGS.

THIS SHEET IS TO BE WORKED WITH THE STIFFENING TABLES ON SHEETS 116/238 THROUGH 120/238, AND THE EXAMPLE STIFFENING DRAWINGS ON SHEETS 121/238 THROUGH 125/238.



**GUSSET PLATE EDGE STIFFENING TABLE**

**TRUSS A & D - UPPER CHORD**

SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
6	U1	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U2	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U4	4	4	5/8"	4	d	YES	-	4	8	1/8"	-
	U5	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U6	4	4	5/8"	6	h	-	YES	4	8	1"	-
	U8	4	4	5/8"	6	h	-	YES	4	8	1"	-
7	U9	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U10	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U11	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U12	4	4	3/4"	9	a	-	YES	4	16	1/8"	-
						b	YES	-	4		1/4"	
	U13	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U14	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U15	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U16	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U17	4	4	3/4"	10	g	YES	-	4	8	1/4"	-
	U18	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U19	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
U20	4	4	5/8"	7	h1	YES	-	4	8	1/8"	122/238	
8	U22	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U24	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U25	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U26	4	4	5/8"	4	d	YES	-	4	16	1/8"	-
						e	YES	-	4		1/8"	
	U27	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U28	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U29	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U30	4	4	5/8"	6	h	-	YES	4	8	1"	-
	U31	4	4	5/8"	7	h2	YES	-	4	8	1/8"	-
	9	U32	4	4	5/8"	3	a1	YES	-	4	16	1/8"
a2							YES	-	4	1/8"		
U33		4	4	5/8"	2	a	-	YES	4	8	1"	-
							1"	-				
U34		4	4	5/8"	2	a	-	YES	4	16	1/8"	-
						b	YES	-	4		1/8"	
U35		4	4	3/4"	9	a	-	YES	4	16	1/8"	-
						b	YES	-	4		1/4"	
U36		4	4	5/8"	1	a	YES	-	4	16	1/8"	-
						b	YES	-	4		1/8"	
U37		4	4	5/8"	1	a	YES	-	4	8	1/8"	-
U38		4	4	5/8"	4	d	YES	-	4	16	1/8"	-
						e	YES	-	4		1/8"	
U39		4	4	5/8"	5	h	YES	-	4	8	1/8"	-
U40	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U41	4	4	3/4"	10	g	YES	-	4	8	1/4"	-	
U42	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
					h	-	YES	4		1"		
U43	4	4	5/8"	6	h	-	YES	4	8	1"	-	
U44	4	4	5/8"	6	h	-	YES	4	8	1"	-	
10	U45	4	4	5/8"	3	a1	YES	-	4	16	1/8"	-
						a2	YES	-	4		1/8"	
	U46	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U47	4	4	5/8"	1	b	YES	-	4	8	1/8"	-
						1/8"	-					
	U48	4	4	5/8"	1	a	YES	-	4	16	1/8"	-
						b	YES	-	4		1/8"	
	U49	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
						d	YES	-	4		1/8"	
	U50	4	4	5/8"	4	e	YES	-	4	16	1/8"	-
1/8"						-						
U52	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U53	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U54	4	4	5/8"	6	h	-	YES	4	8	1"	-	

**GUSSET PLATE EDGE STIFFENING TABLE**

**TRUSS A & D - UPPER CHORD**

SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
11	U57	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U58	4	4	3/4"	9	a	-	YES	4	16	1/8"	-
						b	YES	-	4		1/4"	
	U60	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U61	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U62	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U63	4	4	3/4"	10	g	YES	-	4	8	1/4"	-
	U64	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
U66	4	4	5/8"	3	a1	YES	-	4	8	1/8"	-	
12	U67	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U68	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U69	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U70	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U71	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U72	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U73	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U74	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U76	4	4	5/8"	3	a1	YES	-	4	8	1/8"	-
	13	U77	4	4	5/8"	1	a	YES	-	4	8	1/8"
b							-	YES	4	1/8"		
U78		4	4	3/4"	9	a	-	YES	4	16	1/4"	-
						b	YES	-	4		1/8"	
U79		4	4	5/8"	1	a	YES	-	4	8	1/8"	-
U80		4	4	5/8"	1	a	YES	-	4	8	1/8"	-
U81	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U82	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
14	U85	4	4	5/8"	6	h	-	YES	4	8	1"	-
	U86	4	4	5/8"	3	a1	YES	-	4	8	1/8"	-
	U88	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U89	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U90	4	4	5/8"	4	d	YES	-	4	8	1/8"	-
	U91	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U92	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
15	U93	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U97	4	4	3/4"	9	a	-	YES	4	8	1/8"	-
	U99	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U100	4	4	3/4"	10	h	YES	-	4	8	1/4"	-
16	U104	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U105	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U109	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
17	U113	4	4	3/4"	9	a	-	YES	4	8	1/8"	-
	U114	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U115	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U117	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U118	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
18	U119	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U120	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U121	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U122	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U124	4	4	5/8"	5	h	YES	-	4	8	1/8"	-

436 TOTAL GUSSET PLATE STIFFENINGS

**NOTES**

FOR WORK LOCATIONS: SEE TRUSS ELEVATION DRAWINGS ON SHEETS 98/238 THROUGH 114/238.

ADDITIONAL NOTES: SEE SHEET 115/238.

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS B & C - UPPER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
6	U1	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U2	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U3	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U4	4	4	5/8"	4	d	YES	-	4	16	1/8"	122/238
		4	e			YES	-	4	1/8"			
	U5	4	4	5/8"	5	g	YES	-	4	16	1/8"	122/238
		4	h			YES	-	4	1/8"			
	U6	4	4	5/8"	6	g	YES	-	4	16	1/8"	-
4		h	-			YES	4	1"				
U7	4	4	5/8"	5	g	YES	-	4	8	1/8"	-	
U8	4	4	5/8"	6	h	-	YES	4	8	1"	-	
7	U9	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U10	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U11	4	4	5/8"	2	a	-	YES	4	16	1"	121/238
		4	b			YES	-	4	1/8"			
	U12	4	4	3/4"	9	a	-	YES	4	16	1/8"	-
		4	b			YES	-	4	1/4"			
	U13	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U14	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U15	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U16	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U17	4	4	3/4"	10	g	YES	-	4	8	1/4"	-
	U18	4	4	5/8"	6	g	YES	-	4	16	1/8"	-
4		h	-			YES	4	1"				
U19	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
	4	h			-	YES	4	1"				
U20	4	4	5/8"	7	h1	YES	-	4	16	1/8"	-	
	4	h2			YES	-	4	1/8"				
U21	4	4	5/8"	3	a1	YES	-	4	24	1/8"	-	
	4	a2			YES	-	4	1/8"				
U22	4	4	5/8"	2	a	-	YES	4	16	1"	-	
	4	b			YES	-	4	1/8"				
U23	4	4	5/8"	3	a2	YES	-	4	16	1/8"	-	
	4	b			YES	-	4	1/8"				
U24	4	4	5/8"	1	a	YES	-	4	16	1/8"	-	
	4	b			YES	-	4	1/8"				
U25	4	4	5/8"	1	a	YES	-	4	8	1/8"	-	
U26	4	4	5/8"	4	d	YES	-	4	16	1/8"	-	
	4	e			YES	-	4	1/8"				
U27	4	4	5/8"	5	g	YES	-	4	16	1/8"	-	
	4	h			YES	-	4	1/8"				
U28	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
	4	h			-	YES	4	1"				
U29	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
	4	h			-	YES	4	1"				
U30	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
	4	h			-	YES	4	1"				
U31	4	4	5/8"	7	h1	YES	-	4	16	1/8"	-	
	4	h2			YES	-	4	1/8"				
U32	4	4	5/8"	3	a1	YES	-	4	16	1/8"	-	
	4	a2			YES	-	4	1/8"				
U34	4	4	5/8"	2	a	-	YES	4	16	1"	-	
	4	b			YES	-	4	1/8"				
U35	4	4	3/4"	9	a	-	YES	4	16	1/8"	123/238	
	4	b			YES	-	4	1/4"				
U36	4	4	5/8"	1	a	YES	-	4	16	1/8"	121/238	
	4	b			YES	-	4	1/8"				
U37	4	4	5/8"	1	a	YES	-	4	8	1/8"	-	
U38	4	4	5/8"	4	d	YES	-	4	16	1/8"	-	
	4	e			YES	-	4	1/8"				

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS B & C - UPPER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
9	U40	4	4	5/8"	5	g	YES	-	4	16	1/8"	-
		4	h			YES	-	4	1/8"			
	U41	4	4	3/4"	10	g	YES	-	4	8	1/4"	-
	U42	4	4	5/8"	6	h	-	YES	4	8	1"	-
	U43	4	4	5/8"	6	h	-	YES	4	8	1"	-
	U44	4	4	5/8"	7	h1	YES	-	4	8	1/8"	-
	U45	4	4	5/8"	3	a1	YES	-	4	8	1/8"	-
		4	a			-	YES	4	1"			
U46	4	4	5/8"	2	b	YES	-	4	16	1/8"	-	
	4	a1			YES	-	4	1/8"				
U47	4	4	5/8"	3	a2	YES	-	4	24	1/8"	121/238	
	4	b			YES	-	4	1/8"				
U48	4	4	5/8"	2	a	-	YES	4	16	1"	-	
	4	b			YES	-	4	1/8"				
U49	4	4	5/8"	2	b	YES	-	4	8	1/8"	-	
	4	d			YES	-	4	1/8"				
U50	4	4	5/8"	4	e	YES	-	4	16	1/8"	-	
	4	e			YES	-	4	1/8"				
U51	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
	4	h			YES	-	4	1/8"				
U52	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
	4	g			YES	-	4	1/8"				
U53	4	4	5/8"	6	h	-	YES	4	16	1"	-	
	4	g			YES	-	4	1/8"				
U54	4	4	5/8"	6	g	YES	-	4	16	1/8"	122/238	
	4	h			-	YES	4	1"				
U55	4	4	5/8"	7	h1	YES	-	4	8	1/8"	-	
U56	4	4	5/8"	3	a1	YES	-	4	8	1/8"	-	
U57	4	4	5/8"	2	a	-	YES	4	8	1"	-	
	4	a			-	YES	4	1/8"				
U58	4	4	3/4"	9	a	-	YES	4	16	1/8"	-	
	4	b			YES	-	4	1/4"				
U60	4	4	5/8"	1	a	YES	-	4	8	1/8"	-	
U61	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U62	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U63	4	4	3/4"	10	g	YES	-	4	8	1/4"	123/238	
U64	4	4	5/8"	5	g	YES	-	4	8	1/8"	-	
U65	4	4	5/8"	7	h2	YES	-	4	8	1/8"	-	
U66	4	4	5/8"	3	a1	YES	-	4	16	1/8"	-	
	4	a2			YES	-	4	1/8"				
U67	4	4	5/8"	2	a	-	YES	4	16	1"	-	
	4	b			YES	-	4	1/8"				
U68	4	4	5/8"	2	a	-	YES	4	16	1"	-	
	4	b			YES	-	4	1/8"				
U69	4	4	5/8"	1	a	YES	-	4	16	1/8"	-	
	4	b			YES	-	4	1/8"				
U70	4	4	5/8"	1	a	YES	-	4	8	1/8"	-	
	4	h			YES	-	4	1/8"				
U71	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
	4	g			YES	-	4	1/8"				
U72	4	4	5/8"	5	h	YES	-	4	16	1/8"	-	
	4	h			YES	-	4	1/8"				
U73	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
	4	h			-	YES	4	1"				
U74	4	4	5/8"	6	g	YES	-	4	16	1/8"	-	
	4	h			-	YES	4	1"				
U75	4	4	5/8"	7	h1	YES	-	4	16	1/8"	-	
	4	h2			YES	-	4	1/8"				
U76	4	4	5/8"	3	a2	YES	-	4	8	1/8"	-	
U77	4	4	5/8"	2	a	-	YES	4	16	1"	-	
	4	b			YES	-	4	1/8"				
U78	4	4	3/4"	9	a	-	YES	4	16	1/8"	-	
	4	b			YES	-	4	1/4"				
U79	4	4	5/8"	1	a	YES	-	4	8	1/8"	-	
U80	4	4	5/8"	1	a	YES	-	4	8	1/8"	-	
U81	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
U82	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	

SEE NOTES ON 116/238

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GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS B & C - UPPER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
13	U83	4	4	3/4"	10	g	YES	-	4	8	1/4"	-
	U84	4	4	5/8"	5	g	YES	-	4	8	1/8"	-
	U85	4	4	5/8"	7	h1	YES	-	4	8	1/8"	-
14	U86	4	4	5/8"	3	a1	YES	-	4	16	1/8"	-
		4	4			a2	YES	-	4		1/8"	-
14	U87	4	4	5/8"	2	a	-	YES	4	16	1"	-
		4	4			b	YES	-	4		1/8"	-
		4	4			a	-	YES	4		1"	-
	U88	4	4	5/8"	2	b	YES	-	4	16	1/8"	-
	U89	4	4			a	YES	-	4		8	1/8"
	U90	4	4	5/8"	4	d	YES	-	4	16	1/8"	-
	U91	4	4			e	YES	-	4		16	1/8"
	U92	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
		4	4			g	YES	-	4		16	1/8"
	U93	4	4	5/8"	6	g	YES	-	4	16	1/8"	-
		4	4			h	-	YES	4		1"	-
15	U96	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U97	4	4	3/4"	9	a	-	YES	4	8	1/8"	-
	U98	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U99	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U100	4	4	3/4"	10	h	YES	-	4	8	1/4"	-
16	U105	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U108	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
17	U112	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U113	4	4	3/4"	9	a	-	YES	4	8	1/8"	-
	U114	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U115	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U118	4	4	5/8"	6	h	-	YES	4	8	1"	-
18	U119	4	4	5/8"	2	a	-	YES	4	8	1"	-
	U120	4	4			a	-	YES	4		16	1"
		4	4	b	YES	-	4	1/8"	-			
	U121	4	4	5/8"	1	a	YES	-	4	16	1/8"	-
		4	4			b	YES	-	4		1/8"	-
	U122	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U123	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
U124	4	4	5/8"	5	h	YES	-	4	8	1/8"	-	
<b>636 TOTAL GUSSET PLATE STIFFENINGS</b>												

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS A & C - LOWER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
20	L128	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L129	4	4	5/8"	11	j	YES	-	4	16	1/8"	-
			4			k	YES	-	4		1/8"	-
	L131	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
L132	4	4	5/8"	14	p	YES	-	4	16	1/8"	-	
	4	4			q	YES	-	4		1/8"	-	
<b>24 TOTAL GUSSET PLATE STIFFENINGS</b>												

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS B - LOWER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
20	L128	2	2	5/8"	11	k	YES	-	4	8	1/8"	-
	L129	2	2	5/8"	11	k	YES	-	4	8	1/8"	-
	L131	2	2	5/8"	14	p	YES	-	4	8	1/8"	-
<b>6 TOTAL GUSSET PLATE STIFFENINGS</b>												

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS A & C - UPPER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
20	U127	4	4	5/8"	8	u	YES	-	4	8	1/8"	123238
	U128	4	4	5/8"	2	a	-	YES	4	16	1"	-
			4			b	YES	-	4		1/8"	-
	U129	4	4	5/8"	1	a	YES	-	4	8	1/8"	-
	U131	4	4	5/8"	5	h	YES	-	4	8	1/8"	-
	U132	4	4	5/8"	5	g	YES	-	4	16	1/8"	-
		4	4			h	YES	-	4		1/8"	-
	U133	4	4	5/8"	8	x	YES	-	4	8	1/8"	-
<b>32 TOTAL GUSSET PLATE STIFFENINGS</b>												

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS B - UPPER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
20	U128	2	2	5/8"	1	a	YES	-	4	8	1/8"	-
	U129	2	2	5/8"	1	a	YES	-	4	8	1/8"	-
	U132	2	2	5/8"	5	h	YES	-	4	8	1/8"	-
<b>6 TOTAL GUSSET PLATE STIFFENINGS</b>												

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 1/30/18  
 REVIEWED: DLR  
 STRUCTURE FILE NUMBER: 1801503  
 DRAWN: JSB  
 CHECKED: KAK  
 DESIGNED: TGW  
 GUSSET PLATE EDGE STIFFENING TABLE - 3  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 CUY-10-16.13  
 PID No. 96986  
 118/238  
 178  
 308

SEE NOTES ON 116/238

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS A & D - LOWER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
6	L1	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L2	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L3	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L5	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L6	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L7	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L10	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
7	L11	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L12	4	4	3/4"	19	j	YES	-	4	8	1/4"	125/238
	L13	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L16	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L18	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L19	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L20	4	4	3/4"	17	s	YES	-	4	8	1/4"	-
	L22	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L23	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
8	L24	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L25	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L27	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L28	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L29	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L30	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L31	4	4	3/4"	17	s	YES	-	4	8	1/4"	125/238
	L32	4	4	3/4"	18	t	YES	-	4	8	1/4"	125/238
	L33	4	4	5/8"	12	k	-	YES	4	8	1"	-
9	L34	4	4	5/8"	12	k	-	YES	4	8	1"	-
	L36	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L37	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L39	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L42	4	4	5/8"	15	p	-	YES	4	8	1"	-
	L43	4	4	5/8"	15	p	-	YES	4	8	1"	-
	L44	4	4	3/4"	17	s	YES	-	4	8	1/4"	-
	L45	4	4	3/4"	18	t	YES	-	4	8	1/4"	-
10	L48	4	4	5/8"	11	k	YES	-	4	8	1/4"	-
	L49	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L51	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L52	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L53	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L54	4	4	5/8"	14	p	YES	-	4	8	1/8"	-

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS A & D - LOWER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
11	L57	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L59	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L62	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L64	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
12	L67	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L68	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L69	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L72	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L73	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
13	L74	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L76	4	4	3/4"	17	s	YES	-	4	8	1/4"	-
	L77	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L79	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L82	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
14	L84	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L87	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L88	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L89	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L91	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L92	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
15	L93	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L96	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L101	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
16	L104	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L105	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L108	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
17	L109	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L112	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
18	L117	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L120	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L121	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L124	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L125	4	4	5/8"	14	p	YES	-	4	8	1/8"	-

**288 TOTAL GUSSET PLATE STIFFENINGS**

SEE NOTES ON 116/238

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GUSSET PLATE EDGE STIFFENING TABLE													
TRUSS B & C - LOWER CHORD													
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET	
6	L1	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L2	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L3	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L5	4	4	5/8"	14	p	YES	-	4	16	1/8"	-	
		4	4		q	YES	-	4	1/8"				
	L6	4	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L7	4	4	4	5/8"	15	p	-	YES	4	8	1"	-
7	L10	4	4	5/8"	12	k	-	YES	4	8	1"	-	
	L11	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L12	4	3	3/4"	19	j	YES	-	4	8(B) & 4(C)	1/4"	-	
	L13	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L16	4	4	5/8"	14	p	YES	-	4	8	1/8"	-	
	L18	4	4	5/8"	14	q	YES	-	4	8	1/8"	-	
	L19	4	4	5/8"	16	pl	YES	-	4	8	1/8"	125/238	
8	L22	4	4	5/8"	12	k	-	YES	4	8	1"	-	
	L23	4	4	5/8"	11	j	YES	-	4	8	1/8"	-	
	L24	4	4	5/8"	12	k	-	YES	4	16	1/8"	124/238	
		4	4			k	-	YES	4		1"		
	L25	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L27	4	4	5/8"	14	p	YES	-	4	8	1/8"	-	
	L28	4	4	5/8"	14	q	YES	-	4	8	1/8"	-	
	L29	4	4	5/8"	14	q	YES	-	4	8	1/8"	-	
L31	4	4	5/8"	17	s	YES	-	4	8	1/4"	-		
9	L32	4	4	3/4"	18	t	YES	-	4	8	1/4"	-	
	L33	4	4	5/8"	12	k	-	YES	4	8	1"	-	
	L34	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L36	4	4	5/8"	11	j	YES	-	4	16	1/8"	123/238	
		4	4			k	YES	-	4		1/8"		
	L37	4	4	5/8"	11	k	YES	-	4	8	1/8"	-	
	L39	4	4	5/8"	14	p	YES	-	4	8	1/8"	-	
	L40	4	4	5/8"	14	p	YES	-	4	16	1/8"	124/238	
		4	4			q	YES	-	4		1/8"		
L41	4	4	3/4"	14	q	YES	-	4	8	1/4"	-		
L42	4	4	5/8"	14	p	YES	-	4	8	1/8"	-		
10	L47	4	4	5/8"	12	j	YES	-	4	16	1/8"	-	
		4	4			k	-	YES	4		1"		
	L48	4	4	5/8"	11	j	YES	-	4	8	1/8"	-	
	L49	4	4	5/8"	12	j	YES	-	4	16	1/8"	-	
		4	4			k	-	YES	4		1"		
	L50	4	4	5/8"	13	n	YES	-	4	8	1/8"	-	
	L52	4	4	5/8"	14	q	YES	-	4	8	1/8"	-	
L53	4	4	5/8"	15	p	-	YES	4	16	1"	124/238		
	4	4			q	YES	-	4		1/8"			
L54	4	4	5/8"	15	p	-	YES	4	8	1"	-		

\* DO NOT STIFFEN NORTH GUSSET PLATE AT PANEL POINT 12C. IT WILL BE PARTIALLY PLATED.

GUSSET PLATE EDGE STIFFENING TABLE												
TRUSS B & C - LOWER CHORD												
SPAN	PANEL POINT	NUMBER OF GUSSET PLATES	TOTAL NUMBER OF STIFFENINGS	GUSSET PLATE THICKNESS	REPAIR TYPE	STIFFENING LOCATION	NEW STIFFENING ANGLE	NEW STIFFENING STRUT	NUMBER OF BOLTS PER GUSSET PLATE	TOTAL NUMBER OF BOLTS PER PANEL POINT	PROPOSED BOLT GRIP (INCHES)	SEE SHEET
11	L57	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L59	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L62	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L63	4	4	3/4"	14	q	YES	-	4	8	1/4"	-
	L64	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L67	4	4	4	5/8"	12	k	-	YES	4	8	1"
12	L68	4	4	5/8"	11	j	YES	-	4	16	1/8"	-
		4	4			k	YES	-	4		1/8"	
	L69	4	4	5/8"	11	j	YES	-	4	8	1/8"	-
	L70	4	4	5/8"	13	m	YES	-	4	8	1/8"	124/238
	L71	4	4	5/8"	13	n	YES	-	4	8	1/8"	-
	L72	4	4	5/8"	14	p	YES	-	4	16	1/8"	-
		4	4			q	YES	-	4		1/8"	
	L73	4	4	5/8"	14	p	YES	-	4	16	1/8"	-
4		4	q			YES	-	4	1/8"			
L74	4	4	5/8"	15	p	-	YES	4	8	1"	-	
13	L77	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L79	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L82	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L83	4	4	3/4"	14	p	YES	-	4	8	1/4"	-
14	L86	4	4	3/4"	18	t	YES	-	4	8	1/4"	-
	L87	4	4	5/8"	12	k	-	YES	4	8	1"	-
	L88	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L92	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L93	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
15	L96	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L101	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
16	L104	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L105	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L108	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
17	L109	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L112	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
18	L117	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
	L120	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L121	4	4	5/8"	11	k	YES	-	4	8	1/8"	-
	L124	4	4	5/8"	14	p	YES	-	4	8	1/8"	-
L125	4	4	5/8"	14	p	YES	-	4	8	1/8"	-	
<b>328 TOTAL GUSSET PLATE STIFFENINGS</b>												

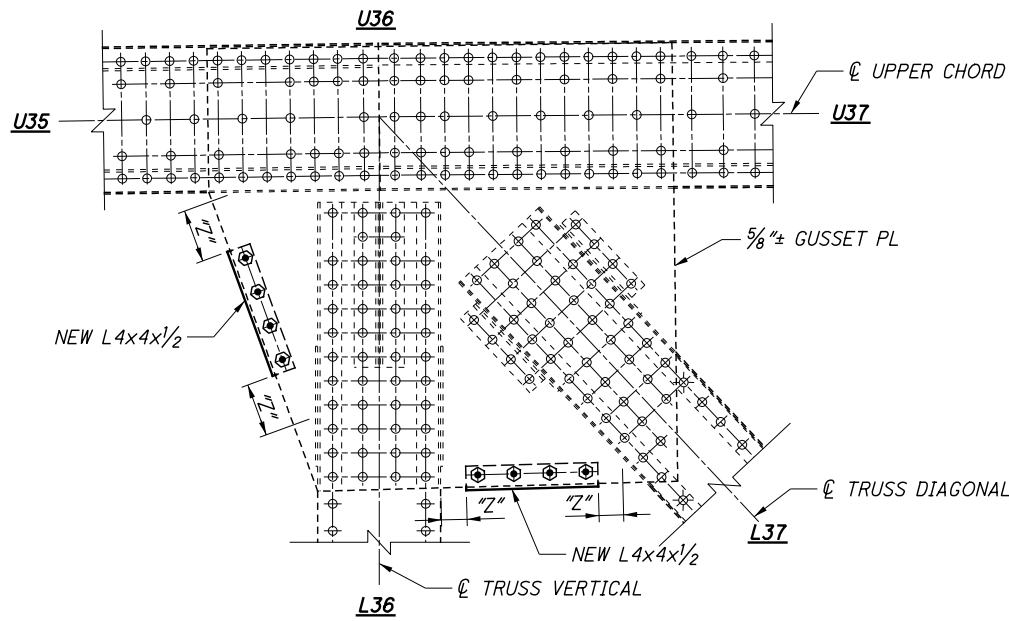
RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902
DATE 1/30/18  
REVIEWED DLR  
DRAWN USB  
DESIGNED TGW  
CHECKED KAK

GUSSET PLATE EDGE STIFFENING TABLE - 5
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

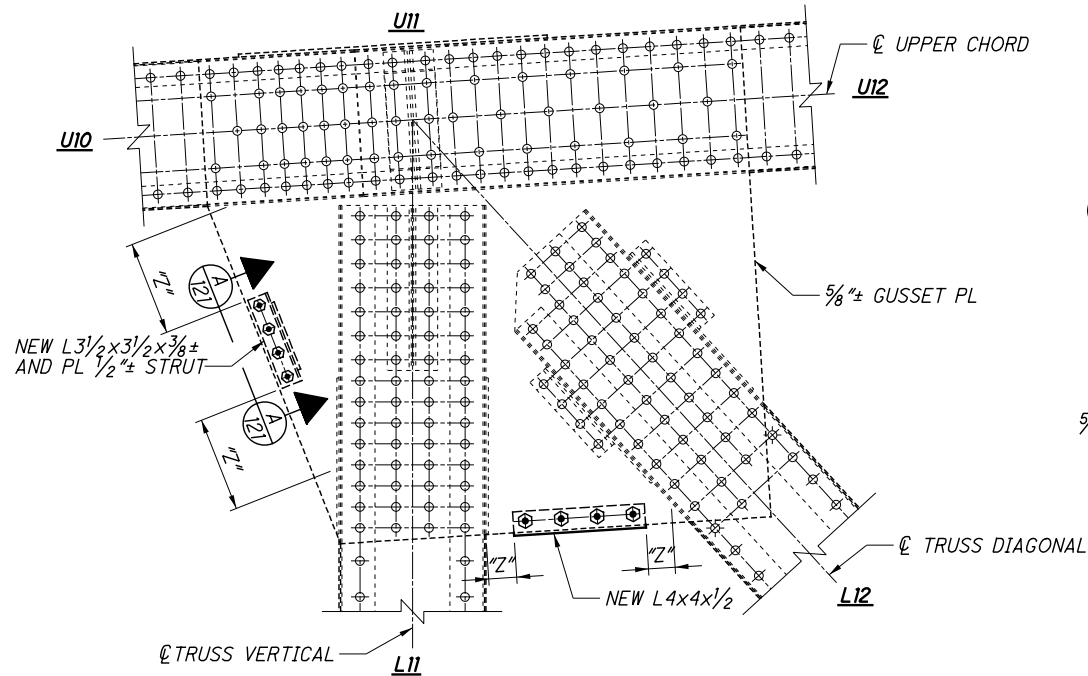
CUY - 10 - 16 - 13  
PID No. 96986
120/238

SEE NOTES ON 116/238

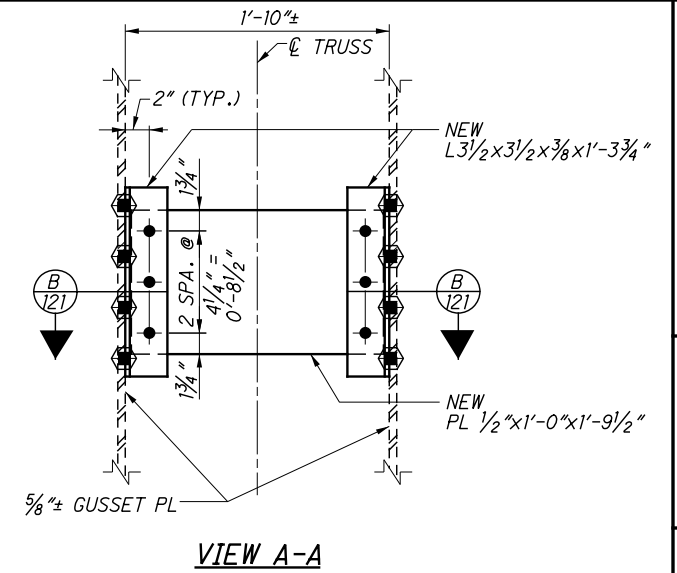
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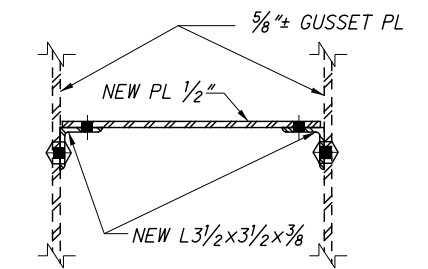
**TYPE 1 STIFFENING**  
(PANEL POINT U36 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



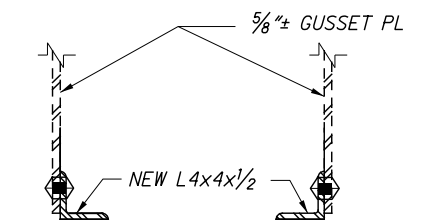
**TYPE 2 STIFFENING**  
(PANEL POINT U11 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



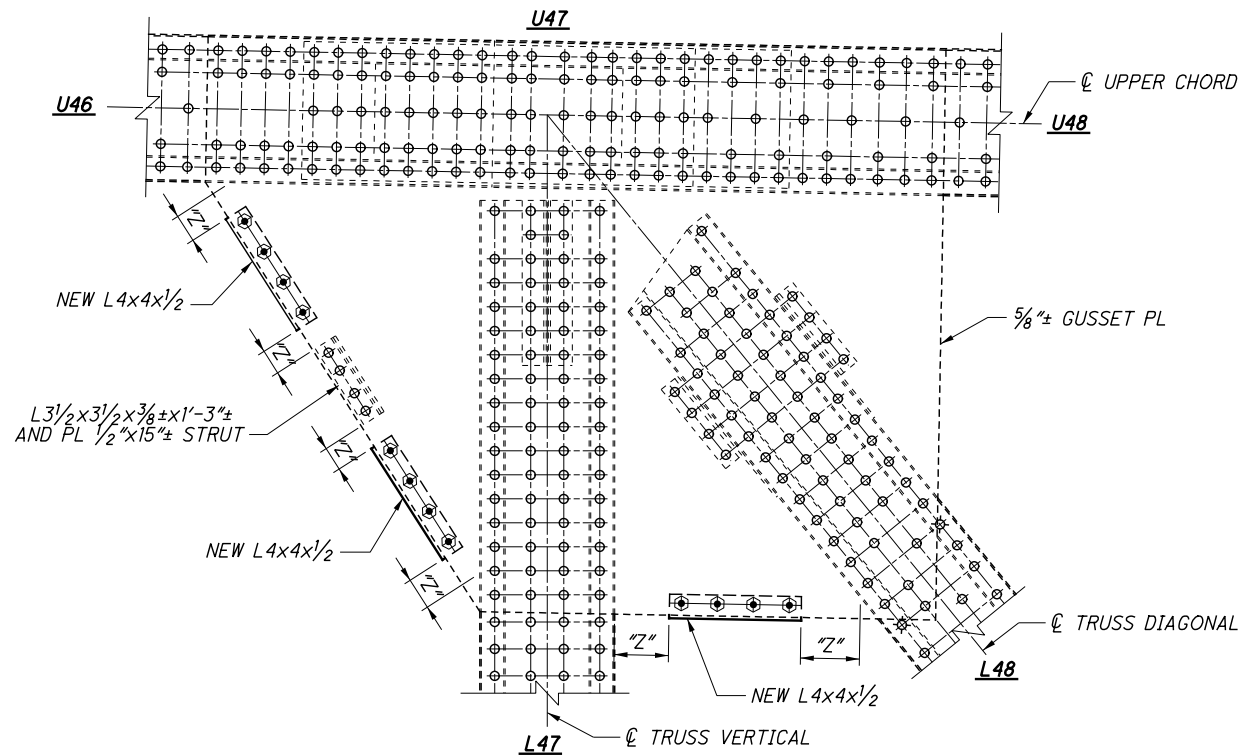
**VIEW A-A**



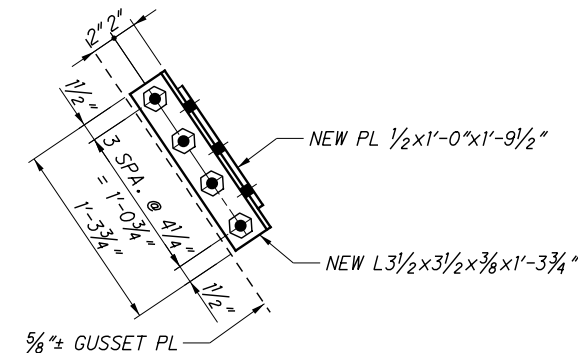
**SECTION B-B**



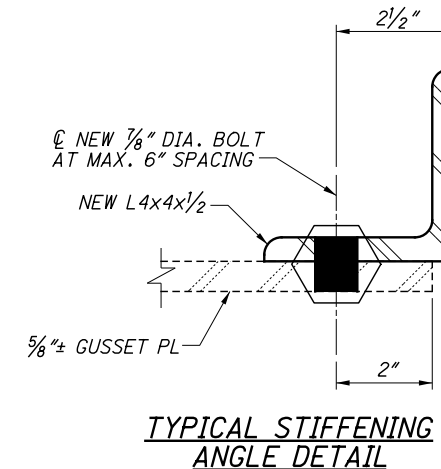
**SECTION C-C**



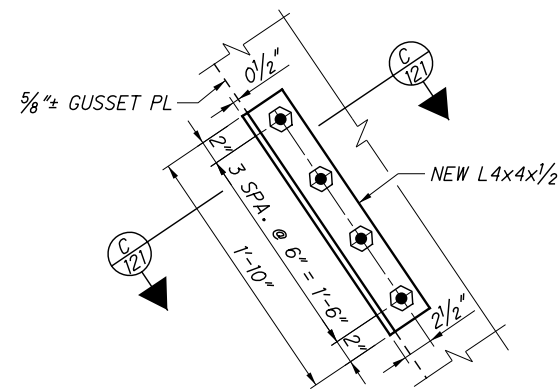
**TYPE 3 STIFFENING**  
(PANEL POINT U47 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPICAL STIFFENING STRUT**  
(LOOKING AT INSIDE FACE OF GUSSET PLATE)



**TYPICAL STIFFENING ANGLE DETAIL**



**TYPICAL L4x4x1/2 STIFFENING ANGLE**  
(LOOKING AT INSIDE FACE OF GUSSET PLATE)

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**VIEWS** SHOWN ARE LOOKING AT THE SOUTH GUSSET PLATE FACE FROM THE SOUTH.

**DIMENSION "Z"**: THE INTENT OF THE EDGE STIFFENING IS TO PROVIDE AN ANGLE ROUGHLY AT THE MIDPOINT OF THE EDGE TO BE STIFFENED, AVOIDING OVERLAP OF THE NEW ANGLE AND EXISTING TRUSS MEMBERS. DIMENSION "Z" REPRESENTS THE DISTANCE FROM THE EDGE OF THE NEW ANGLE TO THE ADJACENT EXISTING TRUSS MEMBER OR EXISTING ANGLE AS MEASURED PARALLEL TO AND IN-LINE WITH THE BACK EDGE OF THE PROPOSED ANGLE; AS DEPICTED IN THE EXAMPLES ABOVE. DIMENSION "Z" WILL VARY AT EACH EDGE ON GUSSET PLATES WITH MULTIPLE EDGE STIFFENING.

**STIFFENED EDGES** SHOWN IN THE VARIOUS TYPE EXAMPLES DEPICT ALL POTENTIAL EDGES TO BE STIFFENED. NOT ALL PANEL POINTS TO BE STIFFENED WILL INCLUDE ALL OF THE STIFFENED EDGES DEPICTED IN THE EXAMPLES. WORK THESE TYPE EXAMPLES WITH THE STIFFENING TABLES ON SHEETS 116/238 THROUGH 120/238; AND THE EDGE STIFFENING SCHEMATICS SHOWN ON SHEET 115/238.

**NEW BOLTS** IN NEW HOLES SHALL BE 7/8" DIA., ASTM A325.

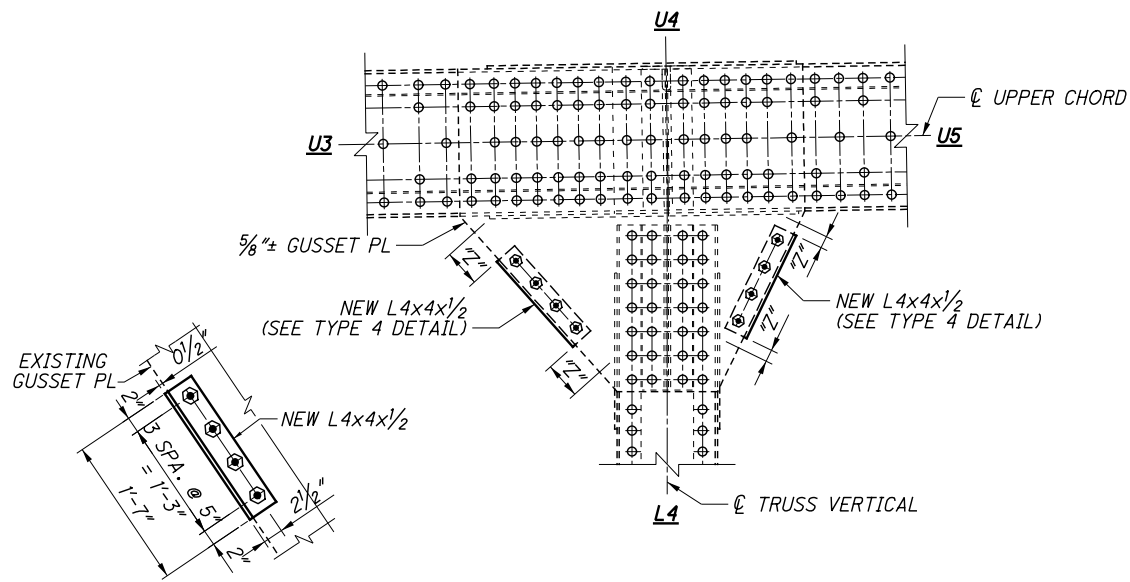
**BOLT LEGEND:** SEE SHEET 14/238.

**FOR LOCATIONS:** SEE TRUSS ELEVATION DRAWINGS 98/238 THROUGH 114/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE STIFFENER**

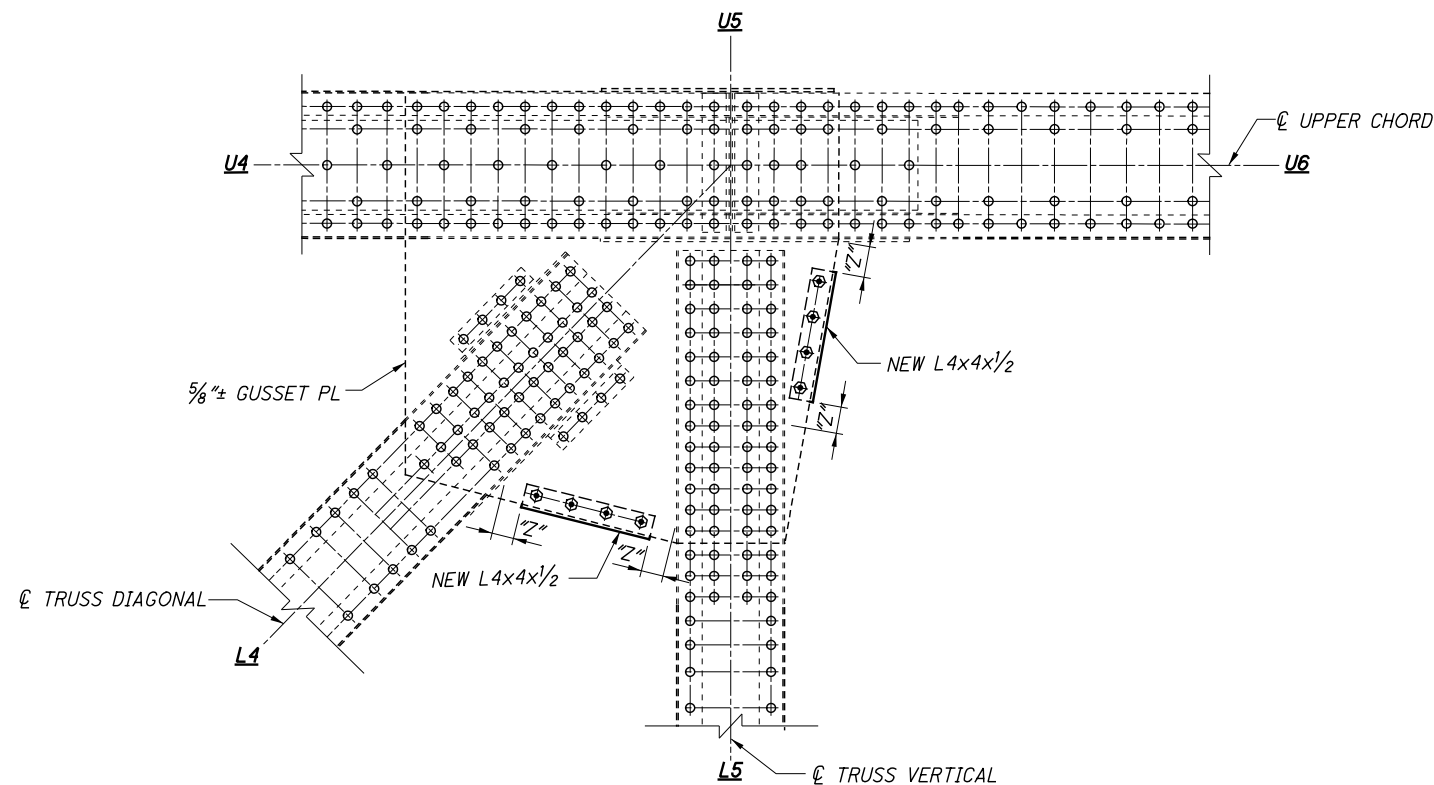
**ANGLES OR STRUTS:** SEE GENERAL NOTE SHEET 11/238 FOR WORK DESCRIPTION AND PAY ITEMS.

F:\2014\114059\_CUY-10-1613\structures\CUY010\_1613\CD015.dgn 3/2/2018 1:53:09 PM JeffSmith

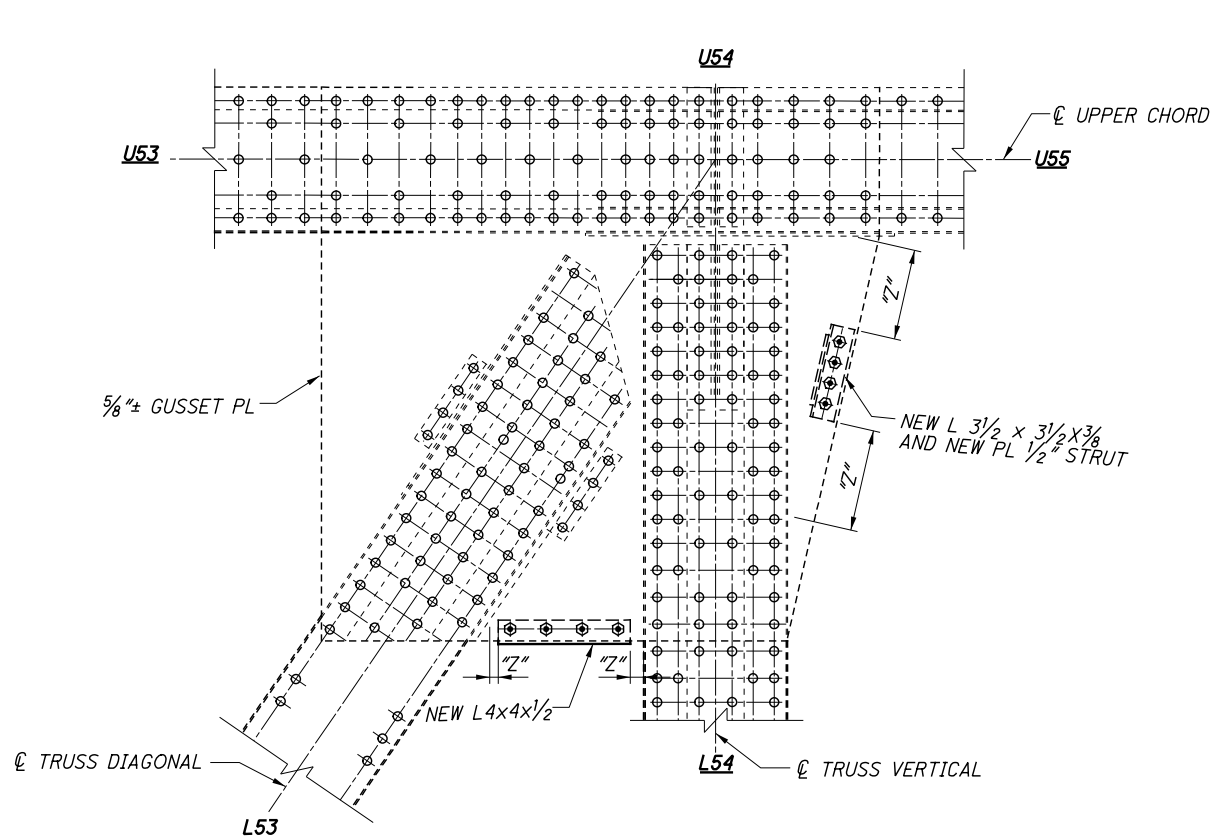


**TYPE 4 STIFFENING ANGLE**  
(LOOKING AT INSIDE FACE OF GUSSET PLATE)

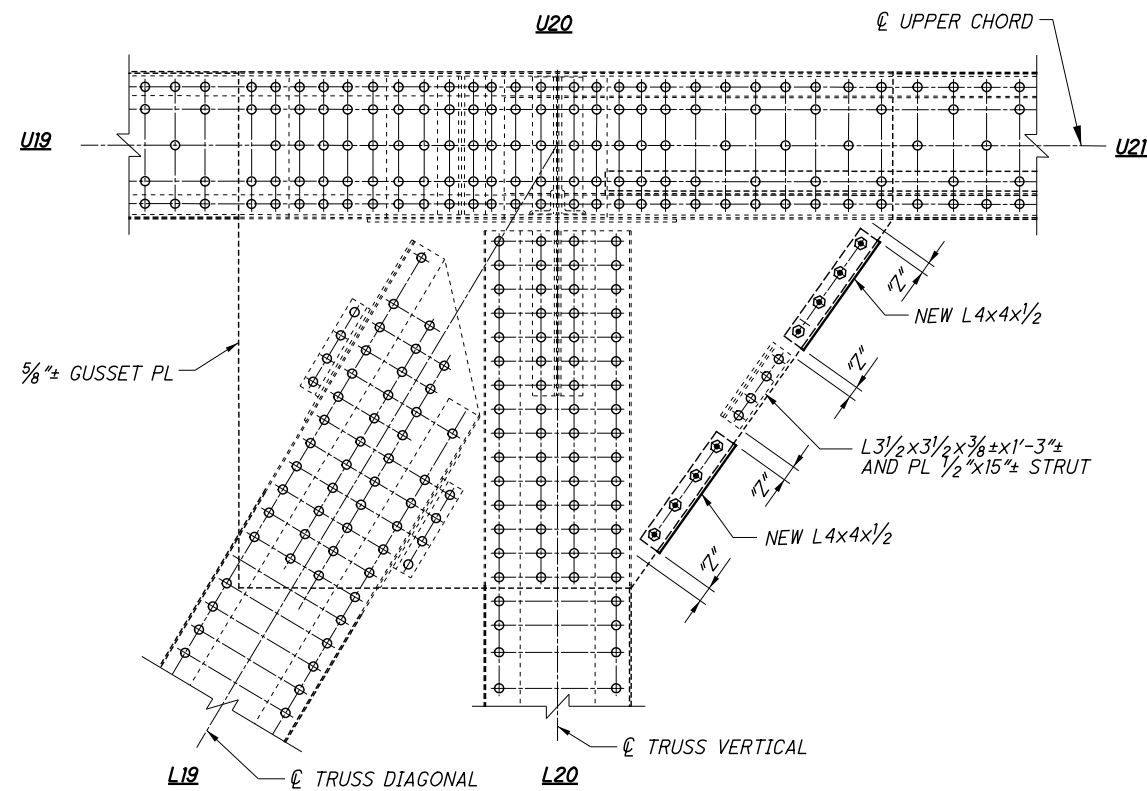
**TYPE 4 STIFFENING**  
(PANEL POINT U4 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 5 STIFFENING**  
(PANEL POINT U5 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 6 STIFFENING**  
(PANEL POINT U54 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 7 STIFFENING**  
(PANEL POINT U20 - TRUSSES A & D  
INSIDE AND OUTSIDE GUSSETS SHOWN)

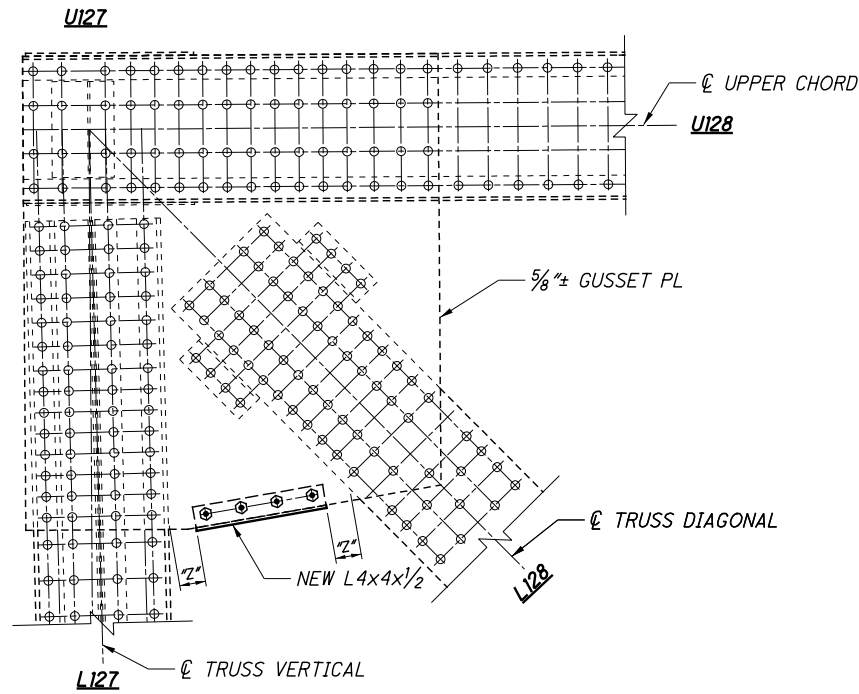
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

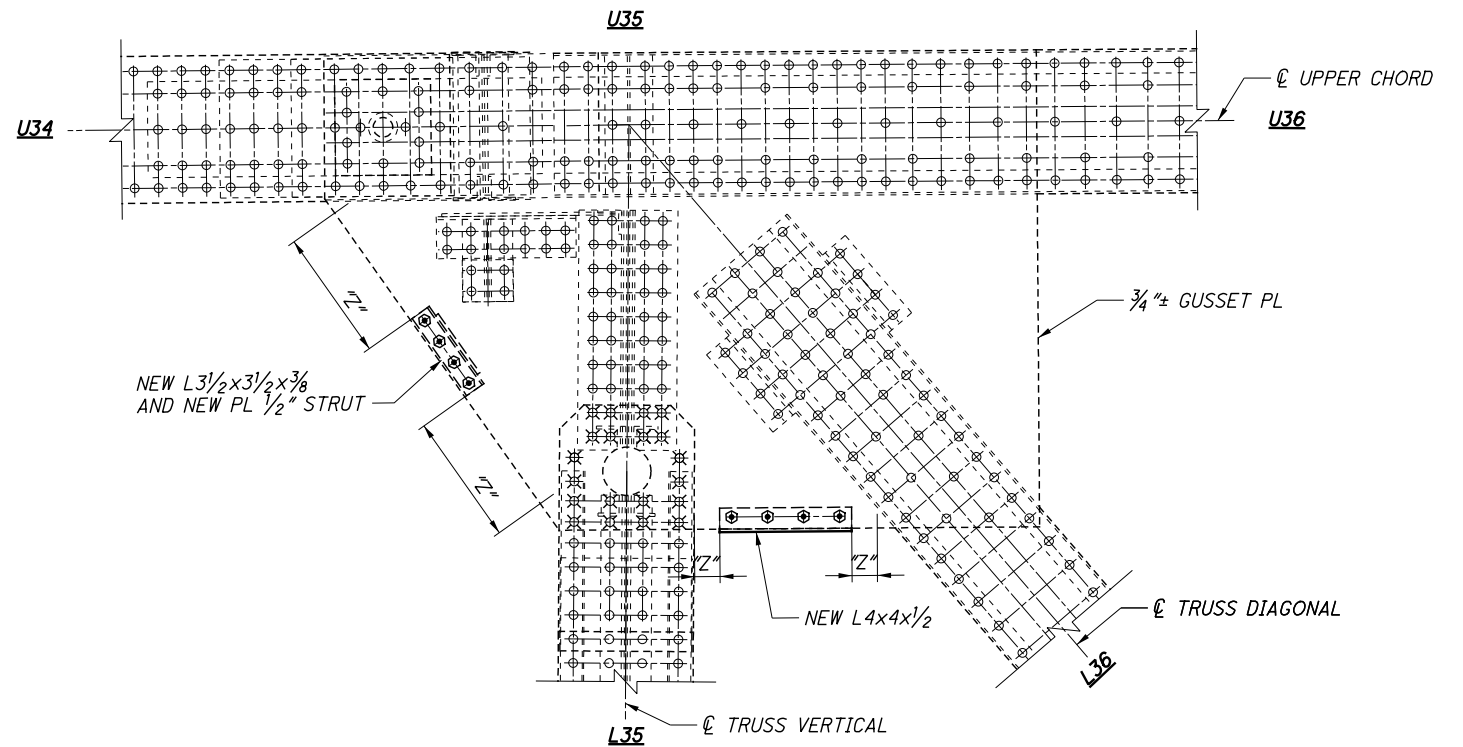
**ADDITIONAL NOTES:** SEE SHEET 121/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	FILE NUMBER 1801503
REVIEWED DLR	STRUCTURE FILE NUMBER 1801503
DRAWN JLS	REVISED
DESIGNED TGW	CHECKED KAK
<b>GUSSET PLATE STIFFENING - UPPER CHORD</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
122/238	182 308

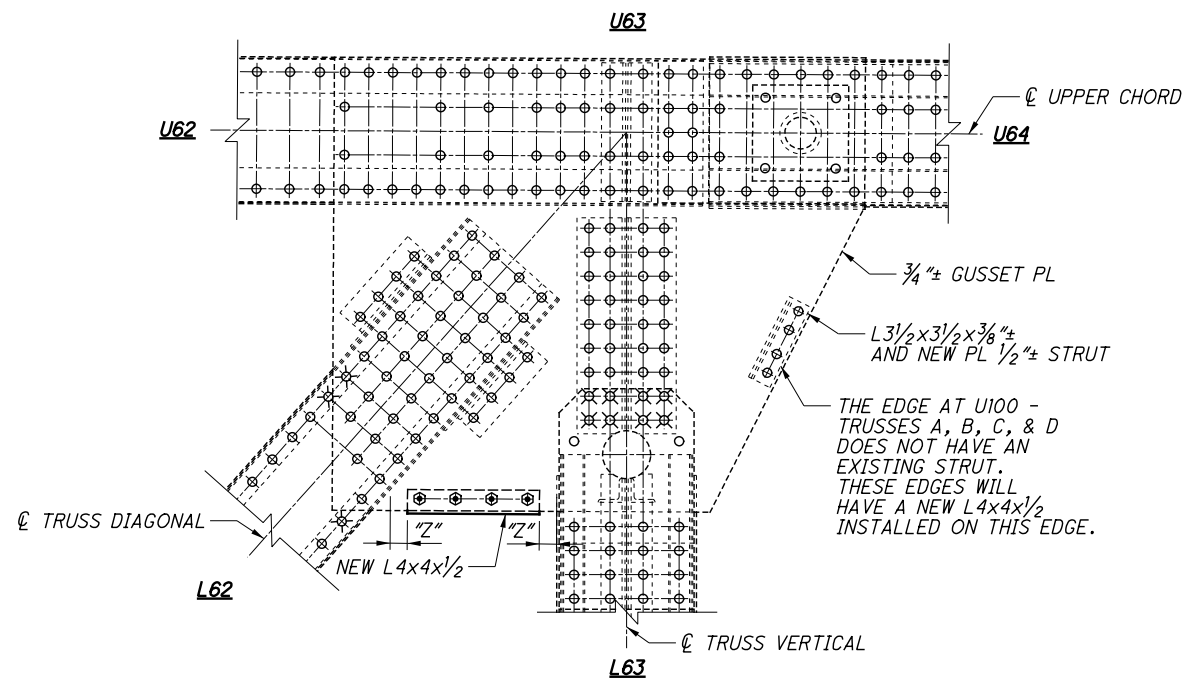
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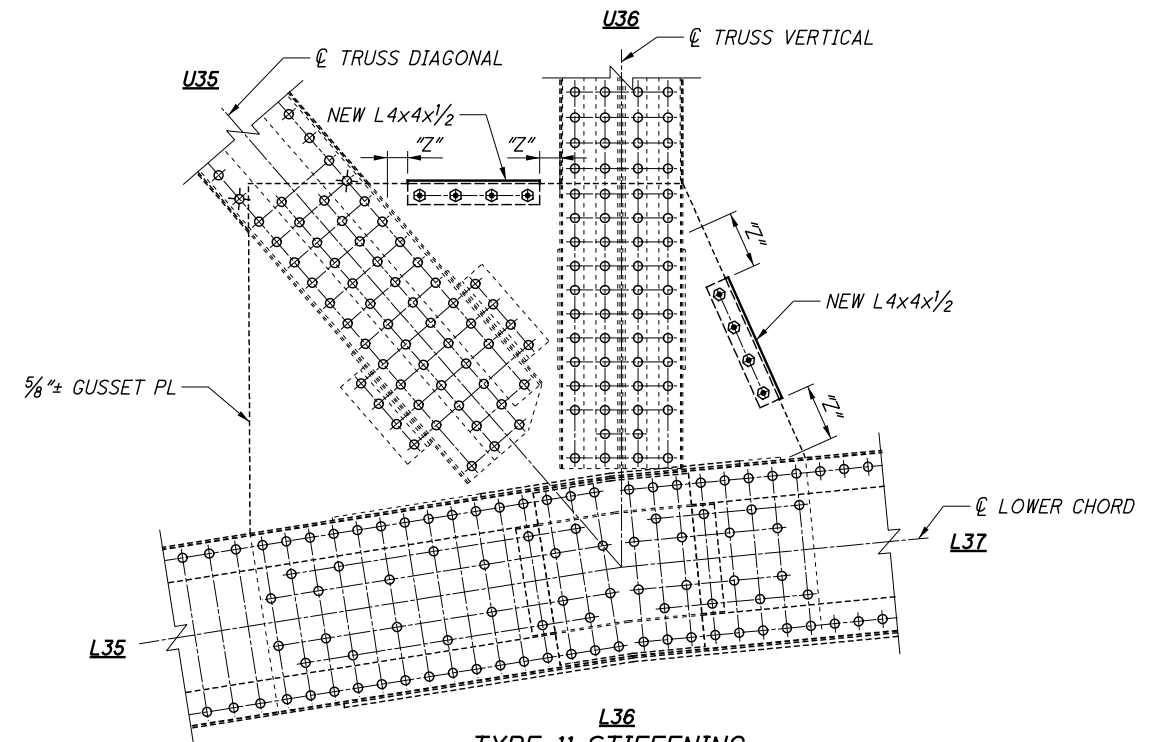
**TYPE 8 STIFFENING**  
(PANEL POINT U127 - TRUSSES A & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 9 STIFFENING**  
(PANEL POINT U35 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 10 STIFFENING**  
(PANEL POINT U63 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 11 STIFFENING**  
(PANEL POINT L36 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)

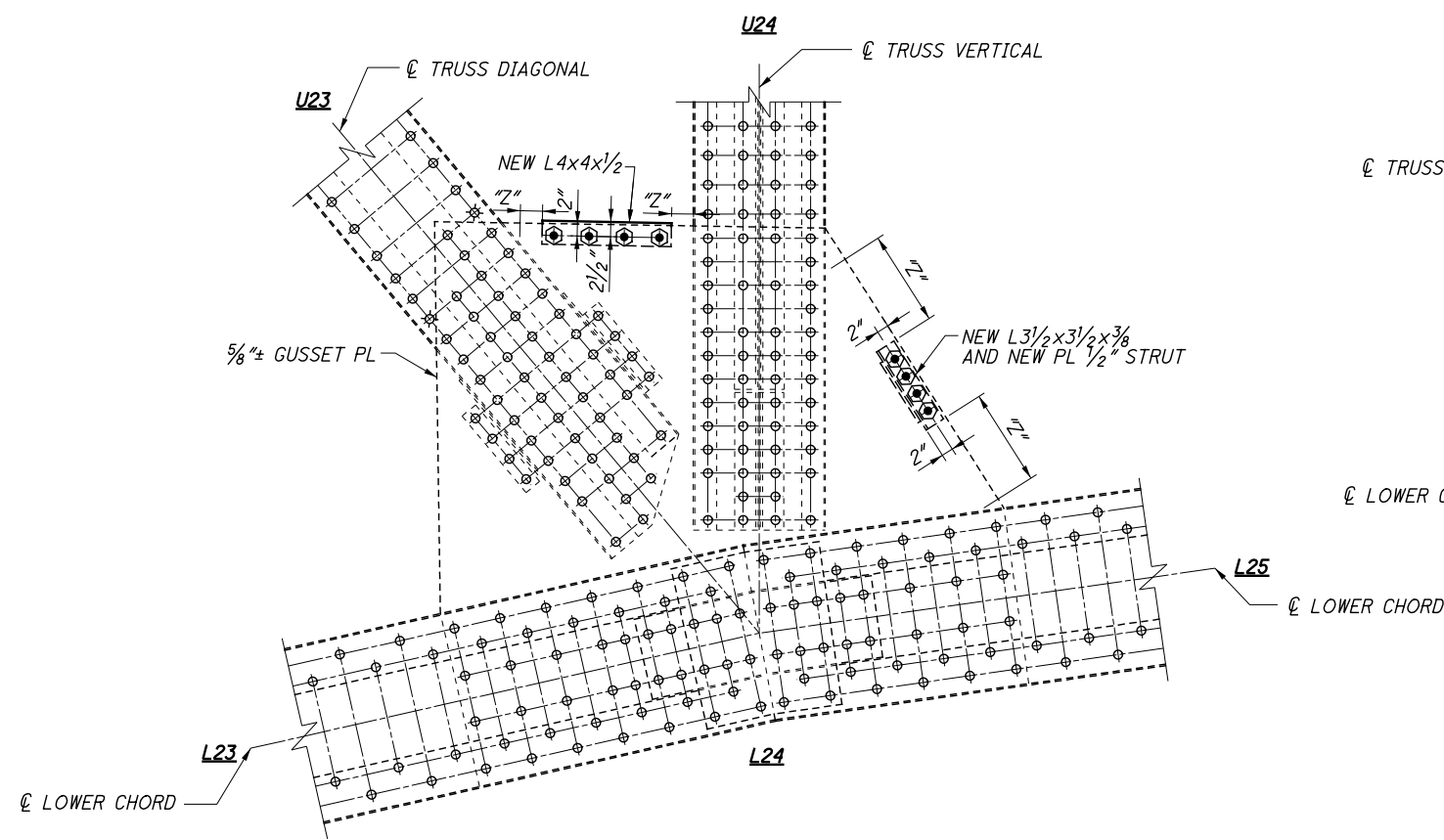
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

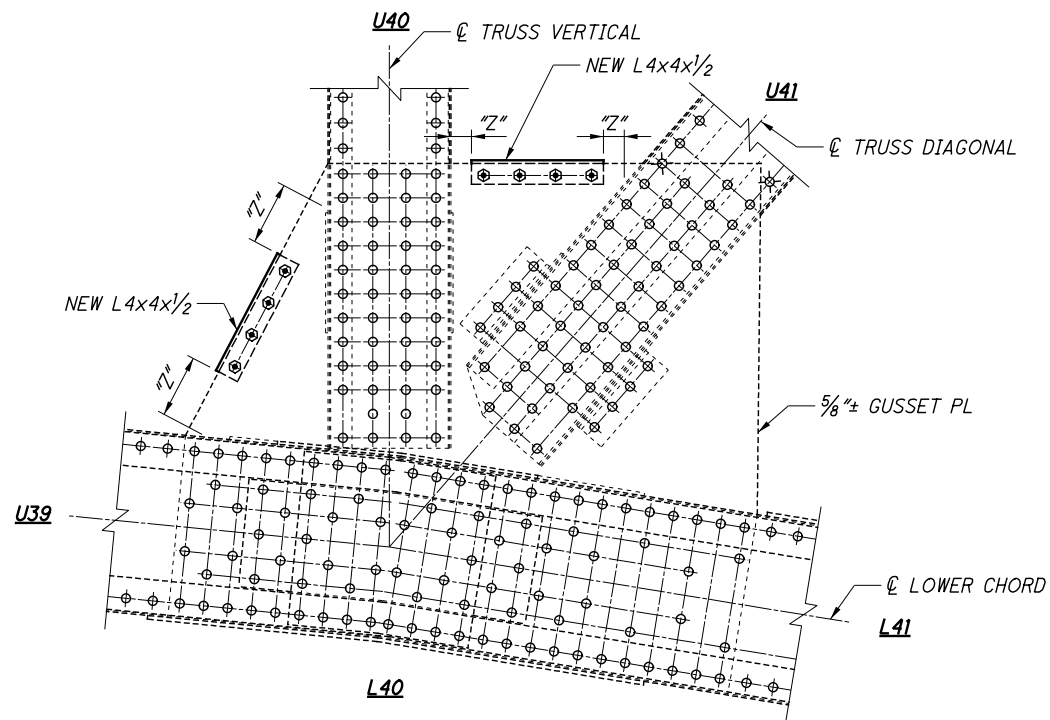
**ADDITIONAL NOTES:** SEE SHEET 121/238.



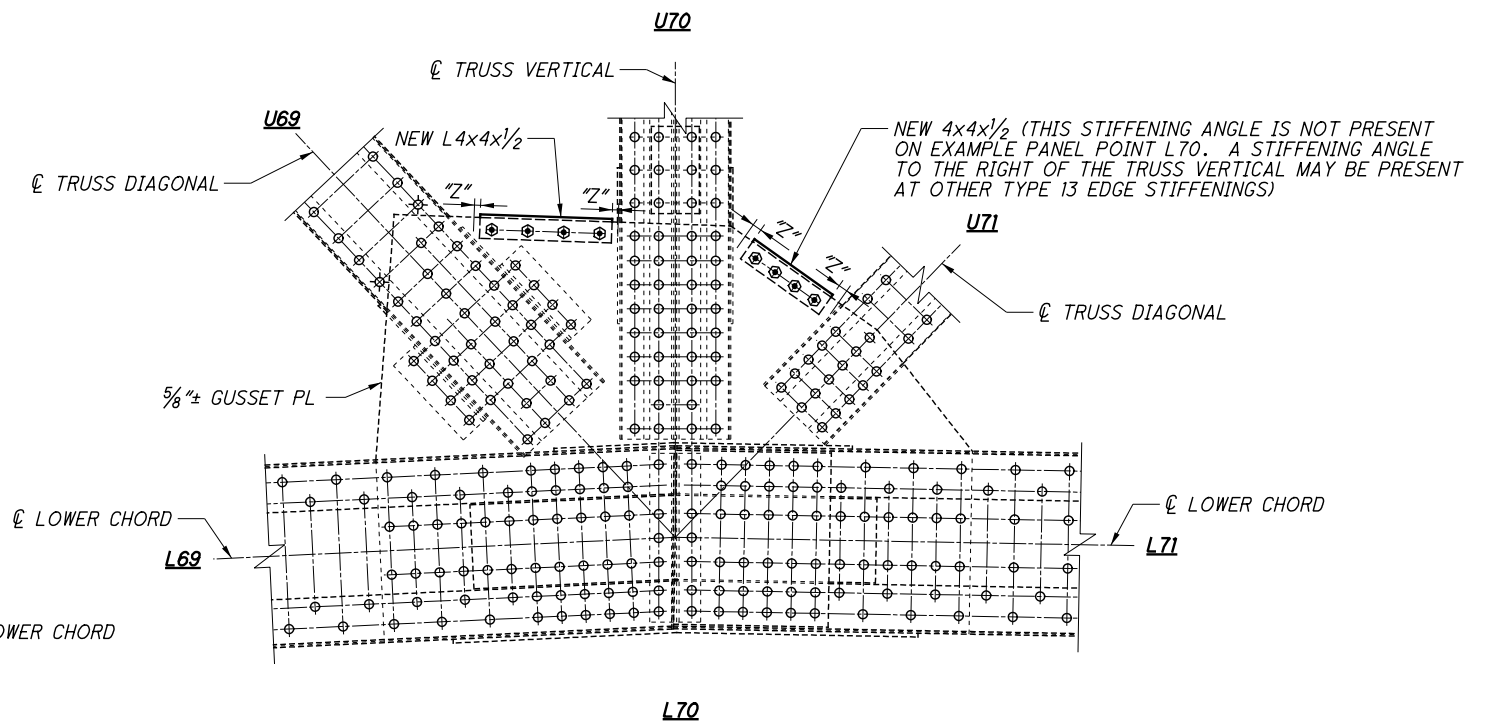
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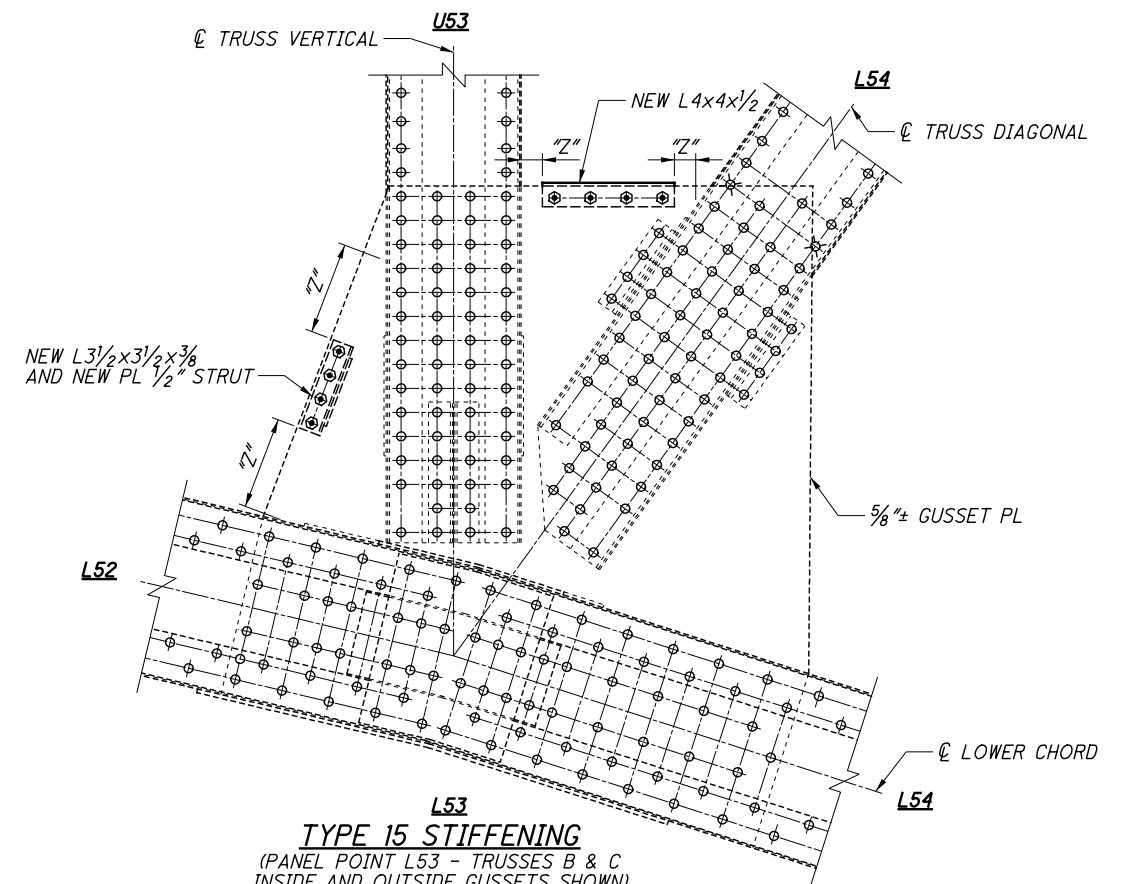
**TYPE 12 STIFFENING**  
(PANEL POINT L24 - TRUSS B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 14 STIFFENING**  
(PANEL POINT L40 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 13 STIFFENING**  
(PANEL POINT L70 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



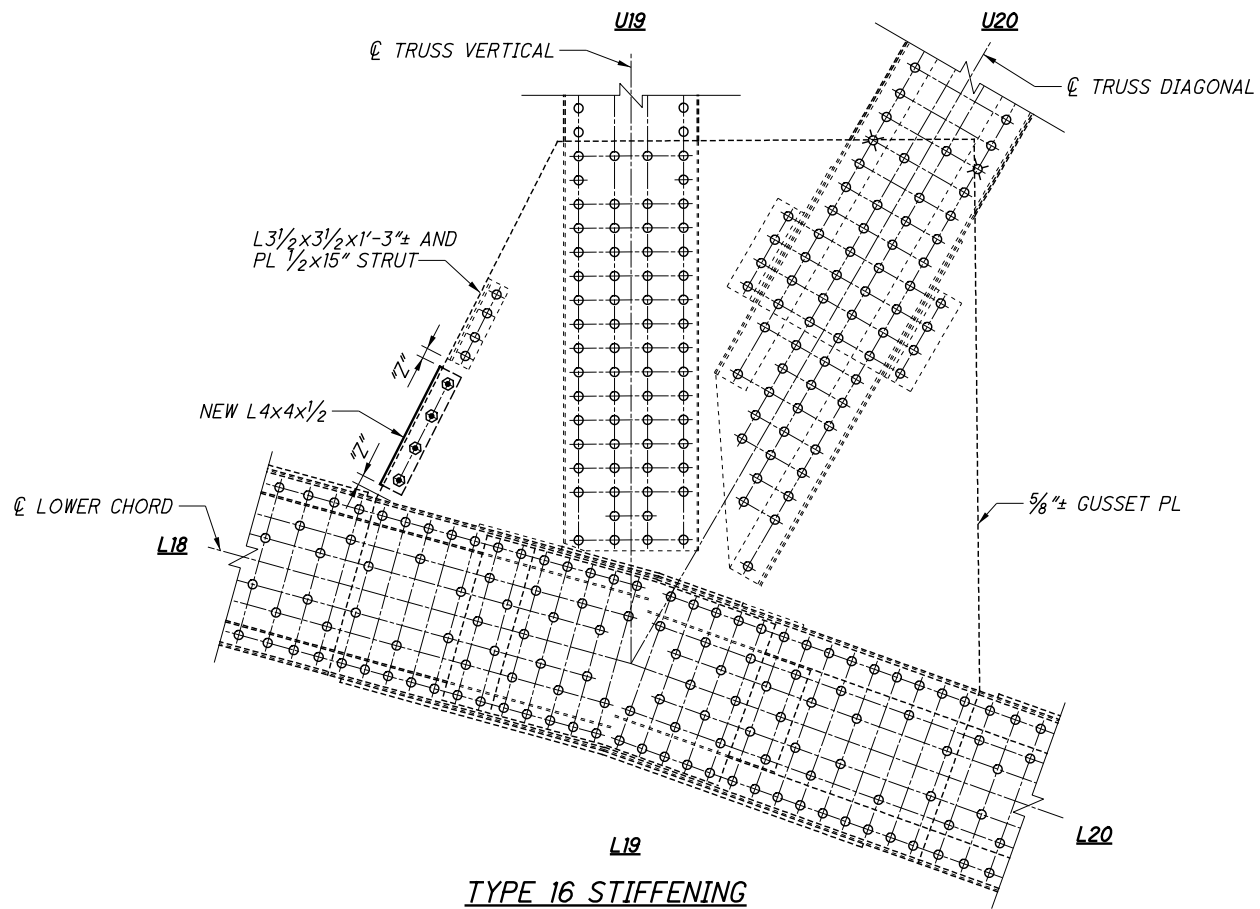
**TYPE 15 STIFFENING**  
(PANEL POINT L53 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)

**NOTES**

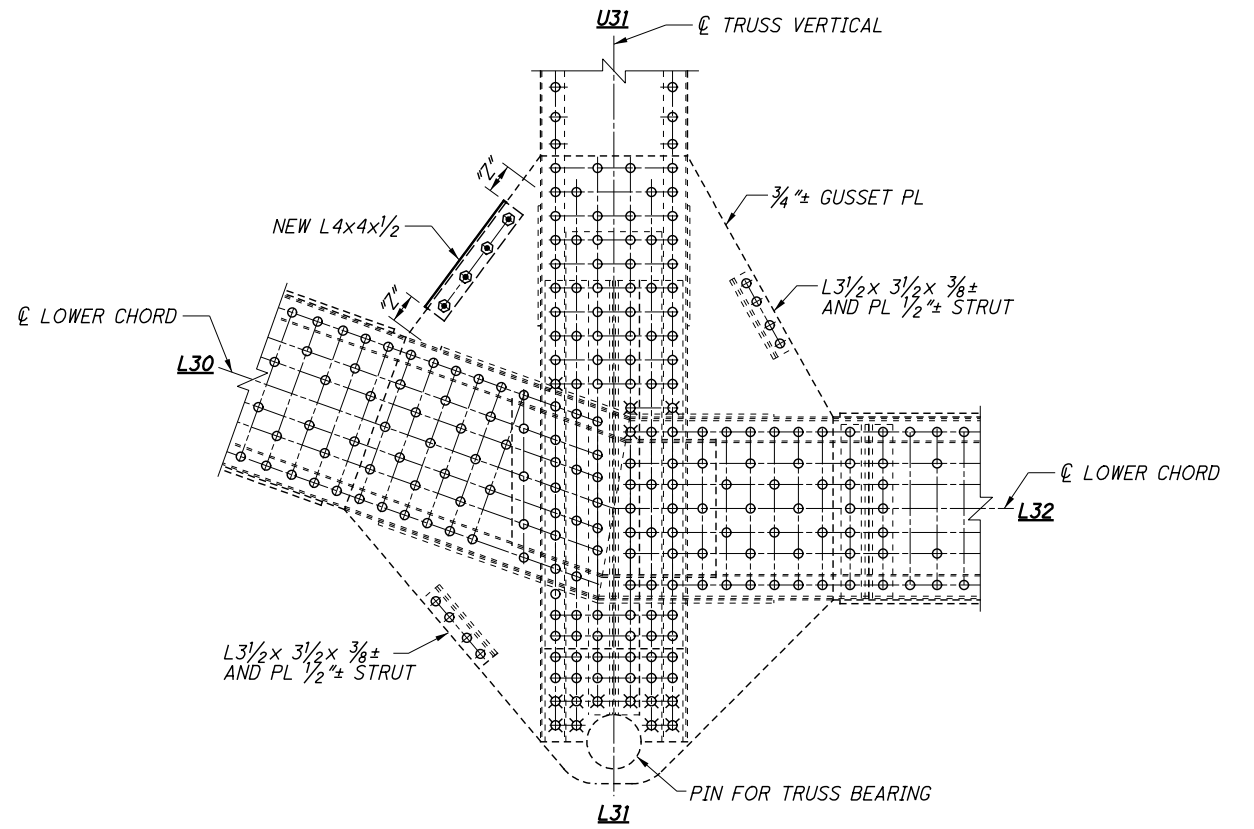
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**ADDITIONAL NOTES:** SEE SHEET 121/238 .

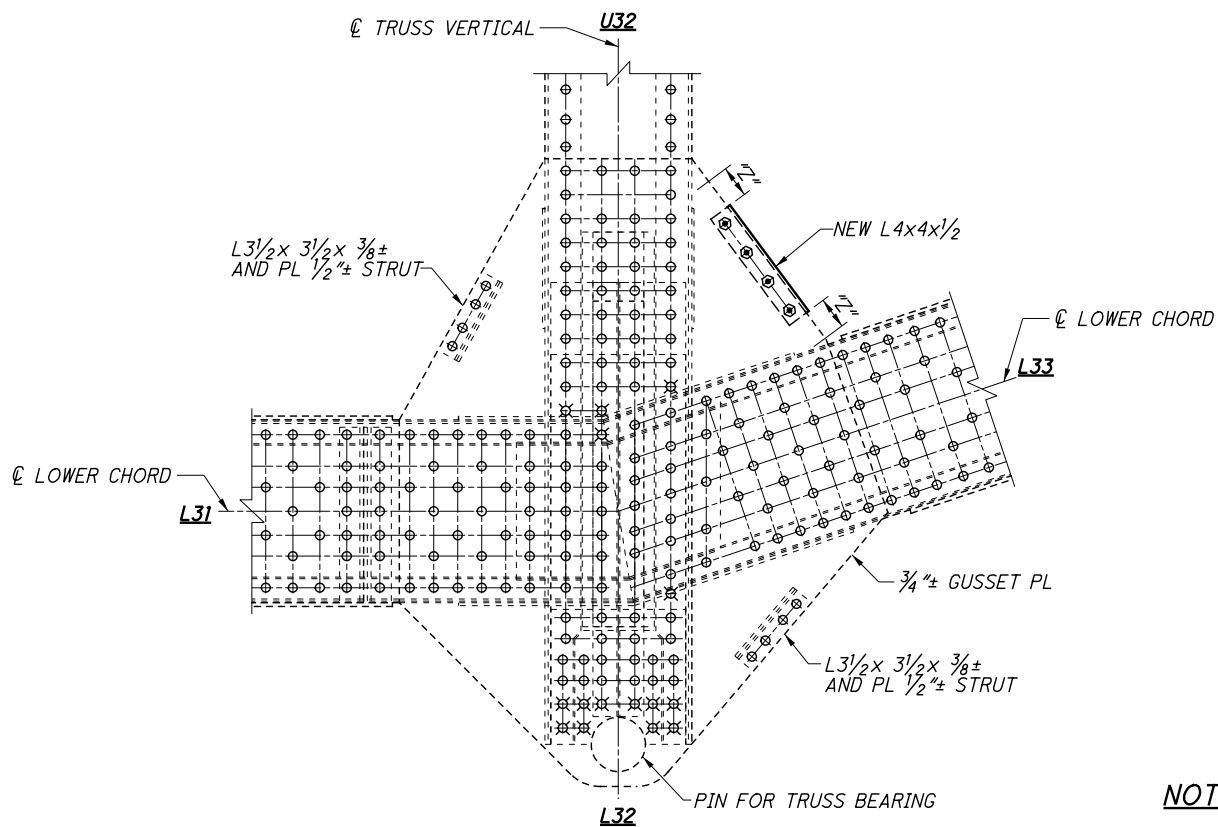
<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>DATE 1/30/18</p>	<p>REVIEWED DLR</p>
<p>STRUCTURE FILE NUMBER 1801503</p>	<p>DESIGNED TGW</p>
<p>DRAWN JLS</p>	<p>CHECKED KAK</p>
<p>GUSSET PLATE STIFFENING - LOWER CHORD</p>	
<p>BRIDGE NO. CUY-10-1613</p>	
<p>S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p>CUY-10-16.13</p>	<p>PID No. 96986</p>
<p>124/238</p>	
<p>184</p>	<p>308</p>



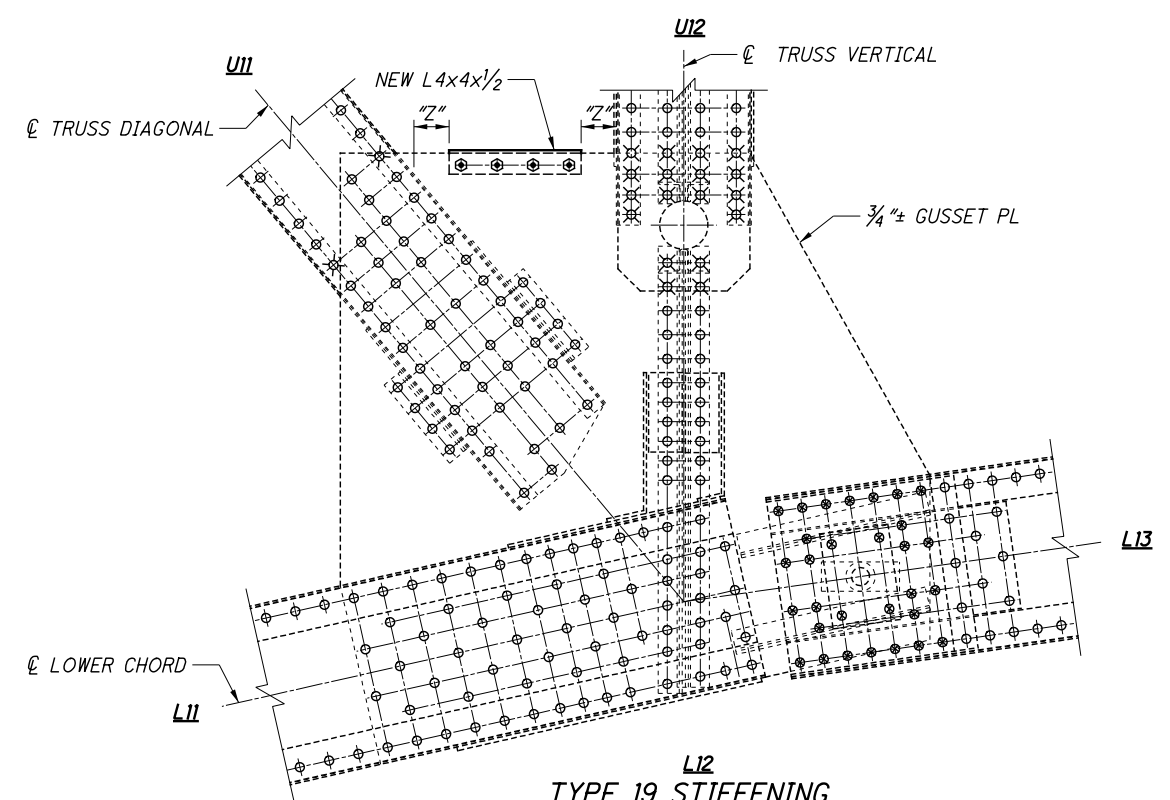
**TYPE 16 STIFFENING**  
(PANEL POINT L19 - TRUSSES B & C  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 17 STIFFENING**  
(PANEL POINT L31 - TRUSSES A & D  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 18 STIFFENING**  
(PANEL POINT L32 - TRUSSES A & D  
INSIDE AND OUTSIDE GUSSETS SHOWN)



**TYPE 19 STIFFENING**  
(PANEL POINT L12 - TRUSSES A & D  
INSIDE AND OUTSIDE GUSSETS SHOWN)

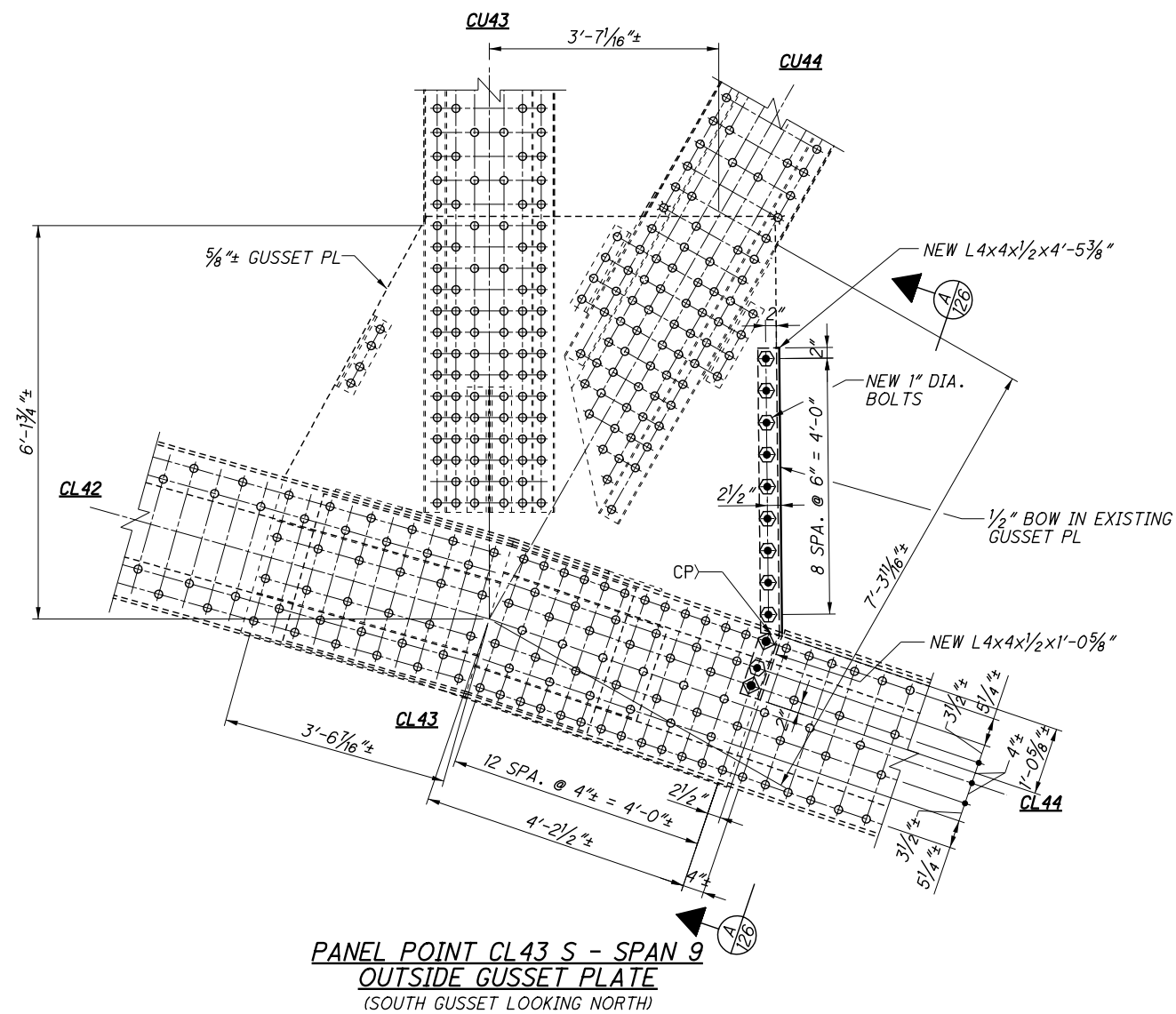
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

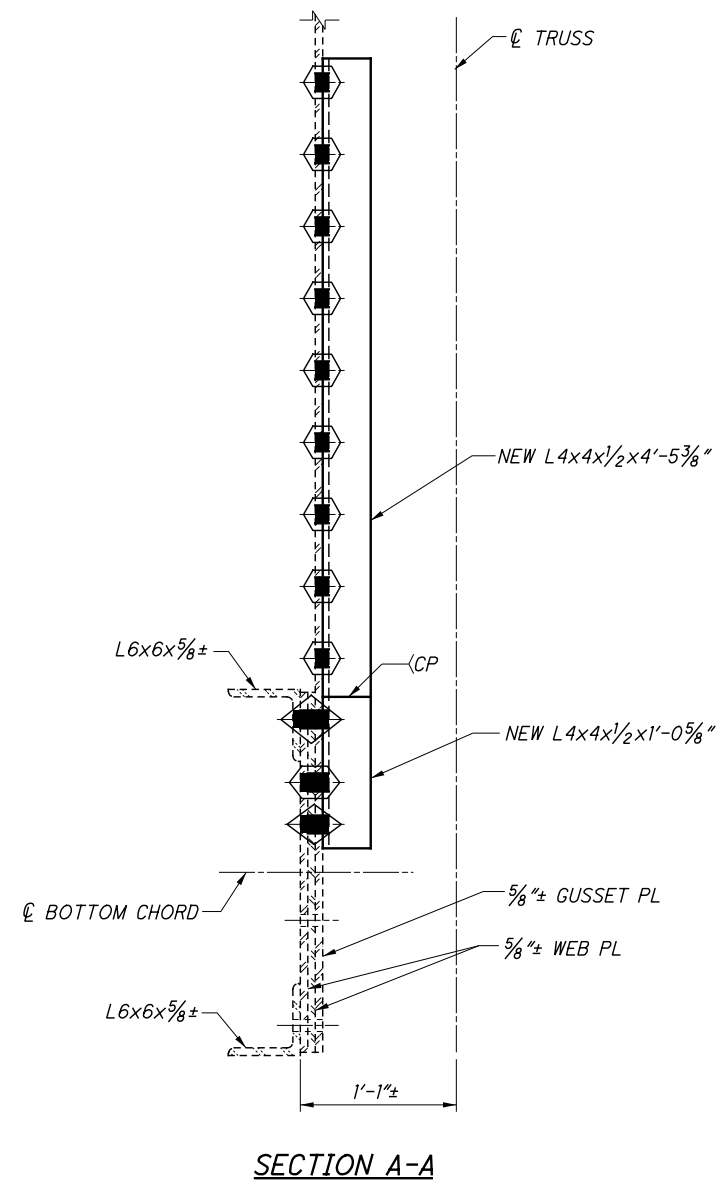
**ADDITIONAL NOTES:** SEE SHEET 121/238.

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**PANEL POINT CL43 S - SPAN 9  
OUTSIDE GUSSET PLATE**  
(SOUTH GUSSET LOOKING NORTH)



**SECTION A-A**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**CONNECTION BOLTS** SHALL BE 1" DIAMETER ASTM A325, TYPE 1.

**EXISTING RIVETS** ARE 1"± DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

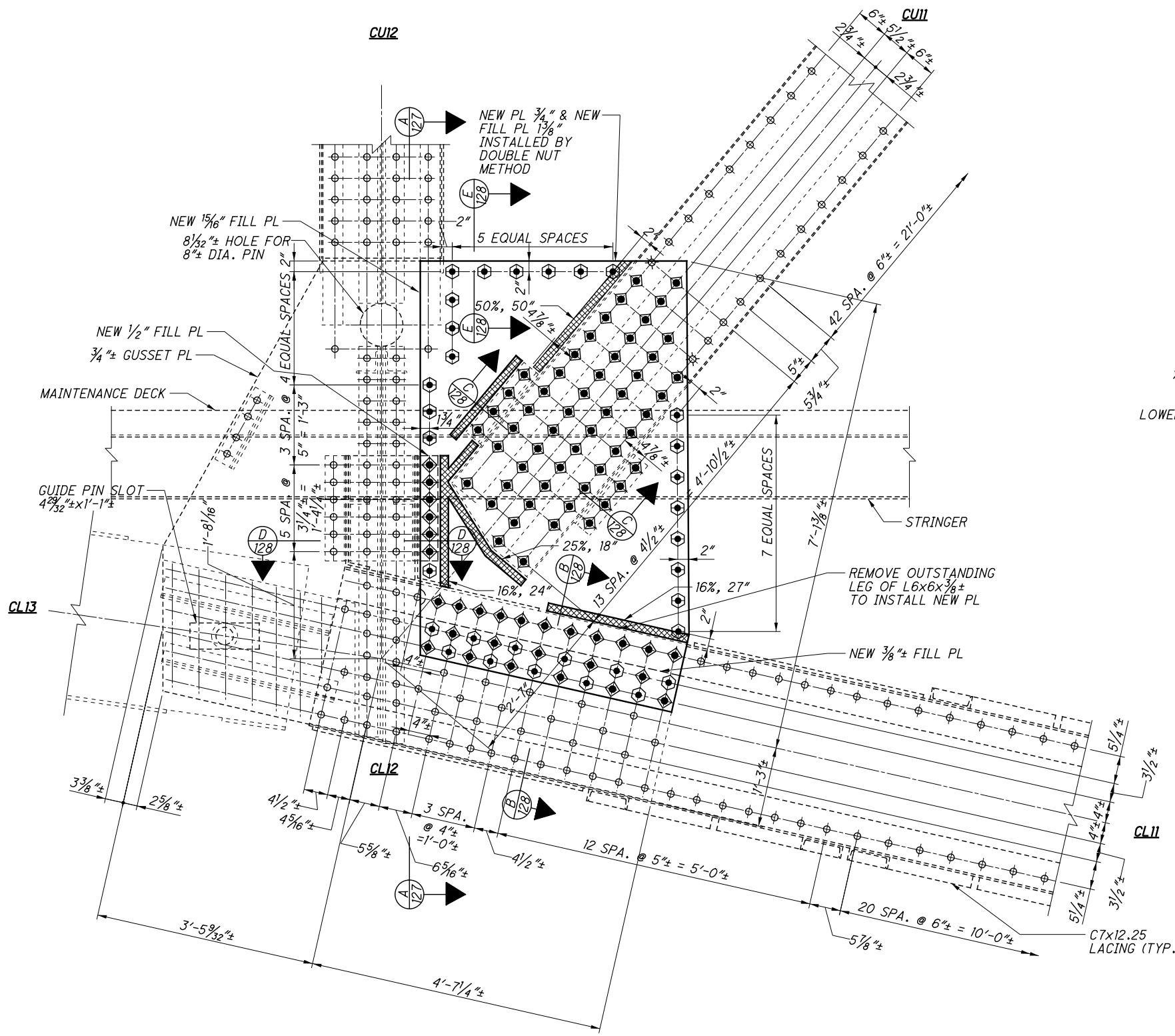
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 107/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.:** BOWED TRUSS GUSSET PLATE REPAIR:  
SEE GENERAL NOTE SHEET 11/238.

**FIELD PAINTING:** SEE GENERAL NOTE SHEET 11/238.

<b>CUY-10-16.13</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		<b>BOWED GUSSET PLATE STIFFENING - PANEL POINT CL43</b>		<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DESIGNED DAP	CHECKED KAK	DRAWN JLS	REVISED	REVIEWED DLR	DATE 1/30/18
				STRUCTURE FILE NUMBER 1801503	
				PID No. 96986	
				126/238	
				186 308	

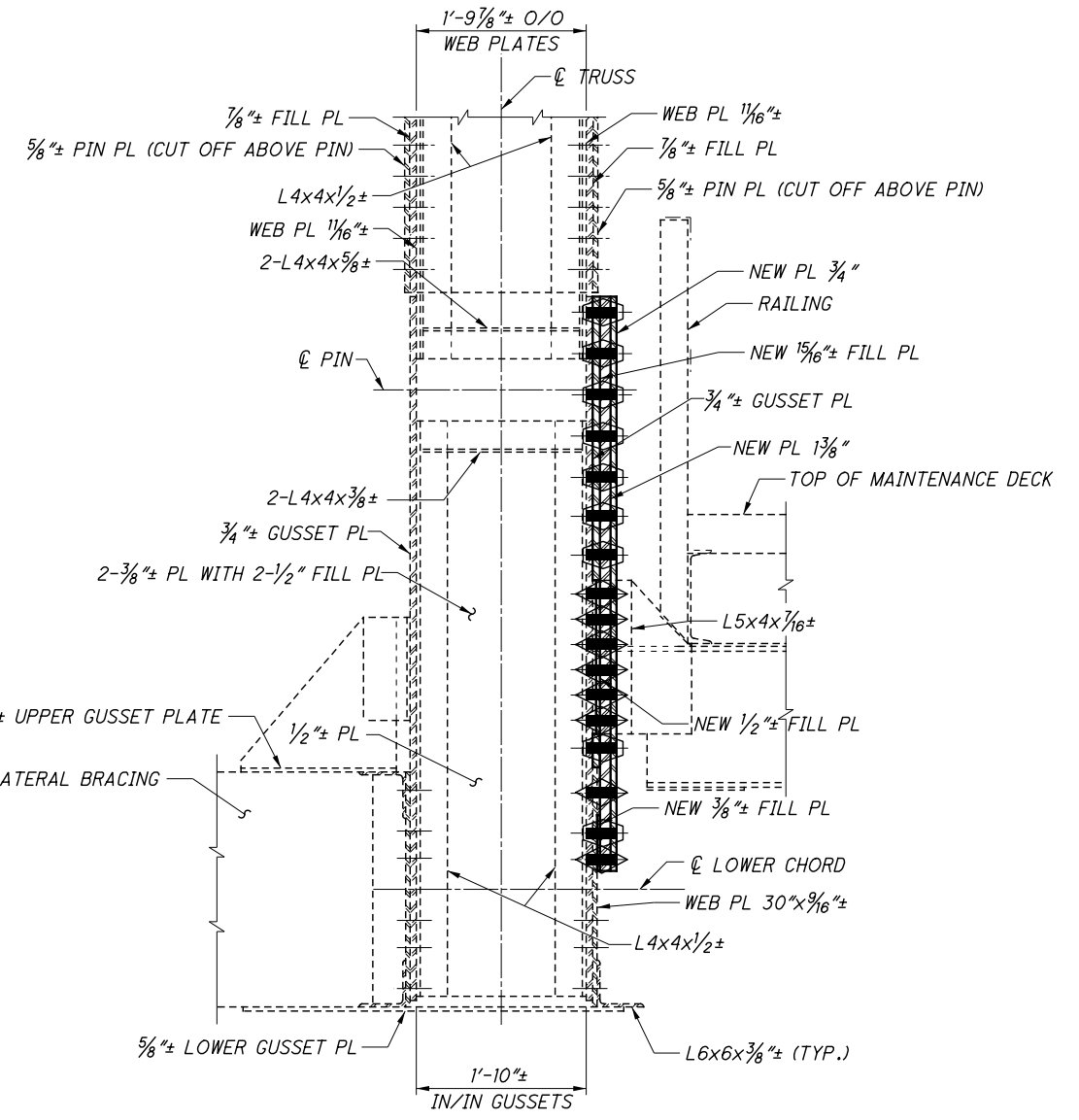
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**PANEL POINT CL12N - SPAN 7  
INSIDE GUSSET PLATE  
(VIEW LOOKING SOUTH)**

**LEGEND**

 INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

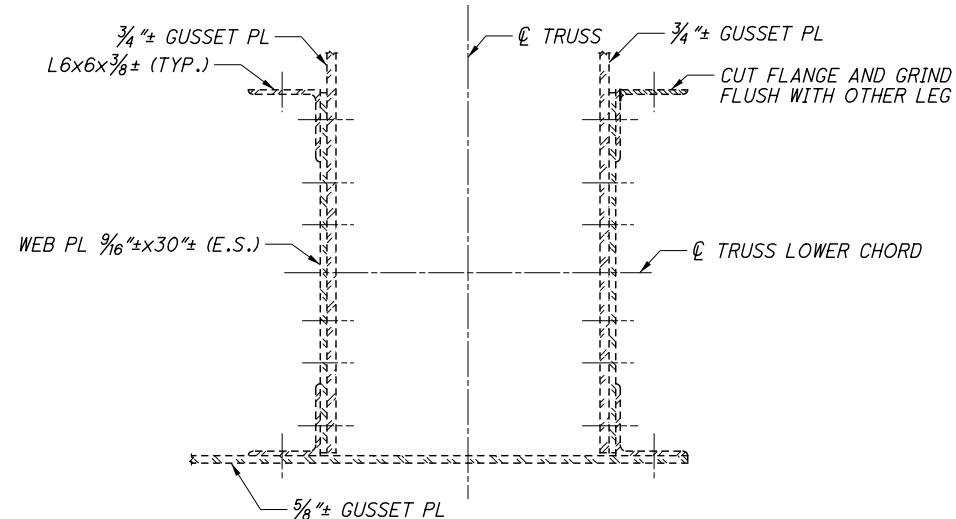


**SECTION A-A**

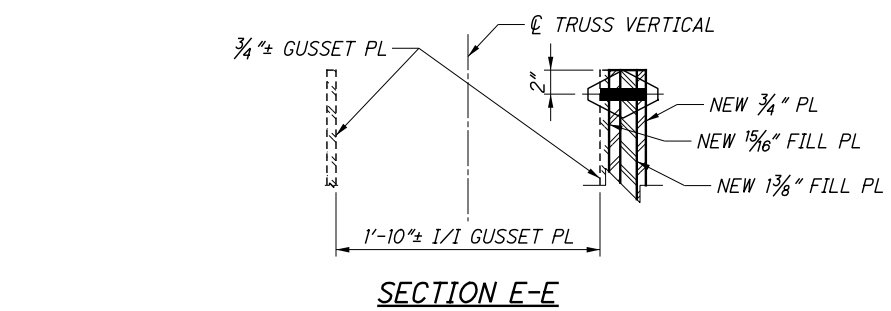
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER, ASTM A490, TYPE 1 BOLTS.
- NOTATION:** N - NORTH GUSSET  
S - SOUTH GUSSET  
E.S. - EACH SIDE
- BOLT LEGEND:** SEE SHEET 14/238.
- TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.
- DOUBLE NUT CONNECTION DETAIL:** SEE SHEET 128/238.
- MEMBER CALLOUTS** ARE FOR ONE FACE OF THE TRUSS MEMBER ONLY.
- PANEL POINT CL12 LOWER CHORD AND PIN REPLACEMENT DETAILS:** SEE DETAILS ON SHEETS 160/238 AND 161/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 106/238.

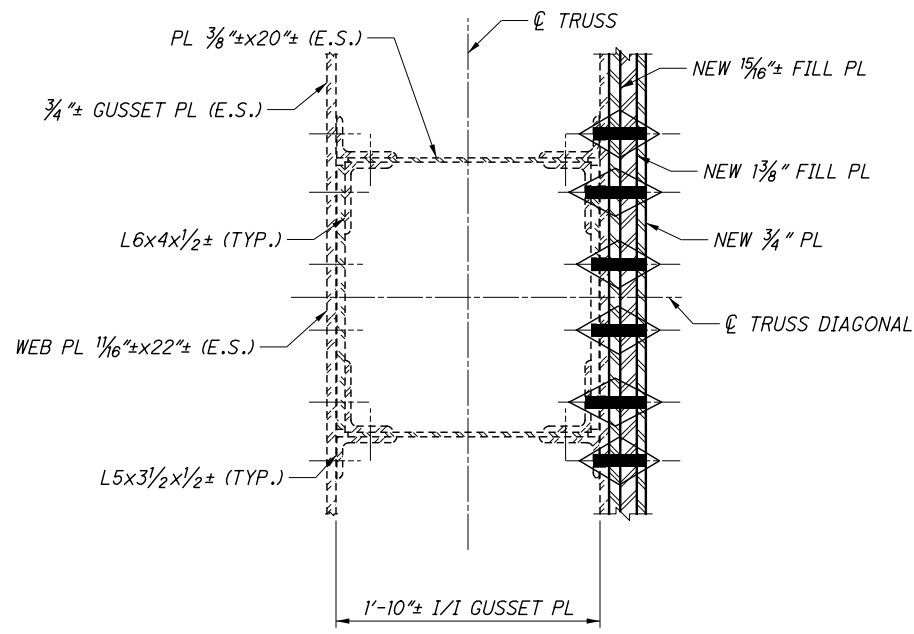
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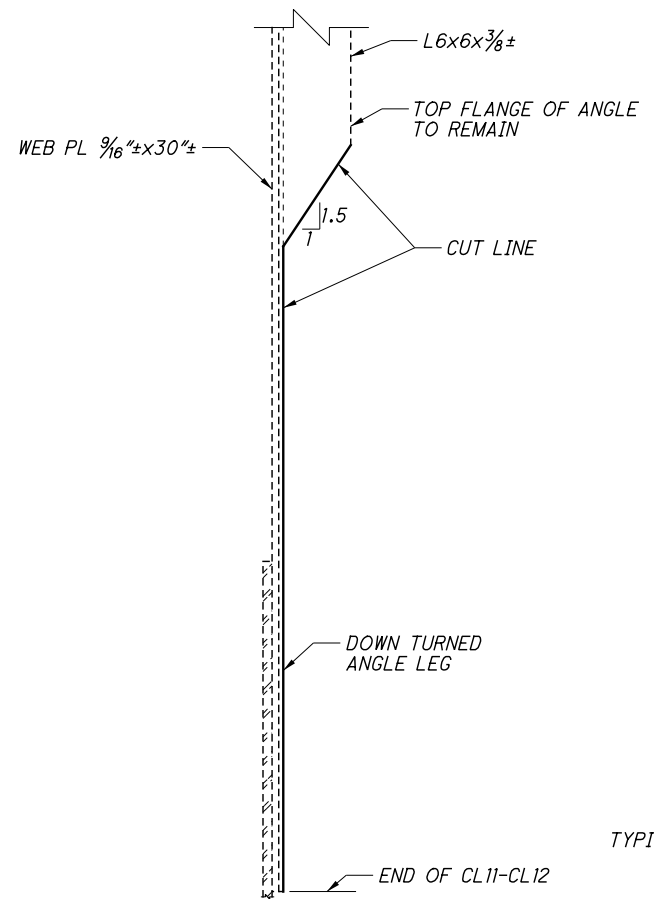
SECTION B-B (REMOVAL)



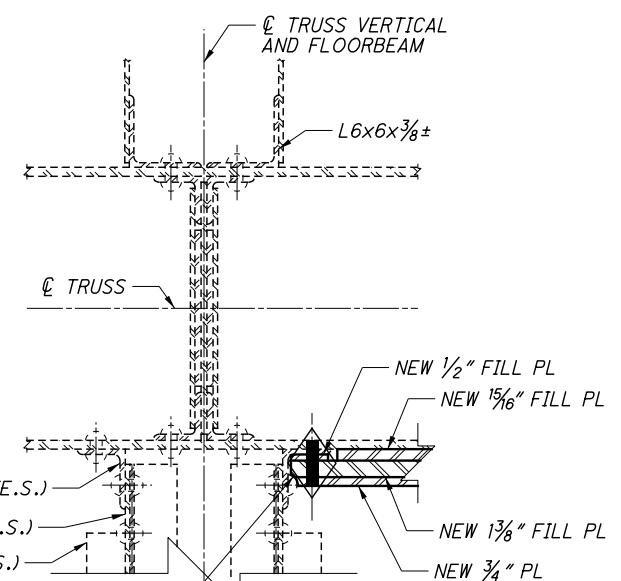
SECTION E-E



SECTION C-C

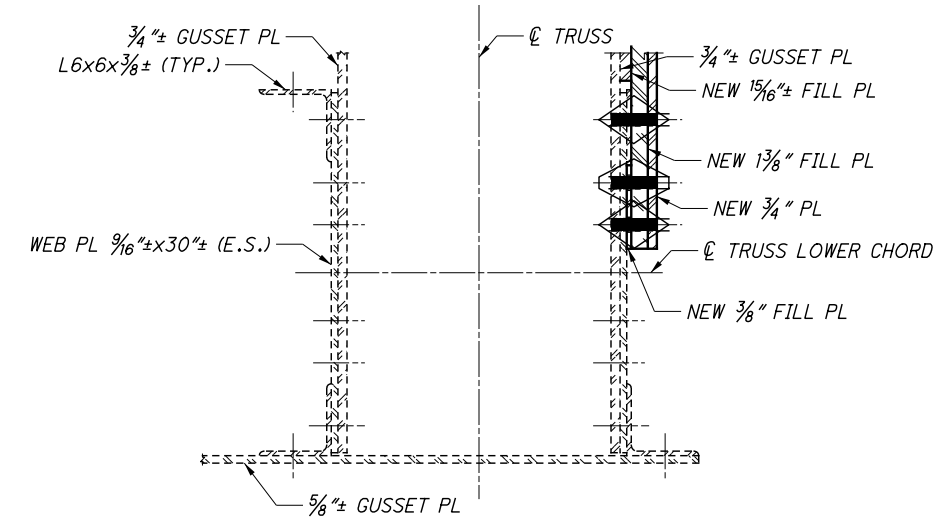


EXISTING FLANGE REMOVAL DETAIL (TOP VIEW)

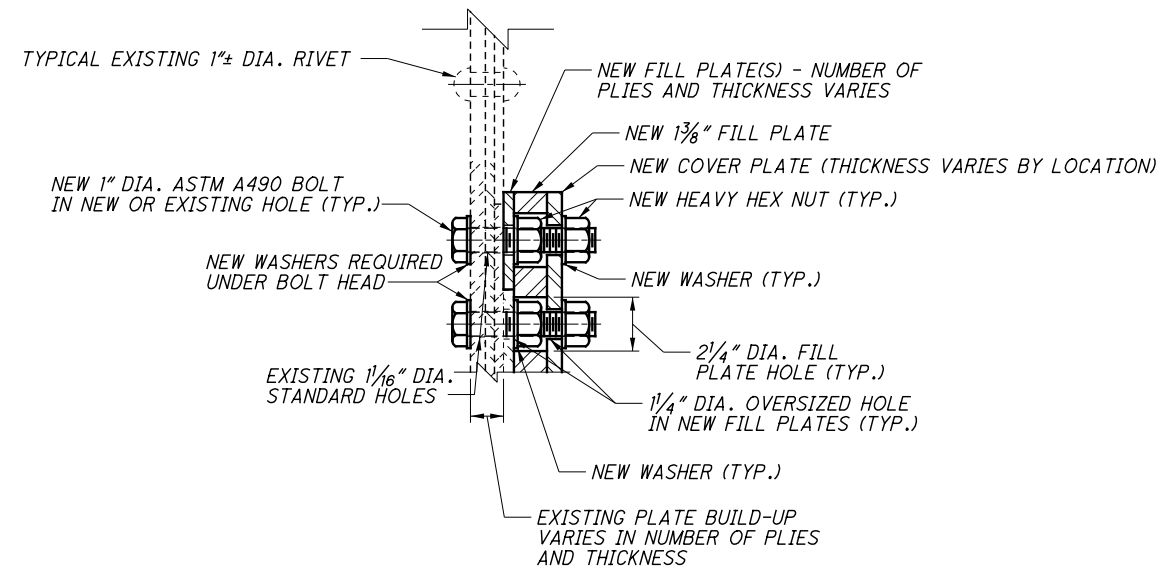


SECTION D-D

TRIM NEW PLATES AS NEEDED TO FIT WITH EXISTING FLOORBEAM CONNECTION BOLTS



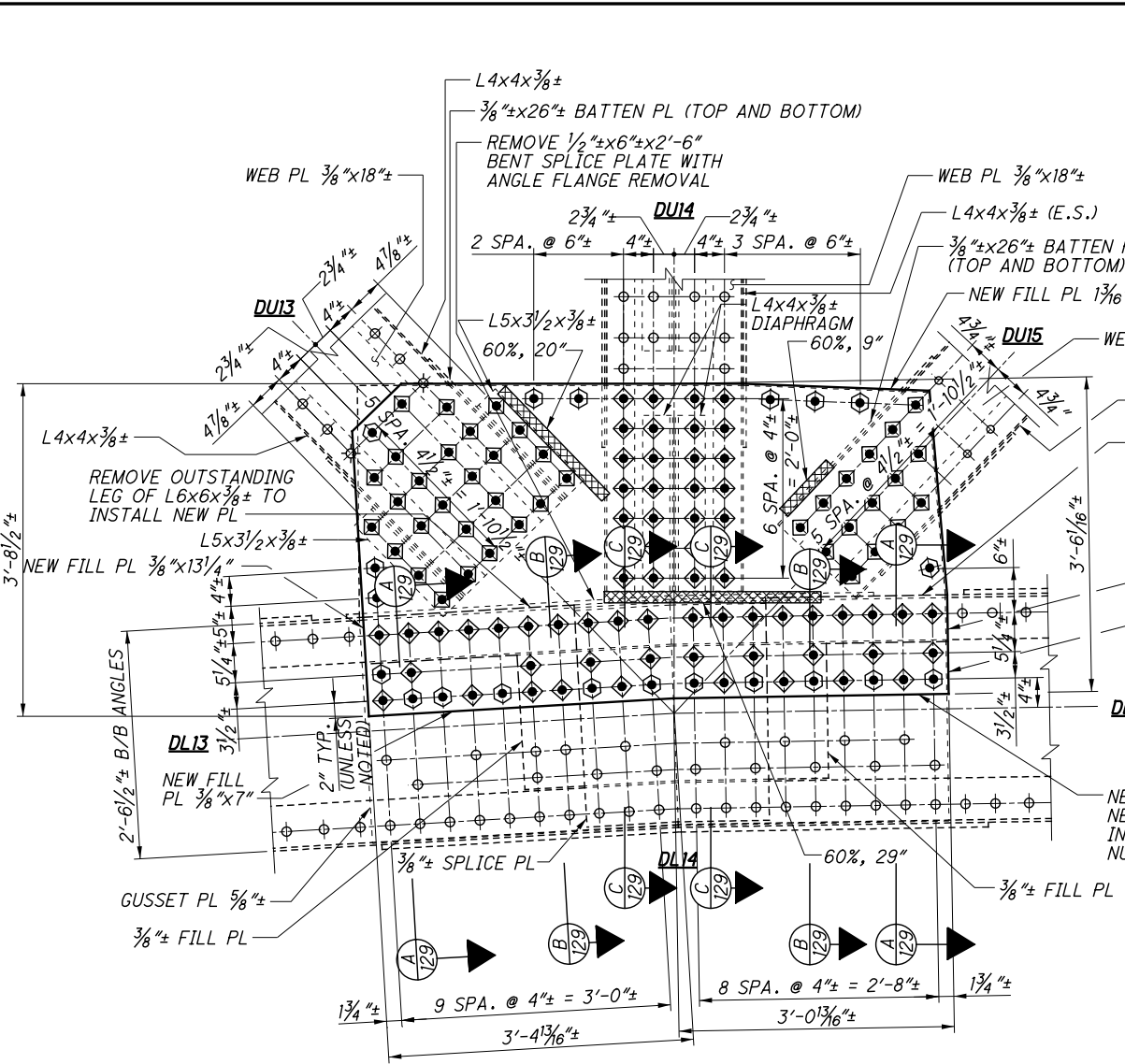
SECTION B-B (PROPOSED)



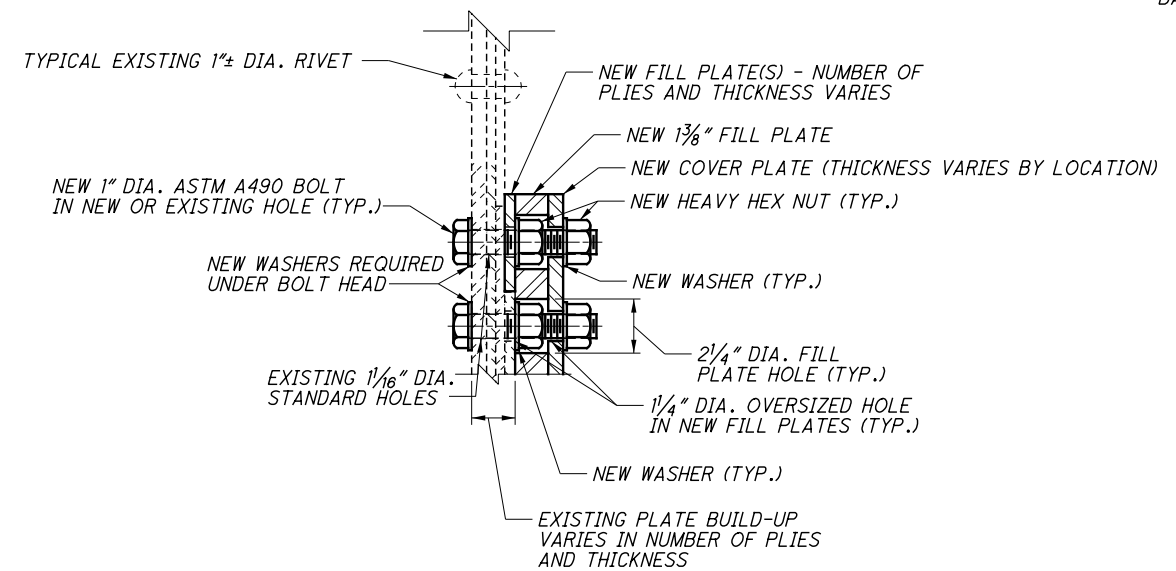
NEW DOUBLE NUT CONNECTION DETAIL (WITH OR WITHOUT ADDITIONAL FILL PLATES)

- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - NEW BOLTS** ARE 1" DIAMETER, ASTM A490, TYPE 1 BOLTS.
  - NOTATION:** N - NORTH GUSSET, S - SOUTH GUSSET, E.S. - EACH SIDE
  - BOLT LEGEND:** SEE SHEET 14/238.
  - ADDITIONAL NOTES:** SEE SHEET 127/238.

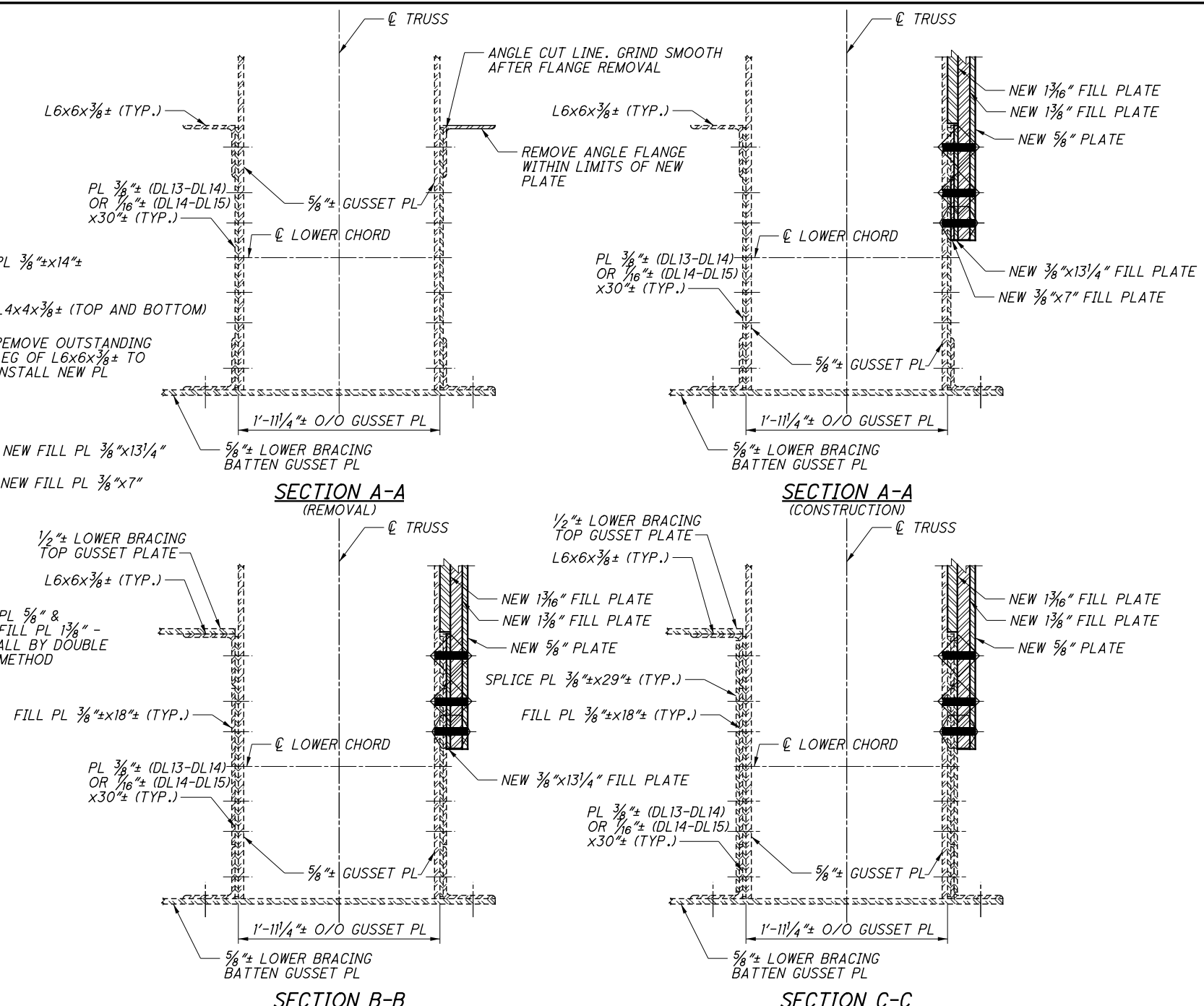
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**PANEL POINT DL14 S - SPAN 7  
OUTSIDE GUSSET PLATE**  
(SOUTH GUSSET LOOKING NORTH)  
SHOP DRAWING REFERENCE:  
CONTRACT 5643 SHEET 466



**NEW DOUBLE NUT CONNECTION DETAIL**  
(WITH OR WITHOUT ADDITIONAL FILL PLATES)



**SECTION B-B**

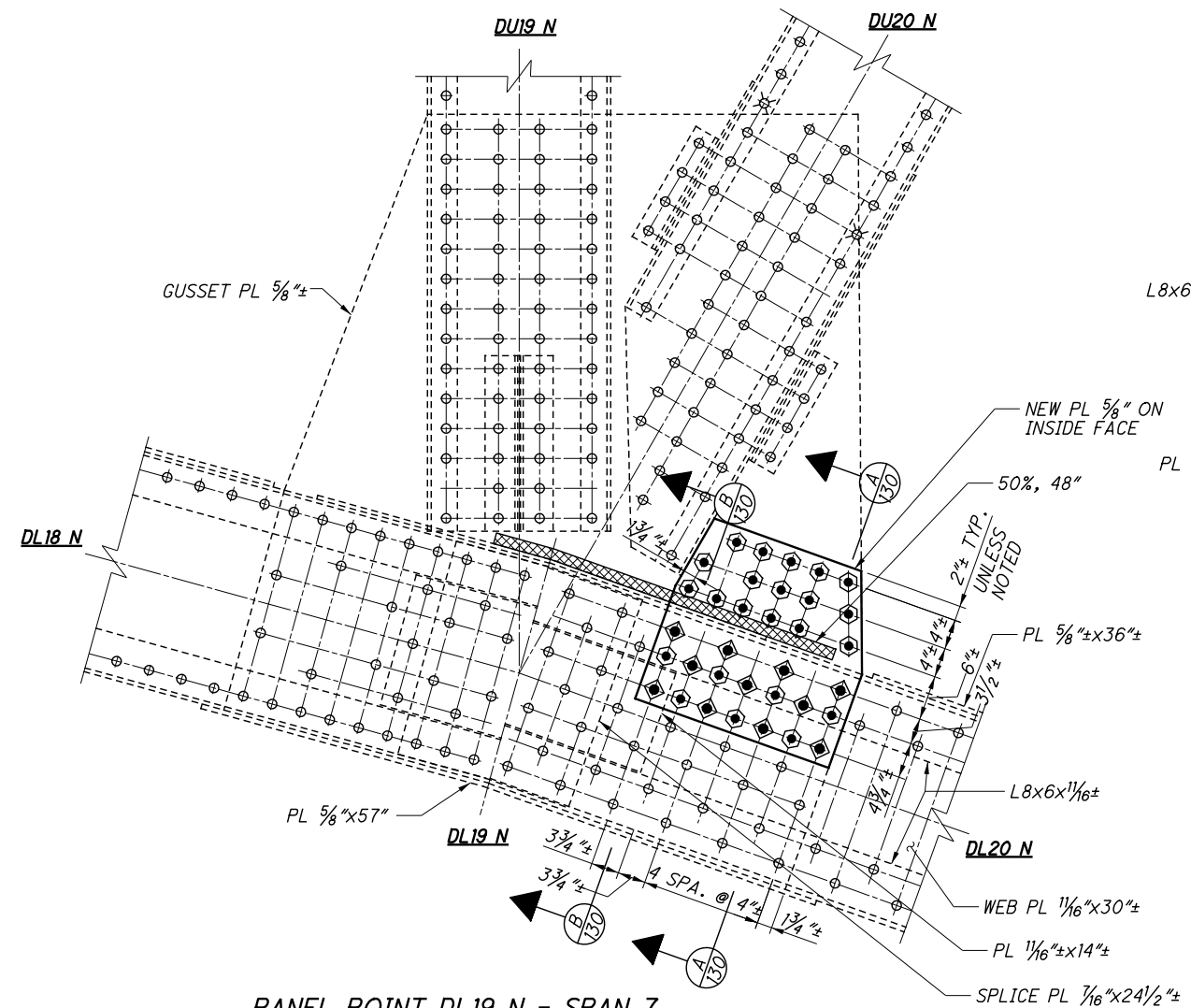
**SECTION C-C**

**LEGEND**

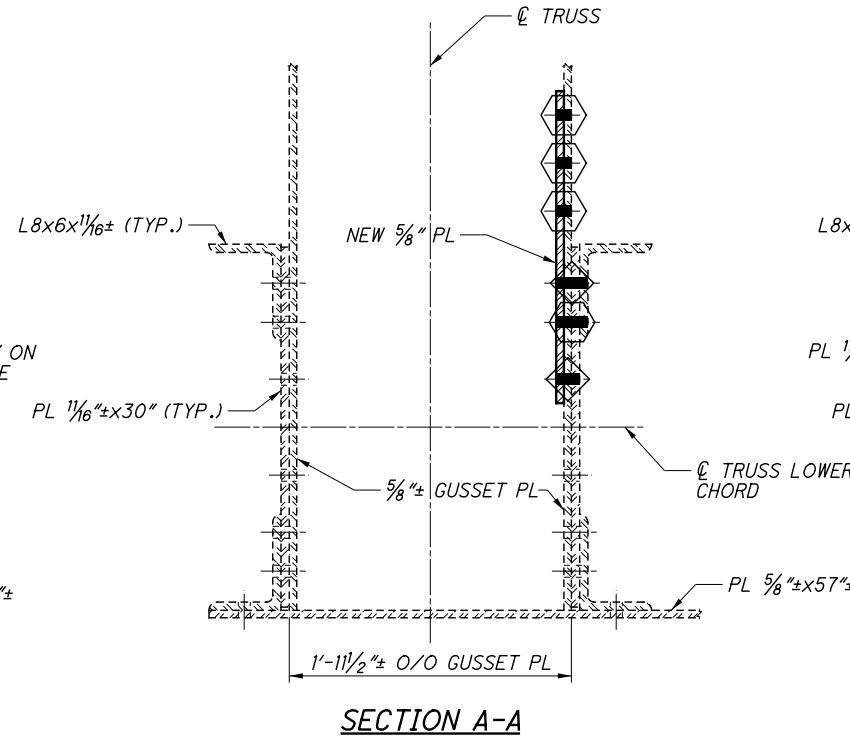
- INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - MEMBER CALLOUTS** ARE FOR ONE FACE OF TRUSS MEMBERS ONLY.
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - NEW BOLTS** ARE 1" DIAMETER, ASTM A490, TYPE 1 BOLTS.
  - NOTATION:** N - NORTH GUSSET  
S - SOUTH GUSSET
  - BOLT LEGEND:** SEE SHEET 14/238.
  - BOLT SPACING:** MAXIMUM SPACING 6". MINIMUM SPACING 3". TYPICAL EDGE DISTANCE 2". MINIMUM EDGE DISTANCE 1/2".
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 110/238.
  - TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.

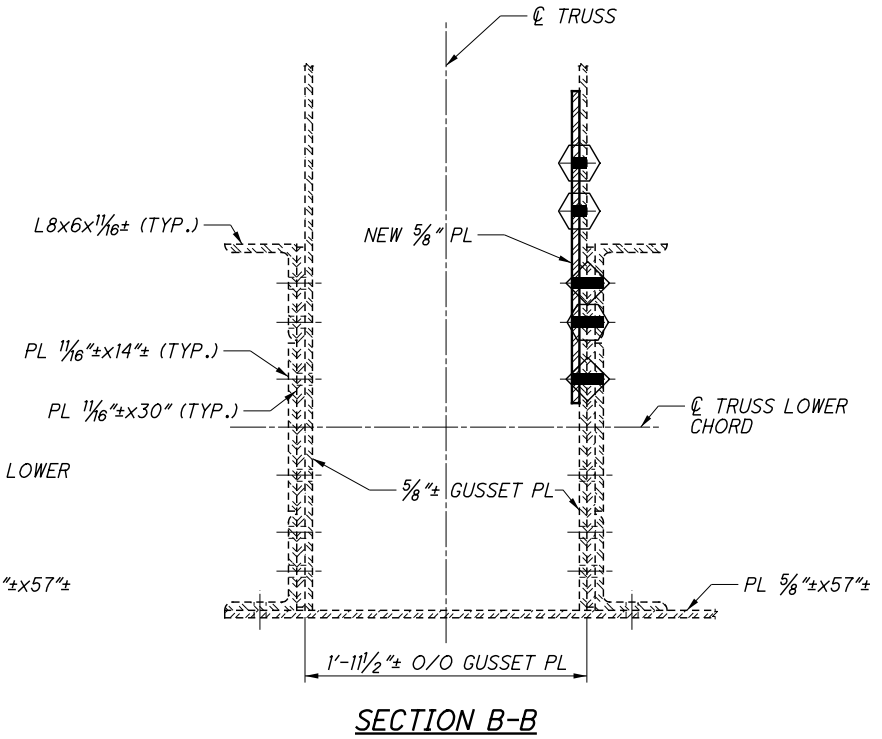
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**PANEL POINT DL19 N - SPAN 7**  
**INSIDE GUSSET PLATE**  
 (NORTH PLATE LOOKING NORTH)  
 SHOP DRAWING REFERENCE:  
 CONTRACT 5643 SHEET 430



**SECTION A-A**



**SECTION B-B**

**LEGEND**

- INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1"± DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

**NOTATION:** N - NORTH GUSSET  
 S - SOUTH GUSSET

**BOLT LEGEND:** SEE SHEET 14/238.

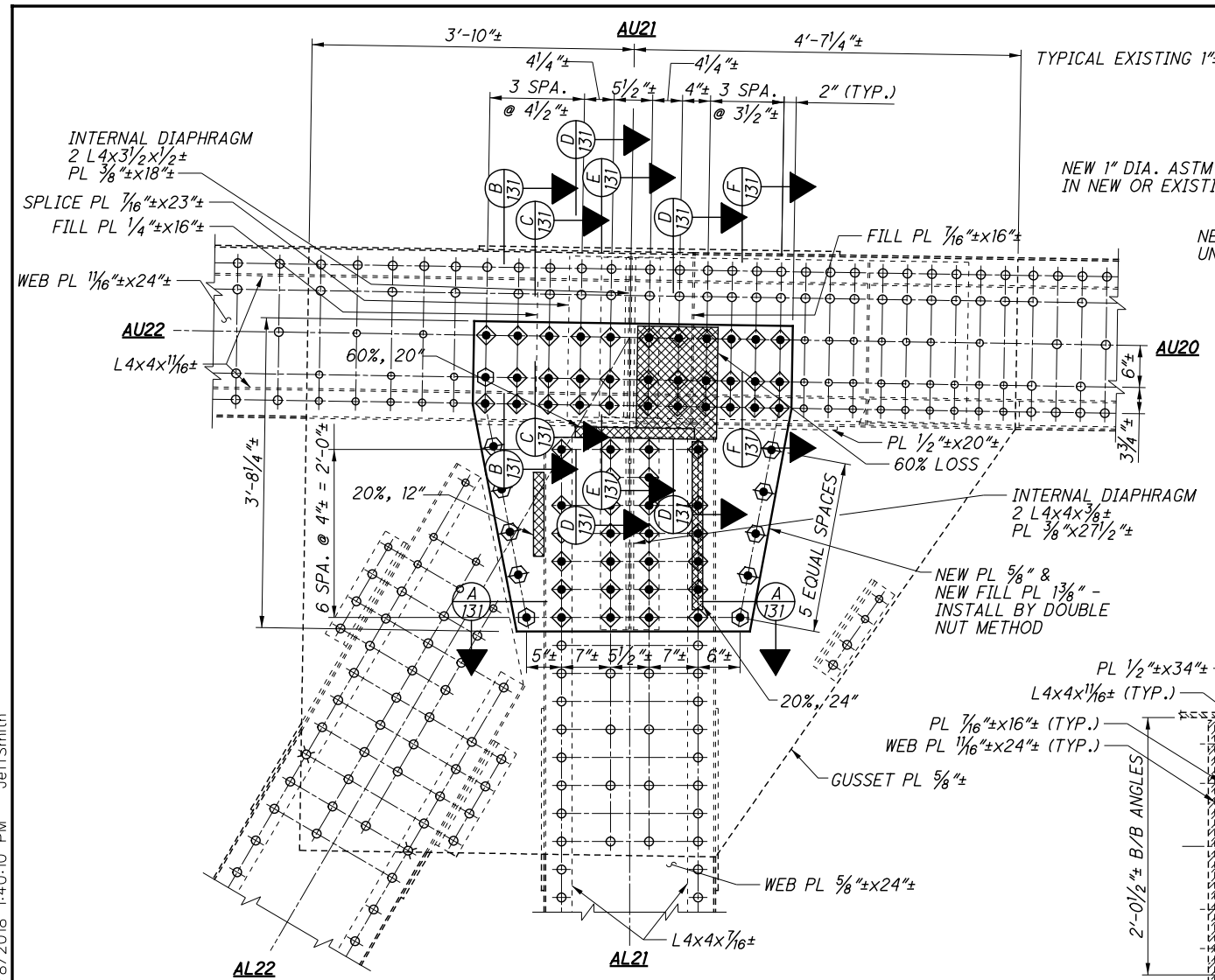
**MEMBER CALLOUTS** ARE FOR ONE FACE OF TRUSS MEMBERS ONLY.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 110/238.

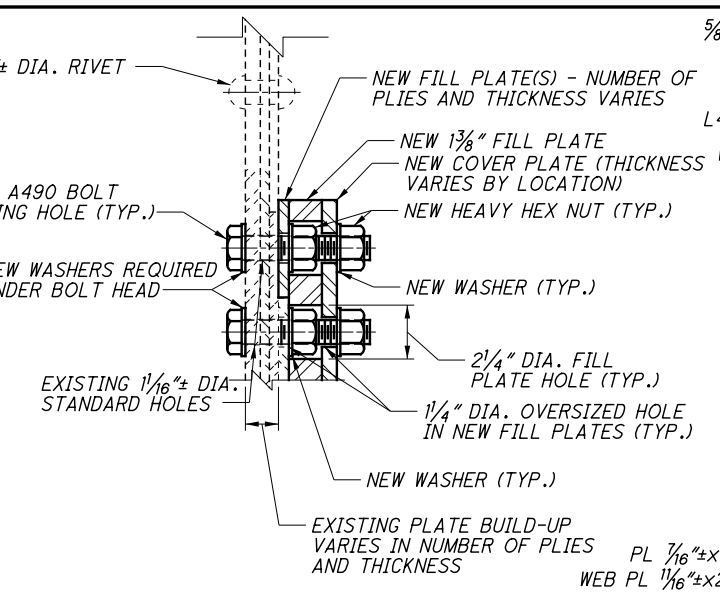
**TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.

 RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE 1/30/18 REVIEWED DLR DRAWN USB DESIGNED DAP CHECKED KAK	STRUCTURE FILE NUMBER 1801503 REVISED REVISED KAK	<b>GUSSET PLATE SECTION LOSS REPAIRS - 4</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER
CUY-10-16.13 PID No. 96986			130/238 190/308

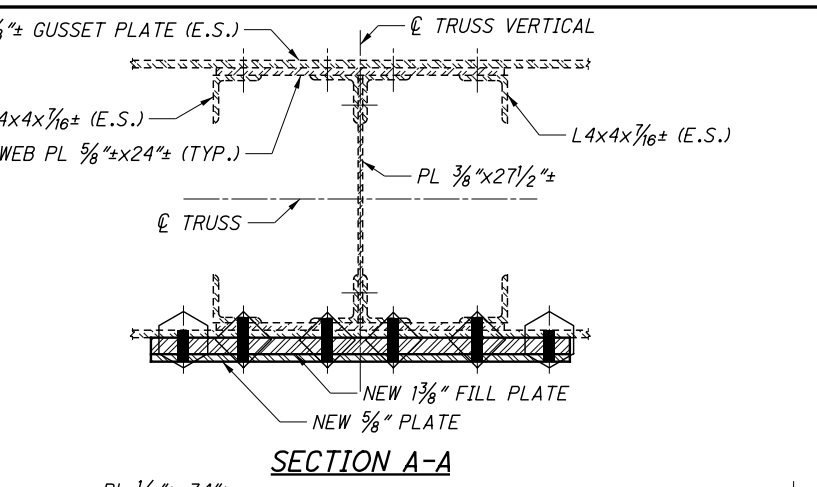
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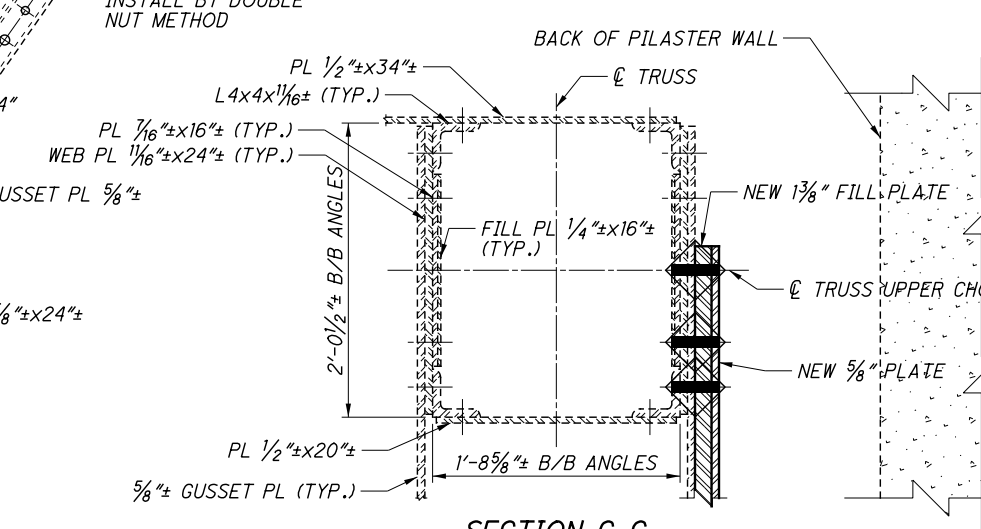
**PANEL POINT AU21 N - SPAN 8  
OUTSIDE GUSSET PLATE**  
(NORTH PLATE LOOKING SOUTH)  
SHOP DRAWING REFERENCE:  
CONTRACT 5643 SHEET 449



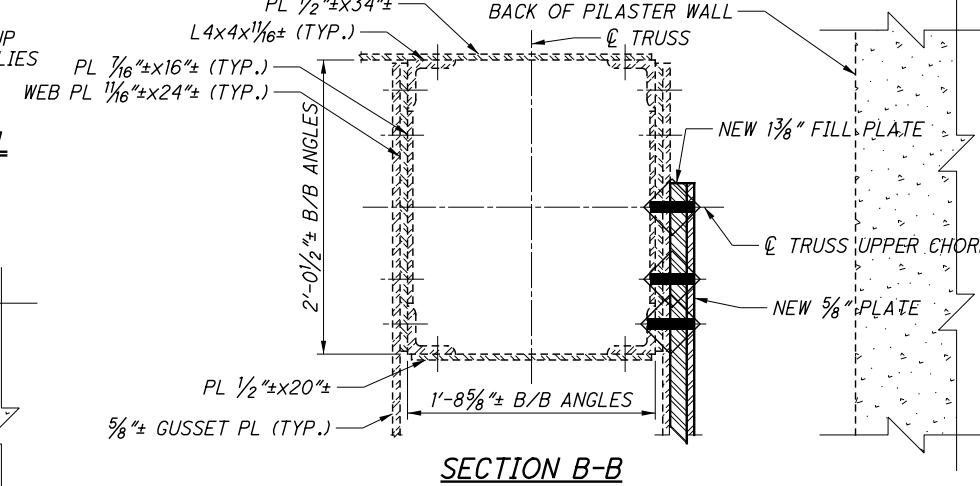
**NEW DOUBLE NUT CONNECTION DETAIL**  
(WITH OR WITHOUT ADDITIONAL FILL PLATES)



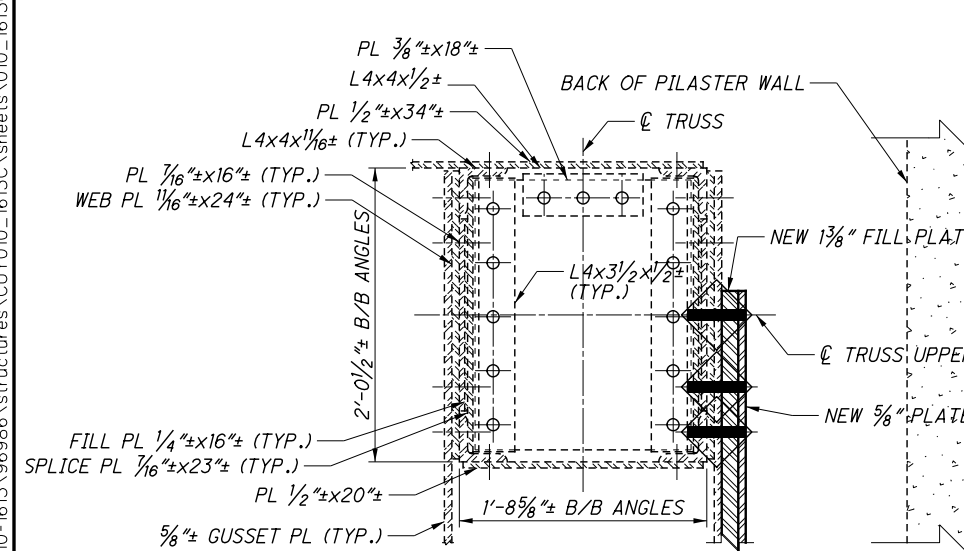
**SECTION A-A**



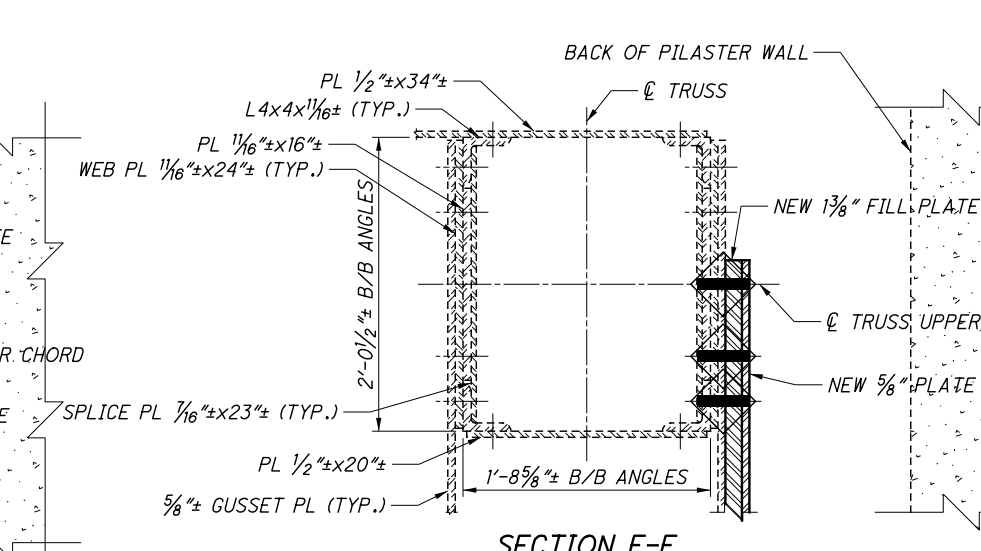
**SECTION C-C**



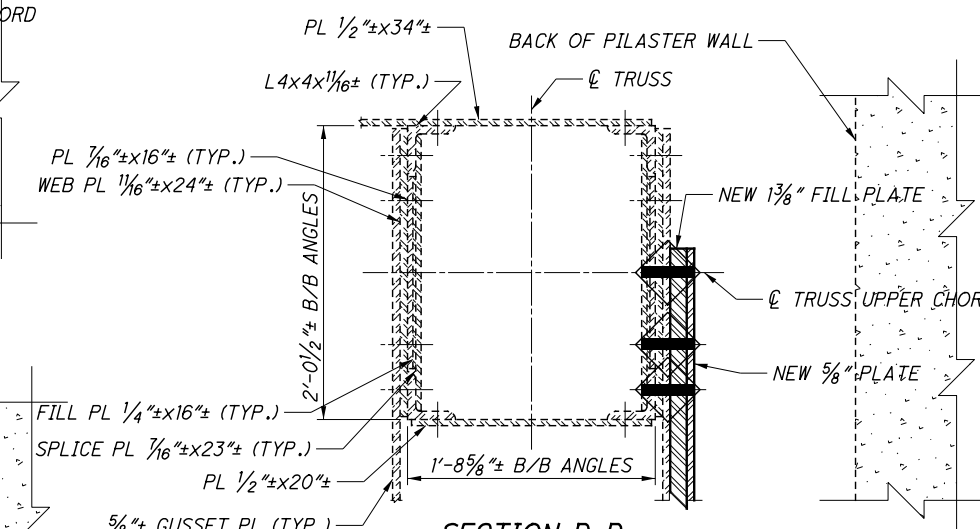
**SECTION B-B**



**SECTION E-E**



**SECTION F-F**



**SECTION D-D**

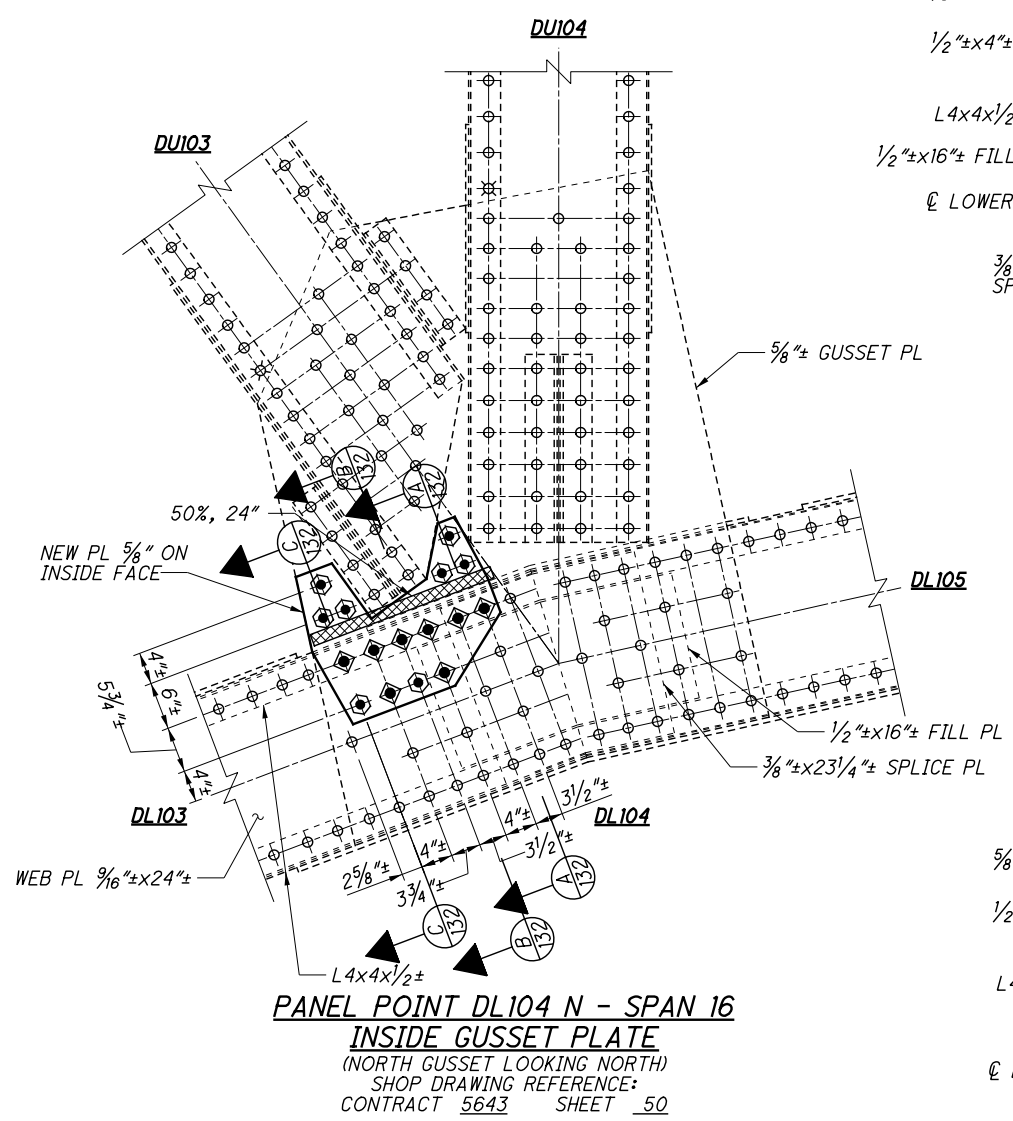
**LEGEND**

- INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

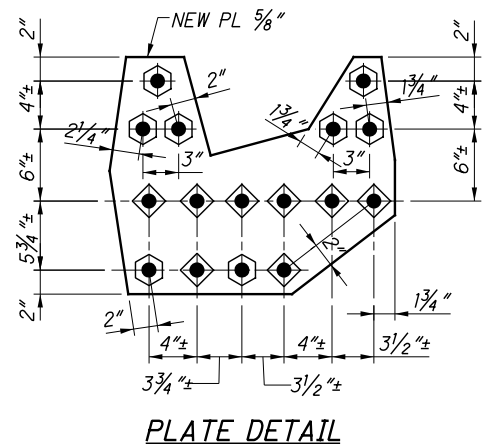
- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - EXISTING RIVETS** ARE 1"± DIAMETER.
  - NEW BOLTS** ARE 1"± DIAMETER, ASTM A490, TYPE 1 BOLTS.
  - NOTATION:** N - NORTH GUSSET  
S - SOUTH GUSSET  
E.S. - EACH SIDE
  - MEMBER CALLOUTS** ARE FOR ONE FACE OF TRUSS MEMBERS ONLY.
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 98/238.
  - TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.
  - BOLT LEGEND:** SEE SHEET 14/238.



