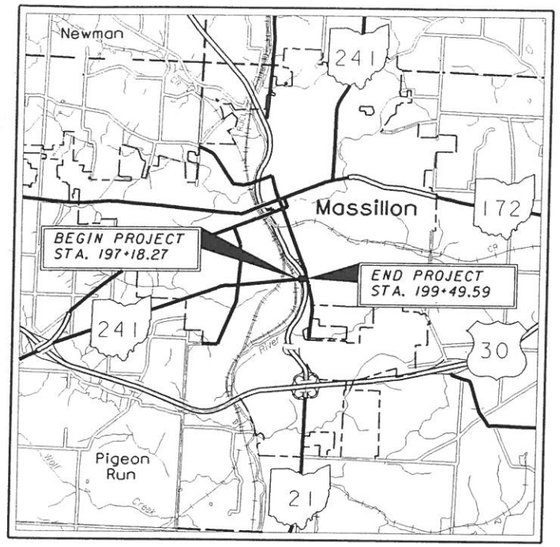


LOCATION MAP

LATITUDE: 40 °46'54" N LONGITUDE: 81°31'00" W

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED

INTERSTATE & DIVIDED HIGHWAY

UNDIVIDED STATE & FEDERAL ROUTES

OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2009)	8,400
DESIGN YEAR ADT (2028)	10,800
DESIGN HOURLY VOLUME (2028)	840
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS (24 HOUR B&C)	0.09
DESIGN SPEED	40 MPH
LEGAL SPEED	35 MPH

DESIGN FUNCTIONAL CLASSIFICATION - URBAN MINOR ARTERIAL

DESIGN EXCEPTIONS:

NONE REQUIRED

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

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

ENGINEERS SEAL:

SIGNED:

DATE:

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

STA-241-7.81 PART 1

CITY OF MASSILLON

STARK COUNTY

FOR PART 2, SEE STA-241-7.67

INDEX OF SHEETS:

PROJECT DESCRIPTION

RECONSTRUCTION OF TWIN TWO-LANE BRIDGES ON S.R.241 OVER S.R.21. WORK INCLUDES INCREASING THE VERTICAL CLEARANCE UNDER THE BRIDGE TO 15'-6" MIN., SUPERSTRUCTURE REPLACEMENT AND ASSOCIATED ROADWAY IMPROVEMENTS.

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.

EARTH DISTURBED AREAS:

PROJECT EARTH DISTURBED AREA = 0.40 Acres

ESTIMATED CONTRACTOR EARTH DISTURBED AREA = 0.25 Acres

NOTICE OF INTENT EARTH DISTURBED AREA = N/A

2008 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEETS 10 AND 11

STAGE 3 REVIEW SUBMISSION 06/11/08

APPROVED _____

DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____

DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DRAWINGS

RM-4.5	1-19-07	MT-98.29	10-19-07			A-1-69	7-19-02
RM-4.6	1-16-04	MT-99.20M	1-30-95			AS-1-81	7-19-02
	7-16-04	MT-101.60	09-20-06			BR-2-98	7-19-02
BP-3.1	10-19-07	MT-101.70	10-18-02			EXJ-4-87	7-19-02
BP-5.1	7-28-00	MT-105.10	10-18-02			GSD-1-96	7-19-02
		MT-105.11	10-18-02				
GR-2.1	1-16-04	MT-110.30	10-18-02			PCB-91	7-19-02
GR-3.1	1-19-07					SBR-1-99	7-19-02
						VPF-1-90	7-19-02
MT-35.10	4-20-01	TC-71.10	01-19-07				
MT-95.30	09-05-06						
MT-95.31	09-05-06						
MT-95.32	09-05-06	CB-2.2	7-15-05				
MT-95.40	10-20-06						
MT-95.41	10-20-06						
MT-95.50	09-05-06						

SUPPLEMENTAL SPECIFICATIONS

1034	04-18-08
1078	04-18-08

SPECIAL PROVISIONS

FEDERAL PROJECT NO. E032 110

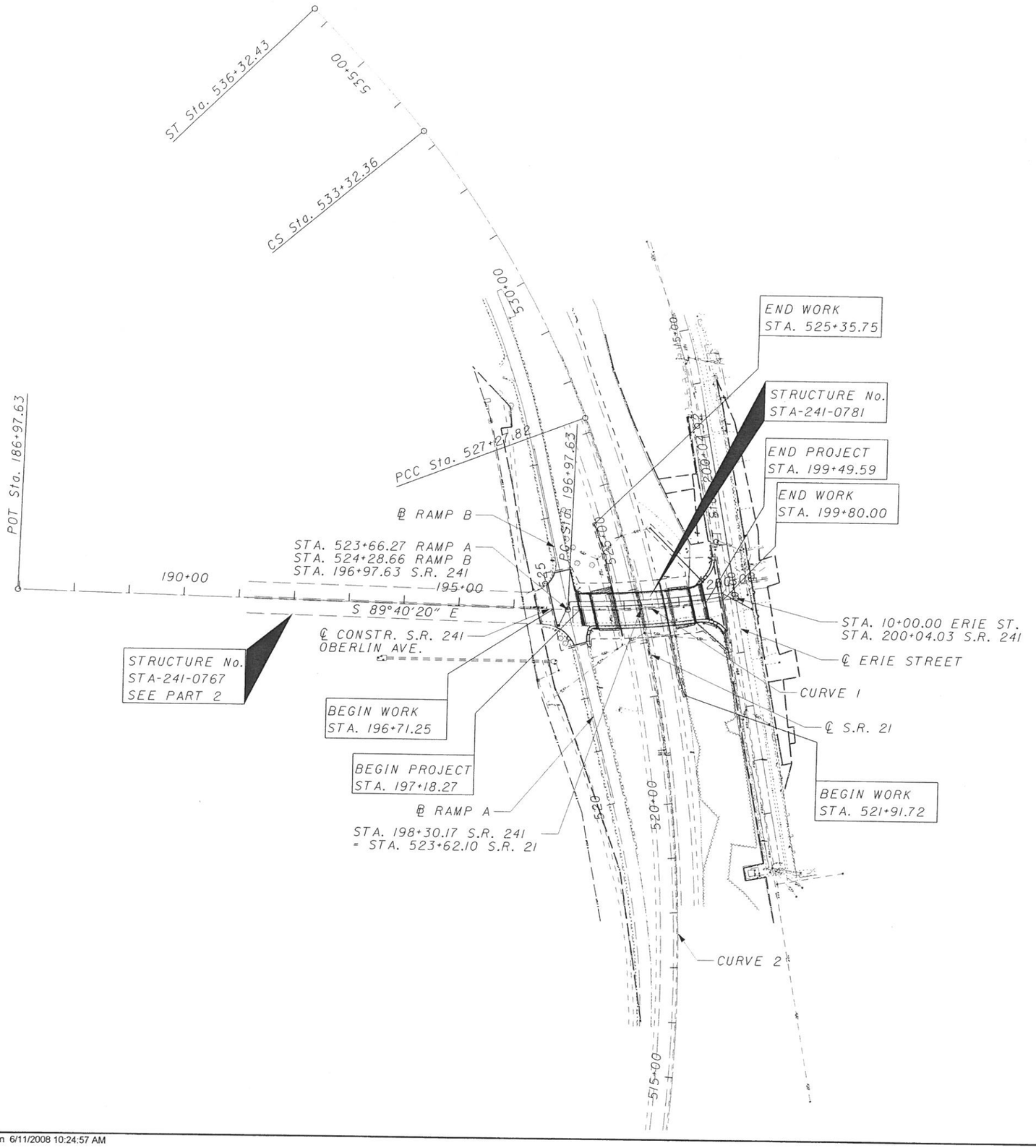
PID NO. 25238

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

STA-241-7.81

1 / 91



CURVE 1 (OBERLIN AVE.)

P.I. STA 198+51.87
Δ = 12° 17′ 30″ (LT.)
Dc = 4° 00′ 00″
R = 1432.39′
T = 154.24
L = 307.29′
E = 8.28′
e max. = N.C.

CURVE 2 (S.R.21)

P.I. STA 518+55.57
Δ = 36° 08′ 15″ (LT.)
Dc = 2° 00′ 00″
R = 2864.79′
T = 934.63
L = 1806.88′
E = 148.61′
e max. = 0.073

HORIZONTAL SCALE IN FEET
0 50 100 200

SCHEMATIC PLAN

STA-241-7.81

2
91

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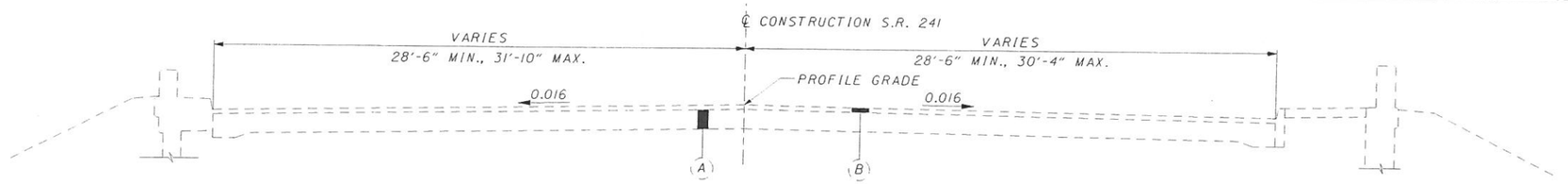
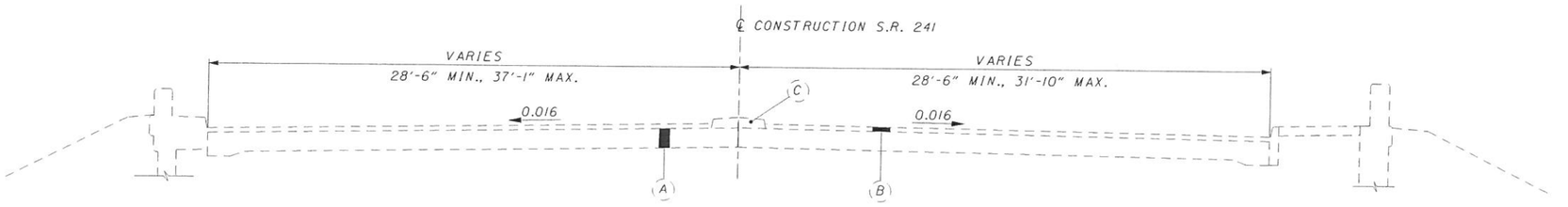


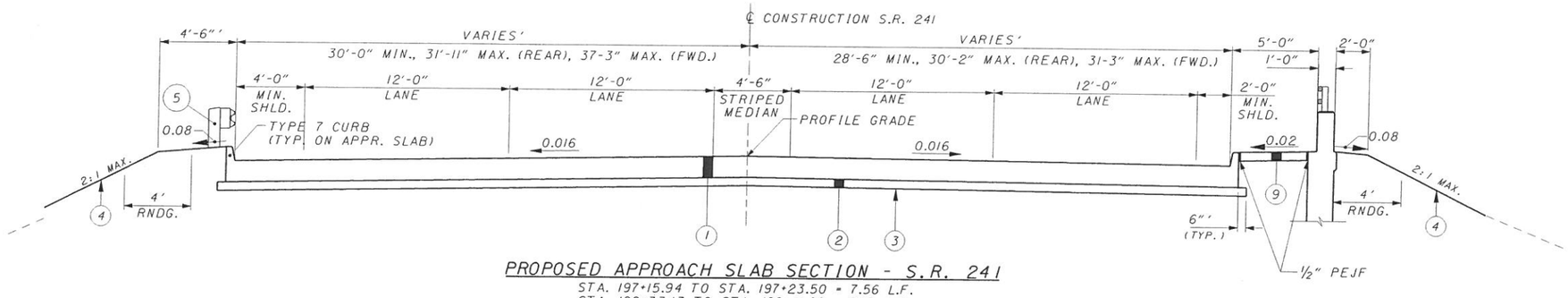
EXIST. APPROACH SLAB SECTION - S.R. 241

STA. 197+18.27 TO STA. 197+43.27 = 25.00 L.F.



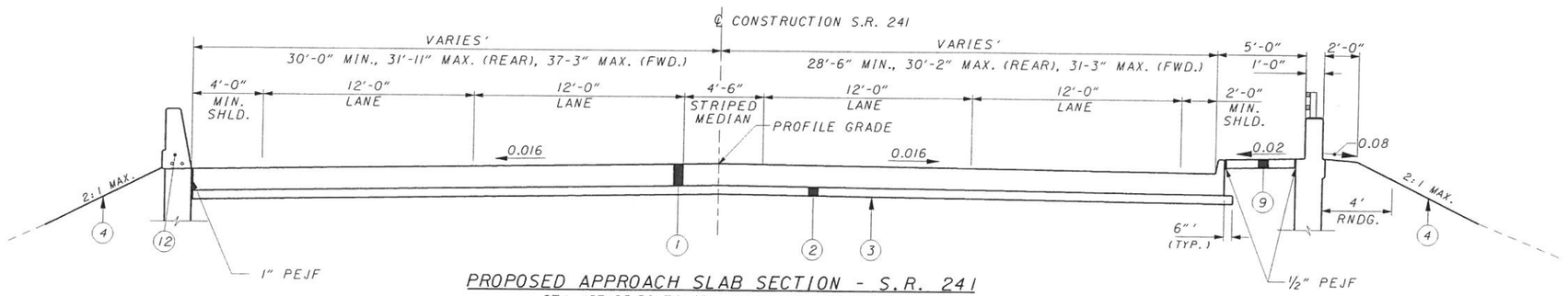
EXIST. APPROACH SLAB SECTION - S.R. 241

STA. 199+24.59 TO STA. 199+49.59 = 25.00 L.F.



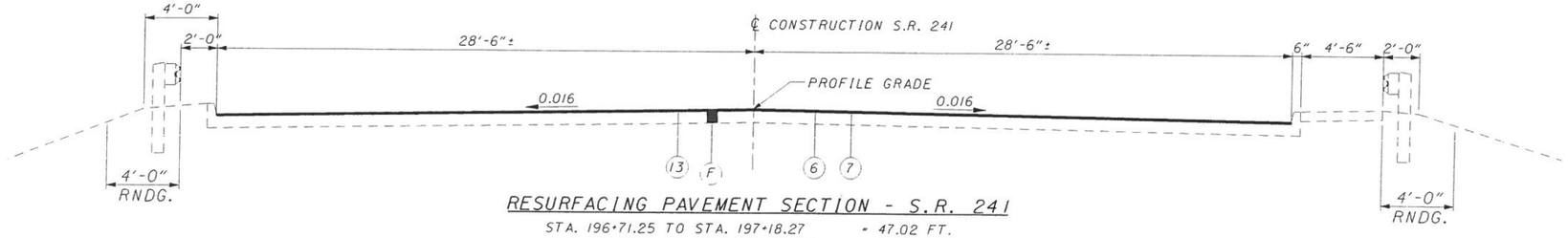
PROPOSED APPROACH SLAB SECTION - S.R. 241

STA. 197+15.94 TO STA. 197+23.50 = 7.56 L.F.
STA. 199+33.13 TO STA. 199+41.26 = 8.13 L.F.



PROPOSED APPROACH SLAB SECTION - S.R. 241

STA. 197+23.50 TO STA. 197+35.94 = 12.44 L.F.
STA. 199+21.26 TO STA. 199+33.13 = 11.87 L.F.



RESURFACING PAVEMENT SECTION - S.R. 241

STA. 196+71.25 TO STA. 197+18.27	= 47.02 FT.
STA. 199+49.59 TO STA. 199+80.00	= 30.41 FT.
	77.43 FT.

LEGEND

1. ITEM 526 REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN (T=13")
2. ITEM 304 6" AGGREGATE BASE, AS PER PLAN
3. ITEM 204 SUBGRADE COMPACTION
4. ITEM 659 SEEDING AND MULCHING
5. ITEM 606 GUARDRAIL, TYPE 5
6. ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, TYPE B (446), AS PER PLAN (T=1½")
7. ITEM 407 - TACK COAT
8. ITEM 608 - CURB, TYPE 6
9. ITEM 609 - 6" CONCRETE WALK
10. ITEM 622 - SINGLE SLOPE TYPE D BARRIER
11. ITEM 609 - 4" CONCRETE WALK
12. ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
13. ITEM 254 - PAVEMENT PLANING (1½" DEPTH)

- A EXIST. REINFORCED CONCRETE APPROACH SLAB (T= 13"±)
- B EXIST. WEARING COURSE, 3"±
- C EXIST. RAISED CONCRETE MEDIAN
- D EXIST. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 AC-20
- E EXIST. 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 AC-20
- F EXIST. 9" REINFORCED CONCRETE PAVEMENT
- G EXIST. 3" BITUMINOUS AGGREGATE BASE
- H EXIST. 6" AGGREGATE BASE
- I EXIST. STANDARD LONGITUDINAL JOINT

TYPICAL SECTIONS - S.R. 241 APPROACH SLAB

STA-241-7.81

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91

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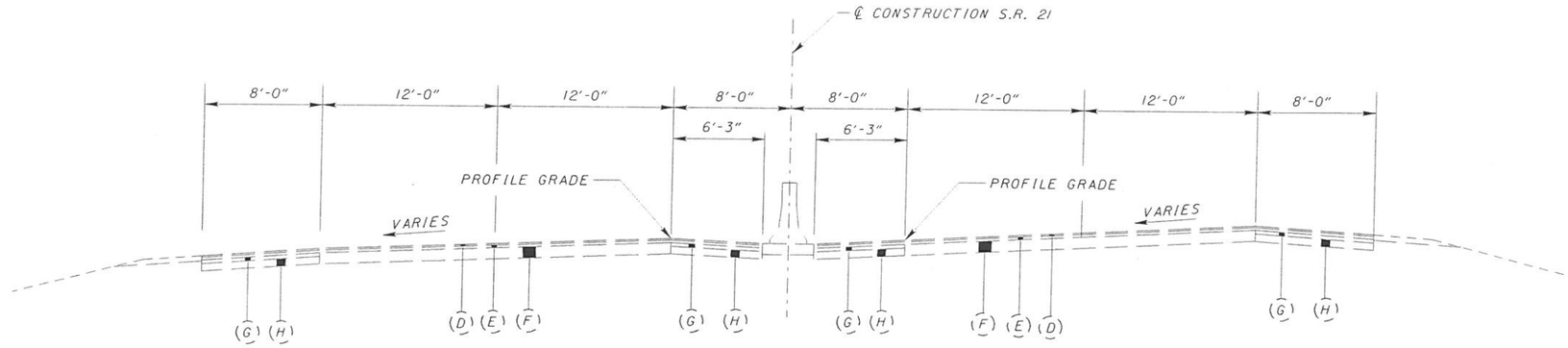
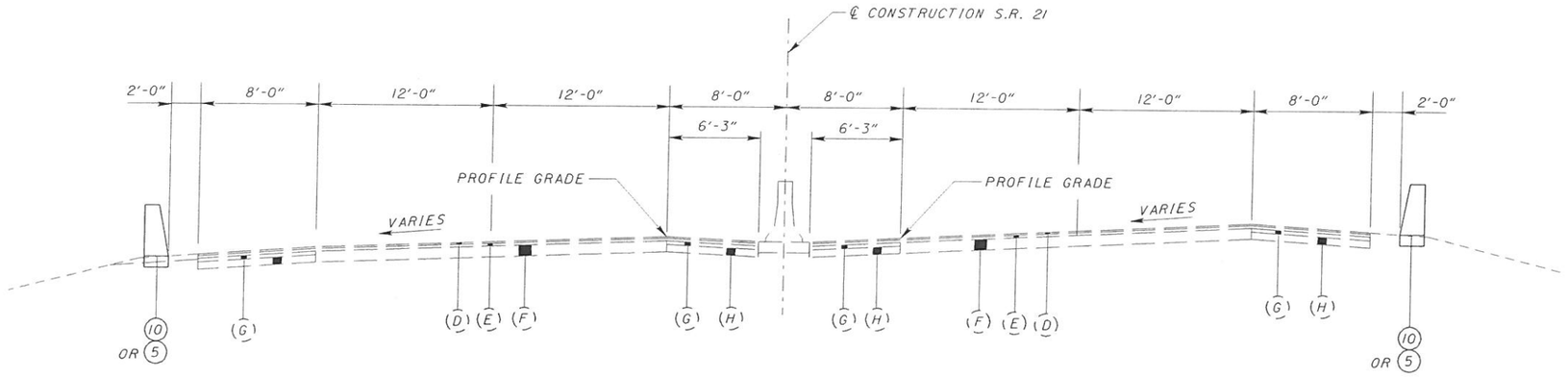


EXISTING SECTION S.R. 21

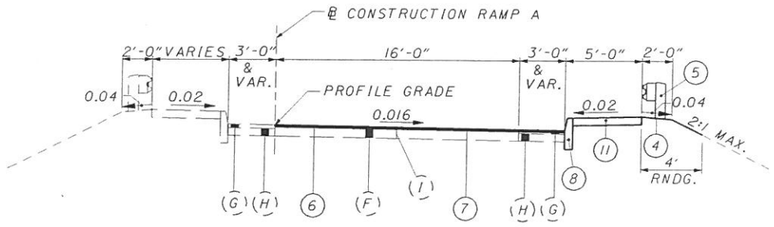


SUPERELEVATED SECTION S.R. 21

STA. 522+29.03 TO STA. 524+97.64 = 286.61' *

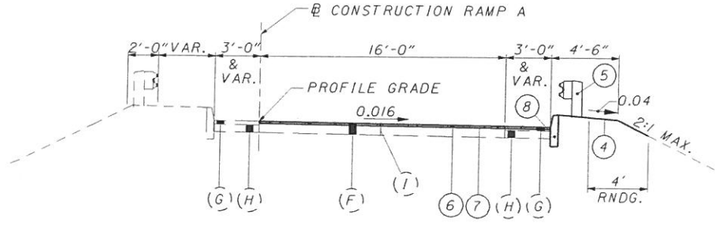
* GUARDRAIL LIMITS:
STA. 521+91.72 TO STA. 523+07.00, RT.
STA. 524+17.27 TO STA. 525+35.75, LT.

BARRIER LIMITS:
STA. 523+07.00 TO STA. 524+00.65, RT.
STA. 523+20.34 TO STA. 524+17.27, LT.



ENTRANCE RAMP A - S.R. 241

STA. 523+00.00 TO STA. 523+66.27 = 66.27 L.F.



EXIT RAMP B - S.R. 241

STA. 524+28.66 TO STA. 525+00.00 = 71.34 L.F.

FOR LEGEND, SEE SHEET 3.

TYPICAL SECTIONS - S.R. 21

STA-241-7.81

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CALCULATED AJS
CHECKED NCK

GENERAL NOTES

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

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

GAS:

DOMINION EAST OHIO
7015 FREEMAN AVE, N.W.
N. CANTON, OHIO 44720
J. MARK. HENSEL
(330) 266-2044

TELEPHONE:

AT&T (OHIO)
50 WEST BOWERY ST.
AKRON, OH 44308
JANE JEWETT
(330) 384-3449

SEWER:

CITY OF MASSILLON
ENGINEERING DEPARTMENT
151 LINCOLN WAY EAST
MASSILLON, OH 44646
KEITH A. DYLEWSKI
(330) 830-1722

LIGHTING/TRAFFIC CONTROL:

CITY OF MASSILLON
(LIGHTING AND TC)
151 LINCOLN WAY EAST
MASSILLON, OH 44646
JOHN HAUSER
(330) 832-1176

EXISTING PLANS

EXISTING PLANS ENTITLED STA-21-8.40 MAY BE INSPECTED IN THE ODOT DISTRICT 4 OFFICE IN AKRON, OHIO.

ELEVATION DATUM

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND THE GEID03 GEOID. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE NORTH ZONE, A LAMBERT CONFORMAL CONIC MAP PROJECTION, THE NORTH AMERICAN DATUM OF 1983 ADJUSTED TO THE NATIONAL SPATIAL REFERENCE SYSTEM OF 2007 (NAD 83(NSRS 2007)), AND THE GRS80 ELLIPSOID.

WORK LIMITS

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

CLEARING AND GRUBBING

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

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERES FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 ITEM.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHLL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

MEDIAN AND/OR CURBING ON APPROACH SLABS

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE MEDIAN AND/OR CURBING ON THE APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	66 CU.YD.
659, SEEDING AND MULCHING	594 SQ. YD.
659, REPAIR SEEDING AND MULCHING	30 SQ. YD.
659, INTERSEEDING	30 SQ. YD.
659, COMMERCIAL FERTILIZER	0.1 TON
659, LIME	0.1 ACRE
659, WATER	2 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 606 - ANCHOR ASSEMBLY, TYPE B-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH10.US/DRCC/ UNDER ROAD-SIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS:

1) THE SRT-350, GUARDRAIL END TERMINAL AS MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373)

THE LENGTH OF THE SRT-350 SYSTEM IS CONSIDERED TO BE 37'-6", INCLUSIVE OF THREE 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE- APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS444 SS444M	SLOTTED RAIL TERMINAL POST LAYOUT AND ERECTION DETAILS SRT-350 (12.5, 8 POST)	7/12/99 Rev.1 7/12/99	8/27/99
SS425M	SLOTTED RAIL TERMINAL SRT-350 POST LAYOUT AND ERECTION DETAILS (12.5, 9POST)	6/21/97 Rev.1	3/6/98

2) THE FLEAT-350, MANUFACTURED BY ROAD SYSTEMS, INC. 2516 MALLORY LANE, STOW, OH10, 44224 (TELEPHONE: 330-346-0721)

THE LENGTH OF THE FLEAT-350 IS CONSIDERED TO BE 37'-6", INCLUSIVE OF THREE 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE- APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
FLT- M	FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) ASSEMBLY	4/16/98	7/31/98

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROXIMATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27¾INCHES FROM THE EDGE OF THE SHOULDER.

ON SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

THE FACE OF THE TYPE B-98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 36" W x 12" H FOR THE SRT-350 AND 14" W x 20" H FOR THE FLEAT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B-98, EACH, AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING AND ALL RELATED HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITES SHALL BE MADE IN ACCORDANCE WITH ITEM 607.

PAVEMENT RESTORATION FOR DRAINAGE STRUCTURE INSTALLATIONS

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 604, DRAINAGE STRUCTURES.

ITEM 301 ASPHALT CONCRETE BASE, PG64-22 1 CU. YD.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 6 INCHES AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE DRAINAGE STRUCTURE.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 304 - 6" AGGREGATE BASE 46 CU. YD.

ITEM SPECIAL - MISC.: VERTICAL CLEARANCE

AFTER ALL CONSTRUCTION HAS BEEN COMPLETED, A REGISTERED SURVEYOR WILL TAKE VERTICAL CLEARANCE MEASUREMENTS AT LOCATIONS INDICATED ON THE APPROVED ODOT FORM (AVAILABLE IN THE DISTRICT 4 STRUCTURES AND PAVEMENT OFFICE). THE FINAL MEASUREMENTS SHALL BE RECORDED ON THE FORM AND SUBMITTED TO THE PROJECT ENGINEER AND THE DISTRICT 4 STRUCTURES AND PAVEMENT ENGINEER. THE RECORD SHALL BEAR THE SEAL OF THE LICENSED SURVEYOR WHO HAS TAKEN THE MEASUREMENTS. THIS WORK SHALL BE PERFORMED AT THE FOLLOWING STRUCTURES: STA-241-0781

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

SPECIAL - MISC.: VERTICAL CLEARANCE 1 EACH.

PAINTING AND SEALING OPERATIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY-URETHANE SEALER, PAINT OR OTHER MATERIALS USED TO REPAIR, CLEAN, SEAL, OR TREAT ANY BRIDGE STRUCTURE FROM ENTERING ANY STREAMS, WETLANDS OR OTHER WATERS OF THE UNITED STATES AND TAKE THE APPROPRIATE ACTIONS IN THE EVENT OF A RELEASE.

ENDANGERED SPECIES HABITAT

THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS) AND MAY IMPACT SUMMER ROOSTING HABITAT FOR THIS SPECIES. THE SUMMER ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BATK, SPLIT TRUNKS AND/OR BARANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES WILL BE PERFORMED ONLY AFTER SEPTEMBER 30 AND BEFORE APRILI. PRIOR TO ANY REMOVAL, THE UNDERSIDE OF THE BRIDGE SHOULD BE CAREFULLY EXAMINED FOR THE PRESENCE OF BATS, ESPECIALLY FROM APRIL 1 TO SEPTEMBER 30. IF ANY BATS ARE FOUND ROOSTING ON THE UNDERSIDE OF THE BRIDGE, THE USFWS, ECOLOGICAL SERVICES DIVISION SHOULD BE CONTACTED OR PROVIDED WITH INFORMATION.

BEST MANAGEMENT PRACTICES

WATER COLUMN AND SEDIMENTATION IMPACTS SHALL BE KEPT TO A MINIMUM THROUGH THE USE OF BEST MANAGEMENT PRACTICES FOR SOIL EROSION AND SEDIMENTATION CONTROL. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OR FILLING OPERATIONS AND INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. THEY SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

STA-241-7.81

NOTIFICATION AND CONTACTS

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING ENTITIES IN WRITING AND VIA TELEPHONE AT LEAST EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF THE CONSTRUCTION ACTIVITIES. INCLUDED IN THE NOTIFICATION SHALL BE THE PROJECTED DATES AND TIME FRAMES OF ANY ROAD CLOSURES.

1. OHIO DEPARTMENT OF TRANSPORTATION
   DISTRICT 4
   2088 SOUTH ARLINGTON ROAD
   AKRON, OHIO 44306
   1-800-603-1054

2. OHIO STATE HIGHWAY PATROL
   CANTON PATROL POST
   4710 SHUFFEL ROAD
   NORTH CANTON, OHIO 44720
   (330)-433-6200

3. STARK COUNTY ENGINEER'S OFFICE
   5165 SOUTHWAY STREET SW
   CANTON, OHIO 44706
   (330)-477-6781

4. CITY OF MASSILLON ENGINEER'S OFFICE
   151 LINCOLN WAY EAST
   MASSILLON, OHIO 44646
   (330)-830-1722

5. CITY OF MASSILLON POLICE DEPARTMENT
   2 JAMES DUNCAN PLAZA SE, SUITE 1
   MASSILLON, OHIO 44646
   (330)-830-1762

6. CITY OF MASSILLON FIRE DEPARTMENT
   233 ERIE STREET SOUTH
   MASSILLON, OHIO 44646
   (330)-833-1053

7. MASSILLON CITY SCHOOL DISTRICT
   207 OAK AVENUE, SE
   MASSILLON, OHIO 44646
   (330)-830-1810

8. STARK AREA REGIONAL TRANSIT AUTHORITY
   1600 GATEWAY BOULEVARD SE
   CANTON, OHIO 44710
   (330)-477-2782

SHOULD THE PROJECTED DATES AND TIME FRAMES OF THE START AND END OF THE ROAD CLOSURES CHANGE THROUGHOUT THE DURATION OF THE PROJECT, THE AGENCIES LISTED ABOVE MUST BE NOTIFIED IMMEDIATELY OF SUCH CHANGES.

SEQUENCE OF CONSTRUCTION

CONSTRUCTION OF THE WILLIAMS J. KEEN BRIDGE IN PART 2 IS INCLUDED IN THE MAINTENANCE OF TRAFFIC PART 1, CONSTRUCTION OF THE S.R. 241 BRIDGE OVER S.R. 21.

PHASE 1

THE CONTRACTOR SHALL ERECT DETOUR SIGNS FOR THE CLOSURE OF THE STATE ROUTE 21 EXIT RAMP (RAMP B) TO STATE ROUTE 241. THE CONTRACTOR SHALL SHIFT TRAFFIC TO THE SOUTH SIDE OF STATE ROUTE 241. THE CONTRACTOR SHALL PERFORM ALL BRIDGE WORK ON THE NORTH SIDE OF STATE ROUTE 241. THE RELOCATED UTILITIES SHALL BE CONSTRUCTED WITHIN ___ CALENDAR DAYS. TWO (2) LANES (ONE LANE IN EACH DIRECTION) OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES AND RAMP A SHALL REMAIN OPEN AT ALL TIMES.

UPON COMPLETION OF PHASE 1 CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL REMOVE THE DETOUR SIGNS AND PROCEED TO PHASE 2.

PHASE 2

THE CONTRACTOR SHALL INSTALL THE TEMPORARY TRAFFIC SIGNAL HEADS AT THE STATE ROUTE 241 / ERIE STREET INTERSECTION. THE CONTRACTOR SHALL SHIFT TRAFFIC TO THE NEWLY CONSTRUCTED PORTION OF THE STATE ROUTE 241 BRIDGE OVER STATE ROUTE 21. THE CONTRACTOR SHALL ERECT DETOUR SIGNS FOR THE CLOSURE OF THE STATE ROUTE 241 ENTRANCE RAMP (RAMP A) TO STATE ROUTE 21. THE CONTRACTOR SHALL PERFORM THE REMAINING BRIDGE WORK ON THE SOUTH SIDE OF STATE ROUTE 241. THE CONTRACTOR SHALL CLOSE THE ENTRANCE RAMP AND SHOULDERS OF STATE ROUTE 21 WITH PCB. THE CONTRACTOR SHALL ALSO CONSTRUCT ROADWAY WORK INCLUDING CURB WORK AND SIDEWALK INSTALLATION ON THE SOUTH SIDE OF STATE ROUTE 241 PROTECTED BY PCB. THE CONTRACTOR SHALL ENSURE THAT ALL RELCOATED UTILITIES ARE PROPERLY INSTALLED BEFORE WORK ON PHASE 3 SHALL BEGIN. TWO (2) LANES (ONE LANE IN EACH DIRECTION) OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES AND RAMP B SHALL REMAIN OPEN AT ALL TIMES.

UPON COMPLETION OF PHASE 2 CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL REMOVE THE DETOUR SIGNS AND PROCEED TO PHASE 3.

PHASE 3

THE CONTRACTOR SHALL COMPLETE THE REMAINING ROADWAY WORK BY INSTALLING SINGLE LANE CLOSURES OF STATE ROUTE 241 AND ERIE STREET. ALL PERMANENT PAVEMENT MARKINGS AND SIGNING SHALL ALSO BE INSTALLED AT THIS TIME. ONE (1) LANE OF TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES.

ITEM 614 - MAINTAINING TRAFFIC

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, THE SPECIFICATIONS AND THE FOLLOWING:

DO NOT MAINTAIN TRAFFIC ON STATE ROUTE 241 FOR THE RECONSTRUCTION OF THE BRIDGES OVER STATE ROUTE 21. DETOUR TRAFFIC AS SHOWN ON THE DETOUR PLANS AND IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, STANDARD CONSTRUCTION DETAILS AND APPLICABLE NOTES CONTAINED HEREIN.

MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES FOR STATE ROUTE 21 UNDER THE STATE ROUTE 241 BRIDGES BY USE OF THE EXISTING PAVEMENT AND TRAFFIC CONTROL DEVICES AS IDENTIFIED ON THE MAINTENANCE OF TRAFFIC PHASING PLANS AND IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, STANDARD CONSTRUCTION DETAILS AND APPLICABLE NOTES CONTAINED HEREIN.

1. A MINIMUM OF ONE TEN FOOT LANE SHALL BE MAINTAINED ON THE EXISTING PAVEMENT (COMPLETE PAVEMENT AND TEMPORARY PAVEMENT) DURING CONSTRUCTION OF WORK.

2. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 786-2211, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.

3. CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION ONE-HALF HOUR AFTER SUNSET OR ONE HALF-HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF FIFTY (50) FEET. WEIGHTED CHANNELIZERS MAY BE USED IN ACCORDANCE WITH THE ADDITIONAL NOTE HEREIN.

4. LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WITH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEE AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.

5. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS AND INCIDENTALS RELATED THERETO.

6. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE SUCCESSIVE WORK ZONES UNLESS THE DISTANCE BETWEEN THE DRUMS, BARRICADES OR CONES EXCEEDS TWO (2) MILES RURAL OR ONE (1) MILE URBAN.

