

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-6-14.56
DETROIT-SUPERIOR BRIDGE
OVER THE CUYAHOGA RIVER
CITY OF CLEVELAND
CUYAHOGA COUNTY

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES REPLACEMENT OF THE UPPER DECK WEARING SURFACE, CONCRETE PATCHING OR REPLACEMENT OF LOWER SUPERSTRUCTURE, SUBSTRUCTURE, STATION AND TUNNEL COMPONENTS, INSTALLATION OF FIBER-REINFORCED POLYMER WRAPS OVER PUBLIC AREAS, CONSTRUCTION OF VANDAL-PROTECTION WALLS, MODIFICATIONS TO THE CENTER STREET SWING BRIDGE OPERATOR'S CAR SHELTER, RESTORATION OF NAVIGATION LIGHTING AND DRAINAGE REPAIRS.

EARTH DISTURBED AREAS

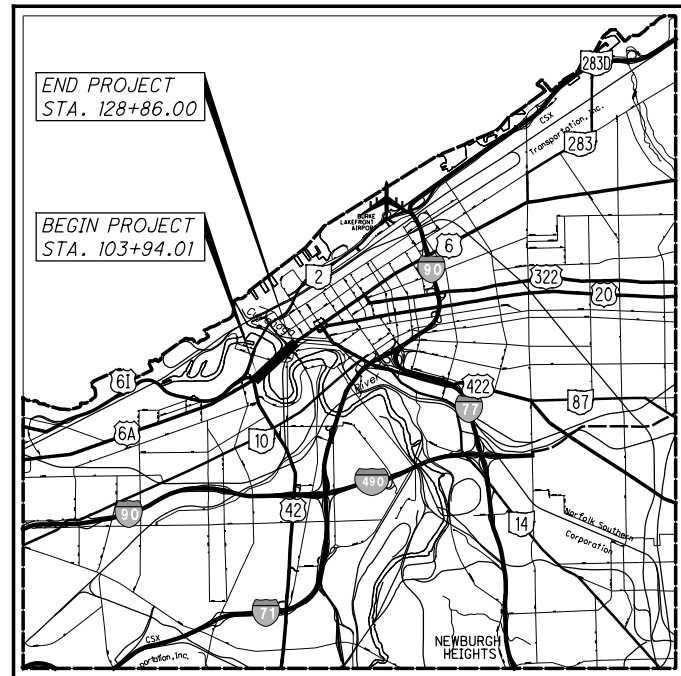
PROJECT EARTH DISTURBED AREA: N/A
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A
NOTICE OF INTENT EARTH DISTURBED AREA: N/A

LIMITED ACCESS

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

2016 SPECIFICATIONS

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



LOCATION MAP

LATITUDE: 41°29'31" N LONGITUDE: 81°42'22" W



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

INDEX OF SHEETS:

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STRUCTURES 20' AND OVER (SFN: 1800930)	40 - 128
RIGHT OF WAY	APPROVED MARCH 22, 2018

STAGE 3 SUBMISSION - APRIL 20, 2018

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764
(Non-members must be called directly)

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

PLAN PREPARED BY:
PENNONI ASSOCIATES INC.
1655 W. MARKET ST., SUITE 355
AKRON, OHIO 44313

ENGINEERS SEAL:

SIGNED: _____
DATE: _____

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	7/18/14			800-2016 1/19/18	
CB-1.1	1/15/16			821 4/20/12	
DM-4.4	1/15/16			843 4/18/03	
EXJ-4-87	1/19/18			844 7/17/15	
MT-95.31	7/21/17			848 1/20/17	
MT-95.32	7/21/17				
MT-99.20	7/21/17				
MT-105.10	7/19/13				
MT-110.10	7/19/13				
TC-71.10	1/19/18				
				PROPOSAL NOTES	
				519 7/21/17	

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 _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

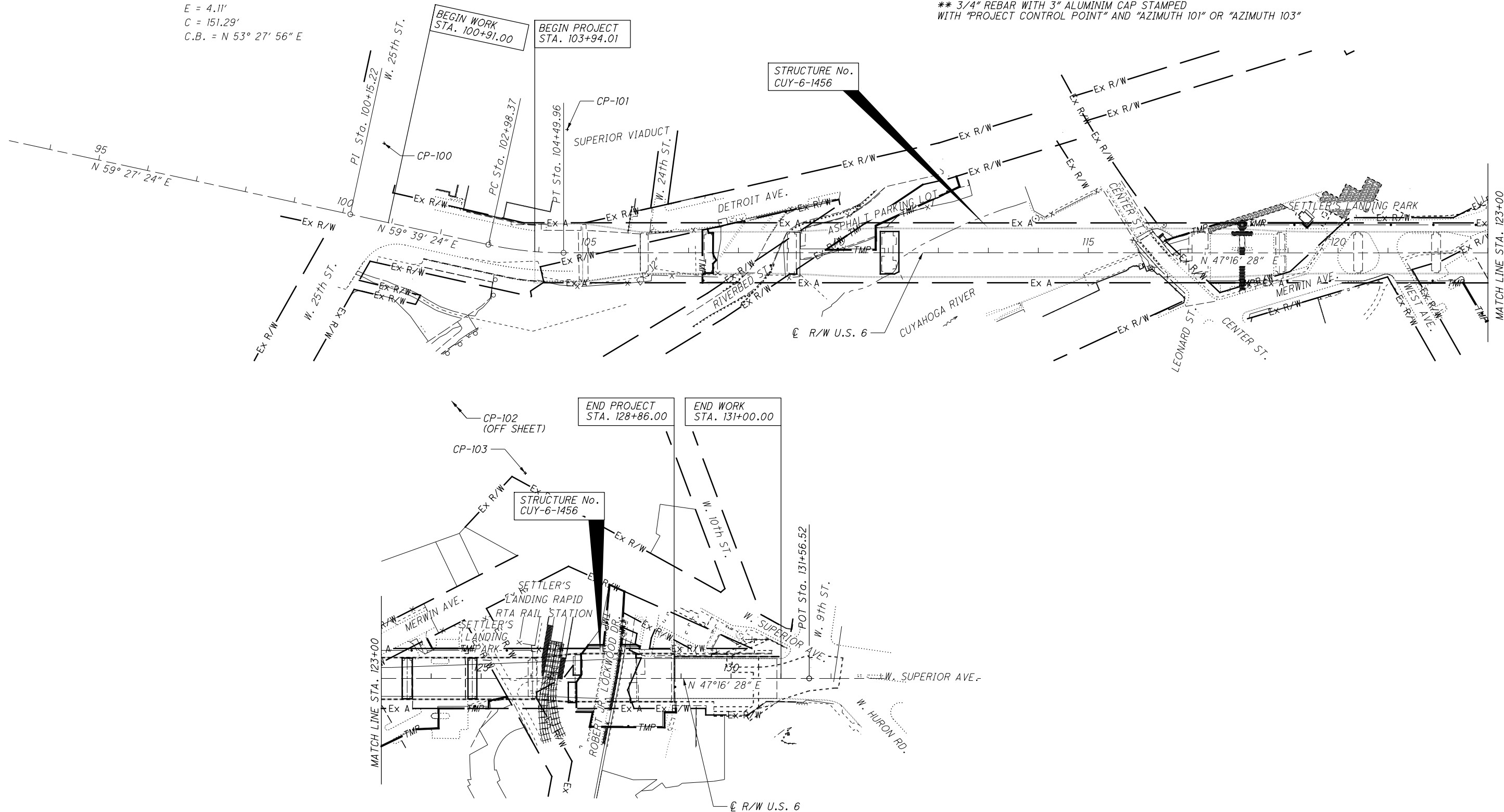
FEDERAL PROJECT NO. E161111
PID NO. 99972
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
CUY-6-14.56
1/128

NAD 83
OHIO STATE PLANE
NORTH ZONE,
PROJECT GROUND, P.A.F.=1.0000583234
NAVD88, GEOID12A
ALL COORDINATES ARE PROJECT GROUND

CURVE DATA
P.I. Sta. 103+74.46
 $\Delta = 12^\circ 22' 56''$ (LT)
 $D_c = 8^\circ 10' 07''$
 $R = 701.42'$
 $T = 76.09'$
 $L = 151.58'$
 $E = 4.11'$
 $C = 151.29'$
 $C.B. = N 53^\circ 27' 56'' E$

Point	North Ground	East Ground	North Grid	East Grid	STATION, OFFSET	Elevation	Feature
CP-100	665971.271	2185718.799	665932.432	2185591.327	U.S. 6 100+50.96, 153.32' LT	667.885	* 3/4" REBAR
CP-101	666240.114	2185969.147	666201.259	2185841.661	U.S. 6 104+57.11, 246.76' LT	656.310	**3/4" REBAR
CP-102	668076.443	2187195.759	668037.481	2187068.202	U.S. 6 126+04.09, 763.49' LT	579.605	* 3/4" REBAR
CP-103	667806.791	2187423.320	667767.844	2187295.749	U.S. 6 125+88.31, 411.02' LT	579.621	**3/4" REBAR

* 3/4" REBAR WITH 3" ALUMINUM CAP STAMPED WITH "PROJECT CONTROL POINT" AND "PRIMARY 100" OR "PRIMARY 102"
** 3/4" REBAR WITH 3" ALUMINUM CAP STAMPED WITH "PROJECT CONTROL POINT" AND "AZIMUTH 101" OR "AZIMUTH 103"



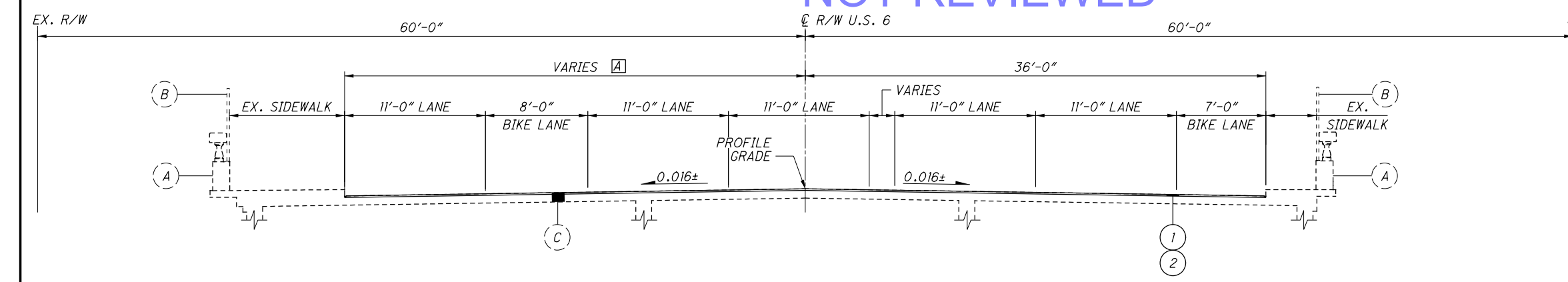
0 100 200
HORIZONTAL SCALE IN FEET

CALCULATED
CJK
CHECKED
JMZ

SCHEMATIC PLAN

CUY-6-14.56

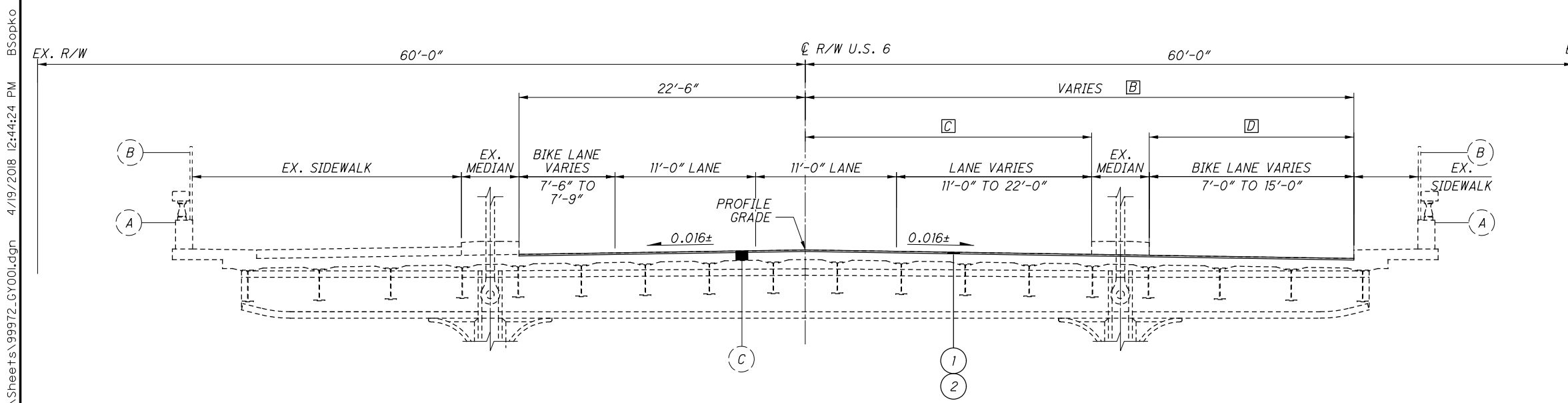
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TYPICAL SECTION - U.S. 6
 STA. 103+94.01 TO STA. 106+25.00
 ALL DIMENSIONS (±)

[A] 40'-0" TO 36'-0" - STA. 103+94.01 TO STA. 104+96.83
 36'-0" TO 36'-0" - STA. 104+96.83 TO STA. 105+34.00
 36'-0" TO 22'-6" - STA. 105+34.00 TO STA. 106+25.00

- LEGEND**
- (1) ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, 1 1/2" THICK
 - (2) ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION (1 1/2" THICK)
 - (A) EXISTING RAILING
 - (B) EXISTING FENCE
 - (C) 8 3/4"(±) EXISTING REINFORCED CONCRETE DECK

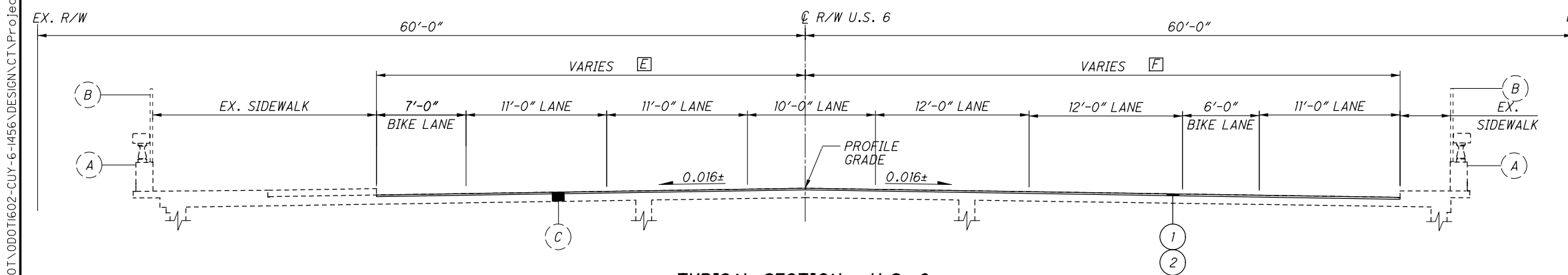


TYPICAL SECTION - U.S. 6
 STA. 106+25.00 TO STA. 123+20.00
 ALL DIMENSIONS (±)

[B] 36'-0" TO 36'-0" - STA. 106+25.00 TO STA. 108+58.86
 36'-0" TO 42'-9" - STA. 108+58.86 TO STA. 110+88.00
 42'-9" TO 42'-9" - STA. 110+88.00 TO STA. 117+34.00
 42'-9" TO 36'-0" - STA. 117+34.00 TO STA. 119+63.09
 36'-0" TO 36'-0" - STA. 119+63.09 TO STA. 123+20.00

[C] 22'-3" TO 22'-3" - STA. 111+03.00 TO STA. 117+20.00

[D] 16'-0" TO 16'-0" - STA. 111+03.00 TO STA. 117+20.00



TYPICAL SECTION - U.S. 6
 STA. 123+20.00 TO STA. 131+00.00
 ALL DIMENSIONS (±)

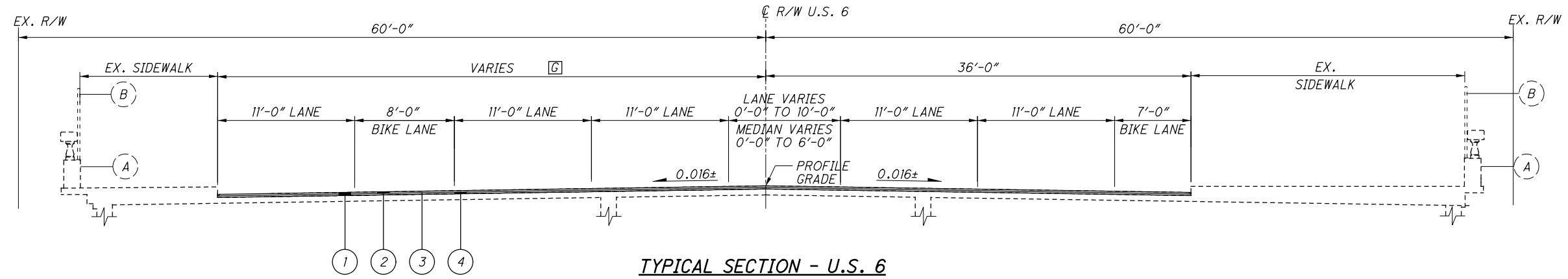
[E] 22'-6" TO 40'-0" - STA. 123+20.00 TO STA. 128+00.00
 40'-0" TO 40'-0" - STA. 128+00.00 TO STA. 131+00.00

[F] 36'-0" TO 36'-0" - STA. 123+20.00 TO STA. 126+07.69
 36'-0" TO 40'-0" - STA. 126+07.69 TO STA. 127+57.75
 40'-0" TO 40'-0" - STA. 127+57.75 TO STA. 131+00.00

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TYPICAL SECTIONS

CUY-6-14.56



TYPICAL SECTION - U.S. 6
(PAVEMENT RESURFACING)
 STA. 100+91.00 TO STA. 103+94.01
 ALL DIMENSIONS (±)

G 44'-0" TO 40'-0" - STA. 101+50.00 TO STA. 103+94.01

LEGEND

- ① ITEM 254 - 3" PAVEMENT PLANING, ASPHALT CONCRETE
- ② ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, CY 12.5 MM, TYPE A (448)
- ③ ITEM 407 - TACK COAT (0.075 GAL/SY)
- ④ ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448)
- (A) EXISTING RAILING
- (B) EXISTING FENCE

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UTILITIES

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

CHARTER COMMUNICATIONS
8179 DOW CIRCLE
STRONGSVILLE, OH 44136
ATTN: GARY NAUMANN
PHONE: 216-575-8016, EXT. 5033
EMAIL: gary.naumann@charter.com

CEI FIRST ENERGY
6896 MILLER ROAD
BRECKSVILLE, OH 44141
ATTN: TED RADER
PHONE: 440-546-8738
EMAIL: rader@firstenergycorp.com

CITY OF CLEVELAND DIVISION OF PUBLIC POWER
1300 LAKESIDE AVENUE
CLEVELAND, OH 44114
ATTN: CHRIS HIRZEL
PHONE: 216-664-3922, EXT. 115
EMAIL: chirzel@cpp.org

CITY OF CLEVELAND DIVISION OF TRAFFIC ENGINEERING
601 LAKESIDE AVENUE
CLEVELAND, OH 44114
ATTN: ANDY CROSS
PHONE: 216-664-3197
EMAIL: across@city.cleveland.oh.us

CITY OF CLEVELAND DIVISION OF WATER POLLUTION CONTROL
12302 KIRBY ROAD
CLEVELAND, OH 44108
ATTN: ELIE RAMY
PHONE: 216-664-2756
EMAIL: eramy@clevelandwpc.com

CITY OF CLEVELAND DIVISION OF WATER
1201 LAKESIDE AVENUE
CLEVELAND, OH 44114
ATTN: FRED ROBERTS
PHONE: 216-644-2444, EXT. 75590
EMAIL: fred_roberts@clevelandwater.com

WESTERN RESERVE COMMUNICATIONS
2801 HAMILTON AVENUE
CLEVELAND, OH 44114
ATTN: LOWELL KATZ
PHONE: 216-621-8121
EMAIL: wrwireless@sbcglobal.net

ZAYO FIBER SOLUTIONS
4199 KINROSS LAKES PARKWAY, SUITE 10
RICHFIELD, OH 44286
ATTN: DAVE GALUSKA
PHONE: 234-281-0025
EMAIL: dave.galuska@zayo.com

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NEORS)
3900 EUCLID AVENUE
CLEVELAND, OH 44115-2504
ATTN: MARY MACIEJOWSKI
PHONE: 216-881-6600, EXT. 6466
EMAIL: maciejowskim@neorsd.org

AT&T
13630 LORAIN AVENUE, 2ND FLOOR
CLEVELAND, OH 44111
ATTN: JAMES JANIS
PHONE: 216-476-6013
EMAIL: pj8191@att.com

DOMINION ENERGY OHIO
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OH 44333
ATTN: WILLIAM SNYDER
PHONE: 330-664-2781
EMAIL: relocation@dominionenergy.com

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 2 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID 12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD 83 (CONUS)(MOL)
ELLIPSOID: GRS 80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - NORTH ZONE
COMBINED SCALE FACTOR: 1.0000583234 (GRID TO GROUND)
ORIGIN OF COORDINATE SYSTEM: (0,0)

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.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

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 31 FT. 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 AN FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND 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 MEACHAN BLVD.
FORT WORTH, TX 76137-4298

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

KIRTLAND'S WARBLER

THIS PROJECT IS LOCATED WITHIN THE MIGRATION RANGE OF THE FEDERALLY ENDANGERED KIRTLAND'S WARBLER. NO TREES AND WOODY VEGETATION GREATER THAN 3 FEET IN HEIGHT SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 22 THROUGH JUNE 1 AND FROM AUGUST 15 THROUGH OCTOBER 15. ALL NECESSARY VEGETATION REMOVAL SHALL OCCUR FROM OCTOBER 16 THROUGH APRIL 21 AND FROM JUNE 2 THROUGH AUGUST 14. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THE KIRTLAND'S WARBLER AS REQUIRED BY THE ENDANGERED SPECIES ACT.

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGE OF THE KIRTLAND'S WARBLER. IF THE SPECIES IS ENCOUNTERED WITHIN THE CONSTRUCTION LIMITS DURING CONSTRUCTION OPERATIONS, ALL CONSTRUCTION OPERATIONS WILL CEASE IMMEDIATELY, AND THE PROJECT ENGINEER SHALL IMMEDIATELY CONTACT THE ODOT-OES AT 614-466-7100, WHO WILL IMMEDIATELY CONTACT THE USFWS COLUMBUS FIELD OFFICE. CONSTRUCTION ACTIVITIES SHALL NOT CONTINUE UNTIL THIS ADDITIONAL COORDINATION/CONSULTATION WITH USFWS IS CONCLUDED.

COORDINATION WITH CLEVELAND METROPARKS

THE CONTRACTOR SHALL NOT STAGE OR STORE ANY CONSTRUCTION EQUIPMENT WITHIN THE DEFINED BOUNDARY OF HERITAGE PARK 1, INCLUDING THE PARKING LOT.

THE CONTRACTOR MUST OBTAIN A CONSTRUCTION PERMIT FROM CLEVELAND METROPARKS PRIOR TO ANY WORK WITHIN HERITAGE PARK 1.

THE CONTRACTOR SHALL NOT DISTURB THE IRISH MEMORIAL STATUE OR THE PARKING LOT PAY STATION KIOSK DURING CONSTRUCTION.

THE CONTRACTOR SHALL RESTORE THE PARKING LOT TO A CONDITION AT LEAST AS GOOD AS EXISTED PRIOR TO THE PROJECT.

THE CONTRACTOR SHALL PROVIDE CLEVELAND METROPARKS WITH AN OPPORTUNITY TO INSPECT THE HERITAGE PARK 1 PROPERTY PRIOR TO COMPLETION OF CONSTRUCTION.

THE CONTRACTOR SHALL COORDINATE THE PROJECT SCHEDULE WITH CLEVELAND METROPARKS.

CLEVELAND METROPARKS
4101 FULTON PARKWAY
CLEVELAND, OH 44144
ATTN: JOHN KILGORE
PHONE: 216-780-1163

CALCULATED
CEM
CHECKED
BPS

GENERAL NOTES

CUY -6 -14.56

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ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF ONE (1) LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON U.S. 6 BY USE OF THE EXISTING PAVEMENT. RESURFACING AREAS SHALL BE ACCOMPLISHED ON NIGHTS AND WEEKENDS USING SCD MT-97.12 MERWIN AVENUE SHALL BE CLOSED FOR A MAXIMUM OF 90 DAYS.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE RECREATION FEATURES OF HERITAGE PARK 1 AND THE CANAL BASIN PARK CONNECTOR TRAIL AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST PROVIDE NOTICE OF PARKING LOT CLOSURE TO CLEVELAND METROPARKS AT LEAST 60 DAYS IN ADVANCE OF THE CLOSURE.

THE CONTRACTOR SHALL INSTALL APPROPRIATE SIGNAGE TO ALERT THE CONTRACTOR MUST INSTALL APPROPRIATE SIGNAGE TO ALERT USERS OF CONSTRUCTION ACTIVITIES IN THE PROXIMITY OF HERITAGE PARK 1.

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

NOTICE OF CLOSURE SIGNS (W20-H13), SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM ROAD	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
> 12 HRS & < 2 WKS	7 CALENDAR DAYS PRIOR TO CLOSURE	
CLOSURES < 12 HRS	2 BUSINESS DAYS PRIOR TO CLOSURE	

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS FOLLOWS:

MERWIN AVENUE, WEST STREET AND RIVERBED ROAD

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

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 OMTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMTCD, 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 OMTCD, 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.

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

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

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

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

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

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

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

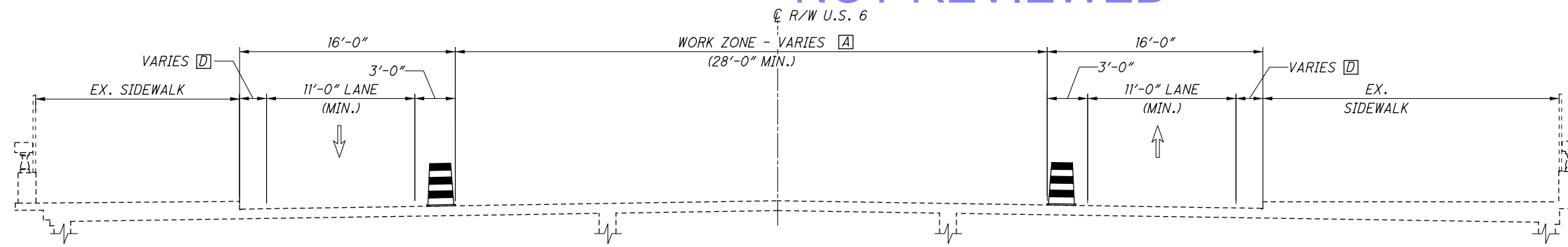
PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC.

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CALCULATED
CJ/K
CHECKED
JM/Z

MAINTENANCE OF TRAFFIC GENERAL NOTES

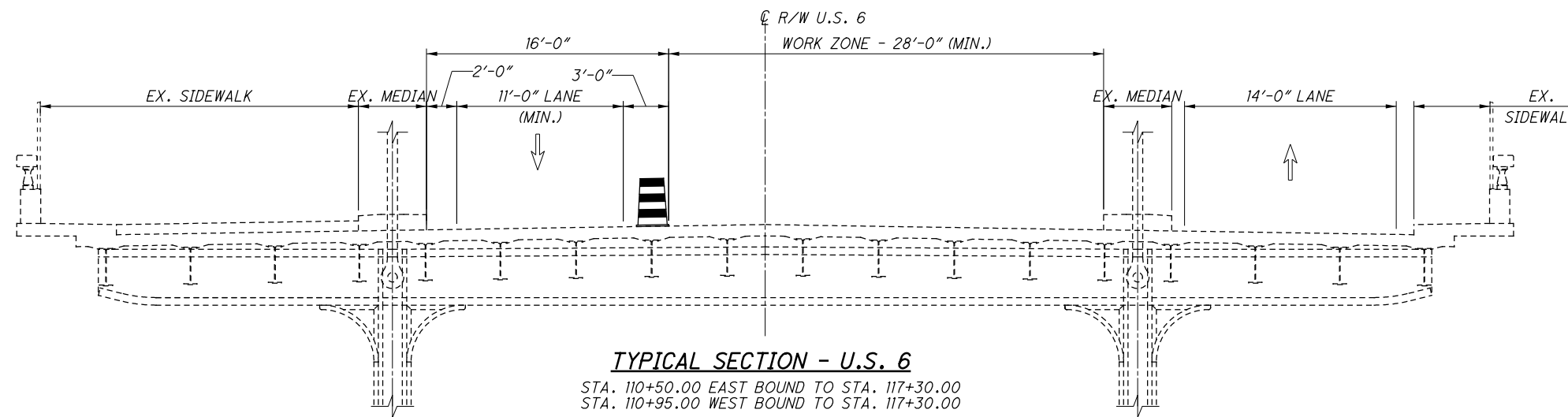
CUY -6 -14.56



TYPICAL SECTION - U.S. 6

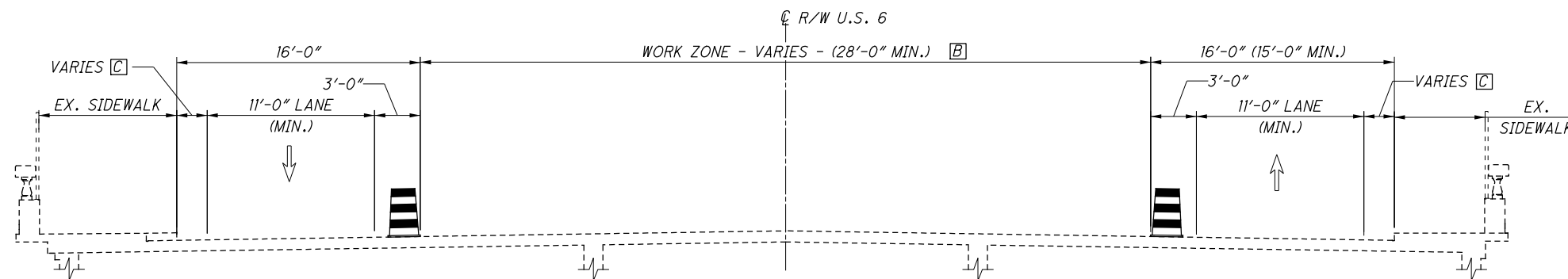
STA. 103+94.00 TO STA. 110+95.00

- 44'-0" TO 39'-0" - STA. 103+94.00 TO STA. 105+28.00
- 39'-0" TO 28'-0" - STA. 105+28.00 TO STA. 106+24.00
- 28'-0" - STA. 106+24.00 TO STA. 110+50.00 EAST BOUND
- 28'-0" - STA. 106+24.00 TO STA. 110+95.00 WEST BOUND
- 2'-0" - STA. 103+94.00 TO STA. 105+92.00
- 1'-0" - STA. 106+12.00 TO STA. 109+38.00
- 2'-0" - STA. 109+58.00 TO STA. 110+50.00 EAST BOUND
- 2'-0" - STA. 109+58.00 TO STA. 110+95.00 WEST BOUND



TYPICAL SECTION - U.S. 6

STA. 110+50.00 EAST BOUND TO STA. 117+30.00
STA. 110+95.00 WEST BOUND TO STA. 117+30.00

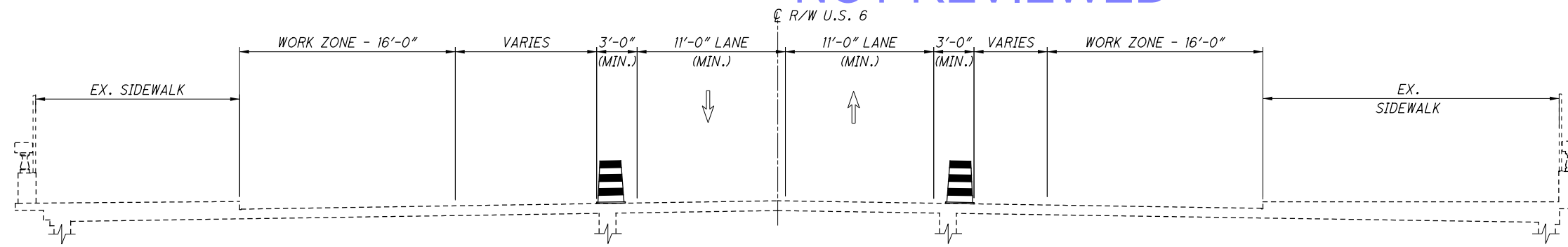


TYPICAL SECTION - U.S. 6

STA. 117+30.00 TO STA. 128+70.00

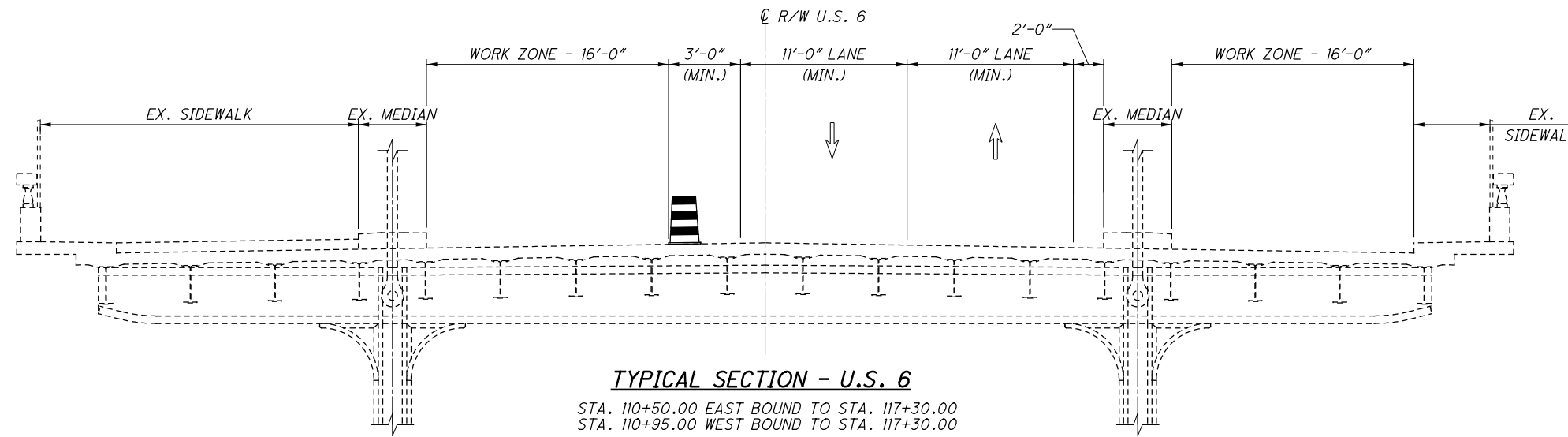
- 28'-0" - STA. 117+30.00 TO STA. 128+70.00
- 28'-0" TO 48'-0" - STA. 123+20.00 TO STA. 128+70.00
- 2'-0" - STA. 117+30.00 TO STA. 118+80.00
- 1'-0" - STA. 119+00.00 TO STA. 123+75.00
- 2'-0" - STA. 123+95.00 TO STA. 128+70.00

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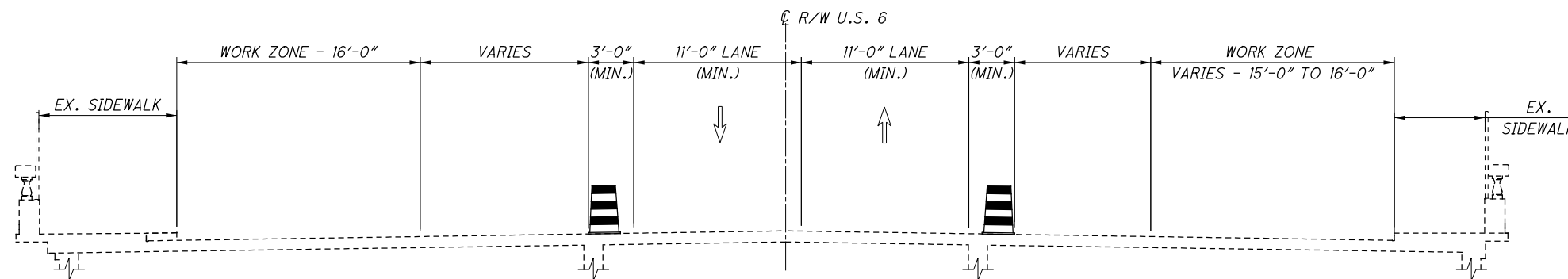
TYPICAL SECTION - U.S. 6

STA. 103+94.00 TO STA. 110+50.00 EAST BOUND
STA. 103+94.00 TO STA. 110+95.00 WEST BOUND



TYPICAL SECTION - U.S. 6

STA. 110+50.00 EAST BOUND TO STA. 117+30.00
STA. 110+95.00 WEST BOUND TO STA. 117+30.00

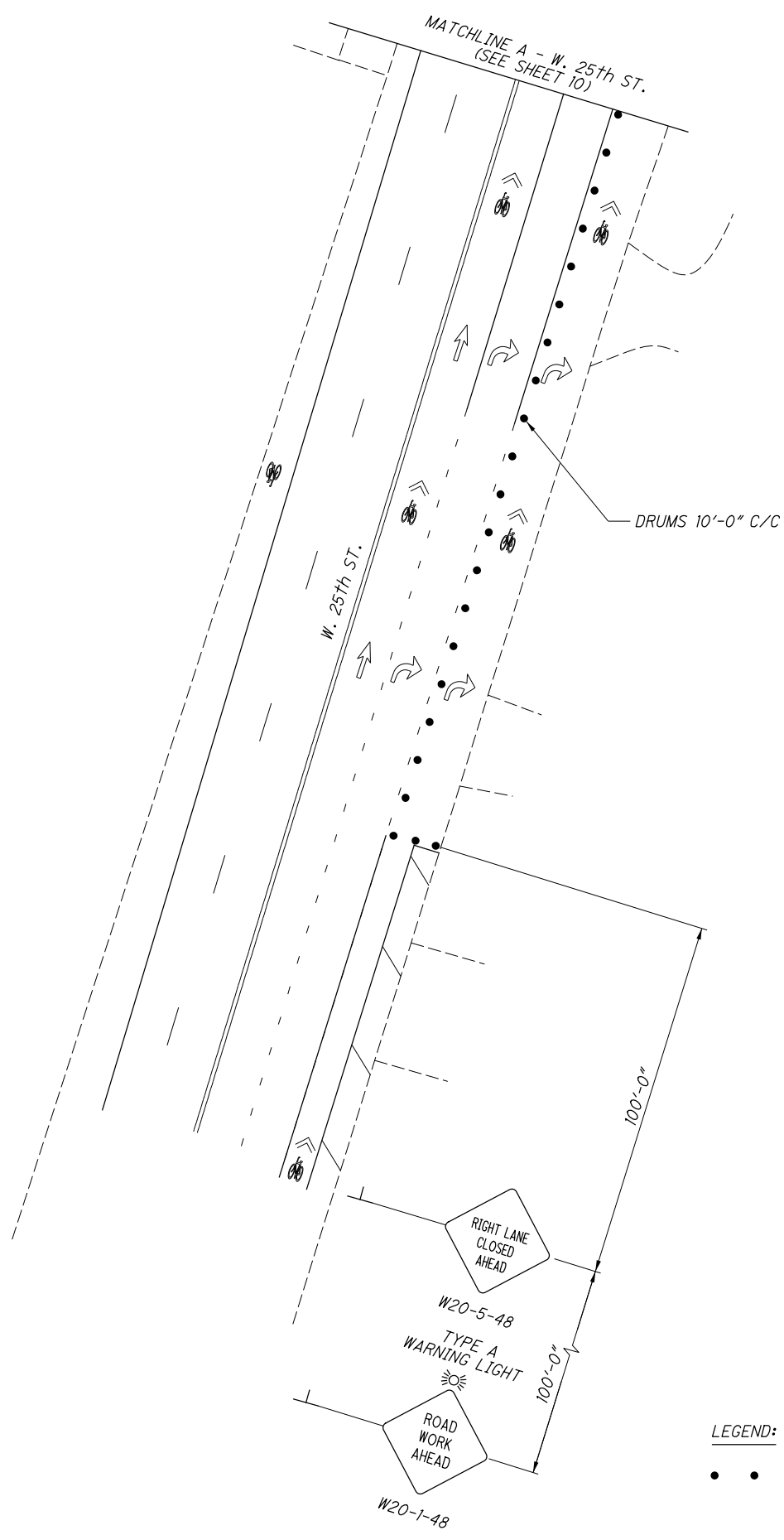


TYPICAL SECTION - U.S. 6

STA. 117+30.00 TO STA. 128+86.00

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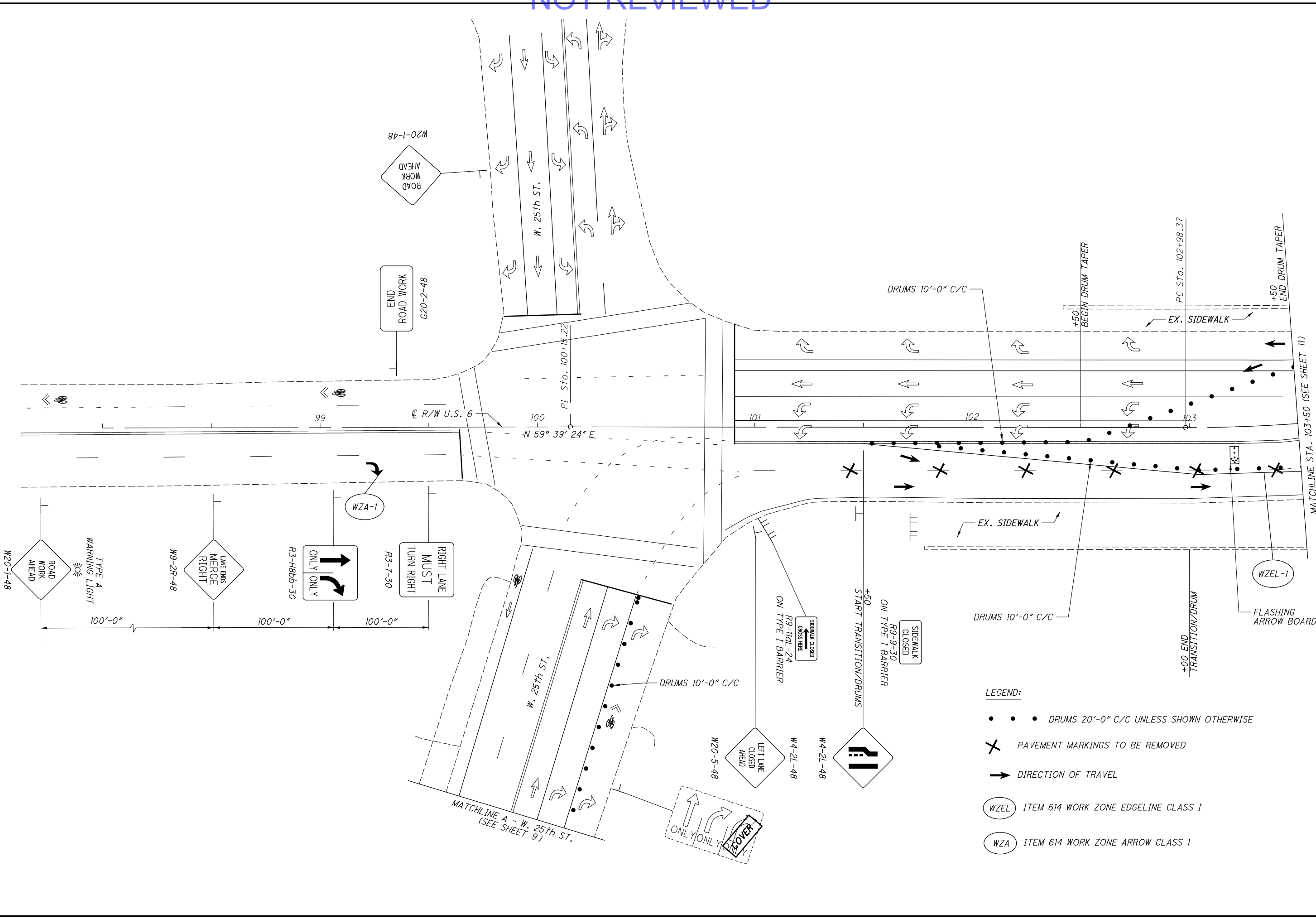
CALCULATED	CJK
CHECKED	JMZ

0 20 40
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN - PHASE 1
MATCHLINE A - W. 25th ST.

CUY-6-14.56

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- LEGEND:**
- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
 - X PAVEMENT MARKINGS TO BE REMOVED
 - ➔ DIRECTION OF TRAVEL
 - (WZEL) ITEM 614 WORK ZONE EDGELINE CLASS 1
 - (WZA) ITEM 614 WORK ZONE ARROW CLASS 1

CALCULATED
CJK
CHECKED
JMZ

0 20 40
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN- PHASE 1
STA. 97+50 TO STA. 103+50**

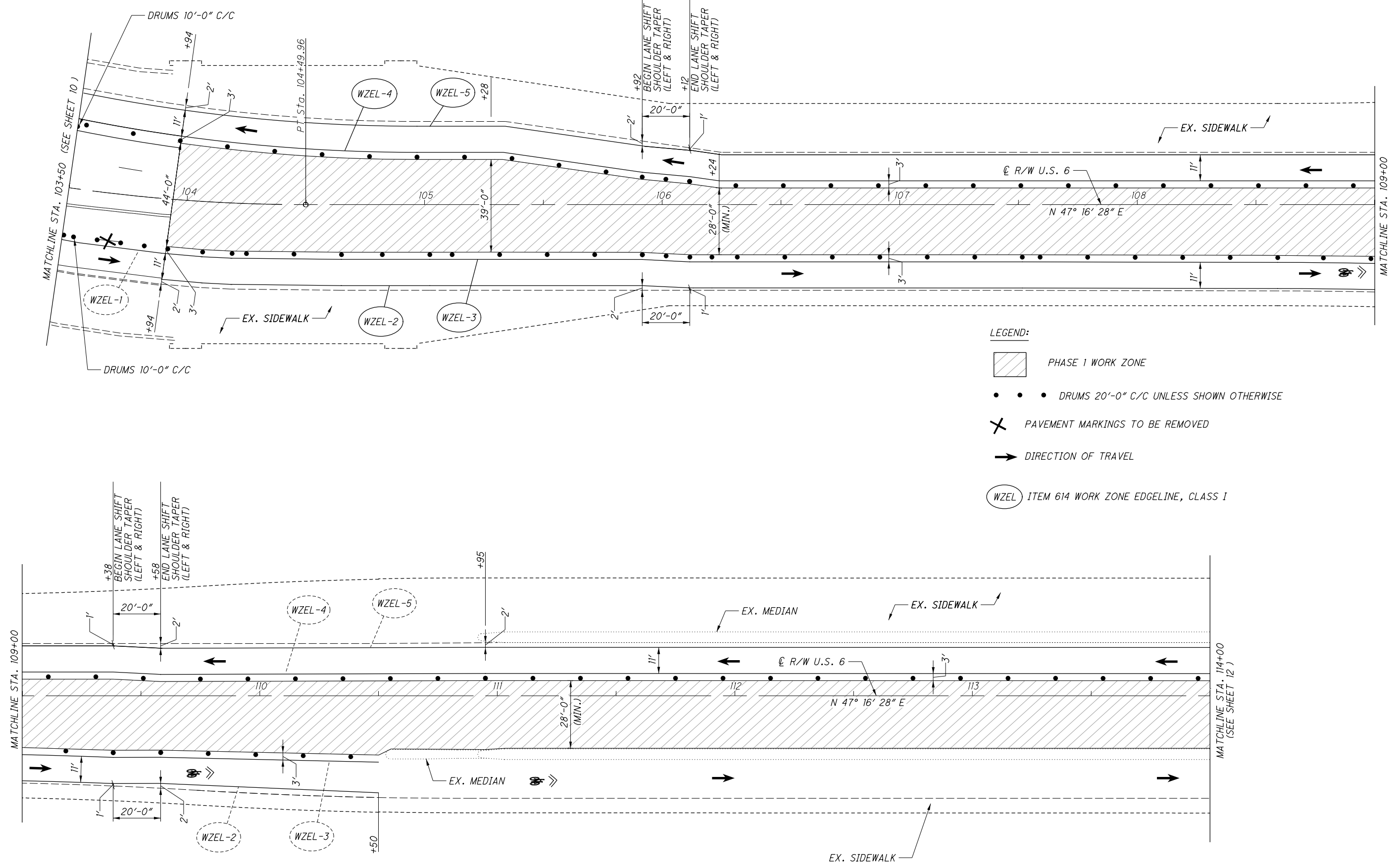







CALCULATED
CJK
CHECKED
JMZ

**MAINTENANCE OF TRAFFIC PLAN- PHASE 1
STA. 103+50 TO STA. 114+50**

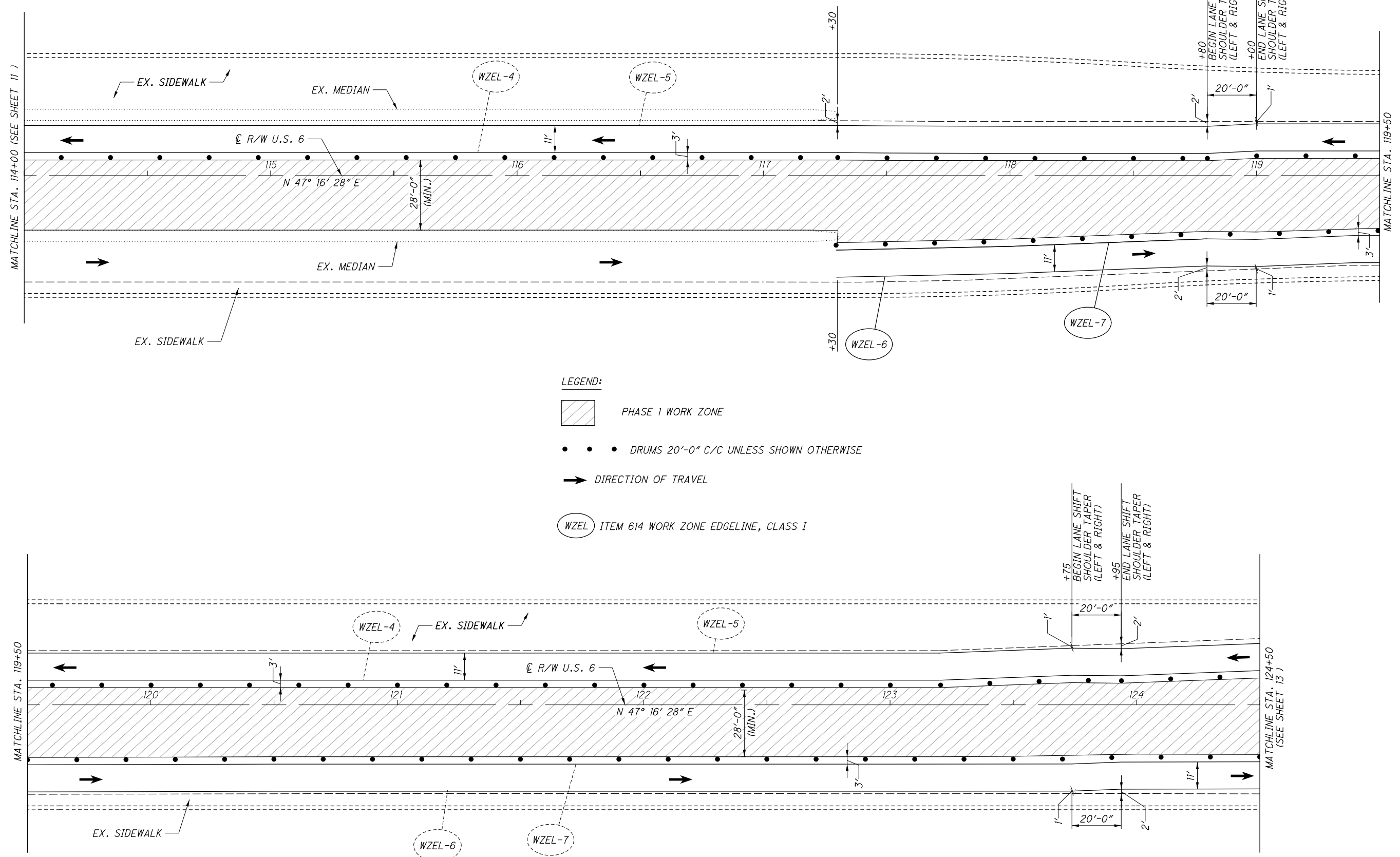
CUY-6-14.56

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- LEGEND:**
-  PHASE 1 WORK ZONE
 -  DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
 -  PAVEMENT MARKINGS TO BE REMOVED
 -  DIRECTION OF TRAVEL
 -  WZEL ITEM 614 WORK ZONE EDGELINE, CLASS I

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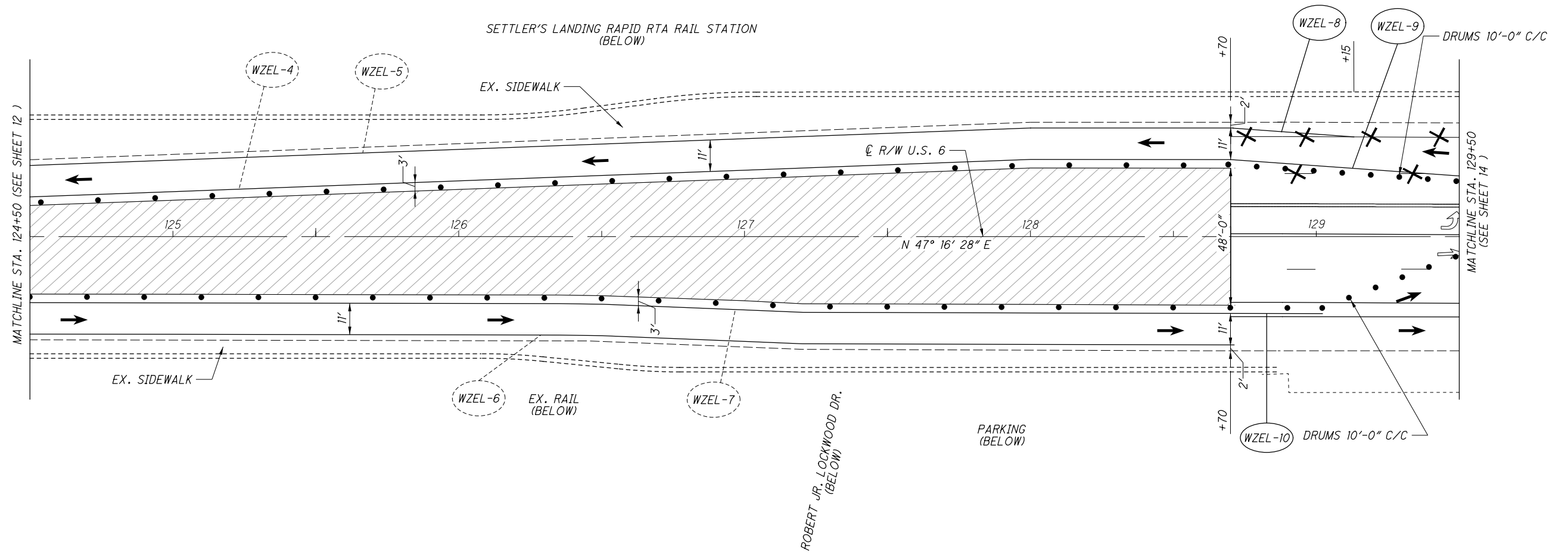
CALCULATED
CJK
CHECKED
JMZ

0 20 40
10
HORIZONTAL
SCALE IN FEET






MAINTENANCE OF TRAFFIC PLAN- PHASE 1
STA. 114+00 TO STA. 124+50

CUY-6-14.56

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LEGEND:

-  PHASE 1 WORK ZONE
-  DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
-  PAVEMENT MARKINGS TO BE REMOVED
-  DIRECTION OF TRAVEL
-  WZEL ITEM 614 WORK ZONE EDGELINE, CLASS 1

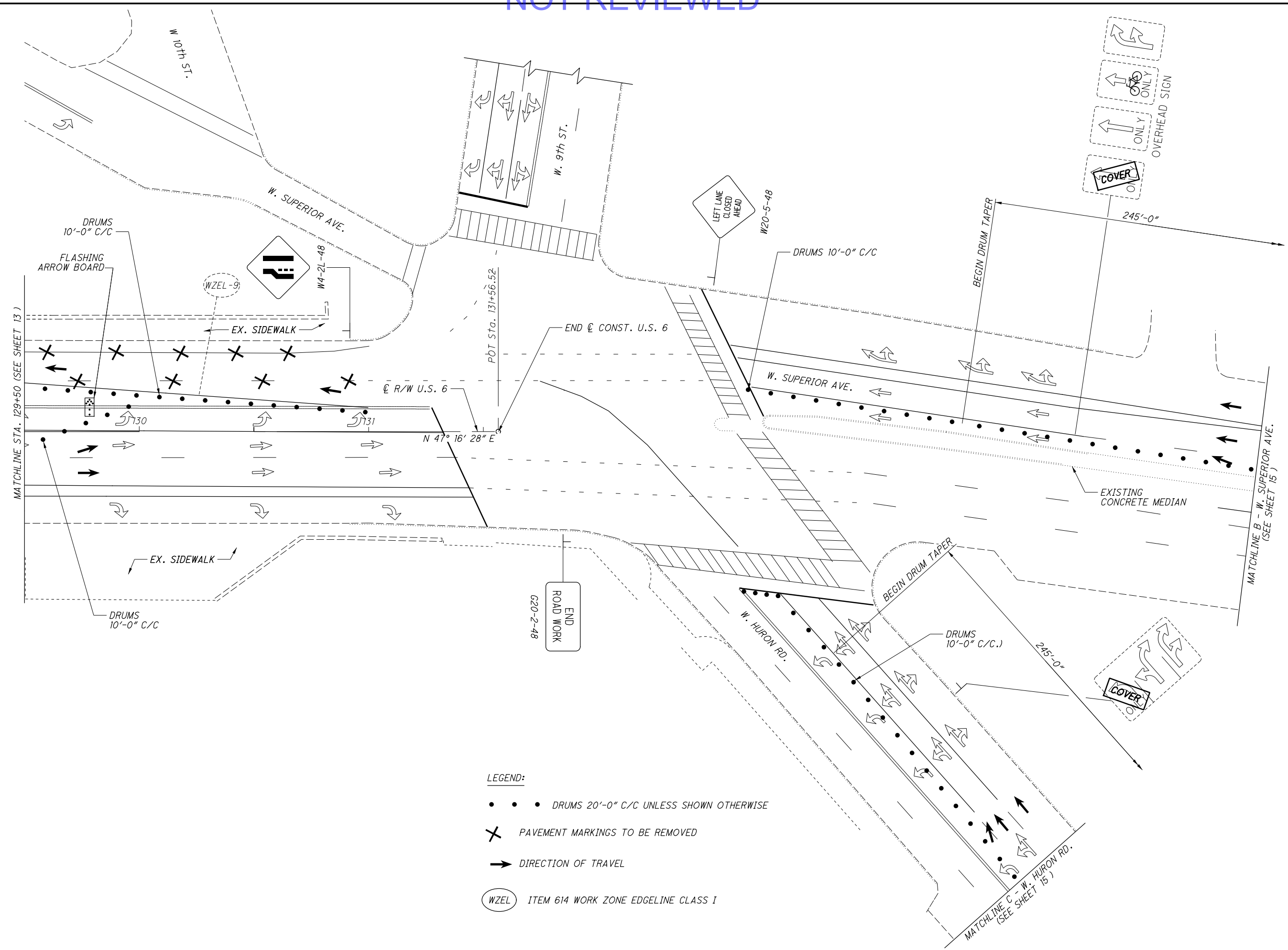
CALCULATED
CJK
CHECKED
JMZ

0 20 40
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN- PHASE 1
STA. 124+50 TO STA. 129+50

CUY-6-14.56

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- LEGEND:**
- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
 - X PAVEMENT MARKINGS TO BE REMOVED
 - ➔ DIRECTION OF TRAVEL
 - WZEL ITEM 614 WORK ZONE EDGELINE CLASS I

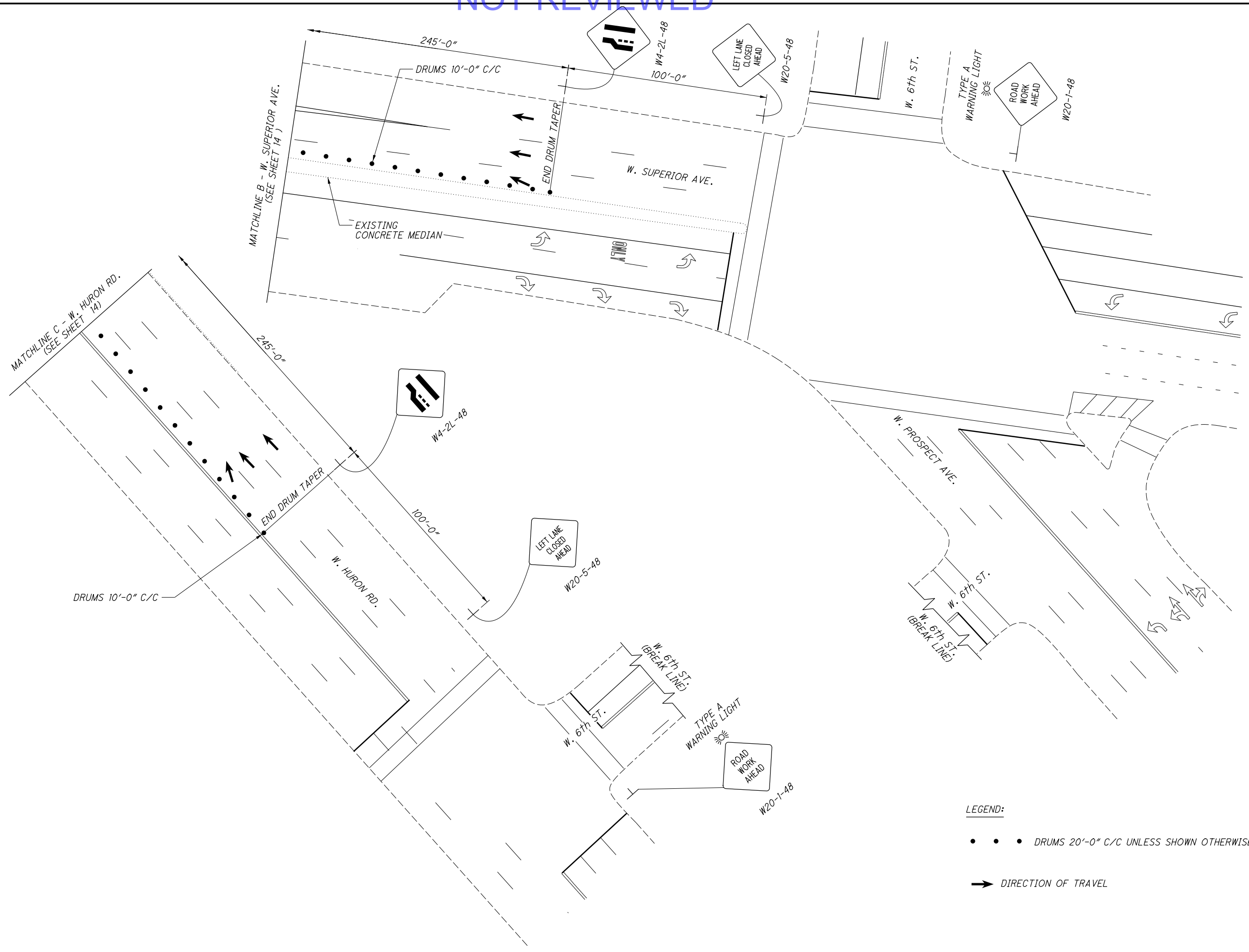
CALCULATED
CJK
CHECKED
JMZ

0 20 40
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN- PHASE 1
STA. 129+50 TO MATCHLINE B**

CUY-6-14.56

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LEGEND:

- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
- ➔ DIRECTION OF TRAVEL

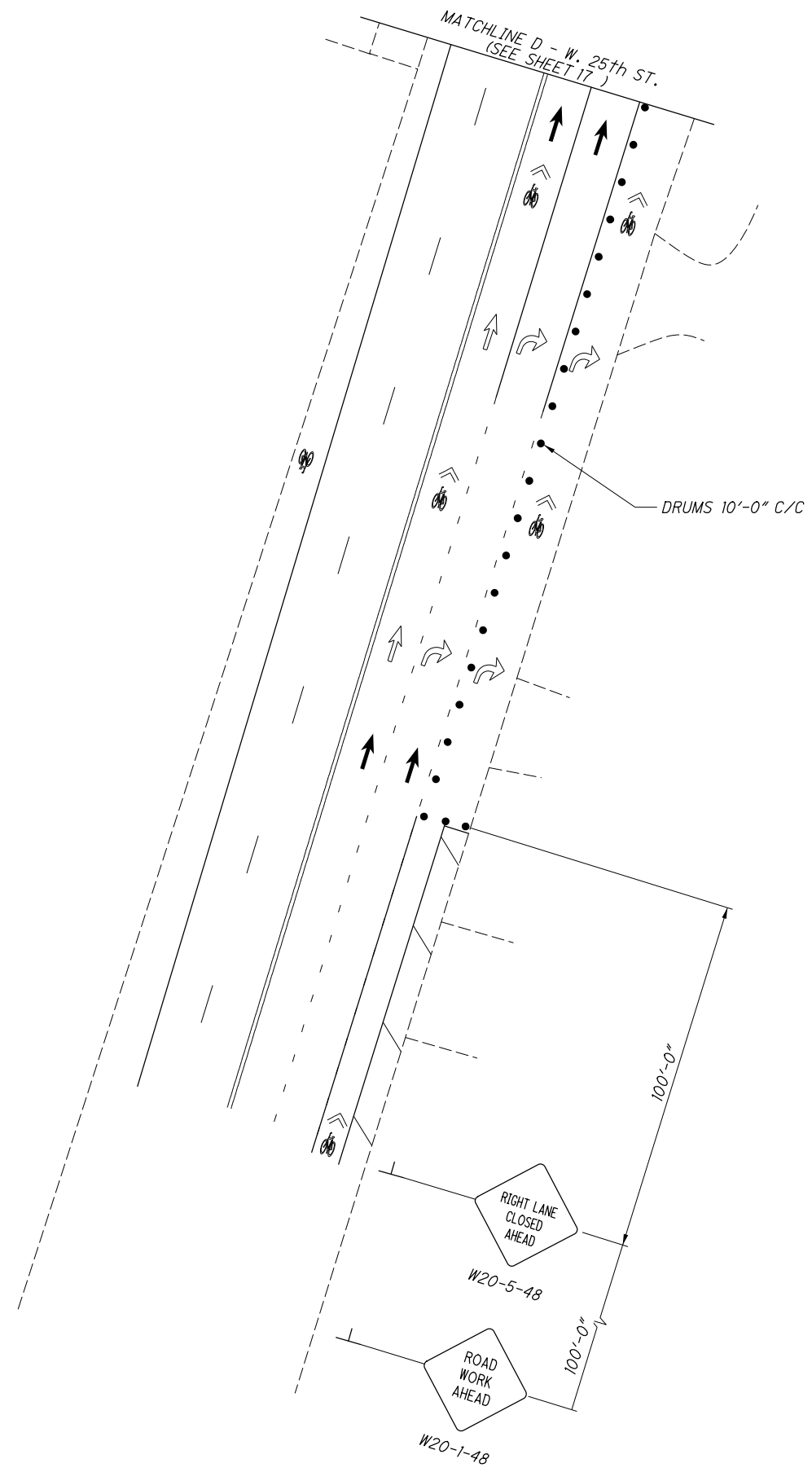
CALCULATED
CJK
CHECKED
JMZ

0 20 40
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN- PHASE 1
MATCH LINE B**

CUY -6 -14.56

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LEGEND:

- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
- ➔ DIRECTION OF TRAVEL

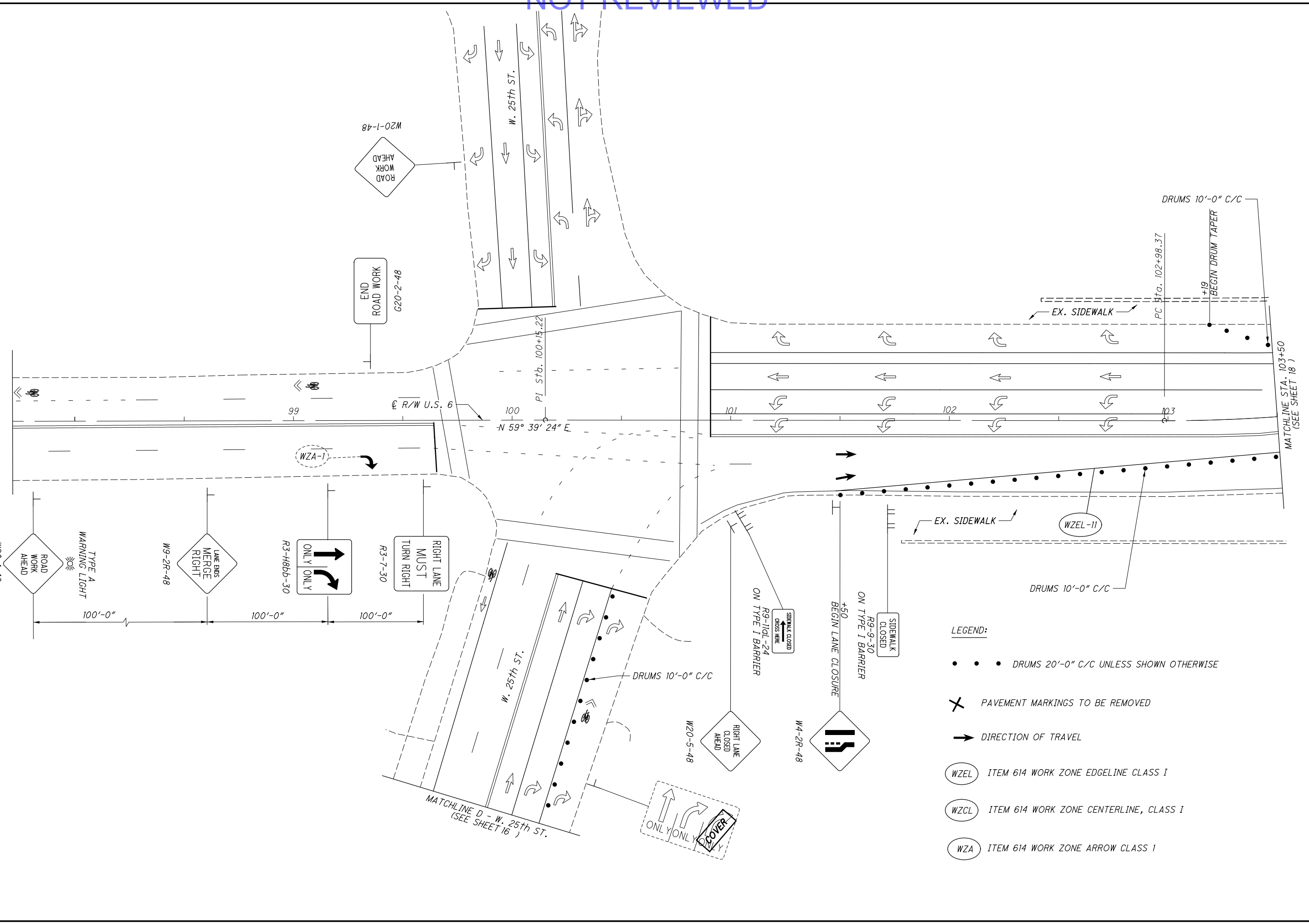
CALCULATED	CJK
CHECKED	JMZ

0 20 40
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
MATCHLINE D - W. 25th ST

CUY-6-14.56

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- LEGEND:**
- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
 - ✕ PAVEMENT MARKINGS TO BE REMOVED
 - ➔ DIRECTION OF TRAVEL
 - WZEL ITEM 614 WORK ZONE EDGELINE CLASS 1
 - WZCL ITEM 614 WORK ZONE CENTERLINE, CLASS 1
 - WZA ITEM 614 WORK ZONE ARROW CLASS 1

CALCULATED CJK CHECKED JMZ

0 20 40
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 98+00 TO STA. 103+50

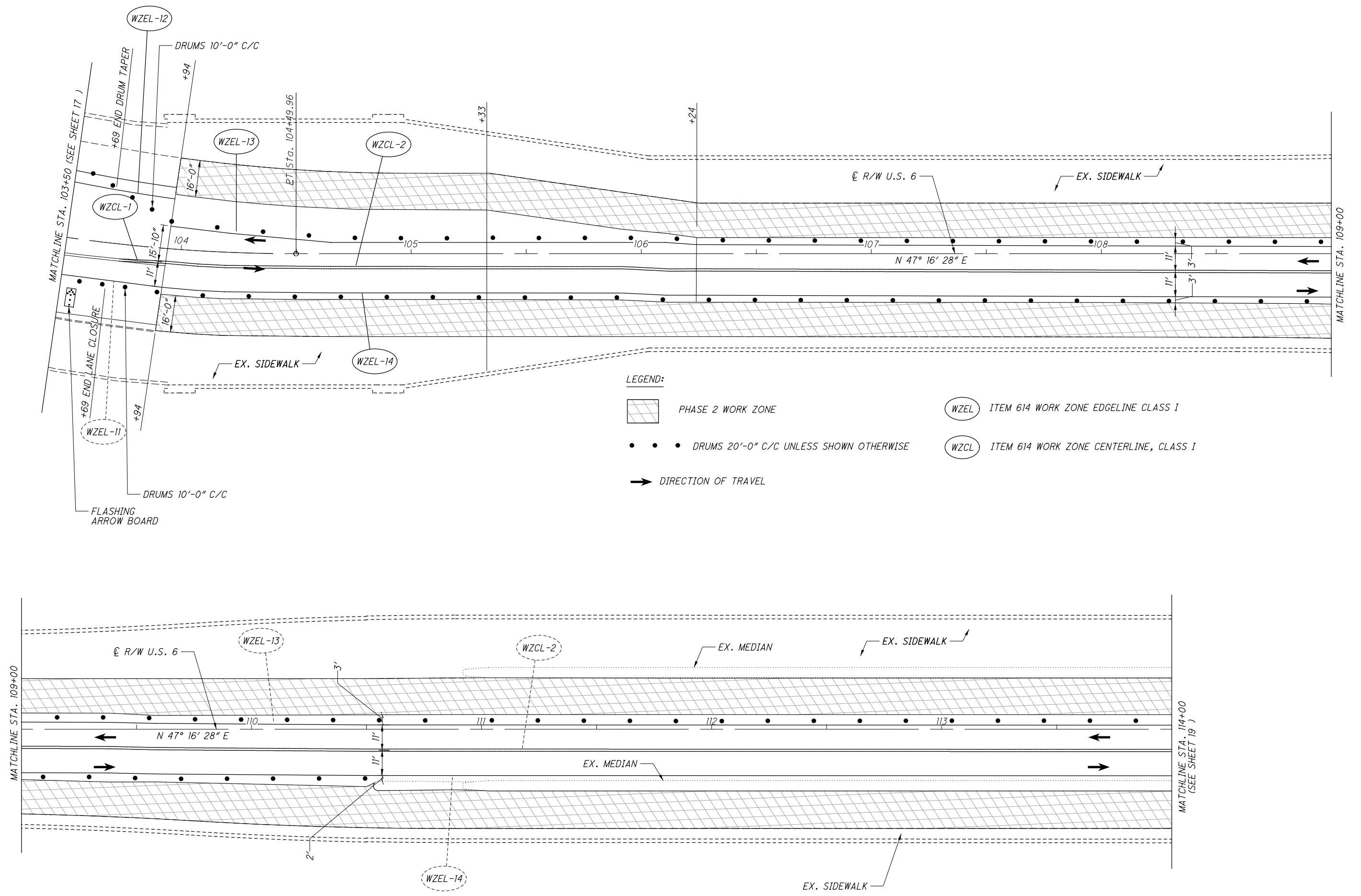


CALCULATED
CJK
CHECKED
JMZ

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 103+50 TO STA. 114+00

CUY-6-14.56

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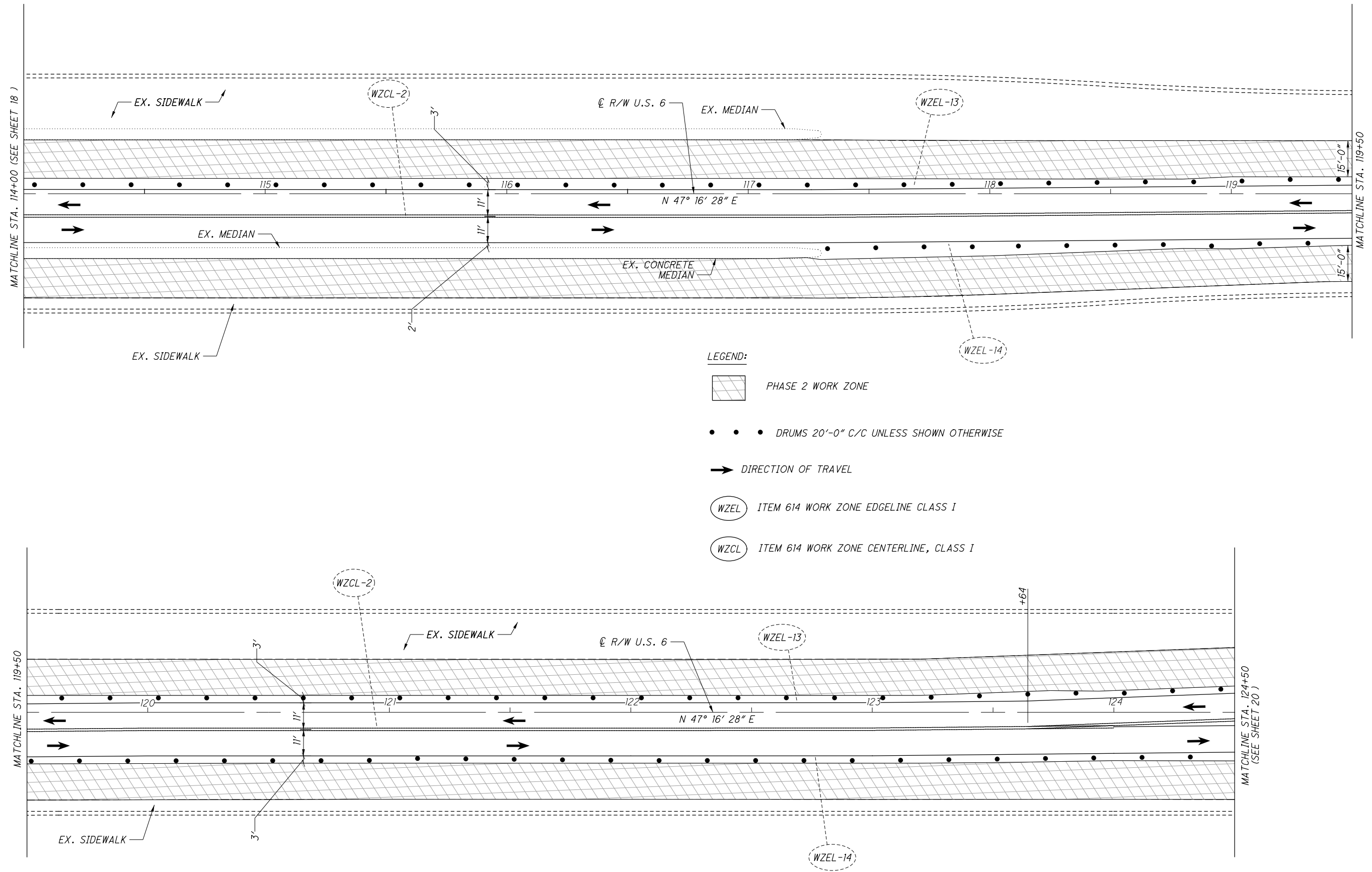







CALCULATED
CJK
CHECKED
JMZ

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 114+00 TO STA. 124+50

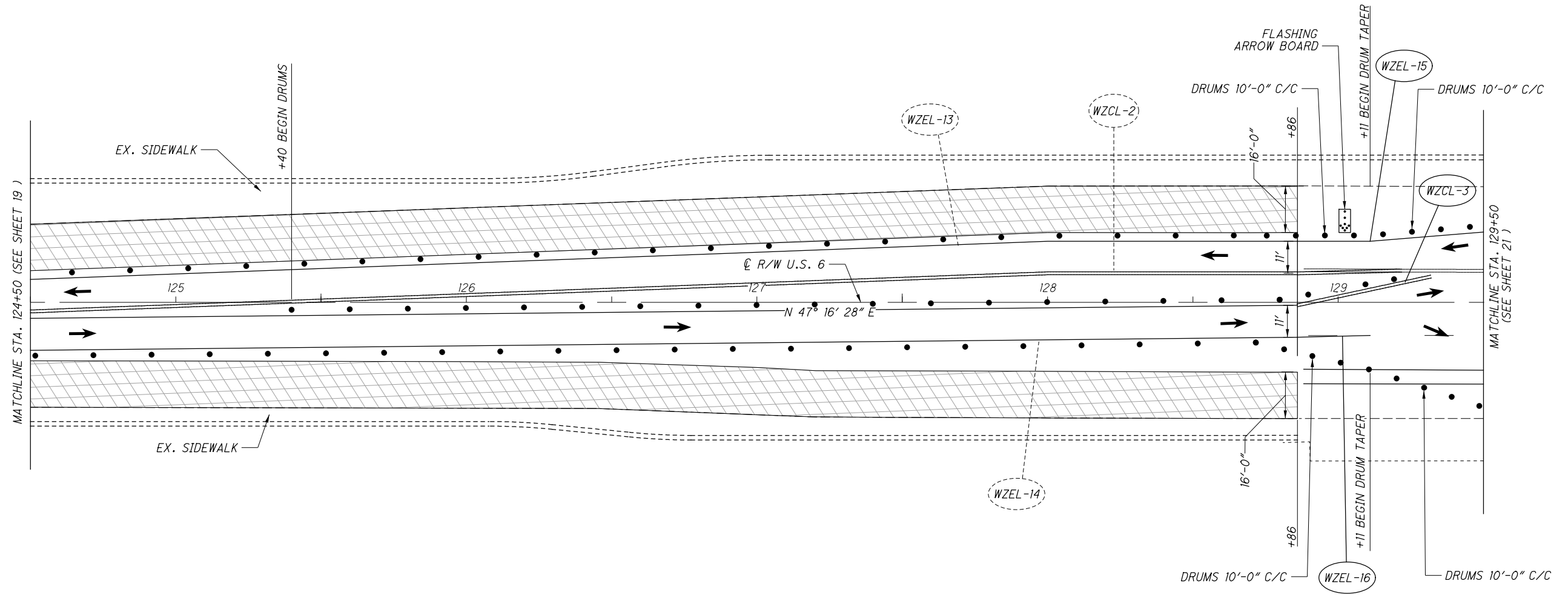
CUY-6-14.56

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- LEGEND:**
-  PHASE 2 WORK ZONE
 -  DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
 -  DIRECTION OF TRAVEL
 -  WZEL ITEM 614 WORK ZONE EDGELINE CLASS I
 -  WZCL ITEM 614 WORK ZONE CENTERLINE, CLASS I

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LEGEND:

PHASE 2 WORK ZONE

DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE

DIRECTION OF TRAVEL

WZEL ITEM 614 WORK ZONE EDGELINE CLASS I

WZCL ITEM 614 WORK ZONE CENTERLINE, CLASS I



CALCULATED CJK
CHECKED JMJ

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 124+50 TO STA. 129+50

CUY-6-14.56

FOR ESTIMATED QUANTITIES, SEE SHEET

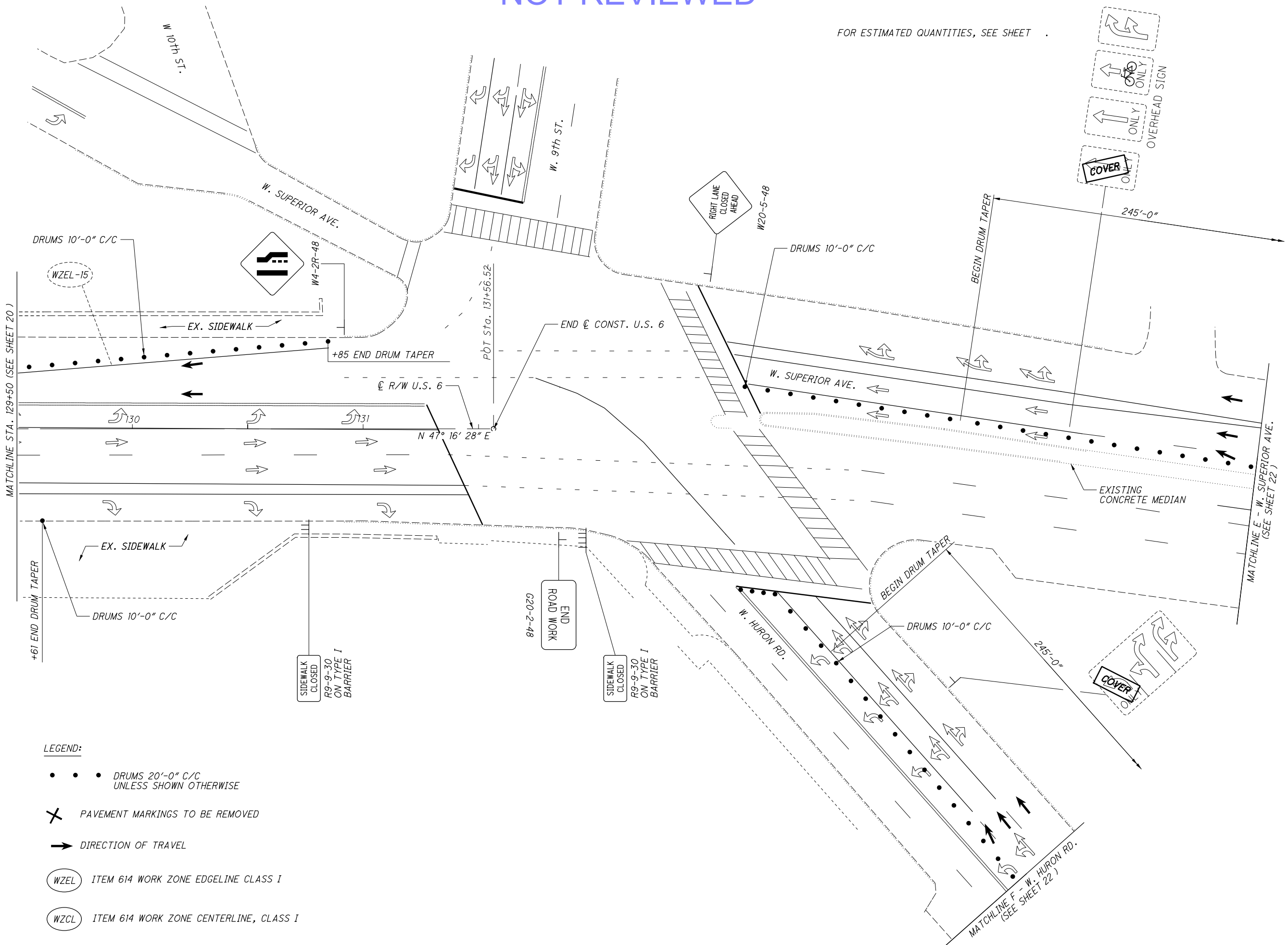


0 20 40
HORIZONTAL
SCALE IN FEET

CALCULATED
CJK
CHECKED
JMZ

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 129+50 TO STA. 131+56.62

CUY-6-14.56

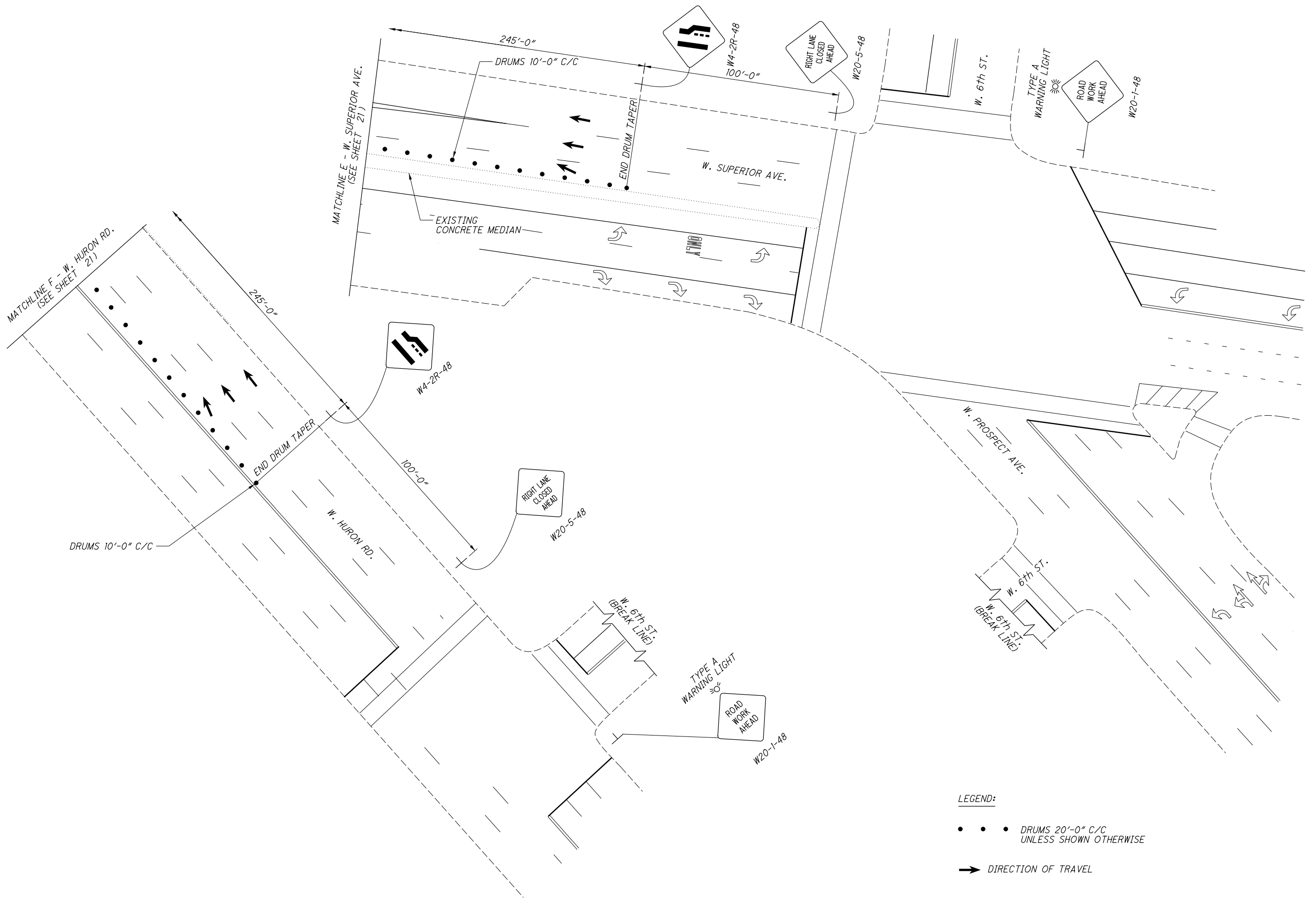


LEGEND:

- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
- X PAVEMENT MARKINGS TO BE REMOVED
- ➔ DIRECTION OF TRAVEL
- WZEL ITEM 614 WORK ZONE EDGELINE CLASS I
- WZCL ITEM 614 WORK ZONE CENTERLINE, CLASS I

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LEGEND:

- • • DRUMS 20'-0" C/C UNLESS SHOWN OTHERWISE
- ➔ DIRECTION OF TRAVEL

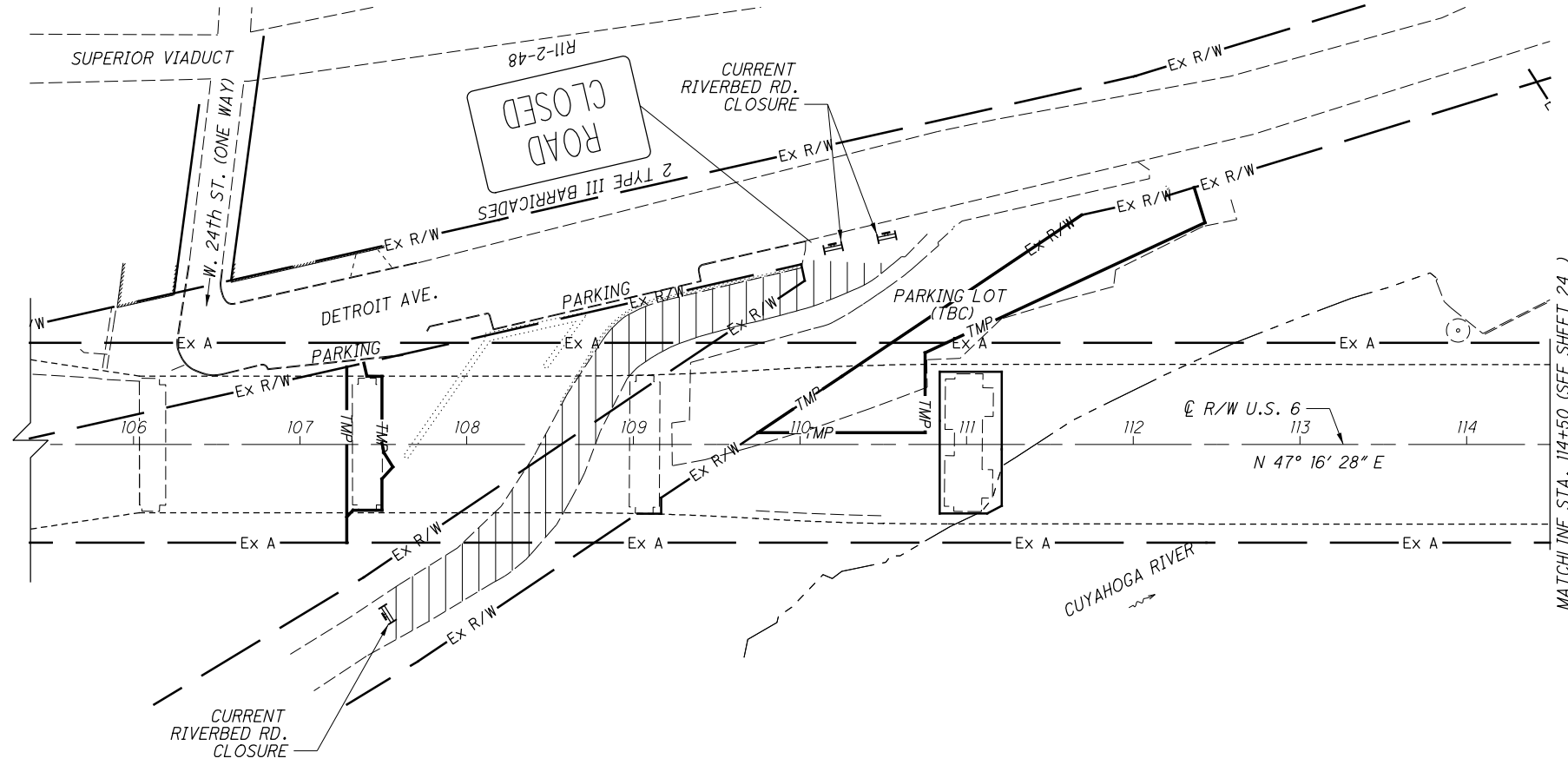
CALCULATED CJK CHECKED JMJ

0 20 40
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN
MATCH LINE E**

CUY-6-14.56

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LEGEND:

(TBC) TO BE CLOSED WHEN REQUIRED



ROAD CLOSED

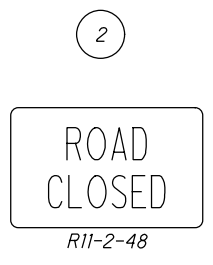
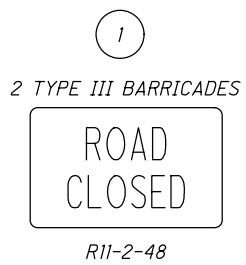


CALCULATED
CJK
CHECKED
JMZ

MAINTENANCE OF TRAFFIC
UNDER U.S. 6

CUY-6-14.56

SIGNS LEGEND:



LEGEND:

(TBC) TO BE CLOSED WHEN REQUIRED

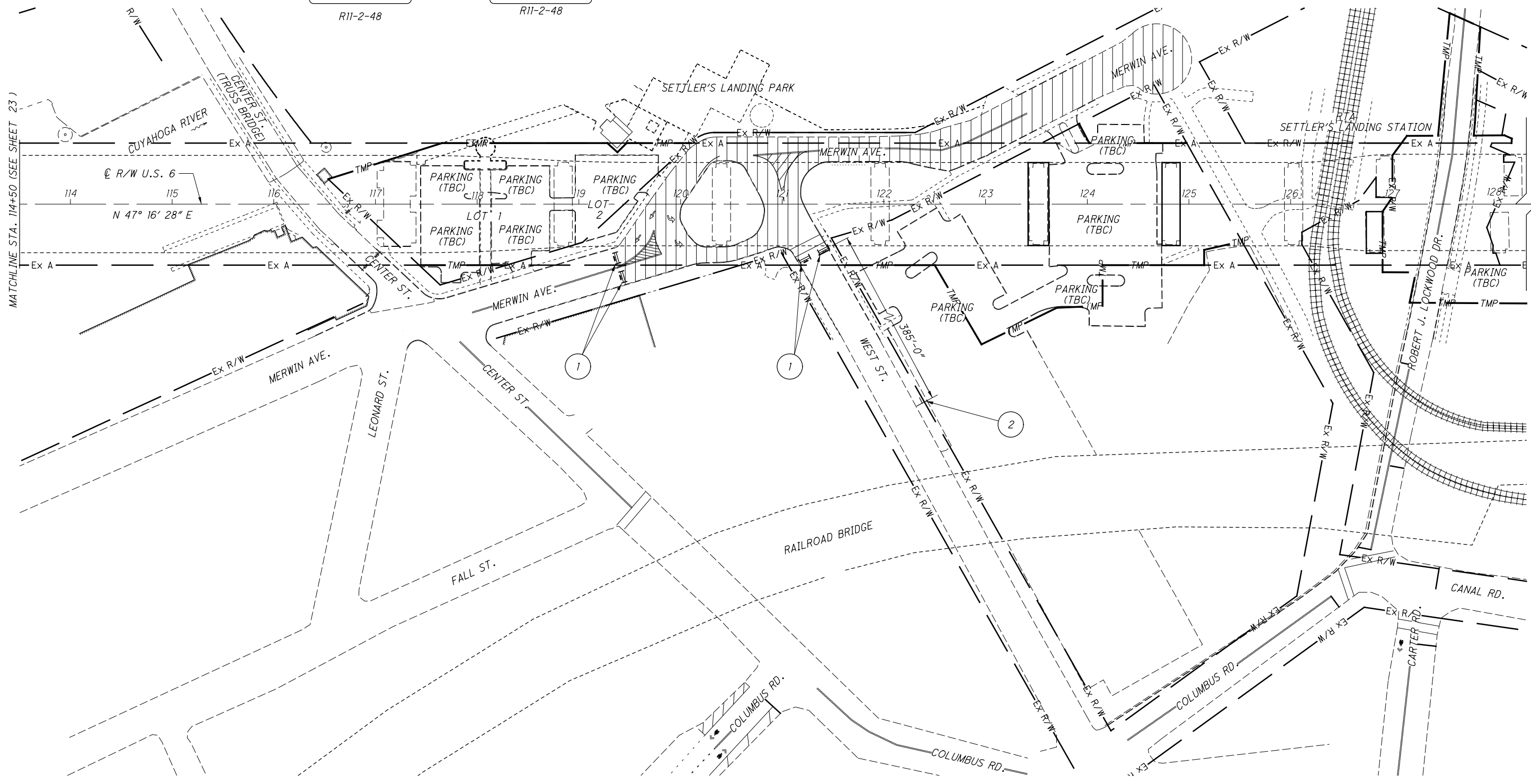


CALCULATED
CJK
CHECKED
JMZ

MAINTENANCE OF TRAFFIC
UNDER U.S. 6

CUY-6-14.56

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SHEET NUM.										PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED	CJK	CHECKED	JMZ
5	6	26	27	30	31	38						EXT	TOTAL								
LUMP												201	11000	LS		ROADWAY	5				
																DRAINAGE					
												611	99920	LS		DRAINAGE STRUCTURE, MISC.:DRAINAGE REPAIRS	31				
																PAVEMENT					
		2,503										254	01000	2,503	SY	PAVEMENT PLANING, ASPHALT CONCRETE3"					
		188										407	10000	188	GAL	TACK COAT					
		105										442	20000	105	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448)					
		105										442	20100	105	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448)					
																LIGHTING					
												625	98000	6	EACH	LIGHTING, MISC.: BRIDGE-MOUNTED MARINE NAVIGATION LIGHTING, LED, AS PER PLAN	38				
																TRAFFIC CONTROL					
				1.05								644	00104	1.05	MILE	EDGE LINE, 6"					
				0.59								644	00204	0.59	MILE	LANE LINE, 6"					
				0.71								644	00300	0.71	MILE	CENTER LINE					
				3,572								644	00400	3,572	FT	CHANNELIZING LINE, 8"					
				112								644	00500	112	FT	STOP LINE					
				406								644	00700	406	FT	TRANSVERSE/DIAGONAL LINE					
				62								644	01300	62	EACH	LANE ARROW					
				900								644	01510	900	FT	DOTTED LINE, 6"					
				23								644	01630	23	EACH	BIKE LANE SYMBOL MARKING					
																STRUCTURE REPAIR (CUY-6-1456)					
																FOR STRUCTURE (CUY-6-1456) ESTIMATED QUANTITIES SEE SHEET 49					
																MAINTENANCE OF TRAFFIC					
	120											614	11110	120	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE					
				0.48								614	21200	0.48	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I					
				0.02								614	21300	0.02	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE II					
				2.78								614	22210	2.78	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I					
				1								614	30000	1	EACH	WORK ZONE ARROW, CLASS I					
																INCIDENTALS					
												614	11000	LS		MAINTAINING TRAFFIC					
												619	16020	18	MNTH	FIELD OFFICE, TYPE C					
												624	10000	LS		MOBILIZATION					

GENERAL SUMMARY

CUY -6 - 14.56

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STATION		LIN. FT.	CADD AREA	254	407	442	442			
FROM	TO			SF	SY	GAL	CY	CY		
100+91.00	103+94.00	244	22589	2503	188	105	105			
GRAND TOTALS CARRIED TO GENERAL SUMMARY				2503	188	105	105			

STATION		LIN. FT.															
FROM	TO																
GRAND TOTALS CARRIED TO GENERAL SUMMARY																	

CUY - 6 - 14.56	CALCULATED CJK
	CHECKED JMZ

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SHEET NO.	REF. NO.	PHASE	STATION		SIDE	614		614		614		614		614		
			FROM	TO		WORK ZONE CENTER LINE CLASS I, 740.06, TYPE I	MI	WORK ZONE CENTER LINE CLASS I, 740.06, TYPE II	MI	WORK ZONE EDGE LINE CLASS I, 740.06, TYPE I	MI	WORK ZONE ARROW, CLASS I	EACH			
10	WZA-1	1,2	99+24		RT									1		
10	WZEL-1	1	101+50	103+94	RT					0.047						
11	WZEL-2	1	103+94	110+50	RT					0.124						
11	WZEL-3	1	103+94	110+50	RT					0.125						
11	WZEL-4	1	103+50	128+70	LT					0.477						
11	WZEL-5	1	103+50	128+70	LT					0.477						
12	WZEL-6	1	117+30	128+70	RT					0.216						
12	WZEL-7	1	117+30	128+70	RT					0.216						
13	WZEL-8	1	128+70	129+13	LT					0.008						
13	WZEL-9	1	128+70	131+00	LT					0.044						
13	WZEL-10	1	128+70	129+02	RT					0.006						
17	WZEL-11	2	101+50	103+94	RT					0.047						
18	WZEL-12	2	103+50	103+94	LT					0.009						
18	WZEL-13	2	103+94	128+86	LT					0.470						
18	WZEL-14	2	103+94	128+86	RT					0.472						
18	WZCL-1	2	103+50	103+94	RT				0.009							
18	WZCL-2	2	103+94	129+00	RT/LT	0.484										
20	WZEL-15	2	128+86	130+85	LT					0.038						
20	WZEL-16	2	128+86	129+11	RT					0.005						
20	WZCL-3	2	128+86	129+36	LT/RT				0.009							
TOTALS CARRIED TO GENERAL SUMMARY								0.48		0.02			2.78		1	

CALCULATED	TEC
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MAINTENANCE OF TRAFFIC SUBSUMMARY	
CUY -6 -14.56	
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128	

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	644	644	644	644	644	644	644	644										
			EDGE LINE, 6" (WHITE)	LANE LINE, 6"		CENTER LINE	CHANNELIZING LINE, 8"	STOP LINE	TRANSVERSE/DIAGONAL LINE	LANE ARROW	DOTTED LINE, 6"	BIKE LANE SYMBOL MARKING											
			FROM	TO		MILE	MILE	MILE	FT	FT	FT	EACH	FT	EACH									
32	EW-1	U.S. 6	101+30	107+50	RT.	0.12																	
32	LL-1	U.S. 6	101+30	105+75	RT.		0.09																
32	LL-2	U.S. 6	104+73	131+14	LT.		0.50																
32	CL-1	U.S. 6	101+15	131+26	LT./RT.			0.57															
32	CL-2	U.S. 6	103+00	105+80	LT./RT.			0.05															
32	CH-1	U.S. 6	101+15	104+73	LT.				352														
32	CH-2	U.S. 6	101+15	104+73	LT.				352														
32	CH-3	U.S. 6	101+15	104+73	LT.				352														
32	CH-4	U.S. 6	101+15	103+00	LT.				185														
32	SL-1	U.S. 6	101+15		LT./RT.				52														
32	LA-1	U.S. 6	101+30		LT.						1												
32	LA-2	U.S. 6	101+30		LT.						1												
32	LA-3	U.S. 6	101+30		LT.						1												
32	LA-4	U.S. 6	101+30		LT.						1												
32	LA-5	U.S. 6	101+30		LT./RT.						1												
32	LA-6	U.S. 6	101+55		RT.						1												
32	LA-7	U.S. 6	102+00		LT.						1												
32	LA-8	U.S. 6	102+00		LT.						1												
32	LA-9	U.S. 6	102+00		LT.						1												
32	LA-10	U.S. 6	102+00		LT./RT.						1												
32	LA-11	U.S. 6	102+70		LT.						1												
32	LA-12	U.S. 6	102+70		LT.						1												
32	LA-13	U.S. 6	102+70		LT.						1												
32	LA-14	U.S. 6	102+70		LT.						1												
32	LA-15	U.S. 6	102+70		LT./RT.						1												
32	LA-16	U.S. 6	103+00		RT.						1												
32	LA-17	U.S. 6	103+40		LT.						1												
32	LA-18	U.S. 6	103+40		LT.						1												
32	LA-19	U.S. 6	103+40		LT.						1												
32	LA-20	U.S. 6	104+10		LT.						1												
32	LA-21	U.S. 6	104+10		LT.						1												
32	LA-22	U.S. 6	104+10		LT.						1												
32	LA-23	U.S. 6	104+10		LT.						1												
32	LA-24	U.S. 6	104+50		RT.						1												
32	LA-25	U.S. 6	104+80		LT.						1												
32	LA-26	U.S. 6	104+80		LT.						1												
32	LA-27	U.S. 6	104+80		LT.						1												
32	LA-28	U.S. 6	104+80		LT.						1												
32	DL-1	U.S. 6	104+73	106+23	LT.							150											
32	DL-2	U.S. 6	104+73	106+23	LT.							150											
32	BM-1	U.S. 6	101+43		LT.								1										
32	BM-2	U.S. 6	101+42		RT.								1										
32	BM-3	U.S. 6	102+83		LT.								1										
32	BM-4	U.S. 6	102+84		RT.								1										
32	BM-5	U.S. 6	104+24		LT.								1										
32	BM-6	U.S. 6	104+36		RT.								1										
32	BM-7	U.S. 6	104+94		LT.								1										
SUBTOTALS CARRIED TO SHEET 30						0.12	0.59	0.62	1241	52	0	28	300	7									

CALCULATED CJK CHECKED JMZ	PAVEMENT MARKING SUBSUMMARY	CUY - 6 - 14.56
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SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	644	644	644	644	644	644	644	644									
			EDGE LINE, 6" (WHITE)	LANE LINE, 6"		CENTER LINE	CHANNELIZING LINE, 8"	STOP LINE	TRANSVERSE/DIAGONAL LINE	LANE ARROW	DOTTED LINE, 6"	BIKE LANE SYMBOL MARKING										
			FROM	TO		MILE	MILE	MILE	FT	FT	FT	EACH	FT	EACH								
33	EW-2	U.S. 6	106+23	131+14	LT.	0.47																
33	CH-5	U.S. 6	107+50	111+00	RT.				352													
33	CH-6	U.S. 6	107+50	111+00	RT.				352													
33	TL-1	U.S. 6	107+50	110+50	RT.					293												
33	LA-29	U.S. 6	106+00		RT.						1											
33	LA-30	U.S. 6	107+00		LT.						1											
33	LA-31	U.S. 6	107+50		RT.						1											
33	LA-32	U.S. 6	109+00		RT.						1											
33	LA-33	U.S. 6	110+00		LT.						1											
33	LA-34	U.S. 6	110+50		RT.						1											
33	BM-8	U.S. 6	108+85		RT.														1			
33	BM-9	U.S. 6	107+13		LT.														1			
33	BM-10	U.S. 6	107+37		RT.														1			
33	BM-11	U.S. 6	108+85		RT.														1			
33	BM-12	U.S. 6	110+13		LT.														1			
33	BM-13	U.S. 6			RT.														1			
34	EW-3	U.S. 6	111+00	117+50		0.12																
34	EW-4	U.S. 6	111+00	117+50		0.12																
34	LA-35	U.S. 6	113+00		LT.						1											
34	LA-36	U.S. 6	113+50		RT.						1											
34	BM-14	U.S. 6	113+26		LT.														1			
34	BM-15	U.S. 6	113+33		RT.														1			
35	LL-3	U.S. 6	120+00	131+38	RT.	0.22																
35	CH-7	U.S. 6	117+50	120+00	RT.				250													
35	CH-8	U.S. 6	117+50	120+00	RT.				250													
35	TL-2	U.S. 6	117+60	120+00	RT.					113												
35	LA-37	U.S. 6	116+10		LT.						1											
35	LA-38	U.S. 6	116+50		RT.						1											
35	LA-39	U.S. 6	119+12		RT.						1											
35	BM-16	U.S. 6	116+25		LT.														1			
35	BM-17	U.S. 6	116+36		RT.														1			
35	BM-18	U.S. 6	119+26		LT.														1			
36	CL-3	U.S. 6	123+50	128+00	RT.			0.09														
36	DL-3	U.S. 6	124+50	127+50	RT.								300									
36	DL-4	U.S. 6	124+50	127+50	RT.								300									
36	LA-40	U.S. 6	122+12		LT.							1										
36	LA-41	U.S. 6	125+12		LT.							1										
36	BM-19	U.S. 6	122+26		LT.														1			
36	BM-20	U.S. 6	125+25		LT.														1			
SUBTOTALS CARRIED TO SHEET30						0.93	0	0	1204	0	406	13	600	13								

CALCULATED CJK CHECKED JMZ	PAVEMENT MARKING SUBSUMMARY	CUY -6 -14.56
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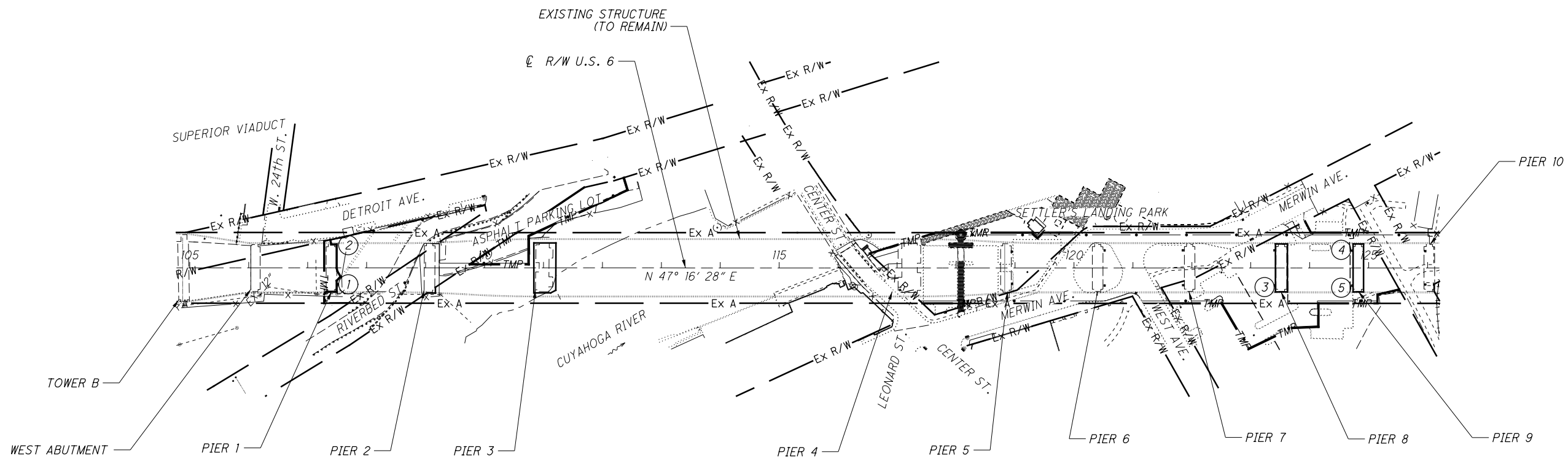
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SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	644	644	644	644	644	644	644	644										
			EDGE LINE, 6" (WHITE)	LANE LINE, 6"		CENTER LINE	CHANNELIZING LINE, 8"	STOP LINE	TRANSVERSE/DIAGONAL LINE	LANE ARROW	DOTTED LINE, 6"	BIKE LANE SYMBOL MARKING											
			FROM	TO		MILE	MILE	MILE	FT	FT	FT	EACH	FT	EACH									
37	CH-9	U.S. 6	127+50	131+46	RT.				396														
37	CH-10	U.S. 6	127+50	131+44	RT.				394														
37	CH-11	U.S. 6	127+96	131+33	LT.				337														
37	SL-2	U.S. 6	131+32		LT./RT.					60													
37	LA-42	U.S. 6	127+12		LT.						1												
37	LA-43	U.S. 6	128+50		LT.						1												
37	LA-44	U.S. 6	128+50		RT.						1												
37	LA-45	U.S. 6	129+11		LT.						1												
37	LA-46	U.S. 6	129+50		LT.						1												
37	LA-47	U.S. 6	129+50		RT.						1												
37	LA-48	U.S. 6	129+50		RT.						1												
37	LA-49	U.S. 6	129+50		RT.						1												
37	LA-50	U.S. 6	130+00		LT.						1												
37	LA-51	U.S. 6	130+00		RT.						1												
37	LA-52	U.S. 6	130+00		RT.						1												
37	LA-53	U.S. 6	130+00		RT.						1												
37	LA-54	U.S. 6	130+56		LT.						1												
37	LA-55	U.S. 6	130+56		RT.						1												
37	LA-56	U.S. 6	130+56		RT.						1												
37	LA-57	U.S. 6	130+56		RT.						1												
37	LA-58	U.S. 6	131+70		LT.						1												
37	LA-59	U.S. 6	131+00		LT.						1												
37	LA-60	U.S. 6	131+00		RT.						1												
37	LA-61	U.S. 6	131+00		RT.						1												
37	LA-62	U.S. 6	131+00		RT.						1												
37	BM-21	U.S. 6	127+26		LT.														1				
37	BM-22	U.S. 6	129+25		LT.														1				
37	BM-23	U.S. 6	130+85		LT.														1				
SUBTOTALS THIS SHEET						0.00	0.00	0.00	1127	60	0	21	0	3									
SUBTOTALS CARRIED FROM SHEET 28						0.12	0.59	0.62	1241	52	0	28	300	7									
SUBTOTALS CARRIED FROM SHEET 29						0.93	0.00	0.09	1204	0	406	13	600	13									
TOTALS CARRIED TO GENERAL SUMMARY						1.05	0.59	0.71	3572	112	406	62	900	23									

CALCULATED CJK CHECKED JMZ	PAVEMENT MARKING SUBSUMMARY	CUY - 6 - 14.56	30 128
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CALCULATED
CJK
CHECKED
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ITEM 611 - DRAINAGE STRUCTURE, MISC.: DRAINAGE REPAIRS
THIS ITEM SHALL INCLUDE MISCELLANEOUS REPAIRS LISTED BELOW.