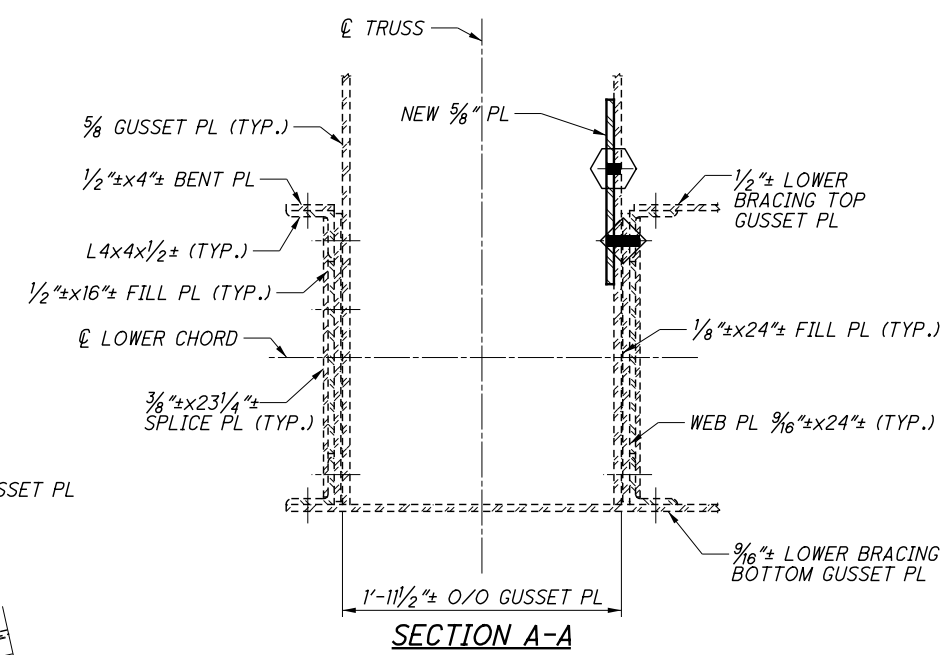
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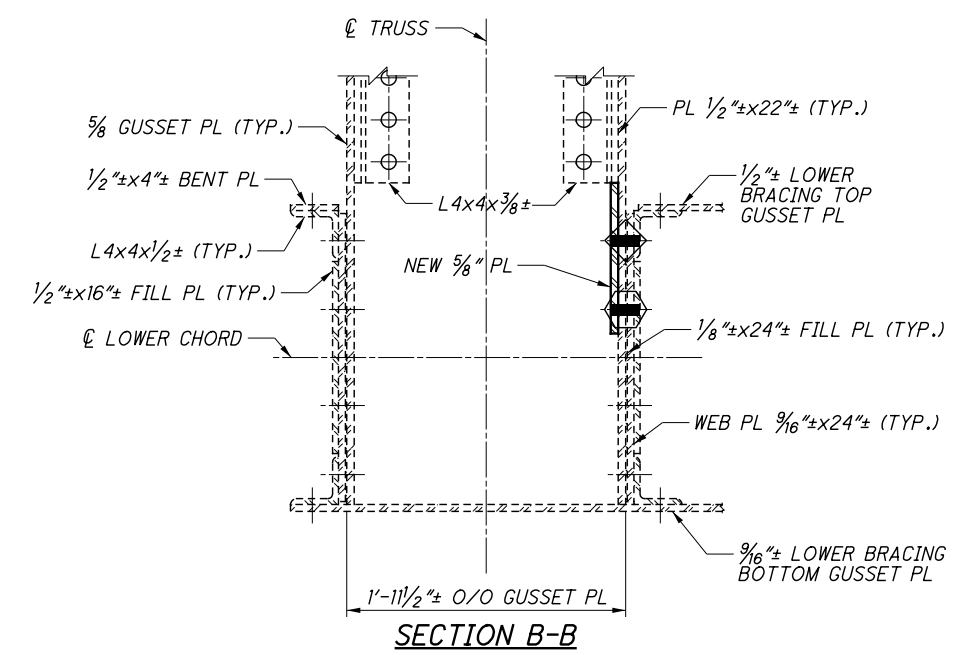
**PANEL POINT DL104 N - SPAN 16**  
**INSIDE GUSSET PLATE**  
 (NORTH GUSSET LOOKING NORTH)  
 SHOP DRAWING REFERENCE:  
 CONTRACT 5643 SHEET 50



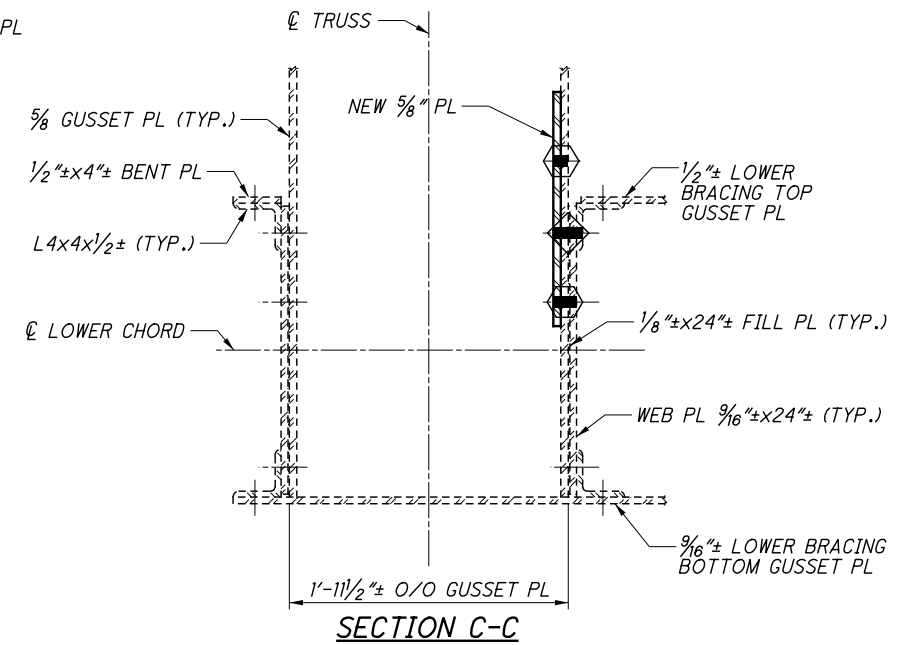
**PLATE DETAIL**



**SECTION A-A**



**SECTION B-B**



**SECTION C-C**

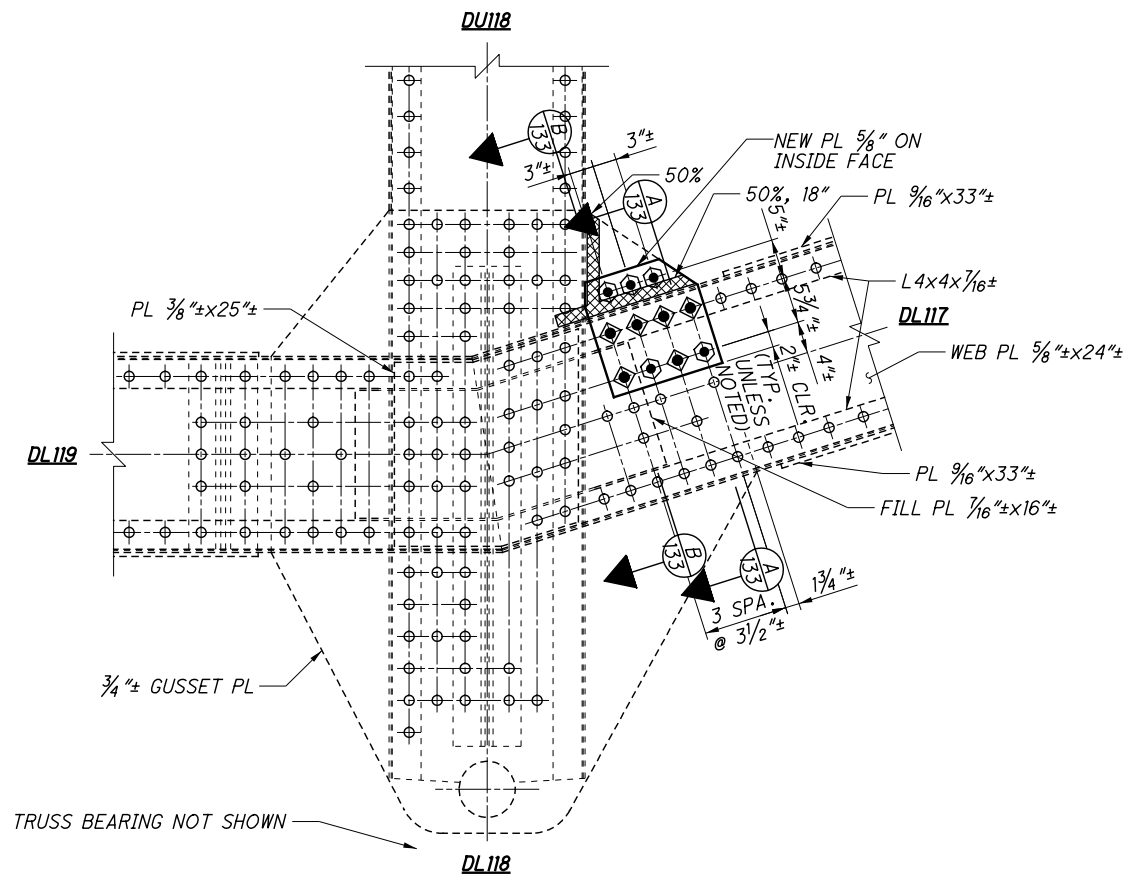
**LEGEND**

- INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

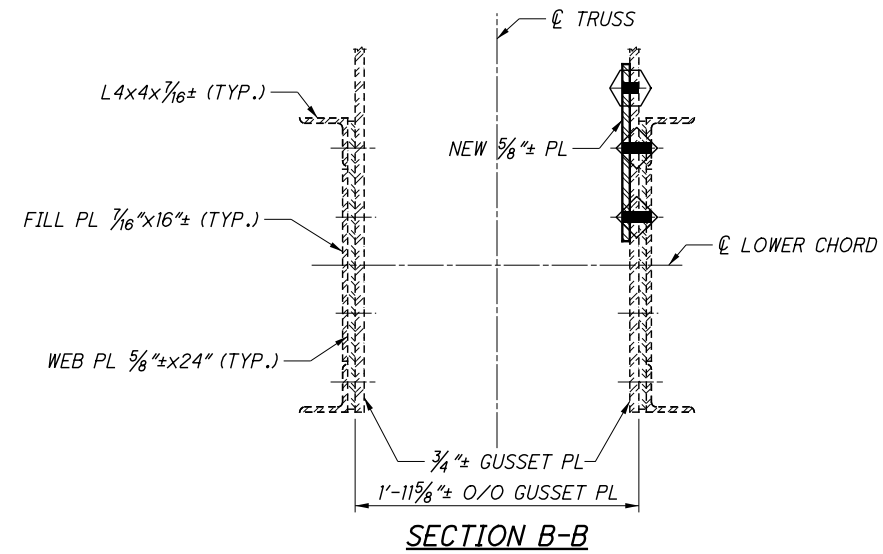
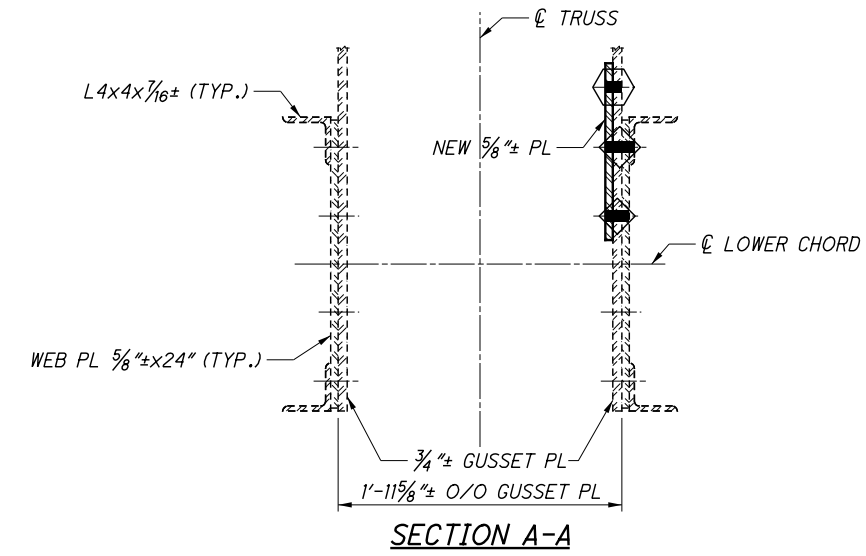
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- NOTATION:** N - NORTH GUSSET  
S - SOUTH GUSSET
- BOLT LEGEND:** SEE SHEET 14/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 113/238.
- TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.
- MEMBER CALLOUTS** ARE FOR ONE FACE OF TRUSS MEMBER ONLY.

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**PANEL POINT DL118 S - SPAN 17**  
**OUTSIDE GUSSET PLATE**  
 (SOUTH GUSSET PLATE LOOKING SOUTH)  
 SHOP DRAWING REFERENCE:  
 CONTRACT 5643 SHEET 250



**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1" DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

**NOTATION:** N - NORTH GUSSET  
 S - SOUTH GUSSET

**BOLT LEGEND:** SEE SHEET 14/238.

**TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.

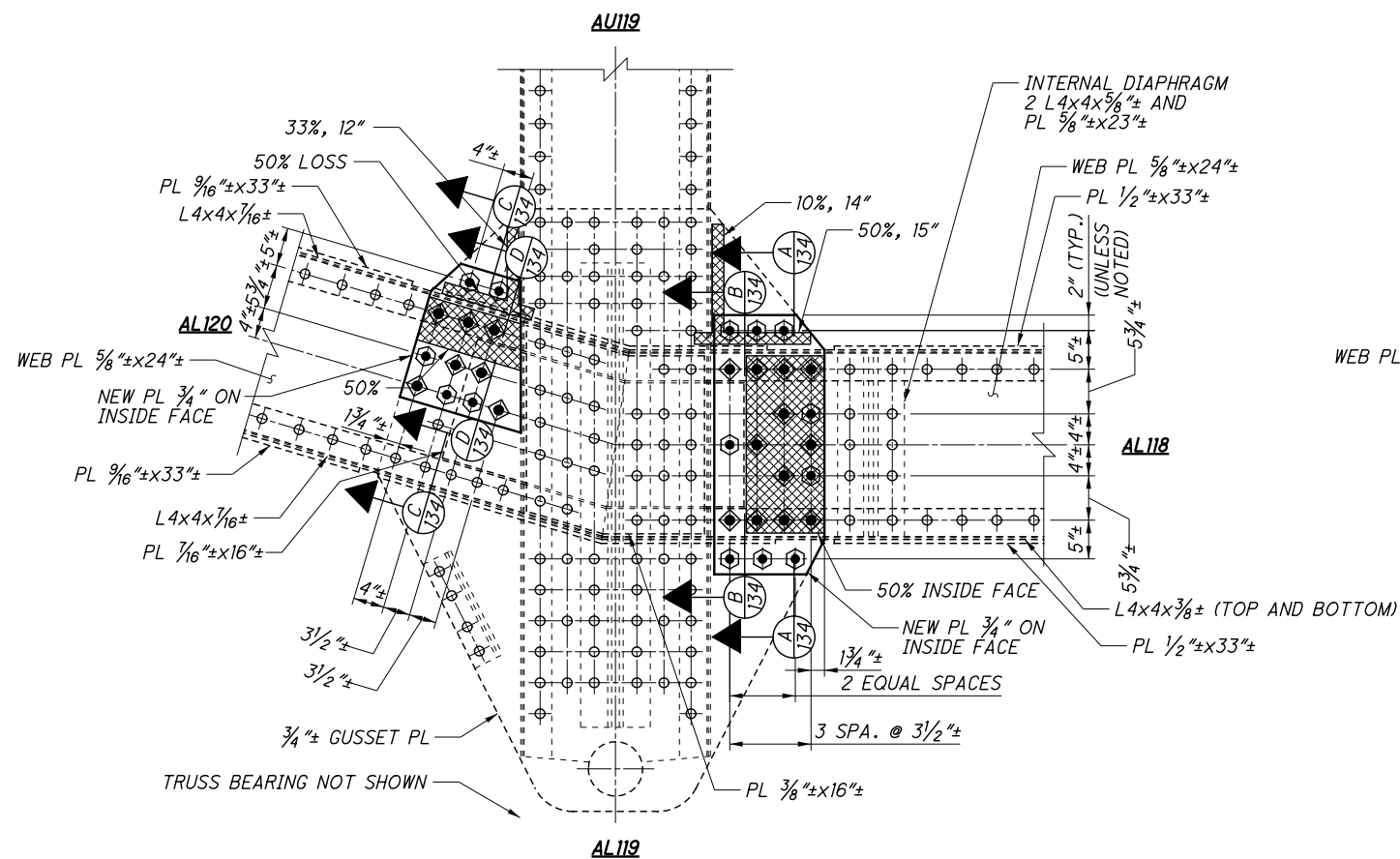
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 113/238.

**MEMBER CALLOUTS** ARE FOR ONE FACE OF TRUSS MEMBERS ONLY.

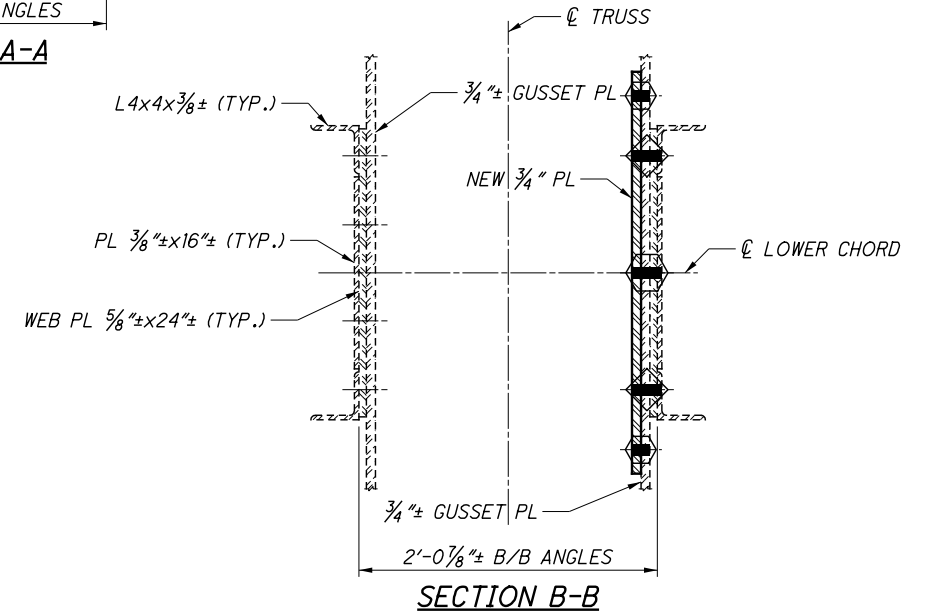
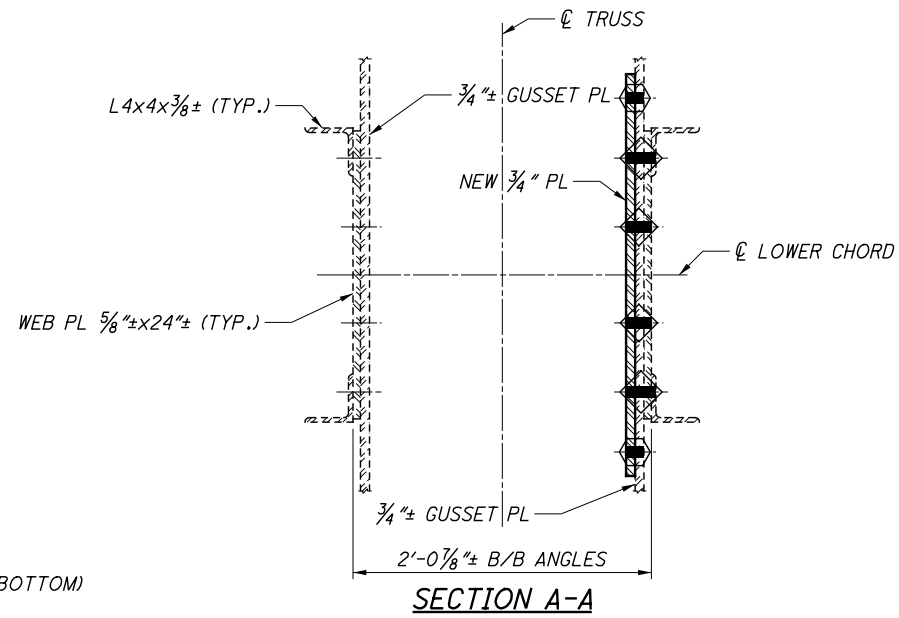
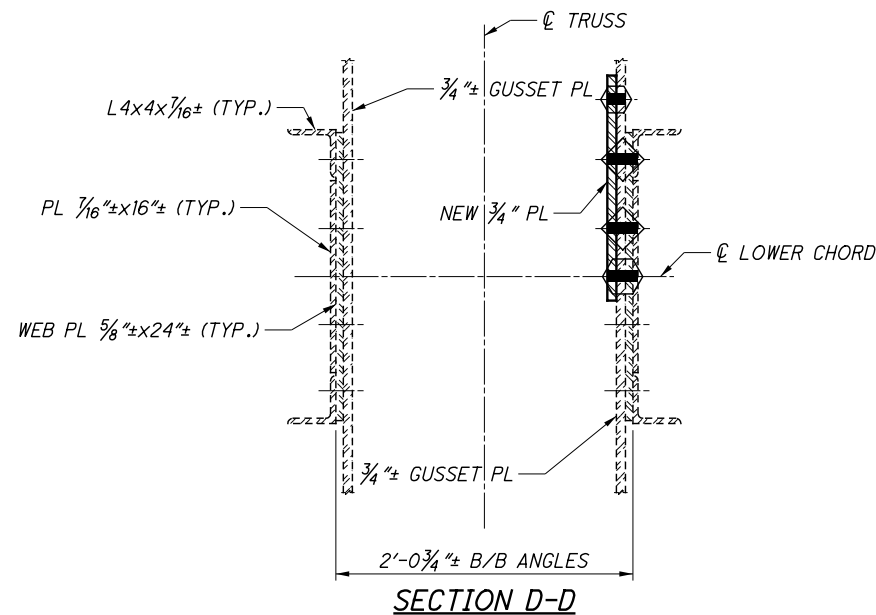
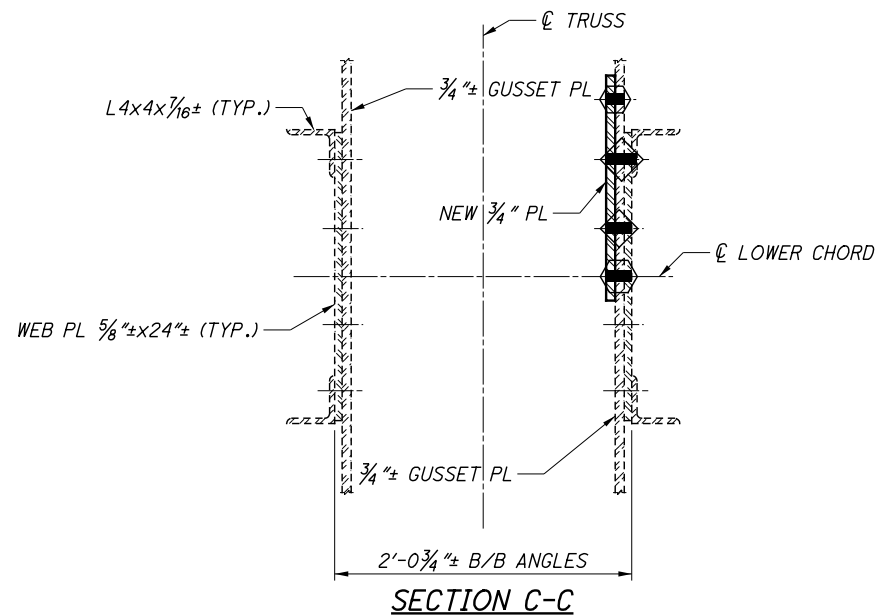
**LEGEND**

 - INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

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**PANEL POINT AL119 S - SPAN 18**  
**INSIDE GUSSET PLATE**  
 (SOUTH GUSSET PLATE LOOKING SOUTH)  
 SHOP DRAWING REFERENCE:  
 CONTRACT 5643 SHEET 281



- INDICATES AREA OF DETERIORATION ON GUSSET PLATE AND AVERAGE SECTION LOSS.

**LEGEND**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1"± DIAMETER.

**NEW BOLTS** ARE 1"± DIAMETER.

**NOTATION:** N - NORTH GUSSET  
 S - SOUTH GUSSET

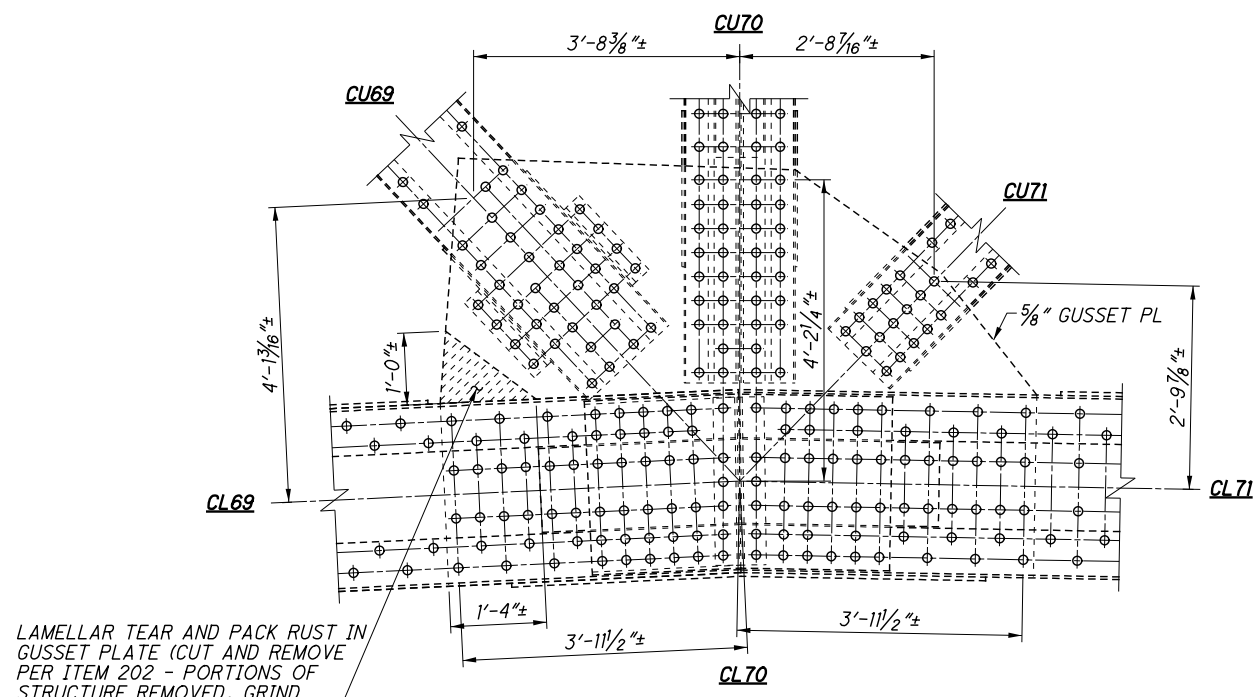
**BOLT LEGEND:** SEE SHEET 14/238.

**TRUSS GUSSET PLATE SECTION LOSS REPAIR BY ADDING PLATES:** SEE GENERAL NOTE SHEET 9/238.

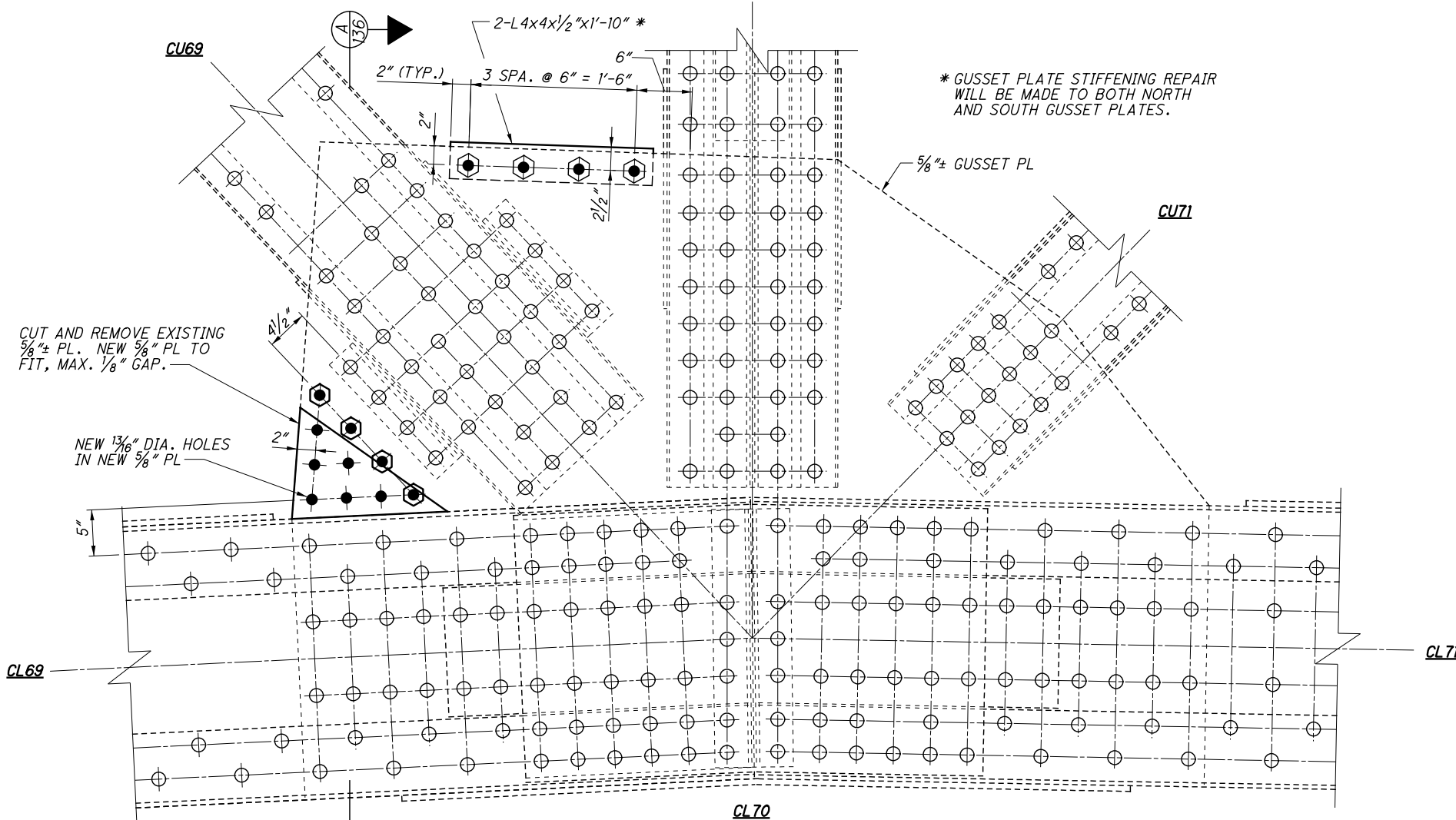
**MEMBER CALLOUTS** ARE FOR ONE FACE OF TRUSS MEMBERS ONLY.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 101/238.

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**PANEL POINT CL70 S - SPAN 12  
OUTSIDE GUSSET PLATE  
(SOUTH GUSSET LOOKING NORTH)**



**REPAIR STEPS 1, 2 AND 3  
PANEL POINT CL70  
SOUTH GUSSET PLATE**

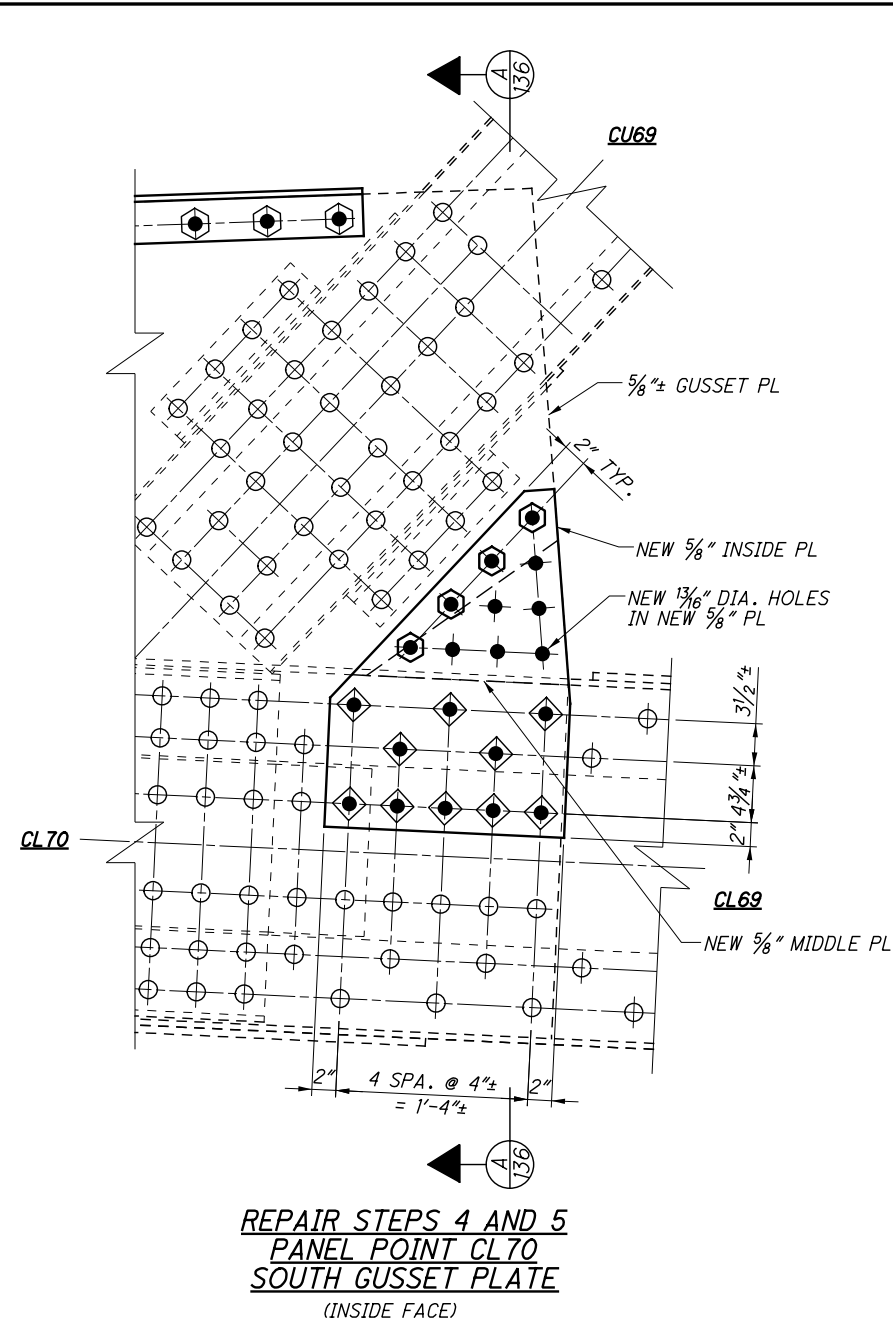
**LAMELLAR TEAR REPAIR PROCEDURE**

1. INSTALL GUSSET PLATE STIFFENING ANGLES BETWEEN TRUSS DIAGONAL AND VERTICALS.
2. CUT AND REMOVE EXISTING LAMELLAR TEAR AND PACK RUST. PREPARE EXISTING SURFACES FOR NEW CONNECTION.
3. FIT NEW GUSSET PLATE PIECE.
4. REMOVE 10 RIVETS FROM LOWER CHORD.
5. BOLT ON NEW INNER PLATE.
6. REMOVE 10 RIVETS FROM DIAGONAL CONNECTION.
7. BOLT ON NEW OUTER PLATE.
8. REAM 1 3/16" HOLES IN NEW 5/8" PLATES TO 1/16" DIAMETER AND INSTALL NEW 1" DIA. BOLTS.
9. PAINT.

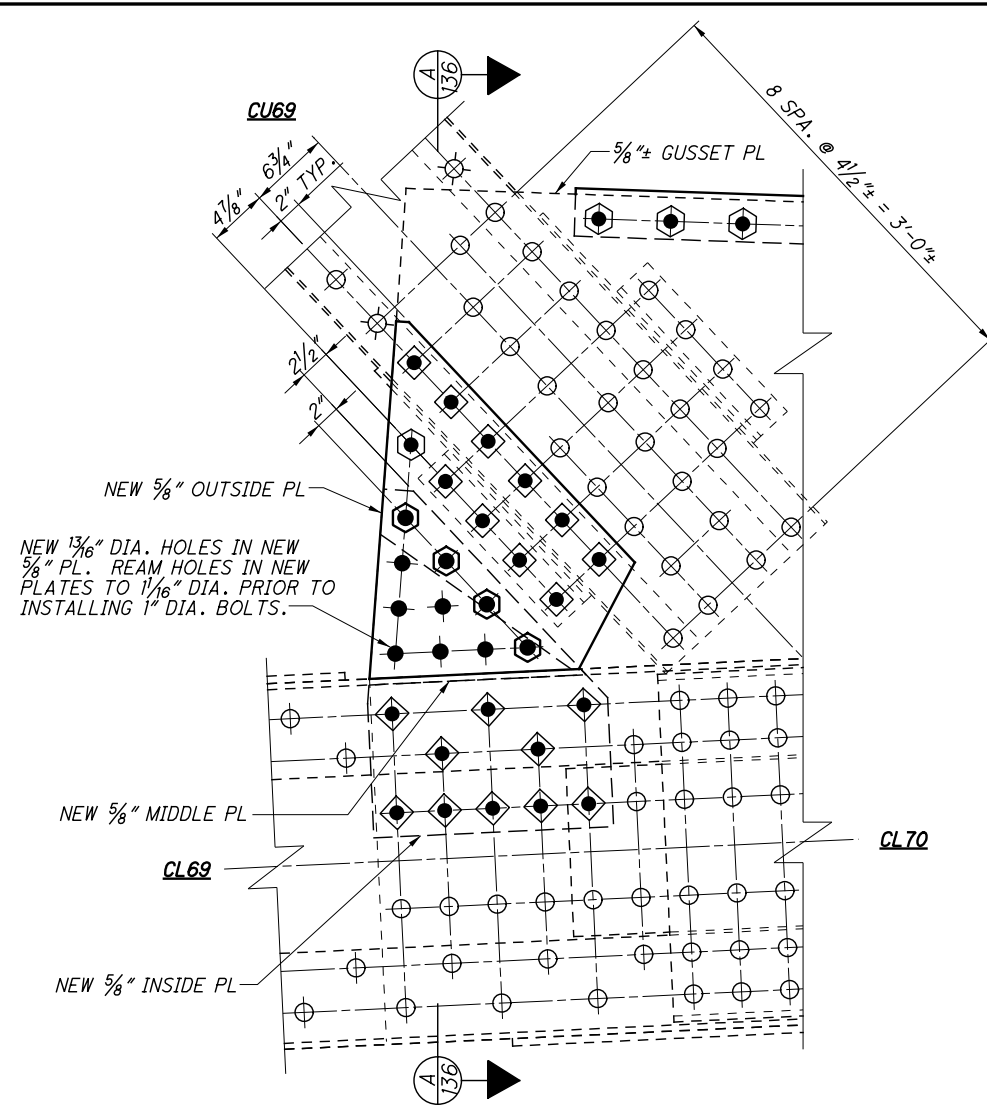
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1"± DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER, ASTM A325, TYPE 1.
- PERFORM WORK** UNDER TRAFFIC WITH NO TEMPORARY SUPPORT.
- STEPS 4 THRU 8 DETAILS:** SEE SHEET 136/238.
- BOLT LEGEND:** SEE SHEET 14/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 108/238.
- ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET PLATE LAMELLAR TEAR REPAIRS:** SEE GENERAL NOTE SHEET 11/238.
- FIELD PAINTING:** SEE GENERAL NOTE SHEET 11/238.

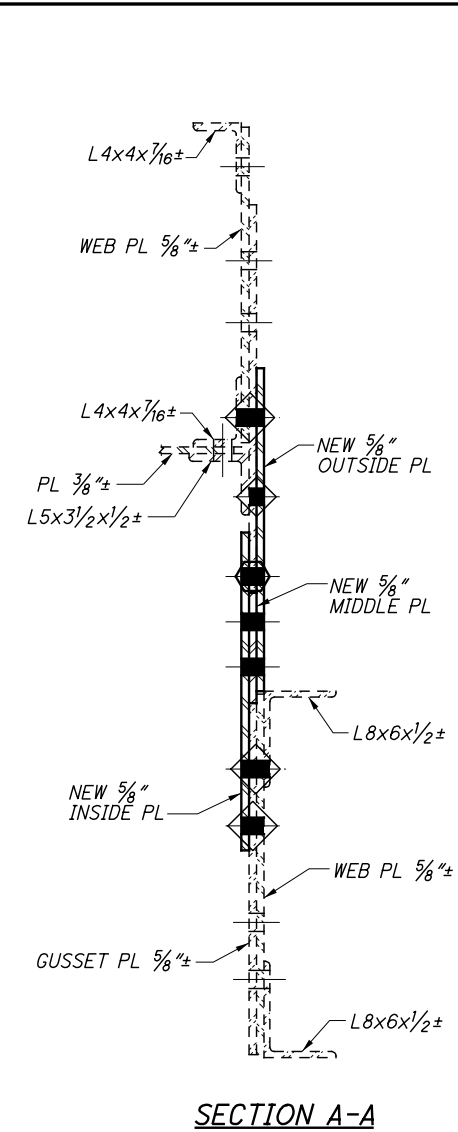
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**REPAIR STEPS 4 AND 5  
PANEL POINT CL70  
SOUTH GUSSET PLATE  
(INSIDE FACE)**

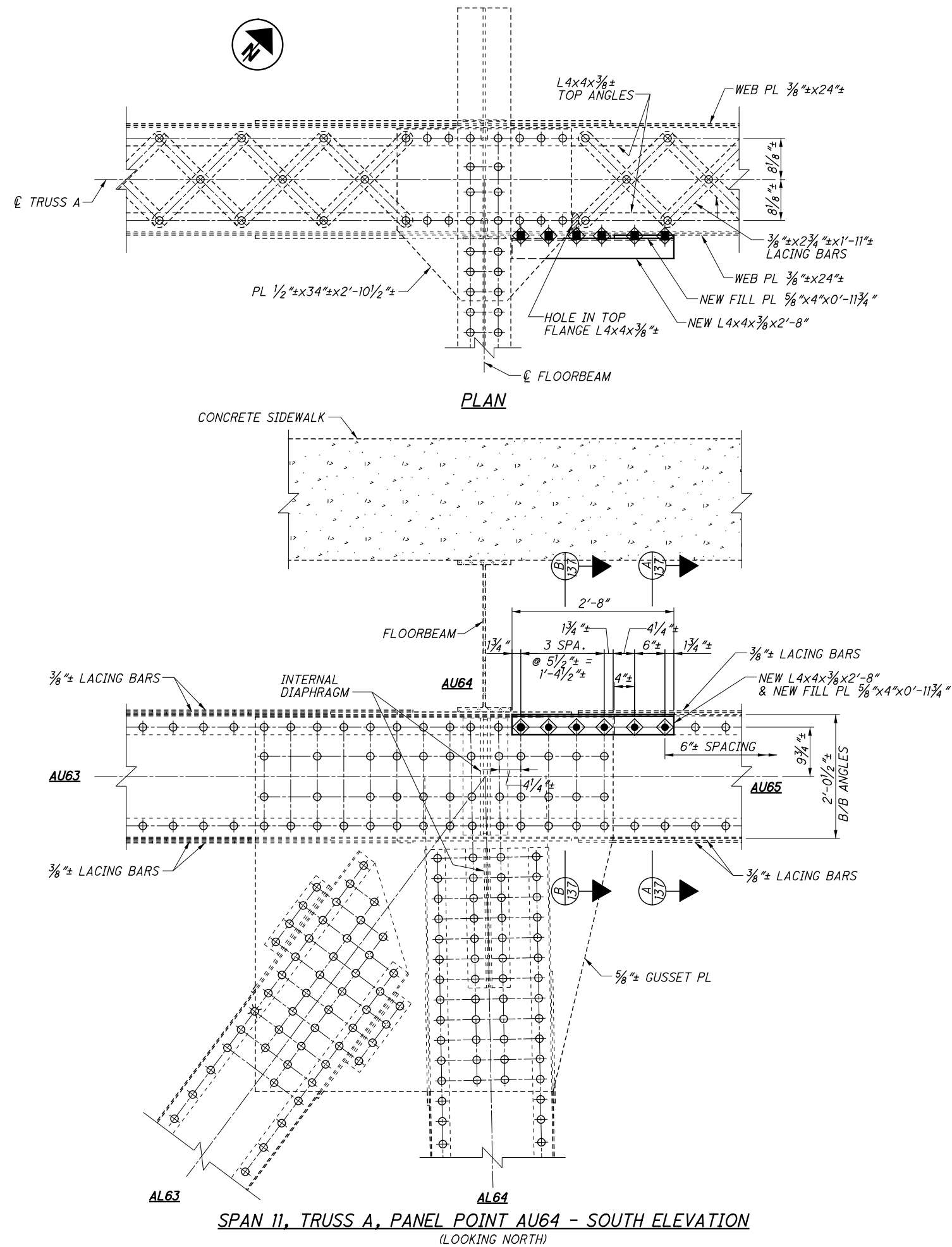


**REPAIR STEPS 6, 7 AND 8  
PANEL POINT CL70  
SOUTH GUSSET PLATE  
(OUTSIDE FACE)**

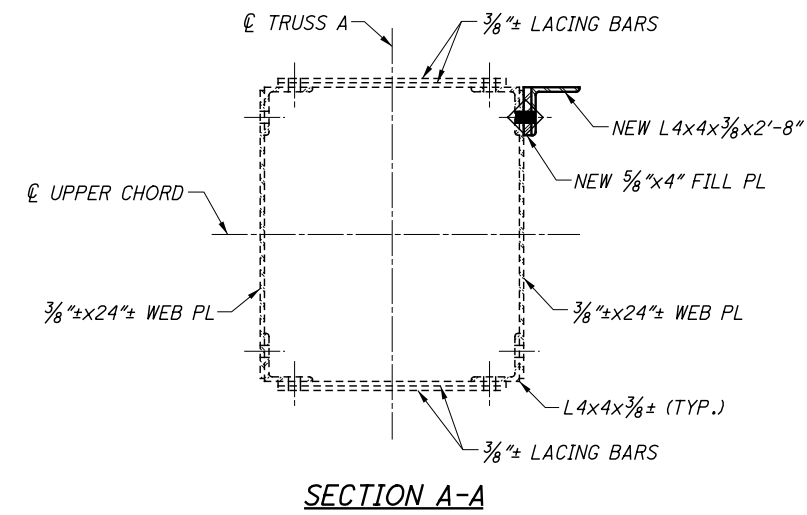


- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - LAMELLAR TEAR REPAIR PROCEDURE NOTE:** SEE SHEET 135238.
  - STEPS 1, 2 AND 3 DETAILS:** SEE SHEET 135238.
  - BOLT LEGEND:** SEE SHEET 14238.

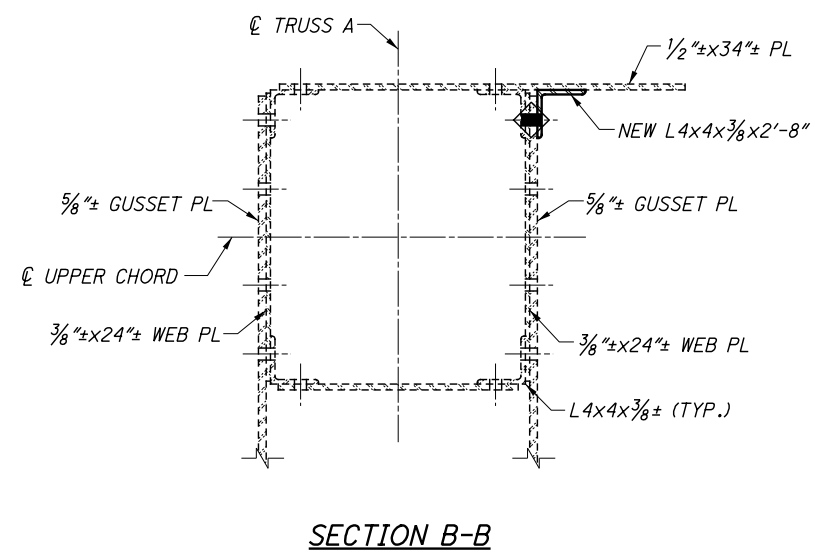
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SPAN 11, TRUSS A, PANEL POINT AU64 - SOUTH ELEVATION  
(LOOKING NORTH)



SECTION A-A

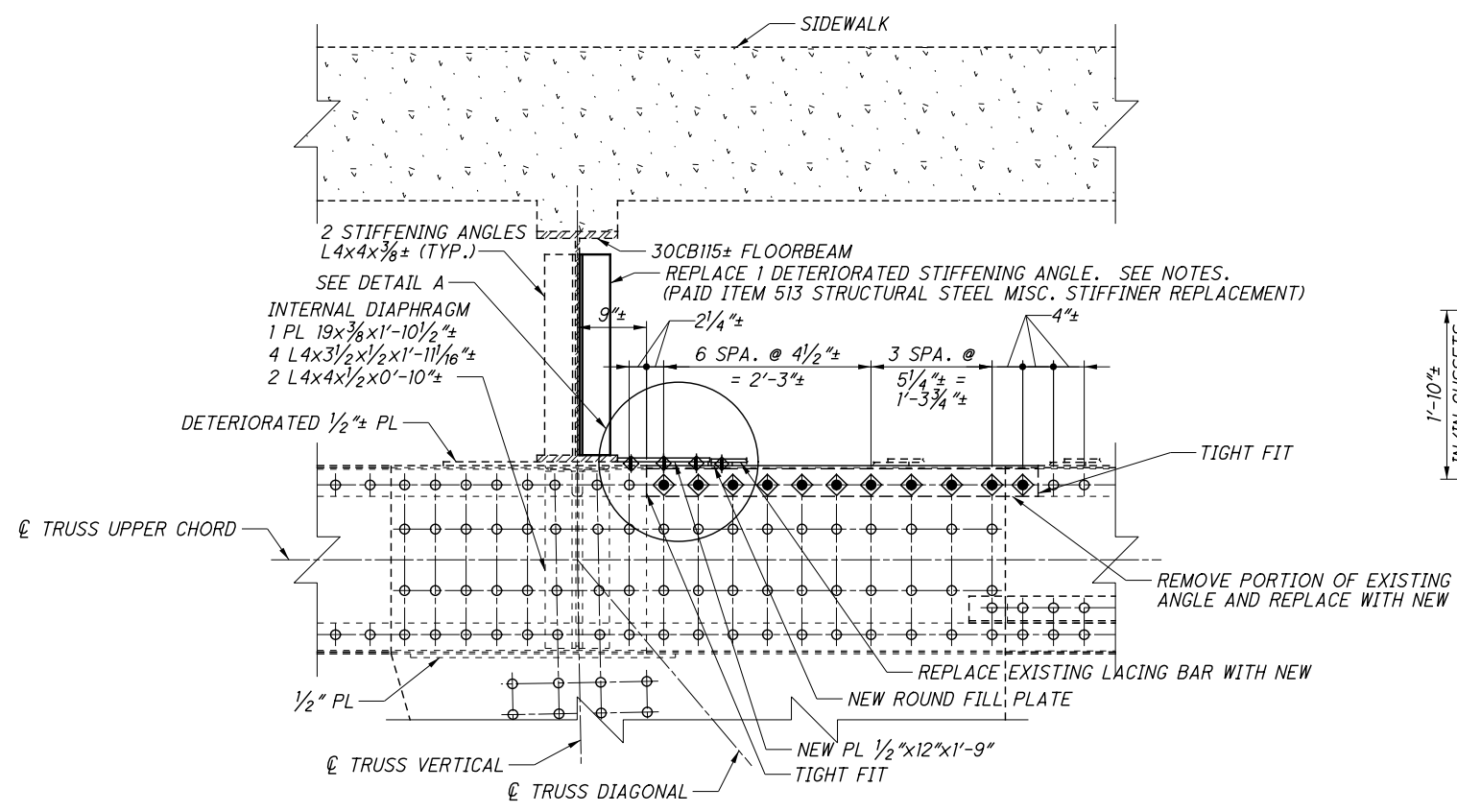


SECTION B-B

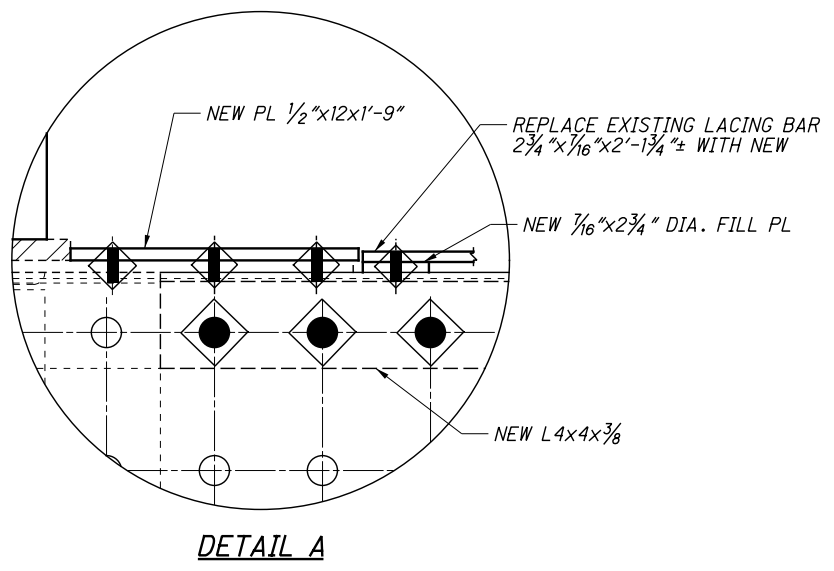
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 100/238.
- ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.
- ITEM 513 - STRUCTURAL STEEL, MISC: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

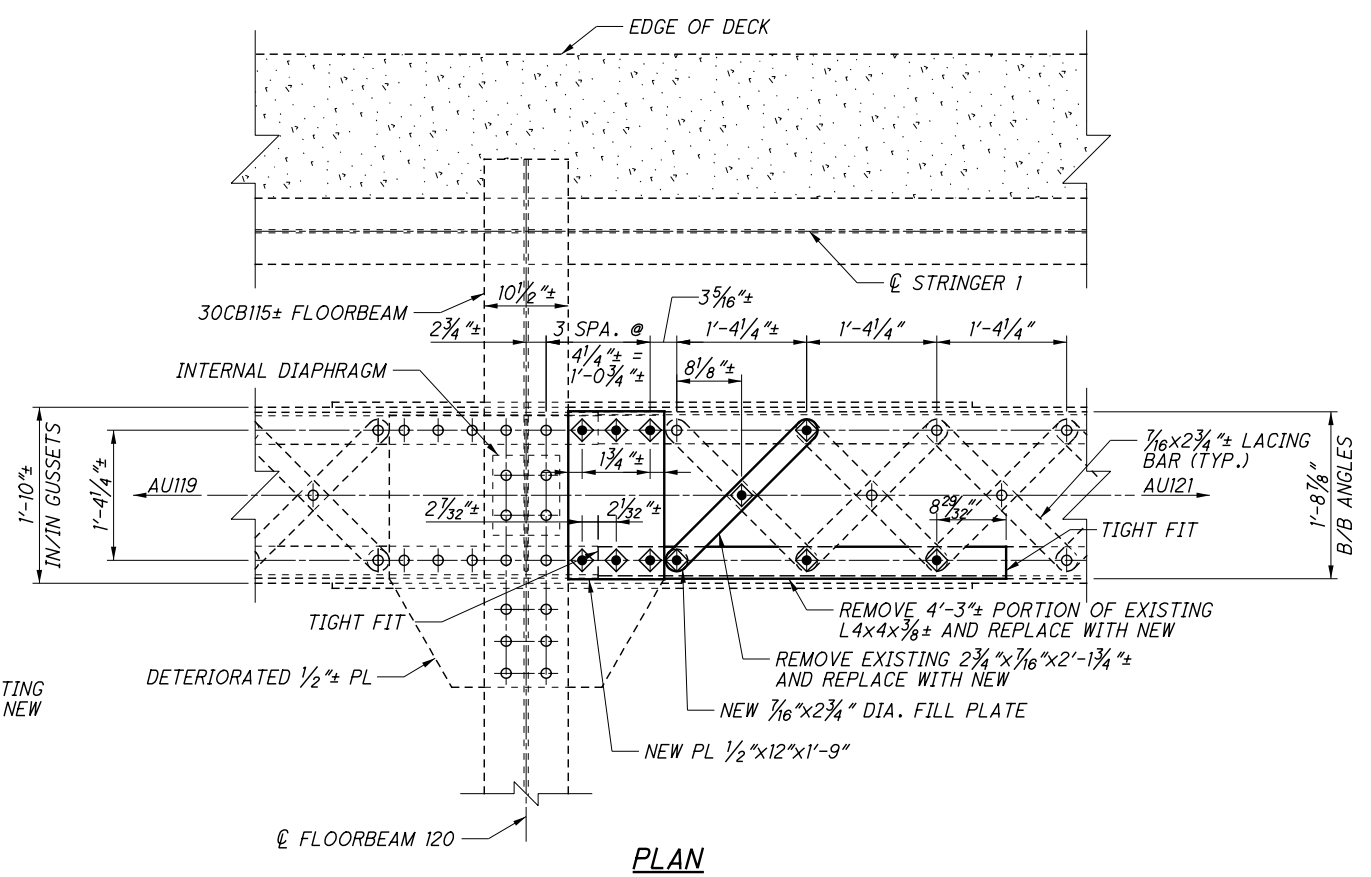
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DRAWN JLS
DESIGNED TGW	CHECKED KAK
TRUSS UPPER CHORD - REPAIR DETAILS - 1 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	137/238 197 308



**SPAN 18, TRUSS A, PANEL POINT AU120 - SOUTH ELEVATION**  
(LOOKING NORTH)



**DETAIL A**



**PLAN**

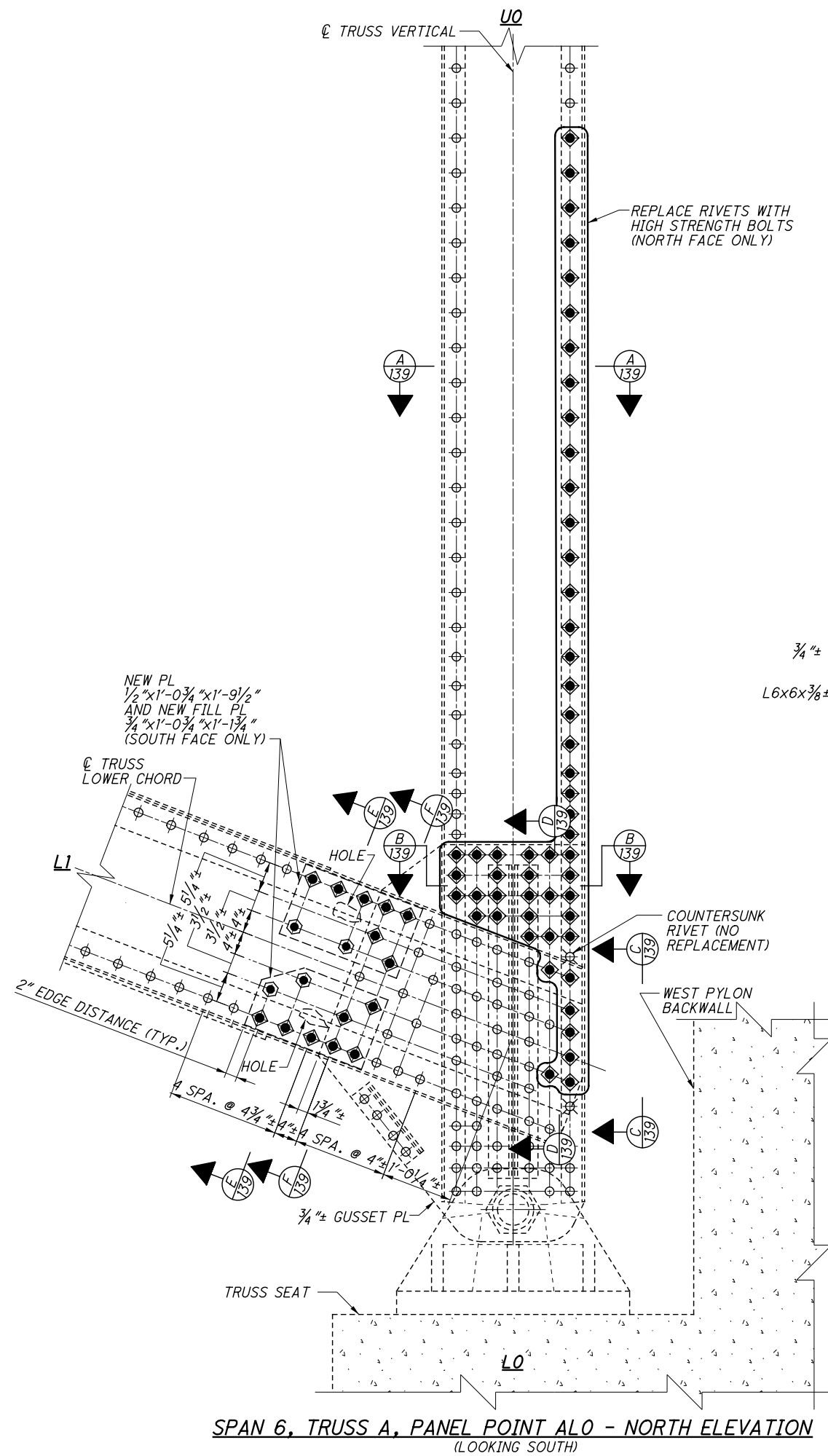
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- NEW ANGLE:** PREPARE BUTT ENDS ON NEW AND EXISTING ANGLES FOR A TIGHT FIT AS DEFINED IN CMS 513.13. FIELD PREPARATION WORK SHALL BE CONSIDERED INCIDENTAL TO THE NEW STEEL PAY ITEM.
- FLOORBEAM STIFFENING ANGLE REPLACEMENT:** SEE DETAILS ON SHEET 90/238.
- REMOVE** UP TO TWO ADDITIONAL LACING BARS FROM TOP CHORD TO FACILITATE INSTALLATION OF NEW ANGLE. REINSTALL EXISTING BARS WITH NEW CONNECTION BOLTS. WORK SHALL BE CONSIDERED INCLUDED INCIDENTAL TO THIS REPAIR.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 101/238.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:** SEE GENERAL NOTE SHEET 7/238.
- ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.
- ITEM 513 - STRUCTURAL STEEL, MISC.: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.
- WORK SHOWN** PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: BOLTED TRUSS REPAIRS, UNLESS NOTED.

F:\2014\114059\_CUY-10-1613\96986\_structures\CUY010\_1613\CS098.dgn 3/2/2018 2:21:42 PM JeffSmith

	<p style="font-size: small;">RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
<p>DESIGNED: KAK CHECKED: KAK DRAWN: USB DLR: DLR</p>	<p>DATE: 1/30/18 REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503</p>
<p><b>TRUSS UPPER CHORD - REPAIR DETAILS - 2</b></p>	<p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>
<p><b>CUY-10-16.13</b></p>	<p>PID No. 96986</p>
<p>138/238</p>	<p>198 308</p>

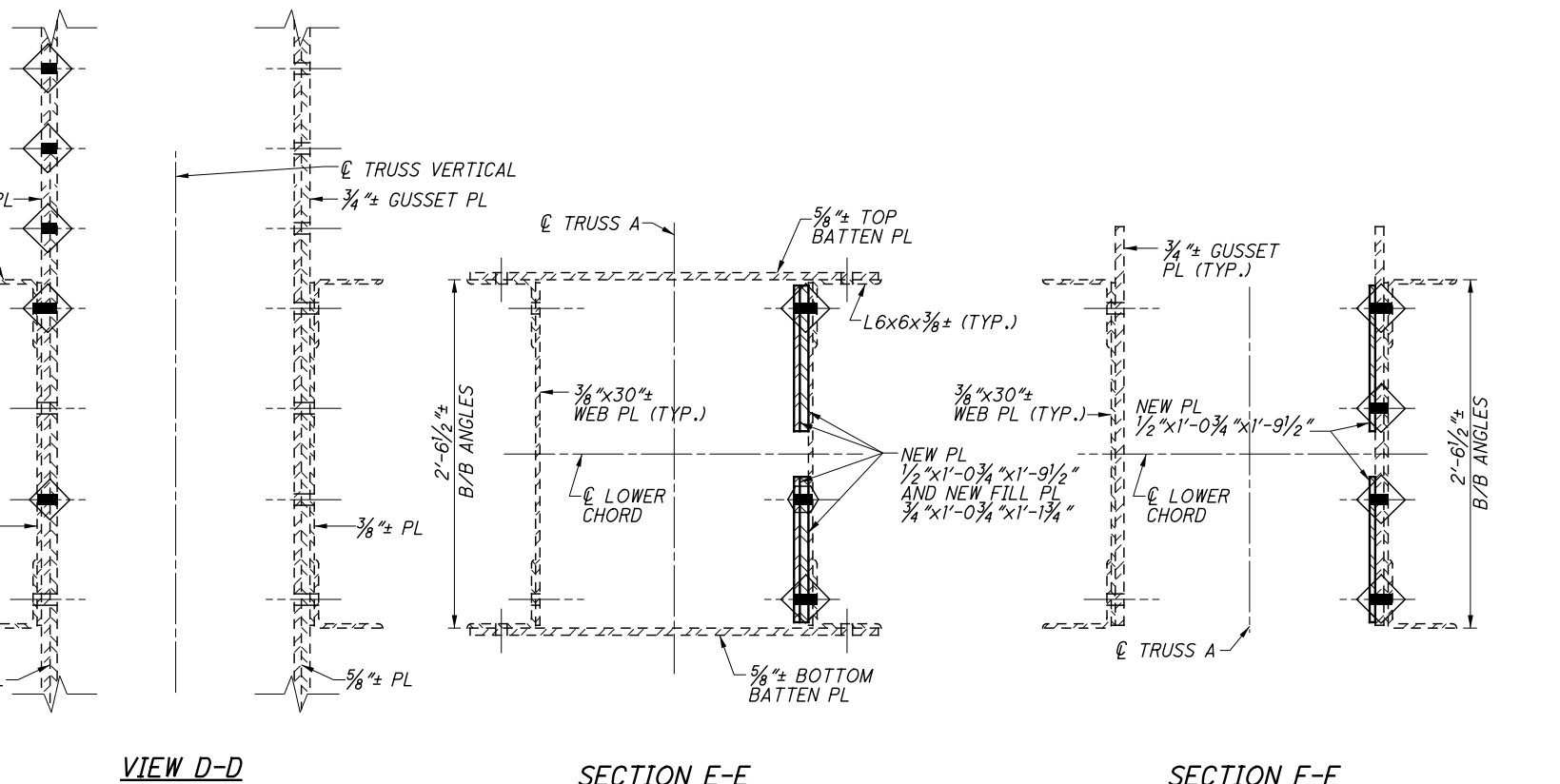
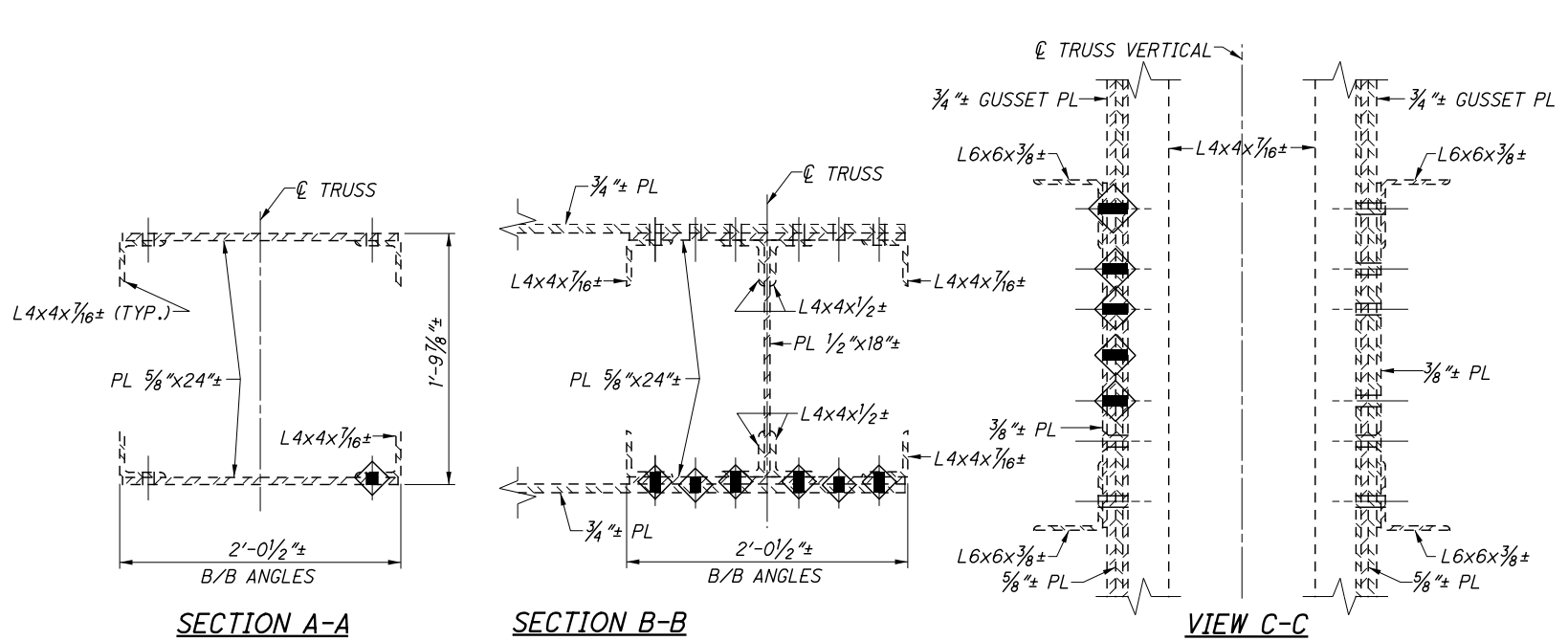
F:\2014\14059 CUY-10-1613\96986\structures\CUY010\_1613\CD102.dgn 3/2/2018 2:24:51 PM JeffSmith



SPAN 6, TRUSS A, PANEL POINT ALO - NORTH ELEVATION  
(LOOKING SOUTH)

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- WORK LIMITATIONS:** DO NOT REMOVE EXISTING RIVETS FOR BOTH SIDE PLATE REINFORCEMENTS AND THE DETERIORATED RIVET REPLACEMENT SIMULTANEOUSLY. COMPLETELY RECONNECT ONE REPAIR PRIOR TO REMOVING RIVETS FOR ANOTHER. LIMIT DETERIORATED RIVET REMOVALS TO NO MORE THAN 5 AT ANY ONE TIME.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 98/238.

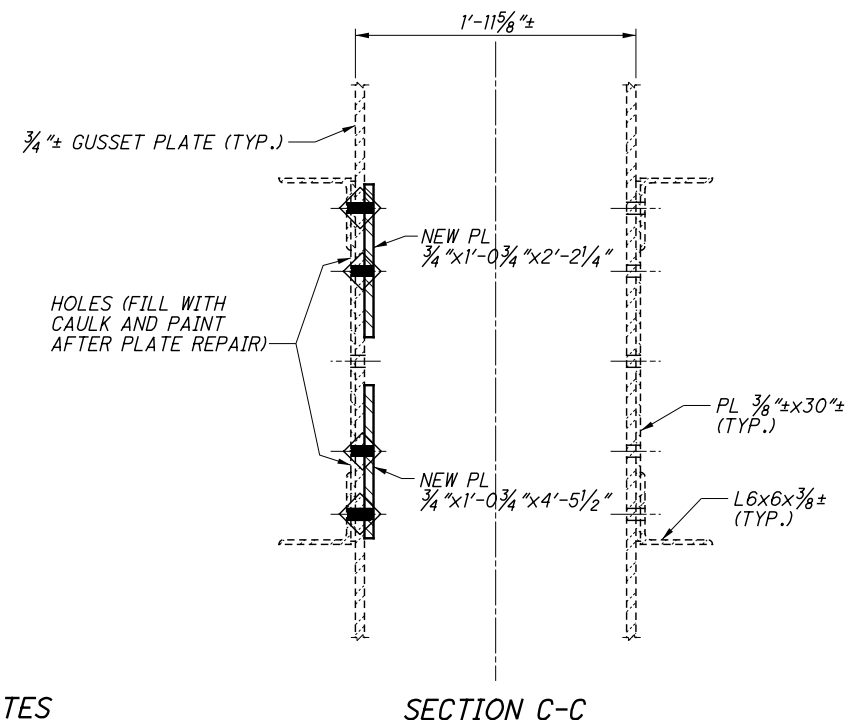
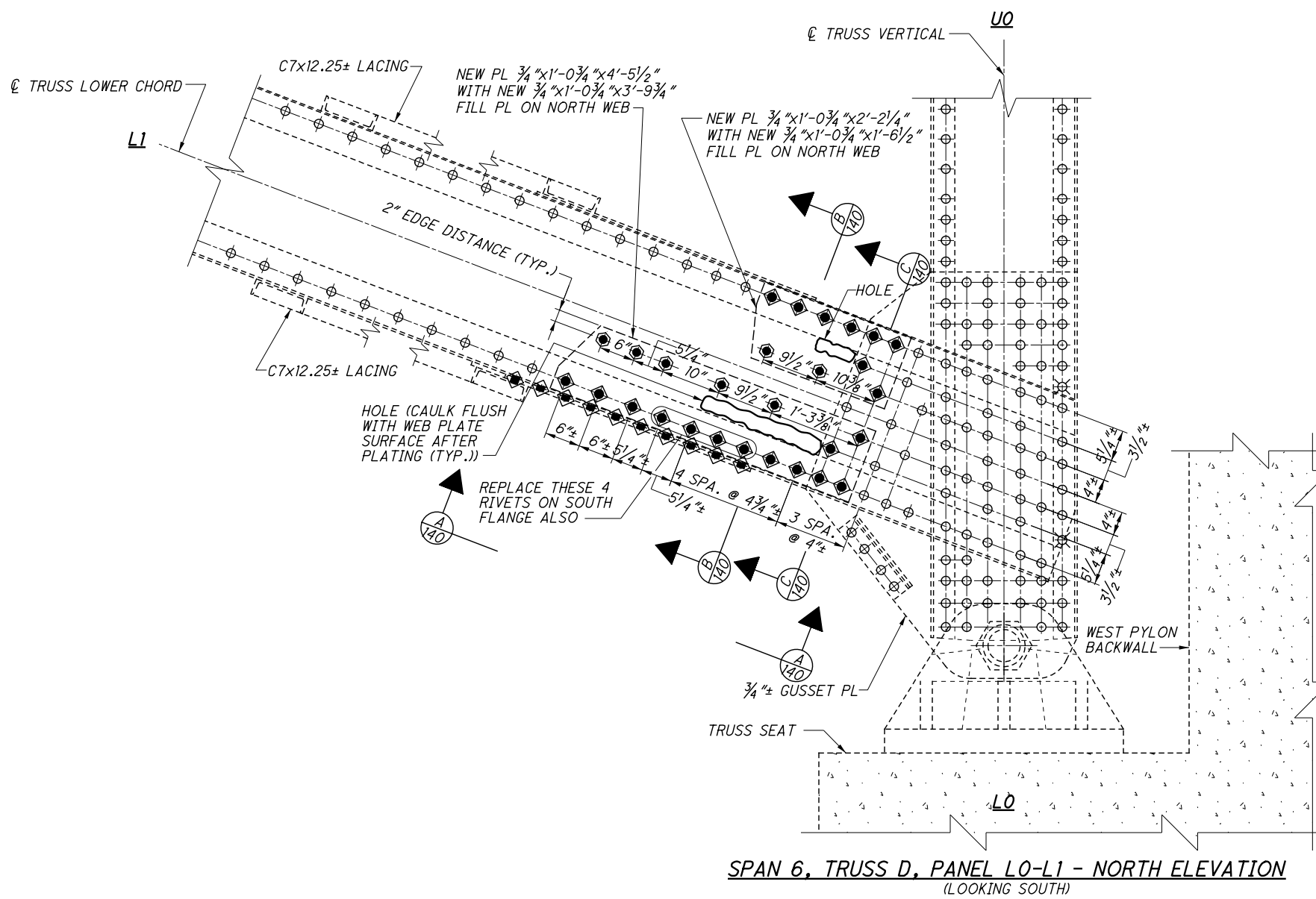
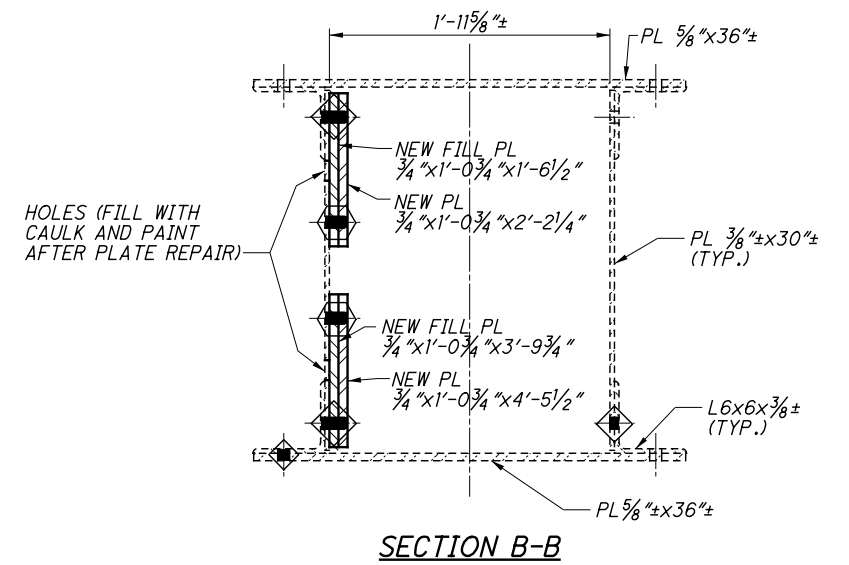
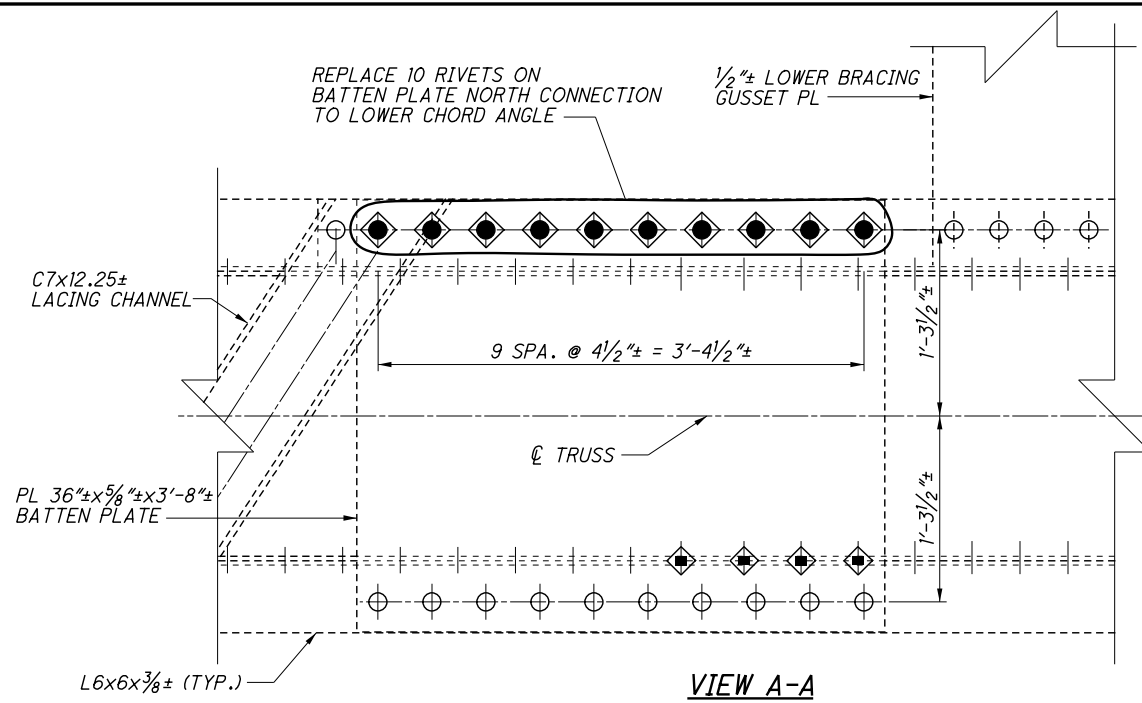


- BOLT LEGEND** SEE SHEET 14/238.
- ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.
- ITEM 513 - STRUCTURAL STEEL, MISC: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.
- ITEM 513 - STRUCTURAL STEEL, MISC: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET 11/238.
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

TRUSS LOWER CHORD (AND VERTICAL) - REPAIR DETAILS - 1		DESIGNED TGW	CHECKED KAK	DRAWN SJK	REVIEWED DLR	DATE 1/30/18	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		STRUCTURE FILE NUMBER 1801503		REVISED			
PID No. 96986		139/238					
		199					
		308					



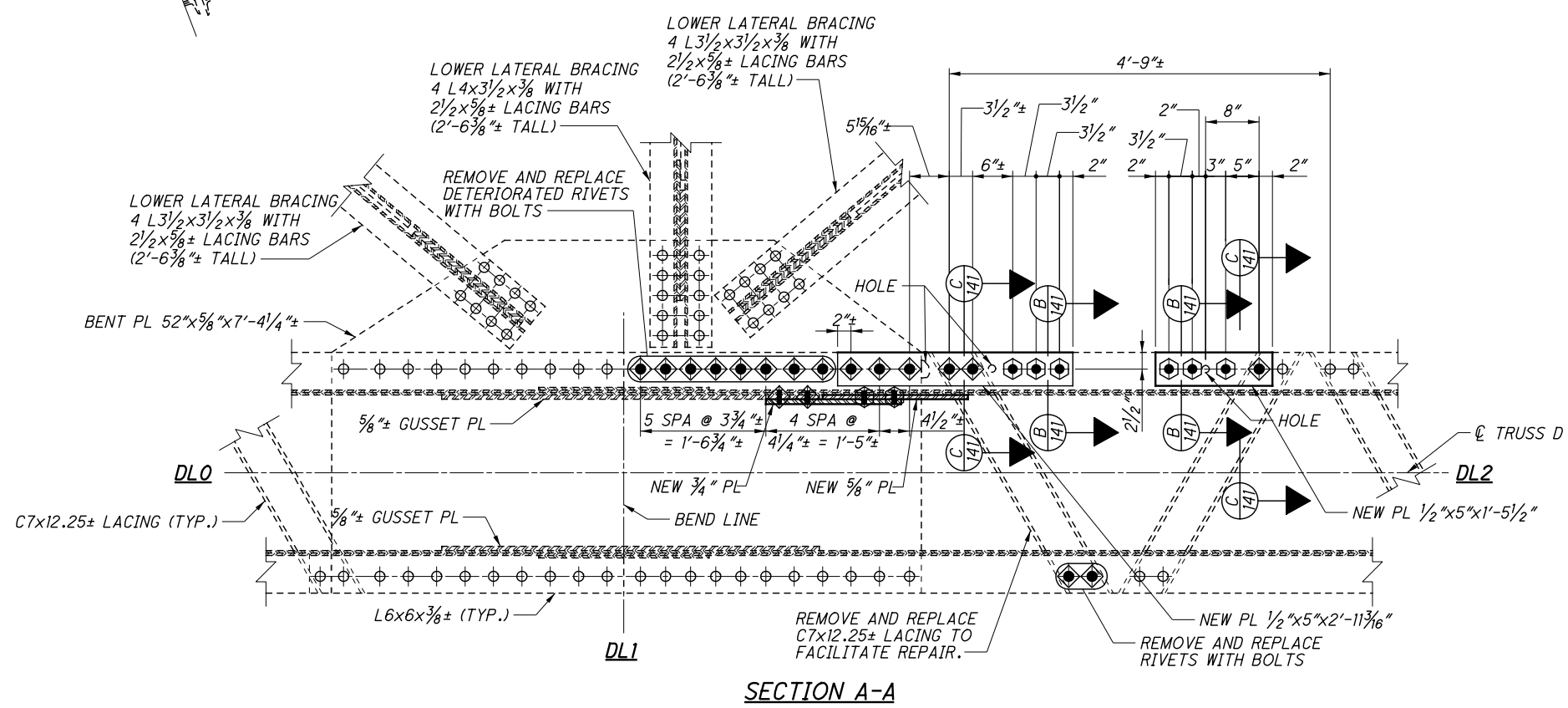
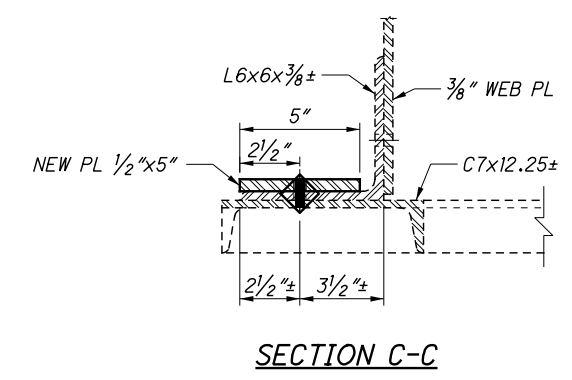
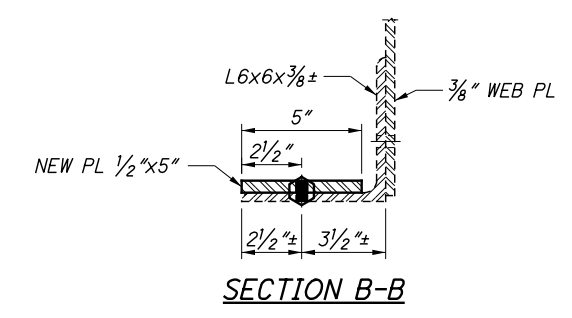
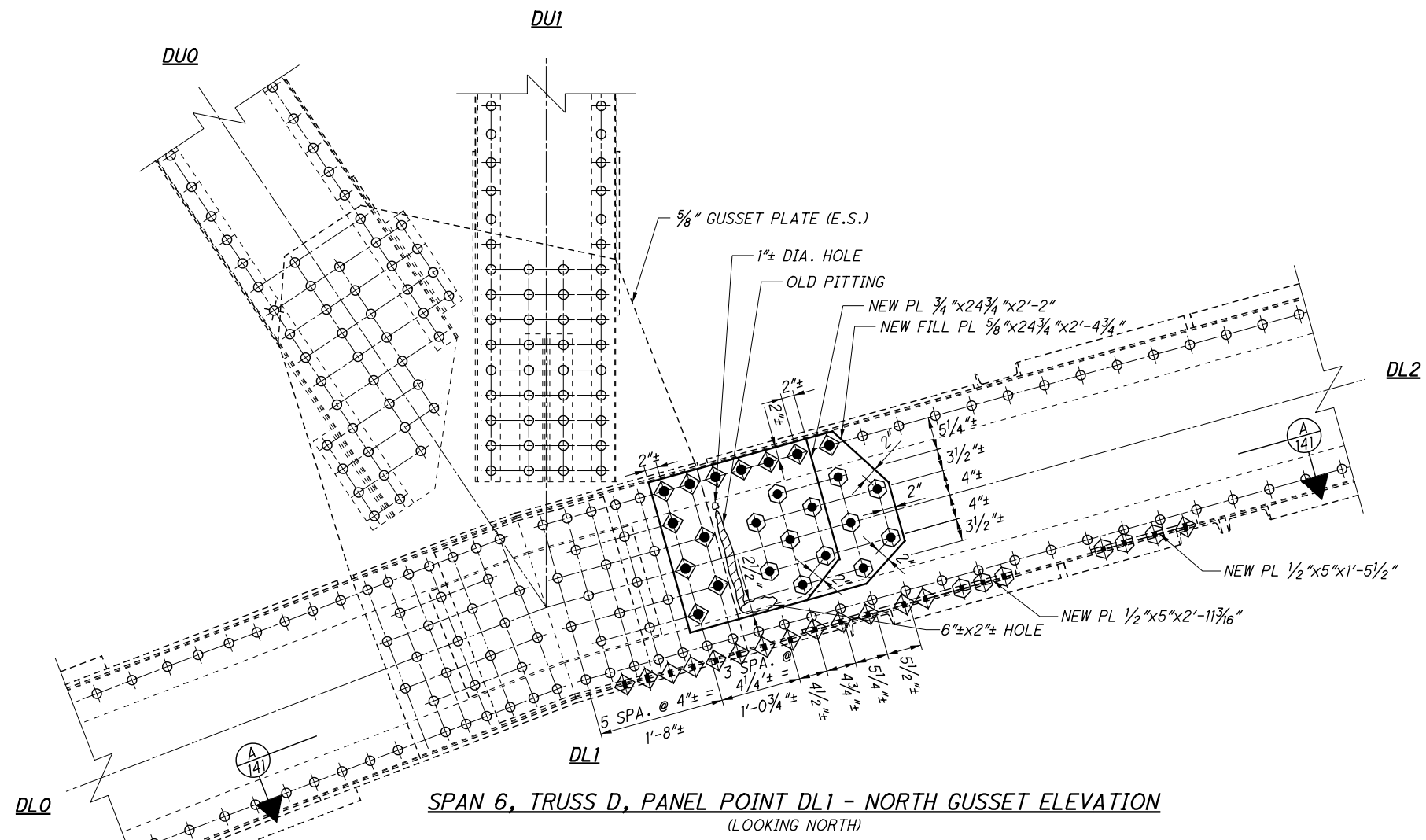
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD033.dgn 3/2/2018 2:25:53 PM JeffSmith



- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - NEW BOLTS** ARE 1" DIAMETER.
  - WORK LIMITATIONS:** DO NOT REMOVE EXISTING RIVETS FOR BOTH SIDE PLATE REINFORCEMENTS AND THE BATTEN PLATE RIVET REPLACEMENT SIMULTANEOUSLY. COMPLETELY RECONNECT ONE REPAIR PRIOR TO REMOVING RIVETS FOR ANOTHER.
  - REPAIR LOCATION:** SEE SHEET **110/238**.
  - BOLT LEGEND** SEE SHEET **14/238**.
  - ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET **8/238**.
  - ITEM 513 - STRUCTURAL STEEL, MISC: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET **10/238**.
  - ITEM 513 - STRUCTURAL STEEL, MISC: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET **11/238**.
  - ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET **12/238**.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	SJK
DESIGNED	TGW
CHECKED	KAK
STRUCTURE FILE NUMBER	1801503
TRUSS LOWER CHORD - REPAIRS DETAILS - 2	
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
140/238	200/308

F:\2014\114059\_CUY-10-1613\96986\_structures\CUY010\_1613\CD021.dgn 3/2/2018 2:26:43 PM JeffSmith



**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**NOTATION**

E.S. - EACH SIDE

**EXISTING RIVETS** ARE 1\"/>

**NEW BOLTS** ARE 1\"/>

**WORK LIMITATIONS:** DO NOT REMOVE EXISTING RIVETS FOR THE SIDE PLATE REINFORCEMENT, BOTTOM PLATE REINFORCEMENT, AND DETERIORATED RIVET REPLACEMENT AT THE SAME TIME.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 110/238.

**BOLT LEGEND** SEE SHEET 14/238.

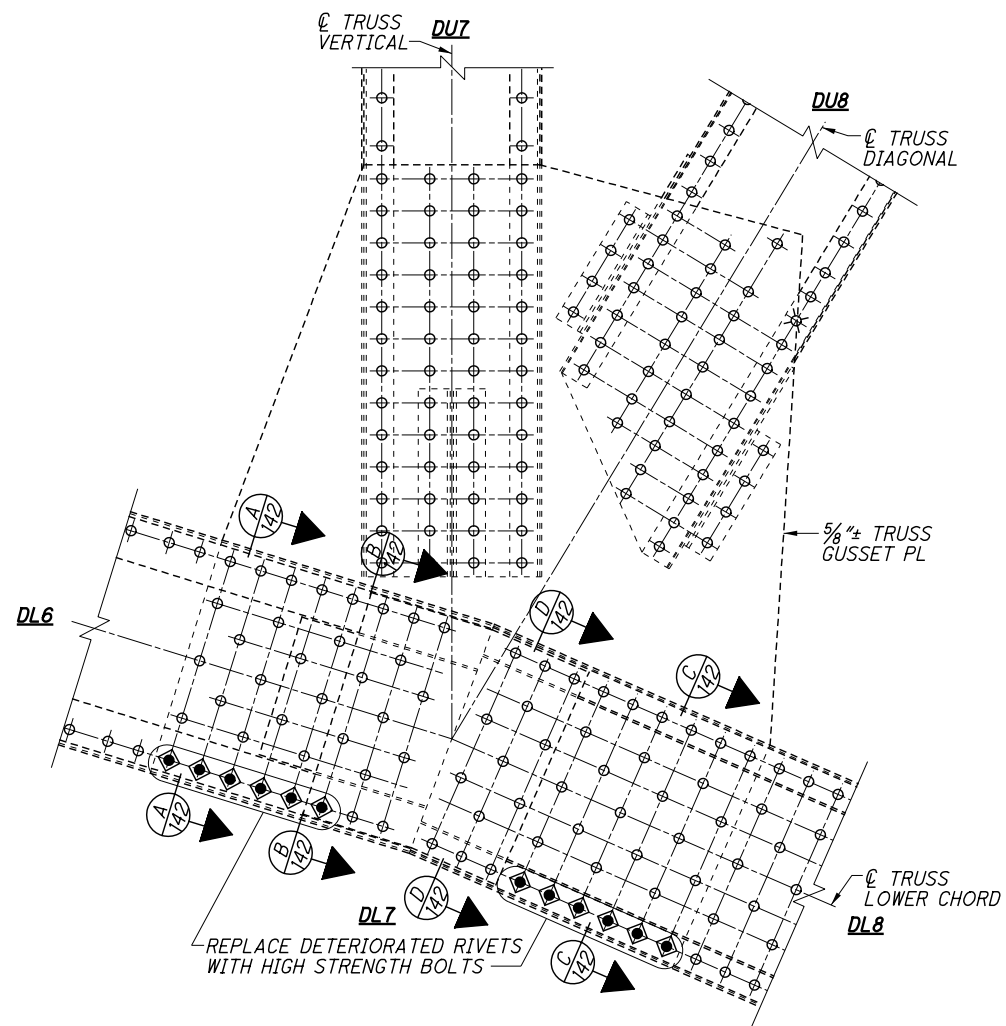
**ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.

**ITEM 513 - STRUCTURAL STEEL, MISC: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.

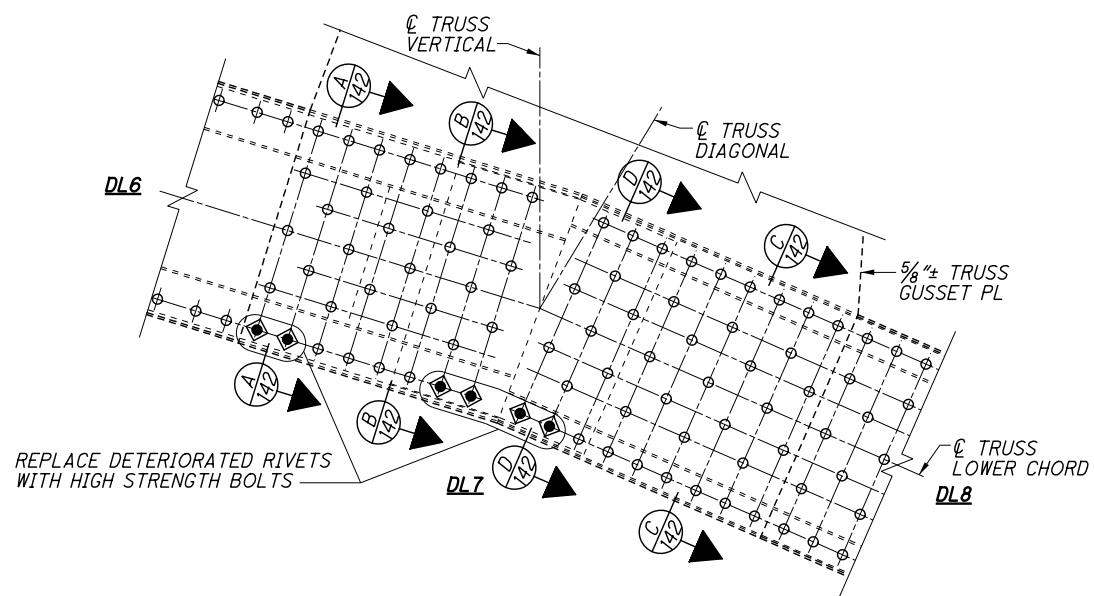
**ITEM 513 - STRUCTURAL STEEL, MISC: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET 11/238.

**ITEM 514 - FIELD PAINTING, MISC: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

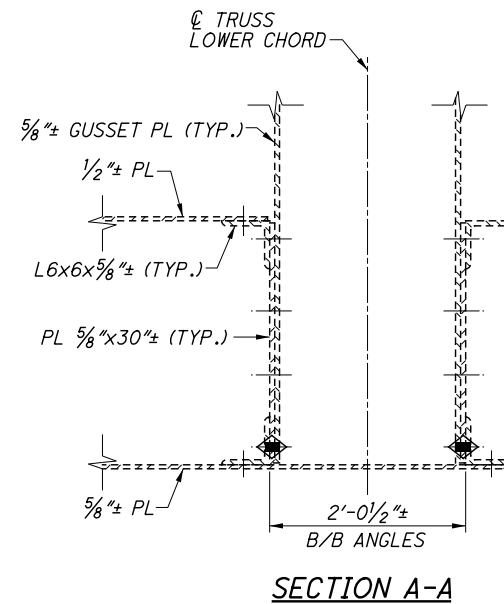
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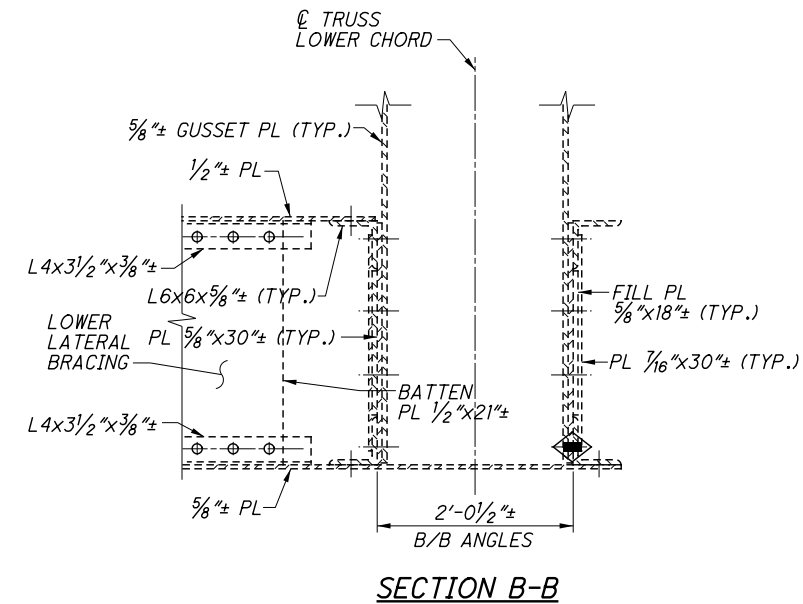
SPAN 6, TRUSS D, PANEL POINT DL7 - SOUTH GUSSET PLATE  
(LOOKING NORTH)



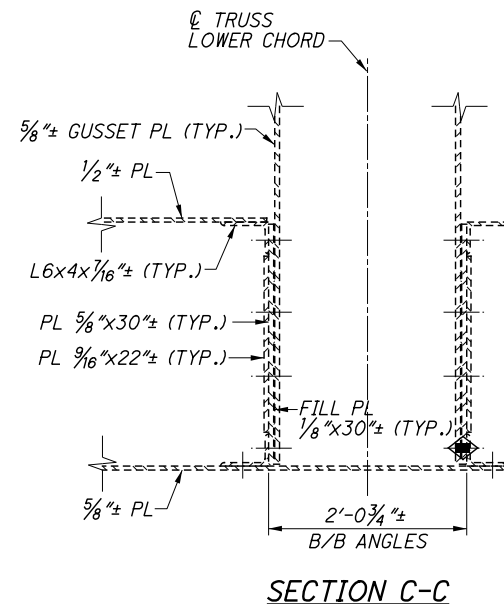
SPAN 6, TRUSS D, PANEL POINT DL7 - NORTH GUSSET PLATE  
(LOOKING NORTH)



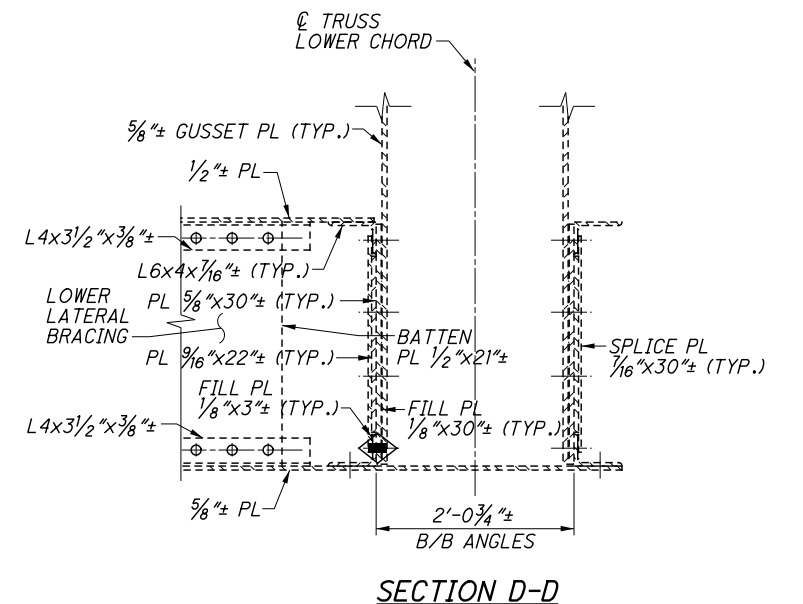
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1" DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER, ASTM A325, TYPE 1.

**NOTATION:** N - NORTH GUSSET  
S - SOUTH GUSSET

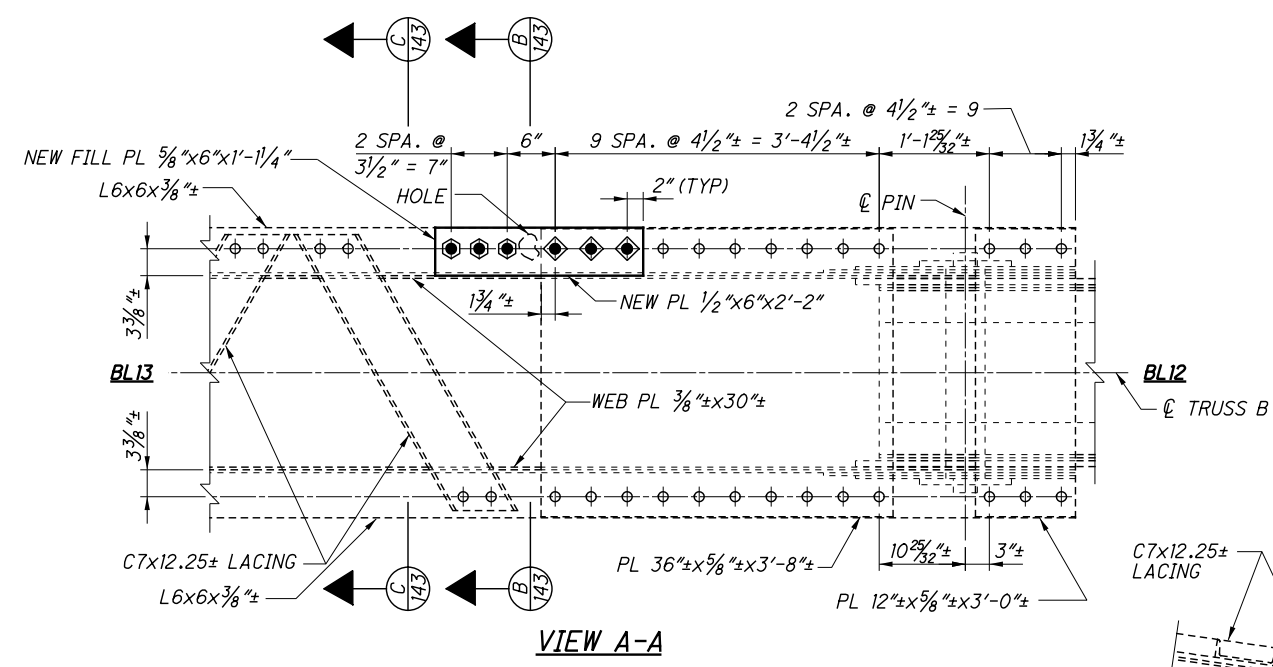
**BOLT LEGEND:** SEE SHEET 14/238.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 110/238.

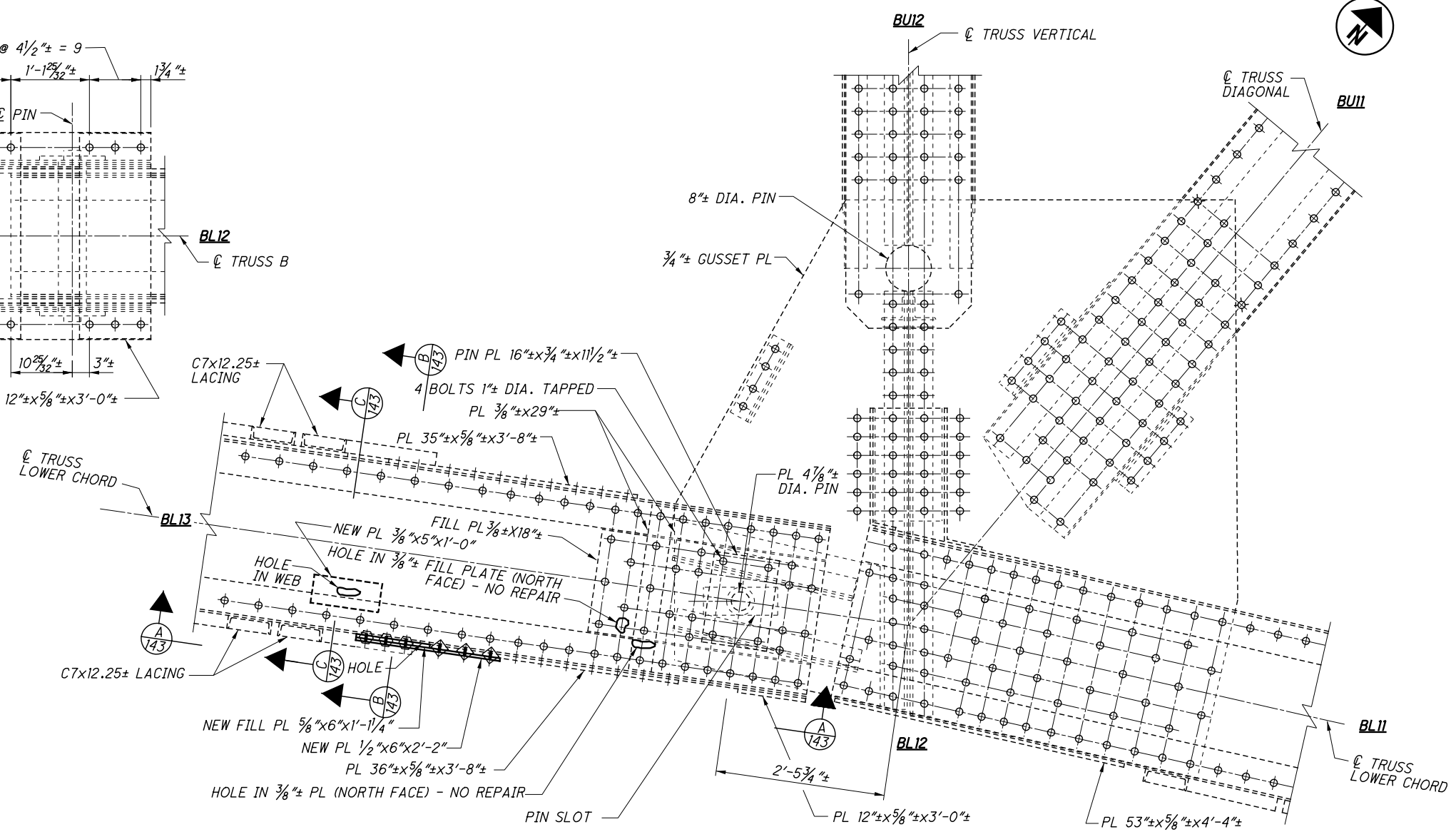
**ITEM 513 - STRUCTURAL STEEL, MISC: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET 11/238.

**ITEM 514 - FIELD PAINTING, MISC: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

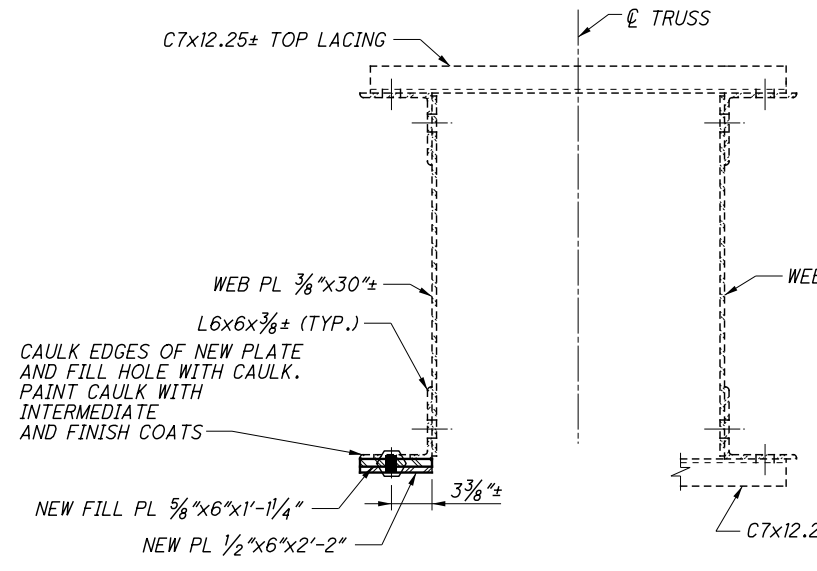
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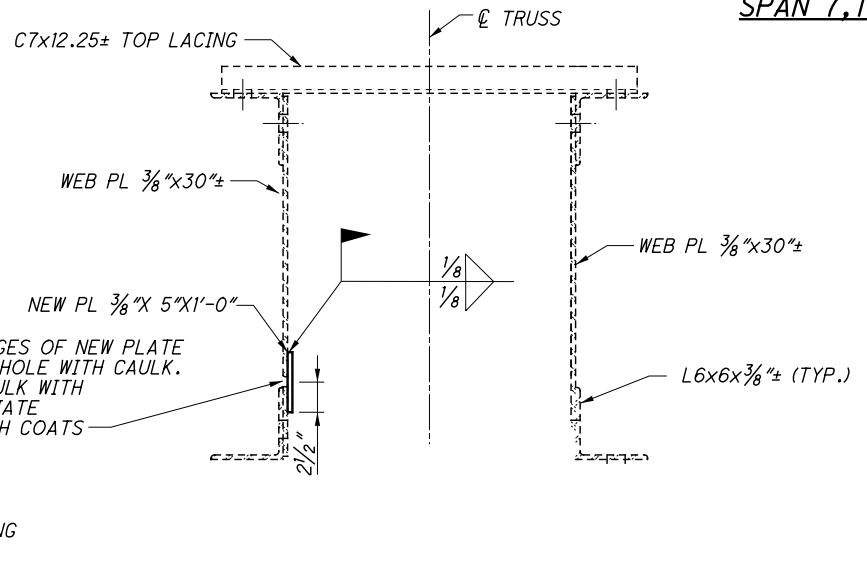
**VIEW A-A**



**SPAN 7, TRUSS B, PANEL BL12-BL13 - NORTH ELEVATION**  
(LOOKING SOUTH)



**SECTION B-B**



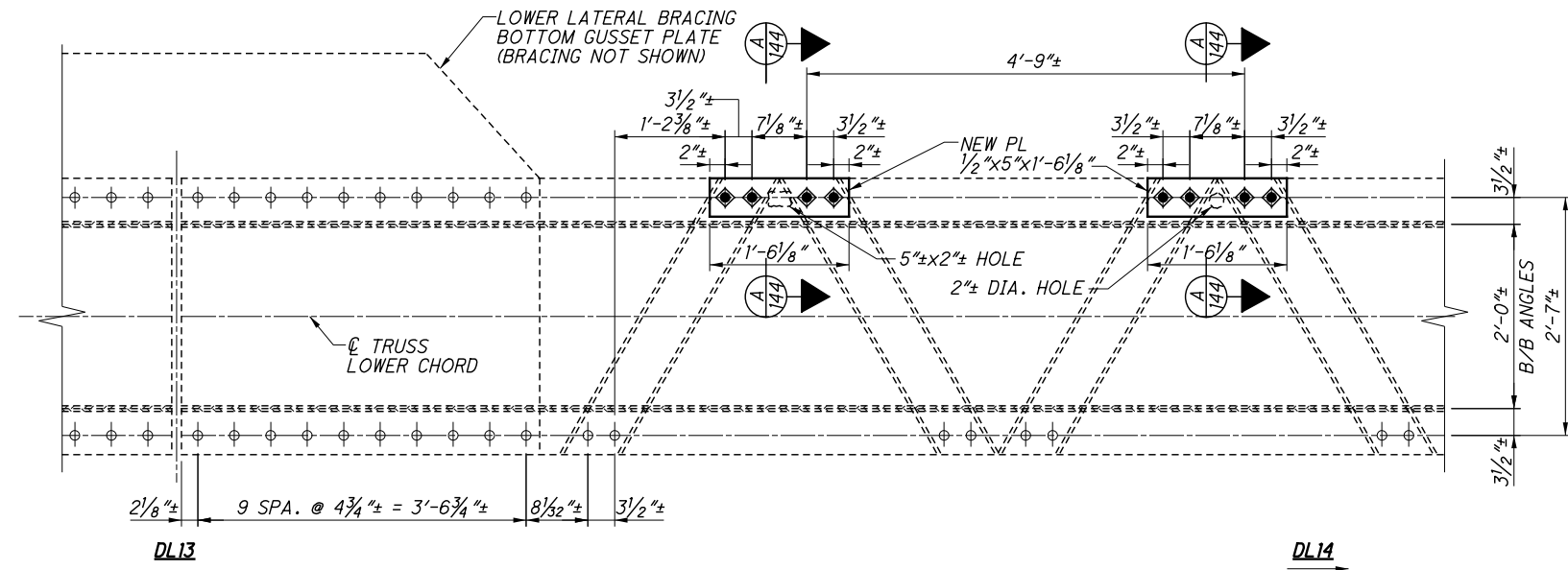
**SECTION C-C**

**NOTES**

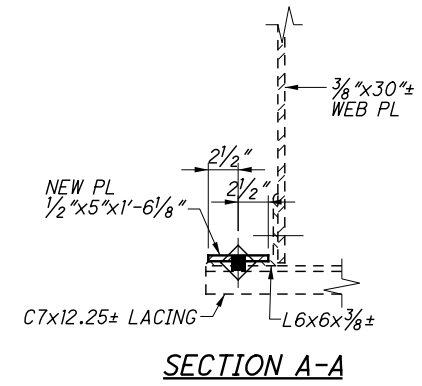
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 457 (L12-L13) AND 493 (L11-L12) FOR BL12.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET [14/238].
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET [102/238].
- ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET [8/238].
- ITEM 513 - STRUCTURAL STEEL, MISC: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET [10/238].
- ITEM 513 - STRUCTURAL STEEL, MISC: WELDED TRUSS STEEL REPAIR:** SEE GENERAL NOTE SHEET [10/238].
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET [12/238].

<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902 	
TRUSS LOWER CHORD - REPAIR DETAILS - 5 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	DATE: 1/30/18 REVIEWED: DLR DRAWN: USB DESIGNED: TGW CHECKED: KAK
CUY-10-16.13 PID No. 96986	
143/238 203/308	

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**SPAN 7, TRUSS D, PANEL DL13-DL14**  
(LOOKING DOWN ON LOWER FLANGE)



**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1"± DIAMETER.

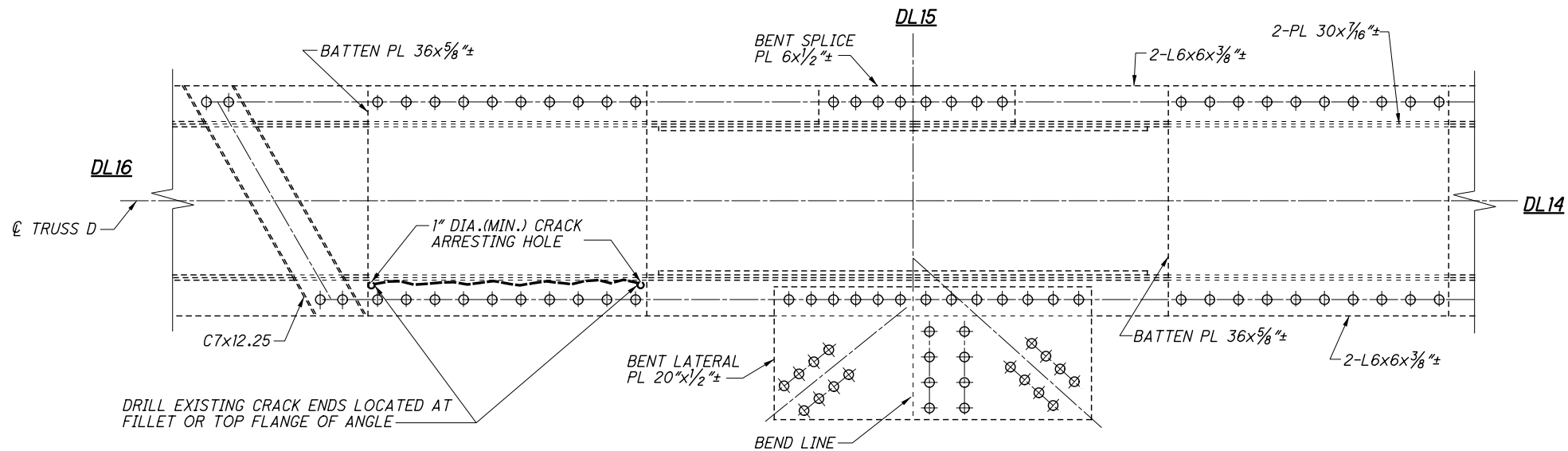
**NEW BOLTS** ARE 1"± DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

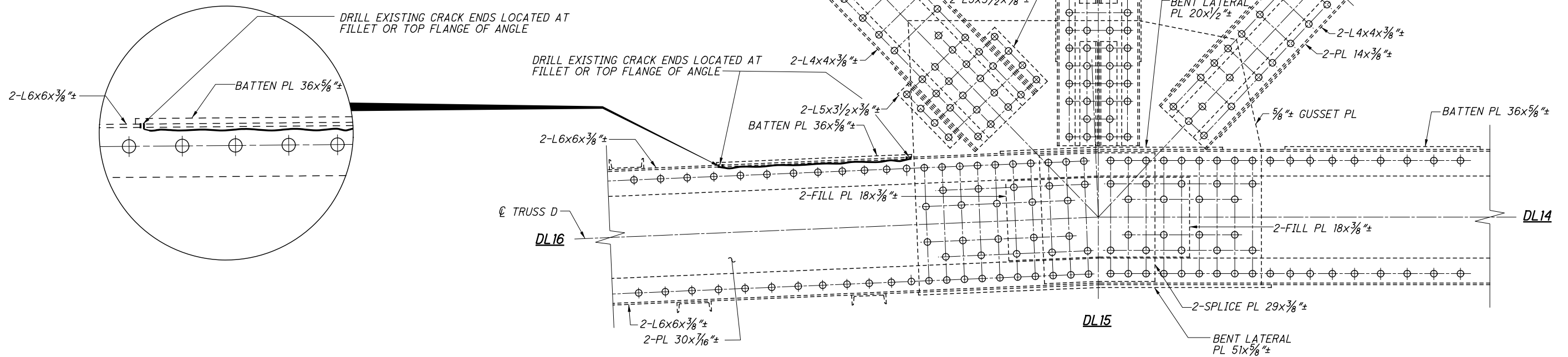
**REPAIR LOCATION:** SEE SHEET 110/238.

**REPAIR PAYMENT:** SEE SHEET 137/238.

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TOP PLAN VIEW



SPAN 7, TRUSS D, PANEL DL15-DL16 - NORTH ELEVATION  
(LOOKING SOUTH)

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**BOLT LEGEND:** SEE SHEET 14/238.

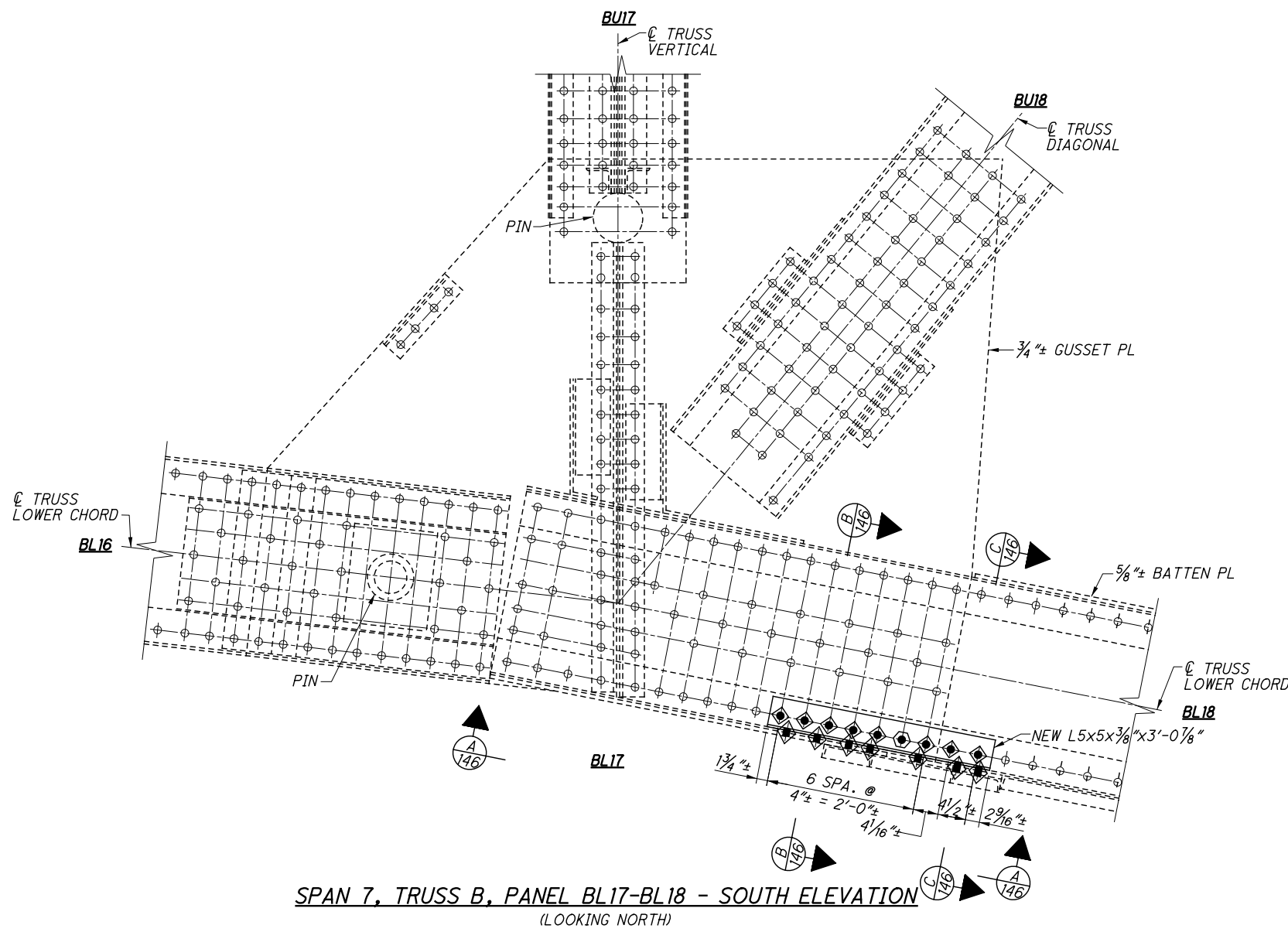
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 110/238.

**ITEM 513 - STRUCTURAL STEEL MISC: DRILLING STRUCTURAL STEEL, GRINDING AND NDT (TRUSS):**  
SEE GENERAL NOTE SHEET 11/238.

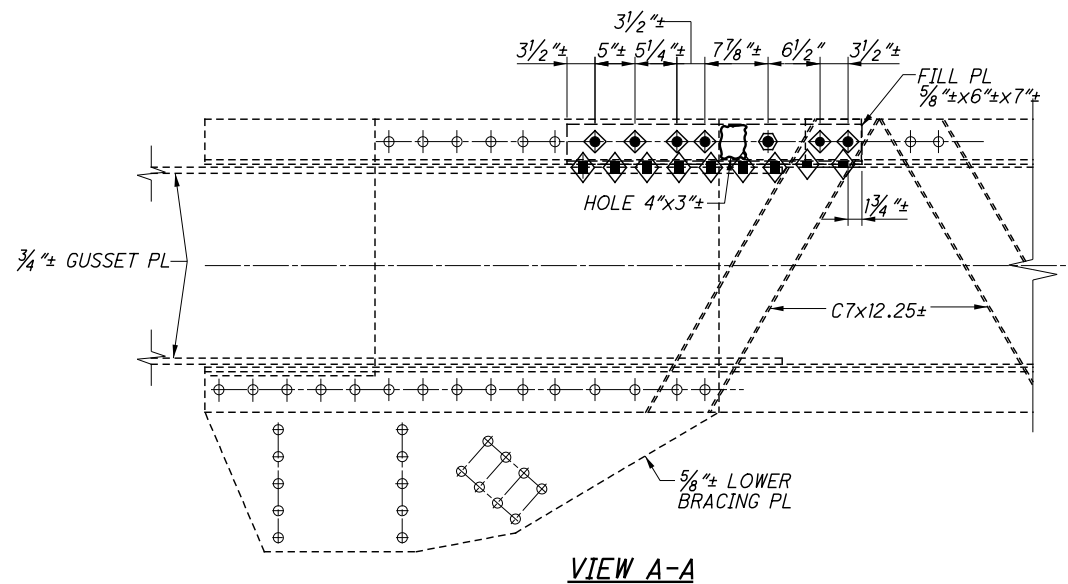
**ITEM 514 - FIELD PAINTING, MISC: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:**  
SEE GENERAL NOTE SHEET 12/238.

<p>TRUSS LOWER CHORD - REPAIR DETAILS - 7</p>	
<p>BRIDGE NO. CUY-10-1613</p>	<p>S.R. 10 OVER THE CUYAHOGA RIVER</p>
<p>CUY-10-16.13</p>	<p>PID No. 96986</p>
<p>145/238</p>	<p>205 308</p>
<p>DESIGNED TGW</p>	<p>CHECKED KAK</p>
<p>DRAWN JLS</p>	<p>REVISED</p>
<p>REVIEWED DLR</p>	<p>STRUCTURE FILE NUMBER 1801503</p>
<p>DATE 1/30/18</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>

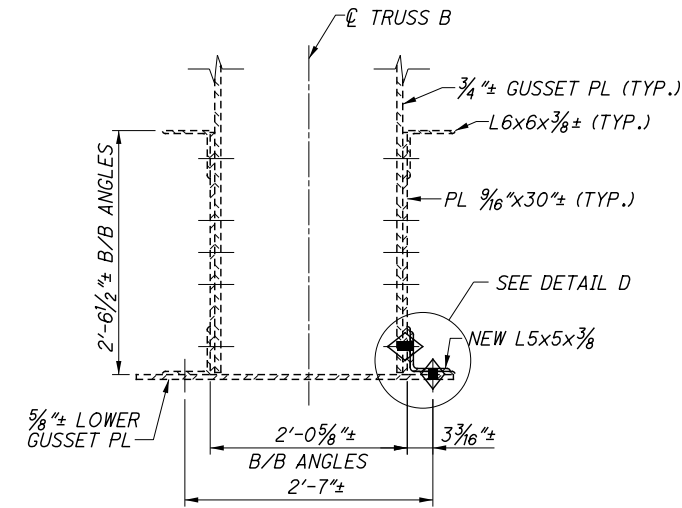
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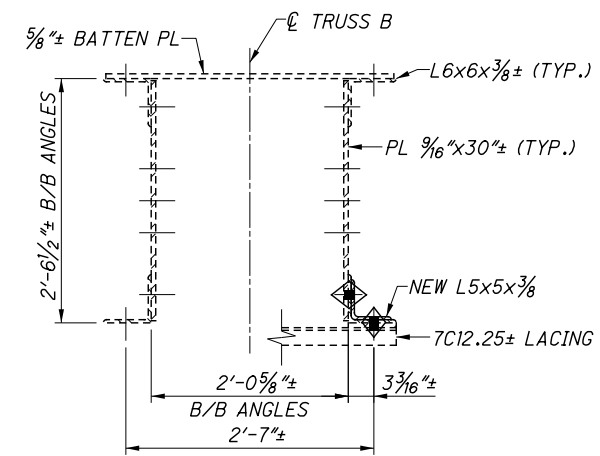
SPAN 7, TRUSS B, PANEL BL17-BL18 - SOUTH ELEVATION  
(LOOKING NORTH)



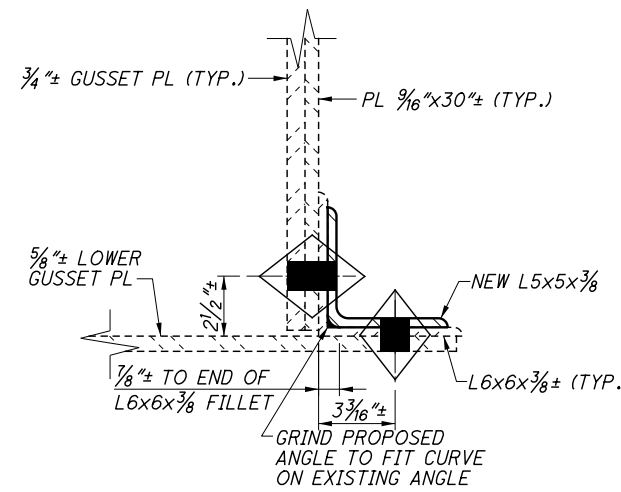
VIEW A-A



SECTION B-B



SECTION C-C



DETAIL D

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1" DIAMETER.

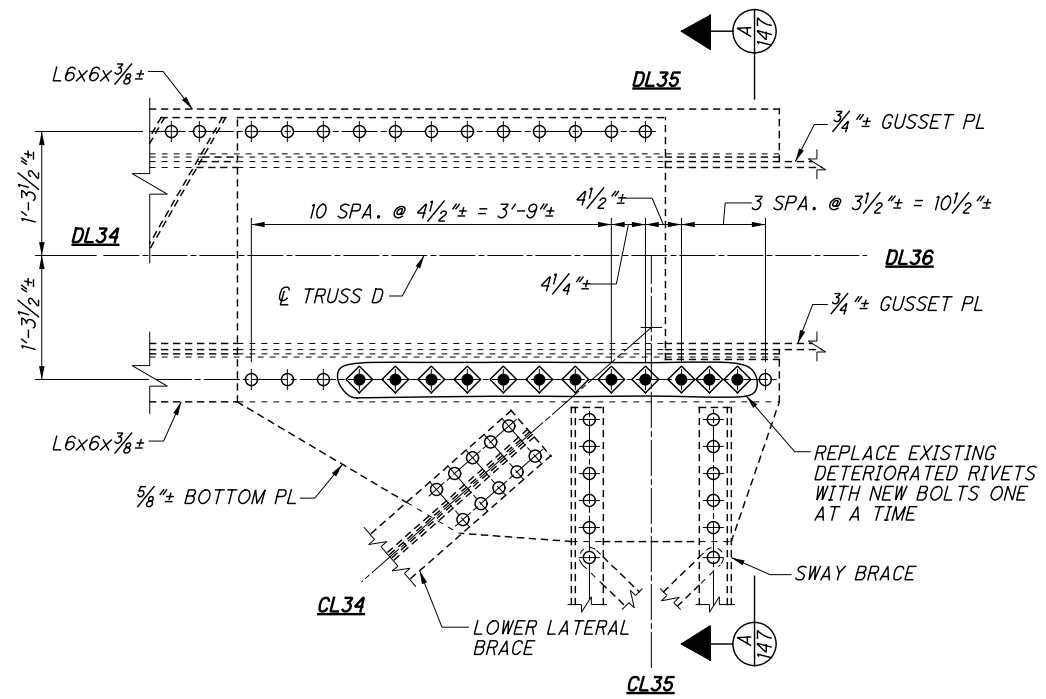
**NEW BOLTS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

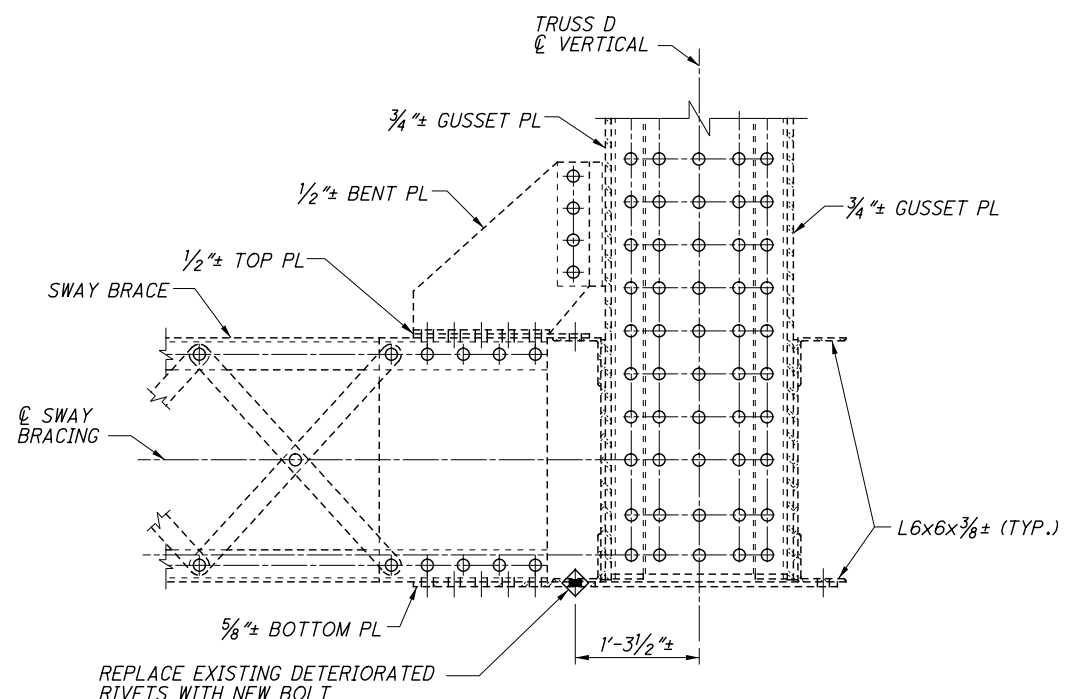
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 102/238.

**REPAIR PAYMENT:** SEE SHEET 137/238.

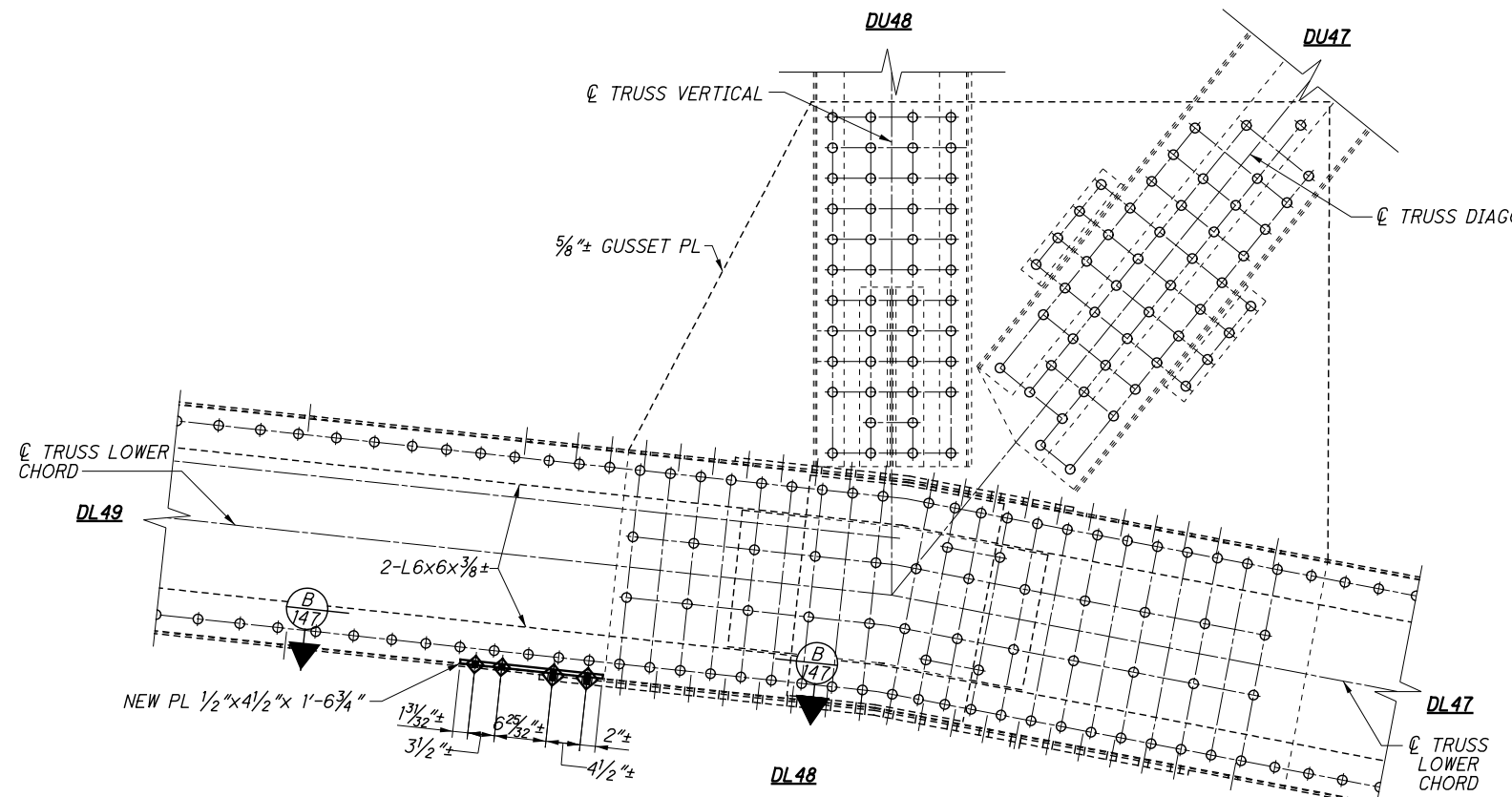
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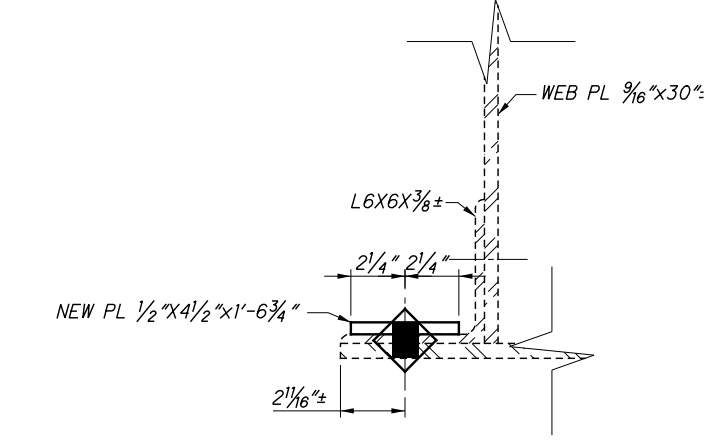
**SPAN 9, TRUSS D, PANEL POINT DL35  
LOWER LATERAL BRACING TO  
TRUSS CONNECTION PLAN**  
(LOOKING UP)



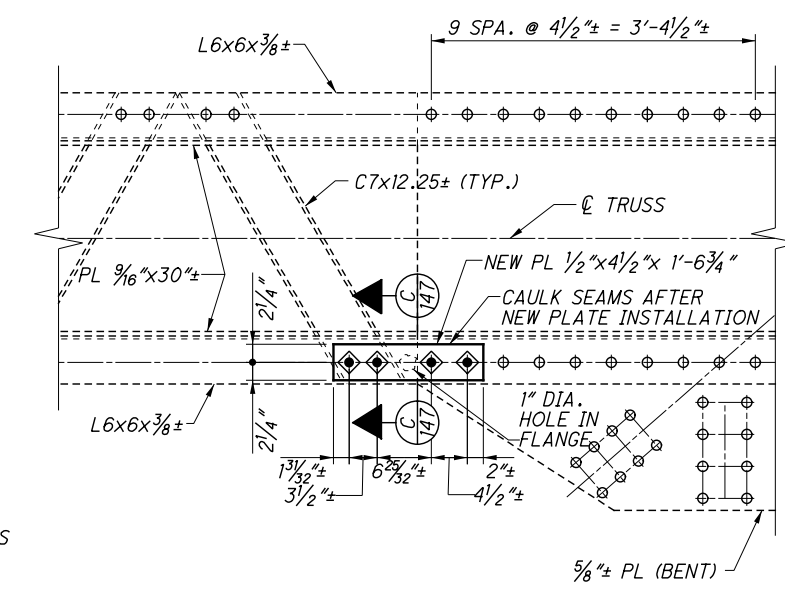
**SECTION A-A**



**SPAN 10, TRUSS D, PANEL POINT DL48 - NORTH ELEVATION**  
(LOOKING SOUTH)



**SECTION C-C**

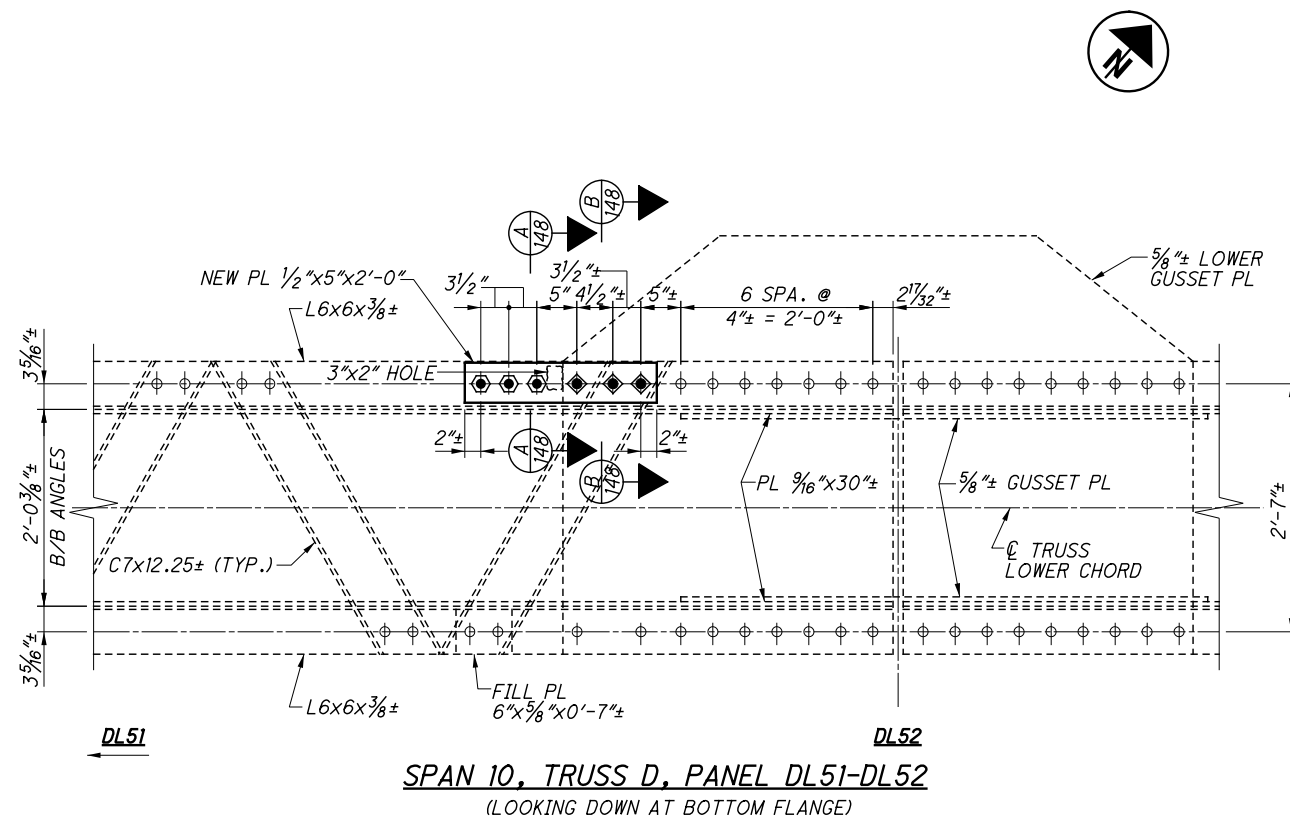


**SECTION B-B**

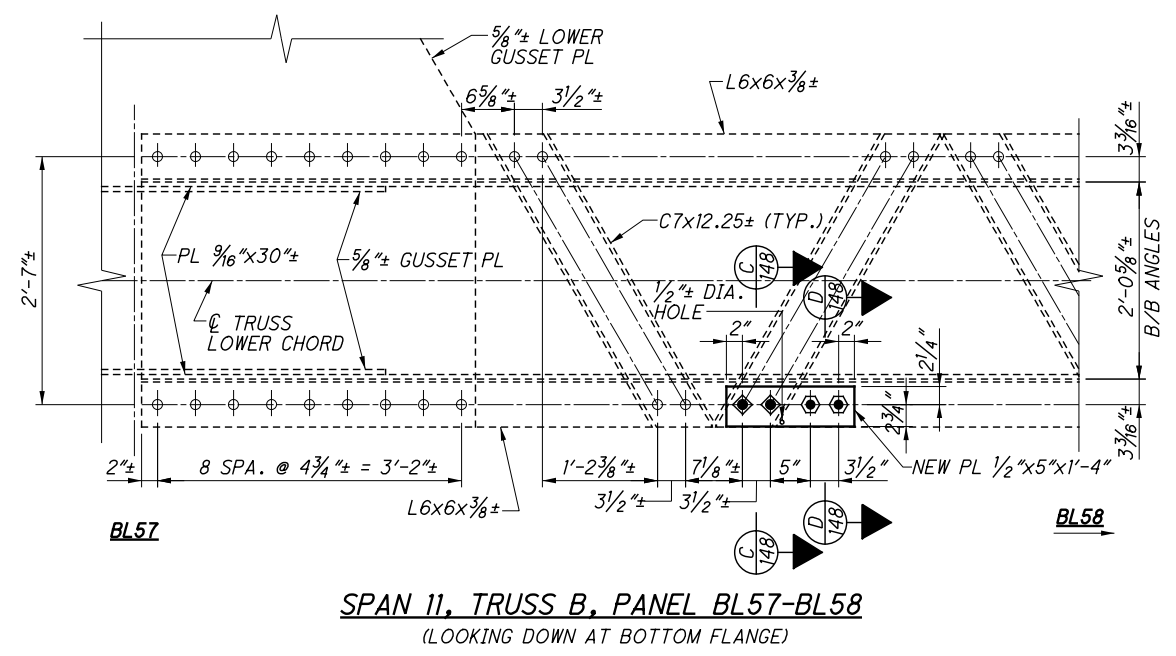
- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - NEW BOLTS** ARE 1" DIAMETER.
  - BOLT LEGEND** SEE SHEET 14/238.
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 111/238.
  - REPAIR PAYMENT:** SEE SHEET 139/238.