7. QUANTITY OF 20 CU. YDS. OF 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC SHALL BE PROVIDED FOR USE IN MAINTAINING PAVEMENT, AS DIRECTED BY THE ENGINEER.

8. NO FULL DEPTH BRIDGE REPAIR SHALL BE PERFORMED OVER AN OPEN LANE. A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE ROADWAY, RAILROAD OR STREAM DURING THE REMOVAL OF THE EXISTING CONCRETE PARAPET AND DECK. THE CONTRACTOR SHALL PROVIDE A SAFETY NET OR PLATFORM OF SUITABLE STRENGTH ON THE UNDERSIDE OF THE DECK. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND THE APPROVAL OF THE ENGINEER AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN AND SAFETY NET OR PLATFORM DESIGN 10 DAYS PRIOR TO COMMENCING ANY DEMOLITION FOR APPROVAL BY THE ENGINEER. THE SUBMITTAL SHALL BE IN WRITING TO THE DISTRICT CONSTRUCTION ENGINEER WITH A COPY TO THE PROJECT ENGINEER.

9. ONLY DURING OFF-PEAK PERIODS (I.E. ANY PERIOD OTHER THAN 6-8AM AND 3-6PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.

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.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

STA-241-7.81

ITEM 614 - BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET (15 METERS). AN ESTIMATED QUANTITY OF 64 EACH OF ITEM 614 BARRIER REFLECTOR, TYPE B AND 64 EACH OF ITEM 614 OBJECT MARKER, ONE-WAY HAVE BEEN PROVIDED IN THE MAINTENANCE OF TRAFFIC SUBSUMAMRY SHEETS.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/ SUPERVISOR HAS BEEN GRANTED.

TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC DEVICES AT THE BEGINNING AND AT THE END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES AND THEIR NAMES AND PHONE NUMBER SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL SHALL HAVE NO OTHER CONSTRUCTION RELATED DUTIES. PAYMENT FOR THE SERVICES OF THE TRAFFIC CONTROL INSPECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO THE SIGN FACE IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL PROVIDE ALL OF THE "CLOSED" PLAQUES NECESSARY.

WEIGHTED CHANNELIZERS

THE WEIGHTED CHANNELIZER SHALL BE PREDOMINATELY ORANGE IN COLOR AND SHALL BE MADE OF A LIGHTWEIGHT, FLEXIBLE, AND DEFORMABLE MATERIAL. THEY SHALL BE AT LEAST 42 INCHES IN HEIGHT WITH A WEIGHTED BASE. THEY MAY HAVE A "HANDLE" OR LIFTING DEVICE WHICH EXTENDS ABOVE THE 42 INCH MINIMUM HEIGHT.

THE MARKINGS ON THE WEIGHTED CHANNELIZER SHALL BE HORIZONTAL, CIRCUMFERENTIAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 6 INCHES WIDE. EACH WEIGHTED CHANNELIZER SHALL HAVE A MINIMUM OF TWO ORANGE AND TWO WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES SHALL NOT EXCEED 2 INCHES WIDE. THE WEIGHTED CHANNELIZER SHALL HAVE A 4-INCH MINIMUM WIDTH, REGARDLESS OF ORIENTATION.

ON FREEWAYS AND MULTILANE HIGHWAYS:
USE OF WEIGHTED CHANNELIZERS ON FREEWAYS AND MULTILANE HIGHWAYS SHALL BE LIMITED TO SHORT-TERM OPERATION, GENERALLY TWELVE HOURS OR LESS, FOR EITHER DAY OR NIGHT. UPON COMPLETION OF WORK WITHIN THE ABOVE NOTED TIME PERIOD, THE WEIGHTED CHANNELIZERS SHALL BE REMOVED. THE WEIGHTED CHANNELIZERS MAY AGAIN BE PLACED ON THE HIGHWAY WHEN THE WORK IS TO RESUME ON THE FOLLOWING DAY OR NIGHT. ANY LANE CLOSURE USING CHANNELIZATION DEVICES, EXPECTED TO REMAIN FOR MORE THAN TWELVE HOURS, SHALL REQUIRE THE USE OF DRUMS OR BARRIERS.

WHEN USED AT NIGHT, WEIGHTED CHANNELIZERS SHALL ONLY BE PLACED IN THE "TANGENT AREA". THE "TANGENT AREA" IS DEFINED AS THE AREA AFTER THE TRANSITION TAPER WHERE THE WORK TAKES PLACE. DRUMS SHALL BE USED IN THE TRANSITION TAPERS FOR NIGHT OPERATIONS.

ON OTHER HIGHWAYS:
THERE ARE NO DURATIONS OF WORK RESTRICTIONS FOR USE OF WEIGHTED CHANNELIZERS ON ALL OTHER TYPES OF HIGHWAYS, DAY OR NIGHT. ON THESE ROADWAYS THE WEIGHTED CHANNELIZER MAY BE USED IN THE TRANSITION TAPERS AS WELL AS IN THE TANGENT AREAS, DAY OR NIGHT.

MAXIMUM SPACING OF THE WEIGHTED CHANNELIZER SHALL BE 40 FEET.

STEPS SHOULD BE TAKEN TO ENSURE THAT THE WEIGHTED CHANNELIZERS WILL NOT BE BLOWN OVER OR DISPLACED BY WIND OR MOVING TRAFFIC. BALLASTS SHOULD NOT PRESENT A HAZARD IF THE WEIGHTED CHANNELIZERS ARE INADVERTENTLY STRUCK, NOR SHOULD THEY AFFECT THE VISIBILITY OF THE WEIGHTED CHANNELIZERS. ALL BALLASTS USED SHOULD BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

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 IN THIS NOTE WILL NOT GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING 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. 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.
- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION 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).
- ROUTING PATROLLING THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) AS SPECIFIED IN THE PLANS.

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 AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A LIST OF THE APPROPRIATE LAW ENFORCEMENT AGENCY(S) INCLUDING ADDRESS AND TELEPHONE NUMBER.

THE LEO SHOULD REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING THE SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF THE SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHOULD NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF THE SHIFT.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 40 HOURS

THE HOURS PAID SHALL INCLUDE 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.

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MAINTENANCE OF TRAFFIC
GENERAL NOTES - S.R. 241

STA-241-7.81

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MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.

2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8- HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF MASSILLON FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00AM TO 9:00AM AND 3:00PM TO 6:00PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY OF MASSILLON POLICE, HIRED BY THE CONTRACTOR:

1. SR 241/ RAMP A/ RAMP B
2. SR 241/ ERIE ST.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONT.)

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

OVERHEAD-MOUNTED WORK ZONE SIGNALS

SIGNALS SHALL BE OVERHEAD MOUNTED IN ACCORDANCE WITH THE DETAILS SHOWN ON SCD MT-96.21.

TEMPORARY TRAFFIC SIGNAL TIMINGS

THE CONTRACTOR SHALL IMPLEMENT THE TEMPORARY TRAFFIC SIGNAL TIMINGS FOR THE S.R. 241/ ERIE ST. INTERSECTION AS SHOWN ON SHEET 24. PROPER TRAFFIC SIGNAL HEAD ALIGNMENT WITH THE TRAVEL LANES SHALL BE MAINTAINED AT ALL TIMES THRU THE USE OF TEMPORARY SIGNAL HEADS. ANY TRAFFIC SIGNAL HEAD ADJUSTMENTS TO THE EXISTING SPAN SIGNAL SYSTEM NECESSITATED BY THE MOVEMENT OF LANE LOCATIONS DURING CONSTRUCTION PHASING SHALL BE ACCOMPLISHED BY HANGING ADDITIONAL SUPPLEMENTAL SIGNAL HEADS ON THE EXISTING SPAN WIRE. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN ITEM 614 - MAINTAINING TRAFFIC.

MAINTENANCE OF CANOE AND TOWPATH TRAFFIC

CANOE AND TOWPATH TRAFFIC SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION OF THE PROJECT BY THE CONTINUING USE OF THE TUSCARAWAS RIVER CHANNEL AND THE TOWPATH TRAIL (OR A TOWPATH TRAIL DETOUR APPROVED BY THE ENGINEER). HOWEVER, THE RIVER CHANNEL AND THE TOWPATH TRAIL MAY BE CLOSED, AND THE TOWPATH TRAFFIC DETOURED, FOR LIMITED DURATION PERIODS IN ORDER TO PERMIT ACTIVE CONSTRUCTION ACTIVITIES OVER THE RIVER AND THE TRAIL. THE PERMITTED CLOSURE PERIODS ARE AS FOLLOWED:

NUMBER OF CLOSURE PERIODS - 14
DURATION OF CLOSURES - 3-5 DAYS
CLOSURE TIMING - 7:00AM TO 6:00 PM, MONDAY THROUGH FRIDAY

ADEQUATE RIVER SIGNING BOTH UPSTREAM AND DOWNSTREAM SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR. THE FOLLOWING TYPE SIGNS ARE CONSIDERED TO BE MINIMUM TREATMENT.

1. APPROXIMATELY ONE-QUARTER MILE UPSTREAM, ADVANCED WARNING TYPE SIGNS ON BOTH BANKS.

2. APPROXIMATELY 300 FEET UPSTREAM, SIGNS SPECIFYING ACTIONS REQUIRED OF CANOEIST ON BOTH BANKS.

3. APPROXIMATELY ONE-QUARTER MILE DOWNSTREAM, ADVANCE WARNING TYPE SIGNS ON BOTH BANKS.

4. APPROXIMATELY 300 FEET DOWNSTREAM, SIGNS SPECIFYING ACTIONS REQUIRED OF CANOEIST ON BOTH BANKS.

THE ABOVE SIGNING SHALL BE MOUNTED IN SUCH A WAY AS TO BE A MINIMUM OF 4 FEET ABOVE THE WATER LEVEL, UNOBSTRUCTED BY TREE BRANCHES, AND PROPERLY ANGLED FOR MAXIMUM VISIBILITY FROM THE MAIN CLEAR CHANNEL. THE METHOD OF SUPPORTING THE SIGNS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. UPON COMPLETION OF THE PROJECT, THE SIGNS AND SUPPORT SYSTEMS SHALL BE COMPLETELY REMOVED FROM THE RIVER CHANNEL. THE CONTRACTOR SHALL NOTIFY LOCAL CANOE LIVERIES USING THIS PORTION OF THE RIVER AT LEAST 10 DAYS PRIOR TO ANY CHANGES AFFECTING CANOE TRAFFIC.

IN THE EVENT PIPES ARE USED TO DIVERT OR CARRY RIVER WATER, BOTH THE INLET AND OUTLET ENDS SHALL BE ADEQUATELY PROTECTED BY GRATES OR FENCE SO THAT PEOPLE OR CANOES ARE NOT DRAWN THROUGH OR HELD BY THEM.

ADVANCED WARNING SIGNAGE SHALL BE ERECTED ALONG THE TOWPATH TRAIL, WARNING TRAIL USERS OF THE CONSTRUCTION AREA AHEAD. ALL WARNING SIGNS SHALL BE DUAL MOUNTED ON BOTH SIDES OF THE BIKE PATH FACING ONCOMING TRAFFIC, ON BOTH APPROACHES TO THE PROJECT LIMITS. THE FOLLOWING SIGN INSTALLATIONS ARE CONSIDERED TO BE THE MINIMUM ACCEPTABLE TREATMENT.

1. APPROXIMATELY 1500 FEET PRIOR TO THE PROJECT LIMITS, THE CONTRACTOR SHALL ERECT W20-1-30 "ROAD WORK AHEAD" SIGNS.

2. APPROXIMATELY 500 FEET PRIOR TO THE WORK AREA, THE CONTRACTOR SHALL ERECT W5-4A-18 "BIKEWAY NARROWS" SIGNS.

3. APPROXIMATELY 500 FEET AFTER PASSING THROUGH THE PROJECT, THE CONTRACTOR SHALL ERRECT G20-2-48 "END ROAD WORK" SIGNS.

THE ABOVE LISTED SIGNS SHALL BE MOUNTED TO ALLOW CLEAR UNOBSTRUCTED VIEW BY ONCOMING TRAIL USERS WITH THE METHOD OF SUPPORT AND INSTALLATION LOCATION APPROVED BY THE ENGINEER. UPON COMPLETION OF THE PROJECT, THE SIGNS AND SUPPORTS SHALL BE COMPLETELY REMOVED FROM THE TRAIL RIGHT OF WAY.

CALCULATED AKF | CHECKED MAH

MAINTENANCE OF TRAFFIC
GENERAL NOTES - S.R. 241

STA-241-7.81

ITEM 614 - WORKZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ONE OF THE FOLLOWING IMPACT ATTENUATORS:

1. THE QUADGUARD CZ, (24 INCHES (610 MILLIMETERS) WIDE SIX-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

   THE LENGTH OF THE SIX-BAY QUADGUARD CZ IS 20'-9" (6.33 METERS). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
QSCZCVR-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 REV. J	8/27/99
35-40-10	QUADGUARD SYSTEM CONCRETE PAD, CZ, QG	11/19/97 REV. D	8/27/99
35-40-16	QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG,	7/30/99 REV. F	8/27/99
354051Z	QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36	5/17/99	8/27/99
35-40-18	TRANSITION ASSEMBLY, 4 OFFSET, QG	6/25/99 REV. F	8/27/99
35400260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 REV. C	8/27/99

2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

   THE TRACC IS 21'-0" (6.4 METERS) LONG AND 2'-7" (0.8 METERS) WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS450	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS	3/12/99 REV. I	8/27/99
SS455	TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS	6/30/99 REV. I	8/27/99
SS462	TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS	6/30/99	8/27/99

3. THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS, INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OHIO 44515 (TELEPHONE: 330-799-9291).

   THE TAU-II FOR THIS NOTE IS PARALLEL 8-BAY UNIT 24' LONG AND 35" WIDE.) INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
A040416	UNIVERSAL TAU-II PARTS LIST	4/22/04	10/16/04
A040420	UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP	4/28/04	10/16/04
A040105	UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)	1/07/04	10/16/04
B040239	APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)	4/21/04	10/16/04

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.

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, MAINTAIN, REPAIR, REPLACE OR RELOCATE 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.

CALCULATED AKF
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MAINTENANCE OF TRAFFIC
GENERAL NOTES - S.R. 241

STA-241-7.81

ITEM 614 - BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET (15 METERS). AN ESTIMATED QUANTITY OF 64 EACH OF ITEM 614 BARRIER REFLECTOR, TYPE B AND 64 EACH OF ITEM 614 OBJECT MARKER, ONE-WAY HAVE BEEN PROVIDED IN THE MAINTENANCE OF TRAFFIC SUBSUMAMRY SHEETS.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/ SUPERVISOR HAS BEEN GRANTED.

DETOUR NOTIFICATION (MASSILLON, STARK COUNTY)

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330) 786-3148 AND CITY OF MASSILLON EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH THE DETOUR SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614 - DETOUR SIGNING.

TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC DEVICES AT THE BEGINNING AND AT THE END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES AND THEIR NAMES AND PHONE NUMBER SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL SHALL HAVE NO OTHER CONSTRUCTION RELATED DUTIES. PAYMENT FOR THE SERVICES OF THE TRAFFIC CONTROL INSPECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO THE SIGN FACE IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL PROVIDE ALL OF THE "CLOSED" PLAQUES NECESSARY.

BRIDGE PAINTING EQUIPMENT ON SHOULDERS

IF BRIDGE PAINTING EQUIPMENT IS TO REMAIN ON THE SHOULDERS WHEN THE CONTRACTOR IS NOT WORKING, IT SHALL BE PLACED BEHIND PORTABLE CONCRETE BARRIER (PCB) AND A WORK ZONE IMPACT ATTENUATOR (WZIA) SHALL PROTECT THE LEADING BLUNT END OF THE PCB (SEE OMUTCD, FIGURE 6H-5 "SHOULDER CLOSURE ON FREEWAY" (TYPICAL APPLICATION 5)). IF THE CONTRACTOR CHOOSES TO PROTECT PAINTING EQUIPMENT WITH PCB AND A WZIA, THE COST SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID FOR MAINTAINING TRAFFIC.

WEIGHTED CHANNELIZERS

THE WEIGHTED CHANNELIZER SHALL BE PREDOMINATELY ORANGE IN COLOR AND SHALL BE MADE OF A LIGHTWEIGHT, FLEXIBLE, AND DEFORMABLE MATERIAL. THEY SHALL BE AT LEAST 42 INCHES IN HEIGHT WITH A WEIGHTED BASE. THEY MAY HAVE A "HANDLE" OR LIFTING DEVICE WHICH EXTENDS ABOVE THE 42 INCH MINIMUM HEIGHT.

THE MARKINGS ON THE WEIGHTED CHANNELIZER SHALL BE HORIZONTAL, CIRCUMFERENTIAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 6 INCHES WIDE. EACH WEIGHTED CHANNELIZER SHALL HAVE A MINIMUM OF TWO ORANGE AND TWO WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES SHALL NOT EXCEED 2 INCHES WIDE. THE WEIGHTED CHANNELIZER SHALL HAVE A 4-INCH MINIMUM WIDTH, REGARDLESS OF ORIENTATION.

ON FREEWAYS AND MULTILANE HIGHWAYS:
USE OF WEIGHTED CHANNELIZERS ON FREEWAYS AND MULTILANE HIGHWAYS SHALL BE LIMITED TO SHORT-TERM OPERATION, GENERALLY TWELVE HOURS OR LESS, FOR EITHER DAY OR NIGHT. UPON COMPLETION OF WORK WITHIN THE ABOVE NOTED TIME PERIOD, THE WEIGHTED CHANNELIZERS SHALL BE REMOVED. THE WEIGHTED CHANNELIZERS MAY AGAIN BE PLACED ON THE HIGHWAY WHEN THE WORK IS TO RESUME ON THE FOLLOWING DAY OR NIGHT. ANY LANE CLOSURE USING CHANNELIZATION DEVICES, EXPECTED TO REMAIN FOR MORE THAN TWELVE HOURS, SHALL REQUIRE THE USE OF DRUMS OR BARRIERS.

WHEN USED AT NIGHT, WEIGHTED CHANNELIZERS SHALL ONLY BE PLACED IN THE "TANGENT AREA". THE "TANGENT AREA" IS DEFINED AS THE AREA AFTER THE TRANSITION TAPER WHERE THE WORK TAKES PLACE. DRUMS SHALL BE USED IN THE TRANSITION TAPERS FOR NIGHT OPERATIONS.

ON OTHER HIGHWAYS:
THERE ARE NO DURATIONS OF WORK RESTRICTIONS FOR USE OF WEIGHTED CHANNELIZERS ON ALL OTHER TYPES OF HIGHWAYS, DAY OR NIGHT. ON THESE ROADWAYS THE WEIGHTED CHANNELIZER MAY BE USED IN THE TRANSITION TAPERS AS WELL AS IN THE TANGENT AREAS, DAY OR NIGHT.

MAXIMUM SPACING OF THE WEIGHTED CHANNELIZER SHALL BE 40 FEET.

STEPS SHOULD BE TAKEN TO ENSURE THAT THE WEIGHTED CHANNELIZERS WILL NOT BE BLOWN OVER OR DISPLACED BY WIND OR MOVING TRAFFIC. BALLASTS SHOULD NOT PRESENT A HAZARD IF THE WEIGHTED CHANNELIZERS ARE INADVERTENTLY STRUCK, NOR SHOULD THEY AFFECT THE VISIBILITY OF THE WEIGHTED CHANNELIZERS. ALL BALLASTS USED SHOULD BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

STOPPAGE OF MAINLINE TRAFFIC

ANY TIME TRAFFIC MUST BE COMPLETELY STOPPED ON A FREEWAY OR INTERSTATE, IT SHALL BE DONE IN THE FOLLOWING MANNER: THE COMPLETE TRAFFIC STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY SHALL BE NO MORE THAN 10 MINUTES IN ANY ONE CONSECUTIVE 30 MINUTE PERIOD.

A MINIMUM OF TWO (2) LAW ENFORCEMENT OFFICERS (LEO) WITH PATROL CARS SHALL BE USED TO PACE MOTORISTS TO A STOP. THERE SHALL BE ONE LEO FOR EACH LANE ON THE FREEWAY.

AFTER TRAFFIC HAS BEEN SLOWED, ONE (1) PATROL CAR SHALL TRAVEL ALONG THE ROADWAY SHOULDER 500 FEET BEHIND THE BACKUP OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGGERS ON THE RAMPS TO STOP TRAFFIC. PATROL CARS SHALL HAVE FLASHING BEACONS TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS.

THE CONTRACTOR/PERMITEE SHALL ERECT AND MAINTAIN "ROAD WORK AHEAD" (W20-1-48) ONE MILE AHEAD OF THE STOP LOCATION, "PREPARE TO STOP" (W3-H5-48) ¾ MILE AHEAD OF THE STOP LOCATION, AND "STOP AHEAD" (W3-1-48) SIGNS ¼ MILE AHEAD OF THE STOP LOCATION. EACH SIGN SHALL BE EQUIPPED WITH A TYPE B FLASHING BARRICADE WARNING LIGHT IN ACCORDANCE WITH SECTION 7G-6 OF THE OMUTCD.

A PORTABLE CHANGEABLE MESSAGE SIGN, TYPE TO BE ON ODOT'S PREAPPROVED LIST, SHALL BE PLACED 1.5 TO 2 MILES IN ADVANCE OF THE CLOSURE OR AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER/PERMIT OFFICE AND THE ODOT PUBLIC INFORMATION OFFICE, 330-786-2211, THREE (3) DAYS PRIOR TO ANY MAINLINE TRAFFIC STOPPAGE.

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 IN THIS NOTE WILL NOT GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING 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. 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.
- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION 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).
- ROUTING PATROLLING THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) AS SPECIFIED IN THE PLANS.

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 AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A LIST OF THE APPROPRIATE LAW ENFORCEMENT AGENCY(S) INCLUDING ADDRESS AND TELEPHONE NUMBER.

THE LEO SHOULD REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING THE SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF THE SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHOULD NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF THE SHIFT.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 40 HOURS

THE HOURS PAID SHALL INCLUDE 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.

CALCULATED AKF
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MAINTENANCE OF TRAFFIC
GENERAL NOTES - S.R. 21

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ITEM 614 - WORKZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ONE OF THE FOLLOWING IMPACT ATTENUATORS:

1. THE QUADGUARD CZ, (24 INCHES (610 MILLIMETERS) WIDE SIX-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

   THE LENGTH OF THE SIX-BAY QUADGUARD CZ IS 20'-9" (6.33 METERS). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
QSCZCVR-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 REV. J	8/27/99
35-40-10	QUADGUARD SYSTEM CONCRETE PAD, CZ, QG	11/19/97 REV. D	8/27/99
35-40-16	QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG,	7/30/99 REV. F	8/27/99
3540512	QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36	5/17/99	8/27/99
35-40-18	TRANSITION ASSEMBLY, 4 OFFSET, QG	6/25/99 REV. F	8/27/99
35400260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 REV. C	8/27/99

2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

   THE TRACC IS 21'-0" (6.4 METERS) LONG AND 2'-7" (0.8 METERS) WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS450	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS	3/12/99 REV. I	8/27/99
SS455	TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS	6/30/99 REV. I	8/27/99
SS462	TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS	6/30/99	8/27/99

3. THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS, INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OHIO 44515 (TELEPHONE: 330-799-9291).

   THE TAU-II FOR THIS NOTE IS PARALLEL 8-BAY UNIT 24' LONG AND 35" WIDE.) INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
A040416	UNIVERSAL TAU-II PARTS LIST	4/22/04	10/16/04
A040420	UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP	4/28/04	10/16/04
A040105	UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)	1/07/04	10/16/04
B040239	APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)	4/21/04	10/16/04

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.

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, MAINTAIN, REPAIR, REPLACE OR RELOCATE 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.

CALCULATED AKF
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MAINTENANCE OF TRAFFIC
GENERAL NOTES - S.R. 21

STA-241-7.81

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, 2 PORTABLE CHANGEABLE MESSAGE SIGNS [PCMS], ON SITE, FOR THE DURATION OF TIME SPECIFIED IN THIS NOTE. EACH SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THIS LIST IS AVAILABLE ON THE ODOT WEBSITE AT HTTP://WWW.DOT.STATE.OH.US/TESTLAB/APPLISTS/MISC/PCMS.HTM. THE CLASS I UNITS SHALL HAVE A MINIMUM LEGIBILITY DISTANCE OF 1250 FEET.

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. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

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 PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY UNLESS IT IS PROTECTED FROM BOTH DIRECTIONS OF TRAFFIC. THE PCMS SHOULD BE LOCATED BEHIND GUARDRAIL WHEREVER POSSIBLE. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE THE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

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

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE CONTRACTOR. A LIST OF ALL PROPOSED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE TWO DIFFERENT MEMORIES [PROM AND RAM] AND CAPABILITY TO STORE UP TO 99 MESSAGES IN EACH MEMORY. 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. IN ORDER TO CONVEY A MAXIMUM OF INFORMATION AT A SINGLE GLANCE, ONLY THREE LINE PRESENTATION FORMATS WITH A MAXIMUM OF SIX MESSAGE PHASES WILL BE PERMITTED. NORMALLY, ONLY A MAXIMUM OF THREE MESSAGE PHASES SHOULD BE EMPLOYED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DE-ACTIVATED 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 AREAS] ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614. 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 AND THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES. THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 614.02.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH SIGN MONTH OF ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND 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

DETOUR DURATION

THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE ___ CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATIONS DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE TO THE CONTRACTOR TO MEE THE DETOUR LIMITATION DATES WITH CAUSE SEPARATE LIQUIDATED DAMAGES AS PER 108.07 OF THE CMS OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED. THE CONTRACTOR WILL COMPLY WITH ALL PROVISIONS OF 108.07 OF THE DEPARTMENT OF TRANSPORATATION CONSTRUCTION MATERIAL SPECIFICATIONS.

OVERLAYING SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE OVERLAYED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE OVERLAY IS REMOVED. THE OVERLAY SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED. THE OVERLAYS MAY BE RIVITED TO THE PERMANENT SIGN. THE CONTRACTOR SHALL PROVIDE ALL THE PLAQUES, SIGNS AND SIGN PANELS NECESSARY.

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MAINTENANCE OF TRAFFIC
GENERAL NOTES - S.R. 21

STA-241-7.81

ITEM	SHEET NUMBERS														ITEM	ITEM EXT.	TOTAL QUANT.	UNIT	DESCRIPTION	SEE SHEET NO.
	7		9	10	11			14		15										
614	40				40										614	11100	80	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
614								5		4					614	12336	9	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
614				1											614	12420	1	LUMP	DETOUR SIGNING	
614								64		64					614	13300	128	EACH	BARRIER REFLECTOR, TYPE B	
614								64		64					614	13360	128	EACH	OBJECT MARKER, TWO-WAY	
614			1												614	18002	1	LUMP	MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF CANOE AND BIKE PATH TRAFFIC	8
614				8											614	18601	8	SIGN MONTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	12
614								0.35		0.41					614	21200	0.76	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I	
614								1.95		1.83					614	22200	3.78	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I	
614								12		74					614	26400	86	FT	WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I	
622								3130		3160					622	40020	6290	FT	PORTABLE CONCRETE BARRIER, 32"	

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MAINTENANCE OF TRAFFIC GENERAL SUMMARY

STA-241-7.81

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SHEET NO.	REFERENCE NO.	LOCATION	LOCATION FROM	LOCATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, TWO-WAY EACH	614 WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I FT	614 WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I (WHITE) FT	614 WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I (YELLOW) FT	614 WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I FT	622 PORTABLE CONCRETE BARRIER, 32" FT
25	DY-1	S.R. 241	184+95	185+00	LT.				5.00				
25	DY-2	S.R. 241	184+95	185+00	RT.				5.00				
25	W-1	S.R. 241	181+00	185+00	LT.					336.00			
25	Y-1	S.R. 241	181+00	183+74	RT.						274.00		
26	DY-3	S.R. 241	185+00	188+50	LT./RT.				350.00				
26	DY-4	S.R. 241	185+00	190+00	RT.				500.00				
26	W-2	S.R. 241	185+00	188+82	LT./RT.					384.00			
27	DY-5	S.R. 241	190+00	195+00	RT.				500.00				
27	W-3	S.R. 241	194+00	195+00	RT.					100.00			
28	DY-6	S.R. 241	195+00	199+40	RT.				440.00				
28	W-4	S.R. 241	195+00	199+40	RT.					440.00			
28	W-21	S.R. 241	197+49	198+99	RT.					150.00			
28	SL-1	S.R. 241	199+00		RT.							12.00	
28	PCB-1	S.R. 241	196+50	199+78	LT./RT.	1	8	8					370.00
33	Y-2	S.R. 21	2006+86	2017+00	LT./RT.						1014.00		
34	Y-3	S.R. 21	1021+00	1031+39	LT./RT.						1039.00		
34	Y-4	S.R. 21	2017+00	2027+50	LT./RT.						1050.00		
34	PCB-3	S.R. 21	1022+00	1028+30	LT./RT.	1	13	13					630.00
34	PCB-4	S.R. 21	2019+00	2026+50	LT./RT.	1	15	15					750.00
35	W-11	S.R. 21	1033+50	1039+00	LT.					550.00			
35	Y-5	S.R. 21	1031+39	1040+44	LT./RT.						905.00		
36	W-12	S.R. 21	2006+86	2017+00	LT./RT.					1014.00			
37	W-13	S.R. 21	1021+00	1031+39	LT./RT.					1039.00			
37	W-14	S.R. 21	2017+00	2027+50	LT./RT.					1050.00			
37	PCB-5	S.R. 21	1022+00	1028+30	LT./RT.	1	13	13					630.00
37	PCB-6	S.R. 21	2019+00	2026+50	LT./RT.	1	15	15					750.00
38	W-15	S.R. 21	1031+39	1040+44	LT./RT.					905.00			
TOTALS CARRIED TO MAINTENANCE OF TRAFFIC GENERAL SUMMARY						5	64	64	1800	5968	4282.00	12	3130
MILE									0.35	1.95			

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MAINTENANCE OF TRAFFIC SUBSUMMARY - PHASE 1 (SHEET 1 OF 1)

STA-241-7.81

SHEET NO.	REFERENCE NO.	LOCATION	LOCATION FROM	LOCATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, TWO-WAY EACH	614 WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I FT	614 WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I (WHITE) FT	614 WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I (YELLOW) FT	614 WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I FT	622 PORTABLE CONCRETE BARRIER, 32" FT
29	DY-7	S.R. 241	181+00	185+00	LT.				400.00				
29	W-6	S.R. 241	181+00	185+00	RT.					459.00			
30	DY-8	S.R. 241	185+00	190+00	LT.				500.00				
30	DY-9	S.R. 241	185+07	188+30	LT.				323.00				
30	W-7	S.R. 241	185+00	188+82	LT./RT.					382.00			
31	DY-10	S.R. 241	190+00	195+00	LT.				500.00				
31	W-8	S.R. 241	194+00	195+00	LT.					100.00			
32	DY-11	S.R. 241	195+00	199+25	LT.				425.00				
32	W-9	S.R. 241	195+00	199+85	LT.					555.00			
32	W-10	S.R. 241	197+18	199+27	LT.					209.00			
32	SL-2	S.R. 241	199+27		LT.							11.00	
32	SL-3	RAMP B	524+75		LT.							63.00	
32	PCB-2	S.R. 241	196+50	199+83	LT.		8	8					400.00
39	Y-6	S.R. 21	2006+86	2017+00	LT./RT.						1014.00		
40	Y-7	S.R. 21	1021+00	1031+39	LT./RT.						1039.00		
40	Y-8	S.R. 21	2017+00	2027+50	LT./RT.						1050.00		
40	PCB-7	S.R. 21	1022+00	1028+30	LT./RT.	1	13	13					630.00
40	PCB-8	S.R. 21	2019+00	2026+50	LT./RT.	1	15	15					750.00
41	Y-9	S.R. 21	1031+39	1040+44	LT./RT.						905.00		
42	W-16	S.R. 21	2006+86	2017+00	LT./RT.					1014.00			
43	W-17	S.R. 21	1021+00	1031+39	LT./RT.					1039.00			
43	W-18	S.R. 21	2017+00	2027+50	LT./RT.					1050.00			
43	PCB-9	S.R. 21	1022+00	1028+30	LT./RT.	1	13	13					630.00
43	PCB-10	S.R. 21	2019+00	2026+50	LT./RT.	1	15	15					750.00
44	W-19	S.R. 21	1031+39	1037+54	LT./RT.					615.00			
44	W-20	S.R. 21	1038+31	1040+44	LT.					213.00			
TOTALS CARRIED TO MAINTENANCE OF TRAFFIC GENERAL SUMMARY						4	64	64	2148	5636	4008.00	74	3160
MILE									0.41	1.83			

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MAINTENANCE OF TRAFFIC SUBSUMMARY - PHASE 2 (SHEET 1 OF 1)

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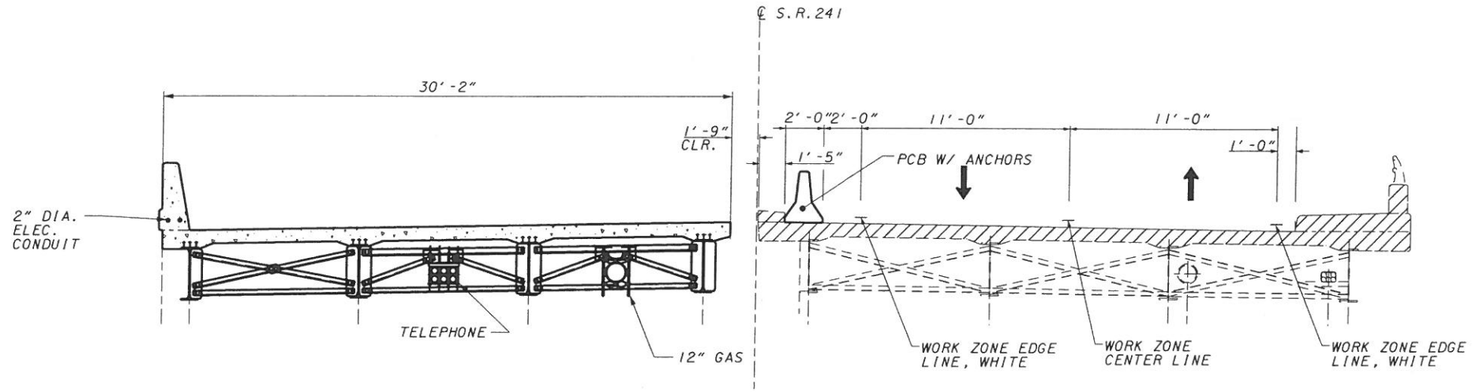
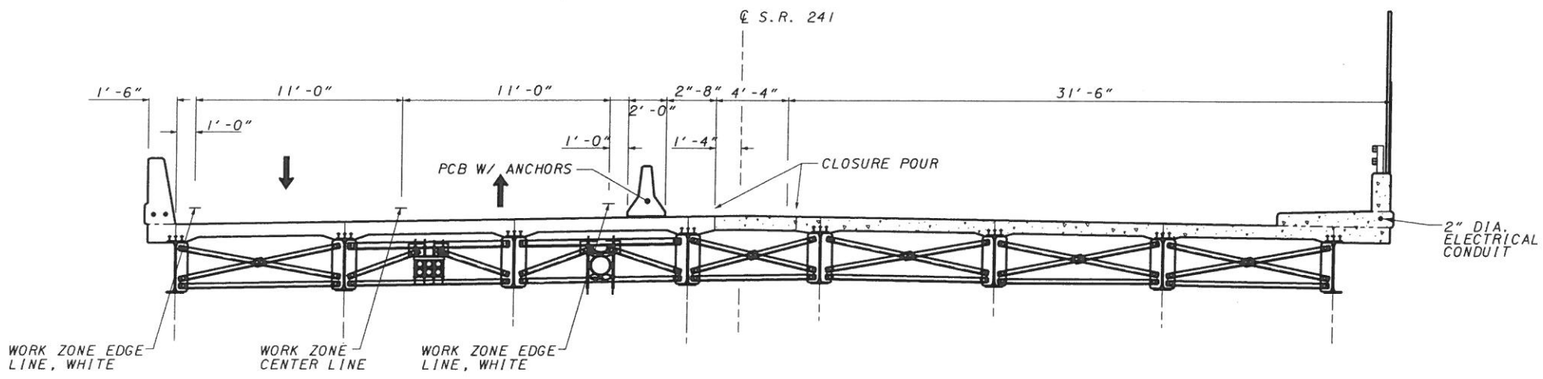


