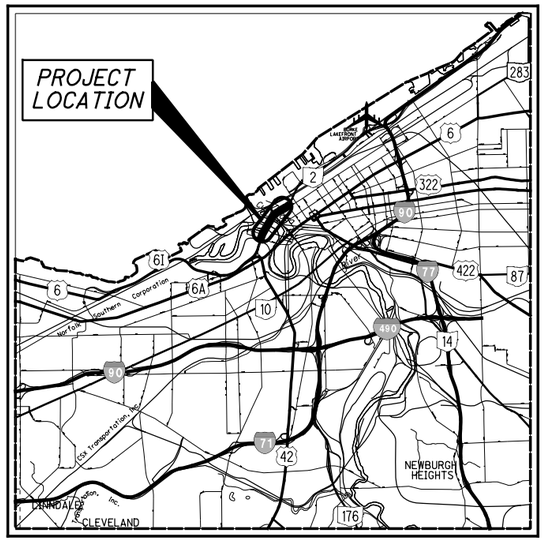

LOCATION MAP

LATITUDE: N 41°29'55" LONGITUDE: W 81°42'19"

SCALE IN MILES
0 1 2 3 4

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

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-2-14.41
PAINT
CITY OF CLEVELAND
CUYAHOGA COUNTY

INDEX OF SHEETS:

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Pg. 58	Added Security Fencing Note
Pg. 68 / 69	Changed Seal Replacement Types
Pg. 69A / 69B	Added Joint Q Replacement
Pg. 115	Added Additional Batten Repair Locations
Pg. 122A,122B, 122C	Added Forward Approach Steel Repairs
Pg. 125	Added Bolts on Section A-A
Pg. 126	Changed Location of Lateral Brace Repair
Pg. 131B	Changed Fence Layout and Type

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES PAINTING OF STRUCTURAL STEEL ELEMENTS ON THE EAST AND WEST APPROACHES. THE MAIN TRUSS SPANS WERE PAINTED IN 2005. THIS PROJECT ALSO INCLUDES PATCHING OF CONCRETE SUBSTRUCTURE UNITS, SUPERSTRUCTURE STEEL REPAIRS, REPLACEMENT OF DECK JOINT ARMOR AND JOINT GLANDS, AND DRAINAGE REPLACEMENT AND REPAIRS.

PROJECT EARTH DISTURBED AREA	= N/A (MAINTENANCE PROJECT)
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	= N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT DISTURBED AREA	= N/A (MAINTENANCE PROJECT)

LIMITED ACCESS

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

I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY, WITH THE EXCEPTION OF THE WEEKEND FULL CLOSURE DETOUR PLAN DETAILED ON SHEET 3 OF THE PLAN SET, WHICH IS TO BE IMPLEMENTED DURING ISOLATED WEEKENDS THROUGHOUT THE DURATION OF THE PROJECT, AS DETAILED IN THE. PLANS.

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.

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

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

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

PLAN PREPARED BY:
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

ENGINEERS SEAL:

STATE OF OHIO
PETER JOSEPH ANAMASI
E-77527
REGISTERED PROFESSIONAL ENGINEER

SIGNED: [signature]
DATE: 12/21/16

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
TC-71.10 07-15-16				800	01-20-17	ARCHITECTURAL	12-16-16
MT-95.40 07-18-14				844	07-17-15	GCRTA	06-10-16
MT-95.50 10-16-15						NORFOLK SOUTHERN RAILWAY COMPANY	08-11-16
MT-99.20 07-19-13						CSXT	04-08-15
MT-99.50 07-19-13						WATERWAY PERMIT	11-21-16
MT-101.70 01-17-14							
MT-101.75 07-15-16							
MT-105.10 07-19-03							
EXJ-4-87 07-19-02							
F-1.1 07-09-13							

APPROVED [signature]
DATE 12-22-16 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E130 (986)
PID NO. 85377
CONSTRUCTION PROJECT NO. CUY-2-14.41
RAILROAD INVOLVEMENT GCRTA, CSXT & NORFOLK SOUTHERN RAILWAY COMPANY
1 / 154

170228 CUY-2-14.41 Conformed Set
Dist 12
85377GT001 4/14/2017 10:38:09 AM nrfisco

CALCULATED HB CHECKED DJW

GENERAL NOTES (1 OF 3)

GENERAL NOTES

ITEM 614, MAINTAINING TRAFFIC

NO PERMANENT LANE CLOSURES OF ANY LANES ON THE STRUCTURE ARE PERMITTED UNTIL APRIL 1, 2018.

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION. SEE SEQUENCE OF CONSTRUCTION NOTES FOR ADDITIONAL DETAILS.

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, MAINTAINING TRAFFIC (ROAD CLOSED SIGN)

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

PHASE 2 SUMMIT ROAD AT PRIVATE PARKING LOT AND AT SUMMIT ROAD AND WEST 3RD STREET INTERSECTION. PHASE 3A SUMMIT ROAD AT PRIVATE PARKING LOT AND AT SUMMIT ROAD AND WEST 3RD STREET INTERSECTION. PHASE 3B SUMMIT ROAD AT PRIVATE PARKING LOT AND AT SUMMIT ROAD AND WEST 3RD STREET INTERSECTION AND WEST LAKESIDE AVENUE RAMP.

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 CALLED FOR IN THIS NOTE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 1 M. GAL

ITEM 614, REPLACEMENT SIGN

FLATSHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD, CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 10 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

R11-H5A-48 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

THE SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE CONSECUTIVE CALENDAR DAYS, SUCH AS DURING WINTER SHUTDOWNS.

(THE SIGNS ON THE MAINLINE SHALL BE DUAL MOUNTED UNLESS NOT PHYSICALLY POSSIBLE. THE FIRST SIGN SHALL BE PLACED BETWEEN THE ROAD WORK AHEAD (W20-1)SIGN AND THE NEXT SIGN IN THE SEQUENCE. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP AND EVERY 2 MILES THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS ON THE MAINLINE SHALL BE R11-H5A-48. SIGNS USED ON THE RAMPS SHALL BE R11-H5A-24. R11-H5A-24 SIGNS MAY BE USED IN THE MEDIAN IN LIEU OF R11-H5A-48 SIGNS IF IT IS NOT PHYSICALLY POSSIBLE TO PROVIDE R11-H5A-48 SIGNS IN THE MEDIAN.)

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF C&MS 730.19.

WORK ZONE INCREASED PENALITIES SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVAL OF THE SIGN AND SUPPORT.

ITEM 614, WORK ZONE INCREASED PENALITIES SIGN 2 EACH

WORK ZONE INCREASED PENALTIES SIGNS WILL BE PLACED AT THE FOLLOWING LOCATIONS:

500' BEFORE THE SPEED LIMIT SIGN (R2-1-36) AT BOTH ENDS SUBWAY AND MAIN AVENUE DURING PHASE 1, PHASE 2, PHASE 3A AND PHASE 3B.

ITEM 614, WORK ZONE SPEED LIMIT SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (40 SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT SIGNS WITHIN THE REDUCED SPEED ZONE(S). THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK THAT CAUSES THE WARRANTING CONDITION(S) TO OCCUR. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING REMOVAL OF THE WARRANTING CONDITION(S), OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY REMOVAL OF WARRANTING CONDITION(S) SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE.

CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 614, PARAGRAPH 614.02(B), INDICATES THAT THE TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, A SPEED REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE A SPEED REDUCTION IN THE OPPOSITE DIRECTION. A SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION, IN SUCH CASE, IS APPROPRIATE ONLY IF CONDITIONS ARE EXPECTED TO HAVE AN IMPACT ON THE DIRECTIONAL TRAFFIC FLOW, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF THE WARRANTING CONDITION, AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF A DIRECTIONAL ROADWAY OF DIVIDED HIGHWAYS. THE FIRST WORK ZONE SPEED LIMIT SIGN SHALL BE PLACED APPROXIMATELY 500 FEET IN ADVANCE OF THE LANE REDUCTION, SHIFT TAPER, OR OTHER ROADWAY OR SHOULDER RESTRICTION THAT WARRANTED THE WORK ZONE SPEED ZONE. ON UNDIVIDED HIGHWAYS THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, APPROXIMATELY 250 FEET IN ADVANCE OF SUCH RESTRICTIONS. THE SIGN SHALL BE REPEATED EVERY 1 MILE FOR 55 MPH ZONES AND EVERY ONE HALF MILE FOR 50 MPH AND 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE. THE SPEED LIMIT REDUCTION SHALL BE LIMITED TO ONLY THE PORTION OF THE PROJECT AND THE WORK THAT WARRANTED THE WORK ZONE SPEED LIMIT REDUCTION.

SPEED REDUCTION (SPEED ZONE AHEAD SYMBOL) SIGNS (W3-5) SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1250 FEET ON MULTI-LANE HIGHWAYS AND 500 FEET ON TWO LANE HIGHWAYS. THE SPEED LIMIT REDUCTION TO 40 MPH IS ONLY NEEDED ON THE WESTBOUND SIDE. A SIGN(S) TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD CONDITION, PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19. WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO ITEM 630, GROUND MOUNTED SUPPORTS NO. 3 POSTS, UNLESS MOUNTED ON A TEMPORARY SIGN SUPPORT PER SCD MT 105.10. WORK ZONE SPEED LIMIT AND RELATED SIGN SIZES, PLACEMENT, SUPPORTS, ETC SHALL BE PER THE OMUTCD, WITH TWO EXCEPTIONS: 1) EXPRESSWAY SIZE SPEED LIMIT SIGNS MAY BE USED ON FREEWAYS AND EXPRESSWAYS, IF NECESSARY; 2) THE HEIGHT OF SIGNS MOUNTED ON PORTABLE SUPPORTS SHOULD BE THE HEIGHT REQUIRED FOR GROUND-MOUNTED SIGNS BUT SHALL NOT BE MORE THAN 1 FOOT LOWER THAN THE HEIGHT REQUIRED BY THE OMUTCD, OR AS DIRECTED BY THE ENGINEER. PORTABLE SUPPORTS SHOULD NOT BE USED FOR A DURATION OF MORE THAN 3 DAYS. WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS. SPEED LIMIT SIGNING FOR THE POINT OF RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE PAID FOR AS WORK ZONE SPEED LIMIT SIGNS. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, WORK ZONE SPEED LIMIT SIGN 6 EACH
ITEM 614, SPEED ZONE AHEAD SYMBOL SIGN 2 EACH

CUY-2-14.41

FLOODLIGHTING

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

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

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

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

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

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

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

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

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

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

ITEM 614 - MAINTENENCE OF TRAFFIC

DESCRIPTION:
TIMES AND DATES FOR LANE CLOSURES MUST BE COORDINATED WITH AND APPROVED BY THE CITY OF CLEVELAND COMMISSIONER OF TRAFFIC ENGINEERING AND ODOT DISTRICT 12 PRIOR TO THEIR IMPLEMENTATION PER THE NOTIFICATION NOTE SHOWN ON SHEET 53. LANE CLOSURES SHALL BE IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND THE LATEST EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWINGS.

LANE CLOSURES WILL BE RESTRICTED TO TIMES PERMITTED BY ODOT DISTRICT 12 AND THE CITY OF CLEVELAND. SEE MOT PLAN ON SHEET 4.

ITEM 614, WORK ZONE IMPACT ATTENUATOR, FOR HAZARDS OVER 24" AND LESS THAN 36" WIDE, (UNIDIRECTIONAL OR BIDIRECTIONAL)

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

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

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

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

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE (OFFICE OF MATERIALS MANAGEMENT WEB PAGE). THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FEET AND 475 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. The PCMS shall be delineated in accordance with C&MS 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) 10, 17, 18, 25, 26, 33, 34, AND 41 OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

(THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 24 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.)

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE. THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

(THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.)

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 8 SIGN MONTH ASSUMING 2 PCMS SIGN(S) FOR 4 MONTH(S)

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

[INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE ALONG TAPERS AND TRANSITION AREAS AND ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.]

[THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.]

[DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.]

[TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.]
PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

[ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.]

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

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

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

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

CALCULATED HB CHECKED DJW

GENERAL NOTES (2 OF 3)

CUY-2-14.41

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

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 AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/ DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

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 PLACE-MENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

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

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINT-ENANCE 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 50 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.

PHASE 3A/3B DETOUR SHALL HAVE DUAL OPTION DETOUR SIGNAGE FROM WEST 25TH STREET EASTBOUND AND FROM EAST 9TH TO WEST 6TH. THE CONTRACTOR SHALL PROPOSE THE DUAL DETOUR ROUTES AND SIGNAGE REQUIRED TO THE ENGINEER FOR APPROVAL 14 DAYS PRIOR TO IMPLEMENTATION. ALL COSTS SHALL BE INCIDENTAL TO ITEM 614 - MAINTAINING TRAFFIC.

PHASE 3A/3B SHALL HAVE SIGNED, 11' WIDE, EMERGENCY PULLOFF LANES, 100' LONG AT STATIONS 28+00 AND 45+00 ON BOTH EASTBOUND AND WESTBOUND. PCB SHALL BE CONTINUOUS AND TAPERS SHALL BE AT 9:1, IN AND OUT, IN BOTH DIRECTIONS. ALL COSTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 - MAINTAINING TRAFFIC.

FULL CLOSURE DETOUR PLAN

THE FOLLOWING DETOUR IS TO BE USED DURING THE ISOLATED FULL CLOSURES OF THE STRUCTURE. SIGNAGE FOR THE DETOUR IS TO BE APPROVED BY THE ENGINEER AND SHALL CONFORM TO STANDARD DRAWING MT-99.50 FOR HIGHWAY CLOSURES AND OMUTCD TYPICAL APPLICATION 20 FOR LOCAL STREETS. ALL LABOR, MATERIALS, AND EQUIPMENT ASSOCIATED WITH FURNISHING, ERECTING, MAINTAINING, AND SUBSEQUENTLY REMOVING DETOUR SIGNS AND BARRICADES SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 - MAINTAINING TRAFFIC.

<u>WESTBOUND</u>

DIVERT TRAFFIC OFF SHOREWAY AT WEST THIRD STREET EXIT. TRAFFIC TRAVELS SOUTH ON WEST 3RD STREET TO SUPERIOR AVENUE. TRAFFIC TRAVELS WEST ON SUPERIOR AVENUE TO WEST 25TH STREET. TRAFFIC TRAVELS NORTH ON WEST 25TH STREET TO SHOREWAY WESTBOUND ONRAMP. TRAFFIC RE-ENTERS SHOREWAY WESTBOUND.

<u>EASTBOUND</u>

DIVERT TRAFFIC OFF SHOREWAY AT WEST 45TH STREET TO DETROIT AVENUE. TRAFFIC TRAVELS EAST ON DETROIT AVENUE AND SUPERIOR AVENUE TO WEST THIRD STREET. TRAFFIC TRAVELS NORTH ON WEST THIRD STREET TO SHOREWAY EASTBOUND ONRAMP. TRAFFIC RE-ENTERS SHOREWAY EASTBOUND.

CALCULATED HB CHECKED DJW

GENERAL NOTES (3 OF 3)

CUY-2-14.41

3A
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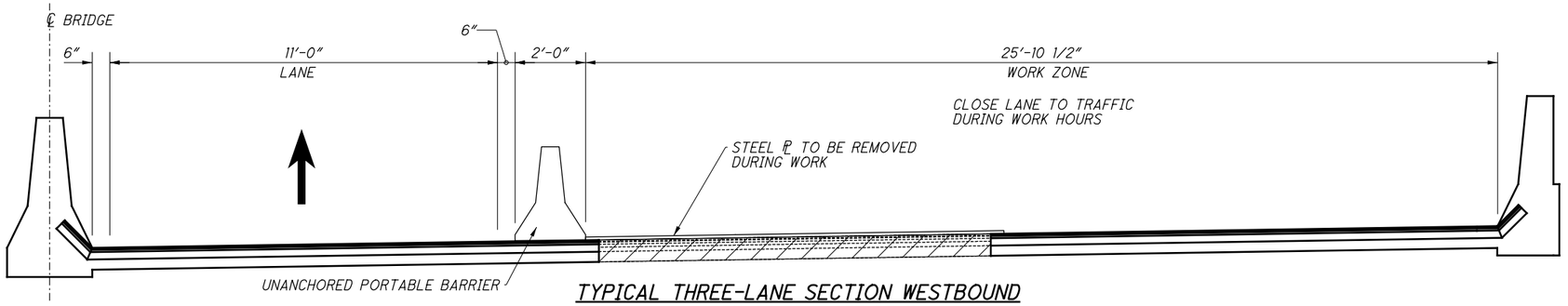
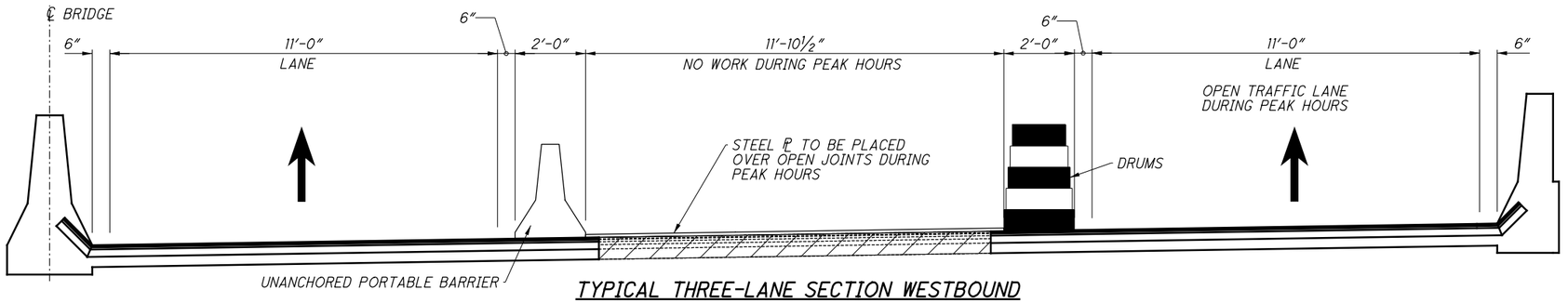


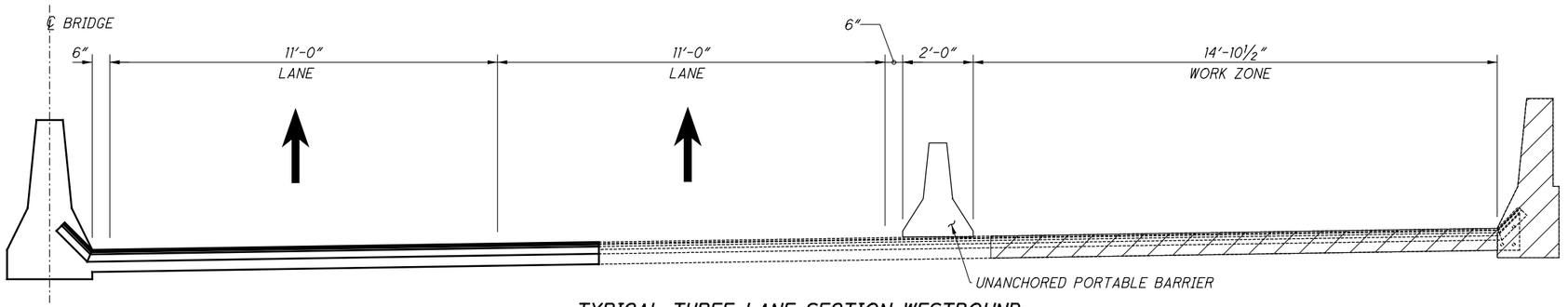
TYPICAL THREE-LANE SECTION WESTBOUND

PHASE 3B - OFF PEAK



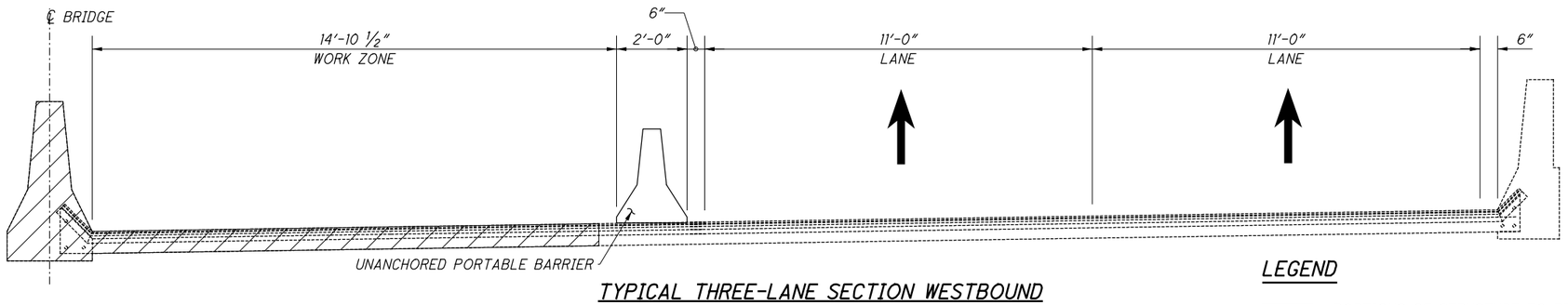
TYPICAL THREE-LANE SECTION WESTBOUND

PHASE 3A - PEAK



TYPICAL THREE-LANE SECTION WESTBOUND

PHASE 2



TYPICAL THREE-LANE SECTION WESTBOUND

PHASE 1

LEGEND

PORTIONS OF STRUCTURE TO BE REMOVED FOR JOINT REPLACEMENT

SEQUENCE OF CONSTRUCTION:

IT IS THE INTENT OF THE FOLLOWING SEQUENCE OF CONSTRUCTION TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELING PUBLIC; THEREFORE, ALL PHASES SHALL HAVE STRICT ADHERENCE TO THE MINIMUM LANE WIDTHS. ALL TEMPORARY OR PERMANENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC. THE SPEED LIMIT SHALL BE REDUCED BY 10 MPH FROM 50 MPH TO 40 MPH IN THE WORK ZONE.

THE SECTIONS SHOWN ARE INDICATIVE OF THE MINIMUM BRIDGE DECK WIDTH THROUGHOUT THE THREE-LANE PORTION OF THE STRUCTURE. THE LOCATION OF PARAPETS AND WIDTH OF THE WORK ZONE WILL VARY AT SELECT JOINT LOCATIONS. THE CONTRACTOR MAY MODIFY THE WIDTH OF THE WORK ZONE AS LONG AS 11′-0″ TRAFFIC LANES WITH 6″ SHOULDERS ARE MAINTAINED.

THE DURATION OF CLOSURE FOR EACH PHASE SHALL NOT EXCEED 45 DAYS. FOR EVERY DAY OVER THE 45 DAYS ALLOWED CLOSURE DURATION, A $5,000 PER DAY FINE WILL BE ASSESSED TO THE CONTRACTOR.

PHASE 1

THE CONTRACTOR SHALL CLOSE THE SOUTH 14′-10½″ OF THE WESTBOUND LANES WITH PORTABLE BARRIERS ALLOWING TWO 11′-0″ LANES REMAINING FOR TRAFFIC.

COMPLETE ALL WORK ON THE JOINTS AND PARAPETS IN THE PHASE 1 WORK ZONE.

ONCE PHASE 1 WORK IS COMPLETE, A FULL CLOSURE OF THE WESTBOUND TRAVEL LANES WILL BE REQUIRED TO PICK UP PHASE 1 AND SET UP PHASE 2. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

DURING THIS FULL CLOSURE, CONTRACTOR IS TO PERFORM JOINT GLAND REPLACEMENTS AT EXPANSION JOINTS I1, 10-J, M, M1, P & Q.

PHASE 2

THE CONTRACTOR SHALL CLOSE THE NORTH 14′-10½″ OF THE WESTBOUND LANES WITH PORTABLE BARRIERS ALLOWING TWO 11′-0″ LANES REMAINING FOR TRAFFIC.

COMPLETE ALL WORK TO THE JOINTS AND PARAPETS IN THE PHASE 2 WORK ZONE.

ONCE PHASE 2 WORK IS COMPLETE, A FULL CLOSURE OF THE WESTBOUND TRAVEL LANES WILL BE REQUIRED TO PICK UP AND SET UP PHASE 3. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

PHASE 3

THE CONTRACTOR SHALL PLACE CONCRETE BARRIERS 25′-10½″ FROM THE NORTH BARRIER.

PEAK
3:00 PM TO 7:00 PM
DURING PEAK HOURS, THE CONTRACTOR SHALL OPEN THE RIGHT WESTBOUND LANE. THE CONTRACTOR SHALL PLACE A LINE OF DRUMS ALONG THE NORTH SIDE OF THE PHASE 3 WORK AREA 12′ FROM THE NORTH BARRIER. TWO 11′ LANES OF TRAFFIC WILL BE MAINTAINED DURING PEAK HOURS. NO WORK SHALL BE PERFORMED DURING PEAK HOURS. STEEL PLATES WILL BE PLACED OVER OPEN JOINTS TO ALLOW FOR VEHICLES TO DRIVE OVER THEM SAFELY.

OFF PEAK
7:00 PM TO 3:00 PM
DURING OFF PEAK HOURS, THE CONTRACTOR SHALL CLOSE THE RIGHT LANE WESTBOUND WHILE MAINTAINING ONE 11′ TRAFFIC LANE ADJACENT TO THE MEDIAN BARRIER. THE PHASE 3 WORK ZONE SHALL ENCOMPASS THE ENTIRE 25′-10½″ OF THE NORTH SIDE OF THE WESTBOUND LANES.

ONCE ALL WORK HAS BEEN COMPLETED THE REMAINING PORTABLE BARRIERS SHALL BE REMOVED AND NORMAL TRAFFIC PATTERNS SHALL RESUME, AFTER PLACEMENT OF PERMANENT PAVEMENT MARKINGS.

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

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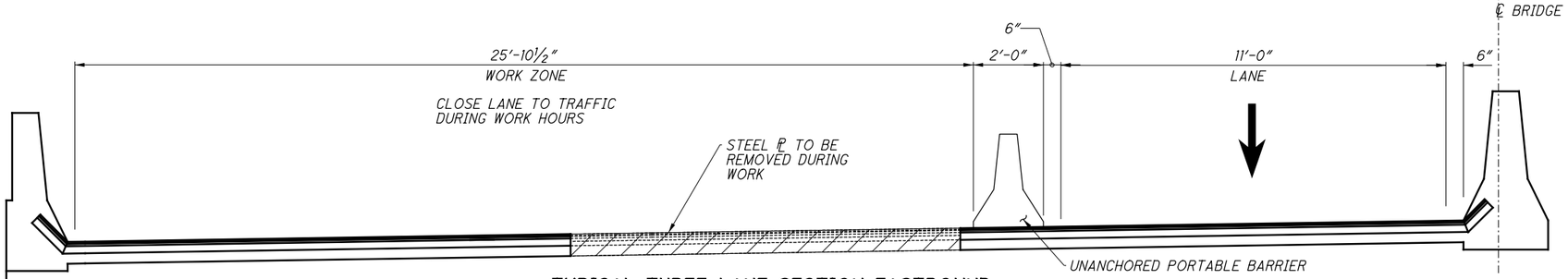
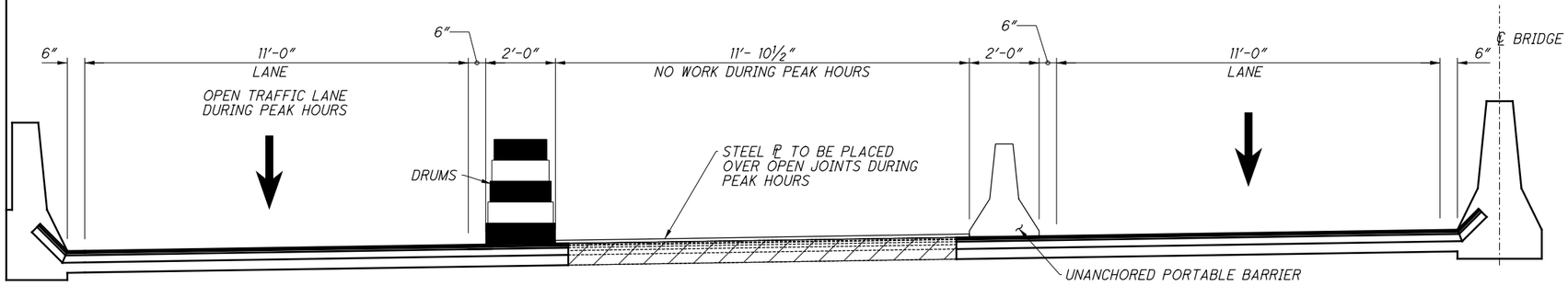
Maintenance of Traffic - Typical Sections 3/30/2017 1:56:41 PM nrfisco



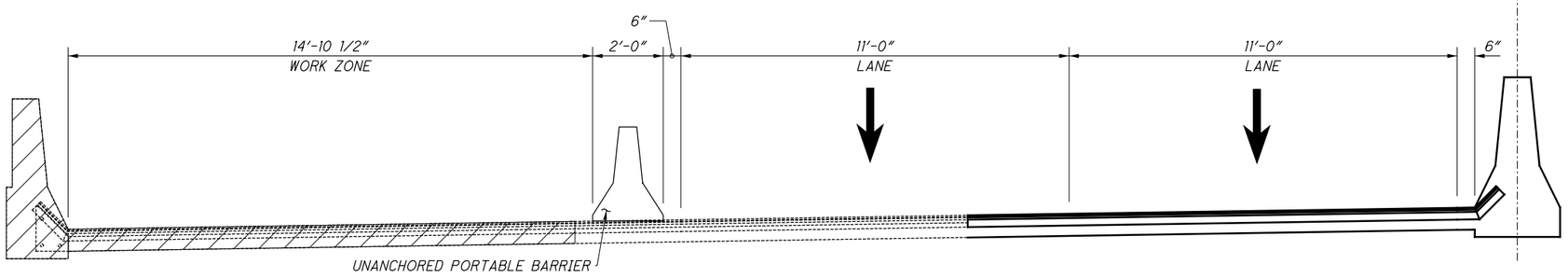
TYPICAL THREE-LANE SECTION EASTBOUND

PHASE 3B - OFF PEAK



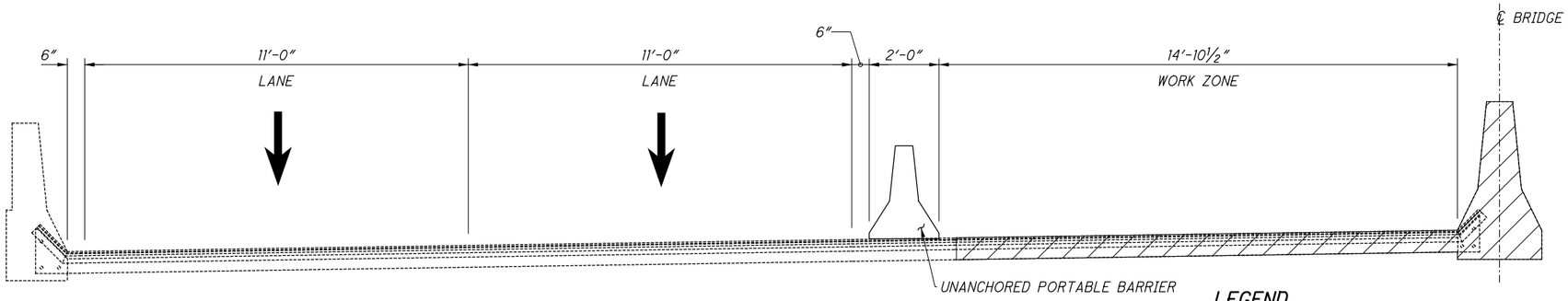
TYPICAL THREE-LANE SECTION EASTBOUND

PHASE 3A - PEAK



TYPICAL THREE-LANE SECTION EASTBOUND

PHASE 2



TYPICAL THREE-LANE SECTION EASTBOUND

PHASE 1

LEGEND

PORTIONS OF STRUCTURE TO BE REMOVED FOR JOINT REPLACEMENT

SEQUENCE OF CONSTRUCTION:

IT IS THE INTENT OF THE FOLLOWING SEQUENCE OF CONSTRUCTION TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELING PUBLIC; THEREFORE, ALL PHASES SHALL HAVE STRICT ADHERENCE TO THE MINIMUM LANE WIDTHS. ALL TEMPORARY OR PERMANENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC. THE SPEED LIMIT SHALL BE REDUCED BY 10 MPH FROM 50 MPH TO 40 MPH IN THE WORK ZONE.

THE SECTIONS SHOWN ARE INDICATIVE OF THE MINIMUM BRIDGE DECK WIDTH THROUGHOUT THE THREE-LANE PORTION OF THE STRUCTURE. THE LOCATION OF PARAPETS AND WIDTH OF THE WORK ZONE WILL VARY AT SELECT JOINT LOCATIONS. THE CONTRACTOR MAY MODIFY THE WIDTH OF THE WORK ZONE AS LONG AS 11′-0″ TRAFFIC LANES WITH 6″ SHOULDERS ARE MAINTAINED.

THE DURATION OF CLOSURE FOR EACH PHASE SHALL NOT EXCEED 45 DAYS. FOR EVERY DAY OVER THE 45 DAYS ALLOWED CLOSURE DURATION, A $5,000 PER DAY FINE WILL BE ASSESSED TO THE CONTRACTOR.

PHASE 1

THE CONTRACTOR SHALL CLOSE THE NORTH 14′-10½″ OF THE EASTBOUND LANES WITH PORTABLE BARRIERS ALLOWING TWO 11′-0″ LANES REMAINING FOR TRAFFIC.

COMPLETE ALL WORK ON THE JOINTS AND PARAPETS IN THE PHASE 1 WORK ZONE.

ONCE PHASE 1 WORK IS COMPLETE, A FULL CLOSURE OF THE EASTBOUND TRAVEL LANES WILL BE REQUIRED TO PICK UP PHASE 1 AND SET UP PHASE 2. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

DURING THIS FULL CLOSURE, CONTRACTOR IS TO PERFORM JOINT GLAND REPLACEMENTS AT EXPANSION JOINTS I1, 10-J, M, M1, P & Q.

PHASE 2

THE CONTRACTOR SHALL CLOSE THE SOUTH 14′-10½″ OF THE EASTBOUND LANES WITH CONCRETE BARRIERS ALLOWING TWO 11′-0″ LANES REMAINING FOR TRAFFIC.

COMPLETE ALL WORK TO THE JOINTS AND PARAPETS IN THE PHASE 2 WORK ZONE.

ONCE PHASE 2 WORK IS COMPLETE, A FULL CLOSURE OF THE EASTBOUND TRAVEL LANES WILL BE REQUIRED TO PICK UP AND SET UP PHASE 3. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

PHASE 3

THE CONTRACTOR SHALL PLACE PORTABLE BARRIERS 25′-10½″ FROM THE NORTH BARRIER.

PEAK
7:00 AM TO 10:00 AM
DURING PEAK HOURS, THE CONTRACTOR SHALL OPEN THE RIGHT EASTBOUND LANE. THE CONTRACTOR SHALL PLACE A LINE OF DRUMS ALONG THE SOUTH SIDE OF THE PHASE 3 WORK AREA 12′ FROM THE SOUTH BARRIER. TWO 11′ LANES OF TRAFFIC WILL BE MAINTAINED DURING PEAK HOURS. NO WORK SHALL BE PERFORMED DURING PEAK HOURS. STEEL PLATES WILL BE PLACED OVER OPEN JOINTS TO ALLOW FOR VEHICLES TO DRIVE OVER THEM SAFELY.

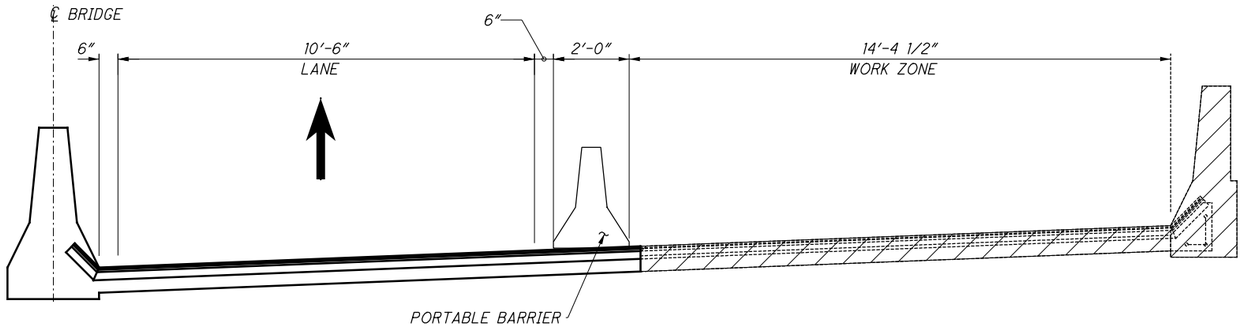
OFF PEAK
10:00 AM TO 7:00 AM
DURING OFF PEAK HOURS, THE CONTRACTOR SHALL CLOSE THE RIGHT LANE EASTBOUND WHILE MAINTAINING ONE 11′ TRAFFIC LANE ADJACENT TO THE MEDIAN BARRIER. THE PHASE 3 WORK ZONE SHALL ENCOMPASS THE ENTIRE 25′-10½″ OF THE SOUTH SIDE OF THE EASTBOUND LANES.

ONCE ALL WORK HAS BEEN COMPLETED, THE REMAINING PORTABLE BARRIERS SHALL BE REMOVED AND NORMAL TRAFFIC PATTERNS SHALL RESUME, AFTER PLACEMENT OF PERMANENT PAVEMENT MARKINGS.

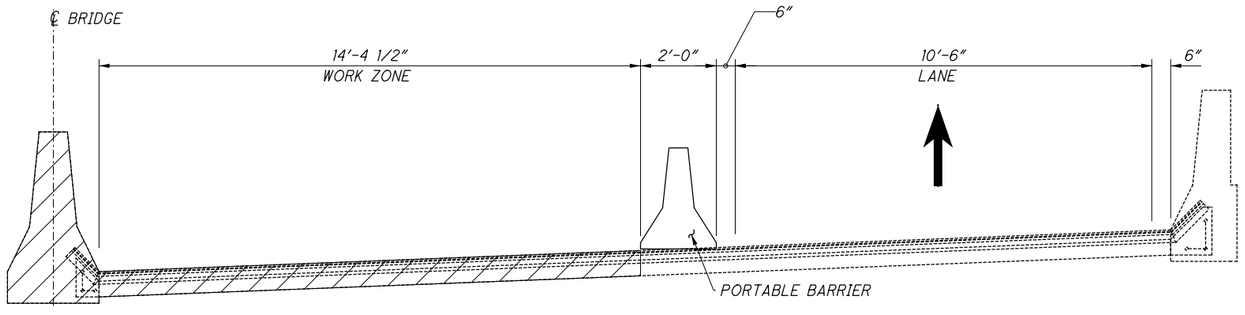
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

CUY-2-14.41



TYPICAL TWO-LANE SECTION WESTBOUND
PHASE 2



TYPICAL TWO-LANE SECTION WESTBOUND
PHASE 1

SEQUENCE OF CONSTRUCTION

IT IS THE INTENT OF THE FOLLOWING SEQUENCE OF CONSTRUCTION TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELING PUBLIC; THEREFORE, ALL PHASES SHALL HAVE STRICT ADHERENCE TO THE MINIMUM LANE WIDTHS. ALL TEMPORARY OR PERMANENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC. THE SPEED LIMIT SHALL BE REDUCED BY 10 MPH FROM 50 MPH TO 40 MPH IN THE WORK ZONE.

THE SECTIONS SHOWN ARE INDICATIVE OF THE MINIMUM BRIDGE DECK WIDTH THROUGHOUT THE TWO-LANE PORTION OF THE STRUCTURE. THE LOCATION OF PARAPETS AND WIDTH OF THE WORK ZONE WILL VARY AT SELECT JOINT LOCATIONS. THE CONTRACTOR MAY MODIFY THE WIDTH OF THE WORK ZONE AS LONG AS 10′-6″ TRAFFIC LANES WITH 6″ SHOULDERS ARE MAINTAINED.

THE DURATION OF CLOSURE FOR EACH PHASE SHALL NOT EXCEED 45 DAYS. FOR EVERY DAY OVER THE 45 DAYS ALLOWED CLOSURE DURATION, A $5,000 PER DAY FINE WILL BE ASSESSED TO THE CONTRACTOR.

PHASE 1

THE CONTRACTOR SHALL CLOSE THE SOUTH 14′-4½″ OF THE WESTBOUND LANES WITH PORTABLE BARRIERS ALLOWING ONE 10′-6″ LANE REMAINING FOR TRAFFIC.

COMPLETE ALL WORK ON THE JOINTS, PARAPETS, AND DECK IN THE PHASE 1 WORK ZONE.

ONCE PHASE 1 WORK IS COMPLETE, A FULL CLOSURE OF THE WESTBOUND TRAVEL LANES WILL BE REQUIRED TO PICK UP PHASE 1 AND SET UP PHASE 2. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

PHASE 2

THE CONTRACTOR SHALL CLOSE THE NORTH 14′-4½″ OF THE WESTBOUND LANES WITH PORTABLE BARRIERS ALLOWING ONE 10′-6″ LANE REMAINING FOR TRAFFIC.

COMPLETE ALL WORK ON THE JOINTS AND PARAPETS IN THE PHASE 2 WORK ZONE.

ONCE PHASE 2 WORK IS COMPLETE, A FULL CLOSURE OF THE WESTBOUND TRAVEL LANES WILL BE REQUIRED FOR THE CONTRACTOR TO REMOVE THE PHASE 2 BARRIERS AND REOPEN BOTH WESTBOUND LANES TO TRAFFIC AFTER PLACEMENT OF PERMANENT PAVEMENT MARKINGS. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

LEGEND

PORTIONS OF STRUCTURE TO BE REMOVED FOR JOINT REPLACEMENT

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

CUY-2-14.41

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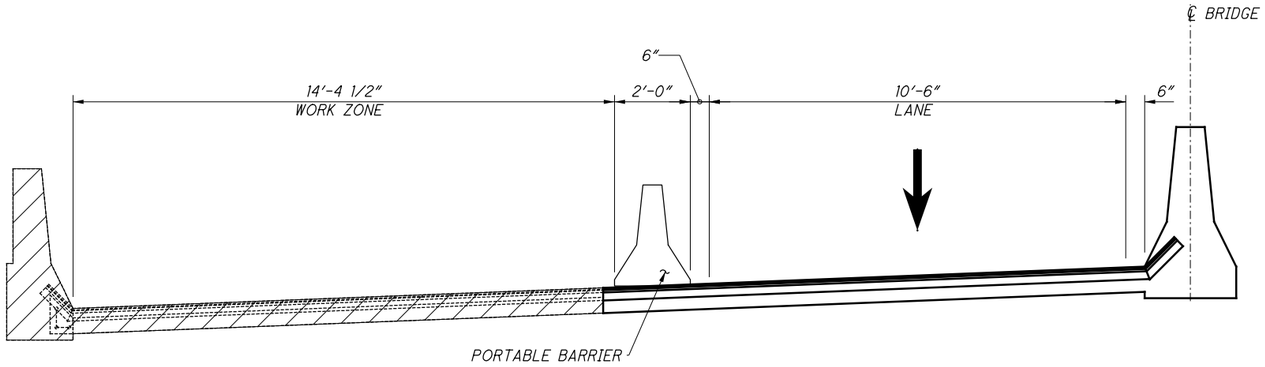
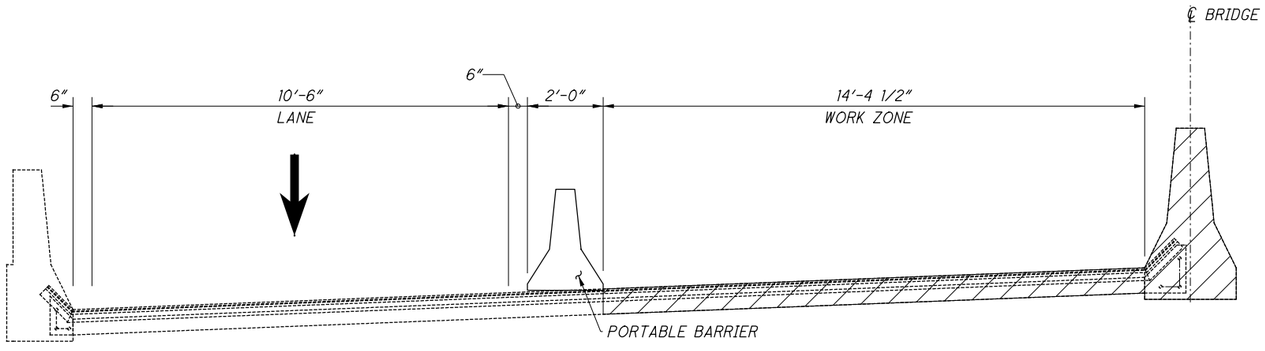
Maintenance of Traffic - Typical Sections 2 1/25/2017 3:33:53 PM nrfisco



TYPICAL TWO-LANE SECTION EASTBOUND
PHASE 2



TYPICAL TWO-LANE SECTION EASTBOUND
PHASE 1

SEQUENCE OF CONSTRUCTION

IT IS THE INTENT OF THE FOLLOWING SEQUENCE OF CONSTRUCTION TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELING PUBLIC; THEREFORE, ALL PHASES SHALL HAVE STRICT ADHERENCE TO THE MINIMUM LANE WIDTHS. ALL TEMPORARY OR PERMANENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC. THE SPEED LIMIT SHALL BE REDUCED BY 10 MPH FROM 50 MPH TO 40 MPH IN THE WORK ZONE.

THE SECTIONS SHOWN ARE INDICATIVE OF THE MINIMUM BRIDGE DECK WIDTH THROUGHOUT THE TWO-LANE PORTION OF THE STRUCTURE. THE LOCATION OF PARAPETS AND WIDTH OF THE WORK ZONE WILL VARY AT SELECT JOINT LOCATIONS. THE CONTRACTOR MAY MODIFY THE WIDTH OF THE WORK ZONE AS LONG AS 10′-6″ TRAFFIC LANES WITH 6″ SHOULDERS ARE MAINTAINED.

THE DURATION OF CLOSURE FOR EACH PHASE SHALL NOT EXCEED 45 DAYS. FOR EVERY DAY OVER THE 45 DAYS ALLOWED CLOSURE DURATION, A $5,000 PER DAY FINE WILL BE ASSESSED TO THE CONTRACTOR.

PHASE 1

THE CONTRACTOR SHALL CLOSE THE NORTH 14′-4½″ OF THE EASTBOUND LANES WITH PORTABLE BARRIERS ALLOWING ONE 10′-6″ LANE REMAINING FOR TRAFFIC.

COMPLETE ALL WORK ON THE JOINTS AND PARAPETS IN THE PHASE 1 WORK ZONE.

ONCE PHASE 1 WORK IS COMPLETE, A FULL CLOSURE OF THE EASTBOUND TRAVEL LANES WILL BE REQUIRED TO PICK UP PHASE 1 AND SET UP PHASE 2. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

PHASE 2

THE CONTRACTOR SHALL CLOSE THE SOUTH 14′-4½″ OF THE EASTBOUND LANES WITH PORTABLE BARRIERS ALLOWING ONE 10′-6″ LANE REMAINING FOR TRAFFIC.

COMPLETE ALL WORK ON THE JOINTS AND PARAPETS IN THE PHASE 2 WORK ZONE.

ONCE PHASE 2 WORK IS COMPLETE, A FULL CLOSURE OF THE EASTBOUND TRAVEL LANES WILL BE REQUIRED FOR THE CONTRACTOR TO REMOVE THE PHASE 2 BARRIERS AND REOPEN BOTH EASTBOUND LANES TO TRAFFIC. AFTER PLACEMENT OF PERMANENT PAVEMENT MARKINGS. FULL CLOSURE WILL ONLY BE PERMITTED DURING APPROVED TIMES. CONTRACTOR IS TO NOTIFY ODOT AND CITY OF CLEVELAND FOR APPROVAL 14 DAYS PRIOR TO SCHEDULED CLOSURE. SEE SHEET 3 / 154 FOR FULL CLOSURE DETOUR PLAN.

LEGEND

PORTIONS OF STRUCTURE TO BE REMOVED FOR JOINT REPLACEMENT

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

CUY-2-14.41

Maintenance of Traffic - Typical Sections 2 1/25/2017 3:33:26 PM nrfisco

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	614 WORK ZONE LANE LINE, CLASS I	614 WORK ZONE EDGE LINE YELLOW, CLASS I	614 WORK ZONE EDGE LINE WHITE, CLASS I	614 WORK ZONE CHANNELIZING LINE, CLASS I	614 WORK ZONE TRANSVERSE/DIAGONAL LINE WHITE, CLASS I	614 WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	614 BARRIER REFLECTOR	622 PORTABLE BARRIER, 32"
						MILE	MILE	MILE	FT	FT	EACH	EACH	FT
10	CH-1	SUBWAY	5+23	5+91	RT				68				
10	CH-2	SUBWAY TO S RAMP	5+46	9+50	LT&RT				404				
10	ELY-1	S RAMP TO MAIN AVE	5+91	77+54	LT&RT		1.36						
10	IA-1	S RAMP	9+37		LT						1		
10	PCB-1	S RAMP TO MAIN AVE	9+47	76+52	RT							668	6680
10	LL-1	S RAMP TO MAIN AVE	9+50	50+26	RT	0.77							
10	ELW-1	S RAMP MAIN AVE	8+73	12+01	RT			0.92					
10	ELY-2	N RAMP TO MAIN AVE	9+88	20+00	RT&LT		0.18						
10	LL-2	N RAMP TO MAIN AVE	10+00	50+30	LT	0.76							
10	ELW-2	N RAMP TO MAIN AVE	10+50	7+67	LT			0.98					
10	PCB-2	N RAMP TO MAIN AVE	11+35	20+00	RT&LT							82	820
11	ELW-3	MAIN AVE	18+48	20+02	LT			0.02					
11	ELY-3	MAIN AVE	18+20	80+86	LT		1.17						
11	CH-3	MAIN AVE	20+02	20+45	LT				44				
11	CH-4	MAIN AVE	20+02	20+45	LT				43				
11	IA-2	MAIN AVE	20+03		LT						1		
11	PCB-3	MAIN AVE	20+72	76+63	LT							560	5600
14	CH-5	MAIN AVE TO S RAMP	50+26	10+54	RT				573				
14	CH-6	MAIN AVE	50+30	55+56	LT&RT				530				
14	CH-7	S RAMP	8+48	10+06	LT				157				
14	CH-8	MAIN AVE	53+98	55+56	RT				158				
14	TLW-1	MAIN AVE	53+98	55+56	RT					62			
14	ELW-4	MAIN AVE	55+56	77+41	LT			0.42					
14	ELW-5	MAIN AVE	55+56	76+70	RT			0.40					
14	ELY-4	S RAMP	10+06	12+78	LT			0.05					
14	LL-3	S RAMP	10+54	12+23	RT	0.04							
16	IA-3	MAIN AVE	76+63		LT						1		
18	ELW-1	SUBWAY TO S RAMP	5+81	10+60	RT			0.95					
18	LL-1	S RAMP TO MAIN AVE	5+92	50+27	RT	0.84							
18	IA-1	S RAMP	9+67		RT						1		
18	ELY-1	S RAMP TO MAIN AVE	9+67	78+00	RT		1.29						
18	PCB-1	S RAMP	9+77	10+19	RT							458	4580
18	ELY-2	N RAMP	9+88	18+46	RT		0.16						
18	ELW-2	N RAMP	9+88	60+99	LT&RT			0.97					
18	LL-2	N RAMP	9+96	18+08	RT	0.15							
18	PCB-2	N RAMP	11+35	10+27	LT							441	4410
19	CH-1	N RAMP TO MAIN AVE	18+08	24+00	RT&LT				535				
19	CH-2	N RAMP TO MAIN AVE	18+46	20+10	RT&LT				110				
19	CH-3	MAIN AVE	18+98	20+10	LT				110				
19	ELY-3	MAIN AVE	18+96	77+40	LT		1.11						
TOTALS CARRIED TO SHEET 9						2.56	5.27	4.71	2732	62	4	2209	22090

CALCULATED HB
CHECKED DJW

MAINTENANCE OF TRAFFIC - SUB SUMMARY (1 OF 2)

CUY-2-14.41

MOT Sub-Summary 1/19/2017 4:03:34 PM nrfisco

MAINTENANCE OF TRAFFIC - SUB-SUMMARY (2 OF 2)

CALCULATED HB
CHECKED GJZ

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	614 WORK ZONE LANE LINE, CLASS I	614 WORK ZONE EDGE LINE YELLOW, CLASS I	614 WORK ZONE EDGE LINE WHITE, CLASS I	614 WORK ZONE CHANNELIZING LINE, CLASS I	614 WORK ZONE TRANSVERSE/DIAGONAL LINE WHITE, CLASS I	614 WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	614 BARRIER REFLECTOR	622 PORTABLE BARRIER, 32"
						MILE	MILE	MILE	FT	FT	EACH	EACH	FT
20	LL-3	MAIN AVE	24+00	50+27	LT	0.50							
22	CH-4	MAIN AVE TO N RAMP	50+27	8+50	LT&RT				380				
22	CH-5	MAIN AVE	50+26	55+06	RT				478				
22	CH-6	S RAMP	6+84	9+50	LT&RT				263				
22	CH-7	MAIN AVE	52+70	54+00	LT				132				
22	TLW-1	MAIN AVE	52+53	55+03	RT					71			
22	PCB-3	N RAMP	8+44	10+14	RT							17	170
22	ELY-4	N RAMP	8+50	12+33	RT		0.07						
22	ELY-5	S RAMP	9+50	10+77	LT			0.02					
22	IA-2	S RAMP	9+52		LT						1		
22	PCB-4	S RAMP	9+62	10+02	LT							4	40
22	ELW-4	MAIN AVE	54+00	80+87	LT			0.51					
22	PCB-5	MAIN AVE	54+00	76+84	LT							228	2280
22	ELW-3	MAIN AVE	55+06	78+00	RT			0.44					
22	IA-3	MAIN AVE	55+09								1		
22	PCB-6	MAIN AVE	55+19	77+00	RT							219	2190
22	IA-4	N RAMP	10+14		RT						1		
22	IA-5	N RAMP	10+27		LT						1		
24	IA-6	MAIN AVE	76+84		LT						1		
26	ELW-1	SUBWAY TO S RAMP	0+00	12+17	RT			1.10					
26	CH-1	SUBWAY	2+23	5+56	RT				336				
26	CH-2	S RAMP	7+27	9+50	LT				223				
26	CH-3	S RAMP	7+27	9+50	RT				222				
26	TLW-1	S RAMP	7+27	9+50	LT&RT					100			
26	ELY-1	SUBWAY TO MAIN AVE	5+56	57+30	RT&LT		0.98						
26	ELW-2	S RAMP TO MAIN AVE	9+50	60+74	LT&RT			0.97					
26	ELY-2	S RAMP	9+50	10+77	LT&RT		0.88						
26	IA-1	S RAMP	9+67		LT						1		
26	PCB-1	S RAMP TO MAIN AVE	9+77	56+89	LT&RT							470	4700
26	ELY-3	N RAMP TO MAIN AVE	9+83	10+33	LT&RT		0.90						
26	ELW-3	N RAMP	9+83	60+97	RT&LT			0.96					
26	ELY-4	N RAMP	10+10	19+18	RT		0.16						
26	ELW-4	N RAMP TO MAIN AVE	10+10	60+99	LT&RT			0.97					
26	PCB-2	N RAMP TO MAIN AVE	11+35	56+99	RT&LT							452	4520
27	CH-4	MAIN AVE	18+98	20+10	LT				110				
27	CH-5	MAIN AVE	18+68	20+10	LT				88				
27	ELY-5	MAIN AVE	18+96	57+30	LT		0.73						
30	IA-2	MAIN AVE	56+99		RT						1		
TOTALS FROM THIS SHEET						0.50	3.72	4.97	2232	171	7	1390	13900
TOTALS FROM SHEET 8						2.56	5.27	4.71	2732	62	4	2209	22090
TOTALS CARRIED TO GENERAL SUMMARY						3.06	18.67		4964	233	11	3599	35990

CUY-2-14.41

MAINTENANCE OF TRAFFIC
DETOUR ROUTE - W. 28TH STREET

CALCULATED | CHECKED

CUY-2-14.41

9A
154

(1)

EAST
2
DETOUR AHEAD

M3-2-24
M1-5-24-2
W20-2-36

(2)

ROAD CLOSED
DETOUR

R11-2-48
M4-10R-48
LIGHTS AND BARRICADES
PER MT-101.60

(3)

EAST
2
DETOUR

M3-2-24
M1-5-24-2
M4-9L-30

(4)

EAST
2
DETOUR

M3-2-24
M1-5-24-2
M4-9R-30

(5)

EAST
2
DETOUR

M3-2-24
M1-5-24-2
M4-9C-30

(6)

END DETOUR

M4-8A-24

LEGEND:

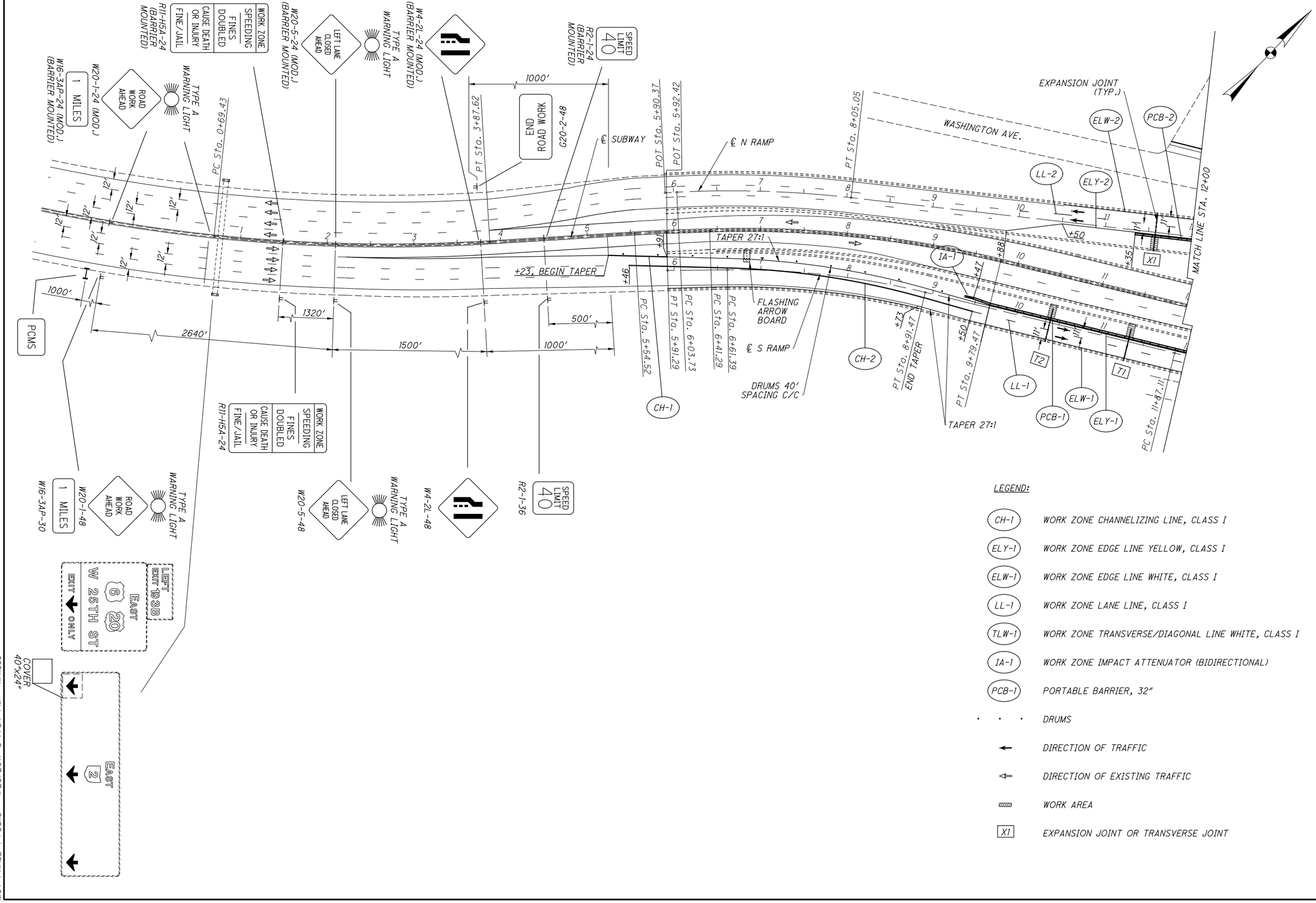
ALL LABOR, MATERIALS, AND EQUIPMENT ASSOCIATED WITH FURNISHING, ERECTING, MAINTAINING, AND SUBSEQUENTLY REMOVING DETOUR SIGNS AND BARRICADES FOR THE DETOUR DEPICTED ON THIS SHEET SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 - DETOUR SIGNING.

LEGEND:

DIRECTION OF DETOUR TRAFFIC

DETOUR

Detour Map W 28th 1/25/2017 3:38:47 PM nrfisco



LEGEND:

CH-1	WORK ZONE CHANNELIZING LINE, CLASS I
ELY-1	WORK ZONE EDGE LINE YELLOW, CLASS I
ELW-1	WORK ZONE EDGE LINE WHITE, CLASS I
LL-1	WORK ZONE LANE LINE, CLASS I
TLW-1	WORK ZONE TRANSVERSE/DIAGONAL LINE WHITE, CLASS I
IA-1	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)
PCB-1	PORTABLE BARRIER, 32″
. . .	DRUMS
←	DIRECTION OF TRAFFIC
⇦	DIRECTION OF EXISTING TRAFFIC
▨	WORK AREA
X1	EXPANSION JOINT OR TRANSVERSE JOINT

HORIZONTAL SCALE IN FEET
0 25 50 100

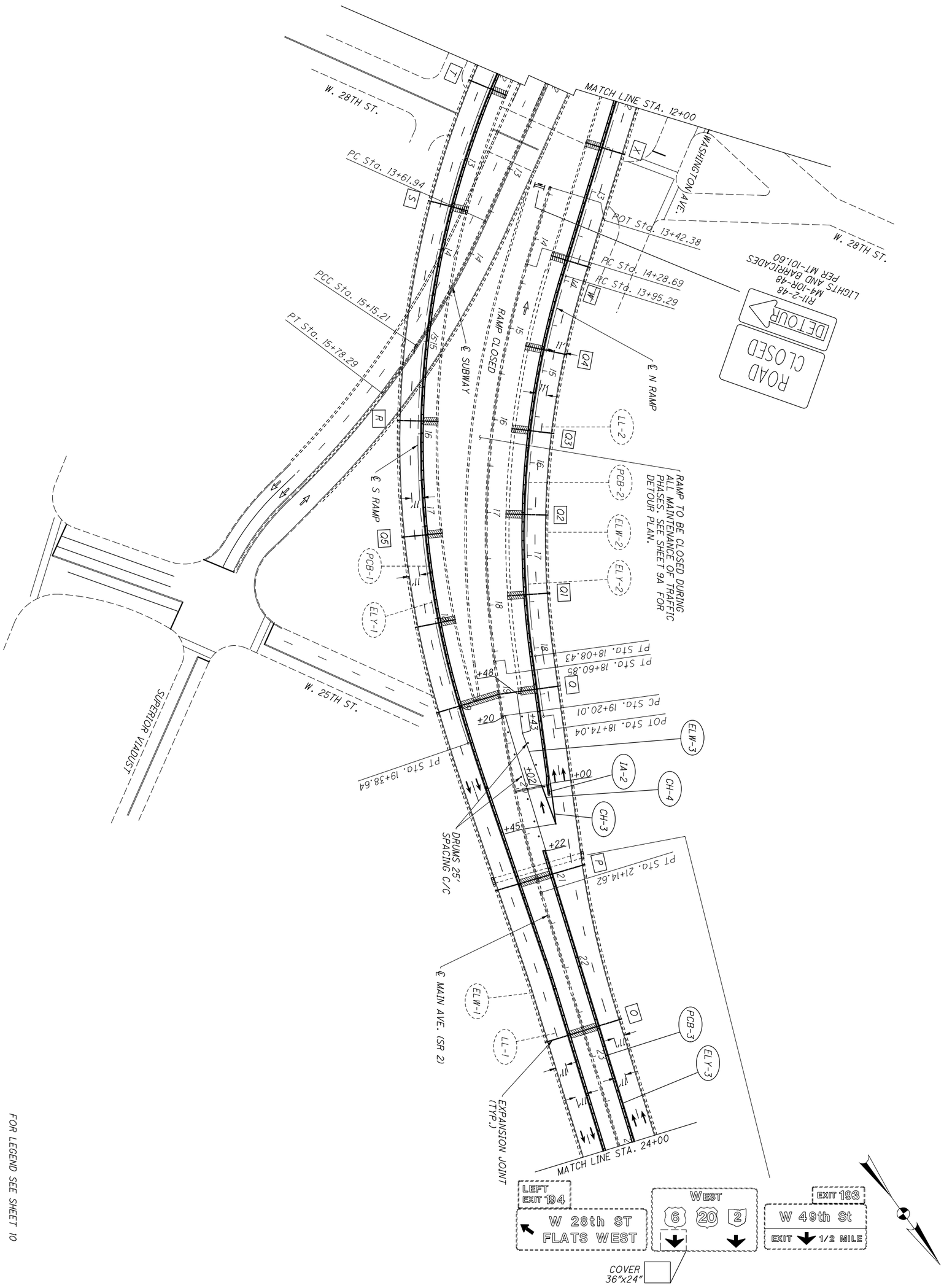
CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC PHASE 1 (1 OF 8)

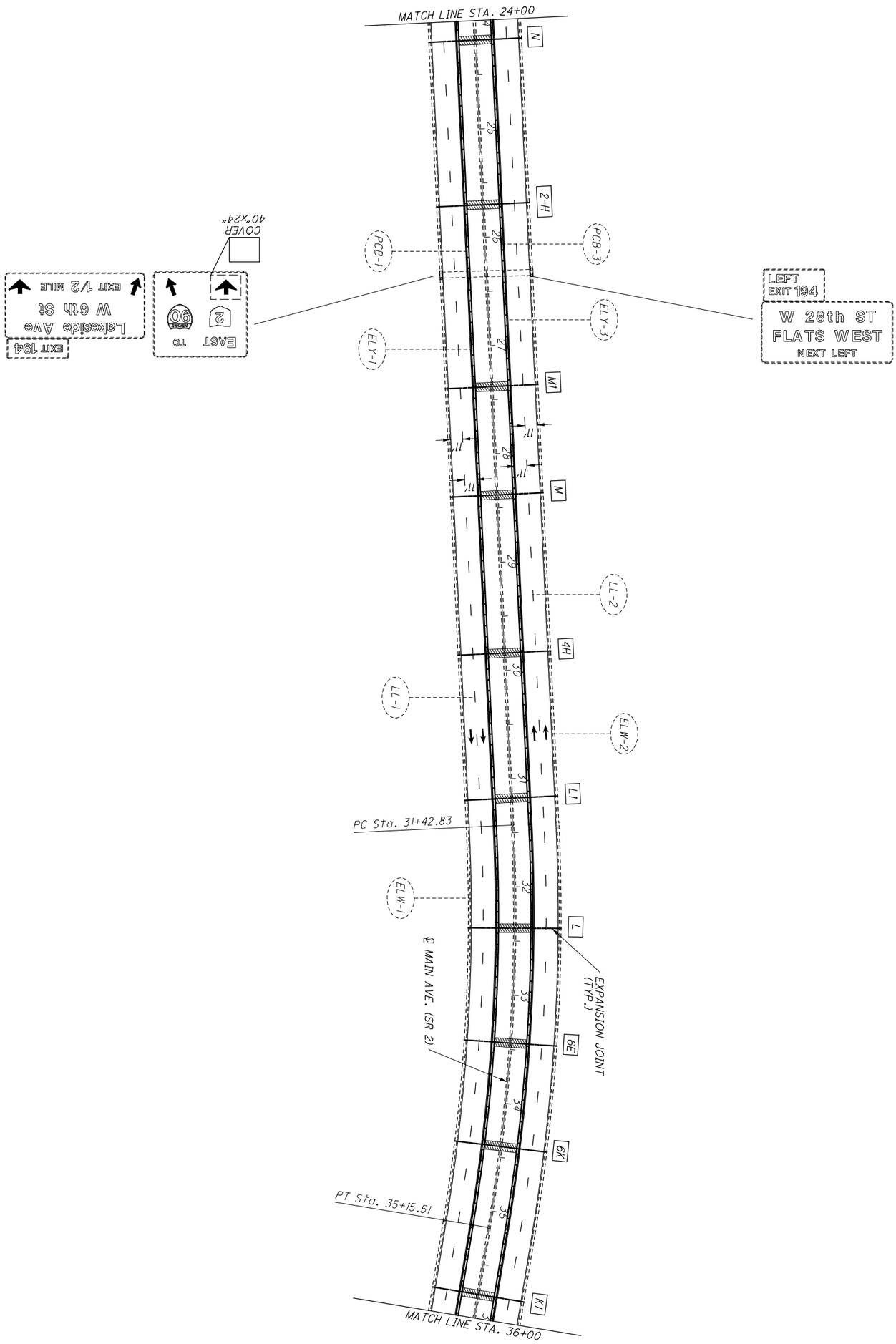
CUY-2-14.41

MOT PHASE 1 PLans 1/25/2017 3:41:54 PM nrfisco



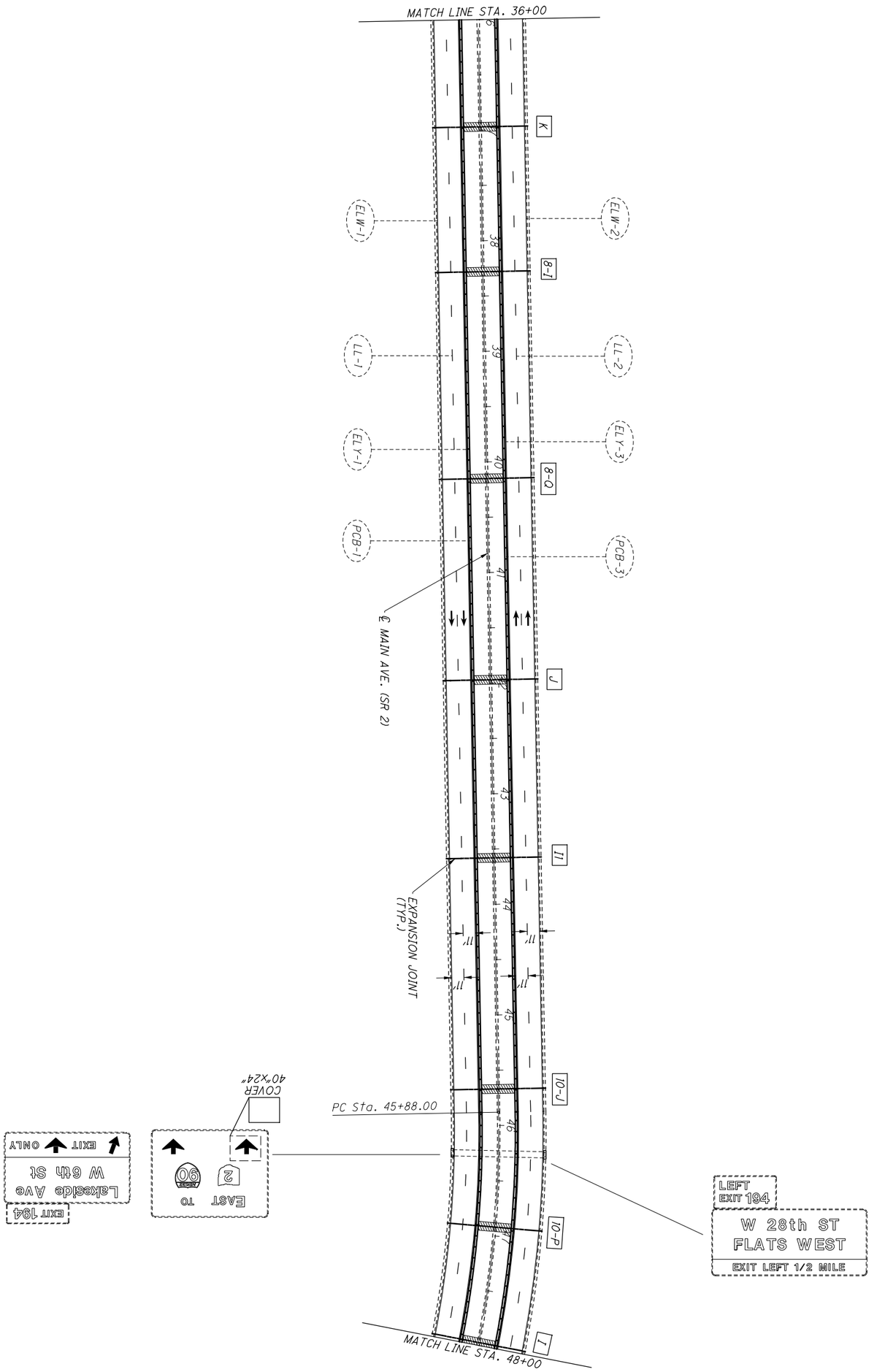
FOR LEGEND SEE SHEET 10

11 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 1 (2 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

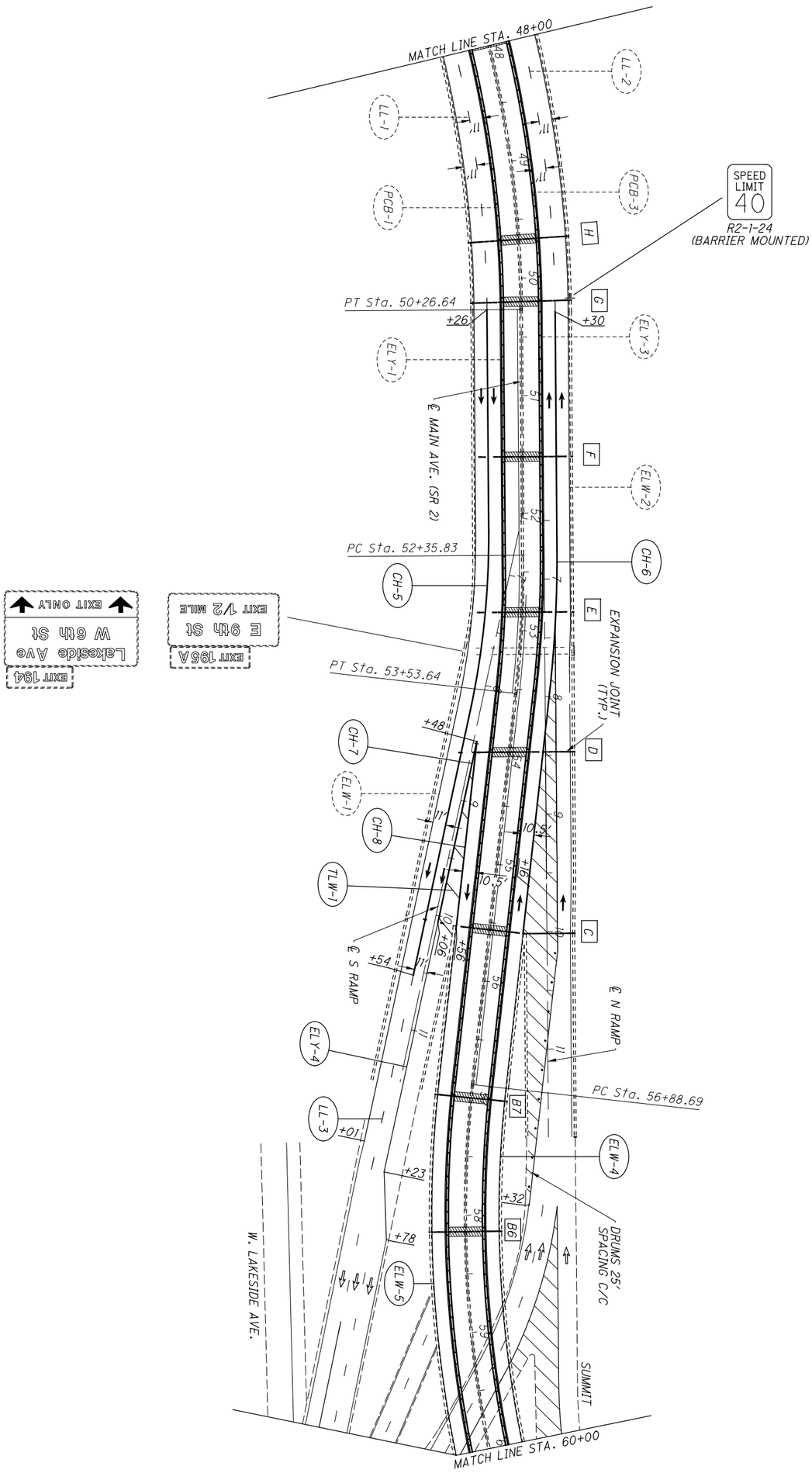


FOR LEGEND SEE SHEET 10

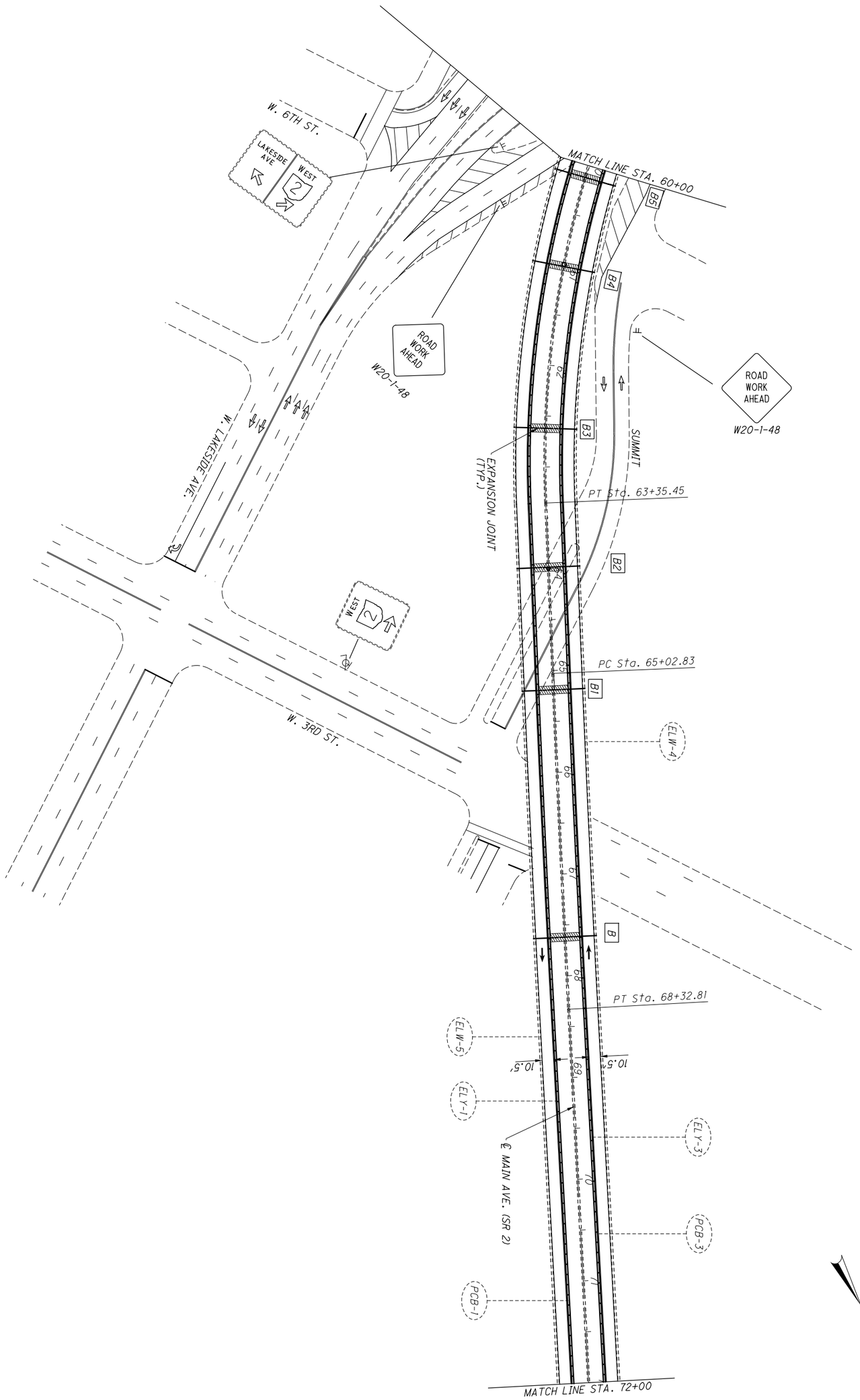
12 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 1 (3 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



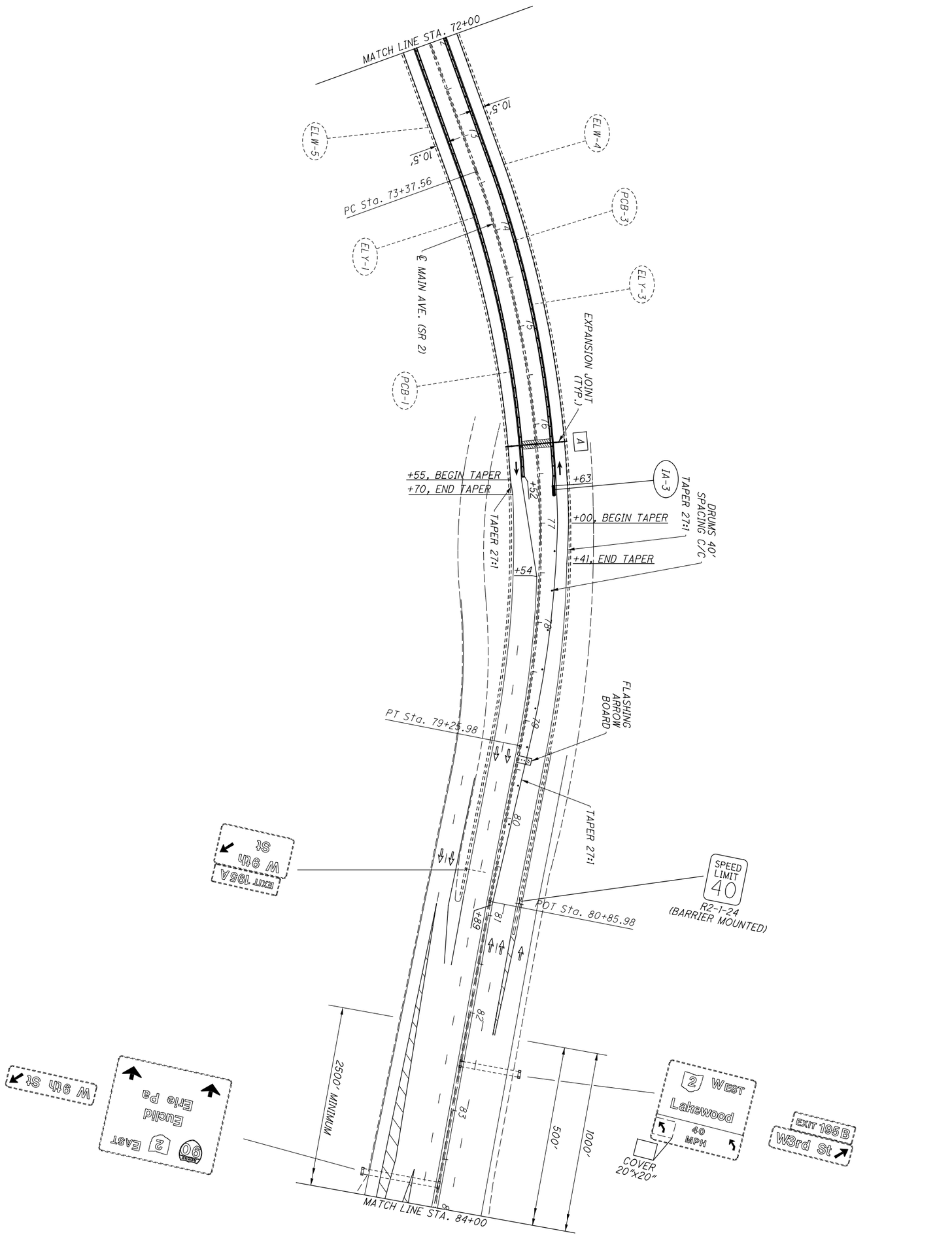
FOR LEGEND SEE SHEET 10



FOR LEGEND SEE SHEET 10

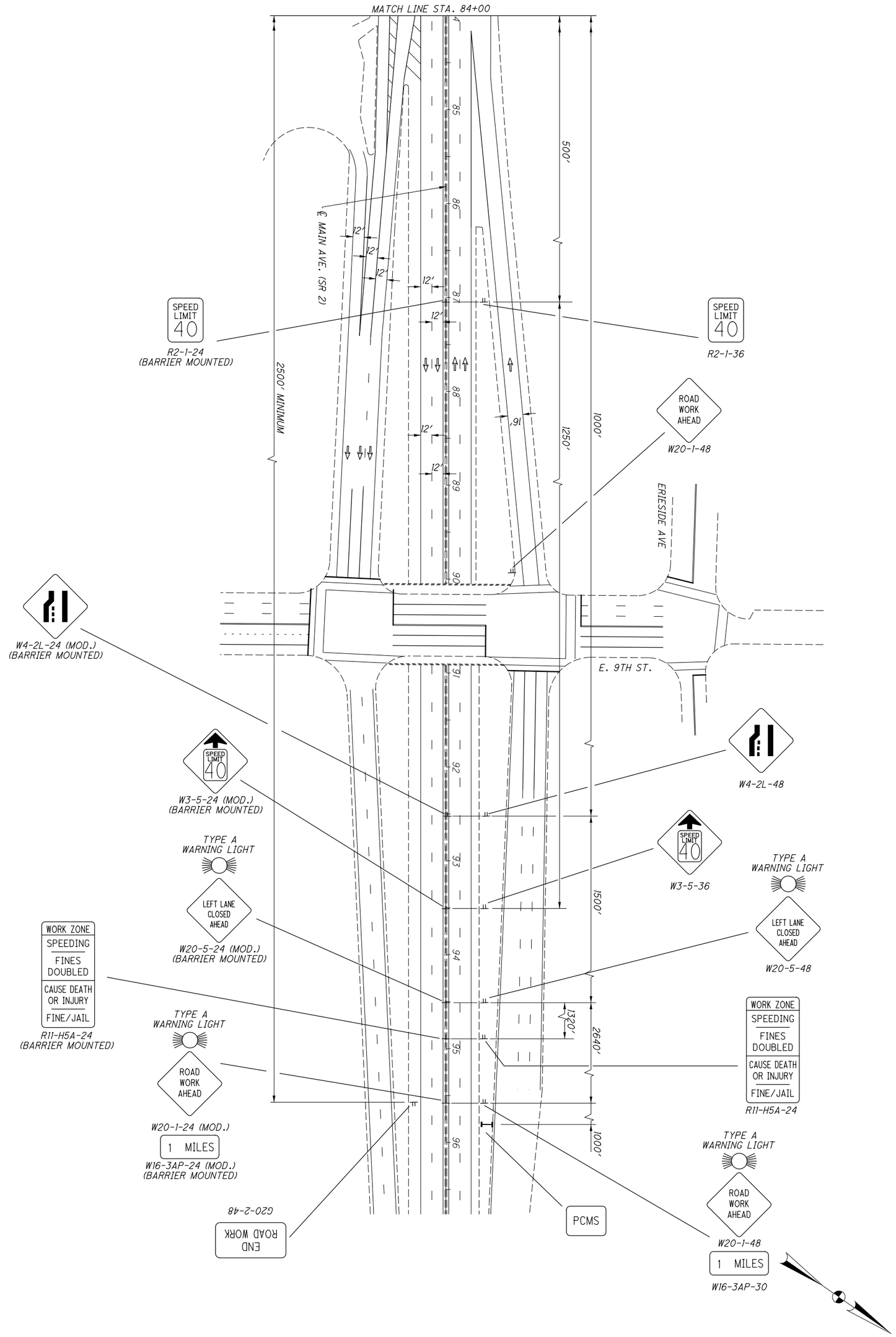


FOR LEGEND SEE SHEET 10



FOR LEGEND SEE SHEET 10

16 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 1 (7 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 10

17 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 1 (8 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 2 (1 OF 8)

CUY-2-14.41

HORIZONTAL SCALE IN FEET: 0, 25, 50, 100

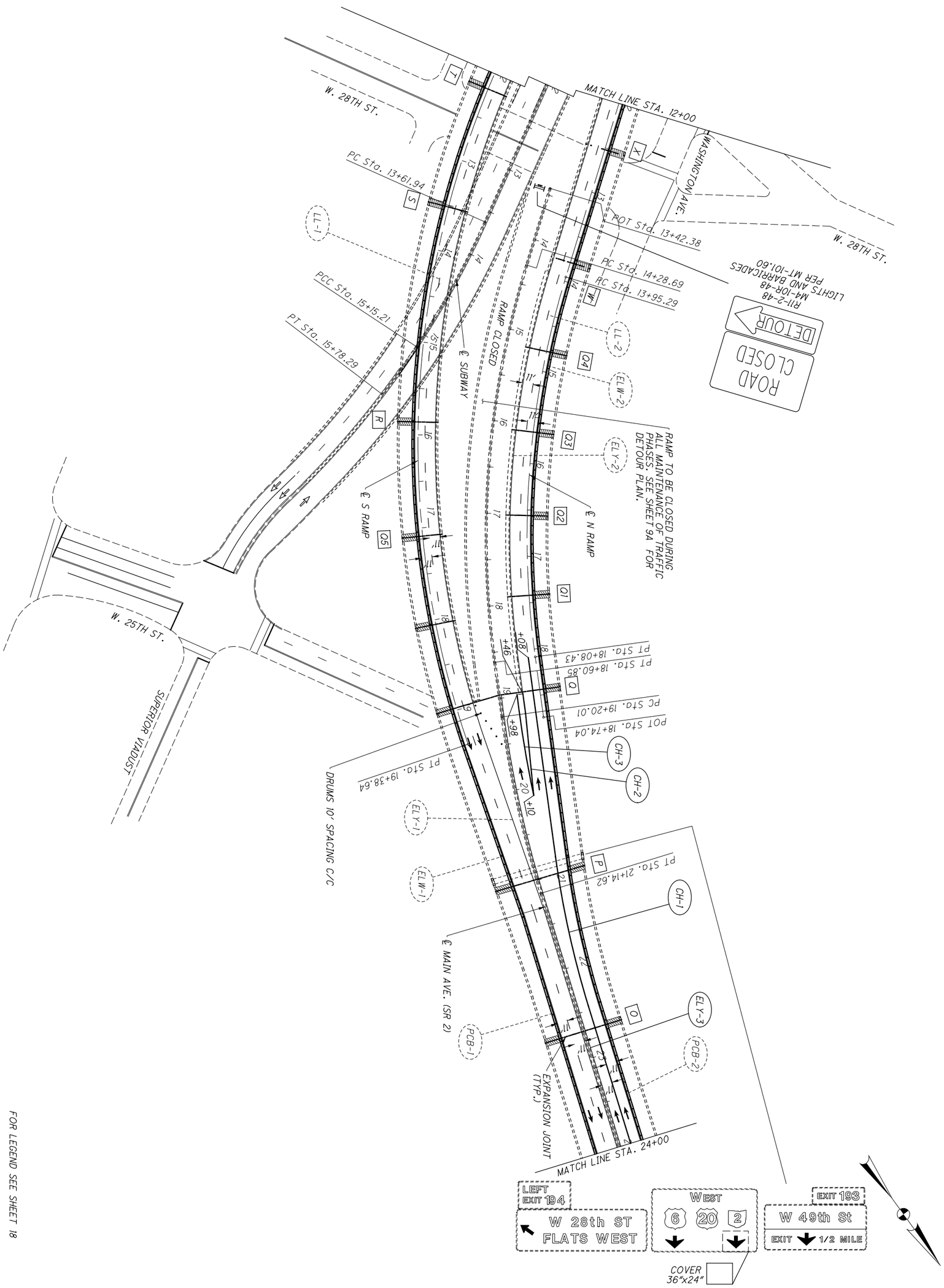
CALCULATED

CHECKED

MOT PHASE 2 Plans 1/25/2017 3:50:24 PM nrfisco

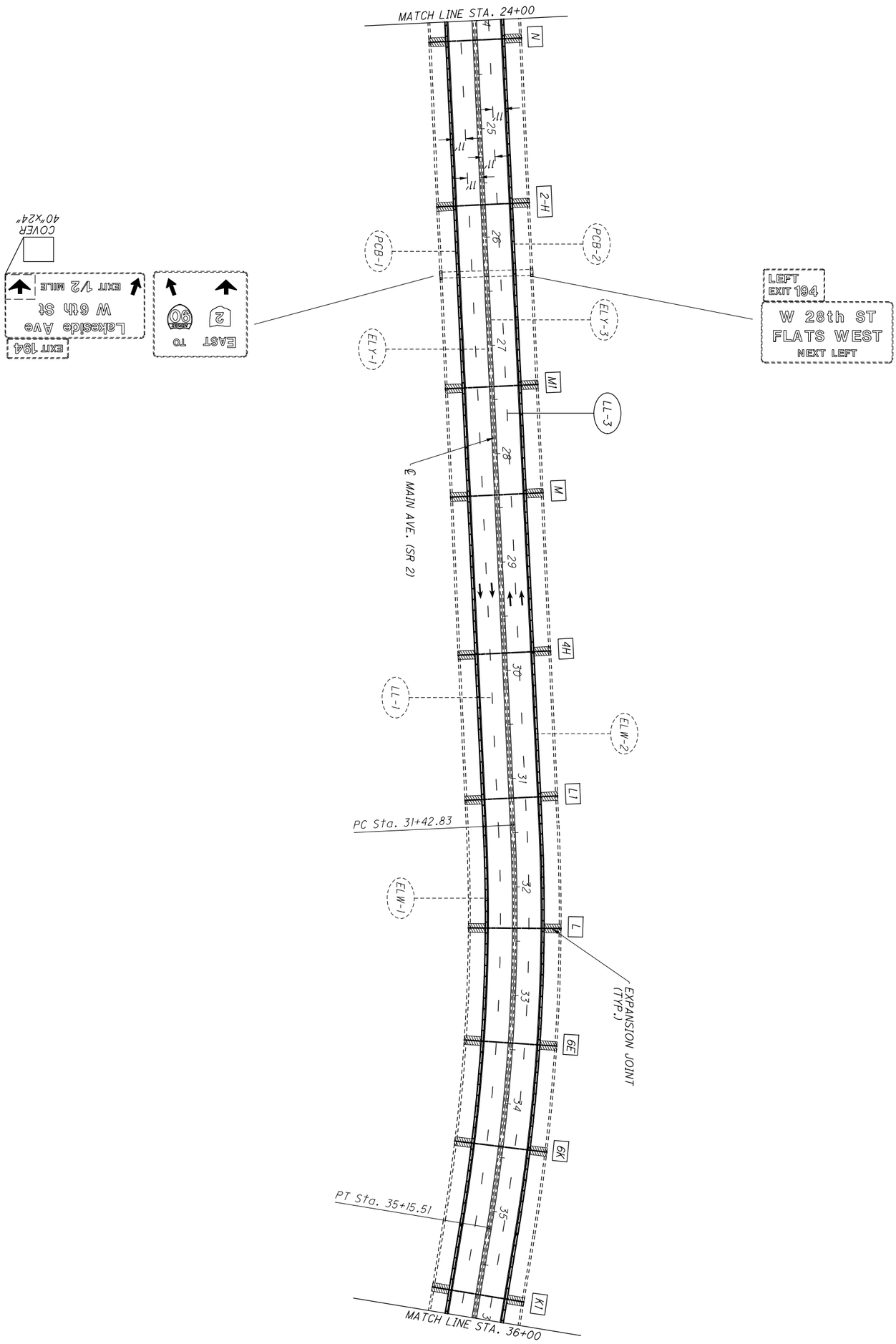
LEGEND:

- CH-1 — *WORK ZONE CHANNELIZING LINE, CLASS I*
- ELY-1 — *WORK ZONE EDGE LINE YELLOW, CLASS I*
- ELW-1 — *WORK ZONE EDGE LINE WHITE, CLASS I*
- LL-1 — *WORK ZONE LANE LINE, CLASS I*
- TLW-1 — *WORK ZONE TRANSVERSE/DIAGONAL LINE WHITE, CLASS I*
- IA-1 — *WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)*
- PCB-1 — *PORTABLE BARRIER, 32″*
- · · · — *DRUMS*
- ← — *DIRECTION OF TRAFFIC*
- ⇦ — *DIRECTION OF EXISTING TRAFFIC*
- ▨ — *WORK AREA*
- X1 — *EXPANSION JOINT OR TRANSVERSE JOINT*



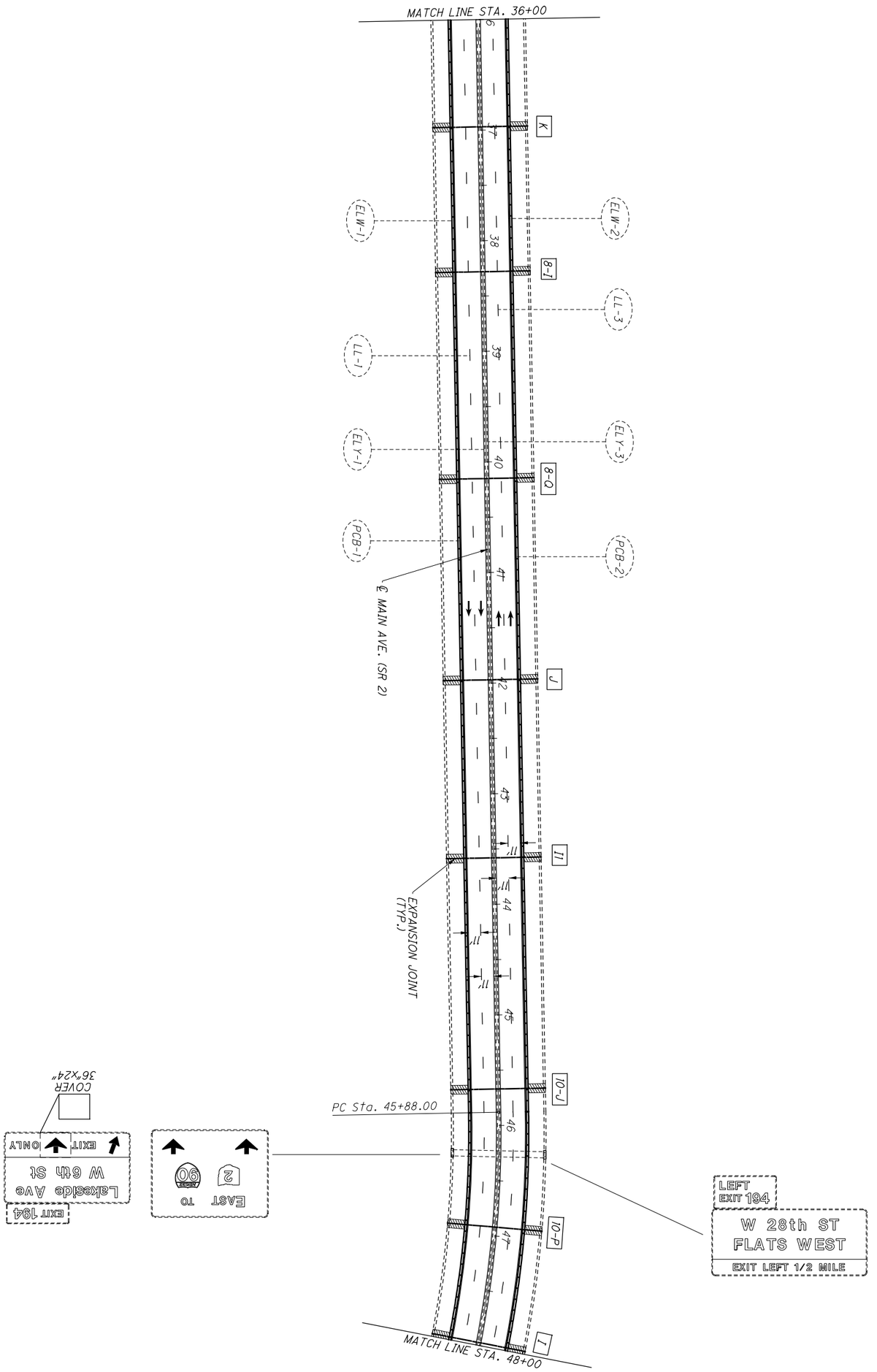
FOR LEGEND SEE SHEET 18

19 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 2 (2 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



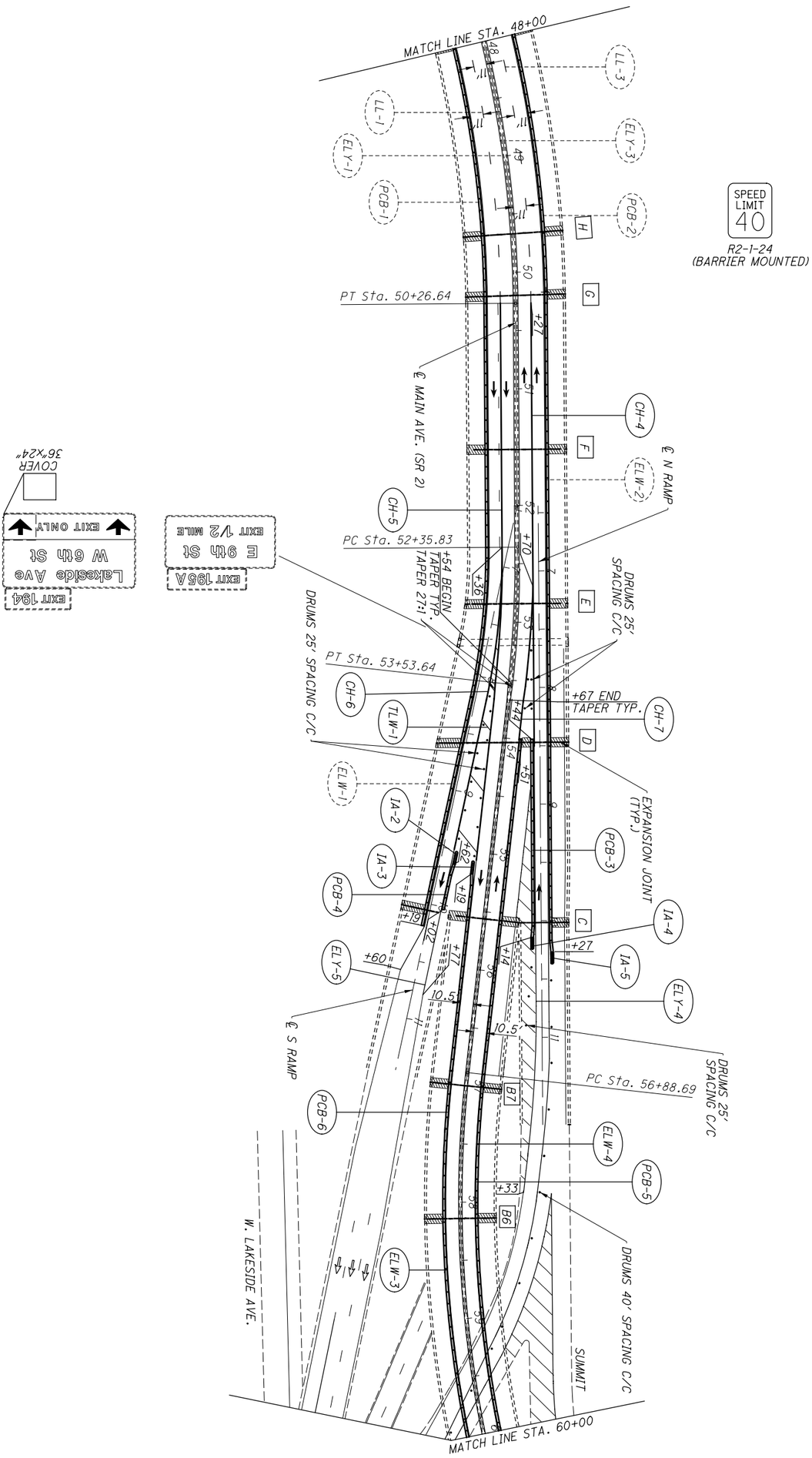
FOR LEGEND SEE SHEET 18

20 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 2 (3 OF 8)	CALCULATED / CHECKED	0 25 50 100 HORIZONTAL SCALE IN FEET

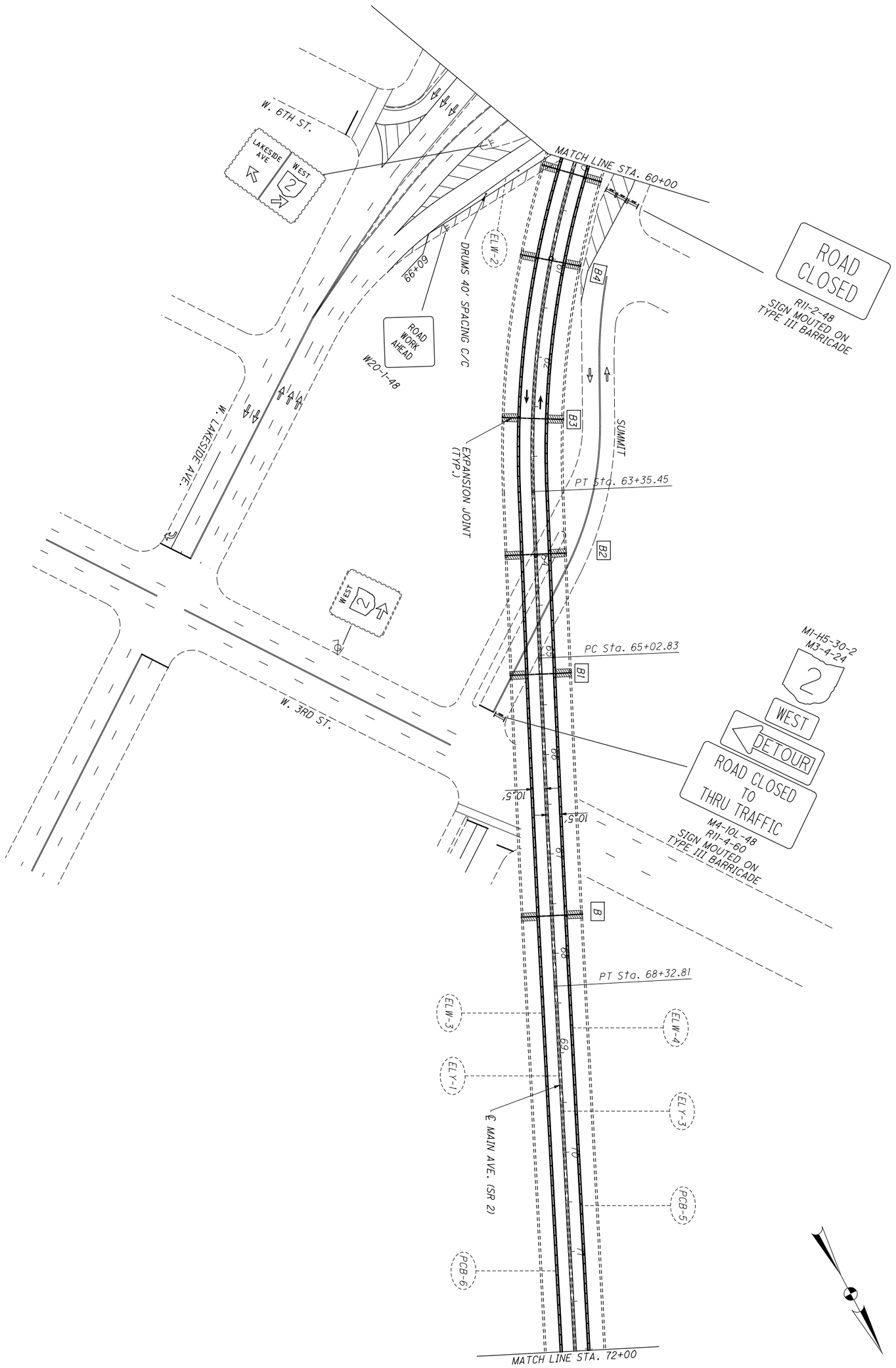


FOR LEGEND SEE SHEET 18

21 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 2 (4 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

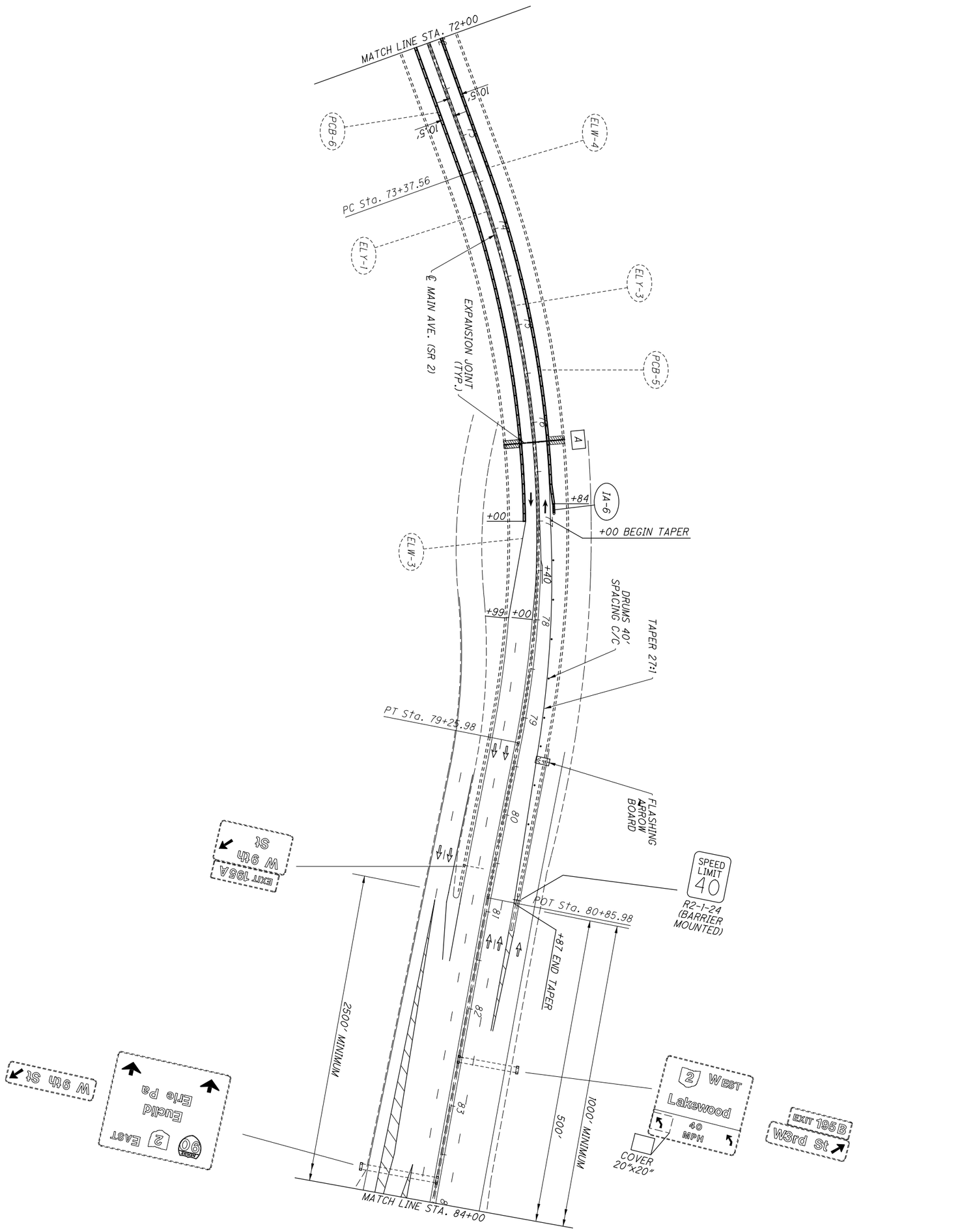


FOR LEGEND SEE SHEET 18

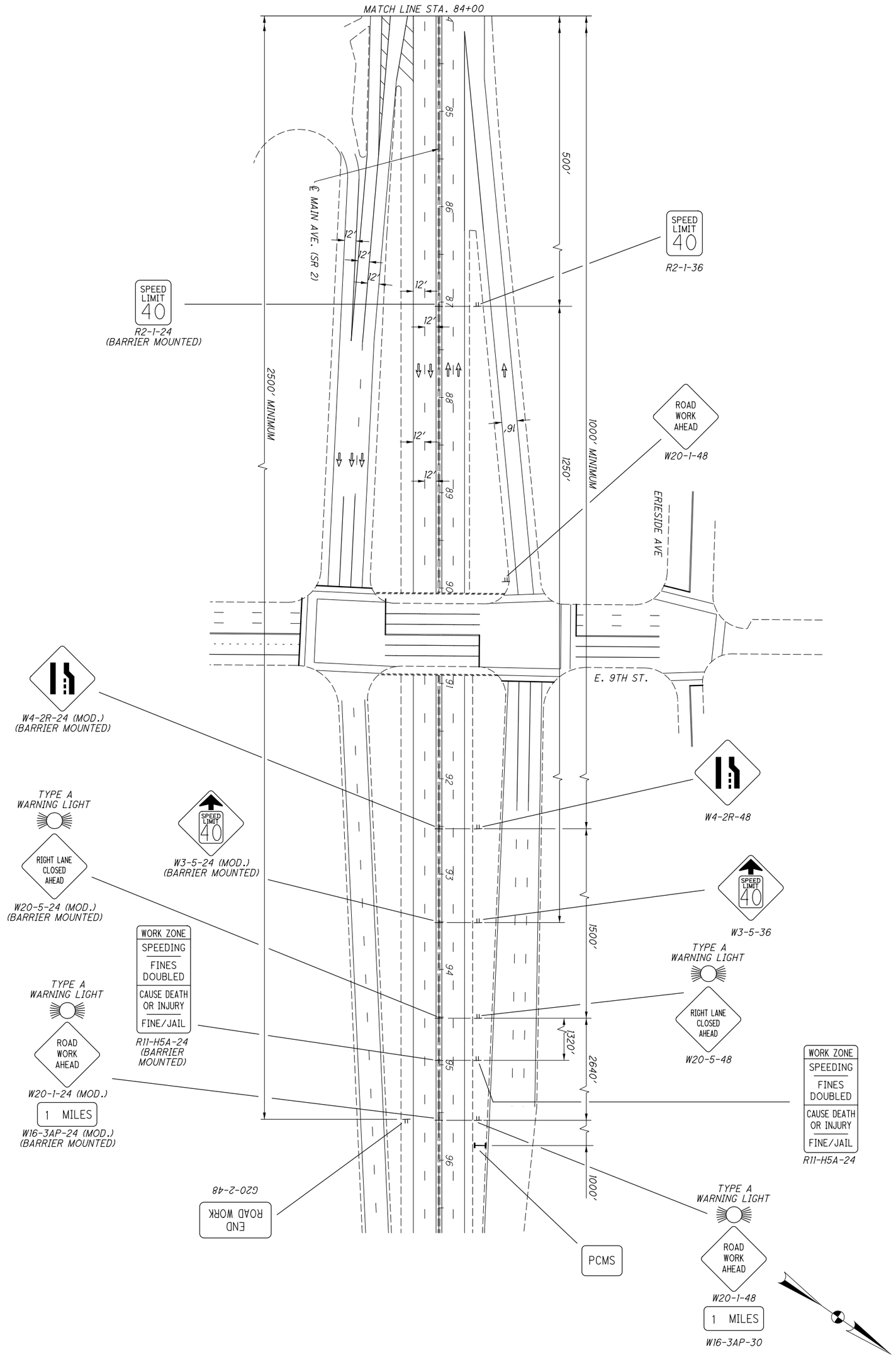


FOR LEGEND SEE SHEET 18

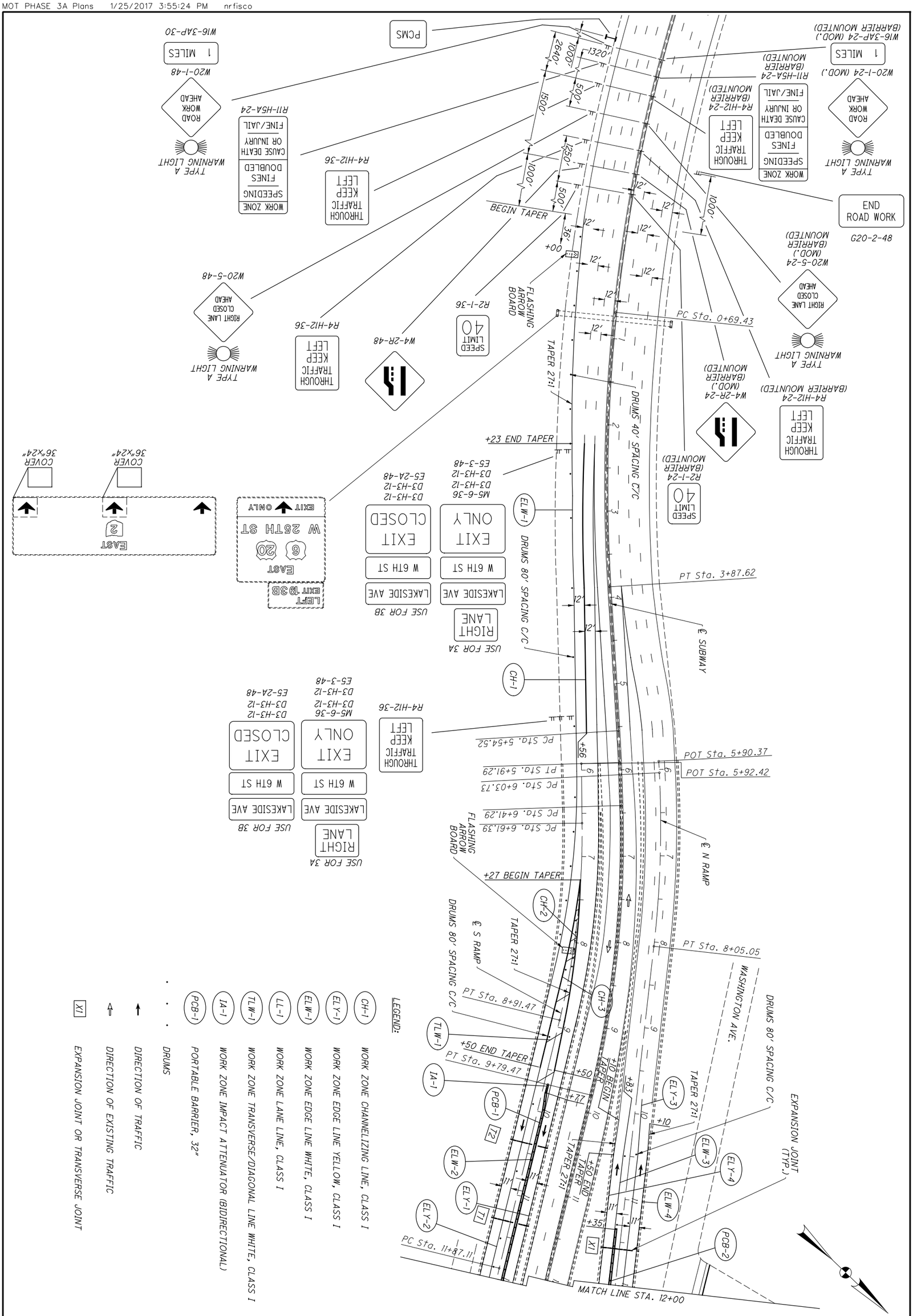
23 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 2 (6 OF 8)	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



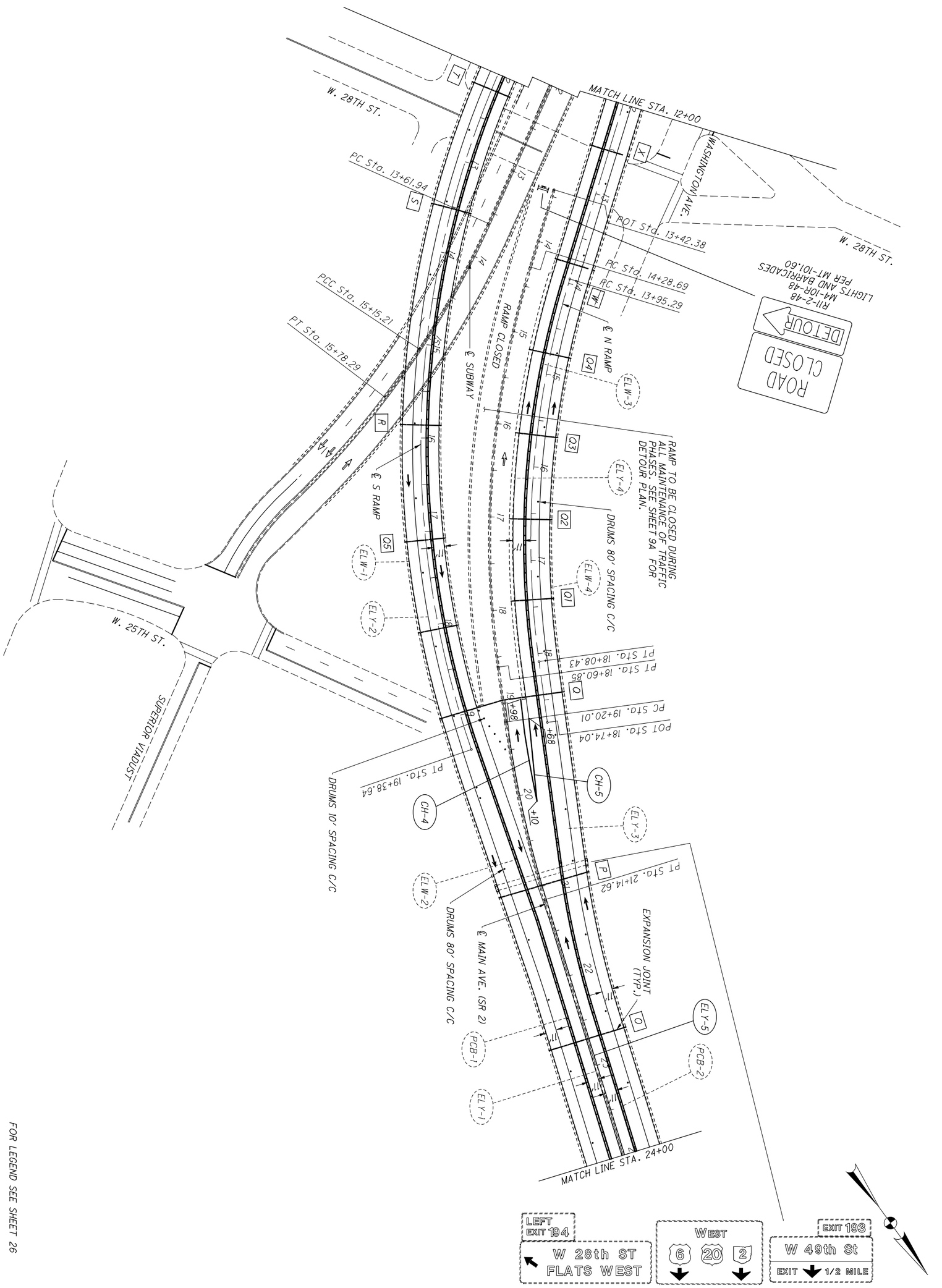
FOR LEGEND SEE SHEET 18



FOR LEGEND SEE SHEET 18

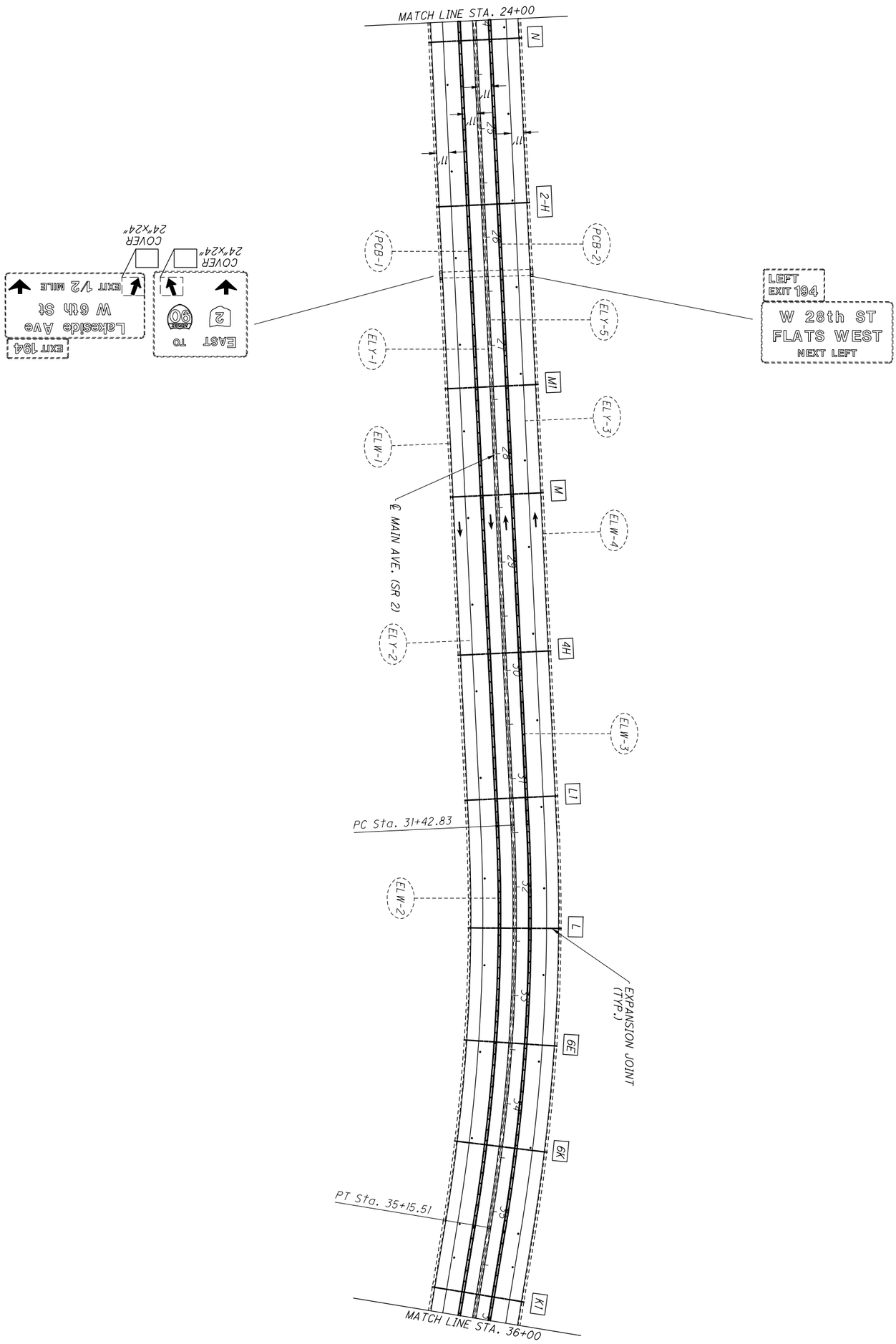


26 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3A (1 OF 8) PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



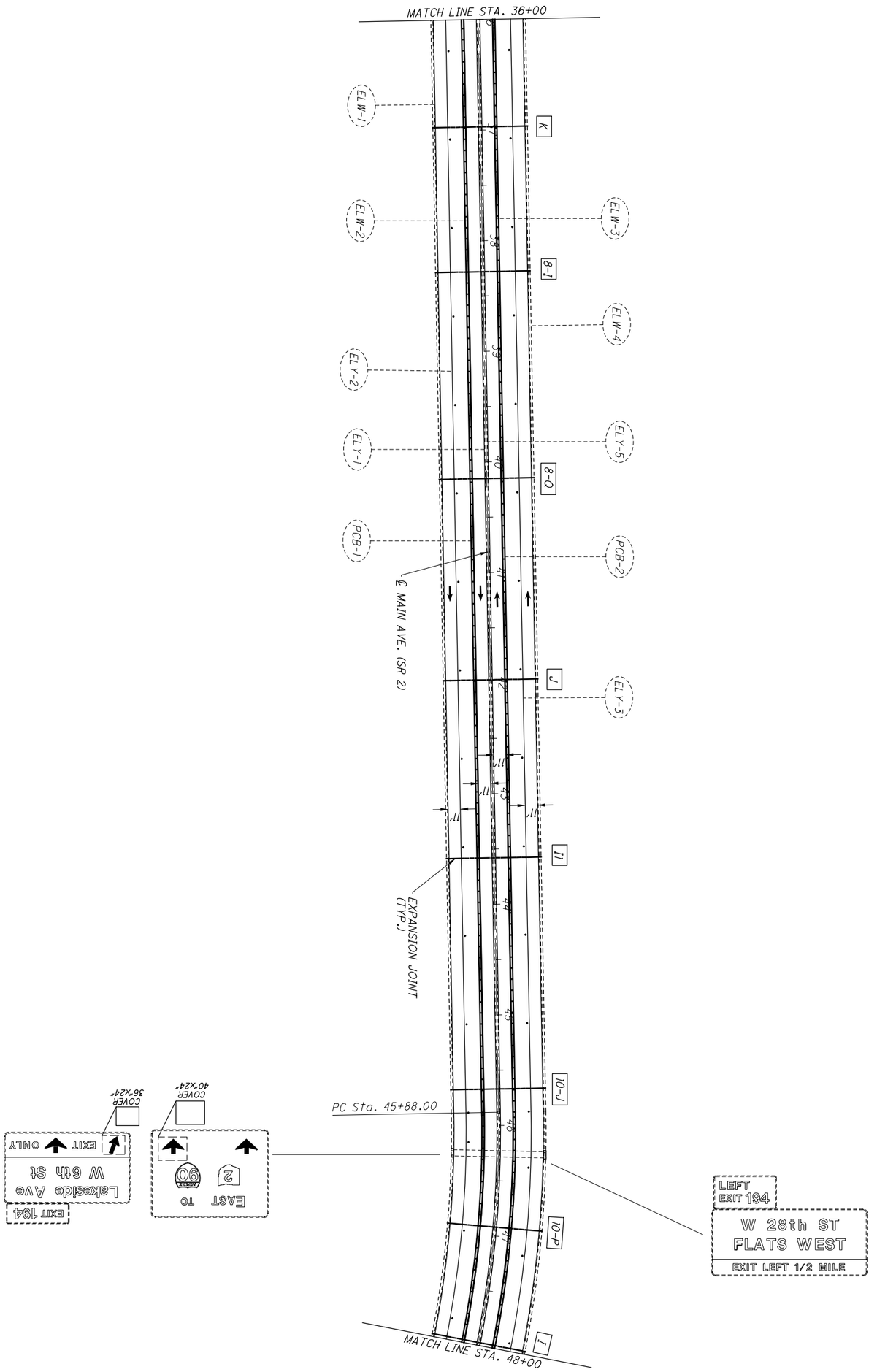
FOR LEGEND SEE SHEET 26

27 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3A (2 OF 8) PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

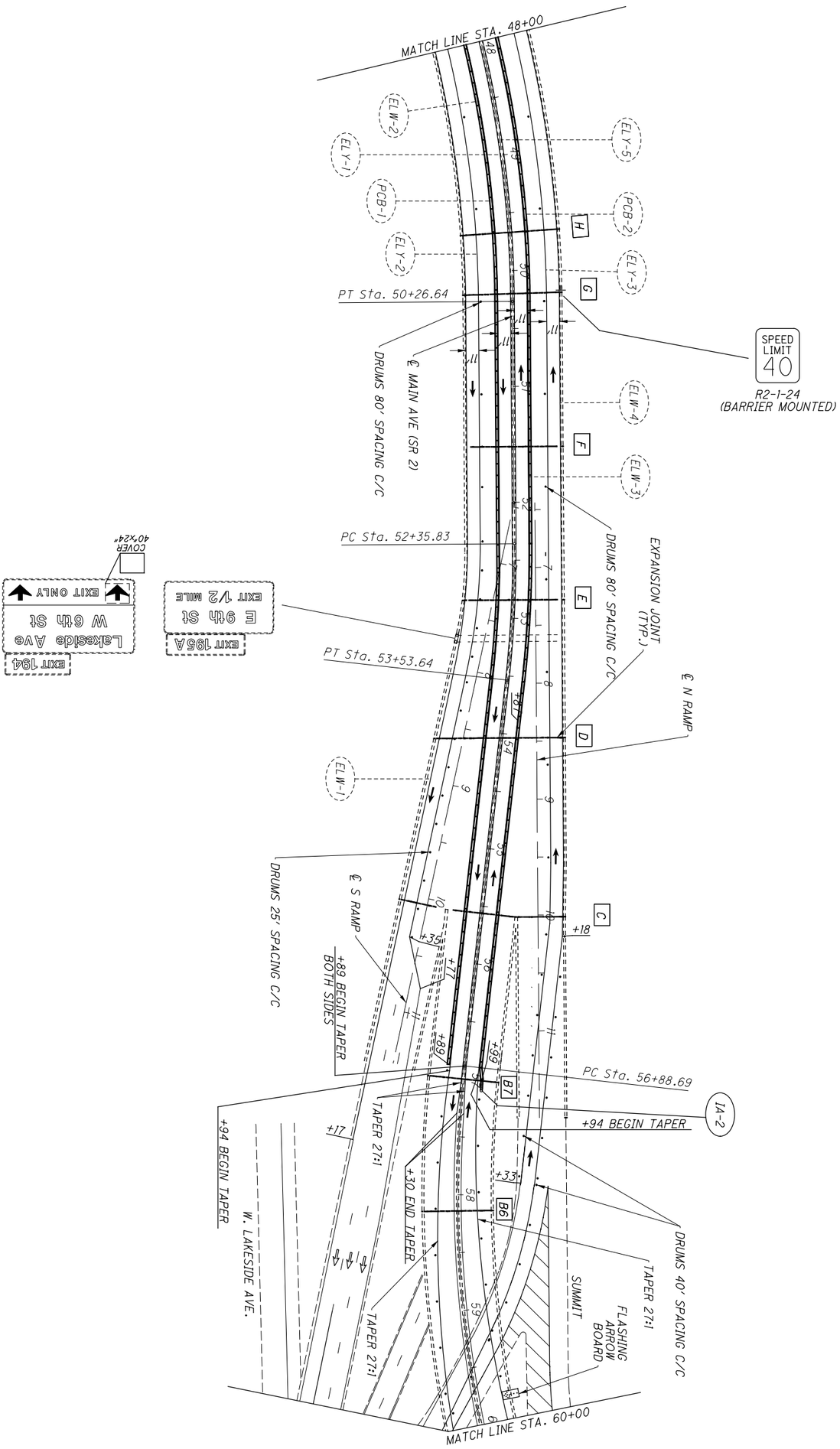


FOR LEGEND SEE SHEET 26

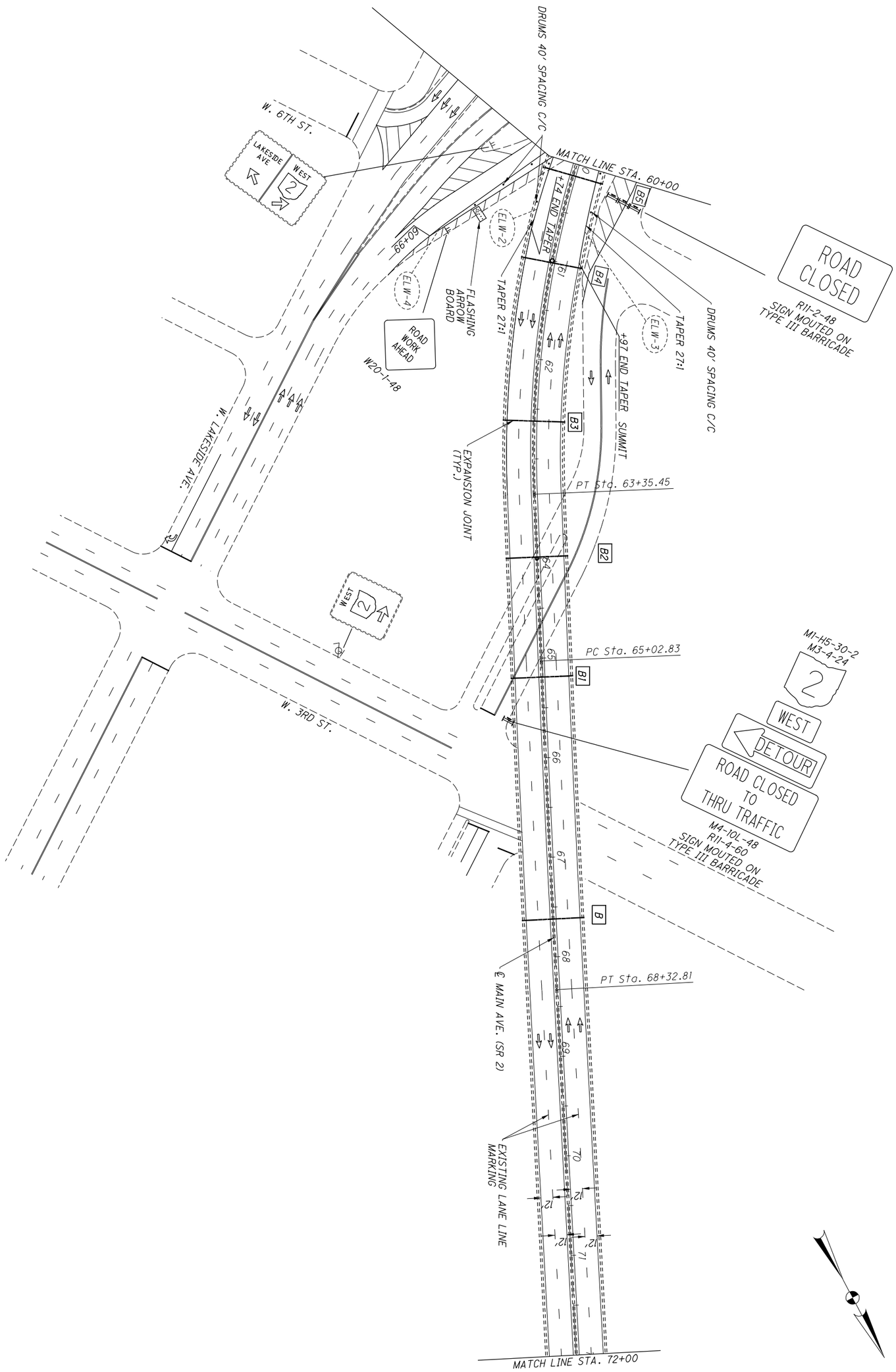
28 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3A (3 OF 8) PEAK	CALCULATED / CHECKED	0 25 50 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 26

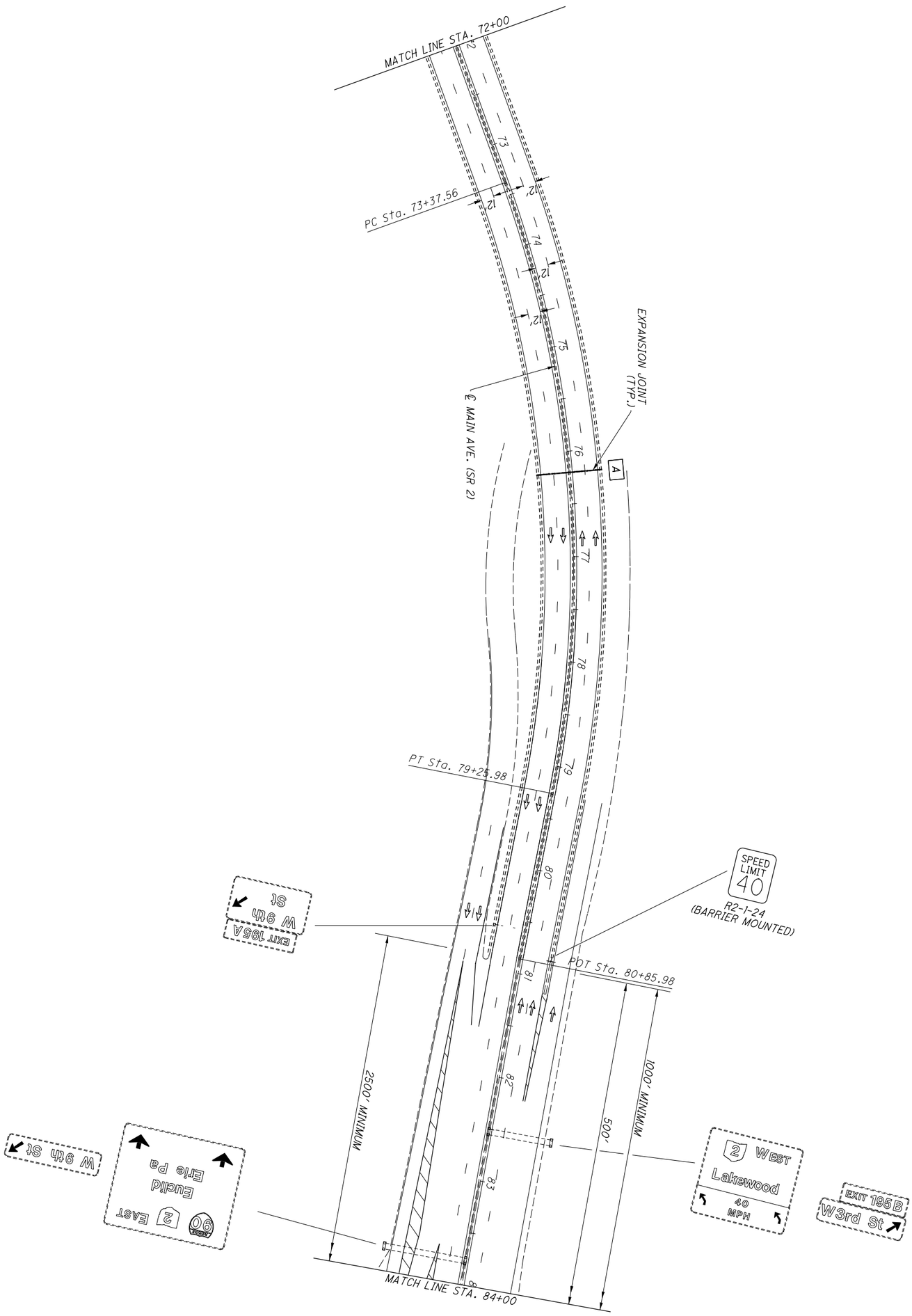


FOR LEGEND SEE SHEET 26



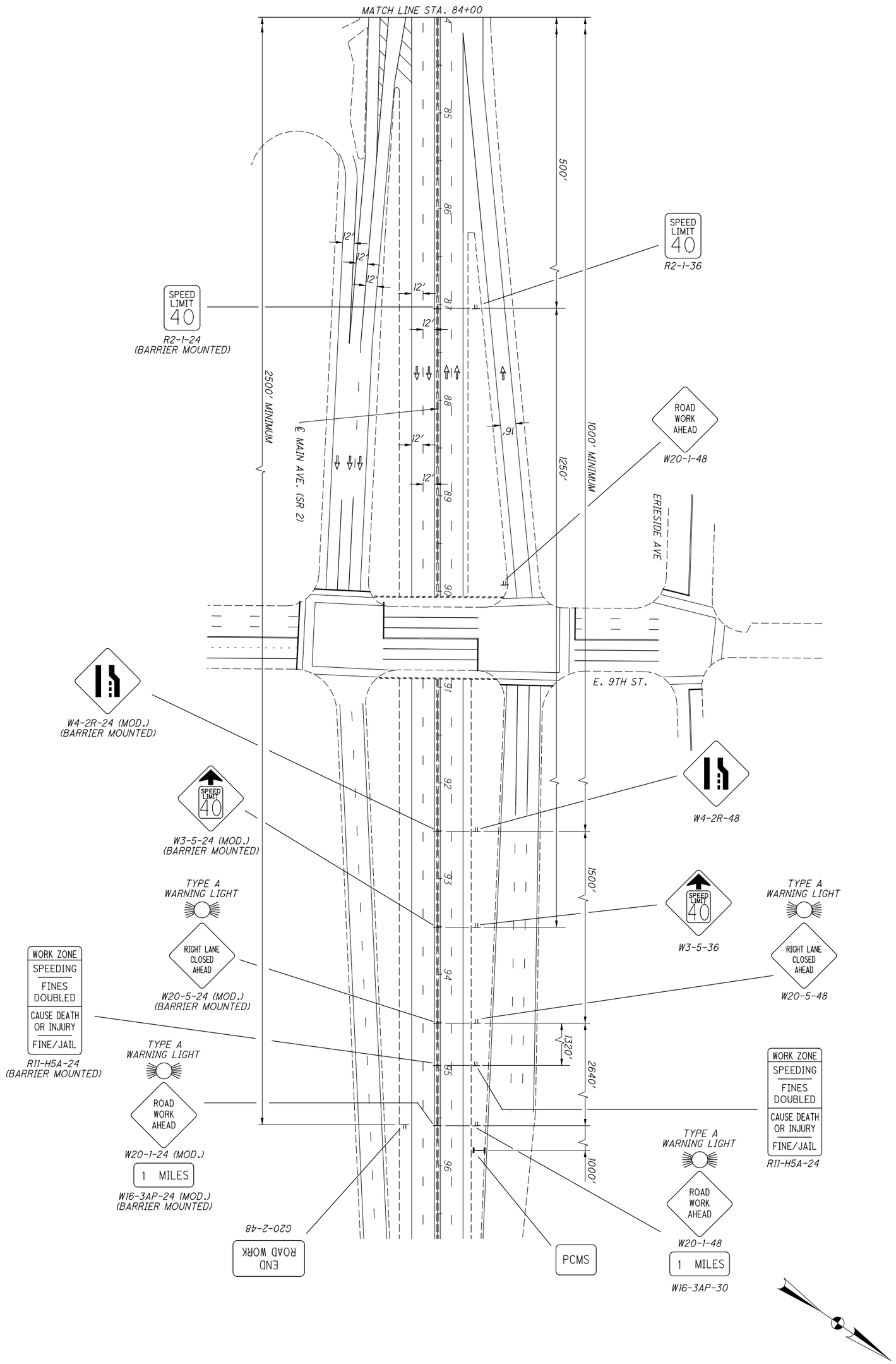
FOR LEGEND SEE SHEET 26

31 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3A (6 OF 8) PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



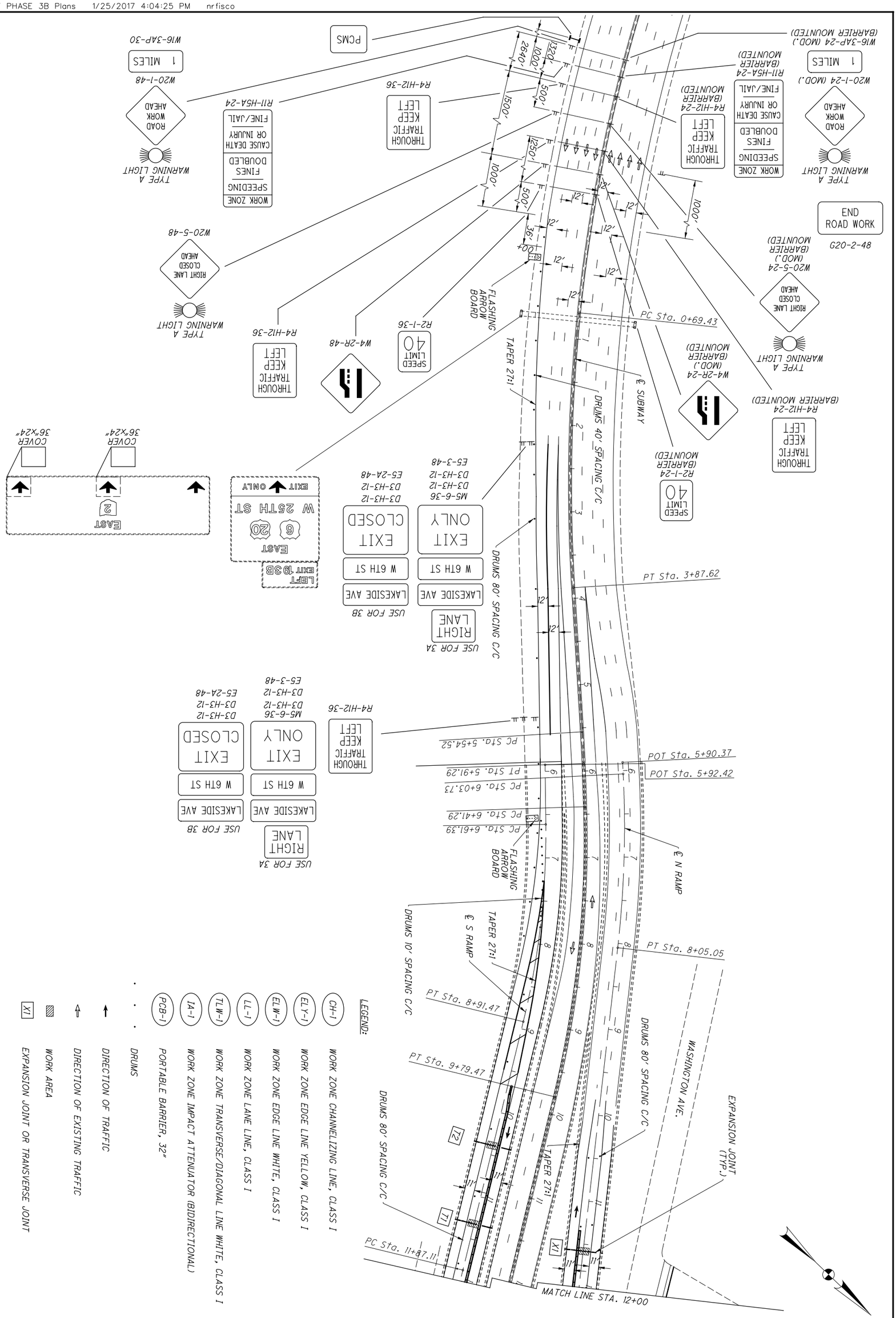
FOR LEGEND SEE SHEET 26

32/154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3A (7 OF 8) PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 26

33 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3A (8 OF 8) PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

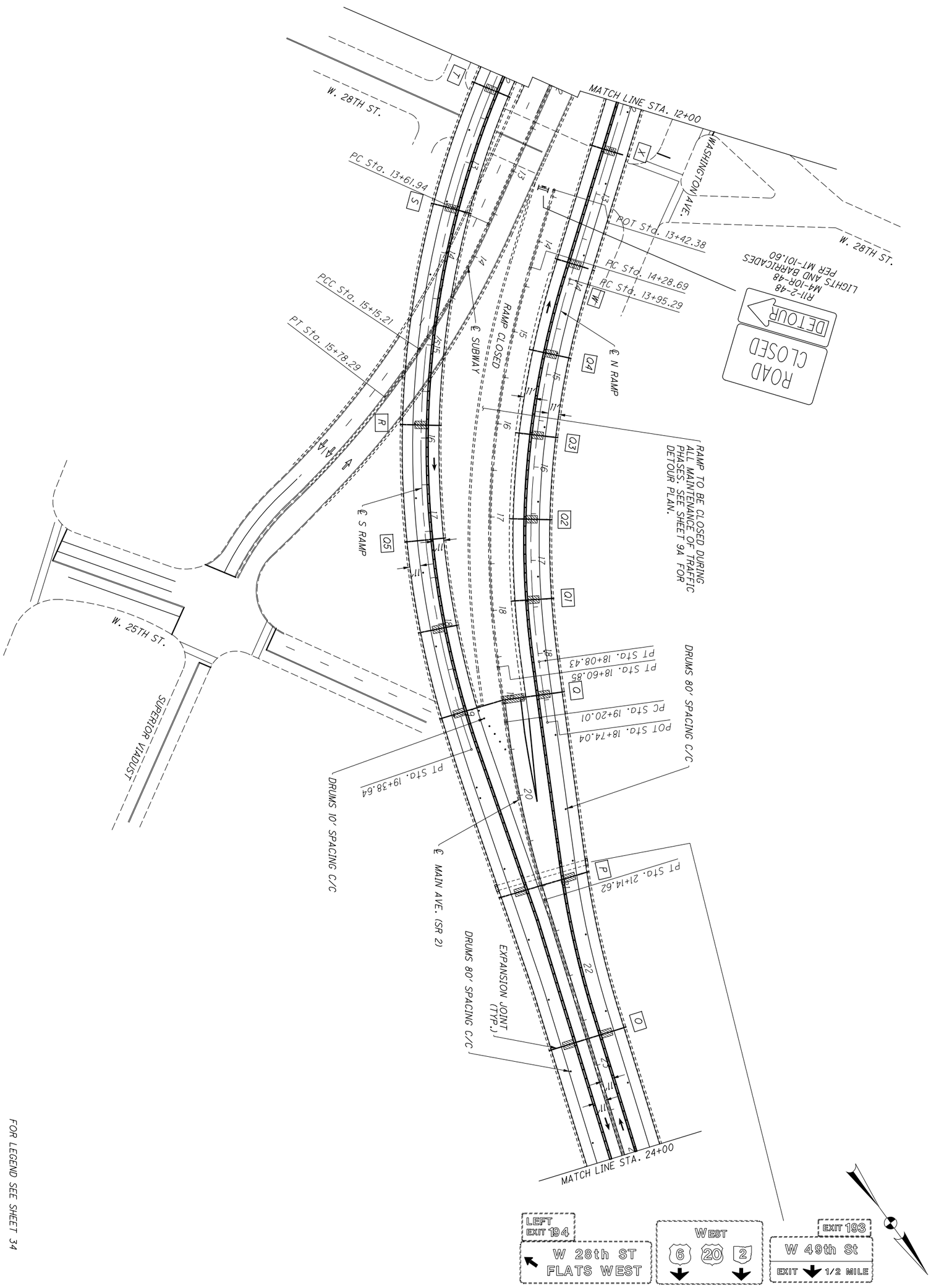


CUY-2-14.41

MAINTENANCE OF TRAFFIC PHASE 3B (1 OF 8)
NON-PEAK

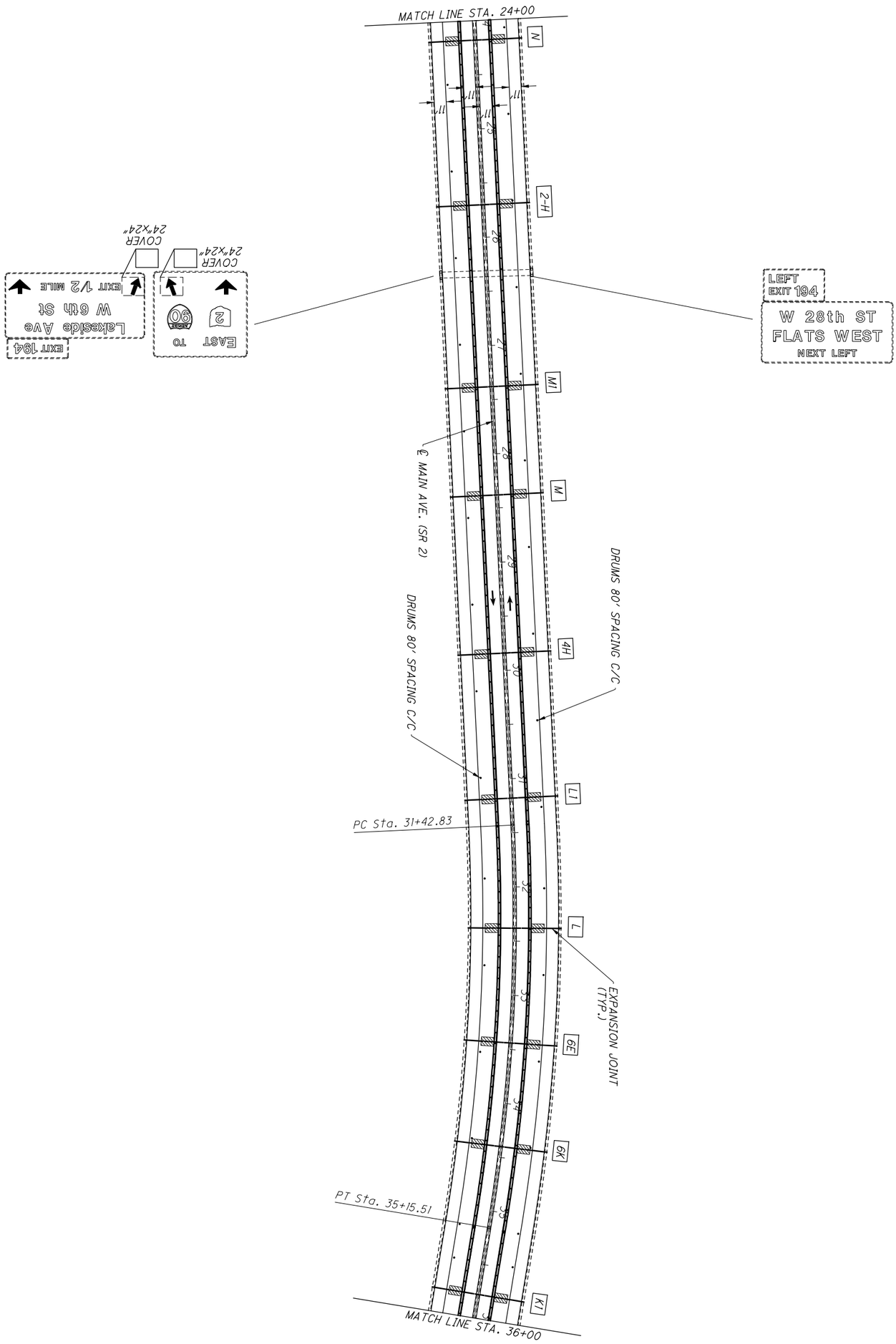
CALCULATED
CHECKED

0 50
25 100
HORIZONTAL SCALE IN FEET



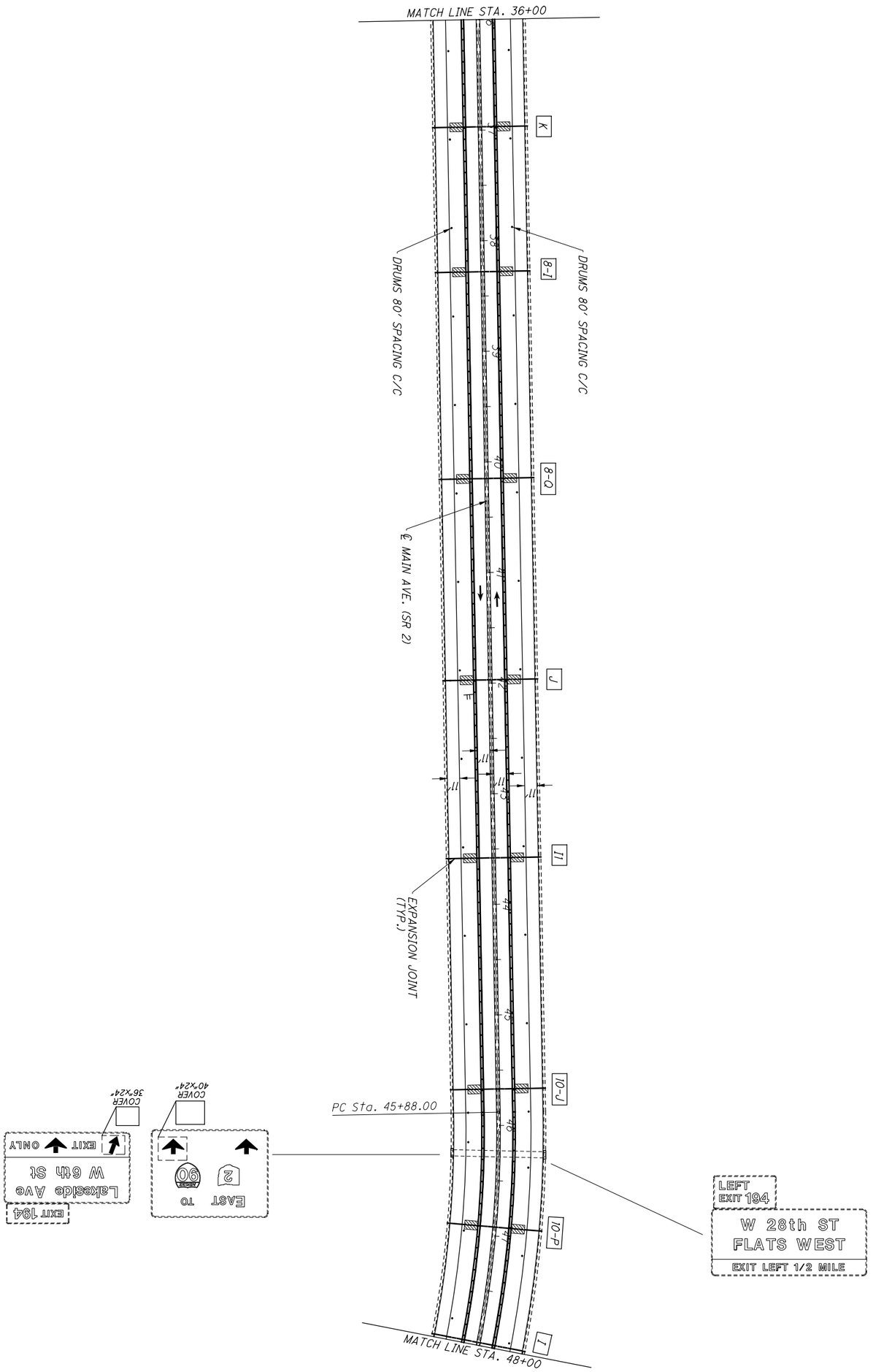
FOR LEGEND SEE SHEET 34

35/154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3B (2 OF 8) NON-PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 34

36 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3B (3 OF 8) NON-PEAK	CALCULATED / CHECKED	0 25 50 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 34