<b>TRUSS LOWER CHORD - REPAIR DETAIL - 9</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED TGW	CHECKED KAK	DRAWN JLS
REVIEWED DLR	DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
CUY-10-16.13 PID No. 96986	147/238 207/308	

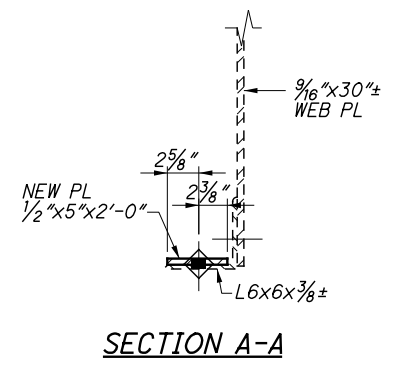




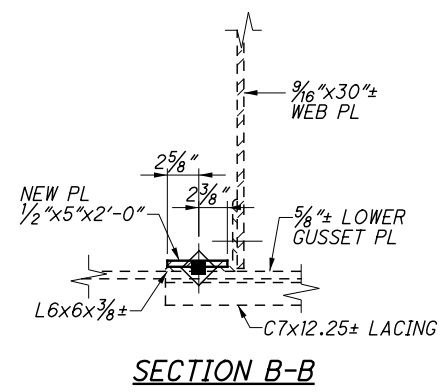
**SPAN 10, TRUSS D, PANEL DL51-DL52**  
(LOOKING DOWN AT BOTTOM FLANGE)



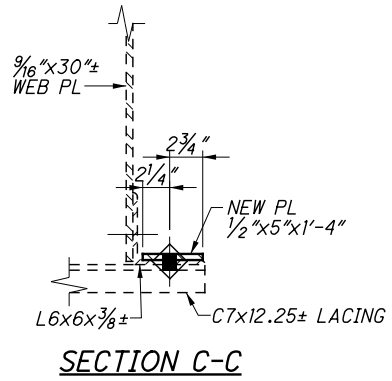
**SPAN 11, TRUSS B, PANEL BL57-BL58**  
(LOOKING DOWN AT BOTTOM FLANGE)



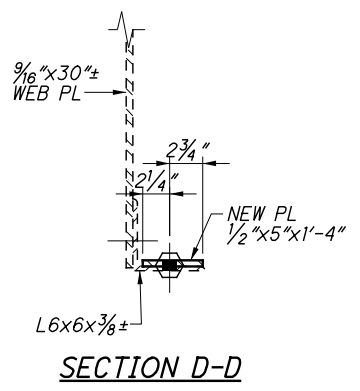
**SECTION A-A**



**SECTION B-B**



**SECTION C-C**



**SECTION D-D**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1" DIAMETER.

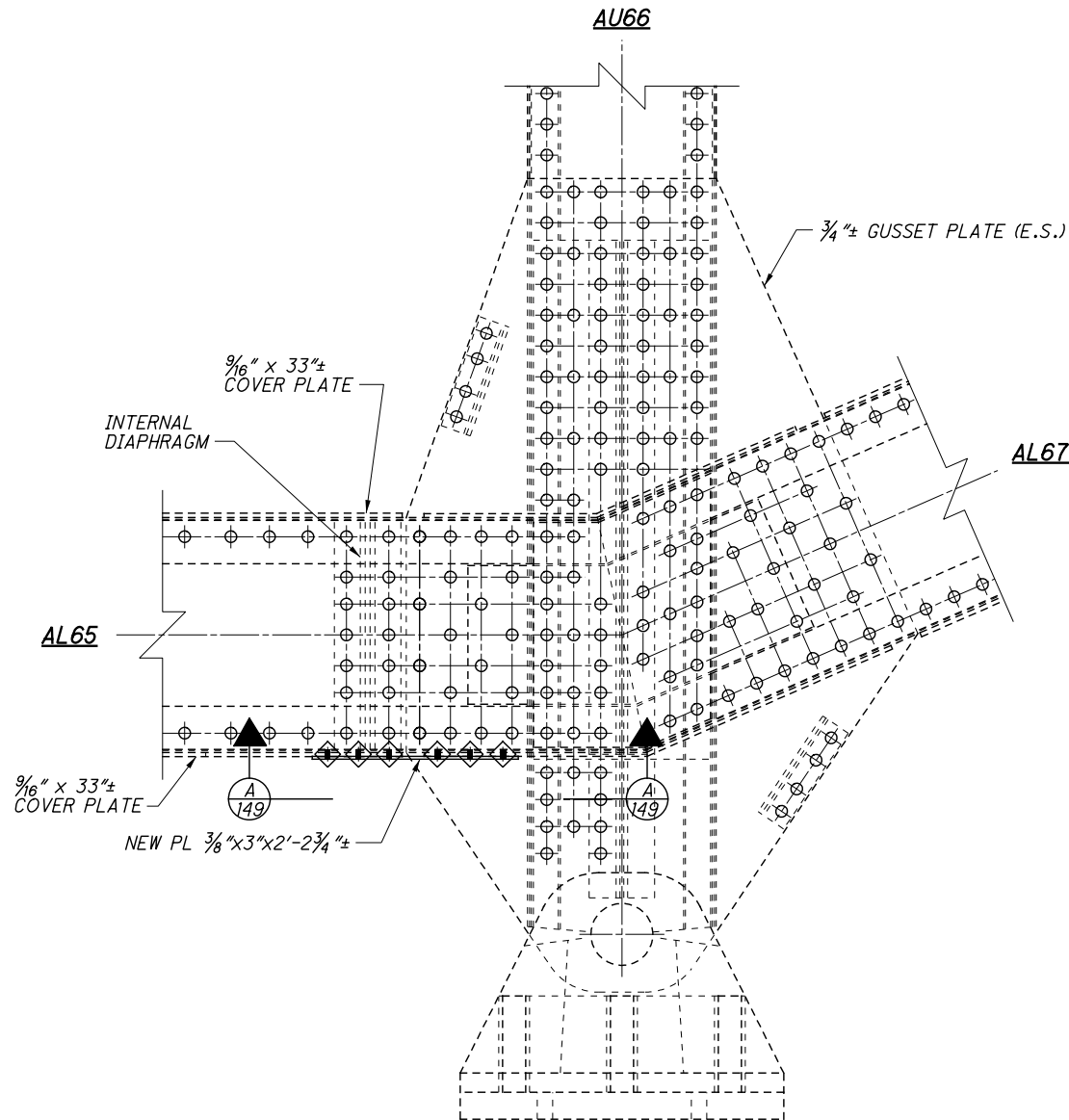
**NEW BOLTS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

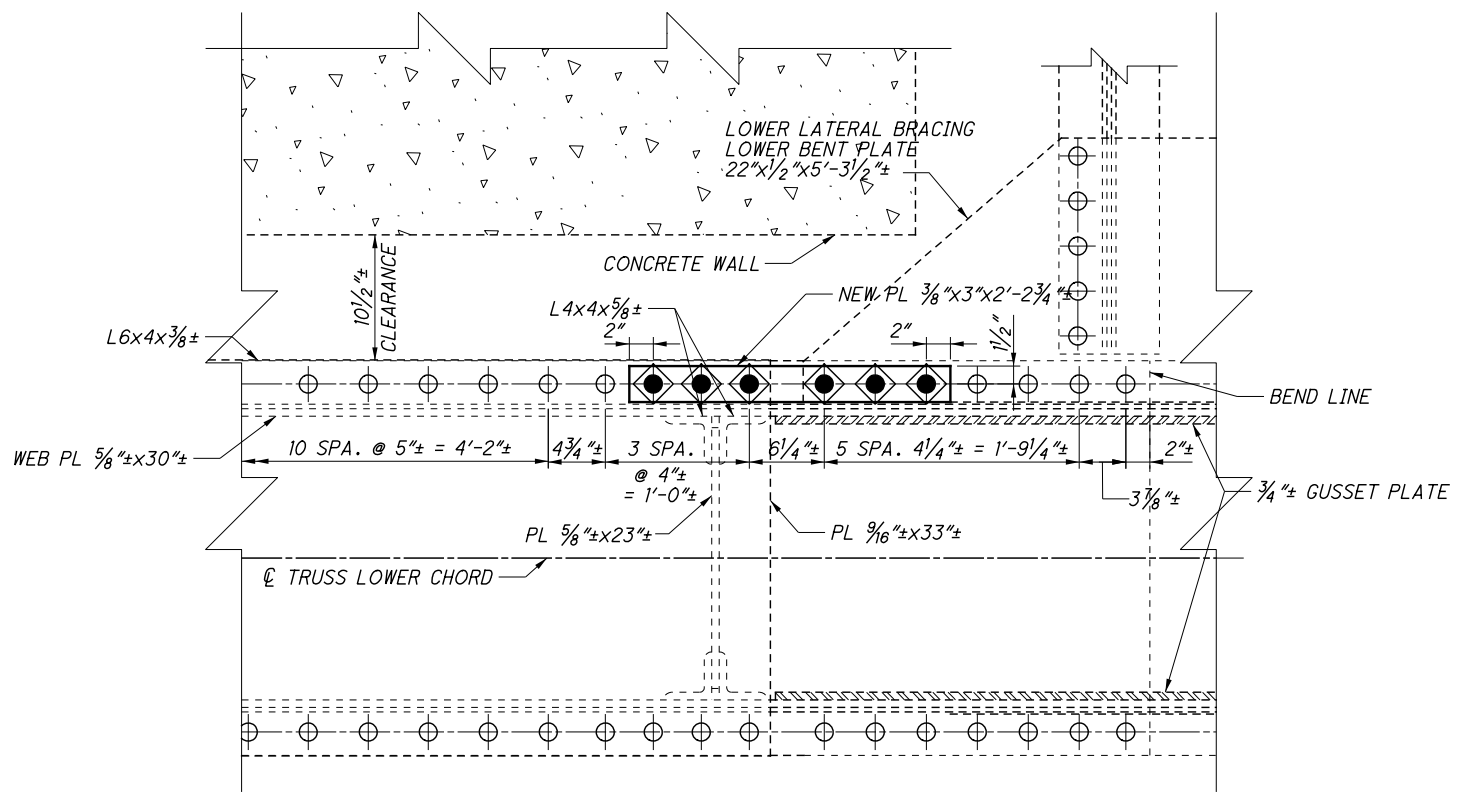
**REPAIR LOCATION:** SEE TRUSS B ELEVATION SHEET 103/238 AND TRUSS D ELEVATION SHEET 111/238.

**REPAIR PAYMENT:** SEE SHEET 137/238.

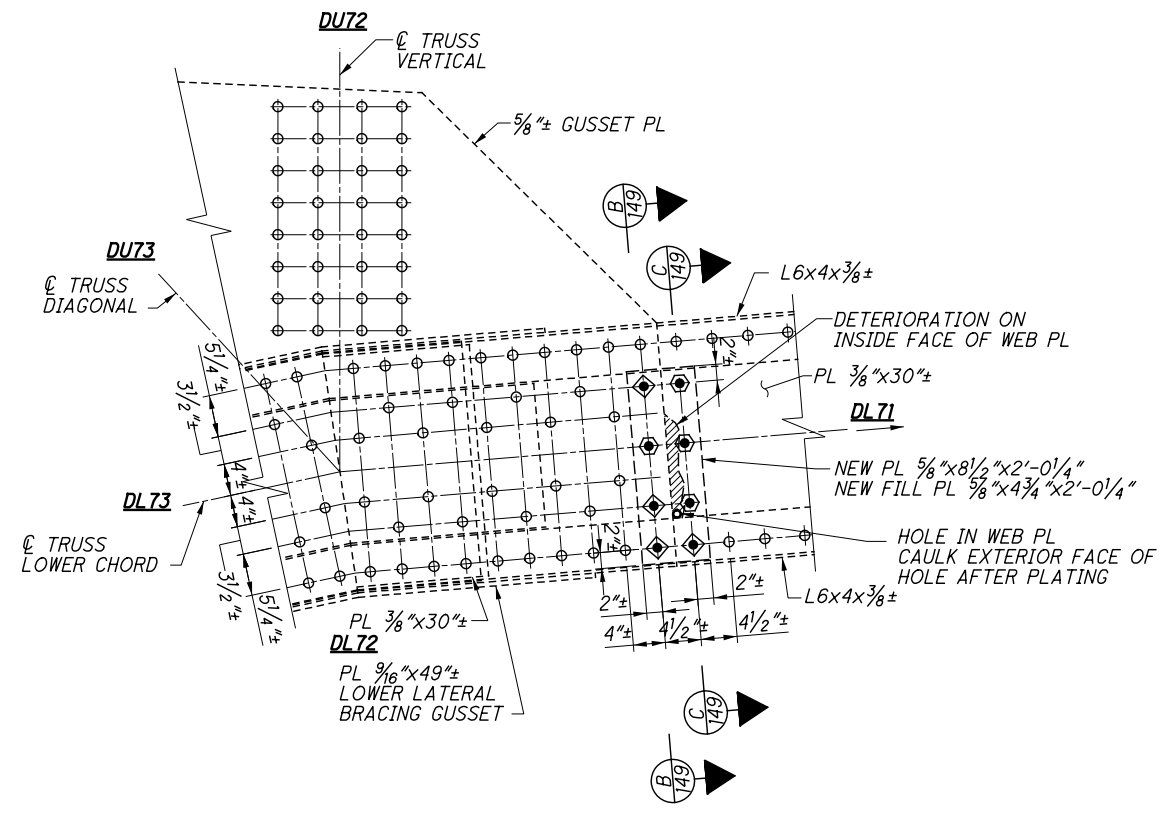
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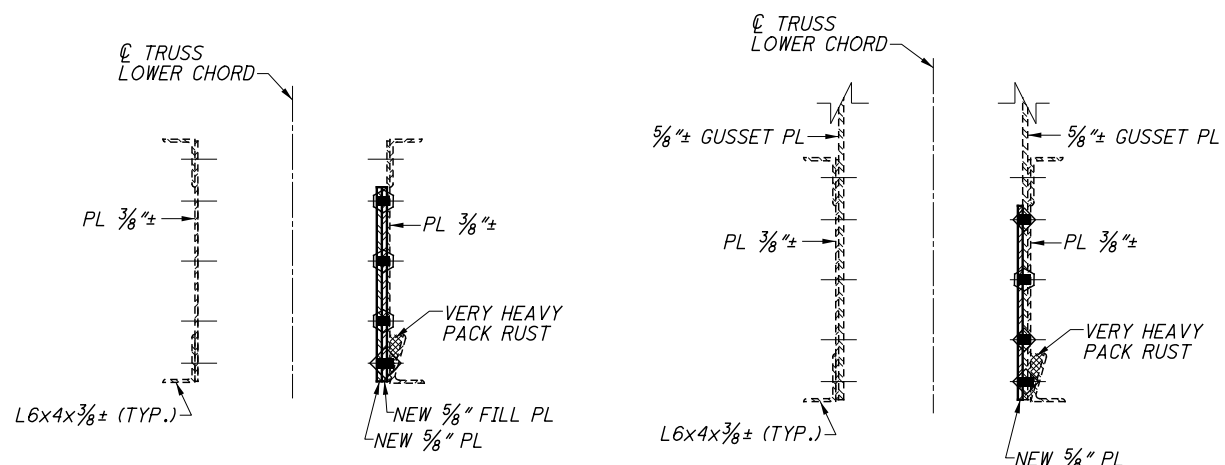
**SPAN 12, TRUSS A, PANEL AL65 - AL66 SOUTH ELEVATION**  
(LOOKING NORTH)



**VIEW A-A**



**SPAN 12, TRUSS D, PANEL POINT DL71-DL72 - NORTH ELEVATION**  
(LOOKING SOUTH)



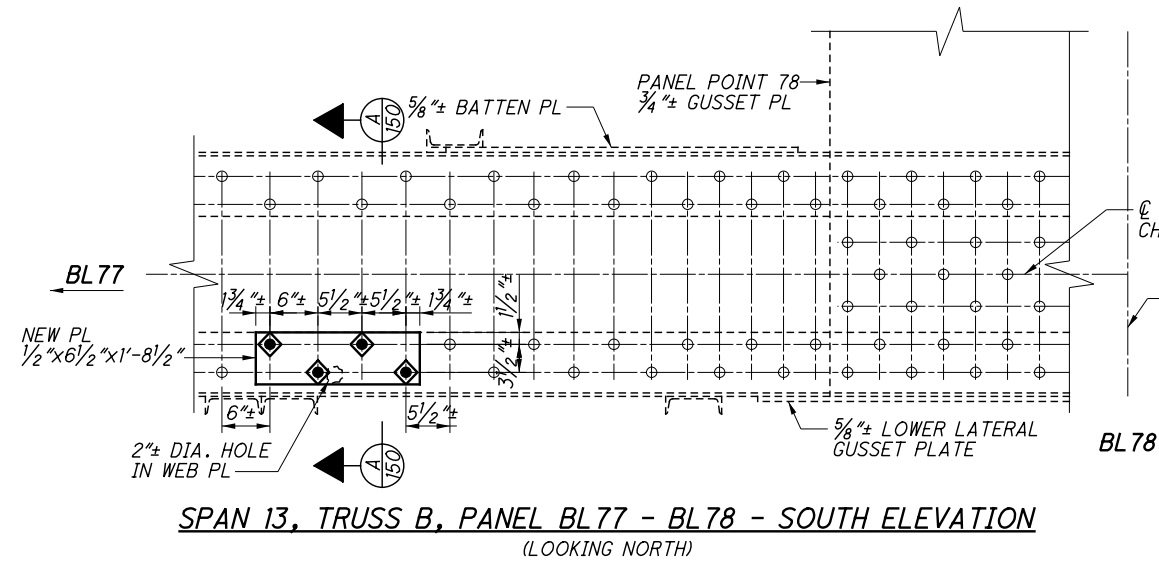
**SECTION C-C**

**SECTION B-B**

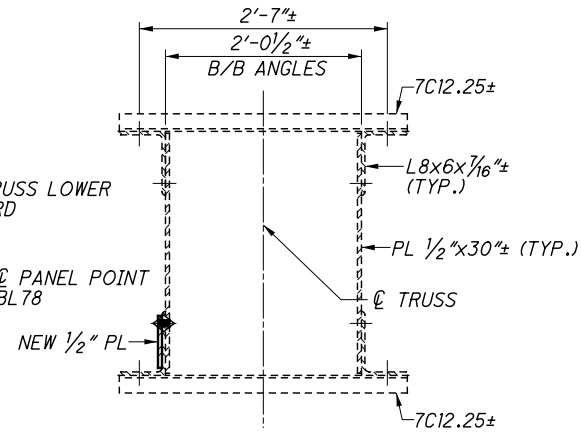
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND** SEE SHEET 14/238.
- REPAIR LOCATION:** SEE TRUSS A ELEVATION SHEET 100/238 AND TRUSS D ELEVATION SHEET 112/238.
- HEAVY PACK RUST** BETWEEN TRUSS CHORD WEB PLATE AND LOWER ANGLE MAY AFFECT THE PROPOSED BOLT GRIP.
- REPAIR PAYMENT:** SEE SHEET 137/238.

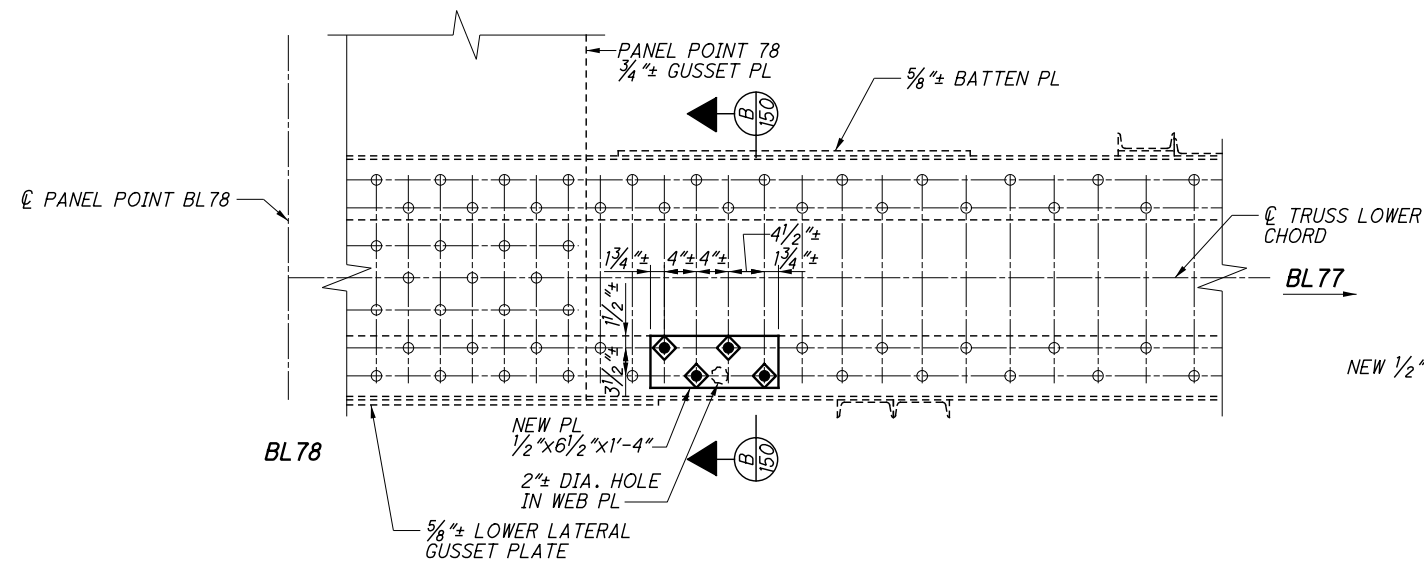
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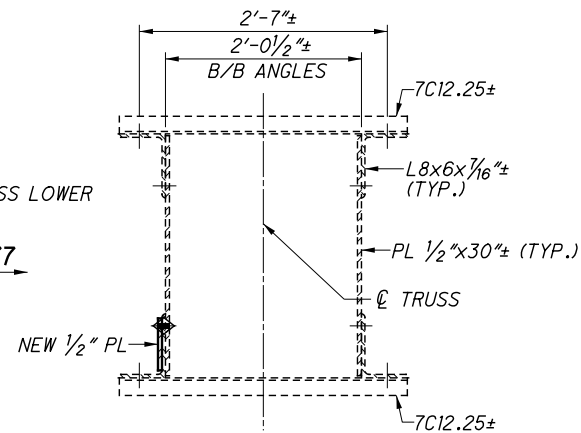
SPAN 13, TRUSS B, PANEL BL77 - BL78 - SOUTH ELEVATION  
(LOOKING NORTH)



SECTION A-A



SPAN 13, TRUSS B PANEL BL77 - BL78 - NORTH ELEVATION  
(LOOKING SOUTH)



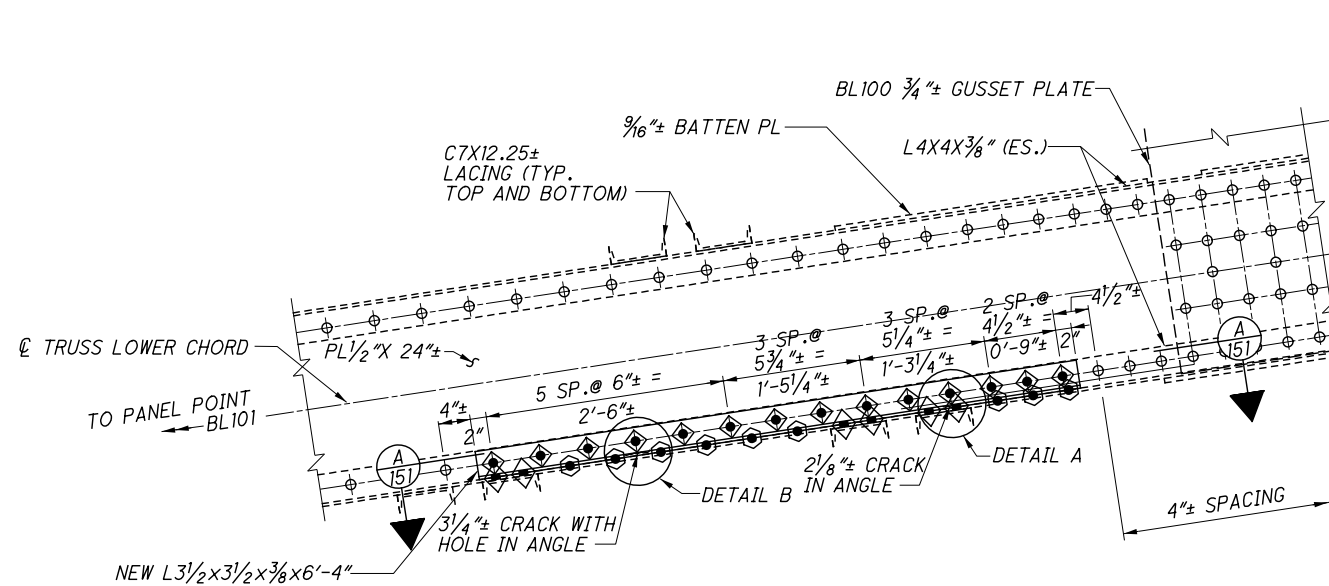
SECTION B-B

**NOTES**

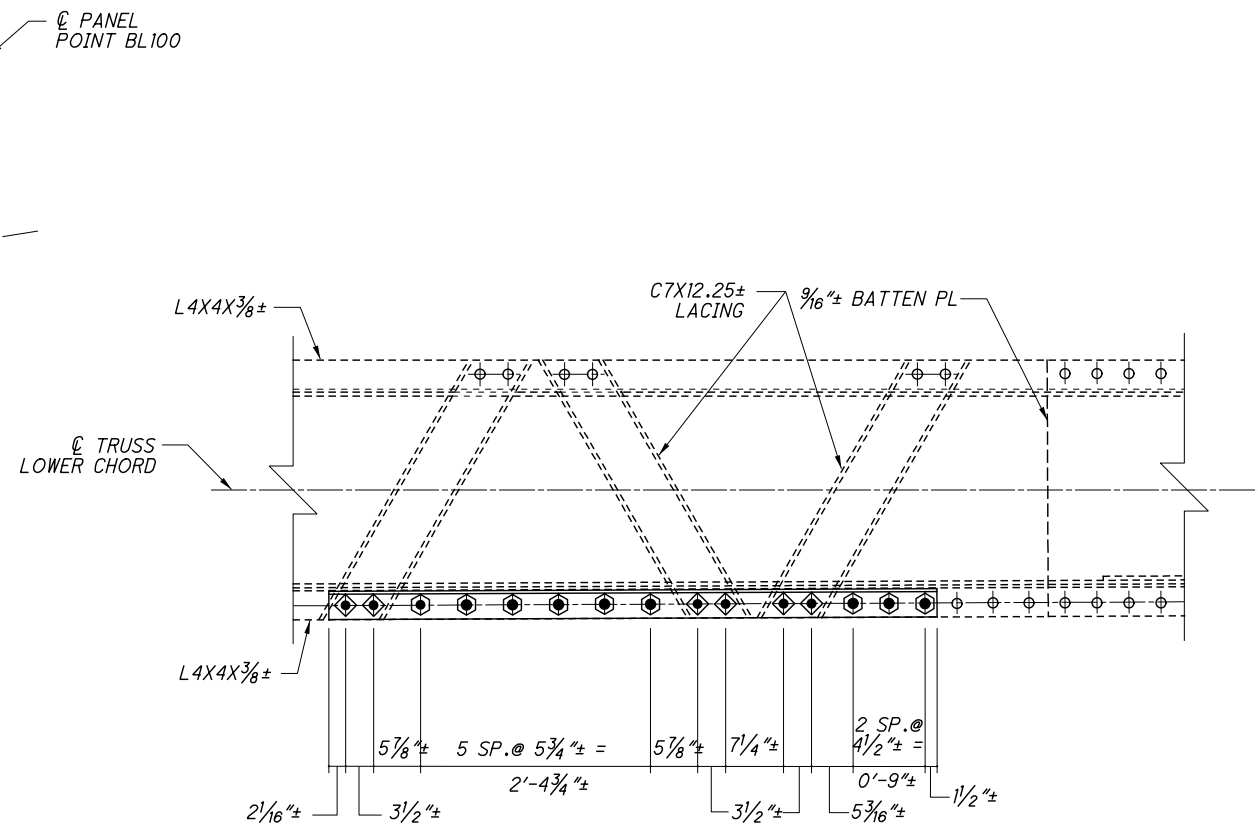
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1"± DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 104/238.
- ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.
- ITEM 513 - STRUCTURAL STEEL, MISC: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>TRUSS LOWER CHORD - REPAIR DETAILS - 12</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DATE: 1/30/18 REVIEWED DLR: STRUCTURE FILE NUMBER 1801503</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
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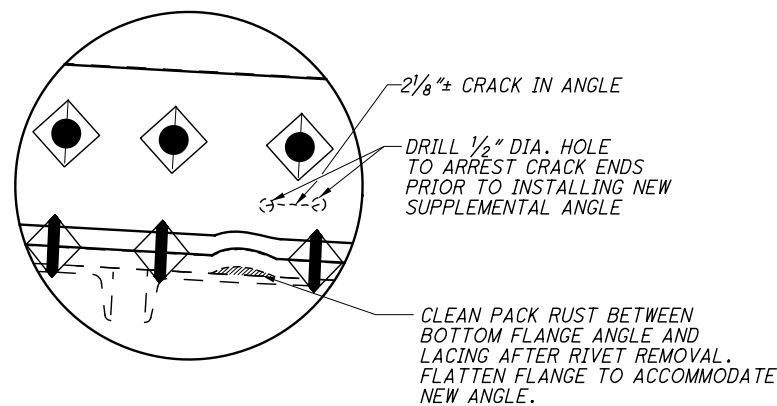
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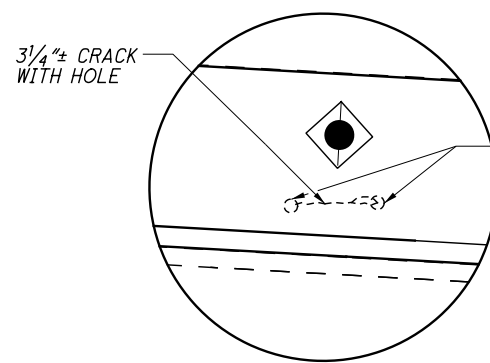
**SPAN 15, TRUSS B, PANEL BL100-BL101 - NORTH ELEVATION**  
(LOOKING SOUTH)



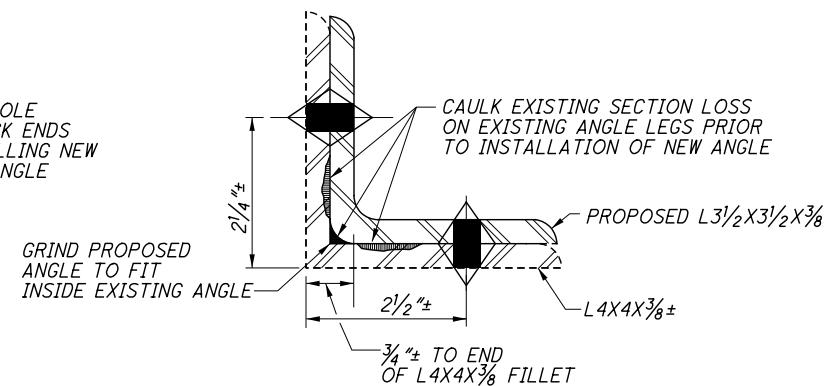
**VIEW A-A**



**DETAIL A**  
(LOOKING SOUTH)



**DETAIL B**  
(LOOKING SOUTH)



**ANGLE DETAIL**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**CAULKING** THE DEPRESSIONS IN THE EXISTING ANGLE FACES SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM. USE MATERIAL AS DESCRIBED IN CMS 574.02.

**PACK RUST REMOVAL ANGLE GRINDING AND FLATTENING** NEEDED TO FIT NEW ANGLE IN PLACE SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

**EXISTING RIVETS** ARE 1" DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 105/238.

**ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.

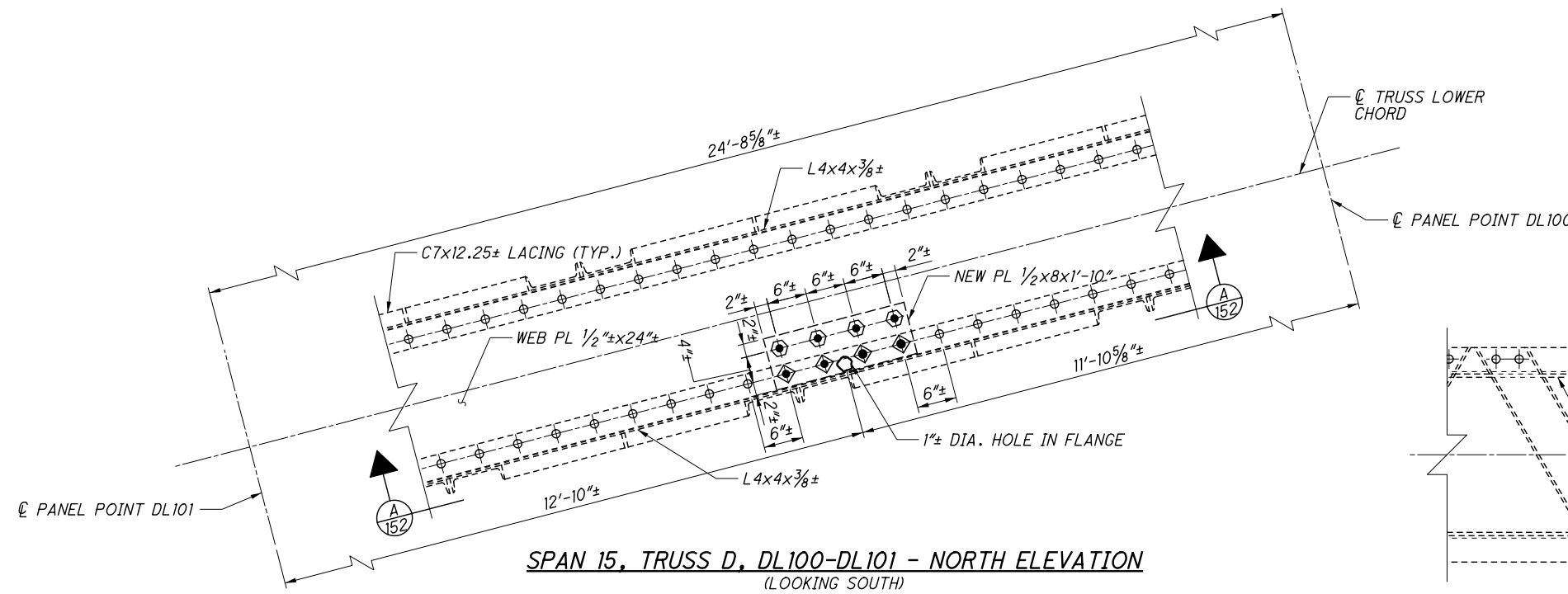
**ITEM 513 - STRUCTURAL STEEL, MISC.: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING AND NDT (TRUSS):** SEE GENERAL NOTE SHEET 11/238.

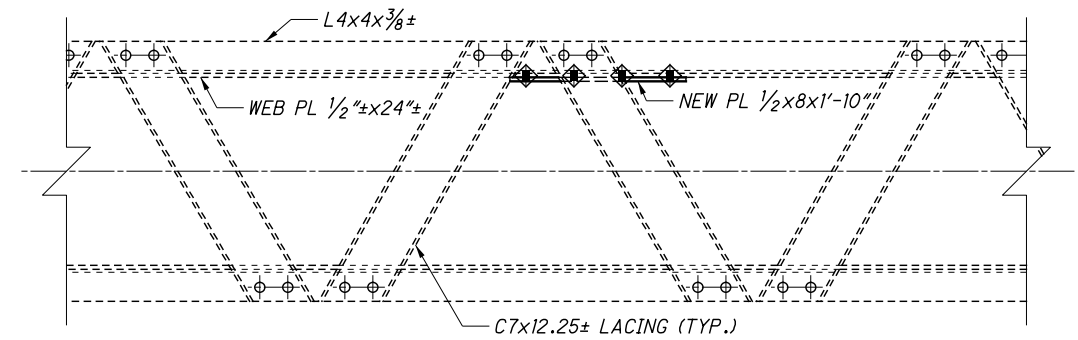
**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

<p>TRUSS LOWER CHORD - REPAIR DETAILS - 13</p>	
<p>BRIDGE NO. CUY-10-1613</p>	<p>S.R. 10 OVER THE CUYAHOGA RIVER</p>
<p>CUY-10-16.13</p>	<p>PID No. 96986</p>
<p>151/238</p>	<p>211/308</p>
<p>DESIGNED: TGW</p>	<p>CHECKED: KAK</p>
<p>DRAWN: RJH</p>	<p>REVISED:</p>
<p>REVIEWED: DLR</p>	<p>DATE: 1/30/18</p>
<p>FILE NUMBER: 1801503</p>	<p>STRUCTURE FILE NUMBER: 1801503</p>
<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	

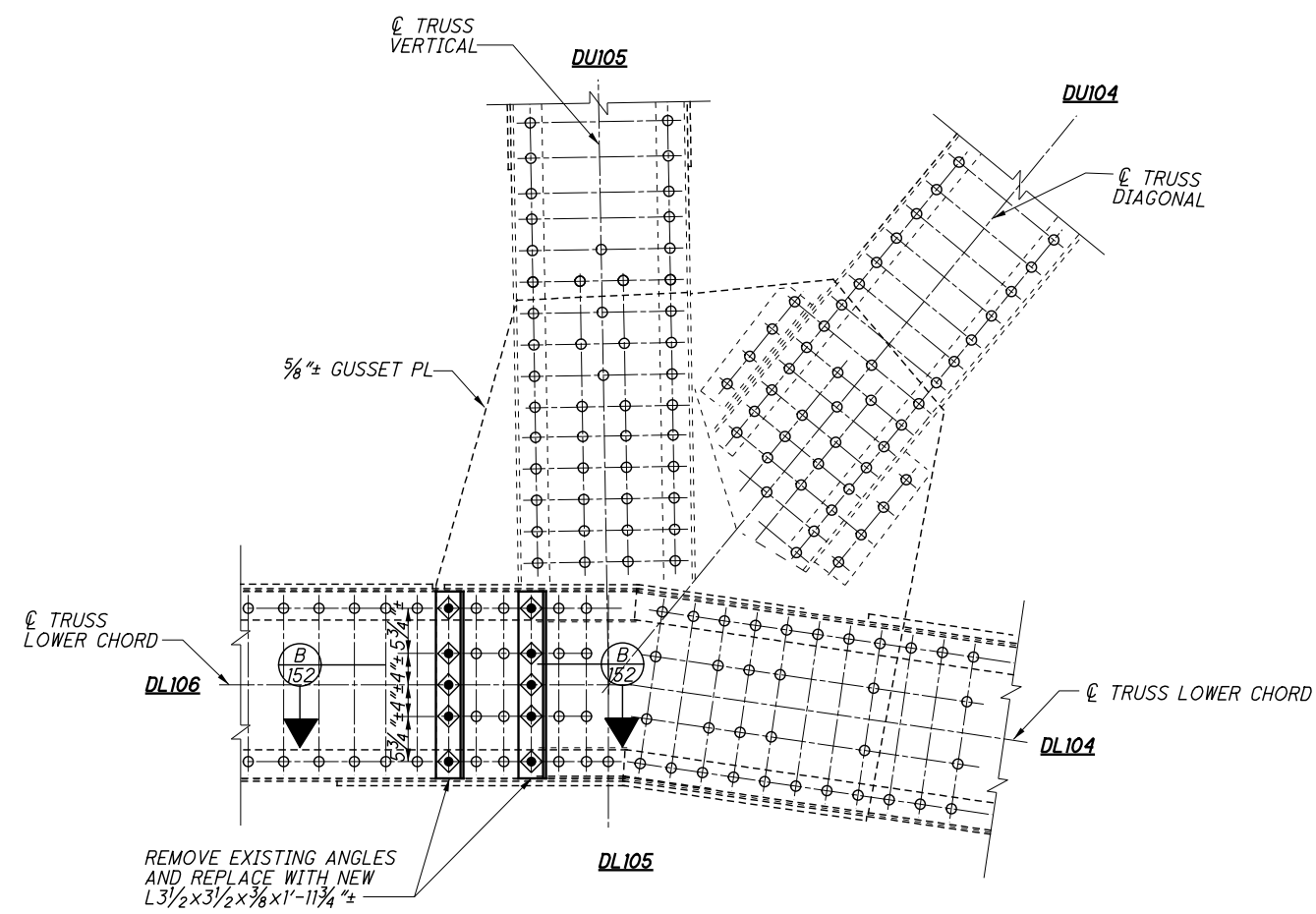
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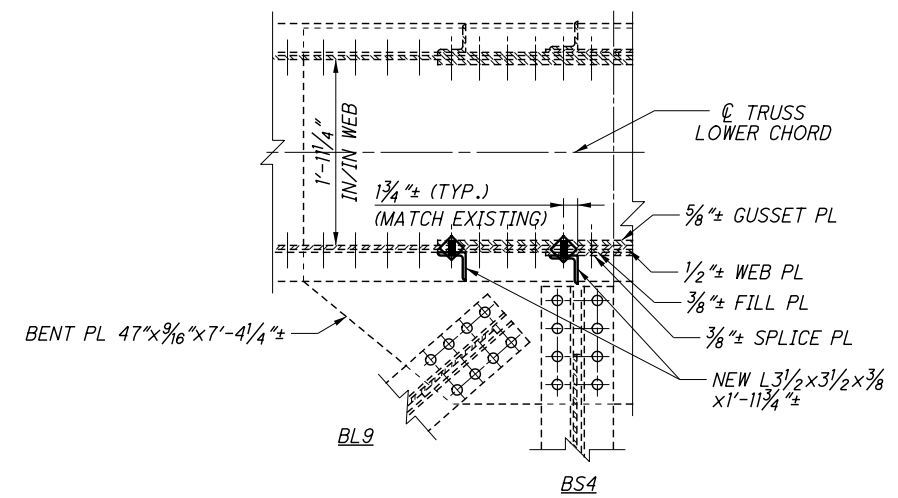
**SPAN 15, TRUSS D, DL100-DL101 - NORTH ELEVATION**  
(LOOKING SOUTH)



**VIEW A-A**



**SPAN 16, TRUSS D, PANEL POINT DL105 - NORTH ELEVATION**  
(LOOKING SOUTH)



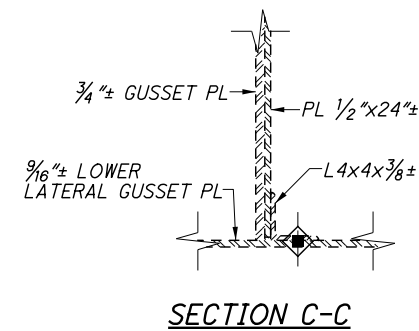
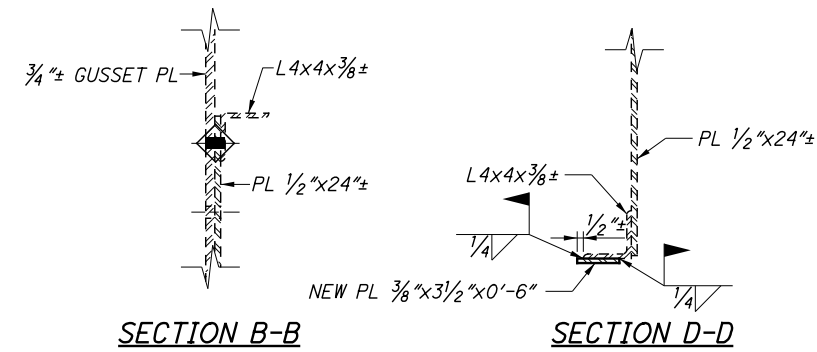
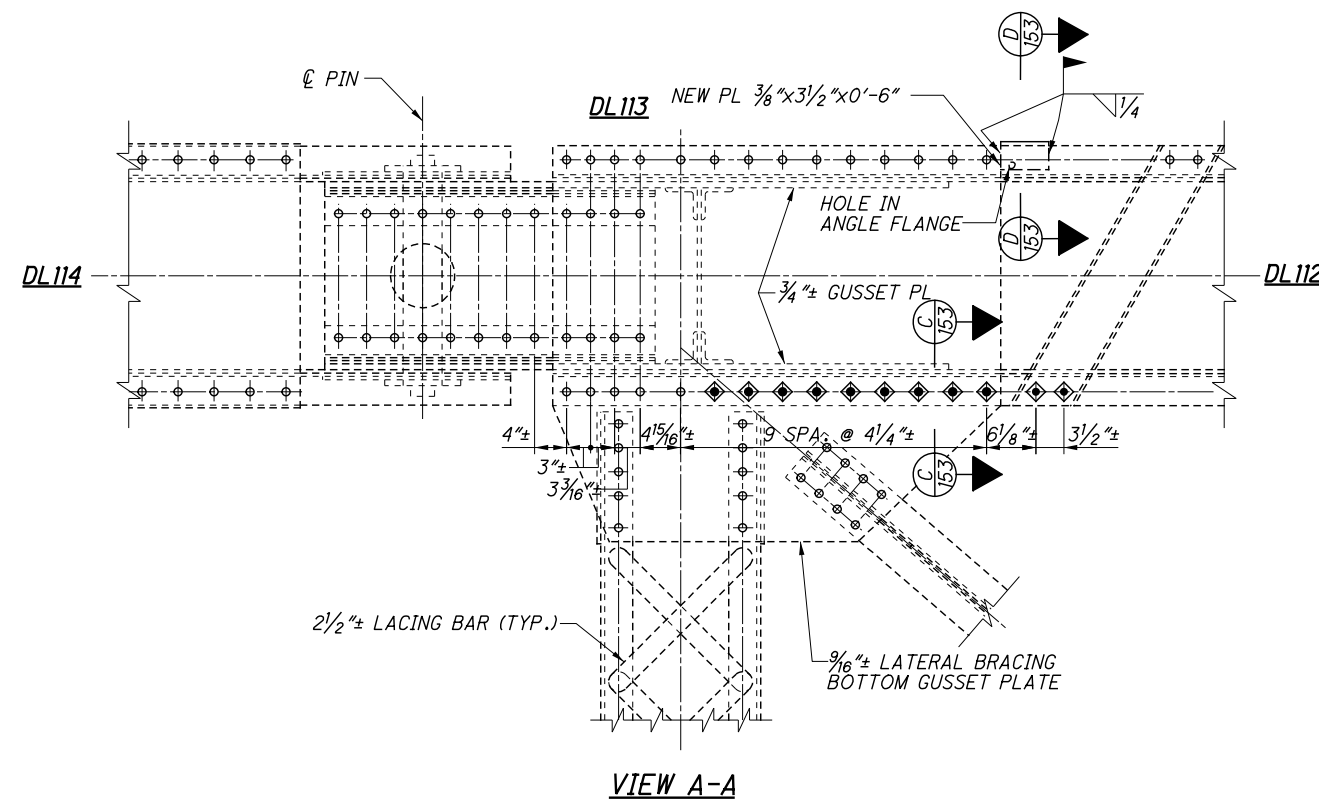
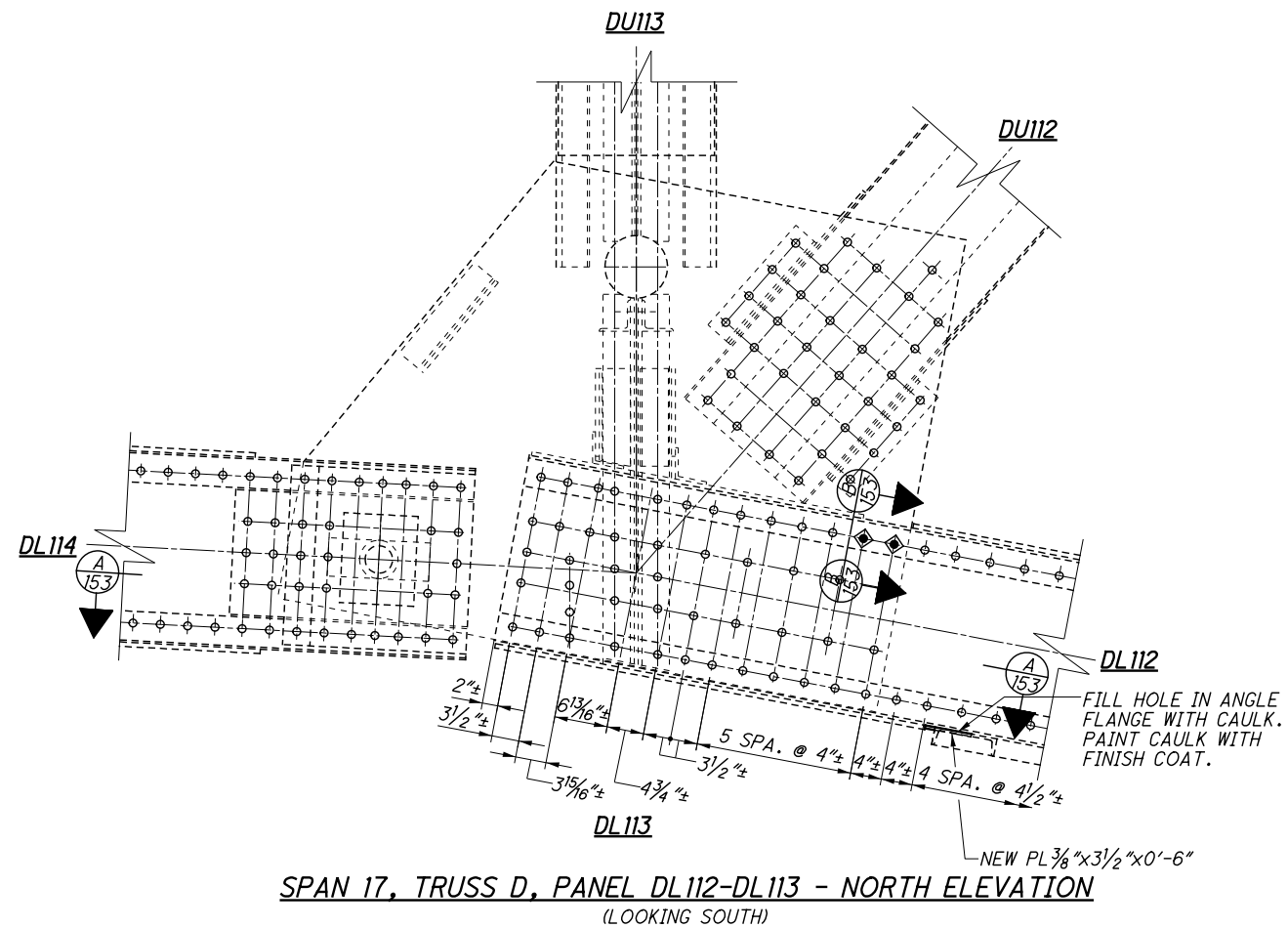
**SECTION B-B**

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- REPAIR LOCATIONS:** SEE TRUSS ELEVATION SHEET 113/238.
- STIFFENER REPLACEMENT NOTES AND PAYMENT:** SEE FLOORBEAM AND STIFFENER REPLACEMENT NOTE ON SHEET 10/238. REPLACE ONLY ONE STIFFENER AT A TIME.
- STRENGTHENING PLATE AT DL100-DL101 PAYMENT:** SEE SHEET 137/238.

<p><b>TRUSS LOWER CHORD - REPAIR DETAILS - 14</b></p> <p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p><b>CUY-10-16.13</b></p> <p>PID No. 96986</p>	<p>152/238</p> <p>212 308</p>	<p><b>RICHLAND ENGINEERING LIMITED</b></p> <p>29 NORTH PARK STREET MANSFIELD, OHIO 44902</p> <p>DATE: 1/30/18 REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503</p> <p>DRAWN: USB CHECKED: KAK</p>
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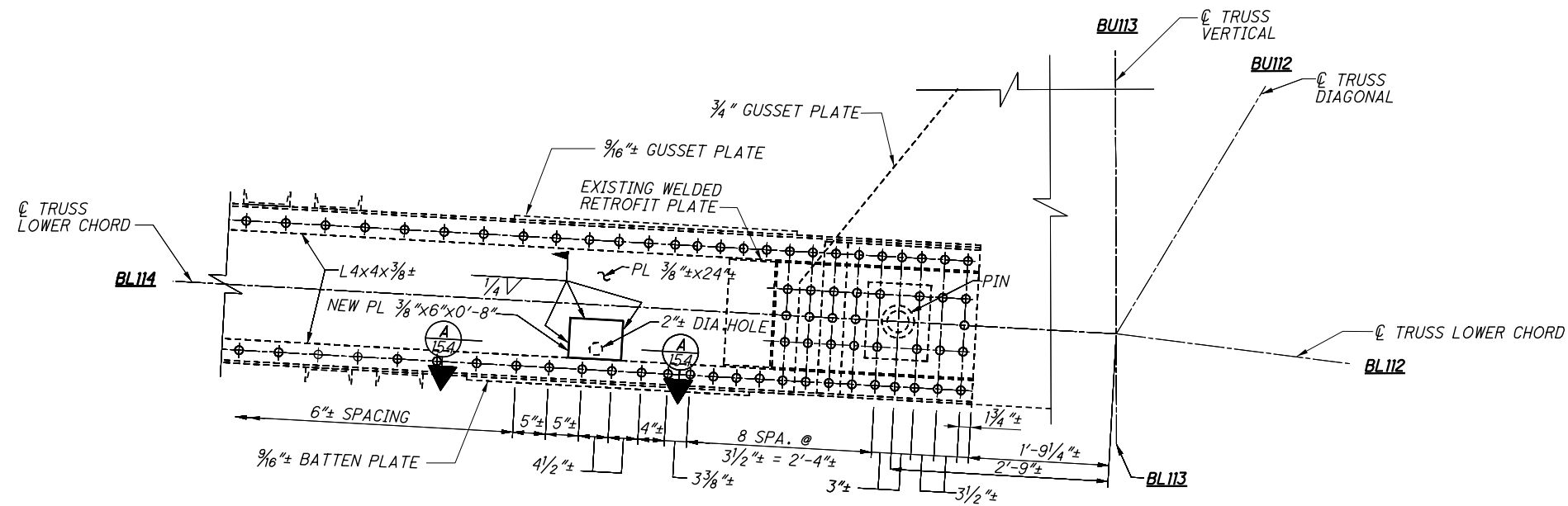
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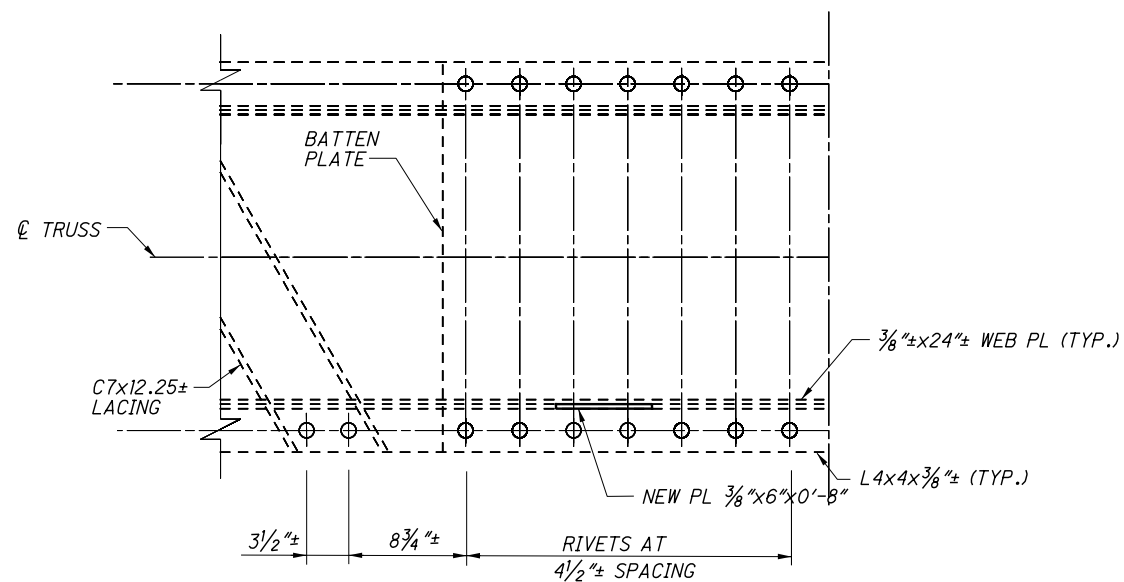
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1"± DIAMETER.
- NEW BOLTS** ARE 1"± DIAMETER.
- BOLT LEGEND:** SEE SHEET [14/238].
- WORK LIMITATIONS:** NO MORE THEN THREE RIVET HOLES SHALL BE OPEN AT ANY ONE TIME.
- CAULKING AND PAINTING HOLE IN STEEL:** USE CAULK SPECIFIED IN 514. WORK SHALL BE CONSIDERED INCIDENTAL TO FIELD TOUCH-UP ITEM.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET [113/238].
- ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED TRUSS REPAIR:** SEE GENERAL NOTE SHEET [10/238].
- ITEM 513 - STRUCTURAL STEEL, MISC.: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET [11/238].
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET [12/238].

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SPAN 17, TRUSS B, PANEL BL113-BL114 - NORTH ELEVATION  
(LOOKING SOUTH)



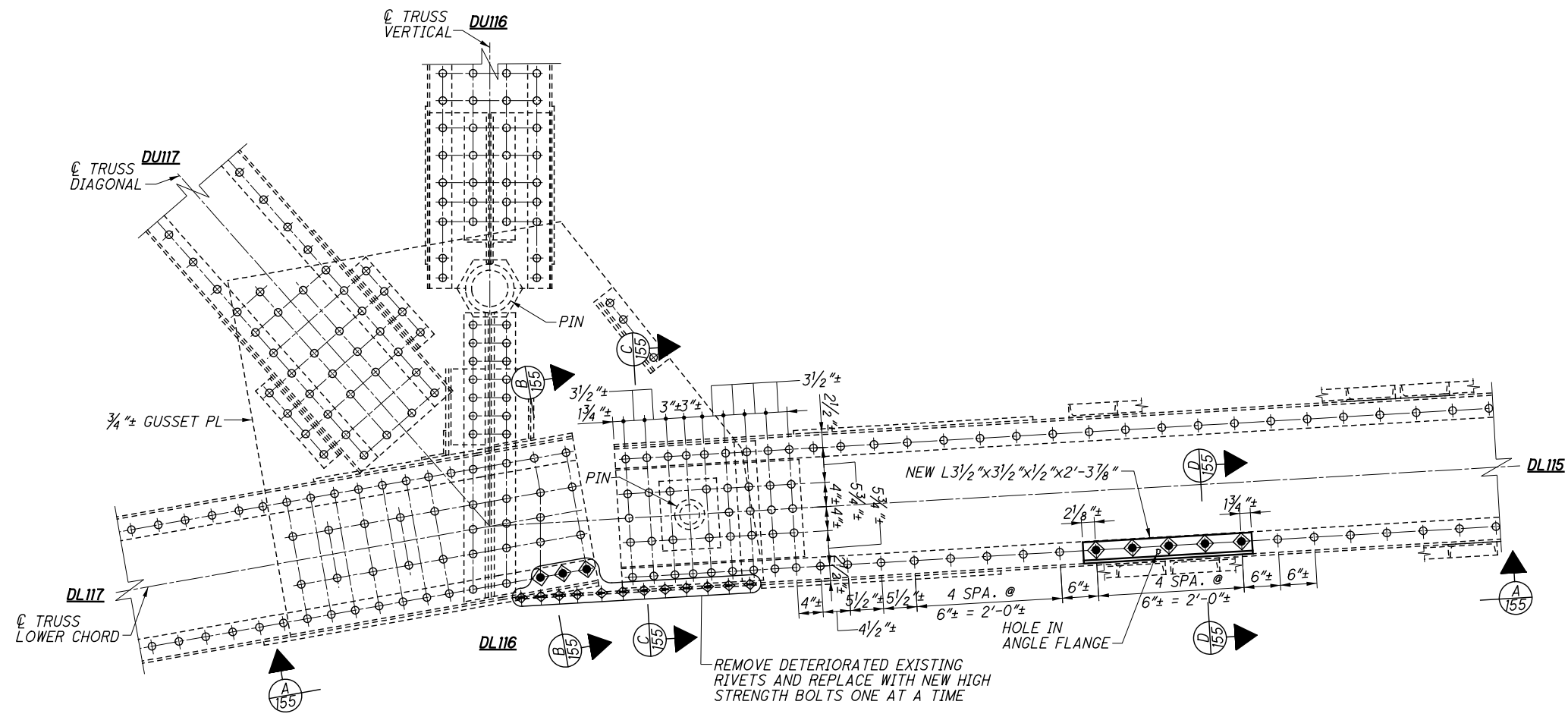
SECTION A-A

**NOTES**

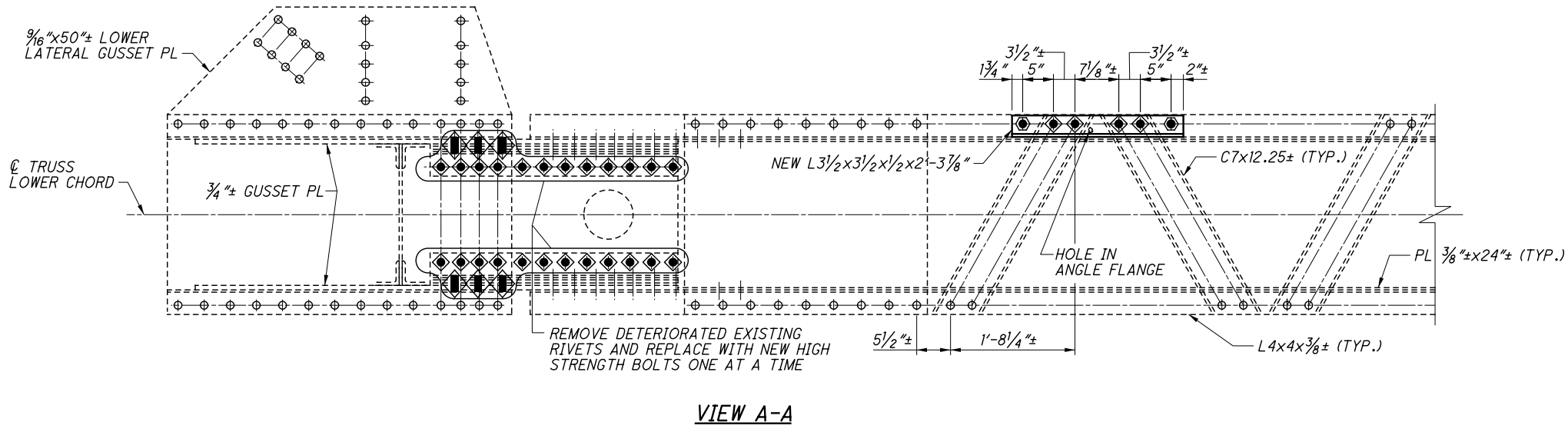
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 105/238.
- ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED TRUSS REPAIR:** SEE GENERAL NOTE SHEET 10/238.
- ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DRAWN USB
DESIGNED TGW	CHECKED KAK
TRUSS LOWER CHORD - REPAIR DETAILS - 16 BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
154/238	
214 308	

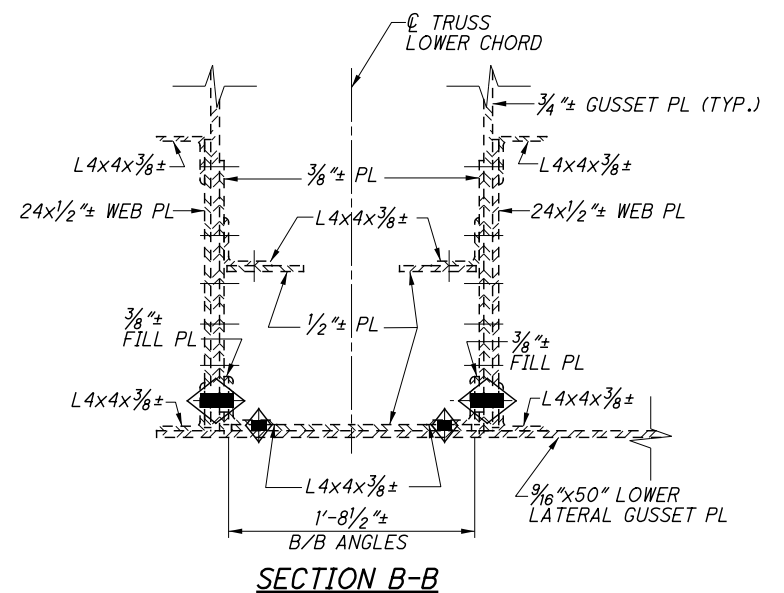
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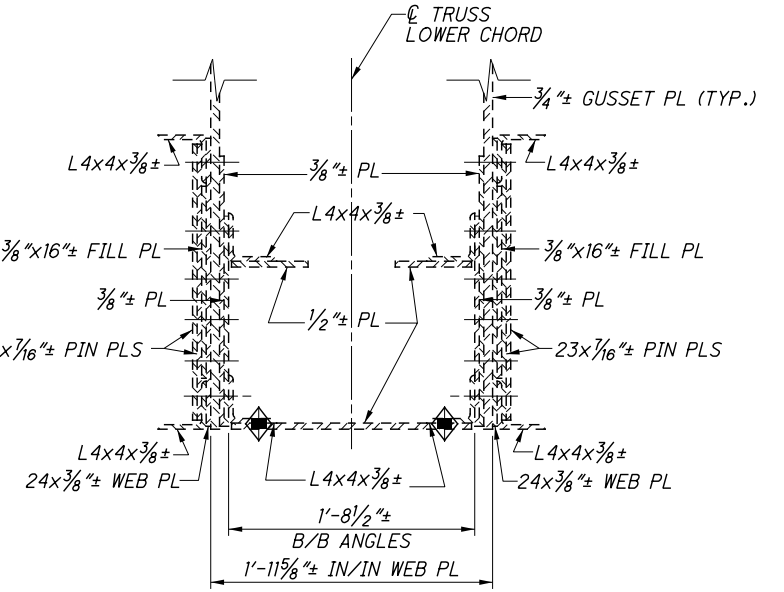
**SPAN 17, TRUSS D, PANEL DL115-DL116 -  
NORTH AND SOUTH GUSSET PLATE**  
(NORTH GUSSET LOOKING SOUTH SHOWN)



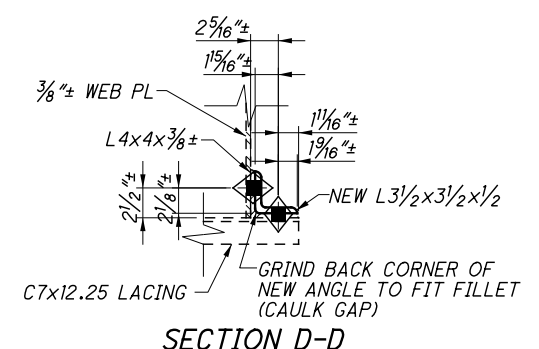
**VIEW A-A**



**SECTION B-B**



**SECTION C-C**



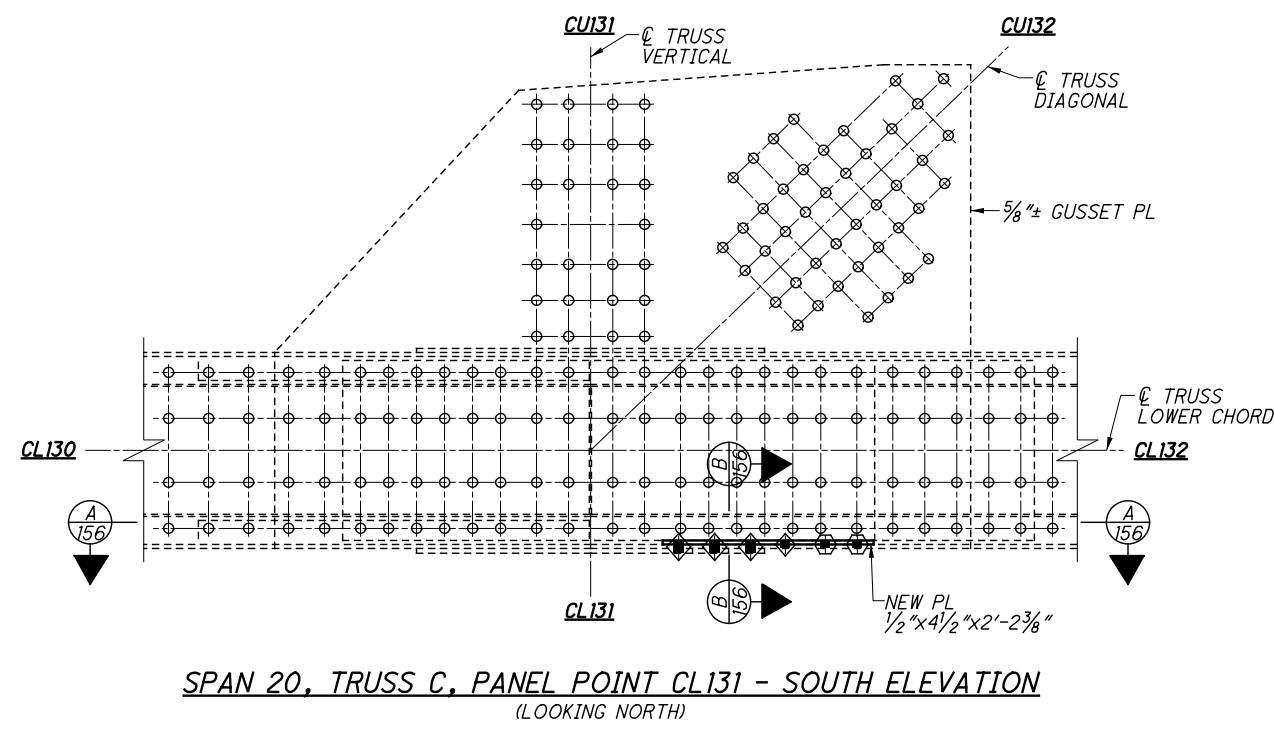
**SECTION D-D**

- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - NEW BOLTS** ARE 1" DIAMETER.
  - BOLT LEGEND:** SEE SHEET 14/238.
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 113/238.
  - REPAIR PAYMENT:** SEE SHEET 139/238.

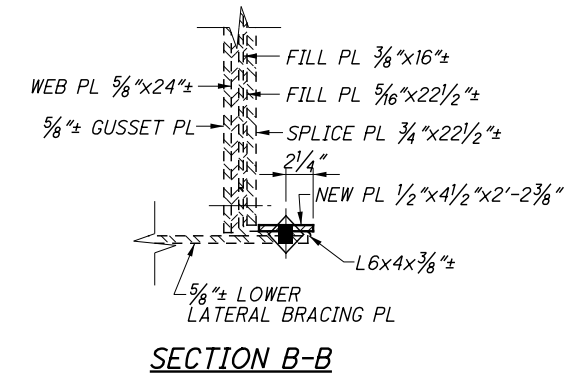
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DJR
DRAWN	SJK
DESIGNED	TGW
FILE NUMBER	1801503
BRIDGE NO.	CUY-10-1613
LOCATION	S.R. 10 OVER THE CUYAHOGA RIVER
PROJECT	TRUSS LOWER CHORD - REPAIR DETAILS - 17
PID No.	96986
Sheet	155/238
Sheet	215/308



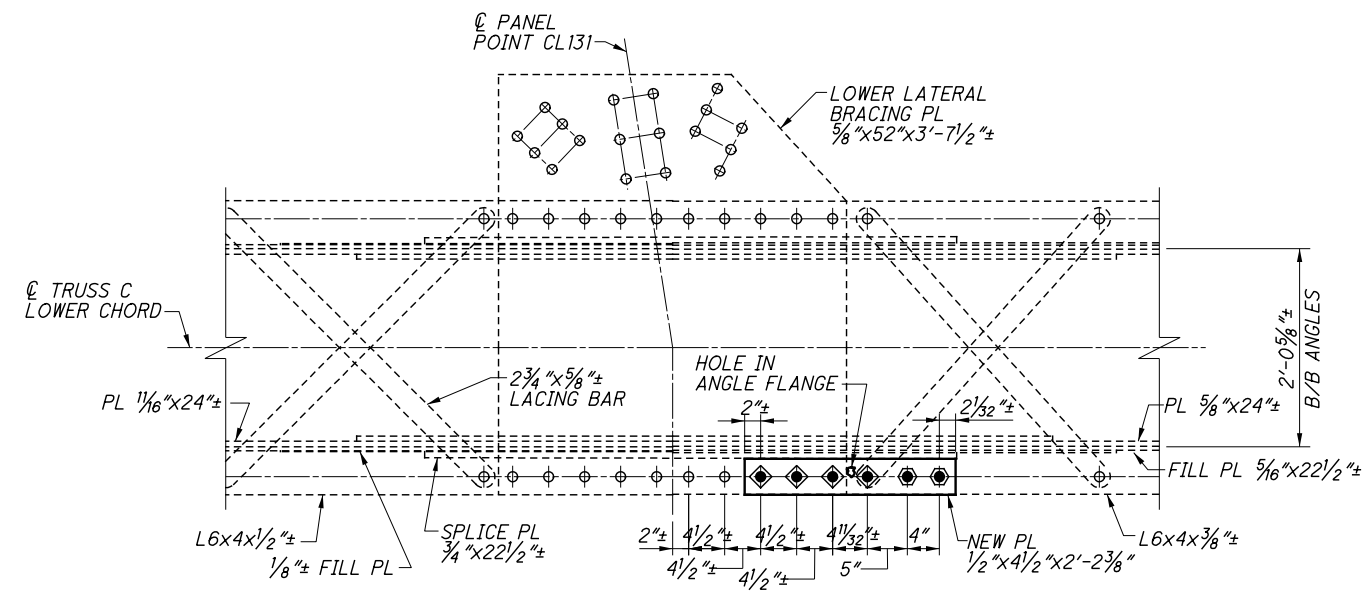
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**SPAN 20, TRUSS C, PANEL POINT CL131 - SOUTH ELEVATION**  
(LOOKING NORTH)



**SECTION B-B**



**VIEW A-A**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1"± DIAMETER.

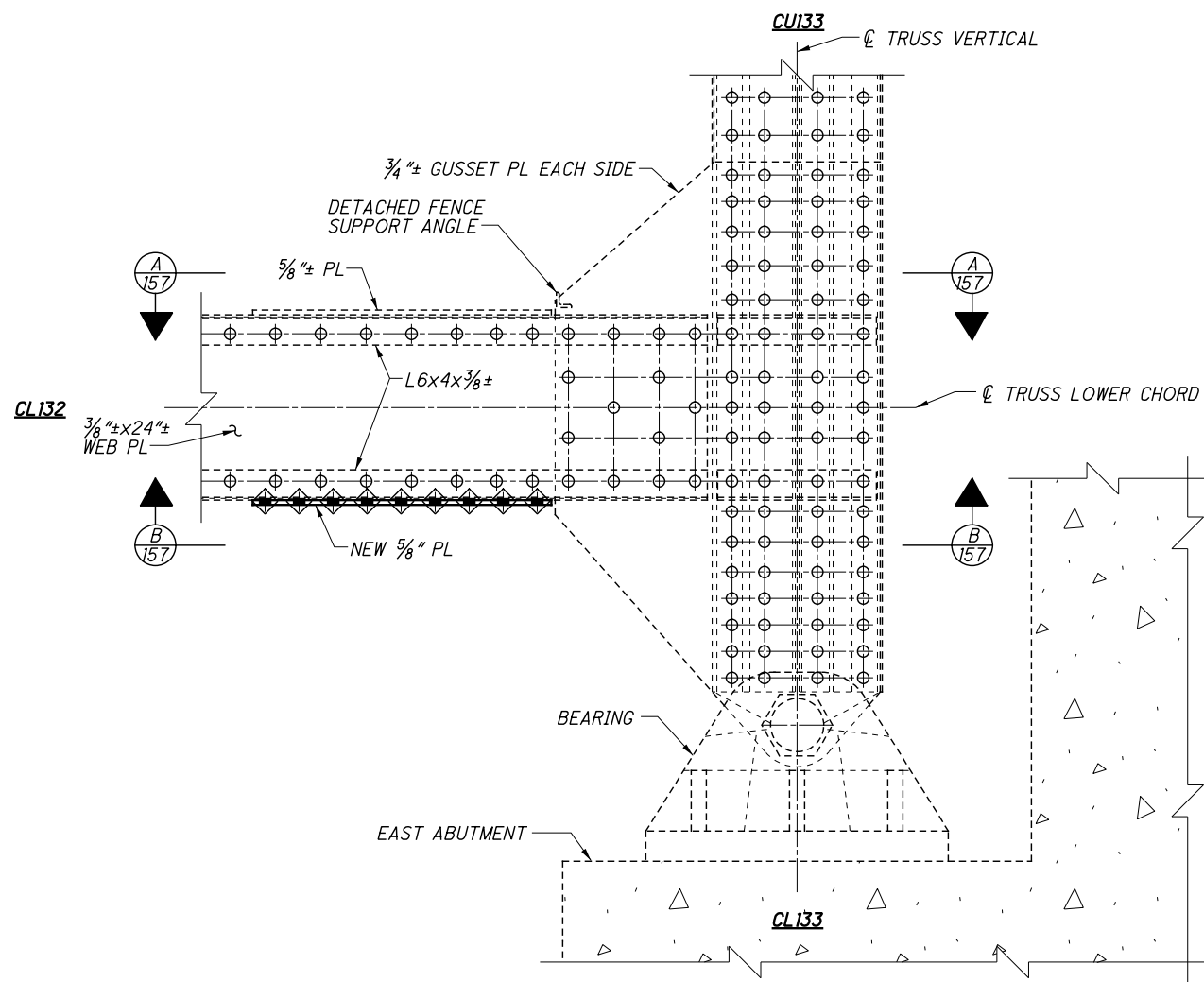
**NEW BOLTS** ARE 1"± DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

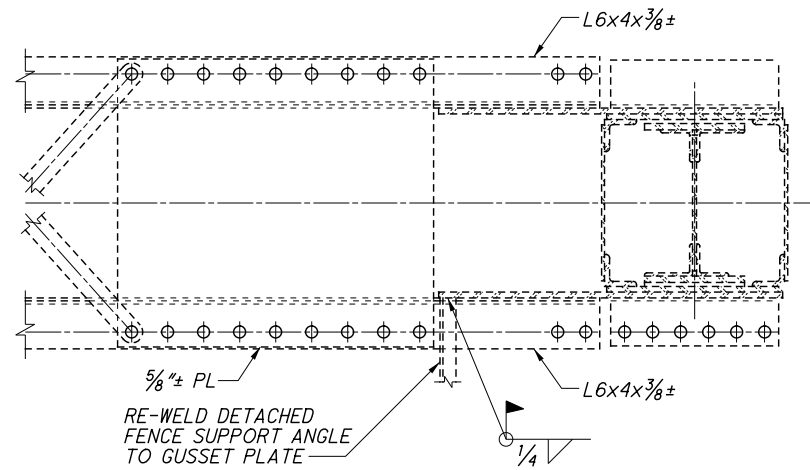
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 114/238.

**REPAIR PAYMENT:** SEE SHEET 137/238.

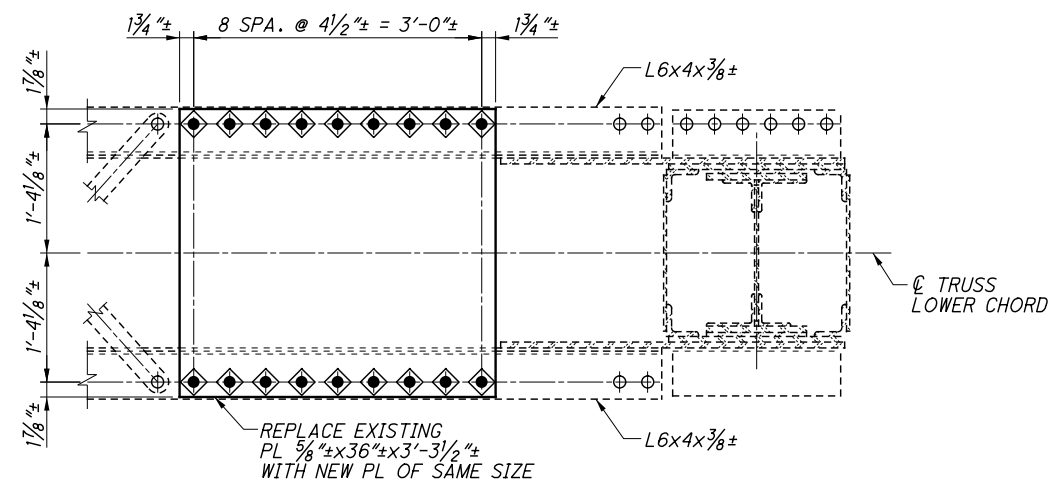
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**SPAN 20, TRUSS C, PANEL CL132-CL133 - SOUTH ELEVATION**  
(LOOKING NORTH)



**VIEW A-A**



**VIEW B-B**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1" DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 114/238.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:** SEE GENERAL NOTE SHEET 7/238.

**ITEM 202 - REMOVAL MISC.: RIVET:** SEE GENERAL NOTE SHEET 8/238.

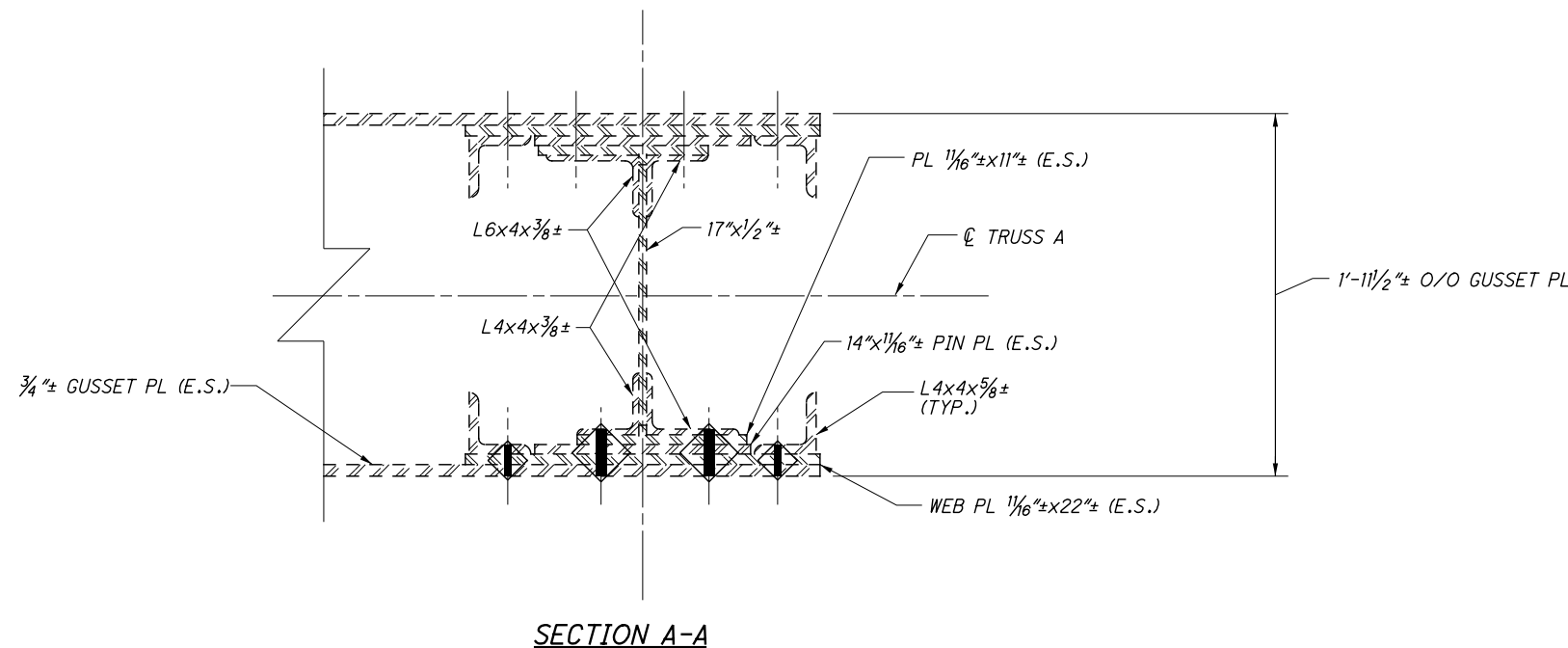
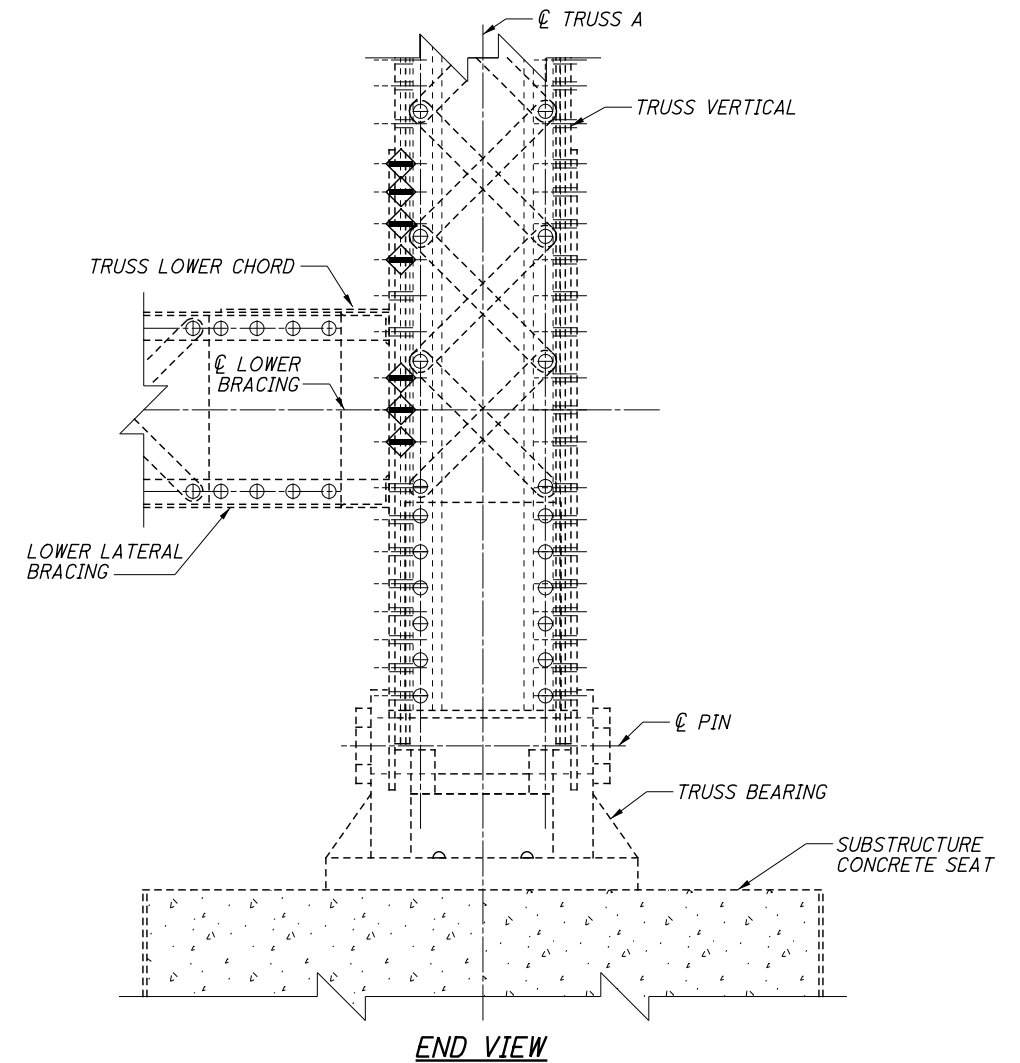
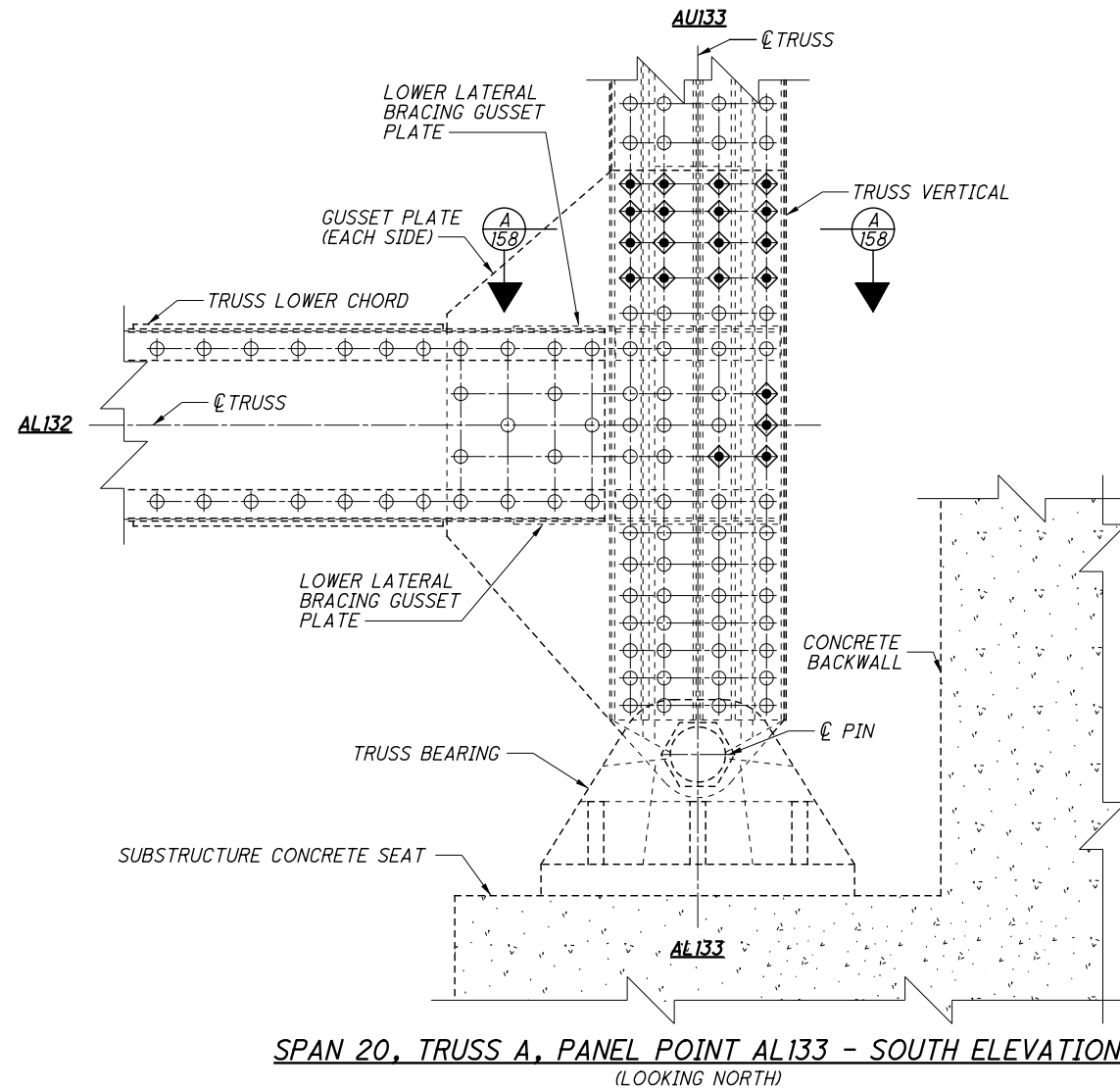
**ITEM 513 - STRUCTURAL STEEL, MISC.: BOLTED TRUSS REPAIRS:** SEE GENERAL NOTE SHEET 10/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: WELDED FENCE SUPPORT REPAIR:** SEE GENERAL NOTE SHEET 10/238.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

<p>TRUSS LOWER CHORD AND SECURITY FENCE - REPAIR DETAILS - 19</p>		<p>DATE: 1/30/18</p>	<p>RECHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
<p>DESIGNED: TGW</p>	<p>DRAWN: RJH</p>	<p>REVIEWED: DLR</p>	<p>STRUCTURE FILE NUMBER: 1801503</p>
<p>CHECKED: KAK</p>	<p>BRIDGE NO.: CUY-10-1613</p>	<p>S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>PID No. 96986</p>
<p>157/238</p>	<p>217/308</p>	<p>CUY-10-16.13</p>	<p>157/238</p>

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**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**FIELD PAINTING AND PACK RUST REPAIR:** SEE DETAILS ON SHEET 198/238.

**NOTATION** = E.S. - EACH SIDE

**EXISTING RIVETS** ARE 1" DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

**REPLACE** RIVETS WITH BOLTS ONE AT A TIME.

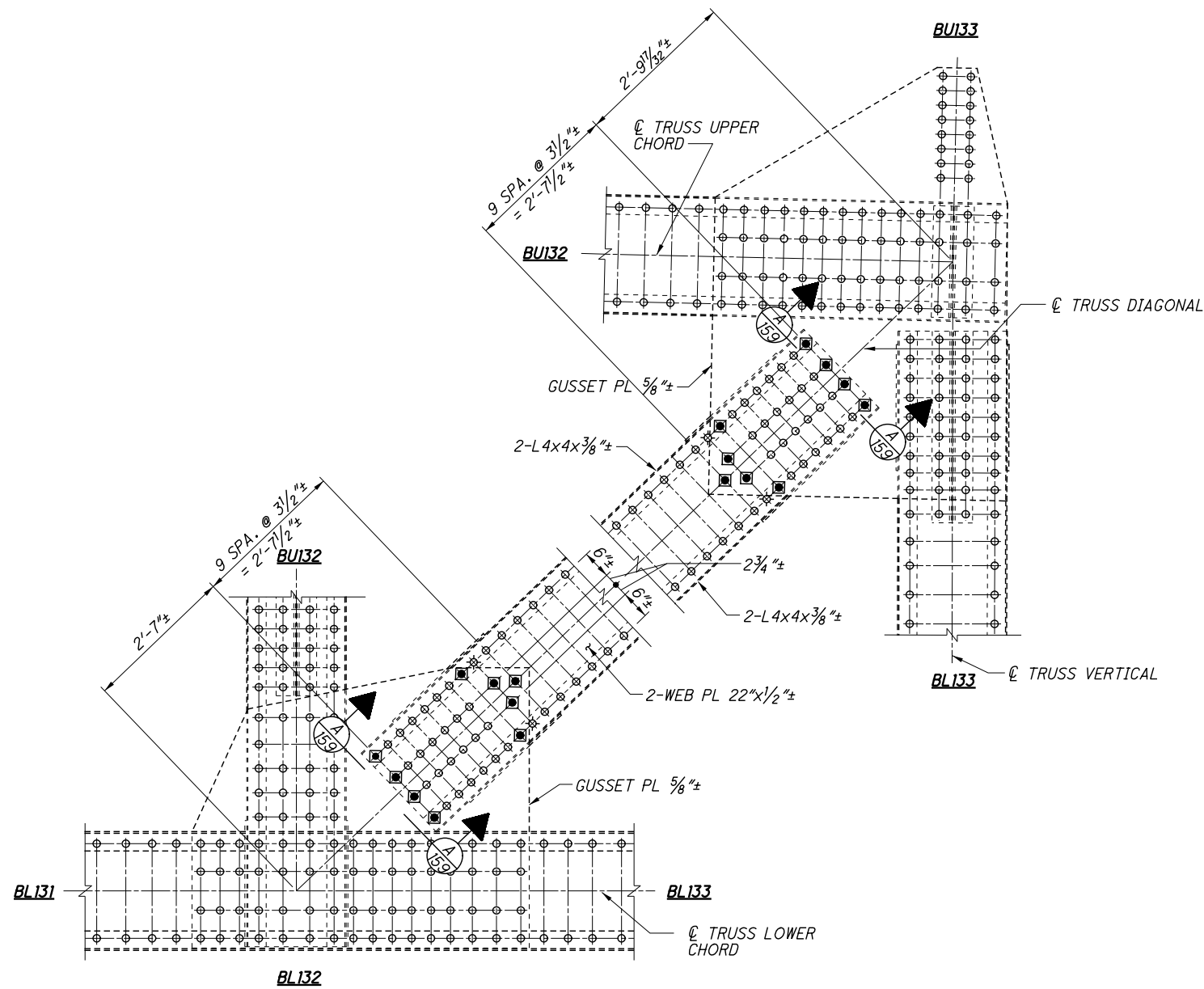
**BOLT LEGEND:** SEE SHEET 14/238.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 114/238.

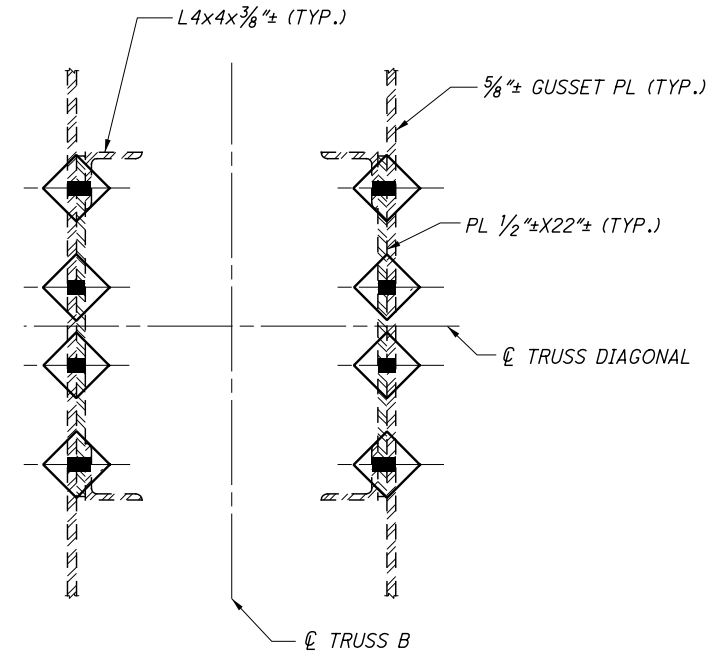
**ITEM 513 - STRUCTURAL STEEL, MISC.: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET 11/238.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

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**SPAN 20, TRUSS B, PANEL BL132 - BUI33 - SOUTH ELEVATION**  
(LOOKING NORTH)



**SECTION A-A**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**CONNECTION BOLTS** SHALL BE 1" DIAMETER ASTM A325, TYPE 1.

**EXISTING RIVETS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

**RIVET REPLACEMENT SEQUENCE:** REPLACE RIVET WITH NEW BOLT ONE AT A TIME IN EACH GUSSET PLATE.

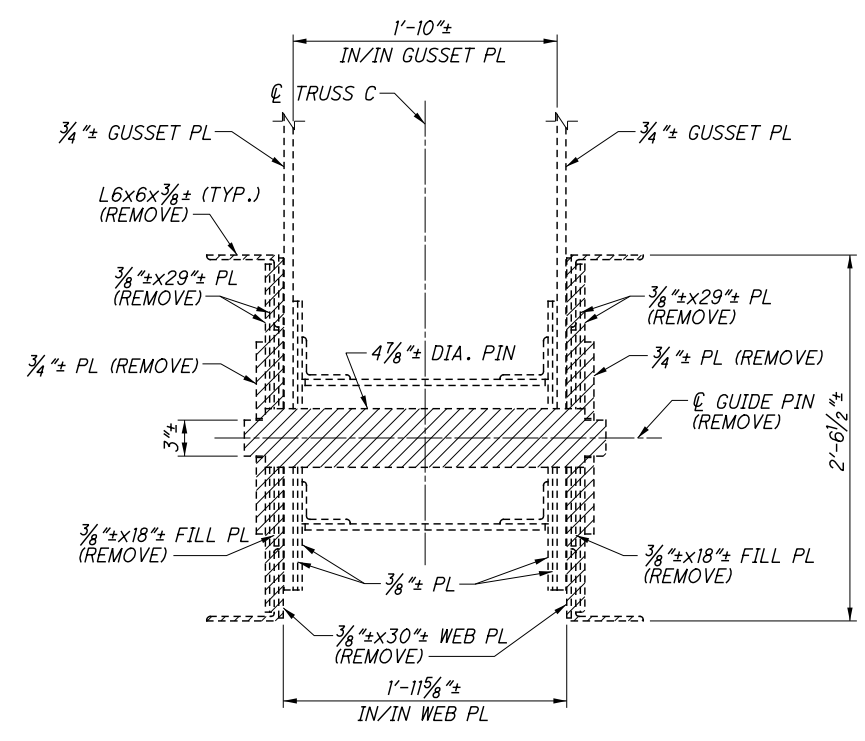
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 114/238.

**ITEM 513 - STRUCTURAL STEEL, MISC: DETERIORATED RIVET REPLACEMENT WITH HIGH STRENGTH BOLT:** SEE GENERAL NOTE SHEET 11/238.

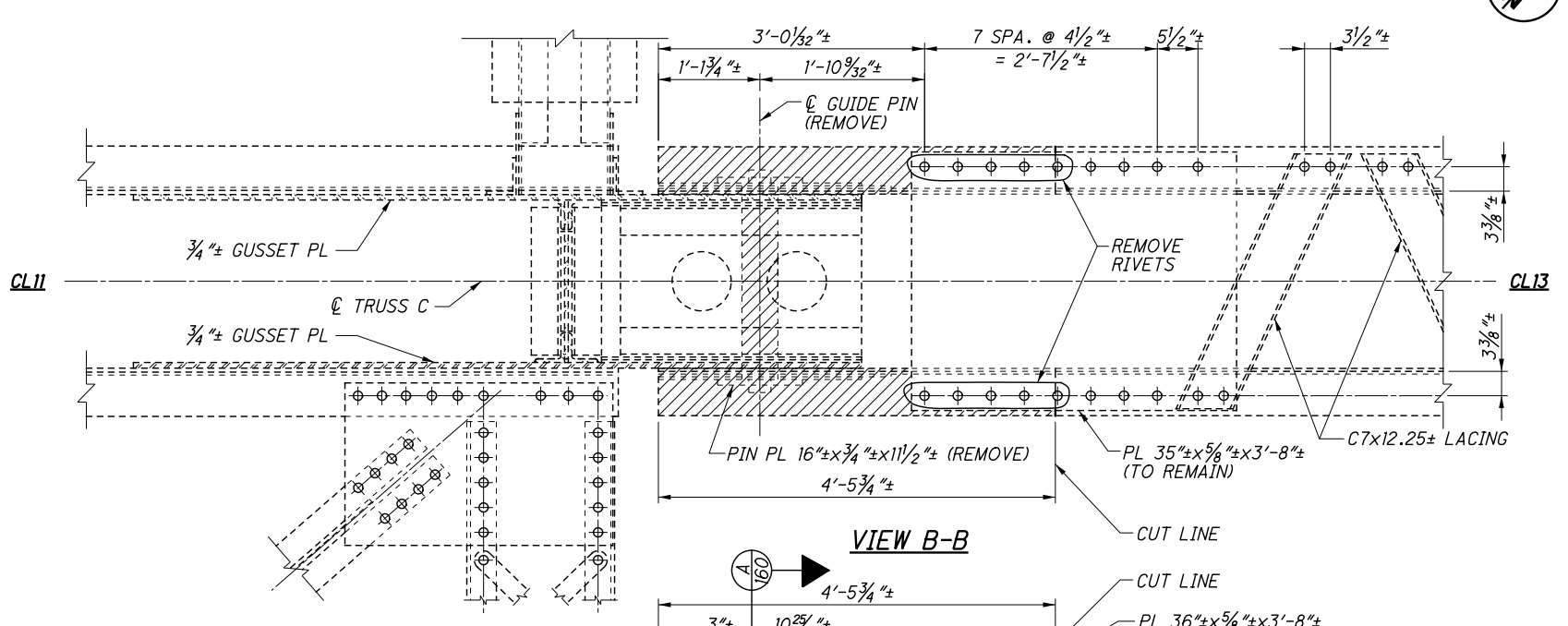
**ITEM 514 - FIELD PAINTING, MISC: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.



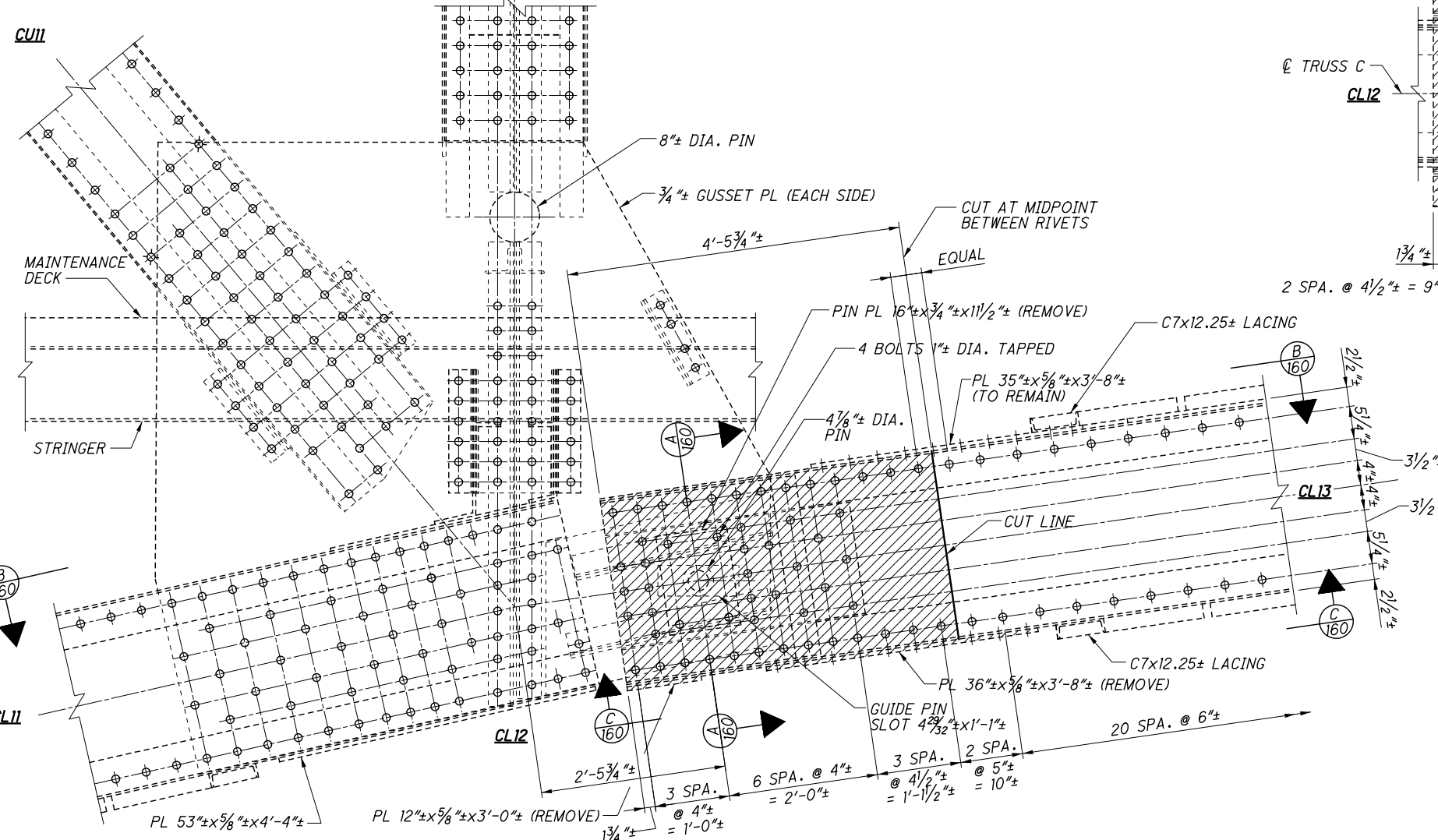
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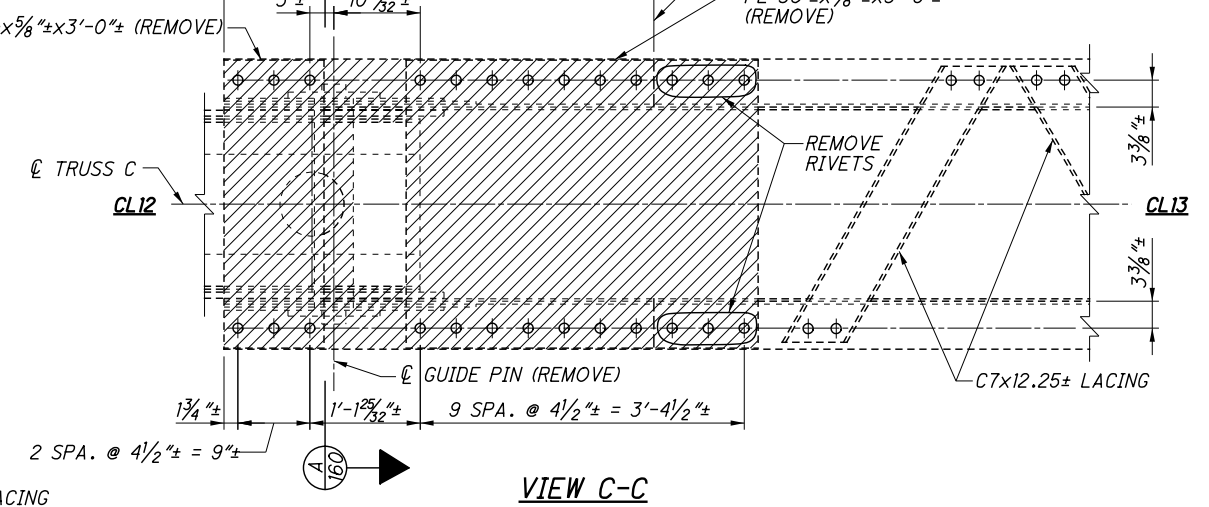
**SECTION A-A**



**VIEW B-B**



**SPAN 7, TRUSS C, PANEL POINT CL12 - SOUTH ELEVATION (LOOKING NORTH)**

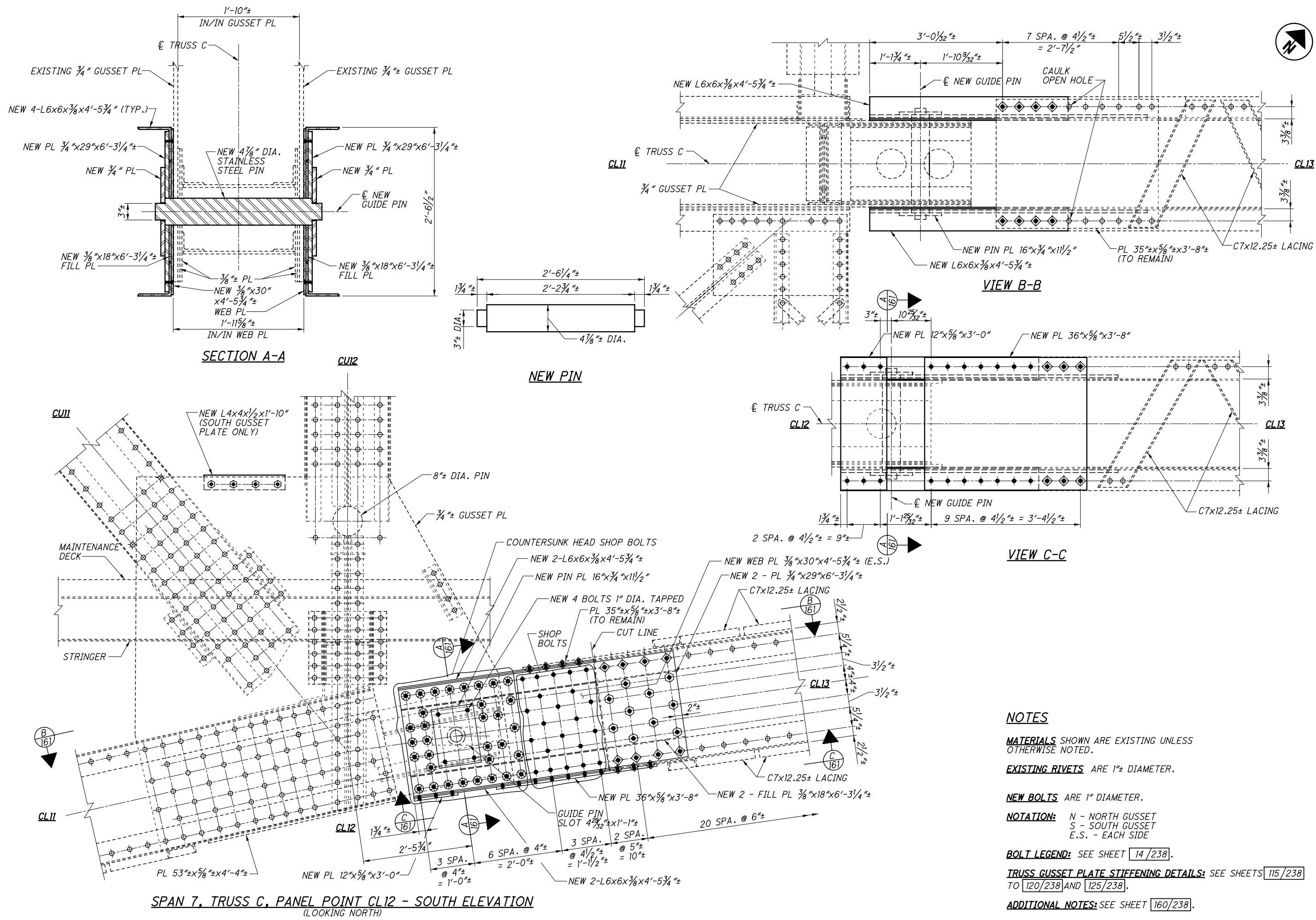


**VIEW C-C**

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

- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 74 (PIN), 457 (L12-L14), 493 (L11-L12), 500 (U11-L12), AND 508 (U12-L12).
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - BOLT LEGEND:** SEE SHEET 14/238.
  - LOWER CHORD & PIN REPLACEMENT -** WORK DESCRIPTION PROCEDURE AND PAYMENT SEE GENERAL NOTES: "REPLACE TRUSS EXPANSION JOINT PIN, CL12, AND REBUILD MEMBER END" SEE SHEET 8/238.
  - PANEL POINT CL12 GUSSET PLATE SECTION LOSS REPAIRS:** SEE DETAILS ON SHEET 127/238 AND 128/238.
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 106/238.

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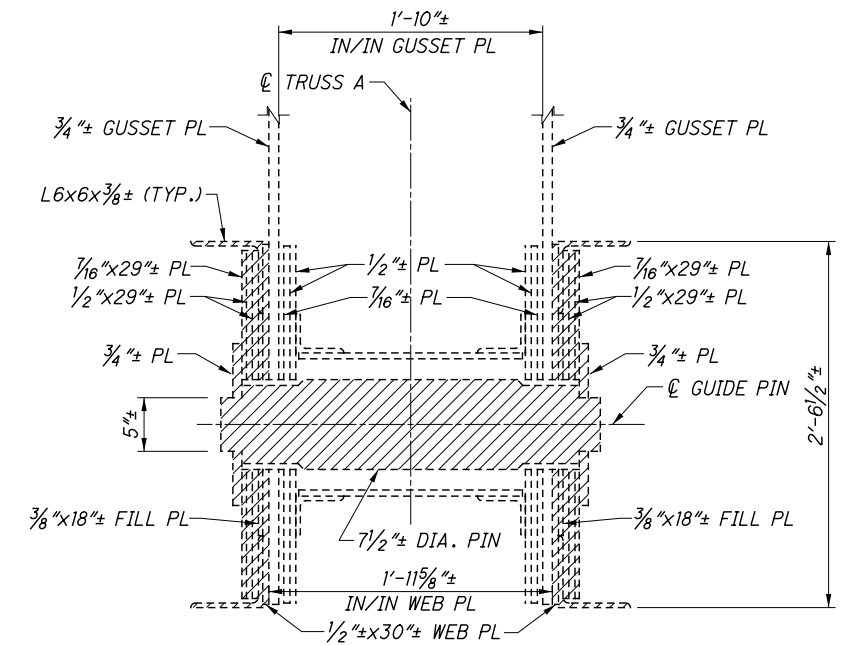
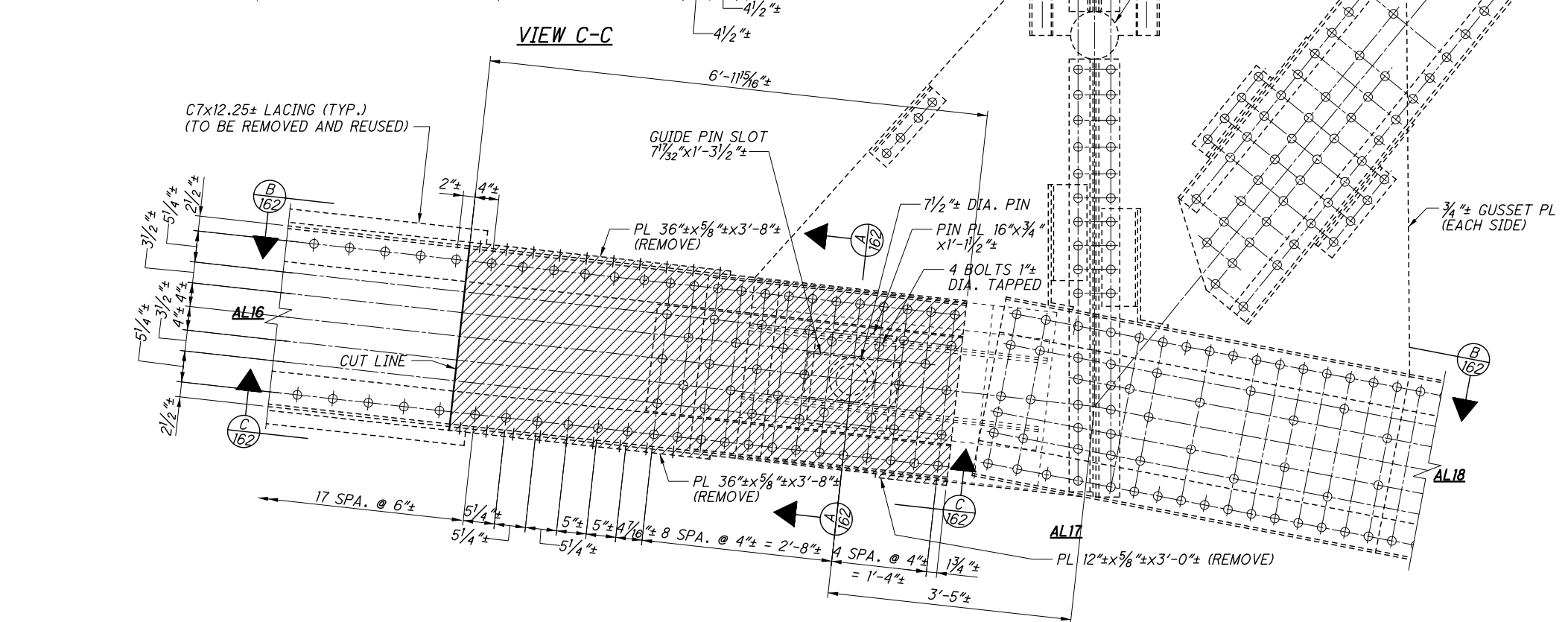
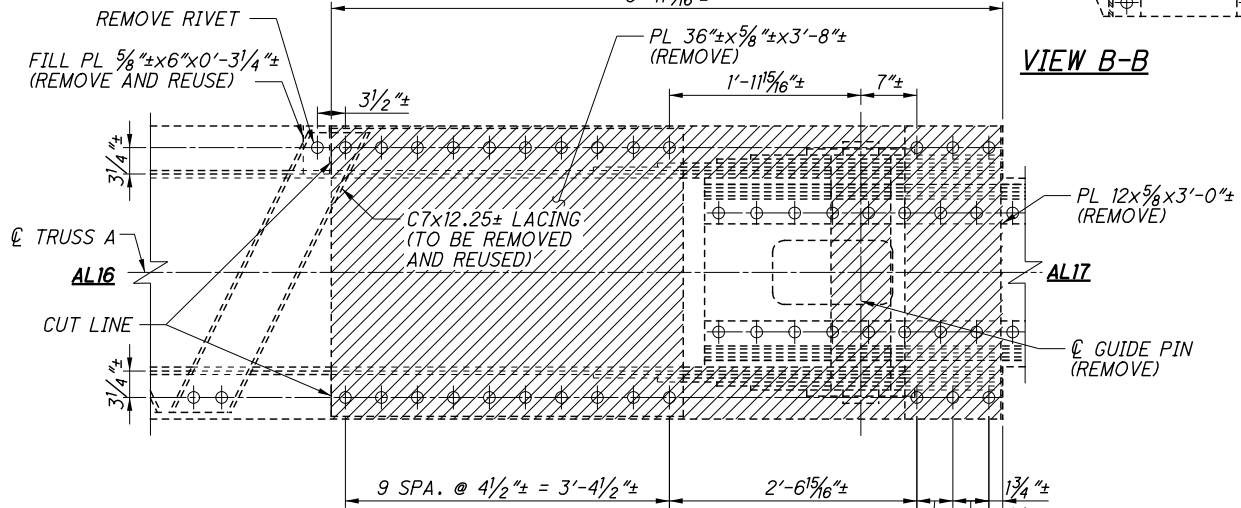
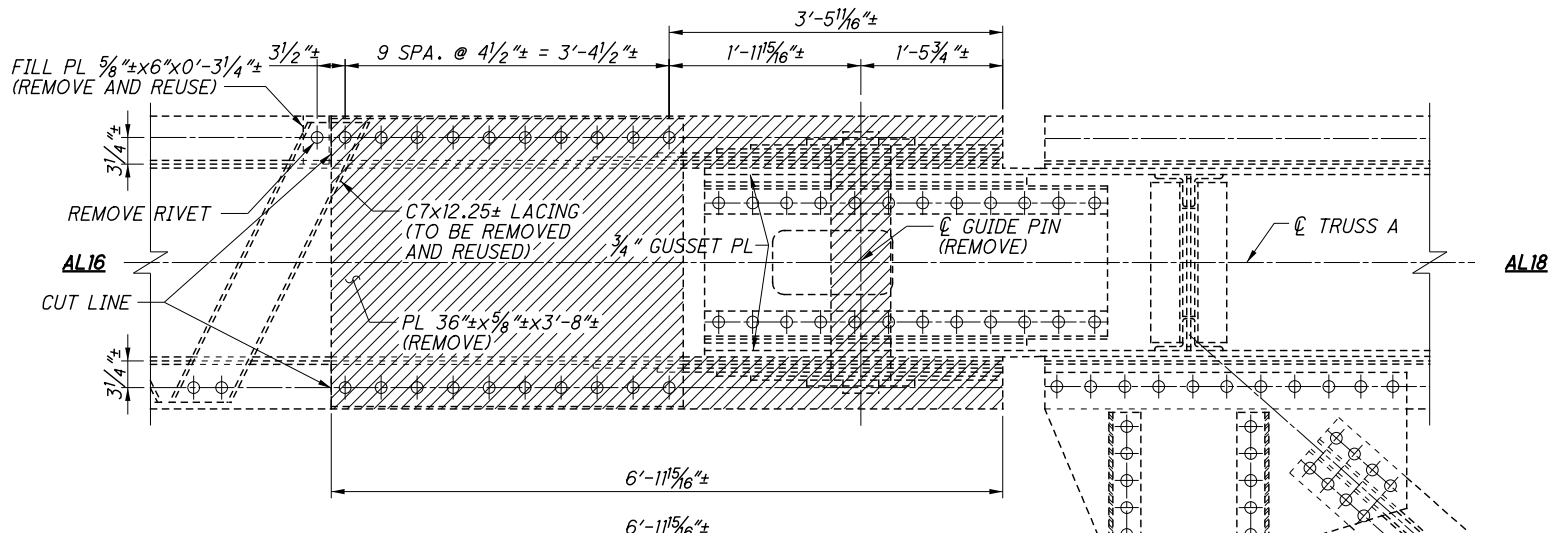


**SPAN 7, TRUSS C, PANEL POINT CL12 - SOUTH ELEVATION**  
(LOOKING NORTH)

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- NOTATION:** N - NORTH GUSSET  
S - SOUTH GUSSET  
E.S. - EACH SIDE
- BOLT LEGEND:** SEE SHEET 14/238.
- TRUSS GUSSET PLATE STIFFENING DETAILS:** SEE SHEETS 115/238 TO 120/238 AND 125/238.
- ADDITIONAL NOTES:** SEE SHEET 160/238.

<b>PIN REPLACEMENT - PANEL POINT CL12 - REPLACEMENT DETAILS</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE: 1/30/18 DLR: JLS STRUCTURE FILE NUMBER: 1801503
DESIGNED: DAP CHECKED: KAK	DRAWN: JLS REVISED:
CUY-10-16.13 PID No. 96986	161/238 221/308



SECTION A-A

**LEGEND**

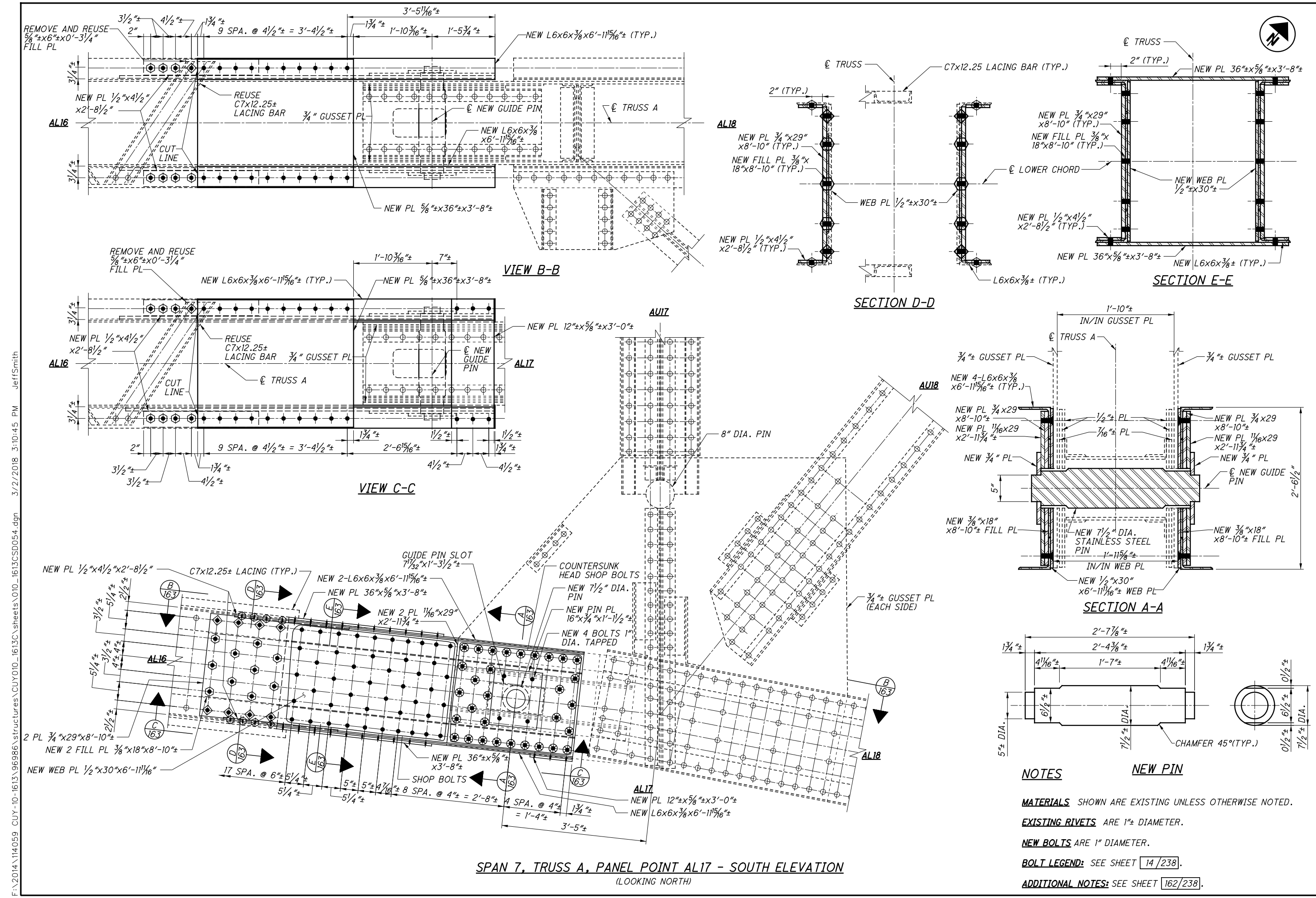
- INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 148 (PIN), 429 (L17-L18), 439 (L17-U18), 443 (L17-U17), AND 459 (L16-L17).
  - EXISTING RIVETS** ARE 1" DIAMETER.
  - BOLT LEGEND:** SEE SHEET 14/238.
  - LOWER CHORD AND PIN REPLACEMENT WORK DESCRIPTION PROCEDURE AND PAYMENT** SEE GENERAL NOTE: REPLACE TRUSS DEFLECTION JOINT PIN, AL17, AND REBUILD MEMBER END SEE SHEET 9/238.
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 98/238.

**SPAN 7, TRUSS A, PANEL POINT AL17 - SOUTH ELEVATION**  
(LOOKING NORTH)

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<b>PIN REPLACEMENT - PANEL POINT AL17 - REMOVAL DETAILS</b>	
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE: 1/30/18 REVIEWED: DLR DRAWN: JLS CHECKED: KAK STRUCTURE FILE NUMBER: 1801503
BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
162/238	
222 308	



SPAN 7, TRUSS A, PANEL POINT AL17 - SOUTH ELEVATION  
(LOOKING NORTH)

**NOTES**

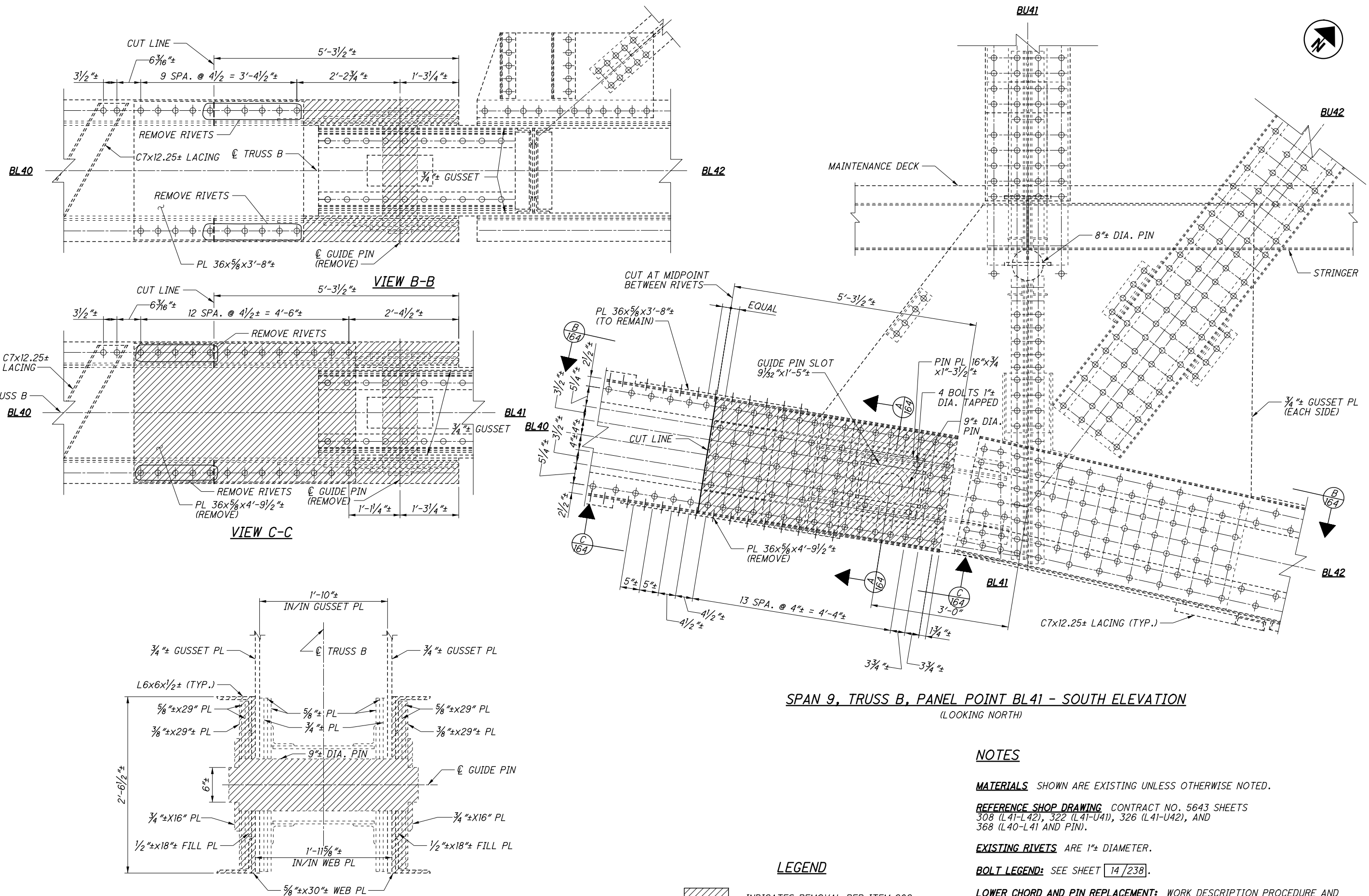
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- ADDITIONAL NOTES:** SEE SHEET 162/238.

**NEW PIN**

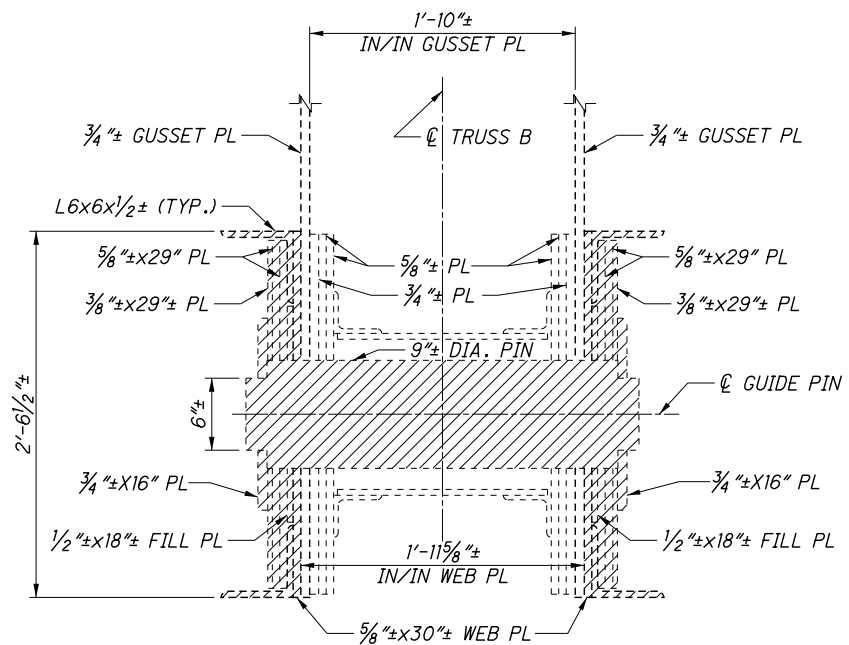
5" DIA.  
6 1/2" DIA.  
7 1/2" DIA.  
CHAMFER 45°(TYP.)  
0 1/2" DIA.  
0 1/2" DIA.



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**SPAN 9, TRUSS B, PANEL POINT BL41 - SOUTH ELEVATION**  
(LOOKING NORTH)



**SECTION A-A**

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

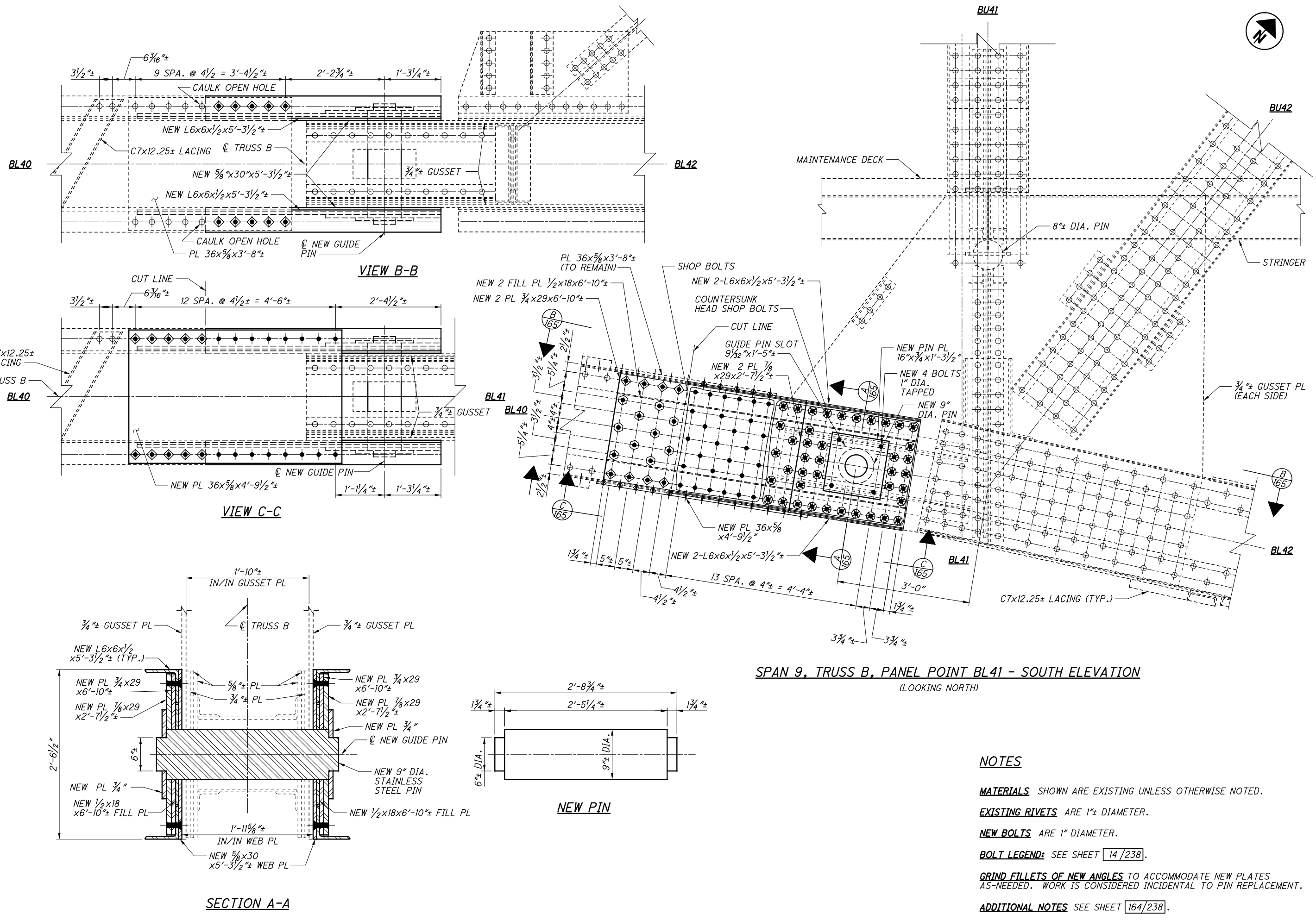
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 308 (L41-L42), 322 (L41-U41), 326 (L41-U42), AND 368 (L40-L41 AND PIN).
- EXISTING RIVETS** ARE 1± DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- LOWER CHORD AND PIN REPLACEMENT:** WORK DESCRIPTION PROCEDURE AND PAYMENT SEE GENERAL NOTES: REPLACE TRUSS DEFLECTION JOINT PIN, BL41, AND REBUILD MEMBER END SEE SHEET 9/238.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 103/238.



<b>PIN REPLACEMENT - PANEL POINT BL41 - REMOVAL DETAILS</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
DESIGNED DAP	DRAWN JSB	REVIEWED DLR
CHECKED KAK	REVISED	DATE 1/30/18
STRUCTURE FILE NUMBER 1801503		PROJECT FILE NUMBER 1801503
<b>CUY-10-16.13</b> PID No. 96986	164/238 224/308	

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SPAN 9, TRUSS B, PANEL POINT BL41 - SOUTH ELEVATION  
(LOOKING NORTH)

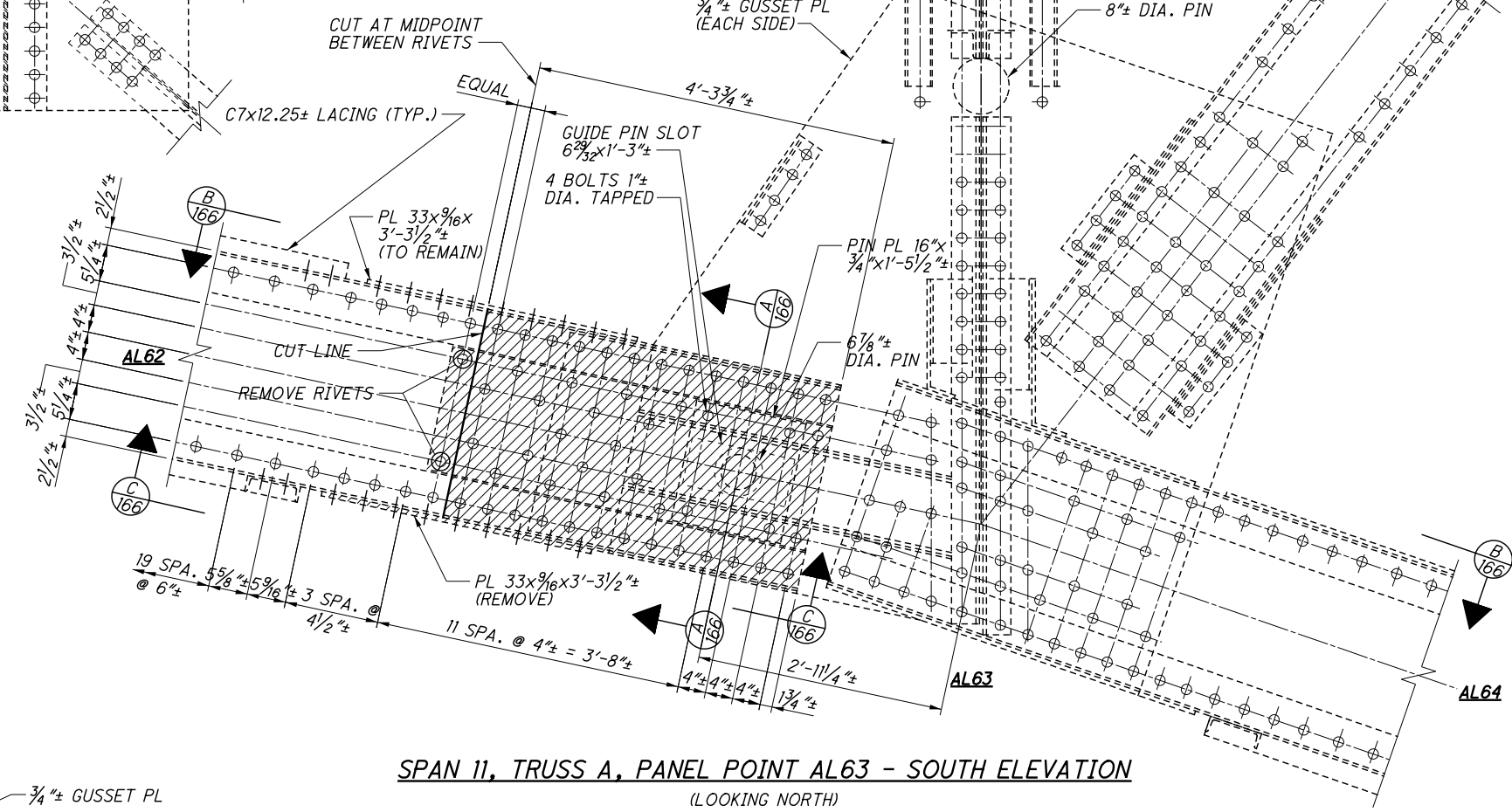
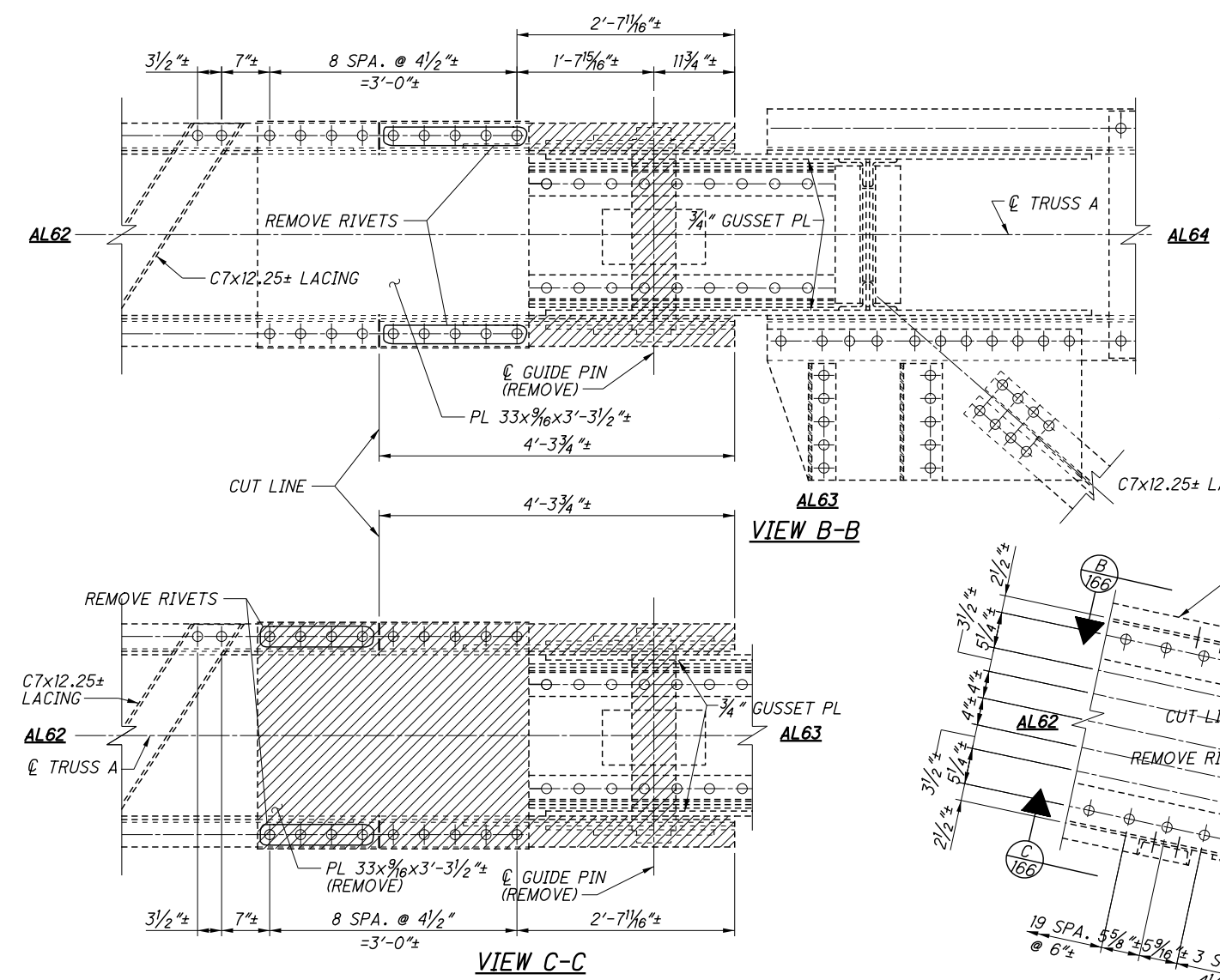
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- GRIND FILLETS OF NEW ANGLES** TO ACCOMMODATE NEW PLATES AS-NEEDED. WORK IS CONSIDERED INCIDENTAL TO PIN REPLACEMENT.
- ADDITIONAL NOTES** SEE SHEET 164/238.

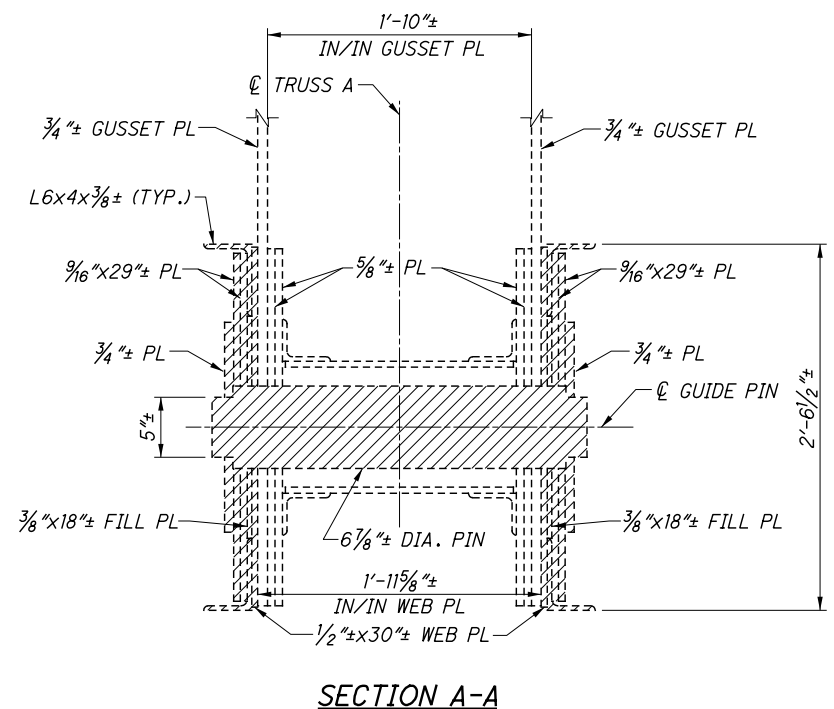
<b>PIN REPLACEMENT - PANEL POINT BL41 - REPLACEMENT DETAILS</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	DATE: 1/30/18 REVIEWED: DLR DRAWN: USB DESIGNED: DAP CHECKED: KAK
CUY-10-16.13 PID No. 96986	STRUCTURE FILE NUMBER: 1801503 165/238 225/308



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SPAN 11, TRUSS A, PANEL POINT AL63 - SOUTH ELEVATION  
(LOOKING NORTH)



SECTION A-A

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 196 (L63-L64), 217 (L63-U63), 222 (L63-U64), AND 242 (L62-L63 AND PIN).