MAINTENANCE OF TRAFFIC TRANSVERSE SECTION

CONSTRUCTION PHASE 1



MAINTENANCE OF TRAFFIC TRANSVERSE SECTION

CONSTRUCTION PHASE 2

LEGEND

- NEW STRUCTURE
- EXISTING STRUCTURE
- PROPOSED CONSTRUCTION BY PHASE
- TRAFFIC FLOW

MAINTENCE OF TRAFFIC - TRANSVERSE SECTIONS
S.R. 241

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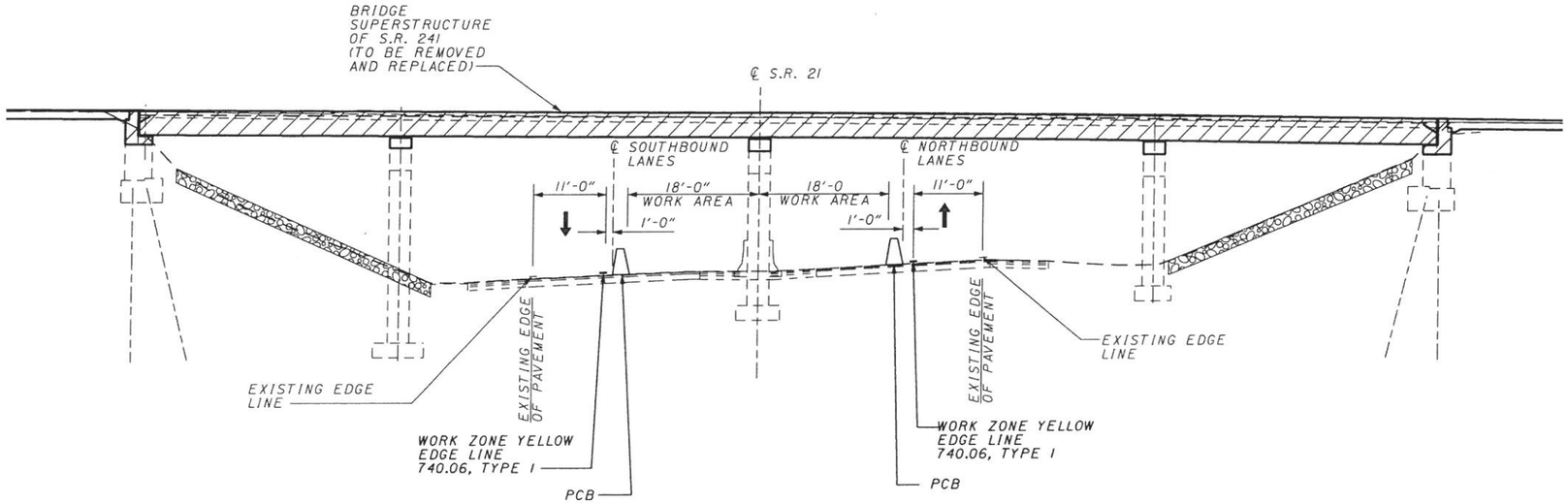
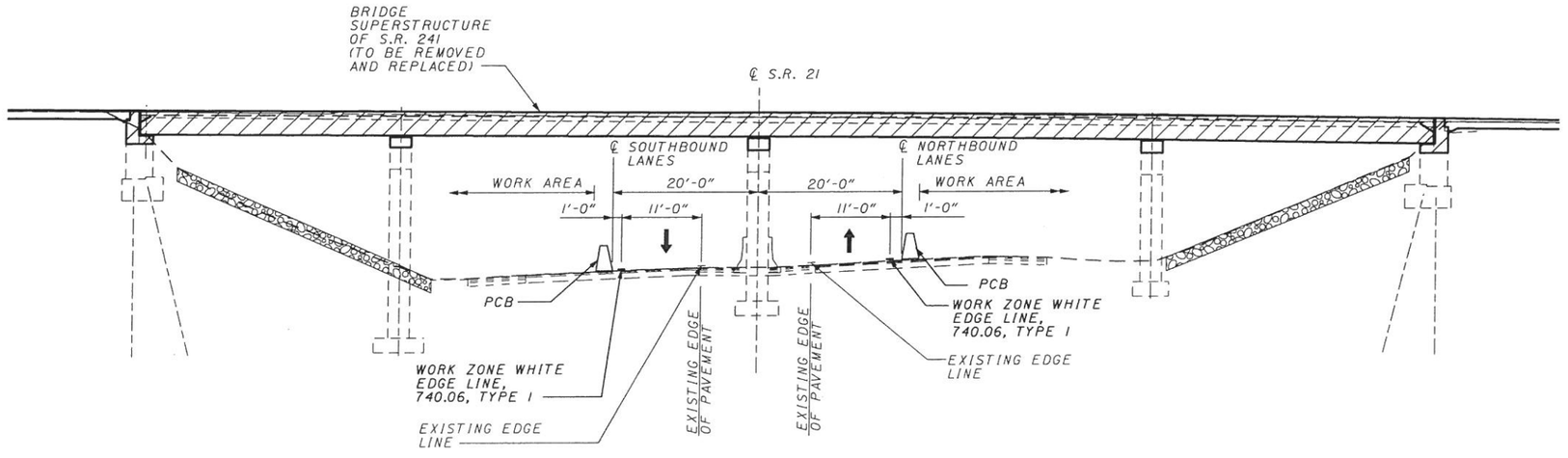


MAINTENANCE OF TRAFFIC TYPICAL SECTION

CONSTRUCTION PHASE 1A & 2A
S.R. 21 NORTHBOUND AND SOUTHBOUND
N.T.S.



MAINTENANCE OF TRAFFIC TYPICAL SECTION

CONSTRUCTION PHASE 1B & 2B
S.R. 21 NORTHBOUND AND SOUTHBOUND
N.T.S.

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MAINTENANCE OF TRAFFIC TRANSVERSE SECTIONS S.R. 21

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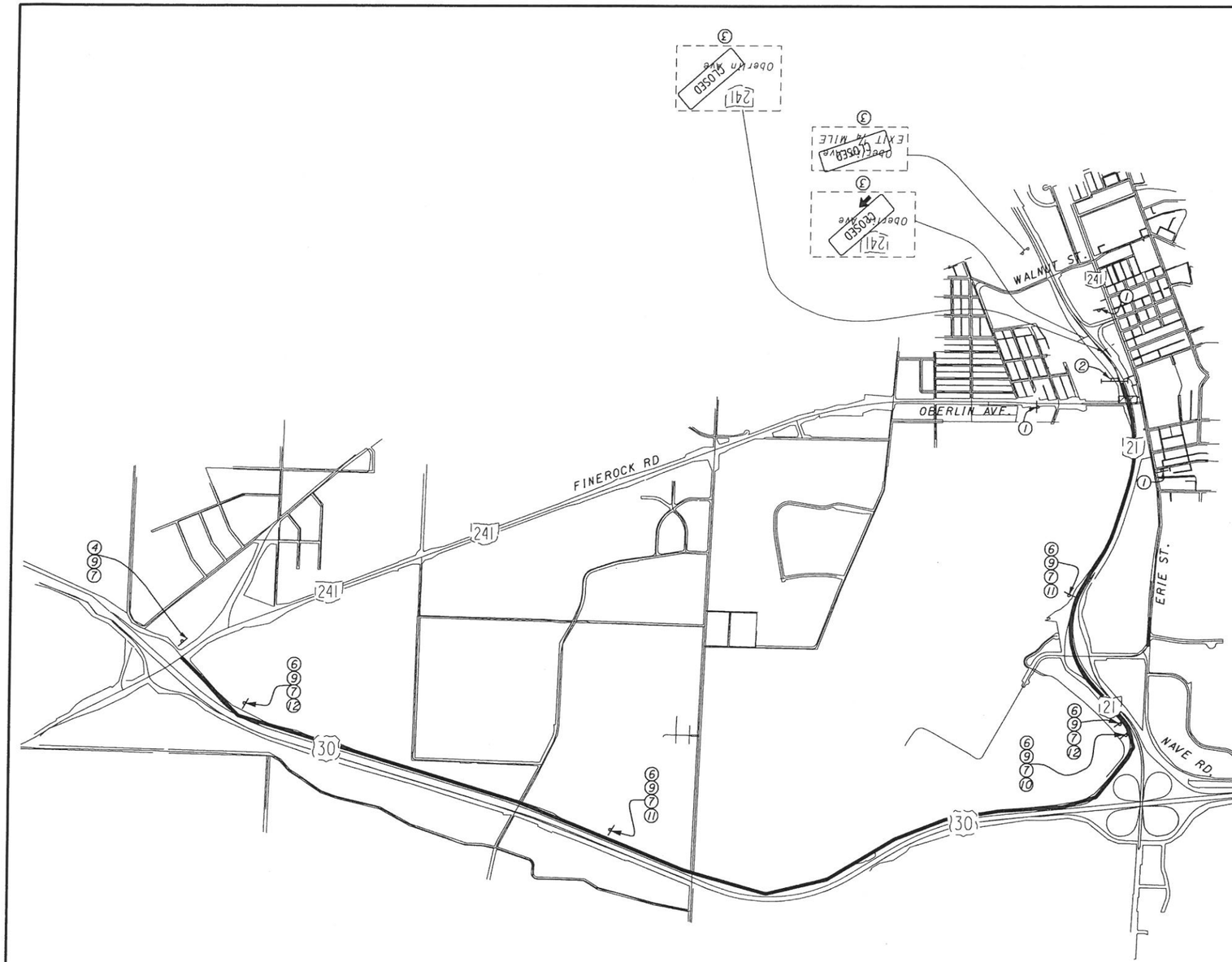

ROAD WORK AHEAD
W20-1-36
TYPE A WARNING LIGHT
①

ROAD CLOSED
RII-2-48
MOUNTED ON A TYPE III BARRICADE
②

CLOSED
SPECIAL-96
③

END DETOUR
M4-8a-24
④

DETOUR
M4-8-24
⑥

241
MI-5-30-3
⑦

21
MI-5-30-2
⑧

TO
M4-5-30
⑨

M6-1-21
⑩

M6-3-21
⑪

M6-5-21
⑫

NOT USED: ⑤

MAP LEGEND
- SIGN
- TYPE III BARRICADE
- WORK AREA
- DETOUR ROUTE

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MAINTENANCE OF TRAFFIC
S.R. 21 DETOUR PLAN - PHASE 1

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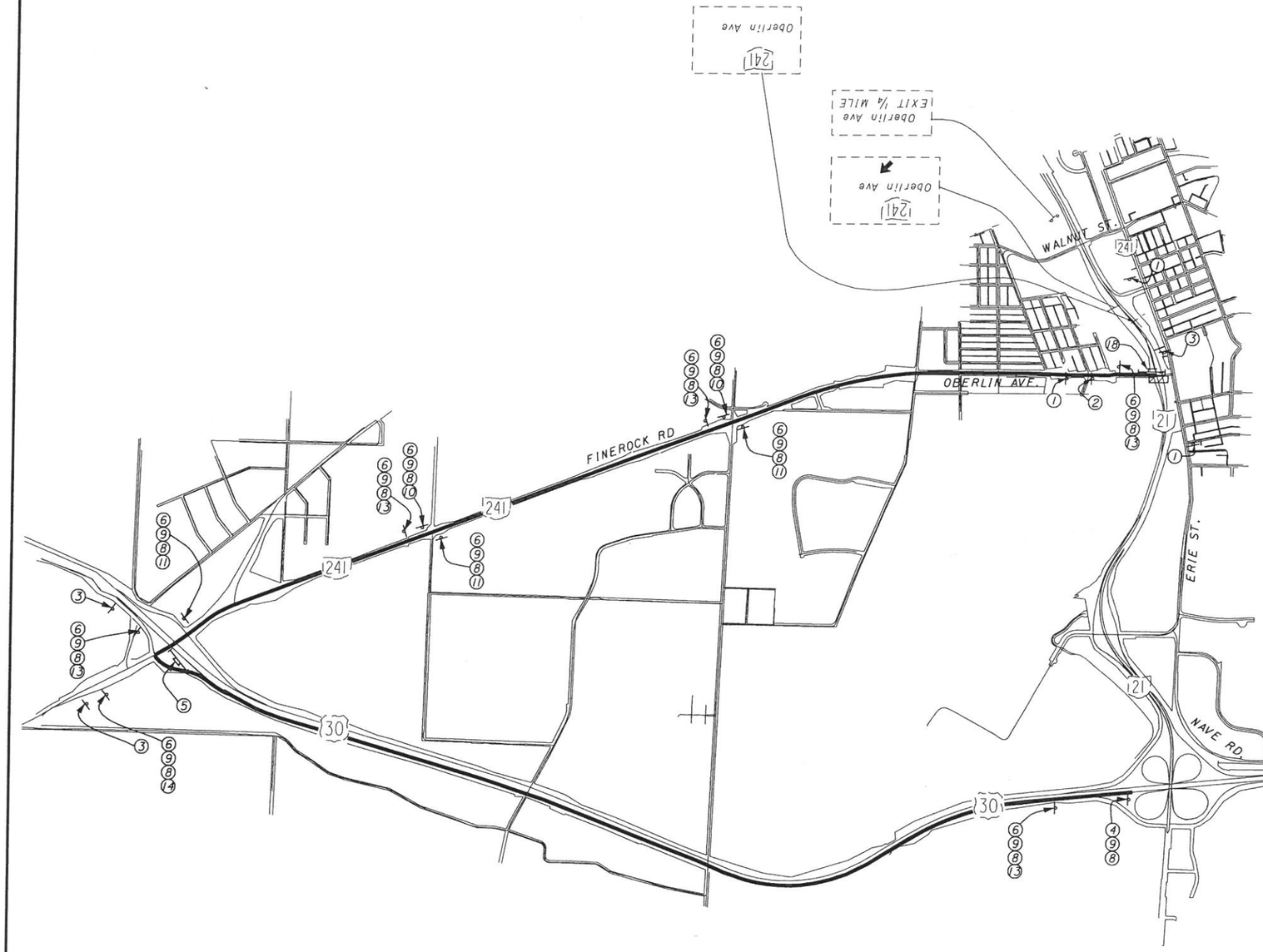

ROAD WORK AHEAD
W20-1-36
TYPE A WARNING LIGHT
①

ROAD CLOSED AHEAD
W20-3-36
TYPE A WARNING LIGHT
②

DETOUR AHEAD
W20-2-36
③

END DETOUR
M4-8a-24
④

ROAD CLOSED
DETOUR
R11-2-48
MOUNTED ON A TYPE III BARRICADE
⑤

DETOUR
M4-8-24
⑥

241
M1-5-30-3
⑦

21
M1-5-30-2
⑧

TO
M4-5-30
⑨

M6-1-21
⑩

M6-1-21
⑩

M6-3-21
⑬

M5-1-21
⑭

NOT USED ⑫

MAP LEGEND
- SIGN
- TYPE III BARRICADE
- WORK AREA
- DETOUR ROUTE

NOT TO SCALE

CALCULATED SWC
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MAINTENANCE OF TRAFFIC
S.R. 21 DETOUR PLAN - PHASE 2

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SIDEWALK CLOSED
R9-9-24
(1)

DETOUR
M4-10L-48
(2)

DETOUR
M4-10R-48
(3)

241
M1-5-30
(4)

DETOUR
M4-9b-30
(5)

DETOUR
M4-9b-30
(6)

DETOUR
M4-H9T-30
(7)

MAP LEGEND

- SIGN
- DETOUR DIRECTIONAL ARROW
- WORK AREA
- DETOUR ROUTE

NOT TO SCALE

CALCULATED AKF
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MAINTENANCE OF TRAFFIC
PEDESTRIAN DETOUR PLAN

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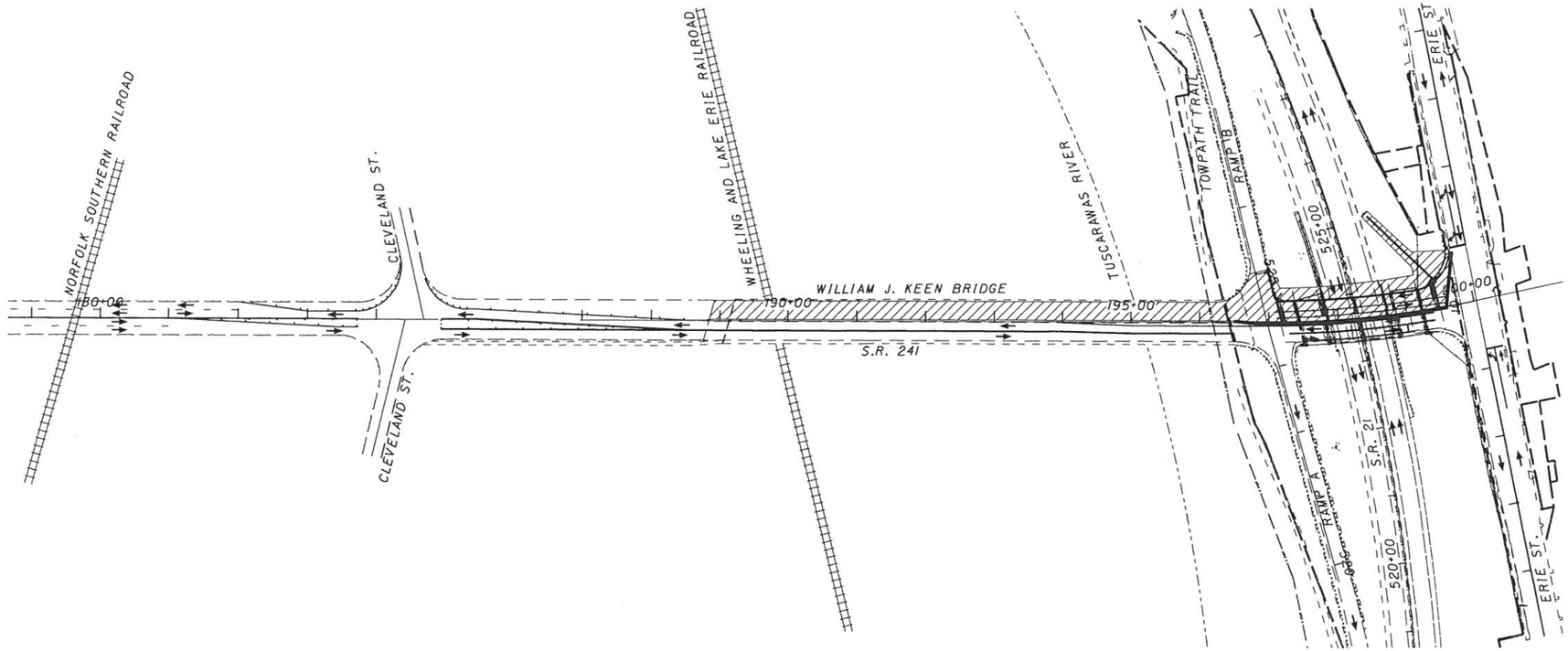
PHASE I

1. ERECT DETOUR SIGNS FOR THE CLOSURE OF S.R. 21 EXIT RAMP (RAMP B) TO S.R. 241

2. PERFORM ALL BRIDGE AND ROADWAY WORK ON NORTH SIDE OF S.R. 241

FOR PHASE I MAINTENANCE OF TRAFFIC PHASING PLANS, SEE SHEETS 25 - 28 AND 33-38
FOR PHASE I MAINTENANCE OF TRAFFIC DETOUR PLAN, SEE SHEET 18



LEGEND

CONSTRUCTION AREA

TRAFFIC FLOW ARROW

NOTE: THE EASTBOUND AND WESTBOUND LANES OF S.R. 241 WILLIAM J. KEEN BRIDGE OVER THE WHEELING AND LAKE ERIE RAILWAY RAILROAD AND THE TUSCARAWAS RIVER IS SEPERATED BY A RAISED MEDIAN. THE EASTBOUND AND WESTBOUND LANES ARE ACTUALLY SEPARATE STRUCTURES.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED DAT
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MAINTENANCE OF TRAFFIC - SCHEMATIC PLAN
CONSTRUCTION PHASE 1

STA-241-7.81

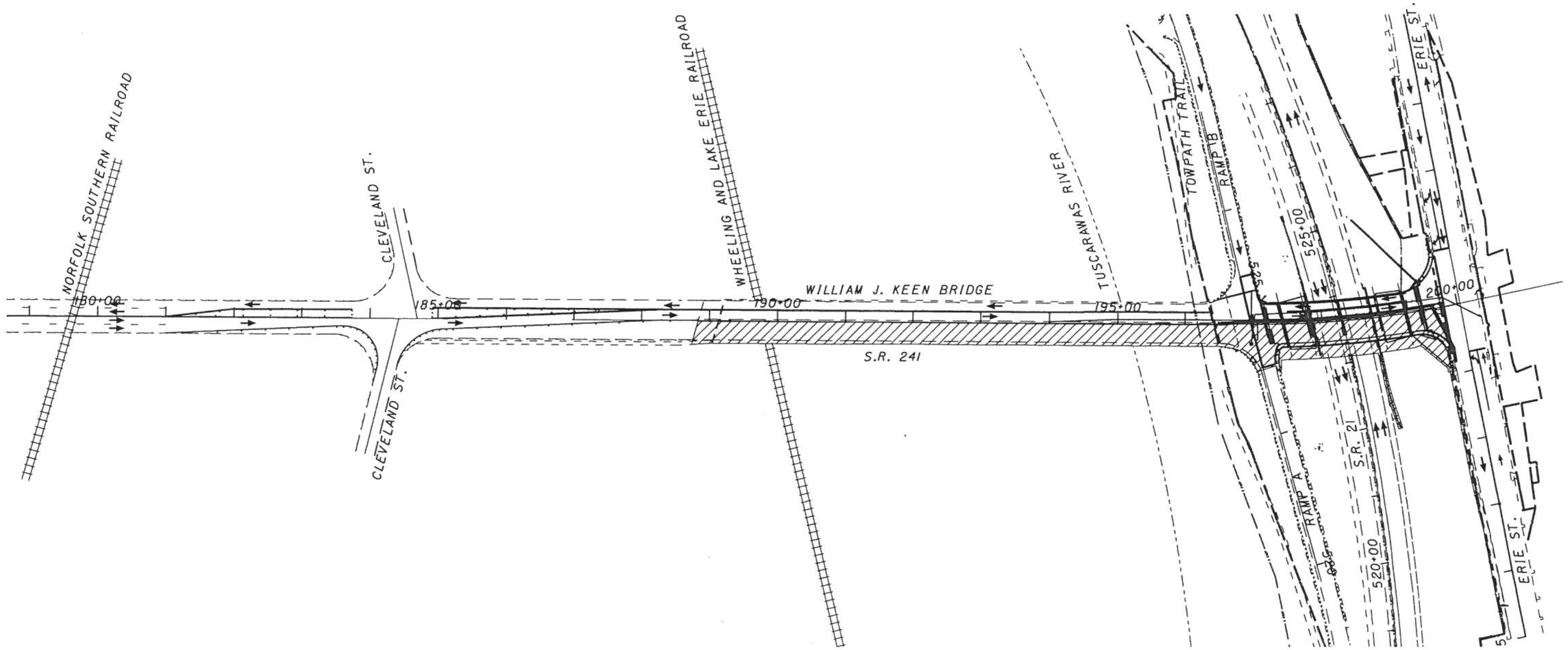
PHASE 2

1. CONSTRUCT TEMPORARY TRAFFIC SIGNAL AT THE S.R. 241/ ERIE STREET INTERSECTION.

2. ERECT DETOUR SIGNS FOR THE CLOSURE OF THE S.R. 241 ENTRANCE RAMP (RAMP A) TO S.R. 21.

3. PERFORM ALL BRIDGE AND ROADWAY WORK ON THE SOUTH SIDE OF S.R. 241.

FOR PHASE 2 MAINTENANCE OF TRAFFIC PHASING PLANS, SEE SHEETS 29 - 32 AND 39-44
FOR PHASE 2 MAINTENANCE OF TRAFFIC DETOUR PLAN, SEE SHEET 19



NOTE: THE EASTBOUND AND WESTBOUND LANES OF S.R. 241 WILLIAM J. KEEN BRIDGE OVER THE WHEELING AND LAKE ERIE RAILWAY RAILROAD AND THE TUSCARAWAS RIVER IS SEPERATED BY A RAISED MEDIAN. THE EASTBOUND AND WESTBOUND LANES ARE ACTUALLY SEPARATE STRUCTURES.

LEGEND

CONSTRUCTION AREA

TRAFFIC FLOW ARROW

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED DAT
CHECKED MAH

MAINTENANCE OF TRAFFIC - SCHEMATIC PLAN
CONSTRUCTION PHASE 2

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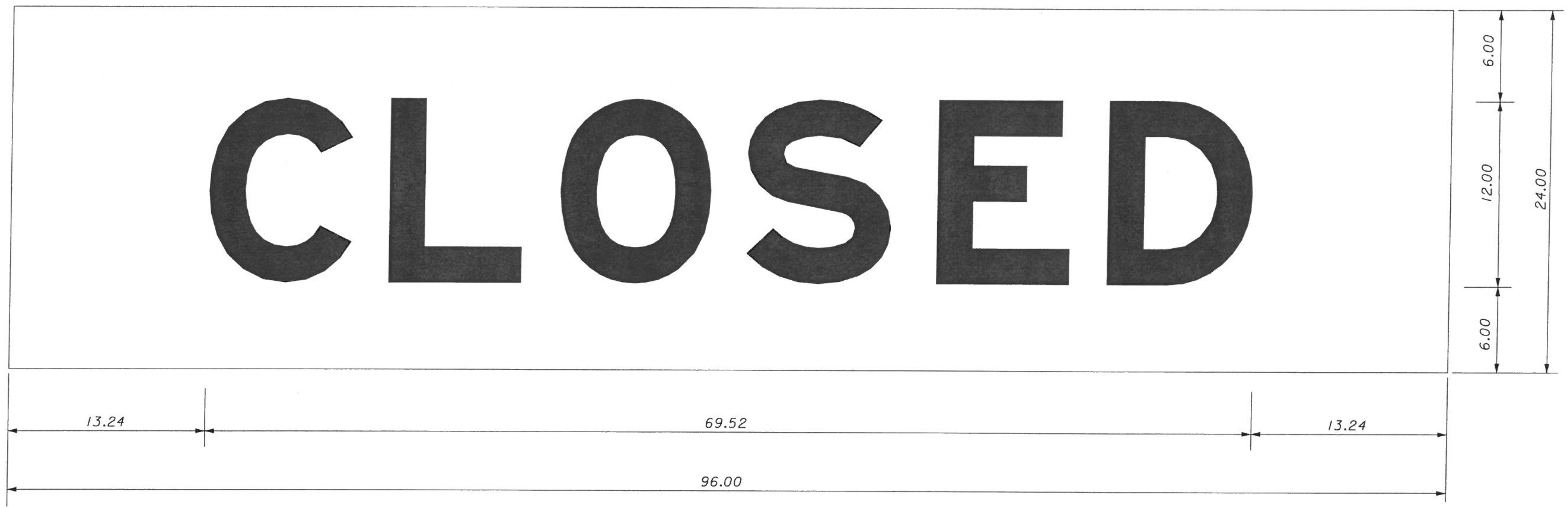

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TABLE OF WIDTHS AND SPACES.

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MAINTENANCE OF TRAFFIC
DETAIL

STA-241-7.80

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INTERSECTION: S.R. 241 / ERIE ST.

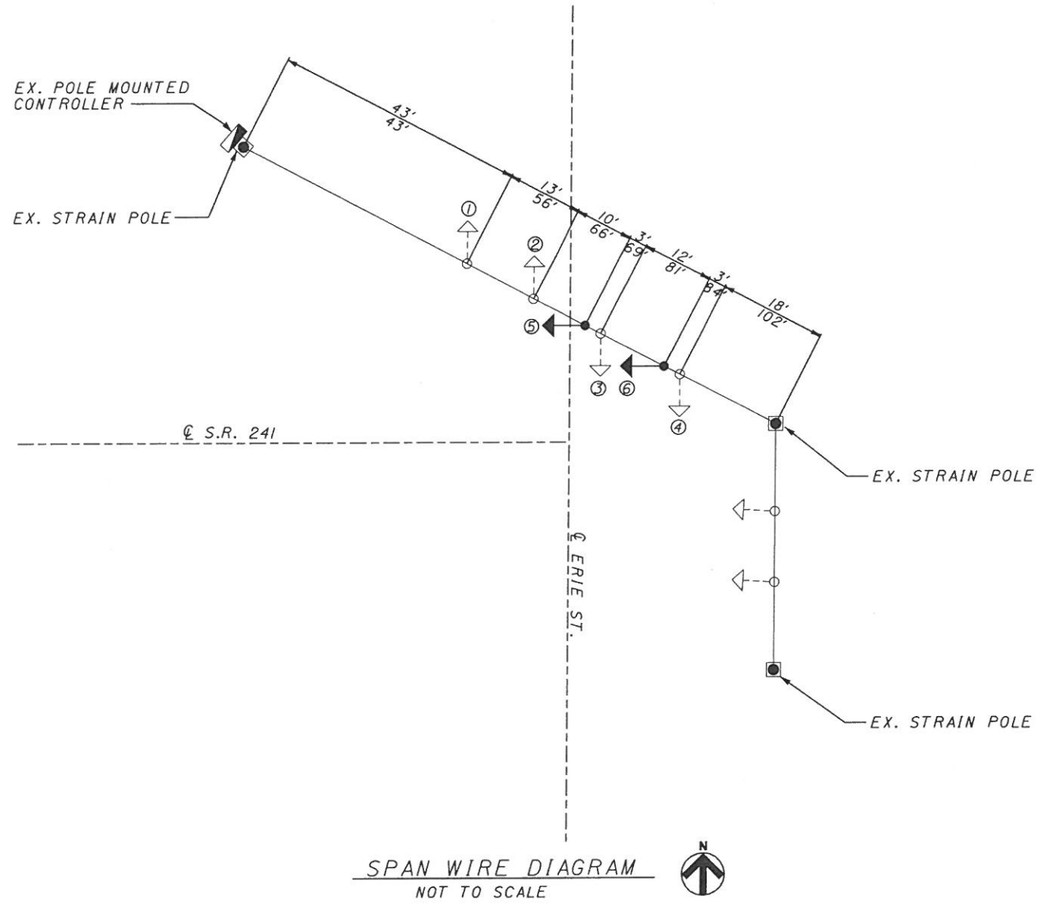
N

START UP	DUAL ENTRY ●							
START IN: Y/R FLASH ● ; ALL RED ○	REST IN RED: RING 1 ○ : RING 2 ○							
TIME FOR FLASH OR ALL RED 5 SEC.	OVERLAP				A	B	C	D
FIRST PHASE(S) * (2+6)	PHASES							
COLOR DISPLAYED: GREEN								

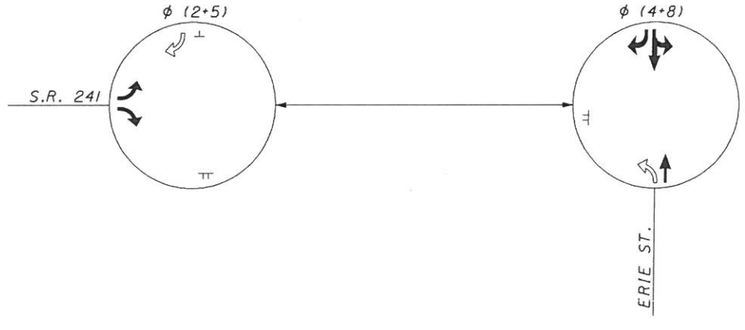
INTERVAL OF FEATURE		CONTROLLER MOVEMENT NO.							
		1	2	3	4	5	6	7	8
INTERSECTION MOVEMENT		↰	→	↳	↑	↱	←	↰	↓
MINIMUM GREEN TIME (SEC.)									
PASSAGE TIME (SEC.)									
MAXIMUM GREEN TIME (SEC.)			25.0		25.0	25.0			25.0
YELLOW CHANGE (SEC.)			3.0		3.0	3.0			3.0
ALL RED CLEARANCE (SEC.)			2.0		2.0	2.0			2.0
WALK (MIN.) (SEC.)									
PEDESTRIAN CLEARANCE (SEC.)									
RECALL	MAXIMUM (ON/OFF)								
	MINIMUM (ON/OFF)								
	PEDESTRIAN (ON/OFF)								

* FREE OPERATION TIMING

NOTE: DURING PHASE 2 CONSTRUCTION, THE CONTRACTOR SHALL COVER THE EXISTING EASTBOUND S.R. 241 SIGNAL HEADS.



SPAN WIRE DIAGRAM
NOT TO SCALE



PHASING DIAGRAM
NOT TO SCALE

SIGNAL DISPLAY CHART							
SIGNAL NO.	ϕ(2+5)			ϕ(4+8)			FLASH
	R/W	CL	CL_1	R/W	CL	CL_1	
1	G	Y	R	R	R	R	Y
2	G	Y	R	R	R	R	Y
3	G	Y	R	R	R	R	Y
4	G	Y	R	R	R	R	Y
5	R	R	R	G	Y	R	R
6	R	R	R	G	Y	R	R

CALCULATED AKF CHECKED

TEMPORARY SIGNAL DETAIL - PHASE 2
S.R. 241 / ERIE ST. INTERSECTION

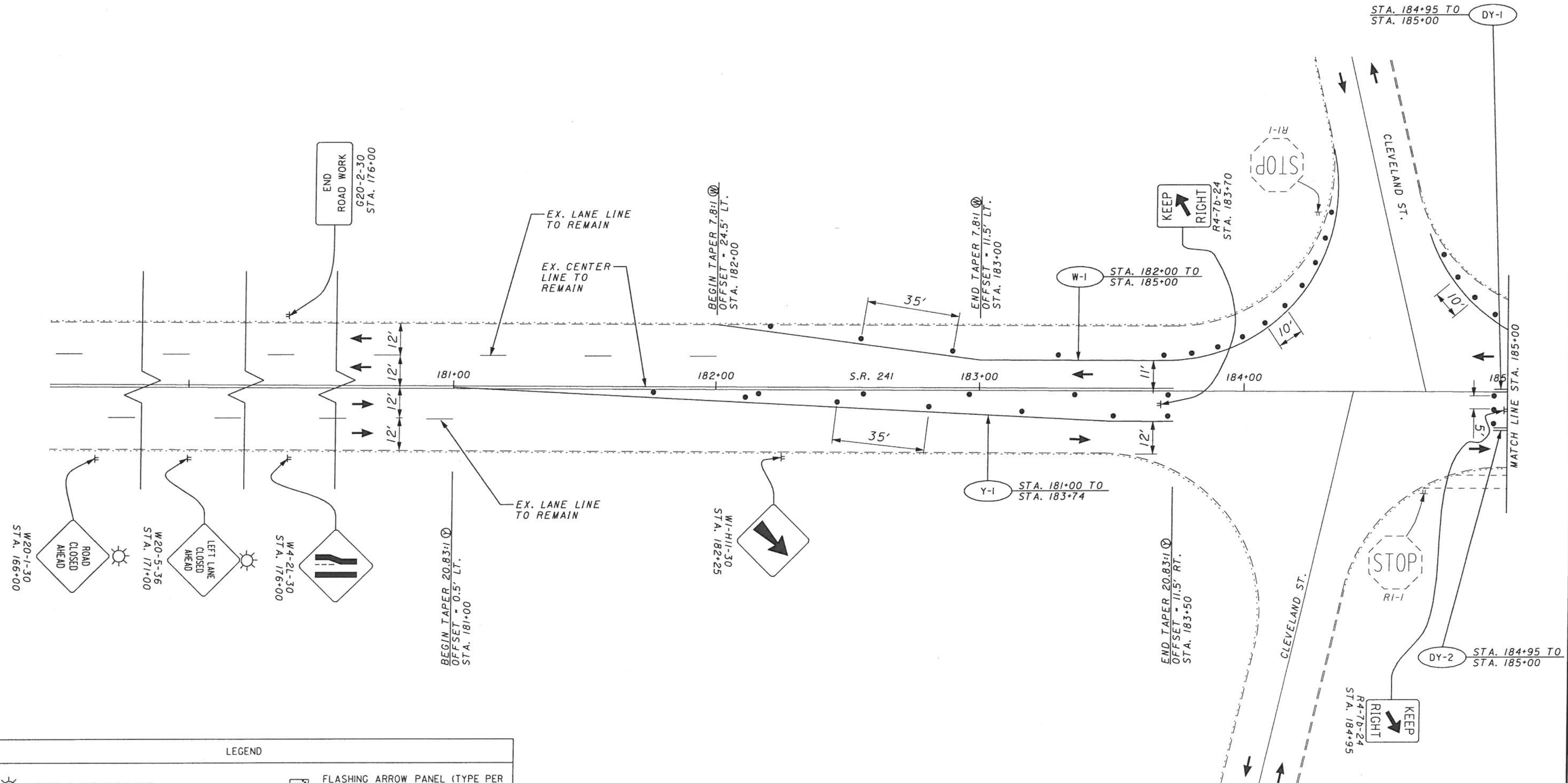
STA-241-7.81

24
91

NOTES: 1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.