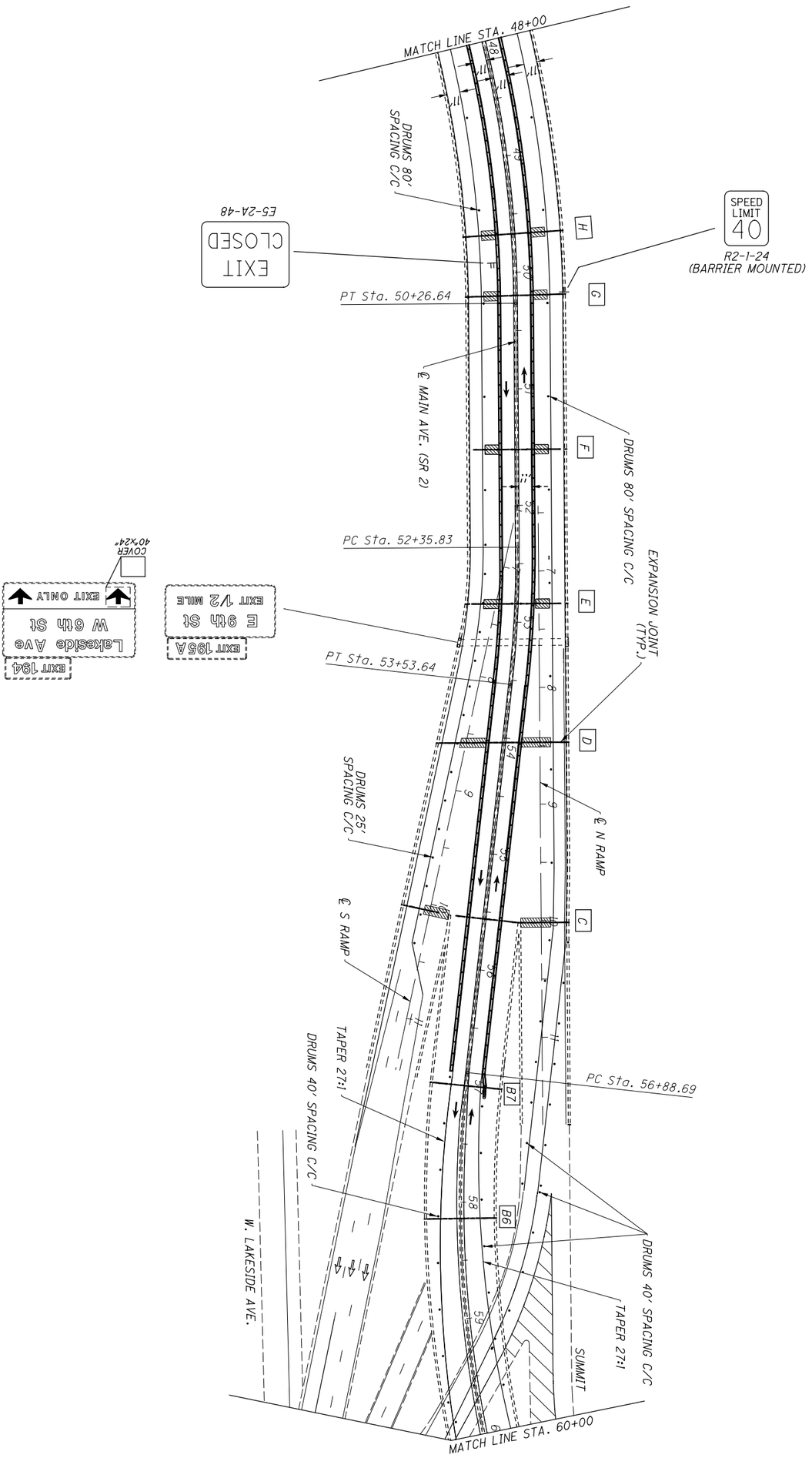
CUY-2-14.41

MAINTENANCE OF TRAFFIC PHASE 3B (4 OF 8)
NON-PEAK

CALCULATED

CHECKED

0 25 50 100
HORIZONTAL SCALE IN FEET

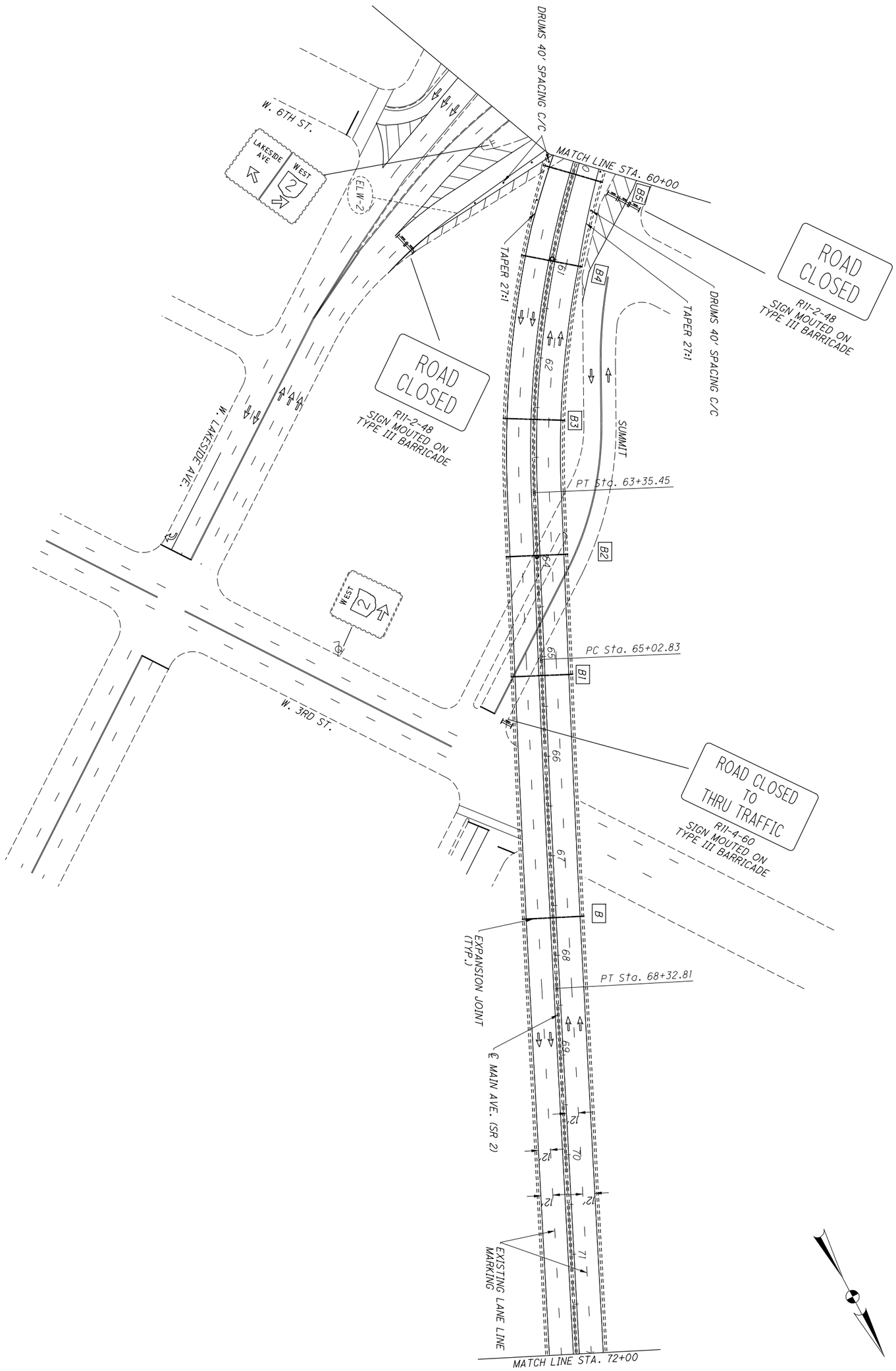


FOR LEGEND SEE SHEET 34

MAINTENANCE OF TRAFFIC PHASE 3B (5 OF 8) NON-PEAK

CALCULATED
CHECKED

0 25 50 100
HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 34

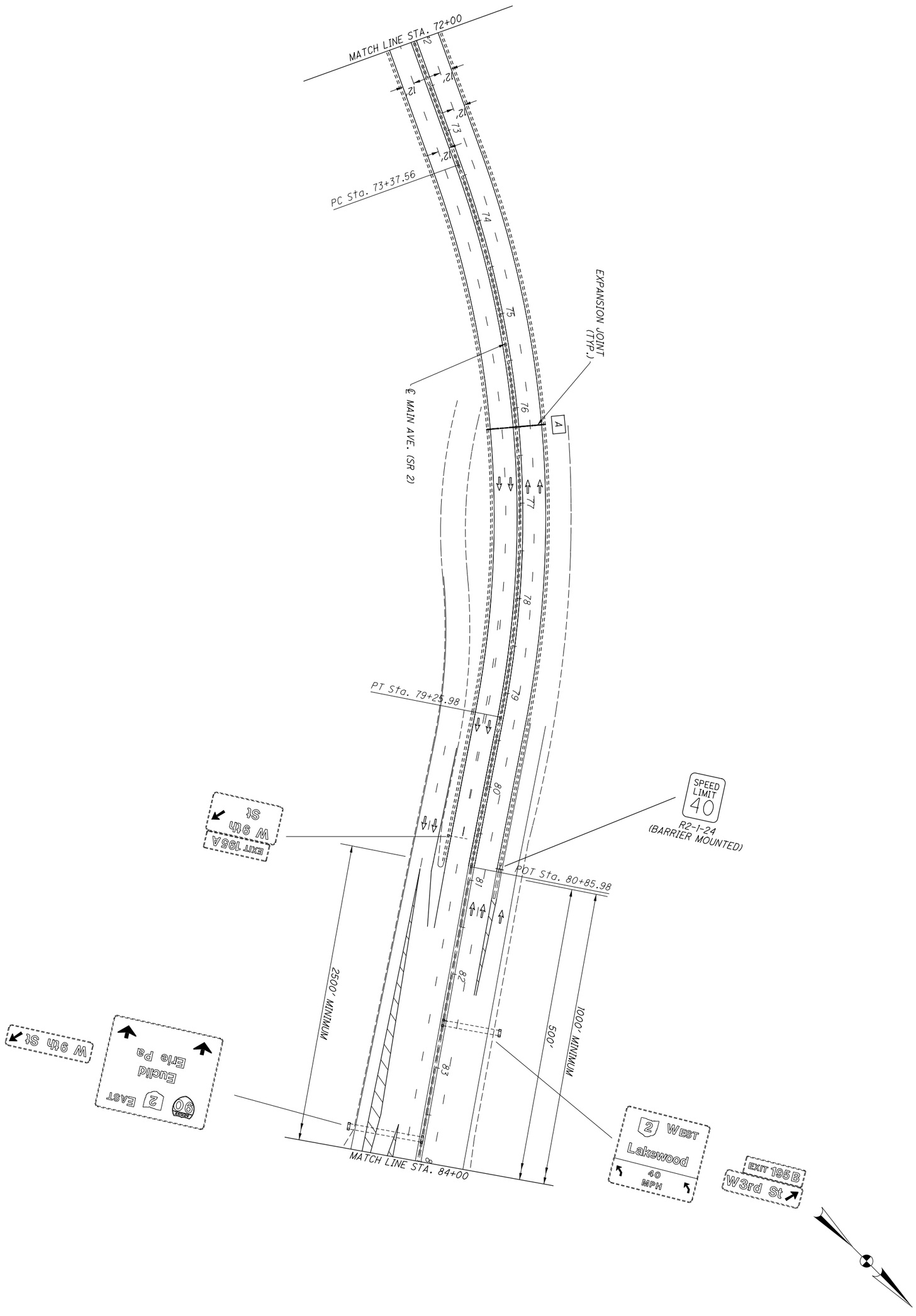
CUY-2-14.41

MAINTENANCE OF TRAFFIC PHASE 3B (6 OF 8) NON-PEAK

CALCULATED

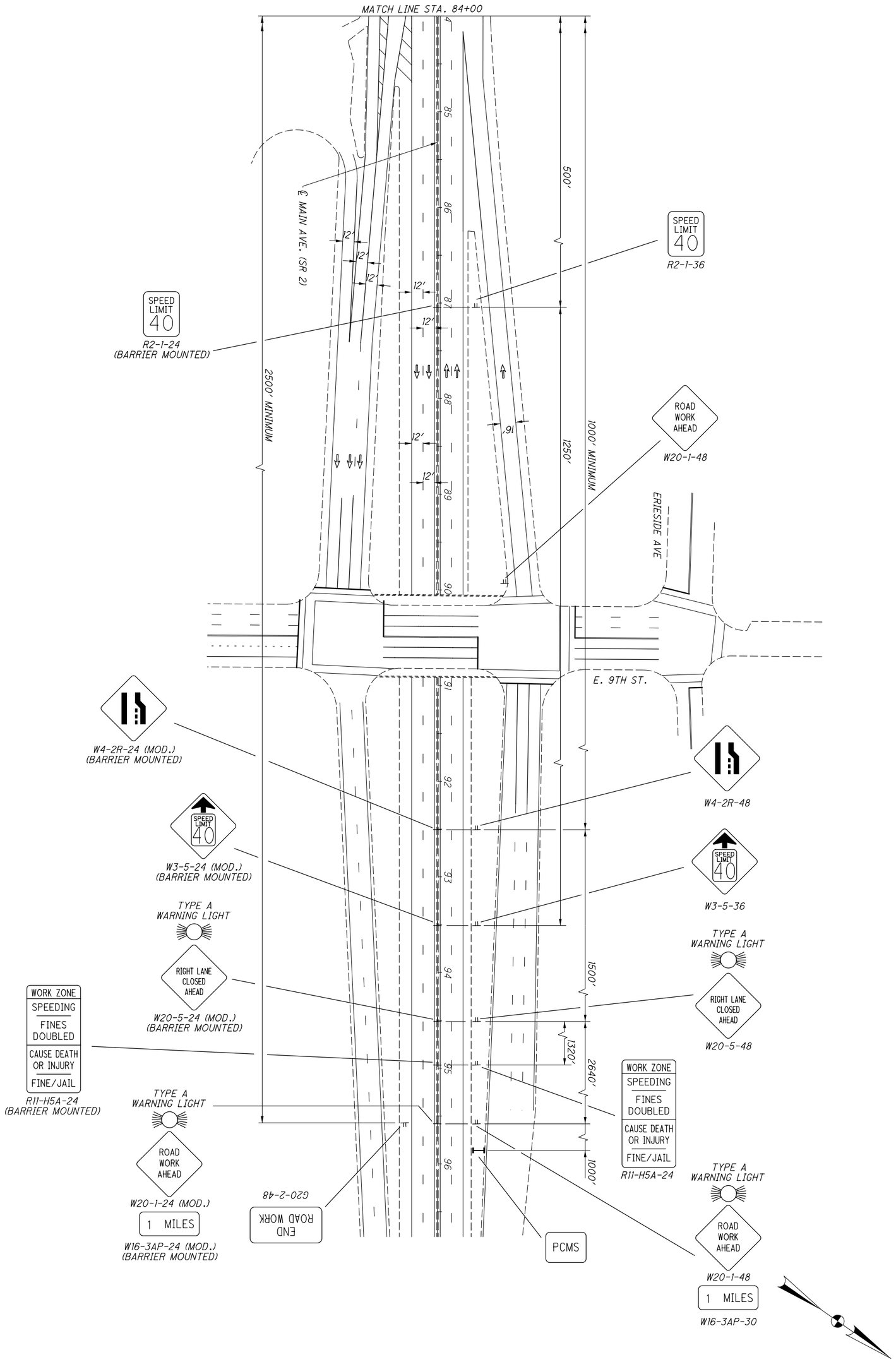
CHECKED

0 25 50 100
HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 34

40 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3B (7 OF 8) NON-PEAK	CALCULATED / CHECKED	0 25 50 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 34

41 / 154	CUY-2-14.41	MAINTENANCE OF TRAFFIC PHASE 3B (8 OF 8) NON-PEAK	CALCULATED / CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	2	3	3A	9	44	62							01/BRO/BR						
																		TRAFFIC CONTROL	
					5.65									646	10010	5.65	MILE	EDGE LINE, 6"	
					4.63									646	10110	4.63	MILE	LANE LINE, 6"	
					2,093									646	10310	2,093	FT	CHANNELIZING LINE, 12"	
					309									646	10600	309	FT	TRANSVERSE/DIAGONAL LINE	
																		STRUCTURE 20 FOOT SPAN AND OVER (CUY-2-1441)	
						LUMP								202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	S3
						2,249								202	11401	2,249	LB	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	S3
						14,316								509	10000	14,316	LB	EPOXY COATED REINFORCING STEEL	
						1,000								509	20001	1,000	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	S3
						98								511	34444	98	CY	CLASS QC2 CONCRETE, BRIDGE DECK	
						55,140								512	10050	55,140	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	S3
						1,010								512	10101	1,010	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	S4
						32,954								513	10200	32,954	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF	S4
						10								513	95030	10	EACH	STRUCTURAL STEEL, MISC.: MAIN TRUSS GUSSET PLATE EDGE STIFFENING ANGLE	S4
						21								513	95030	21	EACH	STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER RETROFIT	S4
						3								513	95030	3	EACH	STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER CONNECTION RETROFIT	S4
						7								513	95030	7	EACH	STRUCTURAL STEEL, MISC.: FORWARD SECTION COLUMN RETROFIT	S5
						56								513	95030	56	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT TRESTLE KEEPER BOLT RETROFIT	S5
						1								513	95030	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP GIRDER WEB RETROFIT	S5
						1								513	95030	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP FLOORBEAM RETROFIT	S5
						1								513	95030	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP STRUT BRACING RETROFIT	S5
						1								513	95030	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP LATERAL BRACING COVER PLATE RETROFIT	S5
						LUMP								514	00101	LS		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN	S5
						LUMP								514	00201	LS		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN	S5
						LUMP								514	00301	LS		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN	S5
						LUMP								514	00401	LS		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	S5
						2,713								514	00504	2,713	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
						622								514	10000	622	EACH	FINAL INSPECTION REPAIR	
						1,224								516	14600	1,224	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT SEAL REPLACEMENT	S6
						898								516	14600	898	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT	S6
						1,162								516	14600	1,162	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT SEAL REPLACEMENT	S6
						4								516	15000	4	EACH	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STRESS RELIEF JOINT REPLACEMENT	S6
						2								516	15000	2	EACH	STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT REPLACEMENT	S6
						17								516	15000	17	EACH	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT REPLACEMENT	S6
						6								518	62200	6	EACH	STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS	S7
						2								518	62200	2	EACH	STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR	S7
						LUMP								518	63300	LS		STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION	S7
						5								SPECIAL	51910000	5	SY	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO- SILICA MODIFIED CONCRETE	S7
						6,411								519	11101	6,411	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	S7
						3,500								SPECIAL	51911600	3,500	SF	PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS	S7
						LUMP								SPECIAL	53000200	LS		STRUCTURE, MISC.: PREMIUM ON GCRTA'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE	S9
						LUMP								SPECIAL	53000200	LS		STRUCTURE, MISC.: PREMIUM ON CSXT'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE	S9
						LUMP								SPECIAL	53000200	LS		STRUCTURE, MISC.: PREMIUM ON N.S.R.C'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE	S9
						LUMP								SPECIAL	53000200	LS		STRUCTURE, MISC.:FLAGGERS FOR GCRTA RAIL PROTECTION	S9
						LUMP								SPECIAL	53000200	LS		STRUCTURE, MISC.:TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURE	S9
						1								SPECIAL	53000400	1	EACH	STRUCTURE, MISC.: FORWARD SECTION CATWALK FENCE AND GATE	S8
						1,600								SPECIAL	53000600	1,600	SF	STRUCTURE, MISC.:COMPOSITE FIBER WRAP SYSTEM	S7
						915								SPECIAL	53000600	915	SF	STRUCTURE, MISC.: FIBERGLASS OPEN GRID DECK	S8
						3								606	61000	3	EACH	IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR	S8
						1								606	61000	1	EACH	IMPACT ATTENUATOR, MISC.: TYPE 3 REPAIR	S8
						153								607	23000	153	FT	FENCE, TYPE CLT	
						1								607	61200	1	EACH	GATE, TYPE CLT	
						1								607	61201	1	EACH	GATE, TYPE CLT, AS PER PLAN	S2A
						LUMP								SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	S4
						1								SPECIAL	62540010	1	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	S9
						LUMP								SPECIAL	69091000	LS		AS-BUILT CONSTRUCTION PLANS	S9
						5								SPECIAL	69098000	5	EACH	MISC.: ACCESS DOOR REPLACEMENT	S9
						1								SPECIAL	69098000	1	EACH	MISC.: GARAGE DOOR REPLACEMENT	S9

CALCULATED HB
CHECKED GJZ

GENERAL SUMMARY (1 OF 2)

CUY-2-14.41

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	2	3	3A	9	62								01/BRO/BR						
					LUMP									SPECIAL	69098400	LS		MISC.:LAKEFRONT RAMP SECURITY FENCE AND GATE	S2A
					128									844	10000	128	SF	CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION	
																		MAINTENANCE OF TRAFFIC	
			50											614	11110	50	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
				11										614	12338	11	EACH	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	
	2													614	12410	2	EACH	SPEED ZONE AHEAD SYMBOL SIGN	
					LUMP									614	12420	LS		DETOUR SIGNING	9A
	6													614	12470	6	EACH	WORK ZONE SPEED LIMIT SIGN	2
	2													614	12484	2	EACH	WORK ZONE INCREASED PENALTIES SIGN	
	10													614	12500	10	EACH	REPLACEMENT SIGN	
				3,599										614	13100	3,599	EACH	BARRIER REFLECTOR	
		8												614	18601	8	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	
				3.06										614	20000	3.06	MILE	WORK ZONE LANE LINE, CLASS I	
				18.67										614	22000	18.67	MILE	WORK ZONE EDGE LINE, CLASS I	
				4,964										614	23000	4,964	FT	WORK ZONE CHANNELIZING LINE, CLASS I	
				233										614	25000	233	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I	
	1													616	10000	1	MGAL	WATER	
				35,990										622	41000	35,990	FT	PORTABLE BARRIER, 32"	
																		INCIDENTALS	
														614	11000	LS		MAINTAINING TRAFFIC	
														619	16020	21	MNTH	FIELD OFFICE, TYPE C	
														623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
														624	10000	LS		MOBILIZATION	

CALCULATED HB
CHECKED GJZ

GENERAL SUMMARY (2 OF 2)

CUY-2-14.41

43
154

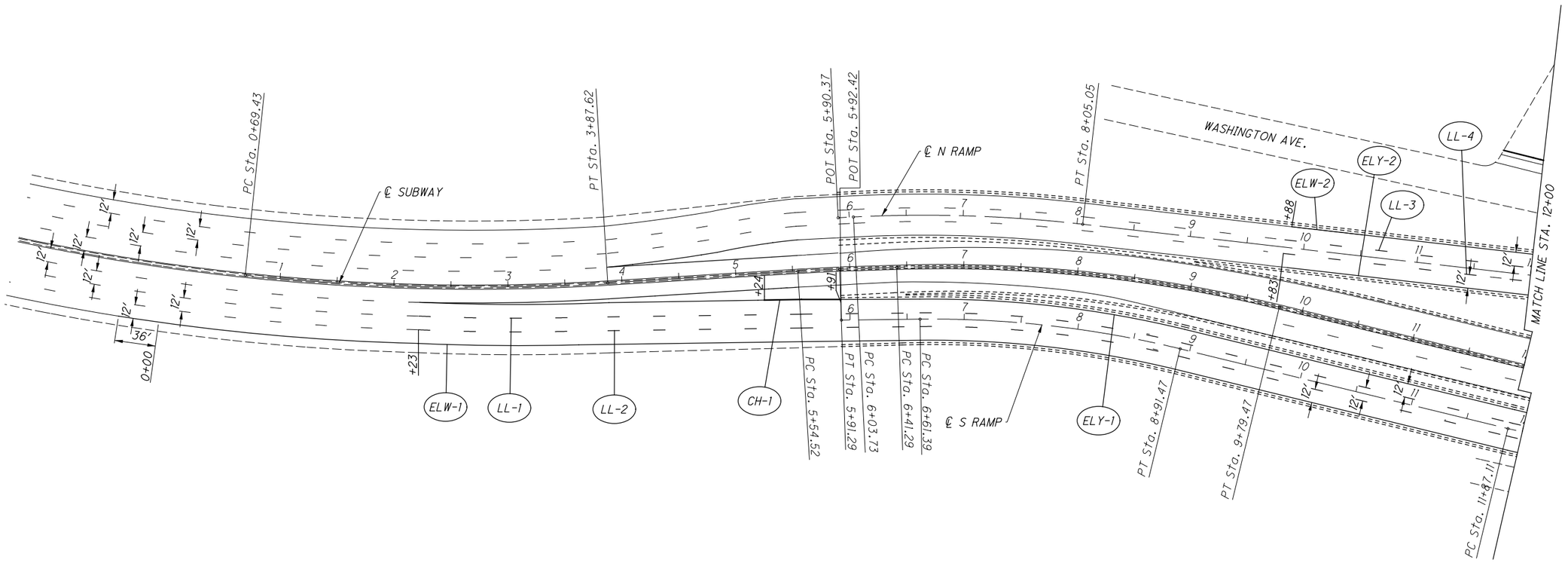
SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	646 EDGE LINE, 6" (WHITE)	646 EDGE LINE, 6" (YELLOW)	646 LANE LINE, 6"	646 CHANNELIZING LINE, 12"	646 TRANSVERSE/DIAGONAL LINE (WHITE)
						MILE	MILE	MILE	FT	FT
45	ELW-1	SUBWAY TO S RAMP	0+00	12+17	RT	1.10				
45	LL-1	SUBWAY TO MAIN AVE	2+23	78+00	RT			1.44		
45	LL-2	SUBWAY TO MAIN AVE	2+23	50+27	RT			0.91		
45	CH-1	SUBWAY	5+24	5+91	RT				67	
45	ELY-1	S RAMP TO MAIN AVE	5+91	78+00	LT&RT		1.37			
45	LL-3	N RAMP TO MAIN AVE	9+83	52+36	LT			0.80		
45	LL-4	N RAMP TO MAIN AVE	9+83	80+89	RT&LT			1.34		
45	ELW-2	N RAMP	9+88	11+82	LT	0.89				
45	ELY-2	N RAMP	9+88	18+46	RT		0.16			
46	CH-2	MAIN AVE	18+96	20+55	LT				157	
46	CH-3	N RAMP TO MAIN AVE	18+46	20+55	RT&LT				154	
46	TWL-1	MAIN AVE	18+96	20+55	LT					46
46	ELY-3	MAIN AVE	18+96	80+89	LT		1.17			
49	CH-4	MAIN AVE TO S RAMP	50+27	11+18	RT&LT				649	
49	CH-5	MAIN AVE	52+36	55+56	LT				323	
49	CH-6	N RAMP	6+80	12+31	LT&RT				553	
49	TLW-2	N RAMP	6+80	12+31	LT&RT					232
49	CH-7	MAIN AVE	54+61	55+56	RT				95	
49	CH-8	S RAMP	9+11	10+06	LT				95	
49	TLW-3	MAIN AVE	54+61	55+56	RT					31
49	ELW-3	MAIN AVE	55+56	80+86	LT	0.48				
49	ELW-4	MAIN AVE	55+56	78+00	RT	0.43				
49	ELY-4	S RAMP	10+06	12+79	LT		0.05			
49	LL-5	S RAMP	11+18	12+79	RT			0.03		
49	LL-6	S RAMP	11+18	12+79	LT			0.03		
49	LL-7	N RAMP TO MAIN AVE	12+31	61+34	RT			0.08		
		SUB-TOTAL				2.90	2.75			
		TOTALS CARRIED TO SHEET				5.65		4.63	2093	309

CALCULATED HB
CHECKED GJZ

PAVEMENT MARKING - SUB-SUMMARY

CUY-2-14.41

PAVEMENT MARKING Sub-Summary 1/19/2017 4:05:32 PM nrfisco



LEGEND:

CH-1	CHANNELIZING LINE, 12"
ELY-1	EDGE LINE YELLOW, 6"
ELW-1	EDGE LINE WHITE, 6"
LL-1	LANE LINE, 6"
TLW-1	TRANSVERSE/DIAGONAL LINE WHITE

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PAVEMENT MARKING (1 OF 7)

CUY-2-14.41

45
154

Traffic Control-Pavement Marking 1/19/2017 4:05:37 PM nrfisco

FOR LEGEND SEE SHEET 45

HORIZONTAL SCALE IN FEET
0 25 50 100

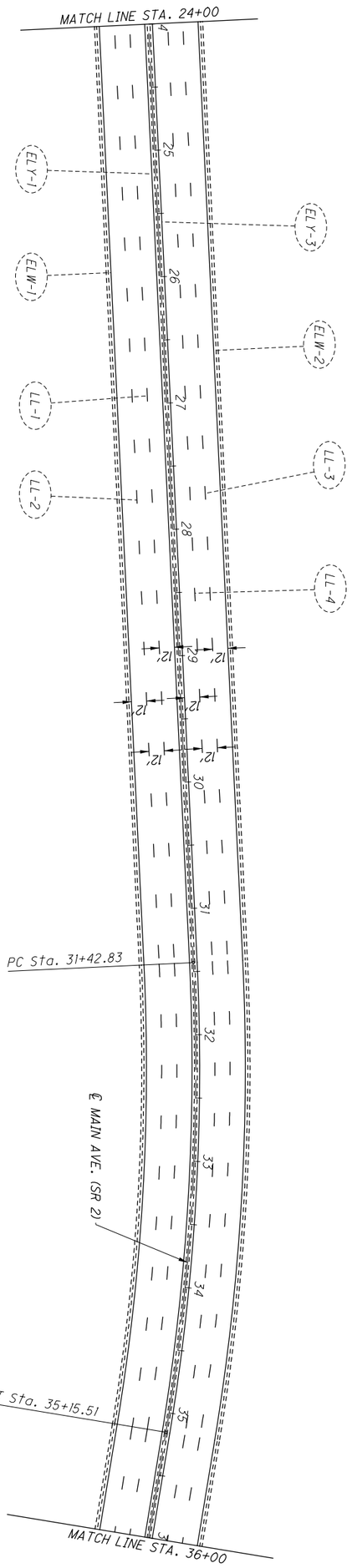
CALCULATED | CHECKED

PAVEMENT MARKING (2 OF 7)

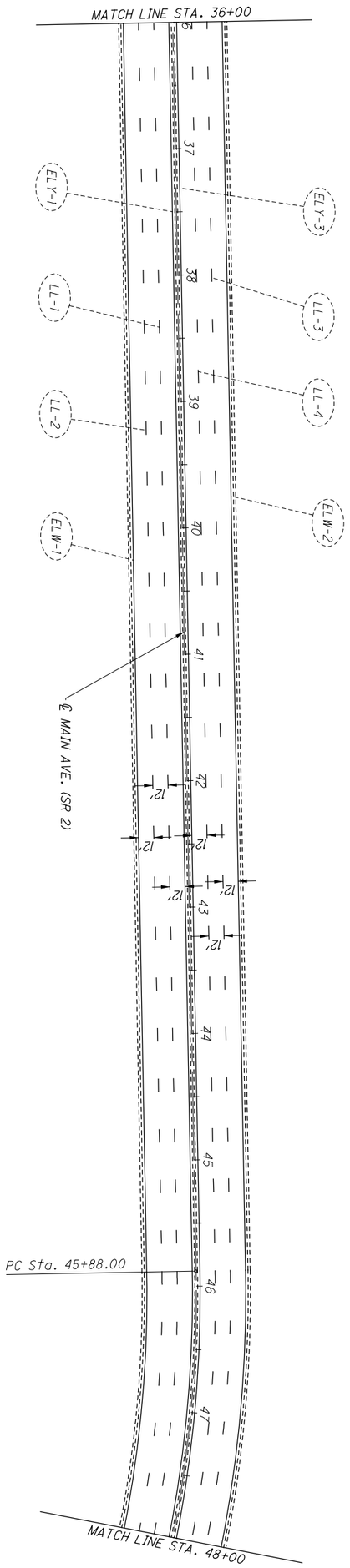
CUY-2-14.41

46
154

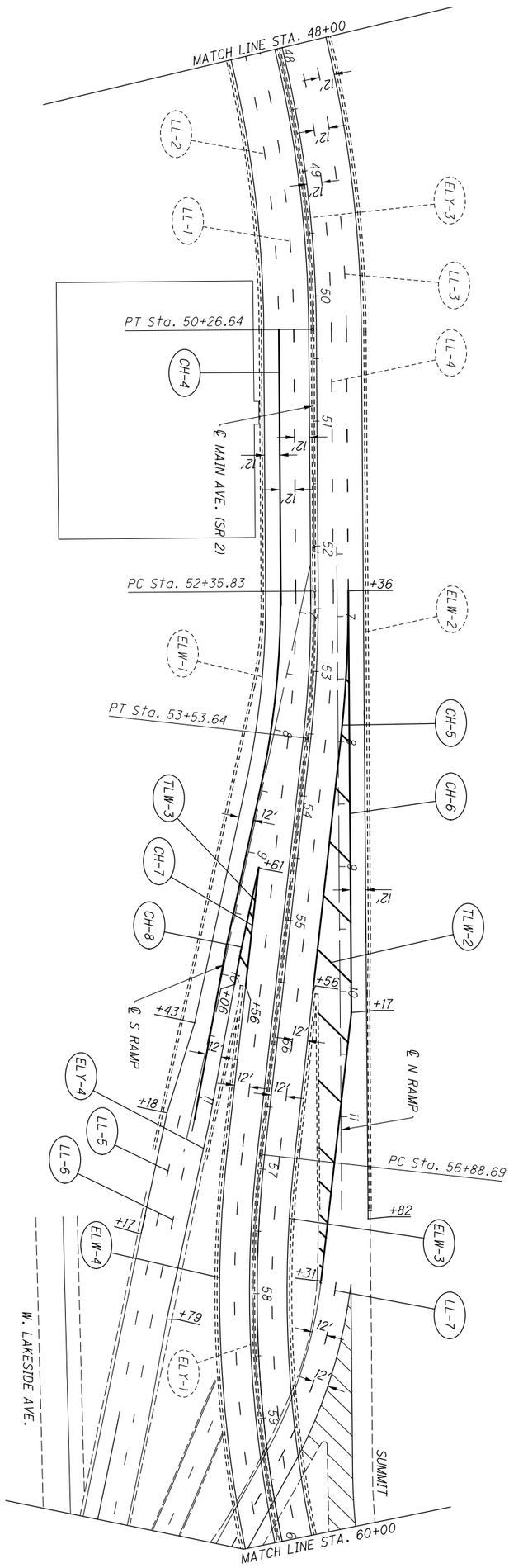
Traffic Control-Pavement Marking 1/19/2017 4:05:39 PM nrfisco



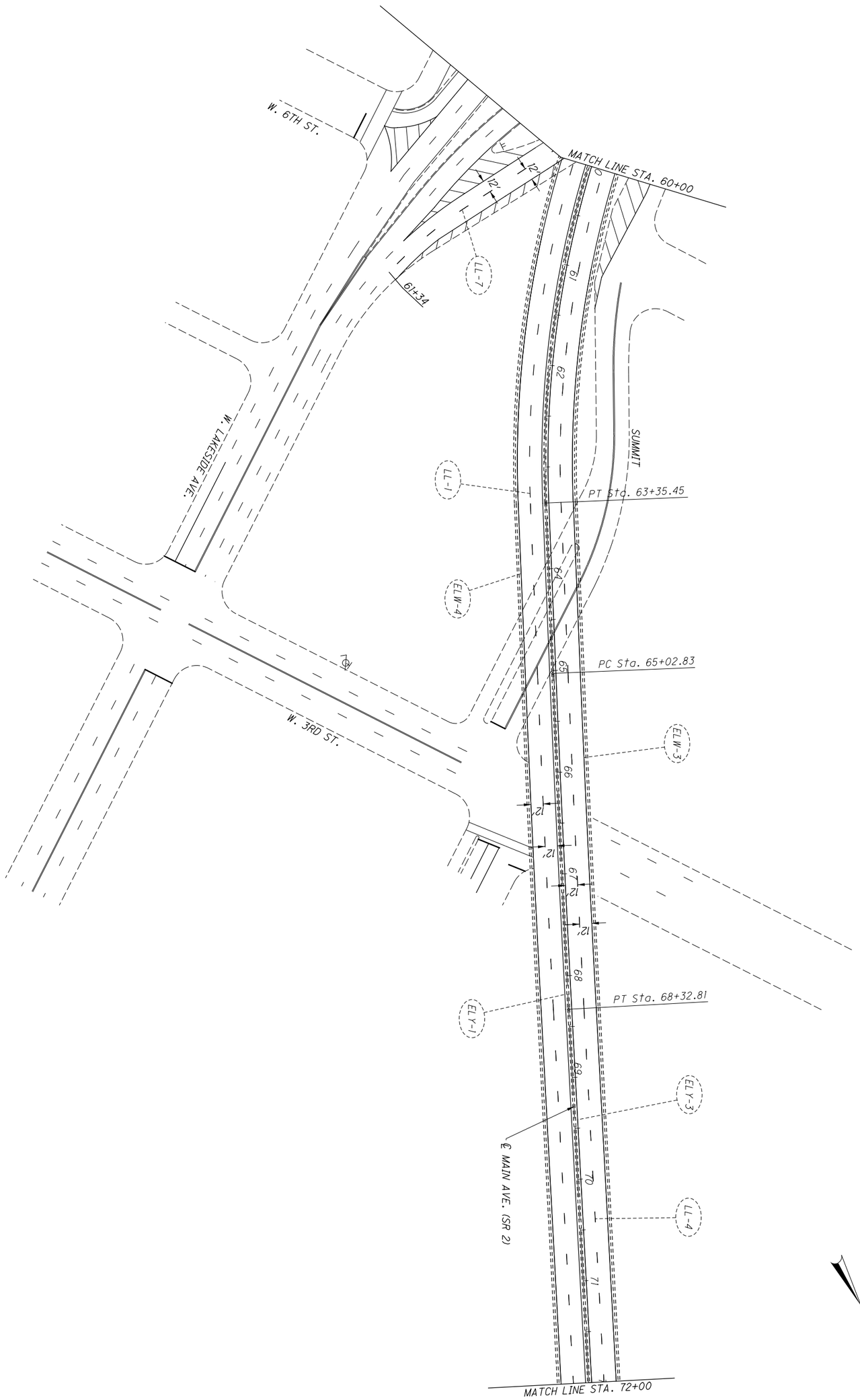
FOR LEGEND SEE SHEET 45



FOR LEGEND SEE SHEET 45

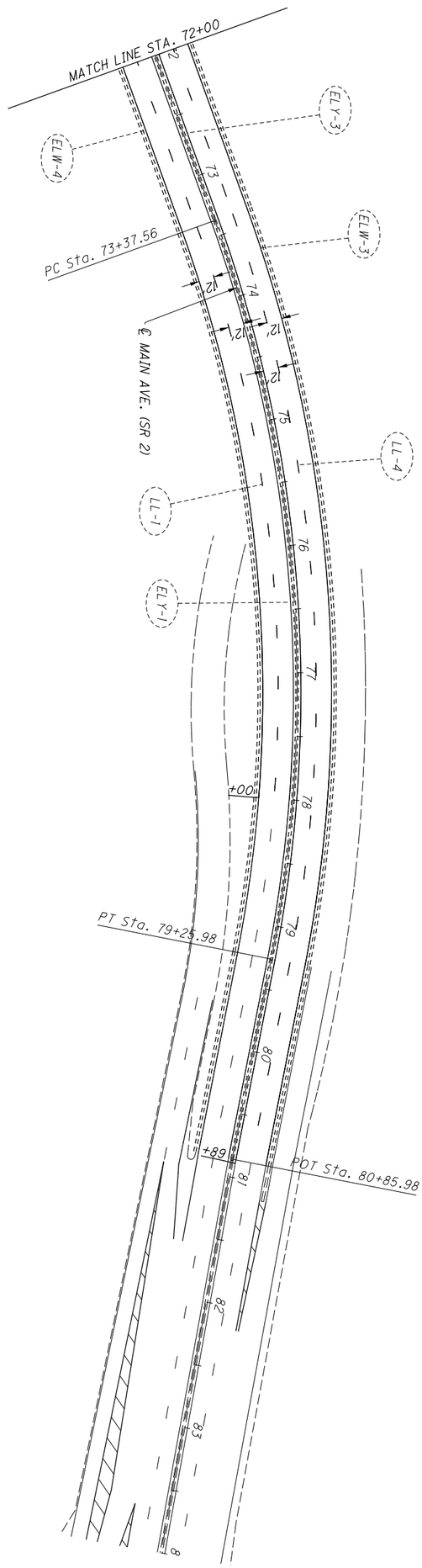


FOR LEGEND SEE SHEET 45



FOR LEGEND SEE SHEET 45

50 / 154	CUY-2-14.41	PAVEMENT MARKING (6 OF 7)	CALCULATED / CHECKED	0 25 50 100 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 45

51 / 154	CUY-2-14.41	PAVEMENT MARKING (7 OF 7)	CALCULATED / CHECKED	0 25 50 100 HORIZONTAL SCALE IN FEET

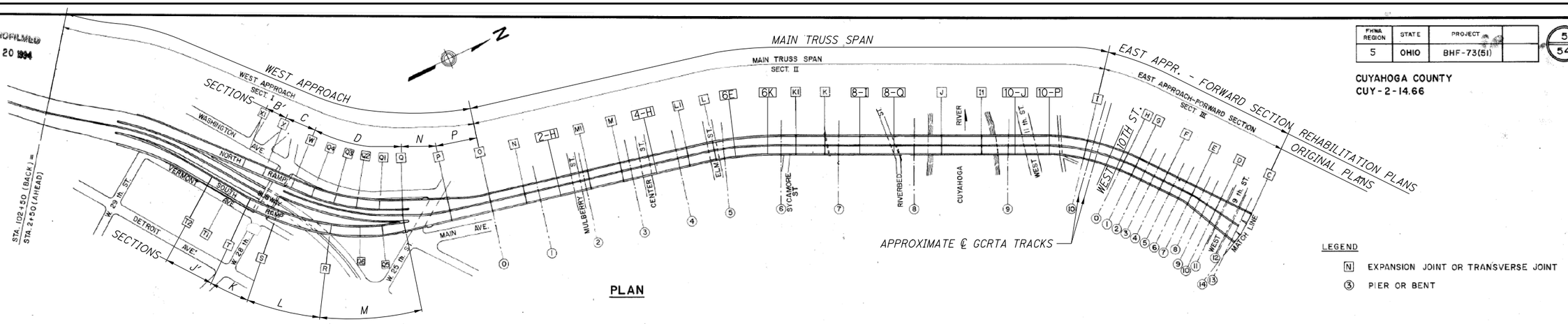
MICROFILMED
JUL 20 1994

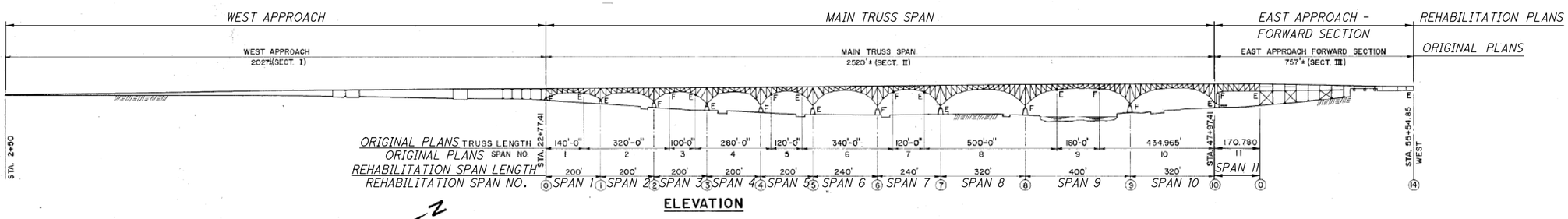
FHWA REGION	STATE	PROJECT		SHEET	TOTAL SHEETS
5	OHIO	BHF-73(51)		5	547

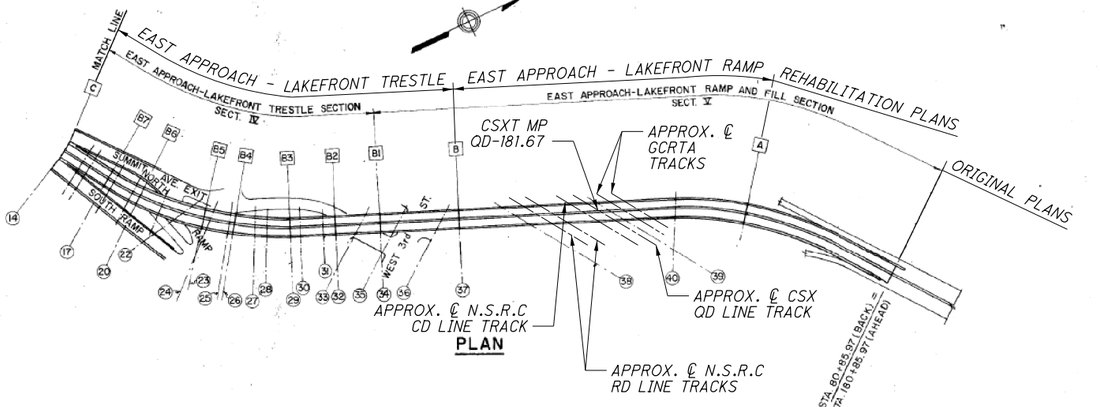
CUYAHOGA COUNTY
CUY-2-14.66

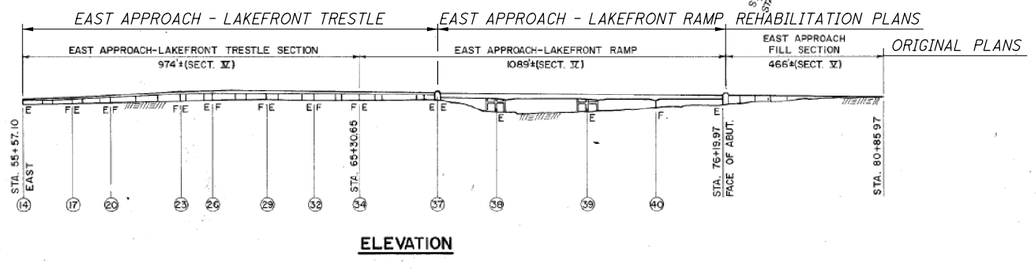
CALCULATED | CHECKED

SITE PLAN









PAVLO ENGINEERING CO., P.C.
NEW YORK, NEW YORK

CUYAHOGA COUNTY ENGINEER
CLEVELAND OHIO

MAIN AVENUE BRIDGE

CITY OF CLEVELAND
BRIDGE OVER THE CUYAHOGA RIVER VALLEY

GENERAL PLAN & ELEVATION

BRIDGE NO. 193 REPORT NO. 7119 DATE Dec. 5/1993

NO. B-136 G5/93

DESIGN	DRAWN	CHECKED	REVISED TO AS BUILT
S.H.	M.H.	C.K.D.	AS BUILT 2/94

CUY-2-14.41

S1/S95

52/154

NOTES:

1. IMAGE IS TAKEN FROM THE 1994 AS-BUILT REHABILITATION DRAWINGS, SHEET 5 OF 547, GENERAL PLAN & ELEVATION MAIN AVENUE BRIDGE OVER THE CUYAHOGA RIVER VALLEY. SOME INFORMATION FROM THE ORIGINAL SHEET HAS BEEN REMOVED.

DESIGN SPECIFICATIONS

THE WORK ON THIS STRUCTURE SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, INCLUDING THE 2002 INTERIM SPECIFICATIONS, AND THE 2004 ODOT BRIDGE DESIGN MANUAL, INCLUDING 7-15-16 INTERIMS.

DESIGN LOADING

HS20-44 CASE I OR THE ALTERNATE MILITARY LOADING. NO FUTURE WEARING SURFACE.

DESIGN DATA

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

NEW CONCRETE CLASS QC2 - 4500 PSI COMPRESSIVE STRENGTH

NEW REINFORCING STEEL - ASTM A615 GRADE 60
YIELD STRENGTH 60 KSI

STANDARD DRAWINGS

THE FOLLOWING STANDARD CONSTRUCTION DRAWINGS ARE REFERENCED IN THE PLANS:

TC-71.10	(REVISED) 07-15-16	MT-101.75	(REVISED) 07-15-16
MT-95.40	(REVISED) 07-18-14	MT-105.10	(REVISED) 07-19-13
MT-99.20	(REVISED) 07-19-13	EXJ-4-87	(REVISED) 07-19-02
MT-101.70	(REVISED) 01-17-04		

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN IN 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 SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

PREVIOUS CONSTRUCTION PLANS

ORIGINAL PLANS	(DATED) 1938
ORIGINAL SHOP DRAWINGS	(DATED) 1938
REHABILITATION PLANS	(DATED) 1983
REHABILITATION PLANS	(DATED) 1994
REHABILITATION PLANS	(DATED) 2012
REHABILITATION PLANS	(DATED) 2013

THE EXISTING STRUCTURE PLANS MAY BE REVIEWED AT THE:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 12 OFFICE
5500 TRANSPORTATION BOULEVARD
GARFIELD HEIGHTS, OH 44125

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

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

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 POLICE, FIRE, EMERGENCY MEDICAL AND SERVICE DEPARTMENTS

THE CITY OF CLEVELAND COMMISSIONER OF TRAFFIC ENGINEERING, ADMINISTRATIVE BUREAU MANAGER, COMMISSIONER OF EMERGENCY MEDICAL SERVICES, POLICE TRAFFIC COMMISSIONER, FIRE CHIEF

THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
ATTN: JAMES STOCK
PHONE: (216) 566-5036
EMAIL: JSTOCK@GCRTA.ORG

NORTHEAST OHIO REGIONAL SEWER DISTRICT

THE CITY OF CLEVELAND DIVISION OF AIR QUALITY

THE CLEVELAND/CUYAHOGA PORT AUTHORITY

THE ARMY CORPS OF ENGINEERS

THE CITY OF CLEVELAND, BUREAU OF BRIDGES AND DOCKS
CLEVELAND CITY HALL
601 LAKESIDE AVENUE, ROOM 518
CLEVELAND, OHIO 44114
ATTN.: ROMAS PLIODZINSKAS
PHONE: (216) 857-7520

LAKE CARRIERS' ASSOCIATION
20325 CENTER RIDGE RD.
ROCKY RIVER, OH 44116-3572
ATTN: GLEN NEKVASIL, VICE PRESIDENT-CORPORATE COMMUNICATIONS
PHONE: (440) 333-9996

HISTORIC WAREHOUSE DISTRICT DEVELOPMENT CORPORATION
614 WEST SUPERIOR AVENUE - SUITE 680
CLEVELAND, OH 44113
ATTN: THOMAS STARINSKY, ASSOCIATE DIRECTOR
PHONE: (216) 409-7054 (CELL)

FLATS FORWARD
ATTN: MARK LAMMON, ACTING DIRECTOR
PHONE: (216) 973-2217 (CELL)

FLATS INDUSTRY ASSOCIATION
820 WEST SUPERIOR AVE
CLEVELAND, OHIO 44113
ATTN: JIM COX, DIRECTOR
PHONE: (216) 241-8060

ERNST AND YOUNG BUILDING
ATTN: JOE KEARNEY
PHONE: (216) 400-6926

ALOFT HOTEL
PHONE: (216) 400-6469

THE ARCHER APARTMENTS
PHONE: (216) 264-3606

THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE MAIN AVENUE BRIDGE.

ALL WORK TO BE PERFORMED IN TRUSS SPAN 11 OVER THE GCRTA WATERFRONT LINE RIGHT OF WAY SHALL BE COORDINATED WITH THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY.

ALL WORK TO BE PERFORMED IN SECTIONS D AND M OF THE WEST APPROACH SHALL BE COORDINATED WITH THE CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS.

CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS
6100 WEST CANAL ROAD
VALLEY VIEW, OHIO 44125
ATTN: JAMES J. HAZIMIHALIS, P.E., MAINTENANCE SUPERINTENDENT - ROADS AND BRIDGES
PHONE: (216) 348-3880

ALL WORK TO BE PERFORMED IN THE EAST APPROACH LAKEFRONT RAMP SHALL BE COORDINATED WITH THE GCRTA, NORFOLK SOUTHERN RAILWAY COMPANY, AND CSXT.

NORFOLK SOUTHERN RAILWAY COMPANY
ATTN: E. W. CHAMBERS
PHONE: (404) 529-1436
EMAIL: eldridge.chambers@nscorp.com

THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
ATTN: JAMES STOCK
PHONE: (216) 566-5036
EMAIL: JSTOCK@GCRTA.ORG

AMANDA DECESARE
500 MEIJER DRIVE, SUITE 305
FLORENCE, KY 41042
PHONE: (859) 372-6124
EMAIL: AMANDA_DECESARE@CSX.COM

WORK OVER THE CUYAHOGA RIVER

THE SAME CLEARANCE AS PROVIDED BY THE NORMAL HEIGHT OF THE BRIDGE SHALL BE PROVIDED THROUGHOUT THE DURATION OF THE PROJECT.

ANY NIGHT WORK MUST BE APPROVED IN WRITING BY THE UNITED STATES COAST GUARD. IF FLOODLIGHTING IS TO BE USED ON THE PROJECT FOR NIGHTTIME WORK, THE CONTRACTOR SHALL TAKE CARE TO POINT LIGHTS AWAY FROM RIVER TRAFFIC VESSELS WHEN THEY PASS THROUGH.

NO SEPARATE PAYMENT WILL BE MADE FOR MEETING AND MAINTAINING THESE NAVIGATIONAL REQUIREMENTS. ALL COSTS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEMS.

PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR IS TO NOTIFY THE UNITED STATES ARMY CORPS OF ENGINEERS OHIO AREA OFFICE POC LISTED BELOW OF THE ACTUAL START DATE OF THE PROJECT AND ALL MILESTONE EVENTS OR OPERATIONS DURING THE PROSECUTION OF THE WORK. SITE INSPECTIONS DURING THE COURSE OF THE PROJECT MAY BE CONDUCTED BY THE CORPS TO INSURE CONFORMITY WITH UNITED STATES ARMY CORPS OF ENGINEERS STANDARDS SET FORTH IN THE LETTER OF PERMISSION DATED NOVEMBER 14, 2016.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT NO CONSTRUCTION DEBRIS OR LITTER ENTERS THE CHANNEL. IN THE EVENT THAT CONSTRUCTION DEBRIS OR LITTER ENTERS THE CHANNEL, THE CONTRACTOR IS TO NOTIFY THE UNITED STATES ARMY CORPS OF ENGINEERS OHIO AREA OFFICE POC LISTED BELOW AND THEN PROMPTLY REMOVE THE CONSTRUCTION DEBRIS OR LITTER FROM THE CHANNEL.

VITO MELILLI
OHIO AREA OFFICE POC
UNITED STATES ARMY CORPS OF ENGINEERS
PHONE: (216) 685-1205
EMAIL: VITO.C.MELILLI@USACE.ARMY.MIL

SHOULD THE CONTRACTOR NEED TO WORK ABOVE THE CUYAHOGA RIVER, THE CONTRACTOR SHALL NOTIFY THE UNITED STATES COAST GUARD IN WRITING AT LEAST 30 DAYS PRIOR TO COMMENCEMENT OF WORK TO ENSURE NAVIGATION INTERESTS ARE PROVIDED ADEQUTE NOTICE OF POTENTIAL IMPACTS.

THE UNITED STATES COAST GUARD
COMMANDER, NINTH COAST GUARD DISTRICT (DPB)
1240 EAST 9TH STREET, ROOM 2025
CLEVELAND, OHIO 44199-2060
ATTN: SCOT STRIFFLER, BRIDGE PROGRAM MANAGER
PHONE: (216) 902-6087

RIVET REMOVAL PROCEDURE

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

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

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

MATERIAL

ALL NEW STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50.

ALL NEW REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.

NEW BOLTS SHALL BE ASTM A325 HIGH STRENGTH BOLTS.

NEW BOLTS REPLACING RIVETS SHALL MATCH THE REPLACED RIVET SIZES, UNLESS NOTED OTHERWISE.

NEW MATERIAL SHALL BE CERTIFIED PER CMS 501.06.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

STRUCTURE GENERAL NOTES (1 OF 9)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S2 / S95

53
154

85377GN001 3/30/2017 2:00:30 PM nrfisco

LIMITATIONS OF OPERATIONS

ALL WORK TO BE PERFORMED WITHIN EXISTING RIGHT-OF-WAY

ALL NIGHT WORK SHALL BE APPROVED BY ODOT AND THE CITY OF CLEVELAND.

ALL LANE CLOSURES SHALL BE COORDINATED AND APPROVED BY ODOT AND THE CITY OF CLEVELAND.

THE CONTRACTOR SHALL CONFORM TO ALL LOCAL NOISE ORDINANCES.

PATCHING OPERATIONS (INCLUDING REMOVAL OF EXISTING CONCRETE) CANNOT BE PERFORMED ON CONSECUTIVE FRAMES CONCURRENTLY IN SECTIONS B', D, J', AND M. ADDITIONALLY, PATCHING OPERATIONS (INCLUDING REMOVAL OF CONCRETE) CANNOT BE PERFORMED ON COLUMNS IN THE SAME FRAME CONCURRENTLY.

NORFOLK SOUTHERN RAILWAY COMPANY OPERATIONS

ALL WORK ON, OVER, OR ADJACENT TO THE NORFOLK SOUTHERN RAILWAY COMPANY RIGHT-OF-WAY SHALL CONFORM TO THE NORFOLK SOUTHERN RAILWAY COMPANY SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS. THE CONTRACTOR MUST APPLY FOR AND RECEIVE AN EXECUTED TEMPORARY CONSTRUCTION AGREEMENT FROM THE LOCAL DIVISION OFFICE PRIOR TO COMMENCING CONSTRUCTION. THE REVIEW AND APPROVAL PROCESS MAY TAKE UP TO 3 MONTHS TO COMPLETE AND IS NOT GUARANTEED TO BE APPROVED.

IF ANY PORTION OF THE EXISTING RAILROAD STRUCTURE IS DAMAGED BY THE CONTRACTOR'S OPERATIONS DURING CONSTRUCTION, THE CONTRACTOR SHALL CEASE WORK, NOTIFY NORFOLK SOUTHERN RAILWAY COMPANY, AND PERFORM REPAIRS TO THE SATISFACTION OF NORFOLK SOUTHERN RAILWAY COMPANY AT THE CONTRACTOR'S SOLE EXPENSE.

IF CONTRACTOR CHOOSES TO INSTALL A TEMPORARY VEHICULAR CROSSING OF NORFOLK SOUTHERN RAILWAY COMPANY TRACKS DURING THE PROJECT IT SHALL BE AT NO COST TO THE PROJECT AND:

A) THE CONTRACTOR MUST APPLY FOR AND RECEIVE AN EXECUTED TEMPORARY CONSTRUCTION AGREEMENT FROM THE LOCAL DIVISION OFFICE PRIOR TO COMMENCING CONSTRUCTION. THE REVIEW AND APPROVAL PROCESS MAY TAKE UP TO 3 MONTHS TO COMPLETE AND IS NOT GUARANTEED TO BE APPROVED.

B) AS DIRECTED BY THE RAILWAY, A LOCKED GATED ACCESS MAY BE REQUIRED AT THE TEMPORARY CONSTRUCTION CROSSING.

C) THE CONTRACTOR WILL BE RESPONSIBLE TO CONSTRUCT UP TO 2'-0" FROM THE OUTSIDE RAIL. NORFOLK SOUTHERN RAILWAY COMPANY WILL CONSTRUCT THE BALANCE.

D) IN ADDITION TO THE APPLICATION FEE, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL ANNUAL FEES FOR USE AND MAINTENANCE OF THE CROSSING ASSESSED BY NORFOLK SOUTHERN RAILWAY COMPANY REAL ESTATE.

ITEM SPECIAL - MISC.: LAKEFRONT RAMP SECURITY FENCE AND GATE

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR, INCLUDING EXCAVATION AND CONSTRUCTION OF THE FENCE POST FOOTERS, NECESSARY TO INSTALL THE VANDAL PROOF EXPANDED METAL FENCE AND GATE OUTLINED BELOW. SEE DETAILS ON SHEET S80B/ S95 FOR MORE INFORMATION. THE SYSTEM WILL INCLUDE CARBON STEEL HIGH SECURITY EXPANDED METAL MESH PANELS AND FITTINGS.

THE MANUFACTURER SHALL HAVE A MINIMUM 10 YEARS' EXPERIENCE IN THE MANUFACTURE OF EXPANDED METAL FENCING. THE CONTRACTOR SHALL PROVIDE INSTALLERS THAT ARE EXPERIENCED WITH THE INSTALLATION OF EXPANDED METAL SECURITY FENCING.

THE FENCE AND GATE SHALL ADHERE TO THE MANUFACTURER'S DESIGN AND INSTALLATION SPECIFICATIONS AND ASTM F2548-12 - EXPANDED METAL FENCE SYSTEMS FOR SECURITY PURPOSES.

THE EXPANDED CARBON STEEL MESH PANELS SHALL HAVE THE FOLLOWING PROPERTIES:

A. TYPE: 3/4" #9R
B. STRAND WIDTH: 0.150"
C. STRAND THICKNESS: 0.134"
D. SWD: 0.923"
E. LWD: 2.0"
F. PERCENT OPEN AREA: 68%
G. GALVANIZED WEIGHT PER SQ. FT.: 1.98 LBS

THE EXPANDED METAL SECURITY FENCING SHALL HAVE THE FOLLOWING PROPERTIES:

A. FRAME: 1'-6" ROUND RAIL NEW FENCE FRAMEWORK
B. LINE POST TYPE: 4" O.D SCHEDULE 40 GALVANIZED PIPE
C. END POST TYPE: 4" O.D. SCHEDULE 40 GALVANIZED PIPE
D. MAXIMUM SPAN: 48"
E. MAXIMUM PANEL SIZE: 48" WIDE BY 78" TALL
F. HORIZONTAL RAILS: (2) 1.660" ϕ SCHEDULE 40 GALVANIZED PIPE

THE SECURITY GATE SHALL HAVE THE FOLLOWING PROPERTIES:

A. TYPE: SINGLE SWING PEDESTRIAN GATE
B. GATE FRAME: 1.90" ROUND PIPE FULLY WELDED
C. MESH TO ATTACH TO OUTSIDE OF FRAME WITH FITTINGS
D. STANDARD INDUSTRIAL HINGES TO MATCH HINGE POST SIZE
E. STANDARD INDUSTRIAL FORK LATCH TO MATCH LATCH POST SIZE
F. TRUSS ROD TIGHTENERS, POST CAPS, AND BRACKETS WILL BE IRON OR STEEL HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM F 626
G. POST TYPE 4" SCHEDULE 40/SS40 PIPE

THE EXPANDED METAL FENCE PANELS SHALL BE INSTALLED USING HOT DIP GALVANIZED STEEL FITTINGS SIZED TO THE FRAMEWORK SPECIFIC TO THE PROJECT. 11 GAGE x 1" STEEL BANDS SHALL BE SIZED TO MATCH THE OUTSIDE DIAMETER OF THE TERMINAL, CORNER, AND GATE POSTS AND SHALL BE USED TO ATTACH EXPANDED METAL MESH TO POSTS.

C-CLAMPS SHALL BE USED TO ATTACH EXPANDED METAL MESH TO LINE POSTS AND RAILS. 11 GAGE x 1" STEEL BAR CLAMPS SHALL BE USED IN PAIRS TO JOIN MESH VERTICALLY BETWEEN RAILS. NUTS AND BOLTS SHALL BE STAINLESS STEEL CARRIAGE BOLTS WITH BREAKAWAY NUTS TO MAXIMIZE SECURITY. BOLT SIZE IS CONTINGENT ON MESH AND FITTINGS. 14 GAGE PRESSED STEEL RAIL CLAMPS SHALL BE USED TO SECURE RAILS TO POSTS.

THE GATE SHALL BE OF A WELDED CONSTRUCTION AND BE DESIGNED TO OPERATE UNDER THE ADDED WEIGHT OF THE EXPANDED METAL SECURITY MESH PANELS AND THE AFFECTS OF ADDITIONAL WIND LOADING. THE GATE SHALL BE DESIGNED PER ASTM F900 SPECIFICATION FOR INDUSTRIAL AND COMMERCIAL SWING GATES.

THE GATE SHALL BE COVERED WITH MESH FABRIC AND SHALL FIT FLUSH ON ALL SIDES OF THE GATE FRAME ALLOWING NO OPEN SPACES BETWEEN THE FABRIC AND THE GATE FRAME. 11 GAGE x 1" STEEL BANDS SHALL SECURE THE MESH TO THE GATE FRAME. ALTERNATIVELY THE EXPANDED METAL MESH CAN BE BE WELDED DIRECTLY TO THE GATE FRAME. USE 11 GAGE x 1" STEEL C-CLAMPS FOR BRACING. C-CLAMPS SHALL BE SPACED NO MORE THAN 16" APART ON GATE BRACES. GATE HINGES SHALL BE STRUCTURALLY CAPABLE OF SUPPORTING THE GATE LEAF AND ALLOW THE GATE TO OPEN AND CLOSE WITHOUT BINDING. THE INSTALLED GATE LATCH SHALL BE CAPABLE OF RETAINING THE GATE IN A CLOSED POSITION.

INSTALLATION AND LAYOUT OF THE FENCE SHALL BE APPROVED BY THE OWNER OR GENERAL CONTRACTOR PRIOR TO INSTALLATION. INSTALL POSTS PLUMB AND SET ON CENTER PER MANUFACTURER'S DRAWINGS. INSTALL ALL RAIL LINES LEVEL. THE BOTTOM RAIL SHALL BE INSTALLED 3" TO 6" FROM ABOVE THE BOTTOM OF THE EXPANDED METAL PANEL. THE TOP RAIL SHALL BE INSTALLED 3" TO 6" FROM THE TOP OF THE EXPANDED METAL PANEL. EXPANDED METAL PANELS SHALL FIT FLUSH TO ALL END POSTS, GATE POSTS, AND GATE FRAMES. TOUCH UP, REPAIR, OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

CONTRACTOR IS TO SUBMIT SHOP DRAWINGS FOR APPROVAL DETAILING LAYOUT OF NEW FENCE SHOWING PROPOSED POST SPACINGS, FOOTING DETAILS, AND FENCING PANEL SIZES PRIOR TO FABRICATION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

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

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP	STRUCTURE, MISC.: LAKEFRONT RAMP SECURITY FENCE AND GATE

ITEM 607 - GATE, TYPE CLT, AS PER PLAN

THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE INSTALLATION OF THE 6' CHAIN LINK FENCE GATE IN SECTION P OF THE WEST APPROACH AS PER THE DETAILS IN THE PLANS WITH THE APPLICABLE PORTIONS OF STANDARD DRAWING F-1.1 AND THE MANUFACTURER'S RECOMMENDATIONS. THE COLOR OF THE FENCE FABRIC, RAILS, POSTS, TIE WIRES, AND ADDITIONAL VISIBLE HARDWARE AND CAULK SHALL BE SILVER.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE INSTALLATION OF THE GATE. PAYMENT FOR CUTTING, GRINDING, AND DRILLING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
607	EACH	GATE, TYPE CLT, AS PER PLAN

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000351	

STRUCTURE GENERAL NOTES (1A OF 9)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S2A/S95

53A
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GCRTA RAILROAD OPERATIONS

THE CONTRACTOR'S WORK SHALL NOT INTERRUPT GCRTA OPERATIONS WITHOUT PRIOR APPROVAL OF THE GCRTA.

ALL WORK OVER, ADJACENT AND WITHIN THE GCRTA ROW SHALL BE COORDINATED WITH GCRTA AUTHORITY PERSONNEL AND MUST COMPLY WITH THE FOLLOWING GCRTA SPECIFICATIONS: SECTION 014500 - SAFETY; SECTION 015010 - MAINTENANCE OF RAIL TRAFFIC AND RESUMPTION OF RAIL SERVICE; SECTION 015020 STANDARD RAIL FLAGGING PROCEDURES; SECTION 015020 - WORK ZONE APPENDIX.

PRIOR TO THE START OF ANY WORK, THE CONTRACTOR MUST ENTER INTO AND EXECUTE A TEMPORARY RIGHT-OF-ENTRY AGREEMENT WITH THE GCRTA. INCLUDED IN THE TEMPORARY RIGHT-OF-ENTRY AGREEMENT ARE THE REQUIREMENTS FOR INSURANCE COVERAGE. IN ADDITION TO STANDARD INSURANCE COVERAGES, THE CONTRACTOR SHALL CARRY ADDITIONAL LIABILITY INSURANCE COVERING RAILROAD PROTECTIVE PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY. ALL WORK OVER AND ON THE GCRTA ROW SHALL BE COORDINATED WITH GCRTA PERSONNEL.

AFTER THE TEMPORARY RIGHT-OF-ENTRY HAS BEEN FULLY EXECUTED, AND PRIOR TO THE START OF ANY WORK, CONTRACTOR PERSONNEL MUST COMPLETE GCRTA CONTRACTOR RULEBOOK C TRAINING, OBTAIN GCRTA CONTRACTOR ID BADGES, AND BE ASSIGNED A GCRTA RADIO.

THE CONTRACTOR MUST SUBMIT WEEKLY OUTAGE REQUESTS TO GCRTA FOR APPROVAL TO ENTER AND WORK WITHIN THE GCRTA ROW. REQUESTS ARE APPROVED ON A WEEKLY BASIS AND ARE WHOLLY DEPENDENT ON THE GCRTA OPERATIONAL REQUIREMENTS. REQUESTS TO GCRTA FOR TOTAL SHUTDOWNS MUST BE SUBMITTED FOUR (4) WEEKS IN ADVANCE AND EVERY WEEK THEREAFTER UNTIL APPROVAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DISRUPTIONS TO REGULAR, CONTINUOUS RAPID TRANSIT SERVICE CAUSED AS A RESULT OF CONSTRUCTION ACTIVITIES.

EXTREME CARE WILL BE EXERCISED AT ALL TIMES TO SAFELY WORK AROUND AND PROTECT THE GCRTA OVERHEAD CATENARY LINES. ON THE GCRTA WATERFRONT LINE, THE CATENARY SYSTEM IS CONTINUOUS CABLE WITH COUNTERWEIGHTS THAT WILL TAKE DOWN A SIGNIFICANT PORTION OF THE LINE IF SEVERED; THEREFORE, EXTREME CARE MUST BE TAKEN AT ALL TIMES TO PROTECT CATENARY LINES AND SUPPORTS.

THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 15.75-FEET VERTICAL CLEARANCE AND A MINIMUM OF 6.5-FEET HORIZONTAL CLEARANCE FROM THE CENTERLINE OF TRACK AT ALL TIMES WHEN TRAINS ARE OPERATING. A GCRTA APPROVED FLAGGER WILL BE REQUIRED WHEN WORKING WITHIN 10-FEET OF THE CENTERLINE OF AN ACTIVE TRACK.

NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE WITHIN OR OVER GCRTA CLEARANCE LIMITS WHILE TRACK IS ACTIVE UNLESS A TEMPORARY PROTECTIVE STRUCTURE IS ERECTED TO PROTECT GCRTA TRAFFIC. DETAILS OF THE PROTECTIVE STRUCTURE SHALL BE PREPARED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE GCRTA FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO STARTING ANY WORK. PROTECTIVE STRUCTURE SHALL BE DESIGNED FOR A MINIMUM LOADING OF 125 POUNDS PER SQUARE FOOT. WHEN CONDITIONS WARRANT, THE CONTRACTOR SHALL PLACE A FILTER FABRIC WRAP OVER THE GCRTA BALLAST WITHIN THE CONSTRUCTION LIMITS. THE FABRIC SHALL BE ATTACHED TO THE EXISTING TIES. DURING WORK, THE GCRTA TRACKS SHALL ALSO BE PROTECTED FROM FALLING DEBRIS WITH PLYWOOD AND/OR OTHER SUITABLE MATERIAL. SUBMIT DETAILED DRAWINGS FOR THE PROTECTION PLAN TO THE GCRTA FOR APPROVAL.

FLAGGERS SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR, EITHER THROUGH COMPANIES WHO SUPPLY CERTIFIED FLAGGERS (OBTAIN LIST FROM GCRTA) OR BY TRAINING AND CERTIFYING ITS OWN EMPLOYEES THROUGH GCRTA. FLAGGING PROCEDURES, FLAGGER TRAINING, AND SET-UP OF WORK ZONES. SEE GCRTA STANDARD 015020 - STANDARD FLAGGING PROCEDURES AND WORK ZONES.

TWO (2) WEEKEND OUTAGES WILL BE PERMITTED FOR THE CONTRACTOR TO PERFORM PROJECT WORK WITHIN THE GCRTA ROW. THE WEEKEND OUTAGES TYPICALLY RUN FROM APPROXIMATELY 3:00 AM SATURDAY TO 1:00 AM MONDAY.

CSXT RAILROAD OPERATIONS

THE CONTRACTOR'S WORK SHALL NOT INTERRUPT THE NORMAL OPERATION OF THE RAILROAD WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER IN CONSULTATION WITH THE CSXT REPRESENTATIVES.

ALL WORK ON, OVER, OR ADJACENT TO THE CSXT RIGHT-OF-WAY SHALL CONFORM TO THE CSXT PUBLIC PROJECTS MANUAL, WHICH IS INCLUDED IN THIS PLAN SET AS THE CSXT SPECIAL PROVISIONS. A CURRENT VERSION OF THIS MANUAL CAN BE FOUND AT THE FOLLOWING LOCATION:

HTTPS://WWW.CSX.COM/INDEX.CFM/LIBRARY/FILES/ABOUT-US/PROPERTY/PUBLIC-PROJECT-MANUAL/

IF CONTRACTOR CHOOSES TO INSTALL A TEMPORARY VEHICLE CROSSING OF CSXT TRACKS DURING THE PROJECT, THE CROSSING SHALL CONFORM TO THOSE DETAILS SHOWN IN THE "AT-GRADE CROSSING DETAILS ASPHALT PAVING WITH RUBBER FLANGE WAY" TYPICAL DRAWING NO. 19 PRESENTED IN THE NS PUBLIC PROJECTS MANUAL, AT NO COST TO THE PROJECT.

ALL WASTE MATERIALS GENERATED BY THIS PROJECT, INCLUDING WASHING WITH CLEANING SOLVENTS, BLASTING, SCRAPING, BRUSHING AND PAINTING OPERATIONS, SHALL BE THE RESPONSIBILITY OF THE STATE OR ITS CONTRACTOR AND SHALL BE CONTAINED, COLLECTED AND PROPERLY DISPOSED OF BY THE STATE OR ITS CONTRACTOR. THE STATE AND ITS CONTRACTOR AGREE TO FULLY COMPLY WITH ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL LAWS, REGULATIONS, STATUTES AND ORDINANCES AT ALL TIMES.

CSXT RAILROAD SAFETY RULES

THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO PROTECT THE PUBLIC AND EMPLOYEES OF CSXT FROM ANY AND ALL DAMAGES AND INJURIES FROM THIS OPERATION.

THE CONTRACTOR SHALL REQUIRE ALL OF HIS EMPLOYEES AT THE PROJECT SITE TO USE PERSONAL PROTECTIVE EQUIPMENT CONSISTENT WITH THE RAILROAD'S SAFETY RULES. THIS EQUIPMENT SHALL, AS A MINIMUM, INCLUDE SAFETY HAT, EYE PROTECTION WITH SIDE SHIELDS, AND 6" MINIMUM HEIGHT, LACE-UP SAFETY TOE SHOES AND A HIGH VISIBILITY VEST WHILE PERSONS OCCUPY CSXT RIGHT OF WAY. WHEN CONDITIONS WARRANT HEARING PROTECTION, FALL PROTECTION, AND RESPIRATORY PROTECTION SHALL ALSO BE FURNISHED AND UTILIZED, CONSISTENT WITH OSHA AND FRA REGULATIONS GOVERNING BRIDGE WORKERS' SAFETY AND HEALTH. WHEN WORKING ON CSXT RIGHT OF WAY OR WITHIN THE SAFETY ZONE SURROUNDING THE TRACKS, A JOB BRIEFING IN ACCORDANCE WITH CSXT SAFE WAY RULES, EFFECTIVE 7/1/2010 (OR LATEST REVISION) SHALL BE HELD PRIOR TO COMMENCING WORK OR WHEN WORK OR CONDITIONS CHANGE.

THE CONTRACTOR CANNOT COMMENCE THE DAY'S WORK ON CSXT RIGHT OF WAY UNLESS CSXT FLAGMAN IS ON THE JOB. A SAFETY BRIEFING WILL BE HELD IN THE PRESENCE OF THE CSXT FLAGMAN AT THE BEGINNING OF EACH WORKDAY AND WHEN WORK ACTIVITY OR WORK CONDITIONS CHANGE. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERVISORY PERSONNEL TO CARRY THROUGH FOR THE ENTIRE WORKDAY ALL OF THE ITEMS DISCUSSED DURING THE SAFETY BRIEFING.

CSXT OR ITS DESIGNATED REPRESENTATIVE WILL DETERMINE WHEN FLAGGING PROTECTION IS REQUIRED.

CSXT RAILROAD FLAGMEN SERVICES

A CSXT FLAGMAN MUST BE PRESENT WHENEVER THE CONTRACTOR IS WORKING OVER OR ON CSXT'S RIGHT OF WAY, OVER OR ON AN ACTIVE TEMPORARY TRACK WITHIN THE DESIGNATED SAFETY ZONE, OR WHEN NEED IS DETERMINED BY CSXT OR ITS DESIGNATED REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT CSXT DIRECTOR OF CONSTRUCTION ENGINEERING AT LEAST 45 DAYS IN ADVANCE WHEN THIS SERVICE IS REQUIRED.

PAYMENT FOR THE CSXT FLAGMEN SHALL BE PAID FOR BY THE STATE. A FORCE ACCOUNT ESTIMATE FOR FLAGMAN SERVICES WILL BE ESTABLISHED WITHIN THE EXECUTED CONSTRUCTION AGREEMENT. REIMBURSEMENT IS REQUIRED FOR A FULL 8-HOUR DAY FOR ANY FLAGMAN FURNISHED UNLESS SAID FLAGMAN IS ENGAGED IN OTHER WORK. COMPENSATION SHALL ALSO INCLUDE PROVISIONS FOR OVERTIME, WHICH SHALL BE COMPENSATED AT THE RATE OF ONE AND ONE HALF TIMES THE HOURLY RATE IN EXCESS OF 8 HOURS ON MONDAY THROUGH FRIDAY AND FOR ANY TIME ON SATURDAY, SUNDAY, OR HOLIDAYS, ACTUAL COSTS FOR TRAVEL, MEALS, LODGING, AND TRANSPORTATION. THE CONTRACTOR SHALL PROVIDE THE FLAGMEN WITH A HEATED SHELTER AND SUITABLE SANITATION FACILITIES.

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

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

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

PERFORM ALL STEEL REMOVAL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING STEEL TO BE PRESERVED. 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 PLANS ACCORDING TO CMS 501.05.

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

DRAINAGE TROUGHS DESCRIPTION:
THIS WORK CONSISTS OF THE REMOVAL OF THE DRAINAGE TROUGHS AND THE ASSOCIATED CONNECTIONS IN SPAN 11 AS DETAILED IN THE PLANS.

JOINT WORK DESCRIPTION:
THIS WORK CONSISTS OF THE REMOVAL OF THE EXISTING DECK SLAB, JOINT ARMOR, AND PARAPETS AS DETAILED IN THE PLANS.

FENCE DESCRIPTION:
THIS WORK CONSISTS OF THE REMOVAL OF THE EXISTING DETERIORATED FENCING AND GATE IN SECTION P, AS SHOWN IN THE PLANS.

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

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

REMOVAL OF EXISTING MEMBERS
THIS WORK CONSISTS OF REMOVAL OF VARIOUS CATWALK MEMBERS, LATERAL BRACING MEMBERS, LATERAL BRACING STRUT MEMBERS, AND FLOORBEAM STRUT MEMBERS TO BE REPLACED IN THE LAKEFRONT RAMP SECTION. EXISTING RIVETS TO BE REMOVED SHALL CONFORM TO THE RIVET REMOVAL PROCEDURE. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF THE EXISTING STEEL TO REMAIN IS DAMAGED DURING THE REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER.

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

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

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

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION OR SECTION LOSS. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. A CONTINGENCY QUANTITY OF 1000 POUNDS HAS BEEN INCLUDED. REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

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

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

85377GN001 4/14/2017 9:23:04 AM nrfisco

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

STRUCTURE GENERAL NOTES (2 OF 9)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S3 / S95

54
154

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS AND EQUIPMENT NECESSARY TO SEAL PATCHED AREAS AND SEAL THE BRIDGE DECK AS SHOWN IN THE PLANS. ALL PROVISIONS OF CMS 512 SHALL APPLY, EXCEPT AS MODIFIED HEREIN.

THIS ITEM IS TO INCLUDE THE REMOVAL OF ALL COATINGS FROM THE EXISTING BRIDGE DECKS, FROM DECK END TO DECK END, TOE-TO-TOE OF PARAPETS. REMOVAL OF OF COATINGS SHALL BE DONE BY WATER BLASTING OR BY VACUUM BLASTING. WATER BLASTING SHALL COMPLY WITH THE REQUIREMENTS OF C&MS 107.19. NO FUGITIVE DUST SHALL BE ALLOWED TO ESCAPE INTO THE ATMOSPHERE. THE CONTRACTOR SHALL NOT DISTURB THE PAVEMENT MARKINGS. IF ANY PAVEMENT MARKINGS ARE DAMAGED, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR REAPPLYING THE DAMAGED MARKINGS AT NO COST TO THE PROJECT. ALL BRIDGE DECKS SHALL BE BLASTED TO ENSURE THAT THE DECK SURFACES ARE ADEQUATELY PREPARED FOR SEALING.

BRIDGE DECK IS TO BE SEALED FROM DECK END TO DECK END, AS SHOWN IN THE PLANS, TOE-TO-TO OF THE PARAPETS. NO SEALING OF ON/OFF RAMP PORTIONS OF STRUCTURE ON GRADE IS TO BE PERFORMED. PRIOR TO APPLYING SEALANT TO THE BRIDGE DECKS, ENSURE THAT THE DECK IS CLEAN AND CLEAR OF ANY FOREIGN MATERIAL. THIS WORK SHALL BE COMPLETED AS DETAILED ABOVE, TO THE SATISFACTION OF THE ENGINEER. NOTE THAT WITH ANY METHOD OF CLEANING AND DEBRIS REMOVAL, UNDER NO CIRCUMSTANCES, SHALL IT CAUSE UNDUE HAZARD TO THE MOTORING PUBLIC, NOR SHALL ANY DEBRIS BE PERMITTED TO ENTER THE WATERWAY. USE PROPER PROTECTION METHODS FOR ANY DRAINS, SCUPPERS, CATCH BASINS, ETC. TO PREVENT DEBRIS OR ABRASIVE CLEANING MATERIALS FROM ENTERING THE SAME.

MEASUREMENT AND PAYMENT:
PAYMENT FOR THIS WORK SHALL INCLUDE ALL EQUIPMENT, TOOLS, MATERIAL, AND LABOR NECESSARY TO PERFORM THIS TASK AND WHERE NOT INCIDENTAL TO THE COMPLETION OF THE OTHER WORK PAID FOR UNDER THIS CONTRACT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
512	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)

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

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS AND EQUIPMENT NECESSARY TO SEAL PATCHED AREAS, AS SHOWN IN THE PLANS. ALL PROVISIONS OF CMS 512 SHALL APPLY, EXCEPT AS MODIFIED HEREIN.

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

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

MEASUREMENT AND PAYMENT:
PAYMENT FOR THIS WORK SHALL INCLUDE ALL EQUIPMENT, TOOLS, MATERIAL, AND LABOR NECESSARY TO PERFORM THIS TASK AND WHERE NOT INCIDENTAL TO THE COMPLETION OF THE OTHER WORK PAID FOR UNDER THIS CONTRACT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

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

ITEM 625 - SPECIAL - MAINTAIN EXISTING LIGHTING

DESCRIPTION:
THIS ITEM CONSISTS OF TEMPORARILY REMOVING AND RE-ERECTING THE EXISTING STREET LIGHTING THAT IS MOUNTED TO THE MAIN AVENUE BRIDGE STRUCTURE TO FACILITATE PAINTING OPERATIONS, WHICH INCLUDES WIRES, WIRE SUPPORTS, LUMINAIRE SUPPORTS, AND LUMINAIRES. EXISTING STREET LIGHTING TO BE INSPECTED BY THE CONTRACTOR AND ENGINEER AND CONDITION OF EXISTING LIGHTING TO BE DOCUMENTED PRIOR TO BEGINNING REMOVAL OPERATIONS. THE CONTRACTOR IS TO EXERCISE CARE NOT TO DAMAGE THE EXISTING STRUCTURE DURING REMOVAL OR RE-INSTALLATION OF LIGHTING. EXISTING STRUCTURAL LUMINAIRE SUPPORTS THAT ARE PERMANENTLY ATTACHED TO THE STRUCTURE VIA WELD OR STRUCTURAL BOLTS SHOULD NOT BE REMOVED, AS THESE SUPPORTS ARE TO BE PAINTED. IF ORIGINAL LIGHTING SUPPORT IS DEEMED UNUSABLE BY THE ENGINEER DUE TO ADVANCED DETERIORATION OR IS UNABLE TO BE REATTACHED USING THE EXISTING MOUNTING SCHEME, THE CONTRACTOR IS TO REPLACE THE DETERIORATED SECTION OR ATTACH THE LIGHTING BY OTHER SUITABLE MEANS THAT HAS BEEN APPROVED BY THE ENGINEER AND MEET ALL APPLICABLE CITY OF CLEVELAND OR ODOT STANDARDS. THE COST OF REPLACING DETERIORATED MEMBERS OR PROVIDING AN ACCEPTABLE MOUNTING SCHEME SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

ADDITIONALLY, THIS ITEM CONSISTS OF PROVIDING TEMPORARY LIGHTING FOR THE ROADWAY AREAS BELOW THE BRIDGE WHERE THE EXISTING LIGHTING HAS BEEN TEMPORARILY REMOVED OR IS BLOCKED BY THE CONTAINMENT SYSTEM. THE PLACEMENT AND LIGHT SOURCE SHALL BE APPROVED BY THE ENGINEER. NO DRILLING INTO, CUTTING OF, OR WELDING TO THE EXISTING STRUCTURE WILL BE PERMITTED IN ORDER TO INSTALL THE TEMPORARY LIGHTING. THIS ITEM ALSO INCLUDES ALL NECESSARY COORDINATION WITH THE UTILITY COMPANY TO DE-ENERGIZE AND RE-ENERGIZE THE LIGHTING TO BE TEMPORARILY REMOVED TO FACILITATE PAINTING OPERATIONS. THE COST OF UTILITY COORDINATION AND FURNISHING, PLACING, AND REMOVING THE TEMPORARY LIGHTING SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

MEASUREMENT AND PAYMENT:
PAYMENT FOR THIS WORK SHALL INCLUDE ALL EQUIPMENT, ACCESS, TOOLS, MATERIALS, AND LABOR NECESSARY TO PERFORM THIS TASK AND WHERE NOT INCIDENTAL TO THE COMPLETION OF THE OTHER WORK PAID FOR UNDER THIS CONTRACT. THE ACCEPTED QUANTITIES FOR THE COMPLETION WORK AS DESCRIBED ABOVE WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
625	LUMP	SPECIAL - MAINTAIN EXISTING LIGHTING

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF

DESCRIPTION:
ALL REQUIREMENTS OF CMS 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO CMS ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN CMS SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, CMS 501.06, TO THE ENGINEER.

THE FOLLOWING MEMBERS ARE INCLUDED IN THIS ITEM: EAST APPROACH FORWARD SECTION CATWALK MEMBERS, LAKEFRONT RAMP LATERAL BRACING, AND LAKEFRONT RAMP CATWALK MEMBERS.

MEASUREMENT AND PAYMENT:
PAYMENT FOR THIS WORK SHALL INCLUDE ALL EQUIPMENT, TOOLS, MATERIAL, AND LABOR NECESSARY TO PERFORM THIS TASK AND WHERE NOT INCIDENTAL TO THE COMPLETION OF THE OTHER WORK PAID FOR UNDER THIS CONTRACT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
513	POUND	STRUCTURAL STEEL MEMBERS, LEVEL UF

ITEM 513 - STRUCTURAL STEEL, MISC.: MAIN TRUSS GUSSET PLATE EDGE STIFFENING ANGLE

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO INSTALL THE GUSSET PLATE EDGE STIFFENING ANGLES AS DETAILED IN THE PLANS.

THE NEW ANGLES HAVE BEEN FABRICATED PREVIOUSLY AND ARE BEING STORED AT THE FOLLOWING LOCATION:

RIVEREDGE GARAGE
4900 OLD GRAYTON ROAD
CLEVELAND, OH 44135

NEW BOLTS SHALL BE ASTM A325 7/8" DIAMETER HIGH STRENGTH BOLTS AND ARE CONSIDERED INCIDENTAL TO THIS ITEM.

THIS REPAIR INCLUDES THE STIFFENING OF GUSSET PLATE EDGES BY BOLTING ON ANGLES AS SHOWN IN THE PLANS. THE ANGLES SHALL HAVE AT LEAST 1" CLEARANCE TO ANY CONNECTING PRIMARY TRUSS MEMBERS.

ADJOINING SURFACES BETWEEN EXISTING STEEL AND NEW STEEL SHALL BE PREPARED PER CMS 514.13. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING PAINT OUTSIDE OF THE RETROFIT AREA. EXISTING PAINTED AREAS DAMAGED OR EXPOSED BY THE CONTRACTOR'S SURFACE PREPARATION OR GUSSET PLATE RETROFIT OPERATION SHALL BE REPAINTED AT NO COST TO THE PROJECT.

IN THE EVENT THAT THE CONTRACTOR DAMAGES AN ANGLE AND THE MEMBER MUST BE REFABRICATED, THE FOLLOWING REQUIREMENTS SHALL APPLY:

MEMBERS REFABRICATED DUE TO CONTRACTOR NEGLIGENCE WILL BE DONE AT NO COST TO THE PROJECT.

ALL REQUIREMENTS OF CMS 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD-FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN CMS SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, CMS 501.06, TO THE ENGINEER.

ALL NEW STIFFENING ANGLES ARE CVN. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIRED AS SPECIFIED IN CMS 711.01.

SURFACE PREPARATION SHALL BE PER CMS 514.13. ALL NEW STEEL SHALL BE SHOP PRIMED IZEU. ALL NEW BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

ALL NEW STIFFENING ANGLES ARE CVN. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIRED AS SPECIFIED IN CMS 711.01.

SURFACE PREPARATION SHALL BE PER CMS 514.13. ALL NEW STEEL SHALL BE SHOP PRIMED IZEU. ALL NEW BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE ANGLE TO BE BOLTED ALONG THE FREE EDGE OF THE GUSSET PLATE. GUSSET PLATES MAY RECEIVE MULTIPLE EDGE STIFFENING ANGLES UNDER THIS UNIT DEFINITION.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: MAIN TRUSS GUSSET PLATE EDGE STIFFENING ANGLE

ITEM 513 - STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO ERECT THE STRUCTURAL STEEL AS SHOWN IN THE PLANS COMPLETE AND IN PLACE AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION.

ALL NEW STIFFENING ANGLES ARE CVN. WHERE A SHAPE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIRED AS SPECIFIED IN CMS 711.01.

EXISTING RIVET AND BOLT LAYOUT
THE CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND RIVET/BOLT LAYOUTS PRIOR TO PERFORMING WORK.

STEEL SURFACE PREPARATION
FAYING SURFACES AND SURFACES TO BE WELDED SHALL BE PREPARED IN ACCORDANCE WITH CMS 514.13.c IMMEDIATELY WITHIN 24 HOURS BEFORE INSTALLATION OF NEW MATERIAL OR WELDING. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE FLOORBEAM CONNECTION LOCATION AND INCLUDES THE INSTALLATION OF TWO STIFFENER ANGLES.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER RETROFIT

85377GN001 4/26/2017 10:15:25 AM dmdickson

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

DESIGNED DMD | DRAWN DMD | CHECKED NRF | REVIEWED PJA | DATE 12-19-16 | REVISED | STRUCTURE FILE NUMBER 1800035

STRUCTURE GENERAL NOTES (3 OF 9)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

ITEM 513 - STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER CONNECTION RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE SELECT EXISTING FLOORBEAM TO FASCIA STRINGER CONNECTION ANGLES AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION.

ALL NEW CONNECTION ANGLES ARE CVN. WHERE A SHAPE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIRED AS SPECIFIED IN CMS 711.01.

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

EXISTING RIVET AND BOLT LAYOUT
THE CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND RIVET/BOLT LAYOUTS PRIOR TO PERFORMING WORK.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE FLOORBEAM CONNECTION LOCATION AND INCLUDES THE INSTALLATION OF TWO NEW FASCIA STRINGER CONNECTION ANGLES AND TWO STIFFENING ANGLES.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER CONNECTION RETROFIT

ITEM 513 - STRUCTURAL STEEL, MISC.: FORWARD SECTION COLUMN RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO RETROFIT THE EAST APPROACH - FORWARD SECTION COLUMNS AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

THE CONTRACTOR IS TO FIELD VERIFY ALL MEMBER DIMENSIONS, RIVET/BOLT LAYOUTS, AND DETERIORATED AREAS TO BE RETROFITTED AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO PERFORMING WORK.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING AND GRINDING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" DEFINES A SINGLE BATTEN PLATE TO BE INSTALLED TO A COLUMN. MULTIPLE COLUMNS WILL RECEIVE TWO REPAIRS UNDER THIS UNIT DEFINITION.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: FORWARD SECTION COLUMN RETROFIT

ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT TRESTLE KEEPER BOLT RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE THE KEEPER BOLTS ON COLUMN BRACKETS IN THE EAST APPROACH - LAKEFRONT TRESTLE SECTION, AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION.

THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE BOLT TO BE REPLACED. FOUR BOLTS SHALL BE REPLACED AT EACH COLUMN BRACKET LOCATION.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT TRESTLE KEEPER BOLT RETROFIT

ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP FLOORBEAM RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO RETROFIT FLOORBEAM 40 IN THE LAKEFRONT RAMP SECTION, INCLUDING THE REMOVAL OF EXISTING ELEMENTS OR CONNECTORS, AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION. EXISTING RIVETS ARE TO BE REMOVED PER THE RIVET REMOVAL PROCEDURE. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS DETAILED IN THE PLANS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE FLOORBEAM LOCATION TO BE RETROFITTED AND INCLUDES ALL RETROFITS TO BE PERFORMED PER THE PLANS.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: LAKFRONT RAMP FLOORBEAM RETROFIT

ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP GIRDER WEB RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO RETROFIT THE LAKEFRONT RAMP GIRDER, AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION.

THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

ALL NEW PLATES ARE CVN. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIRED AS SPECIFIED IN CMS 711.01.

THE CONTRACTOR IS TO FIELD VERIFY ALL MEMBER DIMENSIONS, DETERIORATED AREAS TO BE RETROFITTED, AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO PERFORMING WORK.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE GIRDER LOCATION TO BE RETROFITTED AND INCLUDES ALL RETROFITS TO BE PERFORMED PER THE PLANS.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP GIRDER WEB RETROFIT

ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP STRUT BRACING RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE A KNEE BRACE ON THE LOWER FRAMING STRUT IN THE LAKEFRONT RAMP SECTION, INCLUDING THE REMOVAL OF RIVETS, AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION. EXISTING RIVETS ARE TO BE REMOVED PER THE RIVET REMOVAL PROCEDURE. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS DETAILED IN THE PLANS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE LOWER FRAMING STRUT KNEE BRACE TO BE REPLACED PER THE PLANS.

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

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: LAKFRONT RAMP STRUT BRACING RETROFIT

ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP LATERAL BRACING COVER PLATE RETROFIT

DESCRIPTION:
THIS WORK INCLUDES ALL ACCESS, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO PERFORM A COVER PLATE RETROFIT ON THE LATERAL BRACING IN THE LAKEFRONT RAMP SECTION, INCLUDING THE REMOVAL OF RIVETS, AS SHOWN IN THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF CMS 513 SUPPLEMENTED WITH THE FOLLOWING INFORMATION.

EXISTING RIVETS ARE TO BE REMOVED PER THE RIVET REMOVAL PROCEDURE. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT GOUGE, CUT, OR DAMAGE THE EXISTING STEEL TO REMAIN. IF EXISTING STEEL TO REMAIN IS DAMAGED DURING REMOVAL OR INSTALLATION OF THE RETROFIT, THE CONTRACTOR SHALL REPLACE THE DAMAGED AREA AT NO COST TO THE PROJECT AND TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS NOTIFIED THAT THE EXISTING PAINT SYSTEM MAY CONTAIN LEAD, AND CMS 514.13.D.1 MAY APPLY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS DETAILED IN THE PLANS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE UNIT "EACH" REFERS TO A SINGLE LATERAL BRACING MEMBER COVER PLATE RETROFIT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL, MISC.: LAKFRONT RAMP LATERAL BRACING COVER PLATE RETROFIT

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

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

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

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

DESCRIPTION:

THIS ITEM INCLUDES THE SURFACE PREPARATION AND COATING OF THE EXISTING STEEL MEMBERS TO REMAIN AND COATING OF NEW STEEL MEMBERS, AS PER PLAN. THE CONTRACTOR SHALL COMPLETE REMOVALS AND INSTALLATIONS PER ITEMS 202 AND

DESIGN AGENCY
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CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16

CHECKED	REVISED	STRUCTURE FILE NUMBER
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STRUCTURE GENERAL NOTES (4 OF 9)
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513 PRIOR TO PAINTING OF THE AREAS SPECIFIED TO BE REPAIRED OR REMOVED. SURFACE PREPARATION OF THE FAYING SURFACE BETWEEN ANY NEW STEEL AND EXISTING SURFACES SHALL BE PER CMS 514. NEW STEEL SHALL BE CLEANED AND PRIMED IN THE FIELD. THE COST OF SURFACE PREPARATION AND APPLICATION OF THE PRIME COAT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR FIELD PAINTING OF THE EXISTING STRUCTURAL STEEL. AT THE CONTRACTOR'S OPTION, NEW STEEL MAY BE GIVEN A PRELIMINARY CLEANING IN THE SHOP.

CONTRACTOR SHALL MAINTAIN A MINIMUM 23'-0" VERTICAL CLEARANCE ABOVE TOP OF RAIL DURING PAINTING OPERATIONS AND STRUCTURAL REPAIRS IN TRUSS SPAN 11 AND THE LAKEFRONT RAMP SECTION. THE CONTRACTOR SHALL MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN TRAVEL LANES DURING PAINTING OPERATIONS AND STRUCTURAL REPAIRS. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACT MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREA OR PROVIDE CITY APPROVED DETOUR.

WHERE TEMPORARY REMOVAL OF DRAINAGE ELEMENTS IS REQUIRED IN ORDER TO GAIN ACCESS FOR PAINTING, CONTRACTOR IS TO PROVIDE TEMPORARY DRAINAGE SO THAT WATER DOES NOT DISCHARGE ONTO THE STRUCTURE OR PRIVATE PROPERTY. NO DRAINAGE, PERMANENT OR TEMPORARY, IS PERMITTED TO DISCHARGE ONTO NORFOLK SOUTHERN RAILWAY COMPANY, CSXT, OR GCRTA PROPERTY.

DECORATIVE LIGHTING FIXTURES MAY BE PRESENT ADJACENT TO THE BRIDGE IN THE EAST APPROACH FORWARD SECTION. CARE SHALL BE TAKEN NOT TO DAMAGE DURING PAINTING OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR FIXING ANY DECORATIVE LIGHTING FIXTURES AT NO COST TO THE PROJECT. IF DECORATIVE LIGHTING FIXTURES ARE DAMAGED, CONTACT:

DOWNTOWN CLEVELAND ALLIANCE
ATTN: LAURA WIEGAND
PHONE: (216) 325-0975

EXISTING POWER LINES RUN UNDER AND ARE ATTACHED TO THE STRUCTURE IN WEST APPROACH SECTIONS C AND K. CONTRACTOR IS TO CONTACT THE SERVICE PROVIDER IN ORDER TO DE-ENERGIZE THE POWER LINES SO THAT LINES CAN BE TEMPORARILY REMOVED TO FACILITATE PAINTING OPERATIONS. AFTER COMPLETION OF PAINTING OPERATIONS, CONTRACTOR IS TO REATTACH THE LINES TO THE STRUCTURE IN A MANNER THAT DOES NOT REQUIRE WELDING TO OR DRILLING INTO THE STRUCTURE. ALL WORK ASSOCIATED WITH THE REMOVAL AND REINSTALLATION OF APPURTENANCES AND UTILITIES DESCRIBED HEREIN SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.

THE COLOR OF THE FINISH COAT FOR ALL STRUCTURAL STEEL SHALL BE FEDERAL COLOR NUMBER 595B-15180 (GLOSS).

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

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

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

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

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

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

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

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

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

THE CONTRACTOR SHALL NOT OVERSPRAY ONTO THE CONCRETE DECK, STAY-IN-PLACE FORMS, CONCRETE CURTAIN WALLS, AND CONCRETE SUBSTRUCTURE COMPONENTS (BACKWALLS, ABUTMENTS, PIERS, AND PEDESTALS). PAINTING SHALL BE CONFINED TO ALL FACES OF STRUCTURAL STEEL BELOW THE DECK, DOWN TO THE CONCRETE SUBSTRUCTURE UNIT OR EXISTING GRADE. STRUCTURAL STEEL CONSISTS OF ANY STEEL ON THE STRUCTURE, SUCH AS STRINGERS, FLOORBEAMS, GIRDERS, COLUMNS, LATERAL BRACING, SWAY BRACING, CATWALK MEMBERS (INCLUDING STEEL GRATING), LIGHTING FIXTURE SUPPORTS, AND ALL OTHER STEEL NOT EXPLICITLY CALLED OUT AS NOT TO BE PAINTED. ALL GALVANIZED DOWNSPOUTS, FIBERGLASS GRID DECK, AND LIGHT FIXTURES SHALL NOT BE PAINTED.

514.17 COATING APPLICATION:
IN ADDITION TO THE REQUIREMENTS OF CMS 514, A STRIPE COATING OF THE PRIME COAT SHALL BE APPLIED TO ALL WELDS, CREVICES, RIVET HEADS, NUTS, BOLT HEADS, BOLT THREADS AND OTHER SURFACE IRREGULARITIES. THE STRIPE COATING SHALL BE APPLIED TO THE SPECIFIED SURFACES BEFORE THE APPLICATION OF THE FULL PRIME COAT OVER THE SAME AREAS AND ADJACENT PREPARED SURFACES. STRIPING SHALL EXTEND A MINIMUM OF 1" FROM THE EDGES REQUIRING STRIPE COATING. THE STRIPE COATING SHALL SET TO TOUCH BEFORE APPLICATION OF THE FULL PRIME COAT OVER THE SAME AREA; HOWEVER, THE STRIPE COATING SHALL NOT BE PERMITTED TO DRY FOR A PERIOD LONG ENOUGH TO ALLOW RUSTING OF THE ADJACENT UNPRIMED STEEL SURFACES BEFORE THE FULL PRIME COAT CAN BE APPLIED TO THE AREA.

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

ENSURE COMPLETE COVERAGE OF ALL SURFACES, CREVICES, CORNERS AND SHARP EDGES.

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

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

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

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

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH INSTALLATION OF REPLACEMENT MODULAR EXPANSION JOINT ASSEMBLIES AND GLANDS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "EACH" REFERS TO A SINGLE JOINT LOCATION IN A SINGLE TRAVEL DIRECTION. DUE TO THE PHASED CONSTRUCTION OF THIS PROJECT, A SINGLE JOINT LOCATION IN A SINGLE TRAVEL DIRECTION WILL BE INSTALLED IN THREE PHASES. ALL WORK REQUIRED UNDER THESE THREE PHASES WILL CONSTITUTE A SINGLE REPLACEMENT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
516	EACH	STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT REPLACEMENT

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STRESS RELIEF JOINT REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE INSTALLATION OF REPLACEMENT STEEL STRESS RELIEF JOINT ASSEMBLIES INCLUDING GLANDS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "EACH" REFERS TO A SINGLE JOINT LOCATION IN A SINGLE TRAVEL DIRECTION. DUE TO THE PHASED CONSTRUCTION OF THIS PROJECT, A SINGLE JOINT LOCATION IN A SINGLE TRAVEL DIRECTION WILL BE INSTALLED IN THREE PHASES. ALL WORK REQUIRED UNDER THESE THREE PHASES WILL CONSTITUTE A SINGLE REPLACEMENT.

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

ITEM	UNIT	DESCRIPTION
516	EACH	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STRESS RELIEF JOINT REPLACEMENT

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT SEAL REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL OF EXISTING JOINT SEALS, CLEANING OF EXISTING JOINT ARMOR TO REMAIN, AND INSTALLATION OF THE NEW JOINT SEALS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "FT" REFERS TO PER FOOT OF JOINT SEAL MATERIAL TO BE REMOVED AND REPLACED. NOTE THAT SINGLE MODULAR JOINT LOCATIONS HAVE MULTIPLE JOINT OPENINGS WHERE SEALS WILL NEED TO BE REMOVED AND REPLACED. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT SEAL REPLACEMENT

DESIGN AGENCY
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CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16

CHECKED NRF
REVISED
STRUCTURE FILE NUMBER 1800035

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ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL OF EXISTING JOINT SEALS, CLEANING OF EXISTING JOINT ARMOR TO REMAIN, AND INSTALLATION OF THE NEW JOINT SEALS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "FT" REFERS TO PER FOOT OF JOINT SEAL MATERIAL TO BE REMOVED AND REPLACED.

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

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT SEAL REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL OF EXISTING JOINT SEALS, CLEANING OF EXISTING JOINT ARMOR TO REMAIN, AND INSTALLATION OF THE NEW JOINT SEALS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "FT" REFERS TO PER FOOT OF JOINT SEAL MATERIAL TO BE REMOVED AND REPLACED. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT SEAL REPLACEMENT

ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO CLEAN AND REPAIR THE CATCHMENTS AND CATCH BASINS IN THE LAKEFRONT RAMP SECTION, INCLUDING THE CLEANING OF DEBRIS WITHIN THE CATCH BASIN AND REPAIRING AND SEALING OF PIPE CONNECTIONS TO THE CATCH BASINS.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. THE TERM "EACH" REFERS TO CLEANING AND REPAIRING OF A SINGLE CATCHMENT OR CATCH BASIN. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
518	EACH	STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS

ITEM 518 - STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO REPAIR OR REPLACE EXISTING DRAIN PIPE NEOPRENE DRAIN BOOTS AND MISSING DRAIN BOLTS, INCLUDING REMOVAL OF THE EXISTING NEOPRENE BOOT, IF REQUIRED.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. THE TERM "EACH" REFERS DEFINES THE REPAIR AND REPLACEMENT OF A SINGLE NEOPRENE BOOT OR DRAIN BOLT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
518	EACH	STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO INSTALL THE DRAINAGE ELEMENTS IN SPAN 11 OF THE MAIN TRUSS PER THE PLANS. THE RETROFIT PARTS HAVE BEEN PREFABRICATED AND ARE BEING STORED AT:

RIVEREDGE GARAGE
4900 OLD GRAYTON ROAD
CLEVELAND, OH 44135

IN THE EVENT THAT THE CONTRACTOR DAMAGES ANY DRAINAGE COMPONENTS AND THE PART MUST BE REFABRICATED, PARTS WILL BE REFABRICATED AT NO COST TO THE PROJECT.

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

ITEM	UNIT	DESCRIPTION
518	LUMP	STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION

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

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

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

THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE THROUGH LANE IN EACH DIRECTION OF TRAFFIC AT THE WORK OPERATION AREA AT ALL TIMES. FOR ADDITIONAL INFORMATION REGARDING THE MAINTENANCE OF TRAFFIC, REFER TO ITEM 614 ON SHEET S9/S95.

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

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

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM 519 - SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS

DESCRIPTION:
CONCRETE SURFACES SHALL BE PATCHED IN ACCORDANCE WITH CMS 519 AND THE FOLLOWING ADDITIONS.

ESTIMATED PATCHING QUANTITIES ARE BASED ON THE 2014 INSPECTION OF THE STRUCTURE. AREAS TO BE PATCHED HAVE BEEN DETAILED IN THE PLANS.

IT IS POSSIBLE THAT ADDITIONAL AREAS REQUIRING PATCHING MAY HAVE DEVELOPED SINCE THE 2014 INSPECTION OF THE STRUCTURE. THEREFORE, THE CONTRACTOR SHALL SOUND THE SURROUNDING PERIMETER OF THE AREA TO BE PATCHED AND PATCH NEW AREAS APPROVED BY THE ENGINEER THAT HAVE NOT BEEN DETAILED IN THE PLANS.

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.

TO PERFORM PATCHING REPAIRS, IT MAY BE NECESSARY FOR THE CONTRACTOR TO REMOVE DRAINAGE COMPONENTS FROM THE STRUCTURE. CONTRACTOR SHALL REMOVE AND REINSTALL, AS DIRECTED BY THE ENGINEER, ANY EXISTING DRAINAGE COMPONENTS IN THE WAY OF PERFORMING WORK. MATERIALS DAMAGED BY THIS OPERATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. COST ASSOCIATED WITH REMOVAL AND REINSTALLATION OF DRAINAGE COMPONENTS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING OF DOWEL HOLES, AND CLEANING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

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

ITEM	UNIT	DESCRIPTION
519	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM	UNIT	DESCRIPTION
519	SQ FT	SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS

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

DESCRIPTION:
THIS WORK SHALL CONSIST OF PROVIDING AND INSTALLING A FIBER WRAP ON PIER 10 OF THE MAIN TRUSS SPANS AS SHOWN IN THE PLANS. PREPARATION, WRAPPING THE PIER CAP/COLUMN, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE WORK. THE INSTALLATION SHALL BE PER THE MANUFACTURER'S REQUIREMENTS.

MATERIALS:
SUPPLIERS SHALL HAVE A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 1000 HOUR TESTS FOR 140°F WATER, SALT WATER, ALKALINE SOIL, OZONE AND EFFERVESCENCE IN ADDITION TO THE REQUIREMENTS LISTED BELOW.

THE FABRIC FOR THE COMPOSITE CASING SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE (E) ELECTRICAL GLASS FIBERS. THE FIBER SHALL HAVE A MINIMUM NOMINAL THICKNESS OF 0.05 INCHES. THE MINIMUM WEIGHT OF THE FABRIC SHALL BE 27.0 OUNCES PER SQUARE YARD.

THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN BELOW. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

THE COMPOSITE OF THE FIBER WRAPPED CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI, MIN. IN PRIMARY FIBER DIRECTION	60,000 PSI	D3039, AVERAGE OF 7, 1" BY 10" NORMALIZED TO 0.80" THICK 0.01" PER MINUTE TESTING SPEED
ULTIMATE TENSILE STRENGTH, PSI, MIN. IN ORTHOGONAL FIBER DIRECTION	3,000 PSI	D3039, AVERAGE OF 7, 1" BY 10" NORMALIZED TO 0.80" THICK 0.01" PER MINUTE TESTING SPEED
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO 100% HUMIDITY	60,000 PSI	C581
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO OZONE	60,000 PSI	D1149 EXCEPT NOT UNDER STRESS DURING OZONE EXPOSURE
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO ALKALI	60,000 PSI	D3083 USING SOIL BURIAL - WATER CONTENT OF 73% ± 3%
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO SALT WATER	60,000 PSI	C581 AND D1141 OMITTING ADDITION OF HEAVY METAL REAGENTS
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE AT 140° F	60,000 PSI	D3045
TENSILE STRENGTH (MIN. AFTER TEST) ULTRAVIOLET (UV) EXPOSURE	60,000 PSI	G154 USING FS40 UV-B BULBS FOR A MIN. 40 CYCLES. THE CYCLE SHALL BE 4 HOURS OF CONDENSATE EXPOSURE AT 104° F (40° C).

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

DESIGNED DMD | DRAWN DMD | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

STRUCTURE GENERAL NOTES (6 OF 9)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S7/S95

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL OF EXISTING JOINT SEALS, CLEANING OF EXISTING JOINT ARMOR TO REMAIN, AND INSTALLATION OF THE NEW JOINT SEALS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "FT" REFERS TO PER FOOT OF JOINT SEAL MATERIAL TO BE REMOVED AND REPLACED.

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

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT SEAL REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL OF EXISTING JOINT SEALS, CLEANING OF EXISTING JOINT ARMOR TO REMAIN, AND INSTALLATION OF THE NEW JOINT SEALS AS SHOWN IN THE PLANS.

MEASUREMENT AND PAYMENT:
THE UNIT "FT" REFERS TO PER FOOT OF JOINT SEAL MATERIAL TO BE REMOVED AND REPLACED. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
516	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT SEAL REPLACEMENT

ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO CLEAN AND REPAIR THE CATCHMENTS AND CATCH BASINS IN THE LAKEFRONT RAMP SECTION, INCLUDING THE CLEANING OF DEBRIS WITHIN THE CATCH BASIN AND REPAIRING AND SEALING OF PIPE CONNECTIONS TO THE CATCH BASINS.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. THE TERM "EACH" REFERS TO CLEANING AND REPAIRING OF A SINGLE CATCHMENT OR CATCH BASIN. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
518	EACH	STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS

Security Fencing

Security fencing installed between tunnel wall tops and bridge steel flanges in W 25th and W28th tunnels (CO #9).

ITEM 518 - STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO REPAIR OR REPLACE EXISTING DRAIN PIPE NEOPRENE DRAIN BOOTS AND MISSING DRAIN BOLTS, INCLUDING REMOVAL OF THE EXISTING NEOPRENE BOOT, IF REQUIRED.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. THE TERM "EACH" REFERS DEFINES THE REPAIR AND REPLACEMENT OF A SINGLE NEOPRENE BOOT OR DRAIN BOLT. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
518	EACH	STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO INSTALL THE DRAINAGE ELEMENTS IN SPAN 11 OF THE MAIN TRUSS PER THE PLANS. THE RETROFIT PARTS HAVE BEEN PREFABRICATED AND ARE BEING STORED AT:

RIVEREDGE GARAGE
4900 OLD GRAYTON ROAD
CLEVELAND, OH 44135

IN THE EVENT THAT THE CONTRACTOR DAMAGES ANY DRAINAGE COMPONENTS AND THE PART MUST BE REFABRICATED, PARTS WILL BE REFABRICATED AT NO COST TO THE PROJECT.

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

ITEM	UNIT	DESCRIPTION
518	LUMP	STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION

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

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

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

THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE THROUGH LANE IN EACH DIRECTION OF TRAFFIC AT THE WORK OPERATION AREA AT ALL TIMES. FOR ADDITIONAL INFORMATION REGARDING THE MAINTENANCE OF TRAFFIC, REFER TO ITEM 614 ON SHEET S9/S95.

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

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

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM 519 - SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS

DESCRIPTION:
CONCRETE SURFACES SHALL BE PATCHED IN ACCORDANCE WITH CMS 519 AND THE FOLLOWING ADDITIONS.

ESTIMATED PATCHING QUANTITIES ARE BASED ON THE 2014 INSPECTION OF THE STRUCTURE. AREAS TO BE PATCHED HAVE BEEN DETAILED IN THE PLANS.

IT IS POSSIBLE THAT ADDITIONAL AREAS REQUIRING PATCHING MAY HAVE DEVELOPED SINCE THE 2014 INSPECTION OF THE STRUCTURE. THEREFORE, THE CONTRACTOR SHALL SOUND THE SURROUNDING PERIMETER OF THE AREA TO BE PATCHED AND PATCH NEW AREAS APPROVED BY THE ENGINEER THAT HAVE NOT BEEN DETAILED IN THE PLANS.

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.

TO PERFORM PATCHING REPAIRS, IT MAY BE NECESSARY FOR THE CONTRACTOR TO REMOVE DRAINAGE COMPONENTS FROM THE STRUCTURE. CONTRACTOR SHALL REMOVE AND REINSTALL, AS DIRECTED BY THE ENGINEER, ANY EXISTING DRAINAGE COMPONENTS IN THE WAY OF PERFORMING WORK. MATERIALS DAMAGED BY THIS OPERATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. COST ASSOCIATED WITH REMOVAL AND REINSTALLATION OF DRAINAGE COMPONENTS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPAIRS. PAYMENT FOR CUTTING, GRINDING, DRILLING OF DOWEL HOLES, AND CLEANING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

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

ITEM	UNIT	DESCRIPTION
519	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM	UNIT	DESCRIPTION
519	SQ FT	SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS

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

DESCRIPTION:
THIS WORK SHALL CONSIST OF PROVIDING AND INSTALLING A FIBER WRAP ON PIER 10 OF THE MAIN TRUSS SPANS AS SHOWN IN THE PLANS. PREPARATION, WRAPPING THE PIER CAP/COLUMN, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE WORK. THE INSTALLATION SHALL BE PER THE MANUFACTURER'S REQUIREMENTS.

MATERIALS:
SUPPLIERS SHALL HAVE A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 1000 HOUR TESTS FOR 140°F WATER, SALT WATER, ALKALINE SOIL, OZONE AND EFFERVESCENCE IN ADDITION TO THE REQUIREMENTS LISTED BELOW.

THE FABRIC FOR THE COMPOSITE CASING SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE (E) ELECTRICAL GLASS FIBERS. THE FIBER SHALL HAVE A MINIMUM NOMINAL THICKNESS OF 0.05 INCHES. THE MINIMUM WEIGHT OF THE FABRIC SHALL BE 27.0 OUNCES PER SQUARE YARD.

THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN BELOW. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

THE COMPOSITE OF THE FIBER WRAPPED CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI, MIN. IN PRIMARY FIBER DIRECTION	60,000 PSI	D3039, AVERAGE OF 7, 1" BY 10" NORMALIZED TO 0.80" THICK 0.01" PER MINUTE TESTING SPEED
ULTIMATE TENSILE STRENGTH, PSI, MIN. IN ORTHOGONAL FIBER DIRECTION	3,000 PSI	D3039, AVERAGE OF 7, 1" BY 10" NORMALIZED TO 0.80" THICK 0.01" PER MINUTE TESTING SPEED
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO 100% HUMIDITY	60,000 PSI	C581
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO OZONE	60,000 PSI	D1149 EXCEPT NOT UNDER STRESS DURING OZONE EXPOSURE
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO ALKALI	60,000 PSI	D3083 USING SOIL BURIAL - WATER CONTENT OF 73% ± 3%
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE TO SALT WATER	60,000 PSI	C581 AND D1141 OMITTING ADDITION OF HEAVY METAL REAGENTS
TENSILE STRENGTH (MIN. AFTER TEST) 1000 HOURS EXPOSURE AT 140° F	60,000 PSI	D3045
TENSILE STRENGTH (MIN. AFTER TEST) ULTRAVIOLET (UV) EXPOSURE	60,000 PSI	G154 USING FS40 UV-B BULBS FOR A MIN. 40 CYCLES. THE CYCLE SHALL BE 4 HOURS OF CONDENSATE EXPOSURE AT 104° F (40° C).

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

DESIGNED DMD | DRAWN DMD | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

STRUCTURE GENERAL NOTES (6 OF 9)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

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PROPERTY	REQUIREMENT	ASTM TEST METHOD
ELONGATION PERCENT, MIN. PERCENT, MAX.	 1.7% 5.0%	
TENSILE MODULUS, PSI MIN. OF PRIMARY FIBERS (E)	3,000,000 PSI	D3039
VISUAL DEFECTS	ACCEPTANCE LEVEL III	D2563
COEFFICIENT OF THERMAL EXPANSION IN PRIMARY DIRECTION	4,300,000 PPM / °F (+15%)	D696

SURFACE PREPARATION:
THE SURFACE TO RECEIVE THE COMPOSITE FIBER WRAP SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE THE FIBER. IF FIBERS ARE TO WRAP AROUND CORNERS OF RECTANGLE CROSS-SECTIONS, THE CORNERS SHALL BE ROUNDED TO A ½ INCH RADIUS. THIS WILL HELP PREVENT STRESS CONCENTRATIONS IN THE FIBER WRAP AND VOIDS BETWEEN THE FIBER WRAP AND THE CONCRETE. 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. ALL CONCRETE PATCHES SHALL BE CURED AS APPROVED BY THE ENGINEER.

AVOIDANCE OF THE EXISTING BEARINGS SHALL BE UNDERSTOOD, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AN ACCEPTABLE WRAPPING METHOD AROUND THESE BEARING DEVICES.

ADDITIONALLY, IF THERE ARE CONDUITS AND OR DOWNSPOUTS ATTACHED TO THE COLUMNS OR PIER CAPS TO RECEIVE FIBER WRAP, THE CONTRACTOR SHALL REMOVE THESE ITEMS AS DIRECTED BY THE ENGINEER AND RE-INSTALL THEM AFTER THE APPLICATION OF THE FINAL URETHANE TOP COAT.

COMPOSITE APPLICATION:
THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55 DEG. F AND 95 DEG. F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5 DEG. F ABOVE THE DEW POINT. APPLICATION SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL ENSURE COMPLETE SATURATION OF THE FABRIC.

THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE SURFACE OF THE COLUMN BY WRAPPING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN ½ INCH PER FOOT. THE HORIZONTAL LAP SHALL BE 2" MINIMUM AND THE MINIMUM PERIMETER LAP SHALL BE 1'-0". ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OUT BEFORE THE EPOXY SETS.

SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO DRY TO ACHIEVE ADEQUATE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

THE FINAL LAYER OF EPOXY SHALL BE APPLIED TO THE FINAL LAYER OF FABRIC, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS. SPACES BETWEEN THE BANDS OF FABRIC SHALL BE FILLED WITH EPOXY THICKENED AS DIRECTED BY THE MANUFACTURER.

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

1. SMALL DEFECTS (ON THE ORDER OF 6" DIAMETER) SHALL BE INJECTED OR BACK FILLED WITH EPOXY.
2. BUBBLES LESS THAN 12" DIAMETER SHALL BE REPAIRED BY INJECTING WITH EPOXY. TWO HOLES SHALL BE DRILLED INTO THE BUBBLE TO ALLOW INJECTION OF THE EPOXY AND ESCAPE OF ENTRAPPED AIR.
3. BUBBLES, DELAMINATIONS AND FABRIC TEARS GREATER THAN 12" IN DIAMETER SHALL BE REPAIRED BY REMOVING AND REAPPLYING THE REQUIRED NUMBER OF LAYERS OF THE COMPOSITE AND THE REQUIRED FINISH COATING. ALL REPAIRS SHALL BE APPROVED BY THE PROJECT ENGINEER

COATING SYSTEM APPLICATION:
A FINAL URETHANE COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL 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 THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE APPLYING THE URETHANE COATING.

MEASUREMENT AND PAYMENT:
THE BID PRICE SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PROVIDE AND INSTALL A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYBRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE PIER CAP/COLUMN, INCLUDING ERECTION OF SCAFFOLDING, CLEANING, SURFACE PREPARATION, WRAPPING THE SURFACES, SEALING THE WRAPPED AREAS, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION PER THE MANUFACTURER'S REQUIREMENTS.

PAYMENT FOR ALL THE ABOVE WORK INCLDUING LABOR, MATERIALS, EQUIPMENT, AND INSTALLATION OF THE ABOVE WORK IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE MEASURED AND PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ FT	STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM

ITEM SPECIAL - STRUCTURE, MISC.: FIBERGLASS OPEN GRID DECK

DESCRIPTION:
THE FIBERGLASS GRID SHALL BE A 1½" DEEP COMPOSITE FIBERGLASS REINFORCED GRID, COVERED WITH A BONDED GRIT ANTI-SKID SURFACE AND ULTRAVIOLET INHIBITOR. THE GRID CROSS BARS SHALL BE 6" ON CENTER. THE GRID MUST BE CAPABLE OF WITHSTANDING A UNIFORM LOAD OF 100 PSF OVER THE REQUIRED SPAN WITH ¼" DEFLECTION OR LESS. THE GRID SHALL BE:

DURADEK I-6000, WITH 1½" I BEARING BARS SPACED 1½" ON CENTER
MANUFACTURED BY STRONGWELL
1610 HIGHWAY 52 S
CHATFIELD, MINNESOTA 55923-9799.
PHONE: (507) 867-3479

OR

SAFE-T-SPAN INDUSTRIAL GRATING I6015,
WITH 1½" BEARING BARS SPACED 1½" ON CENTER
MANUFACTURED BY FIBERGRATE
5151 BELTLINE ROAD, SUITE 1212
DALLAS, TEXAS 75254-7028
PHONE: (800) 527-4043

THE GRID SHALL BE THE STANDARD GRAY AS SUPPLIED BY THE MANUFACTURERS.

THE HOLD-DOWN CONNECTIONS FOR THE FIBERGLASS GRID AND THE PANEL CONNECTIONS BETWEEN ADJACENT GRID PANELS SHALL BE AS RECOMMENDED BY THE MANUFACTURER; HOWEVER, NO SURFACE MOUNTED CONNECTIONS SHALL BE USED, AND THE CONNECTORS SHALL BE GALVANIZED. THE CONNECTION BOLTS TO THE FIBERGLASS GRID CONNECTIONS ARE INCIDENTAL TO THE COST OF THE FIBERGLASS GRID. SUBMIT GRID CATALOG CUT, CONNECTION AND GEOMETRIC DOCUMENTATION OF ABOVE GRID OR EQUAL TO THE ENGINEER FOR APPROVAL.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE INSTALLATION. PAYMENT FOR ANY REQUIRED FASTENERS IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM.

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

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ FT	STRUCTURE, MISC.: FIBERGLASS OPEN GRID DECK

ITEM 606 - IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR

ITEM 606 - IMPACT ATTENUATOR, MISC.: TYPE 3 REPAIR

DESCRIPTION:
THIS ITEM INCLUDES THE MATERIAL, EQUIPMENT, AND LABOR TO BE USED TO REPAIR DAMAGED TYPE 2 AND TYPE 3 IMPACT ATTENUATORS AT THE LOCATIONS SHOWN IN THE PLANS.

THE INTENT IS TO PAY FOR THE REPAIR OF ANY DAMAGE TO THE ITEMS LISTED ABOVE AND THE IMPACT ATTENUATOR WILL BE REBUILT SO AS TO CREATE A FULLY FUNCTIONAL IMPACT ATTENUATOR. AS OF 9/30/2016, ONLY THE IMPACT ATTENUATOR AT THE WEST 3RD EASTBOUND OFF-RAMP WILL NEED REPLACED. THE ENGINEER WILL DIRECT THE CONTRACTOR IF FURTHER REPAIRS ARE REQUIRED AT ADDITIONAL LOCATIONS.

THE REINSTALLATION OR REATTACHMENT OF EXISTING COMPONENTS DEEMED REUSABLE BY THE ENGINEER WHICH ARE NECESSARY TO CREATE A FULLY FUNCTIONAL IMPACT ATTENUATOR AND THE REMOVAL AND DISPOSAL OF DAMAGED MATERIALS WILL BE CONSIDERED INCIDENTAL TO THE WORK AND NOT PAID FOR SEPARATELY.

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

ITEM	UNIT	DESCRIPTION
606	EACH	IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR

ITEM	UNIT	DESCRIPTION
606	EACH	IMPACT ATTENUATOR, MISC.: TYPE 3 REPAIR

ITEM SPECIAL - STRUCTURE, MISC.: FORWARD SECTION CATWALK FENCE AND GATE

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR NECESSARY TO INSTALL THE VANDAL PROOF EXPANDED METAL FENCE AND GATE OUTLINED BELOW. SEE DETAILS ON SHEET S71 / S95 FOR MORE INFORMATION.

THE SYSTEM WILL INCLUDE CARBON STEEL HIGH SECURITY EXPANDED METAL MESH PANELS AND FITTINGS.

THE MANUFACTURER SHALL HAVE A MINIMUM 10 YEARS' EXPERIENCE IN THE MANUFACTURE OF EXPANDED METAL FENCING. THE CONTRACTOR SHALL PROVIDE INSTALLERS THAT ARE EXPERIENCED WITH THE INSTALLATION OF EXPANDED METAL SECURITY FENCING.

THE FENCE AND GATE SHALL ADHERE TO THE MANUFACTURER'S DESIGN AND INSTALLATION SPECIFICATIONS AND ASTM F2548-12 - EXPANDED METAL FENCE SYSTEMS FOR SECURITY PURPOSES.

THE EXPANDED CARBON STEEL MESH PANELS SHALL HAVE THE FOLLOWING PROPERTIES:

A. TYPE: ¾" #9R
B. STRAND WIDTH: 0.150"
C. STRAND THICKNESS: 0.134"
D. SWD: 0.923"
E. LWD: 2.0"
F. PERCENT OPEN AREA: 68%
G. GALVANIZED WEIGHT PER SQ. FT.: 1.98 LBS

THE EXPANDED METAL SECURITY FENCING SHALL HAVE THE FOLLOWING PROPERTIES:

A. FRAME: 7'-6" ROUND RAIL NEW FENCE FRAMEWORK
B. LINE POST TYPE: 4" O.D SCHEDULE 40 GALVANIZED PIPE
C. END POST TYPE: 4" O.D. SCHEDULE 40 GALVANIZED PIPE
D. MAXIMUM SPAN: 48"
E. MAXIMUM PANEL SIZE: 48" WIDE BY 78" TALL
F. HORIZONTAL RAILS: (2) 1.660" ϕ SCHEDULE 40 GALVANIZED PIPE

THE SECURITY GATE SHALL HAVE THE FOLLOWING PROPERTIES:

A. TYPE: SINGLE SWING PEDESTRIAN GATE
B. GATE FRAME: 1.90" ROUND PIPE FULLY WELDED
C. MESH TO ATTACH TO OUTSIDE OF FRAME WITH FITTINGS
D. STANDARD INDUSTRIAL HINGES TO MATCH HINGE POST SIZE
E. STANDARD INDUSTRIAL FORK LATCH TO MATCH LATCH POST SIZE
F. TRUSS ROD TIGHTENERS, POST CAPS, AND BRACKETS WILL BE IRON OR STEEL HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM F 626
G. POST TYPE 4" SCHEDULE 40/SS40 PIPE

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

DESIGNED DMD | DRAWN DMD | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 18000351

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THE EXPANDED METAL FENCE PANELS SHALL BE INSTALLED USING HOT DIP GALVANIZED STEEL FITTINGS SIZED TO THE FRAMEWORK SPECIFIC TO THE PROJECT. 11 GAGE x 1" STEEL BANDS SHALL BE SIZED TO MATCH THE OUTSIDE DIAMETER OF THE TERMINAL, CORNER, AND GATE POSTS AND SHALL BE USED TO ATTACH EXPANDED METAL MESH TO POSTS.

C-CLAMPS SHALL BE USED TO ATTACH EXPANDED METAL MESH TO LINE POSTS AND RAILS. 11 GAGE x 1" STEEL BAR CLAMPS SHALL BE USED IN PAIRS TO JOIN MESH VERTICALLY BETWEEN RAILS. NUTS AND BOLTS SHALL BE STAINLESS STEEL CARRIAGE BOLTS WITH BREAKAWAY NUTS TO MAXIMIZE SECURITY. BOLT SIZE IS CONTINGENT ON MESH AND FITTINGS. 14 GAGE PRESSED STEEL RAIL CLAMPS SHALL BE USED TO SECURE RAILS TO POSTS.

THE GATE SHALL BE OF A WELDED CONSTRUCTION AND BE DESIGNED TO OPERATE UNDER THE ADDED WEIGHT OF THE EXPANDED METAL SECURITY MESH PANELS AND THE AFFECTS OF ADDITIONAL WIND LOADING. THE GATE SHALL BE DESIGNED PER ASTM F900 SPECIFICATION FOR INDUSTRIAL AND COMMERCIAL SWING GATES.

THE GATE SHALL BE COVERED WITH MESH FABRIC AND SHALL FIT FLUSH ON ALL SIDES OF THE GATE FRAME ALLOWING NO OPEN SPACES BETWEEN THE FABRIC AND THE GATE FRAME. 11 GAGE x 1" STEEL BANDS SHALL SECURE THE MESH TO THE GATE FRAME. ALTERNATIVELY THE EXPANDED METAL MESH CAN BE BE WELDED DIRECTLY TO THE GATE FRAME. USE 11 GAGE x 1" STEEL C-CLAMPS FOR BRACING. C-CLAMPS SHALL BE SPACED NO MORE THAN 16" APART ON GATE BRACES. GATE HINGES SHALL BE STRUCTURALLY CAPABLE OF SUPPORTING THE GATE LEAF AND ALLOW THE GATE TO OPEN AND CLOSE WITHOUT BINDING. THE INSTALLED GATE LATCH SHALL BE CAPABLE OF RETAINING THE GATE IN A CLOSED POSITION.

INSTALLATION AND LAYOUT OF THE JOB SHALL BE APPROVED BY THE OWNER OR GENERAL CONTRACTOR PRIOR TO INSTALLATION. INSTALL POSTS PLUMB AND SET ON CENTER PER MANUFACTURER'S DRAWINGS. INSTALL ALL RAIL LINES LEVEL. THE BOTTOM RAIL SHALL BE INSTALLED 3" TO 6" FROM ABOVE THE BOTTOM OF THE EXPANDED METAL PANEL. THE TOP RAIL SHALL BE INSTALLED 3" TO 6" FROM THE TOP OF THE EXPANDED METAL PANEL. EXPANDED METAL PANELS SHALL FIT FLUSH TO ALL END POSTS, GATE POSTS, AND GATE FRAMES. TOUCH UP, REPAIR, OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

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

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	STRUCTURE, MISC.: FORWARD SECTION CATWALK FENCE AND GATE

ITEM 614 - MAINTENENCE OF TRAFFIC

DESCRIPTION:
TIMES AND DATES FOR LANE CLOSURES MUST BE COORDINATED WITH AND APPROVED BY THE CITY OF CLEVELAND COMMISSIONER OF TRAFFIC ENGINEERING AND ODOT DISTRICT 12 PRIOR TO THEIR IMPLEMENTATION PER THE NOTIFICATION NOTE SHOWN ON SHEET S2 / S95 . LANE CLOSURES SHALL BE IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND THE LATEST EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWINGS.

LANE CLOSURES WILL BE RESTRICTED TO TIMES PERMITTED BY ODOT DISTRICT 12 AND THE CITY OF CLEVELAND. SEE MOT PLAN ON SHEET 3 / 154 .

ITEM 625 - SPECIAL - REPLACEMENT OF EXISTING LIGHTING UNIT

DESCRIPTION:

THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF A STRUCTURE-MOUNTED CONVENTIONAL LIGHT POLE, INCLUDING POLE, BRACKET ARM AND TRANSFORMER BASE.

THE EXISTING LUMINAIRE SHALL BE REUSED UNLESS IT IS DETERMINED THAT IT IS NOT SUITABLE FOR THE LIGHT POLE REPLACEMENT. THE REMOVAL, STORAGE, AND REUSE SHALL BE INCIDENTAL TO THIS ITEM. IF A NEW REPLACEMENT LUMINAIRE IS REQUIRED, THE COST SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM AS WELL.

THE BOLT CIRCLE OF THE NEW LIGHT POLE SHALL BE SUCH THAT IT CAN READILY ACCOMMODATE THE EXISTING BOLT CIRCLE OF 17¼"Φ, SEE SHEET S15 / S95 FOR ADDITIONAL DETAILS. THE CONVENTIONAL LIGHT POLE SHALL BE A ST10B35 DESIGN AND SUPPLIED BY:

HAPCO
26252 HILLMAN HIGHWAY
ABINGDON, VA 24210
(276) 628-7171

OR

MILLERBERND MANUFACTURING CO.
622 6TH STREET SOUTH
WINSTED, MN 55395
(320) 485-2111

OR

APPROVED EQUAL

MEASUREMENT AND PAYMENT:
THE UNIT PRICE BID FOR ITEM "SPECIAL, REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN DAMAGED AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

ITEM	UNIT	DESCRIPTION
625	EACH	SPECIAL - REPLACEMENT OF EXISTING LIGHT UNIT

ITEM SPECIAL - MISC.: ACCESS DOOR REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REPLACEMENT OF THE DOORS AT THE WEST 25TH AND 28TH STREET VAULTS AS PER THE DETAILS IN THE PLANS AND THE MANUFACTURER'S RECOMMENDATIONS.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO COMPLETE THE REPLACEMENT OF THE DOORS. PAYMENT FOR CUTTING, GRINDING, DRILLING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	ITEM SPECIAL - MISC.: ACCESS DOOR REPLACEMENT

ITEM SPECIAL - MISC.: GARAGE DOOR REPLACEMENT

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIAL, EQUIPMENT, AND LABOR ASSOCIATED WITH THE REMOVAL OF THE EXISTING GARAGE DOOR AND INSTALLATION OF NEW GARAGE DOOR ON THE WEST 25TH STREET VAULT AS PER THE DETAILS IN THE PLANS AND THE MANUFACTURER'S RECOMMENDATIONS.

THE COLOR OF THE FENCE AND ALL ADDITIONAL VISIBLE HARDWARE AND CAULK SHALL BE BLACK.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR MATERIAL, TOOLS, EQUIPMENT, AND LABOR. PAYMENT FOR CUTTING, GRINDING, DRILLING, WELDING, AND BOLTING AS PART OF THIS REPAIR IS CONSIDERED INCIDENTAL FOR PAYMENT IN THIS ITEM. THE ACCEPTED QUANTITIES FOR THE COMPLETED WORK AS DESCRIBED WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	ITEM SPECIAL - MISC.: GARAGE DOOR REPLACEMENT

ITEM SPECIAL - STRUCTURE, MISC.: PREMIUM ON GCRTA'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE

ITEM SPECIAL - STRUCTURE, MISC.: PREMIUM ON CSXT'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE

ITEM SPECIAL - STRUCTURE, MISC.: PREMIUM ON NORFOLK SOUTHERN RAILWAY COMPANY'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE

DESCRIPTION:
THE CONTRACTOR WILL BE REQUIRED TO OBTAIN RAILROAD LIABILITY INSURANCE POLICIES TO COVER LOSS, DAMAGE OR EXPENSE ARISING FROM BODILY INJURY AND PROPERTY DAMAGE LIABILITY, AND PHYSICAL DAMAGE TO PROPERTY ATTRIBUTED TO ACTS OR OMISSIONS AT THE JOB SITE PRIOR TO COMMENCEMENT OF WORK. THE LIABILITY INSURANCE POLICIES MUST MEET THE REQUIREMENTS SET FORTH IN THE GCRTA SPECIAL PROVISIONS AND NORFOLK SOUTHERN RAILWAY COMPANY SPECIAL PROVISIONS FOR PROTECTION OF RAILWAY INTERESTS. THE CONTRACTOR IS ADVISED THAT SEPARATE INSURANCE POLICIES WILL BE REQUIRED FOR THE GCRTA, CSXT, AND NORFOLK SOUTHERN RAILWAY COMPANY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR THE CONTRACTOR TO OBTAIN THE REQUIRED INSURANCE POLICIES DETAILED ABOVE AND WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP	ITEM SPECIAL - STRUCTURE, MISC.: PREMIUM ON GCRTA'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE
SPECIAL	LUMP	ITEM SPECIAL - STRUCTURE, MISC.: PREMIUM ON CSXT'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE
SPECIAL	LUMP	ITEM SPECIAL - STRUCTURE, MISC.: PREMIUM ON NORFOLK SOUTHERN RAILWAY COMPANY'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE

ITEM SPECIAL - STRUCTURE, MISC.: FLAGGERS FOR GCRTA RAIL PROTECTION

DESCRIPTION:
FLAGGERS SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR, EITHER THROUGH COMPANIES WHO SUPPLY CERTIFIED FLAGGERS (OBTAIN LIST FROM GCRTA) OR BY TRAINING AND CERTIFYING ITS OWN EMPLOYEES THROUGH GCRTA. PLEASE REFER TO GCRTA STANDARD 015020 - STANDARD FLAGGING PROCEDURES AND WORK ZONES FOR FLAGGING PROCEDURES, FLAGGER TRAINING, AND SET-UP OF WORK ZONES.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR THE CONTRACTOR TO PROVIDE RAILROAD FLAGGERS FOR THE DURATION OF WORK OPERATIONS BEING PERFORMED ON OR OVER THE GCRTA RIGHT OF WAY AND WILL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP	ITEM SPECIAL - STRUCTURE, MISC.: FLAGGERS FOR GCRTA PROTECTION

ITEM SPECIAL - STRUCTURE, MISC.: TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURE

DESCRIPTION:
THIS ITEM INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR TO DESIGN AND INSTALL A PROTECTIVE STRUCTURE TO PROTECT GCRTA TRAFFIC, AS REQUIRED, IF WORK IS TO BE PERFORMED WITHIN THE GCRTA RAILROAD OPERATING ENVELOPE IN THE MAIN TRUSS SPAN 11 OR EAST APPROACH - LAKEFRONT TRESTLE. THE PROTECTIVE STRUCTURE SHALL MEET THE REQUIREMENTS SET FORTH IN GCRTA STANDARD 015010 - MAINTENANCE OF RAIL TRAFFIC AND RESUMPTION OF REVENUE SERVICE. ONCE CONTRACTOR HAS COMPLETED WORK, THE PROTECTIVE STRUCTURE SHALL BE FULLY REMOVED FROM GCRTA RIGHT OF WAY.

MEASUREMENT AND PAYMENT:
PAYMENT SHALL INCLUDE FULL COMPENSATION FOR DESIGN, MATERIAL, TOOLS, EQUIPMENT, LABOR AND ACCESS TO INSTALL AND REMOVE A PROTECTIVE STRUCTURE MEETING GCRTA STANDARDS. THIS WORK SHALL BE PAID FOR USING THE FOLLOWING CONTRACT ITEM (PAY ITEM):

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP	ITEM SPECIAL - STRUCTURE, MISC.: TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURE

ITEM 690 - AS-BUILT CONSTRUCTION PLANS

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.

FILING:

1. 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.
2. THE CONTRACTOR SHALL PROVIDE FILES AND RACKS FOR PROPER STORAGE AND EASY ACCESS. FILING SHALL BE ESTABLISHED IN A FORMAT ACCEPTABLE TO THE ENGINEER.
3. THE CONTRACTOR SHALL MAKE DOCUMENTS AVAILABLE AT ALL TIMES FOR INSPECTION BY THE ENGINEER.

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

DRAWN	DATE	REVIEWED	STRUCTURE FILE NUMBER
DMD	12-19-16	PJA	1800035

DESIGNED	CHECKED	REVISED
DMD	NRF	

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OVER THE CUYAHOGA RIVER

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4. 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:

1. THE CONTRACTOR SHALL KEEP ALL RECORD DRAWINGS CURRENT.

2. THE CONTRACTOR SHALL NOT PERMANENTLY CONCEAL ANY WORK UNTIL REQUIRED INFORMATION HAS BEEN RECORDED.

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

A. DEPTHS OF VARIOUS ELEMENTS OF FOUNDATION IN RELATION TO DATUM.
B. HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND UTILITIES AND APPURTENANCES REFERENCED TO PERMANENT SURFACE IMPROVEMENTS.
C. FIELD CHANGES OF DIMENSION AND DETAIL.
D. CHANGES MADE BY CHANGE ORDER OR FIELD ORDER.
E. DETAILS NOT ON ORIGINAL CONTRACT DRAWINGS.

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

A. MANUFACTURER, TRADE NAME, CATALOG NUMBER AND SUPPLIER OF EACH PRODUCT AND ITEM OF EQUIPMENT ACTUALLY INSTALLED.
B. CHANGES MADE BY CHANGE ORDER OR FIELD ORDER.
C. 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 IN PDF FORMAT, AS APPROVED BY THE ENGINEER. AT THE COMPLETION OF THE PROJECT, DELIVER ONE (1) PAPER COPY OF RECORD DRAWING ORIGINAL DOCUMENTS TO THE ENGINEER. HIGHLIGHT CHANGES WITH CLOUDS AND SHOW CHANGES ON A SEPARATE MICROSTATION LEVEL.

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 AS SUBMITTED IS COMPLETE AND ACCURATE.

6. SIGNATURE OF CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE

MEASUREMENT AND PAYMENT:
PAYMENT FOR ALL THE ABOVE SHALL BE LUMP SUM UPON THE PROPER EXECUTION OF ALL THE WORK OF THIS ITEM AS DETERMINED BY THE ENGINEER.

ITEM	UNIT	DESCRIPTION
690	LUMP	AS-BUILT CONSTRUCTION PLANS

LIST OF ABBREVIATIONS:

APPR.	APPROACH
APPROX.	APPROXIMATE
B/B	BACK TO BACK
BTM.	BOTTOM
C/C	CENTER TO CENTER
CLR.	CLEAR
CMS	ODOT 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS
CVN	CHARPY V-NOTCH
CONSTR.	CONSTRUCTION
DELAM.	DELAMINATION
DIA.	DIAMETER
E.F.	EACH FACE
ELEV.	ELEVATION
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FAR FACE
FT.	FOOT/FEET
GALV.	GALVANIZED
H.S.	HIGH STRENGTH
HORZ.	HORIZONTAL
INT.	INTERNAL
LAT.	LATERAL
MAX.	MAXIMUM
MIN.	MINIMUM
N	NORTH
N.F.	NEAR FACE
N.S.R.C	NORFOLK SOUTHERN RAILWAY COMPANY
PT.	POINT
QTY.	QUANTITY
R	RADIUS
REINF.	REINFORCEMENT
REM	REMOVAL
S	SOUTH
SECT.	SECTION
SF	SQUARE FEET
SDWK.	SIDEWALK
SPA.	SPACE
ST.	STREET
STIFF.	STIFFENER
SYM.	SYMMETRIC
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
U.C.	UPPER CHORD
VPF	VANDAL PROTECTION FENCE
W.P.	WORKING POINT
WWF	WELDED WIRE FABRIC

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TranSystems
55 PUBLIC SQUARE SUITE 1900
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STRUCTURE GENERAL NOTES (9 OF 9)
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MADE BY: DMD DATE: 9/27/2016
CHECKED BY: NRF DATE: 9/29/2016

ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	PLAN SPLITS 01/BRO/BR	UNIT	DESCRIPTION	WEST APPROACH	MAIN TRUSS	EAST APPROACH	GENERAL	REFERENCE SHEET NUMBER
202	11203	LUMP	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	S3/S95
202	11401	2249	2249	POUND	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN		45	2204		S3/S95
509	10000	14316	14316	POUND	EPOXY COATED REINFORCING STEEL				14316	
509	20001	1000	1000	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				1000	S3/S95
511	34444	98	98	CU YD	CLASS QC2 CONCRETE, BRIDGE DECK	20	36	42		
512	10050	55140	55140	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)	1140			54000	S4/S95
512	10101	1010	1010	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	148	28	394	749	S4/S95
513	10200	32954	32954	POUND	STRUCTURAL STEEL MEMBERS, LEVEL UF			32954		S4/S95
513	95030	10	10	EACH	STRUCTURAL STEEL, MISC.: MAIN TRUSS GUSSET PLATE EDGE STIFFENING ANGLE		10			S4/S95
513	95030	21	21	EACH	STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER RETROFIT	21				S4/S95
513	95030	3	3	EACH	STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER CONNECTION RETROFIT	3				S5/S95
513	95030	7	7	EACH	STRUCTURAL STEEL, MISC.: FORWARD SECTION COLUMN RETROFIT			7		S5/S95
513	95030	56	56	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT TRESTLE KEEPER BOLT RETROFIT			56		S5/S95
513	95030	1	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP GIRDER WEB RETROFIT			1		S5/S95
513	95030	1	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP FLOORBEAM RETROFIT			1		S5/S95
513	95030	1	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP STRUT BRACING RETROFIT			1		S5/S95
513	95030	1	1	EACH	STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP LATERAL BRACING COVER PLATE RETROFIT			1		S5/S95
514	00101	LUMP	LUMP	LUMP	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN				LUMP	S5/S95
514	00201	LUMP	LUMP	LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN				LUMP	S5/S95
514	00301	LUMP	LUMP	LUMP	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN				LUMP	S5/S95
514	00401	LUMP	LUMP	LUMP	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN				LUMP	S5/S95
514	00504	2713	2713	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL				2713	
514	10000	622	622	EACH	FINAL INSPECTION REPAIR				622	
516	14600	1224	1224	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT SEAL REPLACEMENT				1224	S8/S95
516	14600	898	898	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT				898	S7/S95
516	14600	1162	1162	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT SEAL REPLACEMENT				1162	S7/S95
516	15000	4	4	EA	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STRESS RELIEF JOINT REPLACEMENT		4			S6/S95
516	15000	2	2	EA	STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT REPLACEMENT		2			S6/S95
516	15000	17	17	EA	STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT REPLACEMENT	6	1	10		S6/S95
518	62200	6	6	EACH	STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS			6		S7/S95
518	62200	2	2	EACH	STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR			2		S7/S95
518	63300	LUMP	LUMP	LUMP	STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION		LUMP			S7/S95
519	10000	5	5	SQ YD	SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE		5			S7/S95
519	11101	6411	6411	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	6017		394		S7/S95
519	11600	3500	3500	SQ FT	SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS				3500	S7/S95
530	00200	LUMP	LUMP	LUMP	SPECIAL - STRUCTURE, MISC.: PREMIUM ON GCRTA'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE				LUMP	S9/S95
530	00200	LUMP	LUMP	LUMP	SPECIAL - STRUCTURE, MISC.: PREMIUM ON CSXT'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE				LUMP	S9/S95
530	00200	LUMP	LUMP	LUMP	SPECIAL - STRUCTURE, MISC.: PREMIUM ON NORFOLK SOUTHERN RAILWAY COMPANY'S PROTECTIVE LIABILITY AND PROPERTY DAMAGE INSURANCE				LUMP	S9/S95
530	00200	LUMP	LUMP	LUMP	SPECIAL - STRUCTURE, MISC.: FLAGGERS FOR GCRTA RAIL PROTECTION				LUMP	S9/S95
530	00200	LUMP	LUMP	LUMP	SPECIAL - STRUCTURE, MISC.: TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURE				LUMP	S9/S95
530	00400	1	1	EA	SPECIAL - STRUCTURE, MISC.: FORWARD SECTION CATWALK FENCE AND GATE			1		S8/S95
530	00600	1600	1600	SQ FT	SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM		1600			S7/S95
530	00600	915	915	SQ FT	SPECIAL - STRUCTURE, MISC.: FIBERGLASS OPEN GRID DECK			915		S8/S95
606	61000	3	3	EA	IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR	1		2		S8/S95
606	61000	1	1	EA	IMPACT ATTENUATOR, MISC.: TYPE 3 REPAIR	1				S8/S95
607	23000	153	153	FT	FENCE, TYPE CLT	153				
607	61200	1	1	EA	GATE, TYPE CLT	1				
607	61201	1	1	EA	GATE, TYPE CLT, AS PER PLAN	1				S2A/S95
625	40000	LUMP	LUMP	LUMP	SPECIAL - MAINTAIN EXISTING LIGHTING				LUMP	S4/S95
625	40010	1	1	EA	SPECIAL - REPLACEMENT OF EXISTING LIGHTING UNIT			1		S9 S95
SPECIAL	69098000	5	5	EA	MISC.: ACCESS DOOR REPLACEMENT	5				S9/S95
SPECIAL	69098000	1	1	EA	MISC.: GARAGE DOOR REPLACEMENT	1				S9/S95
SPECIAL	69098400	LUMP	LUMP	LUMP	MISC.: LAKEFRONT RAMP SECURITY FENCE AND GATE			LUMP		S2A/S95
SPECIAL	69091000	LUMP	LUMP	LUMP	AS-BUILT CONSTRUCTION PLANS				LUMP	S9/S95
844	10000	128	128	SQ FT	CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION		128			

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

DESIGNED DMD | DRAWN DMD | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

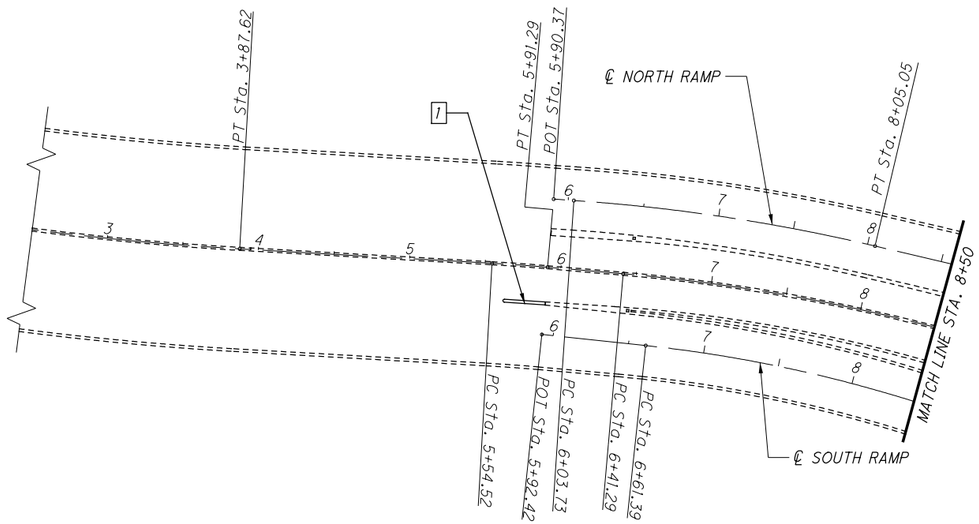
ESTIMATED QUANTITIES
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S11/S95

62
154

85377EQ001 4/14/2017 11:15:51 AM nrfisco



PLAN - WEST APPROACH
STA. 5+54.52 TO STA 8+50

REPAIR LIST:

[1] TYPE 3 IMPACT ATTENUATOR REPAIR

LEGEND:

[#] - REPAIR LOCATION

NOTES:

1. SEE MAINTENANCE OF TRAFFIC SHEETS FOR TRAFFIC CONTROL RESTRICTIONS.
2. ALL REPAIRS ON THIS SHEET SHALL BE PERFORMED DURING THE STAGED LANE CLOSURES DETAILED ON THE MAINTENANCE OF TRAFFIC SHEETS.
3. ALL WORK ASSOCIATED WITH THE ATTENUATOR REPAIR SHALL BE PAID FOR UNDER ITEM 606 - IMPACT ATTENUATOR, MISC.: TYPE 3 REPAIR.
4. FOR PARAPET PATCHING DETAILS, SEE SHEETS [S57/S95] AND [S58/S95].

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

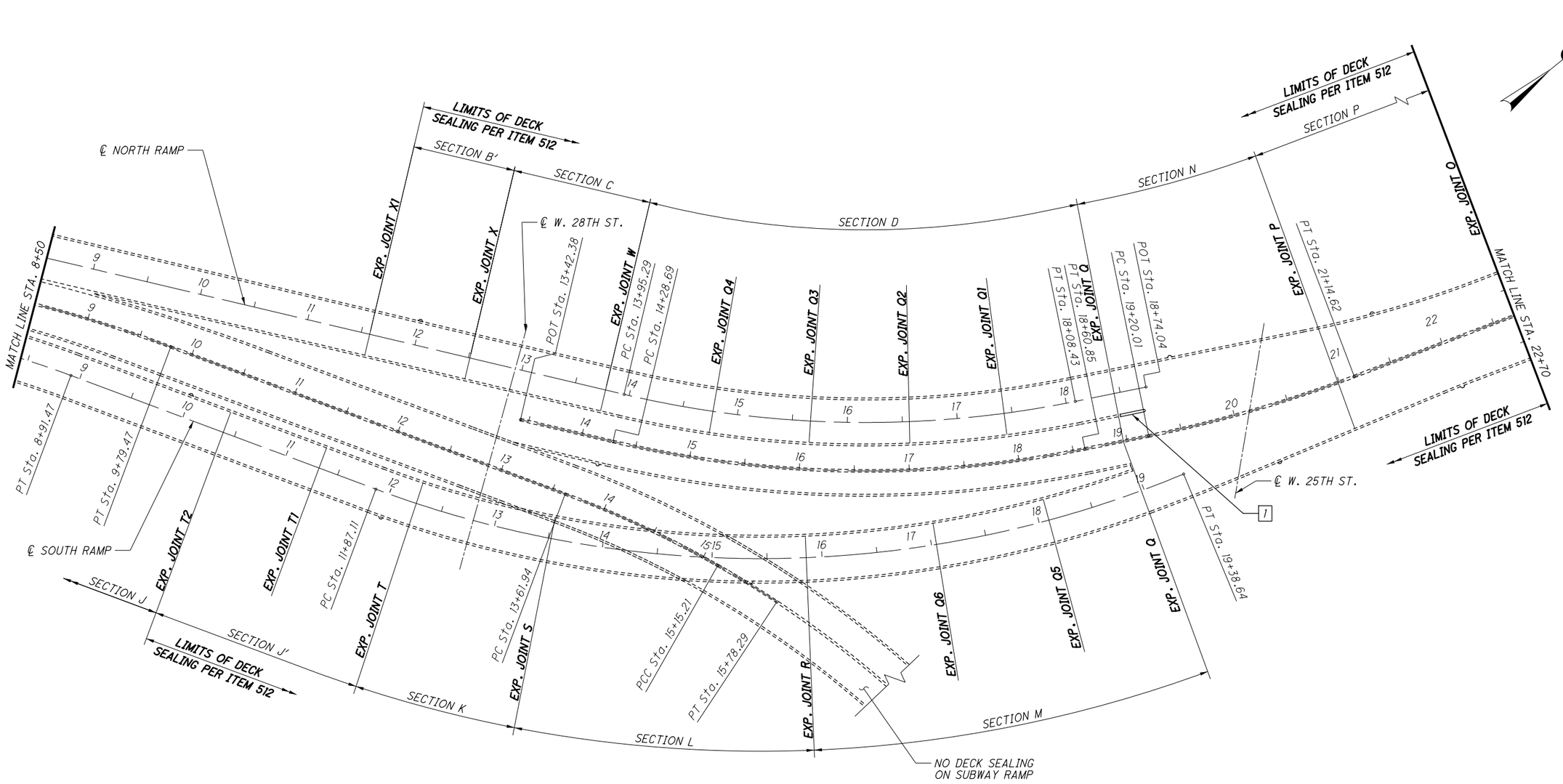
TOP OF DECK REPAIRS (1 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S12/S95

63
154

85377MD010 1/19/2017 4:06:27 PM nrfisco



PLAN - WEST APPROACH
STA. 8+50 TO STA 22+70

REPAIR LIST:

1	TYPE 2 IMPACT ATTENUATOR REPAIR

LEGEND:

[#] - REPAIR LOCATION

NOTES:

1. SEE MAINTENANCE OF TRAFFIC SHEETS FOR TRAFFIC CONTROL RESTRICTIONS.
2. ALL REPAIRS ON THIS SHEET SHALL BE PERFORMED DURING THE STAGED LANE CLOSURES DETAILED ON THE MAINTENANCE OF TRAFFIC SHEETS.
3. THE BRIDGE DECK IS TO BE SEALED FROM TOE-TO-TOE OF PARAPETS WITH NON-EPOXY PER ITEM 512. SEE SHEET [S4 / S95] .
4. ALL WORK ASSOCIATED WITH THE ATTENUATOR REPAIR SHALL BE PAID FOR UNDER ITEM 606 - IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR.
5. FOR PARAPET PATCHING DETAILS, SEE SHEETS [S57 / S95] AND [S58 / S95] .

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

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 12-19-16
CHECKED DMD | REVISED | STRUCTURE FILE NUMBER 1800035

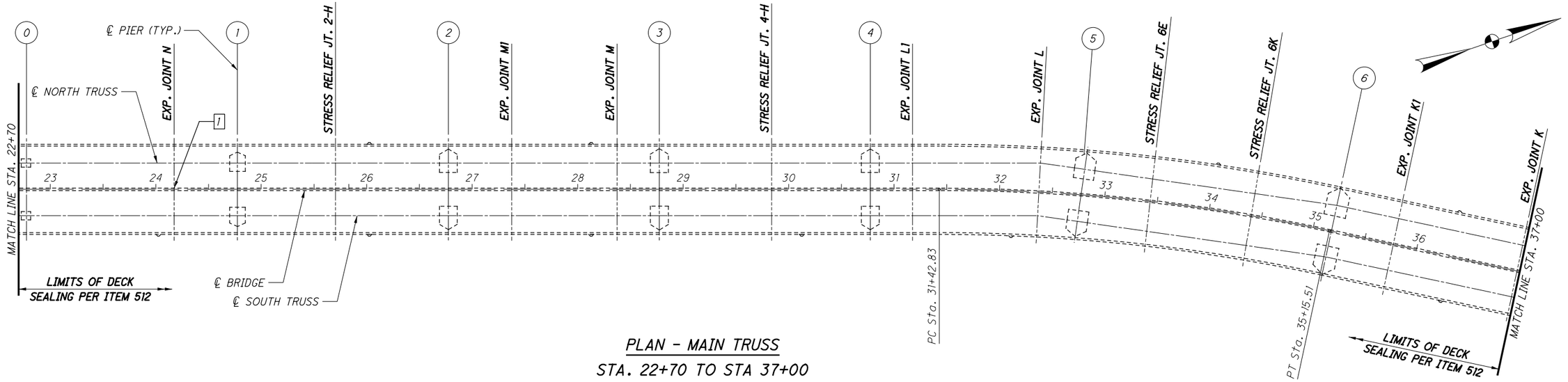
TOP OF DECK REPAIRS (2 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

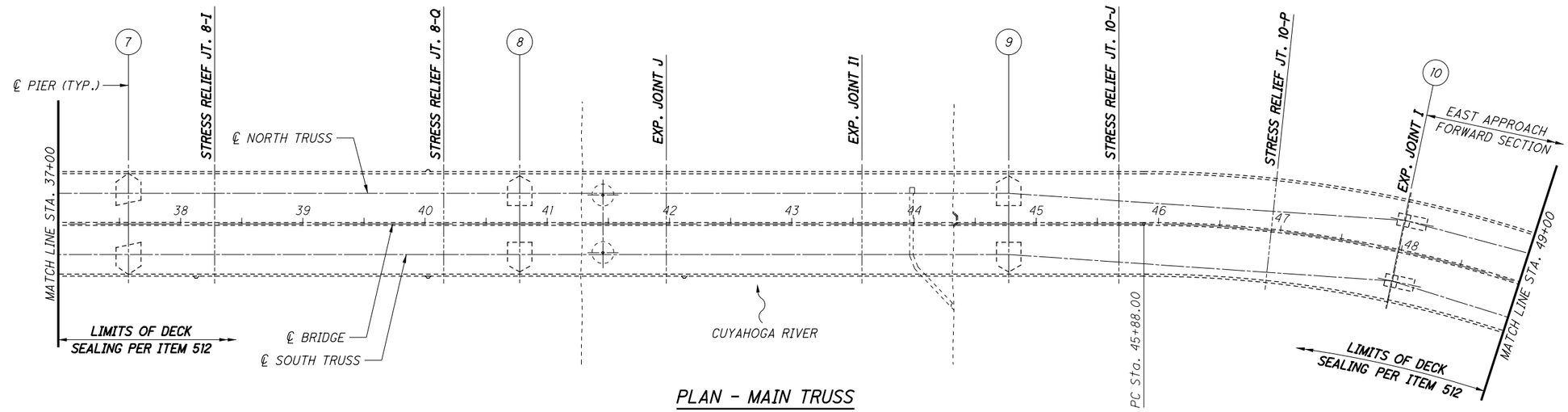
S13 / S95

64
154

85377MD011 3/30/2017 2:05:19 PM nrfisco



PLAN - MAIN TRUSS
STA. 22+70 TO STA 37+00



PLAN - MAIN TRUSS
STA. 37+00 TO STA 49+00

REPAIR LIST:

1 PATCH 4'x18"x3"D DECK SPALL AT THE SOUTH END OF EXPANSION JOINT N

LEGEND:

(X) - PIER NUMBER

- REPAIR LOCATION

NOTES:

1. SEE MAINTENANCE OF TRAFFIC SHEETS FOR TRAFFIC CONTROL RESTRICTIONS.
2. ALL REPAIRS ON THIS SHEET SHALL BE PERFORMED DURING THE STAGED LANE CLOSURES DETAILED ON THE MAINTENANCE OF TRAFFIC SHEETS.
3. THE BRIDGE DECK IS TO BE SEALED WITH NON-EPOXY PER ITEM 512 FROM DECK END TO DECK END, TOE-TO-TOE OF PARAPETS. SEE SHEET S4/S95.
4. FOR PARAPET PATCHING DETAILS, SEE SHEETS S57/S95 AND S58/S95.

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

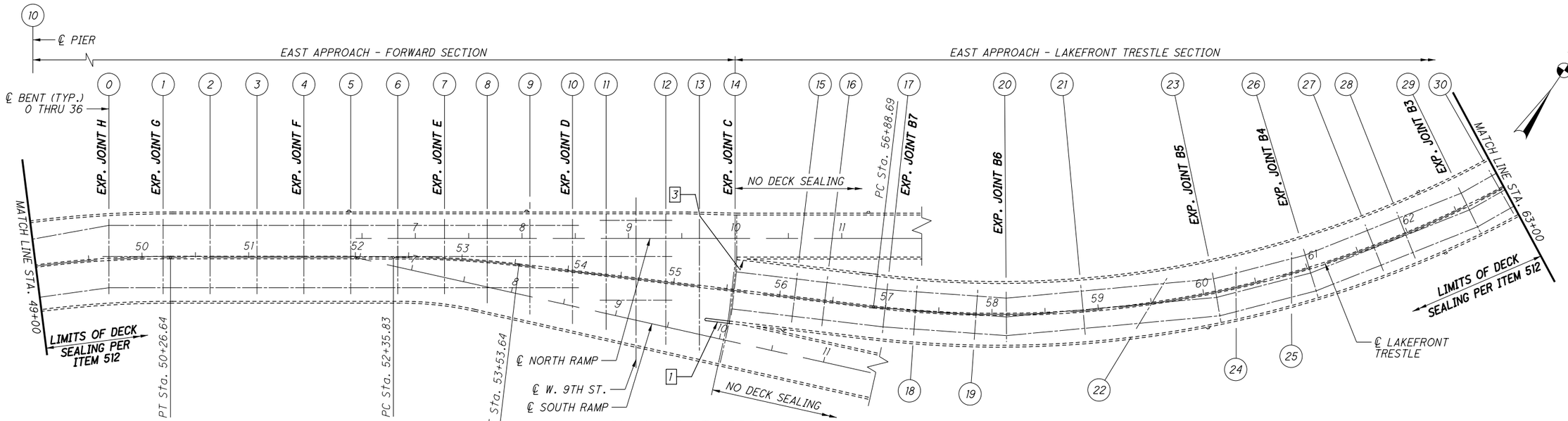
DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

TOP OF DECK REPAIRS (3 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

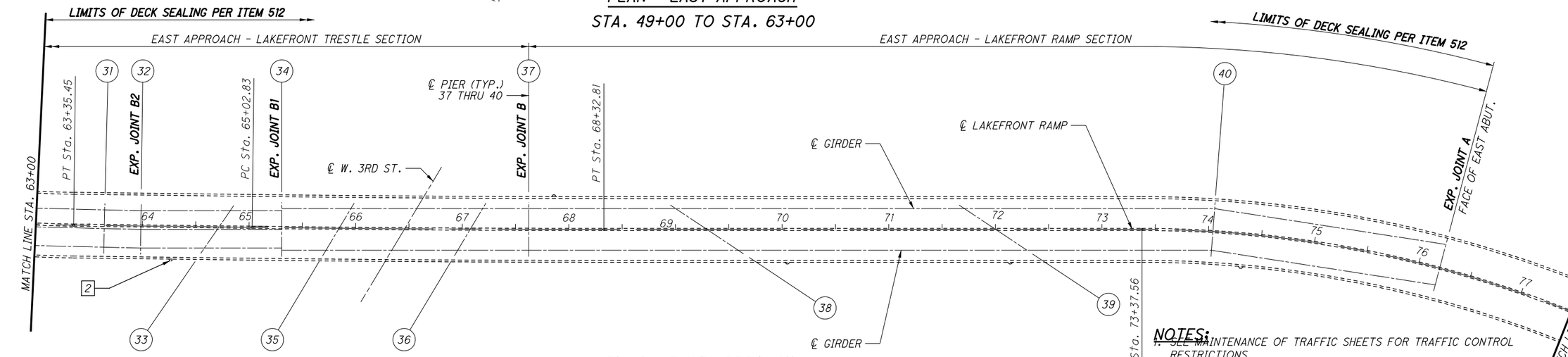
CUY-2-14.41
PID No. 85377

S14/S95

65
154



PLAN - EAST APPROACH
STA. 49+00 TO STA. 63+00



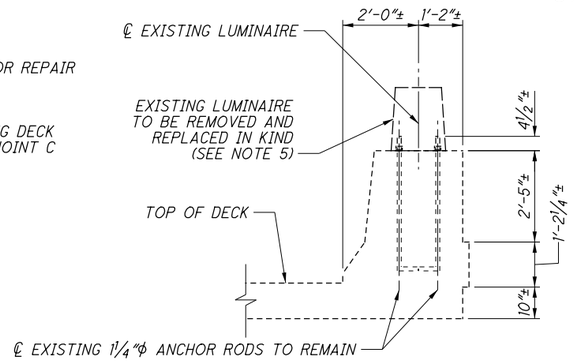
PLAN - EAST APPROACH
STA. 63+00 TO STA. 77+50

REPAIR LIST:

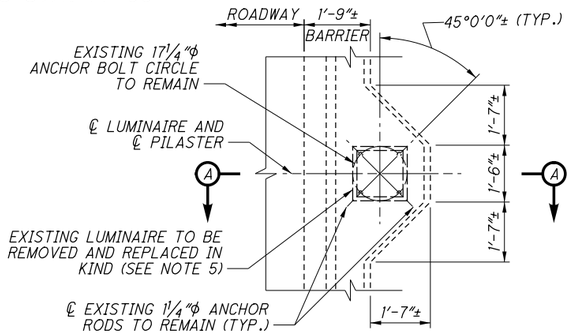
1. TYPE 2 IMPACT ATTENUATOR REPAIR
2. SEE DETAIL 1
3. PATCH 12" WIDE BY 10' LONG DECK SPALL ALONG EXPANSION JOINT C (SEE NOTE 8)

LEGEND:

(X) - PIER/BENT NUMBER
[#] - REPAIR LOCATION



SECTION A-A



DETAIL 1

NOTES:

1. SEE MAINTENANCE OF TRAFFIC SHEETS FOR TRAFFIC CONTROL RESTRICTIONS.
2. ALL REPAIRS ON THIS SHEET SHALL BE PERFORMED DURING THE STAGED LANE CLOSURES DETAILED ON THE MAINTENANCE OF TRAFFIC SHEETS.
3. THE BRIDGE DECK IS TO BE SEALED WITH NON-EPOXY PER ITEM 512 FROM DECK END TO DECK END, TOE-TO-TOE OF PARAPETS. SEE SHEET [S4 / S95].
4. ALL WORK ASSOCIATED WITH REPAIR OF ATTENUATOR SHALL BE PAID FOR UNDER ITEM 606 - IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR.
5. ALL MATERIALS AND LABOR ASSOCIATED WITH REPLACEMENT OF LUMINAIRES SHALL BE PAID FOR UNDER ITEM 625 - SPECIAL - REPLACEMENT OF EXISTING LIGHTING UNIT.
6. FOR PARAPET PATCHING DETAILS, SEE SHEETS [S57 / S95] AND [S58 / S95].
7. THE NEW LUMINAIRE LIGHT POLE WILL UTILIZE THE EXISTING ANCHOR BOLT CIRCLE DIAMETER. SEE SHEET [S9 / S95] FOR ADDITIONAL DETAILS.
8. FOR ADDITIONAL INFORMATION ON THE DECK PATCH ALONG EXPANSION JOINT C SEE SHEET [S41 / S95].