**EXISTING RIVETS** ARE 1"± DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

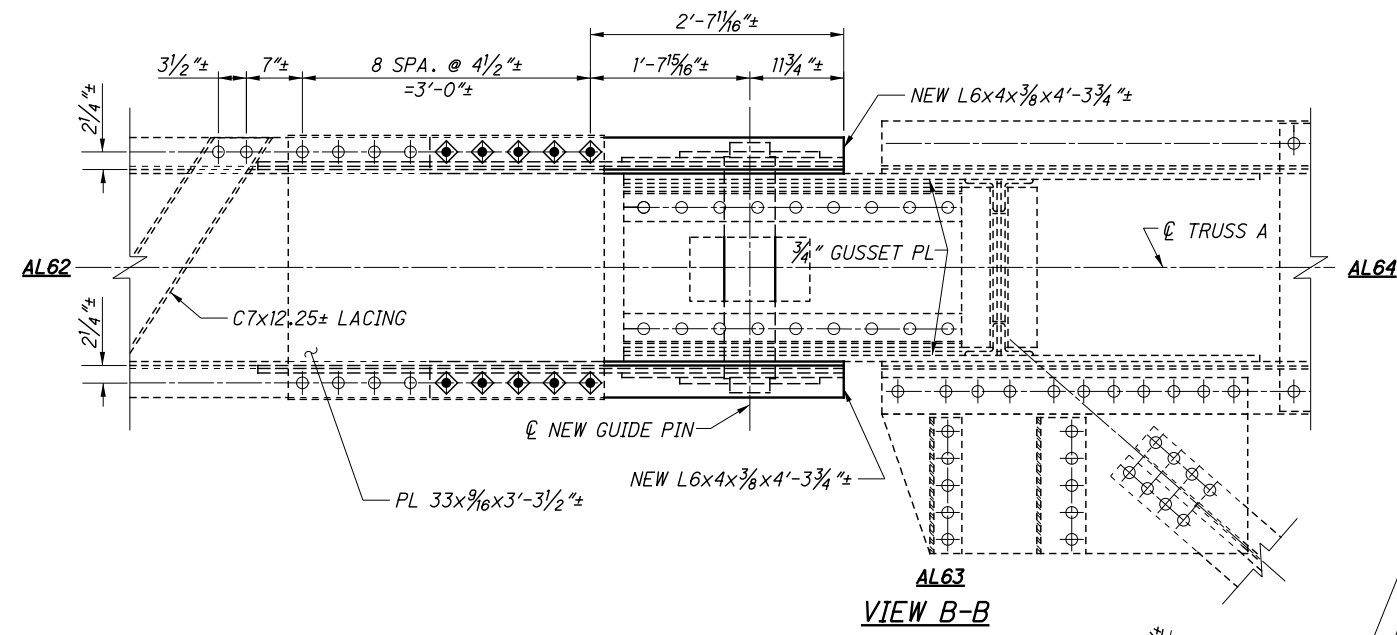
**LOWER CHORD AND PIN REPLACEMENT:** WORK DESCRIPTION PROCEDURE AND PAYMENT SEE GENERAL NOTES: REPLACE TRUSS DEFLECTION JOINT PIN, AL63, AND REBUILD MEMBER END SEE SHEET 9/238.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 100/238.

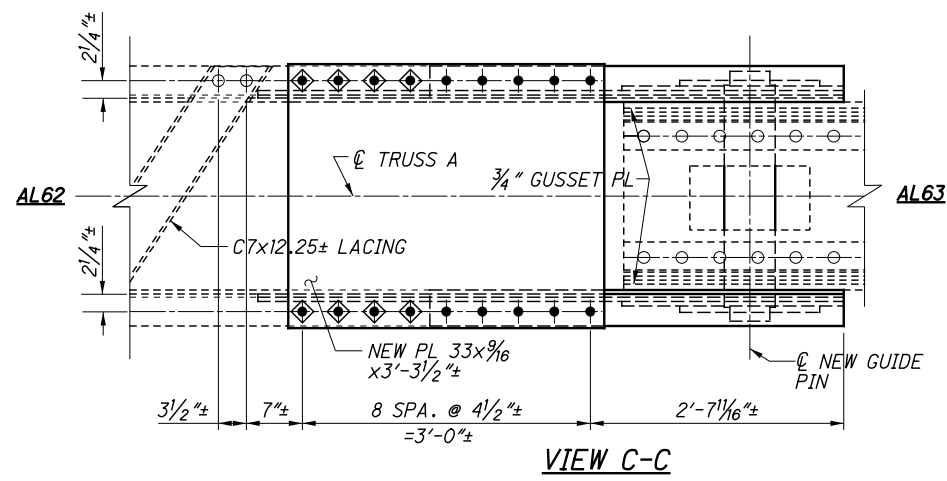
**LEGEND**

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

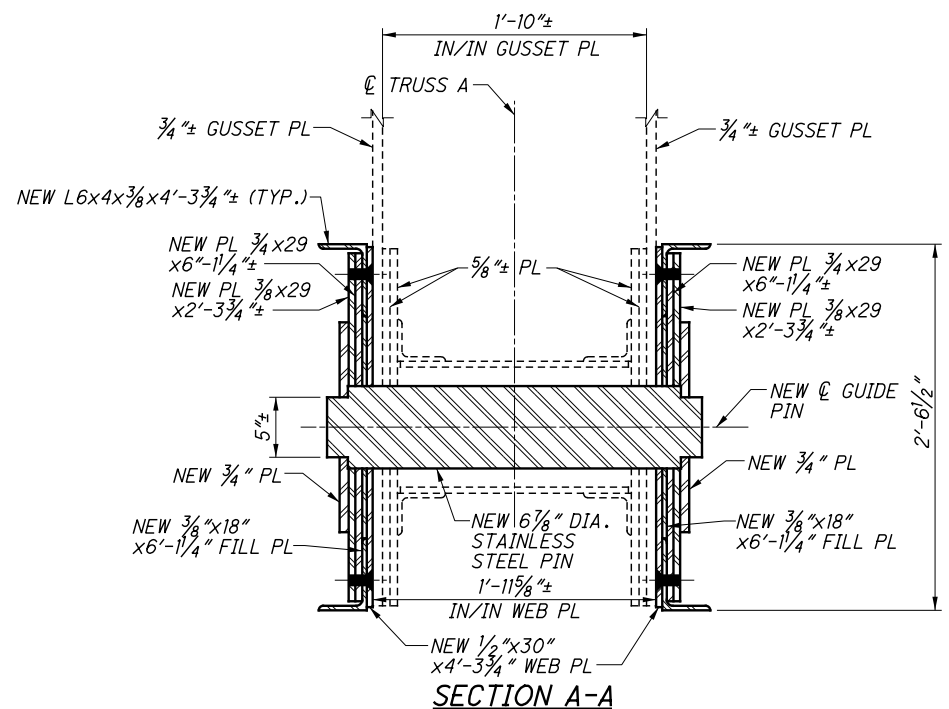
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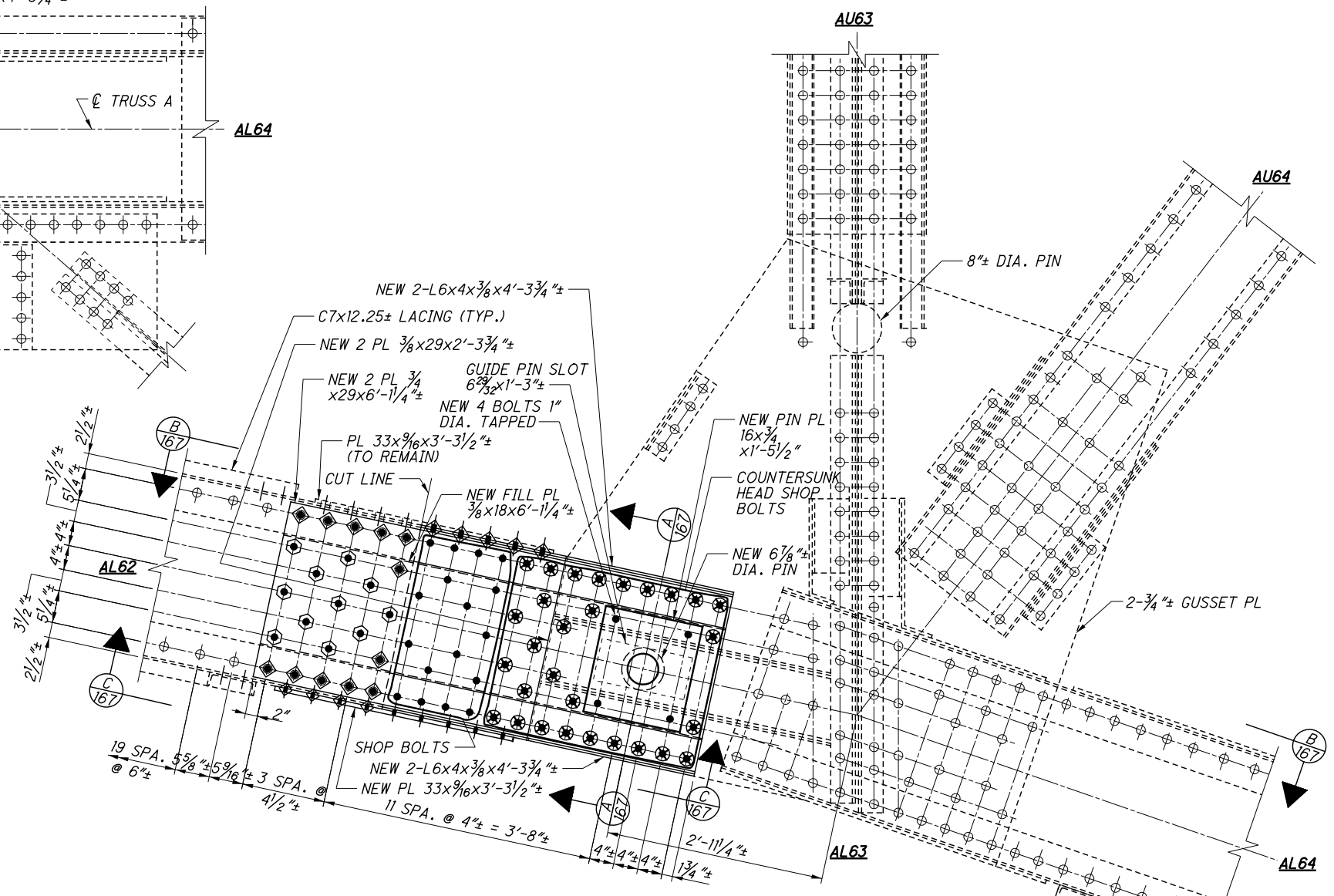
VIEW B-B



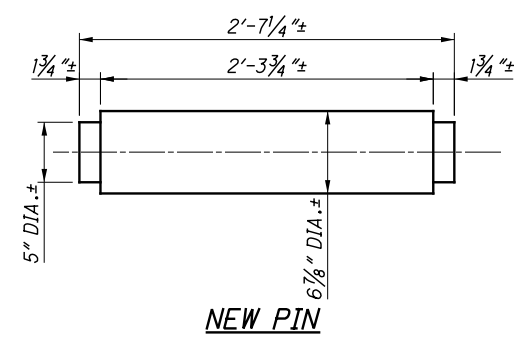
VIEW C-C



SECTION A-A



SPAN 11, TRUSS A, PANEL POINT AL63 - SOUTH ELEVATION  
(LOOKING NORTH)

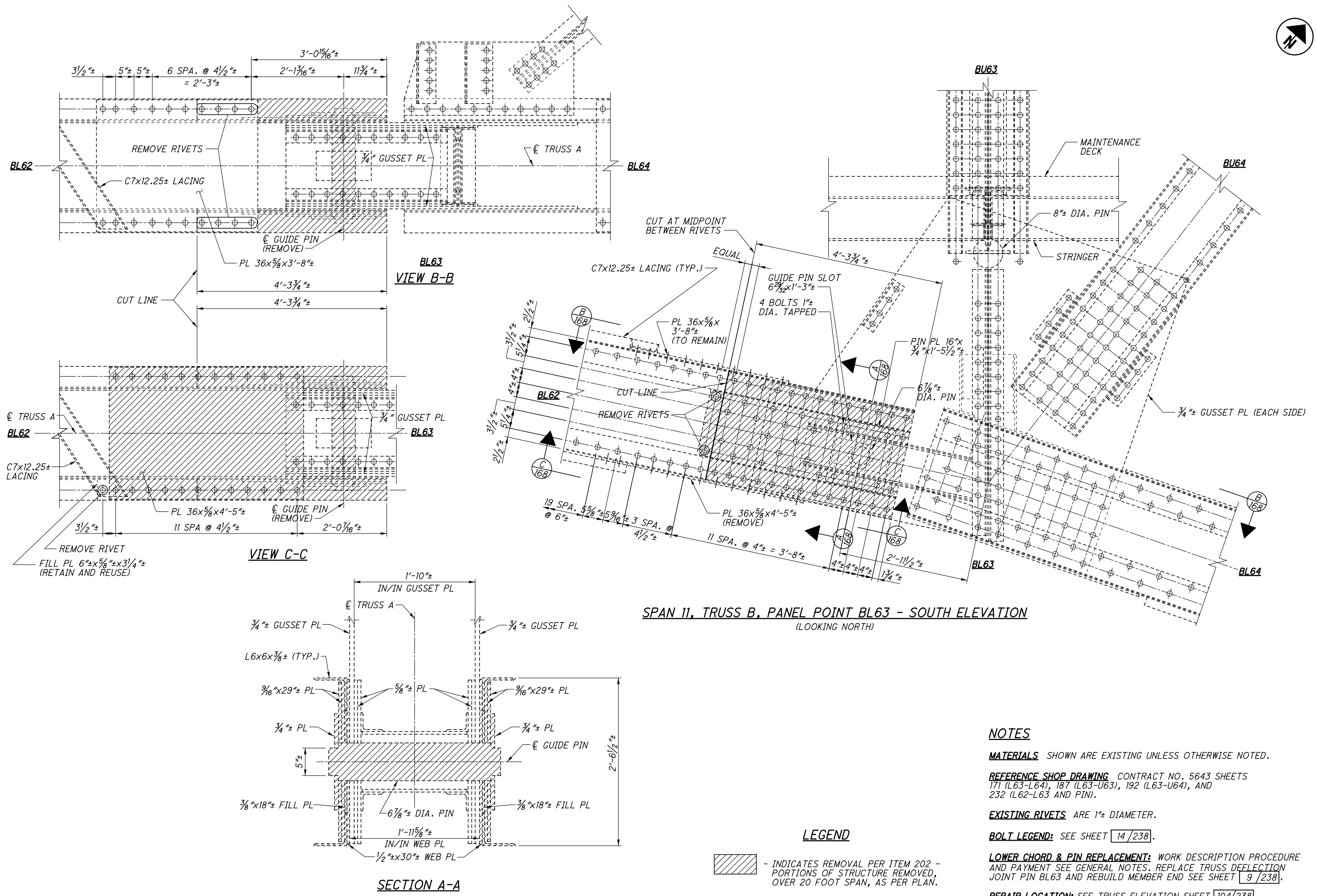


NEW PIN

NOTES

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- ADDITIONAL NOTES:** SEE SHEET 166/238.





**SPAN 11, TRUSS B, PANEL POINT BL63 - SOUTH ELEVATION**  
(LOOKING NORTH)

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 171 (L63-L64), 187 (L63-U63), 192 (L63-U64), AND 232 (L62-L63 AND PIN).

**EXISTING RIVETS** ARE 1" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

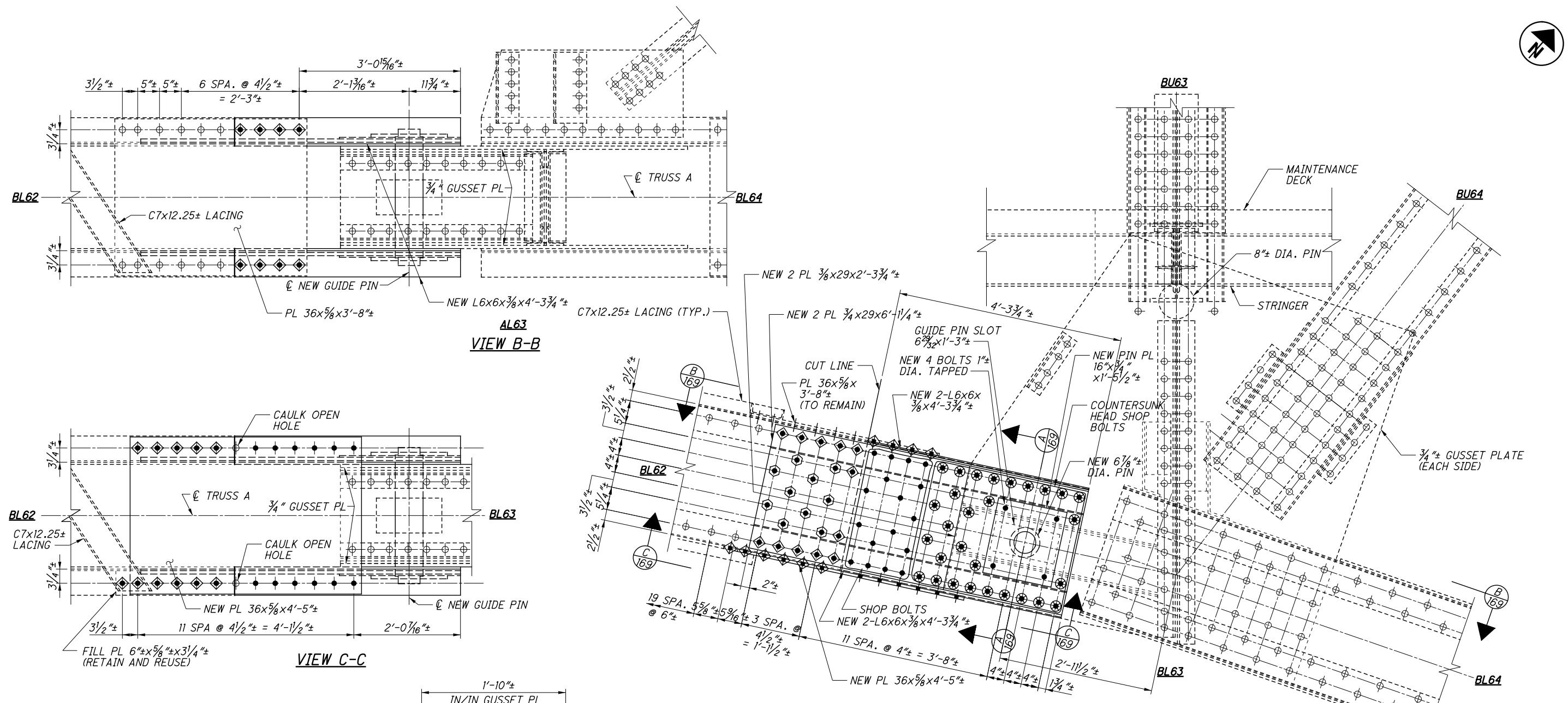
**LOWER CHORD & PIN REPLACEMENT:** WORK DESCRIPTION PROCEDURE AND PAYMENT SEE GENERAL NOTES. REPLACE TRUSS DEFLECTION JOINT PIN BL63 AND REBUILD MEMBER END SEE SHEET 9/238.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 104/238.

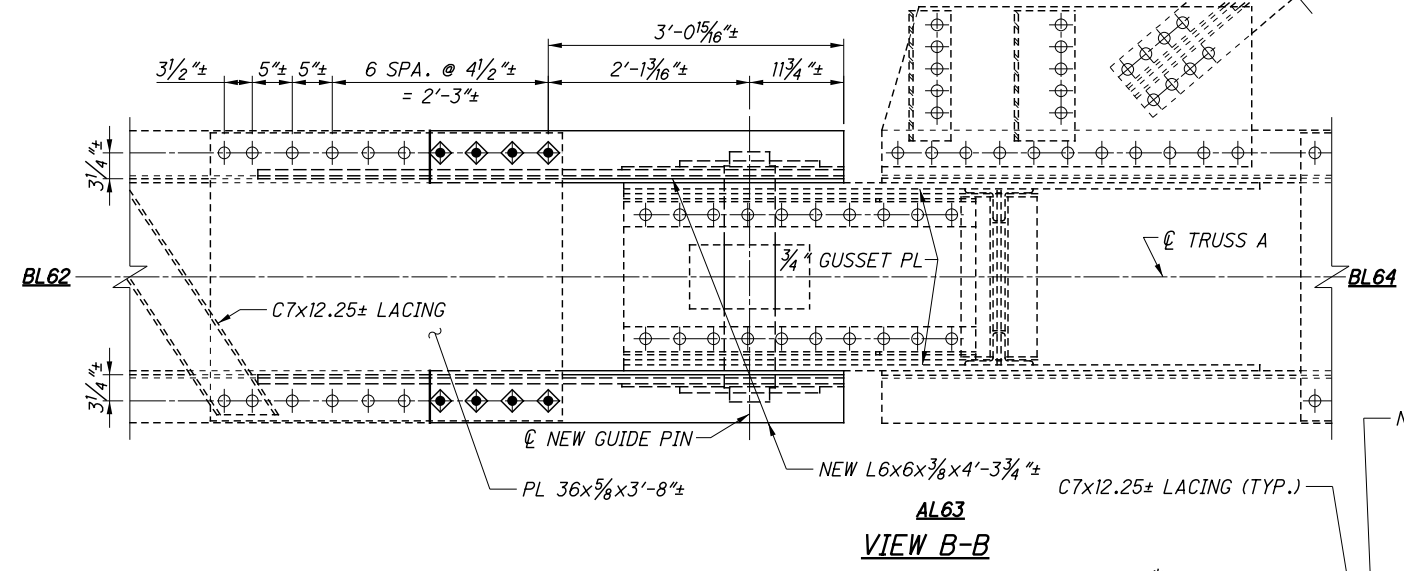
**LEGEND**

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

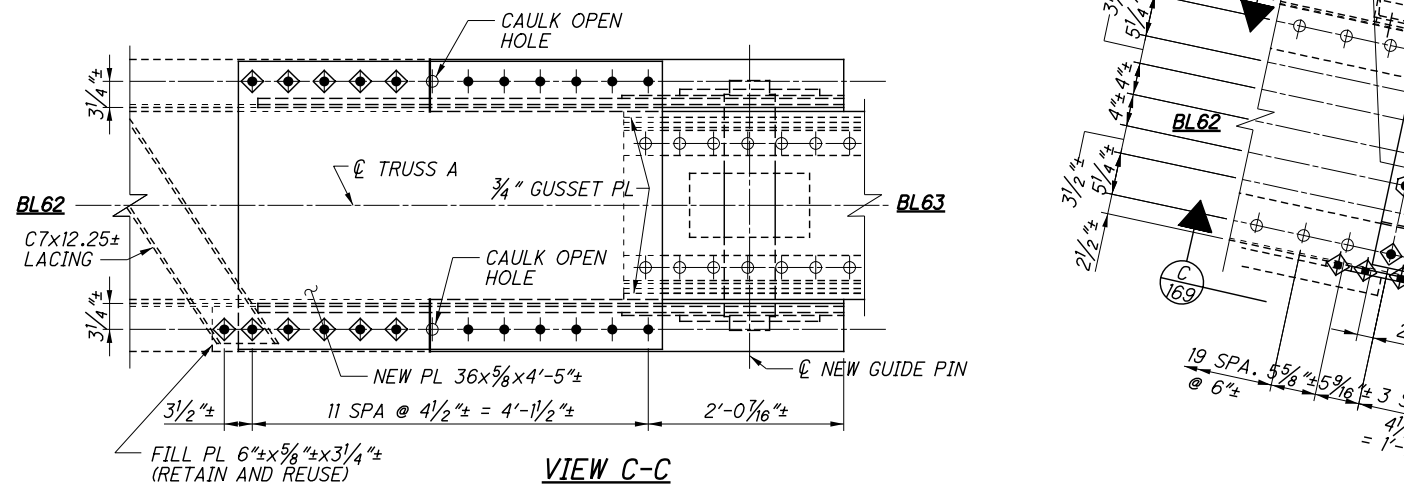
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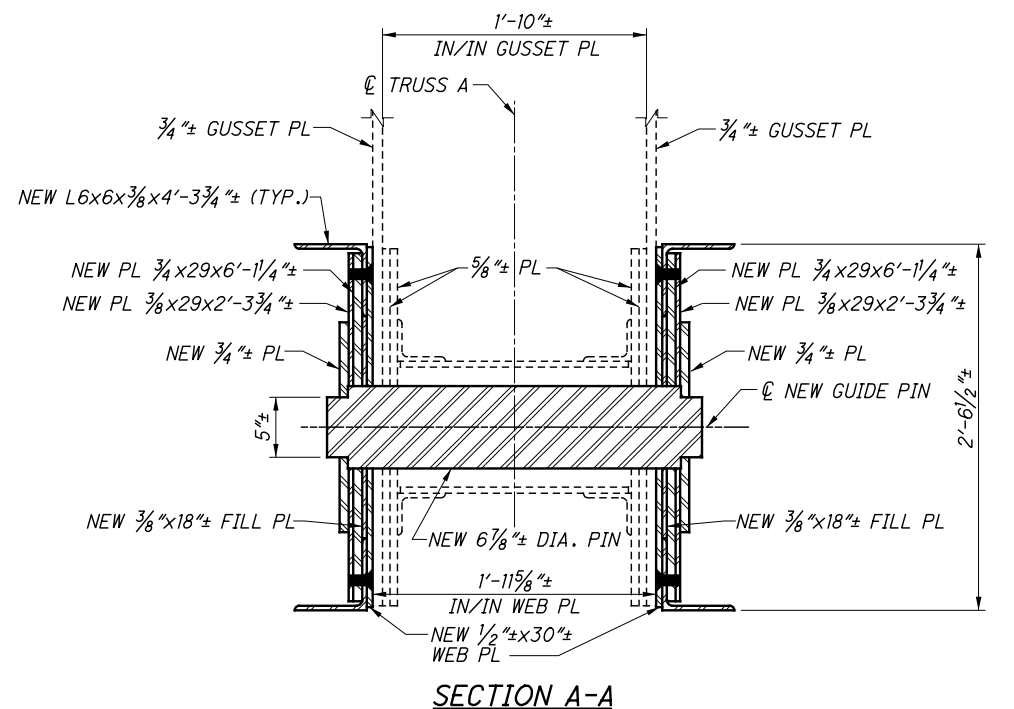
SPAN 11, TRUSS B, PANEL POINT BL63 - SOUTH ELEVATION  
(LOOKING NORTH)



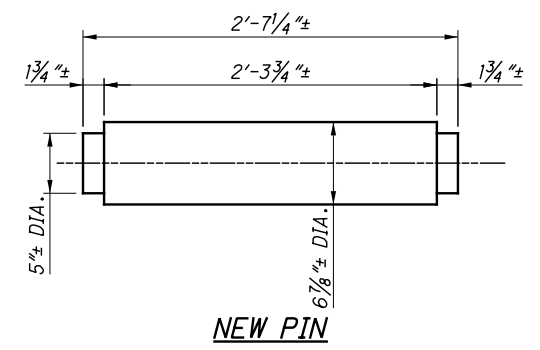
AL63  
VIEW B-B



VIEW C-C



SECTION A-A

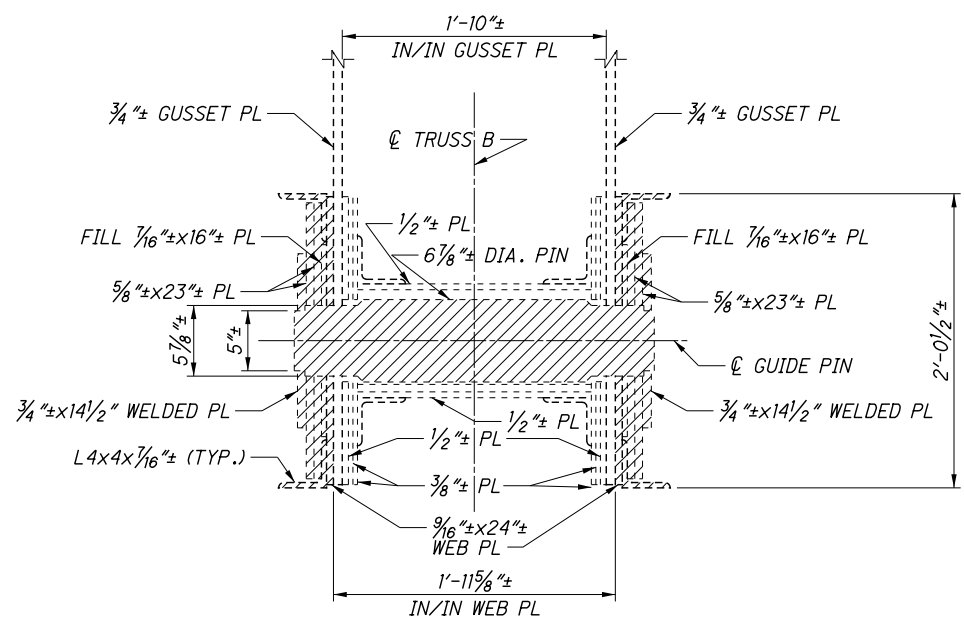


NEW PIN

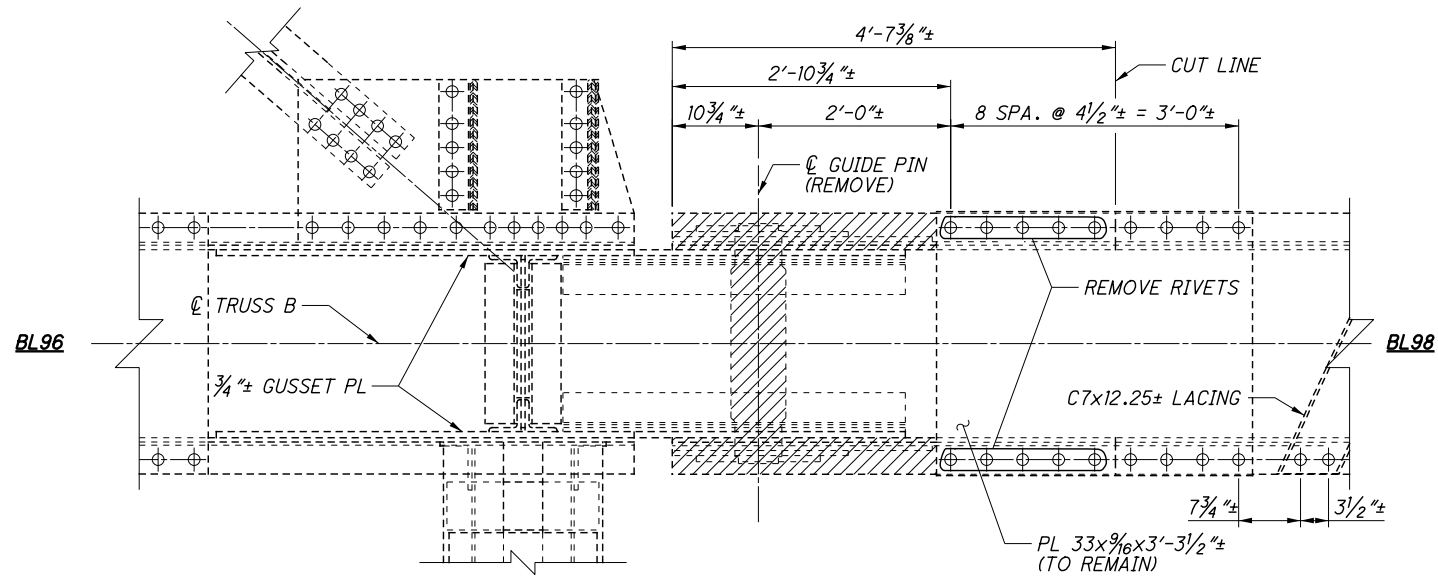
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EXISTING RIVETS** ARE 1" DIAMETER.
- NEW BOLTS** ARE 1" DIAMETER.
- BOLT LEGEND:** SEE SHEET 14/238.
- ADDITIONAL NOTES:** SEE SHEET 168/238.

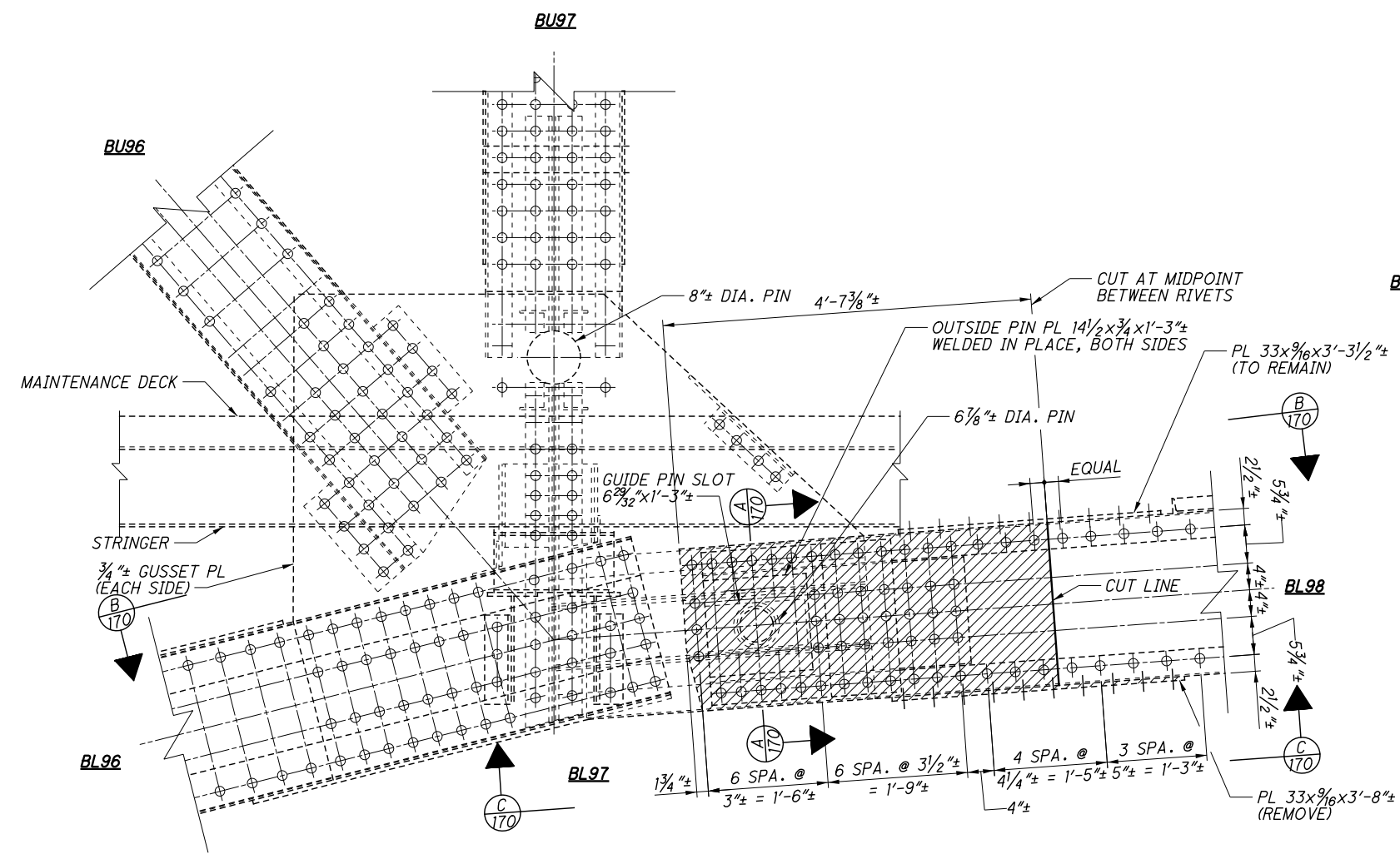
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SECTION A-A

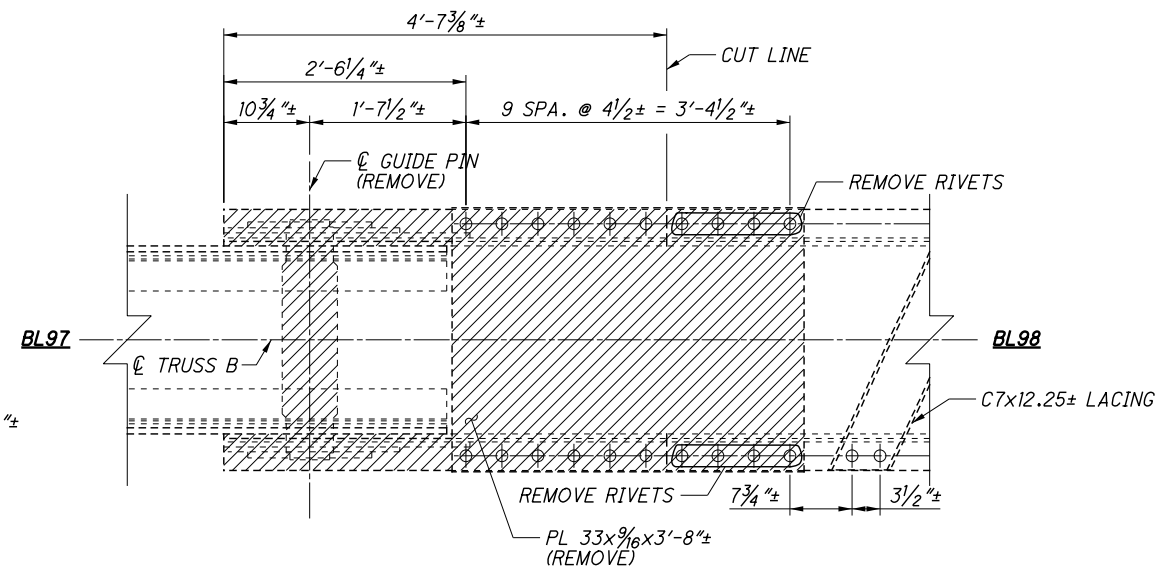


VIEW B-B



SPAN 15, TRUSS B, PANEL POINT BL97 - SOUTH ELEVATION (SHOWN)  
(LOOKING NORTH)

SPAN 15, TRUSS C, PANEL POINT CL97 - NORTH ELEVATION (OPPOSITE HAND)  
(LOOKING SOUTH)



VIEW C-C

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

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**REFERENCE SHOP DRAWING** CONTRACT NO. 5643 SHEETS 74 (L97-L98 AND PIN), 100 (L96-L97), 112 (L97-U97) AND 115 (L97-U96).

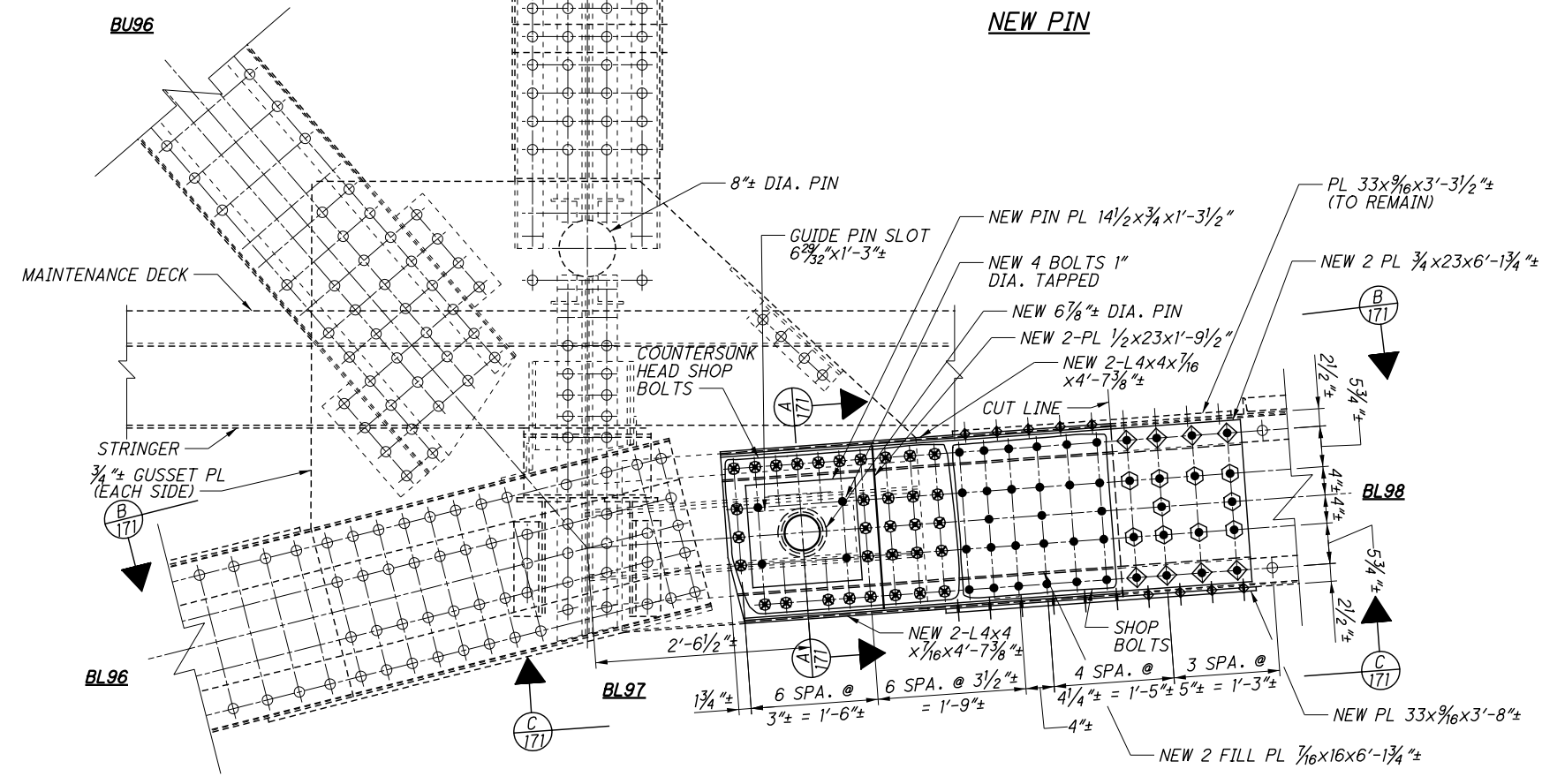
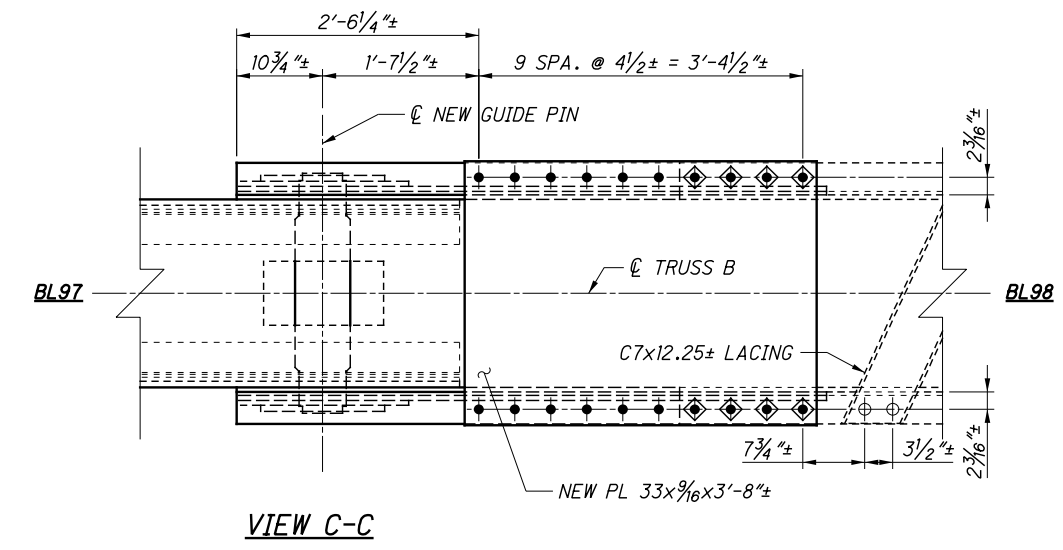
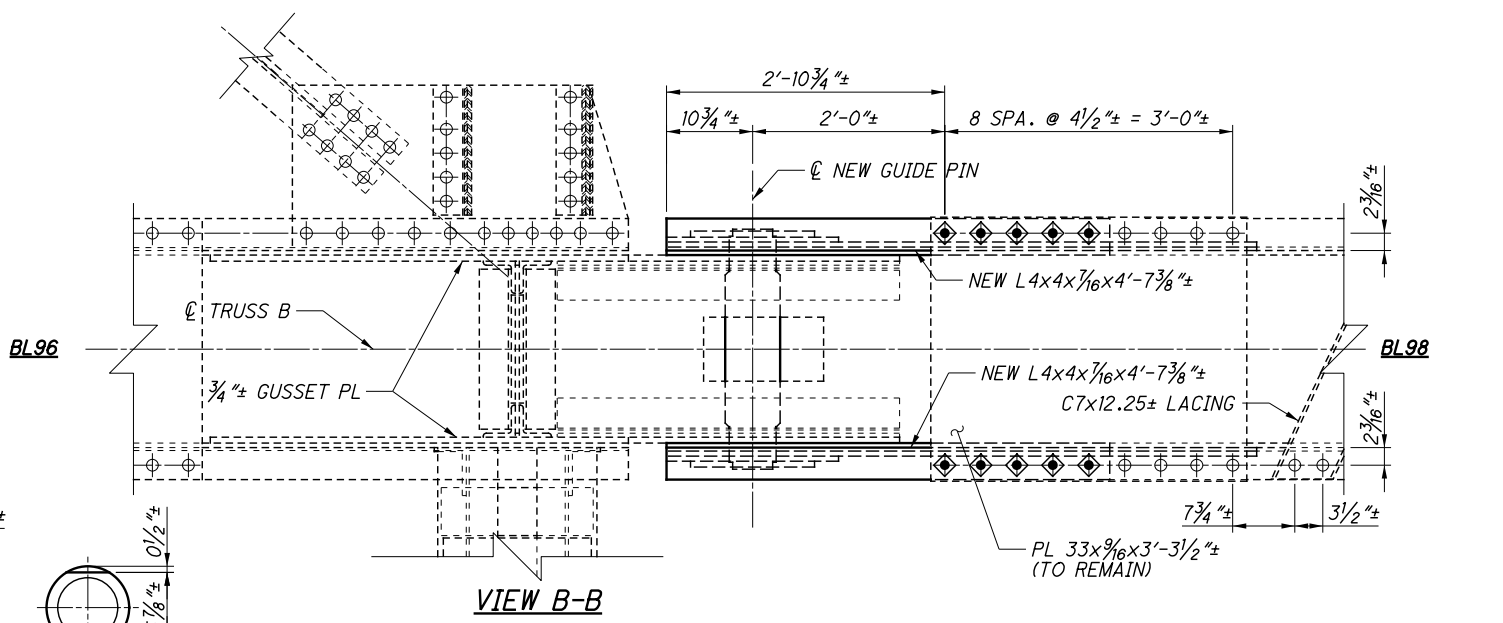
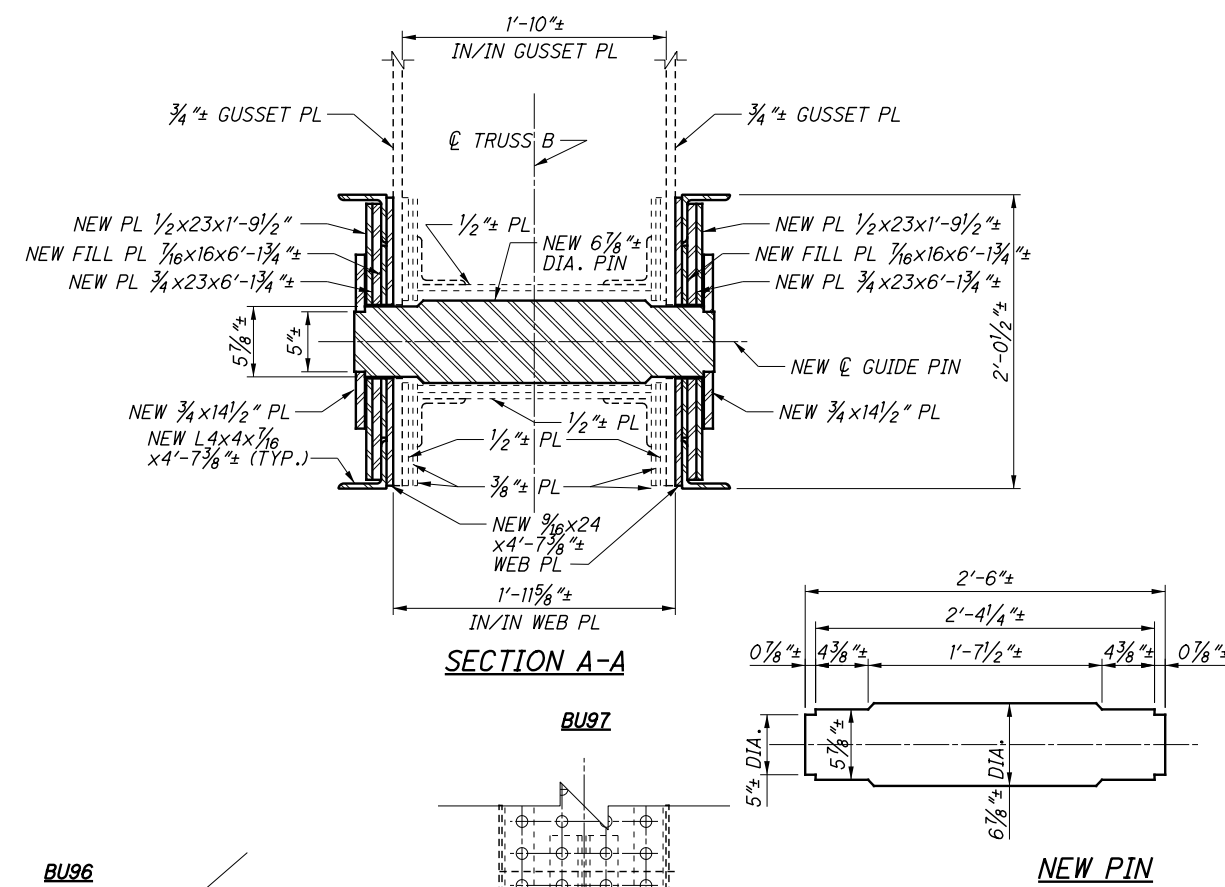
**EXISTING RIVETS** ARE 1/2" DIAMETER.

**BOLT LEGEND:** SEE SHEET 14/238.

**LOWER CHORD & PIN PLACEMENT:** WORK DESCRIPTION PROCEDURE AND PAYMENT SEE GENERAL NOTES: REPLACE TRUSS EXPANSION PIN, BL97 AND CL97, AND REBUILD MEMBER END SEE SHEET 8/238.

**REPAIR LOCATIONS:** SEE TRUSS ELEVATION SHEETS 105/238 AND 109/238.

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**SPAN 15, TRUSS B, PANEL POINT BL97 - SOUTH ELEVATION (SHOWN)**  
(LOOKING NORTH)

**SPAN 15, TRUSS C, PANEL POINT CL97 - NORTH ELEVATION (OPPOSITE HAND)**  
(LOOKING SOUTH)

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**EXISTING RIVETS** ARE 1" DIAMETER.

**NEW BOLTS** ARE 1" DIAMETER.

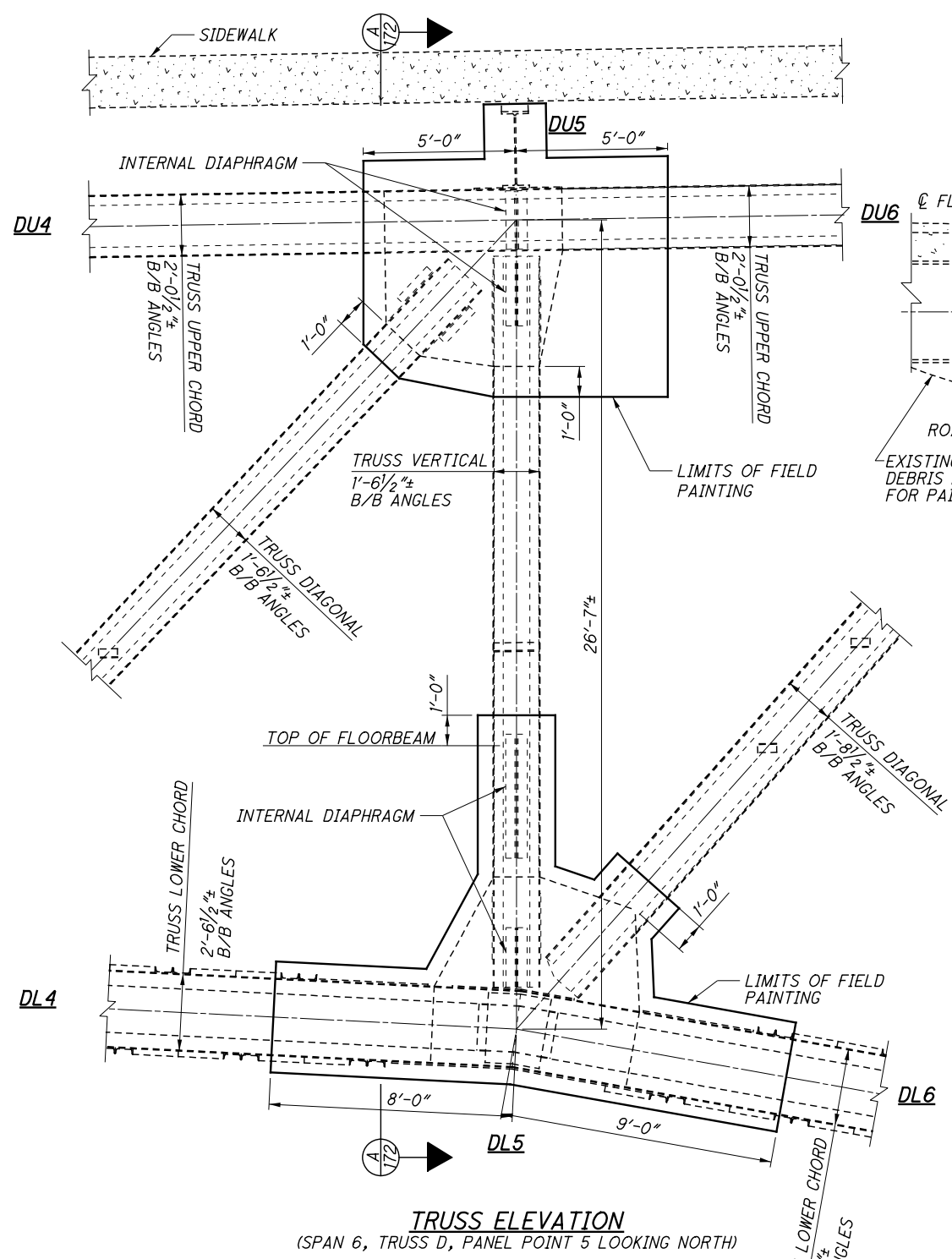
**BOLT LEGEND:** SEE SHEET 14/238.

**ADDITIONAL NOTES:** SEE SHEET 170/238.

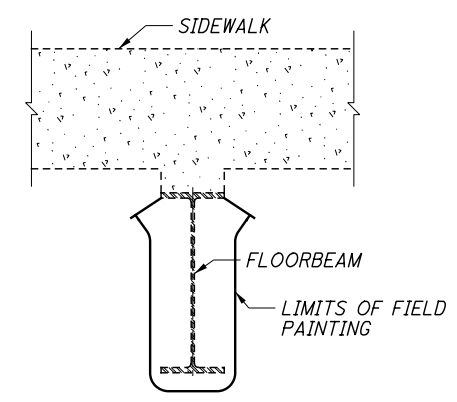
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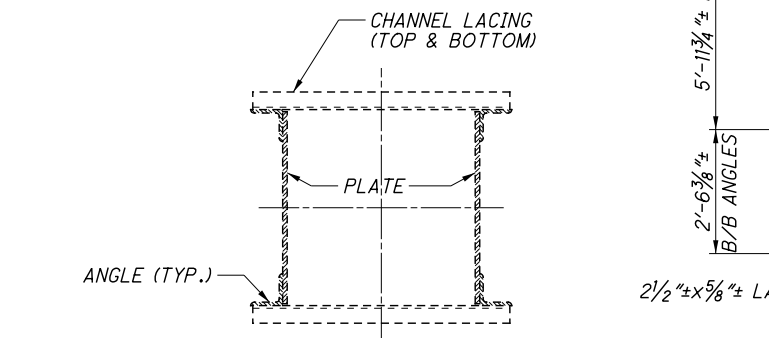
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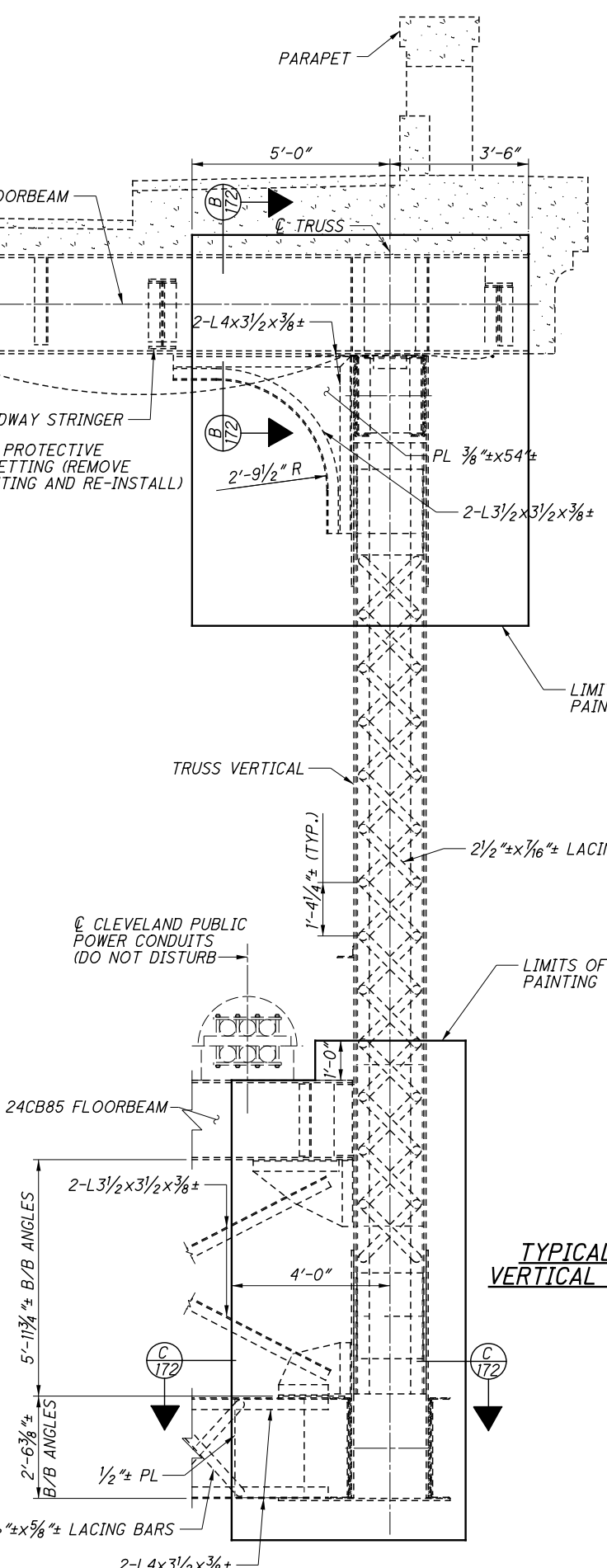
**TRUSS ELEVATION**  
(SPAN 6, TRUSS D, PANEL POINT 5 LOOKING NORTH)



**SECTION B-B**

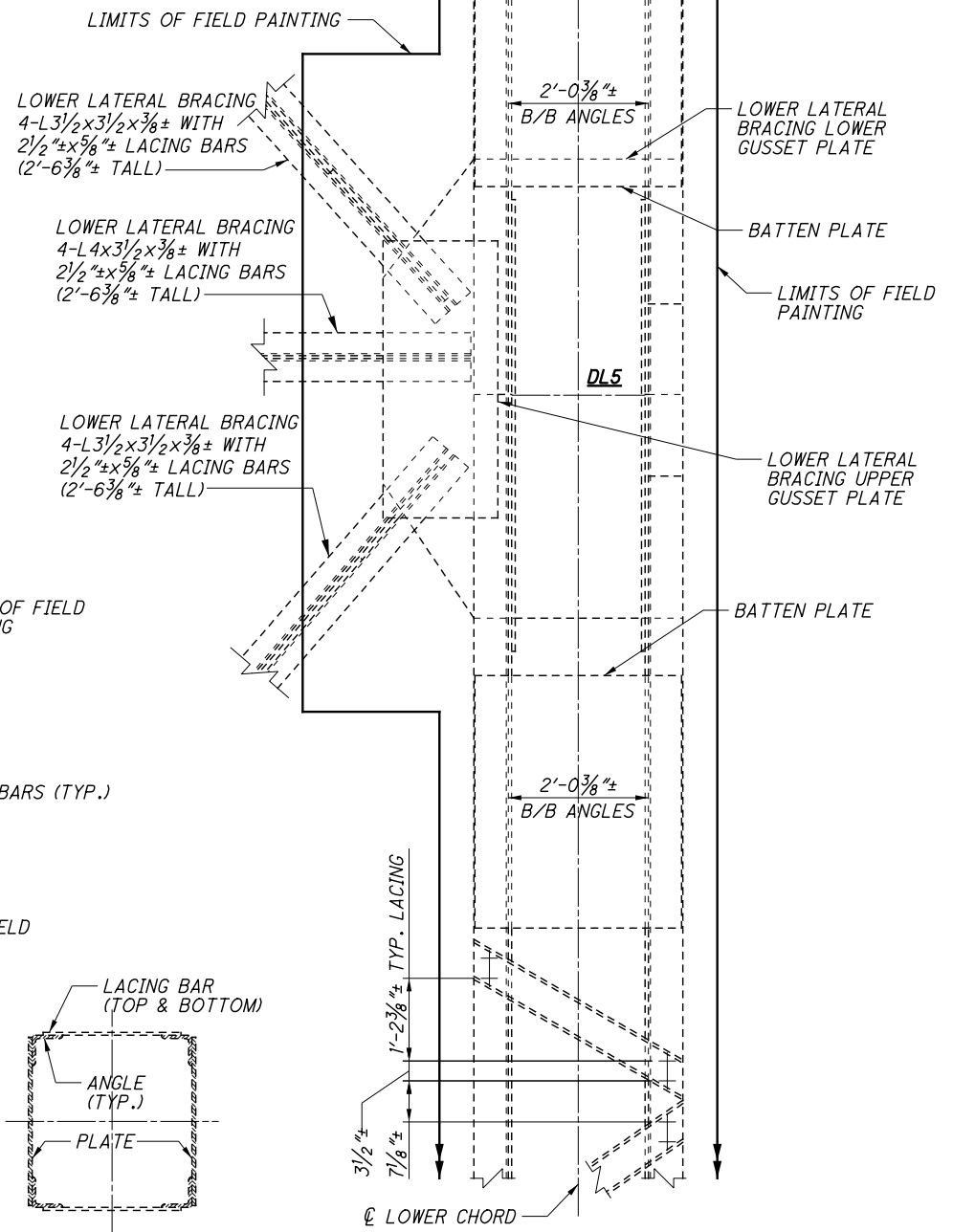


**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



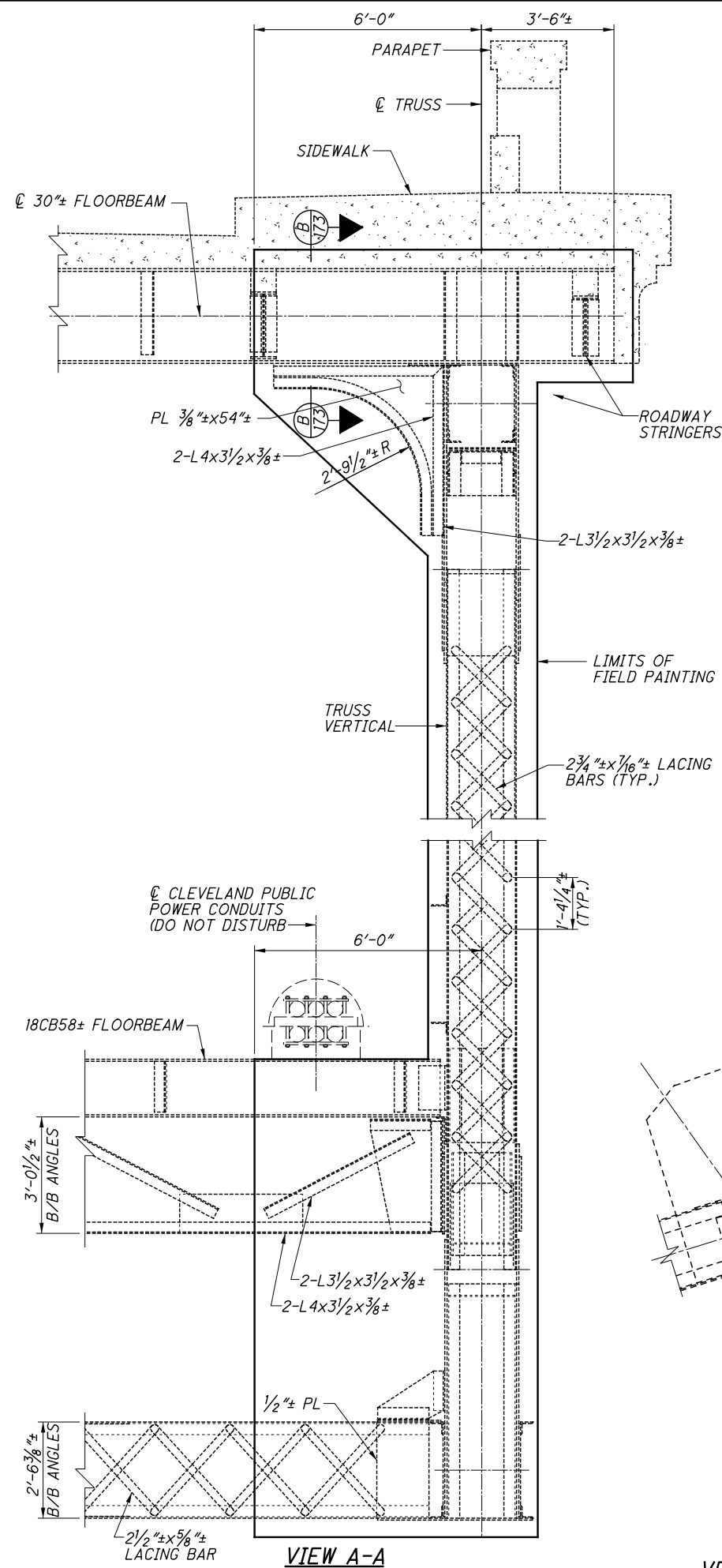
**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**

**VIEW C-C**



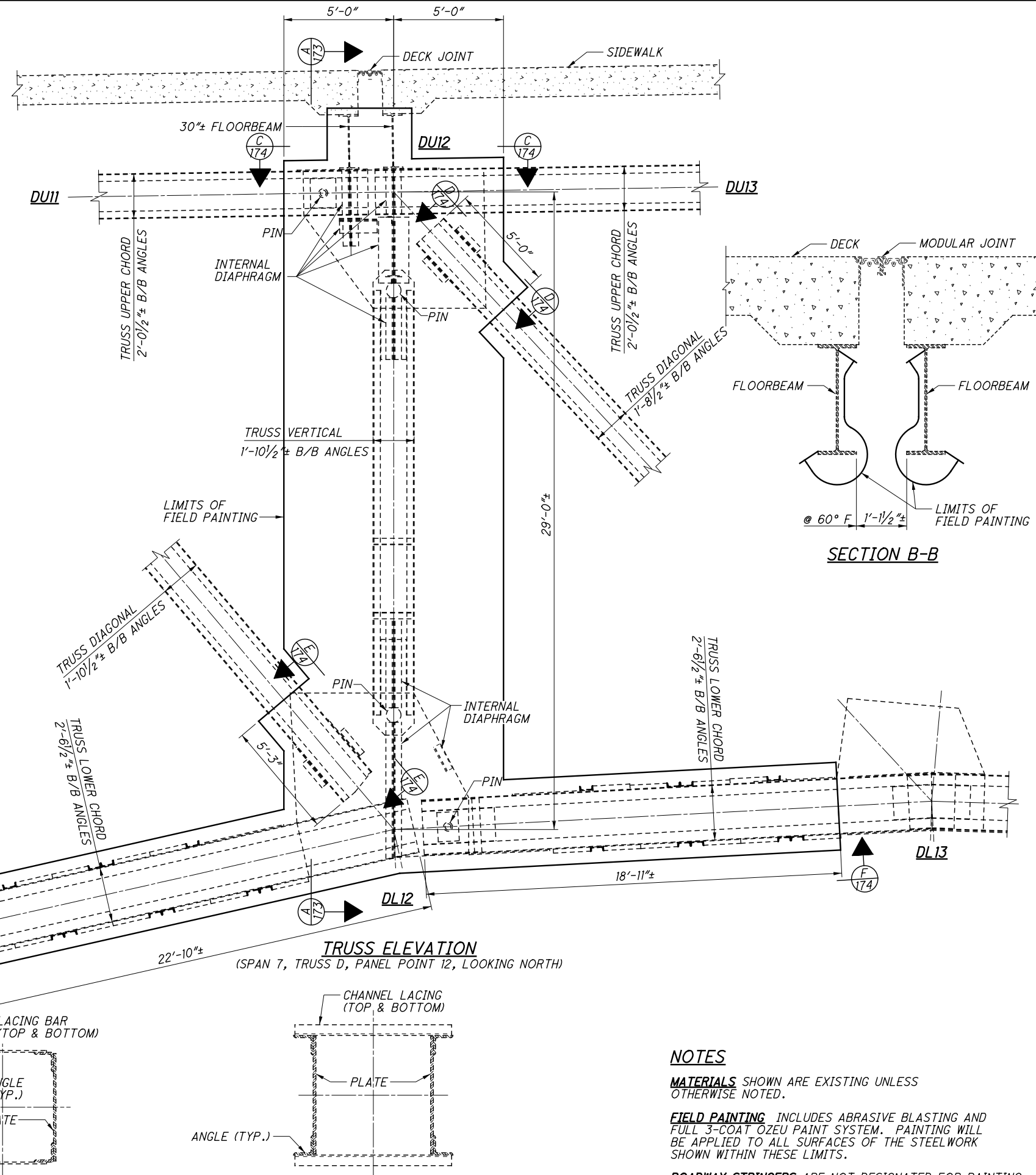
- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
  - DEBRIS NETTING REMOVAL AND REINSTALLATION:** SEE GENERAL NOTE SHEET 6/238.
  - ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
  - REPAIR LOCATION:** SEE FRAMING PLAN SHEET 110/238.

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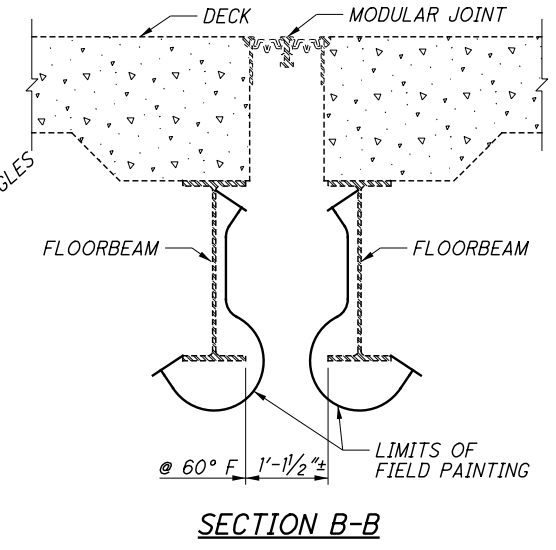
VIEW A-A

TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION



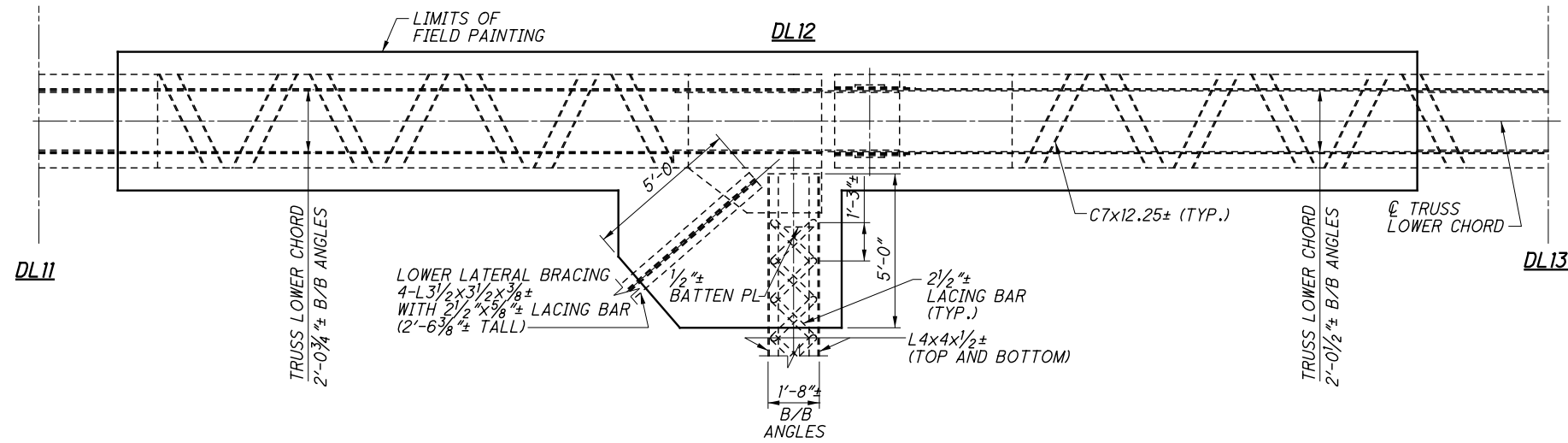
TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
**FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEEL WORK SHOWN WITHIN THESE LIMITS.  
**ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.  
**REPAIR LOCATION:** SEE FRAMING PLAN SHEET 110/238.

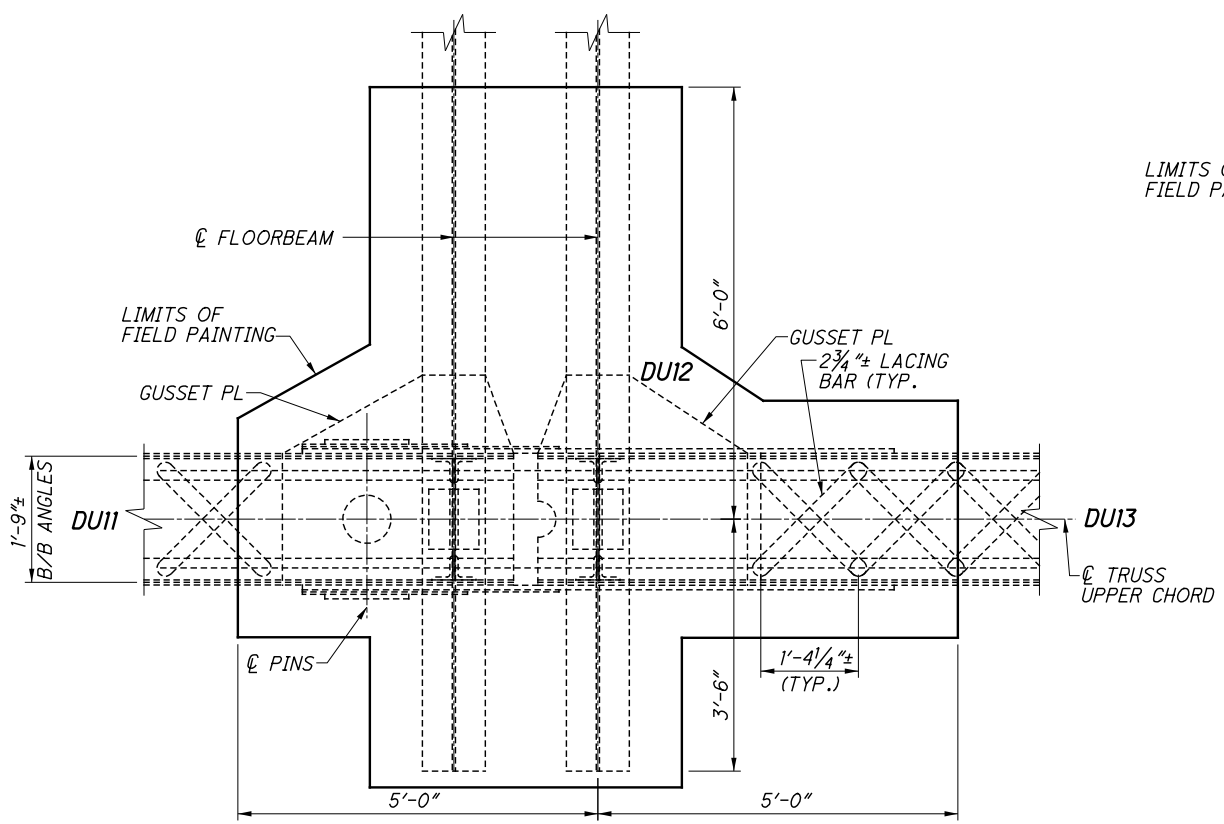


SECTION B-B

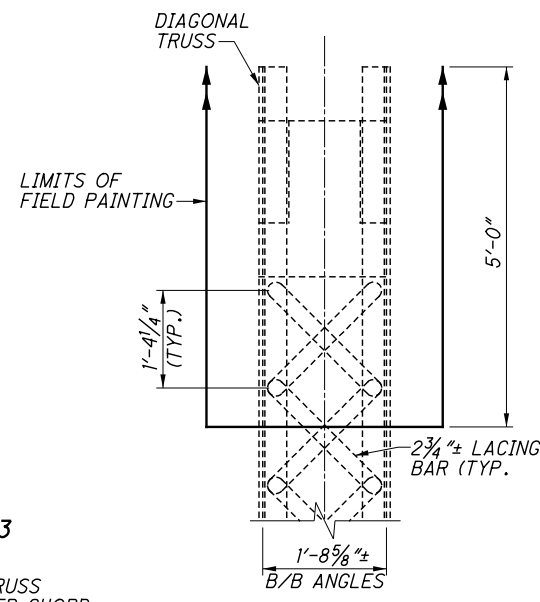
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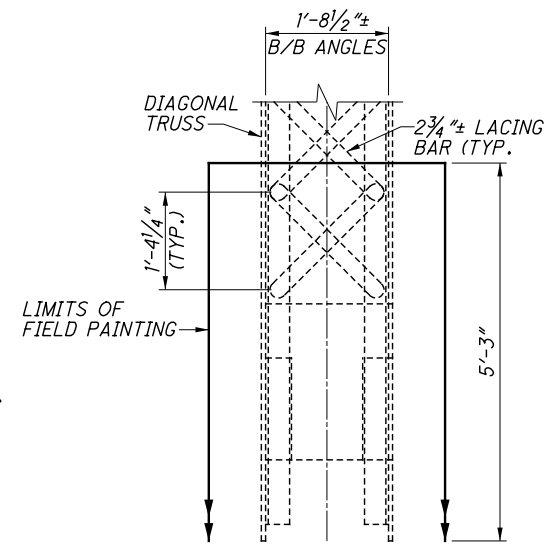
VIEW F-F



VIEW C-C  
(TOP AND BOTTOM LACING SIMILAR)



VIEW D-D  
(TOP AND BOTTOM LACING SIMILAR)



VIEW E-E  
(TOP AND BOTTOM LACING SIMILAR)

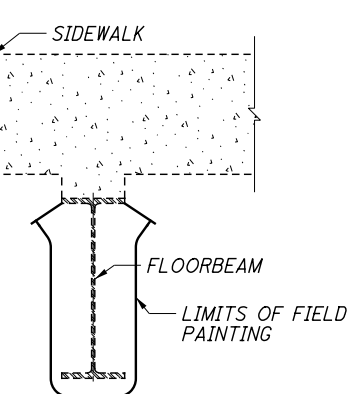
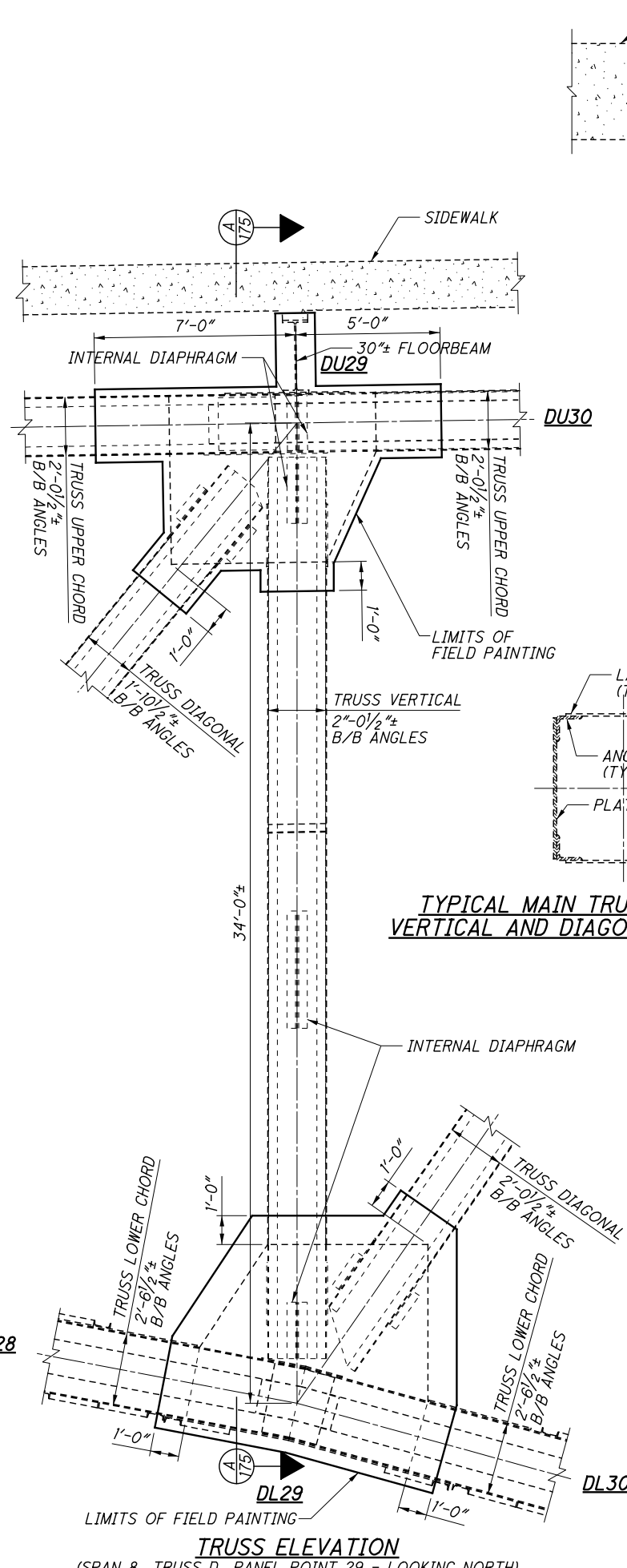
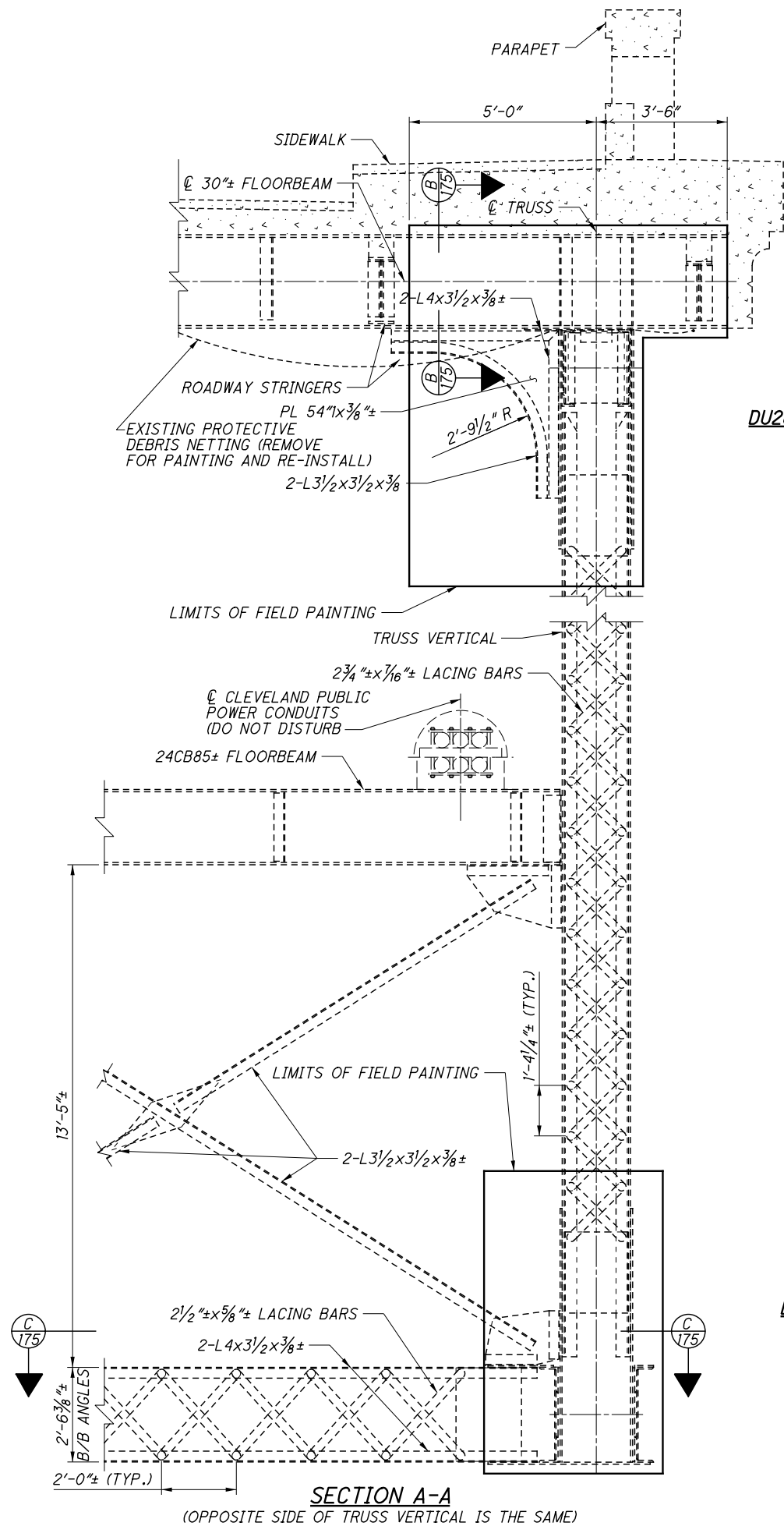
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

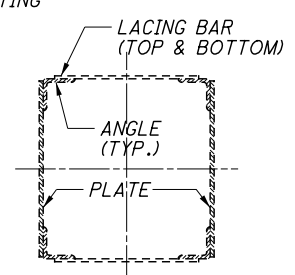
**VIEWS C-C, D-D, E-E & F-F:** FOR LOCATIONS SEE SHEET 173/238.

**ADDITIONAL NOTES:** SEE SHEET 173/238.

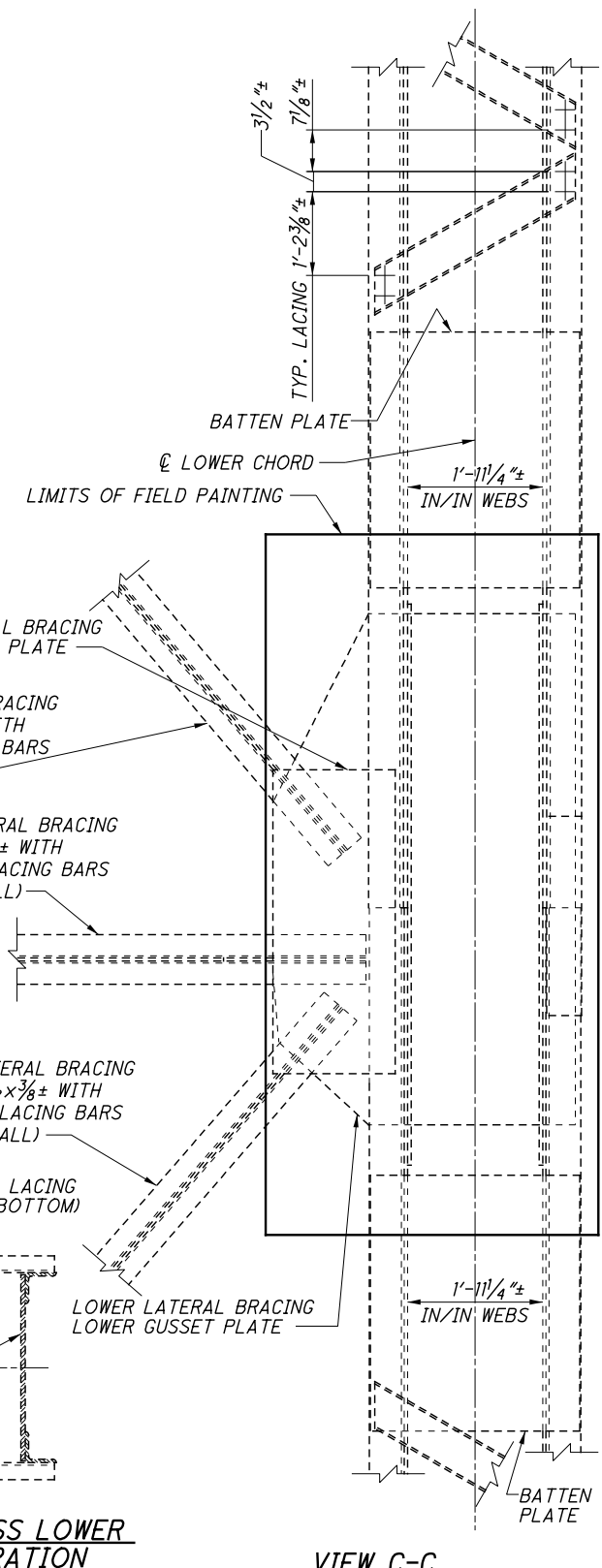
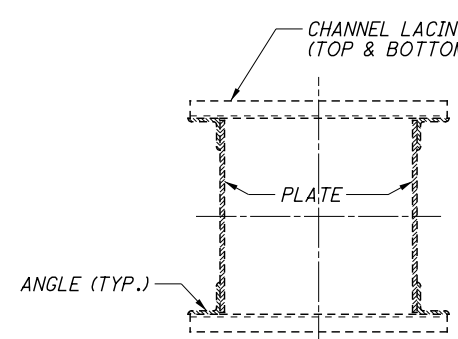
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD084.dgn 3/2/2018 3:32:43 PM JeffSmith



**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



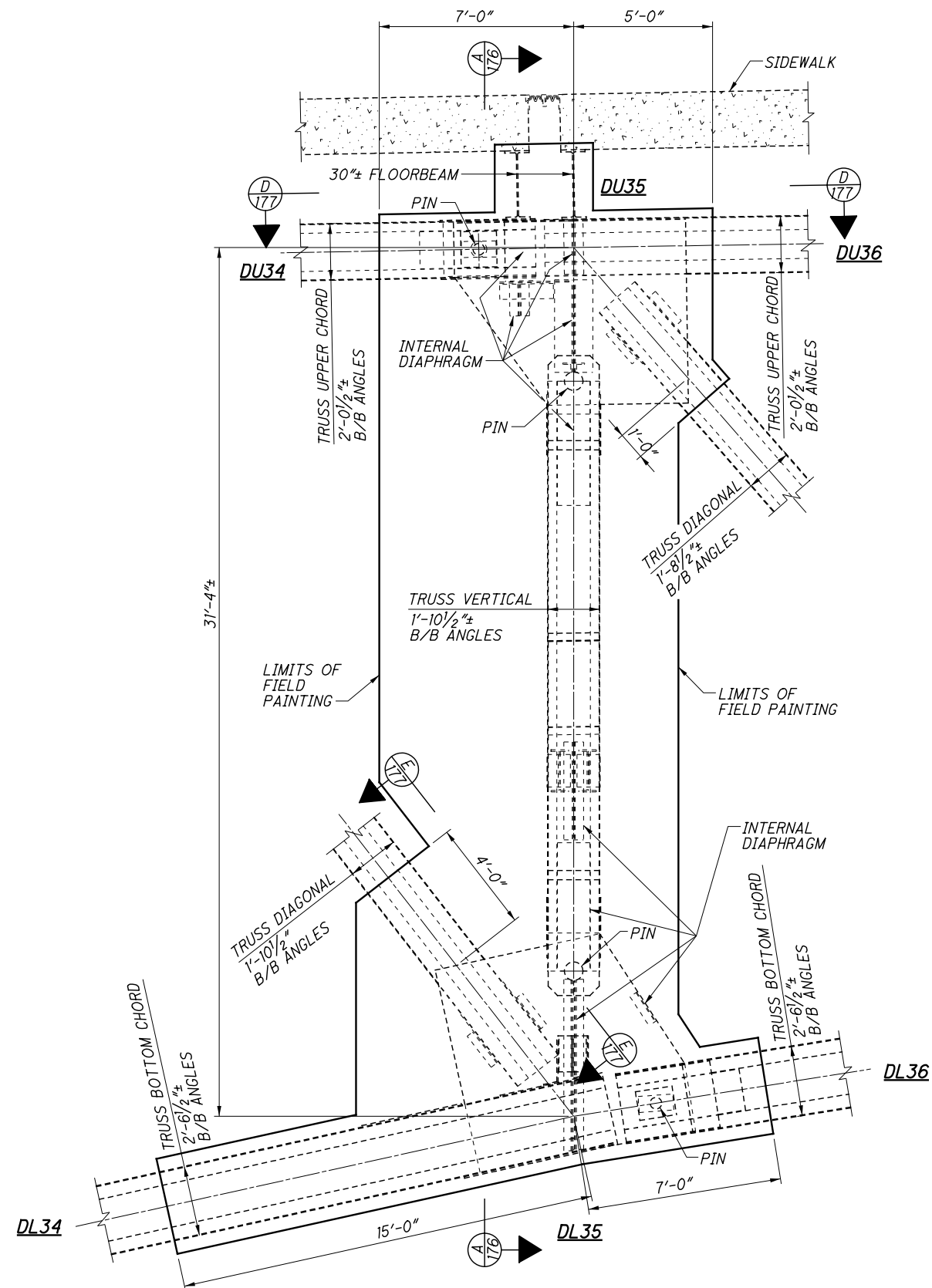
**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



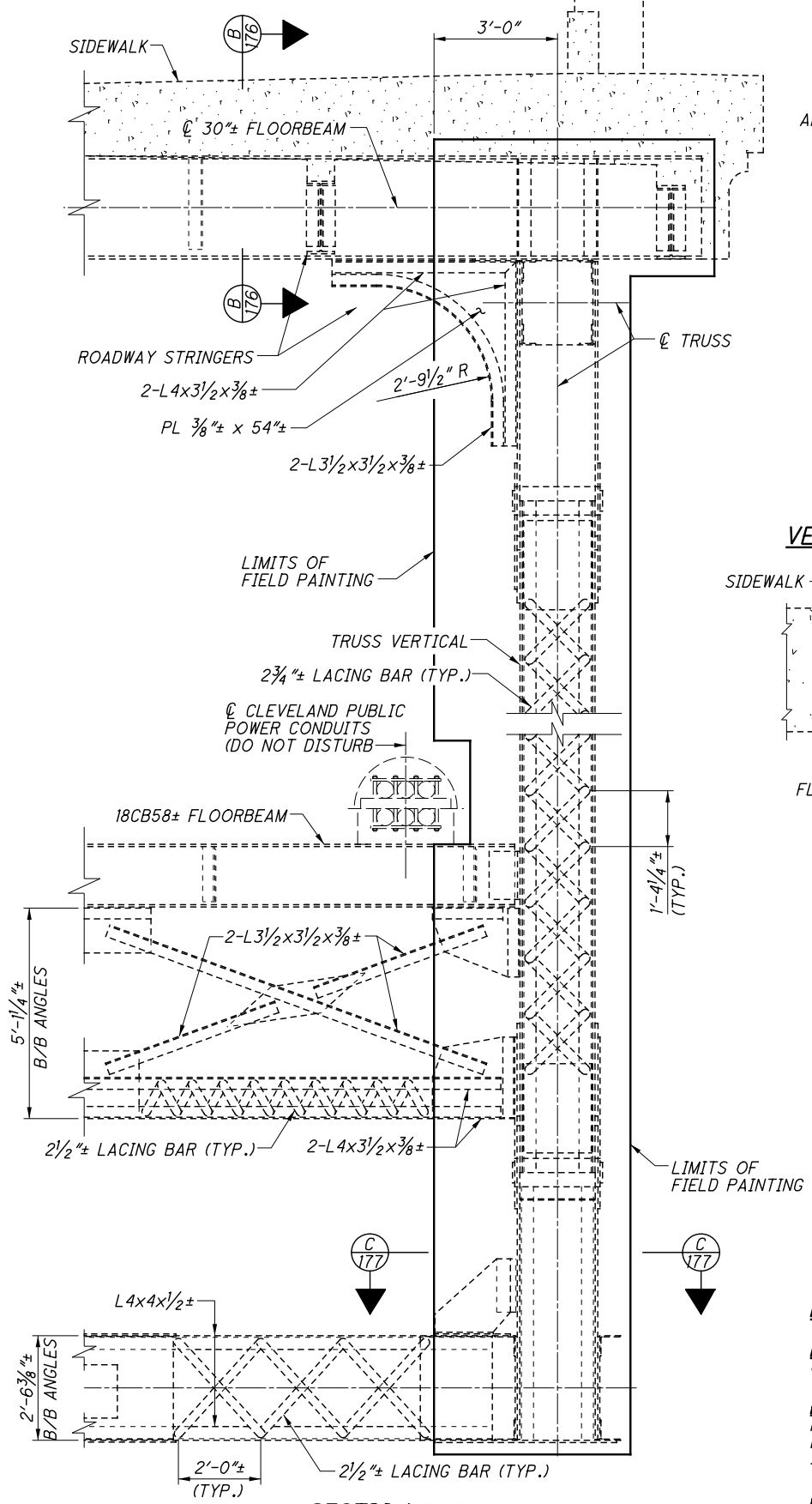
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
- ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
- DEBRIS NETTING REMOVAL AND REINSTALLATION:** SEE GENERAL NOTE SHEET 6/238
- REPAIR LOCATION:** SEE FRAMING PLAN SHEET 110/238

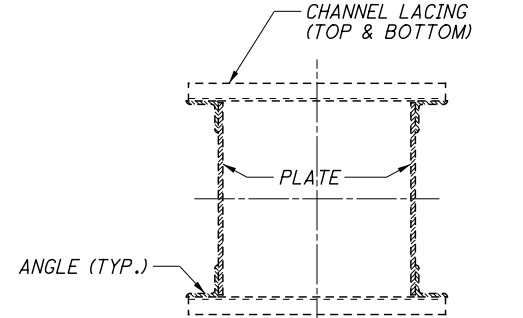
F:\2014\114059\_CUY-10-1613\structures\CUY010\_1613\sheets\010\_1613CSD067.dgn 3/2/2018 3:33:39 PM JeffSmith



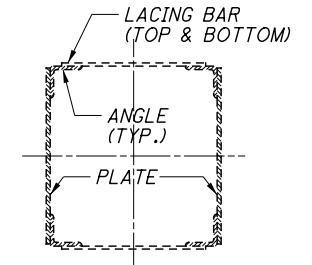
**TRUSS ELEVATION**  
(SPAN 9, TRUSS D, PANEL POINT 35 LOOKING NORTH)



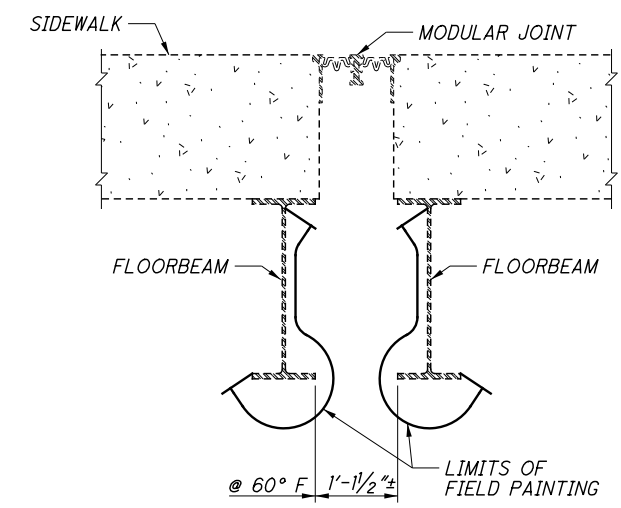
**SECTION A-A**  
(OPPOSITE SIDE OF TRUSS VERTICAL IS THE SAME)



**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



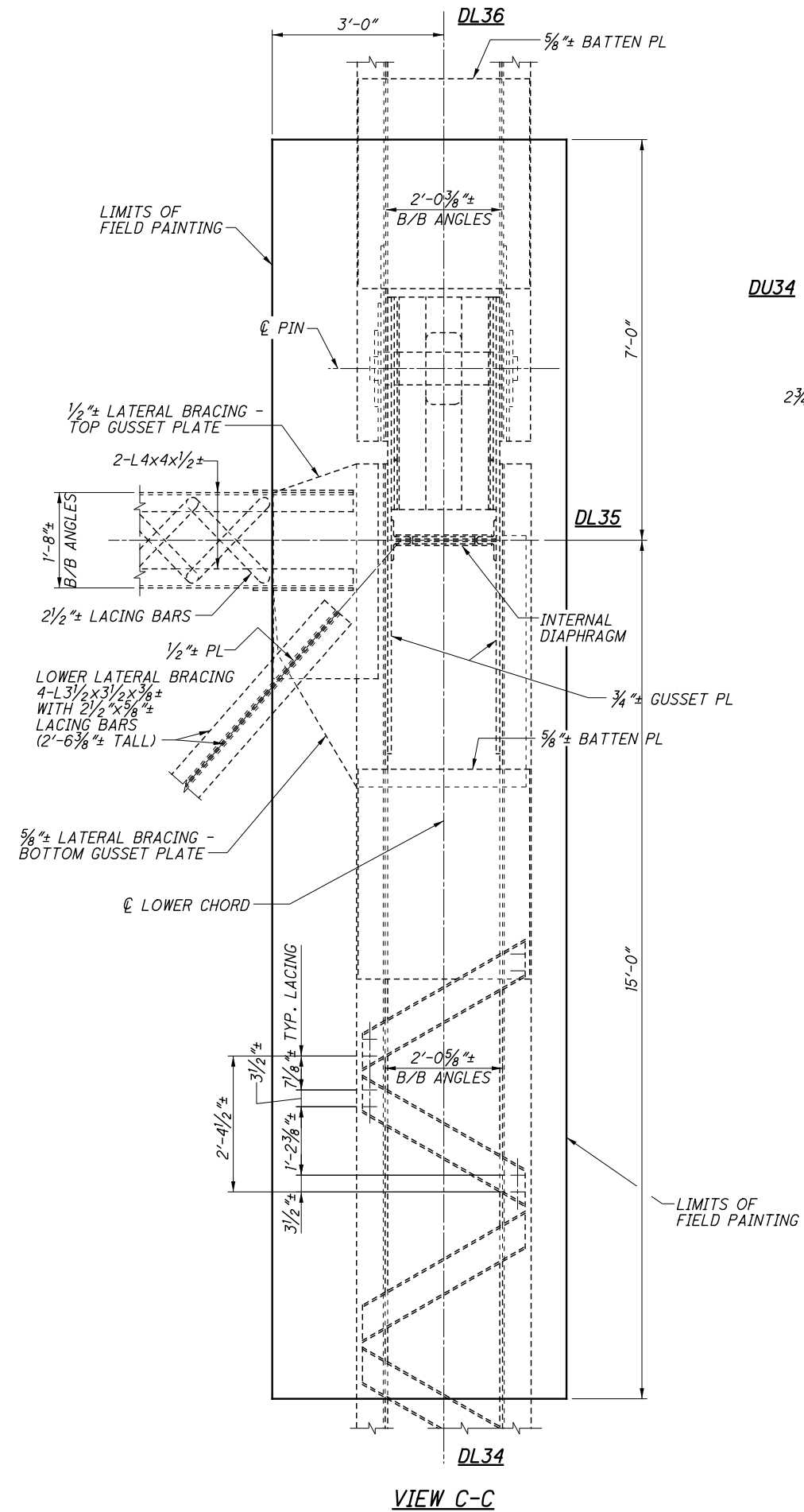
**SECTION B-B**

**NOTES**

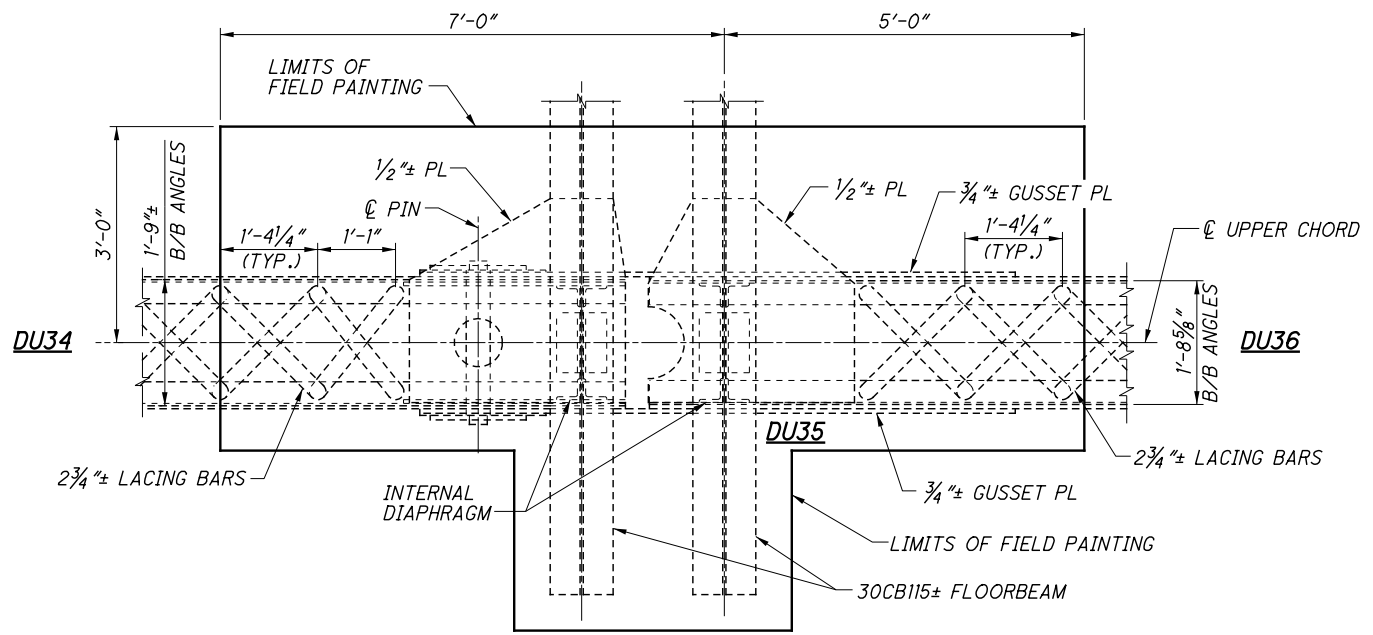
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
- ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
- REPAIR LOCATION:** SEE FRAMING PLAN SHEET 111/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	JLS
DESIGNED	TGW
CHECKED	KAK
STRUCTURE FILE NUMBER	1801503
PANEL POINT D35 - FIELD PAINTING DETAILS - 1	
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
176/238	236/308

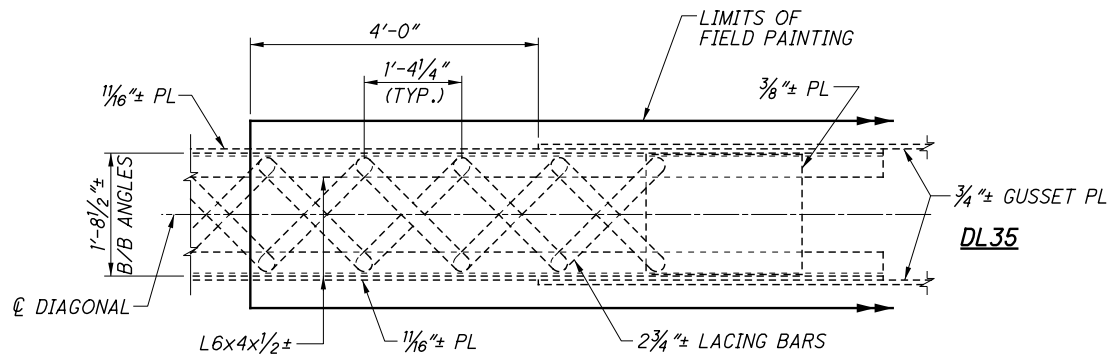
F:\2014\114059\_CUY-10-16\13\96986\structures\CUY010\_1613C\sheets\010\_1613CSD103.dgn 3/2/2018 3:34:36 PM JeffSmith



**VIEW C-C**



**VIEW D-D**



**VIEW E-E**

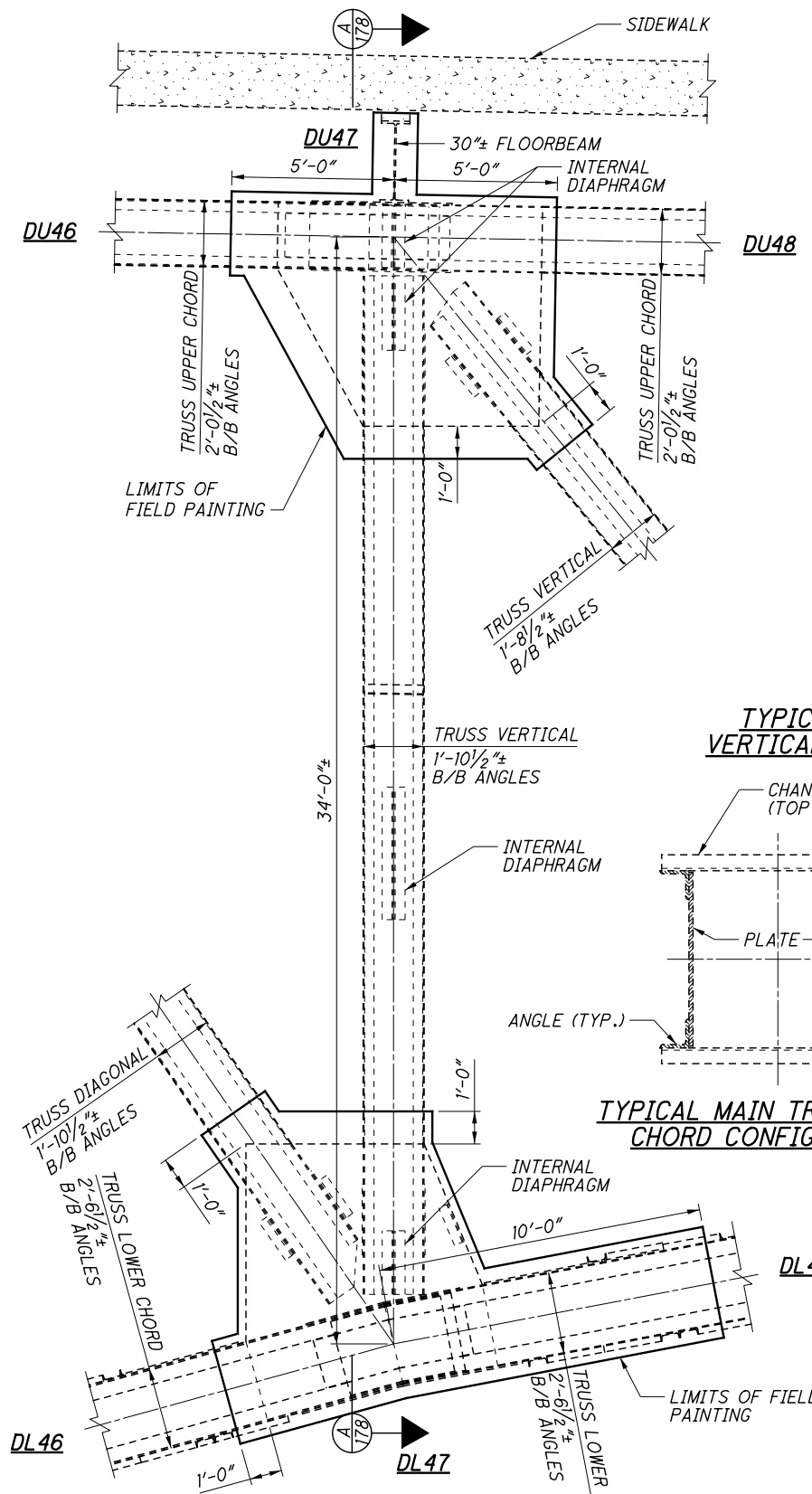
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

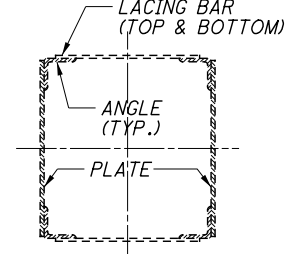
**VIEWS C-C, D-D & E-E:** FOR LOCATIONS SEE SHEET 176/238.

**ADDITIONAL NOTES:** SEE SHEET 176/238.

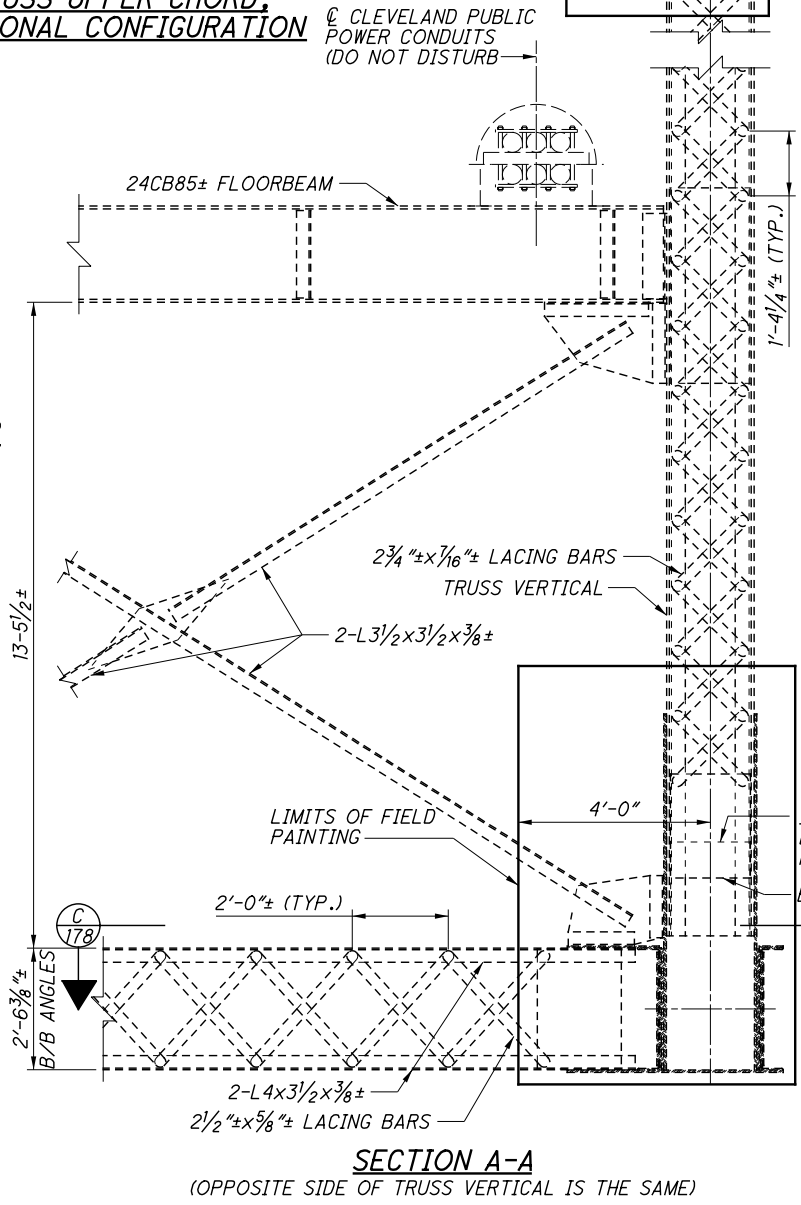
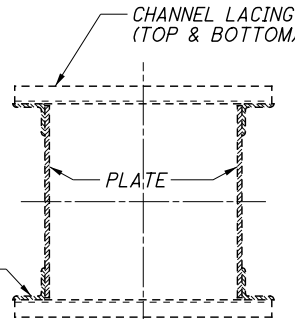
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD091.dgn 3/2/2018 3:38:44 PM JeffSmith



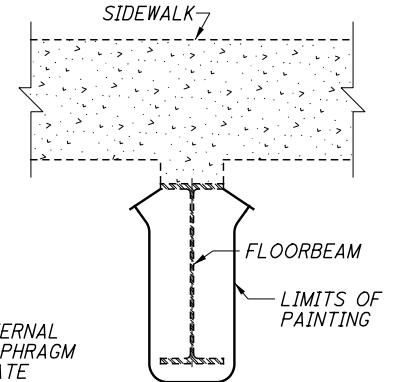
**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



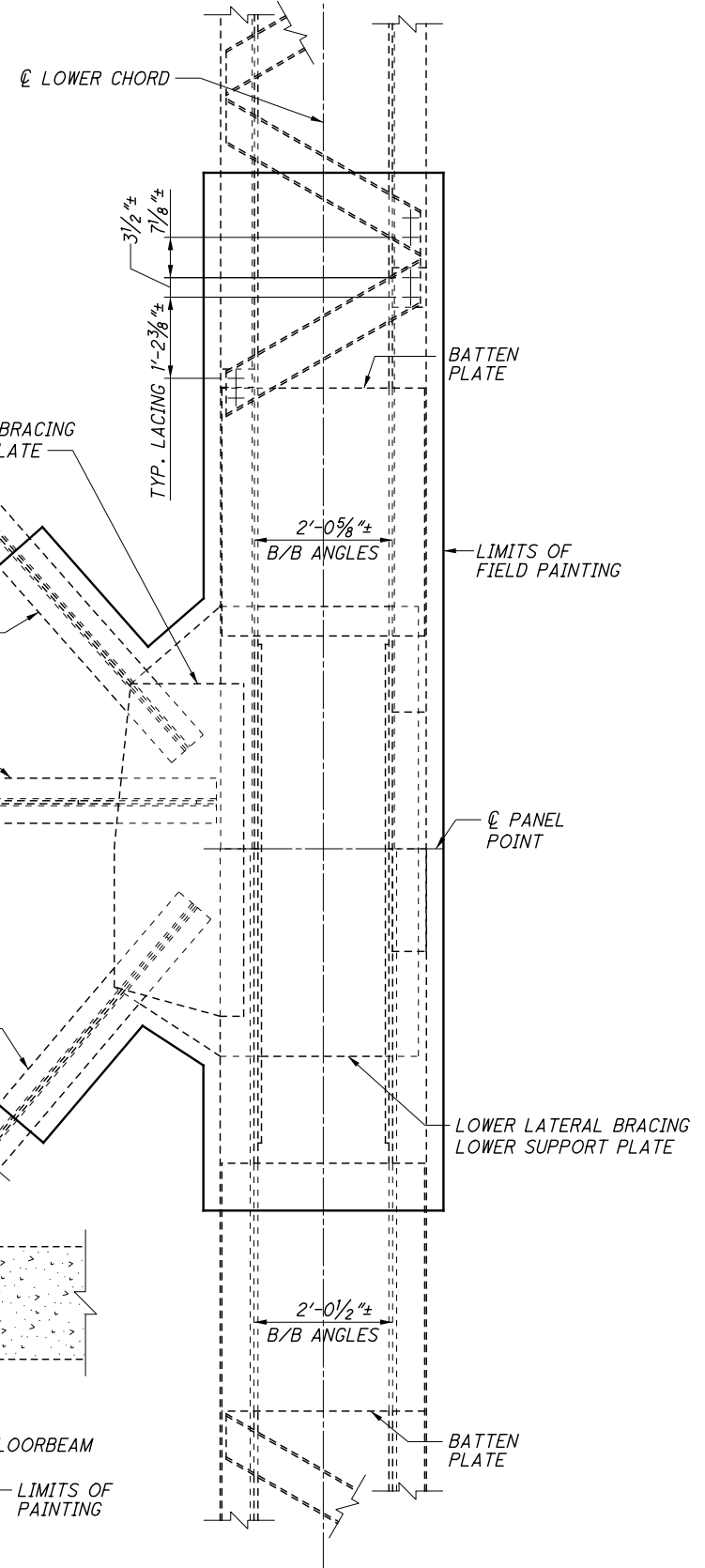
**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



**SECTION B-B**



**VIEW C-C**

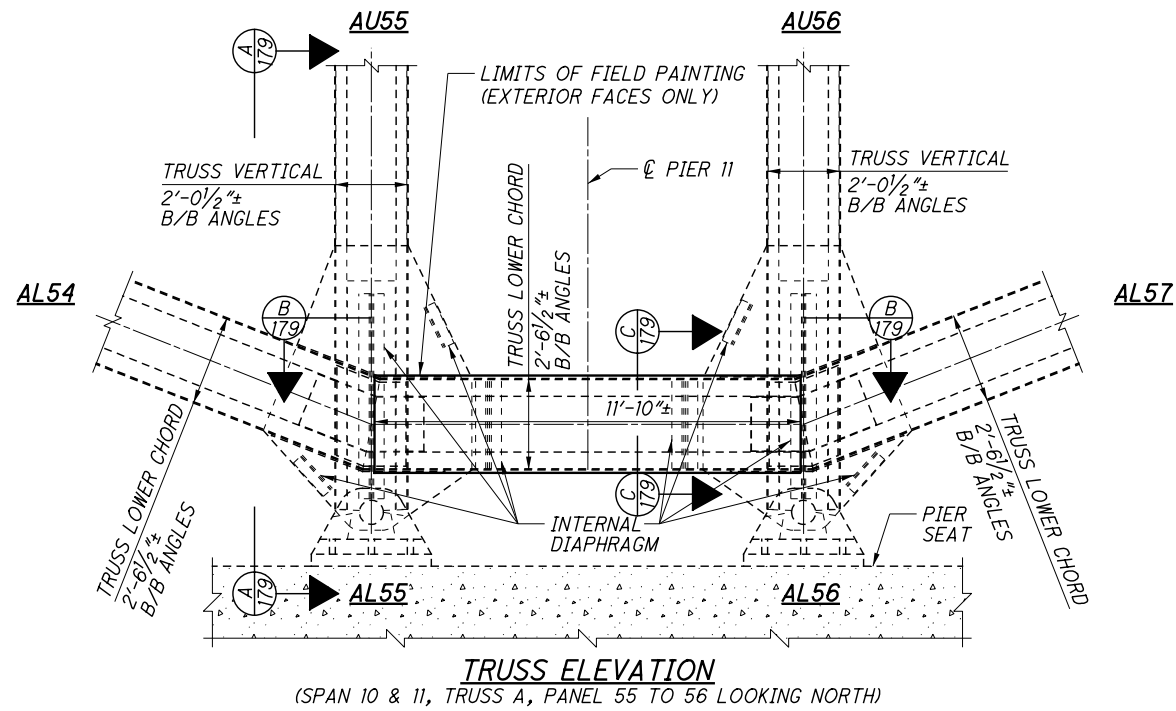


**NOTES**

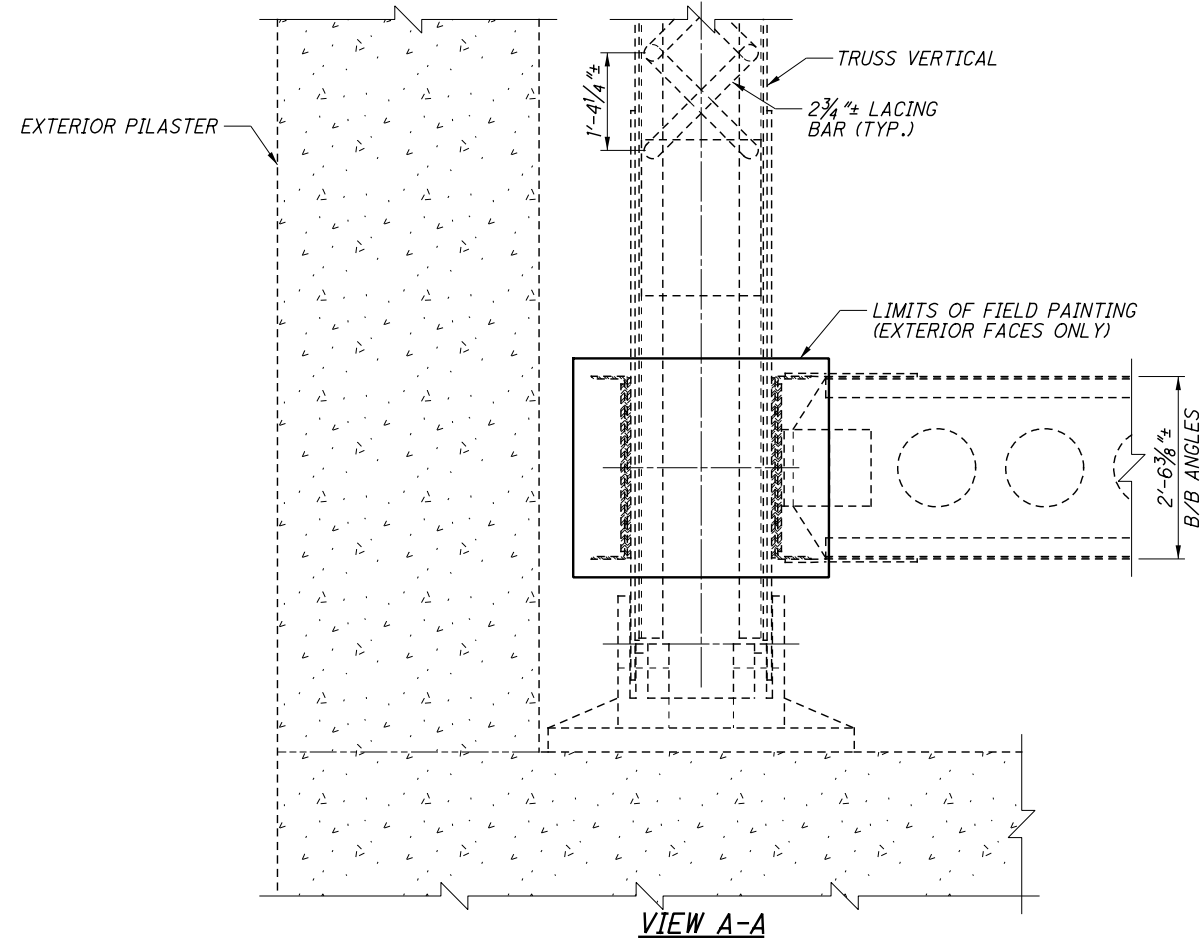
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
- ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING
- REPAIR LOCATION:** SEE FRAMING PLAN SHEET 111/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	JSB
DESIGNED	TGW
CHECKED	KAK
STRUCTURE FILE NUMBER	1801503
BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
PANEL POINT D47 - FIELD PAINTING DETAILS	
CUY-10-16.13	PID No. 96986
178/238	238
	308

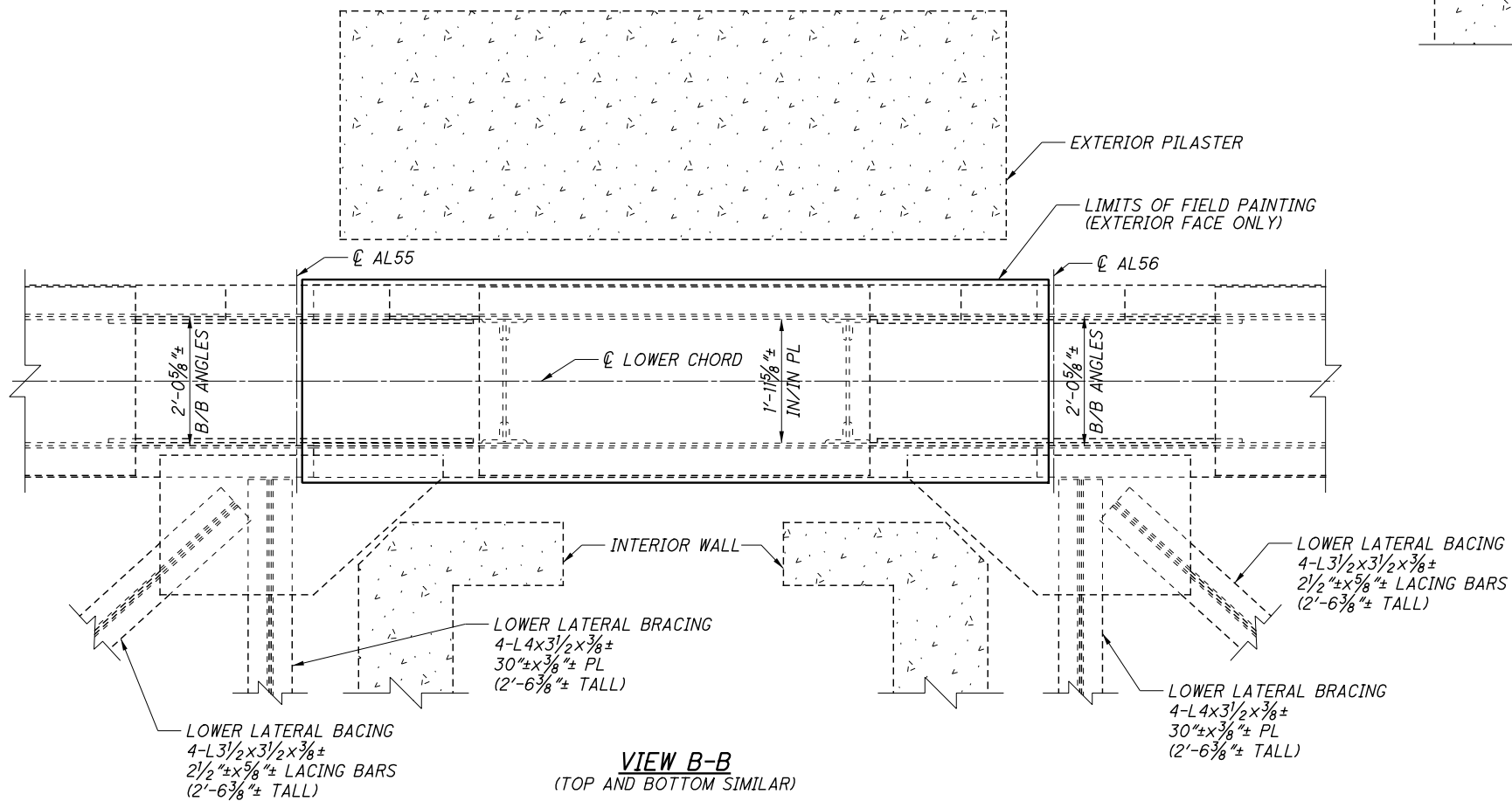
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD068.dgn 3/2/2018 3:39:28 PM JeffSmith



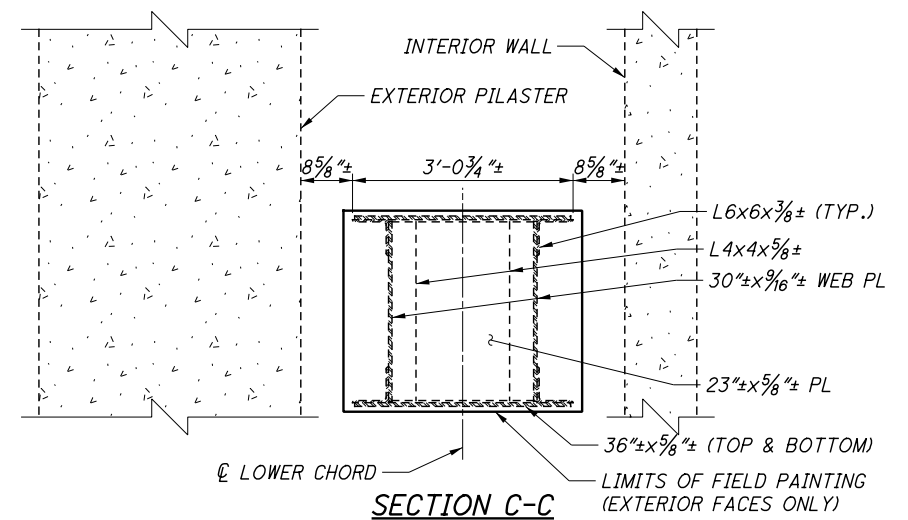
**TRUSS ELEVATION**  
(SPAN 10 & 11, TRUSS A, PANEL 55 TO 56 LOOKING NORTH)



**VIEW A-A**



**VIEW B-B**  
(TOP AND BOTTOM SIMILAR)



**SECTION C-C**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

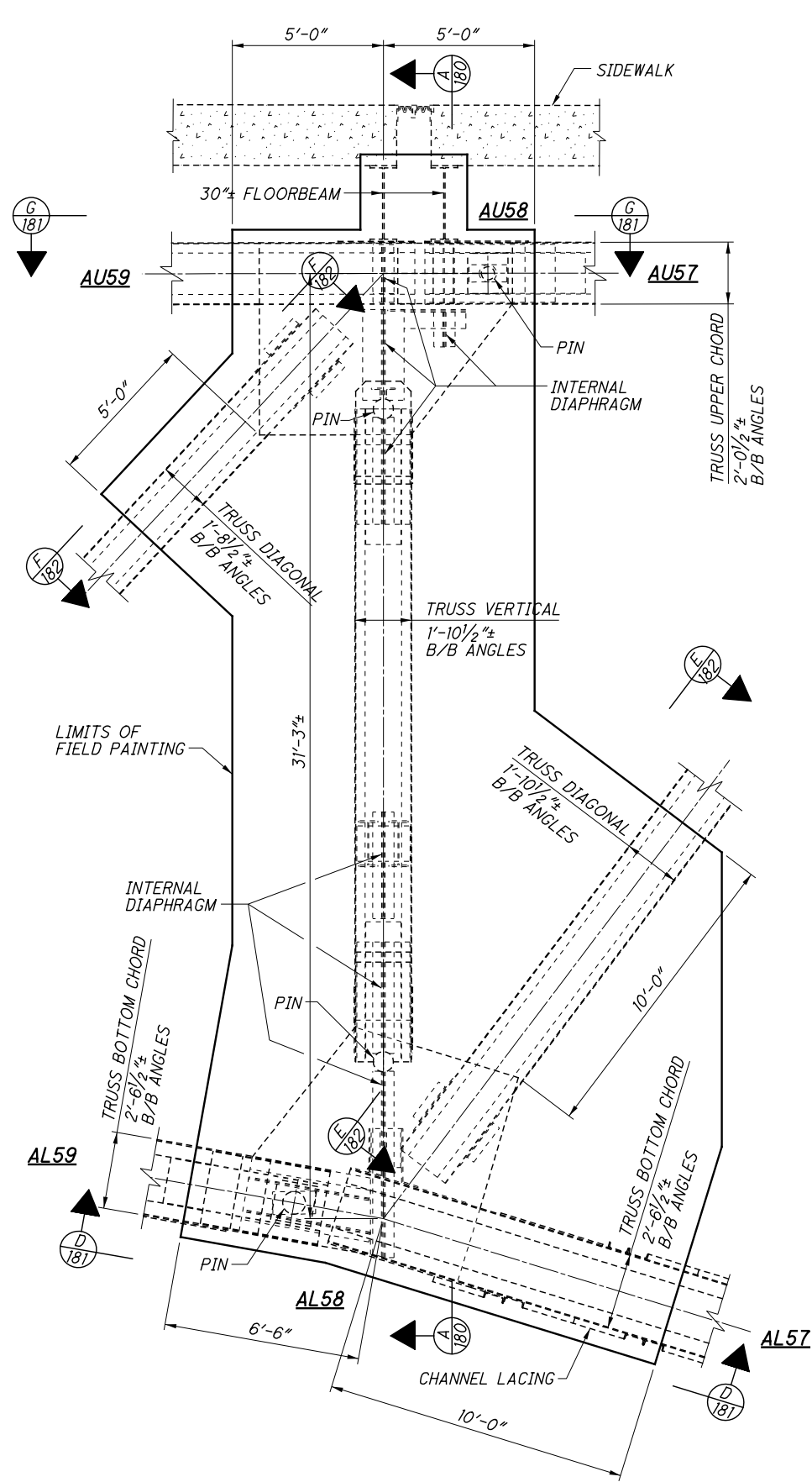
**FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL EXTERIOR SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 99/238.

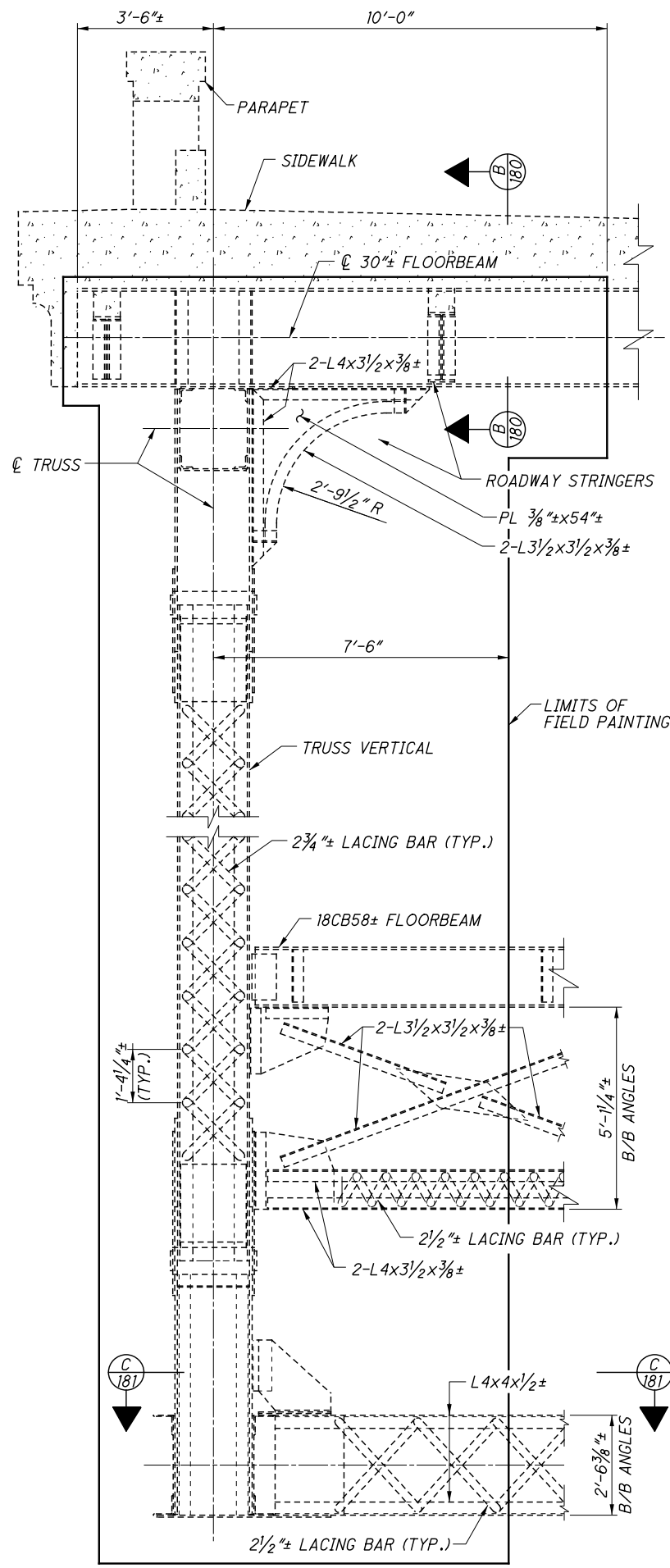
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DRAWN USB
DESIGNED TGW	CHECKED KAK
PANEL A55 TO A56 - FIELD PAINTING DETAILS BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
179/238	239/308



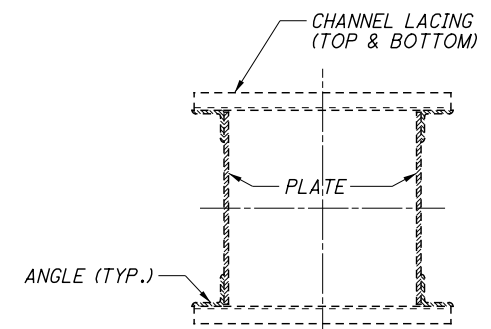
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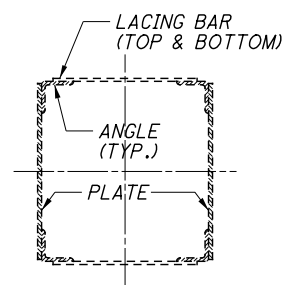
**TRUSS ELEVATION**  
(SPAN 11, TRUSS A, PANEL POINT 58 LOOKING SOUTH SHOWN)  
(SPAN 11, TRUSS D, PANEL POINT 58 SIMILAR)



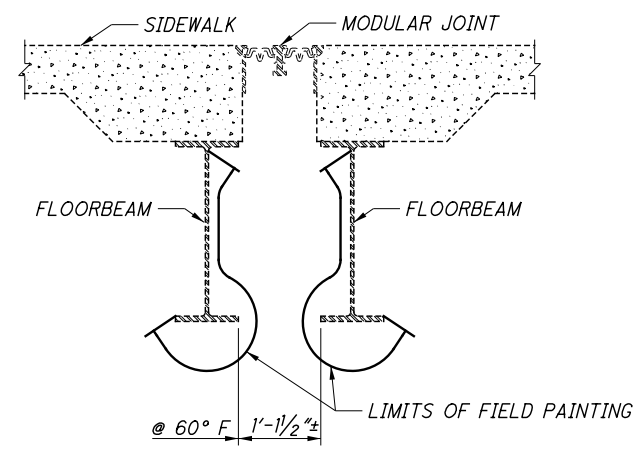
**VIEW A-A**  
(OPPOSITE SIDE OF VERTICAL IS THE SAME)



**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



**SECTION B-B**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

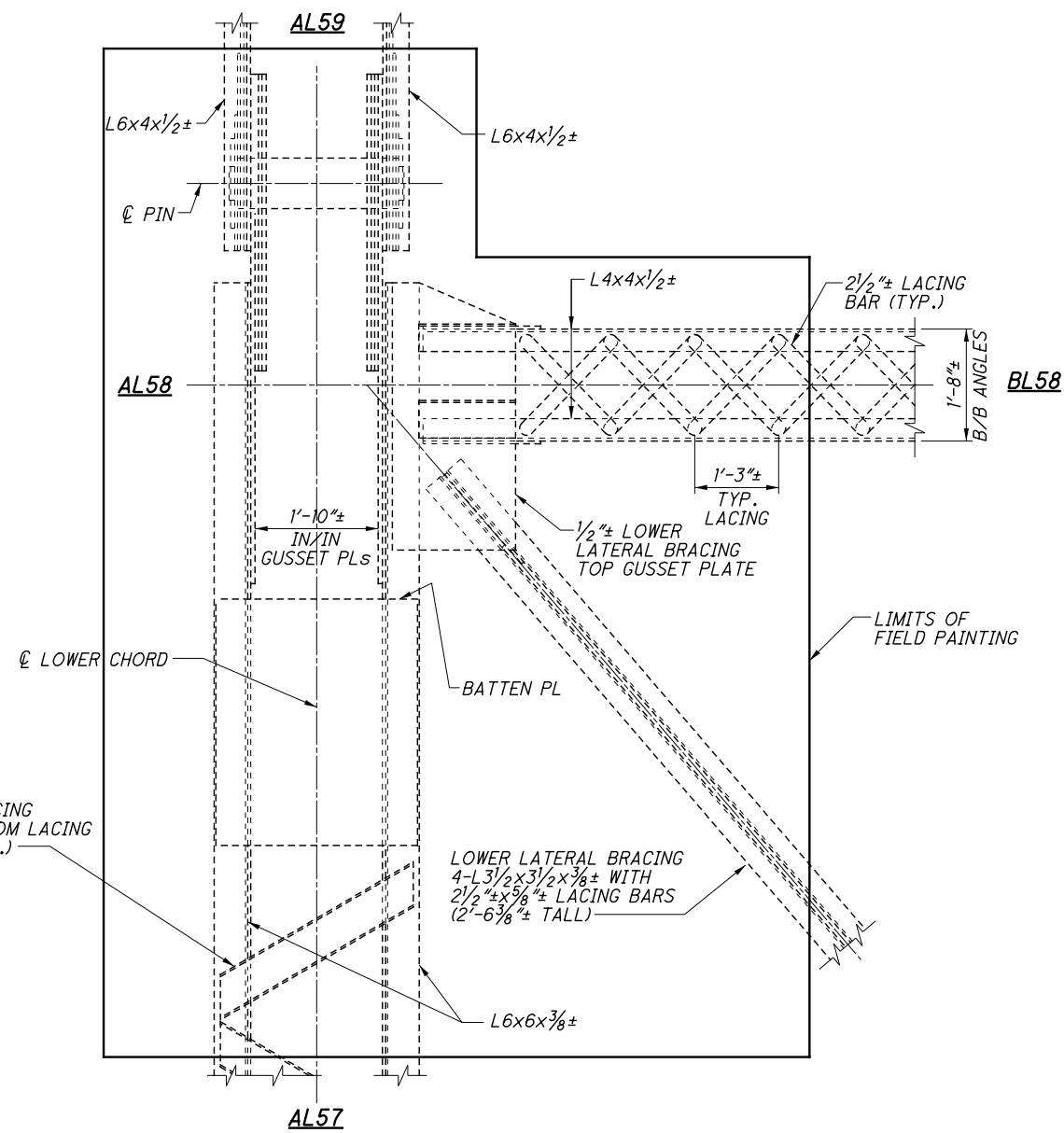
**FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.

**ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.

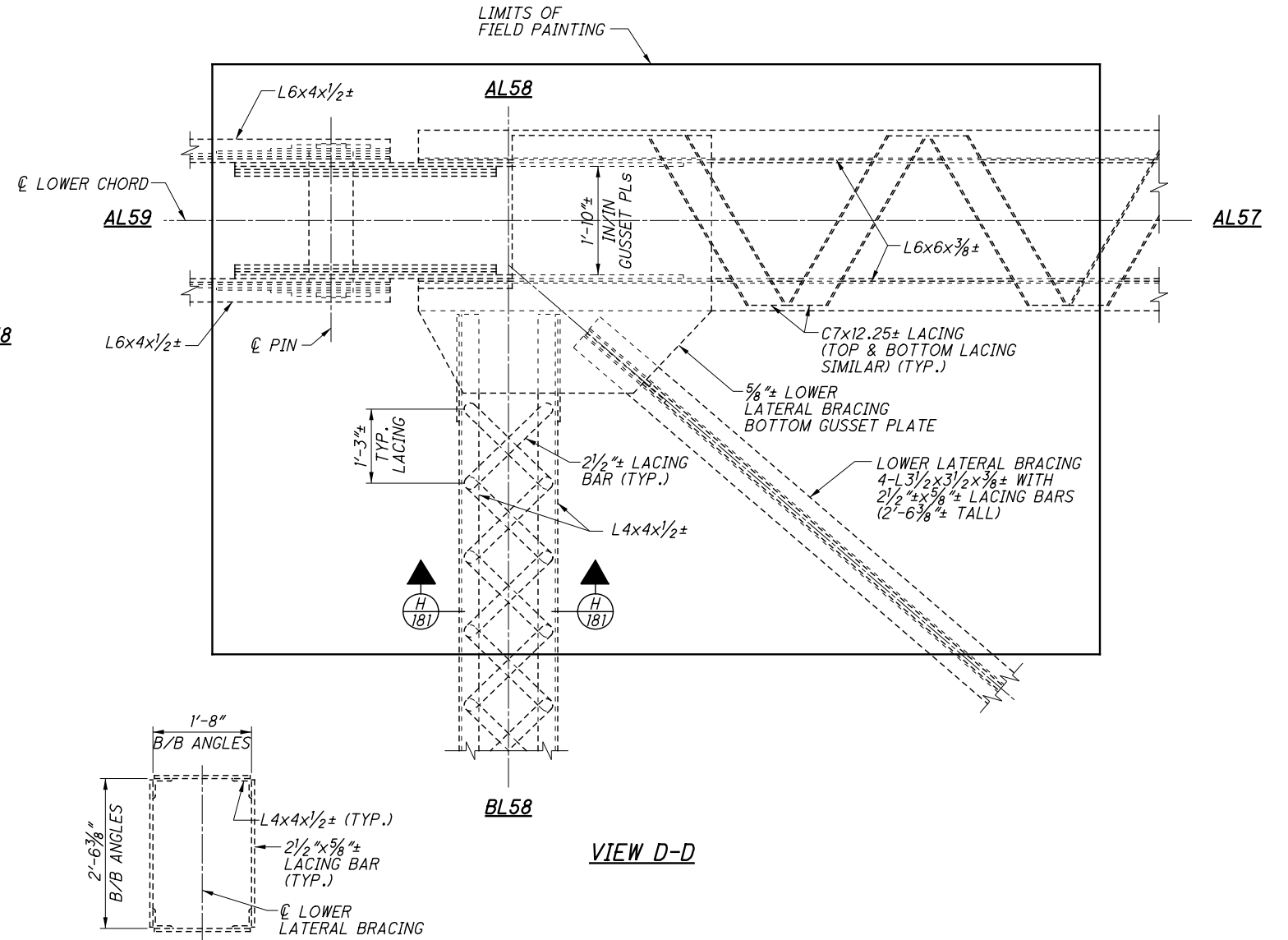
**ROADWAY DRAINAGE PIPE** NOT SHOWN. DO NOT DISTURB.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEETS 99/238 AND 111/238.