2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 181+00 TO STA. 185+00 SHALL BE 740.06, TYPE I, REMOVEABLE.

3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.



LEGEND

☼ TYPE A WARNING LIGHT	FLASHING ARROW PANEL (TYPE PER MT-35.10)
W-# WORK ZONE EDGE LINE (WHITE)	TRAFFIC FLOW ARROW
Y-# WORK ZONE EDGE LINE (YELLOW)	TEMPORARY SIGN SUPPORT
PCB-# WORK ZONE PORTABLE CONCRETE BARRIER	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
SL-# WORK ZONE STOP LINE	WORKZONE
DY-# WORK ZONE DOUBLE CENTER LINE (YELLOW)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 1 - BEGIN TO STA. 185+00

STA-241-7.81

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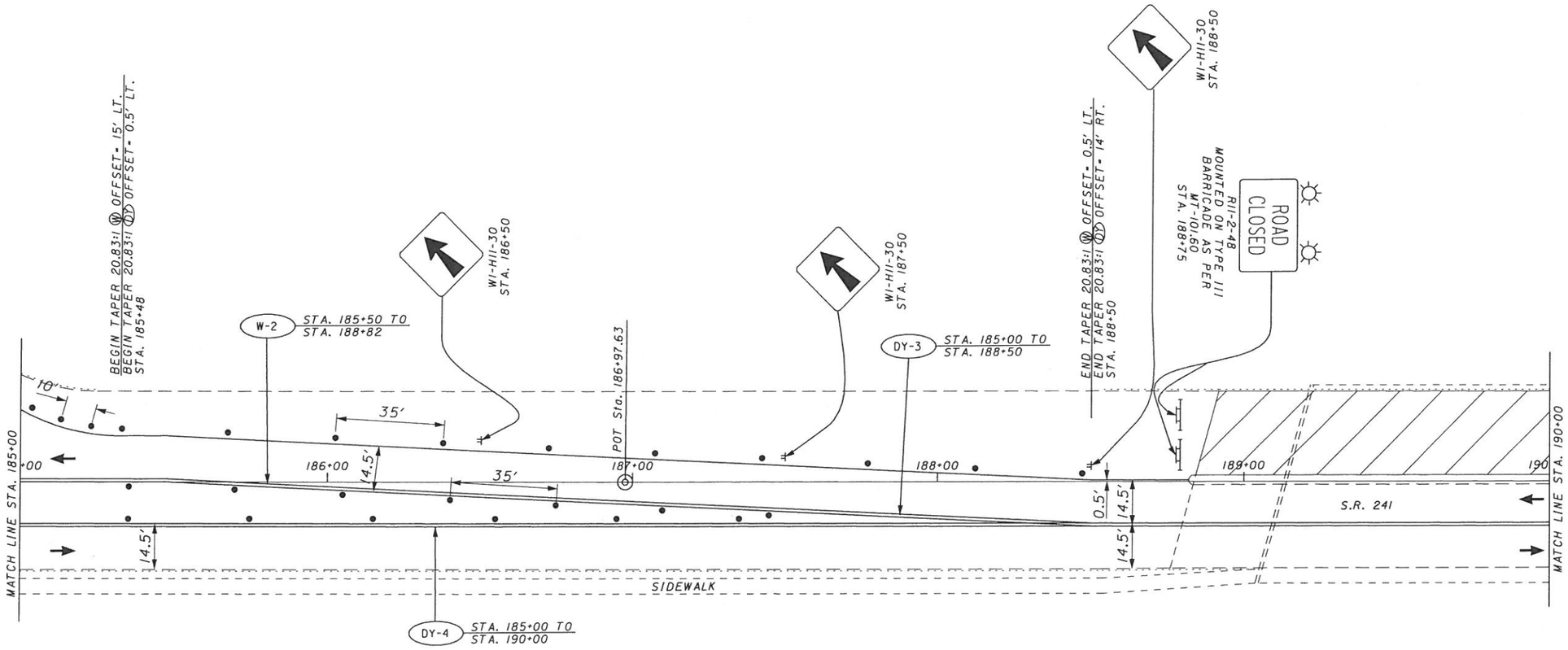
NOTES: 1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.

2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 185+00 TO STA. 190+00 SHALL BE 740.06, TYPE I, REMOVEABLE.

3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.



LEGEND	
TYPE A WARNING LIGHT	FLASHING ARROW PANEL (TYPE PER MT-35.10)
W-* WORK ZONE EDGE LINE (WHITE)	TRAFFIC FLOW ARROW
Y-* WORK ZONE EDGE LINE (YELLOW)	TEMPORARY SIGN SUPPORT
PCB-* WORK ZONE PORTABLE CONCRETE BARRIER	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
SL-* WORK ZONE STOP LINE	WORKZONE
DY-* WORK ZONE DOUBLE CENTER LINE (YELLOW)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

SEE PART 2 FOR CONSTRUCTION PLAN DETAILS FOR THE WILLIAM J. KEEN BRIDGE.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 1 - STA. 185+00 TO STA. 190+00

STA-241-7.81

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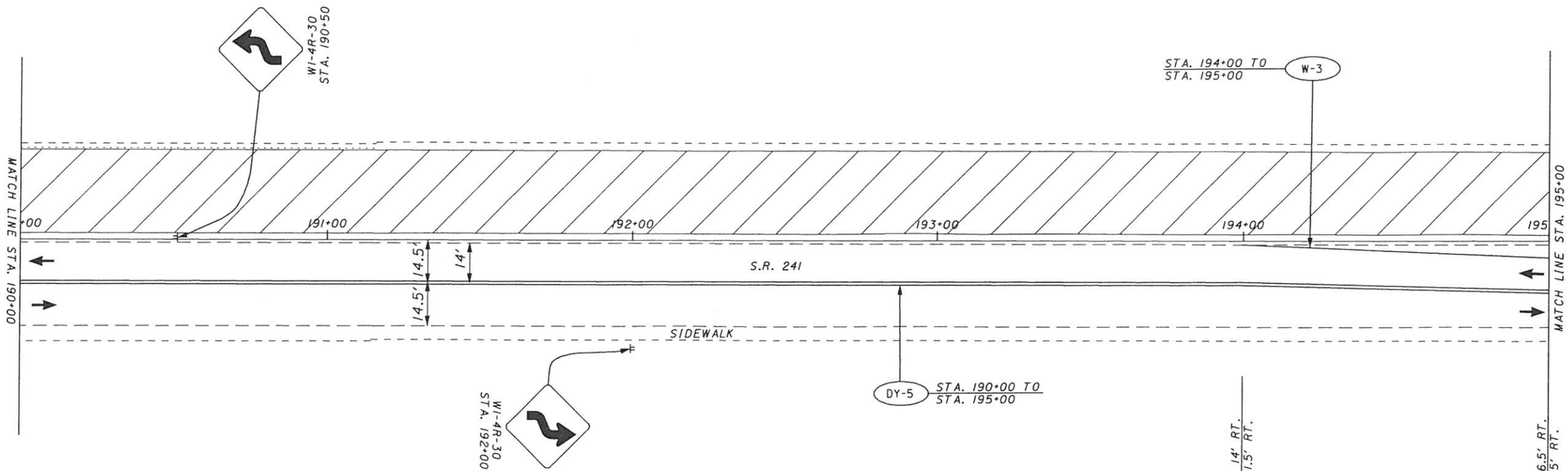
NOTES: 1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.

2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 190+00 TO STA. 195+00 SHALL BE 740.06, TYPE I, REMOVEABLE.

3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.



LEGEND	
TYPE A WARNING LIGHT	FLASHING ARROW PANEL (TYPE PER MT-35.10)
W-* WORK ZONE EDGE LINE (WHITE)	TRAFFIC FLOW ARROW
Y-* WORK ZONE EDGE LINE (YELLOW)	TEMPORARY SIGN SUPPORT
PCB-* WORK ZONE PORTABLE CONCRETE BARRIER	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
SL-* WORK ZONE STOP LINE	WORKZONE
DY-* WORK ZONE DOUBLE CENTER LINE (YELLOW)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

SEE PART 2 FOR CONSTRUCTION PLAN DETAILS FOR THE WILLIAM J. KEEN BRIDGE.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 1 - STA. 190+00 TO STA. 195+00

STA-241-7.81

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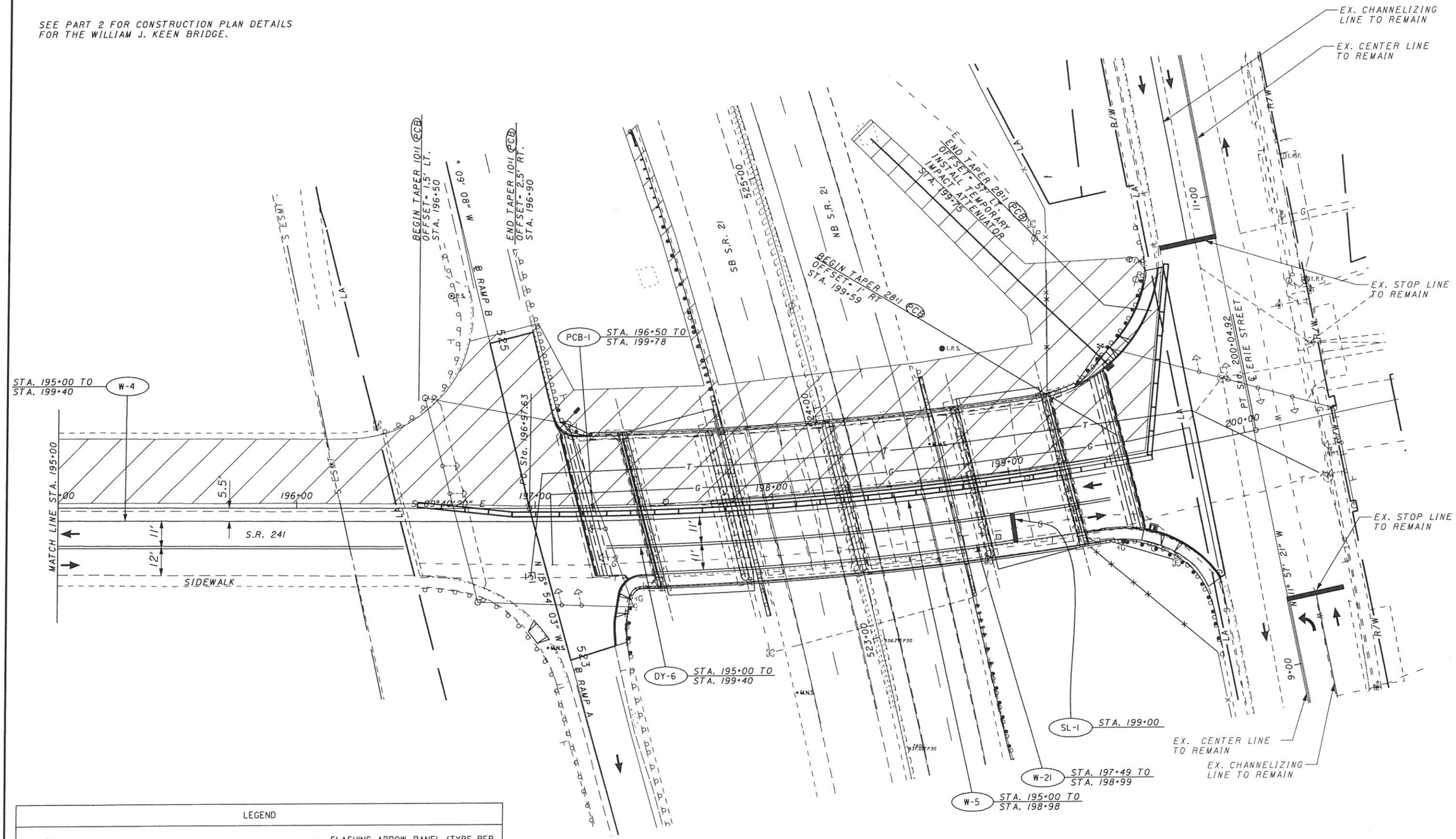
SEE PART 2 FOR CONSTRUCTION PLAN DETAILS FOR THE WILLIAM J. KEEN BRIDGE.



LEGEND

TYPE A WARNING LIGHT	FLASHING ARROW PANEL (TYPE PER MT-35.10)
W-# WORK ZONE EDGE LINE (WHITE)	TRAFFIC FLOW ARROW
Y-# WORK ZONE EDGE LINE (YELLOW)	TEMPORARY SIGN SUPPORT
PCB-# WORK ZONE PORTABLE CONCRETE BARRIER	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
SL-# WORK ZONE STOP LINE	WORKZONE
DY-# WORK ZONE DOUBLE CENTER LINE (YELLOW)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

FOR PHASE I MOT S.R. 21 DETAILED CONSTRUCTION PLANS, SEE SHEETS 33 - 38
FOR PHASE I MOT DETOUR PLAN, SEE SHEET 18

NOTES:
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.
2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 195+00 TO STA. 199+78 SHALL BE 740.06, TYPE I, REMOVEABLE.
3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 1 - STA. 195+00 TO END

STA-241-7.81

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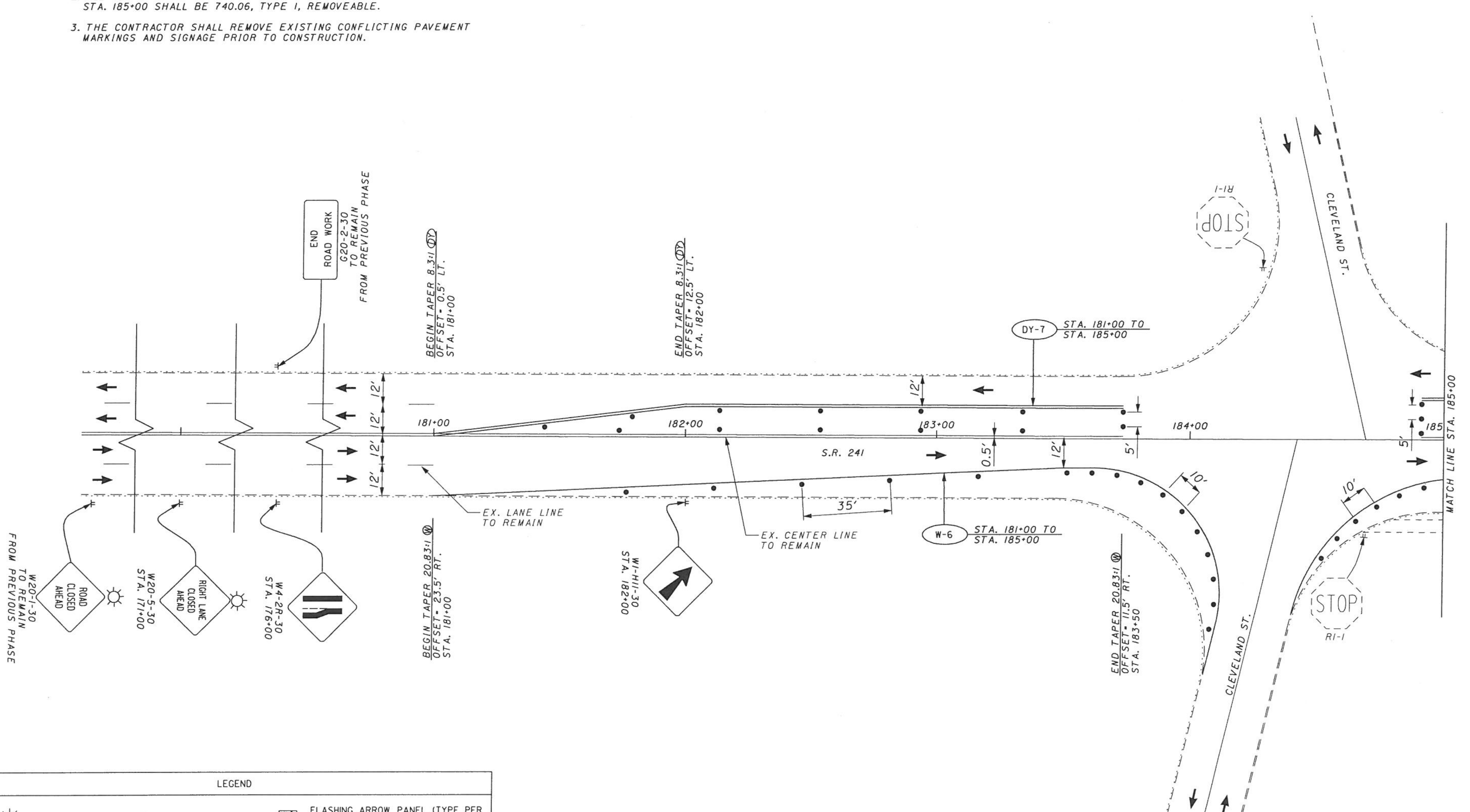
NOTES: 1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.

2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 181+00 TO STA. 185+00 SHALL BE 740.06, TYPE I, REMOVEABLE.

3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.



LEGEND	
TYPE A WARNING LIGHT	FLASHING ARROW PANEL (TYPE PER MT-35.10)
(W-#) WORK ZONE EDGE LINE (WHITE)	TRAFFIC FLOW ARROW
(Y-#) WORK ZONE EDGE LINE (YELLOW)	TEMPORARY SIGN SUPPORT
(PCB-#) WORK ZONE PORTABLE CONCRETE BARRIER	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
(SL-#) WORK ZONE STOP LINE	WORKZONE
(DY-#) WORK ZONE DOUBLE CENTER LINE (YELLOW)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 2 - BEGIN TO STA. 185+00

STA-241-7.81

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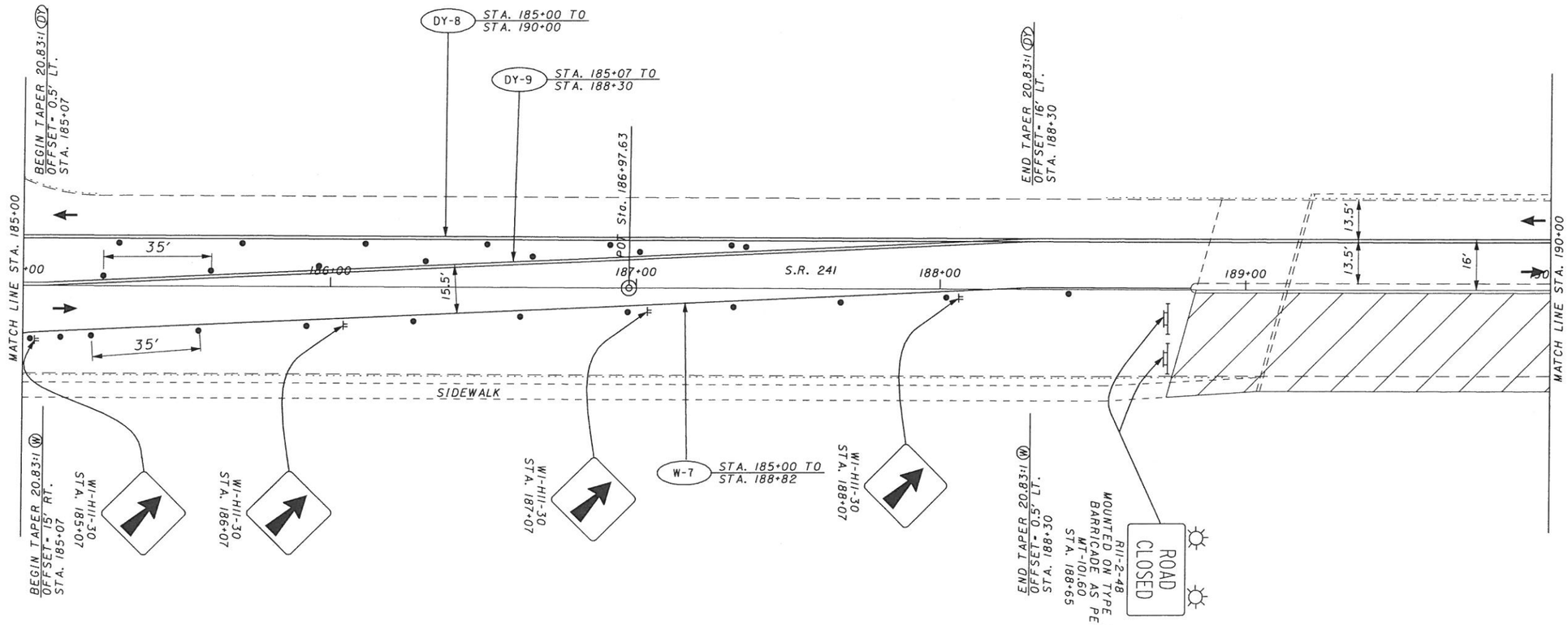
NOTES: 1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.

2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 185+00 TO STA. 190+00 SHALL BE 740.06, TYPE I, REMOVEABLE.

3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.



LEGEND

- TYPE A WARNING LIGHT
- W-# WORK ZONE EDGE LINE (WHITE)
- Y-# WORK ZONE EDGE LINE (YELLOW)
- PCB-# WORK ZONE PORTABLE CONCRETE BARRIER
- SL-# WORK ZONE STOP LINE
- DY-# WORK ZONE DOUBLE CENTER LINE (YELLOW)
- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

SEE PART 2 FOR CONSTRUCTION PLAN DETAILS FOR THE WILLIAM J. KEEN BRIDGE.

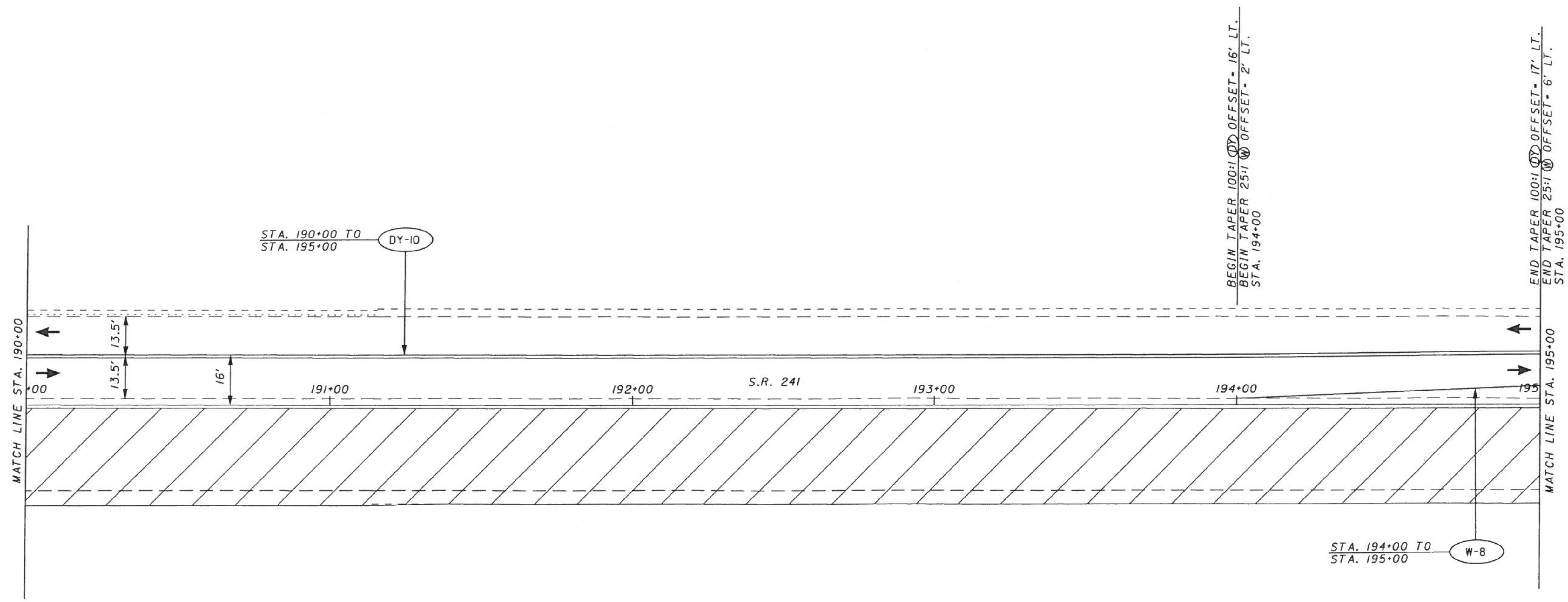
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 2 - STA. 185+00 TO STA. 190+00

STA-241-7.81

NOTES:
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.
2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 190+00 TO STA. 195+00 SHALL BE 740.06, TYPE I, REMOVEABLE.
3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.



LEGEND

- TYPE A WARNING LIGHT
- (W-#) WORK ZONE EDGE LINE (WHITE)
- (Y-#) WORK ZONE EDGE LINE (YELLOW)
- (PCB-#) WORK ZONE PORTABLE CONCRETE BARRIER
- (SL-#) WORK ZONE STOP LINE
- (DY-#) WORK ZONE DOUBLE CENTER LINE (YELLOW)
- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

SEE PART 2 FOR CONSTRUCTION PLAN DETAILS FOR THE WILLIAM J. KEEN BRIDGE.

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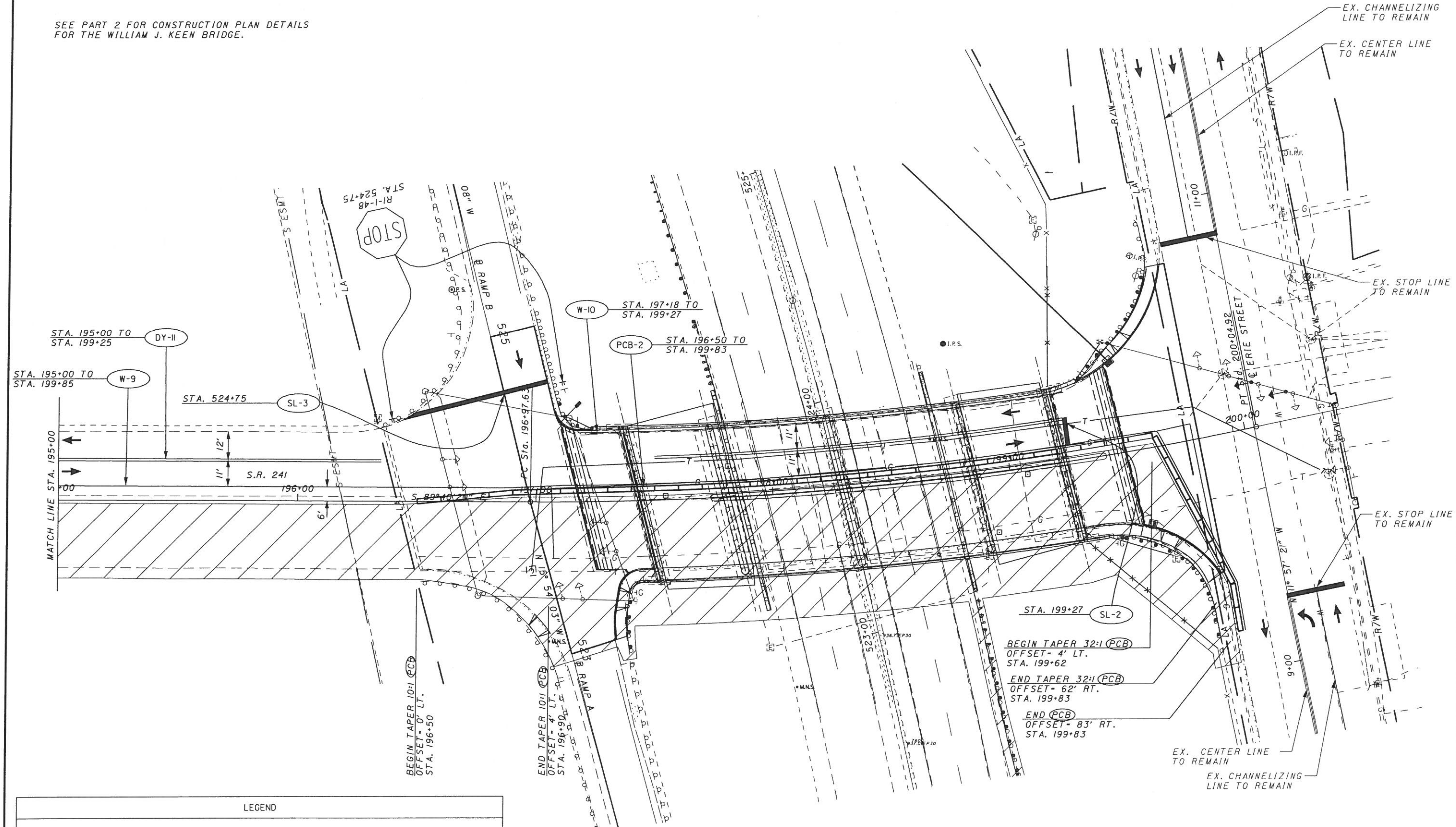
0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED AKF
CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 2 - STA. 190+00 TO STA. 195+00

STA-241-7.81

SEE PART 2 FOR CONSTRUCTION PLAN DETAILS FOR THE WILLIAM J. KEEN BRIDGE.



LEGEND

TYPE A WARNING LIGHT	FLASHING ARROW PANEL (TYPE PER MT-35.10)
(W-*) WORK ZONE EDGE LINE (WHITE)	TRAFFIC FLOW ARROW
(Y-*) WORK ZONE EDGE LINE (YELLOW)	TEMPORARY SIGN SUPPORT
(PCB-*) WORK ZONE PORTABLE CONCRETE BARRIER	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
(SL-*) WORK ZONE STOP LINE	WORKZONE
(DY-*) WORK ZONE DOUBLE CENTER LINE (YELLOW)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

FOR PHASE 2 MOT S.R. 21 DETAILED CONSTRUCTION PLANS, SEE SHEETS 39 - 44.
FOR PHASE 2 MOT DETOUR PLAN, SEE SHEET 19.

NOTES:
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.
2. ALL TEMPORARY PAVEMENT MARKINGS BETWEEN STA. 195+00 TO STA. 199+72 SHALL BE 740.06, TYPE I, REMOVEABLE.
3. THE CONTRACTOR SHALL REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED AKF CHECKED

MAINTENANCE OF TRAFFIC - S.R. 241
CONSTRUCTION PHASE 2 - STA. 195+00 TO END

STA-241-7.81

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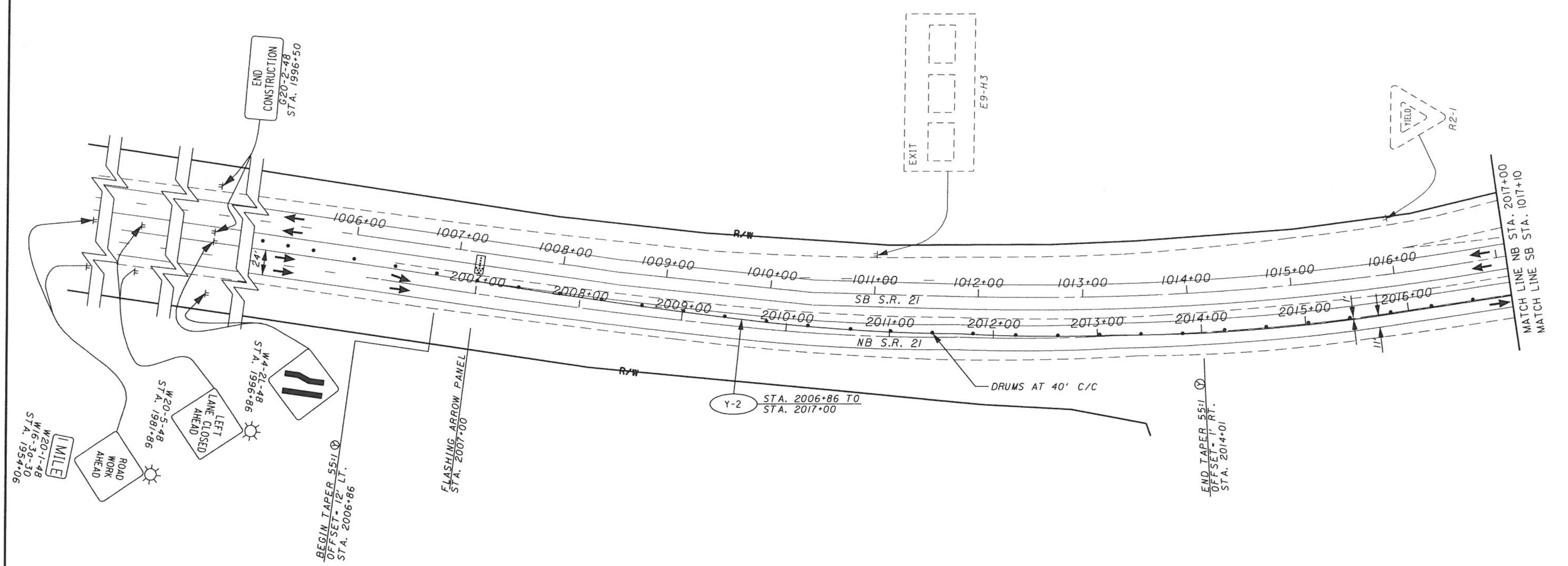

NOTE: 1. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE 740.06, TYPE I, REMOVEABLE.