- ① REPAIR CONDUIT, CATCH BASIN BURIED: ADJUST TO GRADE.
STA. 107+51, 28' RT
- ② REPLACE CATCH BASIN GRATE.
STA. 107+50, 25' LT
- ③ CLEAN CATCH BASIN OF DEBRIS.
STA. 124+40, 29' RT
- ④ CLEAN CATCH BASIN OF DEBRIS.
STA. 124+71, 29' LT
- ⑤ CLEAN CATCH BASIN OF DEBRIS, ADJUST CATCH BASIN GRATE FRAME.
STA. 124+72, 30' RT

ALL WORK SHALL BE IN ACCORDANCE WITH C&MS ITEM 611 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 611 - DRAINAGE STRUCTURE, MISC.: DRAINAGE REPAIRS.

DRAINAGE REPAIRS

CUY - 6 - 14.56

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REMOVE ALL EXISTING MARKINGS

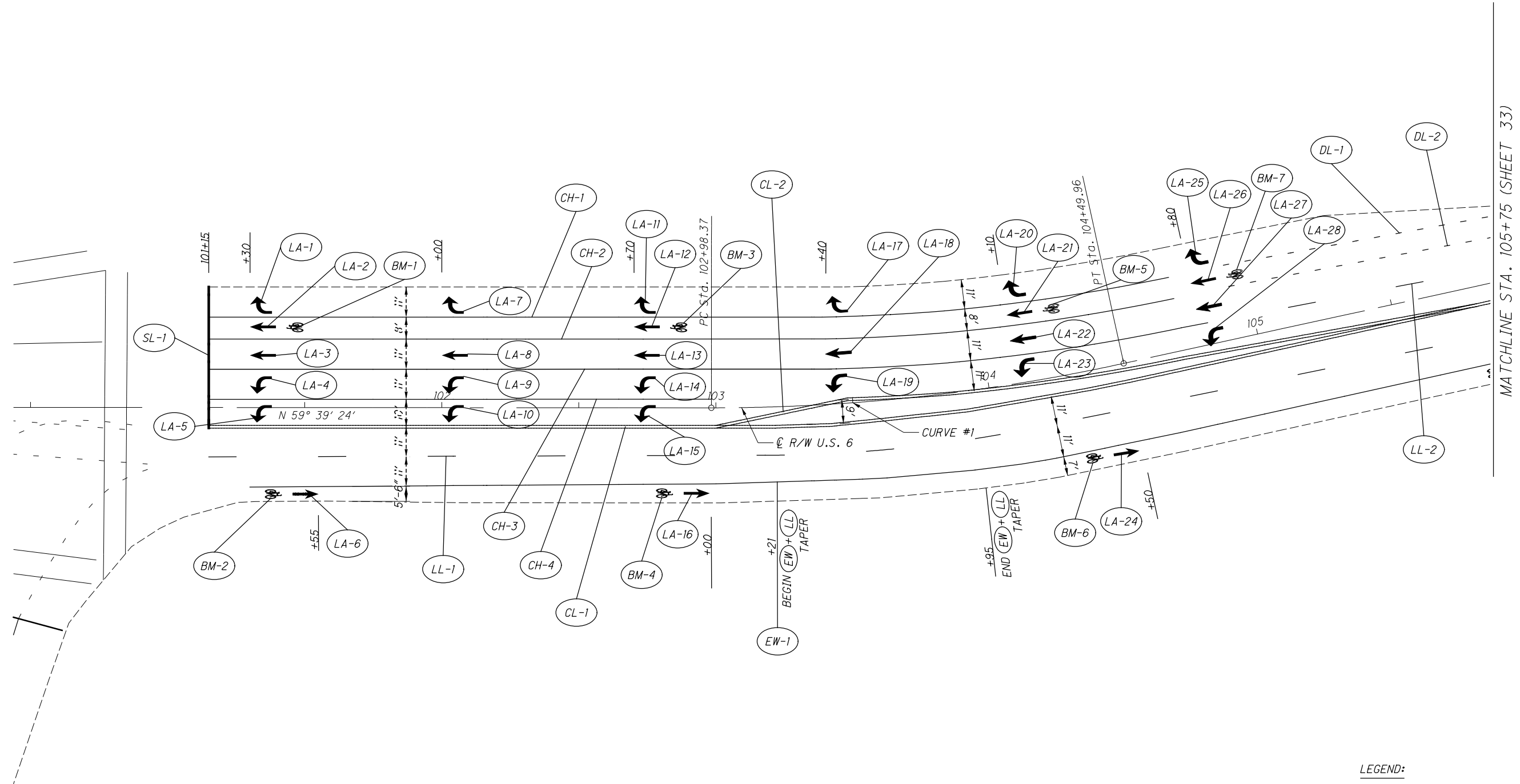


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SIGN AND PAVEMENT MARKING PLAN

CUY - 6 - 14.56

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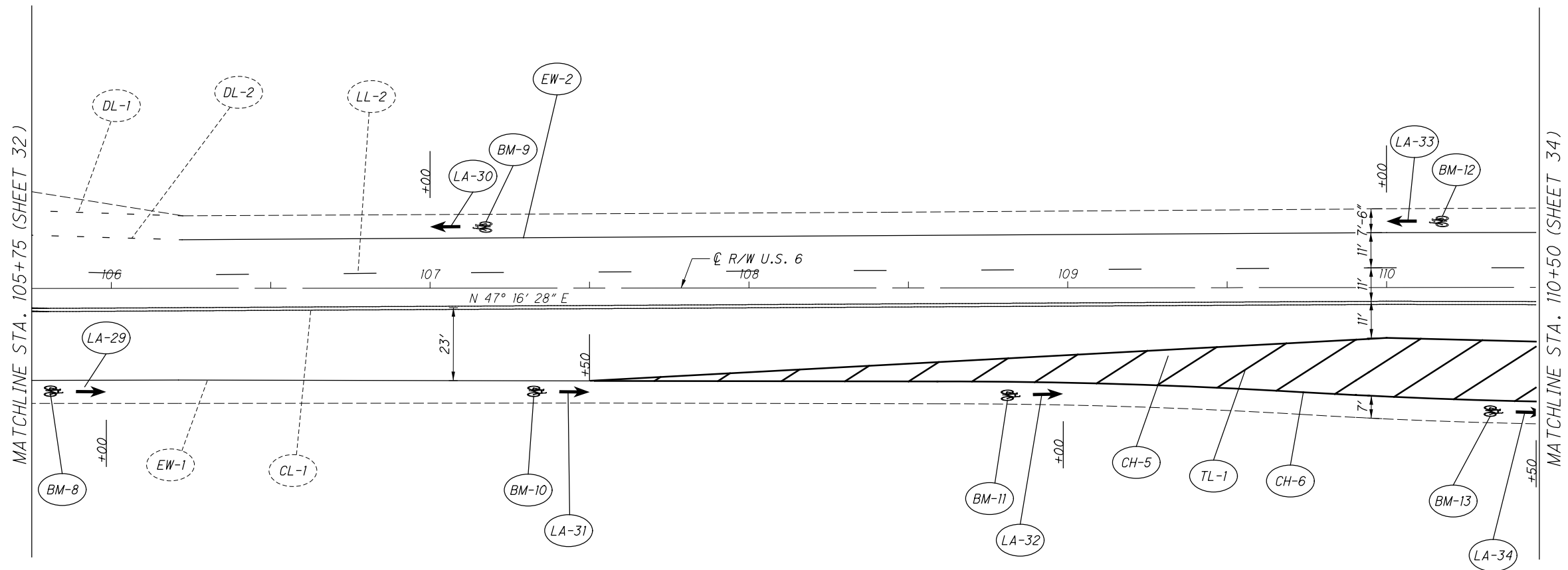


NOTE:
 VERIFY MARKINGS WITH THE CITY OF CLEVELAND
 PRIOR TO PLACING PROPOSED MARKINGS

LEGEND:
 BM - BIKE MARKING
 CH - CHANNELIZING LINE
 CL - CENTER LINE
 DL - DOTTED LINE
 EW - EDGE LINE, 6" (WHITE)
 LA - LANE ARROW
 LL - LANE LINE, 6"
 SL - STOP LINE
 TL - TRANSVERSE LINE

NOTE:
 ALL PAVEMENT MARKINGS
 ARE TO BE ITEM 644 -
 THERMOPLASTIC PAVEMENT
 MARKINGS.

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LEGEND:

- BM - BIKE MARKING
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, 6" (WHITE)
- LA - LANE ARROW
- LL - LANE LINE, 6"
- SL - STOP LINE
- TL - TRANSVERSE LINE

NOTE:

ALL PAVEMENT MARKINGS ARE TO BE ITEM 644 - THERMOPLASTIC PAVEMENT MARKINGS.

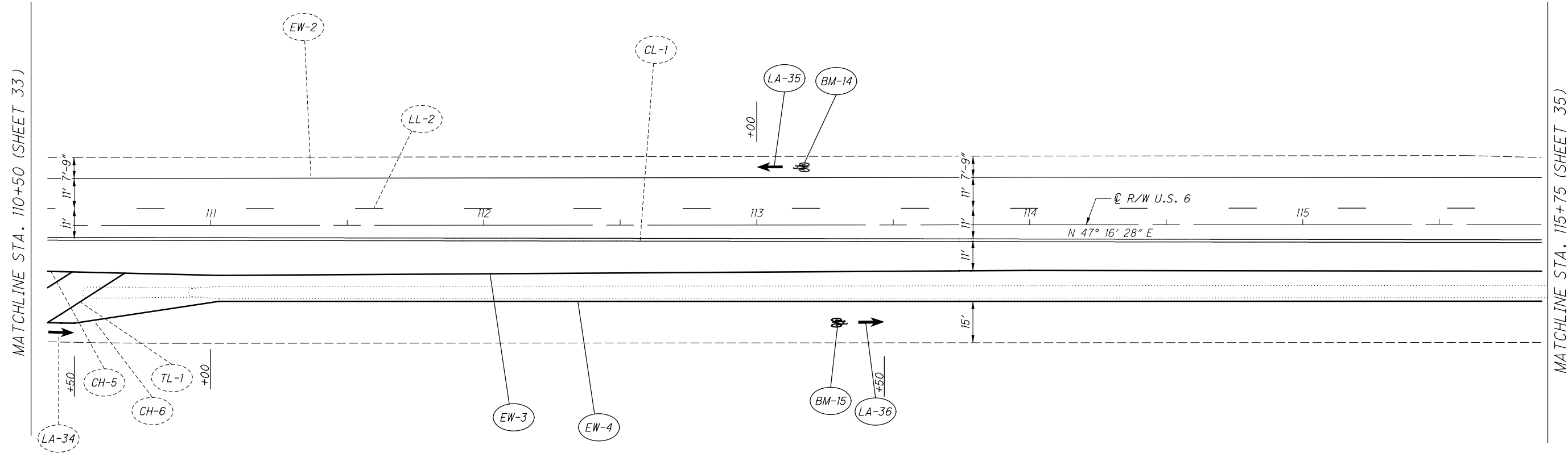
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JMZ

HORIZONTAL SCALE IN FEET

SIGN AND PAVEMENT MARKING PLAN

CUY - 6 - 14.56

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0 20 40
HORIZONTAL
SCALE IN FEET

SIGN AND PAVEMENT MARKING PLAN

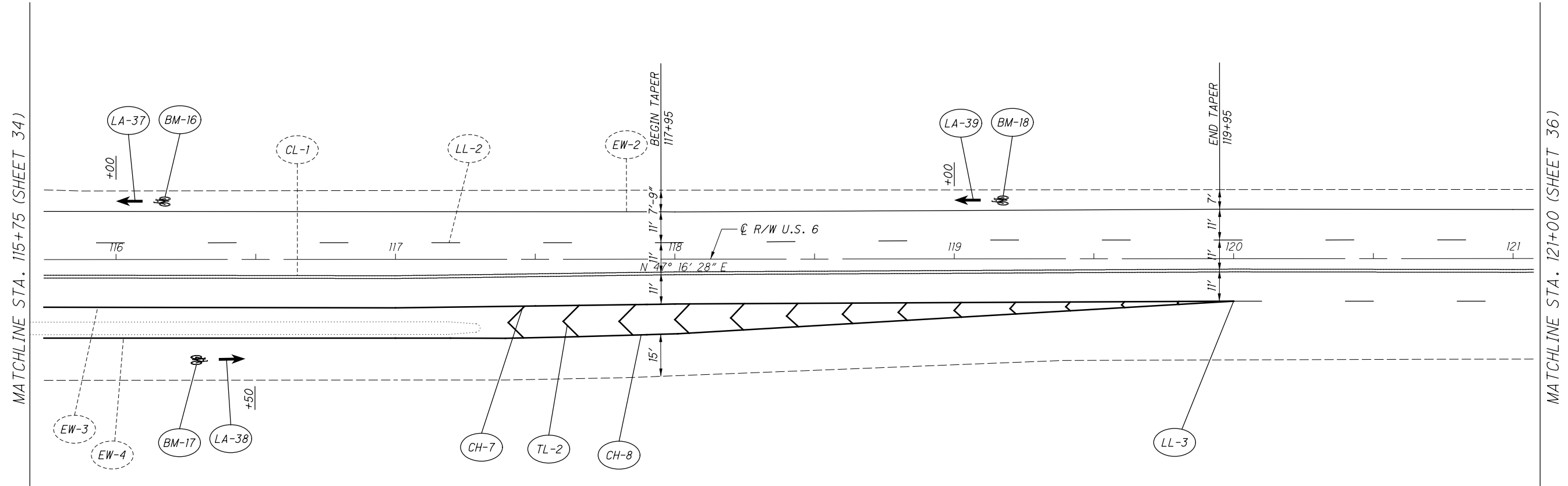
CUY-6-14.56

- LEGEND:**
- BM - BIKE MARKING
 - CH - CHANNELIZING LINE
 - CL - CENTER LINE
 - DL - DOTTED LINE
 - EW - EDGE LINE, 6" (WHITE)
 - LA - LANE ARROW
 - LL - LANE LINE, 6"
 - SL - STOP LINE
 - TL - TRANSVERSE LINE

NOTE:

ALL PAVEMENT MARKINGS
ARE TO BE ITEM 644 -
THERMOPLASTIC PAVEMENT
MARKINGS.

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- LEGEND:**
- BM - BIKE MARKING
 - CH - CHANNELIZING LINE
 - CL - CENTER LINE
 - DL - DOTTED LINE
 - EW - EDGE LINE, 6" (WHITE)
 - LA - LANE ARROW
 - LL - LANE LINE, 6"
 - SL - STOP LINE
 - TL - TRANSVERSE LINE

NOTE:

ALL PAVEMENT MARKINGS ARE TO BE ITEM 644 - THERMOPLASTIC PAVEMENT MARKINGS.

CALCULATED
CEM
CHECKED
JMZ

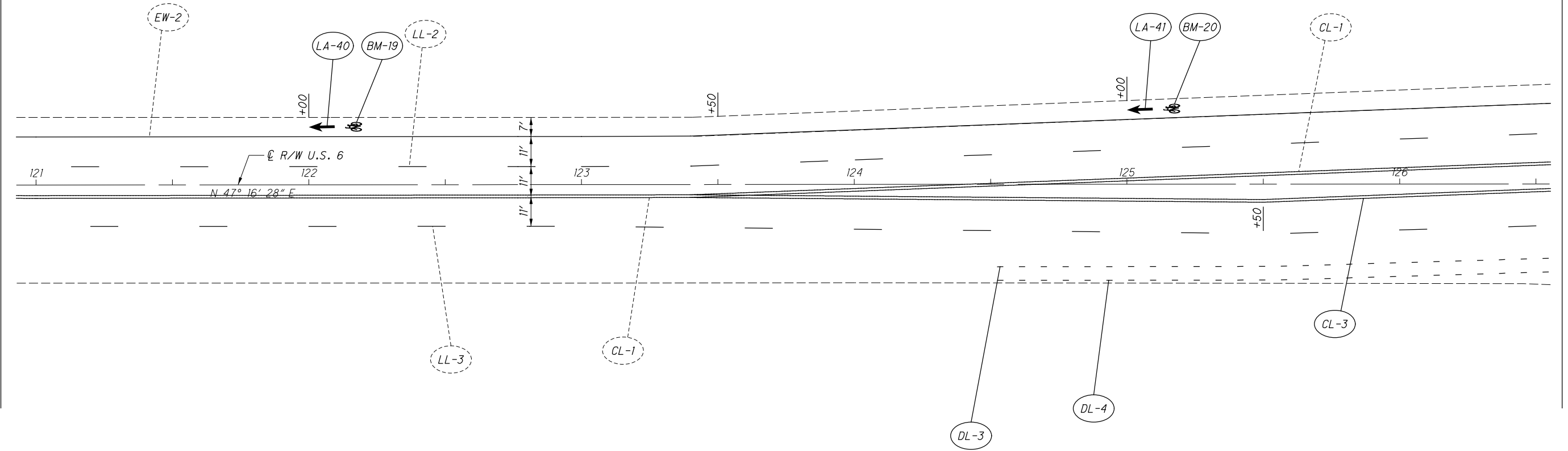
0 20 40
HORIZONTAL
SCALE IN FEET

SIGN AND PAVEMENT MARKING PLAN

CUY - 6 - 14.56

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MATCHLINE STA. 121+00 (SHEET 35)



MATCHLINE STA. 126+50 (SHEET 37)

CALCULATED
CEM
CHECKED
JMZ

0 20 40
HORIZONTAL
SCALE IN FEET

SIGN AND PAVEMENT MARKING PLAN

CUY-6-14.56

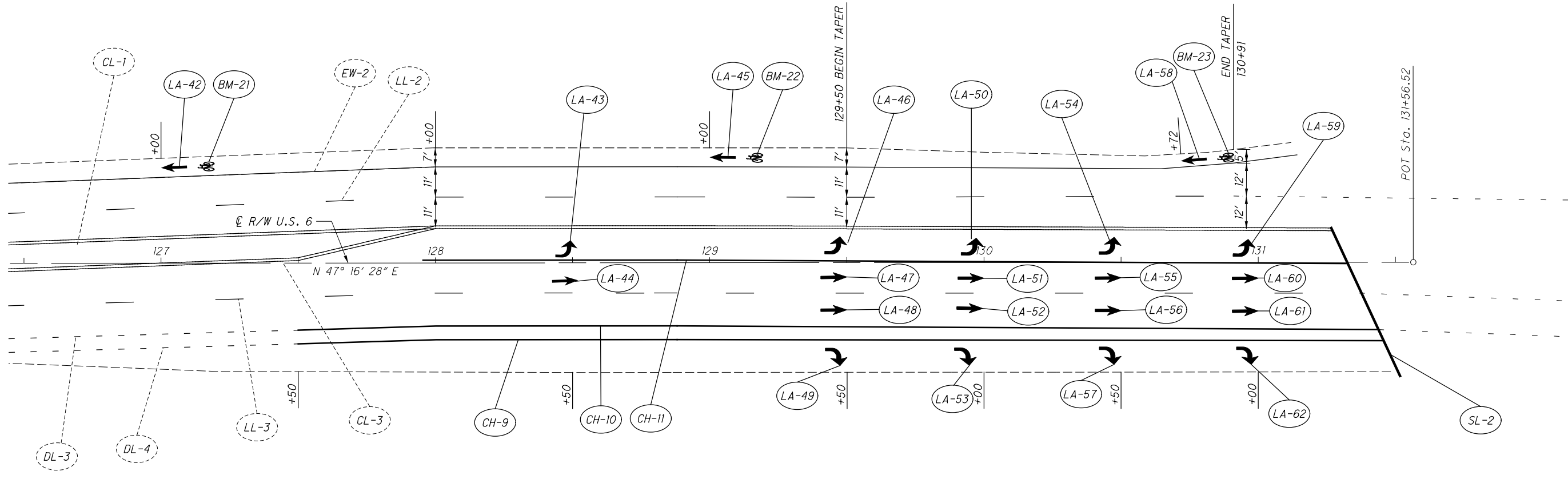
- LEGEND:**
- BM - BIKE MARKING
 - CH - CHANNELIZING LINE
 - CL - CENTER LINE
 - DL - DOTTED LINE
 - EW - EDGE LINE, 6" (WHITE)
 - LA - LANE ARROW
 - LL - LANE LINE, 6"
 - SL - STOP LINE
 - TL - TRANSVERSE LINE

NOTE:

ALL PAVEMENT MARKINGS ARE TO BE ITEM 644 - THERMOPLASTIC PAVEMENT MARKINGS.

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MATCHLINE STA. 126+50 (SHEET 36)



LEGEND:

- BM - BIKE MARKING
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, 6" (WHITE)
- LA - LANE ARROW
- LL - LANE LINE, 6"
- SL - STOP LINE
- TL - TRANSVERSE LINE

NOTE:

ALL PAVEMENT MARKINGS ARE TO BE ITEM 644 - THERMOPLASTIC PAVEMENT MARKINGS.

CALCULATED
CEM
CHECKED
JMZ

0 20 40
1" = 40'
HORIZONTAL
SCALE IN FEET

SIGN AND PAVEMENT MARKING PLAN

CUY - 6 - 14.56

625 LIGHTING, MISC.: BRIDGE-MOUNTED MARINE NAVIGATION LIGHTING, LED, AS PER PLAN

THIS ITEM CONSISTS OF RETROFITTING THE EXISTING TIDELAND, ML-155 NAVIGATION LIGHTING TO LED. CONTRACTOR TO EVALUATE EXISTING POWER SYSTEM INCLUDING WIRING, CONDUIT, CONTROL CENTER AND ALL EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS LISTED BELOW. EXISTING SYSTEM MAY BE REUSED IF REQUIREMENTS ARE MET OR THE SYSTEM MUST BE REPLACED.

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 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 HAVE ITS OWN CONTROLLER/POWER SUPPLY, HOUSED IN ITS OWN METAL ENCLOSURE ACCESSIBLE BY MAINTENANCE PERSONNEL, AS SHOWN ON THE BRIDGE PLANS. THE CONTROLLER SHALL OPERATE AT 120VAC, 60HZ AND HAVE ITS OWN DEDICATED CIRCUIT BREAKER IN A NEARBY PANELBOARD AS DETAILED IN THE BRIDGE PLANS. THE MARINE NAVIGATION LAMP SHALL OPERATE CONTINUOUSLY TWENTY-FOUR (24) HOURS PER DAY, WITH NO INTERVENING PHOTOCELL CONTROL. THE CONTROLLER SHALL PROVIDE ALARM STATUS OUTPUT IN THE FORM OF A BLUE LED CONFIRMATION LIGHT VISIBLE TO ODOT MAINTENANCE PERSONNEL FROM DECK LEVEL TO INDICATE DEFECTIVE OR INOPERATIVE MARINE NAVIGATION LAMP CONDITIONS.

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 WIRING AND CONDUITS.

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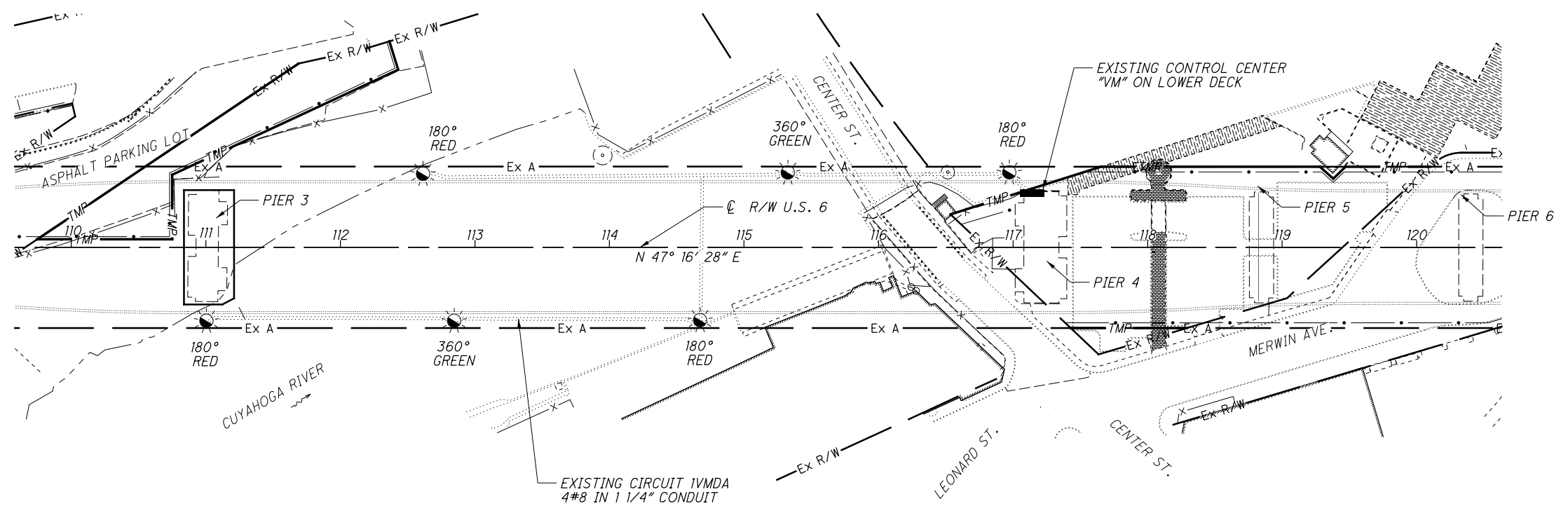
CALCULATED	CJK
	CHECKED
	JMZ

LIGHTING GENERAL NOTES

CUY -6 - 14.56





CALCULATED
CJK
CHECKED
JMZ



NOTES:

EXISTING NAVIGATIONAL LIGHTING: PIVOT TYPE CHANNEL MARKER LIGHT, TIDELAND ML-155 LATERN c/w 180°RED OR 360°GREEN LENS, TIDELAND TF-3AC FLASHER/LAMPCHANGER WITH SS-10-AC PHOTOELECTRIC SWITCH

LEGEND:

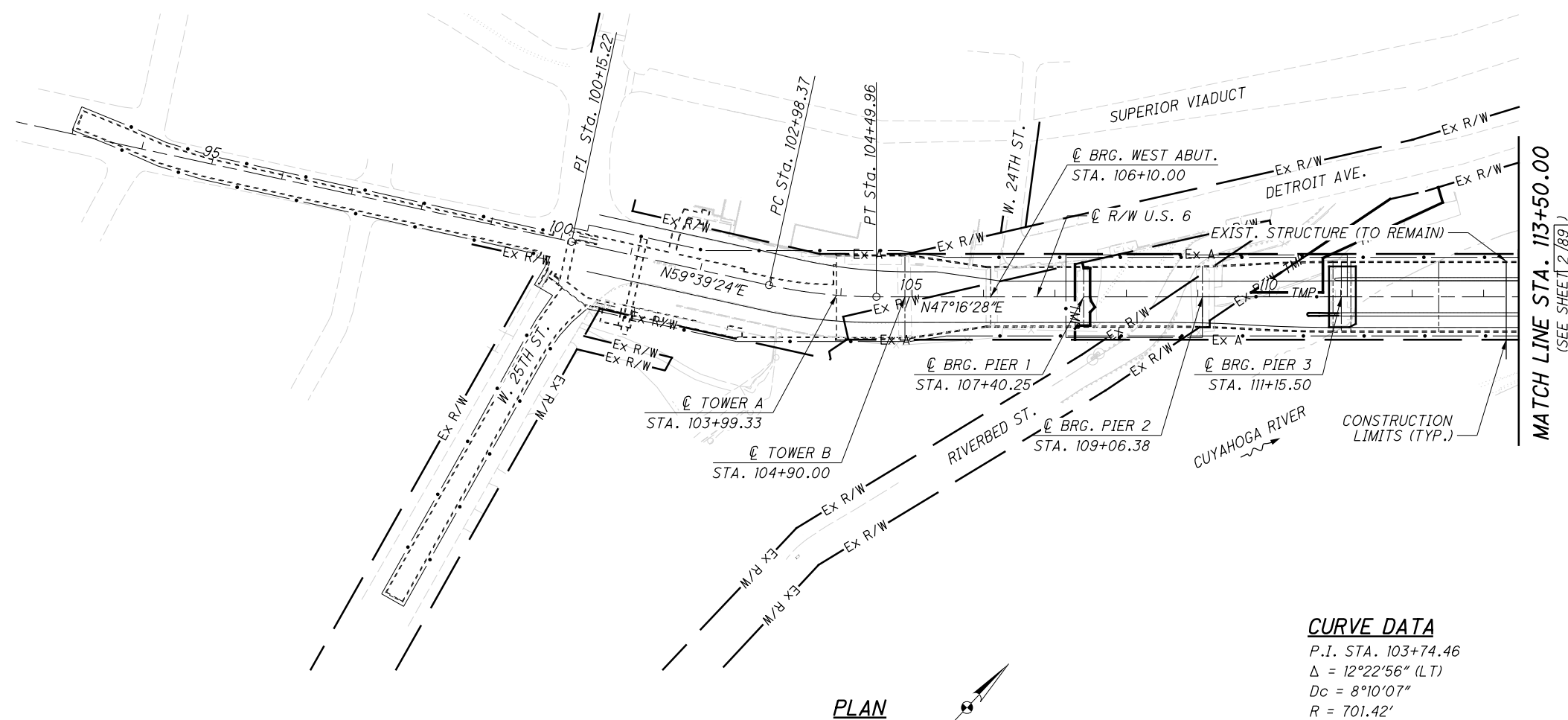
-  EXISTING NAVIGATIONAL LIGHTING
-  EXISTING CONTROL CENTER

LIGHTING PLAN

CUY -6 -14.56

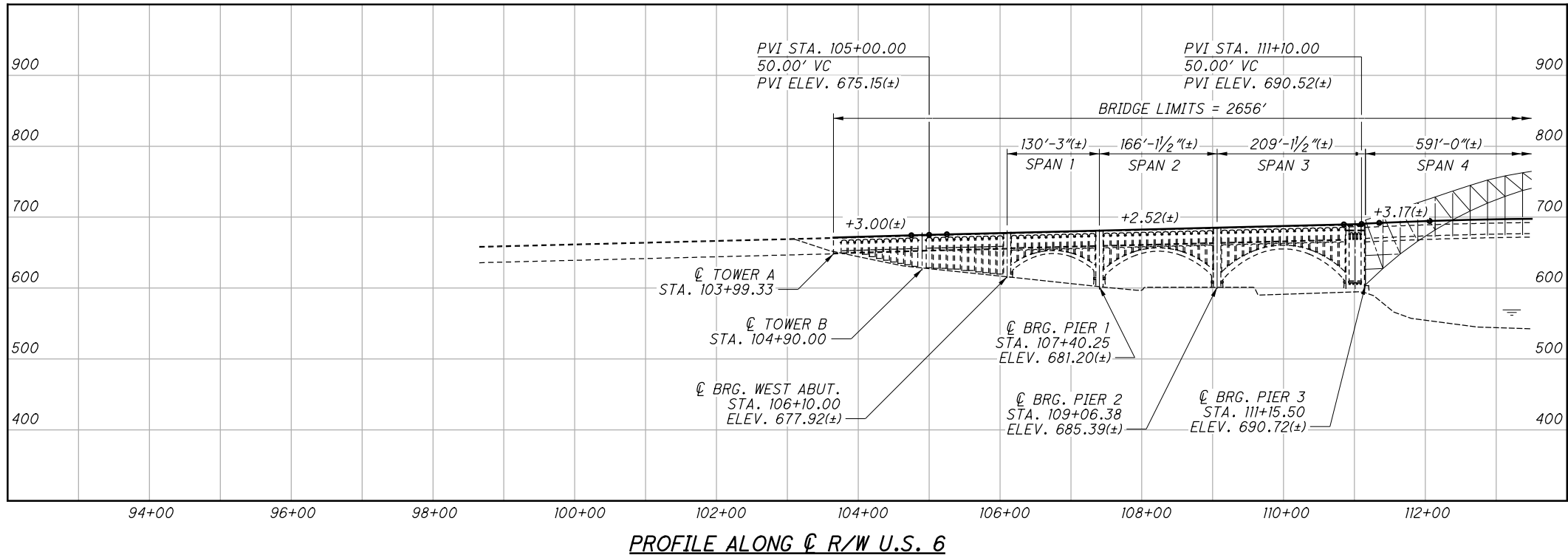
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CURVE DATA

P.I. STA. 103+74.46
 $\Delta = 12^\circ 22' 56''$ (LT)
 $D_c = 8^\circ 10' 07''$
 $R = 701.42'$
 $T = 76.09'$
 $L = 151.58'$
 $E = 4.11'$
 $C = 151.29'$
 $C.B. = N 53^\circ 27' 56'' E$



PROFILE ALONG $\text{\textcircled{C}}$ R/W U.S. 6

BENCHMARK DATA

CP-100 STA. 100+50.96,	ELEV. 667.88,	OFFSET 153.32' LT
CP-101 STA. 104+57.11,	ELEV. 656.31,	OFFSET 246.76' LT
CP-102 STA. 126+04.09,	ELEV. 579.60,	OFFSET 763.49' LT
CP-103 STA. 125+88.31,	ELEV. 579.62,	OFFSET 411.02' LT

FOR ADDITIONAL BENCHMARK INFORMATION. SEE SCHEMATIC PLAN, SHEET 2/128

NOTES

- UTILITIES NOT SHOWN FOR CLARITY. ALL EXISTING UTILITIES ARE TO REMAIN UNLESS NOTED OTHERWISE.

EXISTING STRUCTURE

SUPERSTRUCTURE TYPE:
APPROACH SPANS:
 CONCRETE ARCH SPANS SUPPORTING A DOUBLE DECK ROADWAY CONSISTING OF REINFORCED CONCRETE COLUMNS, FLOORBEAMS AND DECKS.
MAIN SPAN:
 THREE HINGED STEEL ARCH SUPPORTING A DOUBLE DECK ROADWAY CONSISTING OF STEEL COLUMNS, FLOORBEAMS, STRINGERS AND A REINFORCED CONCRETE UPPER DECK.
SUBSTRUCTURE TYPE:
PIERS:
 REINFORCED CONCRETE PIERS WITH ARCH RIBS, WALLS AND COLUMNS.
ABUTMENTS:
 REINFORCED DEEP CONCRETE ABUTMENTS WITH ARCH RIBS, WALLS AND COLUMNS.
SPANS: WEST APPROACH: 130'-3"±, 166'-1/2"±, 209'-1/2"±
 MAIN SPAN: 591'-0"±
 EAST APPROACH: 178'-0"±, 3 @ 155'-9"±, 130'-6"±, 120'-4 1/2"±, 80'-3"±, 123'-0"±, 80'-1/2"±
ROADWAY:
APPROACH SPANS:
 VARIES, 58'-0"± MIN. TO 80'-0"± MAX. F/F CURB
MAIN SPANS:
 44'-9"± F/F CURB WITH ONE ADJACENT ROADWAY WITH 16'-0" F/F CURB
LOADING: HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING, FWS = 30 PSF
SKEW: NONE
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
CROWN: 0.0156± FT/FT
STRUCTURAL FILE NUMBER: 1800930
DATE BUILT: 1917 (REHABILITATED 1967, 1994, 2015)
DISPOSITION: TO BE REHABILITATED

PROPOSED WORK

- BRIDGE DECK OVERLAY USING HYDRODEMOLITION AND MICRO SILICA MODIFIED CONCRETE OVERLAY.
- CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION.
- FIBER WRAP LOCATIONS OVER PUBLIC ACCESS AREAS.



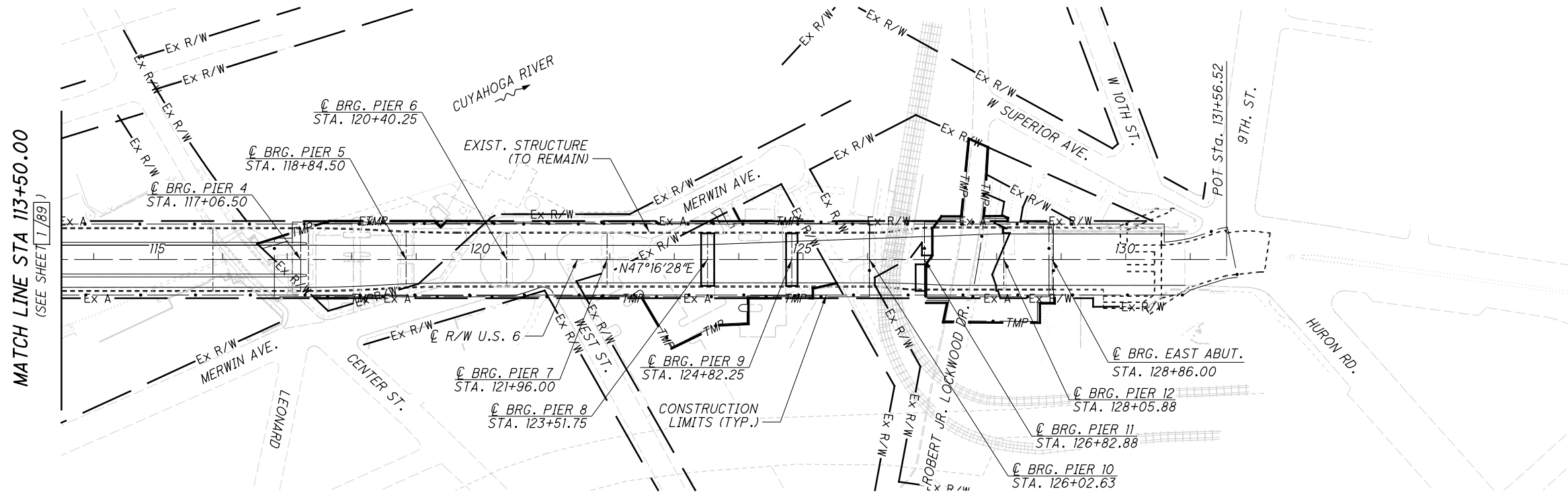
DESIGNED	DEA	CHECKED	BFS
DRAWN	DEA	REVISED	
REVIEWED	DWJ	STRUCTURE FILE NUMBER	1800930
DATE	04/18/18		

CUYAHOGA COUNTY
 STA. 103+94.01
 STA. 128+86.00

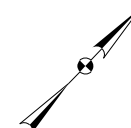
SITE PLAN - 1
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

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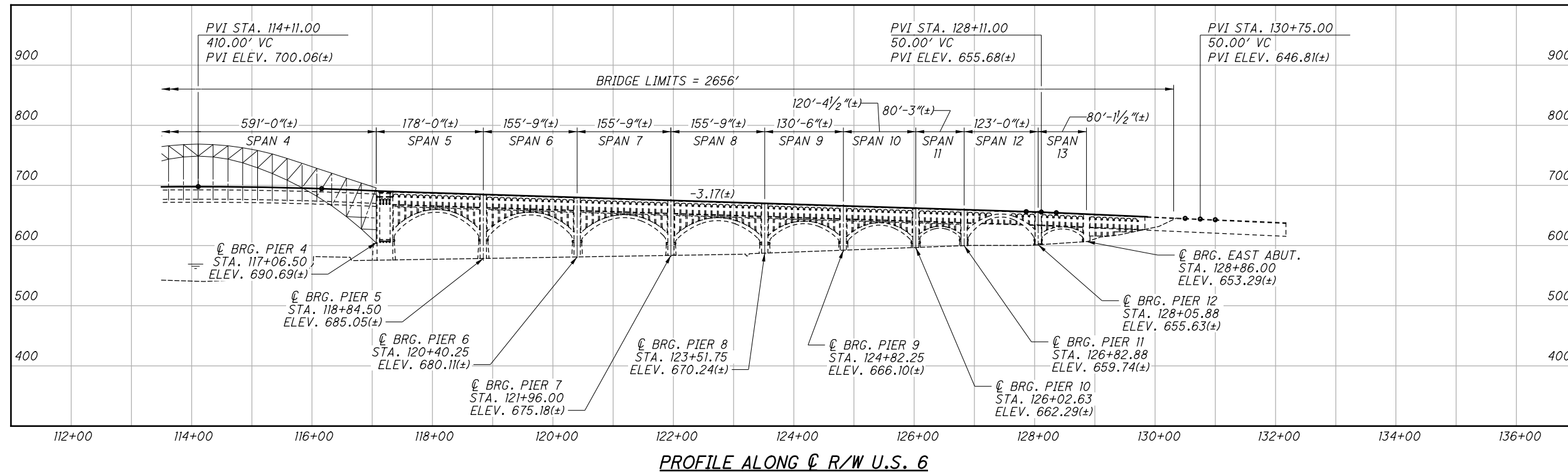


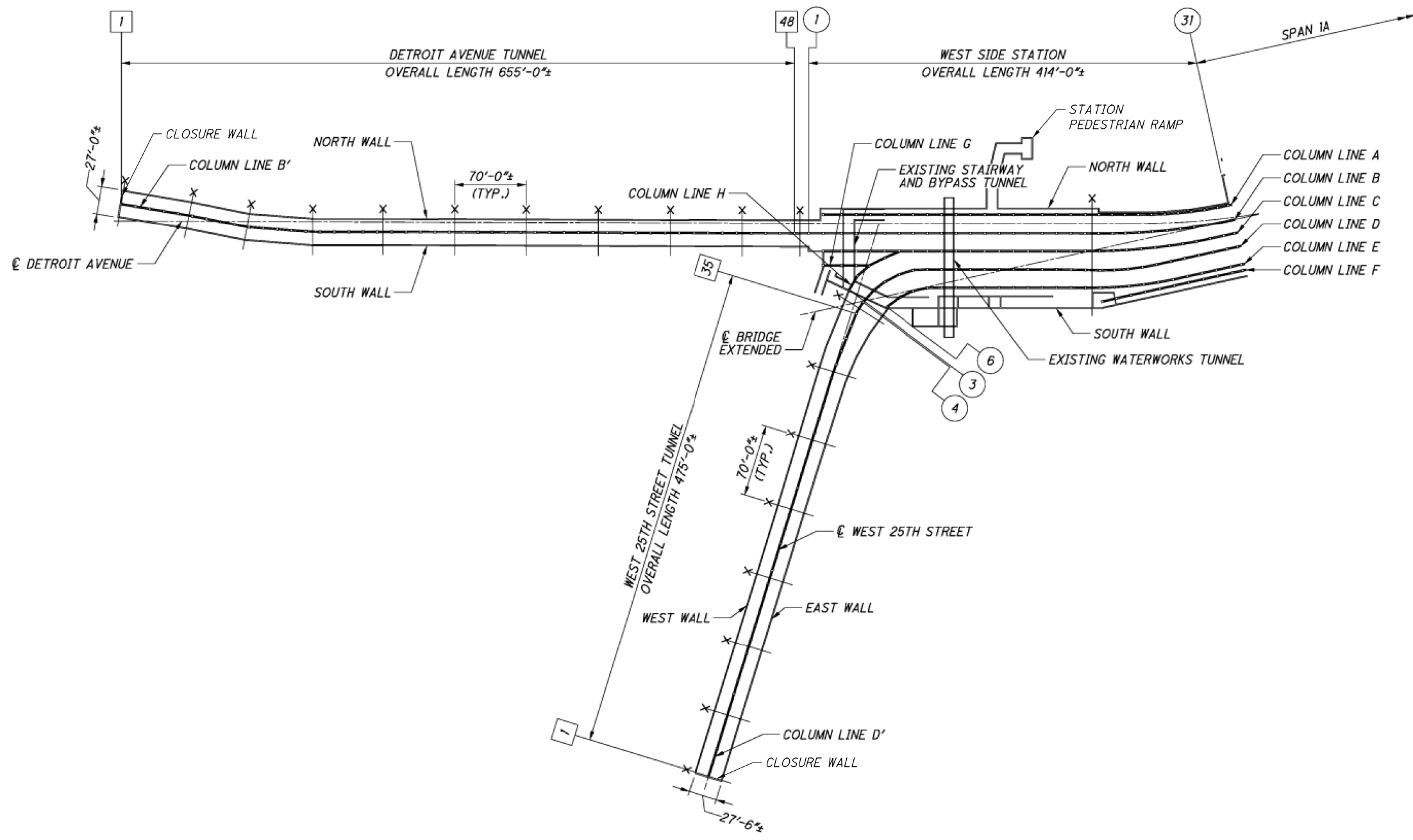
PLAN



NOTES

1. UTILITIES NOT SHOWN FOR CLARITY. ALL EXISTING UTILITIES ARE TO REMAIN UNLESS NOTED OTHERWISE.





PLAN

LEGEND:

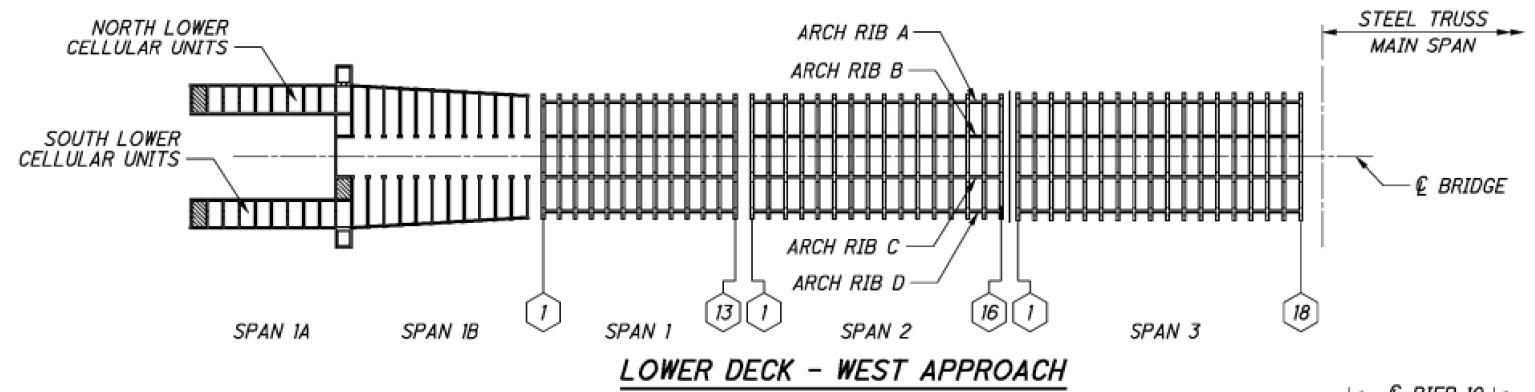
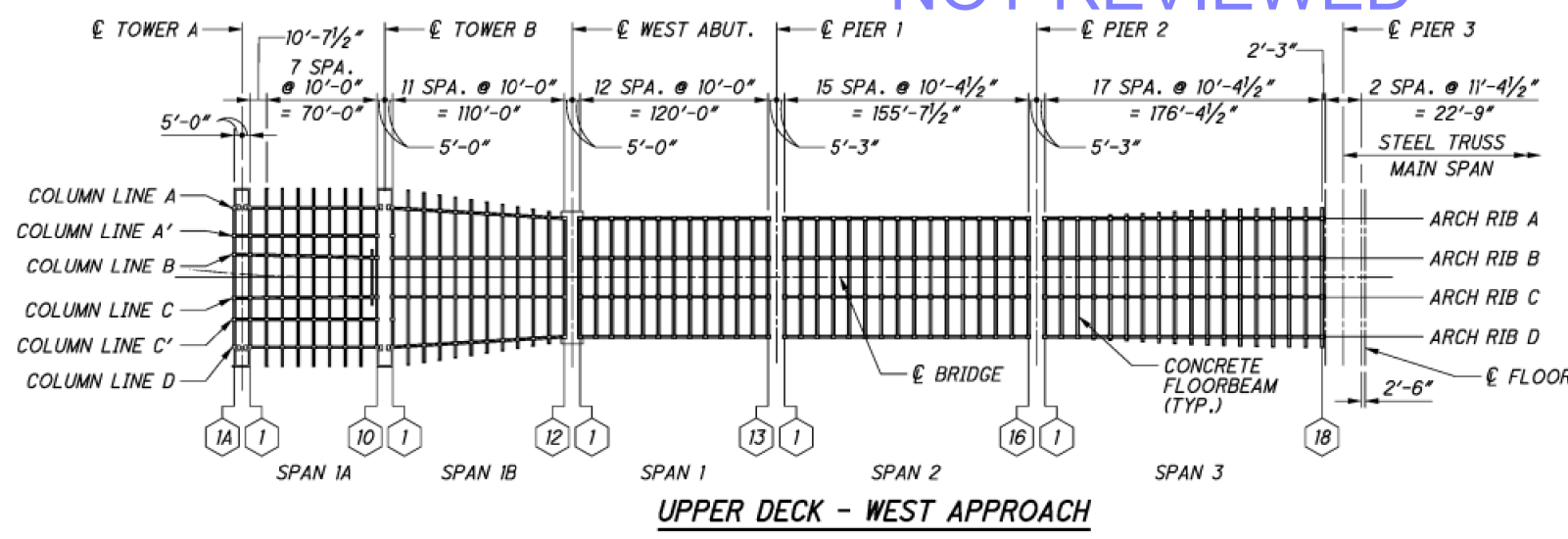
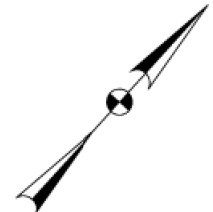
- # TUNNEL COLUMN NUMBER
- ⊕ WEST STATION COLUMN NUMBER
- × CONSTRUCTION JOINT

NOTES:

1. NO PROPOSED WORK SHOWN ON THIS SHEET.
2. FOR STRUCTURE GENERAL NOTES, SEE SHEETS 5/89 TO 9/89
3. ALL DIMENSIONS ARE HORIZONTAL.

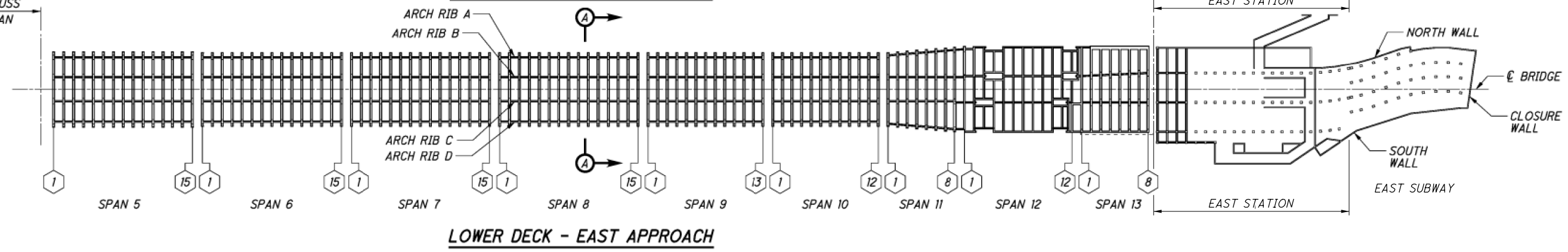
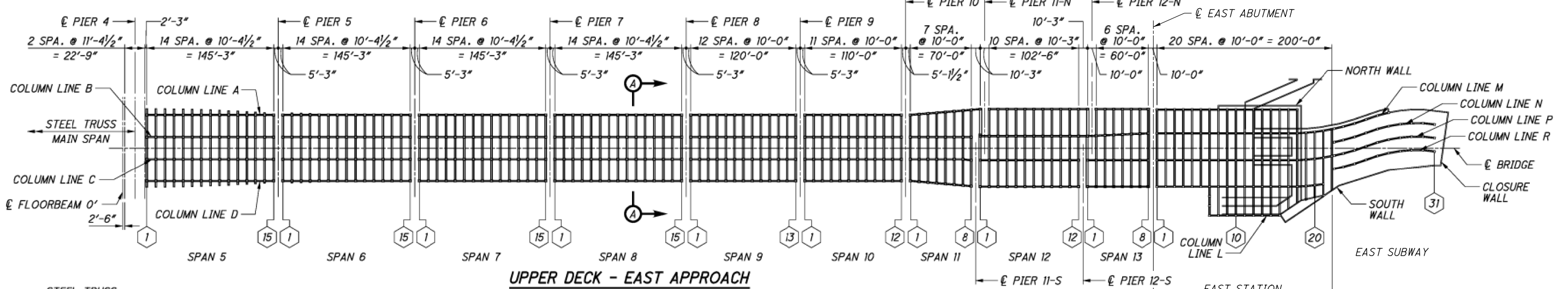
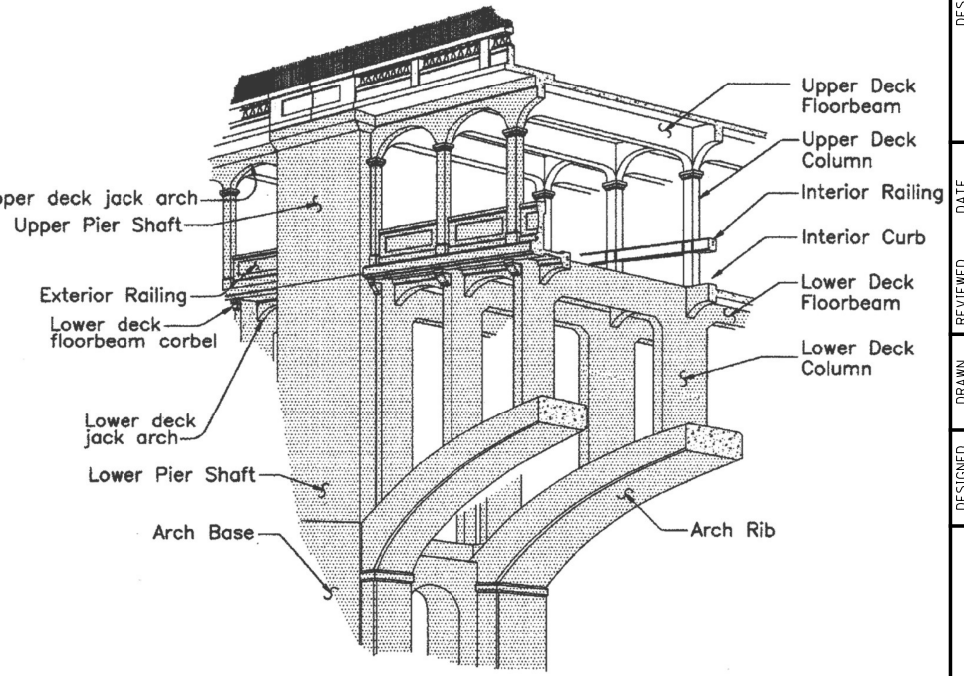
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<p>CUY-6-14.56</p> <p>PID No. 99972</p>	<p>MEMBER IDENTIFICATION PLAN (1 OF 2)</p> <p>BRIDGE NO. CUY-6-1456</p> <p>U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER</p>	<p>DESIGN AGENCY</p> <p>Pennoni</p>	
<p>DESIGNED</p> <p>BPS</p> <p>CHECKED</p> <p>WUJ</p>	<p>DRAWN</p> <p>BPS</p> <p>REVISED</p>	<p>REVIEWED</p> <p>DWJ</p>	<p>DATE</p> <p>04/18/18</p> <p>STRUCTURE FILE NUMBER</p> <p>1800930</p>
<p>3 / 89</p>	<p>42</p> <p>128</p>		



LEGEND:
 # FLOORBEAM LINE NUMBER & COLUMN LINE NUMBER

NOTES:
 1. NO PROPOSED WORK SHOWN ON THIS SHEET.
 2. FOR STRUCTURE GENERAL NOTES, SEE SHEETS 5/89 TO 9/89
 3. ALL DIMENSIONS ARE HORIZONTAL AND (±).



PLAN

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DESIGN AGENCY: Pennoni
 DATE: 04/18/18
 REVISED: DWJ
 STRUCTURE FILE NUMBER: 1800930

MEMBER IDENTIFICATION PLAN (2 OF 2)
 BRIDGE NO.: CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

REFER TO THE FOLLOWING STANDARD DRAWINGS:

EXJ-4-87 DATED (REVISED) 01-19-2018

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

800 DATED 01-19-2018
843 DATED 04-18-2003
844 DATED 07-17-2015
848 DATED 01-20-2017

DESIGN SPECIFICATIONS:

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

DESIGN LOADING:

UPPER DECK:

HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING FWS = 30 PSF

LOWER DECK:

ONE 8-TON VEHICLE WITH 10% IMPACT, 100 PSF, OR A 6-TON MANLIFT WITH 136.5% INCREASE IN ALLOWABLE STRESS, WHICHEVER IS GREATER

DESIGN DATA (NEW MATERIAL):

SELF-CONSOLIDATING CONCRETE - COMPRESSIVE STRENGTH 4500 PSI (JACK ARCHES, COLUMNS, CORBELS, AND PIERS)

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

DECK PROTECTION METHOD:

MICRO-SILICA MODIFIED CONCRETE OVERLAY

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 AND 105.02.

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.

EXISTING STRUCTURE PLANS:

ORIGINAL PLANS DATED 1912
ORIGINAL SHOP DRAWINGS DATED 1914-1917
REHABILITATION PLANS DATED 1966
REHABILITATION PLANS DATED 1994
SIDEWALK ADDITION PLANS DATED 2003

EXISTING STRUCTURE PLANS (CONT.):

DIGITAL COPIES OF THE PLANS MAY BE OBTAINED BY PROSPECTIVE BIDDERS AT THE RECORDS ROOM OF THE CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS, 2079 E 9TH STREET, CLEVELAND, OHIO 44115

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

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

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

MAINTENANCE OF TRAFFIC:

MAINTENANCE OF TRAFFIC FOR THE STRUCTURE WORK SHALL BE COORDINATED WITH THE OVERALL PROJECT. REFER TO THE MAINTENANCE OF TRAFFIC NOTES AND DETAILS ELSEWHERE IN THE PLANS.

NOTIFICATION:

THE CONTRACTOR SHALL NOTIFY IN WRITING THE FOLLOWING AGENCIES AT LEAST 14 DAYS PRIOR TO THE START OF CONSTRUCTION, AND AT LEAST 72 HOURS BEFORE IMPLEMENTING ANY SUBSTANTIAL CHANGE IN TRAFFIC PATTERN OR TEMPORARY LANE CLOSURES:

- THE OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 PUBLIC INFORMATION OFFICE
- THE CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS PUBLIC INFORMATION OFFICE
- THE CITY OF CLEVELAND DEPARTMENT OF PUBLIC SAFETY
- THE CITY OF CLEVELAND DIVISION OF POLICE
- THE CITY OF CLEVELAND DIVISION OF FIRE
- THE CITY OF CLEVELAND DIVISION OF EMERGENCY MEDICAL SERVICES

NOTIFICATION (CONT.):

- THE CITY OF CLEVELAND DIVISION OF TRAFFIC ENGINEERING
- THE CITY OF CLEVELAND DIVISION OF AIR QUALITY
- THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
- THE CLEVELAND BOARD OF EDUCATION
- THE CUYAHOGA COUNTY BOARD OF DEVELOPMENTAL DISABILITIES
- THE UNITED STATES POSTAL SERVICE
- THE CITY OF CLEVELAND, BUREAU OF BRIDGES AND DOCKS
- NORTHEAST OHIO REGIONAL SEWER DISTRICT
- THE CLEVELAND/CUYAHOGA PORT AUTHORITY
- THE ARMY CORPS OF ENGINEERS
- LAKE CARRIERS' ASSOCIATION

NOTIFICATION (CONT.):

- HISTORIC WAREHOUSE DISTRICT DEVELOPMENT CORPORATION
- FLATS FORWARD

THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE DETROIT-SUPERIOR BRIDGE.

RIGHT-OF-WAY:

ALL NECESSARY CONSTRUCTION WORK FOR THIS PROJECT IS TO BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY OR EASEMENTS, WITHIN TEMPORARY RIGHT OF WAY, OR WITHIN STATE PROPERTY.

WORK PERFORMED IN TUNNELS AND ON BRIDGE LOWER DECK:

THE CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS CURRENTLY STORES MANY ITEMS, INCLUDING SNOW FENCE, BENCHES, FOWLER JOB BOXES, LADDERS AND MISCELLANEOUS OTHER ITEMS ON THE LOWER DECK LEVEL OF THE BRIDGE. DURING CONSTRUCTION, THE CONTRACTOR MAY CAREFULLY MOVE THESE ITEMS AS NEEDED IN ORDER TO GAIN ACCESS TO LOCATIONS OF PROPOSED WORK.

WORK PERFORMED ON ADJACENT MEMBERS:

THE SCOPE OF REPAIR WORK INVOLVES A LARGE AMOUNT OF REMOVAL OF CONCRETE FROM STRUCTURAL MEMBERS. IN ORDER TO PRESERVE THE STRUCTURAL INTEGRITY OF THE BRIDGE, THE CONTRACTOR MUST COMPLY WITH THE FOLLOWING REQUIREMENTS:

- 1. THE CONTRACTOR IS PROHIBITED FROM PERFORMING WORK ON COLUMNS AND CONNECTING JACK ARCHES AT THE SAME TIME.
2. THE CONTRACTOR IS PROHIBITED FROM PERFORMING WORK ON ADJACENT JACK ARCHES WHICH CONNECT TO THE SAME COLUMN AT THE SAME TIME.
3. THE CONTRACTOR IS PROHIBITED FROM PERFORMING WORK ON ADJACENT COLUMNS WHICH CONNECT TO THE SAME JACK ARCH AT THE SAME TIME.
4. THE CONTRACTOR IS PROHIBITED FROM PERFORMING WORK ON ADJACENT FLOOR BEAMS WHICH CONNECT TO THE SAME COLUMN AT THE SAME TIME.
5. THE CONTRACTOR IS PROHIBITED FROM PERFORMING WORK ON ADJACENT FLOOR BEAMS LOCATED IN THE SAME BAY AT THE SAME TIME.

WORK DESCRIBED ABOVE INCLUDES CONCRETE PATCHING, JACK ARCH REPLACEMENT, AND COLUMN REPLACEMENT. SEQUENCING OF WORK IS SUBJECT TO THE APPROVAL OF THE ENGINEER.

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Table with columns: DESIGNED, DRAWN, REVIEWED, DATE, STRUCTURE FILE NUMBER. Values: WJV, TEC, DWJ, 04/18/18, 1800930.

GENERAL NOTES (1 OF 5) BRIDGE NO. CUY-6-1456 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56 PID No. 99972

UTILITY PROTECTION REQUIREMENTS:

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE PERFORMING WORK ACTIVITIES AROUND EXPOSED UTILITIES ON THE LOWER DECK AND IN THE TUNNELS AND STATIONS. EXPOSED UTILITIES INCLUDE EXISTING CLEVELAND PUBLIC POWER (CPP) ELECTRIC LINES MOUNTED TO THE LOWER DECK, THE UPPER FRAMING SYSTEM, AND IN THE TUNNELS AND EXISTING O.B.T. DUCTS MOUNTED TO THE UPPER FRAMING SYSTEM, AS SHOWN ON THE CONCRETE REPAIR DETAILS WITHIN THE PLANS. THE CONTRACTOR MUST ENSURE THAT THESE UTILITIES ARE NOT DAMAGED AS A RESULT OF WORK ACTIVITIES OR THE OPERATION OF EQUIPMENT, AND THE CONTRACTOR MAY BE REQUIRED TO PROVIDE TEMPORARY PROTECTIVE OR SUPPORT SYSTEMS IN ORDER TO PREVENT DAMAGE TO UTILITY LINES AND THEIR SUPPORTS DURING STRUCTURE REPAIR OPERATIONS.

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE PERFORMING WORK ACTIVITIES AROUND THE AERIAL UTILITIES LOCATED ON THE GROUND BELOW SPANS 2, 6, 7, AND 8. AERIAL UTILITIES INCLUDE CLEVELAND PUBLIC POWER (CPP) POWER CONDUCTORS IN SPAN 2 AND FIRST ENERGY (CEI) POWER CONDUCTORS IN SPANS 6, 7, AND 8. THE CONTRACTOR MUST ENSURE THAT THESE UTILITIES ARE PROTECTED DURING WORK ACTIVITIES. IF THE UTILITY OWNER(S) ARE REQUIRED TO PERFORM ANY WORK TO ENSURE PROTECTION OF THEIR UTILITY(IES), THE CONTRACTOR AND UTILITY OWNER(S) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM. ALL CONTRACTORS/ OWNERS MUST KNOW AND COMPLY WITH OCCUPATIONAL SAFETY HEALTH ADMINISTRATION (OSHA) SAFE-WORKING CLEARANCES BETWEEN PERSONS OR ANY CONDUCTIVE OBJECT AND ENERGIZED BARE WIRES. DO NOT ALLOW ANY CONSTRUCTION DEBRIS TO FALL ONTO THE UTILITY LINES.

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

SUMMARY OF PROPOSED REHABILITATION WORK:

THE FOLLOWING LIST CONTAINS MAJOR ITEMS OF WORK INCLUDED IN THESE PLANS FOR THE REHABILITATION OF THIS STRUCTURE:

1. REMOVAL OF THE EXISTING CONCRETE WEARING SURFACE BY HYDRO-DEMOLITION AND PLACING A NEW MICRO-SILICA MODIFIED CONCRETE OVERLAY.
2. PATCHING AND INSTALLING GALVANIC ANODES IN THE EXISTING SUBSTRUCTURE AND SUPERSTRUCTURE. LOCATIONS TO BE REPAIRED INCLUDE THE TUNNELS, STATIONS, APPROACH SPANS, SPANS 1-3, SPANS 5-13, AND THE PIERS.
3. REPLACE CONCRETE COLUMNS AND CAPITALS, CONCRETE JACK ARCHES, AND CONCRETE CORBELS AS SHOWN IN THE PLANS.
4. INSTALL COMPOSITE FIBER WRAP ON LOWER DECK FLOOR BEAMS AND ARCH RIBS OVER PUBLIC ACCESS AREAS.
5. INSTALL A MASONRY BLOCK WALL TO PREVENT VANDALS FROM ACCESSING THE BRIDGE.
6. REPAIR THE BRIDGE OPERATOR'S CAR SHELTER ADJACENT TO PIER 4.

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

DESCRIPTION: THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED.

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

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.

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

PROTECTION OF VEHICULAR, PEDESTRIAN AND RIVER TRAFFIC: THE CONTRACTOR IS TO PROVIDE ADEQUATE PROTECTION FOR THE TRAVELING PUBLIC BELOW ALL LOCATIONS OF REMOVAL. SAFE PASSAGE FOR VEHICULAR, PEDESTRIAN AND RIVER TRAFFIC MUST BE MAINTAINED AT ALL TIMES DURING DEMOLITION. DEMOLISHED MATERIAL IS ONLY PERMITTED TO DROP TO THE GROUND PROVIDED THAT THE GROUND IS PROTECTED BY A MINIMUM OF 3/4" PLYWOOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING BOTH THE GROUND SURFACE AND THE REBOUND AREA. AFTER COMPLETION, THE CONTRACTOR SHALL RESTORE THE AREA TO EQUAL OR BETTER CONDITIONS IN ACCORDANCE WITH CMS 107.10.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

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

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

DESCRIPTION: REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. A QUANTITY OF **2500 POUNDS** HAS BEEN ADDED TO THE ESTIMATED QUANTITIES FOR ADDITIONAL REPAIRS TO BE PERFORMED AS DIRECTED BY THE ENGINEER.

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

ITEM 511 – CONCRETE, MISC.: PIER 6 LOWER DECK SHAFT REPAIR:

DESCRIPTION: THIS ITEM SHALL CONSIST OF REPAIRING THE PIER 6 LOWER DECK SHAFT IN ACCORDANCE WITH DETAILS IN THE STRUCTURE PLANS ON SHEET [75]89].

REMOVE THE EXISTING CONCRETE TO THE LIMITS SHOWN IN ACCORDANCE WITH ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

THE PIER 6 LOWER DECK SHAFT REPAIR SHALL BE PERFORMED WITH SELF-CONSOLIDATING CONCRETE (SCC) IN ACCORDANCE WITH CMS 705.12. THE CONTRACTOR SHALL FURNISH MATERIALS ACCORDING TO ODOT'S QUALIFIED PRODUCTS LIST (QPL) AND WHICH MEET THE ACCEPTANCE REQUIREMENTS DETAILED IN THE GENERAL NOTES ON SHEET [7]89]. USE FORMS TO ENSURE ADHERENCE OF REPAIR AND TO MATCH ORIGINAL SURFACE PROFILE AS SHOWN IN THE PLANS.

ALL NEW REINFORCEMENT SHALL BE EPOXY COATED AND FURNISHED PER CMS 509, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL DOWEL HOLES SHALL BE DRILLED AND GROUTED WITH NON-SHRINK, NONMETALLIC GROUT IN ACCORDANCE WITH CMS 510, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL GALVANIC ANODES SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
511	EACH	CONCRETE, MISC.: PIER 6 LOWER DECK SHAFT REPAIR

ITEM 511 – CONCRETE, MISC.: JACK ARCH REPLACEMENT:

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING PORTIONS OF JACK ARCHES DESIGNATED TO BE REPLACED TO THE LIMITS SHOWN IN THE PLANS OR TO THE LIMITS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE DETAILS IN THE STRUCTURE PLANS. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS DETAILED IN THE WORK PERFORMED TO ADJACENT MEMBERS GENERAL NOTE ON SHEET [5]89].

ITEM 511 – CONCRETE, MISC.: JACK ARCH REPLACEMENT (CONT.):

PRIOR TO REMOVING THE EXISTING JACK ARCH DESIGNATED TO BE REPLACED, THE CONTRACTOR SHALL DESIGN AND FURNISH TEMPORARY SHORING TO SUPPORT THE EXISTING SUPERSTRUCTURE, INCLUDING LIVE LOAD AS APPLICABLE, DURING REPAIR OPERATIONS IN ACCORDANCE WITH ITEM SPECIAL – STRUCTURE, MISC.: TEMPORARY SHORING, BRACING AND PROTECTIVE STRUCTURES.

AFTER INSTALLING TEMPORARY SHORING, REMOVE THE EXISTING JACK ARCH DESIGNATED TO BE REPLACED IN ACCORDANCE WITH ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

JACK ARCH REPLACEMENTS SHALL BE PERFORMED WITH SELF-CONSOLIDATING CONCRETE (SCC) IN ACCORDANCE WITH CMS 705.12. THE CONTRACTOR SHALL FURNISH MATERIALS ACCORDING TO ODOT'S QUALIFIED PRODUCTS LIST (QPL) AND WHICH MEET THE ACCEPTANCE REQUIREMENTS DETAILED IN THE GENERAL NOTES ON SHEET [7]89]. USE FORMS TO ENSURE ADHERENCE OF REPAIR AND TO MATCH ORIGINAL SURFACE PROFILE AS SHOWN IN THE PLANS.

ALL NEW REINFORCEMENT SHALL BE EPOXY COATED AND FURNISHED PER CMS 509, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL DOWEL HOLES SHALL BE DRILLED AND GROUTED WITH NON-SHRINK, NONMETALLIC GROUT IN ACCORDANCE WITH CMS 510, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL GALVANIC ANODES SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

THE INTERFACE OF NEW JACK ARCHES AND THE BOTTOM OF THE EXISTING DECK SLAB SHALL BE SEALED BY EPOXY INJECTION IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 512.07, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
511	EACH	CONCRETE, MISC.: JACK ARCH REPLACEMENT

ITEM 511 – CONCRETE, MISC.: COLUMN REPLACEMENT:

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING COLUMNS DESIGNATED TO BE REPLACED IN THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE DETAILS IN THE STRUCTURE PLANS. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS DETAILED IN THE WORK PERFORMED TO ADJACENT MEMBERS GENERAL NOTE ON SHEET [5]89].

PRIOR TO REMOVING THE EXISTING COLUMNS DESIGNATED TO BE REPLACED, THE CONTRACTOR SHALL DESIGN AND FURNISH TEMPORARY SHORING TO SUPPORT THE EXISTING SUPERSTRUCTURE, INCLUDING LIVE LOAD AS APPLICABLE, DURING REPAIR OPERATIONS IN ACCORDANCE WITH ITEM SPECIAL – STRUCTURE, MISC.: TEMPORARY SHORING, BRACING AND PROTECTIVE STRUCTURES.

AFTER INSTALLING TEMPORARY SHORING, REMOVE THE EXISTING COLUMN DESIGNATED TO BE REPLACED IN ACCORDANCE WITH ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

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ITEM 511 - CONCRETE, MISC.: COLUMN REPLACEMENT (CONT.):

COLUMN REPLACEMENTS SHALL BE PERFORMED WITH SELF-CONSOLIDATING CONCRETE (SCC) IN ACCORDANCE WITH CMS 705.12. THE CONTRACTOR SHALL FURNISH MATERIALS ACCORDING TO ODOT'S QUALIFIED PRODUCTS LIST (QPL) AND WHICH MEET THE ACCEPTANCE REQUIREMENTS DETAILED IN THE GENERAL NOTES ON SHEET [7][89]. USE FORMS TO ENSURE ADHERENCE OF REPAIR AND TO MATCH ORIGINAL SURFACE PROFILE AS SHOWN IN THE PLANS.

ALL NEW REINFORCEMENT SHALL BE EPOXY COATED AND FURNISHED PER CMS 509, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL GALVANIC ANODES SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

THE INTERFACE OF NEW COLUMNS AND THE BOTTOM OF THE EXISTING JACK ARCHES SHALL BE SEALED BY EPOXY INJECTION IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 512.07, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
511	EACH	CONCRETE, MISC.: COLUMN REPLACEMENT

ITEM 511 - CONCRETE, MISC.: LOWER DECK CORBEL REPLACEMENT:

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING LOWER DECK CORBELS DESIGNATED TO BE REPLACED IN THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE DETAILS IN THE STRUCTURE PLANS.

PRIOR TO REMOVING THE EXISTING LOWER DECK CORBELS DESIGNATED TO BE REPLACED, THE CONTRACTOR SHALL DESIGN AND FURNISH TEMPORARY SHORING TO SUPPORT THE EXISTING SUPERSTRUCTURE, INCLUDING LIVE LOAD AS APPLICABLE, DURING REPAIR OPERATIONS IN ACCORDANCE WITH ITEM SPECIAL - STRUCTURE, MISC.: TEMPORARY SHORING, BRACING AND PROTECTIVE STRUCTURES.

REMOVE THE EXISTING LOWER DECK CORBEL DESIGNATED TO BE REPLACED IN ACCORDANCE WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

LOWER DECK CORBEL REPLACEMENTS SHALL BE PERFORMED WITH SELF-CONSOLIDATING CONCRETE (SCC) IN ACCORDANCE WITH CMS 705.12. THE CONTRACTOR SHALL FURNISH MATERIALS ACCORDING TO ODOT'S QUALIFIED PRODUCTS LIST (QPL) AND WHICH MEET THE ACCEPTANCE REQUIREMENTS DETAILED IN THE GENERAL NOTES ON SHEET [7][89]. USE FORMS TO ENSURE ADHERENCE OF REPAIR AND TO MATCH ORIGINAL SURFACE PROFILE AS SHOWN IN THE PLANS. THE ORIGINAL LOWER DECK CORBEL FORMS ARE AVAILABLE FROM THE CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS.

ALL NEW REINFORCEMENT SHALL BE EPOXY COATED AND FURNISHED PER CMS 509, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL DOWEL HOLES SHALL BE DRILLED AND GROUTED WITH NON-SHRINK, NONMETALLIC GROUT IN ACCORDANCE WITH CMS 510, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL GALVANIC ANODES SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ITEM 511 - CONCRETE, MISC.: LOWER DECK CORBEL REPLACEMENT (CONT.):

THE INTERFACE OF NEW LOWER DECK CORBELS AND THE EXISTING SUPERSTRUCTURE SHALL BE SEALED BY EPOXY INJECTION IN ACCORDANCE WITH THE REQUIREMENTS OF CMS 512.07, BUT CONSIDERED INCIDENTAL TO THIS PAY ITEM.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
511	EACH	CONCRETE, MISC.: LOWER DECK CORBEL REPLACEMENT

ACCEPTANCE REQUIREMENTS FOR SELF-CONSOLIDATING CONCRETE (SCC):

THE CONCRETE MIX DESIGN SHALL BE IN ACCORDANCE WITH CMS 499 & 705.12. THE COARSE AGGREGATE SHALL BE WELL-GRADED WITH A MAXIMUM SIZE OF 3/8". THE MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 4500 PSI.

THE CONCRETE TESTING SHALL BE PERFORMED BY A CERTIFIED ACI LEVEL 1 FIELD TESTING TECHNICIAN AT A MINIMUM. THE SLUMP FLOW AND J-RING TESTS SHALL BE PERFORMED EACH DAY BY TESTING THE FIRST BATCH OF SCC, AND THEN TESTING CONSECUTIVE BATCHES UNTIL TWO CONSECUTIVELY PRODUCED BATCHES ARE WITHIN THESE REQUIREMENTS.

THE SLUMP FLOW TESTING SHALL BE PERFORMED IN ACCORDANCE WITH AASHTO T347-13 (2017). THE TARGET SLUMP FLOW SHALL BE 24 INCHES WITH A LOWER LIMIT OF 22 INCHES AND AN UPPER LIMIT OF 26 INCHES.

THE J-RING TESTING SHALL BE PERFORMED IN ACCORDANCE WITH AASHTO T 345-12 (2016). THE J-RING TEST SHALL BE PERFORMED TO VERIFY THE PASSING ABILITY OF THE SCC MIX. THE AVERAGE J-RING SLUMP FLOW MINUS THE AVERAGE SLUMP FLOW WITHOUT J-RING SHALL BE NO GREATER THAN 1 INCH TO BE ACCEPTABLE. THE J-RING HEIGHT VALUE, J, SHALL BE 0.6 INCHES OR LESS TO BE ACCEPTABLE.

THE FINISHED CONCRETE SHALL BE SMOOTH AND FREE OF ANY HONEYCOMBS.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

DESCRIPTION: THIS ITEM SHALL CONSIST OF APPLYING AN EPOXY-URETHANE SEALER TO CONCRETE AREAS REPAIRED UNDER ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR IN ACCORDANCE WITH CMS 512 WITH THE FOLLOWING MODIFICATIONS:

ONLY APPLY EPOXY-URETHANE SEALER TO REPAIRED LOCATIONS ON THE PIERS AND THE UPPER AND LOWER DECK FLOOR BEAMS, ARCH RIBS, JACK ARCHES, AND COLUMNS LOCATED BETWEEN SPANS 2 - 13 AND NOT COVERED BY COMPOSITE FIBER WRAP. DO NOT APPLY EPOXY-URETHANE SEALER TO REPAIRED LOCATIONS IN THE TUNNELS, STATIONS, OR SPANS 1A - 1B.

THE COLOR OF THE EPOXY-URETHANE SEALER SHALL MATCH THE EXISTING FEDERAL COLOR NUMBER 37722 (WHITE). THE CONTRACTOR SHALL PROVIDE SAMPLES TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE): (CONT.):

SURFACE PREPARATION FOR SEALING ALONG THE OUTSIDE PERIMETER OF THE REPAIRED CONCRETE AREAS AS SHOWN ON SHEET [85][89] SHALL BE AS PER CMS 512.03.F.

THE CONTRACTOR SHALL REMOVE THE EXISTING EPOXY SEALER FROM THE AREAS TO BE SEALED TO THE SATISFACTION OF THE ENGINEER. CONTRACTOR WILL ONLY RECEIVE PAYMENT FOR SURFACE PREPARATION AS SPECIFIED IN CMS 512.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
512	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

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

THIS ITEM SHALL BE AS PER THE DETAILS IN THE PLANS WITH THE APPLICABLE PORTIONS OF STANDARD DRAWING EXJ-4-87.

REPLACE THE STRIP SEAL GLAND LOCATED AT PIER 8 AS SHOWN IN THE PLANS ON SHEET [12][89] WITH A 3" STRIP SEAL GLAND. MAINTENANCE OF TRAFFIC SHALL BE COORDINATED WITH THE OVERALL PROJECT TO PERFORM WORK. NO BUTT JOINTS SHALL BE ALLOWED IN THE STRIP SEAL GLANDS. EXCEPT FOR MITERED JOINTS AT THE CURBS, THE GLANDS SHALL BE CONTINUOUS. FURNISH JOINTS IN GLANDS PER MANUFACTURER'S RECOMMENDATIONS AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT BID PRICE PER LINEAR FOOT FOR ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL - URETHANE TOP COAT SEALER:

DESCRIPTION: THIS ITEM SHALL CONSIST OF APPLYING A URETHANE TOP COAT SEALER IN ACCORDANCE WITH CMS 512. THE COLOR OF THE URETHANE TOP COAT SEALER SHALL MATCH THE EXISTING FEDERAL COLOR NUMBER 37722 (WHITE). THE CONTRACTOR SHALL PROVIDE SAMPLES TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION. THE URETHANE TOP COAT SEALER SHALL BE APPLIED OVER THE FIBER WRAP EPOXY COATING PER THE NOTE FOR:

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	SY	URETHANE TOP COAT SEALER

ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM:

DESCRIPTION: THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A NON-STRUCTURAL FIBER-REINFORCED POLYMER (FRP) WRAP SYSTEM INCLUDING SURFACE PREPARATION AND ALL INCIDENTALS NECESSARY TO COMPLETE. THIS ITEM SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAILS IN THE STRUCTURE PLANS ON SHEET [85][89] AND IN ACCORDANCE WITH PROPOSAL NOTE 519 WITH THE FOLLOWING MODIFICATIONS:

MATERIALS: SUPPLIERS SHALL HAVE A MINIMUM OF TEN (10) INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 1000 HOUR TESTS FOR 140°F WATER, SALT WATER, ALKALINE SOIL, OZONE AND EFFERVESCENCE.

SUBMITTALS: STRUCTURAL CALCULATIONS AND THE GOVERNING SPECIFICATION ARE NOT REQUIRED.

PLAN, ELEVATION, AND CROSS-SECTIONAL VIEWS OF THE CONCRETE MEMBERS ARE ONLY REQUIRED IF MODIFYING THE DETAILS ON PLAN SHEET [85][89].

INSTALLATION: WHEN REMOVING OBSTRUCTIONS, THE CONTRACTOR MUST MAINTAIN THE SAME SERVICE PROVIDED WHILE DISCONNECTING THE OBSTRUCTION FROM THAT LOCATION ONLY. RECONNECT THE OBSTRUCTION AFTER APPLICATION OF THE URETHANE TOP COAT. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM.

IMPERFECTIONS MAY EXCEED 1/32 INCH, BUT THE SURFACE TO RECEIVE THE COMPOSITE FIBER WRAP SHALL BE FREE FROM FINIS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE THE FIBER. IN ADDITION, THE SURFACE SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE FIBER WRAP. THIS MAY BE ACHIEVED BY GRINDING OR BY THE USE OF TROWELABLE MORTAR AT THE APPROVAL OF THE ENGINEER.

QUALITY CONTROL AND REPAIR OF DEFECTS SHALL BE IN ACCORDANCE WITH PROPOSAL NOTE 519.

COATING SYSTEM APPLICATION: A FINAL URETHANE COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION, AND TO PROVIDE THE AESTHETIC EFFECT.

AFTER 96 HOURS FROM THE FINAL APPLICATION OF EPOXY, IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED, THE EXTERIOR SURFACES OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE APPLYING THE URETHANE COATING.

THE URETHANE FINISH COAT WILL BE PAID FOR UNDER ITEM SPECIAL - URETHANE TOP COAT SEALER.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	SF	COMPOSITE FIBER WRAP SYSTEM

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DESIGN AGENCY: Pennoni
 REVIEWED DATE: 04/18/18
 DWJ STRUCTURE FILE NUMBER: 1800930
 DRAWN BY: TEC
 CHECKED BY: BPS

GENERAL NOTES (3 OF 5)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR:
ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 2 REPAIR:

DESCRIPTION: THIS ITEM SHALL CONSIST OF PATCHING THE CONCRETE STRUCTURE AND INSTALLING GALVANIC ANODES IN ACCORDANCE WITH ODOT CMS 519, SUPPLEMENTAL SPECIFICATION 844, AND THE DETAILS IN THE STRUCTURE PLANS. TYPE 1 REPAIRS CONSIST OF PATCHING CONCRETE AND INSTALLING GALVANIC ANODES TO ALL VERTICAL SIDE SURFACES AND HORIZONTAL TOP SURFACES. TYPE 2 REPAIRS CONSIST OF PATCHING CONCRETE AND INSTALLING GALVANIC ANODES TO ALL OVERHEAD AND SLOPING UNDERSIDE SURFACES. AREAS TO BE PATCHED HAVE BEEN DESIGNATED TYPE 1 OR TYPE 2 IN THE PLANS AND ADDITIONAL AREAS REQUIRING PATCHING WILL BE DESIGNATED TYPE 1 OR TYPE 2 BY THE ENGINEER. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS DETAILED IN THE WORK PERFORMED TO ADJACENT MEMBERS GENERAL NOTE ON SHEET [5]89.

THE ITEMS OF WORK SHALL BE IN ACCORDANCE WITH CMS 519 WITH THE FOLLOWING MODIFICATIONS:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

THE ITEMS OF WORK SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844 WITH THE FOLLOWING MODIFICATIONS:

REPAIR LOCATIONS THAT REQUIRE GALVANIC ANODES ARE DETAILED THROUGHOUT THE PLANS. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84]89. GALVANIC ANODES SHALL BE INSTALLED IN ALL REPAIR LOCATIONS, AS REQUIRED BY THE PLANS, INCLUDING ALL REPAIR LOCATIONS OVER PUBLIC ACCESS AREAS REGARDLESS OF THE SIZE OF THE PATCHING AREA.

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

THE CONTRACTOR IS REQUIRED TO PROTECT THE MURAL LOCATED ON THE EAST FACE OF PIER 4 FROM ALL CONCRETE REMOVAL, PATCHING, AND SEALING WORK. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

MEASUREMENT AND PAYMENT: MEASUREMENT SHALL BE IN ACCORDANCE WITH CMS 519.07. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

Table with 3 columns: ITEM, UNIT, DESCRIPTION. Row 1: SPECIAL, SF, PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR. Row 2: SPECIAL, SF, PATCHING CONCRETE STRUCTURE, TYPE 2 REPAIR.

ITEM SPECIAL - STRUCTURES, TEMPORARY SHORING, BRACING, AND PROTECTIVE STRUCTURES:

DESCRIPTION: THIS ITEM SHALL CONSIST OF FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT, MAINTAIN, AND REMOVE THE FOLLOWING WORK ITEMS:

- 1. TEMPORARY STRUCTURES OR TEMPORARY SHORING REQUIRED TO COMPLETE THE PERMANENT WORK, EXCLUSIVE OF FORMWORK.
2. TEMPORARY SHORING FOR CONCRETE MEMBER REPLACEMENTS AS REQUIRED IN THE PLANS WHICH ARE NOT SPECIFICALLY INCLUDED ELSEWHERE.
3. TEMPORARY PROTECTION TO PROTECT PUBLIC ACCESS AREAS BELOW AND EXISTING FACILITIES SCHEDULED TO REMAIN, ESPECIALLY WHEN DEMOLISHED MATERIAL DROPS TO THE GROUND.
4. TEMPORARY PROTECTION OF EXISTING DECORATIVE LIGHTING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND OPERATION OF ALL TEMPORARY SHORING AND TEMPORARY PROTECTIVE STRUCTURES. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED, SEALED, AND DATED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

WHEN NO LONGER NEEDED TO SAFELY PERFORM REPAIR WORK, THE CONTRACTOR SHALL REMOVE THE TEMPORARY SHORING AND/OR TEMPORARY PROTECTIVE STRUCTURES AT THE DIRECTION OF THE ENGINEER. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

Table with 3 columns: ITEM, UNIT, DESCRIPTION. Row 1: SPECIAL, LUMP, STRUCTURES, TEMPORARY SHORING, BRACING, AND PROTECTIVE STRUCTURES

ITEM 602 - BLOCK MASONRY:

FURNISH AND INSTALL HOLLOW CONCRETE MASONRY UNITS (CMU) WITH MORTAR JOINTS IN ACCORDANCE WITH CMS 602 AND THE DETAILS IN THE STRUCTURE PLANS AS SHOWN ON SHEETS [83]89, [86]89, AND [87]89.

PLACE CMU BLOCKS SIDE BY SIDE FOR THE FULL LENGTH OF EACH COURSE OF THE WALL WITH MORTAR IN-BETWEEN EACH BLOCK. BEFORE PLACING MORTAR, CLEAN ALL SURFACES TO WHICH THE MORTAR IS TO BOND AND ALL LAITANCE AND CONTAMINANTS DETRIMENTAL TO THE ACHIEVEMENT OF AN ADEQUATE BOND. WHEN PLACING CONSECUTIVE LAYERS, ENSURE THAT THE VERTICAL JOINTS DO NOT LINE UP. CHECK WALL PLUMBNESS A MINIMUM OF EVERY THREE (3) LAYERS AND CORRECT DEVIATIONS GREATER THAN 1/4 INCH. CORRECT MISALIGNED, IMPROPERLY SEATED, OR OUT OF LEVEL CMU BLOCKS.

ITEM SPECIAL - STRUCTURES, BRIDGE OPERATOR'S CAR SHELTER:

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING A BRIDGE OPERATOR'S CAR SHELTER IN ACCORDANCE WITH AASHTO M 181, THE DETAILS IN THE STRUCTURE PLANS ON SHEET [88]89, AND THE MANUFACTURER'S RECOMMENDATIONS.

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

Table with 3 columns: ITEM, UNIT, DESCRIPTION. Row 1: SPECIAL, LUMP, STRUCTURES, BRIDGE OPERATOR'S CAR SHELTER

ITEM SPECIAL - AS-BUILT CONSTRUCTION PLANS:

DESCRIPTION: THE CONTRACTOR SHALL MAINTAIN AND PROVIDE THE ENGINEER WITH RECORD DRAWINGS AS SPECIFIED HEREIN. RECORD DRAWINGS SHALL INCLUDE COMPLETE DOCUMENTATION OF FIELD REVISIONS TO THE CONTRACT DOCUMENTS.

THIS CONTRACT ITEM SHALL APPLY TO ALL WORK SHOWN IN THE PLANS EXCEPT CONCRETE REPAIRS PERFORMED UNDER THE FOLLOWING CONTRACT ITEMS:

- ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION
- ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, TYPE 1 OR TYPE 2 REPAIR

FILING:

- A. THE CONTRACTOR SHALL MAINTAIN IN THE FIELD OFFICE AND IN CLEAN, DRY, LEGIBLE CONDITION THE FOLLOWING: CONTRACT DRAWINGS, SPECIFICATIONS, ADDENDA, CONFORMING SHOP DRAWINGS, CHANGE ORDERS, OTHER MODIFICATIONS OF CONTRACT, TEST RECORDS, SURVEY DATA AND ALL OTHER DOCUMENTS PERTINENT TO THE CONTRACTOR'S WORK.
B. THE CONTRACTOR SHALL PROVIDE FILES AND RACKS FOR PROPER STORAGE AND EASY ACCESS. FILING SHALL BE ESTABLISHED IN A FORMAT ACCEPTABLE TO THE ENGINEER.
C. THE CONTRACTOR SHALL MAKE DOCUMENTS AVAILABLE AT ALL TIMES FOR INSPECTION BY THE ENGINEER.
D. RECORD DRAWINGS SHALL NOT BE USED FOR ANY OTHER PURPOSE AND SHALL NOT BE REMOVED FROM THEIR FILED LOCATION WITHOUT THE ENGINEER'S APPROVAL.

RECORDING:

- A. THE CONTRACTOR SHALL KEEP ALL RECORD DRAWINGS CURRENT.
B. THE CONTRACTOR SHALL NOT PERMANENTLY CONCEAL ANY WORK UNTIL REQUIRED INFORMATION HAS BEEN RECORDED.

ITEM SPECIAL - AS-BUILT CONSTRUCTION PLANS (CONT.):

RECORDING (CONT.):

C. CONTRACT DRAWINGS SHALL BE LEGIBLY MARKED TO RECORD ACTUAL CONSTRUCTION INCLUDING:

- 1. DEPTHS OF VARIOUS ELEMENTS OF FOUNDATION IN RELATION TO DATUM.
2. HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND UTILITIES AND APPURTENANCES REFERENCED TO PERMANENT SURFACE IMPROVEMENTS.
3. FIELD CHANGES OF DIMENSION AND DETAIL.
4. CHANGES MADE BY CHANGE ORDER OR FIELD ORDER.
5. DETAILS NOT ON ORIGINAL CONTRACT DRAWINGS.

D. SPECIFICATIONS AND ADDENDA: LEGIBLY MARK EACH SECTION TO RECORD:

- 1. MANUFACTURER, TRADE NAME, CATALOG NUMBER AND SUPPLIER OF EACH PRODUCT AND ITEM OF EQUIPMENT ACTUALLY INSTALLED.
2. CHANGES MADE BY CHANGE ORDER OR FIELD ORDER.
3. OTHER MATTERS NOT ORIGINALLY SPECIFIED.

SUBMITTALS:

- A. THE CONTRACTOR SHALL ANNOTATE ALL RECORD DRAWING REVISIONS ONTO ELECTRONIC COPIES OF PLAN DRAWINGS PROVIDED BY THE ENGINEER USING MICROSTATION V8i, OR LATER SOFTWARE, AS APPROVED BY THE ENGINEER. AT THE COMPLETION OF THE PROJECT, DELIVER ONE (1) PAPER COPY AND ONE (1) ELECTRONIC COPY IN MICROSTATION OF RECORD DRAWING ORIGINAL DOCUMENTS TO THE ENGINEER. HIGHLIGHT CHANGES WITH CLOUDS AND SHOW CHANGES ON A SEPARATE MICROSTATION LAYER.
B. PROVIDE TRANSMITTAL LETTER CONTAINING THE FOLLOWING INFORMATION:
1. DATE
2. PROJECT TITLE AND PROJECT NUMBER
3. CONTRACTOR'S NAME AND ADDRESS
4. TITLE AND NUMBER OF EACH DRAWING
5. CERTIFICATION THAT EACH DOCUMENT IS COMPLETE AND ACCURATE AS SUBMITTED
6. SIGNATURE OF CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE

MEASUREMENT AND PAYMENT: PAYMENT SHALL BE FULL COMPENSATION UPON THE PROPER EXECUTION OF ALL THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, AS DETERMINED BY THE ENGINEER. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

Table with 3 columns: ITEM, UNIT, DESCRIPTION. Row 1: SPECIAL, LUMP, AS-BUILT CONSTRUCTION PLANS

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DESIGN AGENCY: Pennoni
DATE: 04/18/18
REVIEWED BY: DWJ
STRUCTURE FILE NUMBER: 1800930

DRAWN BY: TEC
CHECKED BY: BPS
REVISIONS: REVISED

GENERAL NOTES (4 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

SUGGESTED CONSTRUCTION PROCEDURE:

1. PERFORM CONCRETE PATCHING REPAIRS INCLUDING GALVANIC ANODES, CONCRETE CORBEL REPLACEMENTS, CRACK SEALING, AND CONCRETE SEALING WORK IN SPANS 2 - 3 AND SPANS 5 - 13.
2. INSTALL FRP WRAP TO ARCH RIBS AND LOWER DECK FLOOR BEAMS IN SPANS 2 - 3 AND SPANS 5 - 13.
3. PERFORM CONCRETE PATCHING REPAIRS INCLUDING GALVANIC ANODES AND CONCRETE SEALING WORK TO PIERS.
4. IMPLEMENT MAINTENANCE OF TRAFFIC PATTERNS AND REMOVE THE EXISTING CONCRETE WEARING SURFACE BY HYDRO-DEMOLITION AND PLACE NEW MICRO-SILICA MODIFIED CONCRETE OVERLAY.
5. PERFORM CONCRETE PATCHING REPAIRS INCLUDING GALVANIC ANODES TO SPANS 1A AND 1B.
6. PERFORM CONCRETE PATCHING REPAIRS INCLUDING GALVANIC ANODES, JACK ARCH REPLACEMENTS AND COLUMN REPLACEMENTS TO THE WEST STATION.
7. PERFORM CONCRETE PATCHING REPAIRS INCLUDING GALVANIC ANODES, JACK ARCH REPLACEMENTS AND COLUMN REPLACEMENTS TO THE EAST STATION.
8. PERFORM CONCRETE PATCHING REPAIRS INCLUDING GALVANIC ANODES TO THE WEST APPROACH TUNNELS.
9. INSTALL MASONRY BLOCK WALL AT THE SOUTHWEST AND NORTHEAST END SPANS.
10. REPAIR THE BRIDGE OPERATOR'S CAR SHELTER.