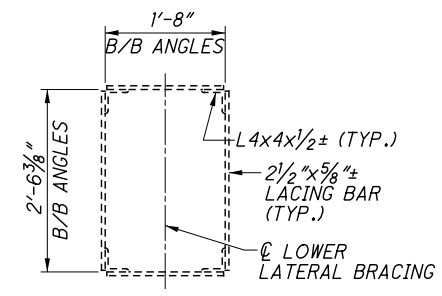
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010-1613\CD087.dgn 3/2/2018 3:41:17 PM JeffSmith



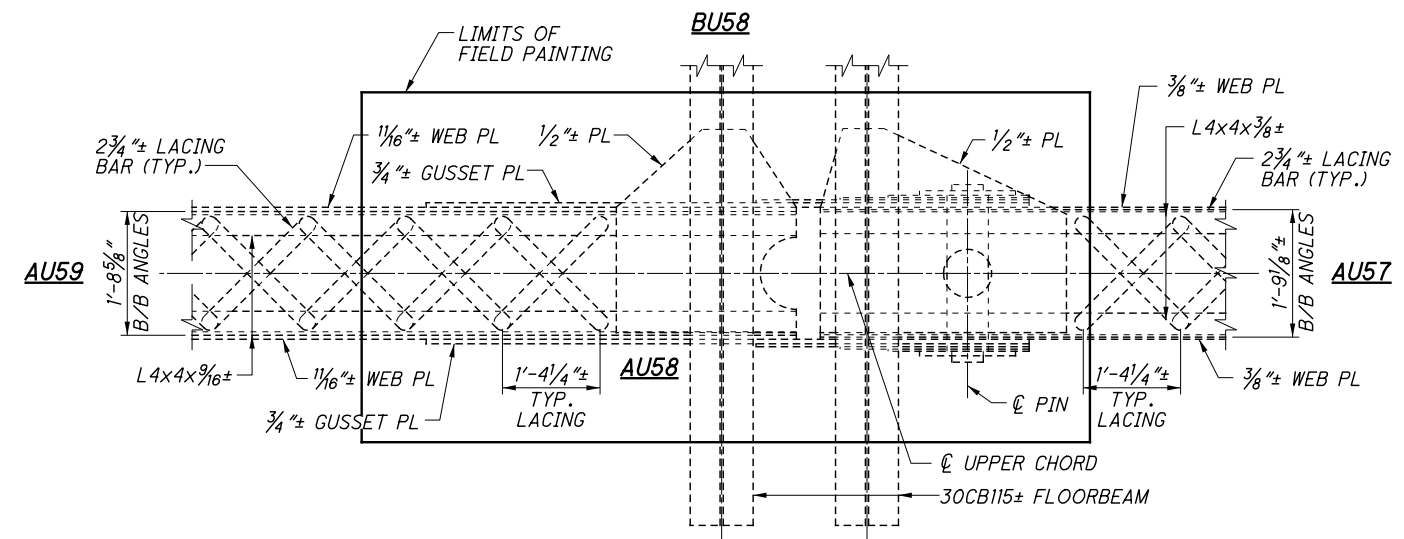
VIEW C-C



VIEW D-D



SECTION H-H



VIEW G-G

**NOTES**

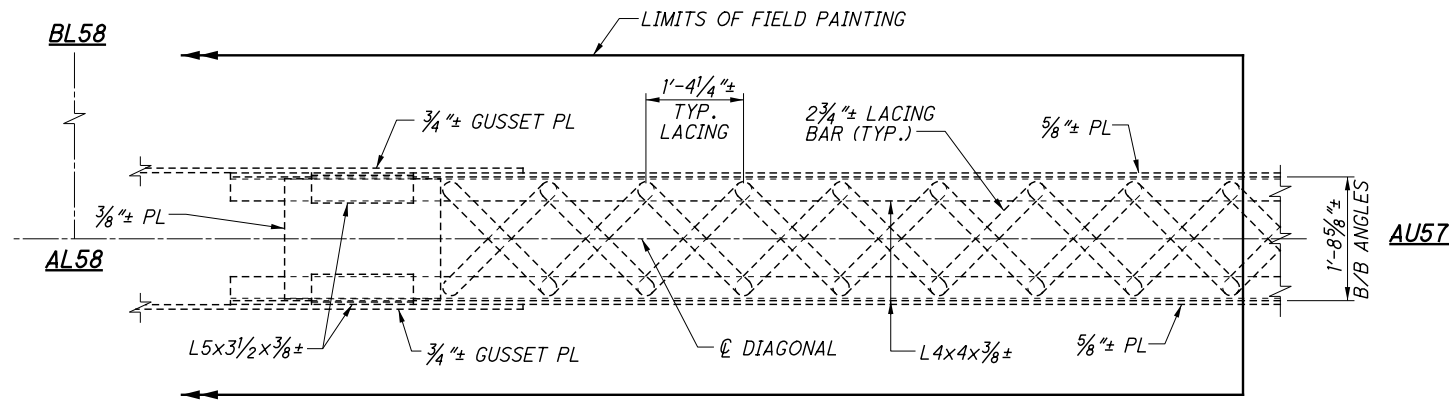
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**VIEWS C-C, D-D & G-G:** FOR LOCATIONS SEE SHEET 180/238.

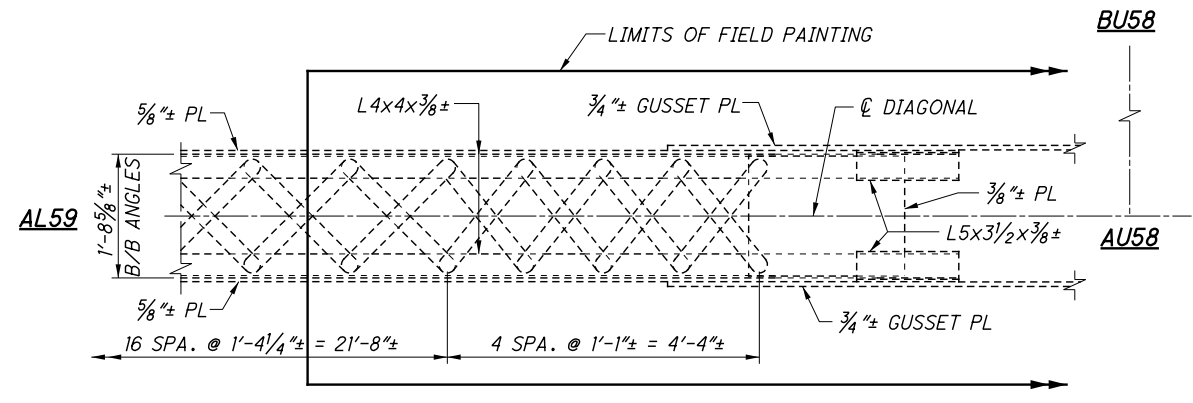
**ADDITIONAL NOTES:** SEE SHEET 180/238.

<p><b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>DATE: 1/30/18 REVIEWED DLR: STRUCTURE FILE NUMBER 1801503</p>	<p>DESIGNED TGW: CHECKED KAK</p>
<p><b>PANEL POINT A58 &amp; D58 - FIELD PAINTING DETAILS - 2</b></p>	
<p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p>CUY-10-16.13 PID No. 96986</p>	<p>181/238 241/308</p>

F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD089.dgn 3/2/2018 3:42:05 PM JeffSmith



VIEW E-E



VIEW F-F

**NOTES**

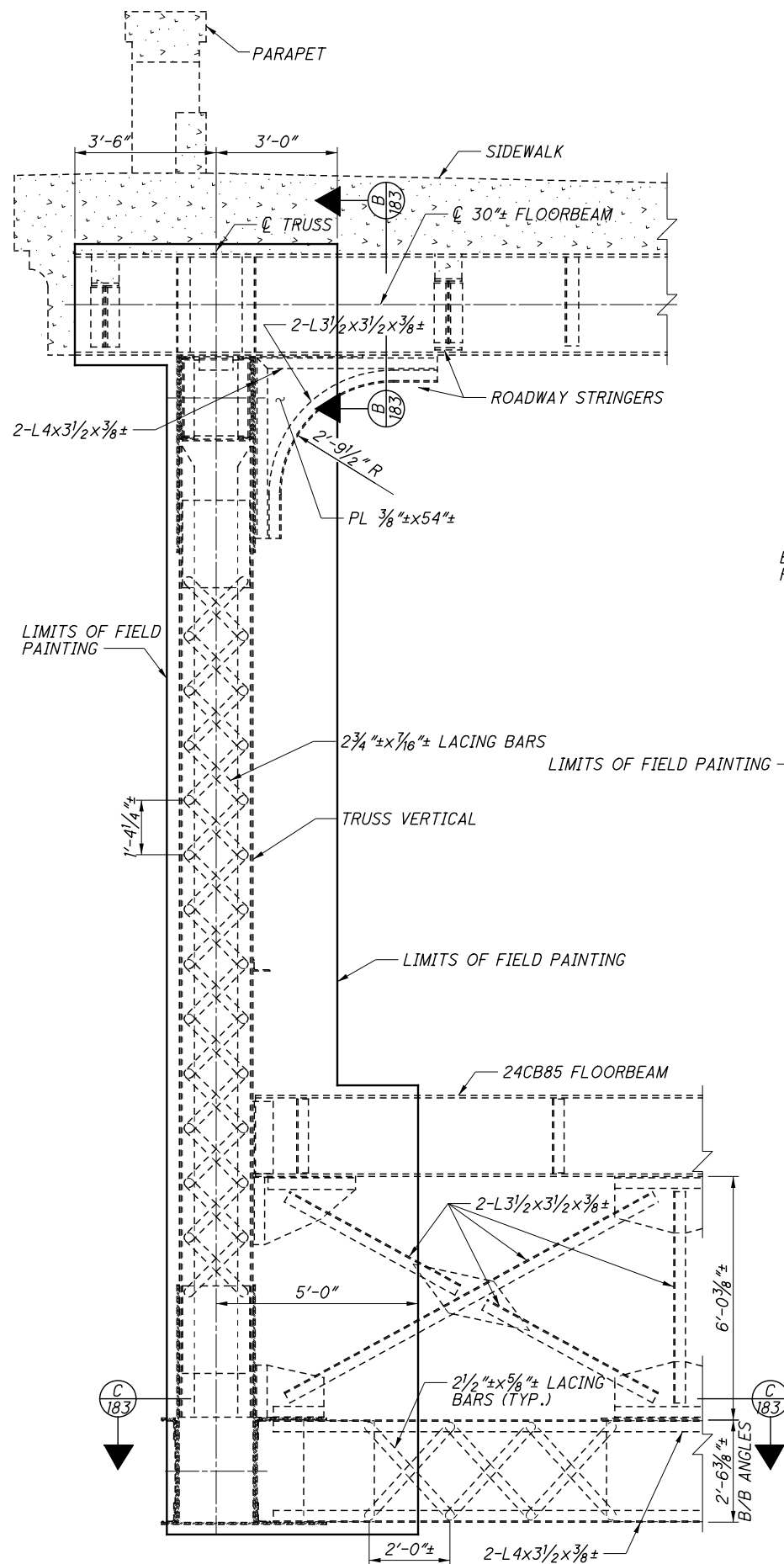
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**VIEWS E-E & F-F:** FOR LOCATIONS SEE SHEET 180/238.

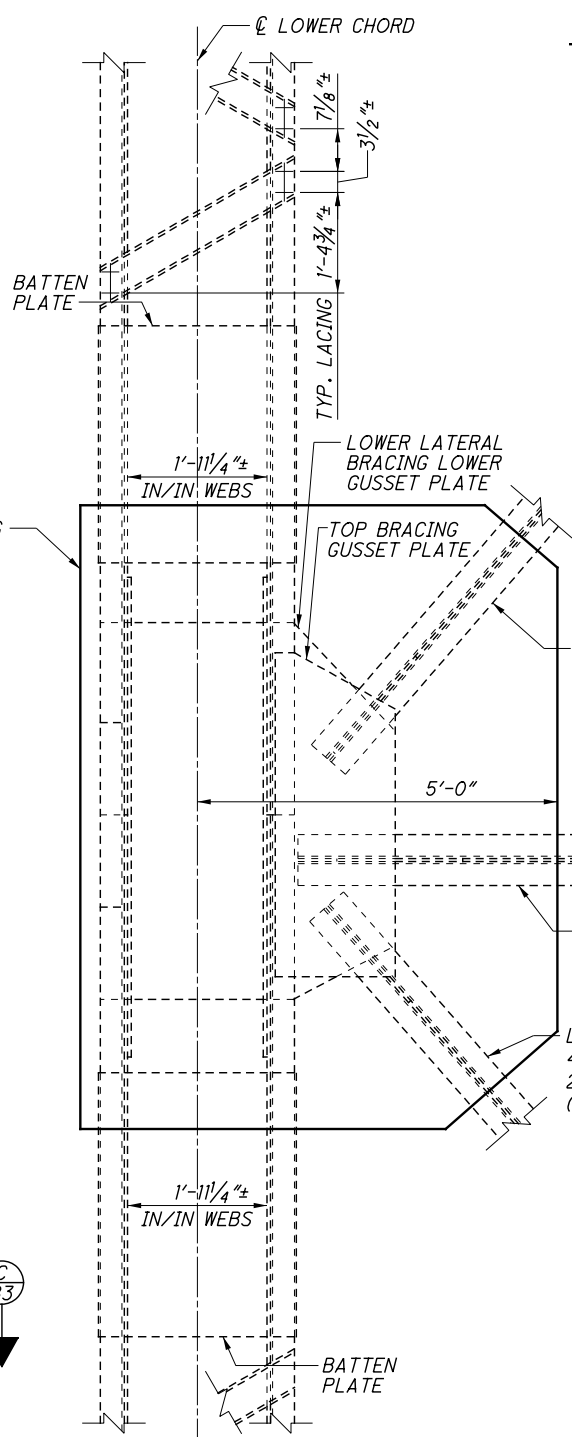
**ADDITIONAL NOTES:** SEE SHEET 180/238.

<p><b>PANEL POINT A58 &amp; D58 - FIELD PAINTING DETAILS - 3</b></p> <p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>		<p>DATE: 1/30/18 REVIEWED BY: DLR STRUCTURE FILE NUMBER: 1801503</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
<p>DESIGNED BY: TGW CHECKED BY: KAK</p>	<p>DRAWN BY: JLS REVISED BY:</p>	<p>CUY-10-16.13 PID No. 96986</p>	
<p>182/238</p>		<p>242 308</p>	

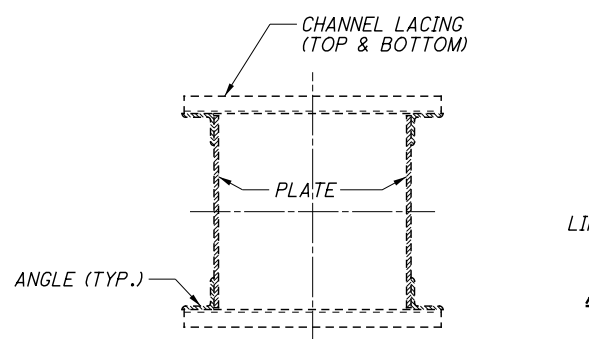
F:\2014\114059\_CUY-10-1613-96986\_structures\CUY010-1613\sheets\010-1613\CD081.dgn 3/2/2018 3:42:56 PM JeffSmith



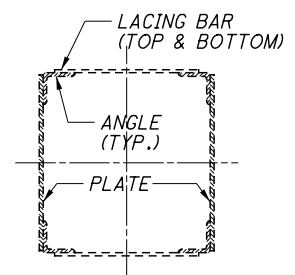
**VIEW A-A**  
(OPPOSITE SIDE OF TRUSS VERTICAL IS THE SAME)



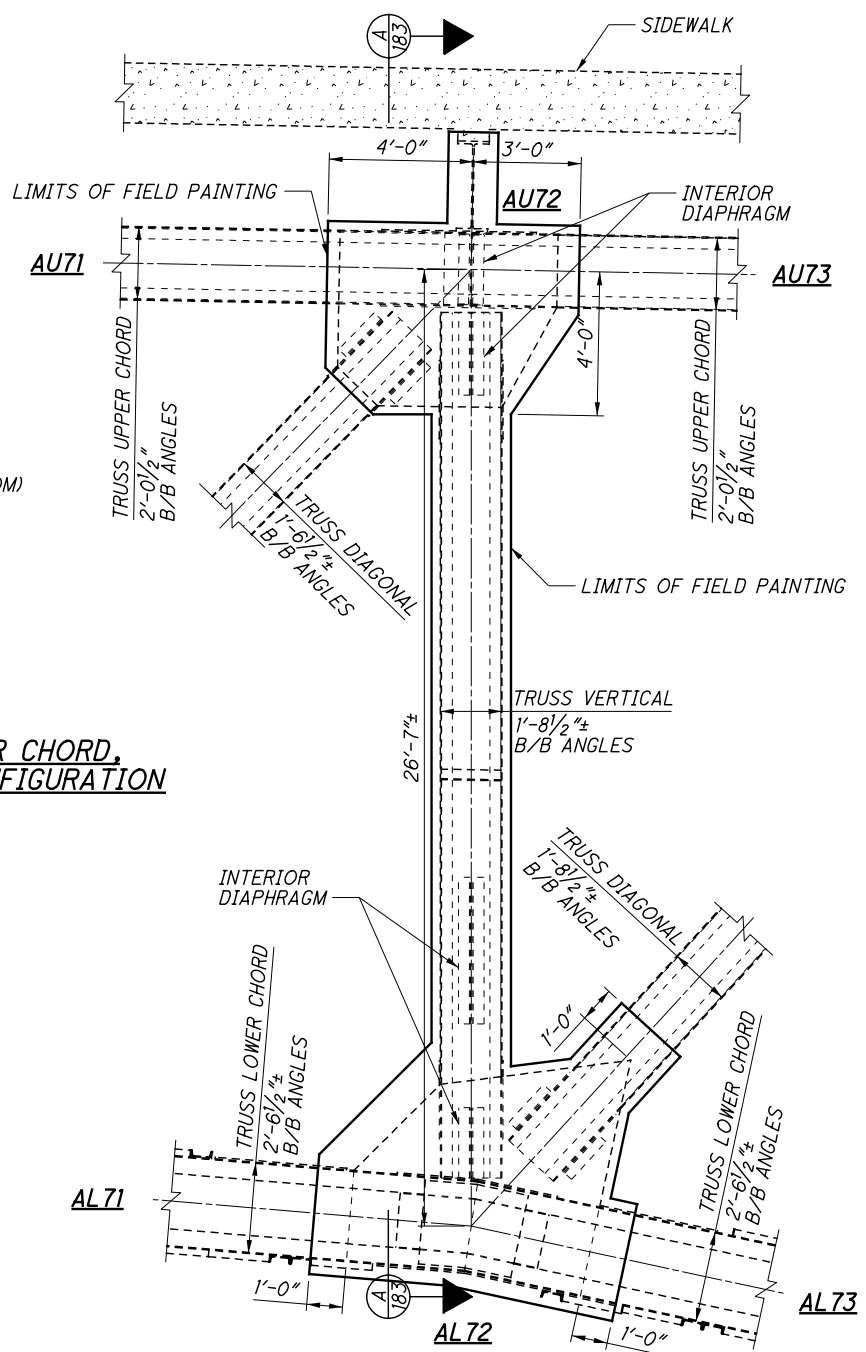
**VIEW C-C**



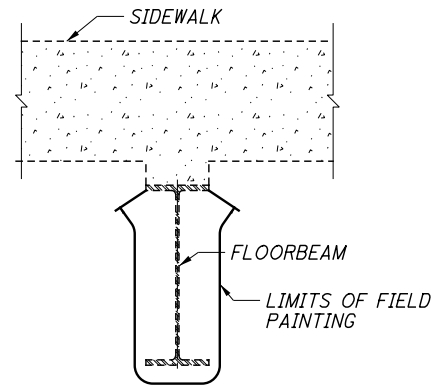
**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



**TRUSS ELEVATION**  
(SPAN 12, TRUSS A, PANEL POINT 72 LOOKING NORTH)



**SECTION B-B**

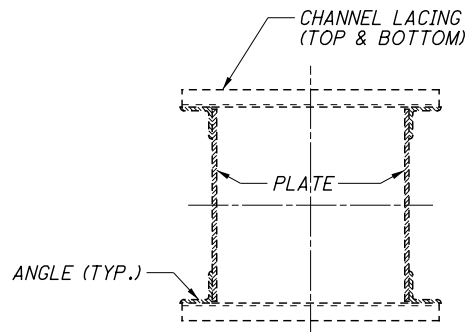
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
**FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.  
**ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.

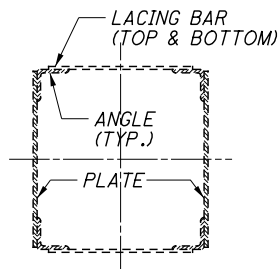
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 100/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	REVIEWED DLR
FILE NUMBER 1801503	STRUCTURE FILE NUMBER 1801503
DESIGNED TGW	DRAWN JSB
CHECKED KAK	REVISED
<b>PANEL POINT A72 - FIELD PAINTING DETAILS</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
<b>CUY-10-16.13</b> PID No. 96986	
183/238 243/308	

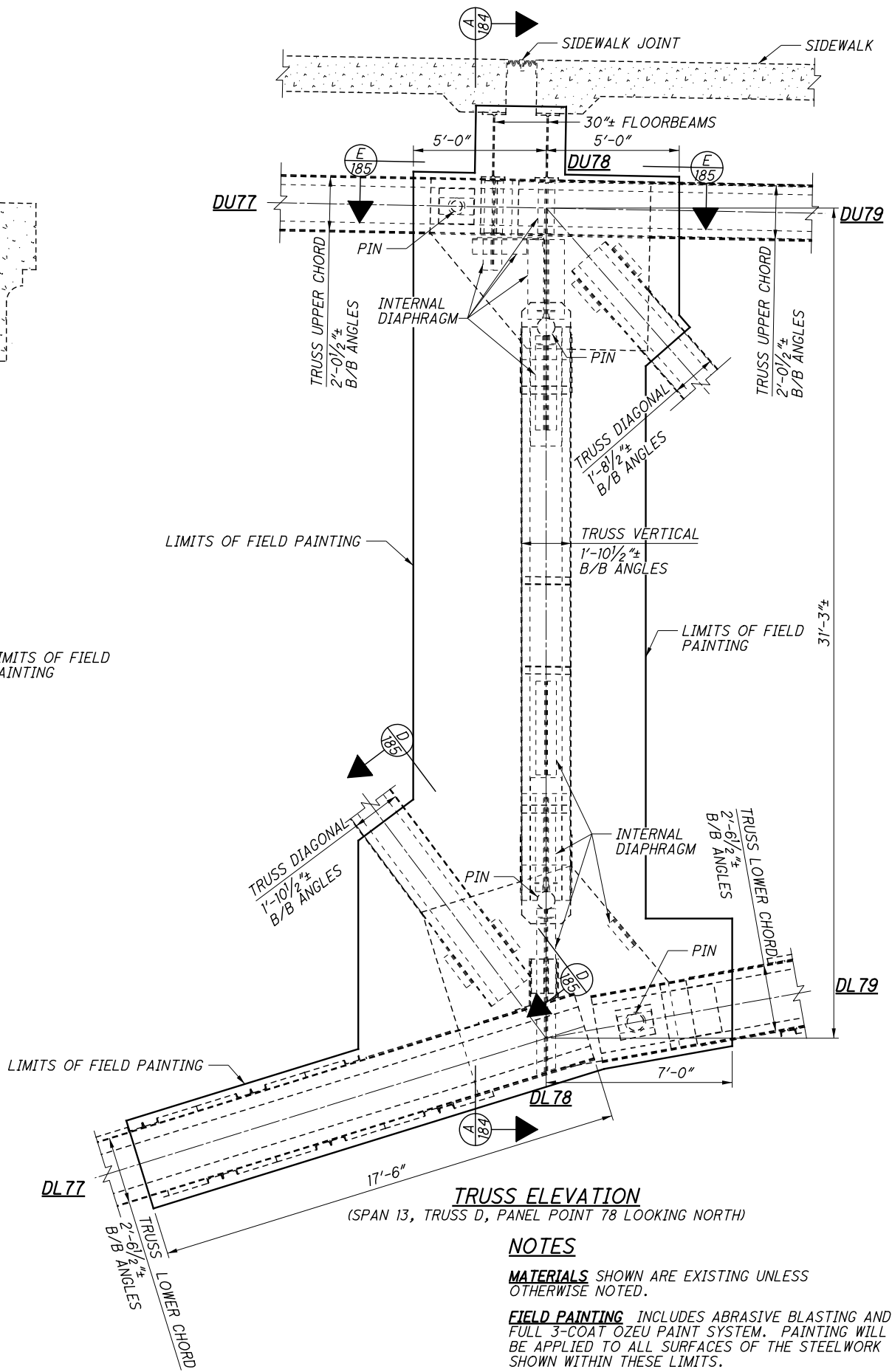
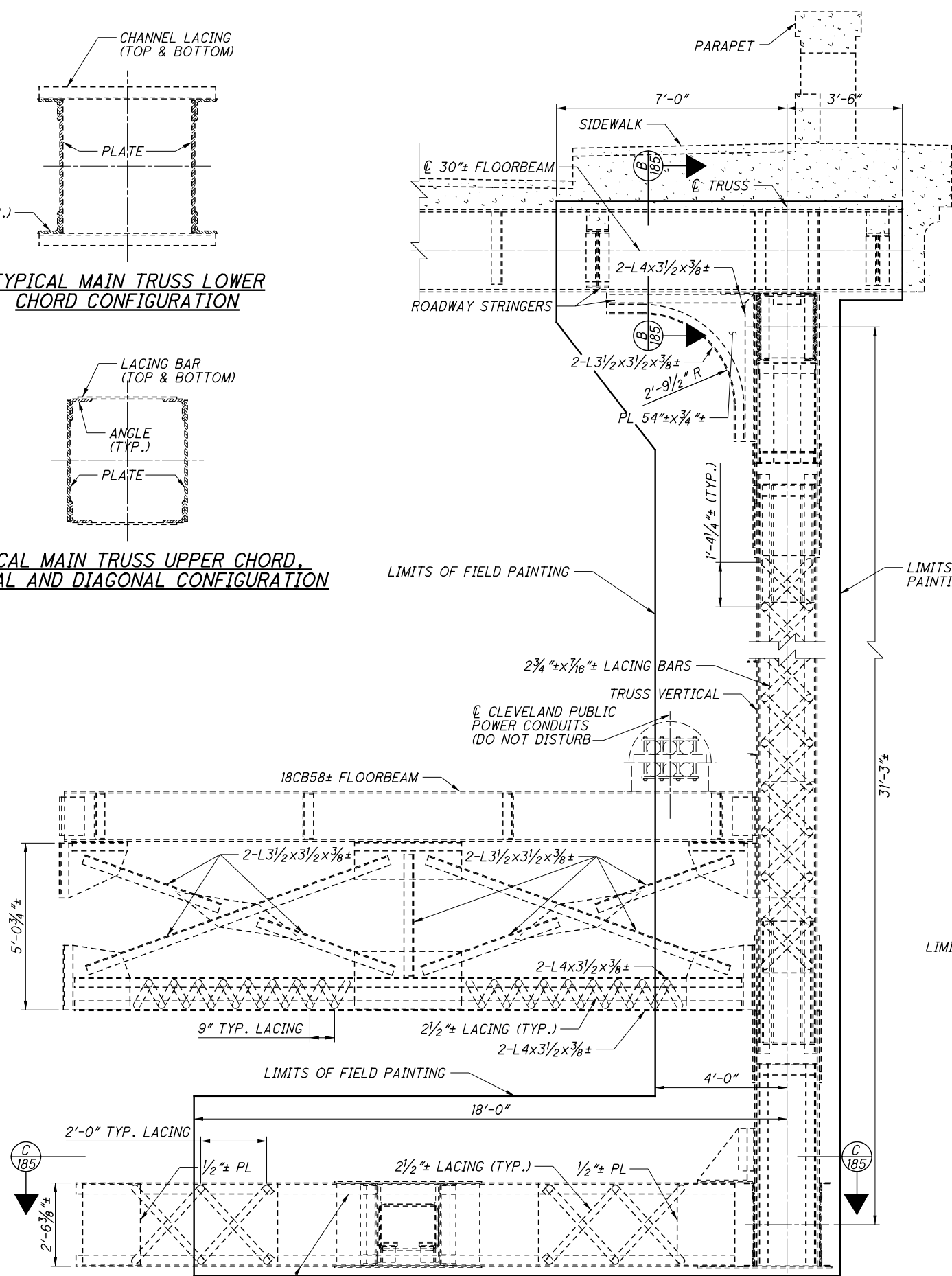
F:\2014\144059\_CUY-10-1613\96986\structures\CUY010\_1613\CD074.dgn 3/2/2018 3:43:39 PM JeffSmith



TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION



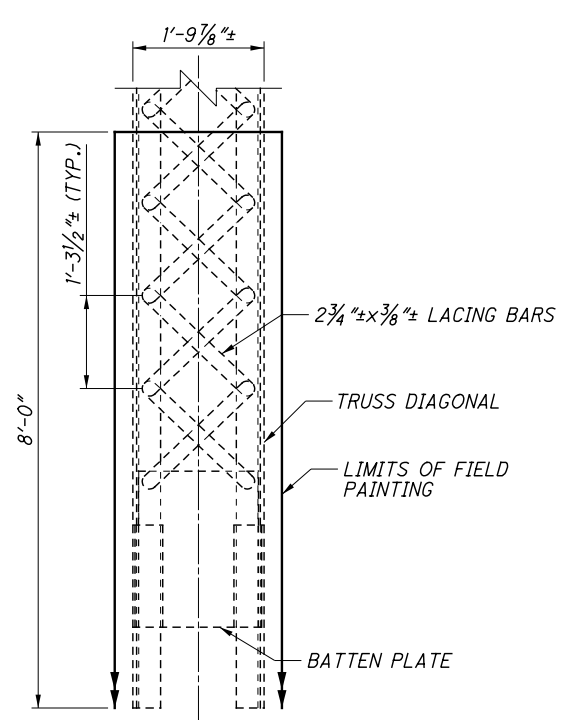
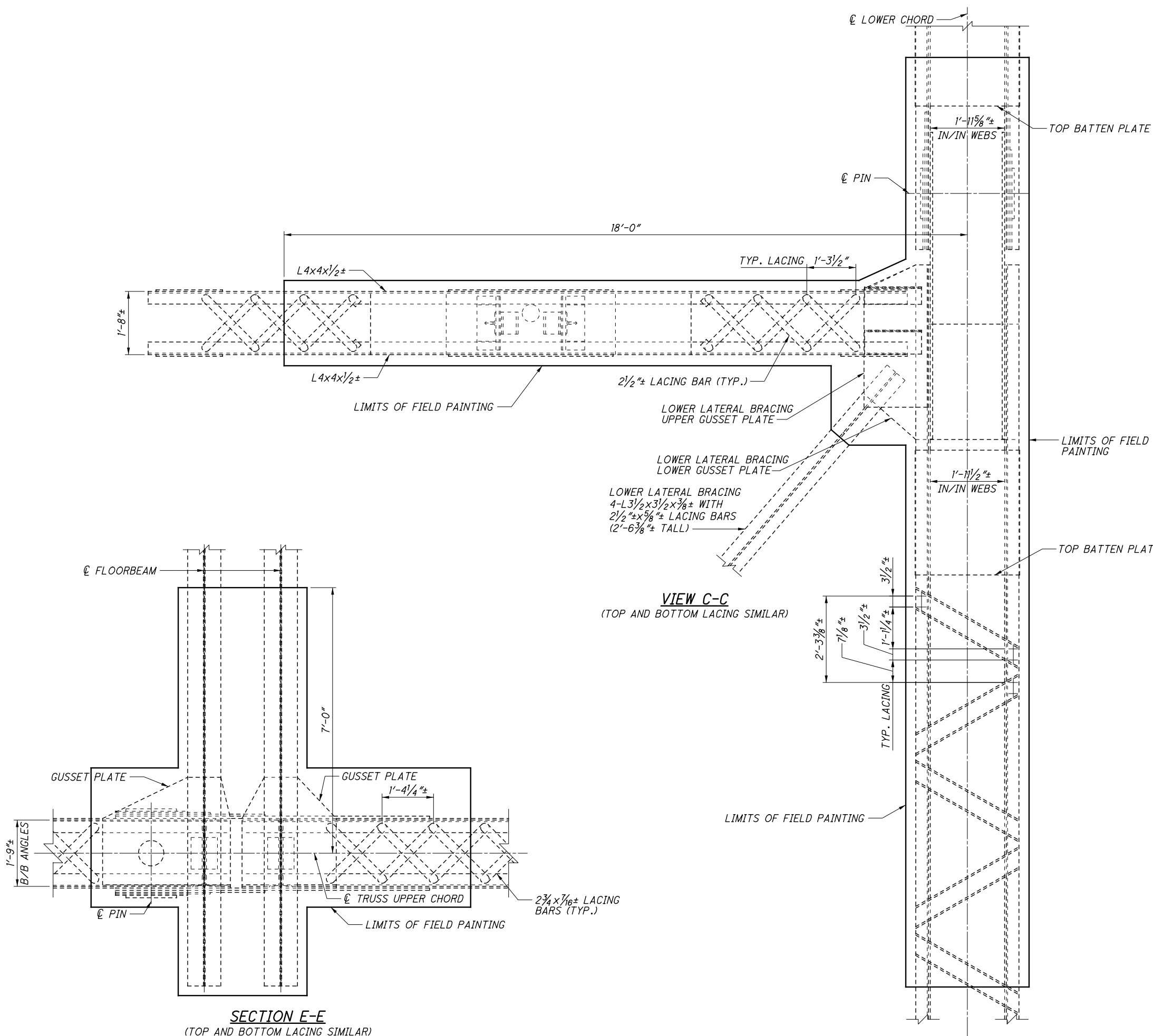
TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION



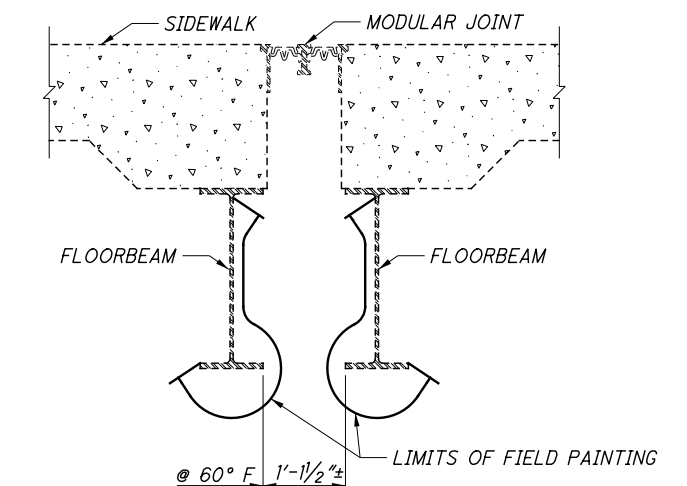
**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
**FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.  
**ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.  
**ROADWAY DRAINAGE PIPE** NOT SHOWN. DO NOT DISTURB.  
**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 112/238.

<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	DRAWN JSB
DESIGNED TGW	CHECKED KAK
<b>PANEL POINT D78 - FIELD PAINTING DETAILS - 1</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
184/238	244 308

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**SECTION D-D**  
(TOP AND BOTTOM LACING SIMILAR)



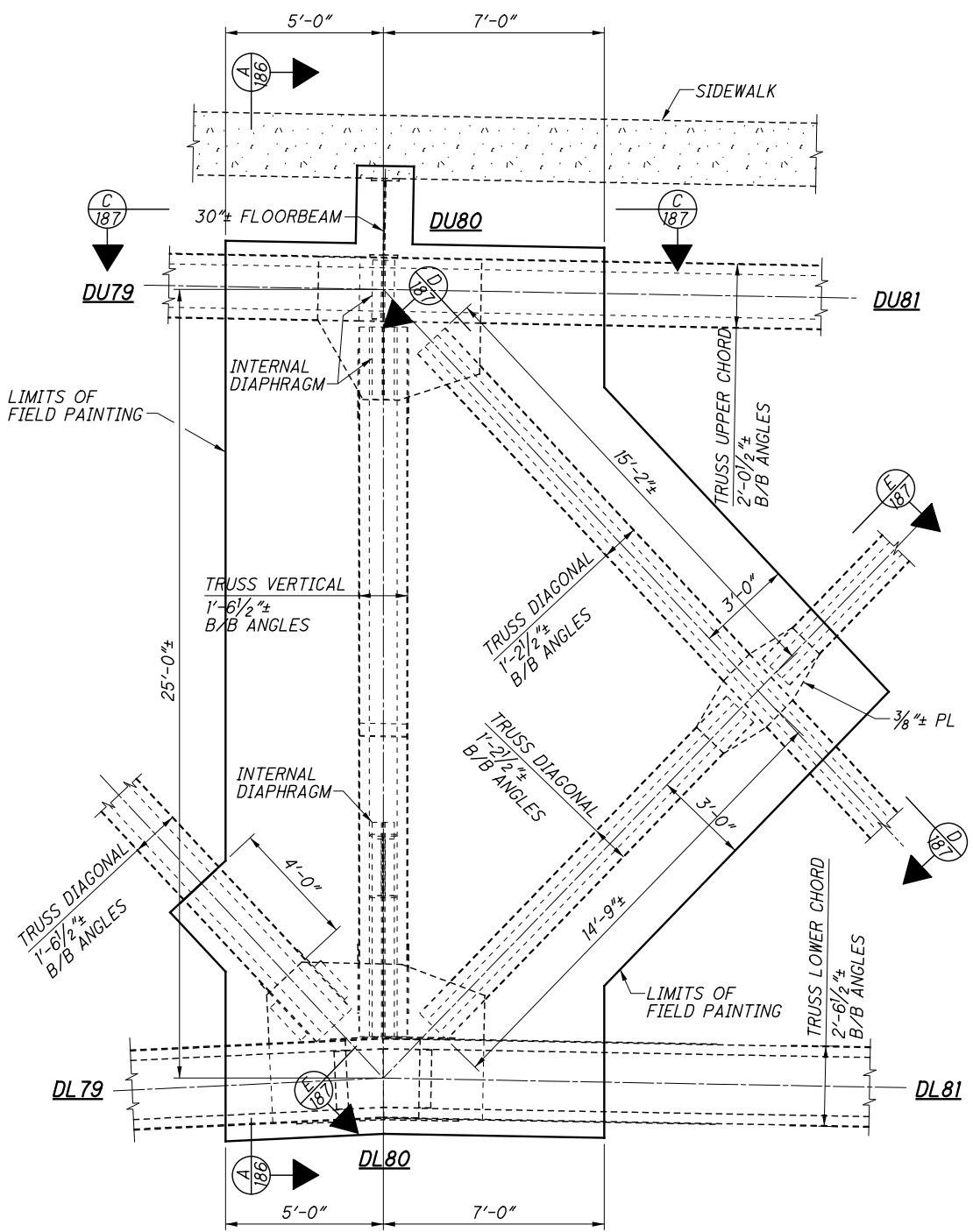
**SECTION B-B**

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
**ADDITIONAL NOTES:** SEE SHEET 184/238.  
**SECTION/VIEWS:** SEE SHEET 184/238.

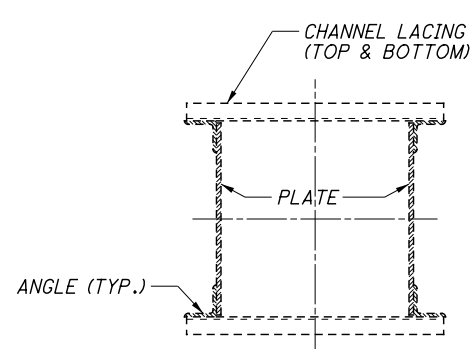
**SECTION E-E**  
(TOP AND BOTTOM LACING SIMILAR)

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	FILE NUMBER 1801503
REVIEWED DLR	STRUCTURE FILE NUMBER 1801503
DRAWN JSB	REVISED
DESIGNED TGW	CHECKED KAK
<b>PANEL POINT D78 - FIELD PAINTING DETAILS - 2</b>	
BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
<b>CUY-10-16.13</b>	<b>PID No. 96986</b>
185/238	
245 308	

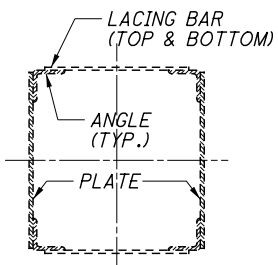
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\CD065.dgn 3/2/2018 3:45:06 PM JeffSmith



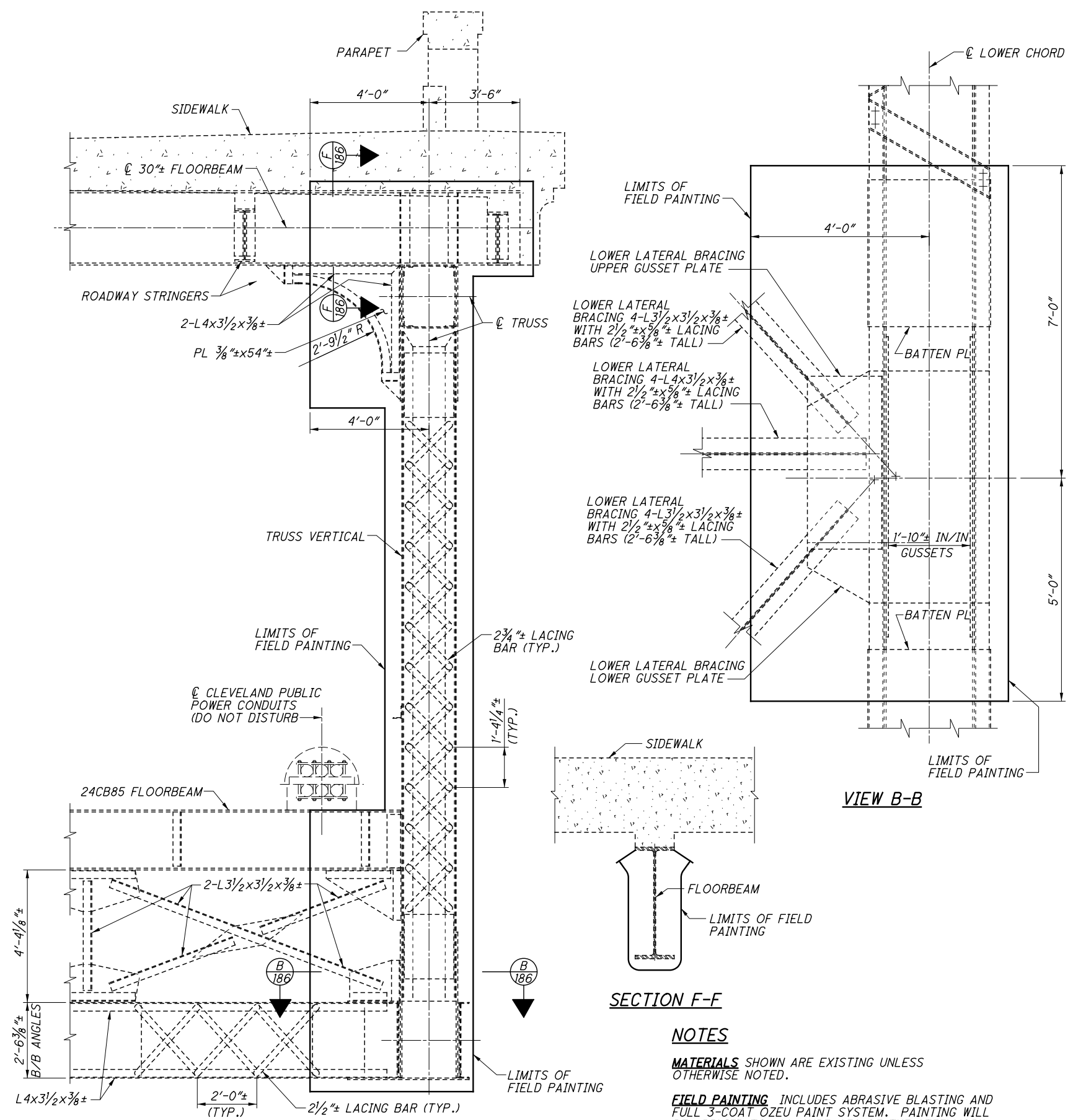
**TRUSS ELEVATION**  
(SPAN 13, TRUSS D, PANEL POINT 80 LOOKING NORTH)



**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



**VIEW A-A**  
(OPPOSITE SIDE OF VERTICAL IS THE SAME)

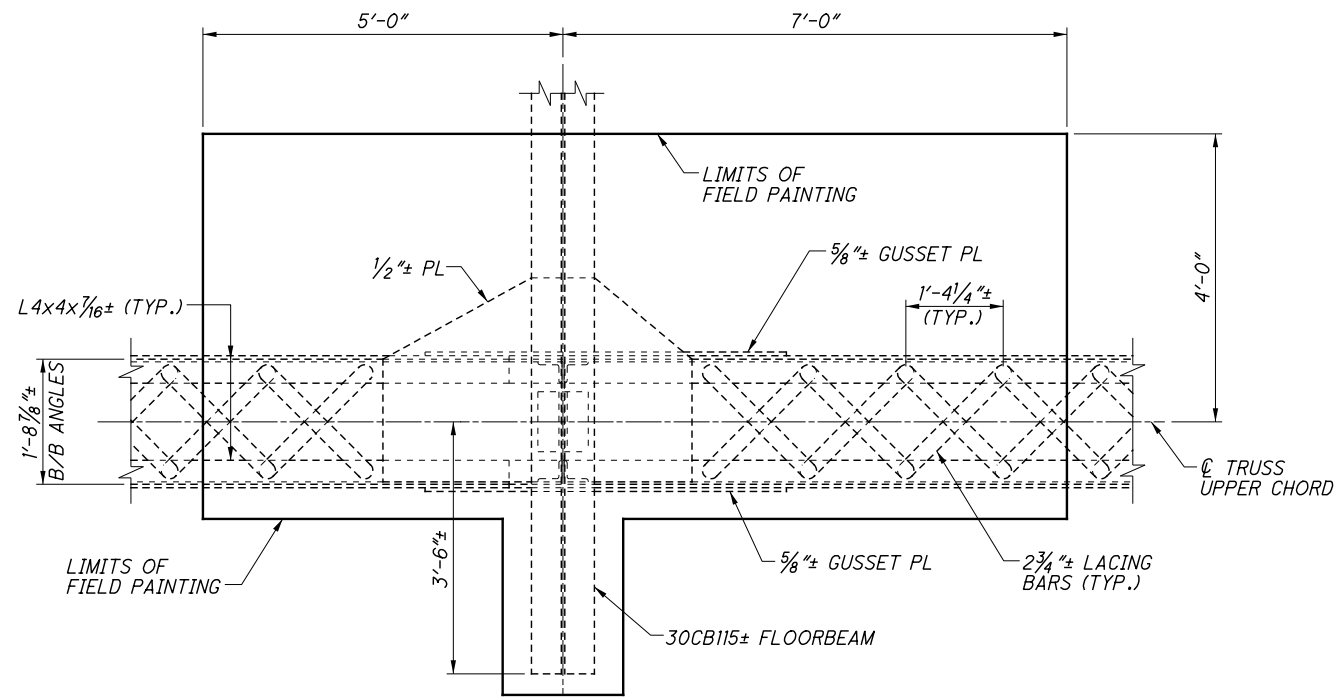
**SECTION F-F**

**NOTES**

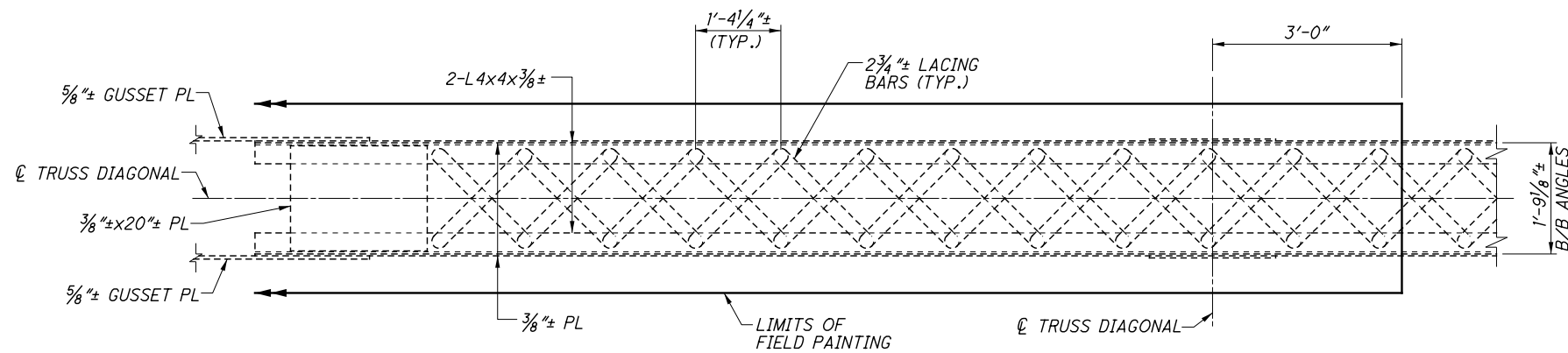
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
- ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 112/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
STRUCTURE FILE NUMBER	1801503
DRAWN	JLS
REVISOR	KAK
DESIGNED	TGW
CHECKED	KAK
<b>PANEL POINT D80 - FIELD PAINTING DETAILS - 1</b>	
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOGA RIVER	
<b>CUY-10-16.13</b>	<b>PID No. 96986</b>
186/238	246/308

F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613CSD107.dgn 3/2/2018 3:45:54 PM JeffSmith

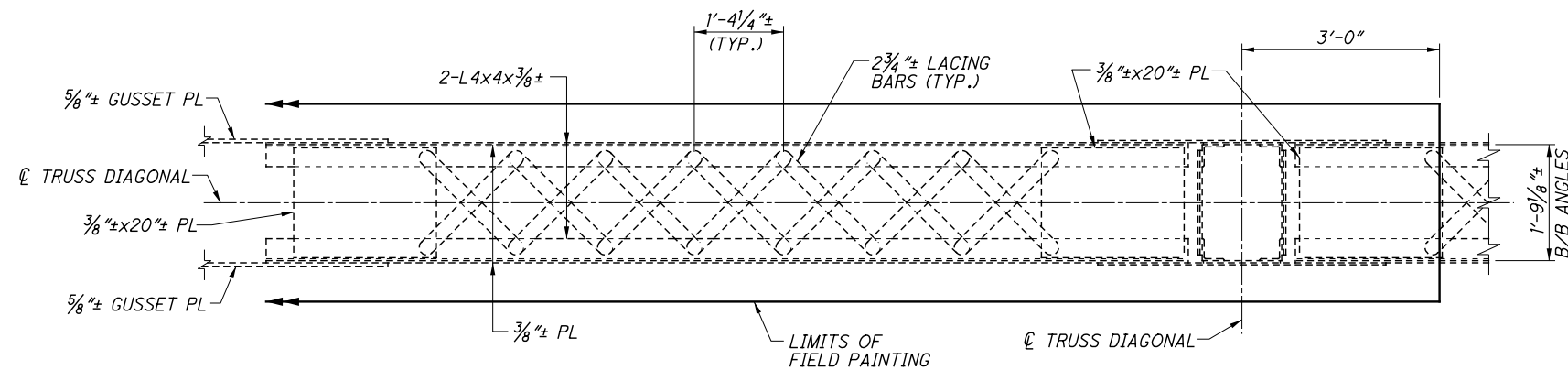


VIEW C-C



VIEW D-D

(OPPOSITE SIDE OF DIAGONAL IS THE SAME)



VIEW E-E

(OPPOSITE SIDE OF DIAGONAL IS THE SAME)

**NOTES**

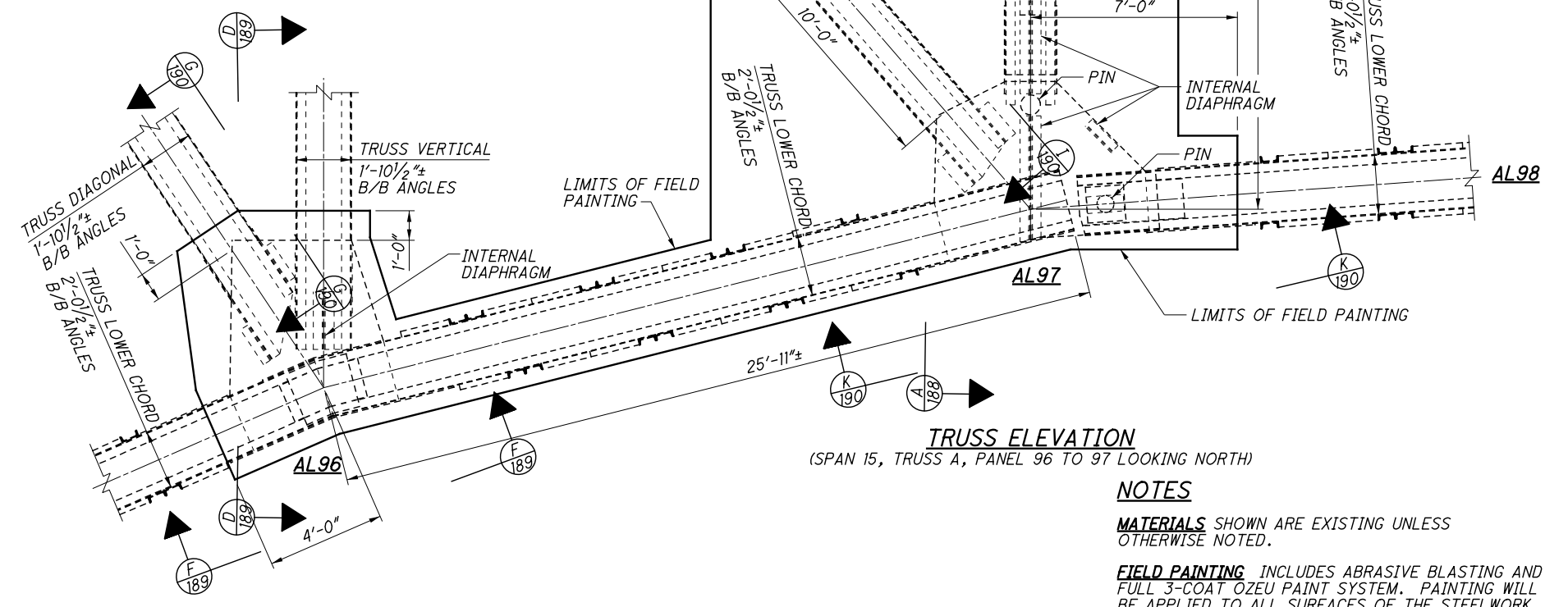
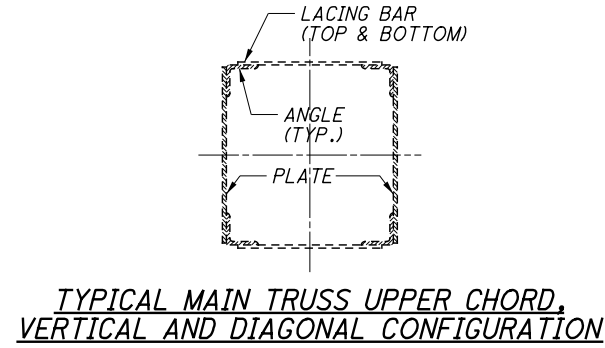
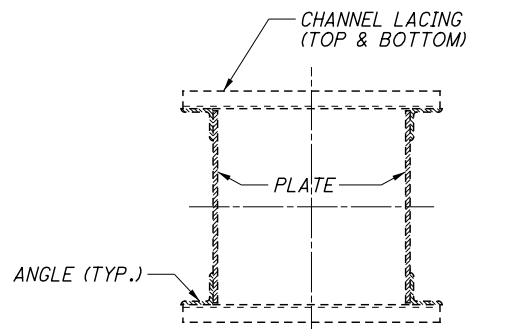
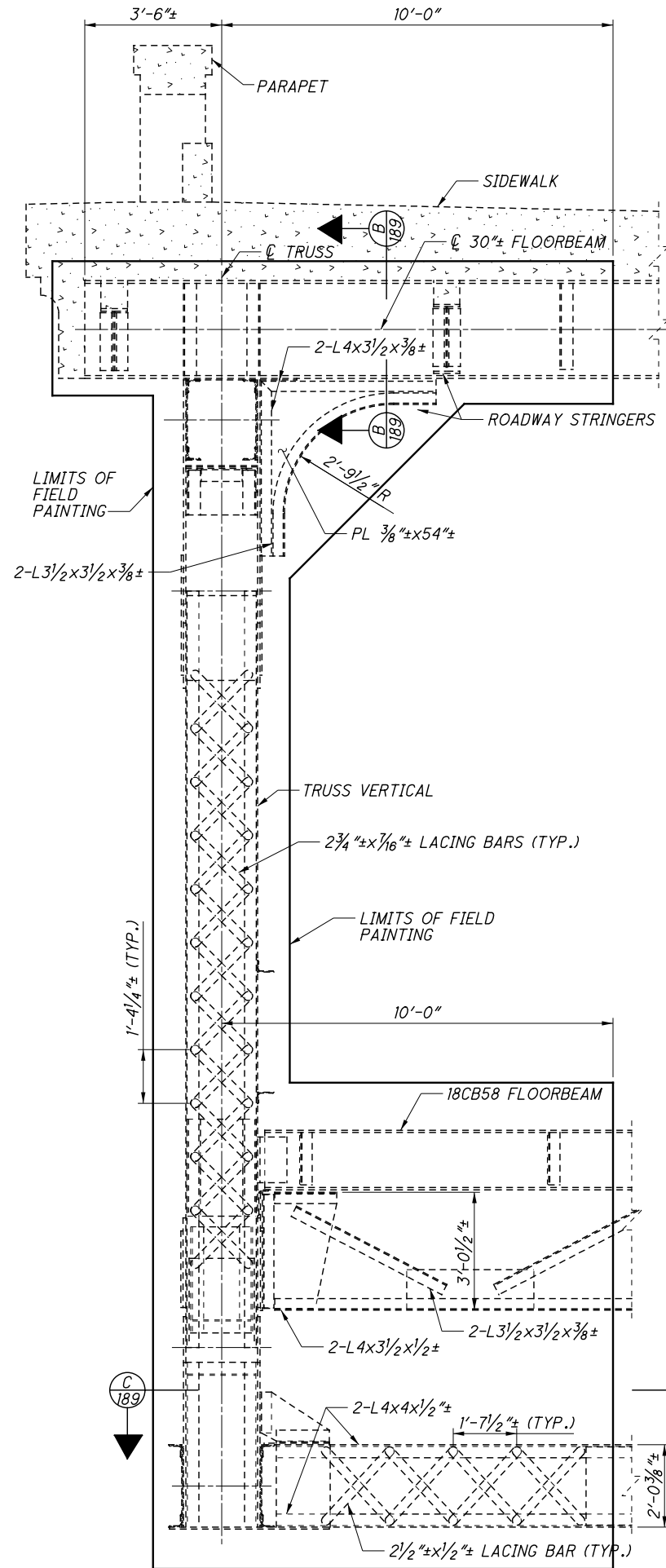
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**VIEWS C-C, D-D & E-E:** FOR LOCATIONS SEE SHEET 186/238.

**ADDITIONAL NOTES:** SEE SHEET 186/238.



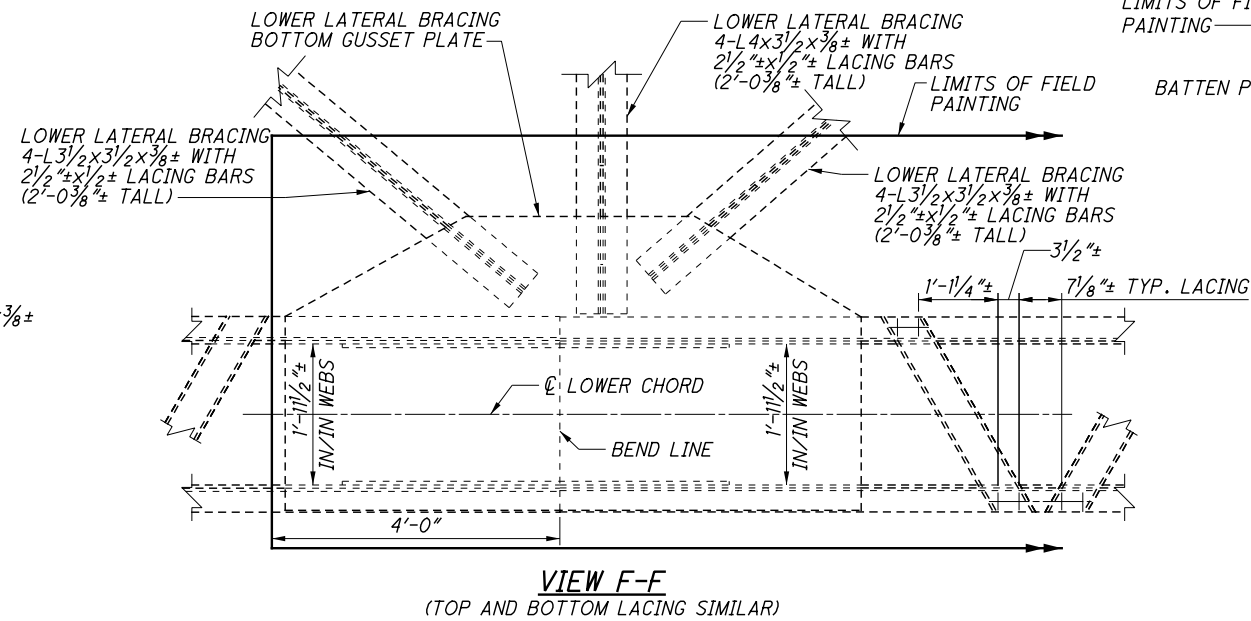
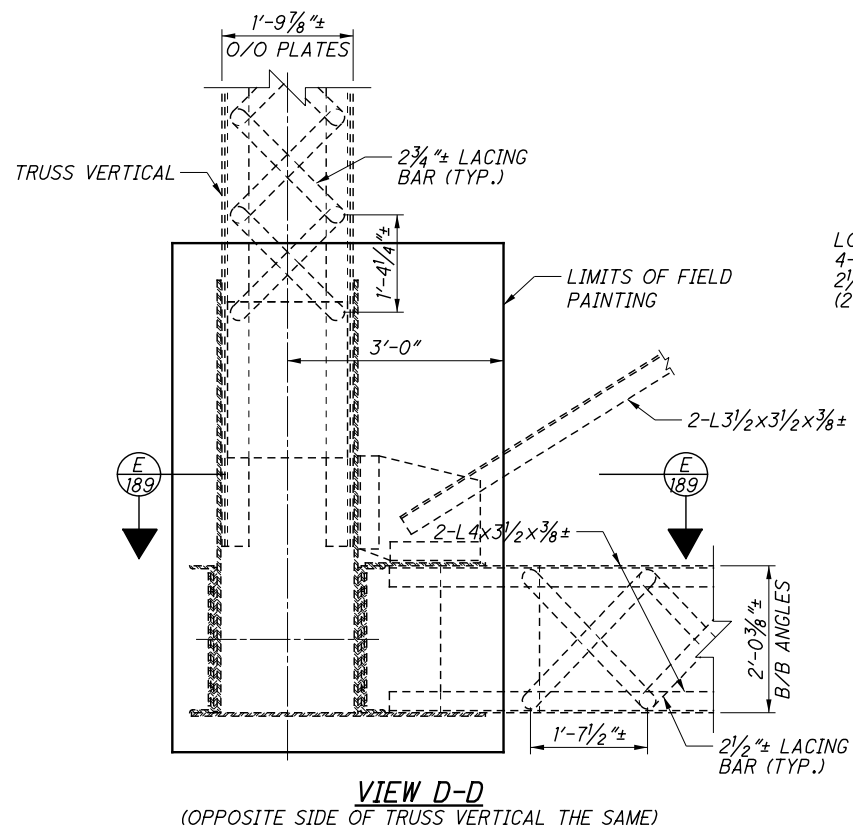
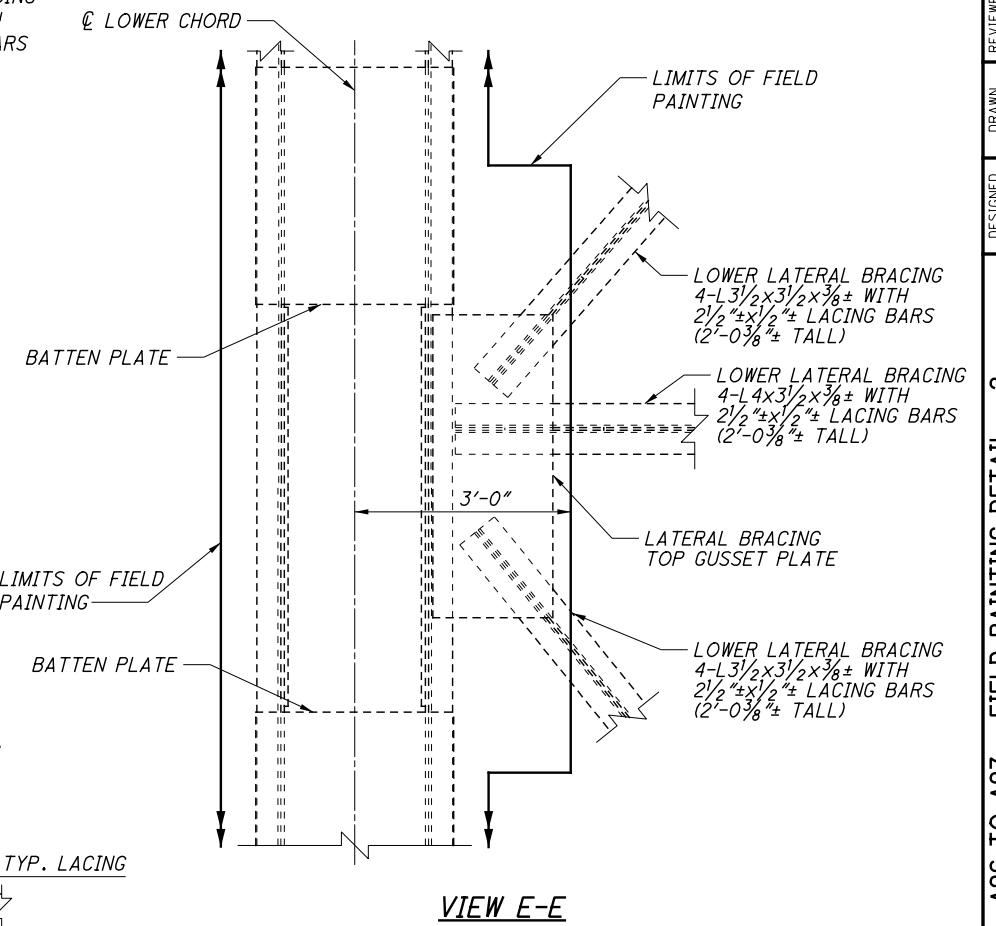
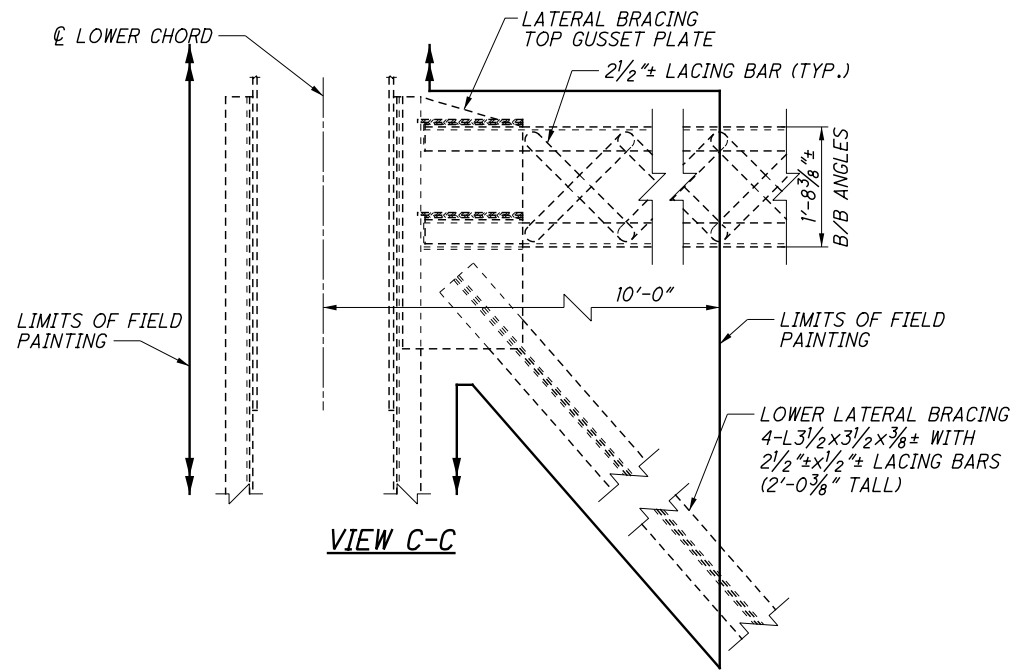
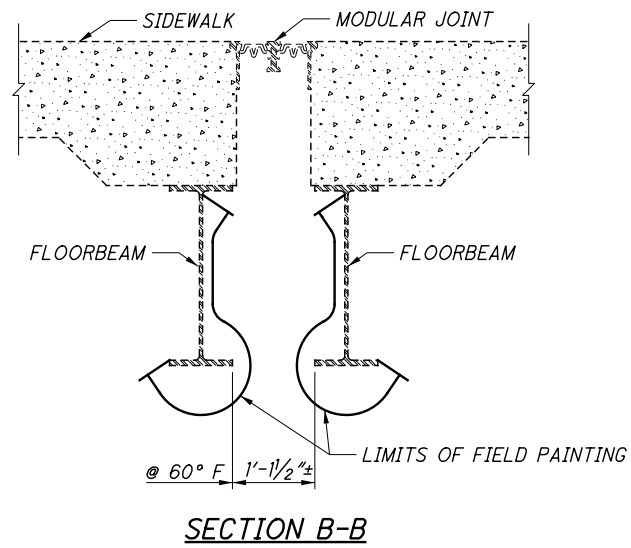
F:\2014\114059\_CUY-10-1613\96986\_structures\CUY010\_1613\CD038.dgn 3/2/2018 3:50:31 PM JeffSmith



- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
  - FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
  - ROADWAY DRAINAGE PIPE** NOT SHOWN. DO NOT DISTURB.
  - ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
  - REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 101/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	JSB
DESIGNED	TGW
CHECKED	KAK
STRUCTURE FILE NUMBER	1801503
PANEL A96 TO A97 - FIELD PAINTING DETAILS - 1	
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
188/238	248
	308

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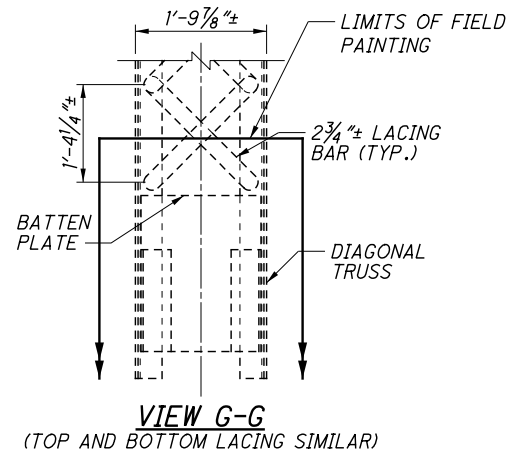
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

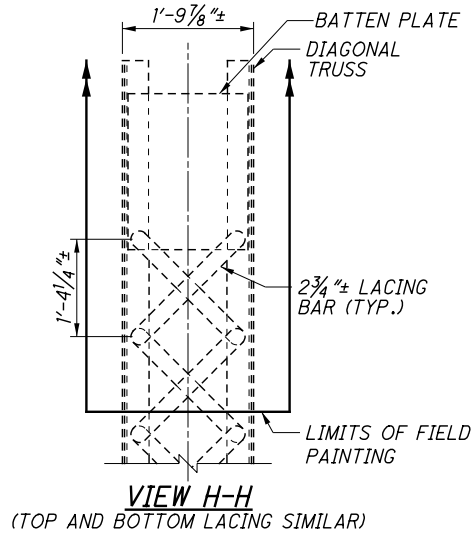
**ADDITIONAL NOTES:** SEE SHEET 188/238.

**SECTIONS/VIEWS:** FOR LOCATIONS, SEE SHEET 188/238.

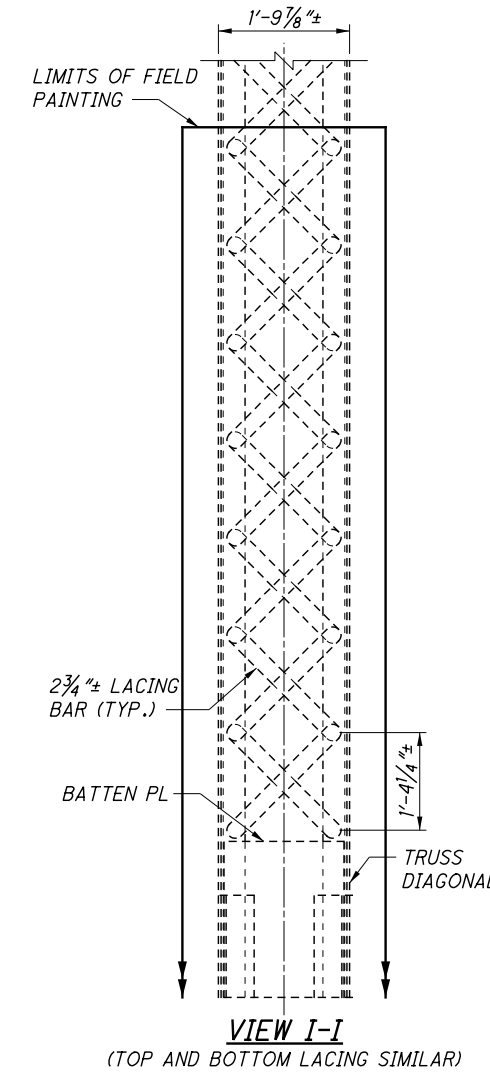
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613CSD079.dgn 3/2/2018 3:52:14 PM JeffSmith



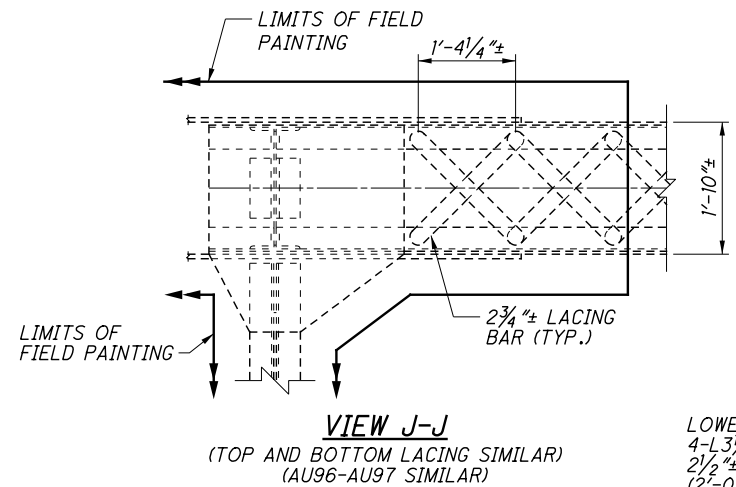
**VIEW G-G**  
(TOP AND BOTTOM LACING SIMILAR)



**VIEW H-H**  
(TOP AND BOTTOM LACING SIMILAR)

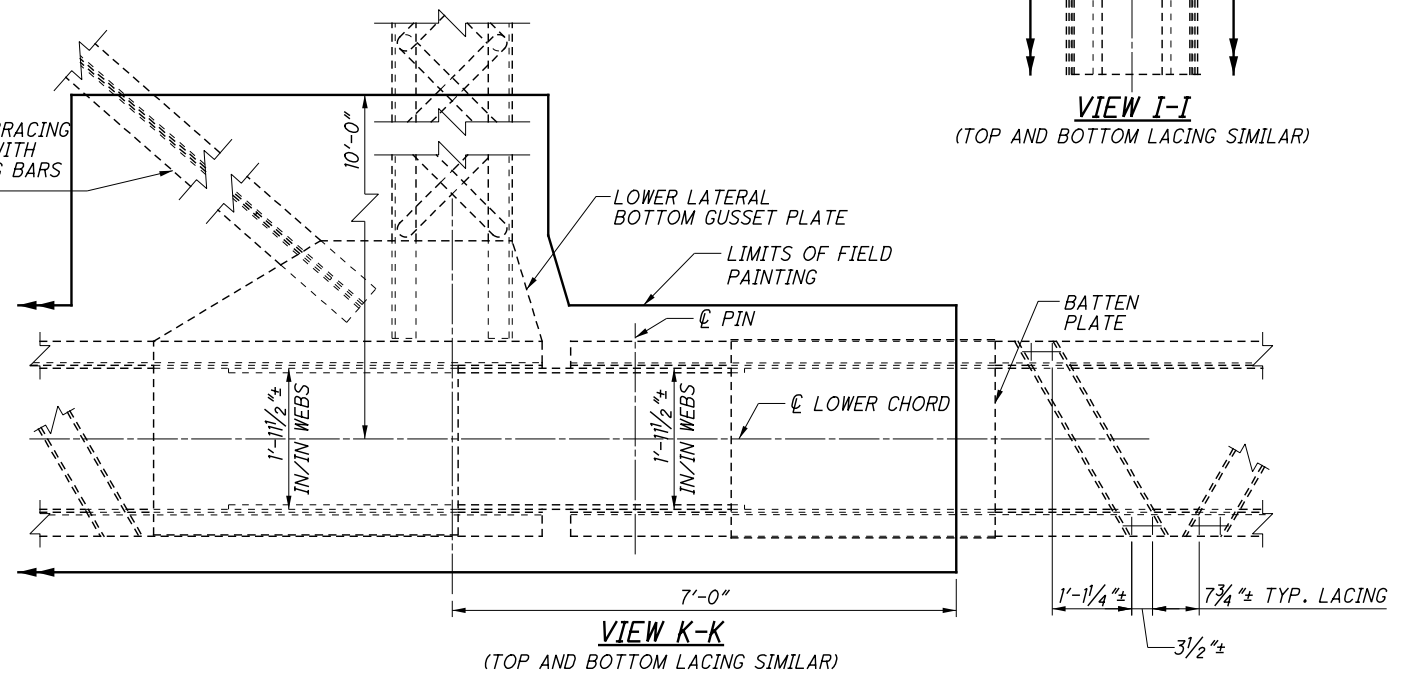


**VIEW I-I**  
(TOP AND BOTTOM LACING SIMILAR)



**VIEW J-J**  
(TOP AND BOTTOM LACING SIMILAR)  
(AU96-AU97 SIMILAR)

LOWER LATERAL BRACING  
4-L3/2x3 1/2x3/8 WITH  
2 1/2x1/2 LACING BARS  
(2'-0 3/8 TALL)



**VIEW K-K**  
(TOP AND BOTTOM LACING SIMILAR)

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

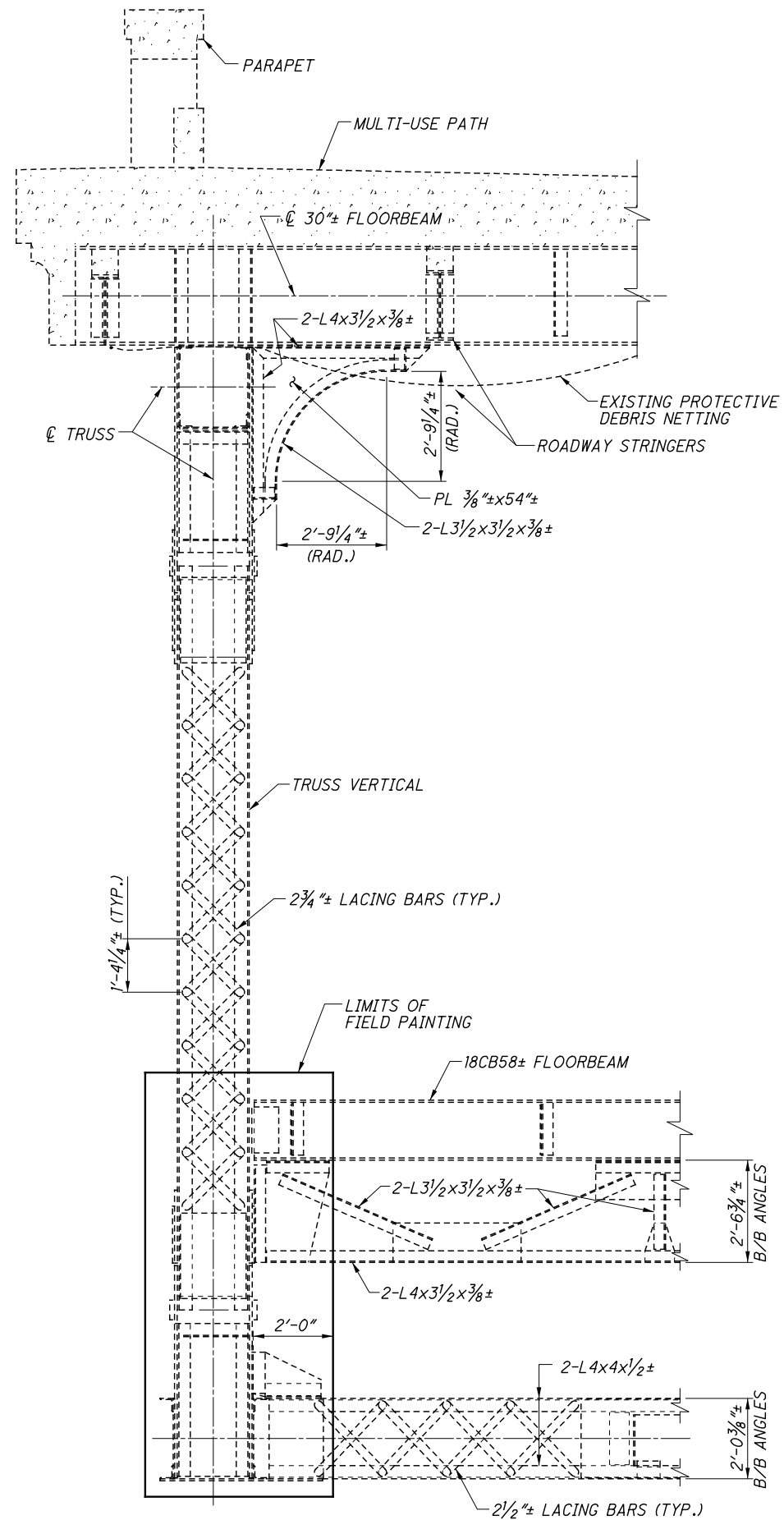
**ADDITIONAL NOTES:** SEE SHEET 188/238.

**VIEWS:** FOR LOCATIONS, SEE SHEET 188/238.

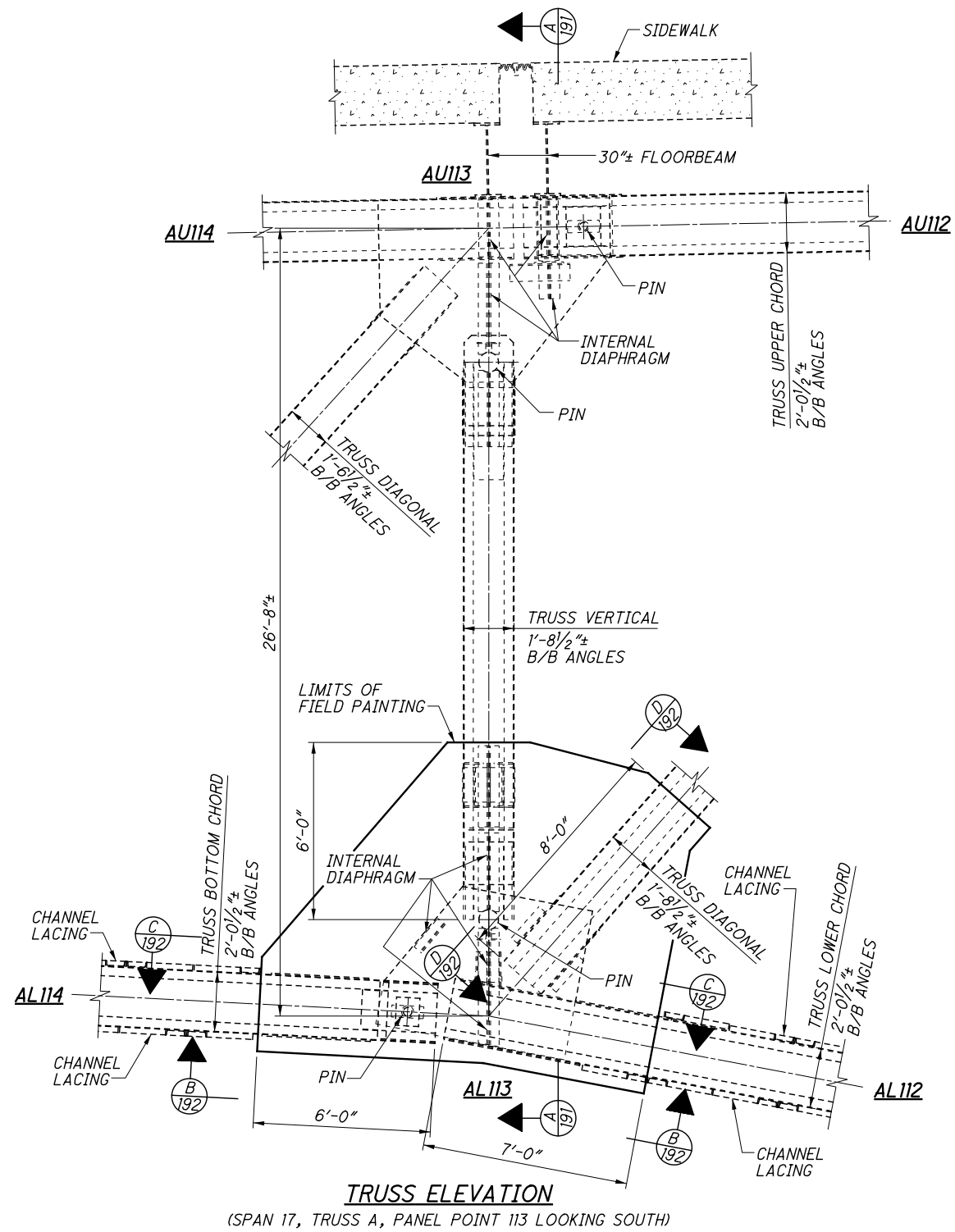
<p><b>PANEL A96 TO A97 - FIELD PAINTING DETAIL - 3</b></p>		<p>DATE: 1/30/18</p>
<p>DESIGNED: TGW</p>	<p>DRAWN: USB</p>	<p>REVIEWED: DLR</p>
<p>CHECKED: KAK</p>	<p>REVISED:</p>	<p>STRUCTURE FILE NUMBER: 1801503</p>
<p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>		
<p>CUY-10-16.13</p>	<p>PID No. 96986</p>	<p>190/238</p>
<p>250 308</p>		

RICHLAND ENGINEERING LIMITED  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

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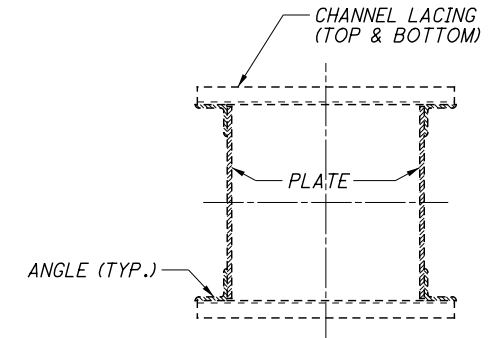


SECTION A-A

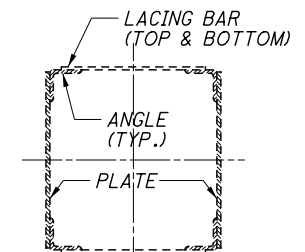


TRUSS ELEVATION

(SPAN 17, TRUSS A, PANEL POINT 113 LOOKING SOUTH)



TYPICAL MAIN TRUSS CHORD CONFIGURATION



TYPICAL MAIN TRUSS VERTICAL AND DIAGONAL CONFIGURATION

NOTES

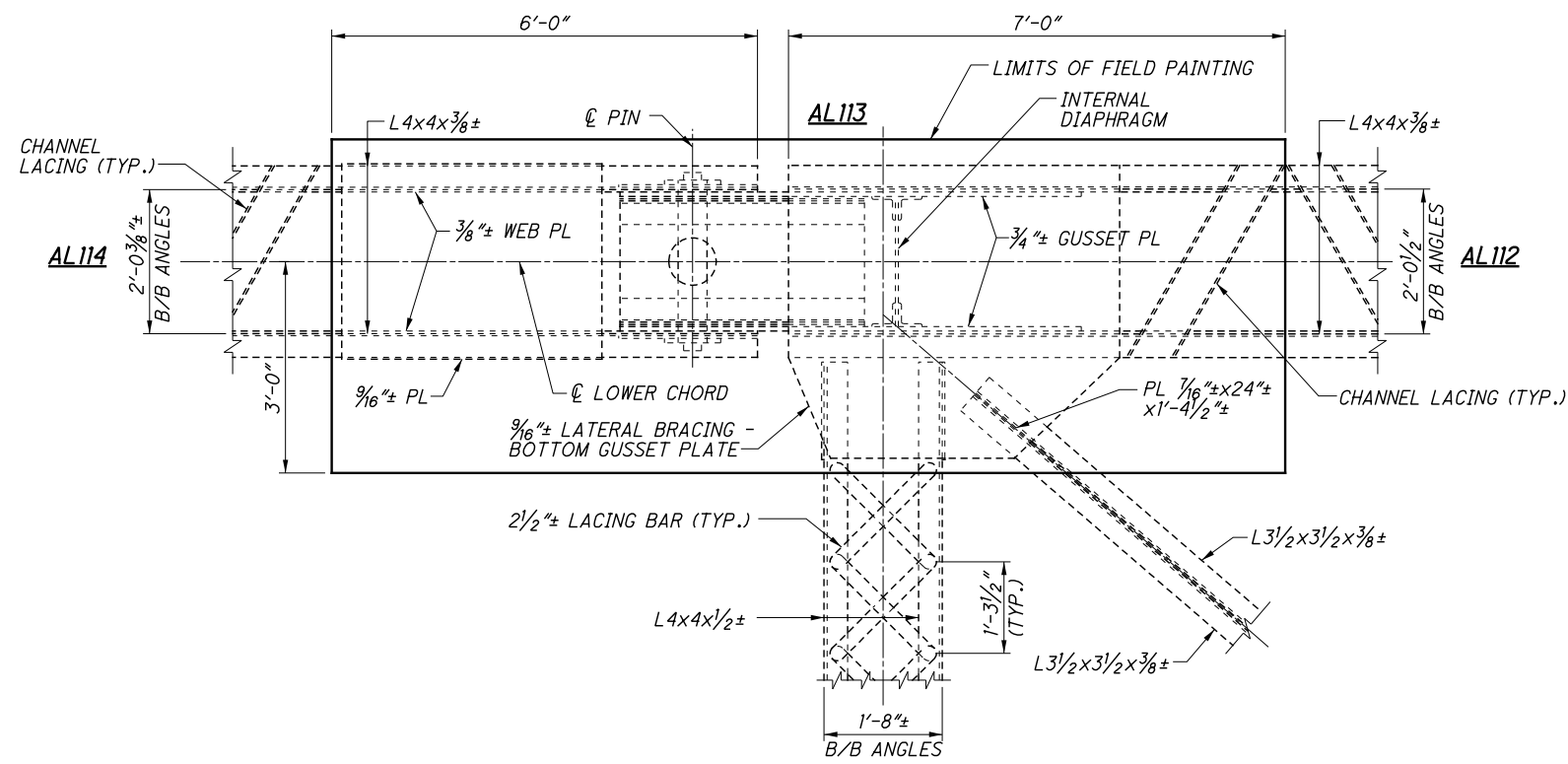
MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

FIELD PAINTING INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.

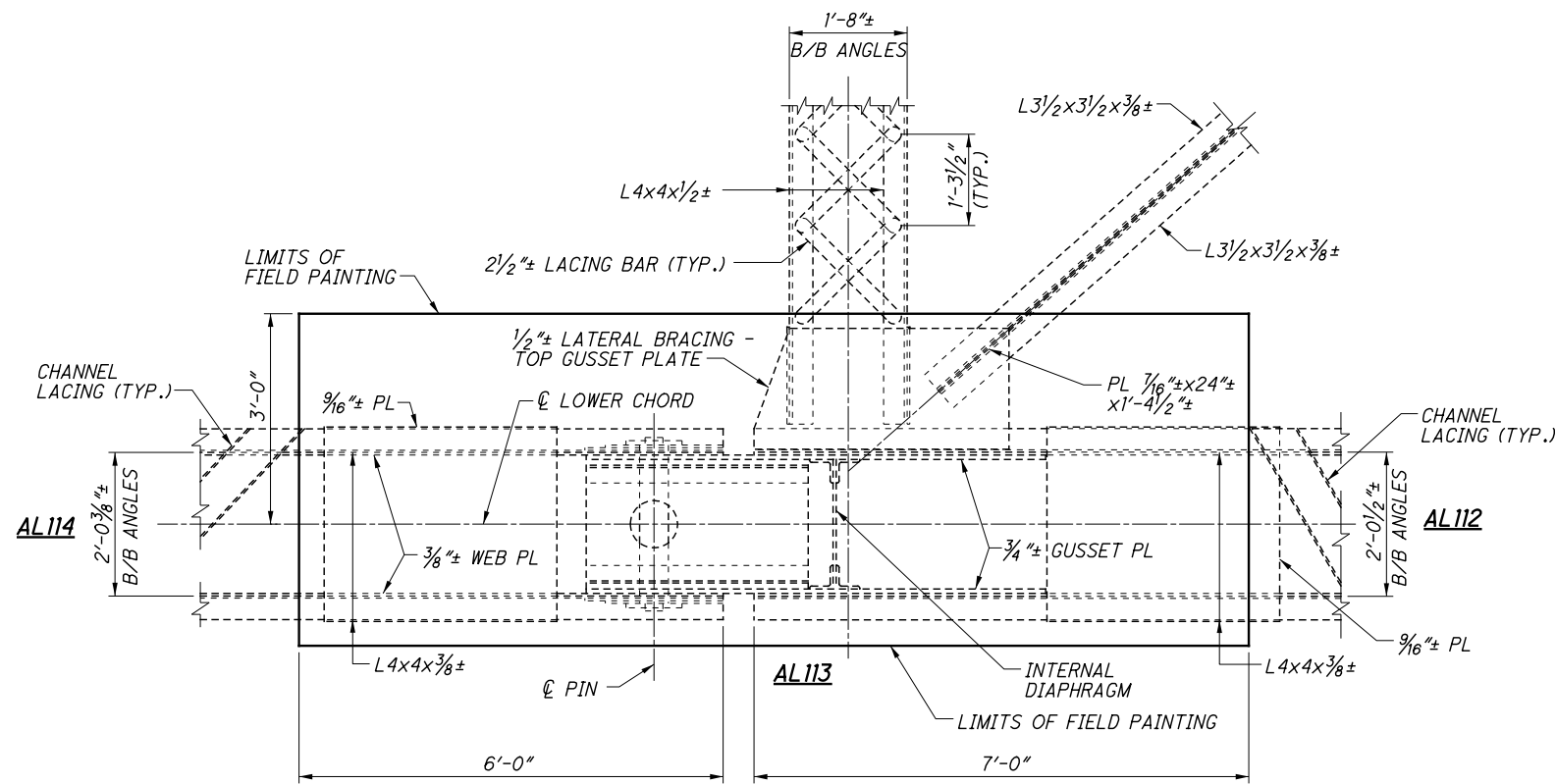
ROADWAY DRAINAGE PIPE NOT SHOWN. DO NOT DISTURB.

REPAIR LOCATION: SEE TRUSS ELEVATION SHEET 101/238.

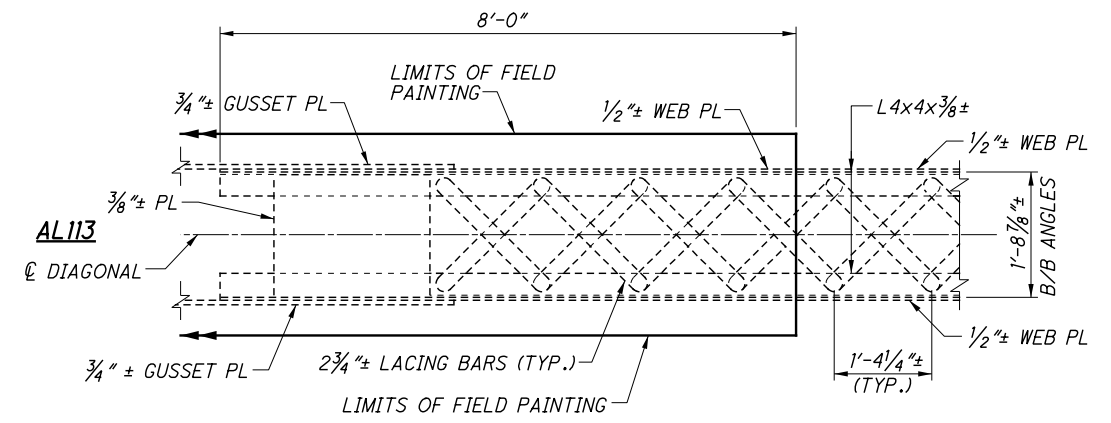
F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\sheets\010\_1613CSD114.dgn 3/2/2018 3:53:39 PM JeffSmith



**VIEW B-B**



**VIEW C-C**



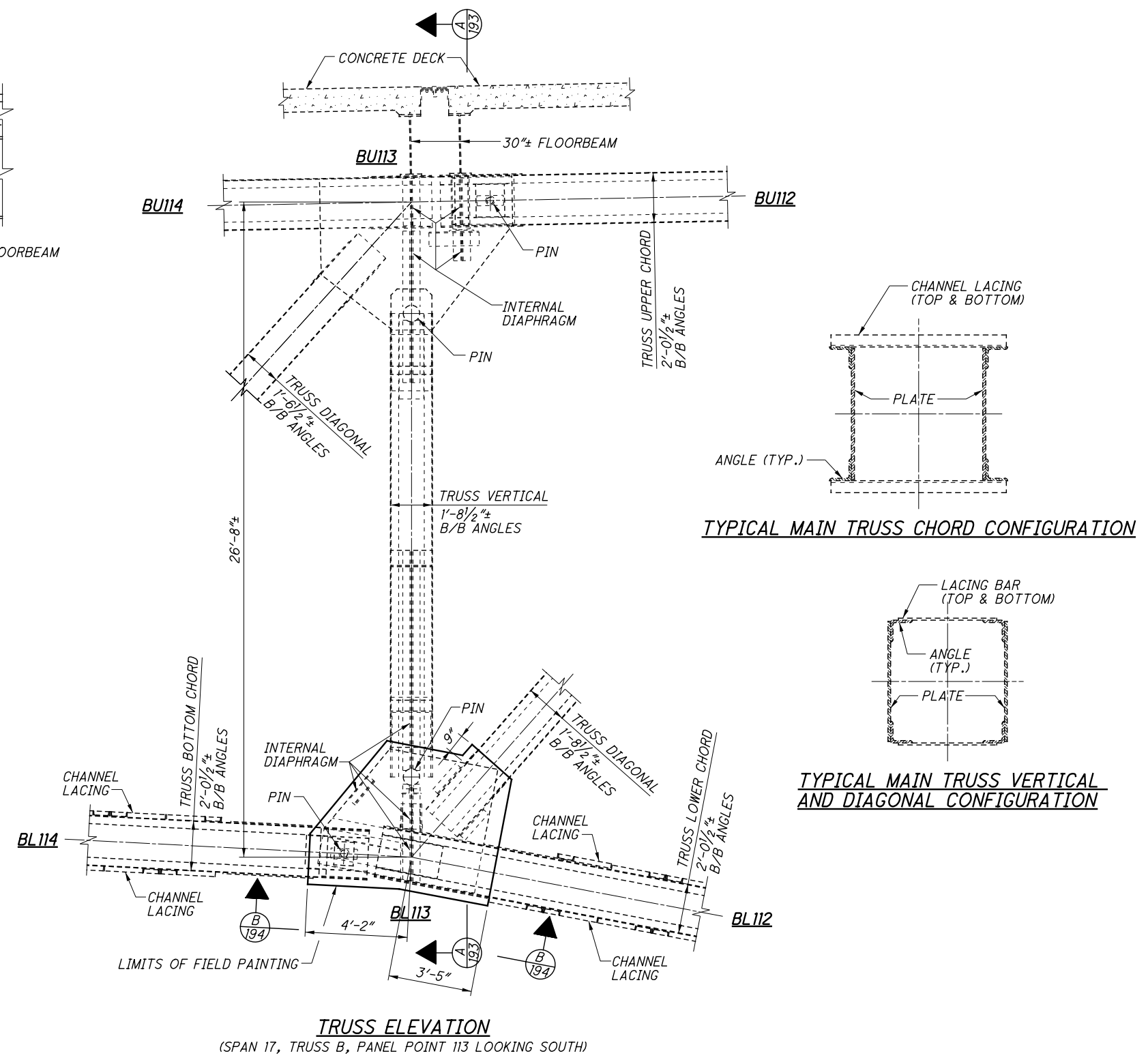
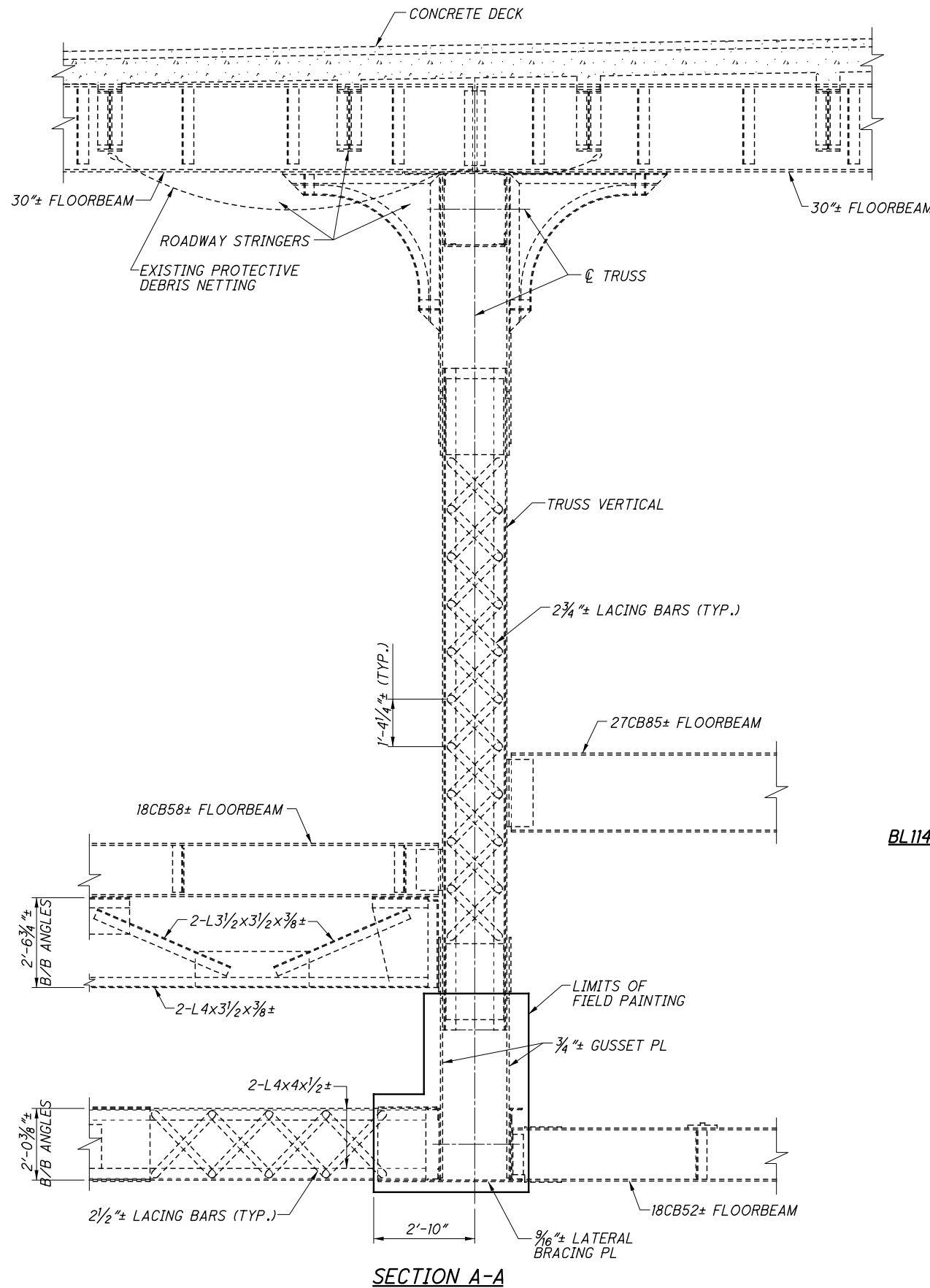
**VIEW D-D**

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- VIEWS B-B, C-C & D-D:** FOR LOCATIONS SEE SHEET 191/238.
- ADDITIONAL NOTES:** SEE SHEET 191/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	JLS
DESIGNED	TGW
CHECKED	KAK
STRUCTURE FILE NUMBER	1801503
PANEL POINT A113 - FIELD PAINTING DETAILS - 2	
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13	PID No. 96986
192/238	252/308

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**TYPICAL MAIN TRUSS CHORD CONFIGURATION**

**TYPICAL MAIN TRUSS VERTICAL AND DIAGONAL CONFIGURATION**

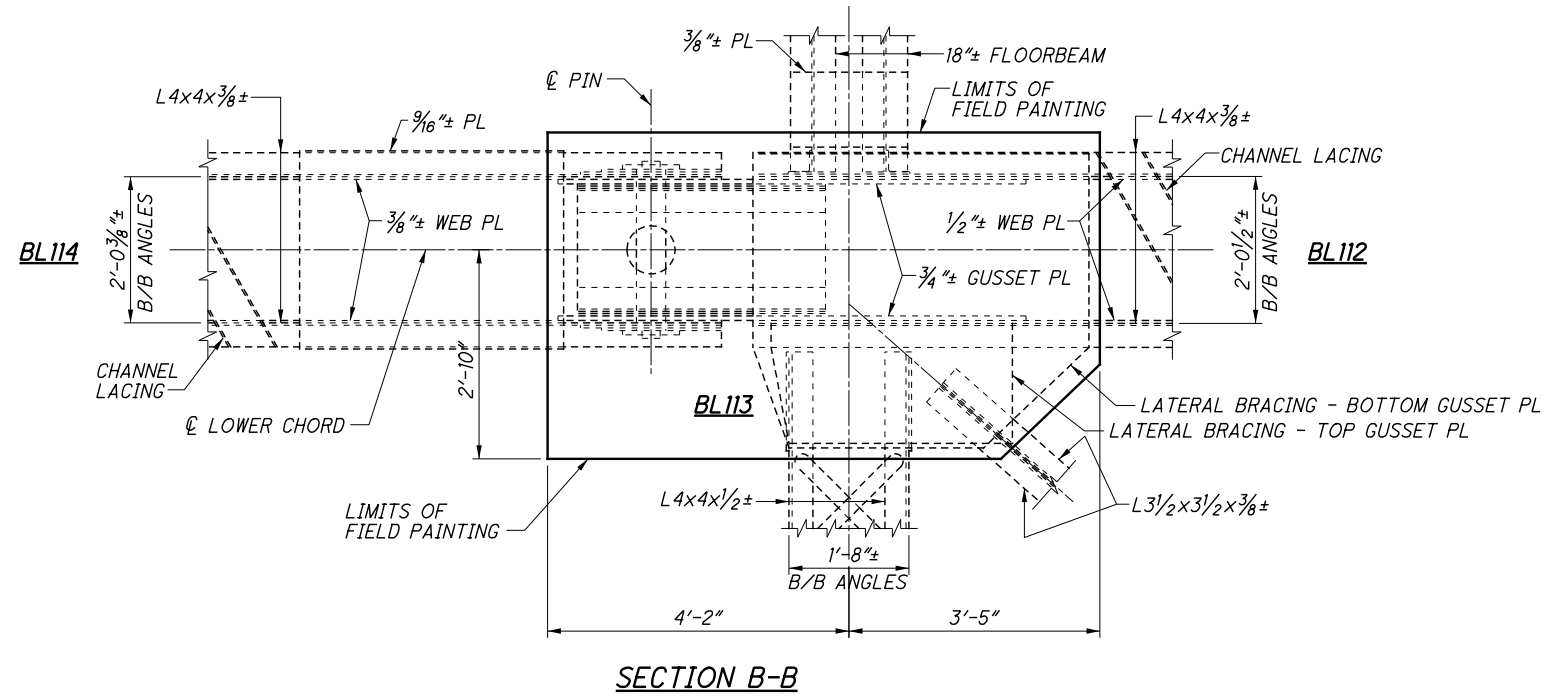
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.

**REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 105/238.

F:\2014\114059\_CUY-10-1613\96986\structures\CUY010\_1613\1613CSD116.dgn 3/5/2018 8:39:42 AM JeffSmith



SECTION B-B

**NOTES**

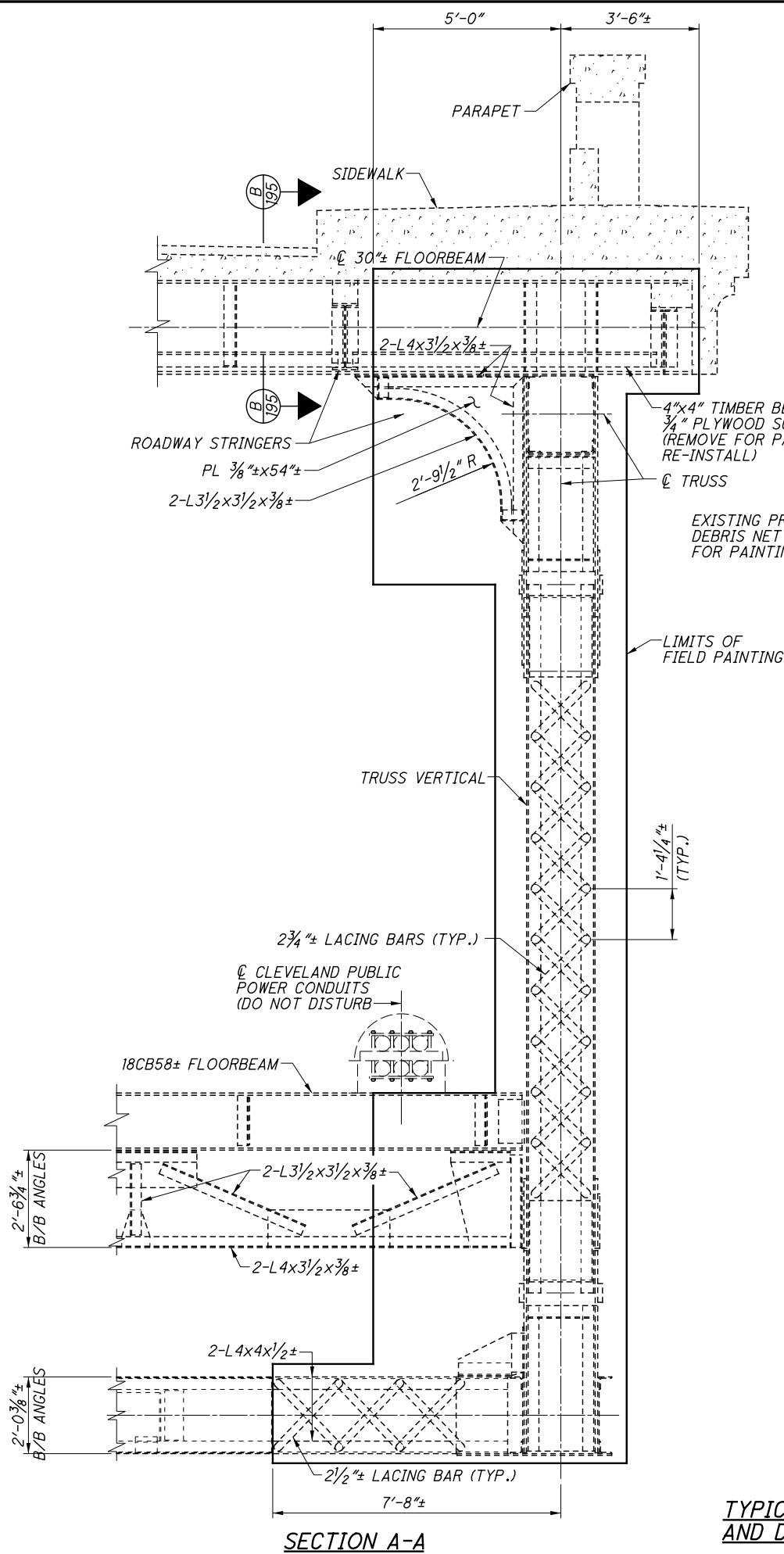
**MATERIALS** SHOWN ARE EXSITING UNLESS OTHERWISE NOTED.

**VIEW B-B:** FOR LOCATION SEE SHEET 193/238.

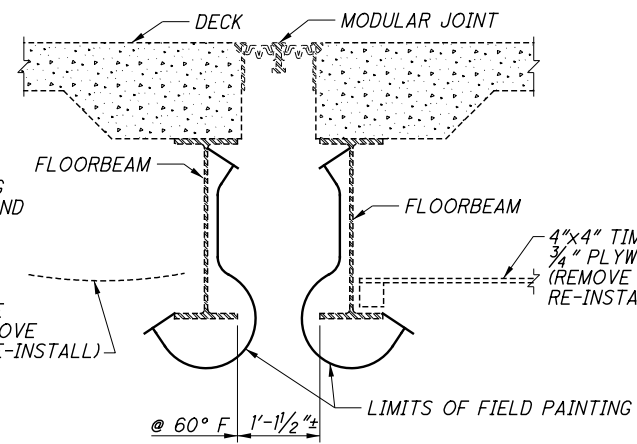
**ADDITIONAL NOTES:** SEE SHEET 193/238.

<b>CUY - 10 - 16.13</b> PID No. 96986	PANEL POINT B113 - FIELD PAINTING DETAILS - 2		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
	BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	DATE 1/30/18 REVIEWED DLR STRUCTURE FILE NUMBER 1801503	
194/238	254 308		

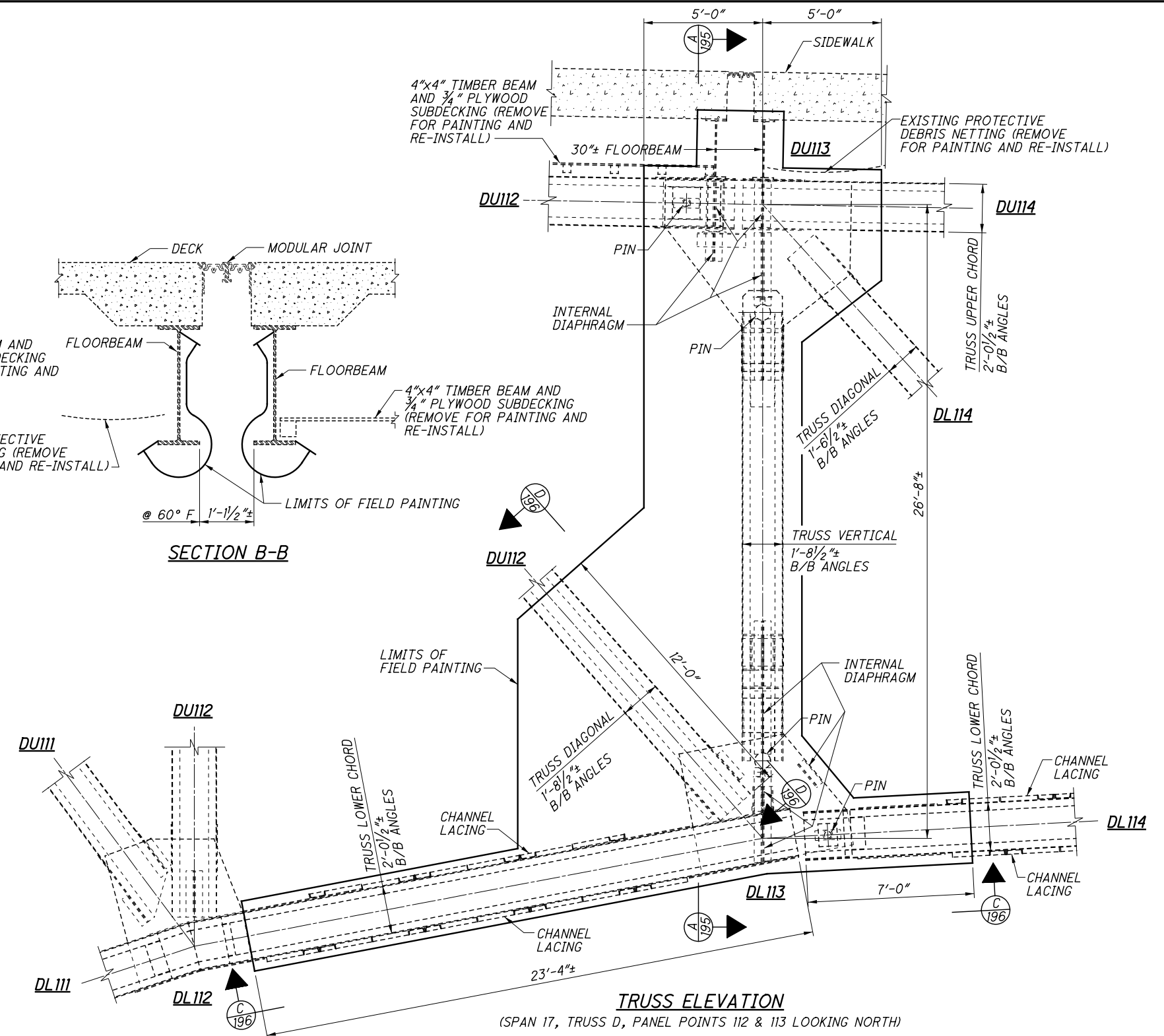
F:\2014\114059 CUY-10-16\13\96986\structures\CUY010\_1613\sheets\010\_1613CSD090.dgn 3/5/2018 8:40:18 AM JeffSmith



SECTION A-A

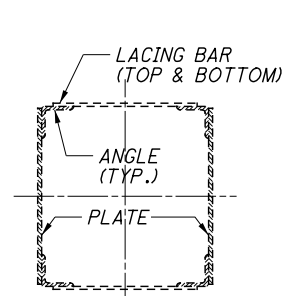


SECTION B-B

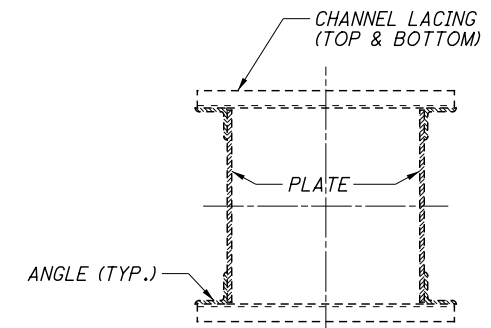


TRUSS ELEVATION

(SPAN 17, TRUSS D, PANEL POINTS 112 & 113 LOOKING NORTH)



TYPICAL MAIN TRUSS VERTICAL AND DIAGONAL CONFIGURATION



TYPICAL MAIN TRUSS CHORD CONFIGURATION

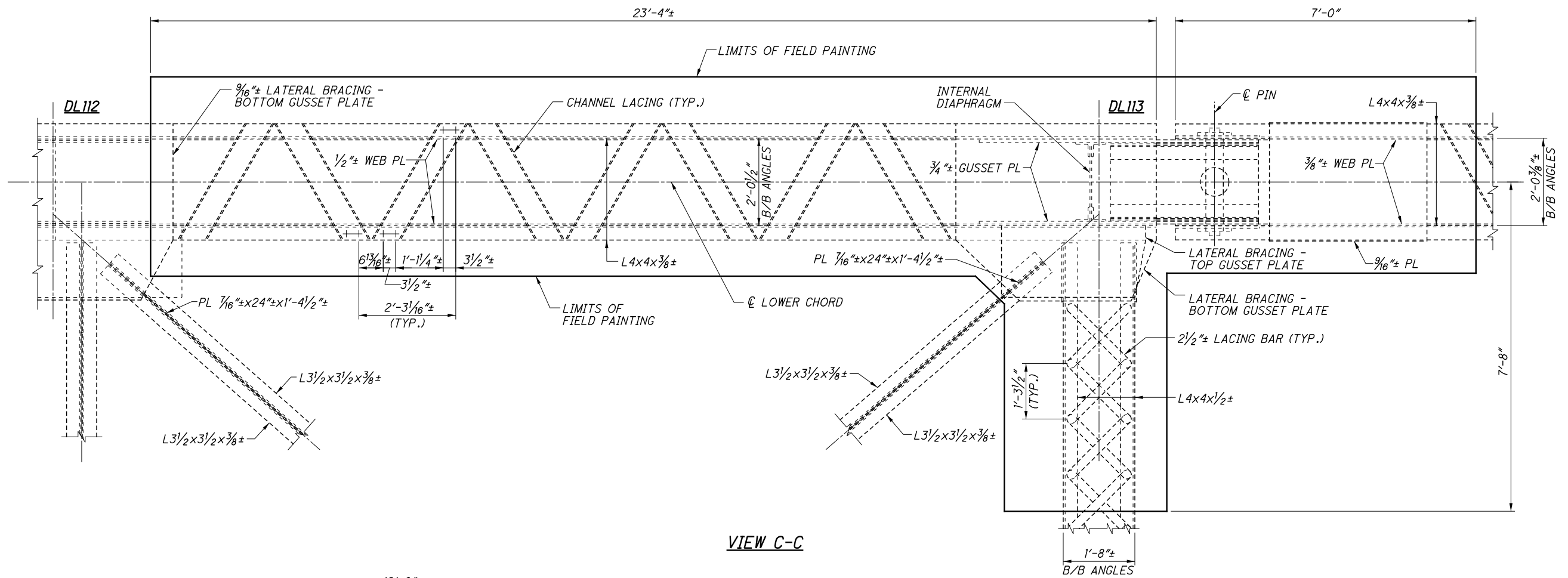
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
- TIMBER SUBDECK REMOVAL AND REINSTALLATION:** SEE GENERAL NOTE SHEET 6/238.
- DEBRIS NETTING REMOVAL AND REINSTALLATION:** SEE GENERAL NOTE SHEET 6/238.
- ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
- ROADWAY DRAINAGE PIPE** NOT SHOWN. DO NOT DISTURB.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 113/238.

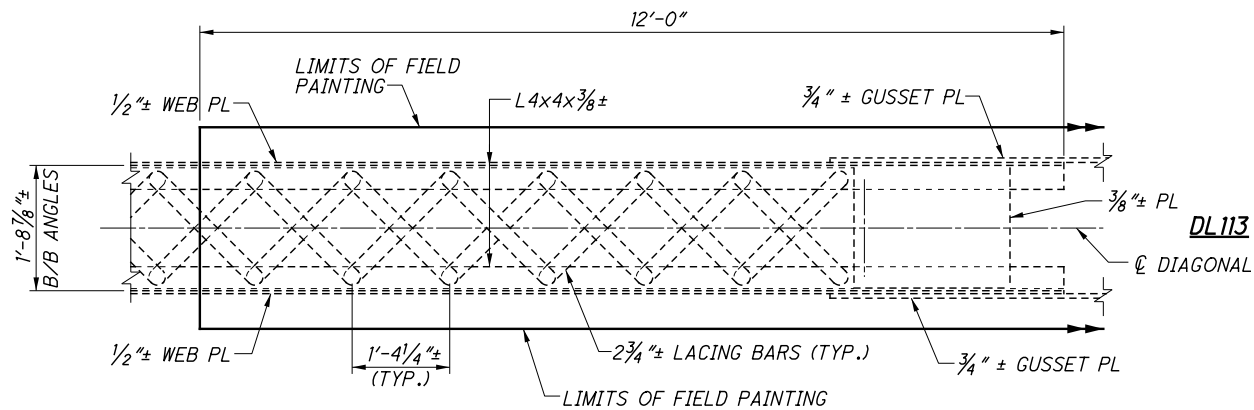
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE	1/30/18
REVIEWED	DLR
DRAWN	JLS
DESIGNED	TGW
CHECKED	KAK
STRUCTURE FILE NUMBER	1801503
BRIDGE NO. CUY-10-1613	
S.R. 10 OVER THE CUYAHOGA RIVER	
PANEL POINT D113 - FIELD PAINTING DETAILS - 1	
CUY-10-16.13	PID No. 96986
195/238	255/308



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VIEW C-C



VIEW D-D

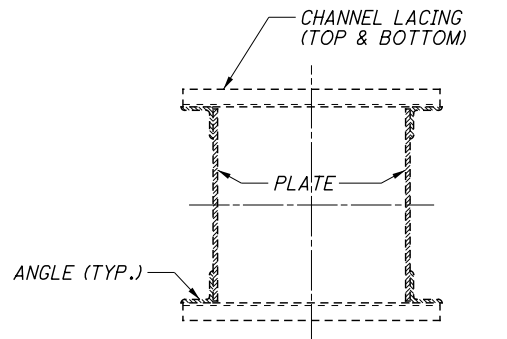
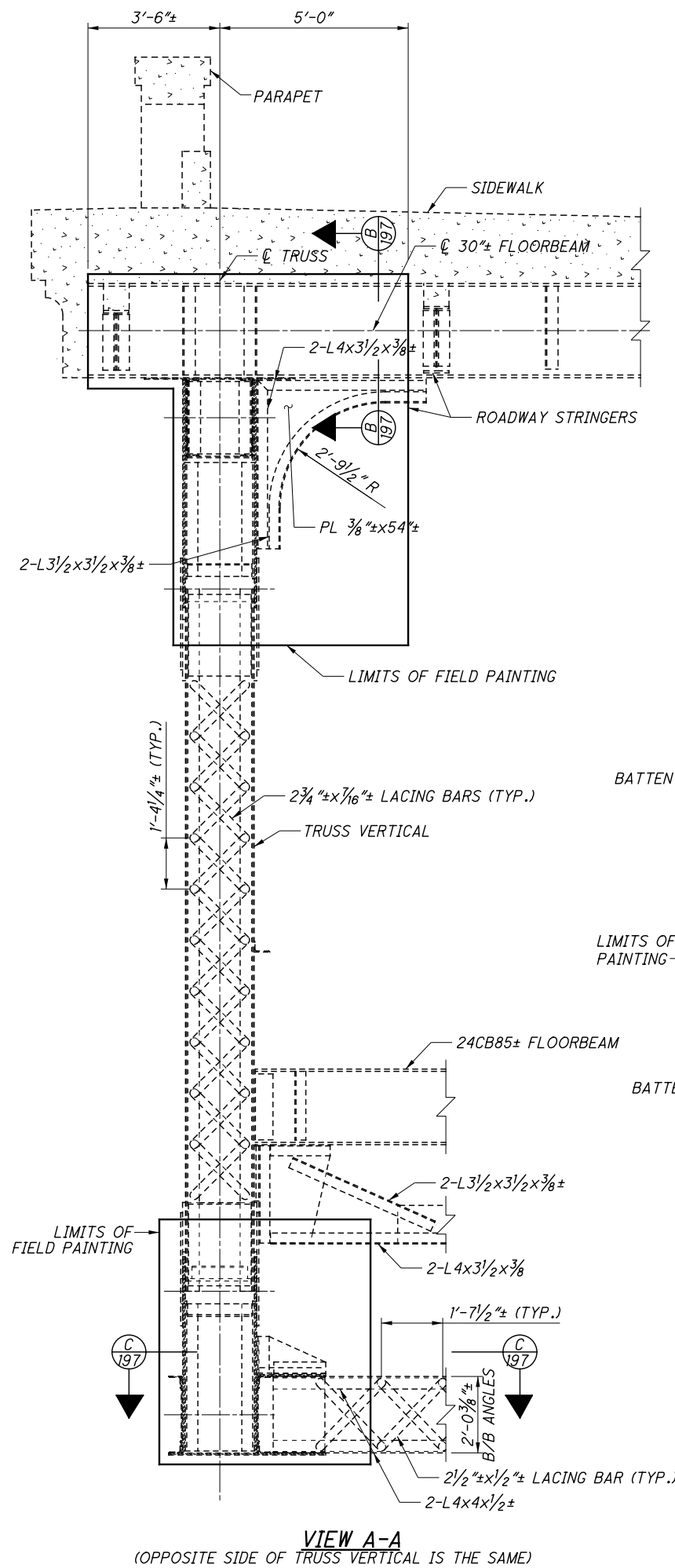
**NOTES**

**MATERIALS** SHOWN ARE EXSITING UNLESS OTHERWISE NOTED.

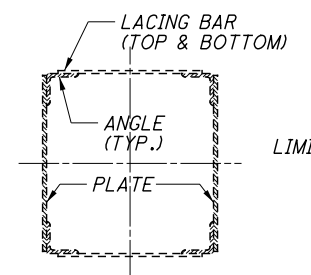
**VIEWS C-C & D-D:** FOR LOCATIONS SEE SHEET 195/238.

**ADDITIONAL NOTES:** SEE SHEET 195/238.

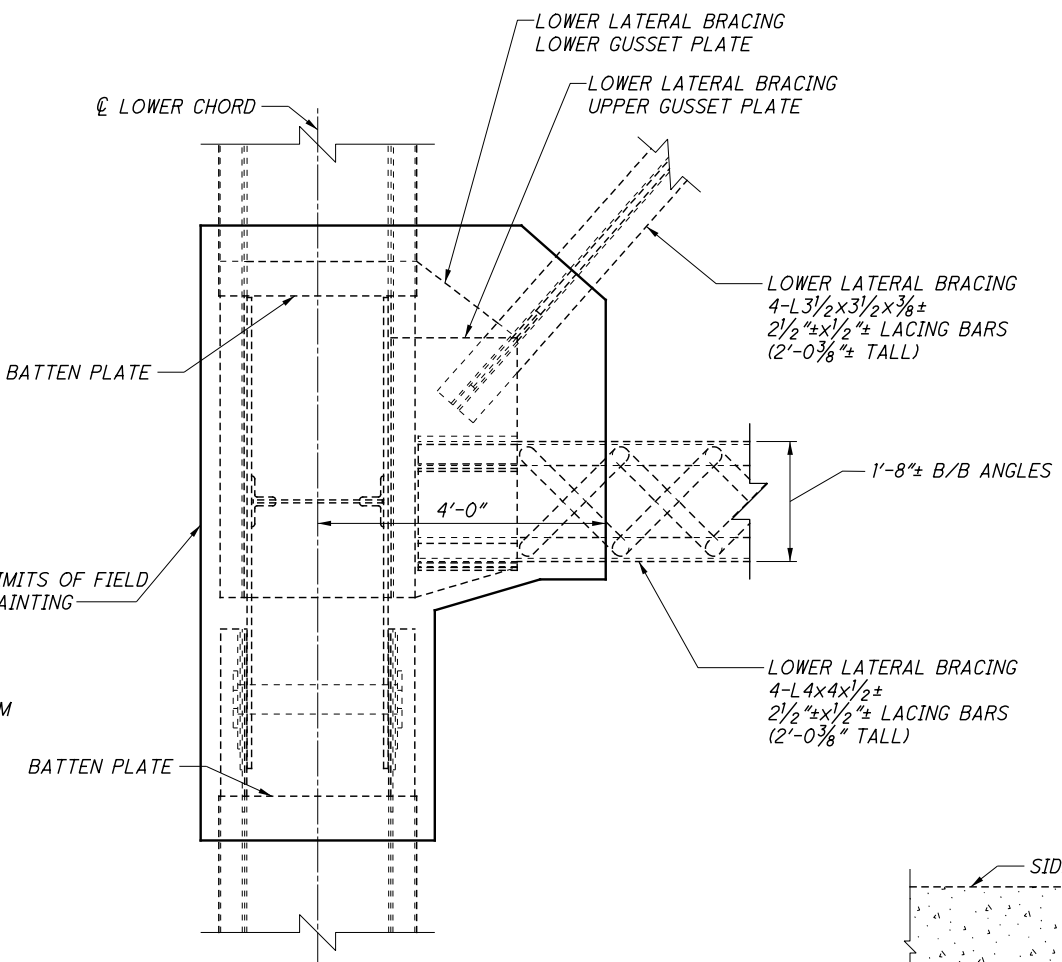
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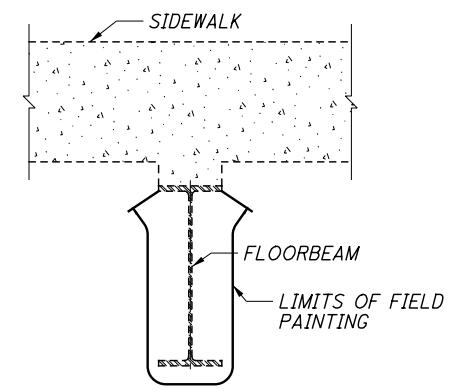
**TYPICAL MAIN TRUSS LOWER CHORD CONFIGURATION**



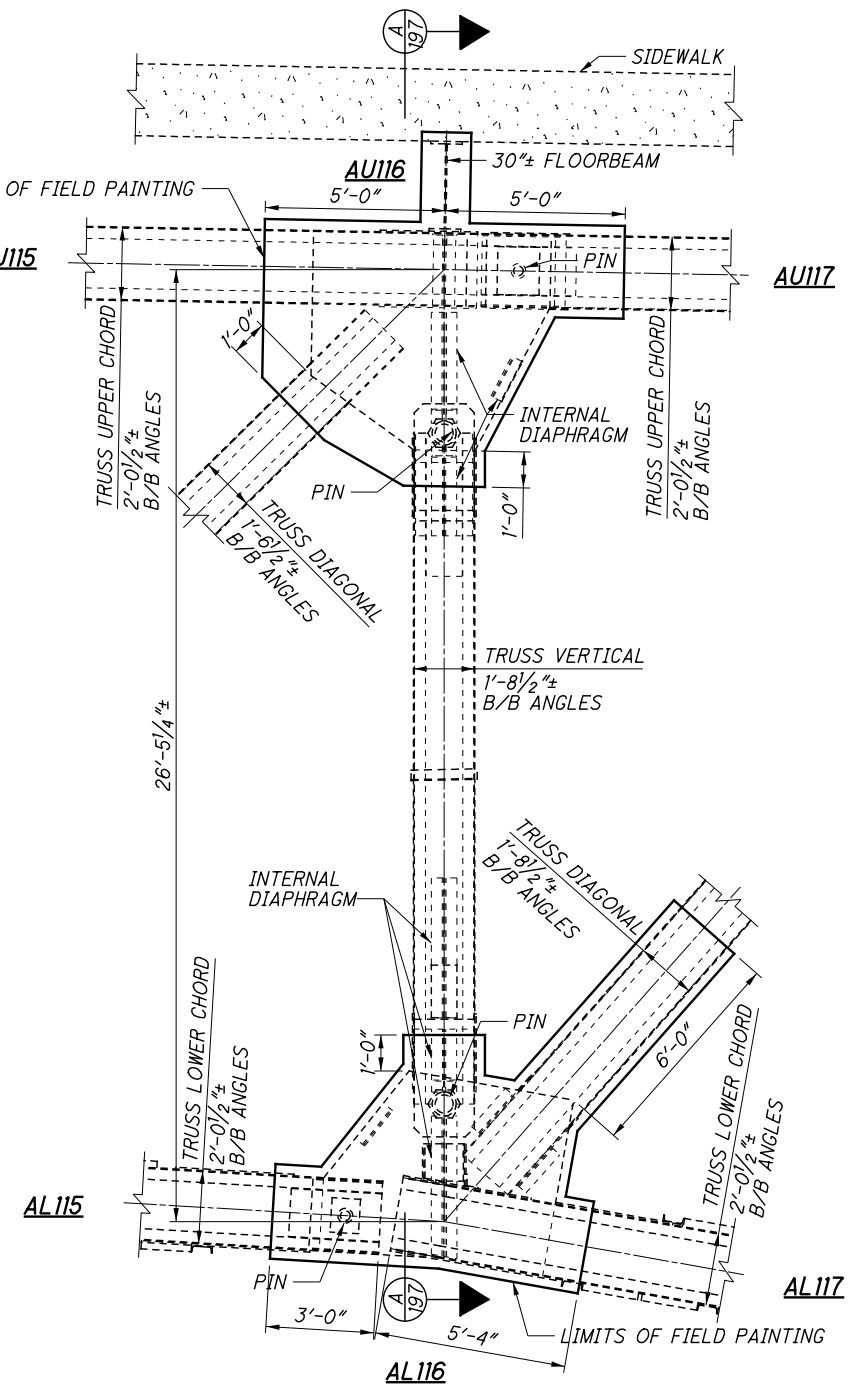
**TYPICAL MAIN TRUSS UPPER CHORD, VERTICAL AND DIAGONAL CONFIGURATION**



**VIEW C-C**



**SECTION B-B**



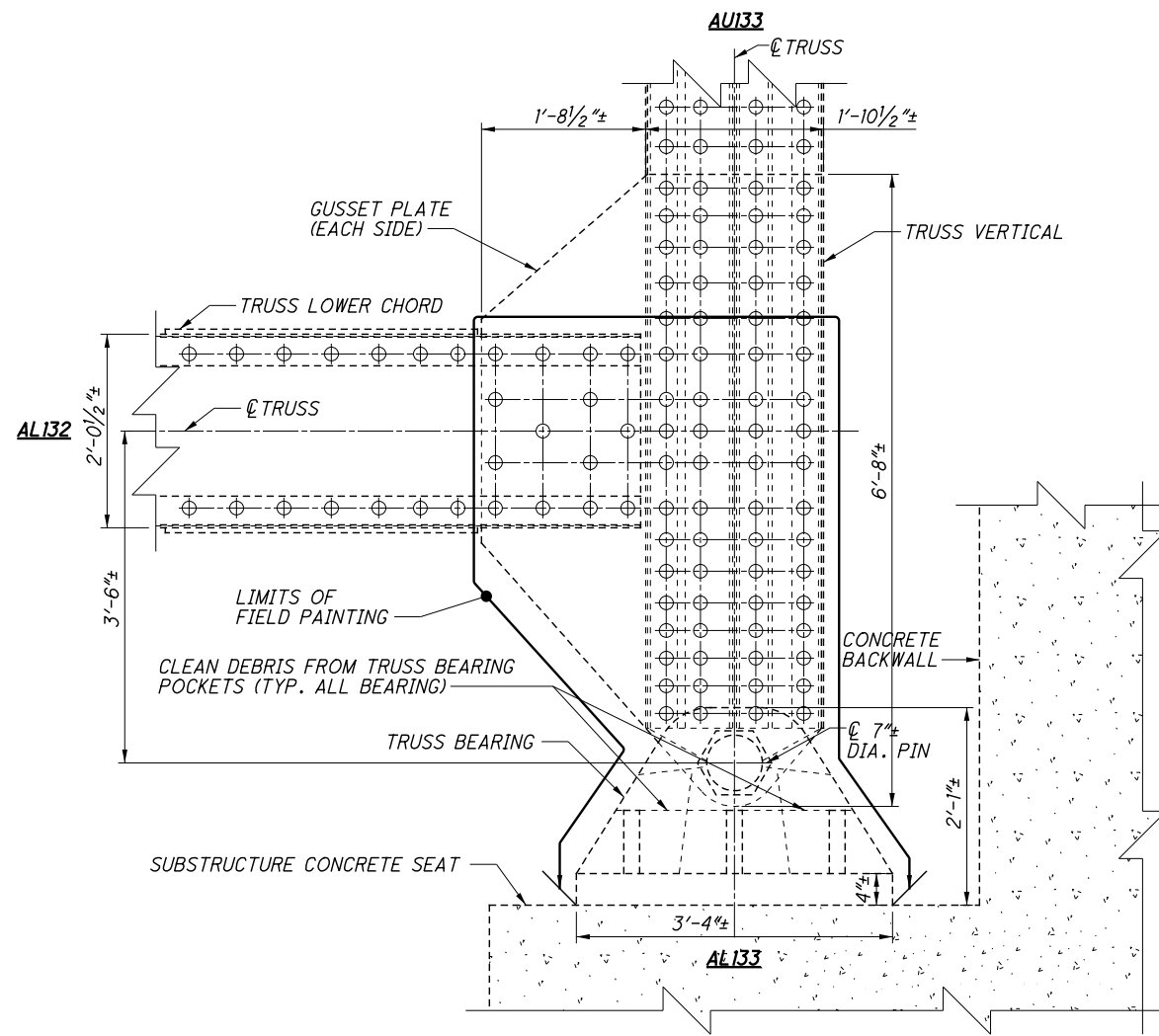
**TRUSS ELEVATION**

(SPAN 17, TRUSS A, PANEL POINT 116 LOOKING NORTH)

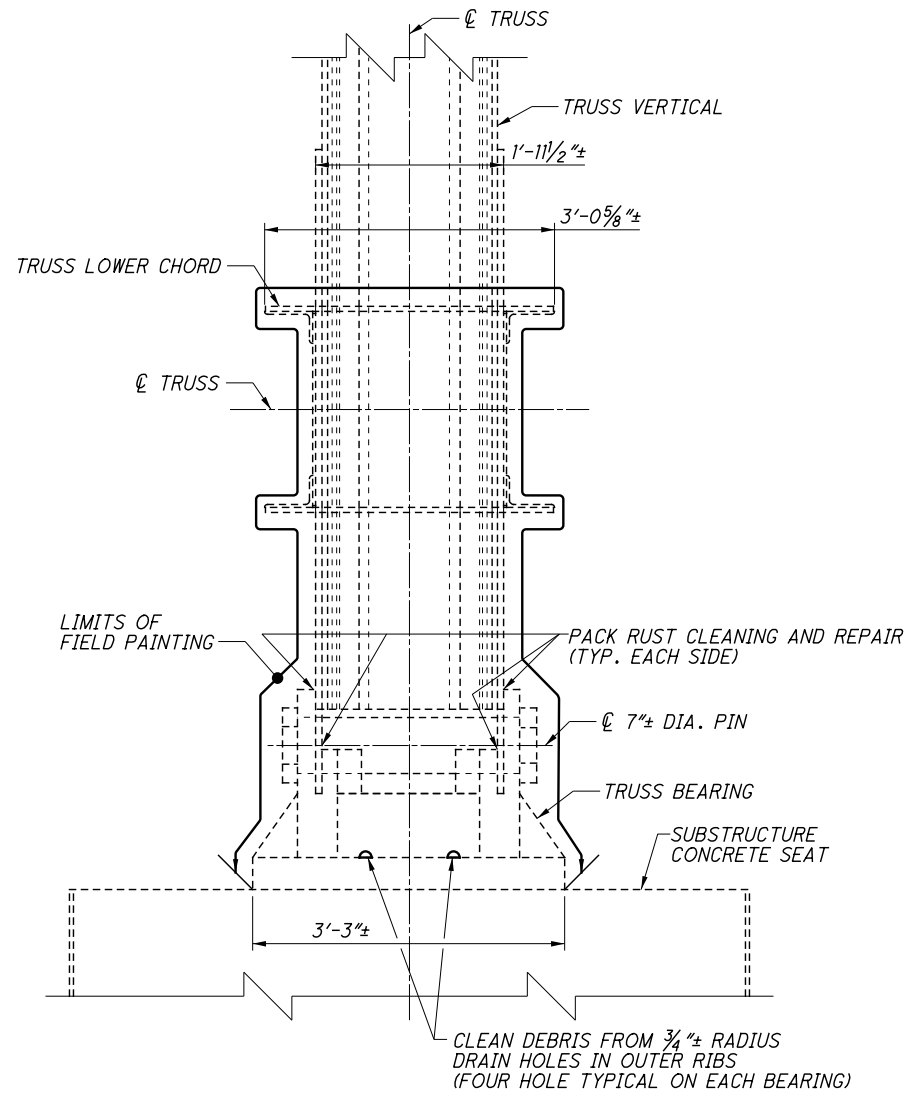
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- FIELD PAINTING** INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM. PAINTING WILL BE APPLIED TO ALL SURFACES OF THE STEELWORK SHOWN WITHIN THESE LIMITS.
- ROADWAY STRINGERS** ARE NOT DESIGNATED FOR PAINTING.
- REPAIR LOCATION:** SEE TRUSS ELEVATION SHEET 101/238.

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**SPAN 20, TRUSS A, PANEL POINT AL133 SOUTH ELEVATION**  
 (SPAN 20, TRUSSES B AND C, PANEL POINT L133 SIMILAR)



**END VIEW**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**REPAIR LOCATION:** SEE FRAMING PLAN SHEET 114/238.

**BEARING PACK RUST REPAIRS** SHALL BE PERFORMED IN SPAN 20 AT PANEL POINT 133, TRUSSES A, B AND C. ADDITIONALLY, WORK WILL BE PERFORMED IN SPAN 20 AT PANEL POINT 127, TRUSSES A AND B.

**FIELD PAINTING** AT PANEL POINT 133 INCLUDES ABRASIVE BLASTING AND FULL 3-COAT OZEU PAINT SYSTEM AS SHOWN IN THE LIMITS OF THESE DETAILS. THE BEARING AREAS AT PANEL POINT 127 ARE TO RECEIVE FIELD TOUCH-UP PAINTING ONLY.

**PACK RUST AND PAINTING REPAIR LOCATIONS:** SEE SHEET 114/238.

**ALL TRUSS BEARINGS** SHALL HAVE DEBRIS CLEANING.

**TRUSS BEARING DEBRIS CLEANING:** SEE ITEM SPECIAL - STRUCTURES: CLEANING DRAIN HOLES AND CLEANING DEBRIS FROM TRUSS BEARINGS GENERAL NOTE SHEET 13/238.

**TRUSS BEARING PACK RUST REMOVAL:** SEE ITEM SPECIAL - STRUCTURES: PACK RUST REPAIRS AND CAULKING NOTE ON SHEET 12/238.

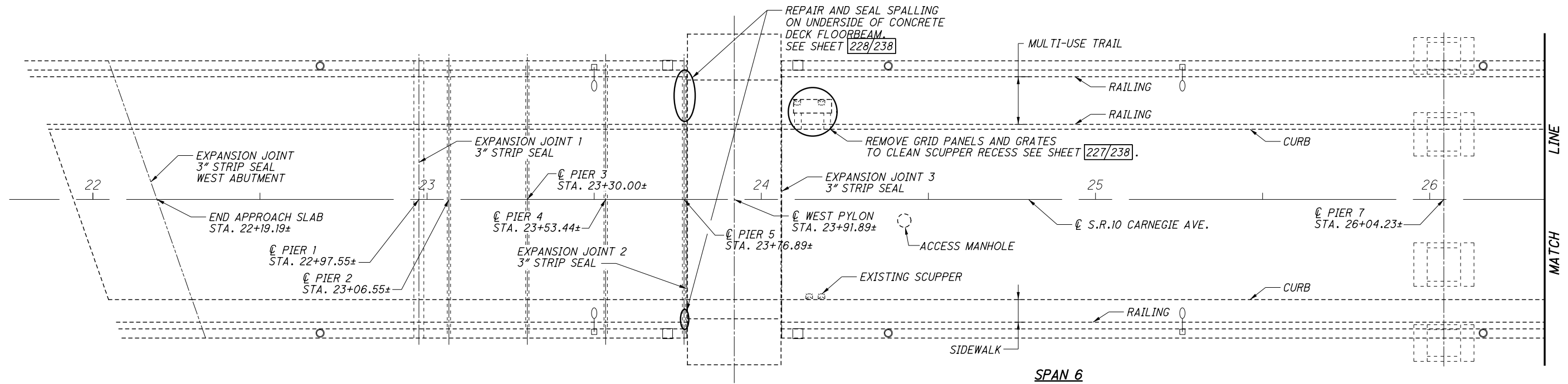
**SYSTEM OZEU PAINTING NOTES:** SEE GENERAL NOTE SHEET 11/238.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.