2. THE CONTRACTOR SHALL REMOVE OR COVER EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

3. BASEMAPPING FOR S.R. 21 MAINTENANCE OF TRAFFIC ZONES CREATED FROM STARK COUNTY GIS DATA.

LEGEND	
TYPE A WARNING LIGHT	TRAFFIC FLOW ARROW
(W-#) WORK ZONE EDGE LINE (WHITE)	TEMPORARY SIGN SUPPORT
(Y-#) WORK ZONE EDGE LINE (YELLOW)	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
(PCB-#) WORK ZONE PORTABLE CONCRETE BARRIER	WORKZONE
	TEMPORARY PAVEMENT
FLASHING ARROW PANEL (TYPE PER MT-35.10)	PORTABLE CONCRETE BARRIER

0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 1A

STA-241-7.81

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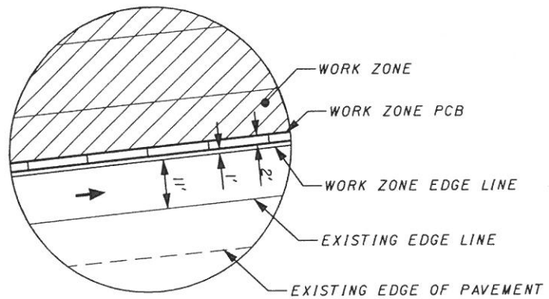
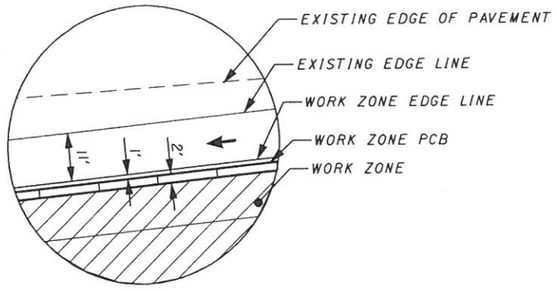
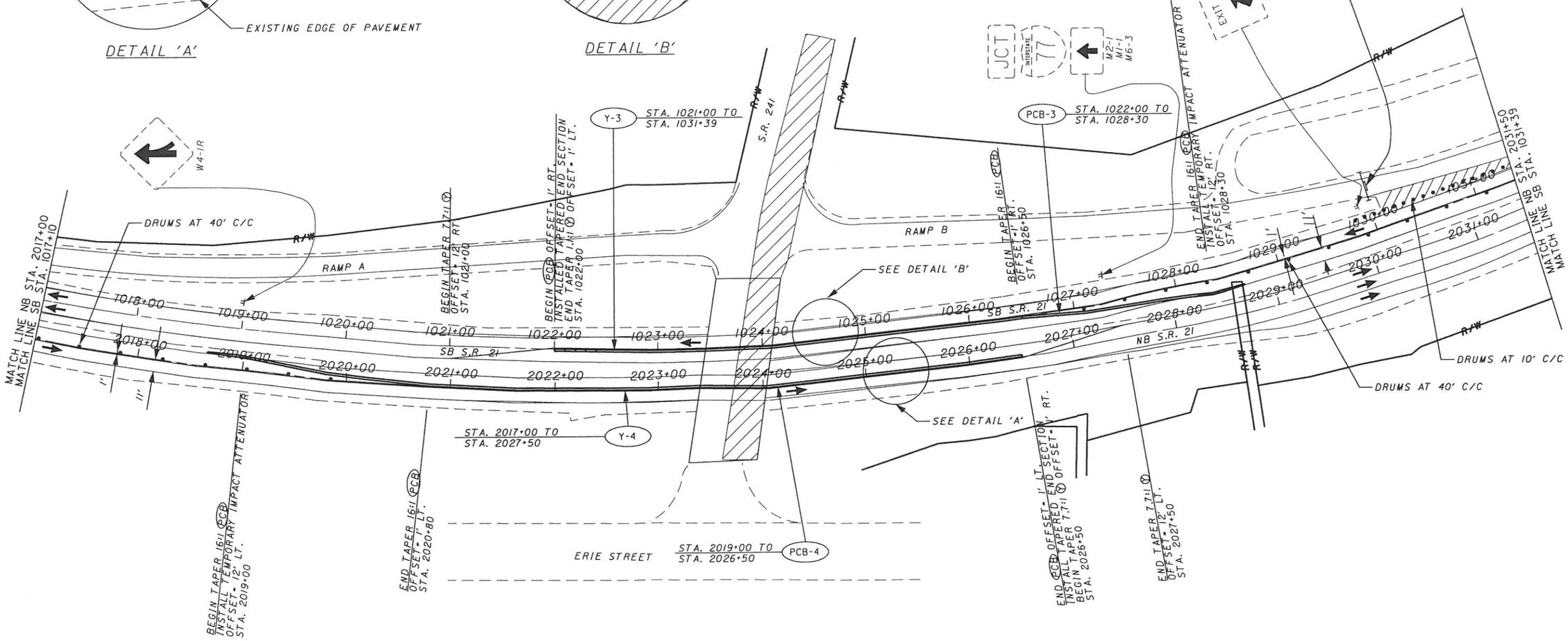


DETAIL 'A'



DETAIL 'B'



NOTE: 1. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE 740.06, TYPE I, REMOVEABLE.

2. THE CONTRACTOR SHALL REMOVE OR COVER EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

3. BASEMAPPING FOR S.R. 21 MAINTENANCE OF TRAFFIC ZONES CREATED FROM STARK COUNTY GIS DATA.

FOR DETOUR PLAN, SEE SHEET 18.
FOR DETAILED PHASE CONSTRUCTION PLANS, SEE SHEET 25 - 28.
FOR TYPICAL SECTION, SEE SHEET 17.

LEGEND

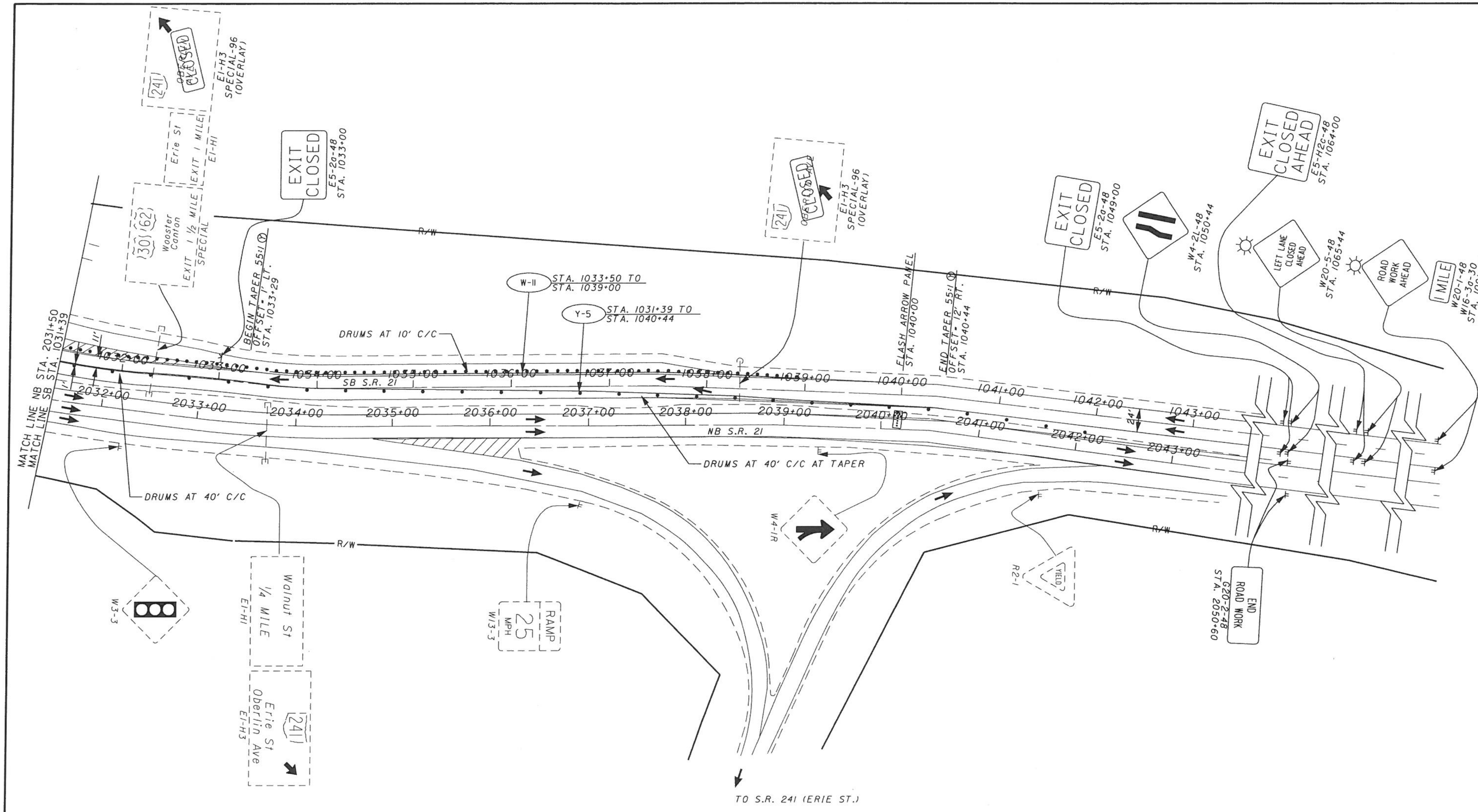
- TYPE A WARNING LIGHT
- W-# WORK ZONE EDGE LINE (WHITE)
- Y-# WORK ZONE EDGE LINE (YELLOW)
- PCB-# WORK ZONE PORTABLE CONCRETE BARRIER
- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- TEMPORARY BARRICADE
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 1A

STA-241-7.81



NOTE: 1. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE 740.06, TYPE I, REMOVEABLE.

2. THE CONTRACTOR SHALL REMOVE OR COVER EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

3. BASEMAPPING FOR S.R. 21 MAINTENANCE OF TRAFFIC ZONES CREATED FROM STARK COUNTY GIS DATA.

4. SEE STANDARD DRAWING MT-98.29 FOR ADDITIONAL DETAILS AND NOTES.

FOR DETOUR PLAN, SEE SHEET 18.

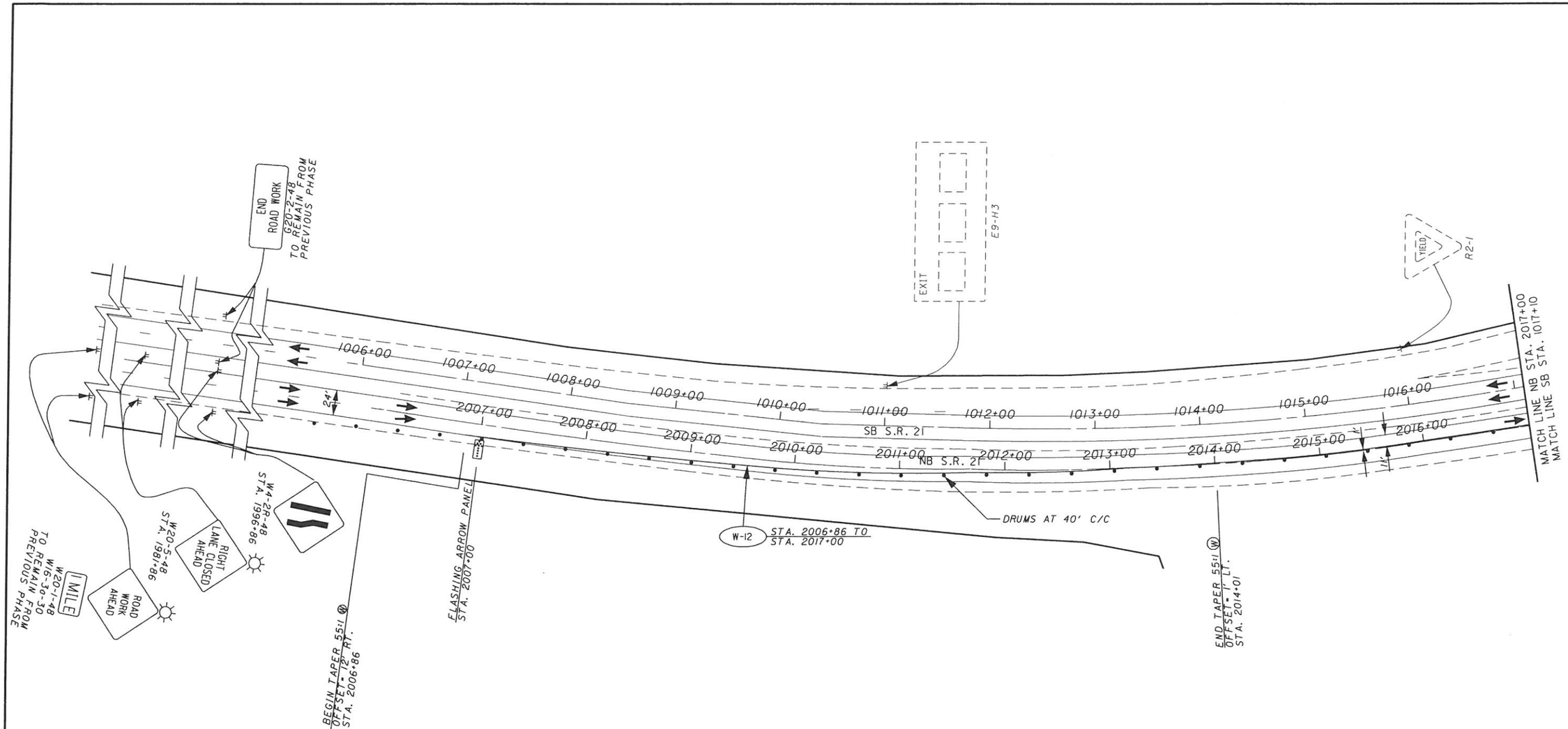
LEGEND

TYPE A WARNING LIGHT	TRAFFIC FLOW ARROW
(W-#) WORK ZONE EDGE LINE (WHITE)	TEMPORARY SIGN SUPPORT
(Y-#) WORK ZONE EDGE LINE (YELLOW)	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
(PCB-#) WORK ZONE PORTABLE CONCRETE BARRIER	WORKZONE
FLASHING ARROW PANEL (TYPE PER MT-35.10)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 1A

STA-241-7.81



NOTE: 1. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE 740.06, TYPE 1, REMOVEABLE.

2. THE CONTRACTOR SHALL REMOVE OR COVER EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

3. BASEMAPPING FOR S.R. 21 MAINTENANCE OF TRAFFIC ZONES CREATED FROM STARK COUNTY GIS DATA.

LEGEND

- TYPE A WARNING LIGHT
- W-* WORK ZONE EDGE LINE (WHITE)
- Y-* WORK ZONE EDGE LINE (YELLOW)
- PCB-* WORK ZONE PORTABLE CONCRETE BARRIER
- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

CALCULATED AKF
CHECKED MAH

0 25 50 100 HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 1B

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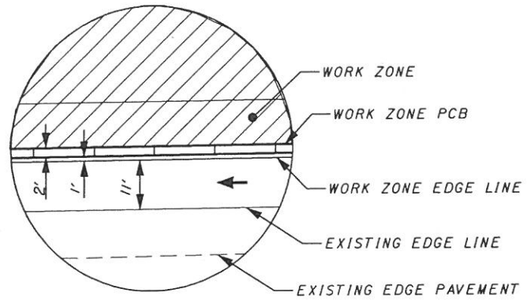
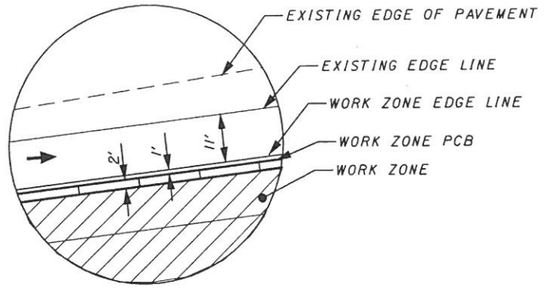
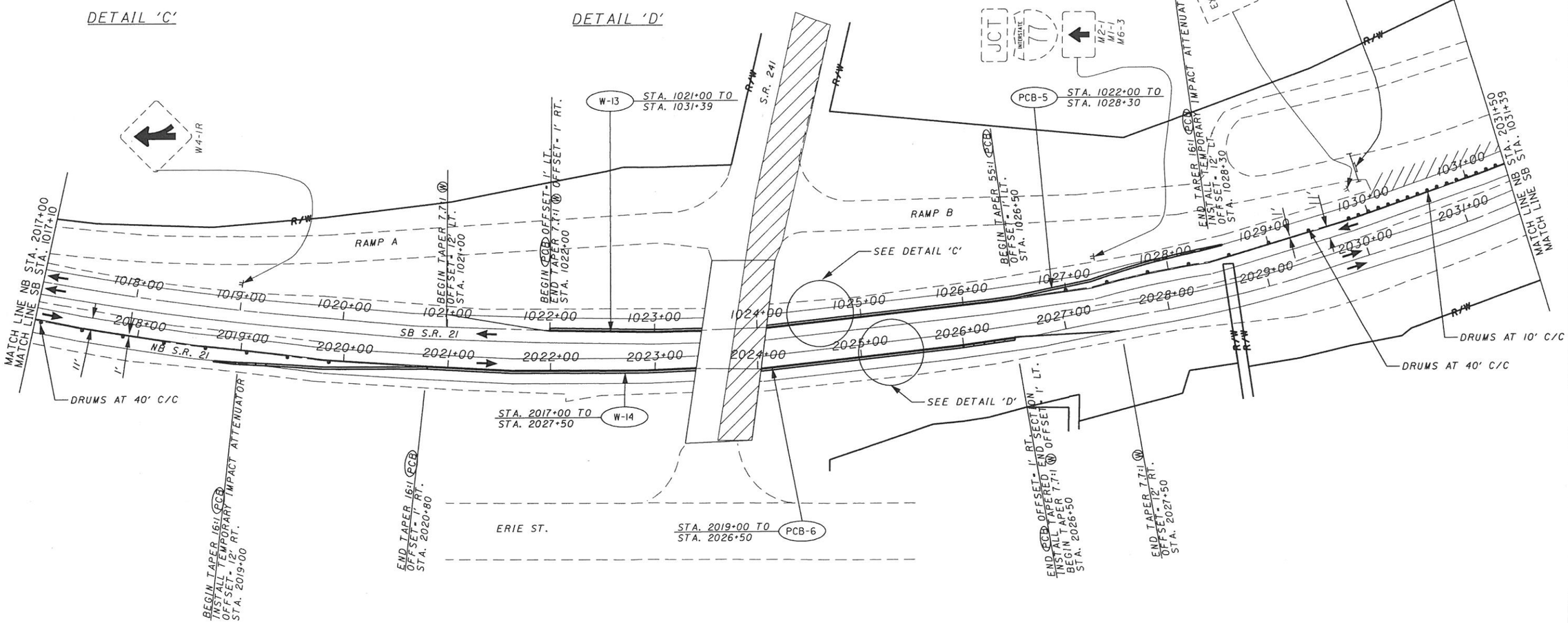


DETAIL 'C'



DETAIL 'D'



FOR DETOUR PLAN, SEE SHEET 18
FOR DETAILED PHASE CONSTRUCTION PLANS, SEE SHEET 25 - 28
FOR TYPICAL SECTION, SEE SHEET 17.

LEGEND

- TYPE A WARNING LIGHT
- W-* WORK ZONE EDGE LINE (WHITE)
- Y-* WORK ZONE EDGE LINE (YELLOW)
- PCB-* WORK ZONE PORTABLE CONCRETE BARRIER
- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

NOTE: 1. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE 740.06, TYPE I, REMOVEABLE.

2. THE CONTRACTOR SHALL REMOVE OR COVER EXISTING CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO CONSTRUCTION.

3. BASEMAPPING FOR S.R. 21 MAINTENANCE OF TRAFFIC ZONES CREATED FROM STARK COUNTY GIS DATA.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 1B

STA-241-7.81

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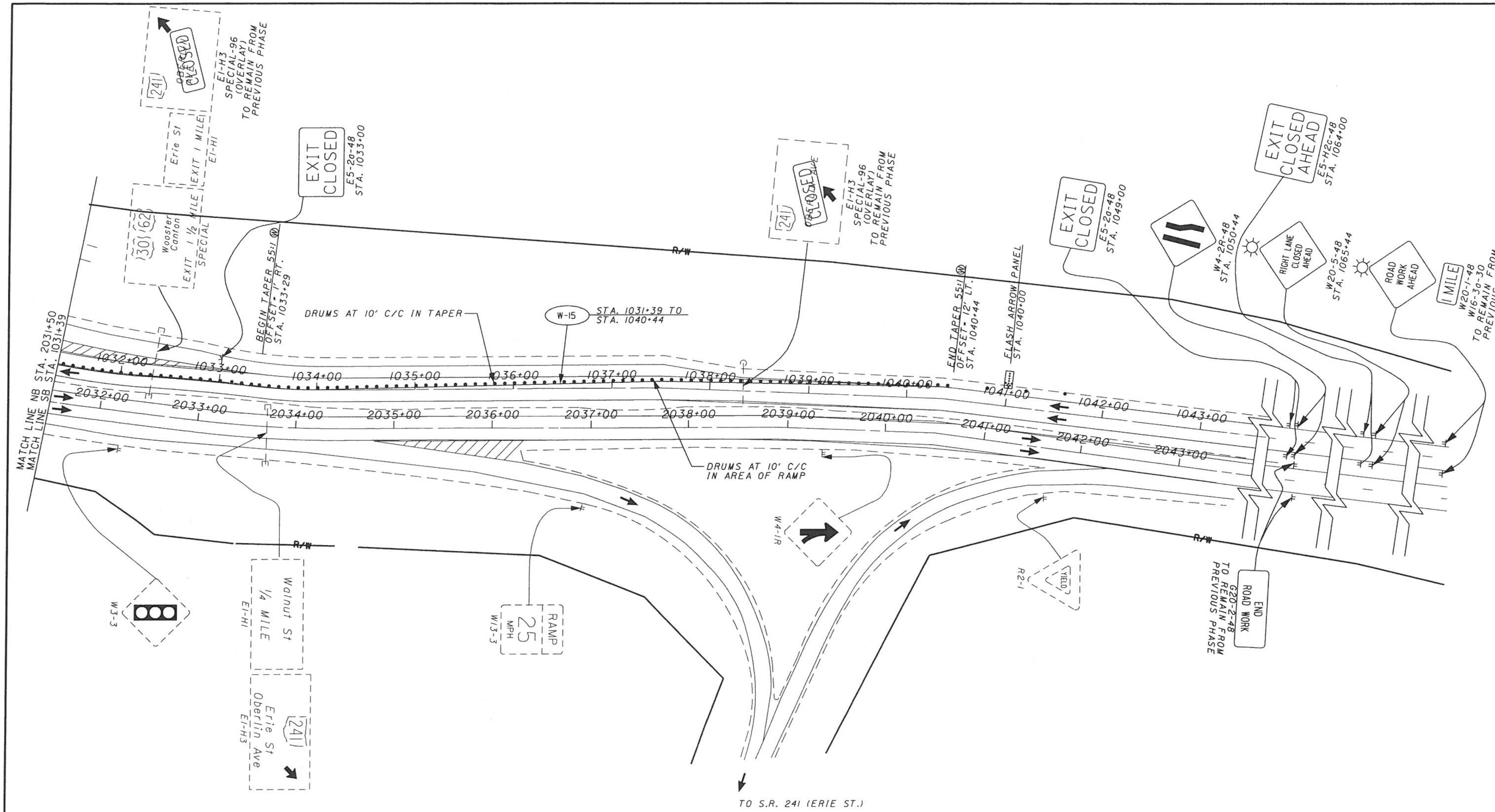

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4. SEE STANDARD DRAWING MT-98.29 FOR ADDITIONAL DETAILS AND NOTES.

FOR DETOUR PLANS, SEE SHEET 18

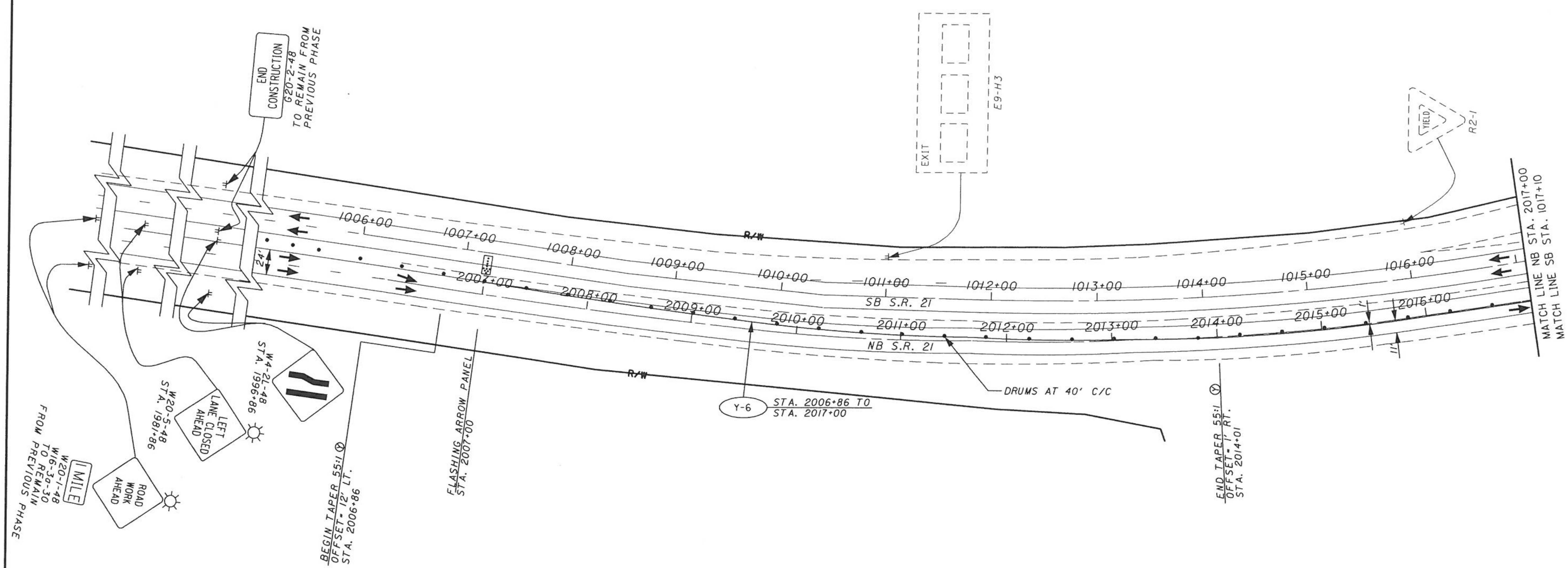
LEGEND

TYPE A WARNING LIGHT	TRAFFIC FLOW ARROW
(W-#) WORK ZONE EDGE LINE (WHITE)	TEMPORARY SIGN SUPPORT
(Y-#) WORK ZONE EDGE LINE (YELLOW)	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
(PCB-#) WORK ZONE PORTABLE CONCRETE BARRIER	WORKZONE
FLASHING ARROW PANEL (TYPE PER MT-35.10)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 1B

STA-241-7.81



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LEGEND

TYPE A WARNING LIGHT	TRAFFIC FLOW ARROW
W-# WORK ZONE EDGE LINE (WHITE)	TEMPORARY SIGN SUPPORT
Y-# WORK ZONE EDGE LINE (YELLOW)	CONSTRUCTION DRUM 40' C/C UNLESS NOTED
PCB-# WORK ZONE PORTABLE CONCRETE BARRIER	WORKZONE
FLASHING ARROW PANEL (TYPE PER MT-35.10)	TEMPORARY PAVEMENT
	PORTABLE CONCRETE BARRIER

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 2A

0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED AKF
CHECKED MAH

STA-241-7.81

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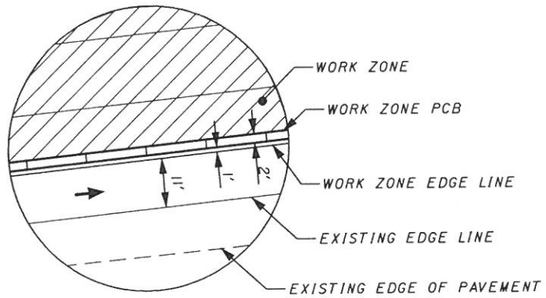
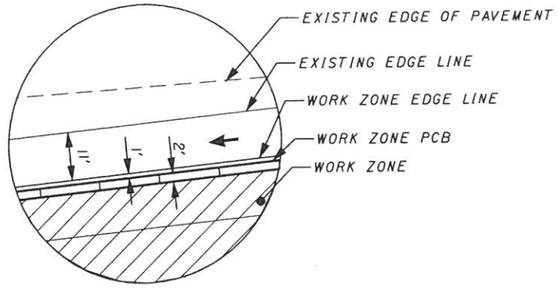
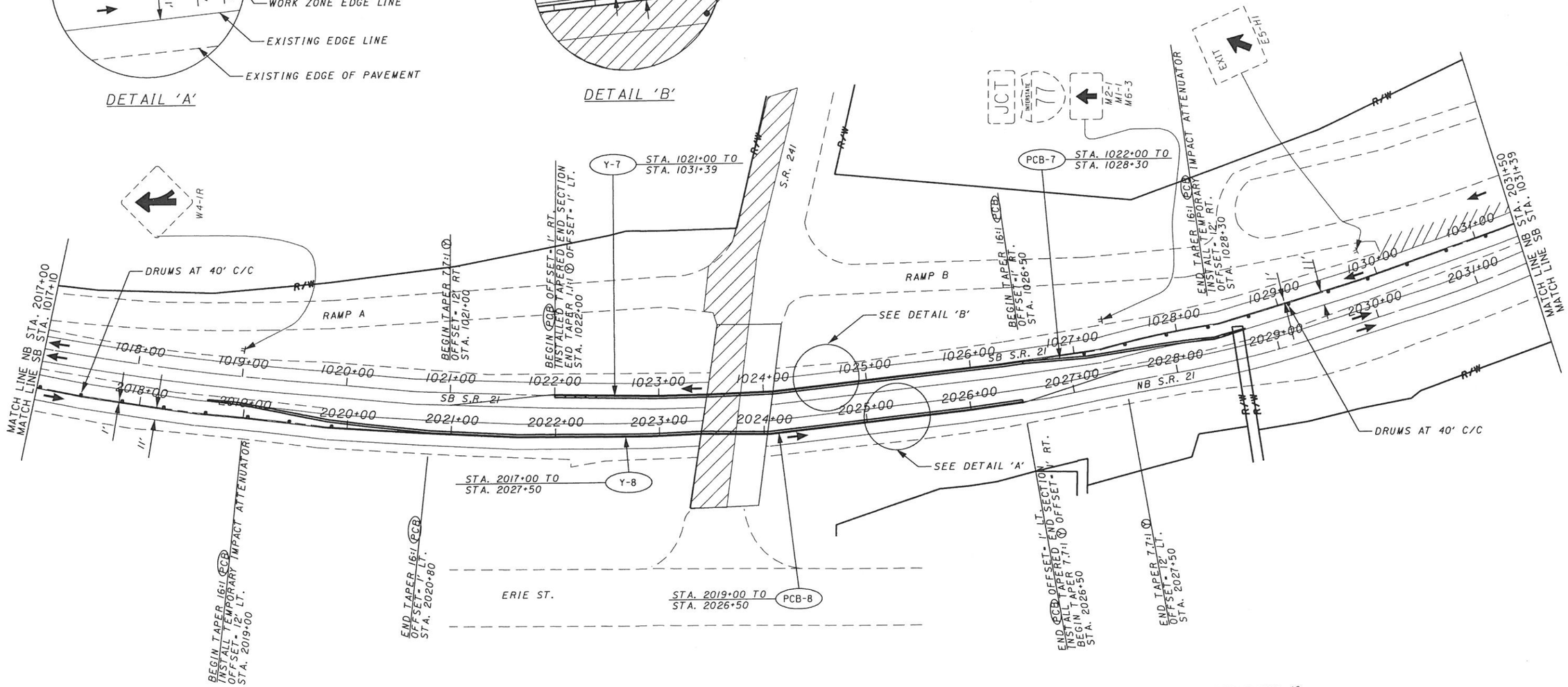


DETAIL 'A'



DETAIL 'B'



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FOR DETOUR PLAN, SEE SHEET 19.
FOR DETAILED PHASE CONSTRUCTION, SEE SHEET 29 - 32
FOR TYPICAL SECTION, SEE SHEET 17.

LEGEND

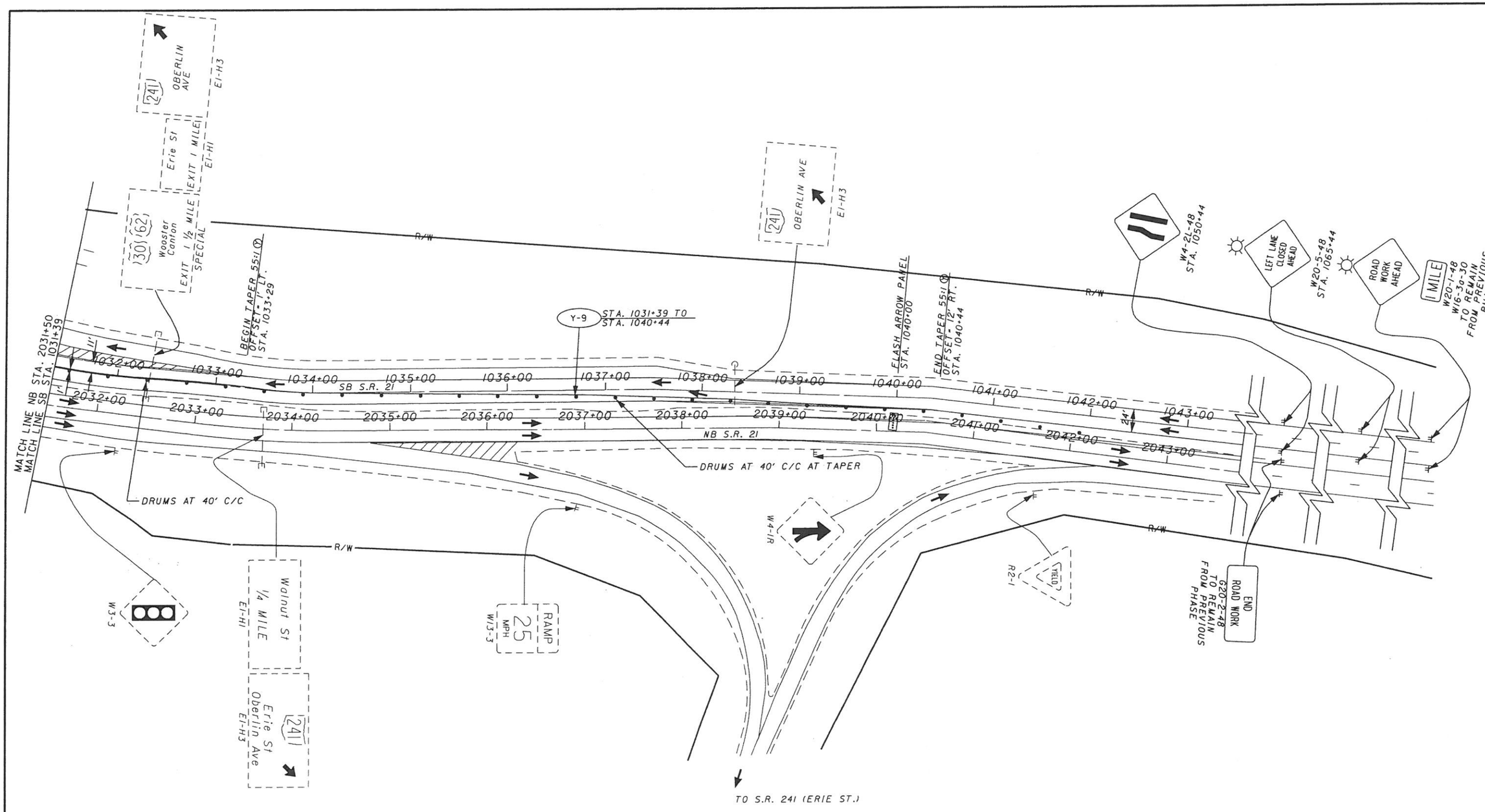
- TYPE A WARNING LIGHT
- W-# WORK ZONE EDGE LINE (WHITE)
- Y-# WORK ZONE EDGE LINE (YELLOW)
- PCB-# WORK ZONE PORTABLE CONCRETE BARRIER
- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- TEMPORARY BARRICADE
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 2A

STA-241-7.81



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4. SEE STANDARD DRAWING MT-98.29 FOR ADDITIONAL DETAILS AND NOTES.