THE ABOVE IS A SUGGESTED CONSTRUCTION PROCEDURE. THE CONTRACTOR SHALL SUBMIT HIS PROPOSED CONSTRUCTION PROCEDURE AND SCHEDULE TO THE ENGINEER FOR APPROVAL BEFORE BEGINNING CONSTRUCTION. NO CONSTRUCTION OPERATIONS WILL BE PERMITTED WITHOUT PRIOR APPROVAL.

PLAN ABBREVIATIONS:

- ABUT. = ABUTMENT
- AVE. = AVENUE
- BRG. = BEARING
- c/c = CENTER TO CENTER
- C.J. = CONSTRUCTION JOINT
- CLR. = CLEAR, CLEAR COVER
- CONC. = CONCRETE
- C.P.P. = CLEVELAND PUBLIC POWER
- DIA. = DIAMETER
- DIM. = DIMENSION
- EL. = ELEVATION
- EXIST. = EXISTING
- EXP. = EXPANSION
- FRP = FIBER REINFORCED POLYMER
- F.A. = FORWARD ABUTMENT
- FWD. = FORWARD
- FWS = FUTURE WEARING SURFACE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- N.A. = NOT APPLICABLE
- PC = POINT OF CURVATURE
- PEJF = PREFORMED EXPANSION JOINT FILLER
- PROP. = PROPOSED
- R.A. = REAR ABUTMENT
- REINF. = REINFORCEMENT
- SPA. = SPACES
- ST. = STREET
- STA. = STATION
- TYP. = TYPICAL
- U.N.O. = UNLESS NOTED OTHERWISE
- CMS = ODOT 2016 CONSTRUCTION AND MATERIALS SPECIFICATIONS

INDEX OF SHEETS:

- SITE PLAN [1/89] AND [2/89]
- MEMBER IDENTIFICATION PLAN [3/89] AND [4/89]
- STRUCTURE GENERAL NOTES [5/89] THRU [9/89]
- ESTIMATED QUANTITIES [10/89]
- UPPER DECK PLAN [11/89] AND [12/89]
- WEST 25TH STREET TUNNEL REPAIR DETAILS [13/89] AND [14/89]
- DETROIT AVENUE TUNNEL REPAIR DETAILS [15/89] AND [16/89]
- WEST STATION REPAIR DETAILS [17/89] THRU [24/89]
- EAST STATION REPAIR DETAILS [25/89]
- PIER REPAIR DETAILS [26/89] THRU [29/89]
- SPAN 1A CONCRETE REPAIR DETAILS [30/89] AND [31/89]
- SPAN 1B CONCRETE REPAIR DETAILS [32/89] AND [33/89]
- SPAN 2 CONCRETE REPAIR DETAILS [34/89] THRU [38/89]
- SPAN 3 CONCRETE REPAIR DETAILS [39/89] THRU [41/89]
- SPAN 5 CONCRETE REPAIR DETAILS [42/89] THRU [46/89]
- SPAN 6 CONCRETE REPAIR DETAILS [47/89] THRU [51/89]
- SPAN 7 CONCRETE REPAIR DETAILS [52/89] THRU [56/89]
- SPAN 8 CONCRETE REPAIR DETAILS [57/89] THRU [61/89]
- SPAN 9 CONCRETE REPAIR DETAILS [62/89] THRU [66/89]
- SPAN 10 CONCRETE REPAIR DETAILS [67/89] THRU [71/89]
- SPAN 12 CONCRETE REPAIR DETAILS [72/89]
- SPAN 13 CONCRETE REPAIR DETAILS [73/89] AND [74/89]
- PIER 6 LOWER DECK SHAFT REPAIRS [75/89]
- CONCRETE REPAIR DETAILS [76/89] AND [77/89]
- CONCRETE CORBEL REPLACEMENT DETAILS [78/89]
- CONCRETE JACK ARCH REPLACEMENT [79/89] AND [80/89]
- CONCRETE COLUMN REPLACEMENT DETAILS [81/89] THRU [83/89]
- CATHODIC PROTECTION DETAILS [84/89]
- FRP DETAILS [85/89]
- MASONRY BLOCK WALL DETAILS [86/89] AND [87/89]
- BRIDGE OPERATOR'S CAR SHELTER [88/89]
- REINFORCING LIST [89/89]

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DESIGNED	WJV	CHECKED	BFS
DRAWN	TEC	REVISED	
REVIEWED	DWJ	DATE	04/18/18
STRUCTURE FILE NUMBER			1800930

GENERAL NOTES (5 OF 5)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

ESTIMATED QUANTITIES

CALC. BY: AJK DATE: 4/10/2018
 CHKD BY: BPS DATE: 4/12/2018

01/BRO/BR	ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	TUNNELS	STATIONS	PIERS	SUPER-STRUCTURE	GENERAL	REF. SHEET NUMBER
LS	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN						6
2500	509	20001	2500	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN					2500	6
351	511	71200	351	SF	CONCRETE, MISC.: PIER 6 LOWER DECK SHAFT REPAIR			351			6
37	511	81300	37	EACH	CONCRETE, MISC.: JACK ARCH REPLACEMENT	1	36				6
11	511	81300	11	EACH	CONCRETE, MISC.: COLUMN REPLACEMENT	2	9				6, 7
16	511	81300	16	EACH	CONCRETE, MISC.: LOWER DECK CORBEL REPLACEMENT				16		7
1069	512	10100	1069	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			208	861		7
600	512	10600	600	FT	CONCRETE REPAIR BY EPOXY INJECTION				100	500	
9794	SPECIAL	51271500	9794	SY	URETHANE TOP COAT SEALER				9794		7
86	516	01301	86	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN				86		7
88,140	SPECIAL	51900100	88,140	SF	COMPOSITE FIBER WRAP SYSTEM				88,140		7
24,581	SPECIAL	51911600	24,581	SF	PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR	9515	2718	1867	10,481		8
3278	SPECIAL	51911600	3278	SF	PATCHING CONCRETE STRUCTURE, TYPE 2 REPAIR	68	194		3016		8
LS	SPECIAL	53000200	LS		STRUCTURES, TEMPORARY SHORING, BRACING, AND PROTECTIVE STRUCTURES						8
LS	SPECIAL	53000200	LS		STRUCTURES, BRIDGE OPERATOR'S CAR SHELTER						8
25	602	15000	25	CY	BLOCK MASONRY		4		21		8
LS	SPECIAL	69091000	LS		AS-BUILT CONSTRUCTION PLANS						8
28	843	50000	28	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	2			26		
19,695	848	10000	19,695	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, 1 1/2" THICK				19,695		
19,695	848	20000	19,695	SY	SURFACE PREPARATION USING HYDRODEMOLITION				19,695		
493	848	30000	493	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY				493		
591	848	50000	591	SY	HAND CHIPPING				591		
LS	848	50100	LS		TEST SLAB						
24	848	50200	24	CY	FULL-DEPTH REPAIR				24		



DESIGN AGENCY
 DATE: 04/18/18
 DWJ
 STRUCTURE FILE NUMBER: 1800930

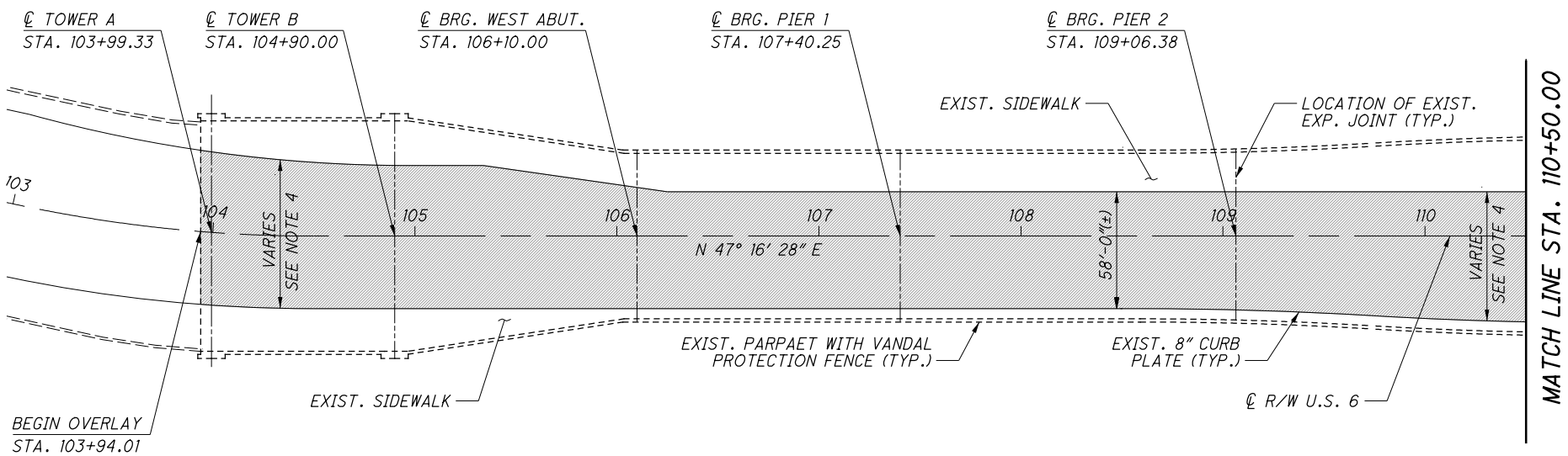
DRAWN: AJK
 CHECKED: BPS
 REVISIONS:

ESTIMATED QUANTITIES
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

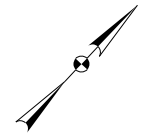
CUY-6-14.56
 PID No. 99972

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PLAN

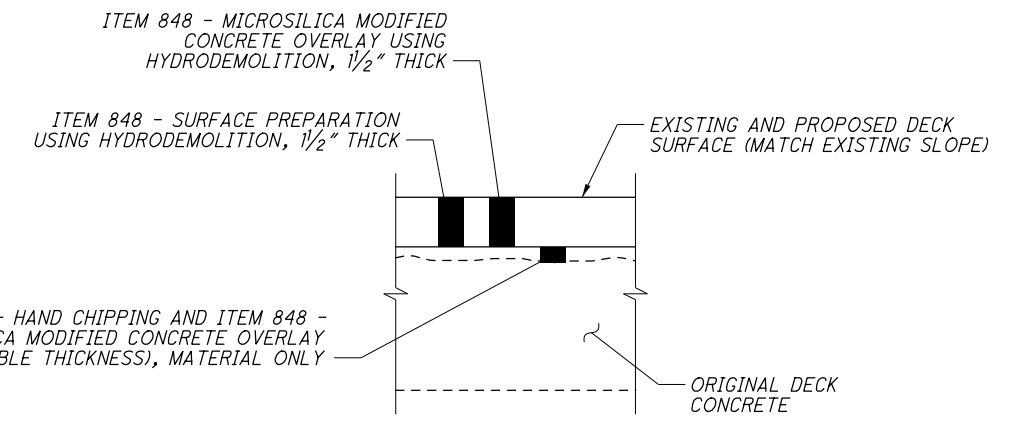


NOTES

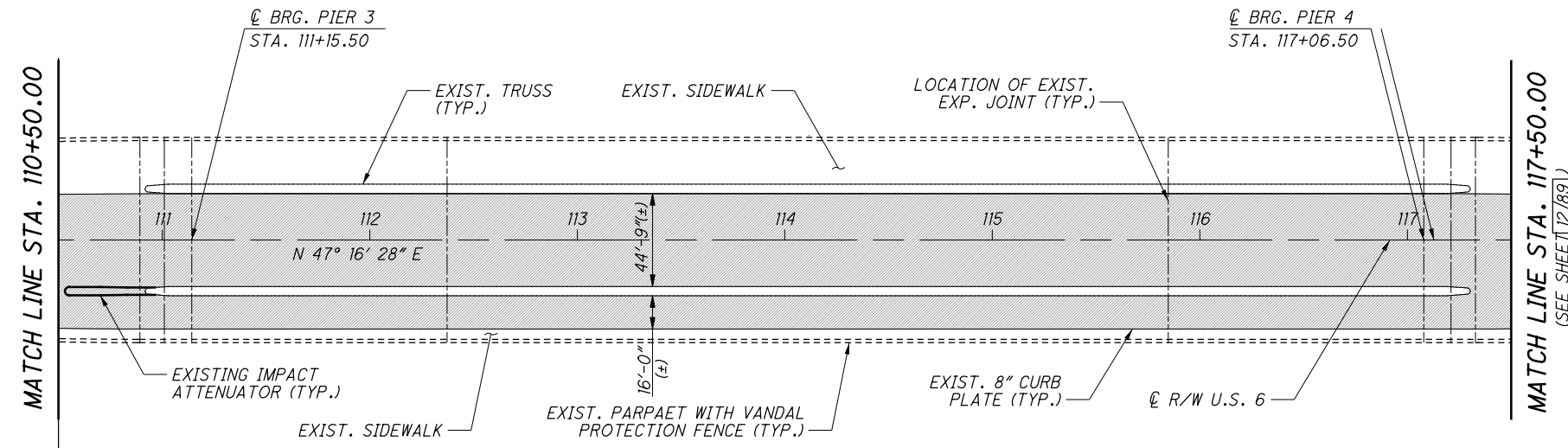
1. FINISHED TOP OF DECK ELEVATIONS SHALL MATCH EXISTING TOP OF DECK ELEVATIONS.
2. FOR ADDITIONAL DETAILS NOT SHOWN, SEE ODOT SUPPLEMENTAL SPECIFICATION 848.
3. FOR VARYING ROADWAY WIDTHS AND STATIONING, SEE TYPICAL SECTIONS ON SHEET 3/128.

LEGEND

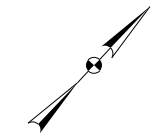
AREAS OF THE DECK TO HAVE EXISTING OVERLAY REMOVED AND REPLACED. FOR OVERLAY REMOVAL SEE NOTE 2. FOR MICRO SILICA MODIFIED CONCRETE OVERLAY SEE NOTE 3.



BRIDGE DECK WEARING SURFACE REPLACEMENT DETAIL



PLAN



DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ

DRAWN DEPARTMENT OF TRANSPORTATION
DEA

DESIGNED BY BPS
DEA

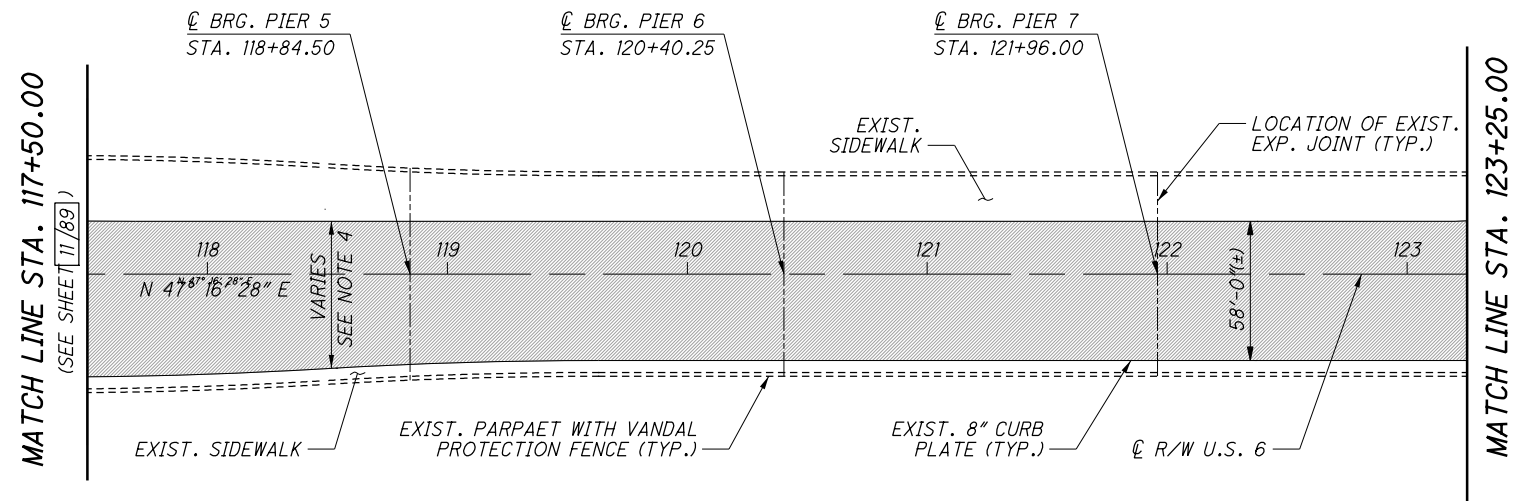
UPPER DECK PLAN - 1
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

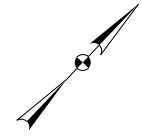
11/89

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128

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PLAN

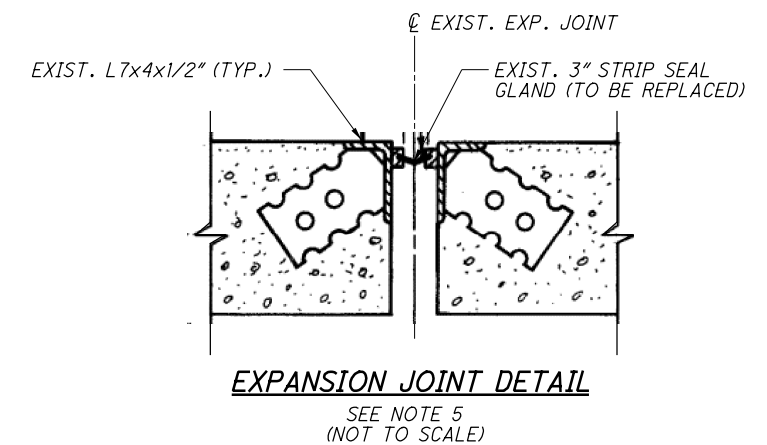


NOTES

1. FINISHED TOP OF DECK ELEVATIONS SHALL MATCH EXISTING TOP OF DECK ELEVATIONS.
2. FOR ADDITIONAL DETAILS NOT SHOWN, SEE ODOT SUPPLEMENTAL SPECIFICATION 848.
3. FOR VARYING ROADWAY WIDTHS AND STATIONING, SEE TYPICAL SECTIONS ON SHEET 3/128.
4. FOR BRIDGE DECK WEARING SURFACE REPLACEMENT DETAIL, SEE SHEET 11/89.
5. FOR ADDITIONAL STRIP SEAL EXPANSION JOINT DETAILS, SEE STANDARD DRAWING EXJ-4-87.

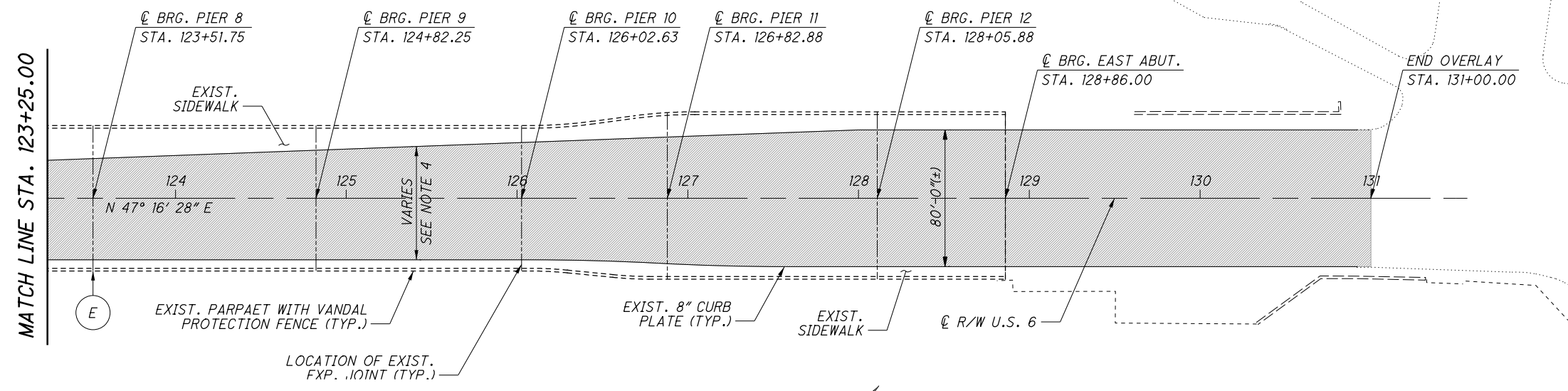
LEGEND

- [Hatched Area] AREAS OF THE DECK TO HAVE EXISTING OVERLAY REMOVED AND REPLACED. FOR OVERLAY REMOVAL SEE NOTE 2. FOR MICRO SILICA MODIFIED CONCRETE OVERLAY SEE NOTE 3.
- (E) REPLACE STRIP SEAL GLAND IN EXPANSION JOINT, SEE DETAIL ON THIS SHEET

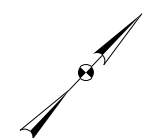


EXPANSION JOINT DETAIL

SEE NOTE 5
(NOT TO SCALE)



PLAN



DESIGN AGENCY
Pennoni

DATE 04/18/18
REVIEWED DWJ
STRUCTURE FILE NUMBER 1800930

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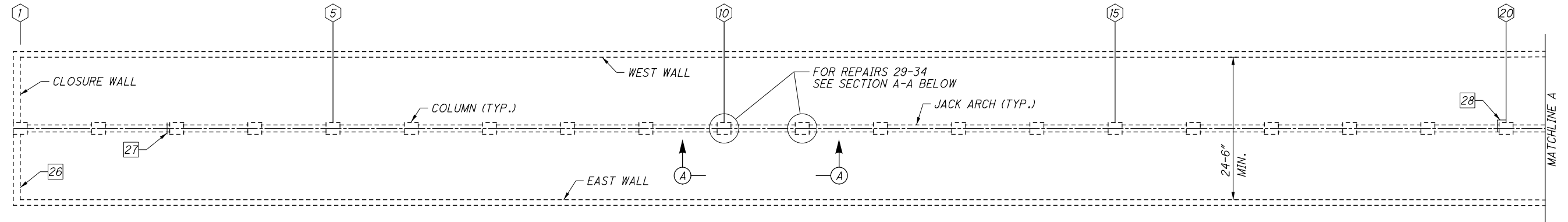
UPPER DECK PLAN - 2
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

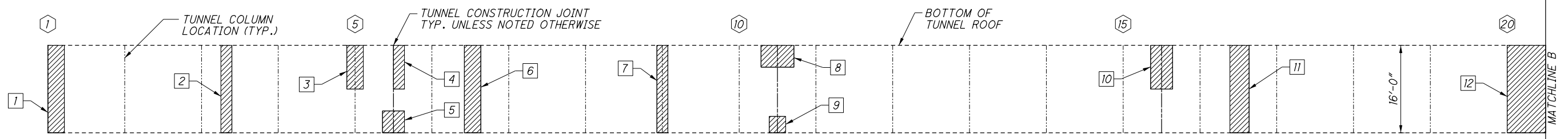
12/89

51
128

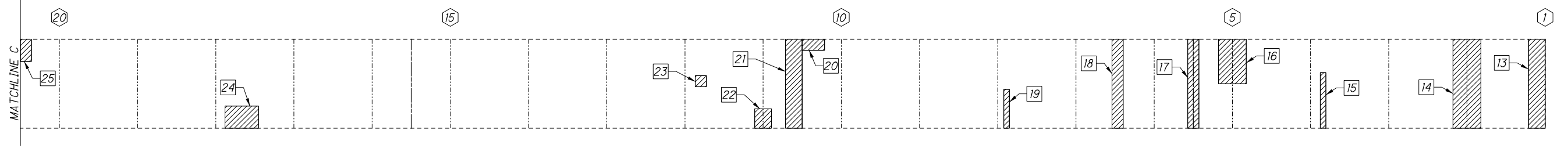
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WEST 25TH STREET TUNNEL - PLAN



**WEST WALL
LOOKING WEST**



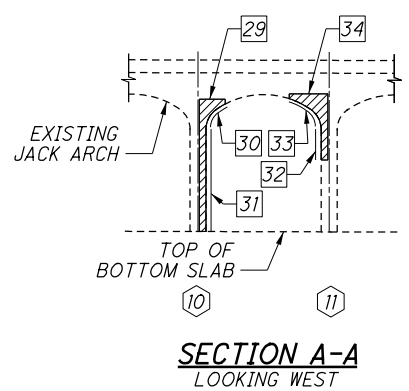
**EAST WALL
LOOKING EAST**

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	48	24
2	TYPE 1	32	12
3	TYPE 1	24	12
4	TYPE 1	16	6
5	TYPE 1	16	8
6	TYPE 1	48	24
7	TYPE 1	32	12
8	TYPE 1	24	10
9	TYPE 1	9	4
10	TYPE 1	32	14
11	TYPE 1	56	24
12	TYPE 1	144	34
13	TYPE 1	48	24
14	TYPE 1	80	28
15	TYPE 1	10	7
16	TYPE 1	40	16
17	TYPE 1	32	12
18	TYPE 1	32	12
19	TYPE 1	7	5
20	TYPE 1	8	3
21	TYPE 1	48	24
22	TYPE 1	11	4

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
23	TYPE 1	4	-
24	TYPE 1	24	10
25	TYPE 1	16	8
26	TYPE 1	100	24
27	TYPE 1	4	4
28	TYPE 1	6	6
29	TYPE 1	13	12
30	TYPE 2	5	3
31	TYPE 1	21	18
32	TYPE 1	6	6
33	TYPE 2	7	4
34	TYPE 1	10	8
MEASURED QUANTITY*		1013	-
PLAN QUANTITY*		1520	422

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	1502
TYPE 2 REPAIR	SF	18



**SECTION A-A
LOOKING WEST**

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.
- DETERIORATED CONCRETE SURFACES WITHIN THREE FEET OF THE TUNNEL FLOOR SHALL NOT BE REPAIRED UNLESS ASSOCIATED WITH A REPAIR ABOVE THIS HEIGHT OR AS NOTED ON THIS SHEET.

LEGEND:

- # TUNNEL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

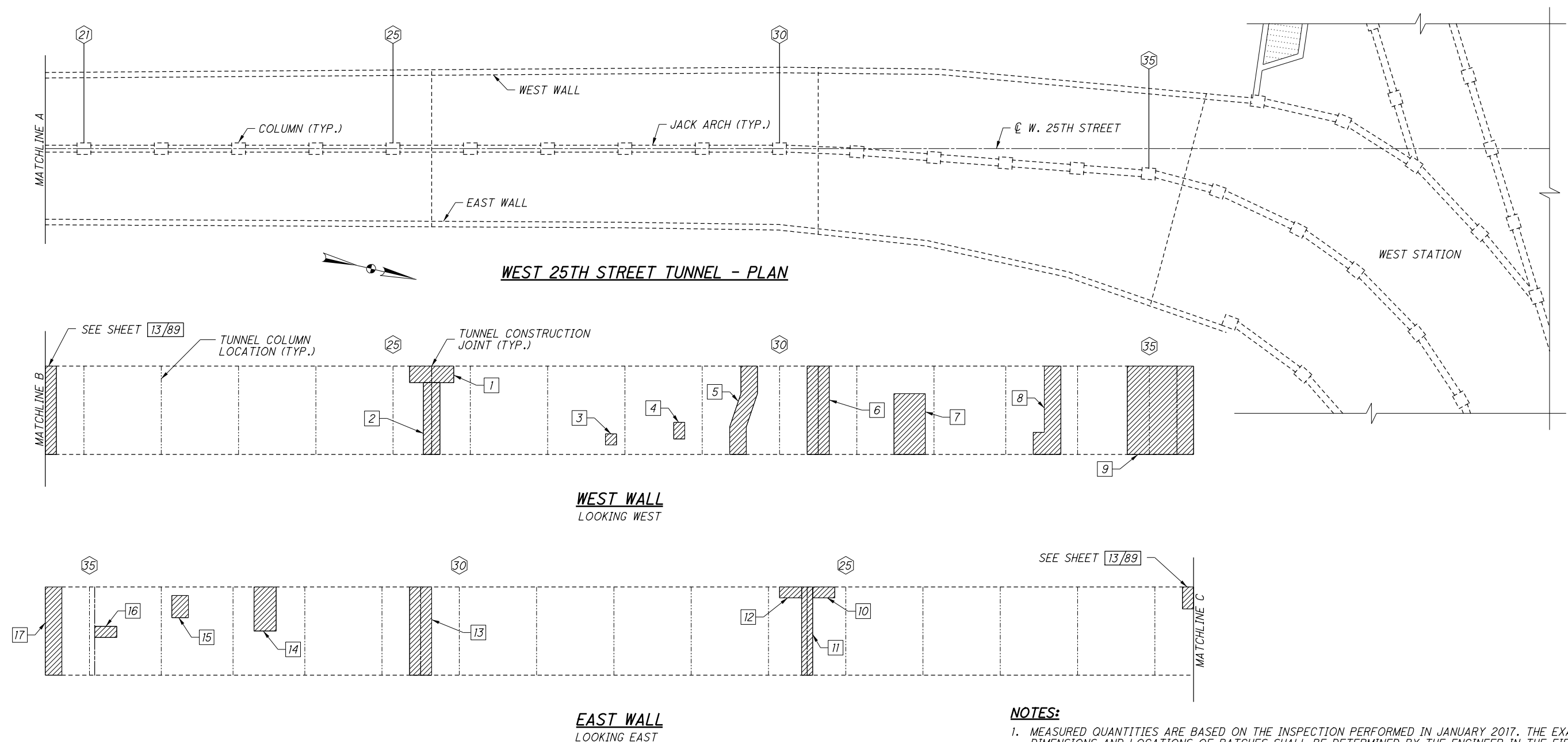
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DESIGNED BY BPS
 CHECKED BY WJW
 DRAWN BY JEB
 REVISIONS
 REVIEWED BY DWJ
 DATE 04/18/18
 STRUCTURE FILE NUMBER 1800930

WEST 25TH STREET TUNNEL CONCRETE REPAIR DETAILS (2 OF 2)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972



WEST 25TH STREET TUNNEL - PLAN

WEST WALL
 LOOKING WEST

EAST WALL
 LOOKING EAST

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	25	12
2	TYPE 1	40	20
3	TYPE 1	4	-
4	TYPE 1	6	2
5	TYPE 1	48	24
6	TYPE 1	64	26
7	TYPE 1	63	20
8	TYPE 1	80	28
9	TYPE 1	272	44
10	TYPE 1	8	3
11	TYPE 1	32	12
12	TYPE 1	8	3
13	TYPE 1	64	26
14	TYPE 1	32	14
15	TYPE 1	12	6

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
16	TYPE 1	8	3
17	TYPE 1	48	24
MEASURED QUANTITY*		814	-
PLAN QUANTITY*		1221	267

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	1221
TYPE 2 REPAIR	SF	-

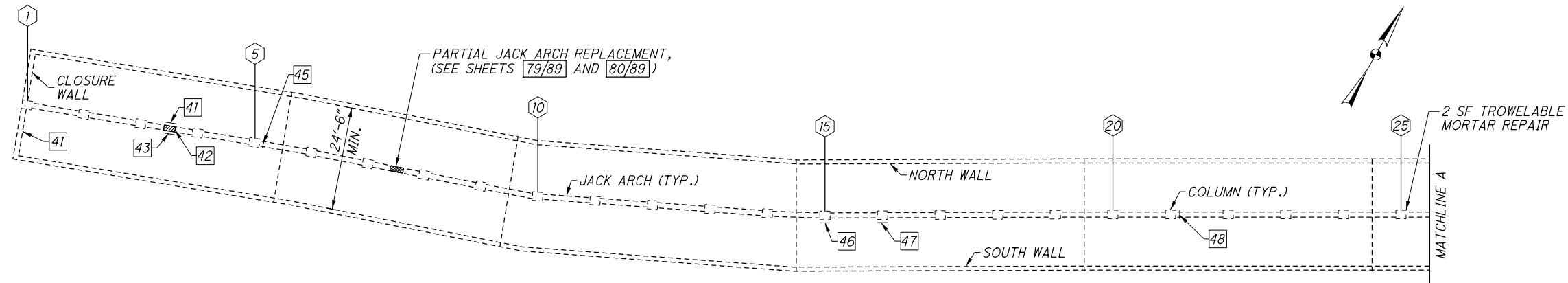
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.
- DETERIORATED CONCRETE SURFACES WITHIN THREE FEET OF THE TUNNEL FLOOR SHALL NOT BE REPAIRED UNLESS ASSOCIATED WITH A REPAIR ABOVE THIS HEIGHT OR AS NOTED ON THIS SHEET.

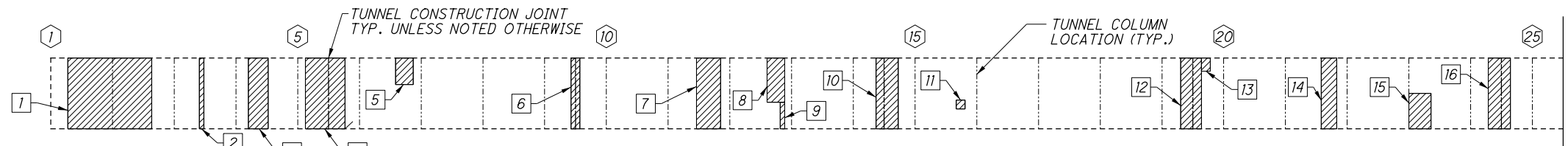
LEGEND:

- # TUNNEL COLUMN NUMBER
- # REPAIR NUMBER
- [Hatched Box] LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- [Dashed Box] LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

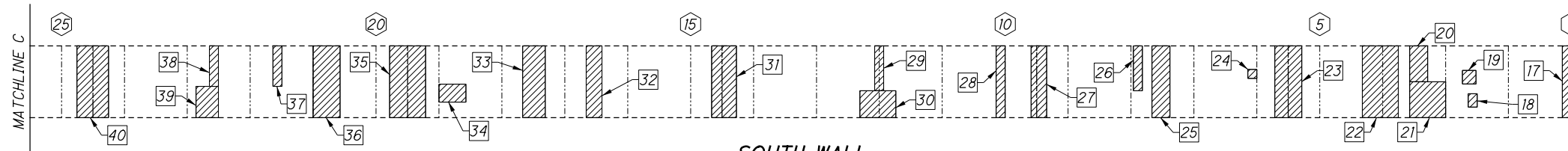
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DETROIT AVENUE TUNNEL - PLAN



**NORTH WALL
LOOKING NORTH**



**SOUTH WALL
LOOKING SOUTH**

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	304	48
2	TYPE 1	16	12
3	TYPE 1	72	26
4	TYPE 1	144	34
5	TYPE 1	24	10
6	TYPE 1	32	12
7	TYPE 1	88	28
8	TYPE 1	45	18
9	TYPE 1	6	4
10	TYPE 1	80	28
11	TYPE 1	4	-
12	TYPE 1	76	26
13	TYPE 1	12	2
14	TYPE 1	56	24
15	TYPE 1	40	16
16	TYPE 1	84	28
17	TYPE 1	32	12
18	TYPE 1	6	2
19	TYPE 1	9	4

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
20	TYPE 1	32	14
21	TYPE 1	64	20
22	TYPE 1	128	32
23	TYPE 1	96	28
24	TYPE 1	4	-
25	TYPE 1	64	26
26	TYPE 1	21	7
27	TYPE 1	56	24
28	TYPE 1	32	12
29	TYPE 1	20	7
30	TYPE 1	48	16
31	TYPE 1	88	28
32	TYPE 1	56	24
33	TYPE 1	80	28
34	TYPE 1	24	10
35	TYPE 1	128	32
36	TYPE 1	96	28
37	TYPE 1	18	7
38	TYPE 1	18	7

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
39	TYPE 1	35	14
40	TYPE 1	112	30
41	TYPE 1	36	12
42	TYPE 1	7	6
43	TYPE 2	7	6
44	TYPE 1	7	6
45	TYPE 1	13	12
46	TYPE 1	4	4
47	TYPE 1	6	6
48	TYPE 1	5	4
MEASURED QUANTITY*		2435	-
PLAN QUANTITY*		3653	788

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	3642
TYPE 2 REPAIR	SF	11

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.
- DETERIORATED CONCRETE SURFACES WITHIN THREE FEET OF THE TUNNEL FLOOR SHALL NOT BE REPAIRED UNLESS ASSOCIATED WITH A REPAIR ABOVE THIS HEIGHT OR AS NOTED ON THIS SHEET.
- A NEW TUNNEL ROOF WAS PREVIOUSLY CONSTRUCTED ON TOP OF THE ORIGINAL DETROIT AVENUE TUNNEL ROOF. THE CONTRACTOR SHALL REMOVE LOOSE ORIGINAL ROOF CONCRETE FROM THE BOTTOM OF THE ORIGINAL DETROIT AVENUE ROOF AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED AS PART OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN.

LEGEND:

- # TUNNEL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

DESIGN AGENCY
Pennoni

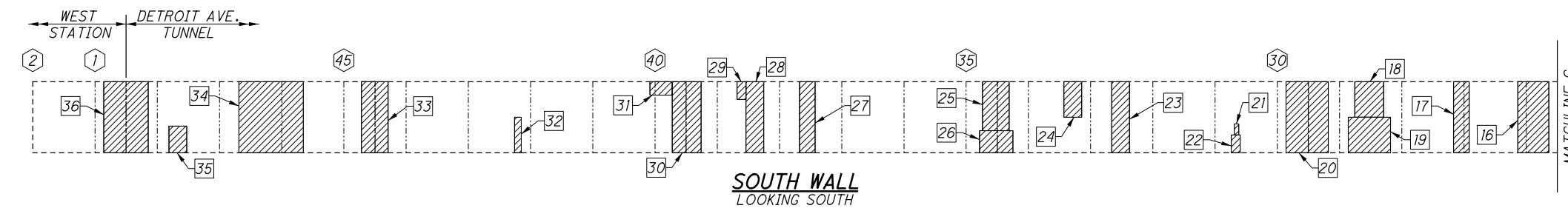
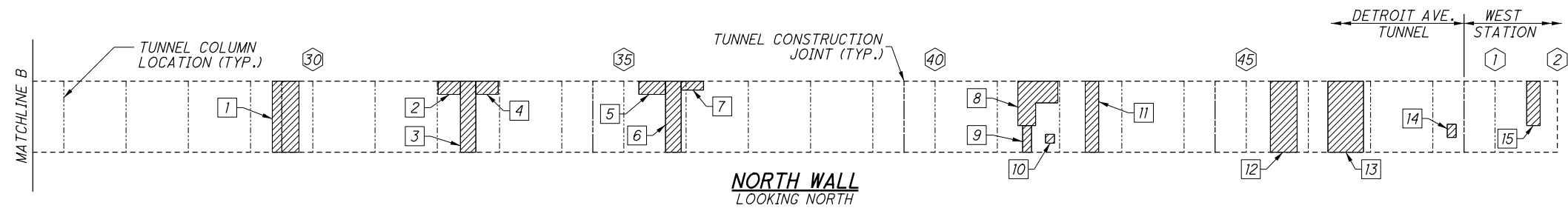
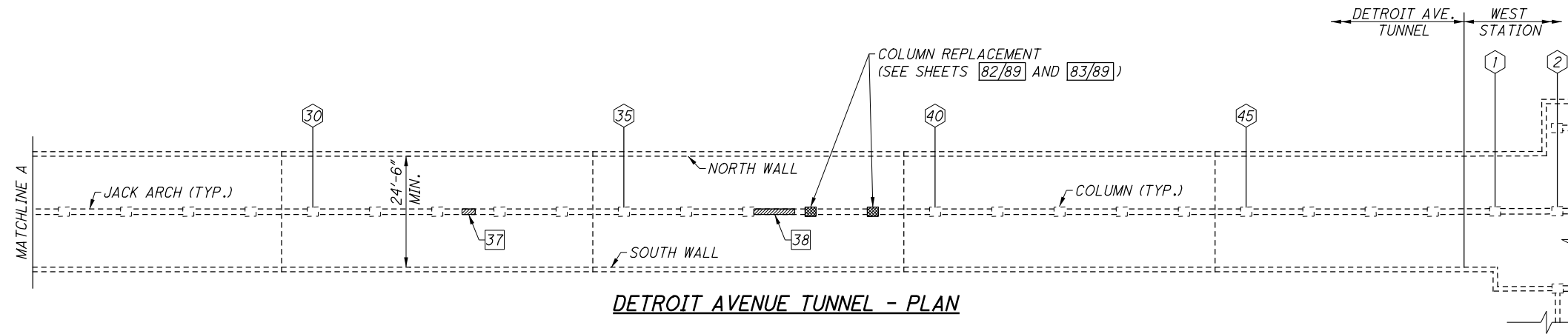
REVIEWED DATE
DWJ 04/18/18
STRUCTURE FILE NUMBER
1800930

DRAWN JEB
JEB
REVISIONS
BPS
WUJ

DETROIT AVENUE TUNNEL CONCRETE REPAIR DETAILS (1 OF 2)

BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972



NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
5. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.
6. DETERIORATED CONCRETE SURFACES WITHIN THREE FEET OF THE TUNNEL FLOOR SHALL NOT BE REPAIRED UNLESS ASSOCIATED WITH A REPAIR ABOVE THIS HEIGHT OR AS NOTED ON THIS SHEET.
7. A NEW TUNNEL ROOF WAS PREVIOUSLY CONSTRUCTED ON TOP OF THE ORIGINAL DETROIT AVENUE TUNNEL ROOF. THE CONTRACTOR SHALL REMOVE LOOSE ORIGINAL ROOF CONCRETE FROM THE BOTTOM OF THE ORIGINAL DETROIT AVENUE ROOF AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED AS PART OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN.

LEGEND:

- # TUNNEL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	100	28
2	TYPE 1	15	8
3	TYPE 1	56	24
4	TYPE 1	15	8
5	TYPE 1	18	8
6	TYPE 1	56	24
7	TYPE 1	10	4
8	TYPE 1	70	16
9	TYPE 1	12	4
10	TYPE 1	4	-
11	TYPE 1	48	24
12	TYPE 1	116	30
13	TYPE 1	128	32
14	TYPE 1	6	2
15	TYPE 1	30	14

ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
16	TYPE 1	112	30
17	TYPE 1	56	24
18	TYPE 1	52	18
19	TYPE 1	76	22
20	TYPE 1	152	34
21	TYPE 1	3	-
22	TYPE 1	8	3
23	TYPE 1	64	26
24	TYPE 1	32	14
25	TYPE 1	66	20
26	TYPE 1	38	14
27	TYPE 1	56	24
28	TYPE 1	64	26
29	TYPE 1	8	3
30	TYPE 1	104	30

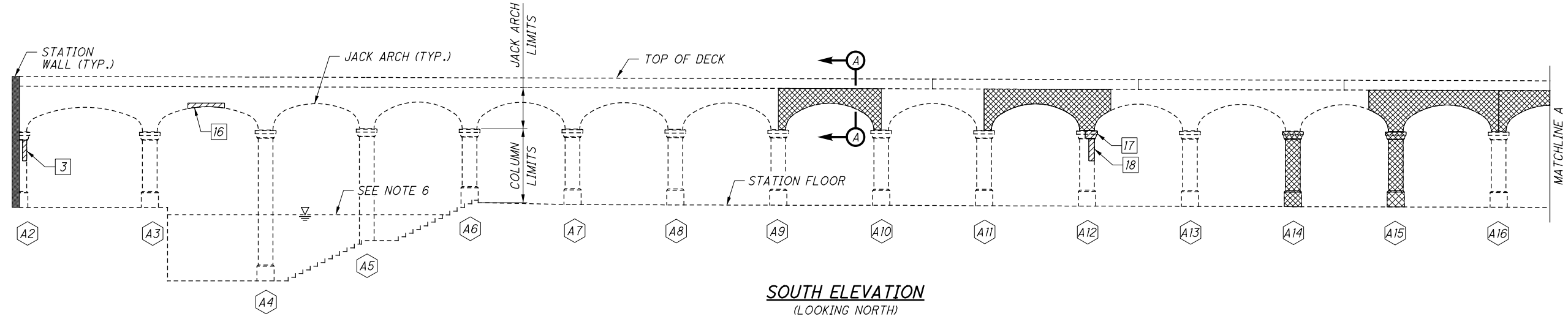
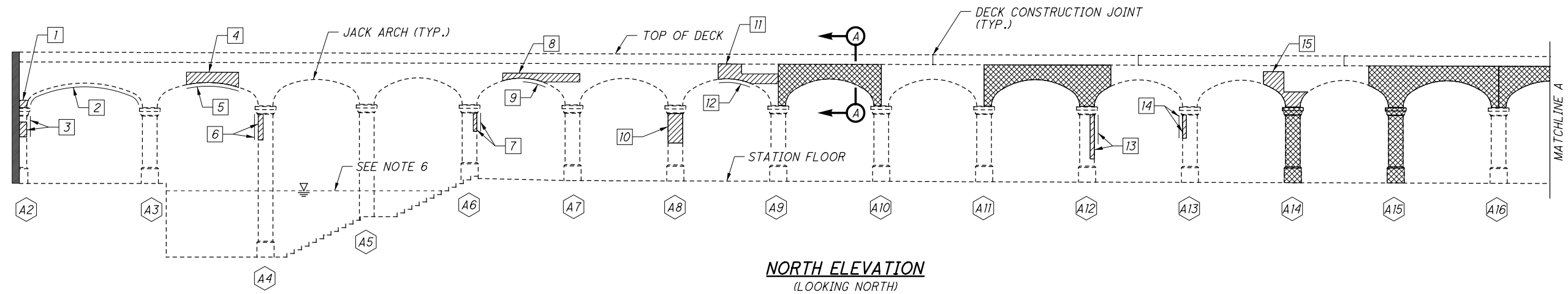
ESTIMATED PATCHING QUANTITIES			
REPAIR No.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
31	TYPE 1	15	8
32	TYPE 1	12	6
33	TYPE 1	112	30
34	TYPE 1	232	42
35	TYPE 1	24	10
36	TYPE 1	160	34
37	TYPE 2	6	6
38	TYPE 2	20	18
MEASURED QUANTITY*		2126	-
PLAN QUANTITY*		3189	668

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	3150
TYPE 2 REPAIR	SF	39

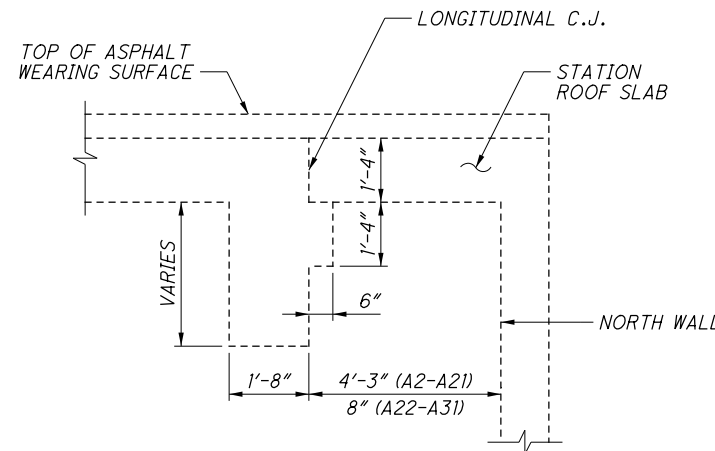
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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	-
2	TYPE 2	9	15
3	TYPE 1	10	4
4	TYPE 1	11	6
5	TYPE 2	4	-
6	TYPE 1	6	2
7	TYPE 1	3	-
8	TYPE 1	14	9
9	TYPE 2	2	-
10	TYPE 1	8	3
11	TYPE 1	14	7
12	TYPE 2	4	-
13	TYPE 1	12	8
14	TYPE 1	4	-
15	TYPE 1	12	8
16	TYPE 1	4	-
17	TYPE 1	2	-
18	TYPE 1	3	-
MEASURED QUANTITY*		124	-
PLAN QUANTITY*		186	62

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	158
TYPE 2 REPAIR	SF	28



SECTION A-A

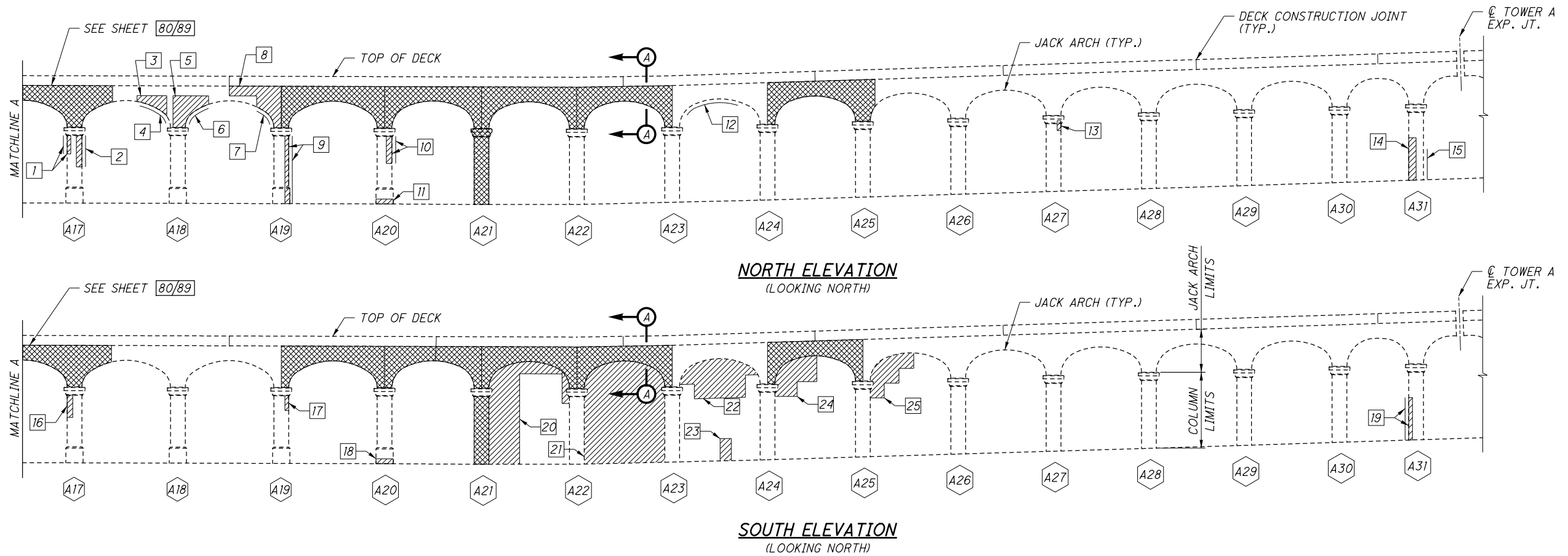
NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
5. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.
6. THE PEDESTRIAN TUNNEL AND STAIRWAY ARE CURRENTLY FLOODED.

LEGEND:

- ⊕ STATION COLUMN NUMBER
- # REPAIR NUMBER
- ▨ LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- ▤ LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- ▩ LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

* SEE NOTES 1 & 2
** SEE NOTE 3



ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	4	-
2	TYPE 1	7	3
3	TYPE 1	6	3
4	TYPE 2	3	-
5	TYPE 1	14	6
6	TYPE 2	5	2
7	TYPE 2	3	-
8	TYPE 1	18	10
9	TYPE 1	10	7
10	TYPE 1	6	2
11	TYPE 1	2	-
12	TYPE 2	12	5
13	TYPE 1	1	-
14	TYPE 1	6	4
15	TYPE 1	4	-
16	TYPE 1	3	-
17	TYPE 1	1	-
18	TYPE 1	2	-
19	TYPE 1	13	8
20	TYPE 1	65	20

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 1	143	30
22	TYPE 1	41	14
23	TYPE 1	5	2
24	TYPE 1	22	12
25	TYPE 1	20	10
MEASURED QUANTITY*		416	-
PLAN QUANTITY*		624	138

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	590
TYPE 2 REPAIR	SF	34

NOTES:

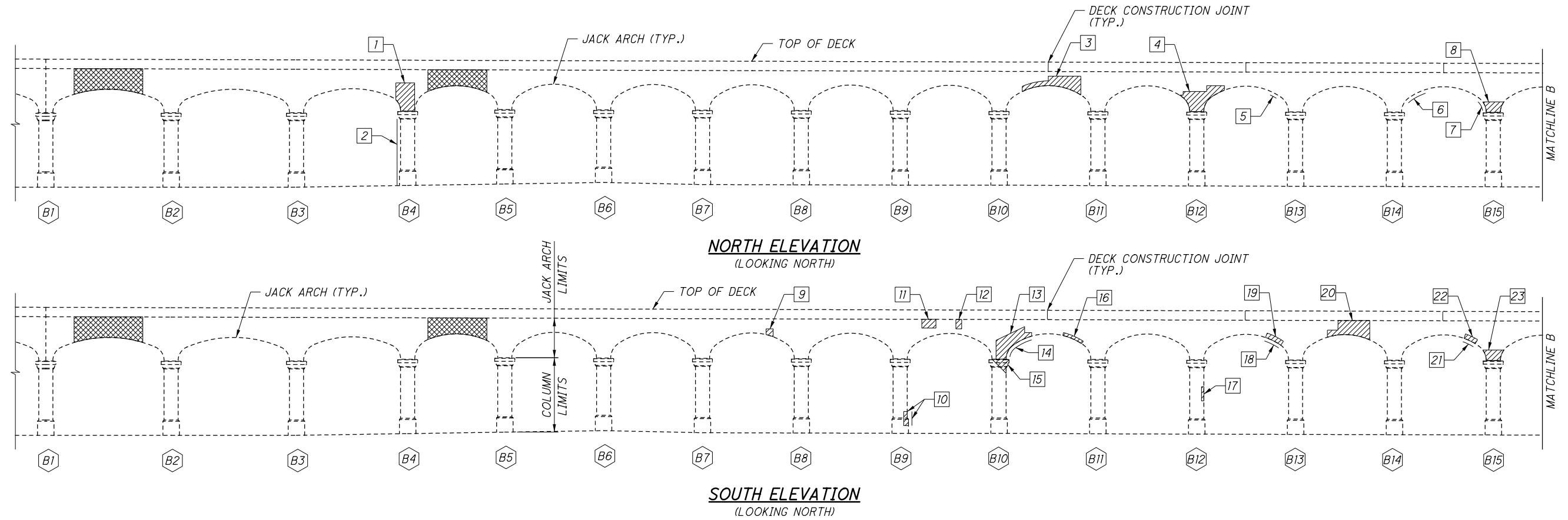
- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.
- FOR SECTION A-A, SEE SHEET 17/89.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	10	6
2	TYPE 1	18	7
3	TYPE 1	11	7
4	TYPE 1	12	8
5	TYPE 2	1	-
6	TYPE 2	5	3
7	TYPE 2	3	-
8	TYPE 1	4	-
9	TYPE 1	1	-
10	TYPE 1	4	-
11	TYPE 1	3	-
12	TYPE 1	2	-
13	TYPE 1	10	8
14	TYPE 2	3	-
15	TYPE 1	3	-
16	TYPE 1	2	-
17	TYPE 1	1	-
18	TYPE 2	3	-
19	TYPE 1	2	-
20	TYPE 1	12	10

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 2	1	-
22	TYPE 1	2	-
23	TYPE 1	4	-
MEASURED QUANTITY*		117	-
PLAN QUANTITY*		176	49

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	152
TYPE 2 REPAIR	SF	24

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
5. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

DESIGN AGENCY: Pennoni

DATE: 04/18/18

REVIEWED: DWJ

STRUCTURE FILE NUMBER: 1800930

DESIGNED: BPS

CHECKED: WJW

DRAWN: JEB

REVISOR:

WEST STATION CONCRETE REPAIR DETAILS (3 OF 8)

BRIDGE NO. CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56

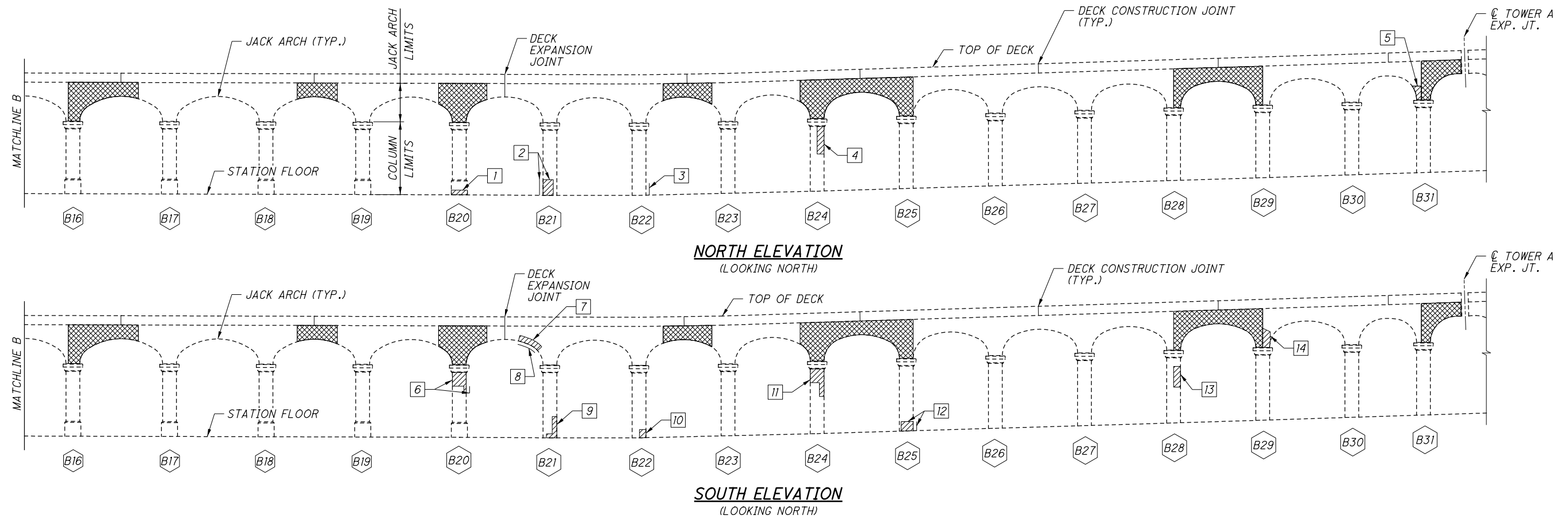
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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	-
2	TYPE 1	6	4
3	TYPE 1	3	-
4	TYPE 1	4	-
5	TYPE 1	3	-
6	TYPE 1	6	4
7	TYPE 1	3	-
8	TYPE 2	3	-
9	TYPE 1	2	-
10	TYPE 1	2	-
11	TYPE 1	6	3
12	TYPE 1	4	-
13	TYPE 1	3	-
14	TYPE 1	3	-
MEASURED QUANTITY*		50	-
PLAN QUANTITY*		75	11

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY			
ITEM	UNIT	QUANTITY	
TYPE 1 REPAIR	SF	70	
TYPE 2 REPAIR	SF	5	

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
5. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

DESIGN AGENCY
Pennoni

DATE 04/18/18
 STRUCTURE FILE NUMBER 1800930

REVIEWED DWJ

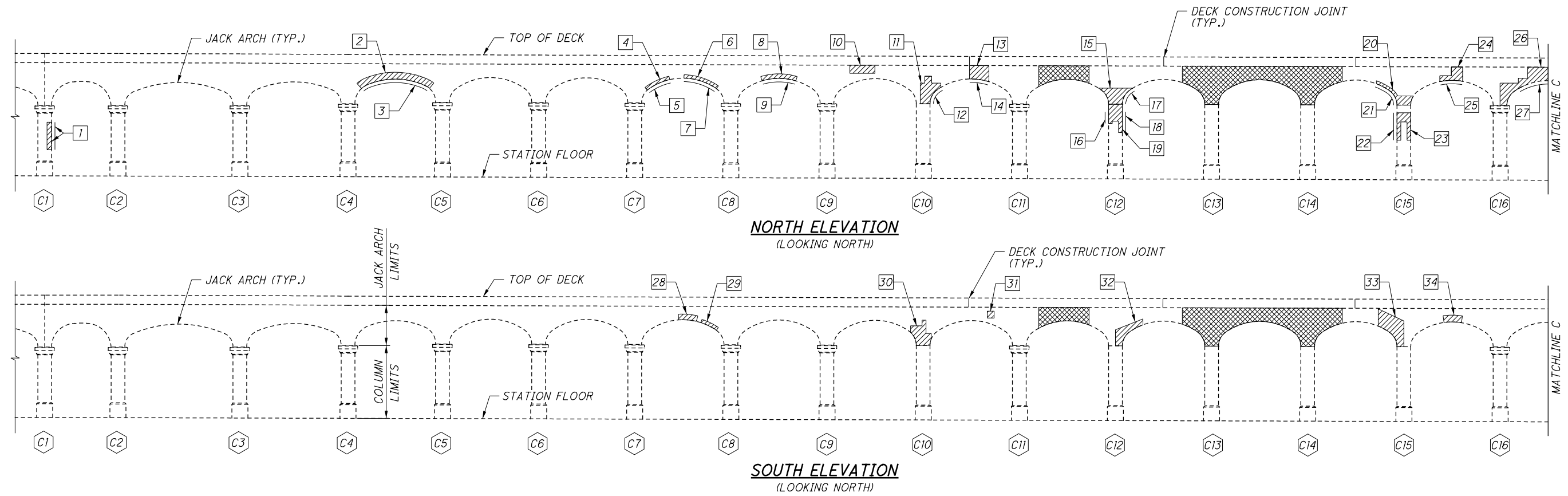
DRAWN JEB
 REVISIONS

DESIGNED BPS
 CHECKED WJW

WEST STATION CONCRETE REPAIR DETAILS (4 OF 8)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	10	6
2	TYPE 1	11	10
3	TYPE 2	6	10
4	TYPE 1	2	-
5	TYPE 2	2	-
6	TYPE 1	3	-
7	TYPE 2	3	-
8	TYPE 1	4	-
9	TYPE 2	3	-
10	TYPE 1	5	-
11	TYPE 1	8	6
12	TYPE 2	4	-
13	TYPE 1	6	4
14	TYPE 2	2	-
15	TYPE 1	8	4
16	TYPE 1	1	-
17	TYPE 2	4	-
18	TYPE 1	3	-
19	TYPE 1	6	2
20	TYPE 1	5	-
21	TYPE 2	7	3
22	TYPE 1	7	3
23	TYPE 1	6	2

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
24	TYPE 1	5	-
25	TYPE 2	2	-
26	TYPE 1	12	6
27	TYPE 2	10	8
28	TYPE 1	3	-
29	TYPE 1	2	-
30	TYPE 1	8	6
31	TYPE 1	1	-
32	TYPE 1	6	3
33	TYPE 1	12	8
34	TYPE 1	3	-
MEASURED QUANTITY*		180	-
PLAN QUANTITY*		270	81

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	206
TYPE 2 REPAIR	SF	64

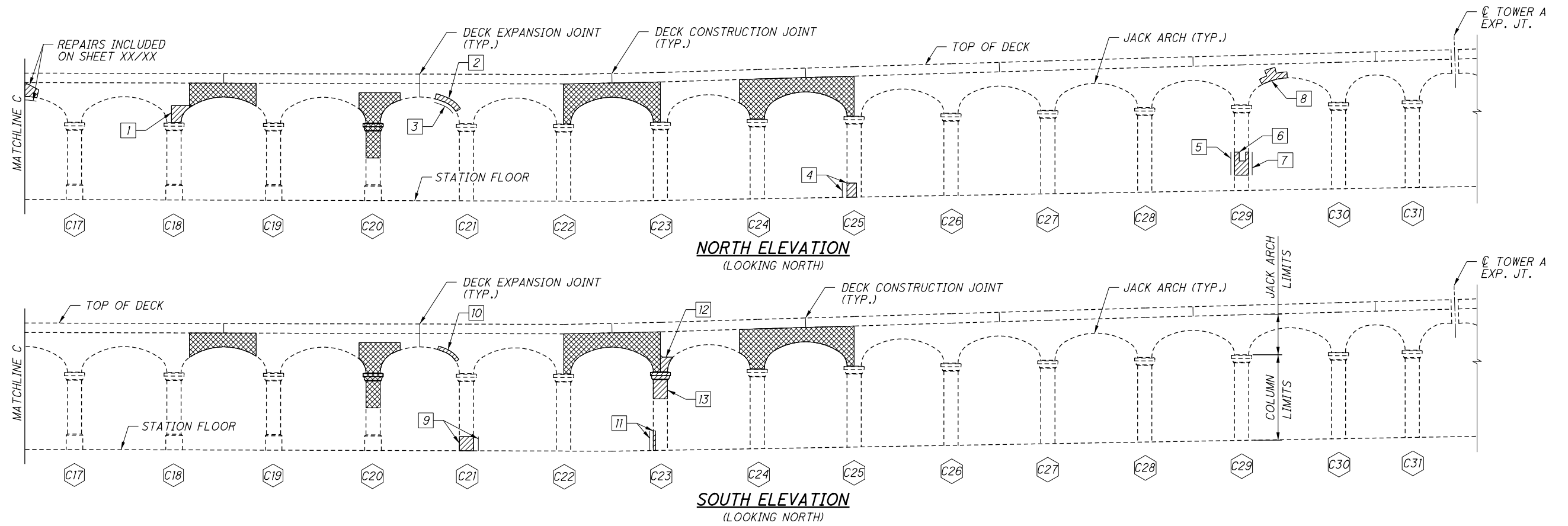
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	5	-
2	TYPE 1	3	-
3	TYPE 2	7	4
4	TYPE 1	7	2
5	TYPE 1	2	-
6	TYPE 1	7	2
7	TYPE 1	2	-
8	TYPE 1	6	3
9	TYPE 1	8	3
10	TYPE 1	2	-
11	TYPE 1	6	2
12	TYPE 1	3	-
13	TYPE 1	6	2
MEASURED QUANTITY*		64	-
PLAN QUANTITY*		96	18

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	86
TYPE 2 REPAIR	SF	10

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
5. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

WEST STATION CONCRETE REPAIR DETAILS (6 OF 8)

BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

22/89

61
 128

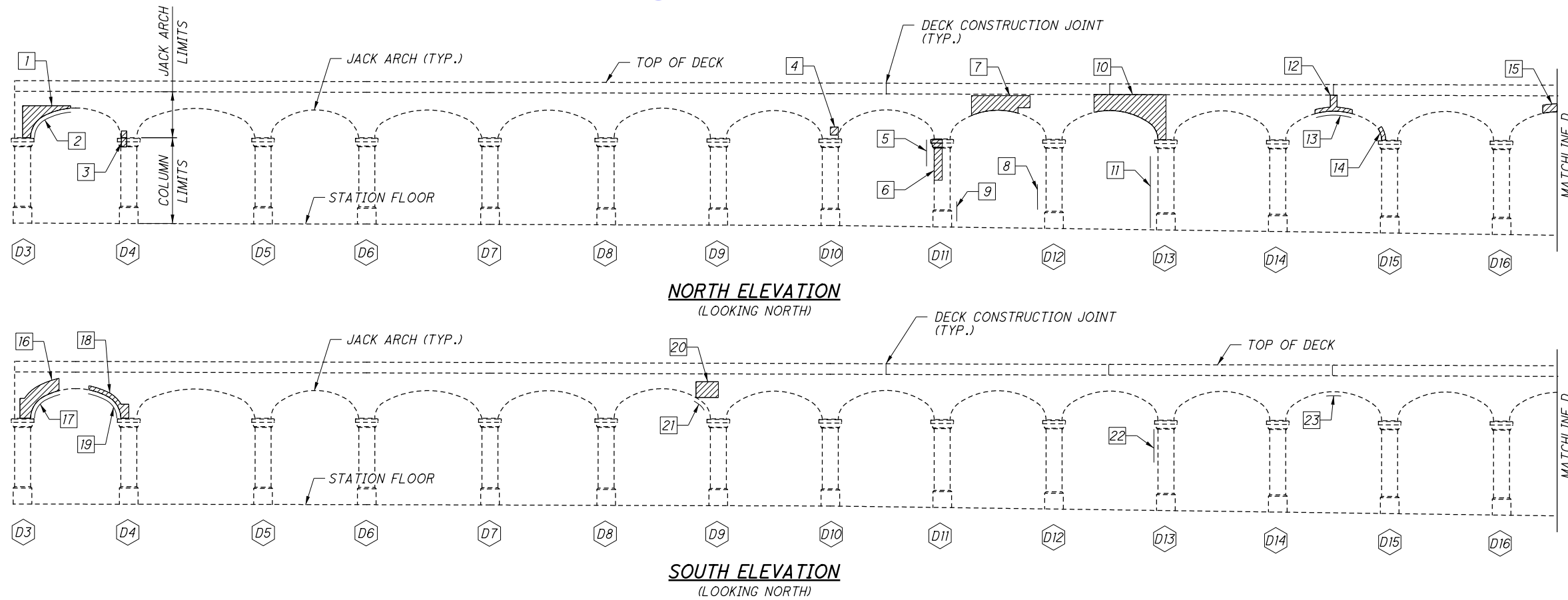
DESIGN AGENCY
Pennoni

DATE 04/18/18
 STRUCTURE FILE NUMBER 1800930

DESIGNED BPS
 CHECKED WJW

DRAWN DWJ
 JEB
 REVISED

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	10	5
2	TYPE 2	4	-
3	TYPE 1	2	-
4	TYPE 1	1	-
5	TYPE 1	4	-
6	TYPE 1	6	4
7	TYPE 1	14	6
8	TYPE 1	7	2
9	TYPE 1	5	-
10	TYPE 1	27	18
11	TYPE 1	9	7
12	TYPE 1	4	-
13	TYPE 2	3	-
14	TYPE 1	1	-
15	TYPE 1	3	-
16	TYPE 1	10	8
17	TYPE 2	3	-
18	TYPE 1	5	-
19	TYPE 2	3	-
20	TYPE 1	7	4

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 2	2	-
22	TYPE 1	4	-
23	TYPE 2	2	-
MEASURED QUANTITY*		136	-
PLAN QUANTITY*		204	54

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	178
TYPE 2 REPAIR	SF	26

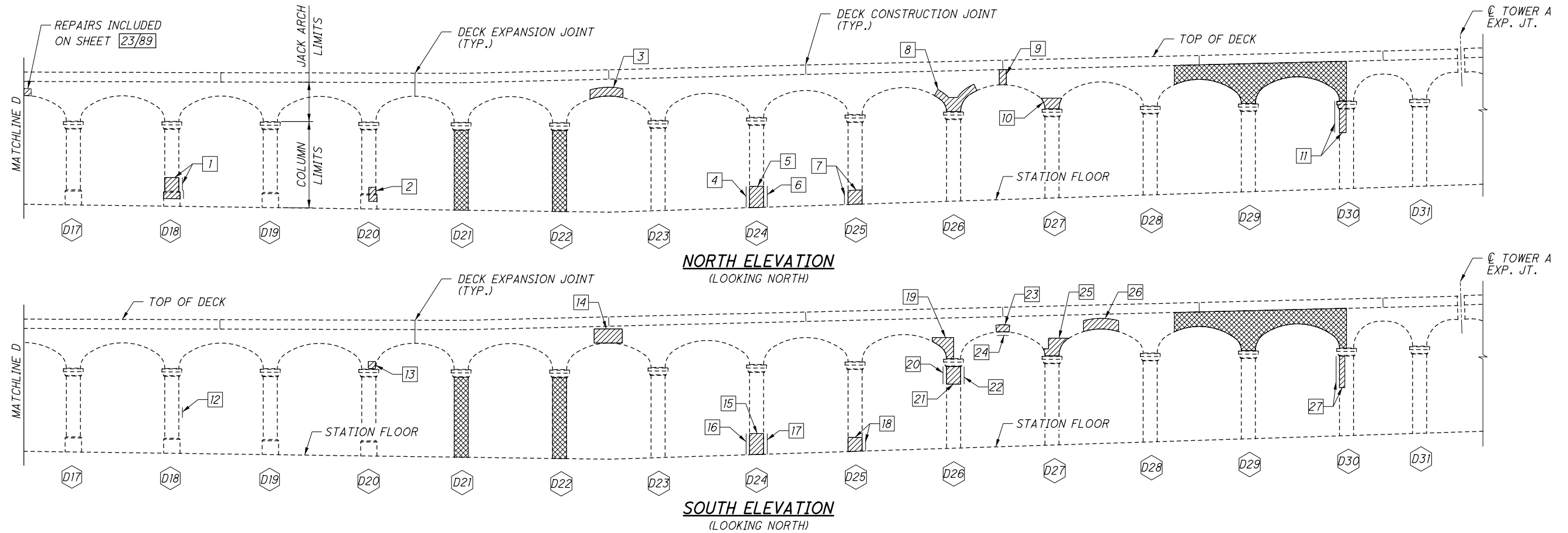
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

DESIGN AGENCY Pennoni	DATE 04/18/18	REVIEWED DWJ	STRUCTURE FILE NUMBER 1800930
DESIGNED BPS	DRAWN JEB	CHECKED WUJ	REVISED
WEST STATION CONCRETE REPAIR DETAILS (7 OF 8) BRIDGE NO. CUY-6-1456 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER			
CUY-6-14.56	PID No. 99972		
23 / 89		62 / 128	



ESTIMATED PATCHING QUANTITIES

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	12	6
2	TYPE 1	2	-
3	TYPE 1	6	4
4	TYPE 1	6	2
5	TYPE 1	6	2
6	TYPE 1	6	2
7	TYPE 1	8	3
8	TYPE 1	9	5
9	TYPE 1	2	-
10	TYPE 1	4	-
11	TYPE 1	9	3
12	TYPE 1	3	-
13	TYPE 1	1	-
14	TYPE 1	8	6
15	TYPE 1	6	2
16	TYPE 1	6	2
17	TYPE 1	6	2
18	TYPE 1	8	3
19	TYPE 1	5	-
20	TYPE 1	2	-

ESTIMATED PATCHING QUANTITIES

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 1	5	-
22	TYPE 1	2	-
23	TYPE 1	2	-
24	TYPE 2	2	-
25	TYPE 1	7	6
26	TYPE 1	8	4
27	TYPE 1	13	6
MEASURED QUANTITY*		154	-
PLAN QUANTITY*		231	58

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY

ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	228
TYPE 2 REPAIR	SF	3

NOTES:

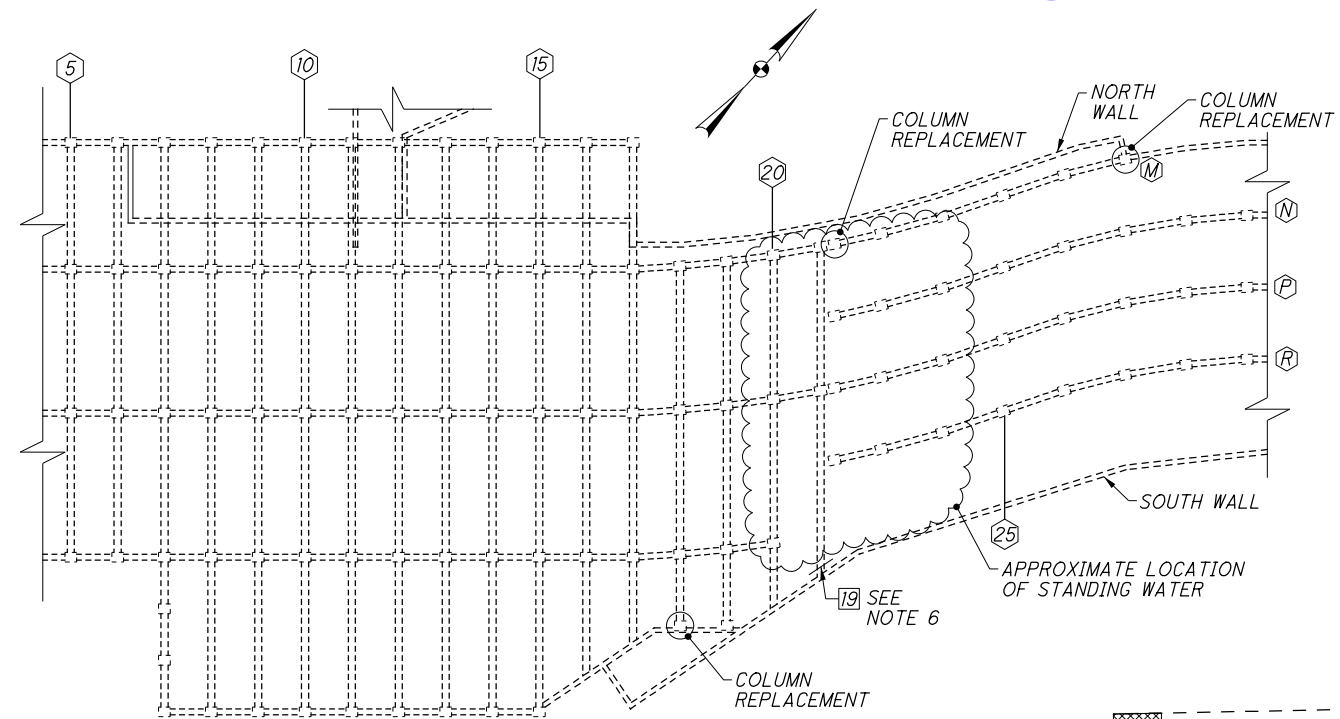
- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

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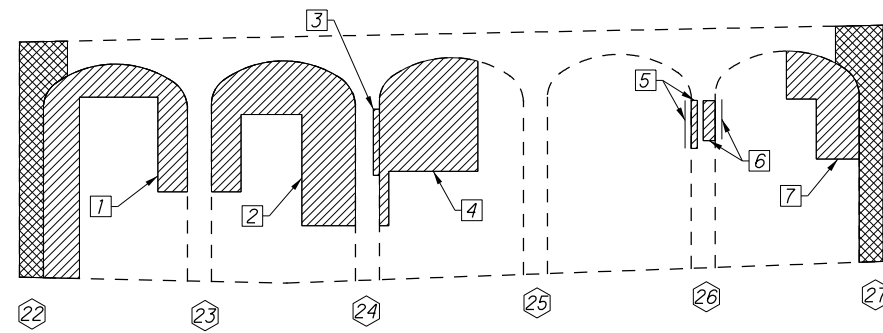
- STATION COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED. FOR REPLACEMENT DETAILS, SEE SHEETS 79/89 THRU 83/89

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EAST STATION & SUBWAY - PLAN

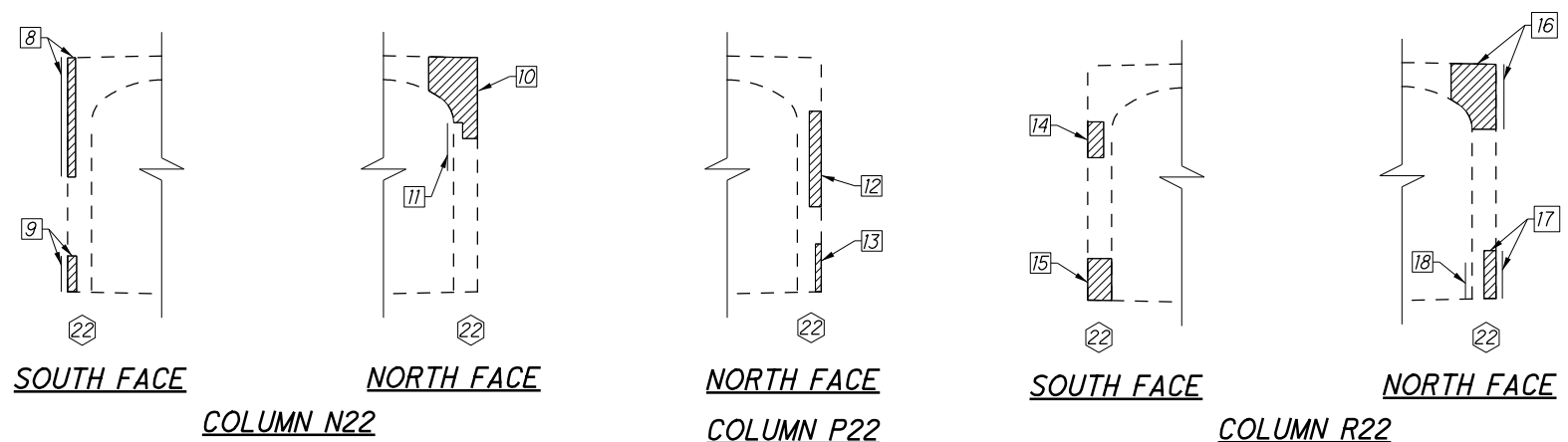


COLUMN LINE M & SUBWAY NORTH WALL - SOUTH FACE

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1 ‡	TYPE 1	183	42
2	TYPE 1	120	28
3	TYPE 1	3	-
4	TYPE 1	80	20
5	TYPE 1	4	-
6	TYPE 1	11	-
7 ‡	TYPE 1	111	30
8	TYPE 1	27	27
9	TYPE 1	6	-
10	TYPE 1	21	12
11	TYPE 1	4	-
12	TYPE 1	10	6
13	TYPE 1	2	-
14	TYPE 1	4	-
15	TYPE 1	7	2
16	TYPE 1	18	14
17	TYPE 1	13	6
18	TYPE 1	6	2
19	TYPE 1	70	34
MEASURED QUANTITY*		700	-
PLAN QUANTITY*		1050	223

* SEE NOTES 1 & 2 ‡ SEE NOTE 8
 ** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	1050
TYPE 2 REPAIR	SF	-



NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES IN THE EAST STATION AND EAST SUBWAY.
- THE CONTRACTOR SHALL REMOVE DEBRIS THAT OBSTRUCTS THE PATCHING OF THE SOUTH WALL. PAYMENT SHALL BE INCLUDED AS PART OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED OVER 20 FOOT SPAN, AS PER PLAN.
- FOR DETAILS OF COLUMNS AND JACK ARCH REPLACEMENT, SEE SHEETS [79/89] THRU [83/89].
- WALL REPAIR EXTENDS BEHIND COLUMN TO BE REPLACED.

LEGEND:

- # STATION COLUMN NUMBER
- # REPAIR NUMBER
- [Hatched Box] LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, TYPE 1 REPAIR
- [Dashed Line] LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL PATCHING CONCRETE STRUCTURES, TYPE 1 REPAIR
- [Cross-hatched Box] LOCATION OF DEFICIENT COLUMN OR JACK ARCH TO BE REPLACED.

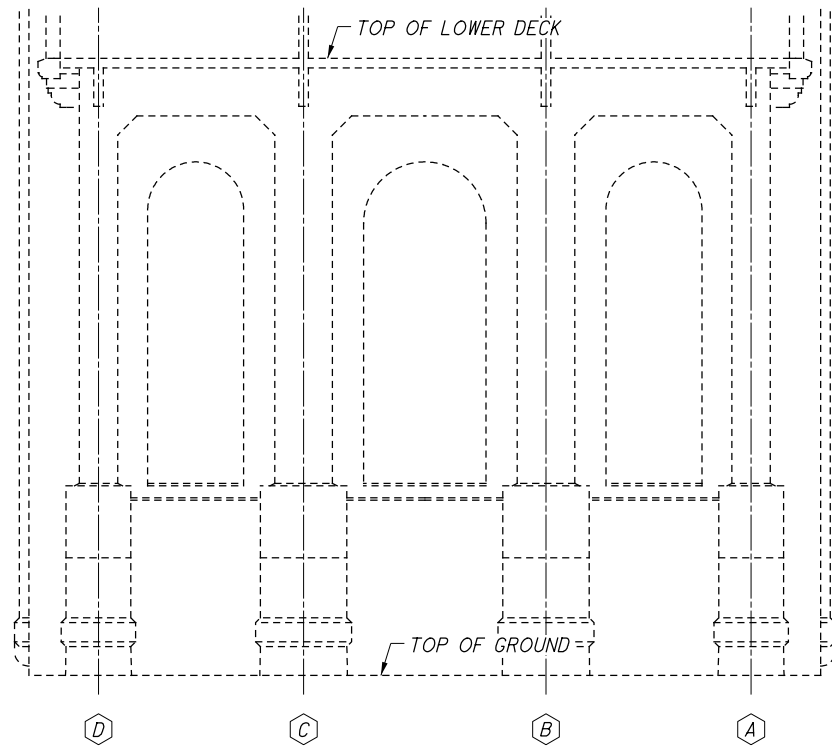
DESIGN AGENCY
Pennoni

DESIGNED BY BPS
 CHECKED BY WJW
 DRAWN BY JEB
 REVISIONS
 REVIEWED BY DWJ
 DATE 04/18/18
 STRUCTURE FILE NUMBER 1800930

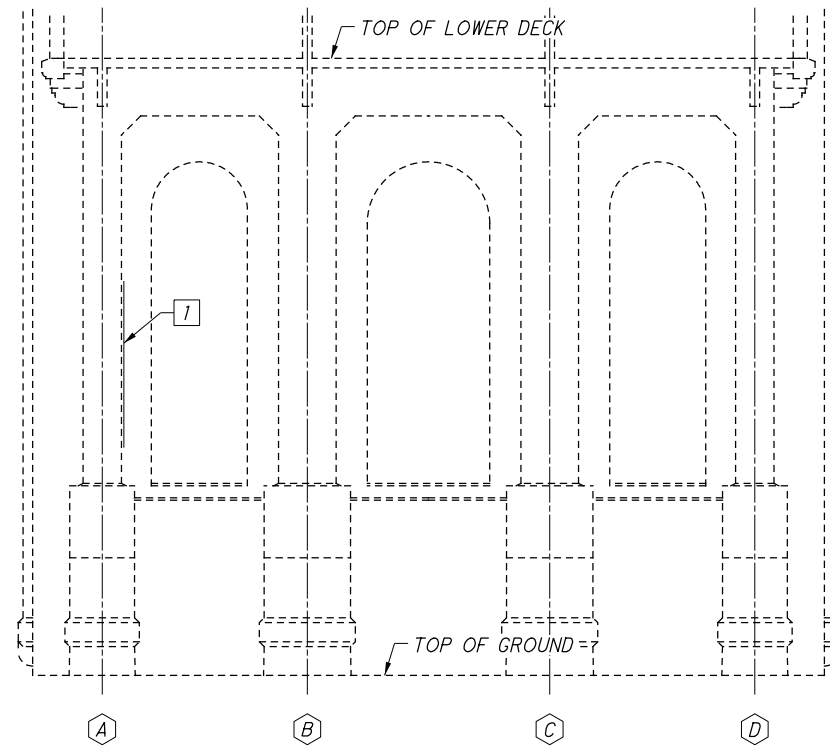
EAST STATION & SUBWAY CONCRETE REPAIR DETAILS
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

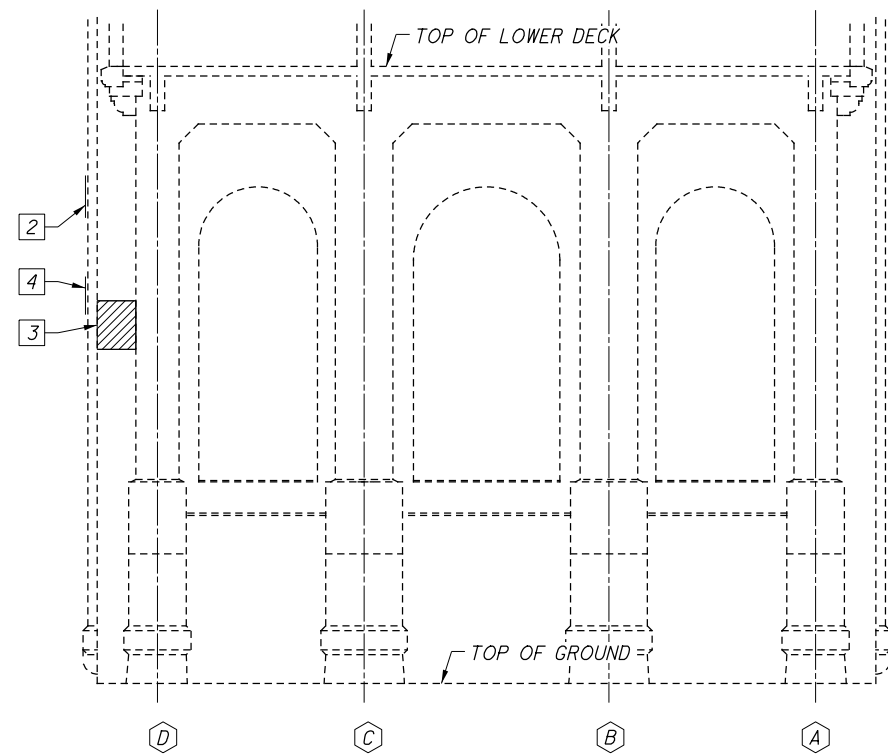
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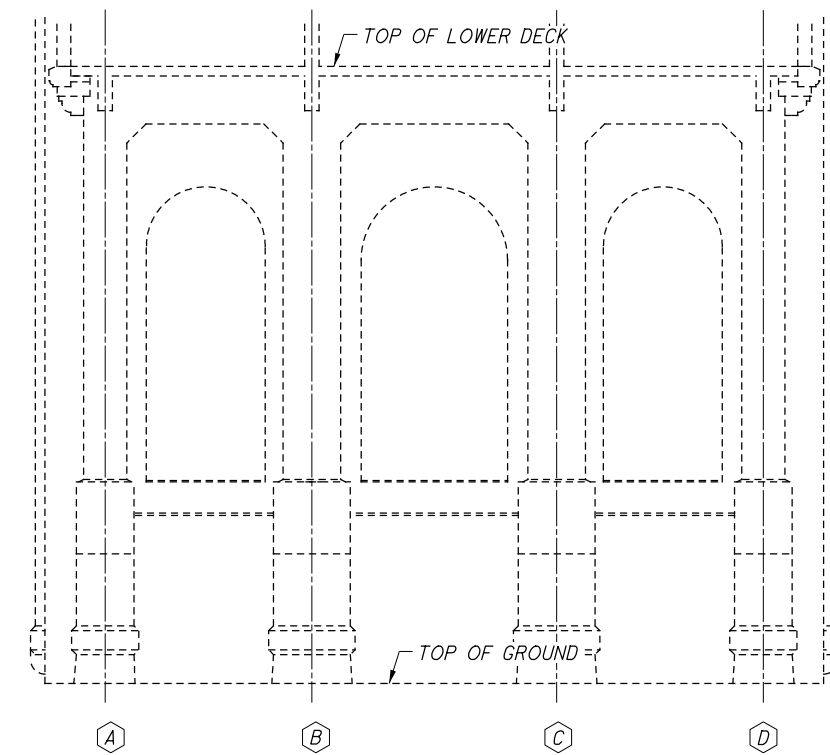
PIER 3 - EAST ELEVATION



PIER 3 - WEST ELEVATION



PIER 4 - EAST ELEVATION



PIER 4 - WEST ELEVATION

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	14	6
2	TYPE 1	6	2
3	TYPE 1	36	12
4	TYPE 1	2	1
MEASURED QUANTITY*		58	-
PLAN QUANTITY*		87	21

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	87
TYPE 2 REPAIR	SF	-

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].

LEGEND:

- (X) ARCH RIB LINE
- # REPAIR NUMBER
- ▨ LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- || LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
 DWJ
 STRUCTURE FILE NUMBER 1800930

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 JEB
 REVISED

DESIGNED WJV
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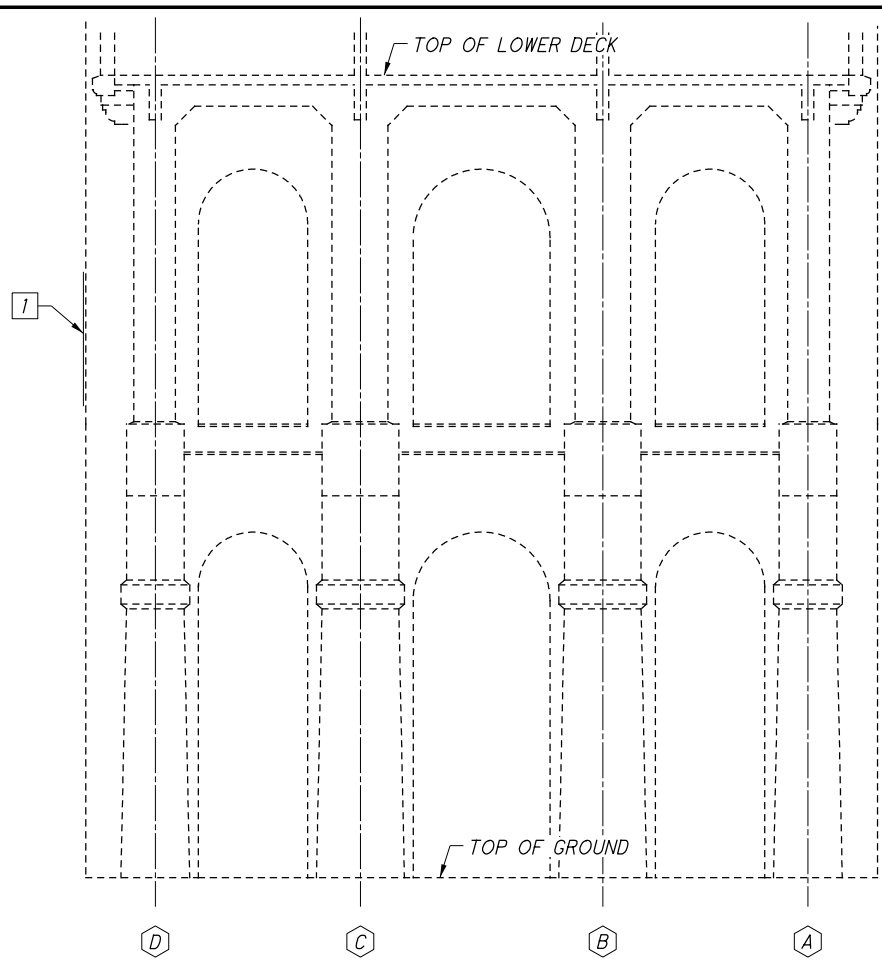
PIER CONCRETE REPAIR DETAILS (1 OF 4)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

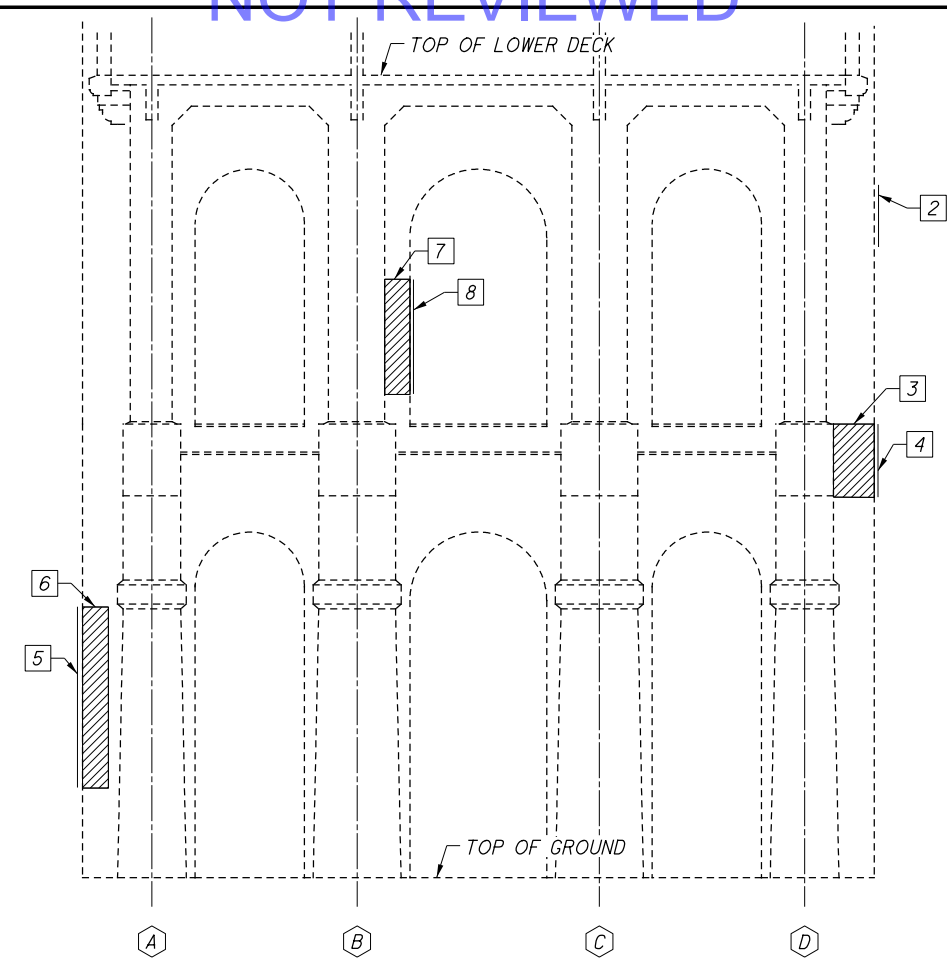
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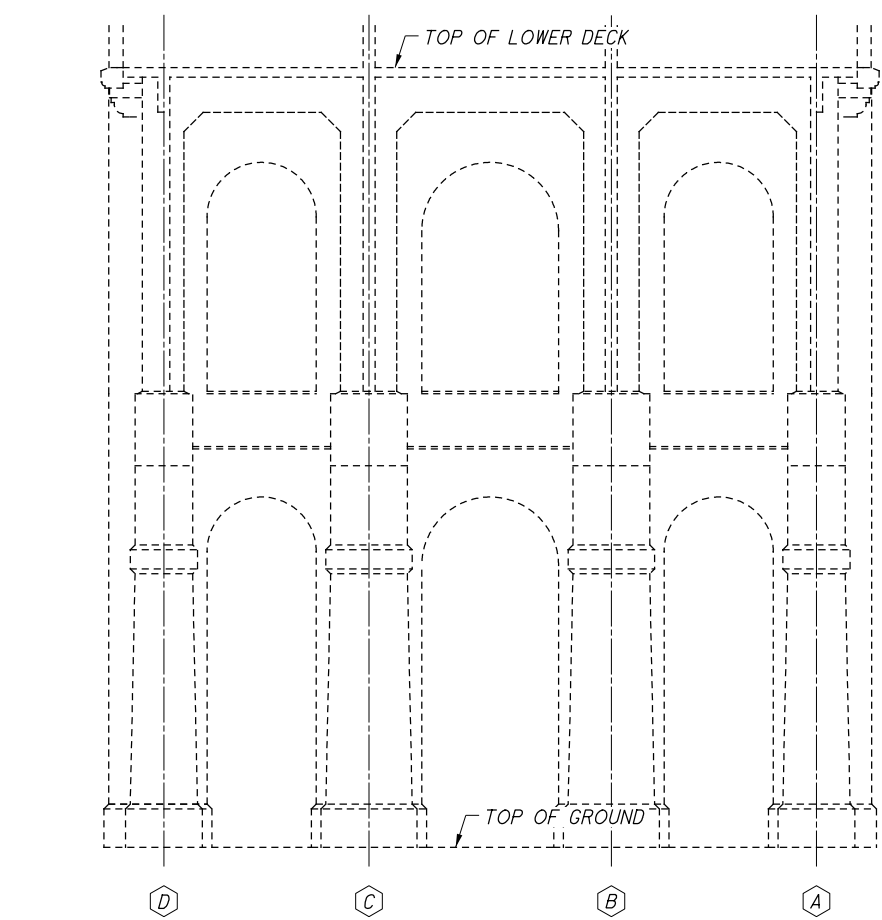
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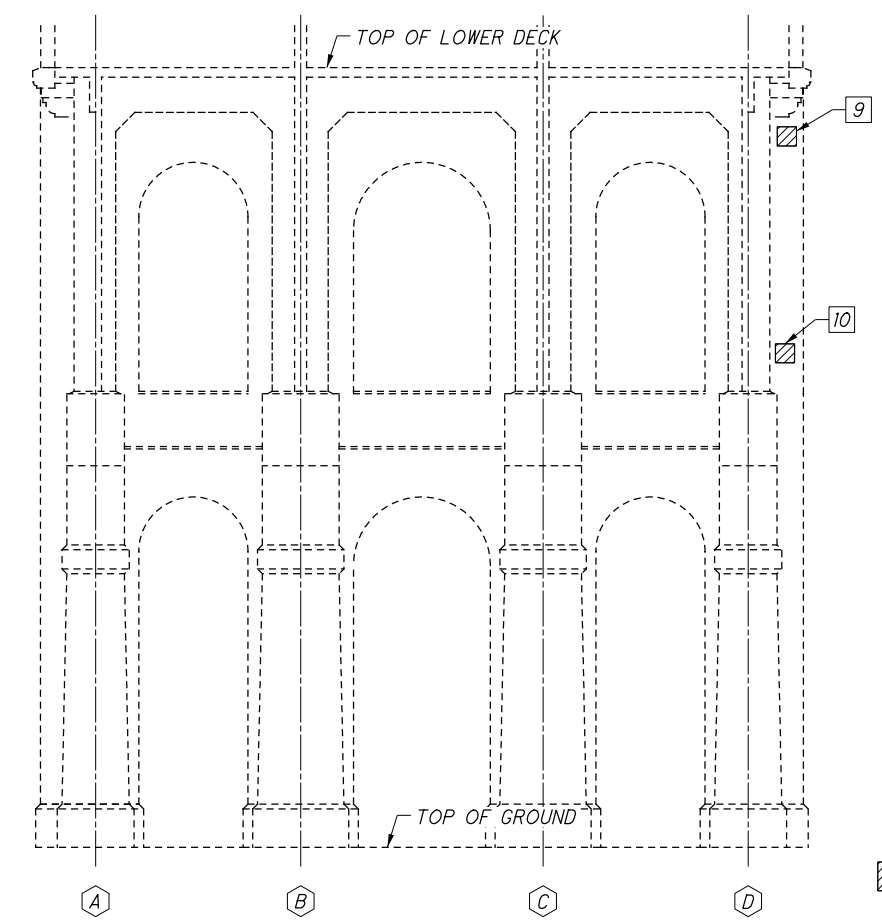
PIER 5 - EAST ELEVATION



PIER 5 - WEST ELEVATION



PIER 6 - EAST ELEVATION



PIER 6 - WEST ELEVATION

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	28	9
2	TYPE 1	4	1
3	TYPE 1	16	5
4	TYPE 1	5	2
5	TYPE 1	12	7
6	TYPE 1	24	7
7	TYPE 1	3	3
8	TYPE 1	3	3
9	TYPE 1	1	1
10	TYPE 1	4	1
MEASURED QUANTITY*		100	-
PLAN QUANTITY*		150	39

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	150
TYPE 2 REPAIR	SF	-

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].