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

TOP OF DECK REPAIRS (4 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S15 / S95

66
154

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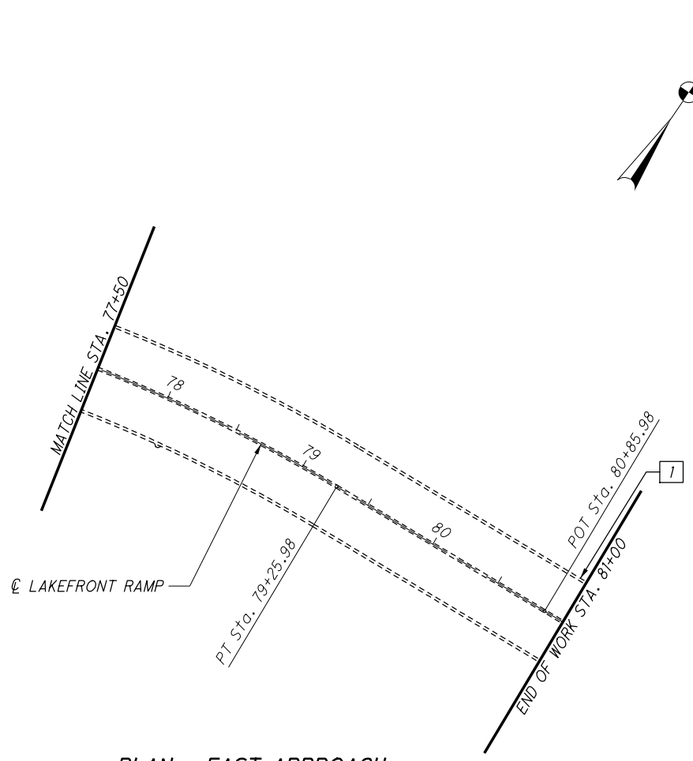
ITEM 516 - JOINT REPLACEMENT

JOINT NAME	WESTBOUND			EASTBOUND		
	TYPE	REPAIR	SHEET(S)	TYPE	REPAIR	SHEET(S)
A	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
B	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95
B1	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
B2	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
B3	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
B4	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
B5	STRIP	FULL REPLACEMENT	S44 & S45 OF S95	STRIP	FULL REPLACEMENT	S44 & S45 OF S95
B6	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
B7	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
C	STRIP	FULL REPLACEMENT	S41 & S42 OF S95	STRIP	FULL REPLACEMENT	S41 & S42 OF S95
D	STRIP	FULL REPLACEMENT	S39 & S40 OF S95	STRIP	FULL REPLACEMENT	S38 & S40 OF S95
E	STRIP	FULL REPLACEMENT	S36 & S37 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
F	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
G	STRIP	FULL REPLACEMENT	S34 & S35 OF S95	STRIP	FULL REPLACEMENT	S34 & S35 OF S95
H	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	FULL REPLACEMENT	S32 & S33 OF S95
I	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95
10-P	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
10-J	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
I1	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
J	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95
8-Q	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
8-I	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
K	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95
K1	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
6-K	STRESS RELIEF	FULL REPLACEMENT	S31 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
6-E	STRESS RELIEF	FULL REPLACEMENT	S30 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
L	MODULAR	FULL REPLACEMENT	S27 TO S29 OF S95	MODULAR	FULL REPLACEMENT	S27 TO S29 OF S95
L1	STRIP	FULL REPLACEMENT	S25 & S26 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
4-H	STRESS RELIEF	FULL REPLACEMENT	S24 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
M	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95
M1	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
2-H	STRESS RELIEF	FULL REPLACEMENT	S24 OF S95	STRESS RELIEF	GLAND REPLACEMENT	S17 & S18 OF S95
N	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95	MODULAR	GLAND REPLACEMENT	S17 & S18 OF S95
O	STRIP	FULL REPLACEMENT	S22 & S23 OF S95	STRIP	FULL REPLACEMENT	S22 & S23 OF S95
P	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
Q	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
Q1	COMPRESSION	FULL REPLACEMENT WITH STRIP	S19 & S20 OF S95	-	-	-
Q2	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95	-	-	-
Q3	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95	-	-	-
Q4	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95	-	-	-
Q5	-	-	-	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95
Q6	-	-	-	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95
R	-	-	-	STRIP	FULL REPLACEMENT	S21 OF S95
S	-	-	-	STRIP	GLAND REPLACEMENT	S17 & S18 OF S95
T	-	-	-	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95
T1	-	-	-	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95
T2	-	-	-	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95
W	COMPRESSION	FULL REPLACEMENT WITH STRIP	S19 & S20 OF S95	-	-	-
X	COMPRESSION	GLAND REPLACEMENT	S17 & S18 OF S95	-	-	-
X1	COMPRESSION	FULL REPLACEMENT WITH STRIP	S19 & S20 OF S95	-	-	-



PLAN - EAST APPROACH
STA. 77+50 TO STA. 81+00

REPAIR LIST:

[1] TYPE 2 IMPACT ATTENUATOR REPAIR

LEGEND:

[#] - REPAIR LOCATION

NOTES:

1. SEE MAINTENANCE OF TRAFFIC SHEETS FOR TRAFFIC CONTROL RESTRICTIONS.
2. ALL REPAIRS ON THIS SHEET SHALL BE PERFORMED DURING THE STAGED LANE CLOSURES DETAILED ON THE MAINTENANCE OF TRAFFIC SHEETS.
3. ALL WORK ASSOCIATED WITH THE ATTENUATOR REPAIR SHALL BE PAID FOR UNDER ITEM 606 - IMPACT ATTENUATOR, MISC.: TYPE 2 REPAIR.
4. FOR PARAPET PATCHING DETAILS, SEE SHEETS [S57/S95] AND [S58/S95].

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		18000351	

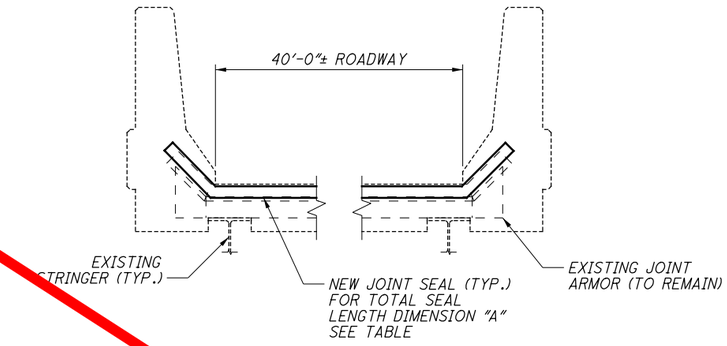
TOP OF DECK REPAIRS (5 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S16/S95

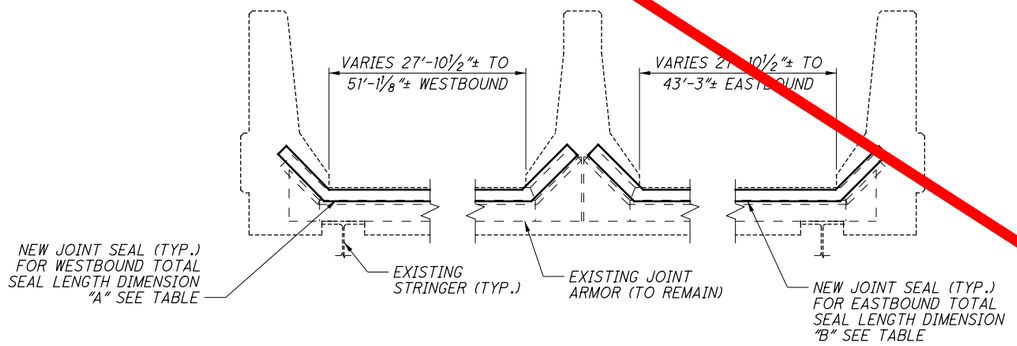
67
154

85377MD014 1/19/2017 4:06:50 PM nrfisco



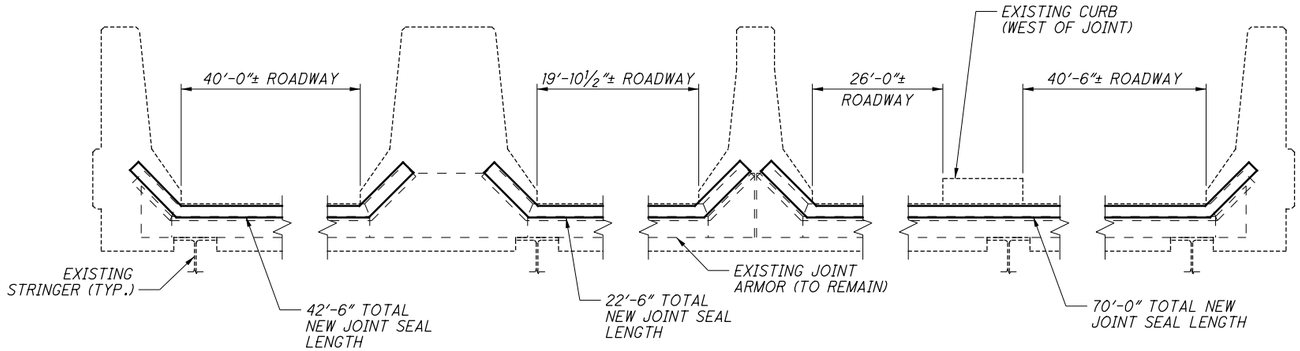
SECTION 1

(LOOKING EAST - JOINT S STRIP SEAL SHOWN, Q2, Q6, T2, T1, T, AND X SIMILAR)



SECTION 2

(LOOKING EAST - JOINTS P, M1, L1, K1, I1, H, F, E, AND B1-B7 STRIP SEAL SHOWN, N, 2-H, M, 4-H, 6-E, 6-K, K, 8-I, 8-Q, J, 10-J, 10-P, I, A, AND B SIMILAR)



SECTION 3

(LOOKING EAST - JOINT Q)

JOINT SEALS TO BE REPLACED

LOCATION		JOINT	JOINT TYPE	SECTION	NEW SEAL TYPE	DIMENSION "A"	DIMENSION "B"
WEST APPROACH	NORTH RAMP	SECTION B'/C	X	COMPRESSION	1	5" WA-500	42'-0"	-
		SECTION D	Q4	COMPRESSION	1	5" WA-500	42'-0"	-
		SECTION D	Q3	COMPRESSION	1	5" WA-500	42'-0"	-
		SECTION D	Q2	COMPRESSION	1	5" WA-500	42'-0"	-
	SOUTH RAMP	SECTION J/J'	T2	COMPRESSION	1	5" WA-500	-	42'-0"
		SECTION J'	T1	COMPRESSION	1	5" WA-500	-	42'-0"
		SECTION J'/K	T	COMPRESSION	1	5" WA-500	-	42'-0"
		SECTION K/L	S	STRIP	1	5" SE-500	-	42'-6"
		SECTION M	Q6	COMPRESSION	1	5" WA-500	-	42'-0"
		SECTION M	Q5	COMPRESSION	1	5" WA-500	-	42'-0"
	SECTION D/N & M/N		Q	STRIP	3	5" SE-500	SEE SECTION 3	
	SECTION N/P		P	STRIP	2	5" SE-500	53'-9"	45'-9"
TRUSS		TRUSS SPAN 1	N	MODULAR	2	D-600	2 x 44'-0"	2 x 44'-0"
		TRUSS SPAN 2	2-H	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
		TRUSS SPAN 3	M1	STRIP	2	5" SE-500	40'-0⅝"	43'-0"
		TRUSS SPAN 3	M	MODULAR	2	D-600	2 x 44'-0"	2 x 44'-0"
		TRUSS SPAN 4	4-H	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
		TRUSS SPAN 5	L1	STRIP	2	5" SE-500	SEE NOTE 2	42'-3"
		TRUSS SPAN 6	6-E	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
		TRUSS SPAN 6	6-K	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
		TRUSS SPAN 7	K1	STRIP	2	5" SE-500	43'-0"	43'-0"
		TRUSS SPAN 7	K	MODULAR	2	D-900	3 x 44'-0"	3 x 44'-0"
		TRUSS SPAN 8	8-I	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
		TRUSS SPAN 8	8-Q	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
		TRUSS SPAN 9	J	MODULAR	2	D-600	2 x 44'-0"	2 x 44'-0"
		TRUSS SPAN 9	I1	STRIP	2	5" SE-500	43'-0"	43'-0"
		TRUSS SPAN 9	10-J	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
		TRUSS SPAN 10	10-P	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
		TRUSS SPAN 10	I	MODULAR	2	D-600	2 x 44'-0"	2 x 44'-0"
EAST APPROACH		FORWARD SECTION	H	STRIP	2	5" SE-500	42'-9"	SEE NOTE 2
		FORWARD SECTION	F	STRIP	2	5" SE-500	43'-0"	43'-0"
		FORWARD SECTION	E	STRIP	2	5" SE-500	SEE NOTE 2	30'-9"
		LAKEFRONT TRESTLE	B7	STRIP	2	5" SE-500	30'-9"	30'-9"
		LAKEFRONT TRESTLE	B6	STRIP	2	5" SE-500	30'-9"	30'-9"
		LAKEFRONT TRESTLE	B4	STRIP	2	5" SE-500	30'-9"	30'-9"
		LAKEFRONT TRESTLE	B3	STRIP	2	5" SE-500	30'-9"	30'-9"
		LAKEFRONT TRESTLE	B2	STRIP	2	5" SE-500	30'-9"	30'-9"
		LAKEFRONT TRESTLE	B1	STRIP	2	5" SE-500	30'-9"	30'-9"
		LAKEFRONT TRESTLE/RAMP	B	MODULAR	2	D-1200	4 x 32'-0"	4 x 32'-0"
		LAKEFRONT RAMP	A	STRIP	2	5" SE-500	28'-0¾"	30'-9"

NOTES:

1. FOR ADDITIONAL SEAL REPLACEMENT DETAILS AND NOTES, SEE SHEET S18 / S95.
2. FOR FULL JOINT REPLACEMENT DETAILS, SEE SHEET S16 / S95.

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

DESIGNED CTG | DRAWN CTG | CHECKED ZTW | REVIEWED PJA | DATE 12-19-16 | REVISED | STRUCTURE FILE NUMBER 1800035

DECK JOINT SEAL REPLACEMENT (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S17 / S95

68
154

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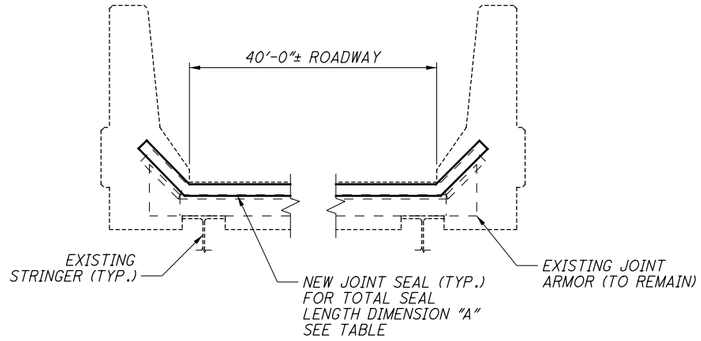
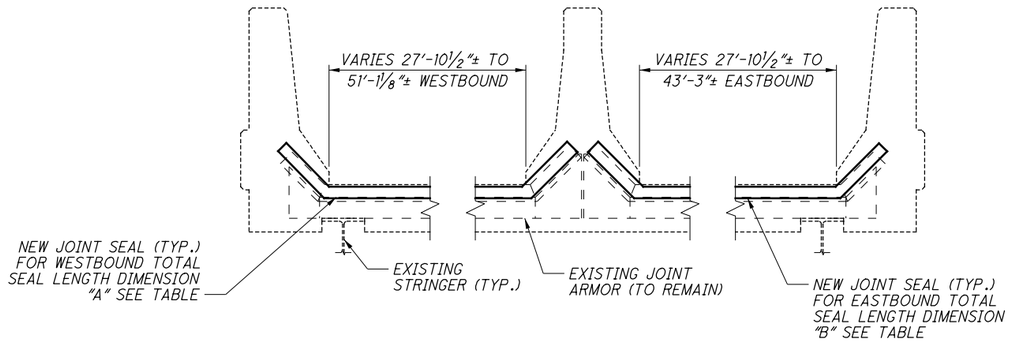


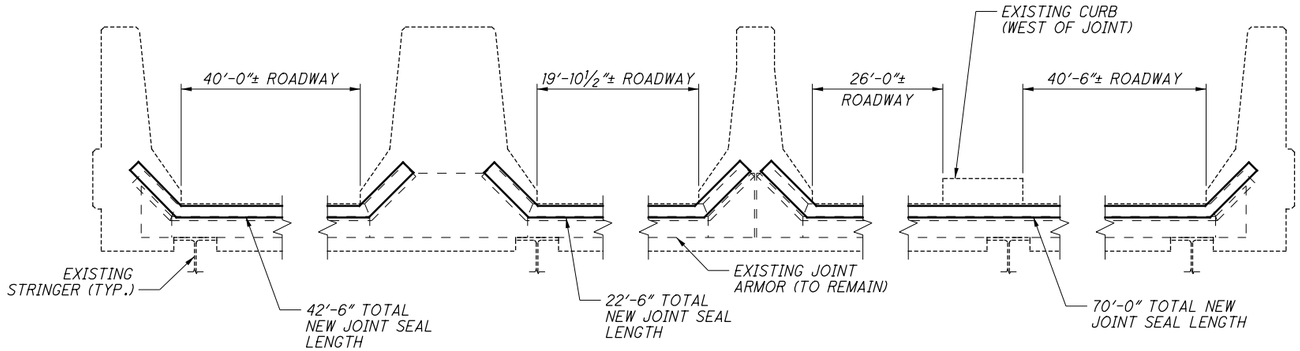
SECTION 1

(LOOKING EAST - JOINT S STRIP SEAL SHOWN, Q2-Q6, T2, T1, T, AND X SIMILAR)



SECTION 2

(LOOKING EAST - JOINTS P, M1, L1, K1, I1, H, F, E, AND B1-B7 STRIP SEAL SHOWN, N, 2-H, M, 4-H, 6-E, 6-K, K, 8-I, 8-Q, J, 10-J, 10-P, I, A, AND B SIMILAR)



SECTION 3

(LOOKING EAST - JOINT Q)

JOINT SEALS TO BE REPLACED

LOCATION		JOINT	JOINT TYPE	SECTION	NEW SEAL TYPE	DIMENSION "A"	DIMENSION "B"
WEST APPROACH	NORTH RAMP SECTION B'/C	X	COMPRESSION	1	5" WA-500	42'-0"	-
	NORTH RAMP SECTION D	Q4	COMPRESSION	1	5" WA-500	42'-0"	-
	NORTH RAMP SECTION D	Q3	COMPRESSION	1	5" WA-500	42'-0"	-
	NORTH RAMP SECTION D	Q2	COMPRESSION	1	5" WA-500	42'-0"	-
	SOUTH RAMP SECTION J/J'	T2	COMPRESSION	1	5" WA-500	-	42'-0"
	SOUTH RAMP SECTION J'	T1	COMPRESSION	1	5" WA-500	-	42'-0"
	SOUTH RAMP SECTION J'/K	T	COMPRESSION	1	5" WA-500	-	42'-0"
	SOUTH RAMP SECTION K/L	S	STRIP	1	FS-175	-	42'-6"
	SOUTH RAMP SECTION M	Q6	COMPRESSION	1	5" WA-500	-	42'-0"
	SOUTH RAMP SECTION M	Q5	COMPRESSION	1	5" WA-500	-	42'-0"
	SECTION D/N & M/N	Q	STRIP	3	FS-200 / 250	SEE SECTION 3	
	SECTION N/P	P	STRIP	2	FS-200	53'-9"	45'-9"
TRUSS	TRUSS SPAN 1	N	MODULAR	2	FS-200	2 x 44'-0"	2 x 44'-0"
	TRUSS SPAN 2	2-H	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
	TRUSS SPAN 3	M1	STRIP	2	FS-275 / 300	40'-0⅝"	43'-0"
	TRUSS SPAN 3	M	MODULAR	2	FS-200	2 x 44'-0"	2 x 44'-0"
	TRUSS SPAN 4	4-H	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
	TRUSS SPAN 5	L1	STRIP	2	FS-250	SEE NOTE 2	42'-3"
	TRUSS SPAN 6	6-E	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
	TRUSS SPAN 6	6-K	STRESS RELIEF	2	2½" WA-250	SEE NOTE 2	42'-3"
	TRUSS SPAN 7	K1	STRIP	2	FS-275	43'-0"	43'-0"
	TRUSS SPAN 7	K	MODULAR	2	FS-200	3 x 44'-0"	3 x 44'-0"
	TRUSS SPAN 8	8-I	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
	TRUSS SPAN 8	8-Q	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
	TRUSS SPAN 9	J	MODULAR	2	FS-200	2 x 44'-0"	2 x 44'-0"
	TRUSS SPAN 9	I1	STRIP	2	FS-250	43'-0"	43'-0"
	TRUSS SPAN 9	10-J	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
	TRUSS SPAN 10	10-P	STRESS RELIEF	2	2½" WA-250	42'-3"	42'-3"
	TRUSS SPAN 10	I	MODULAR	2	FS-200	2 x 44'-0"	2 x 44'-0"
EAST APPROACH	FORWARD SECTION	H	STRIP	2	FS-175	42'-9"	SEE NOTE 2
	FORWARD SECTION	F	STRIP	2	FS-200 / 225	43'-0"	43'-0"
	FORWARD SECTION	E	STRIP	2	FS-200	SEE NOTE 2	30'-9"
	LAKEFRONT TRESTLE	B7	STRIP	2	FS-200 / 225	30'-9"	30'-9"
	LAKEFRONT TRESTLE	B6	STRIP	2	FS-200 / 225	30'-9"	30'-9"
	LAKEFRONT TRESTLE	B4	STRIP	2	FS-200 / 225	30'-9"	30'-9"
	LAKEFRONT TRESTLE	B3	STRIP	2	FS-225 / 250	30'-9"	30'-9"
	LAKEFRONT TRESTLE	B2	STRIP	2	FS-200 / 250	30'-9"	30'-9"
	LAKEFRONT TRESTLE	B1	STRIP	2	FS-200	30'-9"	30'-9"
	LAKEFRONT TRESTLE/RAMP	B	MODULAR	2	FS-200	4 x 32'-0"	4 x 32'-0"
	LAKEFRONT RAMP	A	STRIP	2	FS-200	28'-0¾"	30'-9"

For New Seal Type:
EB/WB

NOTES:

1. FOR ADDITIONAL SEAL REPLACEMENT DETAILS AND NOTES, SEE SHEET S18 / S95 .
2. FOR FULL JOINT REPLACEMENT DETAILS, SEE SHEET S16 / S95 .

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

DESIGNED	DRAWN	REVISED	DATE
CTG	CTG		12-19-16
CHECKED	REVISED BY		STRUCTURE FILE NUMBER
ZTW	PJA		1800035

DECK JOINT SEAL REPLACEMENT (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S17 / S95

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154

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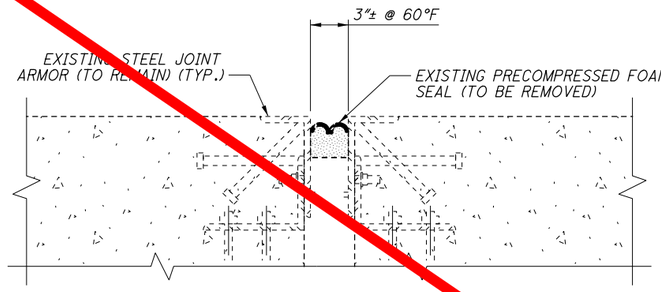
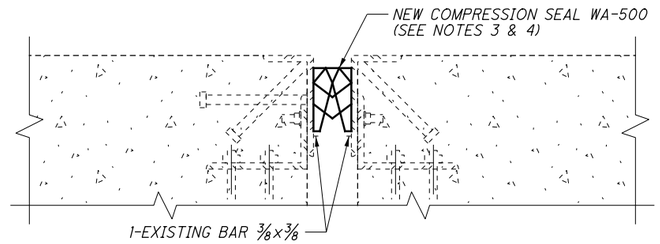


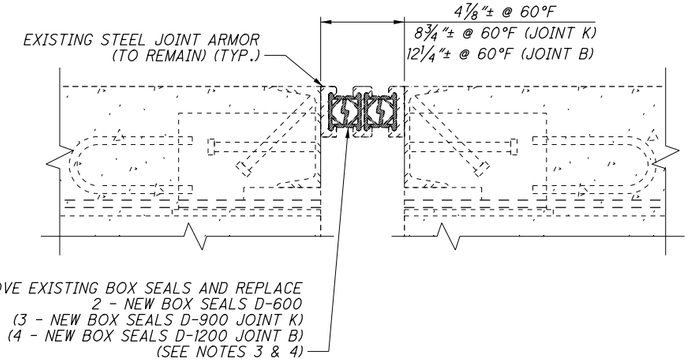
TYPICAL EXISTING COMPRESSION SEAL JOINT

JOINTS Q2-Q6, T1, AND T2 SHOWN
JOINTS T AND X SIMILAR



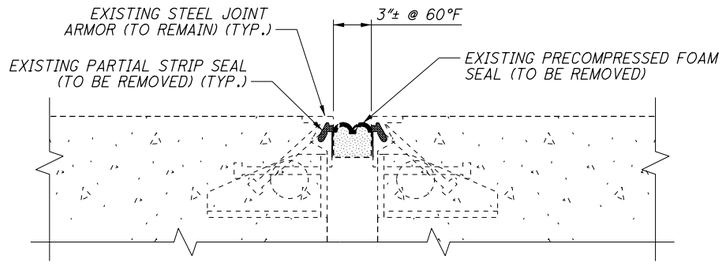
TYPICAL PROPOSED COMPRESSION SEAL JOINT

JOINTS Q2-Q6, T1, AND T2 SHOWN
JOINTS T AND X SIMILAR



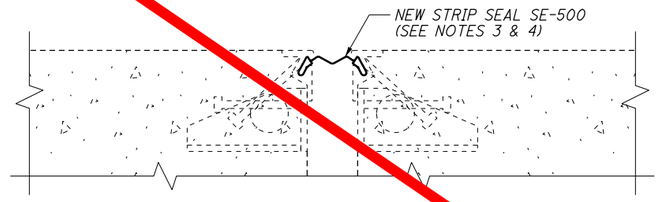
TYPICAL PROPOSED MODULAR SEAL JOINT

JOINTS N, M, J, AND I SHOWN
JOINTS K AND B SIMILAR



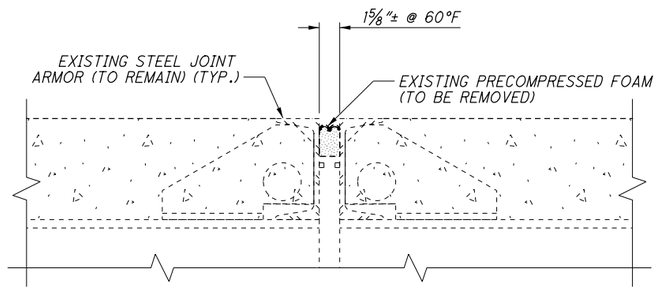
TYPICAL EXISTING STRIP SEAL JOINT

JOINT Q SHOWN
JOINTS A, B1-B4, B6, B7, E (EB ONLY), F, H (WB ONLY), I1, K1, L1 (EB ONLY), M1, P, AND S SIMILAR



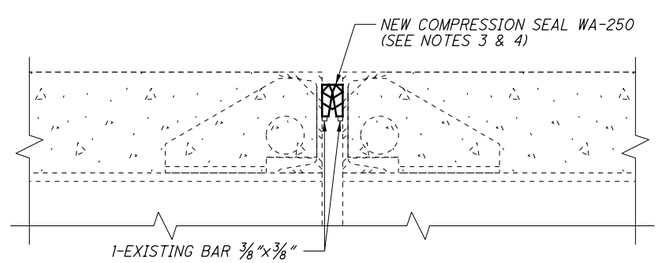
TYPICAL PROPOSED STRIP SEAL JOINT

JOINT Q SHOWN
JOINTS A, B1-B4, B6, B7, E (EB ONLY), F, H (WB ONLY), I1, K1, L1 (EB ONLY), M1, P, AND S SIMILAR



TYPICAL EXISTING STRESS RELIEF JOINT

JOINTS 2-H (EB ONLY), 4-H (EB ONLY), 6-E (EB ONLY), 6-K (EB ONLY), 8-I, 8-Q, 10-J, AND 10-P



TYPICAL PROPOSED STRESS RELIEF JOINT

JOINTS 2-H (EB ONLY), 4-H (EB ONLY), 6-E (EB ONLY), 6-K (EB ONLY), 8-I, 8-Q, 10-J, AND 10-P

NOTES:

1. REPLACEMENT OF THE DECK JOINT SEALS SHALL BE PERFORMED UNDER MOT RESTRICTIONS. SEE SHEETS 4 / 154 THROUGH 7 / 154 FOR MOT SEQUENCE OF CONSTRUCTION.
2. FOR JOINT LOCATIONS, SEE SHEET S16 / S95 .
3. NEW SEALS SHALL BE ONE PIECE ACROSS THE TOTAL WIDTH OF THE JOINT. NO SPLICES WILL BE ACCEPTABLE.
4. DETAILS SHOWN ARE FOR A WABO COMPRESSION SEAL, WABO STRIP SEAL OR WABO MODULAR BOX SEAL SUPPLIED BY WATSON BOWMAN ACME CORP. THE CONTRACTOR HAS THE OPTION OF USING AN EQUIVALENT JOINT SEAL SUPPLIED BY THE D.S. BROWN COMPANY OR APPROVED EQUAL.
5. THE COMPRESSION SEALS AND STRIP SEALS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL PROVIDE THE FIELD ENGINEER WITH THE MANUFACTURER'S INSTALLATION SPECIFICATIONS SEVEN (7) DAYS PRIOR TO THE INSTALLATION.
6. DECK REINFORCING AND ALL JOINT ARMOR DETAILS NOT SHOWN.
7. FOR ADDITIONAL JOINT SEAL REPLACEMENT DETAILS, SEE SHEET S17 / S95 .
8. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW COMPRESSION SEAL, INCLUDING REMOVAL OF EXISTING PRECOMPRESSED FOAM SEAL AND CLEANING OF EXISTING JOINT ARMOR, SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT.
9. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW STRIP SEAL, INCLUDING REMOVAL OF EXISTING PRECOMPRESSED FOAM SEAL AND CLEANING OF EXISTING JOINT ARMOR, SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: STEEL STRIP SEAL EXPANSION JOINT REPLACEMENT.
10. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW MODULAR BOX SEAL, INCLUDING REMOVAL OF EXISTING BOX SEAL AND CLEANING OF EXISTING JOINT ARMOR, SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: MODULAR EXPANSION JOINT SEAL REPLACEMENT.

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

DESIGNED	DRAWN	REVIEWED	DATE
CTG	CTG	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		18000035	

DECK JOINT SEAL REPLACEMENT (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S18 / S95

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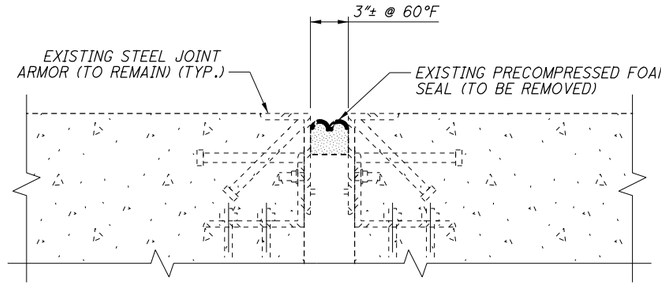
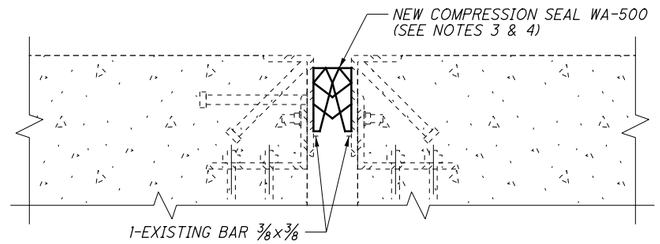


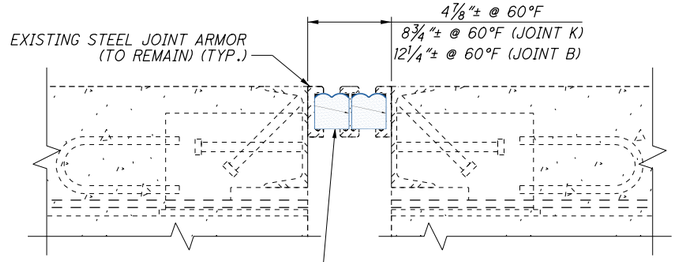
TYPICAL EXISTING COMPRESSION SEAL JOINT

JOINTS Q2-Q6, T1, AND T2 SHOWN
JOINTS T AND X SIMILAR



TYPICAL PROPOSED COMPRESSION SEAL JOINT

JOINTS Q2-Q6, T1, AND T2 SHOWN
JOINTS T AND X SIMILAR



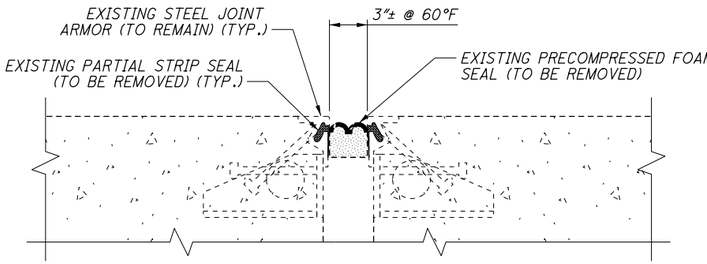
REMOVE EXISTING BOX SEALS AND REPLACE

See Sheet S17 / S95 for additional details.

TYPICAL PROPOSED MODULAR SEAL JOINT

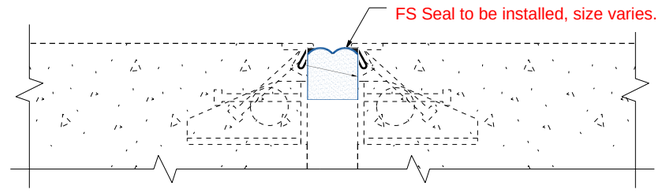
JOINTS N, M, J, AND I SHOWN
JOINTS K AND B SIMILAR

Joint Q EB Partially Replaced, see attached shop drawings for detail.



TYPICAL EXISTING STRIP SEAL JOINT

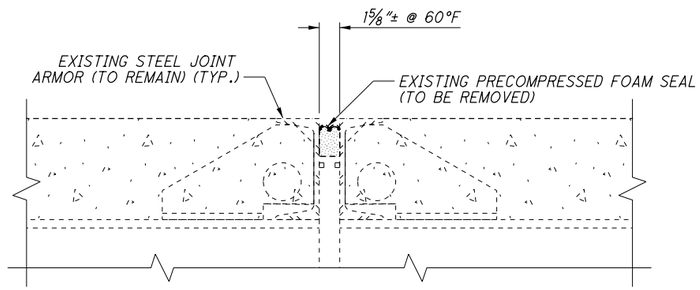
JOINT Q SHOWN
JOINTS A, B1-B4, B6, B7, E (EB ONLY), F, H (WB ONLY), I1, K1, L1 (EB ONLY), M1, P, AND S SIMILAR



TYPICAL PROPOSED STRIP SEAL JOINT

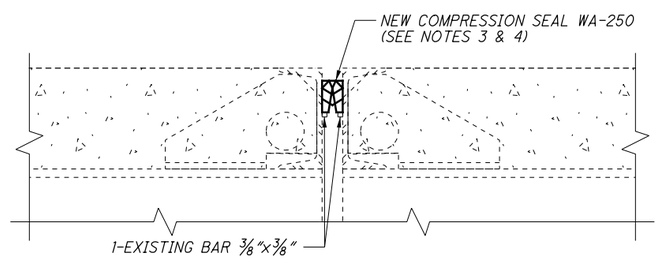
JOINT Q SHOWN
JOINTS A, B1-B4, B6, B7, E (EB ONLY), F, H (WB ONLY), I1, K1, L1 (EB ONLY), M1, P, AND S SIMILAR

See Sheet S17 / S95 for additional details.



TYPICAL EXISTING STRESS RELIEF JOINT

JOINTS 2-H (EB ONLY), 4-H (EB ONLY), 6-E (EB ONLY), 6-K (EB ONLY), 8-I, 8-Q, 10-J, AND 10-P



TYPICAL PROPOSED STRESS RELIEF JOINT

JOINTS 2-H (EB ONLY), 4-H (EB ONLY), 6-E (EB ONLY), 6-K (EB ONLY), 8-I, 8-Q, 10-J, AND 10-P

NOTES:

1. REPLACEMENT OF THE DECK JOINT SEALS SHALL BE PERFORMED UNDER MOT RESTRICTIONS. SEE SHEETS 4 / 154 THROUGH 7 / 154 FOR MOT SEQUENCE OF CONSTRUCTION.
2. FOR JOINT LOCATIONS, SEE SHEET S16 / S95 .
3. NEW SEALS SHALL BE ONE PIECE ACROSS THE TOTAL WIDTH OF THE JOINT. NO SPLICES WILL BE ACCEPTABLE.
4. DETAILS SHOWN ARE FOR A WABO COMPRESSION SEAL, WABO STRIP SEAL OR WABO MODULAR BOX SEAL SUPPLIED BY WATSON BOWMAN ACME CORP. THE CONTRACTOR HAS THE OPTION OF USING AN EQUIVALENT JOINT SEAL SUPPLIED BY THE D.S. BROWN COMPANY OR APPROVED EQUAL.
5. THE COMPRESSION SEALS AND STRIP SEALS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL PROVIDE THE FIELD ENGINEER WITH THE MANUFACTURER'S INSTALLATION SPECIFICATIONS SEVEN (7) DAYS PRIOR TO THE INSTALLATION.
6. DECK REINFORCING AND ALL JOINT ARMOR DETAILS NOT SHOWN.
7. FOR ADDITIONAL JOINT SEAL REPLACEMENT DETAILS, SEE SHEET S17 / S95 .
8. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW COMPRESSION SEAL, INCLUDING REMOVAL OF EXISTING PRECOMPRESSED FOAM SEAL AND CLEANING OF EXISTING JOINT ARMOR, SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT.
9. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW STRIP SEAL, INCLUDING REMOVAL OF EXISTING PRECOMPRESSED FOAM SEAL AND CLEANING OF EXISTING JOINT ARMOR, SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: STEEL STRIP SEAL EXPANSION JOINT REPLACEMENT.
10. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW MODULAR BOX SEAL, INCLUDING REMOVAL OF EXISTING BOX SEAL AND CLEANING OF EXISTING JOINT ARMOR, SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: MODULAR EXPANSION JOINT SEAL REPLACEMENT.

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

DESIGNED	DRAWN	REVIEWED	DATE
CTG	CTG	PJA	12-19-16

CHECKED	REVISED	STRUCTURE FILE NUMBER
ZTW		18000351

DECK JOINT SEAL REPLACEMENT (2 OF 2)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S18 / S95

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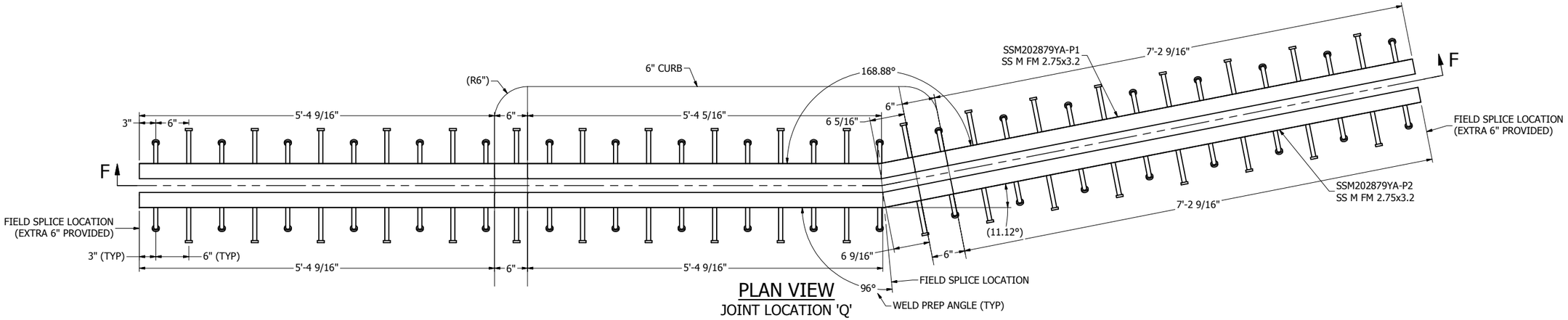
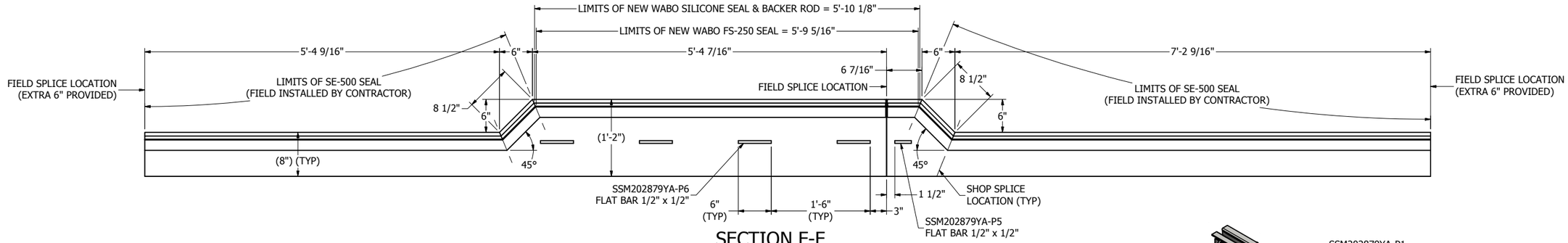


PLAN VIEW
JOINT LOCATION 'Q'
SSM202879YA



SECTION F-F
JOINT LOCATION 'Q'
SSM202879YA

BILL OF MATERIALS (FOR (1) ASSEMBLY ONLY)								
ITEM	PART NO.	QTY	DESCRIPTION	PIECE MARK	LENGTH	WIDTH	WEIGHT (LB)	MATERIAL
0	SSM202879YA	1	TYPE 'M' EXPANSION JOINT (LOCATION: Q)				352.9	UNCOATED
			PL = 20 ft					
1	1954	1	SS M FM 2.75x3.2	SSM202879YA-P1	19'-10 5/8"		169.1	STEEL A588
2	1954	1	SS M FM 2.75x3.2	SSM202879YA-P2	19'-11 5/16"		169.7	STEEL A588
3	3570	1	PLATE 1/2"	SSM202879YA-P3	19'-6 7/16"		238.7	STEEL A588
4	3570	1	PLATE 1/2"	SSM202879YA-P4	19'-5 9/16"		237.3	STEEL A588
5	5950	2	FLAT BAR 1/2" x 1/2"	SSM202879YA-P5	3"		.2	STEEL A588
6	5950	8	FLAT BAR 1/2" x 1/2"	SSM202879YA-P6	6"		.4	STEEL A588
7	4780	92	CON ANC ST ø3/4" x 8"				1.1	STEEL A108
8	SSM202879TDA	6	TEMPORARY DEVICES				2.3	

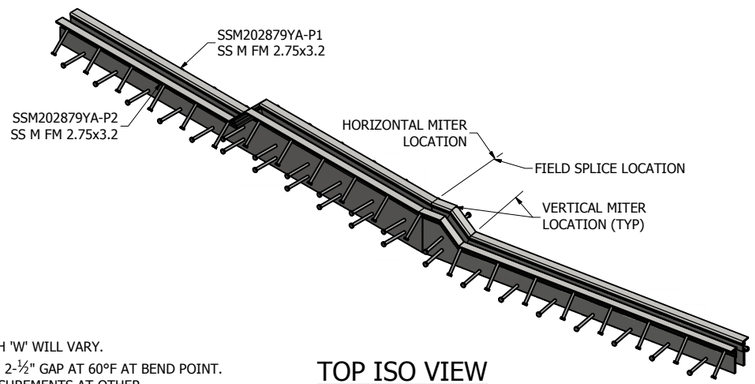
BILL OF MATERIALS (FOR (1) ASSEMBLY ONLY)								
ITEM	PART NO.	QTY	DESCRIPTION	PIECE MARK	LENGTH	WIDTH	WEIGHT (LB)	MATERIAL
0	SSM202879SYA	1	SEAL FOR SHIPPING				18.4	
1	83	1	SE-500	SSM202879SYA-P1	65'-0"		12.4	NEOPRENE
2	8176	1	STYROFOAM BACKER ROD 3" DIA	SSM202879SYA-P2	7'-0"		18.1	Generic
3	WFS250	1	WABOFS BRIDGE SEAL FS-250	SSM202879SYA-P3	7'-0"		26.9	Generic

BILL OF MATERIALS (FOR (1) ASSEMBLY ONLY)								
ITEM	PART NO.	QTY	DESCRIPTION	PIECE MARK	LENGTH	WIDTH	WEIGHT (LB)	MATERIAL
0	SSM202879PSY	1	PARTS FOR SHIPPING				14.6	
1	2720	1	PRIMA-LUB GALLON CAN				9.5	PRIMA-LUB
2	3020	2	INSTALLATION TOOL STRIP SEAL				2.6	STEEL A36

SHOP TO FABRICATE PHASE 1 JOINT WITH EXTRA 6" LENGTH.
CONTRACTOR TO TRIM UPON FIELD INSTALLATION

CONTRACTOR TO VERIFY ALL DIMENSIONS

AMBIENT TEMPERATURE (°F)	DIMENSION 'W' (in.)
30	2 7/8
40	2 3/4
50	2 5/8
60	2 1/2
70	2 3/8
80	2 1/4
90	2 1/8



TOP ISO VIEW
JOINT LOCATION 'Q'

NOTE:

NEW JOINT OPENING WIDTH 'W' WILL VARY.
CONTRACTOR TO MAINTAIN 2-½" GAP AT 60°F AT BEND POINT. (SEE TABLE FOR JOINT MEASUREMENTS AT OTHER TEMPERATURES). CONTRACTOR TO TAPER JOINT OPENING IN JOINT SECTIONS TO REMAIN AT SPLICE LOCATIONS.

MINIMUM ALLOWABLE JOINT OPENING 'W' = 0"
MAXIMUM ALLOWABLE JOINT OPENING 'W' = 5"
SYSTEM MID-RANGE OPENING 'W' = 2-1/2"

EXACT WIDTH TO BE DETERMINED BY ENGINEER AT TIME OF SETTING PER TEMPERATURE SETTING TABLE. MINIMUM SEAL INSTALLATION WIDTH = 1-1/2" [2 1/2"] RECOMMENDED).

CONTRACTOR SHALL COORDINATE REBAR DETAILS AT EXPANSION JOINT BLOCKOUT TO AVOID INTERFERENCE WITH EXPANSION JOINT.

STATE: OHIO
COUNTY: CUYAHOGA
CONTRACT NO.: E130 (986)
PROJECT ID: 85377-170228
BRIDGE NAME: MAIN AVENUE BRIDGE
WBA PRODUCT NO.: SSM202879
JOINT TYPE: SSM STRIP SEAL EXPANSION JOINT

APPROVED
JANUARY 31, 2018
THE RUHLIN COMPANY

DRAWING ACTION:
SUBMITTED
DATE: 1/30/2018

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
ALL DIMENSIONS ARE IN INCHES
DECIMAL: .X ± .030 .XX ± .015 .XXX ± .010
FRACTION:
OVERALL LGTH: ±1/4 / 20 FT
ANGULAR: ±2° (FAB) / ±1° (FORM)
LINEAR (DTLS): ±1/16
HOLE SIZE/DEPTH: +1/16 -0
SWEEP/CAMBER: ASTM A6 T 21
STUD LOCATION: ±1
HOLE LOCATION: ±1/2
BUTT SPLICE LOCATION: ±1/2
*WELD LOCATIONS PER APPLICABLE CODE/SPEC

BASF
We create chemistry

Watson Bowman Acme Corp.
95 Pineview Drive Amherst, NY 14228
phone: (716) 691-7566 fax: (716) 691-9239
www.wbacorp.com

Watson Bowman Acme

NO.	REVISION DESCRIPTION	INIT	DATE
4	ADDED LOCATION 'Q'	PPP	1/25/2018
3	ADDED SHOP SPLICES	PPP	12/11/2017
2	REVISED PER REVIEWER'S COMMENTS	PPP	12/5/2017
1	REVISED PER REVIEWER'S COMMENTS	PPP	11/27/2017

DETAILED BY: PPP DATE: 9/3/2017
CHECKED BY: TSM DATE: 9/10/2017

PROJECT:
MAIN AVE. BRIDGE CUY-2-1441
STRIP SEAL LOCATIONS:B5, C, D, E, G, H, L1, O, Q1, R, W, X1
ODOT JOB NUMBER: 228(17)
TYPE 'M' EXPANSION JOINT DETAILS

SCALE: NTS
WBA JOB NO.: 202879
SHEET NO.: 69A
DRAWING NO.: 202879-02
REV.: 4

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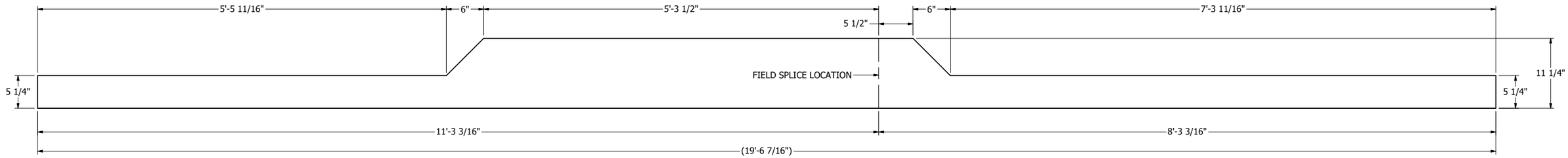
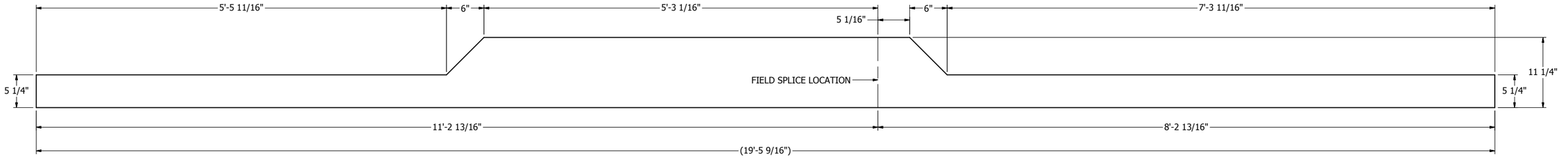


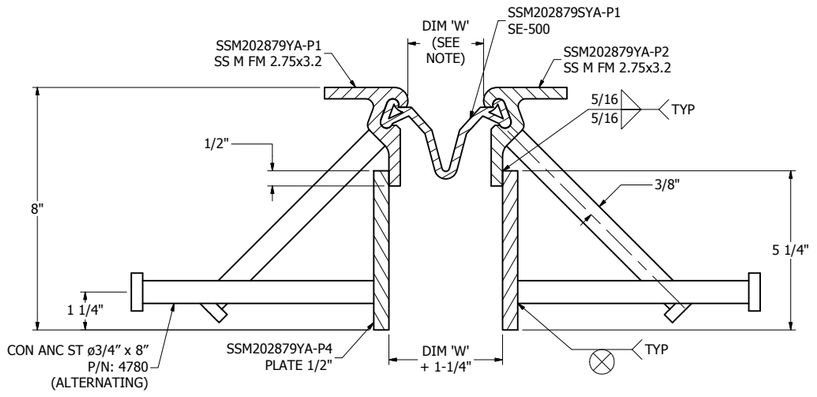
FLAT PATTERN / BURN TEMPLATE

SSM202879YA-P3: PLATE 1/2"

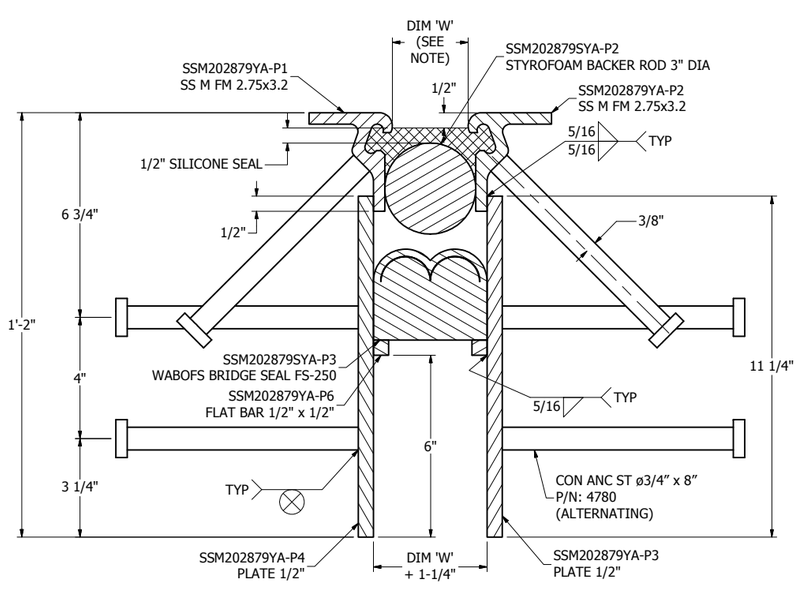


FLAT PATTERN / BURN TEMPLATE

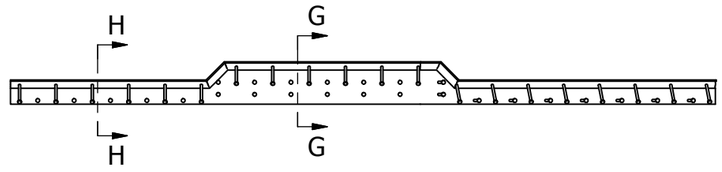
SSM202879YA-P4: PLATE 1/2"



SECTION H-H



SECTION G-G



ELEVATION VIEW

SSM202879YA WITH SEALS INSTALLED

STATE: OHIO
COUNTY: CUYAHOGA
CONTRACT NO.: E130 (986)
PROJECT ID: 85377-170228
BRIDGE NAME: MAIN AVENUE BRIDGE
WBA PRODUCT NO.: SSM202879
JOINT TYPE: SSM STRIP SEAL EXPANSION JOINT

APPROVED
JANUARY 31, 2018
THE RUHLIN COMPANY

DRAWING ACTION:
SUBMITTED
DATE: 1/30/2018

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
ALL DIMENSIONS ARE IN INCHES
DECIMAL: .X ± .030 .XX ± .015 .XXX ± .010
FRACTION:

OVERALL LGTH:	±1/4 / 20 FT
ANGULAR:	±2° (FAB) / ±1° (FORM)
LINEAR (DTLS):	±1/16
HOLE SIZE/DEPTH:	+1/16 -0
SWEEP/CAMBER:	ASTM A6 T 21
STUD LOCATION:	±1
HOLE LOCATION:	±1/2
BUTT SPLICE LOCATION:	±1/2

*WELD LOCATIONS PER APPLICABLE CODE/SPEC

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Watson Bowman Acme

NO.	REVISION DESCRIPTION	INIT	DATE
4	ADDED LOCATION 'Q'	PPP	1/25/2018
3	ADDED SHOP SPLICES	PPP	12/11/2017
2	REVISED PER REVIEWER'S COMMENTS	PPP	12/5/2017
1	REVISED PER REVIEWER'S COMMENTS	PPP	11/27/2017

DETAILED BY: PPP DATE: 9/3/2017
CHECKED BY: TSM DATE: 9/10/2017

PROJECT:
MAIN AVE. BRIDGE CUY-2-1441
STRIP SEAL LOCATIONS:B5, C, D, E, G, H, L1, O, Q1, R, W, X1
ODOT JOB NUMBER: 228(17)
TYPE 'M' EXPANSION JOINT DETAILS

SCALE: NTS
WBA JOB NO.: 202879
SHEET NO.: 69B
DRAWING NO.: 202879-02
REV.: 4

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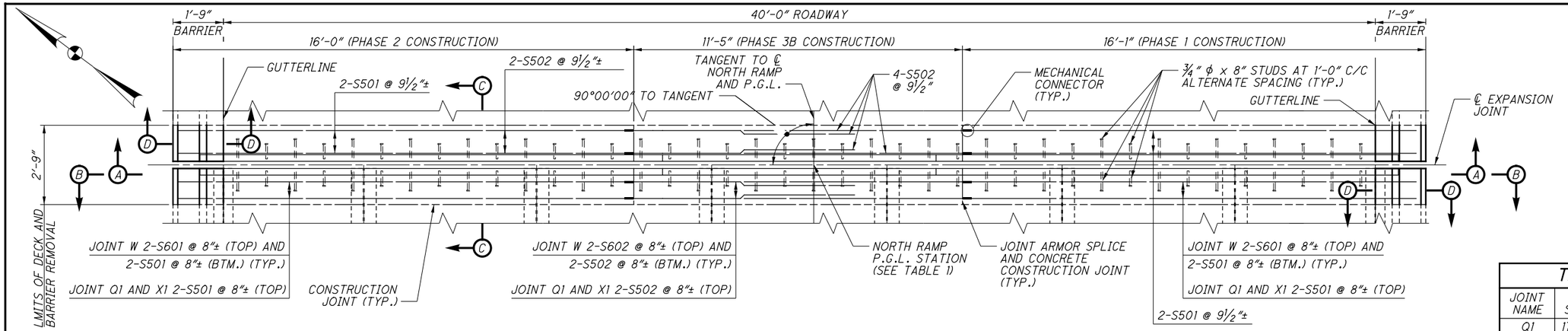
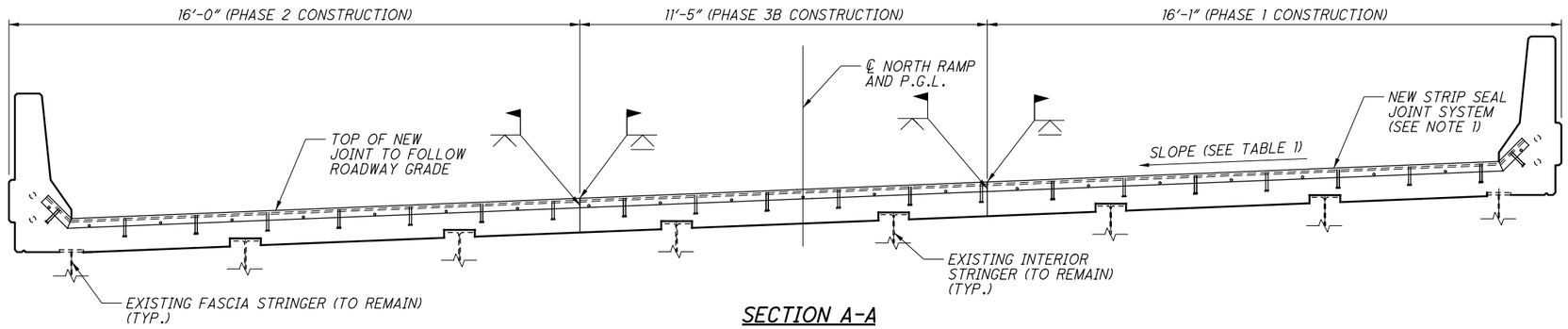


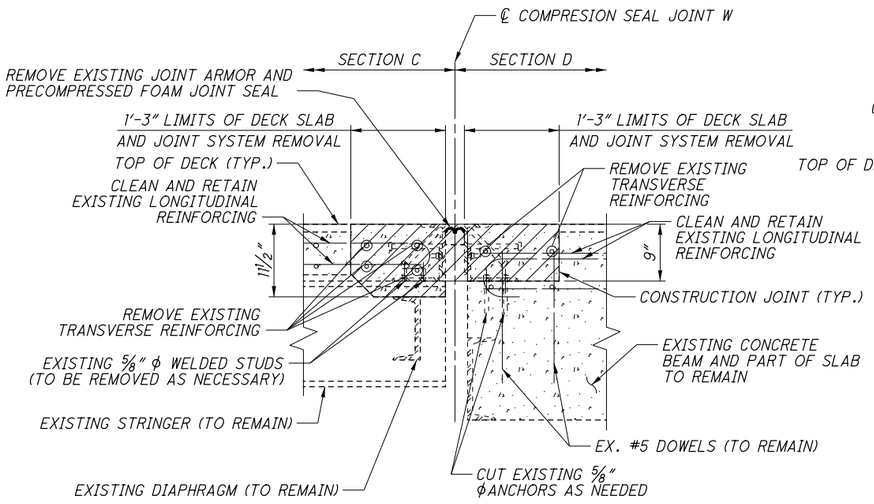
PLAN - COMPRESSION JOINT REPLACED WITH STRIP SEAL JOINT

JOINT W SHOWN
JOINTS Q1 AND X1 SIMILAR



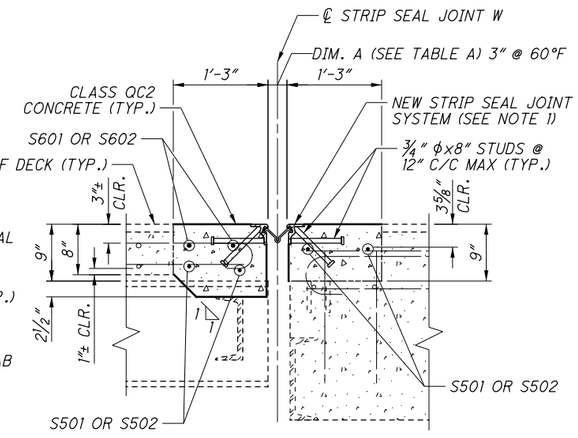
SECTION A-A

(SECTION B-B OPPOSITE HAND)
(JOINT W SECTION C SIDE SHOWN
JOINTS Q1 AND X1 SIMILAR)
(REINFORCING BARS NOT SHOWN)



SECTION C-C - REMOVAL JOINT W

(FLOORBEAM NOT SHOWN FOR CLARITY)



SECTION C-C JOINT W

(FLOORBEAM NOT SHOWN FOR CLARITY)

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

TABLE 1		
JOINT NAME	P.G.L. STATION	SLOPE (FT/FT)
Q1	17+52.79±	0.0400±
W	13+77.89±	0.0226±
X1	11+57.82±	0.0156±

TABLE A	
5" STRIP SEAL WIDTH JOINT W	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3¼"
40°F	3 3/16"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 13/16"
90°F	2¾"

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 TRANSVERSE	3'-2" MIN.
NO. 6 TRANSVERSE	3'-10" MIN.

NOTES:

1. THE DETAILS ON THIS SHEET SHOW THE WABO STRIP SEAL JOINT SYSTEM (MODEL NO. SE-500) AS MANUFACTURED BY WATSON BOWMAN ACME CORP. THE CONTRACTOR HAS THE OPTION OF USING AN EQUIVALENT STRIP SEAL JOINT SYSTEM MANUFACTURED BY THE D.S. BROWN COMPANY OR BY AN APPROVED STRIP SEAL JOINT SYSTEM MANUFACTURER. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REVISED PLAN DETAILS SHOWING THE EQUIVALENT STRIP SEAL JOINT SYSTEM AT NO ADDITIONAL COST TO THE PROJECT.
2. REMOVAL OF THE EXISTING DECK SLAB, JOINT ARMOR (INCLUDING ANGLES, CONCRETE, ANCHOR STUDS, AND ⅝" WELDED STUDS OR ANCHORS), AND PARAPETS TO THE LIMITS SHOWN IN THE PLANS SHALL BE IN ACCORDANCE WITH CMS 202.03 AND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT.
3. MECHANICAL CONNECTORS SHALL BE IN ACCORDANCE WITH CMS 509.07.
4. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW STRIP SEAL JOINTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT REPLACEMENT. CONCRETE AND REINFORCING STEEL SHALL BE PAID FOR SEPARATELY.
5. FOR SECTION D-D, SEE SHEET S20/S95.
6. FOR JOINTS Q1 AND X1 SECTION C-C, SEE SHEET S20/S95.
7. FOR LOCATION OF JOINTS, SEE SHEET S13/S95.
8. CUT AND REMOVE STAY-IN-PLACE DECK FORMS AS NEEDED, DO NOT REPLACE. CONTRACTOR IS TO TOUCH UP EDGES OF CUT FORMS AND ANY SURROUNDING AREAS DAMAGED DURING REMOVAL OF FORMWORK PER ASTM A780. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN.
9. CONTRACTOR IS TO SURVEY CROSS SLOPES PRIOR TO REMOVAL OF EXISTING JOINT TO ENSURE PROPER CROSS SLOPE IS MAINTAINED DURING REPLACEMENT.

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

DESIGNED CTG | DRAWN CTG | REVIEWED PJA | DATE 12-19-16
CHECKED ZTW | REVISED | STRUCTURE FILE NUMBER 18000035

DECK JOINT REPLACEMENT - EXPANSION JOINTS Q1, W, X1

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S19/S95

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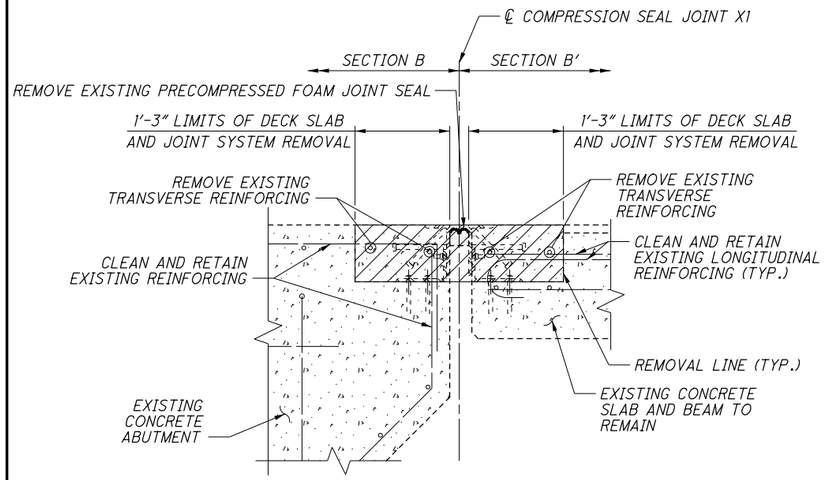
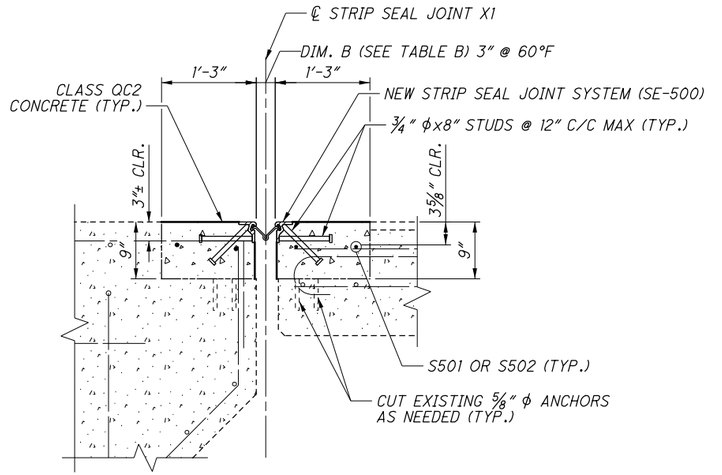
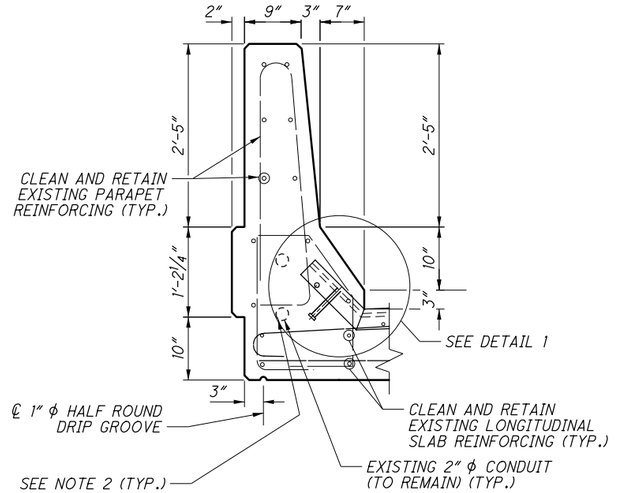


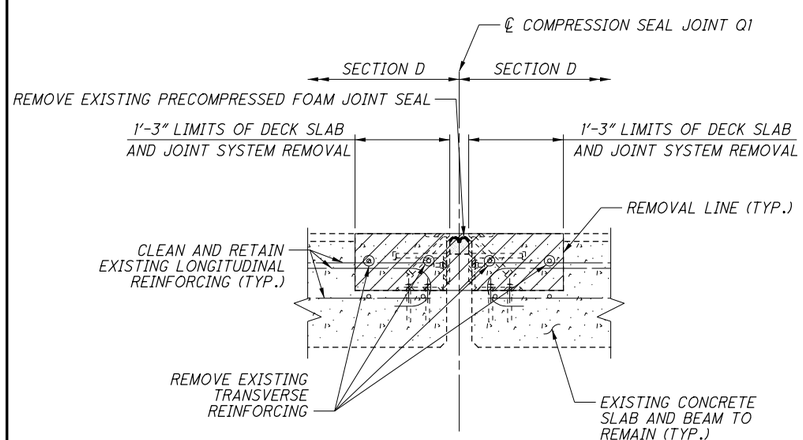
SECTION C-C - REMOVAL JOINT X1



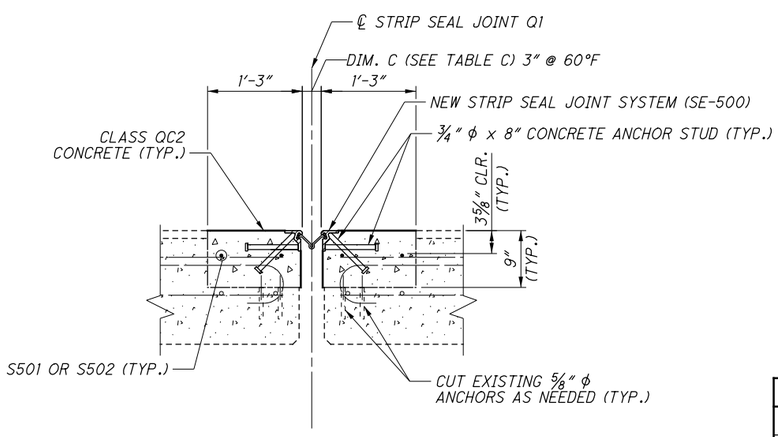
SECTION C-C JOINT X1



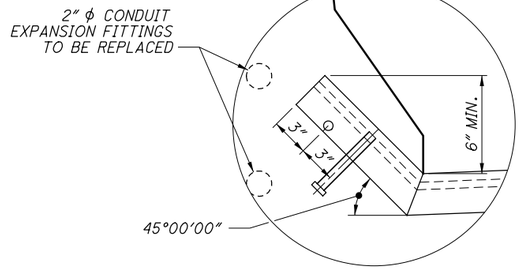
SECTION D-D



SECTION C-C - REMOVAL JOINT Q1



SECTION C-C JOINT Q1



DETAIL 1

REINFORCING NOT SHOWN

NOTES:

1. FOR LOCATIONS OF SECTION C-C, SECTION D-D, AND NOTES SEE SHEET S19 / S95 .
2. CONTRACTOR SHALL REMOVE AND REPLACE ANY LIGHTING POWER CABLE AND CONNECTOR KITS DAMAGED DURING THE EXPANSION JOINT PARAPET REMOVAL/REPLACEMENT WORK ITEM. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE DECK JOINT REPLACEMENT WORK ITEM. THE MAINLINE LIGHTING CIRCUITS SHALL REMAIN FULLY OPERATIONAL IN ALL WORK PHASES EXCEPT PHASE 2 AT THE LOCATIONS WHERE THE PARAPET EXPANSION JOINT WORK IS PROGRESSING.

TABLE B	
5" STRIP SEAL WIDTH JOINT X1	
AMBIENT TEMPERATURE	DIMENSION B
30°F	3⅛"
40°F	3 1/16"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 15/16"
90°F	2⅞"

TABLE C	
5" STRIP SEAL WIDTH JOINT Q1	
AMBIENT TEMPERATURE	DIMENSION C
30°F	3 3/16"
40°F	3⅛"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2⅞"
90°F	2 13/16"

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

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

DESIGNED	DRAWN	REVIEWED	DATE
CTG	CTG	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINTS Q1, W, X1
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S20/S95

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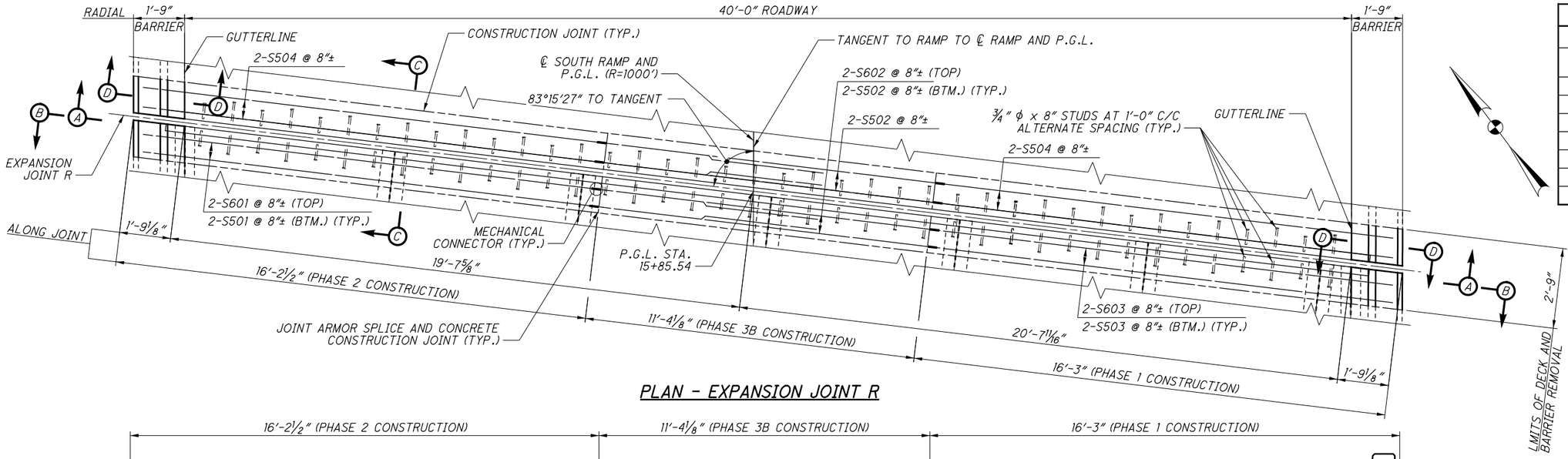
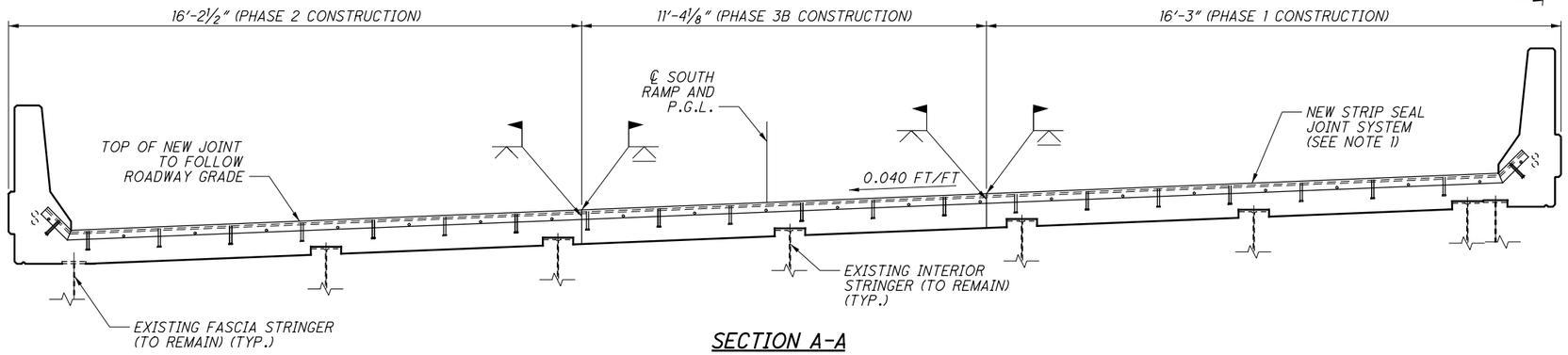
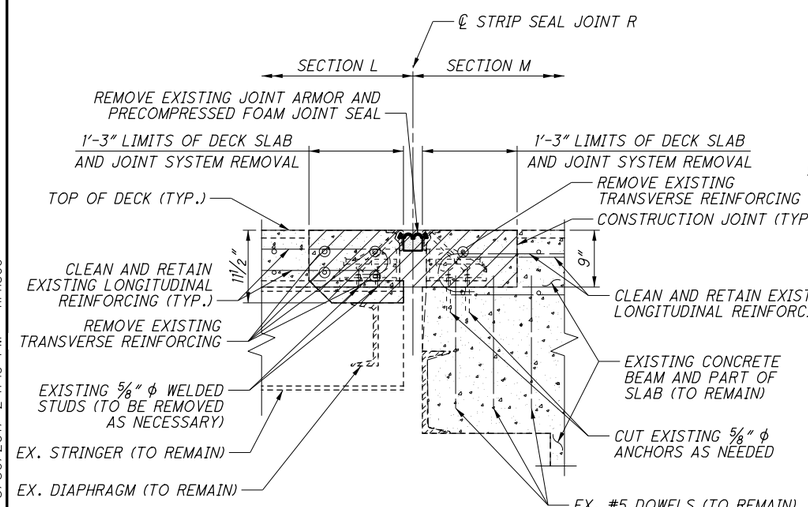


PLAN - EXPANSION JOINT R



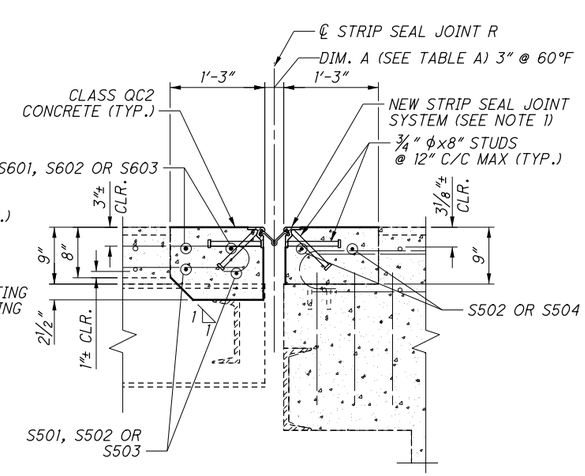
SECTION A-A

(SECTION B-B OPPOSITE HAND)
(SECTION L SIDE SHOWN, SECTION M SIDE SIMILAR)
(REINFORCING BARS NOT SHOWN)



SECTION C-C - REMOVAL

(FLOORBEAM NOT SHOWN FOR CLARITY)



SECTION C-C

(FLOORBEAM NOT SHOWN FOR CLARITY)

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3⅜"
40°F	3¼"
50°F	3⅛"
60°F	3"
70°F	2⅞"
80°F	2¾"
90°F	2⅝"

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 TRANSVERSE	3'-2" MIN.
NO. 6 TRANSVERSE	3'-10" MIN.

LEGEND:

▨ - LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. THE DETAILS ON THIS SHEET SHOW THE WABO STRIP SEAL JOINT SYSTEM (MODEL NO. SE-500) AS MANUFACTURED BY WATSON BOWMAN ACME CORP. THE CONTRACTOR HAS THE OPTION OF USING AN EQUIVALENT STRIP SEAL JOINT SYSTEM MANUFACTURED BY THE D.S. BROWN COMPANY OR BY AN APPROVED STRIP SEAL JOINT SYSTEM MANUFACTURER. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REVISED PLAN DETAILS SHOWING THE EQUIVALENT STRIP SEAL JOINT SYSTEM AT NO ADDITIONAL COST TO THE PROJECT.
2. REMOVAL OF THE EXISTING DECK SLAB, SIP FORMS, JOINT ARMOR (INCLUDING ANGLES, CONCRETE, ANCHOR STUDS, AND ⅝" WELDED STUDS OR ANCHORS), AND PARAPETS TO THE LIMITS SHOWN IN THE PLANS SHALL BE IN ACCORDANCE WITH CMS 202.03 AND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT.
3. MECHANICAL CONNECTORS SHALL BE IN ACCORDANCE WITH CMS 509.07.
4. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW STRIP SEAL JOINTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL EXPANSION JOINT REPLACEMENT. CONCRETE AND REINFORCING STEEL SHALL BE PAID FOR SEPARATELY.
5. FOR SECTION D-D, SEE SHEET S20/S95.
6. FOR LOCATION OF JOINTS, SEE SHEET S13/S95.
7. CUT AND REMOVE STAY-IN-PLACE DECK FORMS AS NEEDED, DO NOT REPLACE. CONTRACTOR IS TO TOUCH UP EDGES OF CUT FORMS AND ANY SURROUNDING AREAS DAMAGED DURING REMOVAL OF FORMWORK PER ASTM A780. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN.
8. CONTRACTOR IS TO SURVEY CROSS SLOPES PRIOR TO REMOVAL OF EXISTING JOINT TO ENSURE PROPER CROSS SLOPE IS MAINTAINED DURING REPLACEMENT.

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

DESIGNED CTG | DRAWN CTG | CHECKED ZTW | REVIEWED PJA | DATE 12-19-16 | REVISED | STRUCTURE FILE NUMBER 18000035

DECK JOINT REPLACEMENT - EXPANSION JOINT R
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S21/S95

72
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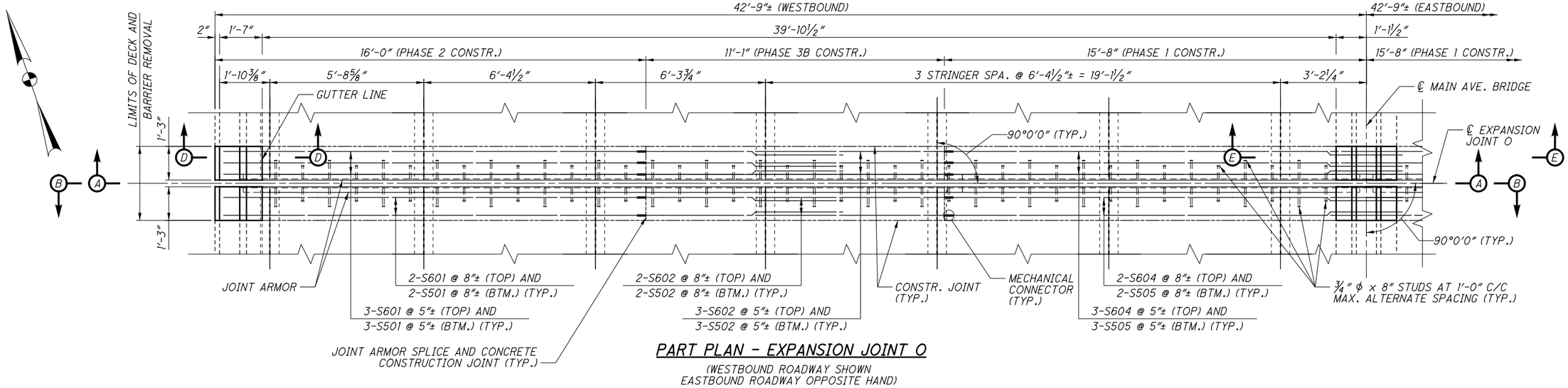
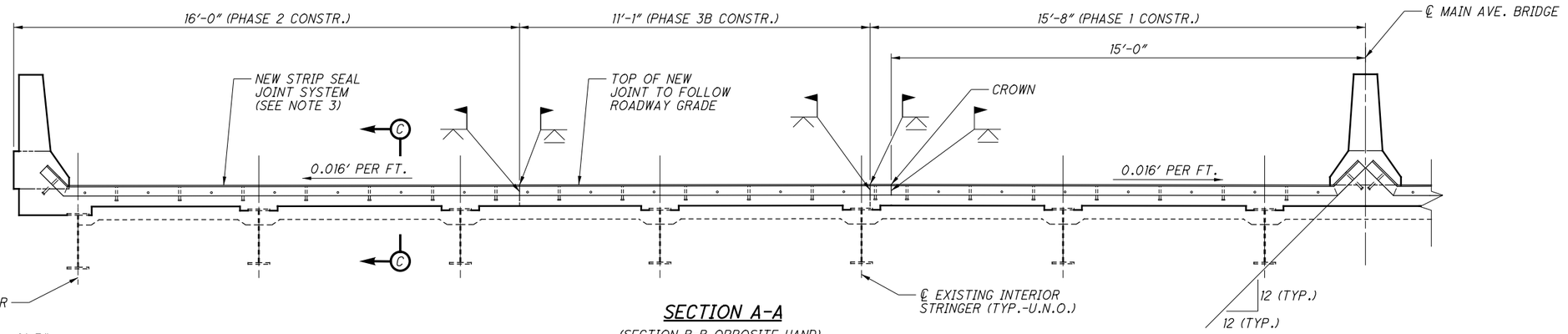


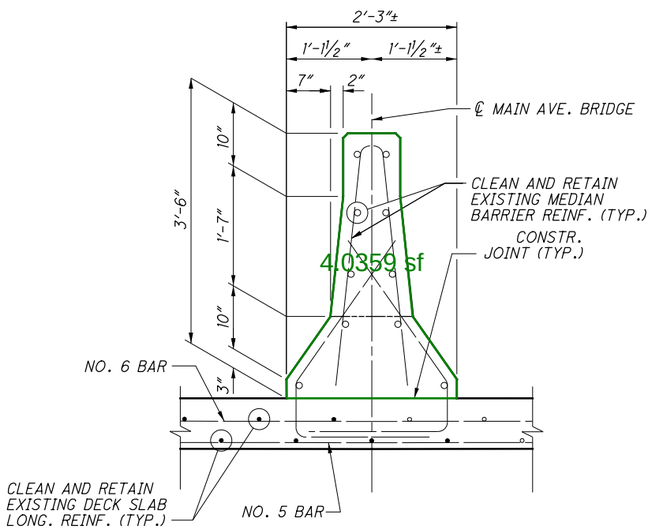
PART PLAN - EXPANSION JOINT O

(WESTBOUND ROADWAY SHOWN
EASTBOUND ROADWAY OPPOSITE HAND)



SECTION A-A

(SECTION B-B OPPOSITE HAND)



SECTION E-E

(FOR ADDITIONAL DETAILS, SEE SECTION D-D)

NOTES:

1. FOR SECTION C-C, SEE SHEET S23/S95.
2. FOR SECTION D-D, SEE SHEET S20/S95.
3. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

DECK JOINT REPLACEMENT - EXPANSION JOINT O (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S22/S95

73
154

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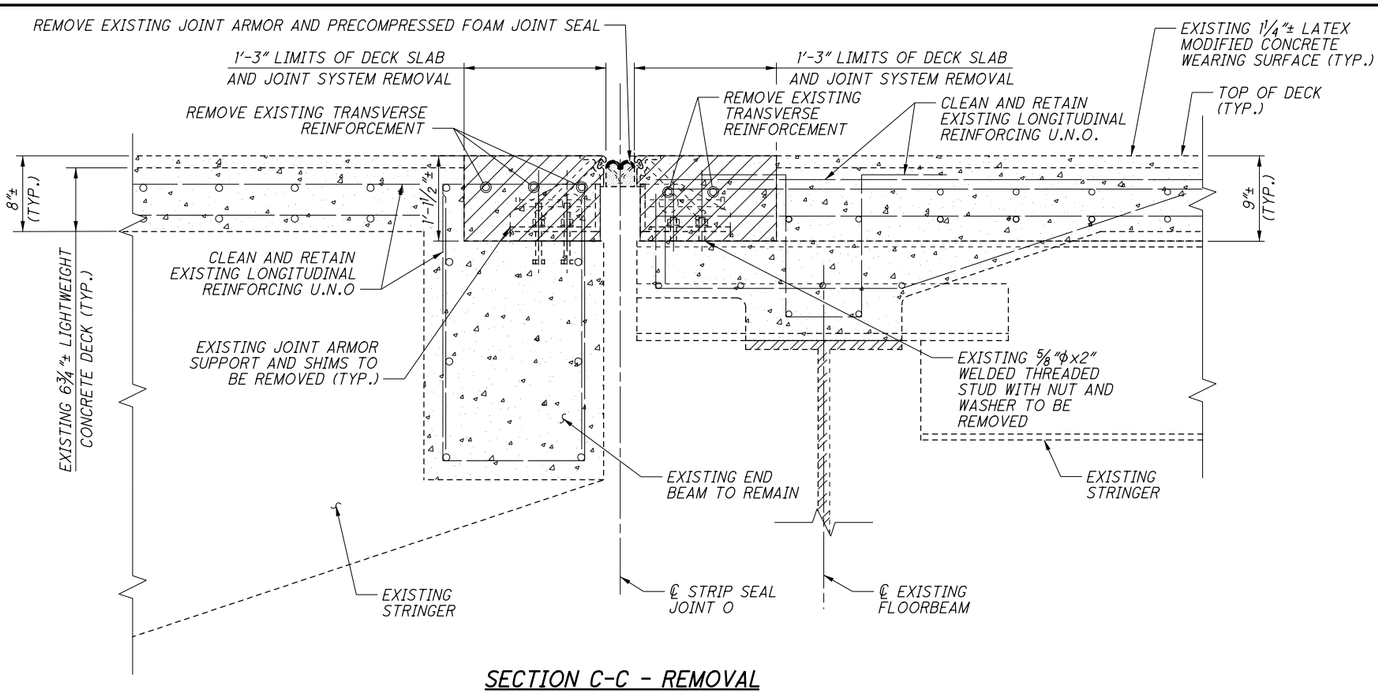
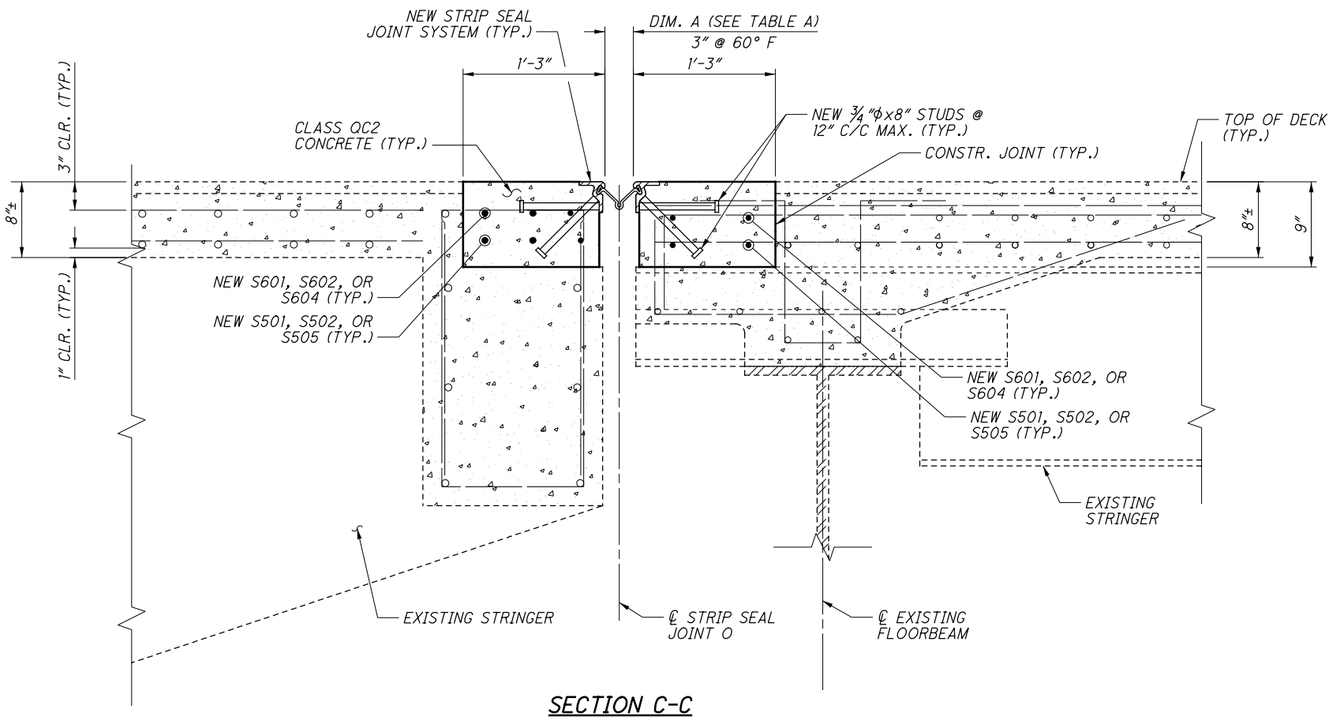


SECTION C-C - REMOVAL



SECTION C-C

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/16"
40°F	3 1/8"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 7/8"
90°F	2 13/16"

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR EXPANSION JOINT O PLAN, ADDITIONAL DETAILS AND NOTES, SEE SHEET S22/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S23/S95

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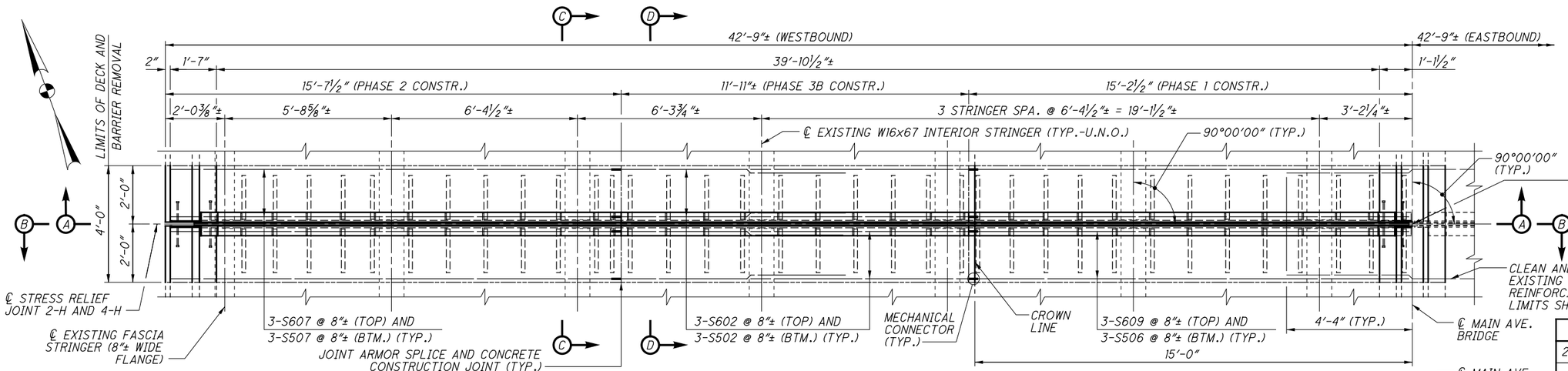


PART PLAN - STRESS RELIEF JOINT 2-H AND 4-H

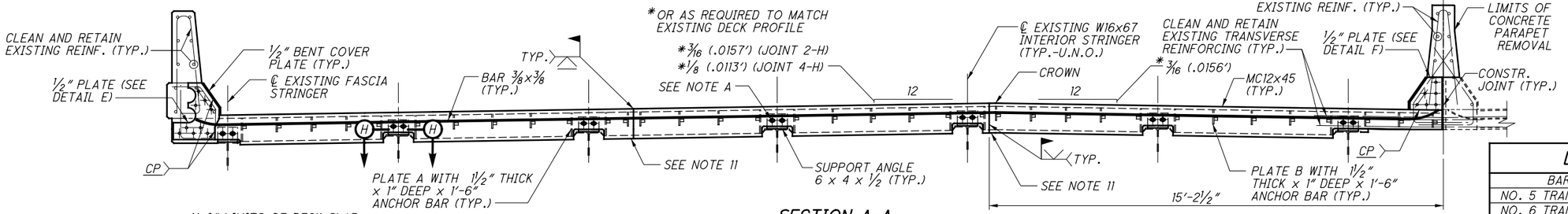
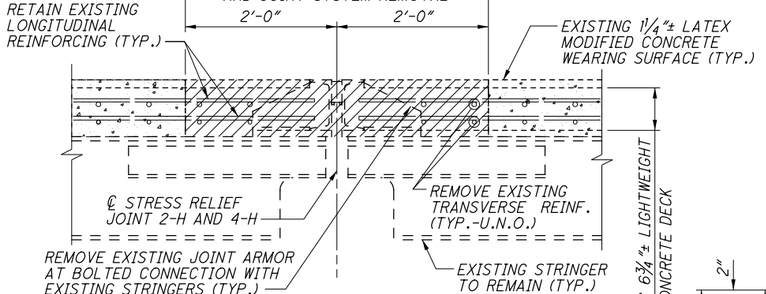
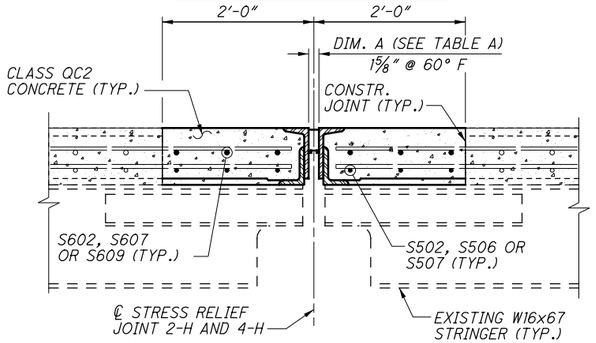


TABLE A	
2.5" COMPRESSION SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	2⅜"
40°F	2"
50°F	1Ⅼ⅜"
60°F	1⅝"
70°F	1Ⅼ⅛"
80°F	1¼"
90°F	1⅛"

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 TRANSVERSE	3'-3" MIN.
NO. 6 TRANSVERSE	3'-10" MIN.



SECTION C-C - REMOVAL

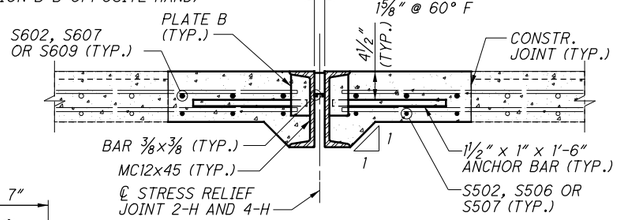


SECTION C-C

(FOR ADDITIONAL DETAILS, SEE SECTIONS C-C REMOVAL AND D-D)
(EXISTING FLOORBEAM NOT SHOWN)

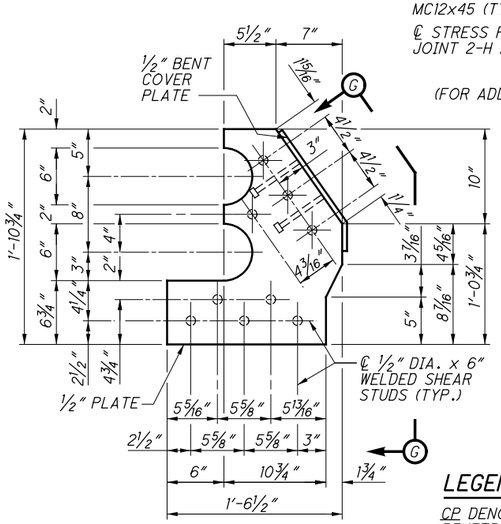
SECTION A-A

(SECTION B-B OPPOSITE HAND)

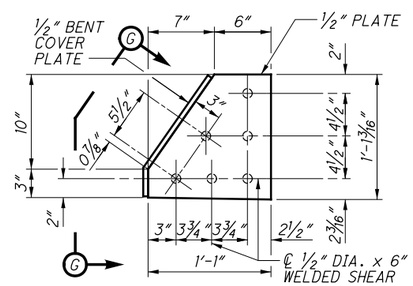


SECTION D-D

(FOR ADDITIONAL DETAILS, SEE SECTION C-C)



DETAIL E



DETAIL F

LEGEND

CP DENOTES COMPLETE PENETRATION WELD

LIMITS OF CONCRETE AND JOINT SYSTEM REMOVAL

NOTES:

1. THE DETAILS ON THIS SHEET SHOW THE WABO COMPRESSION SEAL JOINT SYSTEM (MODEL NO. WA-250) AS MANUFACTURED BY WATSON BOWMAN ACME CORP. THE CONTRACTOR HAS THE OPTION OF USING AN EQUIVALENT COMPRESSION SEAL JOINT SYSTEM MANUFACTURED BY THE D.S. BROWN COMPANY OR BY AN APPROVED COMPRESSION SEAL JOINT SYSTEM MANUFACTURER. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REVISED PLAN DETAILS SHOWING THE EQUIVALENT STRIP SEAL JOINT SYSTEM AT NO ADDITIONAL COST TO THE PROJECT.
2. REMOVAL OF THE EXISTING BRIDGE DECK, SIP FORMS, MEDIAN BARRIER AND BRIDGE PARAPET TO THE LIMITS SHOWN IN THE PLANS SHALL BE IN ACCORDANCE WITH CMS 202.03 AND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, FOR PAYMENT.
3. MECHANICAL CONNECTORS SHALL BE IN ACCORDANCE WITH CMS 509.07.
4. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW STRESS RELIEF JOINTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: STRESS RELIEF JOINT REPLACEMENT. CONCRETE AND REINFORCING STEEL SHALL BE PAID FOR SEPARATELY.
5. FOR ADDITIONAL DETAILS, SEE ODOT STD. DRAWING EXJ-2-81.
6. FOR VIEW G-G, SECTION H-H, AND NOTE A, SEE SHEET S30/S95.
7. FOR LOCATION OF STRESS RELIEF JOINT 2-H AND 4-H, SEE SHEET S14/S95.
8. FOR TYPICAL FASCIA PARAPET DETAILS, SEE SECTION D-D ON SHEET S20/S95.
9. FOR TYPICAL MEDIAN BARRIER DETAILS, SEE SECTION E-E ON SHEET S25/S95.
10. CONTRACTOR IS TO SURVEY CROSS SLOPES PRIOR TO REMOVAL OF EXISTING JOINT TO ENSURE PROPER CROSS SLOPE IS MAINTAINED DURING REPLACEMENT.
11. CONTRACTOR IS TO HOLD BACK DECK SLAB 2" FROM PHASE CONSTRUCTION JOINTS IN PHASES 1 AND 2 TO ALLOW FOR WELDING OF JOINT ARMOR IN PHASE 3. THE VOID IN THE DECK IS TO BE FILLED WITH WOOD, HIGH DENSITY FOAM, OR OTHER SUITABLE MATERIAL THAT IS TO BE REMOVED PRIOR TO POURING DECK SLAB IN PHASE 3.
12. CUT AND REMOVE STAY-IN-PLACE DECK FORMS AS NEEDED, DO NOT REPLACE. CONTRACTOR IS TO TOUCH UP EDGES OF CUT FORMS AND ANY SURROUNDING AREAS DAMAGED DURING REMOVAL OF FORMWORK PER ASTM A780. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113
DESIGNED ZTW
DRAWN JLV
CHECKED CTG
REVIEWED PJA
DATE 12-19-16
REVISED
STRUCTURE FILE NUMBER 18000035
DECK JOINT REPLACEMENT - STRESS RELIEF JOINT 2-H AND 4-H
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER
CUY-2-14.41
PID No. 85377
S24/S95
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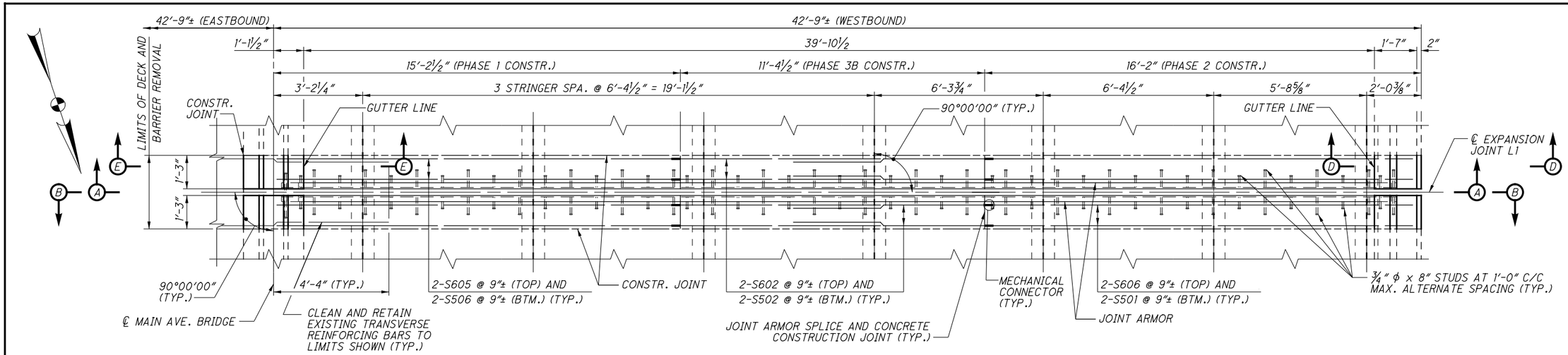
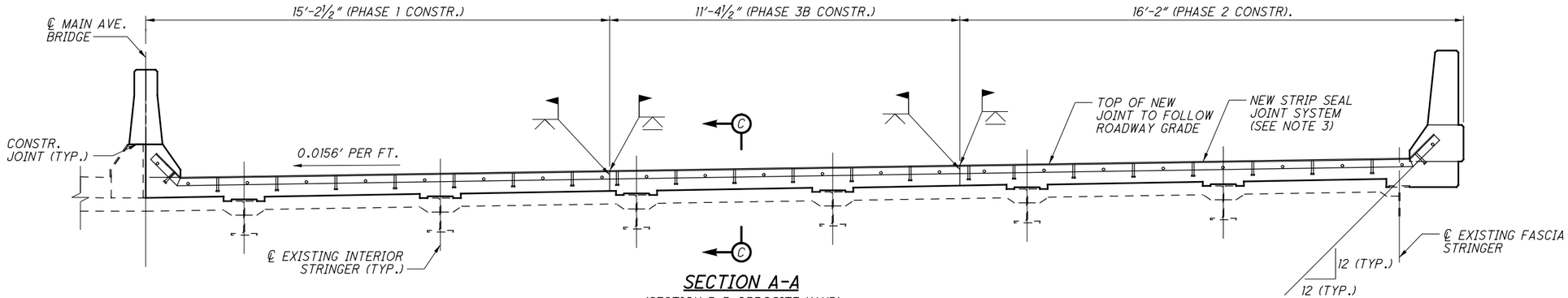
85377MD032-S.R. 2-H and 4-H 3/30/2017 2:12:43 PM mrfisco

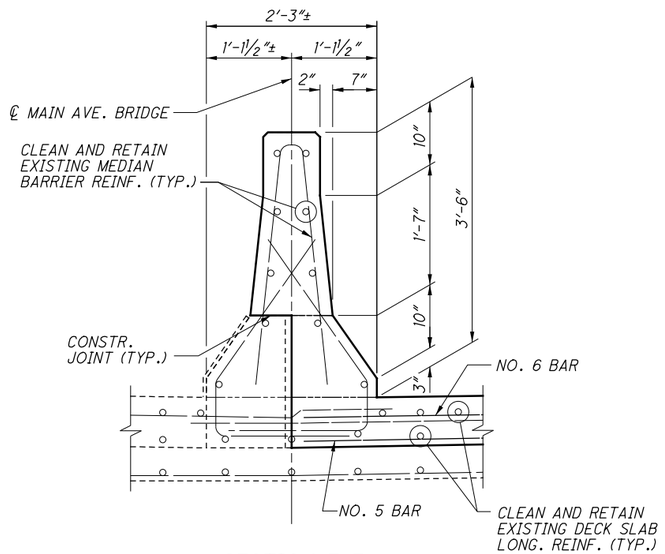


PART PLAN - EXPANSION JOINT L1



SECTION A-A

(SECTION B-B OPPOSITE HAND)



SECTION E-E

(FOR ADDITIONAL DETAILS, SEE SECTION D-D)

NOTES:

1. FOR SECTION C-C, SEE SHEET S26/S95.
2. FOR SECTION D-D, SEE SHEET S20/S95.
3. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT L1 (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S25/S95

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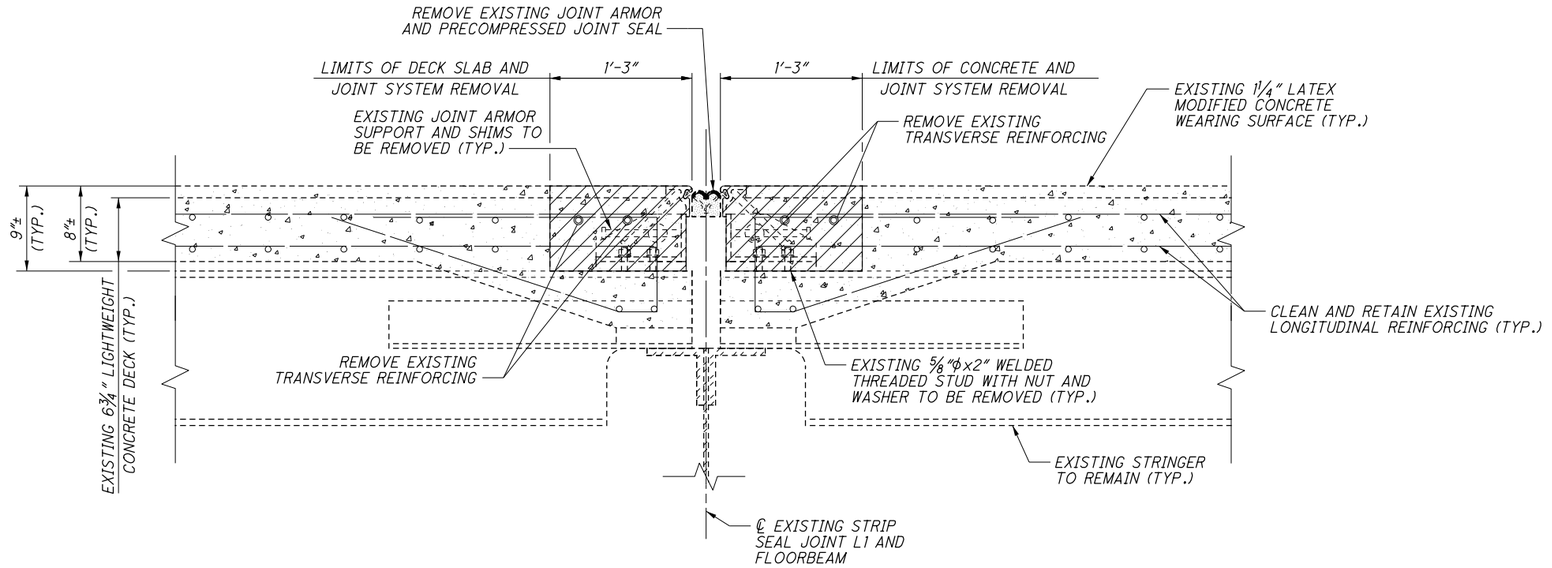
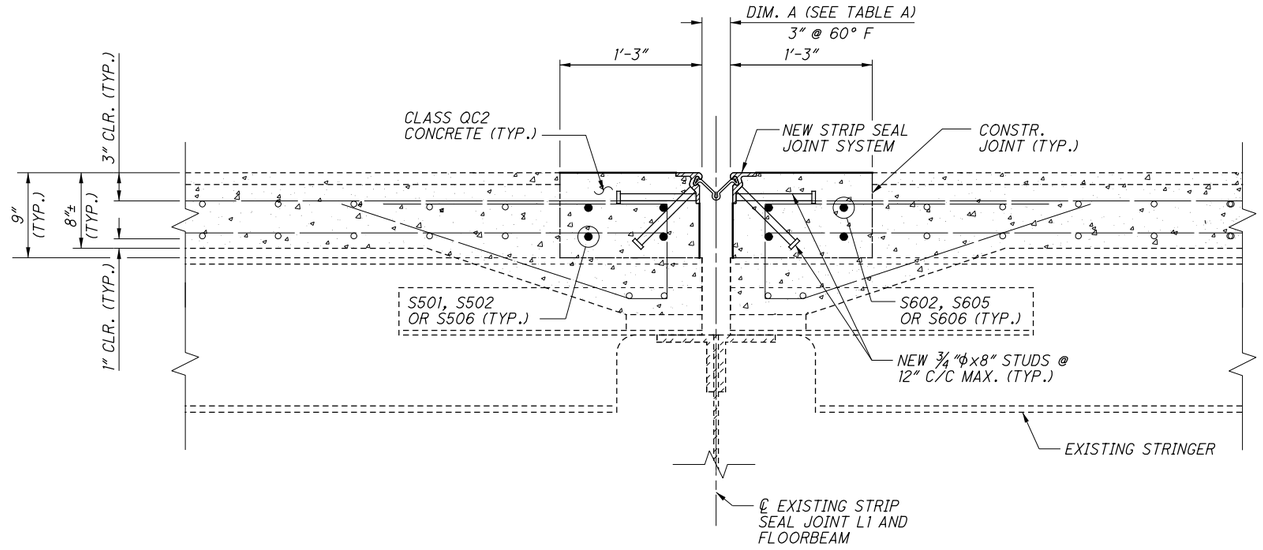


SECTION C-C - REMOVAL



SECTION C-C

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/16"
40°F	3 1/8"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 7/8"
90°F	2 13/16"

LEGEND:

▨ - LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR EXPANSION JOINT L1 PLAN, ADDITIONAL DETAILS AND NOTES, SEE SHEET S25/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT L1 (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S26/S95

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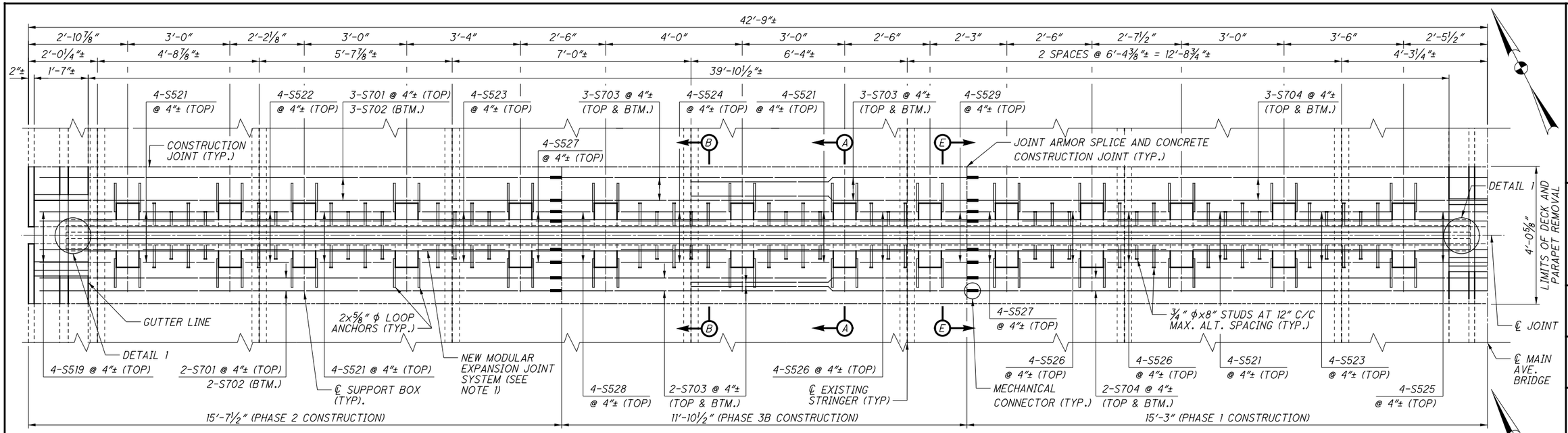
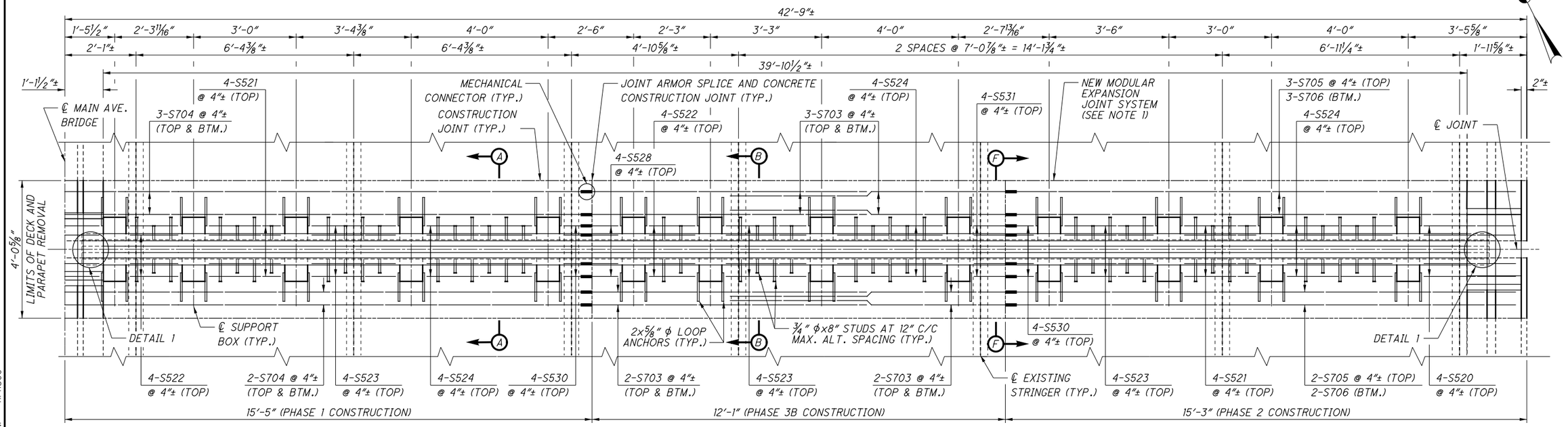


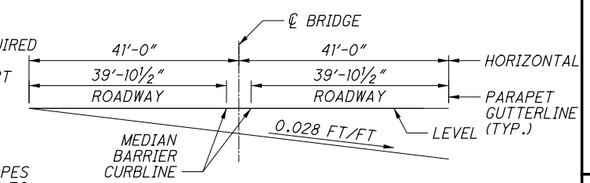
PLAN - MODULAR JOINT L (WESTBOUND)



PLAN - MODULAR JOINT L (EASTBOUND)

NOTES:

1. THE DETAILS ON THIS SHEET SHOW THE WABO MODULAR JOINT SYSTEM (MODEL NO. STM-600) AS MANUFACTURED BY WATSON BOWMAN ACME CORP. THE CONTRACTOR HAS THE OPTION OF USING AN EQUIVALENT MODULAR JOINT SYSTEM MANUFACTURED BY THE D.S. BROWN COMPANY OR BY AN APPROVED MODULAR JOINT SYSTEM MANUFACTURER. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REVISED PLAN DETAILS SHOWING THE EQUIVALENT MODULAR EXPANSION JOINT SYSTEM AT NO ADDITIONAL COST TO THE PROJECT. NEW JOINT ARMOR ON THE JOINT SYSTEM IS TO BE GALVANIZED.
2. REMOVAL OF THE EXISTING DECK SLAB, SIP FORMS, JOINT ARMOR (INCLUDING ANGLES, CONCRETE, ANCHOR STUDS, AND ⅝" WELDED STUDS OR ANCHORS), AND PARAPETS TO THE LIMITS SHOWN IN THE PLANS SHALL BE IN ACCORDANCE WITH CMS 202.03 AND SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT.
3. MECHANICAL CONNECTORS SHALL BE IN ACCORDANCE WITH CMS 509.07.
4. FOR DETAIL 1 , SEE SHEET S20/S95.
5. FOR SECTIONS A-A, AND B-B, SEE SHEET S28/S95.
6. FOR SECTIONS E-E AND F-F SEE SHEETS S29A/S95 AND S29B/S95 .
7. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE NEW MODULAR JOINTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: MODULAR EXPANSION JOINT REPLACEMENT. CONCRETE AND REINFORCING STEEL SHALL BE PAID FOR SEPARATELY.
8. FOR PARAPET DETAILS, SEE SECTION D-D ON SHEET S29/S95.
9. FOR LOCATION OF JOINT L, SEE SHEET S14/S95.
10. CONTRACTOR IS TO CUT EXSTING LONGITUDINAL REINFORCEMENT AS REQUIRED WHERE CONFLICTS EXIST WITH NEW LOCATIONS OF MODULAR JOINT SUPPORT BOXES.
11. CUT AND REMOVE STAY-IN-PLACE DECK FORMS AS NEEDED, DO NOT REPLACE.
12. CONTRACTOR IS TO SURVEY CROSS SLOPES PRIOR TO REMOVAL OF EXISTING JOINT TO ENSURE PROPER CROSS SLOPE IS MAINTAINED DURING REPLACEMENT.
13. FOR ADDITIONAL NOTES SEE SHEET S28/S95 .



JOINT L (WESTBOUND) JOINT L (EASTBOUND)

JOINT L PROFILE

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	ADA	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - MODULAR EXPANSION JOINT L (1 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S27/S95

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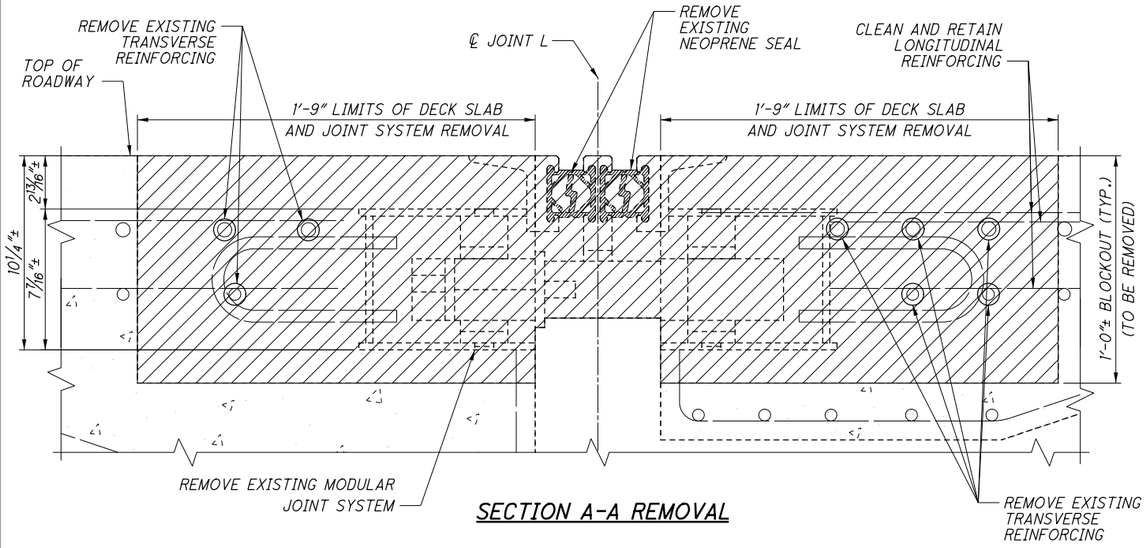
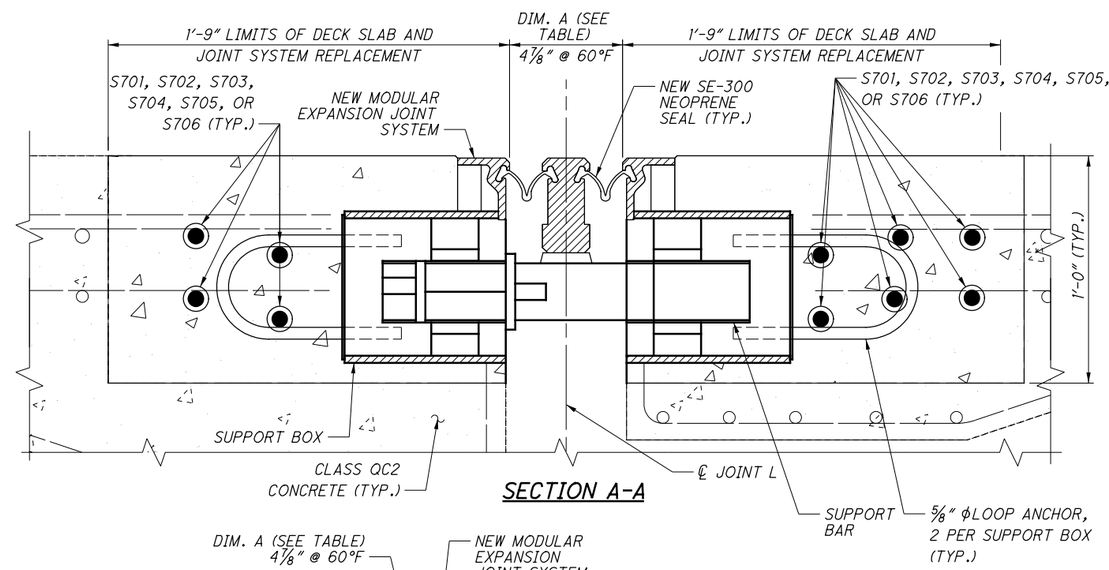
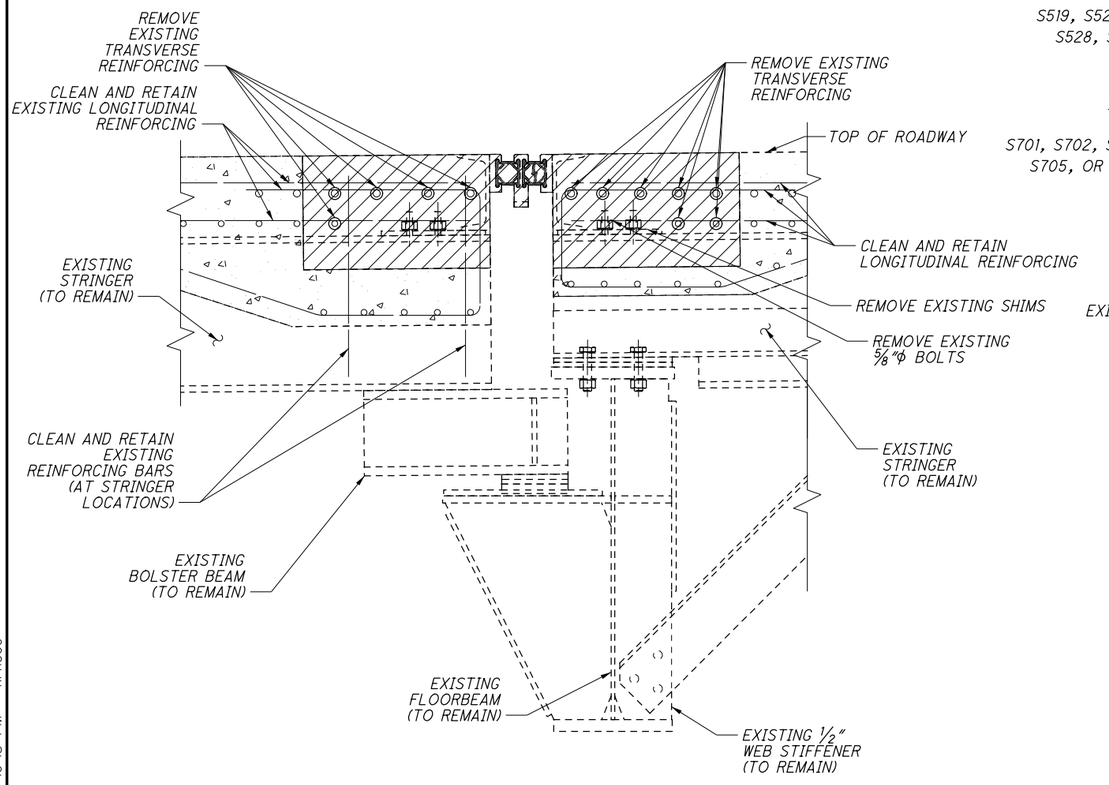


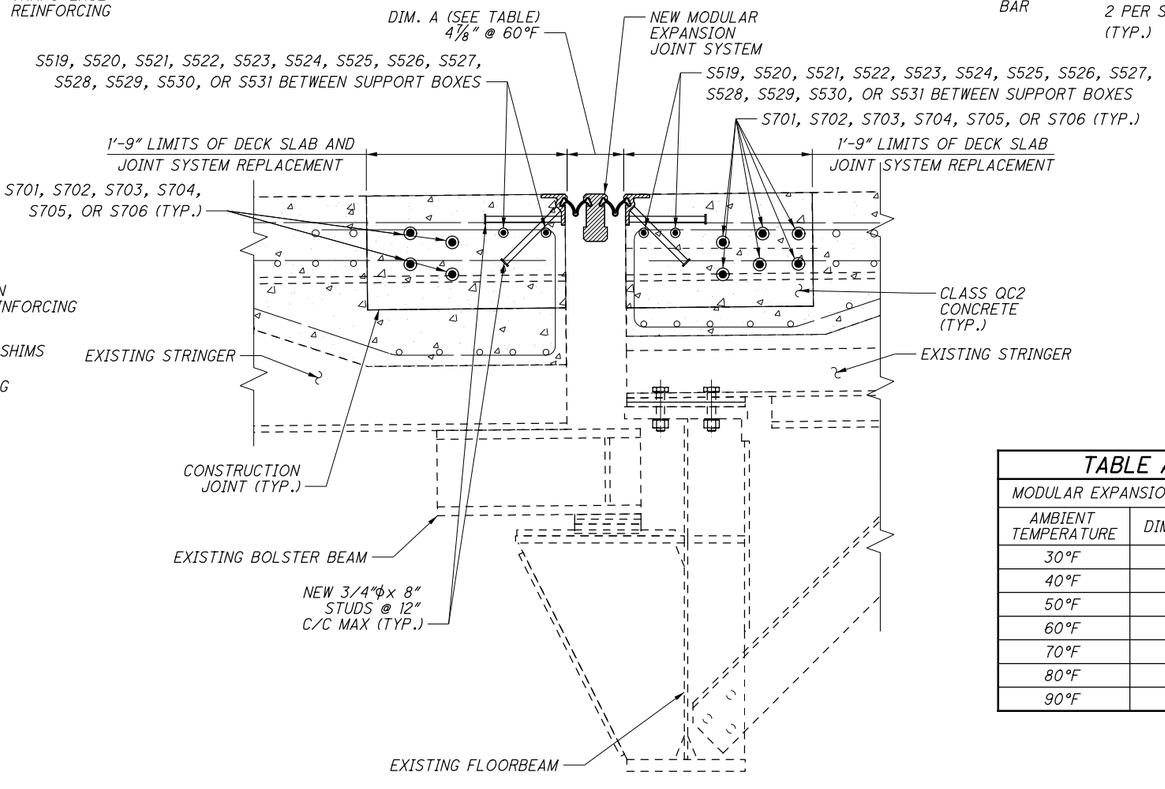
SECTION A-A REMOVAL



SECTION A-A



SECTION B-B REMOVAL



SECTION B-B PROPOSED

TABLE A	
MODULAR EXPANSION JOINT L	
AMBIENT TEMPERATURE	DIMENSION A
30°F	5 1/8"
40°F	5 9/16"
50°F	5 3/16"
60°F	4 7/8"
70°F	4 9/16"
80°F	4 3/16"
90°F	3 7/8"

LEGEND:

- LIMITS OF CONCRETE AND JOINT SYSTEM REMOVAL

NOTES:

1. SEE SHEET S27/S95 FOR ADDITIONAL NOTES, SECTION CUT LOCATIONS, AND JOINT L PLAN VIEWS.
2. CONTRACTOR IS TO INSTALL TEMPORARY NEOPRENE GLANDS IN JOINT ARMOR DURING PHASES 1 AND 2 PER MANUFACTURER'S RECOMMENDATIONS. THESE TEMPORARY GLANDS ARE TO BE REMOVED AND REPLACED WITH THE PERMANENT GLAND IN PHASE 3. ALL LABOR AND MATERIALS ASSOCIATED WITH THE INSTALLATION AND REMOVAL OF THE TEMPORARY GLANDS SHALL BE CONSIDERED INCIDENTAL TO THE JOINT REPLACEMENT WORK.
3. THE MODULAR SUPPORT BAR SPACING SHALL BE DESIGNED AS DETAILED.

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	ADA	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - MODULAR EXPANSION JOINT L (2 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S28/S95

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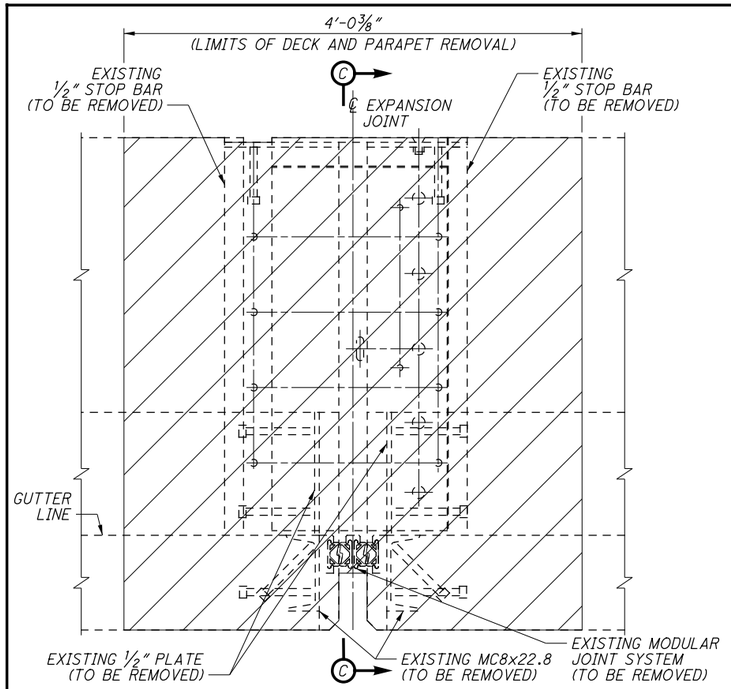
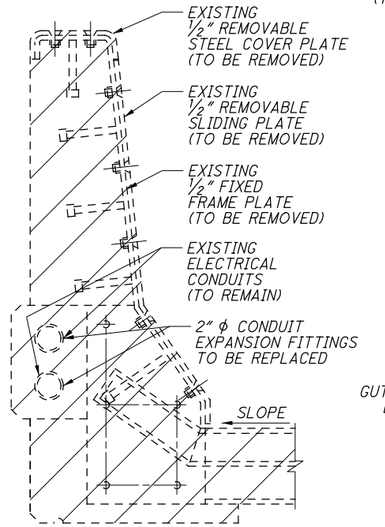


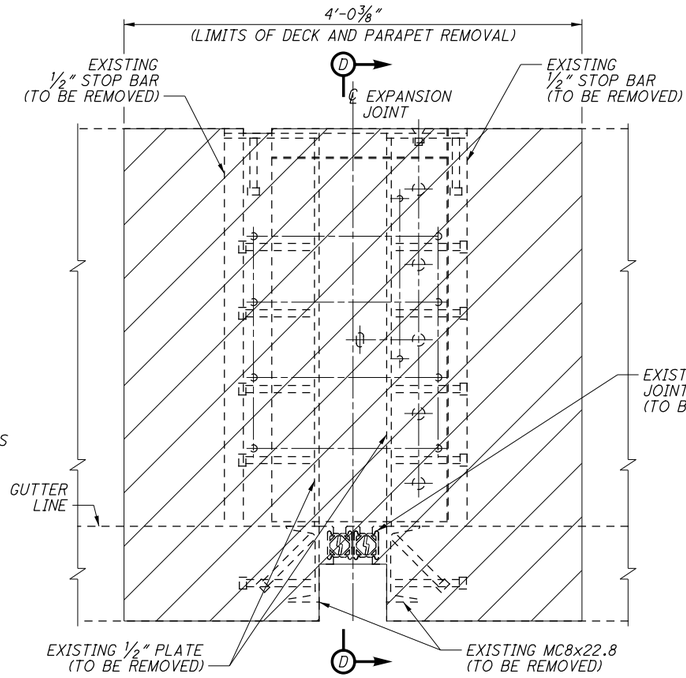
PARAPET ELEVATION REMOVAL

(REINFORCEMENT NOT SHOWN)



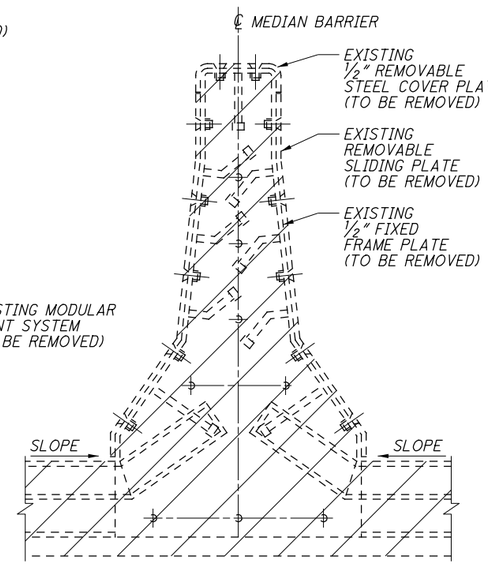
SECTION C-C REMOVAL

(REINFORCEMENT NOT SHOWN)



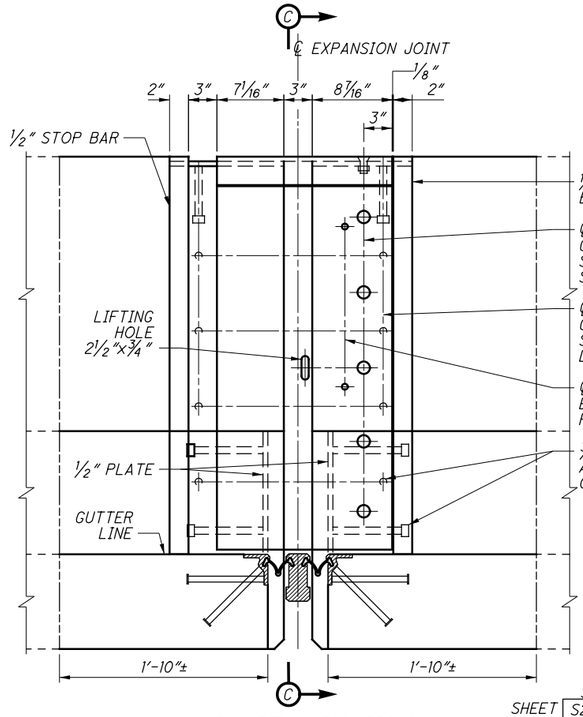
MEDIAN BARRIER ELEVATION REMOVAL

(REINFORCEMENT NOT SHOWN)



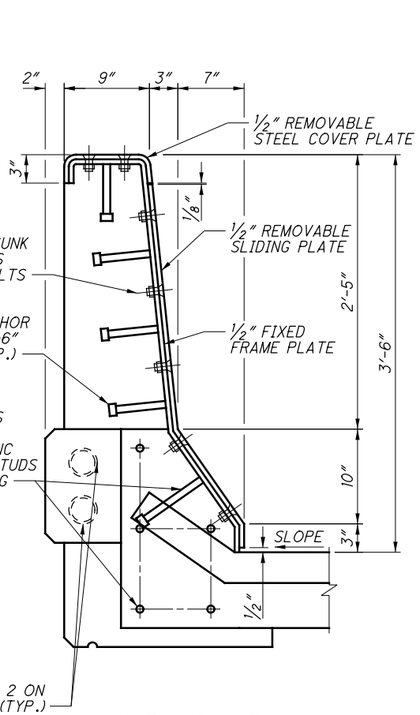
SECTION D-D REMOVAL

(REINFORCEMENT NOT SHOWN)



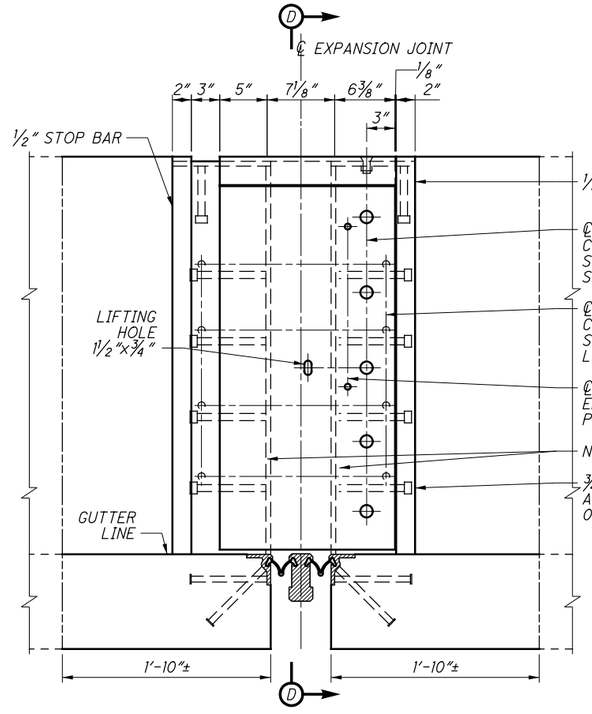
PARAPET ELEVATION

(REINFORCEMENT NOT SHOWN)



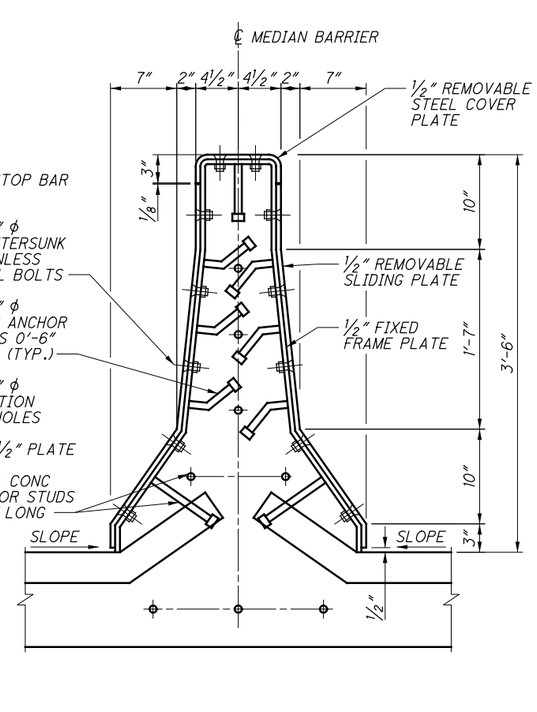
SECTION C-C

(REINFORCEMENT NOT SHOWN)



MEDIAN BARRIER ELEVATION

(REINFORCEMENT NOT SHOWN)



SECTION D-D

(REINFORCEMENT NOT SHOWN)

LEGEND:

- LIMITS OF CONCRETE AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR PLAN VIEW OF MODULAR JOINT L, SEE SHEET S27/S95.
2. FOR REINFORCEMENT DETAILS, SEE SHEETS S27/S95 AND S28/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	GJZ	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		1800035	

DECK JOINT REPLACEMENT - MODULAR EXPANSION JOINT L (3 OF 3)

MAIN AVENUE - BRIDGE NO. CUY-2-1441 OVER THE CUYAHOGA RIVER

CUY-2-14.41

PID No. 85377

S29/S95

80 / 154

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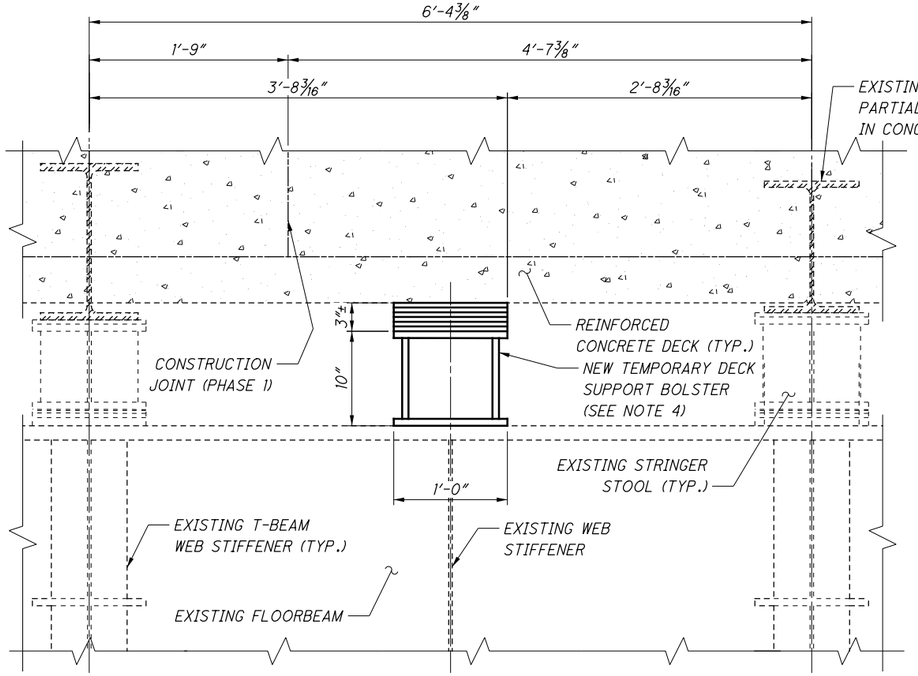
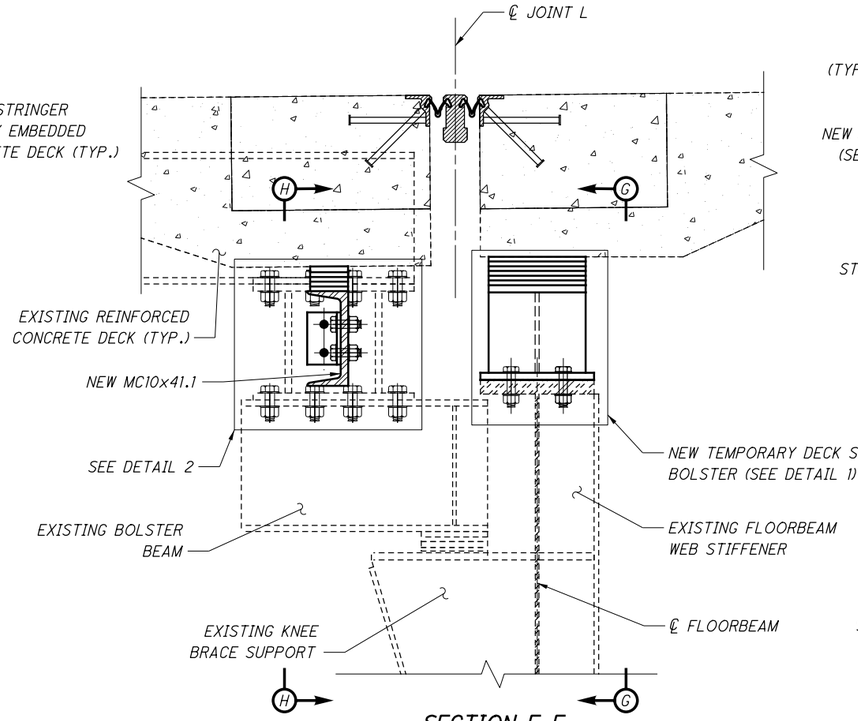
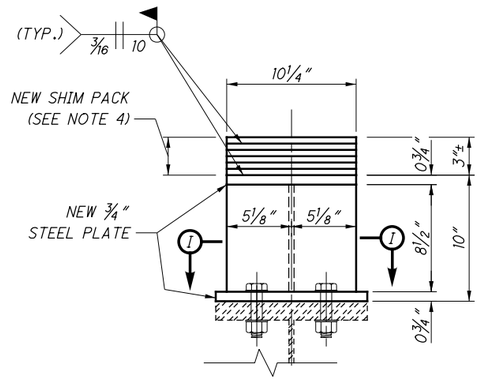


SECTION G-G

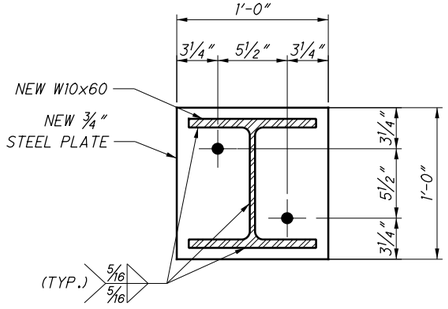


SECTION E-E

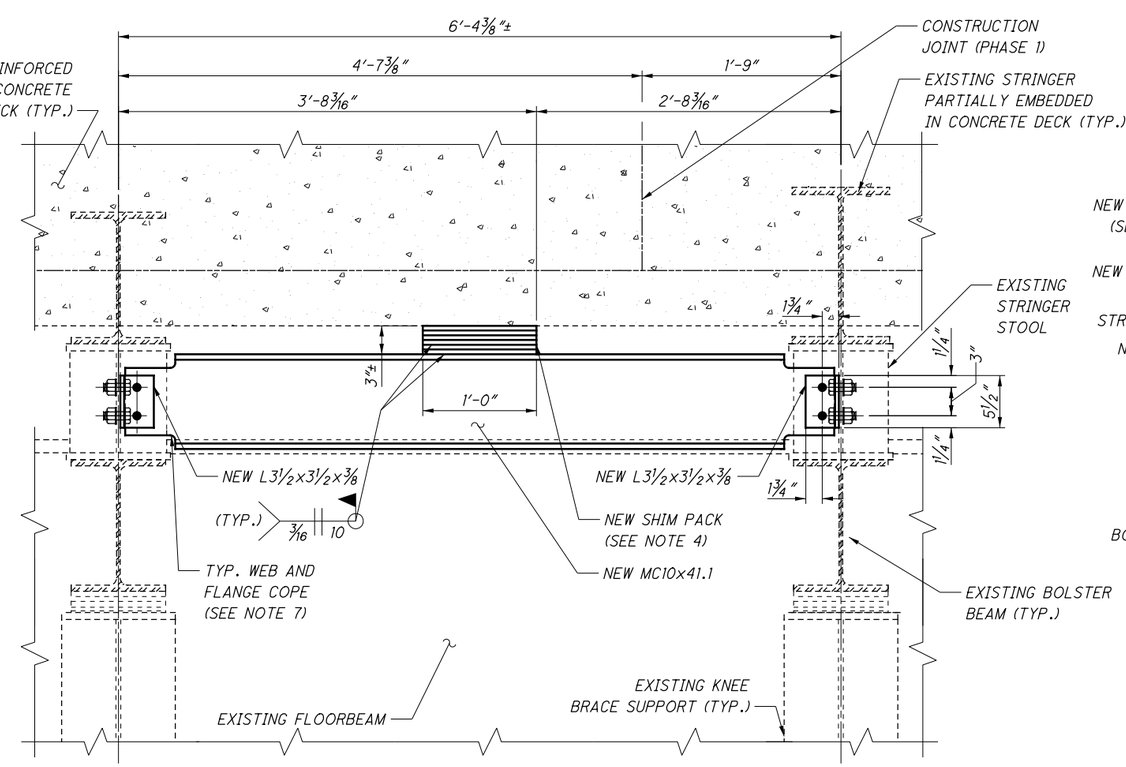
(WEST STRINGERS NOT SHOWN FOR CLARITY)



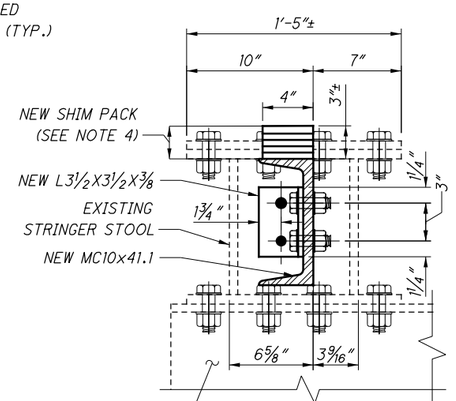
DETAIL 1



SECTION I-I



SECTION H-H



DETAIL 2

LEGEND:

● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A325 BOLT

NOTES:

1. SEE SHEET S27 / S95 FOR THE LOCATION OF SECTION E-E.
2. TEMPORARY DECK SUPPORTS ARE TO BE INSTALLED AT THE LOCATIONS SHOWN PRIOR TO THE START OF PHASE I CONSTRUCTION FOR JOINT L.
3. THE TEMPORARY DECK SUPPORTS ARE TO REMAIN UNTIL THE REPLACEMENT OF JOINT L IS COMPLETED. AFTER REMOVAL, ALL HOLES IN EXISTING MEMBERS TO REMAIN SHALL BE FILLED WITH 7/8"ϕ A325 BOLTS.
4. THE CONTRACTOR SHALL FIELD VERIFY THE TOTAL HEIGHT OF SHIM PLATES REQUIRED TO ADEQUATELY SUPPORT THE UNDERSIDE OF DECK AT THE LOCATIONS SHOWN PRIOR TO INSTALLATION. ESTIMATED HEIGHTS OF THE SHIM PLATES TO BE INSTALLED ARE GIVEN.
5. THE CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO FABRICATION OR PERFORMING WORK.
6. ALL NEW BOLTS SHALL BE 7/8"ϕ A325 HIGH STRENGTH BOLTS, AND ALL NEW HOLES SHALL BE 15/16"ϕ UNLESS NOTED OTHERWISE.
7. THE COPED ENDS OF THE MC10x41.1 DECK SUPPORT BEAM SHALL BE MADE TO THE REQUIREMENTS OF AASHTO/AWS D1.5.
8. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE TEMPORARY DECK SUPPORTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: MODULAR EXPANSION JOINT REPLACEMENT.
9. TOUCHUP OF ANY AREAS OF PAINT DAMAGED DURING INSTALLATION OR REMOVAL OF TEMPORARY SUPPORTS SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED DMD | DRAWN DMD | REVIEWED PJA | DATE 3-27-17
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

DECK JOINT REPLACEMENT - MODULAR EXPANSION JOINT L (3A OF 3)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S29A / S95

80A
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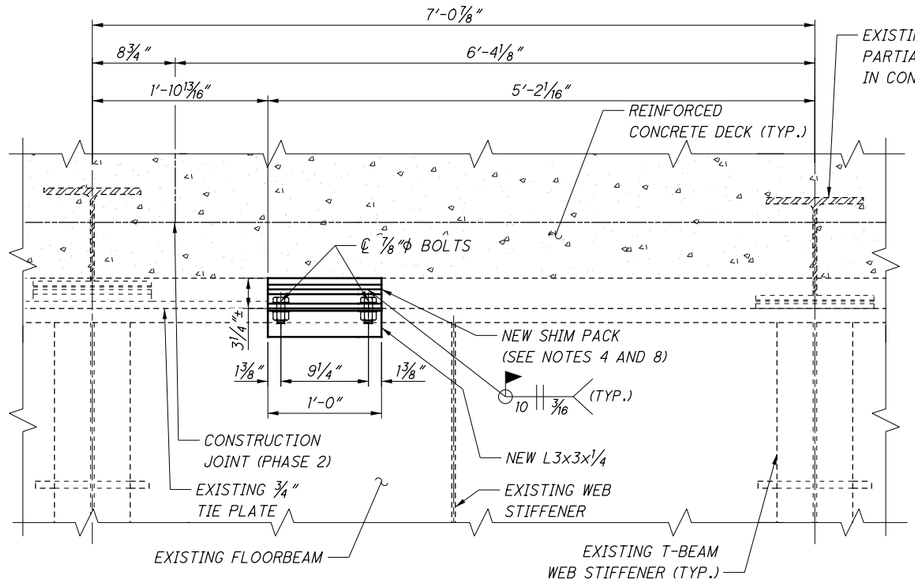
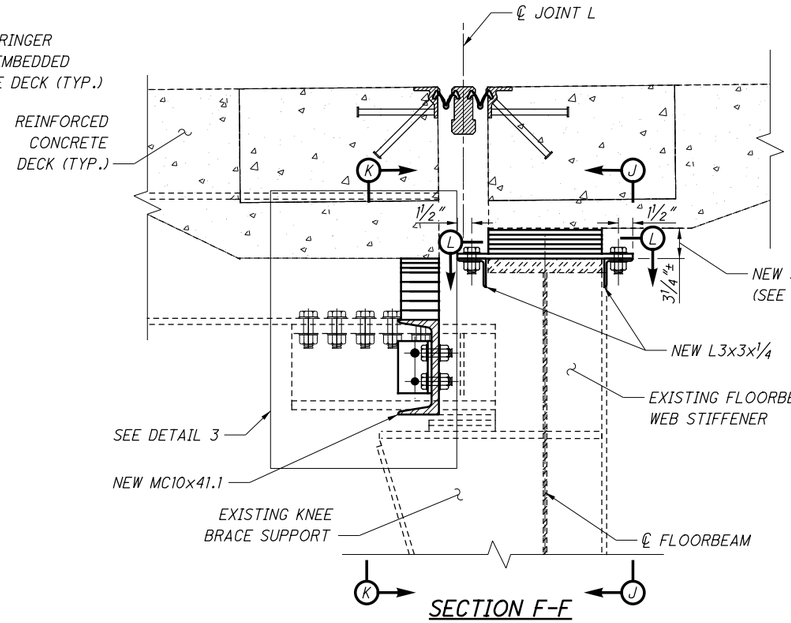
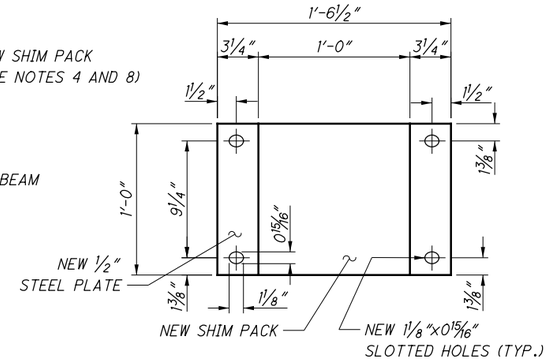


SECTION J-J

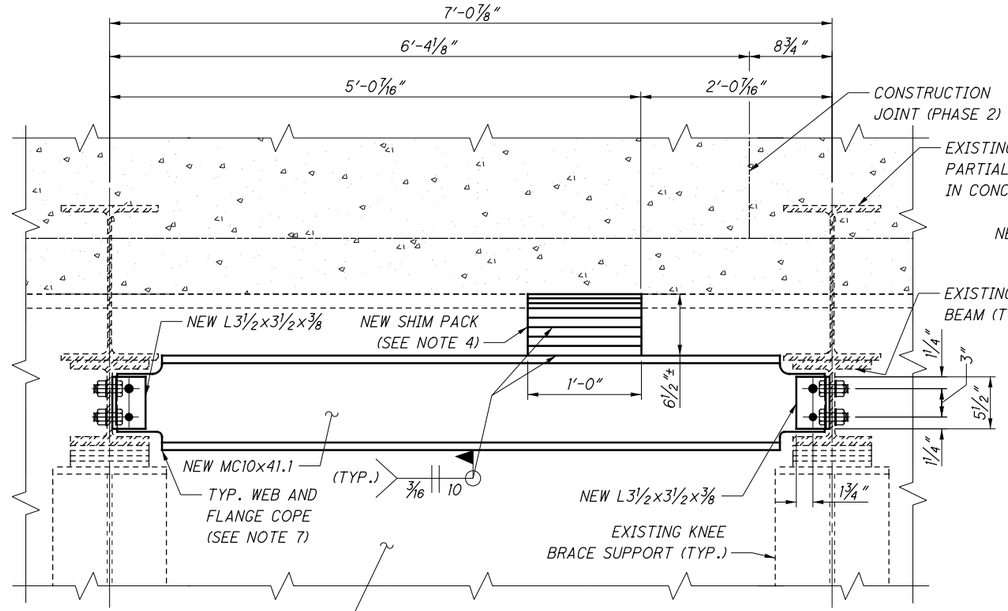


SECTION F-F

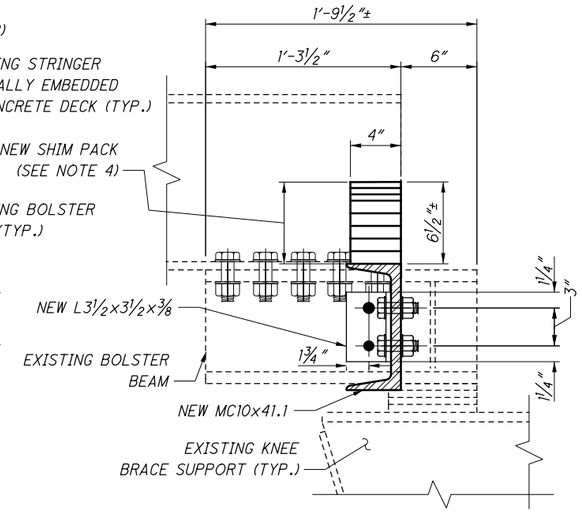
(WEST STRINGERS NOT SHOWN FOR CLARITY)



SECTION L-L



SECTION K-K



DETAIL 3

LEGEND:

● - FIELD DRILL NEW ¹⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

NOTES:

1. SEE SHEET S27/S95 FOR THE LOCATION OF SECTION E-E.
2. TEMPORARY DECK SUPPORTS ARE TO BE INSTALLED AT THE LOCATIONS SHOWN PRIOR TO THE START OF PHASE 1 CONSTRUCTION FOR JOINT L.
3. THE TEMPORARY DECK SUPPORTS ARE TO REMAIN UNTIL THE REPLACEMENT OF JOINT L IS COMPLETED. AFTER REMOVAL, ALL HOLES IN EXISTING MEMBERS TO REMAIN SHALL BE FILLED WITH ⅞"ϕ A325 BOLTS.
4. THE CONTRACTOR SHALL FIELD VERIFY THE TOTAL HEIGHT OF SHIM PLATES REQUIRED TO ADEQUATELY SUPPORT THE UNDERSIDE OF DECK AT THE LOCATIONS SHOWN PRIOR TO INSTALLATION. ESTIMATED HEIGHTS OF THE SHIM PLATES TO BE INSTALLED ARE GIVEN.
5. THE CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO FABRICATION OR PERFORMING WORK.
6. ALL NEW BOLTS SHALL BE ⅞"ϕ A325 HIGH STRENGTH BOLTS, AND ALL NEW HOLES SHALL BE ¹⁵⁄₁₆"ϕ UNLESS NOTED OTHERWISE.
7. THE COPED ENDS OF THE MC10x41.1 DECK SUPPORT BEAM SHALL BE MADE TO THE REQUIREMENTS OF AASHTO/AWS D1.5.
8. KEEPER ANGLES WITH ¹⁵⁄₁₆"ϕ BOLT HOLES SHALL BE INSTALLED SNUG AGAINST THE FLOORBEAM TOP FLANGE EDGES AND SHIM PACK IS TO BE PLACED IMMEDIATELY ADJACENT TO FLOORBEAM TIE PLATE.
9. PAYMENT FOR LABOR, MATERIALS, AND INSTALLATION OF THE TEMPORARY DECK SUPPORTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER MISC.: MODULAR EXPANSION JOINT REPLACEMENT.
10. TOUCHUP OF ANY AREAS OF PAINT DAMAGED DURING INSTALLATION OR REMOVAL OF TEMPORARY SUPPORTS SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED DMD | DRAWN DMD | REVIEWED PJA | DATE 3-27-17
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

DECK JOINT REPLACEMENT - MODULAR EXPANSION JOINT L (3B OF 3)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S29B/S95

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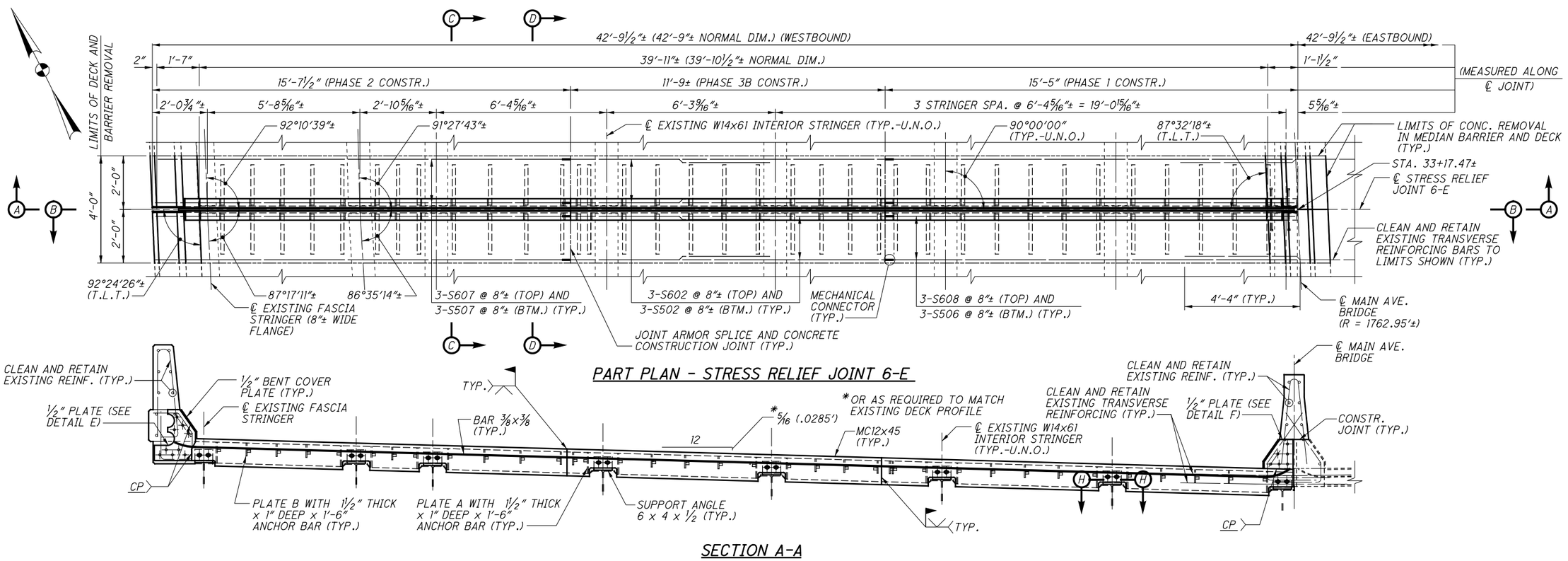
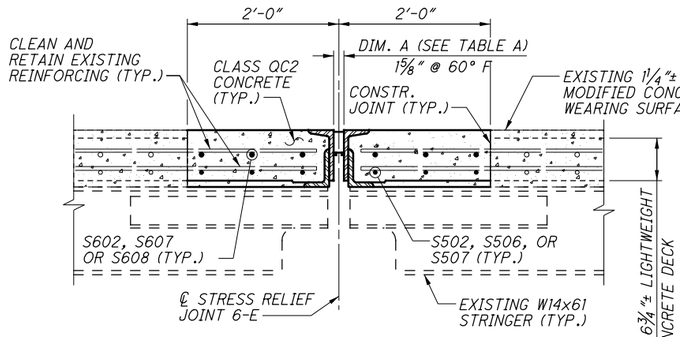


PART PLAN - STRESS RELIEF JOINT 6-E

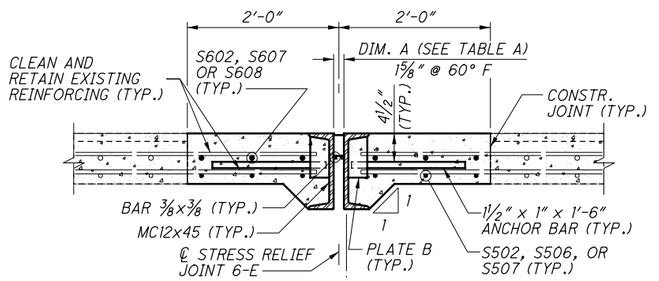
SECTION A-A

(SECTION B-B OPPOSITE HAND)



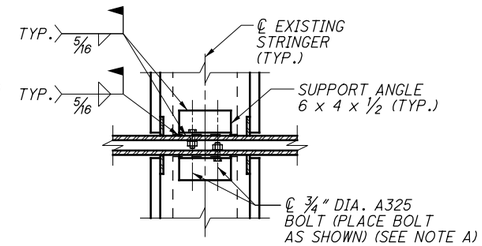
SECTION C-C

(FOR ADDITIONAL DETAILS, SEE SECTION D-D)
(EXISTING FLOORBEAM NOT SHOWN)

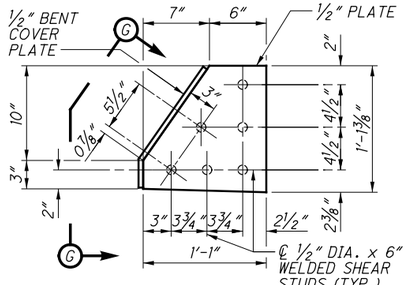


SECTION D-D

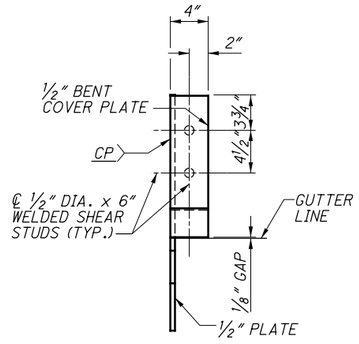
(FOR ADDITIONAL DETAILS, SEE SECTION C-C)



SECTION H-H



DETAIL F



VIEW G-G

(VIEW G-G AT PARAPET SHOWN,
VIEW G-G AT MEDIAN BARRIER SIMILAR)

NOTE A:

THE ¾" DIA. BOLTS SHALL BE REMOVED AFTER FIELD WELDING OF THE SUPPORT ANGLES HAS BEEN COMPLETED. THE HOLES IN THE SUPPORT ANGLES SHALL BE PLUGGED WITH A PLASTIC CAP OR OTHER METHOD TO THE SATISFACTION OF THE ENGINEER.