LEGEND

- TYPE A WARNING LIGHT
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- FLASHING ARROW PANEL (TYPE PER MT-35.10)
- TRAFFIC FLOW ARROW
- TEMPORARY SIGN SUPPORT
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

CALCULATED AKF
CHECKED MAH

0 25 50 100
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 2A

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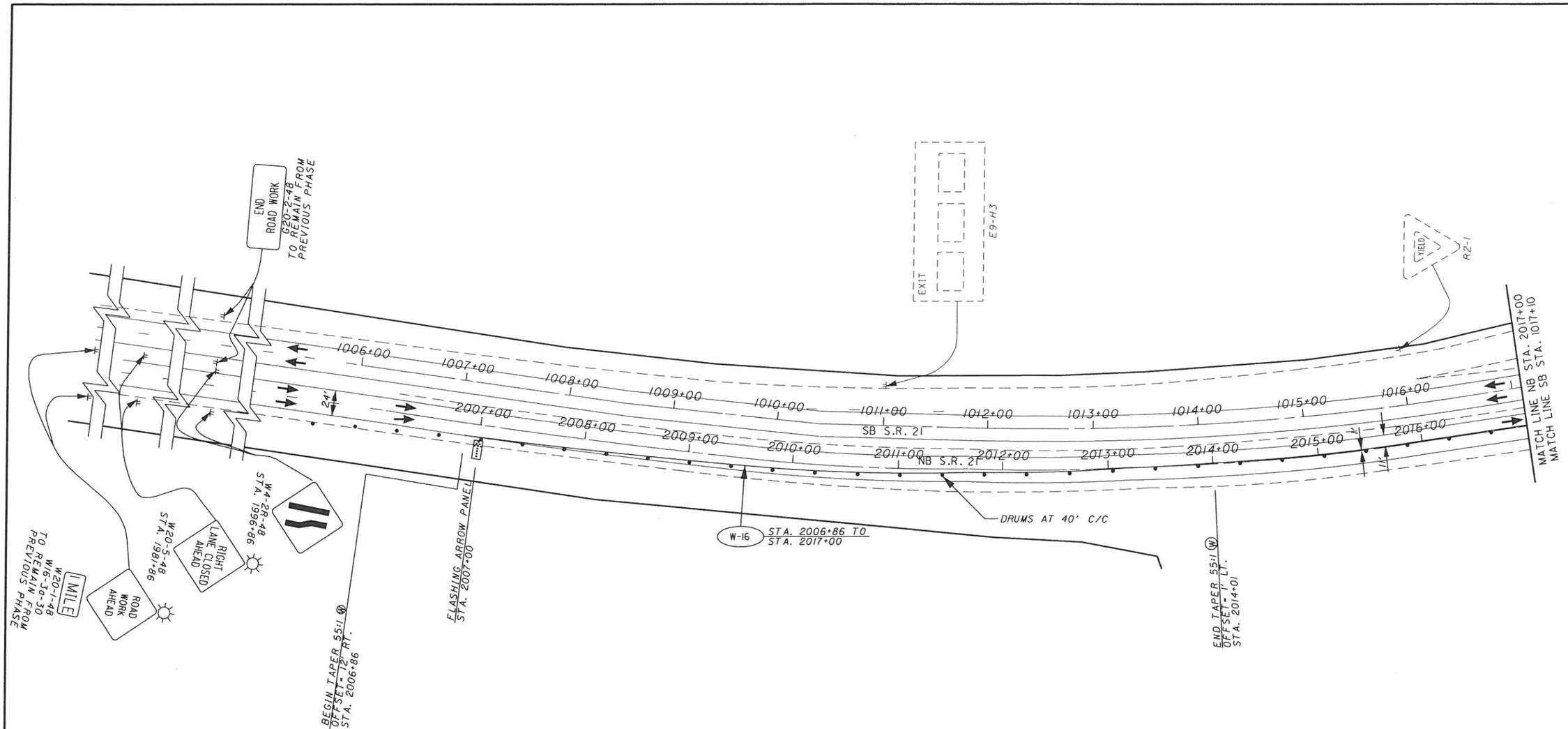

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- PCB-* WORK ZONE PORTABLE CONCRETE BARRIER
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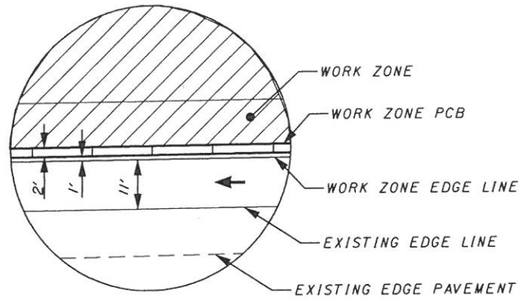
- CONSTRUCTION DRUM 40' C/C UNLESS NOTED
- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

CALCULATED AKF
CHECKED MAH

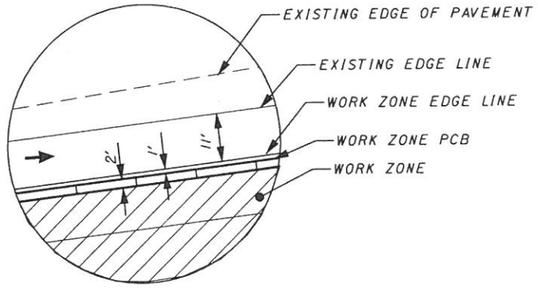
HORIZONTAL SCALE IN FEET
0 25 50 100

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 2B

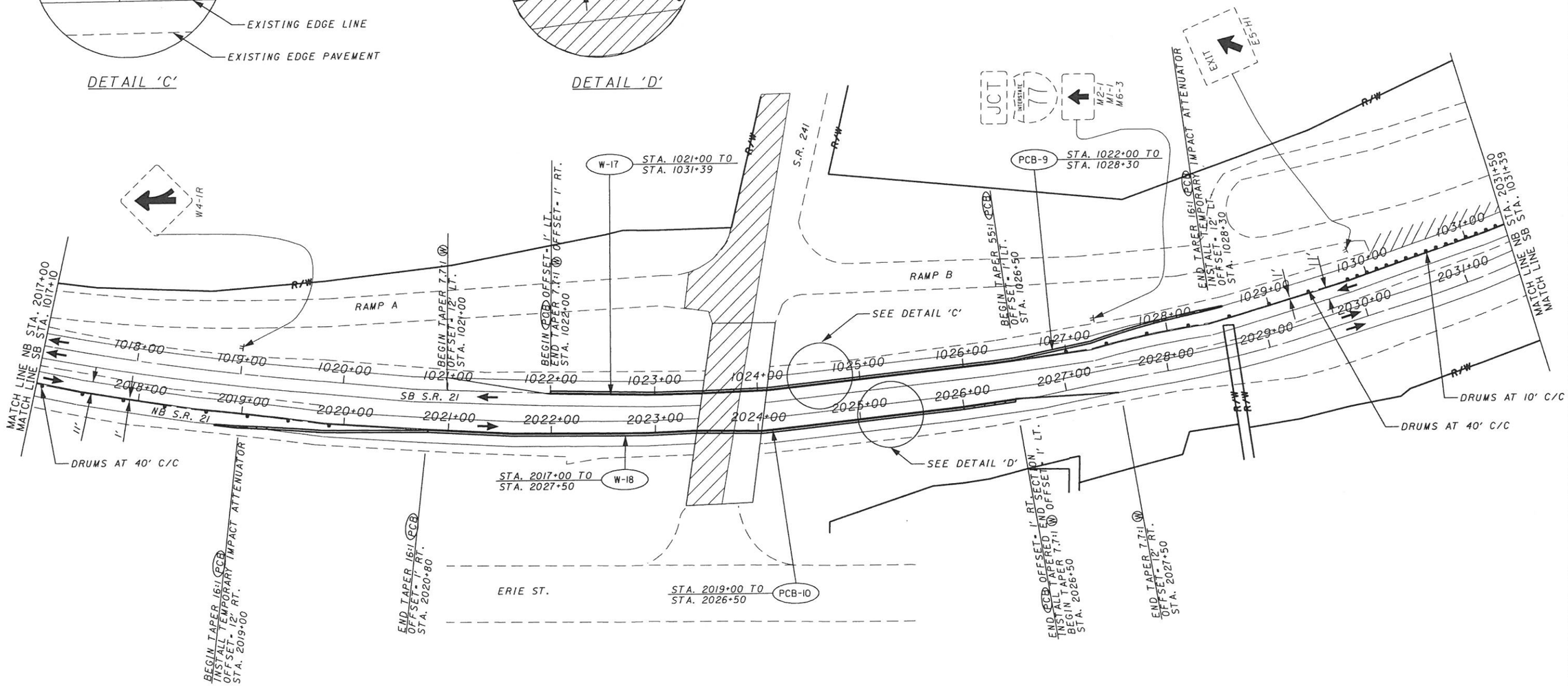
STA-241-7.81



DETAIL 'C'



DETAIL 'D'



FOR DETOUR PLAN, SEE SHEET 19
FOR DETAILED PHASE CONSTRUCTION, SEE SHEETS 29 - 32
FOR TYPICAL SECTION, SEE SHEET 17.

LEGEND

TYPE A WARNING LIGHT	TRAFFIC FLOW ARROW
W-* WORK ZONE EDGE LINE (WHITE)	TEMPORARY SIGN SUPPORT
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HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED AKF
CHECKED MAH

MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 2B

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MAINTENANCE OF TRAFFIC PLAN
S.R. 21 - CONSTRUCTION PHASE 2B

CALCULATED AKF
CHECKED MAH

0 25 50 100
HORIZONTAL SCALE IN FEET

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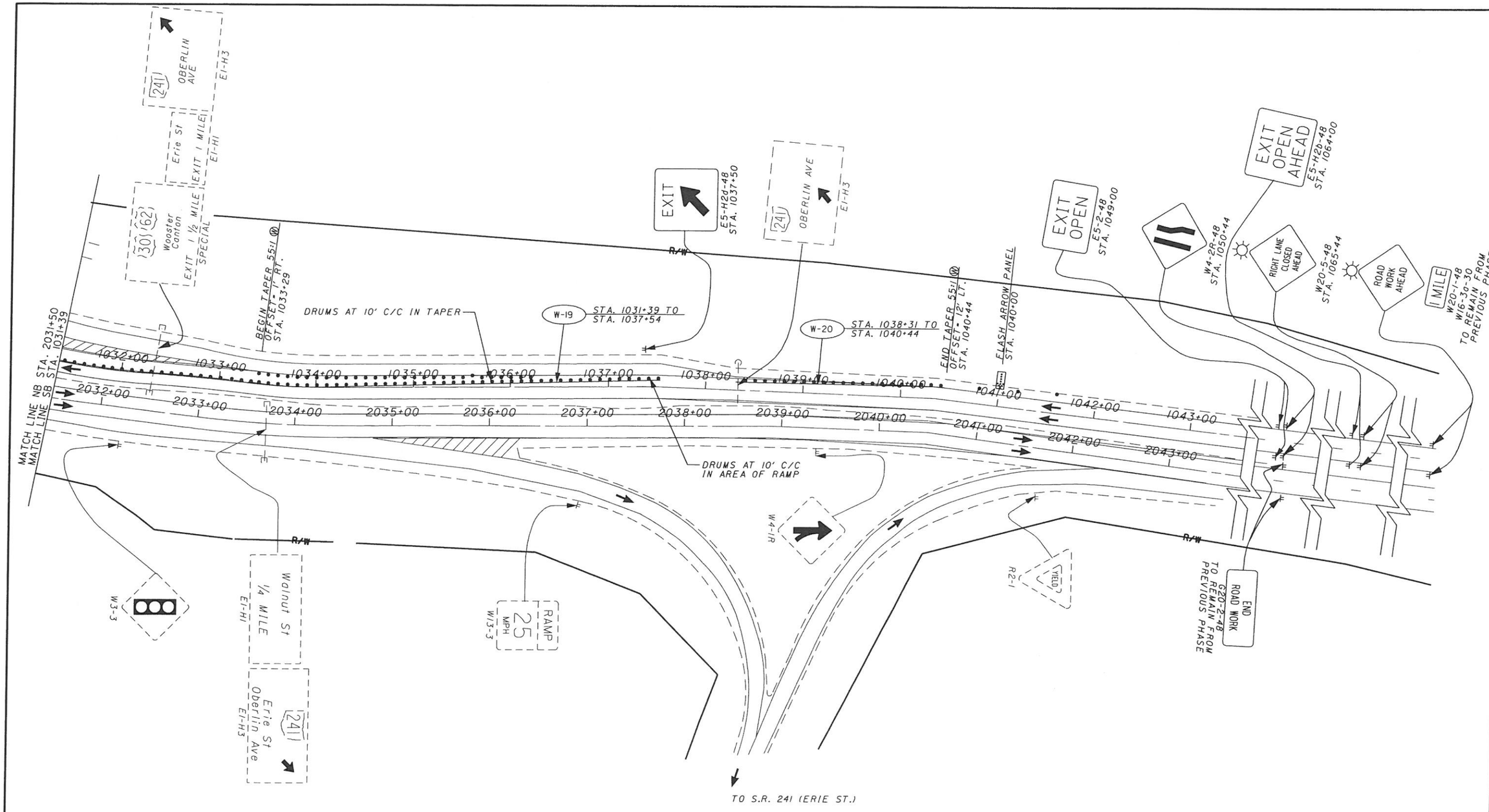

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- TEMPORARY SIGN SUPPORT
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- WORKZONE
- TEMPORARY PAVEMENT
- PORTABLE CONCRETE BARRIER

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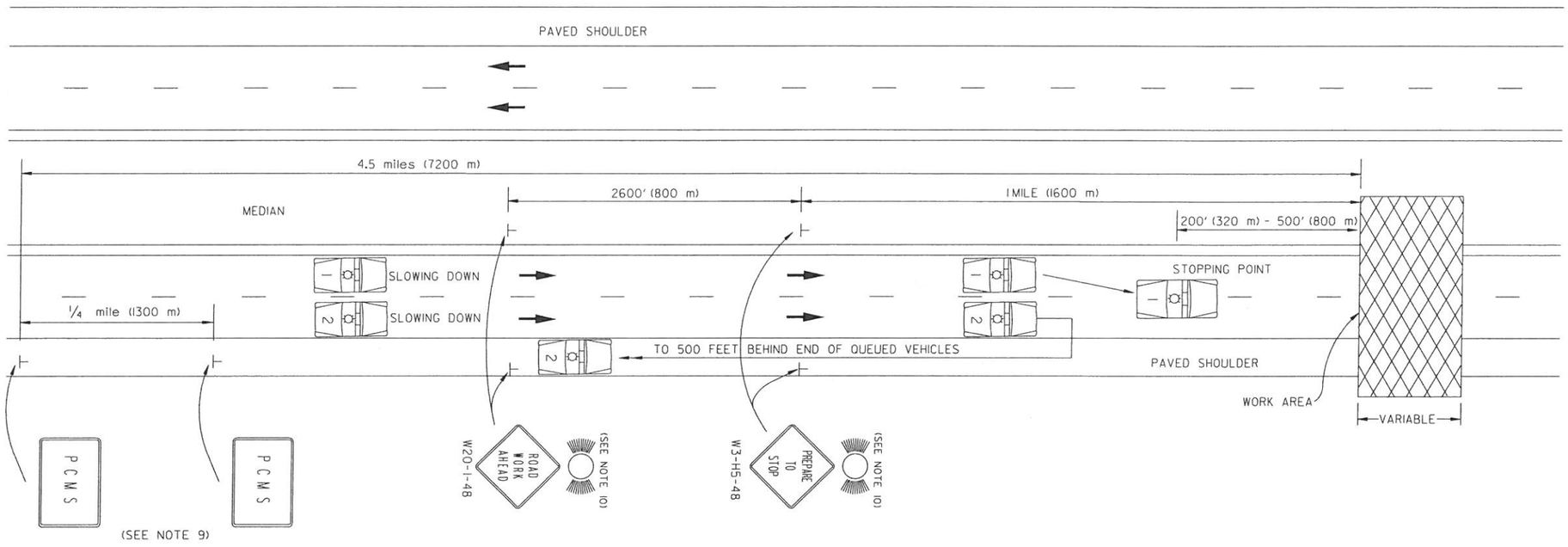

1. This type of highway closure shall be used for all construction, maintenance and utility operations when the duration of closure will not exceed 15 minutes.

2. A minimum of two Law Enforement Officers (LEO) with patrol cars per direction shall be provided to block traffic and pace motorists to a stop. The number of patrol cars shall equal the number of lanes closed on the highway.

3. Patrol cars, with lights flashing, should enter the stream of traffic at approximately three (3) miles before the point of closure. At approximately two (2) miles before the point of closure, they should begin the gradual slow down. Traffic shall be brought to a complete stop a safe distance, between 200 feet and 500 feet, from the work area. This slowing operation shall take no more than ten (10) minutes. After traffic has been stopped, one patrol car shall travel along the roadway shoulder 500 feet behind the end of the queued vehicles.

4. The contractor shall not begin work until traffic has been brought to a complete stop.

5. All entrance ramps located between the stopped traffic and the work area shall be closed.

6. After the highway has been closed and reopened via this procedure, both of the following requirements shall have been met before implementation of another short duration closure, except with the approval of the engineer:
   A. A minimum period of 15 minutes shall have elapsed
   B. The queued traffic shall have dissipated

7. The time frame for stopping traffic shall be specified in the plans or by the District District Deputy Director.

8. The public shall be given advance notice of the upcomming closure by providing Portable Changeable Message signs at the site at least one week in advance of the scheduled closing. Closure information should also be provided through the news media.

9. Two ODOT approved Portable Changeable Messge Signs, Class 1, shall be provided. The first messge sign shall be placed at approximately 4.5 miles in advance of the closure or as directed by the engineer. The second messge sign shall be placed at approximately one quarter mile beyond the first message sign. The first message sign shall read ROAD CLOSED AHEAD (0.8 sec.), PREPARE TO STOP (0.8 sec.), (Black screen for 0.3 sec.) The second message sign shall read ROAD CLOSED AHEAD (0.8 sec.), "EXPECT 30 MIN. DELAY" (0.8 sec.), (Black screen for 0.3 sec.)

10. The contractor shall erect and maintian 48 inch "ROAD WORK AHEAD" and "PREPARE TO STOP" signs on each side of the highway. During night operations, each sign shall be illuminated with one (1) Type A flashing warning light or two (2) flares. The flares shall be replaced if if they burn out.

11. For SR 21 south bound, start the slowdown at the Walnut Road intersection as herein described. Position patrolcars 1 and 2 on Walnut Road on the west approach to the intersection. When ready for closure, wait for southbound SR 21 signals to turn red. Start patrolcars turning southbound toward the SR 241 bridge work zone. Move approximately 100 feet from the intersection and immediately take up the side-by-side configuration shown above. When southbound signal turns green begin rolling southbound. Do not exceed 35 MPH speed for approach to work zone. All other operations described herein apply.

10-11-06 draft

SHORT-DURATION CLOSURE OF MULTI-LANE DIVIDED HIGHWAY

OFFICE OF TRAFFIC ENGINEERING

209961

1 / 1

SHB

CALCULATED GJB
CHECKED MAH

PLAN INSERT SHEET

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SHEET NUMBER								PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	47	48	50					AT&T	DEO						
														ROADWAY	
										201	11000	LUMP		CLEARING AND GRUBBING	
	683									202	30000	683	SF	WALK REMOVED	
	206									202	32000	206	FT	CURB REMOVED	
	517									202	38000	517	FT	GUARDRAIL REMOVED	
	121									202	75000	121	FT	FENCE REMOVED	
			26							203	10000	26	CY	EXCAVATION	
			77							203	20000	77	CY	EMBANKMENT	
1										203	98600	1	EACH	ROADWAY, MISC.: MEASURE VERTICAL CLEARANCE	
	132									451	30000	132	EACH	SPECIAL - PRESSURE RELIEF JOINT, TYPE A	
	290									606	13000	290	FT	GUARDRAIL, TYPE 5	
	2									606	22000	2	EACH	ANCHOR ASSEMBLY, TYPE B-98	
	6									606	35000	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
	121									607	15000	121	FT	FENCE, TYPE 47	
	530									608	10000	530	SF	4" CONCRETE WALK	
	4									608	49000	4	EACH	CURB RAMP	
	128									609	26000	128	FT	CURB TYPE 6	
	191									622	10160	191	FT.	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
														EROSION CONTROL	
2										659	00100	2	EACH	SOIL ANALYSIS TEST	
66										659	00300	66	CY	TOPSOIL	
594										659	10000	594	SY	SEEDING AND MULCHING	
30										659	14000	30	SY	REPAIR SEEDING AND MULCHING	
30										659	15000	30	SY	INTERSEEDING	
0.1										659	20000	0.1	TON	COMMERCIAL FERTILIZER	
0.1										659	31000	0.1	ACRE	LIME	
3										659	35000	3	M. GAL.	WATER	
														DRAINAGE	
	12									603	01500	12	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN	
	138									603	04600	138	FT	12" CONDUIT, TYPE C	
	1									604	00800	1	EACH	CATCH BASIN, NO. 3A	
	1									604	09000	1	EACH	CATCH BASIN ADJUSTED TO GRADE	
	1									604	36600	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
	64									605	11100	64	FT	6" SHALLOW PIPE UNDERDRAINS	
														PAVEMENT	
		277								204	10000	277	SY	SUBGRADE COMPACTION	
		1								204	45000	1	HOUR	PROOF ROLLING	
		948								254	10000	948	SY	PAVEMENT PLANNING, ASPHALT CONCRETE	
1										301	46001	1	CY	ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN	5
		46								304	20001	46	CY	AGGREGATE BASE, AS PER PLAN	5
		71								407	10000	71	GAL	TACK COAT	
		40								442	10050	40	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE B (446), (T= 1 1/2")	
														MAINTENANCE OF TRAFFIC	
														FOR MAINTENANCE OF TRAFFIC QUANTITIES, SEE SHEET 13.	
														TRAFFIC CONTROL	
														FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET 59.	
														STRUCTURES	
														FOR STRUCTURE QUANTITIES, SEE SHEET 68.	
														MISCELLANEOUS	
										619	16010	6	MONTH	FIELD OFFICE, TYPE B	
										623	10000	1	LUMP	CONSTRUCTION LAYOUT STAKES	
										624	10000	1	LUMP	MOBILIZATION	

CALCULATED JLM
CHECKED MCK

GENERAL SUMMARY

STA-241-7.81
PID NO. 25238

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ROADWAY SUBSUMMARY

CALCULATED: JKM
CHECKED: MCJ

SHEET NO.	REFERENCE	STATION FROM	STATION TO	SIDE	202 FENCE REMOVED	202 GUARDRAIL REMOVED	202 WALK REMOVED	202 CURB REMOVED	451 SPECIAL-PRESSURE RELIEF JOINT, TYPE A	606 GUARDRAIL, TYPE 5	606 ANCHOR ASSEMBLY, TYPE B-98	606 BRIDGE TERMINAL ASSEMBLY, TYPE I	607 FENCE, TYPE 47	608 4" CONCRETE WALK	608 CURB RAMP	609 CURB TYPE 6	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D			603 6" CONDUIT, TYPE F FOR UNDERDRAIN	603 12" CONDUIT, TYPE C	604 CATCH BASIN, NO. 3A	604 CATCH BASIN ADJUSTED TO GRADE	PRECAST REINFORCED CONCRETE OUTLET	605 6" SHALLOW PIPE UNDERDRAINS
					FT.	FT.	SF.	FT.	FT.	FT.	EACH	EACH	FT.	S.F.	EACH	FT.	FT.								
ROADWAY																									
50	W1	197+03		RT.			41								1										
50	W2	197+34	197+35	RT.			142							128	1										
50	W3	199+51	199+76	LT.			224							155	1										
50	W4	199+58	199+79	RT.			276							247	1										
50	GR1	197+08	197+27	LT.		24				25		1													
50	GR2	197+39	197+40	RT.		29				28		1													
50	GR3	199+32	199+71	LT.		58				60		1													
50	GR4	199+36	199+75	RT.		73				77		1													
50	F1	199+21	199+28	LT.	51								51												
50	F2	199+29	199+73	RT.	70								70												
50	C1	197+07	197+12	LT.				33								8									
50	C2	197+53	197+39	RT.				35								30									
50	C3	199+45	199+77	LT.				75								50									
50	C4	199+52	199+79	RT.				63								40									
50	PJ1	197+09	197+24						63																
50	PJ2	199+46	199+53						69																
54	R1	522+06	524+05	RT.		202																			
54	R2	523+23	524+56	LT.		131																			
54	GR5	521+92	523+07	RT.						50	1	1													
54	GR6	524+16	525+36	LT.						50	1	1													
54	B1	523+20	524+17	LT.													97								
54	B2	523+07	524+01	RT.													94								
DRAINAGE																									
50	D1	197+10	197+19																	12				1	64
50, 54	D2	199+19	199+48	LT.																	138	1			
50	D3	199+55		RT.																			1		
TOTALS CARRIED TO GENERAL SUMMARY					121	517	683	206	132	290	2	6	121	530	4	128	191			12	138	1	1	1	64

STA-241-7.81
PID NO. 25238

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(P-1) STA. 196+71.25 TO STA. 197+18.27 LT. & RT. = 47.02 FT

PLANIMETERED AREA = 5615.6 SF

ITEM 254 PAVEMENT PLANNING	= 5615.6 SF /9	= 624 SY
ITEM 407 TACK COAT	= (5615.6 SF /9) * .075	= 47 GAL
ITEM 442 (SURFACE)	= (5615.6 SF * 1.5" /12) /27	= 26 CY

(P-2) STA. 199+49.59 TO STA. 199+80.00 LT. & RT. = 30.41 FT

PLANIMETERED AREA = 2916.0 SF

ITEM 254 PAVEMENT PLANNING	= 2916.0 SF /9	= 324 SY
ITEM 407 TACK COAT	= (2916.0 SF /9) * .075	= 24 GAL
ITEM 442 (SURFACE)	= (2916.0 SF * 1.5" /12) /27	= 14 CY

(P-3) STA. 197+15.43 TO STA. 197+35.94 LT. & RT. = 20.51 FT

PLANIMETERED AREA = 1251.0 SF

ITEM 204 SUBGRADE COMPACTION	= 1251.0 SF /9	= 139 SY
ITEM 204 PROOF ROLLING	= (1251.0 SF /9) / 3000	= .05 HR
ITEM 304 6" AGGREGATE BASE	= (1251.0 SF * 6" /12) /27	= 23 CY

(P-4) STA. 199+21.26 TO STA. 199+41.37 LT. & RT. = 20.11 FT

PLANIMETERED AREA = 1242.0 SF

ITEM 204 SUBGRADE COMPACTION	= 1242.0 SF /9	= 138 SY
ITEM 204 PROOF ROLLING	= (1242.0 SF /9) / 3000	= .05 HR
ITEM 304 6" AGGREGATE BASE	= (1242.0 SF * 6" /12) /27	= 23 CY

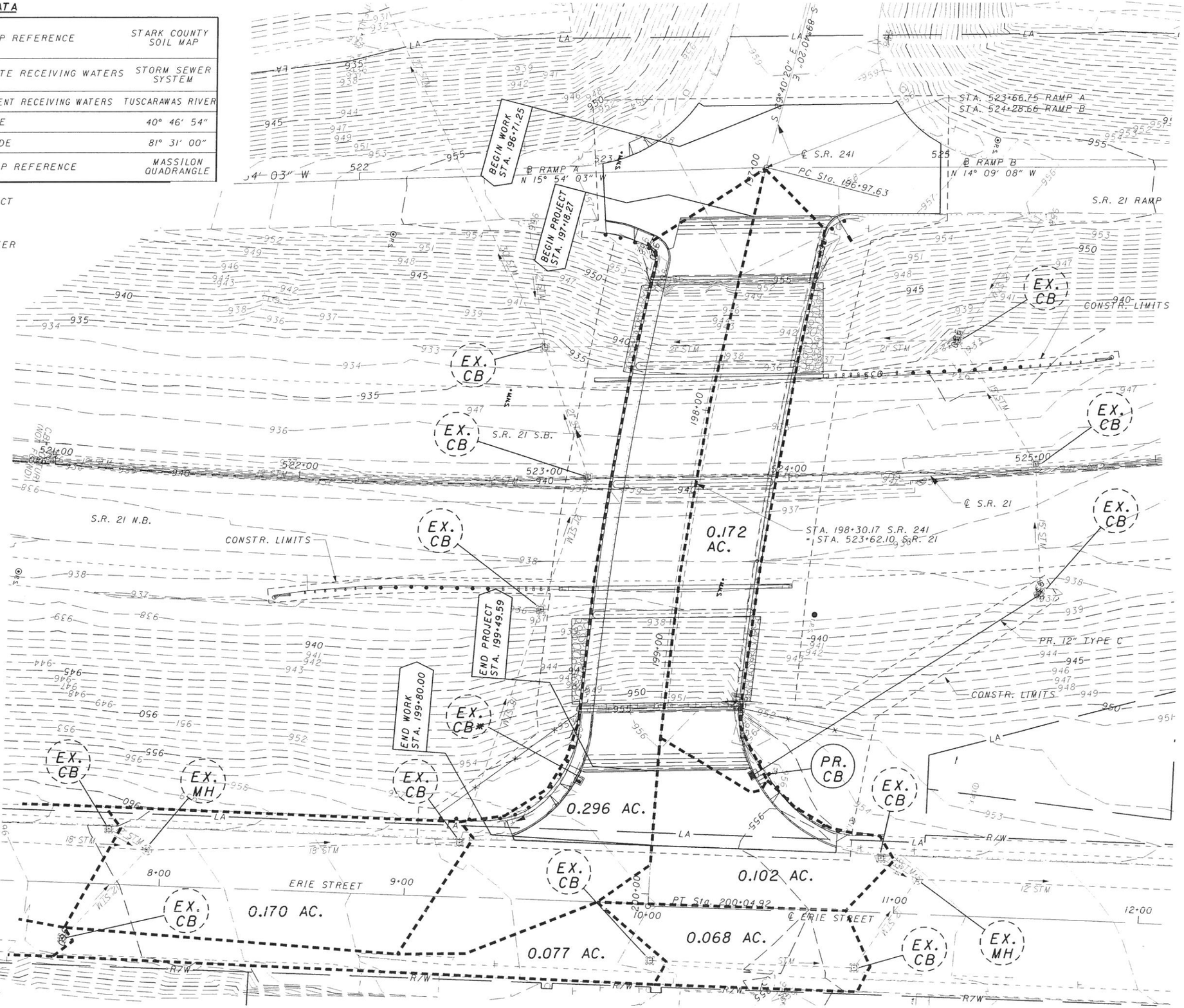
PAVEMENT SUBSUMMARY

STA-241-7.81
PID NO. 25238

PROJECT DATA

TOTAL AREA (RIGHT-OF-WAY) *	1.46 AC.	SOIL MAP REFERENCE	STARK COUNTY SOIL MAP
PROJECT EARTH DISTURBED AREA (FIGURE 1112-1(A))	0.40 AC.		
ESTIMATED CONTRACTOR EARTH DISTURBED AREA (FIGURE 1112-1(K))	0.25 AC.	IMMEDIATE RECEIVING WATERS	STORM SEWER SYSTEM
NOTICE OF INTENT EARTH DISTURBED AREA (FIGURE 1112-1(M))	4.9 AC.	SUBSEQUENT RECEIVING WATERS	TUSCARAWAS RIVER
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.74	LATITUDE	40° 46' 54"
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.75	LONGITUDE	81° 31' 00"
TOTAL IMPERVIOUS AREA (PRE-CONSTRUCTION)	0.49 AC.	USGS MAP REFERENCE	MASSILON QUADRANGLE
TOTAL IMPERVIOUS AREA (POST-CONSTRUCTION)	0.51 AC.		

TMDL NOTE:
NONE OF THE WATERWAYS IMPACTED BY THIS PROJECT IS SUBJECT TO AN EXISTING TOTAL MAXIMUM DAILY LOADING (TMDL) REGULATION PROMULGATED BY OHIO EPA AND APPROVED BY THE UNITED STATES EPA PURSUANT TO SECTION 303(d) OF THE FEDERAL WATER POLLUTION CONTROL ACT.



LEGEND

FLOW ARROW

DRAINAGE DIVIDE

* - EXISTING CATCH BASIN ADJUSTED TO GRADE

HORIZONTAL SCALE IN FEET
0 20 40

CALCULATED ECH
CHECKED

PROJECT SITE PLAN

STA-241-7.81

49
91

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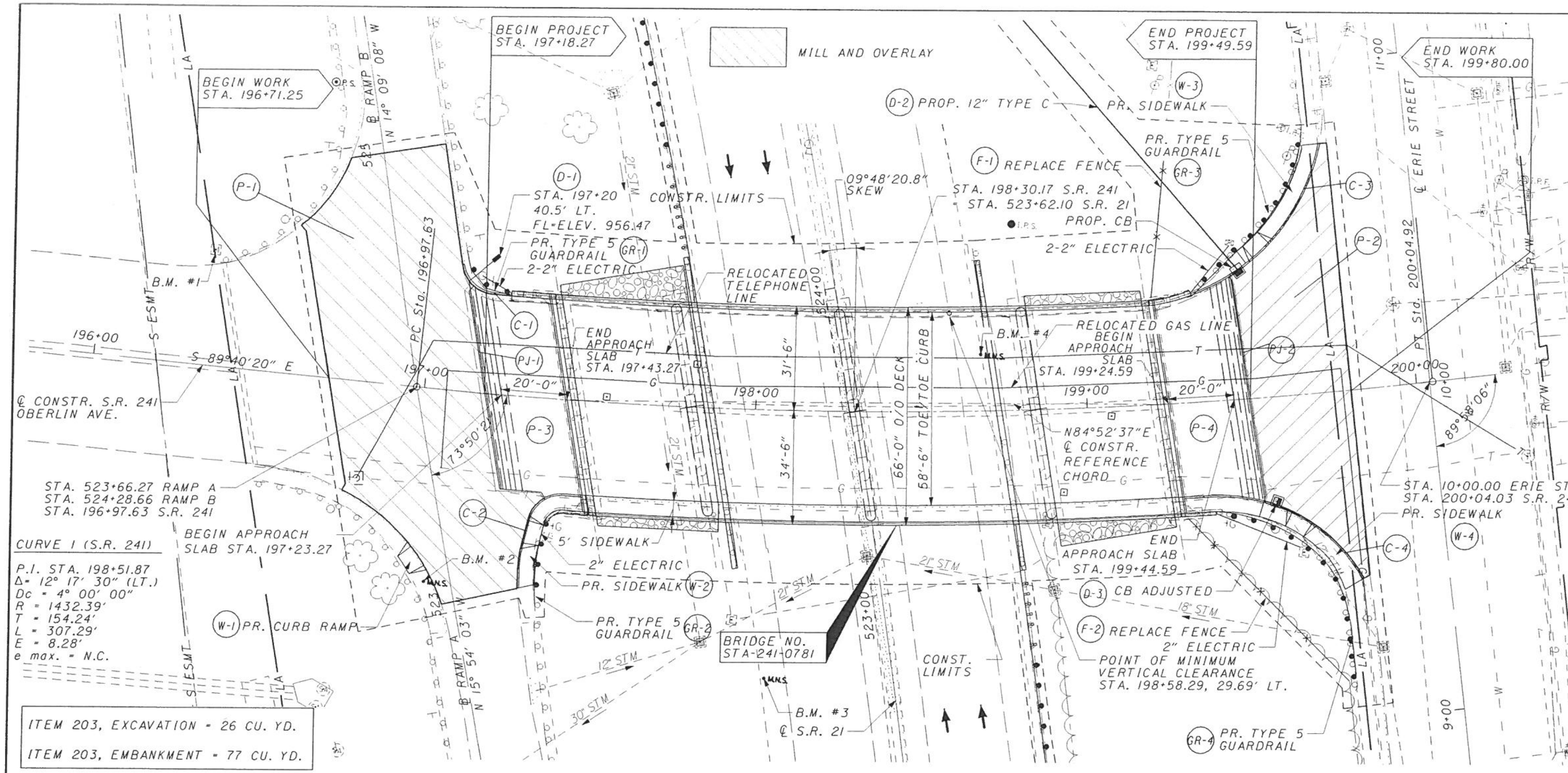
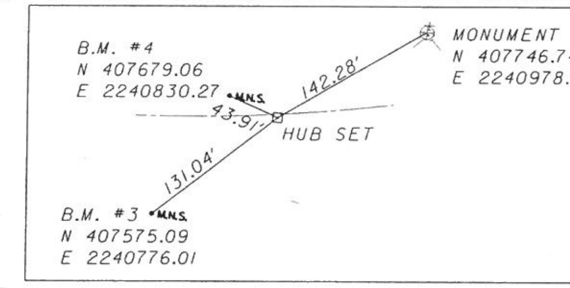

MILL AND OVERLAY
BEGIN WORK STA. 196+71.25
BEGIN PROJECT STA. 197+18.27
END PROJECT STA. 199+49.59
END WORK STA. 199+80.00
(D-2) PROP. 12" TYPE C
PR. SIDEWALK
PR. TYPE 5 GUARDRAIL
(F-1) REPLACE FENCE
09°48'20.8" SKEW
STA. 198+30.17 S.R. 241
STA. 523+62.10 S.R. 21
PROP. CB
2-2" ELECTRIC
(D-1) STA. 197+20 40.5' LT. FL-ELEV. 956.47
CONSTR. LIMITS
PR. TYPE 5 GUARDRAIL
2-2" ELECTRIC
RELOCATED TELEPHONE LINE
RELOCATED GAS LINE
BEGIN APPROACH SLAB STA. 199+24.59
END APPROACH SLAB STA. 197+43.27
B.M. #1
B.M. #4
S 89°40'20" E
℄ CONSTR. S.R. 241 OBERLIN AVE.
N84°52'37"E ℄ CONSTR. REFERENCE CHORD
66'-0" O/O DECK
58'-6" TOE/TOE CURB
31'-6"
34'-6"
20'-0"
STA. 523+66.27 RAMP A
STA. 524+28.66 RAMP B
STA. 196+97.63 S.R. 241
BEGIN APPROACH SLAB STA. 197+23.27
CURVE 1 (S.R. 241)
P.I. STA. 198+51.87
Δ = 12° 17' 30" (LT.)
Dc = 4° 00' 00"
R = 1432.39'
T = 154.24'
L = 307.29'
E = 8.28'
e max. = N.C.
5' SIDEWALK
2" ELECTRIC
PR. SIDEWALK
(W-1) PR. CURB RAMP
PR. TYPE 5 GUARDRAIL
BRIDGE NO. STA-241-0781
B.M. #2
B.M. #3
℄ S.R. 21
CONST. LIMITS
END APPROACH SLAB STA. 199+44.59
(D-3) CB ADJUSTED
(F-2) REPLACE FENCE
2" ELECTRIC
POINT OF MINIMUM VERTICAL CLEARANCE STA. 198+58.29, 29.69' LT.
(GR-4) PR. TYPE 5 GUARDRAIL
STA. 10+00.00 ERIE ST.
STA. 200+04.03 S.R. 241
PR. SIDEWALK
℄ ERIE STREET
PT Sta. 200+04.92
PC Sta. 196+97.63
ITEM 203, EXCAVATION = 26 CU. YD.
ITEM 203, EMBANKMENT = 77 CU. YD.