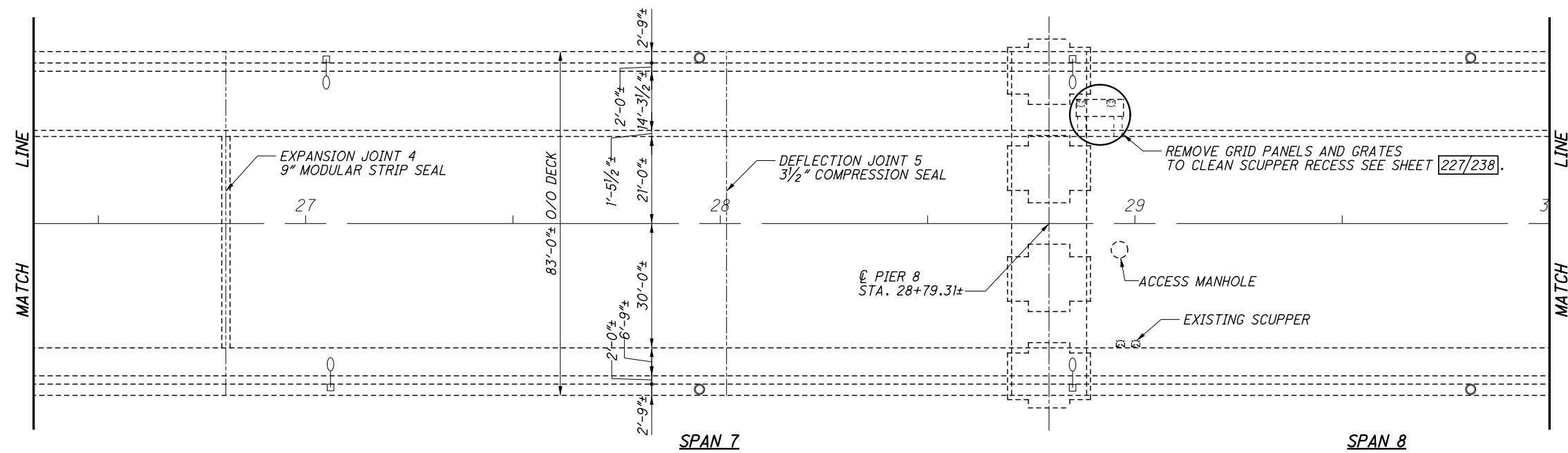
**DETERIORATED RIVET REPLACEMENT WITH BOLT DETAILS** AT PANEL POINT 133 NOT SHOWN. SEE SHEET 158/238.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	STRUCTURE FILE NUMBER 1801503
DRAWN JSB	REVISIONS DAP
DESIGNED KAK	CHECKED DAP
TRUSS BEARING - FIELD PAINTING AND REPAIR DETAILS BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	198/238 258 308

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DECK PLAN



DECK PLAN

LEGEND

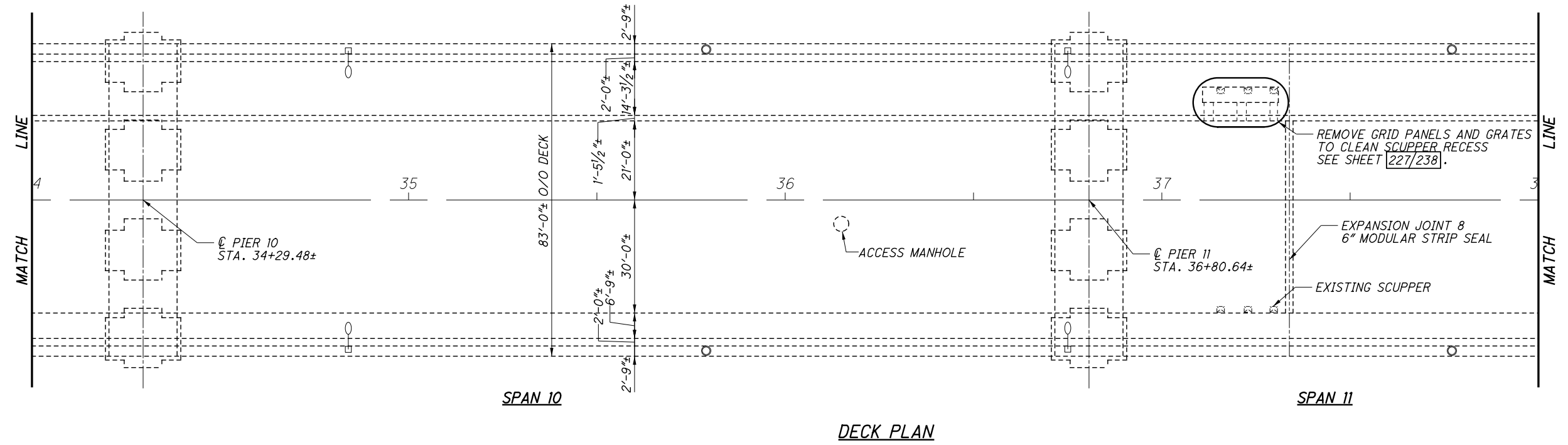
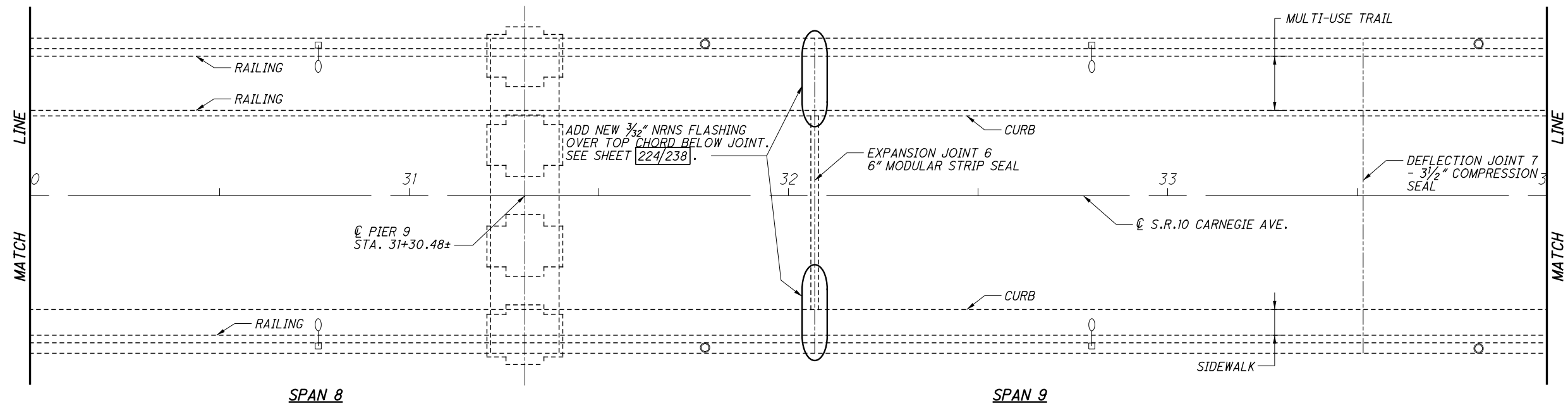
- DECORATIVE LIGHT POST
- LIGHT POLE AND MAST ARM

NOTES

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>DECK PLAN - 1</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DATE: 1/30/18 REVIEWED BY: DLR STRUCTURE FILE NUMBER: 1801503</p>	<p>DESIGNED BY: DAP CHECKED BY: KAK</p>	<p>DRAWN BY: USB REVISED BY:</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
<p>199/238</p>	<p>259 308</p>				

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- LEGEND**
- DECORATIVE LIGHT POST
  - LIGHT POLE AND MAST ARM

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

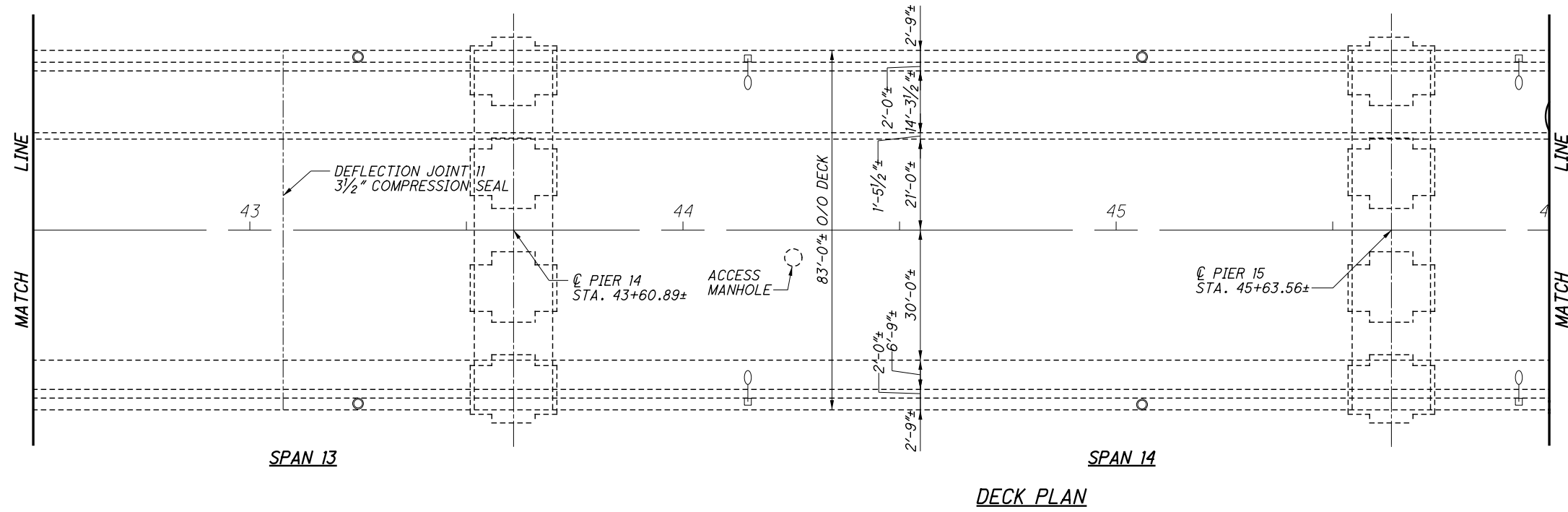
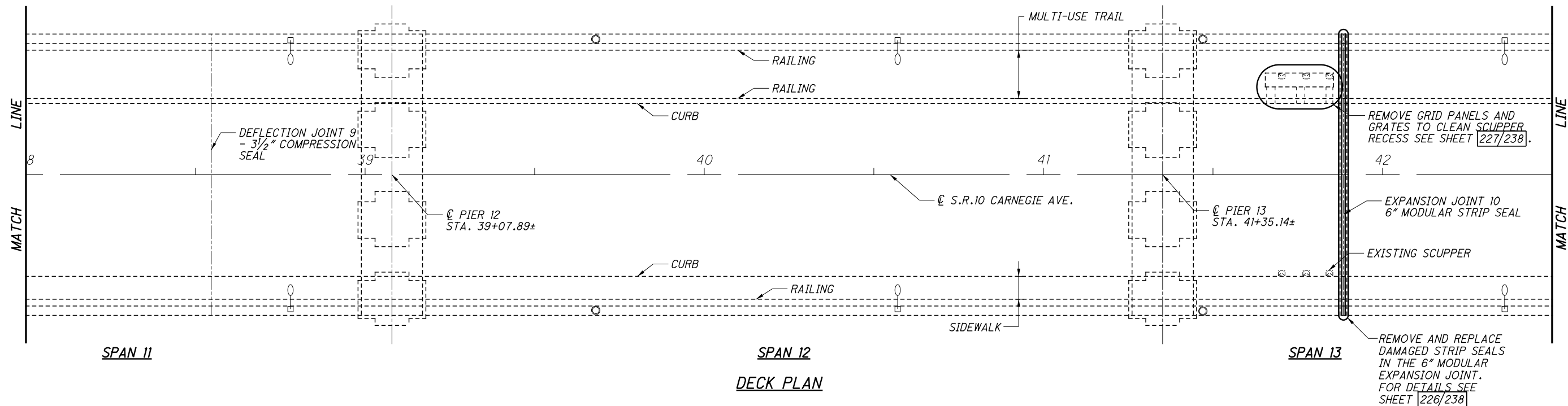


<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>DECK PLAN - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DATE 1/30/18</p> <p>REVIEWED DLR</p> <p>DRAWN JSB</p> <p>DESIGNED DAP</p> <p>CHECKED KAK</p>	<p>STRUCTURE FILE NUMBER 1801503</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
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200/238

260  
308

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- LEGEND**
- DECORATIVE LIGHT POST
  - LIGHT POLE AND MAST ARM

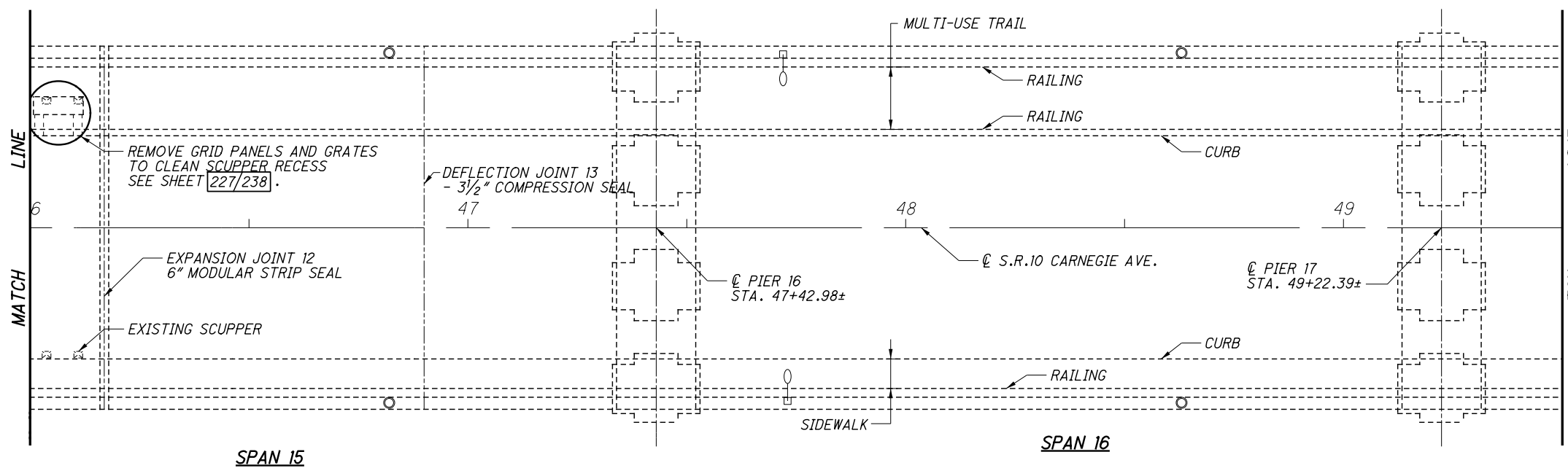
**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

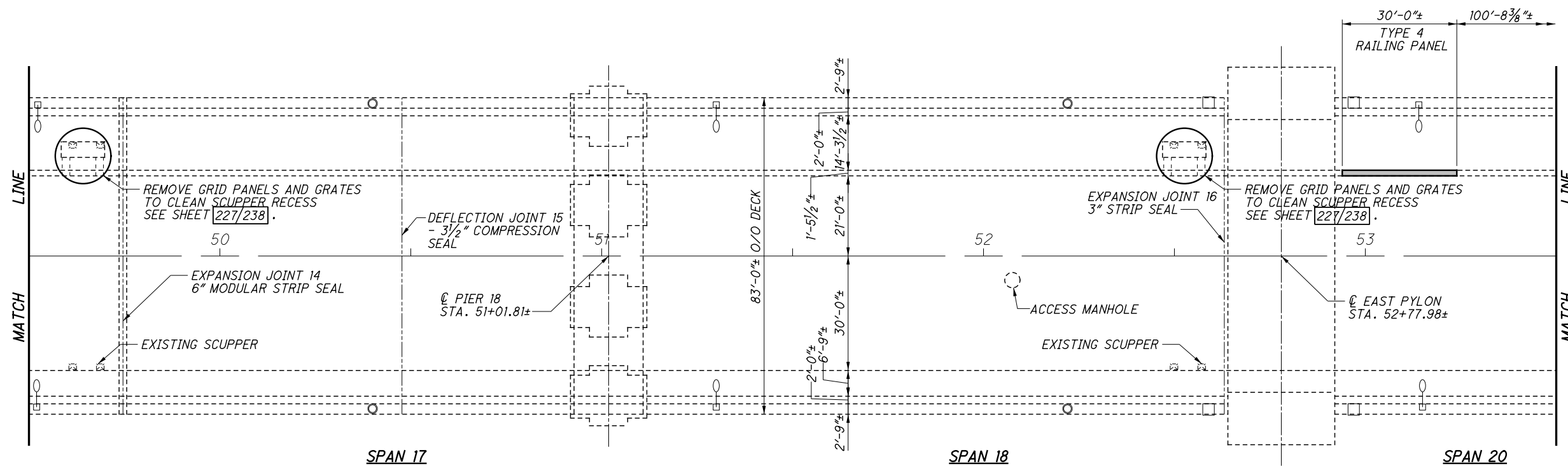


<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>DECK PLAN - 3</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DATE 1/30/18 REVIEWED DLR DRAWN JSB DESIGNED DAP CHECKED KAK</p>	<p>STRUCTURE FILE NUMBER 1801503</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
201/238	261/308			

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DECK PLAN



DECK PLAN

LEGEND

- DECORATIVE LIGHT POST
- LIGHT POLE AND MAST ARM

■ INSIDE RAILING PANEL REMOVED AND REPLACED. (REMOVAL DURING PRE-PHASE 1A). THE RAILING SECTION IS INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN FOR PAYMENT.

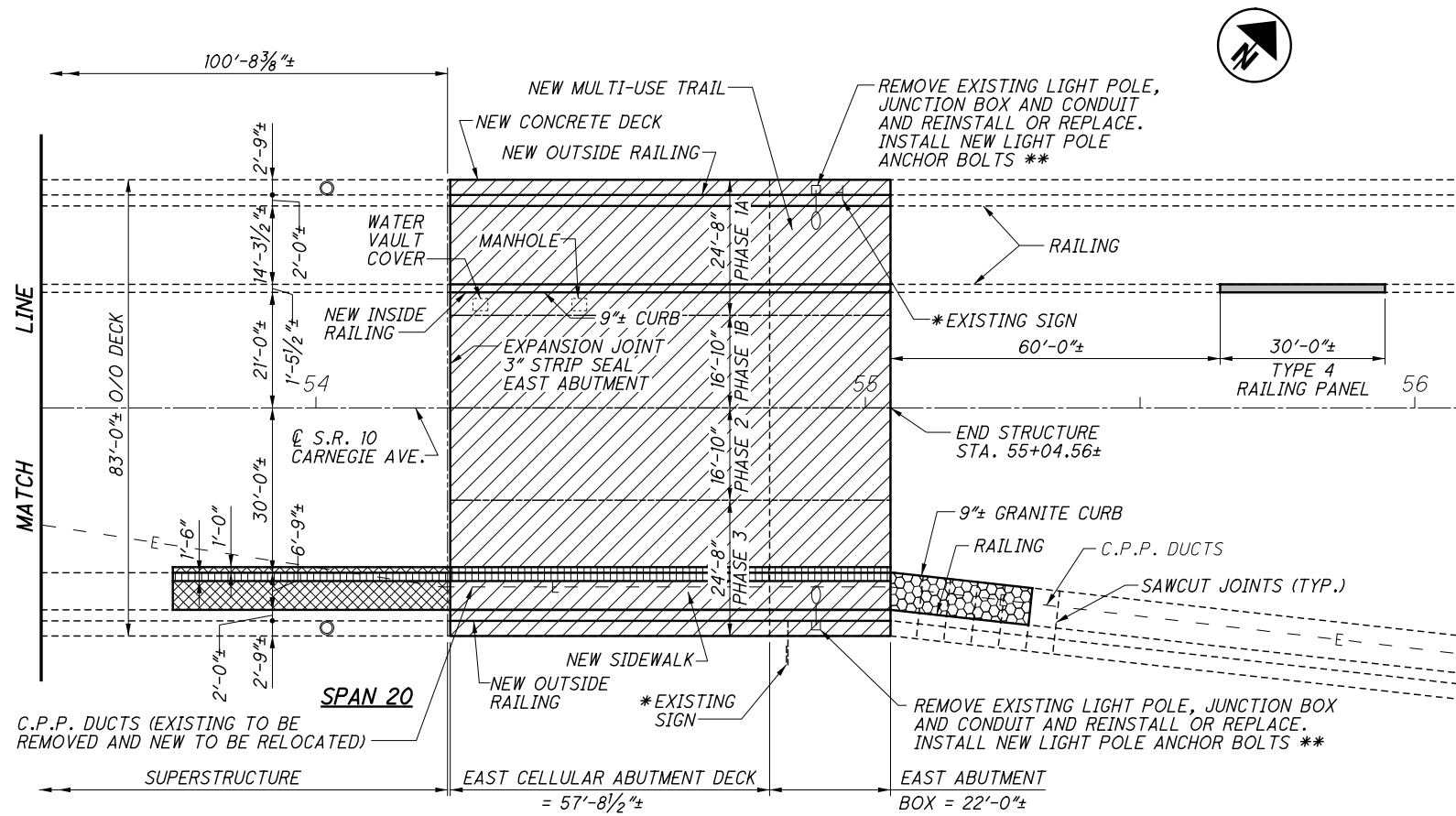
NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.











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**DECK PLAN**

**LEGEND**

-  LIMITS OF DECK WEARING SURFACE REMOVAL AND REPLACEMENT. (REMOVAL DURING PRE-PHASE 1A)
-  LIMITS OF CURB AND PARTIAL SIDEWALK REMOVAL AND REPLACEMENT ON SUPERSTRUCTURE, EAST ABUTMENT DECK AND ABUTMENT BOX. (REMOVAL DURING PRE-PHASE 1A)
-  LIMITS OF SIDEWALK WEARING SURFACE REMOVAL AND REPLACEMENT. (REMOVAL DURING PRE-PHASE 1A)
-  LIMITS OF COMPLETE DECK REPLACEMENT AT EAST ABUTMENT.
-  LIMITS OF SIDEWALK AND GRANITE CURB REMOVAL AND REPLACEMENT (SEE ROADWAY PLANS) (REMOVAL DURING PRE-PHASE 1A)
-  INSIDE RAILING PANEL REMOVED AND REPLACED. (REMOVAL DURING PRE-PHASE 1A). THE RAILING SECTION IS INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN FOR PAYMENT.
-  DECORATIVE LIGHT POST
-  LIGHT POLE AND MAST ARM
- \* TO BE REMOVED AND REINSTALLED IN NEW LOCATION. SEE TRAFFIC CONTROL PLANS.
- \*\* SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.

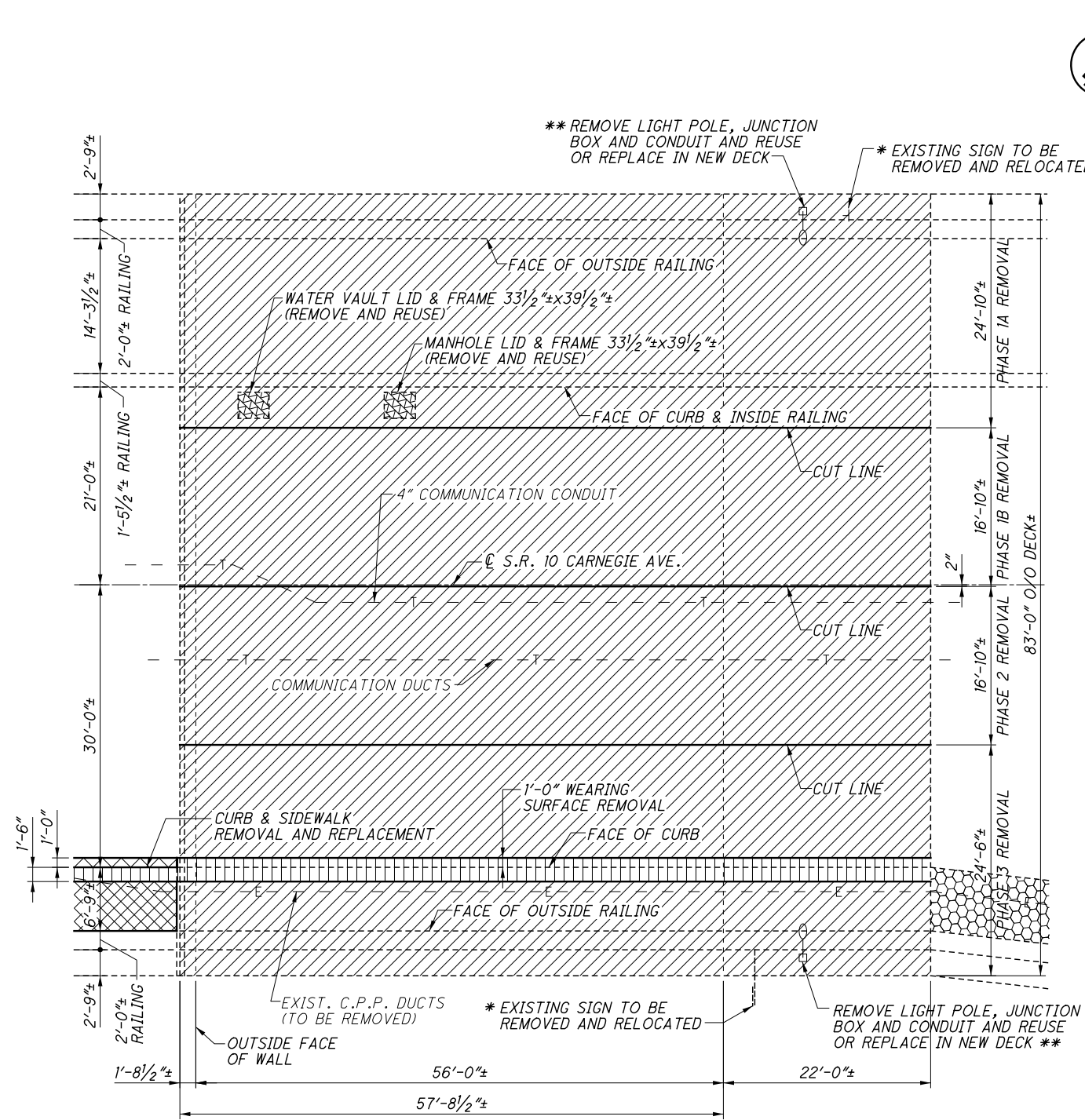
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- EAST ABUTMENT SLAB PLANS:** SEE SHEETS [204/238] THROUGH [222/238].
- TYPE 4 RAILING DETAILS:** SEE SHEET [223/238].
- NOTATION:** C.P.P. - CLEVELAND PUBLIC POWER.

<p><b>CUY-10-16.13</b> PID No. 96986</p>	<p><b>DECK PLAN - 5</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>DESIGNED: BLN CHECKED: dnt</p>	<p>DRAWN: USB REVISED:</p>	<p>REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503</p>	<p>DATE: 1/30/18</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
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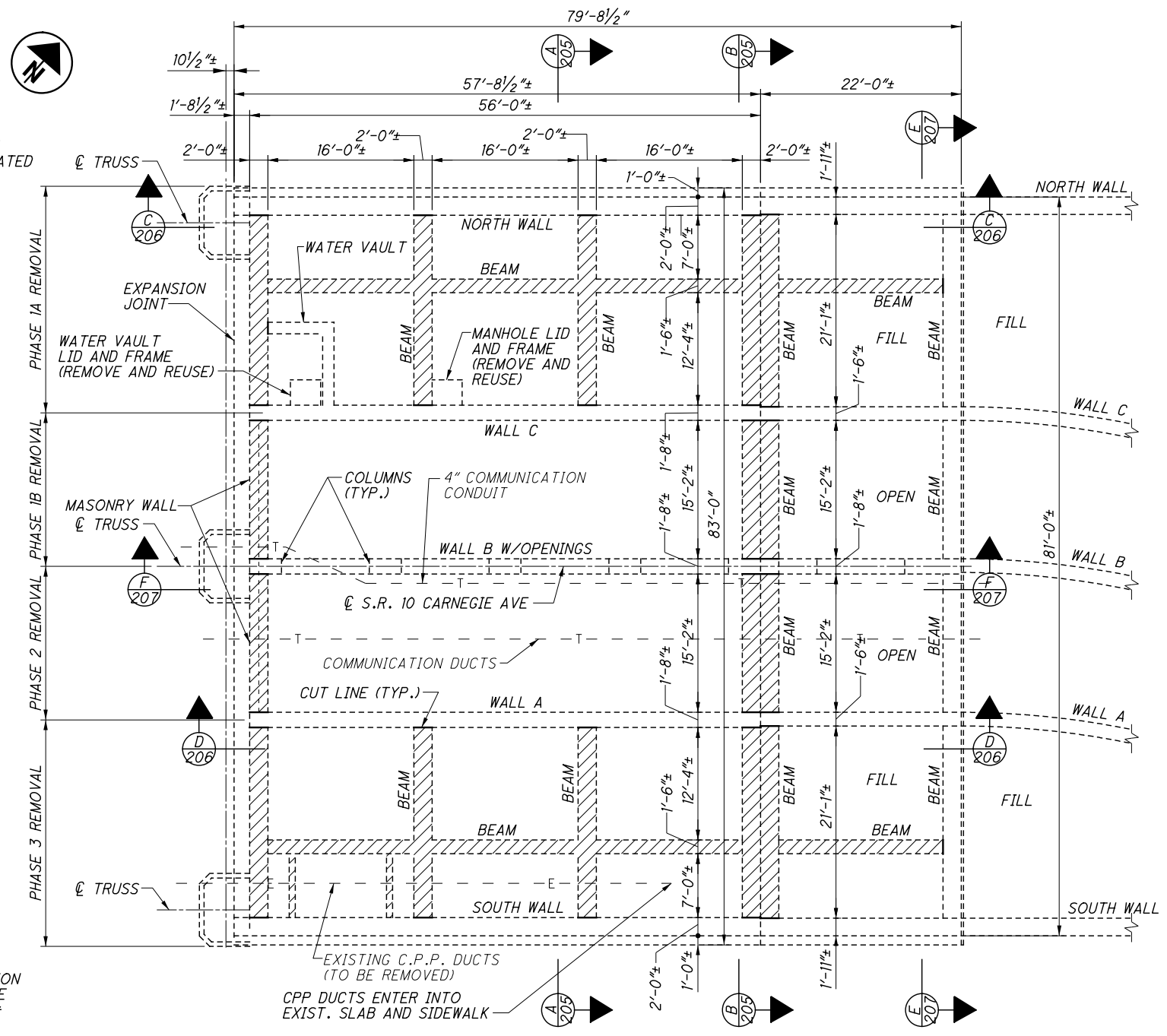
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**EAST CELLULAR ABUTMENT AND EAST ABUTMENT BOX SLAB PLAN**

**LEGEND**

- INDICATES MATERIALS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN, SEE GENERAL NOTE SHEET 7/238.
- INDICATES MATERIALS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN IN PRE-PHASE 1A, SEE GENERAL NOTE SHEET 7/238.
- INDICATES MATERIALS TO BE REMOVED PER ITEM 202 - REMOVAL MISC.: REMOVAL, STORAGE AND REINSTALLATION OF EXISTING MANHOLE LID AND FRAME. SEE GENERAL NOTE SHEET 7/238.
- INDICATES SIDEWALK WEARING SURFACE TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN IN PRE-PHASE 1A, SEE GENERAL NOTE SHEET 7/238.
- INDICATES DECK WEARING SURFACE TO BE REMOVED PER ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN DURING PRE-PHASE 1A. SEE GENERAL NOTE SHEET 13/238.
- INDICATES LIMITS OF SIDEWALK AND GRANITE CURB REMOVAL DURING PRE-PHASE 1A (SEE ROADWAY PLANS).
- LIGHT POLE AND MAST ARM
- \* TO BE REMOVED AND REINSTALLED IN NEW LOCATION. SEE TRAFFIC CONTROL PLANS.
- \*\* SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.



**EAST CELLULAR ABUTMENT AND EAST ABUTMENT BOX FRAMING PLAN  
(DIRECTLY BELOW DECK SLAB)**

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- REMOVAL** OF THE EAST ABUTMENT SLAB IS TO THE BOTTOM OF THE EXISTING 12" SLAB UNLESS DETAILS SHOW OTHERWISE.
- NOTATION:** C.P.P. - CLEVELAND PUBLIC POWER.
- EAST CELLULAR ABUTMENT DECK REMOVAL AND RECONSTRUCTION:** SEE GENERAL NOTE SHEET 8/238.
- PHASE CONSTRUCTION DRAWING:** SEE SHEETS 8 THROUGH 10.
- TRAFFIC CONTROL PLANS:** SEE SHEETS 22 THROUGH 24.
- LIGHTING PLANS:** SEE SHEETS 25 THROUGH 32.
- C.P.P. ELECTRICAL DUCT - RELOCATION:** SEE SHEETS 33 THROUGH 60.

**RICHLAND ENGINEERING LIMITED**  
29 NORTH PARK STREET  
MANSFIELD, OHIO 44902

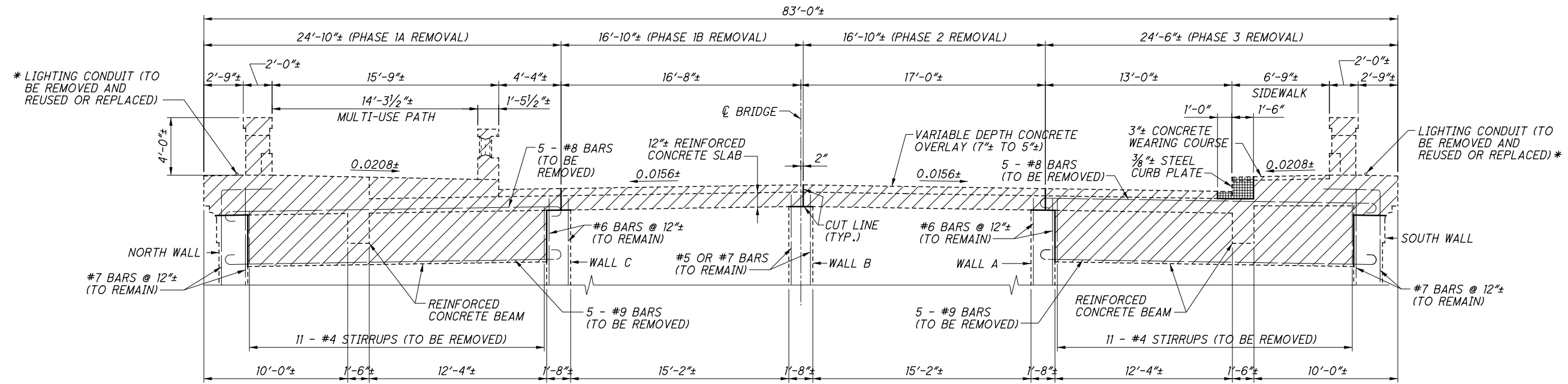
**DATE** 1/30/18  
**REVIEWED** DLR  
**DESIGNED** BLN  
**CHECKED** dnt  
**DRAWN** JSB  
**STRUCTURE FILE NUMBER** 1801503

**EAST ABUTMENT SLAB REMOVAL PLAN**  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

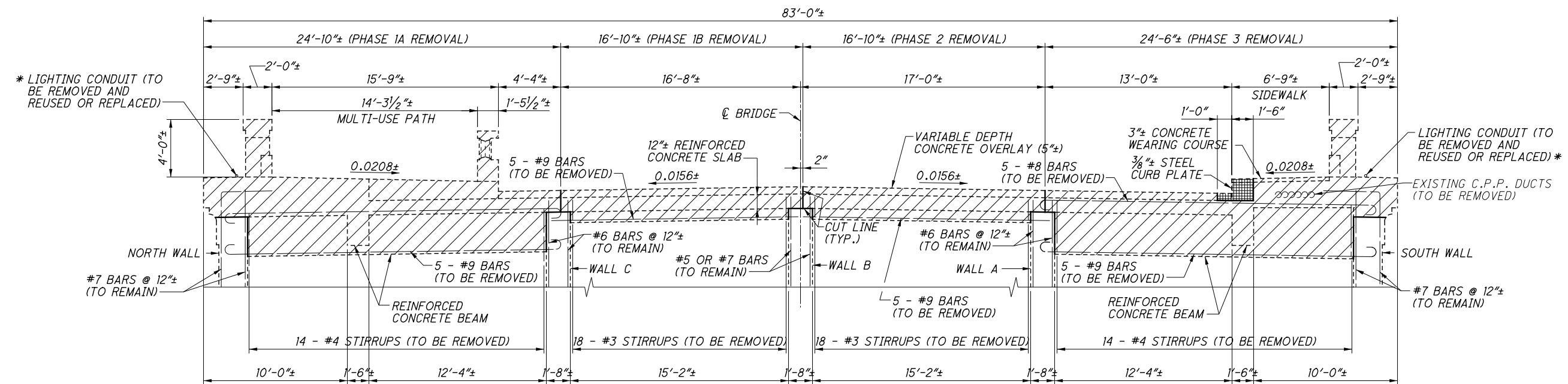
**CUY-10-16.13**  
PID No. 96986

204/238  
264  
308

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SECTION A-A - EAST CELLULAR ABUTMENT SLAB REMOVAL TRANSVERSE SECTION



SECTION B-B - EAST CELLULAR ABUTMENT SLAB REMOVAL TRANSVERSE SECTION

LEGEND

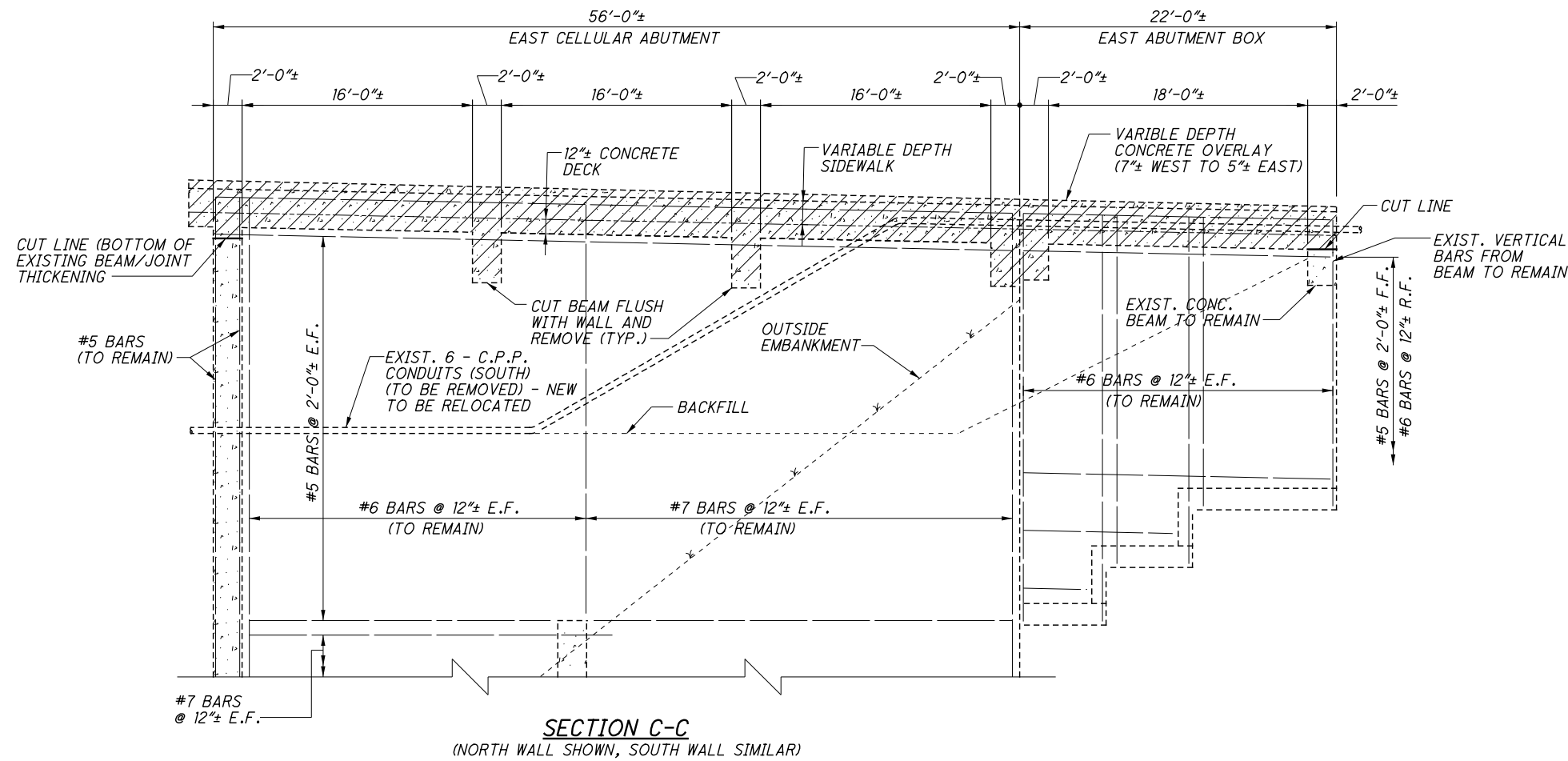
-  INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
-  INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (PRE-PHASE 1A REMOVAL).

\* SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.

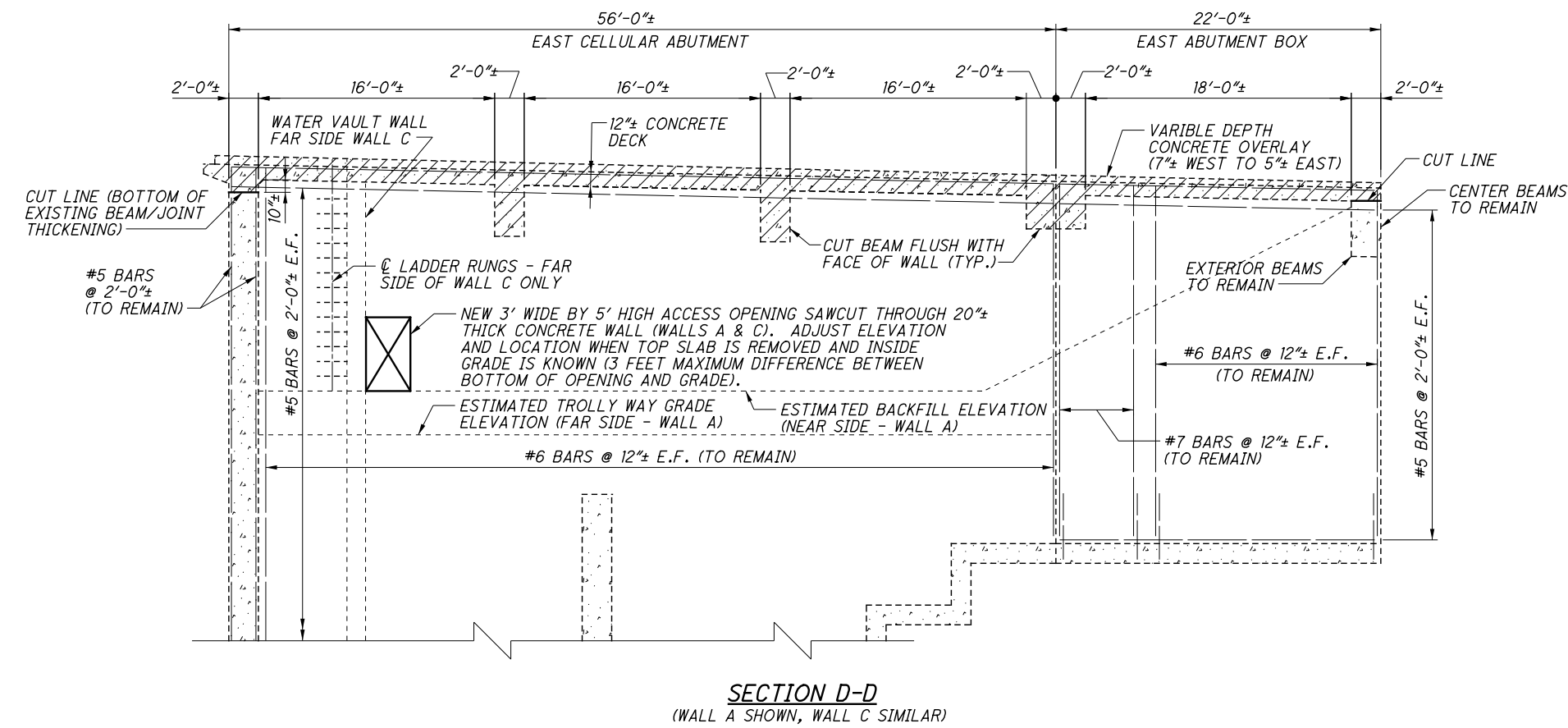
NOTES

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- NOTATION:** C.P.P. - CLEVELAND PUBLIC POWER
- SECTIONS A-A & B-B:** FOR LOCATIONS SEE SHEET 204/238.
- LIGHTING PLANS:** SEE SHEETS 25 THROUGH 32.
- ADDITIONAL NOTES:** SEE SHEET 204/238.

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**SECTION C-C**  
(NORTH WALL SHOWN, SOUTH WALL SIMILAR)



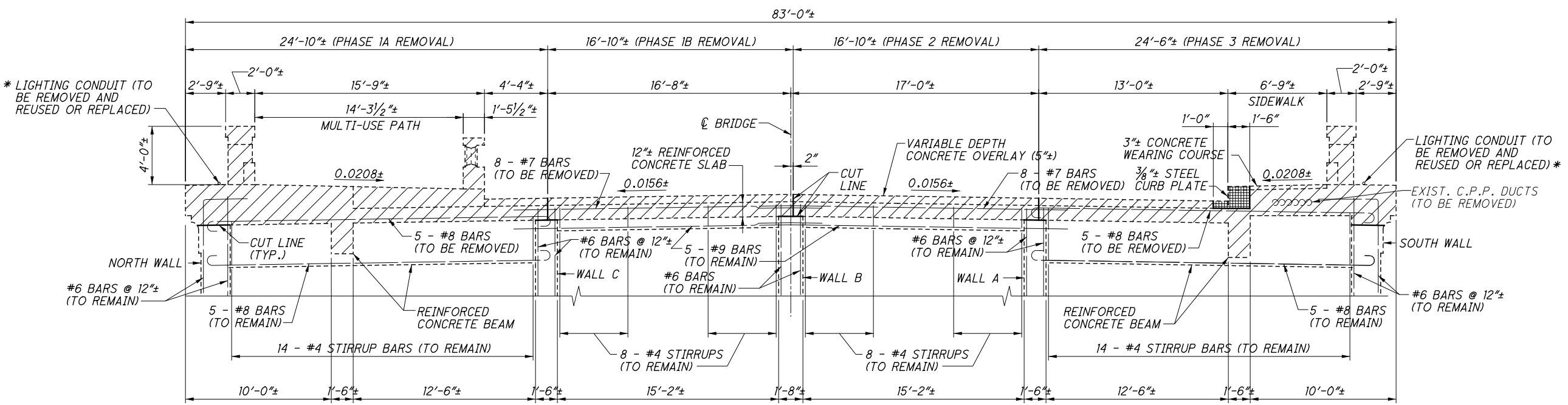
**SECTION D-D**  
(WALL A SHOWN, WALL C SIMILAR)

**LEGEND**

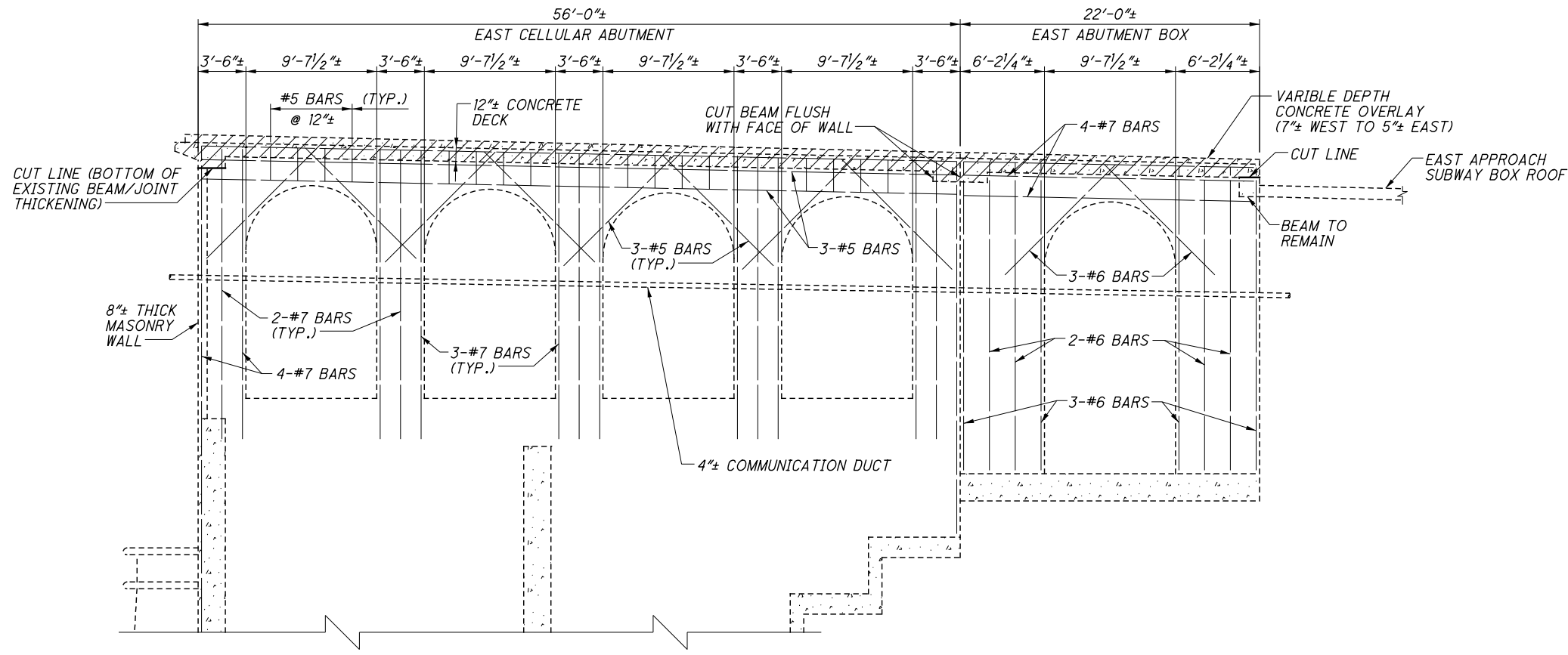
 INDICATES MATERIAL TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- SECTIONS C-C & D-D:** FOR LOCATIONS SEE SHEET 204/238.
- NOTATION:** F.F. - FRONT FACE  
R.F. - REAR FACE  
E.F. - EACH FACE  
C.P.P. - CLEVELAND PUBLIC POWER
- VERTICAL REINFORCING STEEL** EXTENDING INTO THE DECK IS TO REMAIN UNLESS OTHERWISE NOTED.
- CLEVELAND PUBLIC POWER (C.P.P.) DUCT WORK:** SEE REMOVAL AND RELOCATION PLAN SHEETS 33 THROUGH 60.
- ACCESS HOLES** SHALL BE PAID UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- ADDITIONAL NOTES:** SEE SHEET 204/238.



SECTION E-E - EAST ABUTMENT BOX SLAB REMOVAL TRANSVERSE SECTION



SECTION F-F  
(WALL B)  
(ALL VERTICAL REINFORCING STEEL TO REMAIN)

LEGEND

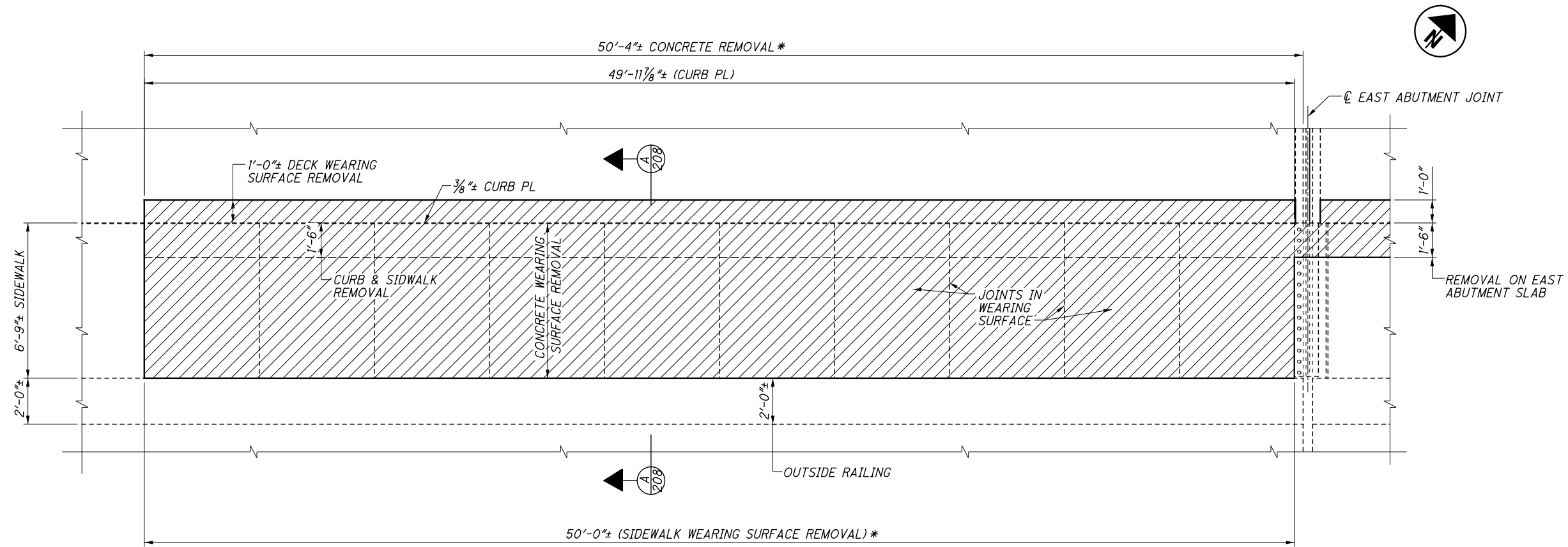
- INDICATES MATERIAL TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- INDICATES MATERIAL TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (PRE-PHASE 1A REMOVAL).
- \* SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.

NOTES

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- SECTIONS E-E & F-F:** FOR LOCATIONS SEE SHEET 204/238.
- NOTATION:** E.F. - EACH FACE  
C.P.P. - CLEVELAND PUBLIC POWER
- VERTICAL REINFORCING STEEL** EXTENDING INTO THE DECK IS TO REMAIN UNLESS OTHERWISE NOTED.
- LIGHTING PLANS:** SEE SHEETS 25 THROUGH 32.
- ADDITIONAL NOTES:** SEE SHEET 204/238.

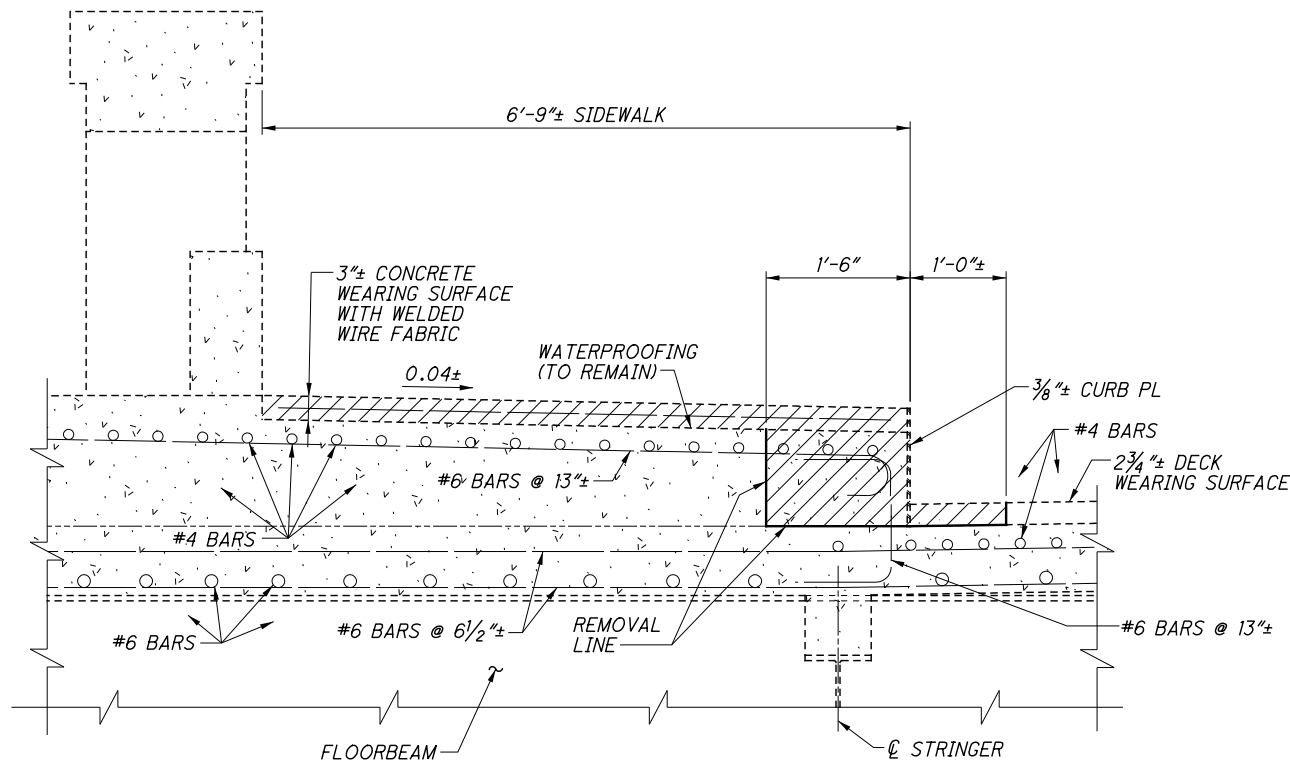
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**PARTIAL SOUTH CURB AND SIDEWALK REMOVAL PLAN**

\* REMOVE CURB, SIDEWALK AND WEARING SURFACE TO THE NEAREST SIDEWALK JOINT 50' FROM THE EAST ABUTMENT EXPANSION JOINT.



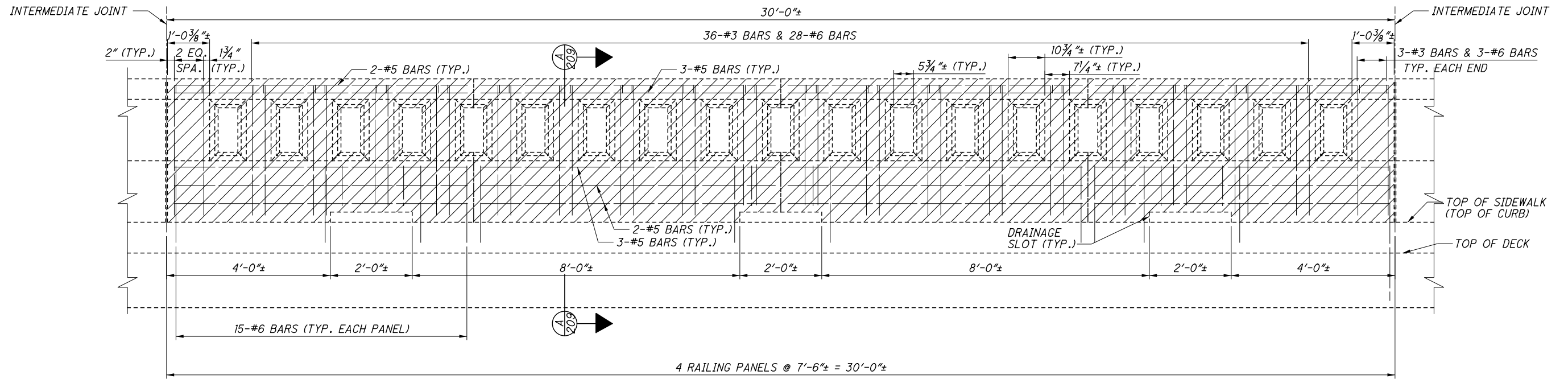
**SECTION A-A**

**LEGEND**

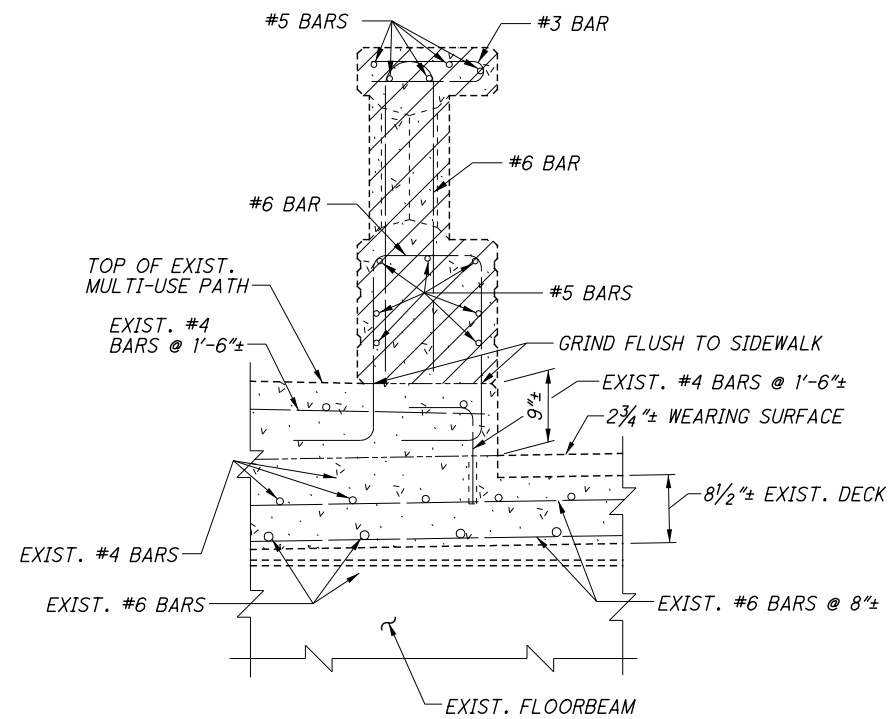
 INDICATES MATERIALS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN, DURING PRE-PHASE 1A FOR MAINTENANCE OF TRAFFIC DURING PHASES 1 AND 2 CONSTRUCTION.

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.



**INSIDE RAILING PANEL TYPE 4**



**SECTION A-A**  
(SUPERSTRUCTURE - SHOWN  
EAST APPROACH - SIMILAR)

**LEGEND**

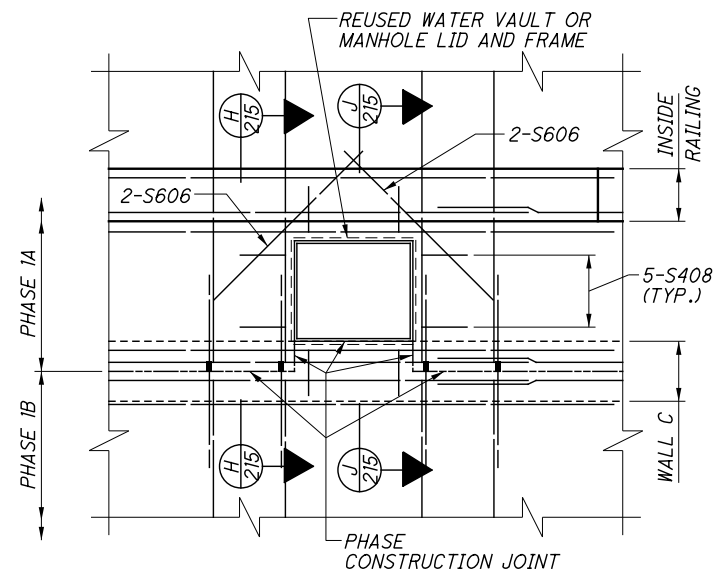
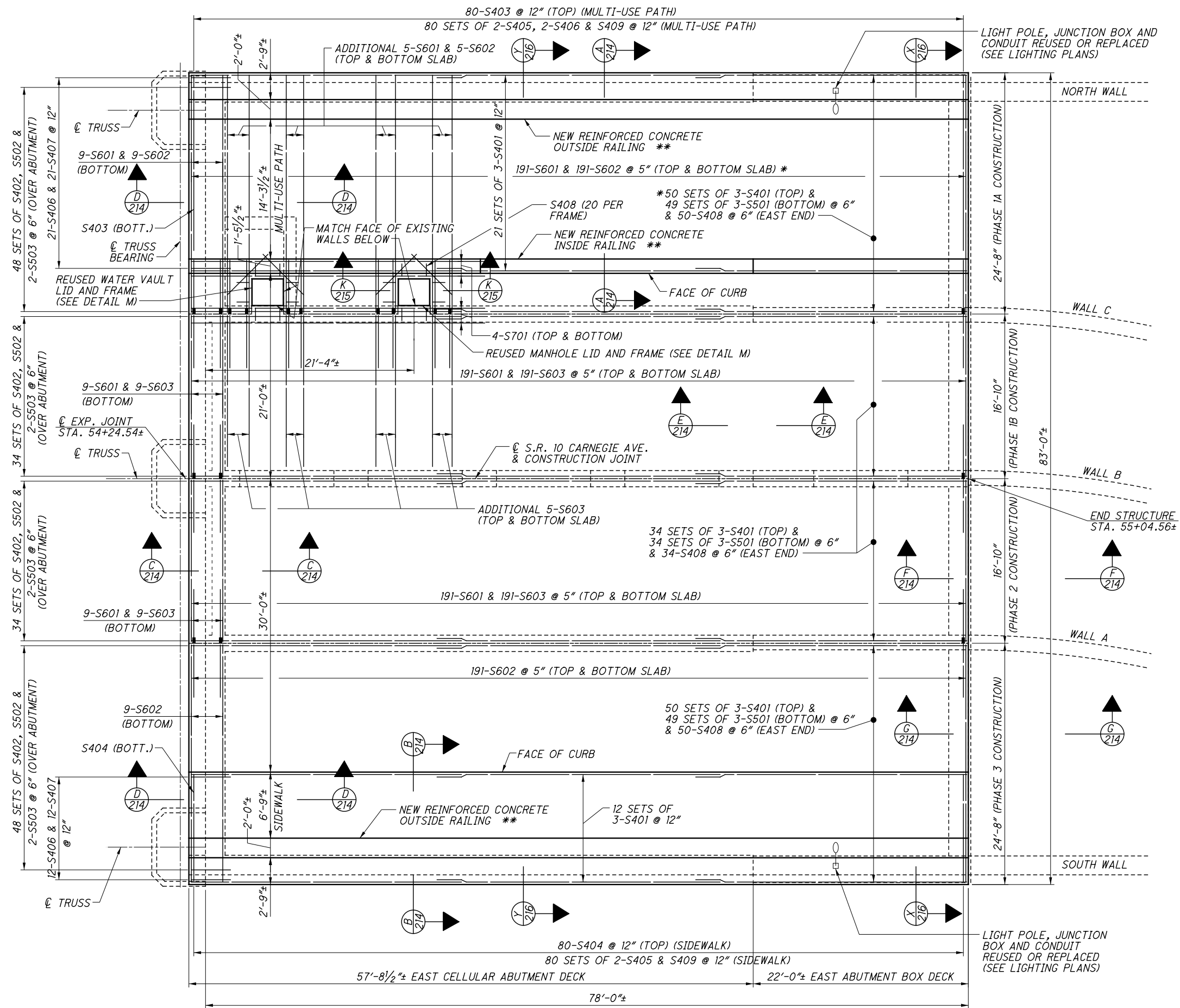
INDICATES MATERIAL TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- RAILING PANEL LOCATIONS:** SEE SHEETS 202/238 & 203/238.
- NEW TYPE 4 RAILING PANEL DETAILS:** SEE SHEET 223/238.

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DETAIL M

LEGEND

- \* FIELD CUT S401 (TOP BARS), S501 (BOTTOM BARS) AND S602 (TOP & BOTTOM BARS) AS NEEDED AROUND WATER VAULT AND MANHOLE LID AND FRAME.
- \*\* FOR REINFORCING STEEL IN NEW OUTSIDE AND INSIDE RAILINGS, SEE RAILING PLAN ON SHEET 218/238.

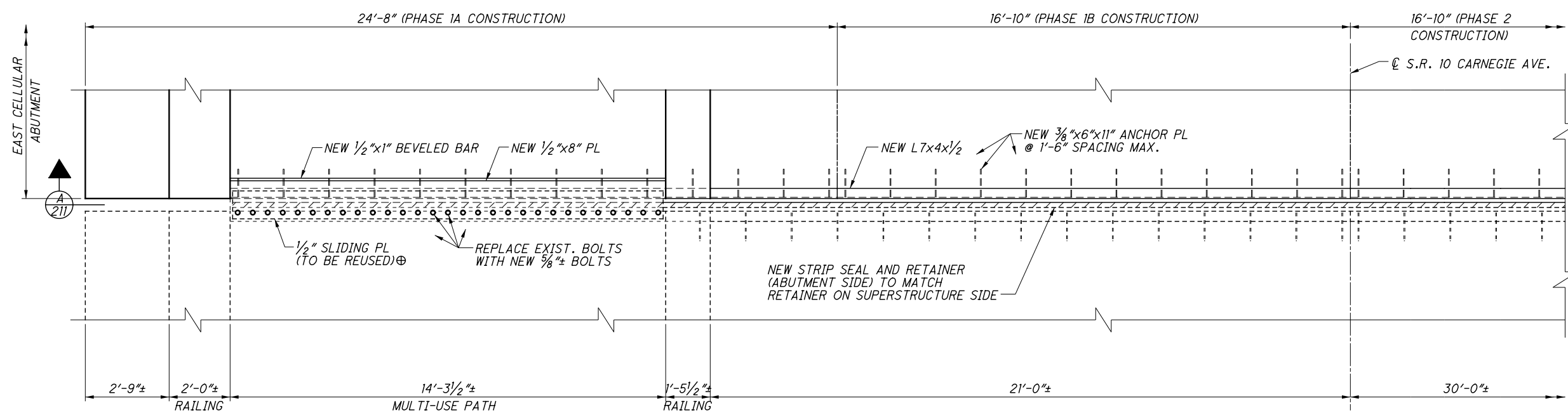
NOTES

- EAST CELLULAR ABUTMENT DECK REMOVAL AND RECONSTRUCTION:** SEE GENERAL NOTE SHEET 8/238.
- EAST ABUTMENT SLAB TRANSVERSE SECTION:** SEE SHEET 216/238.
- RAILING PLAN:** SEE SHEET 218/238.
- EXPANSION JOINT DETAILS:** SEE SHEETS 211/238 THRU 212/238.
- LIGHTING PLANS:** SEE SHEETS 25 THROUGH 32.
- MAINTENANCE OF TRAFFIC DURING PHASE CONSTRUCTION:** SEE SHEETS 4 THROUGH 10.
- ADDITIONAL NOTES:** SEE SHEET 216/238.

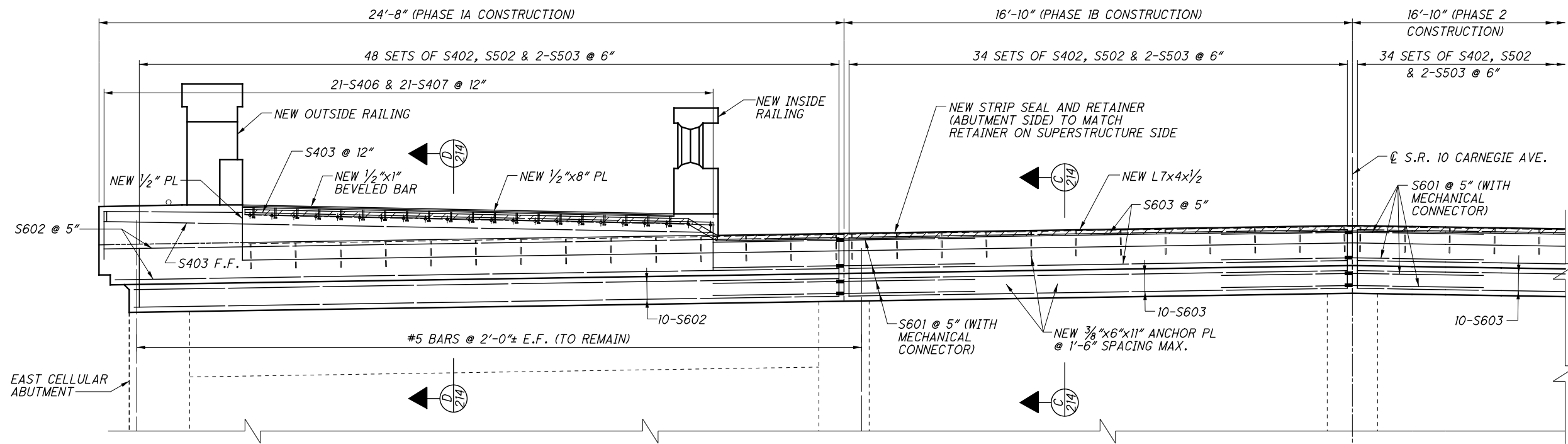
SLAB PLAN

<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DESIGNED: BLN CHECKED: dnt DRAWN: USB REVISED:	DATE: 1/30/18 REVIEWED: DLR STRUCTURE FILE NUMBER: 1801503
<b>EAST ABUTMENT SLAB PLAN</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	
210/238 (270/308)	

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**EAST ABUTMENT JOINT PLAN**



**SECTION A-A**

**LEGEND**

⊕ - GRIND A 1/2" HORIZONTAL x 1/4" VERTICAL BEVEL AT THE EXPOSED EDGE OF THE EXISTING 1/2" SLIDING PLATE

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

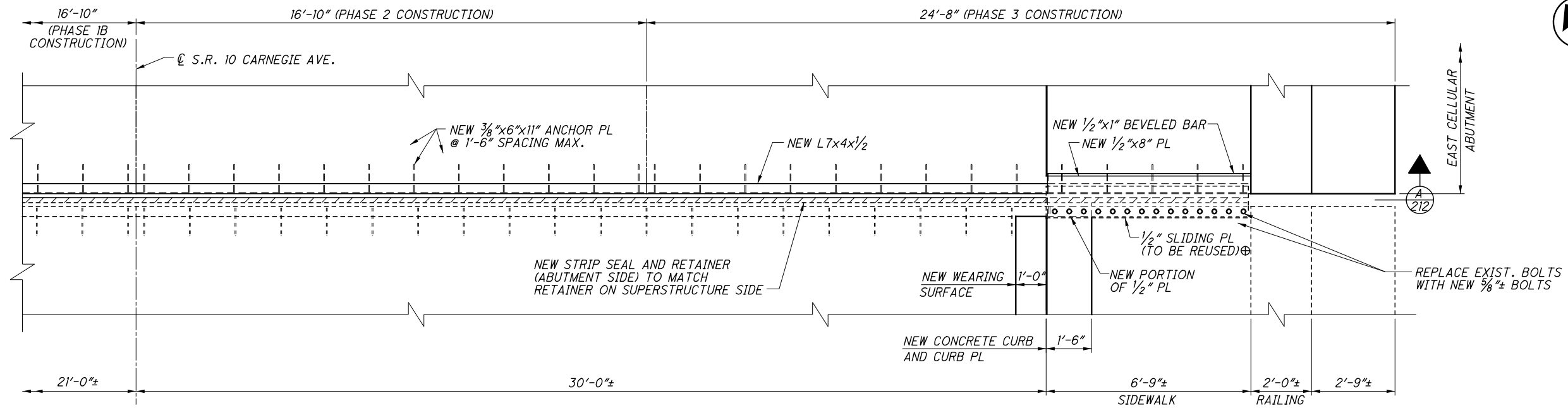
**GRINDING STEEL:** GRINDING OF EXISTING 1/2" STEEL PLATES WILL BE INCLUDED UNDER PAYMENT FOR ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN.

**ADDITIONAL NOTES AND DETAILS:** SEE STANDARD DRAWING EXJ-4-87, REVISED 1-19-18.

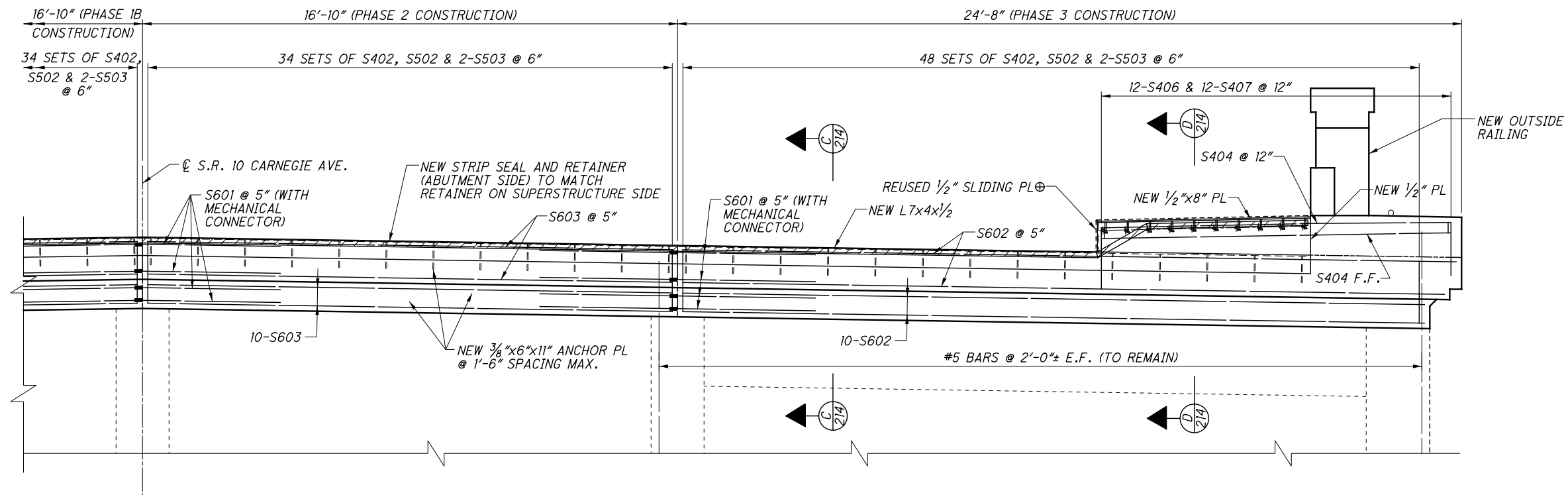
**ADDITIONAL NOTES:** SEE SHEET 204/238.



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**EAST ABUTMENT JOINT PLAN**



**SECTION A-A**

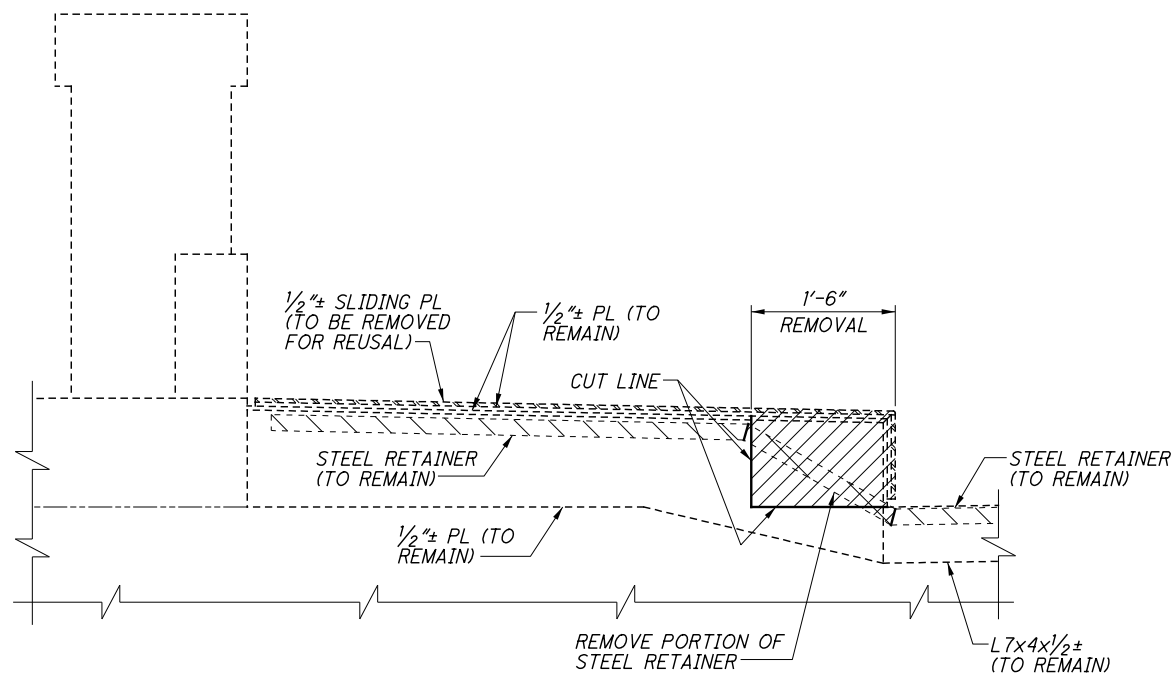
**LEGEND**

⊕ - GRIND A 1/2" HORIZONTAL x 1/4" VERTICAL BEVEL AT THE EXPOSED EDGE OF THE EXISTING 1/2" SLIDING PLATE

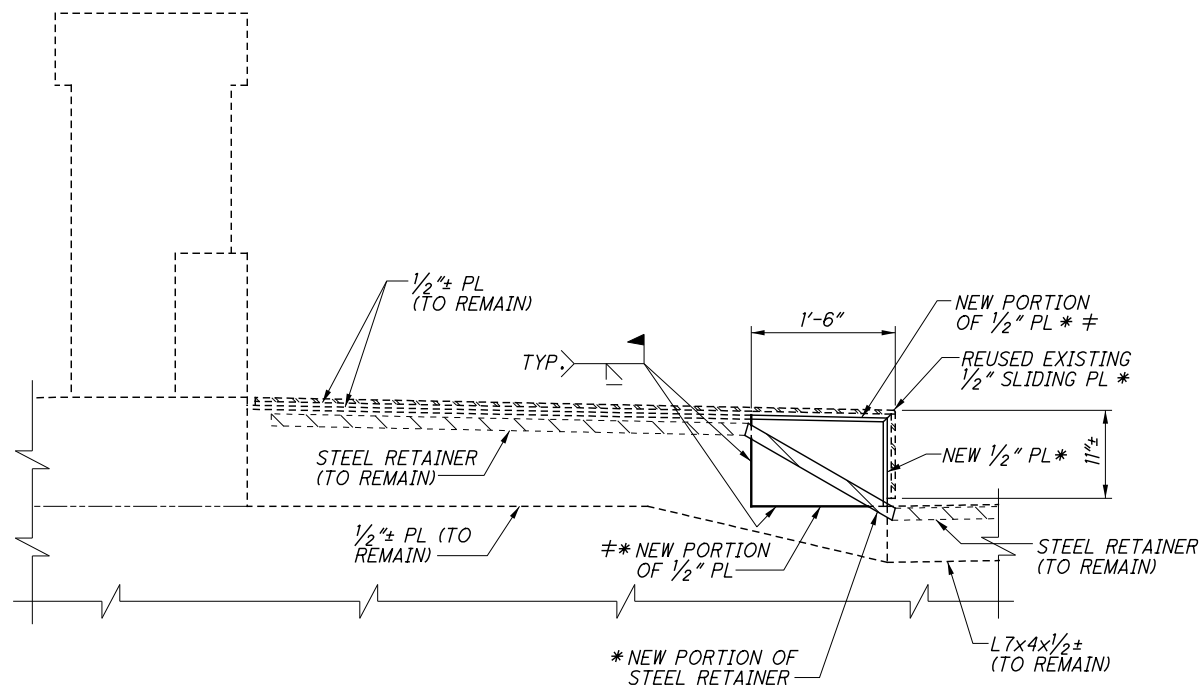
**NOTES**

**ADDITIONAL NOTES:** SEE SHEET 211/238.

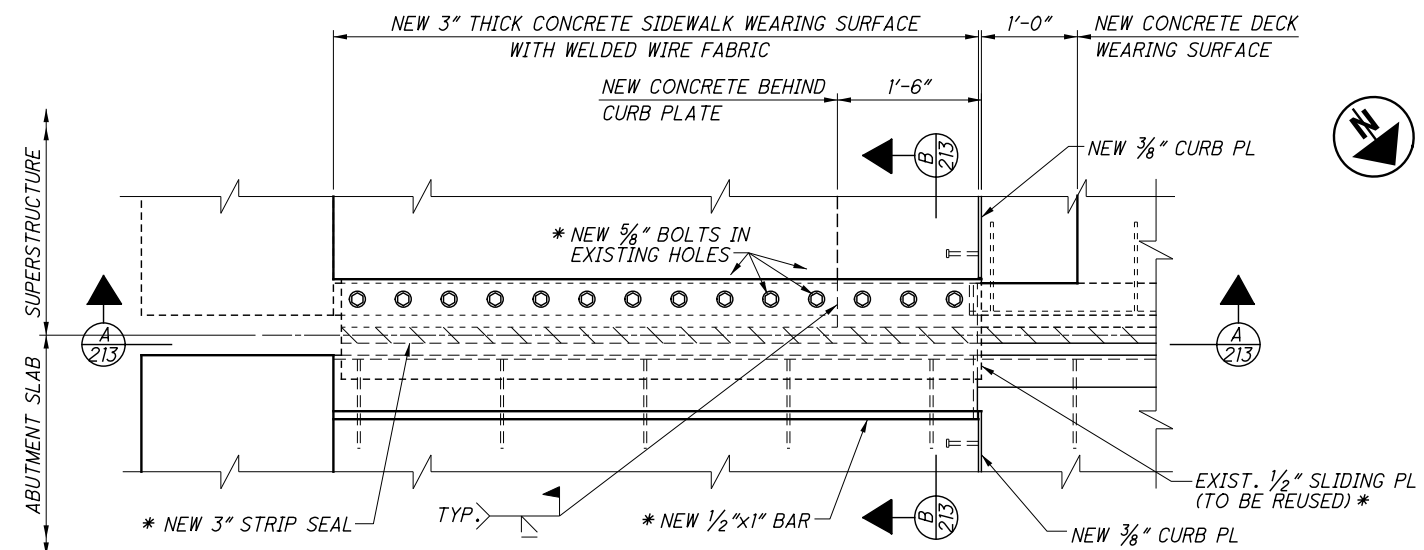
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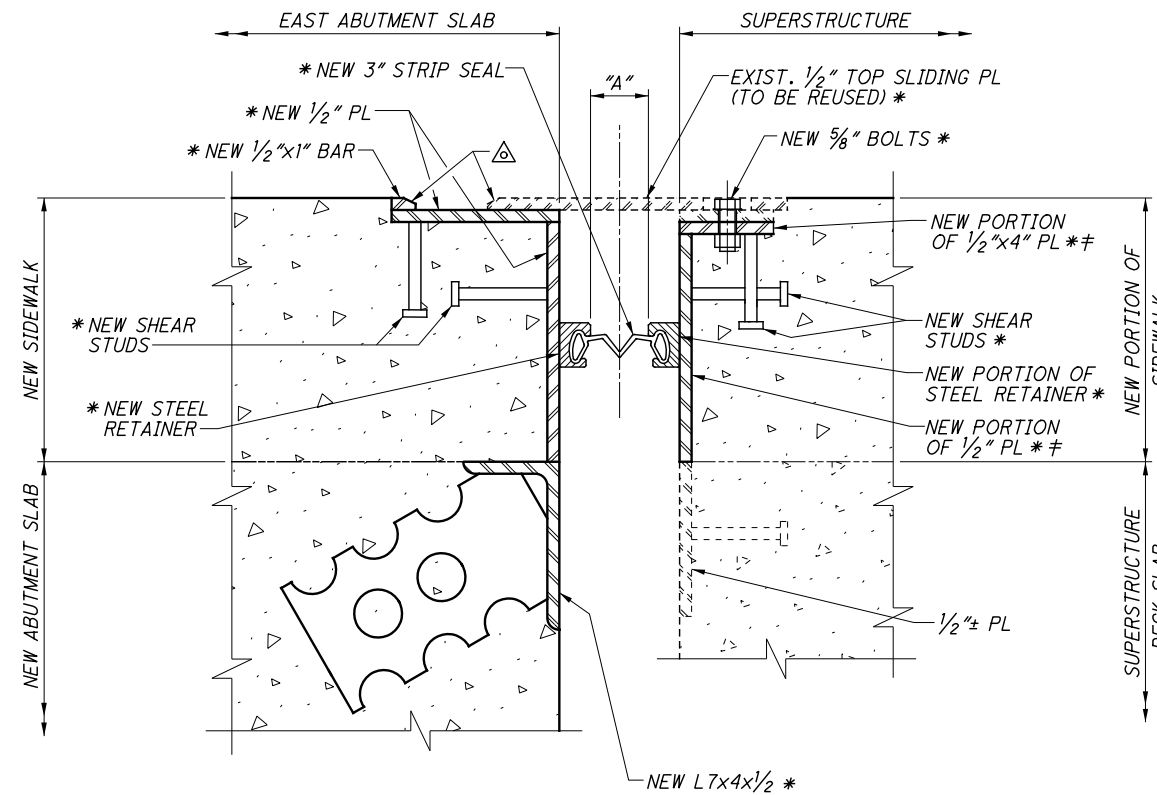
**SECTION A-A REMOVAL**  
(PARTIAL CURB AND SIDEWALK REMOVAL IS PRE-PHASE 1A)



**SECTION A-A REPAIR**  
(PARTIAL CURB AND SIDEWALK REPLACEMENT IS PHASE 3)



**SOUTH SIDEWALK JOINT REPAIR PLAN**



**SECTION B-B**

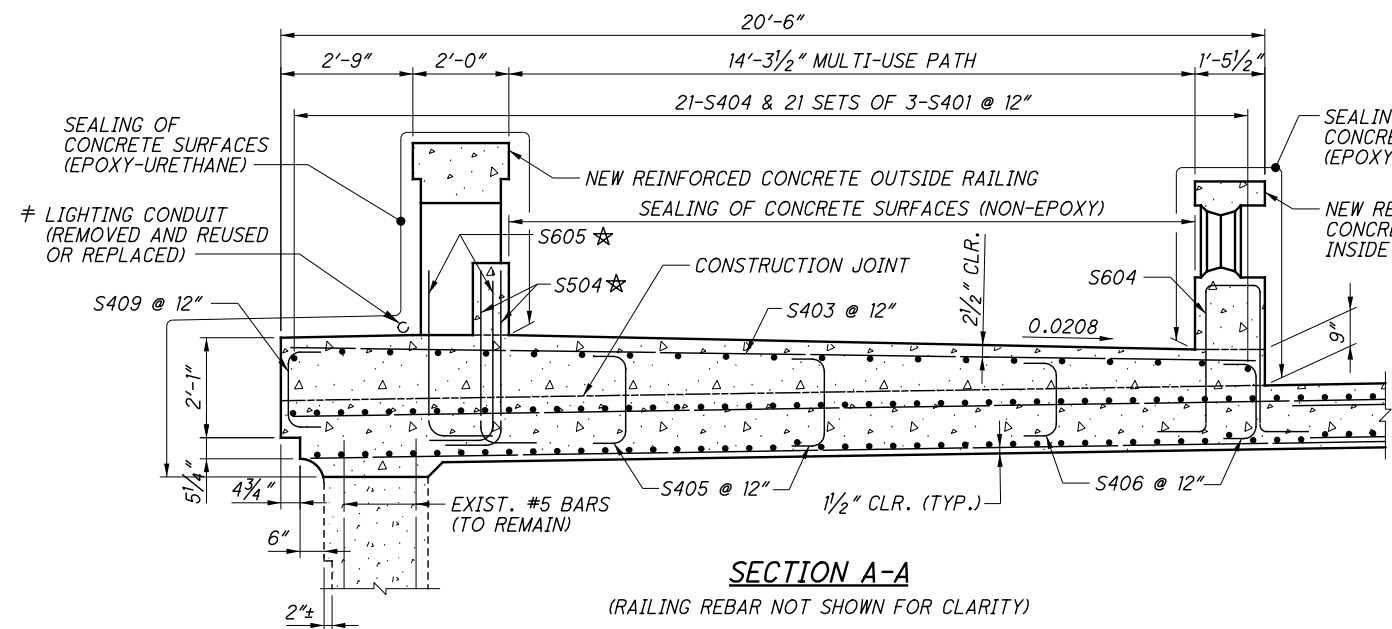
**LEGEND**

- INDICATES MATERIAL TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- \* INCLUDED WITH ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN FOR PAYMENT.
- ‡ THE PREVIOUSLY CUT OFF PORTION OF THE 1/2" PLATES MAY BE REUSED BY WELDING THEM TO THE REMAINING PORTION OF THE PLATES IF IT CAN BE DONE TO THE ACCEPTANCE OF THE ENGINEER.
- △ PROVIDE A 1/2" HORIZONTAL x 1/4" VERTICAL BEVEL AT THE END OF NEW 1/2" x 1" BAR. FIELD GRIND A SIMILAR BEVEL AT THE EXPOSED END OF THE EXISTING 1/2" TOP SLIDING PLATE.

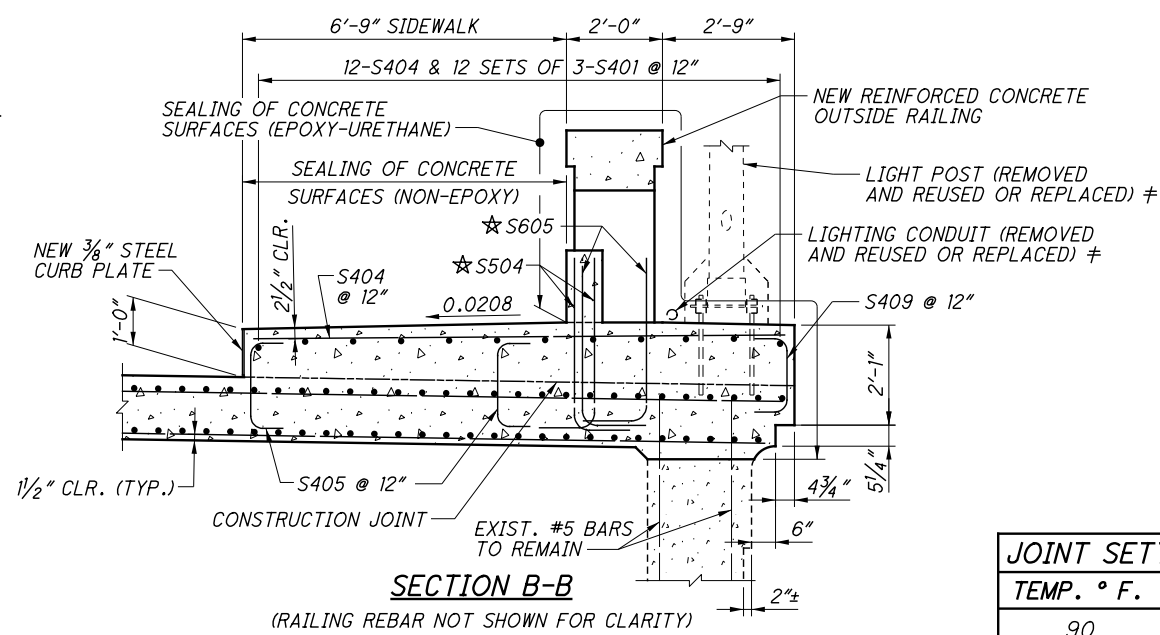
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- ADDITIONAL EXPANSION JOINT DETAILS:** SEE SHEET 214/238 AND STANDARD DRAWING EXJ-4-87, REVISED 1-19-18.
- PARTIAL CURB & SIDEWALK REPLACEMENT DETAILS:** SEE SHEET 217/238.

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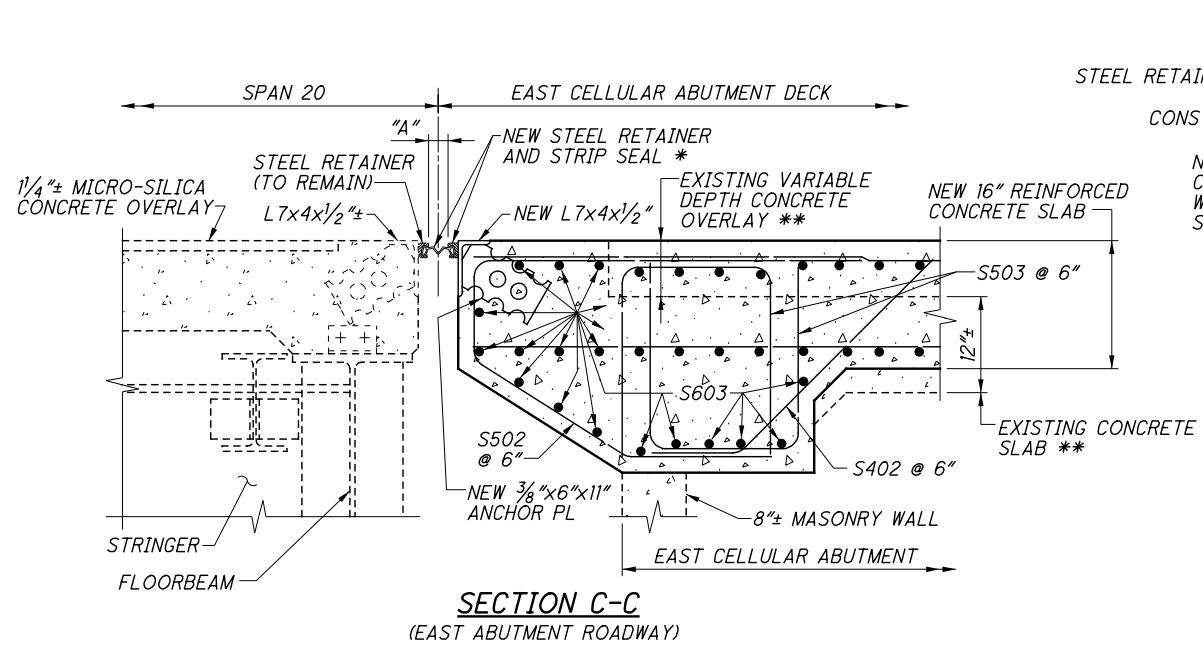


**SECTION A-A**  
(RAILING REBAR NOT SHOWN FOR CLARITY)

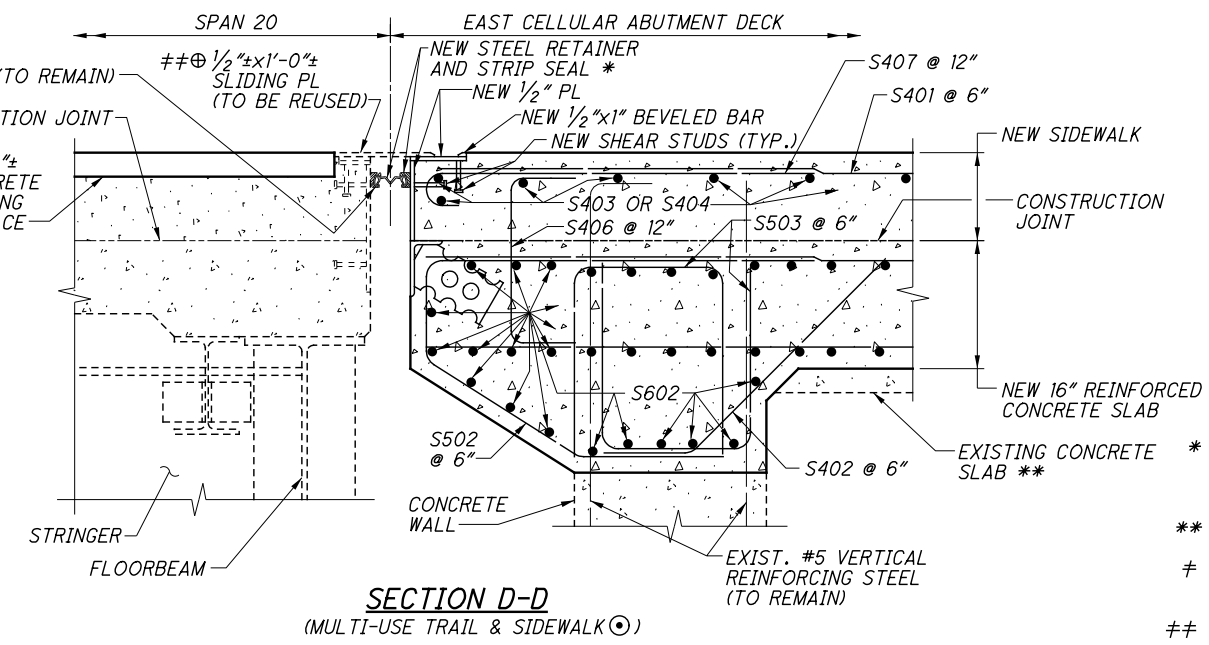


**SECTION B-B**  
(RAILING REBAR NOT SHOWN FOR CLARITY)

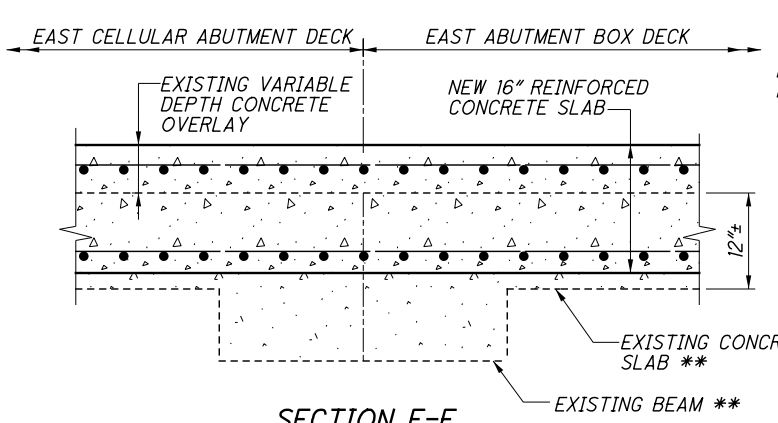
JOINT SETTING TABLE	
TEMP. ° F.	DIM. "A"
90	1 5/16"
80	1 3/8"
70	1 1/2"
60	1 5/8"
50	1 11/16"
40	1 13/16"
30	1 7/8"



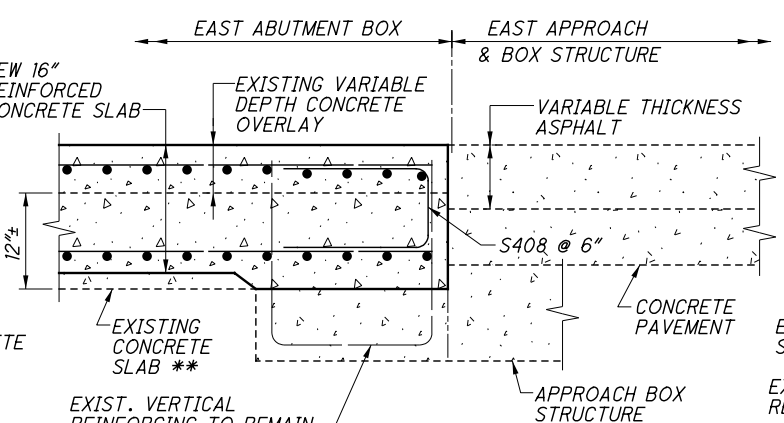
**SECTION C-C**  
(EAST ABUTMENT ROADWAY)



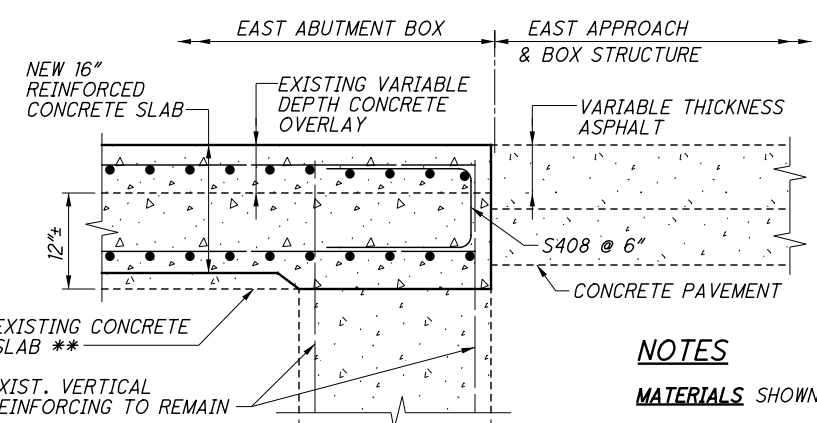
**SECTION D-D**  
(MULTI-USE TRAIL & SIDEWALK)



**SECTION E-E**



**SECTION F-F**



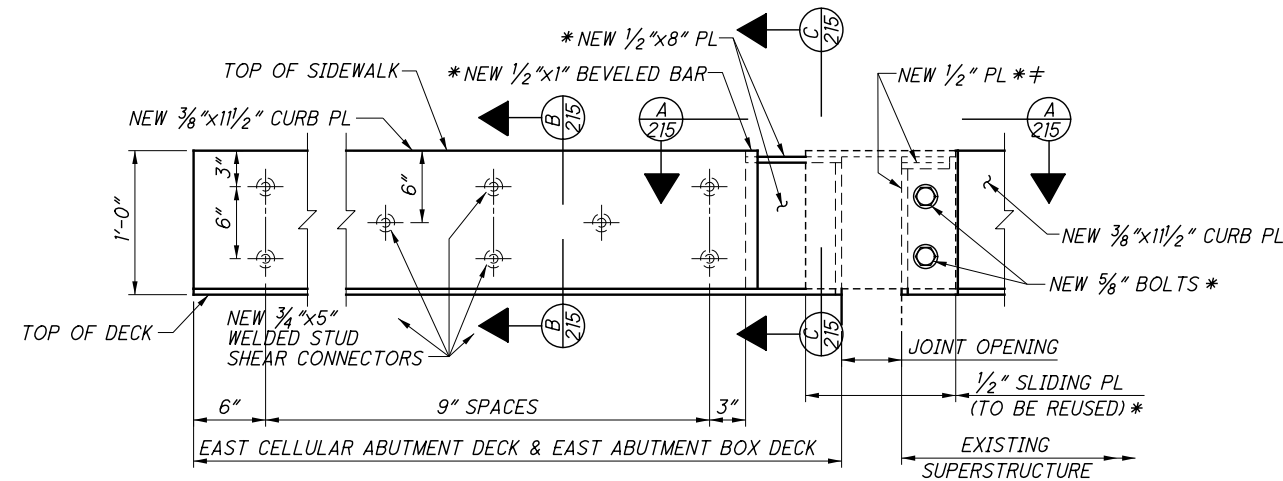
**SECTION G-G**

- LEGEND**
- \* NEW STRIP SEAL AND RETAINER (ABUTMENT SIDE) TO MATCH RETAINER ON SUPERSTRUCTURE SIDE.
  - \*\* TO BE REMOVED.
  - ≠ SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.
  - ≠≠ REPLACE EXISTING BOLTS IN PLATE WITH NEW 3/8" BOLTS (28 BOLTS FOR MULTI-USE PATH, 15 BOLTS FOR SIDEWALK). PARTIAL REPLACEMENT OF PLATE ON SIDEWALK SIDE. SEE SHEET [215/238].
  - ☆ SEE RAILING DETAILS FOR LOCATION AND SPACING OF S504 AND S605 BARS.
  - ⊕ FOR ADDITIONAL CURB REMOVAL AND REPLACEMENT DETAILS SEE SHEETS [208/238] AND [217/238].
  - ⊕ GRIND A 1/2" HORIZONTAL x 1/4" VERTICAL BEVEL AT THE EXPOSED EDGE OF THE EXISTING 1/2" SLIDING PLATE

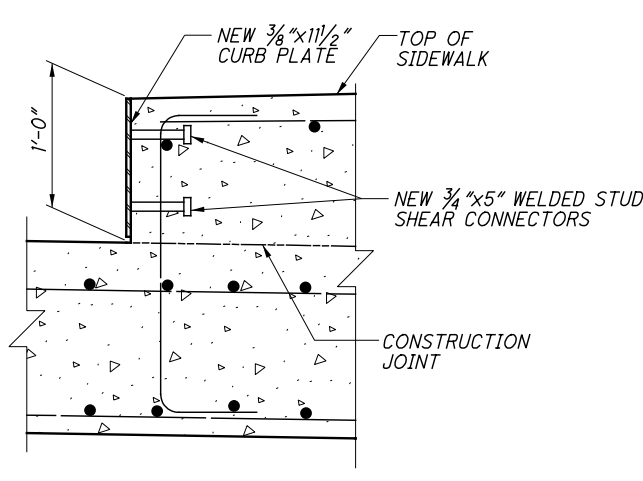
**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- SECTIONS A-A THRU G-G:** FOR LOCATIONS SEE SHEET [210/238].
- EXPANSION JOINT:** FOR ADDITIONAL DETAILS SEE STANDARD DRAWING EXJ-4-87, REVISED 1-19-18.
- RAILING DETAILS:** SEE SHEETS [219/238] THROUGH [223/238].
- LIGHTING PLANS:** SEE SHEETS 25 THROUGH 32.
- ADDITIONAL NOTES:** SEE SHEETS [204/238] AND [211/238].

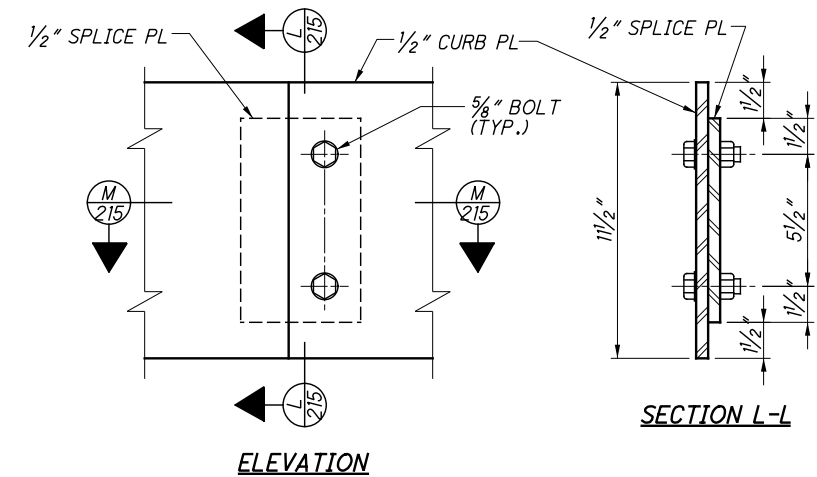
F:\2014\114059\_CUY-10-16\13\96986\structures\CUY010\_1613\CDP012.dgn 3/5/2018 9:14:13 AM JeffSmith



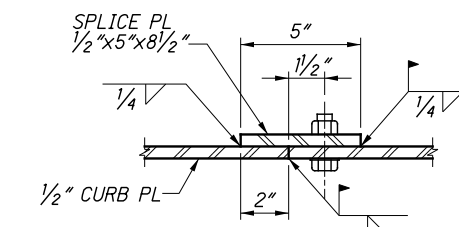
**SOUTH SIDEWALK CURB ELEVATION**



**SECTION B-B**



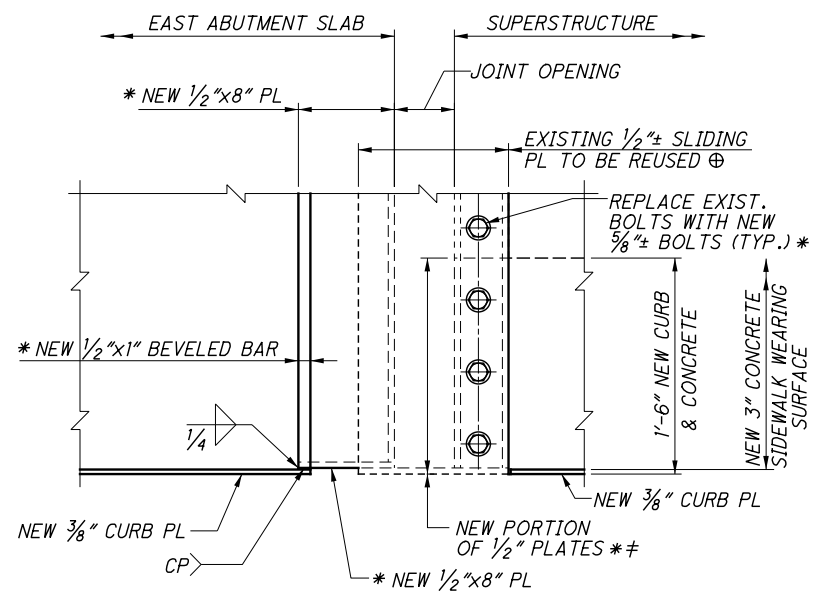
**ELEVATION**



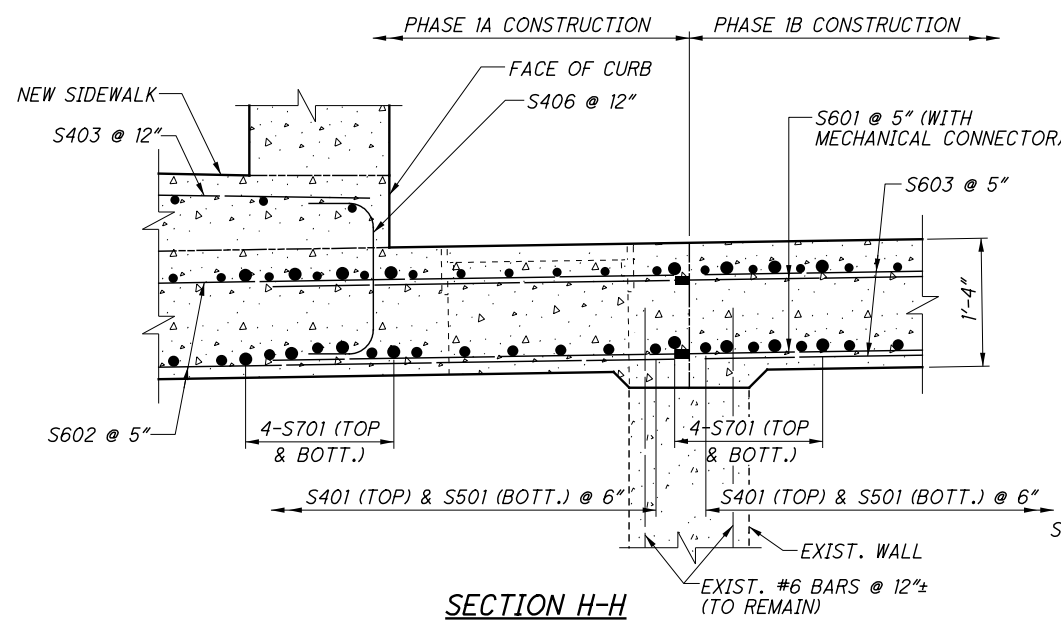
**SECTION M-M**

NOTE: REMOVE BOLTS AFTER FIELD WELDS HAVE BEEN COMPLETED. PLUG WELD HOLES FLUSH WITH CURB PLATE.

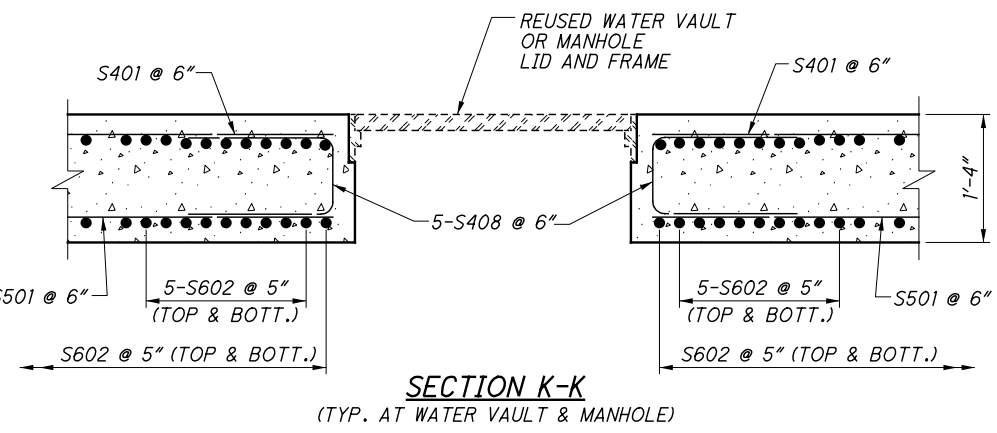
**OPTIONAL CURB PLATE SPLICE DETAIL**



**VIEW A-A**



**SECTION H-H**



**SECTION K-K**

(TYP. AT WATER VAULT & MANHOLE)

**LEGEND**

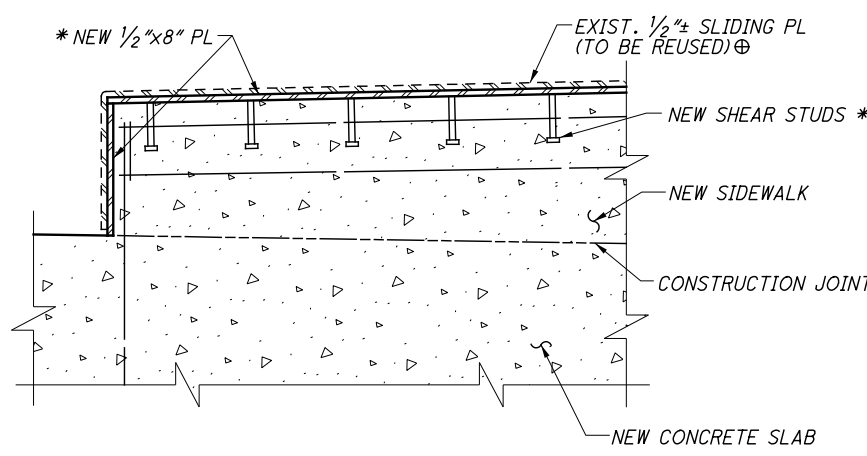
- \* INCLUDED WITH ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN FOR PAYMENT.
- ‡ THE PREVIOUSLY CUT OFF PORTION OF THE 1/2" PLATES MAY BE REUSED BY WELDING THEM TO THE REMAINING PORTION OF THE PLATES IF IT CAN BE DONE TO THE ACCEPTANCE OF THE ENGINEER.
- ⊕ GRIND A 1/2" HORIZONTAL x 1/4" VERTICAL BEVEL AT THE EXPOSED EDGE OF THE EXISTING 1/2" SLIDING PLATE

**NOTES**

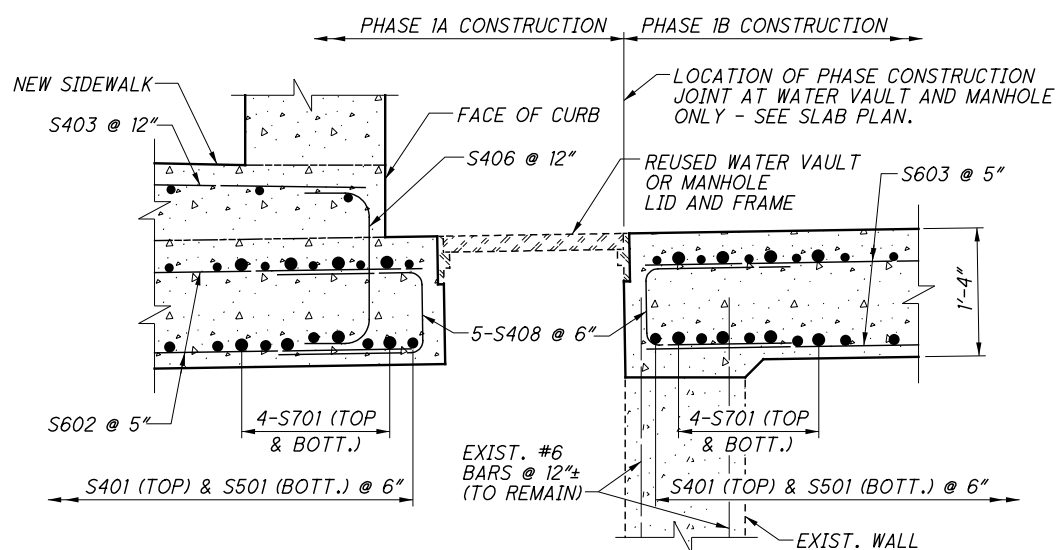
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- SECTIONS H-H, J-J & K-K:** FOR LOCATIONS SEE SHEETS [210/238].
- EXPANSION JOINT DETAILS:** SEE SHEETS [211/238] AND [212/238].
- SLAB PLAN:** SEE SHEET [210/238].

**ITEM 513 - STRUCTURAL STEEL, MISC.: SIDEWALK CURB PLATE:** WORK UNDER THIS ITEM INCLUDES FABRICATING (LEVEL UP) AND INSTALLING THE NEW CURB AND JOINT PLATES INCLUDING WELDING TO THE PROPOSED EXPANSION JOINT PLATES. THE EXPOSED SURFACES SHALL BE COATED WITH A TWO COAT PAINT SYSTEM. THE TOP COAT SHALL MATCH FEDERAL COLOR NO. 595B-20400 (SEMI-GLOSS). PAYMENT SHALL BE INCLUDED AS A LUMP SUM FOR ITEM 513 - STRUCTURAL STEEL, MISC.: SIDEWALK CURB PLATE.

**ADDITIONAL NOTES:** SEE SHEET [204/238].

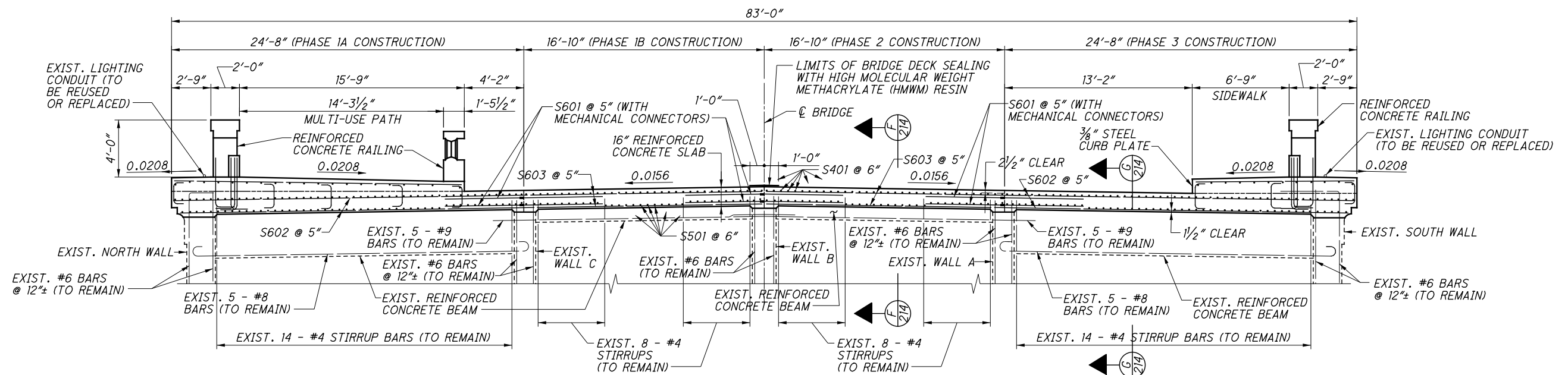


**SECTION C-C**

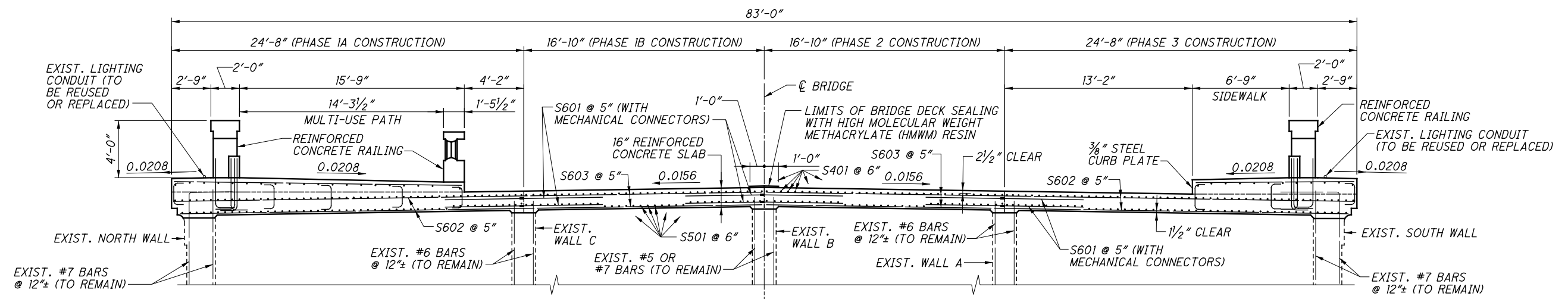


**SECTION J-J**

(TYP. AT WATER VAULT & MANHOLE)



SECTION X-X - PROPOSED EAST ABUTMENT BOX SLAB TRANSVERSE SECTION - EAST END BEAM



SECTION Y-Y - PROPOSED EAST CELLULAR ABUTMENT SLAB TRANSVERSE SECTION - MIDSPAN

**NOTES**

**PROPOSED DECK AND SIDEWALK ELEVATIONS:** THE CONTRACTOR SHALL SURVEY THE DECK, MULTI-USE PATH AND SIDEWALK ELEVATIONS SO THAT THE PROPOSED CONCRETE CAN BE PLACED TO APPROXIMATELY MATCH THE EXISTING SURFACES. PLAN CROSS-SLOPES SHALL BE ADJUSTED AS NECESSARY TO MATCH EXISTING OR APPROACHES FOR SMOOTH TRANSITIONS AND POSITIVE DRAINAGE. TO COMPENSATE FOR FALSEWORK DEFLECTION AND FOR DEFLECTION OF THE SLAB AFTER FALSEWORK IS REMOVED, BUILD CAMBER INTO THE FALSEWORK ACCORDING TO CMS 508.02.

THE SURFACE OF THE SIDEWALK AND MULTI-USE PATH SHALL BE SAW CUT TO MATCH THE SPACING AND WIDTH OF THE CONCRETE ADJACENT TO THIS WORK AREA. THE DEPTH OF THE SAW CUT SHALL BE ONE INCH.

SURVEY AND SAWCUTTING SIDEWALK WORK SHALL BE INCLUDED WITH APPLICABLE CONCRETE ITEMS.

**MATERIALS** SHOWN ARE NEW UNLESS OTHERWISE NOTED.

**REINFORCING STEEL SPLICE LENGTHS** SHALL BE 2'-9" FOR HORIZONTAL #4 BARS, 2'-6" FOR HORIZONTAL #5 BARS AND 4'-2" FOR HORIZONTAL #6 BARS.

**REINFORCING STEEL DETAILS** IN SIDEWALK AND MULTI-USE PATH SEE SHEET 214/238. IN RAILINGS, SEE SHEETS 219/238 THROUGH 222/238.

**RAILING AND SIDEWALK SEALING:** FOR LIMITS, SEE SECTIONS A-A AND B-B ON SHEET 214/238.

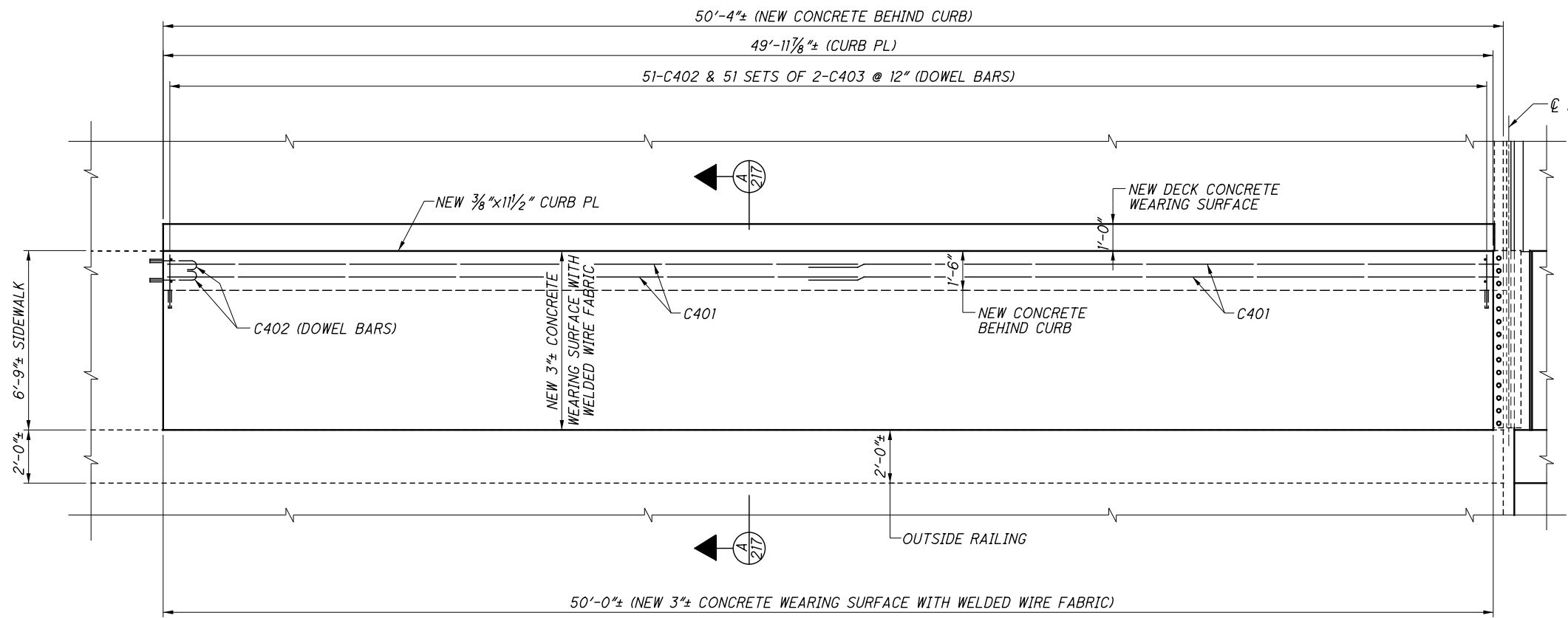
**SECTION X-X AND Y-Y:** FOR LOCATIONS, SEE SHEET 210/238.

**MAINTENANCE OF TRAFFIC PLANS:** SEE SHEETS 8 THROUGH 18 OF 308.

**ADDITIONAL NOTES:** SEE SHEET 204/238.

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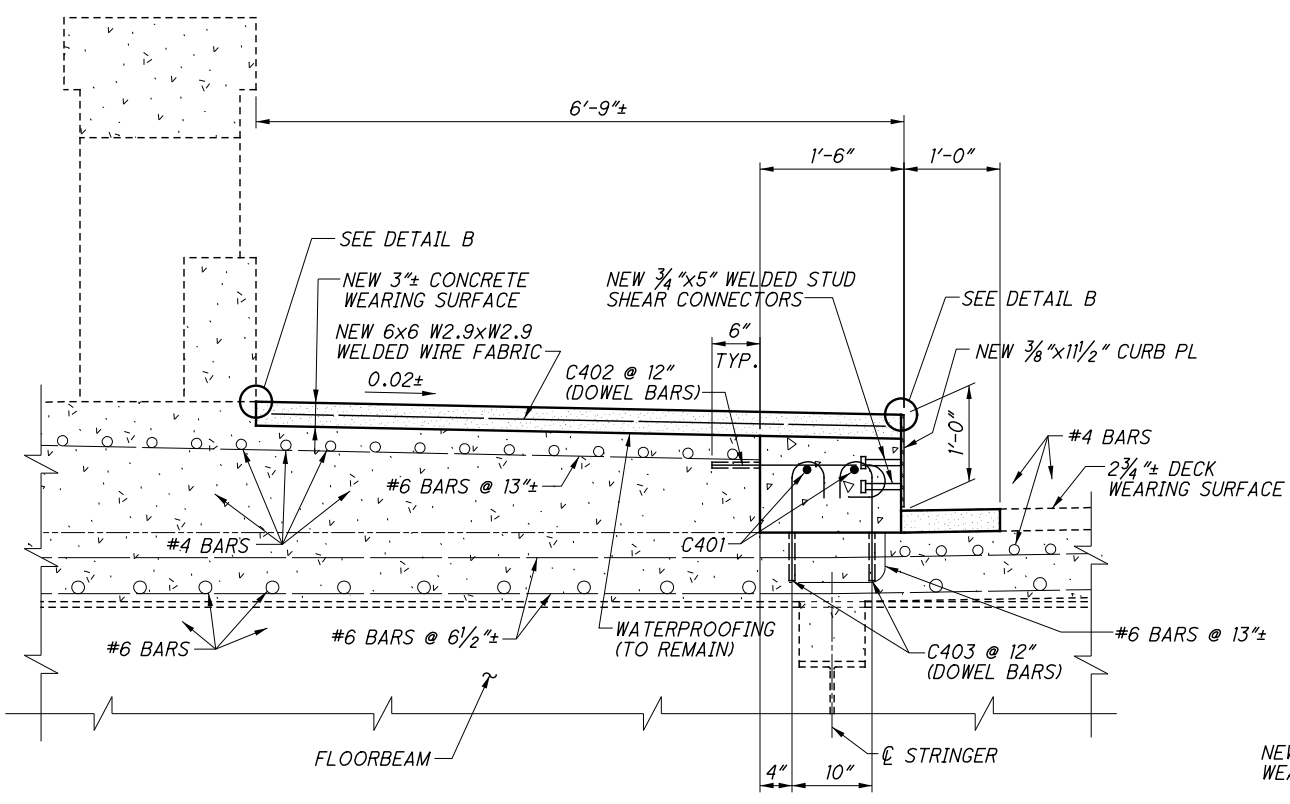


PARTIAL SOUTH CURB AND SIDEWALK REPLACEMENT PLAN

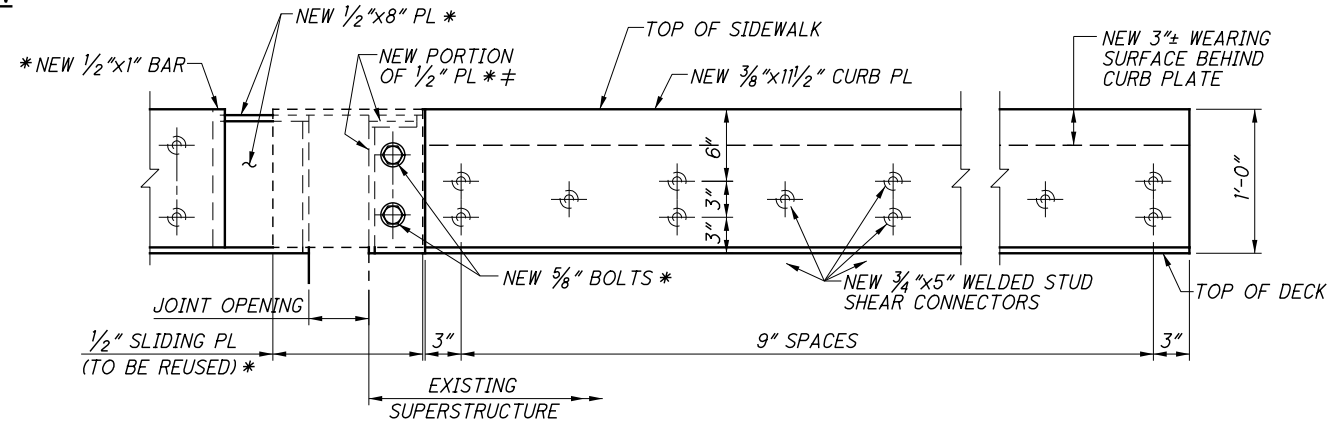


**LEGEND**

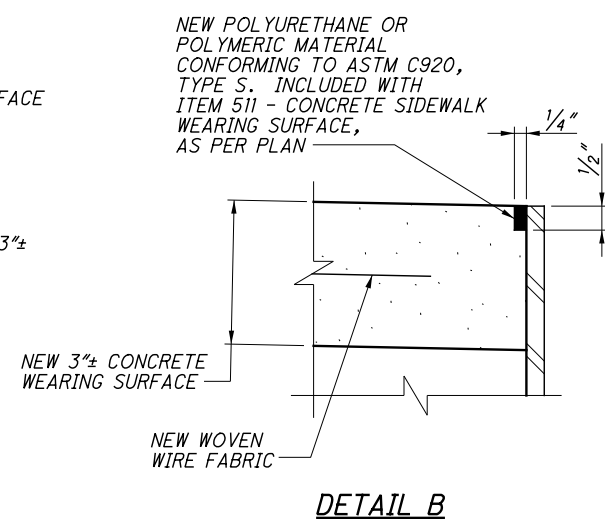
- \* INCLUDED WITH ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN FOR PAYMENT.
- ≠ THE PREVIOUSLY CUT OFF PORTION OF THE 1/2" PLATES MAY BE REUSED BY WELDING THEM TO THE REMAINING PORTION OF THE PLATES IF IT CAN BE DONE TO THE ACCEPTANCE OF THE ENGINEER.



SECTION A-A



SUPERSTRUCTURE SOUTH SIDEWALK CURB ELEVATION



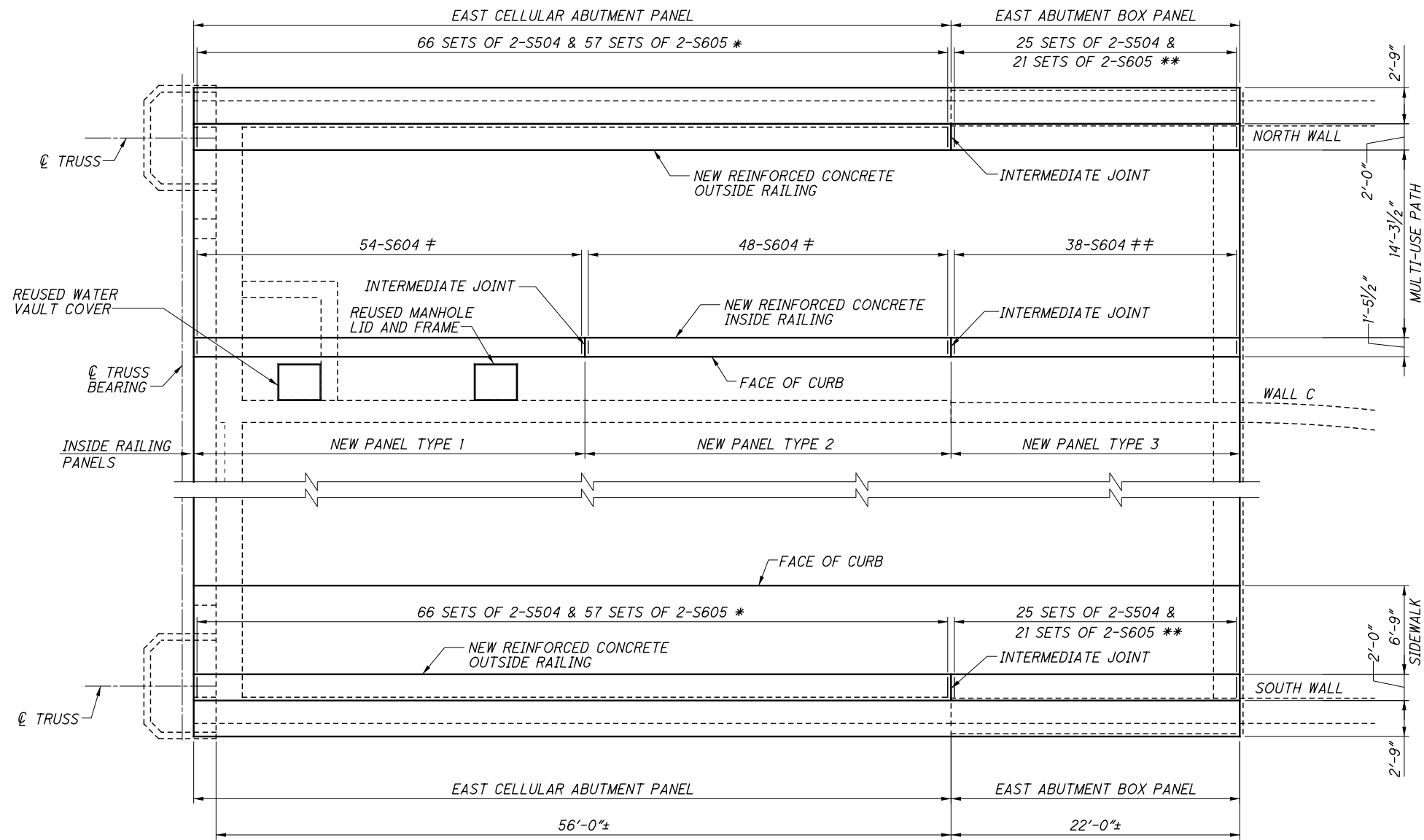
DETAIL B

**NOTES**

- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- CURB REPLACEMENT CONCRETE** IS INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN FOR PAYMENT.
- NEW DECK CONCRETE WEARING SURFACE** IS INCLUDED WITH ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN FOR PAYMENT.
- NEW 3/4" CONCRETE WEARING SURFACE** AND WELDED WIRE FABRIC ARE INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE, SIDEWALK WEARING SURFACE, AS PER PLAN FOR PAYMENT.
- EAST ABUTMENT SIDEWALK EXPANSION JOINT DETAILS:** SEE SHEET [212/238].
- ITEM 513 - STRUCTURAL STEEL, MISC.: SIDEWALK CURB PLATE:** WORK UNDER THIS ITEM INCLUDES FABRICATING (LEVEL UP) AND INSTALLING NEW CURB AND JOINT PLATES INCLUDING WELDING TO THE PROPOSED EXPANSION JOINT PLATES. THE EXPOSED SURFACES SHALL BE COATED WITH A TWO COAT PAINT SYSTEM. THE TOP COAT SHALL MATCH FEDERAL COLOR NO. 595B-20400 (SEMI-GLOSS). PAYMENT SHALL BE INCLUDED AS A LUMP SUM FOR ITEM 513 - STRUCTURAL STEEL, MISC.: SIDEWALK CURB PLATE.

RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE 1/30/18  
 STRUCTURE FILE NUMBER 1801503  
 REVIEWED DLR  
 DRAWN JLS  
 DESIGNED BLN  
 CHECKED dht  
 PARTIAL SOUTH CURB & SIDEWALK REPLACEMENT DETAILS  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 CUY-10-16-13  
 PID No. 96986  
 217/238  
 277  
 308

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**RAILING PLAN**



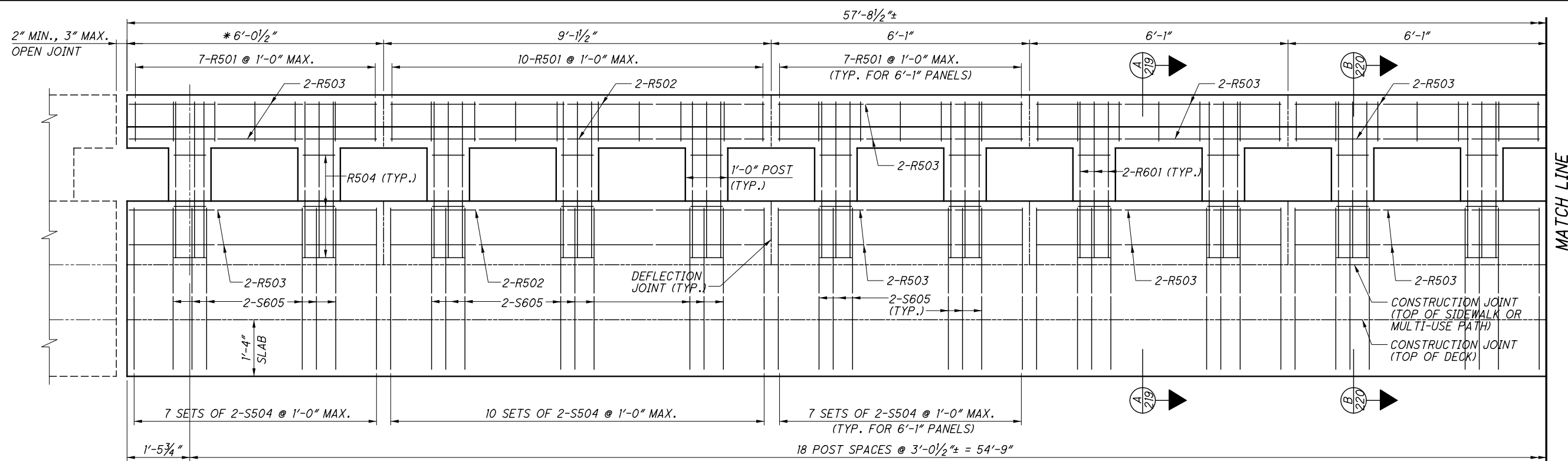
- \* SEE OUTSIDE RAILING ELEVATION ON SHEET 219/238 FOR SPACING.
- \*\* SEE OUTSIDE RAILING ELEVATION ON SHEET 220/238 FOR SPACING.
- # SEE INSIDE RAILING ELEVATION ON SHEET 221/238 FOR SPACING.
- ## SEE INSIDE RAILING ELEVATION ON SHEET 222/238 FOR SPACING.

**NOTES**

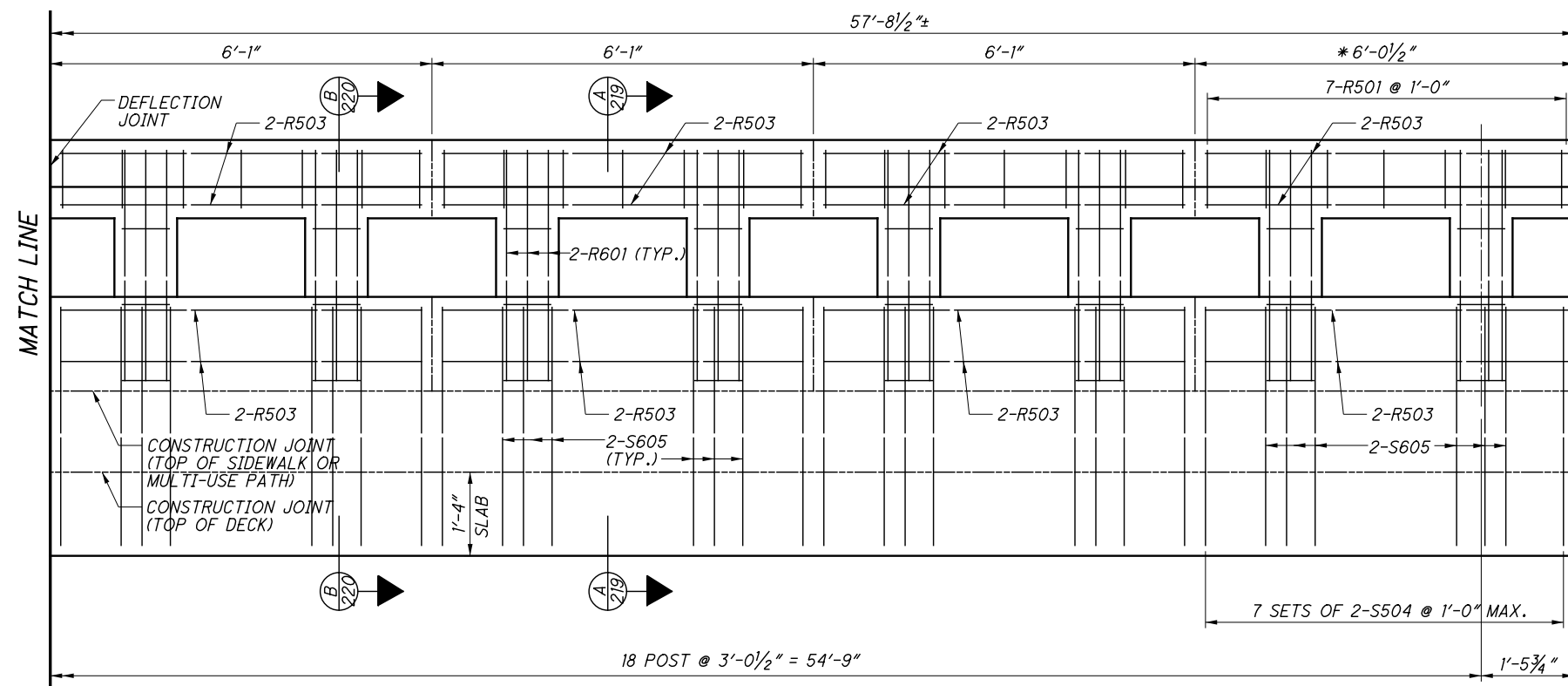
**INSIDE RAILING DETAILS:** SEE SHEETS 221/238 & 222/238.

**OUTSIDE RAILING DETAILS:** SEE SHEETS 219/238 & 220/238.

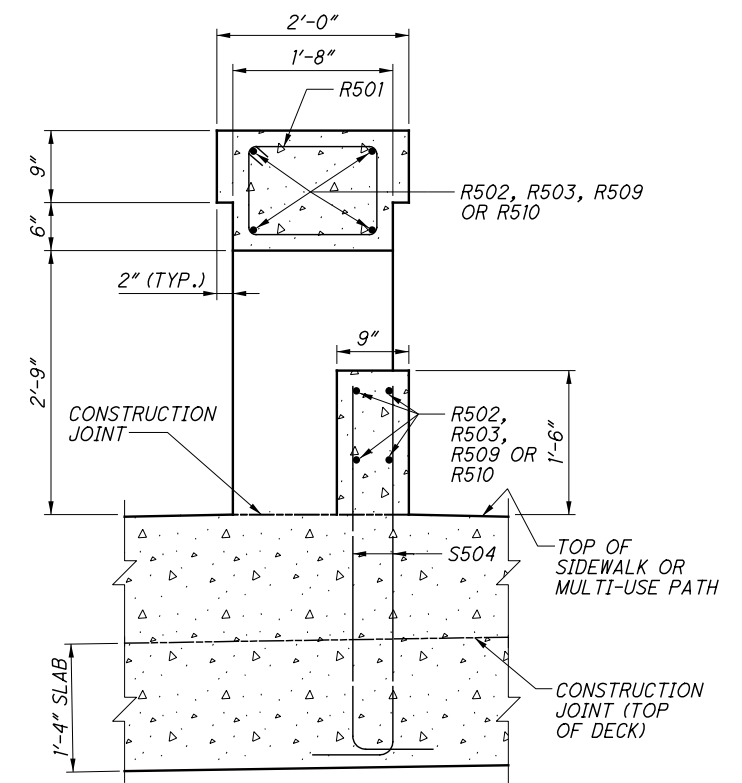
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**EAST CELLULAR ABUTMENT OUTSIDE RAILING PANEL**



**EAST CELLULAR ABUTMENT OUTSIDE RAILING PANEL**



**SECTION A-A**

**NOTES**

**NORTH RAILING** IS SHOWN. SOUTH RAILING OPPOSITE HAND.

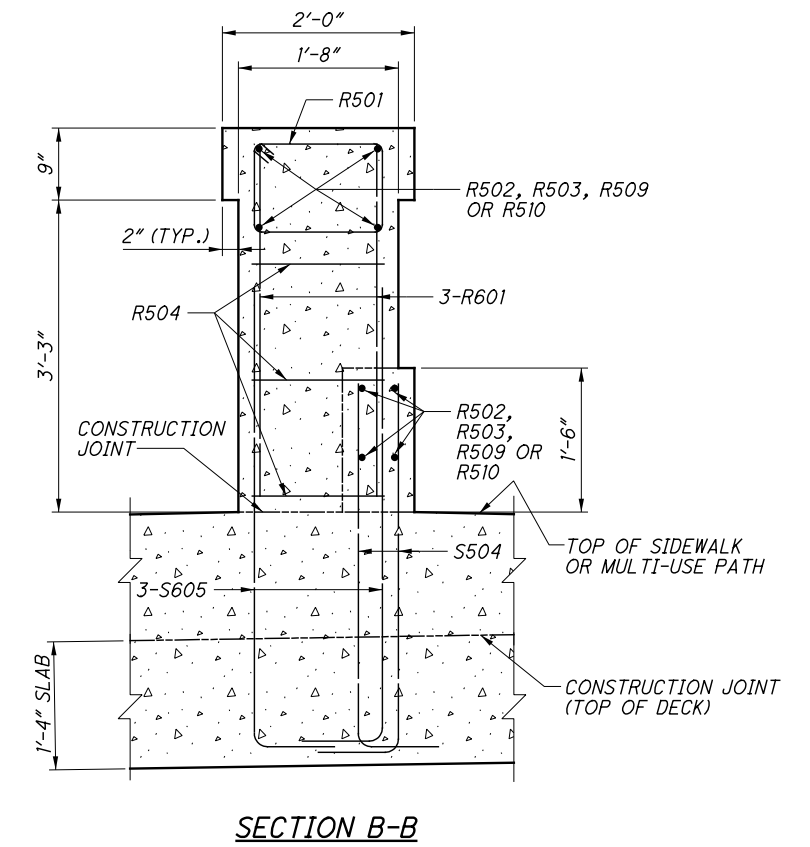
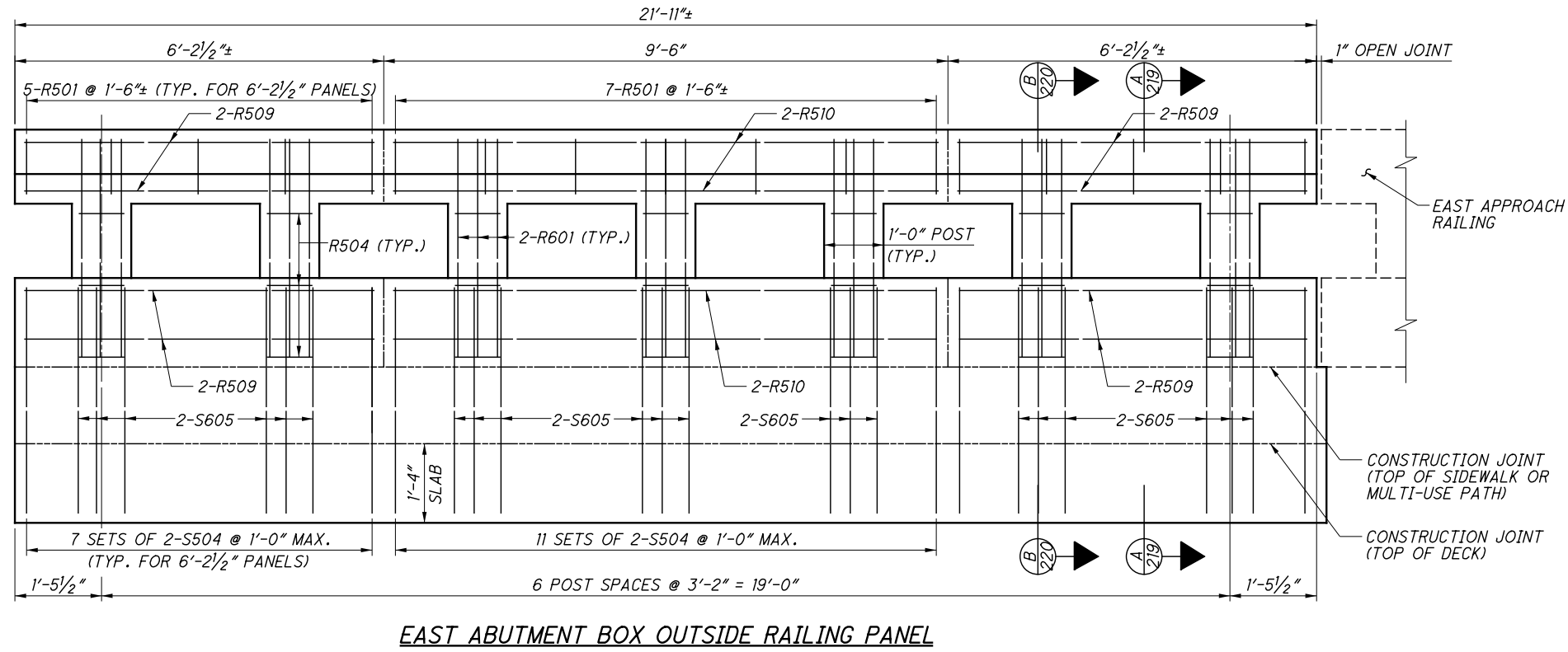
\* **FIELD ADJUST** END PANELS AS NECESSARY TO MAINTAIN OPEN JOINTS ON BOTH ENDS OF RAILING.