TABLE A	
2.5" COMPRESSION SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	2"
40°F	1⅞"
50°F	1¾"
60°F	1⅝"
70°F	1½"
80°F	1⅜"
90°F	1¼"

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 TRANSVERSE	3'-3" MIN.
NO. 6 TRANSVERSE	3'-10" MIN.

LEGEND:

CP INDICATES COMPLETE PENETRATION WELD

TYP.-U.N.O. DENOTES TYPICAL UNLESS NOTED OTHERWISE

T.L.T. DENOTES TO LOCAL TANGENT

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET S24/S95.
2. FOR SECTION C-C - REMOVAL AND DETAIL E, SEE SHEET S24/S95.
3. FOR LOCATION OF STRESS RELIEF JOINT 6-E, SEE SHEET S14/S95.
4. FOR TYPICAL FASCIA PARAPET DETAILS, SEE SECTION D-D ON SHEET S20/S95.
5. FOR TYPICAL MEDIAN BARRIER DETAILS, SEE SECTION E-E ON SHEET S25/S95.

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

DESIGNED ZTW | DRAWN JLV | REVIEWED PJA | DATE 12-19-16
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DECK JOINT REPLACEMENT - STRESS RELIEF JOINT 6-E
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S30/S95

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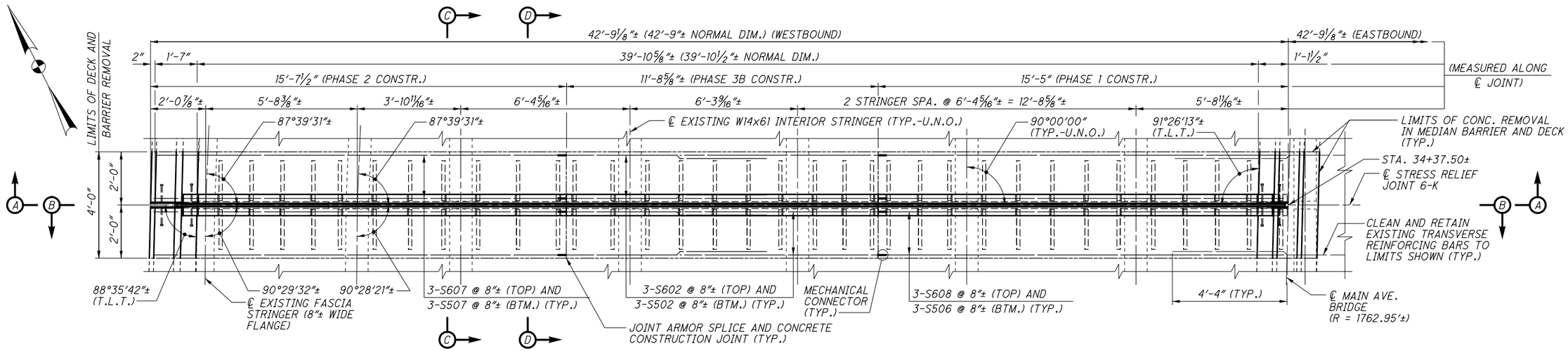
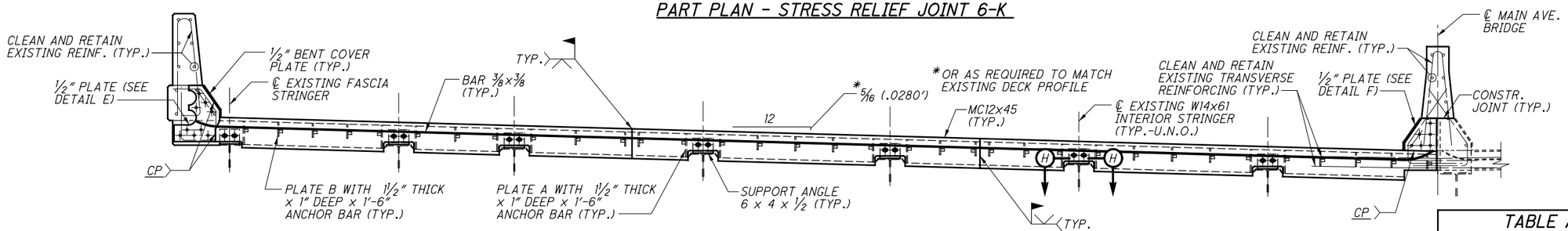
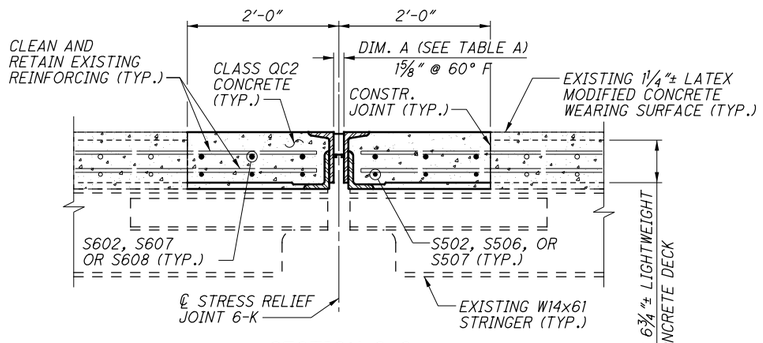


PART PLAN - STRESS RELIEF JOINT 6-K



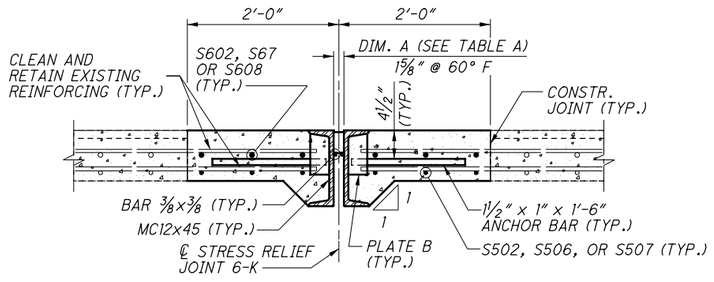
SECTION A-A

(SECTION B-B OPPOSITE HAND)



SECTION C-C

(FOR ADDITIONAL DETAILS, SEE SECTION D-D)
(EXISTING FLOORBEAM NOT SHOWN)



SECTION D-D

(FOR ADDITIONAL DETAILS, SEE SECTION C-C)

TABLE A	
2.5" COMPRESSION SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	2"
40°F	1 7/8"
50°F	1 3/4"
60°F	1 5/8"
70°F	1 1/2"
80°F	1 3/8"
90°F	1 1/4"

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 TRANSVERSE	3'-3" MIN.
NO. 6 TRANSVERSE	3'-10" MIN.

LEGEND:

CP INDICATES COMPLETE PENETRATION WELD

TYP.-U.N.O. DENOTES TYPICAL UNLESS NOTED OTHERWISE

T.L.T. DENOTES TO LOCAL TANGENT

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET S24/S95.
2. FOR SECTION C-C - REMOVAL AND DETAIL E, SEE SHEET S24/S95.
3. FOR DETAIL F, VIEW G-G AND SECTION H-H, SEE SHEET S30/S95.
4. FOR LOCATION OF STRESS RELIEF JOINT 6-K, SEE SHEET S14/S95.
5. FOR TYPICAL FASCIA PARAPET DETAILS, SEE SECTION D-D ON SHEET S20/S95.
6. FOR TYPICAL MEDIAN BARRIER DETAILS, SEE SECTION E-E ON SHEET S25/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	JLV	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CTG		1800035	

DECK JOINT REPLACEMENT - STRESS RELIEF JOINT 6-K
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S31/S95

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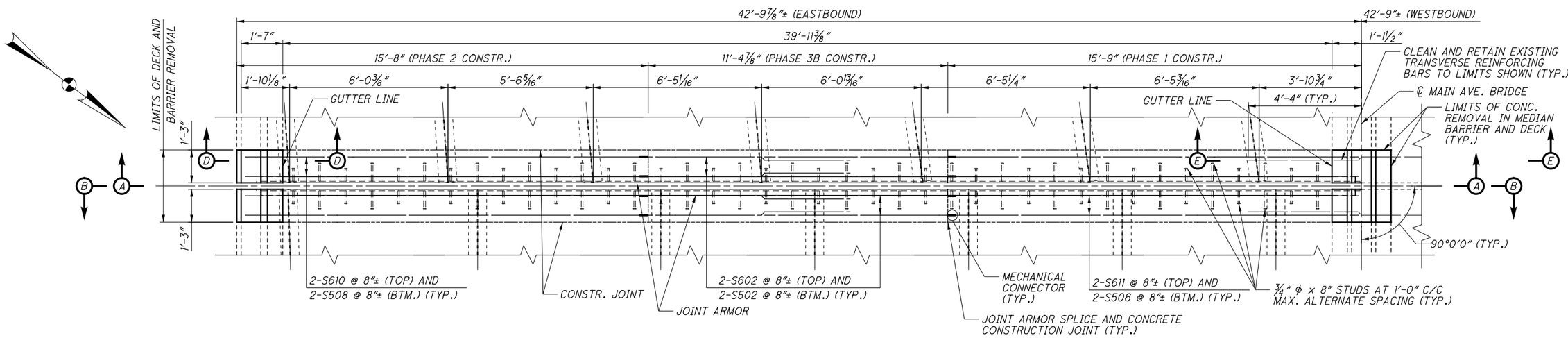
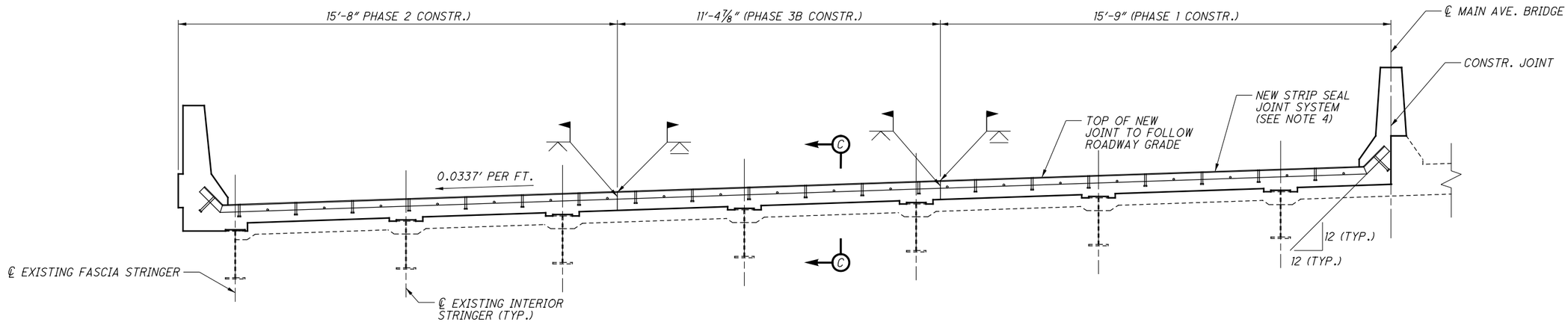


PART PLAN - EXPANSION JOINT H

(EASTBOUND ROADWAY SHOWN)



SECTION A-A

(SECTION B-B OPPOSITE HAND)

NOTES:

1. FOR SECTION C-C, SEE SHEET S33/S95.
2. FOR SECTION D-D, SEE SHEET S20/S95.
3. FOR SECTION E-E, SEE SHEET S25/S95.
4. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DRAWN	REVIEWED	DATE
KPH	PJA	12-19-16
DESIGNED	CHECKED	STRUCTURE FILE NUMBER
KPH	NRF	18000351

DECK JOINT REPLACEMENT - EXPANSION JOINT H (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S32/S95

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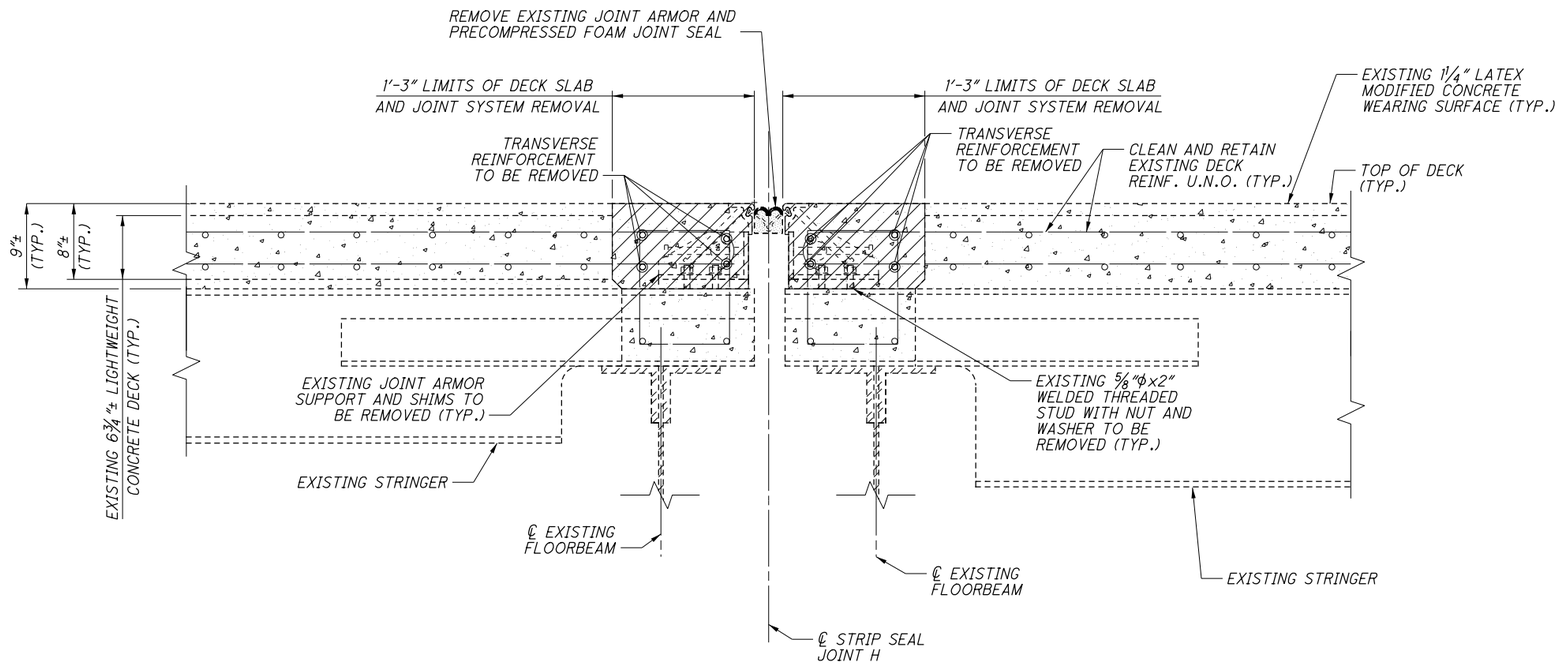
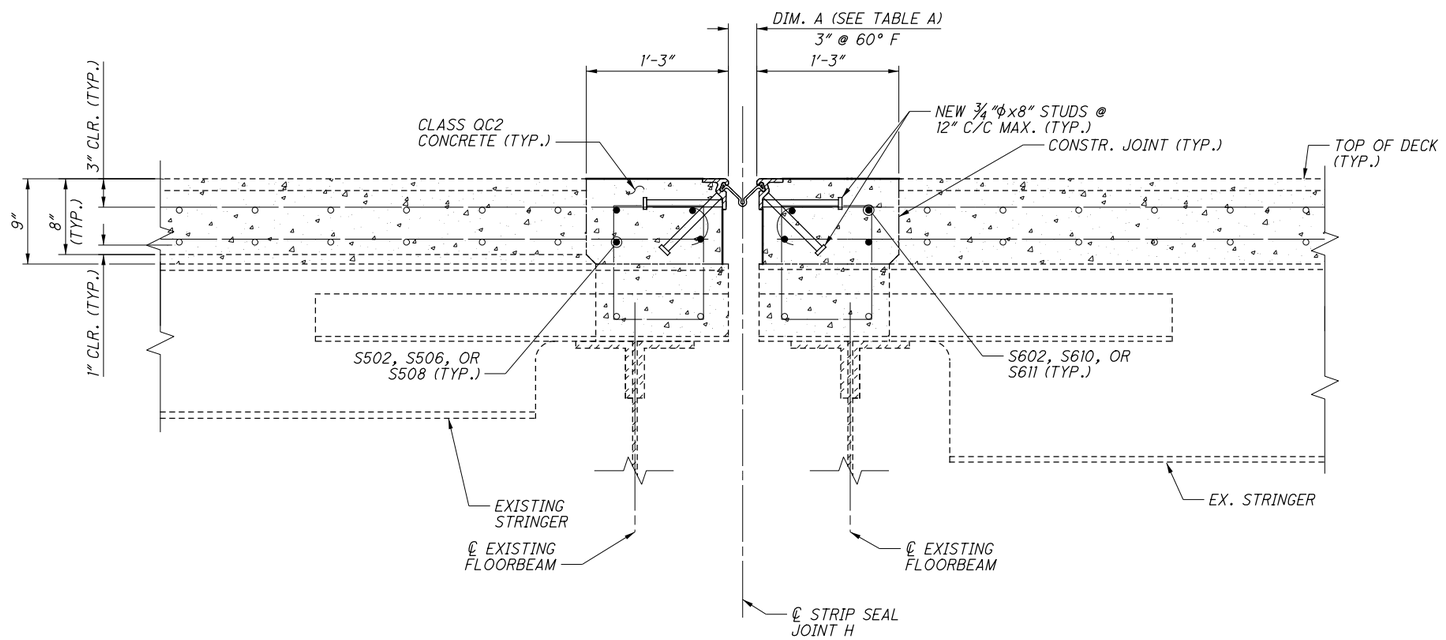


SECTION C-C REMOVAL



SECTION C-C

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/16"
40°F	3 1/8"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 7/8"
90°F	2 13/16"

LEGEND:

▨ - LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR EXPANSION JOINT H PLAN, ADDITIONAL DETAILS AND NOTES, SEE SHEET S32/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT H (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S33/S95

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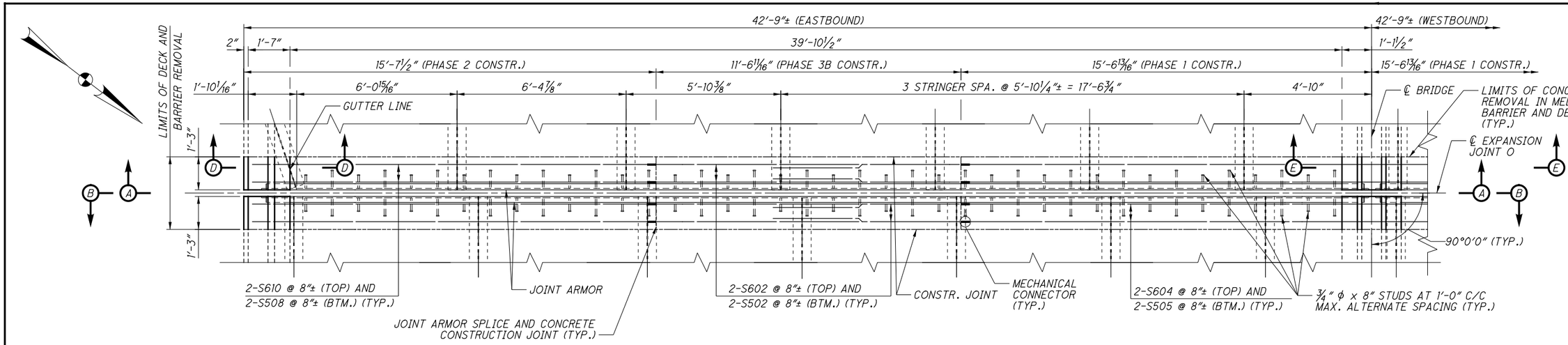
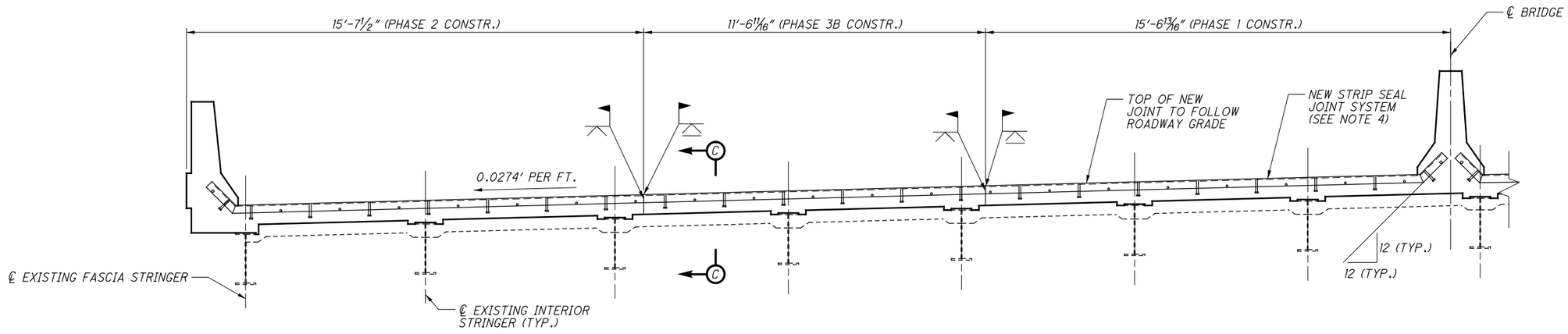


PART PLAN - EXPANSION JOINT G

(EASTBOUND ROADWAY SHOWN, WESTBOUND ROADWAY OPPOSITE HAND)



SECTION A-A

(SECTION B-B OPPOSITE HAND)

NOTES:

1. FOR SECTION C-C, SEE SHEET S35/S95.
2. FOR SECTION D-D, SEE SHEET S20/S95.
3. FOR SECTION E-E, SEE SHEET S25/S95.
4. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT G (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S34/S95

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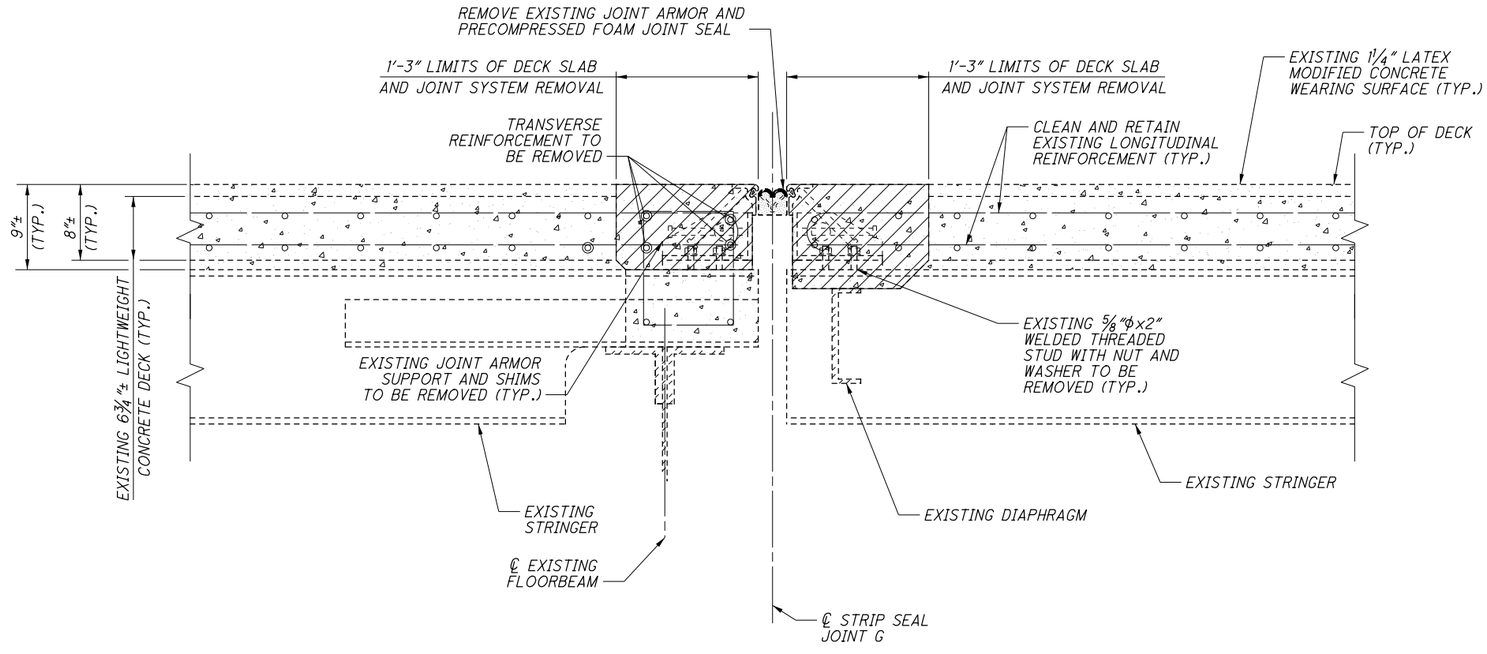
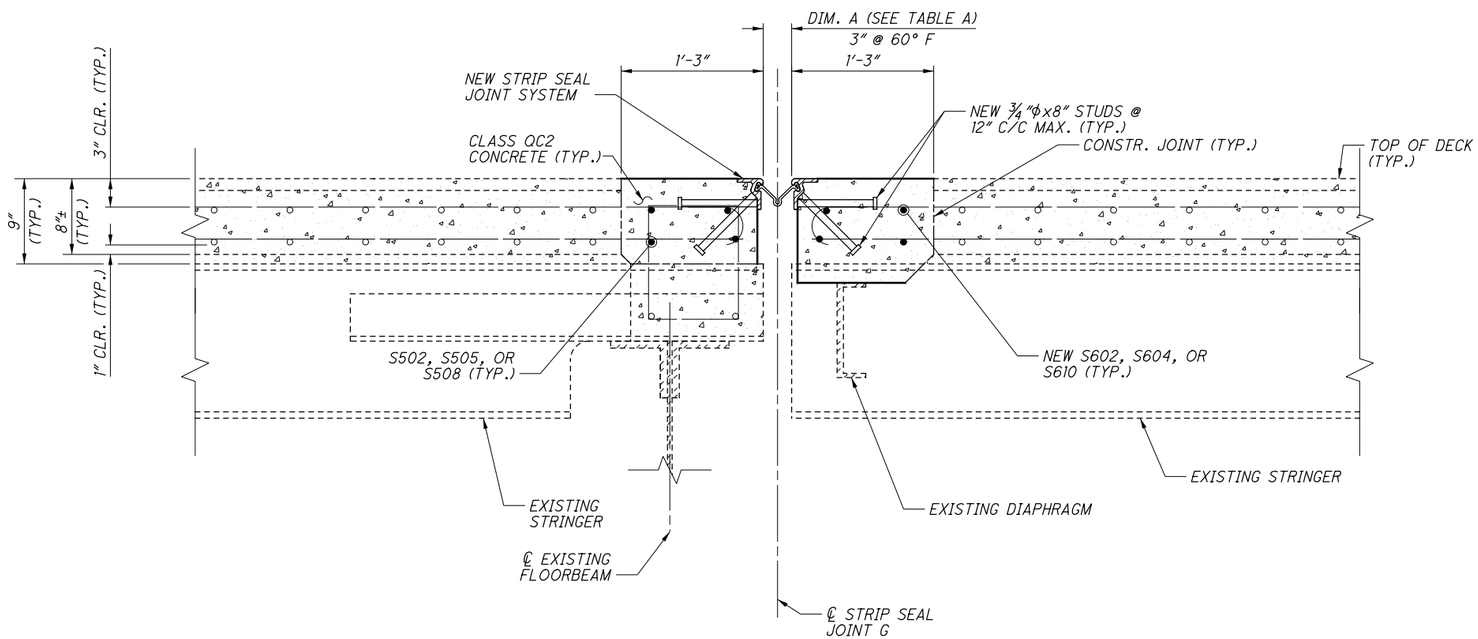


SECTION C-C REMOVAL



SECTION C-C

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/16"
40°F	3 1/8"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 7/8"
90°F	2 13/16"

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR EXPANSION JOINT G PLAN, ADDITIONAL DETAILS AND NOTES, SEE SHEET S34/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT G (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S35/S95

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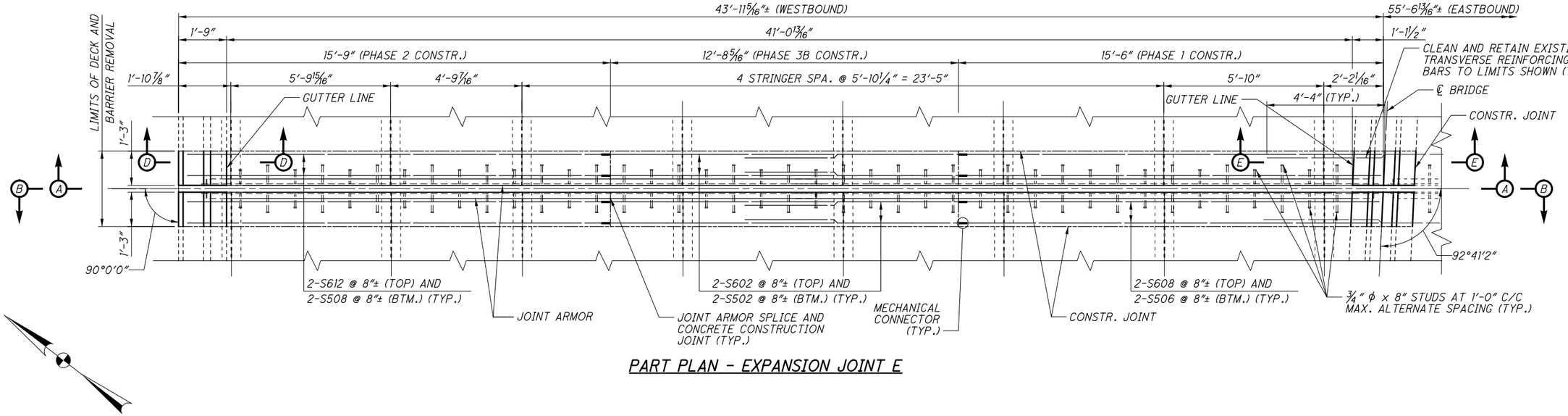
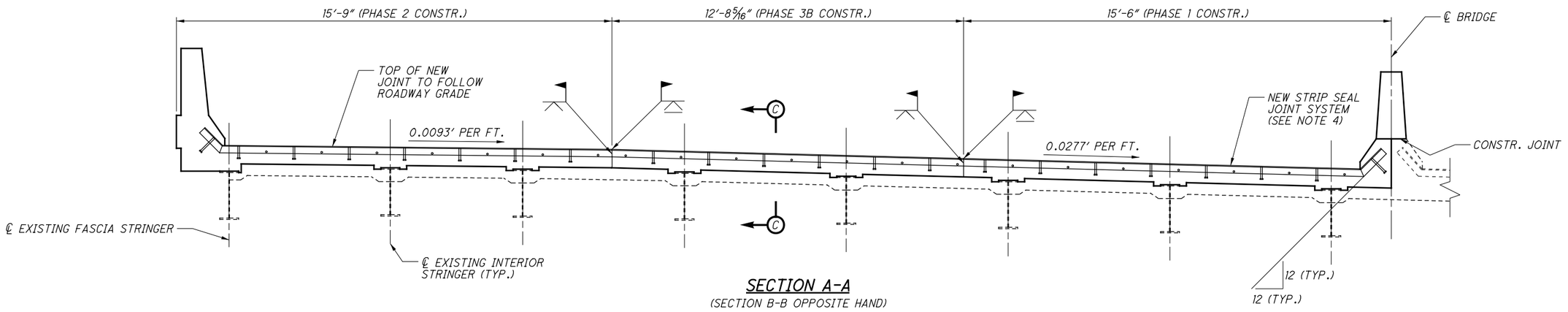


PART PLAN - EXPANSION JOINT E



SECTION A-A

(SECTION B-B OPPOSITE HAND)

NOTES:

1. FOR SECTION C-C, SEE SHEET S37/S95.
2. FOR SECTION D-D, SEE SHEET S20/S95.
3. FOR SECTION E-E, SEE SHEET S25/S95.
4. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000351	

DECK JOINT REPLACEMENT - EXPANSION JOINT E (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S36/S95

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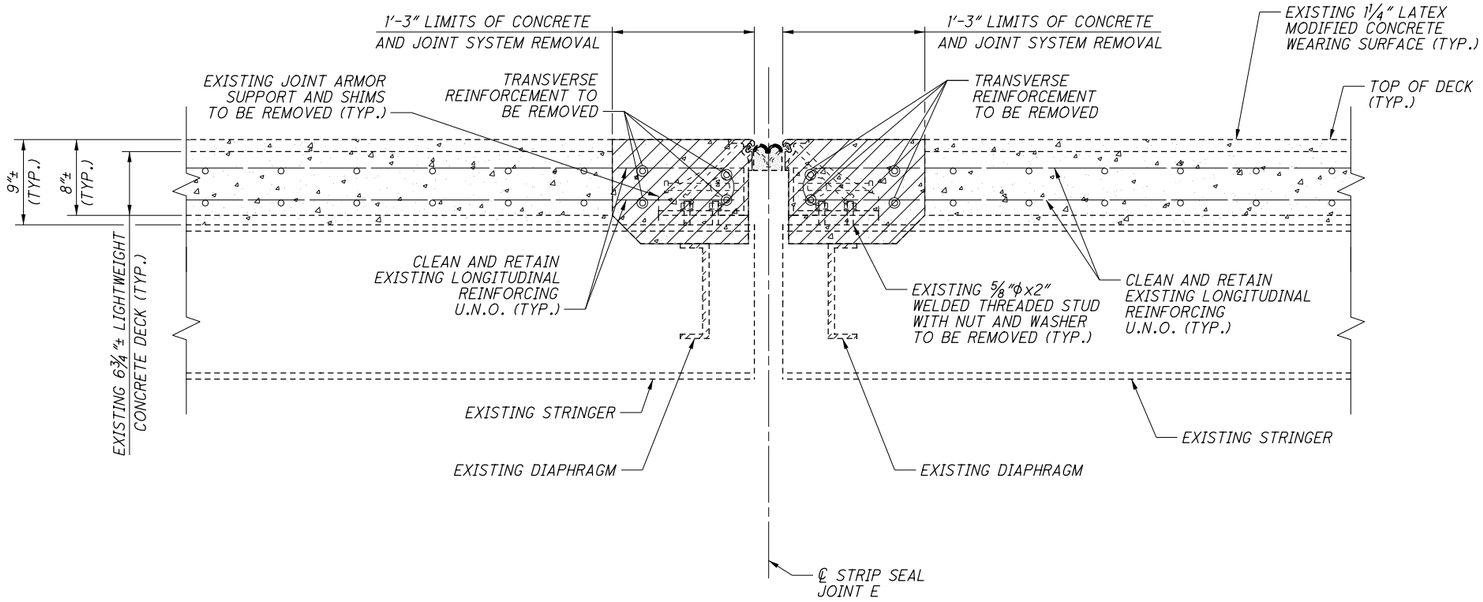
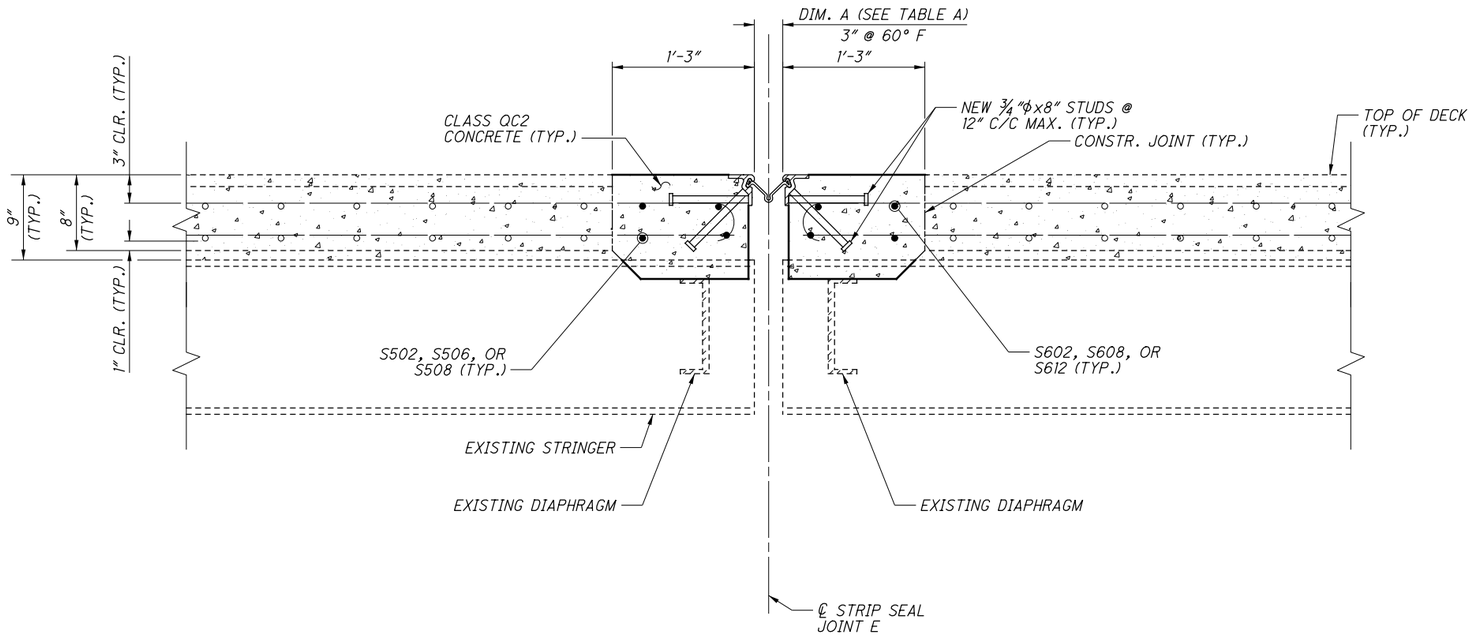


SECTION C-C REMOVAL



SECTION C-C

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/16"
40°F	3 1/8"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 7/8"
90°F	2 13/16"

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR EXPANSION JOINT E PLAN, ADDITIONAL DETAILS AND NOTES, SEE SHEET S36/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

DECK JOINT REPLACEMENT - EXPANSION JOINT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S37/S95

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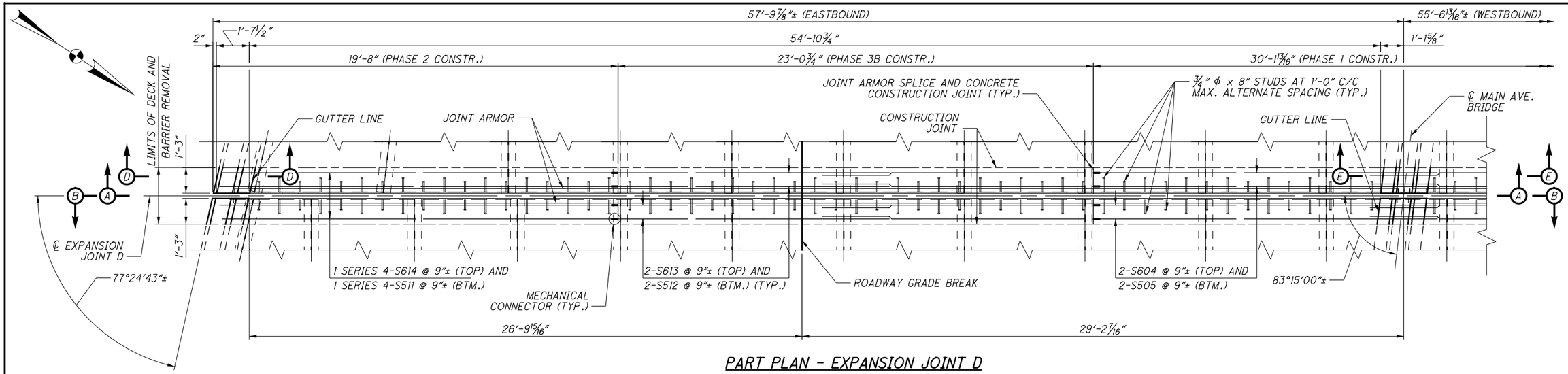
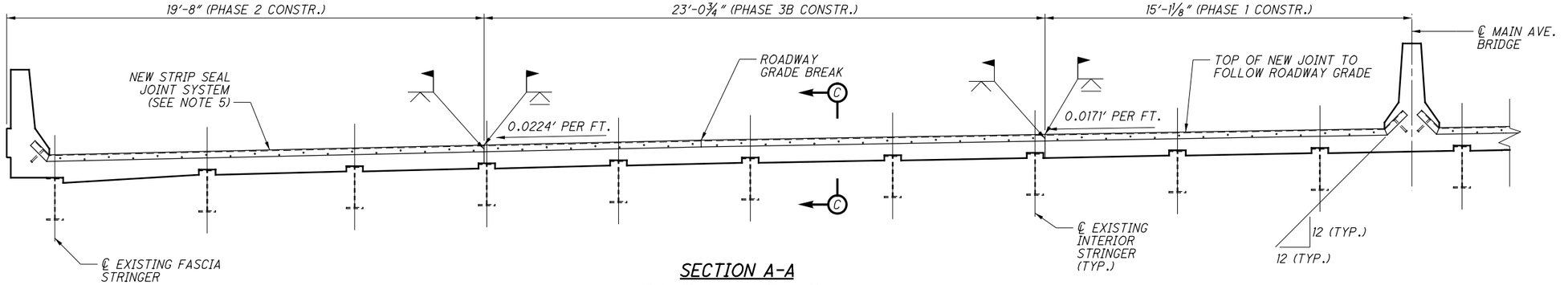


PART PLAN - EXPANSION JOINT D



SECTION A-A

(SECTION B-B OPPOSITE HAND)

NOTES:

1. FOR EXPANSION JOINT D (WESTBOUND) DETAILS, SEE SHEET S39/S95.
2. FOR SECTION C-C, SEE SHEET S40/S95.
3. FOR SECTION D-D, SEE SHEET S20/S95.
4. FOR SECTION E-E, SEE SHEET S25/S95.
5. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		18000035	

DECK JOINT REPLACEMENT - EXPANSION JOINT D (1 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S38/S95

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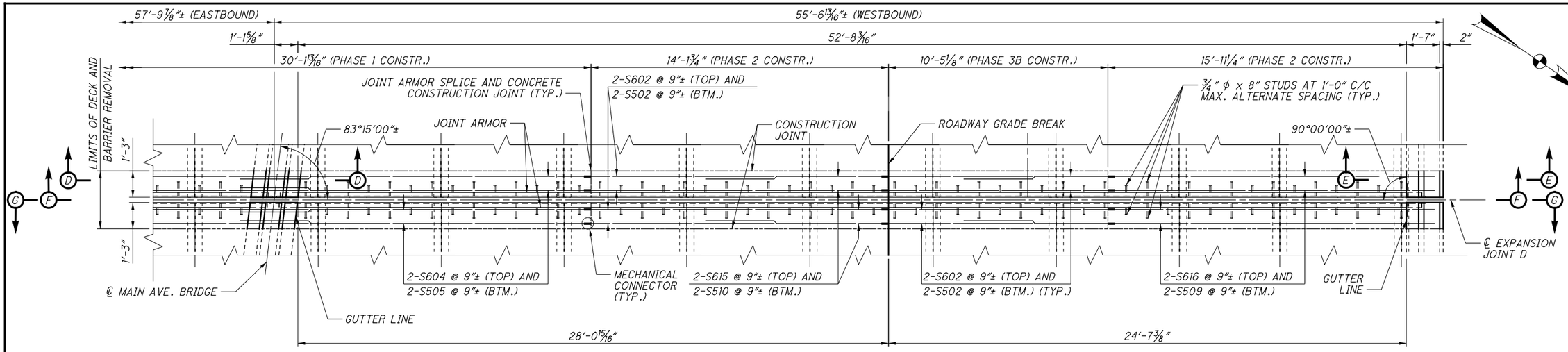
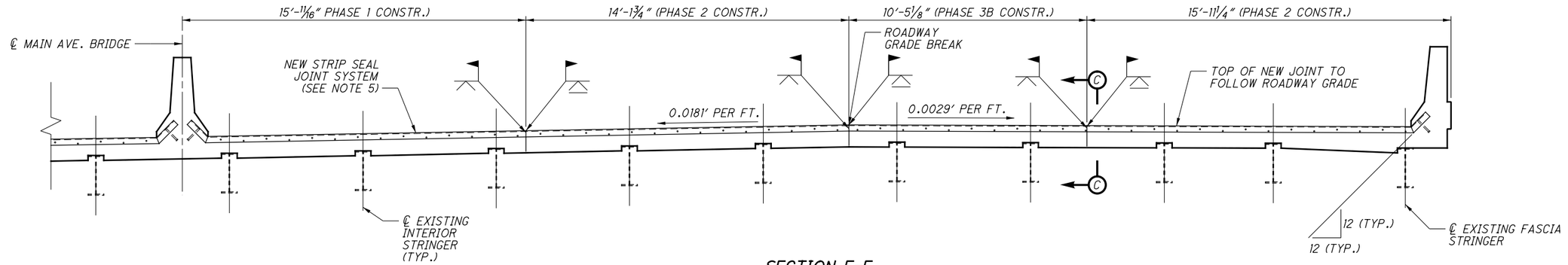


PART PLAN - EXPANSION JOINT D



SECTION F-F

(SECTION G-G OPPOSITE HAND)

NOTES:

1. FOR EXPANSION JOINT D (EASTBOUND) DETAILS, SEE SHEET S38/S95.
2. FOR SECTION C-C, SEE SHEET S40/S95.
3. FOR SECTION D-D, SEE SHEET S20/S95.
4. FOR SECTION E-E, SEE SHEET S25/S95.
5. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		18O0035	

DECK JOINT REPLACEMENT - EXPANSION JOINT D (2 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S39/S95

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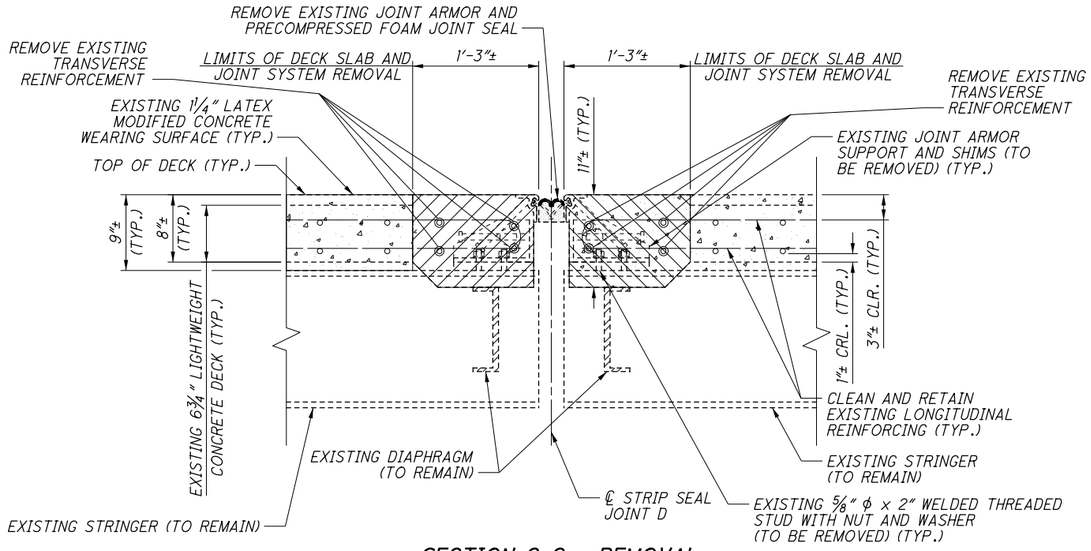
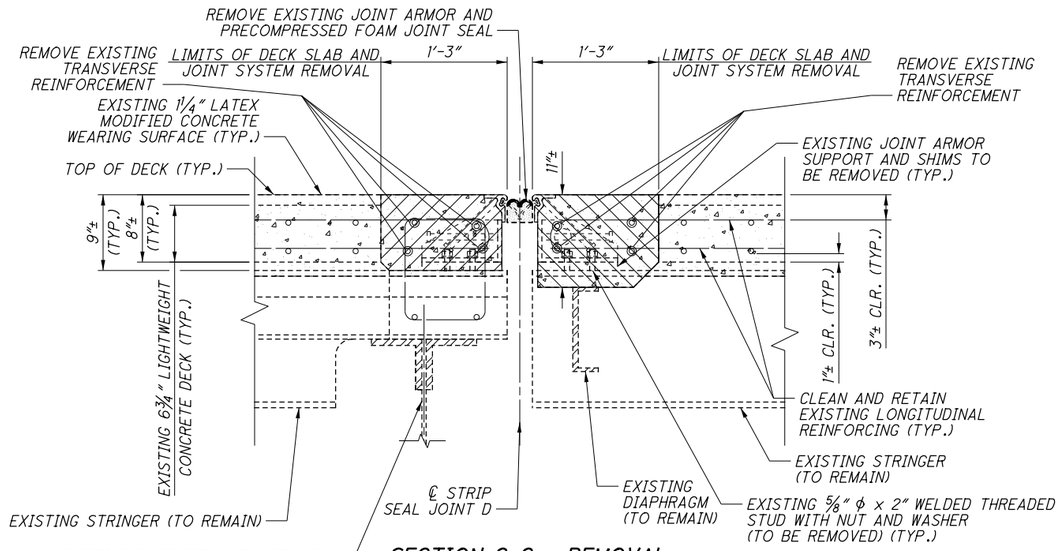


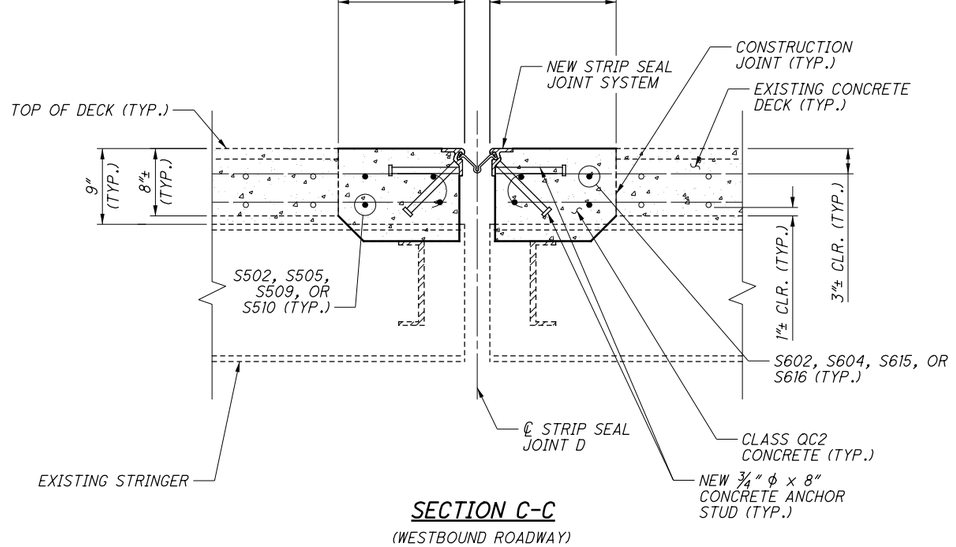
SECTION C-C - REMOVAL

(WESTBOUND ROADWAY)



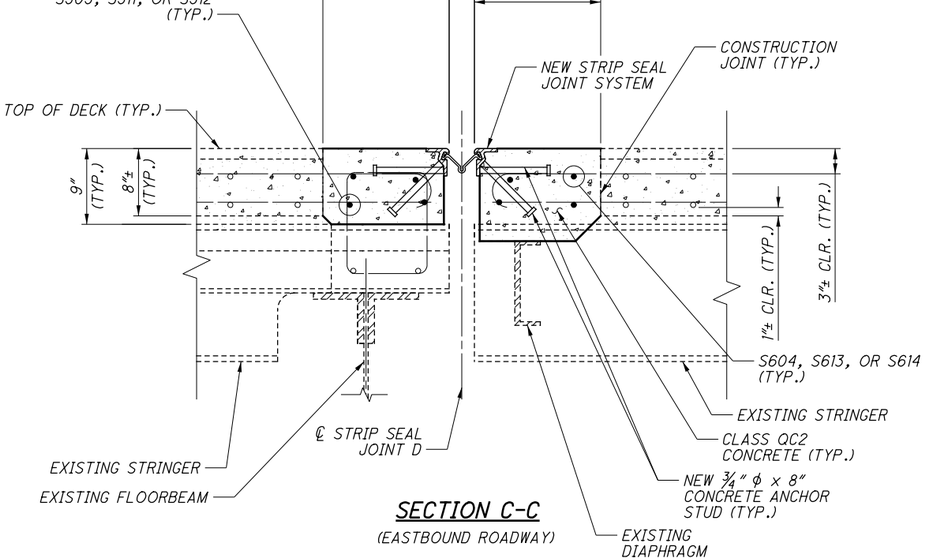
SECTION C-C - REMOVAL

(EASTBOUND ROADWAY)



SECTION C-C

(WESTBOUND ROADWAY)



SECTION C-C

(EASTBOUND ROADWAY)

LEGEND:

▨ - LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 5/16"
40°F	3 3/16"
50°F	3 1/8"
60°F	3"
70°F	2 7/8"
80°F	2 13/16"
90°F	2 11/16"

NOTES:

1. FOR EXPANSION JOINT D (EASTBOUND) PLAN VIEW, SEE SHEET S38/S95.
2. FOR EXPANSION JOINT D (WESTBOUND) PLAN VIEW, SEE SHEET S39/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT D (3 OF 3)

MAIN AVENUE - BRIDGE NO. CUY-2-1441 OVER THE CUYAHOGA RIVER

CUY-2-14.41

PID No. 85377

S40/S95

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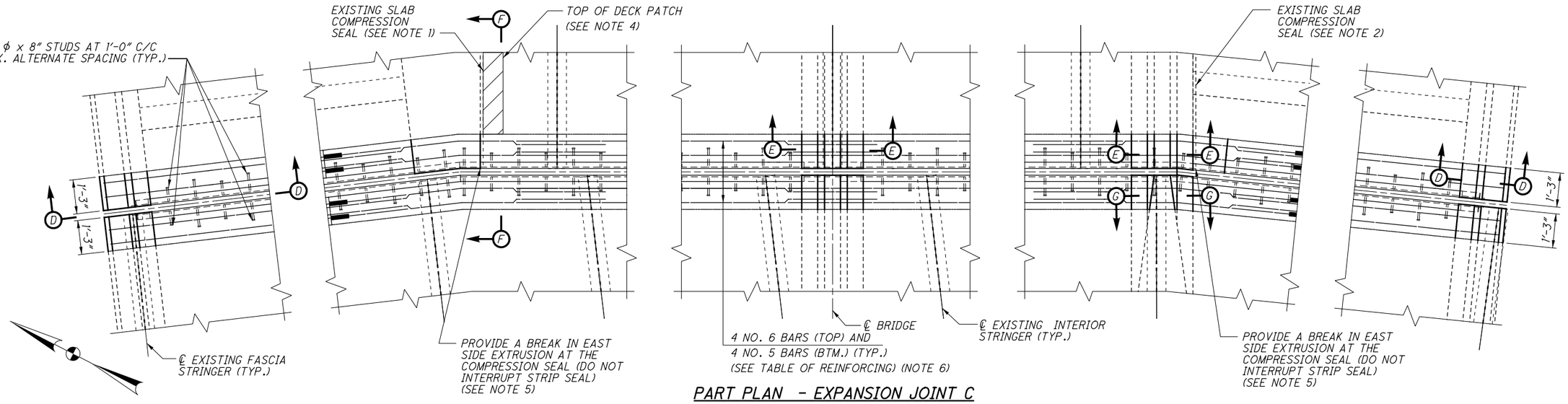
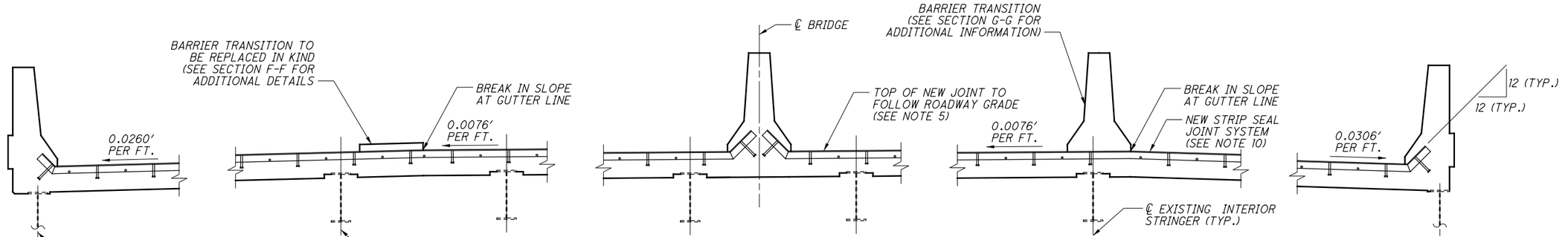
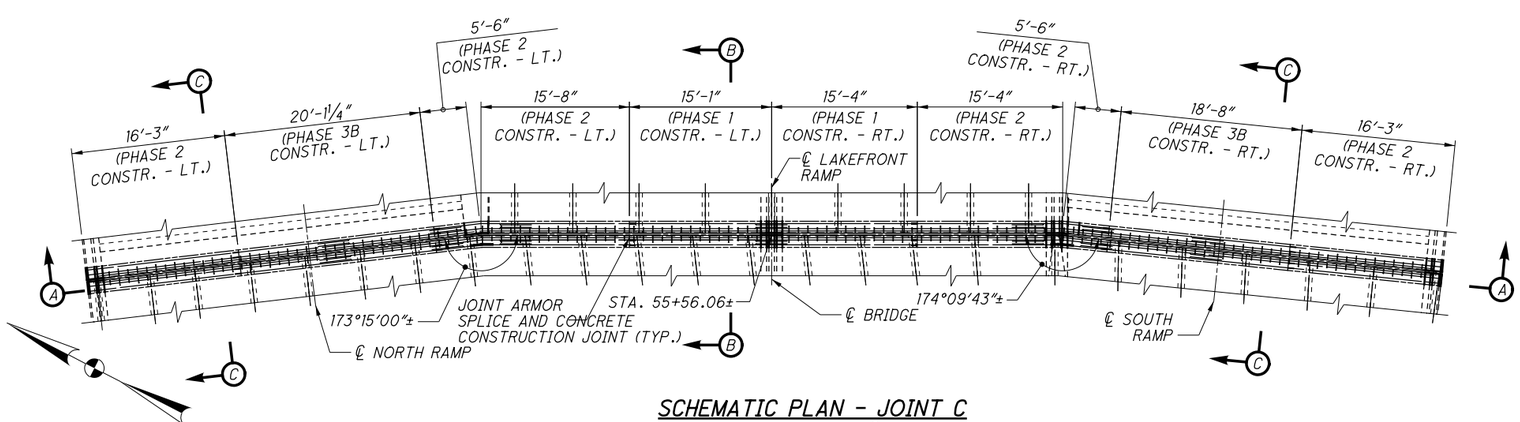


PART PLAN - EXPANSION JOINT C



PART SECTION A-A

(EXISTING DIAPHRAGMS NOT SHOWN)



SCHEMATIC PLAN - JOINT C

(DIMENSIONS MEASURED ALONG ℄ EXP. JOINT C)

NOTES:

1. THE EXISTING DECK COMPRESSION SEAL SHALL BE REPLACED WITH A NEW DECK COMPRESSION SEAL IN KIND. SEE SECTION F-F ON SHEET S43/S95 FOR ADDITIONAL DETAILS.
2. THE EXISTING DECK COMPRESSION SEAL SHALL BE PARTIALLY REPLACED WITH A NEW DECK COMPRESSION SEAL IN KIND WITHIN THE LIMITS OF THE CONCRETE AND JOINT SYSTEM REPLACEMENT.
3. THE REPLACEMENT OF THE EXISTING SLAB COMPRESSION SEALS SHALL BE INCLUDED WITH ITEM 516 STRUCTURAL JOINT OR JOINT SEALER, MISC.: STEEL COMPRESSION JOINT SEAL REPLACEMENT FOR PAYMENT.
4. THE LAKEFRONT RAMP TOP OF DECK IS TO BE PATCHED AT THE LOCATION OF A SPALL ALONG THE EXISTING SLAB COMPRESSION SEAL BETWEEN THE NORTH RAMP AND LAKEFRONT RAMP. SEE SHEET S15/S95 FOR ADDITIONAL DETAILS.
5. THE CONTRACTOR IS TO SURVEY CROSS SLOPES PRIOR TO REMOVAL OF EXISTING JOINT TO ENSURE PROPER CROSS SLOPE IS MAINTAINED DURING REPLACEMENT AND ALSO VERIFY THE LOCATION OF THE EXISTING COMPRESSION SEALS.
6. FOR SECTIONS B-B AND C-C AND TABLE OF REINFORCING, SEE SHEET S42/S95.
7. FOR SECTIONS F-F AND G-G SEE SHEET S43/S95.
8. FOR TYPICAL FASCIA PARAPET DETAILS, SEE SECTION D-D ON SHEET S20/S95.
9. FOR TYPICAL MEDIAN BARRIER DETAILS, SEE SECTION E-E ON SHEET S25/S95.
10. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.
11. CUT AND REMOVE STAY-IN-PLACE DECK FORMS AS NEEDED, DO NOT REPLACE. CONTRACTOR IS TO TOUCH UP EDGES OF CUT FORMS AND ANY SURROUNDING AREAS DAMAGED DURING REMOVAL OF FORMWORK PER ASTM A780. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

DECK JOINT REPLACEMENT - EXPANSION JOINT C (1 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S41/S95

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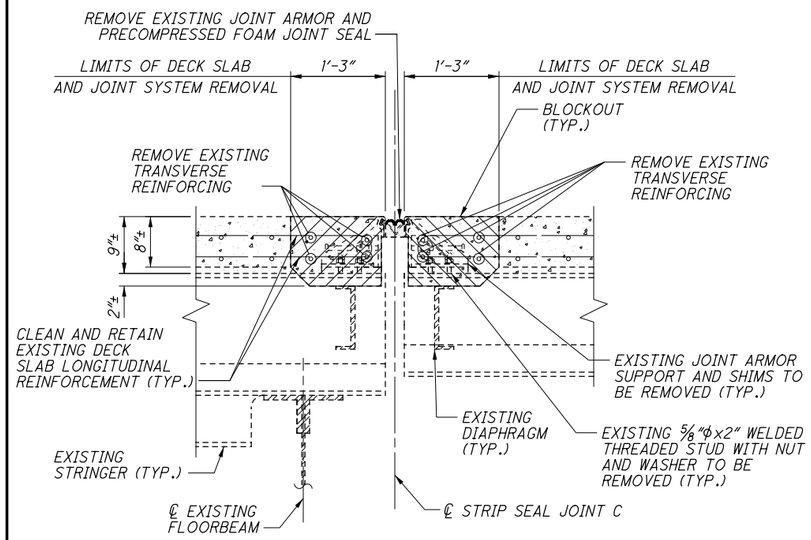
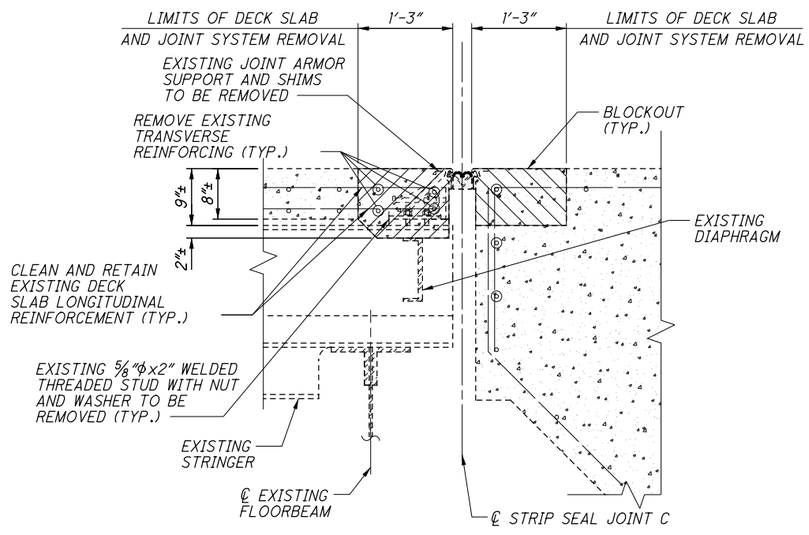


SECTION B-B - EXISTING

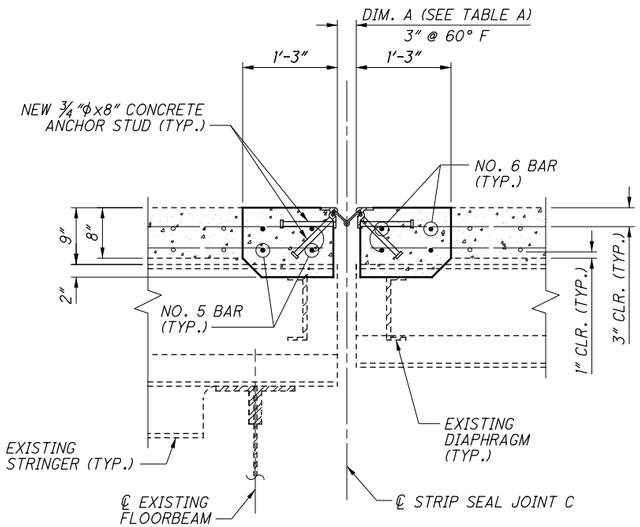


SECTION C-C - EXISTING

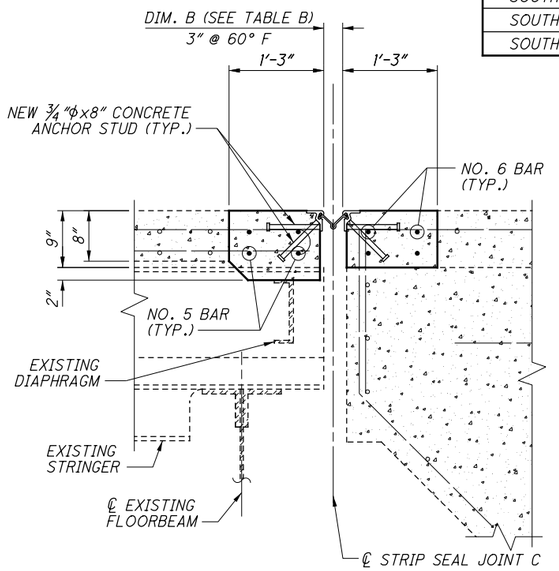
TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/8"
40°F	3 1/4"
50°F	3 1/8"
60°F	3"
70°F	2 7/8"
80°F	2 3/4"
90°F	2 5/8"

TABLE B	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION B
30°F	3 3/16"
40°F	3 1/8"
50°F	3 1/16"
60°F	3"
70°F	2 15/16"
80°F	2 7/8"
90°F	2 13/16"

TABLE OF REINFORCING				
LOCATION	SECTION	PHASE	REINF. BARS TOP MAT	REINF. BARS BTM. MAT
NORTH RAMP	PHASE 2 CONSTR. - LT.	16'-3"	S603	S503
NORTH RAMP	PHASE 3B CONSTR. - LT.	20'-1 1/4"	S613	S513
NORTH RAMP	PHASE 2 CONSTR. - LT.	5'-6"	S617, S618	S514, S516
LAKEFRONT RAMP	PHASE 2 CONSTR. - LT.	15'-8"	S613	S515
LAKEFRONT RAMP	PHASE 1 CONSTR. - LT.	15'-1"	S604	S505
LAKEFRONT RAMP	PHASE 1 CONSTR. - RT.	15'-4"	S604	S505
LAKEFRONT RAMP	PHASE 2 CONSTR. - RT.	15'-4"	S613	S515
SOUTH RAMP	PHASE 2 CONSTR. - RT.	5'-6"	S617, S618	S514, S516
SOUTH RAMP	PHASE 3B CONSTR. - RT.	18'-8"	S613	S513
SOUTH RAMP	PHASE 2 CONSTR. - RT.	16'-3"	S603	S503



SECTION B-B - PROPOSED



SECTION C-C - PROPOSED

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR EXP. JOINT C PLAN, ADDITIONAL DETAILS AND NOTES, SEE SHEET S41 / S95.
2. FOR LOCATION OF SECTION B-B AND C-C, SEE SHEET S41 / S95.

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

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 18000351

DECK JOINT REPLACEMENT - EXPANSION JOINT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

JOINT C (2 OF 3)

S42/S95

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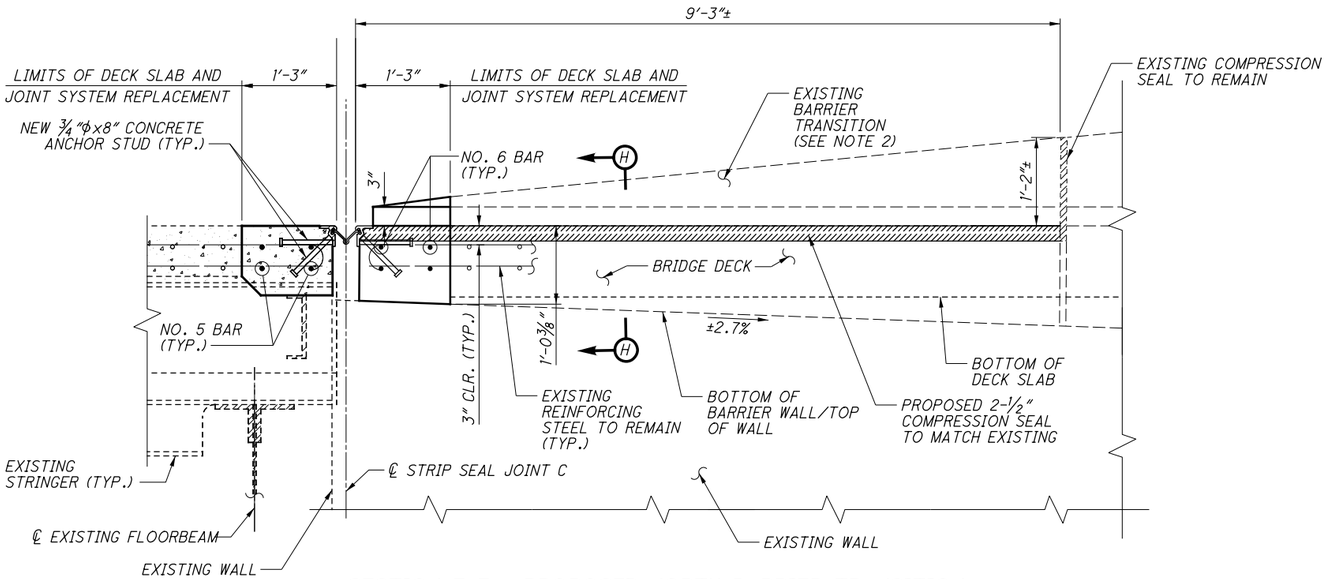
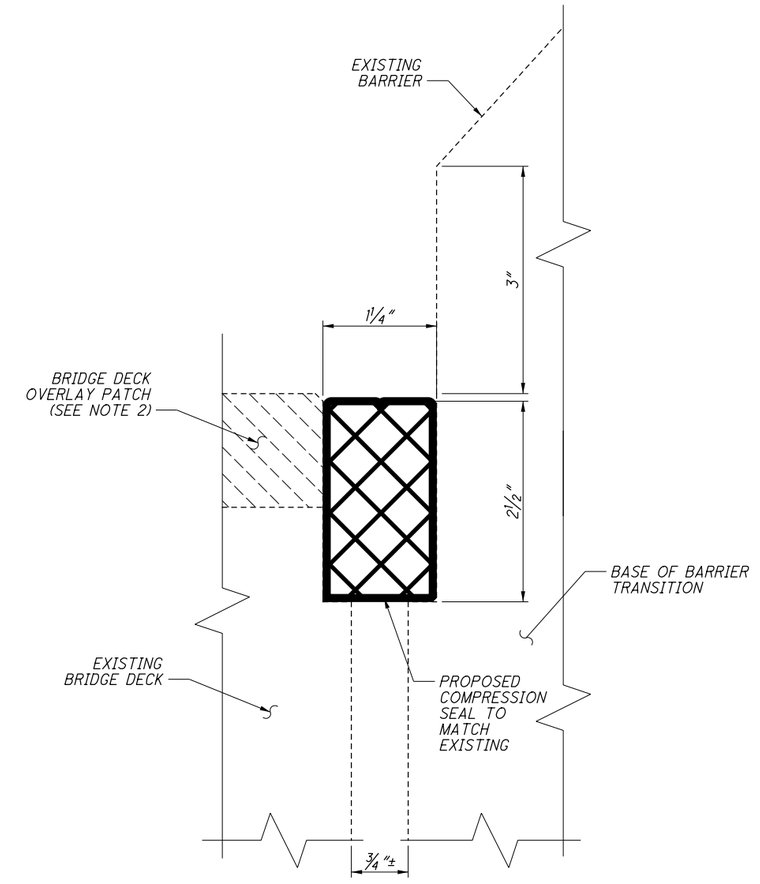
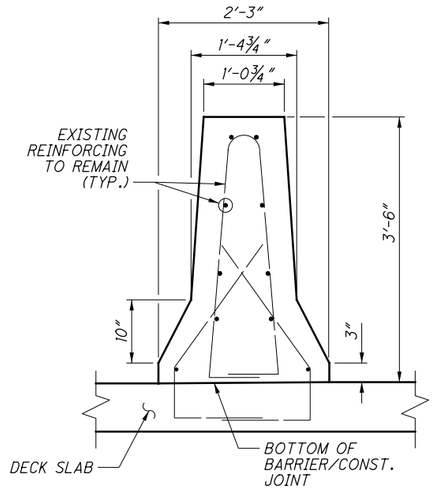


SECTION F-F - PROPOSED NORTH BARRIER TRANSITION



SECTION H-H



SECTION G-G - PROPOSED SOUTH BARRIER TRANSITION

NOTES:

1. FOR LOCATION OF SECTIONS F-F AND G-G, SEE SHEET S41/S95.
2. ALL EXISTING REINFORCING IN BARRIER TRANSISTION TO BE CLEANED AND RETAINED.
3. PATCHING OF BRIDGE DECK TO BE PAID FOR UNDER ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE.
4. FOR ADDITIONAL NOTES, SEE SHEET S41/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	JAH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

DECK JOINT REPLACEMENT - EXPANSION JOINT C (3 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S43/S95

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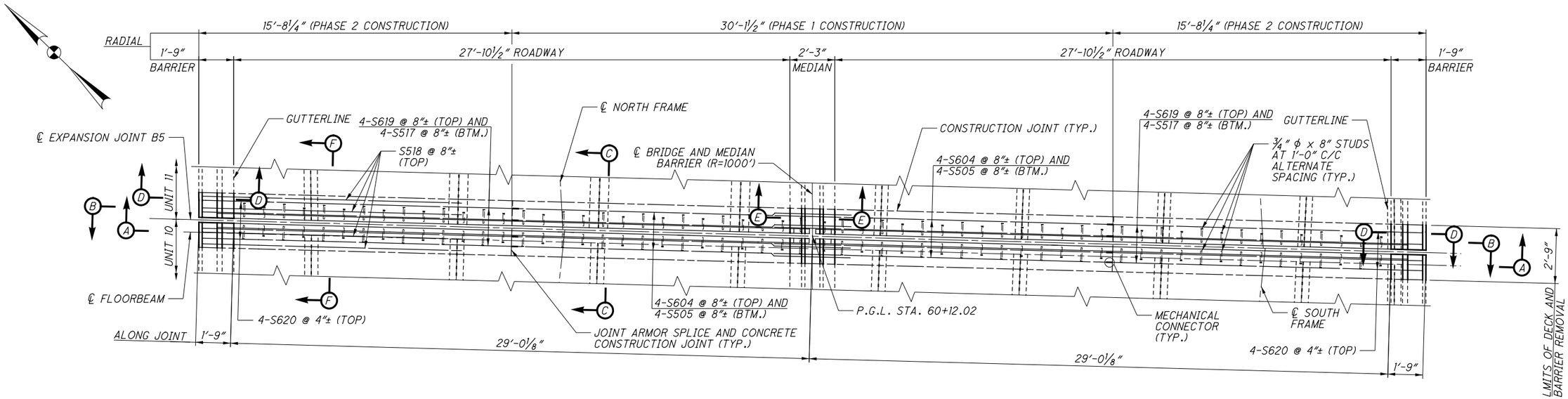
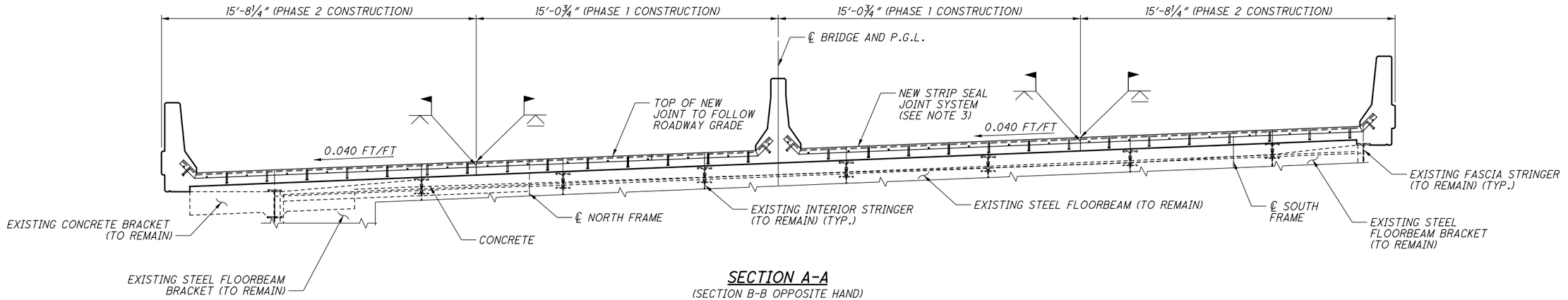


PLAN - EXPANSION JOINT B5



SECTION A-A

(SECTION B-B OPPOSITE HAND)
(UNIT 10 SIDE SHOWN, UNIT 11 SIDE SIMILAR)
(FRAMES NOT SHOWN
REINFORCING BARS NOT SHOWN)

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 TRANSVERSE	3'-2" MIN.
NO. 6 TRANSVERSE	3'-10" MIN.

NOTES:

1. FOR SECTION C-C, SECTION E-E, AND SECTION F-F, SEE SHEET S45/S95.
2. FOR SECTION D-D, SEE SHEET S20/S95.
3. FOR ADDITIONAL NOTES, SEE SHEET S21/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
CTG	CTG	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLV		18000335	

DECK JOINT REPLACEMENT - EXPANSION JOINT B5 (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S44/S95

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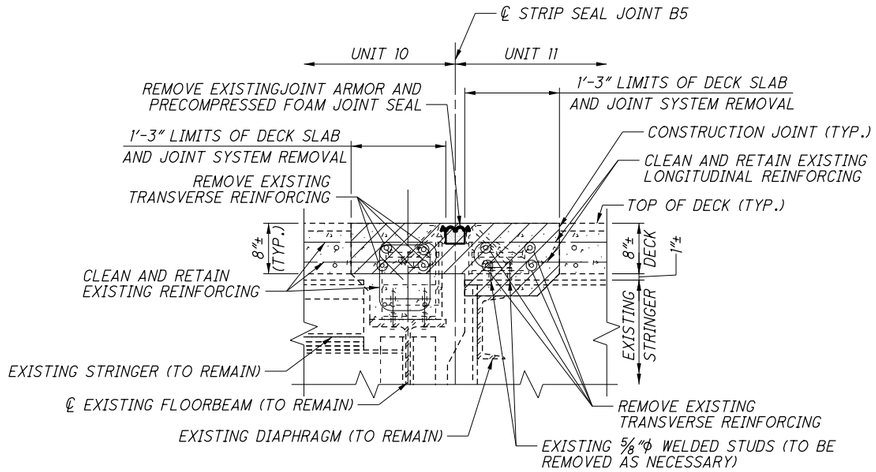
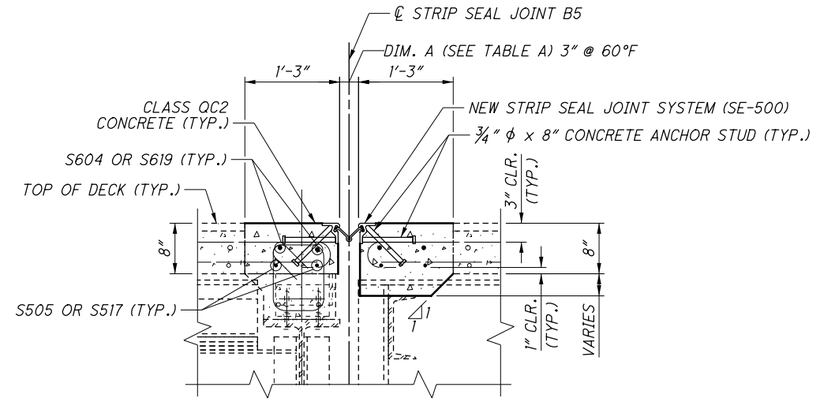
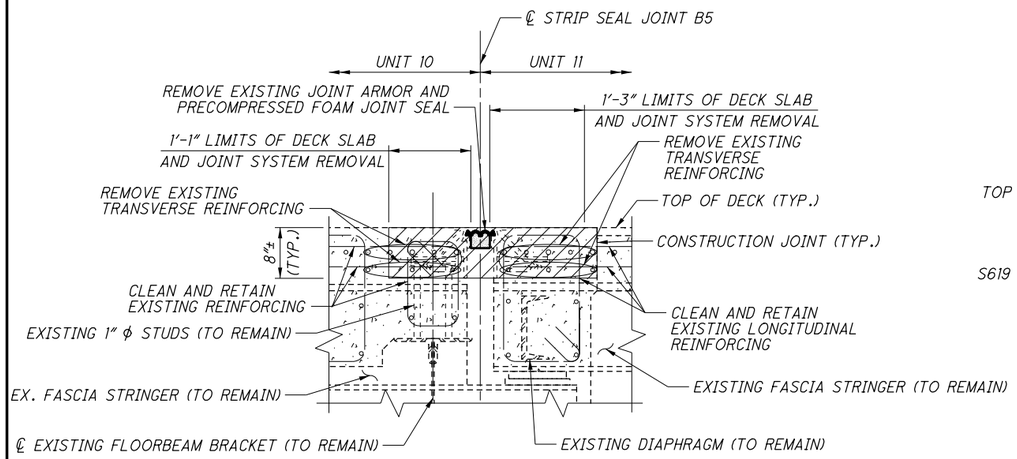


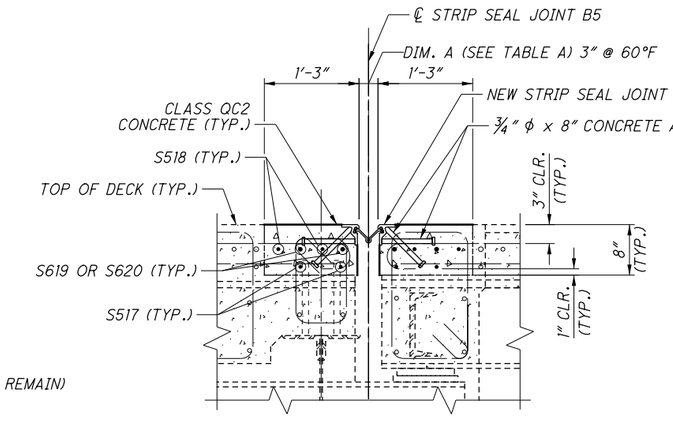
SECTION C-C - REMOVAL



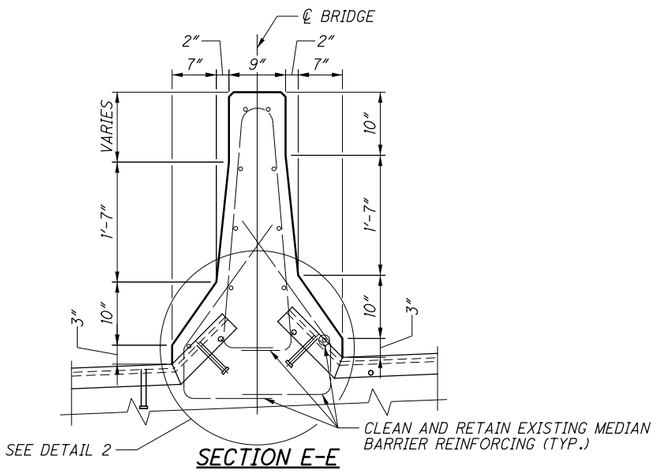
SECTION C-C



SECTION F-F - REMOVAL

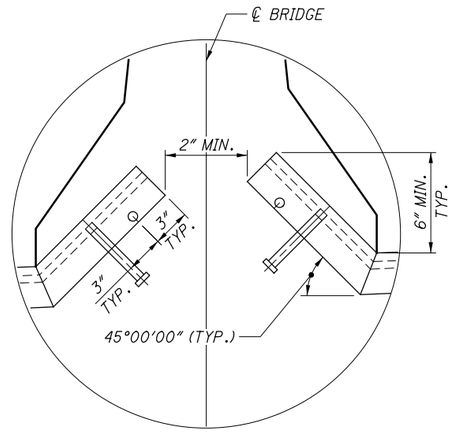


SECTION F-F



SECTION E-E

SLAB REINFORCING NOT SHOWN



DETAIL 2

TABLE A	
5" STRIP SEAL WIDTH	
AMBIENT TEMPERATURE	DIMENSION A
30°F	3 3/8"
40°F	3 1/4"
50°F	3 1/8"
60°F	3"
70°F	2 7/8"
80°F	2 3/4"
90°F	2 11/16"

LEGEND:

- LIMITS OF DECK SLAB AND JOINT SYSTEM REMOVAL

NOTES:

1. FOR LOCATIONS OF SECTION C-C, SECTION E-E, AND SECTION F-F AND NOTES SEE SHEET S44 / S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
CTG	CTG	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLV		18000351	

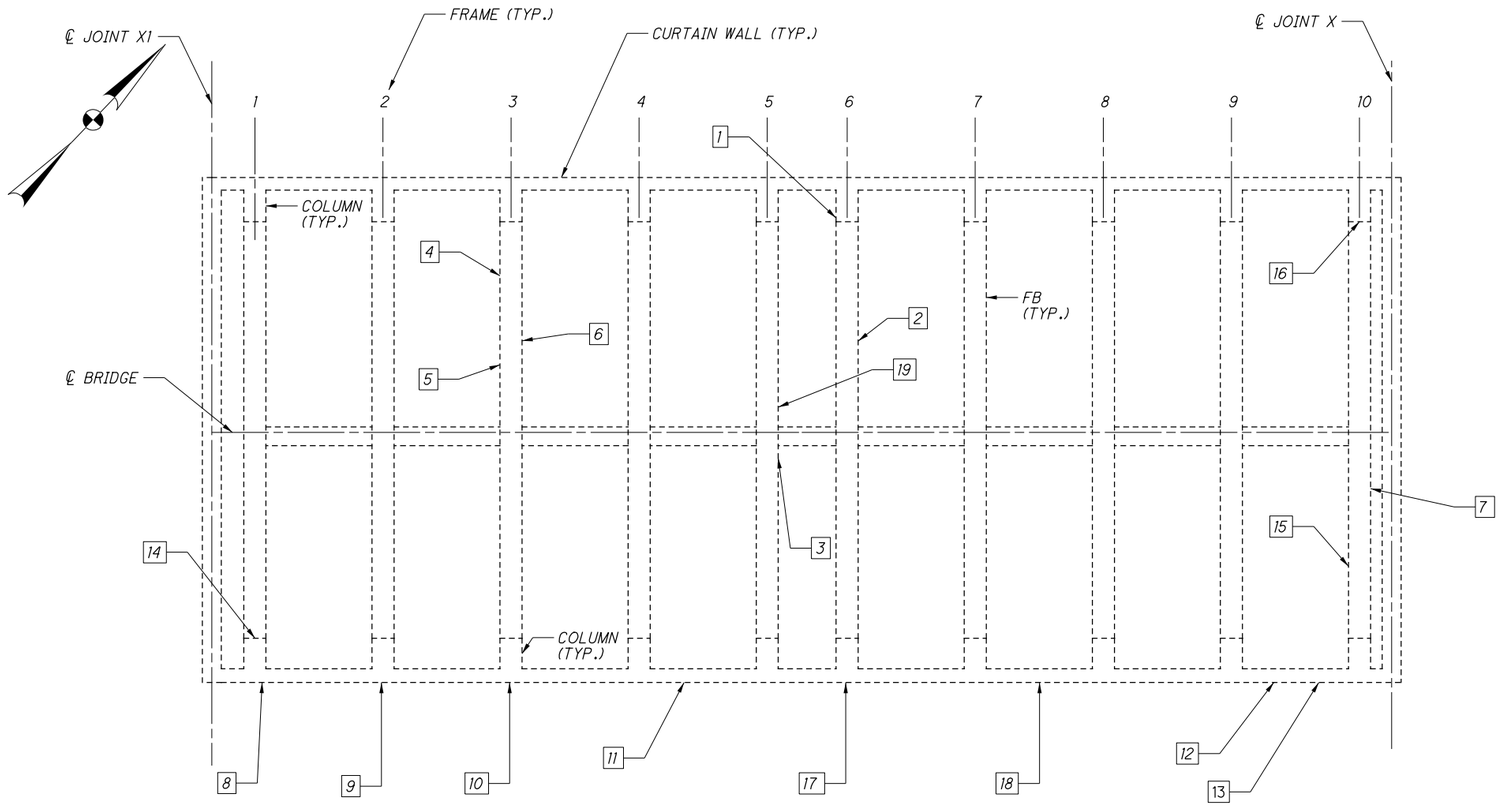
DECK JOINT REPLACEMENT - EXPANSION JOINT B5 (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S45/S95

96
154

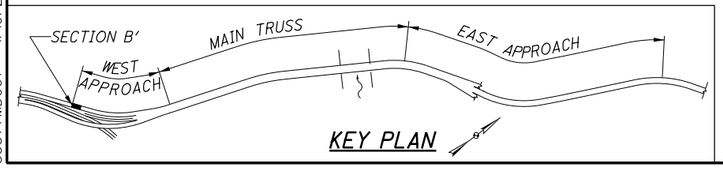
85377MD035 1/19/2017 4:08:26 PM nrfisco



WEST APPROACH - SECTION B' FRAMING PLAN

LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT



NOTES:

1. THE LENGTH AND HEIGHT DIMENSIONS SHOWN ARE APPROXIMATE AND HAVE BEEN ROUNDED TO THE NEAREST FOOT. THEY ARE INDICATIVE OF THE OVERALL SIZE OF THE DELAMINATION OR SPALL ALTHOUGH SOME AREAS MAY BE IRREGULARLY SHAPED. THE AREA OF PATCHING LISTED HAS BEEN INCREASED ON A CASE BY CASE BASIS TO ACCOUNT FOR UNCERTAINTIES AND ADDITIONAL CONCRETE REPAIRS THAT MAY BE REQUIRED.
2. FOR THE PIER NAMES AN "N" SHALL INDICATE THE NORTH PIER OR COLUMN AND AN "S" SHALL INDICATE THE SOUTH PIER OR COLUMN.
3. ALL CONCRETE PATCHING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
4. NEW CONCRETE PATCHES IDENTIFIED AS "EPOXY" SHALL BE SEALED WITH EPOXY-URETHANE SEALANT. THE SEALING SHALL COVER THE AREA OF THE NEW PATCH AS WELL AS A 12" STRIP SURROUNDING THE PERIMETER OF THE NEW PATCH WHERE FEASIBLE. THE SEALING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN.
5. NEW CONCRETE PATCHES IDENTIFIED AS "NON-EPOXY" SHALL BE SEALED WITH A NON-EPOXY SEALANT. THE SEALING SHALL COVER THE AREA OF THE NEW PATCH AS WELL AS A 12" STRIP SURROUNDING THE PERIMETER OF THE NEW PATCH WHERE FEASIBLE. THE SEALING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY).
6. FOR REPAIR DETAILS, SEE SHEET [S56/S95].

ITEM 519 - CONCRETE PATCHING REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	4'-0"	8'-0"	32 SF	COLUMN 6N WEST FACE	TYPE 1	NON-EPOXY
2	SPALL	2'-0"	4'-0"	8 SF	FLOORBEAM 6 EAST FACE	TYPE 1	NON-EPOXY
3	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 5 EAST FACE	TYPE 1	NON-EPOXY
4	DELAM.	2'-0"	4'-0"	8 SF	FLOORBEAM 3 WEST FACE	TYPE 1	NON-EPOXY
5	DELAM.	4'-0"	4'-0"	16 SF	FLOORBEAM 3 WEST FACE	TYPE 1	NON-EPOXY
6	DELAM.	4'-0"	4'-0"	16 SF	FLOORBEAM 3 EAST FACE	TYPE 1	NON-EPOXY
7	SPALL	12'-0"	4'-0"	48 SF	FLOORBEAM 10 EAST FACE	TYPE 1	NON-EPOXY
8	DELAM.	7'-0"	8'-0"	56 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
9	DELAM.	2'-0"	8'-0"	16 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
10	DELAM.	10'-0"	13'-0"	130 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
11	SPALL	10'-0"	12'-0"	120 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
12	DELAM.	2'-0"	12'-0"	24 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
13	DELAM.	4'-0"	5'-0"	20 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
14	SPALL	10'-0"	12'-0"	120 SF	COLUMN 1S NORTH FACE	TYPE 1	NON-EPOXY
15	SPALL	4'-0"	3'-0"	12 SF	FLOORBEAM 10 WEST FACE	TYPE 1	NON-EPOXY
16	SPALL	4'-0"	8'-0"	32 SF	COLUMN 10N SOUTH FACE	TYPE 1	NON-EPOXY
17	DELAM.	4'-0"	8'-0"	32 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
18	DELAM.	8'-0"	4'-0"	32 SF	SOUTH CURTAIN WALL EXTERIOR	TYPE 1	EPOXY
19	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 5 EAST FACE	TYPE 1	NON-EPOXY
			SHEET TOTAL	754 SF			

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

WEST APPROACH - SECTION B' PATCHING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S46/S95

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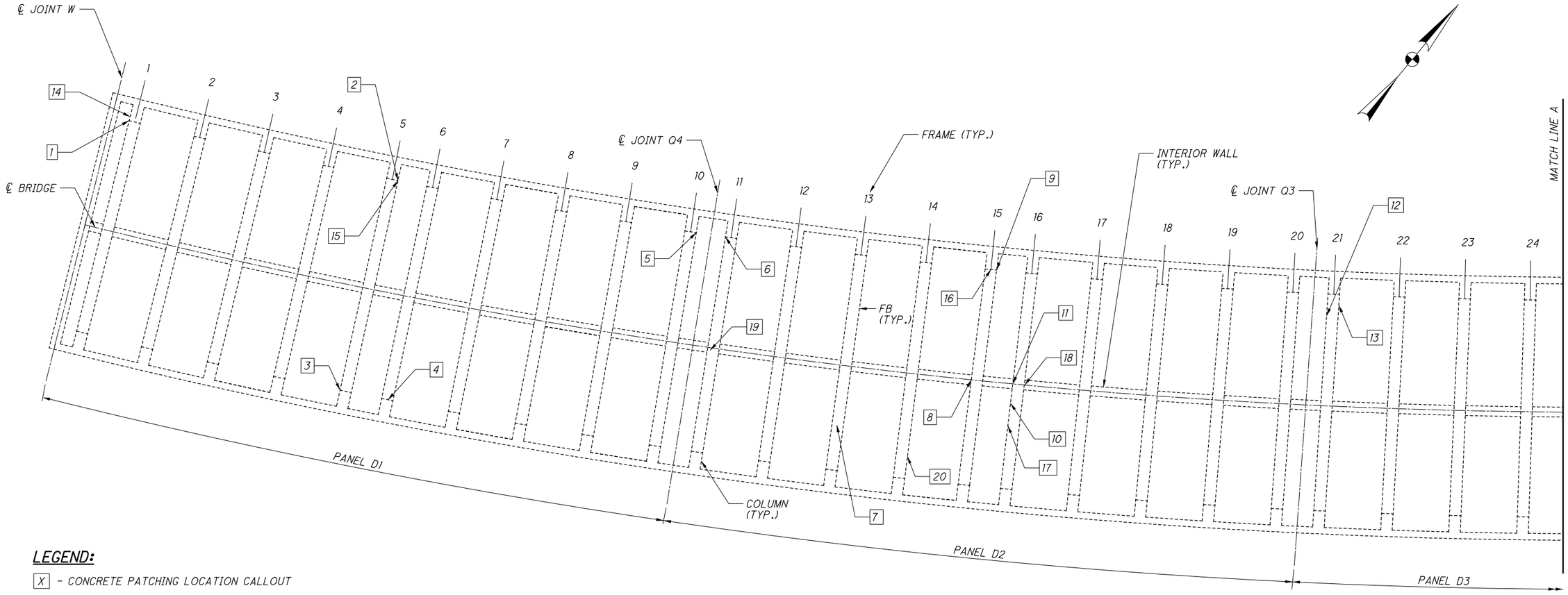
85377MD001 1/19/2017 4:08:31 PM nrfisco



LEGEND:

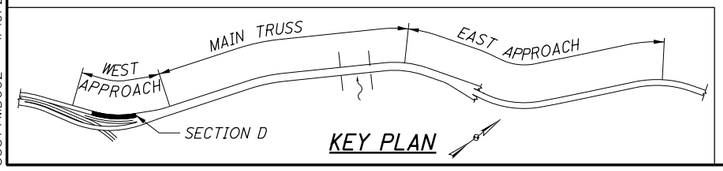
[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].

WEST APPROACH - SECTION D PARTIAL FRAMING PLAN (1 OF 2)

ITEM 519 - CONCRETE PATCHING REPAIRS (CONTINUED)							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	6'-0"	30'-0"	180 SF	COLUMN 1N SOUTHWEST CORNER	TYPE 1	NON-EPOXY
2	SPALL	6'-0"	8'-0"	48 SF	COLUMN 5N SOUTHEAST CORNER	TYPE 1	NON-EPOXY
3	SPALL	2'-0"	4'-0"	8 SF	COLUMN 5S NORTHWEST CORNER	TYPE 1	NON-EPOXY
4	SPALL	4'-0"	4'-0"	16 SF	COLUMN 6S NORTH FACE	TYPE 1	NON-EPOXY
5	DELAM.	4'-0"	5'-0"	20 SF	COLUMN 10N SOUTHEAST CORNER	TYPE 1	NON-EPOXY
6	SPALL	4'-0"	20'-0"	80 SF	COLUMN 11N SOUTHWEST CORNER	TYPE 1	NON-EPOXY
7	SPALL	10-0"	2'-0"	20 SF	FLOORBEAM 13 UNDERSIDE	TYPE 2	NON-EPOXY
8	SPALL	6'-0"	2'-0"	12 SF	FLOORBEAM 15 UNDERSIDE	TYPE 2	NON-EPOXY
9	DELAM	4'-0"	3'-0"	12 SF	COLUMN 15N EAST FACE	TYPE 1	NON-EPOXY
10	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 16 WEST FACE	TYPE 1	NON-EPOXY
11	SPALL	8'-0"	2'-0"	16 SF	FLOORBEAM 16 WEST FACE	TYPE 1	NON-EPOXY
12	SPALL	24'-0"	6'-0"	144 SF	FB 21 UNDERSIDE & WEST FACE	TYPE 1 & 2	NON-EPOXY
13	SPALL	6'-0"	2'-0"	12 SF	FLOORBEAM 21 EAST FACE	TYPE 1	NON-EPOXY
14	DELAM.	4'-0"	18'-0"	72 SF	COLUMN 1N WEST FACE	TYPE 1	NON-EPOXY
15	DELAM.	4'-0"	6'-0"	24 SF	COLUMN 5N SOUTHEAST FACE	TYPE 1	NON-EPOXY
16	DELAM.	4'-0"	8'-0"	32 SF	COLUMN 15N SOUTH FACE	TYPE 1	NON-EPOXY
17	DELAM.	6'-0"	4'-0"	24 SF	FLOORBEAM 16 WEST FACE	TYPE 1	NON-EPOXY
18	DELAM.	8'-0"	2'-0"	16 SF	FB 16 UNDERSIDE & EAST FACE	TYPE 1 & 2	NON-EPOXY
19	DELAM.	14'-0"	4'-0"	56 SF	FLOORBEAM 11 UNDERSIDE	TYPE 2	NON-EPOXY
20	SPALL	10'-0"	2'-0"	20 SF	FLOORBEAM 14 EAST FACE	TYPE 1	NON-EPOXY
			SHEET TOTAL	828 SF			



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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

WEST APPROACH - SECTION D PATCHING (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S47/S95

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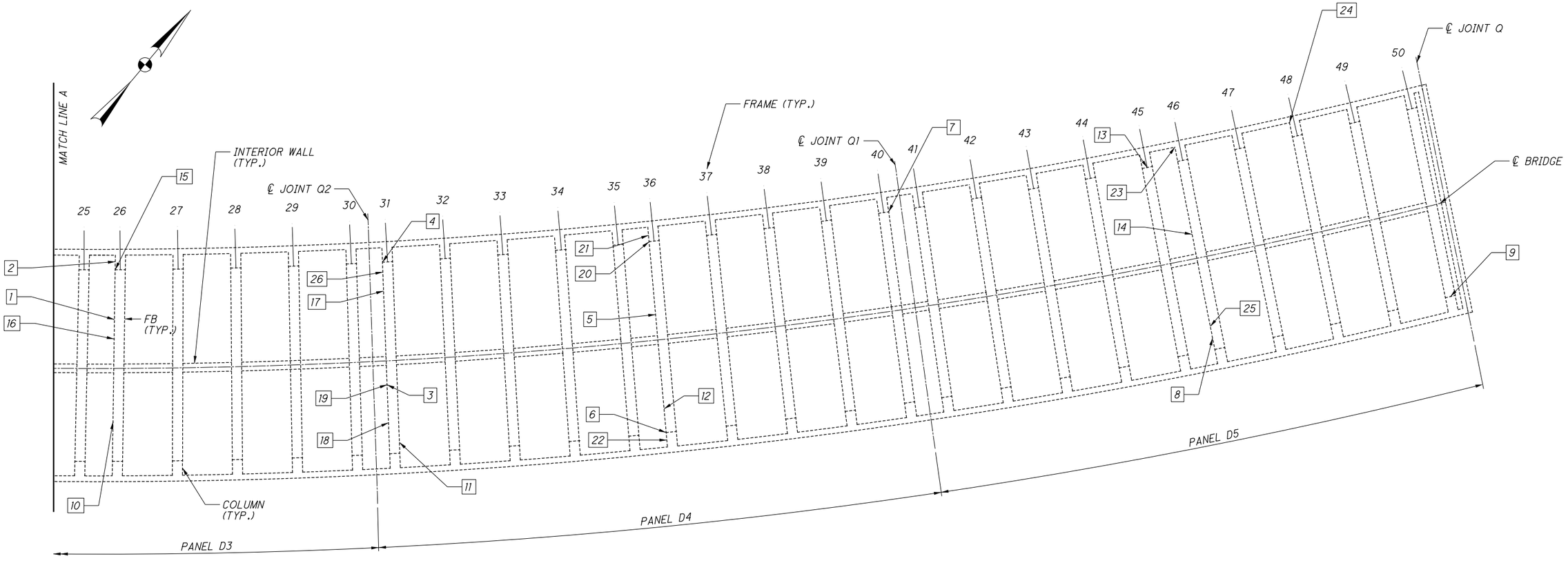
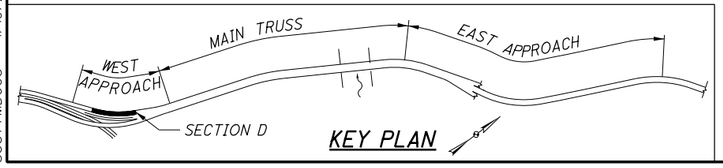
85377MD002 1/19/2017 4:08:36 PM nrfisco

ITEM 519 - CONCRETE PATCHING REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	18'-0"	4'-0"	72 SF	FLOORBEAM 26 WEST FACE	TYPE 1	NON-EPOXY
2	SPALL	8'-0"	4'-0"	32 SF	COLUMN 26N WEST FACE	TYPE 1	NON-EPOXY
3	SPALL	14'-0"	2'-0"	28 SF	FLOORBEAM 31 UNDERSIDE	TYPE 2	NON-EPOXY
4	SPALL	2'-0"	4'-0"	8 SF	FLOORBEAM 31 WEST FACE	TYPE 1	NON-EPOXY
5	SPALL	36'-0"	4'-0"	144 SF	FLOORBEAM 36 WEST FACE	TYPE 1	NON-EPOXY
6	SPALL	18'-0"	6'-0"	72 SF	FLOORBEAM 36 WEST FACE	TYPE 1	NON-EPOXY
7	SPALL	2'-0"	6'-0"	12 SF	COLUMN 40N SOUTHEAST CORNER	TYPE 1	NON-EPOXY
8	SPALL	16'-0"	4'-0"	64 SF	FLOORBEAM 46 WEST FACE	TYPE 1	NON-EPOXY
9	SPALL	8'-0"	28'-0"	244 SF	COLUMN 50S NORTH FACE	TYPE 1	NON-EPOXY
10	SPALL	14'-0"	4'-0"	56 SF	FLOORBEAM 26 WEST FACE	TYPE 1	NON-EPOXY
11	SPALL	8'-0"	2'-0"	16 SF	FLOORBEAM 31 UNDERSIDE	TYPE 2	NON-EPOXY
12	SPALL	10'-0"	4'-0"	40 SF	FLOORBEAM 36 WEST FACE	TYPE 1	NON-EPOXY
13	SPALL	6'-0"	6'-0"	36 SF	COLUMN 45N SOUTH FACE	TYPE 1	NON-EPOXY

ITEM 519 - CONCRETE PATCHING REPAIRS (CONTINUED)							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
14	SPALL	12'-0"	4'-0"	48 SF	FLOORBEAM 46 WEST FACE	TYPE 1	NON-EPOXY
15	DELAM.	6'-0"	6'-0"	36 SF	COLUMN 26N SOUTHWEST CORNER	TYPE 1	NON-EPOXY
16	DELAM.	16'-0"	4'-0"	64 SF	FLOORBEAM 26 WEST FACE	TYPE 1	NON-EPOXY
17	DELAM.	16'-0"	4'-0"	64 SF	FLOORBEAM 31 WEST FACE	TYPE 1	NON-EPOXY
18	DELAM.	10'-0"	2'-0"	20 SF	FLOORBEAM 31 UNDERSIDE	TYPE 2	NON-EPOXY
19	DELAM.	14'-0"	4'-0"	56 SF	FLOORBEAM 31 WEST FACE	TYPE 1	NON-EPOXY
20	DELAM.	2'-0"	12'-0"	24 SF	COLUMN 36N SOUTHWEST CORNER	TYPE 1	NON-EPOXY
21	DELAM.	8'-0"	8'-0"	64 SF	COLUMN 36N WEST FACE	TYPE 1	NON-EPOXY
22	DELAM.	6'-0"	8'-0"	48 SF	COLUMN 36S WEST FACE	TYPE 1	NON-EPOXY
23	SPALL	2'-0"	8'-0"	16 SF	COLUMN 46N WEST FACE	TYPE 1	NON-EPOXY
24	SPALL	4'-0"	4'-0"	16 SF	COLUMN 48N WEST FACE	TYPE 1	NON-EPOXY
25	SPALL	8'-0"	4'-0"	32 SF	FLOORBEAM 46 WEST FACE	TYPE 1	NON-EPOXY
26	SPALL	12'-0"	1'-0"	12 SF	FLOORBEAM 31 UNDERSIDE	TYPE 2	NON-EPOXY
			SHEET TOTAL	1324 SF			



WEST APPROACH - SECTION D PARTIAL FRAMING PLAN (2 OF 2)



LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].

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

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 18000035

WEST APPROACH - SECTION D PATCHING (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S48/S95

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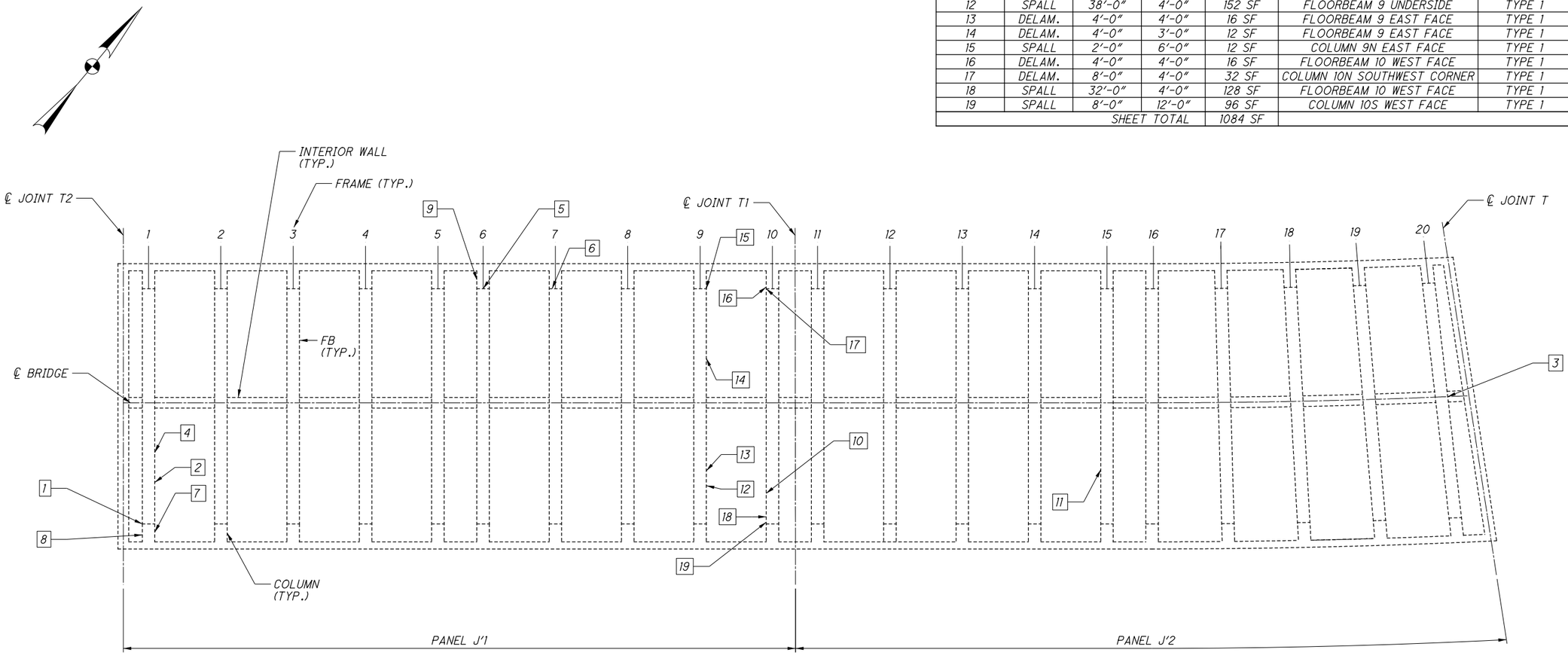
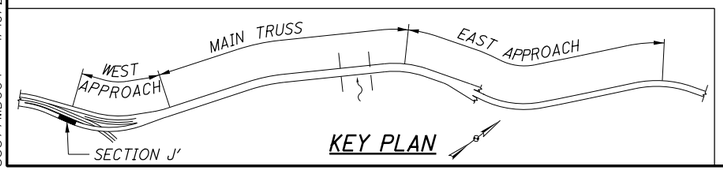
ITEM 519 - CONCRETE PATCHING REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	2'-0"	4'-0"	8 SF	COLUMN 1S NORTHWEST FACE	TYPE 1	NON-EPOXY
2	SPALL	12'-0"	4'-0"	48 SF	FLOORBEAM 1 EAST FACE	TYPE 1	NON-EPOXY
3	SPALL	56'-0"	3'-0"	168 SF	UNDERSIDE OF DECK	TYPE 2	NON-EPOXY
4	SPALL	10'-0"	4'-0"	40 SF	FB 1 UNDERSIDE & EAST FACE	TYPE 2	NON-EPOXY
5	SPALL	6'-0"	2'-0"	12 SF	COLUMN 6N SOUTH FACE	TYPE 1	NON-EPOXY
6	SPALL	4'-0"	8'-0"	32 SF	COLUMN 7N SOUTH FACE	TYPE 1	NON-EPOXY
7	DELAM.	4'-0"	12'-0"	48 SF	COLUMN 1S EAST FACE	TYPE 1	NON-EPOXY
8	DELAM.	8'-0"	6'-0"	48 SF	COLUMN 1S WEST FACE	TYPE 1	NON-EPOXY
9	DELAM.	4'-0"	10'-0"	40 SF	COLUMN 6N WEST FACE	TYPE 1	NON-EPOXY
10	DELAM.	12'-0"	4'-0"	48 SF	FLOORBEAM 10 WEST FACE	TYPE 1	NON-EPOXY
11	SPALL	32'-0"	4'-0"	128 SF	FLOORBEAM 15 WEST FACE	TYPE 1	NON-EPOXY
12	SPALL	38'-0"	4'-0"	152 SF	FLOORBEAM 9 UNDERSIDE	TYPE 1	NON-EPOXY
13	DELAM.	4'-0"	4'-0"	16 SF	FLOORBEAM 9 EAST FACE	TYPE 1	NON-EPOXY
14	DELAM.	4'-0"	3'-0"	12 SF	FLOORBEAM 9 EAST FACE	TYPE 1	NON-EPOXY
15	SPALL	2'-0"	6'-0"	12 SF	COLUMN 9N EAST FACE	TYPE 1	NON-EPOXY
16	DELAM.	4'-0"	4'-0"	16 SF	FLOORBEAM 10 WEST FACE	TYPE 1	NON-EPOXY
17	DELAM.	8'-0"	4'-0"	32 SF	COLUMN 10N SOUTHWEST CORNER	TYPE 1	NON-EPOXY
18	SPALL	32'-0"	4'-0"	128 SF	FLOORBEAM 10 WEST FACE	TYPE 1	NON-EPOXY
19	SPALL	8'-0"	12'-0"	96 SF	COLUMN 10S WEST FACE	TYPE 1	NON-EPOXY
SHEET TOTAL				1084 SF			



WEST APPROACH - SECTION J' FRAMING PLAN



KEY PLAN

LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].

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

DESIGNED KPH | DRAWN KPH | CHECKED NRF | REVIEWED PJA | DATE 12-19-16 | REVISED | STRUCTURE FILE NUMBER 18000335

WEST APPROACH - SECTION J' PATCHING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S49/S95

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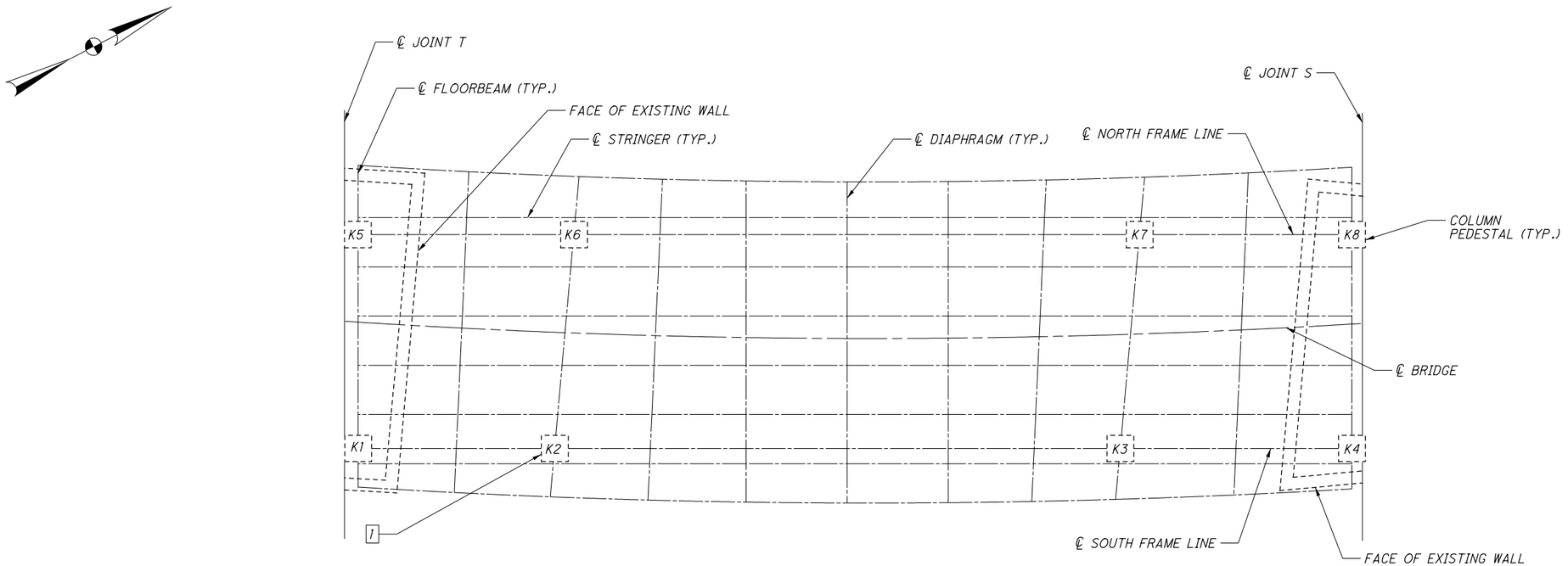
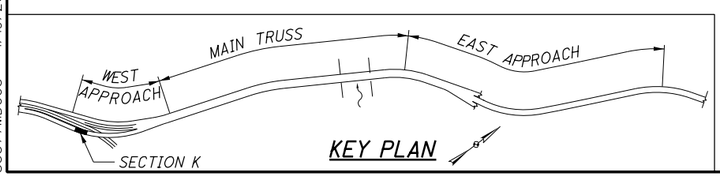
85377MD004 1/19/2017 4:08:52 PM nrfisco

ITEM 519 - CONCRETE PATCHING REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	2'-0"	4'-0"	8 SF	PEDESTAL K2 WEST FACE	TYPE 1	EPOXY



WEST APPROACH - SECTION K FRAMING PLAN



LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].

85377MD005 1/19/2017 4:09:12 PM nrfisco

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

WEST APPROACH - SECTION K PATCHING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S50/S95

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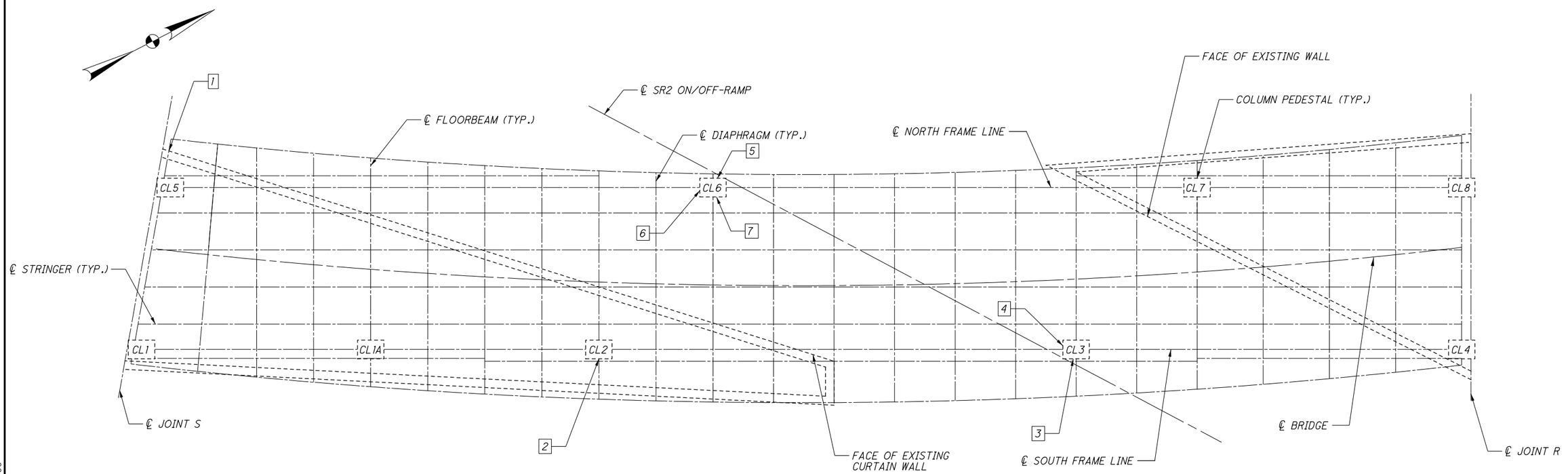
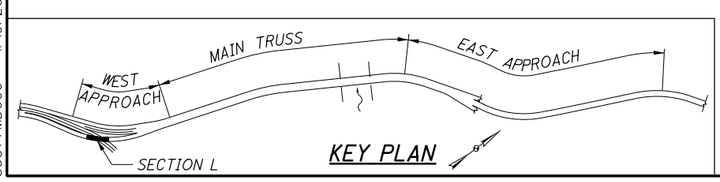
ITEM 519 - CONCRETE PATCHING REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	2'-0"	4'-0"	8 SF	NORTH WALL EXTERIOR CORNER	TYPE 1	EPOXY
2	SPALL	2'-0"	4'-0"	8 SF	PEDESTAL CL2 SOUTH FACE	TYPE 1	NON-EPOXY
3	DELAM	5'-0"	1'-0"	5 SF	PEDESTAL CL3 SOUTH FACE	TYPE 1	EPOXY
4	DELAM	4'-0"	1'-0"	4 SF	PEDESTAL CL3 WEST FACE	TYPE 1	EPOXY
5	SPALL	5'-0"	1'-0"	5 SF	PEDESTAL CL6 NORTH FACE	TYPE 1	EPOXY
6	SPALL	4'-0"	1'-0"	4 SF	PEDESTAL CL6 WEST FACE	TYPE 1	EPOXY
7	DELAM	5'-0"	1'-0"	5 SF	PEDESTAL CL6 SOUTH FACE	TYPE 1	EPOXY
SHEET TOTAL				39 SF			





WEST APPROACH - SECTION L FRAMING PLAN

LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

WEST APPROACH - SECTION L PATCHING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S51/S95

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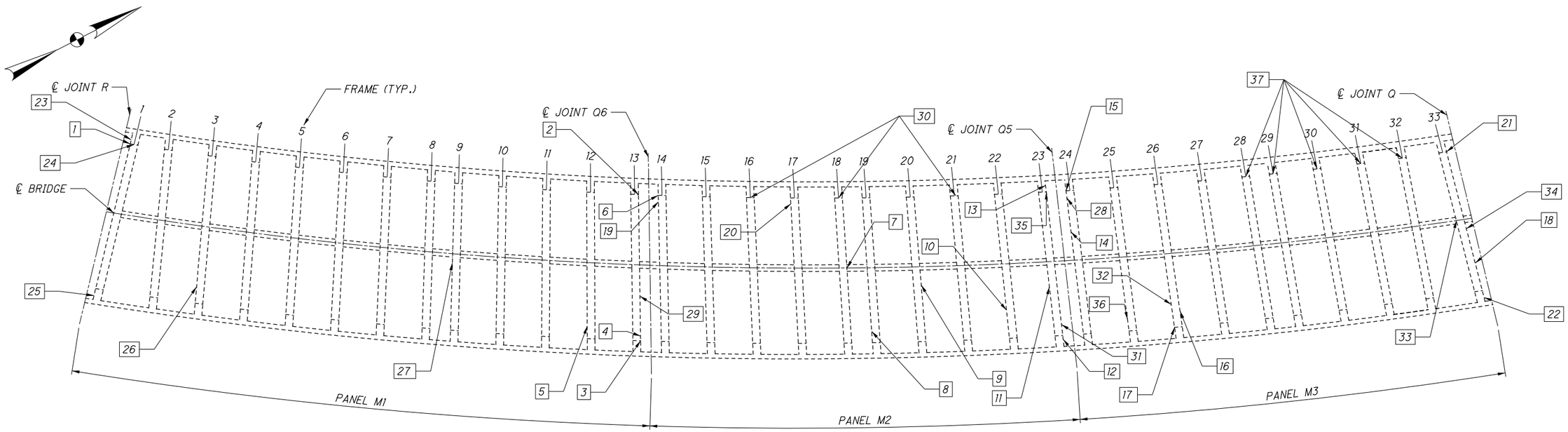
154

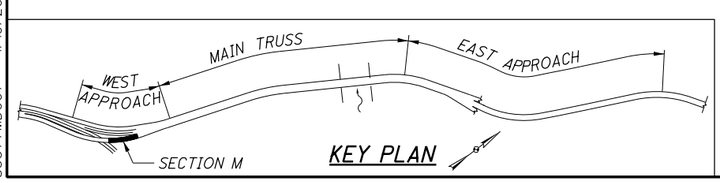
85377MD006 1/19/2017 4:09:16 PM nrfisco

ITEM 519 - CONCRETE PATCHING REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	6'-0"	18'-0"	108 SF	COLUMN IN SOUTHWEST CORNER	TYPE 1	NON-EPOXY
2	SPALL	6'-0"	16'-0"	96 SF	COLUMN 13N SOUTHEAST CORNER	TYPE 1	NON-EPOXY
3	SPALL	4'-0"	8'-0"	32 SF	COLUMN 13S NORTHEAST CORNER	TYPE 1	NON-EPOXY
4	SPALL	12'-0"	4'-0"	48 SF	FLOORBEAM 13 EAST FACE	TYPE 1	NON-EPOXY
5	SPALL	10'-0"	2'-0"	20 SF	FLOORBEAM 12 WEST FACE	TYPE 1	NON-EPOXY
6	SPALL	4'-0"	10'-0"	40 SF	COLUMN 14N WEST FACE	TYPE 1	NON-EPOXY
7	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 18 UNDERSIDE	TYPE 2	NON-EPOXY
8	SPALL	8'-0"	4'-0"	32 SF	FLOORBEAM 19 WEST FACE	TYPE 1	NON-EPOXY
9	SPALL	10'-0"	2'-0"	20 SF	FLOORBEAM 20 EAST FACE	TYPE 1	NON-EPOXY
10	SPALL	3'-0"	4'-0"	12 SF	FLOORBEAM 22 WEST FACE	TYPE 1	NON-EPOXY
11	SPALL	6'-0"	2'-0"	12 SF	FLOORBEAM 23 UNDERSIDE	TYPE 2	NON-EPOXY
12	SPALL	4'-0"	14'-0"	56 SF	COLUMN 23S NORTHEAST CORNER	TYPE 1	NON-EPOXY
13	SPALL	6'-0"	18'-0"	108 SF	COLUMN 23N EAST FACE	TYPE 1	NON-EPOXY
14	SPALL	10'-0"	4'-0"	40 SF	FLOORBEAM 24 WEST FACE	TYPE 1	NON-EPOXY
15	SPALL	3'-0"	4'-0"	12 SF	COLUMN 24N SOUTHWEST CORNER	TYPE 1	NON-EPOXY
16	SPALL	8'-0"	2'-0"	16 SF	FLOORBEAM 26 EAST FACE	TYPE 1	NON-EPOXY
17	SPALL	6'-0"	24'-0"	144 SF	COLUMN 26S NORTHWEST CORNER	TYPE 1	NON-EPOXY
18	SPALL	36'-0"	4'-0"	144 SF	FLOORBEAM 33 UNDERSIDE	TYPE 2	NON-EPOXY
19	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 14 WEST FACE	TYPE 1	NON-EPOXY

ITEM 519 - CONCRETE PATCHING REPAIRS (CONTINUED)							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
20	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 17 WEST FACE	TYPE 1	NON-EPOXY
21	SPALL	6'-0"	4'-0"	24 SF	FLOORBEAM 33 EAST FACE	TYPE 1	NON-EPOXY
22	SPALL	6'-0"	6'-0"	36 SF	COLUMN 33S EAST FACE	TYPE 1	NON-EPOXY
23	DELAM.	4'-0"	8'-0"	32 SF	COLUMN IN WEST FACE	TYPE 1	NON-EPOXY
24	DELAM.	4'-0"	10'-0"	40 SF	COLUMN IN SOUTH FACE	TYPE 1	NON-EPOXY
25	DELAM.	4'-0"	4'-0"	16 SF	COLUMN 1S WEST FACE	TYPE 1	NON-EPOXY
26	DELAM.	10'-0"	2'-0"	20 SF	FLOORBEAM 3 UNDERSIDE	TYPE 2	NON-EPOXY
27	DELAM.	24'-0"	4'-0"	96 SF	FLOORBEAM 9 WEST FACE	TYPE 1	NON-EPOXY
28	SPALL	4'-0"	4'-0"	16 SF	FLOORBEAM 24 WEST FACE	TYPE 1	NON-EPOXY
29	DELAM.	12'-0"	2'-0"	24 SF	FLOORBEAM 13 EAST FACE	TYPE 1	NON-EPOXY
30	DELAM.	24'-0"	2'-0"	48 SF*	COLUMNS 16, 18, 21 SOUTH FACE	TYPE 1	NON-EPOXY
31	DELAM.	8'-0"	4'-0"	32 SF	FLOORBEAM 23 UNDERSIDE	TYPE 2	NON-EPOXY
32	DELAM.	2'-0"	4'-0"	8 SF	FLOORBEAM 26 WEST FACE	TYPE 1	NON-EPOXY
33	SPALL	36'-0"	2'-0"	72 SF	FLOORBEAM 33 WEST FACE	TYPE 1	NON-EPOXY
34	DELAM.	38'-0"	4'-0"	152 SF	FLOORBEAM 33 EAST FACE	TYPE 1	NON-EPOXY
35	DELAM.	6'-0"	2'-0"	12 SF	COLUMN 23 SOUTH FACE	TYPE 1	NON-EPOXY
36	SPALL	2'-0"	4'-0"	8 SF	FLOORBEAM 25 WEST FACE	TYPE 1	NON-EPOXY
37	DELAM.	34'-0"	2'-0"	68 SF*	COLUMNS 28-32 SOUTH FACE	TYPE 1	NON-EPOXY
			SHEET TOTAL	1692 SF	* - TOTAL SF FOR MULTIPLE SPALLS/DELAMINATIONS		



WEST APPROACH - SECTION M FRAMING PLAN



LEGEND:

X - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET S46/S95.

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

DESIGNED KPH | DRAWN KPH | CHECKED NRF | REVIEWED PJA | DATE 12-19-16 | REVISED | STRUCTURE FILE NUMBER 18000035

WEST APPROACH - SECTION M PATCHING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S52/S95

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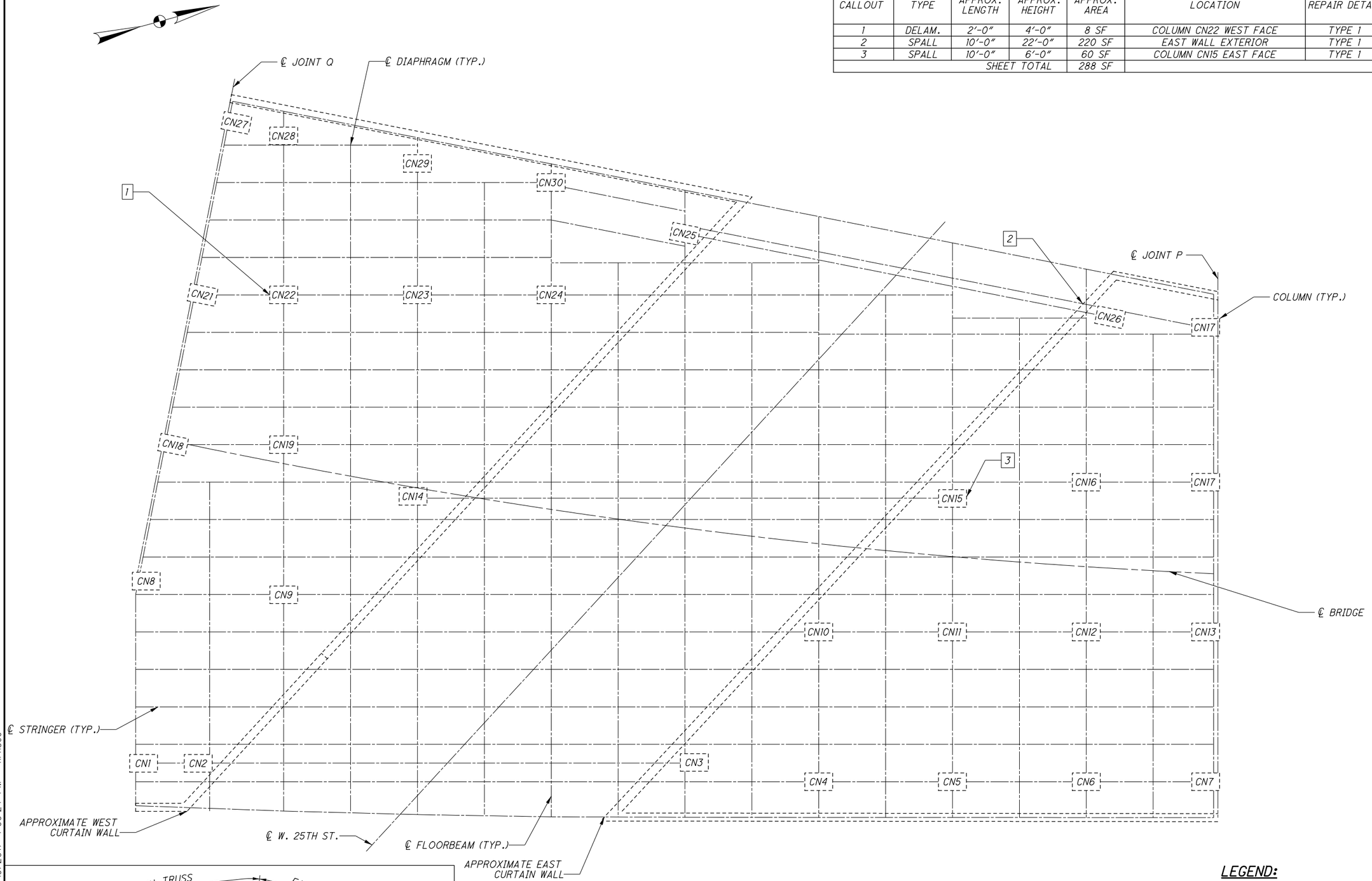
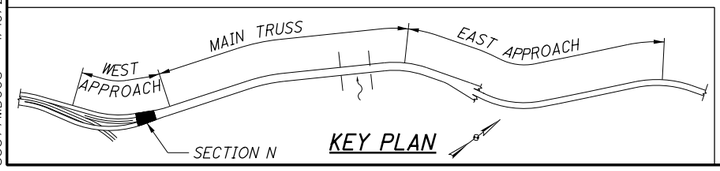
85377MD007 1/19/2017 4:09:20 PM nrfisco

ITEM 519 - CONCRETE PATCHING REPAIR							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	DELAM.	2'-0"	4'-0"	8 SF	COLUMN CN22 WEST FACE	TYPE 1	NON-EPOXY
2	SPALL	10'-0"	22'-0"	220 SF	EAST WALL EXTERIOR	TYPE 1	EPOXY
3	SPALL	10'-0"	6'-0"	60 SF	COLUMN CN15 EAST FACE	TYPE 1	NON-EPOXY
			SHEET TOTAL	288 SF			





KEY PLAN

WEST APPROACH - SECTION N FRAMING PLAN

LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].

85377MD008 1/19/2017 4:09:24 PM nrfisco

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

DESIGNED KPH | CHECKED NRF
DRAWN KPH | REVISED
REVIEWED PJA | DATE 12-19-16
STRUCTURE FILE NUMBER 18000035

WEST APPROACH - SECTION N PATCHING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S53/S95

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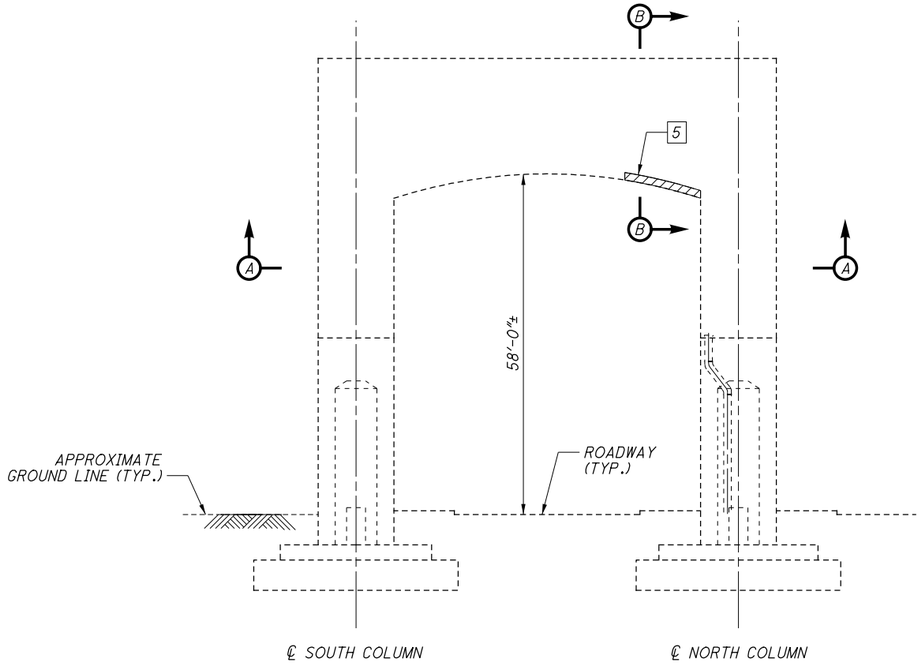
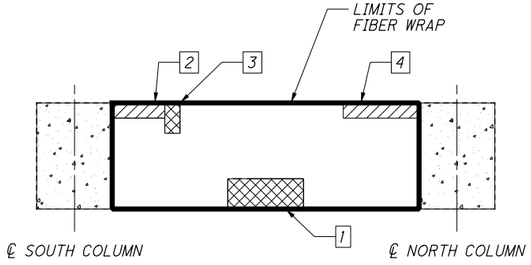
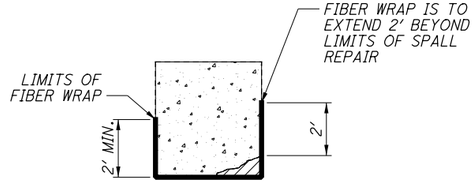
ITEM 844 - CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION REPAIRS							
CALLOUT	TYPE	APPROX. LENGTH	APPROX. WIDTH	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	16'-0"	4'-0"	64 SF	PIER 10S UNDERSIDE	TYPE 2	EPOXY
2	DELAM.	8'-0"	2'-0"	16 SF	PIER 10S UNDERSIDE	TYPE 2	EPOXY
3	SPALL	2'-0"	4'-0"	8 SF	PIER 10S UNDERSIDE	TYPE 2	EPOXY
4	DELAM.	10'-0"	2'-0"	20 SF	PIER 10S UNDERSIDE	TYPE 2	EPOXY
5	DELAM.	10'-0"	2'-0"	20 SF	PIER 10S EAST FACE	TYPE 2	EPOXY
SHEET TOTAL				128 SF			



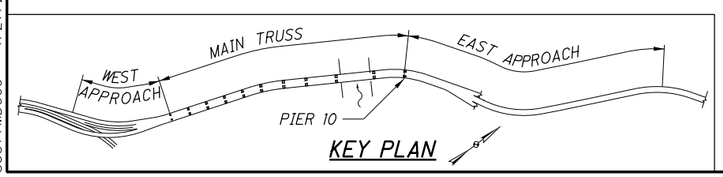
PIER 10 - EAST ELEVATION



SECTION A-A



SECTION B-B



KEY PLAN

LEGEND:

INDICATES DELAMINATED AREA TO BE PATCHED AS PER ITEM 844 - PATCHING CONCRETE WITH GALVANIC ANODE PROTECTION. THESE AREAS ARE APPROXIMATE.

INDICATES SPALLED AREA TO BE PATCHED AS PER ITEM 844 - PATCHING CONCRETE WITH GALVANIC ANODE PROTECTION. THESE AREAS ARE APPROXIMATE.

NOTES:

1. FOR NOTES SEE SHEET S46/S95.
2. ALL PIER PATCHES ARE TO BE SEALED WITH EPOXY URETHANE SEALANT. THE SEALING SHALL COVER THE AREA OF THE NEW PATCH AS WELL AS A 12" STRIP SURROUNDING NEW PATCH WHERE FEASIBLE. THE SEALING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE), AS PER PLAN.
3. THE UNDERSIDE AND VERTICAL FACES SHALL BE WRAPPED WITH A MINIMUM TWO LAYERS OF COMPOSITE FIBER WRAP AND SHALL BE PAID FOR UNDER ITEM SPECIAL STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM.

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

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 12-19-16
CHECKED DMD | REVISED | STRUCTURE FILE NUMBER 18000035

MAIN SPAN - PIER 10 PATCHING

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S54/S95

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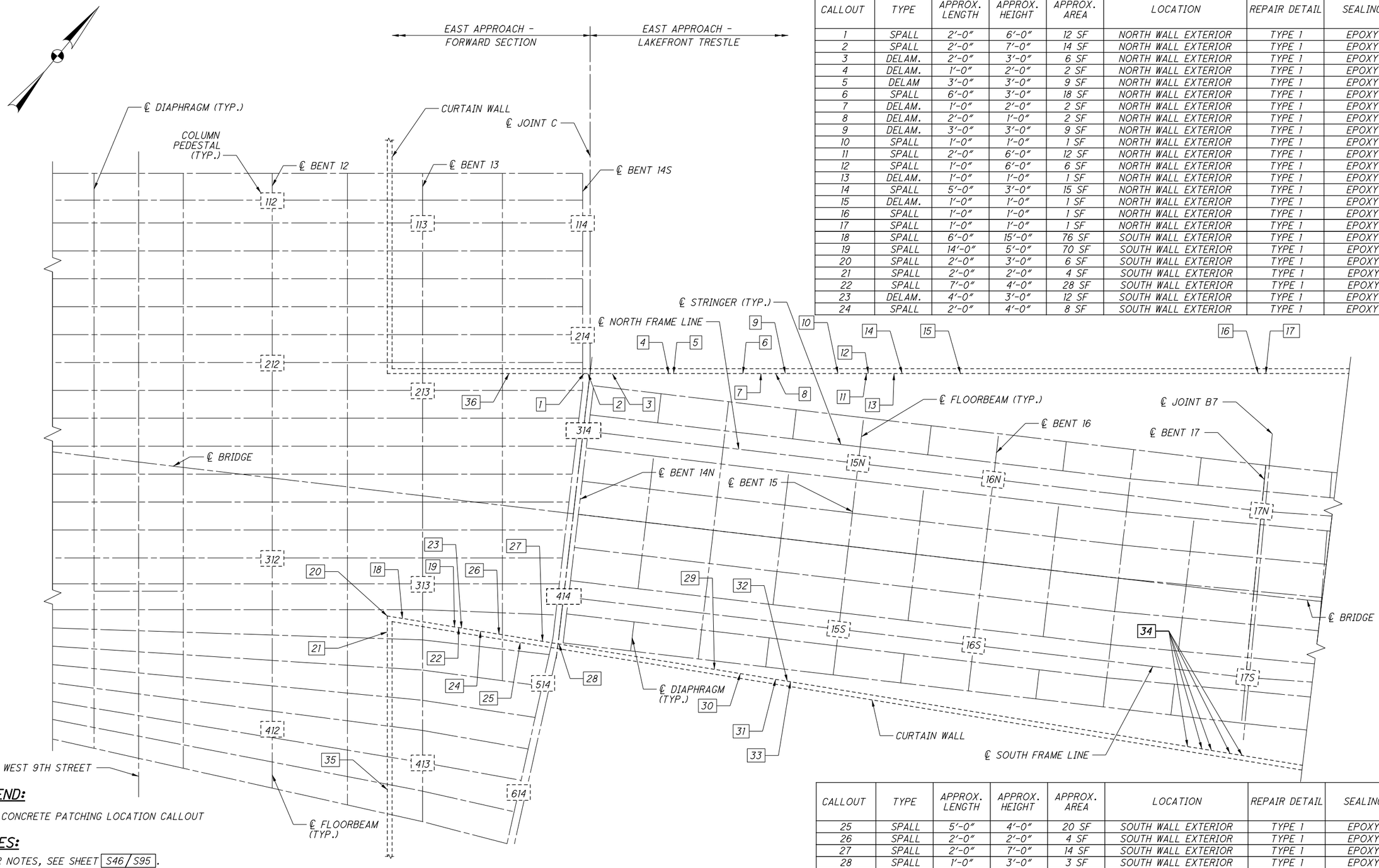


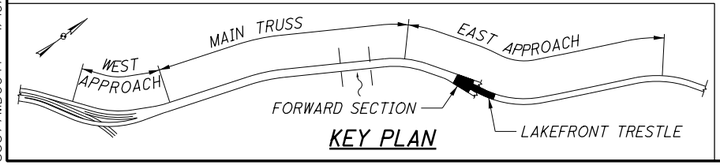
CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
1	SPALL	2'-0"	6'-0"	12 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
2	SPALL	2'-0"	7'-0"	14 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
3	DELAM.	2'-0"	3'-0"	6 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
4	DELAM.	1'-0"	2'-0"	2 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
5	DELAM	3'-0"	3'-0"	9 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
6	SPALL	6'-0"	3'-0"	18 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
7	DELAM.	1'-0"	2'-0"	2 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
8	DELAM.	2'-0"	1'-0"	2 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
9	DELAM.	3'-0"	3'-0"	9 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
10	SPALL	1'-0"	1'-0"	1 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
11	SPALL	2'-0"	6'-0"	12 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
12	SPALL	1'-0"	6'-0"	6 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
13	DELAM.	1'-0"	1'-0"	1 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
14	SPALL	5'-0"	3'-0"	15 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
15	DELAM.	1'-0"	1'-0"	1 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
16	SPALL	1'-0"	1'-0"	1 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
17	SPALL	1'-0"	1'-0"	1 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
18	SPALL	6'-0"	15'-0"	76 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
19	SPALL	14'-0"	5'-0"	70 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
20	SPALL	2'-0"	3'-0"	6 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
21	SPALL	2'-0"	2'-0"	4 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
22	SPALL	7'-0"	4'-0"	28 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
23	DELAM.	4'-0"	3'-0"	12 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
24	SPALL	2'-0"	4'-0"	8 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY

LEGEND:

[X] - CONCRETE PATCHING LOCATION CALLOUT

NOTES:

1. FOR NOTES, SEE SHEET [S46/S95].



KEY PLAN

EAST APPROACH - PARTIAL FRAMING PLAN

CALLOUT	TYPE	APPROX. LENGTH	APPROX. HEIGHT	APPROX. AREA	LOCATION	REPAIR DETAIL	SEALING
25	SPALL	5'-0"	4'-0"	20 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
26	SPALL	2'-0"	2'-0"	4 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
27	SPALL	2'-0"	7'-0"	14 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
28	SPALL	1'-0"	3'-0"	3 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
29	SPALL	6'-0"	1'-0"	6 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
30	SPALL	1'-0"	1'-0"	1 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
31	SPALL	4'-0"	2'-0"	8 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
32	DELAM.	1'-0"	2'-0"	2 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
33	SPALL	1'-0"	3'-0"	3 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
34	SPALL	5'-0"	1'-0"	5 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
35	DELAM.	3'-0"	3'-0"	9 SF	SOUTH WALL EXTERIOR	TYPE 1	EPOXY
36	SPALL	1'-0"	3'-0"	3 SF	NORTH WALL EXTERIOR	TYPE 1	EPOXY
			SHEET TOTAL	394 SF			

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

DESIGNED KPH | DRAWN KPH | CHECKED NRF | REVIEWED PJA | DATE 12-19-16 | REVISED | STRUCTURE FILE NUMBER 1800035

EAST APPROACH - PATCHING

MAIN AVENUE - BRIDGE NO. CUY-2-1441 OVER THE CUYAHOGA RIVER

CUY-2-14.41

PID No. 85377

S55/S95

106/154

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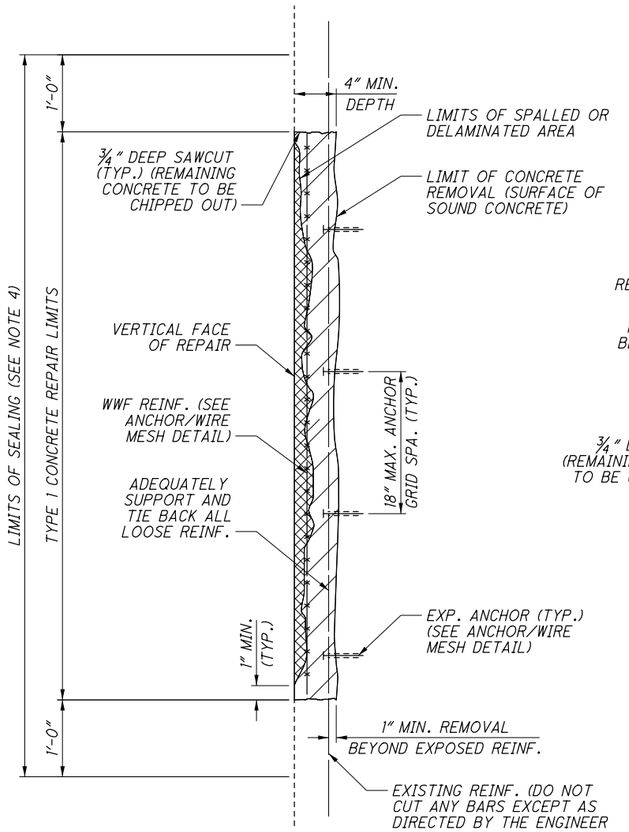
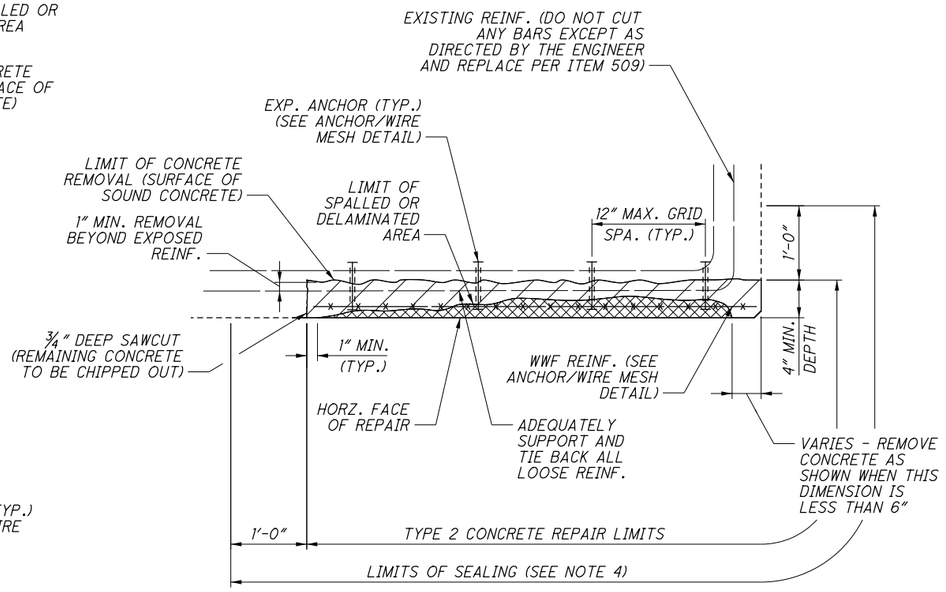


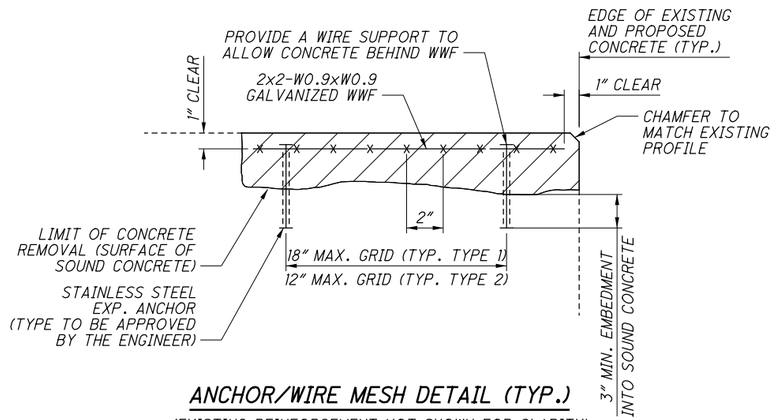
TYPE 1 CONCRETE REPAIR

(FOR VERTICAL SURFACE REPAIRS)
(NOT TO SCALE)



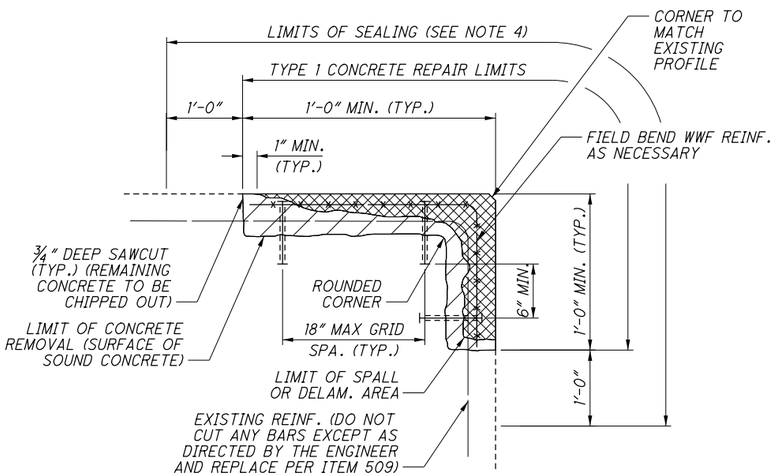
TYPE 2 CONCRETE REPAIR

(FOR HORIZONTAL AND SLOPING OVERHEAD PATCHING APPLICATIONS) (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)

GENERAL PROCEDURE FOR CONCRETE REPAIRS:

A. ALL AREAS FOR REPAIR ARE SUBJECT TO MODIFICATION IN THE FIELD BY THE ENGINEER.

B. SAWCUT PERIPHERY OF EACH AREA TO BE REPAIRED AS SHOWN.

C. REMOVE DETERIORATED CONCRETE AS SHOWN TO SOUND CONCRETE, PLUS AN ADDITIONAL 1/4" TO 1" (MAX.) OF SOUND CONCRETE PROVIDED THAT THE MINIMUM DEPTH IS MAINTAINED.

D. SANDBLAST OR WATERBLAST EXPOSED SURFACES TO REMOVE LOOSE CONCRETE CHIPS AND SURFACE LAITANCE.

E. SANDBLAST OR WIRE BRUSH EXPOSED REINFORCEMENT AND COAT WITH ZINC RICH COATING.

F. SPLICE SAME SIZE NEW BARS TO EXISTING BARS WHERE EXISTING BARS ARE DAMAGED OR HEAVILY CORRODED, AS DIRECTED BY THE ENGINEER, PER ITEM 509.

G. INSTALL WELDED WIRE FABRIC (WWF) AS DIRECTED IN ITEM 519.

H. USE FORMS TO ENSURE ADHERENCE OF REPAIR AND TO MATCH ORIGINAL SURFACE PROFILE PER ITEM 519. FORMS MAY BE NEEDED TO FOLLOW TAPERED SURFACES.

LEGEND:

INDICATES EXISTING CONCRETE SPALL AND/OR DELAMINATION TO BE PATCHED AS PER ITEM 519

INDICATES LIMITS OF CONCRETE REMOVAL INTO SOUND CONCRETE FOR CONCRETE REPAIR

NOTES:

1. FOR GENERAL NOTES SEE SHEET S7 / S95 .
2. ALL WORK AND MATERIALS FOR TYPE 1 AND TYPE 2 REPAIRS OF DETERIORATED CONCRETE AS PRESENTED IN THESE DETAILS ARE INCLUDED IN ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
3. SUBMIT FOR APPROVAL METHODS FOR CONCRETE PLACEMENT TO LIMIT OR ELIMINATE VOIDS AND AIR POCKETS IN PATCHED AREAS. INCLUDE METHOD OF REPAIR IF THERE ARE VOIDS OR AIR POCKETS DISCOVERED UPON REMOVAL OF FORM WORK.
4. FOR TYPE OF SEALING, SEE CONCRETE PATCHING SHEETS S46 / S95 THROUGH S54 / S95 .
5. SANDBLAST OR WIRE BRUSH EXPOSED REINFORCEMENT AND COAT WITH ZINC RICH COATING PER ASTM A780.
6. CONTRACTOR SHALL SUBMIT REPAIR PROCEDURE TO THE ENGINEER FOR APPROVAL.
7. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REINSTALLATION OF DRAINAGE ELEMENTS THAT NECESSITATE TEMPORARY REMOVAL FOR PATCHING OPERATIONS.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

CONCRETE PATCHING REPAIR DETAILS
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S56/S95

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154

85377MD018 1/19/2017 4:09:38 PM nrfisco

GENERAL PROCEDURE FOR CONCRETE REPAIRS:

A. CONTRACTOR IS TO SOUND PARAPET AND MARK AREAS TO BE PATCHED. DELINEATED AREAS ARE TO BE CONFIRMED BY THE ENGINEER PRIOR TO PATCHING.

B. SAWCUT PERIPHERY OF EACH AREA TO BE REPAIRED AS SHOWN.

C. CONCRETE IS TO BE REMOVED A MINIMUM OF 1" BEYOND THE EXTERIOR EDGES OF THE SPALL AND/OR DELAMINATION AND A MINIMUM OF 1" BEYOND THE EXPOSED REINFORCEMENT.

D. REMOVED DETERIORATED CONCRETE AS SHOWN TO SOUND CONCRETE, PLUS AN ADDITIONAL 1/4" TO 1" (MAX.) OF SOUND CONCRETE PROVIDED THAT THE MINIMUM DEPTH IS MAINTAINED.

E. SANDBLAST OR WATERBLAST EXPOSED SURFACES TO REMOVE LOOSE CONCRETE CHIPS AND SURFACE LAITANCE.

F. SANDBLAST OR WIRE BRUSH EXPOSED REINFORCEMENT AS DIRECTED BY ODOT AND COAT WITH ZINC RICH COATING PER ASTM A780.

G. ALL EXISTING REINFORCING IS NOT TO BE DAMAGED AND TO REMAIN UNLESS DIRECTED BY THE ENGINEER. REPLACE DAMAGED BARS AS DIRECTED BY THE ENGINEER PER ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN. WELDED WIRE FABRIC (WWF) IS TO BE INSTALLED AND TIED TO EXISTING REBAR PER CMS 519.05.

H. USE FORMS TO ENSURE ADHERENCE OF REPAIR AND TO MATCH ORIGINAL SURFACE PROFILE PER ITEM 519. FORMS MAY BE NEEDED TO FOLLOW TAPERED SURFACES.

I. PERFORM CONDITION STATE 3 REPAIRS ONLY AT THE DIRECTION OF THE ENGINEER IN THE FIELD.

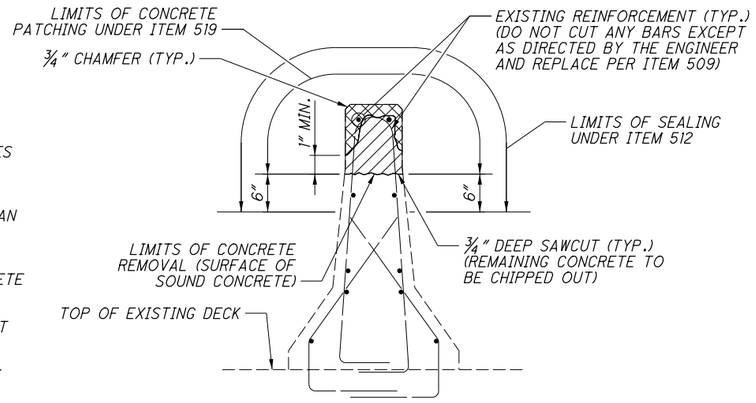
NOTES:

1. FOR GENERAL NOTES SEE SHEETS S7 / S95 .
2. ALL WORK AND MATERIALS FOR CONDITION 1, 2, AND 3 REPAIRS AS SHOWN IN THESE DETAILS SHALL BE PAID UNDER ITEM 519 - SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS.
3. CONDITION STATE 1 AND 2 REPAIRS CAN BE MADE IN CONJUCTION WITH EACH OTHER.
4. CONDITION STATE REPAIRS ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
5. ALL CONCRETE REPAIRS SHALL BE SEALED WITH EPOXY URETHANE. THE SEALING SHALL COVER THE REPAIRED AREA AS WELL AS A 6" STRIPS SURROUNDING THE REPAIR WHERE FEASIBLE. THE SEALING SHALL BE INLUDED FOR PAYMENT UNDER ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN. FOR SEALING DETAILS, SEE SHEET S4 / S95 .
6. 2x2-W0.9xW0.9 GALVANIZED WELDED WIRE FABRIC SHALL BE INSTALLED FOR REPAIRS PER CMS 519.05.
7. ALL LOOSE EXPOSED REINFORCING IS TO BE ADEQUATELY TIED BACK AND SUPPORTED DURING REPAIRS.
8. FULL DEPTH REPLACEMENT QUANTITIES WILL BE DEFINED BY THE PERIMETER OF THE PARAPET MULTIPLIED BY THE LENGTH.
9. FOR THE CONDITION 2 AND 3 REPAIRS, ANY CONSTRUCTION JOINT BETWEEN THE DECK AND PARAPET SHALL BE SEALED WITH HMWM PER ITEM 511.19 AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 519.
10. FOR TYPICAL FASCIA AND MEDIAN BARRIER CROSS-SECTIONS SEE SHEET S58 / S95 .
11. FOR CONDITION STATE 3 REPAIRS, THE SQUARE FOOT QUANTITY OF PATCHING FOR PAYMENT WILL BE EQUAL TO THE SURFACE PERIMETER OF THE PARAPET TIMES THE LENGTH OF THE REPAIR.