LEGEND:

- ARCH RIB LINE
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

DESIGN AGENCY

REVIEWED DATE
04/18/18

DRAWN JEB
STRUCTURE FILE NUMBER

DESIGNED WJV
1800930

CHECKED EAT

PIER CONCRETE REPAIR DETAILS (2 OF 4)

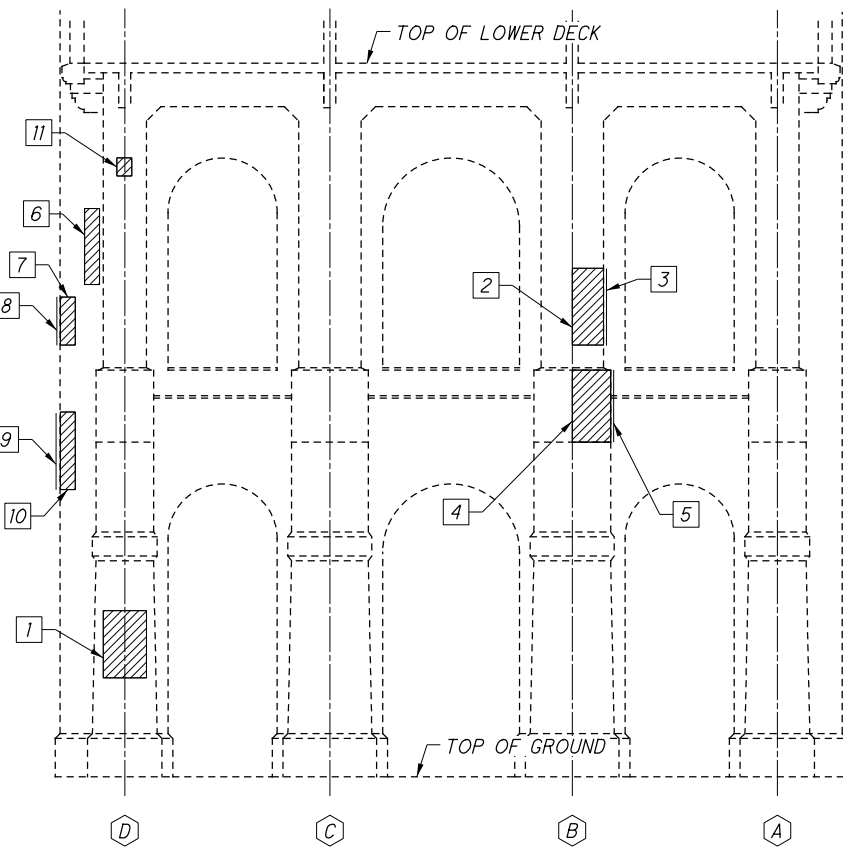
BRIDGE NO. CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

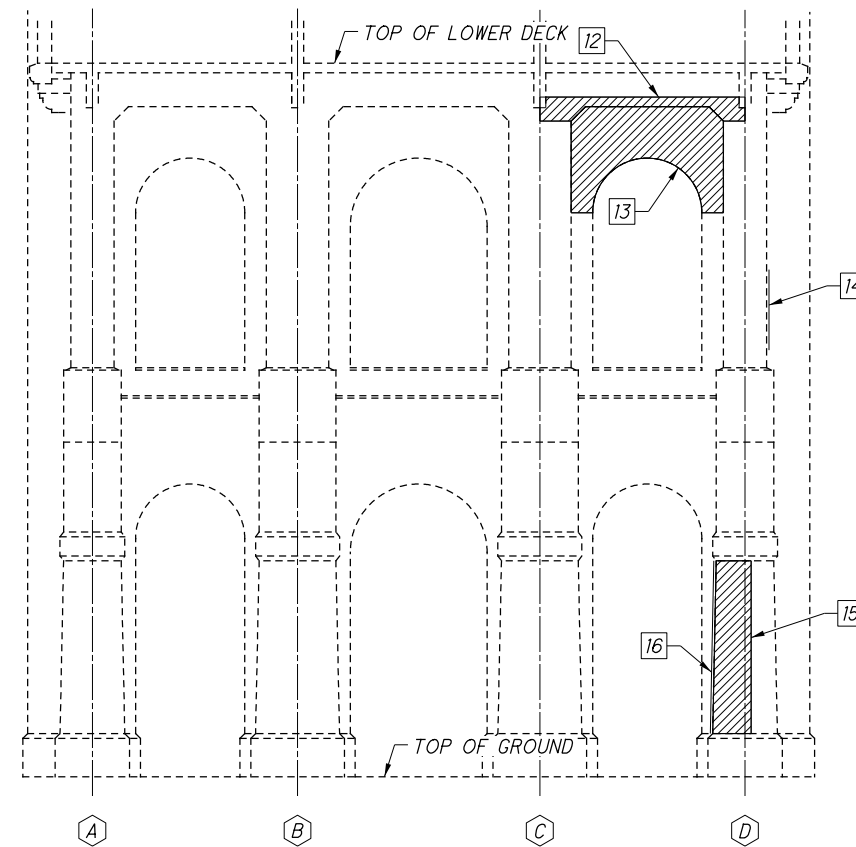
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PID No. 99972

27/89
66/128

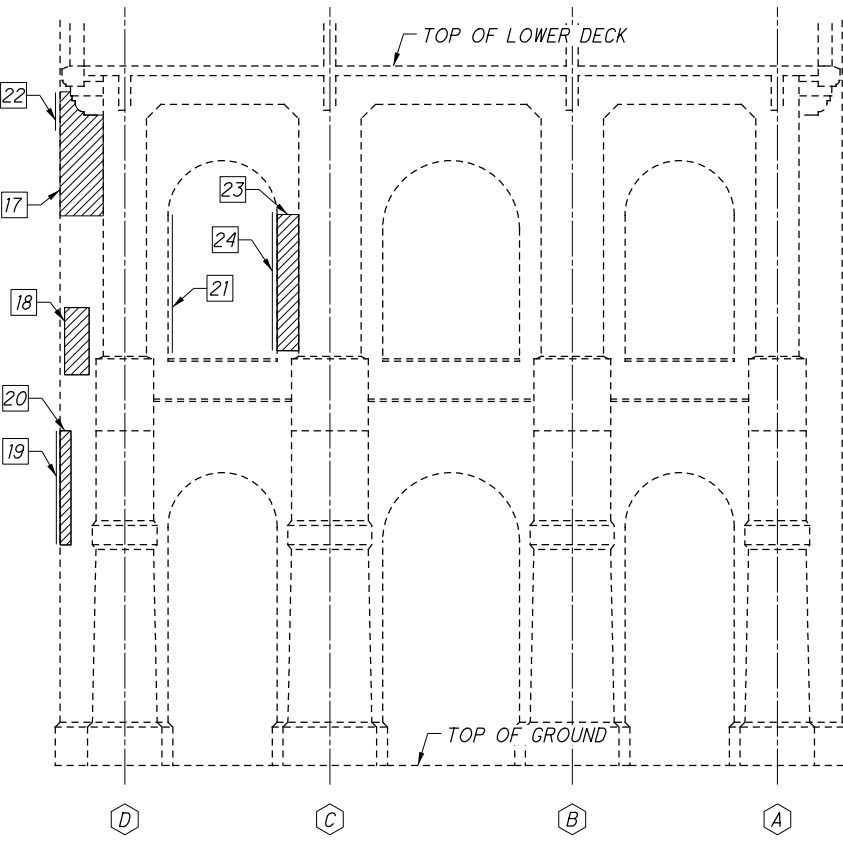
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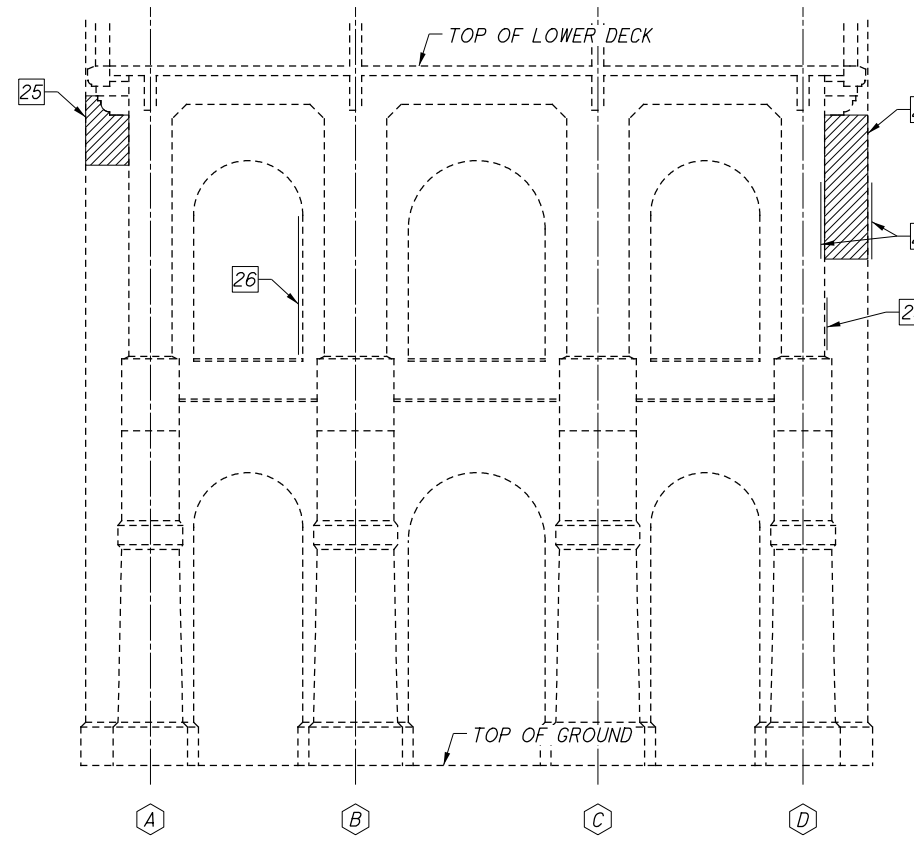
PIER 7 - EAST ELEVATION



PIER 7 - WEST ELEVATION



PIER 8 - EAST ELEVATION



PIER 8 - WEST ELEVATION

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	9	4
2	TYPE 1	12	3
3	TYPE 1	3	3
4	TYPE 1	8	5
5	TYPE 1	6	5
6	TYPE 1	7	3
7	TYPE 1	6	7
8	TYPE 1	6	7
9	TYPE 1	4	1
10	TYPE 1	4	1
11	TYPE 1	1	1
12	TYPE 1	152	30
13	TYPE 1	71	26
14	TYPE 1	18	5
15	TYPE 1	67	20
16	TYPE 1	34	10
17	TYPE 1	83	24
18	TYPE 1	21	8
19	TYPE 1	5	2
20	TYPE 1	15	9
21	TYPE 1	15	9
22	TYPE 1	8	5
23	TYPE 1	45	18
24	TYPE 1	15	9
25	TYPE 1	32	10
26	TYPE 1	150	26
27	TYPE 1	9	4
28	TYPE 1	68	20
29	TYPE 1	17	6
MEASURED QUANTITY*		891	-
PLAN QUANTITY*		1337	281

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	1337
TYPE 2 REPAIR	SF	-

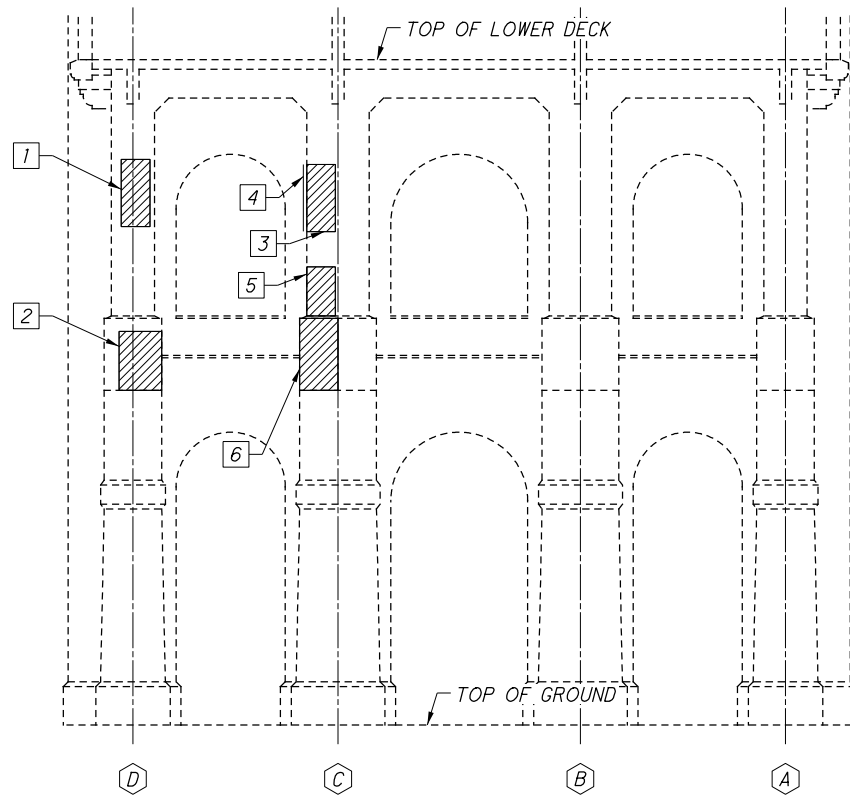
NOTES:

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- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].

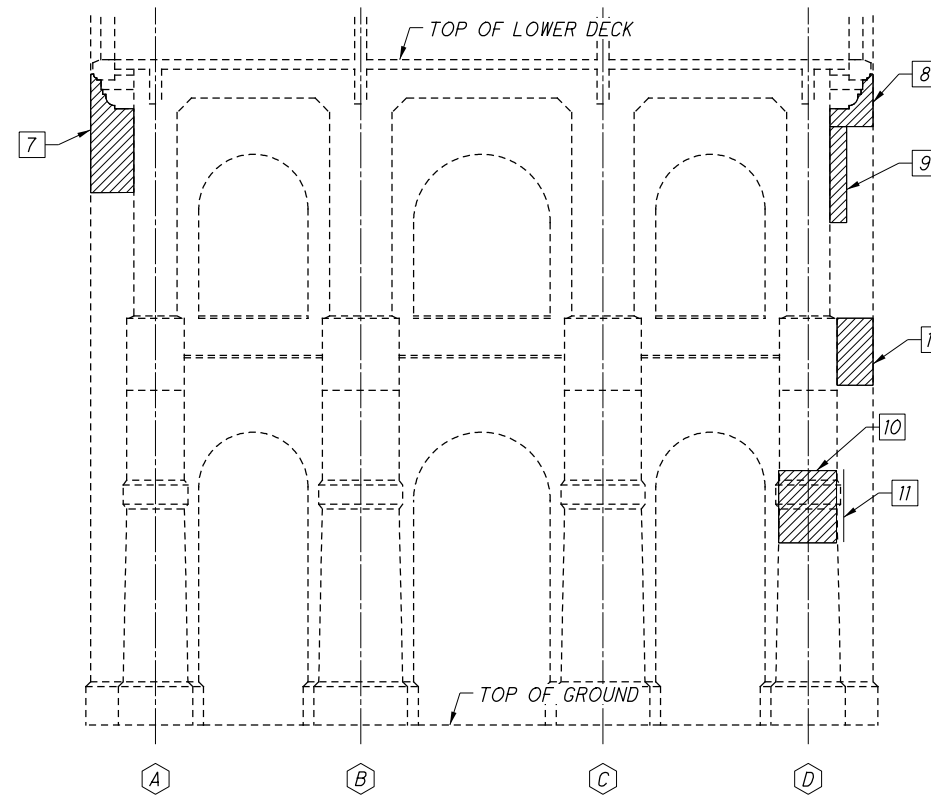
LEGEND:

- (X) ARCH RIB LINE
- # REPAIR NUMBER
- ▨ LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- ||| LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

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PIER 9 - EAST ELEVATION



PIER 9 - WEST ELEVATION

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	21	8
2	TYPE 1	11	5
3	TYPE 1	16	4
4	TYPE 1	4	4
5	TYPE 1	27	10
6	TYPE 1	4	4
7	TYPE 1	34	12
8	TYPE 1	20	6
9	TYPE 1	18	6
10	TYPE 1	9	4
11	TYPE 1	6	2
12	TYPE 1	25	8
MEASURED QUANTITY*		195	-
PLAN QUANTITY*		293	75

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	293
TYPE 2 REPAIR	SF	-

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN SEPTEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].

LEGEND:

- ARCH RIB LINE
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
 DWJ STRUCTURE FILE NUMBER 1800930

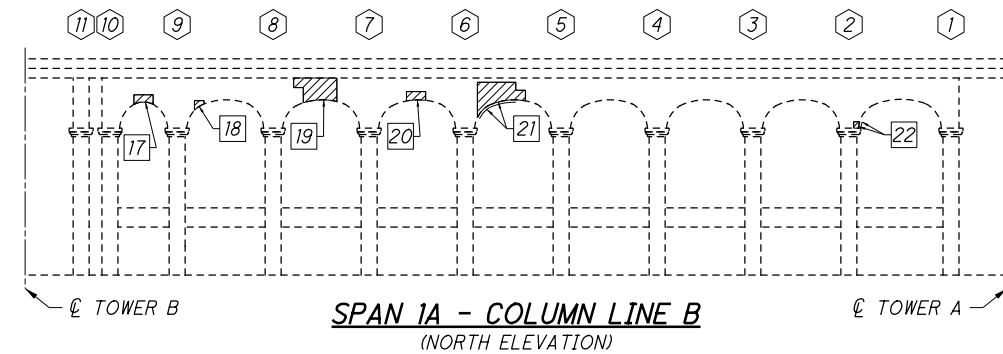
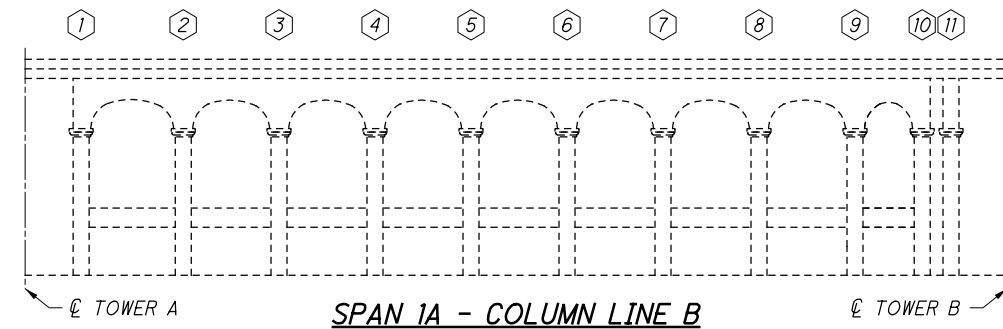
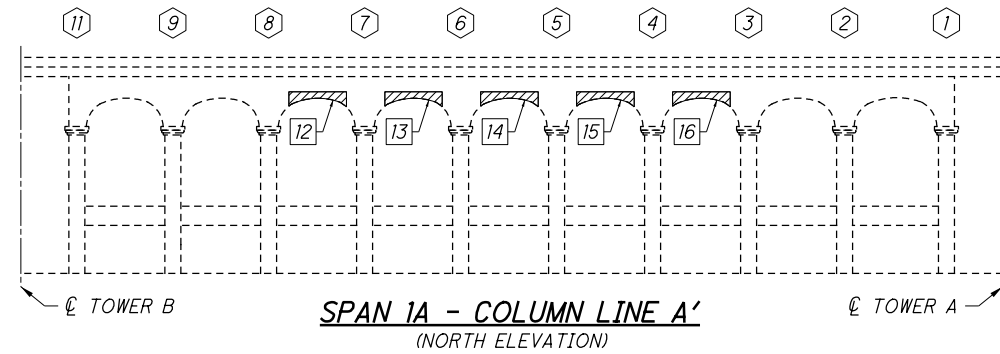
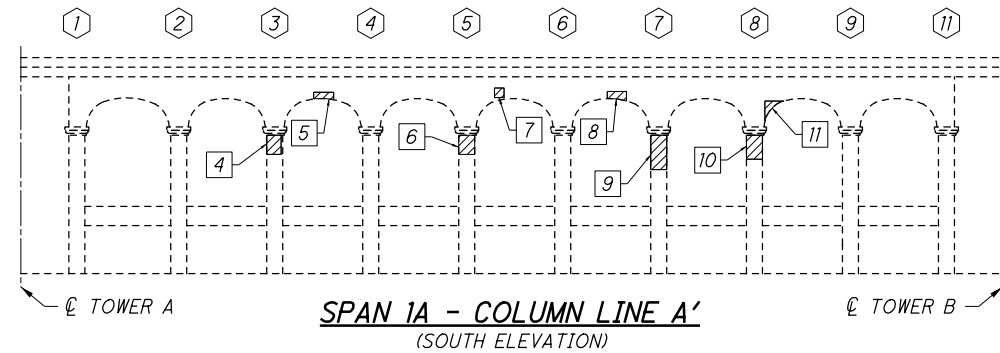
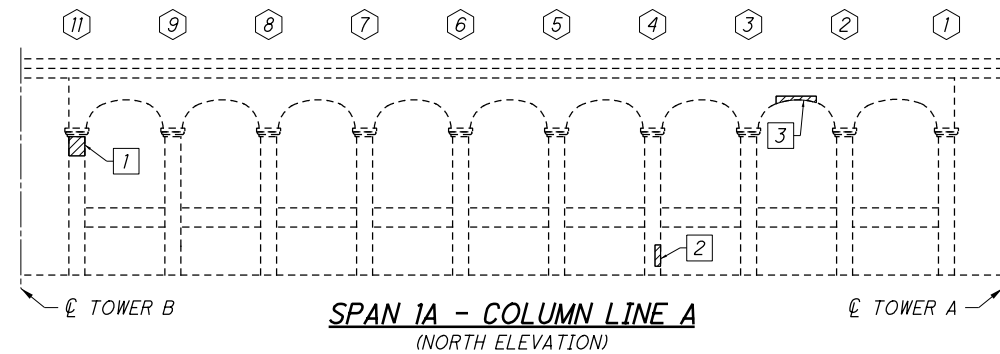
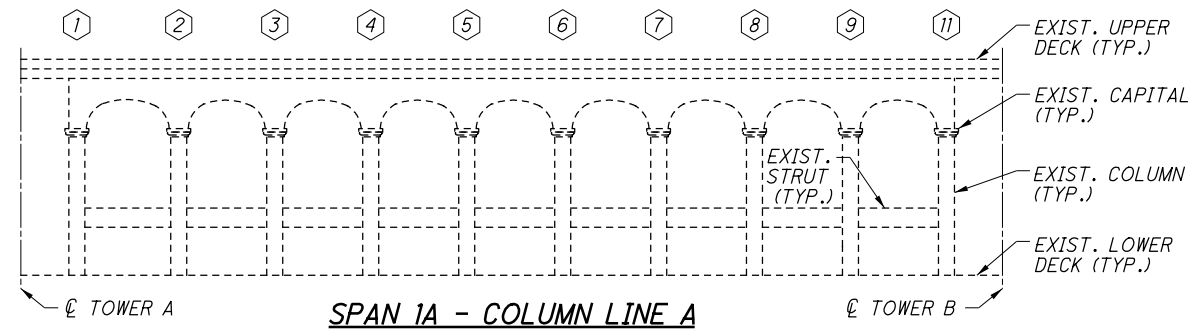
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PIER CONCRETE REPAIR DETAILS (4 OF 4)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

29/89

68
 128



ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	-
2	TYPE 1	1	-
3	TYPE 1	1	-
4	TYPE 1	3	-
5	TYPE 1	2	-
6	TYPE 1	3	-
7	TYPE 1	1	-
8	TYPE 1	4	-
9	TYPE 1	6	3
10	TYPE 1	5	2
11	TYPE 1	4	-
12	TYPE 1	6	5
13	TYPE 1	6	5
14	TYPE 1	6	5
15	TYPE 1	6	5
16	TYPE 1	6	5
17	TYPE 1	2	-
18	TYPE 1	1	-
19	TYPE 1	8	6
20	TYPE 1	1	-

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 2	21	12
22	TYPE 1	2	-
MEASURED QUANTITY*		97	-
PLAN QUANTITY*		146	48

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	114
TYPE 2 REPAIR	SF	32

NOTES:

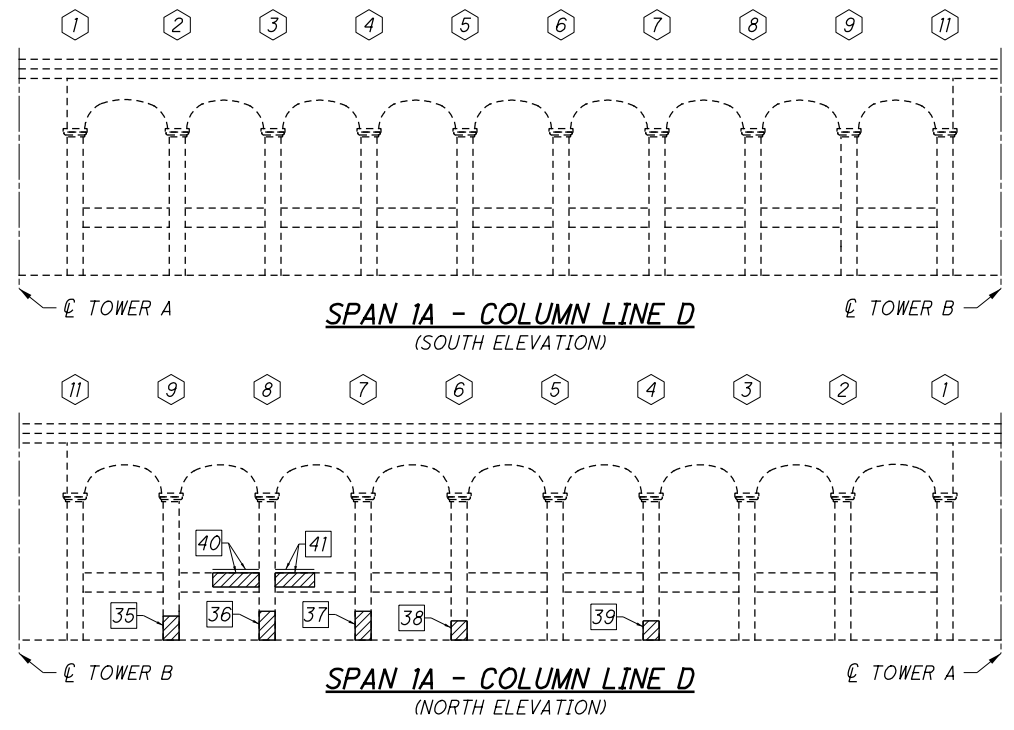
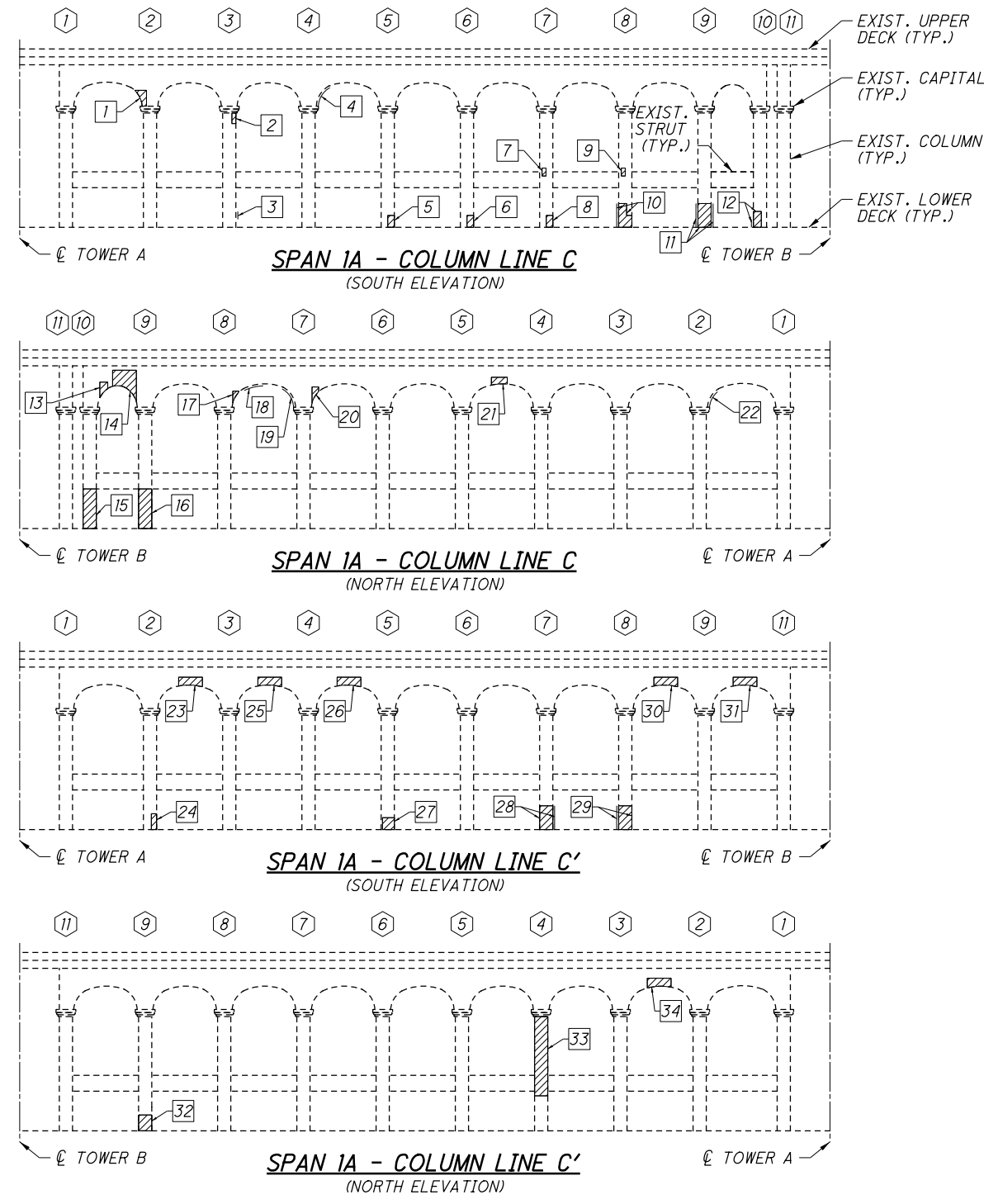
- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	-
2	TYPE 1	1	-
3	TYPE 1	1	-
4	TYPE 2	3	-
5	TYPE 1	2	-
6	TYPE 1	2	-
7	TYPE 1	1	-
8	TYPE 1	2	-
9	TYPE 1	1	-
10	TYPE 1	8	4
11	TYPE 1	15	8
12	TYPE 1	4	-
13	TYPE 1	2	2
14	TYPE 1	12	8
15	TYPE 1	5	2
16	TYPE 1	5	2
17	TYPE 1	2	-
18	TYPE 2	3	-
19	TYPE 2	4	-
20	TYPE 1	2	-
21	TYPE 1	3	-
22	TYPE 2	5	4

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
23	TYPE 1	3	-
24	TYPE 1	2	-
25	TYPE 1	3	-
26	TYPE 1	3	-
27	TYPE 1	3	-
28	TYPE 1	9	4
29	TYPE 1	8	6
30	TYPE 1	3	-
31	TYPE 1	3	-
32	TYPE 1	4	-
33	TYPE 1	17	7
34	TYPE 1	3	-
35	TYPE 1	7	3
36	TYPE 1	6	2
37	TYPE 1	6	2
38	TYPE 1	4	-
39	TYPE 1	4	-
40	TYPE 1	6	1
41	TYPE 1	2	-
MEASURED QUANTITY*		181	-
PLAN QUANTITY*		272	55

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	249
TYPE 2 REPAIR	SF	23

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

DESIGN AGENCY

Pennoni

DESIGNED

DRAWN

REVIEWED

DATE

WJV

JEB

DWJ

04/18/18

CHECKED

REVISED

STRUCTURE FILE NUMBER

1800930

SPAN 1A CONCRETE REPAIR DETAILS (2 OF 2)

BRIDGE NO. CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

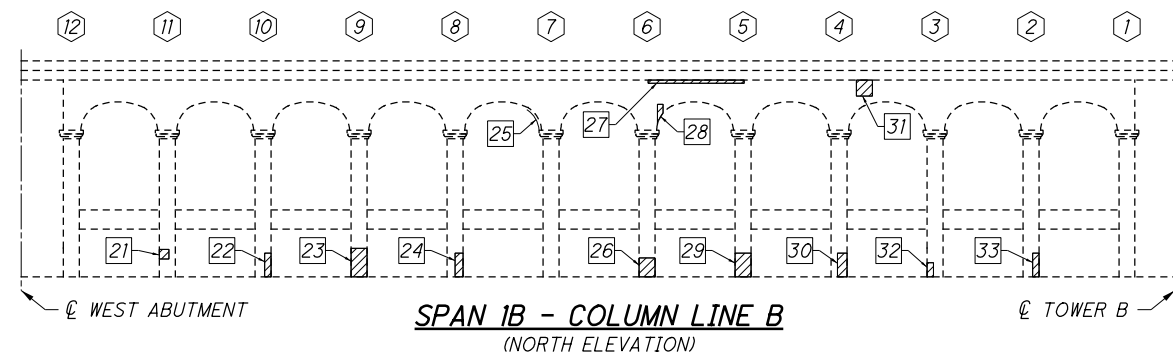
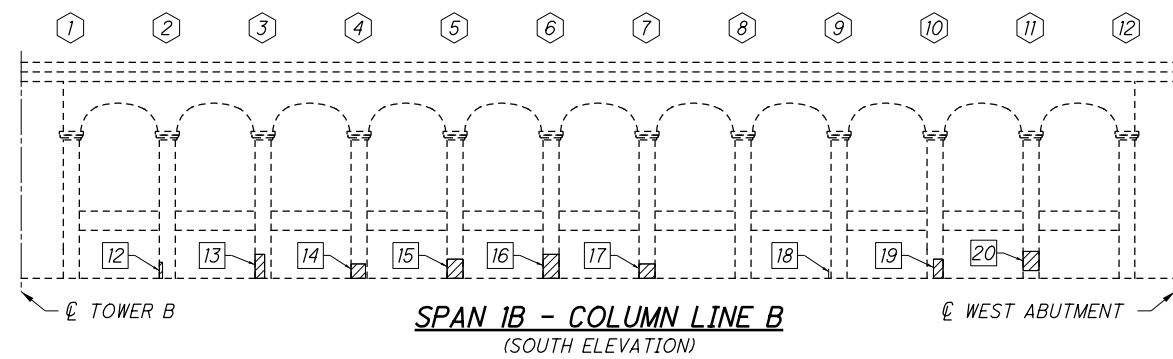
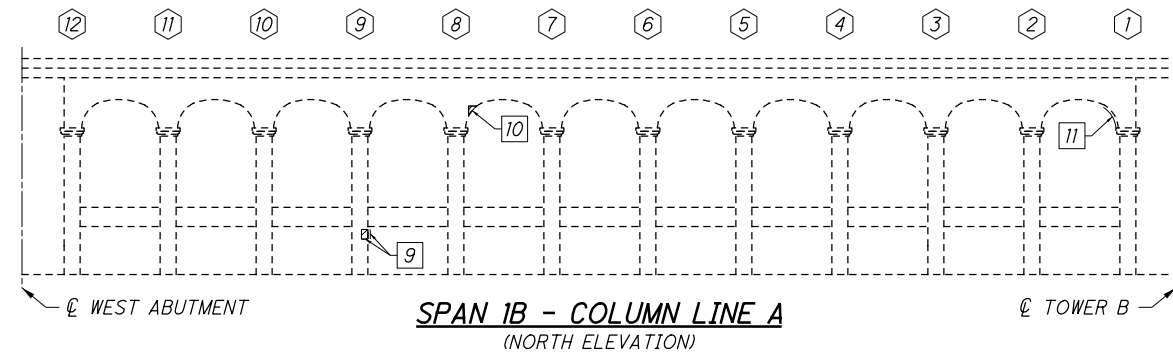
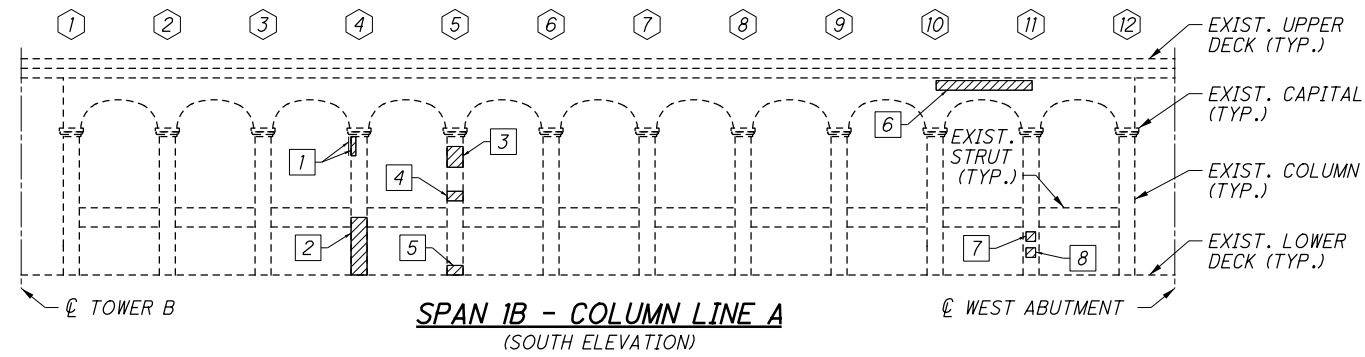
CUY-6-14.56

PID No. 99972

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REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	-
2	TYPE 1	7	3
3	TYPE 1	4	-
4	TYPE 1	2	-
5	TYPE 1	2	-
6	TYPE 1	10	9
7	TYPE 1	1	-
8	TYPE 1	1	-
9	TYPE 1	2	-
10	TYPE 1	1	-
11	TYPE 2	6	6
12	TYPE 1	1	-
13	TYPE 1	3	-
14	TYPE 1	3	-
15	TYPE 1	4	-
16	TYPE 1	5	2
17	TYPE 1	3	-
18	TYPE 1	1	-
19	TYPE 1	2	-
20	TYPE 1	4	-
21	TYPE 1	1	-
22	TYPE 1	2	-

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
23	TYPE 1	5	1
24	TYPE 1	3	-
25	TYPE 2	3	-
26	TYPE 1	4	-
27	TYPE 1	4	-
28	TYPE 1	2	-
29	TYPE 1	5	7
30	TYPE 1	3	-
31	TYPE 1	3	-
32	TYPE 1	1	-
33	TYPE 1	2	-
MEASURED QUANTITY*		102	-
PLAN QUANTITY*		153	28

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	139
TYPE 2 REPAIR	SF	14

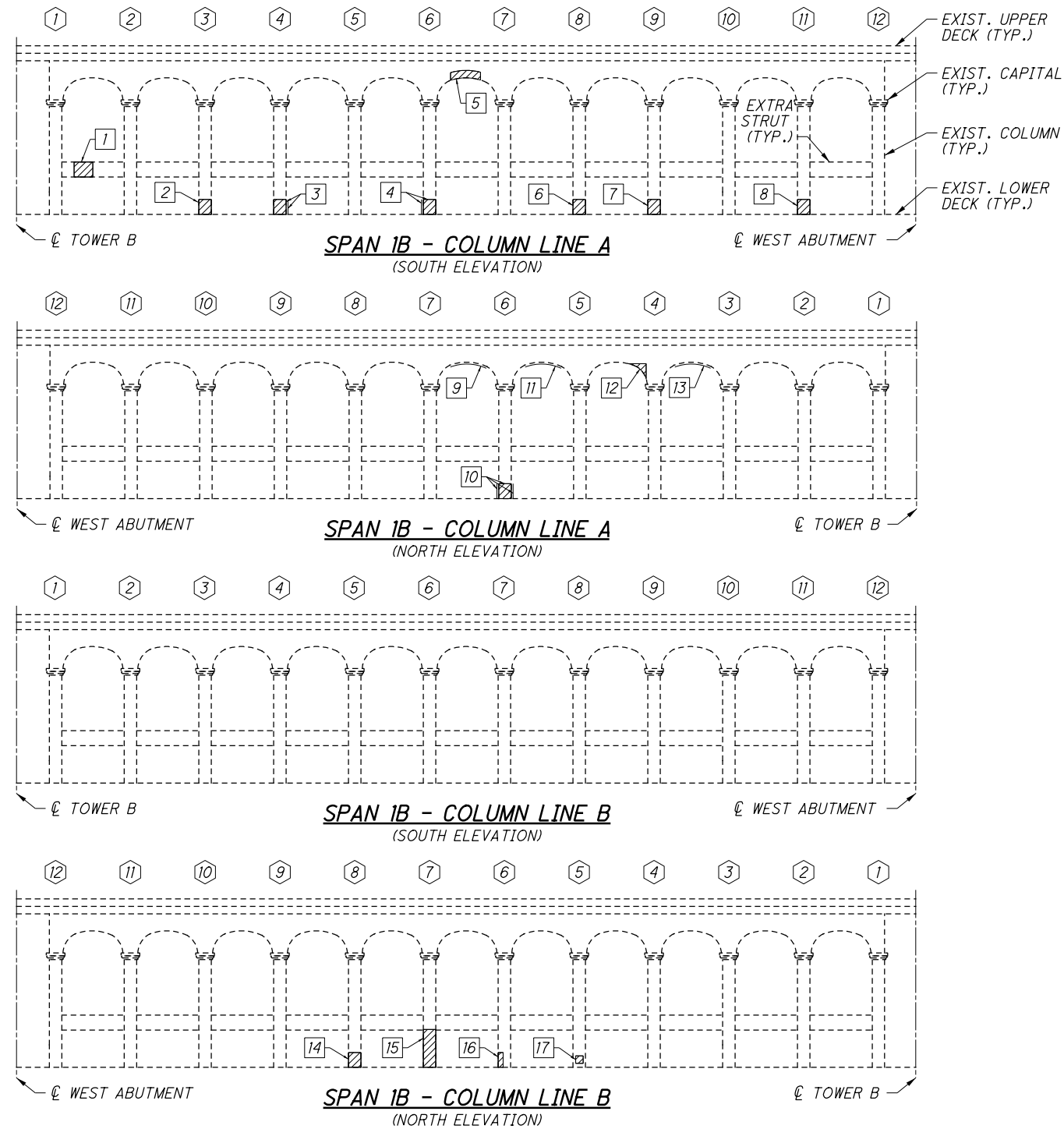
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	5	4
2	TYPE 1	4	-
3	TYPE 1	8	4
4	TYPE 1	8	4
5	TYPE 1	4	-
6	TYPE 1	4	-
7	TYPE 1	4	-
8	TYPE 1	4	-
9	TYPE 2	6	4
10	TYPE 1	12	8
11	TYPE 2	5	4
12	TYPE 1	2	-
13	TYPE 2	4	-
14	TYPE 1	4	-
15	TYPE 1	10	4
16	TYPE 1	2	-
17	TYPE 1	1	-
MEASURED QUANTITY*		87	-
PLAN QUANTITY*		131	32

* SEE NOTES 1 & 2
 ** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	108
TYPE 2 REPAIR	SF	23

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR THE EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR

DESIGN AGENCY: **Pennoni**

REVIEWED: DWJ DATE: 04/18/18
 STRUCTURE FILE NUMBER: 1800930

DRAWN: JEB
 CHECKED: EAT

DESIGNED: WJV

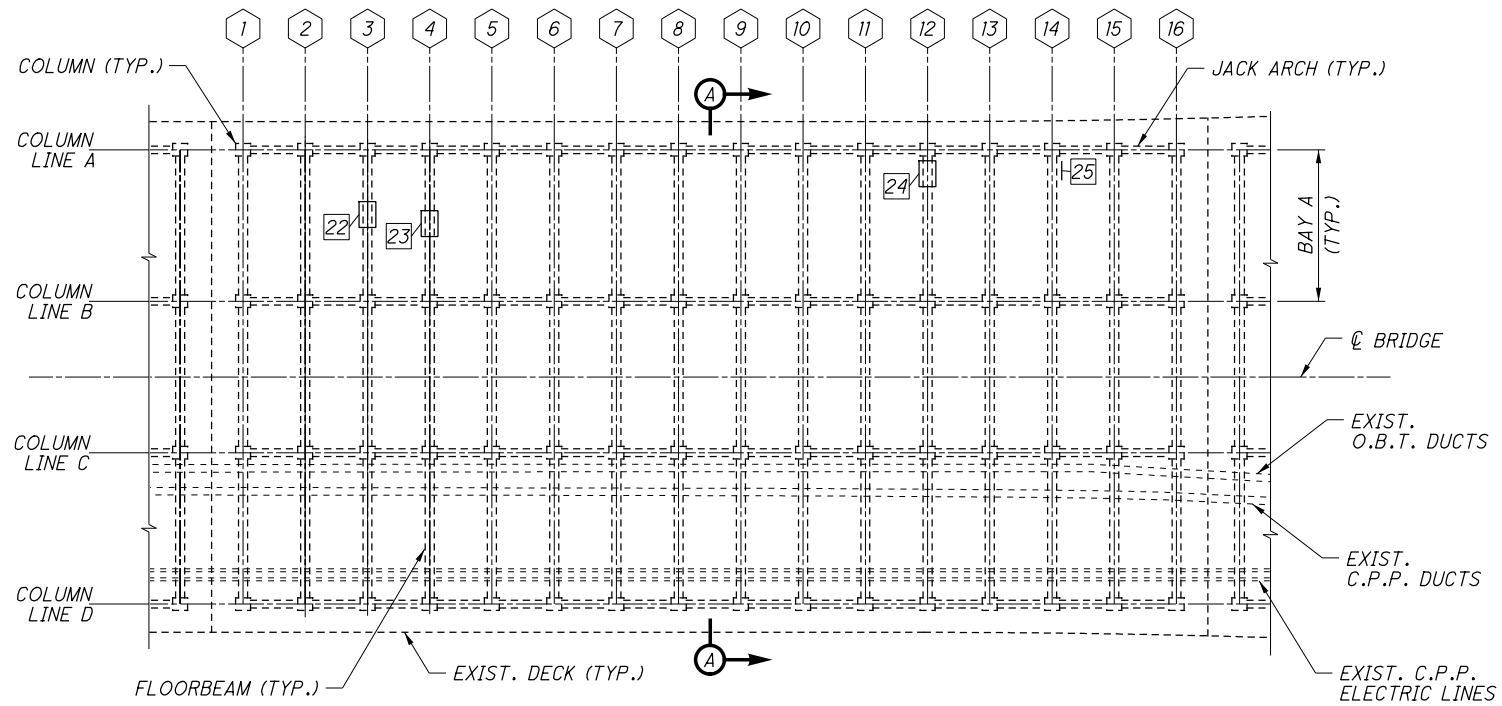
SPAN 1B CONCRETE REPAIR DETAILS (2 OF 2)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

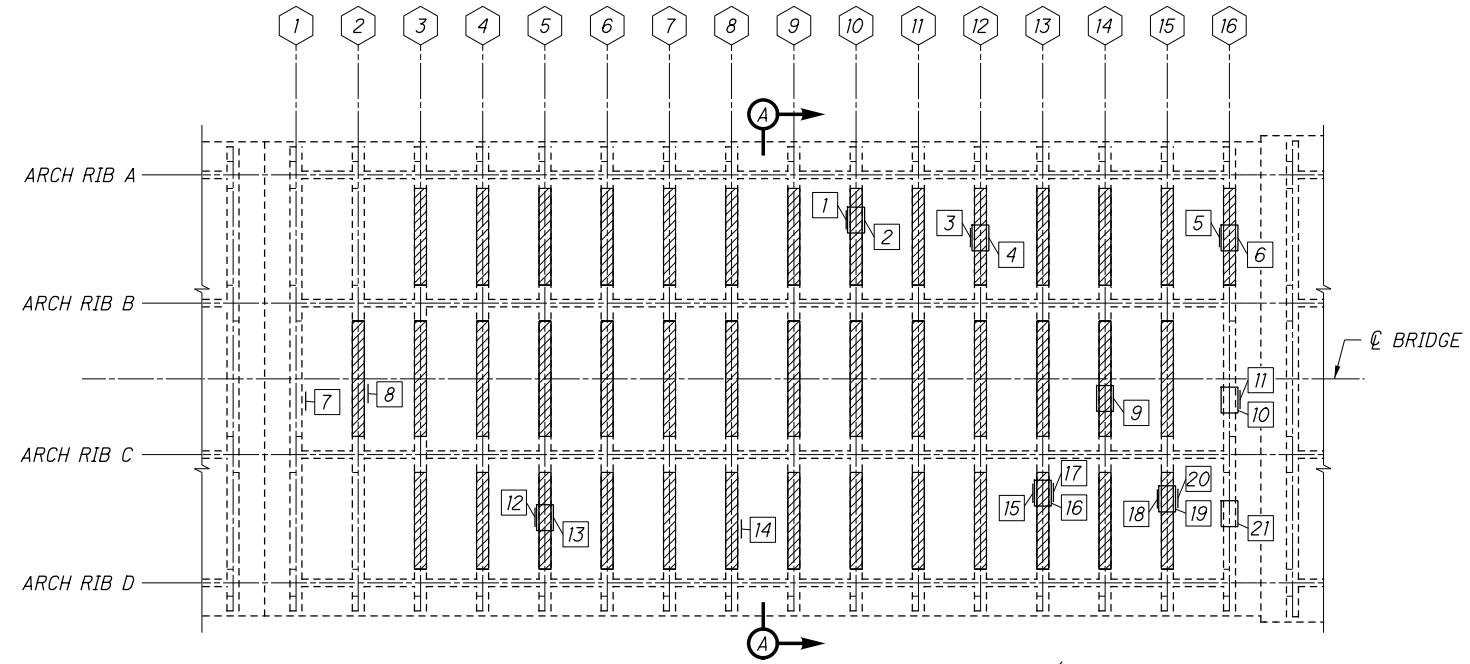
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SPAN 2 - UPPER DECK PLAN



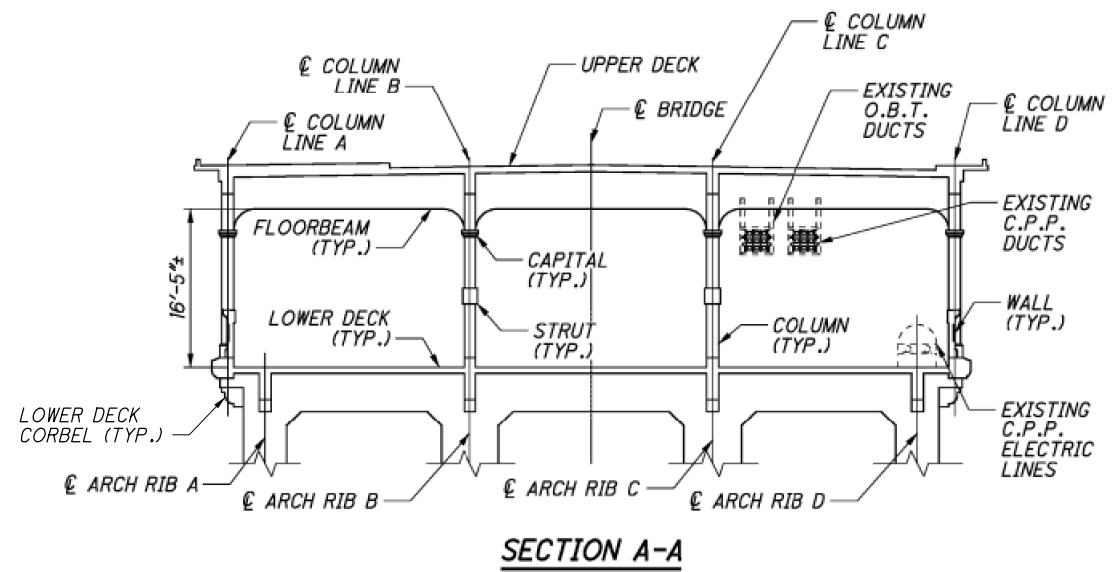
SPAN 2 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	5	3
2	TYPE 2	10	4
3	TYPE 1	10	5
4	TYPE 2	10	8
5	TYPE 1	5	3
6	TYPE 2	10	4
7	TYPE 1	4	1
8	TYPE 1	3	2
9	TYPE 2	10	8
10	TYPE 2	12	10
11	TYPE 1	20	5
12	TYPE 1	10	3
13	TYPE 2	10	8
14	TYPE 1	8	2
15	TYPE 1	10	3
16	TYPE 2	10	4
17	TYPE 1	5	3

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
18	TYPE 1	10	5
19	TYPE 2	10	4
20	TYPE 1	20	5
21	TYPE 2	33	13
22	TYPE 2	2	1
23	TYPE 2	3	2
24	TYPE 2	1	1
25	TYPE 1	12	3
MEASURED QUANTITY*		243	-
PLAN QUANTITY*		365	110

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	183
TYPE 2 REPAIR	SF	182
FRP WRAP	SF	3524



SECTION A-A

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN OCTOBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
5. FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
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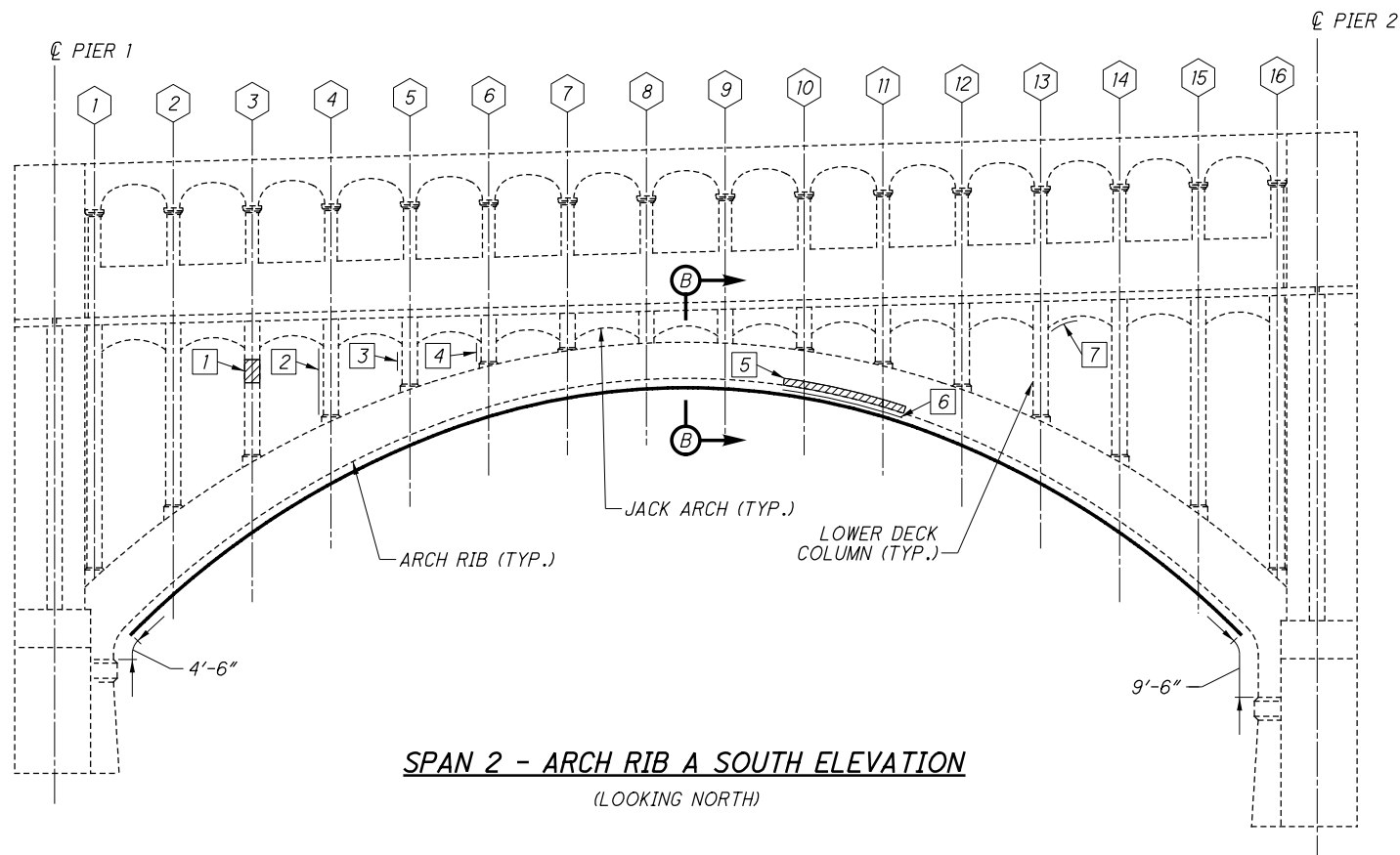
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DWJ STRUCTURE FILE NUMBER 1800930

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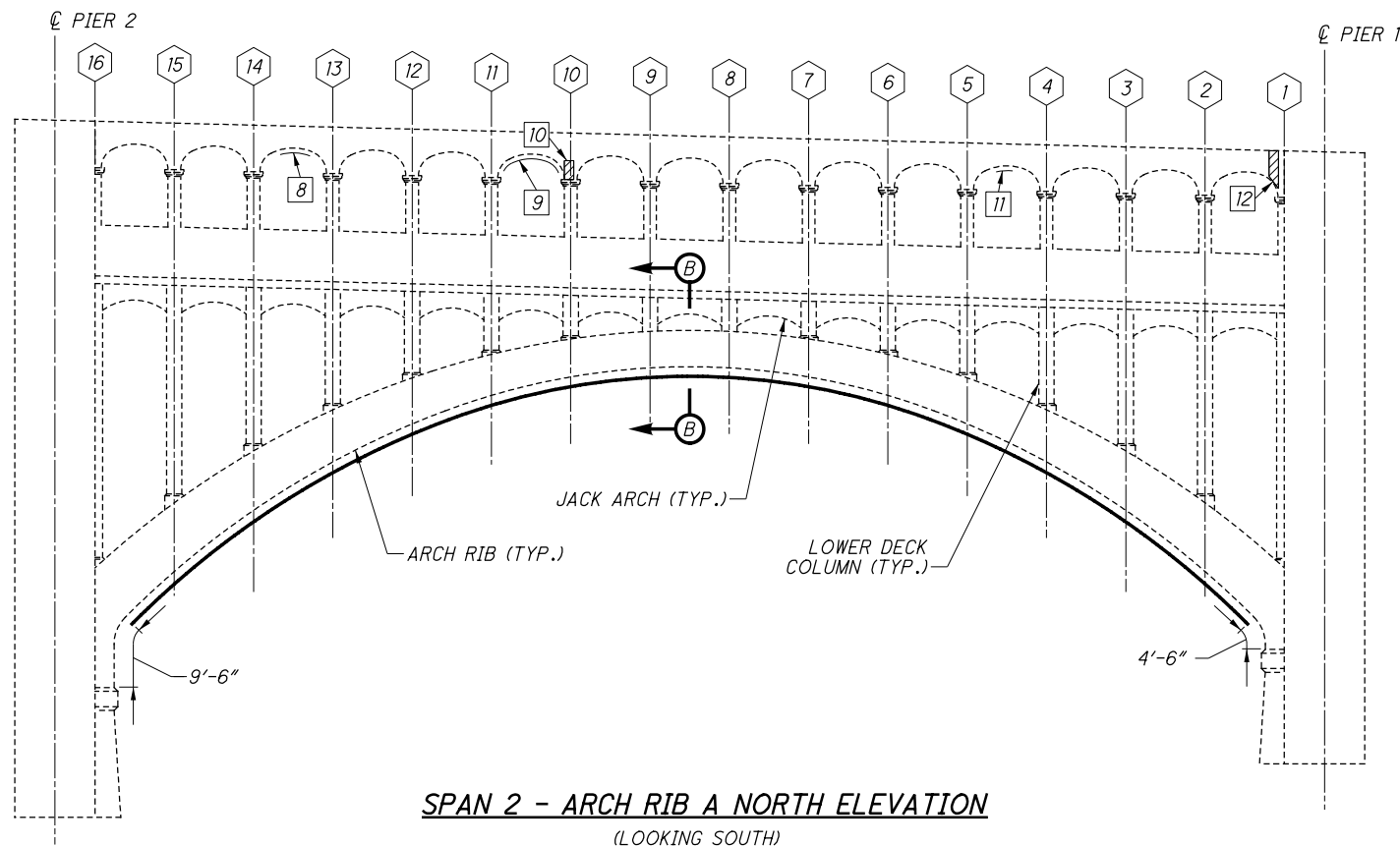
SPAN 2 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 2 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 2 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	6	2
2	TYPE 1	14	4
3	TYPE 1	2	1
4	TYPE 1	6	2
5	TYPE 1	14	-
6	TYPE 2	14	10
7	TYPE 2	3	2
8	TYPE 2	5	2
9	TYPE 2	8	6
10	TYPE 1	2	1
11	TYPE 2	2	1
12	TYPE 1	4	2
MEASURED QUANTITY*		80	-
PLAN QUANTITY*		120	33

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	72
TYPE 2 REPAIR	SF	48
FRP WRAP	SF	1949

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
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REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

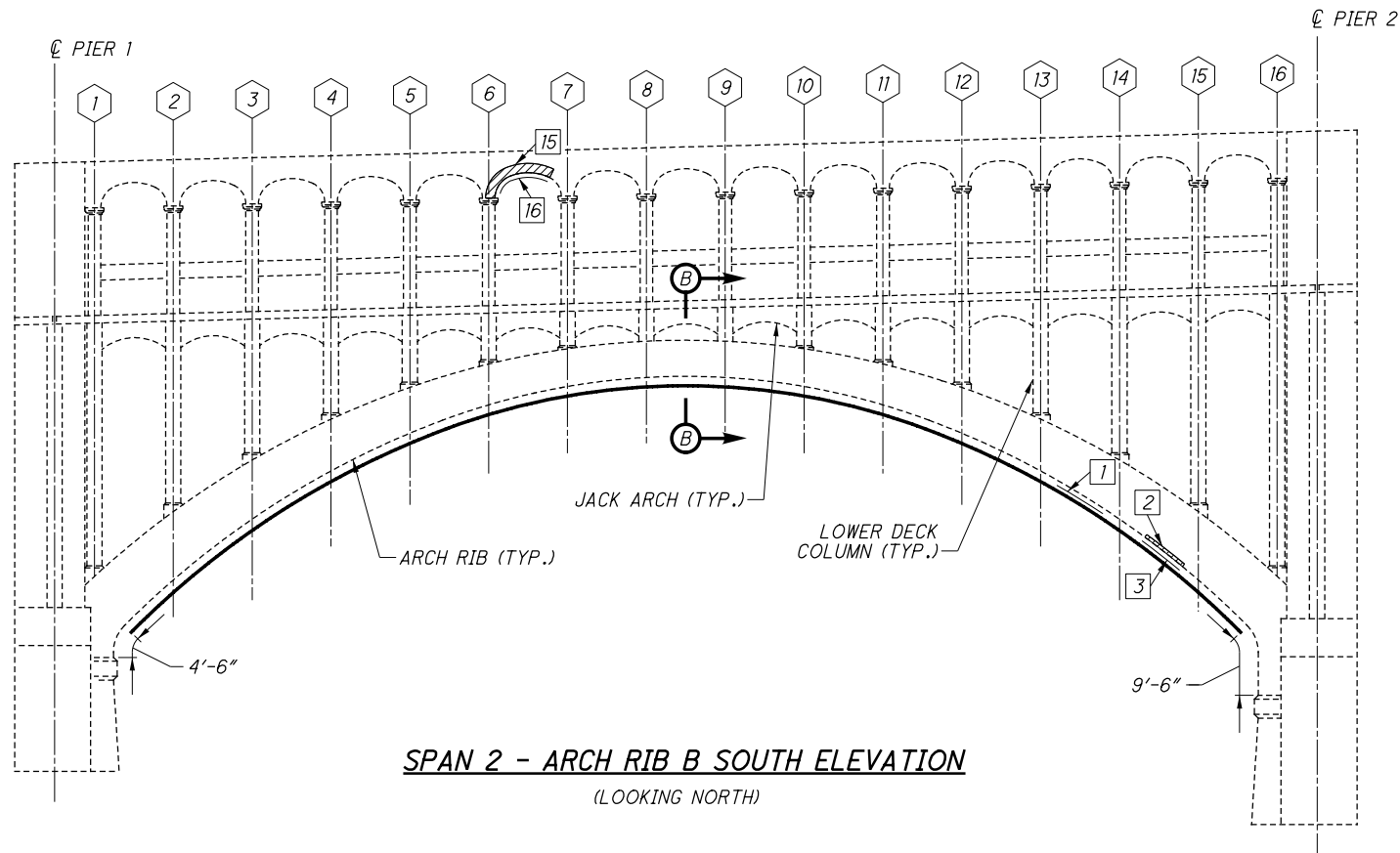
SPAN 2 CONCRETE REPAIR DETAILS (2 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

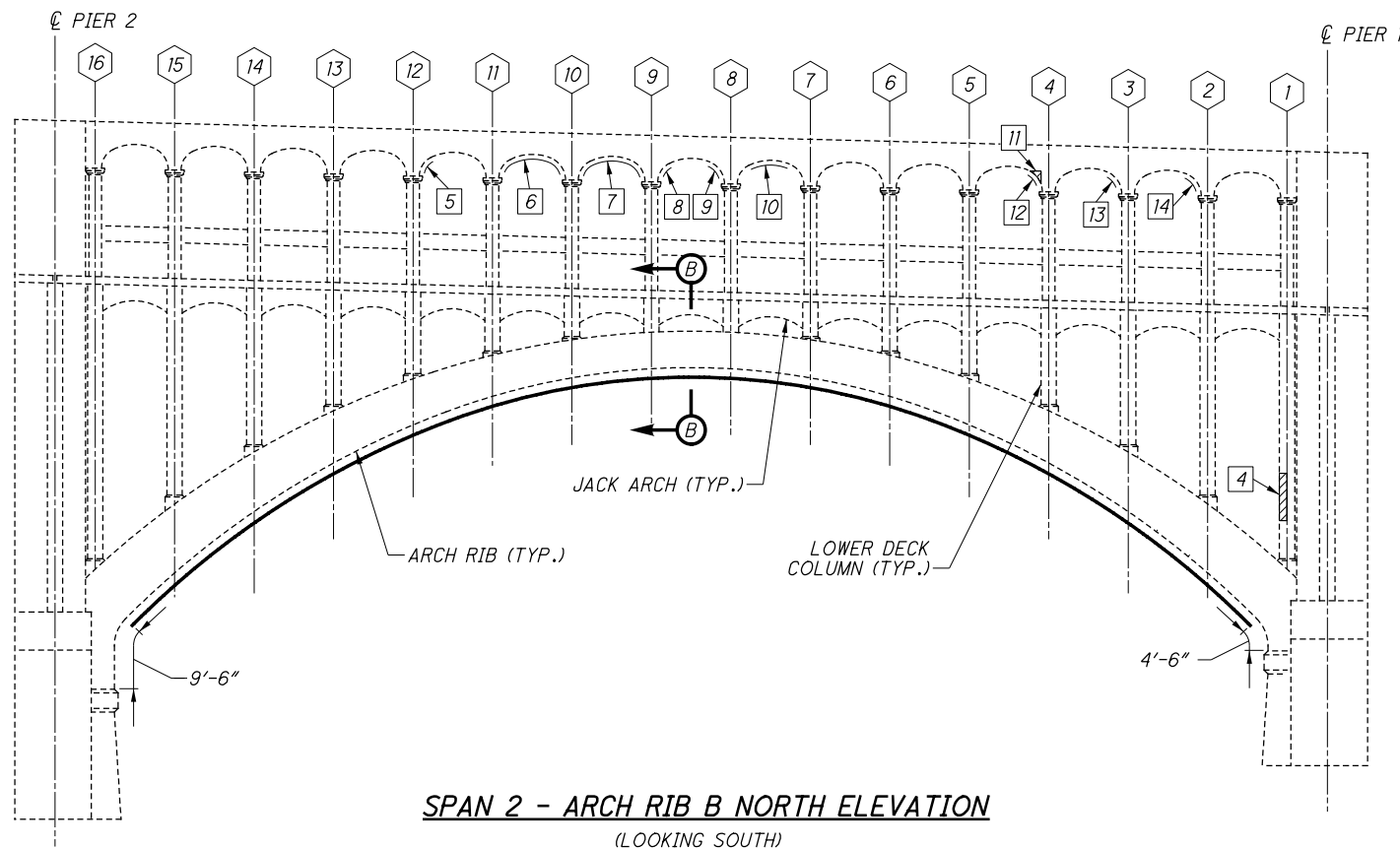
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SPAN 2 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)



SPAN 2 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	6	4
2	TYPE 1	1	-
3	TYPE 2	5	4
4	TYPE 1	6	3
5	TYPE 2	2	1
6	TYPE 2	18	8
7	TYPE 2	18	8
8	TYPE 2	6	2
9	TYPE 2	6	2
10	TYPE 2	9	4
11	TYPE 1	1	1
12	TYPE 2	1	1
13	TYPE 2	2	1
14	TYPE 2	4	2
15	TYPE 1	10	5
16	TYPE 2	12	6
MEASURED QUANTITY*		107	-
PLAN QUANTITY*		161	52

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	27
TYPE 2 REPAIR	SF	134
FRP WRAP	SF	2322

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
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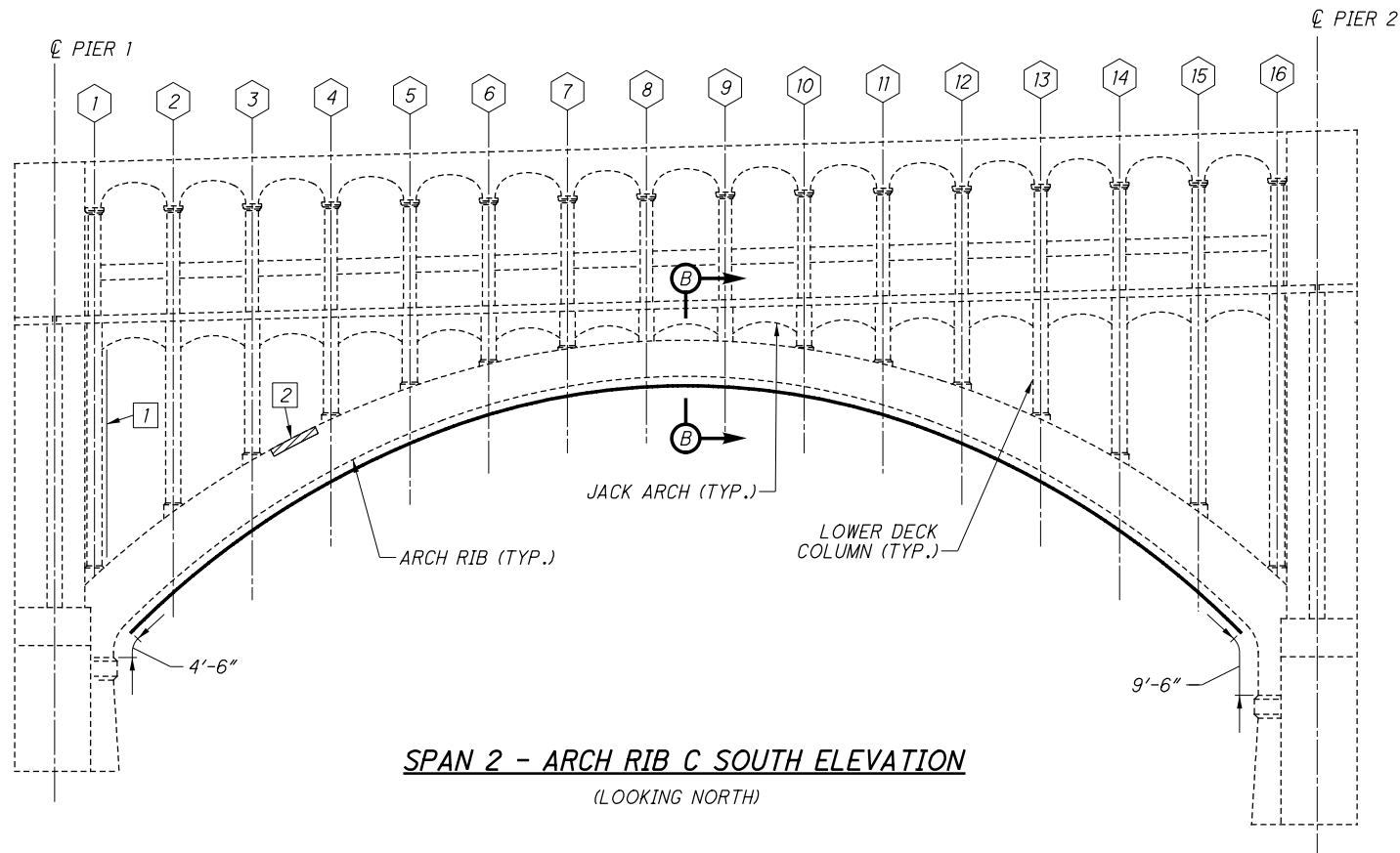
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STRUCTURE FILE NUMBER 1800930

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REVISOR BPS

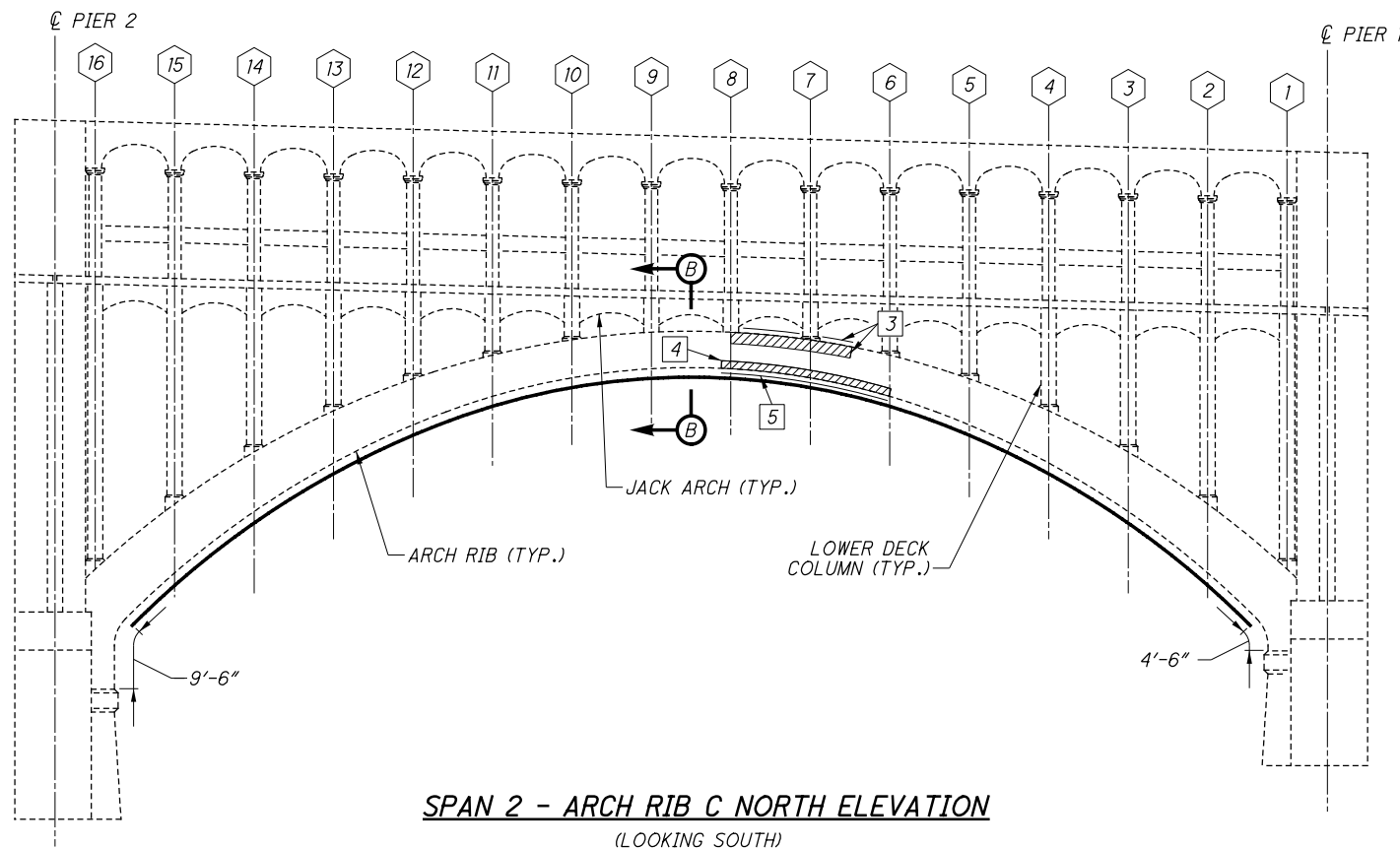
SPAN 2 CONCRETE REPAIR DETAILS (3 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 2 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)



SPAN 2 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	56	14
2	TYPE 1	6	-
3	TYPE 1	40	12
4	TYPE 1	23	-
5	TYPE 2	23	17
MEASURED QUANTITY*		148	-
PLAN QUANTITY*		222	43

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	188
TYPE 2 REPAIR	SF	34
FRP WRAP	SF	2322

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
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STRUCTURE FILE NUMBER 1800930

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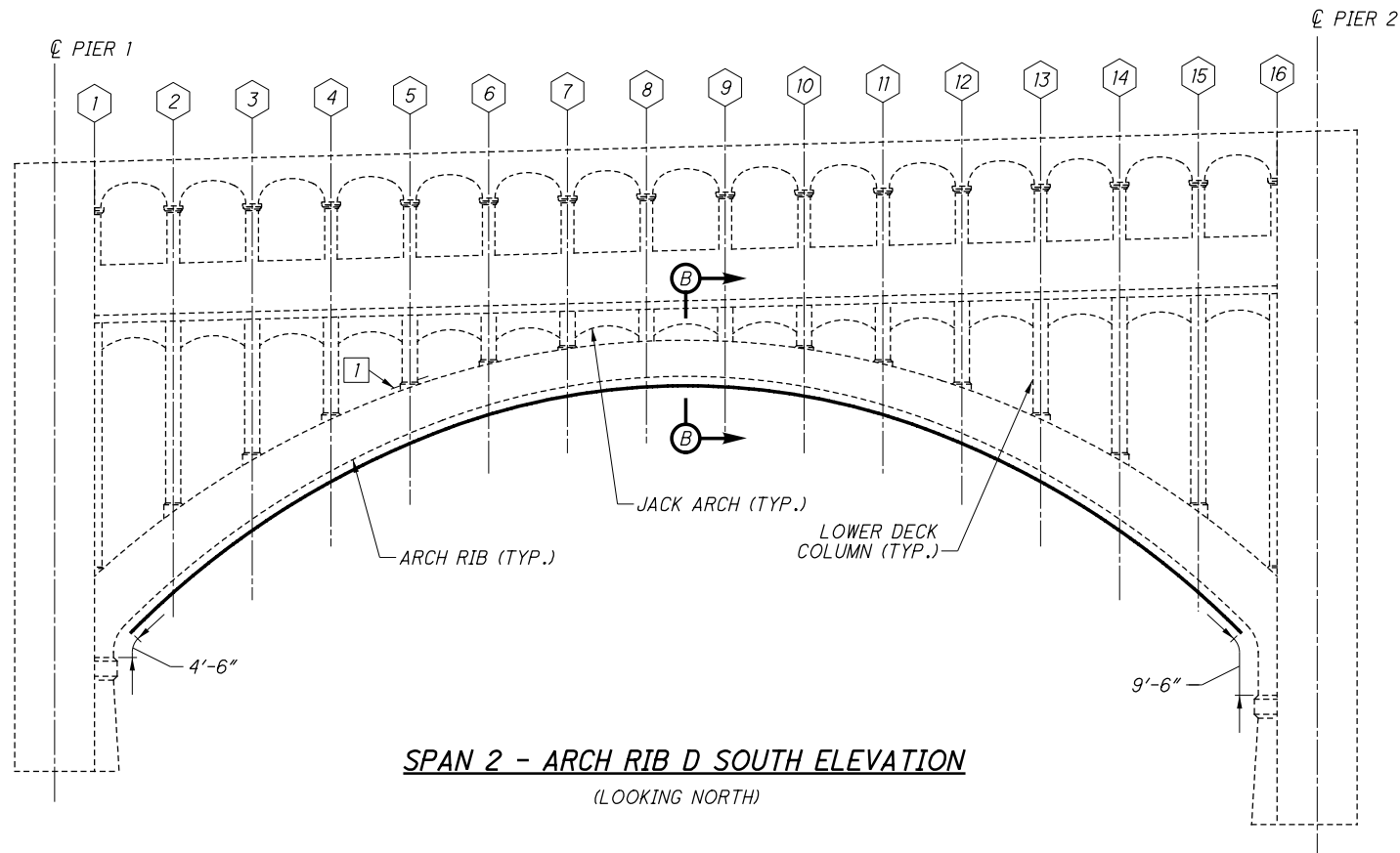
SPAN 2 CONCRETE REPAIR DETAILS (4 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

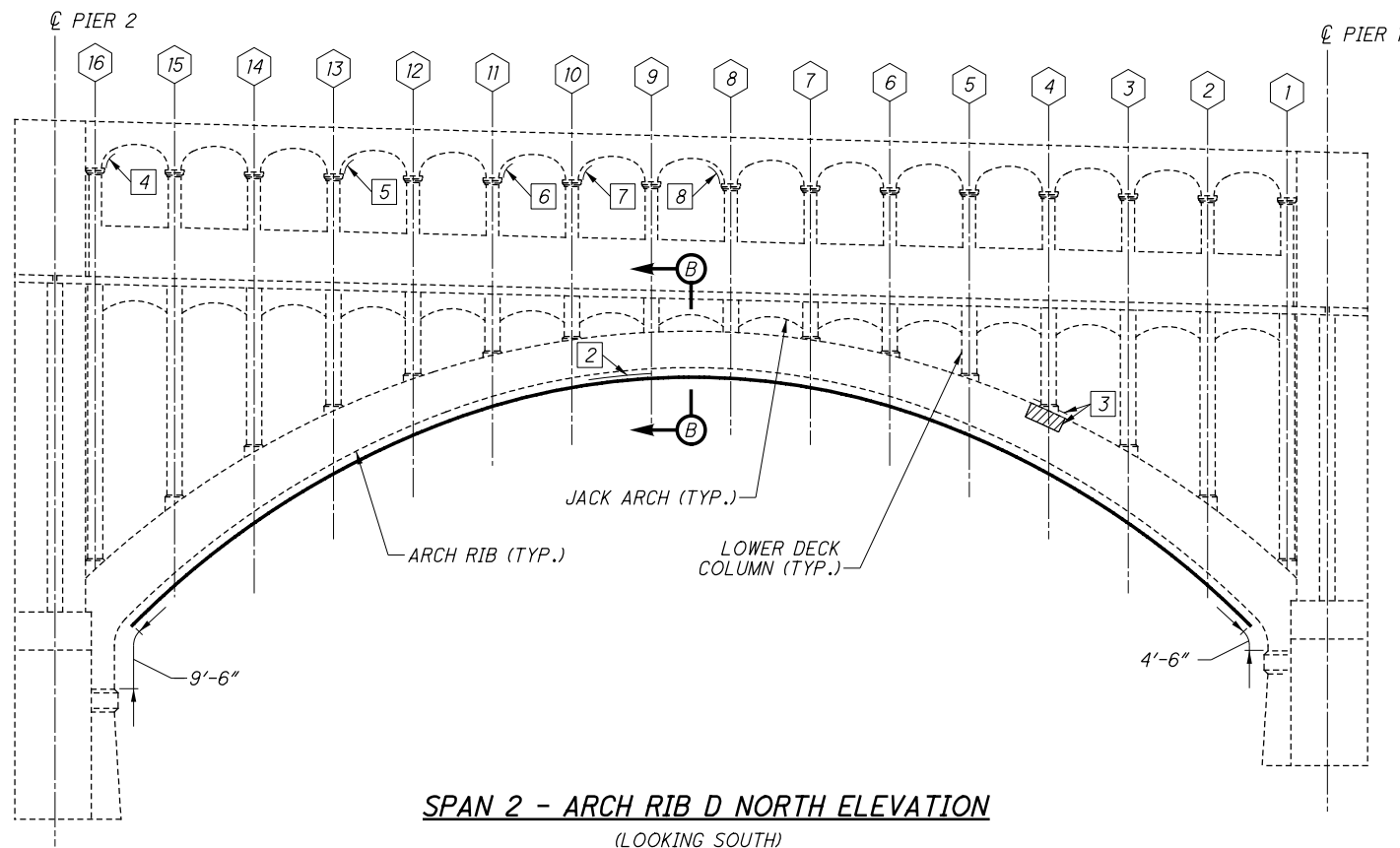
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SPAN 2 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 2 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	5	4
2	TYPE 2	24	12
3	TYPE 1	12	3
4	TYPE 2	3	1
5	TYPE 2	3	1
6	TYPE 2	4	2
7	TYPE 2	8	3
8	TYPE 2	8	3
MEASURED QUANTITY*		67	-
PLAN QUANTITY*		101	29

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	26
TYPE 2 REPAIR	SF	75
FRP WRAP	SF	1949

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
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STRUCTURE FILE NUMBER 1800930

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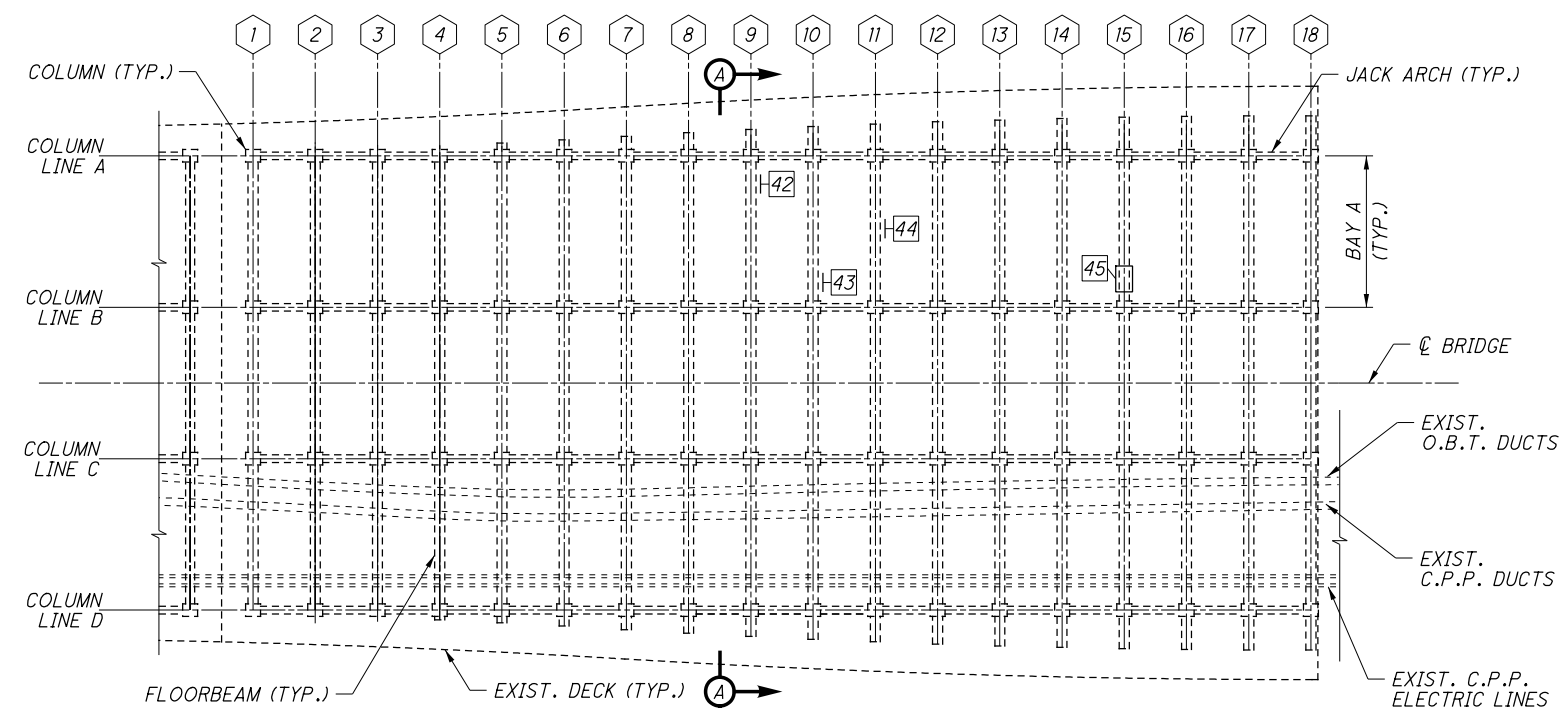
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BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

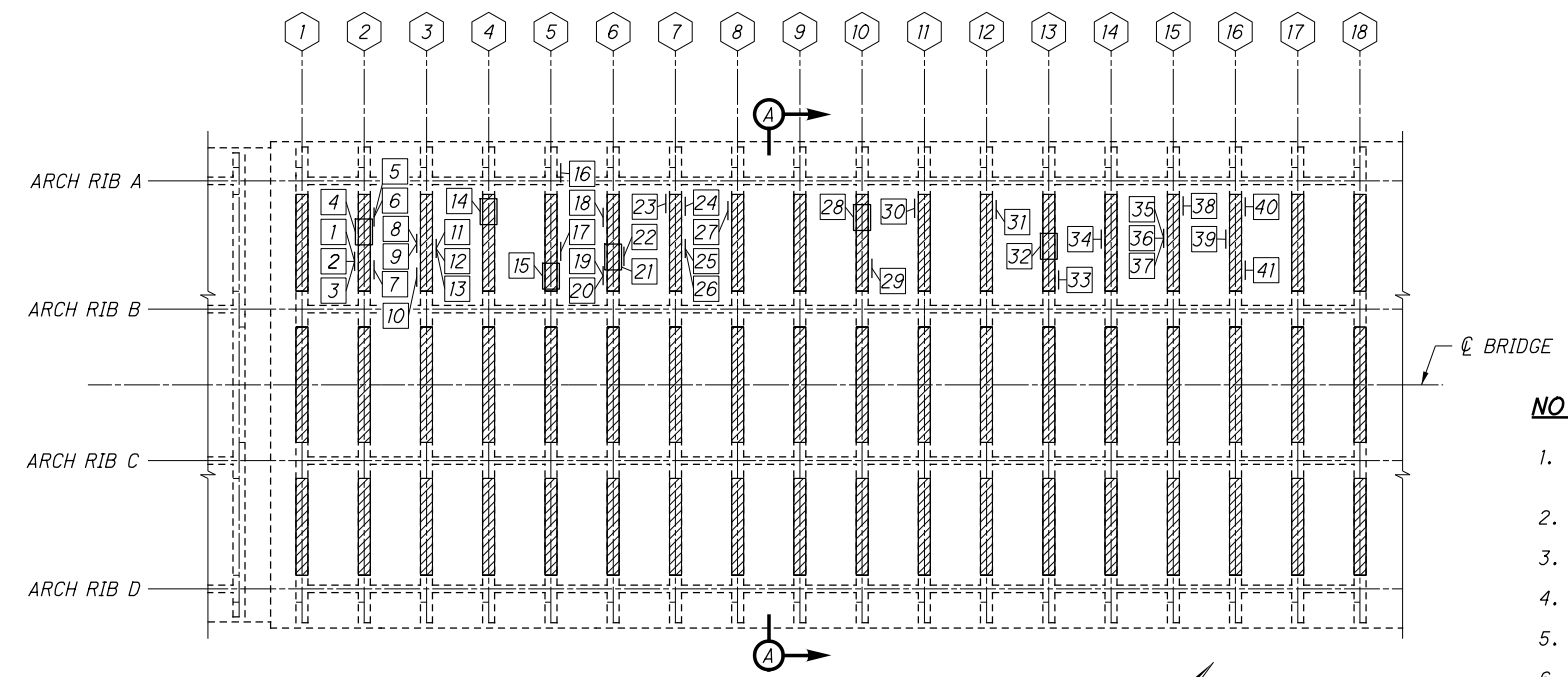
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SPAN 3 - UPPER DECK PLAN



SPAN 3 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	7	2
2	TYPE 1	2	1
3	TYPE 1	5	2
4	TYPE 2	13	5
5	TYPE 1	2	1
6	TYPE 1	2	1
7	TYPE 1	2	1
8	TYPE 1	3	1
9	TYPE 1	3	1
10	TYPE 1	3	1
11	TYPE 1	2	1
12	TYPE 1	2	1
13	TYPE 1	3	1
14	TYPE 2	7	3
15	TYPE 2	4	2
16	TYPE 1	10	2
17	TYPE 1	1	1
18	TYPE 1	3	1
19	TYPE 1	2	1
20	TYPE 1	2	1

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 2	9	7
22	TYPE 1	5	4
23	TYPE 1	2	1
24	TYPE 1	3	2
25	TYPE 1	2	1
26	TYPE 1	3	1
27	TYPE 1	1	1
28	TYPE 2	4	1
29	TYPE 1	2	1
30	TYPE 1	3	1
31	TYPE 1	3	1
32	TYPE 2	7	3
33	TYPE 1	2	1
34	TYPE 1	6	2
35	TYPE 1	5	2
36	TYPE 1	3	1
37	TYPE 1	2	1
38	TYPE 1	1	1
39	TYPE 1	6	1
40	TYPE 1	2	1
41	TYPE 1	8	2
42	TYPE 1	4	2
43	TYPE 1	9	2
44	TYPE 1	5	3
45	TYPE 2	1	1
MEASURED QUANTITY*		176	-
PLAN QUANTITY*		264	74

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	197
TYPE 2 REPAIR	SF	67
FRP WRAP	SF	4635

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR SECTION A-A, SEE SHEET [34/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- [Hatched Box] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

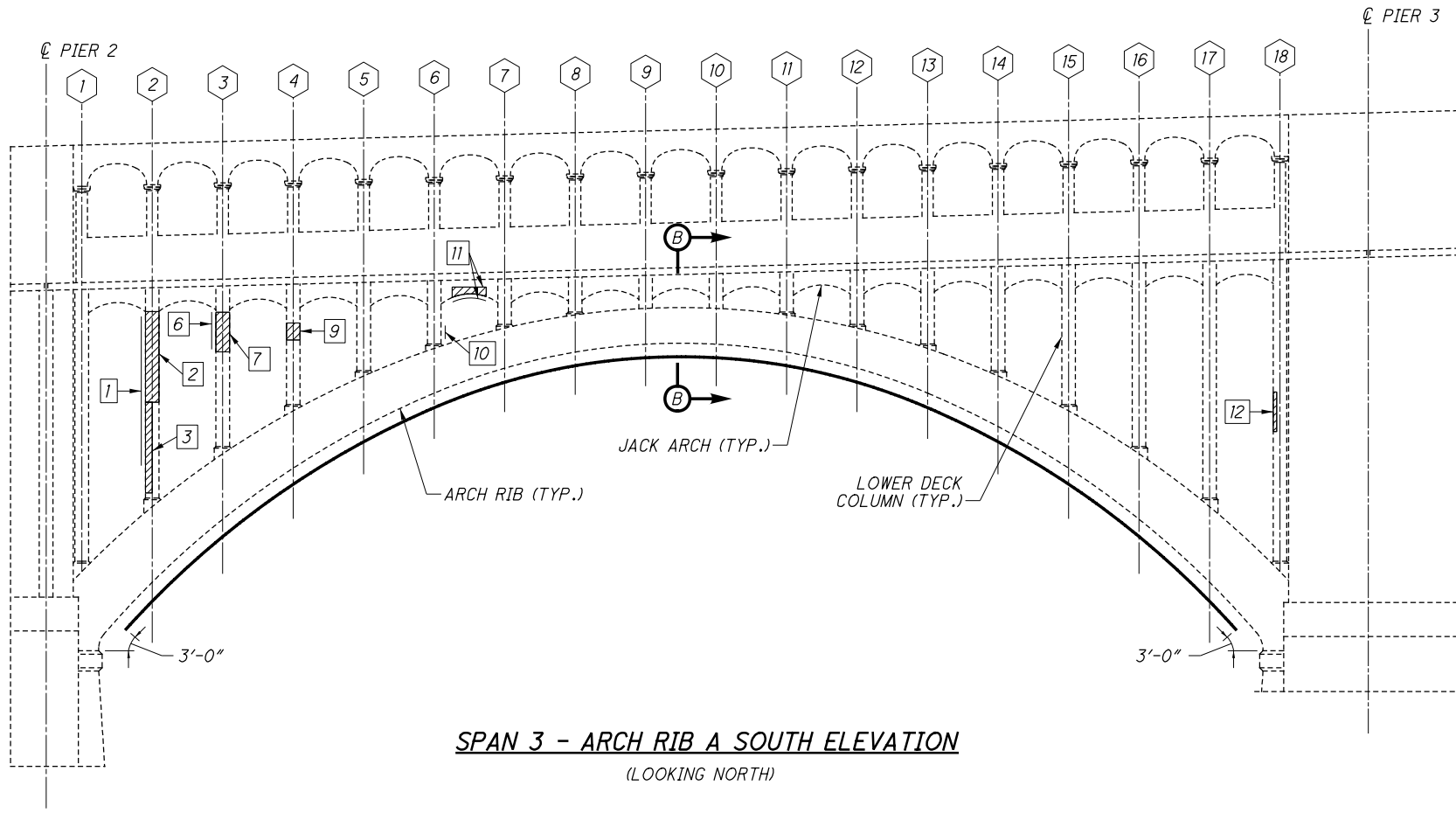


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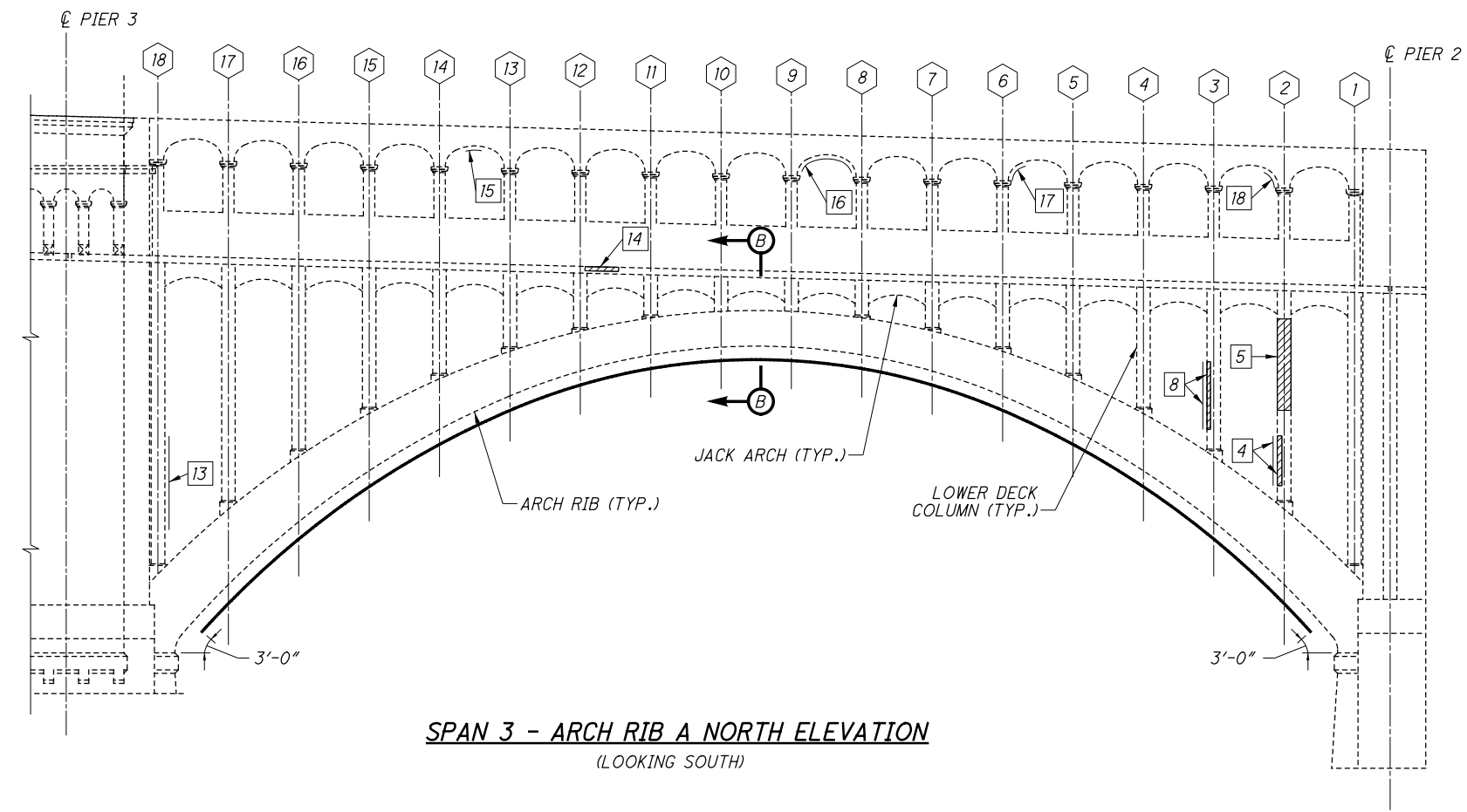
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SPAN 3 CONCRETE REPAIR DETAILS (1 OF 3)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 3 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 3 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	96	22
2	TYPE 1	27	7
3	TYPE 1	14	7
4	TYPE 1	10	4
5	TYPE 1	27	7
6	TYPE 1	19	6
7	TYPE 1	12	3
8	TYPE 1	10	5
9	TYPE 1	5	1
10	TYPE 1	2	1
11	TYPE 1	8	4
12	TYPE 1	5	2
13	TYPE 1	7	3
14	TYPE 1	2	3
15	TYPE 2	2	1
16	TYPE 2	13	7
17	TYPE 2	4	2
18	TYPE 2	1	1
MEASURED QUANTITY*		264	-
PLAN QUANTITY*		396	86

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	366
TYPE 2 REPAIR	SF	30
FRP WRAP	SF	2300

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 3 REPAIR DETAILS, SEE SHEET [26/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR.
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

REVIEWED DATE
DWJ 04/18/18
STRUCTURE FILE NUMBER
1800930

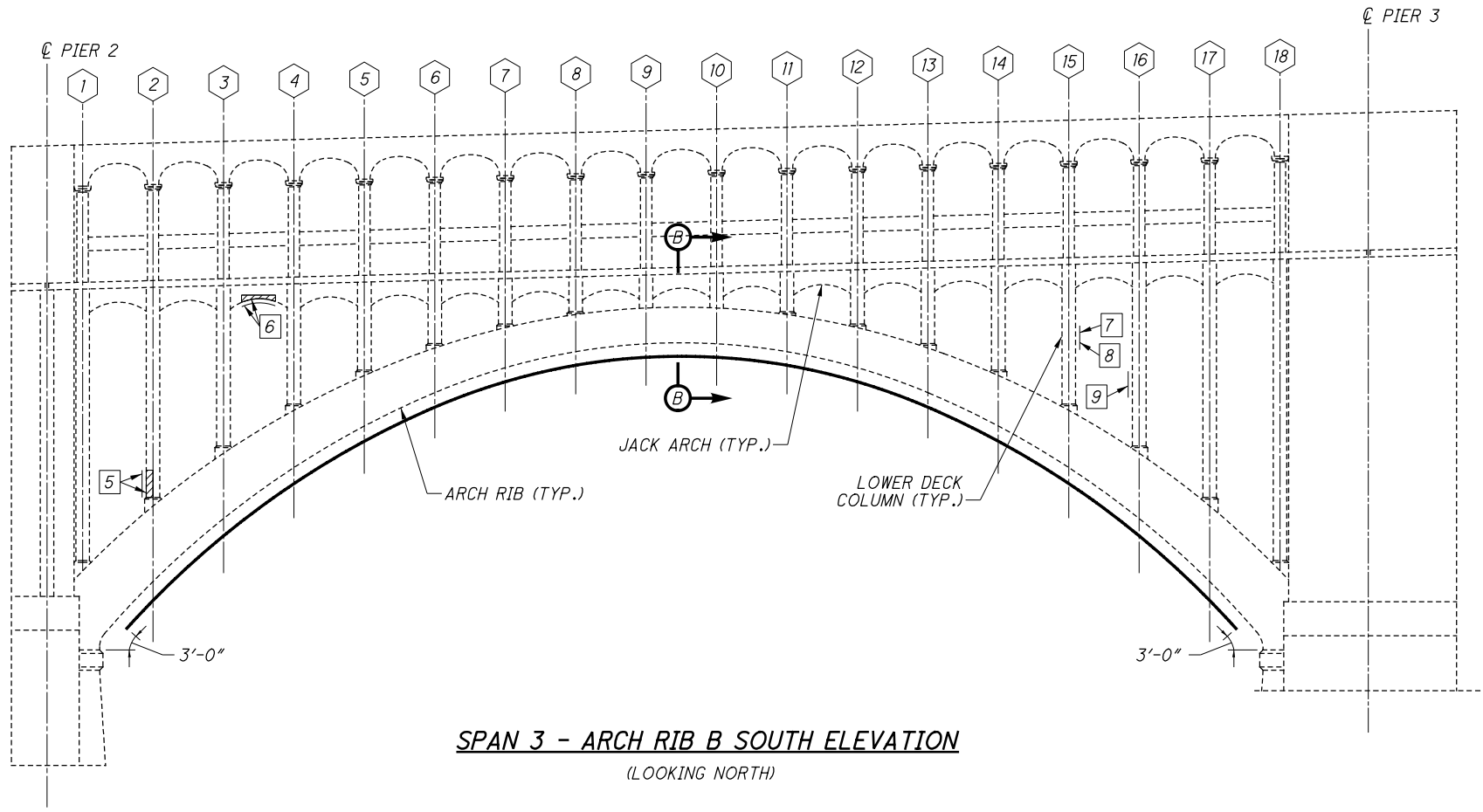
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SPAN 3 CONCRETE REPAIR DETAILS (2 OF 3)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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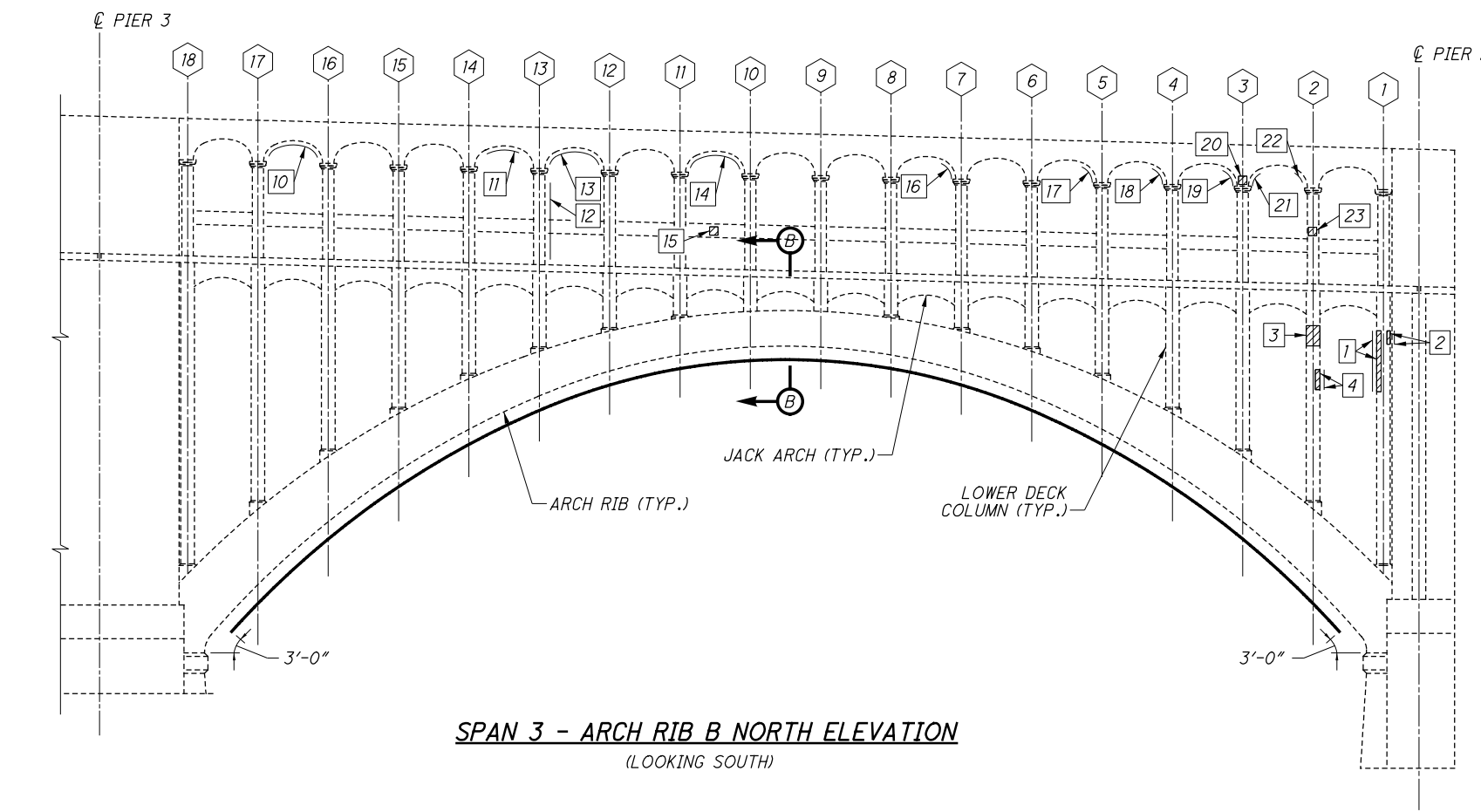
SPAN 3 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	13	5
2	TYPE 1	4	2
3	TYPE 1	2	1
4	TYPE 1	4	2
5	TYPE 1	8	2
6	TYPE 2	15	10
7	TYPE 1	2	1
8	TYPE 1	2	1
9	TYPE 1	3	1
10	TYPE 2	13	7