EXISTING STRUCTURE

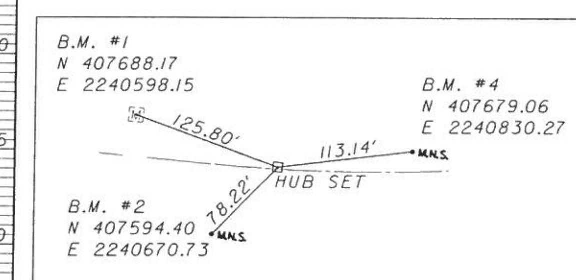
TYPE:	CONTINUOUS STEEL BEAMS WITH NON-COMPOSITE REINFORCED CONCRETE DECK ON CAPPED PILE ABUTMENTS AND CAP AND COLUMN PIERS
SPANS:	35.00'-49.50'-54.25'-38.00' C/C BEARINGS MEASURED AS CHORD ON ℄
ROADWAY:	64'-0" F/F PARAPETS, WITH 5'-0" WALK RT., 2'-0" SAFETY CURB, LT., AND 3'-0" CURBED MEDIAN.
SKEW:	9°48'20.8" R.F. FROM PERP. TO REF. CHORD
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	SPECIAL 25' LONG
ALIGNMENT:	4° CURVE LEFT
SUPERELEVATION:	NONE
CROWN:	3/16" PER FOOT
LOADING	CF-2000 (57)

PROPOSED STRUCTURE

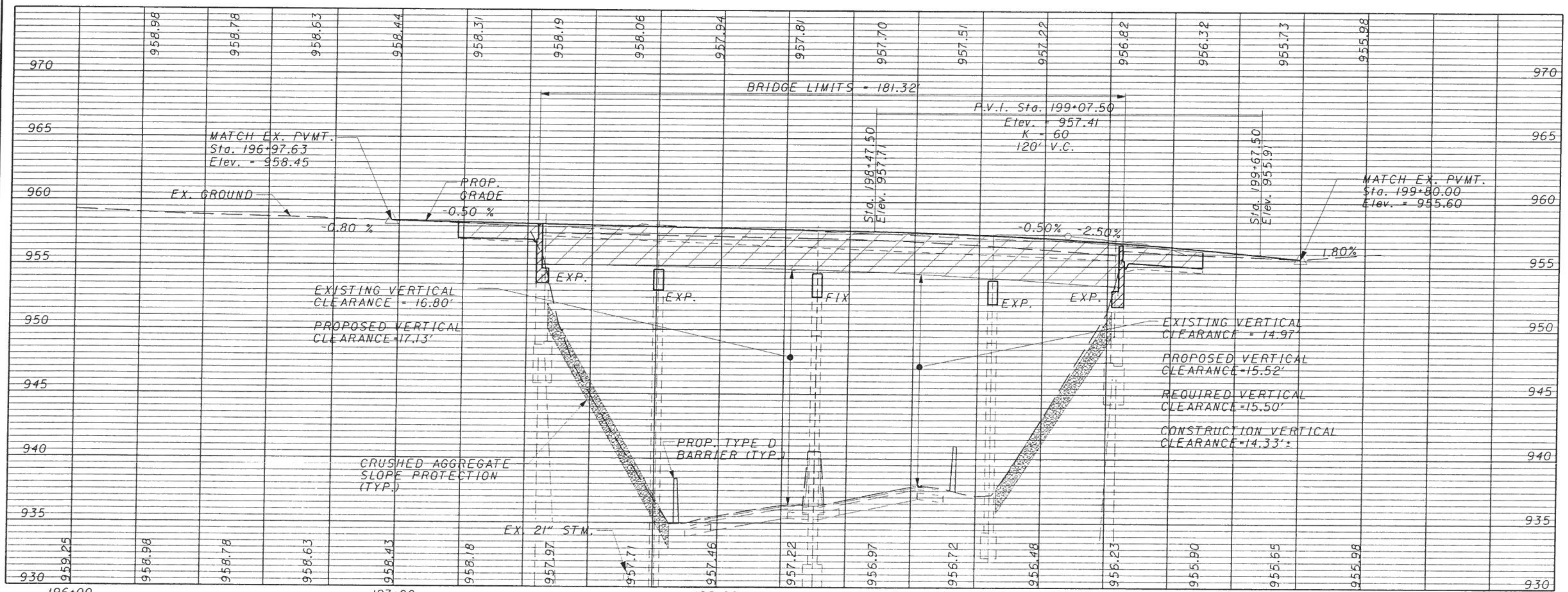
PROPOSED WORK:	NEW COMPOSITE REINFORCED CONCRETE DECK ON NEW CONTINUOUS STEEL BEAMS WITH NEW BACKWALLS ON RAISED EXISTING ABUTMENTS AND RAISED PIER CAPS.
SPANS:	35.00'-49.50'-54.25'-38.00' C/C BEARINGS MEASURED AS CHORD ON ℄
ROADWAY:	58'-6" TOE/TOE OF CURB W/ 5'-0" WALK RT.
SKEW:	9°48'20.8" R.F. FROM PERP. TO REF. CHORD
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	AS-1-81 SPECIAL 25' LONG
ALIGNMENT:	4° CURVE LEFT
SUPERELEVATION:	NONE
CROWN:	0.016
LOADING	HS25-44 (CASE II) THE ALTERNATE MILITARY LOADING AND 60 PSF FUTURE WEARING SURFACE.
LATITUDE:	40° 46' 54" N
LONGITUDE:	81° 31' 00" W



REFERENCE POINT - STA. 197+54.99, 1.71' LT.



REFERENCE POINT - STA. 199+07.38, 2.78' RT.


BRIDGE LIMITS = 181.32'
P.V.I. Sta. 199+07.50
Elev. = 957.41
K = 60
120' V.C.
MATCH EX. PVMT. Sta. 196+97.63 Elev. = 958.45
PROP. GRADE -0.50 %
EX. GROUND
-0.80 %
Sta. 198+47.50 Elev. 957.71
Sta. 199+67.50 Elev. 955.91
MATCH EX. PVMT. Sta. 199+80.00 Elev. = 955.60
-0.50% -2.50%
1.80%
EXP.
FIX
EXISTING VERTICAL CLEARANCE = 16.80'
PROPOSED VERTICAL CLEARANCE=17.13'
EXISTING VERTICAL CLEARANCE = 14.97'
PROPOSED VERTICAL CLEARANCE=15.52'
REQUIRED VERTICAL CLEARANCE=15.50'
CONSTRUCTION VERTICAL CLEARANCE=14.33'±
PROP. TYPE D BARRIER (TYP.)
CRUSHED AGGREGATE SLOPE PROTECTION (TYP.)
EX. 21" STM.
196+00
197+00
198+00
199+00
200+00

BENCHMARKS

B.M. # 1
S.R. 241 STA. 196+33.25, 34.87' RT.
MONUMENT BOX, ELEV. 959.92

B.M. # 2
S.R. 241 STA. 197+06.03, 58.51' RT
RAMP A STA. 523+07.68, 7.95' LT
MAG NAIL SET, ELEV. 957.85.

B.M. # 3
S.R. 241 STA. 198+05.72, 81.50' RT.
S.R 21 STA. 522+85.50, 38.54' LT
MAG NAIL SET, ELEV. 935.17

B.M. # 4
S.R. 241 STA. 198+67.85, 17.11' LT
S.R. 21 STA. 523+72.83, 39.73' RT
MAG NAIL SET, ELEV. 937.65

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED AJS CHECKED NCK

PLAN AND PROFILE - S.R. 241
STA. 196+00.00 TO STA. 200+00

STA-241-7.81

CALCULATED AJS

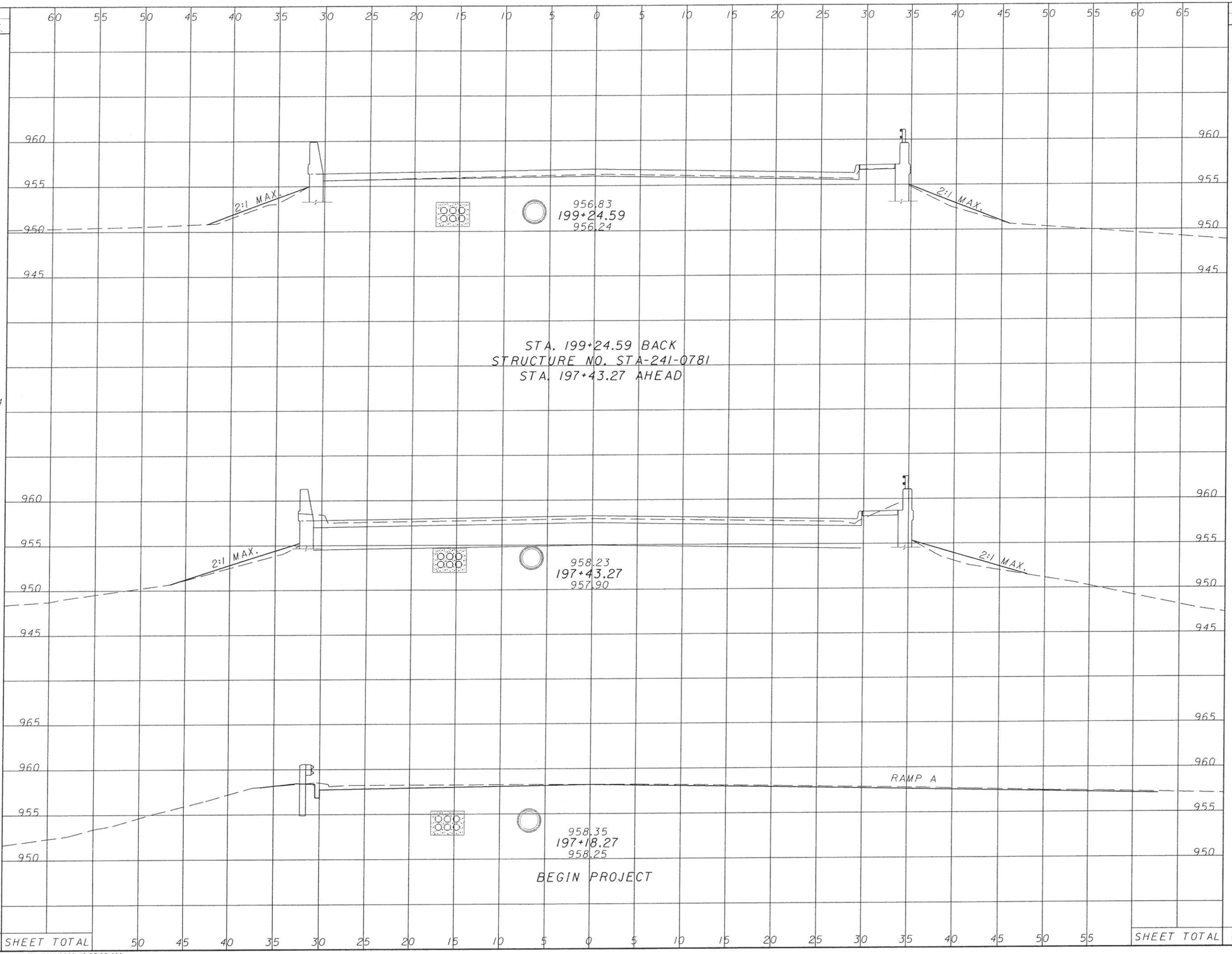
CHECKED NCK

CROSS SECTIONS

STA. 196+50 TO STA. 197+00

STA-241-7.81

SEEDING END WIDTH	SEEDING SQ. YDS.
24	524
28	47
6	6
58	571



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
9	8	20	64
6	11	3	6
0	1	0	0
SHEET TOTAL 15	20	23	70

CALCULATED AJS
CHECKED NCK

CROSS SECTIONS
STA. 197+18.27 TO STA. 199+24.59

STA-241-7.81

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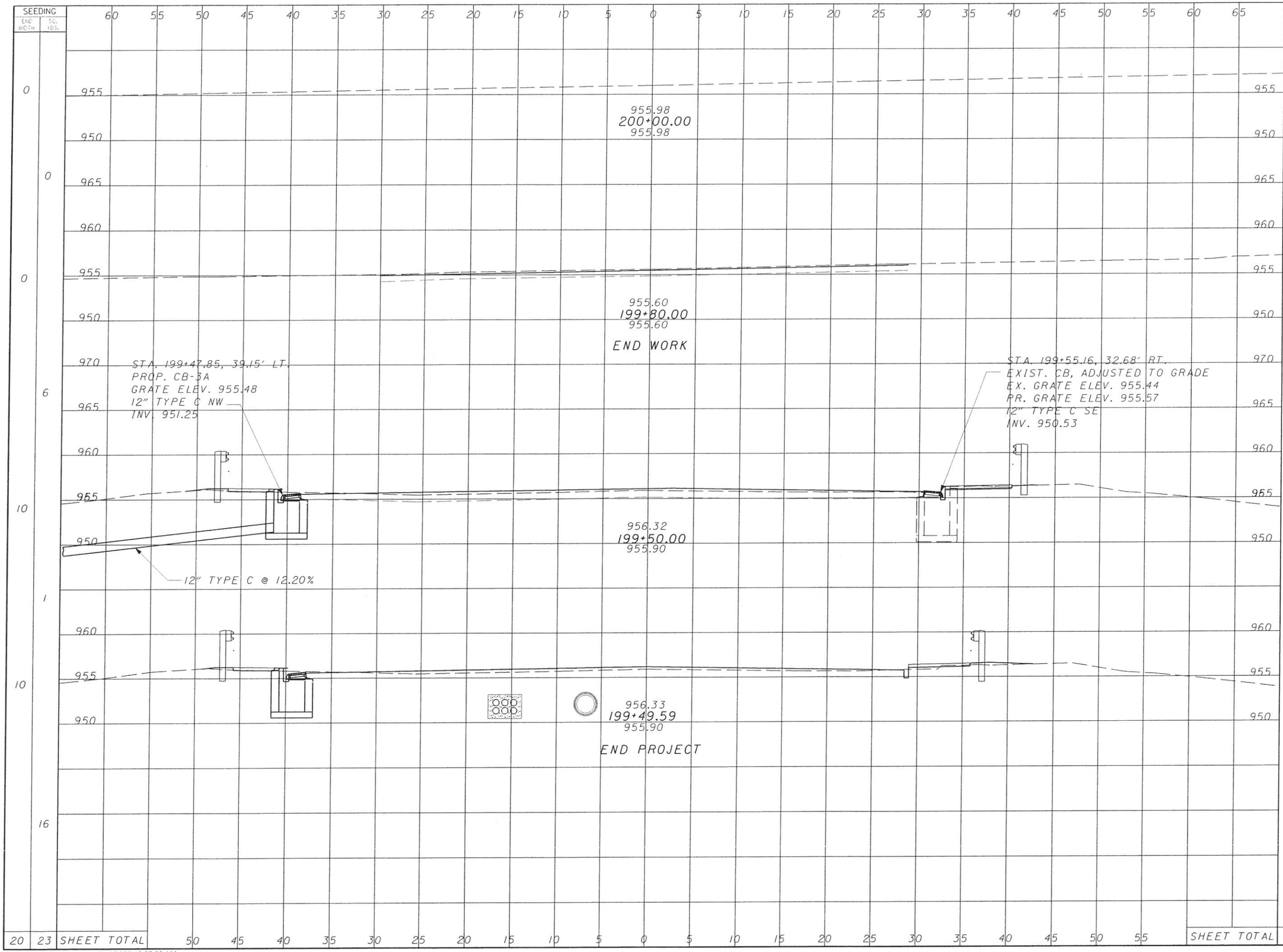
SEEDING	
END WIDTH	SQ. YDS.
0	
	0
0	
	6
10	
	1
10	
	16
20	23



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		0	0
0	0		
		2	2
2	3		
		0	0
1	2		
		1	5
SHEET TOTAL			
3	5	3	7

CALCULATED AJS
CHECKED NCK

CROSS SECTIONS

STA. 199+49.59 TO STA. 200+00.00

STA-241-7.81

53
91

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MILL & OVERLAY

BEGIN PROJECT STA. 197+18.27

BEGIN WORK STA. 196+71.25

℄ S.R. 241

STA. 523+66.75 RAMP A
STA. 524+28.66 RAMP B

℄ RAMP A
N 15° 54' 03" W

℄ RAMP B
N 14° 09' 08" W

PC Sta. 196+97.63

CONSTR. LIMITS

S.R. 21 RAMP

STA. 523+20.34

STA. 524+97.64

(B-1) PROP. TYPE D BARRIER (SEE NOTE)

(R-2) 198'00 ±

PROP. TYPE I BRIDGE TERMINAL ASSEMBLY

PROP. GUARDRAIL, TYPE 5 (GR-6)

PROP. B-98 TERMINAL ASSEMBLY

S.R. 21 S.B.

S.R. 21 N.B.

521+00 522+00 523+00 524+00 525+00

℄ S.R. 21

POINT OF MIN. VERTICAL CLEARANCE STA. 198+58.29, 29.69' LT.

STA. 198+30.17 S.R. 241
= STA. 523+62.10 S.R. 21

PROP. GUARDRAIL, TYPE 5 (GR-5)

PROP. TYPE D BARRIER (SEE NOTE) (B-2)

PR. 12" TYPE C (D-2)

REPLACE FENCE

CB ADJUSTED

PROP. CB

END PROJECT STA. 199+49.59

END WORK STA. 199+80.00

STA. 522+29.03

STA. 523+07.00

STA. 524+00.65

(99'00 ±)

CURVE 2 (S.R. 21)

P.I. STA. 518+55.57
Δ = 36° 08' 15" (LT.)
Dc = 2° 00' 00"
R = 2864.79'
T = 934.63'
L = 1806.88'
E = 148.61'
e max. = 0.073.

ERIE STREET

8+00 9+00 10+00 11+00 12+00

PT Sta. 200+04.92

200'00

℄ ERIE STREET

NOTE:

IN ORDER TO INSURE THAT THE PIERS ARE NOT LEFT UNPROTECTED, CONSTRUCTION OF THE TYPE D BARRIERS, IN THEIR ENTIRETY, SHALL BE PERFORMED IN PHASE 2B.

N

0 10 20 30 40 HORIZONTAL SCALE IN FEET

CALCULATED A/S
CHECKED NCK

PLAN - S.R. 21
STA. 521+00 TO STA. 525+50

STA-241-7.81

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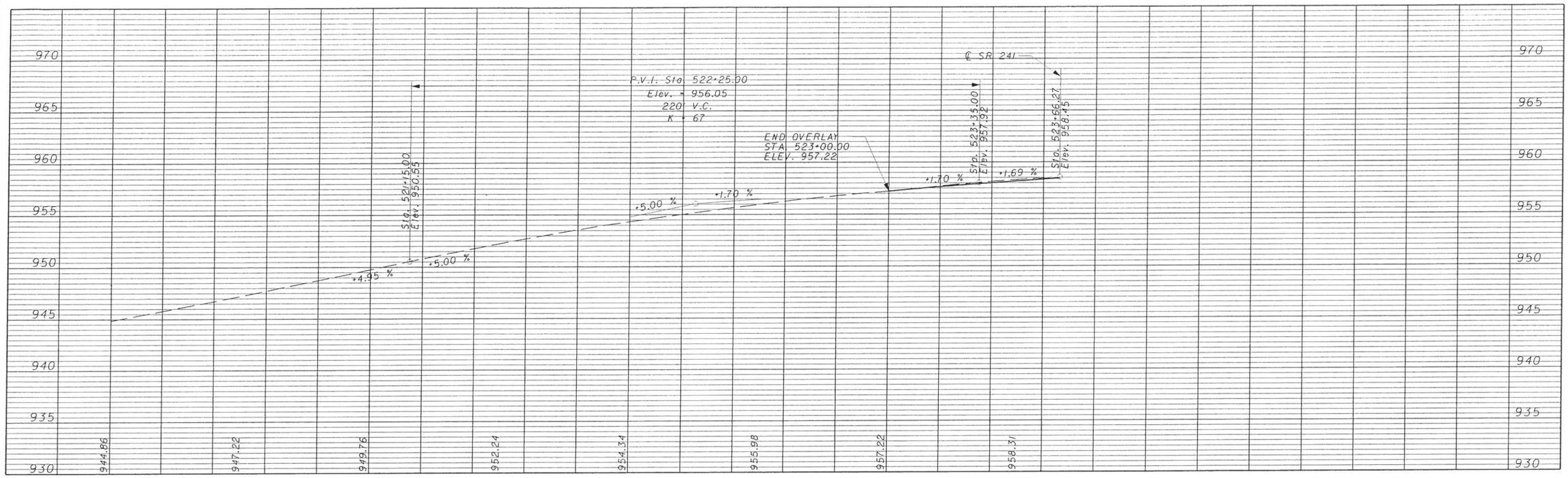
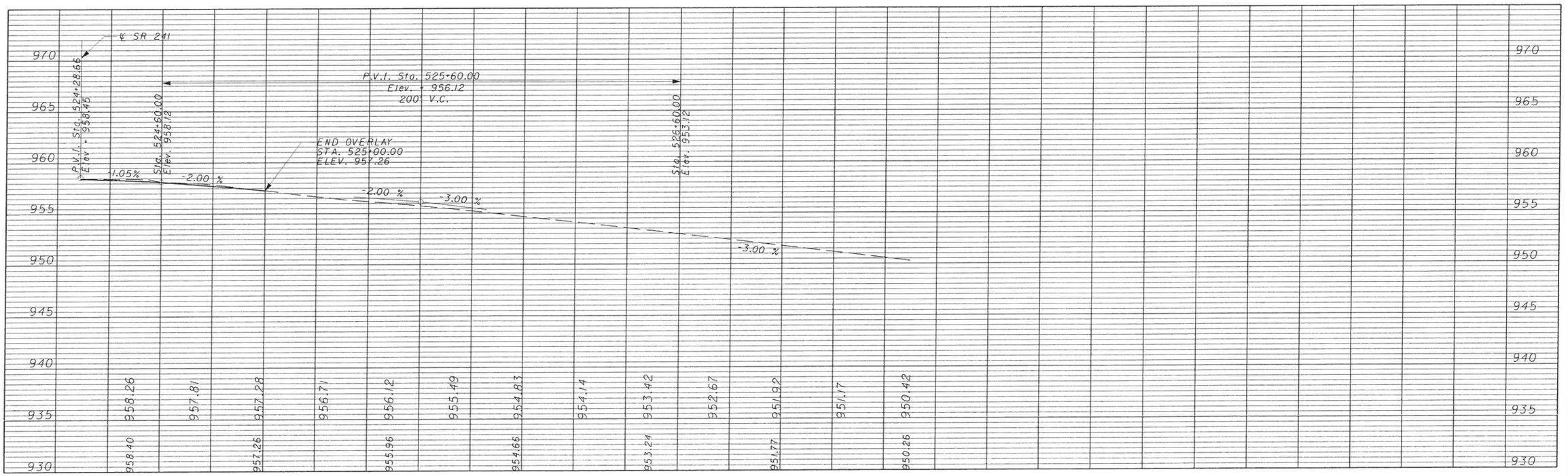


RAMP A STA. 520+00 TO 523+66.27

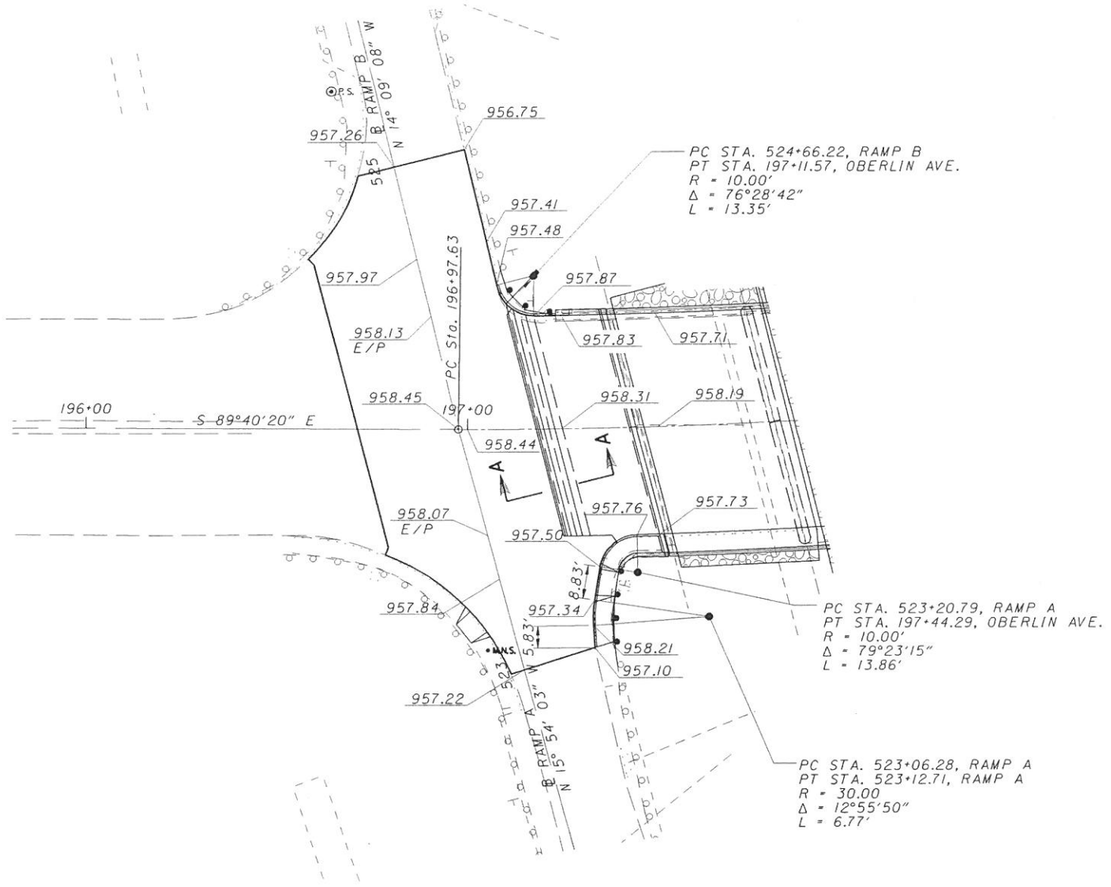


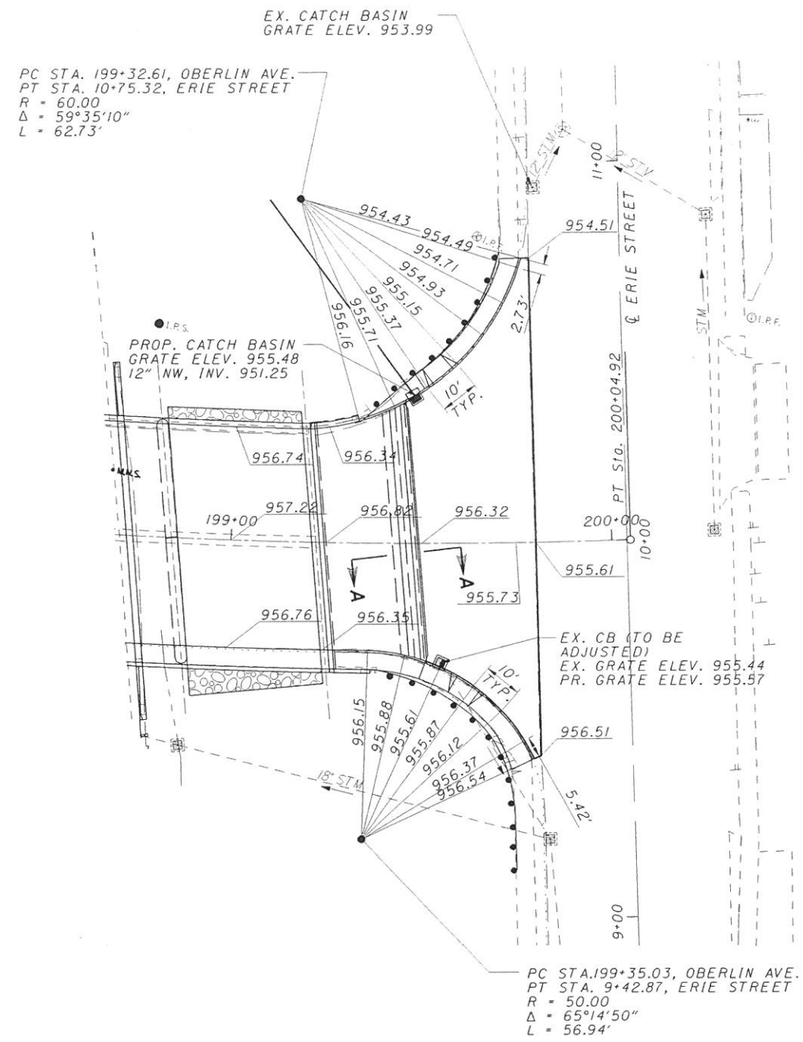
RAMP B STA. 524+28.66 TO 527+50.00

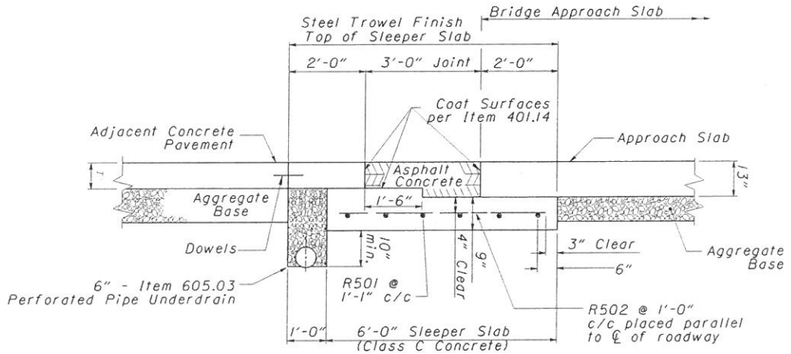
CALCULATED AJS
CHECKED NCK

PROFILES - RAMP A AND RAMP B

STA-241-7.81







SECTION A-A
PRESSURE RELIEF JOINT
AT APPROACH SLAB

NOTES:

1. ELEVATIONS SHOWN ARE PAVEMENT ELEVATIONS (TYP.)

2. WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE HEIGHT OF THE CURBING ON THE APPROACH SLAB FROM THE STANDARD HEIGHT OF 6" TO 8" AS USED ON THE BRIDGE.

HORIZONTAL SCALE IN FEET
0 10 20

CALCULATED AJS
CHECKED NCK

INTERSECTION DETAILS
RAMPS A & B AND ERIE STREET

STA-241-7.81

56
91

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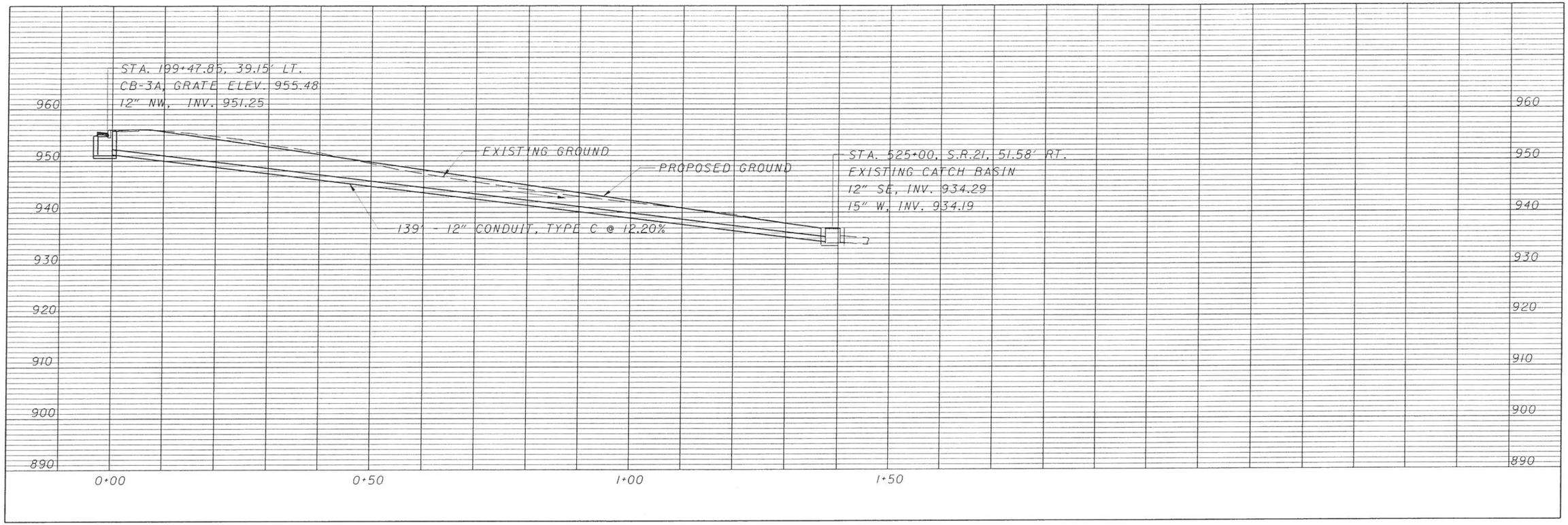

CALCULATED AJS
CHECKED NCK

DRAINAGE PROFILE

STA-241-7.81

57
91

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CONVERSION OF STANDARD CONSTRUCTION DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.02 OF THE 2008 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

ITEM 642 - PAVEMENT MARKINGS, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REPLACEMENT OF THE PAVEMENT MARKINGS DISTURBED DUE TO MAINTENANCE OF TRAFFIC FOR THE PROJECT. THE FOLLOWING QUANTITES HAVE BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ROAD:

ITEM 642 - EDGE LINE (WHITE)	0.76 MI
ITEM 642 - EDGE LINE (YELLOW)	0.76 MI
ITEM 642 - LANE LINE	0.76 MI
ITEM 642 - CHANNELIZING LINE	800 FT

ITEM 646 - EPOXY PAVEMENT MARKINGS, AS PER PLAN

THE EPOXY PAVEMENT MARKING MATERIAL FURNISHED UNDER THESE ITEMS SHALL BE EPOPLEX LS-60 AS FURNISHED BY EPOPLEX, MAPLE SHADE, NEW JERSEY.