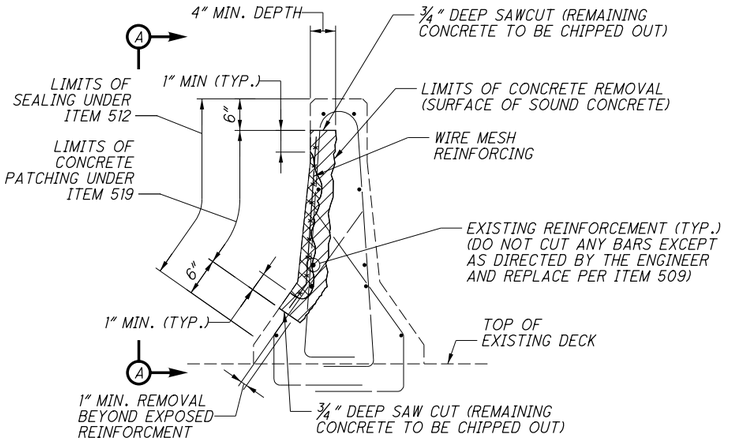
LEGEND:

INDICATES EXISTING CONCRETE SPALL AND/OR DELAMINATION TO BE PATCHED AS PER ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS

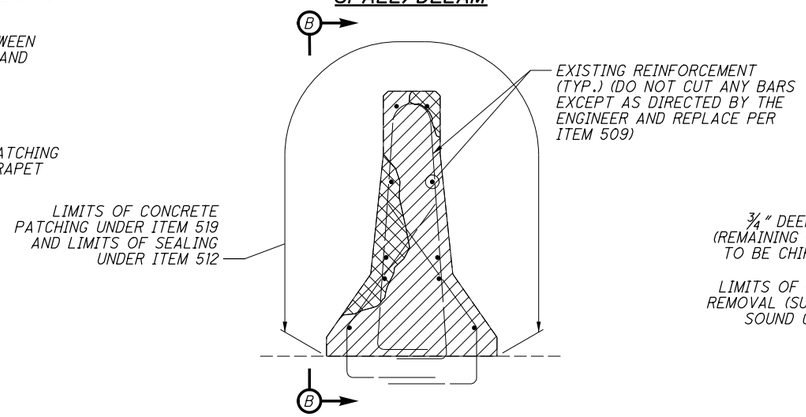
INDICATES LIMITS OF CONCRETE REMOVAL TO SOUND CONCRETE FOR CONCRETE REPAIR



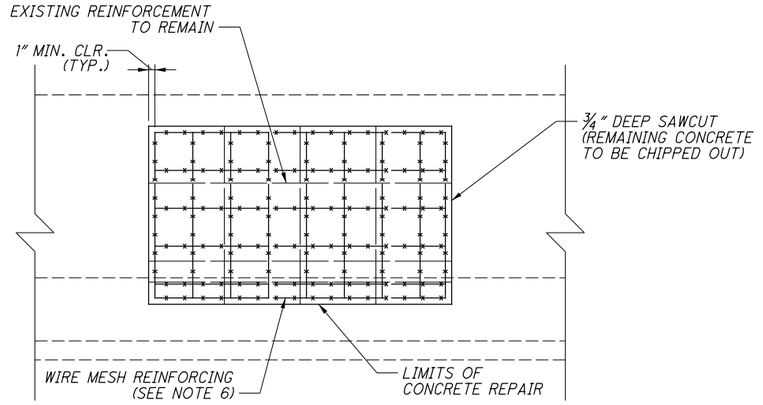
TYPICAL CONDITION 1 SPALL/DELAM



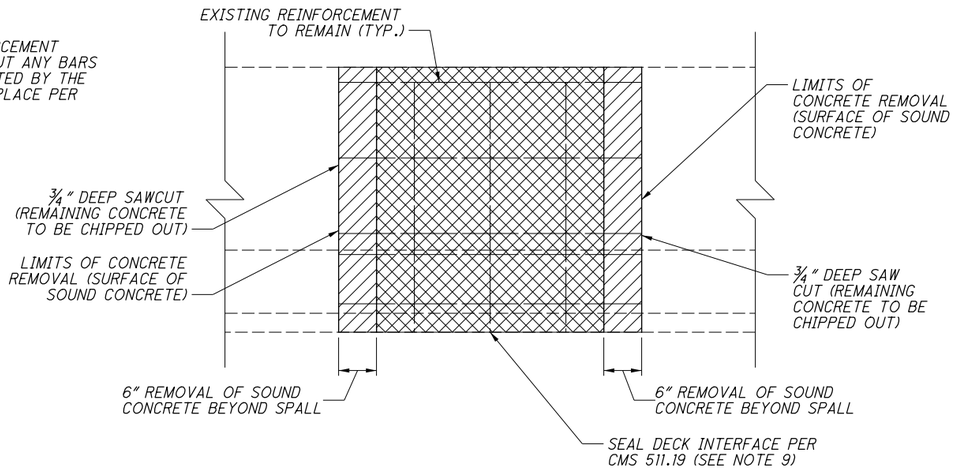
TYPICAL CONDITION 2 SPALL/DELAM



TYPICAL CONDITION 3 CONCRETE REMOVAL



VIEW A-A



VIEW B-B

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

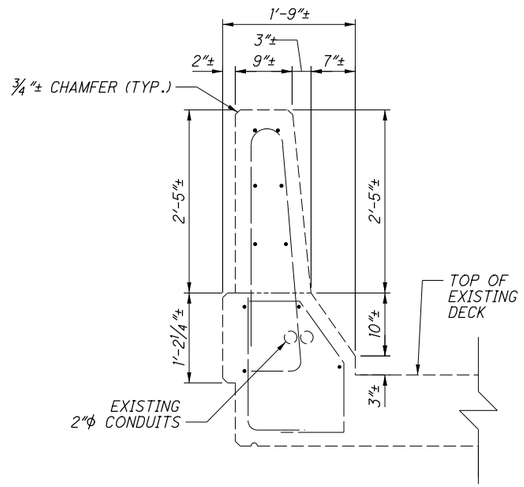
PARAPET CONCRETE PATCHING DETAILS (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

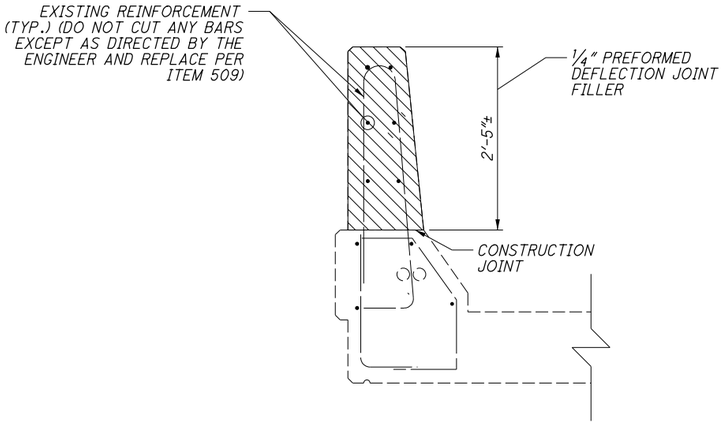
S57 / S95

108
154

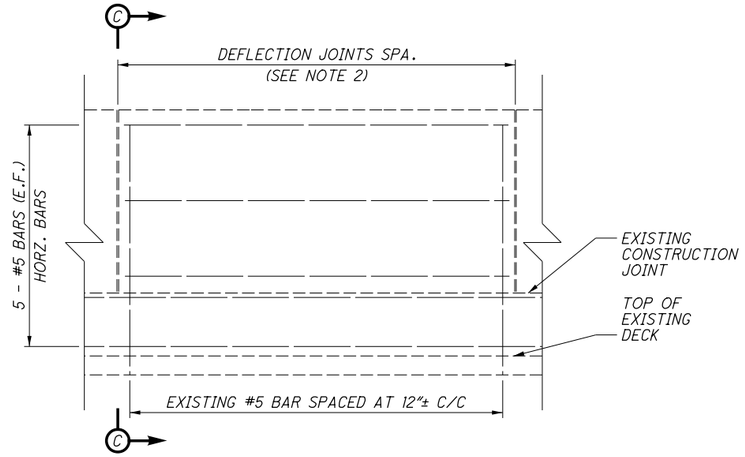
85377MD015 1/19/2017 4:09:43 PM nrfisco



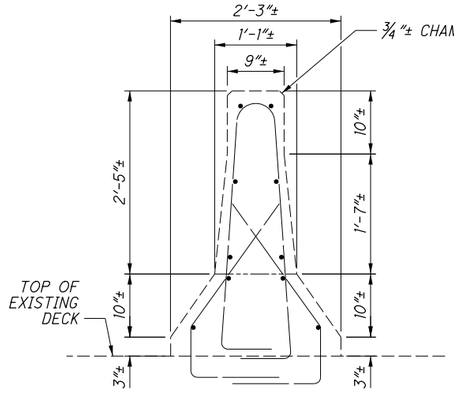
TYPICAL FASCIA BARRIER CROSS SECTION



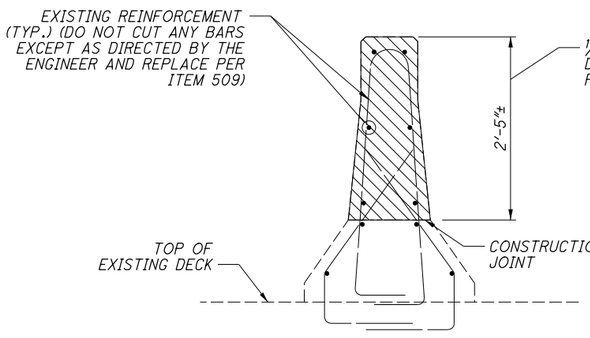
VIEW C-C



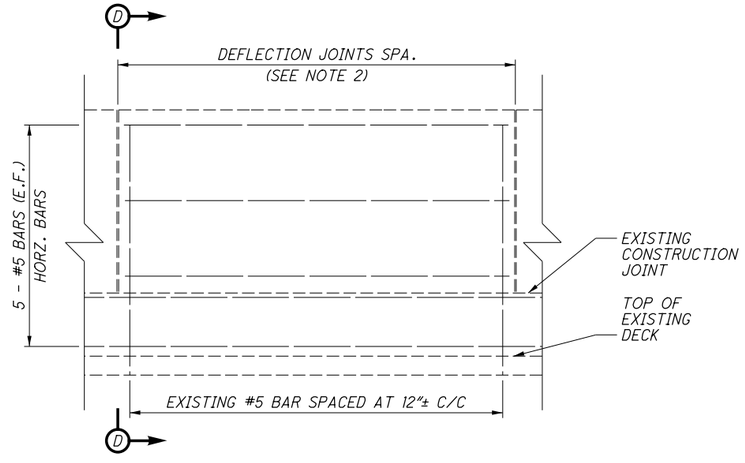
TYPICAL FASCIA BARRIER PANEL SPACING



TYPICAL MEDIAN BARRIER CROSS SECTION



VIEW D-D



TYPICAL MEDIAN BARRIER PANEL SPACING

NOTES:

1. CONTRACTOR IS TO MAINTAIN CURRENT DEFLECTION JOINT LOCATIONS AND SPACING IN THE PARAPETS DURING PATCHING OPERATIONS. DEFLECTION JOINTS ARE TO BE FILLED WITH 1/4" PREFORMED EXPANSION JOINT FILLER (PEJF) AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 519 SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS.
2. SPACING OF PARAPET DEFLECTION JOINTS VARY THROUGHOUT THE LENGTH OF THE BRIDGE. CONTRACTOR IS TO FIELD VERIFY LOCATIONS PRIOR TO COMMENCING PATCHING OPERATIONS.
3. FOR PARAPET PATCHING REPAIRS SEE SHEET S57/S95.

LEGEND:

INDICATES AREA OF 1/4" PEJF TO BE REPLACED AS PER ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TOP OF DECK PARAPETS

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

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 18000351

PARAPET CONCRETE PATCHING DETAILS (2 OF 2)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

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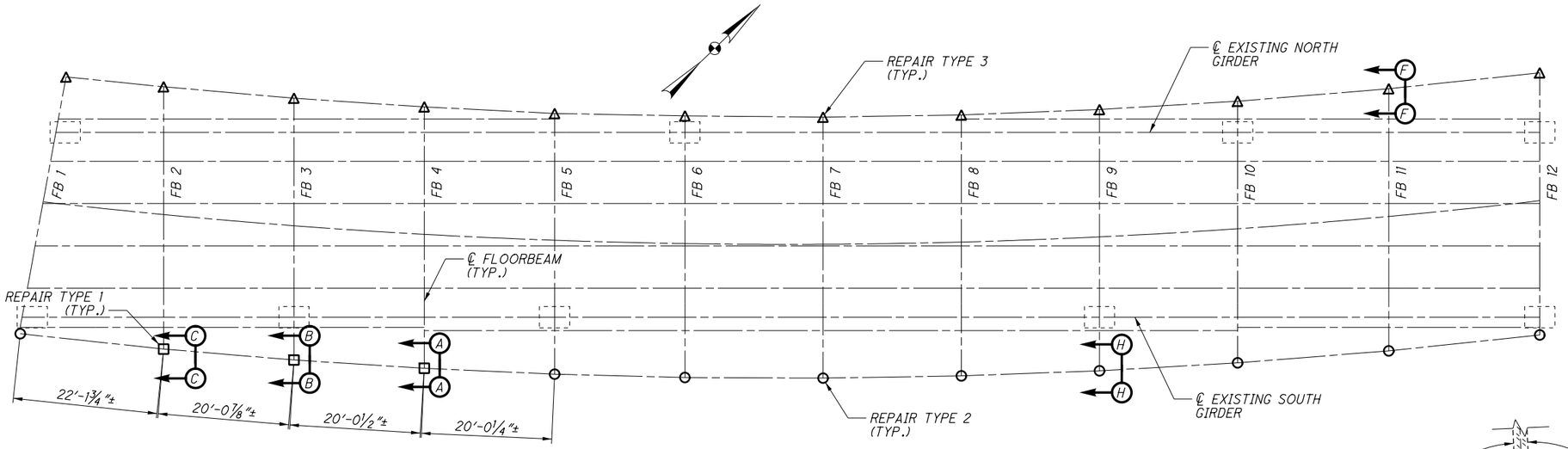


SUGGESTED SEQUENCE OF CONSTRUCTION:

LIMIT REMOVAL AND CONSTRUCTION OPERATIONS TO ONE CONNECTION ANGLE REPAIR LOCATION AT ANY GIVEN TIME.

PERFORM TYPE 1 REPAIRS AS FOLLOWS:

A. INSTALL TEMPORARY SUPPORT UNDER THE FASCIA STRINGER OF THE CONNECTION ANGLE BEING REMOVED.

B. REMOVE A SINGLE CONNECTION ANGLE.

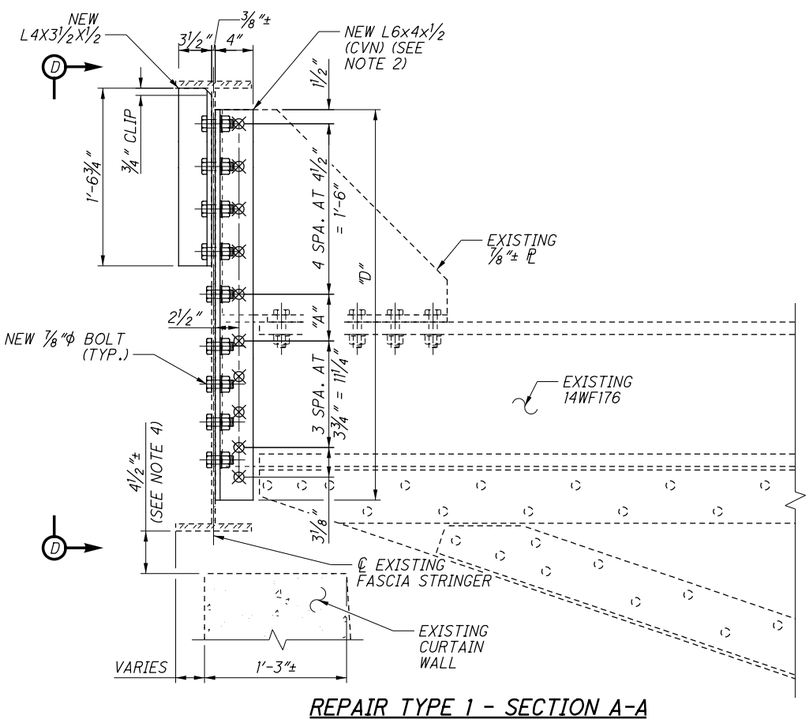
C. PREPARE FAYING SURFACES IN ACCORDANCE WITH CMS 514.13.C.

D. INSTALL NEW CONNECTION ANGLE AND STIFFENING ANGLE WITH PROPERLY TENSIONED ASTM A325 HIGH STRENGTH BOLTS.

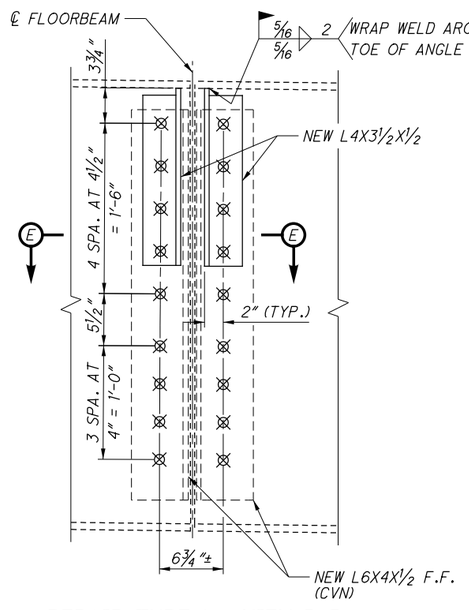
E. WELD NEW STIFFENING ANGLE OUTSTANDING LEG TO FASCIA STRINGER TOP FLANGE, AS SHOWN.

F. REMOVE TEMPORARY SUPPORT UNDER FASCIA STRINGER.

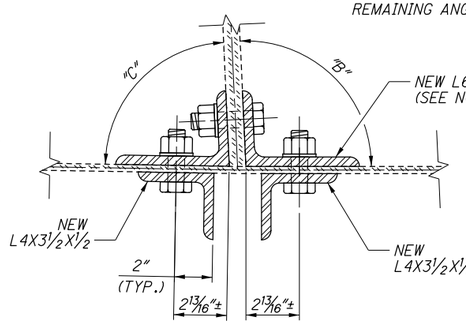
G. REPEAT STEPS "A" THROUGH "E" FOR THE REMAINING ANGLE.



REPAIR TYPE 1 - SECTION A-A
SECTION B-B (SIMILAR)
SECTION C-C (SIMILAR)



REPAIR TYPE 1 - VIEW D-D



REPAIR TYPE 1 - SECTION E-E

NOTES:

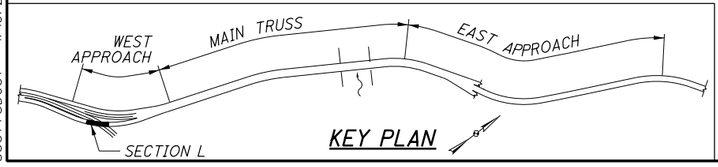
1. FOR SECTION F-F AND H-H, SEE SHEET S60/S95.
2. NEW CONNECTION ANGLES SHALL BE L6X4X½ AND SHOP BENT TO MATCH THE EXISTING STRUCTURE DIMENSIONS. USE OF BENT PLATES WILL NOT BE ALLOWED AT THESE LOCATIONS.
3. THE CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND BOLT LAYOUTS PRIOR TO PERFORMING ANY WORK AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES.
4. DURING REMOVAL AND INSTALLATION OF THE FASCIA CONNECTIONS ANGLES, THE CONTRACTOR SHALL REMOVE LIVE LOAD FROM THE EASTBOUND RIGHT LANE. THE CONTRACTOR SHALL PROVIDE A JACK AND/OR SHIMS CAPABLE OF SUPPORTING 9.5 KIPS BETWEEN THE EXISTING FASCIA AND THE CONCRETE CURTAIN WALL TO PROVIDE TEMPORARY SUPPORT THE FASCIA DURING THE CONNECTION ANGLE REPLACEMENT.
5. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
6. ALL MATERIALS, LABOR, REMOVALS, AND TEMPORARY SUPPORT ASSOCIATED WITH THE REPAIR TYPE 1 SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER CONNECTION RETROFIT.
7. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.

LEGEND:

- □ - REPAIR TYPE 1
- ○ - REPAIR TYPE 2
- △ - REPAIR TYPE 3

BOLT LEGEND:

- ○ - EXISTING RIVET OR BOLT TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
- ⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞"ϕ A325 BOLT.



	"A"	"B"	"C"	"D"
SECTION A-A	4 15/16"	92°37'00"	86°24'32"	3'-5¼"
SECTION B-B	4⅝"	93°35'28"	85°09'44"	3'-5"
SECTION C-C	4 13/16"	94°50'16"	83°56'17"	3'-5⅛"

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

DESIGNED SFH | DRAWN SFH | REVIEWED PJA | DATE 12-19-16 | CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 18000035

WEST APPROACH SECTION L - FASCIA RETROFITS (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S59/S95

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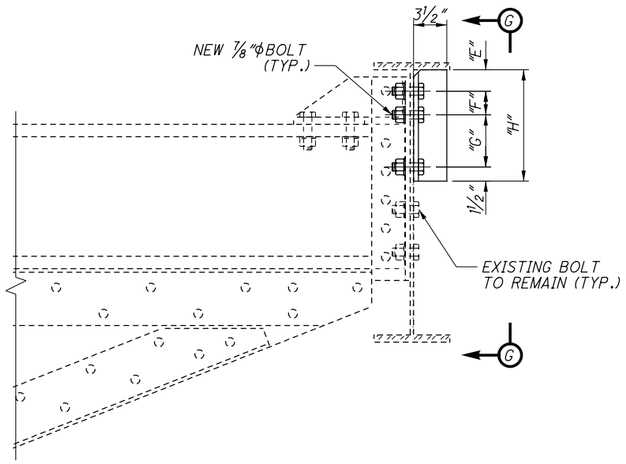
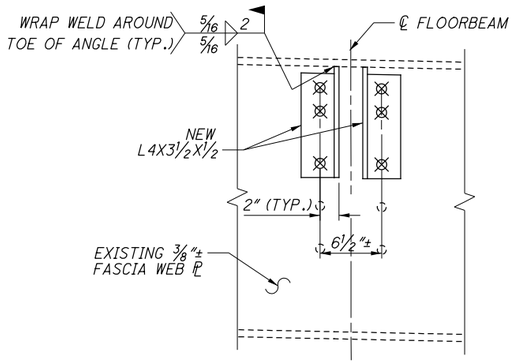
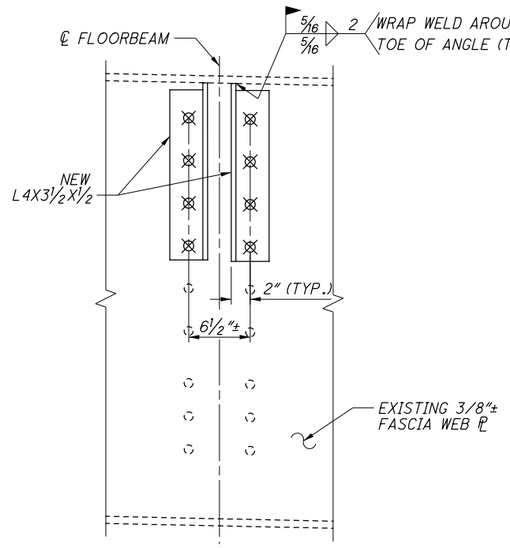


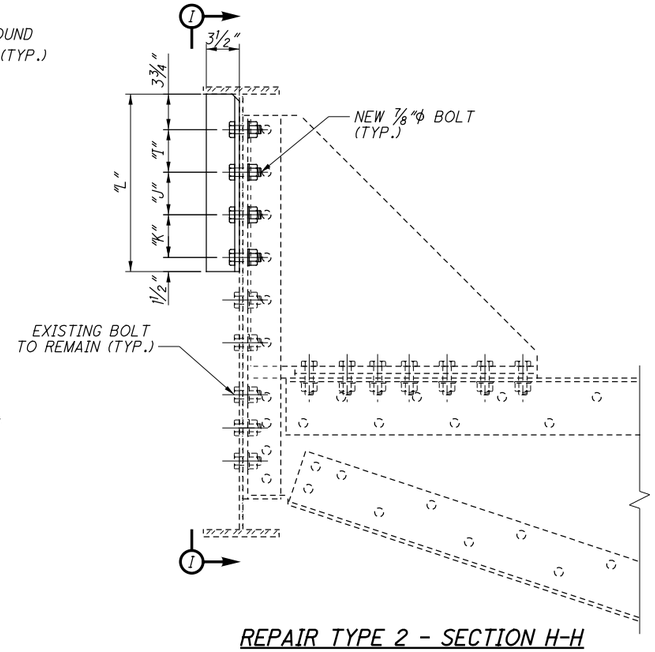
REPAIR TYPE 3 - SECTION F-F



REPAIR TYPE 3 - VIEW G-G



REPAIR TYPE 2 - VIEW I-I



REPAIR TYPE 2 - SECTION H-H

BOLT LEGEND:

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

⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞"ϕ A325 BOLT.

SUGGESTED SEQUENCE OF CONSTRUCTION:

LIMIT REMOVAL AND CONSTRUCTION OPERATIONS TO ONE STIFFENER REPAIR LOCATION AT ANY GIVEN TIME.

PERFORM FASCIA STRINGER STIFFENING AS FOLLOWS:

A. PREPARE FAYING SURFACES IN ACCORDANCE WITH CMS 514.13C.

B. REMOVE ONLY A SINGLE COLUMN OF BOLTS, TO THE LIMITS SHOWN, AT A TIME. INSTALL STIFFENING ANGLE WITH PROPERLY TENSIONED ASTM A325 HIGH STRENGTH BOLTS.

C. WELD NEW STIFFENING ANGLE OUTSTANDING LEG TO STRINGER TOP FLANGE AS SHOWN.

D. REPEAT "B" AND "C" FOR REMAINING STIFFENING ANGLES.

FLOORBEAM	NORTH BRACKET				SOUTH BRACKET			
	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"
FB1	3¾"	4½"	4½"	14¼"	5"	5"	5½"	20¾"
FB2	3¾"	4"	4½"	13¾"	4½"	4½"	4½"	18¾"
FB3	3¾"	4"	4½"	13¾"	4½"	4½"	4½"	18¾"
FB4	3¾"	4½"	4½"	14¼"	4½"	4½"	4½"	18¾"
FB5	3¾"	4½"	4½"	14¼"	4½"	4½"	4½"	18¾"
FB6	3¾"	4½"	5½"	15¼"	4½"	4½"	4½"	18¾"
FB7	3¾"	4½"	5½"	15¼"	4½"	4½"	4½"	18¾"
FB8	3¾"	4½"	5½"	15¼"	4½"	4½"	4½"	18¾"
FB9	3¾"	4½"	5½"	15¼"	4½"	4½"	4½"	18¾"
FB10	2¼"	2½"	5½"	11¾"	4½"	4½"	4½"	18¾"
FB11	2¼"	2½"	5½"	11¾"	4½"	4½"	4½"	18¾"
FB12	3¾"	4½"	4½"	14¼"	4½"	4½"	5½"	19¾"

NOTES:

1. FOR STIFFENER REPAIR LOCATIONS AND SECTION F-F AND H-H LOCATIONS SEE SHEET S59/S95.
2. THE CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND BOLT LAYOUTS PRIOR TO PERFORMING ANY WORK AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES.
3. THE CONTRACTOR SHALL PERFORM THE TYPE 3 REPAIRS WHILE LIMITING LIVE LOAD TO THE EASTBOUND LEFT LANE.
4. ALL MATERIALS AND LABOR ASSOCIATED WITH REPAIR TYPES 2 AND 3 SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: WEST APPROACH FASCIA STRINGER RETROFIT.
5. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.

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

DESIGNED SFH | DRAWN SFH | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED NRF | STRUCTURE FILE NUMBER 1800035

WEST APPROACH SECTION L - FASCIA RETROFITS (2 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S60/S95

111
154

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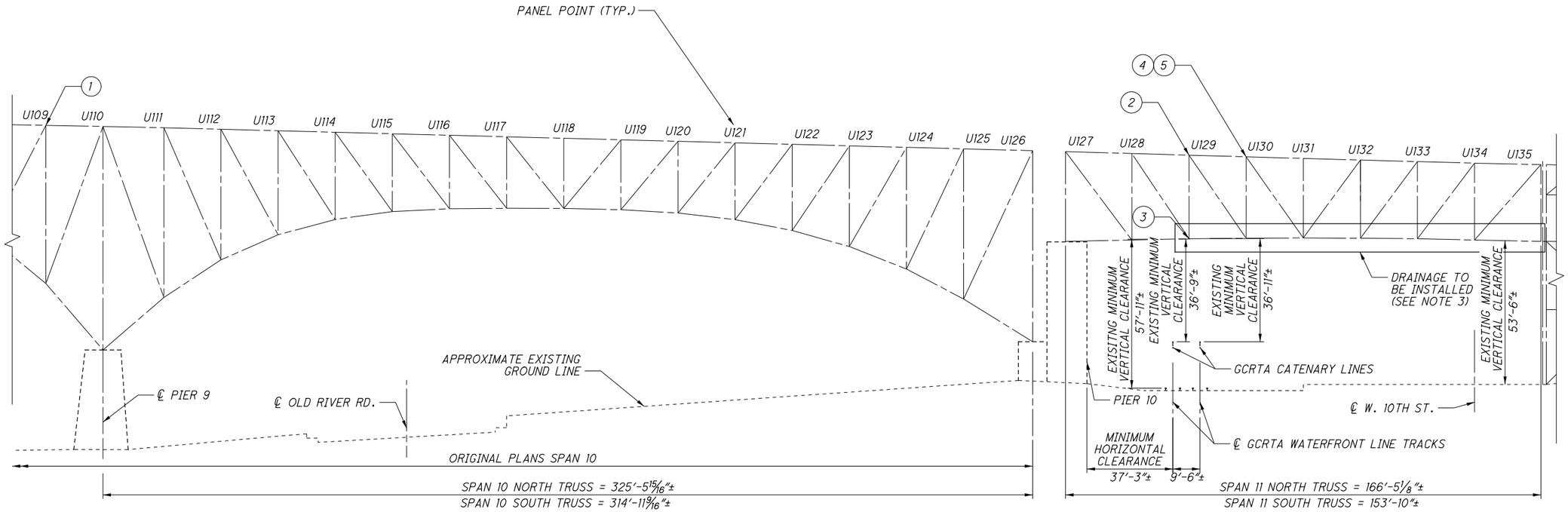


PARTIAL SOUTH ELEVATION OF TRUSS

(CENTERLINES OF MEMBERS SHOWN)
(GUSSET PLATES, BEARINGS, FRAMING, DECK NOT SHOWN FOR CLARITY)

	RETROFIT KEY			
DETAIL	SPAN	LOCATION	RETROFIT	SHEETS
1	9	U109 NORTH TRUSS	GUSSET ℄ EDGE STIFFENING	S62
2	11	U129 SOUTH TRUSS	GUSSET ℄ EDGE STIFFENING	S62
3	11	L129 SOUTH TRUSS	GUSSET ℄ EDGE STIFFENING	S62
4	11	U130 NORTH TRUSS	GUSSET ℄ EDGE STIFFENING	S63
5	11	U130 SOUTH TRUSS	GUSSET ℄ EDGE STIFFENING	S63

NOTES:

1. DUE TO ACCESS RESTRICTIONS BELOW BRIDGE, THE U109 REPAIR IN SPAN 9 MUST BE COMPLETED FROM ABOVE.
2. FOR GCRTA COORDINATION NOTES, SEE SHEET S3 / S95 .
3. FOR DRAINAGE DETAILS, SEE SHEET S92 / S95 THROUGH S94 / S95 .

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		18000035	

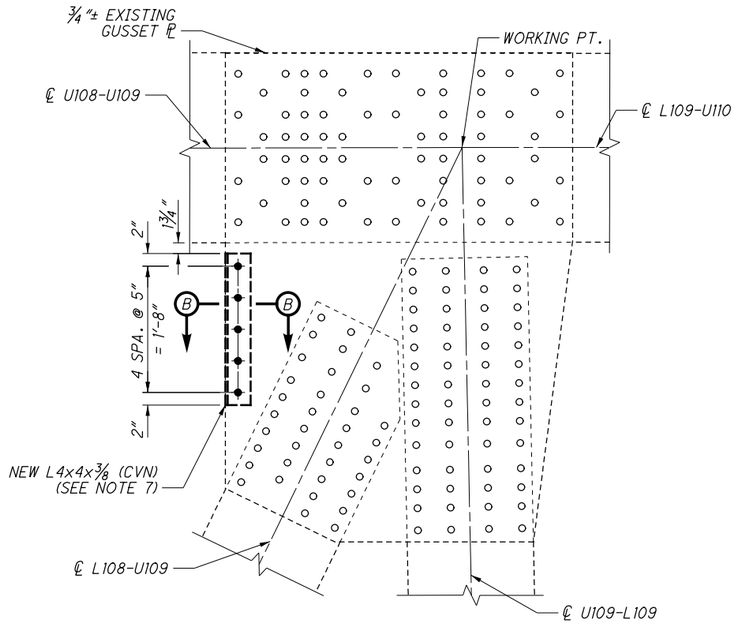
MAIN TRUSS STEEL RETROFIT SPANS 9, 10, & 11
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S61/S95

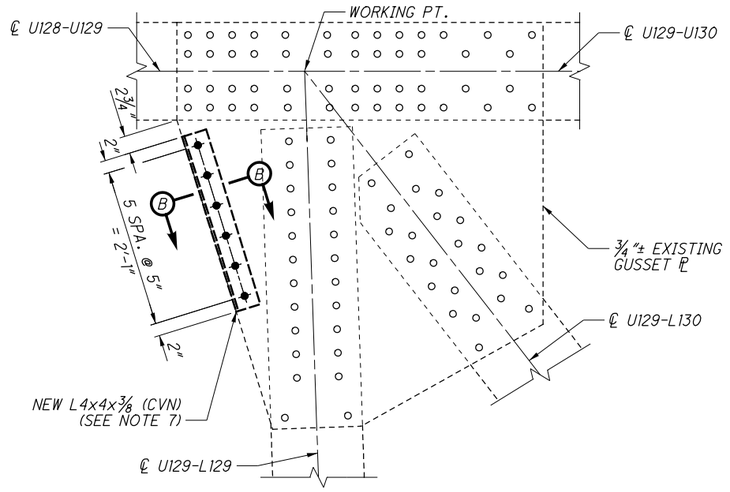
112
154

85377SD002 1/19/2017 4:09:55 PM nrfisco

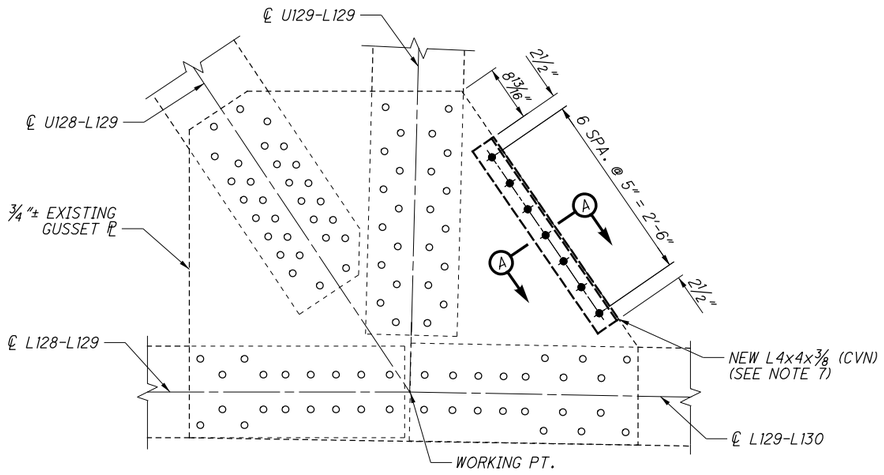


U109N SOUTH GUSSET PLATE (SHOWN)
U109N NORTH GUSSET PLATE (OPPOSITE HAND)

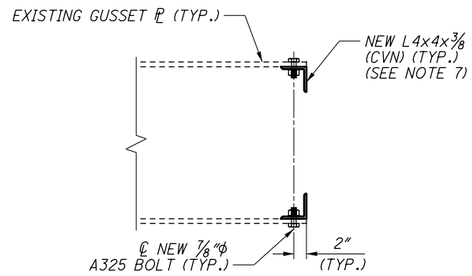
(SEE NOTE 12)



U129S SOUTH GUSSET PLATE (SHOWN)
U129S NORTH GUSSET PLATE (OPPOSITE HAND)



L129S SOUTH GUSSET PLATE (SHOWN)
L129S NORTH GUSSET PLATE (OPPOSITE HAND)



TYPICAL SECTION A-A
SECTION B-B (OPPOSITE HAND)

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. THE NAMING CONVENTION USED IN THE TITLES SHALL BE AS FOLLOWS:
   N = NORTH TRUSS U = UPPER PANEL POINT
   S = SOUTH TRUSS L = LOWER PANEL POINT
   EXAMPLE: U90N&S IS THE UPPER GUSSET PLATE AT PANEL POINT U90 OF THE NORTH AND SOUTH TRUSSES
3. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL NEW BOLT HOLES SHALL BE 15/16" DIAMETER.
4. ALL NEW STEEL ANGLES ARE CVN AND SHALL BE ASTM A709 GRADE 50.
5. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
6. THE ANGLES SHALL HAVE AT LEAST 1" CLEARANCE TO ANY CONNECTING PRIMARY TRUSS MEMBERS.
7. NEW STIFFENING ANGLES HAVE BEEN PREVIOUSLY FABRICATED AND ARE STORED BY THE STATE. SEE GENERAL NOTES SHEET S4/S95.
8. ALL LABOR AND ACCESS ASSOCIATED WITH INSTALLING EACH EDGE STIFFENING RETROFIT ANGLE, INCLUDING DRILLING, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: MAIN TRUSS GUSSET PLATE EDGE STIFFENING ANGLE.
9. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEETS S4/S95.
10. FOR ADDITIONAL LOCATIONS OF SECTION B-B SEE SHEET S63/S95.
11. DUE TO ACCESS RESTRICTIONS BELOW PANEL POINT U109, EDGE STIFFENING ANGLE INSTALLATION MUST BE PERFORMED FROM ABOVE.
12. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.

BOLT LEGEND:

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

● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT.

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		1800035	

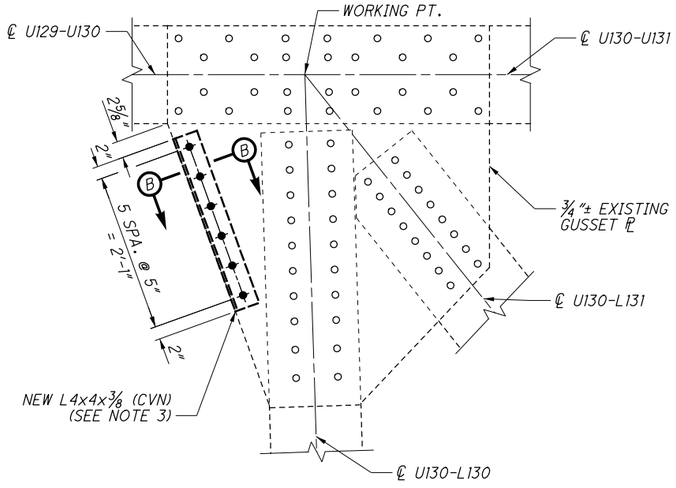
GUSSET PLATE EDGE STIFFENING DETAILS (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

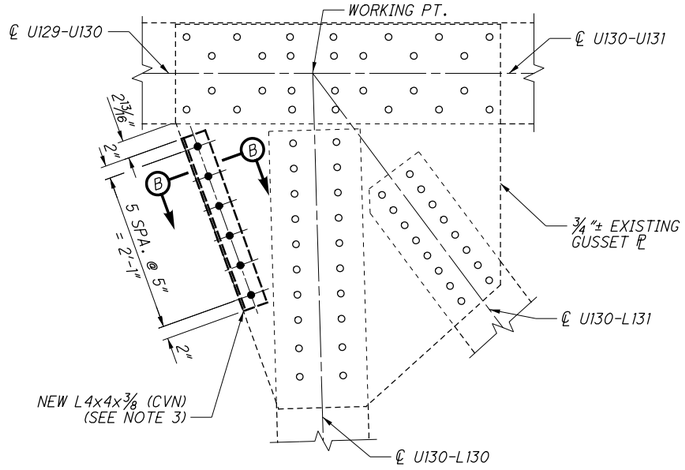
S62/S95

113
154

85377SD003.1 1/19/2017 4:09:59 PM nrfisco



U130S SOUTH GUSSET PLATE (SHOWN)
U130S NORTH GUSSET PLATE (OPPOSITE HAND)



U130N SOUTH GUSSET PLATE (SHOWN)
U130N NORTH GUSSET PLATE (OPPOSITE HAND)

BOLT LEGEND:

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

● - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT.

NOTES:

1. ALL ELEVATIONS SHOWN ARE SOUTH ELEVATIONS.
2. FOR ADDITIONAL NOTES AND SECTION B-B, SEE SHEET S62/S95.
3. NEW STIFFENING ANGLES HAVE BEEN PREVIOUSLY FABRICATED AND ARE STORED BY THE STATE. SEE GENERAL NOTES SHEET S4/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		1800035	

GUSSET PLATE EDGE STIFFENING DETAILS (2 OF 2)

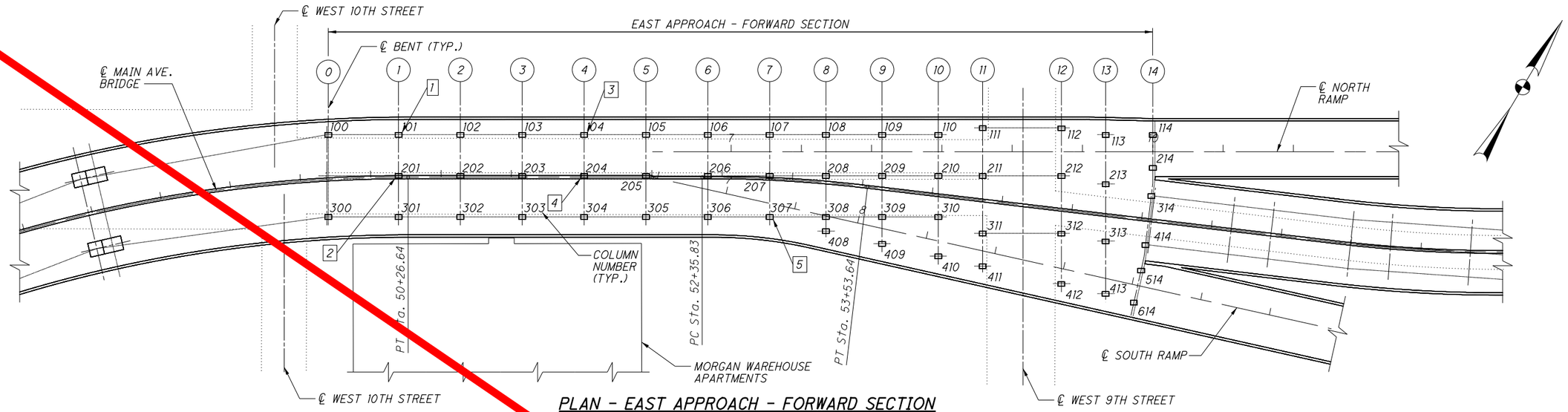
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S63/S95

114
154

85377SD003.1 1/19/2017 4:10:00 PM nrfisco



PLAN - EAST APPROACH - FORWARD SECTION

REPAIR LIST:

[1] REMOVE AND REPLACE EAST BOTTOM BATTEN PLATE.

[2] REMOVE AND REPLACE WEST AND EAST BOTTOM BATTEN PLATES.

[3] REMOVE AND REPLACE WEST AND EAST BOTTOM BATTEN PLATES.

[4] REMOVE AND REPLACE WEST BOTTOM BATTEN PLATE.

[5] REMOVE AND REPLACE EAST BOTTOM BATTEN PLATE.

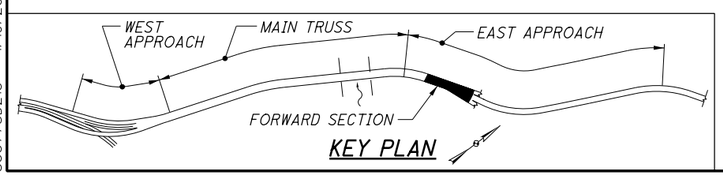
LEGEND:

[X] TYPICAL REPAIR LOCATION CALLOUT

(X) TYPICAL BENT NUMBER CALLOUT

NOTES:

1. SEE SHEETS [S65 / S95] TO [S66 / S95] FOR COLUMN SECTIONS AND REPAIR DETAILS.



KEY PLAN

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

DESIGNED	DRAWN	REVIEWED	DATE
JLV	JLV	PJA	12-19-16

CHECKED	REVISED	STRUCTURE FILE NUMBER
SFH		18000035

EAST APPR. - FORWARD SECTION COLUMN REPAIRS (1 OF 3)

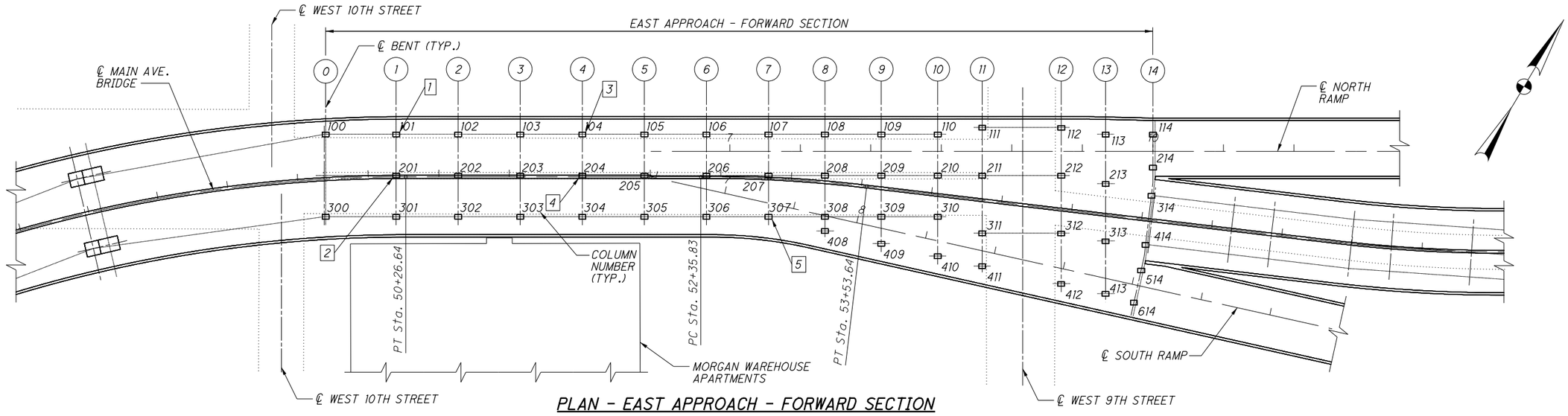
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41

PID No. 85377

S64 / S95

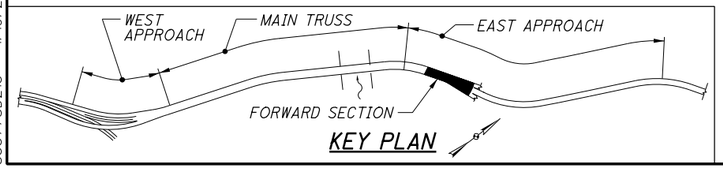
115
154



PLAN - EAST APPROACH - FORWARD SECTION

Revised Batten Plate Repair Locations

SIDE	COLUMN	QUANTITY	Date Installed	Inspector		
East	101	1	4/9/2018	Busher		
East / West	201	2	4/9/2018	Busher		
Center	201	1	4/9/2018	Busher	added Center	
East / West	104	2	4/9/2018	Busher		
West	204	1	3/22/2018	Busher		
East	204	1	3/22/2018	Busher	added East	
East	307	1	3/23/2018	Busher		
Center / East	107	2	6/12/2018	Busher	both added	
West / Center	207	2	6/12/2018	Busher	both added	
West	107	0.25	6/12/2018	Busher	added section loss reinf. Plate	



KEY PLAN

REPAIR LIST:

[1] REMOVE AND REPLACE EAST BOTTOM BATTEN PLATE.

[2] REMOVE AND REPLACE WEST AND EAST BOTTOM BATTEN PLATES.

[3] REMOVE AND REPLACE WEST AND EAST BOTTOM BATTEN PLATES.

[4] REMOVE AND REPLACE WEST BOTTOM BATTEN PLATE.

[5] REMOVE AND REPLACE EAST BOTTOM BATTEN PLATE.

LEGEND:

[X] TYPICAL REPAIR LOCATION CALLOUT

(X) TYPICAL BENT NUMBER CALLOUT

NOTES:

1. SEE SHEETS [S65 / S95] TO [S66 / S95] FOR COLUMN SECTIONS AND REPAIR DETAILS.

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

DESIGNED JLV | DRAWN JLV | REVIEWED PJA | DATE 12-19-16 | CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 1800035

EAST APPR. - FORWARD SECTION COLUMN REPAIRS (1 OF 3)

MAIN AVENUE - BRIDGE NO. CUY-2-1441 OVER THE CUYAHOGA RIVER

CUY-2-14.41

PID No. 85377

S64 / S95

115 / 154

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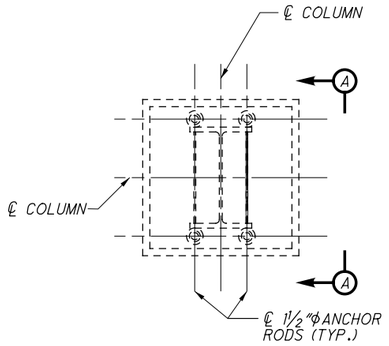
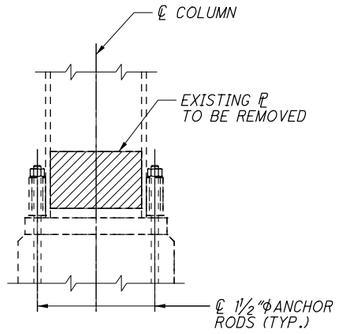
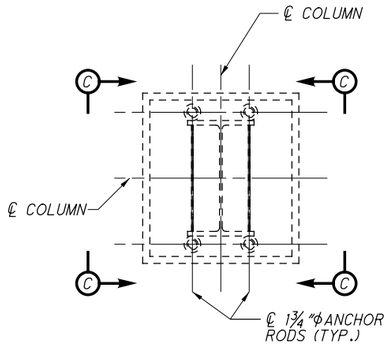


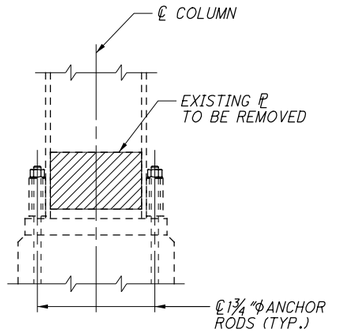
EXISTING SECTION AT COLUMN 101



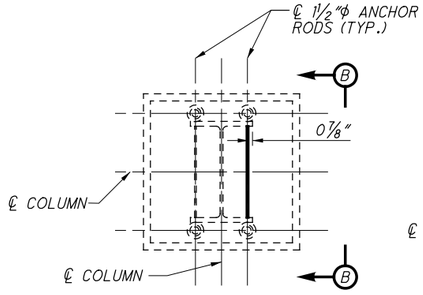
VIEW A-A



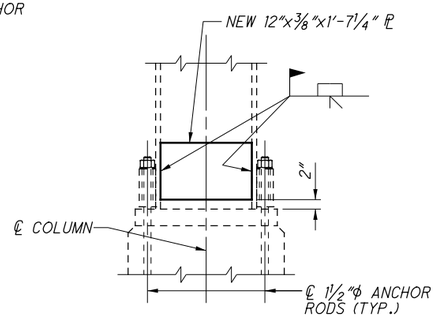
EXISTING SECTION AT COLUMN 201



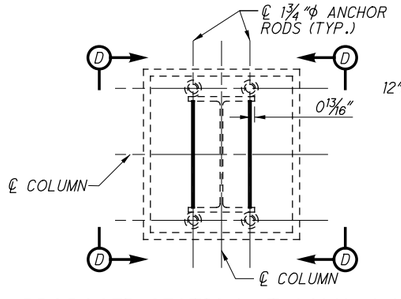
VIEW C-C



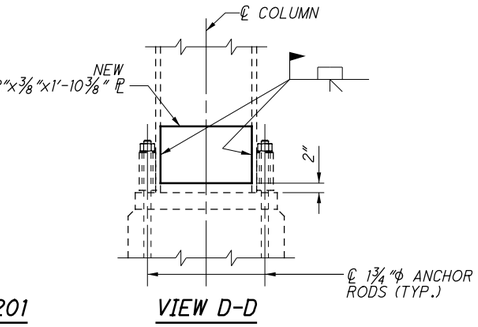
PROPOSED SECTION AT COLUMN 101



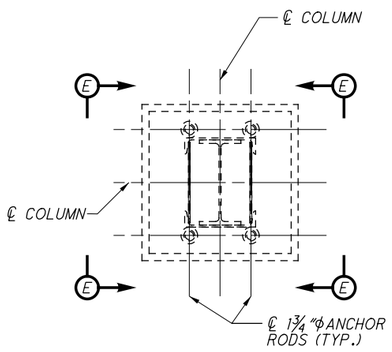
VIEW B-B



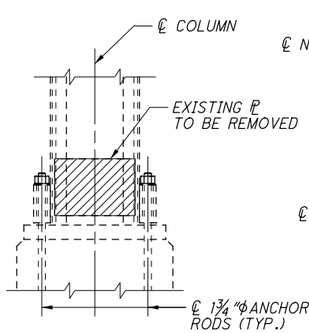
PROPOSED SECTION AT COLUMN 201



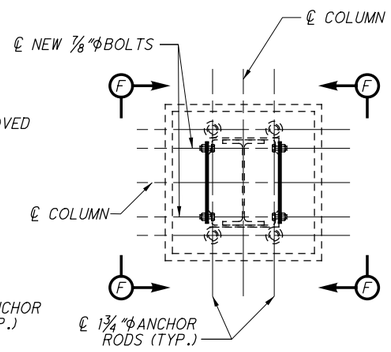
VIEW D-D



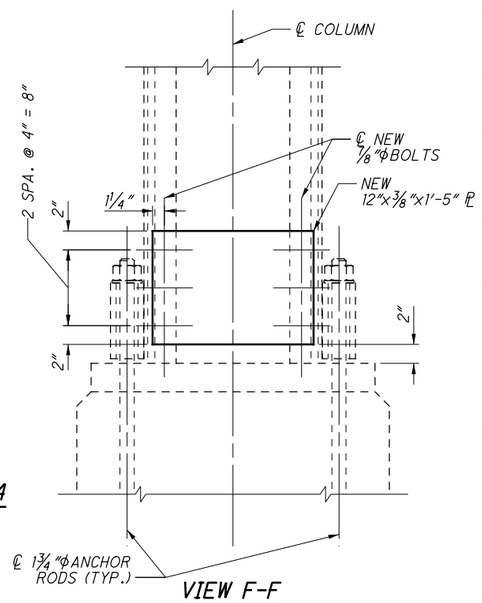
EXISTING SECTION AT COLUMN 104



VIEW E-E



PROPOSED SECTION AT COLUMN 104



VIEW F-F

NOTES:

1. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
2. THE REMOVAL OF THE EXISTING PLATES SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
3. EXISTING WELDS ARE TO BE GROUND SMOOTH AND FLUSH PRIOR TO THE INSTALLATION OF THE NEW PLATE.
4. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING MEMBERS TO REMAIN, AND REPAIR ANY DAMAGE TO THE ENGINEER'S SATISFACTION AT NO ADDITIONAL COST TO THE PROJECT.
5. FOR LOCATIONS OF COLUMN REPAIRS AND COLUMN NOMENCLATURE SEE SHEET S64/S95 .
6. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS PRIOR TO FABRICATION.
7. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLATION OF NEW PLATES SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: FORWARD SECTION COLUMN RETROFIT.
8. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.

LEGEND:

▨ - EXISTING STEEL TO BE REMOVED

● - FIELD DRILL NEW ¹⁵⁄₁₆"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		18000035	

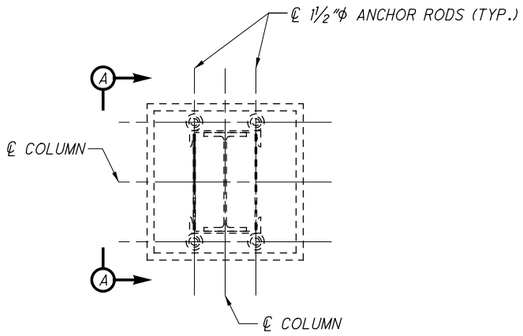
EAST APPR. - FORWARD SECTION COLUMN REPAIRS (2 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S65/S95

116
154

85377SD214 3/30/2017 2:23:58 PM nrfisco



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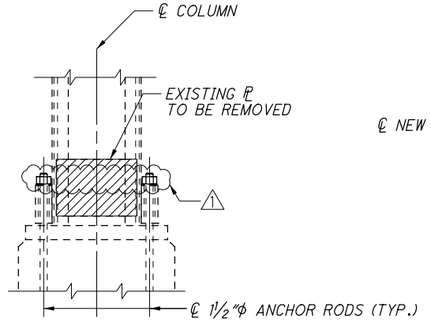
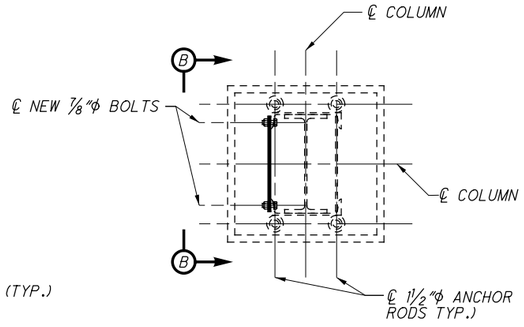
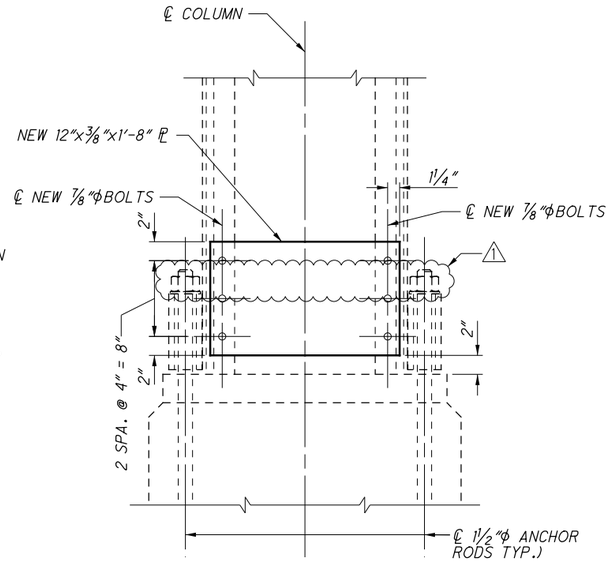


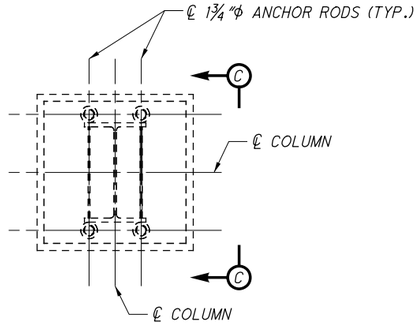
VIEW A-A



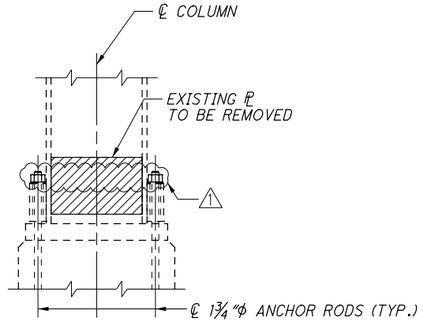
PROPOSED SECTION AT COLUMN 204



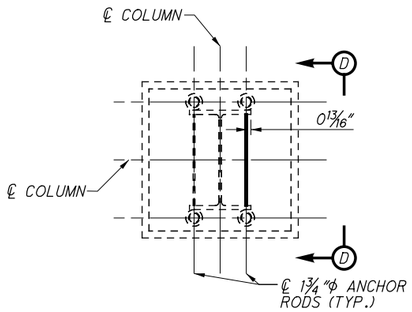
VIEW B-B



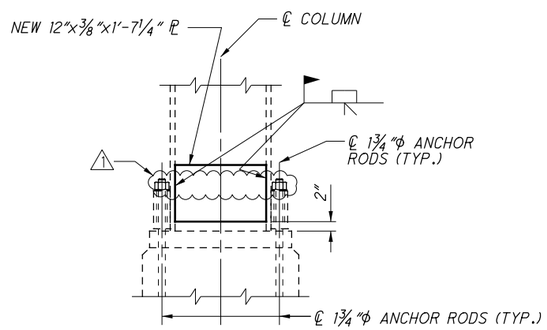
EXISTING SECTION AT COLUMN 307



VIEW C-C



PROPOSED SECTION AT COLUMN 307



VIEW D-D

NOTES:

1. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
2. THE REMOVAL OF THE EXISTING PLATES SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
3. EXISTING WELDS ARE TO BE GROUND SMOOTH AND FLUSH PRIOR TO THE INSTALLATION OF THE NEW PLATE.
4. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING MEMBERS TO REMAIN, AND REPAIR ANY DAMAGE TO THE ENGINEER'S SATISFACTION AT NO ADDITIONAL COST TO THE PROJECT.
5. FOR LOCATIONS OF COLUMN REPAIRS AND COLUMN NOMENCLATURE SEE SHEET S64/S95 .
6. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS PRIOR TO FABRICATION.
7. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLATION OF NEW PLATES SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: FORWARD SECTION COLUMN RETROFIT.
8. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.

LEGEND:

▨ - EXISTING STEEL TO BE REMOVED

● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

1 NRF 2/20/17

85377SD215 3/30/2017 2:23:40 PM dmdickson

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

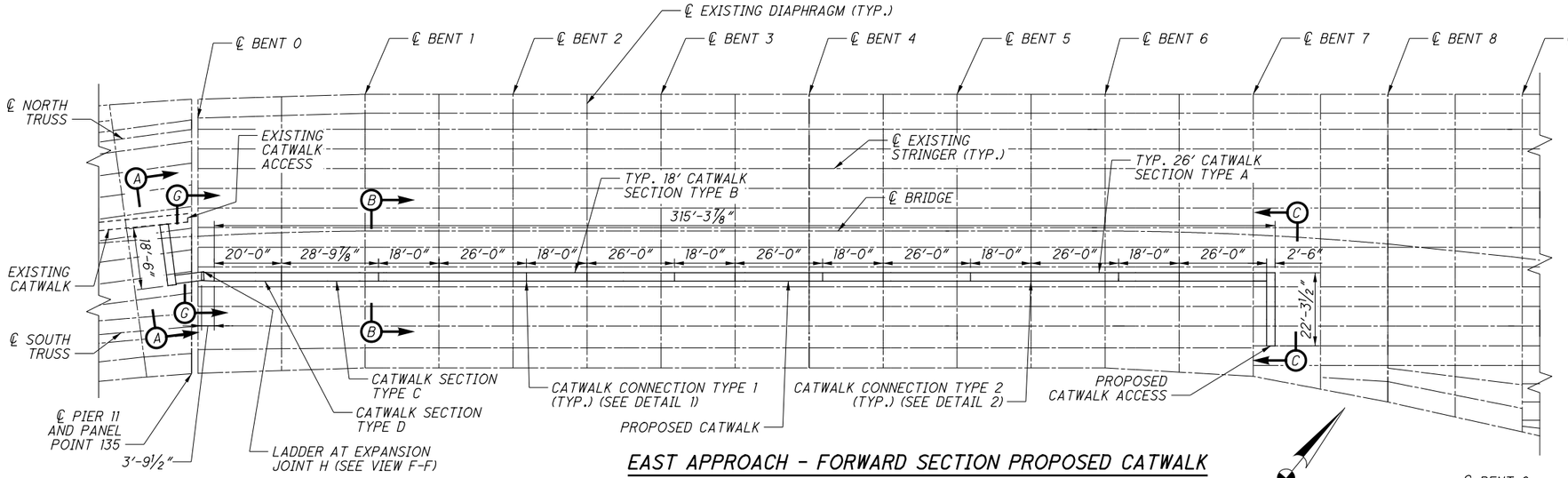
DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		1800035	

EAST APPR. - FORWARD SECTION COLUMN REPAIRS (3 OF 3)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

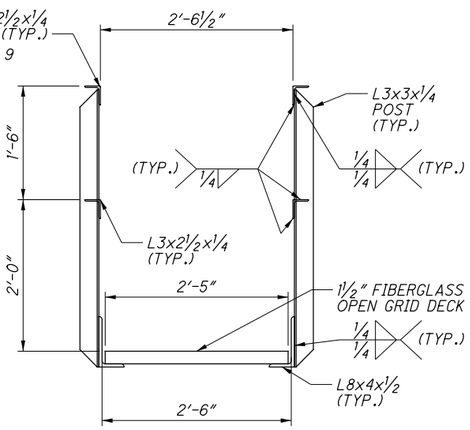
CUY-2-14.41
PID No. 85377

S66/S95

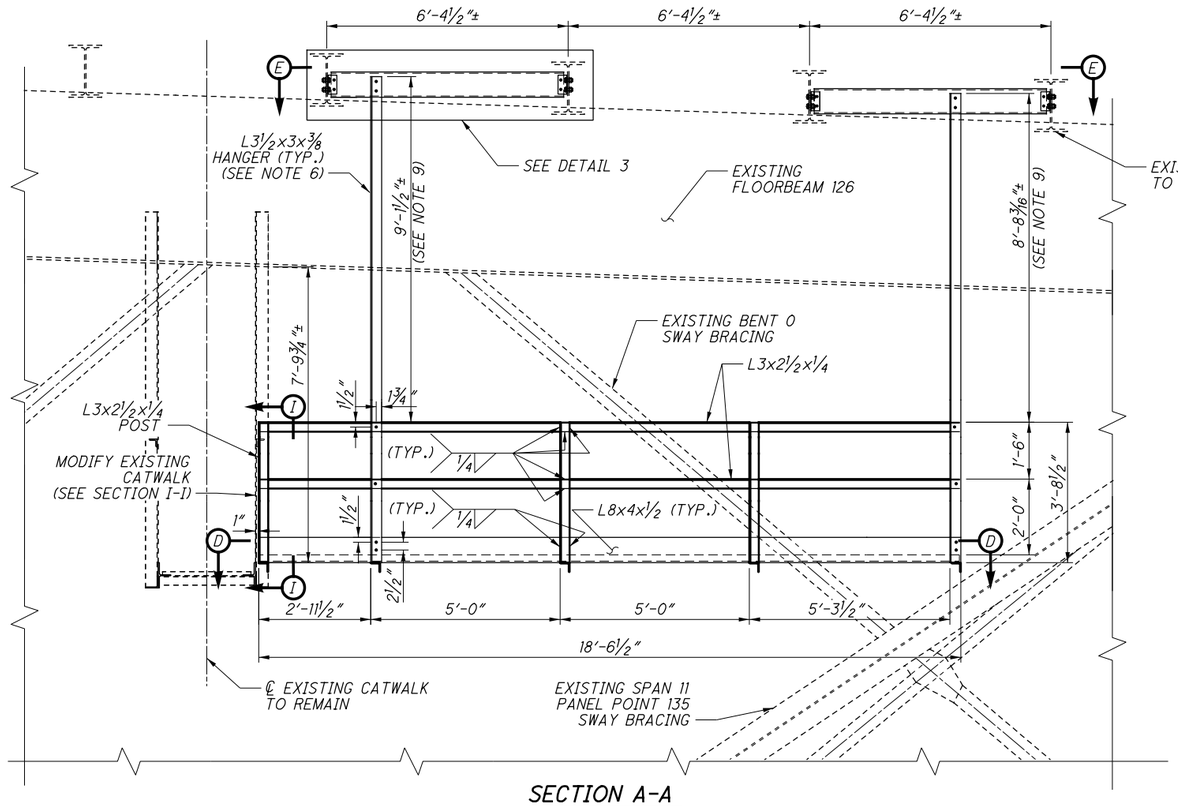
117
154



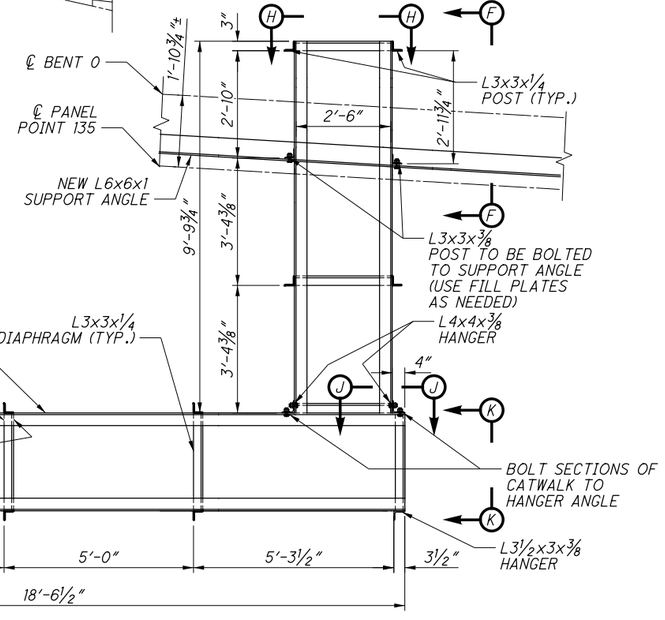
EAST APPROACH - FORWARD SECTION PROPOSED CATWALK



TYPICAL CATWALK SECTION



SECTION A-A

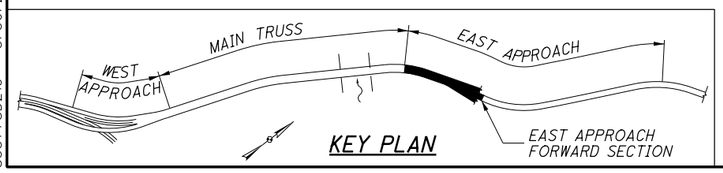


SECTION D-D - PROPOSED CATWALK PLAN VIEW

(EXISTING CATWALK NOT SHOWN)

NOTES:

1. FOR SECTIONS B-B, E-E, AND J-J, SEE SHEET S68/S95.
2. FOR VIEWS H-H AND K-K, SEE SHEET S71/S95.
3. FOR SECTION C-C AND DETAILS 1 AND 2, SEE SHEET S69/S95.
4. FOR DETAIL 3 AND VIEW F-F, SEE SHEET S70/S95.
5. FOR SECTIONS G-G AND I-I, SEE SHEET S70/S95.
6. FOR CATWALK SECTION TYPES A THROUGH D, SEE SHEET S68/S95.
7. ALL NEW BOLTS SHALL BE 7/8"ϕ A325 HIGH STRENGTH BOLTS, AND ALL NEW HOLES SHALL BE 15/16"ϕ UNLESS NOTED OTHERWISE.
8. RAILING ANGLES SHALL BE COPED AT POST AND HANGER LOCATIONS.
9. CONTRACTOR SHALL DETERMINE LENGTH BASED ON ACTUAL PLACEMENT OF HANGER, SUPERELEVATION OF THE BRIDGE, AND EXISTING CATWALK ELEVATION.
10. PAYMENT FOR ALL LABOR, MATERIALS, AND INSTALLATION OF THE NEW CATWALK SHALL BE INCLUDED FOR PAYMENTS WITH ITEM 513 - STRUCTURAL STEEL MISC.: LEVEL UF STEEL.
11. THE REMOVAL OF EXISTING ANGLES ON THE MAIN TRUSS CATWALK SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
12. INCLUDE FIBERGLASS OPEN GRID DECK FOR PAYMENT UNDER ITEM SPECIAL - STRUCTURE MISC.: FIBERGLASS OPEN GRID DECK.
13. FOR FIBERGLASS OPEN GRID NOTES, SEE SHEET S8/S95.
14. ALL L8x4x1/2 CATWALK SUPPORT MEMBERS SHALL BE PAINTED WITH A THREE COAT SYSTEM PRIOR TO INSTALLATION OF FIBERGLASS OPEN GRID DECK.



KEY PLAN

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16

CHECKED	REVISED	STRUCTURE FILE NUMBER
DWC		1800035

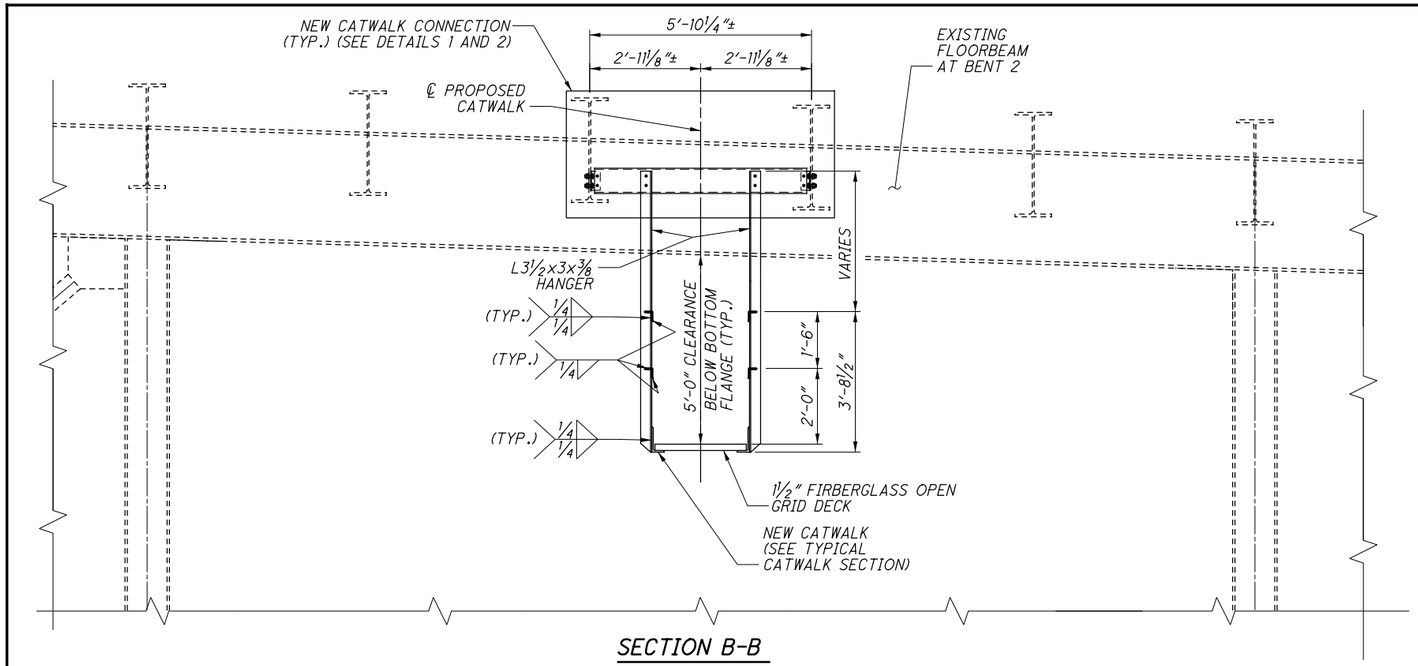
EAST APPR. - FORWARD SECTION PROPOSED CATWALK (1 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

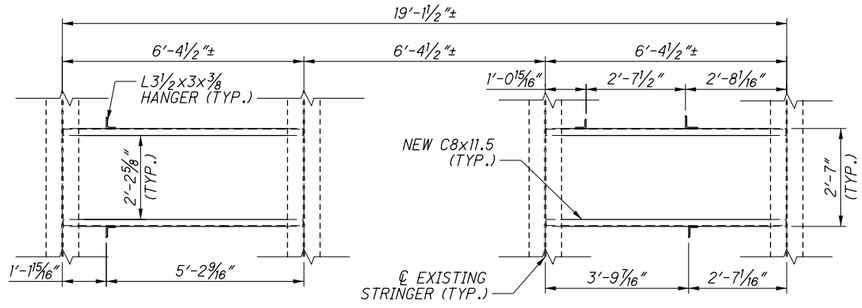
S67/S95

118
154

85377SD210 3/30/2017 2:20:48 PM dmdickson

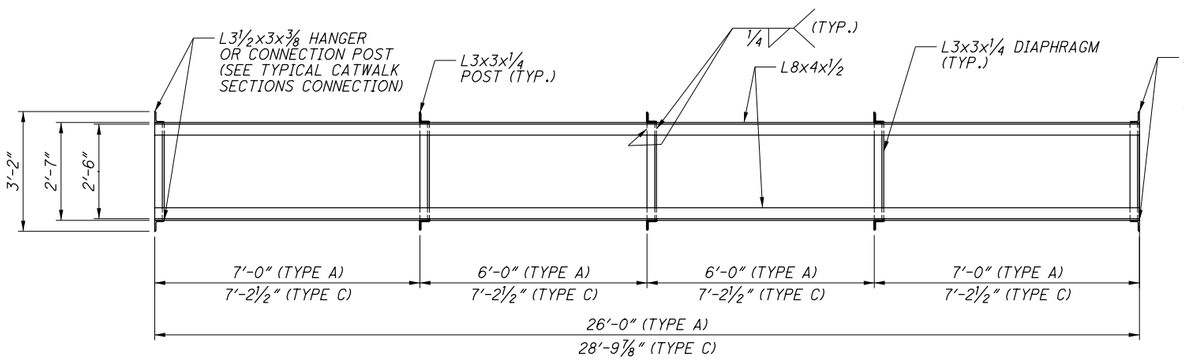


SECTION B-B

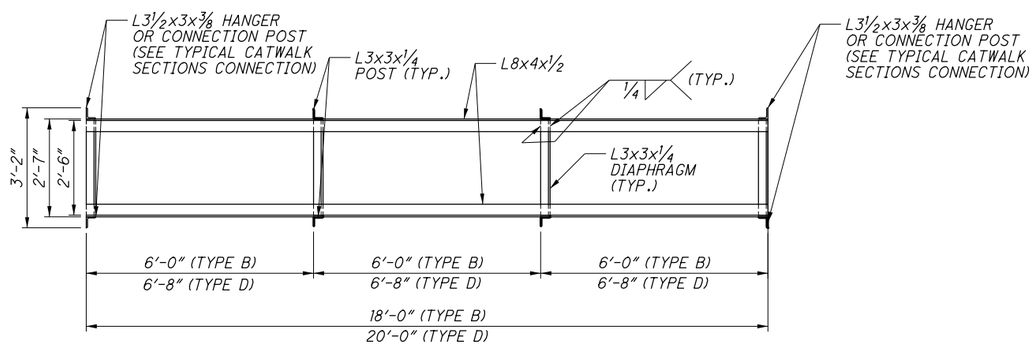


SECTION E-E

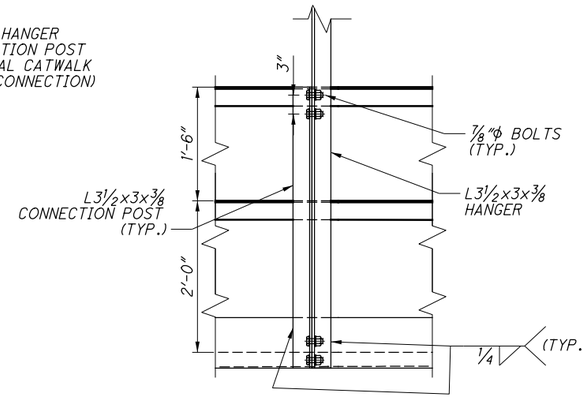
(BOLTED CONNECTIONS NOT SHOWN)



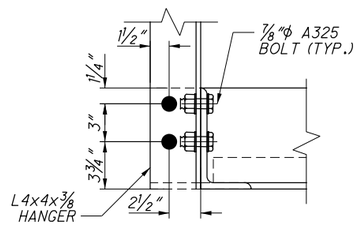
TYPICAL 26' CATWALK SECTION TYPE A PLAN VIEW
CATWALK SECTION TYPE C PLAN VIEW



TYPICAL 18' CATWALK SECTION TYPE B PLAN VIEW
CATWALK SECTION TYPE D PLAN VIEW



TYPICAL CATWALK SECTIONS CONNECTION



SECTION J-J

LEGEND:

● - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

NOTES:

1. FOR LOCATIONS OF SECTION B-B, SECTION E-E, AND TYPICAL CATWALK SECTIONS A THROUGH D, SEE SHEET S67/S95.
2. FOR LOCATIONS OF SECTION J-J, SEE SHEETS S67/S95 AND S71/S95.
3. FOR DETAILS 1 AND 2, SEE SHEET S69/S95.
4. FOR TYPICAL CATWALK SECTION, SEE SHEET S67/S95.
5. SEE SHEET S67/S95 FOR ADDITIONAL NOTES.
6. A MINIMUM 1½" EDGE DISTANCE SHALL BE MAINTAINED AT ALL BOLT LOCATIONS UNLESS NOTED OTHERWISE.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DWC		18000035	

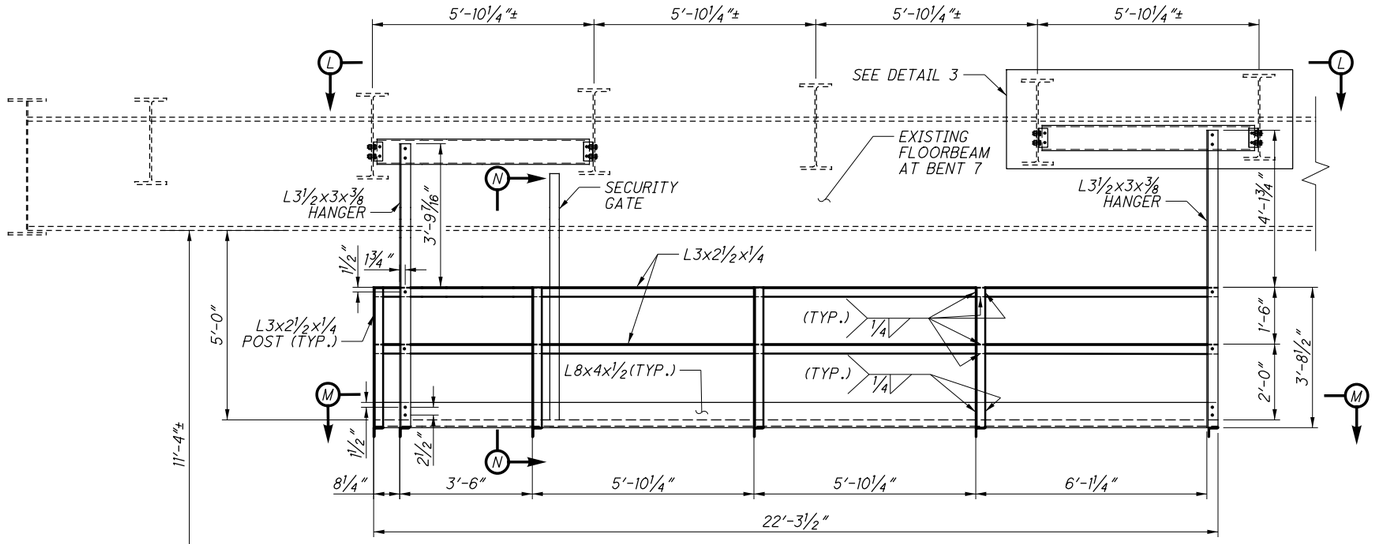
EAST APPR. - FORWARD SECTION PROPOSED CATWALK (2 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S68/S95

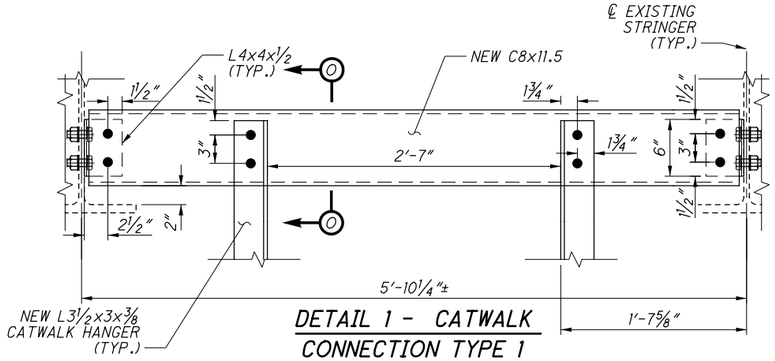
119
154

85377SD210 1/19/2017 4:10:22 PM nrfisco



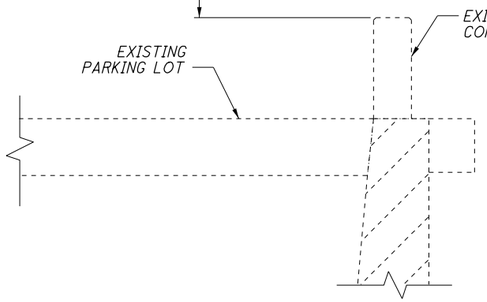
SECTION C-C

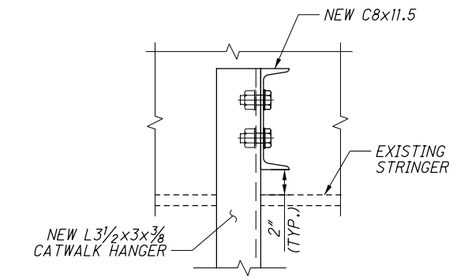
(BENT COLUMNS NOT SHOWN FOR CLARITY)



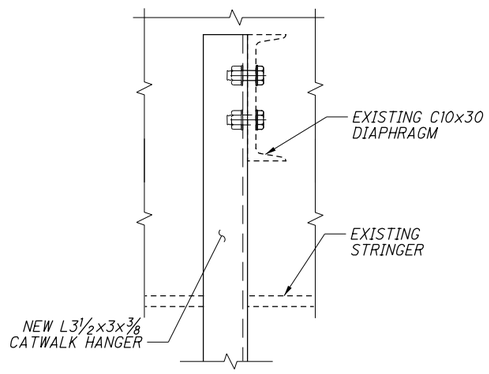
DETAIL 1 - CATWALK CONNECTION TYPE 1

(TYPICAL CONNECTION NEAR BENTS)

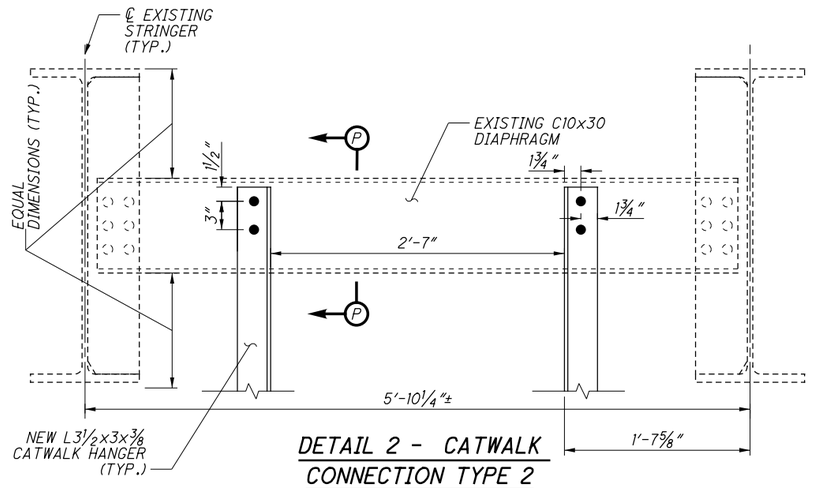




SECTION O-O - CATWALK HANGER CONNECTION TYPE 1



SECTION P-P - CATWALK HANGER CONNECTION TYPE 2



DETAIL 2 - CATWALK CONNECTION TYPE 2

(TYPICAL CONNECTION AT EXISTING DIAPHRAGMS)

LEGEND:

● - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

NOTES:

1. FOR LOCATION OF SECTION C-C, SEE SHEET S67/S95.
2. FOR LOCATION OF DETAILS 1 AND 2, SEE SHEETS S67/S95 AND S68/S95.
3. FOR SECTIONS L-L, M-M, AND N-N, SEE SHEET S71/S95.
4. SEE SHEET S67/S95 FOR ADDITIONAL NOTES.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DWC		18000035	

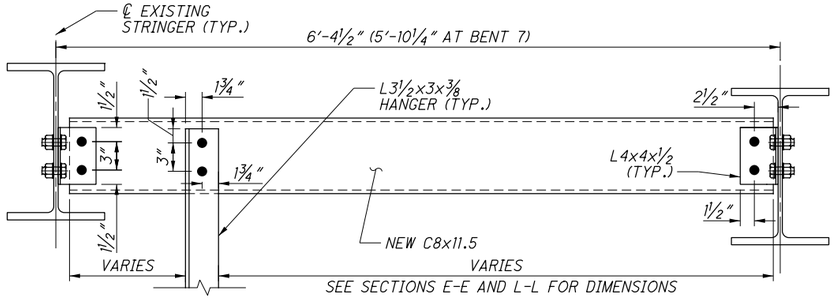
EAST APPR. - FORWARD SECTION PROPOSED CATWALK (3 OF 5)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S69/S95

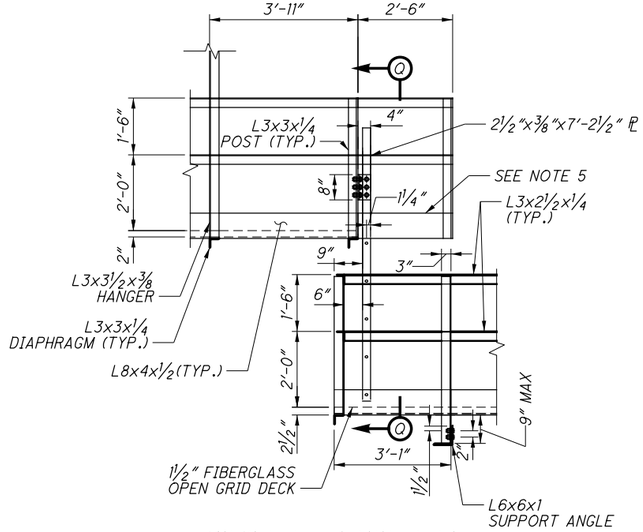
120
154

853775D210 1/19/2017 4:10:22 PM nrfisco



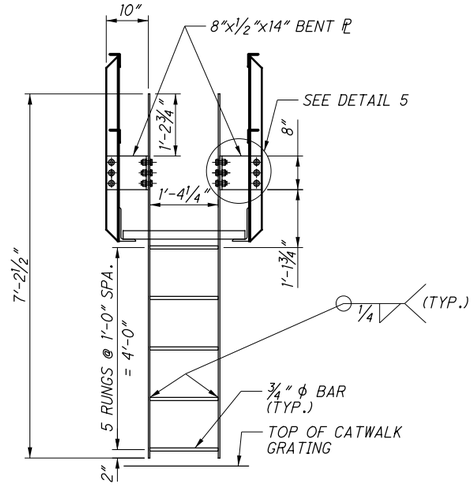
DETAIL 3 - CATWALK CONNECTION TYPE 3

(PIER 11 AND BENT 7 CONNECTIONS SIMILAR)

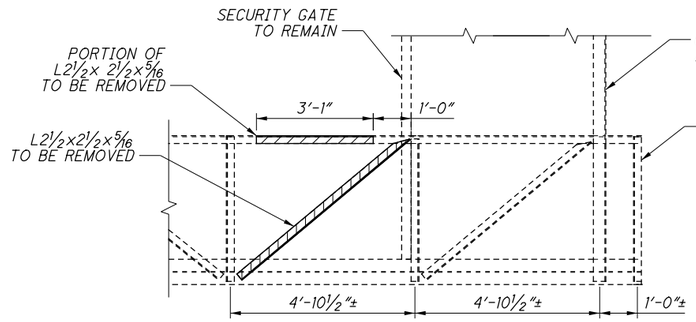


VIEW F-F - LADDER AT EXPANSION JOINT H

(NORTH FACE OF CATWALK)

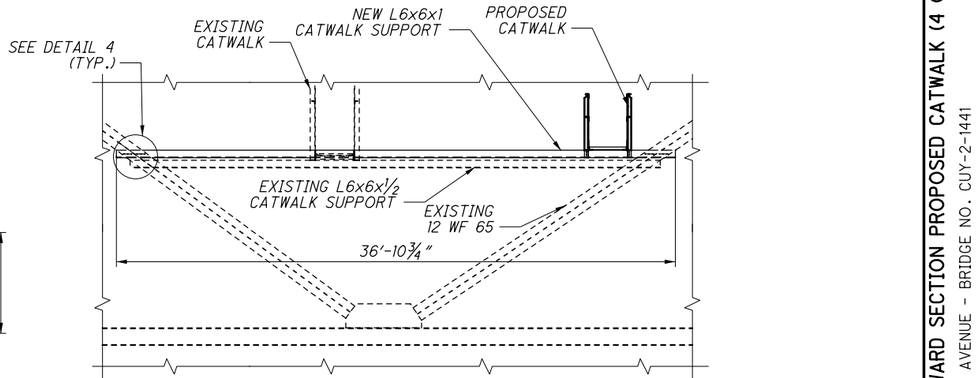


SECTION Q-Q

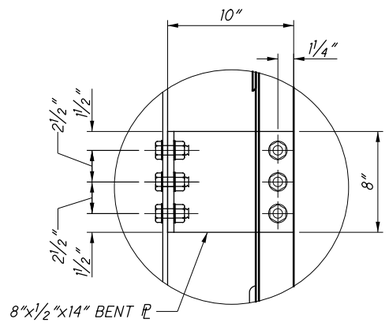


SECTION I-I - EXISTING CATWALK REMOVAL DETAILS

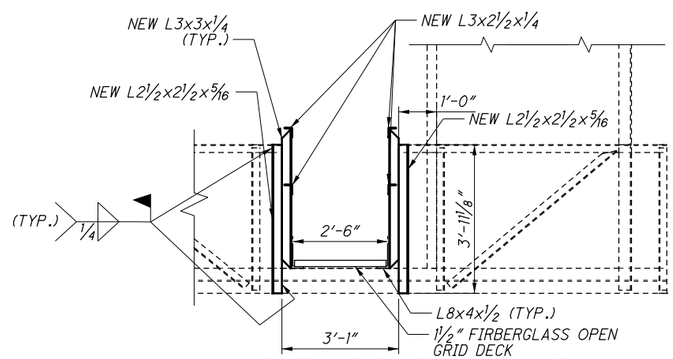
(EAST END OF CATWALK LOOKING NORTH)



SECTION G-G

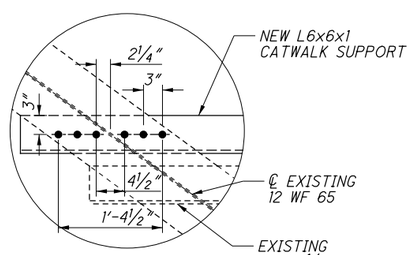


DETAIL 5



SECTION I-I - EXISTING CATWALK MODIFICATIONS

(EAST END OF EXISTING CATWALK LOOKING NORTH)



DETAIL 4

LEGEND:

● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

▨ - EXISTING STEEL TO BE REMOVED

NOTES:

1. FOR LOCATIONS OF VIEW F-F, SECTION I-I, AND SECTION G-G, SEE SHEET S67/S95.
2. FOR LOCATIONS OF DETAIL 3, SEE SHEETS S67/S95 AND S69/S95.
3. SEE SHEET S67/S95 FOR ADDITIONAL NOTES.
4. FOR SECURITY FENCE NOTES, SEE SHEETS S8/S95 AND S9/S95.
5. THE RAILING AND SUPPORT ANGLES FOR THE TOP CATWALK AT THE LADDER SHALL EXTEND OVER THE CATWALK BELOW. THE BOTTOM L8x4x½ SUPPORT ANGLES SHALL HAVE THEIR HORZIZONTAL LEGS FULLY COPED FLUSH WITH THE VERTICAL LEG FOR THE FULL 2'-6" LENGTH THAT THE CATWALK EXTENDS PAST THE LADDER.
6. REMOVAL OF EXISTING CATWALK MEMBERS SHALL BE PAID FOR UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DWC		1800035	

EAST APPR. - FORWARD SECTION PROPOSED CATWALK (4 OF 5)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S70/S95

121
154

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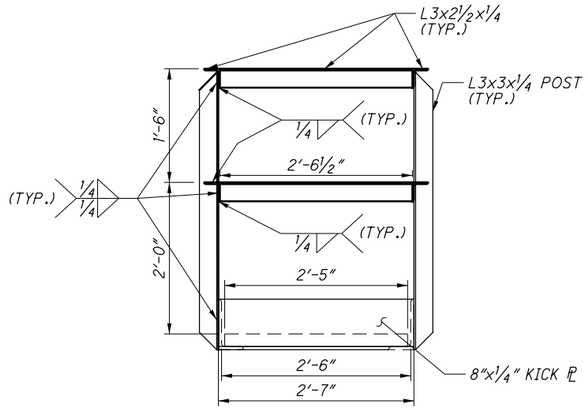
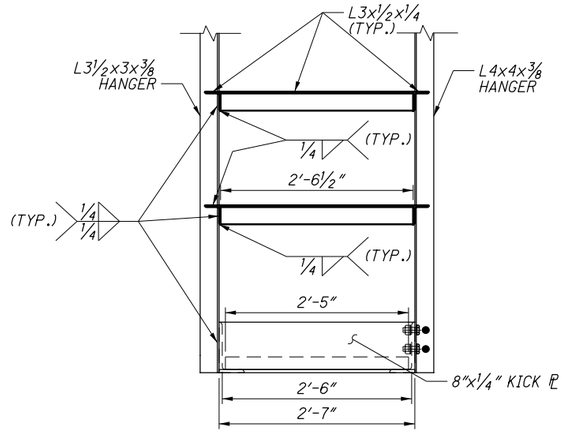
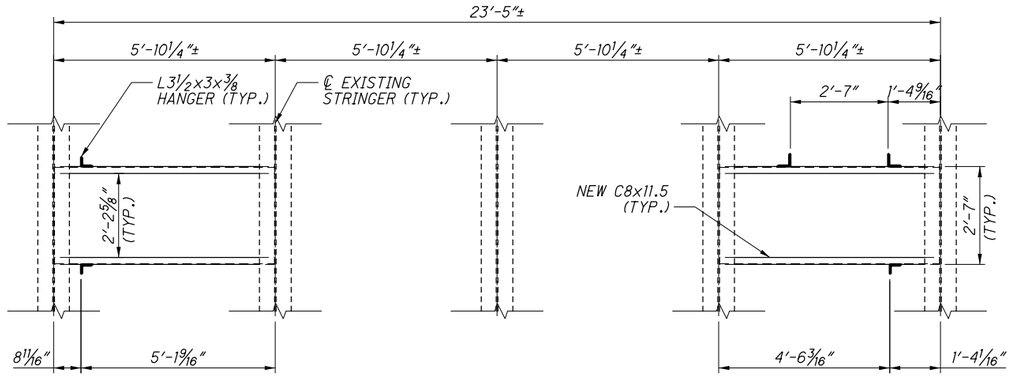


VIEW H-H

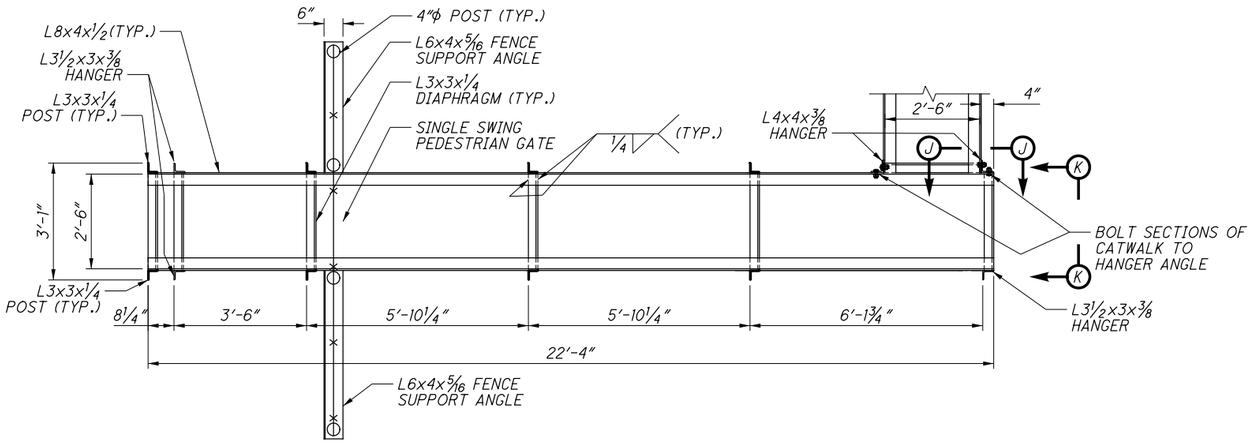


VIEW K-K



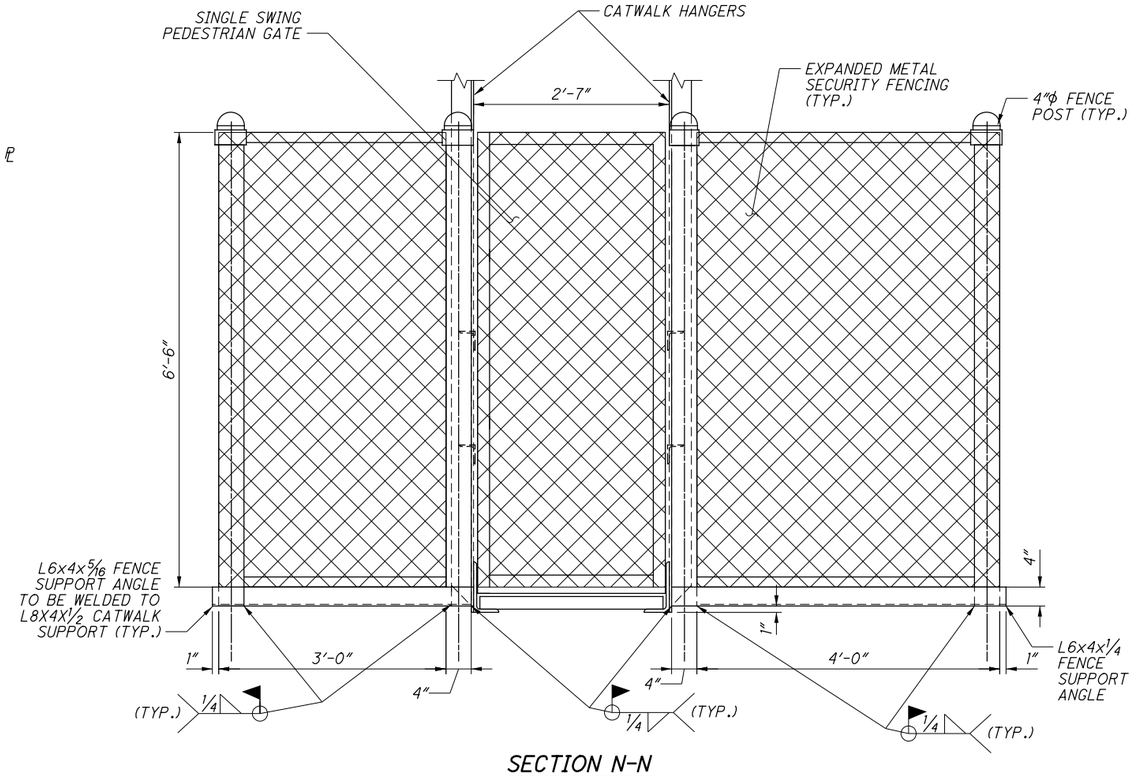
SECTION L-L

(BOLTED CONNECTIONS NOT SHOWN)



SECTION M-M - PROPOSED CATWALK

PLAN VIEW



SECTION N-N

LEGEND:

● - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT

NOTES:

1. FOR LOCATION OF VIEW H-H, SEE SHEET S67/S95.
2. FOR ADDITIONAL LOCATION OF VIEW K-K, SEE SHEET S67/S95.
3. FOR LOCATIONS OF SECTIONS L-L, M-M, AND N-N, SEE SHEET S69/S95.
4. FOR SECTION J-J, SEE SHEET S68/S95.
5. SEE SHEET S67/S95 FOR ADDITIONAL NOTES.
6. PAYMENT FOR ALL LABOR, MATERIALS, AND INSTALLATION OF THE NEW SECURITY GATE SHALL BE INCLUDED FOR PAYMENT WITH ITEM SPECIAL - STRUCTURE MISC.: FORWARD SECTION CATWALK FENCE AND GATE.
7. THE CATWALK RAILING SHALL HAVE THEIR HORIZONTAL LEGS FULLY COPED FLUSH WITH THE VERTICAL LEG AT SECURITY FENCE POST LOCATIONS.

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

DESIGNED	DRAWN	REVIEWED	DATE
DMD	DMD	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DWC		18000351	

EAST APPR. - FORWARD SECTION PROPOSED CATWALK (5 OF 5)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

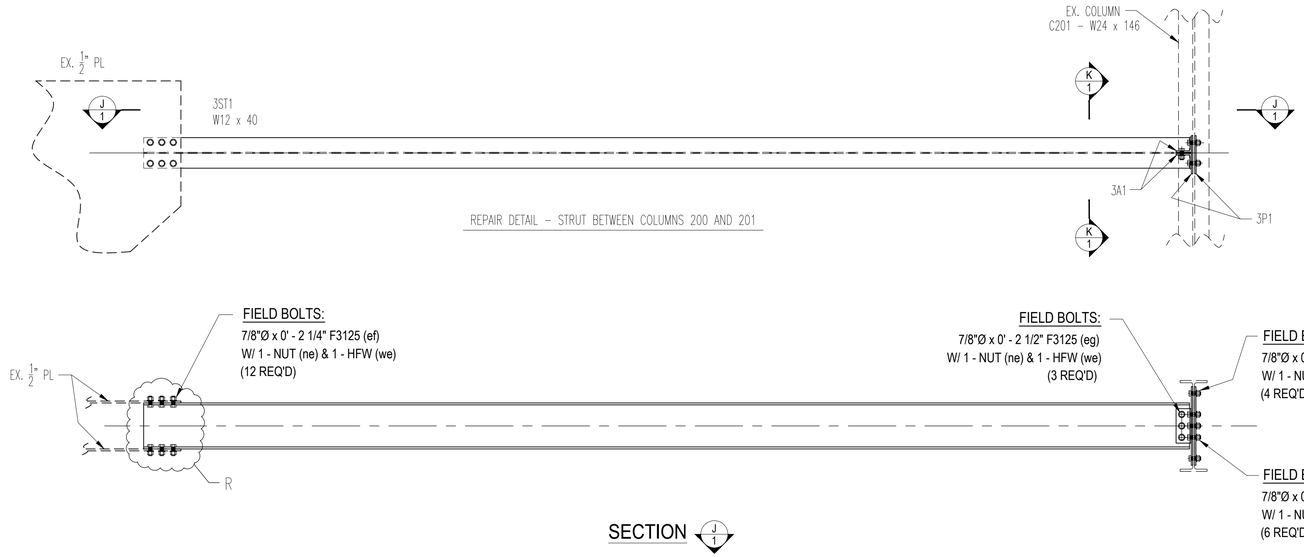
CUY-2-14.41
PID No. 85377

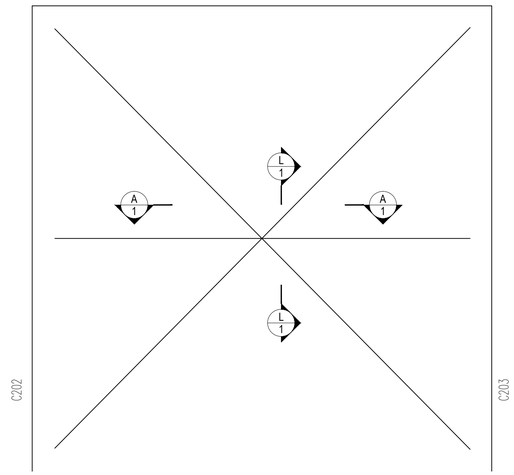
S71/S95

122
154

85377SD210 1/19/2017 4:10:23 PM nrfisco

Forward Section Steel Repairs - Bent 0 to Bent 3





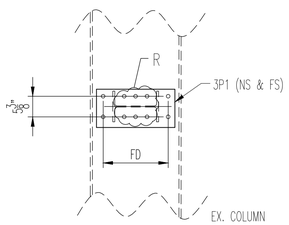
ELEVATION OF BRACING BETWEEN COLUMNS 202 & 203

FIELD NOTE:

R - REMOVE EXISTING FASTENER AND REPLACE WITH NEW 7/8Ø F3125 BOLT.

FD - FIELD DRILL NEW 15/16Ø HOLE IN EXISTING MATERIAL FOR NEW 7/8Ø F3125 BOLT.

* ALL OTHERS, NEW 7/8Ø F3125 BOLT IN 15/16Ø HOLE.

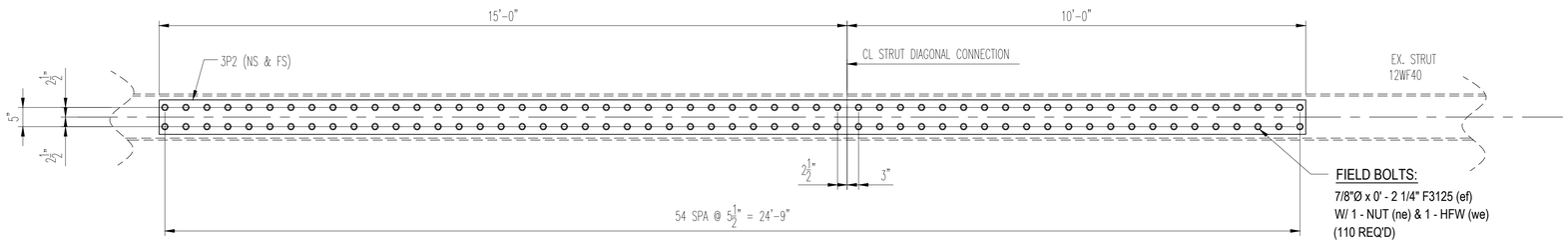


SECTION K 1

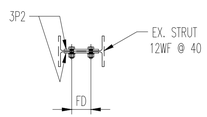
FIELD NOTE:

* ANGLE 3A1 NOT SHOWN FOR CLARITY

* USE 3P1 AS TEMPLATE.



SECTION A 1



SECTION L 1

GENERAL NOTES:

* MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH ODOT-CMS-2016.

* WELDING SHALL BE IN ACCORDANCE WITH AWS/AASHTO D1.5-15 AND ODOT 1011.

* ALL MATERIAL TO BE PRIME PAINTED INORGANIC ZINC PER ODOT CMS 514.

* LOCATIONS OF COVER PLATES SHOWN HAVE BEEN APPROXIMATED. CONTRACTOR IS TO ADJUST LOCATION OF THE COVER PLATES TO COVER AREAS OF 100% SECTION LOSS AS NEEDED.

* ALL INFORMATION & DIMENSIONS ARE TO BE APPROVED BY THE CONTRACTOR PRIOR TO COMMENCING FABRICATION.

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

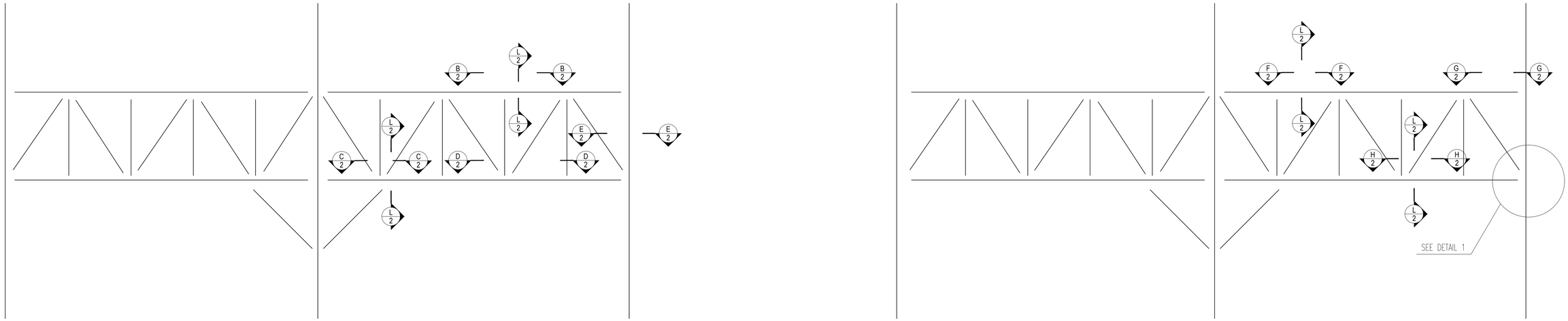
REV. No.	REVISION
SHOP INSPECTED BY:	

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

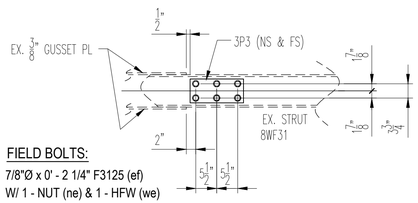
OHIO DEPARTMENT OF TRANSPORTATION
BRIDGE: CUY - 2 - 1441
OVER THE CUYAHOGA RIVER

SCALE: N.T.S.	THE RUHLIN COMPANY	DRAWN: TJK
DATE: 8/18		CHECK: LF
MISCELLANEOUS STRUCTURAL STEEL REPAIR		
REF NO.: 513		ITEM NO.: 513 UF
ODOT PROJ. NO.: 170228	CUYAHOGA COUNTY	DWG. NO.: E1
OSI PROJ. NO.: 18-19	PID No.: 85377 SFN: 1080035	122A

Forward Section Steel Repairs - Bent 0 to Bent 3

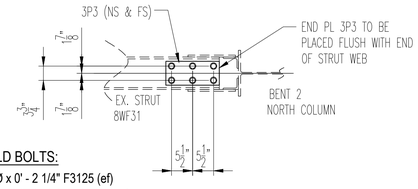


BENT # 2 LOOKING WEST



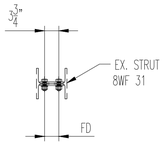
FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(6 REQ'D)

SECTION B 2

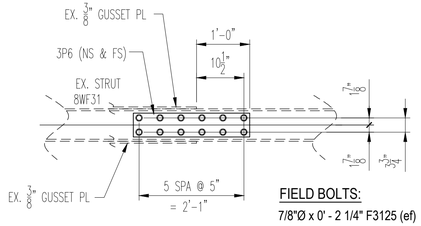


FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(6 REQ'D)

SECTION E 2



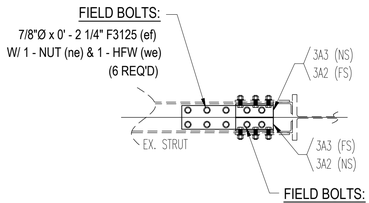
SECTION L 2



FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(12 REQ'D)

SECTION H 2

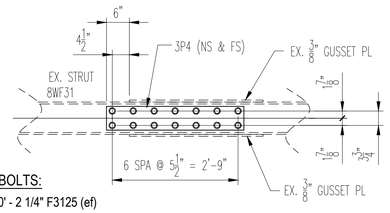
BENT # 3 LOOKING WEST



FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(6 REQ'D)

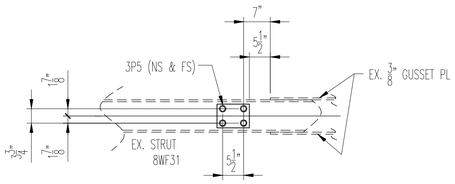
FIELD BOLTS:
7/8"Ø x 0' - 3" F3125 (ej)
W/ 1 - NUT (ne) & 1 - HFW (we)
(4 REQ'D)

SECTION N 2



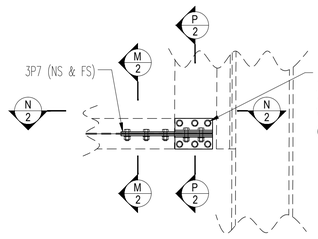
FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(14 REQ'D)

SECTION C 2



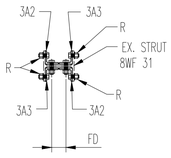
FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(4 REQ'D)

SECTION F 2

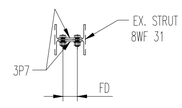


FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(12 REQ'D)

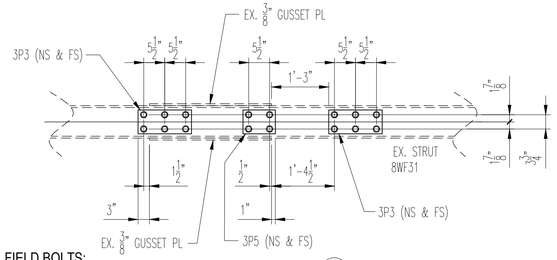
DETAIL 1



SECTION P 2

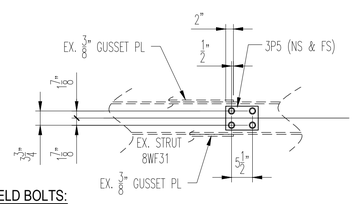


SECTION M 2



FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(16 REQ'D)

SECTION D 2



FIELD BOLTS:
7/8"Ø x 0' - 2 1/4" F3125 (ef)
W/ 1 - NUT (ne) & 1 - HFW (we)
(4 REQ'D)

SECTION G 2

FIELD NOTE:

R - REMOVE EXISTING FASTENER AND REPLACE WITH NEW 7/8Ø F3125 BOLT.

FD - FIELD DRILL NEW 15/16Ø HOLE IN EXISTING MATERISL FOR NEW 7/8Ø F3125 BOLT.

* ALL OTHERS, NEW 7/8Ø F3125 BOLT IN 15/16Ø HOLE.

AISC MEMBER CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

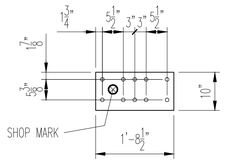
SHOP INSPECTED BY:

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

OHIO DEPARTMENT OF TRANSPORTATION
BRIDGE: CUY - 2 - 1441
OVER THE CUYAHOGA RIVER

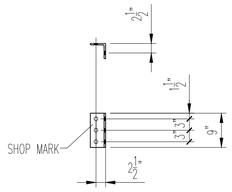
SCALE: N.T.S.	THE RUHLIN COMPANY	DRAWN: TJK
DATE: 8/18		CHECK: LF
MISCELLANEOUS STRUCTURAL STEEL REPAIR		
REF NO.: 513		ITEM NO.: 513 UF
ODOT PROJ. NO.: 170228	CUYAHOGA COUNTY	DWG. NO.: E2
OSI PROJ. NO.: 18-19	PID No.: 85377 SFN: 1080035	122B

Forward Section Steel Repairs - Bent 0 to Bent 3



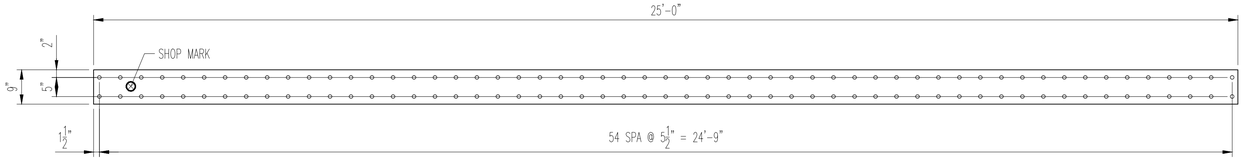
2 - PLATES - 3P1

MATERIAL: PL 3/8" x 10 x 1'-8 1/2"



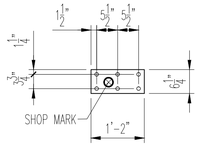
2 - ANGLES - 3A1

MATERIAL: L4 x 4 x 3/8"



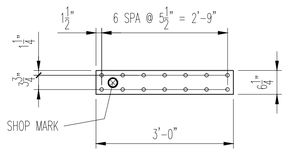
2 - PLATES - 3P2

MATERIAL: PL 3/8" x 9" x 25'-0"



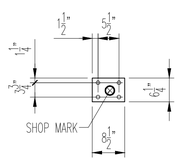
8 - PLATES - 3P3

MATERIAL: PL 3/8" x 6 1/4" x 1'-2"



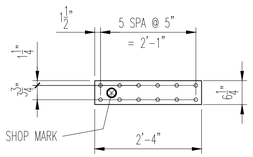
2 - PLATES - 3P4

MATERIAL: PL 3/8" x 6 1/4" x 3'-0"



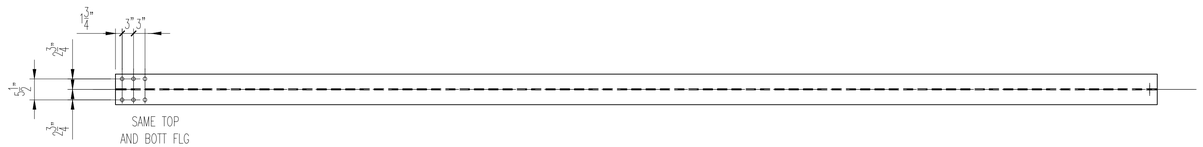
6 - PLATES - 3P5

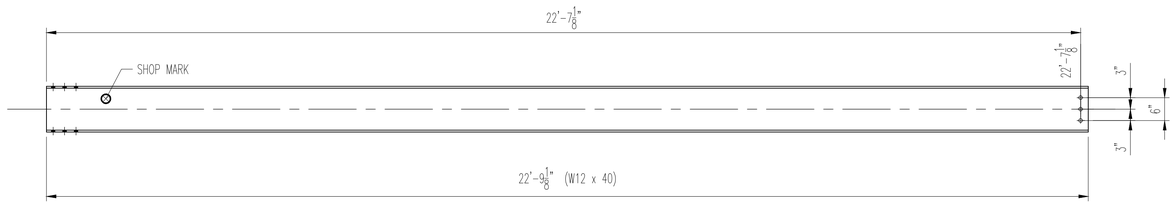
MATERIAL: PL 3/8" x 6 1/4" x 0'-8 1/2"



2 - PLATES - 3P6

MATERIAL: PL 3/8" x 6 1/4" x 3'-0"





1 - STRUT - 3ST1

MATERIAL: W12 x 40

ODOT PROJ #: 170228	PID NO.: 85377	OSI PROJ #: 18-19	REF #: 49	ITEM#: 513

*** MISCELLANEOUS STRUCTURAL STEEL REPAIR ***

MATERIALS ONLY:

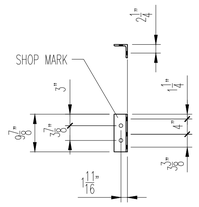
LINE	PO#	QTY	MARK	SECTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARK
1		* 2	3P1	PLATE 3/8 x 10	1	8 1/2	A709-50	21.80	43.60		
2		* 2	3P2	PLATE 3/8 x 9	25	0	A709-50	287.15	574.29		
3		* 8	3P3	PLATE 3/8 x 6 1/4	1	2	A709-50	9.31	74.45		
4		* 2	3P4	PLATE 3/8 x 6 1/4	3	0	A709-50	23.93	47.86		
5		* 6	3P5	PLATE 3/8 x 6 1/4	0	8 1/2	A709-50	5.65	33.90		
6		* 2	3P6	PLATE 3/8 x 6 1/4	2	4	A709-50	18.61	37.22		
7		* 2	3P7	PLATE 3/8 x 6 1/4	2	0	A709-50	15.95	31.91		
8											
9											
10		* 2	3A1	ANGLE 4x4x3/8	0	9	A709-50	7.35	14.70		
11		* 2	3A2	ANGLE 3-1/2x3-1/2x3/8	0	9 7/8	A709-50	6.99	13.99		
12		* 2	3A3	ANGLE 3-1/2x3-1/2x3/8	0	9 7/8	A709-50	6.99	13.99		
13											
14		* 1	3ST1	W12x40	22	9 1/8	A709-50	910.42	910.42		
15											
								SUB TOTAL	1,796.32		

HARDWARE ONLY:

LINE		QTY	MARK	DESCRIPTION	STL SPEC	WT PER (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
16		* 202	ef	7/8x2-1/4 HEX HEAD BOLT	F3125 Galv	0.60	121.40		
17		* 3	eg	7/8x2-1/2 HEX HEAD BOLT	F3125 Galv	0.64	1.93		
		* 4	eh	7/8x2-3/4 HEX HEAD BOLT	F3125 Galv	0.68	2.73		
18		* 10	ej	7/8x3 HEX HEAD BOLT	F3125 Galv	0.72	7.24		
19									
20		* 219	we	7/8 FLAT WASHER	F436 Galv	0.06	14.02		
21									
22		* 219	ne	7/8 HEAVY HEX NUT	A563 Galv	0.30	65.70		
24									
25									
							SUB TOTAL	213.02	

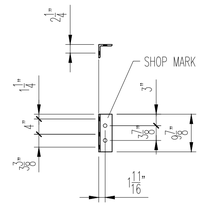
* INDICATES AN ITEM THAT WILL BE SHIPPED LOOSE
ALL BOLTS SHALL BE F3125 GR. A325 (GALV)

TOTAL WT 2,009.33



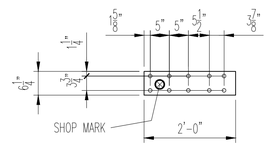
2 - ANGLES - 3A2

MATERIAL: L3 1/2" x 3 1/2" x 3/8"



2 - ANGLES - 3A3

MATERIAL: L3 1/2" x 3 1/2" x 3/8"



2 - PLATES - 3P7

MATERIAL: PL 3/8" x 6 1/4" x 2'-0"

SHOP NOTE:

* ALL HOLES THIS SHEET: 15/16"Ø

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

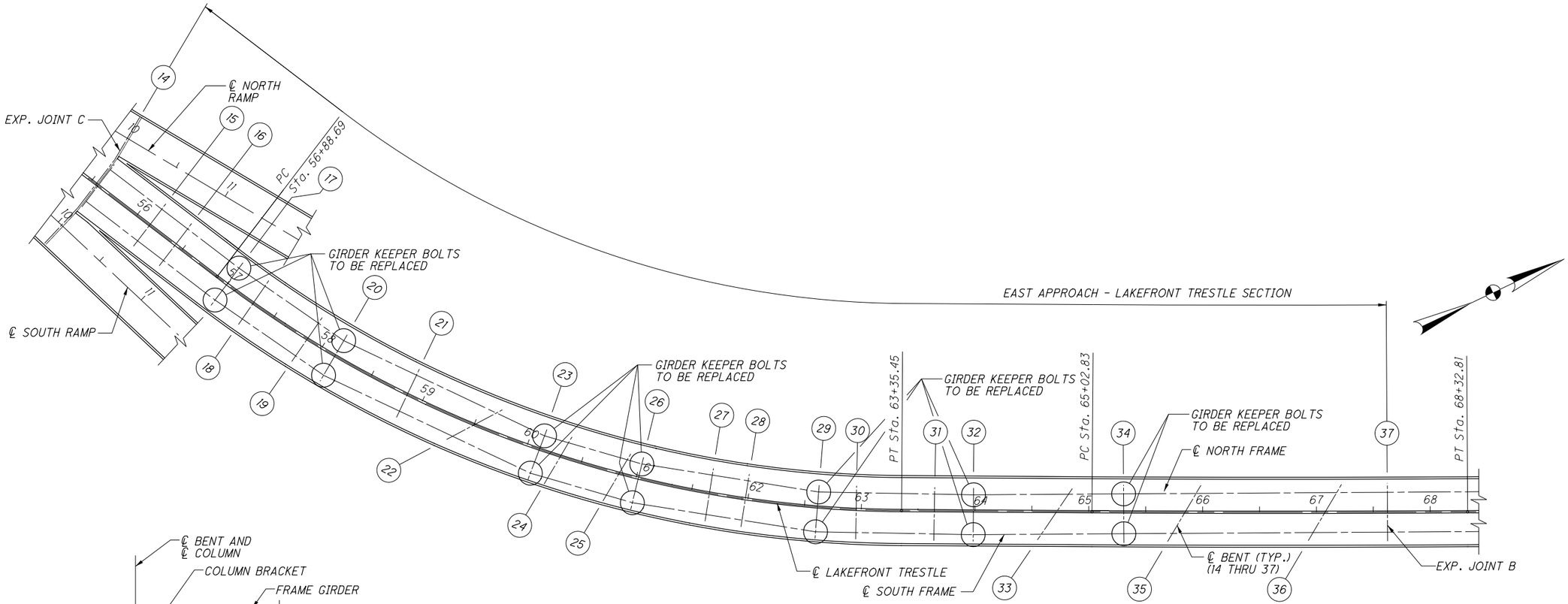
REV. No.	REVISION

SHOP INSPECTED BY:

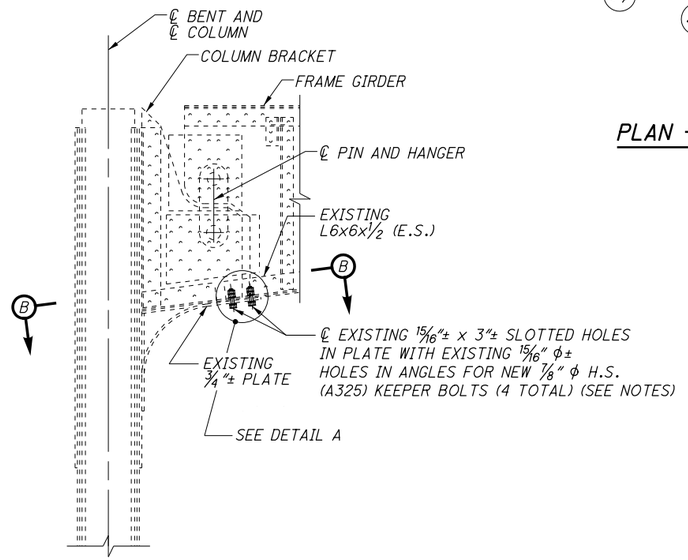
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

OHIO DEPARTMENT OF TRANSPORTATION
BRIDGE: CUY - 2 - 1441
OVER THE CUYAHOGA RIVER

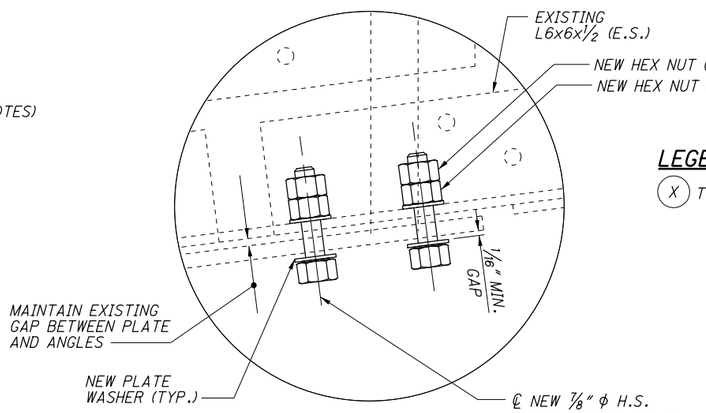
SCALE: N.T.S.	THE RUHLIN COMPANY	DRAWN: TJK
DATE: 8/18		CHECK: LF
MISCELLANEOUS STRUCTURAL STEEL REPAIR		
REF NO.: 513		ITEM NO.: 513 UF
ODOT PROJ. NO.: 170228	CUYAHOGA COUNTY	DWG. NO.: D1
OSI PROJ. NO.: 18-19	PID No.: 85377 SFN: 1080035	122C



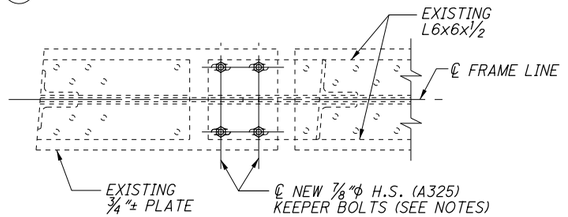
PLAN - EAST APPROACH - LAKEFRONT TRESTLE



PART ELEVATION AT COLUMN BRACKET

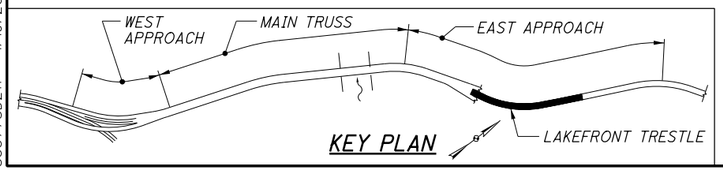


DETAIL A



SECTION B-B

(COLUMN NOT SHOWN)



KEY PLAN

LEGEND:

(X) TYPICAL BENT NUMBER CALLOUT

NOTES:

1. PROVIDE 2 NUTS AND 2 WASHERS FOR EACH KEEPER BOLT PER CMS 711.09. PLATE WASHERS SHALL BE USED FOR LONG SLOTTED HOLES AND HARDENED WASHERS SHALL BE USED FOR STANDARD SIZE HOLES.
2. SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL MEMBERS ADJACENT TO THE BOLT HEADS, NUTS AND WASHERS SHALL BE IN ACCORDANCE WITH CMS 513.20.
3. THE KEEPER BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH CMS 711.02.
4. THE KEEPER BOLTS SHALL BE REPLACED PRIOR TO PAINTING OF THE STRUCTURE PER ITEM 514.
5. ALL MATERIAL AND LABOR ASSOCIATED WITH THE REMOVAL OF THE EXISTING KEEPER BOLTS AND INSTALLATION OF THE NEW KEEPER BOLTS SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL MISC.: LAKEFRONT TRESTLE KEEPER BOLT RETROFIT.

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

DESIGNED JLV | DRAWN JLV | REVIEWED PJA | DATE 12-19-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 1800035

EAST APPR. - LAKEFRONT TRESTLE SECTION KEEPER BOLT REPAIRS

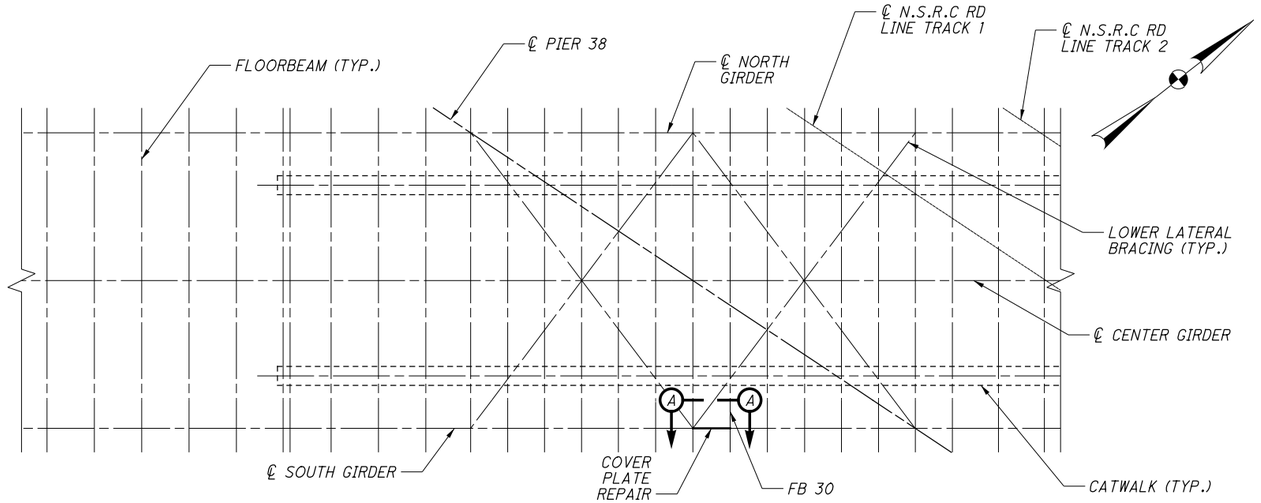
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

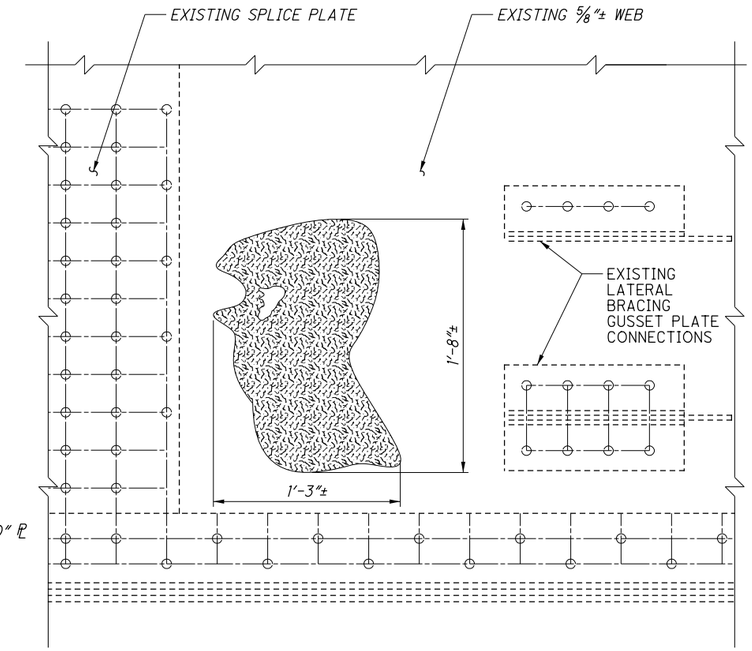
S72/S95

123
154

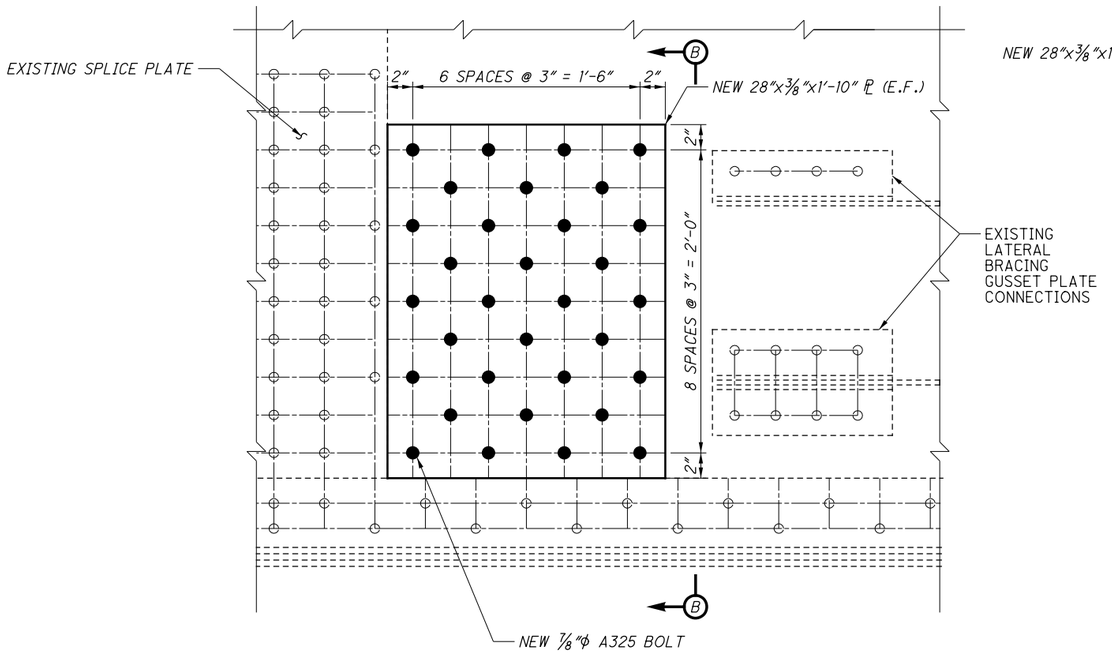
85377SD211 1/19/2017 4:10:28 PM nrfisco



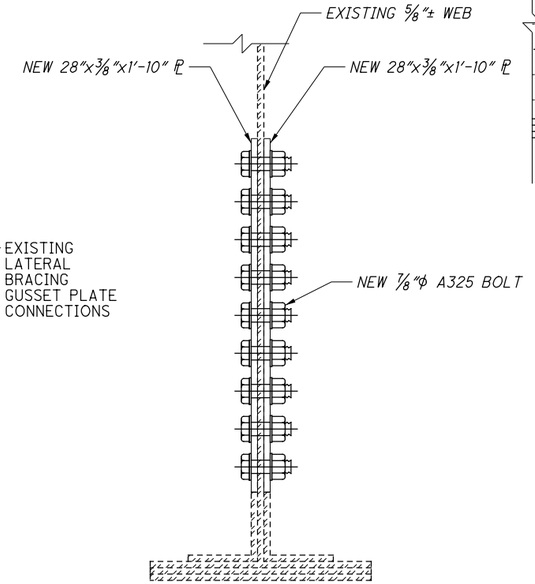
PARTIAL FRAMING PLAN - LAKEFRONT RAMP



VIEW A-A - SOUTH GIRDER - EXISTING SECTION LOSS



VIEW A-A - SOUTH GIRDER - PROPOSED BOLTED COVER PLATE RETROFIT



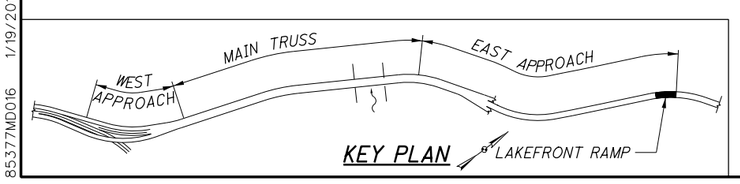
SECTION B-B

LEGEND:

- ▭ - APPROXIMATE LIMITS OF ADVANCED SECTION LOSS.
- ● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A325 BOLT.

NOTES:

1. ALL NEW BOLTS SHALL BE 7/8" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 15/16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. PAYMENT FOR ALL LABOR, MATERIALS, AND INSTALLATION OF THE NEW COVER PLATE SHALL BE INCLUDED FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP GIRDER WEB RETROFIT.
4. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER THE INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
5. DIMENSIONS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO FABRICATION. NOTE THAT THE EXISTING SHOP DRAWINGS FOR THE GIRDER AND FIELD SPLICE ARE NOT AVAILABLE.



KEY PLAN

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	ADA	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		1800035	

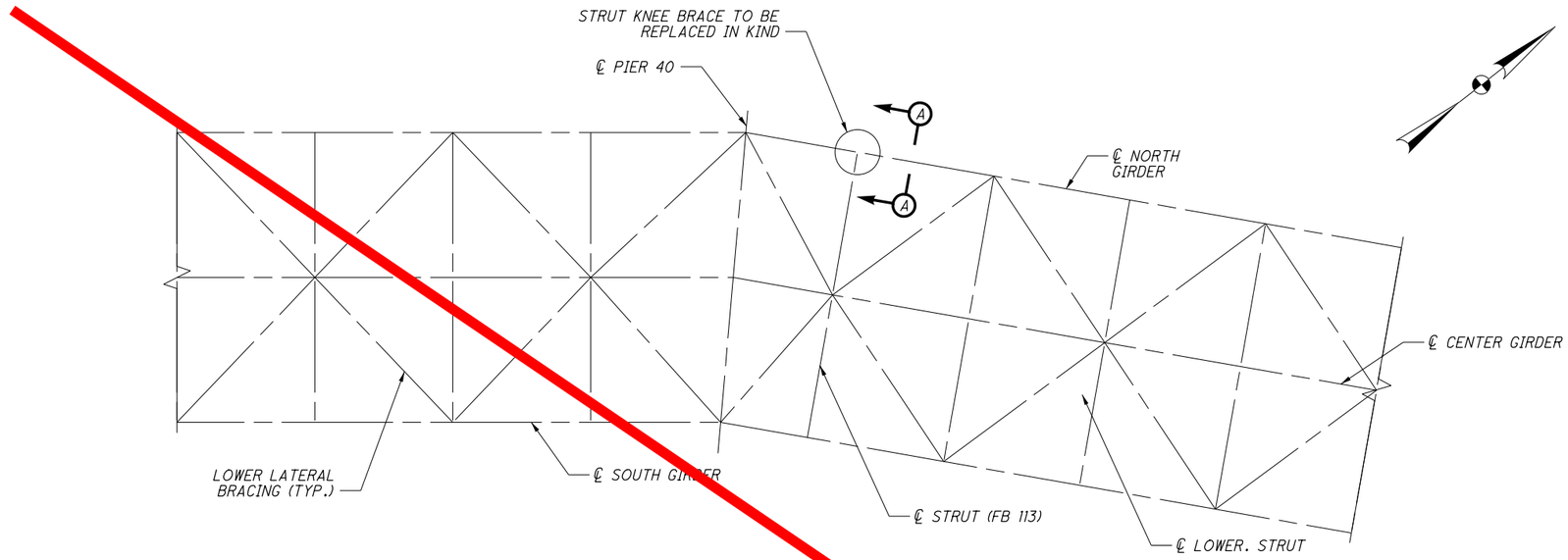
EAST APPR. - LAKEFRONT RAMP - SOUTH GIRDER WEB RETROFIT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

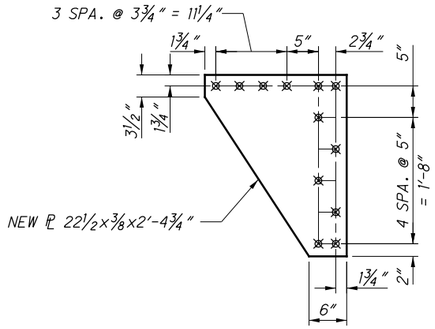
S73/S95

124
154

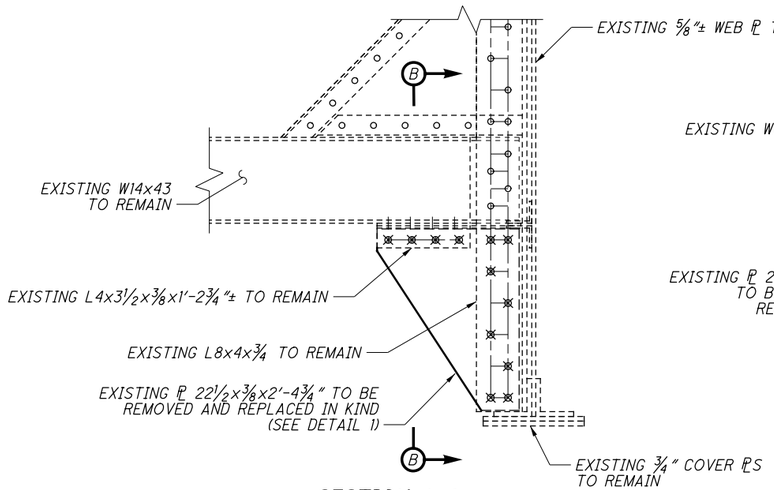
85377MD016 1/19/2017 4:10:33 PM nrfisco



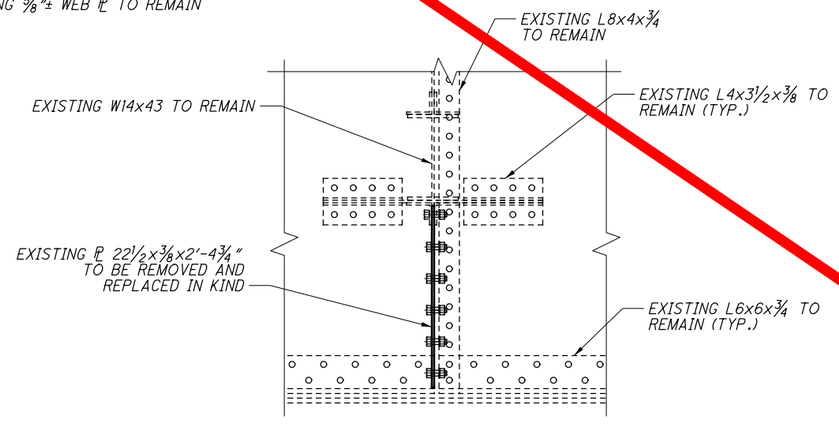
PARTIAL LOWER FRAMING PLAN - LAKEFRONT RAMP



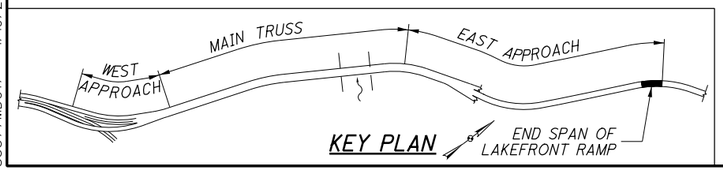
DETAIL 1



SECTION A-A



SECTION B-B



BOLT LEGEND:

⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞"ϕ A325 BOLT.

○ - EXISTING FASTENER TO REMAIN.

NOTES:

1. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 15/16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. SOME EXISTING RIVETS AND PLATES ARE NOT SHOWN FOR CLARITY.
4. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO FABRICATION OR PERFORMING WORK.
5. THE RIVET HOLES IN THE EXISTING ANGLES WILL BE REUSED FOR BOLT HOLES. FIELD VERIFY THE HOLE LOCATIONS BEFORE DRILLING THE NEW PLATE.
6. THE REMOVAL OF THE EXISTING PLATE, BOLTS, AND RIVETS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
7. EXISTING SHOP DRAWINGS ARE NOT AVAILABLE FOR THIS PARTICULAR KNEE BRACE. THE EXACT SIZE AND GEOMETRY OF THE PLATE IS UNKNOWN. ALL PLATES AND ANGLES THICKNESS SHALL BE MEASURED IN THE FIELD TO ENSURE PROPER BOLT LENGTH.
8. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
9. ALL LABOR AND MATERIALS ASSOCIATED WITH THE INSTALLATION OF THE BRACING PLATE SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP STRUT BRACING RETROFIT.

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		1800035	

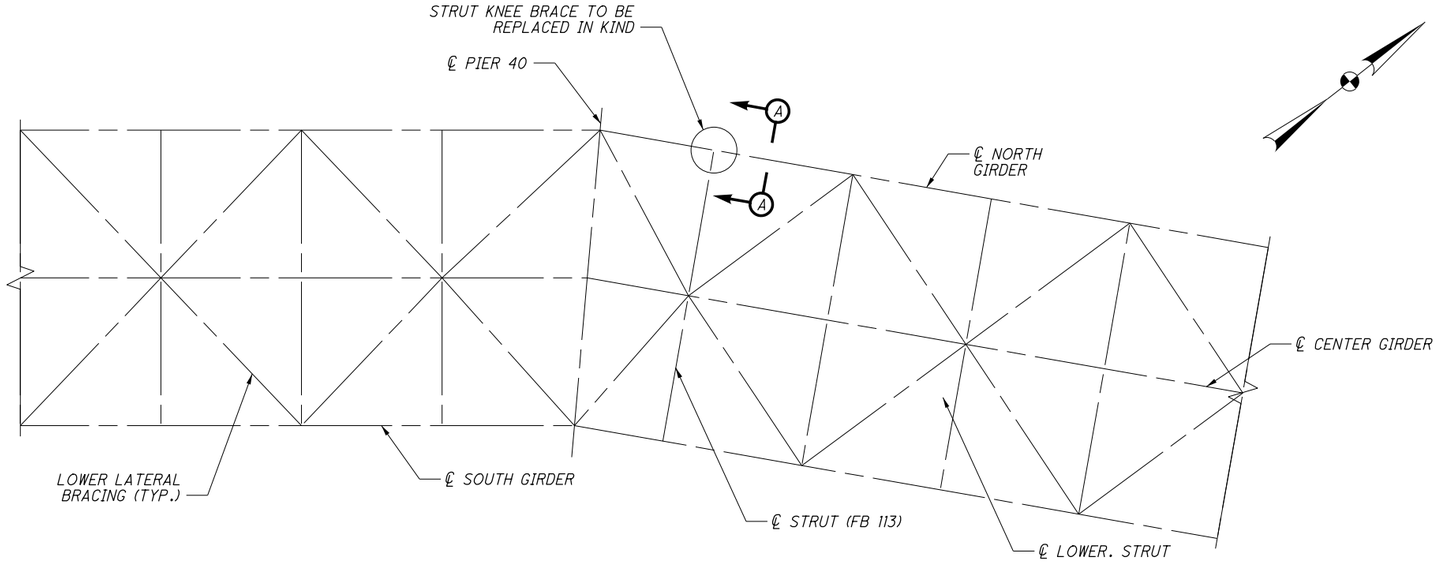
EAST APPROACH - LAKEFRONT RAMP STRUT BRACING RETROFIT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

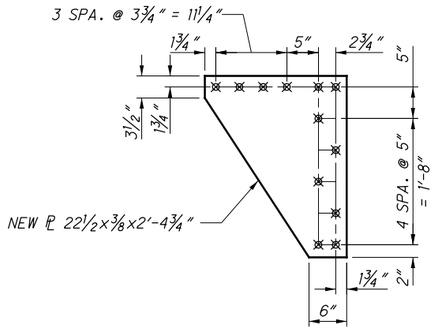
S74/S95

125
154

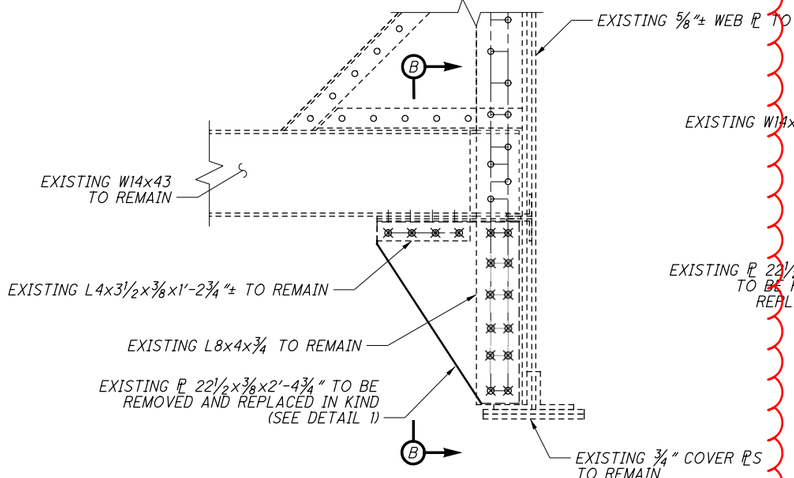
85377MD017 1/19/2017 4:10:38 PM nrfisco



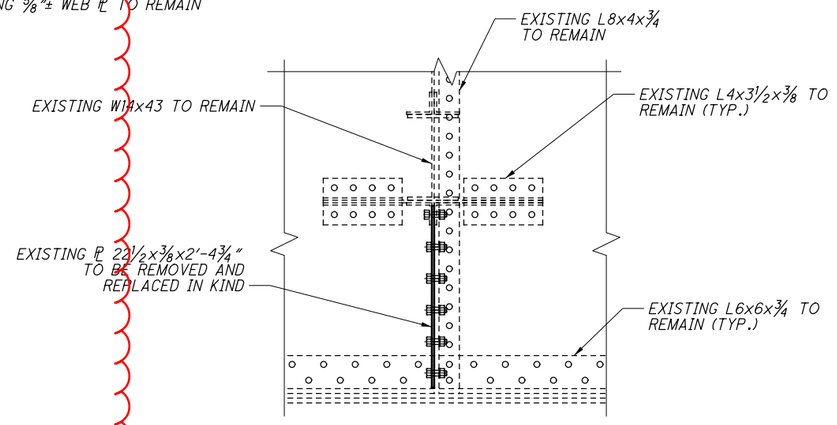
PARTIAL LOWER FRAMING PLAN - LAKEFRONT RAMP



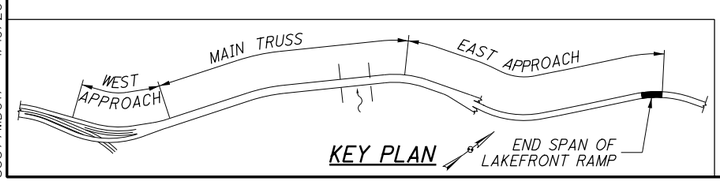
DETAIL 1



SECTION A-A



SECTION B-B



BOLT LEGEND:

⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞"Φ A325 BOLT.

○ - EXISTING FASTENER TO REMAIN.

NOTES:

1. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 15⁄16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. SOME EXISTING RIVETS AND PLATES ARE NOT SHOWN FOR CLARITY.
4. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO FABRICATION OR PERFORMING WORK.
5. THE RIVET HOLES IN THE EXISTING ANGLES WILL BE REUSED FOR BOLT HOLES. FIELD VERIFY THE HOLE LOCATIONS BEFORE DRILLING THE NEW PLATE.
6. THE REMOVAL OF THE EXISTING PLATE, BOLTS, AND RIVETS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
7. EXISTING SHOP DRAWINGS ARE NOT AVAILABLE FOR THIS PARTICULAR KNEE BRACE. THE EXACT SIZE AND GEOMETRY OF THE PLATE IS UNKNOWN. ALL PLATES AND ANGLES THICKNESS SHALL BE MEASURED IN THE FIELD TO ENSURE PROPER BOLT LENGTH.
8. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
9. ALL LABOR AND MATERIALS ASSOCIATED WITH THE INSTALLATION OF THE BRACING PLATE SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP STRUT BRACING RETROFIT.

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		1800035	

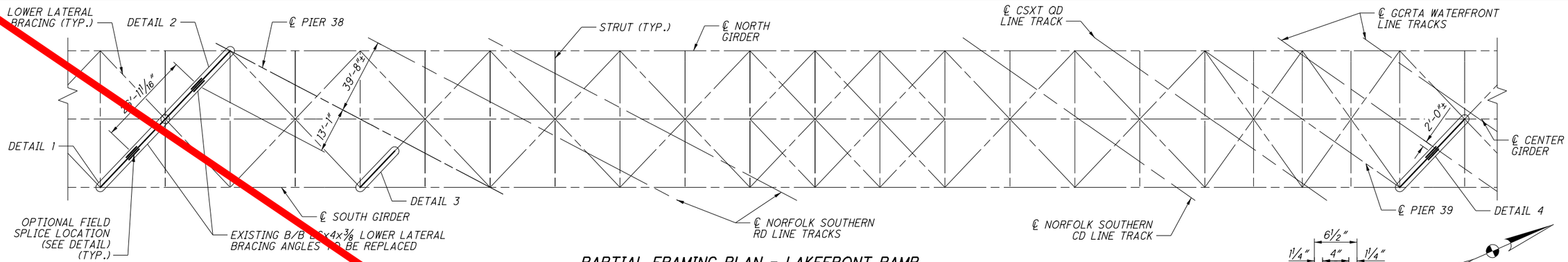
EAST APPROACH - LAKEFRONT RAMP STRUT BRACING RETROFIT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

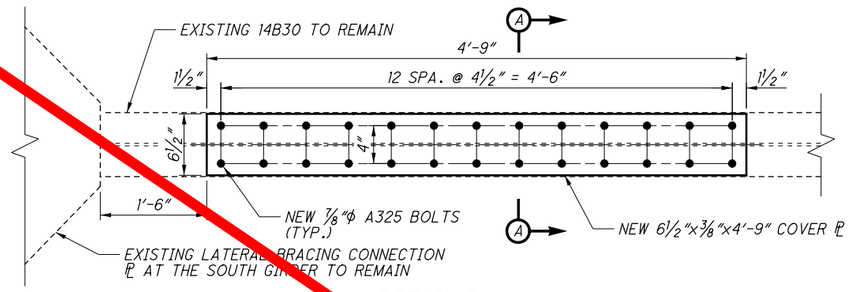
S74/S95

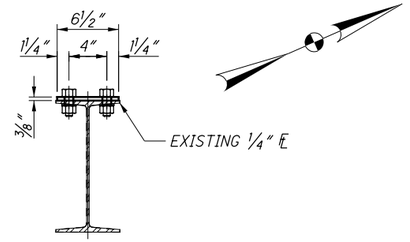
125
154

85377MD017 1/19/2017 4:10:38 PM nrfisco

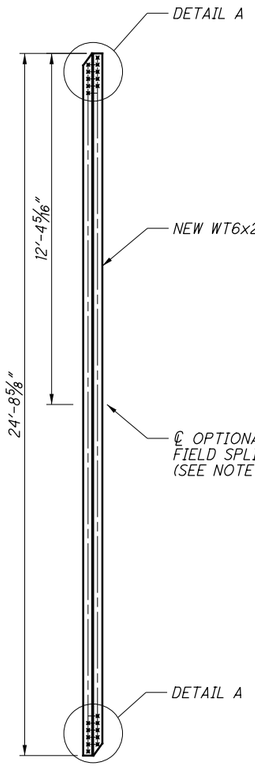


PARTIAL FRAMING PLAN - LAKEFRONT RAMP



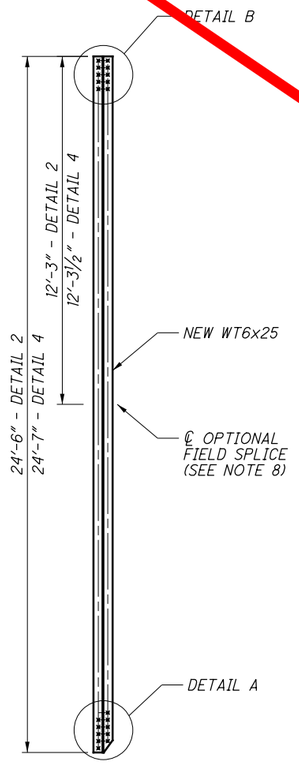


SECTION A-A



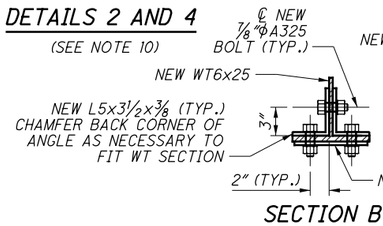
DETAIL 1

(SEE NOTE 10)



DETAILS 2 AND 4

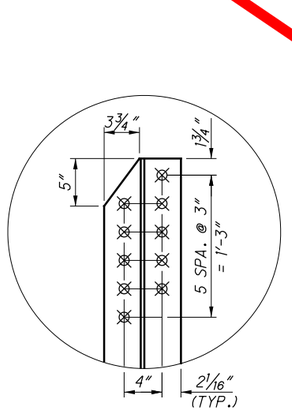
(SEE NOTE 10)



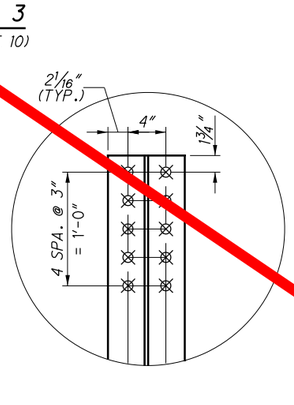
SECTION B-B

DETAIL 3

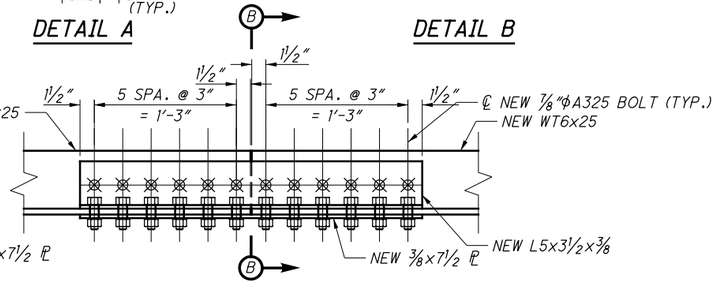
(SEE NOTE 10)



DETAIL A



DETAIL B



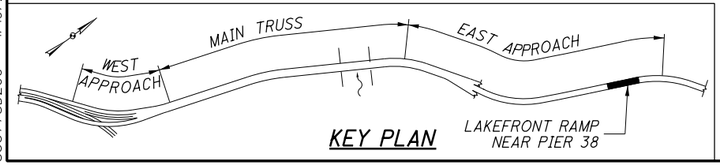
OPTIONAL FIELD SPLICE

BOLT LEGEND:

- ⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞"ϕ A325 BOLT.
- ● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT.

NOTES:

1. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 15/16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. SOME EXISTING RIVETS AND PLATES ARE NOT SHOWN FOR CLARITY.
4. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO PERFORMING WORK.
5. THE RIVET HOLES IN THE EXISTING LATERAL GUSSET PLATES WILL BE REUSED FOR BOLT HOLES. FIELD VERIFY THE HOLE LOCATIONS BEFORE DRILLING THE NEW WT SECTION.
6. THE REMOVAL OF THE EXISTING BRACING ANGLES AND RIVETS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
7. EXISTING SHOP DRAWINGS ARE NOT AVAILABLE FOR PARTICULAR LATERAL GUSSET PLATES. THE EXACT SIZE AND GEOMETRY OF THE PLATES ARE UNKNOWN. GUSSET PLATE THICKNESS SHALL BE MEASURED IN THE FIELD TO ENSURE PROPER BOLT LENGTH.
8. AT THE OPTION OF THE CONTRACTOR A FIELD SPLICE MAY BE UTILIZED.
9. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
10. ALL LABOR, TEMPORARY SUPPORTS, AND MATERIALS ASSOCIATED WITH THE INSTALLATION OF NEW LATERAL BRACING MEMBERS IN DETAILS 1, 2, AND 4 SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL LEVEL UF.
11. ALL LABOR AND MATERIALS ASSOCIATED WITH THE INSTALLATION OF LATERAL BRACING COVER PLATE IN DETAIL 3, INCLUDING DRILLING, SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP LATERAL BRACING COVER PLATE RETROFIT.



KEY PLAN

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

EAST APPR. - LAKEFRONT RAMP LOWER LAT. BRACING RETROFITS
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S75 / S95

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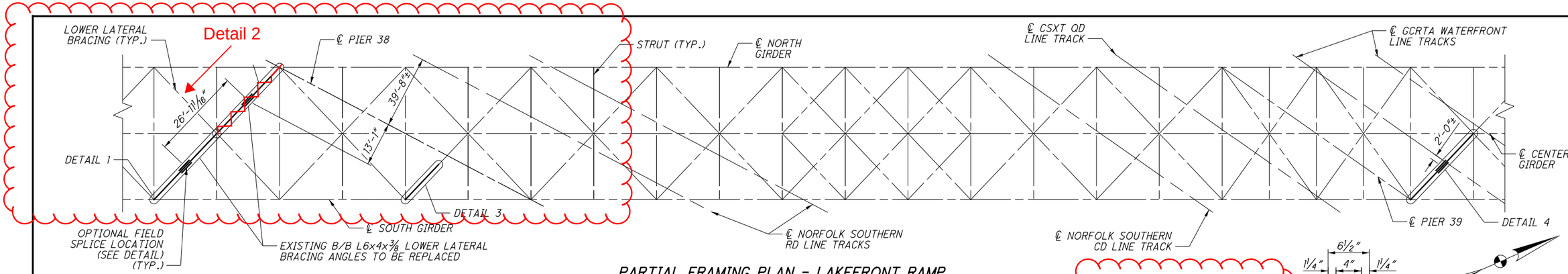
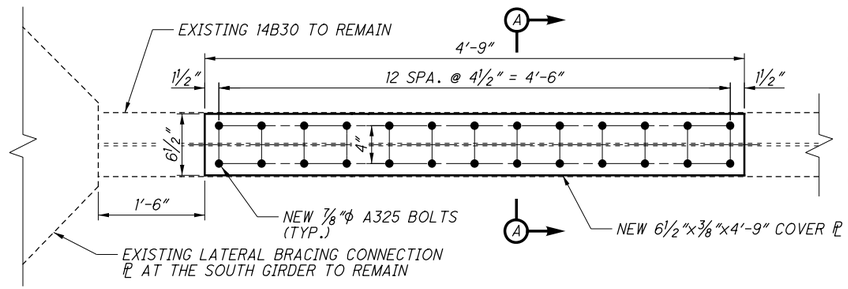
85377SD200 1/19/2017 4:10:43 PM nrfisco

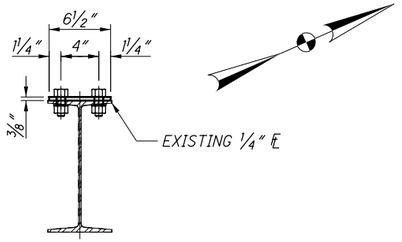


PARTIAL FRAMING PLAN - LAKEFRONT RAMP

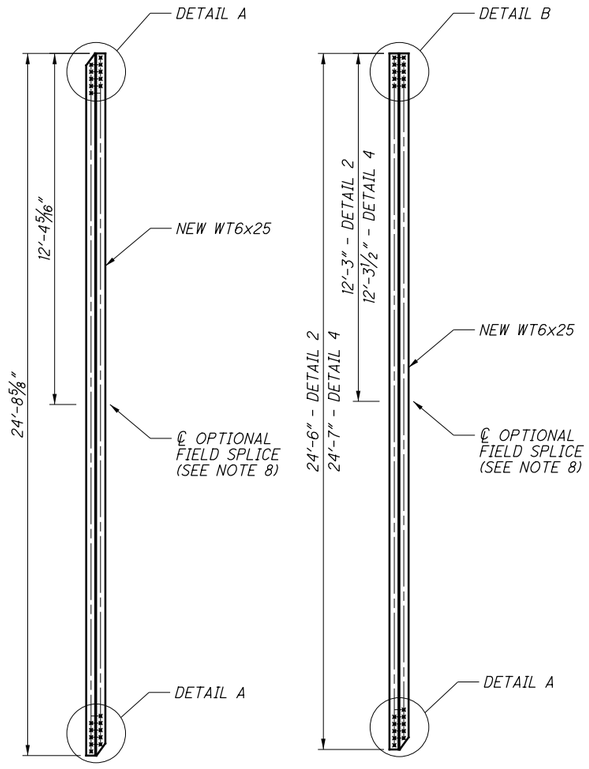


DETAIL 3
(SEE NOTE 10)

Detail 2 Lower Lateral Bracing moved to location noted per Engineer's Direction

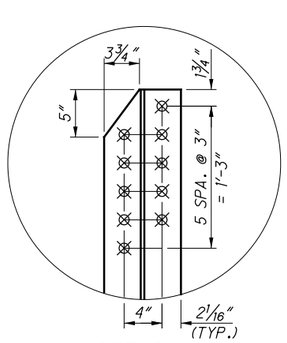


SECTION A-A

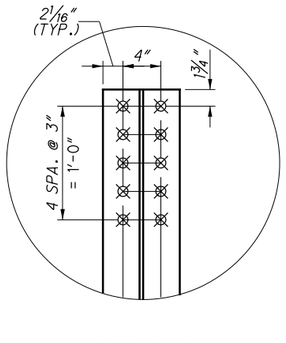


DETAIL 1
(SEE NOTE 10)

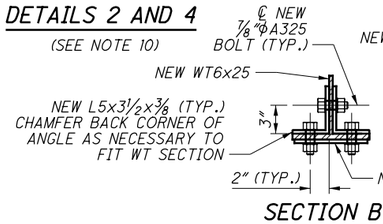
DETAILS 2 AND 4
(SEE NOTE 10)



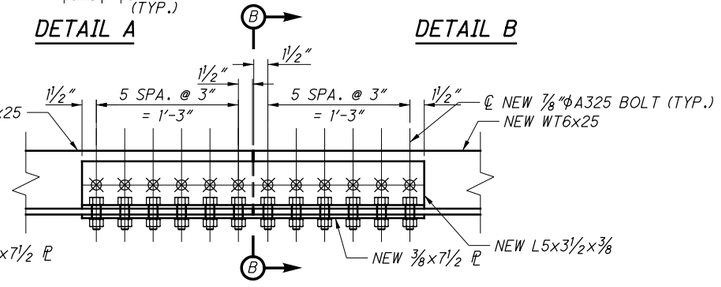
DETAIL A



DETAIL B



SECTION B-B



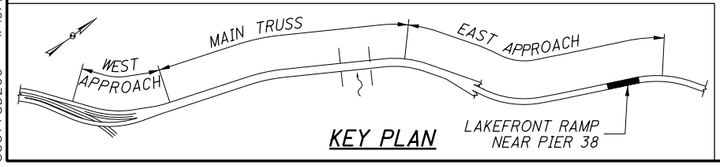
OPTIONAL FIELD SPLICE

BOLT LEGEND:

- ⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW 7/8"ϕ A325 BOLT.
- ● - FIELD DRILL NEW 15/16"ϕ HOLE FOR NEW 7/8"ϕ A325 BOLT.