**RAILING LOCATIONS:** SEE SHEET 218/238.

<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>REVIEWED DLR</p>	<p>DATE 1/30/18</p>
<p>DRAWN JSB</p>	<p>STRUCTURE FILE NUMBER 1801503</p>
<p>DESIGNED BLN</p>	<p>CHECKED dnt</p>
<p><b>EAST ABUTMENT SLAB - OUTSIDE RAILING DETAILS - 1</b></p>	
<p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	
<p><b>CUY-10-16.13</b></p>	<p>PID No. 96986</p>
<p>219/238</p>	
<p>279 308</p>	



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**NOTES**

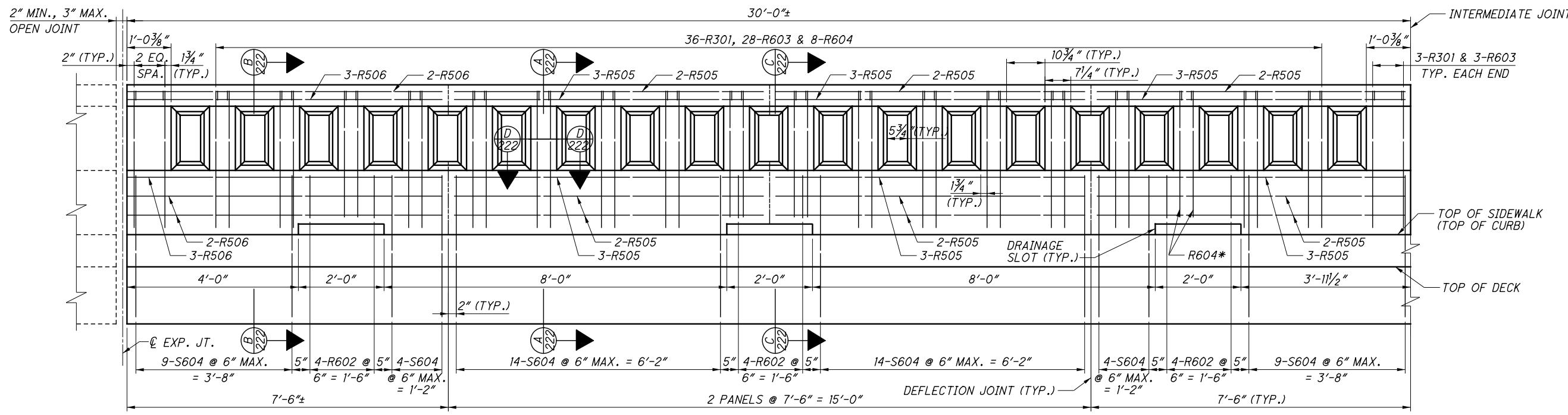
**NORTH RAILING** IS SHOWN. SOUTH RAILING OPPOSITE HAND.

**FIELD ADJUST** END PANELS AS NECESSARY TO MAINTAIN OPEN JOINTS ON BOTH ENDS OF RAILING.

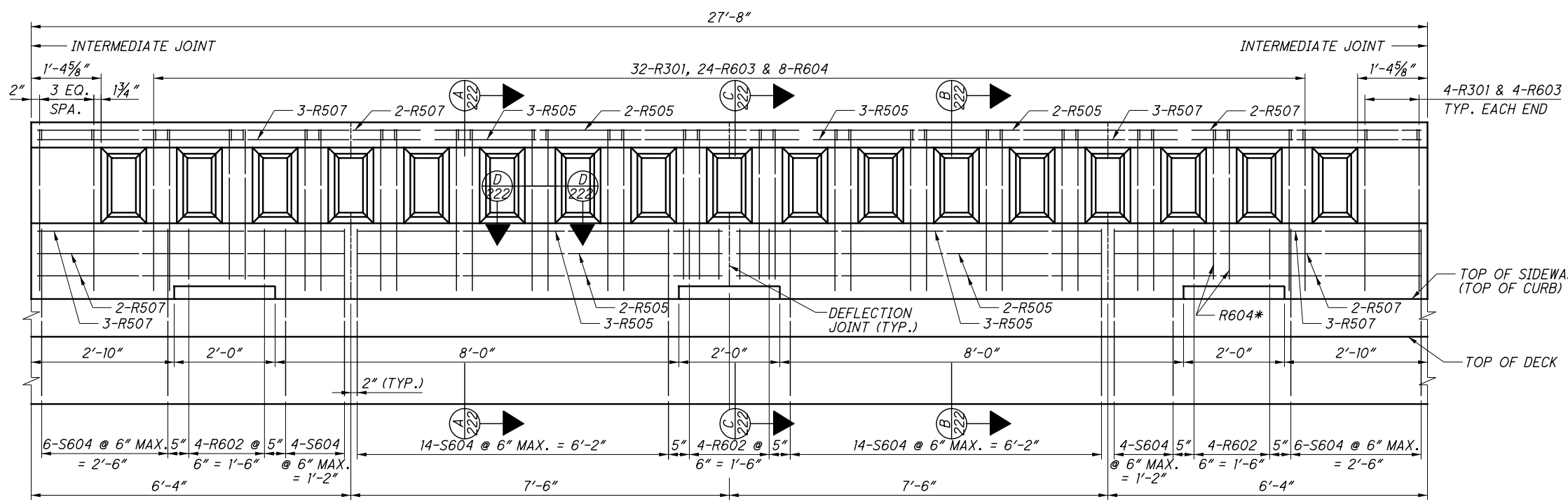
**RAILING LOCATIONS:** SEE SHEET 218/238.

<b>RICHLAND ENGINEERING LIMITED</b> 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
DATE 1/30/18	STRUCTURE FILE NUMBER 1801503
REVIEWED DLR	REVISIONS 1801503
DRAWN USB	CHECKED DJT
<b>EAST ABUTMENT SLAB - OUTSIDE RAILING DETAILS - 2</b> BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
<b>CUY-10-16.13</b>	<b>PID No. 96986</b>
220/238	
(280 / 308)	

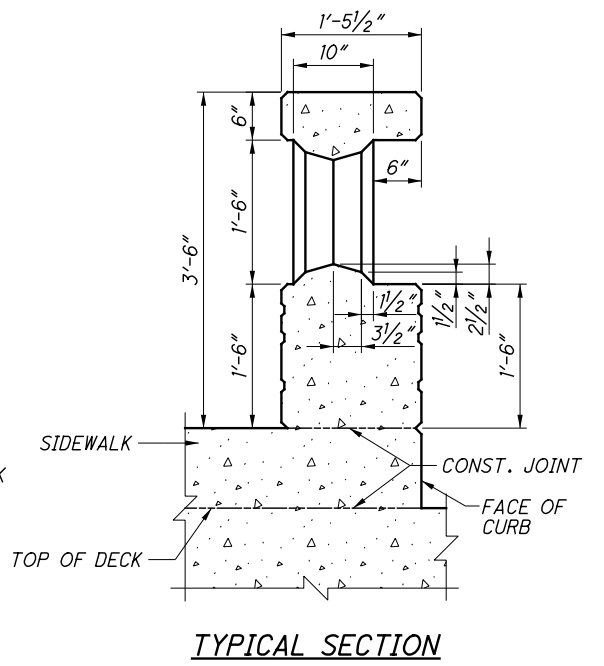
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**TYPE 1 RAILING PANEL**



**TYPE 2 RAILING PANEL**



**TYPICAL SECTION**

**NOTES**

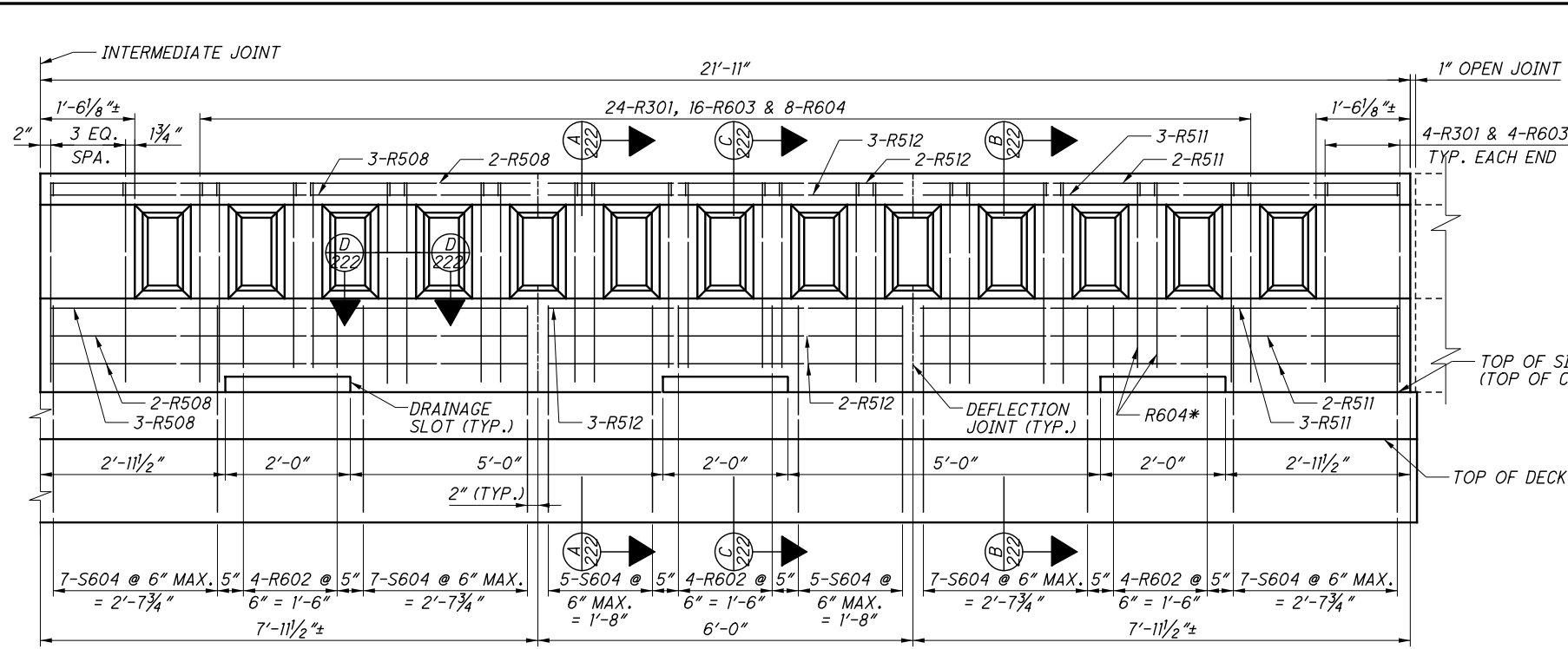
**RAILING PANEL LOCATIONS:** SEE SHEET [218/238].

**INTERMEDIATE JOINT DETAIL:** SEE SHEET [222/238].

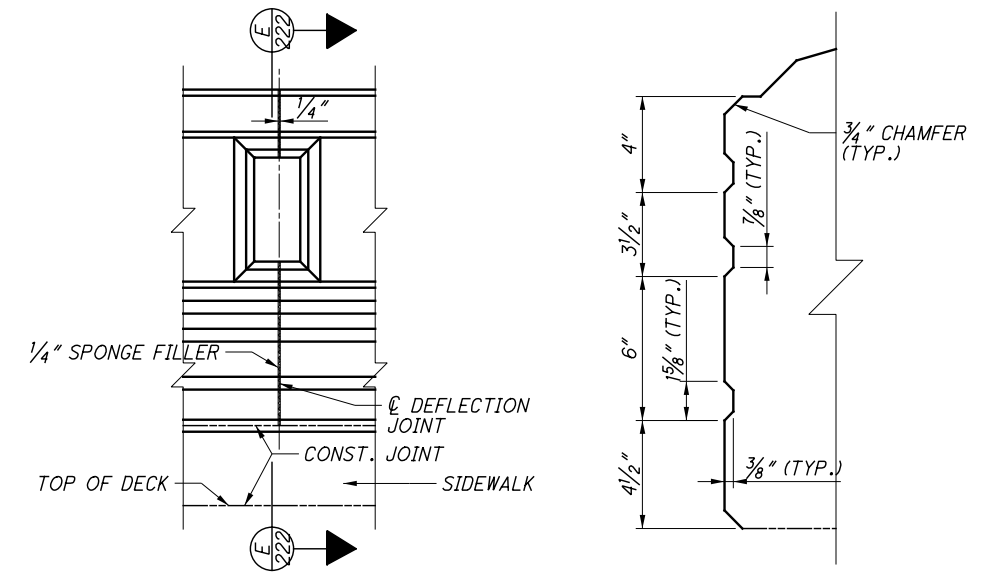
**DEFLECTION JOINT DETAIL:** SEE SHEET [222/238].

**FIELD ADJUST** END PANELS AS NECESSARY TO MAINTAIN OPEN JOINTS ON BOTH ENDS OF RAILING.

**ADDITIONAL DETAILS:** SEE SHEET [222/238].

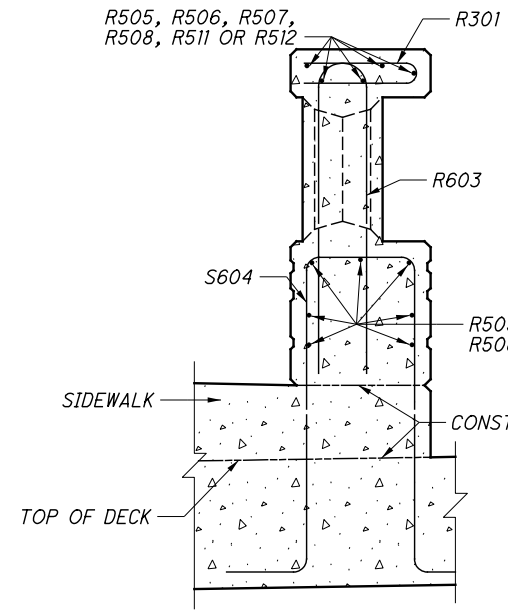


**TYPE 3 RAILING PANEL**

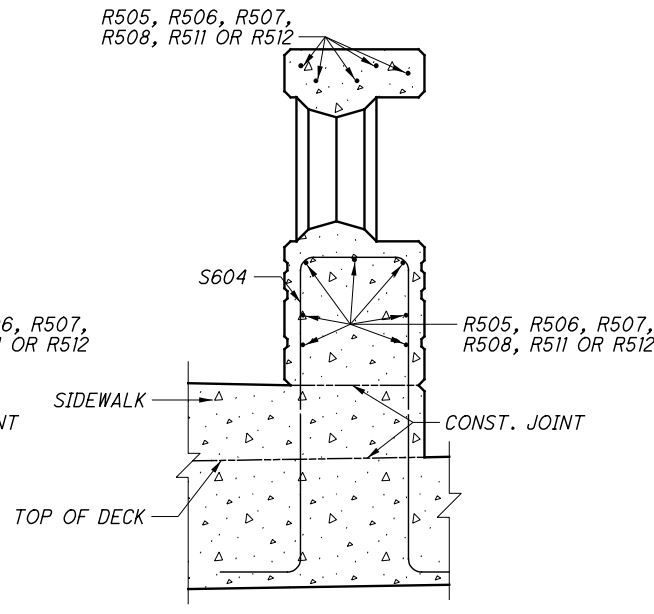


**DEFLECTION JOINT ELEVATION**

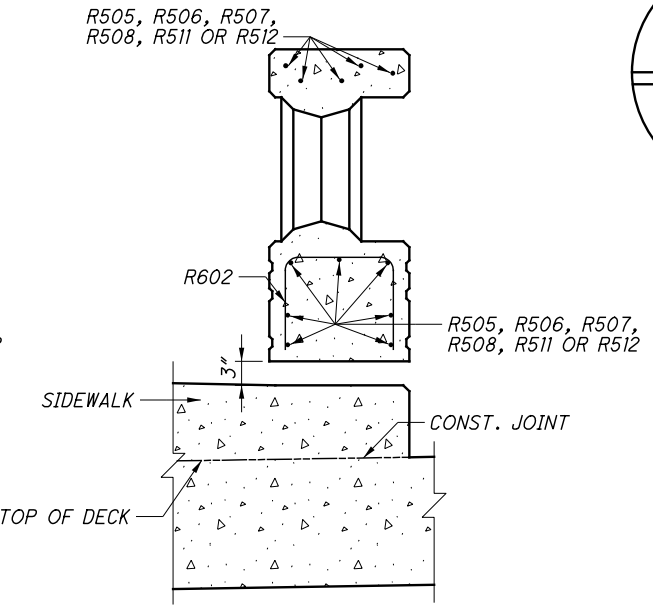
**TYPICAL REVEAL DETAIL**



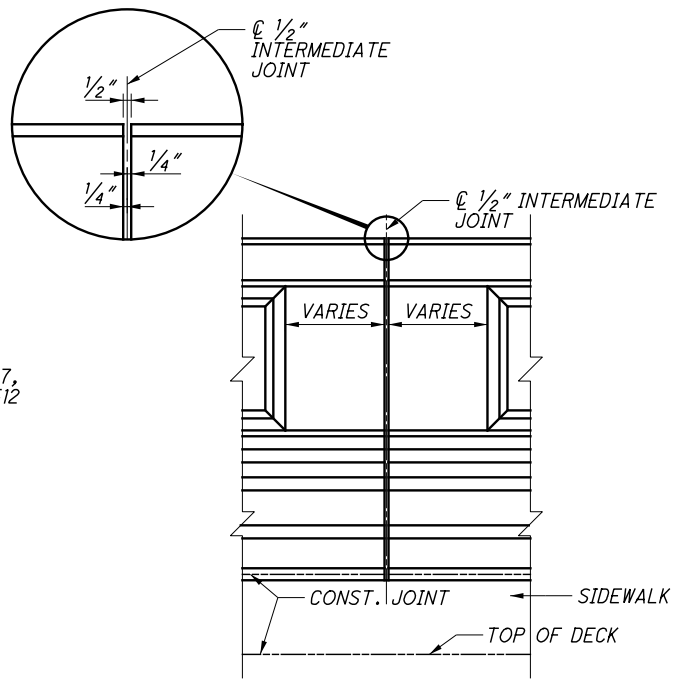
**SECTION A-A**



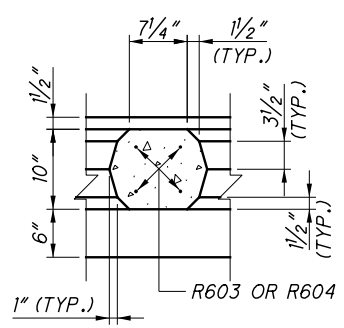
**SECTION B-B**



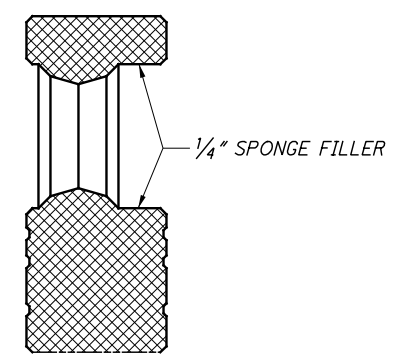
**SECTION C-C**



**INTERMEDIATE JOINT ELEVATION**



**SECTION D-D**



**SECTION E-E**

\* TYPICAL OVER DRAINAGE SLOTS

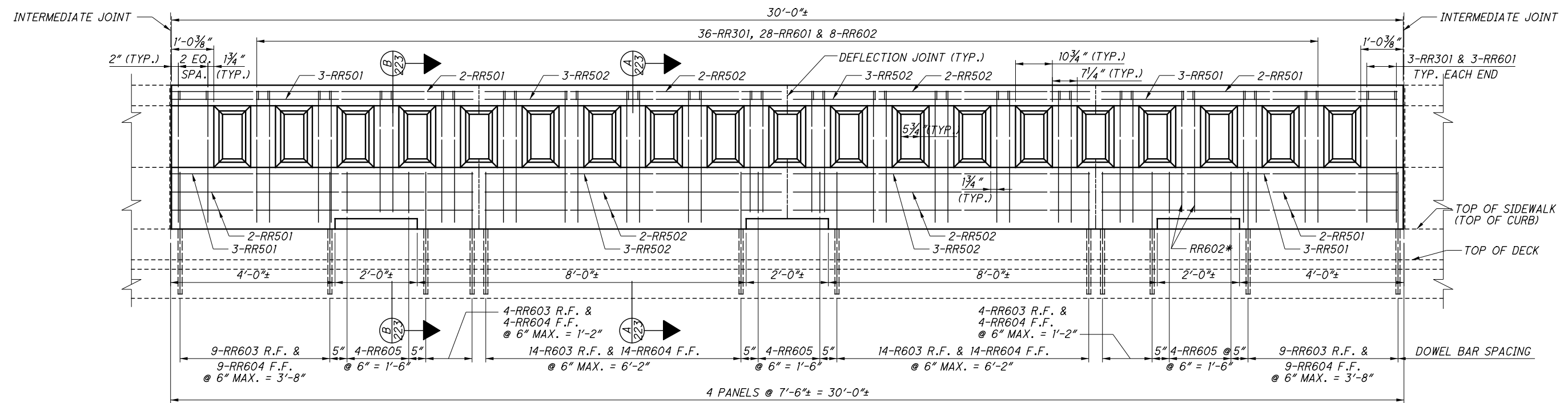
**NOTES**

1. THE NORTH AND SOUTH FACES OF RAILING ARE VERTICAL.
2. THE DEFLECTION JOINTS IN THE RAILING MAY BE EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. EITHER MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M-153, TYPE 1, EXCEPT THE DENSITY OF THE PVC SPONGE SHALL BE NOT LESS THAN 20 LB PER CU FT.
3. AT DEFLECTION JOINT LOCATIONS ATTACH SPONGE FILLER WITH CONSTRUCTION ADHESIVE AT TOP PIECE OF RAILING ABOVE WINDOW LOCATIONS AND ABOVE DRAINAGE SLOTS.
4. NORTH AND SOUTH FACE OF RAILING SHALL BE VERTICAL (PLUMB). DEFLECTION JOINTS, INTERMEDIATE JOINTS, POSTS AND WINDOWS SHALL BE PERPENDICULAR TO GRADE.
5. RAILING LENGTHS ARE MEASURED TO THE C OF INTERMEDIATE JOINTS, TO THE END OF RAILING AT EXPANSION JOINT LOCATIONS AND TO THE END OF RAILING AT THE BEGINNING AND END OF THE PROPOSED RAILING.

**SECTIONS A-A, B-B, C-C & D-D:** FOR ADDITIONAL LOCATIONS SEE SHEET 221/238.

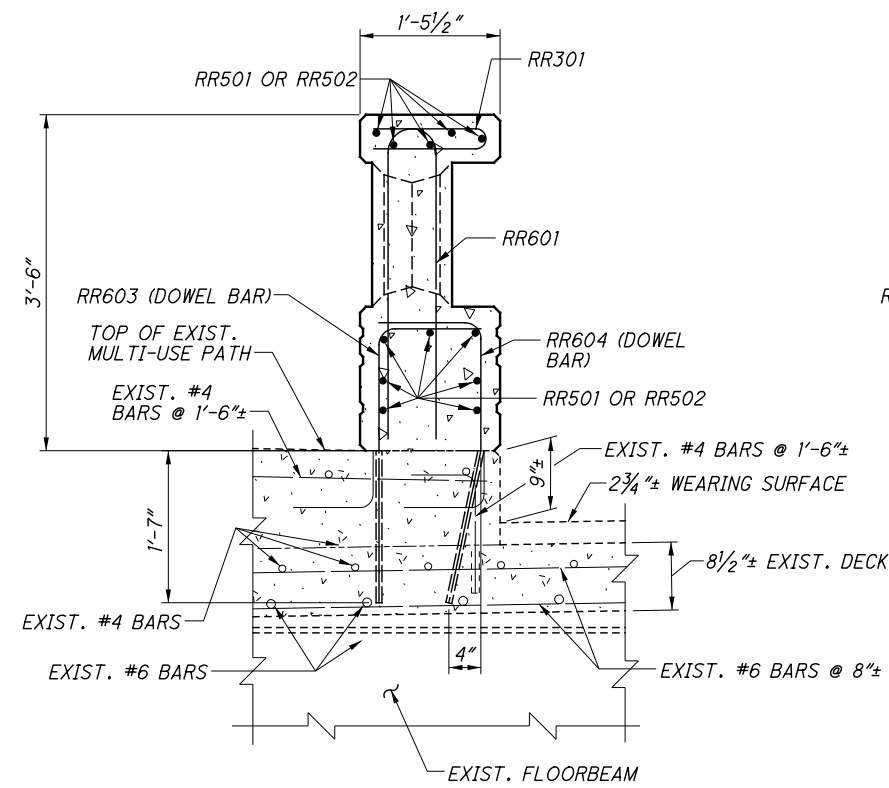
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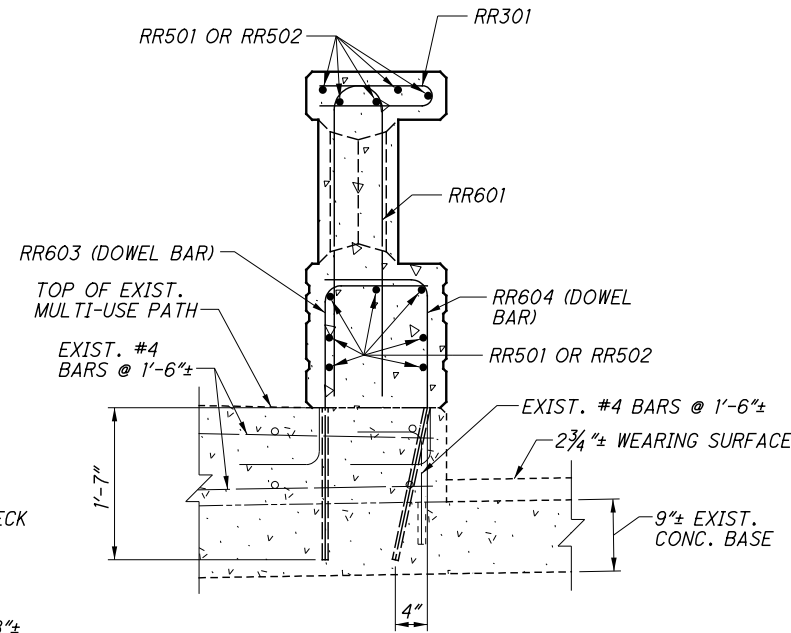


**TYPE 4 RAILING PANEL**

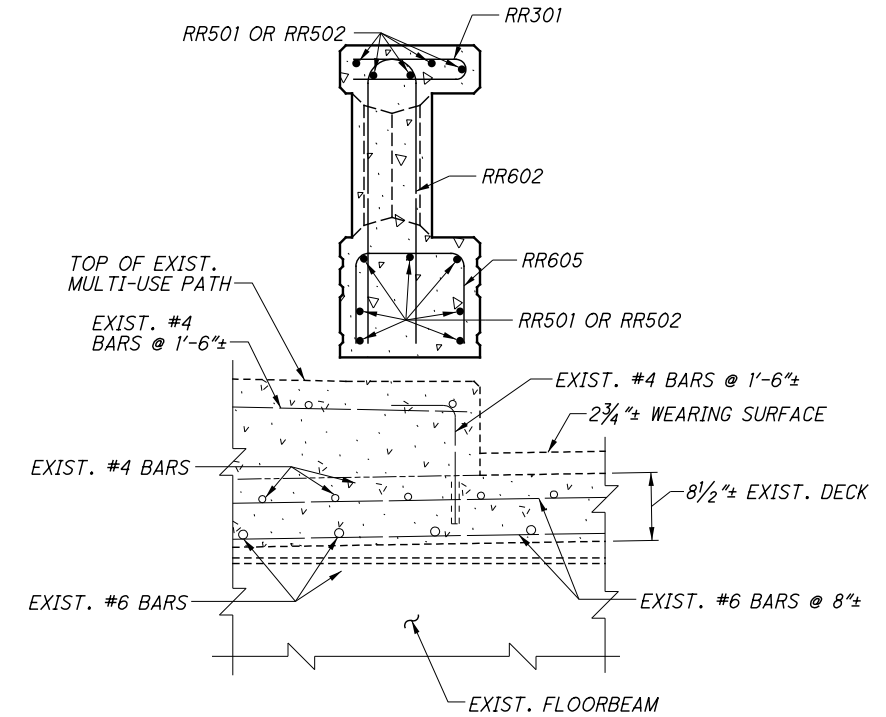
\* TYPICAL OVER DRAINAGE SLOTS



**SECTION A-A**  
(ON SUPERSTRUCTURE)



**SECTION A-A**  
(AT EAST APPROACH)



**SECTION B-B**  
(SUPERSTRUCTURE - SHOWN  
EAST APPROACH - SIMILAR)

**NOTES**

**RAILING PANEL LOCATIONS:** SEE SHEETS [202/238] & [203/238].

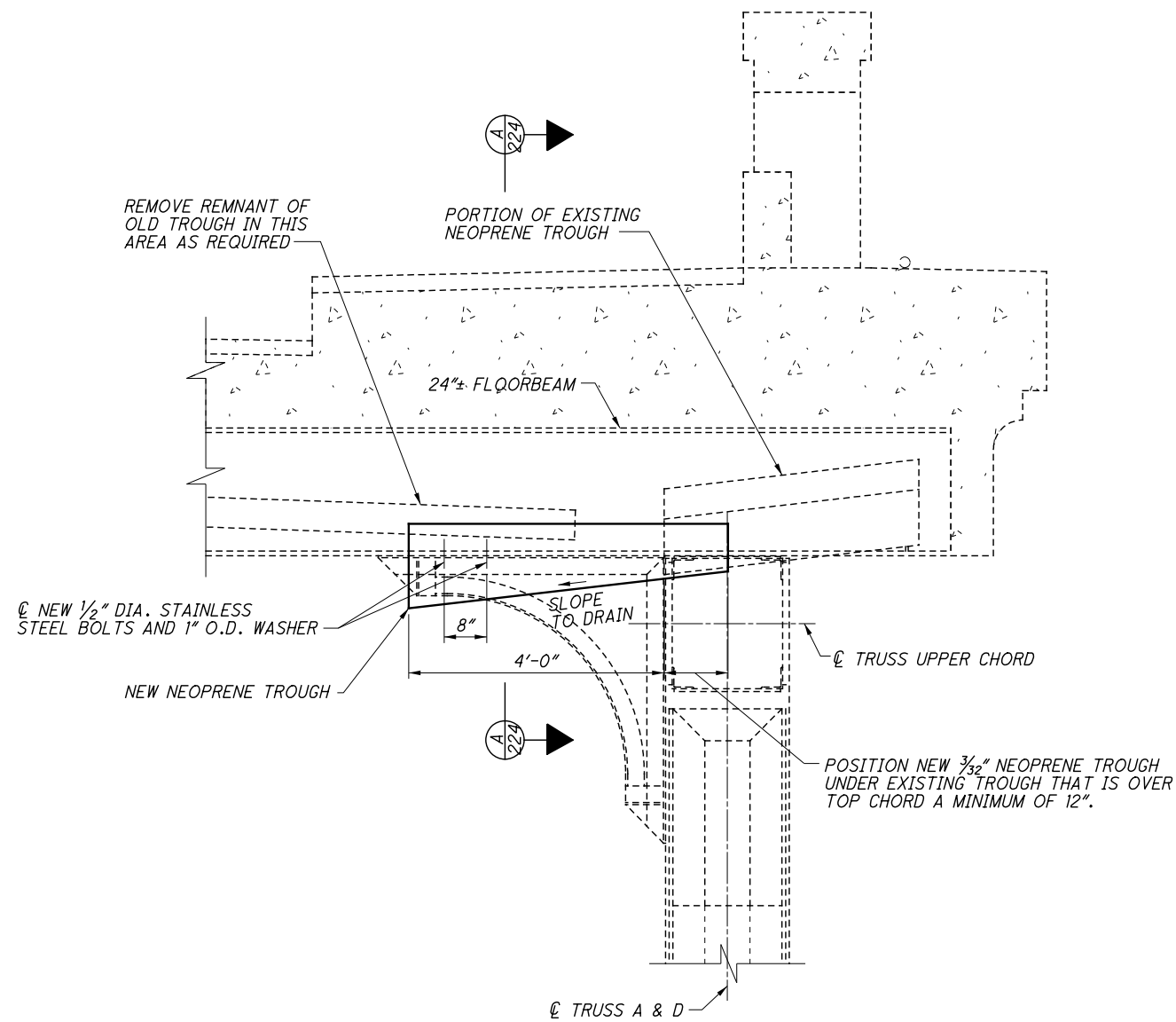
**INTERMEDIATE JOINT DETAIL:** SEE SHEET [222/238].

**DEFLECTION JOINT DETAIL:** SEE SHEET [222/238].

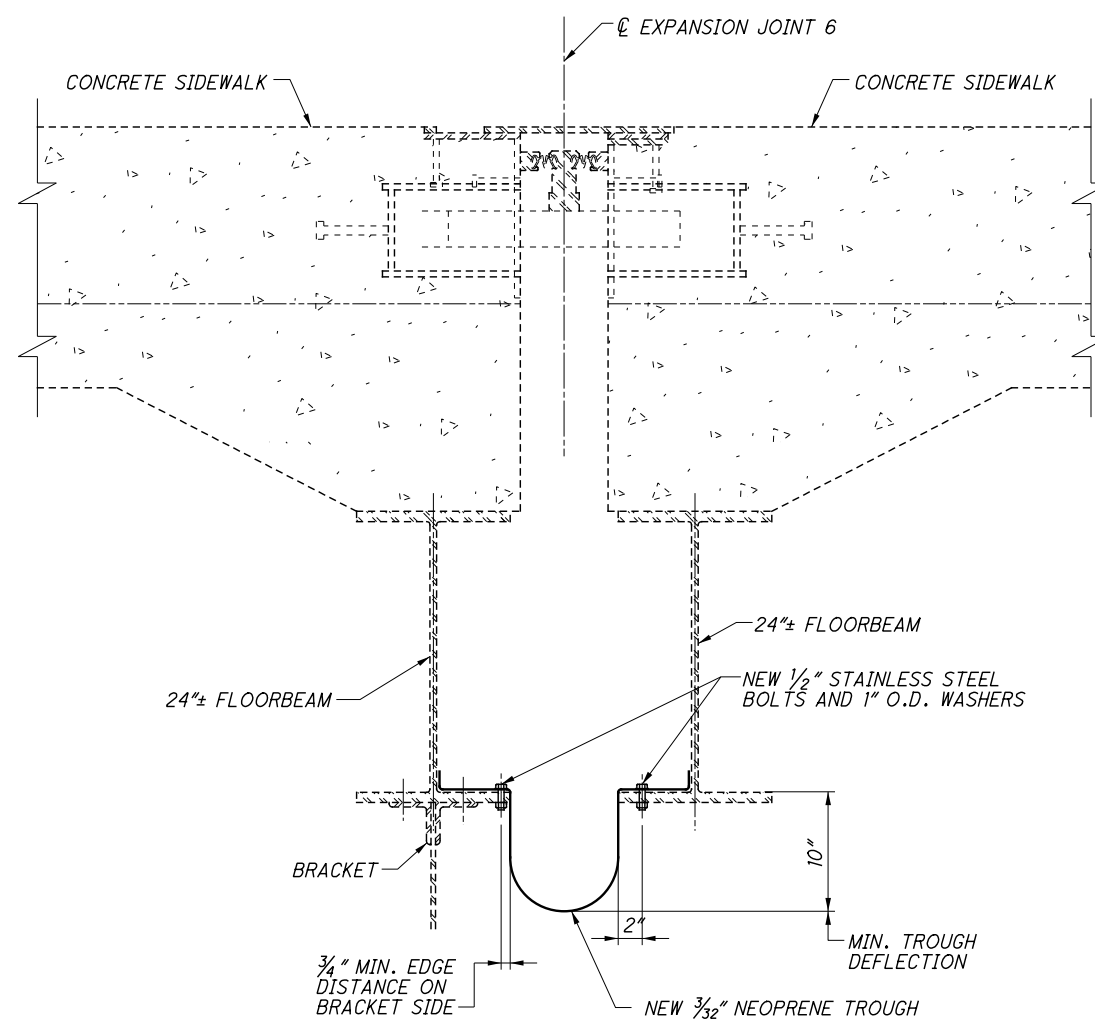
**FIELD ADJUST** END PANELS AS NECESSARY TO MAINTAIN OPEN JOINTS ON BOTH ENDS OF RAILING.

**ADDITIONAL DETAILS:** SEE SHEET [222/238].

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**SPAN 9, PANEL POINT 35**  
**(TRUSS A & D)**  
 (EXPANSION JOINT 6)



**SECTION A-A**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**REPAIR LOCATIONS:** SEE SHEET [81/238] & [200/238].

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: 3/32" NRNS FLASHING, PANEL POINT 35 TOP CHORD EXPANSION JOINT DRAINAGE PROTECTION:** WORK UNDER THIS ITEM INCLUDES PLACEMENT OF SHORT SECTIONS OF NRNS FLASHING ADDED AT EACH TOP CHORD TO DIRECT WATER AWAY PER PLAN DETAILS.

REMOVAL OF ANY EXISTING REMNANTS OF OLD TROUGH OBSTRUCTING THE NEW INSTALLATION SHALL BE PAID FOR UNDER THIS PAY ITEM.

THE NRNS MATERIAL SHALL BE PER CMS 705.13. NEW STAINLESS STEEL BOLTS AND HARDWARE SHALL BE PER CMS 730.10.

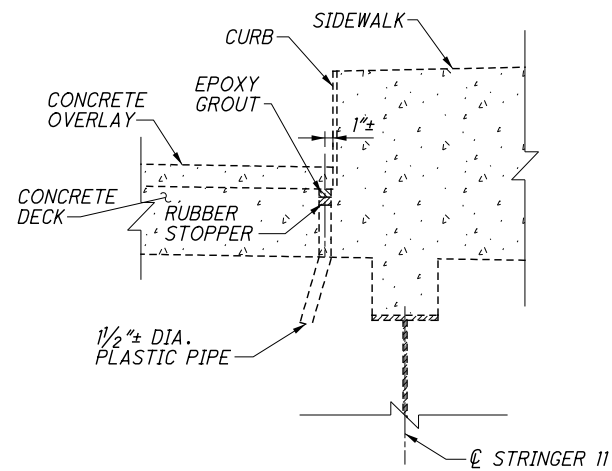
FABRICATION, HANDLING, AND INSTALLATION OF THE NRNS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

PAYMENT FOR THE NRNS MATERIAL, FABRICATION AND INSTALLATION SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR ITEM 518 - STRUCTURE DRAINAGE, MISC.: 3/32" NRNS FLASHING, PANEL POINT 35 TOP CHORD EXPANSION JOINT DRAINAGE PROTECTION.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:** REMOVAL OF ANY EXISTING REMNANTS OF OLD TROUGH OBSTRUCTING THE NEW INSTALLATION SHALL BE PAID FOR UNDER THIS PAY ITEM. SEE GENERAL NOTE SHEET [7/238].

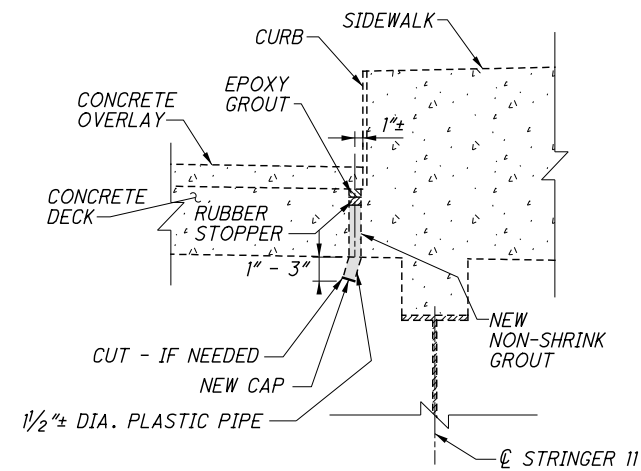
RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
REVIEWED DLR	DATE 1/30/18
DRAWN JLS	STRUCTURE FILE NUMBER 1801503
DESIGNED BLN	CHECKED KAK
PANEL POINT 35 - NEOPRENE TROUGH REPAIR BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER	
CUY-10-16.13 PID No. 96986	
224/238	
(284) 308	

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**EXISTING CONDITIONS**

(DRAIN AT SOUTH CURB SHOWN; DRAIN OUTLETS AT NORTH SIDEWALK AND OVER TRUSSES A & D ARE SIMILAR)



**PROPOSED WORK**

ROADWAY DECK SUBDRAIN PLUGGING LOCATIONS			
LOCATION			NOTES
SPAN	TRUSS	PANEL	
8	D	U29	NEAR FLOORBEAM OVER TRUSS - NETTING INTERFERENCE / FIELD PAINTING LOCATION
10	D	U55	1ST DRAIN WEST OF FLOORBEAM OVER TRUSS
10	D	U44-U45	SECOND DRAIN ON SOUTH SIDE OF STRINGER 11
10	D	U46	1ST DRAIN WEST OF FLOORBEAM OVER TRUSS
12	A	U72	1ST DRAIN WEST OF FLOORBEAM OVER TRUSS / FIELD PAINTING LOCATION
12	D	U72	1ST DRAIN EAST OF FLOORBEAM OVER TRUSS
13	A	U80	1ST DRAIN EAST OF FLOORBEAM OVER TRUSS
13	D	U80	NEAR FLOORBEAM OVER TRUSS / FIELD PAINTING LOCATION
14	A	U88	1ST DRAIN EAST OF FLOORBEAM OVER TRUSS
14	D	U88	1ST DRAIN EAST OF FLOORBEAM OVER TRUSS
15	A	U96	NEAR FLOORBEAM OVER TRUSS / FIELD PAINTING LOCATION
15	D	U100	1ST DRAIN WEST OF FLOORBEAM AT CURB
15	D	U96	1ST DRAIN EAST OF FLOORBEAM OVER TRUSS
17	A	U112	1ST DRAIN WEST OF FLOORBEAM OVER TRUSS - NETTING INTERFERENCE
17	A	U112	1ST DRAIN WEST OF FLOORBEAM OVER TRUSS - PLYWOOD DECKING INTERFERENCE
18	D	U120	NEAR FLOORBEAM OVER TRUSS

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: PLUGGING ROADWAY SUBDRAINS:** SEE GENERAL NOTE SHEET 12/238.

**REPAIR LOCATIONS:** SEE FRAMING PLAN SHEETS 79/238 TO 87/238.

**ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, MODULAR EXPANSION JOINT REPLACEMENT SEALS, AS PER PLAN**

**A. DESCRIPTION**

FURNISH ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO INSPECT, TEST AND INSTALL MODULAR EXPANSION JOINT REPLACEMENT STRIP SEALS IN JOINT 10 IN ACCORDANCE WITH THE PLANS AND THESE NOTES. STRIP SEALS SHALL BE OBTAINED FROM WATSON BOWMAN ACME AND BE COMPARABLE WITH THE MODULAR JOINT EXTRUSIONS THAT ARE REUSED.

THE WORK SHALL ALSO INCLUDE THE REMOVAL OF THE EXISTING STRIP SEALS; AND REMOVAL, STORAGE, MODIFICATION AND REINSTALLATION OF THE SIDEWALK COVER PLATE.

**B. DESIGN**

1. SUPPLY A STRIP SEAL TYPE SEAL CONNECTED TO EXISTING RETAINERS CONNECTED TO THE JOINT ARMOR AND THE SEPARATION BEAMS. DO NOT EXCEED 3.15 INCHES OF TOTAL HORIZONTAL MOVEMENT IN ANY INDIVIDUAL STRIP SEAL.

2. SUPPLY REMOVABLE AND REPLACEABLE NEOPRENE SEALS.

**C. MATERIALS**

1. SUPPLY STRIP SEALS CONFORMING TO ASTM D5973. SUBMIT CERTIFIED TEST DATA PER 513.08 FROM THE MANUFACTURER OR AN ACCREDITED LABORATORY. D5973 SECTION 8, LOT SIZE IS ONE SAMPLE PER JOINT. A SAMPLE IS A PIECE 4 FEET LONG WITH ALL MANUFACTURERS' MARKINGS. THE SEAL AND RETAINER ARE AN INTEGRAL SYSTEM SUPPLIED BY ONE MANUFACTURER. WBA SE-300 ELASTOMERIC STRIP SEAL FROM WATSON BOWMAN ACME ARE CURRENTLY IN THE JOINT.

2. LUBRICANT - ADHESIVE. ONE PART MOISTURE CURING POLYURETHANE COMPOUND MEETING THE REQUIREMENTS OF ASTM D4070 AND AS SPECIFIED BY THE SEAL MANUFACTURER.

3. HARDWARE SHALL BE ASTM A325 TYPE ONE, GALVANIZED OR A449 GALVANIZED, IF REQUIRED FOR COVER PLATE ATTACHMENT.

**D. FABRICATION AND INSTALLATION**

1. JOINTS IN STRIP SEALS: NO JOINTS ARE ALLOWED.

2. EXAMINE SEAL RETAINERS FOR SOIL OR DEFECTS THAT CAN DAMAGE THE SEAL. REPAIR ANY DEFECTS AS DIRECTED BY THE MANUFACTURER.

3. SOLVENT CLEAN THE NEOPRENE SEAL ELEMENTS AND THE RETAINER GROOVES TO REMOVE OIL, GREASE OR OTHER SOIL IMMEDIATELY PRIOR TO INSTALLING THE SEALS. INSTALL SEALS USING PROCEDURES AND ADHESIVE SPECIFIED BY THE JOINT MANUFACTURER. KEEP THE BONDING SURFACE CLEAN, DRY AND WARMER THAN 45° F.

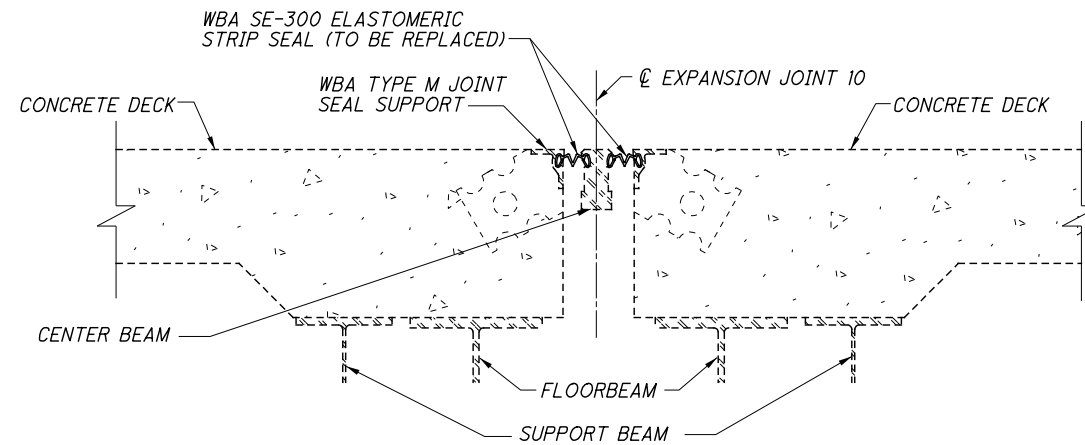
4. TEST THE INSTALLED MODULAR JOINT FOR LEAKS. FLOOD THE TOTAL EXPANSION JOINT LENGTH WITH WATER FOR A PERIOD OF NOT LESS THAN ONE HOUR. COVER THE ENTIRE JOINT SYSTEM BY EITHER PONDING OR FLOWING WATER. LOCATE ANY POINTS OF LEAKAGE AND TAKE ANY AND ALL MEASURES NECESSARY TO STOP THE LEAKAGE. PERFORM THIS WORK AT THE CONTRACTOR'S EXPENSE. PERFORM A SECOND WATER TEST AFTER ALL REPAIRS HAVE BEEN MADE.

**F. METHOD OF MEASUREMENT**

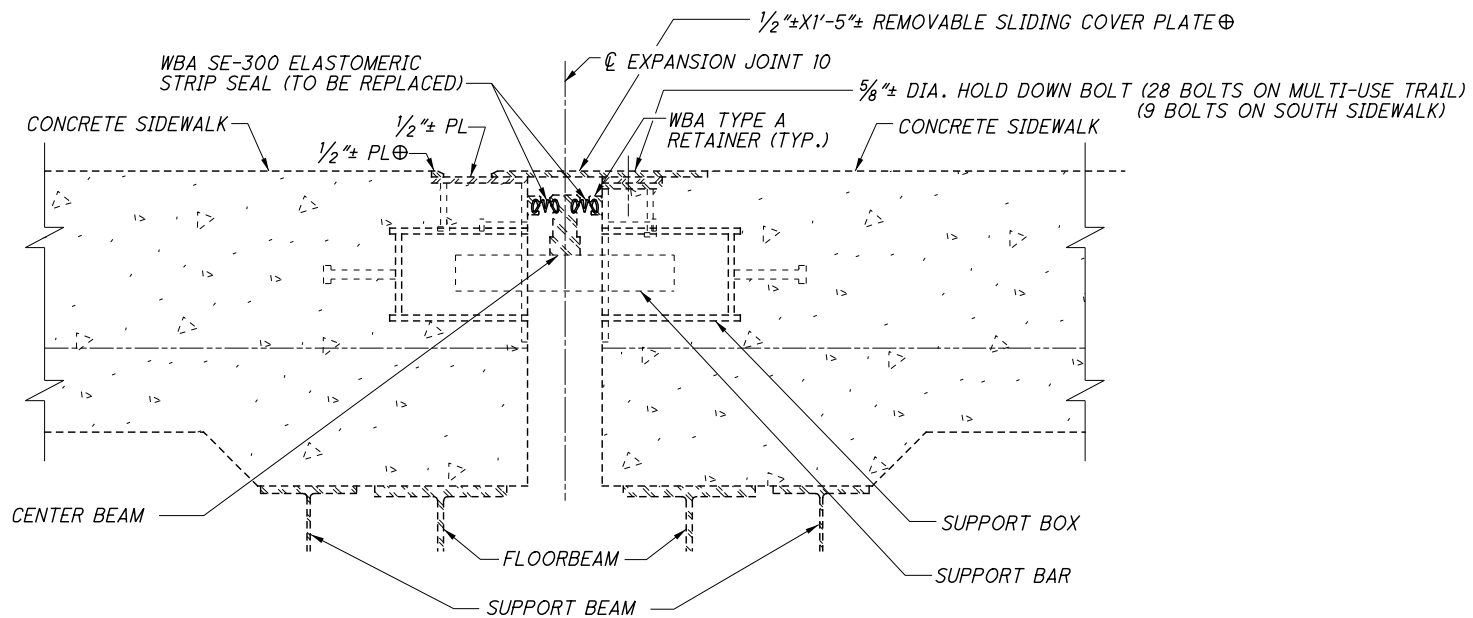
INCLUDE THE COST OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO DESIGN, SUPPLY, INSTALL AND TEST THE REPLACEMENT MODULAR EXPANSION JOINT STRIP SEALS ACCORDING TO THE PLANS AND THESE NOTES.

**G. BASIS OF PAYMENT**

PAYMENT WILL BE MADE AT THE CONTRACT PRICE PER FOOT FOR EACH SEAL IN THE MODULAR JOINT FOR ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, MODULAR EXPANSION JOINT REPLACEMENT SEALS, AS PER PLAN.



**MODULAR EXPANSION JOINT SECTION THRU DECK**



**MODULAR EXPANSION JOINT SECTION THRU SIDEWALK**

**LEGEND**

⊕- GRIND A 1/2" HORIZONTAL x 1/4" VERTICAL BEVEL AT THE EXPOSED EDGE OF THE EXISTING 1/2" SLIDING PLATE AND 1/2"x1" BAR

**NOTES**

**MODULAR EXPANSION JOINT REPAIR LOCATION:**

SEE SHEET 201/238.

**EXISTING TRANSVERSE SECTION:** SEE SHEETS 77/238 & 78/238.

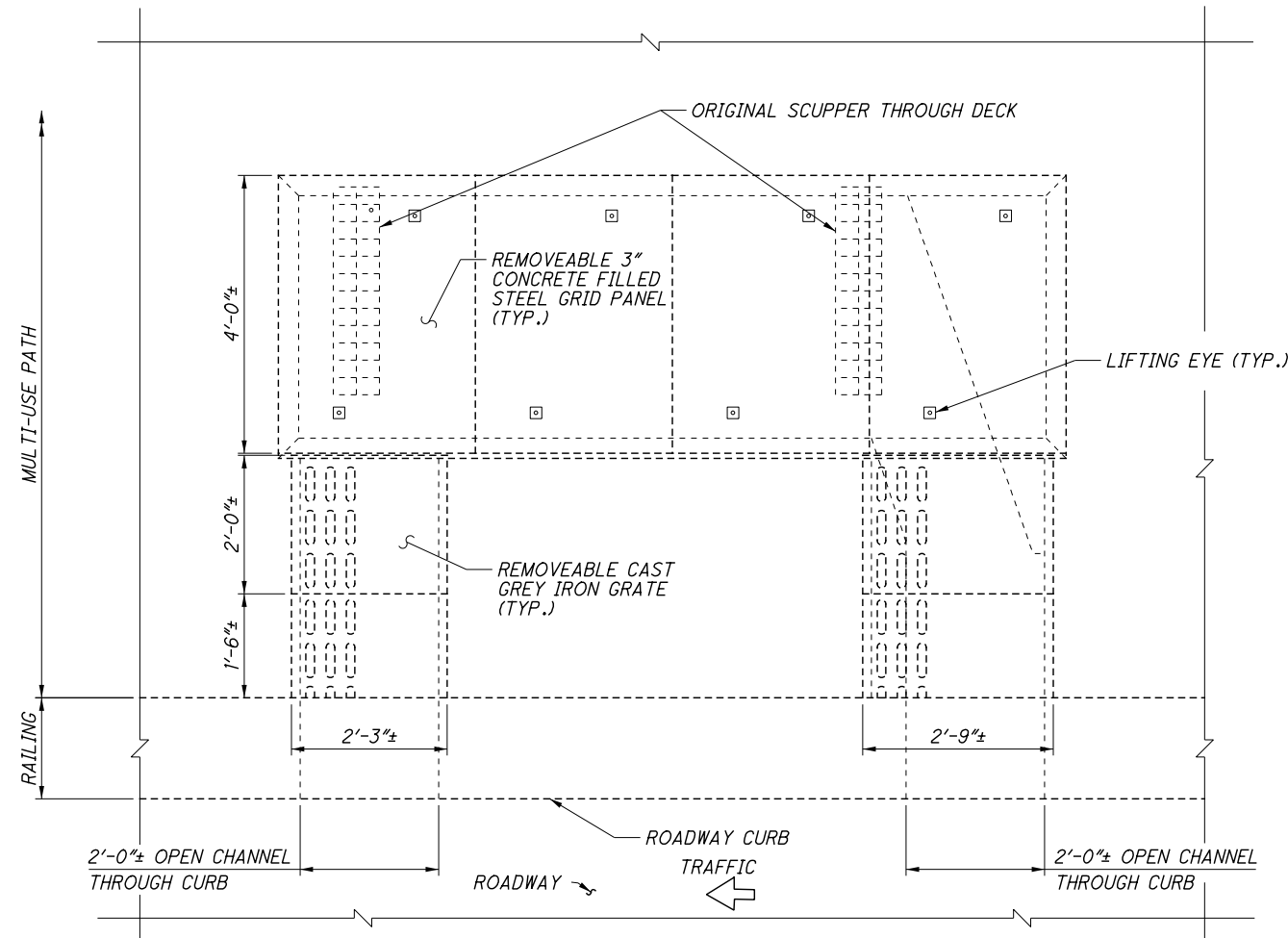
**GRINDING STEEL:** GRINDING OF EXISTING 1/2" STEEL PLATES WILL BE INCLUDED UNDER PAYMENT FOR ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN, MODULAR EXPANSION JOINT REPLACEMENT SEALS.

**EXPANSION JOINT:** FOR ADDITIONAL DETAILS SEE STANDARD DRAWING EXJ-4-87, REVISED 1-19-18.

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<p><b>MODULAR EXPANSION JOINT SEAL REPLACEMENT DETAILS AND NOTES</b></p>	<p>BRIDGE NO. CUY-10-1613 S.R. 10 OVER THE CUYAHOGA RIVER</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
<p>DATE 1/30/18</p>	<p>REVIEWED DLR</p>	<p>STRUCTURE FILE NUMBER 1801503</p>
<p>DESIGNED BLN</p>	<p>DRAWN JLS</p>	<p>CHECKED KAK</p>
<p>CUY - 10 - 16.13</p>	<p>PID No. 96986</p>	<p>226/238</p>
<p>286</p>	<p>308</p>	

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**SCUPPER RECESS PLAN**

**PROPOSED WORK**

1. REMOVE CONCRETE FILLED STEEL GRID PANELS.
2. REMOVE CAST GREY IRON GRATES.
3. REMOVE DIRT AND DEBRIS FROM SCUPPER RECESS AND SCUPPERS.
4. FLUSH SCUPPER RECESS AND SCUPPERS WITH WATER.
5. REINSTALL CONCRETE FILLED STEEL GRID PANELS AND CAST GREY IRON GRATES.

ALL PROPOSED WORK IS INCLUDED WITH ITEM SPECIAL - STRUCTURES: CLEANING DECK SCUPPER RECESS.

THE WORK SHALL BE PAID PER EACH, WITH THE MULTI - SCUPPER RECESSES DEFINED AS A SINGLE LOCATION.

**NOTES**

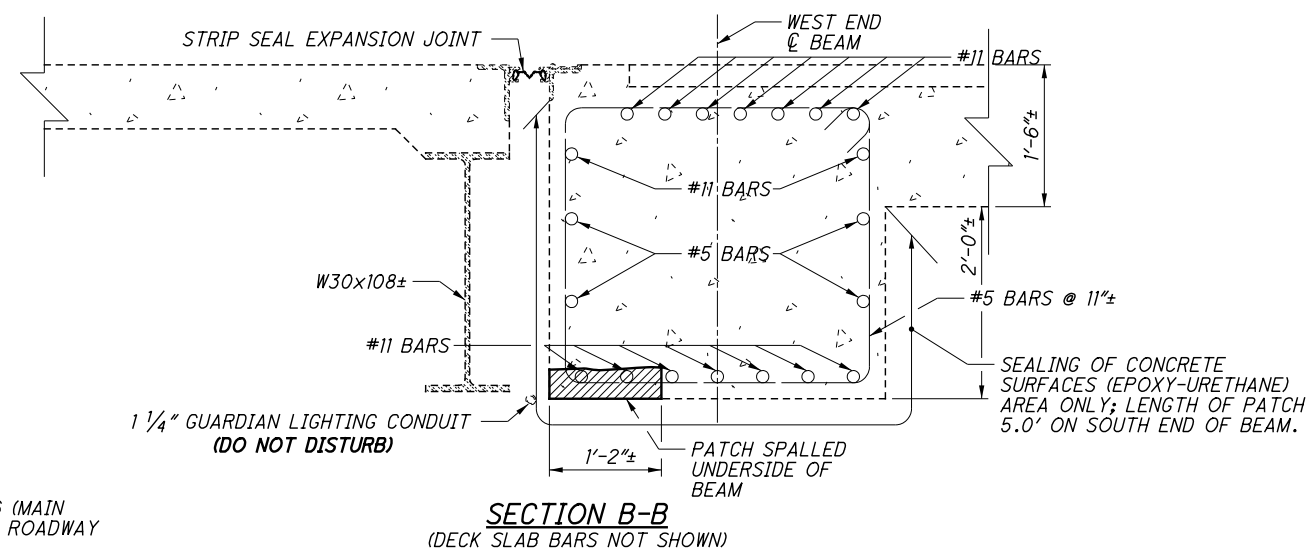
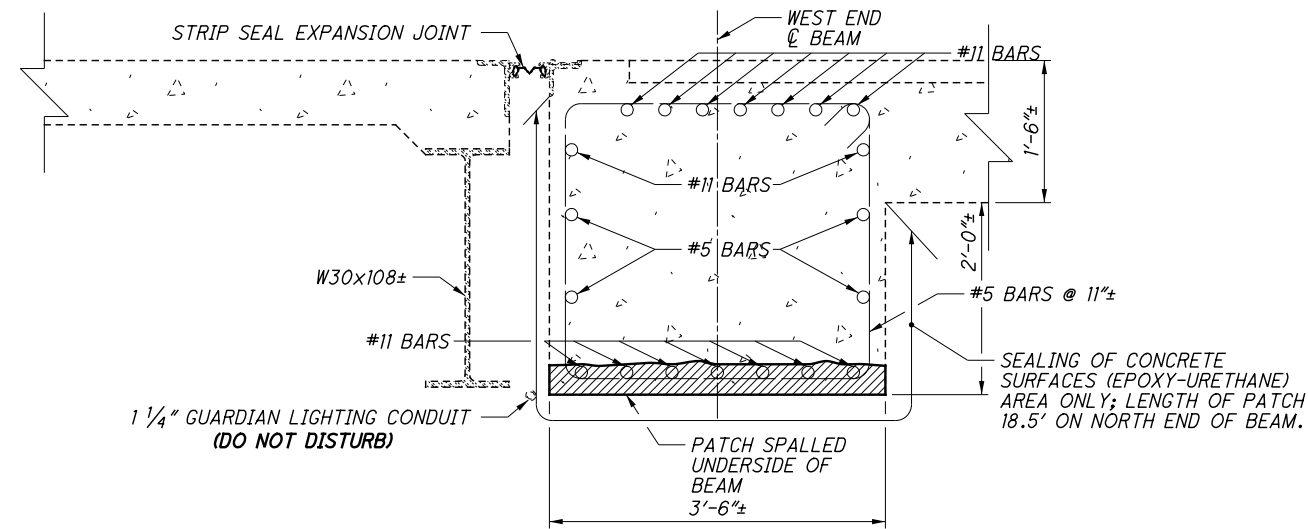
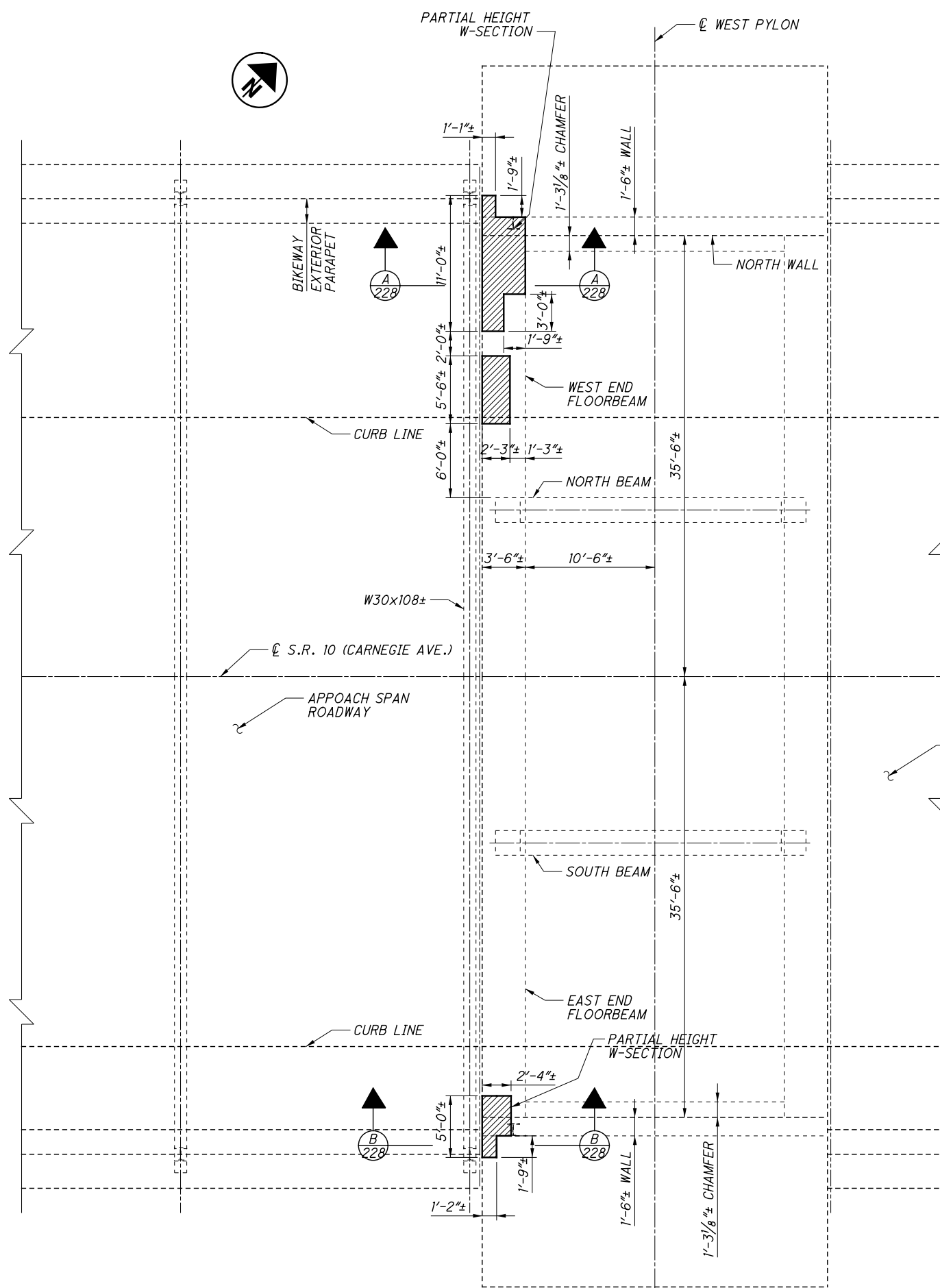
**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**SCUPPER RECESS PLAN:** TWO SCUPPER FRAMING AND INLET CHANNEL PLAN VIEW SHOWN. THREE SCUPPER ARRANGEMENT HAS SIMILAR DETAILS.

**SCUPPER LOCATION:** SEE DECK PLAN SHEETS 199/238 THROUGH 203/238.



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SUMMARY OF PATCHING QUANTITIES				
LOCATION	UNIT	MEASURED QUANTITY	ESTIMATED QUANTITY	REPAIR QUANTITY
NORTH END OF FLOORBEAM	SQ FT	43	48	
SOUTH END OF FLOORBEAM	SQ FT	10	12	
CONTINGENCY	SQ FT		10	
<b>TOTAL</b>	<b>SQ FT</b>	<b>53</b>	<b>70</b>	

**LEGEND**  
 - APPROXIMATE AREA TO BE REPAIRED PER ITEM 519 - PATCHING CONCRETE STRUCTURE

**NOTES**  
**MATERIALS** SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.  
**REPAIR LOCATION:** SEE DECK PLAN SHEET [199/238].  
**ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:** SEE GENERAL NOTE SHEET [8/238].  
**ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN:** SEE GENERAL NOTE SHEET [8/238].

**QUANTITY DESCRIPTIONS**  
**MEASURED QUANTITY:** ESTIMATED QUANTITY OF CONCRETE TO BE REMOVED AS MEASURED IN THE SPRING OF 2016.  
**ESTIMATED QUANTITY:** ESTIMATED QUANTITY USED IN THE PLANS BASED ON ASSUMED INCREASE OF THE DELINEATED DELAMINATED AREAS.  
**ACTUAL REPAIR QUANTITY:** PAY QUANTITY AS MEASURED BY FIELD ENGINEER TO BE ESTABLISHED AND FILLED IN DURING CONSTRUCTION.

**CONCRETE FLOORBEAM REPAIRS AT WEST PYLON**

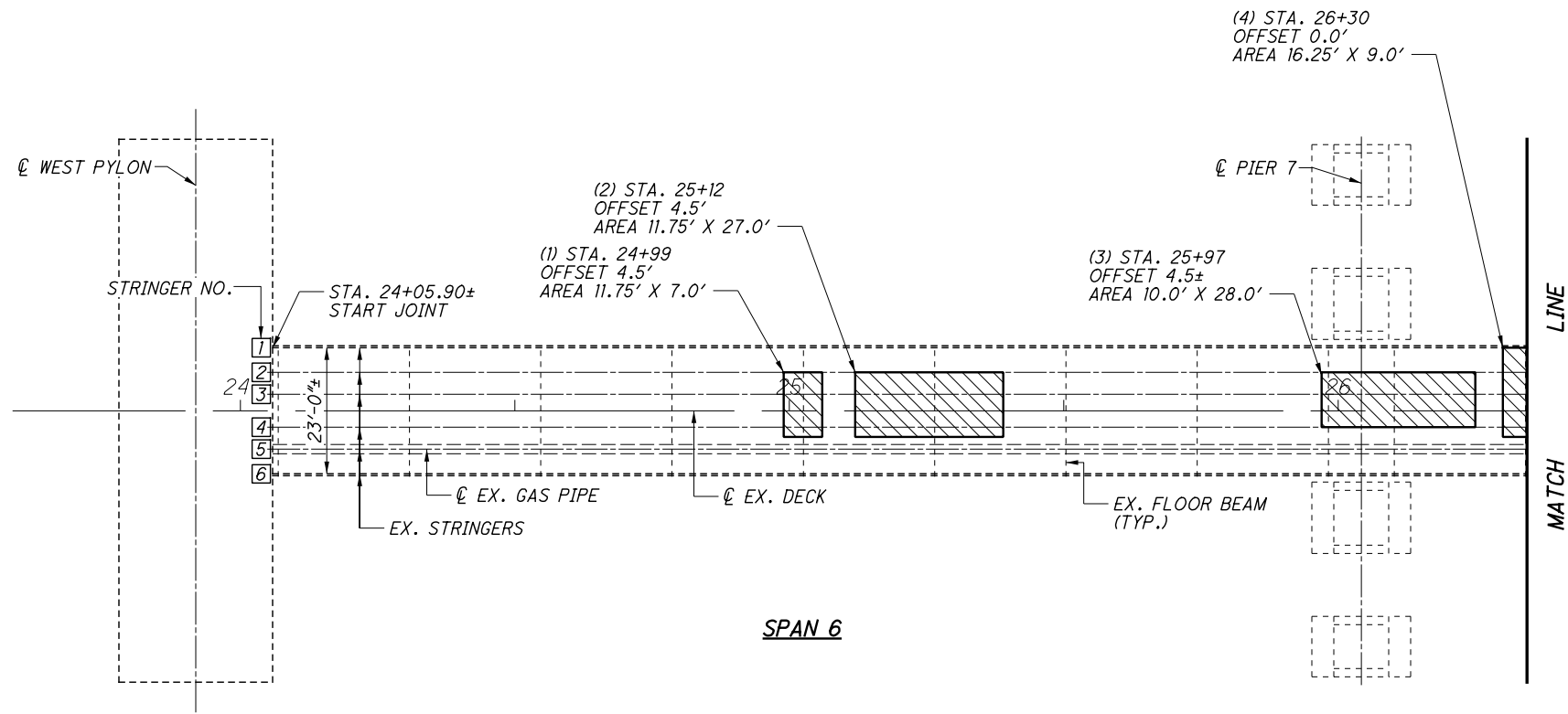
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
PID No. 96986

228/238  
288  
308

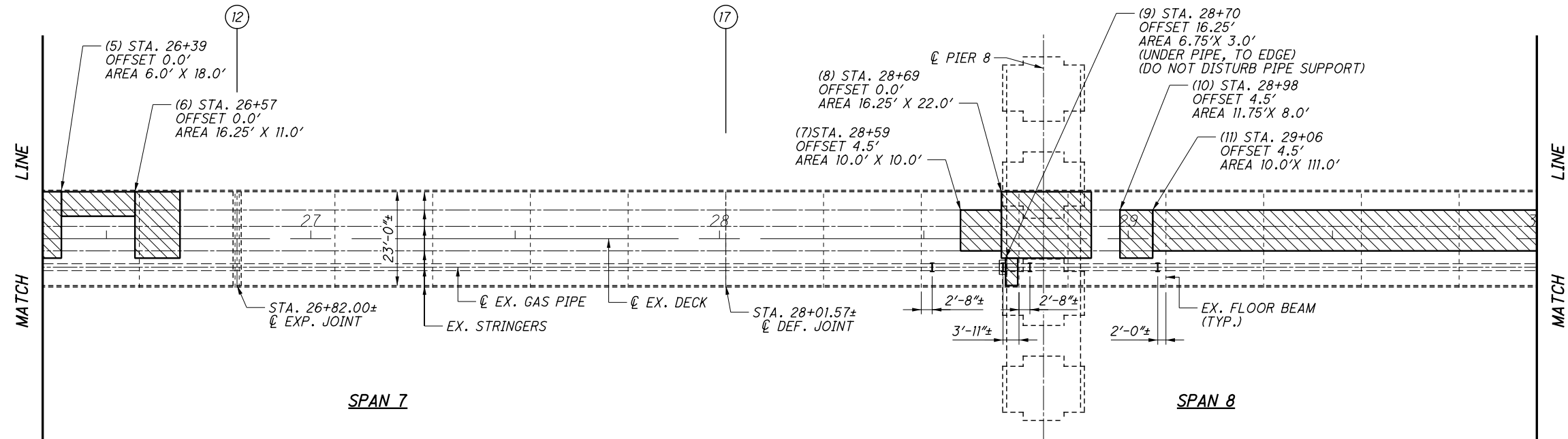
RICHLAND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 1/30/18  
 REVIEWED: DLR  
 DRAWN: JSB  
 DESIGNED: KAK  
 CHECKED: DAP

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ESTIMATED QUANTITIES		
NO.	STATION	AREA (SF)
1	24+99.00	82.25
2	25+12.00	317.25
3	25+97.00	280.00
4	26+30.00	146.25
5	26+39.00	108.00
6	26+57.00	178.75
7	28+59.00	100.00
8	28+69.00	357.50
9	28+70.00	20.25
10	28+98.00	94.00
11	29+06.00	1110.00
TOTAL =		2794.25

DECK PLAN



DECK PLAN

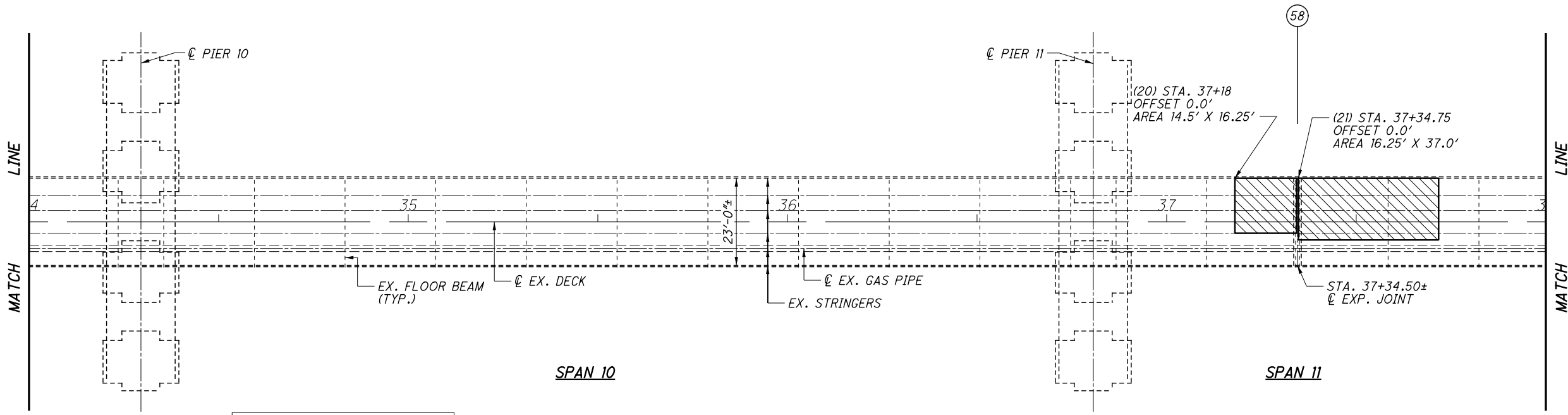
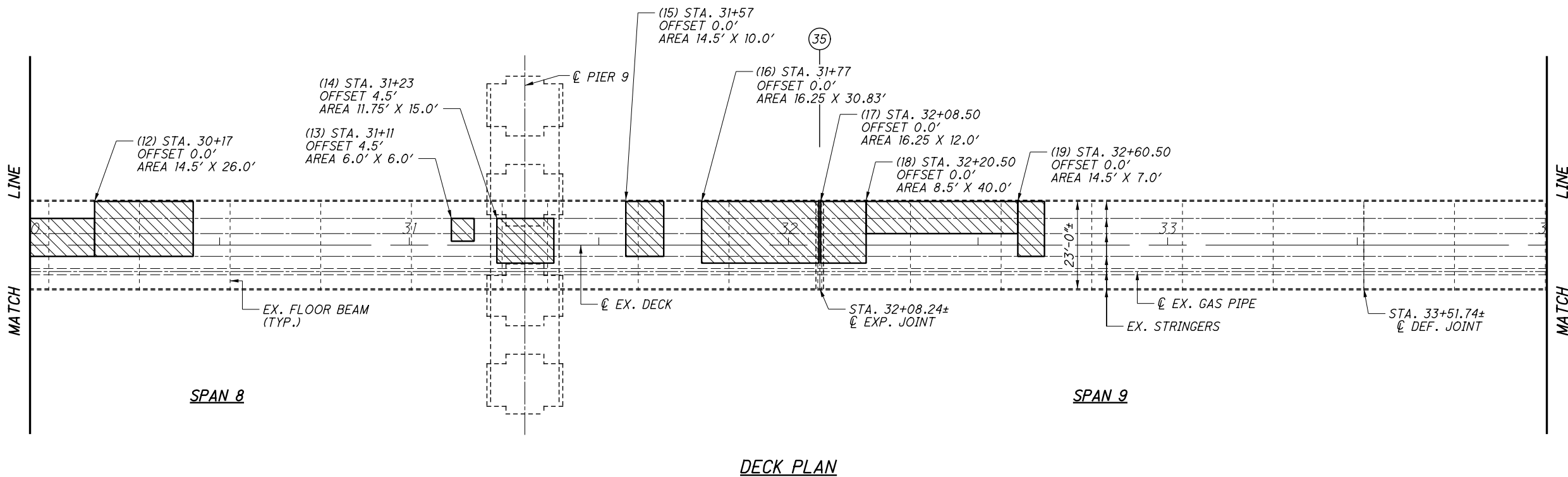
**NOTES:**

- STATIONS ALONG THE CENTER LINE OF THE EXISTING MAINTENANCE AND INSPECTION DECK ARE USED FOR SPECIFYING EACH PROPOSED REPAIR AREA. THE STATION OF THE START JOINT ON THE EXISTING DECK NEAR THE WEST PYLON IS 24+05.90±.
- EACH PROPOSED DECK REPAIR AREA IS SPECIFIED WITH THE STATION AT ITS LEFT REAR CORNER AND THEN FOLLOWED BY THE OFFSET DISTANCE AND THE REPAIR AREA. THE OFFSET DISTANCE IS MEASURED FROM THE LEFT DECK EDGE; THE REPAIR AREA IS GIVEN AS THE TRANSVERSE WIDTH FIRST AND THEN THE LONGITUDINAL LENGTH.
- SEE SHEETS 233/238 AND 234/238 FOR DECK TRANSVERSE SECTION AND REPAIR SECTION DETAILS.
- EXPANSION AND DEFLECTION JOINTS SPECIFIED ON PLANS (SEE LEGEND) REQUIRE BEARING RESET AND REPAIR (NOT A PART OF THIS MAINTENANCE AND INSPECTION DECK REPAIR). SEE MAINTENANCE AND INSPECTION DECK STEEL REPAIR PLANS FOR DETAILS.
- THE CONTRACTOR SHALL IDENTIFY ALL GAS PIPE SUPPORTS THAT WILL BE REMOVED AND REINSTALLED BECAUSE OF DECK REPLACEMENT OPERATIONS PRIOR TO THE START OF DEMOLITION. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE DOMINION EAST OHIO GAS COMPANY AS DESCRIBED IN THE ITEM SPECIAL - STRUCTURES: GAS LINE SUPPORT GENERAL NOTE ON SHEET 13/238.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO THE GAS PIPE IN LOCATION DESCRIBED IN THE ITEM SPECIAL - STRUCTURES: GAS LINE SUPPORT GENERAL NOTE ON SHEET 13/238.
- NO WORK SHALL BE PERFORMED IN THE VICINITY OF THE PIPE WITHOUT PROTECTIVE WRAPPING IN PLACE, SEE ITEM SPECIAL - STRUCTURES: GAS LINE SUPPORT GENERAL NOTE ON SHEET 13/238.
- ITEM 511 CLASS QC2 CONCRETE, MISC.: MAINTENANCE AND INSPECTION DECK INCLUDING QC/QA - SEE GENERAL NOTE SHEET ON 8/238.

**LEGEND**

- DECK REMOVAL AND REPAIR AREA
- (21) - NUMBER OF DECK REMOVAL AND REPAIR AREA
- (12) - PANEL NUMBER OF DECK EXPANSION OR DEFLECTION JOINT THAT REQUIRES REPAIR (SEE NOTE 4)
- I - GAS PIPE SUPPORT - STEEL ROLLER
- GAS PIPE SUPPORT - STEEL COLLAR WITH 22± x 42± CONCRETE BASE

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ESTIMATED QUANTITIES		
NO.	STATION	AREA (SF)
12	30+17.00	377.00
13	31+11.00	36.00
14	31+23.00	176.25
15	31+57.00	145.00
16	31+77.00	500.99
17	32+08.50	195.00
18	32+20.50	340.00
19	32+60.50	101.50
20	37+18.00	235.63
21	37+34.75	601.25
TOTAL =		2708.62

**NOTES:**  
1. SEE NOTES ON SHEET 229/238.

**LEGEND**

DECK REMOVAL AND REPAIR AREA

(21) - NUMBER OF DECK REMOVAL AND REPAIR AREA

(12) - PANEL NUMBER OF DECK EXPANSION OR DEFLECTION JOINT THAT REQUIRES REPAIR (SEE NOTE 4 ON SHEET 229/238)



DESIGN AGENCY: COLUMBUS ENGINEERING CONSULTANTS, INC. 870 MICHIGAN AVENUE, COLUMBUS, OH 43215 TEL: 614/228-3500

DATE: 03/17

REVIEWED: JJ

STRUCTURE FILE NUMBER: 1801503

DESIGNED: JH/YJSJ

CHECKED: SS

**MAINTENANCE AND INSPECTION DECK REPAIR PLAN - 2**

BRIDGE NO. CUY-10-1613

S.R. 10 OVER THE CUYAHOGA RIVER

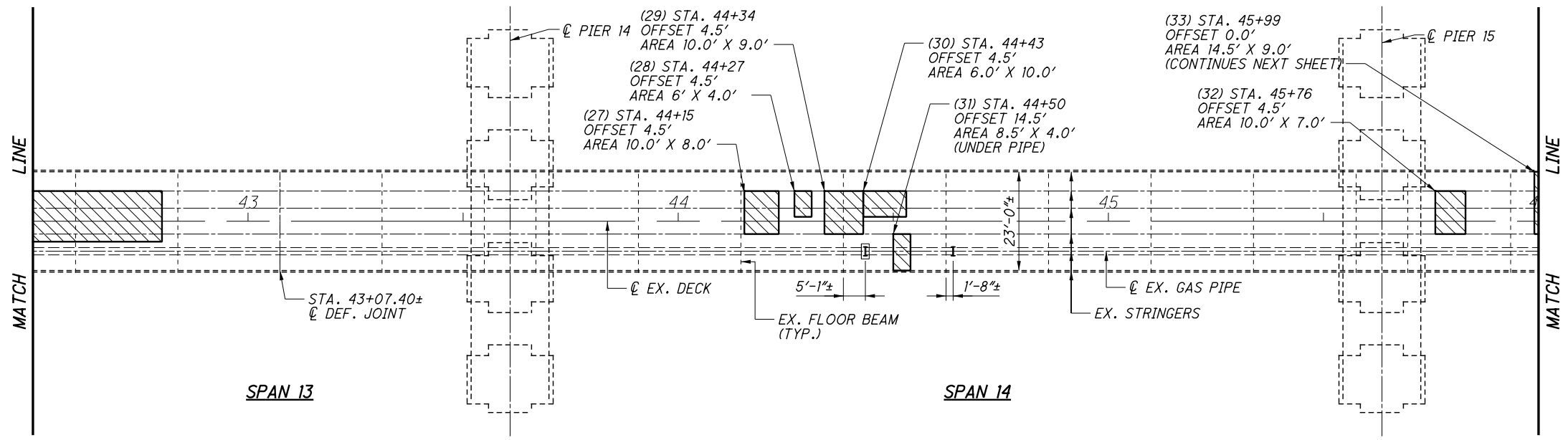
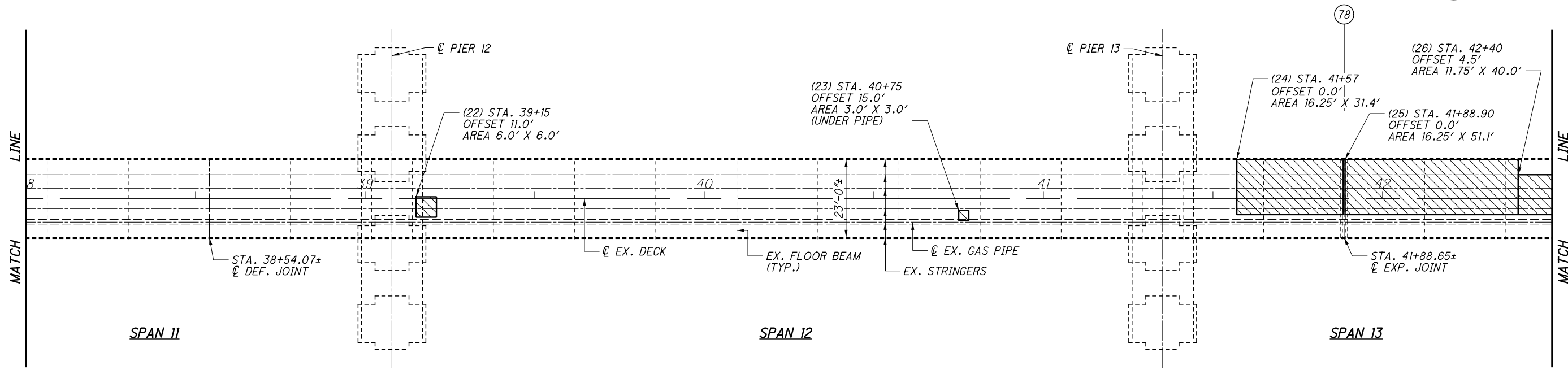
**CUY-10-16.13**

PID No. 96986

230/238

(290/308)

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ESTIMATED QUANTITIES		
NO.	STATION	AREA (SF)
22	39+15.00	36.00
23	40+75.00	9.00
24	41+57.00	510.25
25	41+88.90	830.38
26	42+40.00	470.00
27	44+15.00	80.00
28	44+27.00	24.00
29	44+34.00	90.00
30	44+43.00	60.00
31	44+50.00	34.00
32	45+76.00	70.00
33	45+99.00	130.50
TOTAL =		2344.13

**NOTES:**  
1. SEE NOTES ON SHEET 229/238.

- LEGEND**
- DECK REMOVAL AND REPAIR AREA
  - (21) - NUMBER OF DECK REMOVAL AND REPAIR AREA
  - (12) - PANEL NUMBER OF DECK EXPANSION OR DEFLECTION JOINT THAT REQUIRES REPAIR (SEE NOTE 4 ON SHEET 229/238)
  - I - GAS PIPE SUPPORT - STEEL ROLLER
  - - GAS PIPE SUPPORT - STEEL COLLAR WITH 22"± X 42"± CONCRETE BASE

**MAINTENANCE AND INSPECTION DECK REPAIR PLAN - 3**

BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
PID No. 96986

231/238

291  
308

DESIGN AGENCY  
COLUMBUS ENGINEERING  
CONSULTANTS, INC.  
870 MICHIGAN AVENUE, COLUMBUS, OH 43215  
TEL: 614/428-3500

DATE  
03/17

REVIEWED  
JJ

DRAWN  
CEC

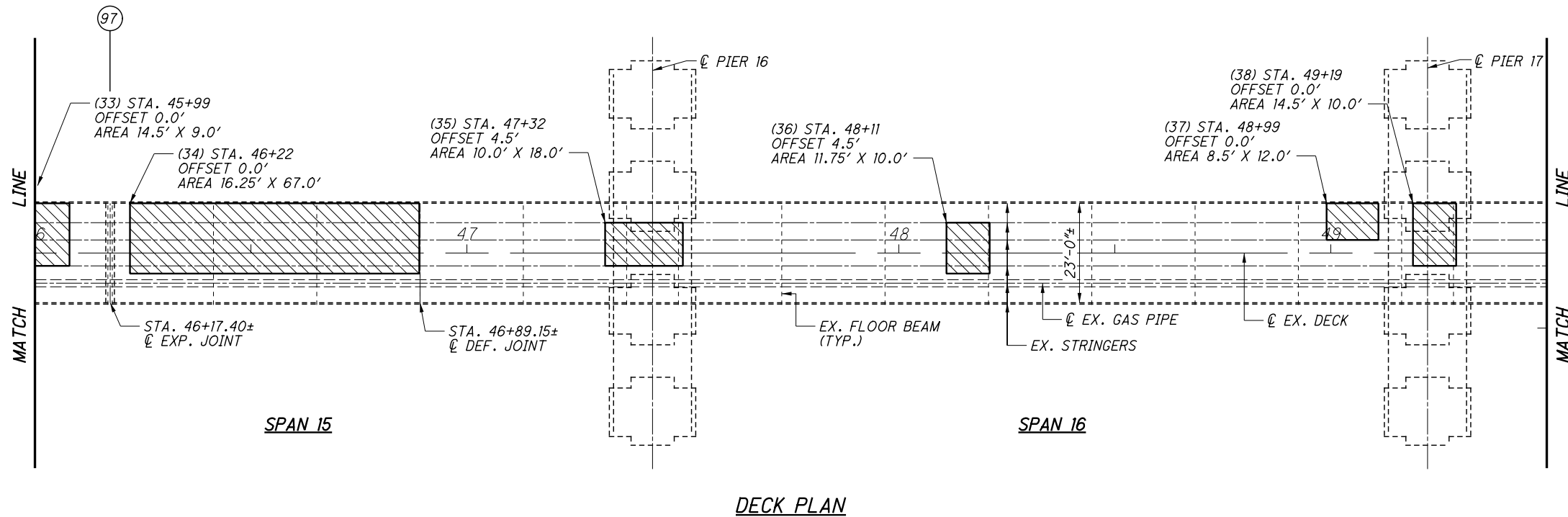
DESIGNED  
JH/YJSJ

STRUCTURE FILE NUMBER  
1801503

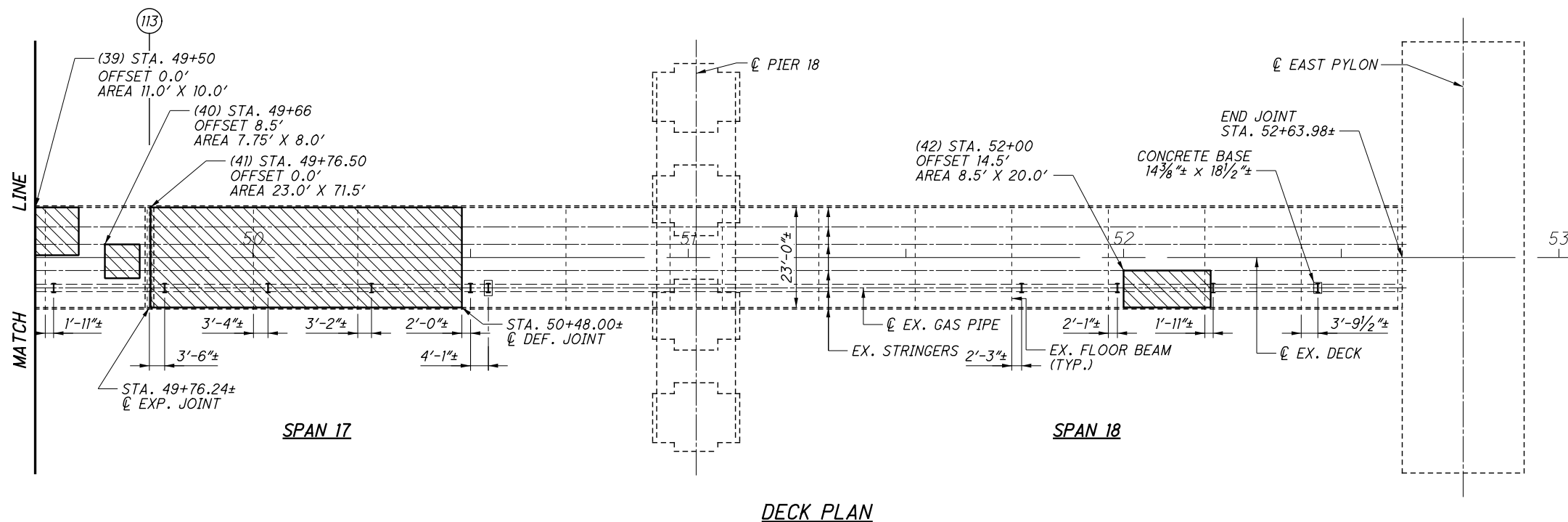
REVISION  
REVISED

CHECKED  
SS

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ESTIMATED QUANTITIES		
NO.	STATION	AREA (SF)
34	46+22.00	1088.75
35	47+32.00	180.00
36	48+11.00	117.50
37	48+99.00	102.00
38	49+19.00	145.00
39	49+50.00	110.00
40	49+66.00	62.00
41	49+76.50	1644.50
42	52+00.00	170.00
TOTAL =		3619.75



**NOTES:**  
1. SEE NOTES ON SHEET 229/238.

- LEGEND**
- DECK REMOVAL AND REPAIR AREA
  - (21) - NUMBER OF DECK REMOVAL AND REPAIR AREA
  - PANEL NUMBER OF DECK EXPANSION OR DEFLECTION JOINT THAT REQUIRES REPAIR (SEE NOTE 4 ON SHEET 229/238)
  - I - GAS PIPE SUPPORT - STEEL ROLLER
  - II - GAS PIPE SUPPORT - STEEL COLLAR WITH 22" x 42" CONCRETE BASE

**MAINTENANCE AND INSPECTION DECK REPAIR PLAN - 4**

BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
PID No. 96986

232/238

292  
308

DESIGN AGENCY  
COLUMBUS ENGINEERING  
CONSULTANTS, INC.  
870 MICHIGAN AVENUE, COLUMBUS, OH 43215  
TEL: 614/228-3500

DATE  
03/17

REVIEWED  
JJ

DRAWN  
CEC

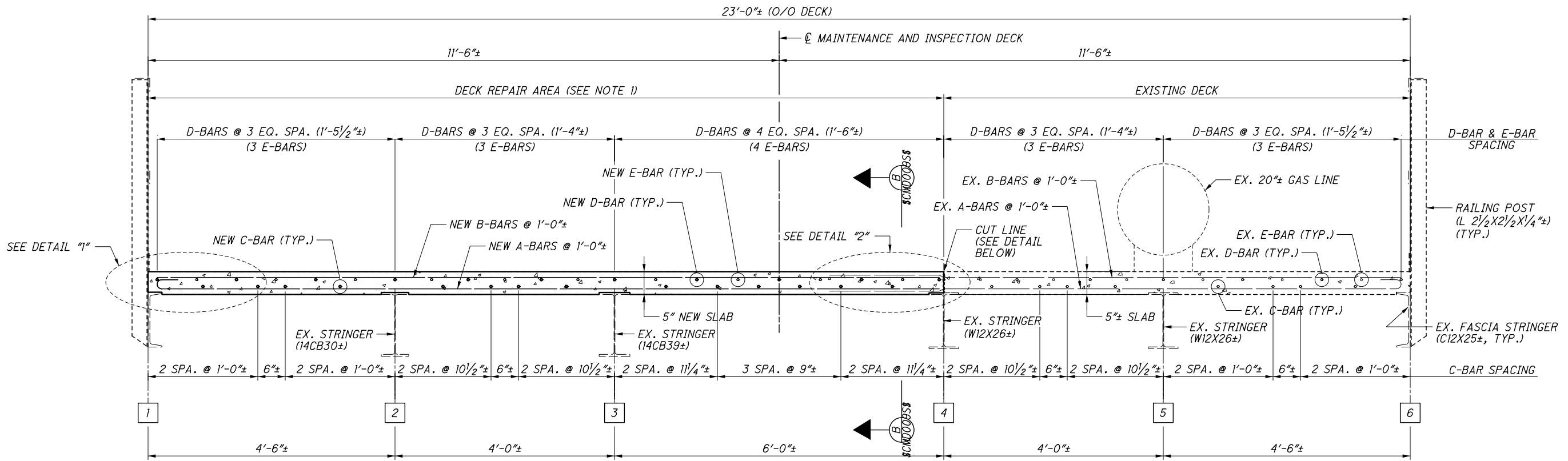
DESIGNED  
JH/YJSJ

STRUCTURE FILE NUMBER  
1801503

REVISOR  
REVISED

CHECKED  
SS

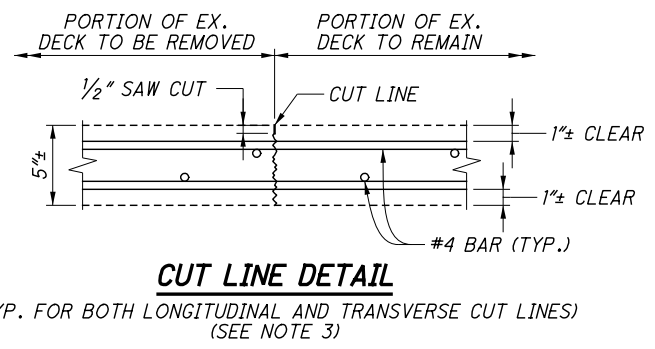
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**TYPICAL TRANSVERSE SECTION (SECTION A-A)**

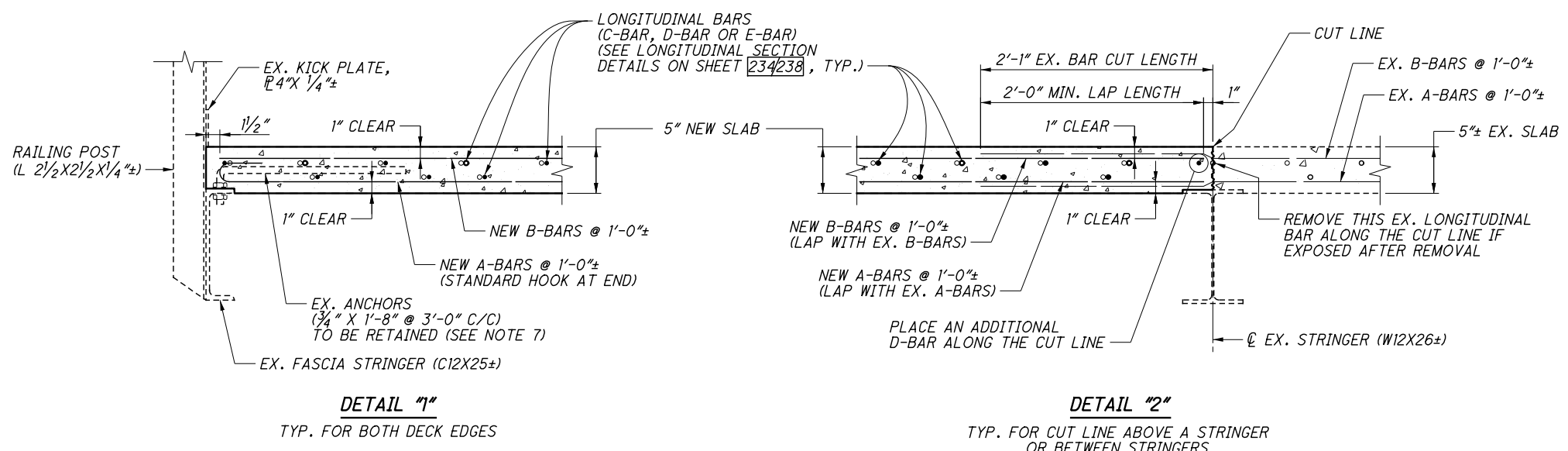
**LEGEND:**

- A-BAR: BOTTOM TRANSVERSE BAR
- B-BAR: TOP TRANSVERSE BAR
- C-BAR: BOTTOM LONGITUDINAL BAR
- D-BAR: TOP LONGITUDINAL BAR
- E-BAR: ADDITIONAL TOP LONGITUDINAL BAR OVER INTERMEDIATE FLOOR BEAMS OR PIERS (PLACED IN BETWEEN D-BARS)
- ALL EXISTING BARS ARE NO. 4, NON-COATED.
- ALL NEW BARS ARE NO. 4, EPOXY-COATED.
- ∞ - INDICATING A NEW BAR LAPS WITH AN EX. BAR NEAR THE CUT LINE
- 2 - EXISTING STRINGER NUMBER



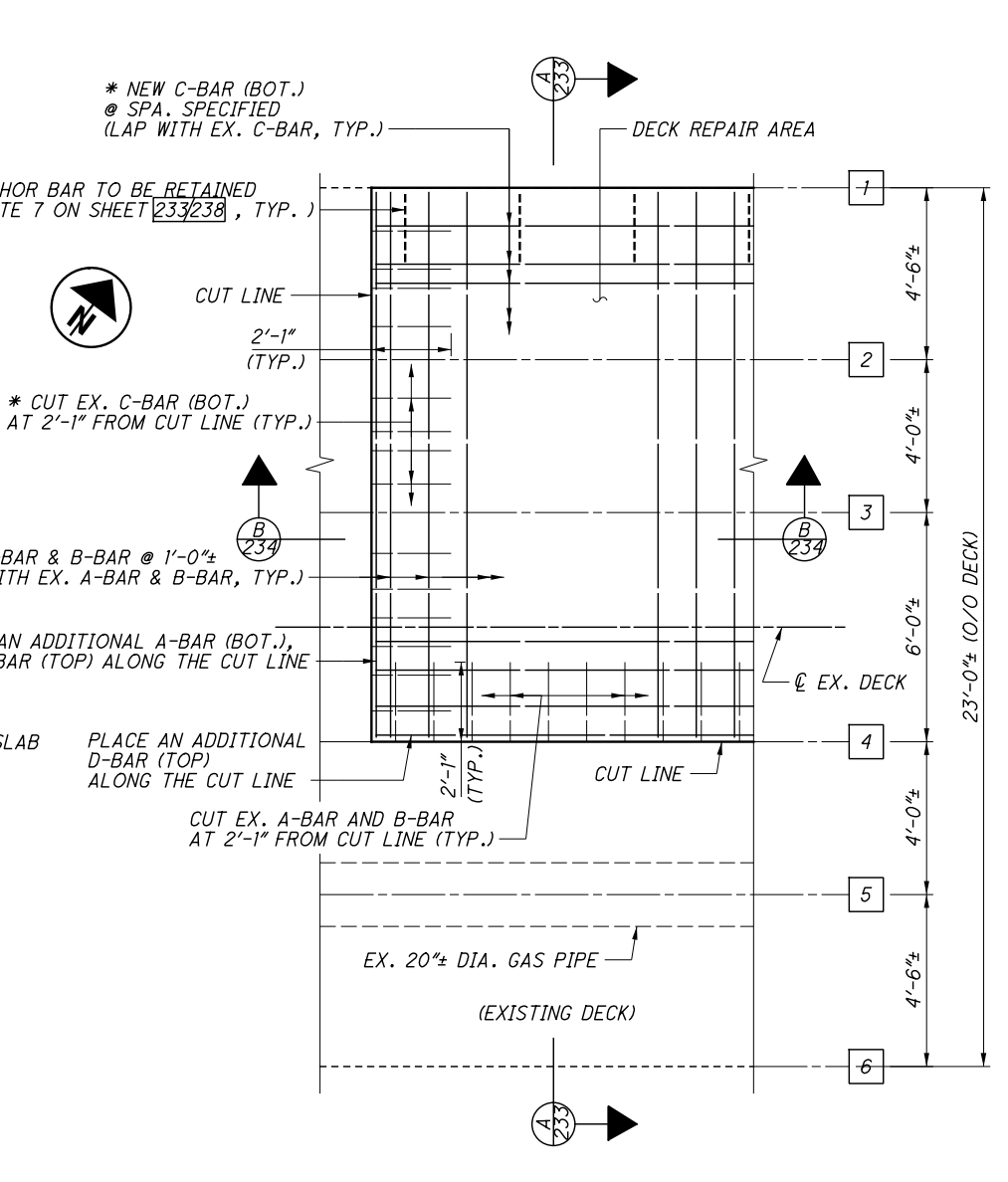
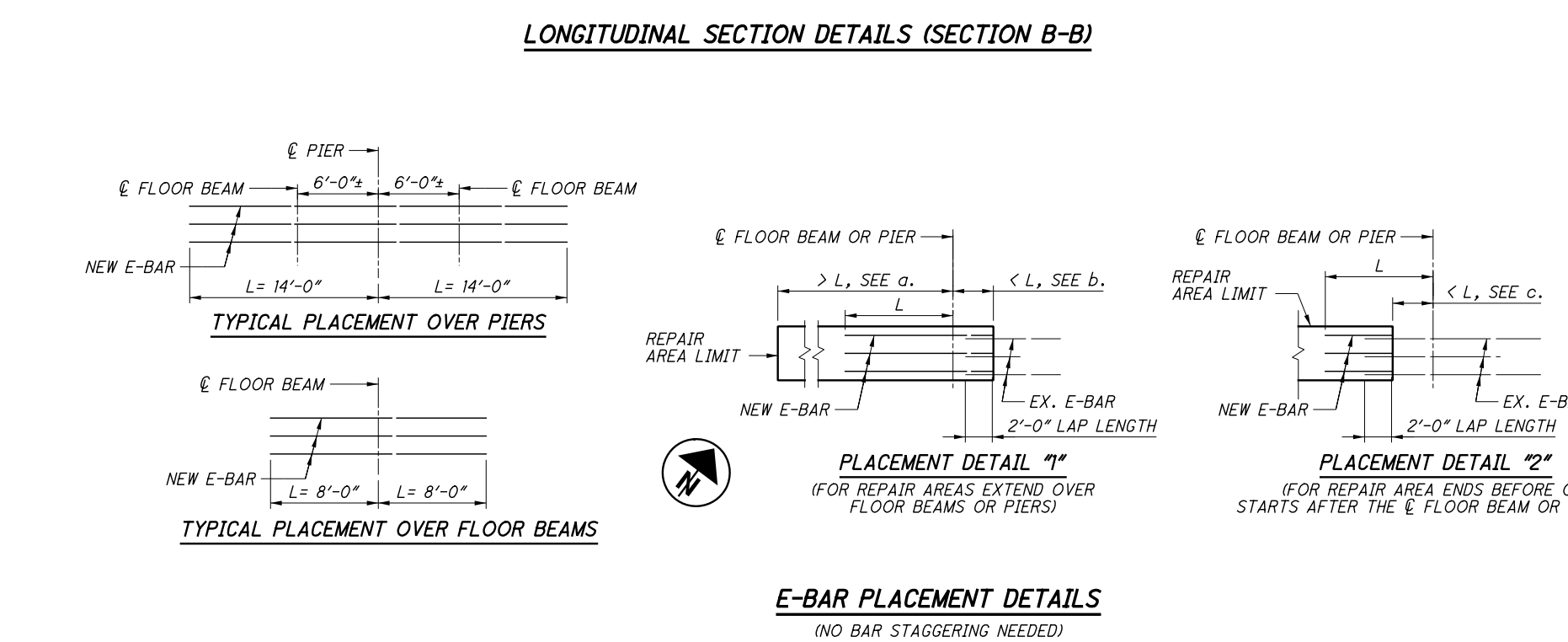
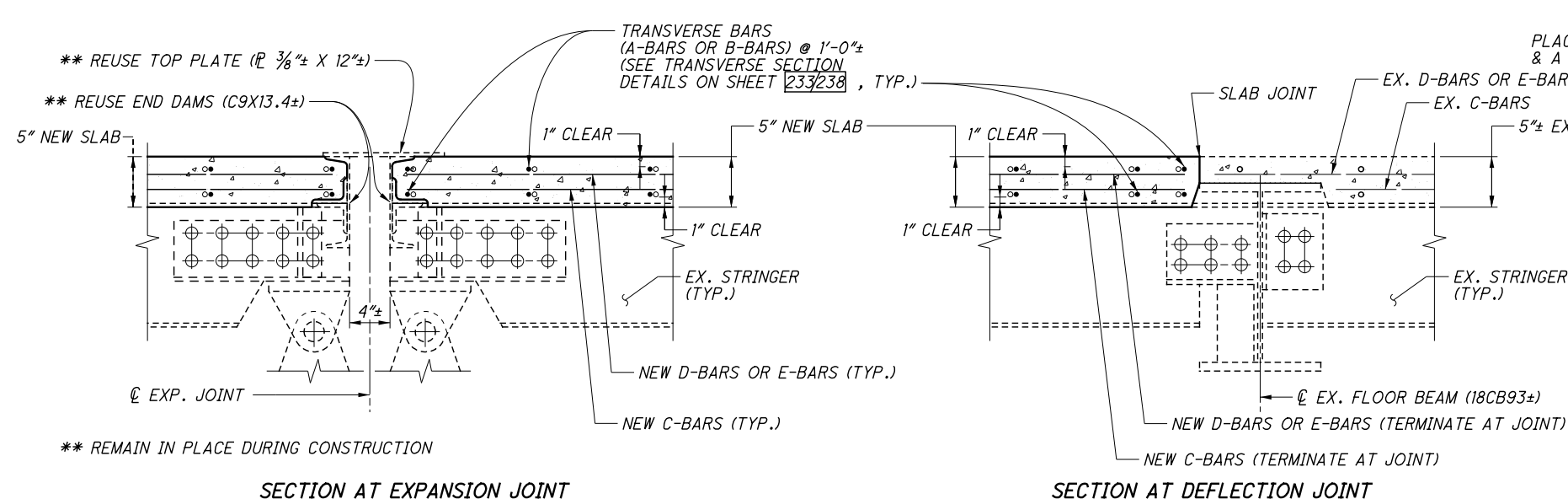
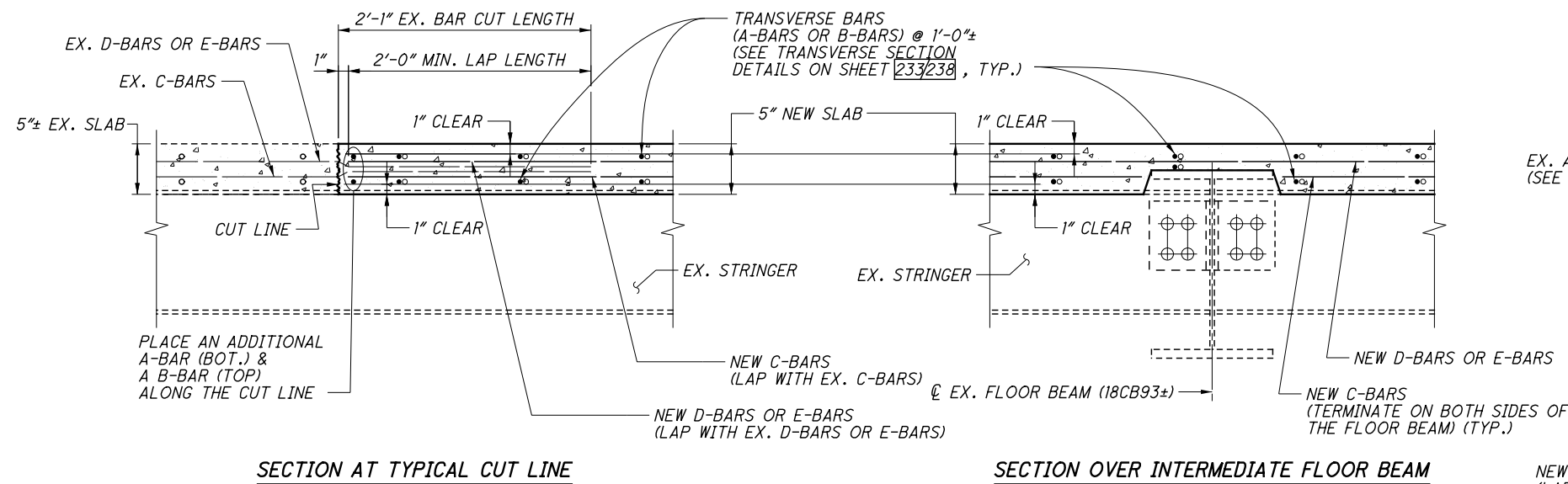
**NOTES:**

1. SEE SHEETS 229/238 TO 232/238 FOR STATION AND EXTENT OF EACH DECK REMOVAL AND REPAIR AREA.
2. PROVIDED DIMENSIONS AND LOCATIONS OF THE EXISTING DECK FRAMING AND REINFORCEMENT ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL RELEVANT DECK FRAMING LOCATIONS AND DIMENSIONS FOR ESTABLISHING LIMITS OF EACH REPAIR AREA. REPAIR AREAS SHALL BE OUTLINED AND MARKED WITH AEROSOL SPRAY PAINT AND BE VERIFIED BY THE ENGINEER.
3. AREAS OF THE EXISTING DECK SPECIFIED TO BE REPAIRED ON THE DECK PLANS SHALL BE REMOVED IN FULL DEPTH. SAW THE PERIMETER OF ALL AREAS DESIGNATED FOR REMOVAL TO A DEPTH OF 1/2" TO PRODUCE A NEAT JOINT. THE CONTRACTOR'S DECK REMOVAL METHOD SHALL NOT DAMAGE EXISTING REINFORCING STEEL TO REMAIN. ANY REINFORCEMENT DAMAGED DURING THE REMOVAL OPERATIONS SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
4. EXISTING BARS, IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS, SHALL BE SALVAGED AND CUT AT 2'-1" FROM THE CUT LINE FOR LAPPING WITH THE NEW BARS. ALL RETAINED EXISTING BARS SHALL BE STRAIGHTENED AND CLEANED TO REMOVE ALL LOOSE AND BUILT-UP RUST, CONCRETE RESIDUE, AND ALL OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND. ANY RETAINED EXISTING BARS THAT ARE DAMAGED OR CONSIDERED TO BE UNSATISFACTORY SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
5. EXISTING BARS IN A REPAIR AREA IN EITHER DIRECTION THAT IS SHORTER THAN 6 FEET CAN BE SALVAGED ENTIRELY WITHOUT CUTTING IF THE EXPOSED BARS ARE EMBEDDED IN EXISTING CONCRETE AT BOTH ENDS AND ARE IN GOOD CONDITION.
6. NEW BARS USED IN THE TRANSVERSE DIRECTION SHALL BE WHOLE BARS; LAPPING NEW BARS IN THE TRANSVERSE DIRECTION IS NOT DESIRED. NEW BARS USED IN THE LONGITUDINAL DIRECTION CAN BE LAPPED IF THE REPAIR LENGTH IS LONGER THAN 30 FEET; MINIMUM LAP LENGTH FOR NEW BARS IS 2'-0".
7. EXISTING ANCHOR BARS (3/4" X 1'-8" @ 3'-0" C/C) AT EACH DECK EDGE SHALL BE RETAINED AND SECURED IN POSITION ON THE EXISTING FASCIA CHANNEL STRINGER. ANY ANCHOR BARS OR BOLTS THAT ARE UNSATISFACTORY SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
8. NEW REINFORCING STEEL SHALL BE ASTM A615 OR A996, GRADE 60, YIELD STRENGTH 60 KSI. ALL BARS ARE NO. 4 AND EPOXY-COATED. NEW DECK CONCRETE SHALL BE CLASS QC2 WITH QC/QA, COMPRESSIVE STRENGTH 4.5 KSI.
9. SEE SHEET 234/238 FOR LOCATION OF SECTION A-A AND LONGITUDINAL SECTION DETAILS.
10. SEE GENERAL NOTE SHEET 13/238 FOR GAS LINE TEMPORARY SUPPORT AND PROTECTION REQUIREMENTS AND SHEET 235/238 FOR DETAILS.



**TRANSVERSE SECTION DETAILS**

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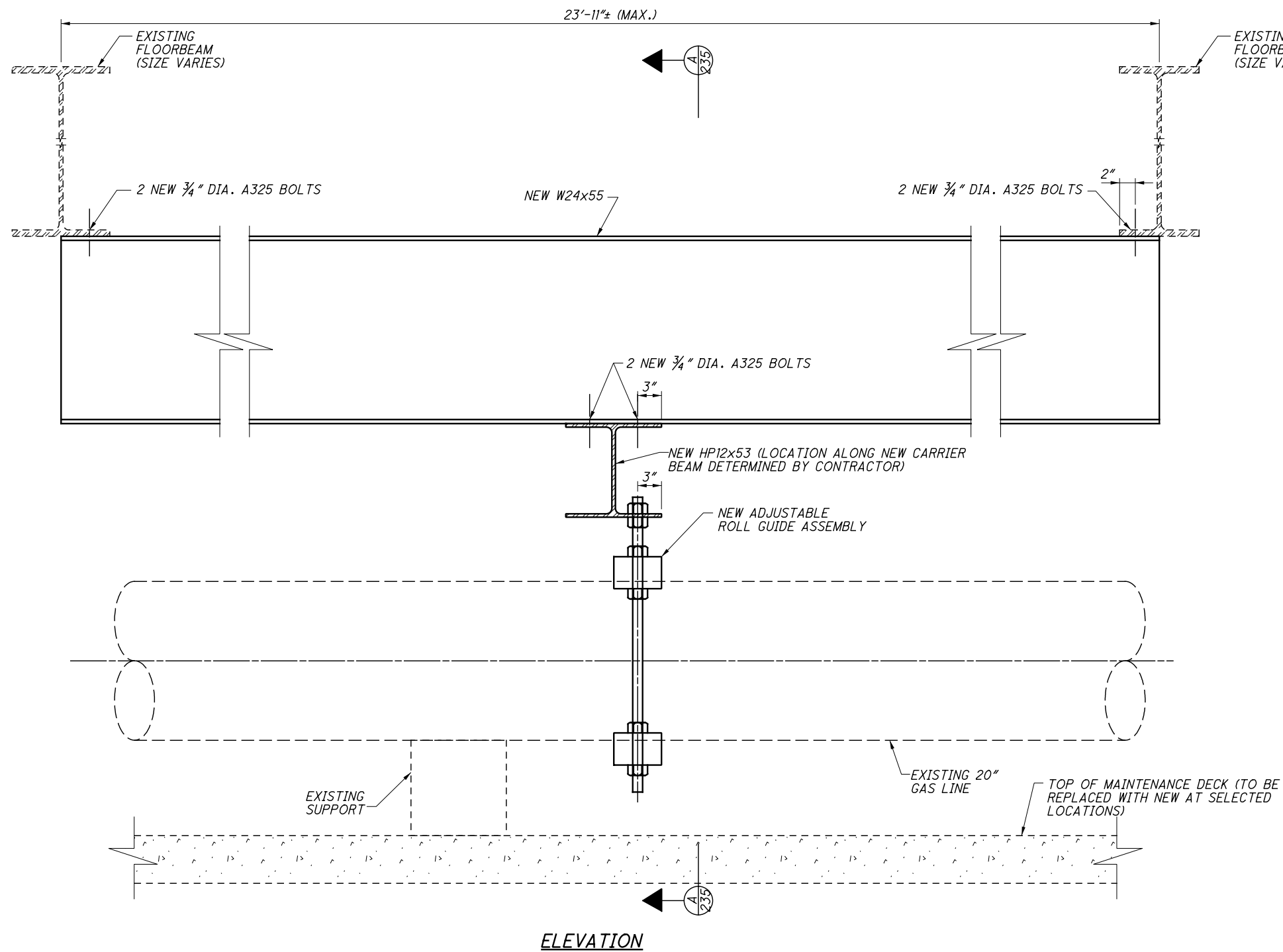
**LEGEND:**  
SEE LEGEND ON SHEET 233238.

**NOTES:**  
1. SEE NOTES ON SHEET 233238.

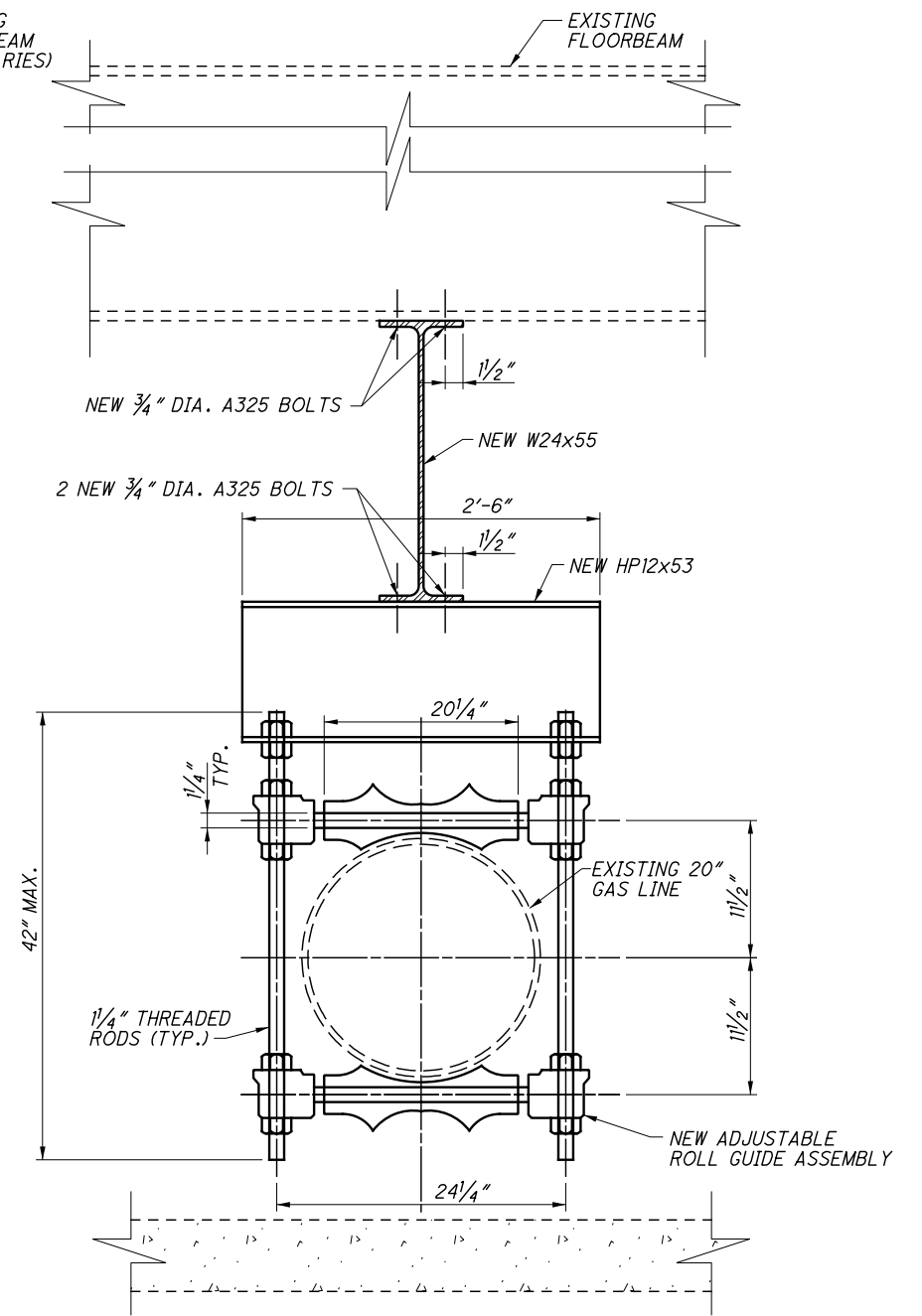
**E-BAR PLACEMENT NOTES:**  
L = TYPICAL LENGTH OF NEW E-BARS ON ONE SIDE OF  $\phi$  FLOOR BEAM OR PIER  
L = 8'-0" FOR NEW E-BARS OVER EX. FLOOR BEAMS  
L = 14'-0" FOR NEW E-BARS OVER PIERS

a. EXTEND NEW E-BARS THE LENGTH L FROM THE  $\phi$  ON THE SIDE WHERE THE REPAIR LIMIT IS LONGER THAN L.  
b. LAP NEW E-BARS WITH EX. E-BARS (2'-0" MIN.) ON THE SIDE WHERE THE REPAIR LIMIT IS SHORTER THAN L.  
c. LAP WITH EX. E-BARS AND EXTEND NEW E-BARS TO THE LENGTH L FROM THE  $\phi$  (LOCATION OF THE  $\phi$  NEEDS TO BE IDENTIFIED).

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**ELEVATION**



**SECTION A-A**

**NOTES**

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

**TEMPORARY SUPPORT REQUIREMENTS:** SEE ITEM SPECIAL - STRUCTURES: GAS LINE SUPPORT GENERAL NOTE ON SHEET **13/238**.

**TEMPORARY PIPE SUPPORT:** THE CONTRACTOR SHALL PROVIDE ADJUSTABLE ROLL GUIDE ASSEMBLIES - 3B AS MANUFACTURED BY:  
 LB & A, INC.  
 P.O. BOX 540  
 WESTTOWN, PA 19395-9982  
 PHONE: 610-696-9220  
 FAX: 610-344-7519  
 WWW.NCROLL.COM  
 (OR APPROVED EQUAL)

THE 3B ADJUSTABLE ROLL GUIDE INCLUDES:  
 4 ADJUSTABLE SOCKETS  
 2 ROD AXLES  
 2 VERTICAL THREADED RODS  
 12 HEX NUTS

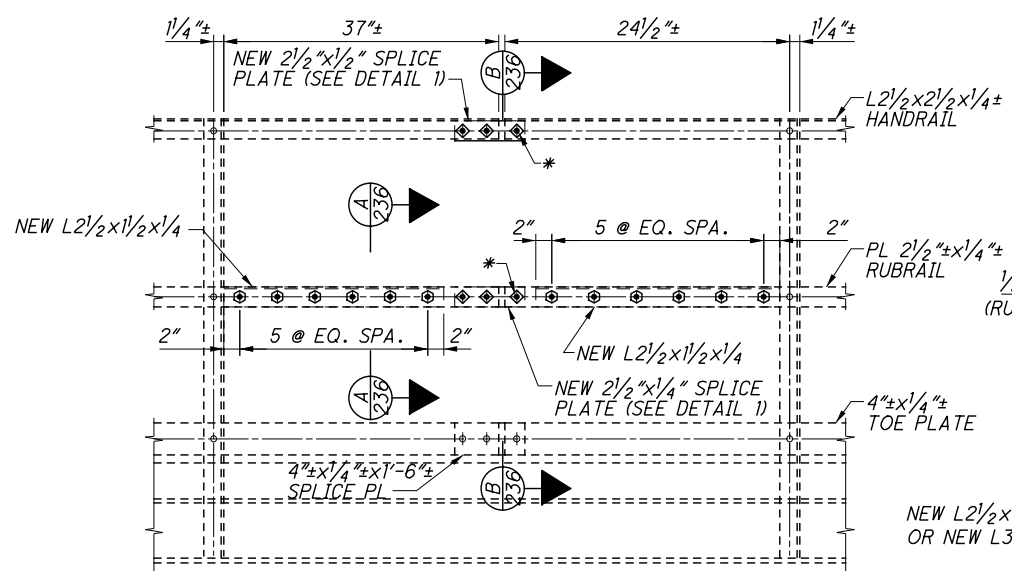
THE CONTRACTOR SHALL ALSO PROVIDE TWO TYPE H NON-CONDUCTIVE PIPE ROLLERS FOR EACH ROLL GUIDE REQUIRED.

THE CONTRACTOR MAY PROPOSE ALTERNATIVE MEANS OF TEMPORARY SUPPORT AS OUTLINED IN THE GENERAL NOTES.

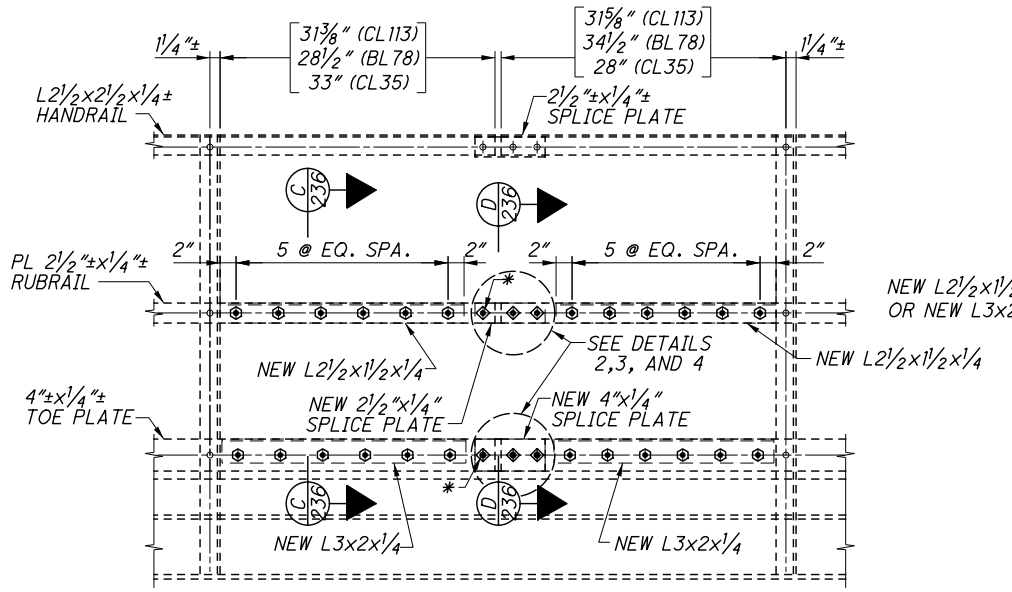
**PROPOSED MAINTAINANCE AND INSPECTION DECK LOCATIONS:** SEE SHEETS **229/238** THROUGH **232/238**.



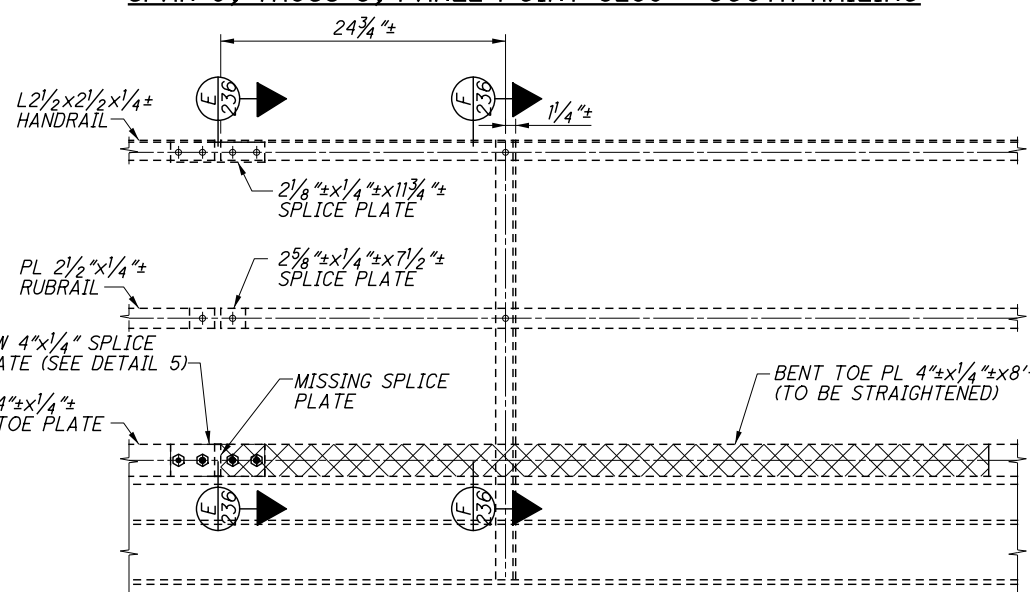
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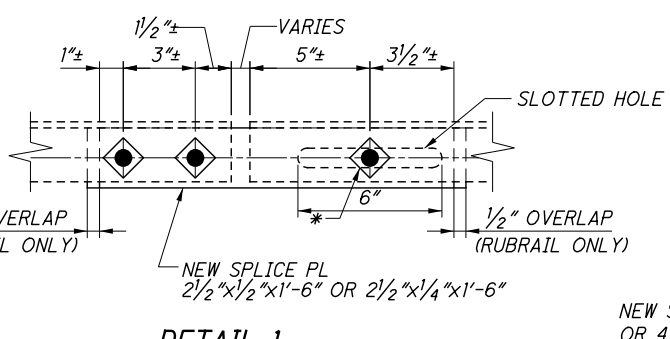
SPAN 7, TRUSS C, PANEL POINT CL12 - SOUTH RAILING



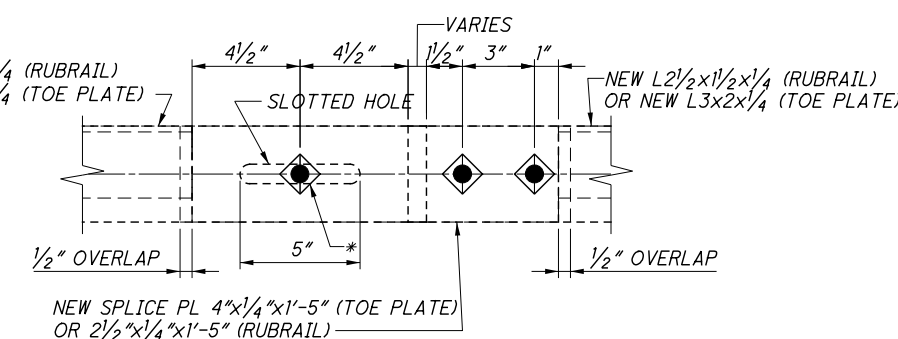
SPAN 17, TRUSS C, PANEL POINT CL113 - SOUTH RAILING  
SPAN 13, TRUSS B, PANEL POINT BL78 - NORTH RAILING  
SPAN 9, TRUSS C, PANEL POINT CL35 - SOUTH RAILING



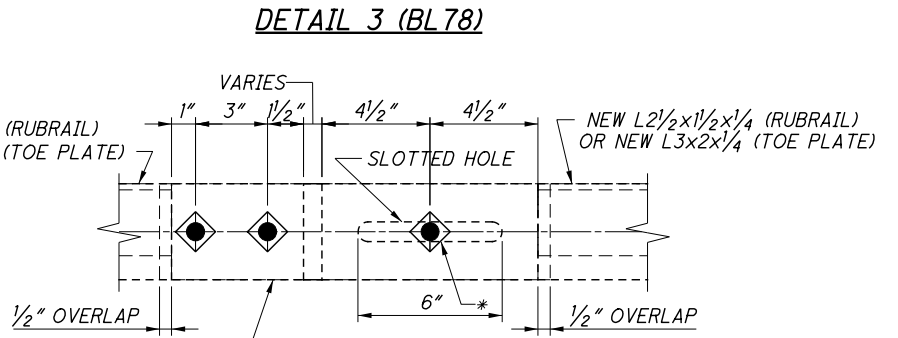
SPAN 18, TRUSS C, PANEL POINT CL124 - SOUTH RAILING



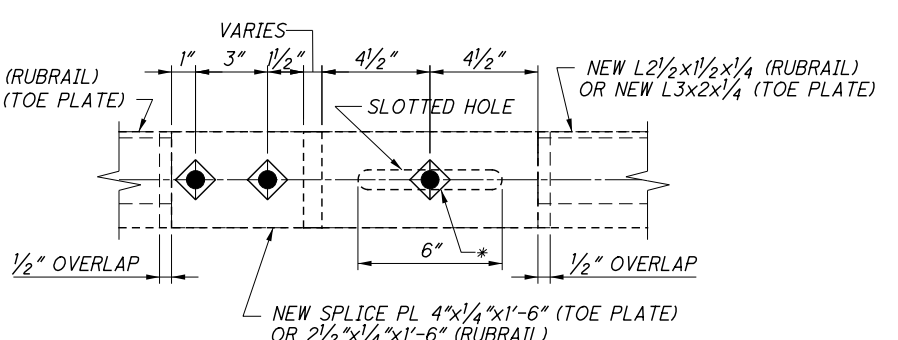
DETAIL 1



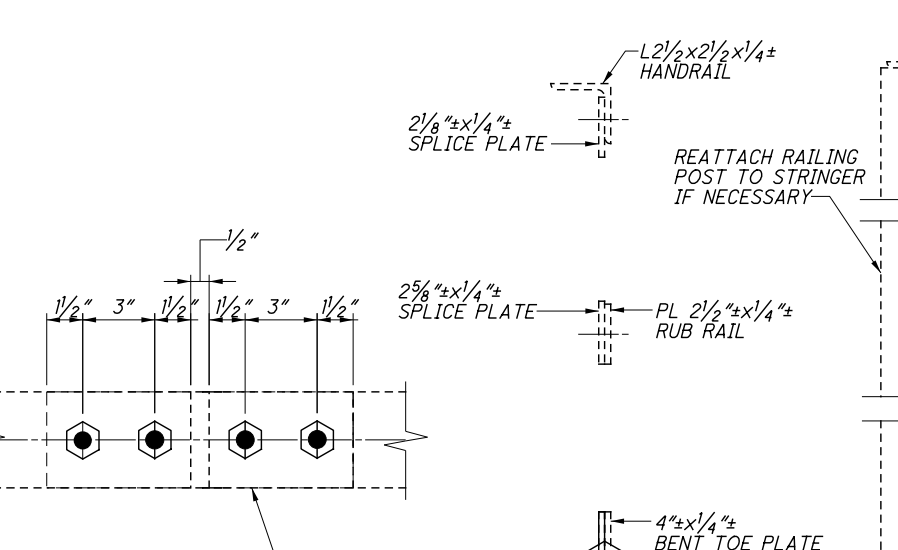
DETAIL 2 (CL113)



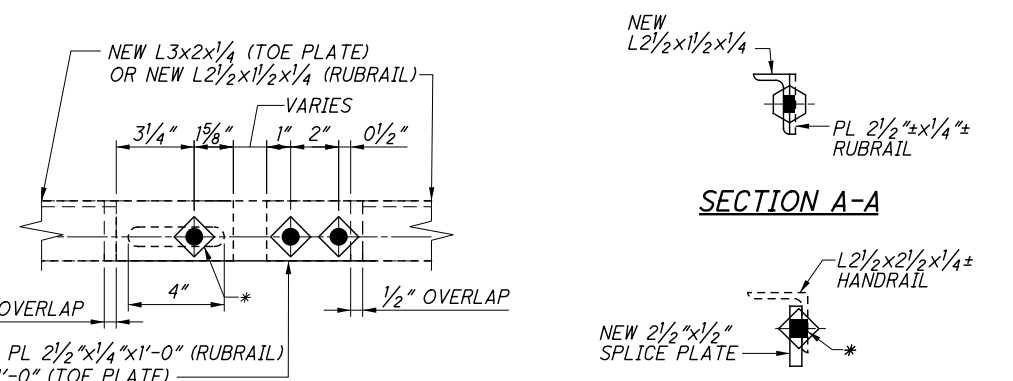
DETAIL 3 (BL78)



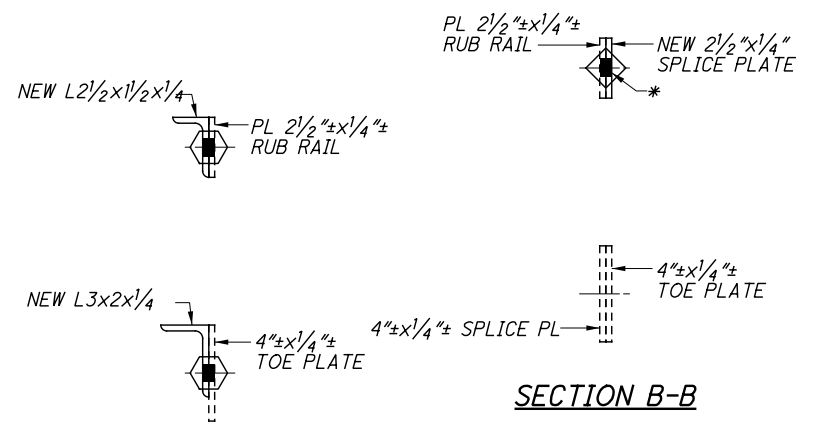
DETAIL 4 (CL35)



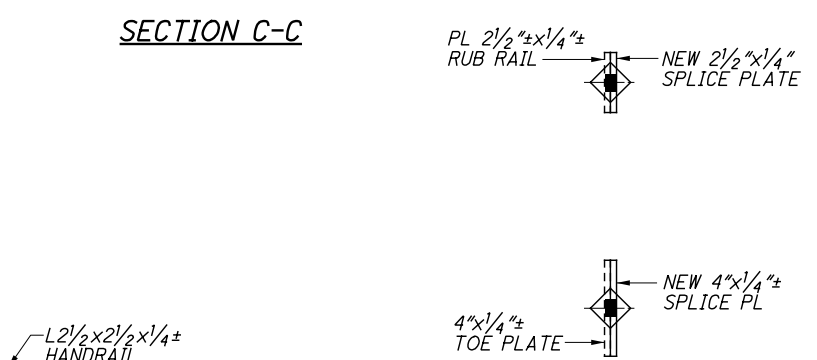
DETAIL 5



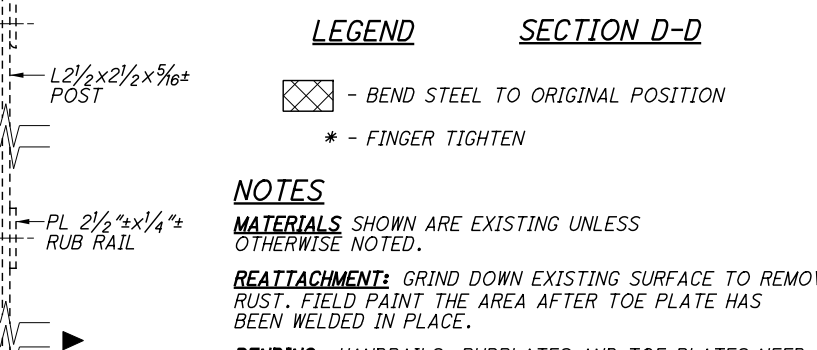
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

LEGEND

- ⊠ - BEND STEEL TO ORIGINAL POSITION
- \* - FINGER TIGHTEN

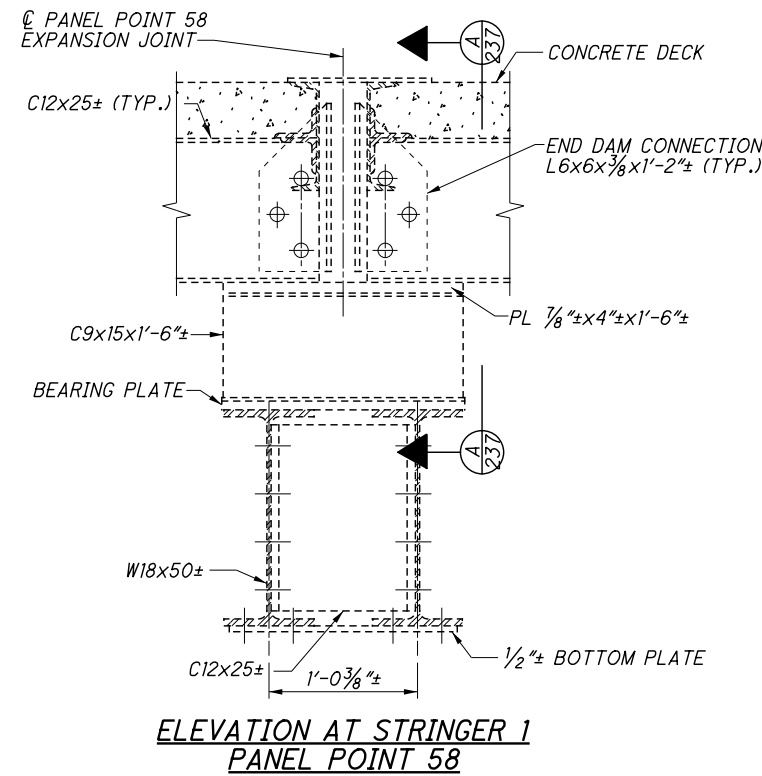
NOTES

**MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
**REATTACHMENT:** GRIND DOWN EXISTING SURFACE TO REMOVE RUST. FIELD PAINT THE AREA AFTER TOE PLATE HAS BEEN WELDED IN PLACE.  
**BENDING:** HANDRAILS, RUBPLATES AND TOE PLATES NEED FIELD BENT BACK TO THEIR ORIGINAL POSITION BEFORE NEW ANGLES AND SPLICE PLATES CAN BE ADDED.  
**BOLT SIZE** IS 3/4" DIAMETER, ASTM A325.  
**BOLT LEGEND:** SEE SHEET 14/238.  
**REPAIR LOCATION:** SEE FRAMING PLAN SHEETS 79/238 TO 87/238.  
**ITEM 513 - STRUCTURAL STEEL, MISC: MAINTENANCE AND INSPECTION DECK RAILING REPAIRS:** SEE GENERAL NOTES SHEET 11/238.

SECTION E-E

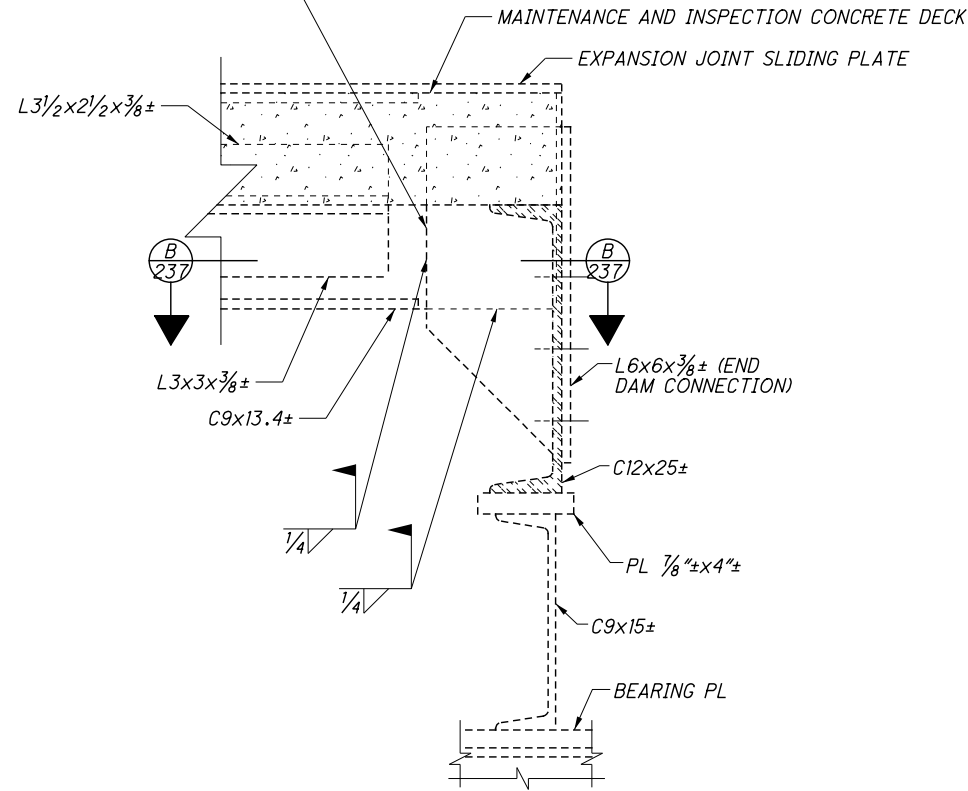
SECTION F-F

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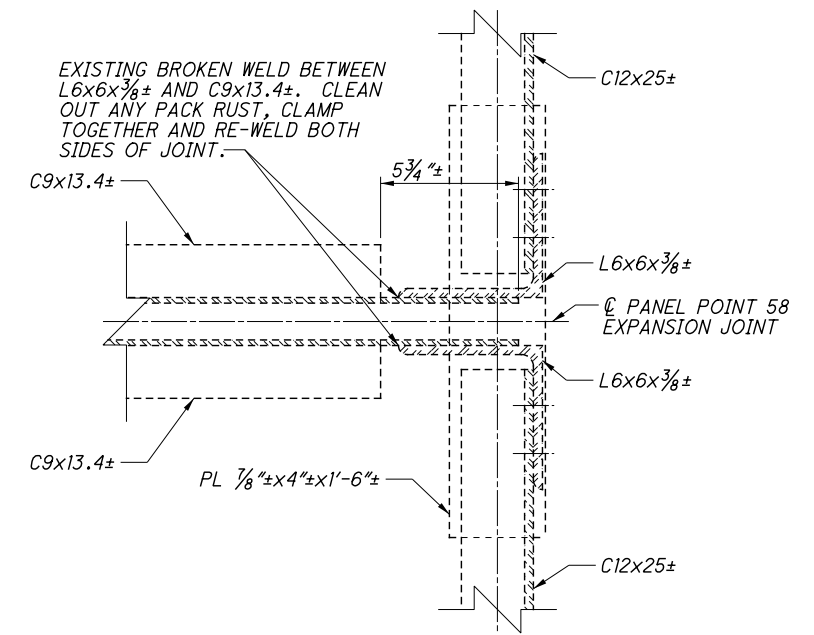


**ELEVATION AT STRINGER 1  
PANEL POINT 58**

EXISTING BROKEN WELD BETWEEN L6x6x3/8± AND C9x13.4±. CLEAN OUT ANY PACK RUST, CLAMP TOGETHER AND RE-WELD BOTH SIDES OF JOINT.



**SECTION A-A**



**SECTION B-B**

**NOTES**

**MATERIALS** ARE EXISTING UNLESS OTHERWISE NOTED.

**REPAIR LOCATION:** SEE FRAMING PLAN SHEET 82/238.

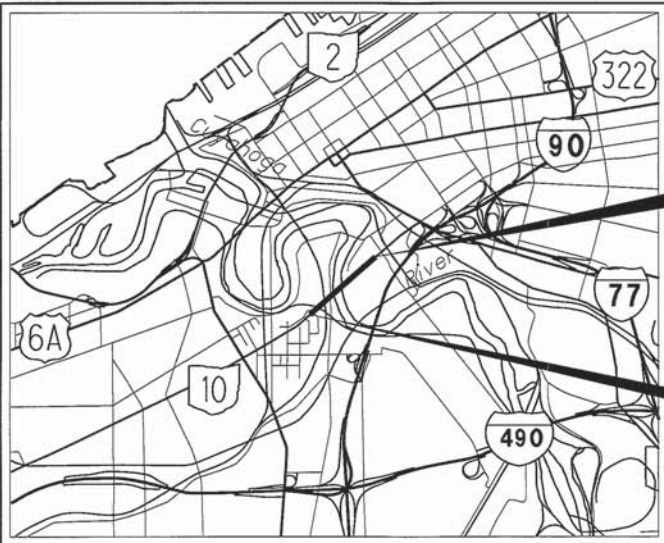
**MAINTENANCE AND INSPECTION DECK FRAMING PLAN:** SEE SHEET 82/238.

**ITEM 513 - STRUCTURAL STEEL, MISC.: MAINTENANCE AND INSPECTION DECK JOINT STEEL REPAIR:** SEE GENERAL NOTE SHEET 10/238.