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
11	TYPE 2	9	5
12	TYPE 1	14	7
13	TYPE 2	13	7
14	TYPE 2	13	7
15	TYPE 1	1	1
16	TYPE 2	1	1
17	TYPE 2	1	1
18	TYPE 2	1	1
19	TYPE 2	6	4
20	TYPE 1	1	1
21	TYPE 2	6	4
22	TYPE 2	1	1
23	TYPE 1	1	1
MEASURED QUANTITY*		134	-
PLAN QUANTITY*		201	73

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	82
TYPE 2 REPAIR	SF	119
FRP WRAP	SF	2741



SPAN 3 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 3 REPAIR DETAILS, SEE SHEET [26/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR.
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY: Pennoni

BRIDGE NO.: CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

SPAN 3 CONCRETE REPAIR DETAILS (3 OF 3)

DESIGNED: TEC
CHECKED: BPS

DRAWN: EAT
REVISED:

REVIEWED: DWJ
DATE: 04/18/18

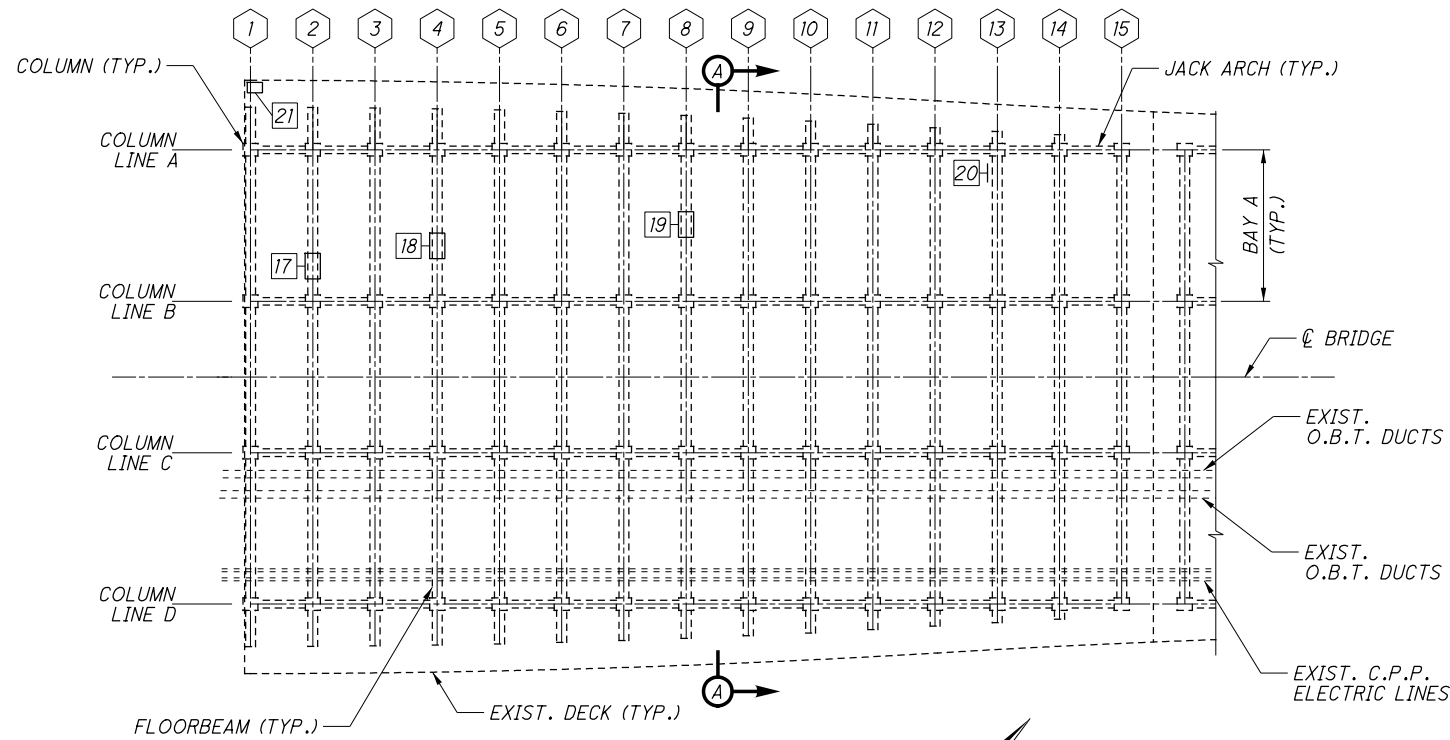
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PID No. 99972

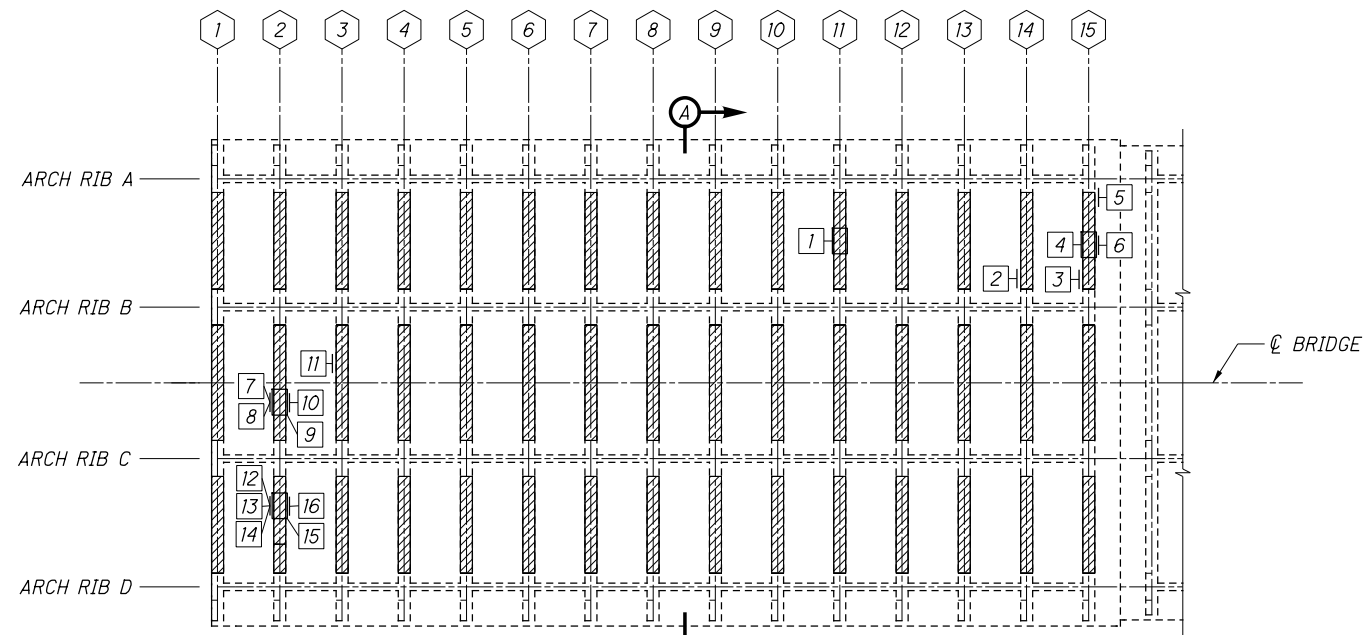
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SPAN 5 - UPPER DECK PLAN



SPAN 5 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	11	4
2	TYPE 1	2	1
3	TYPE 1	5	1
4	TYPE 2	4	3
5	TYPE 1	2	1
6	TYPE 1	15	4
7	TYPE 1	17	8
8	TYPE 1	10	3
9	TYPE 2	33	13
10	TYPE 1	41	8
11	TYPE 1	12	2
12	TYPE 1	4	1
13	TYPE 1	11	2
14	TYPE 1	4	1
15	TYPE 2	14	6
16	TYPE 1	8	2
17	TYPE 2	3	2
18	TYPE 2	2	2
19	TYPE 2	1	1
20	TYPE 1	9	4
21	TYPE 2	1	1
MEASURED QUANTITY*		209	-
PLAN QUANTITY*		314	70

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	210
TYPE 2 REPAIR	SF	104
FRP WRAP	SF	3863

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR SECTION A-A, SEE SHEET [34/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- [Hatched Box] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

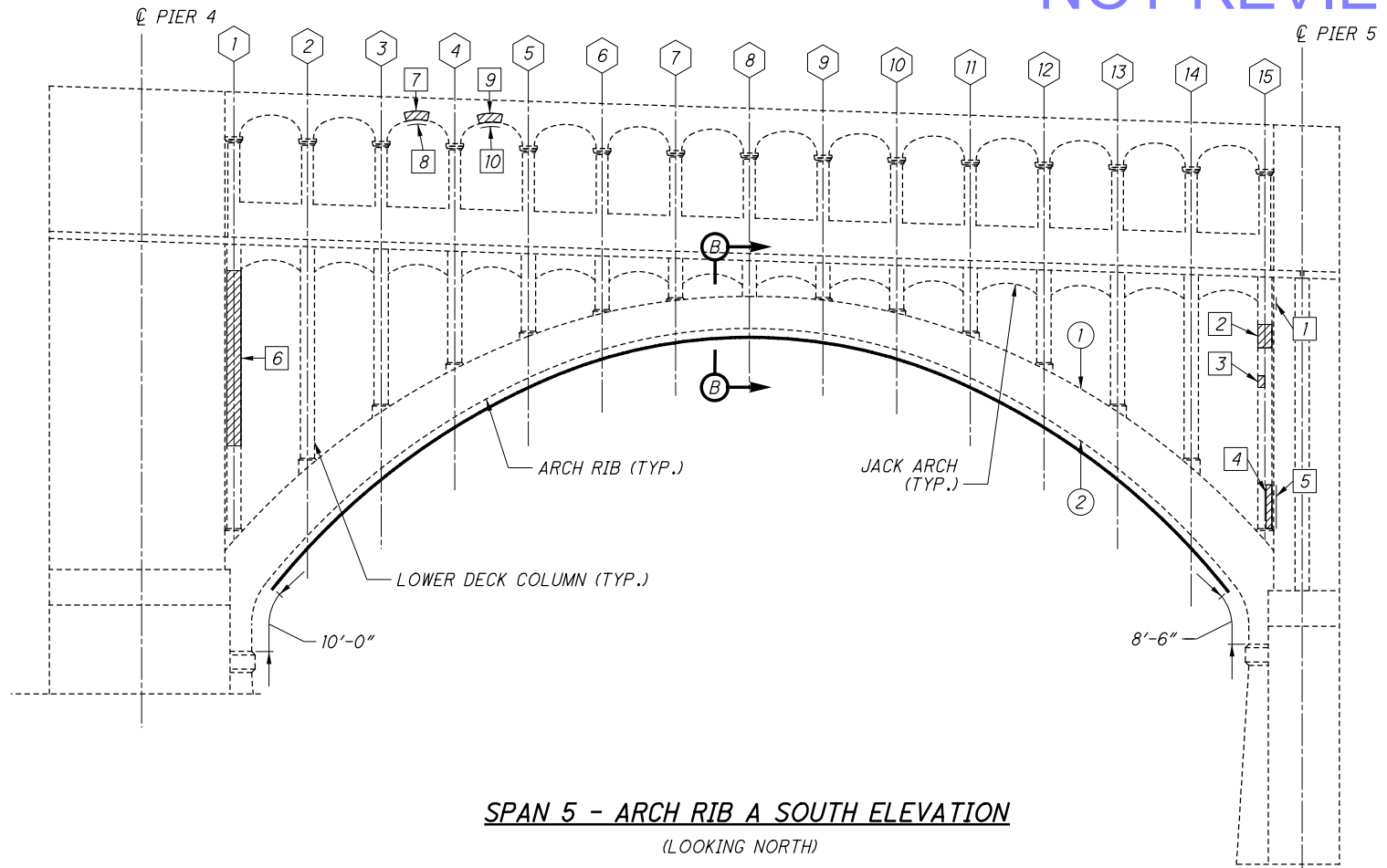
REVIEWED DATE 04/18/18
DWJ STRUCTURE FILE NUMBER 1800930

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SPAN 5 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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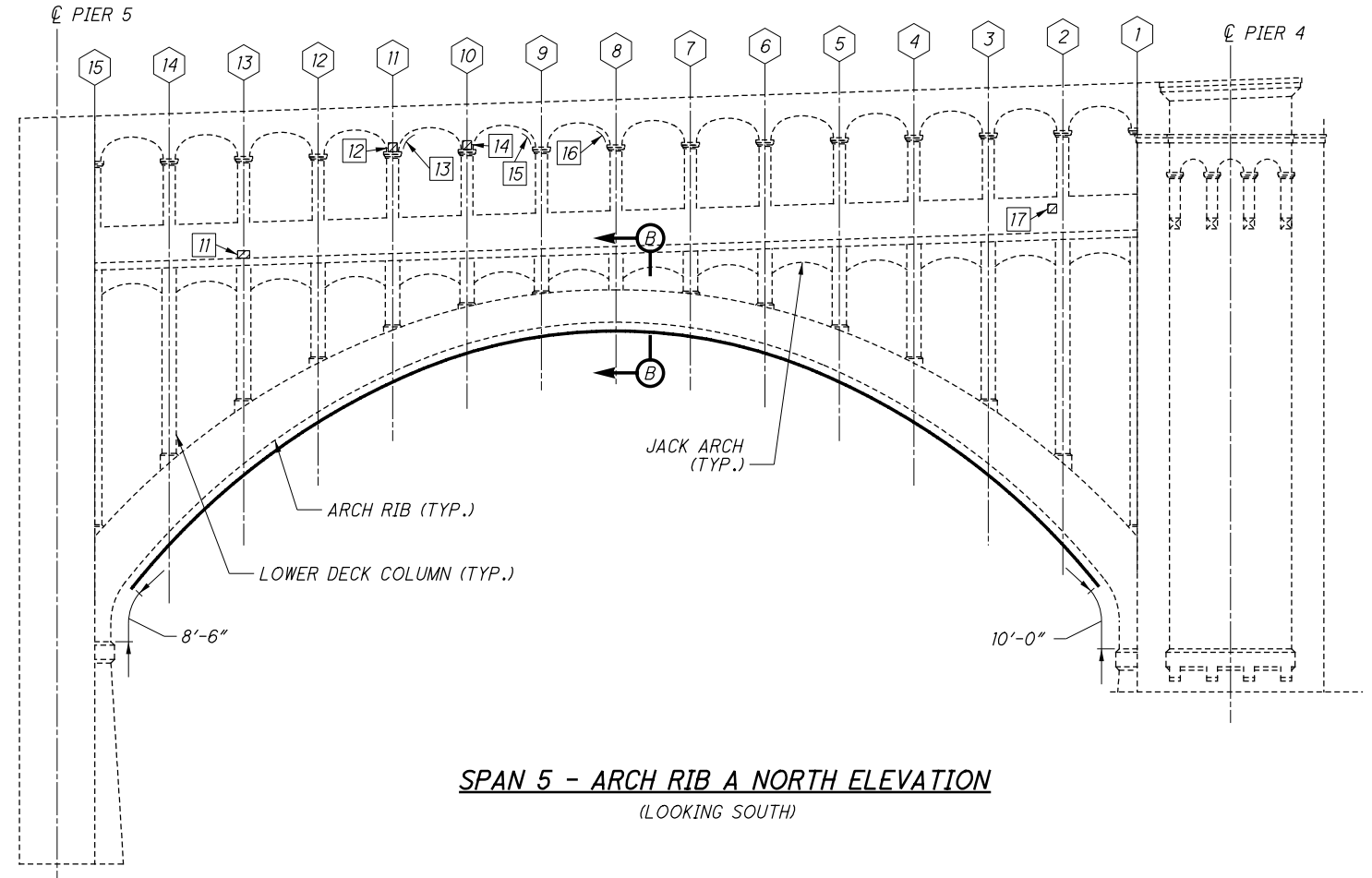
SPAN 5 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	3	1
2	TYPE 1	6	1
3	TYPE 1	2	1
4	TYPE 1	4	3
5	TYPE 1	4	2
6	TYPE 1	40	10
7	TYPE 1	3	1
8	TYPE 2	3	2
9	TYPE 1	4	1
10	TYPE 2	3	1
11	TYPE 1	2	1
12	TYPE 1	1	1
13	TYPE 2	3	2
14	TYPE 1	1	1
15	TYPE 2	4	2
16	TYPE 2	3	2
17	TYPE 1	1	1
MEASURED QUANTITY*		87	-
PLAN QUANTITY*		131	33

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

CRACK REPAIRS		
REPAIR NO.	LENGTH (FT)	
1	50	
2	50	
TOTAL		100

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	107
TYPE 2 REPAIR	SF	24
EPOXY INJECTION	FT	100
FRP WRAP	SF	1755



SPAN 5 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 4 REPAIR DETAILS, SEE SHEET [26/89]. FOR PIER 5 REPAIR DETAILS, SEE SHEET [27/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM
- # LOCATION OF CRACK TO BE REPAIRED IN ACCORDANCE WITH ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION

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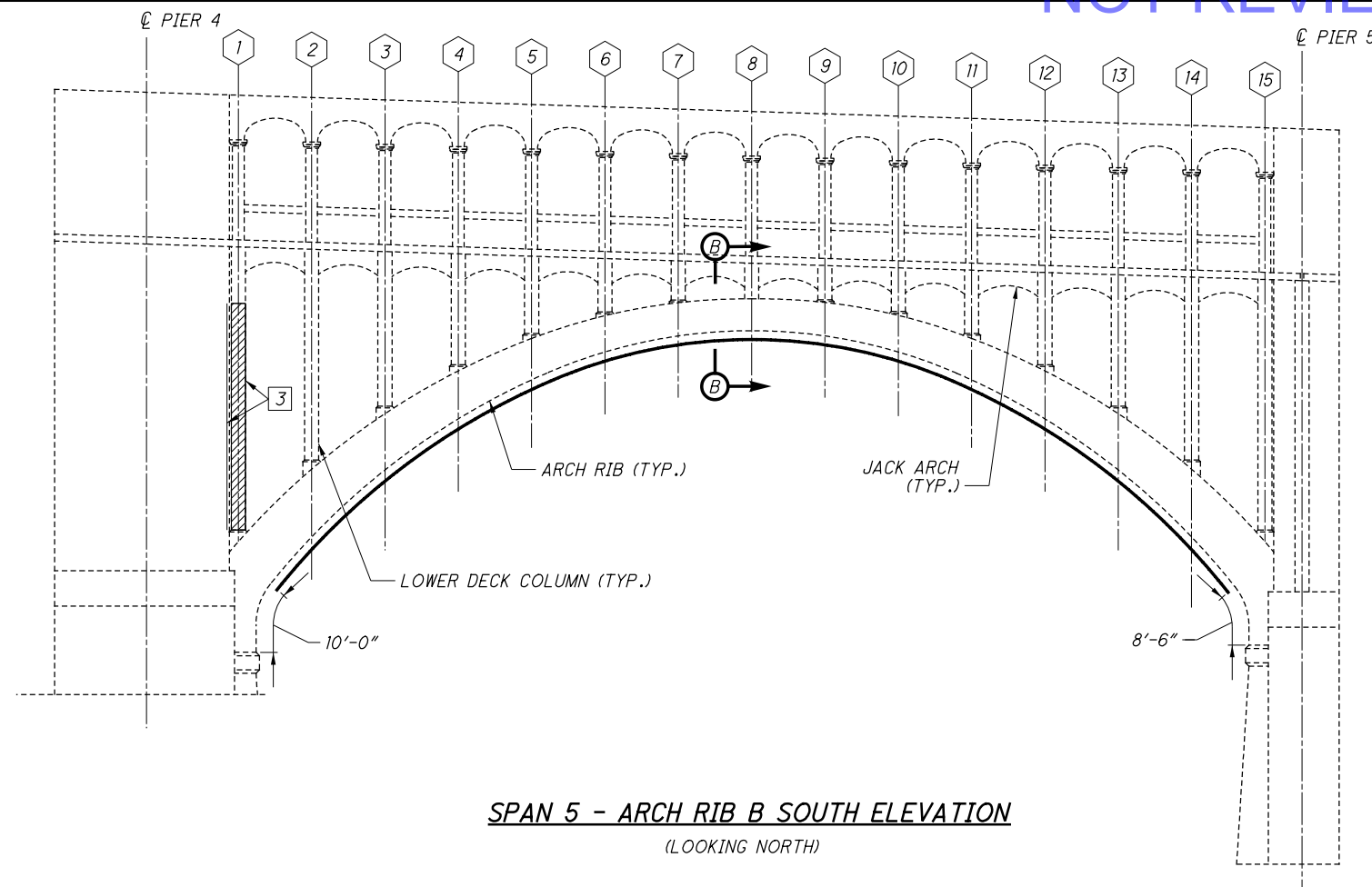
SPAN 5 CONCRETE REPAIR DETAILS (2 OF 5)
BRIDGE NO. CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 5 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	7	2
2	TYPE 1	26	5
3	TYPE 1	96	24
4	TYPE 2	3	2
5	TYPE 1	1	1
6	TYPE 1	4	2
7	TYPE 1	3	2
8	TYPE 2	2	1
9	TYPE 2	2	1
10	TYPE 2	4	3
11	TYPE 2	3	2
12	TYPE 1	1	1
13	TYPE 1	1	1
14	TYPE 1	3	1
15	TYPE 2	3	2
16	TYPE 1	2	1
17	TYPE 1	3	2
MEASURED QUANTITY*		164	-
PLAN QUANTITY*		246	53

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

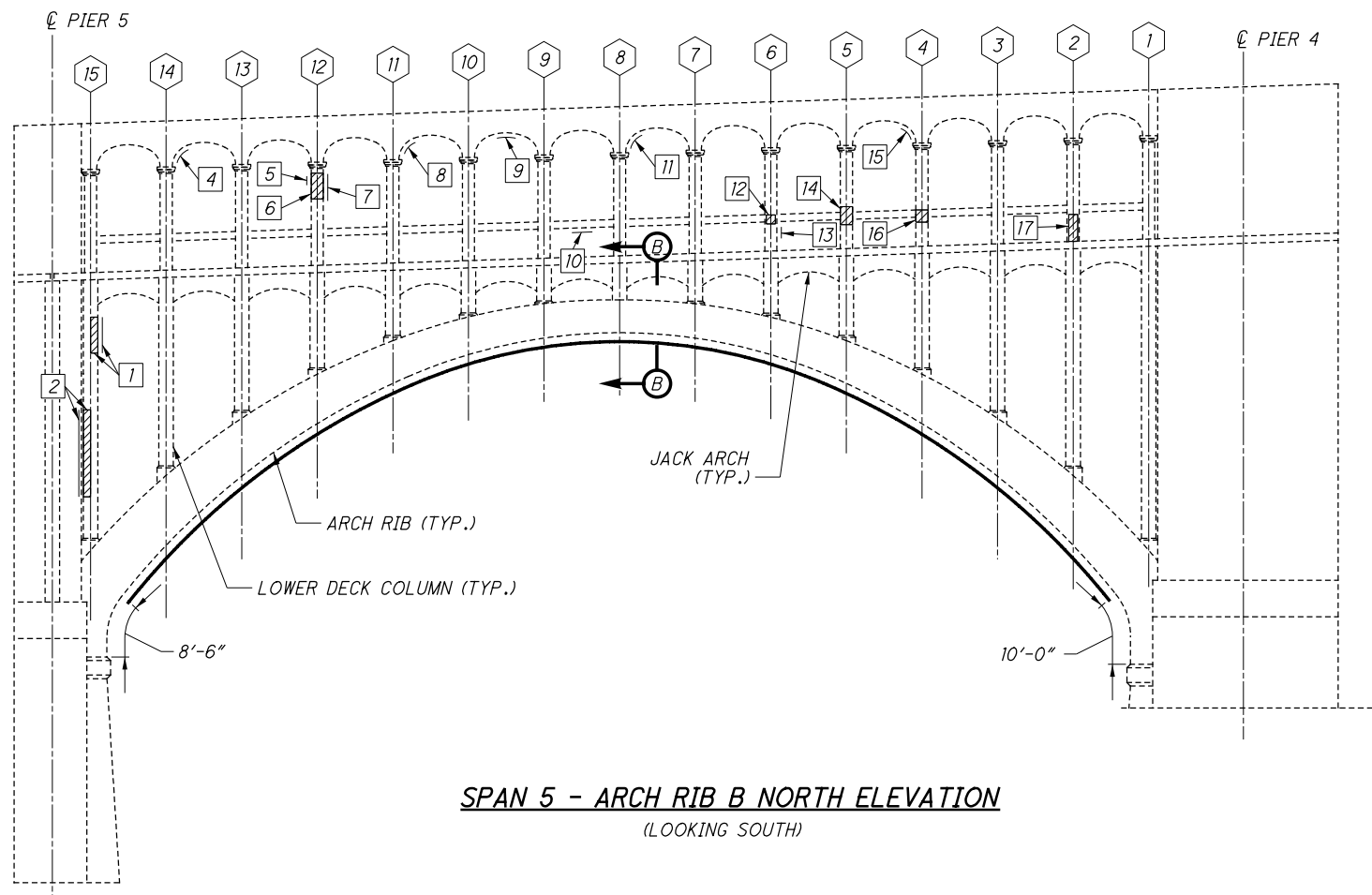
SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	220
TYPE 2 REPAIR	SF	26
FRP WRAP	SF	2074

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 4 REPAIR DETAILS, SEE SHEET **26/89**. FOR PIER 5 REPAIR DETAILS, SEE SHEET **27/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

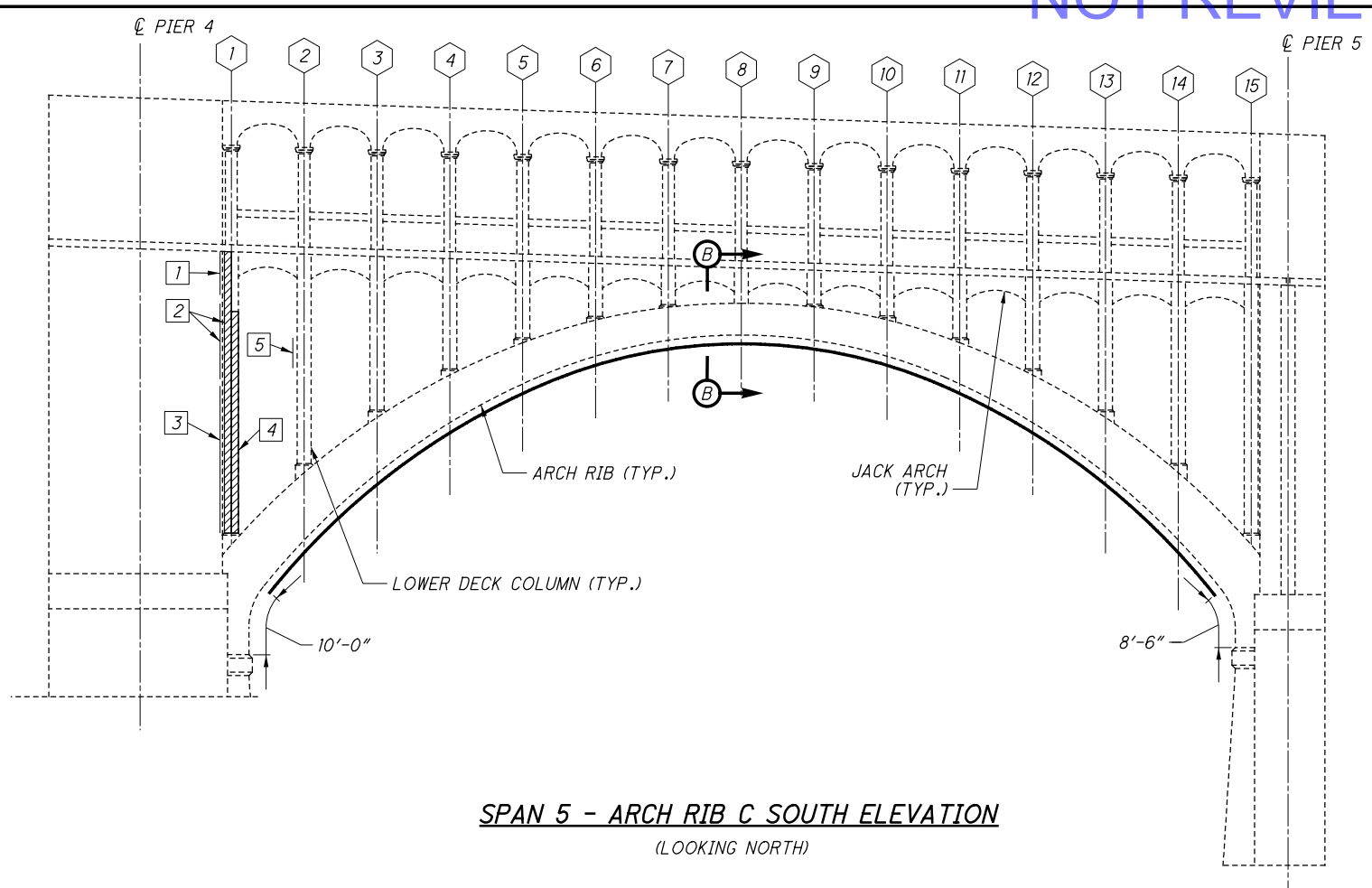
LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM



SPAN 5 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

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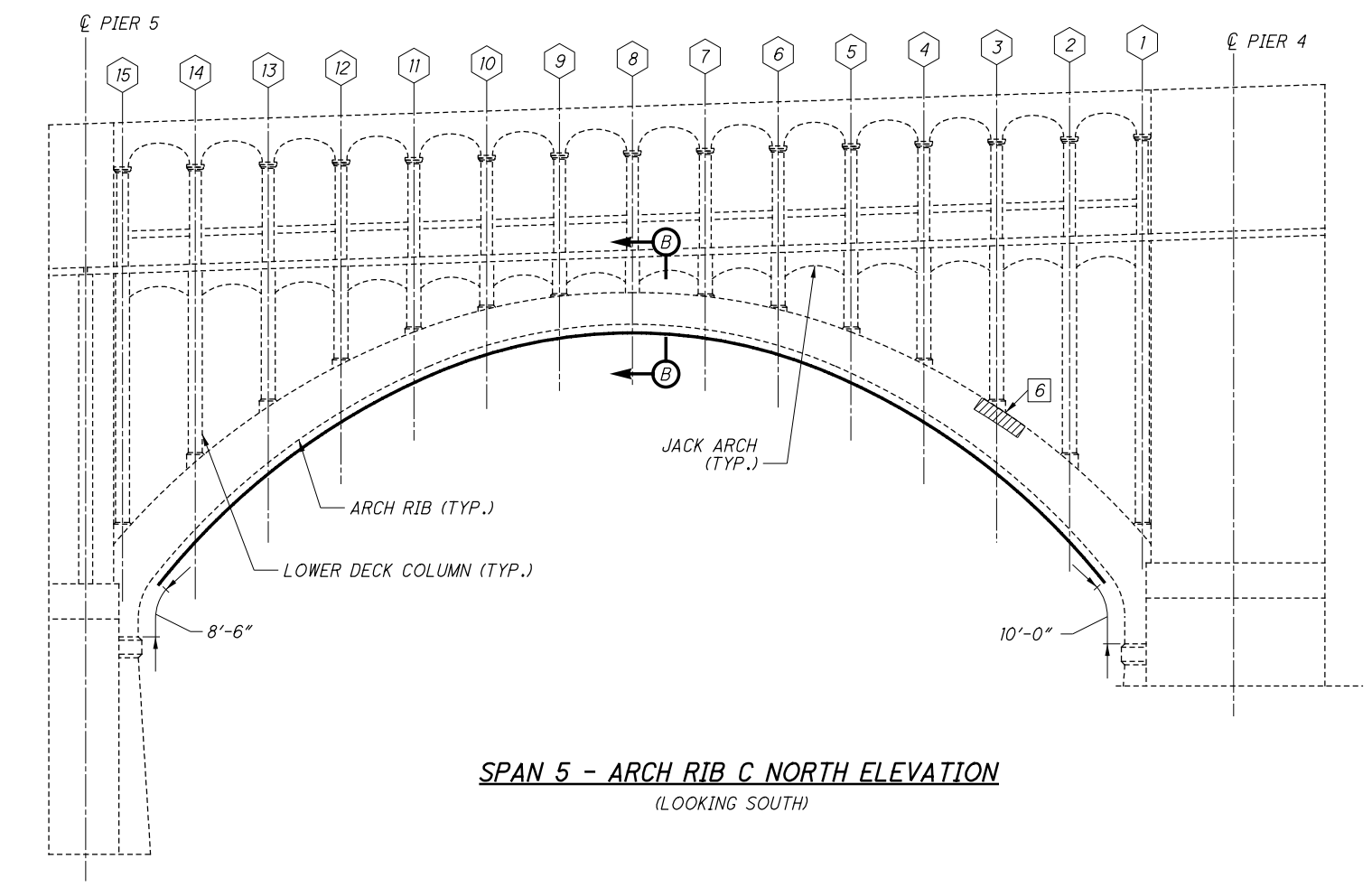


SPAN 5 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	23	6
2	TYPE 1	70	14
3	TYPE 1	60	16
4	TYPE 1	44	11
5	TYPE 1	7	2
6	TYPE 1	10	-
MEASURED QUANTITY*		214	-
PLAN QUANTITY*		321	49

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	321
TYPE 2 REPAIR	SF	-
FRP WRAP	SF	2074



SPAN 5 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
4. GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
5. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
6. FOR PIER 4 REPAIR DETAILS, SEE SHEET **26/89**. FOR PIER 5 REPAIR DETAILS, SEE SHEET **27/89**.
7. FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY

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BRIDGE NO. CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

SPAN 5 CONCRETE REPAIR DETAILS (4 OF 5)

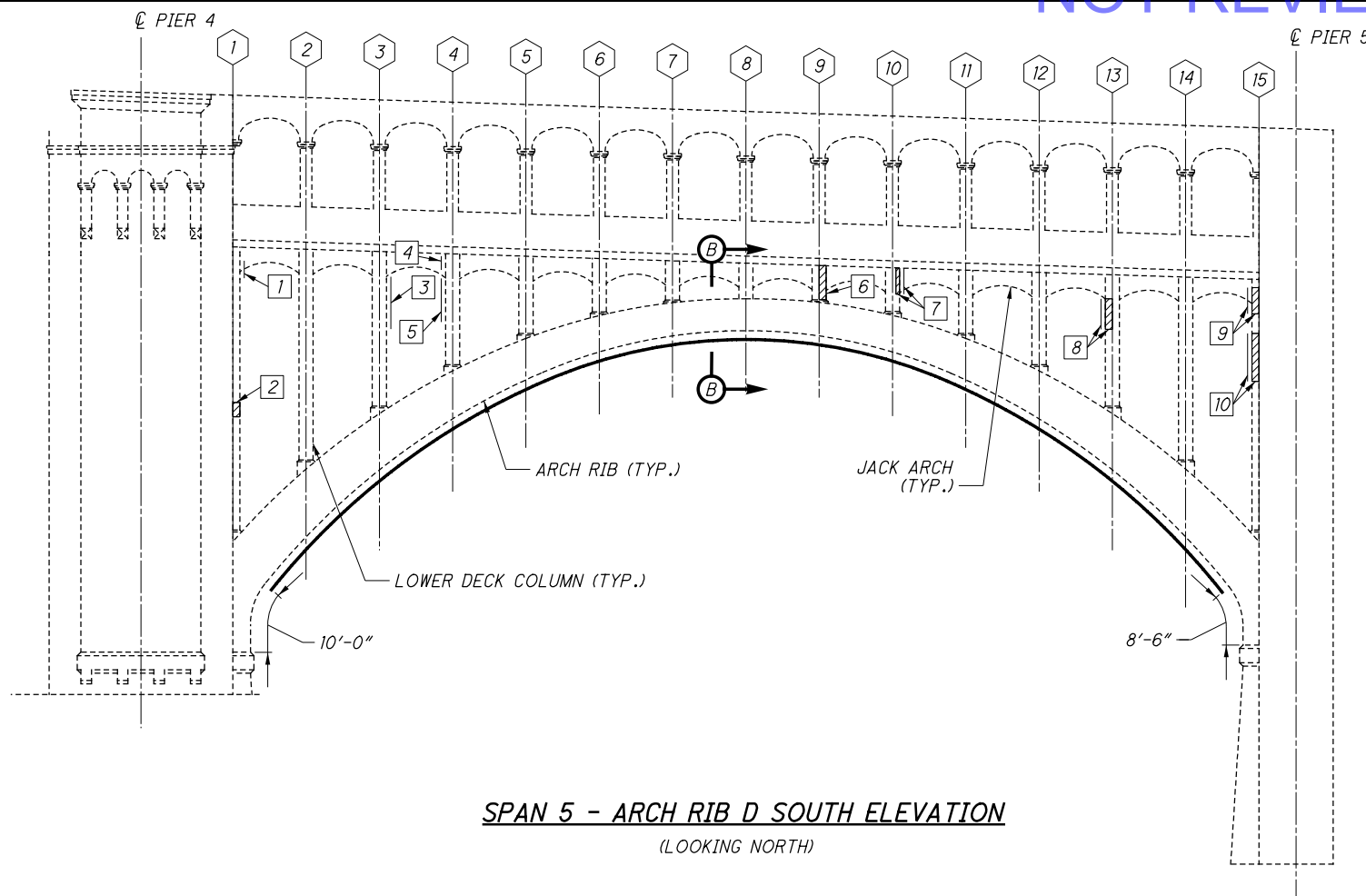
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PID No. 99972

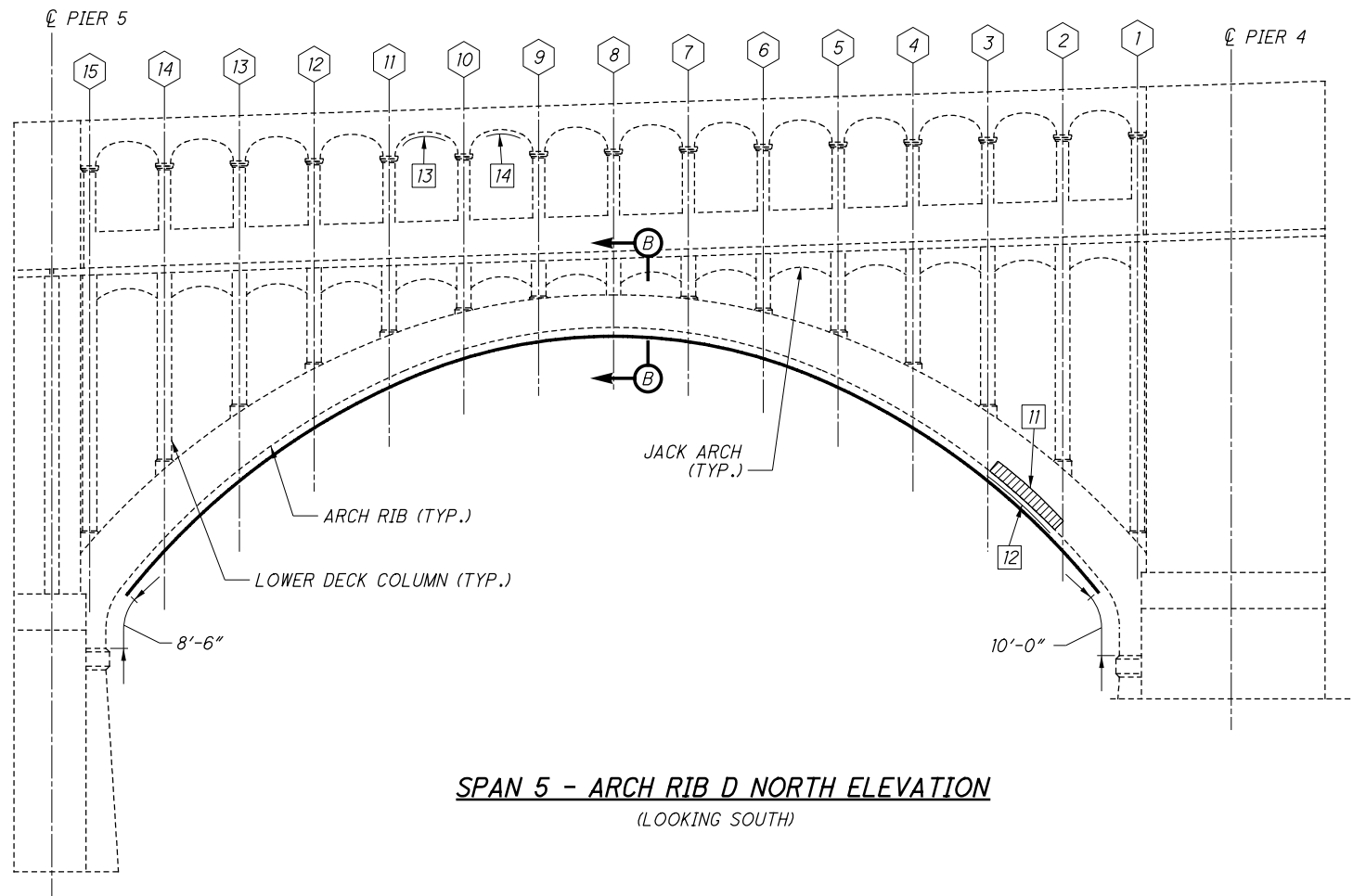
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SPAN 5 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 5 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	5	1
2	TYPE 1	4	1
3	TYPE 1	12	3
4	TYPE 1	4	1
5	TYPE 1	15	6
6	TYPE 1	4	2
7	TYPE 1	3	2
8	TYPE 1	7	2
9	TYPE 1	9	2
10	TYPE 1	16	3
11	TYPE 1	15	-
12	TYPE 1	15	7
13	TYPE 2	6	4
14	TYPE 2	5	4
MEASURED QUANTITY*		120	-
PLAN QUANTITY*		180	38

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	164
TYPE 2 REPAIR	SF	16
FRP WRAP	SF	1755

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- FOR PIER 4 REPAIR DETAILS, SEE SHEET 26/89. FOR PIER 5 REPAIR DETAILS, SEE SHEET 27/89.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET 85/89.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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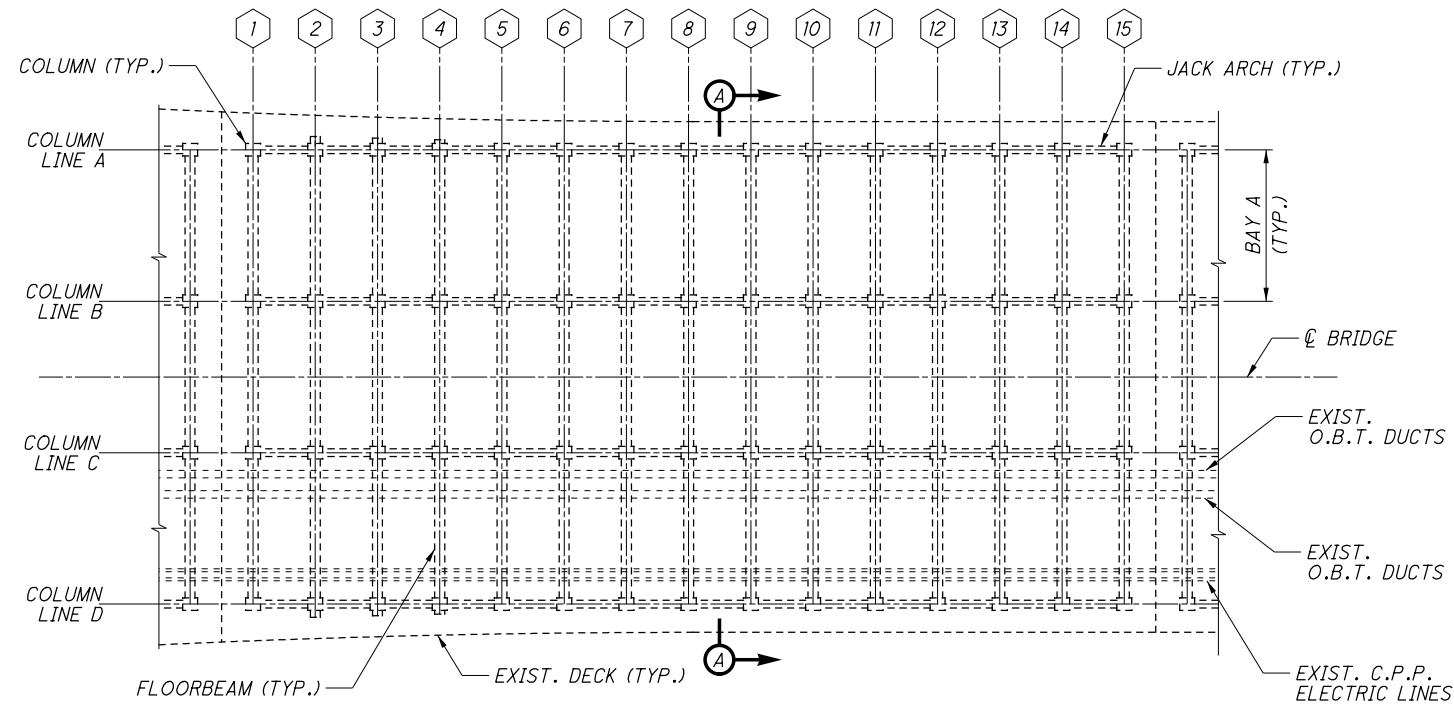
SPAN 5 CONCRETE REPAIR DETAILS (5 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

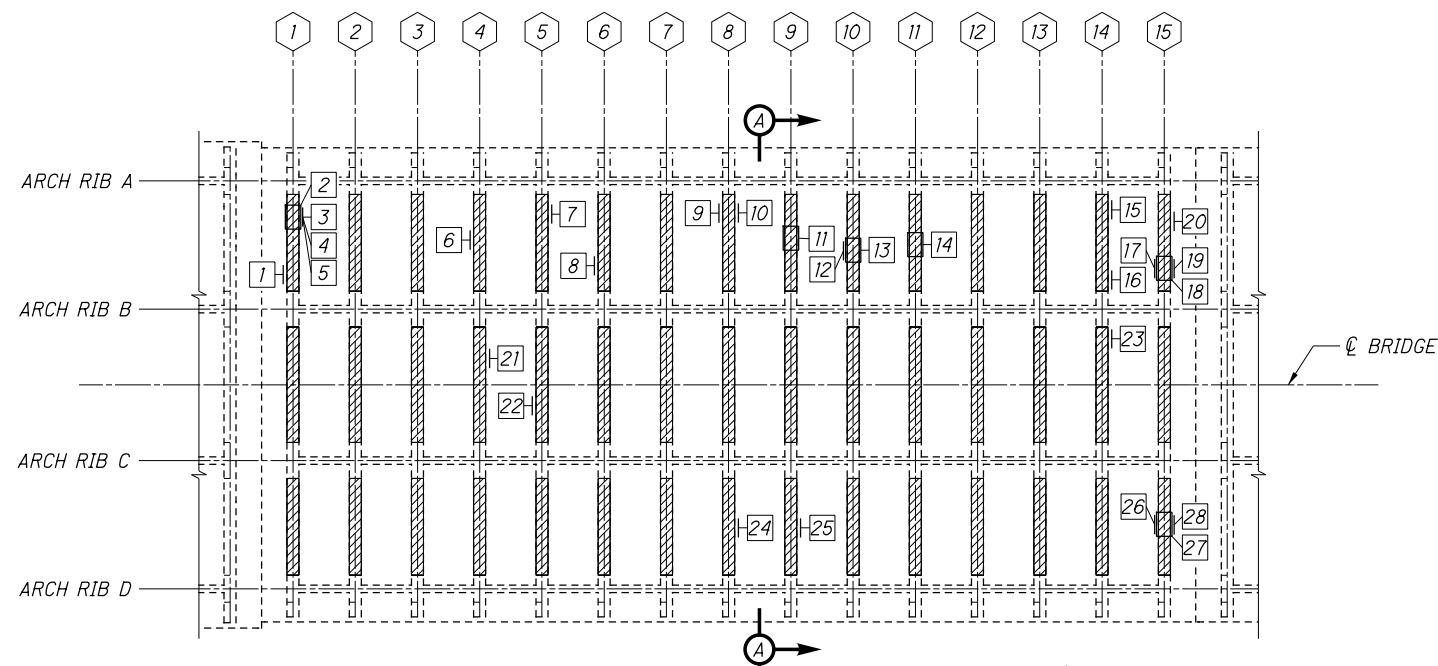
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SPAN 6 - UPPER DECK PLAN



SPAN 6 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	10	3
2	TYPE 2	11	4
3	TYPE 1	6	1
4	TYPE 1	3	1
5	TYPE 1	3	1
6	TYPE 1	7	2
7	TYPE 1	2	1
8	TYPE 1	1	1
9	TYPE 1	2	1
10	TYPE 1	8	2
11	TYPE 2	7	3
12	TYPE 1	6	2
13	TYPE 2	51	20
14	TYPE 2	7	4
15	TYPE 1	4	1
16	TYPE 1	6	5
17	TYPE 1	21	5
18	TYPE 2	6	8
19	TYPE 1	13	4
20	TYPE 1	12	4
21	TYPE 1	6	3
22	TYPE 1	5	1
23	TYPE 1	6	1
24	TYPE 1	6	1
25	TYPE 1	51	12
26	TYPE 1	26	12
27	TYPE 2	51	20
28	TYPE 1	26	12
MEASURED QUANTITY*		363	-
PLAN QUANTITY*		545	135

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	345
TYPE 2 REPAIR	SF	200
FRP WRAP	SF	3863

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR SECTION A-A, SEE SHEET [34/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- [Hatched Box] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

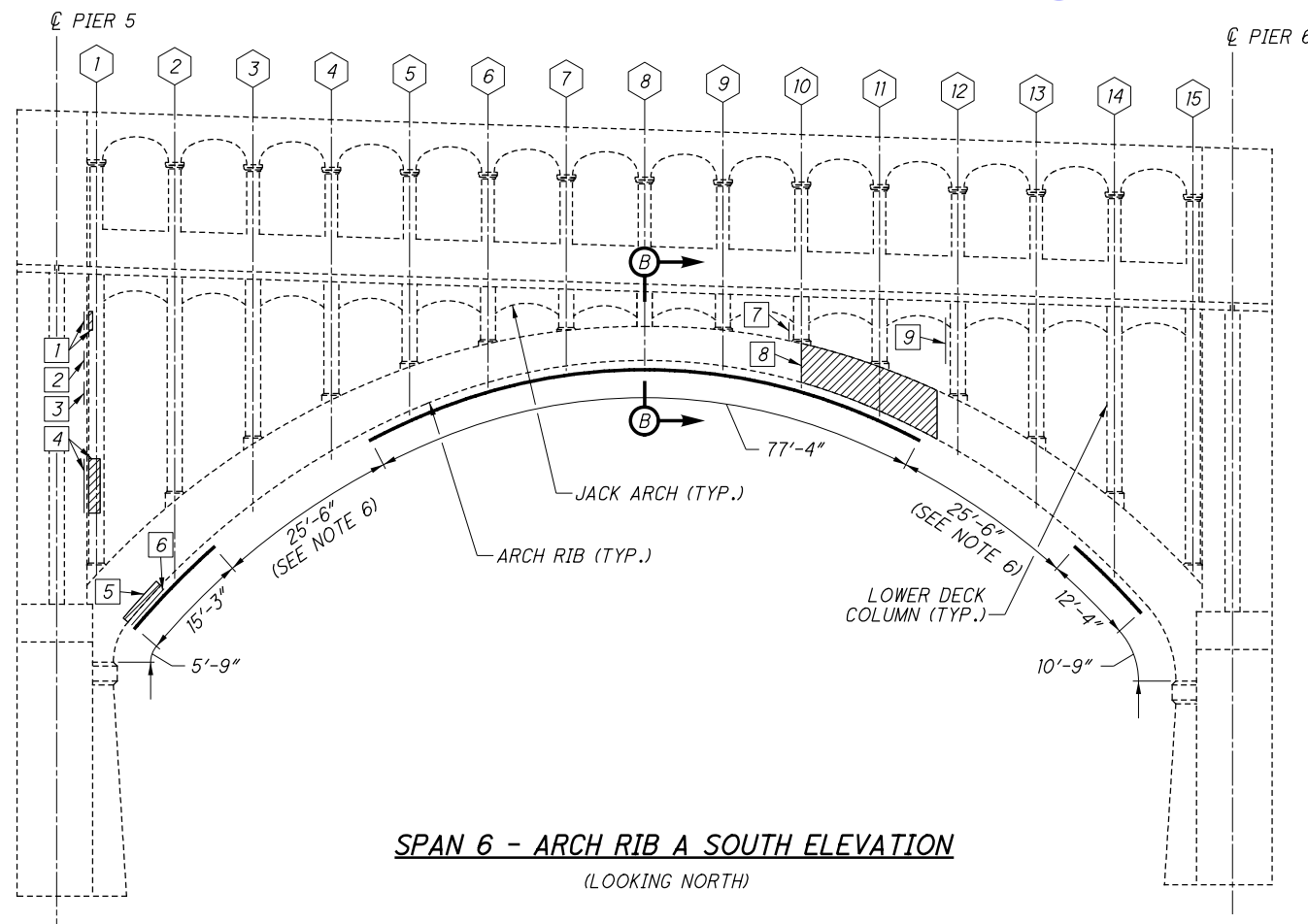
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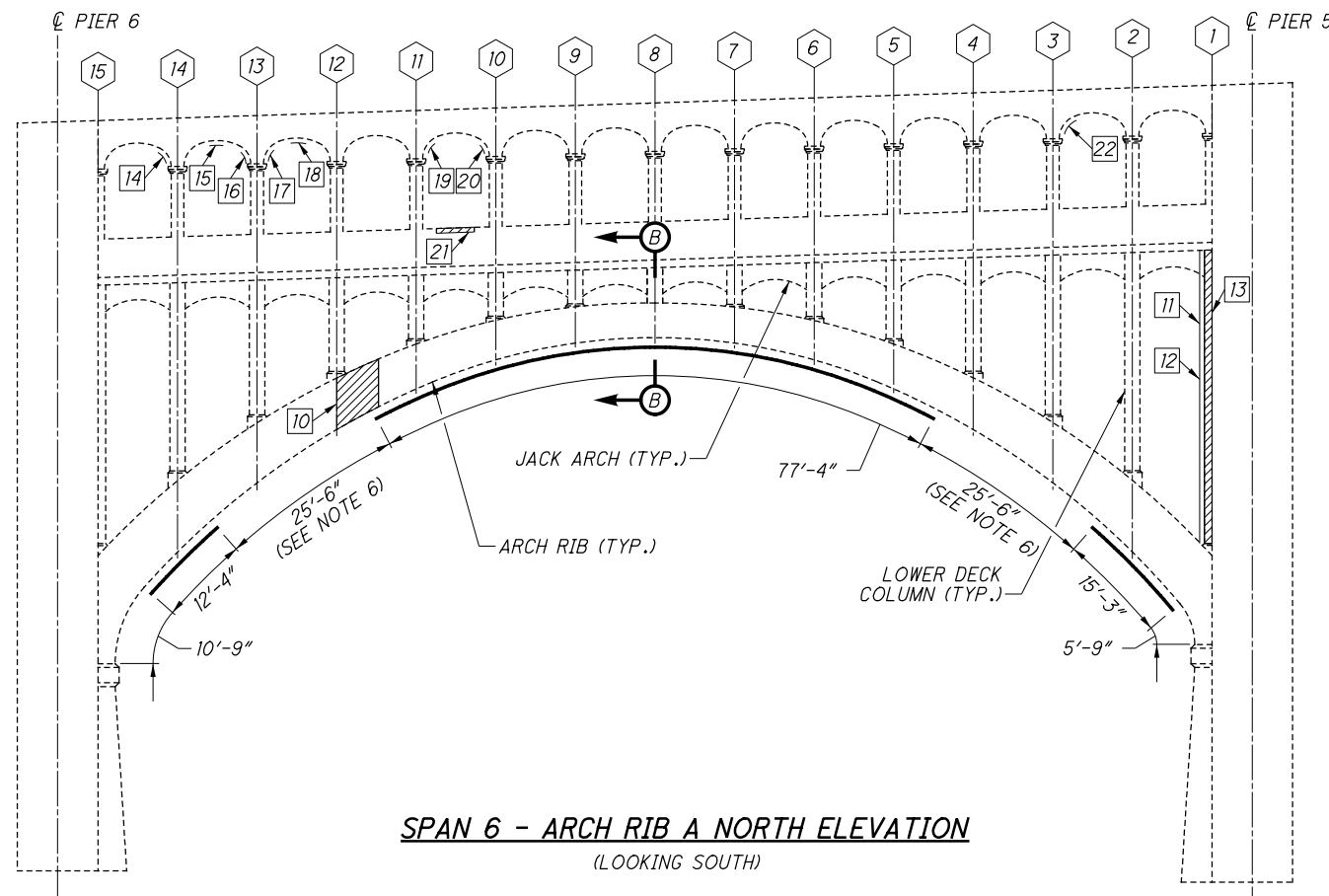
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SPAN 6 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972



SPAN 6 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 6 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	1
2	TYPE 1	2	1
3	TYPE 1	4	1
4	TYPE 1	13	3
5	TYPE 1	4	-
6	TYPE 2	4	3
7	TYPE 1	4	1
8	TYPE 1	68	-
9	TYPE 1	15	6
10	TYPE 1	20	-
11	TYPE 1	104	30
12	TYPE 1	8	2
13	TYPE 1	26	15

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
14	TYPE 2	2	1
15	TYPE 2	1	1
16	TYPE 2	1	1
17	TYPE 2	1	1
18	TYPE 2	1	1
19	TYPE 2	1	1
20	TYPE 2	1	1
21	TYPE 1	2	3
22	TYPE 2	2	1
MEASURED QUANTITY*		286	-
PLAN QUANTITY*		429	74

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	408
TYPE 2 REPAIR	SF	21
FRP WRAP	SF	1154

NOTES:

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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FRP WRAP WILL NOT BE USED FOR WRAPPING THE UNREINFORCED SECTIONS OF THE CONCRETE ARCH RIBS.
- FOR PIER 5 AND PIER 6 REPAIR DETAILS, SEE SHEET [27/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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DESIGN AGENCY
Pennoni

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1800930

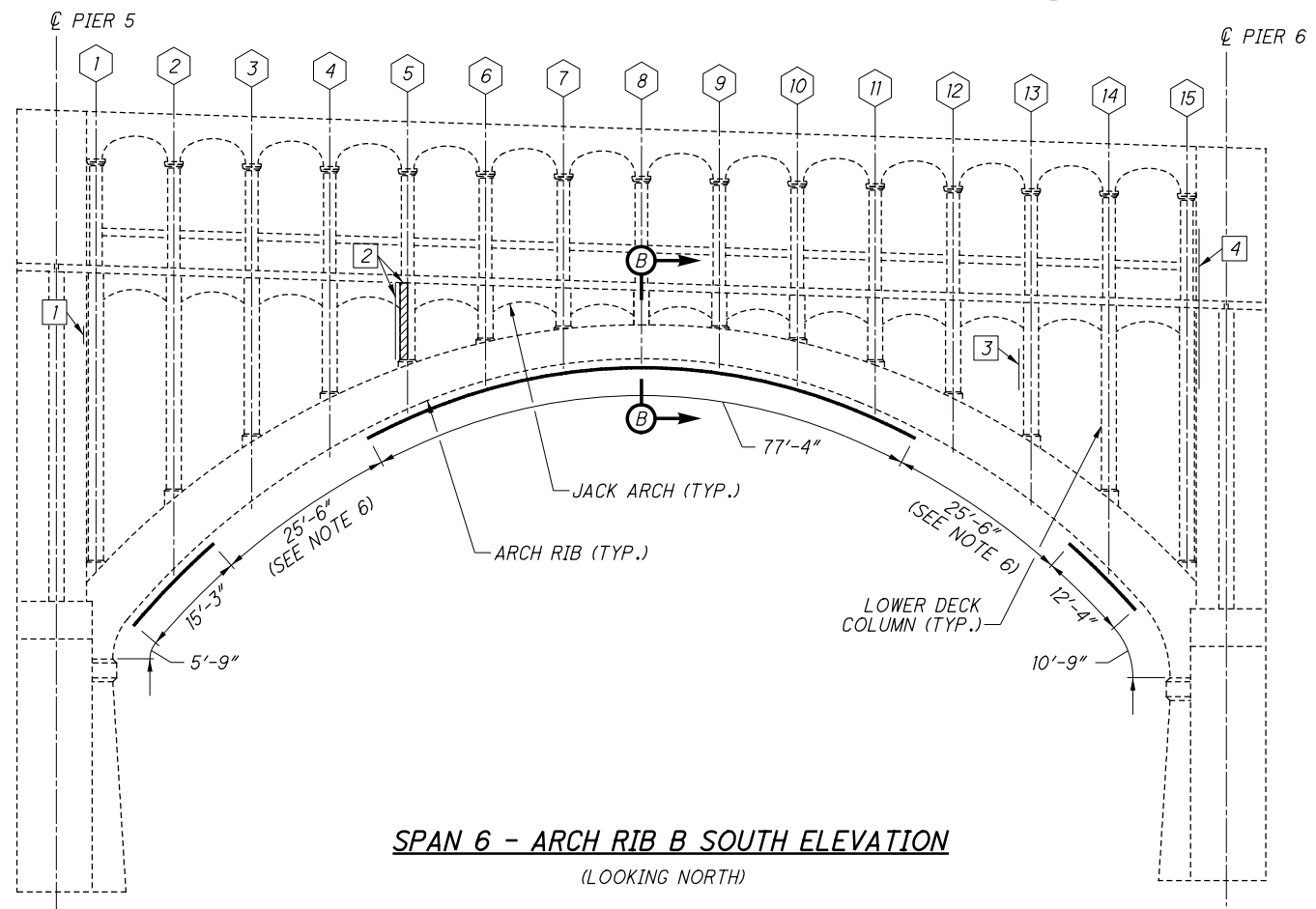
DATE
04/18/18

SPAN 6 CONCRETE REPAIR DETAILS (2 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

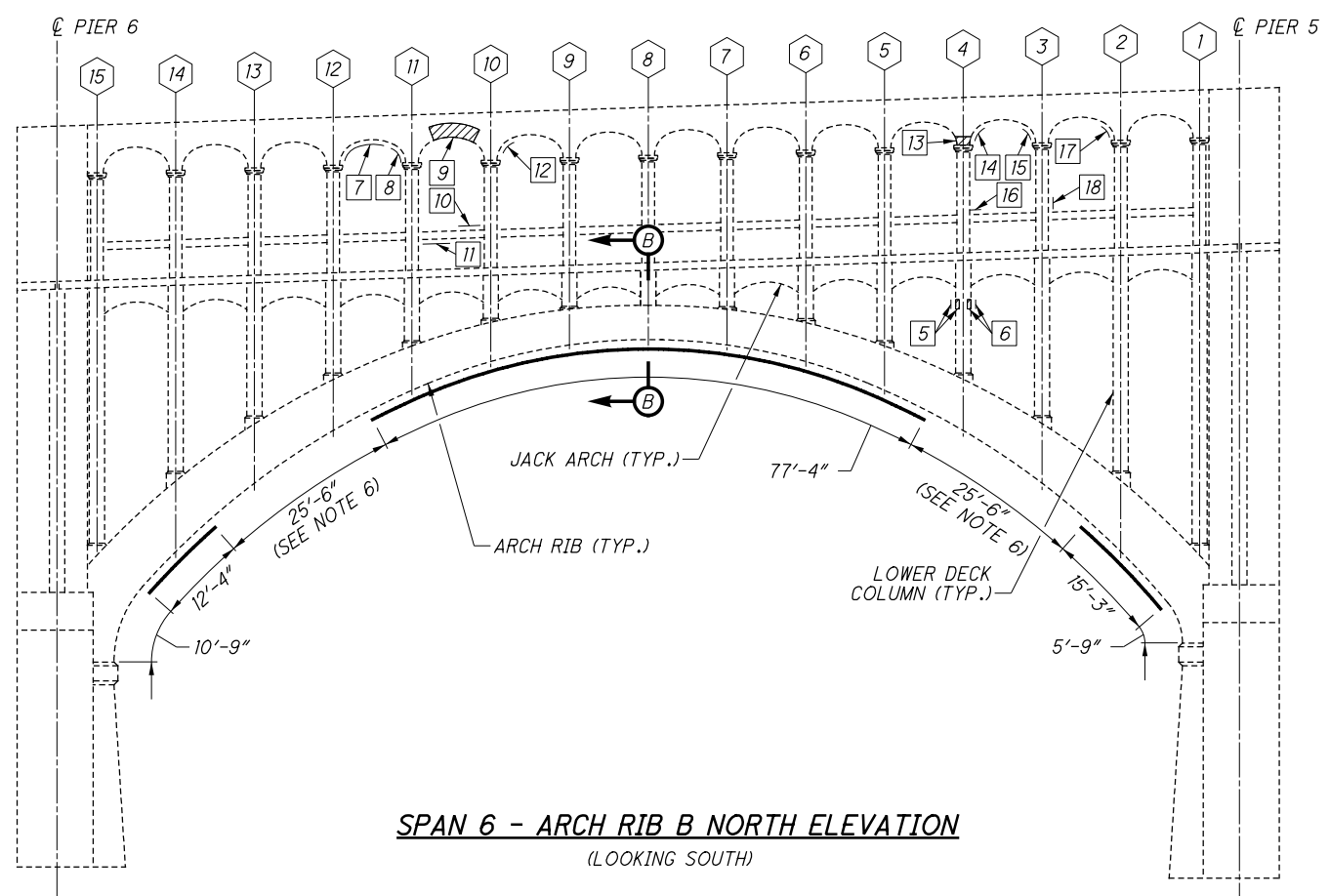
CUY-6-14.56
PID No. 99972

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128



SPAN 6 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)



SPAN 6 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	1
2	TYPE 1	17	5
3	TYPE 1	16	4
4	TYPE 1	35	9
5	TYPE 1	1	1
6	TYPE 1	1	1
7	TYPE 2	16	6
8	TYPE 2	8	3
9	TYPE 1	6	2
10	TYPE 1	3	2

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
11	TYPE 2	3	2
12	TYPE 2	1	1
13	TYPE 1	2	1
14	TYPE 2	3	2
15	TYPE 2	2	1
16	TYPE 1	1	1
17	TYPE 2	3	2
18	TYPE 1	1	1
MEASURED QUANTITY*		121	-
PLAN QUANTITY*		182	45

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	128
TYPE 2 REPAIR	SF	54
FRP WRAP	SF	1364

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
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- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FRP WRAP WILL NOT BE USED FOR WRAPPING THE UNREINFORCED SECTIONS OF THE CONCRETE ARCH RIBS.
- FOR PIER 5 AND PIER 6 REPAIR DETAILS, SEE SHEET [27/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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DESIGN AGENCY
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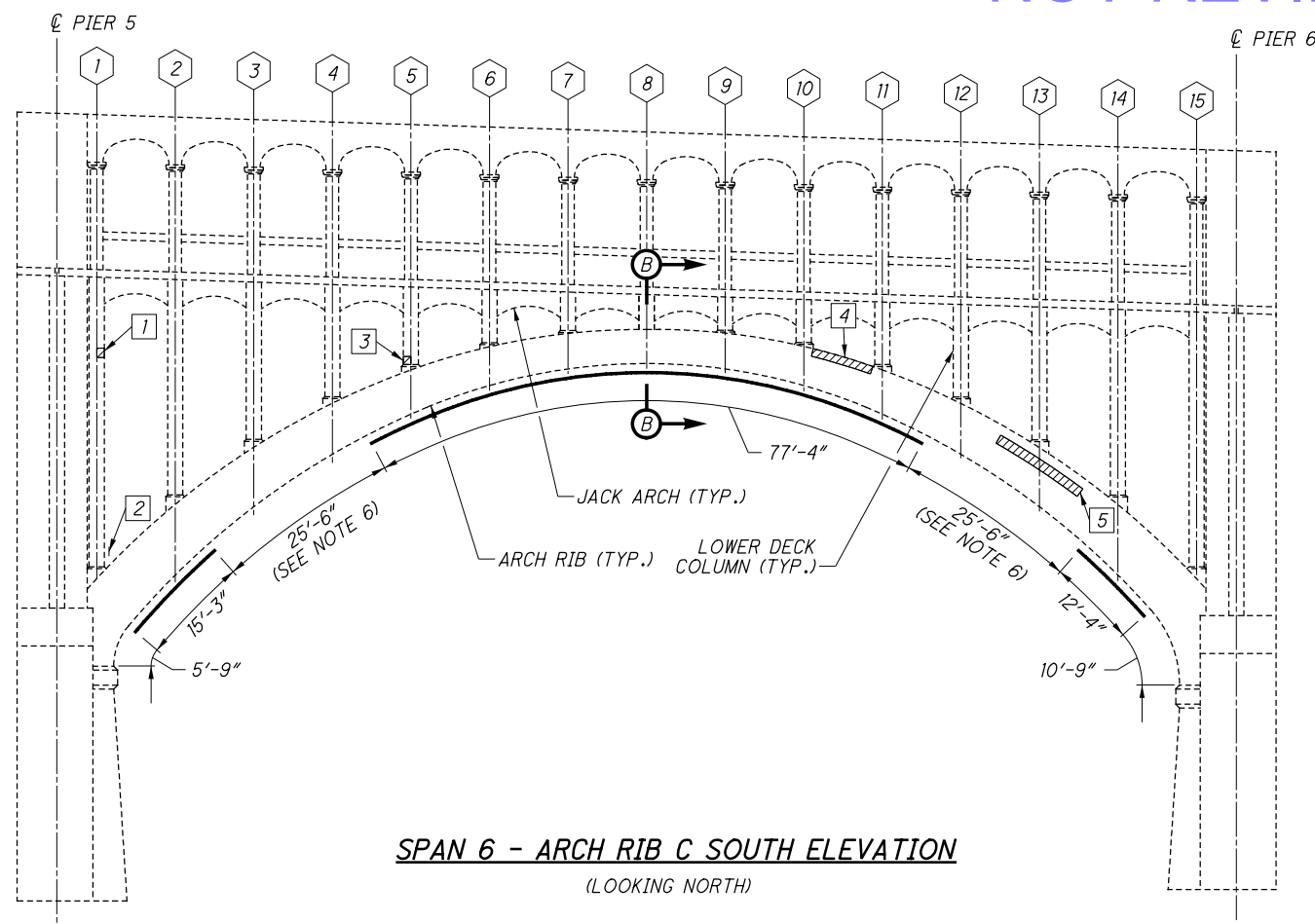
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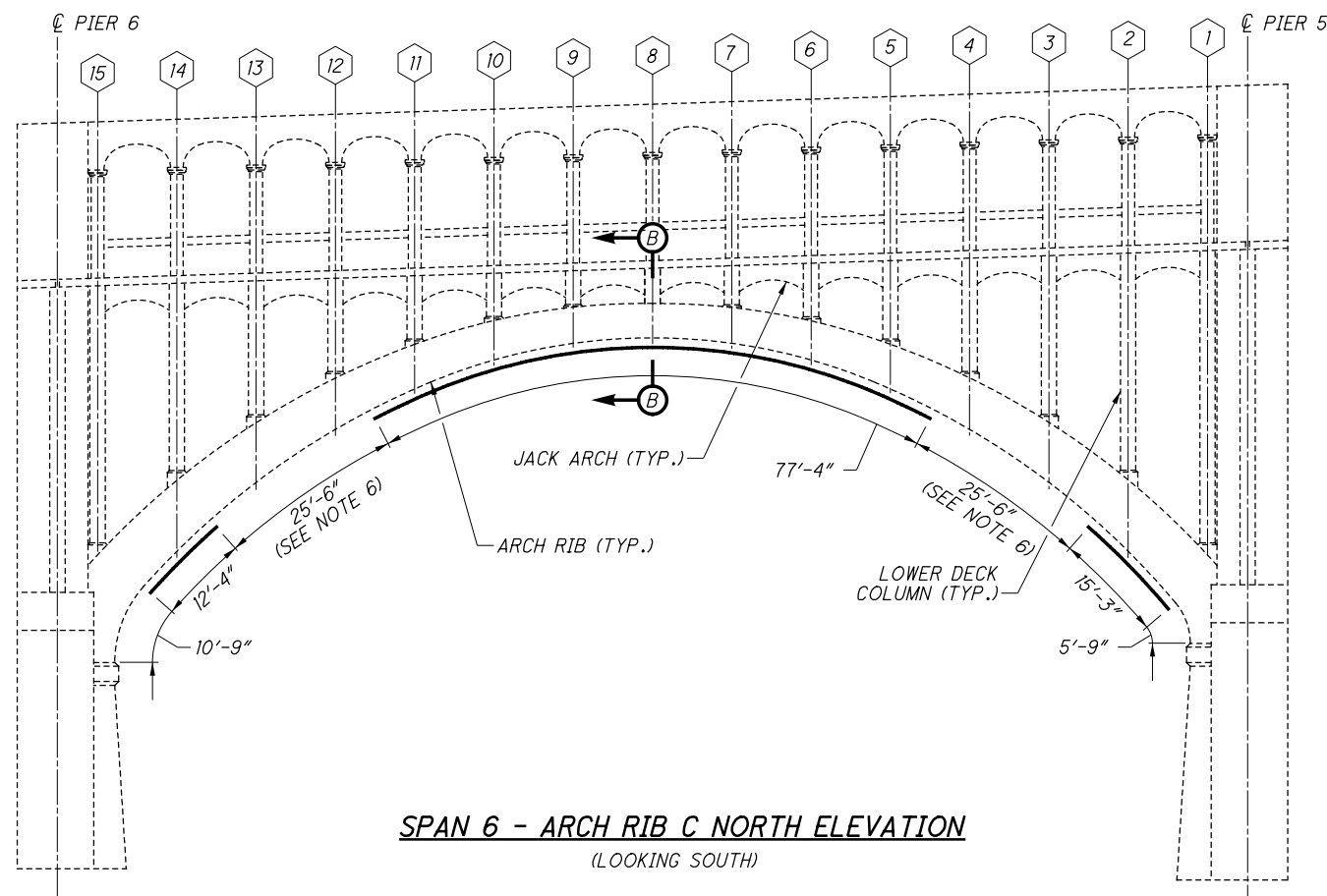
SPAN 6 CONCRETE REPAIR DETAILS (3 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 6 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)



SPAN 6 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	1	1
2	TYPE 1	1	1
3	TYPE 1	1	1
4	TYPE 1	5	-
5	TYPE 1	10	-
MEASURED QUANTITY*		18	-
PLAN QUANTITY*		27	3

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	27
TYPE 2 REPAIR	SF	-
FRP WRAP	SF	1364

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- FRP WRAP WILL NOT BE USED FOR WRAPPING THE UNREINFORCED SECTIONS OF THE CONCRETE ARCH RIBS.
- FOR PIER 5 AND PIER 6 REPAIR DETAILS, SEE SHEET 27/89.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET 85/89.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
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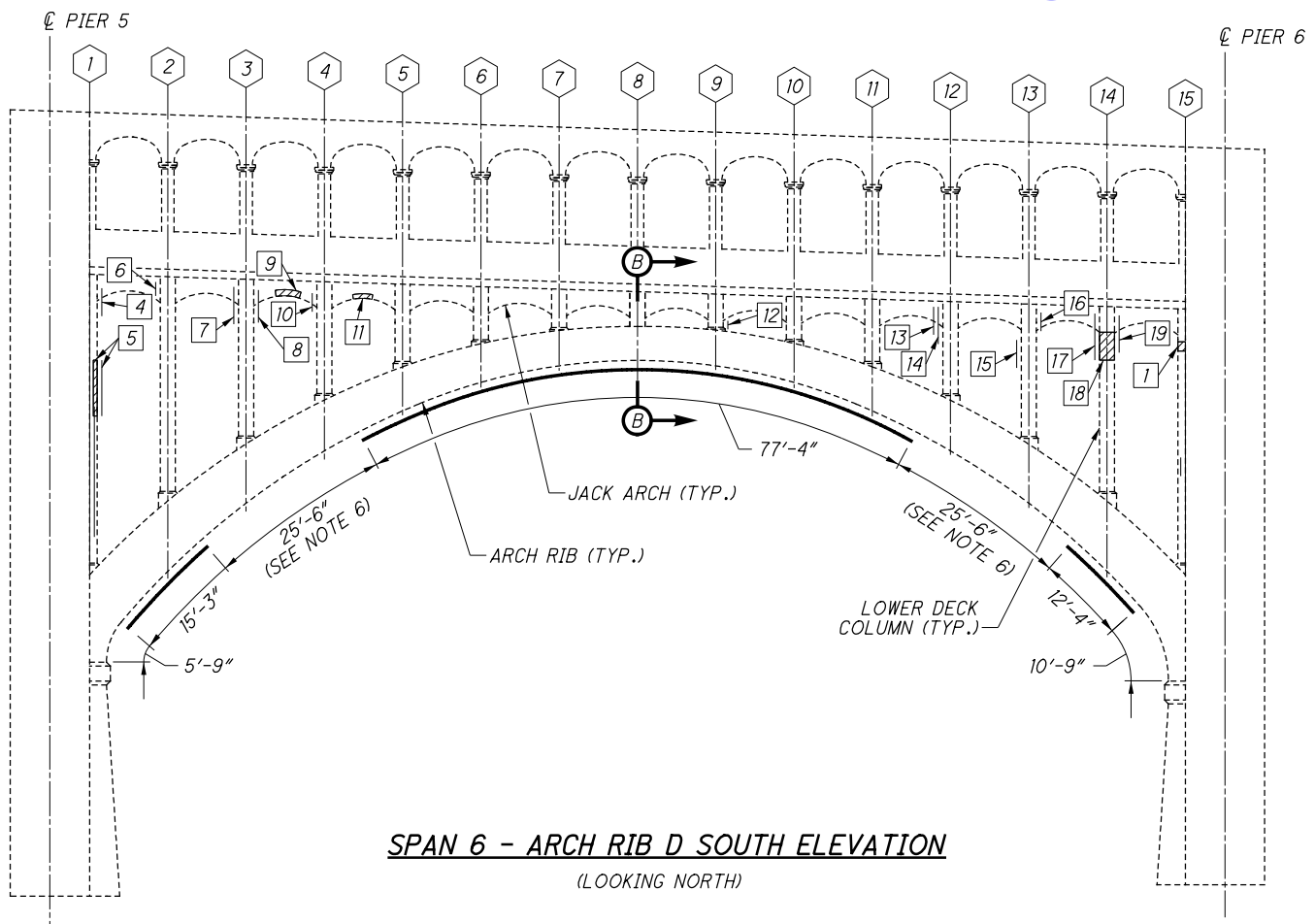
SPAN 6 CONCRETE REPAIR DETAILS (4 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

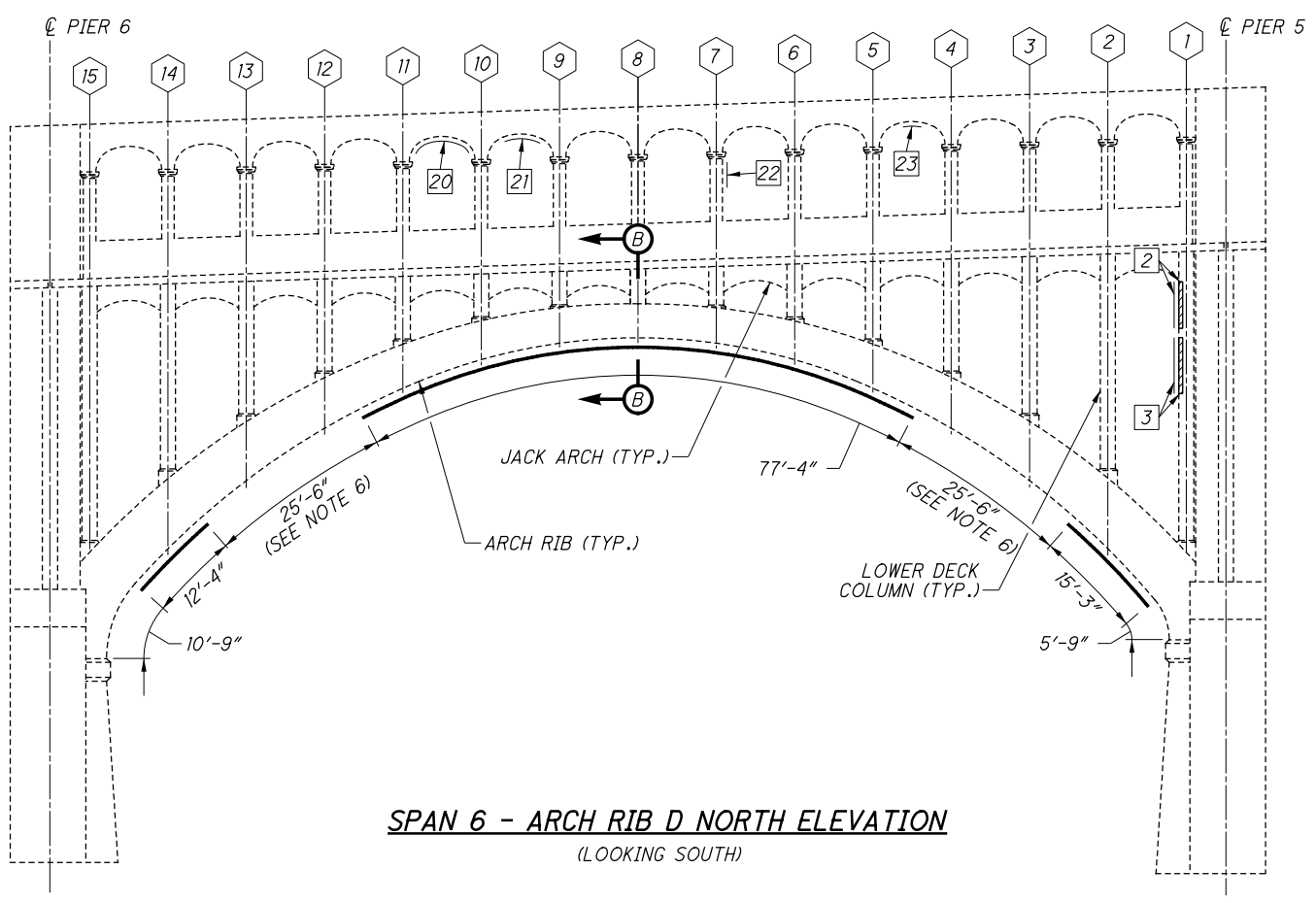
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SPAN 6 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 6 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	1	2
2	TYPE 1	6	3
3	TYPE 1	6	1
4	TYPE 1	3	4
5	TYPE 1	14	4
6	TYPE 1	14	2
7	TYPE 1	2	1
8	TYPE 1	4	2
9	TYPE 1	1	1
10	TYPE 1	1	4
11	TYPE 1	9	2
12	TYPE 1	8	2

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
13	TYPE 1	4	1
14	TYPE 1	10	3
15	TYPE 1	6	2
16	TYPE 1	8	2
17	TYPE 1	1	1
18	TYPE 1	5	3
19	TYPE 1	6	3
20	TYPE 2	10	7
21	TYPE 2	4	3
22	TYPE 1	5	4
23	TYPE 2	2	1

MEASURED QUANTITY*	132	-
PLAN QUANTITY*	198	58

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	174
TYPE 2 REPAIR	SF	24
FRP WRAP	SF	1154

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FRP WRAP WILL NOT BE USED FOR WRAPPING THE UNREINFORCED SECTIONS OF THE CONCRETE ARCH RIBS.
- FOR PIER 5 AND PIER 6 REPAIR DETAILS, SEE SHEET [27/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
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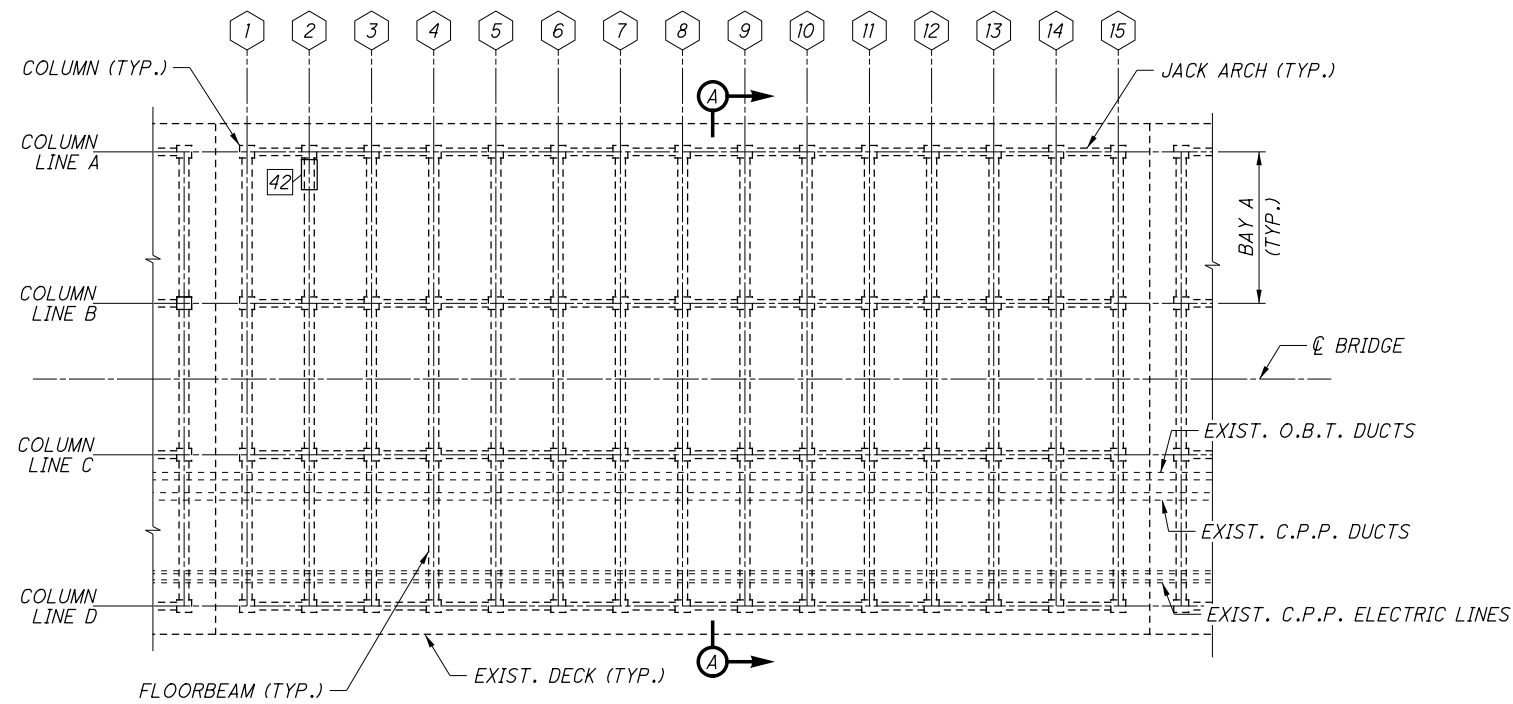
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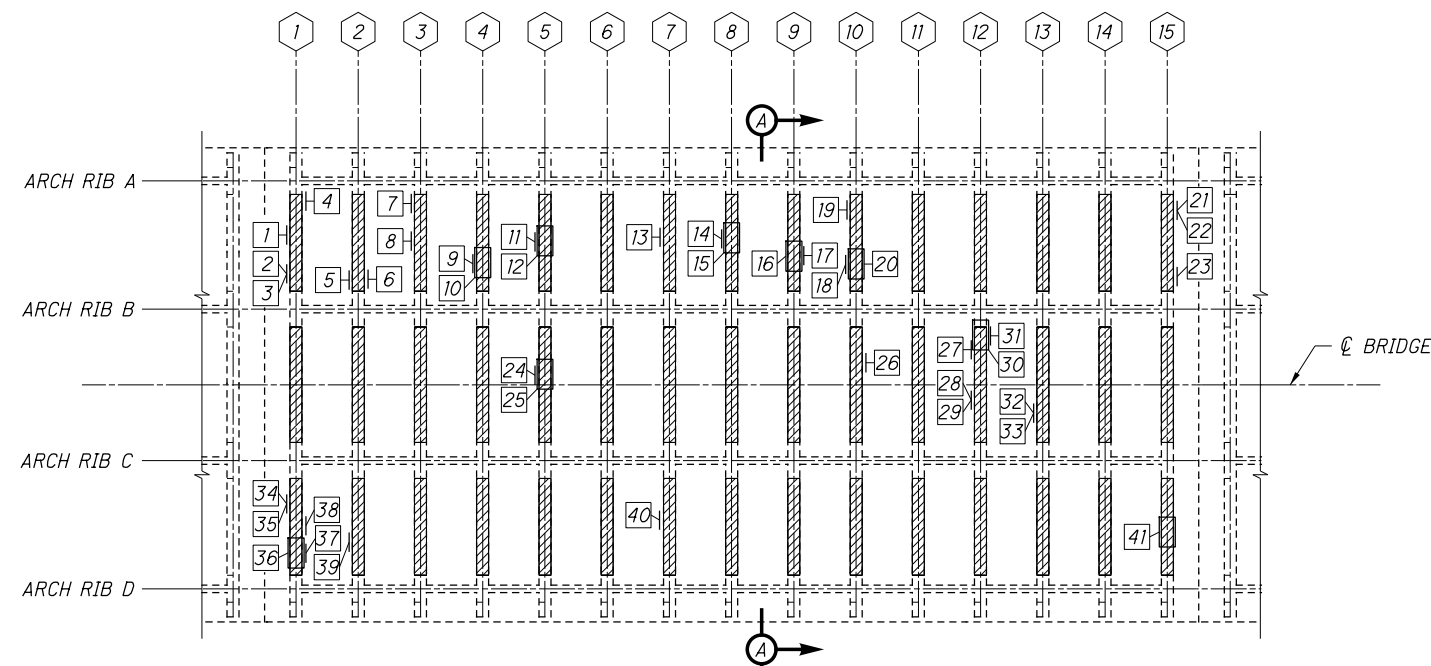
SPAN 6 CONCRETE REPAIR DETAILS (5 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 7 - UPPER DECK PLAN



SPAN 7 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	8	2
2	TYPE 1	20	4
3	TYPE 1	5	1
4	TYPE 1	4	1
5	TYPE 1	2	1
6	TYPE 1	2	1
7	TYPE 1	8	2
8	TYPE 1	21	6
9	TYPE 1	25	4
10	TYPE 2	22	9
11	TYPE 1	6	3
12	TYPE 2	1	1
13	TYPE 1	16	4
14	TYPE 1	6	3
15	TYPE 2	30	12
16	TYPE 2	5	2
17	TYPE 1	4	1
18	TYPE 1	6	2
19	TYPE 1	3	2
20	TYPE 2	3	3
21	TYPE 1	20	6

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
22	TYPE 1	5	1
23	TYPE 1	19	6
24	TYPE 1	12	4
25	TYPE 2	4	3
26	TYPE 1	6	2
27	TYPE 1	4	1
28	TYPE 1	17	3
29	TYPE 1	13	2
30	TYPE 2	2	2
31	TYPE 1	3	1
32	TYPE 1	2	1
33	TYPE 1	2	1
34	TYPE 1	16	6
35	TYPE 1	6	2
36	TYPE 2	3	3
37	TYPE 1	3	2
38	TYPE 1	10	2
39	TYPE 1	33	12
40	TYPE 1	21	4
41	TYPE 2	13	8
42	TYPE 2	1	1
MEASURED QUANTITY*		412	-
PLAN QUANTITY*		618	137

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	492
TYPE 2 REPAIR	SF	126
FRP WRAP	SF	3863

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR SECTION A-A, SEE SHEET [34/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

FLOORBEAM LINE NUMBER

REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.