NOTES:

1. ALL NEW BOLTS SHALL BE 7/8" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 15/16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. SOME EXISTING RIVETS AND PLATES ARE NOT SHOWN FOR CLARITY.
4. CONTRACTOR SHALL FIELD VERIFY MEMBER DIMENSIONS AND CONTACT THE ENGINEER WITH ANY DISCREPANCIES PRIOR TO PERFORMING WORK.
5. THE RIVET HOLES IN THE EXISTING LATERAL GUSSET PLATES WILL BE REUSED FOR BOLT HOLES. FIELD VERIFY THE HOLE LOCATIONS BEFORE DRILLING THE NEW WT SECTION.
6. THE REMOVAL OF THE EXISTING BRACING ANGLES AND RIVETS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
7. EXISTING SHOP DRAWINGS ARE NOT AVAILABLE FOR PARTICULAR LATERAL GUSSET PLATES. THE EXACT SIZE AND GEOMETRY OF THE PLATES ARE UNKNOWN. GUSSET PLATE THICKNESS SHALL BE MEASURED IN THE FIELD TO ENSURE PROPER BOLT LENGTH.
8. AT THE OPTION OF THE CONTRACTOR A FIELD SPLICE MAY BE UTILIZED.
9. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
10. ALL LABOR, TEMPORARY SUPPORTS, AND MATERIALS ASSOCIATED WITH THE INSTALLATION OF NEW LATERAL BRACING MEMBERS IN DETAILS 1, 2, AND 4 SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL LEVEL UF.
11. ALL LABOR AND MATERIALS ASSOCIATED WITH THE INSTALLATION OF LATERAL BRACING COVER PLATE IN DETAIL 3, INCLUDING DRILLING, SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP LATERAL BRACING COVER PLATE RETROFIT.



KEY PLAN

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

EAST APPR. - LAKEFRONT RAMP LOWER LAT. BRACING RETROFITS
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S75/S95

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154

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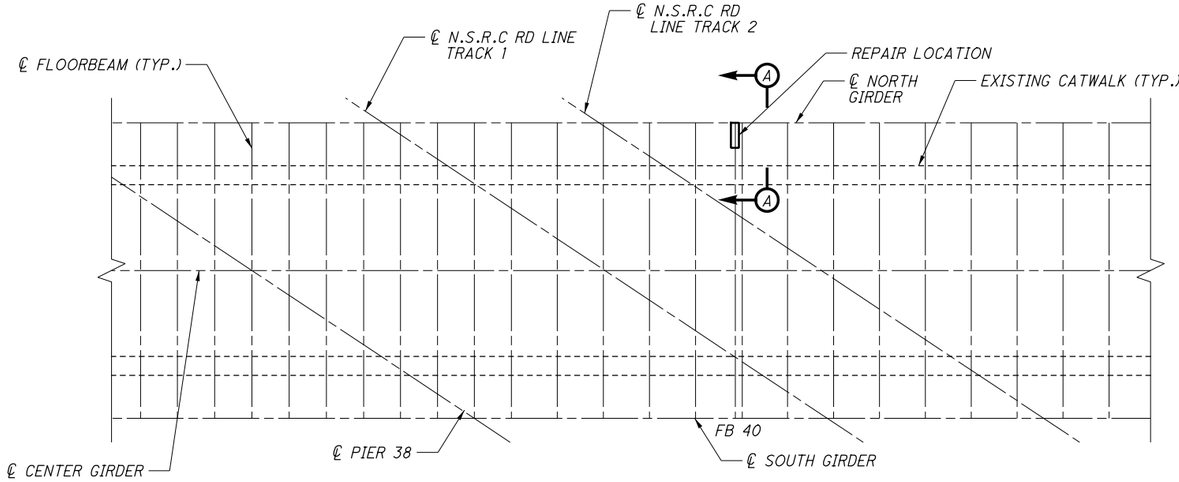
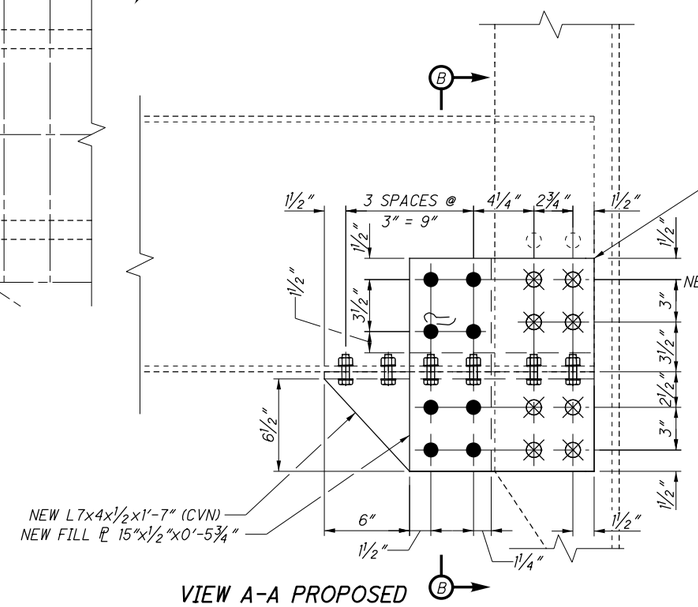
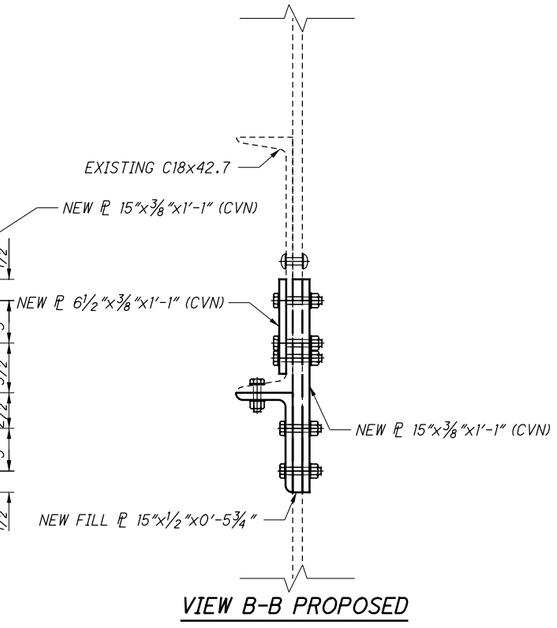


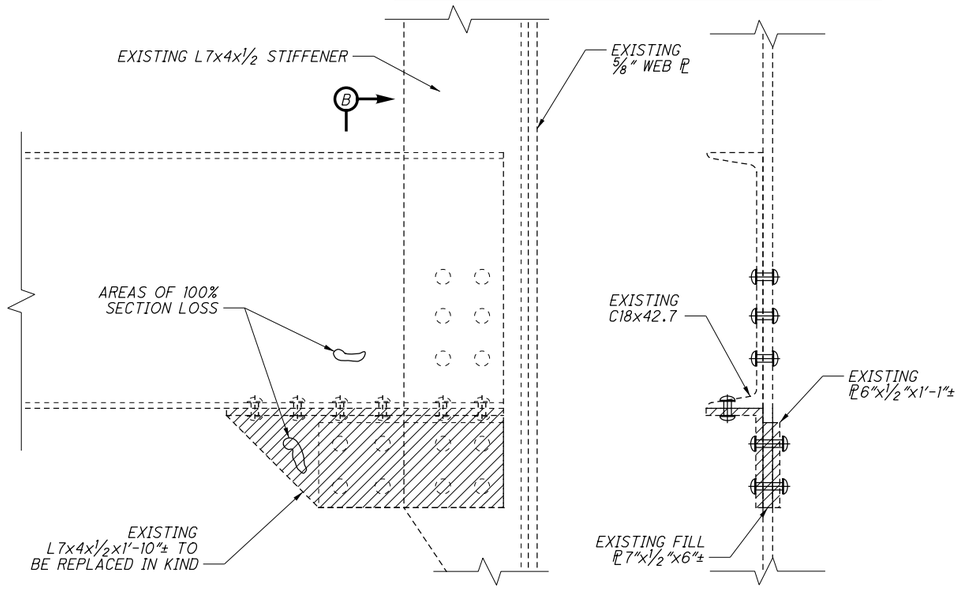
PARTIAL FRAMING PLAN - LAKEFRONT RAMP



VIEW A-A PROPOSED

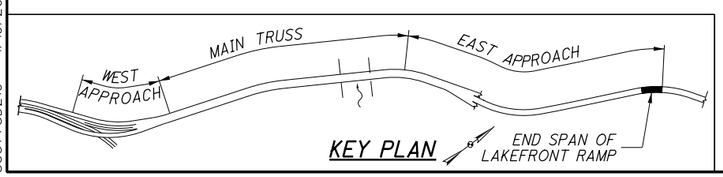


VIEW B-B PROPOSED



VIEW A-A EXISTING

VIEW B-B EXISTING



KEY PLAN

LEGEND:

- ● - FIELD DRILL NEW 15⁄16"ϕ HOLE FOR NEW ⅞"ϕ A325 BOLT.
- ⊗ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ⅞"ϕ A325 BOLT.
- ○ - EXISTING FASTENER TO REMAIN.
- ▨ - EXISTING STEEL TO BE REMOVED.

NOTES:

1. ALL NEW BOLTS SHALL BE ⅞" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 15⁄16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. THE RIVET HOLES IN THE EXISTING MEMBERS WILL BE REUSED FOR BOLT HOLES. FIELD VERIFY THE HOLE LOCATIONS BEFORE DRILLING THE NEW ANGLES.
4. NOTE THAT EXISTING SHOP DRAWINGS FOR THE GIRDER ARE NOT AVAILABLE.
5. ALL LABOR, MATERIALS, REMOVAL, AND ACCESS TO COMPLETE THE FLOORBEAM RETROFIT SHALL BE INCLUDED FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL, MISC.: LAKEFRONT RAMP FLOORBEAM RETROFIT.
6. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF THE COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
7. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	ADA	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SFH		18000351	

EAST APPR. - LAKEFRONT RAMP FLOORBEAM RETROFIT
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S76/S95

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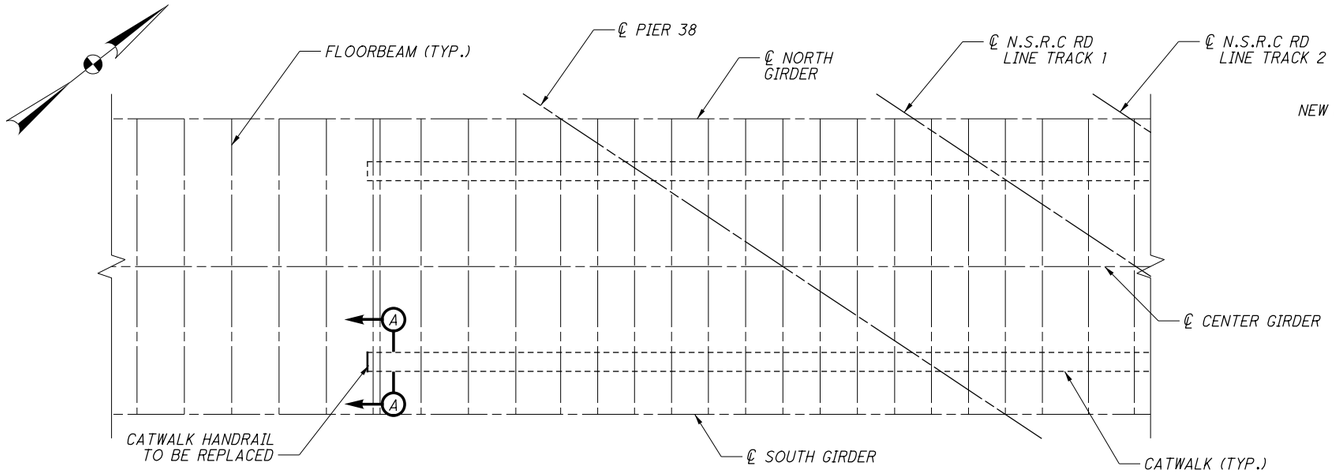
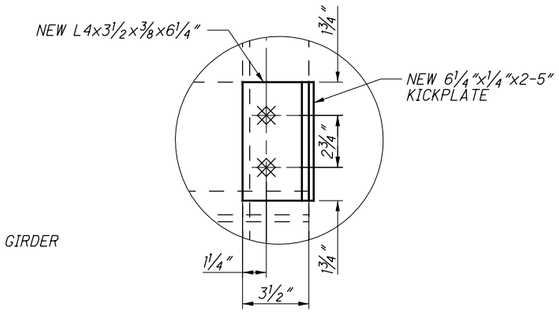
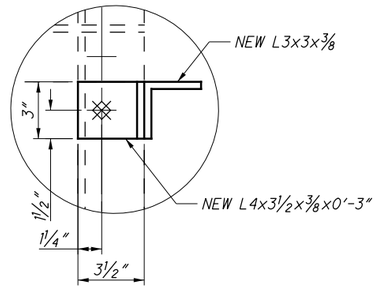


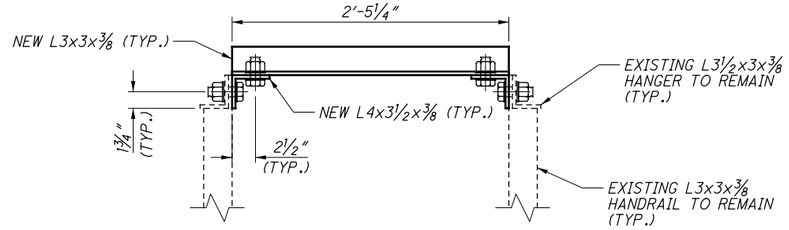
PARTIAL FRAMING PLAN - LAKEFRONT RAMP



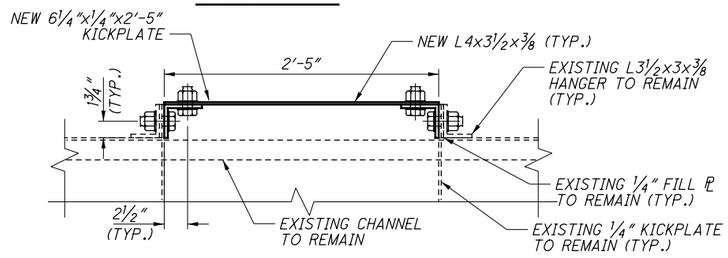
DETAIL 1



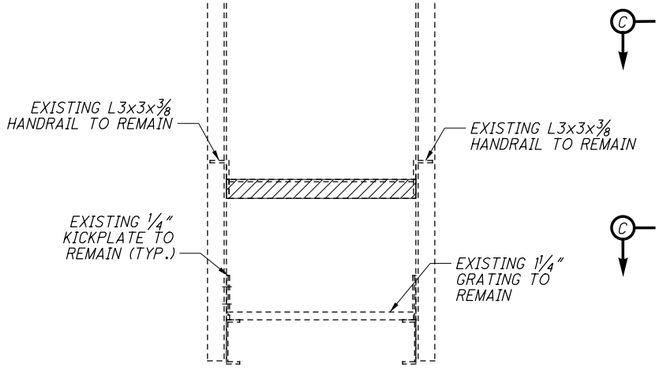
DETAIL 2



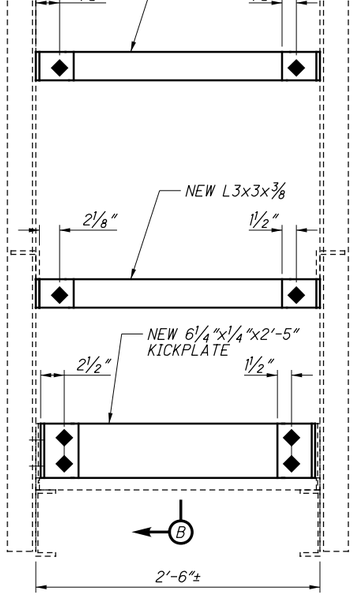
SECTION C-C



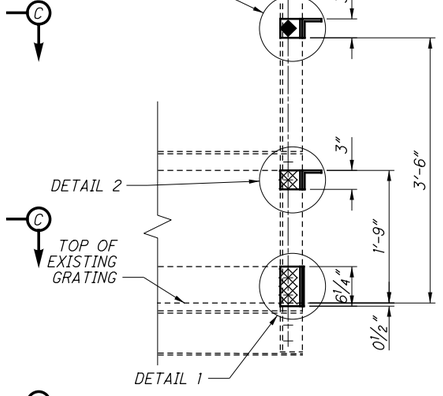
SECTION D-D



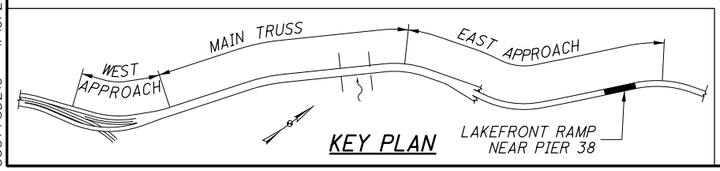
SECTION A-A - EXISTING



SECTION A-A - PROPOSED



SECTION B-B



KEY PLAN

LEGEND:

- ▨ - EXISTING STEEL TO BE REMOVED.
- ◆ - NEW 13⁄16"ϕ HOLE FOR NEW ¾"ϕ A325 BOLT.
- ⊠ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ¾"ϕ A325 BOLT.

NOTES:

1. ALL NEW BOLTS SHALL BE ¾" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE 13⁄16" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. SOME FASTENER HOLES IN THE EXISTING HANGER ANGLES WILL BE REUSED FOR BOLT HOLES. CONTRACTOR IS TO FIELD VERIFY THE MEMBER SIZES, LENGTHS, AND HOLE LOCATIONS BEFORE FABRICATION OF THE NEW ANGLES/PLATES.
4. THE REMOVAL OF THE EXISTING ANGLES AND RIVETS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
5. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
6. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLATION OF NEW HANDRAILS AND KICKPLATES SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF.

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

EAST APPR. - LAKEFRONT RAMP CATWALK RETROFIT (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S77/S95

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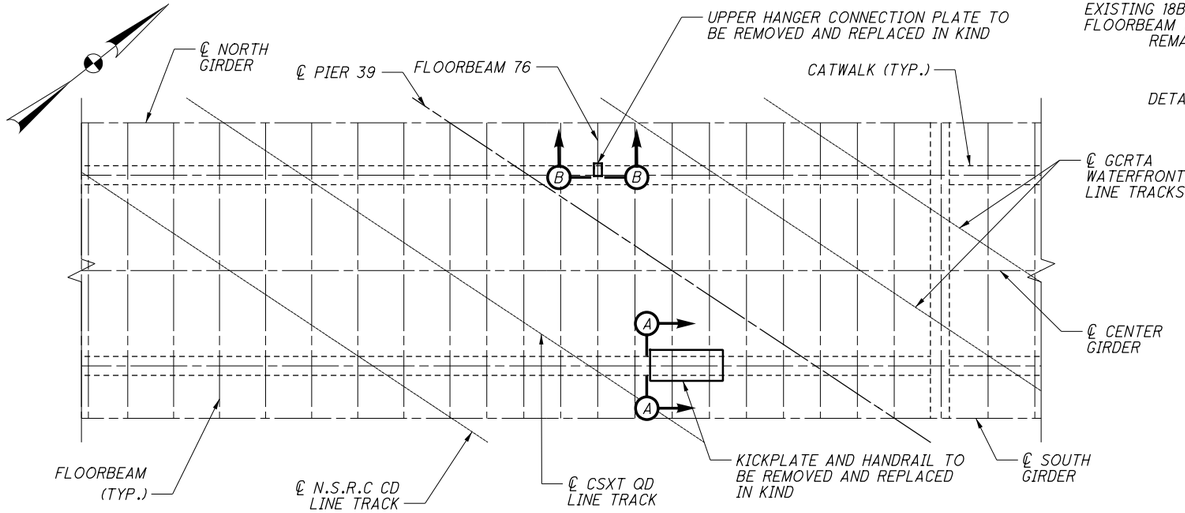
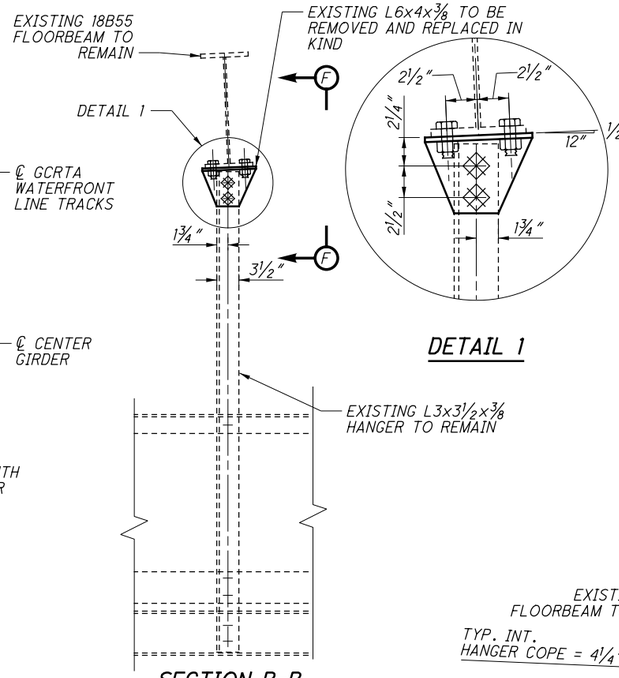
154

85377SD210 1/19/2017 4:10:53 PM nrfisco

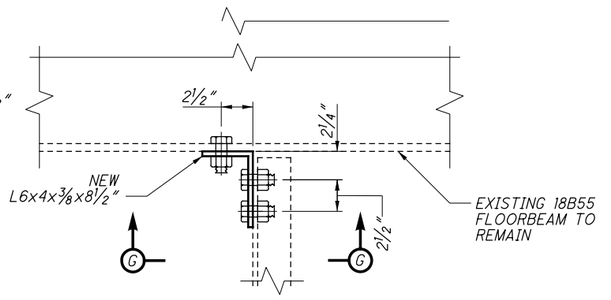


PARTIAL FRAMING PLAN - LAKEFRONT RAMP

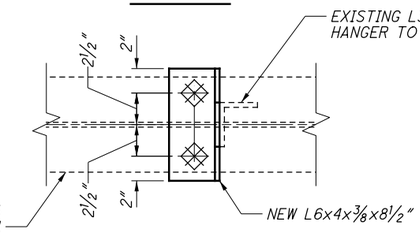


SECTION B-B

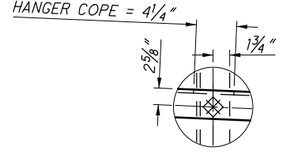
DETAIL 1



VIEW F-F

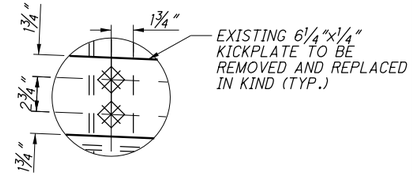


SECTION G-G



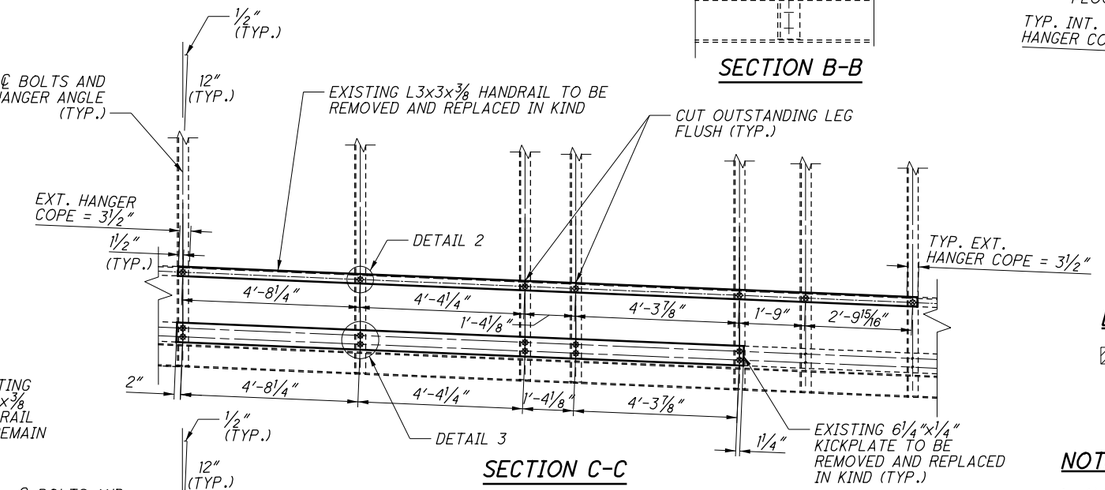
DETAIL 2

(TYPICAL AT ALL INTERIOR HANDRAIL CONNECTIONS, EXTERIOR CONNECTION SIMILAR)

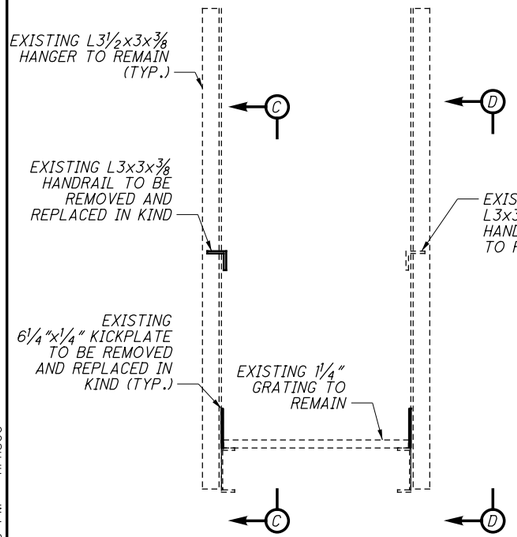


DETAIL 3

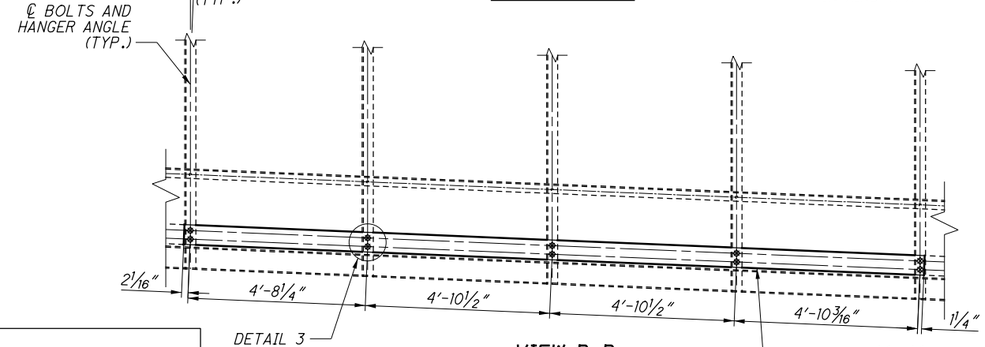
(TYPICAL AT ALL INTERIOR KICKPLATE CONNECTIONS, EXTERIOR CONNECTION SIMILAR)



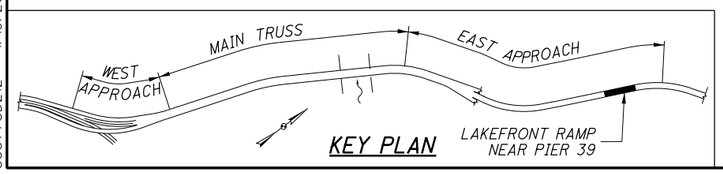
SECTION C-C



SECTION A-A



VIEW D-D



KEY PLAN

LEGEND:

▨ - EXISTING STEEL TO BE REMOVED.

⊗ - REMOVE EXISTING FASTENER AND REPLACE WITH NEW ¾"ϕ A325 BOLT.

NOTES:

1. ALL NEW BOLTS SHALL BE ¾" DIAMETER A325 HIGH STRENGTH BOLTS AND ALL HOLES SHALL BE ¹³⁄₁₆" DIAMETER.
2. ALL EXISTING ELEMENTS SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
3. THE RIVET HOLES IN THE EXISTING HANGER ANGLES WILL BE REUSED FOR BOLT HOLES. CONTRACTOR IS TO FIELD VERIFY THE MEMBER SIZES, LENGTHS, AND HOLE LOCATIONS BEFORE FABRICATION OF THE NEW ANGLES/PLATES.
4. THE REMOVAL OF THE EXISTING ANGLES, PLATES, AND RIVETS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
5. REPAIRS SHOWN ON THIS SHEET SHALL BE COMPLETED PRIOR TO THE PAINTING OF THE STRUCTURE. THE CONTRACTOR SHALL PREPARE ANY FAYING SURFACES PER CMS 514. THE REPAIR AREA SHALL BE COATED WITH A PRIME COAT WITHIN 30 DAYS OF COMPLETION OF THE REPAIR. PREPARATION OF THE FAYING SURFACES AND PRIMING OF THE REPAIR AREAS AFTER INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 514.
6. ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLATION OF NEW HANDRAILS, KICKPLATES, AND HANGER ANGLE SHALL BE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF.

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

DESIGNED	DRAWN	REVIEWED	DATE
RJM	RJM	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		1800035	

EAST APPR. - LAKEFRONT RAMP CATWALK RETROFIT (2 OF 2)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S78/S95

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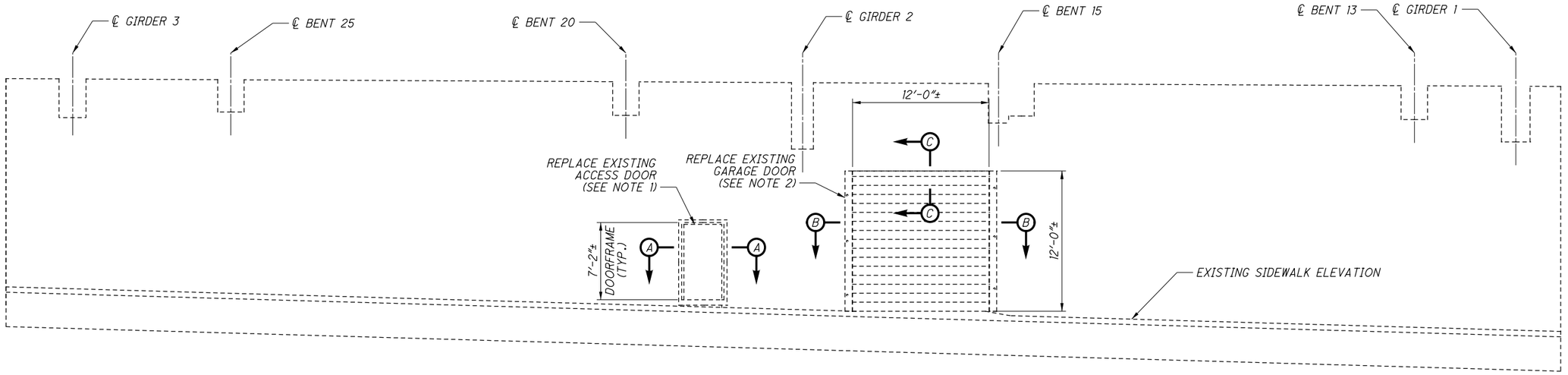
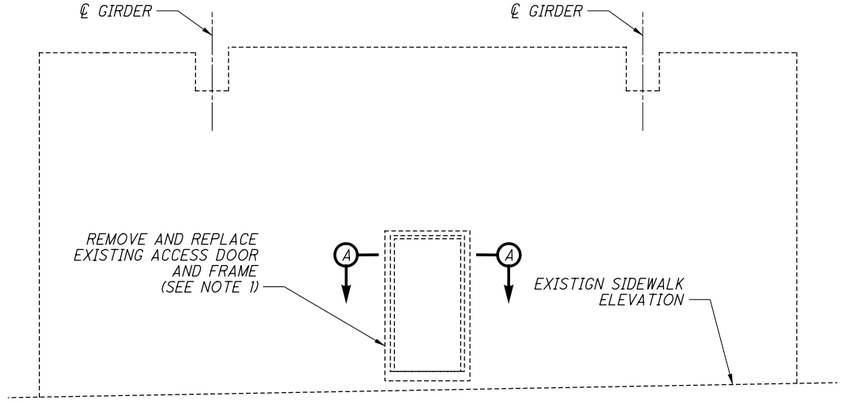
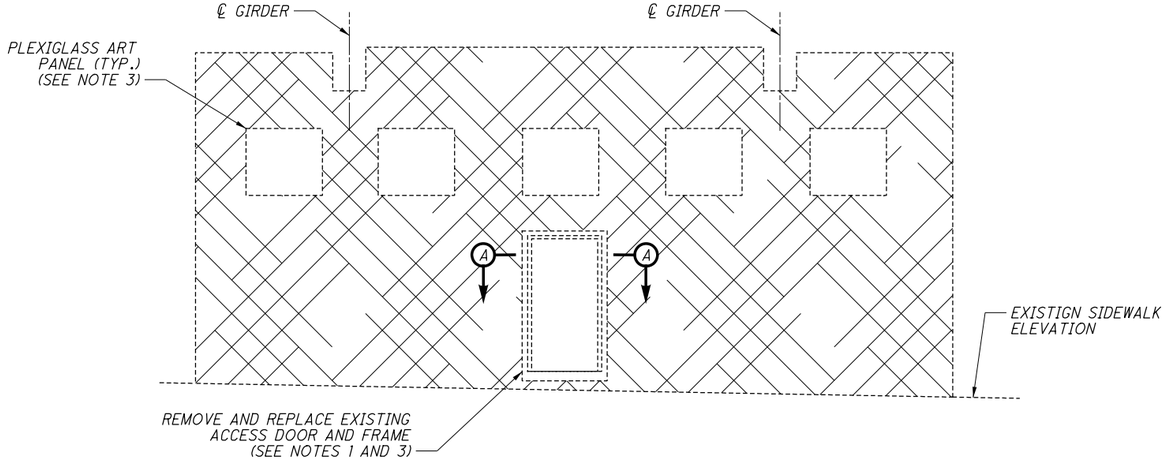


SECTION N - EAST ELEVATION OF WEST CURTAIN WALL



SECTION C - EAST CURTAIN WALL ACCESS DOOR TYPICAL ELEVATION

(SECTION K CURTAIN WALL SIMILAR)
(2 TOTAL LOCATIONS)



SECTION C - WEST CURTAIN WALL ACCESS DOOR TYPICAL ELEVATION

(SECTION K CURTAIN WALL SIMILAR)
(2 TOTAL LOCATIONS)

LEGEND:

- EXTENTS OF PAINTED MURAL

NOTES:

1. REPLACE EXISTING STEEL ACCESS DOOR AND FRAME WITH NEW STEEL ACCESS DOOR AND FRAME TO BRING FRAME FLUSH WITH FRONT OF CURTAIN WALL. SEE ARCHITECTURAL SPECIAL PROVISIONS DOCUMENT FOR NEW ACCESS DOOR DETAILS.
2. REMOVE EXISTING GARAGE DOOR AND DOOR TRACK ASSEMBLY FROM INTERIOR FACE OF CURTAIN WALL AND INSTALL NEW GALVANIZED GARAGE DOOR AND DOOR TRACK ASSEMBLY ON THE EXTERIOR FACE OF THE CURTAIN WALL. SEE ARCHITECTURAL SPECIAL PROVISIONS DOCUMENT FOR NEW GARAGE DOOR DETAILS.
3. THE WEST CURTAIN WALL EXTERIORS ARE PAINTED WITH A DECORATIVE MURAL AND HAVE PLEXIGLASS ARTWORK MOUNTED NEAR THE TOP OF THE CURTAIN WALLS. CONTRACTOR SHALL TAKE GREAT CARE NOT TO DAMAGE THIS ARTWORK AND PORTIONS OF THE MURAL LOCATED OUTSIDE THE LIMITS OF THE FRAME TO BE REPLACED. THE NEW ACCESS DOORS AND FRAMES AT THESE LOCATIONS SHALL BE PAINTED A SHADE OF PINK THAT MATCHES THE EXISTING COLOR PINK PRESENT IN THE MURAL. CONTRACTOR IS TO PROVIDE A PAINT COLOR SAMPLE TO THE ENGINEER FOR APPROVAL PRIOR TO PAINTING OF THE DOORS.
4. FOR SECTIONS A-A THRU C-C, SEE SHEET S80/S95.
5. ALL LABOR, ACCESS, AND MATERIALS ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF THE ACCESS DOORS, INCLUDING CLEANING AND PAINTING OF THE JAMB STEEL, SHALL BE PAID FOR UNDER ITEM SPECIAL, MISC.: ACCESS DOOR REPLACEMENT.
6. ALL LABOR, ACCESS, AND MATERIALS ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF THE GARAGE DOOR, INCLUDING CLEANING AND PAINTING OF THE JAMB STEEL, SHALL BE PAID FOR UNDER ITEM SPECIAL, MISC.: GARAGE DOOR REPLACEMENT.

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	ADA	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000035	

WEST APPROACH - ACCESS DOORS AND GARAGE DOOR (1 OF 2)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S79/S95

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154

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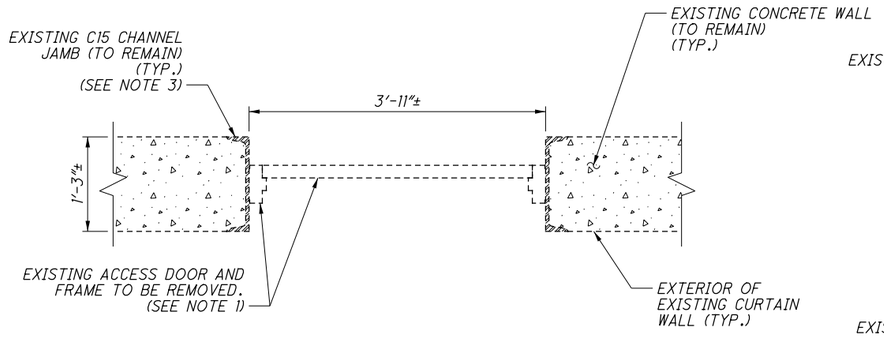
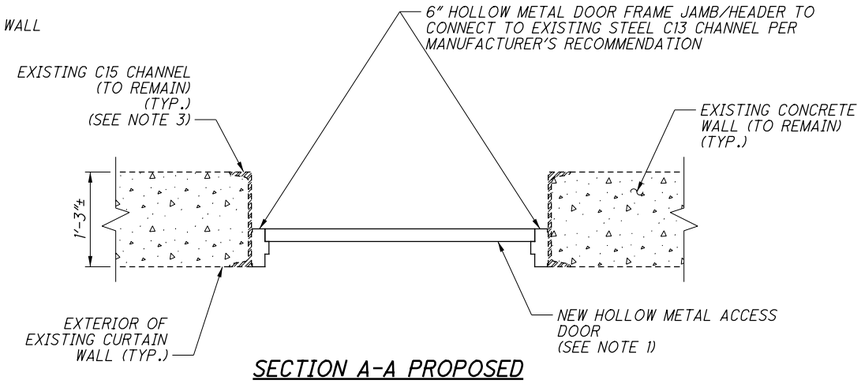
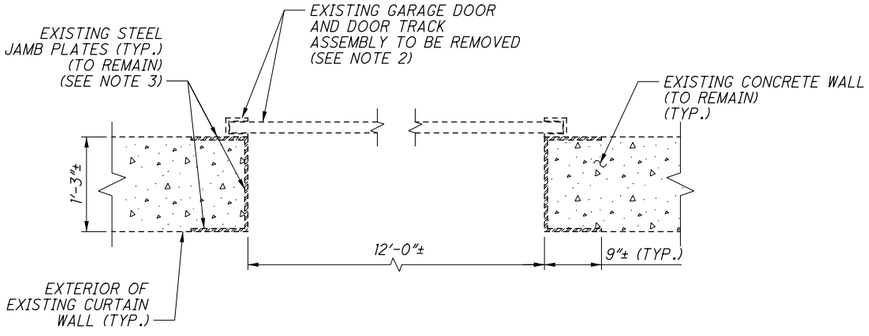


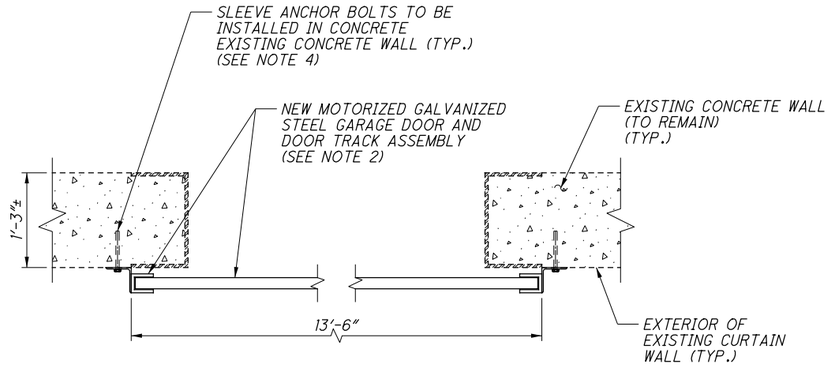
SECTION A-A EXISTING



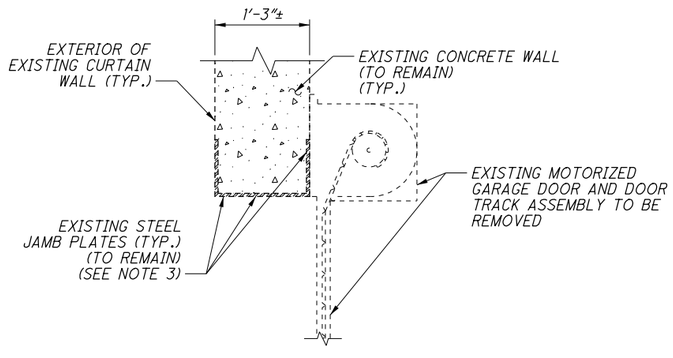
SECTION A-A PROPOSED



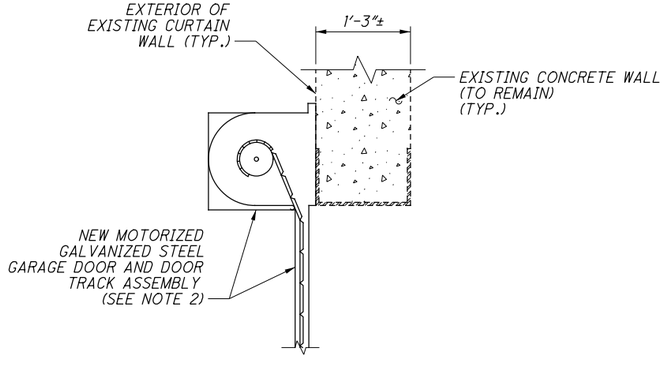
SECTION B-B EXISTING



SECTION B-B PROPOSED



SECTION C-C EXISTING



SECTION C-C PROPOSED

NOTES:

1. REPLACE EXISTING STEEL ACCESS DOOR AND FRAME WITH NEW STEEL ACCESS DOOR AND FRAME TO BRING FRAME FLUSH WITH FRONT OF CURTAIN WALL. SEE ARCHITECTURAL SPECIAL PROVISIONS DOCUMENT FOR NEW ACCESS DOOR DETAILS.
2. REMOVE EXISTING GARAGE DOOR AND DOOR TRACK ASSEMBLY FROM INTERIOR FACE OF CURTAIN WALL AND INSTALL NEW GALVANIZED GARAGE DOOR AND DOOR TRACK ASSEMBLY ON THE EXTERIOR FACE OF THE CURTAIN WALL. SEE ARCHITECTURAL SPECIAL PROVISIONS DOCUMENT FOR NEW GARAGE DOOR DETAILS.
3. ANY HOLES OR CRACKS PRESENT IN THE EXISTING STEEL DOOR JAMBS AFTER REMOVAL OF THE EXISTING ACCESS DOOR AND FRAME AND GARAGE DOOR AND DOOR TRACK ASSEMBLY SHALL BE PATCHED WITH METAL REINFORCED FILLER. THE STEEL DOOR JAMBS SHALL BE BLASTED, PRIMED, AND PAINTED TO MATCH THE EXISTING SURROUNDING CURTAIN WALLS.
4. THE SIZE AND SPACING OF THE SLEEVE ANCHOR BOLTS FOR THE NEW GARAGE DOOR SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS.
5. FOR LOCATIONS OF SECTIONS A-A THRU C-C, SEE SHEET S79/S95.
6. ALL LABOR, ACCESS, AND MATERIALS ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF THE ACCESS DOORS, INCLUDING CLEANING AND PAINTING OF THE JAMB STEEL, SHALL BE PAID FOR UNDER ITEM SPECIAL, MISC.: ACCESS DOOR REPLACEMENT.
7. ALL LABOR, ACCESS, AND MATERIALS ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF THE GARAGE DOOR, INCLUDING CLEANING AND PAINTING OF THE JAMB STEEL, SHALL BE PAID FOR UNDER ITEM SPECIAL, MISC.: GARAGE DOOR REPLACEMENT.

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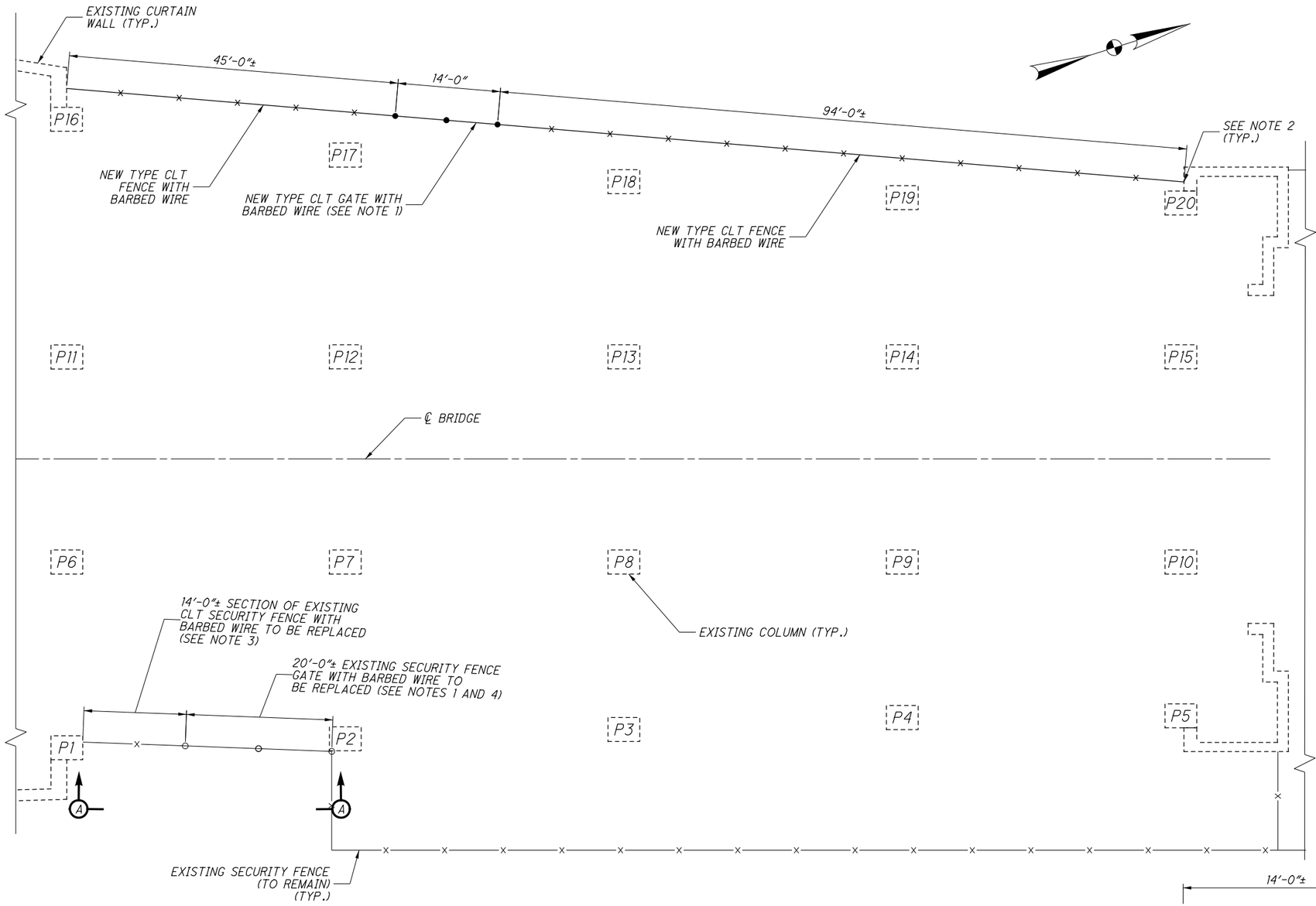
DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED ADA | DRAWN ADA | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

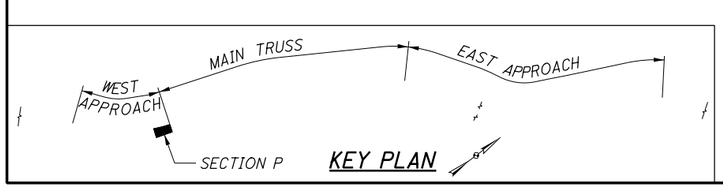
WEST APPROACH - ACCESS DOORS AND GARAGE DOOR (2 OF 2)

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

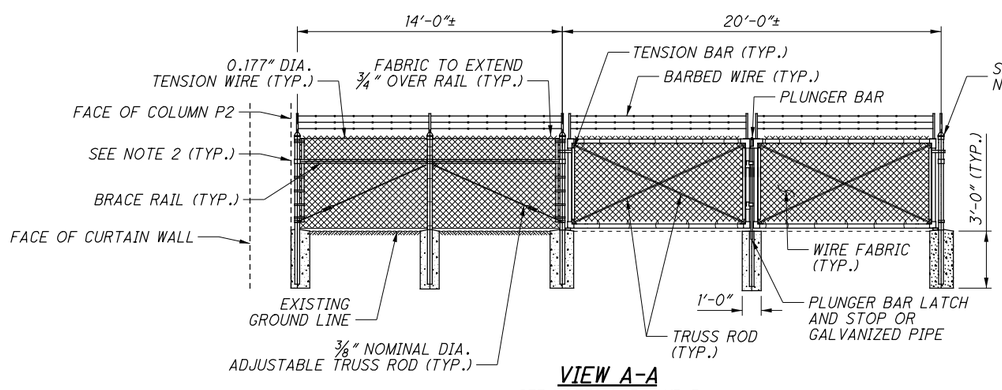
CUY-2-14.41
PID No. 85377



WEST APPROACH - SECTION P SUBSTRUCTURE PLAN



KEY PLAN



VIEW A-A

SEE NOTES 1, 3, AND 5
(COLUMN P2 NOT SHOWN FOR CLARITY)

NOTES:

1. SECURITY FENCE GATES ARE TO BE INSTALLED PER STANDARD CONSTRUCTION DRAWING F-1.1.
2. WHERE FENCING ABUTS THE EXISTING STRUCTURE, A POST IS TO BE PLACED IMMEDIATELY ADJACENT TO THE STRUCTURE TO LEAVE NO MORE THAN A 3" GAP BETWEEN THE POST AND THE EXISTING STRUCTURE.
3. THE REPLACEMENT OF THE EXISTING SECURITY FENCING AND THE INSTALLATION OF NEW SECURITY FENCING SHALL BE PAID FOR UNDER ITEM 607 - FENCE, TYPE CLT.
4. THE INSTALLATION OF THE NEW GATE SHALL BE PAID FOR UNDER ITEM 607 - GATE, TYPE CLT.
5. THE REPLACEMENT OF THE EXISTING GATE SHALL BE PAID FOR UNDER ITEM 607 - GATE, TYPE CLT, AS PER PLAN.
6. EXISTING CHAIN LINK FENCING TO BE TIED INTO NEW POST USING NEW HARDWARE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEM 607 - GATE, TYPE CLT, AS PER PLAN.
7. REMOVAL OF EXISTING FENCING AND GATE SHALL BE PAID FOR UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

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

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	PJA	4/14/2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		18000351	

WEST APPROACH - SECTION P SECURITY FENCE DETAILS

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S80A / S95

131A
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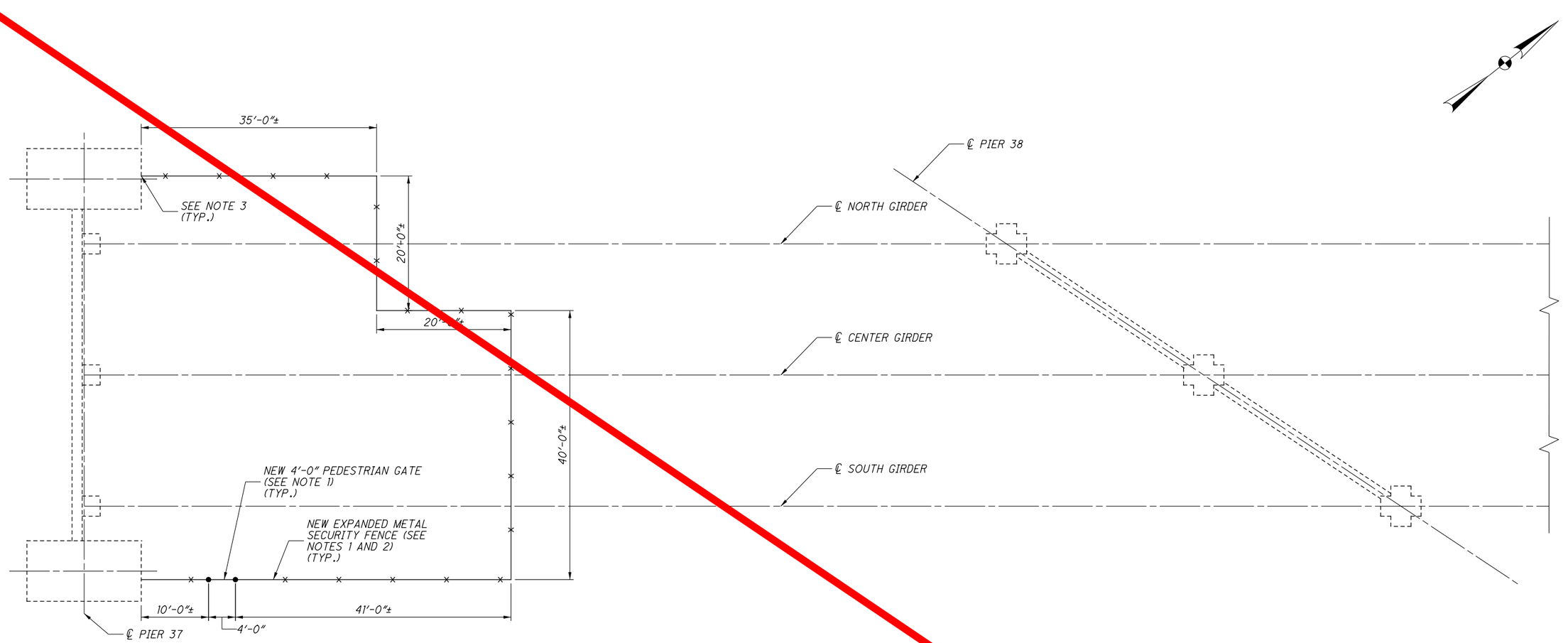
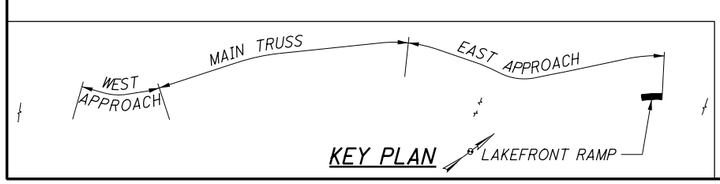




NOTES:

1. EXPANDED METAL SECURITY FENCE TO BE INSTALLED WITH A MAXIMUM GAP OF 2" BETWEEN THE BOTTOM OF THE FENCE AND GROUNDLINE, ESPECIALLY ON SLOPED SECTIONS OF GROUND. SEE SHEET S2A / 154 FOR ADDITIONAL INFORMATION ON EXPANDED METAL FENCING AND SECURITY GATE.
2. FENCE POST FOOTERS ARE TO BE INSTALLED PER SECURITY FENCING MANUFACTURER'S RECOMMENDATIONS.
3. WHERE FENCING ABUTS THE EXISTING STRUCTURE, A POST IS TO BE PLACED IMMEDIATELY ADJACENT TO THE STRUCTURE TO LEAVE NO MORE THAN A 3" GAP BETWEEN THE POST AND THE EXISTING STRUCTURE.
4. THE INSTALLATION OF THE NEW EXPANDED METAL SECURITY FENCE SHOWN ON THIS SHEET, INCLUDING ACCESS GATE, SHALL BE PAID FOR UNDER ITEM SPECIAL - MISC.: LAKEFRONT RAMP SECURITY FENCE AND GATE.

Tran Systems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	PJA	4/14/2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		18000035	

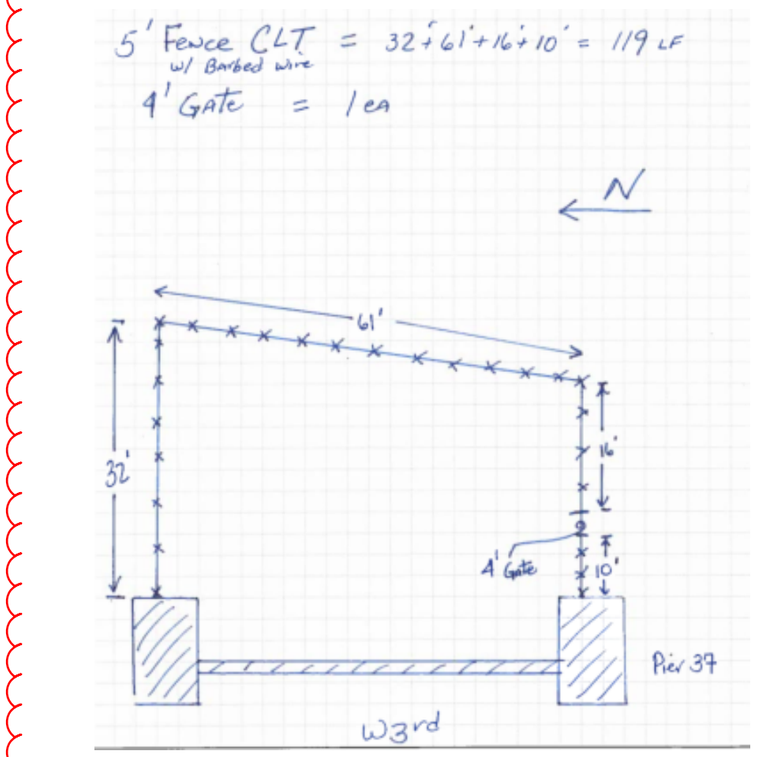
EAST APPROACH - LAKEFRONT RAMP SECURITY FENCE DETAILS

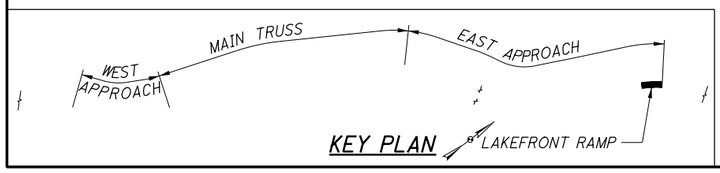
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S80B / S95

131B / 154





NOTES:

1. EXPANDED METAL SECURITY FENCE TO BE INSTALLED WITH A MAXIMUM GAP OF 2" BETWEEN THE BOTTOM OF THE FENCE AND GROUNDLINE, ESPECIALLY ON SLOPED SECTIONS OF GROUND. SEE SHEET S2A / 154 FOR ADDITIONAL INFORMATION ON EXPANDED METAL FENCING AND SECURITY GATE.
2. FENCE POST FOOTERS ARE TO BE INSTALLED PER SECURITY FENCING MANUFACTURER'S RECOMMENDATIONS.
3. WHERE FENCING ABUTS THE EXISTING STRUCTURE, A POST IS TO BE PLACED IMMEDIATELY ADJACENT TO THE STRUCTURE TO LEAVE NO MORE THAN A 3" GAP BETWEEN THE POST AND THE EXISTING STRUCTURE.
4. THE INSTALLATION OF THE NEW EXPANDED METAL SECURITY FENCE SHOWN ON THIS SHEET, INCLUDING ACCESS GATE, SHALL BE PAID FOR UNDER ITEM SPECIAL - MISC.: LAKEFRONT RAMP SECURITY FENCE AND GATE.

TranSystems
55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	PJA	4/14/2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DMD		18000035	

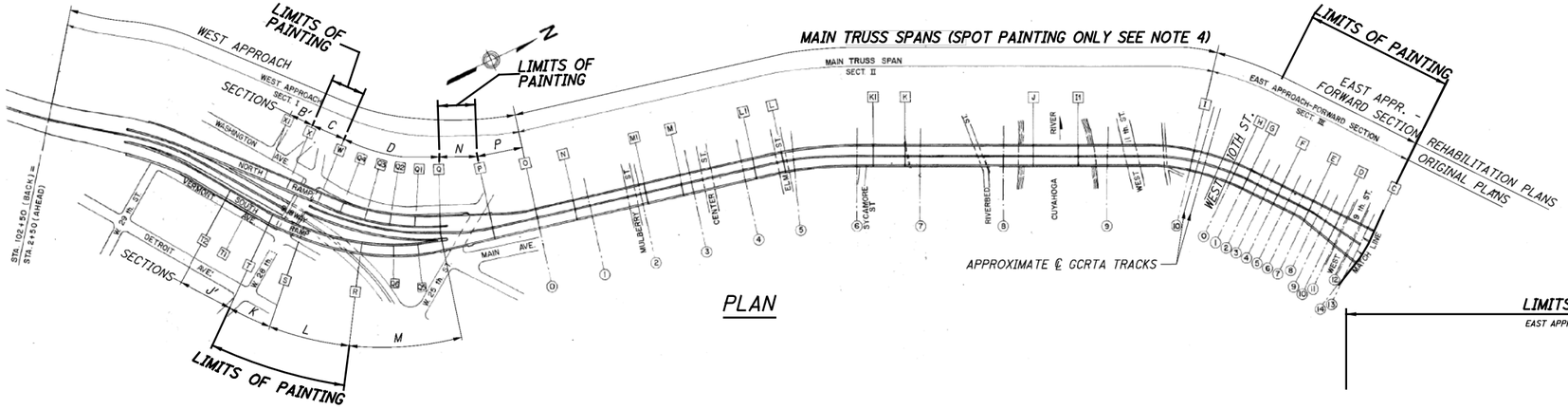
EAST APPROACH - LAKEFRONT RAMP SECURITY FENCE DETAILS

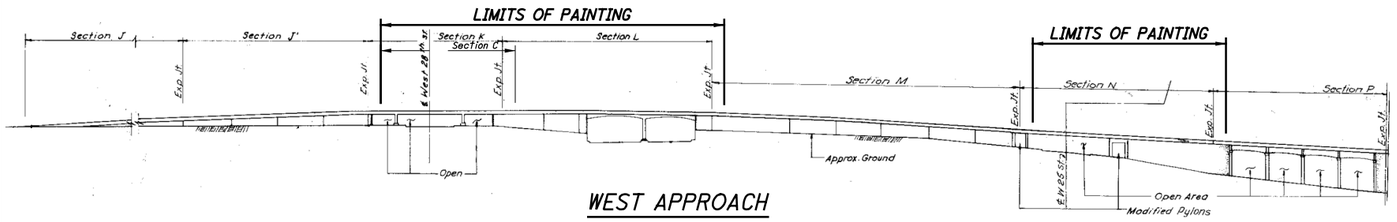
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

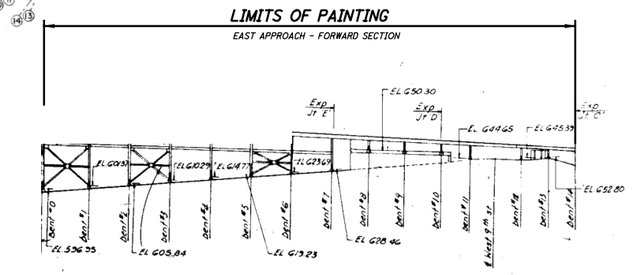
CUY-2-14.41
PID No. 85377

S80B / S95

131B
154

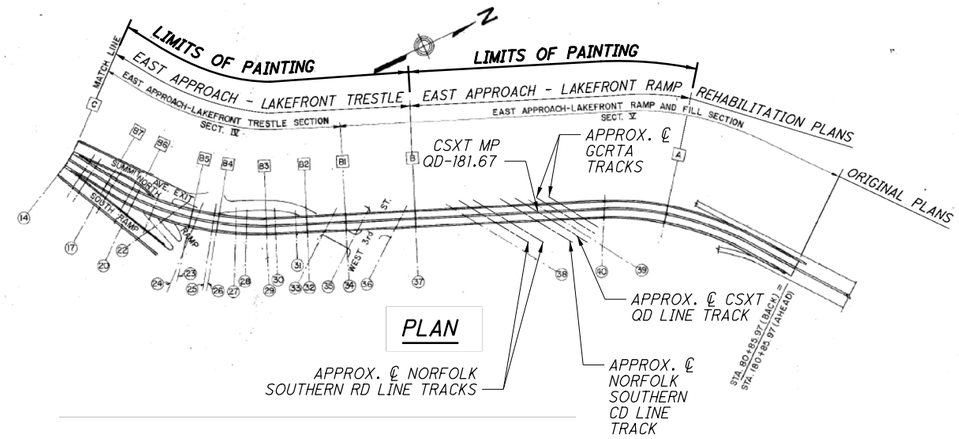


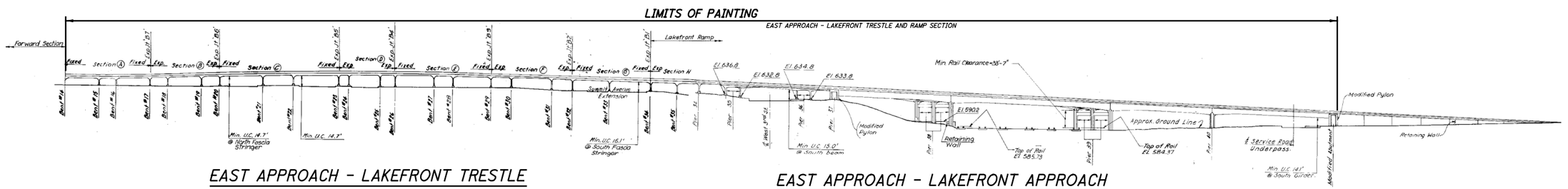




NOTES:

1. PAINT ALL EXPOSED FACES OF STRUCTURAL STEEL, INCLUDING TRUSS MEMBERS, FLOORBEAMS, STRINGERS, GUSSET PLATES, LATERAL BRACING, BEARINGS, CATWALKS, AND APPURTENANCES WITHIN THE LIMITS OF PAINTING SHOWN ON SHEETS S83 / S95 TO S91 / S95. DOWNSPOUTS SHALL NOT BE PAINTED.
2. REMOVE AND REPLACE SECONDARY CONNECTIONS (I.E. DRAINAGE PIPES) AND PROVIDE TEMPORARY SUPPORTS AS NECESSARY IN ORDER TO FULL GAIN ACCESS TO STRUCTURAL MEMBERS.
3. THE PAINTING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 514 - FIELD PAINTING.
4. PAINTING OF THE MAIN TRUSS SPANS 1 THROUGH 11 WILL ONLY OCCUR AT REPAIR LOCATIONS DESIGNATED IN THIS PLAN SET AND WITHIN LIMITS DEFINED ON THE DETAIL REPAIR SHEETS.
5. CONTRACTOR SHALL MAINTAIN 23'-0" CLEARANCE ABOVE RAILROAD TOP OF RAIL AT ALL TIMES. ALL ACCESS TO RAILROAD RIGHT OF WAY WILL BE TEMPORARY AND ACCESS WILL BE COVERED UNDER RIGHT OF WAY AGREEMENT TO BE OBTAINED BY OHIO DEPARTMENT OF TRANSPORTATION.
6. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PARCEL OWNER TO OBTAIN RIGHT OF ENTRY. SEE RIGHT OF WAY PLAN FOR PARCELS AFFECTED BY PAINTING OPERATIONS AND OWNER CONTACT INFORMATION, SEE SHEETS R1 / R8 TO R8 / R8.
7. PLAN AND ELEVATION VIEWS ARE TAKEN FROM THE 1990 REHABILITATION OF MAIN AVENUE BRIDGE NO. 193 BHF-73(51).





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

DESIGNED ADA | DRAWN ADA | REVIEWED PJA | DATE 12-19-16
CHECKED SFH | REVISED | STRUCTURE FILE NUMBER 1800035

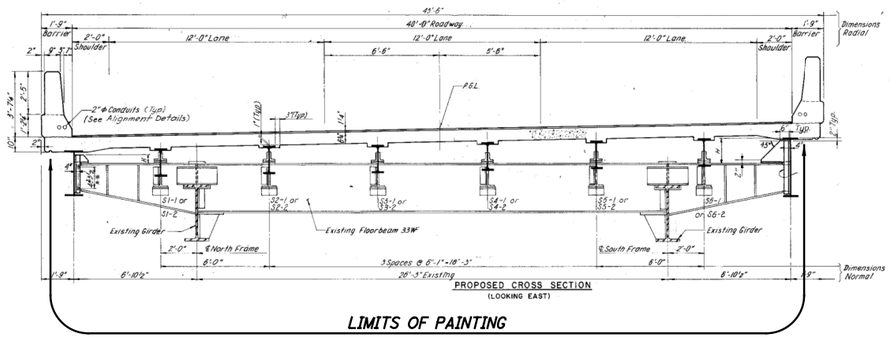
LIMITS OF PAINTING OVERVIEW
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S81 / S95

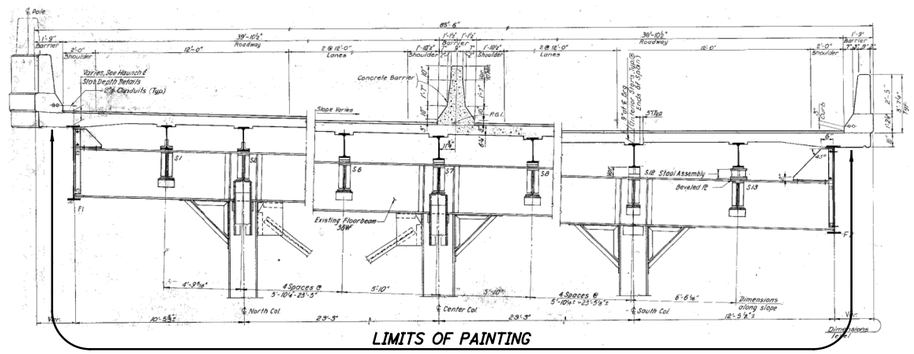
132
154

85377SD001 1/19/2017 4:11:11 PM nrfisco

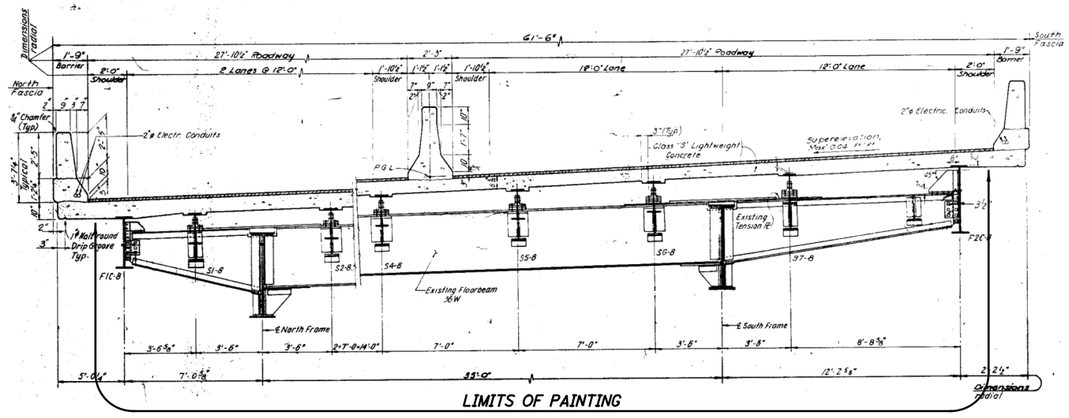


SECTION C

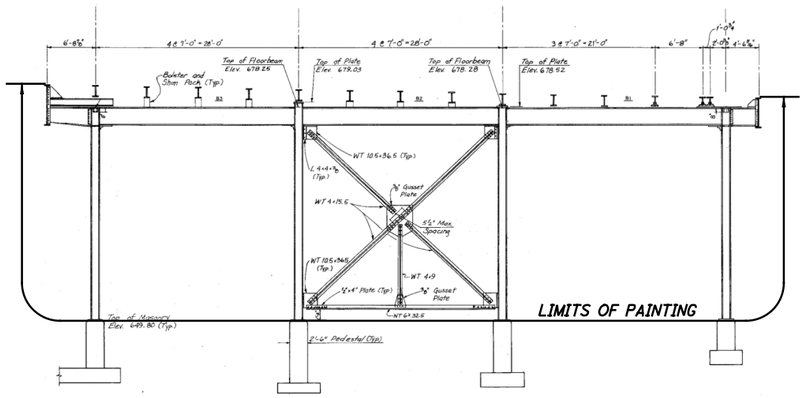
(SECTION K AND L SIMILAR)



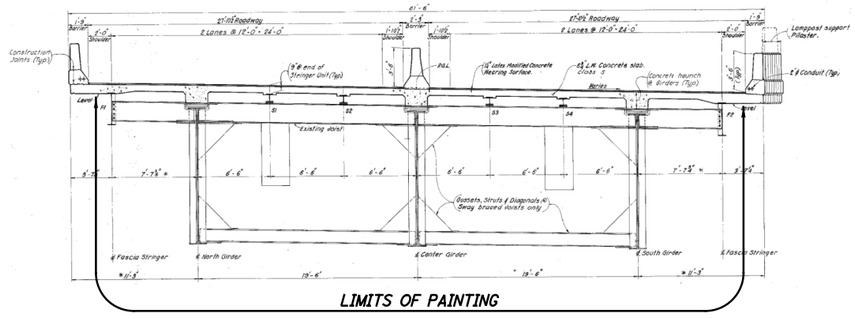
EAST APPROACH - FORWARD SECTION



EAST APPROACH - LAKEFRONT TRESTLE



SECTION N



EAST APPROACH - LAKEFRONT RAMP

NOTES:

1. FOR NOTES SEE SHEET S81/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
ADA	ADA	PJA	12-19-16
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DMD		1800035	

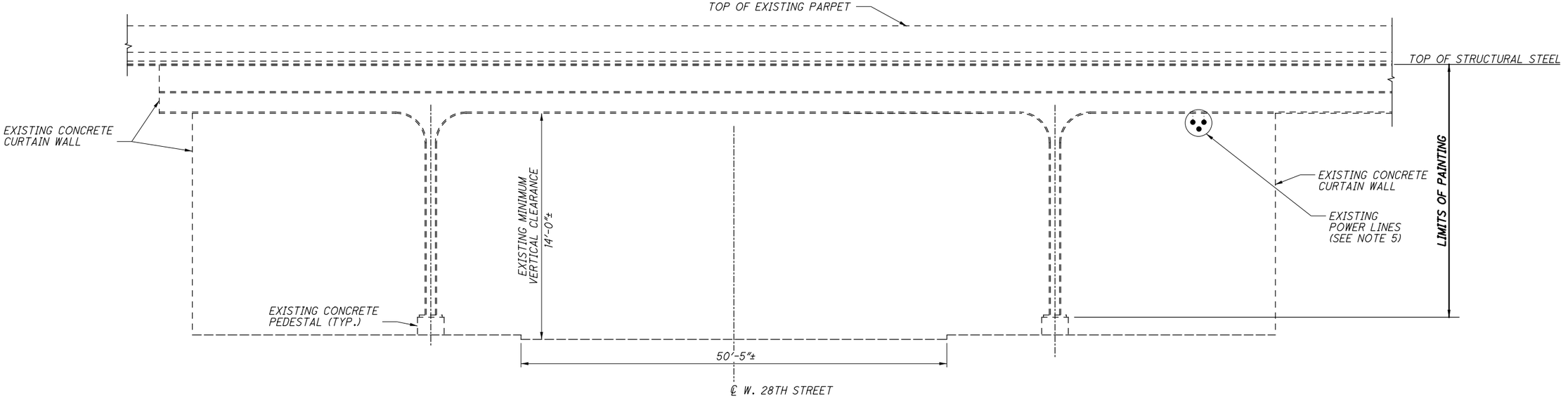
APPROACH SPANS - PAINTING
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S82/S95

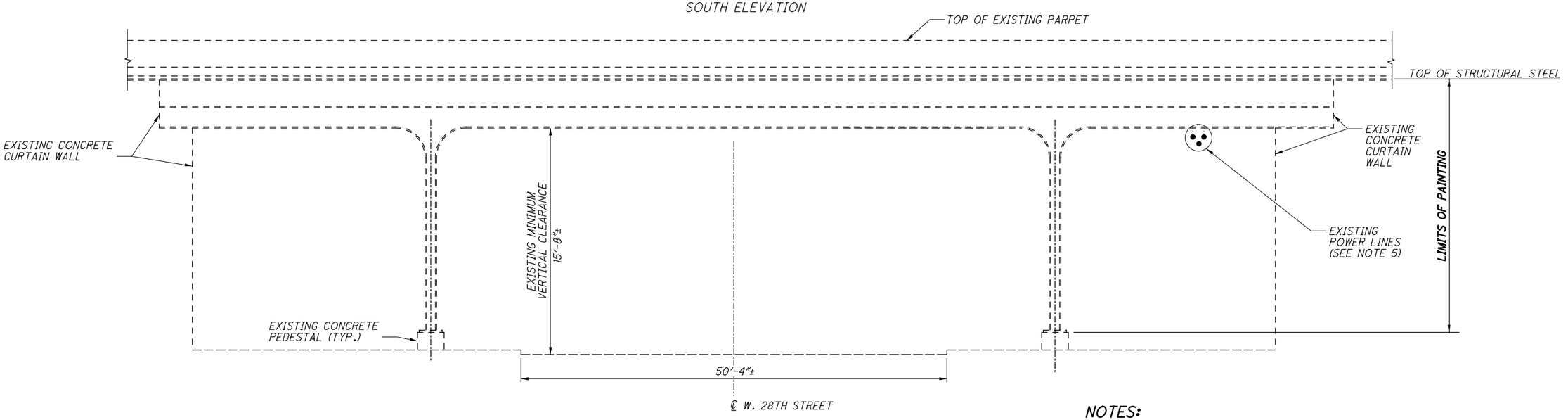
133
154

85377SD001.1 12/22/2016 1:41:17 PM dmdickson



WEST APPROACH - SECTION K

SOUTH ELEVATION



WEST APPROACH - SECTION C

SOUTH ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
2. EXISTING VERTICAL AND HORIZONTAL CLEARANCES SHOWN ON THIS SHEET WERE MEASURED IN THE FIELD AND ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT ADEQUATE UNDERCLEARANCE IS MAINTAINED IN TRAVEL LANES OPEN TO TRAFFIC.
3. THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE MAIN AVENUE BRIDGE AND MUST APPROVE ALL CLOSURES.
4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. EXISTING POWER LINES ATTACHED TO STRUCTURE ARE TO BE TEMPORARILY REMOVED AND REINSTALLED TO ALLOW FOR PAINTING OPERATIONS. SEE SHEET S6/S95 FOR ADDITIONAL NOTES.
6. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED	DRAWN	REVIEWED	DATE
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NRF		1800035	

PAINTING DETAILS - WEST APPROACH SECTIONS C & K

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S83/S95

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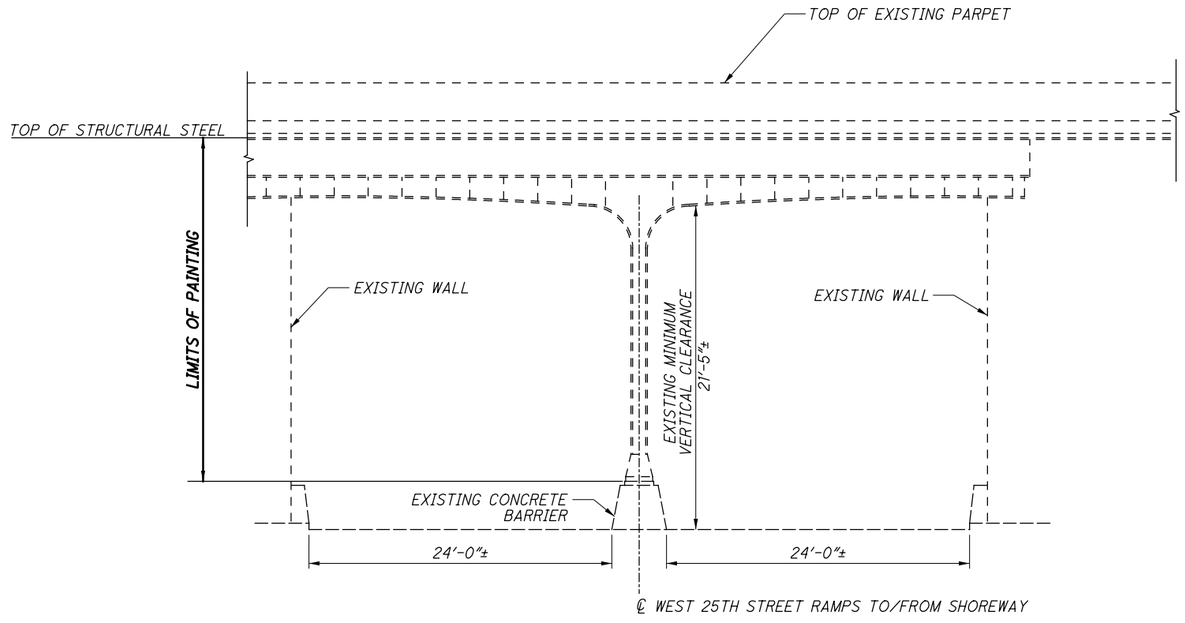
154

Structure Typical Sections 1/25/2017 4:32:21 PM nrfisco



WEST APPROACH - SECTION L

EAST ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
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3. THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE MAIN AVENUE BRIDGE AND MUST APPROVE ALL CLOSURES.
4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED	DRAWN	REVIEWED	DATE
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NRF		1800035	

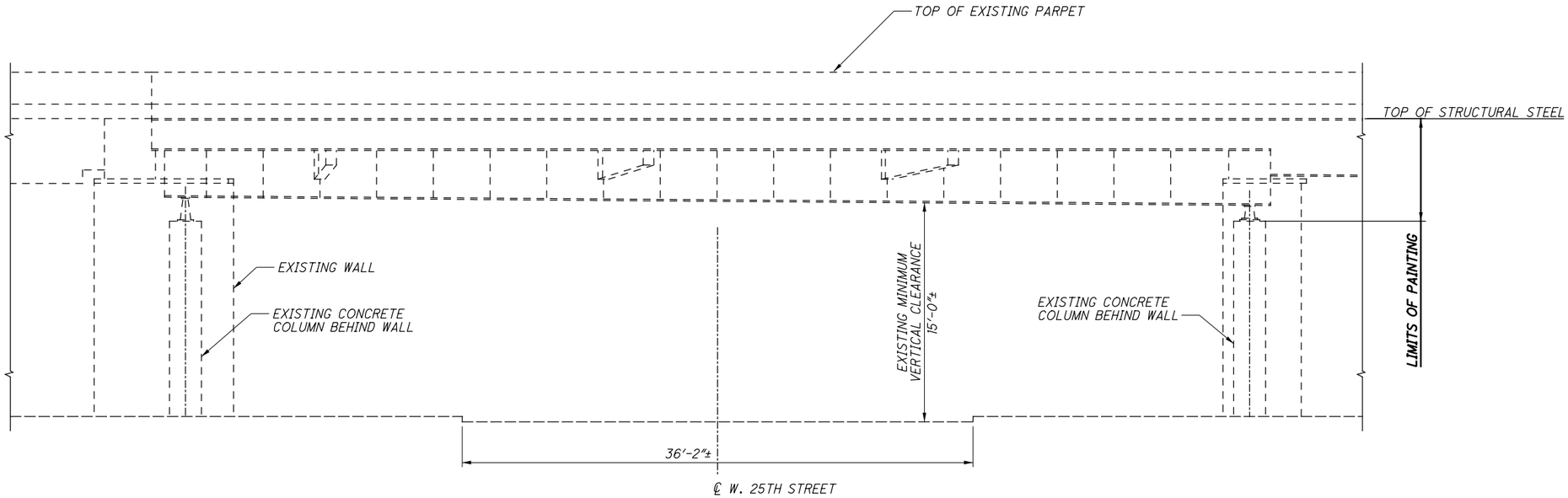
PAINTING DETAILS - WEST APPROACH
MAIN AVENUE - BRIDGE NO. CUY-2-14.41
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S84/S95

135
154

Structure Typical Sections 1/19/2017 4:11:48 PM nrfisco



WEST APPROACH - SECTION N

SOUTH ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
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4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. EXISTING POWER LINES ATTACHED TO STRUCTURE ARE TO BE TEMPORARILY REMOVED AND REINSTALLED TO ALLOW FOR PAINTING OPERATIONS. SEE SHEET S81/S95 FOR ADDITIONAL NOTES.
6. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED	DRAWN	REVIEWED	DATE
HB	HB	PJA	12-19-16
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NRF		1800035	

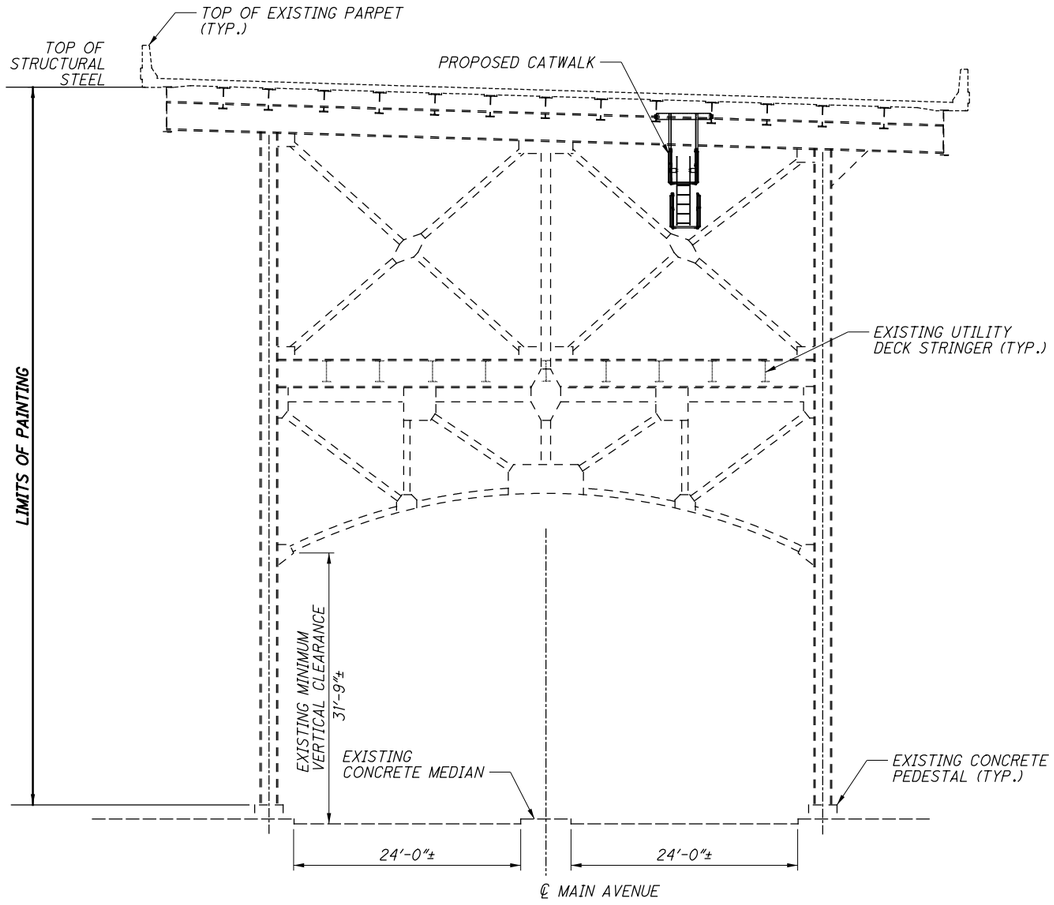
PAINTING DETAILS - WEST APPROACH SECTION N
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S85/S95

136
154

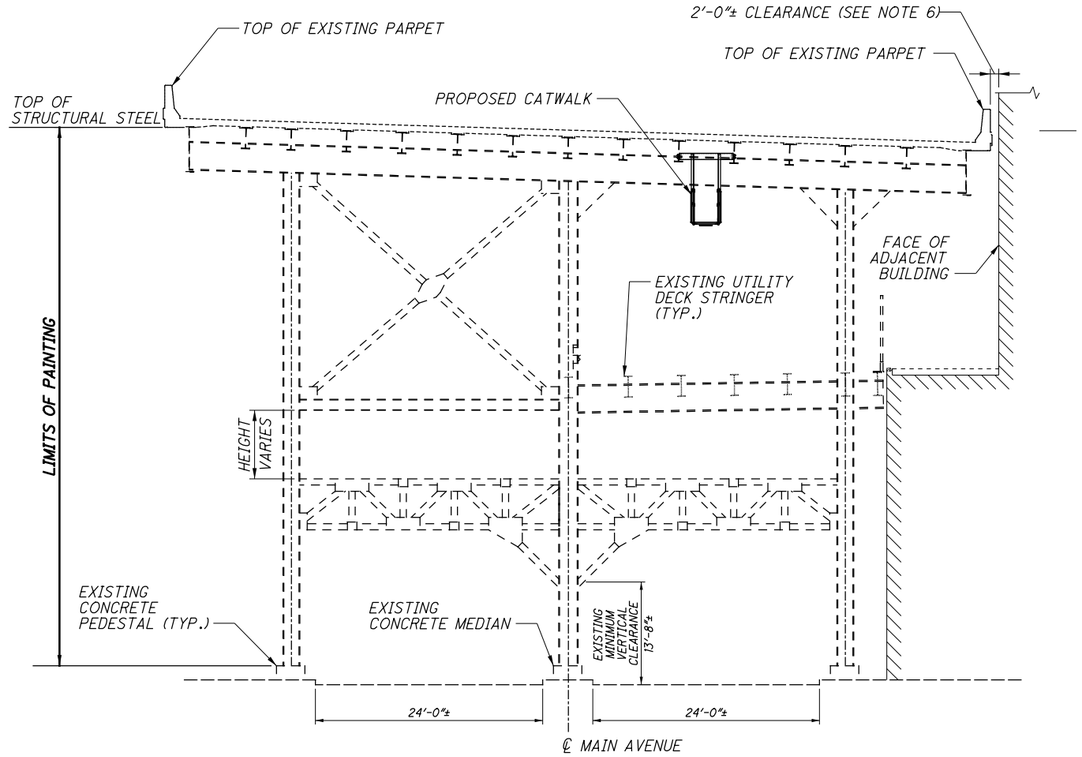
Structure Typical Sections 1/19/2017 4:11:49 PM nrfisco



EAST APPROACH - FORWARD SECTION - BENT 0

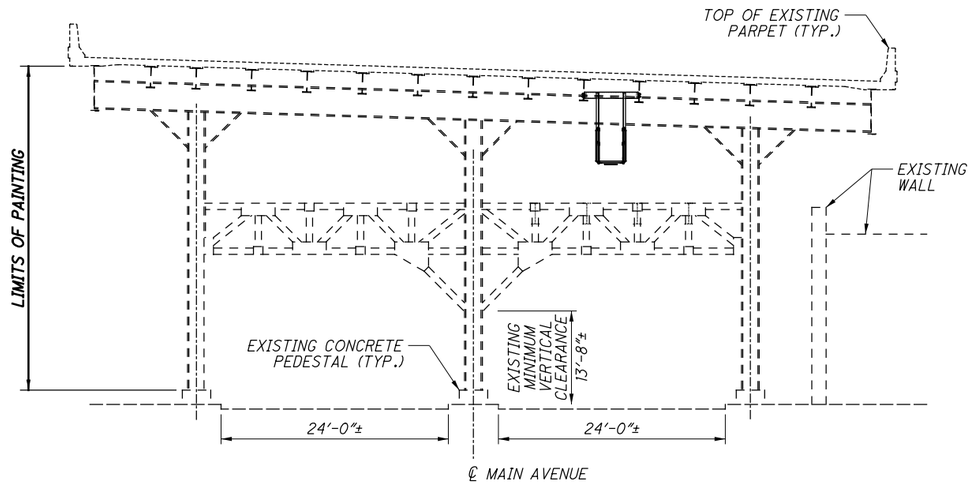
WEST ELEVATION

TOP OF STRUCTURAL STEEL



EAST APPROACH - FORWARD SECTION - BENT 4

WEST ELEVATION (BENTS 2 THROUGH 6 SIMILAR)



EAST APPROACH - FORWARD SECTION - BENT 7

WEST ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
2. EXISTING VERTICAL AND HORIZONTAL CLEARANCES SHOWN ON THIS SHEET WERE MEASURED IN THE FIELD AND ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT ADEQUATE UNDERCLEARANCE IS MAINTAINED IN TRAVEL LANES OPEN TO TRAFFIC.
3. THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE MAIN AVENUE BRIDGE AND MUST APPROVE ALL CLOSURES.
4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.
6. CLEARANCE BETWEEN BUILDING AND EXTERIOR FACE OF PARAPET IS TYPICALLY 2'-0"±; HOWEVER, AN AREA WITH 6"± CLEARANCE IS PRESENT BETWEEN BENTS 2 AND 3.
7. DUE TO THE CLOSE PROXIMITY TO THE ADJACENT BUILDINGS, NOISE RESTRICTIONS AND DUST CONTAINMENT WILL BE STRICTLY ENFORCED.

DESIGN AGENCY
TranSystems
55 PUBLIC SQUARE, SUITE 1900
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NRF		1800035	

PAINTING DETAILS - EAST APPROACH

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S86/S95

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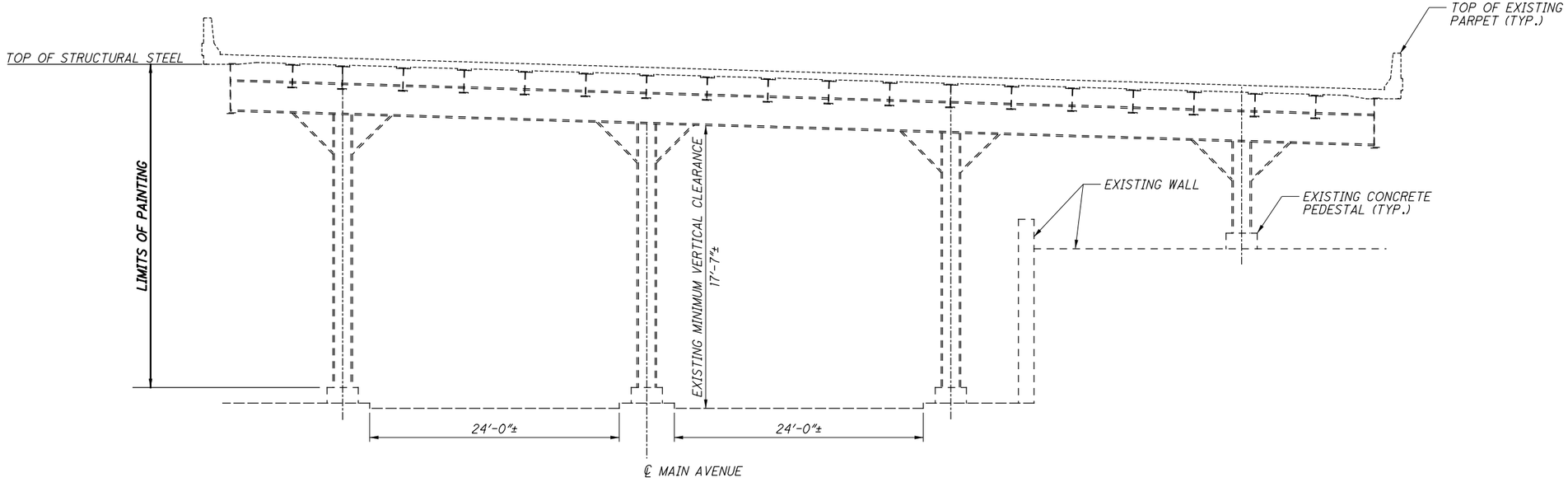
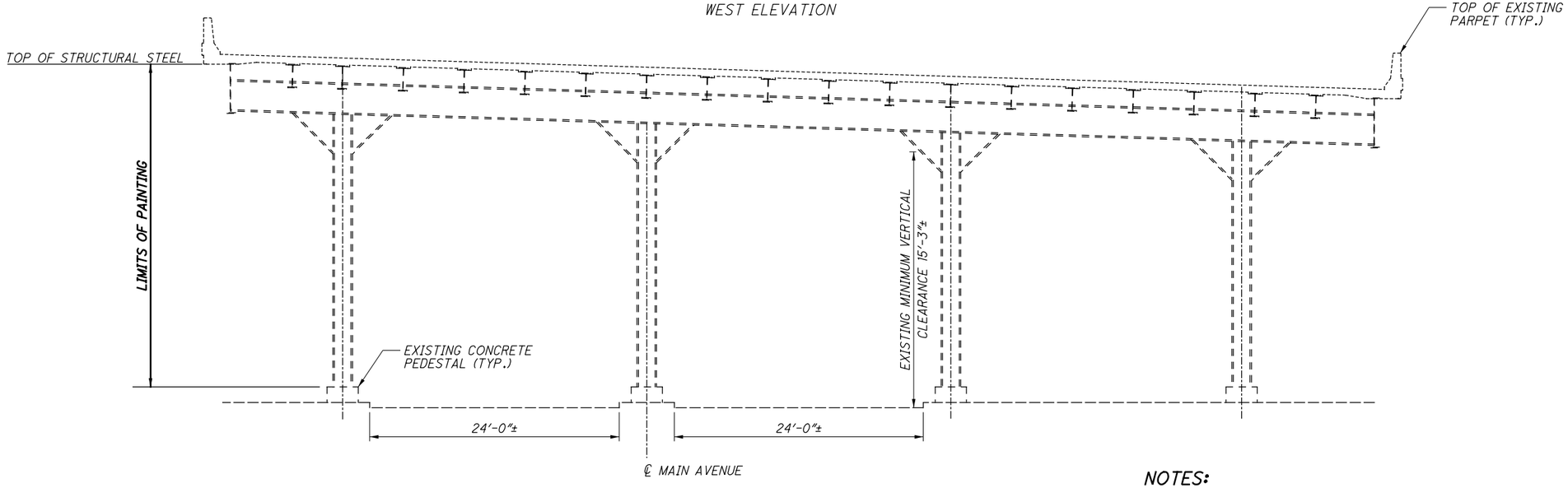
154

Structure Typical Sections 1/19/2017 4:11:49 PM nrfisco



EAST APPROACH - FORWARD SECTION - BENT 9

WEST ELEVATION



EAST APPROACH - FORWARD SECTION - BENT 12

WEST ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
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4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.

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

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HB	HB	PJA	12-19-16
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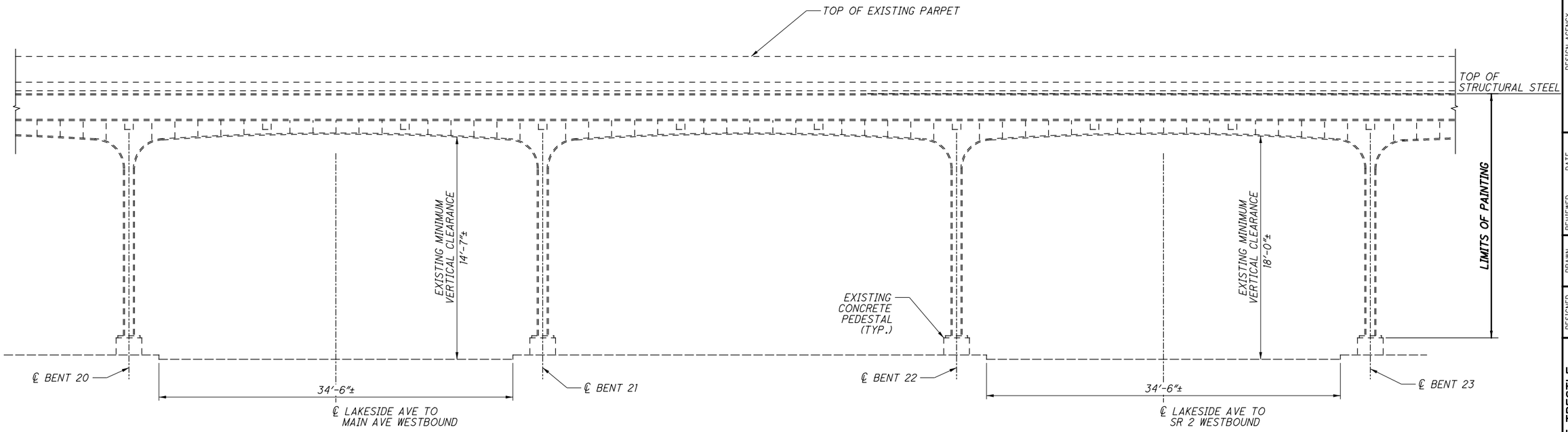
PAINTING DETAILS - EAST APPROACH - FORWARD SECTION

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

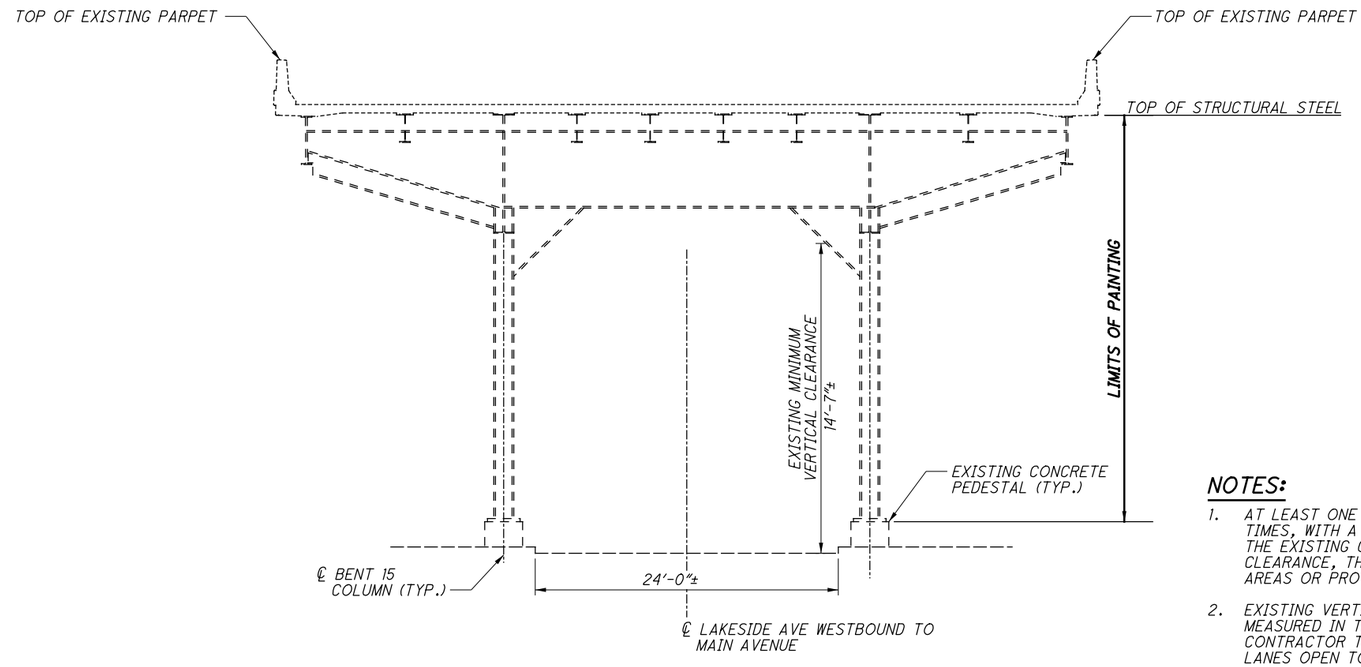
S87/S95

Structure Typical Sections 1/19/2017 4:11:50 PM nrfisco



EAST APPROACH - LAKEFRONT TRESTLE

WEST 6TH STREET RAMPS SOUTH ELEVATION



EAST APPROACH - LAKEFRONT TRESTLE

BENT 15 EAST ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
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DESIGN AGENCY
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55 PUBLIC SQUARE, SUITE 1900
CLEVELAND, OHIO 44113

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PAINTING DETAILS - EAST APPROACH - LAKEFRONT TRESTLE
MAIN AVENUE - BRIDGE NO. CUY-2-14.41
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S88/S95

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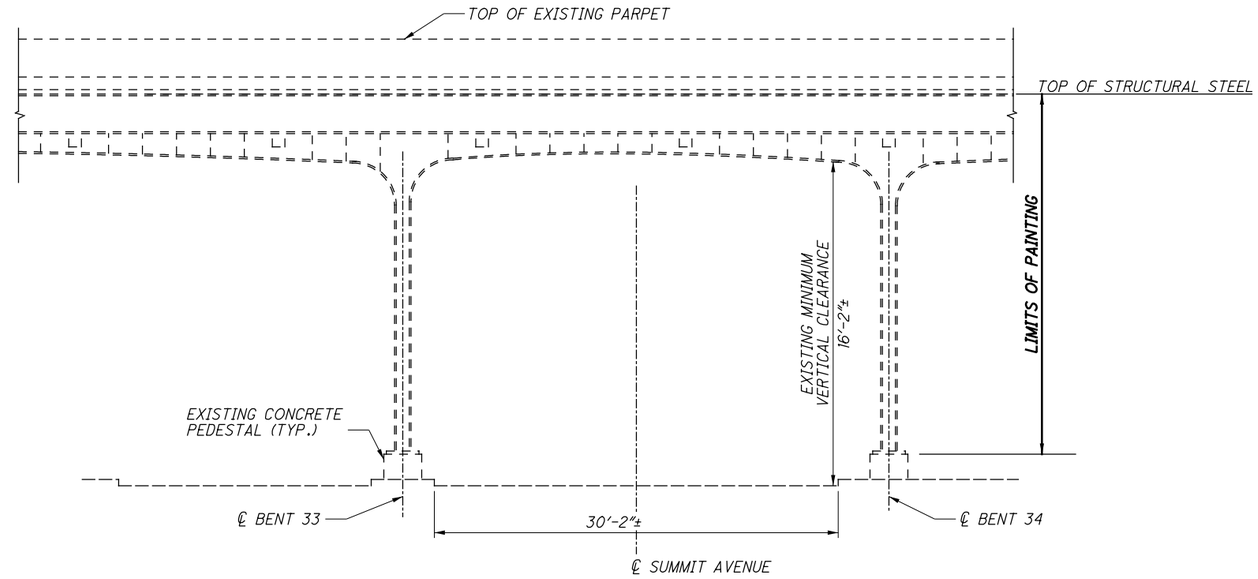
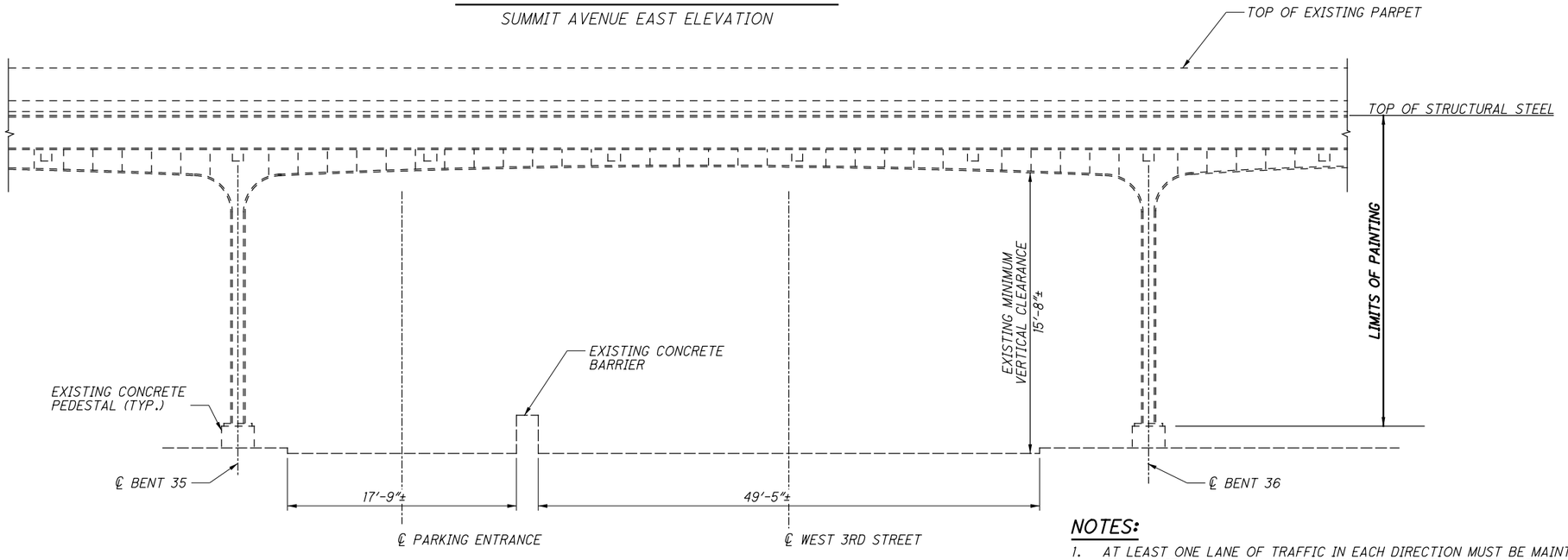
154

Structure Typical Sections 1/19/2017 4:11:50 PM nrfisco



EAST APPROACH - LAKEFRONT TRESTLE

SUMMIT AVENUE EAST ELEVATION



EAST APPROACH - LAKEFRONT TRESTLE

SOUTH ELEVATION

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
2. EXISTING VERTICAL AND HORIZONTAL CLEARANCES SHOWN ON THIS SHEET WERE MEASURED IN THE FIELD AND ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT ADEQUATE UNDERCLEARANCE IS MAINTAINED IN TRAVEL LANES OPEN TO TRAFFIC.
3. THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE MAIN AVENUE BRIDGE AND MUST APPROVE ALL CLOSURES.
4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED	DRAWN	REVIEWED	DATE
HB	HB	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

PAINTING DETAILS - EAST APPROACH - LAKEFRONT TRESTLE

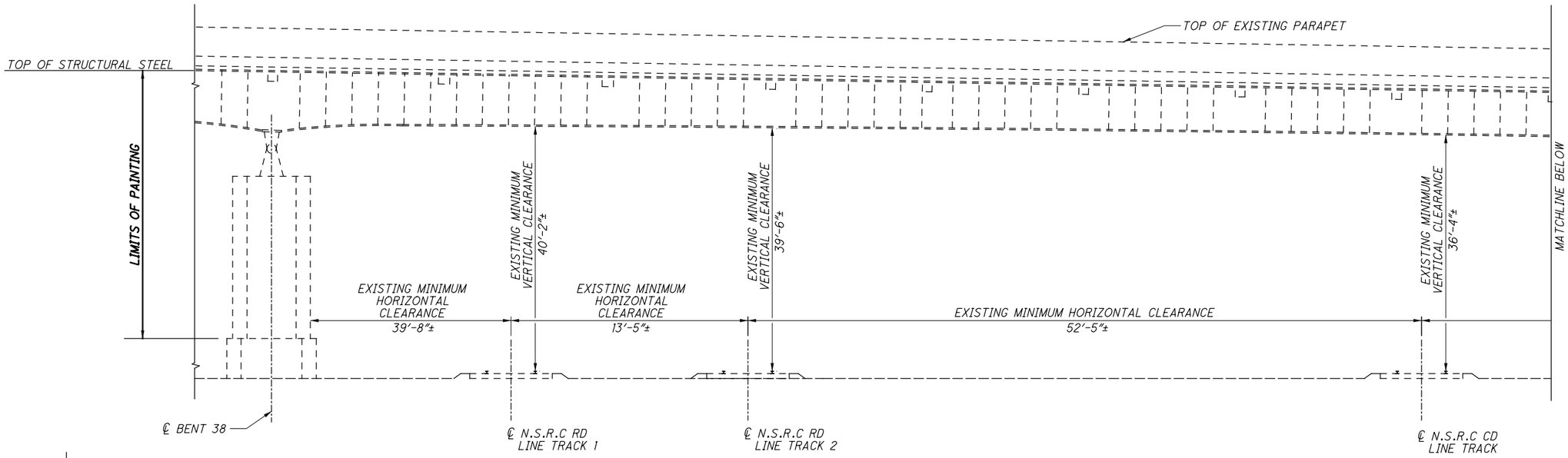
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

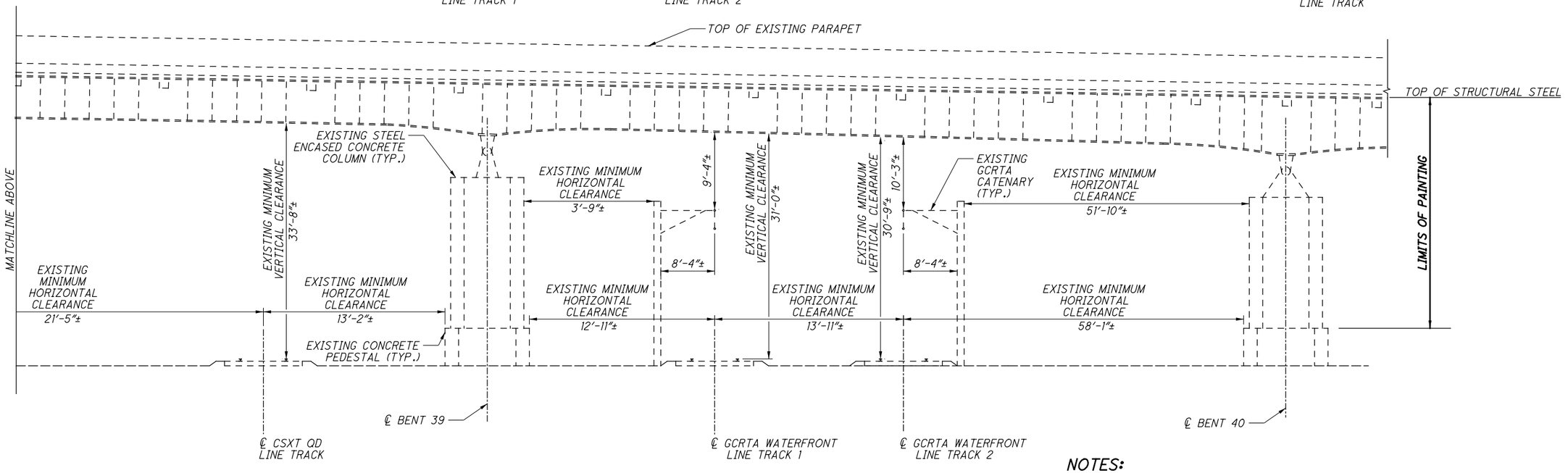
CUY-2-14.41
PID No. 85377

S89/S95

140
154

Structure Typical Sections 1/19/2017 4:11:50 PM nrfisco





EAST APPROACH - LAKEFRONT RAMP

EAST ELEVATION BETWEEN BENTS 38 AND 40

NOTES:

1. EXISTING VERTICAL AND HORIZONTAL CLEARANCES SHOWN ON THIS SHEET WERE MEASURED IN THE FIELD AND ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT ADEQUATE UNDERCLEARANCE IS MAINTAINED OVER RAILROAD TRACKS AT ALL TIMES. A 23' VERTICAL CLEARANCE IS REQUIRED OVER NORFOLK SOUTHERN RAILWAY COMPANY AND CSXT TRACKS. A 17' MINIMUM VERTICAL CLEARANCE IS REQUIRED OVER GCRTA TRACKS.
2. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95
3. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.
4. FOR NORFOLK SOUTHERN RAILWAY COMPANY AND GCRTA RESTRICTIONS ON PAINTING AND ACCESS SEE SHEETS S2/S95 TO S3/S95.

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

DESIGNED	DRAWN	REVIEWED	DATE
HB	HB	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

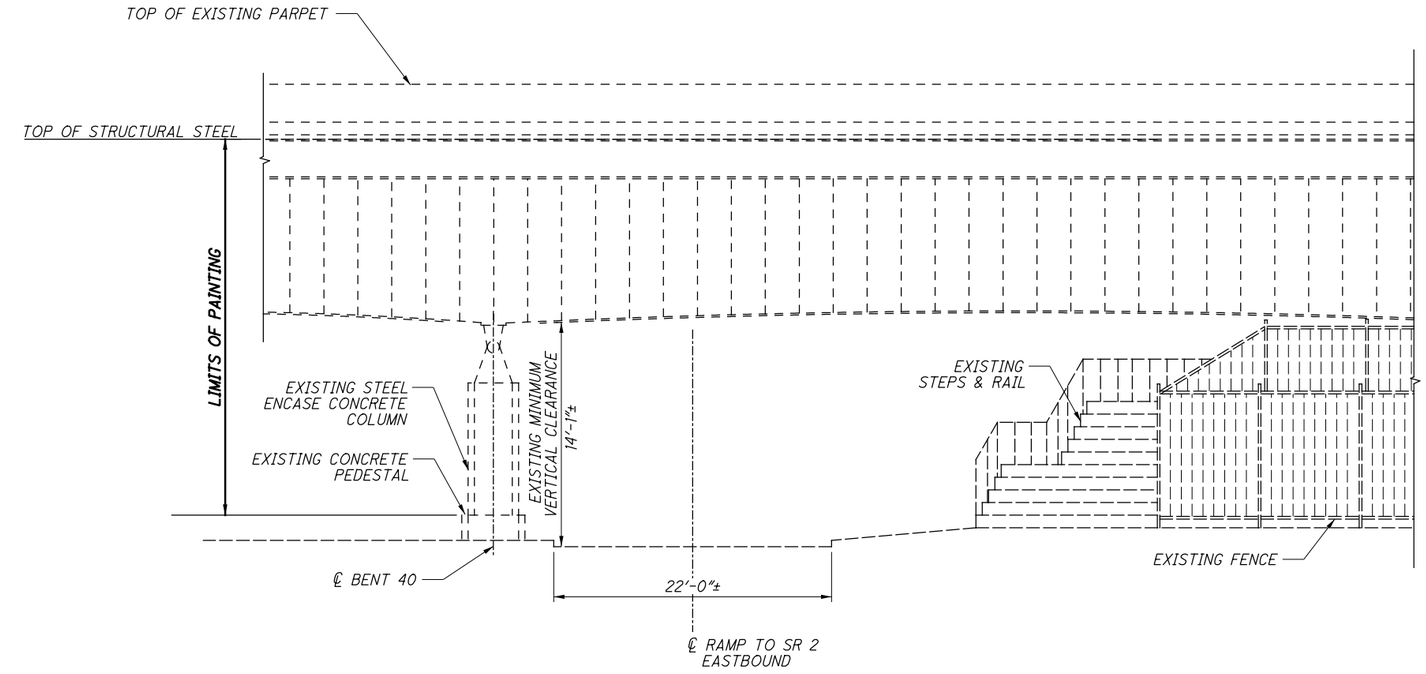
PAINTING DETAILS - EAST APPROACH - LAKEFRONT RAMP
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S90/S95

141
154

Structure Typical Sections 1/19/2017 4:11:51 PM nrfisco



EAST APPROACH - LAKEFRONT RAMP

EAST ELEVATION BETWEEN BENT 40 AND EAST ABUTMENT

NOTES:

1. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES, WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6" IN THE TRAVEL LANE. WHERE THE EXISTING GEOMETRY OF THE STRUCTURE PROHIBITS THIS MINIMUM VERTICAL CLEARANCE, THE CONTRACTOR MUST DIVERT TRAFFIC TO AVOID LOW CLEARANCE AREAS OR PROVIDE CITY APPROVED DETOUR.
2. EXISTING VERTICAL AND HORIZONTAL CLEARANCES SHOWN ON THIS SHEET WERE MEASURED IN THE FIELD AND ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT ADEQUATE UNDERCLEARANCE IS MAINTAINED IN TRAVEL LANES OPEN TO TRAFFIC.
3. THE CITY OF CLEVELAND HAS JURISDICTION OVER LOCAL ROADS BENEATH THE MAIN AVENUE BRIDGE AND MUST APPROVE ALL CLOSURES.
4. FOR ADDITIONAL PAINTING NOTES, SEE SHEET S81/S95 .
5. ALL PAINTING WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 514.

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

DESIGNED	DRAWN	REVIEWED	DATE
HB	HB	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

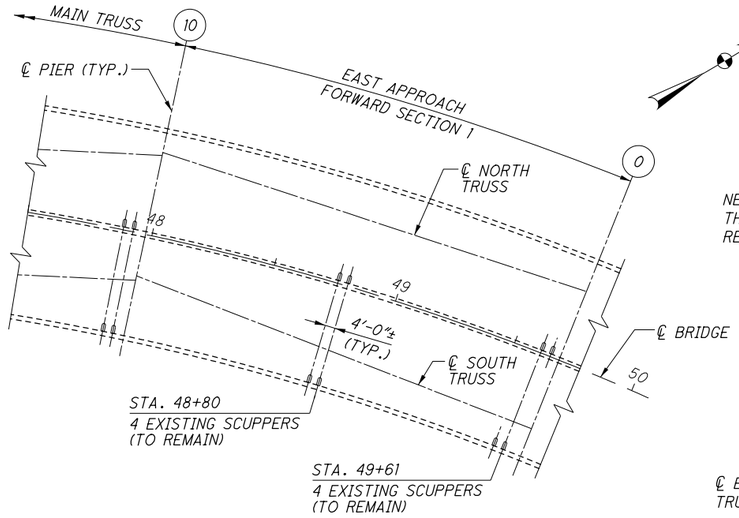
PAINTING DETAILS - EAST APPROACH-LAKEFRONT RAMP
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

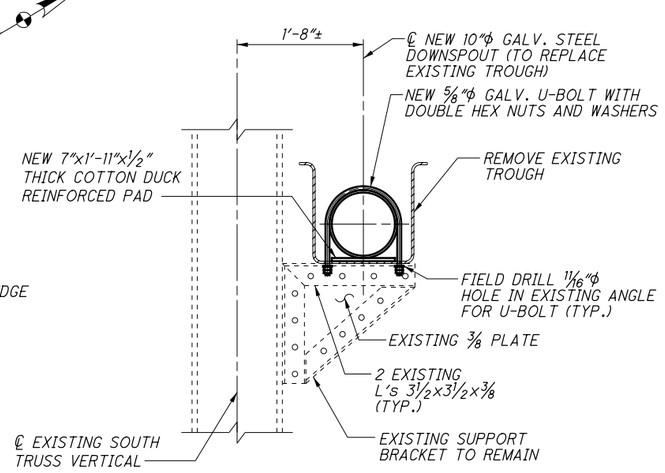
S91/S95

142
154

Structure Typical Sections 1/19/2017 4:11:51 PM nrfisco

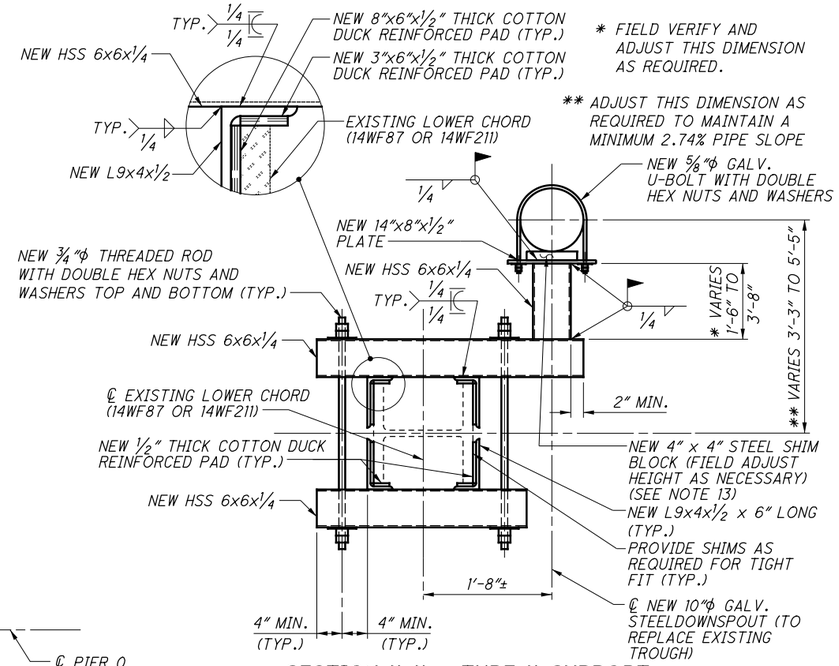


PARTIAL EXISTING PLAN

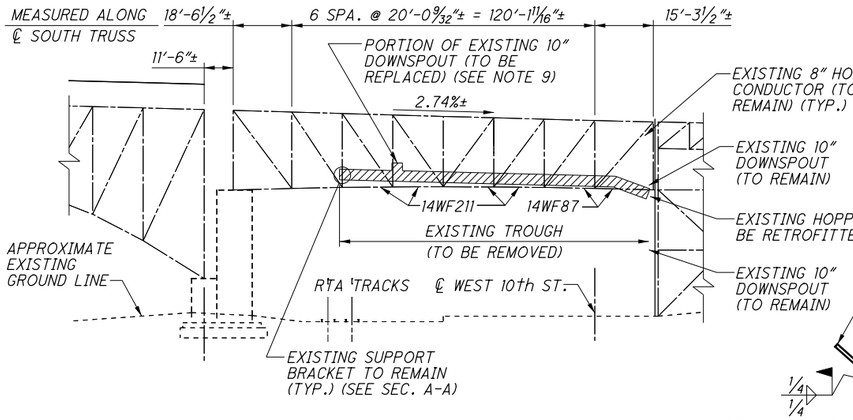


SECTION A-A

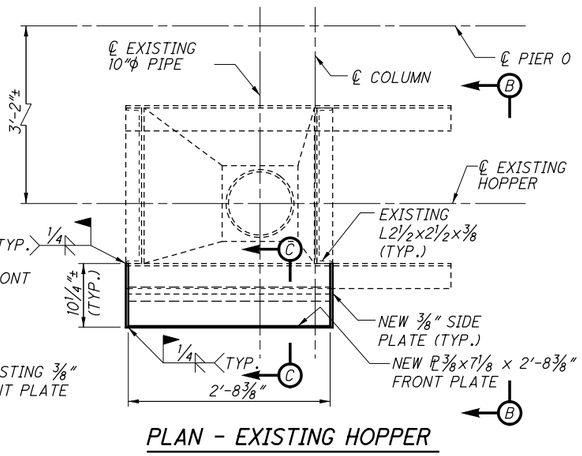
(TYPICAL AT SOUTH TRUSS VERTICALS PP2 THRU PP7)



SECTION K-K - TYPE K SUPPORT

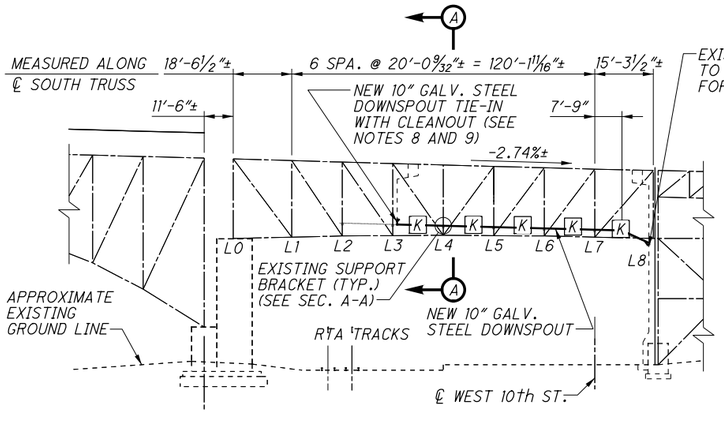


PARTIAL EXISTING ELEVATION - SOUTH TRUSS

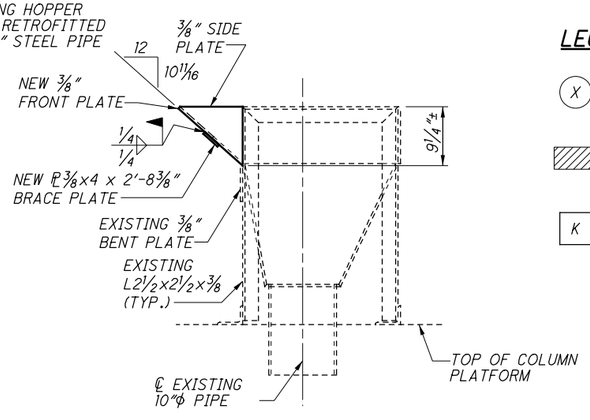


PLAN - EXISTING HOPPER

PARTIAL SECTION C-C



PARTIAL PROPOSED ELEVATION - SOUTH TRUSS



VIEW B-B

LEGEND:

- (X) - PIER DESIGNATION
- ▨ - INDICATES PORTIONS OF STRUCTURE TO BE REMOVED
- [K] - LOCATION OF TYPE K SUPPORT

ALL MATERIALS SHOWN ON THIS SHEET HAVE BEEN PREVIOUS FABRICATED AS PART OF A PREVIOUS PROJECT. SEE SHEET S7 / S95 FOR STORAGE LOCATION FOR THE MATERIALS. NOTES 1 THROUGH 4 ARE PROVIDED FOR INFORMATION ONLY IN THE EVENT THAT THE CONTRACTOR IS REQUIRED TO REFABRICATE ANY COMPONENTS AT THE REQUEST OF THE ENGINEER.

NOTES:

1. ALL STRUCTURAL TUBING SHALL BE ASTM A500, GRADE B (Fy = 46 ksi), GALVANIZED IN ACCORDANCE WITH 711.02.
2. ALL OTHER STRUCTURAL STEEL CALLED OUT ON THIS SHEET, SHALL BE ASTM A709 GRADE 50 STEEL, GALVANIZED IN ACCORDANCE WITH 711.02.
3. THE 5/8"ϕ U-BOLTS SHALL BE ASTM A307, GALVANIZED IN ACCORDANCE WITH 711.02.
4. ALL 10"ϕ STEEL PIPE SHALL BE ASTM A53, GRADE B (SCHEDULE 40), GALVANIZED IN ACCORDANCE WITH 711.02.
5. ALL DIMENSIONS ARE TO BE FIELD VERIFIED AND ADJUSTED AS REQUIRED, SUBJECT TO THE APPROVAL OF THE ENGINEER.
6. REMOVAL OF EXISTING DRAINAGE ELEMENTS IS TO BE PAID FOR UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
7. INSTALLATION OF 10" DIAMETER PIPE AND ASSOCIATED CLEANOUTS, CONNECTIONS, COUPLINGS, SUPPORTS, INCLUDING THE HOPPER RETROFIT AND LABOR ARE TO BE PAID FOR UNDER ITEM 518 - STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION.
8. FOR CLEANOUT DETAIL, SEE SHEET S93 / S95.
9. FOR DOWNSPOUT TIE-IN DETAIL, SEE SHEET S93 / S95.
10. FOR GCRTA TRACK COORDINATION NOTES, SEE SHEET S3 / S95.
11. MATERIALS SHOWN ARE EXISTING, UNLESS NOTED OTHERWISE.
12. SHIM PACKS WILL NOT BE PERMITTED.
13. CONTRACTOR IS TO REPAIR AREAS OF PAINT DAMAGED DURING THE REMOVAL OF THE EXISTING DRAINAGE SYSTEM AND INSTALLATION OF THE NEW DRAINAGE SYSTEM PER ITEM 514. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 518 - STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION.

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

DESIGNED JLV | DRAWN JLV | REVIEWED PJA | DATE 12-19-16 | CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

EAST APPR. FWD. SECTION - EXISTING DRAINAGE REM. AND REPAIR

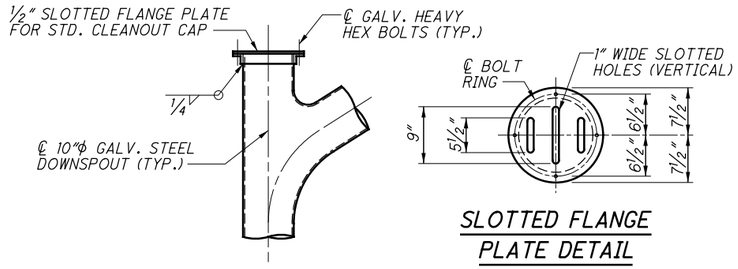
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S92 / S95

143
154

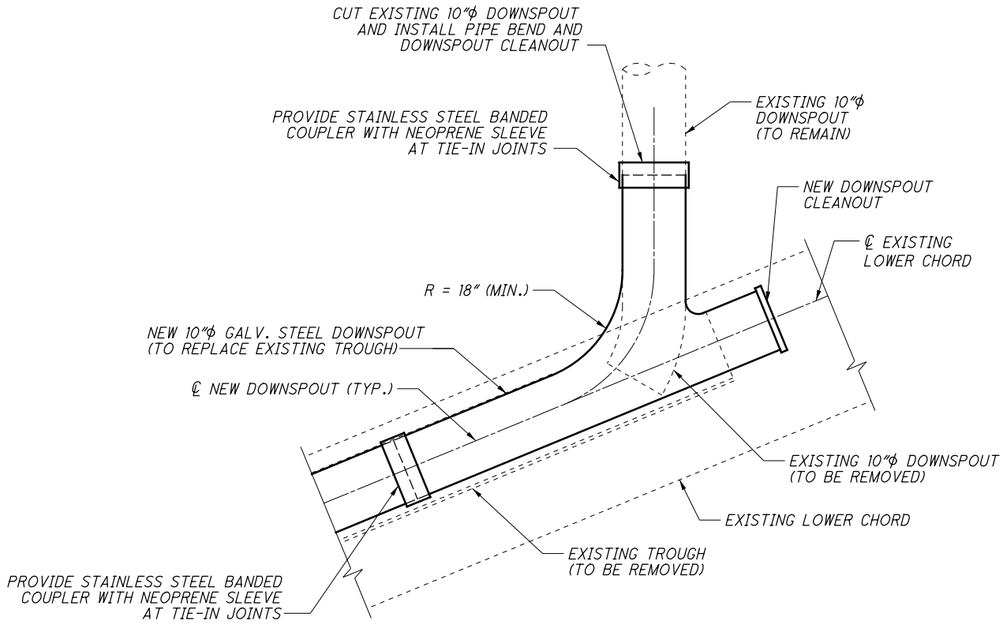
85377MD023 3/30/2017 2:17:58 PM dmdickson



CLEANOUT DETAIL

(SEE NOTE 6)

SLOTTED FLANGE PLATE DETAIL



DOWNSPOUT TIE-IN DETAIL

(SEE NOTE 5)

ALL MATERIALS SHOWN ON THIS SHEET HAVE BEEN PREVIOUS FABRICATED AS PART OF A PREVIOUS PROJECT. SEE SHEET S7 / S95 FOR STORAGE LOCATION FOR THE MATERIALS. NOTES 1 THROUGH 4 ARE PROVIDED FOR INFORMATION ONLY IN THE EVENT THAT THE CONTRACTOR IS REQUIRED TO REFABRICATE ANY COMPONENTS AT THE REQUEST OF THE ENGINEER.

NOTES:

1. ALL OTHER STRUCTURAL STEEL CALLED OUT ON THIS SHEET, SHALL BE ASTM A709 GRADE 50 STEEL, GALVANIZED IN ACCORDANCE WITH 711.02.
2. ALL 10"ϕ AND 12"ϕ STEEL PIPE SHALL BE ASTM A53, GRADE B (SCHEDULE 40), GALVANIZED IN ACCORDANCE WITH 711.02.
3. INSTALLATION OF 10" DIAMETER PIPE AND ASSOCIATED CLEANOUTS, CONNECTIONS, COUPLINGS, SUPPORTS, INCLUDING THE HOPPER RETROFIT AND LABOR ARE TO BE PAID FOR UNDER ITEM 518 - STRUCTURE DRAINAGE, MISC.: SPAN 11 DRAINAGE INSTALLATION.

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

DESIGNED	DRAWN	REVIEWED	DATE
CAS	CAS	PJA	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000351	

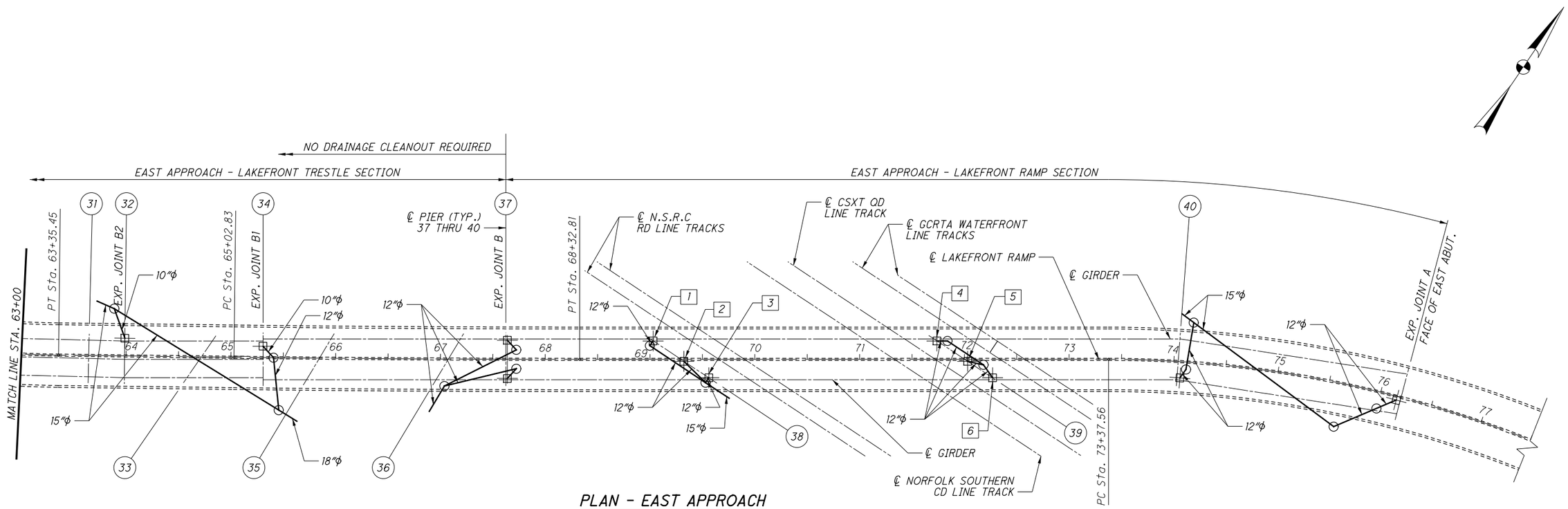
MAIN TRUSS - DOWNSPOUT AND HOPPER DETAILS
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

S93/S95

144
154

85377MD024 1/19/2017 4:11:57 PM nrfisco



PLAN - EAST APPROACH

REPAIR LIST:

1. EXISTING CATCH BASIN STA. 69+02.99, 17.56' LT (TO BE CLEANED)
2. EXISTING CATCH BASIN STA. 69+32.33, 1.94' RT (TO BE CLEANED)
3. EXISTING CATCH BASIN STA. 69+56.15, 17.56' RT (REPAIR NEOPRENE DRAIN PIPE BOOT, CLEAN CATCH BASIN)
4. EXISTING CATCH BASIN STA. 71+73.83, 17.56' LT (TO BE CLEANED)
5. EXISTING CATCH BASIN STA. 72+03.16, 1.94' RT (TO BE CLEANED)
6. EXISTING CATCH BASIN STA. 72+26.99, 17.56' RT (REPLACE MISSING DRAIN BOLT, CLEAN CATCH BASIN)

LEGEND:

- (X) - PIER/BENT NUMBER
- [#] - CATCH BASIN REPAIR
- ⊕ - LOCATION OF EXISTING CATCH BASIN
- ○ - LOCATION OF EXISTING MANHOLE
- —— - EXISTING PIPE

DRAINAGE NOTES:

1. FOR ATTACHMENT TO PIERS, BOLTS SHALL BE ¾" DIAMETER EXPANSION GALVANIZED BOLT ANCHORS DRILLED IN PLACE. BOLTS SHALL BE CAPABLE OF DEVELOPING A PULLOUT RESISTANCE OF NOT LESS THAN 12,000 LBS.
2. FOR ATTACHMENT TO EXISTING STEEL MEMBERS, BOLTS SHALL BE GALVANIZED ¾" DIAMETER ASTM A325 HIGH STRENGTH BOLTS. PAYMENT FOR DRILLING BOLT HOLES IN EXISTING STEELWORK SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN, FOR PAYMENT.
3. ALL MATERIALS AND LABOR ASSOCIATED WITH CLEANING OF THE CATCHMENTS SHALL BE PAID FOR UNDER ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEANING AND REPAIR OF CATCHMENTS AND CATCH BASINS.
4. REPAIR OF NEOPRENE DRAIN BOOTS AND MISSING DRAIN BOLTS, INCLUDING REMOVAL AND REPLACEMENT OF EXISTING ELBOWS AND NEOPRENE BOOTS, SHALL BE PAID FOR UNDER ITEM 518 - STRUCTURE DRAINAGE, MISC.: MISCELLANEOUS DRAINAGE REPAIR.
5. NO STRUCTURE DRAINAGE, PERMANENT OR TEMPORARY, IS PERMITTED TO DISCHARGE ONTO NORFOLK SOUTHERN RAILWAY COMPANY RIGHT OF WAY.

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

DESIGNED KPH | DRAWN KPH | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED | STRUCTURE FILE NUMBER 1800035

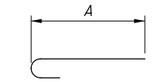
EAST APPROACH - DRAINAGE PLAN

MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

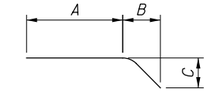
CUY-2-14.41
PID No. 85377

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
JOINT REPLACEMENT											
S501	40	15'-7"	650	41	15'-7"						
S502	152	9'-0"	1427	40	9'-0"						
S503	10	15'-10"	165	41	15'-10"						
S504	4	16'-4"	68	42	15'-9"						
S505	42	17'-3"	756	41	17'-3"						
S506	36	14'-6"	544	41	14'-6"						
S507	24	15'-0"	375	41	15'-0"						
S508	16	15'-2"	253	41	15'-2"						
S509	4	15'-6"	65	41	15'-6"						
S510	4	8'-9"	37	41	8'-9"						
S511	1 SERIES	19'-0"	80	41	19'-0"						2"
	OF 4	TO 19'-6"			TO 19'-6"						
S512	8	13'-3"	111	40	13'-3"						
S513	16	11'-9"	196	40	11'-9"						
S514	8	5'-0"	42	41	5'-0"						
S515	8	15'-0"	125	40	15'-0"						
S516	8	11'-3"	94	19	6'-3"	5'-0"	1"				
S517	8	15'-3"	127	40	15'-3"						
S518	4	12'-7"	52	16	12'-0"						
S519	4	2'-7"	11	16	1'-11"						
S520	4	3'-2"	13	16	2'-6"						
S521	24	1'-9"	44	STR	1'-9"						
S522	12	1'-1"	14	STR	1'-1"						
S523	20	2'-3"	47	STR	2'-3"						
S524	16	2'-10"	47	STR	2'-10"						
S525	4	3'-1"	13	STR	3'-1"						
S526	12	1'-5"	18	STR	1'-5"						
S527	8	0'-9"	6	41	0'-9"						
S528	8	0'-10"	7	40	0'-10"						
S529	4	0'-8"	3	40	0'-8"						
S530	8	0'-10"	7	41	0'-10"						
S531	4	0'-11"	4	40	0'-11"						
S601	16	16'-3"	391	42	15'-7"						
S602	128	9'-0"	1730	40	9'-0"						
S603	10	16'-6"	248	42	15'-10"						
S604	42	17'-9"	1120	41	17'-9"						
S605	4	14'-9"	89	41	14'-9"						
S606	4	16'-5"	99	42	15'-9"						
S607	24	15'-8"	565	42	15'-0"						
S608	16	15'-0"	360	41	15'-0"						
S609	12	14'-6"	261	41	14'-6"						
S610	12	15'-9"	284	42	15'-2"						
S611	4	15'-3"	92	41	15'-3"						
S612	4	16'-0"	96	42	15'-4"						
S613	32	15'-0"	721	40	15'-0"						
S614	1 SERIES	19'-0"	120	42	19'-0"						2"
	OF 4	TO 19'-6"			TO 19'-6"						
S615	4	9'-0"	54	41	9'-0"						
S616	4	16'-2"	97	42	15'-6"						
S617	8	11'-3"	135	19	6'-3"	5'-0"	1"				
S618	8	5'-0"	60	41	5'-0"						
S619	8	15'-3"	183	40	15'-3"						
S620	8	4'-8"	56	16	4'-0"						
S701	5	16'-0"	164	42	15'-2"						
S702	5	15'-2"	155	41	15'-2"						
S703	40	9'-6"	777	40	9'-6"						
S704	20	18'-3"	746	41	18'-3"						
S705	5	15'-8"	160	42	14'-10"						
S706	5	14'-10"	152	41	14'-10"						
		TOTAL	14316								

BAR BENDING DIAGRAMS



TYPE-16



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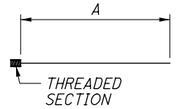

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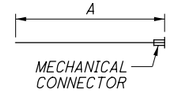

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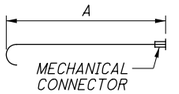


TYPE-42

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, AR501 BAR: AR: LOCATION OF THE BAR IN THE STRUCTURE (REAR ABUTMENT)
5: BAR SIZE DESIGNATION NO. 5
01: SEQUENCE NUMBER

2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT BARS ARE INDICATED BY "STR".

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

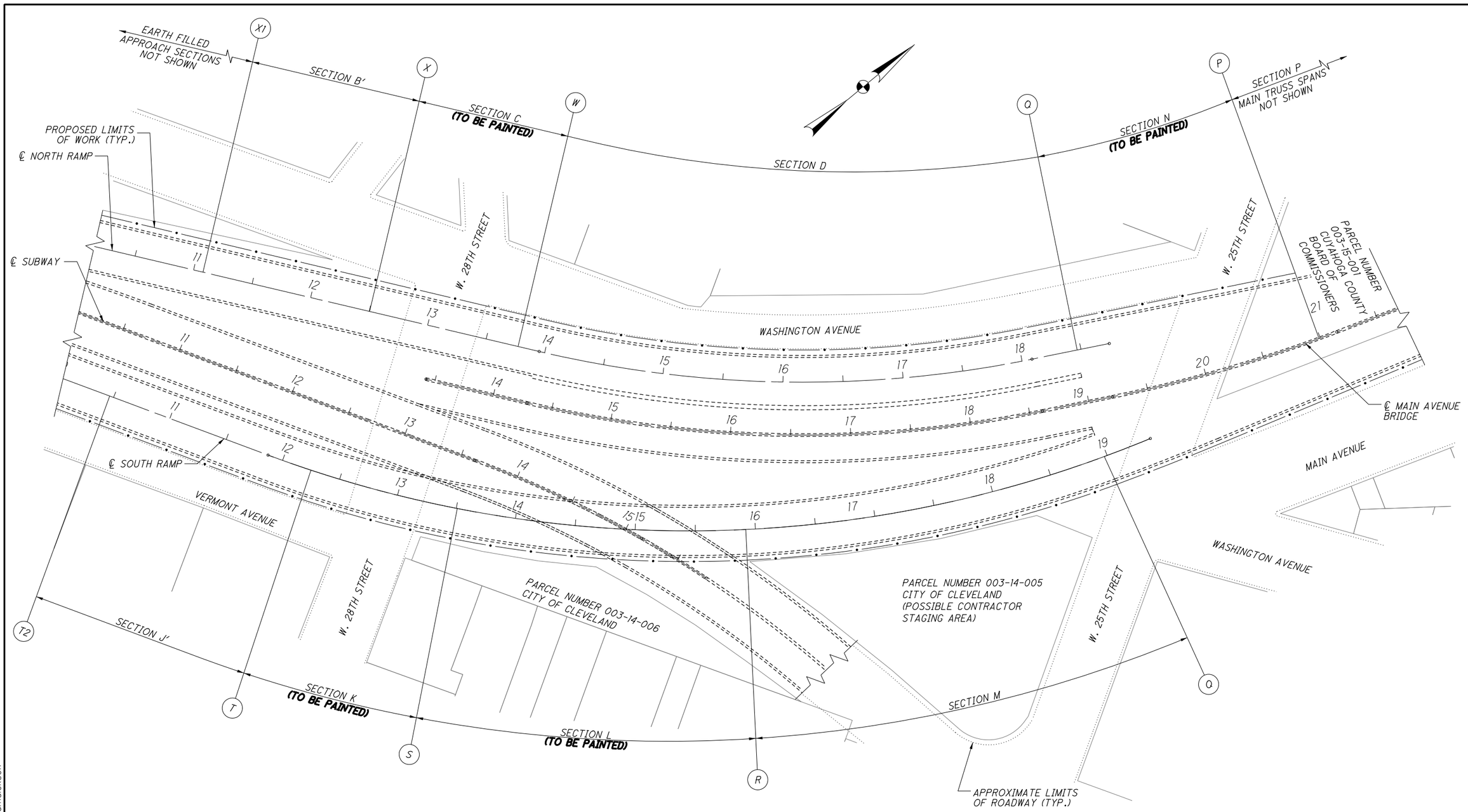
DESIGNED ADA | DRAWN GJZ | REVIEWED PJA | DATE 12-19-16
CHECKED NRF | REVISED NRF | STRUCTURE FILE NUMBER 18000035

REINFORCING STEEL LIST
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

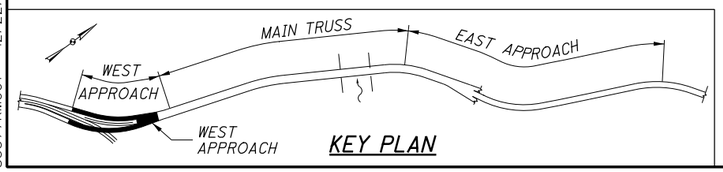
S95/S95

146
154



RIGHT OF WAY IDENTIFICATION PLAN
WEST APPROACH

THE PURPOSE OF THIS RIGHT OF WAY PLAN IS TO IDENTIFY THE PARCELS AND THEIR OWNERS THAT WILL BE AFFECTED BY THE WORK DETAILED IN THE REHABILITATION PLANS. THE EXISTING PROPERTY LINES AND OWNER INFORMATION SHOWN ARE BASED ON RECORD INFORMATION OBTAINED FROM THE CUYAHOGA COUNTY AUDITOR'S OFFICE. LIMITS OF THE EXISTING STRUCTURE ARE BASED ON PREVIOUS DESIGN PLAN SETS SUPPLEMENTED BY FIELD OBSERVATIONS. NO FORMAL SURVEY WAS PERFORMED AS PART OF THIS PROJECT.



KEY PLAN

LEGEND:

(X) - JOINT DESIGNATION

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	KPH	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

RIGHT OF WAY IDENTIFICATION MAP (1 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R1 / R8

147
154

85377RM001 12/22/2016 1:42:16 PM dmdickson

PARCEL NUMBER 101-11-003
CLEVELAND, CITY OF

PARCEL NUMBER 101-01-005
CLEVELAND, CITY OF

PARCEL NUMBER 101-11-015
CLEVELAND, CITY OF

MATCHLINE A SHEET R3

PARCEL NUMBER 101-13-029
CUYAHOGA COUNTY BOARD OF COMM.
JOHN MYERS
(216) 698-2517

PARCEL NUMBER 101-13-036
CLEVELAND - CUYAHOGA COUNTY
PORT AUTHORITY

CUYAHOGA RIVER

47+00
46+00
45+00
44+00
43+00
42+00

℄ MAIN AVENUE
BRIDGE

PARCEL NUMBER 101-13-028
CUYAHOGA COUNTY BOARD OF COMM.
JOHN MYERS (216) 698-2517

PARCEL NUMBER 101-13-035
FLATS EAST DEVELOPMENT LLC

PARCEL NUMBER 101-13-007
(101-13-008)
SAMSEL ROPE MARINE

PARCEL NUMBER 101-13-007
(101-13-009)
SAMSEL ROPE MARINE

PARCEL NUMBER 101-13-027
TELECOM ACQUISITION CORP.

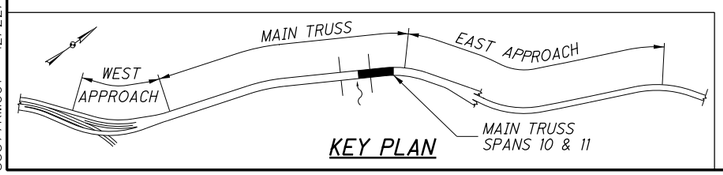
APPROXIMATE LIMITS
OF ROADWAY (TYP.)

PARCEL NUMBER 101-13-026
TELECOM ACQUISITION CORP. 1, INC.

PARCEL NUMBER 101-13-007
(101-13-010)
SAMSEL ROPE MARINE

OLD RIVER ROAD

CUYAHOGA RIVER



KEY PLAN

RIGHT OF WAY IDENTIFICATION PLAN
MAIN TRUSS - SPANS 9 AND 10
NO PAINTING WORK REQUIRED ON THIS SHEET

85377RM001 12/22/2016 1:42:20 PM dmdickson

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

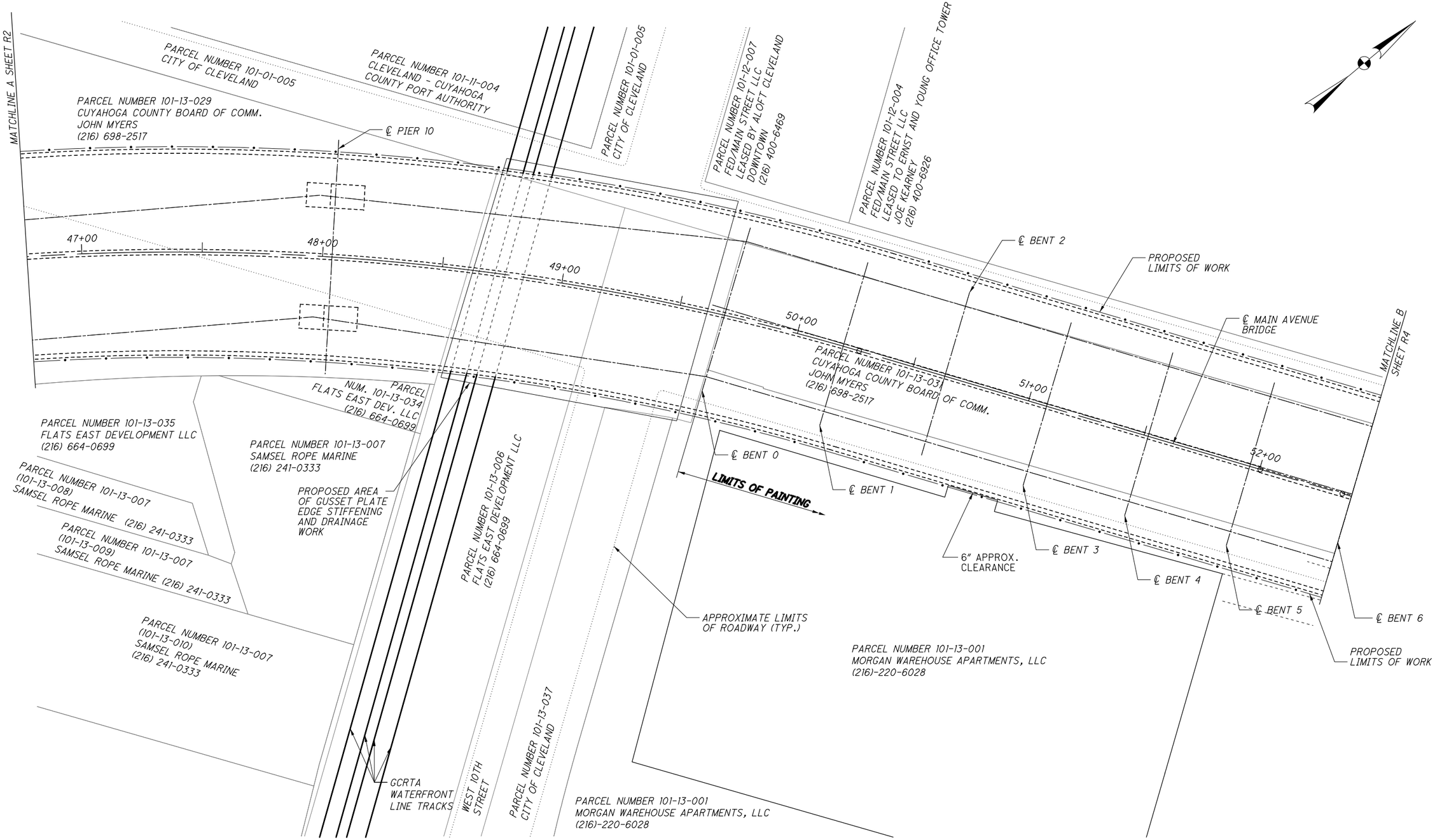
DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

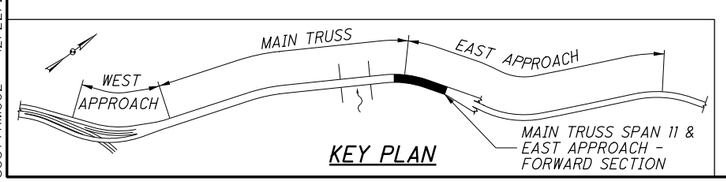
RIGHT OF WAY IDENTIFICATION MAP (2 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R2 / R8

148
154





KEY PLAN

RIGHT OF WAY IDENTIFICATION PLAN
EAST APPROACH - FORWARD SECTION

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

85377RM002 12/22/2016 1:42:23 PM dmdickson

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

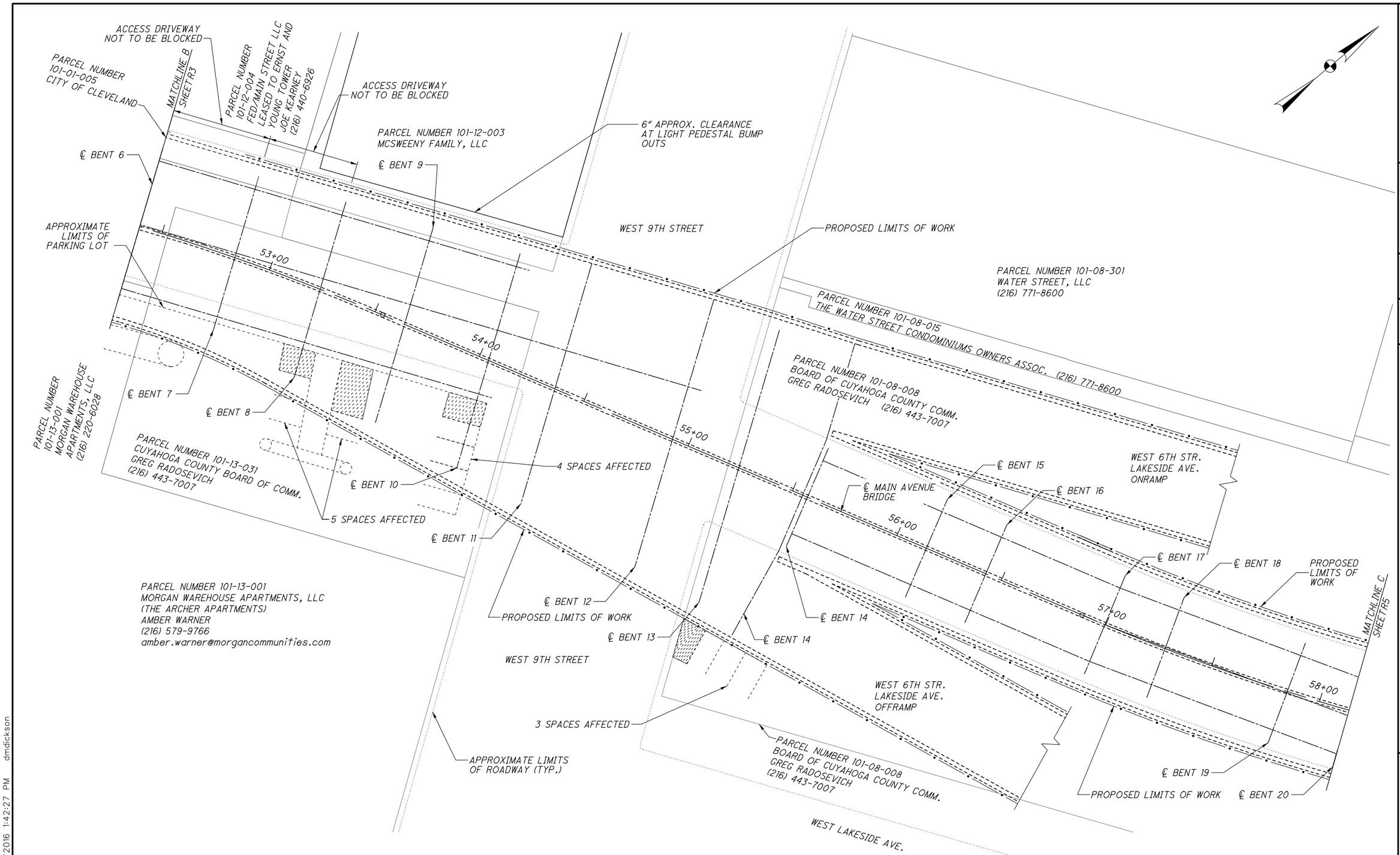
DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000351	

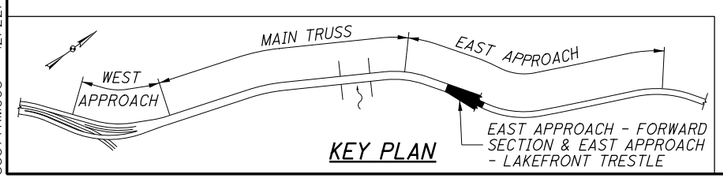
RIGHT OF WAY IDENTIFICATION MAP (3 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R3 / R8

149
154





RIGHT OF WAY IDENTIFICATION PLAN
EAST APPROACH - FORWARD SECTION
EAST APPROACH - LAKEFRONT TRESTLE

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000351	

RIGHT OF WAY IDENTIFICATION MAP (4 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R4 / R8

150
154

85377RW003 12/22/2016 1:42:27 PM dmdickson

PARCEL NUMBER 101-08-015
THE WATER STREET CONDOMINIUMS OWNERS ASSOC. (216) 771-8600

PARCEL NUMBER 101-08-007
WATER STREET ASSOC.
(216) 771-8600

PARCEL NUMBER 101-02-007
C & K PROPERTIES, INC.
LEASED TO ABM PARKING
(216) 736-7190

MATCHLINE C SHEET R4

PROPOSED LIMITS OF WORK

℄ MAIN AVENUE BRIDGE

PARCEL NUMBER 101-08-008
BOARD OF CUYAHOGA COUNTY COMMISSIONERS
GREG RADOSEVICH
(216) 443-7007

PARKING LOT ACCESS DRIVE NOT TO BE BLOCKED

SUMMIT AVE.

7 SPACES AFFECTED

MATCHLINE D SHEET R6

℄ BENT 32

℄ BENT 30

6 SPACES AFFECTED

64+00

63+00

℄ BENT 31

℄ BENT 29

9 SPACES AFFECTED

3 SPACES AFFECTED

5 SPACES AFFECTED

7 SPACES AFFECTED

℄ BENT 28

1 SPACE AFFECTED

PARCEL NUMBER 101-08-004
BOARD OF COUNTY COMMISSIONERS
GREG RADOSEVICH
(216) 443-7007

℄ BENT 22

℄ BENT 23

℄ BENT 25

18 SPACES AFFECTED

℄ BENT 26

℄ BENT 27

59+00

60+00

61+00

62+00

2 SPACES AFFECTED

2 SPACES AFFECTED

4 SPACES AFFECTED

℄ BENT 20

℄ BENT 21

PROPOSED LIMITS OF WORK

℄ BENT 24

4 SPACES AFFECTED

2 SPACES AFFECTED

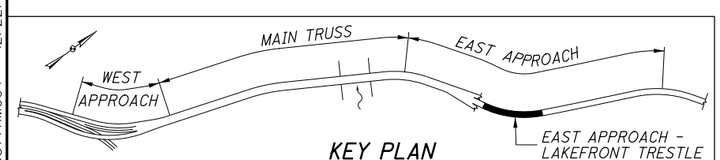
PARCEL NUMBER 101-08-009
CUYAHOGA COUNTY BOARD
OF COMMISSIONERS
LEASED TO JACOBS INVESTMENTS
PAUL ERTEL
(216) 861-4080

WEST LAKESIDE AVE.

CLEVELAND MEMORIAL SHOREWAY SR-2 RAMP FROM WEST LAKESIDE AVE.

APPROXIMATE LIMITS OF ROADWAY (TYP.)

WEST LAKESIDE AVE.