**ITEM 514 - FIELD PAINTING, MISC.: FIELD TOUCH-UP OF NEW AND EXISTING PAINT:** SEE GENERAL NOTE SHEET 12/238.



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END ACQUISITION  
PROJECT STA. 54+75.00  
16.73 SLM

BEGIN ACQUISITION  
PROJECT STA. 19+89.58  
16.04 SLM

# RIGHT OF WAY LEGEND SHEET CUY-10-16.13

CUYAHOGA COUNTY  
CITY OF CLEVELAND

TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE

## PROJECT DESCRIPTION

THE PROJECT IS THE CONSTRUCTION OF MAINTENANCE REPAIRS ON BRIDGE NO. CUY-10-1613. REPAIRS INCLUDE CONCRETE DECK, STEEL MEMBERS, AND PARTIAL PAINTING.

PROJECT LENGTH = 0.62 MILE

THE EXISTING R/W WIDTH AND LOCATION WERE DETERMINED USING CUY-10-16.05 CENTERLINE SURVEY PLAT DATED 5/31/79, PREPARED BY HNTB CONSULTING ENGINEERS.

## PROJECT CONTROL

STATE PLANE GRID NAD83(2011)  
PROJECT ADJUSTMENT FACTOR 1.000055924

## PLANS PREPARED BY:

FIRM NAME : RICHLAND ENGINEERING LIMITED  
R/W DESIGNER: BRIAN BESECKER  
R/W REVIEWER: ROBERT J. MCAULEY  
FIELD REVIEWER: BRIAN BESECKER

PRELIMINARY FIELD REVIEW DATE: 5/14/15  
TRACINGS FIELD REVIEW DATE: 3/7/16

OWNERSHIP UPDATED BY: BRIAN BESECKER  
DATE COMPLETED: 3/4/16  
PLAN COMPLETION DATE: 3/7/16

TYPES OF TITLE LEGEND:  
SH = STANDARD HIGHWAY EASEMENT  
T = TEMPORARY EASEMENT  
A = AERIAL EASEMENT

## MONUMENT LEGEND

☒ EXISTING R/W MONUMENT BOX  
♣ RAILROAD SPIKE FOUND  
⊙ IRON PIN FOUND

## STRUCTURE KEY

□ RESIDENTIAL  
■ COMMERCIAL  
▨ OUT-BUILDING

## INDEX OF SHEETS:

LEGEND SHEET	1
PROPERTY MAP	2
SUMMARY OF ADDITIONAL R/W	3
R/W DETAIL	4-7
RAILROAD PLATS	8-9
TEMPORARY DRIVE EASEMENT	10

NOTES: THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNER OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C.

### ELECTRIC:

CITY OF CLEVELAND  
DIVISION OF CLEVELAND PUBLIC POWER (CPP)  
1300 LAKESIDE AVE.  
CLEVELAND, OHIO 44114  
ATTN: CHRIS HIRZEL  
PHONE: (216) 664-3922, EXT. 115  
CLEVELAND PUBLIC POWER CIRCUITS:  
STREET LIGHTING  
ATTN: JAMES FERGUSON,  
CHIEF, BUREAU OF STREET LIGHTING  
PHONE: (216) 420-7704, EXT. 183

ILLUMINATING COMPANY (FIRST ENERGY)  
6896 MILLER ROAD  
BRECKSVILLE, OHIO 44141  
ATTN: TED RADER  
ENGINEERING SUPERVISOR  
PHONE: (440) 456-8738

### WATER:

CITY OF CLEVELAND  
DIVISION OF WATER  
1201 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
ATTN: FRED ROBERTS  
PHONE: (216) 664-2444, EXT. 5590

### CABLE:

TIME WARNER CABLE  
8179 DOW CIRCLE  
STRONGSVILLE, OHIO 44136  
SUPERVISOR: GARY NAUMANN  
PHONE: (216) 575-8016, EXT. 5033  
FIELD ENGINEER: PAUL SILVESTRO  
PHONE: (216) 575-8016, EXT. 5034

### SEWER:

CITY OF CLEVELAND  
DIVISION OF WATER POLLUTION CONTROL  
12302 KIRBY ROAD  
CLEVELAND, OHIO 44108  
ATTN: RACHID ZOGHAIB  
PHONE: (216) 664-3785

NORTHEAST OHIO REGIONAL  
SEWER DISTRICT (NEORS)  
3900 EUCLID AVENUE  
CLEVELAND, OHIO 44115-2504  
ATTN: MARY MACIEJOWSKI  
PHONE: (216) 881-6600 EXT. 6466

### COMMUNICATIONS:

AT&T OHIO (SBC)  
13630 LORAIN AVENUE, 2ND FLOOR  
CLEVELAND, OHIO 44111  
ATTN: JAMES JANIS  
PHONE: (216) 476-6142

AT&T LONG DISTANCE  
HLG CONSULTING  
5980-G WILCOX PLACE  
DUBLIN, OHIO 43016  
ATTN: TONY LYLE  
PHONE: 614-760-8320

FIBERTECH NETWORKS, LLC  
15565 NEO PARKWAY  
GARFIELD HEIGHTS, OHIO 44128  
ATTN: ED DALY  
CELL: 585-397-5988

MCI-WORLDCOM  
120 RAVINE ST.  
AKRON, OHIO 44303  
ATTN: AL GUEST  
PHONE: (330) 253-8267

SPRINT NEXTEL  
875 GREENTREE RD.  
STE. 410, BUILDING 7  
PITTSBURGH, PA 15220  
ATTN: LUKE BRYAN  
PHONE: (412) 960-4071

WINDSTREAM  
560 TERNES AVE.  
ELYRIA, OHIO 44035  
ATTN: GEOFFREY HAMM  
PHONE: (440) 329-4245

QWEST COMMUNICATIONS (CENTURYLINK)  
4650 LAKEHURST COURT, 1ST FLOOR  
DUBLIN, OHIO 43016  
ATTN: CHRIS STRAYER  
PHONE: (614) 215-5606

CROWN CASTLE  
2 EASTON OVAL, SUITE 425  
COLUMBUS, OHIO 43219  
ATTN: MICHAEL BRYANT  
PHONE: (614) 269-5772

### GAS:

DOMINION EAST OHIO GAS COMPANY  
TRANSMISSION & STORAGE & GATHERING FACILITIES  
320 SPRINGSIDE DRIVE, SUITE 320  
AKRON, OHIO 44333  
ATTN: MIKE ANTONIUS,  
PHONE: (330) 664-2488  
DOMINION EAST OHIO GAS COMPANY  
ATTN: BRYAN DAYTON,  
PROJECT MANAGER  
PHONE: (330) 664-2409

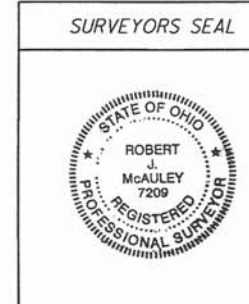
## CONVENTIONAL SYMBOLS

County Line	-----	Ditch / Creek (Ex)	-----
Township Line	-----	Ditch / Creek (Pr)	-----
Section Line	-----	Tree Line (Ex)	-----
Corporation Line	----- or -----	Ownership Hook Symbol	Example
Fence Line (Ex)	----- (Pr)	Property Line Symbol	Example
Center Line	-----	Break Line Symbol	Example
Right of Way (Ex)	----- Ex R/W	Tree (Pr)	☼, Tree (Ex) ☼, Shrub (Ex) ☼
Right of Way (Pr)	----- R/W	Tree (Remove)	☼, Shrub (Remove) ☼
Standard Highway Ease.(Ex)	----- Ex SH	Evergreen (Ex)	☼, Stump
Temporary Right of Way	----- TMP	Evergreen (Remove)	☼, Stump (Remove) ☼
Aerial Ease. (Ex)	----- Ex A	Wetland (Pr)	☼, Grass (Pr) ☼, Aerial Target
Channel Ease. (Pr)	----- CH	Post (Ex)	☼, Mailbox (Ex) ☼, Mailbox (Pr) ☼
Utility Ease. (Ex)	----- Ex U	Light (Ex)	☼, Telephone Marker (Ex) TEL
Railroad	----- or -----	Fire Hydrant (Ex)	☼, Water Meter (Ex) ☼
Guardrail (Ex)	----- (Pr)	Water Valve (Ex)	☼, Utility Valve Unknown (Ex.) ☼
Construction Limits	-----	Telephone Pole (Ex)	☼, Power Pole (Ex) ☼
Edge of Pavement (Ex)	-----	Light Pole (Ex)	☼
Edge of Pavement (Pr)	-----		
Edge of Shoulder (Ex)	-----		
Edge of Shoulder (Pr)	-----		

I, ROBERT J. MCAULEY, P. S. HAVE CONDUCTED A SURVEY OF THE EXISTING CONDITIONS FOR THE OHIO DEPARTMENT OF TRANSPORTATION IN 2014. THE RESULTS OF THAT SURVEY ARE CONTAINED HEREIN. THE HORIZONTAL COORDINATES EXPRESSED HEREIN ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM NORTH ZONE ON NAD 83(2011) DATUM. THE PROJECT COORDINATES (US SURVEY FEET) ARE RELATIVE TO STATE PLANE GRID COORDINATES (US SURVEY FEET) BY A PROJECT ADJUSTMENT FACTOR OF 1.000055924. AS A PART OF THIS PROJECT I HAVE REESTABLISHED THE LOCATIONS OF THE EXISTING PROPERTY LINES AND THE EXISTING CENTERLINE OF RIGHT OF WAY FOR PROPERTY TAKES CONTAINED HEREIN. AS A PART OF THIS PROJECT I HAVE ESTABLISHED THE PROPOSED PROPERTY LINES, CALCULATED THE GROSS TAKE, PRESENT ROADWAY OCCUPIED (PRO), NET TAKE AND NET RESIDUE; AS WELL AS PREPARED THE LEGAL DESCRIPTIONS NECESSARY TO ACQUIRE THE PARCELS AS SHOWN HEREIN. ALL OF MY WORK CONTAINED HEREIN WAS CONDUCTED IN ACCORDANCE WITH OHIO ADMINISTRATIVE CODE 4733-37 COMMONLY KNOWN AS "MINIMUM STANDARDS FOR BOUNDARY SURVEYS IN THE STATE OF OHIO" UNLESS NOTED. THE WORDS I AND MY AS USED HEREIN ARE TO MEAN EITHER MYSELF OR SOMEONE WORKING UNDER MY DIRECT SUPERVISION.

*Robert J. McAuley*  
ROBERT J. MCAULEY, PROFESSIONAL LAND SURVEYOR 7209

DATE: 8 March 2016



FEDERAL PROJECT NO. E140539  
PID NO. 96986  
CALCULATED BB CHECKED RMC  
RIGHT OF WAY LEGEND SHEET  
CUY-10-16.13  
1/10  
299/308

CUYAHOGA COUNTY  
CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE



PID NO. **96986**  
R/W DESIGNER BB  
R/W REVIEWER RJM

**PROPERTY MAP**

**CUY-10-16.13**

2 / 10

300  
308

10  
WILMA L. TAYLOR  
P.P.N. 004-02-015  
AFN 201405140281  
0.0850 AC.  
P.P.N. 004-02-016  
AFN 20145300273  
0.0694 AC.

13  
LAKE LINK LLC  
P.P.N. 004-26-008  
AFN 201512090534  
4.4095 AC.

18  
SCRANTON AVERELL INC.  
P.P.N. 004-28-002  
D.V. 11879, P. 817  
1.4463 AC.

11  
BOARD OF COUNTY COMMISSIONERS  
P.P.N. 004-02-017  
0.0395 AC.

14  
BOARD OF PARK COMMISSIONERS  
OF THE CLEVELAND METROPOLITAN  
PARK DISTRICT  
P.P.N. 004-26-016  
AFN 201411250604  
0.5089 AC.

19  
CITY OF CLEVELAND  
A MUNICIPAL CORPORATION  
P.P.N. 004-27-015  
4.1677 AC.  
P.P.N. 004-27-018  
1.9425 AC.  
P.P.N. 004-28-009  
4.7636 AC.  
P.P.N. 004-28-014  
0.3720 AC.  
AFN 201409230510  
RECREATION EAS.  
AFN 201007290462  
AFN 201007290312

12  
2041 WEST LLC  
P.P.N. 004-26-001  
AFN 200302241485  
2.6584 AC.

16  
FLATS INDUSTRIAL INC.  
(FKA FLATS INDUSTRIAL RAILROAD CO)  
A DELAWARE CORPORATION  
P.P.N. 004-04-017  
AFN 201305060864  
11.1035 AC.

20  
MID-CONTINENT COAL & COKE CO.  
A DELAWARE CORPORATION  
P.P.N. 122-20-004  
1.0170 AC.  
P.P.N. 122-20-005  
4.7448 AC.  
P.P.N. 122-20-006  
0.7755 AC.  
D.V. 13674, P. 7  
P.P.N. 122-20-011  
5.2720 AC  
D.V. 14802, P. 291

21  
ALLIED CORPORATION INC.  
AN OHIO CORPORATION  
P.P.N. 122-20-012  
AFN 200704030327  
5.5303 AC.

25  
CSX TRANSPORTATION, INC.  
P.P.N. 122-18-009  
D.V. 88-5964, P. 7

22  
R.E. SERVICES INC.  
TRUSTEE, AN OHIO CORPORATION  
P.P.N. 122-20-007  
3.4499 AC.  
P.P.N. 101-30-001  
2.1767 AC.  
D. V. 89-6858, P. 51

26  
GILLOTA FUEL PRODUCTS INC.  
AN OHIO CORPORATION  
P.P.N. 101-31-006  
D. V. 94-10410, P. 27  
0.2800 AC.

17  
BOARD OF PARK COMMISSIONERS  
OF THE CLEVELAND METROPOLITAN  
PARK DISTRICT  
P.P.N. 004-26-009  
AFN 201411250607  
1.0500 AC.

23  
WEST THIRD BRIDGE BUILDING LLC  
AN OHIO LIMITED LIABILITY COMPANY  
P.P.N. 122-18-022  
AFN 201009080269  
0.2404 AC.

27  
MICHAEL L. MILLER, TRUSTEE AND  
HAROLD S. LAPINE, TRUSTEE  
P.P.N. 101-31-009  
D.V. 91-7879, P. 34  
D.V. 87-1001, P. 13  
2.0515 AC.

24  
FUNDAMENTAL PARKING, LLC  
P.P.N. 101-30-002  
0.3420 AC.  
P.P.N. 101-30-003  
1.5200 AC.  
P.P.N. 122-18-010  
0.1130 AC.  
P.P.N. 122-18-011  
1.0400 AC.  
AFN 201603230625

28  
BOARD OF COUNTY COMMISSIONERS  
P.P.N. 122-18-001  
D.V. 3965, P. 458  
0.0757 AC.

15  
CARTER PENINSULA INC.  
AN OHIO CORPORATION  
P.P.N. 004-28-001  
D.V. 88-2426, P. 51  
D.V. 88-2426, P. 55  
22.7620 AC.

20' DRIVE EAS.  
(INGRESS/EGRESS)  
D.V. 12355, P. 423  
D.V. 12379, P. 723  
AFN 201212100674

RECREATIONAL  
TRAIL EAS.  
AFN 201503240701  
AFN 201411250606  
AFN 200912230517

SEWER EAS.  
D.V. 15232, PG. 549

BEGIN ACQUISITION  
STA. 19+89.58

END ACQUISITION  
STA. 51+03.05.00

BEGIN PROJECT  
STA. 22+19.19

END PROJECT  
STA. 55+04.56

OVERPASS EAS.  
AFN 201204050605  
AFN 201411250605

RIVER DOCK INC.  
P.P.N. 122-21-001  
D.V. 87-7627, P. 54  
AFN 201202280229  
P.P.N. 122-21-004  
D.V. 87-3965, P. 55

CITY OF CLEVELAND  
A MUNICIPAL CORPORATION  
P.P.N. 122-16-018  
D.V. 2925, P. 415

STATE OF OHIO  
DEPARTMENT OF  
TRANSPORTATION  
P.P.N. 122-16-020  
AFN 200912160227  
1.4950 AC.  
P.P.N. 122-16-019  
AFN 201304100116  
0.0818 AC.

STATE OF OHIO  
DEPARTMENT OF  
TRANSPORTATION  
P.P.N. 122-18-002  
AFN 201201050190  
0.1525 AC.

REV. BY	DATE	DESCRIPTION
RMC	9/13/17	REVISED END ACQUISITION STATION
RMC	9/13/17	REMOVED PARCEL 27-T
BB	7/13/17	REVISED PAGE NUMBERS
RMC, BB	7/29/16	REVISED DATA TO MATCH TITLE REPORTS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
REV. BY	DATE	DESCRIPTION
DATE COMPLETED 3/7/16		

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TOTAL NUMBER OF :  
 11 OWNERSHIPS 0 TOTAL TAKES  
 15 PARCELS 1 OWNERSHIPS W/ STRUCTURES INVOLVED

NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

GRANTEE: ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION UNLESS OTHERWISE SHOWN.

ALL AREAS IN ACRES

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD	AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED		
											LEFT	RIGHT			BOOK	PAGE	
1-9	NOT USED												STATE				
10	TAYLOR, WILMA L.	4	AFN 201405140281	004-02-015	0.0850	-	-	-	-					NO ADDITIONAL R/W REQUIRED			
		4	AFN 201405300273	004-02-016	0.0694	-	-	-	-								
	TOTAL				0.1544	-	-	-	-			0.1544					
11	BOARD OF COUNTY COMMISSIONERS	4		004-02-017	0.0395	-	-	-	-			0.0395		NO ADDITIONAL R/W REQUIRED			
12	2041 WEST LLC	4	AFN 200302241485	004-26-001	2.6584	-	-	-	-				2.6584	NO ADDITIONAL R/W REQUIRED			
13-T1	LAKE LINK LLC, AN OHIO LIMITED LIABILITY COMPANY	4	AFN 201512090534	004-26-008	4.4095	-	0.3814	-	0.3814					MAINTENANCE REPAIRS / ** SEE TABLE BELOW			
13-T2		4,10				-	0.2786	-	0.2786							INGRESS/EGRESS EAS. DURING CONST./ ** SEE TABLE BELOW	
	TOTAL						0.6600		0.6600								
14-T	BOARD OF PARK COMMISSIONERS OF THE CLEVELAND METROPOLITAN PARK DISTRICT, A POLITICAL SUBDIVISION OF THE STATE OF OHIO	4,8	AFN 201411250604	004-26-016	0.5089	-	0.2511	-	0.2511					MAINTENANCE REPAIRS / ** SEE TABLE BELOW			
15-T	CARTER PENINSULA INC., AN OHIO CORPORATION NKA CARTER PENINSULA,LLC	4,8	D.V.88-2426, P.51 & P.55	004-28-001	22.7620	-	0.4770	0.0386	0.4384					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.2595 AC.			
16-T	FLATS INDUSTRIAL INC. (FKA FLATS INDUSTRIAL RAILROAD CO.), A DELAWARE CORPORATION	4,8	AFN 201305060864	004-04-017	11.1035	-	0.4784	-	0.4784					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.2286 AC.			
17-T	BOARD OF PARK COMMISSIONERS OF THE CLEVELAND METROPOLITAN PARK DISTRICT, A POLITICAL SUBDIVISION OF THE STATE OF OHIO	4,8	AFN 201411250607	004-26-009	1.0500	-	0.2641	-	0.2641					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.1301 AC.			
18-T	SCRANTON AVERELL INC., AN OHIO CORPORATION	4,8	D.V.11879, P.817	004-28-002	1.4463	-	0.4510	0.0403	0.4107	YES				MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.2273 AC.			
				004-28-003	0.1146	-	-	-	-	-					COMMERCIAL TRAILER - DO NOT DISTURB		
19-SH	CITY OF CLEVELAND, A MUNICIPAL CORPORATION	4,5	AFN 201409230510	004-27-015	4.1677	-	-	-	-								
				004-27-018	1.9425	-	0.0722	-	0.0722								
				004-28-009	4.7636	0.0001	0.0233	0.0001	0.0232								
				004-28-014	0.3720	0.0356	0.0469	-	0.0469								
	TOTAL				11.2458	0.0357	0.1424	0.0001	0.1423			11.0678		EX. AERIAL EAS. 0.0397 AC.			
19-T							0.7325	0.0355	0.6970					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.3527 AC.			
20-SH	MID-CONTINENT COAL & COKE CO., A DELAWARE CORPORATION	5,6	D.V.13674, P.7 D.V.14802, P.291	122-20-004	1.0170	-	-	-	-					EX. AERIAL EAS. 0.0323 AC.			
				122-20-005	4.7448	0.2380	0.0377	0.0110	0.0267	YES					COMMERCIAL TRAILER - DO NOT DISTURB		
				122-20-006	0.7755	-	-	-	-	-							
				122-20-011	5.2720	0.0830	0.0190	-	0.0190								
	TOTAL				11.8093	0.3210	0.0567	0.0110	0.0457			11.4426					
20-T							3.5354	0.3100	3.2254					MAINTENANCE REPAIRS/ EX. AERIAL EAS. 1.4548 AC.			
21-T	ALLIED CORPORATION INC., AN OHIO CORPORATION	6	AFN 200704030327	122-20-012	5.5303	-	1.0401	0.0826	0.9575					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.4644 AC.			
22	R.E. SERVICES INC., TRUSTEE, AN OHIO CORPORATION	6,7	D. V.89-6858, P.51	122-20-007	3.4499	-	-	-	-								
				101-30-001	2.1767	-	-	-	-	-							
	TOTAL				5.6266	-	-	-	-			5.6266		NO ADDITIONAL R/W REQUIRED			
23	WEST THIRD BRIDGE BUILDING LLC, AN OHIO LIMITED LIABILITY COMPANY	6,7	AFN 201009080269	122-18-022	0.2404	-	-	-	-			0.2404		NO ADDITIONAL R/W REQUIRED			
24-T1	FUNDAMENTAL PARKING, LLC, AN OHIO LIMITED LIABILITY COMPANY	7,9	AFN 201603230625	101-30-002	0.3420	-	0.0856	-	0.0856					MAINTENANCE REPAIRS			
		7,9		101-30-003	1.5200	-	-	-	-					NO ADDITIONAL R/W REQUIRED			
				122-18-010	0.1130	-	0.0284	-	0.0284					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.0148 AC.			
24-T2				122-18-011	1.0400	-	0.2933	-	0.2933					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.1496 AC.			
	TOTAL				3.0150	-	0.4073	-	0.4073								
25-T	CSX TRANSPORTATION, INC.	7,9	D.V.88-5964, P.7	122-18-009	-	-	0.3577	-	0.3577					MAINTENANCE REPAIRS / EX. AERIAL EAS. 0.1782 AC.			
26	GILLOTA FUEL PRODUCTS INC., AN OHIO CORPORATION	7,9	D.V.94-10410, P. 27	101-31-006	0.2800	-	-	-	-			0.2800					
27	MICHAEL L. MILLER, TRUSTEE AND HAROLD S. LAPINE, TRUSTEE	7	D.V.87-1001, P.13 D.V.91-7879, P.34	101-31-009	2.0515	-	-	-	-								
28	BOARD OF COUNTY COMMISSIONERS	7,9	D.V.3965, P.458	122-18-001	0.0757	-	-	-	-			0.0757	STATE				

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FEDERAL PROJECT NO. E140539  
 PID NO. 96986  
 STATE JOB NO. 520716  
 R/W DESIGNER BB  
 R/W REVIEWER RJM  
 SUMMARY OF ADDITIONAL RIGHT OF WAY  
 CUY-10-16-13  
 3/10  
 301  
 308

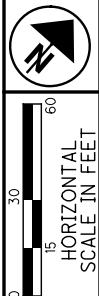
TYPES OF TITLE LEGEND:  
 SH = STANDARD HIGHWAY EASEMENT  
 T = TEMPORARY EASEMENT

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

NOTE: TEMPORARY PARCELS 24-T1 AND 24-T2 TO BE OF 12 MONTH DURATION. ALL OTHER TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.  
 \* DENOTES RIGHT OF WAY ENCROACHMENT

PARCEL NO.	AREA OVERLAP		
	EX. AERIAL	EX. TRAIL	EX. ING./EG.
13-T1	0.1847	0.0604	0.0294
13-T2	0.0	0.0	0.0291
14-T	0.1435	0.0	0.0684

REV. BY	DATE	DESCRIPTION
RMC	9/13/17	REMOVED PARCEL 27-T
BB	7/13/17	REVISED PAGE NUMBERS
BB	6/12/17	REVISED TEMPORARY PARCELS DURATION
RMC, BB	7/29/16	REVISED DATA TO MATCH TITLE REPORTS
BB	7/15/16	REVISED TEMPORARY PARCELS DURATION
RMC, BB	7/13/16	REVISED OWNERSHIP DATA AND PARCEL AREAS
DATE COMPLETED		3/7/16



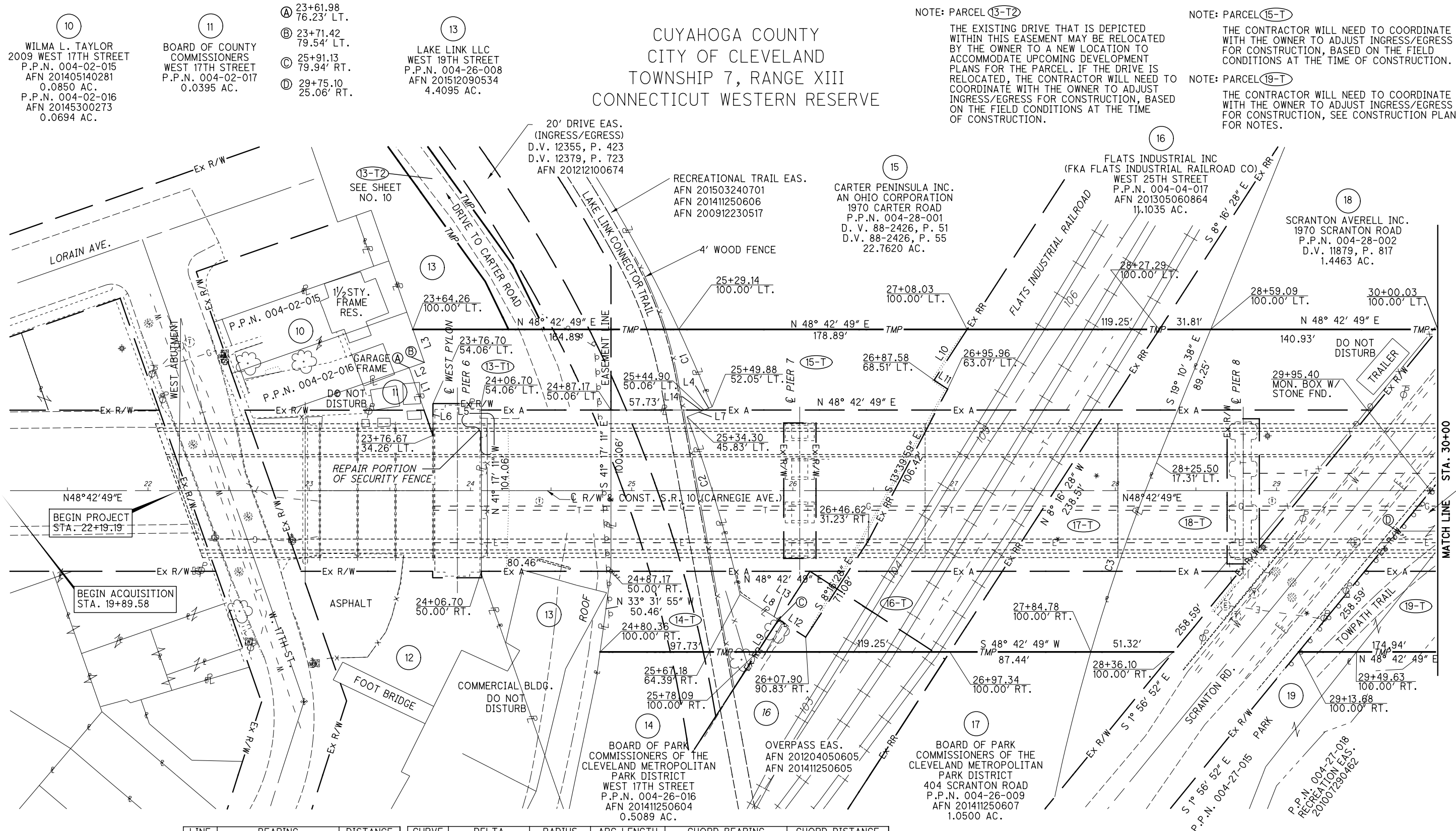
PID NO. **96986**  
 R/W DESIGNER BB  
 R/W REVIEWER RJM

**RIGHT OF WAY PLAN**  
 STA. 21+50.00 TO 30+00.00

**CUY-10-16.13**

4 / 10  
 302  
 308

CUYAHOGA COUNTY  
 CITY OF CLEVELAND  
 TOWNSHIP 7, RANGE XIII  
 CONNECTICUT WESTERN RESERVE



10 WILMA L. TAYLOR  
 2009 WEST 17TH STREET  
 P.P.N. 004-02-015  
 AFN 201405140281  
 0.0850 AC.  
 P.P.N. 004-02-016  
 AFN 20145300273  
 0.0694 AC.

11 BOARD OF COUNTY COMMISSIONERS  
 WEST 17TH STREET  
 P.P.N. 004-02-017  
 0.0395 AC.

12 2041 WEST LLC  
 2041 WEST 17TH STREET  
 P.P.N. 004-26-001  
 AFN 200302241485  
 2.6584 AC.

13 LAKE LINK LLC  
 WEST 19TH STREET  
 P.P.N. 004-26-008  
 AFN 201512090534  
 4.4095 AC.

14 BOARD OF PARK COMMISSIONERS OF THE CLEVELAND METROPOLITAN PARK DISTRICT  
 WEST 17TH STREET  
 P.P.N. 004-26-016  
 AFN 201411250604  
 0.5089 AC.

15 CARTER PENINSULA INC.  
 AN OHIO CORPORATION  
 1970 CARTER ROAD  
 P.P.N. 004-28-001  
 D. V. 88-2426, P. 51  
 D.V. 88-2426, P. 55  
 22.7620 AC.

16 BOARD OF PARK COMMISSIONERS OF THE CLEVELAND METROPOLITAN PARK DISTRICT  
 404 SCRANTON ROAD  
 P.P.N. 004-26-009  
 AFN 201411250607  
 1.0500 AC.

NOTE: PARCEL 13-T2  
 THE EXISTING DRIVE THAT IS DEPICTED WITHIN THIS EASEMENT MAY BE RELOCATED BY THE OWNER TO A NEW LOCATION TO ACCOMMODATE UPCOMING DEVELOPMENT PLANS FOR THE PARCEL. IF THE DRIVE IS RELOCATED, THE CONTRACTOR WILL NEED TO COORDINATE WITH THE OWNER TO ADJUST INGRESS/EGRESS FOR CONSTRUCTION, BASED ON THE FIELD CONDITIONS AT THE TIME OF CONSTRUCTION.

NOTE: PARCEL 15-T  
 THE CONTRACTOR WILL NEED TO COORDINATE WITH THE OWNER TO ADJUST INGRESS/EGRESS FOR CONSTRUCTION, BASED ON THE FIELD CONDITIONS AT THE TIME OF CONSTRUCTION.

NOTE: PARCEL 19-T  
 THE CONTRACTOR WILL NEED TO COORDINATE WITH THE OWNER TO ADJUST INGRESS/EGRESS FOR CONSTRUCTION, SEE CONSTRUCTION PLANS FOR NOTES.

BEGIN PROJECT STA. 22+19.19

BEGIN ACQUISITION STA. 19+89.58

LINE	BEARING	DISTANCE
L1	N 60° 34' 28" W	44.47'
L2	N 29° 25' 32" E	10.00'
L3	N 60° 34' 28" W	21.68'
L4	S 26° 57' 46" W	5.36'
L5	S 48° 42' 49" W	30.00'
L6	S 41° 11' 35" E	19.80'
L7	N 26° 57' 46" E	11.41'
L8	N 81° 42' 55" E	28.55'
L9	S 8° 16' 28" E	23.92'
L10	S 8° 16' 28" E	37.55'
L11	N 81° 43' 32" E	10.00'
L12	S 81° 42' 55" W	20.00'
L13	S 81° 42' 55" W	48.55'
L14	N 26° 57' 46" E	16.77'

CURVE	DELTA	RADIUS	ARC LENGTH	CHORD BEARING	CHORD DISTANCE
C1	3° 18' 03" RT.	906.95'	52.25'	S 64° 39' 56" E	52.24'
C2	7° 58' 21" RT.	827.27'	115.11'	S 57° 53' 55" E	115.02'
C3	5° 55' 54" LT.	1200.00'	124.23'	S 22° 08' 34" E	124.18'

PARCEL NO.	EASEMENT REQUIRED	TOTAL AREA	AREA OVERLAP			
			EX. AERIAL	PRO	EX. TRAIL	EX. ING./EG.
13-T1	TEMPORARY	0.3814	0.1847	0.0	0.0604	0.0294
13-T2		0.2786	0.0	0.0	0.0	0.0291
14-T		0.2511	0.1435	0.0	0.0	0.0684
15-T		0.4770	0.2595	0.0386	0.0	0.0
16-T		0.4784	0.2286	0.0	0.0	0.0
17-T		0.2641	0.1301	0.0	0.0	0.0
18-T		0.4510	0.2273	0.0403	0.0	0.0
19-T		0.7325	0.3527	0.0355	0.0	0.0

19 CITY OF CLEVELAND  
 A MUNICIPAL CORPORATION  
 1825 & 2065 SCRANTON ROAD  
 P.P.N. 004-27-015  
 4.1677 AC.  
 P.P.N. 004-27-018  
 1.9425 AC.  
 P.P.N. 004-28-009  
 4.7636 AC.  
 AFN 201409230510

NOTE: DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., WITHIN THE TEMPORARY EASEMENT

REV. BY	DATE	DESCRIPTION
BB	7/13/17	REVISED PAGE NUMBERS
BB	6/12/17	ADDED NOTE FOR PARCEL 15-T AND 19-T
BB	12/23/16	ADDED NOTE FOR PARCEL 13-T2
RMC, BB	7/29/16	REVISED DATA TO MATCH TITLE REPORTS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
REV. BY	DATE	DESCRIPTION
DATE COMPLETED	3/7/16	

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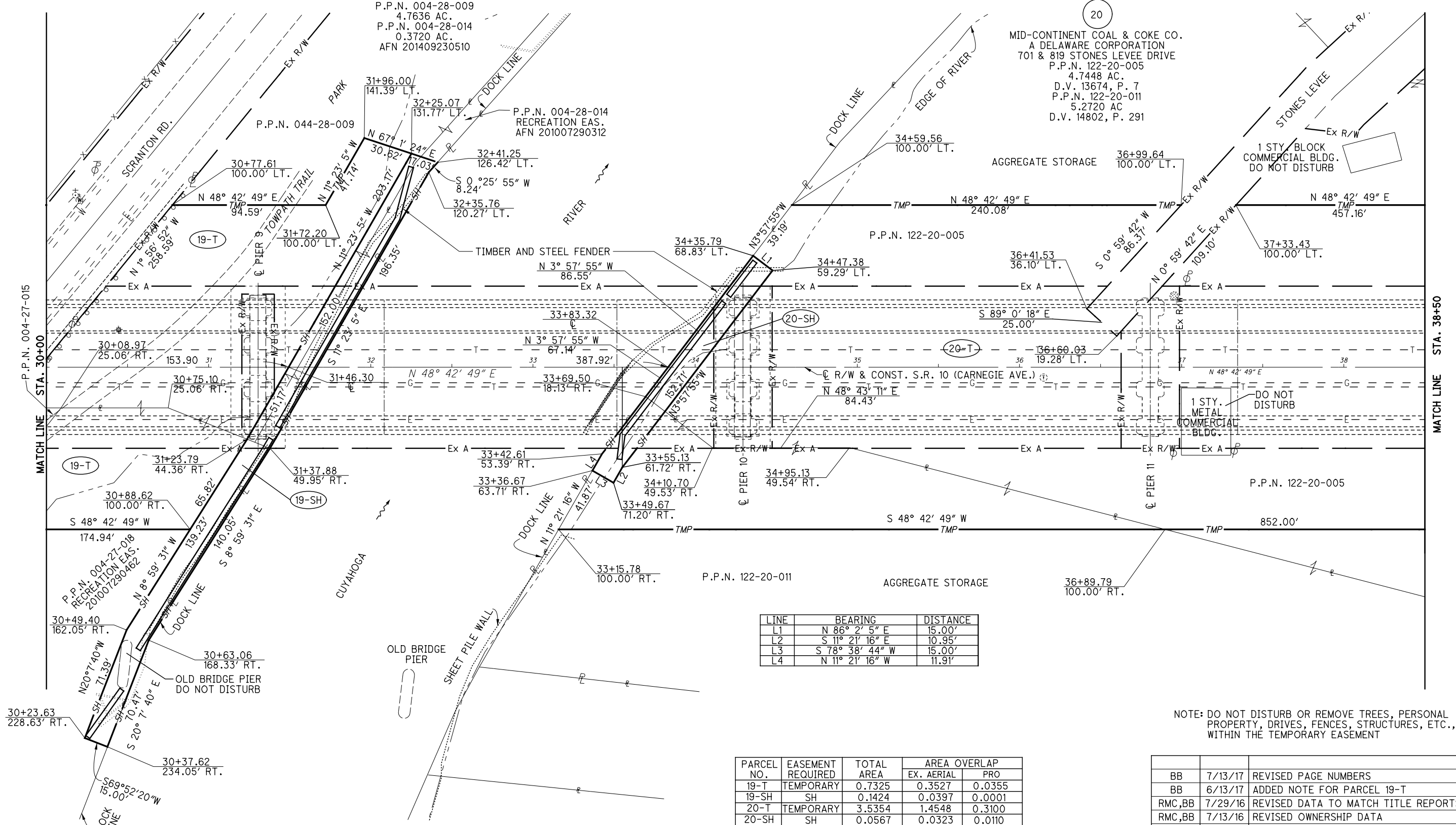
CUYAHOGA COUNTY  
CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE

NOTE: PARCEL 19-T

THE CONTRACTOR WILL NEED TO COORDINATE WITH THE OWNER TO ADJUST INGRESS/EGRESS FOR CONSTRUCTION, SEE CONSTRUCTION PLANS FOR NOTES.

31  
CITY OF CLEVELAND  
A MUNICIPAL CORPORATION  
1825 & 2065 SCRANTON ROAD  
P.P.N. 004-27-015  
4.1677 AC.  
P.P.N. 004-27-018  
1.9425 AC.  
P.P.N. 004-28-009  
4.7636 AC.  
P.P.N. 004-28-014  
0.3720 AC.  
AFN 201409230510

20  
MID-CONTINENT COAL & COKE CO.  
A DELAWARE CORPORATION  
701 & 819 STONES LEVEE DRIVE  
P.P.N. 122-20-005  
4.7448 AC.  
D.V. 13674, P. 7  
P.P.N. 122-20-011  
5.2720 AC  
D.V. 14802, P. 291



LINE	BEARING	DISTANCE
L1	N 86° 2' 5" E	15.00'
L2	S 11° 21' 16" E	10.95'
L3	S 78° 38' 44" W	15.00'
L4	N 11° 21' 16" W	11.91'

PARCEL NO.	EASEMENT REQUIRED	TOTAL AREA	AREA OVERLAP	
			EX. AERIAL	PRO
19-T	TEMPORARY	0.7325	0.3527	0.0355
19-SH	SH	0.1424	0.0397	0.0001
20-T	TEMPORARY	3.5354	1.4548	0.3100
20-SH	SH	0.0567	0.0323	0.0110

NOTE: DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., WITHIN THE TEMPORARY EASEMENT

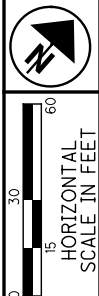
REV. BY	DATE	DESCRIPTION
BB	7/13/17	REVISED PAGE NUMBERS
BB	6/13/17	ADDED NOTE FOR PARCEL 19-T
RMC, BB	7/29/16	REVISED DATA TO MATCH TITLE REPORTS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
KAK	4/18/16	REVISION TO PROPOSED FENDER LOCATIONS
DATE COMPLETED	3/7/16	

  
  
 PID NO. **96986**  
 R/W DESIGNER BB  
 R/W REVIEWER RJM  
**RIGHT OF WAY PLAN**  
**STA. 30+00.00 TO 38+50.00**  
**CUY-10-16.13**  
 5 / 10  
 303  
 308

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CUYAHOGA COUNTY  
CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE

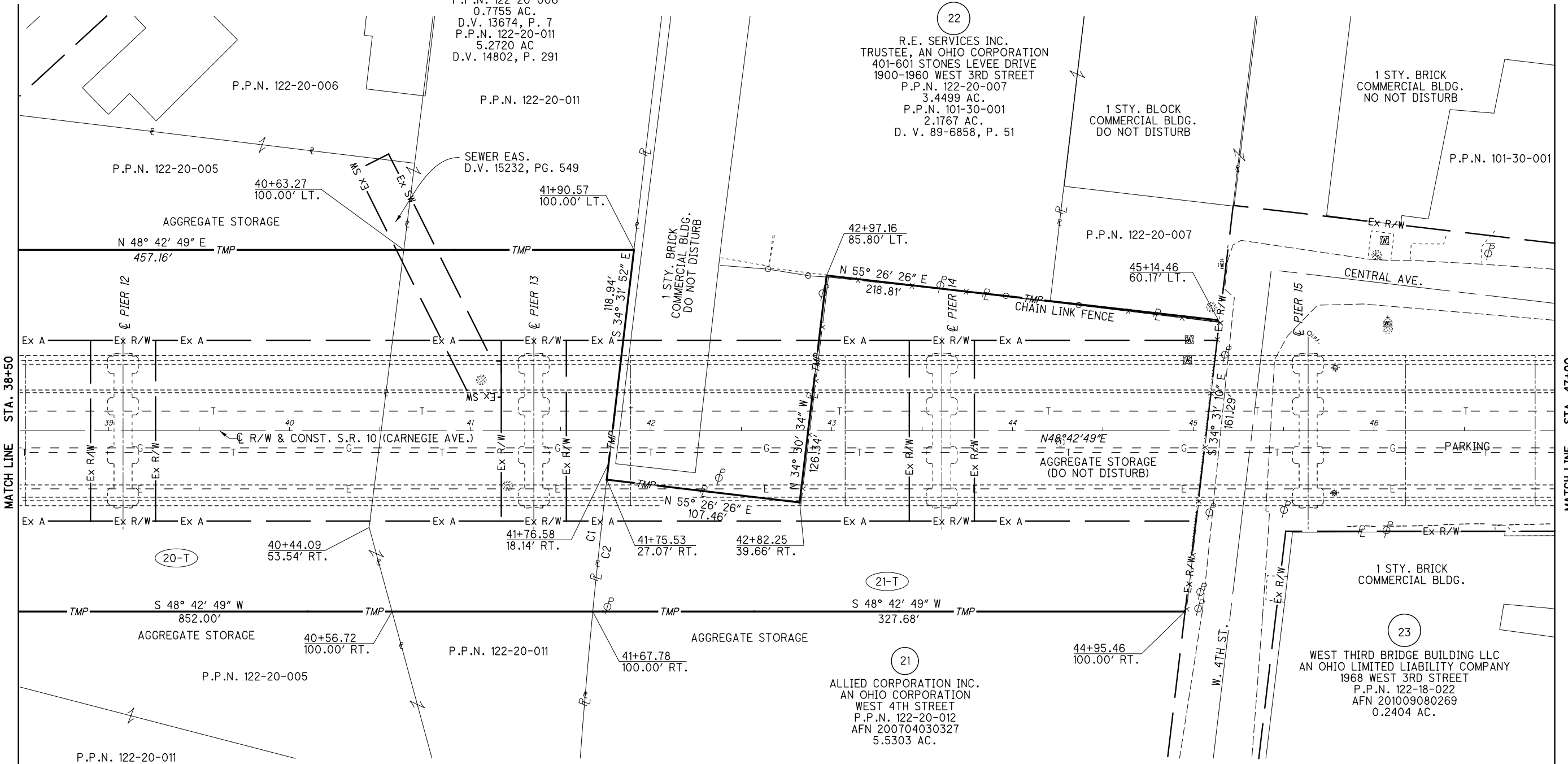


20

MID-CONTINENT COAL & COKE CO.  
A DELAWARE CORPORATION  
701 & 819 STONES LEEVE DRIVE  
P.P.N. 122-20-005  
4.7448 AC.  
P.P.N. 122-20-006  
0.7755 AC.  
D.V. 13674, P. 7  
P.P.N. 122-20-011  
5.2720 AC.  
D.V. 14802, P. 291

22

R.E. SERVICES INC.  
TRUSTEE, AN OHIO CORPORATION  
401-601 STONES LEEVE DRIVE  
1900-1960 WEST 3RD STREET  
P.P.N. 122-20-007  
3.4499 AC.  
P.P.N. 101-30-001  
2.1767 AC.  
D. V. 89-6858, P. 51



MATCH LINE STA. 38+50

MATCH LINE STA. 47+00

CURVE	DELTA	RADIUS	ARC LENGTH	CHORD BEARING	CHORD DISTANCE
C1	1° 14' 18" LT.	3809.83'	82.34'	S 35° 09' 01" E'	82.34'
C2	1° 6' 11" LT.	3809.83'	73.34'	N 35° 13' 4" W	73.34'

NOTE: DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., WITHIN THE TEMPORARY EASEMENT

PARCEL NO.	EASEMENT REQUIRED	TOTAL AREA	AREA OVERLAP	
			EX. AERIAL	PRO
20-T	TEMPORARY	3.5354	1.4548	0.3100
21-T	TEMPORARY	1.0401	0.4644	0.0826

REV. BY	DATE	DESCRIPTION
BB	7/13/17	REVISED PAGE NUMBERS
RMC, BB	7/29/16	REVISED DATA TO MATCH TITLE REPORTS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
DATE COMPLETED		3/7/16

PID NO. 96986

R/W DESIGNER BB  
R/W REVIEWER RJM

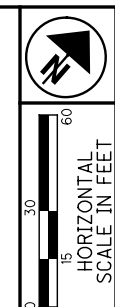
RIGHT OF WAY PLAN  
STA. 38+50.00 TO STA. 47+00.00

CUY-10-16.13

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CUYAHOGA COUNTY  
CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE

22  
R.E. SERVICES INC., TRUSTEE  
AN OHIO CORPORATION  
401-601 STONES LEVEE DRIVE  
1900-1960 WEST 3RD STREET  
P.P.N. 101-30-001  
D.V. 89-6858, P. 51  
2.1767 AC.

24  
FUNDAMENTAL PARKING, LLC  
WEST 3RD STREET  
P.P.N. 101-30-002  
0.3420 AC.  
P.P.N. 101-30-003  
1.5200 AC.  
P.P.N. 122-18-010  
0.1130 AC.  
P.P.N. 122-18-011  
1.0400 AC.  
AFN 201603230625

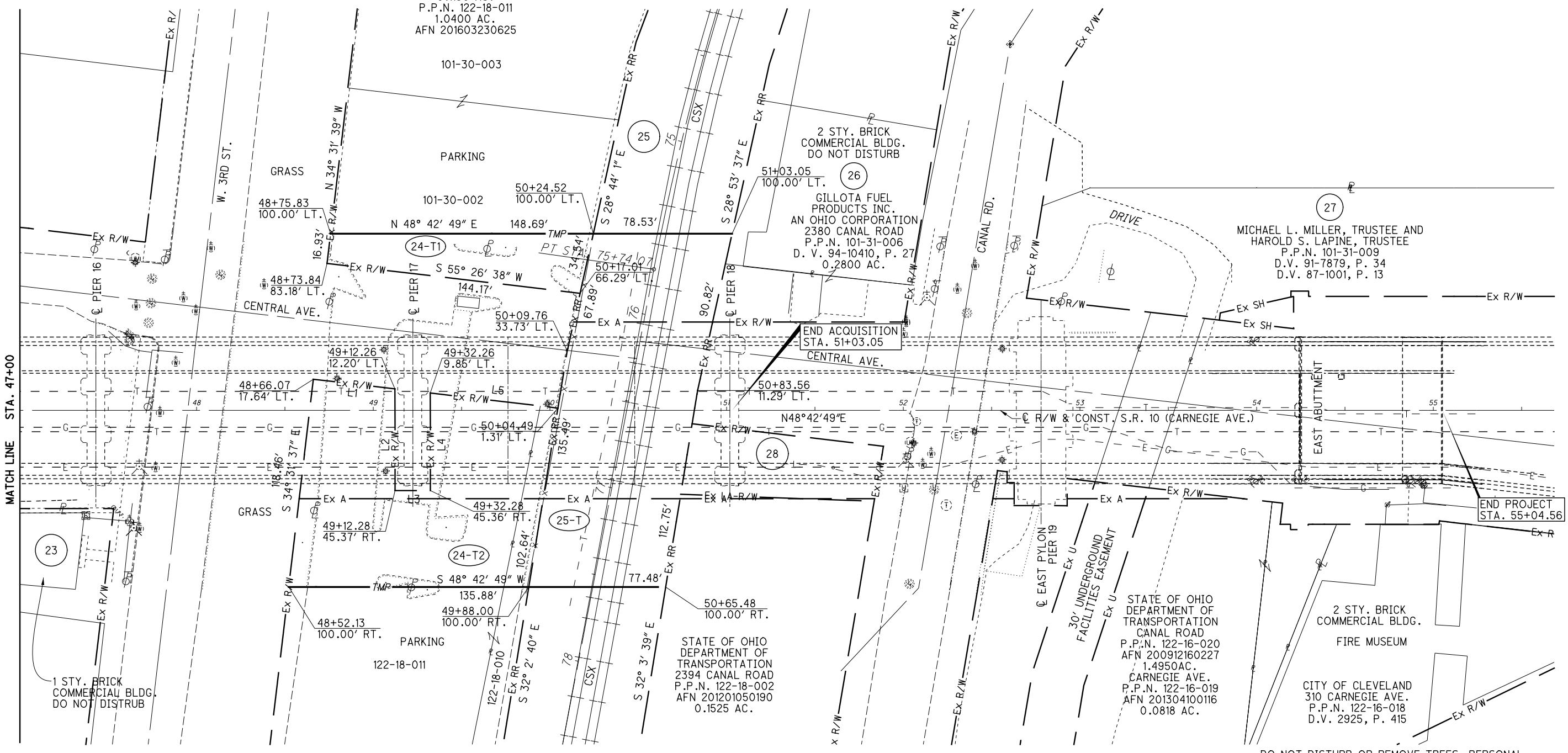
27  
MICHAEL L. MILLER, TRUSTEE AND  
HAROLD S. LAPINE, TRUSTEE  
P.P.N. 101-31-009  
D.V. 91-7879, P. 34  
D.V. 87-1001, P. 13

PID NO. **96986**  
R/W DESIGNER BB  
R/W REVIEWER RJM

**RIGHT OF WAY PLAN**  
STA. 47+00.00 TO STA. 55+00.00

**CUY-10-16.13**

7 / 10  
305  
308



NOTE: TEMPORARY PARCELS 24-T1 AND 24-T2 TO BE OF 12 MONTH DURATION. ALL OTHER TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.

DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., NOTE: WITHIN THE TEMPORARY EASEMENT

23  
WEST THIRD BRIDGE BUILDING LLC  
AN OHIO LIMITED LIABILITY CORPORATION  
1968 WEST 3RD STREET  
P.P.N. 122-18-022  
AFN 201009080269  
0.2404 AC.

25  
CSX TRANSPORTATION, INC.  
P.P.N. 122-18-009  
D.V. 88-5964, P. 7

28  
BOARD OF COUNTY COMMISSIONERS  
CANAL ROAD  
P.P.N. 122-18-001  
D.V. 3965, P. 458  
0.0757 AC.

PARCEL NO.	EASEMENT REQUIRED	TOTAL AREA	AREA OVERLAP	
			EX. AERIAL	PRO
24-T1	TEMPORARY	0.0856	0.0	0.0
24-T2	TEMPORARY	0.3217	0.1644	0.0
25-T	TEMPORARY	0.3577	0.1782	0.0

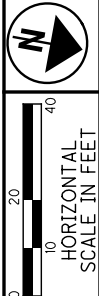
LINE	BEARING	DISTANCE
L1	N 55° 25' 41" E	46.51'
L2	S 41° 18' 15" E	57.57'
L3	N 48° 41' 45" E	20.00'
L4	N 41° 18' 15" W	55.21'
L5	N 55° 27' 30" E	72.73'

REV. BY	DATE	DESCRIPTION
RMC	9/13/17	REMOVED AREA OVERLAP PARCEL 27-T
RMC	9/13/17	REMOVED L6-L10 BEARINGS/DISTANCES
RMC	9/13/17	REVISED END ACQUISITION STATION
RMC	9/13/17	REMOVED PARCEL 27-T
BB	7/13/17	REVISED PAGE NUMBERS
BB	6/12/17	ADDED NOTE FOR PARCELS 24-T1 AND 24-T2
RMC, BB	7/13/16	REVISED OWNERSHIPS DATA
DATE COMPLETED	3/7/16	

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# CUYAHOGA COUNTY

CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE

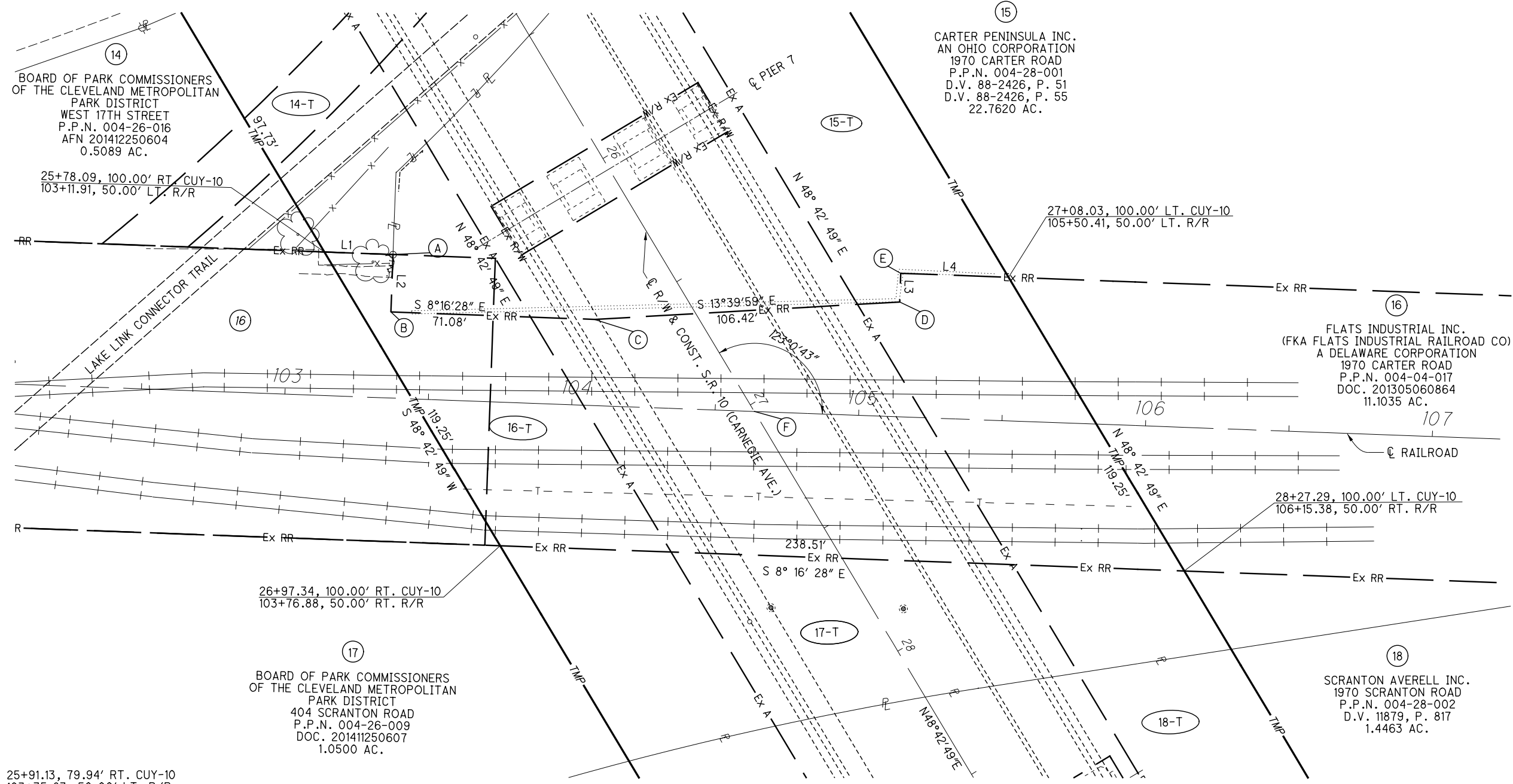


PID NO. **96986**  
R/W DESIGNER BB  
R/W REVIEWER RJM

## FLATS INDUSTRIAL RAILROAD RAILROAD PLAT

CUY-10-16.13

8 / 10  
306  
308



14  
BOARD OF PARK COMMISSIONERS  
OF THE CLEVELAND METROPOLITAN  
PARK DISTRICT  
WEST 17TH STREET  
P.P.N. 004-26-016  
AFN 201412250604  
0.5089 AC.

15  
CARTER PENINSULA INC.  
AN OHIO CORPORATION  
1970 CARTER ROAD  
P.P.N. 004-28-001  
D.V. 88-2426, P. 51  
D.V. 88-2426, P. 55  
22.7620 AC.

16  
FLATS INDUSTRIAL INC.  
(FKA FLATS INDUSTRIAL RAILROAD CO)  
A DELAWARE CORPORATION  
1970 CARTER ROAD  
P.P.N. 004-04-017  
DOC. 201305060864  
11.1035 AC.

17  
BOARD OF PARK COMMISSIONERS  
OF THE CLEVELAND METROPOLITAN  
PARK DISTRICT  
404 SCRANTON ROAD  
P.P.N. 004-26-009  
DOC. 201411250607  
1.0500 AC.

18  
SCRANTON AVERELL INC.  
1970 SCRANTON ROAD  
P.P.N. 004-28-002  
D.V. 11879, P. 817  
1.4463 AC.

- (A) 25+91.13, 79.94' RT. CUY-10  
103+35.83, 50.00' LT. R/R
- (B) 26+07.90, 90.83' RT. CUY-10  
103+35.83, 30.00' LT. R/R
- (C) 26+46.62, 31.23' RT. CUY-10  
104+06.91, 30.00' LT. R/R
- (D) 26+95.96, 63.07' LT. CUY-10  
105+12.86, 40.00' LT. R/R
- (E) 26+87.58, 68.51' LT. CUY-10  
105+12.86, 40.00' LT. R/R
- (F) 27+02.69, CL CUY-10  
104+63.64, CL R/R

LINE	BEARING	DISTANCE
L1	N 8° 16' 28" W	23.92'
L2	N 81° 42' 55" E	20.00'
L3	N 81° 43' 32" E	10.00'
L4	N 8° 16' 28" W	37.55'

PARCEL NO.	EASEMENT REQUIRED	TOTAL AREA	AREA OVERLAP EX. AERIAL
16-T	TEMPORARY	0.4784 AC.	0.2286 AC.

RAILROAD CENTERLINE ESTABLISHED FROM SURVEY PLATS OF RECORD IN CUYAHOGA COUNTY. RAILROAD CENTERLINE STATIONING WAS ASSUMED FOR PROJECT USE ONLY.

NOTE: DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., WITHIN THE TEMPORARY EASEMENT

REV. BY	DATE	DESCRIPTION
BB	7/13/17	REVISED PAGE NUMBERS
RMC, BB	7/29/16	REVISED DATA TO MATCH TITLE REPORTS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
DATE COMPLETED		3/7/16

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# CUYAHOGA COUNTY

CUYAHOGA COUNTY  
CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE



PID NO.  
**96986**

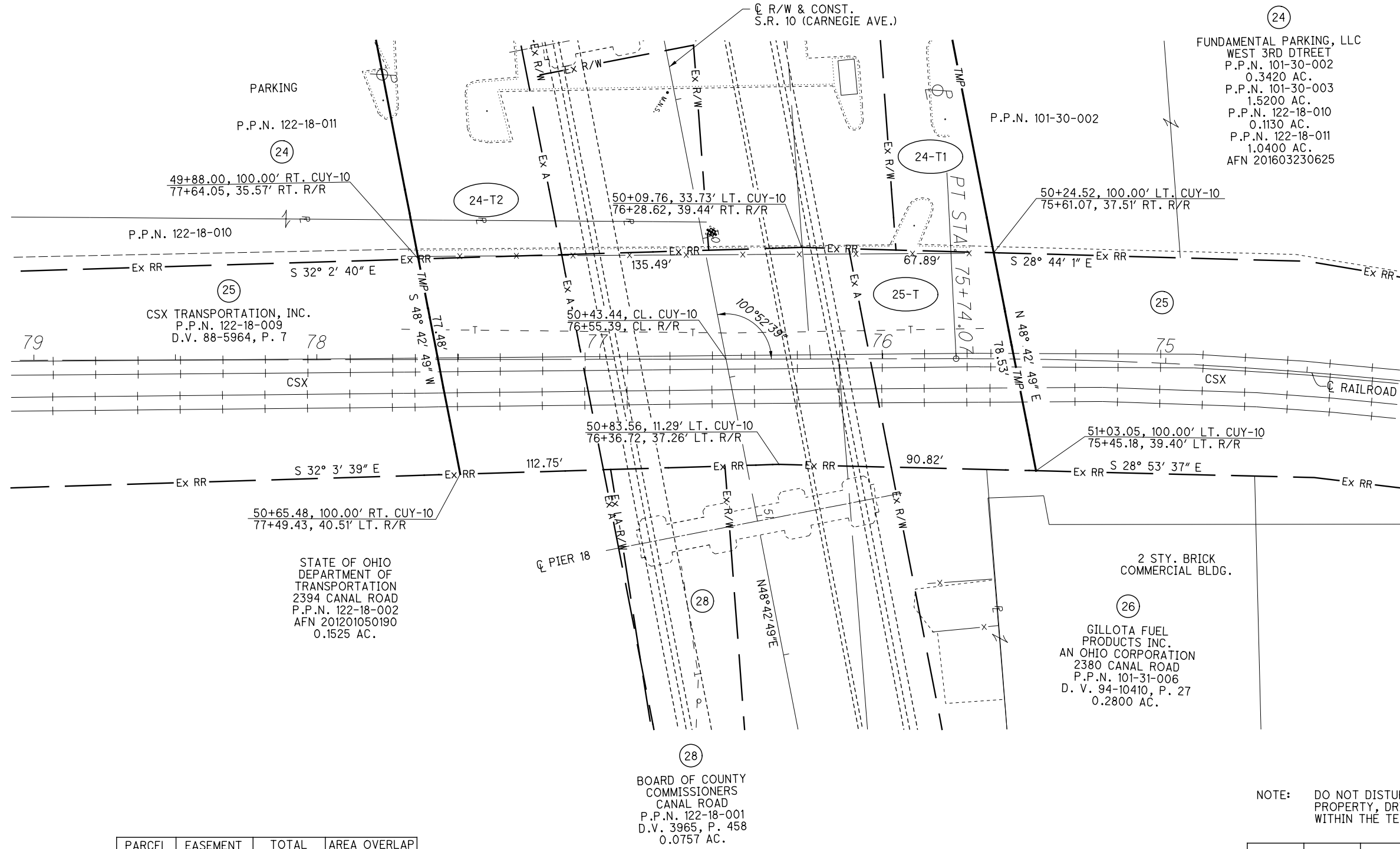
R/W DESIGNER BB  
R/W REVIEWER RJM

**CSX TRANSPORTATION, INC.**  
**RAILROAD PLAT**

**CUY-10-16.13**

9 / 10

307  
308



24  
FUNDAMENTAL PARKING, LLC  
WEST 3RD DTREET  
P.P.N. 101-30-002  
0.3420 AC.  
P.P.N. 101-30-003  
1.5200 AC.  
P.P.N. 122-18-010  
0.1130 AC.  
P.P.N. 122-18-011  
1.0400 AC.  
AFN 201603230625

25  
CSX TRANSPORTATION, INC.  
P.P.N. 122-18-009  
D.V. 88-5964, P. 7

28  
STATE OF OHIO  
DEPARTMENT OF  
TRANSPORTATION  
2394 CANAL ROAD  
P.P.N. 122-18-002  
AFN 201201050190  
0.1525 AC.

28  
BOARD OF COUNTY  
COMMISSIONERS  
CANAL ROAD  
P.P.N. 122-18-001  
D.V. 3965, P. 458  
0.0757 AC.

26  
GILLOTA FUEL  
PRODUCTS INC.  
AN OHIO CORPORATION  
2380 CANAL ROAD  
P.P.N. 101-31-006  
D. V. 94-10410, P. 27  
0.2800 AC.

NOTE: DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., WITHIN THE TEMPORARY EASEMENT

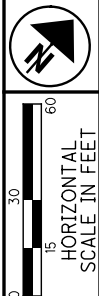
PARCEL NO.	EASEMENT REQUIRED	TOTAL AREA	AREA OVERLAP EX. AERIAL
25-T	TEMPORARY	0.3577 AC.	0.1782 AC.

RAILROAD CENTERLINE AND STATIONING WERE ESTABLISHED FROM CUY-90-14.90 RIGHT OF WAY PLANS BASED ON CSX VALUATION MAP; THE BALTIMORE AND OHIO RAILROAD, AKRON-CHICAGO DIVISION, C.T. & V BRANCH STATION 53+00.85 TO STATION 105+80.85, SHEET NO. V120.1 OF S-LIB, V05734, DATED JUNE 30, 1918.

REV. BY	DATE	DESCRIPTION
BB	7/13/17	REVISED PAGE NUMBERS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
DATE COMPLETED	3/7/16	

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CUYAHOGA COUNTY  
CITY OF CLEVELAND  
TOWNSHIP 7, RANGE XIII  
CONNECTICUT WESTERN RESERVE

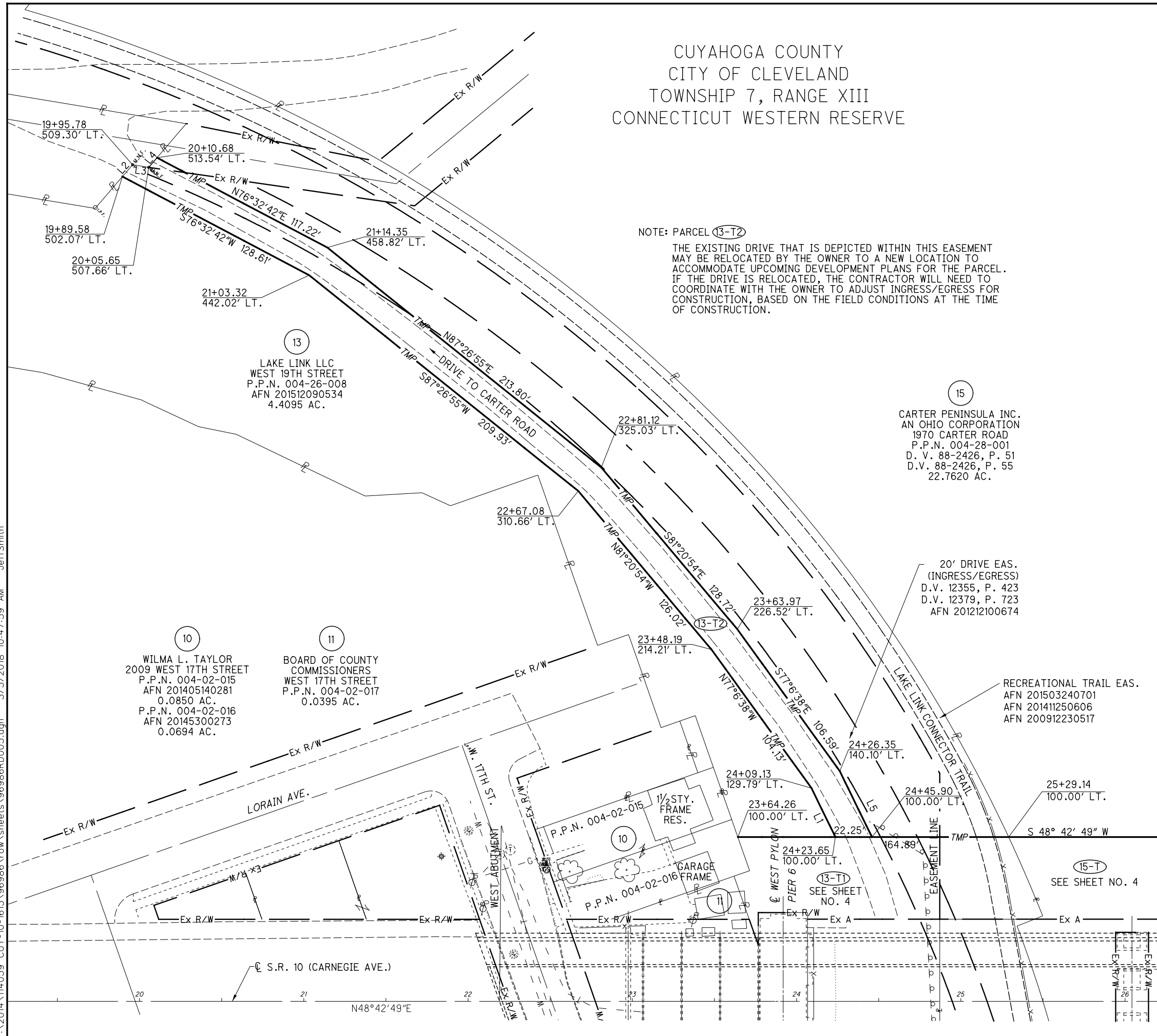


PID NO. **96986**  
R/W DESIGNER BB  
R/W REVIEWER RJM

**RIGHT OF WAY PLAN  
TEMPORARY DRIVE EASEMENT**

**CUY-10-16.13**

NOTE: PARCEL 13-T2  
THE EXISTING DRIVE THAT IS DEPICTED WITHIN THIS EASEMENT MAY BE RELOCATED BY THE OWNER TO A NEW LOCATION TO ACCOMMODATE UPCOMING DEVELOPMENT PLANS FOR THE PARCEL. IF THE DRIVE IS RELOCATED, THE CONTRACTOR WILL NEED TO COORDINATE WITH THE OWNER TO ADJUST INGRESS/EGRESS FOR CONSTRUCTION, BASED ON THE FIELD CONDITIONS AT THE TIME OF CONSTRUCTION.



10  
WILMA L. TAYLOR  
2009 WEST 17TH STREET  
P.P.N. 004-02-015  
AFN 201405140281  
0.0850 AC.  
P.P.N. 004-02-016  
AFN 20145300273  
0.0694 AC.

11  
BOARD OF COUNTY  
COMMISSIONERS  
WEST 17TH STREET  
P.P.N. 004-02-017  
0.0395 AC.

13  
LAKE LINK LLC  
WEST 19TH STREET  
P.P.N. 004-26-008  
AFN 201512090534  
4.4095 AC.

15  
CARTER PENINSULA INC.  
AN OHIO CORPORATION  
1970 CARTER ROAD  
P.P.N. 004-28-001  
D.V. 88-2426, P. 51  
D.V. 88-2426, P. 55  
22.7620 AC.

20' DRIVE EAS.  
(INGRESS/EGRESS)  
D.V. 12355, P. 423  
D.V. 12379, P. 723  
AFN 201212100674

RECREATIONAL TRAIL EAS.  
AFN 201503240701  
AFN 201411250606  
AFN 200912230517

PARCEL 13-T2

LINE	BEARING	DISTANCE
L1	N67°16'42"W	33.14'
L2	N0°41'45"W	9.52'
L3	N58°8'2"E	10.00'
L4	N0°41'45"W	7.74'
L5	S67°16'42"E	44.61'

NOTE: DO NOT DISTURB OR REMOVE TREES, PERSONAL PROPERTY, DRIVES, FENCES, STRUCTURES, ETC., WITHIN THE TEMPORARY EASEMENT

REV. BY	DATE	DESCRIPTION
BB	7/13/17	REVISED PAGE NUMBERS
BB	12/23/16	ADDED NOTE FOR PARCEL 13-T2
RMC, BB	7/29/16	DATA REVISED TO MATCH TITLE REPORTS
RMC, BB	7/13/16	REVISED OWNERSHIP DATA
DATE COMPLETED	3/7/16	

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**PROJECT DESCRIPTION**

THIS PROJECT INCLUDES REPLACEMENT OF THE CUYAHOGA RIVER CHANNEL FENDER SYSTEM UNDER THE STATE ROUTE 10 (CARNEGIE AVENUE) BRIDGE IN CLEVELAND, OHIO, DESIGNATED AS CUY-10-16.13, PID NO. 96986

**GEOLOGY**

THE PROJECT SITE LIES WITHIN THE LAKE ERIE PLAIN PHYSIOGRAPHIC REGION. WITHIN THIS REGION, THE GEOLOGICAL DEPOSITS CONSIST OF PLEISTOCENE-AGE LACUSTRINE SOILS AND WAVE-PLANED GLACIAL TILL.

THE LACUSTRINE SOILS CONSIST OF SILTS AND CLAYS. OFTEN, THE SILTS AND CLAYS OCCUR IN ALTERNATING THIN LAYERS KNOWN AS VARVES. VARVED SOILS ARE CHARACTERISTIC OF LACUSTRINE DEPOSITS, AND THE THIN LAYERING IS TYPICALLY ATTRIBUTED TO SEASONAL OR OTHER CYCLIC VARIATIONS OF SEDIMENTATION IN THE LAKE WATERS. IN ADDITION, THIN SAND SEAMS AND PARTINGS MAY BE ENCOUNTERED.

THE GLACIAL TILL, ALSO REFERRED TO AS A MORaine, WAS DEPOSITED BY THE ADVANCE AND RETREAT OF GLACIAL ICE. WITHIN THE GLACIAL TILL, IT IS NOT UNCOMMON TO ENCOUNTER COBBLES, BOULDERS, AND SEAMS OF GRANULAR SOILS, WHICH MAY OR MAY NOT BE WATER BEARING. IN THE LAKE ERIE PLAIN PHYSIOGRAPHIC REGION, THE SURFACE OF THE GLACIAL TILL HAS GENERALLY EXPERIENCED SOME REWORKING FROM WAVE ACTION OF THE HISTORIC LAKE.

BEDROCK AT THE SITE IS DEVONIAN AGE, BROADLEY MAPPED AS OLENTANGY AND OHIO SHALES. BASED ON HISTORIC BORINGS PERFORMED FOR THE NEARBY INTERSTATE 90 BRIDGE, ROCK IS ANTICIPATED AT DEPTHS ON THE ORDER OF 130 TO 150 FEET BELOW THE NORMAL WATER LEVEL (Elevs. 450 TO 430) IN THE GENERAL PROJECT AREA.

THE USDA NATURAL RESOURCES CONSERVATION SERVICES (NRCS) WEB SOIL SURVEY INDICATES THAT THE NEAR-SURFACE SOILS IN THE PROJECT AREA ARE MAPPED AS URBAN LAND.

**SUBSURFACE EXPLORATION**

FIVE (5) TEST BORINGS, DESIGNATED AS BORINGS B-001-0-15 THROUGH B-005-0-15, WERE DRILLED BY TTL DURING THE PERIOD FROM FEBRUARY 23 THROUGH MARCH 1, 2016. THESE BORINGS ARE FULLY DESIGNATED AS BORINGS B-001-0-15 THROUGH B-005-0-15 IN ACCORDANCE WITH ODOT PROTOCOL, BUT THE -0-15 PORTION OF THE NOMENCLATURE IS GENERALLY OMITTED IN THE DISCUSSION HEREIN. BORINGS B-001, B-002, AND B-003 WERE PERFORMED ALONG THE EXISTING WEST RIVER FENDERS, AND BORINGS B-004 AND B-005 WERE PERFORMED ALONG THE EXISTING (PARTIALLY SUBMERGED) EAST RIVER FENDERS.

THE TEST BORINGS WERE COMPLETED USING AN ATV-MOUNTED ROTARY DRILLING RIG. DISTURBED (SPLIT-SPOON) DRIVE SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (ASTM D 1586) CONTINUOUSLY UTILIZING A 24-INCH SAMPLE DRIVE TO A DEPTH OF 6 FEET BELOW THE RIVER BOTTOM AND AT 5-FOOT INTERVALS UTILIZING AN 18-INCH SAMPLE DRIVE THEREAFTER TO BORING COMPLETION.

THE CALIBRATED HAMMER/ROD ENERGY RATIO FOR THE CME 550 ATV-MOUNTED DRILL RIG UTILIZED ON THIS PROJECT WAS 82.7 PERCENT, BASED ON CALIBRATION ON JANUARY 7, 2016.

**EXPLORATION FINDINGS**

THE WATER LEVEL WAS RELATIVELY STABLE DURING OUR EXPLORATION, ESTIMATED AT APPROXIMATE ELEV. 574. ALONG THE RIVER CHANNEL, GRADES VARIED FROM ORDER OF ELEV. 564 TO 542 BASED ON TOPOGRAPHIC CONTOURS SHOWN ON THE PLAN. HOWEVER, AT THE TIME OF OUR INVESTIGATION, THE DEPTH OF THE RIVER BOTTOM AT THE BORING LOCATIONS WAS FOUND TO RANGE FROM APPROXIMATELY 23½ TO 28½ FEET BELOW THE TOP OF THE WATER (Elevs. 550± TO 545±), INDICATING POSSIBLE DREDGING, SEDIMENTATION, AND/OR REGRADING ACTIVITIES MAY HAVE OCCURED SINCE THE PERFORMANCE OF THE SURVEY FOR THE PLAN.

THE SUBSOILS ENCOUNTERED CAN BE GENERALLY DESCRIBED AS THREE STRATA OF COHESIVE SOILS WITH VARYING STRENGTH AND MOISTURE CHARACTERISTICS.

STRATUM I CONSISTED OF VERY SOFT TO SOFT COHESIVE ALLUVIAL DEPOSITS ENCOUNTERED IN EACH OF THE BORINGS AT THE RIVER BOTTOM SURFACE TO DEPTHS RANGING FROM 26½ TO 31 FEET BELOW THE TOP OF THE WATER SURFACE (Elevs. 547± TO 543±). THE ALLUVIAL DEPOSITS CONSISTED OF SANDY SILT (ODOT A-4A), AS WELL AS SILT (ODOT A-4B).

STRATUM II CONSISTED OF PREDOMINATELY STIFF TO VERY STIFF COHESIVE LACUSTRINE DEPOSITS ENCOUNTERED UNDERLYING STRATUM I TO DEPTHS RANGING FROM APPROXIMATELY 44 TO 55 FEET (Elevs. 530± TO 519±). THE LACUSTRINE DEPOSITS CONSISTED OF SILT (ODOT A-4B), AS WELL AS SANDY SILT (ODOT A-4A).

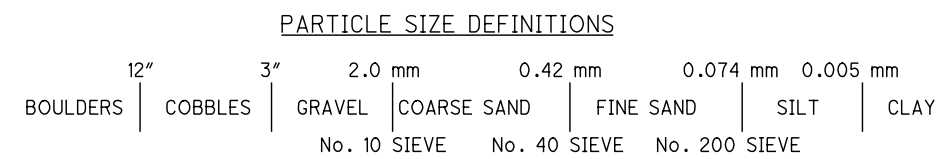
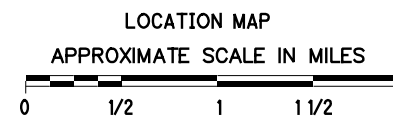
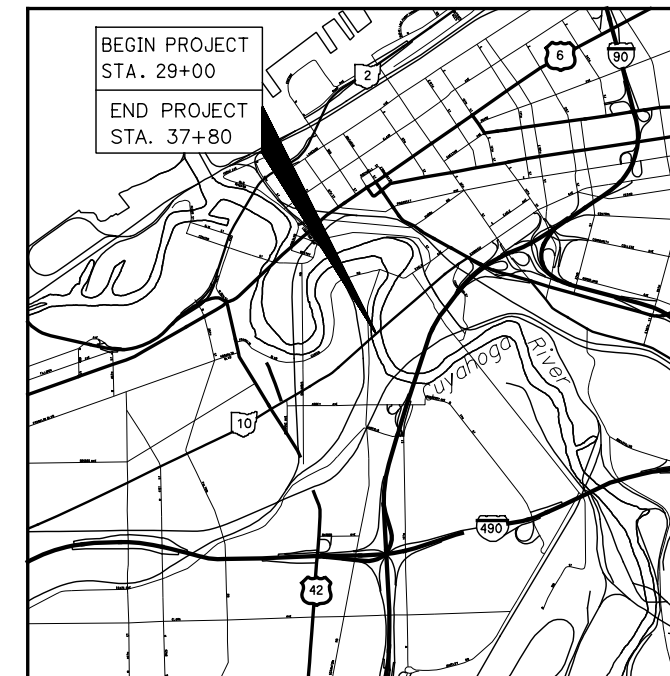
STRATUM III CONSISTED OF PREDOMINATELY STIFF TO VERY STIFF COHESIVE REWORKED TILL DEPOSITS ENCOUNTERED UNDERLYING STRATUM II TO BORING TERMINATION AT DEPTHS RANGING FROM 80½ TO 85½ FEET (Elevs. 494± TO 489±). THE STRATUM III REWORKED TILL DEPOSITS INCLUDED SILT AND CLAY (ODOT A-6A), CLAY (ODOT A-7-6), SANDY SILT (ODOT A-4A), AS WELL AS SILT (ODOT A-4B).

**LEGEND**

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
SANDY SILT	A-4A	6	8
SILT	A-4B	16	17
SILT AND CLAY	A-6A	2	23
CLAY	A-7-6	1	1
	TOTAL	25	49

	BORING LOCATION - PLAN VIEW
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.
WC	INDICATES WATER CONTENT IN PERCENT.
W	INDICATES FREE WATER ELEVATION.
	INDICATES STATIC WATER ELEVATION.
○	INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.
*	INDICATES COMPRESSIVE STRENGTH DETERMINED BY ASTM D 2166.
SS	INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.
NP	INDICATES A NON-PLASTIC SAMPLE.
NI	INDICATES NOT INTACT.



**SPECIFICATIONS**

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS (SGE), DATED JANUARY 2016.

**AVAILABLE INFORMATION**

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE OR THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

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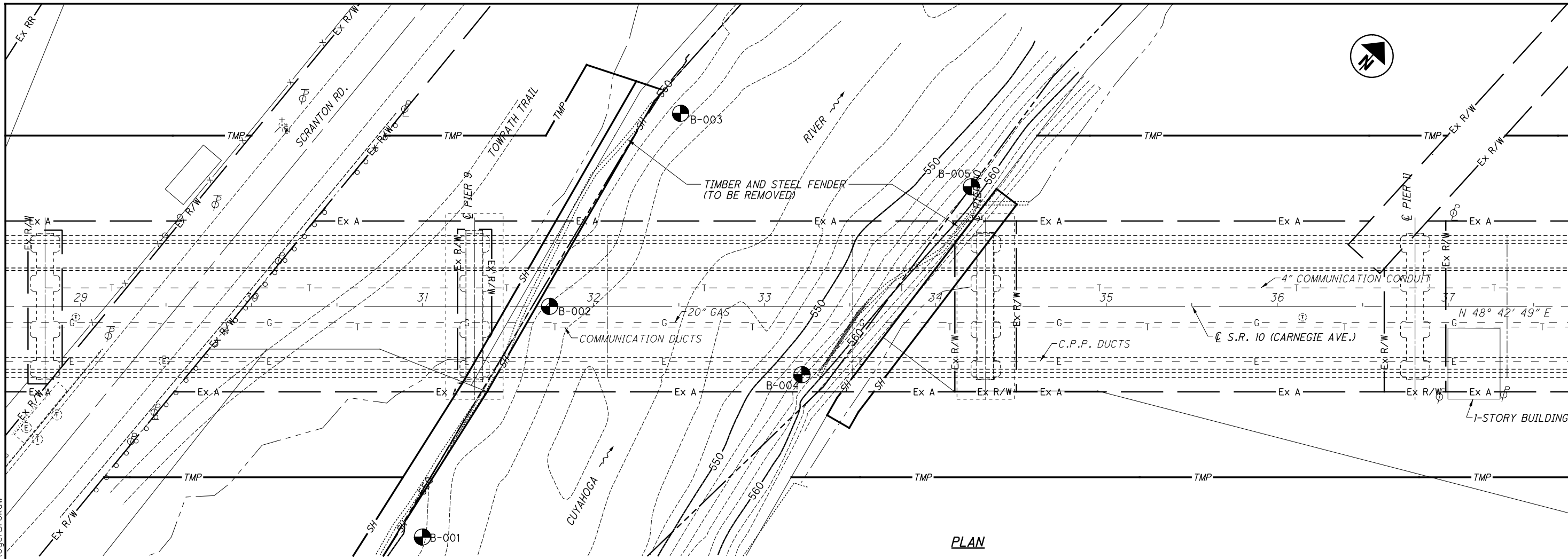


PID NO. 96986

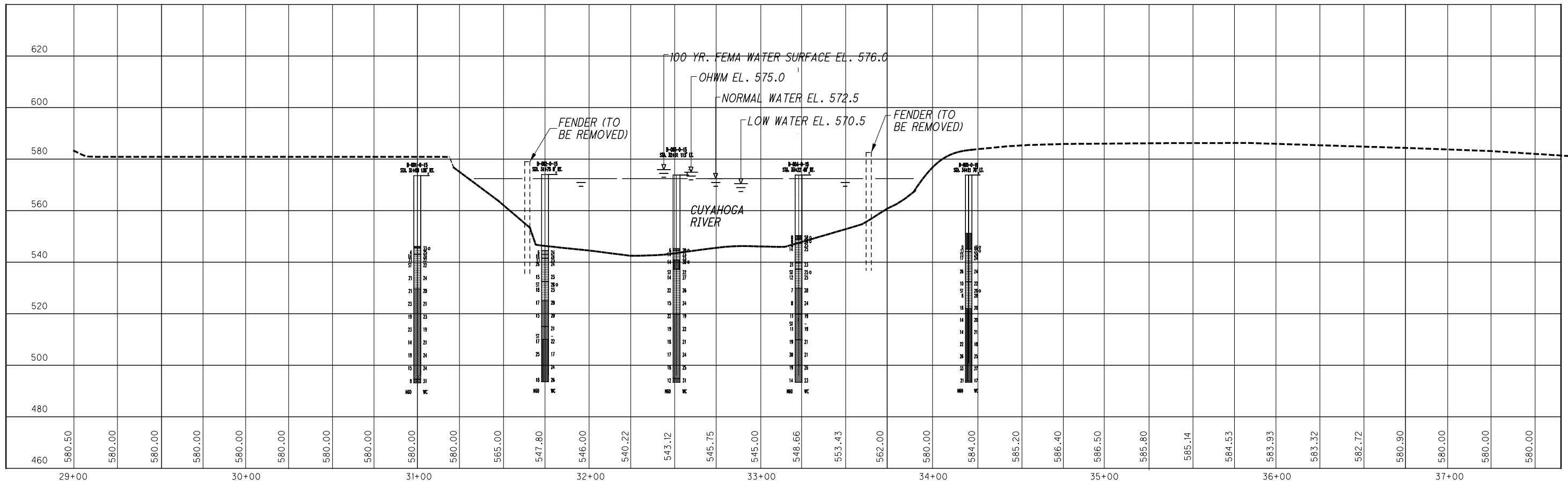
STRUCTURE FOUNDATION EXPLORATION  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16.13  
PID NO. 96986

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PLAN



**STRUCTURE FOUNDATION EXPLORATION**  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
PID NO. 96986

2 / 17

DRAWN: TRR  
CHECKED: KDC

**ASSOCIATES INC.**  
Engineering & Construction

PROJECT: CUY-10-16.13	DRILLING FIRM / OPERATOR: TTL / TB	STATION / OFFSET: 31+00, 135 RT	EXPLORATION ID: B-001-0-15
TYPE: STRUCTURE FOUNDATION	SAMPLING FIRM / LOGGER: TTL / KKC	ALIGNMENT: STATE ROUTE 10	
PID: 96986 BR ID: N/A	DRILLING METHOD: 3.25" HSA	ELEVATION: 573.5 (NAVD88) EOB: 80.5 ft.	PAGE: 1 OF 3
START: 2/29/16 END: 2/29/16	SAMPLING METHOD: SPT / ST	COORD: 45.565362300, -87.577053100	
MATERIAL DESCRIPTION AND NOTES		GRADATION (%)	
WATER - 27 FEET 6 INCHES		GR	CS
ELEV. 573.5		FS	SI
		CL	LL
		PL	PI
		WC	
ELEV. 546.0		ODOT CLASS (G)	
ELEV. 545.5			
ELEV. 543.0			

SPT/ROD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	HP (tsf)	GRADATION (%)								WC	ODOT CLASS (G)	HOLE SEALED
					GR	CS	FS	SI	CL	LL	PL	PI			
3	5	100	SS-3	1.06*	0	0	1	71	28	30	21	9	24	A-4b (8)	
5	5	100	SS-4	1.75	-	-	-	-	-	-	-	-	22	A-4b (V)	
6	7	88	ST-5	2.16*	0	0	1	68	31	28	20	8	22	A-4b (8)	
7	8	100	SS-6	2.00	-	-	-	-	-	-	-	-	24	A-4b (V)	
4	3	100	SS-7	2.25	-	-	-	-	-	-	-	-	20	A-6a (V)	
6	9	100	SS-8	2.00	-	-	-	-	-	-	-	-	21	A-6a (V)	
7	10	100	SS-9	NI	1	3	4	27	65	37	24	13	23	A-6a (9)	
4	6	100	SS-10	1.00	-	-	-	-	-	-	-	-	19	A-6a (V)	
6	8	100	SS-10	1.00	-	-	-	-	-	-	-	-	19	A-6a (V)	
8	9														

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 4/19/16 17:05 - S:\PROJECTS\13188.01.GPJ

PID	BR ID	N/A	PROJECT	CUY-10-16.13	STATION / OFFSET	31+00, 135 RT	START	2/29/16	END	2/29/16	PG 2 OF 3	B-001-0-15									
MATERIAL DESCRIPTION AND NOTES				ELEV.	SPT/ROD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	HP (tsf)	GRADATION (%)								WC	ODOT CLASS (G)	HOLE SEALED	
				542.5	3	5	100	SS-3	1.06*	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	HOLE SEALED	
STIFF, GRAY, SILT, SOME CLAY AND TRACE SAND, MOIST (continued)					32	5	100	SS-4	1.75	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
@32: STIFF TO VERY STIFF (WITH TRACE ORGANICS IN SS-4 SAMPLE)					33	7	88	ST-5	2.16*	0	0	1	68	31	28	20	8	22	A-4b (8)		
@34: LITTLE SAND					34	8	100	SS-6	2.00	-	-	-	-	-	-	-	-	24	A-4b (V)		
STIFF TO VERY STIFF GRAY, SILT AND CLAY, LITTLE SAND AND TRACE GRAVEL, DAMP				529.5	44	3	100	SS-7	2.25	-	-	-	-	-	-	-	-	20	A-6a (V)		
@54: TRACE SAND					45	6	100	SS-8	2.00	-	-	-	-	-	-	-	-	21	A-6a (V)		
					46	9	100	SS-9	NI	1	3	4	27	65	37	24	13	23	A-6a (9)		
					47	8	100	SS-10	1.00	-	-	-	-	-	-	-	-	19	A-6a (V)		
					48	7	100	SS-10	1.00	-	-	-	-	-	-	-	-	19	A-6a (V)		
					49	10															
					50	10															
					51	10															
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					64	10															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 4/19/16 17:05 - S:\PROJECTS\13188.01.GPJ



PID: 96986	BRID: N/A	PROJECT: CUY-10-16.13	STATION/OFFSET: 31+00, 135 RT	START: 2/29/16	END: 2/29/16	PG 3 OF 3	B-001-0-15		
MATERIAL DESCRIPTION AND NOTES		ELEV. 509.3	REC SAMPLE ID (%)	GRADATION (%)	ATTERBERG		HOLE SEaled		
		DEPTHS	N <sub>60</sub>	GR	FS	SI	WC		
			SPT/ROD	CS	CL	LL	PL		
				NI					
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, LITTLE SAND AND TRACE GRAVEL, DAMP (continued)  @69': MOIST  MEDIUM STIFF, GRAY, CLAY, SOME SILT AND TRACE SAND, MOIST		-65	3	-	-	-	-	21	
		-66	4	14	100	SS-11	NI	-	-
		-67	6						
		-68							
		-69	6	19	100	SS-12	1.25	-	-
		-70	7						24
		-71							
		-72							
		-73							
		-74	3	15	100	SS-13	1.00	-	-
		-75	5						24
		-76	6						
		-77							
		-78							
		-79	1	8	100	SS-14	NI	-	-
-80	3						31		
		494.5							
		493.0							
		EOB							

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - #19/16 17:05 - S:\PROJECTS\13188.01.GPJ

NOTES: "NI" - NOT INTACT. "u"<sub>u</sub> - UNCONFINED STRENGTH DETERMINED BY ASTM D 2186. ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23 CF BENTONITE GROUT

PROJECT: CUY-10-16.13	DRILLING FIRM / OPERATOR: TTL / TB	DRILL RIG: CME 550X ATV	STATION / OFFSET: 31+75.0 RT	EXPLORATION ID
TYPE: STRUCTURE FOUNDATION	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: CME AUTOMATIC	ALIGNMENT: STATE ROUTE 10	B-002-0-15
PID: 96986 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/16	ELEVATION: 574.0 (NAV/D88) EOB: 80.5 ft.	PAGE
START: 2/24/16 END: 2/24/16	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 82.7	COORD: 41.489284200, -81.693928200	1 OF 3
MATERIAL DESCRIPTION AND NOTES	ELEV. 574.0	REC SAMPLE ID	GRADATION (%)	ODOT CLASS (G) SEaled
WATER - 29 FEET 6 INCHES	DEPTHS	SPT / RQD	GR CS FS SI CL LL PL PI WC	HOLE
	1			CLASS (G) SEaled
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	30	2	0	2
MEDIUM STIFF, BLACK, SILT, "AND" CLAY, TRACE SAND, MOIST	544.5	6	78	SS-1
	543.0	2	0	2
		2	0	2
		6	0	2
		59	39	29
		8	21	8
		24	21	8
		24	24	A-4b (8)

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - S:\PROJECTS\13188.01.GPJ

PID: 96986 BR ID: N/A	PROJECT: CUY-10-16.13	STATION / OFFSET: 31+75.0 RT	START: 2/24/16	END: 2/24/16	PG 2 OF 3	B-002-0-15			
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT / RQD	N <sub>60</sub>	REC SAMPLE ID (%)	HP (tsf)	GRADATION (%)	ATTERBERG	ODOT CLASS (G) SEaled
MEDIUM STIFF, GRAY, SILT, "AND" CLAY, TRACE SAND, MOIST	543.0	32	4	18	100	1.75	-	-	A-4b (V)
	541.5	33	5	11	100	1.12*	0	2	A-4b (8)
		34	3	5	100	2.25	0	1	A-4b (8)
		35	5	10	100	1.75	-	-	A-4b (V)
		36	6	18	100	1.75	-	-	A-4b (V)
		37	7						
		38	8						
		39	4	15	100	1.75	-	-	A-4b (V)
		40	5	6					
		41	6						
	532.5	42							
		43							
		44							
		45							
		46							
		47							
		48							
		49	3	17	100	1.75	-	-	A-6a (V)
	525.0	50	5	7					
		51							
		52							
		53							
		54	3	4	15	1.50	-	-	A-6a (V)
		55	4	7					
		56							
		57							
		58							
		59	0	2	8	100	0.52*	-	A-6a (V)
	515.0	60	2	4					
		61							
		62							
		63							
		64							
MEDIUM STIFF, GRAY, SILT AND CLAY, TRACE SAND, DAMP TO MOIST	510.0				0	NR	-	-	A-6a (V)

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 4/19/16 17:09 - S:\PROJECTS\13188.01.GPJ

PID: 96986	BR ID: N/A	PROJECT: CUY-10-16.13	STATION / OFFSET:	31+75. RT	START: 2/24/16	END: 2/24/16	PG 3 OF 3			B-002-0-15							
							REC (%)	HP (tsf)	GRADATION (%)								
MATERIAL DESCRIPTION AND NOTES		ELEV.	SPT/ ROD	N <sub>60</sub>	FS	SI	CL	LL	PL	WC	ODOT CLASS (GI)	HOLE SEALED					
STIFF TO VERY STIFF, GRAY, SANDY SILT, SOME CLAY AND LITTLE GRAVEL, DAMP TO MOIST (continued)		509.8	5	17	-	-	-	-	-	-	22	A-4a (V)	[Pattern]				
			65														
[Pattern]			66														
			67														
			68														
			69														
			70	25	4	25	100	1.54*	18	5	8	41	28	19	9	17	A-4a (7)
			71														
			72														
			73														
			74														
			75		0	22	100	2.50	-	-	-	-	-	-	-	24	A-4a (V)
			76														
	77																
	78																
	79																
	80	493.5	2	18	100	NI	-	-	-	-	-	-	-	26	A-4a (V)		
			8														

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 4/19/16 17:09 - S:\PROJECTS\13188 01.GPJ

NOTES: "NI" - UNCONFINED STRENGTH DETERMINED BY ASTM D 2166. "NR" - NO RECOVERY. "N" - NOT INTACT.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23 CF BENTONITE GROUT

PROJECT: CUY-10-16.13	DRILLING FIRM / OPERATOR: TTL / TB	STATION / OFFSET: 32+51.113 LT	EXPLORATION ID
TYPE: STRUCTURE FOUNDATION	SAMPLING FIRM / LOGGER: TTL / KKC	ALIGNMENT: STATE ROUTE 10	B-003-0-15
PID: 96986 BR ID: N/A	DRILLING METHOD: 3.25" HSA	ELEVATION: 573.8 (NAV/D88) EOB: 80.5 ft.	PAGE 1 OF 3
START: 3/1/16 END: 3/1/16	SAMPLING METHOD: SPT / ST	COORD: 41.489506900, -81.693988600	
MATERIAL DESCRIPTION AND NOTES	ELEV. 573.8	GRADATION (%)	ODOT CLASS (GI)
WATER - 28 FEET 6 INCHES	DEPTHS	REC SAMPLE HP ID (tsf)	WC
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PID: 96986	BR ID: N/A	PROJECT: CUY-10-16.13	STATION / OFFSET: 32+51.113 LT	START: 3/1/16	END: 3/1/16						Pg 3 OF 3	B-003-C-15								
					ATTERBERG															
MATERIAL DESCRIPTION AND NOTES			SPT/ RQD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	GRADATION (%)			ODOT CLASS (G)										
			DEPTHS				GR	CS	FS	SI	CL	LL	PL	PI	WC					
VERY STIFF GRAY SILT AND CLAY LITTLE SAND AND TRACE GRAVEL, DAMP TO MOIST (continued)			65	4	18	100	SS-11	NI	-	-	-	-	-	-	-	21				
			66	5																
			67																	
			68																	
			69	2	17	100	SS-12	NI	-	-	-	-	-	-	-	-	-	24		
			70	4																
			71																	
			72																	
			73																	
			74	2	18	100	SS-13	1.50	-	-	-	-	-	-	-	-	-	25		
75	6																			
76	7																			
77																				
78																				
79	1	4	12	100	SS-14	1.00	0	1	1	32	66	43	27	16	31	A-7-6 (11)				
80	5																			
STIFF, GRAY, CLAY, SOME SILT AND TRACE SAND, MOIST			Elev. 494.8			Elev. 499.3			EOB											

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 4/19/16 17:11 - S:\PROJECTS\13188.01.GPJ

NOTES: "NI" - UNCONFINED STRENGTH DETERMINED BY ASTM D 2166. "NI" - NOT INTACT.  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23 CF BENTONITE GROUT

PROJECT: CUY-10-16.13	DRILLING FIRM / OPERATOR: TTL / TB	STATION / OFFSET: 33+22.40 RT	EXPLORATION ID: B-004-0-15
TYPE: STRUCTURE FOUNDATION	SAMPLING FIRM / LOGGER: TTL / KKC	ALIGNMENT: STATE ROUTE 10	
PID: 96986 BR ID: N/A	DRILLING METHOD: 3.25" HSA	ELEVATION: 573.8 (NAVD88EOB)	80.5 ft. PAGE
START: 2/25/16 END: 2/25/16	SAMPLING METHOD: SPT / ST	COORD: 41.489328600, -81.693412200	1 OF 3

DRILL RIG: CME 550X ATV  
 HAMMER: CME AUTOMATIC  
 CALIBRATION DATE: 1/7/16  
 ENERGY RATIO (%): 82.7

REC SAMPLE HP (tsf)  
 REC (%) ID

SPT/ RQD N<sub>60</sub> GR CS FS SI CL LL PL PI WC

GRADATION (%) ATTERBERG

ODOT CLASS (G) SEALED

WATER - 23 FEET 6 INCHES

DEPTH	SPT/ RQD	N <sub>60</sub>	REC (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	SEALED
1															
2															
3															
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18															
19															
20															
21															
22															
23															
24	0	0	89	NI	4	3	9	49	35	30	21	9	58	A-4a (8)	
25	0	0	33	SS-2	NI	0	4	11	51	34	29	9	54	A-4b (8)	
26	0	0	6	SS-3	1.75	-	-	-	-	-	-	-	25	A-4b (V)	
27	0	2	14	SS-4	0.84*	0	0	1	56	43	29	9	25	A-4b (8)	
28	3	5													
29	5														
30															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 4/19/16 17:12 - S:\PROJECTS\13188.01.GPJ

550.3  
 548.8  
 547.3

VERY SOFT, BROWN/GRAY, SANDY SILT, "AND" CLAY, TRACE GRAVEL AND ORGANICS, WET (PETROLEUM ODOR NOTED IN JAR)  
 VERY SOFT, BROWN/GRAY, SILT, SOME CLAY, LITTLE SAND, AND TRACE ORGANICS, WET (FREE WATER NOTED IN JAR)  
 MEDIUM STIFF TO STIFF, GRAY, SILT, "AND" CLAY, TRACE SAND, MOIST

PID: 96986	BR ID: N/A	PROJECT: CUY-10-16.13	STATION / OFFSET: 33+22.40 RT	START: 2/25/16	END: 2/25/16	PG 2 OF 3	B-004-0-15							
MATERIAL DESCRIPTION AND NOTES			SPT/ RQD	GRADATION (%)	ATTERBERG		HOLE							
			N <sub>60</sub>	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	SEALED

DEPTH	SPT/ RQD	N <sub>60</sub>	REC (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	SEALED
32															
33															
34	5	7	21	100	SS-5	2.00	-	-	-	-	-	-	23	A-4b (V)	
35	8														
36															
37															
38															
39	2	4	12	100	SS-7	1.75	-	-	-	-	-	-	25	A-4b (V)	
40	5														
41															
42															
43															
44	1	2	7	100	SS-8	0.51*	-	-	-	-	-	-	28	A-6a (V)	
45	3														
46															
47															
48															
49	0	3	8	100	SS-9	0.75	-	-	-	-	-	-	24	A-6a (V)	
50	3														
51															
52															
53															
54	0	3	11	100	SS-10	0.76*	-	-	-	-	-	-	19	A-6a (V)	
55	5														
56															
57															
58															
59	0	3	11	100	SS-12	0.73*	-	-	-	-	-	-	19	A-6a (V)	
60	5														
61															
62															
63															
64															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 4/19/16 17:12 - S:\PROJECTS\13188.01.GPJ

539.8  
 537.3  
 529.8  
 519.8  
 509.8

MEDIUM STIFF TO STIFF, GRAY, SILT, "AND" CLAY, TRACE SAND, MOIST  
 MEDIUM STIFF TO STIFF, GRAY, SILT, "AND" CLAY, TRACE SAND, MOIST (continued)  
 VERY STIFF, GRAY, SILT, "AND" CLAY, LITTLE SAND, MOIST  
 STIFF, GRAY, SILT, SOME CLAY, TRACE GRAVEL, AND SAND, MOIST  
 MEDIUM STIFF, GRAY, SILT AND CLAY, LITTLE SAND, MOIST  
 @49': TRACE SAND  
 MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY, LITTLE SAND AND TRACE GRAVEL, DAMP

PID: 96986	BR ID: N/A	PROJECT: CUY-10-16.13	STATION / OFFSET: 33+22.40 RT	START: 2/25/16		END: 2/25/16		PG 3 OF 3		B-004-0-15						
				GRADATION (%)		ATTERBERG		WC								
MATERIAL DESCRIPTION AND NOTES		ELEV. 509.6	REC SAMPLE ID (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	HOLE SEaled	
SPT/ RCD		DEPTH	N <sub>60</sub>	SS-13	5	4	7	24	60	31	20	11	21	A-6a (8)		
3		65	19	SS-13	1.25	5	4	7	24	60	31	20	11	21	A-6a (8)	
5		66														
9		67														
		68														
		69														
8		70	30	SS-14	NI	-	-	-	-	-	-	-	-	21	A-6a (V)	
10		71														
12		72														
		73														
		74														
1		75	19	SS-15	1.50	-	-	-	-	-	-	-	-	26	A-6a (V)	
6		76														
8		77														
		78														
		79														
4		80	14	SS-16	2.00	-	-	-	-	-	-	-	-	23	A-6a (V)	
5		EOB														

STANDARD ODOT SOIL BORING LOG (6.5 X 11) - OH DOT GDT - 4/19/16 17-12 - S:\PROJECTS\13188.01.GPJ

NOTES: "NI" - NOT INTACT. "NR" - UNCONFINED STRENGTH DETERMINED BY ASTM D 2166. "NR" - NO RECOVERY.  
 ABANDONMENT METHODS: MATERIALS QUANTITIES: PUMPED 23 CF BENTONITE GROUT





PID: 96986	BR ID: N/A	PROJECT: CUY-10-16.13	STATION / OFFSET: 34+21.70 LT	START: 2/23/16	END: 2/23/16	PG 3 OF 3	B-005-0-15												
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT / RQD	N <sub>60</sub>	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED	
STIFF TO VERY STIFF, GRAY, SANDY SILT, "AND" CLAY, TRACE GRAVEL, DAMP TO MOIST (continued)		509.4	65	4	14	100	1.00	-	-	-	-	-	-	-	-	21	A-4a (V)		
			66	6															
STIFF, GRAY, SILT, SOME CLAY, LITTLE SAND, AND TRACE GRAVEL, DAMP			67																
			68																
			69	4	22	100	1.50	8	3	9	40	40	28	19	9	18	A-4a (8)		
			70	9															
			71																
			72																
			73																
			74	5	26	100	1.50	-	-	-	-	-	-	-	-	-	25	A-4a (V)	
			75	11															
			76																
			77																
			78																
			79	8	33	100	1.50	-	-	-	-	-	-	-	-	27	A-4a (V)		
			80	13															
			81																
			82																
			83																
			84	5	21	100	1.50	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
			85	9															
			EOB																

NOTES: "NI" - NOT INTACT. "U" - UNCONFINED STRENGTH DETERMINED BY ASTM D 2166.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 24 CF BENTONITE GROUT

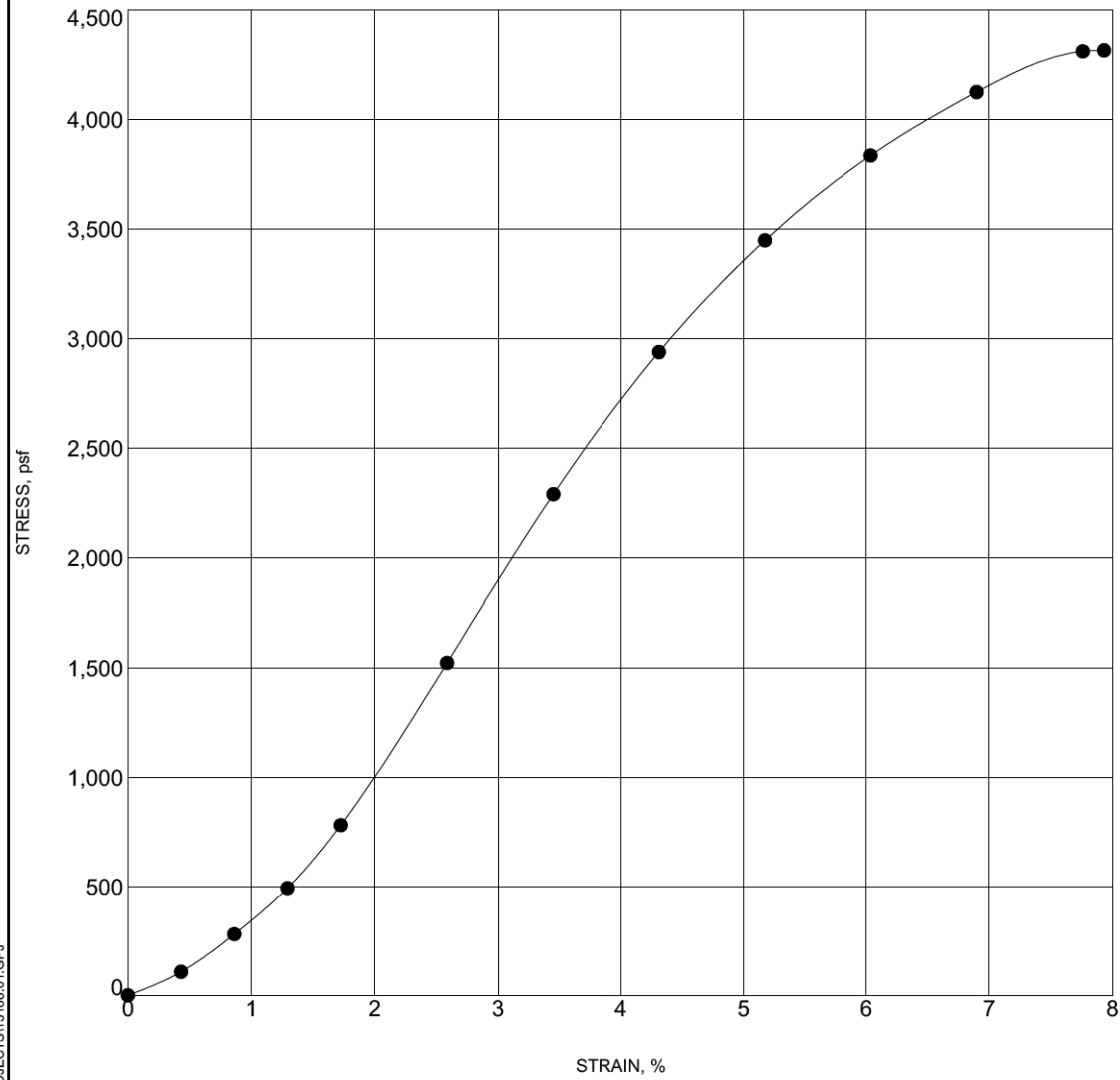
STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 4/19/16 17-13 - S:\PROJECTS\13188.01.GPJ



TTL Associates, Inc.  
1915 N 12th Street  
Toledo, Ohio 43624  
Telephone: 419-324-2222  
Fax: 419-241-1808

### UNCONFINED COMPRESSION TEST

PROJECT CUY-10-16.13 PID 96986  
OGE NUMBER N/A PROJECT TYPE Structure Foundation



Specimen Identification	Classification	$\gamma_d$	MC%
● B-001-0-15 33.5	A-4b	105	22

UNCONFINED - OH DOT.GDT - 4/22/16 11:17 - S:\PROJECTS\13188.01.GPJ

PROJECT DESIGNATION: CUY-10-16.13, PID NO. 96986

EXPLORATION ID: B-001-0-15

ALIGNMENT, STATION & OFFSET: STATE ROUTE 10, STA. 31+00, 135' RT.

SAMPLE ID: ST-5 DEPTH: 33.5-35.5 FT.

#### SPECIMEN DATA

DIAMETER: 2.88 IN. WET DENSITY: 127.5 PCF

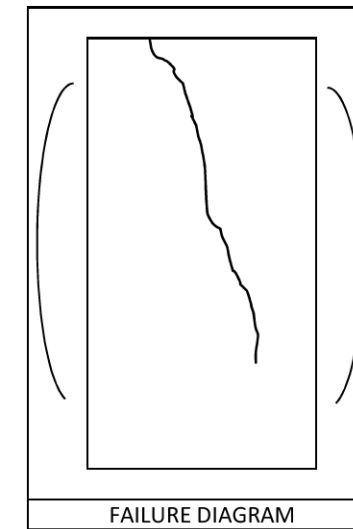
HEIGHT: 5.8 IN. DRY DENSITY: 104.8 PCF

VISUAL DESCRIPTION: STIFF, GRAY, SILT, SOME CLAY AND LITTLE SAND, MOIST

#### PHYSICAL CHARACTERISTICS

% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC
0	0	1	68	31	28	20	8	22

REMARKS: 2.16 TSF AT 7.9 % STRAIN



DRAWN: TRR  
CHECKED: KDC

**STRUCTURE FOUNDATION EXPLORATION**  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
PID NO. 96986

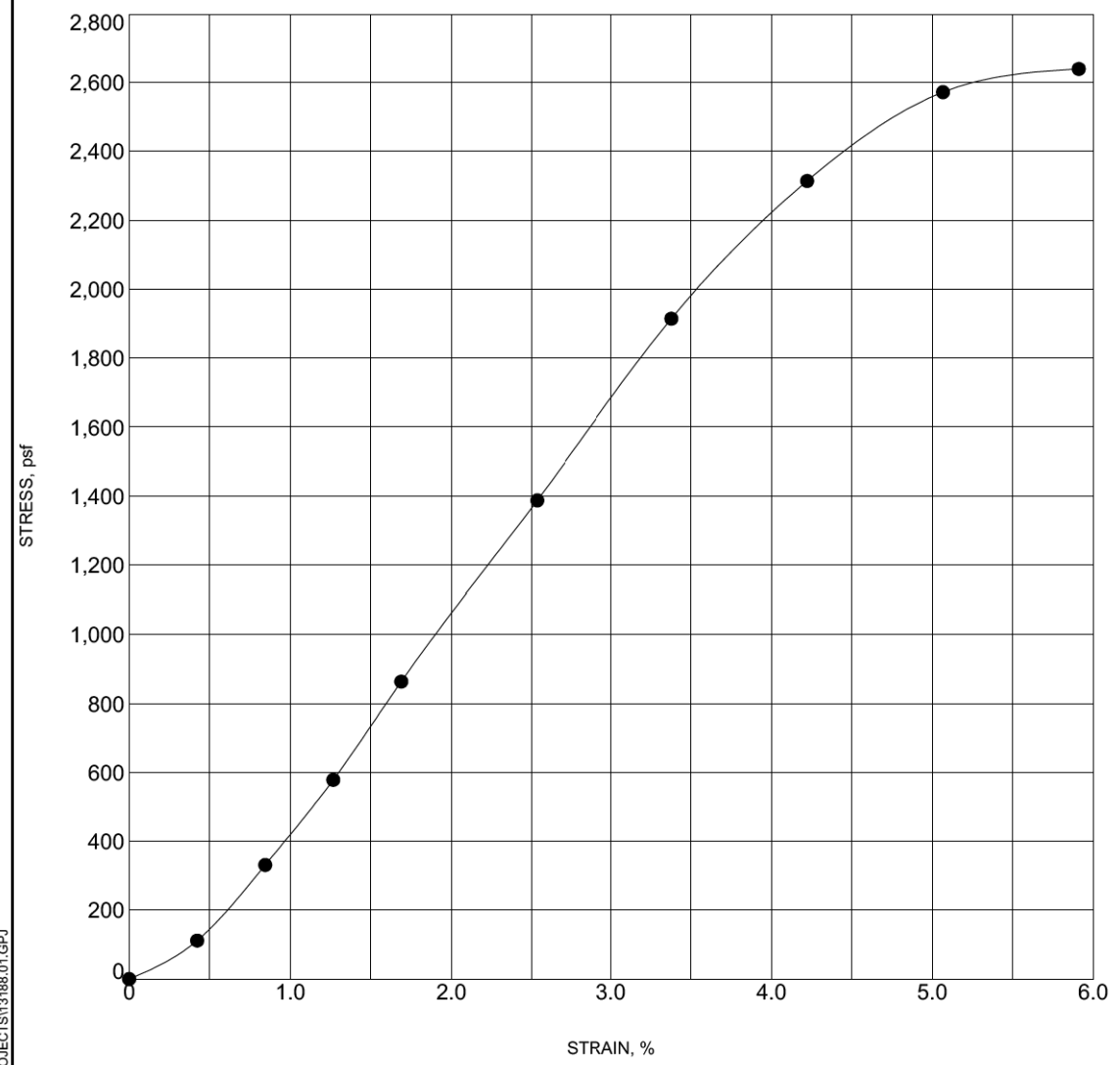




TTL Associates, Inc.  
1915 N 12th Street  
Toledo, Ohio 43624  
Telephone: 419-324-2222  
Fax: 419-241-1808

### UNCONFINED COMPRESSION TEST

PROJECT CUY-10-16.13 PID 96986  
OGE NUMBER N/A PROJECT TYPE Structure Foundation



Specimen Identification	Classification	$\gamma_d$	MC%
● B-002-0-15 41.5	A-4b	101	28

PROJECT DESIGNATION: CUY-10-16.13, PID NO. 96986

EXPLORATION ID: B-002-0-15

ALIGNMENT, STATION & OFFSET: STATE ROUTE 10, STA. 31+75, 0' RT.

SAMPLE ID: ST-6 DEPTH: 41.5-43.5 FT.

#### SPECIMEN DATA

DIAMETER: 2.83 IN. WET DENSITY: 129.5 PCF

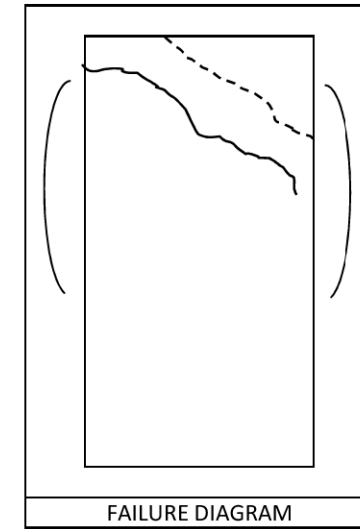
HEIGHT: 5.92 IN. DRY DENSITY: 101.0 PCF

VISUAL DESCRIPTION: STIFF TO VERY STIFF, GRAY, SILT, SOME CLAY AND TRACE SAND, WET

#### PHYSICAL CHARACTERISTICS

% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC
0	0	1	35	34	28	20	8	28

REMARKS: 1.32 TSF AT 5.9 % STRAIN



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DRAWN: TRR  
CHECKED: KDC

STRUCTURE FOUNDATION EXPLORATION  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16.13  
PID NO. 96986

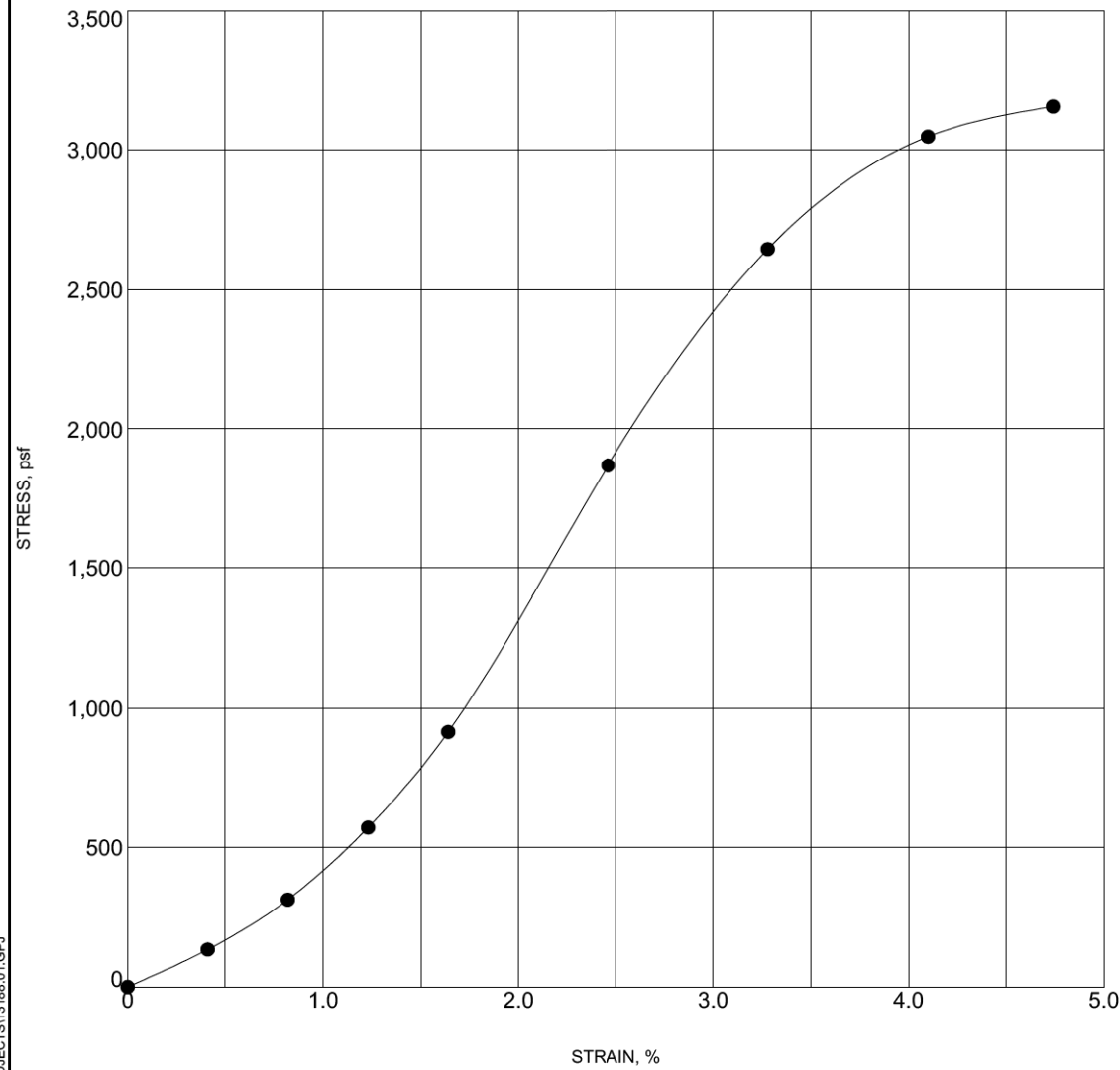




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1915 N 12th Street  
Toledo, Ohio 43624  
Telephone: 419-324-2222  
Fax: 419-241-1808

### UNCONFINED COMPRESSION TEST

PROJECT CUY-10-16.13 PID 96986  
OGE NUMBER N/A PROJECT TYPE Structure Foundation



Specimen Identification	Classification	$\gamma_d$	MC%
● B-003-0-15 36.5	A-4b	104	22

PROJECT DESIGNATION: CUY-10-16.13, PID NO. 96986

EXPLORATION ID: B-003-0-15

ALIGNMENT, STATION & OFFSET: STATE ROUTE 10, STA. 32+51, 113' LT.

SAMPLE ID: ST-5 DEPTH: 36.5-38.5 FT.

#### SPECIMEN DATA

DIAMETER: 2.88 IN. WET DENSITY: 127.1 PCF

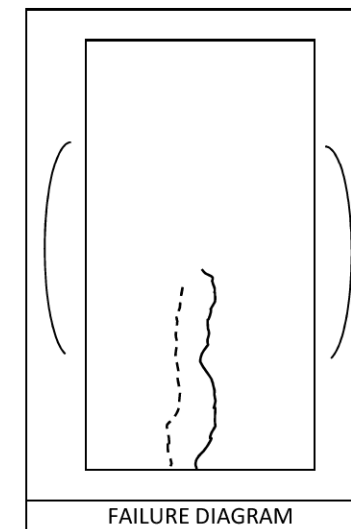
HEIGHT: 6.1 IN. DRY DENSITY: 104.3 PCF

VISUAL DESCRIPTION: STIFF TO VERY STIFF, GRAY, SILT, SOME CLAY AND TRACE SAND, MOIST

#### PHYSICAL CHARACTERISTICS

% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC
0	0	1	71	28	28	22	6	22

REMARKS: 1.58 TSF AT 4.7 % STRAIN



**STRUCTURE FOUNDATION EXPLORATION**  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
 PID NO. 96986



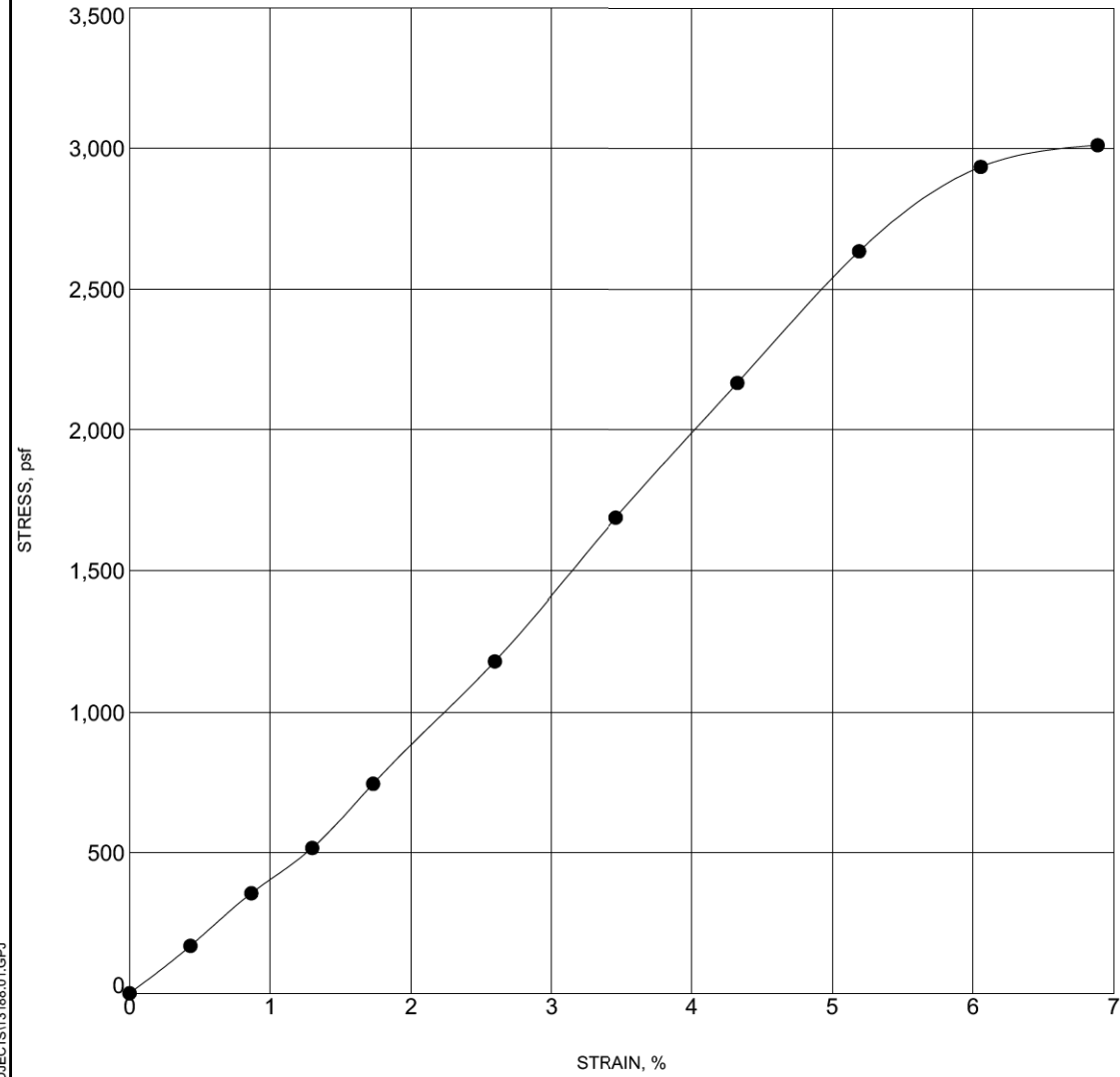
DRAWN: TRR  
CHECKED: KDC



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1915 N 12th Street  
Toledo, Ohio 43624  
Telephone: 419-324-2222  
Fax: 419-241-1808

### UNCONFINED COMPRESSION TEST

PROJECT CUY-10-16.13 PID 96986  
OGE NUMBER N/A PROJECT TYPE Structure Foundation



Specimen Identification	Classification	$\gamma_d$	MC%
● B-004-0-15 36.5	A-4b	100	25

PROJECT DESIGNATION: CUY-10-16.13, PID NO. 96986

EXPLORATION ID: B-004-0-15

ALIGNMENT, STATION & OFFSET: STATE ROUTE 10, STA. 33+22, 40' RT.

SAMPLE ID: ST-6 DEPTH: 36.5-38.5 FT.

SPECIMEN DATA

DIAMETER: 2.85 IN. WET DENSITY: 124.1 PCF

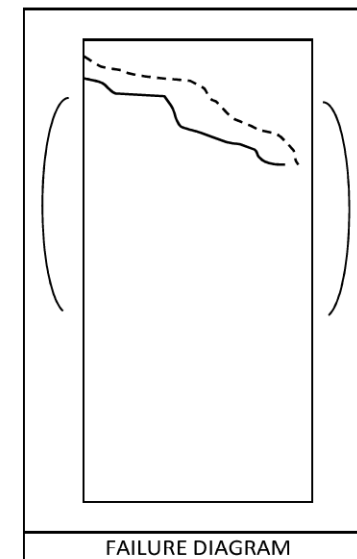
HEIGHT: 5.78 IN. DRY DENSITY: 99.5 PCF

VISUAL DESCRIPTION: STIFF, GRAY, SILT, SOME CLAY AND SAND, MOIST

PHYSICAL CHARACTERISTICS

% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC
7	0	1	66	26	27	22	5	25

REMARKS: 1.51 TSF AT 6.9 % STRAIN



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**STRUCTURE FOUNDATION EXPLORATION**  
BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

**CUY-10-16.13**  
PID NO. 96986



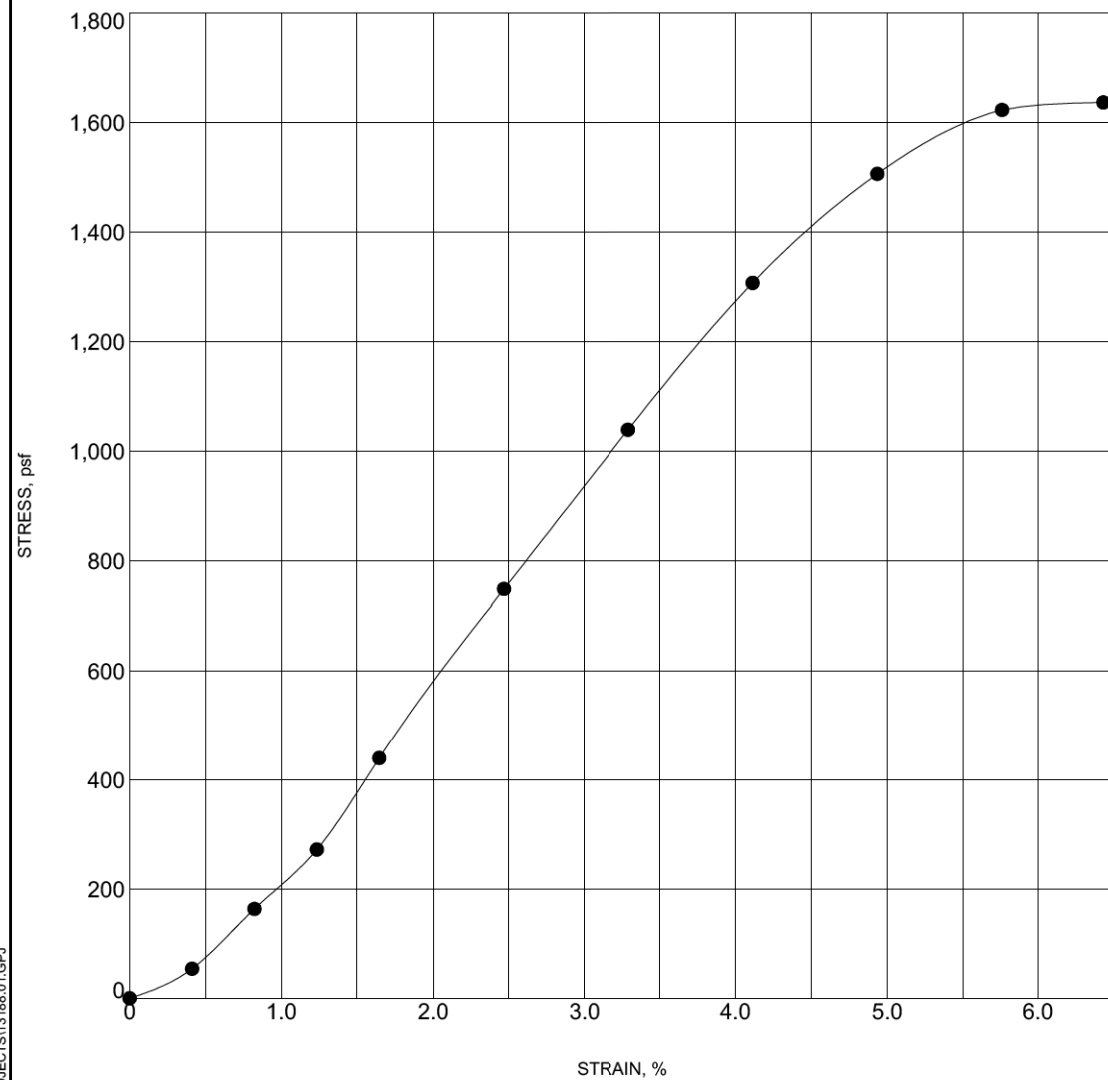
DRAWN: TRR  
CHECKED: KDC



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1915 N 12th Street  
Toledo, Ohio 43624  
Telephone: 419-324-2222  
Fax: 419-241-1808

### UNCONFINED COMPRESSION TEST

PROJECT CUY-10-16.13 PID 96986  
OGE NUMBER N/A PROJECT TYPE Structure Foundation



Specimen Identification	Classification	$\gamma_d$	MC%
● B-005-0-15 46.5	A-4b	97	26

PROJECT DESIGNATION: CUY-10-16.13, PID NO. 96986

EXPLORATION ID: B-005-0-15

ALIGNMENT, STATION & OFFSET: STATE ROUTE 10, STA. 34+21, 70' LT.

SAMPLE ID: ST-7 DEPTH: 46.5-48.5 FT.

#### SPECIMEN DATA

DIAMETER: 2.85 IN. WET DENSITY: 122.1 PCF

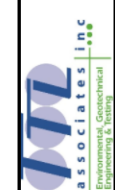
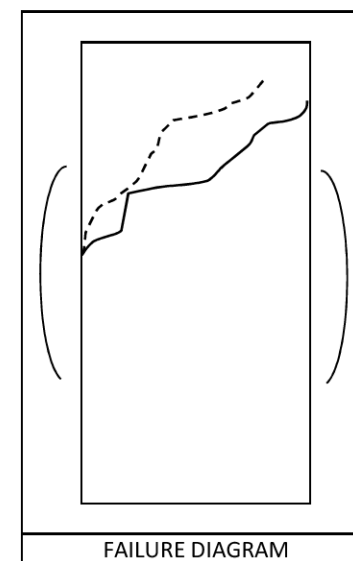
HEIGHT: 6.08 IN. DRY DENSITY: 96.8 PCF

VISUAL DESCRIPTION: MEDIUM STIFF TO STIFF, GRAY, SILT, LITTLE CLAY AND TRACE SAND, MOIST TO WET

#### PHYSICAL CHARACTERISTICS

% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC
0	0	1	82	17	24	21	3	26

REMARKS: 0.82 TSF AT 6.4 % STRAIN

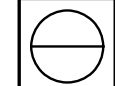


DRAWN: TRR  
CHECKED: KDC

## STRUCTURE FOUNDATION EXPLORATION

BRIDGE NO. CUY-10-1613  
S.R. 10 OVER THE CUYAHOGA RIVER

CUY-10-16.13  
PID NO. 96986



# SPECIAL PROVISIONS

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# WATERWAY PERMITS CONDITIONS

C-R-S: CUY-10-16.13

PID: 96986

Date: 5/8/2017

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ODOT pursuant to 23 USC 327 and a Memorandum of Understanding dated December 11, 2015, and executed by FHWA and ODOT.

1. Waterway Permit Time Restrictions:

Nationwide Permit (NWP) 3 (Maintenance) is authorized for CUY-10-16.13, PID 96986 (USACE ID: LRH-2016-00607-CUY). A copy of the NWP shall be kept at the work site at all times and made available to all contractors and subcontractors. The permit is effective starting: **May 8, 2017**. The NWP expires **March 18, 2022**.

Additionally, USACE authorized a Section 408 Alteration and provided a Section 408 Letter of Permission. Both Section 408 authorizations expire on **March 18, 2022**.

For permitted work in aquatic resources (including, but not limited to: streams, wetlands, jurisdictional ditches, captured streams, lakes, ponds), the Department will consider the Contractor's submission of a reauthorization to the waterway permit end date based on project constraints. In order to be considered, the Contractor must submit a justification to the Engineer at least 90 days prior to the waterway permit end date. The Engineer will submit the request for a time extension to ODOT-OES-WPU for consideration and coordination with the U.S. Army Corps of Engineers (USACE), Ohio Environmental Protection Agency (OEPA), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), and Ohio Department of Natural Resources (ODNR).

2. Deviations From Permitted Construction Activities

No deviation from the requirements for work in aquatic resources depicted in the plans, Special Provisions, and/or working drawings may be made unless a modification has been submitted to ODOT-OES-WPU and approved by the appropriate agencies (i.e., USACE, OEPA, USCG, ODNR, and USFWS).

For emergency situations resulting in unanticipated impacts to aquatic resources, provide notification (verbal or written) to the Engineer as soon as possible following discovery of the situation. Written notification to the Engineer and notification to the ODOT-OES-WPU (614-466-7100) must be made within 24 hours.

For non-emergency situations, notify the Engineer in writing for submission to the ODOT-OES-WPU (614-466-7100) for consideration and coordination with the appropriate agencies. Notification must be made at least 90 days prior to planned, non-permitted activities. Consideration of the requested deviation is at the discretion of the Director and must be coordinated with the appropriate regulatory agencies.

3. In-Stream Work Restrictions

Work in the following aquatic resources is further restricted as follows:

Stream Name /Description	Location	Work restriction dates (No in-stream work permitted)
Cuyahoga River	30+25.50 to 34+36.77	None

In-stream work has been defined as the placement and/or removal of fill materials (temporary or permanent) below ordinary high water of a stream. Examples of "fill" include, but are not limited to: bridge piers, abutments, culverts, rock channel protection, scour protection and temporary work pads.

Fills placed within a stream identified in the above table (outside of the work restriction dates) can continue to be worked from during the work restriction dates, but cannot be expanded, removed, or otherwise modified (below ordinary high water) until once again outside of the work restriction dates.

4. Materials:

Materials utilized in or adjacent to aquatic resources on this project for temporary or permanent fill or bank protection shall consist of suitable material free from toxic contaminants in other than trace quantities. Broken asphalt is specifically excluded. Chromated Copper Arsenate (CCA), creosote, and other pressure treated lumber shall not be used in structures that are placed in aquatic resources.

5. Cultural Resources

If archeological sites or human remains are discovered, cease all work in the immediate area and notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-Cultural Resource Section at 614-466-7100. In the event of human remains are identified by OES-Cultural Resources Section the Engineer shall also contact the Cuyahoga County Sheriff's Office at (216) 443-6000.

6. Aquatic Resource Demarcation:

All aquatic resources indicated on the plans shall be demarcated in the field as per SS 832 prior to site disturbance. Table 1 is attached and includes detailed amounts of impact quantities that permitted within the aquatic resources.

The remainder of the aquatic resources must be demarcated as to ensure avoidance. The fence shall remain in place and be maintained throughout the construction process. Following the completion of the project, the fence and posts shall be removed.

7. Spill containment:

Provide and Maintain an Oil Spill Kit with a minimum capacity of 65 gallons. The Spill Kit shall contain:

- 6 - 3 in. X 8 ft. Oil only socks
- 4 - 18 in. X 18 in. Oil only pillows
- 2 - 5 in. X 10ft. Booms
- 50 - 16in. X 20 in. Oil only pads
- 10- Disposable Bags
- 1- 65 Gallon drum with lid
- 25 pounds of Granular Oil Absorbent

The Oil Spill Kit shall be located within 150 feet of any equipment working in a stream or wetland. The oil Spill Kit shall be maintained for the life of the contract. Any materials utilized during the project will be replaced within 48 hours. All costs associated with furnishing and maintaining the above referenced spill containment kit is incidental to work.

8. Blasting:

State law requires notification to the Ohio Department of Natural Resources should blasting be required within or near stream channels (See ORC 1533.58 & CMS 107.09). Notify Engineer, in writing, for submission to ODOT-OES-WPU (614-466-7100) for coordination with ODNR.

9. Bridge Inspection:

Prior to the removal of bridge structures, the underside must be carefully examined for the presence of birds and bats. Should any birds or bats be found roosting on the underside of the bridge, the Contractor is required to notify the Engineer for coordination with ODOT-OES-WPU (614-466-7100).

10. Project Inspection:

Inspection of Work may include inspection by representatives of other government agencies or railroad corporations that pay a portion of the cost of the Work or regulate the Work through State and Federal law. Comments from the representatives of these agencies shall be directed to the Engineer. Please forward a copy to ODOT-OES-WPU (614-466-7100).

11. Temporary Access Fills (Stream and River Crossings and Fills)

Temporary impacts to streams are not authorized for this project. Temporary fill activities can include, but are not limited to, causeways, work pads, coffer dams, sheet piling, and construction equipment. Any unauthorized temporary impacts that occur will be in violation of Section 404 and 401 of the Clean Water Act.

12. Excavation Activities:

Excavated material will be placed at the upland site and disposed of in such a manner that sediment and runoff to streams and other waters is controlled and minimized. If any changes to the proposed work are deemed necessary, you must notify and coordinate with the ODOT-OES-WPU (614-466-7100).

13. Bridge Demolition Debris:

Bridge demolition into Cuyahoga River is not authorized for this project and debris is considered a temporary fill activity by the USACE and Ohio EPA. If any demolition debris inadvertently falls into Cuyahoga River, it must be removed immediately. If removal of debris material cannot be achieved immediately, please contact ODOT-Office of Environmental Services-Waterway Permits Unit at 614-466-7100.

14. Notice to Navigation

Contact Mr. Bob Remmers, Chief of the Operations and Technical Services Section of the U.S. Army Corps of Engineers, Buffalo District a minimum of 14 days prior to commencement of construction activities at (716) 879-4277 to provide information for the preparation of a Notice to Navigation Interests. A form is attached to these Special Provisions.

15. Other Notification Requirements

The Contractor shall contact Mr. Lee Soule, U.S. Coast Guard 9<sup>th</sup> District, 30 days prior to the commencement of construction activities.

**Mr. Lee Soule**  
**USCG, 9<sup>th</sup> District**  
 (216) 902-6085  
[Lee.D.Soule@uscg.mil](mailto:Lee.D.Soule@uscg.mil)



The Contractor shall contact Mr. Vito Melilli, USACE Ohio Area Office POC, prior to the commencement of construction activities to notify him of the actual start date of the project and all milestone events/operations during the prosecution of work.

**Mr. Vito Melilli, Chief**  
**USACE, Buffalo District, Ohio Area Office**  
 (216) 685-1205  
[vito.c.melilli@usace.army.mil](mailto:vito.c.melilli@usace.army.mil)

#### 16. Incidental Debris

Notify the Engineer and remove any incidental debris that falls into the Federal Channel of the Cuyahoga River. The Engineer shall notify Mr. Vito Melilli, USACE, Ohio Area Office POC, of any such debris.

**Mr. Vito Melilli, Chief**  
**USACE, Buffalo District, Ohio Area Office**  
 (216) 685-1205  
[vito.c.melilli@usace.army.mil](mailto:vito.c.melilli@usace.army.mil)

#### 17. Navigation Project

Operations must be conducted so as to avoid interference with operation and maintenance of the federal navigation project.

If deficiencies in the alteration work are observed at any time to adversely impact the Navigation project, the alteration may need to be modified or removed to the satisfaction of the USACE. In such cases, the Engineer will be notified in writing.

The contractor shall ensure that the work is properly operated and maintained. If any damage to the federal navigation project is found as a result of deficient operations and maintenance of the work, the Requestor shall ensure that it is promptly repaired and the project restored to "as-constructed" conditions, to the satisfaction of the USACE.

#### 18. Pre-Construction Inspection

The Contractor shall schedule a pre-construction inspection of the project site with USACE within 30 days of initiating work. Contact Mr. Vito Melilli, USACE, Buffalo District.

#### 19. Final Inspection

The Contractor shall schedule a final inspection of the completed work with USACE within 30 days of completion of construction. Contact Mr. Vito Melilli, USACE, Buffalo District.

#### 20. U.S. Coast Guard Completion

Upon completion of the project, the U.S. Coast guard must be provided engineering plans showing the new fendering system in relation to the navigation channel of the Cuyahoga River.

#### 21. U.S. Coast Guard Authorization

The U.S. Coast Guard authorization is subject to be rescinded or revised at any time by the Commander, Ninth Coast Guard District should the needs of navigation change or safety concerns arise. Coordination with Mr. Lee Soule, USCG Ninth District is required if project conditions change.

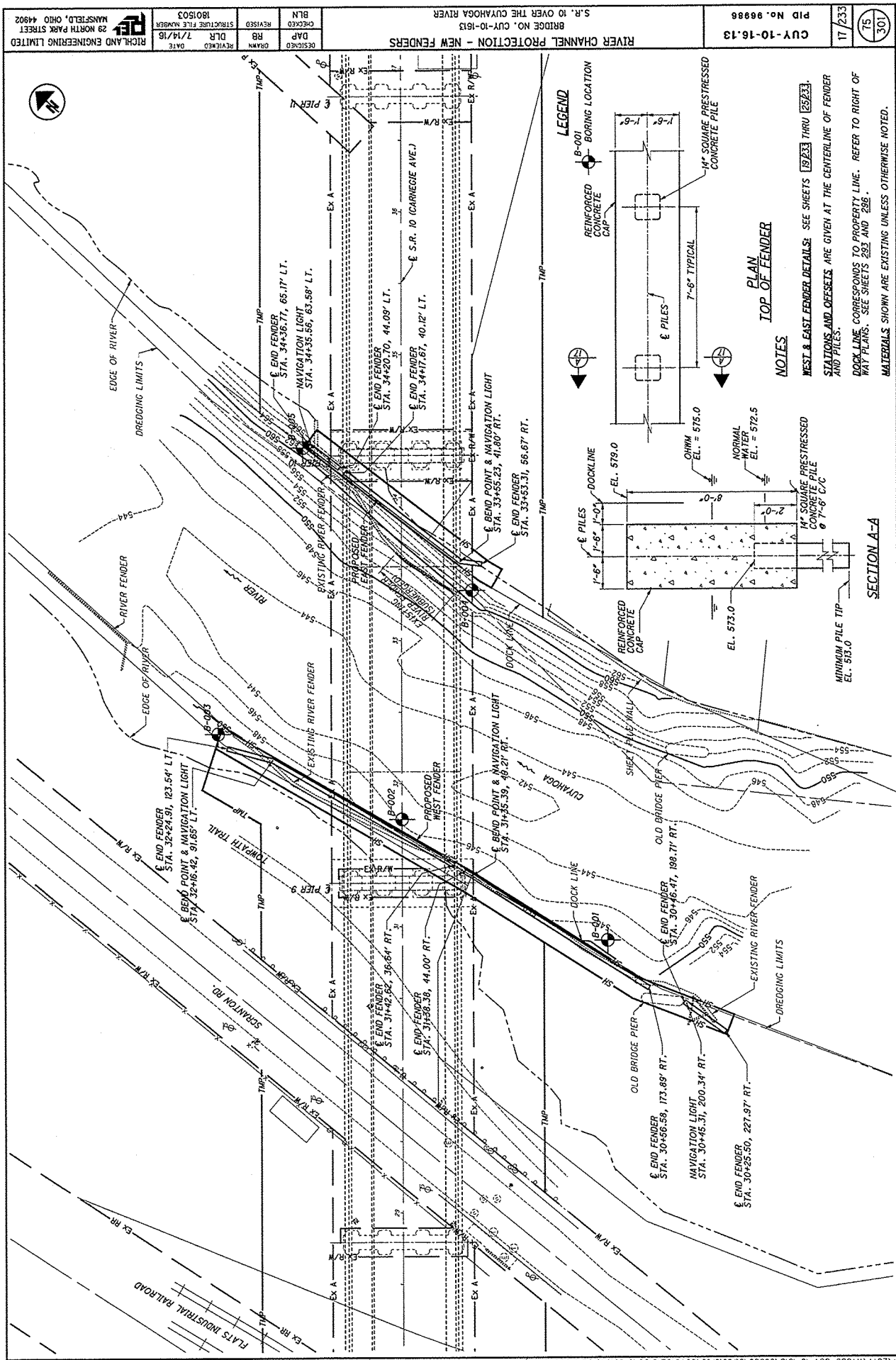
#### 22. USACE Construction Completion Certification:

Upon completion of the work, notify the Engineer. The USACE Construction Completion Certification must be completed and signed by the Engineer then forwarded to the:

U.S. Corps of Engineers  
 DSCC  
 Building 10, Section 10  
 3990 East Broad Street  
 Columbus, Ohio 43218

Forward a copy of the certification to ODOT-OES-WPU (614-466-7100). A copy of the form has been attached to these Special Provisions.





RICH AND ENGINEERING LIMITED  
 29 NORTH PARK STREET  
 MANSFIELD, OHIO 44902  
 DATE: 7/14/16  
 DLR: 17/14/16  
 RIB: 1801503  
 REVISIONS: 1801503  
 BLN: 1801503  
 CHECKED: 1801503  
 STRUCTURE FILE NUMBER: 1801503  
 RIVER CHANNEL PROTECTION - NEW FENDERS  
 BRIDGE NO. CUY-10-1613  
 S.R. 10 OVER THE CUYAHOGA RIVER  
 PID No. 96988  
 CUY-10-16.13  
 17/233  
 15  
 301

**Notice to Navigation**

For USACE Internal Use Only					
Received by:		Mail	Email	Intranet	Infoport
Navigation number assigned:					

Date: \_\_\_\_\_

**Contact Information**

Applicant: Ohio Department of Transportation  
 Telephone #: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_  
 Subcontractor: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Telephone #: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

**Who work is being done for**

\_\_\_\_\_

**Type of work that is being done**

\_\_\_\_\_

**Location (river/mile point/right or left descending)**

\_\_\_\_\_

**Description of floating plant (boat and name/type of equipment they will use/how many pieces of equipment)**

\_\_\_\_\_

**Monitoring which marine channels at the worksite?**

\_\_\_\_\_

Location of floating plant during non-working hours:		Completion Date:	
Date work will begin:		Days per Week:	
Work Hours per Day:			

NOTE: WORK CAN NOT BEGIN SOONER THAN 14 DAYS ONCE NTN IS COMPLETE

PERMIT NUMBER: \_\_\_\_\_



US Army Corps of Engineers  
Huntington District

Permit Number: 2016-00607-CUY

Name of Permittee: Ohio Department of Transportation

Date of Issuance: May 3, 2017

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers - Huntington District  
Building 10/ Section 10  
PO Box 3990  
Columbus, OH 43218-3990

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date