▨ AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM



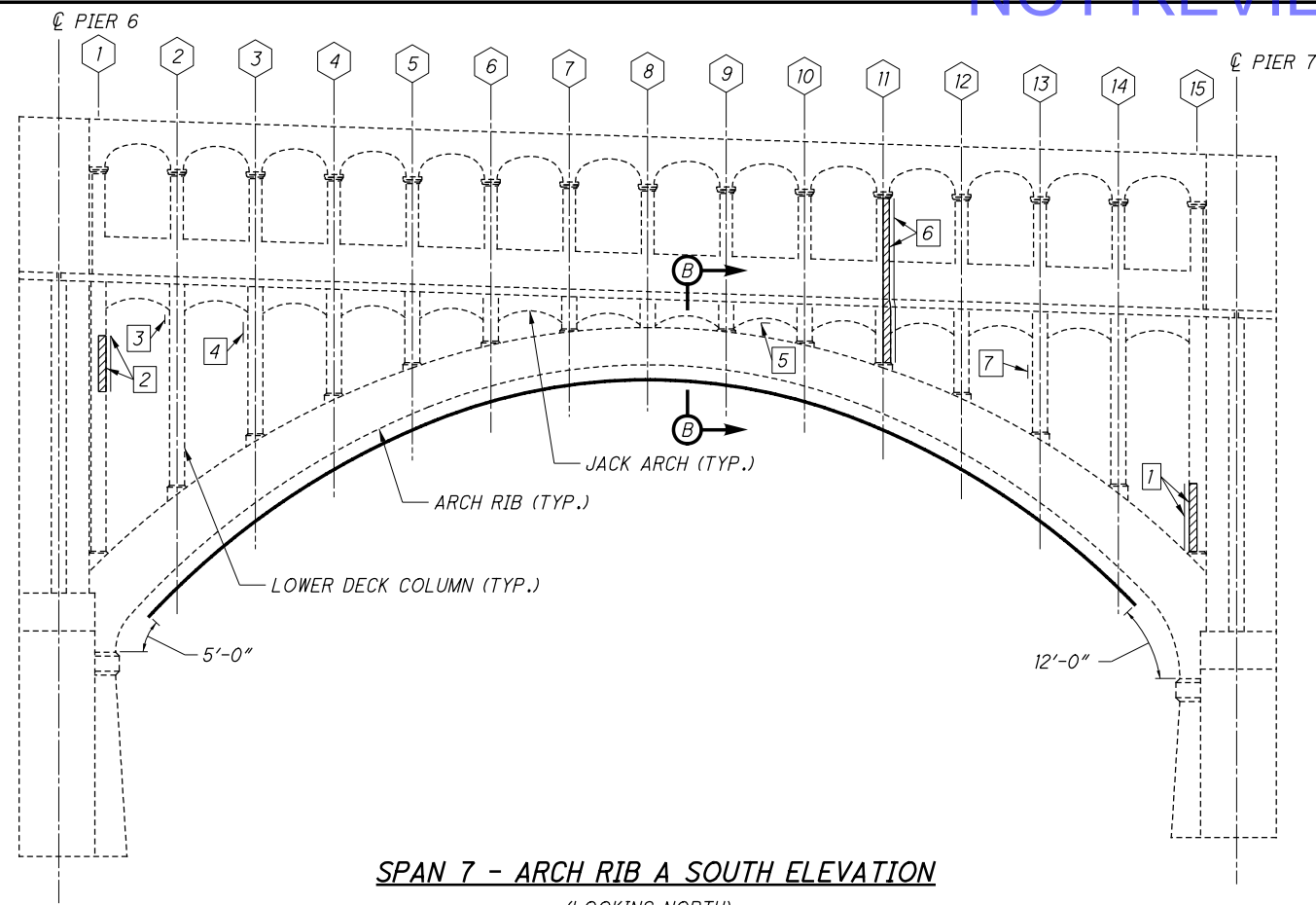
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DATE 04/18/18
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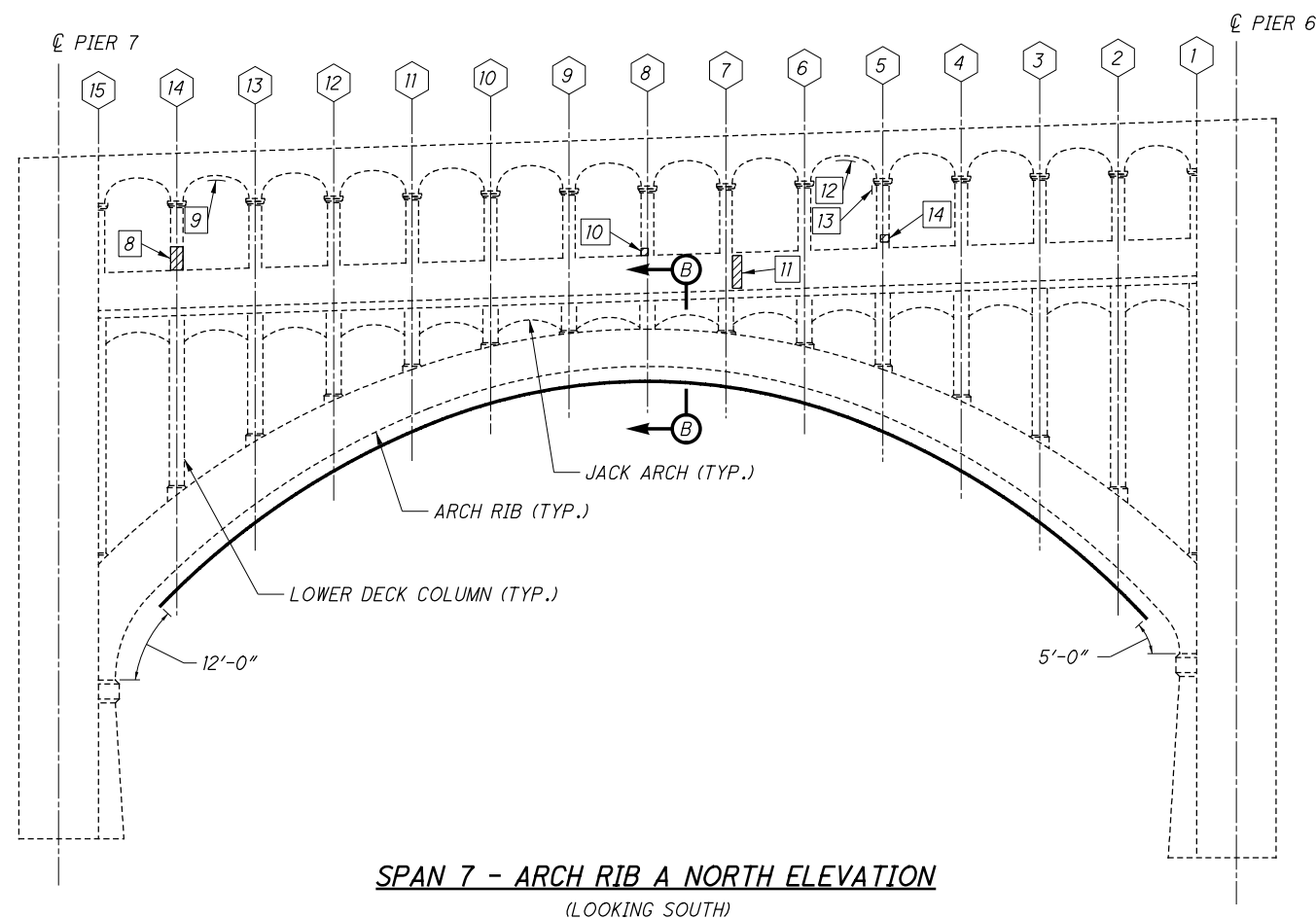
SPAN 7 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 7 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 7 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	21	5
2	TYPE 1	20	6
3	TYPE 1	1	1
4	TYPE 1	7	2
5	TYPE 2	2	2
6	TYPE 1	32	12
7	TYPE 1	3	1
8	TYPE 1	5	2
9	TYPE 2	4	1
10	TYPE 1	1	1
11	TYPE 1	4	2
12	TYPE 2	2	1
13	TYPE 1	1	1
14	TYPE 1	1	1
MEASURED QUANTITY*		104	-
PLAN QUANTITY*		156	38

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	144
TYPE 2 REPAIR	SF	12
FRP WRAP	SF	1681

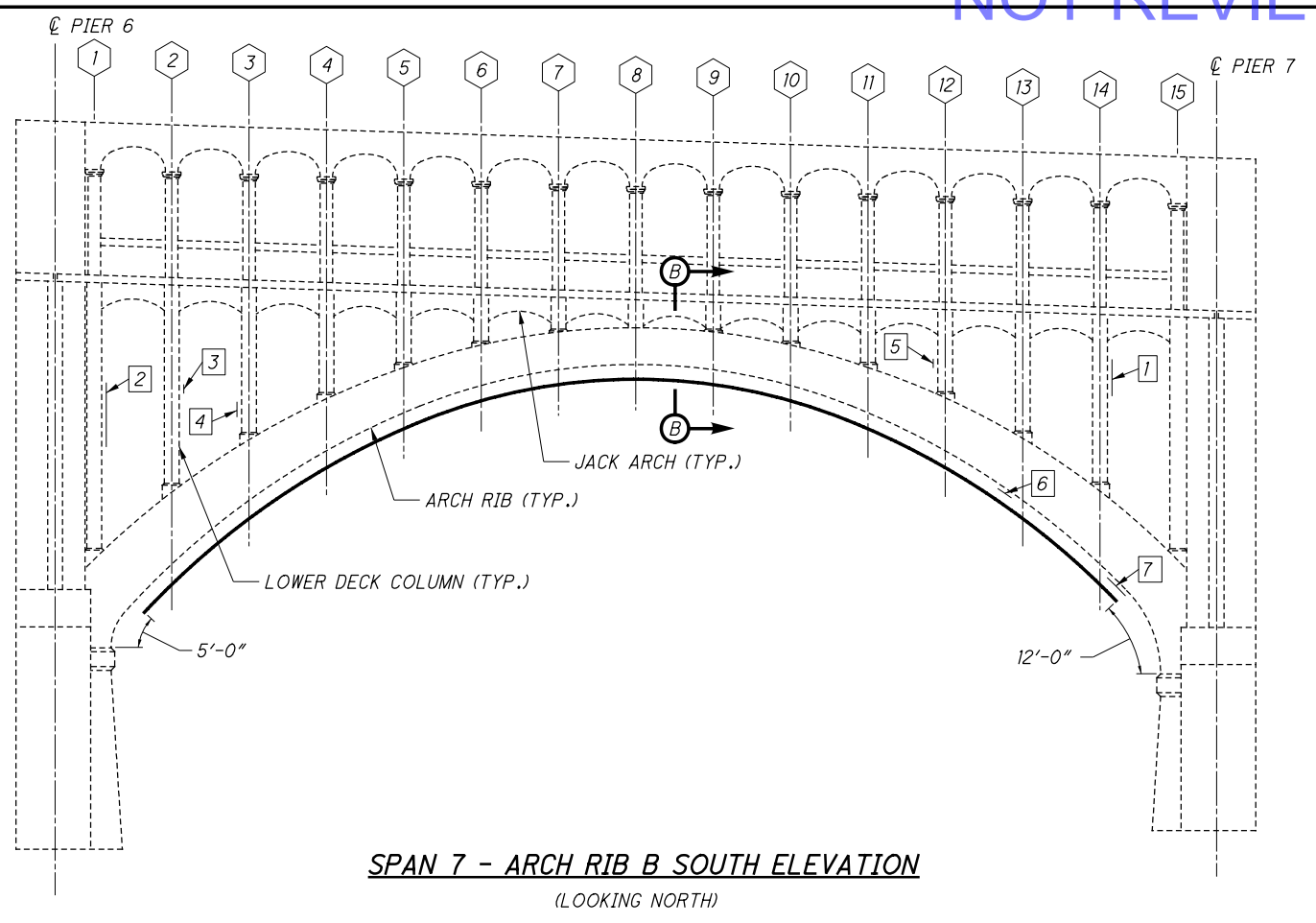
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 6 REPAIR DETAILS, SEE SHEET **27/89**. FOR PIER 7 REPAIR DETAILS, SEE SHEET **28/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

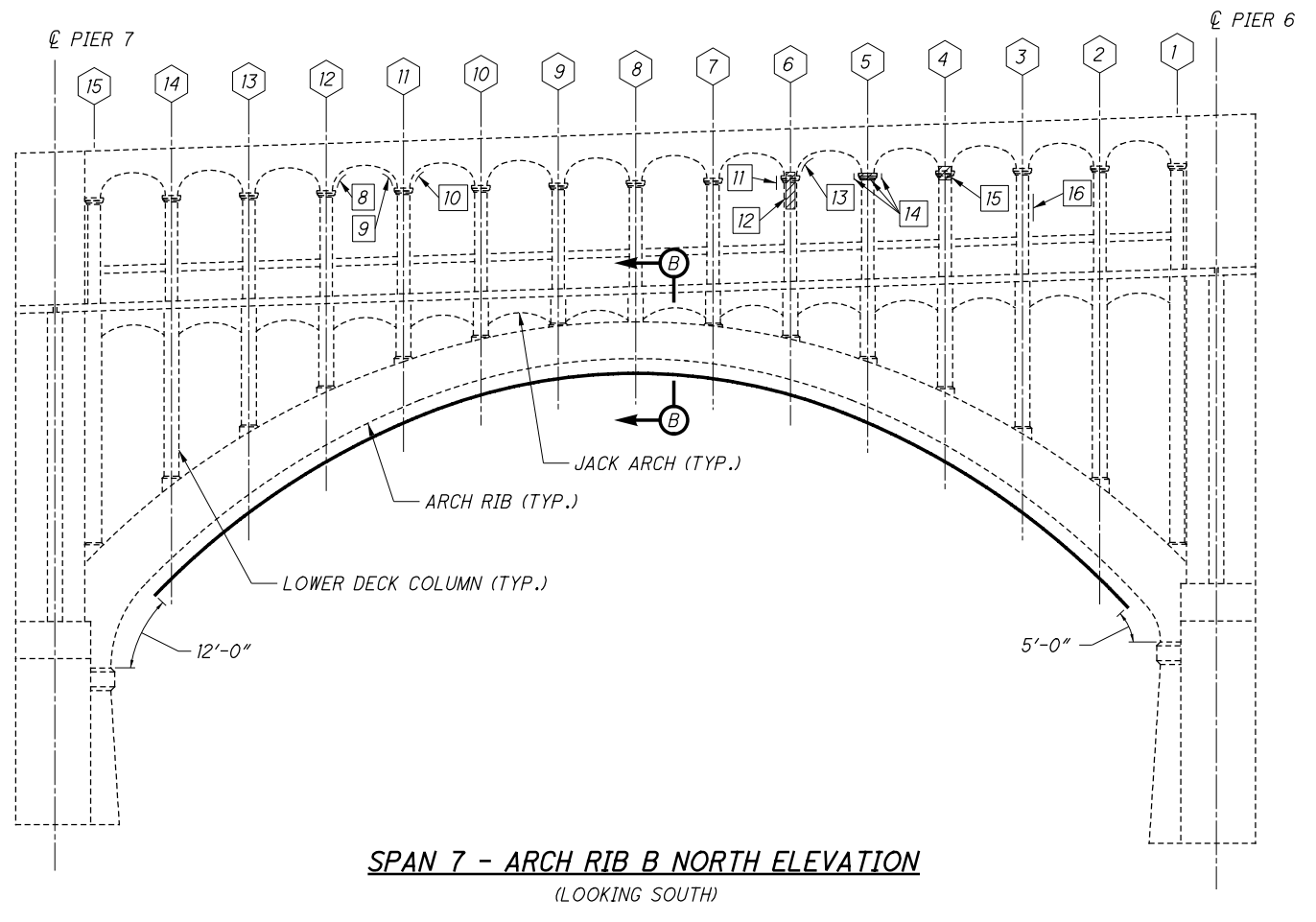
LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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SPAN 7 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)



SPAN 7 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	10	2
2	TYPE 1	28	8
3	TYPE 1	2	1
4	TYPE 1	5	1
5	TYPE 1	1	1
6	TYPE 2	3	1
7	TYPE 2	21	8
8	TYPE 2	3	2
9	TYPE 2	3	2
10	TYPE 2	1	1
11	TYPE 1	4	1
12	TYPE 1	5	4
13	TYPE 2	4	3
14	TYPE 1	5	4
15	TYPE 1	4	1
16	TYPE 1	5	4
MEASURED QUANTITY*		104	-
PLAN QUANTITY*		156	44

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	103
TYPE 2 REPAIR	SF	53
FRP WRAP	SF	1987

- NOTES:**
- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
 - PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
 - ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
 - GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
 - FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
 - FOR PIER 6 REPAIR DETAILS, SEE SHEET **27/89**. FOR PIER 7 REPAIR DETAILS, SEE SHEET **28/89**.
 - FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

- LEGEND:**
- # SPANDREL COLUMN NUMBER
 - # REPAIR NUMBER
 - LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
 - LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
 - AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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STRUCTURE FILE NUMBER
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BRIDGE NO. CUY-6-1456

U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

PID No. 99972

CUY-6-14.56

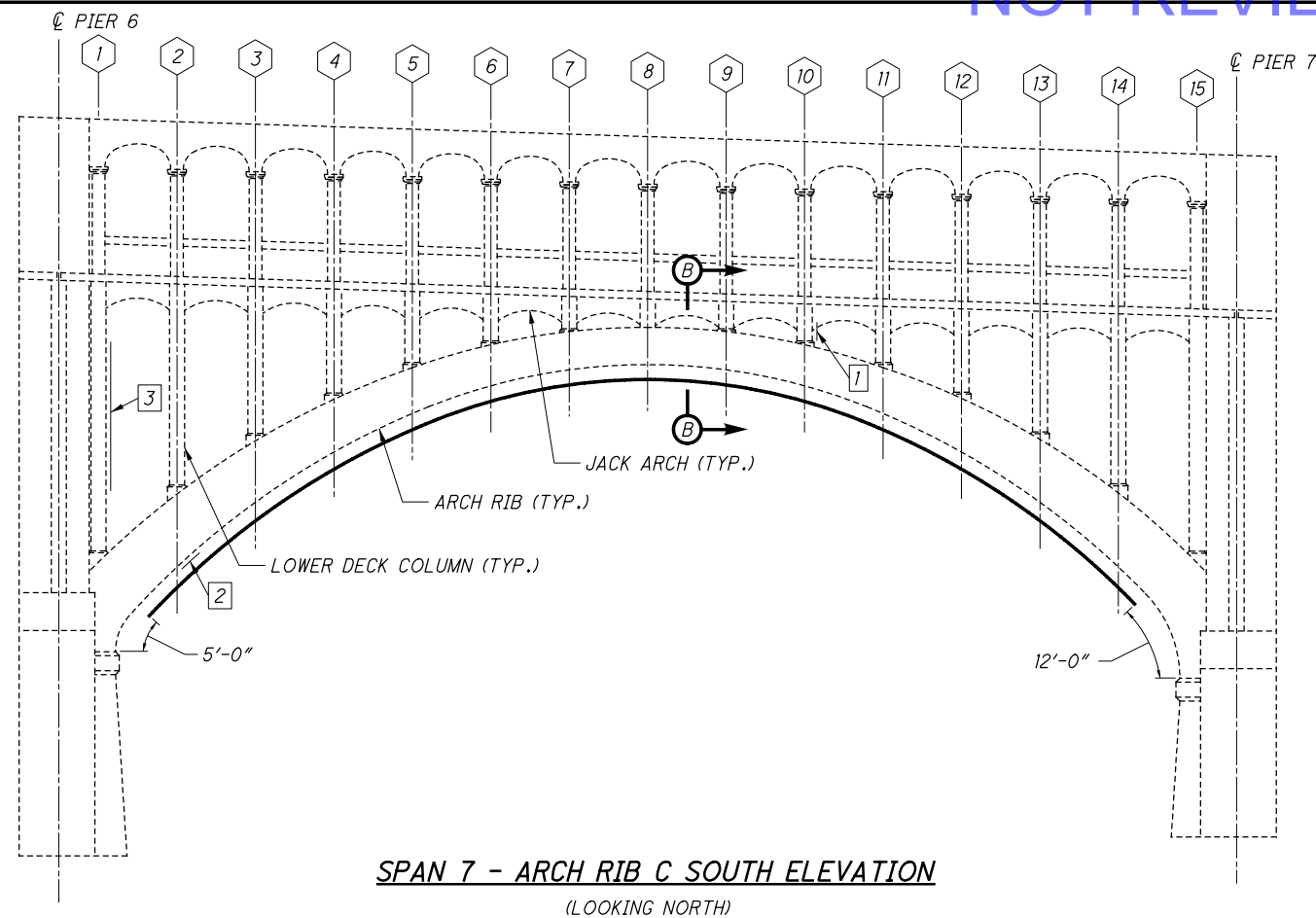
SPAN 7 CONCRETE REPAIR DETAILS (3 OF 5)

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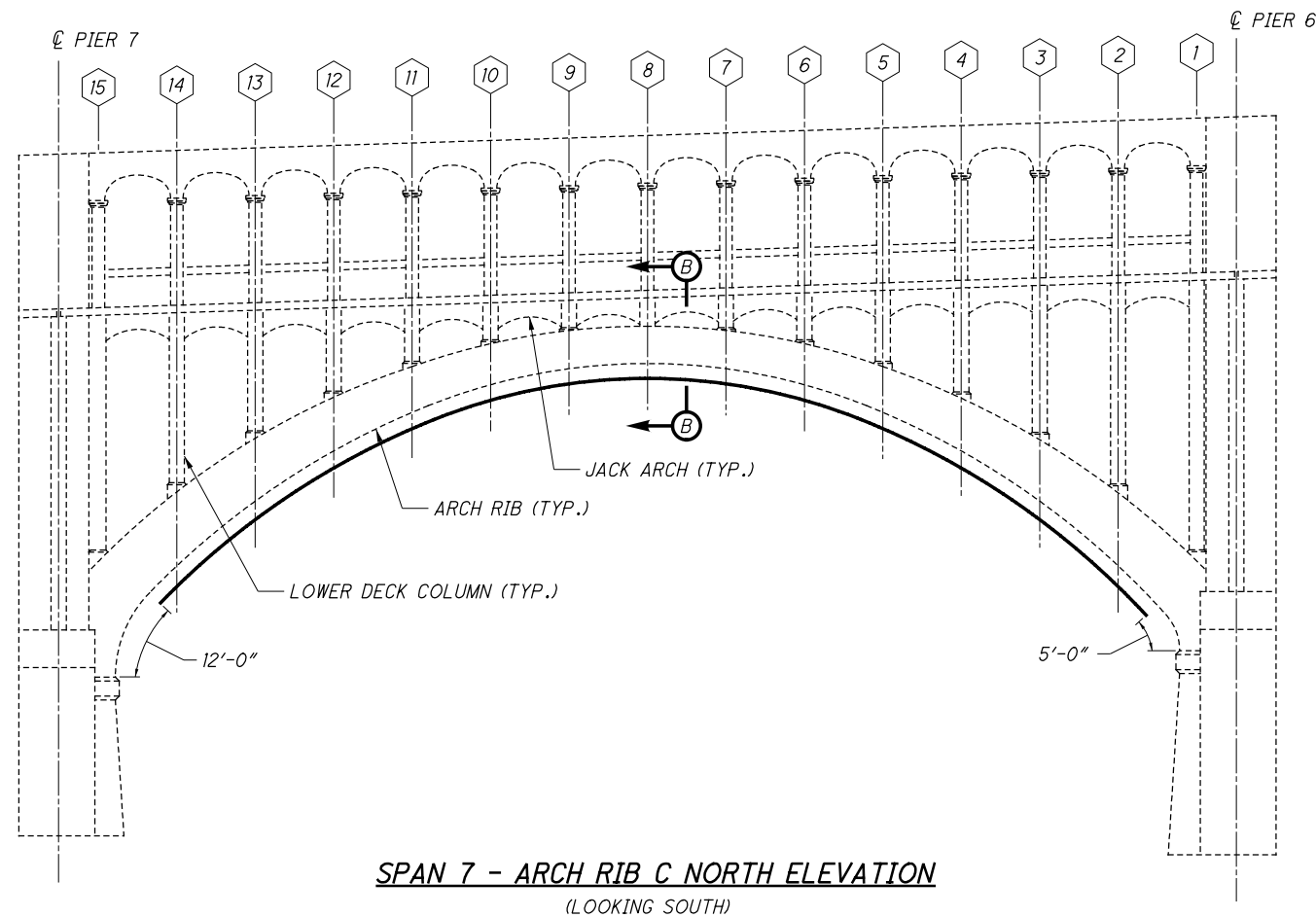
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SPAN 7 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)



SPAN 7 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	2	1
2	TYPE 2	15	5
3	TYPE 1	32	8
MEASURED QUANTITY*		49	-
PLAN QUANTITY*		74	14

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

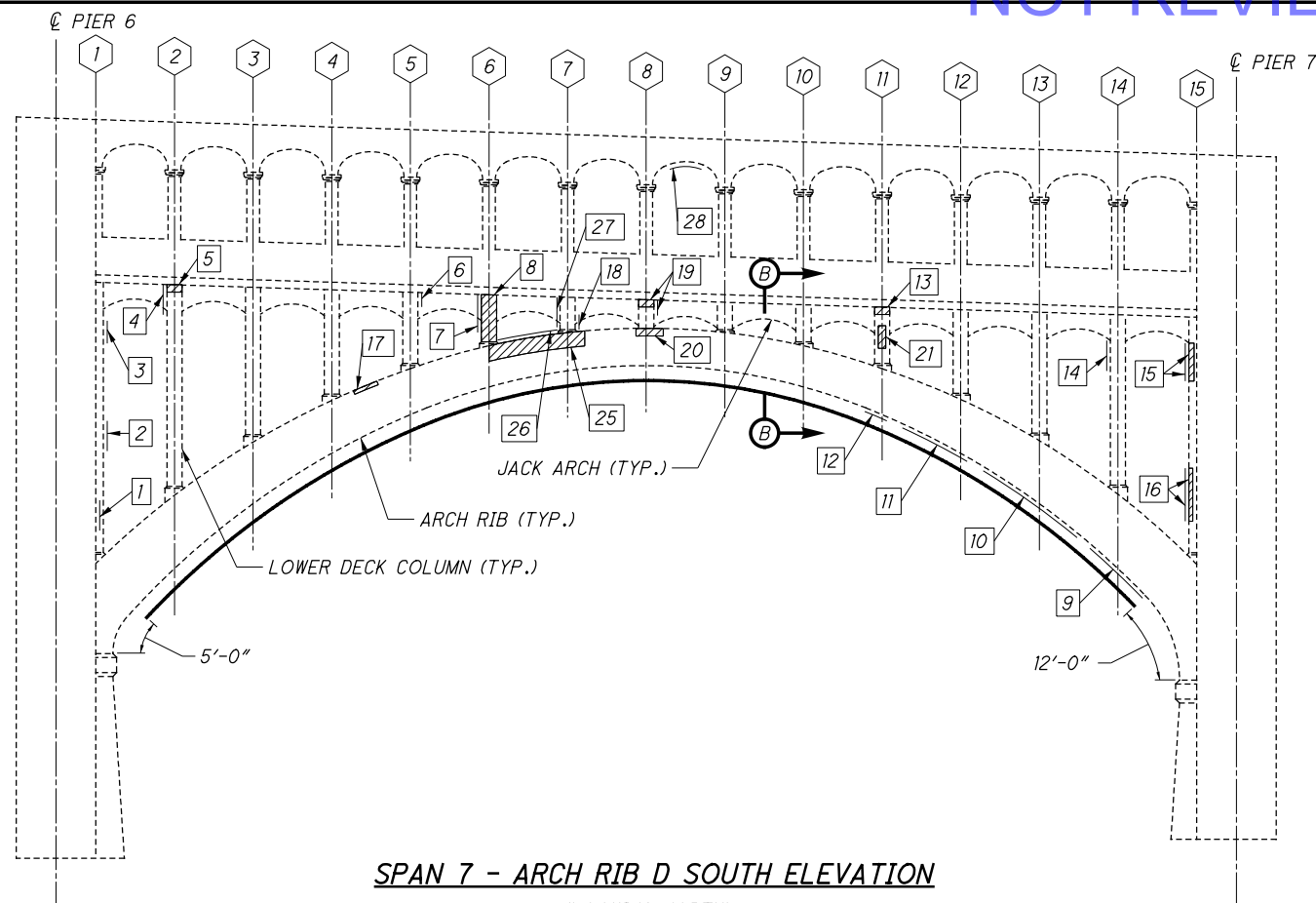
SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	51
TYPE 2 REPAIR	SF	23
FRP WRAP	SF	1987

NOTES:

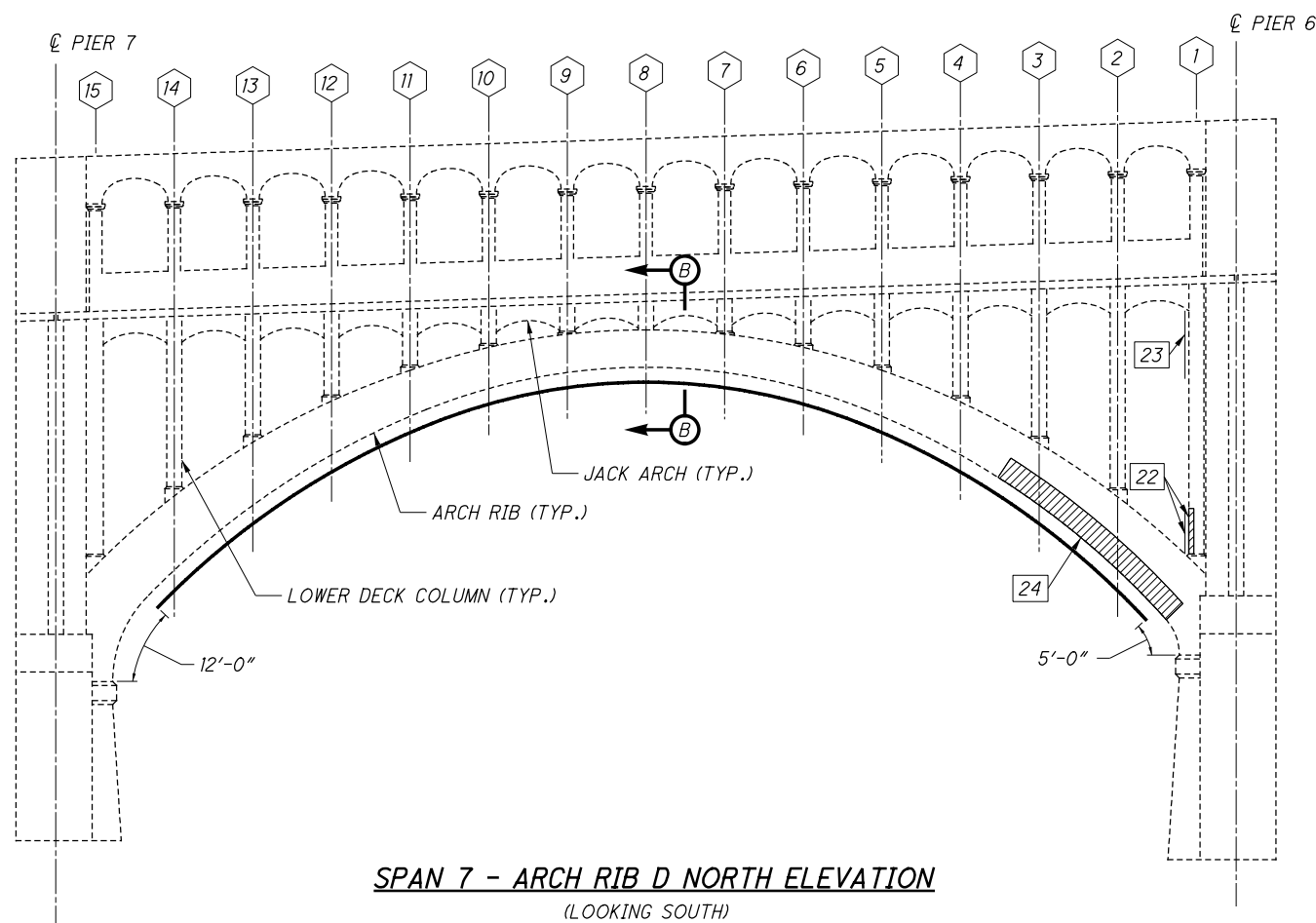
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- FOR PIER 6 REPAIR DETAILS, SEE SHEET **27/89**. FOR PIER 7 REPAIR DETAILS, SEE SHEET **28/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM



SPAN 7 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 7 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	4	2
2	TYPE 1	4	2
3	TYPE 1	3	2
4	TYPE 1	8	2
5	TYPE 1	2	1
6	TYPE 1	3	2
7	TYPE 1	20	6
8	TYPE 1	12	3
9	TYPE 2	16	6
10	TYPE 2	25	12
11	TYPE 2	18	10
12	TYPE 2	5	2
13	TYPE 1	2	1
14	TYPE 1	6	2
15	TYPE 1	18	6

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
16	TYPE 1	10	4
17	TYPE 1	17	10
18	TYPE 1	4	1
19	TYPE 1	6	2
20	TYPE 1	3	-
21	TYPE 1	3	2
22	TYPE 1	8	3
23	TYPE 1	12	5
24	TYPE 1	90	-
25	TYPE 1	24	-
26	TYPE 1	72	22
27	TYPE 1	8	2
28	TYPE 2	4	3
MEASURED QUANTITY*		407	-
PLAN QUANTITY*		611	113

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	509
TYPE 2 REPAIR	SF	102
FRP WRAP	SF	1681

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
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- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- FOR PIER 6 REPAIR DETAILS, SEE SHEET 27/89. FOR PIER 7 REPAIR DETAILS, SEE SHEET 28/89.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET 85/89.

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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DESIGN AGENCY
Pennoni

DESIGNED BY JEB
CHECKED BY DEB
DRAWN BY JEB
REVISOR
REVIEWED BY DWJ
DATE 04/18/18
STRUCTURE FILE NUMBER 1800930

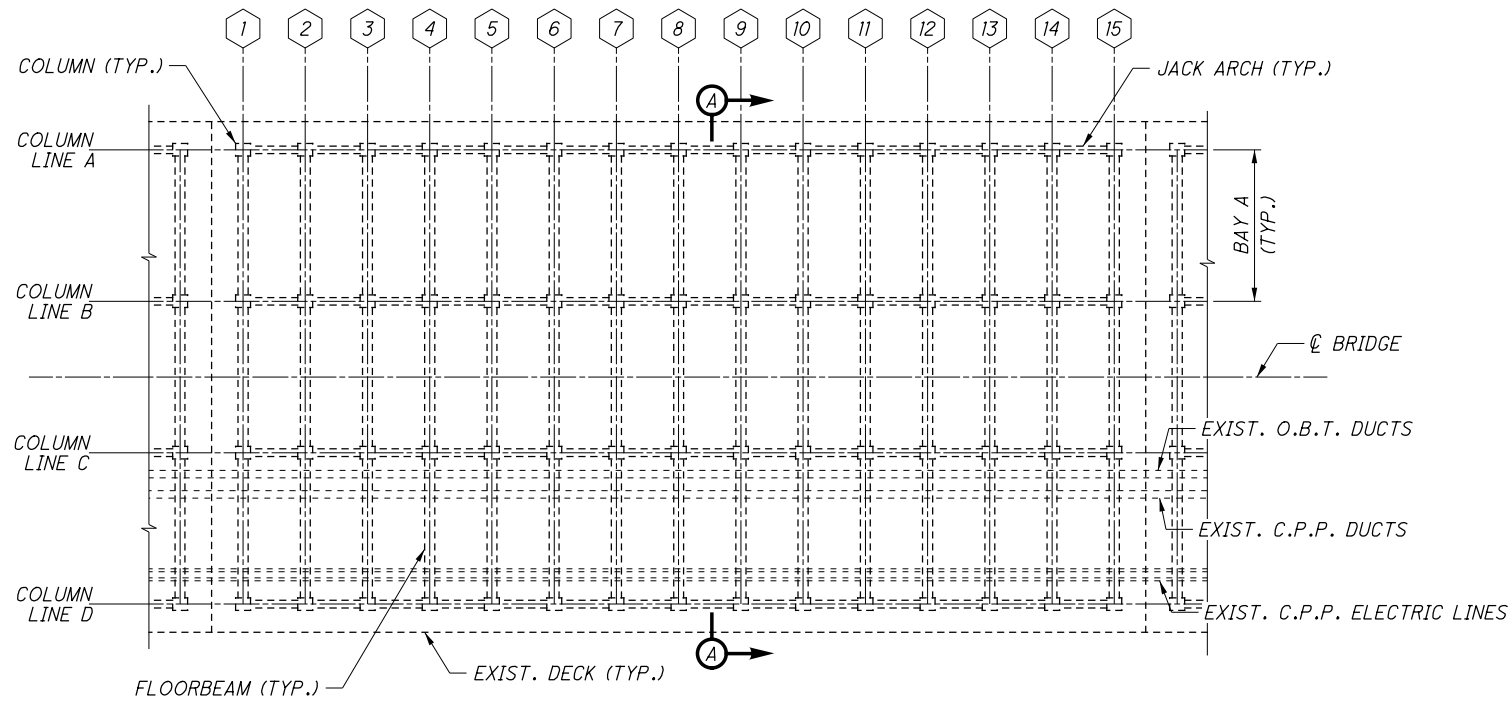
SPAN 7 CONCRETE REPAIR DETAILS (5 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

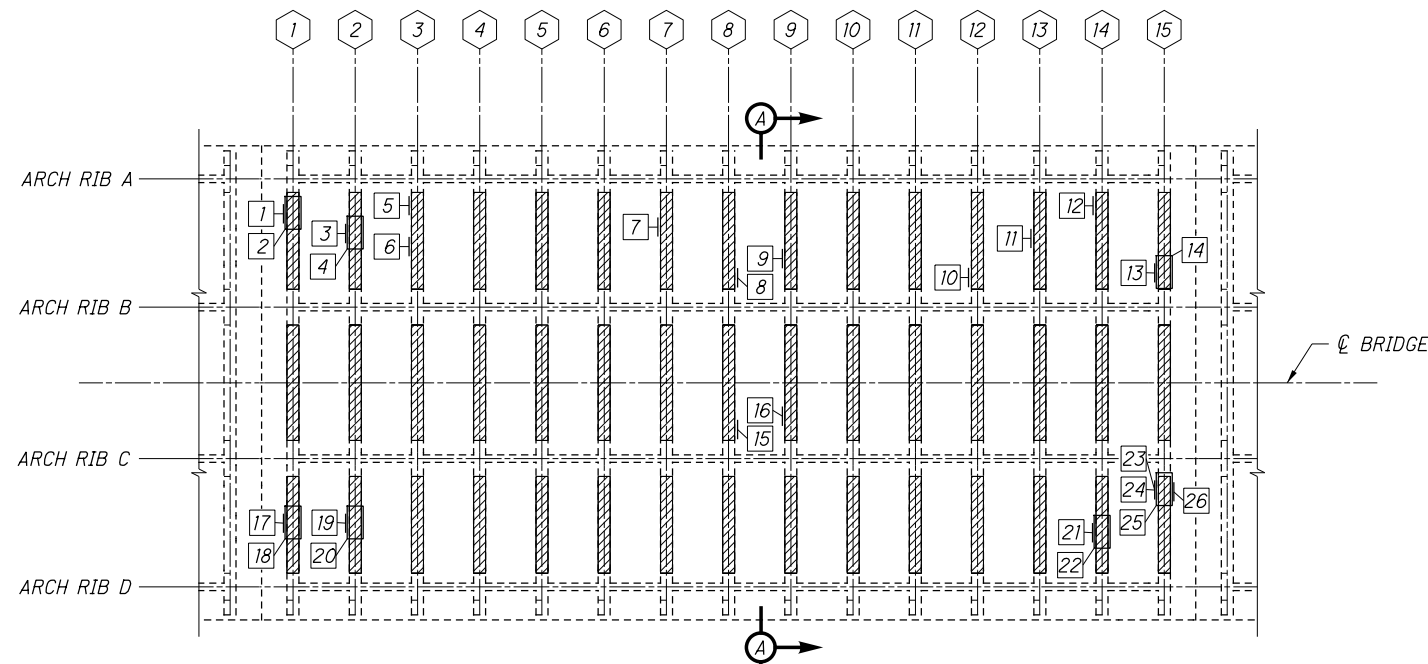
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SPAN 8 - UPPER DECK PLAN



SPAN 8 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	4	4
2	TYPE 2	4	6
3	TYPE 1	3	2
4	TYPE 2	6	3
5	TYPE 1	4	2
6	TYPE 1	14	4
7	TYPE 1	3	1
8	TYPE 1	8	2
9	TYPE 1	39	10
10	TYPE 1	1	1
11	TYPE 1	8	2
12	TYPE 1	10	4
13	TYPE 1	1	1
14	TYPE 2	2	2
15	TYPE 1	2	1
16	TYPE 1	8	2
17	TYPE 1	4	4
18	TYPE 2	7	6
19	TYPE 1	20	6
20	TYPE 2	5	4
21	TYPE 1	17	4
22	TYPE 2	3	2
23	TYPE 1	23	6
24	TYPE 1	5	1
25	TYPE 2	5	2
26	TYPE 1	8	2
MEASURED QUANTITY*		214	
PLAN QUANTITY*		321	84

* SEE NOTES 1 & 2
** SEE NOTE 3

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	273
TYPE 2 REPAIR	SF	48
FRP WRAP	SF	3863

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR SECTION A-A, SEE SHEET [34/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- [Hatched Box] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ STRUCTURE FILE NUMBER 1800930

DRAWN A/JK
A/JK REVISIONS

DESIGNED W/JV
W/JV CHECKED DE/A
DE/A

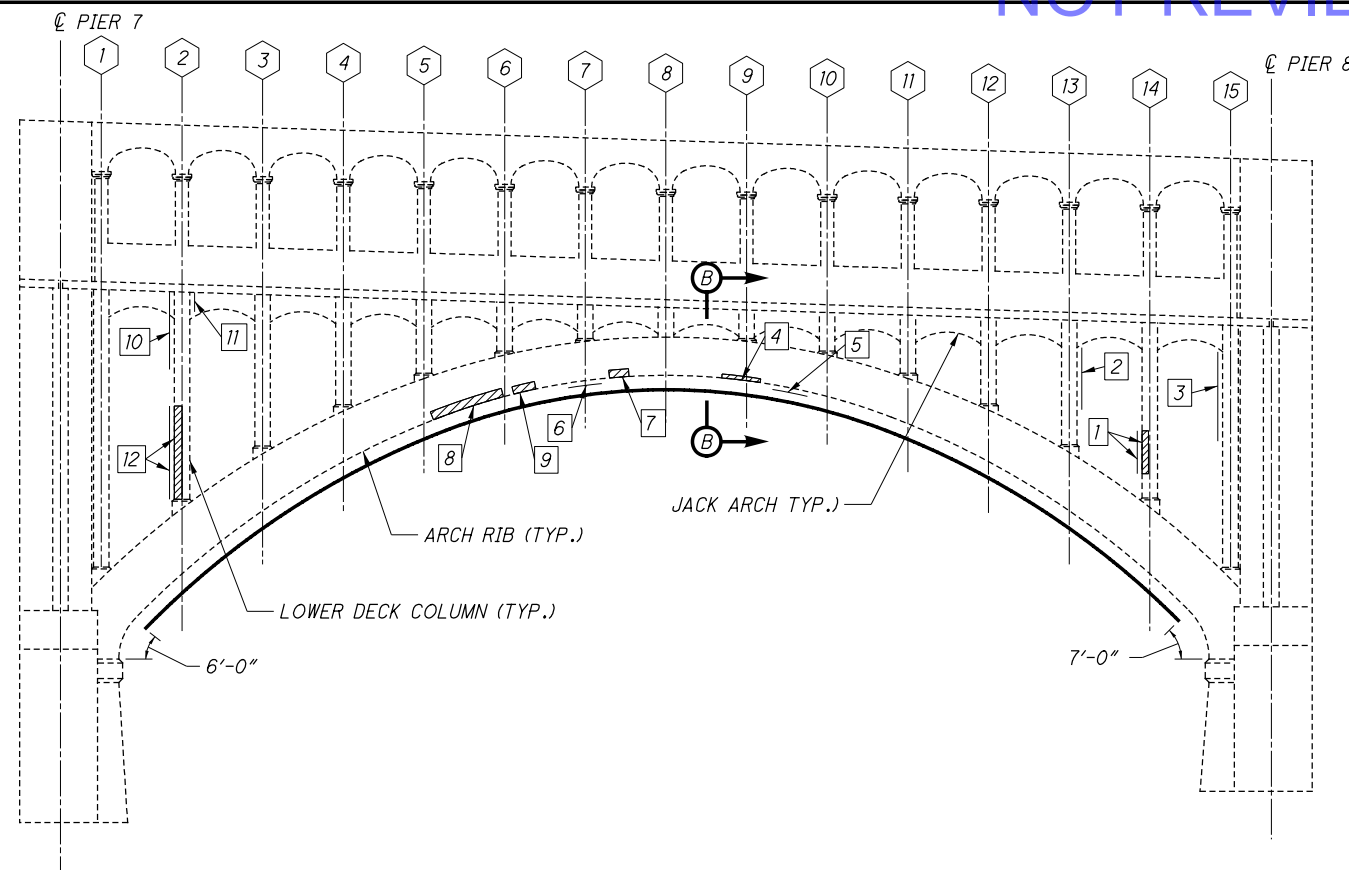
SPAN 8 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

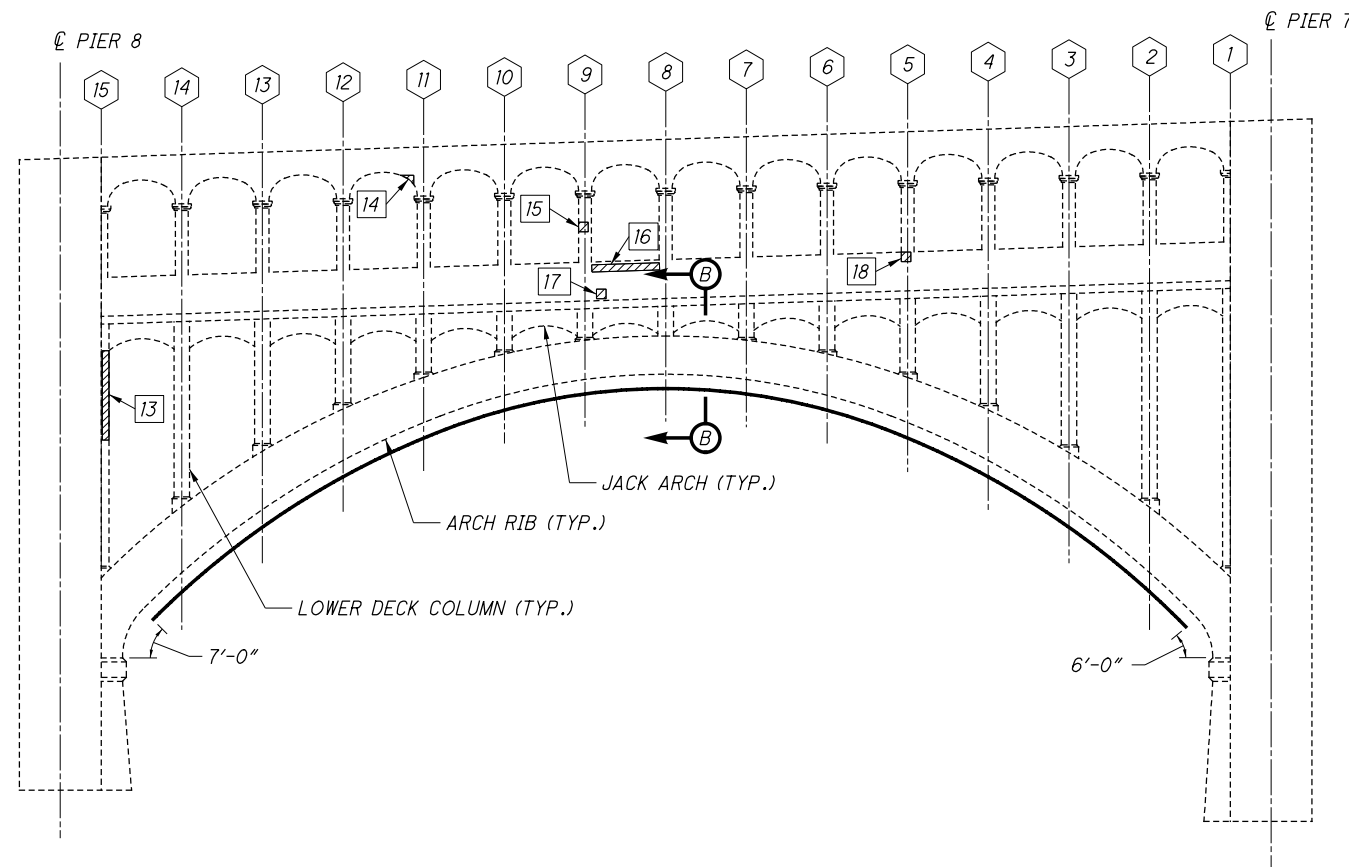
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SPAN 8 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 8 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	15	3
2	TYPE 1	26	8
3	TYPE 1	18	6
4	TYPE 1	3	-
5	TYPE 2	11	6
6	TYPE 2	7	4
7	TYPE 1	2	-
8	TYPE 1	12	-
9	TYPE 1	2	-
10	TYPE 1	12	5
11	TYPE 1	32	6
12	TYPE 1	1	1
13	TYPE 1	6	4
14	TYPE 1	1	1
15	TYPE 1	1	1
16	TYPE 1	9	5
17	TYPE 1	1	1
18	TYPE 1	1	1
MEASURED QUANTITY*		160	-
PLAN QUANTITY*		240	52

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	213
TYPE 2 REPAIR	SF	27
FRP WRAP	SF	1680

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 7 AND PIER 8 REPAIR DETAILS, SEE SHEET **28/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
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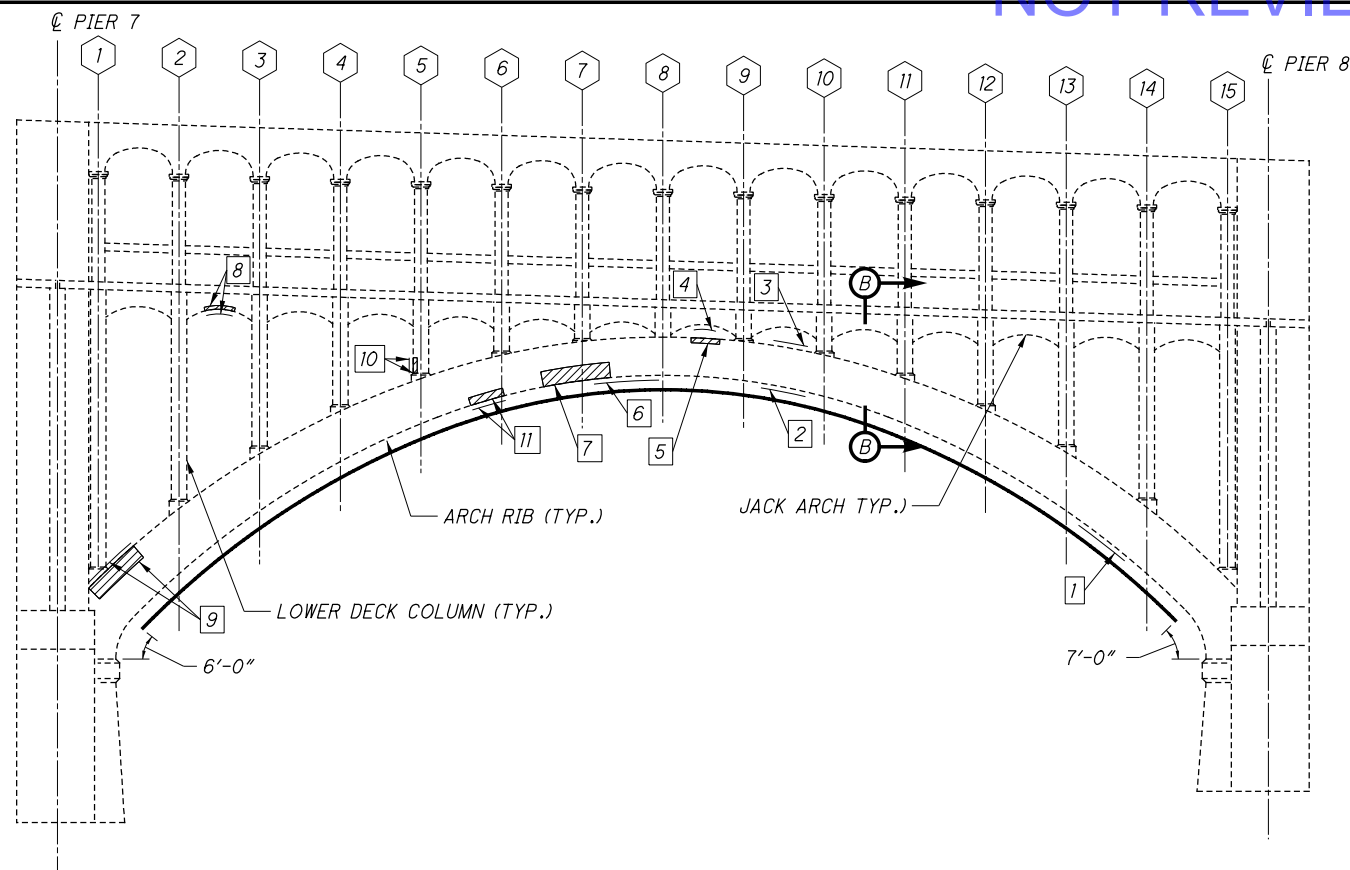
REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

SPAN 8 CONCRETE REPAIR DETAILS (2 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

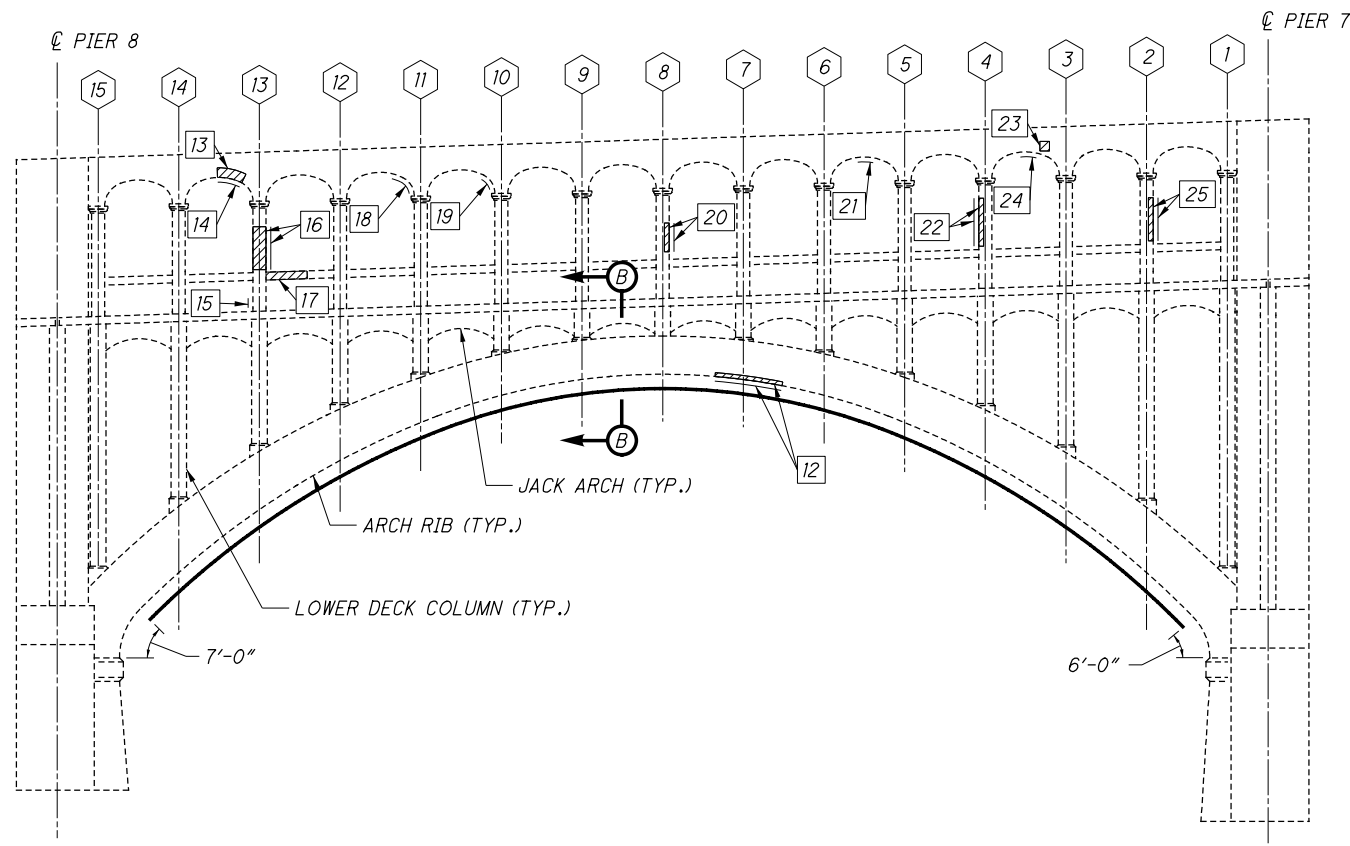
CUY-6-14.56
PID No. 99972

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SPAN 8 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)



SPAN 8 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	9	5
2	TYPE 2	32	12
3	TYPE 1	5	3
4	TYPE 2	3	3
5	TYPE 1	4	-
6	TYPE 2	11	4
7	TYPE 1	23	-
8	TYPE 2	2	2
9	TYPE 1	11	-
10	TYPE 1	2	1
11	TYPE 2	6	2
12	TYPE 2	13	8
13	TYPE 1	2	1
14	TYPE 2	2	1
15	TYPE 1	1	1

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
16	TYPE 1	12	6
17	TYPE 1	5	3
18	TYPE 2	6	3
19	TYPE 2	1	1
20	TYPE 1	3	2
21	TYPE 2	1	1
22	TYPE 1	5	4
23	TYPE 1	1	1
24	TYPE 2	1	1
25	TYPE 1	5	3
MEASURED QUANTITY*		166	-
PLAN QUANTITY*		249	68

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	119
TYPE 2 REPAIR	SF	130
FRP WRAP	SF	1985

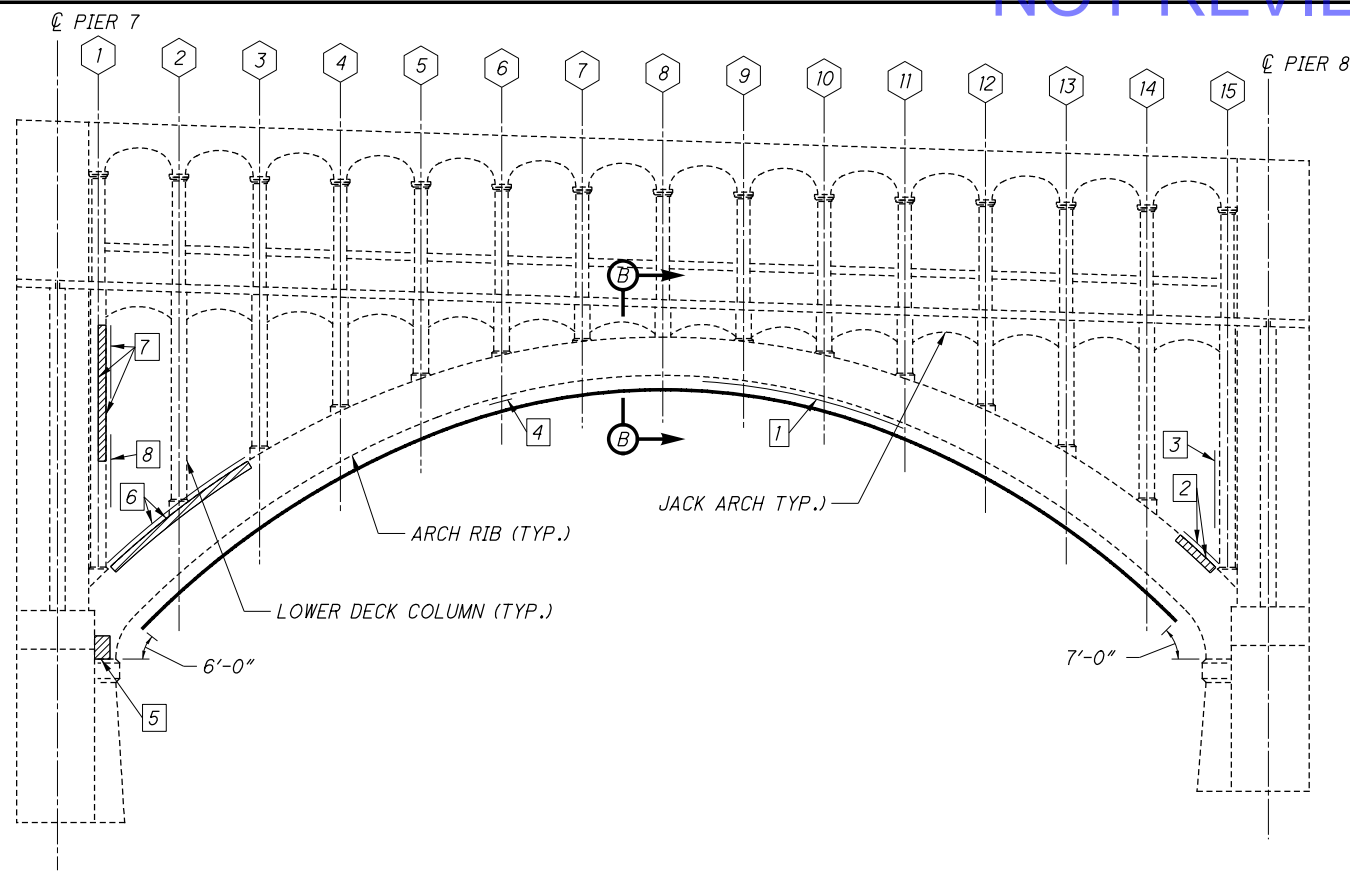
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 7 AND PIER 8 REPAIR DETAILS, SEE SHEET **28/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

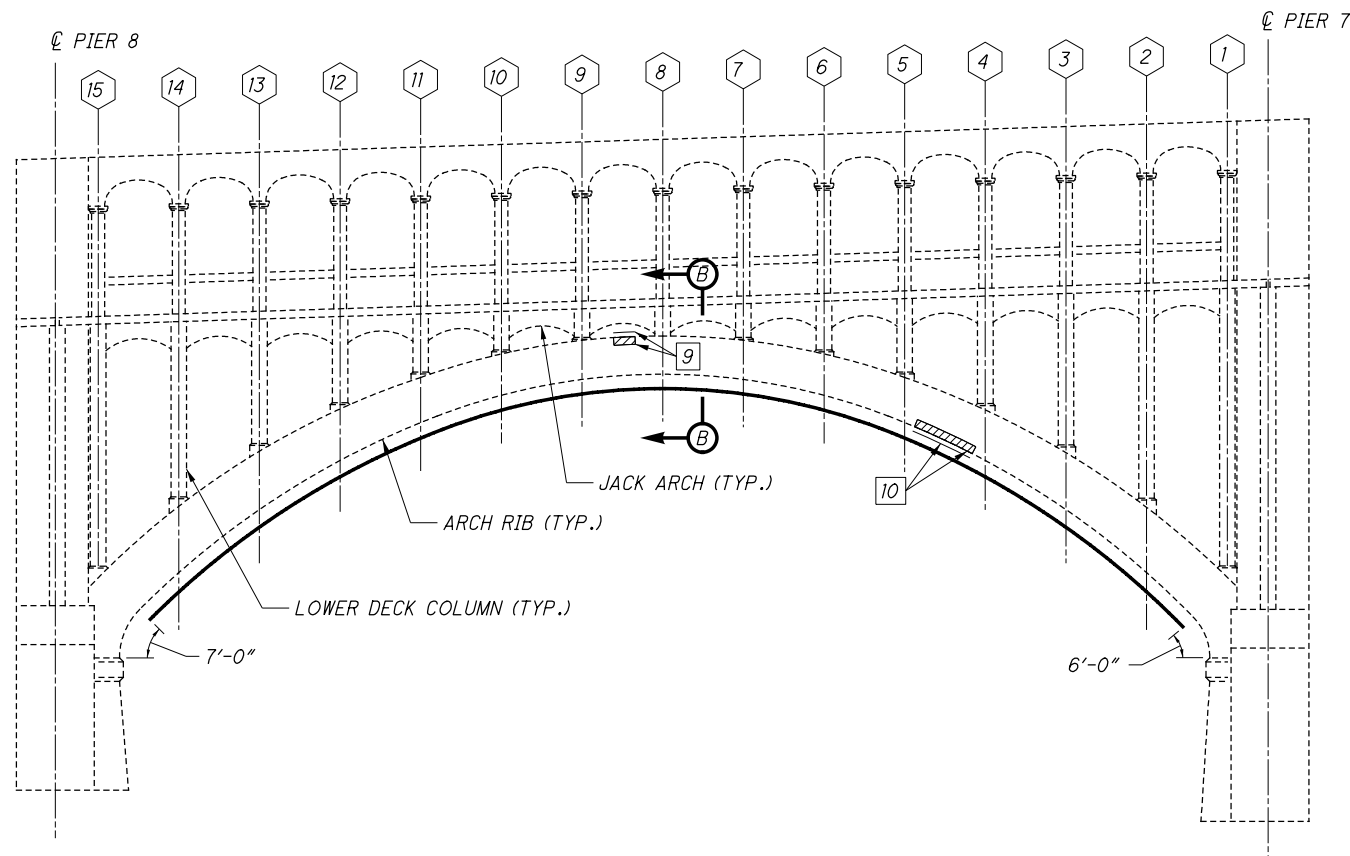
LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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SPAN 8 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)



SPAN 8 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	192	44
2	TYPE 1	26	12
3	TYPE 1	35	10
4	TYPE 2	4	1
5	TYPE 1	6	2
6	TYPE 1	40	15
7	TYPE 1	175	36
8	TYPE 1	10	5
9	TYPE 1	3	2
10	TYPE 2	21	10
MEASURED QUANTITY*		512	-
PLAN QUANTITY*		768	137

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	442
TYPE 2 REPAIR	SF	326
FRP WRAP	SF	1985

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 7 AND PIER 8 REPAIR DETAILS, SEE SHEET **28/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

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REVISOR DEB

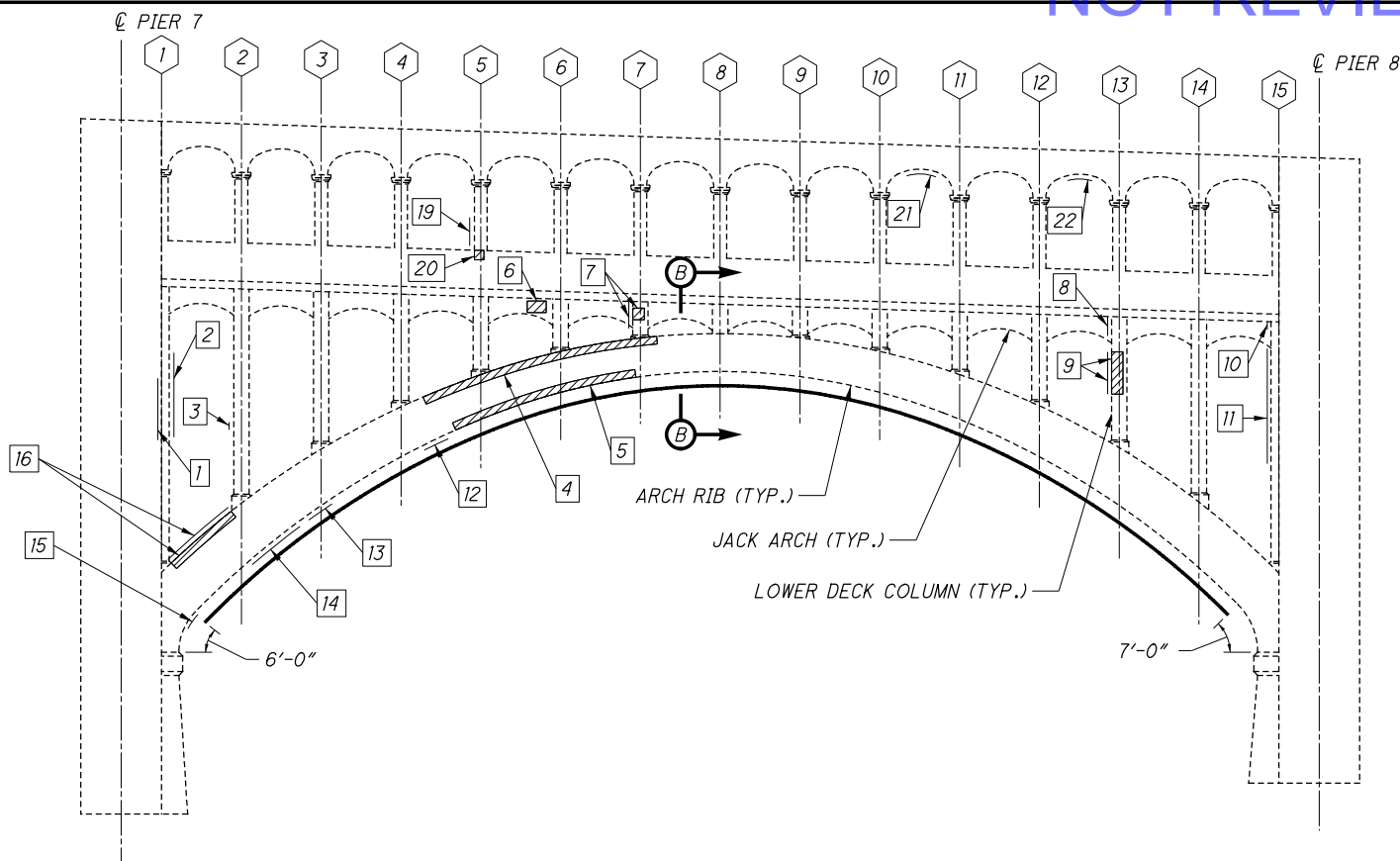
SPAN 8 CONCRETE REPAIR DETAILS (4 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

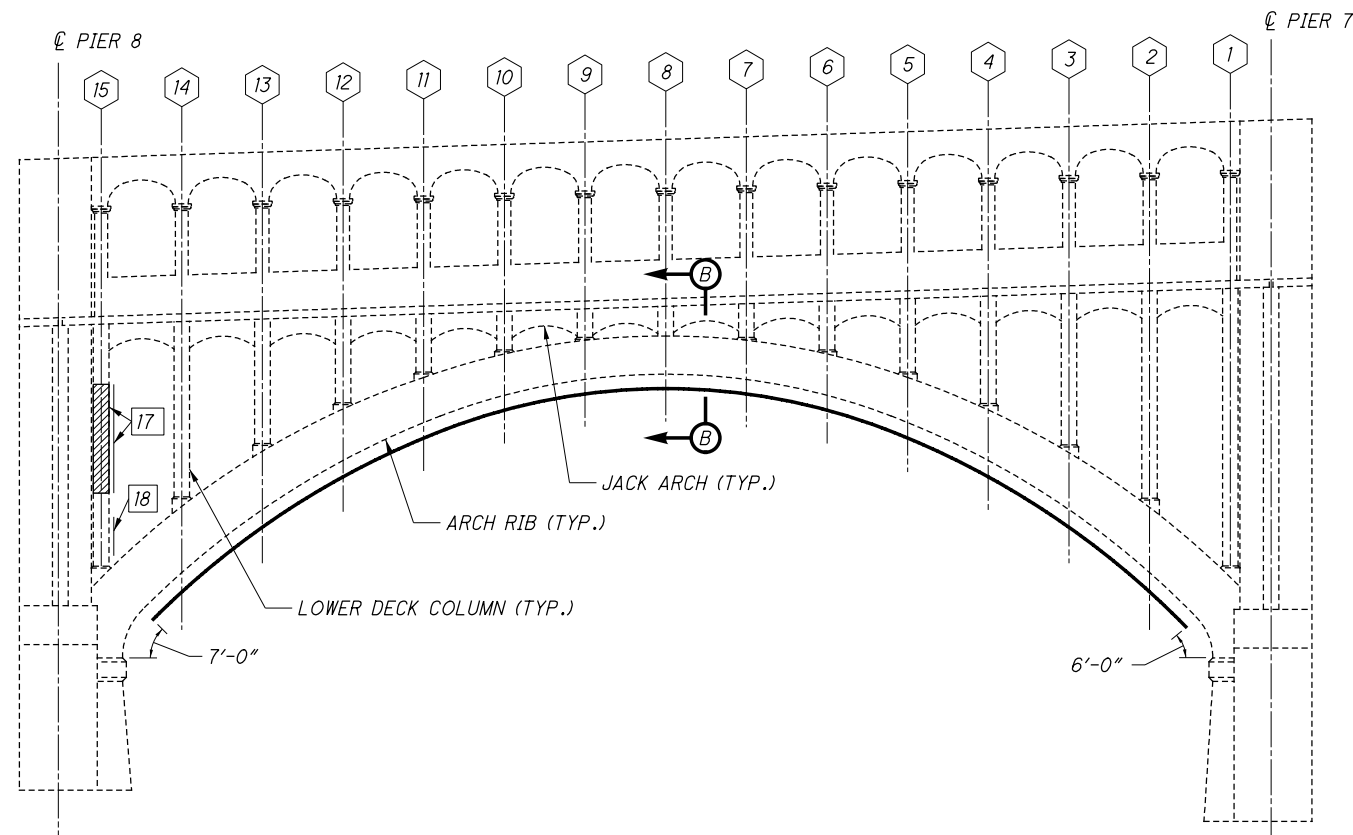
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SPAN 8 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 8 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	12	4
2	TYPE 1	11	5
3	TYPE 1	1	1
4	TYPE 1	65	-
5	TYPE 1	30	-
6	TYPE 1	4	2
7	TYPE 1	12	8
8	TYPE 1	5	1
9	TYPE 1	16	3
10	TYPE 1	1	1
11	TYPE 1	23	7
12	TYPE 2	8	3
13	TYPE 2	4	2
14	TYPE 2	15	6
15	TYPE 2	5	2

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
16	TYPE 1	27	12
17	TYPE 1	56	22
18	TYPE 1	5	4
19	TYPE 1	5	2
20	TYPE 1	1	1
21	TYPE 2	4	3
22	TYPE 2	3	2
MEASURED QUANTITY*		313	-
PLAN QUANTITY*		470	91

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	411
TYPE 2 REPAIR	SF	59
FRP WRAP	SF	1680

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
4. GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
5. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
6. FOR PIER 7 AND PIER 8 REPAIR DETAILS, SEE SHEET [28/89].
7. FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- [Hatched Box] LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- [Dashed Line] LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- [Solid Line] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

DATE 04/18/18
REVIEWED DWJ
STRUCTURE FILE NUMBER 1800930

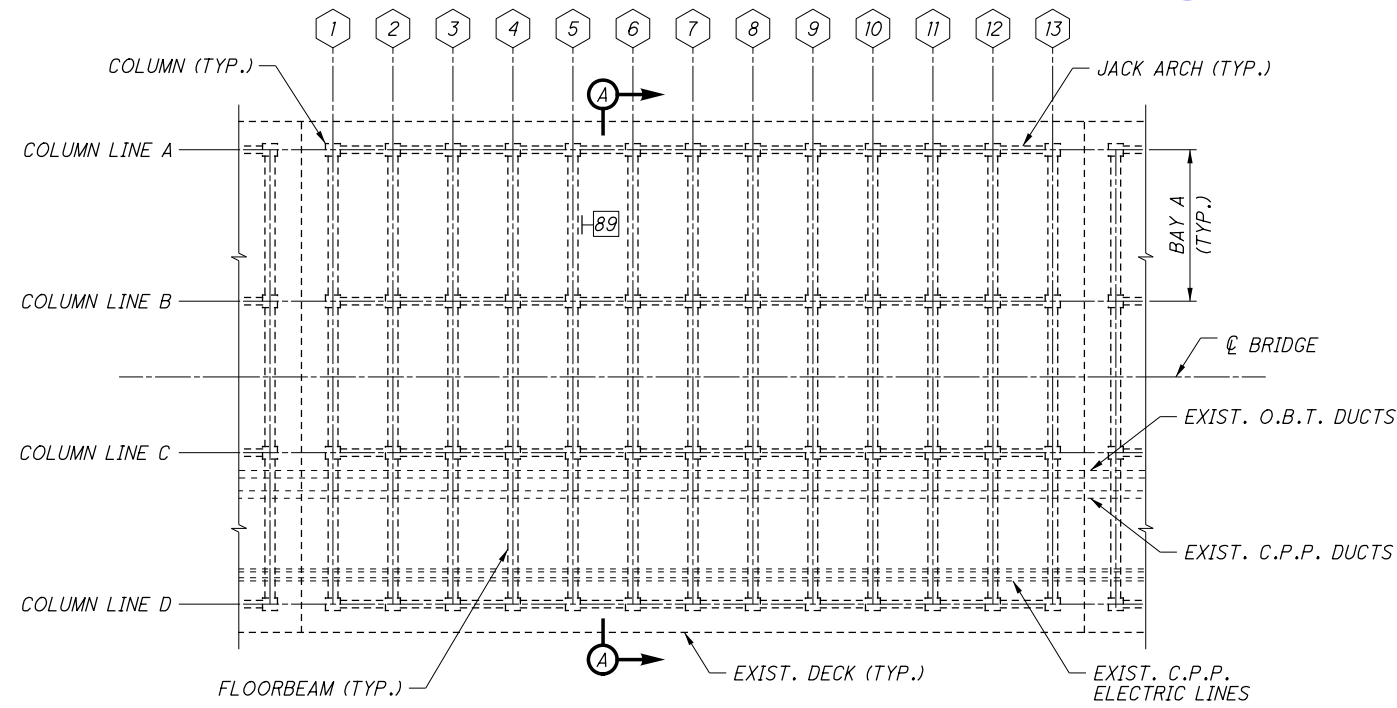
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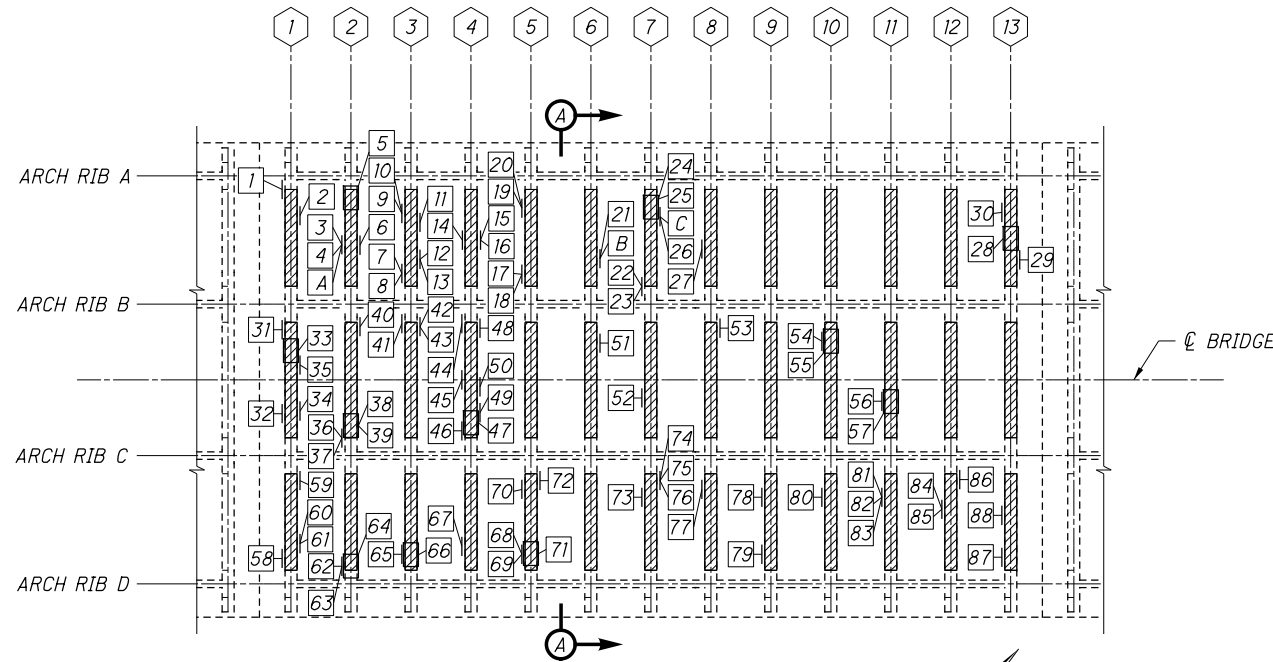
SPAN 8 CONCRETE REPAIR DETAILS (5 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 9 - UPPER DECK PLAN



SPAN 9 - LOWER DECK PLAN

NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
5. FOR SECTION A-A, SEE SHEET [34/89].
6. FOR FRP WRAP DETAILS, SEE SHEET [85/89].

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	4	1
2	TYPE 1	5	1
3	TYPE 1	1	1
4	TYPE 1	3	1
5	TYPE 2	9	5
6	TYPE 1	1	1
7	TYPE 1	3	1
8	TYPE 1	4	1
9	TYPE 1	4	1
10	TYPE 1	2	1
11	TYPE 1	4	1
12	TYPE 1	4	1
13	TYPE 1	2	1
14	TYPE 1	24	6
15	TYPE 1	3	1
16	TYPE 1	2	1
17	TYPE 1	3	1
18	TYPE 1	2	1
19	TYPE 1	6	2
20	TYPE 1	3	1
21	TYPE 1	2	1
22	TYPE 1	2	1
23	TYPE 1	1	1
24	TYPE 2	7	6
25	TYPE 2	1	1
26	TYPE 1	3	1
27	TYPE 1	21	6
28	TYPE 2	28	11
29	TYPE 1	18	6
30	TYPE 1	46	12
31	TYPE 1	29	8
32	TYPE 1	19	6
33	TYPE 2	6	5
34	TYPE 1	8	2
35	TYPE 1	3	3
36	TYPE 1	1	1
37	TYPE 1	1	1
38	TYPE 2	2	1
39	TYPE 2	1	1
40	TYPE 1	2	1
41	TYPE 1	2	1
42	TYPE 1	4	1
43	TYPE 1	1	1
44	TYPE 1	2	1
45	TYPE 1	23	6
46	TYPE 1	3	1

* SEE NOTES 1 & 2
** SEE NOTE 3

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- A REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 843
- ▨ AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
47	TYPE 2	3	4
48	TYPE 1	2	1
49	TYPE 1	3	3
50	TYPE 1	3	1
51	TYPE 1	2	1
52	TYPE 1	2	1
53	TYPE 1	2	1
54	TYPE 1	5	5
55	TYPE 2	7	7
56	TYPE 1	4	4
57	TYPE 2	7	6
58	TYPE 1	19	6
59	TYPE 1	5	1
60	TYPE 1	18	4
61	TYPE 1	3	1
62	TYPE 1	6	1
63	TYPE 1	2	1
64	TYPE 2	2	1
65	TYPE 1	2	2
66	TYPE 2	3	3
67	TYPE 1	5	2
68	TYPE 1	4	3
69	TYPE 1	4	1
70	TYPE 1	2	1
71	TYPE 2	4	5
72	TYPE 1	2	1
73	TYPE 1	1	1
74	TYPE 1	1	1
75	TYPE 1	2	1
76	TYPE 1	3	2
77	TYPE 1	4	1
78	TYPE 1	2	1
79	TYPE 1	2	1
80	TYPE 1	2	1
81	TYPE 1	6	2
82	TYPE 1	4	2
83	TYPE 1	3	1
84	TYPE 1	7	2
85	TYPE 1	4	1
86	TYPE 1	2	1
87	TYPE 1	24	6
88	TYPE 1	14	4
89	TYPE 1	1	1
MEASURED QUANTITY*		528	-
PLAN QUANTITY*		792	212

A	SS843	15	-
B	SS843	2	-
C	SS843	1	-
MEASURED QUANTITY*		18	-

SHEET QUANTITY SUMMARY

ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	672
TYPE 2 REPAIR	SF	120
FRP WRAP	SF	3348



DESIGN AGENCY
DATE 04/18/18
REVIEWED DWJ
STRUCTURE FILE NUMBER 1800930

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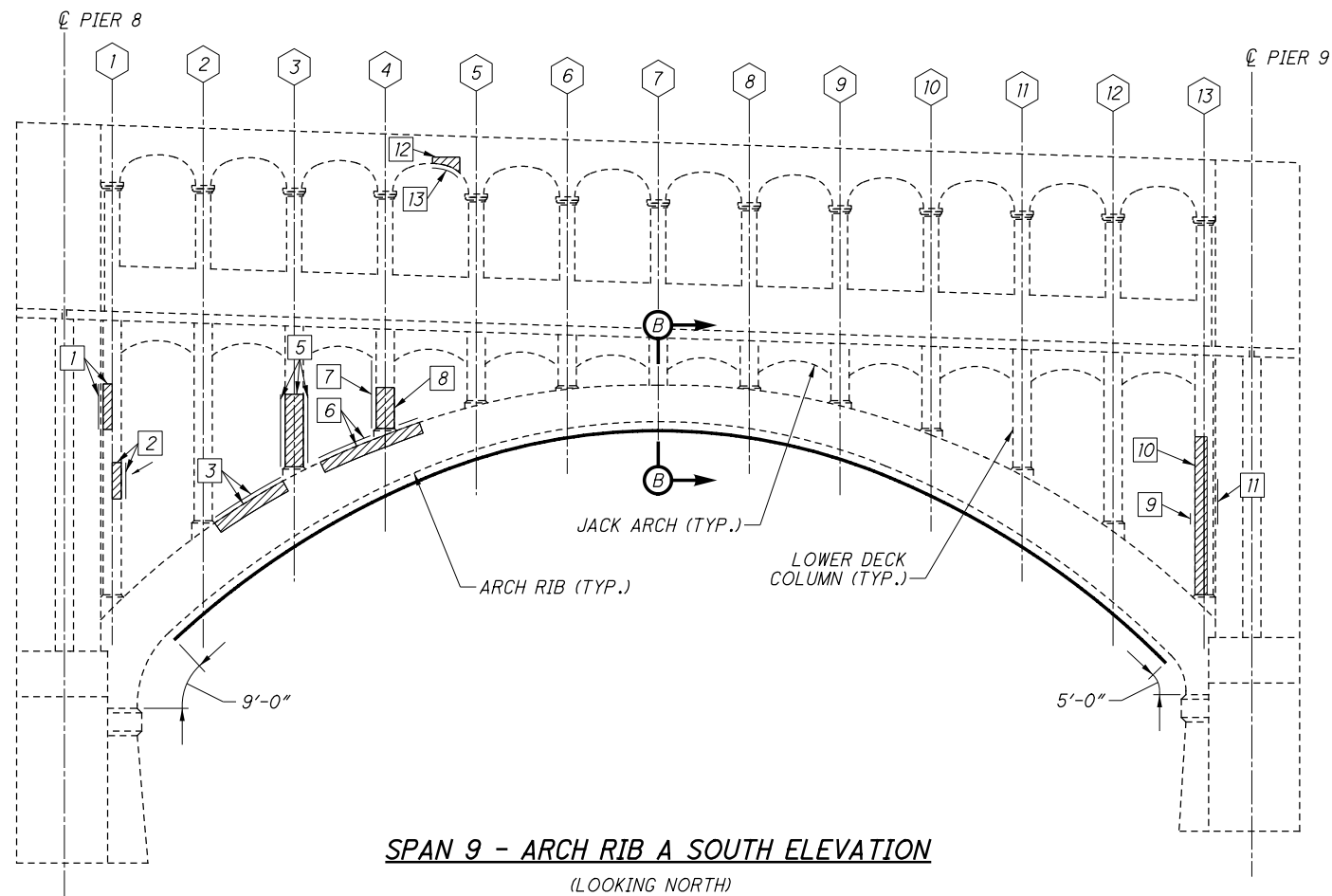
SPAN 9 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

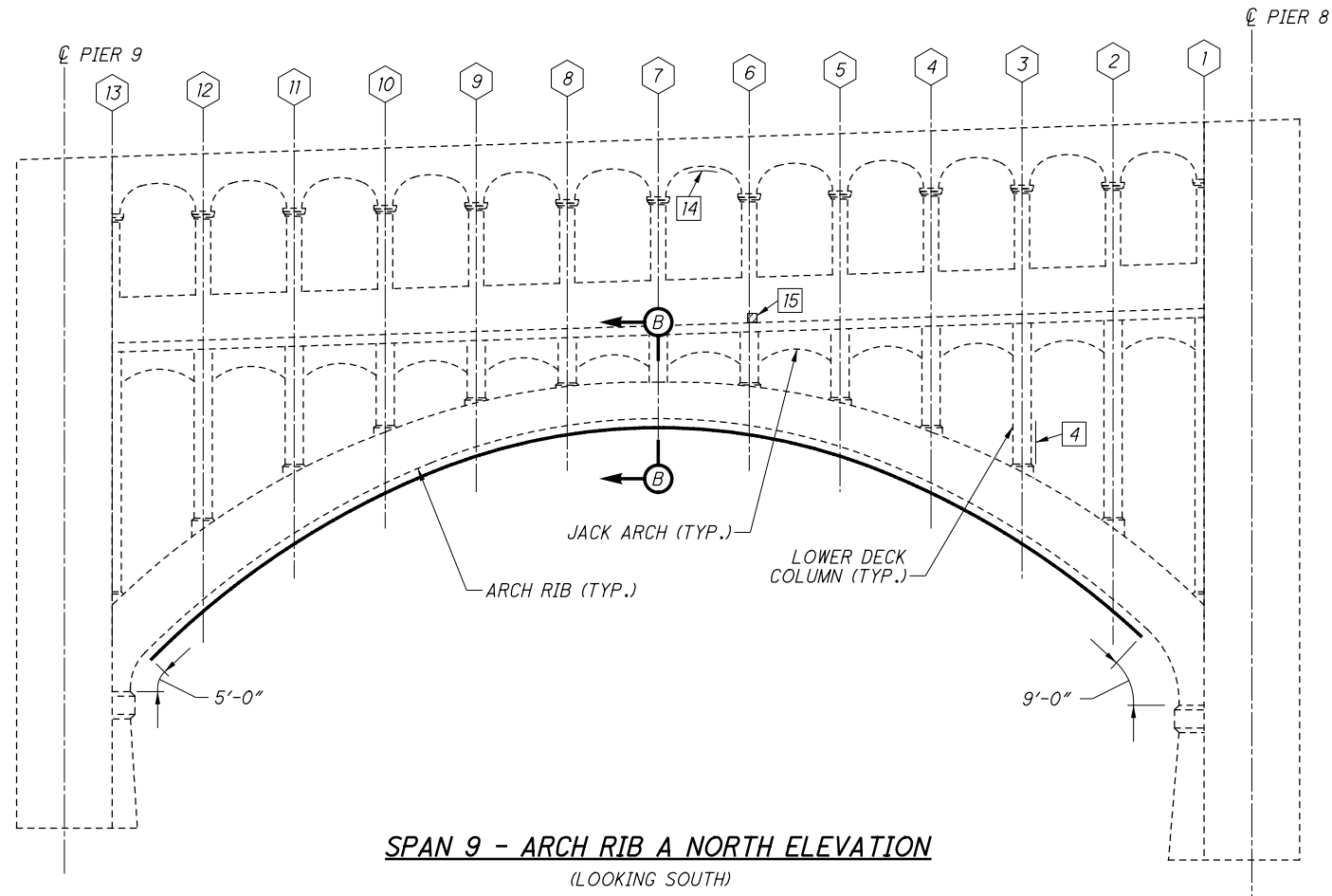
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SPAN 9 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 9 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	10	3
2	TYPE 1	7	2
3	TYPE 1	25	6
4	TYPE 1	18	4
5	TYPE 1	30	8
6	TYPE 1	26	7
7	TYPE 1	32	8
8	TYPE 1	9	2
9	TYPE 1	2	1
10	TYPE 1	24	9
11	TYPE 1	5	3
12	TYPE 1	6	2
13	TYPE 2	3	2
14	TYPE 2	4	3
15	TYPE 1	1	1
MEASURED QUANTITY*		202	-
PLAN QUANTITY*		303	61

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	292
TYPE 2 REPAIR	SF	11
FRP WRAP	SF	1358

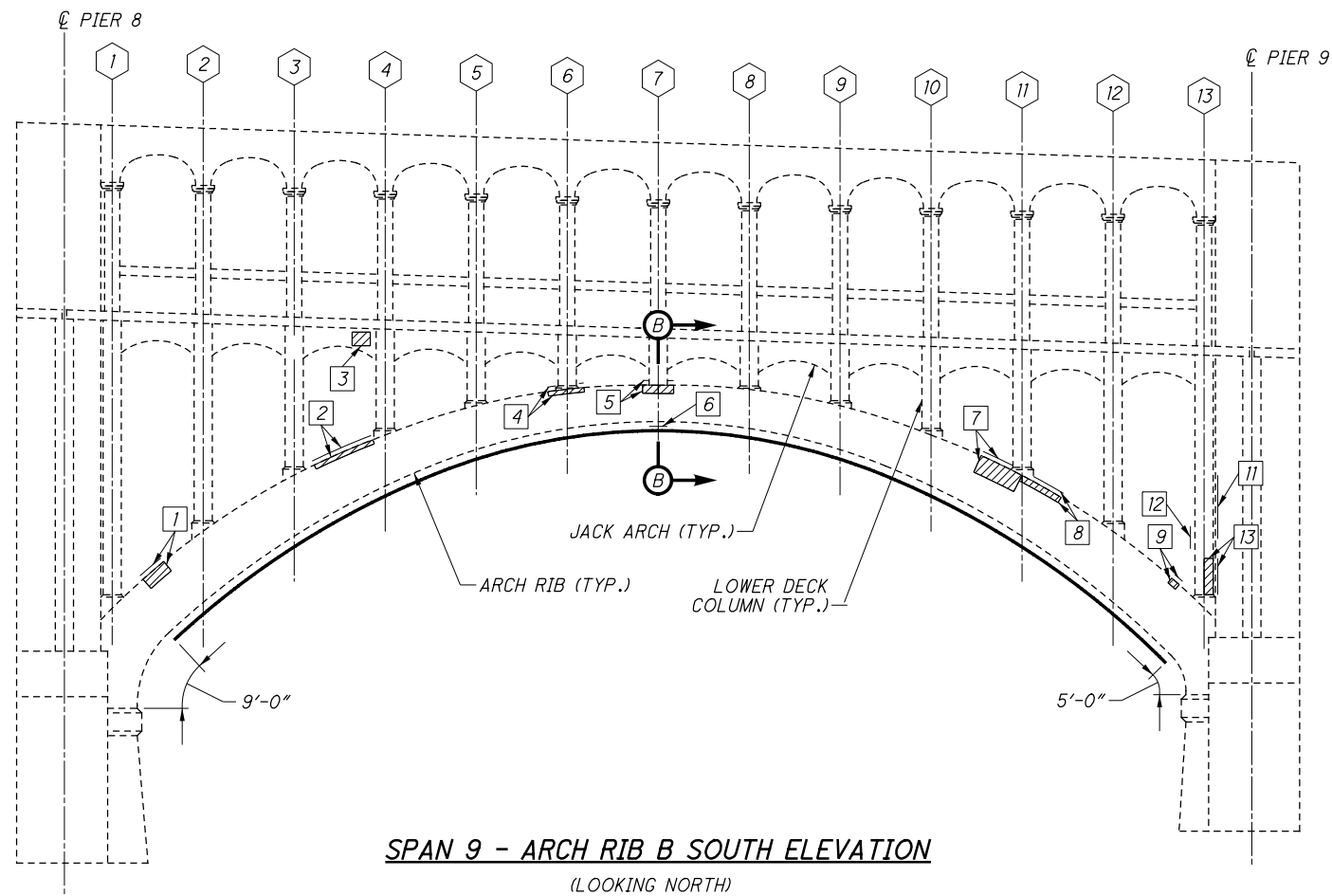
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE VERTICAL SIDES OF THE UNREINFORCED CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 8 REPAIR DETAILS, SEE SHEET **28/89**. FOR PIER 9 REPAIR DETAILS, SEE SHEET **29/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

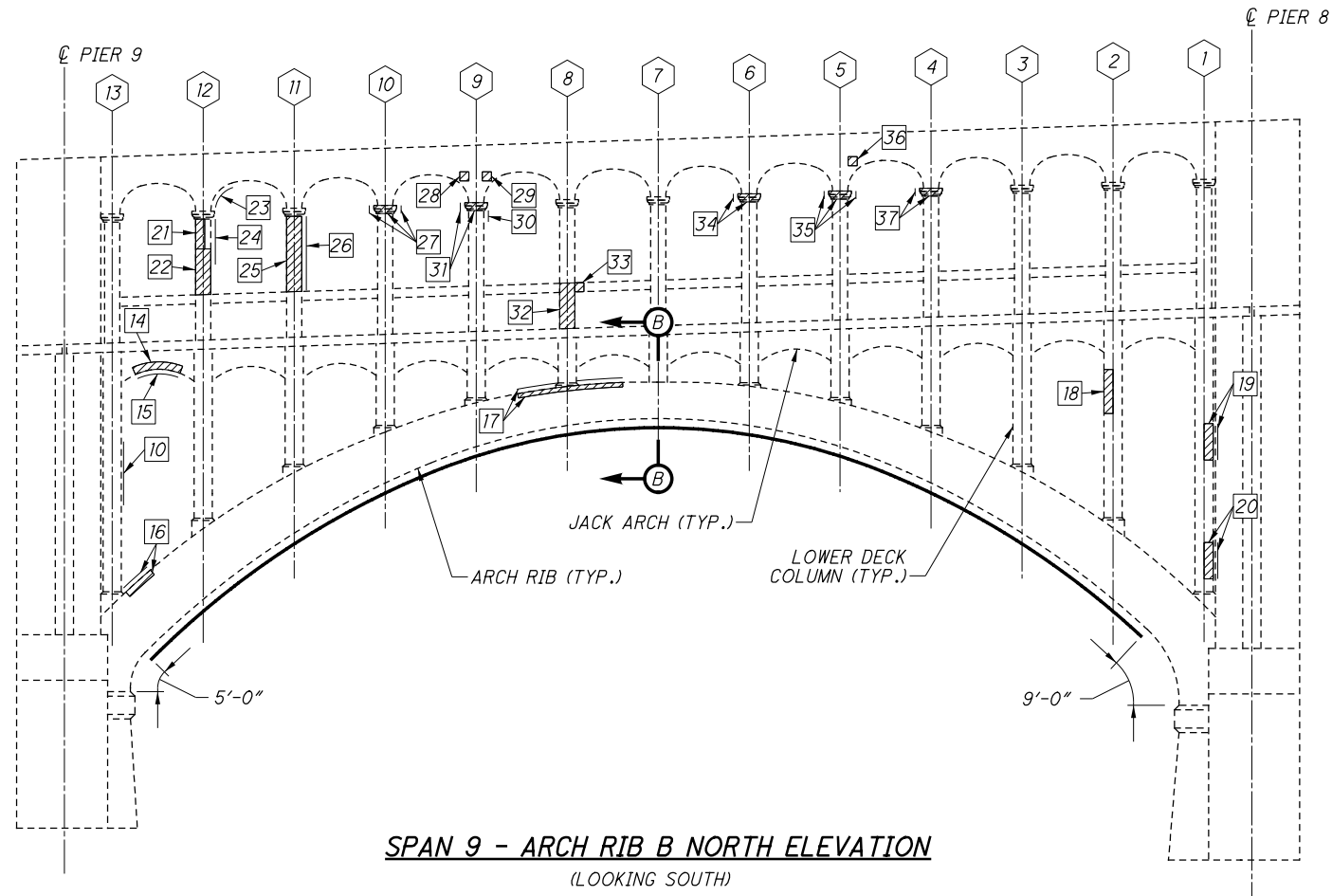
LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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SPAN 9 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)



SPAN 9 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	7	2
2	TYPE 1	9	5
3	TYPE 1	3	2
4	TYPE 1	5	3
5	TYPE 1	6	2
6	TYPE 2	2	1
7	TYPE 1	14	4
8	TYPE 1	10	3
9	TYPE 1	2	1
10	TYPE 1	18	6
11	TYPE 1	11	4
12	TYPE 1	4	1
13	TYPE 1	10	2
14	TYPE 1	5	5
15	TYPE 2	5	5
16	TYPE 1	5	2
17	TYPE 1	19	9
18	TYPE 1	5	2
19	TYPE 1	6	2
20	TYPE 1	12	2

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
21	TYPE 1	3	2
22	TYPE 1	9	4
23	TYPE 2	3	2
24	TYPE 1	5	4
25	TYPE 1	14	6
26	TYPE 1	4	6
27	TYPE 1	4	3
28	TYPE 1	1	1
29	TYPE 1	1	1
30	TYPE 1	2	1
31	TYPE 1	3	2
32	TYPE 1	9	4
33	TYPE 1	1	1
34	TYPE 1	4	3
35	TYPE 1	4	3
36	TYPE 1	1	1
37	TYPE 1	3	2
MEASURED QUANTITY*		229	-
PLAN QUANTITY*		344	109

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	329
TYPE 2 REPAIR	SF	15
FRP WRAP	SF	1605

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 8 REPAIR DETAILS, SEE SHEET [28/89]. FOR PIER 9 REPAIR DETAILS, SEE SHEET [29/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

DESIGNED BY
A/JK
CHECKED BY
B/PS

DRAWN BY
A/JK
REVISED BY

REVIEWED BY
DWJ
STRUCTURE FILE NUMBER
1800930

DATE
04/18/18

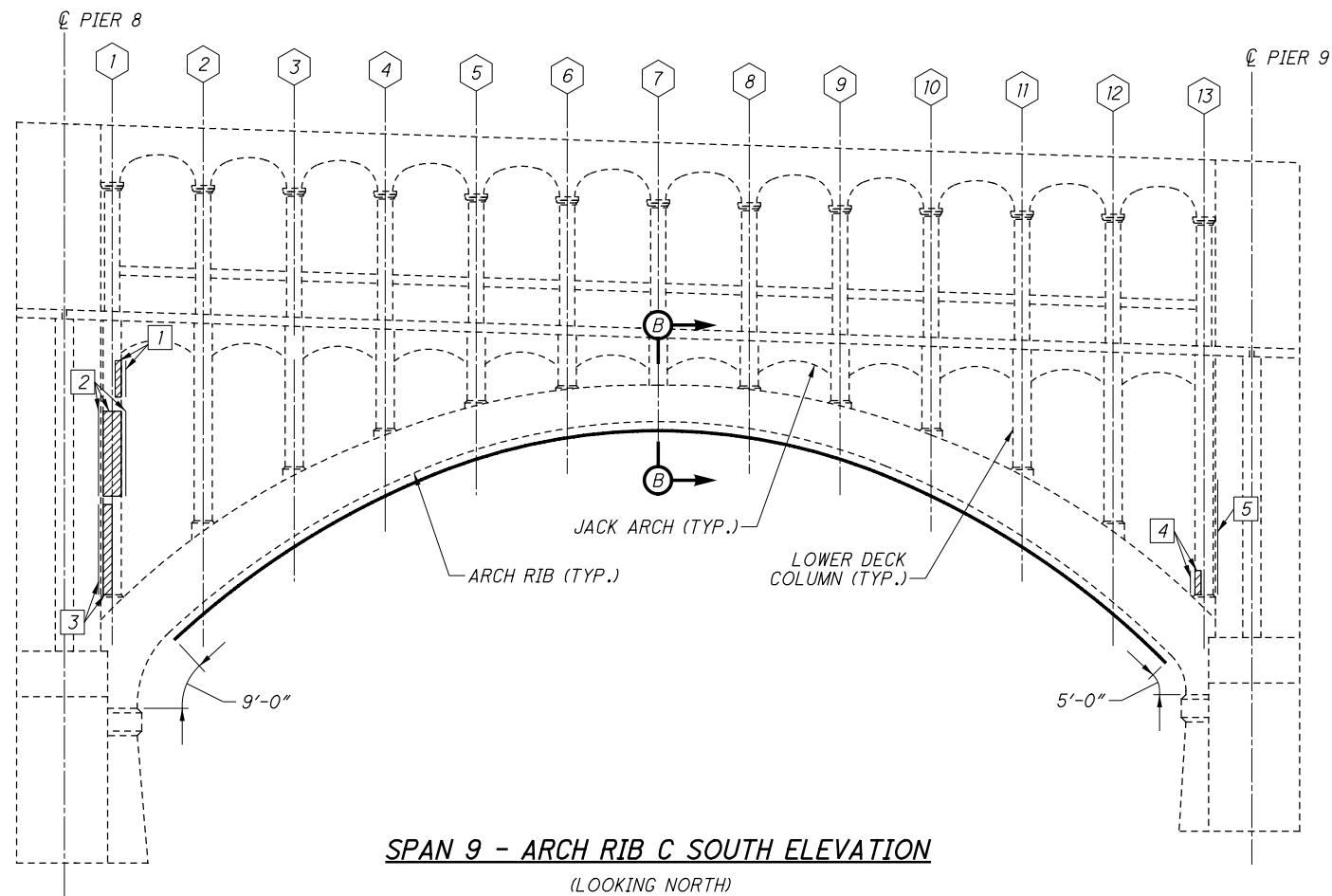
BRIDGE NO. CUY-6-1456
SPAN 9 CONCRETE REPAIR DETAILS (3 OF 5)
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

PID No. 99972
CUY-6-14.56

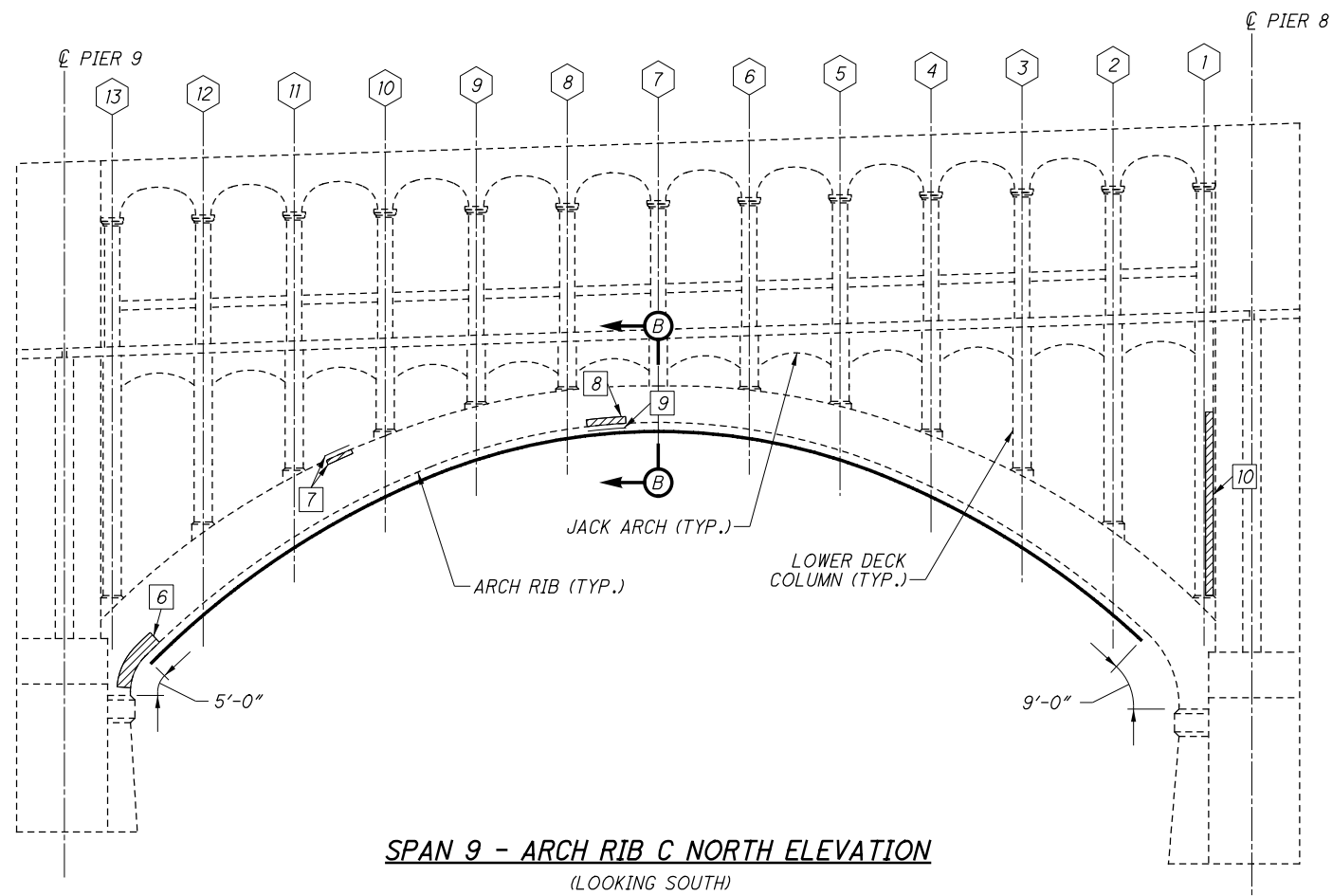
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SPAN 9 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)



SPAN 9 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	5	2
2	TYPE 1	54	12
3	TYPE 1	43	12
4	TYPE 1	4	1
5	TYPE 1	26	6
6	TYPE 1	10	-
7	TYPE 1	9	4
8	TYPE 1	4	-
9	TYPE 2	9	3
10	TYPE 1	17	10
MEASURED QUANTITY*		181	-
PLAN QUANTITY*		272	50

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	259
TYPE 2 REPAIR	SF	13
FRP WRAP	SF	1605

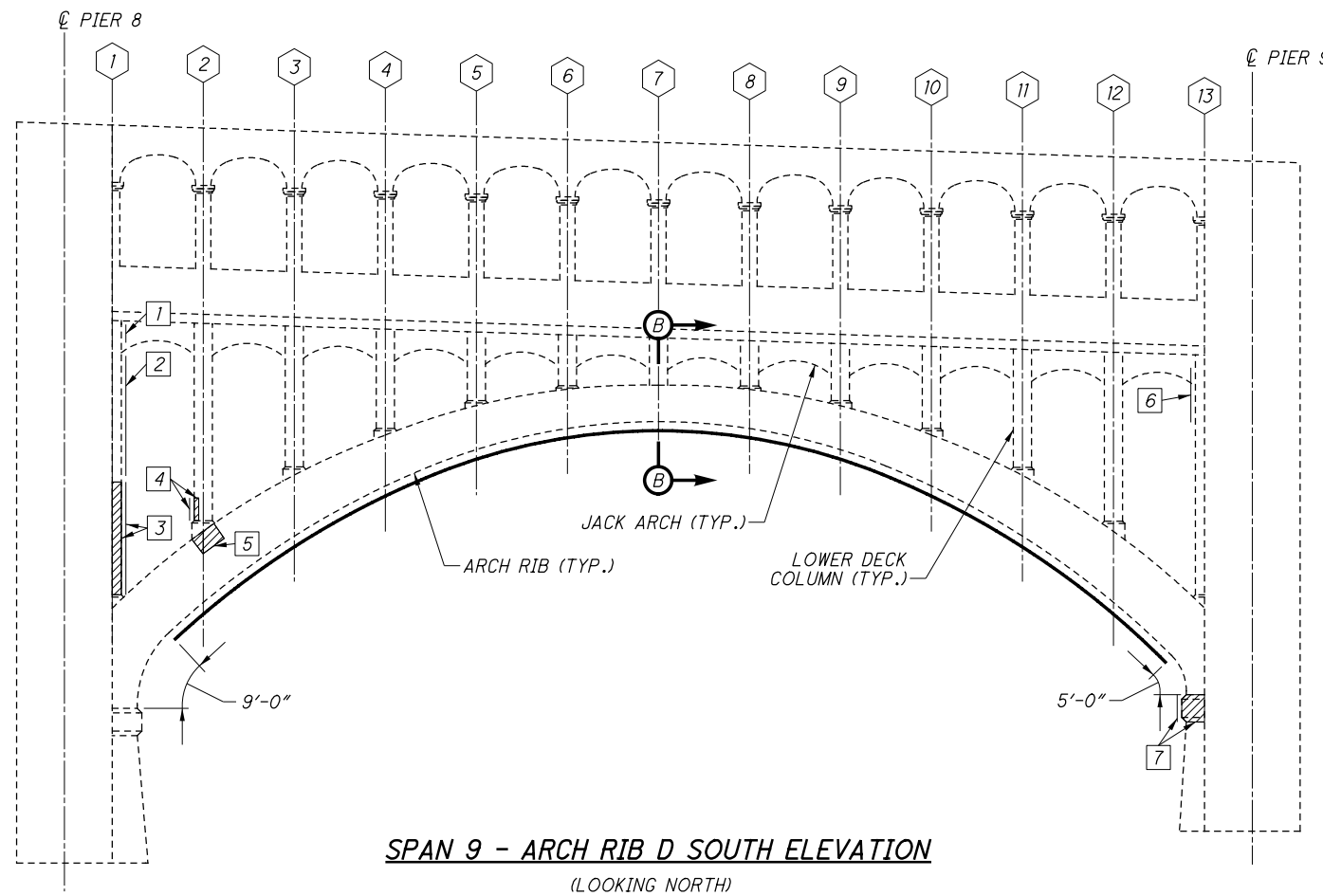
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 8 REPAIR DETAILS, SEE SHEET [28/89]. FOR PIER 9 REPAIR DETAILS, SEE SHEET [29/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

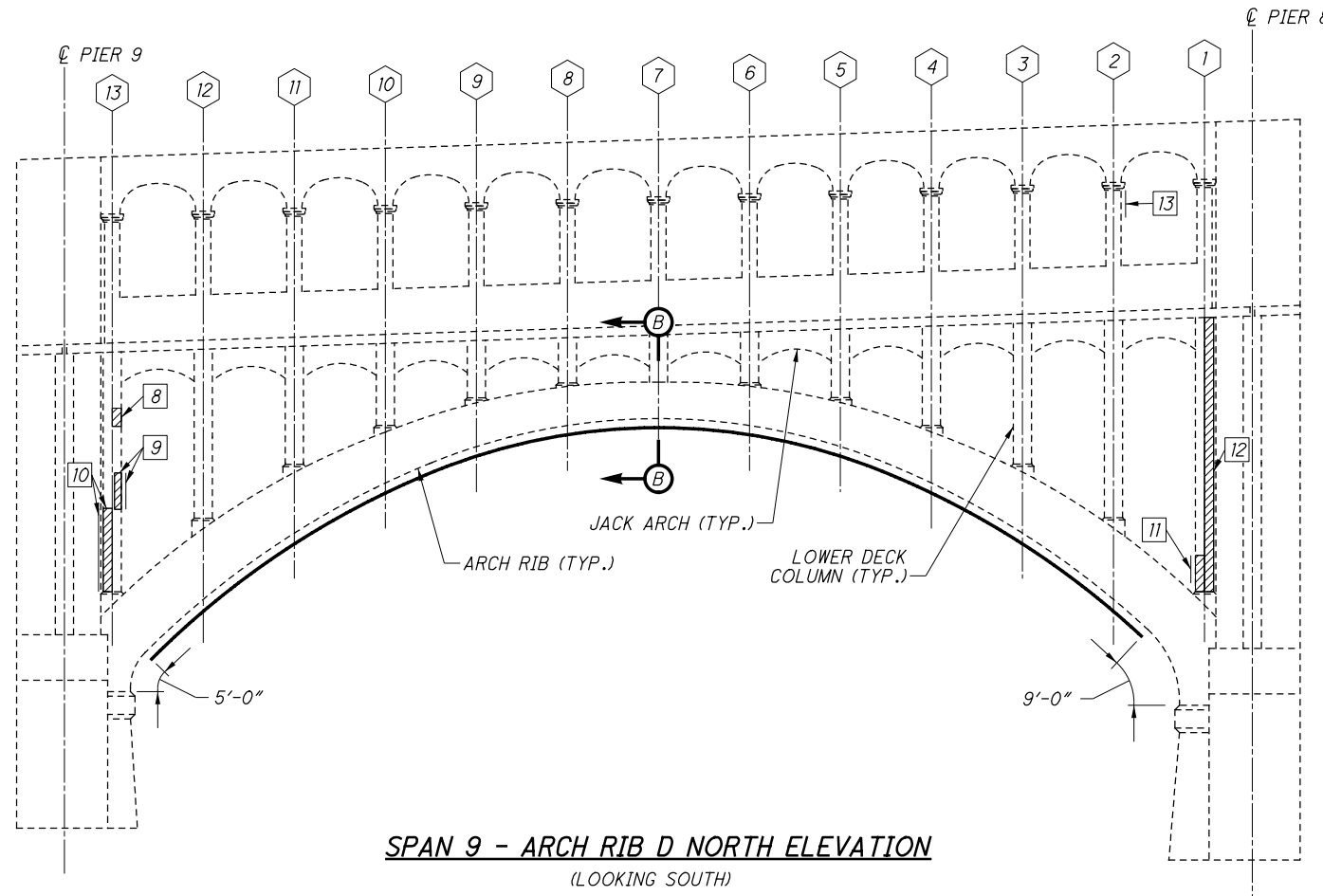
LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
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- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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SPAN 9 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 9 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	4	1
2	TYPE 1	62	18
3	TYPE 1	28	6
4	TYPE 1	3	1
5	TYPE 1	6	-
6	TYPE 1	18	6
7	TYPE 1	15	8
8	TYPE 1	2	1
9	TYPE 1	6	2
10	TYPE 1	23	5
11	TYPE 1	4	2
12	TYPE 1	34	17
13	TYPE 1	3	2
MEASURED QUANTITY*		208	-
PLAN QUANTITY*		312	69

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	312
TYPE 2 REPAIR	SF	-
FRP WRAP	SF	1358

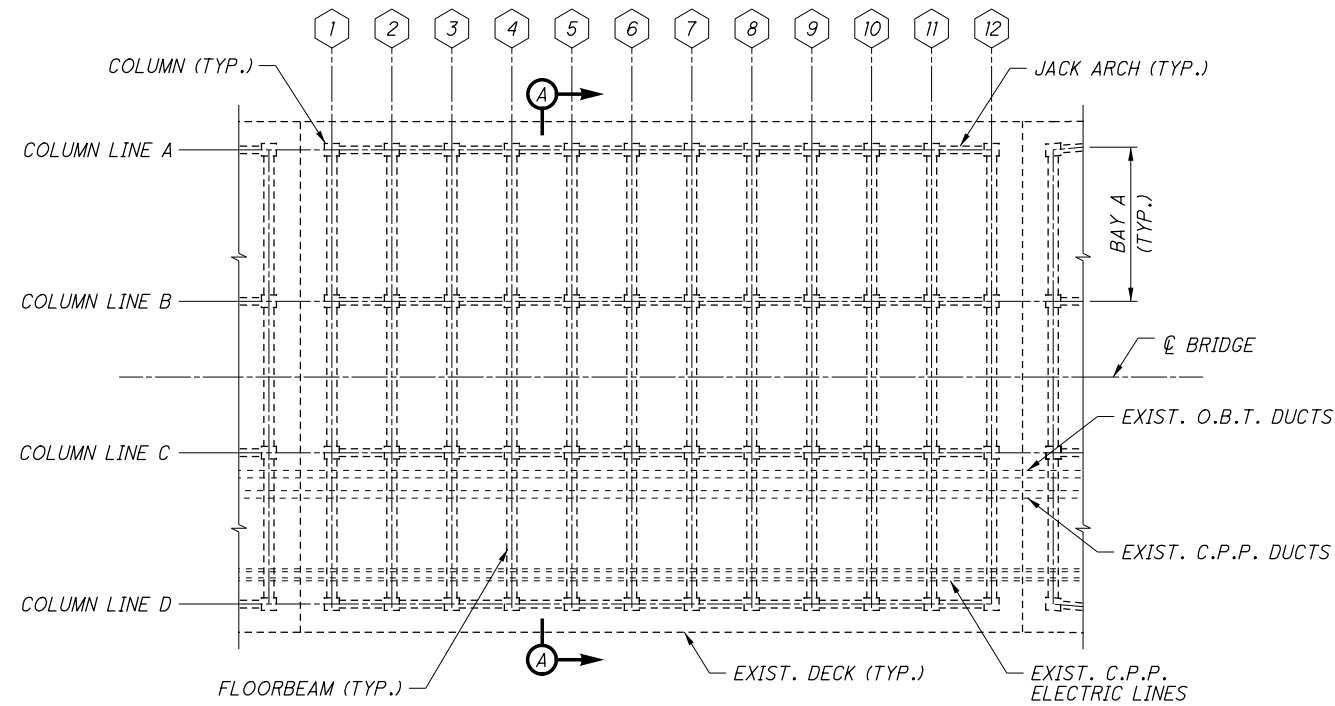
NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE VERTICAL SIDES OF THE UNREINFORCED CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 8 REPAIR DETAILS, SEE SHEET **28/89**. FOR PIER 9 REPAIR DETAILS, SEE SHEET **29/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