KEY PLAN

RIGHT OF WAY IDENTIFICATION PLAN
EAST APPROACH - LAKEFRONT TRESTLE

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

85377RM004 12/22/2016 1:42:32 PM dmdickson

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

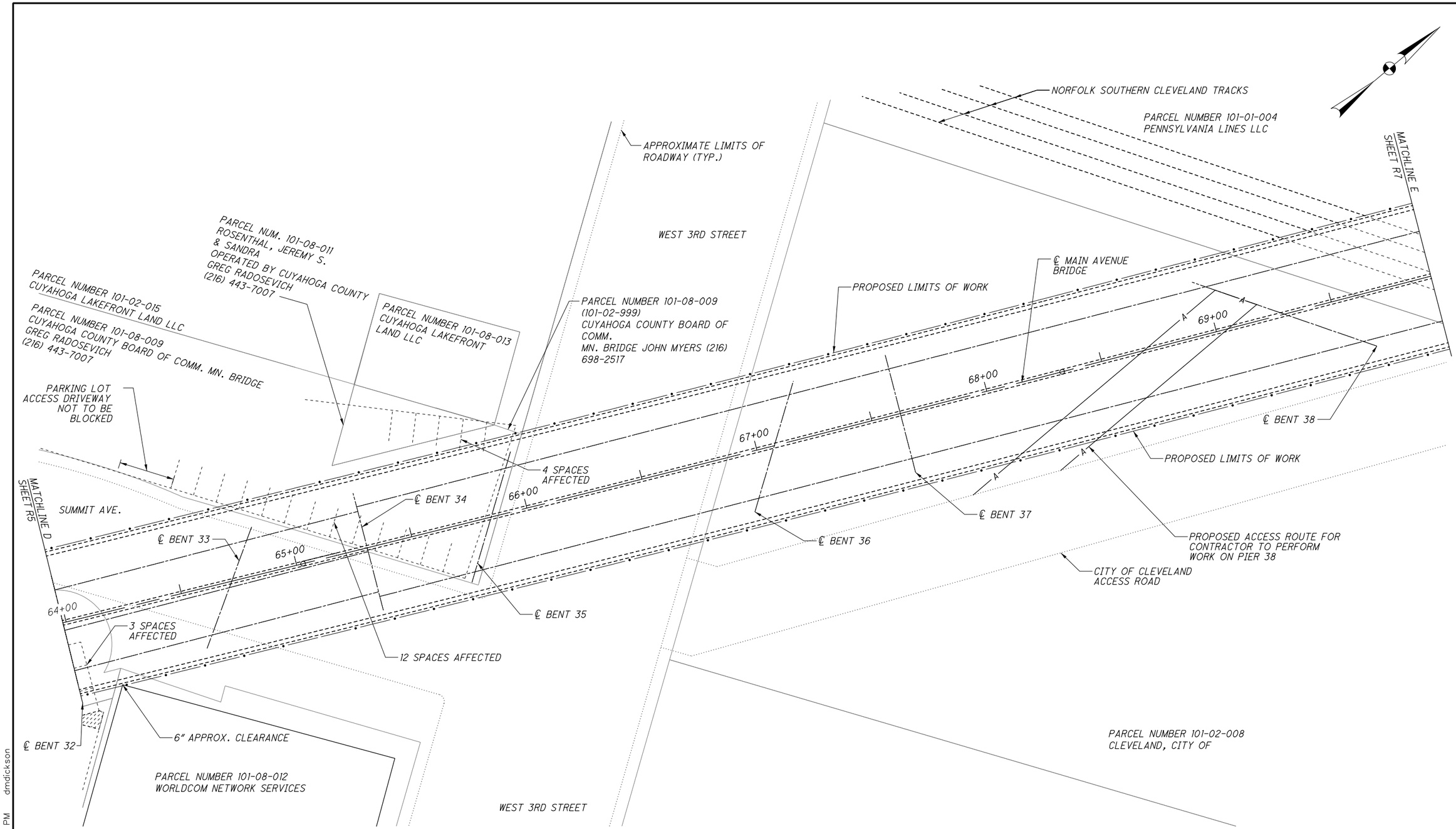
DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000335	

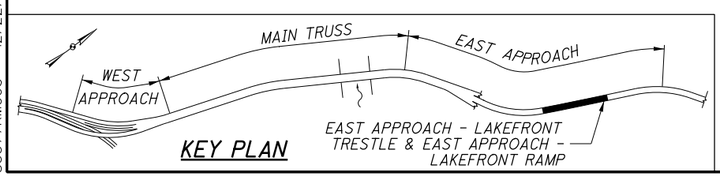
RIGHT OF WAY IDENTIFICATION MAP (5 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R5 / R8

151
154





KEY PLAN

RIGHT OF WAY IDENTIFICATION PLAN

EAST APPROACH - LAKEFRONT TRESTLE
EAST APPROACH - LAKEFRONT RAMP

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

85377RM005 12/22/2016 1:42:36 PM dmdickson

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

RIGHT OF WAY IDENTIFICATION MAP (6 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R6 / R8

152
154

PARCEL NUMBER 101-02-017
NATIONAL RAILROAD PASS CORP
GCRTA
JOE SHAFFER
(216) 566-5146

APPROXIMATE LIMITS OF ROADWAY (TYP.)

GCRTA WATERFRONT LINE TRACKS

℄ BENT 40

CLEVELAND MEMORIAL SHOREWAY SR-2
RAMPS TO AND FROM WEST 3RD

MATCHLINE F
SHEET R8

PARCEL NUMBER 101-02-018
CLEVELAND, CITY OF

PROPOSED LIMITS OF WORK

75+00

74+00

73+00

℄ BENT 39

PARCEL NUMBER 101-02-018
CLEVELAND, CITY OF

CITY OF CLEVELAND PARKING LOT
ACCESSIBLE FROM EB SHOREWAY
ONRAMP FROM W. THIRD STREET

PARCEL NUMBER 101-01-004
PENNSYLVANIA LINES LLC
LEASED TO NORFOLK SOUTHERN
E.W. CHAMBERS
(404) 529-1436

72+00

MATCHLINE E
SHEET R6

PROPOSED ACCESS ROUTE FOR
CONTRACTOR TO PERFORM WORK
ON PIER 39

71+00

70+00

℄ MAIN AVENUE
BRIDGE

PROPOSED LIMITS OF WORK

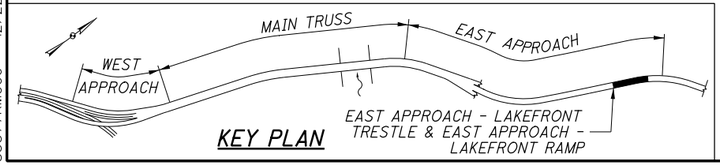
CSXT QD
LINE TRACK

PARCEL NUMBER 101-01-004
PENNSYLVANIA LINES LLC
LEASED TO NORFOLK SOUTHERN
E.W. CHAMBERS
(404) 529-1436

NORFOLK SOUTHERN
CD LINE TRACK

PARCEL NUMBER 101-02-008
CLEVELAND, CITY OF

NORFOLK SOUTHERN
RD LINE TRACKS



KEY PLAN

RIGHT OF WAY IDENTIFICATION PLAN
EAST APPROACH - LAKEFRONT RAMP

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

85377RM006 12/22/2016 1:42:41 PM dmdickson

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

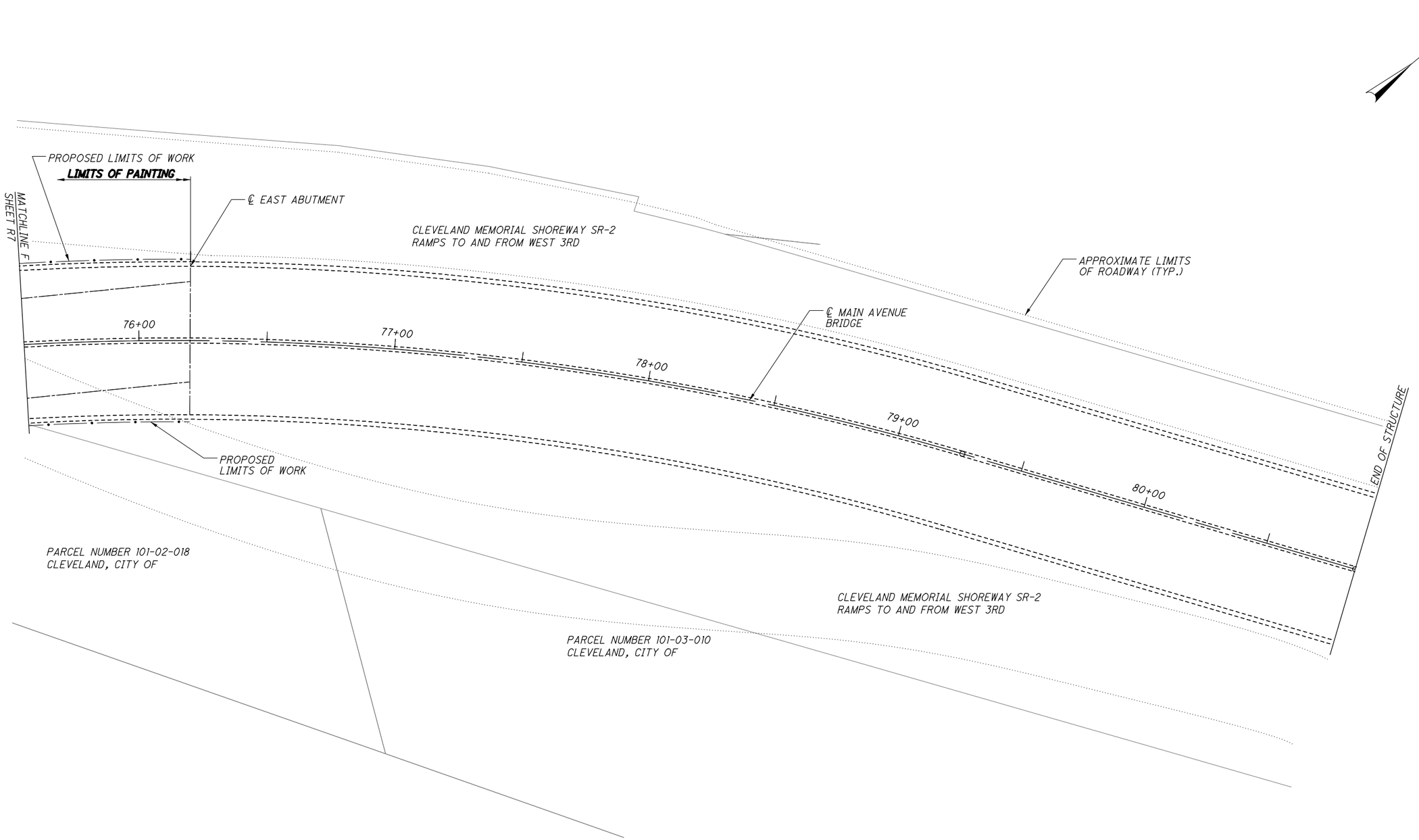
DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		1800035	

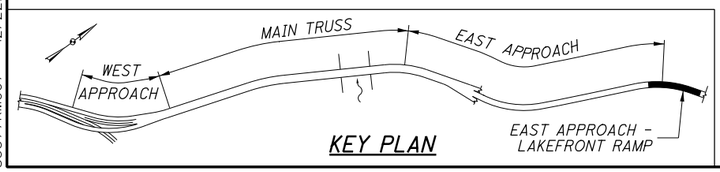
RIGHT OF WAY IDENTIFICATION MAP (7 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R7 / R8

153
154





KEY PLAN

RIGHT OF WAY IDENTIFICATION MAP
EAST APPROACH - LAKEFRONT RAMP

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACCESS FOR PAINTING WITH ALL ENTITIES SHOWN ON THIS PLAN.

85377RM007 12/22/2016 1:42:46 PM dmdickson

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

DESIGNED	DRAWN	REVIEWED	DATE
KPH	JLV	BCS	12-19-16
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRF		18000351	

RIGHT OF WAY IDENTIFICATION MAP (8 OF 8)
MAIN AVENUE - BRIDGE NO. CUY-2-1441
OVER THE CUYAHOGA RIVER

CUY-2-14.41
PID No. 85377

R8 / R8

154
154

SPECIAL PROVISIONS

ARCHITECTURAL

FOR

CUY-2-14.41
PID: 85377

DATE: 12-16-16

GENERAL

Work Description

The requirements of the Proposal Package and General Provisions shall apply to this Special Provision, except as herein modified. This Special Provision describes the Architectural Work required for this project. The work shall be as detailed on Sheets 128 and 129 of 152 of the design plans and as herein specified, and as required by good installation practice to make a complete and operational system.

This work shall generally consist of, but shall not be limited to, the furnishing and installing of the following systems and/or items:

- Access Doors in the West Approach (Sections C, K, and N)
- Motorized Garage Door in Section N

Safeguard all work in place and materials stored on site. The Contractor is responsible for all losses resulting from theft and/or vandalism of work or materials.

Contractor is responsible for securing access to the vault areas during demolition and replacement of doors to ensure that unauthorized access is not gained by the general public.

Access Doors

The doors shall be either:

Curries Company Polystyrene Core: 707 Series.

Or

CECO Door Products Polystyrene Core: Legion Series

Or approved equal.

General: Existing doors to be removed. Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.

Door Requirements: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. Provide doors complying

with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Design: Flush panel.
2. Core Construction: Manufacturer's standard polystyrene. Where indicated, provide doors fabricated as thermal-rated assemblies with a minimum Rvalue of 2.8 or better.
3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

ACCESS DOOR HARDWARE:

Door hardware shall be either:

Manufacturer abbreviations are:

1. MK – McKinney
2. RO – Rockwood
3. RU – Corbin Russwin
4. PE – Pemko

3 Hinge (heavy weight)	T4A3386 NRP	US32D MK 087100
1 Exit Device (storeroom)	ED5200A PR957 PHS MK	630 RU 087100
1 Kick Plate	K1050 10" 4BE CSK	US32D RO 087100
1 Threshold	73x3AFG MSES25SS	PE 087100
1 Gasketing (rigid jamb)	303AS TK SP8	PE 087100

Or

Manufacturer abbreviations are:

1. IVE – Ives
2. NGP – National Guard Products
3. SAR – Srgent

3 Hinge (Heavy weight)	5BB1HW 4.5 X 4.5 NRP	652 (IVE)
1 Exit Device	10-63-43-12-8813 ETL SNB	630 (SAR)
1 Kick Plate	8400 10" X 1 1/2" LDW B4E	630 (IVE)
1 Threshold	513 SIA-FRAME WIDTH	(NGP)
1 Set seal	9850B-HEAD & JAMBS	BRN (NGP)

Or

Approved Equal

HOLLOW METAL FRAMES

Frames shall be either:

Curries Company – M Series

Or

CECO Door Products – SU Series

Or

Approved Equal

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A653, Coating Designation A60.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.

Additional Notes:

Doors shall be key locked from the outside. Single key to open all locks. Provide six (6) copies of the key to ODOT.

Doors and frames on west curtain walls in Sections C and K with murals shall be painted solid pink to match the existing mural. Provide a paint color sample for approval prior to painting of doors.

All other doors, frames, and jambs shall be painted to match the color of the sealant on the surrounding concrete walls.

Motorized Garage Door

The doors shall be either:

Cornell Iron Insulated (R-Value 8.0) coiling door: Model ESD20. Motorized: (1p/120v) with safety bottom edge.

Or

Overhead Door Corp insulated (R-Value 10.9) heavy duty (24ga front and back) coiling door: Model 627. Motorized (1p/120v) with safety bottom.

Or

Approved Equal

General: Existing door is to be removed. New door is to tie into existing junction box housed in the interior room for power.

SHUTTER ASSEMBLY:

A. Wind Loading
   1. Design and reinforce overhead coiling fire shutters and guides to withstand a wind loading pressure of 20 psf.

B. Curtain
   1. Fabricate curtain of interlocking, flat slats of continuous length for the width of the door without splices. Unless otherwise shown or specified, provide flat faced slats of the material gauge recommended by the door Manufacturer for the size and type of door required, and wind pressure specified.
   2. Fabricate curtain slats from structural quality, cold-rolled, galvanized steel sheets complying with ASTM A-653, Grade A, with 0.028 oz. "commercial" zinc coating. Provide end locks, as required.
   3. Provide bottom bar consisting of 2 angles, each not less than 1-1/4" x 1-1/4" x 12 gauge thick or provide standard bottom bar per UL rated assembly.

C. Guides
   1. Fabricate curtain jamb guides of steel shapes with sufficient depth and strength to retain the curtain in guides. Build up units with minimum 3/16" thick steel sections complying with ASTM A-36. Slot bolt holes for track adjustment.

D. Weather Seal
   1. Provide natural rubber or neoprene rubber weather stripping. Secure weather seals with continuous metal pressure bars. At door heads, use a continuous sheet secured to the inside of the curtain coil hood. At door heads, use continuous sheet secured to the inside of the curtain coil hood. At door jambs, use continuous strip secured to the exterior side of the jamb guide. At sill, provide a neoprene astragal with safety edge device.]

E. Counterbalancing Mechanism
   1. Counterbalance shutters by means of an adjustable steel helical torsion spring, mounted around a steel shaft, in a spring barrel and connected to the door curtain with the required barrel rings. Use grease-sealed ball bearings or self-lubricating graphite bearings for all rotating members.

F. Hood, Motor Cover, Tension Cover
   1. Form hood, motor cover and tension mechanism cover to entirely enclose coiled curtain and operating mechanism, motor and tension mechanism at opening head, and act as a weather seal. Contour to suit end brackets to which hood is attached. Provide Roll and reinforce top and bottom edges for stiffness.
   2. Fabricate steel hoods of not less than 24 gauge hot-dip galvanized steel sheet with 1.25 oz. "commercial" zinc coating, complying with ASTM A 525. Phosphate treat before fabrication.

MANUAL OPERATION

A. Provide door handle for manual operation in case or power outage.

POWER OPERATION:

A. Provide high-starting torque, reversible, Class A insulated electric motor with thermal overload protection that must raise and lower the curtain at 12" per second. Furnish power operation equipment of size and capacity to suit the current characteristics of the electric service supplied, and as recommended by the door Manufacturer.
B. Coordinate various power, wiring and installation location requirements for size and location of motor in different sized overhead coiling doors.

REMOTE CONTROL STATIONS:

A. Provide momentary-contact, 3-button control stations with push button control labeled "open", "close" and "stop" for operation. Provide weather-proof push button control stations for exterior exposure. Control must be arranged that door may be stopped at any intermediate point by pressing "Stop" button. It will be possible to operate door in either direction when stopped at intermediate point. New control station shall be located inside the vault and mount at the location of the existing control. The 3-button control station shall be located on the inside of the vault area.

SAFETY EDGE DEVICE:

A. Provide each door with an electric safety edge device extending full width of door bottom, and located within the U-shaped neoprene astragal mounted to the bottom door rail. Contact with switch before curtain is fully closed will immediately stop the downward travel and reverse direction to the fully opened position. Connect to the control circuit through a retracting safety cord.

SHOP FINISH:

A. All ferrous metal and galvanized surfaces, unexposed, except lubricated surfaces, must be thoroughly cleaned free of rust, scale, oil, grease, dirt and other foreign substances and given one coat of rust inhibiting primer, baked-on. Shop finish paint all exposed galvanized and ferrous metal surfaces with zinc rich primer and manufactures standard baked on finish, color as selected.

SPECIAL PROVISIONS

GCRTA

FOR

CUY-2-14.41
PID: 85377

DATE: 06-10-16

SECTION 014500 - SAFETY PROCEDURES

Part 1 - General

1.1 GENERAL

A. Contractor will perform its work in a safe manner, comply with all environmental safety and health requirements of the contract documents as issued by the Greater Cleveland Regional Transit Authority (GCRTA), and comply with all applicable laws, codes, ordinances, rules, regulations, and lawful orders of all public authorities. Contractor has the sole and complete obligation to provide a safe and healthful working environment for its employees and for other persons at the project site who may be exposed to the Contractors and Subcontractor's work.

B. Contractor and its Subcontractors are responsible for the development, implementation, administration and enforcement of their individual safety and health programs.

C. Contractor is responsible for the implementation of all applicable governmental federal, state and local regulations as they apply to the scope of work and the project.

D. Contractor is responsible for conforming to all applicable safety requirements of the (GCRTA), as specified herein and in the contract.

E. Contractor is responsible for assuring that project supervisors are trained in Safety procedures and that designated "Competent Persons" meet all training and experience requirements necessary to comply with OSHA directives.

F. Contractor is required to maintain a Substance Abuse Prevention Program that meets all applicable regulatory requirements. Employee must successfully complete a substance abuse prevention test.

G. The Contractor must notify GCRTA whenever a Contractor's employee sustains an injury that requires more than first aid. In those cases when an employee needs medical attention but is treated and released, notification to GCRTA shall be the day of the incident of the following business day for off-shift and weekend work. A business day is considered Monday through Friday, 8:00 a.m. until 5:00 p.m. In those cases when the injury is serious and the employee is hospitalized, GCRTA must be notified within 3 hours of the incident. The same immediate notification requirement would be required for a fatality. The Contractor shall contact the Project Manager, who will then notify the Manager of Safety through GCRTA Service Quality Integrated Communications Center. In case of any injury or accident at the work site, a written accident report must be prepared by the Contractor and one (1) copy thereof given to GCRTA's Project Manager within 24 hours.

H. IMMINENT DANGER

RTA may stop those operations that create an imminent danger to employees, to the public, and to property.

I. COOPERATION

The Contractor shall cooperate with all the safety representatives from local, state, or federal agencies, including those of GCRTA.

1.2 SAFETY PROGRAM (SCHEDULE 18)

A. For projects requiring a Schedule 18, the Contractor is required to have a written site-specific safety and health program aligned with OSHA and the contract requirements. This program must be submitted to the GCRTA Project Manager for review and approval prior to commencement of work.

B. A copy of the Contractor's site-specific safety program shall be available for review at the Contractor's field offices.

C. The approval of the Contractor's site-specific safety and health program does not relieve the Contractor from its responsibility for employees, public safety, and compliance with all applicable safety requirements.

D. The site-specific safety and health program must at a minimum include and address implementation of the following to the degree they are applicable to the scope of work:

1. Description of planned work including task hazard breakdown where appropriate
2. Responsibilities and lines of authority for the planned work including Competent Persons list for area required by OSHA.
3. Method for identifying job hazards and control methods.
4. Personal protective equipment (PPE) required for the planned work (Note if respiratory protection is required, a "Respiratory Protection Program" must be included).
5. Employee orientation and required job training.
6. Safety and health inspections.
7. Safety and health goals and expectations.
8. Disciplinary policy for violation of safety rules.
9. Fire Prevention and Protection including contingency planning.
10. Rules of Conduct and/or Standard Operating Procedures as required for the work.
11. Security and site control measures.
12. Sanitation and on-site medical support services.

13. Owner-specified safety requirements.
14. Accident Reporting, Root Cause Investigation, and Corrective Actions.
15. Recordkeeping
16. Hazard Communication and training

E. Contractor will develop a job hazard analysis (JHA) that identifies the hazards before commencing each major phase or activity at the site or as required by the Project Manager. The analysis will also describe the planned work and assign responsibility for Hazard prevention or control of identified hazards, and state corrective action to prevent Injury. See Attachment A as an example format for Job Hazard Analysis.

F. FIRST AID AND EMERGENCY MEDICAL CARE

Contractor is responsible for providing first aid trained personnel and emergency medical care for its employees and agents.

G. TRANSPORTATION AND ENVIRONMENTAL COMPLIANCE

If activities of the Contractor involve transportation or shipping of Hazardous Materials (as defined by the Department of Transportation) or if the work requires Environmental Controls or potential for spills and/or releases, a designated person will be available to provide necessary compliance support. In the event of a transportation incident or environmental release, the designated person will provide necessary coordination of response activities for the Contractor. This person will also provide notification of insurance carriers and HAZMAT response for any Contractor incidents.

H. SAFETY MEETINGS

Contractor will conduct regularly scheduled safety meetings with its employees and/or supervision as necessary to ensure that safety is adequately addressed in its work planning and execution. Contractor will provide written notice of the time, place, and subject of these meetings and provide GCRTA Project Manager the opportunity to observe.

I. PERSONAL PROTECTIVE EQUIPMENT

1. Contractor will provide, at its own expense, all required personal protective equipment for its employees and all required safety equipment and supplies as needed. Contractor is required to ensure that employee are wearing appropriate personal protective equipment as specified in applicable OSHA regulatory standards. In accordance with OSHA standards, all employees shall be required to wear personal protective equipment during working hours and on the project premises, including Non-metallic ANSI Z89.1-1997 approved hard hat and ANSI Z 1987.1-1989 approved protective eye wear with peripheral protection. Employees

performing welding, cutting, grinding or similar operations must utilize protective head gear in conjunction with other required protective equipment while protective equipment while performing such operations.

2. Employees working in designated "Hearing Protection Required" areas or when noise is identified as a potential job hazard in the pre-task JHA, must be provided with adequate hearing protection including either approved Earplugs, Canal Caps or Ear Muffs as required to meet OSHA, MSHA, or USACOE requirements.

3. A written documentation of identification of task specific PPE is required under OSHA requirement 29 CFR 1910.132(d) or as specified in 29 CFR 1926 Subpart E. Contractor is responsible for compliance as required for the task. In addition, the Job Hazard Analysis for each task must specify required PPE for the task as part of the task specific planning process.

J. FALL PROTECTION

1. Construction/Contractor work which requires the use of fall protection and fall arrest equipment and supplies, shall be considered hazardous work, and shall be required to have the contractor provide a written assessment (JHA) and plan explaining:

   a. What fall hazard(s) exist on the project, and how each will be abated;

   b. In the event the abatement involves personal fall arrest system, an explanation of how rescue shall be performed if a fall event occurs.

2. Fall protection shall be required to be worn on all aerial lift equipment, bucket truck equipment, and on scissors lift equipment if the scissor lift has manufacturer installed fabricated tie off points.

K. HAZARD COMMUNICATION (HAZCOM) / Right to Know

1. Contractor shall adequately educate, train and provide proper personal protective equipment and resources (including eye flushing means and skin rinsing means) to all employees performing work with hazardous chemicals. Hazardous chemicals include but are not limited to chemicals that may irritate and/or damage body tissue if contact is made with the chemical.

2. Contractors shall be required to maintain at the site an up to date, accurate, readily accessible set of MSDS/SDS for each of all chemicals being used/applied. Contractors shall immediately make available for review any MSDS/SDS requested by a contractor or GCRTA.

L. HOT WORK

1. Hot Work shall be defined as any activity involving welding of any type (MIG,TIG,Stick), any activity involving oxy/fuel gas burning, or use of any powered tool that generates sparks and heat (grinding, dry cutting, etc.)

2. All hot work activity, with the exception of outdoor track work, requires that a hot work permit be issued on a job by job basis, and required to be obtained from the hot work permitting authority (the general contractor, subcontractor leader or GCRTA, etc.) prior to starting such activity. Each hot work permit shall be only as long as the task specified lasts or an 8 hour work shift whichever is shorter.

3. All hot work performed must have a continuous fire watch during hot work activity and a mandatory 1 hour fire watch occur after the hot work specified in each permit has ended, regardless of time of day, time of completion of task, location of task or weather conditions.

4. Any fires regardless of size that occur as a result of hot work being performed shall be required to be reported to the GCRTA Project Manager.

5. The contractor shall be required to keep on file a copy of all issued hot work permits, and shall make them available for review by the Project Manager or a GCRTA safety department representative.

1.3 SAFETY REPRESENTATIVES

A. Contractors required to submit a Schedule 18-Safety Program/Plan shall be required to designate a qualified Safety Representative that has the authority and support of his/her management to conduct and coordinate its subcontractors' safety and health program and/or policies. The duties and responsibilities of the Safety Representative shall be specified in the site-specific Safety Plan. The Safety Representative shall be granted "stop-work" authority, along with the responsibility and organizational freedom necessary to implement and enforce the safety and health program.

B. Prior to commencement of work the Contractor shall provide the GCRTA Project Manager with the name and qualifications of the Safety Representative for approval. Once approved, the Safety Supervisor/Representative will not be changed without the approval of the GCRTA Project Manager. A Safety Representative must be present on the project site whenever work is being performed.

1.4 WORKER'S COMPENSATION

A. Worker's Compensation as required under applicable laws must be provided and administrated by the Contractor for their employees and agents. The GCRTA Project Manager will not assume any responsibility for the administration of Worker's Compensation insurance, the submittal of reports, processing of claims or any other related activity.

1.5 INSPECTIONS

A. Contractor is responsible for conducting daily and documented weekly jobsite inspections for unsafe conditions and work practices. The GCRTA Project Manager or designee will conduct a monthly documented inspection.

B. Contractor shall prohibit the use of unsafe machinery, tools, materials, or equipment and shall conduct pre-job and as-required inspections on same in accordance with manufacturer's recommendations and appropriate regulations. All heavy equipment shall have a documented safety inspection prior to being used on the project. All equipment, tools, and appliances shall be used according to manufacturer specifications. Modifications or alternative uses must be approved by the manufacturer prior to planned use.

C. Contractor will immediately notify the GCRTA Project Manager of any and all OSHA inspections and shall afford GCRTA Project Manager the opportunity to observe the inspection. Contractor will provide GCRTA Project Manager a copy of all citations received and all Contractor responses issued as a result of such inspections within two working days of receipt or issuance.

D. Contractor will perform periodic safety inspections of Subcontractor's work. Subcontractor's safety representative will accompany Contractor's safety supervisor during these inspections and take prompt action to correct all identified deficiencies. Contractor's management will participate in any scheduled safety walk-through with GCRTA Project Manager. Such inspections and identification of deficiencies by GCRTA Project Manager does not relieve Contractor from its responsibility to comply with all applicable safety regulations and rules.

1.6 EMPLOYEE ORIENTATION AND TRAINING

A. Contractor shall instruct each employee required to handle or use flammable liquids, gases, toxic materials, poisons, radiological materials, and other harmful substances in safe handling and use. Employees shall be made aware of the potential hazards, the necessary personal hygiene, and the personal protective measures provided. In addition employees must receive training on appropriate spill control measures as part of site-specific Emergency training.

B. All personnel working on or near the right of way will be required to attend "Rail Operations Rulebook Level C" training. All personnel that will be utilized for flagging duties shall attend flagging training and possess a current certification issued by GCRTA.

C. Contractor shall permit only qualified employees, by training or experience to operate equipment or machinery, and should verify the employee's ability to operate such equipment through visual observations for appropriate time periods.

D. All new jobsite employees, upon their day of employment or initial entrance onto the project site, will be required to attend a jobsite orientation. This orientation program shall include the Contractor's:

1. Project rules
2. Emergency and first aid procedures.
3. Work rules and procedures
6. Security procedures.
5. Fire prevention and protection.
6. Use of personal protective equipment, and other subjects related to the employee's responsibilities and duties.
7. Smoking Prohibition
   a. Board Resolution 2006-193 was passed on Tuesday, October 17, 2006, expanding the areas where smoking is prohibited to include all indoor and outdoor locations owned or under the control of the Authority. This change will become effective January 1, 2007. The areas affected by the change include: 1)indoor and outdoor areas open to the public and to customers, such as rail stations, transit centers, park & ride facilities, and bus shelters located on GCRTA property, 2) outdoor portions of employee workplaces including private vehicles on GCRTA property and 3) motor and rail vehicles not in revenue service.

E. Contractor will provide safety training for its employees at its own expense, and such training will be documented and copies provided to the GCRTA Project Manager upon request. Safety training will include, but not be limited to:

1. Orientation to the safety policies and rules stipulated by the Contractor prior to each employee's initial work assignment on the project.
2. Orientation of supervisors to the safety policies, rules, and their responsibility to enforce it.
3. Weekly "Toolbox Talks" on an appropriate safety subject, for all employees.
4. Hazardous materials training (HAZCOM).
5. Personal protective equipment
6. Personal safe work practices

7. Special safety training for those affected, including but not limited to, confined space entry, respiratory protection, hot work permits, fire watch, trenching/excavation, fall protection, scaffolding, aerial lift operation etc.

G. Unsafe acts by employees or repeated unsafe considered serious and will not be tolerated. Contractor will uniformly enforce a policy that states the disciplinary action to be applied when employees violate safety rules. This policy will be consistent with project and/or Contractor's safety enforcement policy.

1.7 SAFETY VIOLATIONS

A. Contractor is responsible for promptly correcting all violations of safety and health standards, potential hazards and other such safety related problems within their area of responsibility. In the event an apparent violation is observed by the GCRTA Project Manager, the Contractor will be notified.

B. If the GCRTA Project Manager notifies the Contractor of any non-compliance with the provisions of the project's safety and health program, GCRTA policy or other statutory requirements, Contractor shall take prompt action and make all reasonable efforts to correct the unsafe or unhealthy condition(s) or act(s). Satisfactory compliance shall be made within a reasonable, specified time. If Contractor refuses to correct unsafe or unhealthy conditions or acts, the GCRTA Project Manager will initiate appropriate actions in accordance with the contract provisions and may take one or more of the following steps:

1. Cease the operation or a portion thereof (particularly in the case of an imminent danger).

2. Correct the situation and back-charge Contractor.

3. Invoke contract penalties and/or terminate the contract.

C. Willful and repeated failure to comply could result in the shutdown of the work, or portions thereof. No part of the time lost due to any such modification of operations or stop orders shall be made the subject of claim or extension of time or for increased costs of damage by the Contractor.

1.8 REPORTS AND SUBMITTALS

A. Contractor will report all injuries recordable on its OSHA 300 log, all accidents resulting in property damage and all environmental incidents to the GCRTA Project Manager promptly, and follow up in writing within 24 hours. Within one working day, Contractor will provide GCRTA with a written report documenting the root cause(s) of the accident and action(s) taken, or planned to be taken, to preclude recurrence.

B. All job hazard analyses(JHAs), work permits, training records, inspection reports, and daily safety reports must be available for review by the GCRTA Project Manager.

Contractor will maintain records of all first aid cases, work related injuries/illnesses and property damage according to OSHA requirements and the representative insurance carrier requirements. These records may be reviewed by the GCRTA Project Manager as required and permitted by law.

C. On monthly basis, the contractor will complete and submit the GCRTA Monthly Safety Report that summarizes injuries and manhours for the project.

D. Contractor will provide to the GCRTA Safety Department copies of Material Safety Data Sheets (MSDS) for materials that Contractor brings on the jobsite. This information will provided prior to arrival of the materials on the project site.

Part 2 - Products

2.1 NONE

Part 3 - Execution

3.1 NONE

Part 4 - Measurement and Payment

4.1 No separate measurement or payment will be made for the work under this item, the cost of which shall have been included under other items of work.

END OF SECTION

SPECIFICATION 014500

SAFETY PROCEDURES

Attachment A

Sample Job Hazard Analysis Form

Title of JHA: _____

Project Name/Number: _____

Name of Person(s) Completing JHA: _____

Date Completed: _____ Date Reviewed: _____

Basic Job Steps	Identified Hazards Associated With Job Steps	Hazard Controls and Personal Protective Equipment Required

SECTION 015010 - MAINTENANCE OF RAIL TRAFFIC AND RESUMPTION OF REVENUE SERVICE

Part 1 - General

1.1 DESCRIPTION

A. The work must be carried out on an operating transit system. RTA will maintain revenue service on the affected portion of the line throughout the duration of the contract. The current scheduled regular operating hours and track availability periods are as follows:

Area	Date	Days	Regular Operating Hours	Track Availability Periods
Red Line:	Year Round	Mon. thru Fri. Sat. & Sun.	3:10 a.m. to 1:50 a.m. 3:10 a.m. to 1:50 a.m.	1:50 a.m. to 3:10 a.m. 1:50 a.m. to 3:10 a.m.
Blue/Green Lines:	Year Round	Mon. thru Fri Sat. & Sun.	3:30 a.m. to 1:15 a.m. 3:30 a.m. to 1:15 a.m.	1:15 a.m. to 3:30 a.m. 1:15 a.m. to 3:30 a.m.
Waterfront Lines:	Year Round	Mon. thru Fri. Sat. & Sun.	6:35 a.m. to 10:45 p.m. 9:05 a.m. to 10:45 p.m.	11:00 p.m. to 6:00 a.m. 11:00 p.m. to 9:00 a.m. Special events see below
E. 55th St. Yards:	Year Round	7 days a week	24 hours a day	None

Generally, operating hours are extended during Special Events on the Red, and Blue/Green Lines for 1-1/2 hours after the conclusion of the event. A special Event is defined as an event that is likely to extend beyond 10:00 p.m. and is expected to draw 10,000 spectators or more to an area located within 1/4 mile of an RTA rail station.

Generally, operating hours are extended during Special Events on the Waterfront Lines for 1-1/2 hours after the conclusion of the event. A special Event here is defined as an event that is likely to occur at any time, and is expected to draw 3,000 spectators or more to an area located within 1/4 mile of an RTA Waterfront Rail Line.

A special event on one line can impact other lines as well. GCRTA reserves the right to restrict or deny track availability when GCRTA deems it necessary to expand the hours of service to accommodate special events.

Generally after the last train exits a proposed work area the Control Center will authorize occupancy for work.

Track outage times provided by GCRTA include the time required for the Contractor to arrive on scene and request the shut-down, as well as the time for GCRTA to arrive and

shut down the track. The time spent waiting for the shut-down will be borne by the Contractor.

B. Contractor must not interfere with the normal transit system operations. Work may only be performed by permit as delineated in this section of these specifications.

C. The Owner retains authority over all rail traffic operations. The Owner shall reserve the right to approve (or reject) the adequacy of the Contractor's protective measures to assure continuity of the Authority operations.

D. Additional single tracking after 8 p.m. or stopping of train traffic during the above Regular Operating Hours may be permitted. However, it is not guaranteed and the Contractor may not rely on having access to track areas during Regular Operating Hours. When permitted, it may be allowed under the following:

1. The Contractor has justified why the single tracking request is needed.

2. The Contractor has indicated the time frames in the original construction schedule.

E. The requested occupancy will not be granted and can be revoked, even after being issued, under the following conditions and at GCRTA's discretion:

1. Conflict with Special Events

2. Conflict with the RTA system maintenance and/or emergency work

3. Conflict with other ongoing construction projects

4. When snowfall exceeds or is forecast to exceed 5", when freezing rain is forecast, or when snow trains must be operated

5. When visibility is poor, creating an unsafe working environment for both work crews and GCRTA operations

F. Any occupancy of the Rail right-of-way requires an approved occupancy permit. Work or occupancy within 10 feet of the centerline of any track requires an approved occupancy permit and generally daytime work hours are only available from 9:30 am to 2:30 pm.

Part 2 - Products

2.1 Not Applicable

Part 3 - Execution

3.1 RESTRICTIONS BY GCRTA

A. The Contractor must receive a permit prior to starting work that may affect GCRTA property and facilities. Each Contractor must submit requests through the Engineering

and Project Development (E&PD) Manager for prior Authority approval for occupying the rail right-of-way. These requests will be of the following types:

1. Wayside work - Required for all work performed on the rail right-of-way, not between the tracks and more than 10 feet from the centerline of any track.

2. Active Track Occupancy Permit - Required for all work performed on the rail right-of-way using hand tools and within 10 feet from the centerline of any track.

3. Track Outage Permit - Required for any single tracking operation where one track is taken out of service.

4. Power Outage Permit - Required for any work on the rail right-of-way that is within 10 feet of the energized catenary conductor wire; however, when power outages are not feasible, the Contractor may proceed with the work based on the Contractor's compliance with all OSHA regulations. These regulations include, but are not limited to, distance relating to qualified and unqualified personnel as defined by OSHA when working around the Authority's 600-volt catenary system.

5. Track Shutdown Permit - Required for any termination of Rail service i.e. complete shutdown of service on track(s). This application must be submitted by 11:00 am Wednesday four weeks before the week of the track(s) shutdown.

All requests must be submitted in writing to the Director of E&PD no later than 11:00 AM of the preceding Wednesday for consideration by the Director of Service Management or his designate. Due to other ongoing construction and maintenance projects, there is no guarantee that any request will be approved. All requests will be approved or disapproved in writing.

B. In the event of a reversal by either GCRTA or the Contractor of any Track or Power Outage permit, a good faith effort must be made to notify the other party prior to the scheduled outage. Contractor cancellation of permits for work after 7:45 PM shall be no later than 3:30 pm that day, and any failure to cancel 12 hours prior to the scheduled outage shall result in the Contractor being assessed Liquidated Damages in the amount of $500 for each occurrence. This cost must be paid directly by the Contractor to GCRTA. Failure to pay will result in rejection of all future outage requests. GCRTA will make a good faith effort to notify the Contractor 12 hours prior to any cancellation. However, it is understood that emergencies may occur which may prevent GCRTA from canceling within this time frame.

C. Power outages will not be allowed during the following conditions:

1. On holidays or during Special Events

2. Where weather conditions are such that icing of the catenary may occur (For example: RTA has experienced icing conditions when the temperature is between 25 and 35 degrees Fahrenheit with a chance of precipitation)

To confirm if weather conditions might be affecting rail operations, the Contractor may call either the Control Center Supervisor at 216-566-5114 or 216-566-5115 or the Load Dispatcher at 216-566-5135.

D. Any unexpected effects upon the operations of scheduled/unscheduled train movements shall be immediately called into the Control Center Supervisor at 216-566-5114 or 566-5115.

E. The Contractor must receive the proper outage permit prior to lifting of any bridge span, or other such material, over GCRTA tracks. GCRTA Rail personnel shall be present in the area to ensure a safe and clear area after span lift. Demolition work shall stop when trains pass through a demolition area or trains shall be stopped at a safe distance if imminent danger is shown.

F. All work over GCRTA tracks shall be done with the overhead power off unless authorized by both District Director-Rail and Director of E&PD or their designates. If any Contractor or Utility requires the de-energization of the overhead power to the Catenary System, a power outage permit must be approved per the above methods.

3.2 RESUMPTION OF REVENUE SERVICE

A. The track must be returned to the Authority one-half hour before the start of scheduled revenue service at that location. At the completion of the week night shift and at the completion of weekend work, the Contractor is to inspect and subsequently release the work zone back to the Authority for resumption of revenue service. This will require the Contractor to adhere to the following procedures:

1. Prior to release of a work zone, the Contractor is to clear his equipment, manpower and materials from the right-of-way, an area defined as at least 10 feet from the centerline of each track.

2. The Contractor, along with the Engineer, will inspect the entire work zone to assure that the work completed complies with the requirements of the Authority for the resumption of revenue service within the work zone. The construction, at a minimum, must comply with FRA Class 4 Safety Standards for track or compliance with these construction tolerances.

3. Other requirements may be imposed by the Authority based on AREA construction tolerances, procedures and/or practices. Imposition of slow orders and other means can be requested by the Contractor in order to assure the resumption of safe revenue operations.

4. When each item above has been completed, the Engineer shall notify the appropriate Control Center Supervisor of the release of the work zone back to the Authority.

5. At the completion of each night shift and weekend work, the Contractor must inspect work site and release it to RTA in an aesthetically pleasing manner as determined by the Engineer.

B. The Contractor must comply with the provisions of these General Requirements as representing an integral part of his legal obligation under this contract.

3.3 TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES

A. In order to protect GCRTA traffic (passengers, personnel and property) against harm and damage from falling material and debris during any demolition or construction overhead, the Contractor shall furnish and erect an electrically insulated rigid temporary structure under the spans that are directly over the GCRTA tracks.

B. The flooring and siding of the temporary structure shall have no cracks or openings through which material particles may fall. As a minimum, one layer of 3/4-inch plywood with lapped joints or an equivalent design shall be placed between the lower flanges of the structural steel beams above the track bed and the shoulders of the GCRTA tracks.

C. The temporary falsework shall be suitable for attachment of the live catenary wire system, and all signal, power and communication cables. The falsework shall be removed by Contractor when work is completed.

D. Details of the temporary falsework and protective structures including the proposed temporary under clearances to the GCRTA tracks, shall be prepared by a professional engineer for approval by the GCRTA Director of E&PD prior to starting any demolition or construction work.

E. This protective work shall be performed at the Contractor's cost.

F. Before starting the work of erecting the temporary falsework, the Contractor must have a special meeting with the Project Manager for the purpose of developing a plan for making arrangements to move, protect and reattach the fiber optic cable. Before any such work is started, the Control Center Supervisor will be notified at:

Control Center Supervisor, West	Office Phone	(216) 566-5114
Control Center Supervisor, East	Office Phone	(216) 566-5115

3.4 SPECIAL GCRTA REQUIREMENTS

A. Rules for work performed within ten (10) feet of the GCRTA overhead propulsion power cables:

1. Some of the work contemplated by this agreement may be performed within ten (10) feet of the overhead propulsion power cables (catenary lines) providing 600-volt D.C. power to the GCRTA Rapid Transit.

2. In order to provide continual public transit service to meet the needs of the riding public, the Authority desires to keep to a minimum any power outages that may adversely affect regularly scheduled public transit on the GCRTA Rapid Transit.

3. Overhead propulsion power cables (600-volts D.C.) shall always be considered energized. The Contractor must not assume the power is shut-off until actually confirmed by GCRTA on a daily basis that shutdown has actually been accomplished. **Despite power shut-off, the overhead propulsion cables are always to be considered hot.**

4. All work shall be performed in accordance with rules, regulations, procedures and safe practices of the GCRTA, OSHA and all other governmental agencies having jurisdiction over this project, including, but not limited to, applicable OSHA regulations pertaining to work performed within proximity of energized conductors. (29 CFR)

5. It is the responsibility of the Contractor to know and comply with all governmental regulations pertaining to work performed in proximity to electrical power cables providing 600-volts D.C. (29 CFR)

6. It is the Contractor's responsibility to provide qualified persons who meet all governmental standards, including, but not limited to, OSHA standards that enable them to perform the scope of work within proximity of overhead propulsion power cables providing 600 volts D.C.

7. The Contractor and/or individual employees of the Contractor shall be required to present evidence upon demand that they have been trained and are otherwise properly qualified to perform work required by this agreement in accordance with applicable OSHA regulations or any other governmental regulations or standards required by this agreement.

8. The Contractor shall provide GCRTA with a safety program plan that shall address, in part, the need to perform work within 10 feet of overhead power propulsion lines providing 600-volts D.C.

B. GCRTA aerial lines on GCRTA property may be relocated by GCRTA personnel if required. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with GCRTA in relocation of these lines. The cost of all wire relocation shall be paid for through a Force Account funded by the organization responsible for the project.

C. No equipment or material shall be suspended or erected above, within 16.0 feet vertically above top of rail or higher based on existing catenary heights, or within 7.5 feet horizontally from the center of the track over which trains are operating, unless otherwise approved by GCRTA's Director of E&PD in advance.

D. Track ballast must be protected from contamination during demolition and construction. Signal equipment must also be protected. The Contractor must furnish details at least

30 days well in advance of starting the work for approval on how they plan to protect both items.

E. No excavation, removal of existing pier foundations or constructing new foundations adjacent to GCRTA tracks is permitted without approval of GCRTA. Sheeting may be required to prevent undermining of tracks. If sheeting is required, it is the responsibility of the Contractor to provide and install such sheeting. Proposed sheeting shall be prepared by a Professional Engineer for approval by GCRTA Director of E&PD prior to starting any excavation or demolition work.

F. If proposed construction is in the vicinity of a rapid station, pedestrian traffic to the GCRTA station shall be maintained at all times by the Contractor. Structurally sound fencing, barricades, and/or shelters shall be provided to protect GCRTA users at the station entrances and platforms. The Contractor shall submit details of the protection system for GCRTA's Director of E&PD's approval before demolition is started.

G. No construction activity shall take place within GCRTA construction clearance limits while track is active except with flaggers and the proper Outage Permit. During complete shutdown, Contractor is cautioned to the possibility of track utilization by RTA work trains and other service equipment.

H. No at-grade crossing of GCRTA tracks is permitted by vehicles or equipment, without prior approval of the District Director-Rail or his designate.

I. The Contractor shall provide, install, erect and maintain suitable lighting and protections for safe and efficient progress and for any work that is to be performed after daylight hours.

J. Flaggers shall be provided by the Contractor, either through companies who supply certified flaggers (obtain list from GCRTA) or by training and certifying its own employees through GCRTA. For flagging procedures, flagger training, and set-up of work zones, see Section 015020 - Standard Rail Flagging Procedures.

K. Any violation of GCRTA construction restrictions by the Contractor may result in immediate shutdown of construction activities until the violation is corrected.

L. These procedures are applicable whenever any personal or equipment of any Contractor are on Authority rail property and/or more specifically, within a distance of 10 feet from the centerline of each track, including any and all work performed over tracks and work being performed on overhead (highway) structures.

Part 4 - Measurement and Payment

4.1 GENERAL

A. No separate measurement or payment will be made for work required under this section.

END OF SECTION 015010

SECTION 015020 - STANDARD RAIL FLAGGING PROCEDURES

Part 1 - General

1.1 INTRODUCTION

A. These procedures are applicable whenever any personnel or equipment of any contractor, subcontractor or consultant (hereinafter called Contractor) are on GCRTA Rail Right-of-Way. Special care is required when within an operating envelope around the tracks, the outer limit being a vertical plane located a distance of 10 feet from the centerline of each track, including any and all work performed over tracks including work being performed on overhead highway structures.

B. Contractors are responsible to know and comply with all GCRTA Right-of-Way Worker Protection Plan safety rules and procedures, including the following:

1. On-site personnel shall wear safety shoes, hardhats, safety glasses, and lime green reflective safety vests at all times.

2. Before crossing any tracks, STOP, LISTEN and LOOK for trains or vehicles approaching from either direction. Do not cross tracks unless you have time to walk normally, and do not take chances that would make a misstep serious. Do not step on the head of the rail. Never cross the track within switches, which can be operated at any time.

3. Do not walk on tracks except when absolutely necessary. When walking alongside the tracks, face the normal direction of traffic.

4. Consider all tracks as operating tracks and be on the alert for trains operating in either direction on any track at any time.

5. As a train approaches, move to a position of at least 10 feet from the centerline of the track and look towards the train. When standing beside the tracks in a confined space, be sure that you have allowed sufficient space for the train to pass safely without touching your body, clothing, or any other object you may have in your possession.

6. Do not step into the first 20 feet of the track area behind a stopped train. Always maintain a safe distance from the train, which could begin moving in either direction at any time.

7. The overhead wires of the 600-volt catenary system should always be considered as energized. Do not work closer to the wires than allowed under OSHA regulations and other applicable codes and standards.

C. Personnel deemed as unsuitable by GCRTA shall be removed immediately by the Contractor and will be barred from the GCRTA premises.

1.2 RESPONSIBILITY

A. Contractor is responsible for compliance with all elements of these procedures, including all training, drug testing, certification and re-certification.

B. Contractors are responsible for all employee wages associated with the training, certification, re-certification and use as Flaggers.

C. GCRTA will not be responsible for "no shows," late arrivals or delays to Contractor due to the failure to comply with the current GCRTA Right-of-Way Worker Protection Plan, or the certification and use of Flaggers.

D. A Work Zone and/or Single Tracking request may be denied or revoked for failure of the Contractor to comply with these requirements.

E. Failure of the Contractor to have qualified Flaggers will be grounds for the Authority to have the Contractor cease operations until such personnel are available. Claims for lost wages and productivity will not be honored.

F. The Contractor will provide a Work Zone Plan that depicts the location and layout of all protective equipment and flag personnel. The plan shall be based on Diagrams 1-11 in Work Zone Appendix.

Part 2 - Products

2.1 REQUIRED EQUIPMENT

A. The required equipment listed below shall be provided by the Contractor to the Flaggers at the beginning of each shift of work. The Contractor will remain responsible for ensuring that all work tools and equipment are available to each Flagger.

B. Clothing worn by the Flaggers shall be compatible with the weather conditions. Shorts, tennis shoes and other inappropriate clothing will not be allowed. Clothing shall not be loose fitting; safety boots with hard arch shank and toes are required for Flaggers and must be worn at all times. In accordance with OSHA 1910.136, safety shoes must comply with "ASTM F2413, American Society for Testing and Materials" and carry an Electrical Hazard (EH) Rating. Shoes that comply with these requirements will have "ASTM F2413" and "EH" printed on the label inside each shoe.

C. Whereas Flaggers are Contractor's employees, GCRTA retains certain jurisdiction over flag personnel. Flaggers must be trained and certified by GCRTA. No persons shall perform flag duties unless so qualified. The Contractor has all other jurisdiction, including wages, employment benefits, and day-to-day supervision.

D. Each Flagger must carry the following prescribed and Authority approved materials and equipment as listed below. The Contractor shall provide this material and equipment. The Contractor shall have spare expendable materials such as air canisters and flashlight batteries available at all times.

1. A GCRTA approved, lime green, reflective safety vest and safety shoes MUST BE WORN AT ALL TIMES WHILE ON DUTY.

2. Flags - One red and one yellow. Flag shall be a minimum of 17" square on a 24" wood handle.

3. Flashlight - For night, tunnel and underground operations. Flashlight shall be powered by a minimum of two "D" cells and be clearly visible from a minimum distance of 500 feet.

4. Whistle

5. Air horn with spare full canister. Note: Air horn can only be used when temperatures are above +20 degrees F. The horn shall be equal to Falcon Commander4 (Branchburg, NJ) with Falcon MRN 422 canister.

6. Signs - One orange "W" and one green "R" (Resume), both made with reflective material. Each sign shall be placed in a clearly visible position (to the train operator) and should be within eight feet of the centerline of the track the Flagger is protecting. Signs shall be a minimum of twelve inches wide and eleven inches high on ½" plywood or aluminum highway sign stock. "W" letter shall be a minimum of six inches in height. Letter "R" shall be a minimum of six inches high. If highway cones are used for mounting, they shall be safety orange, twenty-four inches in height, with a heavy base plate with a minimum size of fourteen inches square. In windy conditions, a more secure mounting may be required. See Diagrams 10 and 11 in Work Zone Appendix.)

7. Note pad and pen

8. Hardhat to be worn at all times. Hardhat should be E or G rated.

9. ANSI Z-87 Safety Glasses shall be worn at all times.

10. GCRTA supplied radios issued to the Contractor shall be carried by Flaggers. The radios shall be used for the passing of information to the flagmen regarding the operations of trains, as well as emergency situations.

11. Portable Trip Arms and Trip Stops as shown and required in the Work Zone Diagrams. Trip arm fabrication plans provided upon request to the Engineer.

    a. Portable Trip Arm – the trip arm can be raised and lowered.

    b. Portable Trip Stop – the trip arm can not be raised and lowered.

E. Prior to the start of flagging operations, the Contractor must inspect and replace all defective, lost or stolen equipment. A daily check of all flagging materials and devices must be performed by the Contractor. A checklist shall be maintained and signed by the Contractor for inspection by GCRTA or its designated Representatives of the devices and a test of each to ensure they are working.

F. In addition to the equipment listed above, the GCRTA Rail District personnel will furnish and install Protracker Devices for the Contractors unless the devices are resident at the project site, in which case the Contractor shall install. These devices are designed to warn workers of approaching rail traffic. The Protracker devices are to be considered as a secondary warning device to flag personnel. The Protracker device locations are as shown on the Work Zone plans.

Part 3 - Execution

3.1 WORK ZONES

A. A Work Zone is a section of track protected by the use of warning signs and one or more Flaggers through which trains operate. See Diagram 1 through 9 in the Work Zone Appendix of 015020). It provides protection for work crews, passengers, trains, equipment, tools and property. Any work performed by a Contractor on or within 10 feet of GCRTA tracks must utilize a Work Zone and accompanying Flagger(s). If right-of-way occupancy will be outside of the 10-foot envelope of each track, but encroachment of equipment, materials or workers is possible, then one or more Flag Person will still be required.

B. GCRTA may, at its own discretion, require additional Flaggers if specific situations warrant the additional Flaggers (such as poor visibility, extremely loud equipment, around curves, etc.) The cost of additional Flaggers will be borne by the Contractor.

C. Contractors must follow contractual and the current GCRTA Right-of-Way Worker Protection Plan provisions for requesting a Work Zone on/or adjacent to the tracks. They must report their location and Work Zone limits to the Control Center Supervisor (CCS) for permission to set up the Work Zone.

D. Only the Control Center Supervisor may authorize the Contractor to set up a Work Zone.

3.2 PREPARING FOR THE WORK ZONE

A. The Contractor shall contact the West (Red Line: Airport to E. 29th interlocking and Waterfront Line) or East (Red Line: E. 29th to Windermere and the Shaker Lines) Control Center Supervisor (CCS) by radio daily before the start of work to inform the Control Center Supervisor of the work location, the nature of the work to be done and any other pertinent information. The Control Center can be reached at the following numbers: Control Center Supervisor West 216-566-5114, and Control Center Supervisor East 216-566-5115. In the event the Control Center Supervisor cannot be contacted, the Central Communications may be called at 216-566-5135. For Work Zones within the Central Rail Storage Facility at E. 55th Street contact Yard Control at 216-566-5250.

B. The Contractor must have an approved Rail Right-of-Way Occupancy Permit before the Work Zone is set up. The Control Center Supervisor (CCS) will announce the specific type of Work Zone on the radio with the start and end points to all Operators before the Work Zone is set up. The Contractor is responsible for ensuring that the Work Zone is set up properly.

   1. The Crew Leader will notify the control Center Supervisor by radio after the Work Zone setup is complete and that the work is commencing under a specific type of Work Zone. The Control Center Supervisor will acknowledge that the specific type of Work Zone has been set up.

C. The Contractor will be responsible for obtaining, removing and maintaining all the required signs for the Work Zone. Each Contractor will be responsible for providing transport of their Flaggers to each work site.

D. The Contractor shall designate a person who shall be in charge of its flagging operation (herein after referred to as the Flagging Supervisor). A Flagging Supervisor can only flag in the case of an emergency or to relieve a Flagger for a short period of time.

E. The Flagging Supervisor shall ensure the proper placement of the signs and Flagger(s) as required and as shown on Work Zone diagrams.

F. The Flagging Supervisor must send a Flagger sufficient distance ahead against traffic to act as a lookout while the Work Zone is being set up.

G. The Contractor is responsible for having Flaggers at the project site and will specify when meal and other breaks are to be taken. Flaggers are NOT PERMITTED UNDER ANY CIRCUMSTANCES to leave their assignment without a replacement. Leaving a Work Zone without flag protection may result in serious injury and in project shutdown.

H. If a Flagger leaves the Work Zone without a replacement, the workers must immediately leave the right-of-way, close the Work Zone, and advise the CCS immediately by telephone or radio.

I. The Contractor is responsible to ensure that the Flagger has all required equipment in serviceable condition and that the Flagger and all other work crew members are wearing approved hardhats, safety glasses, safety shoes, lime green safety vests, and other required personal protective equipment. Failure to comply will be cause for project shutdown.

J. The Flagging Supervisor will adjust the Work Zone dimensions or number of Flaggers whenever necessary to ensure adequate visibility of the Flagger to both the train operators and work crew. In certain locations, clear visibility from the orange warning, "W", sign to the work area may not be available due to curves or obstructions. In these cases, additional Flaggers are required. The Contractor will position the Flagger at locations so that the first Flagger has clear sight of the orange warning sign, and the second Flagger is between the first Flagger and the work crew and has clear sight of both the first Flagger and the work crew. The second Flagger's duty will then be to relay

(repeat) signals given by the first Flagger to and from the work crew. In all cases, a minimum 330-foot distance from the first Flagger to the Work Zone will be maintained.

K. When visibility is less than 1,000 feet (due to fog or other conditions), the Contractor shall close the Work Zone, vacate the right-of-way, and report clear to the CCS in accordance with the requirements in the GCRTA Rail Operating Rule Book.

L. When setting up the Work Zone, position the Flagging Supervisor at the work site. The Flagger will then test the whistle and air horn. If the work crew cannot easily hear the whistle, the air horn shall be used along with the whistle. Test of whistle and air horn must be documented on Checklist, per section 2.1E.

M. After the Contractor has set up the approved Work Zone, the Flagger should stand, if possible, approximately 3 to 4 feet to the side of the outer rail of the track, continually watching for oncoming trains.

N. The use of personal radios, cell phones and/or headphones, or similar devices, is prohibited while performing flagging duties.

O. Signals are to be given by the use of flags when outside during daylight hours. Always give signals at right angle to the track while facing the oncoming train and standing between three and four feet from the outer rail. Flags of prescribed color must be used. The flag signals are:

   1. Stop – move the red flag back and forth in a horizontal motion at waist level.

   2. Proceed – swing the yellow flag up and down in a vertical motion, with the flag away from the Flagger's body.

P. A flashlight is used in place of the flags during hours of darkness, when the Flagger's location is in a tunnel or other similar dark area, and when daylight signals cannot be plainly seen. The procedures are the same as flag signals, with the exception being that the movement of the light indicates the signal given.

Q. In the case of single tracking, a Flagger must be positioned at each end of the Work Zone facing the direction of oncoming traffic. Work Zone shall be signed for both directions.

R. Any time the Work Zone is to be vacated for more than 20 minutes, the Work Zone is to be removed (see Part 3.3-A1, B2 and C2).

3.3 HOW THE DIFFERENT WORK ZONES FUNCTION

A. SINGLE TRACK WORK ZONE – SEE DIAGRAM 1 IN WORK ZONE APPENDIX

SINGLE TRACK WORK ZONE IN A CURVE – SEE DIAGRAM 2

SINGLE TRACK WORK ZONE – NON-CAB SIGNAL TERRITORY – SEE DIAGRAM 8

Definition: A Single Track Work Zone is required when the track cannot be cleared of personnel, material, and equipment within 30 seconds of approaching rail traffic.

1. Crew Leader calls Control Center Supervisor by radio requesting a Single Track Work Zone, giving the Control Center Supervisor starting and ending points using crossover locations.

2. After Control Center Supervisor grants permission and makes the announcement of the Single Track Work Zone from Points A to B on the radio, the Crew Leader will send a flag person 1,000 feet in each direction to act as lookouts while the Single Track Work Zone is being set up. In Non-Cab Signal Territory the Control Center Supervisor will notify switch Tenders and issue instructions on setting of the crossover turnouts.

3. GCRTA Rail District personnel shall provide and install the Protracker as shown unless the Protracker is resident on the project, in which case the Contractor shall install. The Contractor must keep the Protracker in a position to warn the workers. .

   a. The Crew Leader will notify the control Center Supervisor by radio after the Single Track Work Zone setup is complete and that the work is commencing under a Single Track Work Zone. The Control Center Supervisor will acknowledge that the Single Track Work Zone has been set up.

4. On the track used by trains, set up the **X** Restricted Speed Zone signs 330 feet in advance of the Work Zone in both directions. Refer to Diagrams.

5. Set up orange W-signs 1000 feet if normal speed is < 45 mph or if normal speed is 46-60 mph distance is 1350 feet in advance of Work Zone on the track used by trains. Refer to Diagrams.

6. Install portable trip stops adjacent to the W-signs on the track not used by trains (track out of service). Refer to Diagrams.

7. Install derailer 350 feet in both directions in advance of the Work Zone on the track that is to be worked on. Refer to Diagrams.

8. Set up green R-signs and trip arms 330 feet beyond the exiting ends of the Work Zone on the track used by trains. Refer to Diagrams.

9. Station a flag person at each restricted speed sign 330 feet from Work Zone, in a position of safety and visibility, adjacent to the track to control all approaching train movements on any track.

10. Crew Leader will notify Control Center Supervisor after the Work Zone setup is completed.

   a. Curvature or grade restricts visibility; additional flag person(s) are required. See diagrams in Work Zone Appendix).

11. When a train is approaching the Work Zone, the flag person shall display the red flag and sound horn to notify the work crew of approaching train.

    a. If the operator does not show any signs of recognizing the signal, the flag person will alert the work crew immediately using a continuous blast of the whistle, air horn or any other method.

12. After train has come to a complete stop and work crew has cleared right-of-way, the flag person will lower the trip arm and then display yellow flag, allowing train to proceed through Work Zone at Restricted Speed.

13. When the train has passed the R-sign, the flag person will reset the trip arm and the operator may return to normal operation.

A1. Removal of a Single Track Work Zone

1. The Crew Leader ensures that all equipment, tools and materials are removed from the work area.

2. Workers shall clear the work area.

3. The trip stops and trip arms are to be removed by the Contractor.

4. The Protracker devices are to be removed by the GCRTA Rail District personnel unless the Protracker is resident on the project, in which case the Contractor shall remove. The removal of the Protrackers will be verified by the Contractor in either case prior to the removal of the Work Zone.

5. Trackside signs, trip arms, and trip stops will be removed by a worker with a flag person providing protection and notification of approaching trains.

6. Once all workers, devices, equipment, signs and flag personnel are clear of the track to a safe location, the Crew Leader will contact the Control Center Supervisor by radio to inform him that the Single Track Work Zone has been removed and the track is clear.

   a. In Non-Cab Signal Territory the Control Center Supervisor will contact switch tenders and arrange for work equipment to clear the work zone.

7. The Control Center Supervisor will acknowledge the Crew Leader and make a radio announcement that the Single Track Work Zone is removed and the track is clear.

B. ONE-TRACK WORK ZONE – SEE DIAGRAM 3 IN WORK ZONE APPENDIX

Definition: Work can be done on one track only, which includes 10 feet from the centerline of the track on the field side of the track. Workers and equipment may not be in the devil strip (area between tracks) or on the adjacent track or Right-of-Way. The Work Zone must be cleared within 30 seconds of approaching rail traffic.

B1. Set Up of a One-Track Work Zone

1. Crew Leader calls Control Center Supervisor requesting a One-Track Work Zone, giving the Control Center Supervisor starting and ending points by catenary or crossover points A and B.

2. After permission is given by the Control Center Supervisor, and after the announcement has been made by the CCS that a One Track Work Zone is in affect from Point A to Point B on the radio, Crew Leader will send a flag person in each direction, 1,000 feet each, to act as lookouts while the Work Zone is being set up.

3. GCRTA Rail District personnel shall provide and install the Protracker as shown unless the Protracker is resident on the project, in which case the Contractor shall install. The Contractor must keep the Protracker in a position to warn the workers.

   a. The Crew Leader will notify the control Center Supervisor by radio after the One Track Work Zone setup is complete and that the work is commencing under a One Track Work Zone. The Control Center Supervisor will acknowledge that the One Track Work Zone has been set up.

4. Set up the **X** Restricted Speed Zone signs 330 feet in advance of the Work Zone in both directions. See Diagram 3.

5. Set up orange W-signs 1,000 feet if normal speed is < 45 mph or if normal speed is 46-60 mph distance is 1,350 feet in advance of the Work Zone in both directions.

6. Set up green R-signs 330 feet past the Work Zone in both directions.

7. Station a flag person and trip arm at the restricted speed sign on the track to be worked on.

8. After the Work Zone setup is completed, notify Control Center Supervisor that work will commence.

9. When a train is on approach, flag person shall display the red flag and sound horn to notify the work crew of an approaching train.

10. The crew is to clear the right-of-way.

   a. If the operator does not show any signs of recognizing the signal, the flag person will alert the work crew immediately using a continuous blast of the whistle, the air horn or any other method.

11. After train has come to a complete stop and work crew has cleared right-of-way, the flag person will lower the trip arm and display yellow flag, allowing train to proceed through Work Zone at Restricted Speed.

12. When the train has passed the R-sign, the flag person will reset the trip arm and the operator may return to normal operation.

B2. Removal of a One-Track Work Zone

1. The Crew Leader ensures that all equipment, tools and materials are removed from the work area.

2. Workers shall clear the work area.

3. The Protracker devices are to be removed by the GCRTA Rail District personnel unless the Protracker is resident on the project in which case the Contractor shall remove. The removal of the Protrackers will be verified by the Contractor in either case prior to the removal of the Work Zone.

4. Trackside signs and trip arms will be removed by a worker with a flag person providing protection and notification of approaching trains.

5. Once all workers, devices, equipment, signs, and flag personnel are clear of the track to a safe location, the Crew Leader will contact the Control Center Supervisor to inform him that the One-Track Work Zone has been removed and the track is clear.

6. The Control Center Supervisor will acknowledge the Crew Leader and make a radio announcement that the One-Track Work Zone has been removed and the track is clear.

C. TWO-TRACK WORK ZONE – SEE DIAGRAM 4

Definition: Work can be performed within 10 feet of the centerline of both tracks and includes the devil strip (area between the tracks).

C1. Set Up of a Two Track Work Zone

1. Crew Leader calls Control Center Supervisor by radio requesting a Two-Track Work Zone, giving the Control Center Supervisor starting and ending points using catenary numbers.

2. After Control Center Supervisor grants permission and makes the announcement of the Two Track Work Zone on the radio, the Crew Leader will send a flag person 1,000 feet in each direction to act as lookouts while the Work Zone is being set up.

3. GCRTA Rail District personnel shall provide and install the Protracker as shown unless the Protracker is resident on the project, in which case the Contractor shall install. The Contractor must keep the Protracker in a position to warn the workers.

   a. The Crew Leader will notify the control Center Supervisor by radio after the Two Track Work Zone setup is complete and that the work is commencing under a Two Track Work Zone. The Control Center Supervisor will acknowledge that the Two Track Work Zone has been set up.

4. Set up the **X** Restricted Speed Zone signs 330 feet in advance of the Work Zone in both directions. Refer to Diagram 4.

5. Set up orange W-signs 1,000 feet if speed is < 45 mph or if normal speed is 46-60 mph distance is 1,350 feet in advance of the Work Zone in both directions. Refer to Diagram 4.

6. Set up green R-signs 330 feet past the Work Zone in both directions. Refer to Diagram 4.

7. Station a flag person and trip arm at each restricted speed sign, in a position of safety and visibility, adjacent to the track to signal all approaching train movements on any track.

8. Crew Leader will notify Control Center Supervisor after the Work Zone setup is completed.

   a. When curvature or grade restricts visibility, additional flag person(s) are required. Refer to Diagram 2.

9. When the train is on approach, flag person shall display the red flag and sound horn to notify the work crew of approaching train.

10. The crew is to clear the right-of-way.

    a. If the operator does not show any signs of recognizing the signal, the flag person will alert the work crew immediately using a continuous blast of the whistle, air horn or any other method.

11. After the train has come to a complete stop and work crew has cleared right-of-way, flag person will lower the trip arm and display yellow flag, allowing train to proceed through Work Zone at Restricted Speed.

12. When the train has passed the R-sign, the flag person will reset the trip arm and the operator may return to normal operation.

C2. Removal of a Two-Track Work Zone

1. The Crew Leader ensures that all equipment, tools and materials are removed from the work area.

2. Workers shall clear the work area.

3. The Protracker devices are to be removed by the GCRTA Rail District personnel unless the Protracker is resident on the project, in which case the Contractor shall remove. The removal of the Protrackers will be verified by the Contractor in either case prior to the removal of the Work Zone.

4. Trackside signs and trip arms will be removed by a worker with a flag person providing protection and notification of approaching trains.

5. Once all workers, devices, equipment, signs and flag personnel are clear of the track to a safe location, the Crew Leader will contact the Control Center Supervisor by radio to inform him that the Two-Track Work Zone has been removed and the tracks are clear.

6. The Control Center Supervisor will acknowledge the Crew Leader and make a radio announcement that the Two-Track Work Zone is removed and the tracks are clear.

D. TOTAL SHUTDOWN WORK ZONE – SEE DIAGRAM 5 IN WORK ZONE APPENDIX

Definition: A Total Shutdown closes the rail line between two points. This includes both track and overhead power. All rail traffic is excluded between these two points.

D1. Setting up a Total Shutdown Work Zone

1. The Crew Leader contacts the CCS via radio and requests permission to Occupy the Track from point A to point B.

2. Location of personnel and equipment between point A and B is given to the CCS.

3. The CCS gives permission to the PIC to occupy the track and the CCS notifies the Operators that the Total Shutdown Work Zone is in affect from Point A to Point B.

4. The Crew Leader acknowledges that the track has been released from the CCS and given to the Crew Leader and will notify the CCS when trip stops and derailers will be installed.

5. The Line Department executes the power outage procedures. Ground straps are applied. This ends with the Power Outage Form signed and acknowledging that power has been turned off.

6. The Crew Leader informs the CCS that the trip stops, Work Zone stop sign and ground strap have been installed. Trip stop is placed 1,000 feet if normal speed is < 45 mph or 1,350 feet if speed is 46-60 mph in advance of the derailers on both tracks on both ends of the work location.

7. Rail traffic moving into the total shutdown Work Zone limits need to request permission of the Crew Leader and granted by the Crew Leader, not the CCS. Trip stops and derails will then be removed by the Contractor. Personnel and equipment will be cleared for the safe passage through the work limits.

8. In certain locations, switches are clamped by the GCRTA Signal Department (SD) so that movements cannot be sent into the total shutdown work zone area. The CCS informed by the SD that the clamps are in place.

D2. Removal of a Total Shutdown Work Zone

1. The Crew Leader will verify that the track is in a condition to be returned to revenue service.

2. The Crew Leader will verify that personnel and equipment have been removed from the track.

3. The Crew Leader will verify that the trip stops and derailers have been removed from the track.

4. The Crew Leader will contact the CCS and inform them that the track is being returned to the CCS from point A to point B, and that all personnel, equipment, and material are clear of the track. All trip stops and derailers have been removed from the track. Track is returned to the CCS.

5. Service Quality Rail Supervisor, along with the Crew Leader and Contractor, will inspect the Total Shutdown Work Zone to verify that the stop signs, derailers, trip stops and ground straps have been removed from the track for the resumption of rail service.

6. The power outage form is signed acknowledging that the personnel, equipment, and material are removed from the track.

7. Line Department begins the re-energization of the overhead power. Ground straps are removed. Locks are removed from devices.

8. Central Communications transmits via radio that the overhead power is being restored in the total shutdown work zone area. Power is restored.

10. If installed, clamps are removed from the switches by the RTA Signal Department to allow movement on the track. CCS informed by the RTA Signal Department that the clamps have been removed from the switches.

3.4 WORKERS NOT GOVERNED BY WORK ZONES

A. MOVING INSPECTION ZONE – SEE DIAGRAM 6 IN WORK ZONE APPENDIX

Definition: A Moving Inspection Zone is to be used for inspection of the right-of-way, with no work being performed.

1. Under special conditions, when a Work Zone is not required as approved by the Engineer in advance, and an inspection is to be performed on or within 10 feet of the track, the following procedures will apply: Work Zone Signs are not required. See Diagram 6.

   a. The Flagging Supervisor will be responsible for the group following these procedures and requirements.

      1) One flagman is required with one up to two Inspectors.

      2) Two flagmen are required when there are three or more Inspectors.

   b. All Inspectors and Flagmen must wear an approved safety vest, hardhat, safety glasses, safety shoes, and other required personal protective equipment (PPE).

   c. The inspection should always move towards approaching traffic.

   d. The Inspection Group will notify by radio the East or West Control Center Supervisor (CCS) of the location and limits, the work being performed, and any other pertinent information regarding work activities. The Inspection Group must have the approval of the Control Center Supervisor and will wait until a Moving Inspection Zone has been announced before the inspection can begin. Extra caution is required when depending solely on a Moving Inspection Zone without having Work Zone signs in place.

   e. Facing approaching trains; a Flagger will be positioned 330 feet ahead of the Inspection Group. This Flagger must have all required equipment in serviceable condition. Because there are no Work Zone signs, trip arms, trip stops, and Protrackers, the use of the air horn/whistle is extremely important.

   f. As work may progress along the track, the Flagger must remain 330 feet ahead of the Inspection Group at all times.

   g. As the train approaches, follow the procedures listed in section 3.3 A, B, & C.

   h. Trains will slow to 15 mph on both tracks while moving through the Moving Inspection Zone.

   i. When the inspection is completed, the Inspection Group will notify the Control Center Supervisor by radio that the track is clear through the limits of the Moving Work Zone and the Moving Work Zone can be cancelled.

j. The Control Center Supervisor will acknowledge this and make an announcement to all trains that the Moving Inspection Zone is cancelled.

3.5 PIGGYBACK (SECODARY) WORK ZONE – SEE DIAGRAM 7 IN WORK ZONE APPENDIX

Definition: A Piggyback Work Zone is a group of Work Zones within a Work Zone Limit that has been established by the Primary Work Zone.

Piggyback work zones shall only be permitted under a Total Shutdown Work Zone or Single Track Work Zone.

A. The Primary Work Zone Person In Charge (PIC) will contact the ICC and request permission to set up the Work Zone. See Diagram 7.

B. Additional Work Zones may be established within the Primary Work Zone Limits with the permission of the Primary Work Zone PIC.

1. Each Work Zone that is within the Primary Work Zone Limit is responsible to set up and provide the appropriate signs and equipment for their Work Zone per sections as per sections 3.3A, B, and C.

2. Communication and coordination must be established and maintained between all Work Zones within the Piggyback Work Zone Limits.

3. Work time within the Piggyback Work Zone is limited to the time granted to the Primary Work Zone.

C. Removal of the Piggyback Work Zones

1. All Work Zones within the Work Zone Limit must report to the PIC that they have removed their Work Zone and that all work has been completed and that they are clear of the Right-of-Way.

2. All Work Zones must be clear of the Right-of-Way when and if the Primary Work Zone has completed their work and has cleared the Right-of-Way.

3.6 RTA LINE CAR/HIGH-RAIL WORK ZONE – SEE DIAGRAM 9 IN WORK ZONE APPENDIX

Definition: The RTA Line Car/High-Rail Work Zone is required when the subject vehicles are necessary and work personnel remain on the vehicle.

A. Crew Leader calls Control Center Supervisor requesting Line Car/High-Rail Work Zone, giving the Control Center Supervisor starting and ending points using crossover or catenary pole locations.

1. After Control Center Supervisor gives authorization and broadcasts the Line Car/High-Rail Work Zone from Points A to B on the radio, the Crew Leader will have a stop sign set-up 330 feet before the start of the work Zone.

a. The Crew Leader will notify the Control Center Supervisor after the STOP sign is placed. The Control Center Supervisor will acknowledge that the Line Car/High-Rail Work Zone has been set up.

b. Trains will slow to restricted speed while passing the Line Car/High-Rail Work Zone.

c. When the work is completed the Crew Leader again calls the Control Center Supervisor and then STOP sign is retrieved.

d. When Control Center Supervisor acknowledges the Line Car/High-Rail follows Control Center instructions for clearing the line.

3.7 SPECIAL PROCEDURES

A. Any orders, instructions or procedures that are found to be confusing, contradictory, unsafe, or difficult to follow must be brought to the attention of the Flagging Supervisor. Any object waved violently by anyone on or near the tracks must be treated as a signal to stop.

B. In any instance where a train operator does not comply with the provisions governing Work Zones, Slow Orders, and especially flag or flashlight signals, the Flagger should note that train's car number, block number, direction, time and location. This information must be recorded and reported immediately to the Engineer and the CCS.

C. During all signaling procedures, whether stationary or moving, always avoid working or traveling in the median area between the eastbound and westbound tracks. This area, commonly known as the "devil strip," is extremely dangerous. Under certain circumstances, i.e., two trains passing, there is no way to escape and, in many cases, insufficient space for a person to occupy. If work or travel in the devil strip is required; an individual should be extremely alert to approaching trains and/or work equipment on any track in any direction, as in many cases there is insufficient space between two trains for a person to occupy. The sound and/or distraction of one train can easily drown out the sound of or distract attention from the other approaching train.

D. Walking or standing between or directly on the rails is to be avoided at all times.

E. Special precaution is to be taken where GCRTA right-of-way is bound by other railroads' tracks adjacent to the GCRTA right-of-way.

3.8 FLAGGER TRAINING AND CERTIFICATION

A. Each Contractor is required to hire its own employees and/or temporaries to perform the duties of Flaggers. These employees shall be given a training session on flagging techniques and procedures by the GCRTA. These training sessions shall be supplemented with actual in-field training. The training sessions will be 8 hours total per person. The Contractor shall follow the procedures explained in the attached "Program A" for Certification and "Program B" for Recertification.

B. Each employee is to bring his own equipment to the training sessions. All alcohol and drug testing results must be completed and accepted by GCRTA prior to the first class.

C. Training classes are conducted periodically by the GCRTA, as needed, to maintain the availability of sufficient flagging personnel. Contractors should contact the GCRTA regarding the availability of classes.

D. Additionally, all Contractors should have their superintendents, foremen, and other supervisory field personnel trained in flagging procedures and the current GCRTA Right-of-Way Worker Protection Plan prior to the beginning of construction, and Supervision certified on the Flagging Procedures.

E. Only trained personnel of the Contractor will be certified for the prescribed time period and issued a GCRTA Flagger certification card. Flagging Supervisors will have their cards annotated by the GCRTA to show they are "Supervisors".

F. Certification cards, valid annually, will be issued by the Training Department to each Flagger who successfully completes GCRTA Flagging Training. The certification card will also serve as verification of identity and contain the following: Name, ID number, date of expiration, and signature of training supervisor.

G. All Flaggers are required, when flagging, to carry the GCRTA Flagger certification card and a driver's license or state issued identification card.

H. The GCRTA will retain a certified flagging personnel list. Flaggers must be recertified annually before their certification expires.

3.9 DRUG AND ALCOHOL TESTING

A. All flagging personnel must submit to and pass a drug screen performed by a laboratory that is certified by Heath and Human Services (HHS) under the National Laboratory Certification Program prior to an offer of employment for this service.

B. The Contractor must certify at least one week before the start of training that the Flaggers are drug-free and fit for work. All costs associated with the testing will be the Contractor's responsibility.

C. The Contractor shall use appropriate selection criteria and candidate screening per 49 CFR Part 40 specifically §40.25 before employing person to performing flagging services.

D. The Contractor will ensure that all Flaggers meet all U.S. Department of Transportation and Federal Transit Administration regulations including criminal record check and satisfactory completion of a periodic drug/alcohol screen.

E. In addition to pre-employment drug screening, such tests shall be conducted for Flaggers as defined in 49 CFR Part 655 under the following circumstances:

1. Through the random selection testing process.

2. As soon as practical following involvement in any accident as defined by §655.44 where his/her actions, in-actions or activities may have contributed to the accident or cannot be discounted as contributing to the accident.

3. At any time when there is reasonable suspicion of an employee drug/alcohol use as follows:

   a. When a supervisor or company official has reasonable suspicion based on personal, observable and articulable, abnormal behavior by an employee, including appearance, behavior, speech, or breath odor, which objectively indicates drug or alcohol impairment.

   b. Direct observation of an employee for drug use or possession by any supervisor.

F. If the Contractor has a "second chance" policy, testing must also be performed prior to return to work after rehabilitation and also follow up testing as described by the Substance Abuse Professional.

G. If there is evidence that an on-duty Flagger is under the influence of drugs and/or alcohol, the Flagger will be removed immediately from service and the Engineer and/or GCRTA Transit Police summoned.

H. The Contractor shall provide GCRTA with a copy of their written Substance Abuse Policy which complies with the Department of Transportation Regulation 49 CFR Part 40 *"Procedures for Transportation Workplace Drug and Alcohol Testing Programs"* and 49 CFR Part 655 *"Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations"*.

I. The Contractor shall provide GCRTA's Occupational Health Department with a monthly report of the number of tests conducted in each of the above categories and the results. All testing shall be conducted pursuant to applicable Federal and State requirements, including but not limited to those set forth in 49 CFR Part 40.

J. The Contractor shall complete the annual Management Information System (MIS) report per Federal Transit Administration (FTA) Regulation 49 CFR Part 655 and provide the report to GCRTA's Occupational Health Department prior to March 10th of each year of the contract.

K. The Contractor will provide GCRTA's Occupational Health Department with verification of employee and supervisor training in Substance Abuse and policy distribution in accordance to 49 CFR 655, as well as identifying a drug and alcohol program manager.

L. The Contractor will be subject to record audits for compliance with the Substance Abuse regulations. Drug and alcohol test results will be maintained in a confidential, separate file and retained according to the recordkeeping guidelines as outlined in §655.71. Failure to comply with DOT and/or FTA Substance Abuse regulations could result in the delay of payment for services or the termination of the contract.

Part 4 - Measurement and Payment

4.1 GENERAL

A. No separate measurement or payment will be made for work required under this section.

END OF SECTION 015020

FLAGGER TRAINING AND CERTIFICATION

PROGRAM A - INITIAL CERTIFICATION

A. New Flaggers:

1. The Contractor will be associated with a collection site that can perform DOT drug collections. All drug specimens will be sent to a laboratory that is certified under the Department of Health and Human Services (HHS) by the Substance Abuse and Mental Health Services Administration (SAMHSA). The contractor will retain the services of a Medical Review Officer who will review all drug test results.

2. At the Contractor's expense, all new Flaggers will be sent for DOT pre-employment drug testing. The Contractor will receive all test results and will maintain records per DOT Regulation 49 CFR Part 40. All new Flaggers must have negative drug test results to be eligible for Flagger training.

3. A "GCRTA Drug and Alcohol Eligibility List Form" will be faxed to GCRTA's Occupational Health Department at (216) 771-4490 listing the following information: (See page 015020-A5 for copy of form)

   a. The full name of the candidate

   b. An identification number (either Social Security number or Driver's License number)

   c. Date of the drug test

   d. Results of the test

   e. The Project number, Project name and name of GCRTA's Project Manager

   f. The name of the company representative responsible for the Drug & Alcohol Program

   g. The signature of the company representative and date of GCRTA notification

   h. On the form check the appropriate initial certification or recertification box.

4. GCRTA's Occupational Health Department will communicate with the GCRTA Project Manager to provide the necessary information and to proceed with the request to schedule flag training.

5. Contractor shall also fax a notarized "Request for Flag Training and/or Rulebook C Training Form" to the GCRTA Project Manager or Director of Project Development & Engineering, Fax No. (216) 771-4424, requesting training for the Flaggers. The form must contain the following information: (See page 015020-A4 for copy of form)

a. Contractor must fill out all contact information at the top of the form.

b. List the names of eligible candidates. Any Contractor who issues a false list of candidates may be deemed non-responsive for future GCRTA Projects.

c. Contractor must specify training class desired. Note: New Flaggers require Certification Training (classroom and in the field) and then must be recertified (classroom only) every 12 months.

d. Form must be notarized in section provided at bottom and faxed to Engineering and Project Development department to start the process.

e. Original notarized form must be mailed to address provided at the bottom of the form.

6. The GCRTA Project Manager or Director of Project Development & Engineering will contact the Training Department to request a training date. The Contractor will be advised of the scheduled date and location of training via e-mail.

7. A maximum of three (3) Flaggers per trainer can be certified in the field at any one GCRTA Flagger training session.

8. The training will last 8 hours and includes both classroom and in the field on-the-job training.

9. The trainees must show up for the training session at the proper time. Tardiness will not be permitted. Tardy students will be released at the discretion of the Training Supervisor.

10. Trainees must come to class with appropriate equipment for both classroom and field training. These include: Work safety shoes, air horn, whistle, red and yellow flags, flashlights or lantern, lime green reflective vest, hardhat and appropriate clothing for weather.

11. After the classroom and field training, the successful candidates shall be certified by the GCRTA Training Supervisor and issued an ID card.

12. The Training Supervisor will also issue a letter to the Contractor with a copy to the GCRTA Project Manager and the Director of Project Development & Engineering indicating the names of certified Flaggers and the expiration date of the certification.

13. The Flagger must carry the ID card together with an Ohio ID or driver's license whenever he/she is on GCRTA property performing his/her flagging duties.

14. GCRTA certification is valid for a period of 12 months. After this period, the Flagger must be recertified.

15. The GCRTA certification does not warrant a free bus or train ride to the Flagger.

16. There will be periodic/random checks on the performance and physical conditions of the Flaggers by GCRTA staff and/or their agents.

17. Any Flaggers who are found to violate the flagging rules outlined in the Flagging Procedures will be removed from the project, and/or their agent(s).

18. A Flagger discharged for violation of the rules (maximum of two violations) will be barred from GCRTA projects and denied future certifications. All such violations must be reported to the Director of Project Development & Engineering in writing.

REQUEST FOR FLAG TRAINING AND/OR RULEBOOK C TRAINING FORM

FAX TO: Cynthia Darko, GCRTA Engineering and Project Development Dept.
GCRTA Fax No: (216) 771-4424 (cdarko@gcrta.org)

_____, _____, _____
(Company Name) (Contact Person) (E-Mail Address & Telephone #)

_____, _____, _____
(RTA Project Name) (RTA Project No.) (RTA Project Manager)

The contracting company (as indicated above) requests that a training session be scheduled for our flag personnel, supervisory personnel and/or operators who have negative urine, drug and alcohol results and are 18 years of age or older. **Note: New Flaggers require Certification Training (classroom and in the field) and then must be recertifed (classroom only) every 12 months.**

		Specify Training Class(s) Desired		
		Flag Training		
	Eligible Candidates	Certification	Recertif.	Rule Book C
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____

_____ _____
Company President Date

(Notary Stamp)

_____ _____
Notary Date

PLEASE SEND ORIGINAL NOTARIZED FORM VIA U.S. MAIL TO:
GCRTA, ENGINEERING &PROJECT DEVELOPMENT DEPT. – ATTN: C. Darko
1240 W. 6th Street, Cleveland, Ohio 44113-1331

GCRTA DRUG AND ALCOHOL ELIGIBILITY LIST FORM

GCRTA Project Title:_____ GCRTA Project No.: _____ GCRTA Project Manager: _____

Contracting Company: _____ Company Contact Name:_____

Phone #: _____ E-Mail Address:_____ Proj Start Date: _____ Completion Date:_____

Flagger Name	ID number	Date of testing	Pre-employment	Random	Post Accident	Reasonable Suspicion	Test Results	Certi-fication	Recerti-fication

FAX FORM TO GCRTA OCCUPATIONAL HEALTH @ (216) 771-4490

Submitted by: _____ Title: _____ Date: _____

FLAGGER TRAINING RECERTIFICATION

PROGRAM B - RECERTIFICATION

A. Recertification:

1. A Flagger must be re-certified every twelve months.

B. Procedure for Recertification:

1. As prerequisites for recertification, follow steps in Program A-2 (with modifications as noted below), A-3 and A-5 as listed in Program A. Check the recertification box on the GCRTA Drug and Alcohol Eligibility List Form. A two (2) hour classroom training for recertification is offered by the GCRTA Training Department.

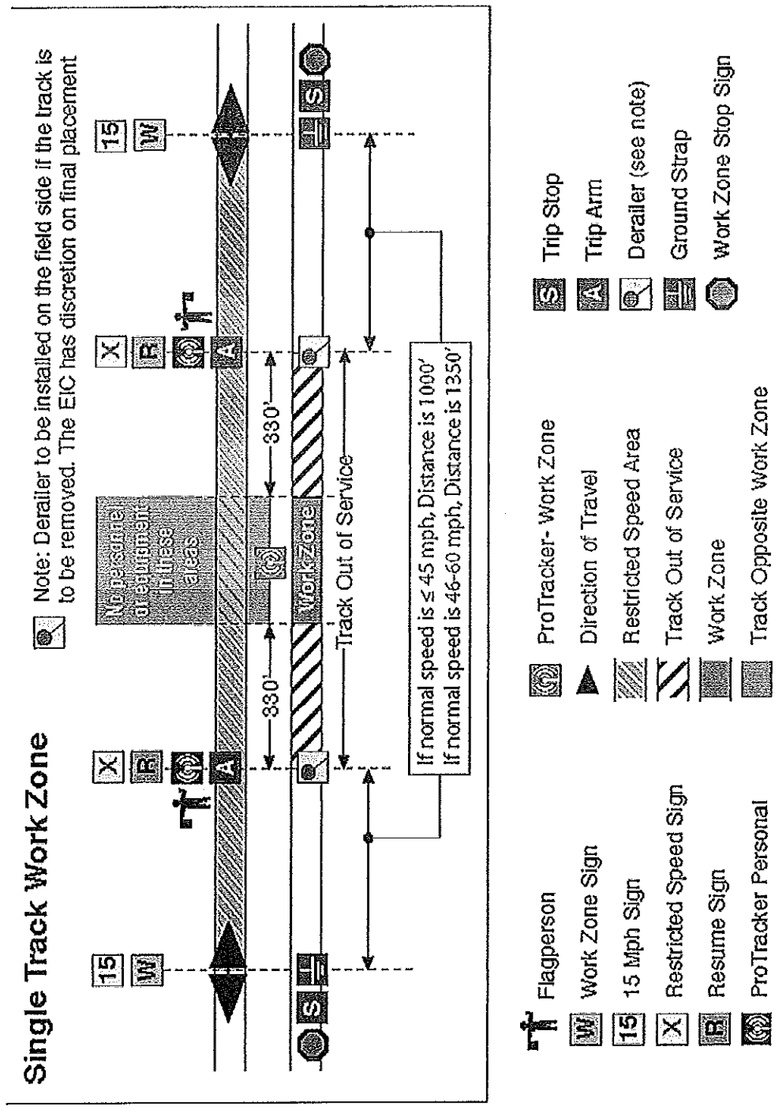
2. The Contractor will provide a "GCRTA Drug and Alcohol Eligibility List Form" as noted in A-showing evidence of DOT random drug/alcohol testing within the last 30 days or the Flagger will be sent for DOT pre-employment testing. The report will be faxed to GCRTA's Occupational Health Department at least one week before the recertification training class is attended.

3. The candidate for recertification must be equipped as in Program A above.

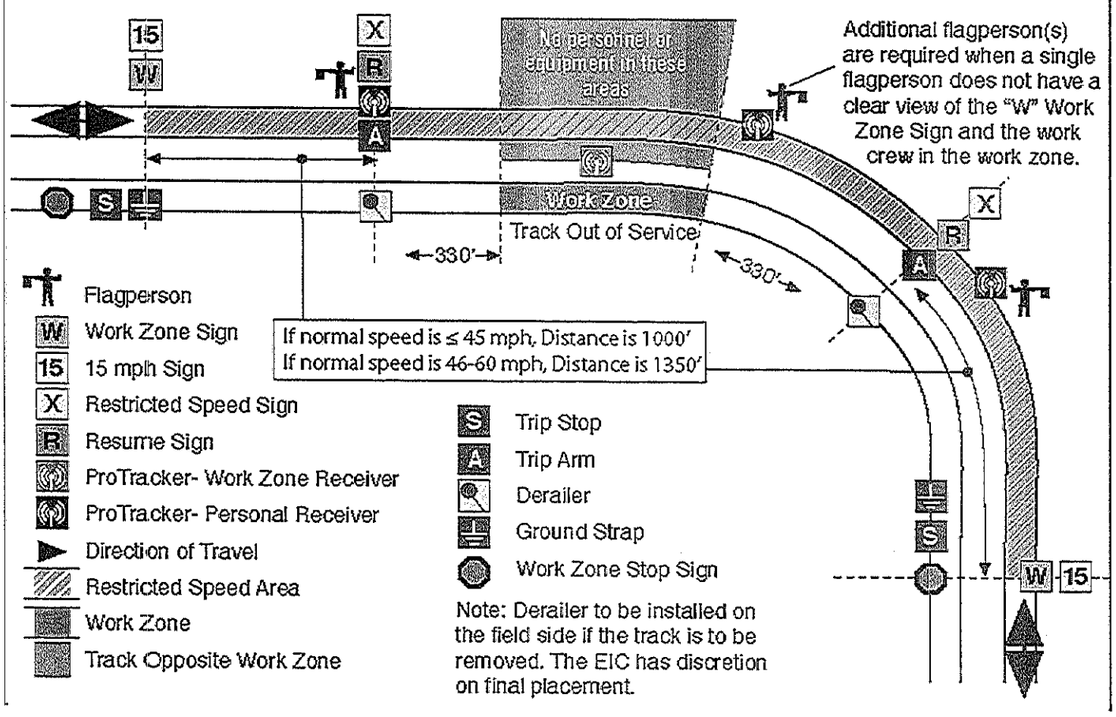
4. Candidates who successfully complete the two (2) hour classroom training will be recertified and can be deployed immediately. Recertification is valid for a period of 12 consecutive months.

5. Program A - Paragraphs 13 through 18 also apply.

6. Candidates with more than 12 months of inactivity must go through Program A above and be certified.



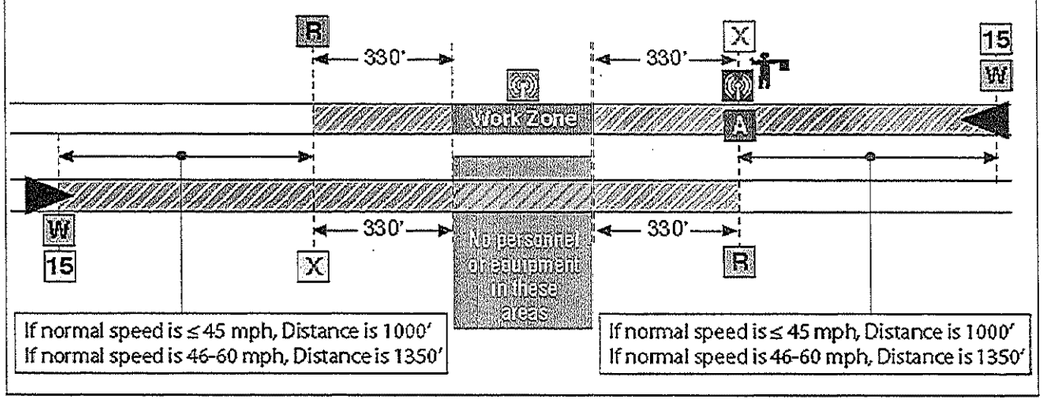
Single Track Work Zone In A Curve



015020 – Diagram 2

March 2016

One Track Work Zone

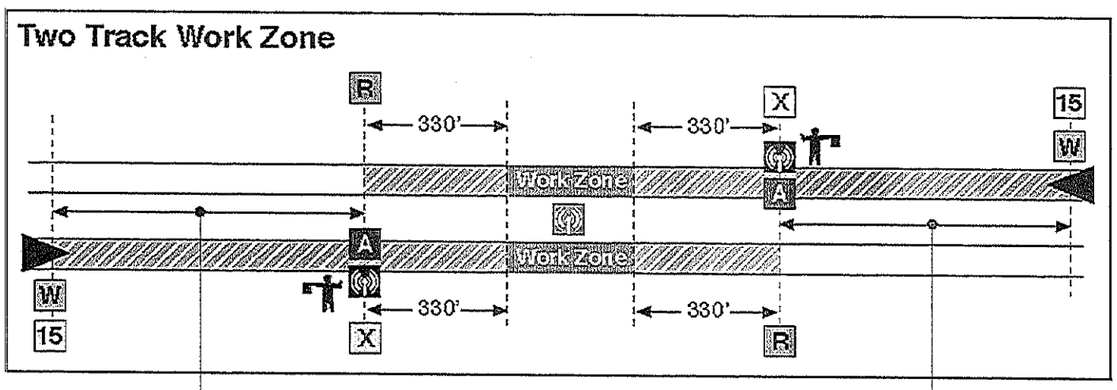


Flagperson
Work Zone Sign
15 mph Sign
Restricted Speed Sign
Resume Sign
ProTracker- Work Zone Receiver
ProTracker- Personal Receiver
Trip Arm
Direction of Travel
Restricted Speed Area
Work Zone
Track Opposite Work Zone

015020 – Diagram 3

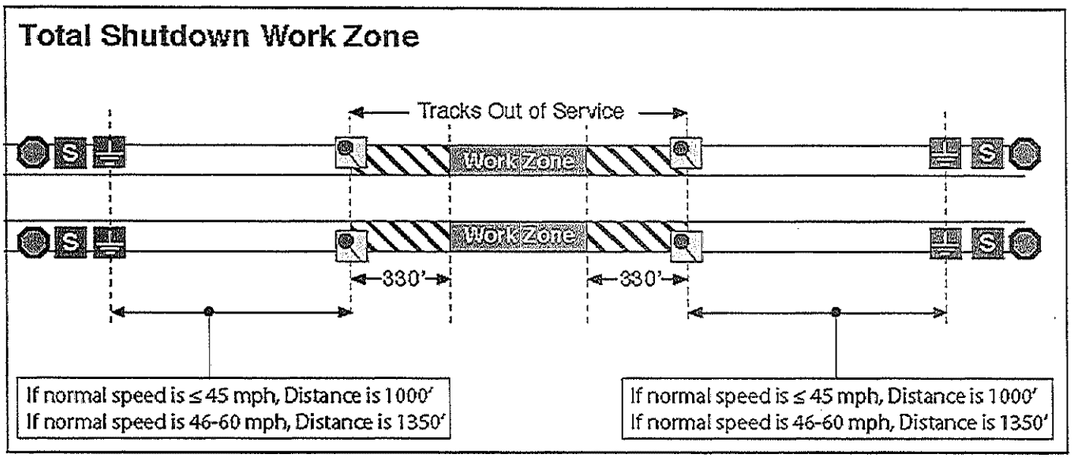
March 2016

Two Track Work Zone



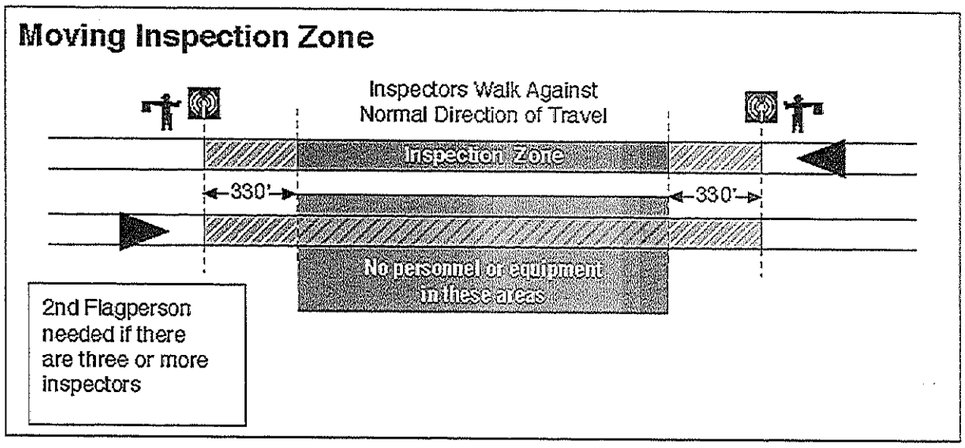
- Flagperson
- W Work Zone Sign
- 15 15 mph Sign
- X Restricted Speed Sign
- R Resume Sign
- ProTracker- Work Zone Receiver
- ProTracker- Personal Receiver
- Direction of Travel
- Restricted Speed Area
- Work Zone
- A Trip Arm

Total Shutdown Work Zone

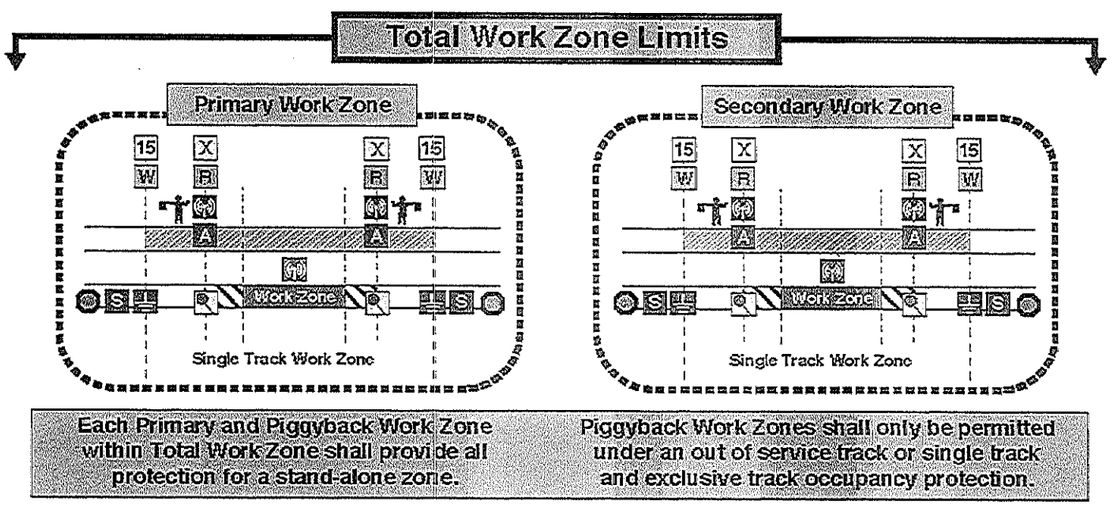


- Work Zone Stop Sign
- Track Out of Service
- Work Zone
- S Trip Stop
- Ground Strap
- Derailer

Note: Derailer to be installed on the field side if the track is to be removed. The EIC has discretion on final placement



Flagperson
ProTracker- Personal Receiver
Direction of Travel
Restricted Speed Area
Inspection Zone
Track Opposite Work Zone

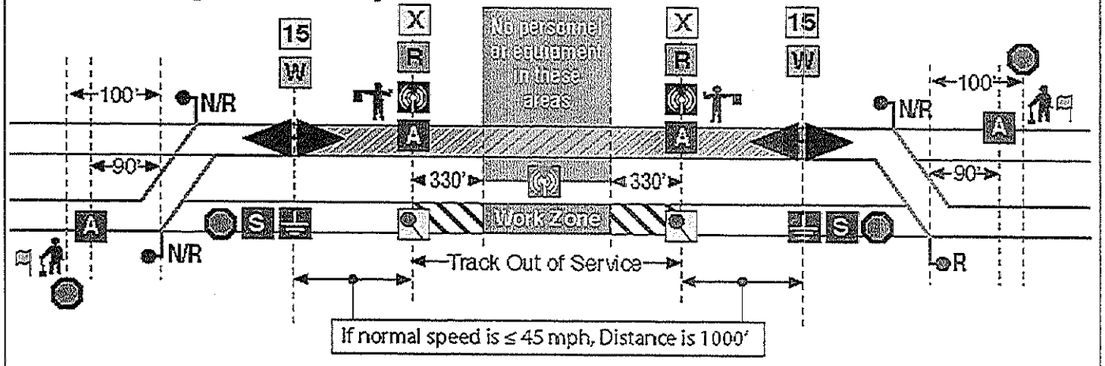


Flagperson
Work Zone Sign
15 Mph Sign
Restricted Speed Sign
Resume Sign
ProTracker Personal
ProTracker- Work Zone
Restricted Speed Area
Track Out of Service
Work Zone
Trip Stop
Trip Arm
Derailer
Ground Strap
Work Zone Stop Sign

Note: Derailer to be installed on the field side if the track is to be removed. The EIC has discretion on final placement

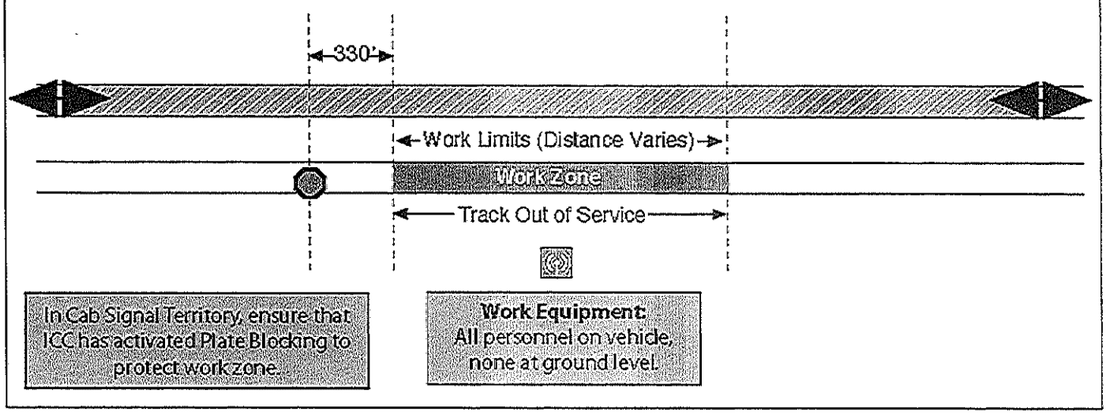
Single Track Work Zone- Non Cab Signal Territory

Note: Derailer to be installed on the field side if the track is to be removed. The EIC has discretion on final placement



- Flagperson
- Switch Tender
- Pilot Flag
- N/R Normal / Reverse Switch
- R Reverse Switch
- W Work Zone Sign
- 15 15 Mph Sign
- X Restricted Speed Sign
- R Resume Sign
- ProTracker Personal
- ProTracker- Work Zone
- Direction of Travel
- Restricted Speed Area
- Track Out of Service
- Work Zone
- Track Opposite Work Zone
- S Trip Stop
- A Trip Arm
- Derailer (see note)
- Ground Strap
- Work Zone Stop Sign

RTA Line Car / High-Rail Work Zone



- ProTracker- Work Zone Receiver
- Direction of Travel
- Restricted Speed Area
- Work Zone
- Work Zone Stop Sign

Trackside Signs

End of Cab Signal Sign
The sign that indicates the end of cab signal protection.
White Background, Black Letters

Yard Limit Sign
The sign that indicates the beginning or end of a yard.
Yellow Background, Black Letters

Spring Switch Sign
The sign that indicates the location of Spring-and-Return switch.
Yellow Background, Black Letters

Speed Limit Sign (Approaching)
The sign that indicates the maximum speed in miles per hour that may not be exceeded through a permanent Restricted Speed zone.
White Background, Black Letters

Stop Sign
The sign that indicates the location and point a train or equipment is to make a complete stop.
Red Background, Black Letters

Work Zone Speed Limit Sign
The sign that indicates the speed through a work zone or temporary speed limit zone. (Sign will designate maximum speed through work zone or temporary speed limit zone.)
Yellow Background, Black Letters

Restricted Speed
A speed not to exceed fifteen (15) miles per hour, controlling movement of any rail vehicle to permit stopping within one half the range of vision short of another train, broken rail, improperly aligned switch, derails set in the derailing position, any signal requiring a stop, motor vehicles at grade crossings, or other obstruction.
Red X on a Yellow Background

Trackside Signs

Work Zone Sign
The Sign that indicates a Work Zone ahead.
Orange Background, Black Letter

Speed Limit Sign
The sign that indicates the start of a temporary speed limit area.
Yellow Background, Black Letter

Resume Speed Sign
The sign that indicates the end of a Restricted Speed zone.
Green Background, Black Letter

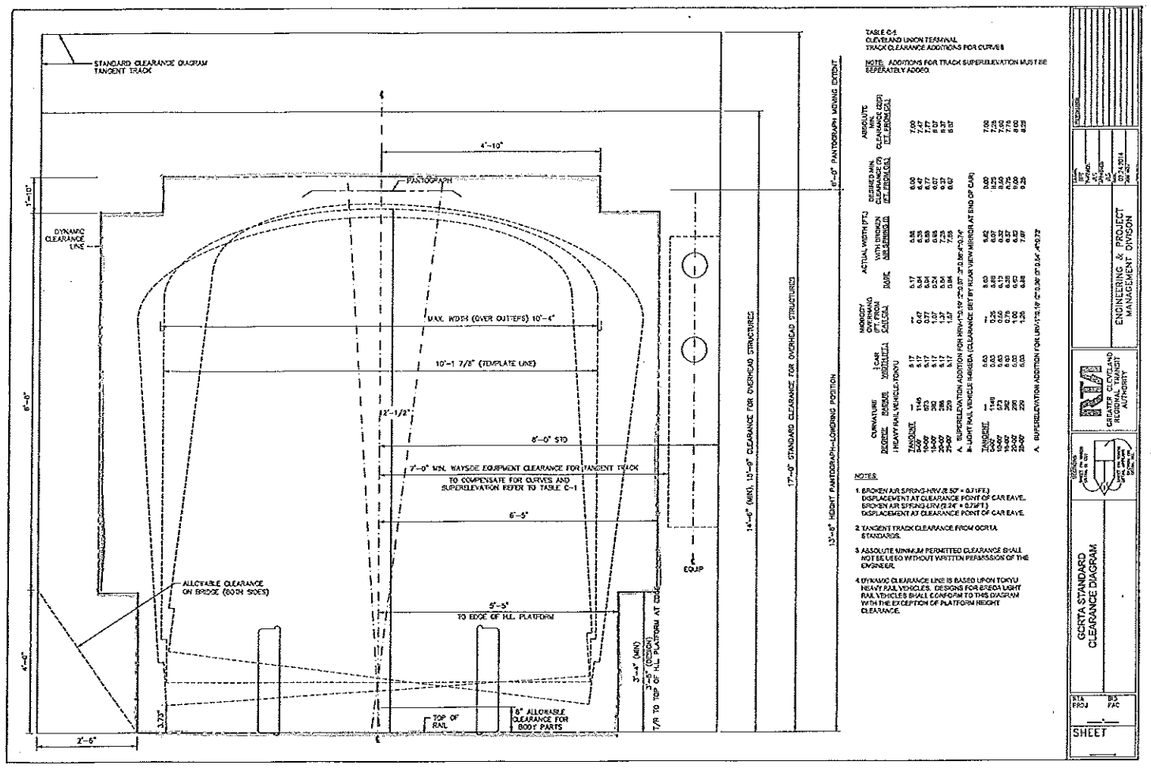
Blue Flag
The sign indicating a track or equipment out of service.
Blue Background, White Letters

Cab Signal Test Loop
The sign that indicates the Location of the Cab Signal Test
White Background, Black Letters

End of Block Sign
The sign that indicates the entrance to an area not under signal protection.
White Background, Black Letters

End of Cab Signal Sign
The sign that indicates the end of cab signal protection.
White Background, Black Letters

Note: For size of signs, see Section 2.1.D.6



"SAMPLE"

TEMPORARY RIGHT OF ENTRY AGREEMENT

THIS TEMPORARY RIGHT OF ENTRY, made this _____ day of _____ 201___, by and between the GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY ("Licensor") and _____ (Licensee"), collectively, "the Parties."

Licensor hereby permits Licensee to enter upon property owned or controlled by Licensor located _____ in Cleveland Ohio, and being located substantially as shown upon print marked Exhibit "A", attached hereto and made a part hereof.

This Right of Entry is granted upon the following terms and conditions:

I. The Right of Entry is granted only for the purpose of conducting _____ _____ from _____ __, 201__ through _____ __, 201__. Specifically, Licensee will be _____ _____ over/adjacent to Licensor's tracks.

2. Licensor shall be given at least ten (10) days advance notice before entry upon the property. Notices to Licensor shall be directed to: _____ or _____, GCRTA, 1240 W. 6th Street, Cleveland, Ohio, whose telephone numbers are _____ and _____, respectively. Activities shall be coordinated through _____ at GCRTA whose telephone number is _____.

3. All reasonable care shall be exercised and such precautions taken as Licensor may deem necessary to protect Licensor's facilities and operations and comply with Licensor's specifications as described in Sections 014500, 015010 and 015020, attached hereto as Exhibit "B" and made a part hereof. Licensor reserves the right to place inspectors and supervisors for observation purposes during the operations hereunder and the expense thereof, including the expense of any material furnished, shall be promptly paid by Licensee upon receipt of Licensor's bill therefore. In addition to direct wage and material cost, such expense shall include, but shall not be limited to, cost of supervision, traveling expenses, Ohio Public Employee's Retirement System (OPERS) and Unemployment Taxes, vacation allowances, and all other expense incidental thereto

4. Licensee hereby agrees to indemnify and save harmless Licensor from and against any and all liability, losses, damages, claims, actions, causes of action, costs and expenses (including attorneys' fees) for personal injury (including death) and/or property damage to whomsoever or whatsoever occurring, arising from or growing out of, directly or indirectly, the presence of Licensee, its agents, servants or employees upon or about the property of Licensor or in connection with the privileges herein granted.

5. Licensee shall, at its expense, obtain and maintain during the period of time when Licensee exercises the rights granted herein, in a form and with companies satisfactory to

Licensor, the following minimum insurance coverages. The contractor shall also be responsible for assuring that each of its subcontractors and anyone employed directly or indirectly by any contractor or subcontractor provide adequate insurance for the work performed or products supplied by it.

a. Commercial General Liability Insurance with a combined single limit of not less than $1,000,000 per occurrence and $2,000,000 annual aggregate for injury to or death of persons and damage to or loss or destruction of property. In addition, umbrella liability coverage of $3,000,000 per occurrence and $3,000,000 aggregate. Such policy shall be endorsed to provide products and completed operations coverage and contractual liability coverage for liability assumed under this Agreement. The contractual liability coverage shall be of a form that does not deny coverage for operations conducted within 50 feet of any railroad hazard and evidence of this lack of exclusion shall be provided to Licensor if this option is taken.

b. In the event Licensee's Commercial General Liability Insurance Policy does not provide contractual liability coverage for operations conducted within 50 feet of a railroad hazard, Licensee shall, at its expense, also obtain and maintain during the period of time when Licensee exercises the rights granted herein, in a form and with companies satisfactory to Licensor, Railroad Protective Liability Insurance. Said policy shall have limits of not less than a combined single limit of $2,000,000 each occurrence and $6,000,000 in the aggregate. In addition, said policy shall name Licensor as the named insured and shall be underwritten on Insurance Services Office (ISO) Form Number CG 00 35 10 01 or an equivalent form satisfactory to Licensor.

c. Evidence of such insurance (certificate of insurance for the General Liability insurance and the original policy of Railroad Protective Liability Insurance) shall be furnished to and approved by Licensor's Director Risk Management prior to occupancy of Licensor's Property. Said certificate of insurance shall state that coverage shall not be suspended, voided, cancelled, or reduced in coverage or limits without (10) days advance written notice to Licensor.

d. Automobile Liability Insurance having a combined single limit of not less than $1,000,000 per occurrence. In addition, umbrella liability coverage of $3,000,000 per occurrence. Said policy shall apply to all owned, leased, hired and non-owned vehicles used in connection with the work.

e. Statutory Workers' Compensation coverage in compliance with all applicable state workers' compensation laws to cover all employees furnishing labor under the terms of this contract and under the control of the Contractor. Employers' Liability coverage in the amount of $1,000,000 per accident / $1,000,000 per employee for disease will also be included, either under the Workers' Compensation policy or under the Commercial General Liability policy (Stop Gap) referenced under a. above. In Ohio, a copy of a certificate of premium payment from the Industrial commission and Bureau of Workers Compensation, or a copy of the Certificate of Employer's Right to Pay Compensation Directly.

"SAMPLE"

f. Professional Liability / Errors & Omissions Insurance in the amount of $2 million per claim. The definition of wrongful acts must be applicable to the work performed hereunder. As this insurance is written on a claims-made basis, the policy must be maintained for a minimum of two years following completion of the work.

g. General Requirements: The contractor shall not commence work herein until it has obtained the required insurance and has received written approval of such insurance by the Authority. It shall furnish evidence of such insurance in the form of a certificate (Accord or similar form). The certificate shall provide the following:

- In the event the insurance should be changed or cancelled, such change or cancellation shall not be effective until 10 days after the Authority has received written notice of such change or cancellation from the Contractor. Such notice shall be mailed by certified mail, return receipt requested, to the Authority in care of the Director of Procurement.
- Name the Authority as an additional insured for all liability coverage under a. and d. above for claims arising out of operations in conjunction with the contract
- Contain a waiver of subrogation in favor of the Authority.
- Specify that the insurance is primary and non-contributory as respects any insurance or self-insurance programs maintained by GCRTA
- Specific reference to the subject contract.
- Specific reference to all deductibles & Self-Insured Retentions (SIR).
- An insurance company having less than an A-X rating by The A. M. Best Company will not be considered acceptable. All certificates are subject to acceptance by the Authority. The Authority shall be entitled to receive a full copy of the insurance policy(ies) upon request and reserves the right to review financial statements and approve any deductibles or SIR.

h. Note: The insurance coverage required herein is not intended to and shall not reduce, limit, affect or modify the primary obligations of Licensee under any other provisions of this Agreement.

6. At the termination of this Right of Entry, Licensor's property shall be restored by Licensee to its original condition, or to a condition satisfactory to Licensor.

7. No drainage conditions shall be created or allowed to exist which would be adverse to Licensor's property.

8. A minimum clearance of fifteen feet (15') from the centerline of the nearest track shall be maintained at all times for any material, equipment or vehicles of Licensee occupying Licensor's property unless authorized in writing by Licensor or Licensor's Superintendent.

9. The license and permission hereby granted is for the sole benefit of Licensee, and Licensor is to receive no benefit therefrom nor any consideration therefore except the

covenants, promises and agreements set forth in this Right of Entry.

10. No explosives of any kind shall be used on Licensor's property.

11. No debris will be buried in or burned upon Licensor's property.

12. This Right of Entry (a) shall not be assigned or transferred by Licensee, (b) may be terminated at will by Licensor or Licensee, and (c) shall terminate automatically _____, 201___; however, that termination shall not relieve Licensee of any obligation or liability incurred prior to such termination.

IN WITNESS WHEREOF, the parties hereto have executed this Temporary Right of Entry Agreement in duplicate as of the date first hereinabove written.

Signed in the presence of:

THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

_____
(Witness)

By: _____
Joseph A. Calabrese, CEO
General Manager/Secretary-Treasurer

_____
(Witness)

Date: _____, 201__

APPROVED AS TO LEGAL FORM

_____
Sheryl King Benford, General Counsel
Deputy General Manager for Legal Affairs

Signed in the presence of:

_____

By: _____

_____
(Witness)

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Date: _____, 201__

SPECIAL PROVISIONS

NORFOLK SOUTHERN RAILWAY COMPANY

FOR

CUY-2-14.41
PID: 85377

DATE: 08-11-16

E. Norfolk Southern – Special Provisions for Protection of Railway Interests

1. AUTHORITY OF RAILROAD ENGINEER AND SPONSOR ENGINEER:

   Norfolk Southern Railway Company, hereinafter referred to as "Railroad", and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Public Projects impacting the Railroad, the Railroad's Public Projects Engineer, hereinafter referred to as "Railroad Engineer", will serve as the authorized representative of the Railroad.

   The authorized representative of the Project Sponsor ("Sponsor"), hereinafter referred to as the "Sponsor's Engineer", shall have authority over all other matters as prescribed herein and in the Project Specifications.

   The Sponsor's Prime Contractor, hereinafter referred to as "Contractor" shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice, from time to time in the sole discretion of the Railroad. Contractor must request from Railroad and follow the latest version of these provisions prior to commencing work.

2. NOTICE OF STARTING WORK:

   A. The Contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:

      1. Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement.

      2. Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor's Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of-way.

      3. Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective Insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

      4. Obtained Railroad's Flagging Services as required by paragraph 7 herein.

      5. Obtained written authorization from the Railroad to begin work on Railroad's rights-of-way, such authorization to include an outline of specific conditions with which he must comply.

      6. Furnished a schedule for all work within the Railroad's rights-of-way as required by paragraph 7.B.1.

   B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS:

   A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.

   B. Whenever work within Railroad's rights-of-way is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.

   C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.

   D. "One Call" Services do not locate buried Railroad utilities. The contractor shall contact the Railroad's representative 2 days in advance of work at those places where excavation, pile driving, or heavy loads may damage the Railroad's underground facilities. Upon request from the Contractor or Sponsor, Railroad forces will locate and paint mark or flag the Railroad's underground facilities. The Contractor shall avoid excavation or other disturbances of these facilities. If disturbance or excavation is required near a buried Railroad facility, the contractor shall coordinate with the Railroad to have the facility potholed manually with careful hand excavation. The facility shall be protected by the Contractor during the course of the disturbance under the supervision and direction of the Railroad's representative.

4. TRACK CLEARANCES:

   A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.

      1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.

      2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal

clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.

3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.

4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

B. Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad's representative at least 72 hours in advance of the work.

2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.

3. Receive permission from the Railroad's representative to proceed with the work.

4. Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

1. Construction work and operations by the Contractor on Railroad property shall be:

a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.

b. In accordance with the Railroad's written outline of specific conditions.

c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.

d. In accordance with these Special Provisions.

2. Submittal Requirements

a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.

b. The Contractor shall allow for 30 days for the Railroad's review and response.

c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.

d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.

e. All submittals shall first be approved by the Sponsor's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.

f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:

(1) General Means and Methods
(2) Ballast Protection
(3) Construction Excavation & Shoring
(4) Pipe, Culvert, & Tunnel Installations
(5) Demolition Procedure
(6) Erection & Hoisting Procedure
(7) Debris Shielding or Containment
(8) Blasting
(9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
(10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.

g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:

(1) Shop Drawings
(2) Bearing Shop Drawings and Material Certifications
(3) Concrete Mix Design
(4) Structural Steel, Rebar, and/or Strand Certifications
(5) 28 day Cylinder Test for Concrete Strength
(6) Waterproofing Material Certification
(7) Test Reports for Fracture Critical Members
(8) Foundation Construction Reports

Fabrication may not begin until the Railroad has approved the required shop drawings.

h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Submission shall also provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction.

B. Ballast Protection

1. The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.

2. The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.

C. Excavation:

1. The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case existing section will be maintained.

2. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

D. Excavation for Structures and Shoring Protection:

1. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material.

2. All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the state of the proposed project, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6.E-Construction Excavation (Refer to Norfolk Southern Public Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.

3. The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.

4. The Contractor shall be required to survey the track(s) and Railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.

5. Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed ½".

6. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

7. The front face of shoring located to the closest NS track for all shoring set-ups located in Zone 2 as shown on NS Typical Drawing No. 4 – Shoring Requirements (Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone 2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.

E. Pipe, Culvert, & Tunnel Installations

1. Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:

   a. For Open Cut Method refer to Norfolk Southern Public Projects Manual Appendix H.4.6.
   b. For Jack and Bore Method refer to Norfolk Southern Public Projects Manual Appendix H.4.7.
   c. For Tunneling Method refer to Norfolk Southern Public Projects Manual Appendix H.4.8.

2. The installation methods provided are for pipes carrying storm water or open flow run-off. All other closed pipeline systems shall be installed in accordance Norfolk Southern's Pipe and Wire Program and the NSCE-8

F. Demolition Procedures

1. General

   a. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.

   b. Railroad tracks and other Railroad property must be protected from damage during the procedure.

   c. A pre-demolition meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.

   d. The Railroad Engineer or his designated representative must be present at the site during the entire demolition procedure period.

   e. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.

2. Submittal Requirements

   a. In addition to the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

      (1) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

(2) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.

(3) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.

(4) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.

(5) A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

(6) Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.

3. Overhead Demolition Debris Shield

a. The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.

b. The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.A.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.A.1.

c. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.

d. The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.

e. The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.

f. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.

g. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.

4. Vertical Demolition Debris Shield

a. A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.

G. Erection & Hoisting Procedures

1. General

a. Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.

b. Railroad tracks and other Railroad property must be protected from damage during the erection procedure.

c. A pre-erection meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure.

d. The Railroad Engineer or his designated representative must be present at the site during the entire erection procedure period.

e. For field splices located over Railroad property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Projects Manual Appendix H.1, Section 4.A.3.).

2. Submittal Requirements

a. In addition the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

(1) As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.

(2) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or staging locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

(3) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.

(4) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.

(5) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.

(6) A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

(7) Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

H. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Sponsor Engineer for use of explosives on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:

a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.

b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.

c. No blasting shall be done without the presence of the Railroad Engineer or his authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.

d. Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.

e. The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.

f. Explosive materials or loaded holes shall not be left unattended at the blast site.

g. A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.

h. After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, number of decks, type and pounds of explosives used per deck.

i. The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.

2. The Railroad representative will:

   a. Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.

   b. Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.

3. The Contractor must hire, at no expense to the Railroad, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:

   a. Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.

   b. Confirm that the minimum amounts of explosives are used to remove the rock.

   c. Be empowered to intercede if he concludes that the Contractor's blasting operations are endangering the Railway.

   d. Submit a letter acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.

   e. Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.

   f. Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.

4. The request for permission to use explosives on the Railroad's Right-of-Way shall include a blasting proposal providing the following details:

   a. A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.

   b. Hole diameter.

   c. Hole spacing and pattern.

   d. Maximum depth of hole.

   e. Maximum number of decks per hole.

   f. Maximum pounds of explosives per hole.

   g. Maximum pounds of explosives per delay.

   h. Maximum number of holes per detonation.

   i. Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.

   j. Approximate dates and time of day when the explosives are to be detonated.

   k. Type of flyrock protection.

   l. Type and patterns of audible warning and all clear signals to be used before and after each blast.

   m. A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address and telephone number.

   n. A copy of the Authority's permit granting permission to blast on the site.

   o. A letter from the blasting consultant acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.

   p. In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.

   q. A copy of the borings and Geotechnical information or report.

I. Track Monitoring

   1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.

   2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.

   3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.

   4. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

J. Maintenance of Railroad Facilities:

   1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor will promptly

repair eroded areas within Railroad rights-of-way and repair any other damage to the property of the Railroad or its tenants.

2. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.

3. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

K. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.

2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

L. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or his authorized representative.

6. DAMAGES:

A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.

B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Railroad.

2. Under the terms of the agreement between the Sponsor and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.

3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed.

4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal. The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.

2. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.

3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer

needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.

4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

C. Payment:

1. The Sponsor will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.

2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Sponsor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.

3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.

4. Railroad work involved in preparing and handling bills will also be charged to the Sponsor. Charges to the Sponsor by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Sponsor's Engineer. Address all written correspondence electronically to Railroad Engineer.

2. The Railroad flagman assigned to the project will be responsible for notifying the Sponsor Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Sponsor's Engineer will document such notification in the project records. When requested, the Sponsor's Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. HAUL ACROSS RAILROAD TRACK:

A. Where the plans show or imply that materials of any nature must be hauled across Railroad's track, unless the plans clearly show that the Sponsor has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's track. The Contractor or Sponsor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.

B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

A. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Sponsor and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Sponsor and/or the Railroad.

B. Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

10. COOPERATION AND DELAYS:

A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.

B. No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

11. TRAINMAN'S WALKWAYS:

A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

12. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHT-OF-WAY:

A. The Contractor and/or the Sponsor's personnel authorized to perform work on Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway

Worker Protection Training; However the Contractor and the Sponsor's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. In the vicinity of at-grade crossings, it is strongly recommended that reflective vests be worn.

C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.

D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.

E. No one is allowed to cross tracks without specific authorization from the flagman.

F. All welders and cutting torches working within 25' of track must stop when train is passing.

G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

13. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHT-OF-WAY:

A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.

B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

C. All employees will stay with their machines when crane or boom equipment is pointed toward track.

D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).

E. Swinging loads must be secured to prevent movement while train is passing.

F. No loads will be suspended above a moving train.

G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.

H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.

I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.

K. All equipment, loads and cables are prohibited from touching rails.

L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.

N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

14. INSURANCE:

A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:

1. a. Commercial General Liability Insurance having a combined single limit of not less than $2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.

b. Automobile Liability Insurance with a combined single limit of not less than $1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.

2. Railroad Protective Liability Insurance having a combined single limit of not less than $2,000,000 each occurrence and $6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of $5,000,000 each occurrence and $10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from

bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

a. The insurer must be rated A- or better by A.M. Best Company, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.

b. The policy must be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:
   (1) CG 00 35 01 96 and CG 28 31 10 93; or
   (2) CG 00 35 07 98 and CG 28 31 07 98; or
   (3) CG 00 35 10 01; or
   (4) CG 00 35 12 04; or
   (5) CG 00 35 12 07; or
   (6) CG 00 35 04 13.

c. The named insured shall read:

   Norfolk Southern Corporation and its subsidiaries
   Three Commercial Place
   Norfolk, Virginia 23510-2191
   Attn: S. W. Dickerson Risk Management

   (NOTE: Railroad does not share coverage on RRPL with any other entity on this policy)

d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.

e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.**

f. The name and address of the prime Contractor must appear on the Declarations.

g. The name and address of the Sponsor must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."

h. Endorsements/forms that rea **required** are:

   (1) Physical Damage to Property Amendment
   (2) Terrorism Risk Insurance Act (TRIA) coverage must be included

i. Other endorsements/forms that will be accepted are:
   (1) Broad Form Nuclear Exclusion – Form IL 00 21
   (2) 30-day Advance Notice of Non-renewal or cancellation
   (3) Required State Cancellation Endorsement
   (4) Quick Reference or Index Form CL/IL 240

j. Endorsements/forms that are NOT acceptable are:
   (1) Any Pollution Exclusion Endorsement except CG 28 31
   (2) Any Punitive or Exemplary Damages Exclusion
   (3) Known Injury or Damage Exclusion form CG 00 59
   (4) Any Common Policy Conditions form
   (5) An Endorsement that limits or excludes Professional Liability coverage
   (6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
   (7) An Endorsement that excludes TRIA coverage
   (8) A Sole Agent Endorsement
   (9) Any type of deductible endorsement or amendment
   (10) Any other endorsement/form not specifically authorized in item no. 2.h above.

B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad's right of way.

C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor's and any subcontractors' Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

SPONSOR:

RAILROAD:
Risk Management
Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191

D. The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.

E. Insurance Submission Procedures

1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes. **Please provide point of contact information with the submission including a phone number and email address.**

2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:

   a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirely inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.

   b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of $2M per occurrence of general and $1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.

3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

15. FAILURE TO COMPLY:

   A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:

      1. The Railroad Engineer may require that the Contractor vacate Railroad property.

      2. The Sponsor's Engineer may withhold all monies due the Contractor on monthly statements.

   B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor's Engineer.

16. PAYMENT FOR COST OF COMPLIANCE:

   A. No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

17. PROJECT INFORMATION

   A. Date: _____
   B. NS File No.: _____
   C. NS Milepost: _____
   D. Sponsor's Project No.: _____

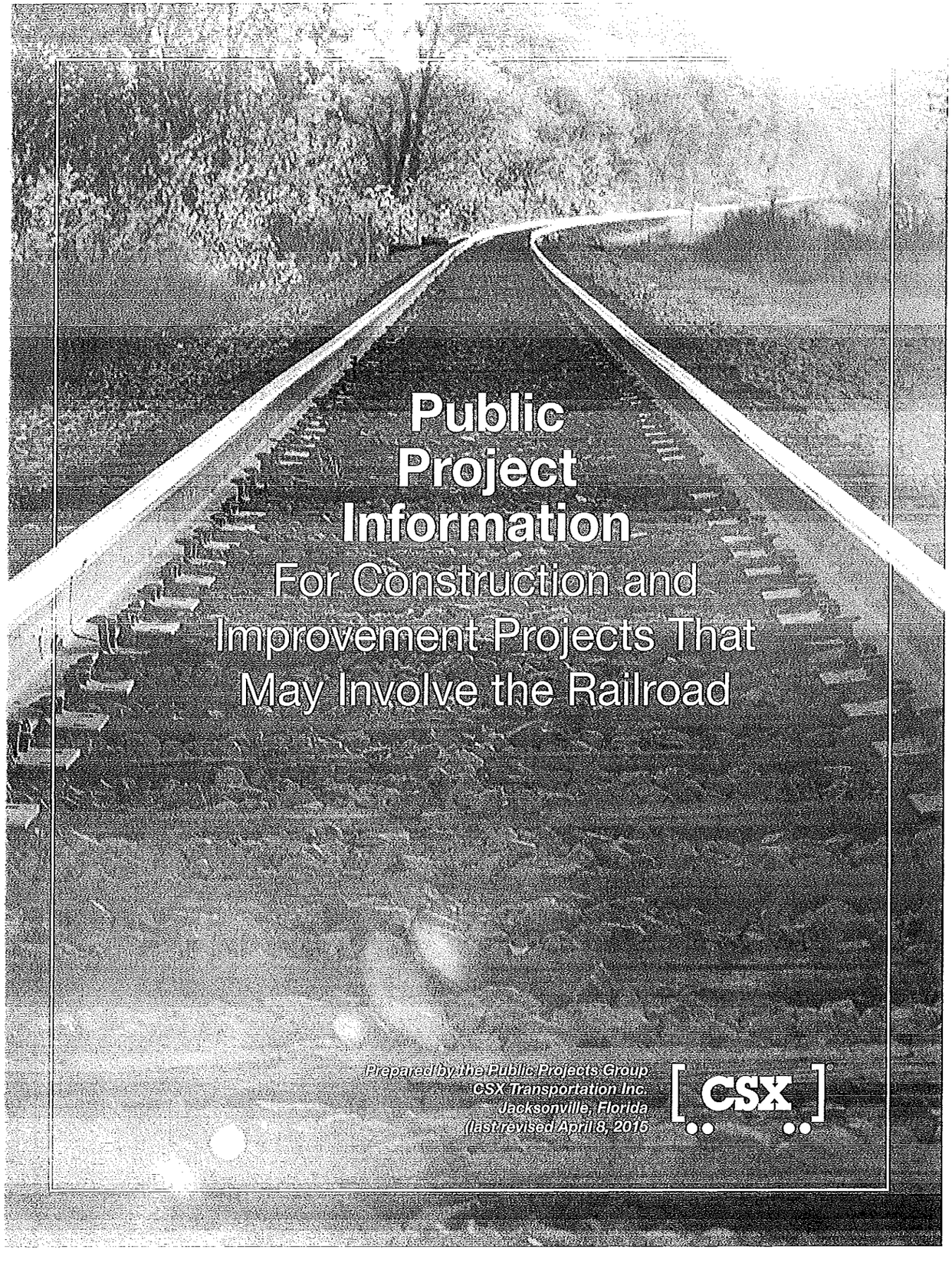
SPECIAL PROVISIONS

CSXT

FOR

CUY-2-14.41
PID: 85377

DATE: 04-08-15



Public Project Information

For Construction and Improvement Projects That May Involve the Railroad

Prepared by the Public Projects Group
CSX Transportation Inc.
Jacksonville, Florida
(last revised April 8, 2015

To the Communities, Businesses and Government Agencies We Serve:

CSX Corporation and its business units CSX Transportation (CSXT) and CSX Intermodal (CSXI) provide rail and intermodal service in 23 states, the District of Columbia and two Canadian provinces. CSXT operates more than 1,200 trains daily, over 21,000 miles of track, helping America maintain the strongest and most productive transportation system in the world.

In addition to CSXT's vitally important customer service responsibilities, the company wants to be a good neighbor in the states and communities where we operate. That is why we have prepared this information. We want to make it easier for communities and other project sponsors to work with us when they have construction and improvement projects that may involve the CSXT rail property.

CSXT's Public Projects team is involved in a wide variety of projects initiated by government agencies, local businesses and others. Accurate and timely communication of information between CSXT and these parties improves planning, relationships and successful completion of projects. The tools in this manual explain important steps project sponsors must follow, including information required in connection with any public project proposal.

CSXT places the highest priority on safety – for its employees and for the public. Because CSXT is a business and its shareholders ultimately own its rail system, the company must also give careful consideration to anything that could adversely affect customer service, compensation for use of railroad property, and risk to railroad operation.

The Project Managers – Public Projects are the initial contact for CSXT and are assigned territories by state. Please contact them directly about public projects using the information provided. General Engineering Consultants (GEC) provide additional engineering services to assist CSXT in managing public projects.

CSXT hopes the information and procedures provided here will make it easier for us to work together.

Tony Bellamy
Director Project Management
Public Projects

CSXT Public Project Policy Information
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Appendix

Additional information can be obtained by contacting the following:

- American Railway Engineering and Maintenance of Way Association, (301) 459-3200, or www.arema.org
- U.S. Department of Transportation, Manual of Uniform Traffic Control Devices, http://mutcd.fhwa.dot.gov/

Information Covered in This Manual

This information is intended to assist communities and other project sponsors to plan and implement construction and improvement projects that may involve the CSXT rail property. Examples of such projects include:

- **Highway-Rail Grade Crossings:** Closure, removal, installation and alterations of public highway-rail grade crossings. CSX's Property Services department manages private crossings.
- **Bridges Over CSXT:** Construction, reconstruction, rehabilitation, repair, removal, and maintenance of bridges over the railroad by outside parties.
- **Bridges Carrying CSXT:** Construction, reconstruction, rehabilitation, repair, removal, and maintenance of bridges carrying CSXT over highways and other public properties initiated by outside parties.
- **Parallel Roads/Facilities:** Construction, reconstruction, modification, removal, and maintenance of parallel roads or other public facilities affecting CSXT property or operations.
- **U.S. Army Corps of Engineers Projects:** Any project undertaken by the Corps of Engineers that involves CSXT property or operations.
- **Entry Onto CSXT Property:** Temporary rights of entry onto CSXT property, easements, utility installation and bridge inspections.
- **Other Projects Involving CSXT Rail Corridors:** Publicly sponsored projects involving or altering CSXT facilities or its property. These projects may be on, above, adjacent to, or otherwise have the potential to impact CSXT property.

Important notes:

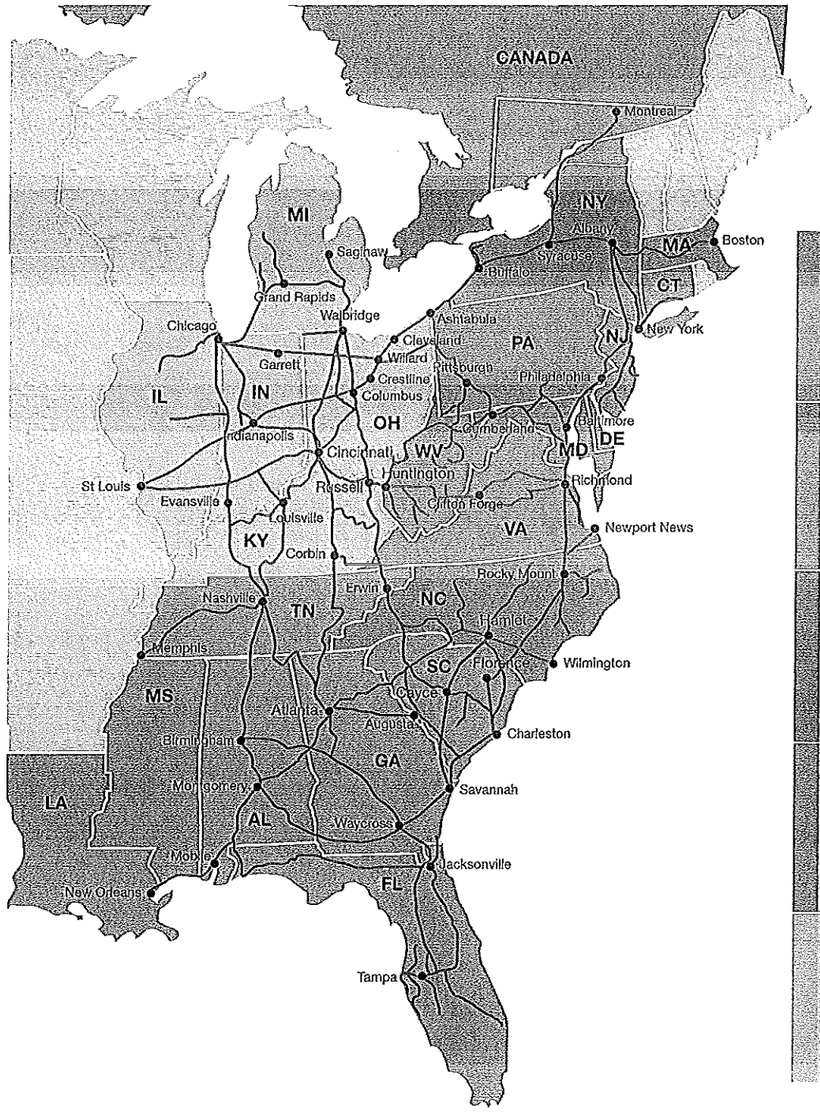
The information herein is intended to be a tool only and all statements in this manual are intended to be for broad use. This manual cannot be taken as authority to construct. Specific projects will be subject to analysis of all factors leading to formal agreements between all parties. The purpose of review by CSXT is solely to ensure compliance with the minimum standards of CSXT, and not for any other purpose.

The guidelines and requirements herein are provided for reference only and are subject to revision without notice. All new projects shall be designed in accordance with the most current policies, requirements, and standards of CSXT.

Any items affecting railroad property not covered in this manual shall be subject to CSXT's prior review and approval.

The safety of CSXT employees and the general public is of paramount importance to CSXT.

CSXT Public Projects Staff and Territory Map



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Additional CSXT Resources and Contacts

Many areas of community interest are outside the scope of this manual. The following is a list of contacts within CSXT that may be helpful on other community matters:

- **Emergencies:** Emergencies and suspicious situations should be reported immediately to the CSX Public Safety Coordination Center, (800) 232-0144.
- **Corporate Communications and Public Affairs:** News media information, public affairs, state and community relations. Contact: (904) 366-2949.
- **Industrial Development:** New industry site locations, track proposals. Contact: Director Technical Programs, Regional Development (904) 359-1617.
- **Property Services:** Non-Construction and Environmental right-of-entry, wire line and pipeline crossings, private crossings, compliance with codes relating to right-of-way conditions. Contact: http://csx.com/index.cfm/customers/non-freight-services/propertyreal-estate/permitting-utility-installations-and-rights-of-entry/
- **Quiet Zones:** Contact: TellCSX@csx.com or (877) 835-5279.
- **Railroad Track and Signal Maintenance:** Track maintenance, drainage maintenance, maintenance of highway-rail grade crossings surfaces and warning systems. Contact: TellCSX@csx.com or (877) 835-5279.
- **Real Estate Lease or Purchase:** Contact: http://csx.com/index.cfm/customers/non-freight-services/propertyreal-estate/
- **Structures and Bridges:** Maintenance of bridges that are CSXT's responsibility. Contact: Assistant Chief Engineer - Structures (904) 359-1104.
- **Passenger Operations:** Amtrak, passenger train proposals, commuter train proposals, light rail corridors. Contact: Director Passenger Services Strategy (904) 359-1099.
- **Rails to Trails:** Conversion of unused rail lines to trails. Contact: Manager Public Agency Services (904) 279-4491.
- **Non Emergency Issues:** Contact: TellCSX@csx.com or (877) 835-5279.

I. Definitions

1. *Agency* – The project sponsor (i.e., State DOT, Local Agencies, Private Developer, etc.)
2. *AREMA* – American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA Manual for Railway Engineering.
3. *Construction Submission* – The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.
4. *Controlled Demolition* – Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSXT employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSXT's ability to access its property at all times.
5. *Contractor* – The Agency's representative retained to perform the project work.
6. *Engineer* – CSXT Engineering Representative or a GEC authorized to act on the behalf of CSXT.
7. *Flagman* – A qualified CSXT employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.
8. *GEC* – General Engineering Consultant who has been authorized to act on the behalf of CSXT. GECs perform preliminary engineering, construction inspection, and monitoring under the direction of the CSXT Engineering personnel. GEC personnel also perform day-to-day administration of certain types of projects.
9. *Horizontal Clearance* – Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.
10. *Professional Engineer* – An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Professional Engineer and shall bear his seal and signature.
11. *Potential to Encroach* – Work having the possibility of impacting CSXT property or operations; defined as one or more of the following:
    a. Any activity where access onto CSXT property is required.
    b. Any activity where work is being performed on CSXT ROW.
    c. Any excavation work adjacent to CSXT tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSXT property limits.
    d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.
    e. Any work where the scatter of debris or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.
    f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.
    g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSXT.

12. *ROW* – Right of Way; Refers to CSXT Right-of-Way as well as all CSXT property and facilities. This includes all aerial space within the property limits, and any underground facilities.
13. *Submission Review Period* – A minimum of 30 days will be required for the initial review response. Up to an additional 30 days may be required to review any/all subsequent submissions or resubmission.
14. *Theoretical Railroad Live Load Influence Zone* – A 1½ horizontal to 1 vertical theoretical slope line starting 1'-6" below TOR elevation and 12'-0" from the centerline of the nearest track.
15. *TOR* – Top of Rail. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails. Use the higher of the two rails when track is superelevated.
16. *Track Structure* – All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.
17. *Vertical Clearance* – Distance measured from TOR to the lowest obstruction, within six feet (6'-0") of the track centerline, in either direction.

Requirements for Preliminary Engineering Review

Key Points

- **Starting CSXT Preliminary Engineering (PE) early by providing conceptual plans lowers project costs and shortens the time required for CSXT review and approval**
- **Using standard agreements lowers costs and saves time**
- **If the proposal requires an easement on CSXT property, the project sponsor should contact CSXT Real Property when beginning PE.**
- **If the proposal requires a utility encroachment, the project sponsor should contact CSXT Property Services when beginning PE.**
- **PE typically costs $8,000 to $25,000**
- **CSXT PE Review will not begin until the PE Agreement is fully executed and PE funds are received.**

Overview

Any project proposals that may affect or be near the CSXT right-of-way must be evaluated by CSXT. To initiate a construction or improvement project, a PE agreement is required to identify the project sponsor, the scope, define the tasks to be accomplished, and specify the payment required. Once the plans for the project are approved by CSXT, a construction agreement will be developed.

Purpose

The purpose of the PE is to identify issues related to safety, engineering, customer service, operations, legal and regulatory matters, expense, risk and other considerations specific to any proposed project. CSXT review of plans is only to determine that the plans, and improvements constructed in accordance with the plans, satisfy CSXT's requirements. Plans should be submitted early in project development to ensure that CSXT requirements can be incorporated.

Process Steps To Be Taken

- Notify CSXT Public Projects Group of the project by providing location information and conceptual plans.
- Provide CSXT authorization to incur preliminary engineering costs.
- Review and complete a standard PE agreement and provide payment for expenses as specified in the agreement.
- Provide project information; attend meetings (as needed), review site with CSXT or GEC personnel.
- Submit initial plans to CSXT or designated GEC for review.
- Respond to CSXT or designated GEC comments and adjust design if necessary.
- Submit final design for CSXT or designated GEC review.
- CSXT will perform final review to ensure compliance with railroad requirements.
- CSXT will estimate the cost of the work to be done by CSXT, including flagging.
- If CSXT takes no exceptions to the design plans (or once all CSXT concerns have been addressed), CSXT will prepare a standard construction agreement for execution.

Costs and Expenses

These matters are covered in more detail in the section that follows ("Payment of CSXT's Costs and Expenses"). For the reasons described in that section, CSXT requires advance payment for its costs and expenses of reviewing and handling the PE. All expenses of the party seeking the review will be borne by that party, including expenses for CSXT employees or GEC personnel attending meetings, reviewing plans, preparing correspondence and other activities to support the review of the project.

Timing

It is in the interest of all parties to complete the PE review before commitments are made or construction steps begin. CSXT will work to be responsive, with timing depending upon the complexity of the project. CSXT and its GEC will work with the project sponsor to schedule PE and construction to meet project schedule objectives whenever possible, considering available resources.

Standard Documents

CSXT executes hundreds of agreements each year for preliminary engineering and construction of projects. CSXT has developed standard agreements which can be executed by CSXT without additional legal review. Non-standard agreements or modifications to the CSXT standard agreement terms will require additional legal review and may increase project duration and/or cost. Sample standard agreement documents are available in the Appendix.

Payment of CSXT's Costs and Expenses

Key Points and Procedures

- **Preliminary Engineering (PE) costs are paid in advance.**
- **CSXT construction expenses will be estimated during PE and the estimate will be incorporated into the construction agreement. Advance payment is required to cover these expenses prior to the start of project construction.**
- **If CSXT anticipates that actual expenses will exceed the advance payment, additional payment will be required. Project work may be stopped until additional payment is received.**
- **If CSXT's actual expenses are less than the sum of any deposits the difference will be refunded after final cost accounting.**
- **All funding sources must be identified up front, and any time funding sources change, CSXT must be immediately informed.**

Overview

The types of projects being addressed in this manual usually do not directly benefit and, in some cases, create risk to, and hurdles for, CSXT's core business of providing transportation service vital to its customers and the American economy. For these reasons, CSXT seeks payment for its costs and expenses incurred in connection with project review or construction.

Examples of Costs and Expenses

Agency shall reimburse CSXT for all costs and expenses incurred by CSXT in connection with the Project, including, without limitation:

- All out of pocket expenses
- Travel and lodging expenses
- Telephone, facsimile, and mailing expenses
- Costs for equipment, tools, materials and supplies
- Sums paid to CSXT's consultants and subcontractors
- CSXT labor in connection with the Project (included but not limited to flagging), together with CSXT labor overhead percentages established by CSXT pursuant to applicable law
- For estimating purposes only, typical flagging costs are $1,300 per day.

Insurance Requirements for Public Projects

I. Insurance Policies:

Agency and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability (CGL) coverage at their sole cost and expense with limits of not less than $5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.

2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than $1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates [if permitted by state law].

3. Commercial Automobile Liability insurance with limits of not less than $1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.

4. Railroad Protective Liability (RPL) insurance with limits of not less than $5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of $10,000,000, which insurance shall satisfy the following additional requirements:

   a. The Railroad Protective Liability Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.

   b. CSX Transportation must be the named insured on the Railroad Protective Liability Insurance Policy. The named insured's address should be listed as:

      CSX Transportation, Inc.
      500 Water Street, C-907
      Jacksonville, FL 32202

   c. The name and address of the Contractor and of the Project Sponsor/Involved Governmental Agency must be shown on the Declarations page.

   d. A description of operations and location must appear on the Declarations page and must match the Project description.

   e. Terrorism Risk Insurance Act (TRIA) coverage must be included.

   f. Authorized endorsements must include:

      (i). Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later

   g. Authorized endorsements may include:

      (i). Broad Form Nuclear Exclusion - IL 00 21

      (ii). Notice of Non-renewal or cancellation

      (iii). Required State Cancellation Endorsement

      (iv). Quick Reference or Index - CL/IL 240

   h. Authorized endorsements may not include:

      (i). A Pollution Exclusion Endorsement except CG 28 31

      (ii). An Endorsement that excludes TRIA coverage

      (iii). An Endorsement that limits or excludes Professional Liability coverage

      (iv). A Non-Cumulation of Liability or Pyramiding of Limits Endorsement

      (v). A Known Injury Endorsement

      (vi). A Sole Agent Endorsement

      (vii). A Punitive or Exemplary Damages Exclusion

      (viii). A "Common Policy Conditions" Endorsement

      (ix). Policies that contain any type of deductible

      (x). Any endorsement that is not named in Section 4 (f) or (g) above that CSXT deems unacceptable

5. All insurance companies must be A. M. Best rated A- and Class VII or better

6. Such additional or different insurance as CSXT may require

II. Additional Terms

1. Contractor must submit the complete Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies in an electronic format to:

   insurancedocuments@csx.com

Neither Agency nor Contractor may begin work on or about CSXT property until written approval of the required insurance has been received from CSXT or CSXT's Insurance Compliance vendor, Ebix.

Entry onto CSXT Property

Key Points

Written permission is required for all parties entering CSXT property.

- **Construction Agreements authorize entry onto CSXT property.**
- **Temporary right-of-entry agreements can also be used for limited purposes.**
- **CSXT Property Services handles temporary rights of entry for non-construction activities.**
- **CSXT Public Projects handles temporary rights of entry for construction activities.**
- **All parties must adhere to CSXT Safety procedures.**
- **Appropriate insurance is required.**

Overview

To maintain efficient customer service and to ensure the safety of CSX employees and of those parties requesting access to CSXT property, CSXT requires all parties accessing its right-of-way for investigative activities or for the performance of construction work to have a written agreement with CSXT fully detailing each party's responsibilities. Activities by others with the potential to affect CSXT's property, operations, and or personnel without actually entering CSXT property must also be reviewed with CSXT and appropriate arrangements and agreements completed.

The process by which an appropriate agreement covering entry and/or the other necessary conditions or requirements can be developed and implemented is typically dependent upon the scope of the activities proposed by an outside party or agency. Although the type of agreement may vary, most agreements include insurance and liability provisions, work procedures and conditions and reimbursement provisions relating to payment to CSXT for costs it may incur in relation to the entry or work. The following summarizes the various types of CSXT agreements and contracts most frequently utilized to accommodate the requested entry and the proposed work activities.

Entry for Construction Work via CSXT Public Projects

Entry for construction work (not exclusively associated with utility work) will require a Construction Agreement or a Temporary Right-of-Entry Agreement, as determined by the magnitude of potential impacts to CSXT.

A Construction Agreement will be required for construction work that could impact CSXT facilities or operation, such as construction or rehabilitation of a bridge over CSXT, roadway construction or other highway improvements, or grading and/or drainage work.

Construction work that will not impact CSXT facilities or operation may be handled by a Temporary Right-of-Entry Agreement, as determined by CSXT Public Projects.

Entry for Non-Construction Work via CSXT Property Services

A Temporary Right-of-Entry agreement is utilized by CSXT primarily in situations where outside parties or agencies desire to undertake investigative work such as performing survey work, taking borings, performing bridge inspections or undertaking other activities requiring only access to CSXT property and not construction work activities. Different agreements are used for temporary private crossings.

Applications for Temporary Right-of-Entry agreements for investigative and non-construction work activities (including movement of off-highway or oversized loads at grade crossings) within CSXT's right-of-way can be obtained by contacting CSXT Property Services department online at www.csx.com. Click on "Community – Property and Projects," and then click on "Learn more" under "Utility installations and Rights of Entry."

Entry For Other Purposes via CSXT Property Services

CSXT may use other forms of agreements covering entry by outside parties or agencies depending on work scope or other factors. The process to obtain right of entry for these purposes as listed below may also be initiated through CSXT's Property Services department. Information also is available by visiting www.csx.com

- Environmental Right-of-Entry
- Utility Permit/License Agreement for pipeline and wire line construction – both for specifications and applications
- Land Lease applications
- Movement of oversized loads across CSXT tracks at private or public highway-rail grade crossings
- Movement of off highway construction equipment across CSXT tracks at private or public highway-rail grade crossings

Construction Monitoring Requirements

Key Points

- **Construction work affecting CSXT will be monitored by CSXT and its consultants at the project sponsor's expense.**
- **Construction monitoring is in addition to flagging and other protective services.**

Overview

To ensure the safety of the public and CSXT employees, maintain quality rail service to CSXT customers and to protect CSXT assets, CSXT may require construction monitoring (in addition to flagging protection) of the project. The construction monitoring will be conducted by CSXT and its consultants at project expense.

General Guidelines

Construction monitoring includes intermittent or continuous on-site presence of CSXT or its consultants during construction activities.

- The construction project sponsor, owner, or agency in charge will pay for the cost of construction monitoring. Construction monitoring will be specified, and the estimated cost will be included in the construction agreement for the project.
- Construction monitoring is in addition to railroad employee flagging.
- Construction monitoring includes CSXT review and approval of all plan changes and required contractor submissions during the construction phase of the project.
- The project sponsor is responsible for its safety and the safety of its property, contractors, and employees. CSXT, as part of its construction monitoring, will review the work site for activities that could interfere with safe operation of the railroad.
- CSXT and its consultants are not responsible for monitoring the general work activities under the direction of the project sponsor for compliance with safety regulation. Any observed unsafe acts or conditions will be reported immediately to the project sponsor or contractor representative.

Railroad Flagging for Activities On or Near CSXT Property and Tracks

Key Points

- **Flagging services are required when projects are within close proximity to active rail lines, as required by federal law.**
- **Flagging services can only be performed by qualified CSXT personnel.**
- **Arrangements for flagging services may take up to 90 days to schedule a qualified employee.**

Overview

In the interest of public safety and the safety of employees and property, CSXT will work cooperatively with agencies, consultants, contractors and others who need to access railroad property when work brings them in close proximity to active railroad tracks to determine the appropriate flagging services needed and to make arrangements for those services.

Conditions When CSXT Flagging Services Are Required:

- When any entity is working on, near or adjacent to active railroad tracks.
- When an outside party is using railroad property or performing operations that may affect railroad property or facilities. This includes occasions when a party has been given express permission from CSXT to enter railroad property or perform such operations under the terms of a Construction agreement, Temporary Right-of-Entry agreement or other appropriate documentation.
- When work off railroad property has the potential to impact CSXT property or operations.
- When off-highway construction equipment is crossing the railroad at a private or public crossing.
- When oversized equipment or highway vehicles are to cross the railroad at a private or public crossing.
- In other instances as determined by CSXT.

Qualified Flagging Personnel

CSXT flagging services may only be performed by qualified CSXT employees who are trained in the proper procedures related to rail operations and safety requirements, familiar with rail operations and procedures in a project area and able to communicate directly with CSXT dispatching personnel and train crews.

Arrangements for CSXT Flagging Services

- CSXT will make arrangements for flagging services related to planned work by an outside party under the terms of a temporary right-of-entry agreement, construction agreement, environmental license agreement or other mutually acceptable arrangements.
- Advance notice must be provided to secure CSXT flagging services. The level of advance notice may vary from site to site or project to project or if CSXT determines, under the provisions of its labor agreements with its union forces, that flagging services can only be provided as a result of the flagging position being bid and awarded to qualified CSXT personnel.

Responsibility for Costs and Expenses

- All costs and expenses associated with CSXT flagging services are the sole responsibility of the agency, consultant or contractor.
- CSXT will provide its estimated costs prior to the start of the project work or its assignment of flagging personnel.
- Once flagging personnel are formally assigned by CSXT to a specific work location, the period of assignment can only be changed with appropriate advanced arrangements.
- Charges for providing flagging services beyond a normal eight-hour weekday are calculated and billed at an overtime rate.
- For initial planning purposes, typical flagging cost is $1,300 per day.

Examples of Flagging Costs and Expenses

Charges billed by CSXT to the agency, consultant or contractor may include, but are not limited to:

- Employee Salary
  - Hourly employee charges are based on the time an employee departs and returns to his or her headquarters location. As such, the charges can be expected to exceed the level actually incurred during the assigned coverage period or while the flagman is present at the specific work location.
  - This period also includes the time required for flagging personnel to perform the required preparations and termination procedures associated with flagging services at a location.
- Overhead Costs
  - These charges are assessed against the hourly employee charges and determined in accordance with standard accounting procedures or as mandated by State and/or Federal regulations.
- Employee Expenses or Per Diem Rate
  - This amount is calculated based on an employee's actual expenses or on a per diem rate according to the terms of applicable collective bargaining agreements between CSXT and its assigned union flagging employees.
  - The amount includes travel and lodging expenses and the cost for a leased, rented, CSXT, or personal vehicle to be used for transportation.
- Administrative, Accounting, and Billing Services
  - This amount is related to the time associated with setting up the agreement, arranging for and supervising the employee, billing and collection of costs, and other expenses associated with CSXT providing flagging services.

Highway-Rail Grade Crossing Surface Maintenance and Replacement

Key Points

- **Report issues with crossing surfaces to TellCSX. (TellCSX@csx.com or 1-877-TELLCSX)**
- **Coordination is required for work near crossings.**
- **Highways must be closed to vehicular traffic for crossing replacement or maintenance work.**
- **Agreements with CSXT are required for crossing work and work near crossings.**
- **Crossing surface maintenance and replacement must be performed by CSXT.**
- **Crossing surfaces must meet criteria set by CSXT's Engineering Standards. For identification purposes, each crossing has a distinct DOT inventory number (such as 123456A) posted at the crossing and the railroad milepost.**

Overview

The crossing surface provides a path for highway vehicles to cross railroad tracks. The objective is to provide a safe, smooth, and cost effective crossing for highway and railroad traffic. Highway and railroad maintenance work in the vicinity of highway-rail grade crossings must consider safety concerns for both highway and railroad traffic before, during, and after the time the work is implemented.

Identification of the crossing and location

Each crossing has a unique DOT inventory identification number posted at the crossing. There is often more than one crossing on the same road. The crossing number (such as 123456A) must be used to identify the specific crossing in all communications with the railroad to reduce possible confusion about the specific location.

Crossing Construction

Railroad track is continuous through the crossing and includes railroad ties, rail and fasteners below the surface of the crossing. The crossing surface for highway traffic can be made of several different materials. Drainage is required for all four quadrants at a crossing.

Crossing Surface Types and Selection

Crossing surface material and construction methods are selected for each crossing based on the type of highway and railroad traffic, past experience and funding available from highway agencies for individual projects.

Standard types of CSXT approved crossing surfaces are Concrete or Timber/Asphalt. Projects funded by outside parties may be constructed with other materials if specified by the outside party and approved by CSXT. Modular Platform "Tub" type crossings may be considered for use at locations with slow rail operations of 15 MPH or less and high road vehicle count and/or heavy vehicles.

Crossing Maintenance and Replacement

Crossing maintenance and replacement of the track and crossing surface are performed by CSXT and may be billable to an outside party or highway authority as specified in an agreement. The responsibility for the maintenance of public crossing approach pavement varies by state and is specified in some individual crossing agreements or orders.

Crossing work requires closing the entire highway-rail grade crossing. Replacement of track components through a crossing requires removal of the crossing surface, replacement of track ballast, and surfacing the track through the crossing prior to replacement of the crossing surface. If the subgrade needs to be improved, the application of a hot mixed asphalt underlayment should be considered. Drainage will be reestablished for all four quadrants. After the crossing surface is replaced, the highway approach paving is completed and then the road is opened to highway traffic. Replacement of the track and crossing surface usually requires that the highway be closed for several days.

Crossing surfaces are also removed and replaced when track maintenance work is performed through a crossing such as rail replacement, tie replacement, and track surfacing (smoothing). Each crossing has the surface removed and replaced after the work has been completed. Crossings are usually closed for several days during this maintenance work.

Requesting Crossing Surface Replacement or Upgrades

Highway agencies seeking replacement of crossing surfaces should contact CSXT Public Projects. The request for the work and the recommended surface must be reviewed and approved by CSXT. If approved, Public Projects will prepare a standard agreement and include the cost estimate for the project.

Alterations to Highway-Rail Grade Crossing Warning Devices

Key Points

- **Any alterations to highway-rail grade crossing warning systems must adhere to all applicable laws, regulations and national standards.**
- **Requests to CSXT for new or modified public at-grade crossing warning devices must be initiated by the highway agency.**
- **Preliminary Engineering agreements are used to define the project scope and prepare design and estimate information for each project.**
- **The requesting project sponsor will be responsible for advance payment for engineering, design and installation of warning devices.**
- **The coordination of traffic intersection signals with warning devices will be determined by the highway agency or regulatory agency.**
- **Construction agreements are used to implement the projects.**

Overview

The Public Projects Group will process all projects proposing alterations to public highway-rail grade crossing warning systems. Included will be projects for opening new crossings, closing existing crossings, modifying or widening of existing crossings, installing new warning systems, removing and/or relocating existing warning systems and modifying/upgrading existing warning systems.

Identification of the crossing and location

Each crossing has a unique DOT inventory identification number posted at the crossing. There is often more than one crossing on the same road. The number (such as 123456A) must be used to identify the specific crossing in all communications with the railroad to reduce possible confusion about the specific location.

Design Considerations

Highway-rail grade crossing warning systems must adhere to all applicable Federal and State standards and regulations, and local policies, laws and ordinances, as well as CSXT standards. The highway agency, not CSXT, is responsible for determining the level and configuration of warning devices for a public highway-rail grade crossing. In addition, the highway agency or other governmental agency responsible for making warning system and equipment determinations is responsible for selecting appropriate vehicular traffic control signs and/or devices for a specific public highway. Loop Detection Circuitry will not be designed, installed, owned, or maintained by CSXT.

Recommended practices and additional information are available in American Railway Engineering and Maintenance of Way Association (AREMA) manuals and the Manual on Uniform Traffic Control Devices (MUTCD).

Engineering, Cost Estimation, Installation

CSXT will provide engineering, design, and cost estimates for the installation of highway-rail grade crossing warning devices at the expense of the project sponsor as part of the Preliminary Engineering for a project. Changes to highway-rail grade crossing surfaces may also require engineering and estimating by CSXT. Because of labor agreements with CSXT's union forces, CSXT will install the highway-rail grade crossing warning devices.

Operation of Highway-Rail Grade Crossing Warning Devices

Highway-rail grade crossing warning systems are designed to activate in advance of a train entering the crossing. Train speed changes while approaching the crossing may cause the warning system to activate longer than expected. Trains stopping or making forward and reverse movements near the crossing may cause the warning system to activate and then clear after an appropriate time without a train entering the crossing.

Traffic Light Preemption Interconnection

The highway agency will determine if preemption is required. Preemption of the cycle of traffic signals at highway intersections near highway-rail grade crossings requires careful review by highway traffic engineers to determine the appropriate timing and sequence for both the traffic signal and the highway-rail grade crossing warning system. Preemption for the traffic signal may be simultaneous with, or in advance of, the warning system activation. The appropriate sequence and timing shall be provided by the highway agency and distributed to CSXT to facilitate CSXT's signal design. CSXT will furnish one preemption interconnection circuit of a normally closed contact that is designed to open upon the approach or presence of a train and will terminate the closed preemption interconnection circuit in a common cable junction box to be used for the interconnection of the traffic signals and the grade crossing warning devices.

Overhead and Undergrade Bridge Projects

Key Points

- **Overhead and undergrade bridge projects must comply with CSXT's policies and standards, which are available in the appendices of this manual.**
- **All work on overhead and undergrade bridges must be reviewed and approved by CSXT.**
- **CSXT should be involved early in the project development phases to allow required bridge standards to be incorporated into the design of the project.**
- **A preliminary engineering agreement and construction agreement will be required.**
- **CSXT property and operations (including train speeds) shall not be negatively impacted by the project.**
- **No temporary reduced clearances will be permitted.**
- **CSXT requires that new overhead bridges (including existing bridge replacements) span CSXT's right-of-way and have a minimum 23' vertical clearance above top of rail.**
- **All new undergrade bridges must have a ballast deck.**
- **MSE walls are prohibited on CSXT property.**

Overview

Given the efficiencies and environmental benefits of moving goods by rail, CSXT continues to see strong demand for rail services across its network. It is critical that CSXT maintain the ability to expand its network in the future.

CSXT requires that new overhead bridges (including existing bridge replacements) span CSXT's right-of-way and have a minimum 23' vertical clearance above top of rail. CSXT requires that new undergrade bridges provide accommodations for future operating needs, as determined by CSXT.

During project construction, rail operations must not be impeded. Temporary run-around track(s) and/or phased construction may be necessary as determined by CSXT.

General Guidelines

- All bridge projects over or under CSXT shall be governed by the appropriate criteria found in the appendices. This includes but is not limited to replacements, new construction, substructure modifications and/or repairs, superstructure replacement or repair, and deck replacement or overlay.
- Temporary and final drainage plans must be approved by CSXT.
- CSXT's access to its property must be maintained.
- Plans must show all tracks and horizontal and vertical track clearances for both the existing conditions and the proposed project.
- Bridge demolition criteria are found in the Overhead Bridge Criteria in the appendices of this manual.
- Upon completion of construction, a full set of as-built drawings, showing actual measured vertical and horizontal clearances, shall be furnished to CSXT.