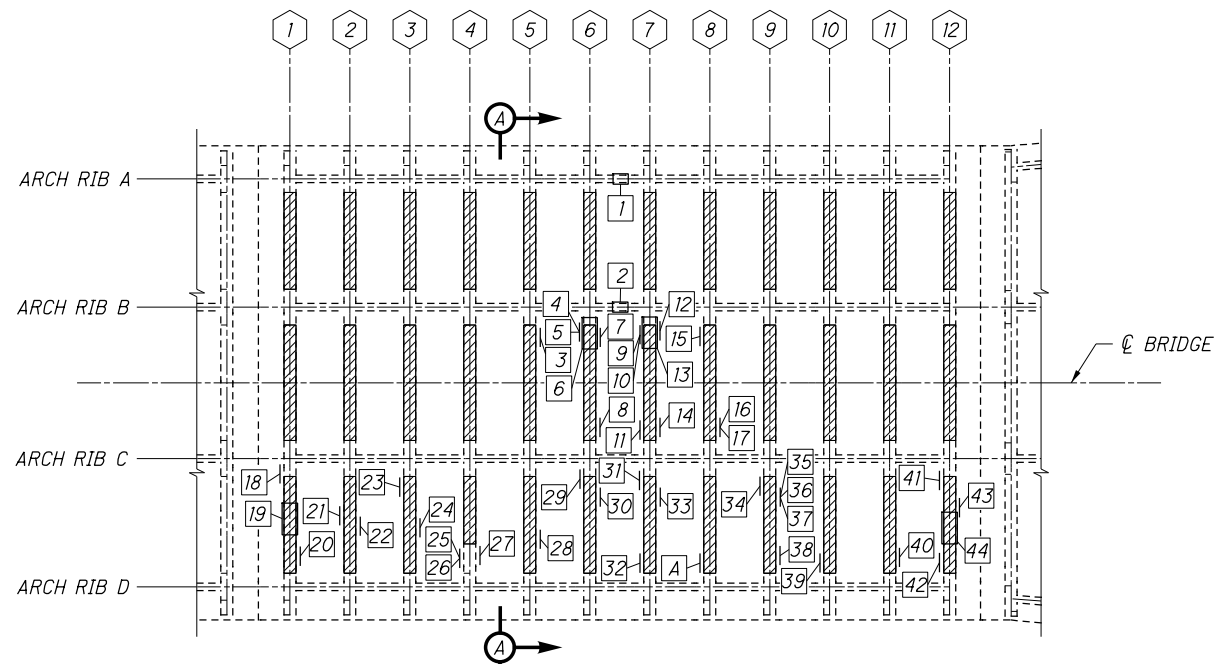
LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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SPAN 10 - UPPER DECK PLAN



SPAN 10 - LOWER DECK PLAN

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	1	1
2	TYPE 2	1	1
3	TYPE 1	4	1
4	TYPE 1	5	1
5	TYPE 1	4	2
6	TYPE 2	9	3
7	TYPE 1	13	2
8	TYPE 1	2	1
9	TYPE 1	4	2
10	TYPE 1	4	1
11	TYPE 1	15	6
12	TYPE 1	26	8
13	TYPE 2	14	5
14	TYPE 1	8	1
15	TYPE 1	4	1
16	TYPE 1	4	1
17	TYPE 1	4	1
18	TYPE 1	9	4
19	TYPE 2	17	7
20	TYPE 1	21	6
21	TYPE 1	3	1
22	TYPE 1	5	2
23	TYPE 1	2	1
24	TYPE 1	2	1

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
25	TYPE 1	16	4
26	TYPE 2	4	3
27	TYPE 1	2	1
28	TYPE 1	6	2
29	TYPE 1	10	2
30	TYPE 1	19	6
31	TYPE 1	37	10
32	TYPE 1	10	2
33	TYPE 1	12	4
34	TYPE 1	30	8
35	TYPE 1	2	1
36	TYPE 1	4	1
37	TYPE 1	16	4
38	TYPE 1	27	8
39	TYPE 1	34	8
40	TYPE 1	3	1
41	TYPE 1	21	8
42	TYPE 1	11	4
43	TYPE 1	2	1
44	TYPE 2	9	3
MEASURED QUANTITY*		456	-
PLAN QUANTITY*		684	141
A	SS843	8	-
MEASURED QUANTITY*		8	-

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	602
TYPE 2 REPAIR	SF	82
FRP WRAP	SF	3090

* SEE NOTES 1 & 2
** SEE NOTE 3

NOTES:

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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR SECTION A-A, SEE SHEET [34/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- A REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 843.
- ▨ AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM



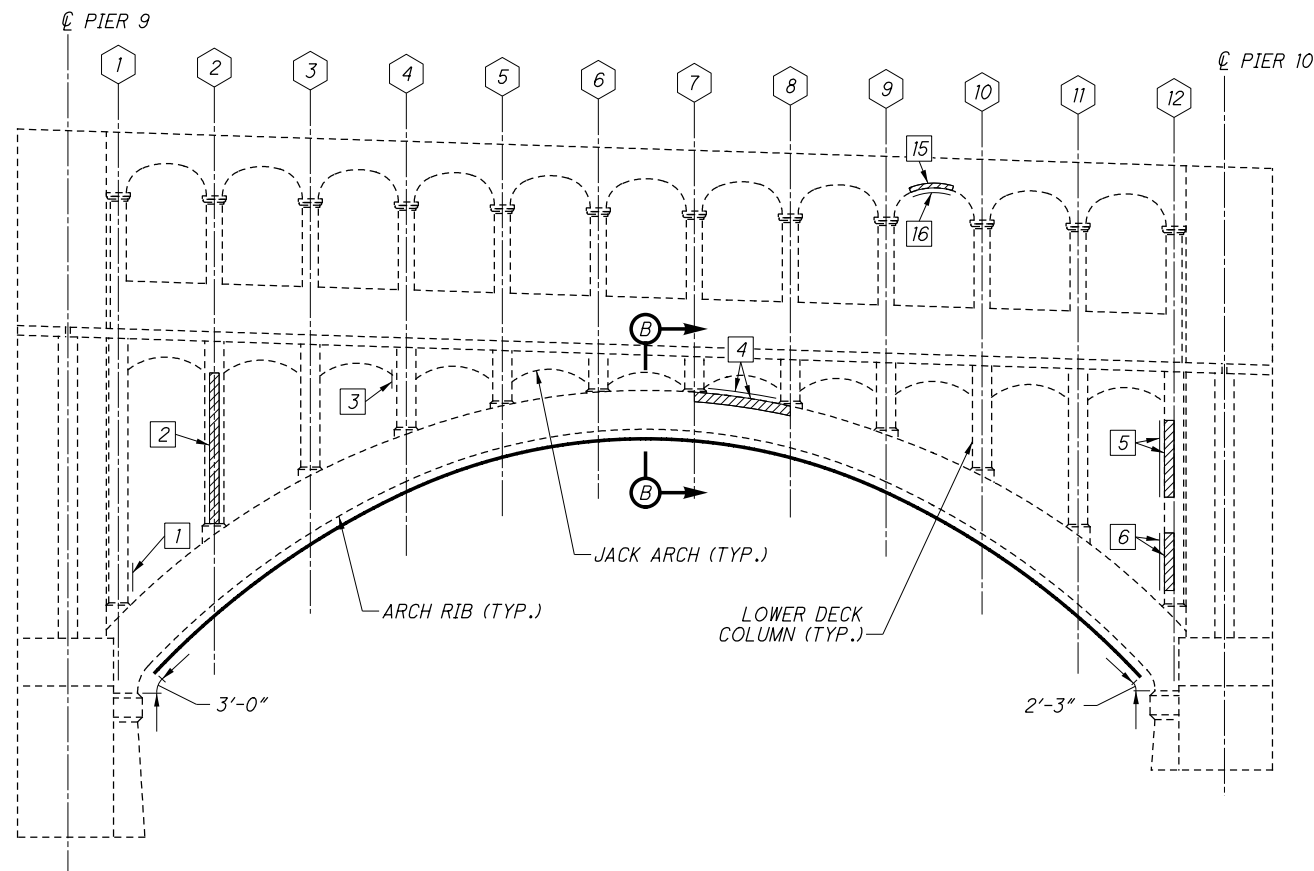
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SPAN 10 CONCRETE REPAIR DETAILS (1 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

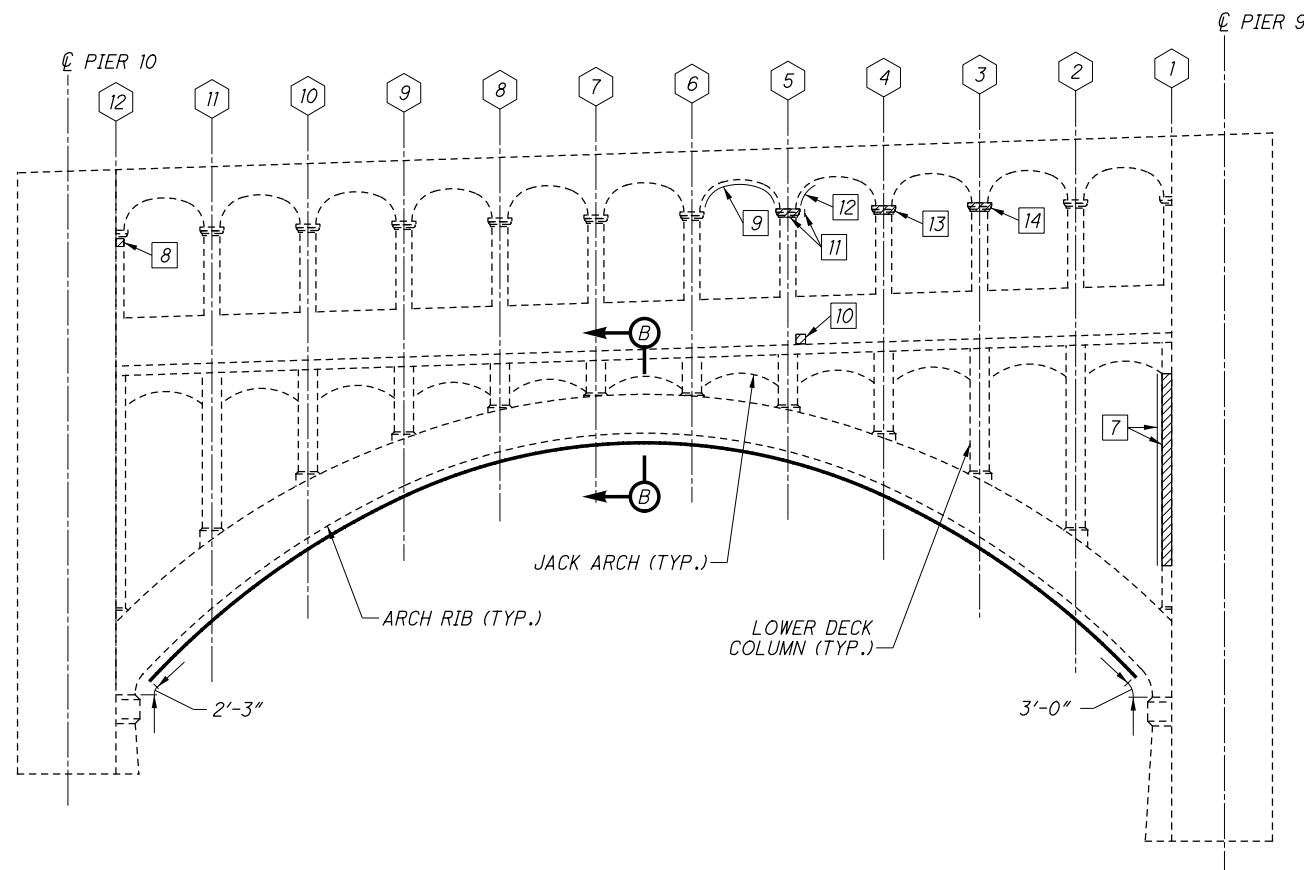
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PID No. 99972

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SPAN 10 - ARCH RIB A SOUTH ELEVATION
(LOOKING NORTH)



SPAN 10 - ARCH RIB A NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	3	2
2	TYPE 1	16	8
3	TYPE 1	2	1
4	TYPE 1	20	7
5	TYPE 1	16	4
6	TYPE 1	12	3
7	TYPE 1	40	10
8	TYPE 1	1	1
9	TYPE 2	10	7
10	TYPE 1	1	1
11	TYPE 1	3	2
12	TYPE 2	2	1
13	TYPE 1	2	1
14	TYPE 1	2	1
15	TYPE 1	2	2
16	TYPE 2	2	3
MEASURED QUANTITY*		134	-
PLAN QUANTITY*		201	54

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	180
TYPE 2 REPAIR	SF	21
FRP WRAP	SF	1304

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 9 REPAIR DETAILS, SEE SHEET [29/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
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DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

DRAWN A/JK
REVISOR

DESIGNED A/JK
CHECKED B/PS

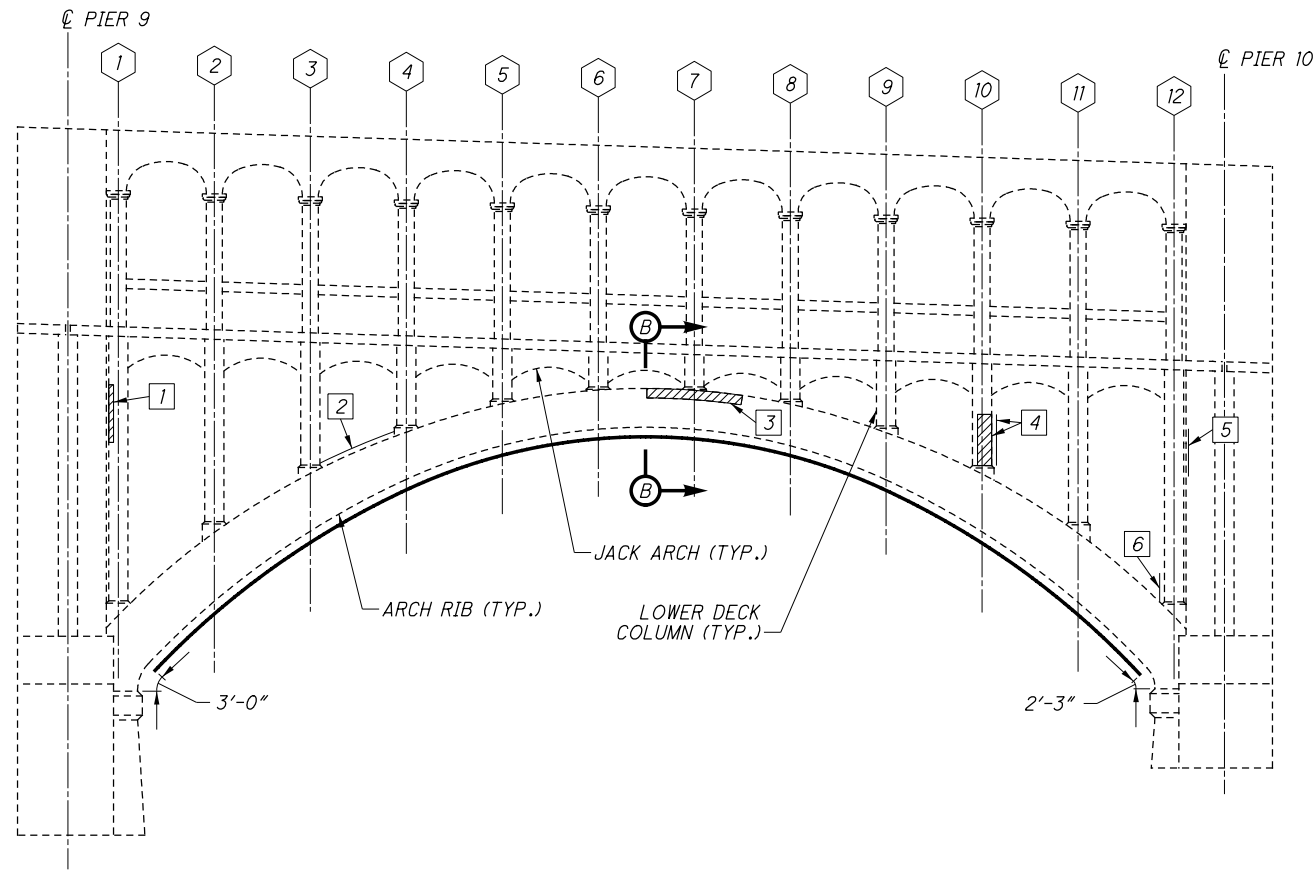
SPAN 10 CONCRETE REPAIR DETAILS (2 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

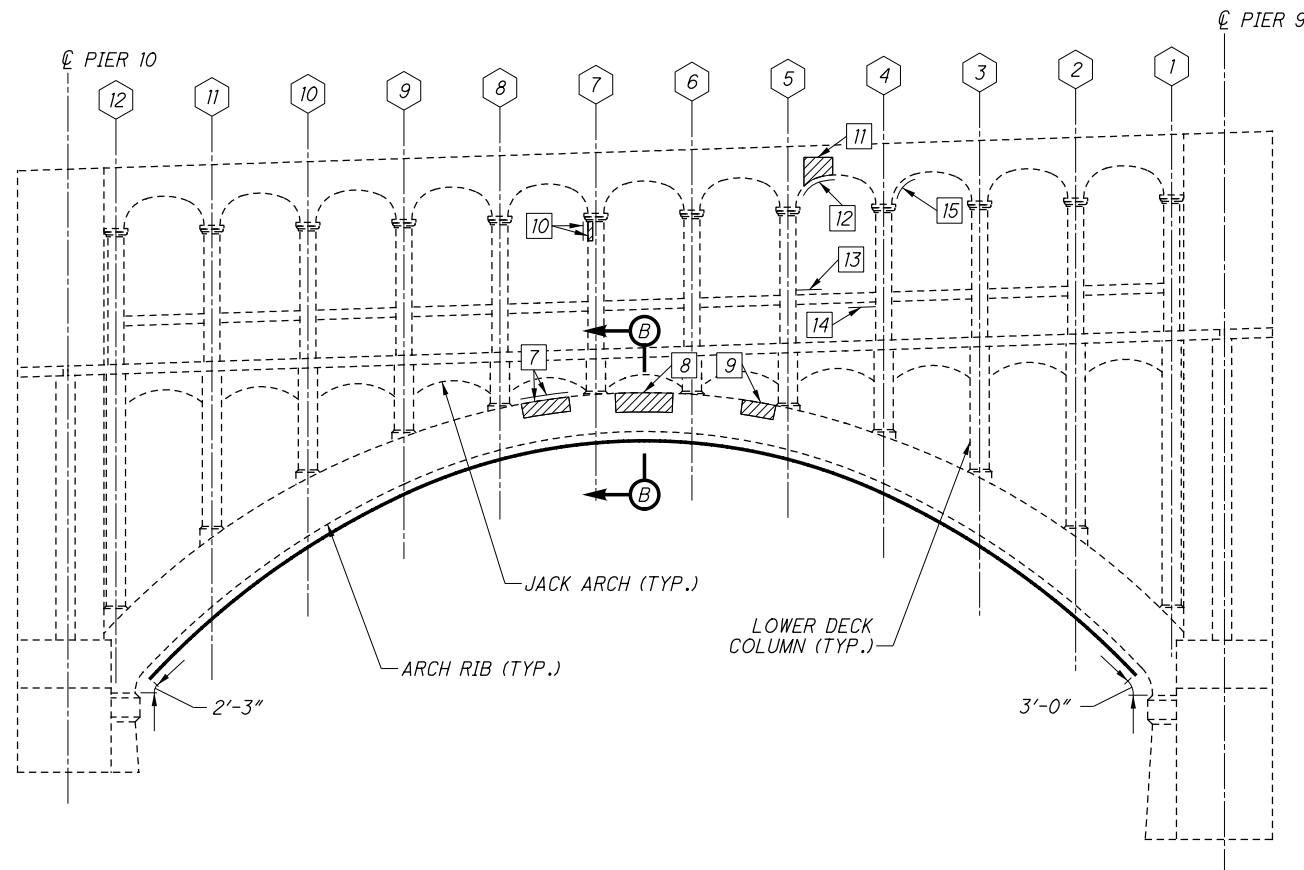
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SPAN 10 - ARCH RIB B SOUTH ELEVATION
(LOOKING NORTH)



SPAN 10 - ARCH RIB B NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	3	3
2	TYPE 1	80	22
3	TYPE 1	10	-
4	TYPE 1	16	6
5	TYPE 1	5	3
6	TYPE 1	6	2
7	TYPE 1	48	16
8	TYPE 1	12	-
9	TYPE 1	5	-
10	TYPE 1	1	1
11	TYPE 1	6	2
12	TYPE 2	3	2
13	TYPE 1	3	2
14	TYPE 2	3	2
15	TYPE 2	3	2
MEASURED QUANTITY*		204	-
PLAN QUANTITY*		306	63

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	293
TYPE 2 REPAIR	SF	13
FRP WRAP	SF	1541

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
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- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 9 REPAIR DETAILS, SEE SHEET **29/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- SPANDREL COLUMN NUMBER
- REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

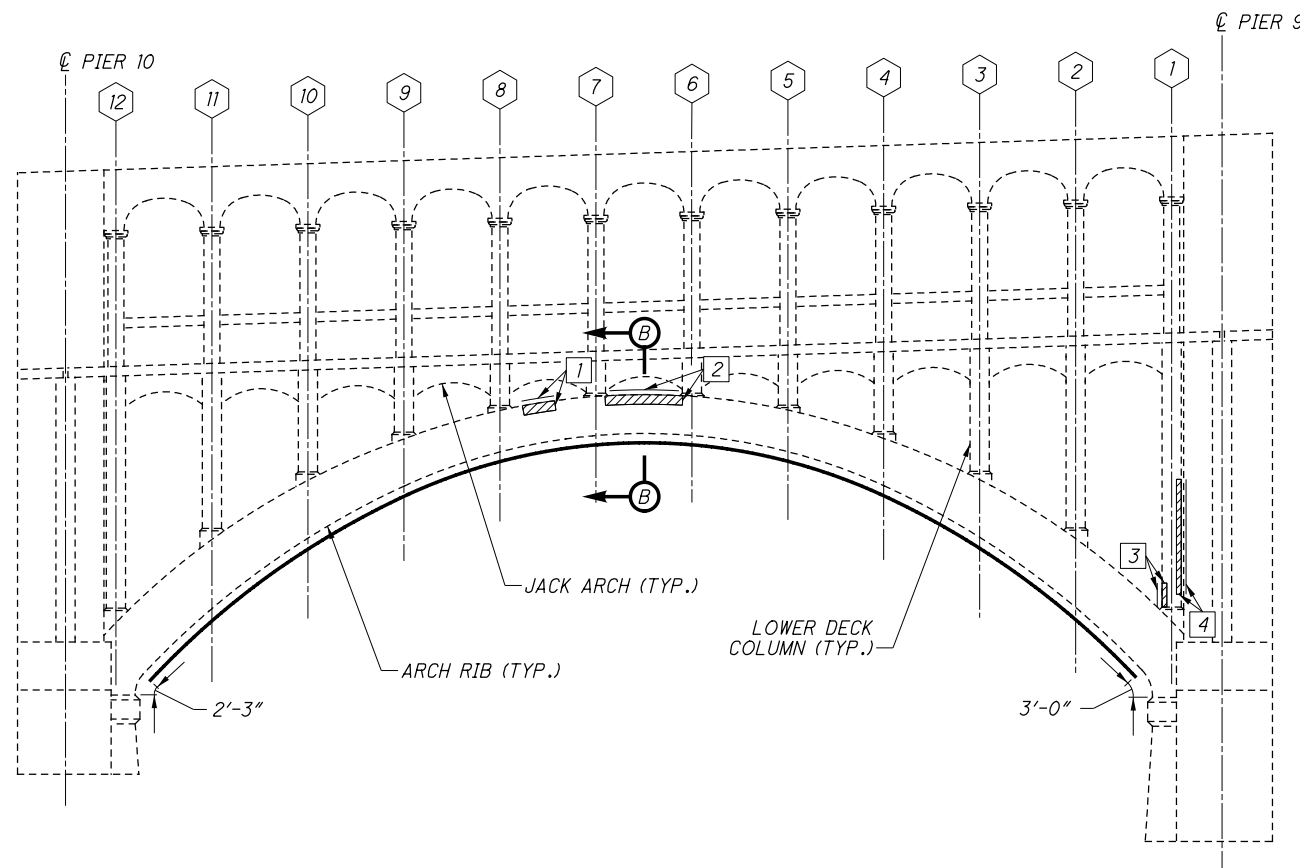
SPAN 10 CONCRETE REPAIR DETAILS (3 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 10 - ARCH RIB C SOUTH ELEVATION
(LOOKING NORTH)



SPAN 10 - ARCH RIB C NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	7	2
2	TYPE 1	32	12
3	TYPE 1	3	1
4	TYPE 1	34	6
MEASURED QUANTITY*		76	-
PLAN QUANTITY*		114	21

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	114
TYPE 2 REPAIR	SF	-
FRP WRAP	SF	1541

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET **84/89**.
- FOR PIER 9 REPAIR DETAILS, SEE SHEET **29/89**.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET **85/89**.

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

DRAWN A/JK
CHECKED B/PS

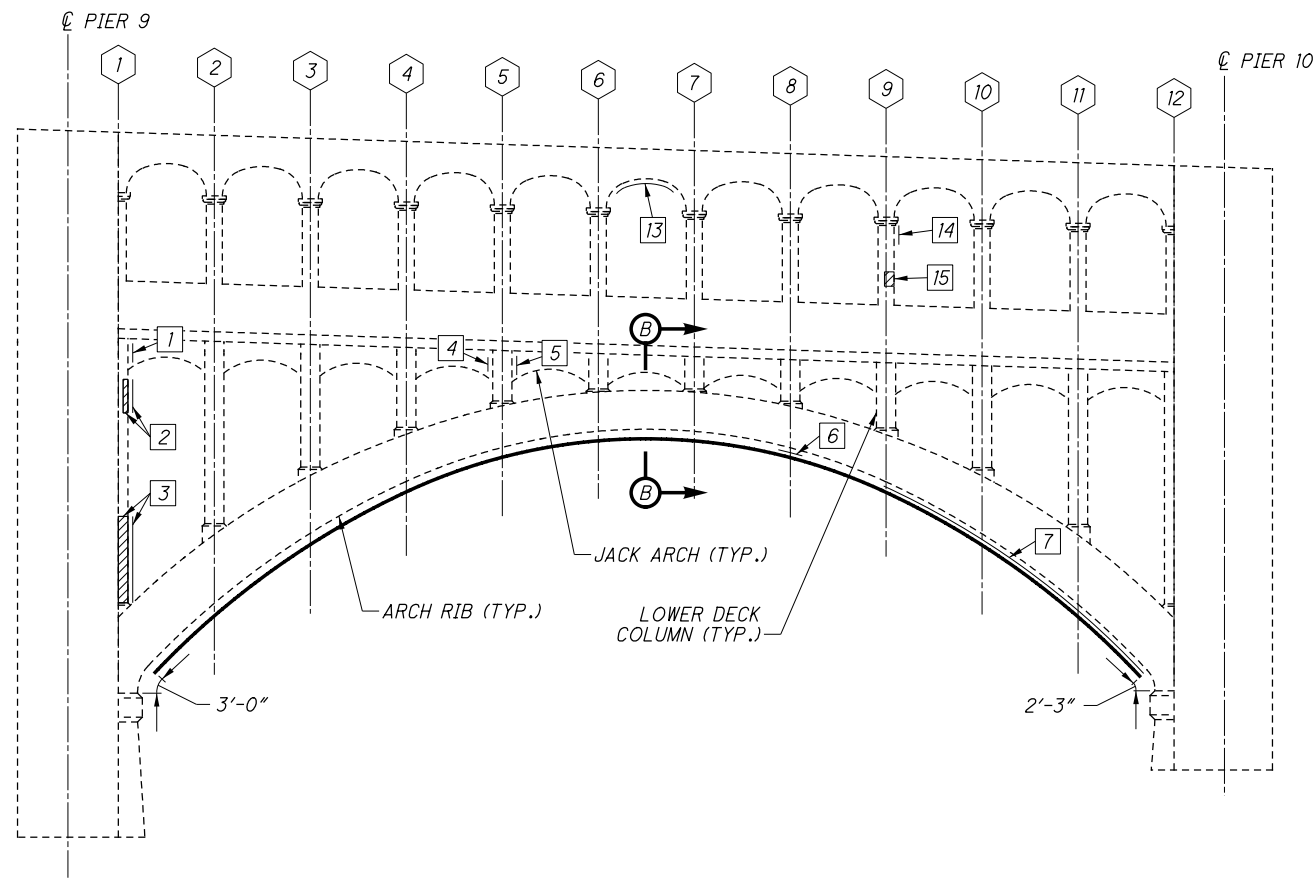
SPAN 10 CONCRETE REPAIR DETAILS (4 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

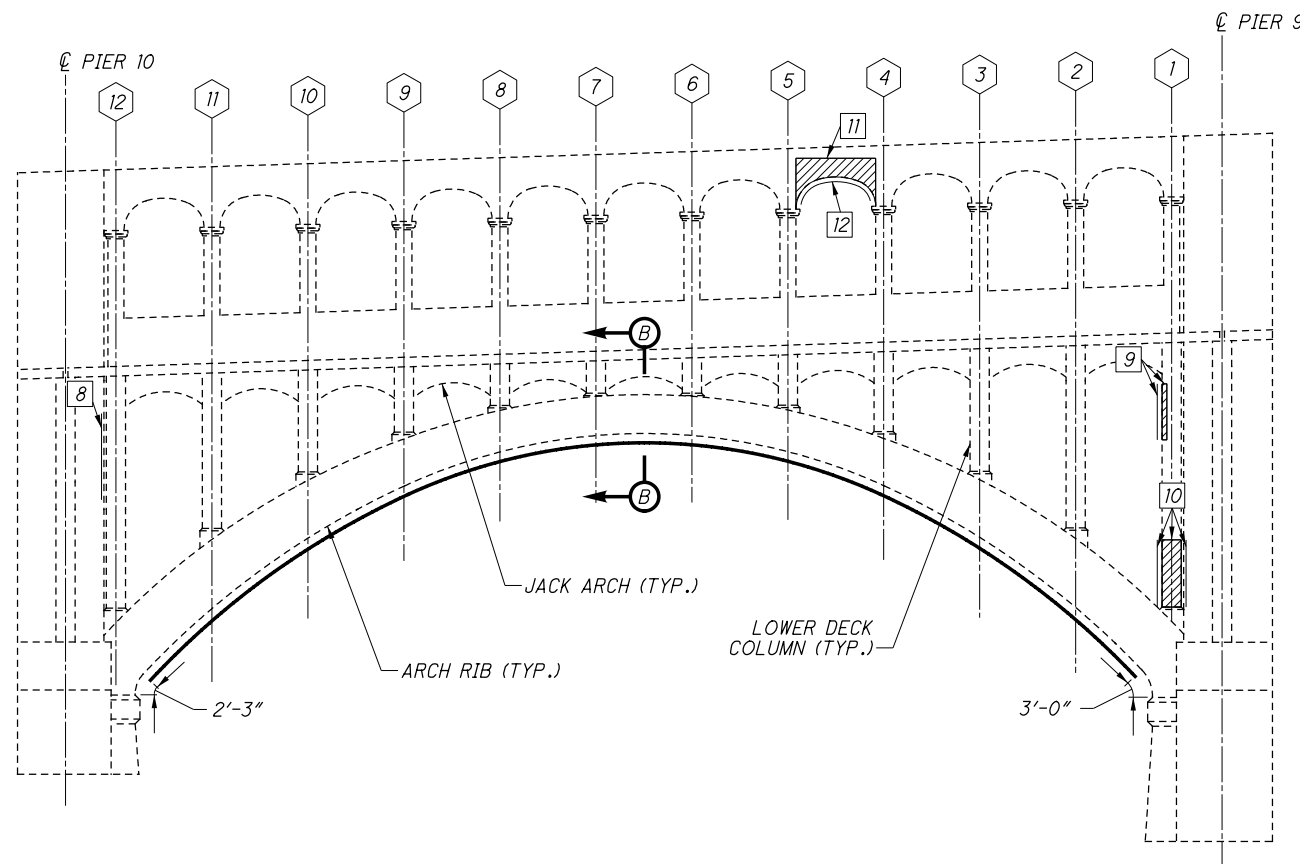
70/89

109
128

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SPAN 10 - ARCH RIB D SOUTH ELEVATION
(LOOKING NORTH)



SPAN 10 - ARCH RIB D NORTH ELEVATION
(LOOKING SOUTH)

ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	4	1
2	TYPE 1	8	3
3	TYPE 1	21	5
4	TYPE 1	1	1
5	TYPE 1	2	1
6	TYPE 2	4	1
7	TYPE 2	138	52
8	TYPE 1	18	5
9	TYPE 1	6	2
10	TYPE 1	24	8
11	TYPE 1	24	8
12	TYPE 2	18	9
13	TYPE 2	7	5
14	TYPE 1	2	1
15	TYPE 1	2	1
MEASURED QUANTITY*		279	-
PLAN QUANTITY*		419	103

* SEE NOTES 1 & 2
** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	168
TYPE 2 REPAIR	SF	251
FRP WRAP	SF	1304

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN DECEMBER 2016. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR PIER 9 REPAIR DETAILS, SEE SHEET [29/89].
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET [85/89].

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESIGN AGENCY
Pennoni

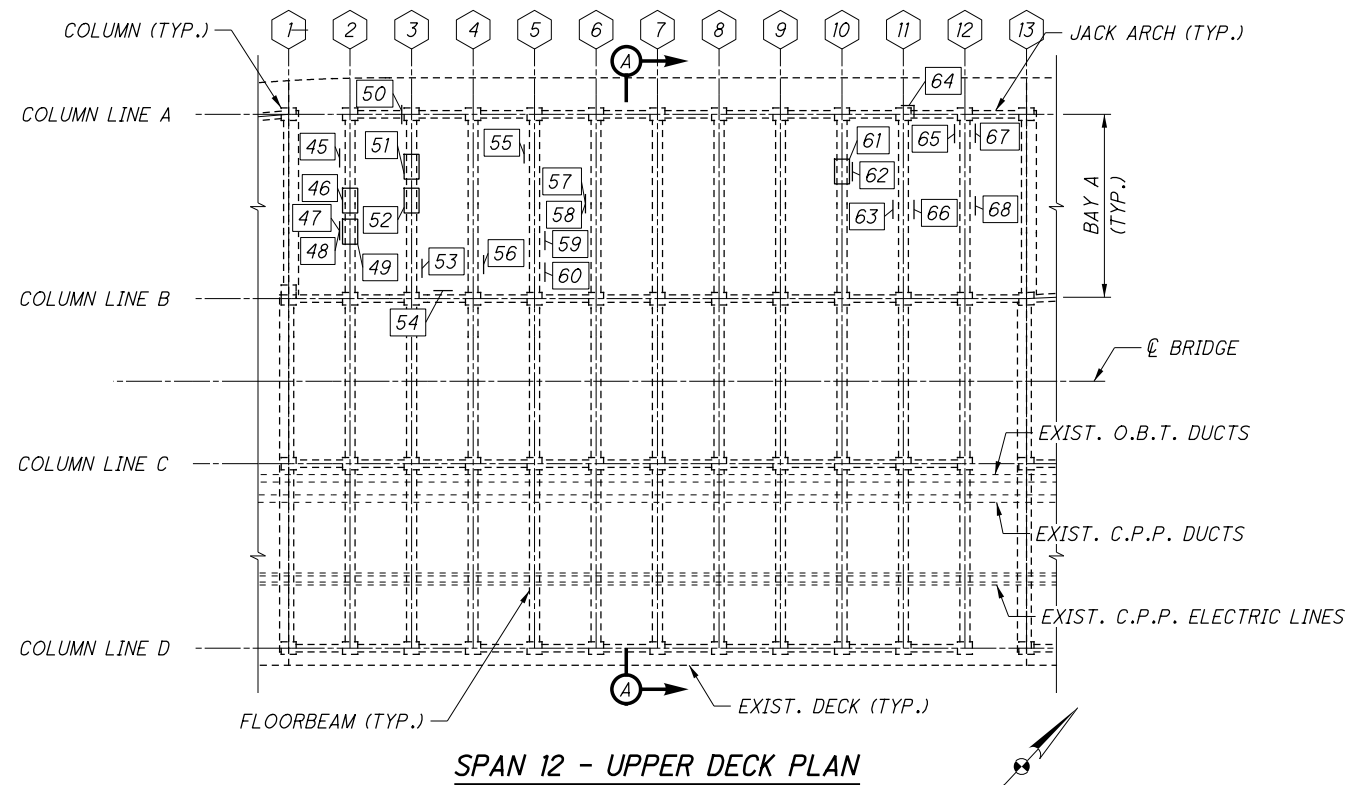
REVIEWED DATE 04/18/18
DWJ
STRUCTURE FILE NUMBER 1800930

DRAWN AJK
AJK
REVISOR BPS

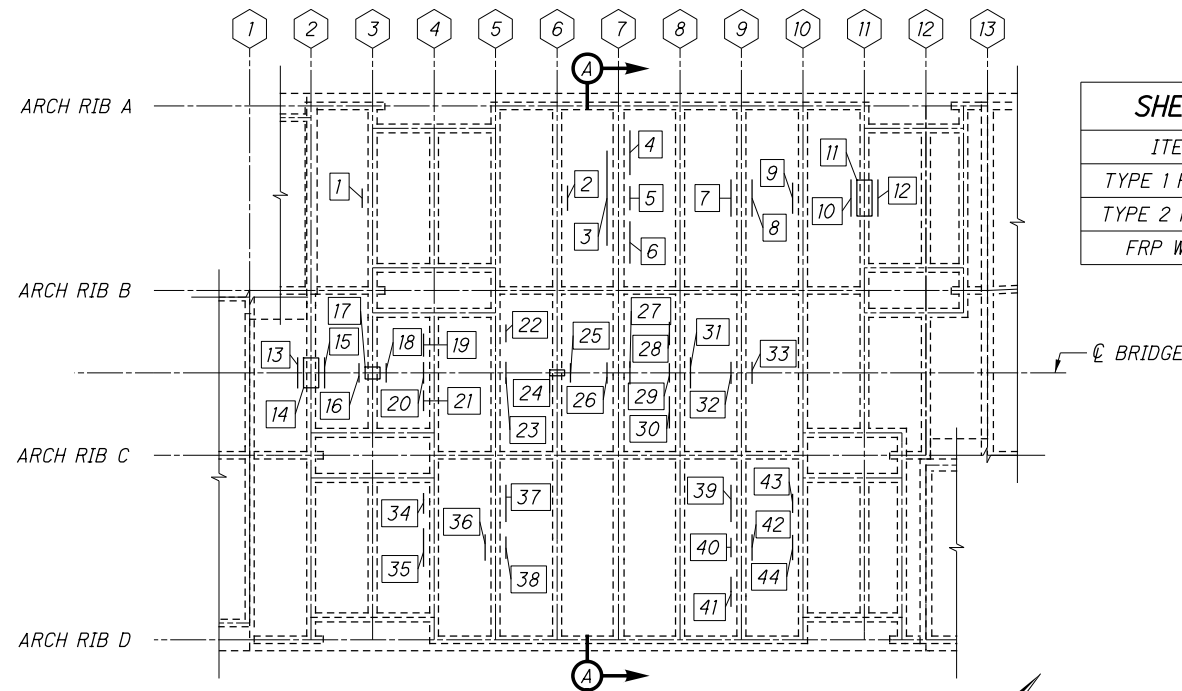
SPAN 10 CONCRETE REPAIR DETAILS (5 OF 5)
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

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SPAN 12 - UPPER DECK PLAN



SPAN 12 - LOWER DECK PLAN

SHEET QUANTITY SUMMARY

ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	531
TYPE 2 REPAIR	SF	44
FRP WRAP	SF	65

ESTIMATED PATCHING QUANTITIES

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 1	1	1
2	TYPE 1	6	1
3	TYPE 1	16	8
4	TYPE 1	19	4
5	TYPE 1	5	1
6	TYPE 1	15	3
7	TYPE 1	4	1
8	TYPE 1	4	1
9	TYPE 1	1	1
10	TYPE 1	20	6
11	TYPE 2	6	4
12	TYPE 1	20	6
13	TYPE 1	17	6
14	TYPE 2	5	4
15	TYPE 1	17	6
16	TYPE 1	4	2
17	TYPE 2	2	2
18	TYPE 1	4	2
19	TYPE 1	5	1
20	TYPE 1	2	1
21	TYPE 1	3	1
22	TYPE 1	2	1
23	TYPE 1	3	1
24	TYPE 2	1	2
25	TYPE 1	2	1
26	TYPE 1	2	1
27	TYPE 1	5	1
28	TYPE 1	5	1
29	TYPE 1	2	1
30	TYPE 1	11	4
31	TYPE 1	10	4
32	TYPE 1	3	1
33	TYPE 1	3	1
34	TYPE 1	3	1
35	TYPE 1	14	3
36	TYPE 1	6	2
37	TYPE 1	5	3

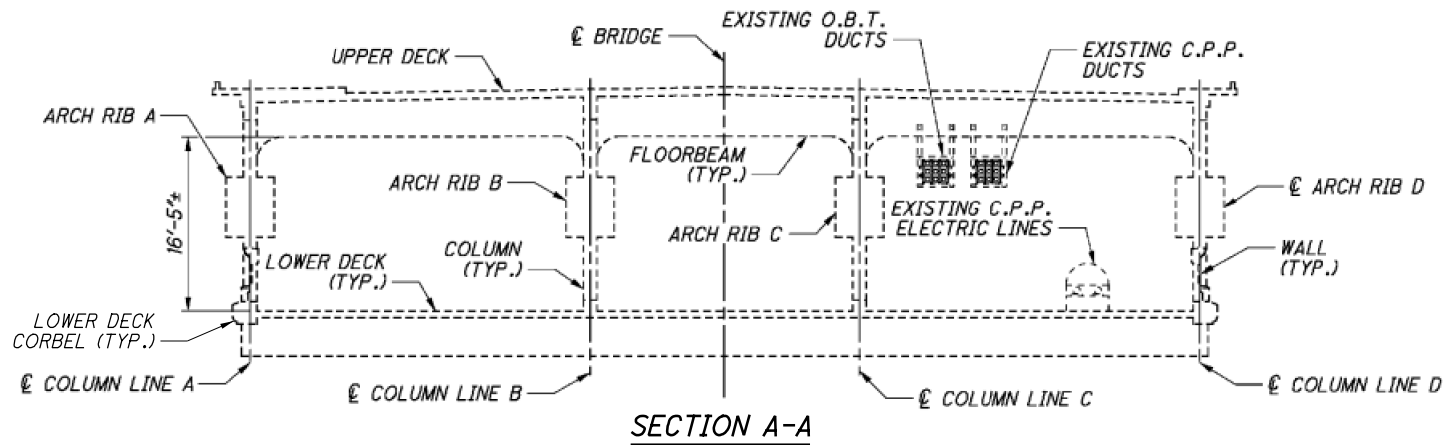
ESTIMATED PATCHING QUANTITIES

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
38	TYPE 1	4	1
39	TYPE 1	3	2
40	TYPE 1	1	1
41	TYPE 1	10	2
42	TYPE 1	8	2
43	TYPE 1	1	1
44	TYPE 1	2	1
45	TYPE 1	3	2
46	TYPE 2	4	3
47	TYPE 1	1	1
48	TYPE 1	1	1
49	TYPE 2	1	1
50	TYPE 1	2	1
51	TYPE 2	4	4
52	TYPE 2	3	3
53	TYPE 1	2	1
54	TYPE 1	3	2
55	TYPE 1	3	2
56	TYPE 1	1	1
57	TYPE 1	4	2
58	TYPE 1	23	5
59	TYPE 1	6	2
60	TYPE 1	6	2
61	TYPE 2	3	3
62	TYPE 1	10	3
63	TYPE 1	6	2
64	TYPE 1	3	2
65	TYPE 1	1	1
66	TYPE 1	1	1
67	TYPE 1	6	2
68	TYPE 1	4	1
MEASURED QUANTITY*		383	-
PLAN QUANTITY*		575	148

* SEE NOTES 1 & 2
** SEE NOTE 3

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE INSPECTION PERFORMED IN JANUARY 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- THE LOWER DECK FLOORBEAMS ARE CONCRETE ENCASED STEEL GIRDERS AND CONTAIN MINIMAL TEMPERATURE/SHRINKAGE STEEL REINFORCEMENT. PATCH THE VERTICAL SIDES OF THESE MEMBERS IN ACCORDANCE WITH THE STANDARD TYPE 1 REPAIR DETAILS. PATCH THE HORIZONTAL BOTTOM SURFACES IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET [84/89]. CONNECTION OF THE EMBEDDED GALVANIC ANODES SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
- FOR FRP WRAP DETAILS, SEE SHEET [85/89].

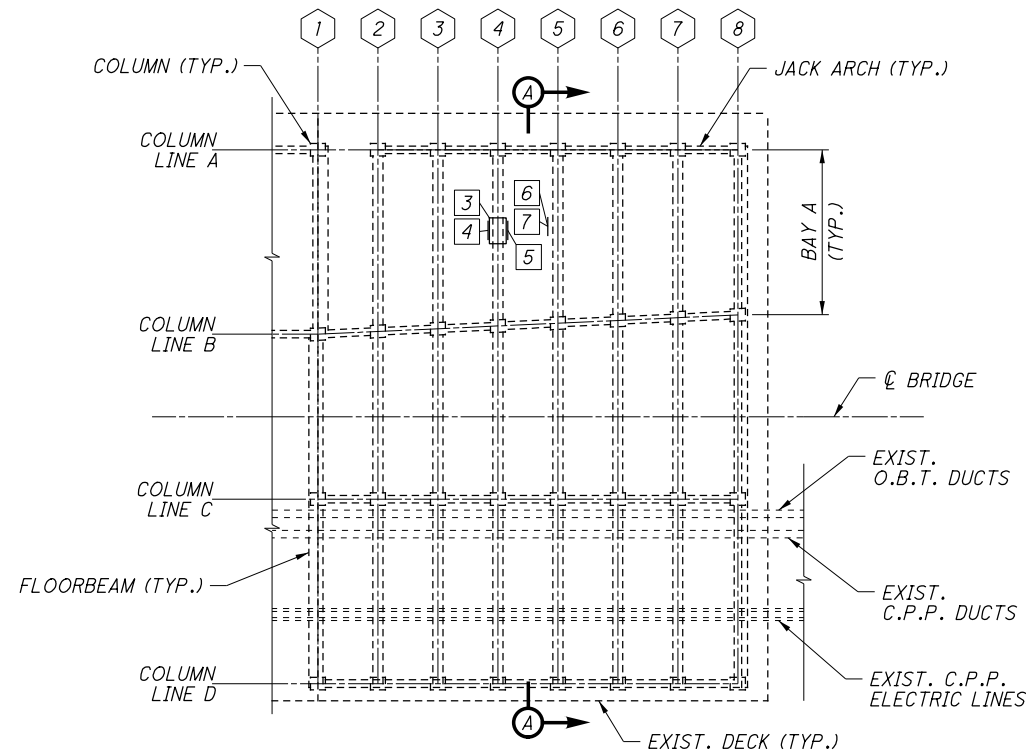


SECTION A-A

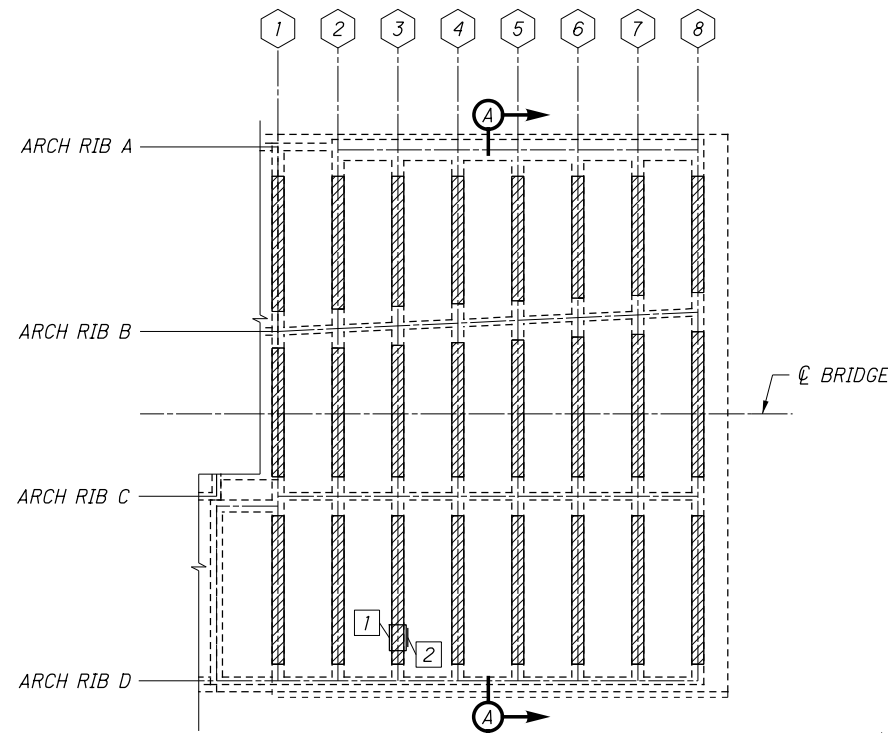
LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- ▨ AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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SPAN 13 - UPPER DECK PLAN



SPAN 13 - LOWER DECK PLAN

REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	10	6
2	TYPE 1	6	3
3	TYPE 2	4	4
4	TYPE 1	4	1
5	TYPE 1	2	1
6	TYPE 1	4	1
7	TYPE 1	10	3
MEASURED QUANTITY*		40	-
PLAN QUANTITY*		60	19

* SEE NOTES 1 & 2
** SEE NOTE 3

ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	39
TYPE 2 REPAIR	SF	21
FRP WRAP	SF	2738

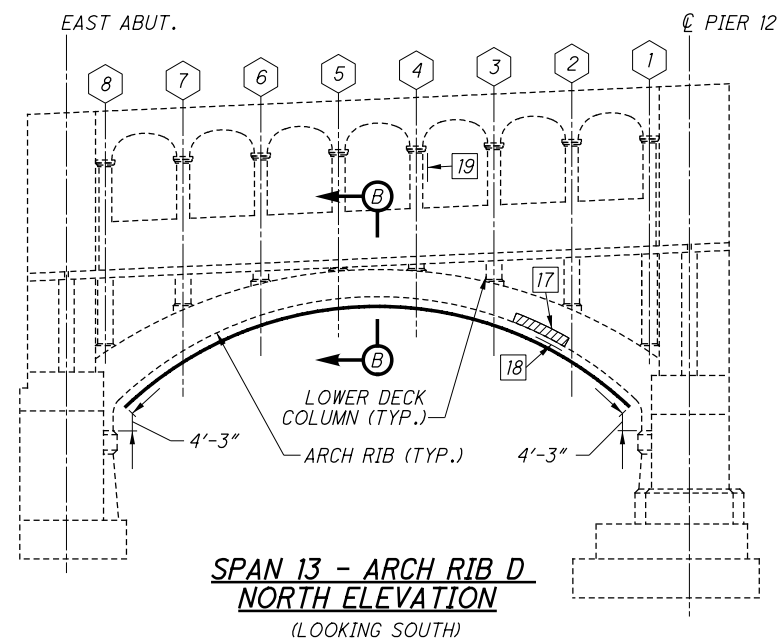
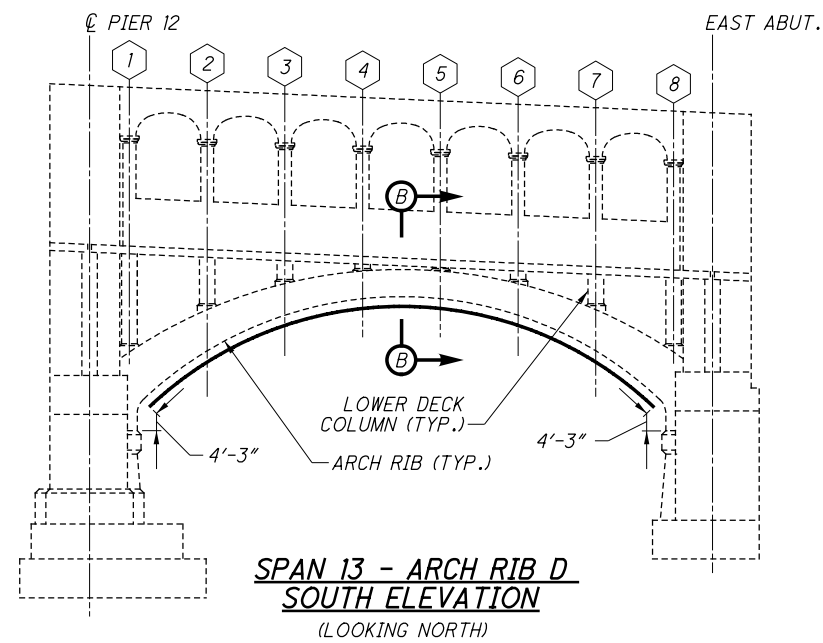
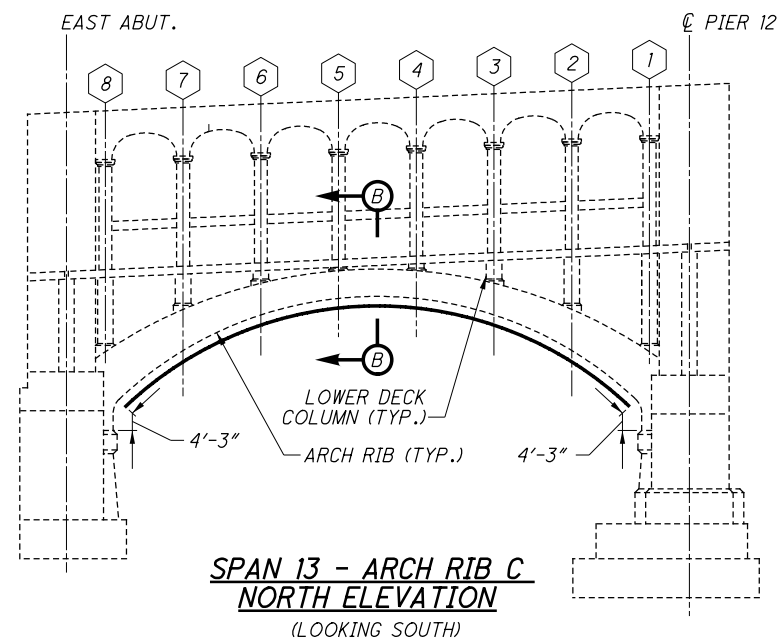
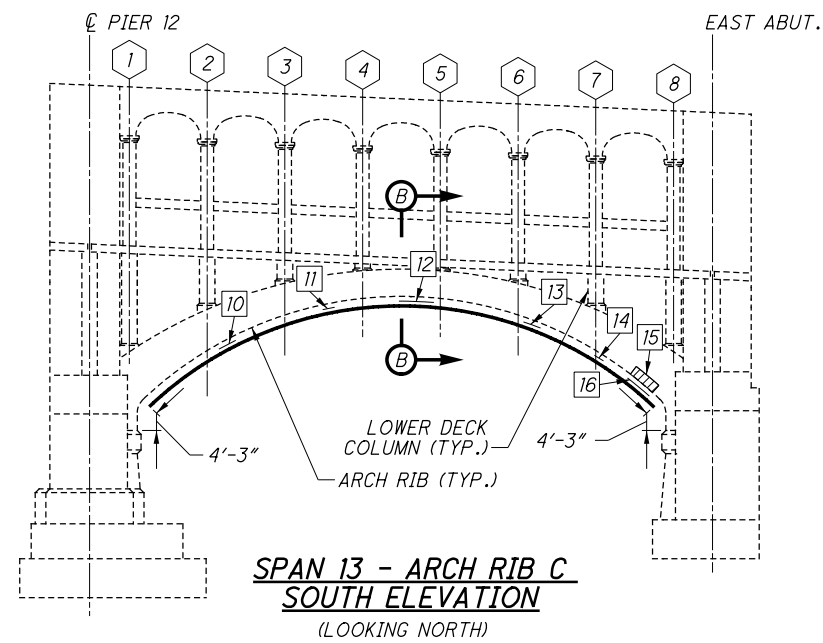
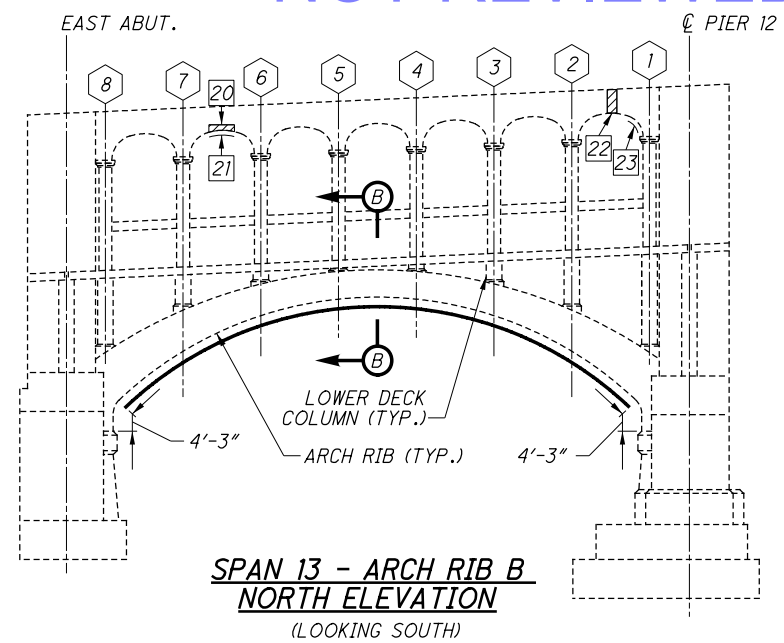
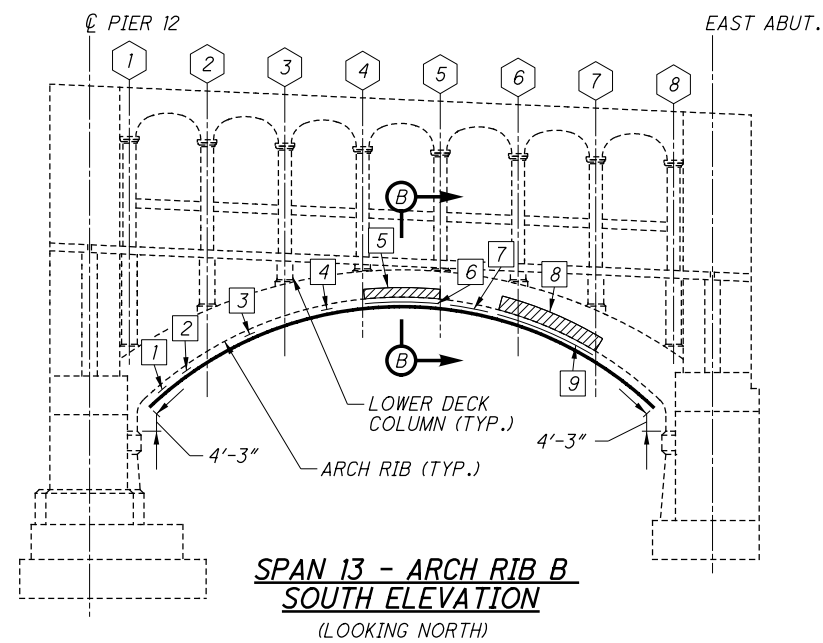
NOTES:

1. MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
2. PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
3. ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
5. FOR SECTION A-A, SEE SHEET [34/89].
6. FOR FRP WRAP DETAILS, SEE SHEET [85/89].

LEGEND:

- # FLOORBEAM LINE NUMBER
- # REPAIR NO. OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- [Hatched Box] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

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ESTIMATED PATCHING QUANTITIES			
REPAIR NO.	REPAIR TYPE	AREA (SF)	ANODE QUANTITY**
1	TYPE 2	1	1
2	TYPE 2	1	1
3	TYPE 2	1	1
4	TYPE 2	1	1
5	TYPE 1	10	-
6	TYPE 2	40	16
7	TYPE 2	15	8
8	TYPE 1	23	-
9	TYPE 2	75	26
10	TYPE 2	4	1
11	TYPE 2	1	1
12	TYPE 2	24	10
13	TYPE 2	2	1
14	TYPE 2	1	1
15	TYPE 1	3	-
16	TYPE 2	3	2
17	TYPE 1	6	-
18	TYPE 2	5	2
19	TYPE 1	3	2
20	TYPE 1	3	2
21	TYPE 2	4	3
22	TYPE 1	4	2
23	TYPE 2	1	1
MEASURED QUANTITY*		231	-
PLAN QUANTITY*		347	82

* SEE NOTES 1 & 2
 ** SEE NOTES 3 & 4

SHEET QUANTITY SUMMARY		
ITEM	UNIT	QUANTITY
TYPE 1 REPAIR	SF	78
TYPE 2 REPAIR	SF	269
FRP WRAP	SF	2491

NOTES:

- MEASURED QUANTITIES ARE BASED ON THE VISUAL INSPECTION PERFORMED IN NOVEMBER 2017. THE EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.
- PLAN QUANTITIES INCLUDE 50% CONTINGENCY ADDED TO MEASURED QUANTITIES.
- ANODES ARE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.
- GALVANIC ANODES WILL NOT BE USED FOR PATCHING THE UNREINFORCED VERTICAL SIDES OF THE CONCRETE ARCH RIBS.
- FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.
- FOR FRP WRAP DETAILS AND SECTION B-B, SEE SHEET 85/89.

LEGEND:

- # SPANDREL COLUMN NUMBER
- # REPAIR NUMBER
- [Hatched Box] LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 REPAIR
- [Dashed Box] LOCATION OF DEFICIENT CONCRETE ON PERPENDICULAR FACE (NOT VISIBLE IN ELEVATION VIEW) TO BE REPAIRED IN ACCORDANCE WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR
- [Dotted Box] AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

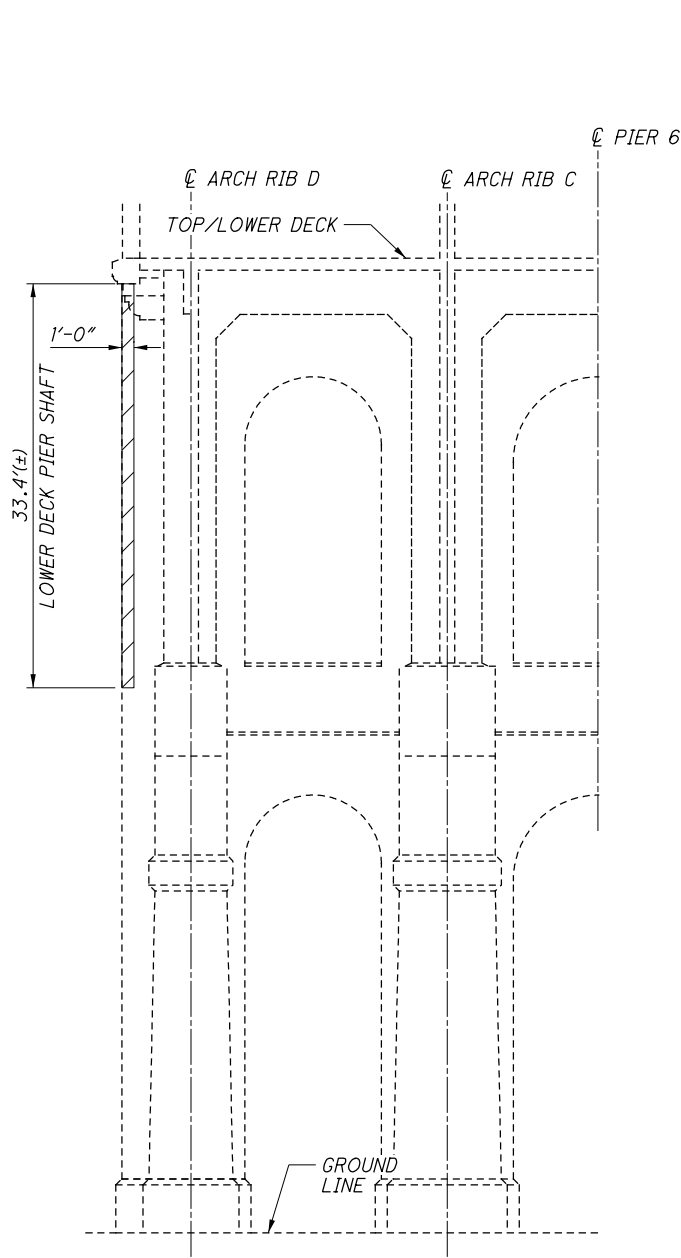


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 DATE 04/18/18
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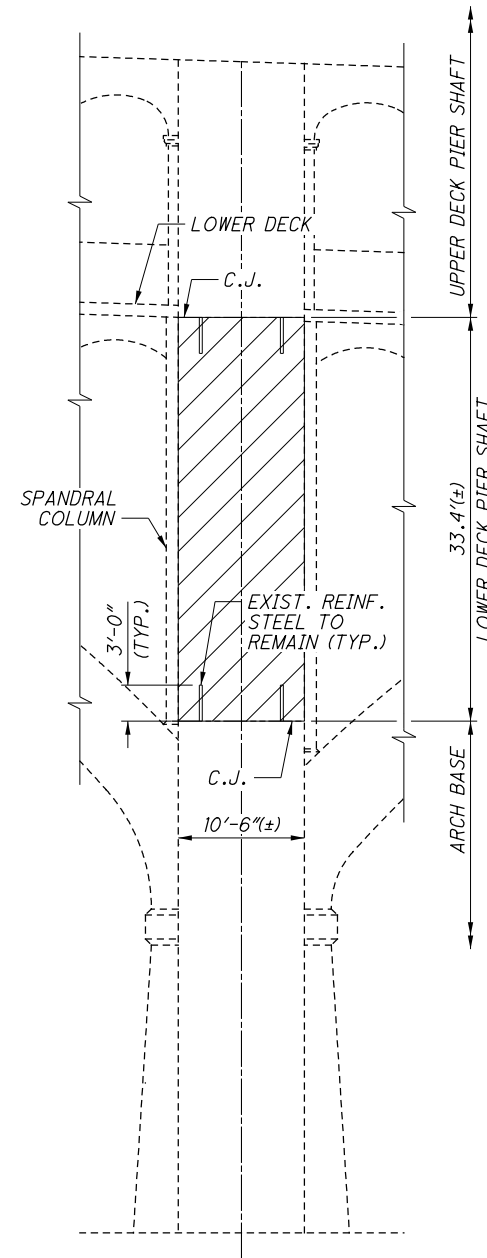
SPAN 13 CONCRETE REPAIR DETAILS (2 OF 2)
 BRIDGE NO. CUY-6-1456
 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
 PID No. 99972

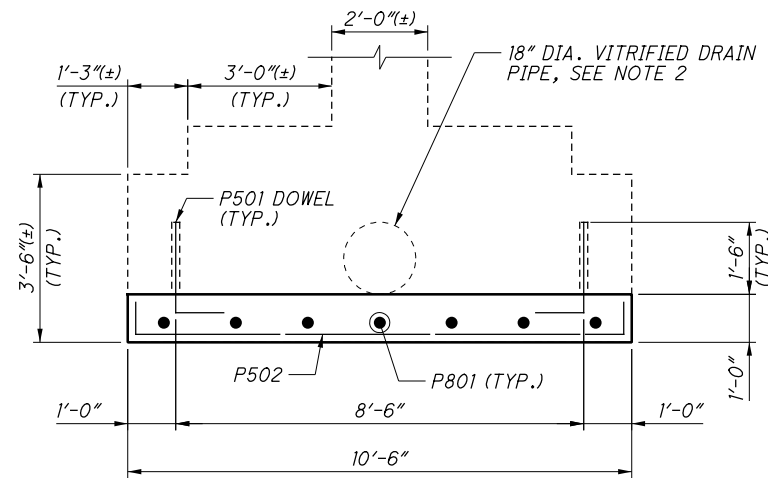
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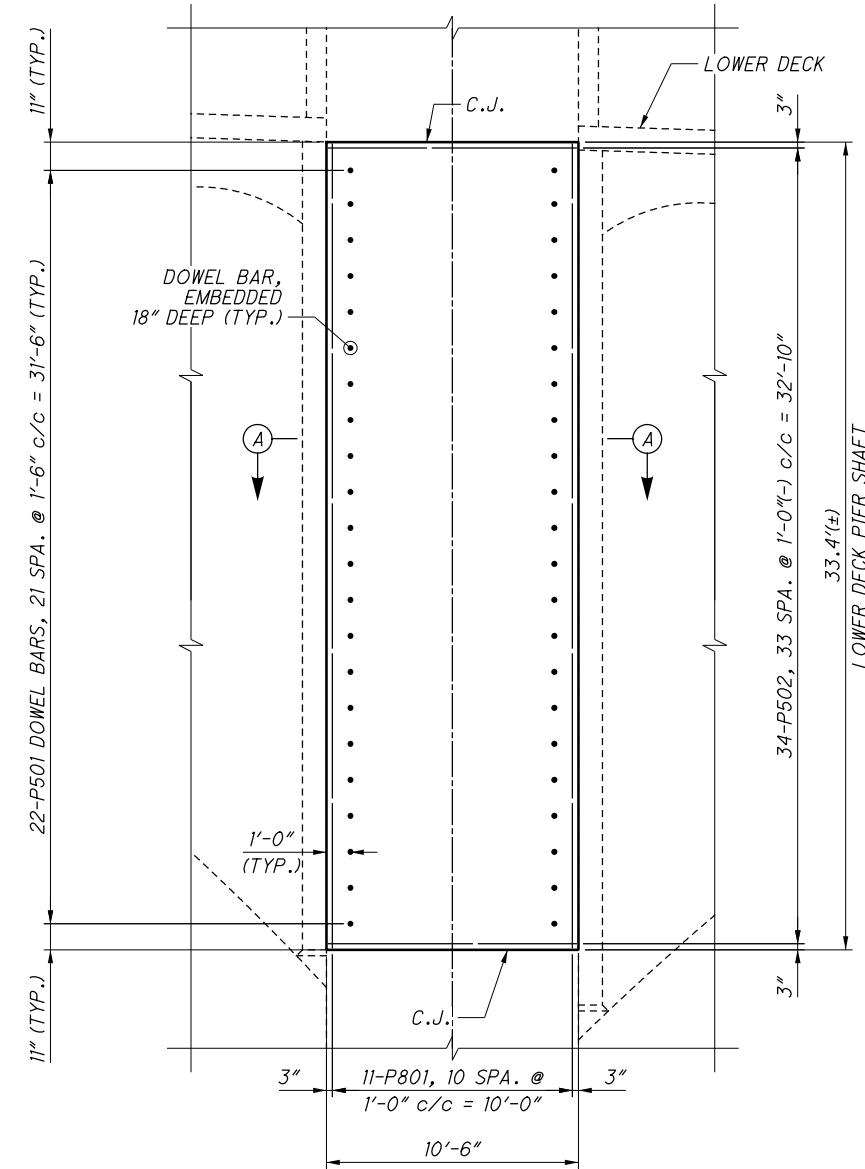
PIER 6 - EAST ELEVATION
SHOWING LIMITS OF REMOVAL



PIER 6 - SOUTH ELEVATION
SHOWING LIMITS OF REMOVAL



SECTION A-A



PARTIAL REPLACEMENT
LOWER DECK SHAFT ELEVATION

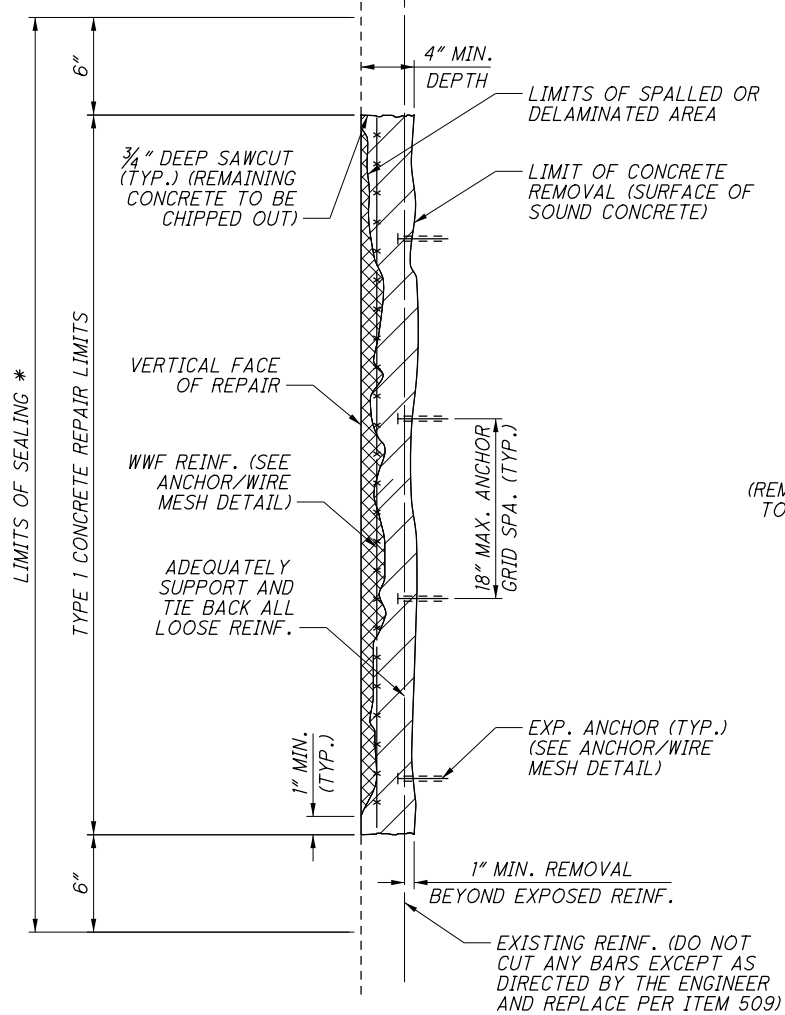
LEGEND:

LOCATION OF DEFICIENT CONCRETE TO BE REPAIRED IN ACCORDANCE WITH ITEM 511 - CONCRETE, MISC.: PIER 6 LOWER DECK SHAFT REPAIR

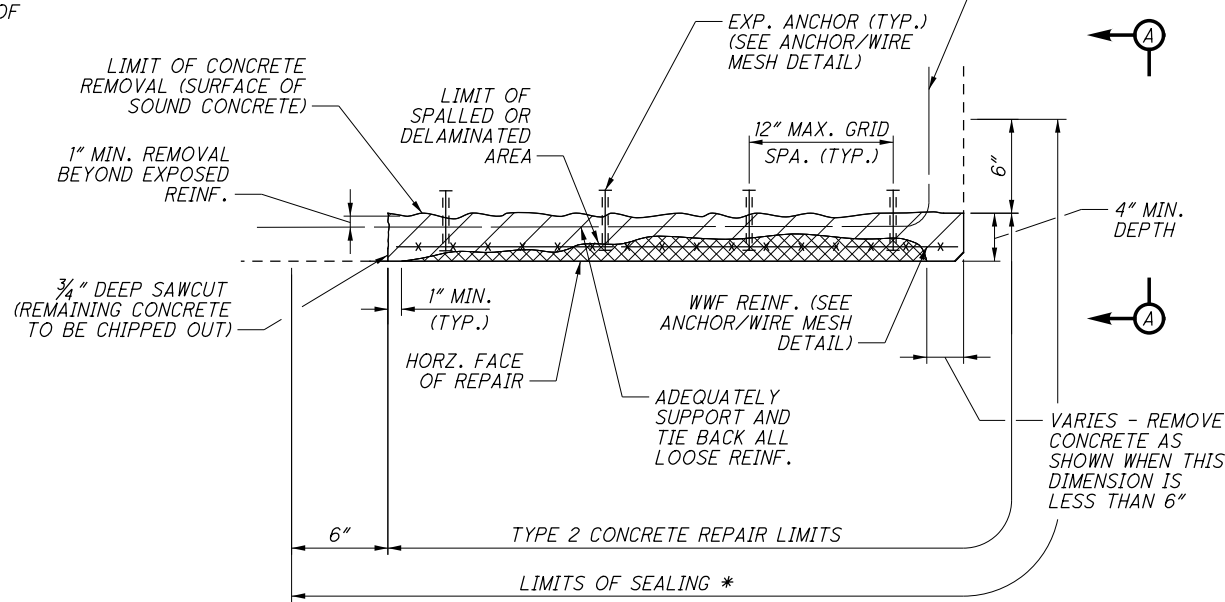
NOTES:

1. THE DEPTH OF CONCRETE REMOVAL SHALL NOT BE GREATER THAN 12 INCHES.
2. THE ASSUMED POSITION OF THE ORIGINAL ENCASED 18" DIAMETER DRAIN PIPE IS SHOWN. IF THE DRAIN PIPE IS EXPOSED DURING REMOVAL OF DETERIORATED CONCRETE, THE EXISTING PIPE SHALL BE REMOVED. ANY DETERIORATED CONCRETE SURROUNDING THE PIPE BEYOND THE 12" REMOVAL SHALL REMAIN IN PLACE.
3. EMBEDDED GALVANIC ANODES ARE NOT SHOWN FOR CLARITY. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET 84/89.

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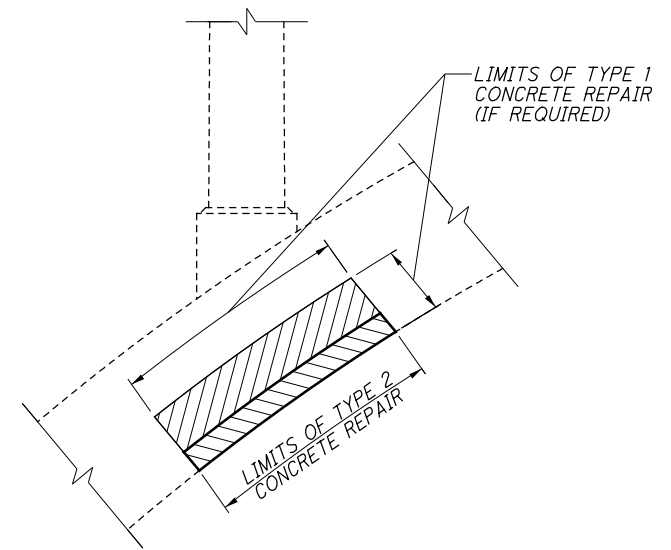


TYPE 1 CONCRETE REPAIR
(NOT TO SCALE)

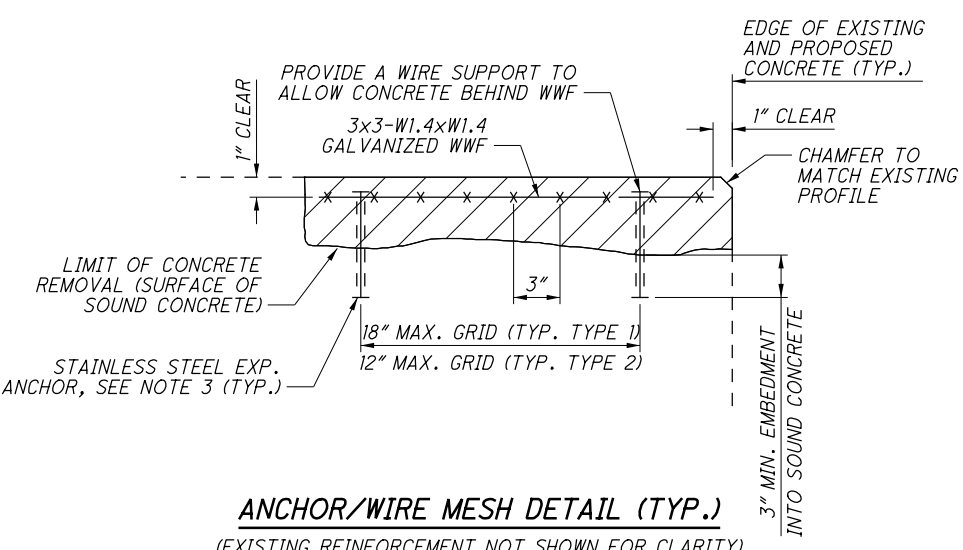


TYPE 2 CONCRETE REPAIR
(NOT TO SCALE)

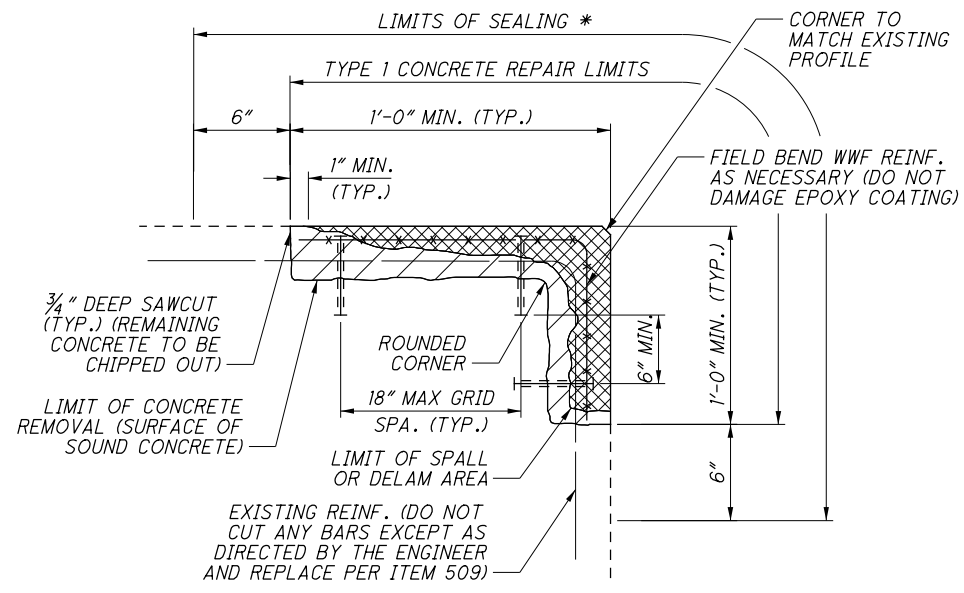
* EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO PATCHED OR REPLACED CONCRETE SURFACES IN THE FOLLOWING LOCATIONS: WEST STATION, EAST STATION, W. 25TH TUNNEL, DETROIT TUNNEL, AND SPANS 1A & 1B.



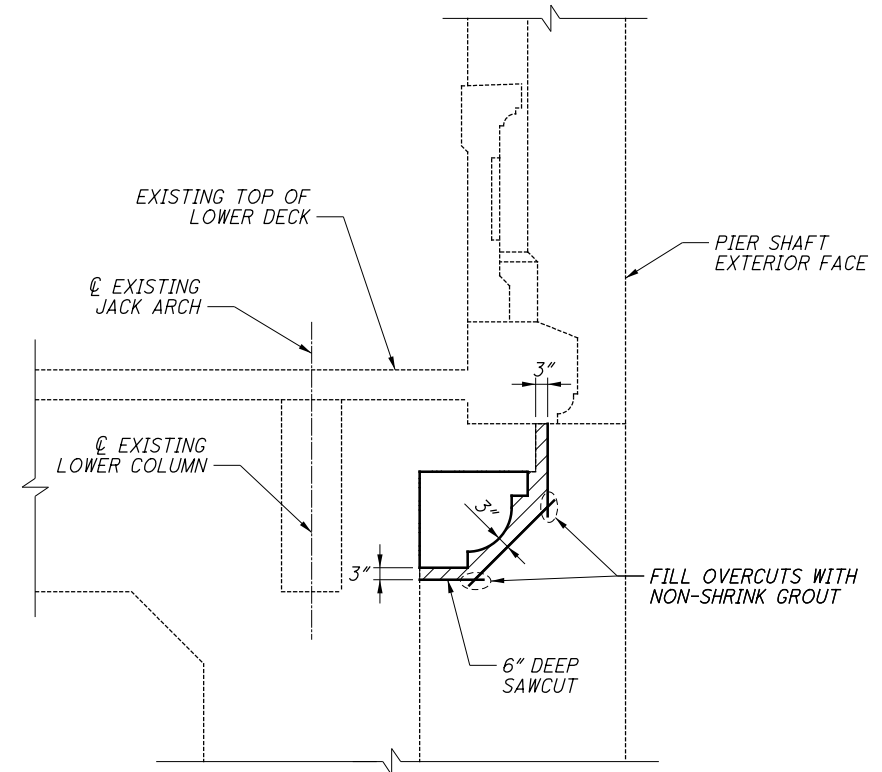
VIEW A-A
(ARCH RIB APPLICATION SHOWN, FLOORBEAM TYPE 2 CONCRETE REPAIR APPLICATIONS SIMILAR - NOT TO SCALE)



ANCHOR/WIRE MESH DETAIL (TYP.)
(EXISTING REINFORCEMENT NOT SHOWN FOR CLARITY) (NOT TO SCALE)



TYPE 1 REPAIR AT VERTICAL CORNER
(FOR INFORMATION NOT SHOWN SEE TYPE 1 CONCRETE REPAIR) (NOT TO SCALE)



LOWER DECK CORBEL RETROFIT DETAIL

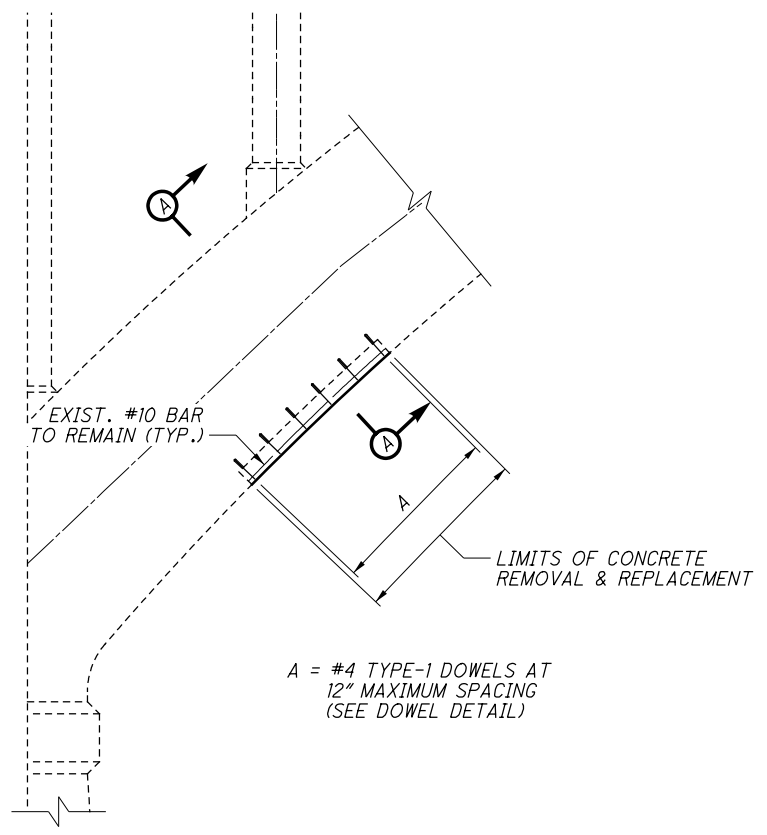
NOTES:

- ALTHOUGH EMBEDDED GALVANIC ANODES ARE REQUIRED AS NOTED THROUGHOUT THE PLANS, THEY ARE NOT SHOWN FOR CLARITY.
- FOR DETAILS ON REPAIRING THE UNREINFORCED VERTICAL SIDES OF THE ARCH RIBS, SEE CONCRETE REPAIR DETAILS ON SHEET 77/89.
- STAINLESS STEEL EXPANSION ANCHORS SHALL BE CONFAST DOMESTIC WEDGE ANCHOR, POWERS POWER-STUD ANCHOR, OR MARKSMEN THUNDERSTUD WEDGE ANCHOR AND IS SUBJECT TO THE APPROVAL OF THE ENGINEER. IF THE CONTRACTOR CANNOT SUPPLY AN APPROVED STAINLESS STEEL EXPANSION ANCHOR, INSTALL #4 DOWELS WITH A MINIMUM 6" EMBEDMENT DEPTH IN ACCORDANCE WITH CMS 519.05 AT NO ADDITIONAL COST TO THE STATE. STAINLESS STEEL EXPANSION ANCHORS AND/OR DOWELS SHALL BE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR TYPE 2 REPAIR.

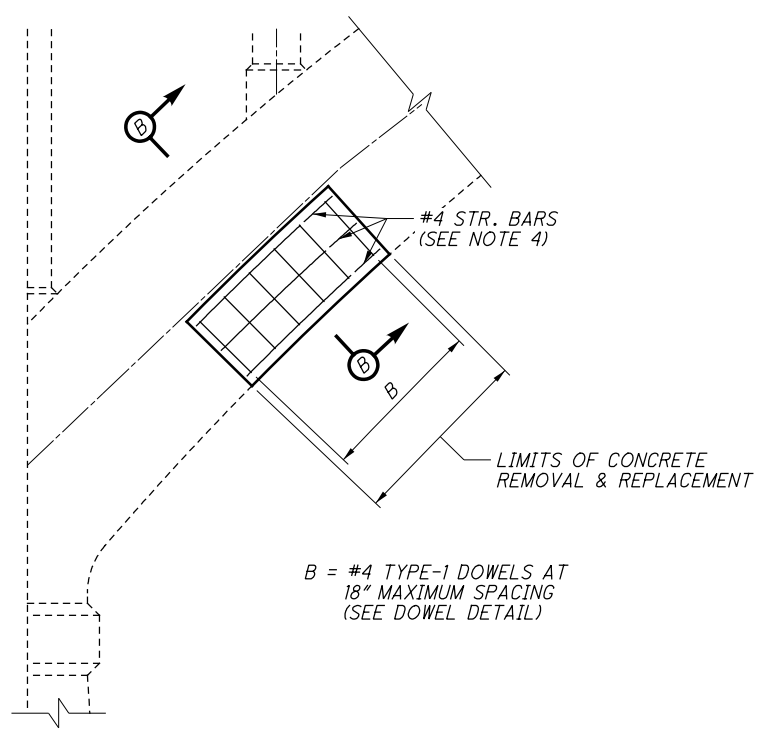
LEGEND:

- INDICATES EXISTING CONCRETE SPALL AND/OR DELAMINATION TO BE PATCHED AS PER ITEM SPECIAL - PATCHING CONCRETE STRUCTURES MISC.: TYPE 1 OR TYPE 2 REPAIR
- TYPE 1 LIMITS OF CONCRETE REMOVAL INTO SOUND CONCRETE FOR CONCRETE REPAIR
- TYPE 2 LIMITS OF CONCRETE REMOVAL INTO SOUND CONCRETE FOR CONCRETE REPAIR

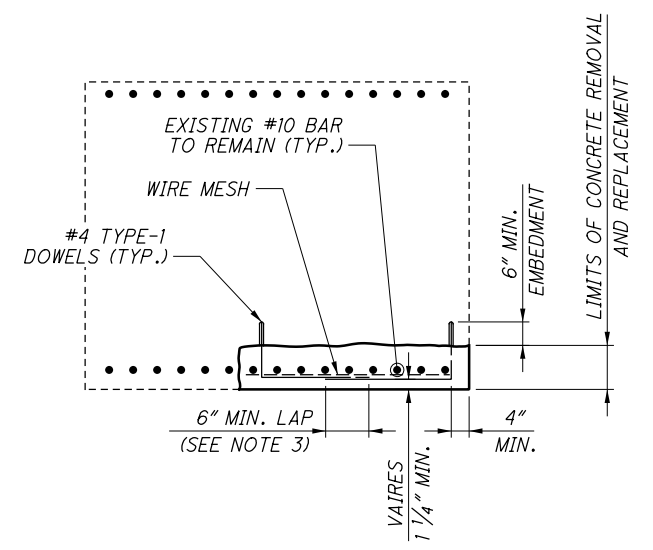
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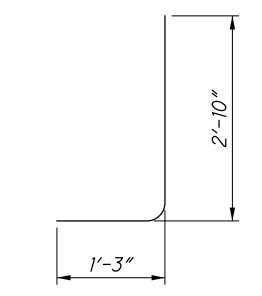
TYPICAL ARCH RIB ELEVATION
SHOWING HORIZONTAL BOTTOM SURFACE REPAIR
(NOT TO SCALE)



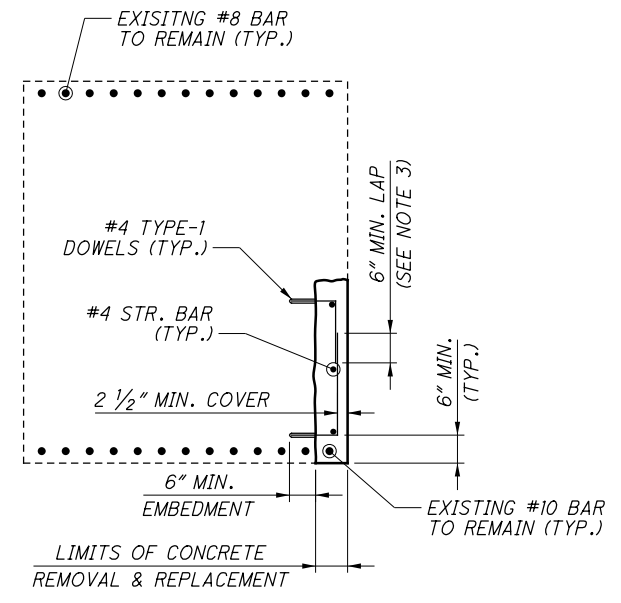
TYPICAL ARCH RIB ELEVATION
SHOWING VERTICAL SIDE FACE REPAIR
(NOT TO SCALE)



SECTION A-A
(NOT TO SCALE)



DOWEL DETAIL
(SEE NOTE 2)

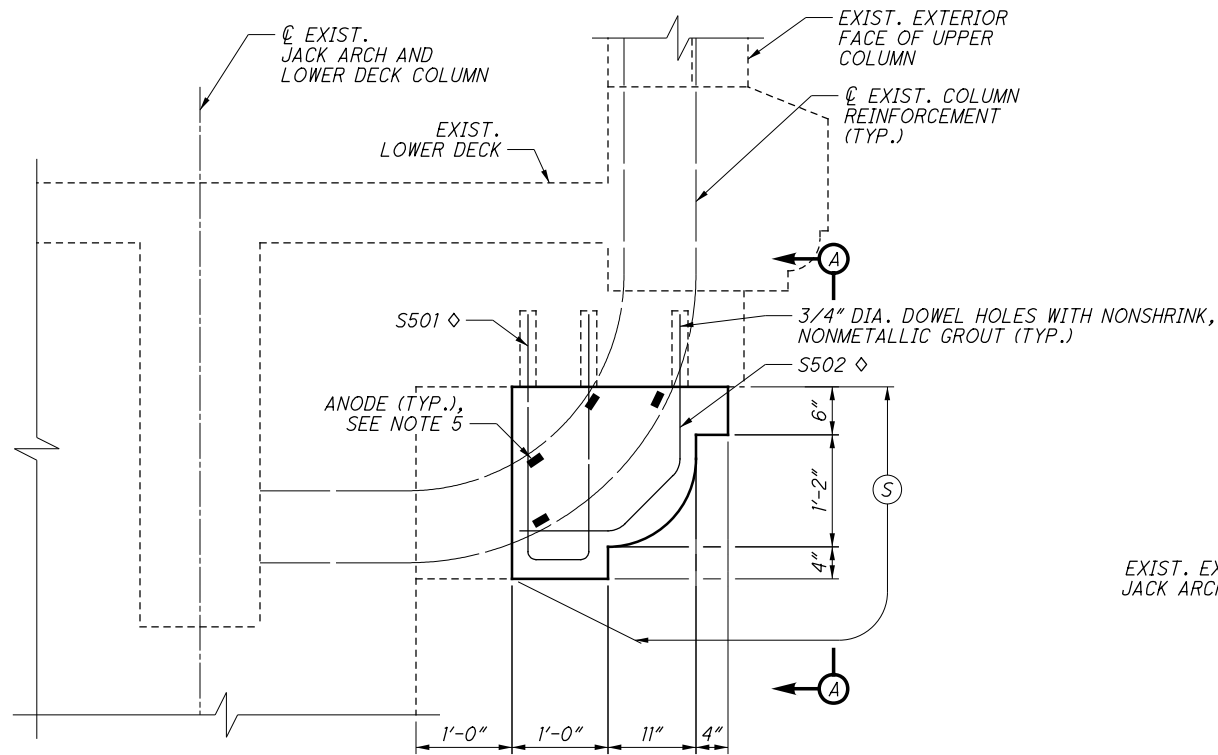


SECTION B-B
(NOT TO SCALE)

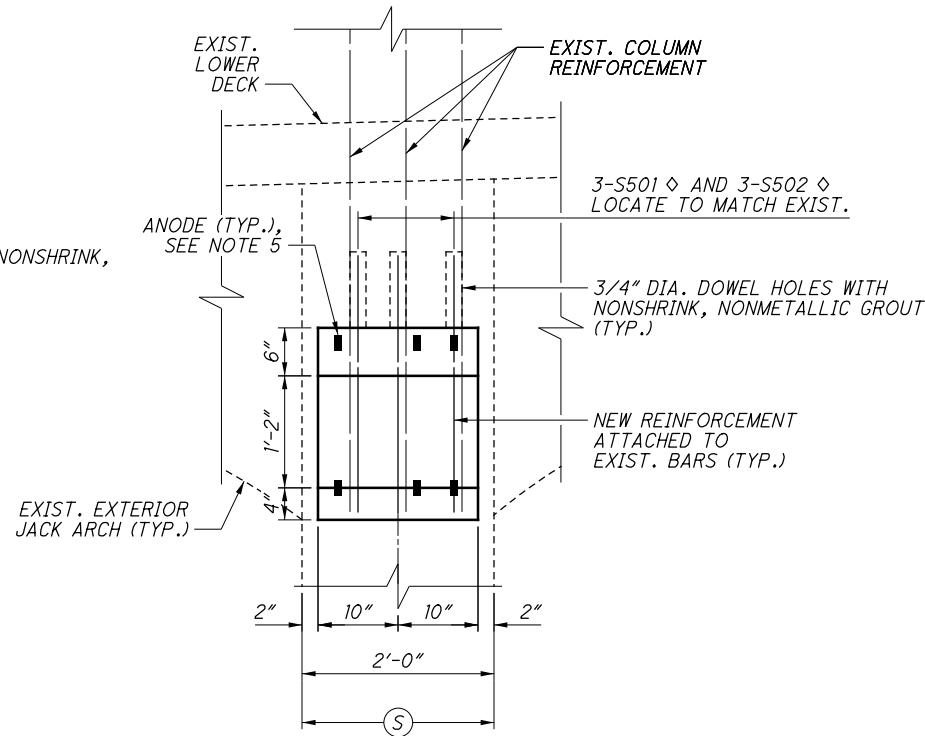
NOTES:

1. CLEAN AND RETAIN ALL EXISTING REINFORCEMENT EXTENDING FROM EXISTING STRUCTURE INTO PORTIONS OF REBUILT STRUCTURE. IF RETAINING EXISTING REINFORCEMENT IS NOT POSSIBLE, NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
2. DOWEL BARS SHALL BE TRIMMED AS NEEDED AND AS DIRECTED BY THE ENGINEER IN ORDER TO MAINTAIN REQUIRED MINIMUM CONCRETE COVER AND LAP LENGTHS.
3. EACH PAIR OF L-SHAPED DOWEL BARS MUST OVERLAP A MINIMUM OF 6".
4. STRAIGHT LONGITUDINAL REINFORCING BARS SHALL BE BENT AND PLACED IN THE FIELD TO MATCH THE CURVATURE OF THE EXISTING ARCH.
5. ALL NEW DOWELS SHALL BE INSTALLED WITH NONSHRINK, NONMETALLIC GROUT PER CMS 510.
6. ALL LIMITS OF CONCRETE REMOVAL SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO COMMENCING WORK AND ORDERING MATERIAL. IF ANY DISCREPANCIES ARE FOUND IN THE DIMENSIONS, THE ENGINEER SHALL DIRECT THE CONTRACTOR TO ADJUST THE LENGTH AND QUANTITY OF REINFORCING ACCORDINGLY.
7. IF POSITION OF EXISTING LONGITUDINAL REINFORCEMENT DOES NOT ALLOW FOR MINIMUM 1/4" COVER OF NEW L-SHAPED DOWELS, PLACE NEW L-SHAPED DOWELS ABOVE LONGITUDINAL REINFORCEMENT. WIRE MESH SHALL STILL BE PLACED BELOW EXISTING LONGITUDINAL REINFORCEMENT PRIOR TO POURING NEW CONCRETE.

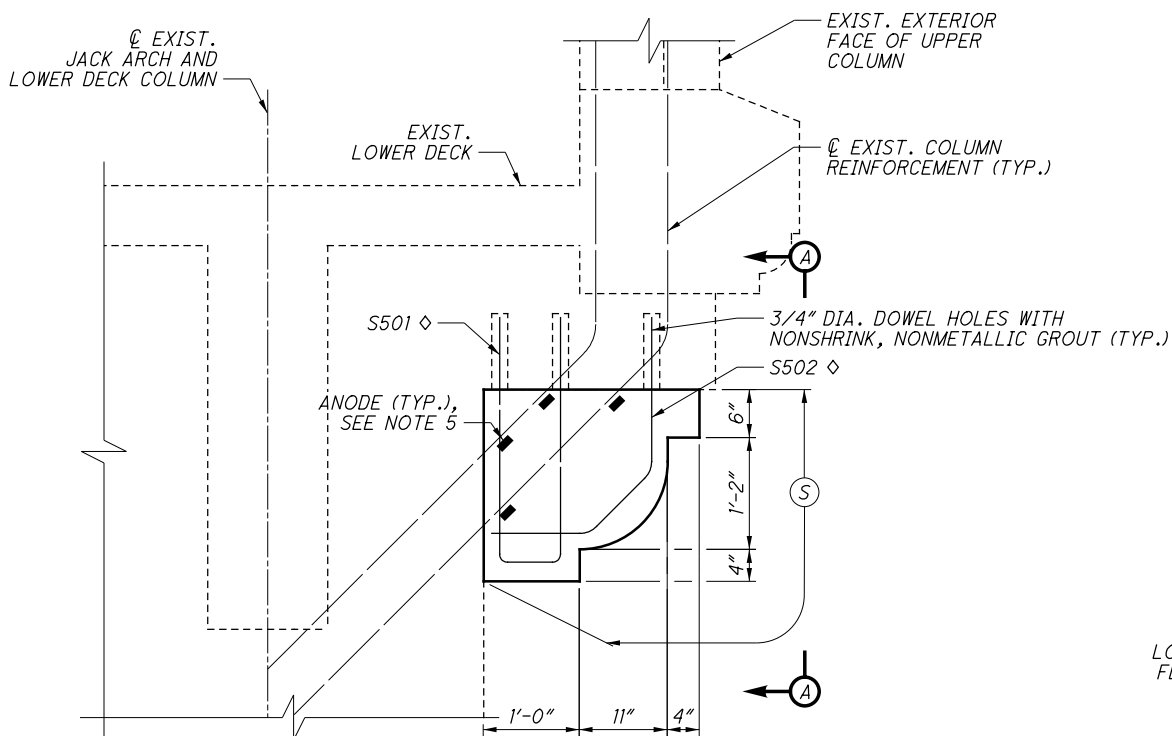
DESIGNED EAT	CHECKED BPS	DRAWN EAT	REVISED	REVIEWED DWJ	DATE 04/18/18	STRUCTURE FILE NUMBER 1800930	DESIGN AGENCY Pennoni
CONCRETE REPAIR DETAILS - 2							
BRIDGE NO. CUY-6-1456							
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER							
CUY-6-14.56							
PID No. 99972							
77/89							
116							
128							



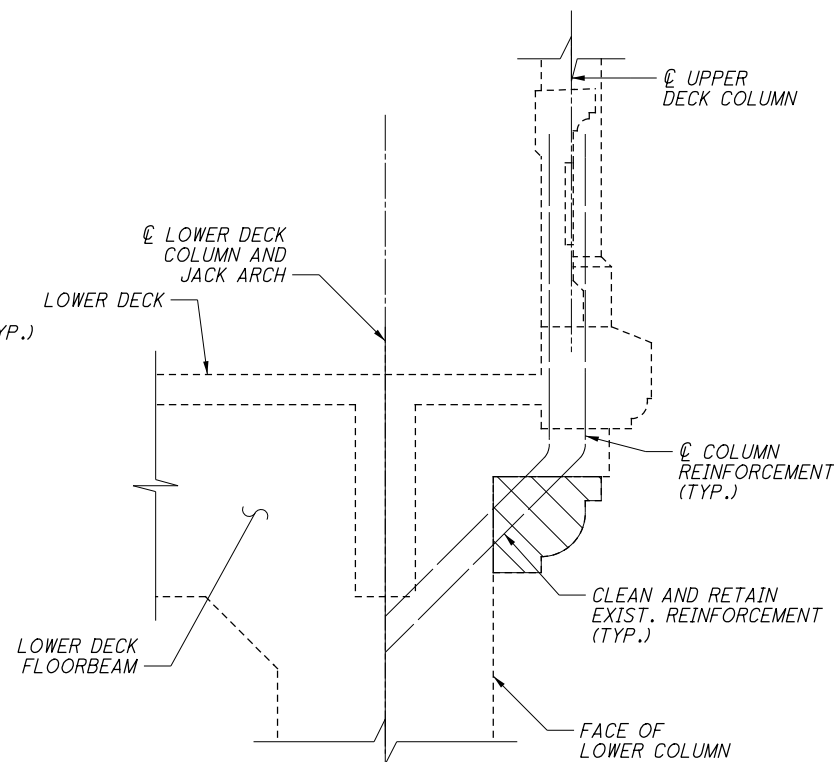
CORBEL ELEVATION - SPANS 3 AND 5



VIEW A-A



CORBEL ELEVATION - SPANS 2 AND 6-10






CORBEL REMOVAL DETAIL

CORBEL REPLACEMENTS				
REPAIR NO.	SPAN	FLOORBEAM	END	ANODE QUANTITY *
1	3	8	NORTH	12
2	3	9	NORTH	12
3	5	12	SOUTH	12
4	6	1	SOUTH	12
5	6	12	SOUTH	12
6	6	15	NORTH	12
7	7	1	SOUTH	12
8	7	2	SOUTH	12
9	7	10	NORTH	12
10	7	15	SOUTH	12
11	8	1	NORTH	12
12	8	12	NORTH	12
13	8	14	NORTH	12
14	8	15	SOUTH	12
15	9	1	SOUTH	12
16	10	1	SOUTH	12

* SEE NOTE 6

LEGEND:

-  PORTION OF CORBEL TO BE REMOVED
-  LIMITS OF SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
-  DOWEL BAR TO BE DRILLED AND GROUTED A MIN. 9" INTO EXISTING CONCRETE

NOTES:

1. SOME EXISTING REINFORCEMENT IS NOT SHOWN FOR CLARITY.
2. ALL NEW REINFORCEMENT TO MAINTAIN 2 INCHES MINIMUM CLEARANCE TO FACE. THE REINFORCEMENT SHALL BE SECURELY TIED TO THE EXISTING REINFORCEMENT WHERE POSSIBLE TO HOLD IN PLACE.
3. ALL NEW CONCRETE CORBELS SHALL BE SEALED WITH EPOXY URETHANE. THE SEALING SHALL COVER THE NEW CONCRETE AS WELL AS A STRIP SURROUNDING THE NEW CONCRETE WHERE FEASIBLE.
4. THE INTERFACE BETWEEN ALL NEW CORBELS AND EXISTING FLOORBEAMS SHALL BE SEALED BY EPOXY INJECTION.
5. ATTACH ANODES TO THE EXISTING REINFORCING STEEL NEAR THE INTERFACE BETWEEN THE EXISTING AND PROPOSED CONCRETE.
6. THE METAL CORBEL FORMWORK USED DURING THE 1995 - 1997 REHABILITATION WAS SALVAGED AND HAS BEEN IN STORAGE WITH THE GUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS. THIS FORMWORK IS AVAILABLE TO THE CONTRACTOR FOR USE ON THIS PROJECT.
7. ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR CORBEL REPLACEMENT INCLUDING ANODES SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 511 - CONCRETE, MISC.: LOWER DECK CORBEL REPLACEMENT. EPOXY INJECTION SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM.