Parallel Road Construction

Key Points

- **Proposed parallel public roads shall be located off CSXT property.**
- **Safety at existing highway-rail grade crossings must be considered and not adversely impacted.**
- **No additional drainage may be directed onto railroad property.**
- **CSXT's access to its property must not be impeded.**
- **Construction may result in the need for alterations to crossing warning systems or facilities.**

Overview

In the interest of public safety, parallel public roads shall be located off CSXT property. Parallel roads involving intersections with existing or proposed highways where public or private crossings are present should be aligned to provide sufficient distance from the crossing for the largest vehicle (design vehicle) permitted to use the road to stop between the railroad and the parallel road traffic control signs, markings, and warning devices without interfering with railroad operations, obstructing or preventing the operation of traffic control devices or obstructing the crossing in any manner.

General Guidelines

The design of highways, highway intersection, and configuration of highway-rail grade crossings is the responsibility of the highway agency. Drainage for highway runoff, the railroad corridor, and adjacent property must be designed to reduce or maintain existing railroad drainage and to prevent standing water and potential erosion. Access for CSXT equipment to the railroad property, structures, and track cannot be restricted or prevented.

Federal and State design manuals, the Manual of Uniform Traffic Control Devices (MUTCD) and additional recommended practices available in American Railway Engineering and Maintenance of Way Association manuals (AREMA) provide design information to be considered by the highway agency responsible for the project engineering. The table of contents of this document has additional information on the MUTCD and AREMA manuals and information.

Painting and Cleaning CSXT Bridges to Improve Appearance

Key Points

- **CSXT understands the desire of communities to improve the appearance of bridges and other structures. Safety of CSXT employees, the general public and neighbors restrict some alternatives for bridge appearance improvement.**
- **CSXT may permit others to paint CSXT bridges if labor agreement, technical and responsibility requirements are resolved.**
- **Any surface preparation methods must follow all applicable environmental guidelines and must be approved in advance by CSXT.**
- **CSXT will not accept proposals to attach signage to CSXT bridges.**
- **A written request should be submitted to CSXT's Public Projects Group to initiate consideration of such projects.**

Overview

Requests are occasionally made by outside parties for various beautification projects, including painting of overhead and undergrade bridges. These requests are considered on a case-by-case basis by CSXT. The cost of painting and future aesthetic maintenance will be the responsibility of the project sponsor proposing to paint the CSXT bridge. CSXT will make every effort to cooperate, consistent with maintaining the safety of the public and the safe operation of the railroad.

Consideration of Bridge Painting Projects

Bridge painting proposals must be reviewed and approved by CSXT to ensure compliance with safety and environmental regulations, CSXT specifications, and to ensure that the proposal will not impact CSXT's property or operations.

- CSXT will require an agreement for all bridge painting proposals.
- A public agency must be a party to the agreement.
- CSXT will incur no costs or liabilities as a result of the project.
- The public agency or its designee will be responsible for maintenance of the painted surfaces, including aesthetic damage caused by highway vehicles and vandalism.
- A railroad flagman will be required at the project expense.

Submission of Project Requests

A written request by the party wishing to undertake such projects should be forwarded to CSXT's Public Projects Group for handling. The request should include information about the situation and the project objectives to assist CSXT with completion of the review. The following information should be included:

- The project sponsor and public agency that will execute appropriate agreements for implementation as well as future maintenance of the painted surfaces.
- Paint specifications that meet CSXT standards and methods for surface preparation, cleanup, and paint application.
- Qualifications and experience of the painting contractor. CSXT will accept state qualified bridge painting contractors working for the responsible agency or company. Containment system, clean up and disposal of all paint and other material removed from the bridge. The clean-up and disposal of material from the surface preparation for painting and actual painting must comply with all appropriate regulations.
- The materials removed during the surface preparation must not impact the surrounding area including ground, water, or air impacts. Materials must not be stored on CSXT property.
- Control of paint overspray and vapors during application. The work must be done complying with appropriate regulations and over spray controlled to prevent damage to adjacent property and vehicles in the area.
- Pictures and conceptual drawing should be submitted with the initial request from the community to simplify the initial review and comment by CSXT.
- Work site safety plan including keeping all personnel away from the tracks and fall protection measures where required.

Cleaning and Painting of Bridges over CSXT

Key Points

- **CSXT understands that maintenance of bridges over CSXT may include cleaning and painting. The safety of CSXT employees, the general public, and the project sponsor's contractors is of paramount importance to CSXT.**
- **A written request should be submitted to CSXT's Public Projects Group to initiate this type of project. The request will be reviewed for safety considerations and compliance with CSXT engineering and environmental standards.**
- **An agreement is required to accommodate engineering, review of plans, flagging, right-of-entry, and payment of CSXT incurred costs.**

Overview

All work over CSXT has the potential to impact CSXT property and rail operations. CSXT will review bridge painting and cleaning projects to ensure environmental and engineering standards are met. This review, flagging protection and construction monitoring costs will be paid by the project sponsor.

Requirements for Initiating and Implementing Bridge Cleaning and Painting

A Preliminary Engineering agreement is required to cover CSXT's review of the project and preparation of a cost estimate and construction agreement.

To ensure safety, a railroad employee flagman must be present to control railroad operations in the area during the planned work.

A written request by the party wishing to undertake such projects should be forwarded to CSXT's Public Projects Group for handling. The request should include information about the location and the project objectives to assist CSXT with completion of the review. The following information should be included:

- The project sponsor and appropriate public agency that will execute appropriate agreements for implementation as well as future maintenance of the painted surfaces.
- Qualifications and experience of the painting contractor. CSXT will accept state qualified bridge painting contractors working for the responsible agency or company.
- Containment system, clean up and disposal of all paint and other material removed from the bridge. The clean-up and disposal of material from the surface preparation for painting and actual painting must comply with all appropriate regulations.
- The materials removed during the surface preparation must not impact the surrounding area including ground, water, or air impacts. Materials must not be stored on CSXT property.
- Control of paint overspray and vapors during application. The work must be done complying with appropriate regulations and over spray controlled to prevent damage to adjacent property and vehicles in the area.
- Pictures and conceptual drawing should be submitted with the initial request from the community to simplify the initial review and comment by CSXT.
- Work site safety plan including keeping all personnel away from the tracks and fall protection measures where required.

Public Road Crossing Openings and Closures

Key Points

- **Both federal and state government policies discourage the creation of new highway-rail grade crossings. To enhance highway-rail grade crossing safety, CSXT endorses the United States Department of Transportation's goal of reducing the number of at-grade crossings through consolidation, elimination, grade separation and restriction of the number of new crossings installed.**
- **Grade separated structures are the best alternative to add new roads or additional highway capacity.**
- **CSXT and state and federal agencies have worked with many communities to develop and implement projects that improve highway traffic flow without the creation of new highway-rail grade crossings.**
- **CSXT, the Federal Railroad Administration (FRA), and state agencies encourage communities to consider all alternatives before planning to create new grade crossings and encourage closure of existing grade crossings where possible.**
- **CSXT may provide incentive payments for crossing closures.**
- **To comply with and in support of the federal initiative to reduce crossings, CSXT requires the community to identify three comparable active grade crossings to be closed for each new grade crossing.**

Overview

CSXT understands the importance of highway-rail grade crossings and their relevance to such priorities as economic development, emergency vehicle access and other growth opportunities in the communities through which we operate. Because of the safety concerns associated with highway-rail grade crossings, however, every effort must be made to obtain alternative access or additional capacity using grade separations, or by other roads leading to existing crossings.

Crossing Closure Incentive Program

Eliminating crossings is a goal of CSXT, states and the Federal Railroad Administration (FRA). Likewise, the Federal Highway Administration (FHWA) Railroad-Highway Grade Crossing Handbook acknowledges that the first alternative that should always be considered for a highway-rail at-grade crossing is elimination. Elimination of a crossing provides the highest level of crossing safety because the point of intersection between highway and railroad is removed. Closing adjacent crossings simplifies the design, installation and operation of highway-rail grade crossing warning systems. To help ensure the success of this effort, CSXT may provide incentive payments for the closure of public crossings.

Considerations for Crossing Openings and Closures

The addition of any grade crossing brings the potential for incidents involving trains and motor vehicles. For this reason, both federal and state government policies discourage the creation of new grade crossings. CSXT, other railroads, the United States Department of Transportation and most states encourage communities to carefully consider all alternatives, including grade separations (crossings that go over or under railroad tracks), as opposed to the creation of new at-grade crossings. The cost of a grade separation should not outweigh the enhanced safety it would provide for motorists.

CSXT, the FRA and other railroads actively participate in programs such as Operation Lifesaver, an initiative dedicated to educating the public on the importance of practicing safe driving procedures at grade crossings. For more information about crossing safety, visit: http://www.beyondourrails.org/safety

Before agreeing to the establishment of a new crossing, CSXT expects communities to engage in a study with the purpose of identifying existing redundant public crossings for closure. To comply with and in support of the federal initiative to reduce grade crossings, CSXT requires that the community identify the closure of three or more comparable active public at-grade crossings.

Policies and Procedures to Guide New Crossing Requests:

The project sponsor requesting a new crossing or seeking to convert a private crossing to a public crossing will be asked to prepare a written request, presenting the following information:

1. A description of the proposed highway project, including proposed passive or active traffic control devices, and the need for preemption and/or interconnection with traffic signals, together with a scale drawing or sketch of the proposed highway and vicinity.

2. Expected Annual Average Daily Traffic (AADT) and proposed vehicular speed limit, photographs, aerial map.

3. A detailed explanation of the necessity of the crossing.

4. Identify at-grade crossings to be closed. Include their vehicular speed limit, AADT, and traffic type.

5. The terms on which the project sponsor proposes that the crossing shall be constructed and subsequently maintained.

6. The determination by the highway or regulatory authority of the need for passive or active traffic control devices and other safety treatments (i.e., signage, roadway medians, etc.), as selected by the highway authority consistent with applicable federal and state MUTCD guidelines and requirements.

7. A plan to satisfy any appropriate regulatory authority's requirements, procedures and approval. The project sponsor should coordinate with all applicable agencies (state, county, city, etc.) to ensure proper procedures are followed.

8. Provide CSXT authorization to incur costs for its Preliminary Engineering to review the crossing request (whether or not is approved), design and construction expenses, and for the ongoing maintenance of the crossing surface and related grade crossing warning devices.

CSXT will review the request for a new crossing and inform the project sponsor whether or not the new crossing is approved. CSXT may deny a new crossing request due to safety or operational concerns.

Bicycle/Pedestrian Pathways and Multi-Use Trails

Key Points

- **Private or public parallel bicycle/pedestrian pathways and trails are not permitted on CSXT property.**
- **Bicycle/pedestrian pathways and trails cannot cross tracks at grade outside of existing highway easements.**
- **The highway agency's design must include additional safety measures for at-grade pathways and trails within existing highway easements.**
- **CSXT prefers grade separated bicycle/pedestrian pathways and multi-use trails.**
- **CSXT will oppose condemnation proceedings aimed at recreational use of trackside property.**

Overview

CSXT recognizes that communities often wish to establish recreational pathways and trails in the proximity of active railroad lines. While CSXT will work with communities to accommodate such requests, it is critical for project sponsors to recognize that CSXT requirements must be met and safety precautions taken to protect the public and CSXT employees. In addition, certain requests, such as pathway crossings at grade outside of existing highway easements, will not be permitted.

CSXT Policy on Pathways and Trails Parallel to CSXT Property

At CSXT safety is paramount. CSXT's policy is not to permit private or public parallel bicycle/pedestrian paths that come within the railroad's right-of-way. CSXT will insist upon safety measures such as fencing and signage where such pathways or parks are established parallel to the railroad's right-of-way. The cost of installing, inspection and future maintenance are the responsibility of the trail sponsor or agency. CSXT will oppose any attempt to establish recreational usage of CSXT property through condemnation. Regardless of construction of pathways and trails, CSXT reserves the right to use CSXT right of way for operational necessities.

Pathways and Trails Crossing CSXT Tracks and Right-of-Way

Bicycle/pedestrian pathways and trails cannot cross tracks at grade outside of existing highway easements. Grade separated pathway and trail crossings are preferred in all cases, and required when outside of an existing highway easement. Pathways and trails under existing railroad structures are discouraged and will only be allowed under special circumstances. Pathways and trails over and under the railroad track shall have protective fencing.

Bicycle/pedestrian pathways and trails crossing at-grade within a highway easement must have appropriate signs and warning systems as determined by the responsible highway and/or regulatory agency.

All expenses associated with the design, installation and maintenance of the pathway/trail, including the costs of signs, crossing surfaces and warning systems associated with an at-grade crossing, will be paid by the project sponsor.

CSXT prosecutes trespassers and every precaution must be taken to ensure that the public remains clear of CSXT's property.

Quiet Zones Proposals

Key Points

- **This section was developed as a guideline for communities that approach CSXT in regards to the implementation of a Quiet Zone under the Federal Railroad Administration's (FRA) final rule on the use of locomotive horns at public highway-rail grade crossings (49 CFR Part 222, the "Rule"), and to ensure CSXT's full compliance and cooperation with respect to the Rule.**
- **According to the FRA, the implementation of Quiet Zones – without appropriate safeguards and equipment – increases the risk of accidents at highway-rail grade crossings. In this context, CSXT encourages communities considering whether to pursue the implementation of a Quiet Zone to take into account the installation of appropriate Supplemental Safety Measures ("SSMs"), as defined in the Rule, as well as the consolidation and/or closing of adjacent crossings, all of which will act as a safeguard to potentially reduce the risk of accidents at each crossing below the risk level that existed prior to the implementation of the Quiet Zone.**
- **Communities that wish to implement Quiet Zones will be required to strictly comply with the Rule.**
- **Pursuant to the Rule, notifications and/or applications to implement or continue Quiet Zones are to be made to the FRA and must involve all relevant state and local agencies, CSXT, and any other rail carriers operating in the area.**
- **CSXT will seek to be reimbursed for work performed to design, implement, and maintain railroad facilities within Quiet Zones.**
- **CSXT desires to be a good corporate citizen. CSXT also places importance on the quality and timeliness of service to its customers and the communities it serves. As such, consistent with the Rule, CSXT will seek to encourage communities requesting Quiet Zones to implement solutions and SSMs that optimally achieve safety while minimizing the impact on railroad operations.**

Overview

CSXT will fully comply with the Rule, which provides requirements for the sounding of locomotive horns when approaching public highway-rail grade crossings. The Rule also provides guidance for conditions under which a public authority with jurisdiction over the roadway crossing CSXT tracks may apply for and establish Quiet Zones. A Quiet Zone is a section of a rail line that contains one or more consecutive public crossings at which locomotive horns are not routinely sounded. (For full details on the rules, CSXT recommends that communities either visit the FRA web site at www.fra.dot.gov or contact the FRA's Office of Safety at 202-493-6299).

Policy on Quiet Zones

The Rule clearly defines requirements that must be satisfied by the public authority requesting that a Quiet Zone be established or continued. CSXT will expect the public authority to strictly comply with these requirements.

Identification of the crossing and location

Each crossing has a unique DOT inventory identification number posted at the crossing. There is often more than one crossing on the same road. The crossing number (such as 123456A) must be used to identify the specific crossing in all communications with the railroad to reduce possible confusion about the specific location.

Preliminary Planning for Quiet Zones

Preliminary work by CSXT personnel and/or its consultants is likely to be required in connection with the proposed new or continued Quiet Zone, including, but not limited to: updating crossing inventory information; attending meetings; participating, to the extent feasible, in diagnostic reviews of the public, private and pedestrian crossings in a proposed Quiet Zone; preparing and processing estimates covering the cost of work to be performed by CSXT, if applicable; and processing necessary agreements. CSXT will coordinate preliminary planning activities with each public authority pursuant to an initial agreement that will also provide for payment to CSXT for services provided during development of Quiet Zones.

Getting Started: Process for Pursuing a Quiet Zone

1. Groups or individuals interested in Quiet Zones should first contact the public authority responsible for the highway where the Quiet Zone would be located. Public authorities should then contact the FRA for additional information on Quiet Zone requirements and procedures.

2. The public authority shall initiate contact with CSXT to: TellCSX@csx.com or (877) 835-5279. Those making this contact will be furnished with the Quiet Zone policy and advised of the appropriate contact within the CSXT Public Projects Group for the initial planning activities with CSXT.

3. If the public authority decides to proceed with preliminary planning for a Quiet Zone, CSX will assist by providing, when required, DOT inventory information and attending diagnostic review meetings, to the extent schedules permit. CSXT resources to attend these meetings are limited and thus CSXT will seek flexibility in establishing meeting dates and times in order to permit CSXT representatives to attend.

4. The preliminary planning for a Quiet Zone project should include a review of the following principles:

    a. CSXT will cooperate and work in good faith with local communities and the appropriate public authority to provide all possible assistance in a manner that protects the safety of local citizens and their communities as well as CSXT's employees.

    b. In accordance with the Rule, CSXT's support of a Quiet Zone proposal will require the plan to meet very specific FRA measures and requirements, which in some cases, may be subject to FRA review, approval and on-going oversight. Accordingly, CSXT retains the right to review and comment on the requests.

    c. CSXT expects the involvement of the state DOT, FRA, and/or state regulatory authority in any diagnostic review of a public, private and pedestrian crossing in the Quiet Zone corridor being proposed.

    d. As discussed above, the appropriate public authority will be expected to reimburse CSXT for its cost of design, installation and future maintenance of safety enhancements, including, but not limited to, its installation of Supplemental Safety Measures (SSMs) and Alternative Safety Measures (ASMs). As an example, CSXT installs and maintains active warning systems at highway-rail grade crossings that may be modified or expanded for a Quiet Zone. Curbs, medians, pavement markings and other traffic control signs such as advance warning signs are installed and maintained by Public Authorities. The specific responsibilities are expected to be resolved during the preliminary planning for a Quiet Zone.

    e. If one or more SSMs or ASMs selected to be installed require work by CSXT, a separate standard Preliminary Engineering Agreement will be required to cover CSXT's engineering, review, handling, and estimate preparation connected with the proposed work. A separate Construction Agreement will be used for implementation of the projects. The cost of this work will be the responsibility of the requesting public authority.

    f. SSMs or ASMs installed and maintained by the public authority as described above are important parts of traffic control at each crossing. The Public authority is responsible for periodic inspection and repair of these items.

5. Standard CSXT Public Projects Group design and estimating procedures will be used for projects related to Quiet Zones.

6. Vehicle Loop Detection Circuitry will not be designed, installed, owned, or maintained by CSXT.

7. Wayside Horn Systems are not authorized for use on CSXT.

APPENDIX

CSX Transportation

PRELIMINARY ENGINEERING AGREEMENT

Public Projects Group
Jacksonville, FL
Date Issued: May 12, 2006

PRELIMINARY ENGINEERING AGREEMENT

This Preliminary Engineering Agreement (this "Agreement") is made as of _____, 20__, by and between CSX TRANSPORTATION, INC., a Virginia corporation with its principal place of business in Jacksonville, Florida ("CSXT"), and [insert name of public agency], a body corporate and political subdivision of the [State or Commonwealth] of [insert name of State/Commonwealth] ("Agency").

EXPLANATORY STATEMENT

1. Agency wishes to facilitate the development of the proposed [DESCRIBE PROJECT] (the "Project").

2. Agency has requested that CSXT proceed with certain necessary engineering and/or design services for the Project to facilitate the parties' consideration of the Project.

3. Subject to the approval of CSXT, which approval may be withheld for any reason directly or indirectly related to safety or CSXT operations, property, or facilities, the Project is to be constructed, if at all, at no cost to CSXT, under a separate construction agreement to be executed by the parties at a future date.

NOW, THEREFORE, for and in consideration of the foregoing Explanatory Statement and other good and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties agree as follows:

1. Scope of Work

1.1 Generally. The work to be done by CSXT under this Agreement shall consist of: (i) the preparation or review and approval of preliminary and final engineering and design plans, specifications, drawings, agreements and other documents pertaining to the Project, (ii) the preparation of cost estimates for CSXT's work in connection with the Project, and (iii) the review of construction cost estimates, site surveys, assessments, studies, agreements and related construction documents submitted to CSXT by Agency for the Project (collectively, the "Engineering Work"). Engineering Work may also include office reviews, field reviews, attending hearings and meetings, and preparing correspondence, reports, and other documentation in connection with the Project. Nothing contained in this Agreement shall oblige CSXT to perform work which, in CSXT's opinion, is not relevant to CSXT's participation in the Project.

1.2 Effect of CSXT Approval or Preparation of Documents. By its review, approval or preparation of plans, specifications, drawings or other documents pursuant to this Agreement (collectively, the "Plans"), CSXT signifies only that the Plans and the Project proposed to be constructed in accordance with the Plans satisfy CSXT's requirements. CSXT expressly disclaims all other representations and warranties in connection with the Plans, including, but not limited to, the integrity, suitability or fitness for the purposes of Agency or any other persons of such Plans or the Project constructed in accordance with the Plans.

2. Project Construction. Nothing contained in this Agreement shall be deemed to constitute CSXT's approval of or consent to the construction of the Project, which approval or consent may be withheld for any reason directly or indirectly related to safety or CSXT operations, property, or facilities. The Project if constructed is to be constructed, if at all, under a separate construction agreement to be executed by the parties at a future date.

3. Reimbursement of CSXT Expenses.

3.1. Reimbursable Expenses. Agency shall reimburse CSXT for all costs and expenses incurred by CSXT in connection with the Engineering Work, including, without limitation: (i) all out of pocket expenses, (ii) travel and lodging expenses, (iii) telephone, facsimile, and mailing expenses, (iv) costs for equipment, tools, materials and supplies, (v) sums paid to consultants and subcontractors, and (vi) labor, together with labor overhead percentages established by CSXT pursuant to applicable law (collectively, the "Reimbursable Expenses").

3.2 Estimate. CSXT has estimated the total Reimbursable Expenses for the Project to be approximately $_____ (the "Estimate" as amended or revised). In the event CSXT anticipates that actual Reimbursable Expenses may exceed such Estimate, it shall provide Agency with the revised Estimate of total Reimbursable Expenses for Agency's approval and confirmation that sufficient funds have been appropriated to cover the total Reimbursable Expenses as reflected in the revised Estimate. CSXT may elect, by delivery of notice to Agency, to immediately cease all further Engineering Work, unless and until Agency provides such approval and confirmation.

3.3 Payment Terms.

3.3.1. Advance Payment in Full. Upon execution and delivery of this Agreement by Agency, Agency will deposit with CSXT a sum equal to the Reimbursable Expenses, as shown by the Estimate. Agency shall pay CSXT for Reimbursable Expenses in the amount set forth in CSXT Schedule PA attached hereto, a copy of which shall accompany the advance payment. If CSXT anticipates that it may incur Reimbursable Expenses in excess of the deposited amount, CSXT will request an additional deposit equal to the then remaining Reimbursable Expenses which CSXT estimates that it will incur. CSXT shall request such additional deposit by delivery of invoices to Agency. Agency shall make such additional deposit within thirty (30) days following delivery of such invoice to Agency.

3.3.2. Following completion of all Engineering Work, CSXT shall reconcile the total Reimbursable Expenses incurred by CSXT against the total payments received from Agency and shall submit to Agency a final invoice if required. Agency shall pay to CSXT the amount by which actual Reimbursable Expenses exceed total payments, as shown by the final invoice, within thirty (30) days following delivery to Agency of the final invoice. CSXT will provide a refund of any unused deposits if the deposit exceeds the incurred Reimbursable Expenses for the Project.

3.3.3. In the event that Agency fails to pay CSXT any sums due CSXT under this Agreement: (i) Agency shall pay CSXT interest at the lesser of 1.0% per month or the maximum rate of interest permitted by applicable law on the delinquent amount until paid in full; and (ii) CSXT may elect, by delivery of notice to Agency: (A) to immediately cease all further work on the Project, unless and until Agency pays the entire delinquent sum, together with accrued interest; and/or (B) to terminate this Agreement.

3.4 Effect of Termination. Agency's obligation to pay CSXT Reimbursable Expenses in accordance with this Section shall survive termination of this Agreement for any reason.

4. Appropriations. Agency represents to CSXT that: (i) Agency has obtained appropriations sufficient to reimburse CSXT for the Reimbursable Expenses encompassed by the initial Estimate; (ii) Agency shall use its best efforts to obtain appropriations necessary to cover Reimbursable Expenses encompassed by subsequent Estimates approved by Agency; and (iii) Agency shall promptly notify CSXT in the event that Agency is unable to obtain such additional appropriations.

5. Termination.

5.1 By Agency. Agency may terminate this Agreement, for any reason, by delivery of notice to CSXT. Such termination shall become effective upon the expiration of fifteen (15) calendar days following delivery of notice to CSXT or such later date designated by the notice.

5.2 By CSXT. CSXT may terminate this Agreement (i) as provided pursuant to Section 3.3.3., or (ii) upon Agency's breach of any of the terms of, or its obligations under, this Agreement and such breach continues without cure for a period of ninety (90) days after written notification from CSXT to Agency of such breach.

5.3 Consequences of Termination. If the Agreement is terminated by either party pursuant to this Section or any other provision of this Agreement, the parties understand that it may be impractical to immediately stop the Engineering Work. Accordingly, both parties agree that, in such instance a party may continue to perform Engineering Work until it

has reached a point where it may reasonably and/or safely suspend the Engineering Work. Agency shall reimburse CSXT pursuant to this Agreement for the Engineering Work performed, plus all costs reasonably incurred by CSXT to discontinue the Engineering Work and all other costs of CSXT incurred as a result of the Project up to the time of full suspension of the Engineering Work. Termination of this Agreement or Engineering Work on the Project, for any reason, shall not diminish or reduce Agency's obligation to pay CSXT for Reimbursable Expenses incurred in accordance with this Agreement. In the event of the termination of this Agreement or the Engineering Work for any reason, CSXT's only remaining obligation to Agency shall be to refund to Agency payments made to CSXT in excess of Reimbursable Expenses in accordance with Section 2.

6. Subcontracts. CSXT shall be permitted to engage outside consultants, counsel and subcontractors to perform all or any portion of the Engineering Work.

7. Notices. All notices, consents and approvals required or permitted by this Agreement shall be in writing and shall be deemed delivered (i) on the expiration of three (3) days following mailing by first class U.S. mail, (ii) on the next business day following mailing by a nationally recognized overnight carrier, or (iii) on the date of transmission, as evidenced by written confirmation of successful transmission, if by facsimile or other electronic transmission if sent on a business day (or if not sent on a business day, then on the next business day after the date sent), to the parties at the addresses set forth below, or such other addresses as either party may designate by delivery of prior notice to the other party:

If to CSXT: CSX Transportation, Inc.
500 Water Street, J301
Jacksonville, Florida 32202
Attention: _____

If to Agency: _____
_____
_____
_____

8. Entire Agreement. This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of both parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter. In the event of any inconsistency between this Agreement and the Exhibits, the more specific terms of the Exhibits shall be deemed controlling.

9. Waiver. If either party fails to enforce its respective rights under this Agreement, or fails to insist upon the performance of the other party's obligations hereunder, such failure shall not be construed as a permanent waiver of any rights or obligations in this Agreement.

10. Assignment. CSXT may assign this Agreement and all rights and obligations herein to a successor in interest, parent company, affiliate, or future affiliate. Upon assignment of this Agreement by CSXT and the assumption by CSXT's assignee of CSXT's obligations under this Agreement, CSXT shall have no further obligations under this Agreement. Agency shall not assign its rights or obligations under this Agreement without CSXT's prior written consent, which consent may be withheld for any reason.

11. Applicable Law. This Agreement shall be governed by the laws of the [State or Commonwealth] of [*PROJECT LOCATION], exclusive of its choice of law rules. The parties further agree that the venue of all legal and equitable proceedings related to disputes under this Agreement shall be situated in Duval County, Florida, and the parties agree to submit to the personal jurisdiction of any State or Federal court situated in Duval County, Florida.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate, each by its duly authorized officers, as of the date of this Agreement.

[AGENCY]

By: _____
Print Name: _____
Title: _____

CSX TRANSPORTATION, INC.

By: _____
Print Name: _____

CSXT Schedule PA
(Advance Payment – Preliminary Engineering Agreement)

PAYMENT SUBMISSION FORM

****

Payment is hereby provided in accordance with the terms of Section 3.3 of the Agreement dated _____, 20____, between Agency and CSXT.

****

A copy of this Payment Submission Form shall accompany all payments delivered by Agency to CSXT which shall be forwarded to the following address:

CSX Transportation, Inc.
P. O. Box 116651
Atlanta. GA 30368-6651

Payment due within ten (10) days of Agency's receipt of fully executed agreement

****

(All information below to be completed by Agency providing Payment)

Payment Date	Payment Amount	Check No.
_____	_____	_____

****

Date: _____ By: _____

Name: _____

Title: _____

Phone: _____

Email: _____

APPENDIX

CSX Transportation

CONSTRUCTION AGREEMENT

Public Projects Group
Jacksonville, FL
Date Issued: October 1, 1999

CONSTRUCTION AGREEMENT

This Construction Agreement ("Agreement") is made as of _____, 20____, by and between CSX TRANSPORTATION, INC., a Virginia corporation with its principal place of business in Jacksonville, Florida ("CSXT"), and [PUBLIC AGENCY], a body corporate and political subdivision of the State of _____ ("Agency").

EXPLANATORY STATEMENT

1. Agency has proposed to construct, or to cause to be constructed, [PROJECT DESCRIPTION] (the "Project").

2. Agency has obtained, or will obtain, all authorizations, permits and approvals from all local, state and federal agencies (including Agency), and their respective governing bodies and regulatory agencies, necessary to proceed with the Project and to appropriate all funds necessary to construct the Project.

3. Agency acknowledges that: (i) by entering into this Agreement, CSXT will provide services and accommodations to promote public interest in this Project, without profit or other economic inducement typical of other Agency contractors; (ii) neither CSXT nor its affiliates (including their respective directors, officers, employees or agents) will incur any costs, expenses, losses or liabilities in excess of payments made to CSXT, by or on behalf of Agency or its contractors, pursuant to this Agreement; and (iii) CSXT retains the paramount right to regulate all activities affecting its property and operations.

4. It is the purpose of this Agreement to provide for the terms and conditions upon which the Project may proceed.

NOW, THEREFORE, in consideration of the foregoing Explanatory Statement and other good and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties agree as follows:

1. PROJECT PLANS AND SPECIFICATIONS

Preparation and Approval. Pursuant to Exhibit A of this Agreement, all plans, specifications, drawings and other documents necessary or appropriate to the design and construction of the Project shall be prepared, at Agency's sole cost and expense, by Agency or CSXT or their respective contractors. Project plans, specifications and drawings prepared by or on behalf of Agency shall be subject, at CSXT's election, to the review and approval of CSXT. Such plans, specifications and drawings, as prepared or approved by CSXT, are referred to as the "Plans", and shall be incorporated and deemed a part of this Agreement. Plans prepared or submitted to and approved by CSXT as of the date of this Agreement are set forth in Exhibit B to this Agreement.

Effect of CSXT Approval or Preparation of Plans. By its review, approval or preparation of Plans pursuant to this Agreement, CSXT signifies only that such Plans and improvements constructed in accordance with such Plans and improvements constructed in accordance with such Plans satisfy CSXT's requirements. CSXT expressly disclaims all other representations and warranties in connection with the Plans, including, but not limited to, the integrity, suitability or fitness for the purposes of Agency or any other persons of the Plans or improvements constructed in accordance with the Plans.

Compliance with Plans. The Project shall be constructed in accordance with the Plans.

2. ALLOCATION AND CONDUCT OF WORK

Work in connection with the Project shall be allocated and conducted as follows:

2.1 CSXT Work. Subject to timely payment of Reimbursable Expenses as provided by Section 4, CSXT shall provide, or cause to be provided, the services as set forth by Exhibit A to this Agreement. Agency agrees that CSXT shall provide all services that CSXT deems necessary or appropriate (whether or not specified by Exhibit A) to preserve and maintain its property and operations, without impairment or exposure to liability of any kind and in compliance with all applicable federal, state and local regulations and CSXT's contractual obligations, including, but not limited to, CSXT's existing or proposed third party agreements and collective bargaining agreements.

2.2 Agency Work. Agency shall perform, or cause to be performed, all work as set forth by Exhibit A, at Agency's sole cost and expense.

2.3 Conduct of Work. CSXT shall commence its work under this Agreement following: (i) delivery to CSXT of a notice to proceed from Agency; (ii) payment of Reimbursable Expenses (as provided by Section 4.1) as required by CSXT prior to the commencement of work by CSXT; (iii) issuance of all permits, approvals and authorizations necessary or appropriate for such work; and (iv) delivery of proof of insurance acceptable to CSXT, as required by Section 9. The initiation of any services by CSXT pursuant to this Agreement, including, but not limited to, the issuance of purchase orders or bids for materials or services, shall constitute commencement of work for the purposes of this Section. The parties intend that all work by CSXT or on CSXT property shall conclude no later than [INSERT DATE], unless the parties mutually agree to extend such date.

3. SPECIAL PROVISIONS

Agency shall observe and abide by, and shall require its contractors ("Contractors") to observe and abide by the terms, conditions and provisions set forth in Exhibit C to this Agreement (the "Special Provisions"). To the extent that Agency performs Project work itself, Agency shall be deemed a Contractor for purposes of this Agreement. Agency further agrees that, prior to the commencement of Project work by any third party Contractor, such Contractor shall execute and deliver to CSXT Schedule I to this Agreement to acknowledge Contractor's agreement to observe and abide by the terms and conditions of this Agreement.

4. COST OF PROJECT AND REIMBURSEMENT PROCEDURES

4.1 Reimbursable Expenses. Agency shall reimburse CSXT for all costs and expenses incurred by CSXT in connection with the Project, including, without limitation: (1) all out of pocket expenses, (2) travel and lodging expenses, (3) telephone, facsimile, and mailing expenses, (4) costs for equipment, tools, materials and supplies, (5) sums paid to CSXT's consultants and subcontractors, and (6) CSXT labor in connection with the Project, together with CSXT labor overhead percentages established by CSXT pursuant to applicable law (collectively, "Reimbursable Expenses"). Reimbursable Expenses shall also include expenses incurred by CSXT prior to the date of this Agreement to the extent identified by the Estimate provided pursuant to Section 4.2.

4.2 Estimate. CSXT has estimated the total Reimbursable Expenses for the Project as shown on Exhibit D (the "Estimate", as amended or revised). In the event CSXT anticipates that actual Reimbursable Expenses for the Project may exceed such Estimate, it shall provide Agency with the revised Estimate of the total Reimbursable Expenses, together with a revised Payment Schedule (as defined by Section 4.3.1), for Agency's approval and confirmation that sufficient funds have been appropriated to cover the total Reimbursable Expenses of such revised Estimate. CSXT may elect, by delivery of notice to Agency, to immediately cease all further work on the Project, unless and until Agency provides such approval and confirmation.

4.3 Payment Terms.

4.3.1 Agency shall pay CSXT for Reimbursable Expenses in the amounts and on the dates set forth in the Payment Schedule as shown on Exhibit E (the "Payment Schedule", as revised pursuant to Section 4.2). CSXT agrees to submit invoices to Agency for such amounts and Agency shall remit payment to CSXT at the later of thirty (30) days following delivery of each such invoice to Agency or, the payment date (if any) set forth in the Payment Schedule.

4.3.2 Following completion of the Project, CSXT shall submit to Agency a final invoice that reconciles the total Reimbursable Expenses incurred by CSXT against the total payments received from Agency. Agency shall pay to CSXT the amount by which Reimbursable Expenses exceed total payments as shown by the final invoice, within thirty (30) days following delivery of such invoice to Agency. In the event that the payments received by CSXT from Agency exceed the Reimbursable Expenses, CSXT shall remit such excess to Agency.

4.3.3 In the event that Agency fails to pay CSXT any sums due CSXT under this Agreement: (i) Agency shall pay CSXT interest at the lesser of 1.0% per month or the maximum rate of interest permitted by applicable law on the delinquent amount until paid in full; and (ii) CSXT may elect, by delivery of notice to Agency: (A) to immediately cease all further work on the Project, unless and until Agency pays the entire delinquent sum, together with accrued interest; and/or (B) to terminate this Agreement.

4.3.4 All invoices from CSXT shall be delivered to Agency in accordance with Section 16 of this Agreement. All payments by Agency to CSXT shall be made by certified check and mailed to the following address or such other address as designated by CSXT's notice to Agency:

CSX Transportation, Inc.
P. O. Box 116551
Atlanta. GA 30368-6651

4.4 Effect of Termination. Agency's obligation to pay to CSXT Reimbursable Expenses in accordance with Section 4 shall survive termination of this Agreement for any reason.

5. APPROPRIATIONS

Agency represents to CSXT that: (i) Agency has appropriated funds sufficient to reimburse CSXT for the Reimbursable Expenses encompassed by the Estimate attached as Exhibit D; (ii) Agency shall use its best efforts to obtain appropriations necessary to cover Reimbursable Expenses encompassed by subsequent Estimates approved by Agency; and (iii) Agency shall promptly notify CSXT in the event that Agency is unable to obtain such appropriations.

6. EASEMENTS AND LICENSES

6.1 Agency Obligation. Agency shall acquire all necessary licenses, permits and easements required for the Project.

6.2 Temporary Construction Licenses. Insofar as it has the right to do so, CSXT hereby grants Agency a nonexclusive license to access and cross CSXT's property, to the extent necessary for the construction of the Project (excluding ingress or egress over public grade crossings), along such routes and upon such terms as may be defined and imposed by CSXT and such temporary construction easements as may be designated on the Plans approved by CSXT.

Permanent Easements. Insofar as it has the right to do so, CSXT shall grant, without warranty to Agency, easements for the use and maintenance of the Project wholly or partly on CSXT property as shown on the Plans approved by CSXT, if any, on terms and conditions and at a price acceptable to the parties. Upon request by CSXT, Agency shall furnish to CSXT descriptions and plat plans for the easements.

7. PERMITS

At its sole cost and expense, Agency shall procure all permits and approvals required by any federal, state, or local governments or governmental agencies for the construction, maintenance and use of the Project, copies of which shall be provided to CSXT.

8. TERMINATION

8.1 By Agency. For any reason, Agency may, as its sole remedy, terminate this Agreement by delivery of notice to CSXT. Agency shall not be entitled to otherwise pursue claims for consequential, direct, indirect or incidental damages or lost profits as a consequence of CSXT's default or termination of this Agreement or Work on the Project by either party.

8.2 By CSXT. In addition to the other rights and remedies available to CSXT under this Agreement, CSXT may terminate this Agreement by delivery of notice to Agency in the event Agency or its Contractors fail to observe the terms or conditions of this Agreement and such failure continues more than ten (10) business days following delivery of notice of such failure by CSXT to Agency.

8.3 Consequences of Termination. If the Agreement is terminated by either party pursuant to this Section or any other provision of this Agreement, the parties understand that it may be impractical for them to immediately stop the Work. Accordingly, they agree that, in such instance a party may continue to perform Work until it has reached a point where it may reasonably and safely suspend the Work. Agency shall reimburse CSXT pursuant to this Agreement for the Work performed, plus all costs reasonably incurred by CSXT to discontinue the Work and protect the Work upon full suspension of the same, the cost of returning CSXT's property to its former condition, and all other costs of CSXT incurred as a result of the Project up to the time of full suspension of the Work. Termination of this Agreement or Work on the Project, for any reason, shall not diminish or reduce Agency's obligation to pay CSXT for Reimbursable Expenses incurred in accordance with this Agreement. In the event of the termination of this Agreement or the Work for any reason, CSXT's only remaining obligation to Agency shall be to refund to Agency payments made to CSXT in excess of Reimbursable Expenses in accordance with Section 4.

9. INSURANCE

In addition to the insurance that Agency requires of its Contractor, Agency shall acquire or require its Contractor to purchase and maintain insurance in compliance with CSXT's insurance requirements attached to this Agreement as Exhibit F. Neither Agency nor Contractor shall commence work on the Project until such policy or policies have been submitted to and approved by CSXT's Risk Management Department.

10. OWNERSHIP AND MAINTENANCE

[CSXT UTILIZES VARIOUS LANGUAGE IN COMPLETING THIS SECTION DESCRIBING BOTH MAINTENANCE RESPONSIBILITIES FOR CSXT AND AGENCY WHICH IS DEPENDENT UPON THE PROJECT WORK SCOPE, PROVISIONS OF LAW OR REGULATORY ORDERS, PROJECT NEGOTIATIONS AND OTHER FACTORS – FINAL LANGUAGE TO BE DETERMINED]

10.1 By Agency.

10.2 By CSXT.

10.3 Alterations. Agency shall not undertake any alteration, modification or expansion of the Project, without the prior written approval of CSXT, which may be withheld for any reason, and the execution of such agreements as CSXT may require.

11. INDEMNIFICATION

11.1 Generally. To the maximum extent permitted by applicable law, Agency and its Contractors shall indemnify, defend, and hold CSXT and its affiliates harmless from and against all claims, demands, payments, suits, actions, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages), for any injury to or death to any person(s) (including, but not limited to the employees of CSXT, its affiliates, Agency or its Contractors), for the loss of or damage to any property whatsoever (including but not limited to property owned by or in the care, custody, or control of CSXT, its affiliates, Agency or its Contractors, and environmental damages and any related remediation brought or recovered against CSXT and its affiliates), arising directly or indirectly from the negligence, recklessness or intentional wrongful misconduct of the Contractors, Agency, and their respective agents, employees, invitees, contractors, or its contractors' agents, employees or invitees in the performance of work in connection with the Project or activities incidental thereto, or from their presence on or about CSXT's property. The foregoing indemnification obligation shall not be limited to the insurance coverage required by this Agreement, except to the extent required by law or otherwise expressly provided by this Agreement.

11.2 Compliance with Laws. Agency shall comply, and shall require its Contractors to comply, with any federal, state, or local laws, statutes, codes, ordinances, rules, and regulations applicable to its construction and maintenance of the Project. Agency's Contractors shall indemnify, defend, and hold CSXT and its affiliates harmless with respect to any fines, penalties, liabilities, or other consequences arising from breaches of this Section.

11.3 "CSXT Affiliates". For the purpose of this Section 11, CSXT's affiliates include CSX Corporation and all entities, directly or indirectly, owned or controlled by or under common control of CSXT or CSX Corporation and their respective officers, directors, employees and agents.

11.4 Notice of Incidents. Agency and its Contractor shall notify CSXT promptly of any loss, damage, injury or death arising out of or in connection with the Project work.

11.5 Survival. The provisions of this Section 11 shall survive the termination or expiration of this Agreement.

12. INDEPENDENT CONTRACTOR

The parties agree that neither Agency nor its Contractors shall be deemed either agents or independent contractors of CSXT. Except as otherwise provided by this Agreement, CSXT shall exercise no control whatsoever over the employment, discharge, compensation of, or services rendered by Agency or Agency's Contractors, or the construction practices, procedures, and professional judgment employed by Agency or its Contractor to complete the Project. Notwithstanding the foregoing, this Section 12 shall in no way affect the absolute authority of CSXT to prohibit Agency or its Contractors or anyone from entering CSXT's property, or to require the removal of any person from its property, if it determines, in its sole discretion, that such person is not acting in a safe manner or that actual or potential hazards in, on or about the Project exist.

13. "ENTIRE AGREEMENT"

This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of both parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter. In the event of any inconsistency between this Agreement and the Exhibits, the more specific terms of the Exhibits shall be deemed controlling.

14. WAIVER

If either party fails to enforce its respective rights under this Agreement, or fails to insist upon the performance of the other party's obligations hereunder, such failure shall not be construed as a permanent waiver of any rights or obligations in this Agreement.

15. ASSIGNMENT

CSXT may assign this Agreement and all rights and obligations herein to a successor in interest, parent company, affiliate, or future affiliate. Upon assignment of this Agreement by CSXT and the assumption of CSXT's assignee of CSXT's obligations under this Agreement, CSXT shall have no further obligation under this Agreement. Agency shall not assign its rights or obligations under this Agreement without CSXT's prior consent, which consent may be withheld for any reason.

16. NOTICES

All notices, consents and approvals required or permitted by this Agreement shall be in writing and shall be deemed delivered upon personal delivery, upon the expiration of three (3) days following mailing by first class U.S. mail, or upon the next business day following mailing by a nationally recognized overnight carrier, to the parties at the addresses set forth below, or such other addresses as either party may designate by delivery of prior notice to the other party:

If to CSXT:

If to Agency:

17. SEVERABILITY

The parties agree that if any part, term or provision of this Agreement is held to be illegal, unenforceable or in conflict with any applicable federal, state, or local law or regulation, such part, term or provision shall be severable, with the remainder of the Agreement remaining valid and enforceable.

18. APPLICABLE LAW

This Agreement shall be governed by the laws of the State of _____, exclusive of its choice of law rules. The parties further agree that the venue of all legal and equitable proceedings related to disputes under this Agreement shall be situated in Duval County, Florida, and the parties agree to submit to the personal jurisdiction of any State or Federal court situated in Duval County, Florida.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate, each by its duly authorized officers, as of the date of this Agreement.

[PUBLIC AGENCY]

By _____

Print Name_____

Title _____

CSX TRANSPORTATION, INC.

By _____

Print Name_____

Title _____

EXHIBIT A

ALLOCATION OF WORK

Subject to Section 2.1, work to be performed in connection with the Project is allocated as follows:

A. Agency shall let by contract to its Contractors:

CSXT shall perform or cause to be performed:

EXHIBIT B

PLANS AND SPECIFICATIONS

Plans, Specifications and Drawings:

As of the date of this Agreement, the following plans, specifications and drawings have been submitted by Agency to CSXT for its review and approval:

[INSERT PLAN DESCRIPTION HERE]

EXHIBIT C

CSXT SPECIAL PROVISIONS

EXHIBIT D

INITIAL ESTIMATE

EXHIBIT E
PAYMENT SCHEDULE

Advance Payment in Full

Upon execution and delivery of notice to proceed with the Project, Agency will deposit with CSXT a sum equal to the Reimbursable Expenses, as shown by the Estimate. If CSXT anticipates that it may incur Reimbursable Expenses in excess of the deposited amount, CSXT will request an additional deposit equal to the then remaining Reimbursable Expenses which CSXT estimates that it will incur. CSXT shall request such additional deposit by delivery of invoices to Agency. Agency shall make such additional deposit within 30 days following delivery of such invoice to Agency

[NOTE: ALTERNATE PAYMENT PROVISIONS MAY BE ABLE TO BE CONSIDERED BY CSXT IF DEEMED ACCEPTABLE AND ARE SUBJECT TO NEGOTIATION BETWEEN CSXT AND AGENCY]

EXHIBIT F

INSURANCE REQUIREMENTS

SCHEDULE I

CONTRACTOR'S ACCEPTANCE

To and for the benefit of CSX Transportation, Inc. ("CSXT") and to induce CSXT to permit Contractor on or about CSXT's property for the purposes of performing work in accordance with the Agreement dated _____, 20__, between [PUBLIC AGENCY] and CSXT, Contractor hereby agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to Exhibits C and F to the Agreement, and Sections 3, 9 and 11 of the Agreement.

Contractor: _____

By: _____

Name: _____

Title: _____

Date: _____

APPENDIX

CSX Transportation

TEMPORARY RIGHT OF ENTRY AGREEMENT

Public Projects Group
Jacksonville, FL
Date Issued: September 9, 2014

CSX Transportation, Inc.
Temporary Right of Entry Agreement

THIS AGREEMENT, made as of _____, 20___, by and between CSX TRANSPORTATION, INC., a Virginia corporation, whose mailing address is 500 Water Street, Jacksonville, Florida 32202, hereinafter called "**CSXT**," and (****), whose mailing address is (*****), hereinafter called "**Licensee**," WITNESSETH:

WHEREAS, Licensee has submitted a written application to CSXT requesting permission to enter CSXT's property located within the (******) Division, (*****) Subdivision, at DOT#: (*****) MP (*****). (STREET NAME) in(CITY), (COUNTY) County, (STATE), (the "**Property**"), for the purpose of (PROJECT DESCRIPTION), beginning (***) feet from the (******)right of way, (the "**Project**"); and

WHEREAS, CSXT is willing to grant to Licensee the limited right and permission to enter upon the Property for the limited purpose of performing the Project.

NOW THEREFORE, CSXT hereby grants to Licensee the right and permission to enter upon the Property for the purpose of performing said Project, subject to the terms and conditions set forth below:

1. PROJECT: The Project shall be performed at the entire cost and expense of Licensee, in accordance with good and sound engineering practices, to the satisfaction of CSXT's Division Engineer or his or her duly authorized representative ("Division Engineer") and in a manner to avoid accidents, damages, unnecessary delays to or interference with train traffic of CSXT. Prior to entry, Licensee shall notify the Division Engineer's representative and arrange for flagging protection in accordance to Sections 5 and 6 of this Agreement. Licensee shall not dig in the ballast line or within the tracks loading influence area, or otherwise disturb the track structure. Licensee and Licensee's employees, agents, contractors and other representatives (collectively, "Agents") shall maintain in their possession a copy of this Agreement at all times during their occupation of the Property.

2. INDEMNITY:

2.1 Licensee hereby assumes risk of and agrees to indemnify, defend, protect and save CSXT and CSXT's Affiliates harmless with respect to any and all attorneys' fees, liability, claims, demands, payments, suits, actions, recoveries, penalties, costs, legal expenses, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages) for:

2.1.1 personal injury, including, but not limited to bodily injury to or death of any person or persons whomsoever, including the agents, servants, Affiliates or employees of the parties;

2.1.2 the loss or damage to any property whatsoever, including property owned or in the care, custody or control of the parties hereto or their respective Affiliates;

2.1.3 any environmental damage and any related remediation brought or recovered against CSXT or any of its Affiliates; and

2.1.4 any and all other losses or damages; arising directly or indirectly from the presence of Licensee or its Agents on or about the Property, whether or not attributable in whole or part to the negligence, gross negligence, or intentional misconduct of CSXT or its Affiliates.

2.2 The parties waive any and all right or opportunity to contest the enforceability of this Section and agree that, in the event this Section, or any part of this Section, is found unenforceable by the final, unappealable judgment of a court of competent jurisdiction, this Section shall be construed so as to be enforceable to the maximum extent permitted by applicable law. In the event that such court of competent jurisdiction finds that Florida statutory construction contract indemnity monetary limits apply to this Agreement with respect to Licensee's indemnification of CSXT and its Affiliates for liability caused in whole or in part by any act, omission or default by CSXT or its Affiliates, the parties hereto agree that such limit shall be equal to the limits (exclusive of deductibles) of the applicable insurance required by Sections 3 and 4 of this Agreement. The parties acknowledge and agree that this monetary limit, if required, bears a commercially reasonable relationship to this Agreement, in so far as, among other factors, the parties have taken into account the availability and cost of insurance and other risk transference devices, the scope of the Project, the risks associated with the Project, and the compensation and any other benefits exchanged between the parties in connection with this Agreement.

2.2.1 Licensee shall comply with any federal, state, or local laws, statutes, codes, ordinances, rules,

and regulations applicable to its presence or performance of any activity on the Property and agrees to indemnify, defend, and hold CSXT and its Affiliates harmless with respect to any fines, penalties, liabilities, or other consequences for its failure to so comply.

2.2.2 For the purpose of this Agreement, the term "Affiliates" includes all entities, directly or indirectly owned or controlled by, or under common control of a party or its respective officers, directors, employees and agents, and in the case of CSXT, includes CSX Corporation, CSXT and their Affiliates and their respective officers, directors, employees and agents.

2.2.3 The provisions of this Section shall survive the termination or expiration of this Agreement.

3. GENERAL LIABILITY INSURANCE: Licensee shall procure and maintain, at its expense: (i) statutory Worker's Compensation and Employers Liability Insurance with available limits of not less than $1,000,000.00, which insurance must contain a waiver of subrogation against CSXT and its Affiliates; (ii) Commercial General Liability coverage (inclusive of contractual liability) with available limits of not less than $5,000,000.00 in combined single limits for bodily injury and property damage and covering the contractual liabilities assumed under this Agreement; (iii) business automobile liability insurance with available limits of not less than $1,000,000.00 combined single limit for bodily injury and/or property damage per occurrence; and (iv) such other insurance as CSXT may reasonably require. Upon request, Licensee shall provide CSXT with a copy of Licensee's applicable insurance policies. A policy endorsement naming CSXT as an additional insured and specifying such coverage shall be furnished to CSXT prior to the execution of this Agreement, and the required coverage will be kept in force until all of Licensee's obligations under this Agreement have been fully discharged and fulfilled, or until Licensee shall have been specifically released by a written instrument signed by an authorized officer of CSXT. Licensee shall also provide CSXT with a copy of the insurance policies. The insurance policies shall provide that the insurance carrier must give CSXT notice at least thirty (30) days in advance of cancellation of coverage, of any change in coverage, or of cancellation of the policy. Notwithstanding any provisions of this Section, the liability assumed by Licensee shall not be limited to the required insurance coverage.

4. RAILROAD PROTECTIVE LIABILITY INSURANCE: Licensee agrees to purchase Railroad Protective Liability Insurance in accordance with CSXT's requirements (attached as Exhibit A and incorporated into this Agreement) for the benefit of CSXT for Licensee's operations under this Agreement. Licensee shall furnish an appropriate Insurance policy (and required endorsements), as the case may be, with the return of this executed Agreement.

5. PRIOR NOTIFICATION: Licensee or Licensee's Agents shall notify CSXT's Roadmaster at least 10 days prior to requiring entry on the Property and shall abide by the instructions of the Division Engineer, or his or her authorized representative. The Roadmaster, (******), can be contacted at: (*****), to schedule flagging services.

6. CLEARANCES: Neither Licensee nor Agents shall perform any Project or place or operate any equipment of Licensee or Agents at a distance closer than fifty (50) feet from the center of any track, without the prior approval of the Division Engineer. The Division Engineer may require protective services or such other services as deemed necessary or appropriate. Equipment shall be moved across CSXT's track(s) only at a public crossing unless prior arrangements have been made with the Division Engineer and a Private Crossing Agreement is fully executed and in place. Licensee and Agents shall take all precautions necessary to avoid interference with or damage to CSXT's property and signal and communication facilities during their performance of the Project.

7. PROTECTIVE SERVICES: If protective services, such as flagging protection, are required by CSXT, Licensee shall make arrangements with the Roadmaster to furnish such personnel, flagman or watchman, that in the Roadmaster's opinion may be necessary to protect the facilities and traffic of CSXT during the performance of the Project. Licensee shall pay for the cost of such services, including all applicable surcharges and additives. These services are estimated to be $_____, as supported by the attached estimate.

8. PAYMENT FOR PROTECTIVE SERVICES: Payment shall be made by Licensee in accordance with the following designated option:

( ) **Option 1**: Licensee shall make an advance deposit of funds based on an estimate of the cost of protective or other services as determined by CSXT. The cost for CSXT's services shall then be assessed by CSXT against this advance deposit. Upon completion of the Project, any unused funding will be returned to Licensee. If CSXT's costs exceed the advance deposit(s), a request will be made to Licensee for additional funds or an invoice will be issued to Licensee for final payment. Licensee shall remit payment to CSXT within thirty (30) days of receipt of either a request for additional funds or an invoice.

( ) **Option 2**: Licensee shall promptly reimburse CSXT for the cost of protective or other services on an as-incurred basis, including all applicable surcharges, upon receipt of bill(s) therefor.

9. ENVIRONMENTAL: This Agreement does not include and expressly excludes the performance of any site investigation activities designed to determine environmental conditions on, about or beneath the Property. Precluded activities include performing soil borings for purposes other than geotechnical investigation, obtaining soil, sediment, groundwater and surface water samples, and conducting field or laboratory analyses of any soil, sediment, groundwater or surface water samples obtained from CSXT property to identify chemical composition or environmental condition. If *any type of environmental investigation is desired, a separate right of entry agreement issued through CSXT's Environmental Department must be secured.*

10. CLAIMS: Licensee shall, or shall require Agents, to promptly notify the Division Engineer of any loss, damage, injury or death arising out of or in connection with the Project.

11. REMEDIATION: It is understood and agreed that, upon completion of the Project, the Property shall be left in a condition satisfactory to Division Engineer or his or her duly authorized representative.

12. SAFETY:

12.1 All personnel entering the Property must comply with CSXT safety rules and requirements to include, without exception, the wearing of hard hats and approved safety shoes and safety glasses with side shields. Anyone not in compliance with these rules and regulations will be asked to leave the Property.

12.2 Before performing any work authorized by this Agreement, Licensee, at its sole cost and expense, shall obtain all necessary permit(s) (including but not limited to zoning, building, construction, health, safety or environmental matters), letter(s) or certificate(s) of approval. Licensee expressly agrees and warrants that it shall conform and limit its activities to the terms of such permit(s), approval(s) and authorization(s), and shall comply with all applicable ordinances, rules, regulations, requirements and laws of any governmental authority (state, federal or local) having jurisdiction over Licensee's activities, including the location, contact, excavation and protection regulations of the Occupational Safety and Health Act (OSHA) (29 CFR 1926.651(b), et al.), and State "One Call" -"Call Before You Dig" requirements.

13. TERM: This Right-of-Entry Agreement and the permission conferred and the license granted by it does not constitute a grant of permanent easement and shall terminate upon completion of the Project or at midnight,_____ ,whichever occurs first, unless extended in writing by CSXT. In the event Licensee fails to comply with terms and provisions of this Agreement, Licensee agrees to pay and agrees that CSXT shall be entitled to recover costs and expenses incurred by CSXT, including legal fees and expenses, to enforce the terms of this Agreement.

14. SEVERABILITY: The parties agree that if any part, term or provision of the Agreement is held to be illegal, unenforceable or in conflict with any applicable federal, state, or local law or regulation, such part, term or provision shall be severable, with the remainder of the Agreement remaining valid and enforceable. If any provision or any part of a provision of the Agreement shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable law, ordinance, rule or regulation, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Agreement, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

15. ENTIRE AGREEMENT: This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of both parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter.

16. NOTICES: All notices, consents and approvals required or permitted by this agreement shall be in writing and shall be deemed delivered; upon personal delivery, upon the expiration of three (3) business days following mailing by U.S. first class mail, or upon the next business day following mailing by a nationally recognized overnight carrier, to the Licensee at the address above, and to Licensor at the address shown on Page 1, or at such other addresses as either party may designate by delivery of prior notice to the other party .

17. TERMINATION: CSXT shall have the right at any time and at its sole discretion to terminate this Agreement upon notice to Licensee.

18. WAIVER: If either party fails to enforce its respective rights under this Agreement, or fails to insist upon the performance of the other party's obligations hereunder, such failure shall not be construed as a permanent waiver of any rights or obligations in this Agreement.

19. GOVERNING LAW; VENUE: This Agreement shall be governed by and construed under the laws of the State of Florida, without regard to the choice of law provisions thereof. Venue for any action arising from, or brought to enforce, this Agreement, shall vest exclusively in the state or federal courts located in Duval County, Florida, and the parties agree to submit to the personal jurisdiction of any state or federal court located in Duval County, Florida.

20. NO ASSIGNMENT: Notwithstanding anything to the contrary contained in this Agreement, Licensee shall not permit Agents to enter the Property without first requiring Agents to agree in writing to comply with all of the terms of this Agreement. Notwithstanding the foregoing, Licensee shall continue to be responsible for insuring that Agents comply with all of the terms and conditions of this Agreement and shall indemnify and hold CSXT harmless for any damages described in Section 2 above caused in whole or in part by such subcontractor. Assignment of this Agreement to any party other than Agents in accordance with this Section shall not be permitted except upon the prior written consent of CSXT, which consent may be granted or withheld at CSXT's sole discretion. This Agreement shall be binding upon the parties and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written.

Witness for CSX Transportation:

_____

CSX TRANSPORTATION, INC.

By: _____

Name:
Title:

Witness for: (******)

_____

(********):

By: _____

Print/Type Name:_____

Print/Type Title:_____
Who, by the execution hereof, affirms that he/she has the authority to do so and to bind the [*] to the terms and conditions of this Agreement.

ATTACHMENT "A"
INSURANCE REQUIREMENTS

Evidence required by CSX Transportation, Inc.
You are required to furnish Insurance to protect CSX Transportation, Inc. in connection with activities to be performed on or adjacent to CSX Transportation's Right of Way.

The following summarize CSXT's specifications for proper evidence of insurance:

1. Commercial General Liability coverage at their sole cost and expense with limits of not less than $5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.

2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than $1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates [if permitted by state law].

3. Commercial automobile liability insurance with limits of not less than $1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.

4. Railroad protective liability insurance with limits of not less than $5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of $10,000,000, which insurance shall satisfy the following additional requirements:

a. The Railroad Protective Liability Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.

b. CSX Transportation must be the named insured on the Railroad Protective Liability Insurance Policy. The address should be listed as:

CSX Transportation, Inc.
500 Water Street - C907
Jacksonville, FL 32202

c. Name and Address of Licensee must be shown on the Declarations page.

d. A description of operations and location must appear on the Declarations page and must match the Project description.

e. Authorized endorsements must include the Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later.

f. Authorized endorsements may include:

(i) Broad Form Nuclear Exclusion - IL 00 21
(ii) 30-day Advance Notice of Non-renewal or cancellation
(iii) Required State Cancellation Endorsement
(iv) Quick Reference or Index - CL/IL 240

g. Authorized endorsements may not include:

(i) A Pollution Exclusion Endorsement except CG 28 31
(ii) A Punitive or Exemplary Damages Exclusion
(iii) A "Common Policy Conditions" Endorsement
(iv) Any endorsement that is not named in Section 4 (e) or (f) above.
(v) Policies that contain any type of deductible

5. All insurance companies must be A. M. Best rated A- and Class VII or better.

6. Such additional or different insurance as CSXT may require.

II. Additional Terms

1. Licensee must submit the original Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies to:

insurancedocuments@csx.com

2. Licensee may not begin work on the Project until it has received CSXT's written approval of the required insurance.

APPENDIX

CSX Transportation

RIGHT OF ENTRY AND INDEMNITY AGREEMENT FOR BRIDGE PAINTING (AESTHETIC)

Public Projects Group
Jacksonville, FL
Date Issued: September 9, 2014

Project: City, County, State – Proposed Project Description and location; DOT #123456A; Milepost xxx-123.45; Division; Subdivision; OP _____

RIGHT OF ENTRY AND INDEMNITY AGREEMENT FOR BRIDGE PAINTING (AESTHETIC)

This Agreement is made and effective as of _____, by and between CSX TRANSPORTATION, INC., a Virginia corporation, with a mailing address of 500 Water Street, Jacksonville, Florida 32202, hereinafter called "**CSXT**," and the Name of Agency, a public corporation, under the laws of the State of State, with a mailing address of Street Address, PO Box, City State and ZIP, hereinafter called "**AGENCY**".

WHEREAS, CSXT controls and operates a right of way and bridge located within the ****** Division, ***** Subdivision, at DOT#: 123456A MP XXX-123.45. Street Name in City, County County, State ("the Property");

WHEREAS, AGENCY has submitted a written request to enter the Property and to clean and paint the facing of the bridge (the "Project") as described in Exhibit A, attached and incorporated by reference; and

WHEREAS, CSXT is willing to grant AGENCY the limited right and permission to enter upon the Property for the limited purpose of performing the Project;

NOW, THEREFORE, CSXT hereby grants to AGENCY the right and permission to enter upon the Property for the purpose of performing the Project, subject to the terms and conditions set forth below:

1. TERM AND SCOPE

From the period starting from the date of execution of this Agreement, through the date that is one year from such date unless further extended by mutual agreement of the parties (the "Term"), AGENCY, through its employees, agents, contractors, subcontractors, and/or other representatives (each, a "Designee" and collectively, "Designees"), may, only once (meaning not on a repetitive basis) enter the Property and perform the Project (the "Work"). Notwithstanding the foregoing, provided that CSXT shall first have approved the specifications therefore, as set forth in Section 2 hereof, AGENCY may also engage in periodic spot painting to remove graffiti (the "Spot Painting").

2. PROJECT

A. All plans, specifications, drawings and other documents necessary or appropriate to the design and performance of the Project, including but not limited to paint color and temporary attachment specifications (if any), shall be prepared, at AGENCY's sole cost and expense, by AGENCY or its Designees. Such plans shall be submitted to CSXT for review and approval of CSXT at least thirty (30) days prior to starting the Work or Spot Painting. The specifications for Spot Painting must include the paint color (which must be compatible with the most recent paint applied), application method (e.g. spray, brush, etc.), and structure access/reach equipment type (e.g. ladders, man lifts, etc.). CSXT may require paint removal prior to Spot Painting for safety reasons; if so, AGENCY must also submit a paint removal method (e.g. sand-blasting, chemical removal, etc.). **No Work or Spot Painting may begin until CSXT has approved the plans and specifications.** By its review or approval of plans pursuant to this Agreement, CSXT signifies only that such plans and performance of the Work and Spot Painting in accordance with such plans satisfy CSXT's requirements.

B. Upon receipt of the specifications, CSXT's authorized representative will determine and inform AGENCY whether a flagman need be present and whether AGENCY need implement any special protective or safety measures. If a flagman is required, AGENCY shall notify CSXT's authorized representative and arrange for safety protection in accordance with this Agreement.

C. The Work and Spot Painting shall be performed in accordance with good and sound practices, to the satisfaction of CSXT's authorized representative in a manner to avoid accidents, damages, unnecessary delays to or interference with the continuous and uninterrupted use of CSXT tracks or other operations, including train, signal, telephone and communication services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's property or right-of-way. Under no circumstances shall Work or Spot Painting affect the operations or safety of trains. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, AGENCY shall make such provision.

D. The Project shall be designed and the Work and Spot painting performed at no cost, expense or liability to CSXT.

3. COMMENCEMENT OF WORK; AUTHORITY OF CSXT REPRESENTATIVE

A. AGENCY shall not commence any Work on CSXT Property until AGENCY has:

1. Notified CSXT in writing of the date that it expects Work or Spot Painting to commence on the Project. Such notice must be received by CSXT at least ten (10) business days in advance of the date AGENCY proposes to begin Work or Spot Painting on the Property. The notice must refer to this Agreement by date.

2. Obtain authorization from CSXT's authorized representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which AGENCY must comply.

B. CSXT retains the paramount right to regulate all activities affecting its property and operations. CSXT's authorized representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by AGENCY for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement.

4. FLAGGING / INSPECTION SERVICE

A. CSXT has sole authority to determine the need for flagging required to protect its operations and property.

B. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT's authorized representative, such inspection may be necessary.

C. Any CSXT expenses associated with flagging and inspection service shall be calculated, estimated, and reimbursed by AGENCY in the manner described in Section 10.

D. Should CSXT's authorized representative determine that flagging is necessary, AGENCY may attempt to coordinate the timing of the Work or Spot Painting with CSXT's authorized representative so that the Project may be performed during times that flagging is already ongoing at the Property.

5. SAFETY

A. CSXT will provide AGENCY with a copy of its safety rules and requirements prior to the commencement of the Work or Spot Painting. Any AGENCY personnel or Designee entering the Property must comply with CSXT's safety rules and requirements. Anyone not in compliance with these rules and regulations will be asked to leave the Property.

B. Before performing any Work authorized by this Agreement, AGENCY, at no expense to CSXT, will obtain all necessary permit(s) (including, but not limited to, zoning, building, construction, health, safety or environmental matters), letter(s) or certificate(s) of approval. AGENCY expressly agrees and warrants that it shall conform and limit activities to the terms of such permit(s), approval(s) and authorization(s), and shall comply with all applicable ordinances, rules, regulations, requirements and laws of any governmental authority (state, federal or local) having jurisdiction over the activities in the Project, including applicable provisions of the Occupational Safety and Health Act (OSHA) (29 CFR 1926.651(b), et al.).

6. ACCESS LIMITATIONS; STORAGE OF MATERIALS

A. This Agreement does not give AGENCY the right to cross CSXT property or tracks with vehicles, equipment or in any other matter other than at an existing and open public crossing. At no time will anyone performing the Work or Spot Painting be allowed beyond the bridge abutments on CSXT's property or be allowed on top of the bridge unless accompanied by CSXT personnel.

B. AGENCY shall not store materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless AGENCY has received prior written permission from CSXT's authorized representative.

7. ENVIRONMENTAL

A. This Agreement does not include and expressly excludes the performance of any site investigation activities designed to determine environmental conditions on, about or beneath the Property.

B. AGENCY shall comply with all federal, state and local environmental laws and regulations in its work at the Property and shall perform the Work or Spot Painting in an environmentally protective manner, and shall prevent releases and spills of any materials that could harm human health or the environment, including but not limited to, hydrocarbon products, anti-freeze, spent mechanical draining, solvents, hazardous substances and hazardous wastes as defined in the Comprehensive Environmental Response, Compensation and Liability Act and the Resource Conservation and Recovery Act, respectively ("Environmental Substances"). AGENCY, at its expense, shall assume all responsibility for the investigation and cleanup of any release or discharge of any Environmental Substance at the Property that arises from the performance of any work, presence or other activity at the Property by AGENCY or its Designees. In addition to other liability terms contained in this Agreement, AGENCY agrees to indemnify, defend and hold harmless CSXT and CSXT's Affiliates from and against all environmental costs and expenses, including without limitation, all environmental analysis and cleanup expenses, fines and claims, or penalties arising from any work, presence or activity of the AGENCY or its Designees at the Property.

8. REMEDIATION AND CLEAN-UP

AGENCY, upon completion of the Work or Spot Painting, shall (i) remove from the Property any equipment, surplus materials, or rubbish belonging to AGENCY or AGENCY's Designee; and (ii) leave CSXT Property to its original condition, satisfactory to CSXT's authorized representative.

9. INSURANCE AND WAIVERS

AGENCY shall (i) acquire or require AGENCY's Designee to purchase and maintain insurance in compliance with CSXT's insurance requirements attached to this Agreement as Exhibit B; (ii) require any individual not employed by AGENCY to execute the Waiver and Release Form attached hereto as Exhibit C; and (iii) require any Designee to execute the Acceptance by AGENCY Designee Form attached hereto as Exhibit D prior to entering CSXT property and/or commencing any Work or Spot Painting. Neither AGENCY nor AGENCY's Designee shall commence the Work or Spot Painting until such insurance policy or policies and forms have been submitted to and approved by CSXT's Risk Management Department.

10. CSXT'S COSTS AND EXPENSES; REIMBURSEMENT PROCEDURES

A. Reimbursable Expenses. AGENCY shall reimburse CSXT or shall cause AGENCY's Designee to reimburse CSXT for all costs and expenses incurred by CSXT in connection with the Project, Work or Spot Painting (the "Reimbursable Expenses").

B. Estimate. CSXT has estimated the total Reimbursable Expenses as shown on Exhibit E (the "Estimate", as amended or revised). In the event CSXT anticipates that actual Reimbursable Expenses may exceed such Estimate, it shall provide AGENCY with the revised Estimate of the total Reimbursable Expenses.

C. Payment Terms. Upon execution and delivery of this Agreement by AGENCY, AGENCY will deposit with CSXT a sum equal to the estimated Reimbursable Expenses, as shown by the Estimate. Following completion of the Project, CSXT shall submit to AGENCY a final invoice that reconciles the total costs incurred by CSXT against the total payments received from AGENCY. AGENCY shall pay to CSXT the amount by which expenses exceed total payments as shown by the final invoice, within thirty (30) days following delivery of such invoice to AGENCY. In the event that the payments received by CSXT from AGENCY exceed the estimated expenses, CSXT shall remit such excess to AGENCY.

11. INDEMNIFICATION.

A. As a material inducement for entering into this Agreement, and without which CSXT would not enter into the same, AGENCY covenants and agrees that to the extent permitted by law, AGENCY shall indemnify, defend, and hold CSXT and its affiliates harmless from and against all claims, demands, payments, suits, actions, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages), for any injury to or death to any person(s) (including, but not limited to the employees of CSXT, its affiliates, AGENCY or its Designees), for the loss of or damage to any property whatsoever (including but not limited to property owned by or in the care, custody, or control of CSXT, its affiliates, AGENCY or its Designees), arising or resulting from the performance of this Agreement by AGENCY or any other person performing any work or service on the AGENCY's behalf on or about the Property. The foregoing indemnification obligation shall not be limited to the insurance coverage required by this Agreement, except to the extent required by law or otherwise expressly provided by this Agreement.

B. **Compliance with Laws.** AGENCY shall comply, and shall require its Designees to comply, with any federal, state, or local laws, statutes, codes, ordinances, rules, and regulations applicable to its construction and maintenance of the Project. AGENCY's Designees shall indemnify, defend, and hold CSXT and its affiliates harmless with respect to any fines, penalties, liabilities, or other consequences arising from breaches of this Section.

C. **"CSXT Affiliates"**. For the purpose of this Agreement, CSXT's affiliates include CSX Corporation and all entities, directly or indirectly, owned or controlled by or under common control of CSXT or CSX Corporation and their respective officers, directors, employees and agents.

D. **Survival.** The provisions of this Section shall survive the termination or expiration of this Agreement.

12. CLAIMS

AGENCY shall promptly notify the CSXT's authorized representative of any loss, damage, or injury arising out of or in connection with the Work or Spot Painting. AGENCY shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of CSXT for any such Work or Spot Painting performed.

13. MAINTENANCE

A. **By AGENCY.** Upon completion of the Project, AGENCY, or its Designee, shall be solely responsible for maintaining the aesthetic appearance of the Project, including taking any actions deemed necessary by CSXT, in its sole discretion, to address any damage or disfiguration due to vandalism or graffiti by Spot Painting, in accordance with Section 1. In the event AGENCY or its Designee fails to maintain the aesthetic appearance of the Project in a reasonable condition, as determined by CSXT in its sole discretion, CSXT, after due notice to AGENCY, may [(i) require AGENCY to remove or paint over the mural, (ii) at AGENCY Designee's sole cost and expense arrange for the mural to be removed or painted over, or (iii)] take such action as it deems appropriate to restore the railroad bridge to a condition acceptable to CSXT. For purposes of this Section, "due notice" shall mean thirty (30) days' notice unless CSXT, in its sole discretion, determines that an emergency condition exists, in which case, AGENCY or its Designee shall take immediate action.

B. **By CSXT.** CSXT shall not in any manner be restricted from (i) maintaining, repairing, replacing or renewing its tracks, all parts of the railroad bridge supports, signal and communication systems or any other rail facilities or its property as it deems appropriate or (ii) performing any actions required to reasonably support rail operations. Neither shall CSXT in any manner be responsible for any damage or disfiguration caused to the Project due to such work, actions, or railroad operations, nor shall CSXT be responsible for the aesthetic appearance of the mural or the area of the railroad bridge supports upon which the Project is painted, so long as AGENCY remains responsible for the maintenance of the Project.

C. **Alterations.** AGENCY shall not undertake any alteration, modification or expansion of the Project, without the prior approval of CSXT, which may be withheld for any reason, and the execution of such agreements as CSXT may require.

14. INDEPENDENT CONTRACTOR

The parties agree that neither AGENCY nor the AGENCY Designee shall be deemed either agents or independent contractors of CSXT. Except as otherwise provided by this Agreement, CSXT shall exercise no control whatsoever over the employment, discharge, compensation of, or services rendered by AGENCY or AGENCY's Representative, or the construction practices, procedures, and professional judgment employed by AGENCY or AGENCY's Representative to complete the Project. Notwithstanding the foregoing, this Section shall in no way affect the absolute authority of CSXT to prohibit AGENCY or AGENCY's Representative or anyone from entering CSXT's property, or to require the removal of any person from its property, if it determines, in its sole discretion, that such person is not acting in a safe manner or that actual or potential hazards in, on or about the Property exist.

15. INTERPRETATION

AGENCY and CSXT each acknowledge that the terms, covenants, conditions, and provisions of this Agreement have been negotiated between and jointly authored by the parties hereto, and in consequence of this joint authorship, the parties agree that no term, covenant, condition or provision hereunder shall be construed more strictly against one party or the other hereto.

16. SEVERABILITY

The parties agree that if any part, term or provision of the Agreement is held to be illegal, unenforceable or in conflict with any applicable federal, state, or local law or regulation, such part, term or provision shall be severable, with the remainder of the Agreement remaining valid and enforceable. If any provision or any part of a provision of the Agreement shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable law, ordinance, rule or regulation, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Agreement, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

17. ENTIRE AGREEMENT

This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of all parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter. No modification or alteration of the terms hereof shall be binding unless such modification or alteration is in writing and executed by the parties.

18. NOTICES

All notices, consents and approvals required or permitted by this agreement shall be in writing and shall be deemed delivered; upon personal delivery, upon the expiration of three (3) business days following mailing by U.S. first class mail, or upon the next business day following mailing by a nationally recognized overnight carrier, to the parties at the addresses set forth below, or such other addresses as either party may designate by delivery of prior notice to the other party.

TO CSXT: CSX Transportation, Inc.
500 Water Street, J301
Jacksonville, Florida 32202
Attention – Director Project Management, Public Projects

TO AGENCY: Name
Title
Agency
Street Address
City, State ZIP

19. TERMINATION

CSXT and AGENCY shall have the right to terminate this Agreement upon notice for any reason.

Termination of this Agreement or Work on the Project, for any reason, shall not diminish or reduce AGENCY's obligation to pay CSXT for Reimbursable Expenses incurred in accordance with this Agreement. In the event of the termination of this Agreement or the Work for any reason, CSXT's only remaining obligation to AGENCY shall be to refund to AGENCY payments made to CSXT in excess of Reimbursable Expenses in accordance with Section 10.

20. WAIVER

If any party fails to enforce its respective rights under this Agreement, or fails to insist upon the performance of the other party's obligations hereunder, such failure shall in no way be construed as a permanent waiver of any rights or obligations in this Agreement, nor in any way to affect the validity of this Agreement or any part hereof or the right of either party to thereafter enforce each and every such provision and to exercise any such right or option. No waiver of any breach of this Agreement shall be held to be a waiver of any other or subsequent breach.

21. GOVERNING LAW; VENUE

This Agreement shall be governed by and construed under the laws of the State of Florida, without regard to the choice of law provisions thereof. Venue for any action arising from, or brought to enforce, this Agreement, shall vest exclusively in the state or federal courts located in Duval County, Florida, and the parties agree to submit to the personal jurisdiction of any state or federal court located in Duval County, Florida.

22. ASSIGNMENT

This Agreement shall be binding upon the parties hereto and upon all persons successor in interest to said parties. This Agreement shall not be assignable by AGENCY without the express written consent of CSXT.

[SIGNATURE PAGE FOLLOWS]

Project: City, County, State – Proposed Project Description and location; DOT #123456A; Milepost xxx-123.45; Division; Subdivision; OP _____

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the day and year first above written.

Agency

_____
Name / Title

Date:_____

CSX TRANSPORTATION, INC.

_____

Name:
Title:

Date:_____

APPROVED AS TO FORM AND LEGALITY:

_____
AGENCY Attorney

Date: _____

EXHIBIT A
PROJECT PLANS AND SPECIFICATIONS

EXHIBIT B
INSURANCE REQUIREMENTS

I. Insurance Policies:

Agency and its Designee, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability (CGL) coverage at their sole cost and expense with limits of not less than $5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.

2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than $1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates [if permitted by state law].

3. Commercial Automobile Liability insurance with limits of not less than $1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.

4. Railroad Protective Liability (RPL) insurance with limits of not less than $5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of $10,000,000, which insurance shall satisfy the following additional requirements:

a. The Railroad Protective Liability Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.

b. CSX Transportation must be the named insured on the Railroad Protective Liability Insurance Policy. The named insured's address should be listed as:

CSX Transportation, Inc.
500 Water Street, C-907
Jacksonville, FL 32202

c. The Name and Address of the Designee and of the Project Sponsor/Involved Governmental Agency must be shown on the Declarations page.

d. A description of operations and location must appear on the Declarations page and must match the Project description.

e. Terrorism Risk Insurance Act (TRIA) coverage must be included.

f. Authorized endorsements must include:

(i) Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later

g. Authorized endorsements may include:

(i) Broad Form Nuclear Exclusion - IL 00 21
(ii) Notice of Non-renewal or Cancellation
(iii) Required State Cancellation Endorsement
(iv) Quick Reference or Index - CL/IL 240

h. Authorized endorsements may not include:

(i) A Pollution Exclusion Endorsement except CG 28 31
(ii) An Endorsement that excludes TRIA coverage
(iii) An Endorsement that limits or excludes Professional Liability coverage

(iv) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
(v) A Known Injury Endorsement
(vi) A Sole Agent Endorsement
(vii) A Punitive or Exemplary Damages Exclusion
(viii) A "Common Policy Conditions" Endorsement
(ix) Policies that contain any type of deductible
(x) Any endorsement that is not named in Section 4 (f) or (g) above that CSXT deems unacceptable

5. All insurance companies must be A. M. Best rated A- and Class VII or better.

6. Such additional or different insurance as CSXT may require.

II. Additional Terms

1. Contractor must submit the complete Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies in an electronic format to:

insurancedocuments@csx.com

2. Neither Agency nor its Designee may begin work on or about CSXT property until written approval of the required insurance has been received from CSXT or CSXT's Insurance Compliance vendor, Ebix.

III. Provision of Required Insurance through CSXT's RPL Policy.

Notwithstanding the foregoing, and in order to fully satisfy the provisions of the RPL (but not CGL) insurance requirements herein, Agency or Agency's Designess may pay CSXT, at CSXT's current rate at time of request, the cost of adding this Project to CSXT's RPL Policy for the duration of the Project. This coverage is offered at CSXT's discretion and may not be available under all circumstances

Project: City, County, State – Proposed Project Description and location; DOT #123456A; Milepost xxx-123.45; Division; Subdivision; OP _____

EXHIBIT C

WAIVER AND RELEASE FORM

TEMPORARY LICENSE AGREEMENT

_____shall indemnify and hold CSX Transportation, Inc. ("CSXT"), the owner or holder in interest of the tract of real property known as the CSX Transportation right of way under the _____, (the "Property"), harmless from all claims, damages, demands, causes of action, suits, expenses (including attorney's fees and costs), judgments and interest whatsoever arising from a project to clean up and paint the bridge supports on the Property.

Signature:_____

Date:_____

Note: AGENCY must require any member, volunteer or other person not employed by AGENCY to execute this Waiver and Release Form, Exhibit C, prior to entering CSXT property and/or commencing any work on the Project. A copy of all Waiver and Release Forms obtained from any member, volunteer or other person not employed by AGENCY must be sent to:

Jonathan McArthur
Risk Manager – Planning & Analysis
CSX Transportation
500 Water Street C-907
Jacksonville, FL 32202
Phone: 904-359-3394
Fax: 904-306-5325

Project: City, County, State – Proposed Project Description and location; DOT #123456A; Milepost xxx-123.45; Division; Subdivision; OP _____

EXHIBIT D

ACCEPTANCE BY AGENCY DESIGNEE

To and for the benefit of CSX Transportation, Inc. ("CSXT") and to induce CSXT to permit the AGENCY Designee on or about CSXT's property for the purposes of performing Work or Spot Painting in accordance with the Agreement dated _____, 20____, between AGENCY and CSXT, AGENCY Designee hereby agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to Exhibit B and Exhibit C to the Agreement, and Sections 2, 3, 7, 8, 11, and 13 of the Agreement. Any notices required to be given to AGENCY Designee shall be in writing and delivered to the person identified below.

AGENCY Designee

By: _____

Print Name: _____

Title: _____

Date: _____

Notices shall be delivered to:

[name and address]

Project: City, County, State – Proposed Project Description and location; DOT #123456A; Milepost xxx-123.45; Division; Subdivision; OP _____

EXHIBIT E

ESTIMATE OF REIMBURSABLE EXPENSES

Attached

APPENDIX

CSX Transportation

CSXT SPECIAL PROVISIONS

Public Projects Group
Jacksonville, FL
Date Issued: May 9, 2011

AUTHORITY OF CSXT ENGINEER
The CSXT Representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by the Agency or its Contractor for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement and these Special Provisions.

II. INTERFERENCE WITH CSXT OPERATIONS

A. Agency or its Contractor shall arrange and conduct its work so that there will be no interference with CSXT operations, including train, signal, telephone and telegraphic services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's Property or right-of-way. Agency or its Contractor shall store materials so as to prevent trespassers from causing damage to trains, or CSXT Property. Whenever Work is likely to affect the operations or safety of trains, the method of doing such Work shall first be submitted to the CSXT Representative for approval, but such approval shall not relieve Agency or its Contractor from liability in connection with such Work.

B. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, Agency or its Contractor shall make such provision. If the CSXT Representative determines that such provision is insufficient, CSXT may, at the expense of Agency or its Contractor, require or provide such provision as may be deemed necessary, or cause the Work to cease immediately.

III. NOTICE OF STARTING WORK. Agency or its Contractor shall not commence any work on CSXT Property or rights of-way until it has complied with the following conditions:

A. Notify CSXT in writing of the date that it intends to commence Work on the Project. Such notice must be received by CSXT at least ten business days in advance of the date Agency or its Contractor proposes to begin Work on CSXT property. The notice must refer to this Agreement by date. If flagging service is required, such notice shall be submitted at least thirty (30) business days in advance of the date scheduled to commence the Work.

B. Obtain authorization from the CSXT Representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which it must comply.

C. Obtain from CSXT the names, addresses and telephone numbers of CSXT's personnel who must receive notice under provisions in the Agreement. Where more than one individual is designated, the area of responsibility of each shall be specified.

IV. WORK FOR THE BENEFIT OF THE CONTRACTOR

A. No temporary or permanent changes to wire lines or other facilities (other than third party fiber optic cable transmission systems) on CSXT property that are considered necessary to the Work are anticipated or shown on the Plans. If any such changes are, or become, necessary in the opinion of CSXT or Agency, such changes will be covered by appropriate revisions to the Plans and by preparation of a force account estimate. Such force account estimate may be initiated by either CSXT or Agency, but must be approved by both CSXT and Agency. Agency or Contractor shall be responsible for arranging for the relocation of the third party fiber optic cable transmission systems, at no cost or expense to CSXT.

B. Should Agency or Contractor desire any changes in addition to the above, then it shall make separate arrangements with CSXT for such changes to be accomplished at the Agency or Contractor's expense.

V. HAUL ACROSS RAILROAD

A. If Agency or Contractor desires access across CSXT property or tracks at other than an existing and open public road crossing in or incident to construction of the Project, the Agency or Contractor must first obtain the permission of CSXT and shall execute a license agreement or right of entry satisfactory to CSXT, wherein Agency or Contractor agrees to bear all costs and liabilities related to such access.

B. Agency and Contractor shall not cross CSXT's property and tracks with vehicles or equipment of any kind or character, except at such crossing or crossings as may be permitted pursuant to this section.

VI. COOPERATION AND DELAYS

A. Agency or Contractor shall arrange a schedule with CSXT for accomplishing stage construction involving work by CSXT. In arranging its schedule, Agency or Contractor shall ascertain, from CSXT, the lead time required for assembling crews and materials and shall make due allowance therefor

B. Agency or Contractor may not charge any costs or submit any claims against CSXT for hindrance or delay caused by railroad traffic; work done by CSXT or other delay incident to or necessary for safe maintenance of railroad traffic; or for any delays due to compliance with these Special Provisions.

C. Agency and Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.

D. Agency and Contractor understand and agree that CSXT does not assume any responsibility for work performed by others in connection the Project. Agency and Contractor further understand and agree that they shall have no claim whatsoever against CSXT for any inconvenience, delay or additional cost incurred by Agency or Contractor on account of operations by others.

VII. STORAGE OF MATERIALS AND EQUIPMENT

Agency and Contractor shall not store their materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless Agency or Contractor has received CSXT Representative's prior written permission. Agency and Contractor understand and agree that CSXT will not be liable for any damage to such materials and equipment from any cause and that CSXT may move, or require Agency or Contractor to move, such material and equipment at Agency's or Contractor's sole expense. To minimize the possibility of damage to the railroad tracks resulting from the unauthorized use of equipment, all grading or other construction equipment that is left parked near the tracks unattended by watchmen shall be immobilized to the extent feasible so that it cannot be moved by unauthorized persons.

VIII. CONSTRUCTION PROCEDURES

A. General

1. Construction work on CSXT property shall be subject to CSXT's inspection and approval.

2. Construction work on CSXT property shall be in accord with CSXT's written outline of specific conditions and with these Special Provisions.

3. Contractor shall observe the terms and rules of the CSXT Safe Way manual, which Agency and Contractor shall be required to obtain from CSXT, and in accord with any other instructions furnished by CSXT or CSXT's Representative.

B. Blasting

1. Agency or Contractor shall obtain CSXT Representative's and Agency Representative's prior written approval for use of explosives on or adjacent to CSXT property. If permission for use of explosives is granted,Agency or Contractor must comply with the following:

a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Agency or Contractor.

b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

c. No blasting shall be done without the presence of an authorized representative of CSXT. At least 30 days' advance notice to CSXT Representative is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.

d. Agency or Contractor must have at the Project site adequate equipment, labor and materials, and allow sufficient time, to (i) clean up (at Agency's expense) debris resulting from the blasting without any delay to trains; and (ii) correct (at Agency's expense) any track misalignment or other damage to CSXT's property resulting from the blasting, as directed by CSXT Representative, without delay to trains. If Agency's or Contractor's actions result in delay of any trains, including Amtrak passenger trains, Agency shall bear the entire cost thereof.

e. Agency and Contractor shall not store explosives on CSXT property.

2. CSXT Representative will:

a. Determine the approximate location of trains and advise Agency or Contractor of the approximate amount of time available for the blasting operation and clean-up.

b. Have the authority to order discontinuance of blasting if, in his or her opinion, blasting is too hazardous or is not in accord with these Special Provisions.

IX. MAINTENANCE OF DITCHES ADJACENT TO CSXT TRACKS

Agency or Contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from their operations. Agency or Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) hay or straw barrier; (3) berm or temporary ditches; (4) sediment basin; (5) aggregate checks; and (6) channel lining. All such maintenance and repair of damages due to Agency's or Contractor's operations shall be performed at Agency's expense.

X. FLAGGING / INSPECTION SERVICE

A. CSXT has sole authority to determine the need for flagging required to protect its operations and property. In general, flagging protection will be required whenever Agency or Contractor or their equipment are, or are likely to be, working within fifty (50) feet of live track or other track clearances specified by CSXT, or over tracks.

B. Agency shall reimburse CSXT directly for all costs of flagging that is required on account of construction within CSXT property shown in the Plans, or that is covered by an approved plan revision, supplemental agreement or change order.

C. Agency or Contractor shall give a minimum of 30 days' advance notice to CSXT Representative for anticipated need for flagging service. No work shall be undertaken until the flag person(s) is/are at the job site. If it is necessary for CSXT to advertise a flagging job for bid, it may take up to 90-days to obtain this service, and CSXT shall not be liable for the cost of delays attributable to obtaining such service.

D. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT Representative, such inspection may be necessary. Agency shall reimburse CSXT for the costs incurred by CSXT for such inspection service. Inspection service shall not relieve Agency or Contractor from liability for its Work.

E. CSXT shall render invoices for, and Agency shall pay for, the actual pay rate of the flagpersons and inspectors used, plus standard additives, whether that amount is above or below the rate provided in the Estimate. If the rate of pay that is to be used for inspector or flagging service is changed before the work is started or during the progress of the work, whether by law or agreement between CSXT and its employees, or if the tax rates on labor are changed, bills will be rendered by CSXT and paid by Agency using the new rates. Agency and Contractor shall perform their operations that require flagging protection or inspection service in such a manner and sequence that the cost of such will be as economical as possible.

XI. UTILITY FACILITIES ON CSXT PROPERTY

Agency shall arrange, upon approval from CSXT, to have any utility facilities on or over CSXT Property changed as may be necessary to provide clearances for the proposed trackage.

XII. CLEAN-UP

Agency or Contractor, upon completion of the Project, shall remove from CSXT's Property any temporary grade crossings, any temporary erosion control measures used to control drainage, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings belonging to Agency or Contractor. Agency or Contractor, upon completion of the Project, shall leave CSXT Property in neat condition, satisfactory to CSXT Representative.

XIII. FAILURE TO COMPLY

If Agency or Contractor violate or fail to comply with any of the requirements of these Special Provisions, (a) CSXT may require Agency and/or Contractor to vacate CSXT Property; and (b) CSXT may withhold monies due Agency and/or Contractor; (c) CSXT may require Agency to withhold monies due Contractor; and (d) CSXT may cure such failure and the Agency shall reimburse CSXT for the cost of curing such failure.

APPENDIX

CSX Transportation

CRITERIA FOR OVERHEAD BRIDGES

Office of Director Fixed Plant Engineering
Jacksonville, FL
Date Issued: September 14, 2007

CRITERIA FOR OVERHEAD BRIDGES

CSX Transportation (CSXT) has minimum requirements for outside parties constructing, rehabilitating, or replacing bridges over CSXT's railroad tracks. These requirements are intended to provide safe and continuous passage of all train traffic during and after construction of bridges over its tracks. Part of these requirements is for the outside party to submit a detailed plan of the project as well as provide details of the construction methodology. This document provides information on the requirements by CSXT for overhead bridges.

Plans and specifications for new or reconstructed bridges over CSXT's railroad tracks or right-of-way shall meet the following requirements:

I. GENERAL REQUIREMENTS:

A. CSXT's valuation station and the distance from the nearest milepost at the intersection of the centerline of the track and the centerline of the bridge shall be shown on the General Plan.

B. The existing and proposed minimum horizontal and vertical clearances shall be marked clearly on the General Plan and Elevation.

C. At least one subsurface exploration boring for each substructure unit adjacent to the track shall be furnished to CSXT's during the design submittal. Borings shall provide enough information to design shoring and foundations.

D. Prior to construction activities, all overhead bridge projects will require the procurement of the appropriate property rights from CSX Real Property and other construction agreement(s) with CSX Transportation.

E. All lifting equipment and connection devices shall have capacity for 150% of the actual lifting load. The factor of safety provided by the manufacturer in the lifting capacity data shall not be considered in the 150% requirement. A licensed professional engineer, familiar with lifting and rigging, in the State where the construction work is proposed must sign and seal all plans and calculations related to critical lifting on the project.

II. CLEARANCES:

A. Horizontal Clearance: Standard horizontal clearance from centerline of the track to the face of the pier or abutment shall typically be 25'-0" or greater, but never less than 18'-0", measured perpendicular to the track. Provisions for future tracks, access roads, other CSXT facilities, and drainage may require the minimum clearance be increased or use of multi-span structures. The toe of footings shall not be closer than 11'-0" from centerline of the track to provide adequate room for sheeting.

B. Vertical Clearance: A standard vertical clearance of 23'-0" shall be provided, measured from top of high rail to lowest point of structure in the horizontal clearance area which extends 6'-0" either side of the centerline of track.

C. Temporary Construction clearances to be used shall be subject to approval by CSXT. Typically reductions in clearance for construction are not permitted.

D. CSXT shall be furnished as-built drawings showing actual clearances as constructed.

III. CRASHWALLS:

AREMA Specifications, Chapter 8, Article 2.1.5 covers the requirements for crashwalls. Crashwalls are required when face of the pier is closer than 25'-0" from centerline of the track, measured perpendicular to the track, except as noted below.

Crashwalls shall meet the following requirements:

A. Crashwalls for single column piers shall be minimum 2'-6" thick and shall extend a minimum of 6'-0" above the top of high rail for piers located between 18'-0" and 25'-0" from the centerline of the nearest track. The wall shall extend minimum 6'-0" beyond the column on each side in the direction parallel to the track.

B. For multi-column piers, the columns shall be connected with a wall of the same thickness as the columns or 2'-6" whichever is greater. The wall shall extend a minimum of 2'-6" beyond the end of outside columns in a direction parallel to the track.

C. Reinforcing steel to adequately anchor the crashwalls to the column and footing shall be provided. For piers of heavy construction, crashwalls may be omitted. Solid piers with a minimum thickness of 2'-6" and length of 20'-0", single column piers of minimum 4'-0" X 12'-6" dimensions or any other solid pier sections with equivalent cross sections and minimum 2'-6" thickness are considered as heavy construction.

IV. DRAINAGE:

Drainage from the bridge shall be preferably collected with drain pipes and drained away from CSXT's right-of-way. When open scuppers are provided on the bridge, none shall be closer than 25'-0" of the centerline of nearest track. Flow from the scuppers shall be directed away from CSXT's drainage ditches.

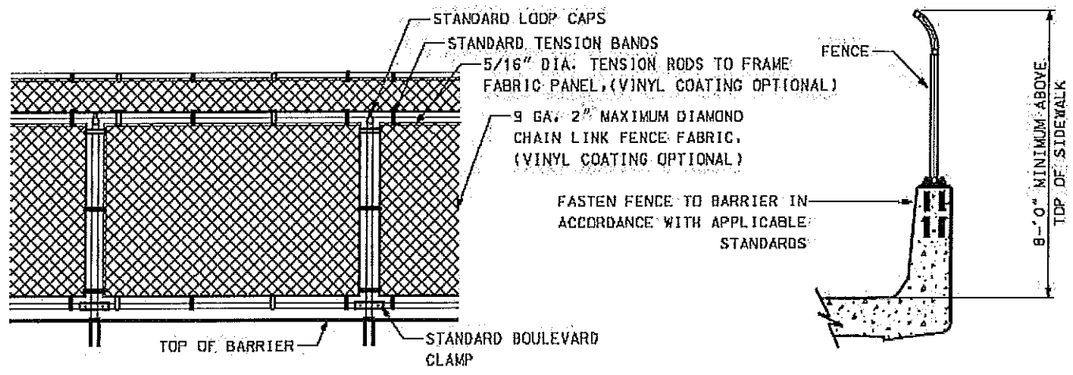
Projects including stormwater systems shall be designed for a 100-year storm event as a minimum. If stormwater is drained on or to CSXT's right-of-way, calculations must be submitted to CSXT to verify the 100-year storm event is properly handled. Improvements to the adjacent drainage systems may be required at project expense, to ensure the impacted system will meet the 100-year storm event minimum condition.

During and after completion of construction, the outside party or its contractor must clear CSXT's drainage ditches of all debris to the satisfaction of CSXT's construction engineering and inspection representative.

V. PROTECTIVE FENCING:

All highway structures shall have a protective barrier fence to extend at least 8'-0" from the top of the sidewalk or driving surface adjacent to the barrier wall. The fence may be placed on top of the barrier wall. The fence shall be capable of preventing pedestrians from dropping debris onto CSXT's right-of-way, and in particular, passing trains.

Openings in the fence hall not exceed 2"x2". Fencing should also include anti-climbshields or be of a configuration to minimize the likelihood of climbing on the outside of the protective fencing. A chain link fence option is shown below:



VI. STRUCTURE EXCAVATION AND SHORING:

Shoring protection shall be provided when excavating adjacent to an active track. Shoring will be provided in accordance with AREMA *Manual for Railway Engineering* Chapter 8 part 28, except as noted below.

Shoring will not be required if both the following conditions are satisfied:

1. Excavation does not encroach upon a 1 ½ horizontal: 1 vertical theoretical slope line starting 1'-6" below top of rail and at 12'-0" minimum from centerline of the track (live load influence zone).

2. Track is on level ground or in a cut section and on stable soil.

When the track is on an embankment, excavating the toe of the embankment without shoring may affect the stability of the embankment. Therefore, excavation of the embankment toe without shoring will not be permitted.

Preferred protection is the cofferdam type that completely encloses the excavation. Where dictated by conditions, partial cofferdams with open sides away from the track may be used. Cofferdams shall be constructed using steel sheet piling or steel soldier piles with timber lagging. Wales and struts shall be provided as needed. The following shall be considered when designing cofferdams:

a. Shoring shall be designed to resist a vertical live load surcharge of 1,882 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, 8'-6" wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA Manual for Railway Engineering, Chapter 8, Part 20.

b. Allowable stresses in materials shall be in accordance with AREMA *Manual for Railway Engineering,* Chapter 7, 8, and 15.

c. A construction procedure for temporary shoring shall be shown on the drawing.

d. Safety railing shall be installed when temporary shoring is within 15'-0" of the centerline of the track.

e. A minimum distance of 10 feet from centerline of the track to face of nearest point of shoring shall be maintained.

The contractor shall submit the following drawings and calculations for CSXT's review and approval.

1. Three (3) sets of detailed drawings of the shoring systems showing sizes of all structural members, details of connections, and distances form centerline of track to face of shoring. Drawing shall show a section showing height of shoring and track elevation in relation to bottom of excavation.

2. One set of calculations of the shoring design.

The drawings and calculations shall be prepared by a Licensed Professional Engineer in the State where shoring is to be constructed and shall bear his seal and signature. Shoring plans shall be approved by CSXT's construction engineering and inspection representative.

3. For sheeting and shoring within 18'-0" of the centerline of the track, the live load influence zone, and in slopes, the contractor shall use sheet pile. No sheet pile in slopes or within 18'-0" of the centerline of track shall be removed. Sheet piles shall be cut off 3'-0" below the finished ground line. The remaining 3'-0" shall be backfilled and compacted immediately after cut off.

VII. DEMOLITION OF EXISTING STRUCTURE:

The Contractor shall submit a detailed procedure for demolition of existing structures over or adjacent to CSXT's tracks or right-of-way. The procedure shall clearly indicate the capacity of cranes, location of cranes with respect to the tracks and calculated lifting loads (refer to Section I.E of this document). The demolition procedure must be approved by CSXT's construction engineering and inspection representative.

CSXT's tracks, signals, structures, and other facilities shall be protected from damage during demolition of existing structure or replacement of deck slab. As a minimum, both of the following methods shall be used:

A. During demolition of the deck, a protection shield shall be erected from the underside of the bridge over the track area to catch falling debris. The protection shield shall be supported from girders or beams. The deck shall be removed by cutting it in sections and lifting each section out. The protection shield shall be designed, with supporting calculations, for a minimum of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.

Large pieces of deck shall not be allowed to fall on the protection shield

B. A ballast protection system consisting of geofabric or canvas shall be placed over the track structure to keep the ballast clean. The system shall extend along the track structure for a minimum of 25'-0" beyond the limits of the demolition work, or farther if required by CSXT's construction engineering and inspection representative.

C. The Contractor shall submit detailed plans, with supporting calculations, of the protection shield and ballast protection systems for approval prior to the start of demolition.

D. Blasting will not be permitted to demolish a structure over or within CSXT's right-of-way.

VIII. ERECTION PROCEDURE:

The Contractor shall submit a detailed procedure for erecting over or adjacent to CSXT's tracks or right-of-way. The procedure shall clearly indicate the capacity of cranes, location of cranes with respect to the tracks and calculated lifting loads (refer to Section. E of this document). The erection procedure must be approved by CSXT's construction engineering and inspection representative.

IX. PILE INSTALLATION:

A. For the installation of piles and sheeting for abutment foundations, pier foundations, retaining wall foundations, temporary and permanent shoring and other structures on or adjacent to CSXT's right-of-way, the contractor may be required to submit a detailed track monitoring program for CSXT's approval prior to performing any work near CSXT's right-of-way.

B. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. CSXT shall have the capability of modifying the survey locations and monitoring frequency as needed during the project.

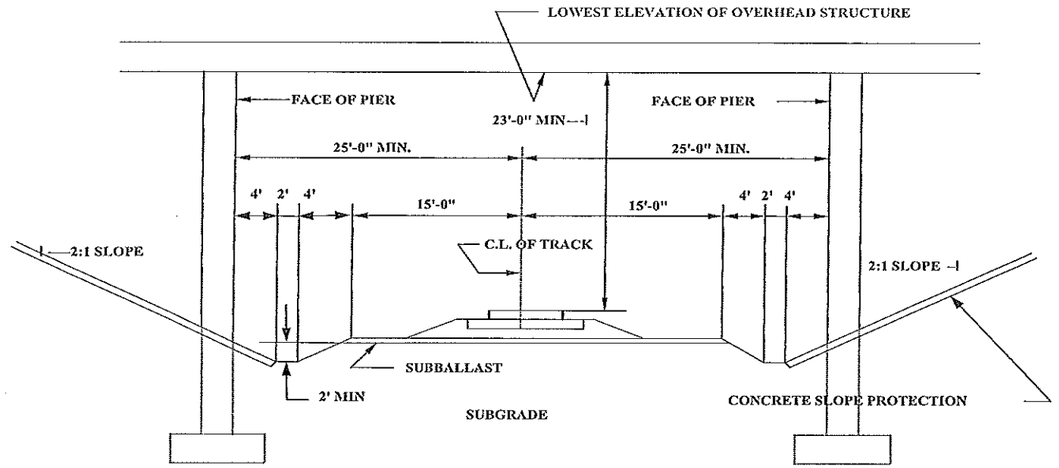
C. If any settlement is observed, CSXT's construction engineering and inspection representative shall be immediately notified. CSXT, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSXT or performed by CSXT including the monitoring of corrective action of the contractor will be at project expense.

X. PEDESTRIAN OVERHEAD:

Pedestrian overhead bridges shall be governed by this document in its entirety with the following exceptions:

A. Pedestrian overhead bridges shall span the entire width of CSXT's right-of-way. Intermediate piers or other supports will not be permitted.

B. Pedestrian overhead bridges shall be completely enclosed with protective canopy or by other means to prevent users from dropping debris onto CSXT's right-of-way.

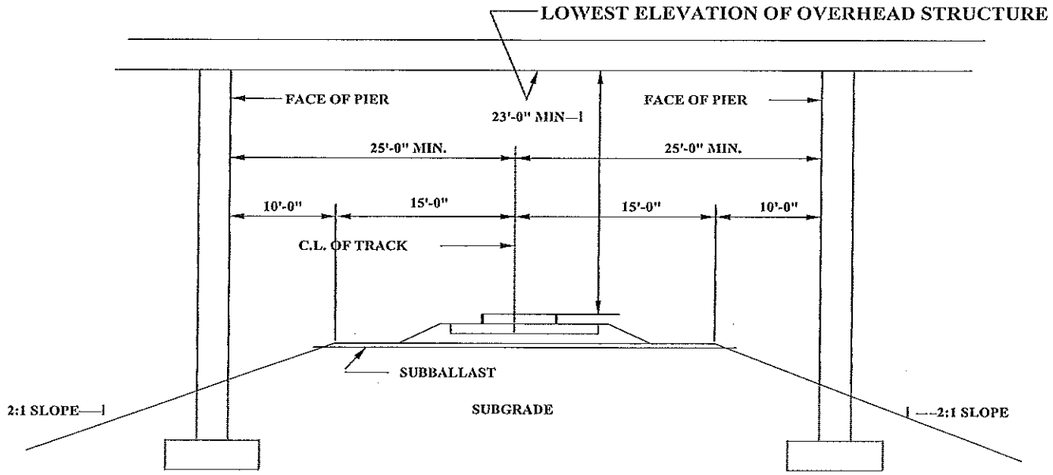


CLEARANCES REQUIRED FOR OVERHEAD STRUCTURES
TYPICAL ROADBED SECTION WITH STANDARD DITCHES

NOTE: FOR MULTIPLE TRACKS, STANDARD TRACK CENTERS IS 15'-0". AN ADDITIONAL 8'-0" WIDE ACCESS ROAD MAY BE REQUIRED TO PROVIDE 33'-0" MINIMUM DISTANCE FROM CENTERLINE OF TRACK TO FACE OF PIER.

CSX ENGINEERING DEPARTMENT

STANDARD CLEARANCES FOR OVERHEAD STRUCTURES

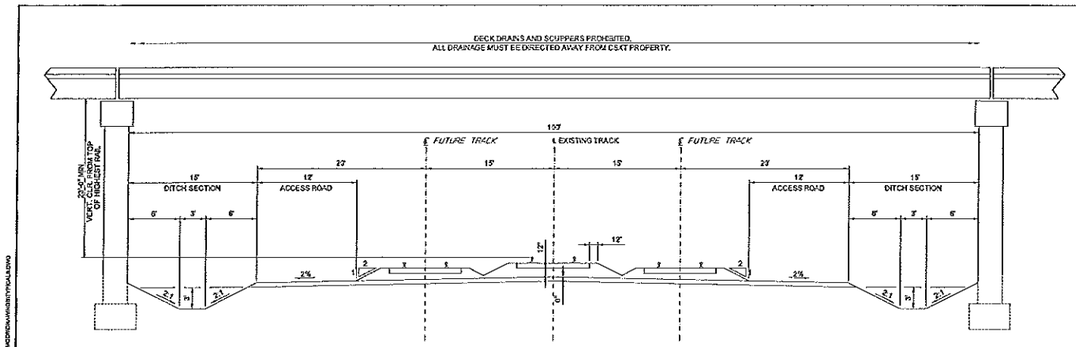


CLEARANCES REQUIRED FOR OVERHEAD STRUCTURES
TYPICAL SECTION FOR ROADBED IN FILL

(WHERE NO DEFINED DITCHES ARE NEEDED)

CSX ENGINEERING DEPARTMENT

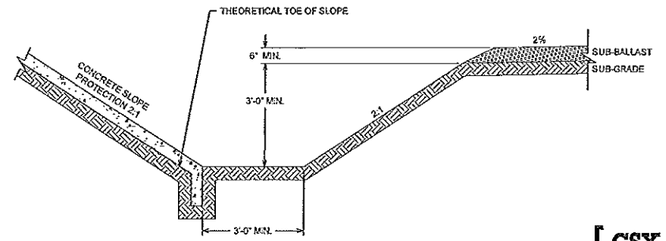
STANDARD CLEARANCES FOR OVERHEAD STRUCTURES



TYPICAL TRACK CROSS SECTION FOR OVERHEAD BRIDGE DESIGNS
NTS

NOTES:

1. CLEAR SPAN WIDTH SHOULD ACCOUNT FOR THE NUMBER OF EXISTING TRACKS AT SPECIFIC PROJECT SITE. EACH ADDITIONAL TRACK ADDS 15' TO THE CLEAR SPAN WIDTH CALCULATION.
2. HORIZONTAL DIMENSIONS SHOWN ARE PERPENDICULAR TO ℄ OF TRACK.
3. CRASHWALLS MAY BE REQUIRED BASED ON SITE SPECIFIC PARAMETERS.
4. ACTUAL REQUIRED HORIZONTAL CLEARANCES MAY NEED TO BE INCREASED DUE TO EXISTING ROADBED SECTION, LOCATION OF PARALLEL DITCHES, HYDROLOGICAL CONDITIONS, AND FUTURE TRACK REQUIREMENTS.
5. THEORETICAL TOE OF SLOPE IS BASED ON THE STANDARD ROADBED SECTION. ACTUAL TOE OF SLOPE MAY VARY DUE TO EXISTING GROUND LINE.
6. THE DITCH SECTION SHOWN IS THE MINIMUM ACCEPTABLE SECTION.
7. THE DITCH SECTION IS TO BE INCREASED AS REQUIRED BY LOCAL CONDITIONS, BASED ON HYDROLOGICAL AND HYDRAULIC STUDIES.
8. HORIZONTAL DIMENSIONS SHOWN ARE THE MINIMUM WHICH WILL ALLOW THE CONSTRUCTION OF CSXT'S STANDARD ROADBED SECTION.



DITCH DETAIL
NTS

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APPENDIX

CSX Transportation

UNDERGRADE BRIDGE CRITERIA INCLUDING BALLAST DECKS

Public Projects Group
Jacksonville, FL
Date Issued: October 1, 1999

CRITERIA FOR BALLAST DECK RAILROAD BRIDGES

PURPOSE AND SCOPE
These criteria modify and supplement the applicable sections of the AREMA Manual of Recommended Practice in connection with the design of ballasted deck railway bridges.

I. SPECIFICATIONS:

A. Design Specifications: American Railway Engineering and Maintenance-of-Way Associations (AREMA) Manual for Railway Engineering, Current Edition.

Chapter 7.	Timber Structures
Chapter 8.	Concrete Structures and Foundations
Chapter 15.	Steel Structures
Chapter 29.	Waterproofing

B. Construction Specifications:
1. Use AREMA Manual recommendations for fabrication and erection of structural steel (Chapter 15).
2. Use AREMA Manual recommendations for Concrete Structures and foundations (Chapter 8).
3. Use AREMA Manual recommendations for dampproofing and deck waterproofing (Chapter 29).
4. CSXT Standard Specifications and Special Specifications shall be used where appropriate. Items not covered by CSXT Standard and Special Specifications should use the Standard Highway Specifications for the State where the bridge is being constructed.

II. BRIDGE LAYOUT
While preparing the initial layout of the bridge the following shall be considered:

A. The layout of the bridge shall show the Railroad Valuation Stations at face of backwalls and at centerline of the bridge. Distance from centerline of the bridge to nearest milepost shall be shown on plan.

B. For bridges on curves, the girders, abutments and piers shall be located with reference to chords.

C. Provide horizontal clearance on the bridge as shown in Figure 1-1, Chapter 15 of the AREMA Manual. For curved track, increase the required clearance 1 ? inches per degree of curvature. On the inside of the curve, the required clearance shall be measured from the centerline of the track projected at right angles to the plane of the superelevation. No reduction in required clearances shall be made on outside of the curve due to superelevation. If State legal clearance requirements exceed Railroad requirements; the State legal requirements shall govern. When bridge is on tangent track but the track is curved within 80 feet of the end of bridge, the lateral clearances in Figure 1-1 shall be increased as mentioned above.

D. Bridges over public roadways shall have walkways on both sides of the track. Preferably bridges shall be made wide enough to accommodate walkways on inside of the bridge girders.

E. For multiple track bridges, the width of the bridge must provide proper clearances measured from centerline of each outside track. In addition adequate room shall be provided for a future 15'- 0" center to center of each track.

F. On ballast deck bridges, timber roadway ties 7" thick, 9" wide and 8' 6" long, spaced at 1' 9" centers shall be used. Alternatively, concrete ties may be used at 2'-0" centers. Minimum ballast depth is 8" measured at the centerline of the low rail.

III. DESIGN LOADS
Railroad Bridges shall be designed for all loads specified in Chapters 8 and 15 of the AREMA Specifications. The following live loads shall be used.

Non Composite Design:	Coopers E-80 loading with full diesel impact and the Alternate Live Load.
Composite Design:	Coopers E-80 loading with full diesel impact and the Alternate Live Load.
	Coopers E-65 with full diesel impact for steel alone.

In computing dead load of structure, include the weight of an additional 6" of ballast. This allows for future track surfacing.

IV. MATERIAL REQUIREMENTS

A. STRUCTURAL STEEL:

1. Structural Steel shall be ASTM A709 Gr36, Gr50 or Gr50W. The toughness shall be T2 for non-fracture critical members or F2 for fracture critical members. Other types of steel may be used if approved by the CSX Director Structural Engineering. Thickness of flange plates shall not exceed 3 inches.

2. The engineer shall call out all fracture critical members on the plans.

3. Structural Steel shall be in accordance with CSX Transportation "Specifications for Structural Steel".

4. Structural Steel shall be painted in accordance with CSX Transportation "Specifications for Painting Structural Steel".

B. CONCRETE: Concrete shall be air entrained. Cement shall be Portland Cement, ASTM-C150, Type I or IA. Concrete shall have a minimum 28-day compressive strength of:

4000 psi -- Substructure
5000 psi -- Superstructure

Use of Fly Ash in concrete is not acceptable. Concrete admixtures other than air entrainment must be approved by CSX's Director Structural Engineering prior to use.

Concrete shall be in accordance with the current CSX Transportation Specifications for "Cast-In-Place Concrete."

C. REINFORCING STEEL: Deformed bars of billet steel conforming to ASTM 615, Grade 60 shall be used.

V. SUPERSTRUCTURE

A. GENERAL

1. The thickness of steel deck plate shall be as follows:

Plate Thickness	Max. Clear Distance Between Beams
?"	1'-6"
5/8"	2'-0"
?"	2'-4"

2. The steel deck plates shall be shop welded with a pair of 5/16" continuous fillet welds to each floorbeam or deck beam. Deck units shall be shop assembled with two or three beams per unit. Deck plates are not permitted to overhang the beam when these units are fabricated.

3. The closing deck plate between adjacent deck units shall be fillet welded to the beams with continuous 5/16" fillet weld at each beam. After deck plates are welded to beam, fill space between deck plates at joint with bituminous mastic.

4. For welded plate girders no more than two flange section transitions will be permitted without special permission. A full penetration groove weld shall be used for flange to web connection.

5. Intermediate stiffeners shall consist of two angles, one on each side of the web, and shall be bolted to the web. End bearing stiffeners may be plates or angles, welded or bolted.

6. Provide ?" thick, 31 ply, preformed elastomeric shock pads (MIL-C-882C specifications) between bearings and masonry.

7. Superstructures for multiple track bridges, constructed without detour tracks, shall be designed such that the superstructure can be rolled into place in segments while the temporary structure for at least one track remains intact.

8. The bottom lateral bracing system, if required by the AREMA Manual recommendations, shall be bolted to the girders.

9. Continuous spans will not be permitted.

B. The following criteria apply to through plate girder bridges with steel deck plates and closely spaced floorbeams:

1. Floorbeam brackets (or knee braces) shall be weldments that are bolted to the top flange of the floorbeams and to vertical stiffeners on the girder. The slope of the bracket shall be 4 inches in 12 inches where possible.

2. End floorbeams shall frame into the end stiffeners. An additional connection angle shall be provided where welded stiffener plates are used. End floorbeams and connections shall be designed such that the bridge can be jacked up by placing jacks under the end floorbeams. Jacking stiffeners shall be provided at points of jacking.

3. Intermediate floorbeams shall frame into the girder web using double connection angles and high strength steel bolts. At brackets or at other locations where there is an intermediate stiffener, the stiffener on the inside of the girder shall be terminated 1" minimum above the top of the floorbeam.

4. Through plate girder spans are limited to single and double track bridges only.

C. The following criteria apply to bridges with multiple deck girders with steel deck plates.

1. Provide a welded field splice in the deck plates at or near the centerline of bearing of the girders. Provide a closing deck plate from the abutment to this field splice that is normal to the girders and normal to the long direction of the main deck plates. This will avoid splicing deck plates over the backwall.

2. Steel fascia girders may be used in addition to the load carrying girders. The depth of fascia girders shall be 1/12 of the span length. The depth shall also be enough to place the top flange 3 inches above the top of high rail when a handrail is placed along the girder or 38 inches above the top of high rail when no handrail is used. The web of the fascia girder shall be 1/170 of the depth with ? inch minimum. The flanges shall be 12"x 1" minimum.

3. If fascia girders are not used, girders shall be spaced such that deck plates will not overhang the flange of the outside girders by more than 2 inches and a concrete parapet wall shall be provided. The wall shall be securely anchored to the deck plate and have a minimum thickness of 12 inches at the top. The height of the wall shall be as specified for fascia girders.

D. The following criteria apply to deck girder bridges with reinforced concrete deck slabs.

1. Minimum thickness of slabs shall be:
   12" for composite design
   8" for non composite design
   The deck slab shall be wide enough to provide room for walkways. This may be accomplished by providing a full width ballast trough or ballast trough with raised concrete walkways.

2. Epoxy coated reinforcing bars shall be used throughout the slab.

3. The outside edge of the slab shall be not more than 1' -- 6" from the centerline of the outside girder. Provide a ?" drip bead on the bottom face of slab.

4. Provide a concrete parapet wall on each side of deck slab. Wall to have a minimum thickness of 12" at the top with reinforcing anchored into the slab. Top of wall shall be 3" above top of high rail if a handrail is provided and 38" above top of high rail without handrail.

5. For composite design, the following minimum reinforcing shall be provided in the slab:
   Transverse direction - #5 at 6" c. to c.
   Longitudinal direction - #5 at 9" c. to c.

VI. DECK DRAINAGE

1. Top surface of waterproofing protection shall have a transverse slope of 1" with a crown under centerline of each track. Use an underlayment with a minimum thickness of 3 ?" of portland cement concrete with welded wire fabric or 1" bituminous mastic underlayment to provide required slope on steel decks. Underlayments shall be in accordance with the requirements of AREMA, Chapter 29, Section 2.5 Underlayment. Concrete decks shall be cast to provide desired slope. Use longitudinal half round deck drains and pans at ballast retainers and between tracks to collect discharge.

2. Top surface of waterproofing protection shall have a minimum longitudinal slope of 0.5%. When the deck is level or slopes less than 0.5%, underlayment be used to provide longitudinal slope also. Concrete decks shall be cast to provide required slope. Use longitudinal half round deck drains and pans at ballast retainers and between tracks.

3. Deck drains and bottom pans shall be 12 gage, galvanized and bituminous coated.

4. For concrete deck bridges where membrane waterproofing is not used, Ductile Iron pipe drains though the deck with Ductile Iron or stainless steel collection system may be used in lieu of the surface drainage system using half round drains.

5. For longer bridges, intermediate drains at the piers may be required. Use six-inch diameter; Schedule 40 steel pipe for these drains. All pipe, connections, hanger and brackets shall be galvanized or stainless steel. Field connections shall be made with Style 77 Victaulic coupling or equal. Each ballast drain shall have a downspout to a collector on the substructure. Provide a one-inch gap between downspouts and the collector piping.

6. Two feet of porous backfill, measured horizontally, shall be provided behind all abutments and wingwalls. Provide perforated pipe drains behind abutment at bottom to remove drainage. Half-round deck drains shall be connected by downspouts to the perforated pipe at the bottom of porous backfill. This pipe and downspouts shall be 8 inch, 16 gage corrugated metal pipe, galvanized and bituminous coated. The perforated pipe shall be connected to a non-perforated 8 inch, 16 gage corrugated metal, galvanized and bituminous-coated pipe prior to exiting from behind abutments. The non-perforated pipe shall be drained away from the bridge with a 1% minimum slope.

VII. DECK WATERPROOFING

A. GENERAL

1. All steel bridge decks shall be waterproofed using membrane waterproofing.

2. Concrete bridge decks shall be waterproofed using membrane waterproofing when the bridge is located in areas subject to frequent freeze and thaw cycles. In areas not subject to frequent freeze and thaw cycles, the deck surface may be dampproofed. Railroad's Director Structural Engineering shall have final authority as to which system will be used.

3. All deck joints between spans shall be watertight.

4. Waterproofing or dampproofing shall be applied to the entire surface of deck and inside faces of parapets or curb plates. Materials and construction to be in accordance with AREMA Manual recommendations, Chapter 29 plus requirements as follows.

B. MEMBRANE WATERPROOFING:

1. Use 3/32" thick Butyl Rubber Membrane waterproofing conforming to the requirements of Article 2.3.5 on the entire deck and ballast retainers.

2. Adhesive must be applied to the entire surface to be waterproofed.

3. No. 3, tongue and groove splice, shown in AREMA Chapter 29, Figure 2-2, shall be used for splicing Butyl Rubber Membrane.

C. WATERPROOFING PROTECTION:

Two layers of asphaltic panels, conforming to AREMA Article 2.4.7, total thickness not less than 1 inch and placed with staggered joints and set in compatible adhesive, shall be used to protect Buty1 Rubber Membrane on deck and ballast retainers. Ballast shall be placed as soon as practicable following placement of the panels to prevent distortion from sunlight. Edges and protrusions of panels are to be coated in accordance with Article 2.9.4.6. (A).

VIII. SUBSTRUCTURE:

A. ABUTMENT:

1. The abutment shall be designed in accordance with requirements of Chapter 8 of the AREMA Manual

2. The abutment shall be wide enough to provide for a 15' – 0" shoulder measured from the centerline at the nearest track, on each side. In case of multiple track bridges, the abutment width shall be sufficient to provide for standard 15' – 0" shoulder on both sides and future 15' – 0" center to center between tracks. Wingwalls shall be designed to support 2 horizontal : 1 vertical embankment slope.

3. Provide four inches minimum clearance between end of structural steel and face of backwall.

4. Use front face of backwall and centerline of track as reference for abutment layout.

5. Provide waterstops of all construction joints. Waterstops shall be PVC 9" X 3/8" Hollow Bulb (Bulb ?" I. D., 1 ?" O. D.) continuous across joint.

6. Provide minimum edge distance of six inches from edge of masonry plate or shoe to edge of abutment.

B. PIER:

1. Provide a minimum edge distance of six inches from the front edge or back edge of masonry plate or shoe. In addition, provide a minimum edge distance of six inches from the corner of masonry plate or shoe

2. Provide four inches minimum clear between ends of structural steel.

3. Provide a minimum of eighteen inches beyond the outside edge of the masonry plate or shoe to the end of the pier.

4. Length of pier shall be sufficient to provide for future 15'-0" center to center of tracks, when multiple tracks are supported on one pier.

5. Thickness of pier shall be minimum 4'-0" width measured at the stem.

IX. MAINTENANCE OF RAILROAD TRAFFIC

A. GENERAL

1. It is essential that the construction be performed with a minimum interference with rail traffic. Continuity of safe rail operations will be required for the duration of the project.

2. The Design Engineer should contact Railroad's Division manager in the preliminary design stage to determine Railroad Operational requirements.

3. The most effective method of maintaining traffic is to temporarily reroute traffic around the construction site using detour tracks. Detour tracks will be required where feasible. Railroad's Chief Engineer Design and Construction, will furnish design requirements.

4. If detour tracks cannot be provided, the new superstructure shall be constructed adjacent to final location and rolled into place. Temporary bridges will be required to maintain traffic. Construction plans shall show complete details of temporary bridges and roll-in structure.

5. A detailed construction procedure for maintaining traffic shall be shown on the plans. When construction requires total interruption of rail traffic, an estimate of the time required will be shown in the procedure. This interval must be within the approved time frame furnished by Railroad's Division Manager.

6. Prior to the start of construction, written approval from the Railroad for the procedure of construction must be secured.

X. PLAN PREPARATION AND SUBMITTAL

A. PRELIMINARY PLANS

Provide four (4) sets of type, size and location (T.S.&L.) plans to Railroad for approval. The T.S.&L. plan shall show plan view, elevation and typical cross section of the proposed structure. Furnish cross sections or topographic map with contours and soil exploration data along with T.S.&L. plans. Obtain Railroad approval before proceeding with final design. Railroad will assign a bridge designation when T.S.&L. plans are reviewed. This bridge designation shall be shown on all drawings.

B. FINAL PLANS

Provide four (4) sets of detailed final plans and one set of design calculations for Railroad approval. Submit special provisions or special specifications along with final plans for Railroad approval.

After plans are approved and construction contract is awarded, a copy of the contract shall be provided to the Railroad. Provide one (1) set of original plans or Mylar reproducible tracings (not sepias) of the as built design plans for the Railroad files, after job completion.

C. SHOP DRAWINGS

Provide two (2) complete sets of shop drawings for Railroad review. Welding procedures shall be submitted with the structural steel shop drawings. After completion of the job, furnish one set of original or Mylar reproducible tracings of the shop drawings for Railroad Files.

D. COFFERDAMS AND SHORING PLANS

During construction of the bridge, shoring may be required to support detour track or cofferdams may be needed to construct abutments and piers. Contractor shall submit detailed plans of the cofferdams and/or shoring, along with the construction procedure and one set of calculations to the Railroad and shall secure approval in writing prior to the start of the construction. Plans shall be prepared by a registered Professional Engineer in the State where the cofferdam or shoring is being constructed and shall bear his seal and signature. All pertinent soil data shall be sent to Railroad along with the plans for the shoring or cofferdam.

Shoring to protect Railroad traffic shall be designed to resist a vertical live load surcharge of 1800 lbs per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, 8'-6" wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA Manual, Chapter 8, part 20.

APPENDIX

CSX Transportation

CONSTRUCTION SUBMISSION CRITERIA

Public Projects Group
Jacksonville, FL
Date Issued: February 23, 2015

TABLE OF CONTENTS

INTRODUCTION

The intent of this document is to guide outside agencies and their Contractors when performing work on, over, or with potential to impact CSXT property (ROW). Work plans shall be submitted for review to the designated CSXT Engineering Representative for all work which presents the potential to affect CSXT property or operations; this document shall serve as a guide in preparing these work plans. All work shall be performed in a manner that does not adversely impact CSXT operations or safety; as such, the requirements of this document shall be strictly adhered to, in addition to all other applicable standards associated with the construction. Applicable standards include, but are not limited to, CSXT Standards and Special Provisions, CSXT Insurance Requirements, CSXT Pipeline Occupancy Criteria, as well as the governing local, county, state and federal requirements. It shall be noted that this document and all other CSXT standards are subject to change without notice, and future revisions will be made available at the CSXT website: www.csx.com.

I. DEFINITIONS

1. *Agency* – The project sponsor (i.e., State DOT, Local Agencies, Private Developer, etc.)

2. *AREMA* – American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA Manual for Railway Engineering.

3. *Construction Submission* – The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.

4. *Controlled Demolition* – Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSXT employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSXT's ability to access its property at all times.

5. *Contractor* – The Agency's representative retained to perform the project work.

6. *Engineer* – CSXT Engineering Representative or a GEC authorized to act on the behalf of CSXT.

7. *Flagman* – A qualified CSXT employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.

8. *GEC* – General Engineering Consultant who has been authorized to act on the behalf of CSXT.

9. *Horizontal Clearance* – Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.

10. *Professional Engineer* – An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Licensed Professional Engineer and shall bear his/her seal and signature.

11. *Potential to Foul* – Work having the possibility of impacting CSXT property or operations; defined as one or more of the following:
    a. Any activity where access onto CSXT property is required.
    b. Any activity where work is being performed on CSXT ROW.
    c. Any excavation work adjacent to CSXT tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSXT property limits.
    d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.
    e. Any work where the scatter of debris, or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.
    f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.
    g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSXT.

12. *ROW* – Right of Way; Refers to CSXT Right-of-Way as well as all CSXT property and facilities. This includes all aerial space within the property limits, and any underground facilities.

13. *Submission Review Period* - a minimum of thirty (30) days in advance of start of work. Up to thirty (30) days will be required for the initial review response. Up to an additional thirty (30) days may be required to review any/all subsequent submissions or resubmission.

14. *Theoretical Railroad Live Load Influence Zone* – A 1½ horizontal to 1 vertical theoretical slope line starting 18 inches (1'-6") below top of tie elevation and twelve feet (12'-0") from the centerline of the nearest track.

15. *TOR* – Top of Rail. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails.

16. *Track Structure* – All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.

17. *Vertical Clearance* – Distance measured from TOR to the lowest obstruction within six feet (6'-0") of the track centerline, in either direction.

II. GENERAL SUBMISSION REQUIREMENTS

A. A construction work plan is required to be submitted by the Agency or its Contractor, for review and acceptance, prior to accessing or performing any work with Potential to Foul.

B. The Agency or its representative shall submit six (6) sets of plans, specifications, supporting calculations, and detailed means and methods procedures for the specific proposed work activity.

C. Construction submissions shall include all information relevant to the work activity, and shall clearly and concisely explain the nature of the work, how it is being performed, and what measures are being taken to ensure that railroad property and operations are continuously maintained.

D. All construction plans shall include a map of the work site, depicting the CSXT tracks, the CSXT right of way, proposed means of access, proposed locations for equipment and material staging (dimensioned from nearest track centerline), as well as all other relevant project information. An elevation drawing may also be necessary in order to depict clearances or other components of the work.

E. Please note that CSXT will not provide pricing to individual contractors involved in bidding projects. Bidding contractors shall request information from the agency and not CSXT.

F. The Contractor shall install a geotextile fabric ballast protection system to prevent construction or demolition debris and fines from fouling ballast. The geotextile ballast protection system shall be installed and maintained by the Contractor to the satisfaction of the Engineer.

G. The Engineer shall be kept aware of the construction schedule. The Contractor shall provide timely communication to the Engineer when scheduling the work such that the Engineer may be present during the work. The Contractor's schedule shall not dictate the work plan review schedule, and flagging shall not be scheduled prior to receipt of an accepted work plan.

H. At any time during construction activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

I. Blasting will not be permitted to demolish a structure over or within CSXT's right-of-way. When blasting off of CSXT property but with Potential to Foul, vibration monitoring, track settlement surveying, and/or other protective measures may be required as determined by the Engineer.

J. Blasting is not permitted adjacent to CSXT right-of-way without written approval from the Chief Engineer, CSXT.

K. Mechanical and chemical means of rock removal must be explored before blasting is considered. If written permission for the use of explosives is granted, the Agency or Contractor must submit a work plan satisfying the following requirements:

1. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Agency or Contractor.

2. Electronic detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

3. No blasting shall be done without the presence of an authorized representative of CSXT. Advance notice to the Engineer is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.

4. Agency or Contractor must have at the project site adequate equipment, labor and materials, and allow sufficient time, to clean up debris resulting from the blasting and correct any misalignment of tracks or other damage to CSXT property resulting from the blasting. Any corrective measures required must be performed as directed by the Engineer at the Agency's or Contractor's expense without any delay to trains. If Agency's or Contractor's actions result in the delay of any trains including passenger trains, the Agency or Contractor shall bear the entire cost thereof.

5. The Agency or Contractor may not store explosives on CSXT property.

6. At any time during blasting activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

III. HOISTING OPERATIONS

A. All proposed hoisting operations with Potential to Foul shall be submitted in accordance with the following:

1. A plan view drawing shall depict the work site, the CSXT track(s), the proposed location(s) of the lifting equipment, as well as the proposed locations for picking, any intermediate staging, and setting the load(s). All locations shall be dimensioned from centerline of the nearest track. Crane locations shall also be dimensioned from a stationary point at the work site for field confirmation.

2. Computations showing the anticipated weight of all picks. Computations shall be made based upon the field-verified plans of the existing structure. Pick weights shall account for the weight of concrete rubble or other materials attached to the component being removed; this includes the weight of subsequent rigging devices/components. Rigging components shall be sized for the subsequent pick weight.

3. All lifting equipment, rigging devices, and other load bearing elements shall have a rated (safe lifting) capacity that is greater than or equal to 150% of the load it is carrying, as a factor of safety. Supporting calculations shall be furnished to verify the minimum capacity requirement is maintained for the duration of the hoisting operation.

4. Dynamic hoisting operations are prohibited when carrying a load with the Potential to Foul. Cranes or other lifting equipment shall remain stationary during lifting. (i.e., no moving picks).

5. For lifting equipment, the manufacturer's capacity charts, including crane, counterweight, maximum boom angle, and boom nomenclature is to be submitted.

6. A schematic rigging diagram must be provided to clearly call out each rigging component from crane hook to the material being hoisted. Copies of catalog or information sheets shall be provided to verify rigging weights and capacities.

7. For built-up rigging devices, the contractor shall submit the following:

   i. Details of the device, calling out material types, sizes, connections and other properties.
   ii. Load test certification documents and/or design computations bearing the seal and signature of a Professional Engineer. Load test shall be performed in the configuration of its intended use as part of the subject demolition procedure.
   iii. Copies of the latest inspection reports of the rigging device. The device shall be inspected within one (1) calendar year of the proposed date for use.

8. A detail shall be provided showing the crane outrigger setup, including dimensions from adjacent slopes or facilities. The detail shall indicate requirements for bearing surface preparation, including material requirements and compaction efforts. As a minimum, outriggers and/or tracks shall bear on mats, positioned on level material with adequate bearing capacity.

9. A complete written narrative that describes the sequence of events, indicating the order of lifts and any repositioning or re-hitching of the crane(s).

IV. DEMOLITION PROCEDURE

A. The Agency or its Contractor shall submit a detailed procedure for a controlled demolition of any structure on, over, or adjacent to the ROW. The controlled demolition procedure must be approved by the Engineer prior to beginning work on the project.

B. Existing Condition of structure being demolished:

1. The Contractor shall submit as-built plans for the structure(s) being demolished.
2. If as-built plans are unavailable, the Contractor shall perform an investigation of the structure, including any foundations, substructures, etc. The field measurements are to be made under the supervision of the Professional Engineer submitting the demolition procedure. Findings shall be submitted as part of the demolition means and methods submittal for review by the Engineer.
3. Any proposed method for temporary stabilization of the structure during the demolition shall be based on the existing plans or investigative findings, and submitted as part of the demolition means and methods for review by the Engineer.

C. Demolition work plans shall include a schematic plan depicting the proposed locations of the following, at various stages of the demolition:

1. All cranes and equipment, calling out the operating radii.
2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
3. Proposed locations for stockpiling material or locations for truck loading.
4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.
5. Note that no crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.

D. Demolition submittal shall also include the following information:

1. All hoisting details, as dictated by Section III of this document.
2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., torch/saw cutting various portions of the superstructure or

substructure, dismantling splices, installing temporary bracing, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
4. Design and supporting calculations shall be prepared, signed, and sealed by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its contractor.

E. Girders or girder systems shall be stable at all times during demolition. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).

F. Existing, obsolete, bridge piers shall be removed to a minimum of three feet (3'-0") below the finished grade, final ditch line invert, or as directed by the Engineer.

G. A minimum quantity of twenty five (25) tons of CSXT approved granite track ballast may be required to be furnished and stockpiled on site by the Contractor, or as directed by the Engineer.

H. The use of acetylene gas is prohibited for use on or over CSXT property. Torch cutting shall be performed utilizing other materials such as propane.

I. CSXT's tracks, signals, structures, and other facilities shall be protected from damage during demolition of existing structure or replacement of deck slab.

J. Demolition Debris Shield

1. On-track or ground-level debris shields (such as crane mats) are prohibited for use by CSXT.

2. Demolition Debris Shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the structure. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris. The debris shield shall not be the primary means of debris containment.

   i. The demolition debris shield design and supporting calculations, all signed/sealed by a Professional Engineer, shall be submitted for review and acceptance.
   ii. The demolition debris shield shall have a minimum design load of 50 pounds per square foot (50 psf) plus the weight of the equipment, debris, personnel, and all other loads.
   iii. The Contractor shall verify the maximum particle size and quantity of the demolition debris generated during the procedure does not exceed the shield design loads. Shield design shall account for loads induced by particle impact; however the demolition procedure shall be such that impact forces are minimized. The debris shield shall not be the primary means of debris containment.
   iv. The Contractor shall include installation/removal means and methods for the demolition debris shield as part of the proposed Controlled Demolition procedure submission.
   v. The demolition debris shield shall provide twenty three feet (23'-0") minimum vertical clearance, or maintain the existing vertical clearance if the existing clearance is less than twenty three feet (23'-0").
   vi. Horizontal clearance to the centerline of the track should not be reduced unless approved by the Engineer.
   vii. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Engineer.

K. Vertical Demolition Debris Shield

1. This type of shield may be required for substructure removals in close proximity to CSXT track and other facilities, as determined by the Engineer.
2. The Agency or its Contractor shall submit detailed plans with detailed calculations, prepared, signed, and sealed by a Professional Engineer, of the protection shield.

V. ERECTION PROCEDURE

A. The Agency or its Contractor shall submit a detailed procedure for erection of a structure with Potential to Foul. The erection procedure must be approved by the Engineer prior to beginning work on the project.

B. Erection work plans shall include a schematic plan depicting the following, at all stages of the construction:
1. All proposed locations of all cranes and equipment, calling out the operating radii.
2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
3. All proposed locations for stockpiling material or locations for truck loading.
4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.

C. No crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.

D. For erection of a structure over the tracks, the following information shall be submitted for review and acceptance by the Engineer, at least thirty (30) days prior to erection:
1. As-built beam seat elevations – field surveyed upon completion of pier/abutment construction.
2. Current Top of Rail (TOR) elevations – field measured at the time of as-built elevation collection.
3. Computations verifying the anticipated minimum vertical clearance in the final condition which accounts for all deflection and camber, based upon the current TOR and as-built beam seat elevations. The anticipated minimum vertical clearance shall be greater than or equal to that which is indicated by the approved plans. Vertical clearance (see definitions) is measured from TOR to the lowest point on the overhead structure at any point within six feet (6'-0") from centerline of the track. Calculations shall be signed and sealed by a Professional Engineer.

E. Girders or girder systems shall be stable at all times during erection. No crane may unhook prior to stabilizing the beam or girder.
1. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
2. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer.
3. Temporary bracing shall not be removed until sufficient lateral bracing or diaphragm members have been installed to establish a stable condition. Supporting calculations, furnished by the Professional Engineer, shall confirm the stable condition.

F. Erection procedure submissions shall also include the following information:
1. All hoisting details, as dictated by Section III of this document.
2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., performing aerial splices, installing temporary bracing, installation of diaphragm members, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
4. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its Contractor.
5. Design and supporting calculations prepared by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review.

VI. TEMPORARY EXCAVATION AND SHORING

A. The Agency or its Contractor shall submit a detailed design and procedure for the installation of a sheeting/shoring system adjacent to the tracks. Shoring protection shall be provided when excavating with Potential to Foul, or as otherwise determined by CSXT. Shoring shall be provided in accordance with the AREMA, except as noted below.

B. Shoring may not be required if all of the following conditions are satisfied:
1. The excavation does not encroach within the Theoretical Live Load Influence Zone. Please refer to Figure 1.
2. The track structure is situated on level ground, or in a cut section, and on stable soil.
3. The excavation does not adversely impact the stability of a CSXT facility (i.e. signal bungalow, drainage facility,

undergrade bridge, building, etc), or the stability of any structure on, over, or adjacent to CSXT property with potential to foul.
4. Shoring is not required by any governing federal, state, local or other construction code.

C. Shoring is required when excavating the toe of an embankment. Excavation of any embankment which supports an active CSXT track structure without shoring will not be permitted.

D. Trench boxes are not an acceptable means of shoring. Trench boxes are prohibited for use on CSXT property or within the Theoretical Railroad Live Load Influence Zone.

E. Shoring shall be a cofferdam-type, which completely encloses the excavation. However, where justified by site or work conditions, partial cofferdams with open sides away from the track may be permissible, as determined by the Engineer.

F. Cofferdams shall be constructed using interlocking steel sheet piles, or when approved by the Engineer, steel soldier piles with timber lagging. Wales and struts shall be included when dictated by the design.

G. The use of tiebacks can be permissible for temporary shoring systems, when conditions warrant. Tiebacks shall have a minimum clear cover of 6'-0", measured from the bottom of the rail. Upon completion of the work, tiebacks shall be grouted, cut off, and remain in place.

H. All shoring systems on, or adjacent to CSXT right-of-way, shall be equipped with railings or other fall protection, compliant with the governing federal, state or local requirements. Area around pits shall be graded to eliminate all potential tripping hazards.

I. Interlocking steel sheet piles shall be used for shoring systems qualifying one or more of the following conditions:
1. Within 18'-0" of the nearest track centerline
2. Within the live load influence zone
3. Within slopes supporting the track structure
4. As otherwise deemed necessary by the Engineer.

J. Sheet piles qualifying for one or more of the requirements listed in Section VI.I (above) of this document shall not be removed. Sheet piles shall be left in place and cut off a minimum of 3'-0" below the finished grade, the ditch line invert, or as otherwise directed by the Engineer. The ground shall be backfilled and compacted immediately after sheet pile is cut off.

K. The following design considerations shall be considered when preparing the shoring design package:
1. Shoring shall be designed to resist a vertical live load surcharge of 1,880 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, eight feet six inches (8'-6") wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in *AREMA Manual for Railway Engineering*, Chapter 8, Part 20.
2. Allowable stresses in materials shall be in accordance with AREMA Chapter 7, 8, and 15.3.
3. A minimum horizontal clearance of ten feet (10'-0") from centerline of the track to face of nearest point of shoring shall be maintained, provided a twelve feet (12'-0") roadbed is maintained with a temporary walkway and handrail system.
4. For temporary shoring systems with Potential to Foul, piles shall be plumb under full dead load. Maximum deflection at the top of wall, under full live load, shall be as follows:
   i. One-half (1/2) inch for walls within twelve feet (12'-0") of track centerline (Measured from centerline of the nearest track to the nearest point of the supporting structure).
   ii. One (1) inch for walls located greater than twelve feet (12'-0") from track centerline

L. Shoring work plans shall be submitted in accordance with Section II of this document, as well as the following additional requirements:
1. The work plan shall include detailed drawings of the shoring systems calling out the sizes of all structural members, details of all connections. Both plan and elevation drawings shall be provided, calling out dimensions from the face of shoring relative to the nearest track centerline. The elevation drawing shall also show the height of shoring, and track elevation in relation to bottom of excavation.
2. Full design calculations for the shoring system shall be furnished.
3. A procedure for cutting off the sheet pile, backfilling and restoring the embankment.

VII. TRACK MONITORING

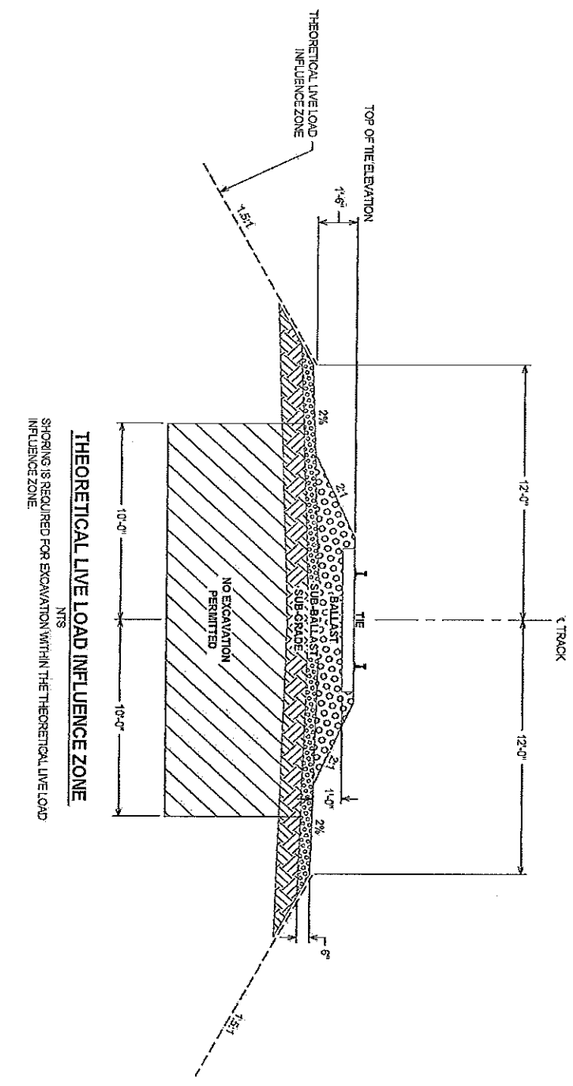
A. When work being performed has the potential to disrupt the track structure, a work plan must be submitted detailing a track monitoring program which will serve to monitor and detect both horizontal and vertical movement of the CSXT track and roadbed.

B. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. CSXT reserves to the right to modify the survey locations and monitoring frequency as necessary during the project.

C. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Engineer for analysis.

D. If any movement has occurred as determined by the Engineer, CSXT will be immediately notified. CSXT, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSXT or performed by CSXT including the monitoring of corrective action of the contractor will be at project expense.

FIGURE 1: Theoretical Live Load Influence Zone



THEORETICAL LIVE LOAD INFLUENCE ZONE
NTS

SHORING IS REQUIRED FOR EXCAVATION WITHIN THE THEORETICAL LIVE LOAD INFLUENCE ZONE.

NOTES:

1. THEORETICAL LIVE LOAD INFLUENCE ZONE IS A 1 ½ HORIZONTAL TO 1 VERTICAL THEORETICAL SLOPE LINE STARTING 1'-6" BELOW TOP OF TIE ELEVATION AND 12'-0" FROM THE CENTERLINE OF THE NEAREST TRACK.
2. REFER TO CONSTRUCTION SUBMISSION CRITERIA FOR ADDITIONAL REQUIREMENTS.
3. SHORING SHALL BE DESIGNED TO RESIST A VERTICAL LIVE LOAD SURCHARGE OF 1,880 LBS. PER SQUARE FOOT, IN ADDITION TO ACTIVE EARTH PRESSURE. THE SURCHARGE SHALL BE ASSUMED TO ACT ON A CONTINUOUS STRIP 8'-6" WIDE. LATERAL PRESSURES DUE TO SURCHARGE SHALL BE COMPUTED USING THE STRIP LOAD FORMULA SHOWN IN AREMA MANUAL FOR RAILWAY ENGINEERING, CHAPTER 8, PART 20.

APPENDIX

CSX Transportation

DRAINAGE CRITERIA

CSXT Design and Construction
Public Projects Group
Jacksonville, FL
Date Issued: September 9, 2014

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INTRODUCTION

CSXT owns its right-of-way for the primary purpose of operating a railroad. All drainage occupancies shall therefore be designed and constructed so that rail operations and facilities are not interfered with, interrupted, or endangered. In addition, the proposed facility shall be located to minimize encumbrance to the right-of-way so that the railroad will have unrestricted use of its property for current and future operations.

The CSX Design & Construction Standard Specifications for Pipelines, last revised February 24, 2010 shall serve as the overarching authority for recommended practice in providing sufficient drainage and protective measures for projects on CSXT property. The intent of this document is to provide criteria which supplements, modifies and/or supersedes the applicable sections of the AREMA Manual when designing a project which can affect drainage on or about the CSXT ROW. Additionally, these requirements help guide an outside party through the necessary procedures for interacting with CSXT and delivering an acceptable design.

I. DEFINITIONS

1. *Agency* – The project sponsor (i.e. State DOT, Local Agencies, Private Developer, etc.)

2. *AREMA* – American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA *Manual for Railway Engineering*.

3. *Construction Submission* – The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.

4. *Controlled Demolition* – Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSXT employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSXT's ability to access its property at all times.

5. *Contractor* – The Agency's representative retained to perform the project work.

6. *Engineer* – CSXT Engineering Representative or a GEC authorized to act on the behalf of CSXT.

7. *Flagman* – A qualified CSXT employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.

8. *GEC* – General Engineering Consultant who has been authorized to act on the behalf of CSXT. GECs perform preliminary engineering, construction inspection, and monitoring under the direction of the CSXT Engineering personnel. GEC personnel also perform day-to-day administration of certain types of projects.

9. *Horizontal Clearance* – Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.

10. *Professional Engineer* – An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Professional Engineer and shall bear his seal and signature.

11. *Potential to Encroach* – Work having the possibility of impacting CSXT property or operations; defined as one or more of the following:

a. Any activity where access onto CSXT property is required.

b. Any activity where work is being performed on CSXT ROW.

c. Any excavation work adjacent to CSXT tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSXT property limits.

d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.

e. Any work where the scatter of debris or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.

f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.

g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSXT.

12. *ROW* – Right of Way; Refers to CSXT Right-of-Way as well as all CSXT property and facilities. This includes all aerial space within the property limits, and any underground facilities.

13. *Submission Review Period* - A minimum of 30 days will be required for the initial review response. Up to an additional 30 days may be required to review any/all subsequent submissions or resubmission.

14. *Theoretical Railroad Live Load Influence Zone* – A 1½ horizontal to 1 vertical theoretical slope line starting 1'-6" below TOR elevation and 12'-0" from the centerline of the nearest track.

15. *TOR* – Top of Rail. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails. Use the higher of the two rails when track is superelevated.

16. *Track Structure* – All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.

17. *Vertical Clearance* – Distance measured from TOR to the lowest obstruction, within six feet (6'-0") of the track centerline, in either direction.

II. CSXT GENERAL DESIGN REQUIREMENTS

A. Refer to CSX's Design & Construction Standard Specifications for Pipeline Occupancies, last dated February 24, 2010, for the design requirements for all pipes and drainage structures under the railroad.

B. All pipes, ditches, and other structures carrying surface drainage on CSXT property and/or under CSXT track(s) shall be designed to carry the run-off from a one hundred (100) year, 24-hour design storm without ponding of water against the roadbed.

C. Pipe(s) used to carry surface drainage on CSXT's right-of-way shall have a minimum diameter of 24 inches.

D. When calculating the capacity of existing or proposed drainage structures, under CSXT's track(s), the headwater calculation at the structure shall not be greater than one (1):

$HW/D \leq 1$.

E. Rate and quantity of storm water runoff from any proposed development shall not exceed the rate and quantity of runoff prior to development. This standard shall be maintained for all design storms up to the 100 year storm event.

F. Pipes (casing or carrier) placed under CSXT tracks shall not be less than 5.5 feet from base of rail to top of pipe at its shallowest point.

G. Pipelines laid longitudinally on CSXT's right-of-way, 50 feet or less from centerline of track shall be buried not less than 4 feet from ground surface to top of pipe. Where the pipeline is laid more than 50 feet from centerline of track, the minimum cover shall be at least 3 feet.

H. Erosion prevention methods shall be used to protect railroad ditches and other drainage facilities during construction on and adjacent to CSXT's right-of-way.

I. Permanent erosion and sediment pollution control facilities shall be designed for the 100-year storm. Provide calculations and details of any riprap outlet protection and channel linings as needed within CSXT right-of-way.

J. Pipes and culverts within the live load influence shall conform to current AREMA Recommendations and ASTM Specifications. All such structures shall be designed to carry Cooper's E-80 loading with diesel impact. Refer to CSX's Design & Construction Standard Specifications for Pipeline Occupancies approved material types and specifications.

K. CSXT right-of-way shall not be utilized for retention, detention or settling basins. Also, the railroad embankment must not be used as any part of a detention pond structure.

L. Track roadbed fills shall not be used as dams or levees for retention of runoff.

M. Temporary sediment basins/traps shall not be constructed against track roadbed fill.

N. Formal approval of the proposed design, by the appropriate governmental agency having jurisdiction, shall be submitted to CSXT for their review and acceptance.

O. Pipes and culverts are not to be located within the limits of a turnout or nor closer than 45 feet to any railroad bridge, building or any other important structure.

P. When excavation for a pipeline or other structure will be within the theoretical railroad embankment line of an adjacent track, interlocking steel sheet piling will be required to protect the track(s). Trench Boxes are prohibited for use on CSXT within the Theoretical Railroad Live Load Influence Zone. Please refer to the CSX Transportation, Construction Submission Criteria for further details regarding sheeting.

Q. Blasting is not permitted on or adjacent to CSXT right-of-way without prior written approval from the Chief Engineer, CSXT.

R. Crossing of tracks at grade by equipment and personnel is prohibited except by prior arrangement with and as directed by, CSXT.

S. Temporary Track Supports may be required when jacking, boring or tunneling method of installation is used, and depending upon the size and location of the drainage crossing. The Agency's contractor shall furnish and supply the CSX approved track supports, with the installation and removal performed by CSXT employees. The Agency shall reimburse CSXT for all costs associated with the installation and removal of the track supports.

T. Plans submitted to CSXT for approval shall be prepared by a Professional Engineer and should indicate design, suitable topographic plan, and outline of total drainage area.

U. If the drainage is to discharge into an existing drainage channel on CSXT's right-of-way and/or through a drainage structure under CSXT's track(s), the computations must include the hydraulic analysis of any existing ditch and/or structure.

V. Extension of pipes, culverts and other drainage structures previously installed under CSXT owned track shall be made with culvert or drainage structure having the same size, shape, and dimensions, as the existing pipe. In no case shall the existing drainage structure be extended so that the hydraulic capacity is decreased or obstructed. In some cases, it may be necessary to extend existing outlets with pipe or culvert of a larger size. Details of connections to mismatched culverts shall be submitted for CSXT approval.

W. Agency may be required to provide reasonable corrective measures to alleviate an existing drainage problem within CSXT property which may be affected by the proposed development. It shall be the responsibility of the Agency to obtain all drainage easements and permits. CSXT shall be indemnified and held harmless of any liability.

X. Agency is to provide information on groundwater recharge if infiltration is proposed adjacent to CSXT property. Soils testing and certification by a registered professional engineer shall be required.

Y. Emergency spillways discharging onto CSXT property are to be designed and constructed so that the basin berm is protected against erosion.

Z. Energy dissipating devices are to be placed at all outlets discharging to CSXT property.

AA. Concrete end walls shall be placed at outlets discharging to CSXT property. All concrete outlet pipes on CSXT property must be equipped with a trash rack.

BB. Under no conditions shall any person be allowed to modify, alter or change a previously approved storm water management (SWM) facility discharging to CSXT property unless an approved alternate facility is approved by CSXT.

CC. Design of the drainage system, including alterations of the existing drainage system on CSXT right-of-way, is the responsibility of the Agency. Drainage shall not be diverted, directed toward CSXT, or increased in quantity without prior approval and agreement with CSXT.

DD. Supporting calculations must be provided for all proposed drainage and storm water management facilities that discharge onto or impact CSXT property.

EE. Occupancies shall be designed, and their construction shall be accomplished, so that adequate and uninterrupted drainage of CSXT's rights-of way is maintained.

FF. If, in the course of construction, it may be necessary to block a ditch, pipe, or other drainage facility, temporary pipes, ditches, or other proposed drainage facilities shall be installed to maintain adequate drainage, as approved by CSXT. Upon completion of the Project, the temporary facilities shall be removed and the permanent facilities restored.

GG. Temporary and permanent erosion control and sedimentation (E&S) devices must be provided to prevent the flow of sediment onto and adjacent to CSXT property.

HH. The design shall take into account and provide upstream areas within the entire watershed in computing discharge, sizing of pipes, inlets, and other structures.

II. When applicable, Agency is to provide maintenance and operation of E&S/Storm water facilities.

III. PLANS

A. Plans shall include the following, but not limited to:

1. Existing property boundaries, easements, etc.
2. Existing drainage features and topography.
3. Existing utility locations
4. Existing structures, tracks, roads, features, etc.
5. Existing topography including wetlands and all environmental features.
6. Delineate & Dimension proposed property acquisition or property easements.
7. Dimension distances from all temporary and proposed E&S and storm water management facilities to CSXT's property line and/or easement.
8. Dimension distances from all temporary and proposed E&S and storm water management facilities to CSXT's tracks
9. Dimension all temporary and proposed encroachments within CSXT's property
10. Show existing contours
11. Provide TOR elevations.
12. Provide proposed contours, site grading and drainage facilities
13. Provide proposed improvements, including easements and property lines and limit of disturbance

14. Details for all temporary and proposed drainage structures, SWM and E&S Best Management Practices (BMP) devices
15. Detail proposed E&S, SWM, drainage collection & conveyance systems (pipes, ditches, etc.)
    i. Provide location, size, slope & type of pipe.
    ii. Ditch cross sections
    iii. Invert elevations
    iv. Grate and rim elevations
16. If applicable, identify the 100-year floodplain if project is within a specified flood zone.
17. Provide E&S Plans in compliance with all State and Local requirements.
18. Signature and Seal of State Licensed PE

IV. CALCULATIONS & REPORTS

A. Design Calculations:

1. Pre and post development Drainage Area Maps
    i. Provide soils boundary lines & soil types
    ii. Delineate drainage areas
    iii. Time of Concentration (Tc) flow path
    iv. Provide weighted CN and c-values (as applicable to design method)
2. Pre-development 100-year runoff volume and flows for all facilities draining to or on CSXT ROW
3. Post-development 100-year runoff volume and flows for all facilities draining to or on to CSXT ROW
    i. Verify no increase in rate or quantity of runoff to CSXT property from Pre-Development conditions
    ii. Provide hydraulic analysis (depth and velocity calculations) for all facilities draining to or on CSXT ROW (existing and proposed) and verify sufficient capacity for proposed flow is provided.
4. Design of proposed collection & conveyance systems (pipes, ditches, etc.)
    i. CSXT requires capacity for a 100 year, 24 hour storm
    ii. CSXT requires a minimum diameter of 24-inches for pipes within CSXT ROW
5. Provide all temporary and permanent E&S and SWM BMP calculations
6. Signature and Seal of State Licensed PE

B. Project narrative/summary describing proposed improvements, drainage design, SWM and E&S methodologies, site soil and geological conditions (if known), flooding characteristics (if applicable) and State and Local requirements used to produce designs.

C. Recommended: Photographs of the site and adjacent CSXT property, as well as discharge locations and drainage facilities on CSXT property to receive runoff from the proposed development.

V. CONSTRUCTION SPECIFICATIONS

A. Construction shall be in accordance to the CSX Design & Construction Standard Specifications for Pipeline Occupancies, last revised February 24, 2010 or latest revision, under the Construction Requirements section.

B. All work on or near CSXT property shall be conducted in accordance with CSXT safety rules and regulations. Specifically all Agency's employees and Contractors, while on CSXT property, shall be required to wear a hard hart, safety glasses with side shields, 6" lace up boots with a distinct heel, shirts with sleeves, and long pants; additional personal protective equipment may be required based on certain operations. The Contractor and its employees shall comply with the CSXT safety rules at all times while occupying CSXT's property. Operations will be subject to CSXT inspection at any and all times. All personnel operating equipment must be qualified on it to perform task at hand.

C. For the installation of temporary or permanent shoring systems, including but not limited to soldier piles and lagging, and interlocked steel sheeting on or adjacent to CSXT's right-of-way, the contractor may be required to submit a detailed track monitoring program for CSXT's approval prior to performing any work near CSXT's right-of-way. Please refer to CSX Transportation, Construction Submission Criteria for additional information.

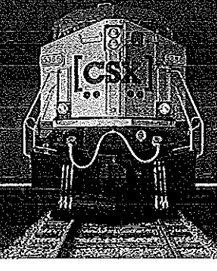
D. When water is known or expected to be encountered all plans and specifications must be submitted to the Engineer for approval before the process begins. Pumps of sufficient capacity to handle the flow shall be maintained at the site, provided the contractor has received approval from CSXT to operate them. Pumps in operation shall be constantly attended on a 24-hour basis until, in the sole judgment of CSXT, the operation can be safely halted. When dewatering, a process for monitoring for any settlement of track or structures must be in place.

E. If any track movement has occurred as determined by the Engineer, CSXT will be immediately notified. CSXT, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSXT or performed by CSXT including the monitoring of corrective action of the contractor will be at project expense.

F. Installation by the open cut method is not approved under CSXT's mainline tracks, tracks carrying heavy tonnage or tracks carrying passenger trains. Also, open cut shall not be used within the limits of a highway/railroad grade crossing or its approaches, 25 feet either side of traveled way, where possible.

CSX TRANSPORTATION, INC.
500 Water Street
Jacksonville, FL 32202
www.csx.com

HOW TOMORROW MOVES



SPECIAL PROVISIONS

WATERWAY PERMITS CONDITIONS

C-R-S: CUY-2-14.41 Paint

PID: 85377

Date: 11/21/2016

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by ODOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 11, 2015, and executed by FHWA and ODOT.

1. Waterway Permit Time Restrictions:

No waterway permits are required for CUY-2-14.41 Paint, PID 85377.

NOTE: If project conditions change and temporary or permanent fill is required, additional permitting is necessary.

2. Deviations From Permitted Construction Activities

No deviation from the requirements for work depicted in the plans, Special Provisions, and/or working drawings may be made unless a modification has been submitted to ODOT-OES-WPU and approved by the appropriate agencies (i.e., USACE, OEPA, USCG, ODNR, and USFWS).

For emergency situations resulting in unanticipated impacts to aquatic resources or navigation, provide notification (verbal or written) to the Engineer as soon as possible following discovery of the situation. Written notification to the Engineer and notification to the ODOT-OES-WPU (614-466-7100) must be made within 24 hours.

For non-emergency situations, notify the Engineer in writing for submission to the ODOT-OES-WPU (614-466-7100) for consideration and coordination with the appropriate agencies. Notification must be made at least 90 days prior to planned, non-permitted activities. Consideration of the requested deviation is at the discretion of the Director and must be coordinated with the appropriate regulatory agencies.

3. In-Stream Work Restrictions

Work in the following aquatic resources is further restricted as follows:

Stream Name /Description	Location	Work restriction dates (No in-stream work permitted)
Cuyahoga River	Span 9	No in-stream work permitted

In-stream work has been defined as the placement and/or removal of fill materials (temporary or permanent) below ordinary high water of a stream. Examples of "fill" include, but are not limited to: bridge piers, abutments, culverts, rock channel protection, scour protection and temporary work pads.

4. Cultural Resources

If archeological sites or human remains are discovered, cease all work in the immediate area and notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-Cultural Resource Section at 614-466-7100. In the event of human remains are identified by OES-Cultural Resources Section the Engineer shall also contact the Cuyahoga County Sheriff's Office at (216) 443-6000.

5. Aquatic Resource Demarcation:

All aquatic resources indicated on the plans shall be demarcated in the field as per SS 832 prior to site disturbance. Specifically, only the locations and quantities in the table below are authorized to be impacted.

No impacts to Cuyahoga River are Authorized for this project.

The remainder of the aquatic resources must be demarcated as to ensure avoidance. The fence shall remain in place and be maintained throughout the construction process. Following the completion of the project, the fence and posts shall be removed.

6. Spill containment:

Provide and Maintain an Oil Spill Kit with a minimum capacity of 65 gallons. The Spill Kit shall contain:

- 6 - 3 in. X 8 ft. Oil only socks
- 4 - 18 in. X18 in. Oil only pillows
- 2 - 5 in. X 10ft. Booms
- 50 - 16in. X 20 in. Oil only pads
- 10- Disposable Bags
- 1- 65 Gallon drum with lid
- 25 pounds of Granular Oil Absorbent

The Oil Spill Kit shall be located within 150 feet of any equipment working in a stream or wetland. The oil Spill Kit shall be maintained for the life of the contract. Any materials utilized during the project will be replaced within 48 hours. All costs associated with furnishing and maintaining the above referenced spill containment kit is incidental to work.

7. Blasting:

State law requires notification to the Ohio Department of Natural Resources should blasting be required within or near stream channels (See ORC 1533.58 & CMS 107.09). Notify Engineer, in writing, for submission to ODOT-OES-WPU (614-466-7100) for coordination with ODNR.

8. Bridge Inspection:

Prior to the removal of bridge structures, the underside must be carefully examined for the presence of birds and bats. Should any birds or bats be found roosting on the underside of the bridge, the Contractor is required to notify the Engineer for coordination with ODOT-OES-WPU (614-466-7100).

9. Project Inspection:

Inspection of Work may include inspection by representatives of other government agencies or railroad corporations that pay a portion of the cost of the Work or regulate the Work through State and Federal law. Comments from the representatives of these agencies shall be directed to the Engineer. Please forward a copy to ODOT-OES-WPU (614-466-7100).

10. Temporary Access Fills (Stream and River Crossings and Fills)

Temporary impacts to streams are not authorized for this project. Temporary fill activities can include, but are not limited to, causeways, work pads, coffer dams, sheet piling, and construction equipment. Any unauthorized temporary impacts that occur will be in violation of Section 404 and 401 of the Clean Water Act.

11. Bridge Demolition Debris:

Bridge demolition into Cuyahoga River is not authorized for this project and debris is considered a temporary fill activity by the USACE and Ohio EPA. If any demolition debris inadvertently falls into Cuyahoga River it must be removed immediately. If removal of debris material cannot be achieved immediately, please contact ODOT-Office of Environmental Services-Waterway Permits Unit at 614-466-7100.

12. Notice to Navigation

Contact Mr. Bob Remmers, Chief of the Operations and Technical Services Section of the U.S. Army Corps of Engineers, Buffalo District a minimum of 14 days prior to commencement of construction activities at (716) 879-4277 to provide information for the preparation of a Notice to Navigation Interests. A form is attached to these Special Provisions.

13. Other Notification Requirements

Contact Mr. Lee Soule, U.S. Coast Guard 9th District, 30 days prior to the commencement of construction activities.

Mr. Lee Soule
USCG, 9th District
(216) 902-6085
Lee.D.Soule@uscg.mil

Contact Mr. Vito Melilli, USACE Ohio Area Office POC, prior to the commencement of construction activities to notify him of the actual start date of the project and all milestone events/operations during the prosecution of work.

Mr. Vito Melilli, Chief
USACE, Buffalo District, Ohio Area Office
(216) 685-1205
vito.c.melilli@usace.army.mil

14. Incidental Debris

Notify the Engineer and remove any incidental debris that falls into the Federal Channel of the Black River. The Engineer shall notify Mr. Vito Melilli, USACE, Ohio Area Office POC, of any such debris.

Mr. Vito Melilli, Chief
USACE, Buffalo District, Ohio Area Office
(216) 685-1205
vito.c.melilli@usace.army.mil

15. Vertical Bridge Clearance

No scaffolding, cables or any other temporary equipment shall be installed below low steel of the bridge in order to retain the vertical clearance of the bridge.