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DESIGN AGENCY
Pennoni

REVIEWED DATE 04/18/18
DWJ STRUCTURE FILE NUMBER 1800930

DRAWN EAT
EAT REVISED

DESIGNED WJV
WJV CHECKED BPS

CONCRETE CORBEL REPLACEMENT DETAIL

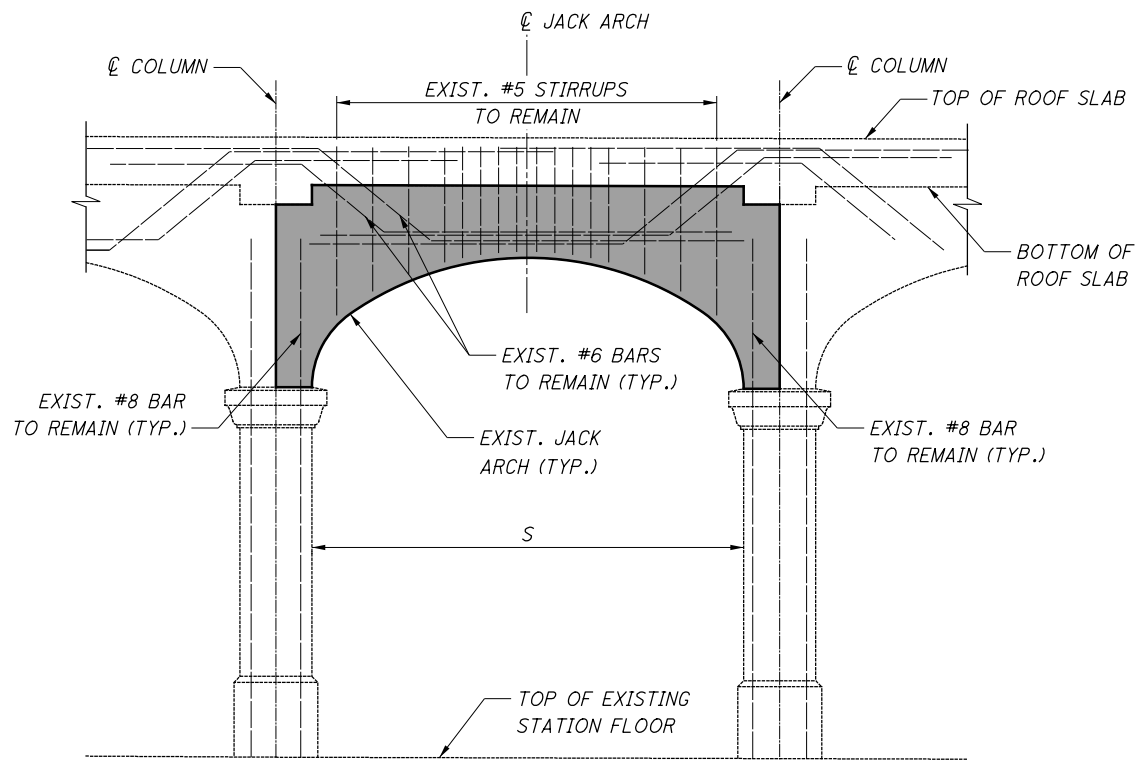
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

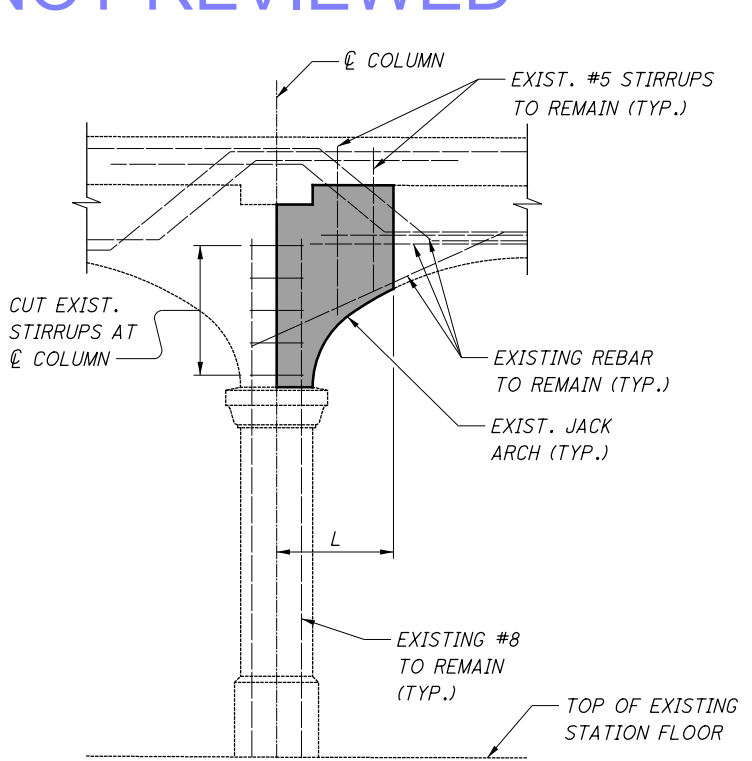
78/89

117
128

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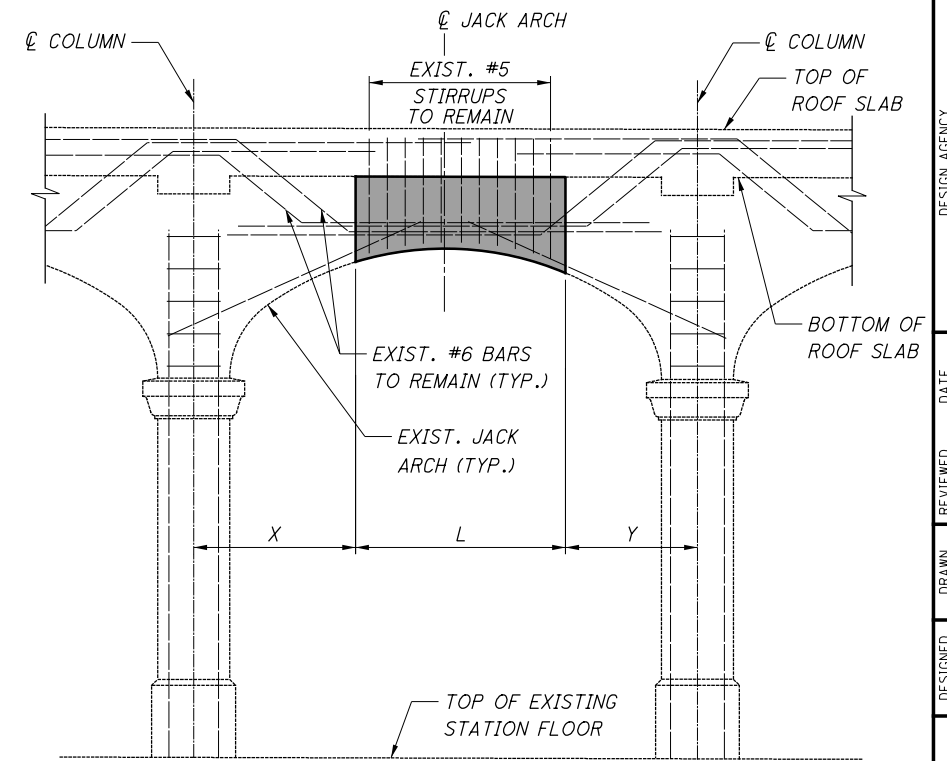


FULL JACK ARCH REMOVAL



TYPE 1 PARTIAL JACK ARCH REMOVAL

LOOKING NORTH



TYPE 2 PARTIAL JACK ARCH REMOVAL

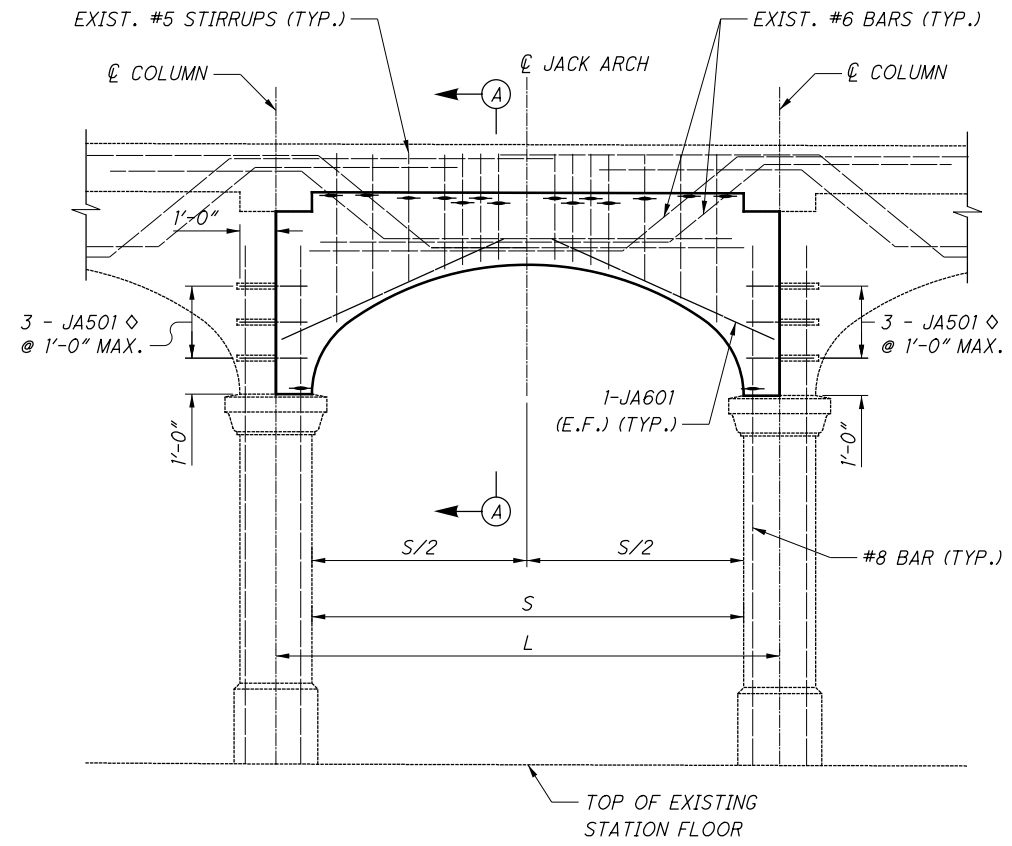
LOOKING NORTH

LEGEND:

- LIMITS OF JACK ARCH REMOVAL, SEE NOTE 4 ON SHEET 78/89
- EMBEDDED GALVANIC ANODE

NOTES:

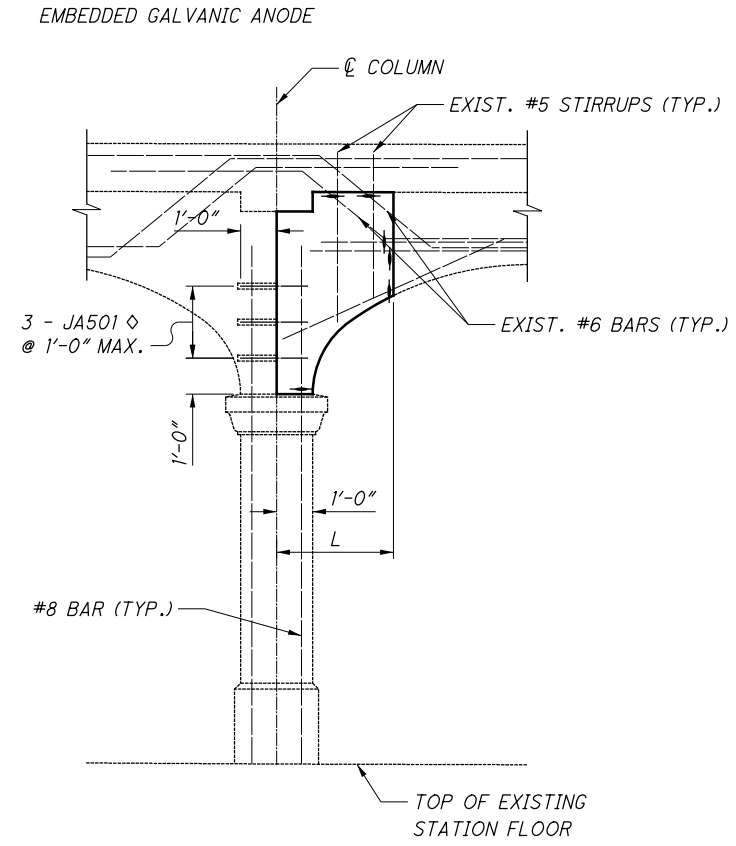
1. SEE SHEET 80/89 FOR SECTIONS & NOTES.
2. FOR DETAILS OF EMBEDDED GALVANIC ANODE CONNECTION IN JACK ARCH REPLACEMENT ARRANGEMENTS, SEE SHEET 84/89.



FULL JACK ARCH REPLACEMENT

SHOWN WITH EXISTING COLUMNS ROTATED
(JACK ARCH REPLACEMENT WITH COLUMN REPLACEMENT SIMILAR)

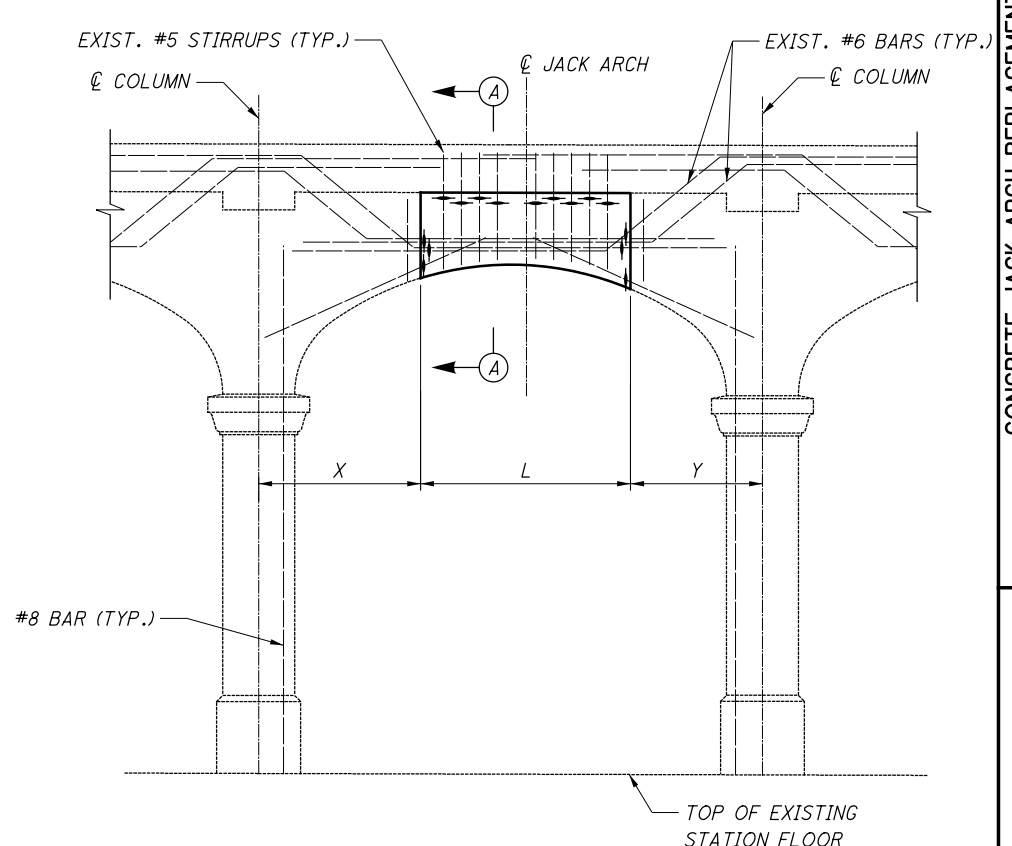
\diamond DOWEL BAR TO BE DRILLED AND GROUTED 1'-0" INTO CONCRETE



TYPE 1 PARTIAL JACK ARCH REPLACEMENT

LOOKING NORTH

\diamond DOWEL BAR TO BE DRILLED AND GROUTED 1'-0" INTO CONCRETE



TYPE 2 PARTIAL JACK ARCH REPLACEMENT

LOOKING NORTH

	DESIGN AGENCY Pennoni
REVIEWED DWJ	DATE 04/18/18
DRAWN CTL	STRUCTURE FILE NUMBER 1800930
DESIGNED CTL	CHECKED WJW
CONCRETE JACK ARCH REPLACEMENT DETAILS	
BRIDGE NO. CUY-6-1456 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER	
CUY-6-14.56	PID No. 99972
79/89	
118 128	

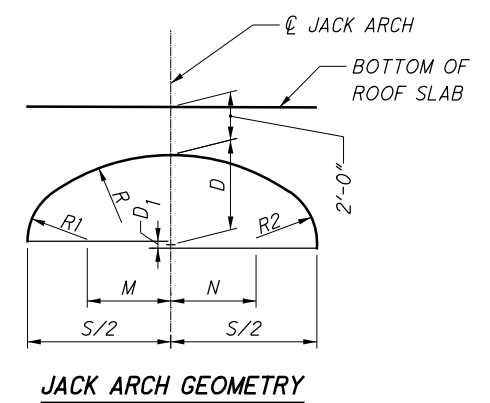
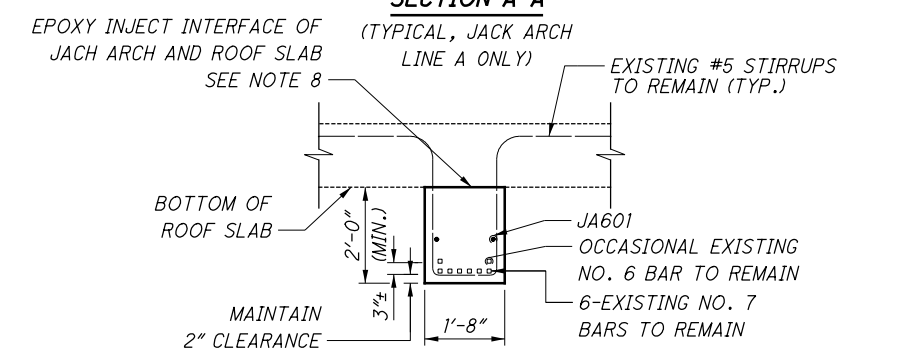
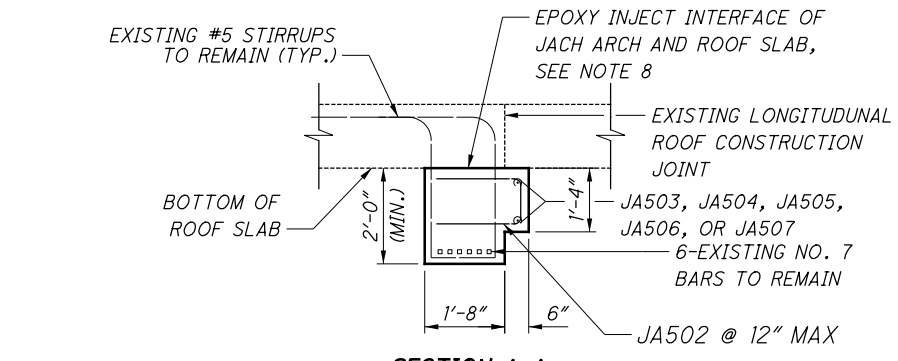
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JACK ARCH REPAIR SCHEDULE

JACK ARCH	REPAIR	L	EST. CONC. VOLUME (CU.FT.)	X	Y	S	D	D ₁	R	R1	R2	M	N	NO. OF GALVANIZED ANODES	BAR MARK	BAR #
A9-A10	FULL	--	83	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	16	JA503	2
A11-A12	FULL	--	83	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	16	JA503	2
A12-A13	TYPE 1	3'-3"	25	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	6	JA504	2
A14-A15	TYPE 1	2'-8"	27	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	6	JA505	2
A15-A16	FULL	--	83	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	16	JA503	2
A16-A17	FULL	--	83	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	16	JA503	2
A17-A18	TYPE 1	5'-2"	35	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	8	JA506	2
A19-A20	FULL	--	83	--	--	12'-0"	2'-0"	3/16"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	16	JA503	2
A20-A21	FULL	--	77	--	--	11'-1 5/8"	1'-11 1/4"	3/16"	8'-9 1/16"	3'-1 3/8"	3'-2 1/8"	4'-11"	4'-11"	16	JA507	2
A21-A22	FULL	--	76	--	--	10'-11"	2'-0"	1/2"	8'-7"	3'-0 5/8"	3'-1 3/8"	4'-9"	4'-9"	16	JA507	2
A22-A23	FULL	--	76	--	--	10'-11"	2'-0"	2 9/16"	8'-7"	3'-3"	2'-11"	4'-9"	4'-9"	16	JA507	2
A24-A25*	FULL	--	91	--	--	10'-11"	2'-0 1/4"	4 3/4"	8'-7"	3'-4 3/4"	2'-9 1/8"	4'-9"	4'-9"	16	JA507	2
B1-B2	TYPE 2	9'-9"	51	4'-0"	4'-0"	15'-9"	2'-11"	0"	16'-9 1/2"	2'-0 5/8"	2'-0 5/8"	6'-8"	6'-8"	14		
B4-B5	TYPE 2	8'-5"	36	2'-10"	2'-6"	11'-9"	2'-3 3/16"	2 1/2"	10'-6"	3'-0 1/4"	2'-7 1/2"	4'-11"	4'-11"	17		
B16-B17 I	TYPE 1	9'-6"	52	--	--	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	15		
B18-B19	TYPE 2	5'-10"	21	4'-6"	3'-8"	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	15		
B19-B20	TYPE 1	3'-0"	22	--	--	12'-0"	2'-0"	3/16"	8'-7"	2'-5 7/8"	2'-6 7/8"	4'-11"	4'-11"	6		
B20-B21	TYPE 1	4'-0"	25	--	--	11'-1 5/8"	1'-11 1/4"	3/16"	8'-9 1/16"	3'-1 3/8"	3'-2 1/8"	4'-11"	4'-11"	7		
B22-B23	TYPE 2	7'-1"	27	3'-6"	2'-4"	10'-11"	2'-0 1/4"	2 9/16"	8'-7"	3'-3"	2'-11"	4'-9"	4'-9"	17		
B23-B24	TYPE 1	2'-6"	19	--	--	10'-11"	2'-0"	4 3/4"	8'-7"	3'-4 3/4"	2'-9 1/8"	4'-9"	4'-9"	6		
B24-B25	FULL	--	68	--	--	10'-11"	2'-0"	4 3/4"	8'-7"	3'-4 3/4"	2'-9 1/8"	4'-9"	4'-9"	16		
B25-B26	TYPE 1	1'-0"	10	--	--	10'-11"	2'-0"	4 3/4"	8'-7"	3'-4 3/4"	2'-9 1/8"	4'-9"	4'-9"	3		
B28-B29	FULL	--	69	--	--	10'-11"	2'-0"	4 3/4"	8'-7"	3'-4 3/4"	2'-9 1/8"	4'-9"	4'-9"	16		
B31-EXP. JT. Δ	TYPE 1	5'-6"	32	--	--	5'-1 5/8"	2'-0 5/16"	--	3'-9 3/8"	3'-9 3/8"	--	4'-9"	--	9		
C11-C12	TYPE 2	7'-4"	28	2'-10"	3'-10"	12'-0"	1'-11 1/16"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	15		
C12-C13	TYPE 1	4'-3"	27	--	--	12'-0"	1'-11 1/16"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	7		
C13-C14	FULL	--	74	--	--	12'-0"	1'-11 1/16"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	16		
C14-C15	TYPE 1	5'-1"	30	--	--	12'-0"	1'-11 1/16"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	8		
C18-C19	TYPE 2	9'-5"	38	2'-2"	2'-5"	12'-0"	1'-11 1/16"	1/2"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	18		
C19-C20	TYPE 1	2'-0"	12	--	--	12'-0"	1'-11 1/2"	3/8"	8'-7"	2'-5 7/8"	2'-7"	4'-11"	4'-11"	5		
C20-C21	TYPE 1	3'-10"	16	--	--	11'-1 5/8"	1'-10 1/16"	1/8"	8'-9 1/16"	3'-1 3/8"	3'-2"	4'-11"	4'-11"	7		
C22-C23	FULL	--	73	--	--	11'-7 1/2"	2'-0 1/4"	3 3/8"	8'-7"	3'-0 1/4"	2'-6"	4'-11"	4'-11"	16		
C23-C24	TYPE 1	2'-6"	19	--	--	11'-7 1/2"	2'-0 1/4"	5 1/16"	8'-7"	3'-0 5/8"	2'-4 1/2"	4'-11"	4'-11"	6		
C24-C25	FULL	--	73	--	--	11'-7 1/2"	2'-0 1/4"	4 13/16"	8'-7"	3'-0 5/8"	2'-4 1/2"	4'-11"	4'-11"	16		
D28-D29	TYPE 1	10'-7"	52	--	--	11'-11 1/2"	2'-0 3/4"	4 13/16"	8'-7"	2'-10"	2'-2 1/4"	4'-11"	4'-11"	16		
D29-D30	FULL	--	76	--	--	11'-11 1/2"	2'-0 1/2"	4 5/16"	8'-7"	2'-10"	2'-2 1/4"	4'-11"	4'-11"	16		
JA7-8	TYPE 2	5'-10"	21	5'-0"	3'-8"	12'-0"	2'-0"	1/2"	8'-7"	2'-5 7/8"	2'-7 1/16"	4'-11"	4'-11"	14		

TOTAL ESTIMATED CONCRETE VOLUME 1793 CU. FT. = 66.4 CY

- * - INCLUDES ESTIMATED 1'-8" LENGTH OF JACK ARCH A25-A26
- I - INCLUDES ESTIMATED 0'-8" LENGTH OF JACK ARCH B15-B16
- Δ - INCLUDES ESTIMATED 0'-4" LENGTH OF JACK ARCH B30-B31

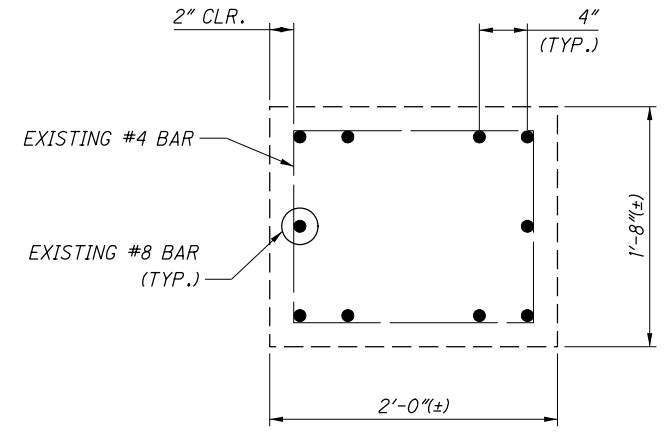
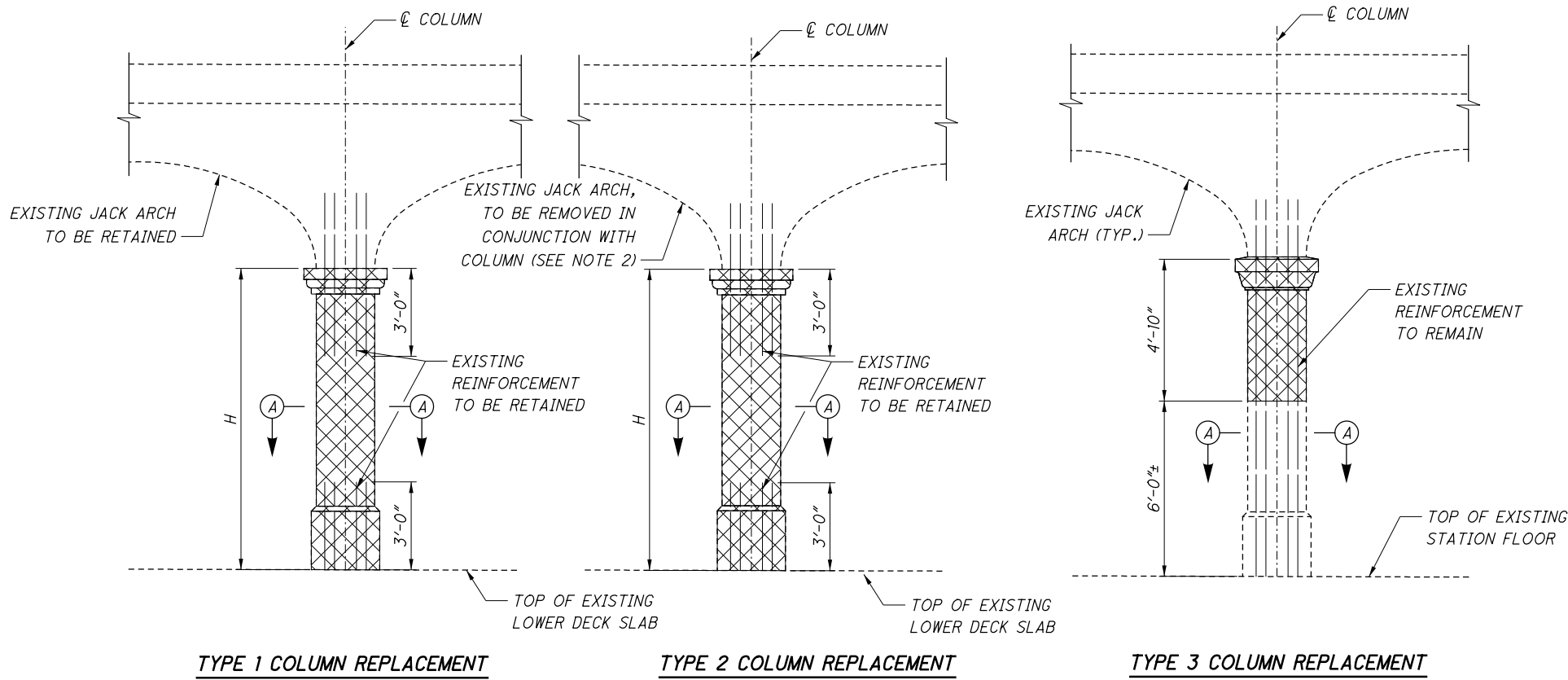


NOTES:

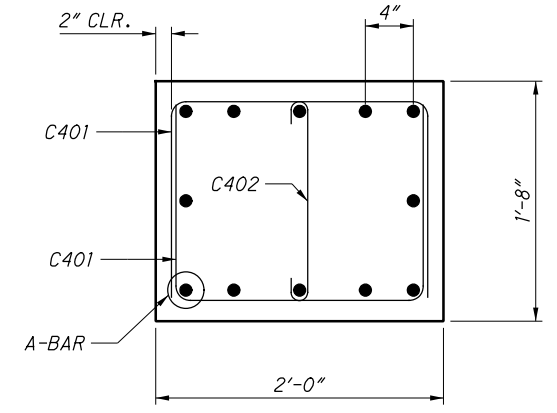
1. FOR LOCATIONS OF FULL AND PARTIAL JACK ARCH REPLACEMENTS, SEE SHEETS 15/89 TO 24/89.
2. CARE SHALL BE TAKEN IN REMOVING THE EXISTING CONCRETE TO PRESERVE REINFORCING STEEL THAT IS TO BE INCORPORATED IN THE FINAL DESIGN.
3. EXISTING REINFORCING BEING REUSED SHALL BE CLEANED PRIOR TO PLACEMENT OF NEW CONCRETE.
4. ALL EXISTING REINFORCEMENT NOT SHOWN WITHIN THE LIMITS OF JACK ARCH REMOVAL, SHALL BE CUT AND REMOVED.
5. GALVANIC ANODES SHALL BE ATTACHED TO ALL EXISTING REINFORCEMENT RETAINED AND ALONG THE PERIPHERY OF THE JACK ARCH REPLACEMENT. SEE SHEET 84/89 FOR DETAILS OF EMBEDDED GALVANIC ANODE CONNECTIONS.
6. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO NEW CONCRETE SURFACES.
7. THE CONTRACTOR SHALL DESIGN AND FURNISH TEMPORARY SHORING TO SUPPORT DECK SLAB DURING JACK ARCH REMOVAL AND REPLACEMENT. TEMPORARY SHORING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - STRUCTURE, MISC.: TEMPORARY SHORING, BRACING AND PROTECTIVE STRUCTURES.
8. THE INTERFACE BETWEEN NEW JACK ARCHES AND EXISTING DECK SLAB SHALL BE SEALED BY EPOXY INJECTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 511 - CONCRETE, MISC.: JACK ARCH REPLACEMENT.
9. ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS ASSOCIATED WITH JACK ARCH REPLACEMENTS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 511 - CONCRETE, MISC.: JACK ARCH REPLACEMENT.
10. FOR LOCATION OF SECTION A-A AND B-B, SEE SHEET 79/89.

	DESIGN AGENCY DATE 04/18/18 REVIEWED DWJ STRUCTURE FILE NUMBER 1800930 DRAWN CTL REVISIONS DESIGNED CTL CHECKED WJW
CONCRETE JACK ARCH REPLACEMENT DETAILS BRIDGE NO. CUY-6-1456 U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER	CUY-6-14-56 PID No. 99972
80 / 89	119 128

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SECTION A-A



SECTION B-B

COLUMN REPLACEMENT SCHEDULE							
	COLUMN	REPLACEMENT TYPE	H	EST. CONC. VOLUME (CU.FT.)	A-BARS	X-SETS	CAPITAL
DETROIT TUNNEL	38	1	10'-8"	23	C801	12	YES
	39	1	10'-8"	23	C801	12	YES
WEST STATION	A14	1	10'-3 ³ / ₈ "	35	C802	11	YES
	A15	2	10'-3 ³ / ₈ "	35	C803	14	YES
	A21	2	10'-3 ⁵ / ₈ "	35	C803	14	YES
	C20	3	4'-11"	17	-	6	YES
	D21	1	12'-5 ³ / ₄ "	42	C804	14	YES
EAST STATION	D22	1	12'-7 ¹ / ₂ "	43	C804	14	YES
	M22	2	13'-5 ⁵ / ₈ "	45	C805	*	NO
	M27	2	12'-9 ¹ / ₄ "	43	C806	*	NO
	X18	1	12'-0"	40	C807	*	YES

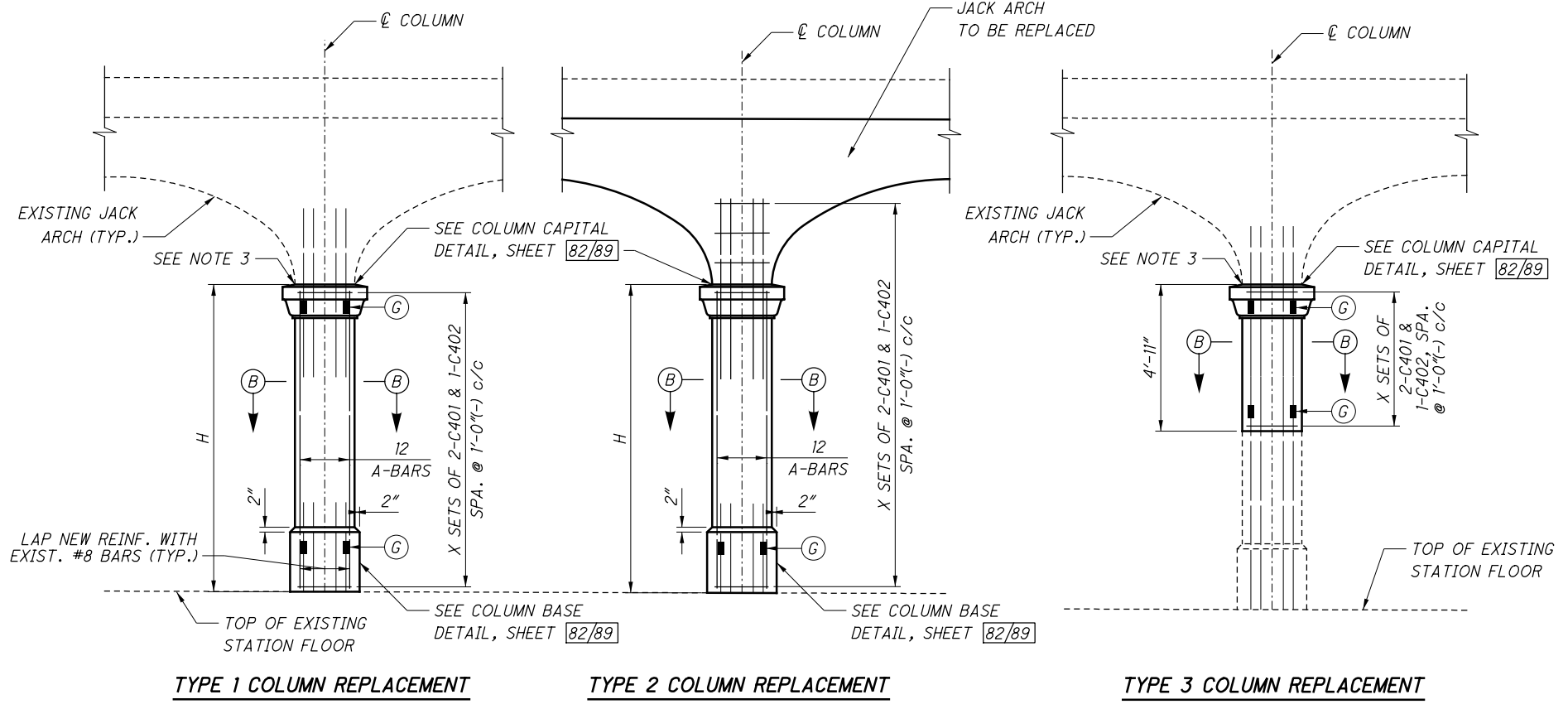
* FOR DETAILS OF EAST STATION REINFORCING STEEL, SEE SHEET 83/89

LEGEND:

- XXXX PORTIONS OF EXISTING COLUMN TO BE REMOVED
- G ATTACH ANODES TO THE EXISTING REINFORCING STEEL NEAR THE INTERFACE BETWEEN THE EXISTING AND PROPOSED CONCRETE

NOTES:

1. SEE SHEET 82/89 FOR ADDITIONAL NOTES AND DETAILS.
2. THE CONTRACTOR IS PROHIBITED FROM REMOVING OR PERFORMING ANY WORK ON ADJACENT EXISTING JACK ARCHES WHILE COMPLETING WORK FOR TYPE 2 COLUMN REPLACEMENTS. CONTRACTOR IS ONLY PERMITTED TO REMOVE WHAT IS NECESSARY ABOVE THE COLUMNS TO INSTALL THE PROPOSED COLUMN REINFORCEMENT.
3. THE INTERFACE BETWEEN NEW COLUMNS AND EXISTING JACK ARCHES SHALL BE SEALED BY EPOXY INJECTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 511 - CONCRETE, MISC.: COLUMN REPLACEMENT.

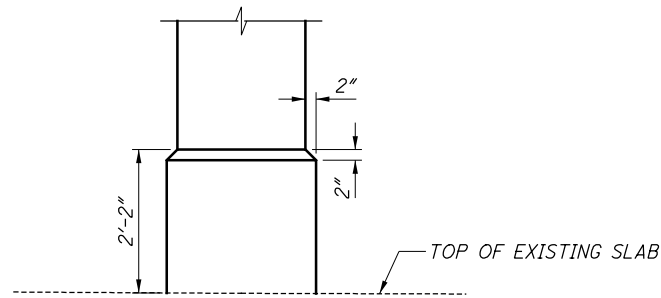


TYPE 1 COLUMN REPLACEMENT

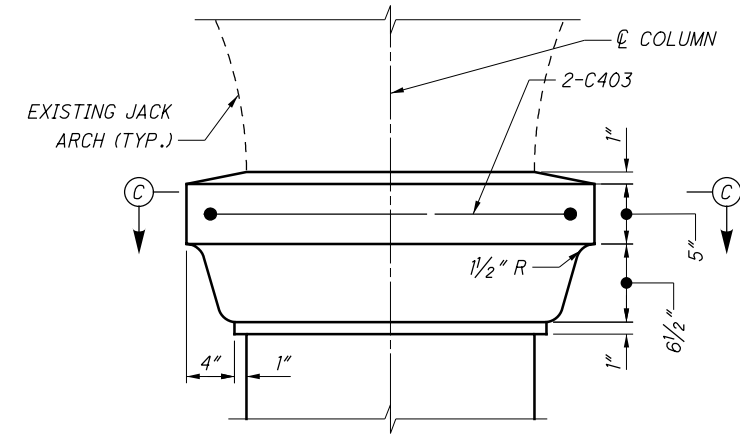
TYPE 2 COLUMN REPLACEMENT

TYPE 3 COLUMN REPLACEMENT

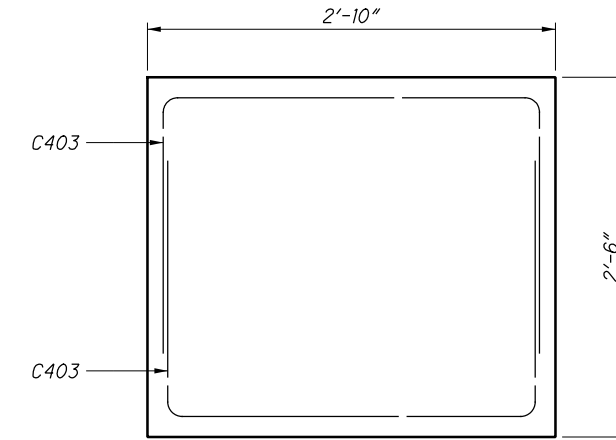
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COLUMN BASE DETAIL
(DIMENSIONS ARE TYPICAL
ON FOUR FACES OF COLUMN)



COLUMN CAPITAL DETAIL
SHOWING CAPITAL DETAILS FOR
DETROIT TUNNEL, WEST STATION, AND EAST STATION



SECTION C-C

NOTES:

1. FOR LOCATIONS OF COLUMN REPLACEMENTS, SEE SHEETS [16/89] TO [25/89].
2. CLEAN AND RETAIN ALL EXISTING REINFORCING EXTENDING FROM EXISTING STRUCTURE INTO PORTIONS OF REBUILT STRUCTURE AS SHOWN.
3. SOME EXISTING REINFORCEMENT IS NOT SHOWN FOR CLARITY.
4. FOR DETAILS AND MAXIMUM GRID SPACING FOR EMBEDDED GALVANIC ANODES, SEE SHEET [84/89].
5. EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO REPLACED CONCRETE SURFACES LOCATED IN THE TUNNELS OR STATIONS.
6. FOR TEMPORARY SUPPORT DETAILS FOR COLUMN REPLACEMENTS, SEE SHEET [83/89].
7. THE INTERFACE BETWEEN NEW COLUMNS AND EXISTING JACK ARCHES SHALL BE SEALED BY EPOXY INJECTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 511 - CONCRETE, MISC.: COLUMN REPLACEMENT.
8. ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS ASSOCIATED WITH COLUMN REPLACEMENTS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 511 - CONCRETE, MISC.: COLUMN REPLACEMENT.

DESIGN AGENCY
Pennoni

REVIEWED DATE
DWJ 04/18/18
STRUCTURE FILE NUMBER
1800930

DRAWN CTL
CTL REVISED

DESIGNED CTL
CHECKED WJW

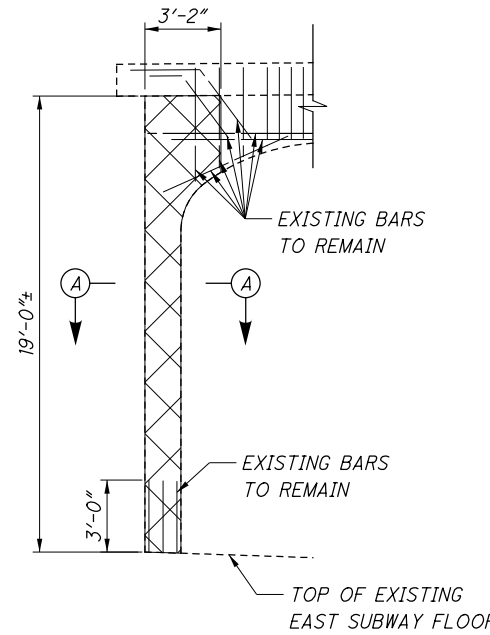
CONCRETE COLUMN REPLACEMENT DETAILS
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972

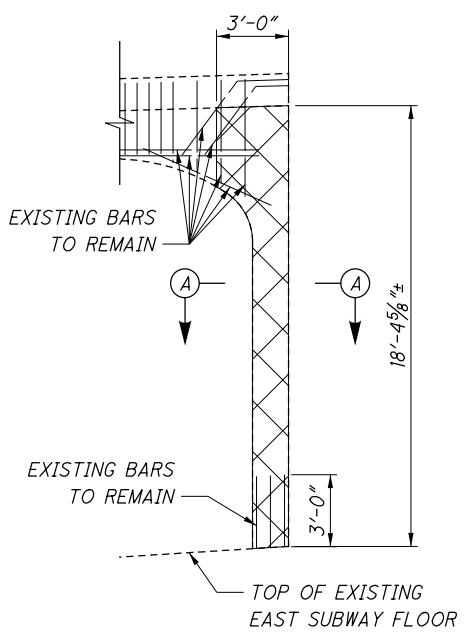
82 / 89

121
128

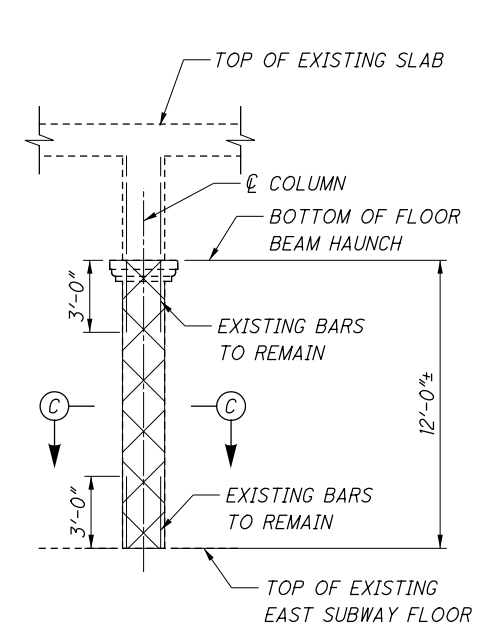
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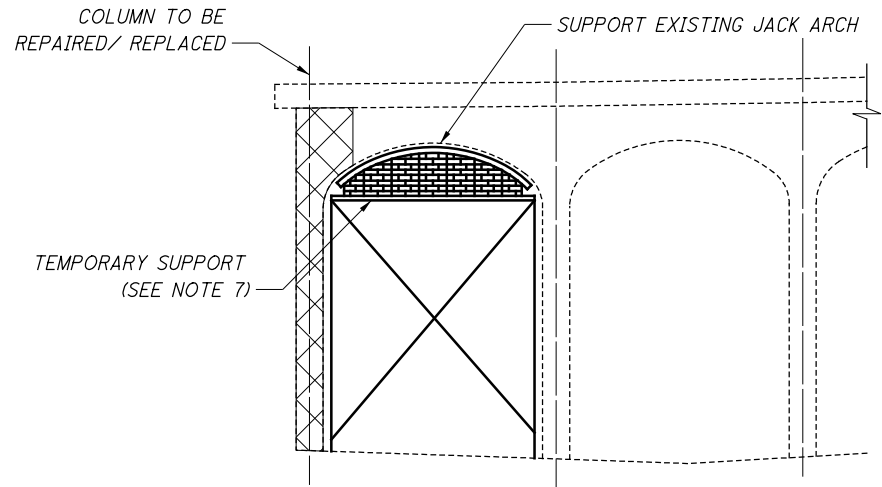
COLUMN M22



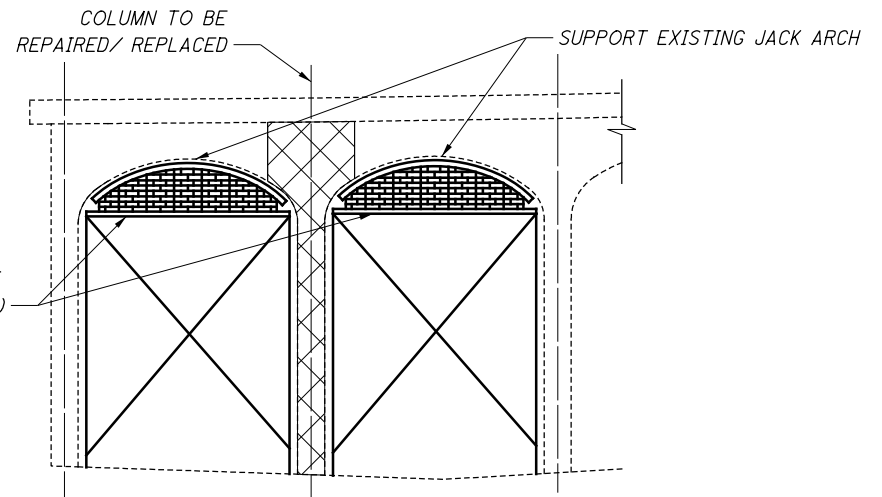
COLUMN M27



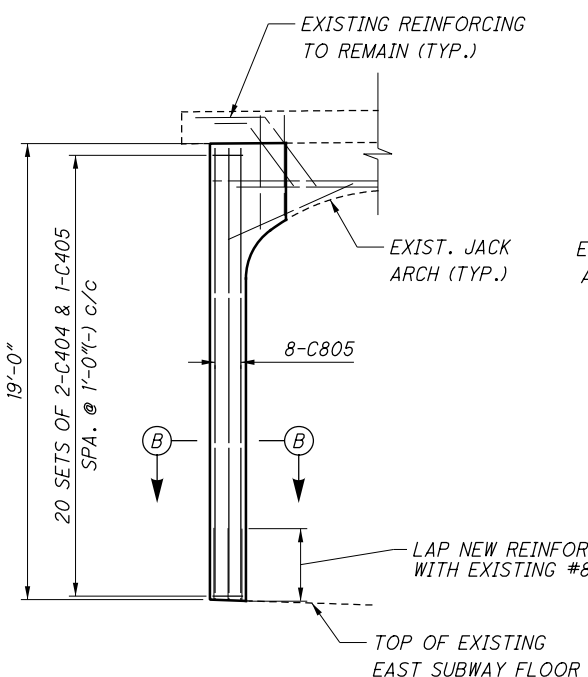
COLUMN L18



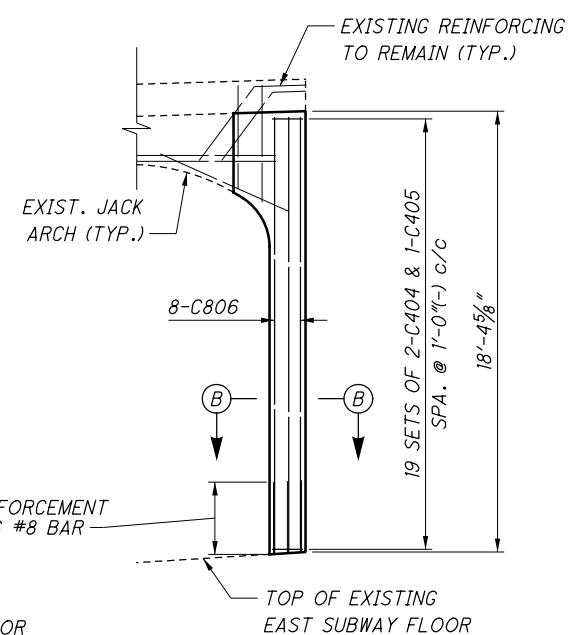
TYPICAL TEMPORARY SUPPORT ELEVATION



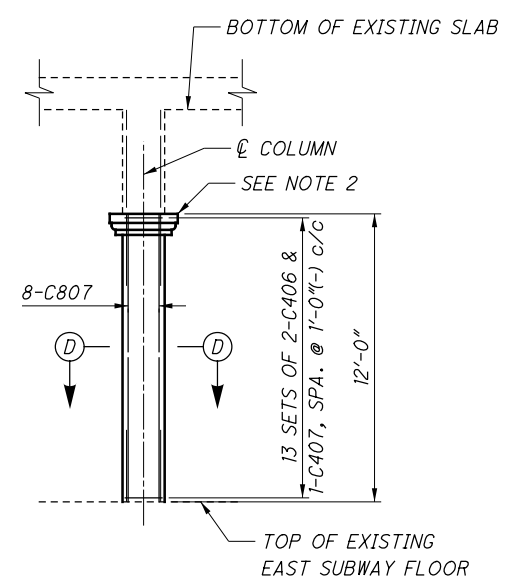
TYPICAL TEMPORARY SUPPORT ELEVATION



**COLUMN M22
LOOKING NORTH**

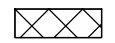


**COLUMN M27
LOOKING NORTH**



**COLUMN L18
LOOKING EAST**

LEGEND:



PORTIONS OF EXISTING COLUMN TO BE REMOVED



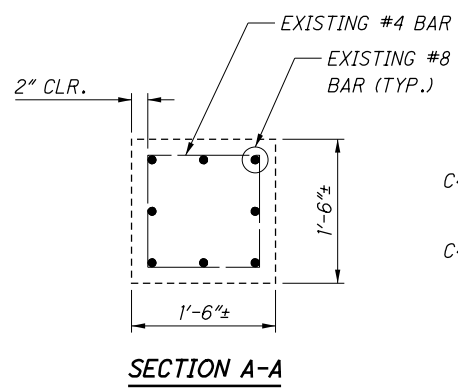
REMOVE 6' WIDE X 12' HIGH PORTION OF EXISTING MASONRY BLOCK WALL IN ACCORDANCE WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN



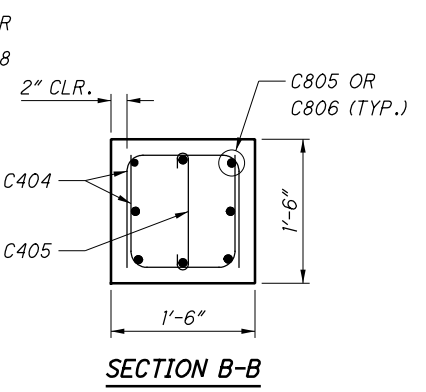
CONSTRUCT 6' WIDE X 12' HIGH PORTION OF MASONRY BLOCK WALL IN ACCORDANCE WITH ITEM 602 - BLOCK MASONRY

NOTES:

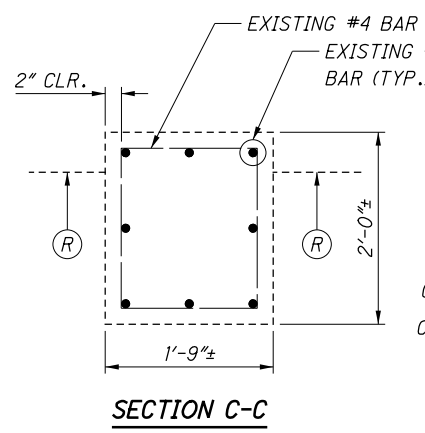
- FOR LOCATIONS OF COLUMN REPLACEMENTS, SEE SHEET [25/89].
- FOR COLUMN CAPITAL DIMENSIONS, SEE SHEET [82/89].
- EXISTING REINFORCING BEING REUSED SHALL BE CLEANED PRIOR TO POURING NEW CONCRETE.
- EXISTING REINFORCEMENT NOT TO BE RETAINED IS NOT SHOWN FOR CLARITY.
- GALVANIC ANODES SHALL BE ATTACHED TO ALL EXISTING REINFORCEMENT RETAINED AND ALONG THE PERIPHERY OF THE JACK ARCH REPLACEMENT. FOR DETAILS OF EMBEDDED GALVANIC ANODE CONNECTIONS, SEE SHEET [84/89].
- EPOXY-URETHANE SEALER SHALL NOT BE APPLIED TO REPLACED CONCRETE SURFACES.
- THE CONTRACTOR SHALL DESIGN AND FURNISH TEMPORARY SHORING TO SUPPORT ADJACENT JACK ARCHES DURING COLUMN REMOVAL AND REPLACEMENT AND TO SUPPORT JACK ARCHES BEING REPAIRED/REPLACED. JACK ARCHES SHALL BE FULLY SUPPORTED ALONG THEIR ENTIRE UNDERSIDE. THE CALCULATED UNFACTORED LOADS TO BE SUPPORTED AT EACH COLUMN ARE 168 KIPS DEAD LOAD AND 72 KIPS LIVE LOAD. TEMPORARY SHORING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - STRUCTURES, TEMPORARY SHORING, BRACING AND PROTECTIVE STRUCTURES.
- ALL MATERIALS AND LABOR ASSOCIATED WITH COLUMN REPLACEMENTS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 511 - CONCRETE, MISC.: COLUMN REPLACEMENT.
- THE INTERFACE BETWEEN NEW COLUMNS AND EXISTING JACK ARCHES SHALL BE SEALED BY EPOXY INJECTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 511 - CONCRETE, MISC.: COLUMN REPLACEMENT.



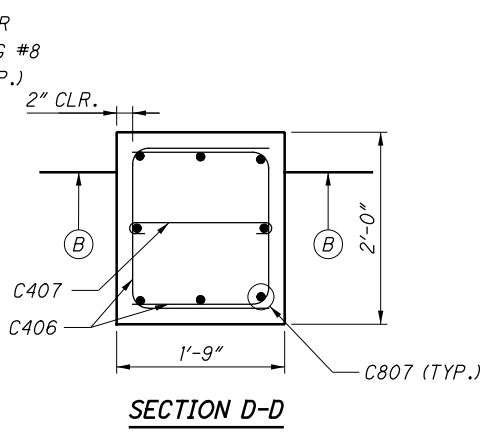
SECTION A-A



SECTION B-B

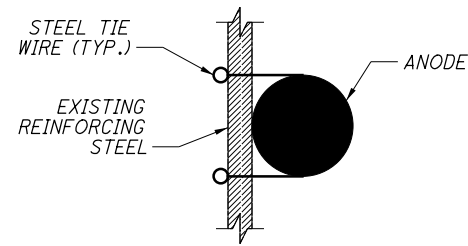


SECTION C-C



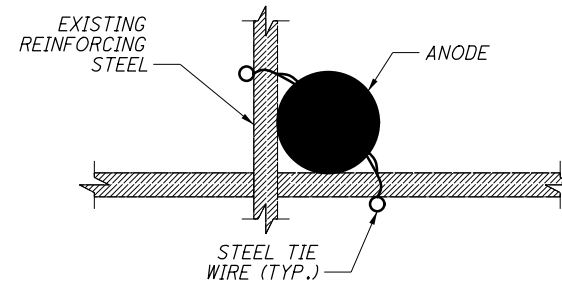
SECTION D-D

DESIGN AGENCY Pennoni	REVIEWED	DATE
	DWJ	04/18/18
DRAWN	CTL	STRUCTURE FILE NUMBER
CTJ	WJ	1800930
DESIGNED	CTL	
CHEKED	WJ	
CONCRETE COLUMN REPLACEMENT DETAILS - EAST STATION		
BRIDGE NO. CUY-6-1456		
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER		
CUY-6-14.56		
PID No. 99972		
83/89		
122		
128		



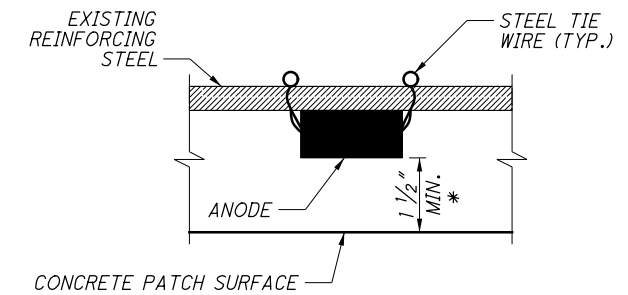
DETAIL 1 - ANODE BESIDE EXISTING REINFORCING

NOT TO SCALE



DETAIL 2 - ANODE AT REINFORCING BAR INTERSECTION

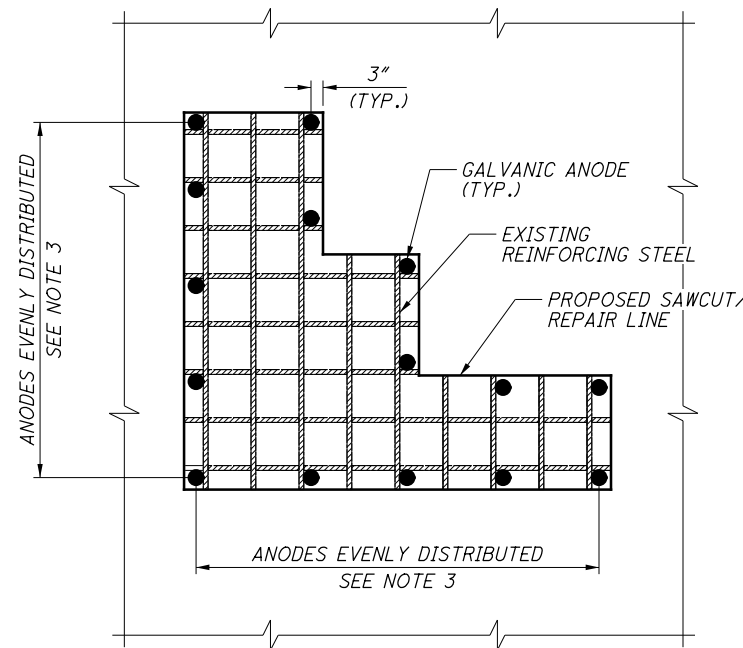
NOT TO SCALE



DETAIL 3 - ANODE PLACED BELOW/ABOVE REINFORCING BAR

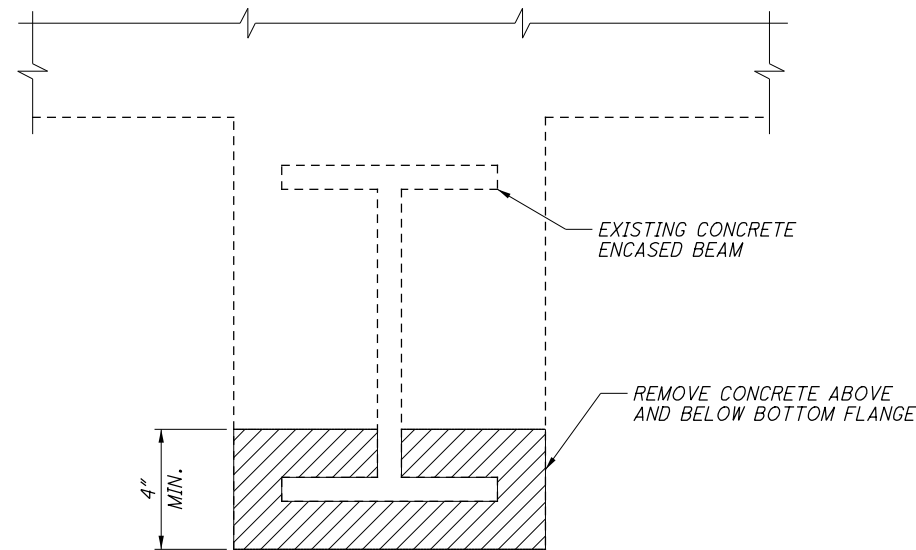
NOT TO SCALE

* IF COVER IS INSUFFICIENT TO PROVIDE 1 1/2" MINIMUM CLEAR COVER, LOCATE ANODE ABOVE REINFORCING BAR



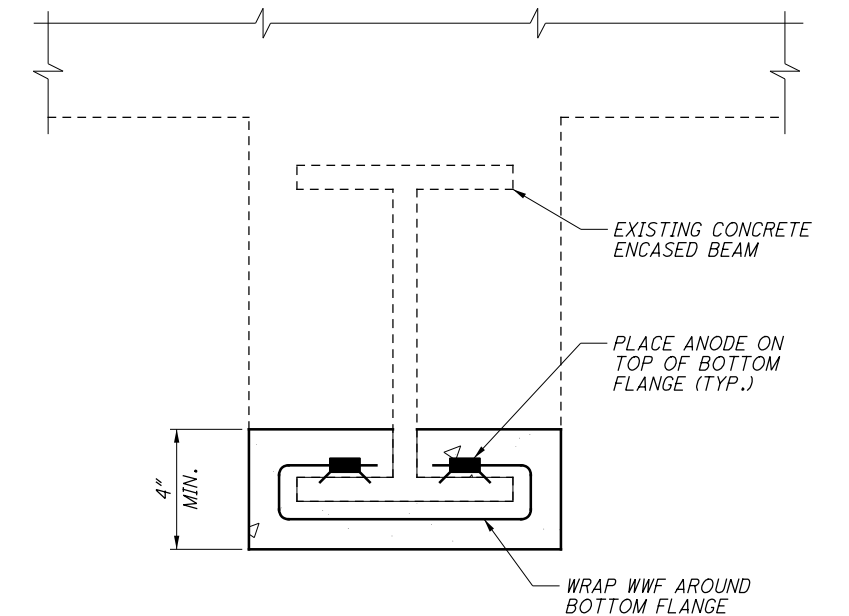
TYPICAL SURFACE REPAIR

(WWF NOT SHOWN)



SPAN 12 LOWER DECK FLOORBEAM CONCRETE REMOVAL

NOT TO SCALE



SPAN 12 LOWER DECK FLOORBEAM ANODE PLACEMENT

NOT TO SCALE

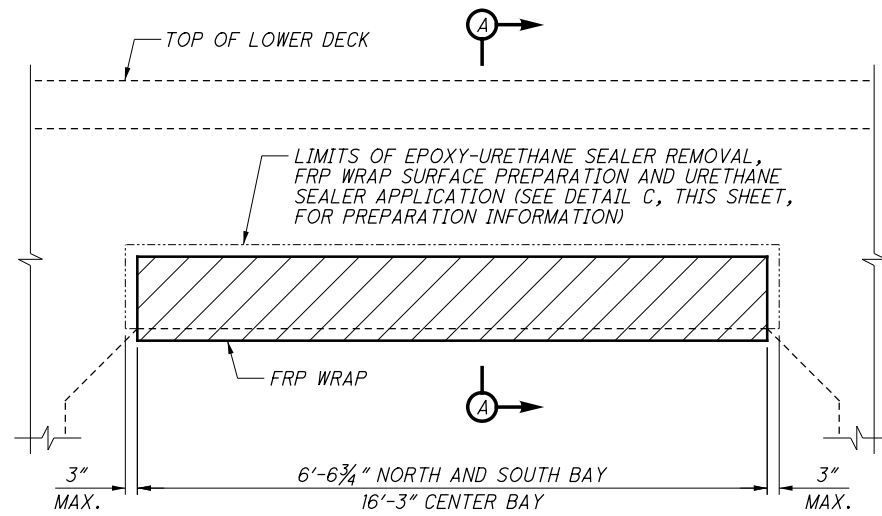
MAXIMUM GRID SPACING TABLE			
LOCATION			MAX SPA.
SPAN 2 THROUGH SPAN 13	ARCH RIBS	TOP	20"
		BOTTOM	20"
		SIDE	-
	UPPER DECK	FLOORBEAMS - BOTTOM	16"
		FLOORBEAMS - SIDE	30"
		JACK ARCHES - BOTTOM	20"
		JACK ARCHES - SIDE	30"
		COLUMNS	20"
	LOWER DECK	FLOORBEAMS - BOTTOM	18"
FLOORBEAMS - SIDE		30"	
JACK ARCHES		16"	
COLUMNS		30"	
SPAN 1A & 1B / WEST STATION / EAST STATION	JACK ARCHES	16"	
	COLUMNS/WALLS	20"	
TUNNELS	COLUMNS/JACK ARCHES	16"	
	WALLS	20"	
PIERS	ALL SURFACES	24"	

NOTES

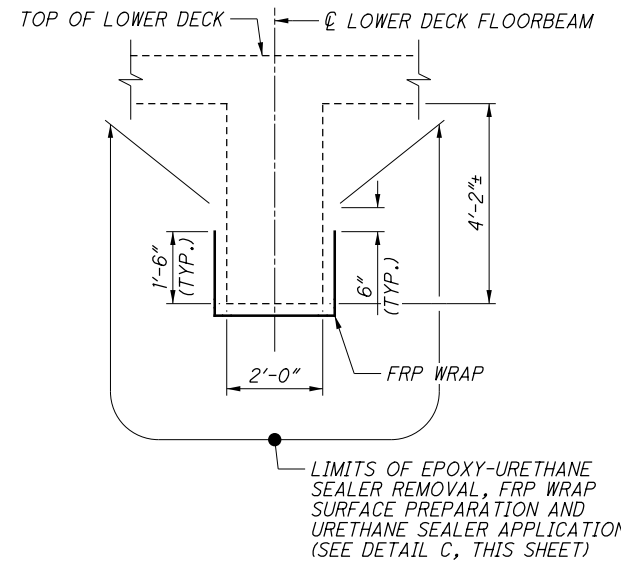
- FOR ADDITIONAL ANODE DETAILS AND REQUIREMENTS SEE SUPPLEMENTAL SPECIFICATION 844.01 TO 844.07.
- ANODES ARE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, TYPE 1 OR 2 REPAIR.
- ANODES TO BE PLACED AROUND PERIMETER OF PATCH. FOR MINIMUM SPACING REQUIREMENTS, SEE MAXIMUM GRID SPACING TABLE, THIS SHEET.
- FOR TUNNEL REPAIRS, SEE SHEETS [13/89] TO [16/89].
- FOR WEST AND EAST STATION REPAIRS, SEE SHEETS [17/89] TO [25/89].
- FOR PIER REPAIRS, SEE SHEETS [26/89] TO [29/89].
- FOR LOWER DECK AND ARCH RIB REPAIRS, SEE SHEETS [30/89] TO [74/89].
- FOR COLUMN AND JACK ARCH REPLACEMENT DETAILS, SEE SHEETS [79/89] TO [83/89].

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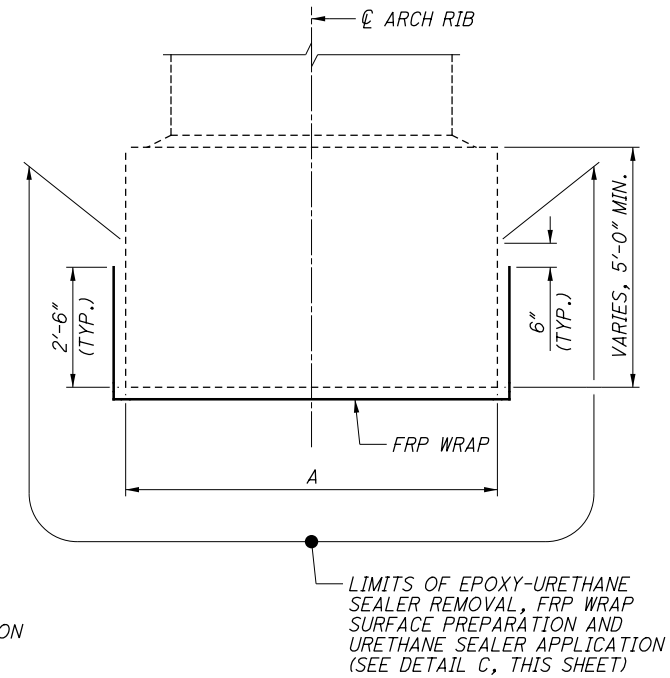
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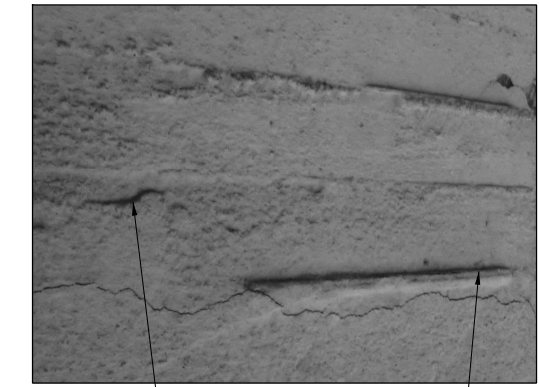
LOWER DECK FLOORBEAM - PARTIAL ELEVATION



SECTION A-A

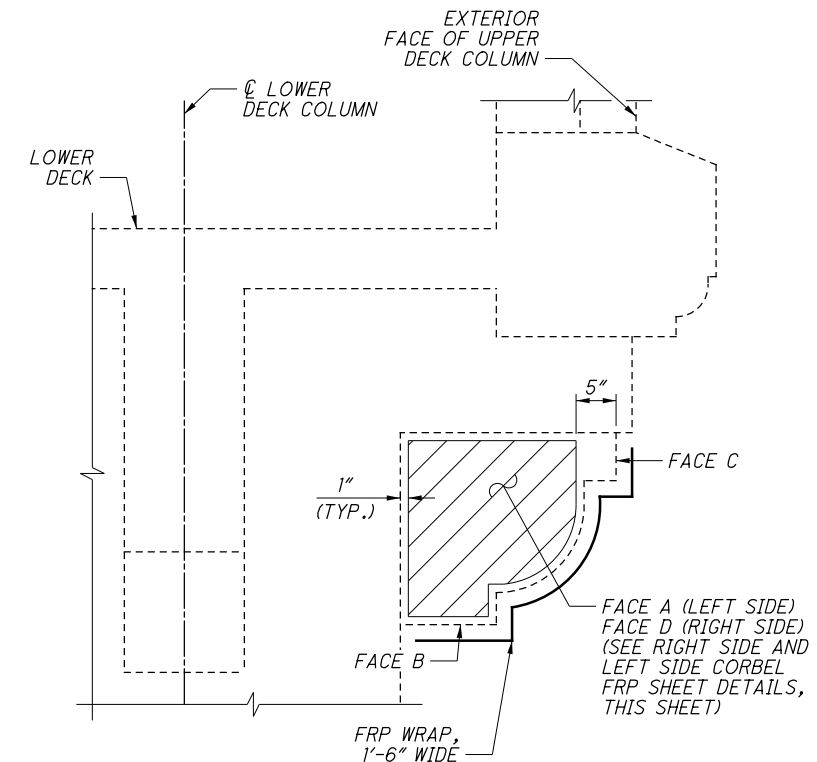


SECTION B-B



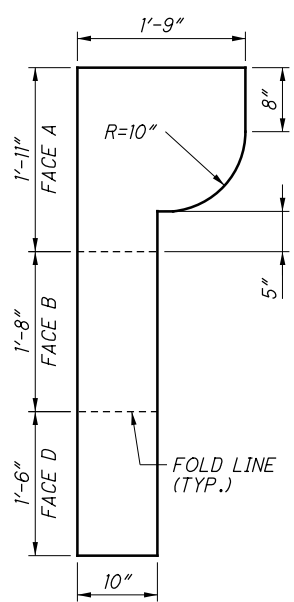
FILL IN CONCRETE FORM VOIDS AS REQUIRED
REMOVE CONCRETE FORM LINES GREATER THAN 1/8" INCHES HIGH

DETAIL C

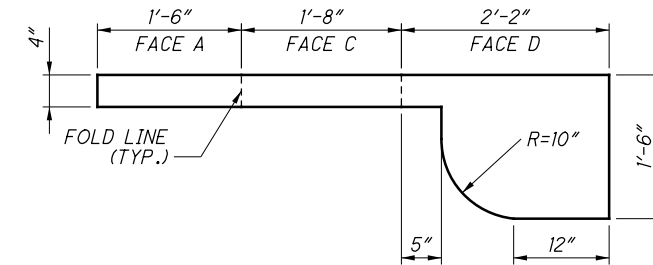


CORBEL FRP REPAIR DETAIL

LEFT SIDE, RIGHT SIDE OPPOSITE HAND (TYP. SPANS 2 AND 6-10, SPANS 3 AND 5 SIMILAR)



LEFT SIDE CORBEL FRP SHEET DETAIL



RIGHT SIDE CORBEL FRP SHEET DETAIL

SPAN	ARCH RIB WIDTH	
	ARCH RIBS A AND D	ARCH RIBS B AND C
2 & 3	6'-9"	9'-0"
5-10	6'-0"	8'-0"
13	5'-6"	6'-9"

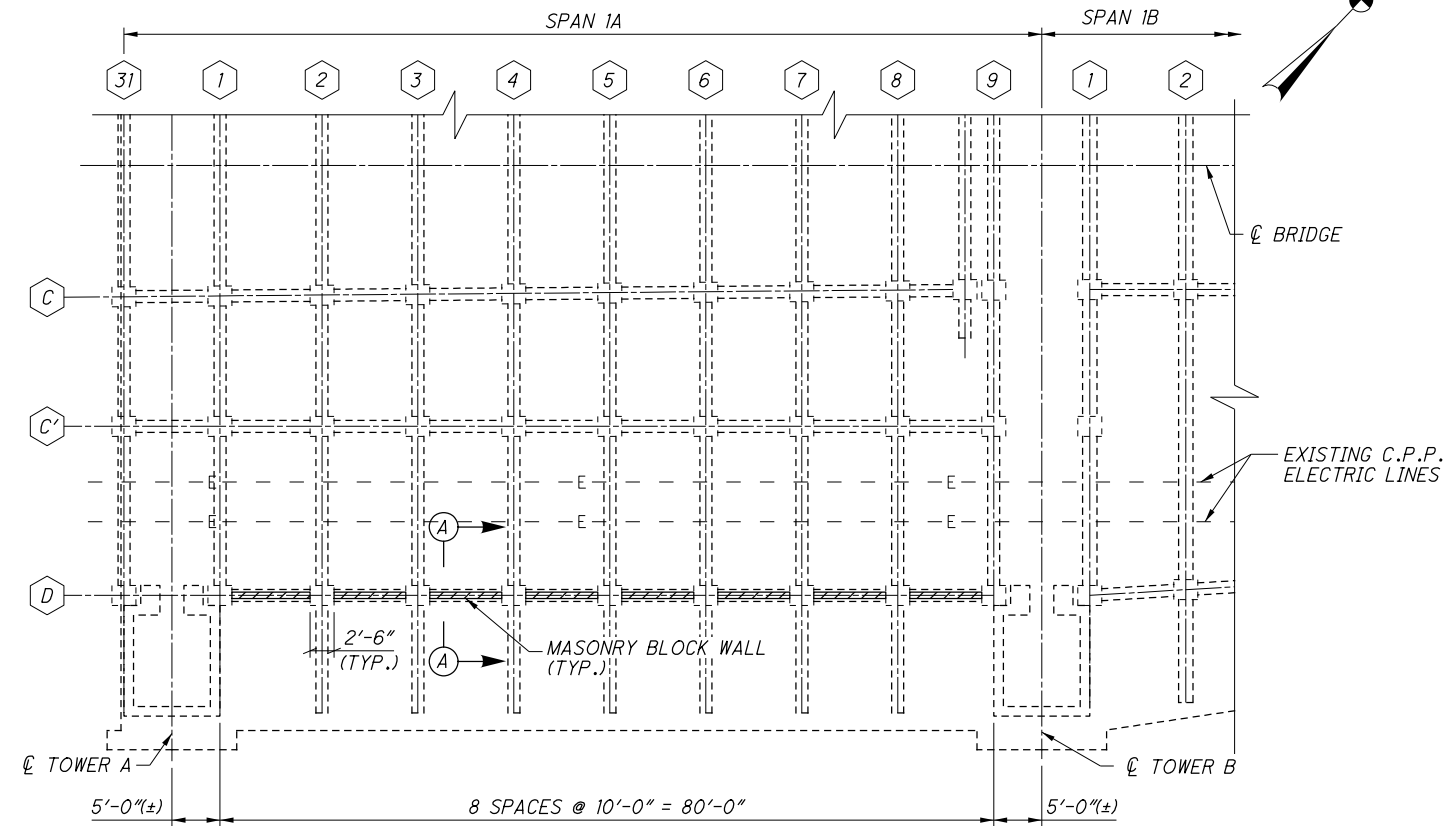
NOTES:

- FOR FRP WRAP NOTES SEE SHEET 7/89.
- FOR THE LOCATION OF SECTION B-B, SEE SHEETS 35/89 THRU 74/89.

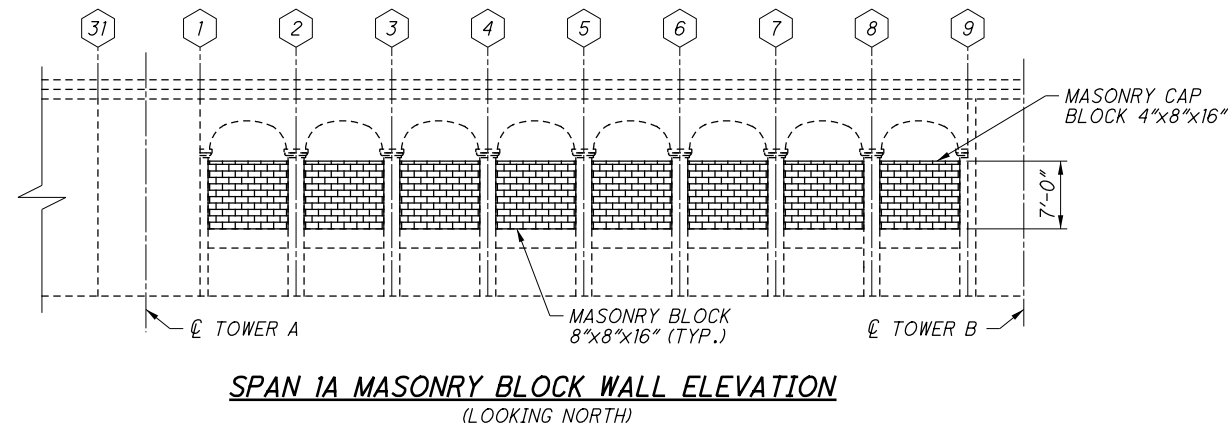
LEGEND:

AREA TO BE TREATED WITH FRP WRAP PER ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

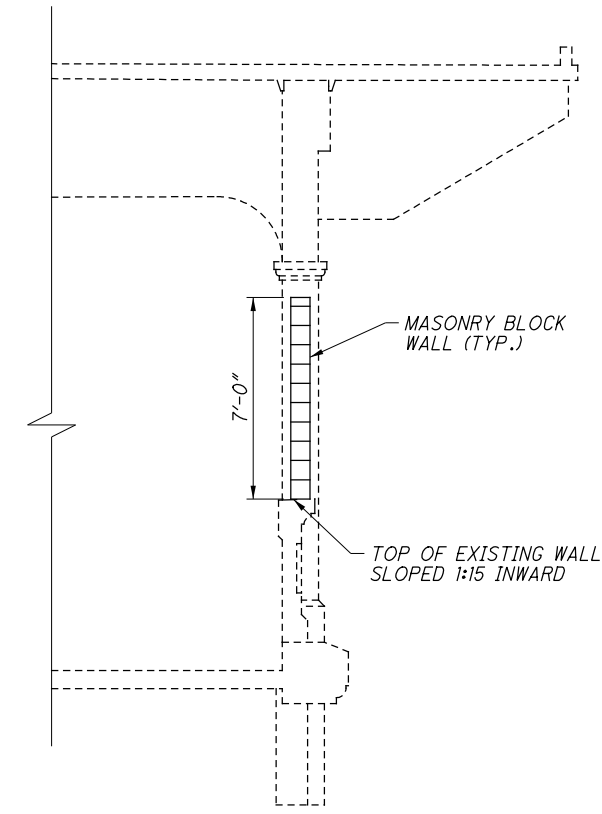
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SPAN 1A LOWER DECK MASONRY WALL - PLAN



**SPAN 1A MASONRY BLOCK WALL ELEVATION
(LOOKING NORTH)**

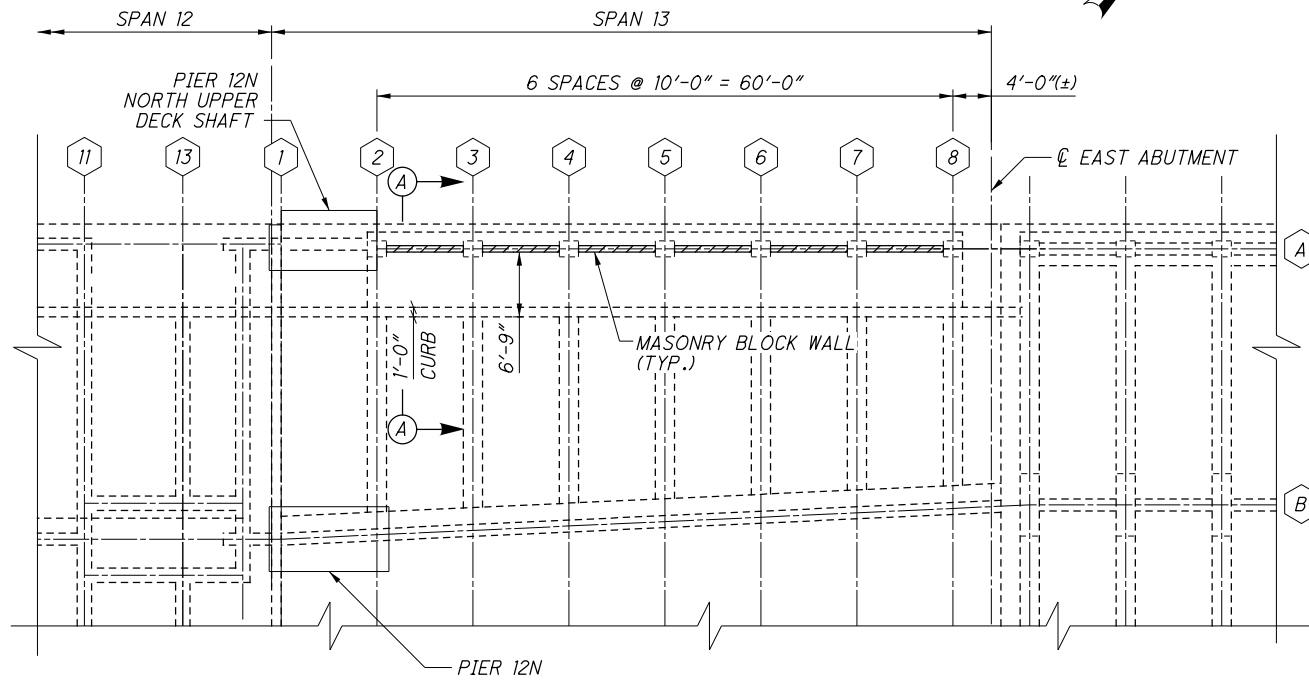


**SECTION A-A
(LOOKING EAST)**

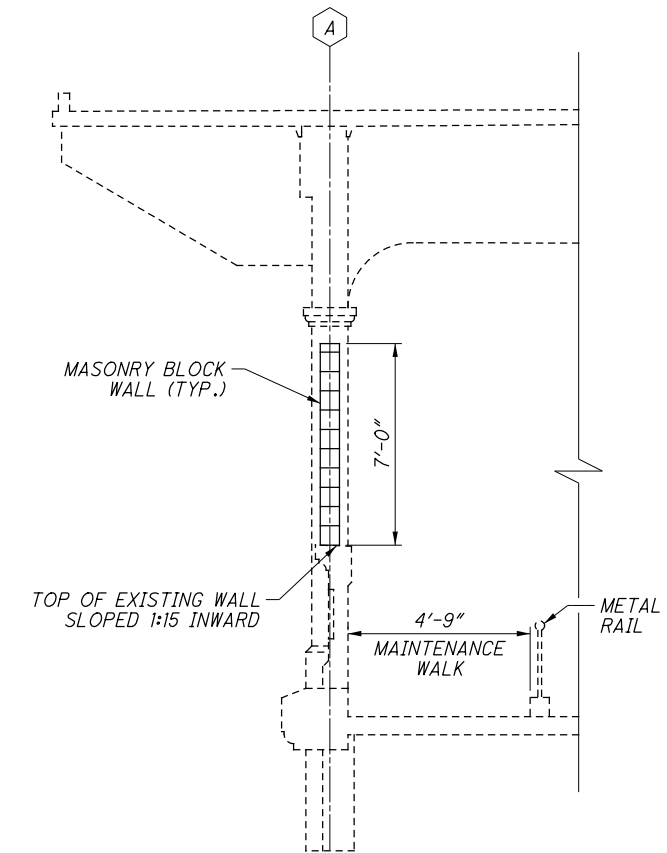
NOTE:

1. THE CONTRACTOR SHALL REMOVE THE EXISTING CHAIN LINK FENCING ON TOP OF THE EXTERIOR RAIL AND THE PERFORATED STEEL PLATE FRAME ON THE SOUTH EXTERIOR FACE OF THE BRIDGE, AND ALL RELATED HARDWARE. PAYMENT SHALL BE INCLUDED AS PART OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

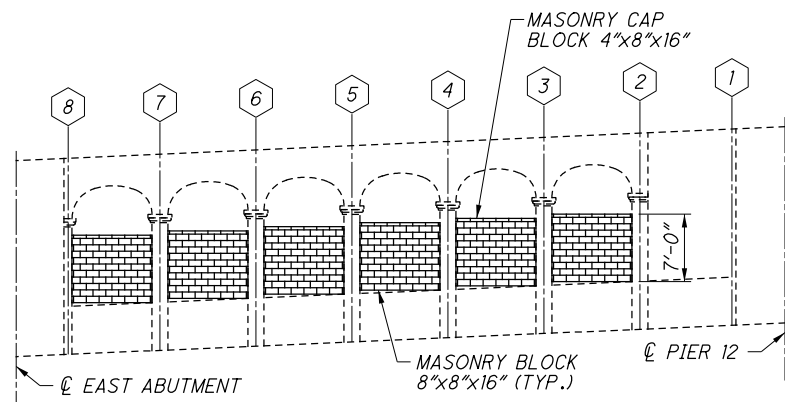
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SPAN 13 LOWER DECK MASONRY WALL - PLAN



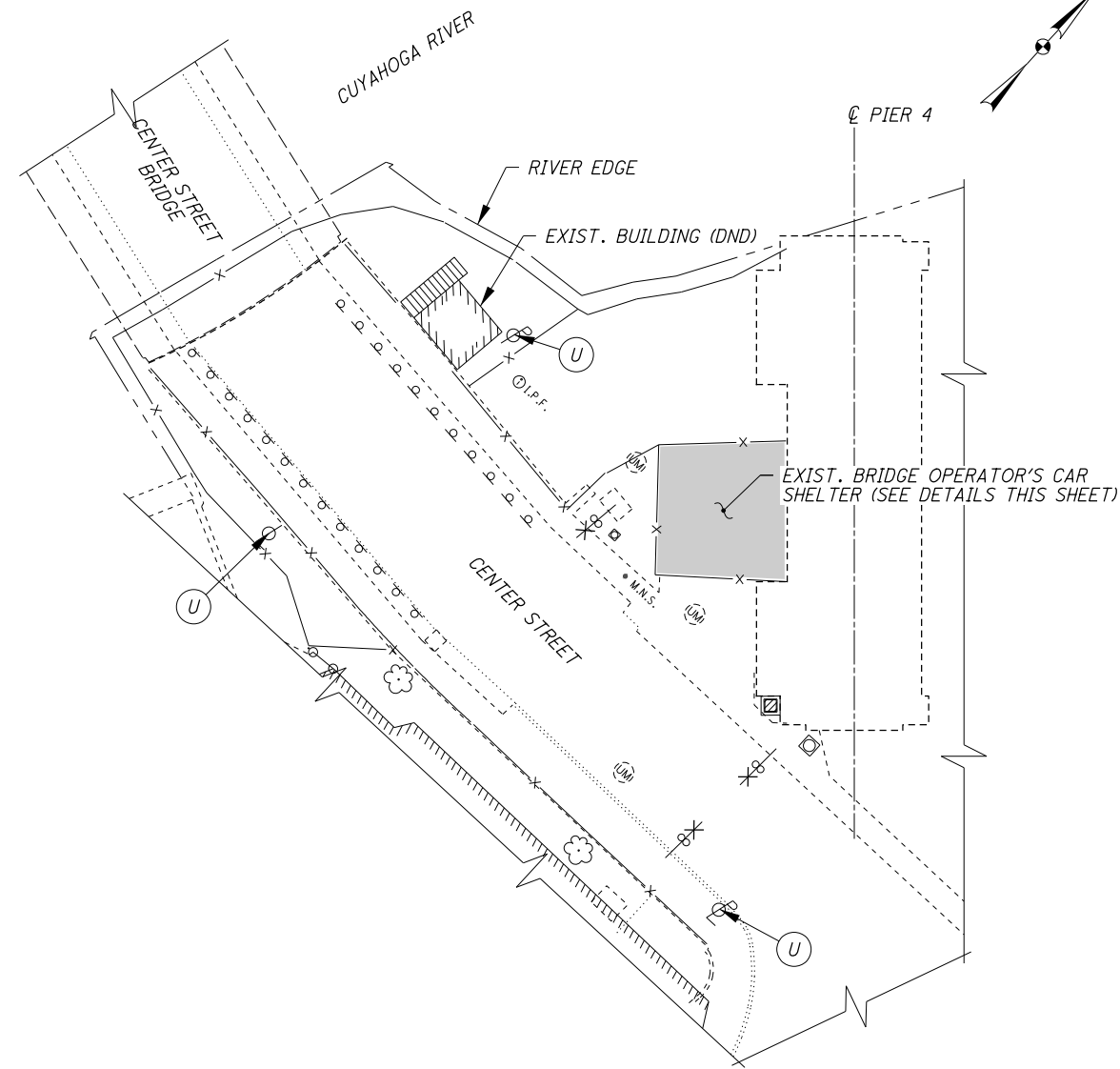
**SECTION A-A
(LOOKING EAST)**



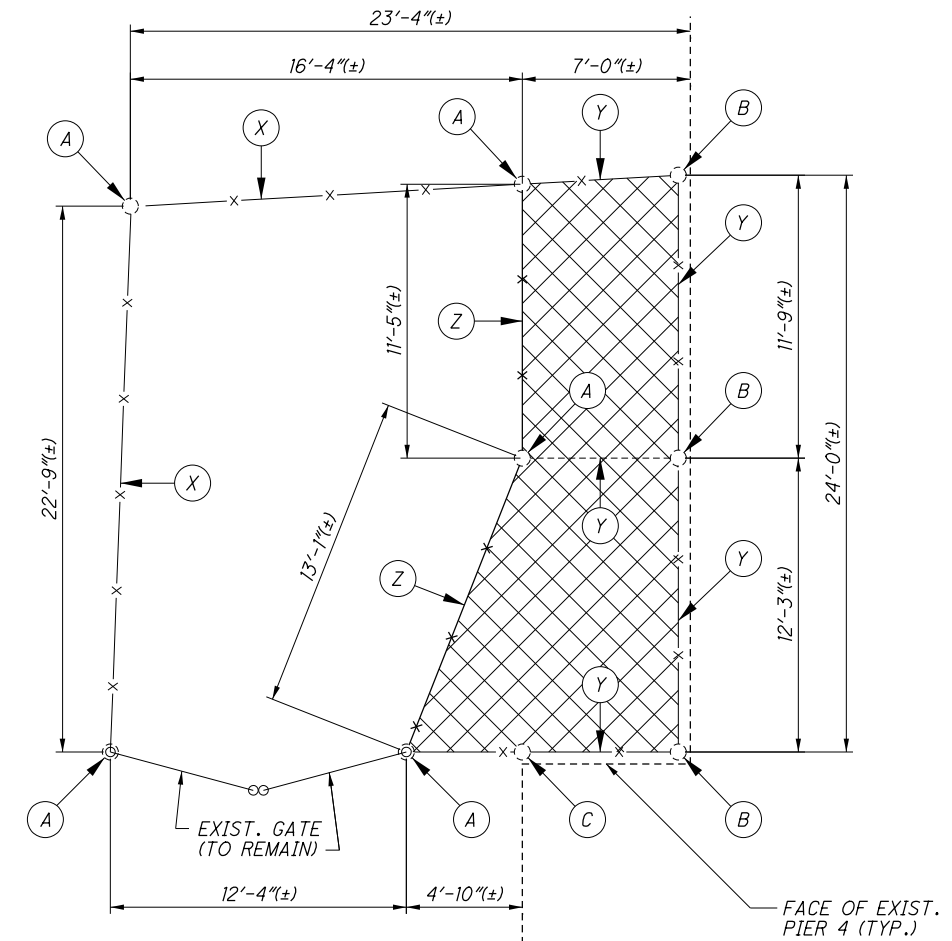
**SPAN 13 MASONRY BLOCK WALL ELEVATION
(LOOKING SOUTH)**

NOTES:

1. THE CONTRACTOR SHALL REMOVE THE EXISTING CHAIN LINK FENCING ON TOP OF THE EXTERIOR RAIL AND ALL RELATED HARDWARE. PAYMENT SHALL BE INCLUDED AS PART OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.



BRIDGE OPERATOR'S CAR SHELTER LOCATION PLAN
(EXISTING SUPERSTRUCTURE NOT SHOWN FOR CLARITY)



BRIDGE OPERATOR'S CAR SHELTER DETAILS

LEGEND

- (A) EXIST. STEEL POST TO REMAIN
- (B) EXIST. STEEL POST TO BE REMOVED
- (C) EXIST. STEEL POST (SEE NOTE 2)
- (U) EXIST. UTILITY POLE (DO NOT DISTURB)
- (X) EXIST. CHAIN-LINK FENCE AND BARS TO REMAIN
- (Y) EXIST. CHAIN-LINK FENCE AND BARS TO BE REMOVED
- (Z) PROP. 9'-0" TALL CHAIN LINK FENCE
- EXIST. CHAIN LINK FENCE COVER TO BE REMOVED

NOTES

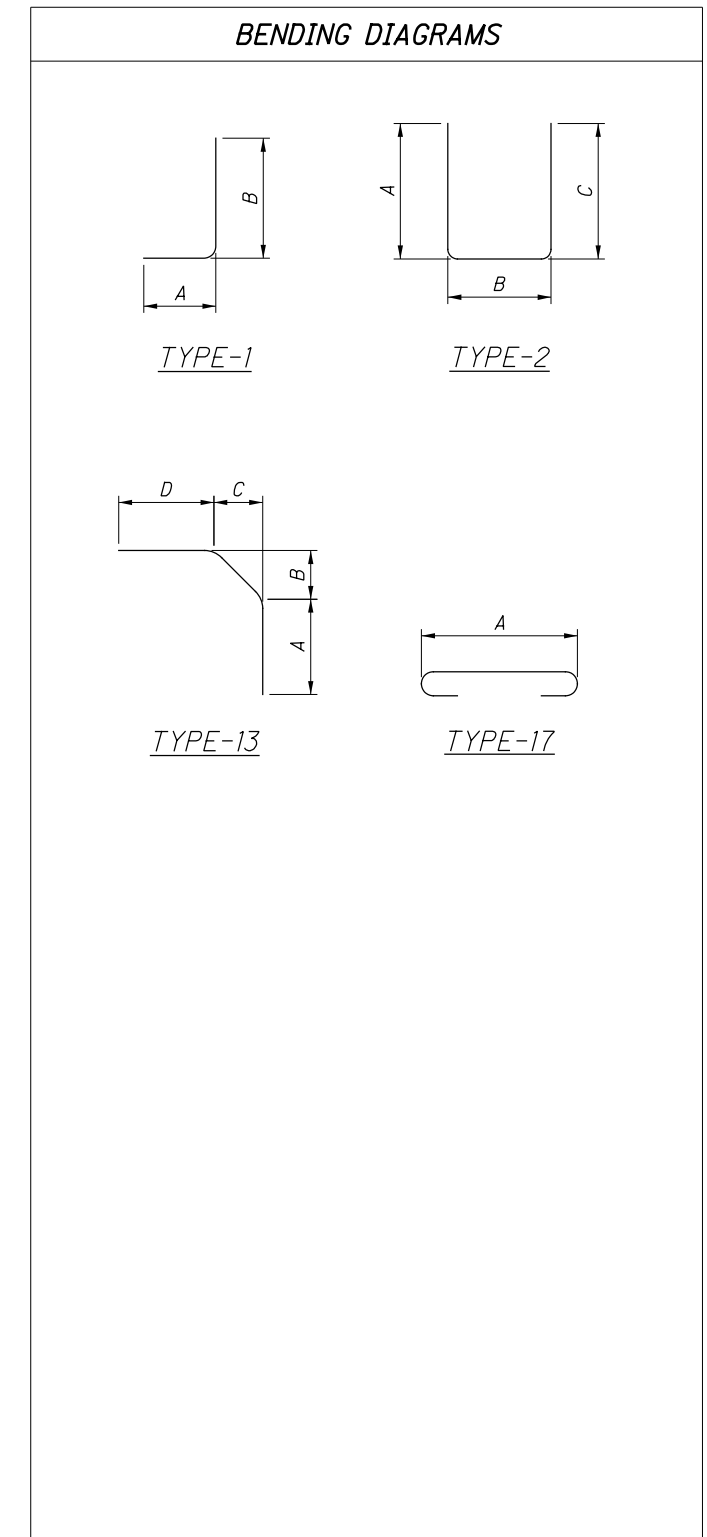
1. THE CONTRACTOR SHALL COORDINATE ACCESS AND WORK WITHIN THE BRIDGE OPERATOR'S CAR SHELTER WITH THE CITY OF CLEVELAND BUREAU OF DOCKS AND BRIDGES.
2. THE STEEL POST ADJACENT TO THE CORNER OF THE PIER 4 PEDESTAL SHALL BE CUT AT A HEIGHT 6'-4" ABOVE THE SIDEWALK. ALL FENCING AND HORIZONTAL BRACING ABOVE THIS HEIGHT AND BETWEEN THE PIER AND SHELTER GATE SHALL ALSO BE REMOVED.
3. PAYMENT FOR COMPONENTS OF THE EXISTING BRIDGE OPERATOR'S CAR SHELTER TO BE REMOVED SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN.
4. FURNISH THE PROPOSED CHAIN-LINK FENCE IN ACCORDANCE WITH AASHTO M 181 AND THE MANUFACTURER'S RECOMMENDATIONS.
5. PAYMENT FOR THE PROPOSED CHAIN-LINK FENCE SHALL BE MADE AT THE CONTRACT PRICE FOR ITEM SPECIAL - STRUCTURES, BRIDGE OPERATOR'S CAR SHELTER.

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MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
PIERS											
P501	44	2'-10"	130	1	2'-0"	1'-0"					
P502	34	11'-3"	399	2	0'-8"	10'-2"	0'-8"				
P801	11	33'-0"	969	STR							
SUB-TOTAL			1498								
COLUMNS											
C401	194	4'-2"	540	2	1'-4"	1'-8"	1'-4"				
C402	97	2'-4"	151	17	1'-4"						
C403	18	5'-10"	70	2	1'-9"	2'-6"	1'-9"				
C404	78	3'-4"	174	2	1'-2"	1'-2"	1'-2"				
C405	39	2'-2"	56	17	1'-2"						
C406	26	4'-4"	75	2	1'-5"	1'-8"	1'-5"				
C407	13	2'-5"	21	17	1'-5"						
C801	24	10'-4"	662	STR							
C802	12	9'-11"	318	STR							
C803	24	13'-0"	833	STR							
C804	24	12'-1"	774	STR							
C805	8	18'-8"	399	STR							
C806	8	18'-0"	384	STR							
C807	8	11'-8"	249	STR							
SUB-TOTAL			4706								
JACK ARCHES											
JA501	135	4'-5"	622	2	1'-10"	1'-0"	1'-10"				
JA502	145	4'-3"	643	2	1'-9"	1'-0"	1'-9"				
JA503	10	13'-8"	143	STR							
JA504	2	2'-11"	6	STR							
JA505	2	2'-4"	5	STR							
JA506	2	4'-10"	10	STR							
JA507	8	12'-7"	105	STR							
JA601	60	7'-0"	631	STR							
SUB-TOTAL			2165								
CORBELS											
S501	48	5'-7"	280	2	2'-7"	0'-8"	2'-7"				
S502	48	3'-2"	159	13	1'-6"	0'-8"	0'-8"	0'-10"			
SUB-TOTAL			439								

NOTE: ALL REINFORCING STEEL LISTED ABOVE IS SHOWN FOR INFORMATION ONLY.
REINFORCING STEEL IS INCLUDED FOR PAYMENT UNDER ASSOCIATED 511 PAY ITEMS.



REINFORCING STEEL NOTES

- SERIES BARS - EACH BAR VARIES BY THE TABULATED AMOUNT.
- ALL DIMENSIONS ARE OUT TO OUT.
- TYPE 'STR' INDICATES A STRAIGHT BAR.
- THE BAR SIZE NUMBER IS INDICATED IN THE 'MARK' COLUMN. THE FIRST ONE OR TWO DIGITS OF EACH MARK INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A #5 BAR SIZE AND P1101 IS A #11 BAR SIZE.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.



DESIGN AGENCY
DATE 04/18/18
REVIEWED DWJ
STRUCTURE FILE NUMBER 1800930

DRAWN EAT
EAT
REVISOR BPS

REINFORCING STEEL LIST
BRIDGE NO. CUY-6-1456
U.S. 6 (DETROIT-SUPERIOR BRIDGE) OVER CUYAHOGA RIVER

CUY-6-14.56
PID No. 99972