ITEM 646 - EPOXY PAVEMENT MARKINGS - (POLYCARB) - ALTERNATE BID

THE EPOXY PAVEMENT MARKING MATERIAL SHALL BE MARK 55.4 AS FURNISHED BY POLYCARB, CLEVELAND, OHIO.

CALCULATED AKF
CHECKED MAH

TRAFFIC CONTROL
GENERAL NOTE SHEET

STA-241-7.81

ITEM	SHEET NUMBERS														ITEM	ITEM EXT.	TOTAL QUANT.	UNIT	DESCRIPTION	SEE SHEET NO.
	58		60		61															
630					4										630	08600	4	EACH	SIGN POST REFLECTOR	
630					125										630	03100	125	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
630					89										630	80100	89	SQ FT	SIGN, FLAT SHEET	
630					10										630	84900	10	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
630					6										630	86002	6	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
642	1.52														642	00090	1.52	MILE	EDGE LINE	
642	0.76														642	00190	0.76	MILE	LANE LINE	
642	800														642	00390	800	FT	CHANNELIZING LINE	
644			0.03												644	00100	0.03	MILE	EDGE LINE	
644			0.53												644	00200	0.53	MILE	LANE LINE	
644			0.15												644	00300	0.15	MILE	CENTER LINE	
644			95												644	00500	95	FT	STOP LINE	
644			235												644	00600	235	FT	CROSSWALK LINE	
644			9												644	00900	9	SQ FT	ISLAND MARKING	
644			2												644	01000	2	EACH	RAILROAD SYMBOL MARKING	
646			0.18												646	10001	0.18	MILE	EDGE LINE, AS PER PLAN	58
646			0.12												646	10101	0.12	MILE	LANE LINE, AS PER PLAN	58
646			216												646	10301	216	FT	CHANNELIZING LINE, AS PER PLAN	58
646			12												646	10801	12	SQ FT	ISLAND MARKING, AS PER PLAN	58
646			6												646	20301	6	EACH	LANE ARROW, AS PER PLAN	58

CALCULATED AKF CHECKED

TRAFFIC CONTROL GENERAL SUMMARY

STA-241-7.81

PAVEMENT MARKINGS SUBSUMMARY

SHEET NO.	REFERENCE NO.	LOCATION	LOCATION FROM	LOCATION TO	SIDE	644 EDGE LINE, WHITE (FT)	644 EDGE LINE, YELLOW (FT)	644 LANE LINE (FT)	644 CENTER LINE, DOUBLE SOLID YELLOW (FT)	644 STOP LINE (FT)	644 CROSSWALK LINE (FT)	644 ISLAND MARKING (SQ FT)	644 RAILROAD SYMBOL MARKING (EACH)	646 EDGE LINE, WHITE, AS PER PLAN (FT)	646 EDGE LINE, YELLOW, AS PER PLAN (FT)	646 LANE LINE, AS PER PLAN (FT)	646 CHANNELIZING LINE, AS PER PLAN (FT)	646 ISLAND MARKING, AS PER PLAN (SQ FT)	646 LANE ARROW, AS PER PLAN (EACH)
62	LL-1	S.R. 241	181+00	188+88	LT.			788											
62	LL-2	S.R. 241	188+88	189+00	LT.											12			
62	LL-3	S.R. 241	181+00	188+80	RT.			780											
62	LL-4	S.R. 241	188+80	189+00	RT.											20			
62	LL-5	S.R. 241	189+00	195+00	LT.			600											
62	LL-6	S.R. 241	189+00	195+00	RT.			600											
62	CEL-1	S.R. 241	181+00	188+82	CEN.				782										
62	RR-1	S.R. 241	182+35		LT.								1						
62	RR-2	S.R. 241	182+35		LT.								1						
63	ELW-1	RAMP B	524+77	525+23	LT.	59													
63	ELW-2	RAMP A	522+91	523+11	LT.	20													
63	ELW-3	S.R. 241	524+77	199+52	LT.									265					
63	ELW-4	S.R. 241	523+21	199+52	RT.									228					
63	ELY-1	S.R. 241	197+35	199+50	LT.										215				
63	ELY-2	S.R. 241	197+35	199+50	RT.										215				
63	ELY-3	RAMP B	524+77	525+23	RT.		46												
63	ELY-4	RAMP A	522+91	523+11	RT.		21												
63	LL-7	S.R. 241	195+00	199+48	LT.											448			
63	LL-8	S.R. 241	195+00	196+15	RT.											115			
63	CL-1	S.R. 241	197+35	199+51	RT.												216		
63	SL-1	RAMP B	524+75		LT./RT.					61									
63	SL-2	S.R. 241	199+51		RT.					34									
63	CWL-1	RAMP A	523+21		LT./RT.						67								
63	CWL-2	S.R. 241	199+65		LT./RT.						168								
63	IMY-1	S.R. 241	196+45		CEN.													4	
63	IMY-2	S.R. 241	197+32		CEN.													8	
63	IMY-3	S.R. 241	199+54		CEN.							9							
63	LA-1	S.R. 241	198+09		RT.														1
63	LA-2	S.R. 241	198+09		RT.														1
63	LA-3	S.R. 241	198+75		RT.														1
63	LA-4	S.R. 241	198+75		RT.														1
63	LA-5	S.R. 241	199+41		RT.														1
63	LA-6	S.R. 241	199+41		RT.														1
TOTALS CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY						79	67	2768	782	95	235	9	2	493	430	595	216	12	6
MILE						0.03		0.53	0.15					0.18		0.12			

CALCULATED AKF
CHECKED

STA-241-7.81

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SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 SIGN POST REFLECTOR, RED	630 GROUND MOUNTED SUPPORT, NO. 3 POST	630 SIGN, FLAT SHEET	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
							EACH	FT	SQ FT	EACH	EACH
63	S-1	RAMP B	525+25	RT.	R1-1-36	36" x 36"	2	15.0 / 15.0	9.00		
					R6-1L-54	54" x 18"			6.75		
					R6-1R-54	54" x 18"			6.75		
					R5-1-36	36" x 36"			9.00		
63	S-2	RAMP B	525+10	LT.	R1-1-36	36" x 36"	2	15.0 / 15.0	9.00		
					R6-1L-54	54" x 18"			6.75		
					R6-1R-54	54" x 18"			6.75		
					R5-1-36	36" x 36"			9.00		
63	S-3	S.R. 241	199+50	RT.	R3-H8bd-30	30" x 30"		13.00	6.25		
63	S-4	S.R. 241	199+40	LT.	W8-13-30	30" x 30"		13.00	6.25		
63	S-5	S.R. 241	197+21	LT.	R3-1-24	24" x 24"		12.50	4.00		
63	S-6	S.R. 241	196+40	RT.	R4-7b-24	24" x 30"		13.0 / 13.0	5.00		
					R3-2-24	24" x 24"			4.00		
63	R-1	RAMP B		RT.	R1-1					1	2
					R6-1L					1	
					R6-1R					1	
					R5-1					1	
63	R-2	RAMP B		LT.	R1-1					1	2
					R6-1L					1	
					R6-1R					1	
					R5-1					1	
63	R-3	S.R. 241		LT.	W8-13					1	1
63	R-4	S.R. 241		LT.	R3-1					1	1
TOTALS CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY							4	125	89	10	6

CALCULATED AKF
CHECKED

SIGNING SUBSUMMARY

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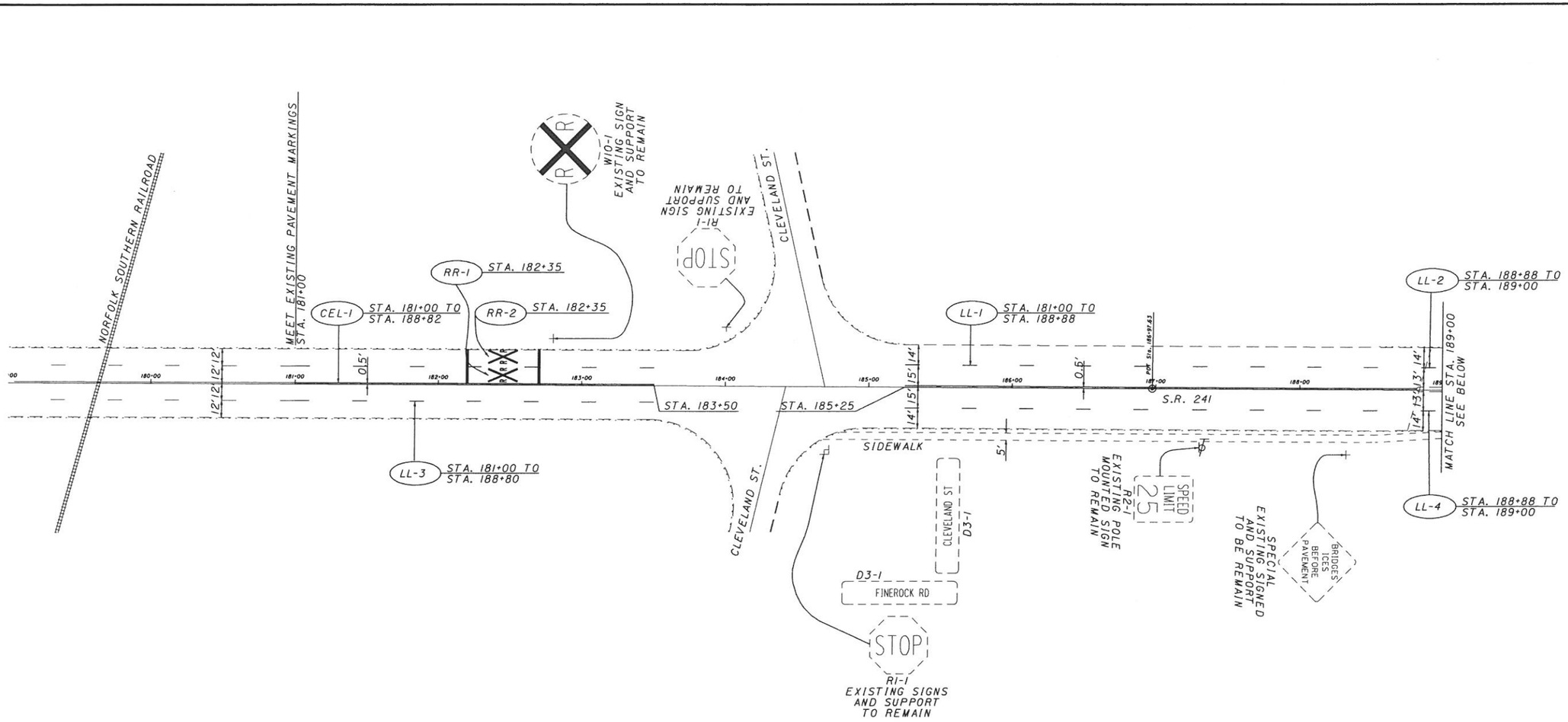

LEGEND	
CEL-#	CENTER LINE, DOUBLE SOLID, YELLOW
LL-#	LANE LINE
LA-#	LANE ARROW
ELW-#	EDGE LINE, WHITE
CL-#	CHANNELIZING LINE
RR-#	RAILROAD SYMBOL MARKING
SL-#	STOP LINE
CWL-#	CROSSWALK LINE
IMY-#	ISLAND MARKINGS, YELLOW
⊥/⊥	SIGN SUPPORT
■—	OVERHEAD SIGN SUPPORT
S-#	PROPOSED SIGN AND NEW SUPPORT
R-#	EXISTING SIGN AND SUPPORT TO BE REMOVED

HORIZONTAL SCALE IN FEET
0 20 40 80

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TRAFFIC CONTROL PLAN
S.R. 241 - BEGIN TO STA. 195+00

STA-241-7.81

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TRAFFIC CONTROL PLAN
S.R. 241 - STA. 195+00 TO STA. 200+00

HORIZONTAL SCALE IN FEET
0 10 20 40

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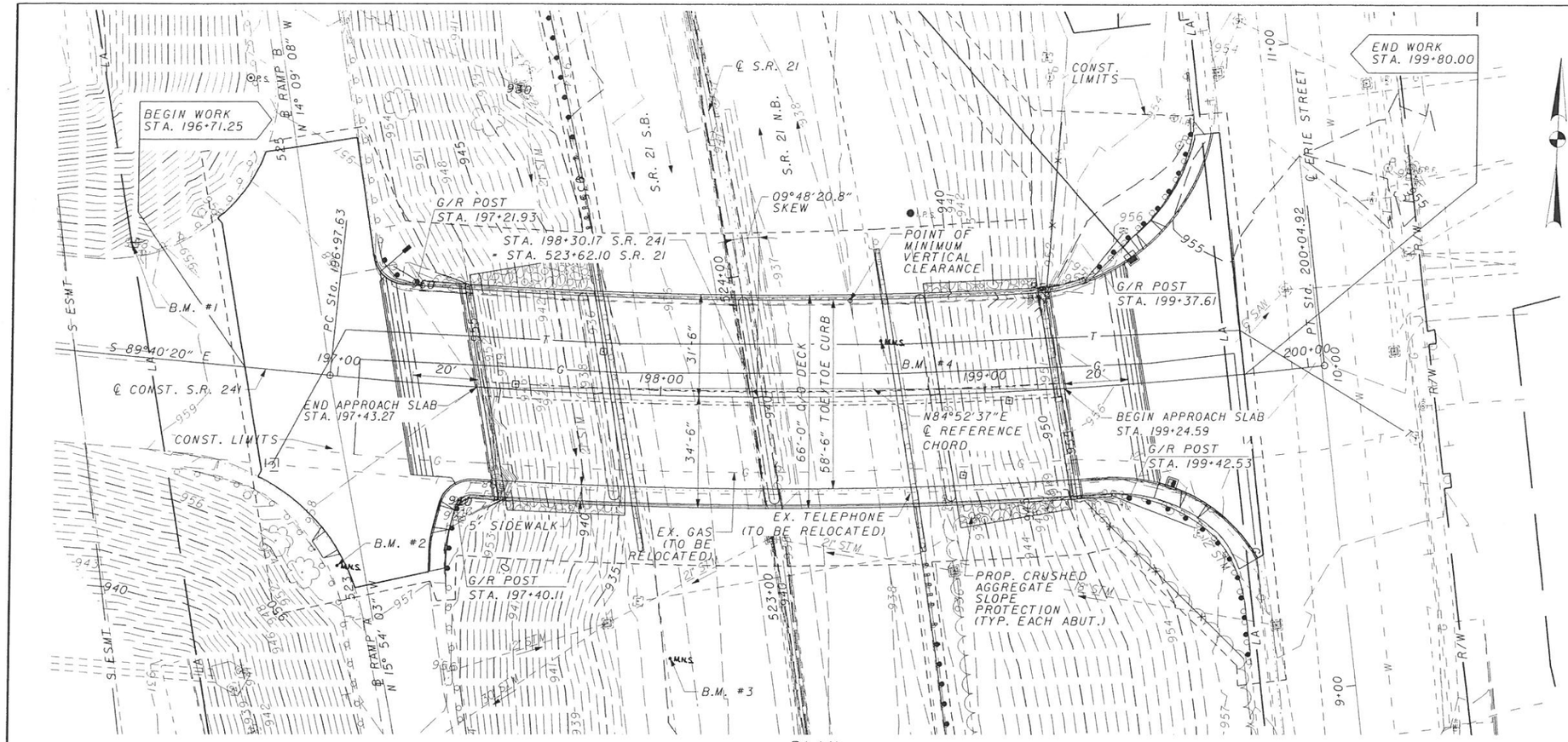
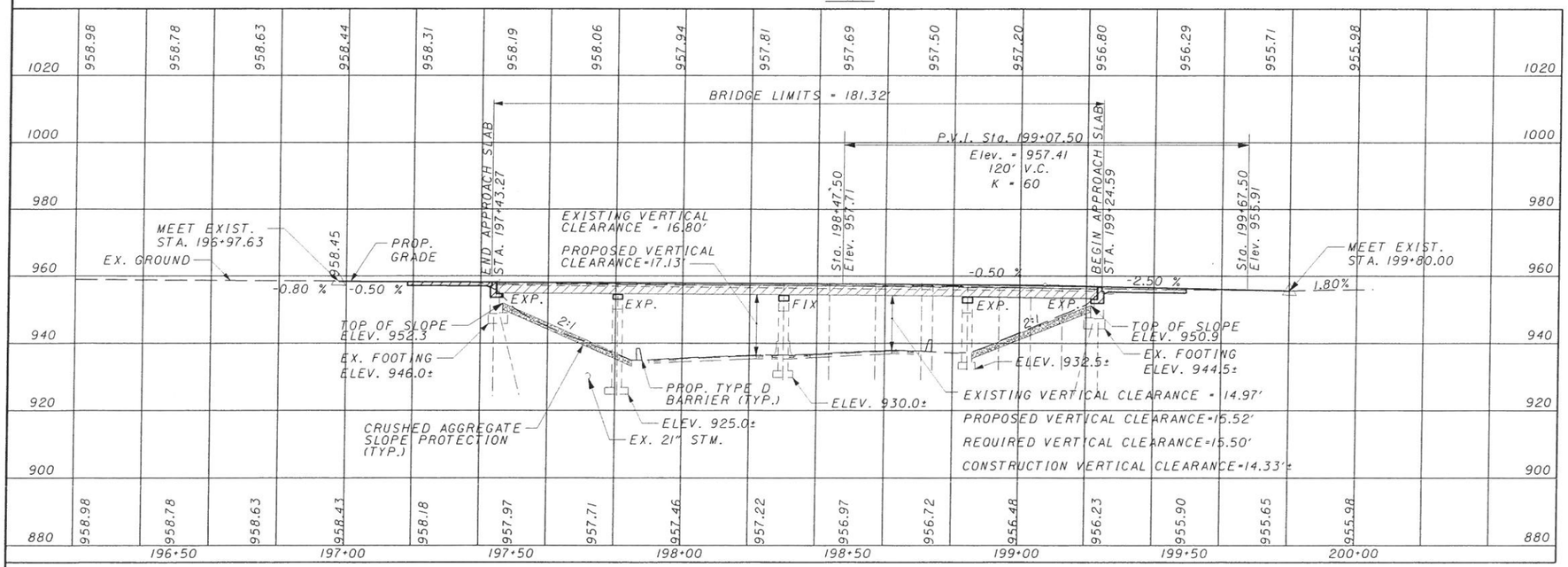
LEGEND

CEL-#	CENTER LINE, DOUBLE SOLID, YELLOW
LL-#	LANE LINE
LA-#	LANE ARROW
ELW-#	EDGE LINE, WHITE
ELY-#	EDGE LINE, YELLOW
CL-#	CHANNELIZING LINE
RR-#	RAILROAD SYMBOL MARKING
SL-#	STOP LINE
CWL-#	CROSSWALK LINE

EXISTING SIGN TO REMAIN
EXISTING SIGN TO BE REMOVED
PROPOSED SIGN
SIGN SUPPORT
OVERHEAD SIGN SUPPORT
S-# PROPOSED SIGN AND NEW SUPPORT
R-# EXISTING SIGN AND SUPPORT TO BE REMOVED
IMY-# ISLAND MARKINGS, YELLOW



PLAN



PROFILE ALONG ℄ S.R. 241 (OBERLIN AVE.)

BENCHMARKS
B.M. # 1 S.R. 241 STA. 196+33.25, 34.87' RT. MONUMENT BOX, ELEV. 959.92
B.M. # 2 S.R. 241 STA. 197+06.03, 58.51' RT RAMP A STA. 523+07.68, 7.95' LT MONUMENT NAIL SET, ELEV. 957.85.
B.M. # 3 S.R. 241 STA. 198+05.72, 81.50' RT. S.R 21 STA. 522+85.50, 38.54' LT MONUMENT NAIL SET, ELEV. 935.17
B.M. # 4 S.R. 241 STA. 198+67.85, 17.11' LT S.R. 21 STA. 523+72.83, 39.73' RT MONUMENT NAIL SET, ELEV. 937.65

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

S.R.241 CURVE DATA:

P.I. Sta. 198+51.87
Δ = 12°17'30" Lt.
D = 4°00'00"
R = 1432.39
L = 307.29'
T = 154.24

CURRENT YEAR ADT (2009) = 8,400
DESIGN YEAR ADT (2028) = 10,800
DESIGN HOURLY VOLUME (2028) = 840
DIRECTIONAL DISTRIBUTION = 0.60
TRUCKS (24 HOUR B&C) = 0.09
ADTT (2028) = 970

LEGEND:

▨ APPROACH SLABS AND PORTIONS OF EXISTING STRUCTURE TO BE REMOVED.

EXISTING STRUCTURE	
TYPE:	CONTINUOUS STEEL BEAMS WITH NON-COMPOSITE REINFORCED CONCRETE DECK ON CAPPED PILE ABUTMENTS AND CAP AND COLUMN PIERS
SPANS:	35.00'-49.50'-54.25'-38.00' C/C BEARINGS MEASURED AS CHORD ON ℄
ROADWAY:	64'-0" f/f PARAPETS, WITH 5'-0" WALK RT., 2'-0" SAFETY CURB, LT., AND 3'-0" CURBED MEDIAN.
SKEW:	9°48'20.8" R.F. FROM PERP. TO REF. CHORD
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	SPECIAL 25' LONG
ALIGNMENT:	4° CURVE LEFT
SUPERELEVATION:	NONE
CROWN:	0.016
LOADING	CF-2000 (57)

PROPOSED STRUCTURE	
PROPOSED WORK:	NEW COMPOSITE REINFORCED CONCRETE DECK ON NEW CONTINUOUS STEEL BEAMS WITH NEW BACKWALLS ON RAISED EXISTING ABUTMENTS AND RAISED PIER CAPS.
SPANS:	35.00'-49.50'-54.25'-38.00' C/C BEARINGS MEASURED AS CHORD ON ℄
ROADWAY:	58'-6" TOE/TOE OF CURB W/ 5'-0" WALK RT.
SKEW:	9°48'20.8" R.F. FROM PERP. TO REF. CHORD
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	AS-1-81 SPECIAL 20' LONG
ALIGNMENT:	4° CURVE LEFT
SUPERELEVATION:	NONE
CROWN:	0.016
LOADING	HS25-44 (CASE II) THE ALTERNATE MILITARY LOADING AND 60 PSF FUTURE WEARING SURFACE.
LATITUDE:	40° 46' 54" N
LONGITUDE:	81° 31' 00" W

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

DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

STARK COUNTY
STA. 197+43.27
STA. 199+24.59

SITE PLAN
BRIDGE No. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID 25238

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64
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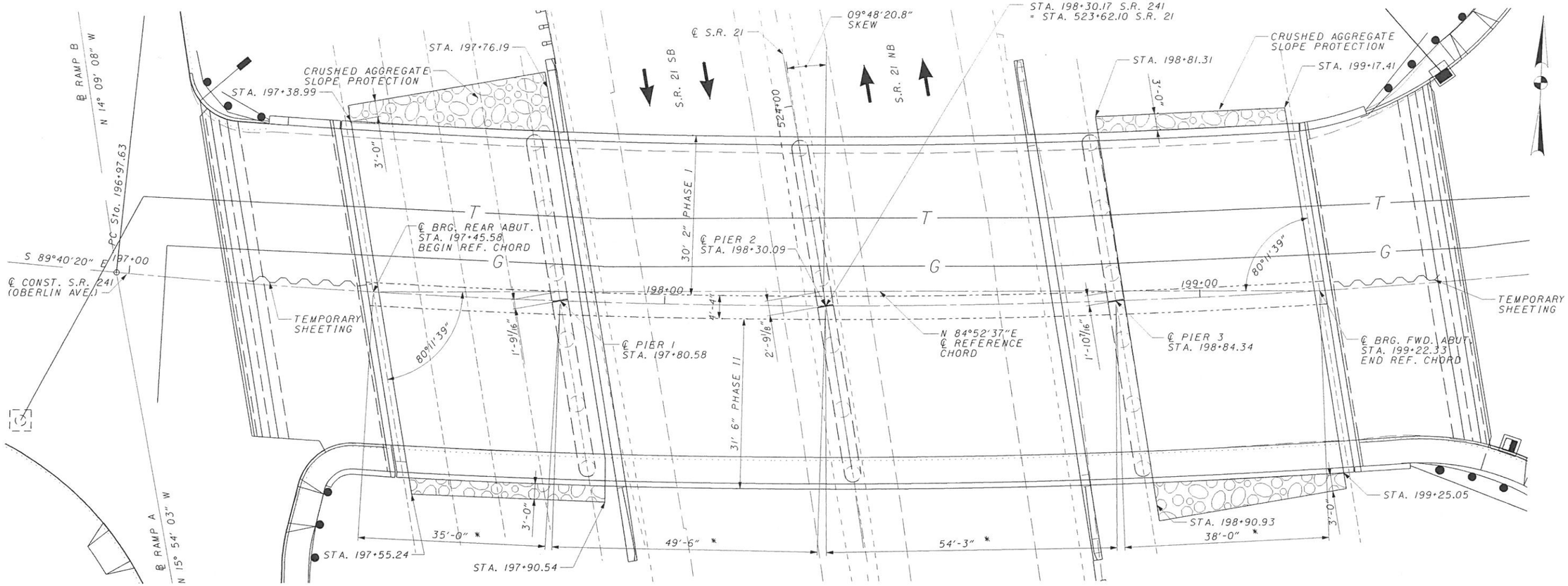
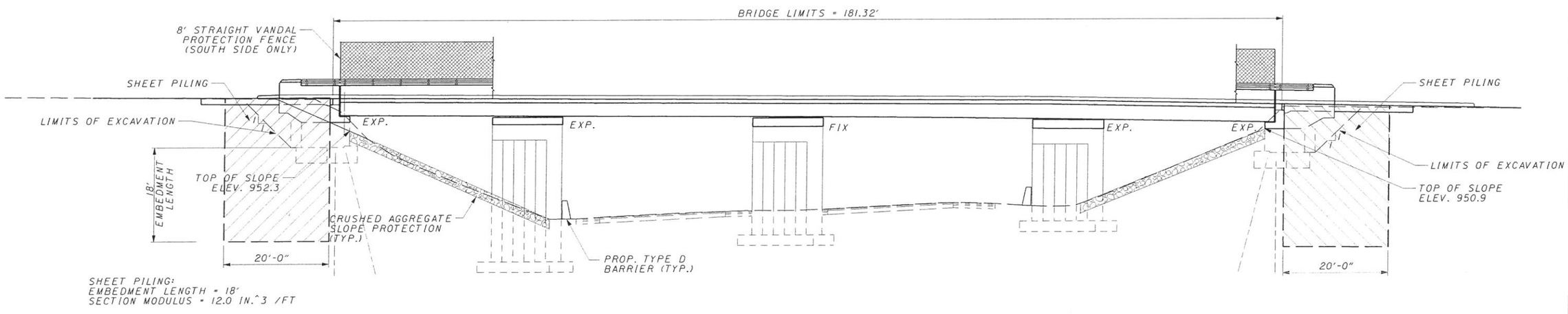


PLAN

* MEASURED ALONG LOCAL CHORDS

FOR UTILITY LOCATIONS SEE SHEETS [26/28] AND [27/28].



ELEVATION

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

DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

STARK COUNTY
STA. 197+43.27
STA. 199+24.59

GENERAL PLAN AND ELEVATION
BRIDGE No. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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REFER TO THE FOLLOWING STANDARD DRAWINGS:

A-1-69 REVISED 07-19-02	GSD-1-96 REVISED 07-19-02
AS-1-81 REVISED 07-19-02	PCB-91 REVISED 07-19-02
BR-2-98 REVISED 07-19-02	SBR-1-99 REVISED 07-19-02
EXJ-4-87 REVISED 07-19-02	VPF-1-90 REVISED 07-19-02

AND SUPPLEMENTAL SPECIFICATION(S):

1034 DATED 04-18-08
1078 DATED 04-18-08

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 17TH EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 2002 INCLUDING ALL SUBSEQUENT INTERIM SPECIFICATIONS, AND THE 2004 ODOT BRIDGE DESIGN MANUAL AND INTERIMS THROUGH JANUARY 18, 2008.

DESIGN LOADING

DESIGN LOADING: HS25, CASE II AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT.

DESIGN DATA

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

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

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

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL

2-1/2" CONCRETE COVER

CONCRETE SURFACE SEALER ON DECK FASCIA.

MONOLITHIC WEARING SURFACE

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

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

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

REMOVE ENTIRE SUPERSTRUCTURE

REMOVE ABUTMENT & WINGWALL AS SHOWN IN PLANS

CUT LINE CONSTRUCTION JOINT PREPARATION

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

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH LIFTS.

ITEM 625 - CONDUIT, 2", 725.05, AS PER PLAN

THIS ITEM INCLUDES CONDUIT ON THE BRIDGE AND UNDER THE APPROACH SLABS. THE QUANTITY IS MEASURED FROM PULL BOX TO PULL BOX ON EACH SIDE OF THE BRIDE.

SUBSTRUCTURE CONCRETE REMOVAL

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

UTILITY LINES

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES.

THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

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.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 503 - COFFERDAMS, CRIBS, AND SHEETNG, AS PER PLAN

AT THE OPTION OF THE CONTRACTOR, AN ALTERNATE METHOD OF TEMPORARY SHORING FOR PART-WIDTH CONSTRUCTION MAY BE USED. PLANS FOR SUCH SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE FOR ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

STRUCTURE IDENTIFICATION SIGNS

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS FOR THE FOLLOWING STRUCTURES:
STA-241-0781 (2 APPROACHES)
STA-21-0992 (2 APPROACHES)

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR EACH APPROACH:

ITEM 630 - SIGN, FLAT SHEET, 1 SQ FT
ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 7.5 FT.

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

THE CONCRETE SURFACES SHALL BE SEALED WITH AN EPOXY-URETHANE SEALER, FEDERAL COLOR #17778 - LIGHT NEUTRAL.

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS:
ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HPA, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGG TYPE	FINE AGG (LB)	# 8 COARSE AGG (LB) *	# 57 COARSE AGG (LB) *	TOTAL (LB)	CEMENT CONTENT (LB)	GGBF SLAG (LB)	MICRO SILICA (LB)	MAX. WATER TO CEMENT-ITIOUS RATIO	AIR CONTENT ± 2%
GRAVEL	1370	650	790	2810	440	190	30	0.42	6
LIME-STONE	1370	655	800	2820	440	190	30	0.42	6
SLAG	1370	570	695	2635	440	190	30	0.42	6

* - ALL COARSE AGGREGATE SHALL HAVE AN ABSORBANCY OF 1.00% OR GREATER AS DFINED PER ASTM C127

BASIS OF PAYMENT:
PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM 511 - CLASS HP CONCRETE, BRDIGE DECK, AS PER PLAN, CU. YD.
ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU. YD.
ITEM 511 - CLASS HP CONCRETE, SIDEWALK, AS PER PLAN, CU. YD.
ITEM 511 - CLASS HP CONCRETE, TEST SLAB, LUMP

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

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 BALSTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM SPECIAL - GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES

1.0 DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 863, THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO CLEAN AND GALVANIZE ALL STRUCTURAL STEEL SURFACES, AS SPECIFIED HEREIN. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT QUALIFIED AS A FABRICATION SHOP UNDER SUPPLEMENTAL SPECIFICATION 863 (SS 863), BUT THE APPROVED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATING, ADDITIONAL LAYDOWNS REQUIRED TO ASSURE THE FABRICATED STEEL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION. SECTIONS 863.29 AND 863.30 SHALL NOT APPLY.

THIS ITEM SHALL ALSO INCLUDE GALVANIZING, PER 711.02, OF ALL NUTS, WASHERS, BOLTS, ANCHOR BOLTS.

ANY SHEAR STUDS, SECTION 863.24, SHALL BE INSTALLED IN THE FABRICATOR'S SHOP BEFORE GALVANIZING.

2.0 PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER SS 863.081, BOTH THE FABRICATOR'S QUALITY CONTROL SPECIALIST, (QCPS) AND GALVANIZED COATING APPLICATOR SHALL BE PRESENT AND DISCUSS METHODS OF OPERATION, QUALITY CONTROL, INCLUDING REPAIRS, TRANSPORTATION, ERECTION METHODS, TO ACCOMPLISH ALL PHASES OF THE PREPARATION AND COATING WORK REQUIRED BY THIS SPECIFICATION.

3.0 QUALITY CONTROL

3.1 QUALITY CONTROL SPECIALIST

THE QCPS (QUALITY CONTROL PAINT SPECIALIST) REQUIRED UNDER SS 863, IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCPS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN SS 863.29.

3.2 QUALITY CONTROL POINTS

QUALITY CONTROL POINTS (QCP) ARE POINTS IN TIME WHEN ONE PHASE OF THE WORK IS COMPLETE AND READY FOR INSPECTION BY THE FABRICATOR'S QCPS AND THE DEPARTMENT'S QA REPRESENTATIVE. THE NEXT OPERATIONAL STEP MUST NOT PROCEED UNLESS THE QCP HAS BEEN ACCEPTED OR QA INSPECTION WAIVED BY THE DEPARTMENT'S QA REPRESENTATIVE. AT THESE POINTS THE FABRICATOR MUST

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

DESIGNED AJS | DRAWN AJS | REVIEWED SSK | DATE 6/08
CHECKED NCK | REVISED | STRUCTURE FILE NUMBER 7600186

STRUCTURE GENERAL NOTES
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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ITEM SPECIAL - GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES (CONTINUED)

AFFORD ACCESS TO INSPECT ALL AFFECTED SURFACES. IF INSPECTION INDICATES A DEFICIENCY, THAT PHASE OF THE WORK MUST BE CORRECTED IN ACCORDANCE WITH THESE SPECIFICATIONS PRIOR TO BEGINNING THE NEXT PHASE OF WORK. DISCOVERY OF DEFECTIVE WORK OR MATERIAL AFTER A QUALITY CONTROL POINT IS PAST OR FAILURE OF THE FINAL PRODUCT BEFORE FINAL ACCEPTANCE, MUST NOT IN ANY WAY PREVENT REJECTIONOR OBLIGATE THE DEPARTMENT TO FINAL ACCEPTANCE.

QUALITY CONTROL POINTS	
QUALITY CONTROL POINT (QCP)	PURPOSE
A. SOLVENT CLEANING	REMOVE ASPHALTIC CEMENT, OIL, GREASE, SALT, DIRT, ETC.
B. GRINDING EDGES	REMOVE SHARP CORNERS PER AWS
C. ABRASIVE BLASTING	BLAST SURFACES, INCLUDING REPAIR FINS, TEARS, SLIVERS OR SHARP EDGES
D. GALVANIZING	CHECK COATING THICKNESS
E. FAYING SURFACE CLEANING	CHECK FAYING SURFACE ROUGHNESS. CHECK BOLT HOLE CLEARANCE. CHECK FOR OTHER FIELD CONNECTIONS UNIFORM COATING THICKNESS.
F. SECOND LAY DOWN	CHECK SWEEP AND CAMBER TOLERANCES OF EACH STRUCTURAL MEMBER.
G. FIELD REPAIR OF DAMAGE AREAS	CHECK FOR DAMAGE AREAS AFTER ERECTION OF STRUCTURE. PERFORM DAMAGE REPAIRS.
H. FINAL REVIEW	CLEAN STRUCTURE AS PER QCP#1. VISUALLY INSPECT SYSTEM FOR ACCEPTANCE.

A. SOLVENT CLEANING (QCP#1)

THE STEEL MUST BE SOLVENT CLEANED WHERE NECESSARY TO REMOVE ALL TRACES OF ASPHALTIC CEMENT, OIL, GREASE, DIESEL FUEL DEPOSITS, AND OTHER SOLUBLE CONTAMINANTS PER SSPC-SP1 SOLVENT CLEANING. UNDER NO CIRCUMSTANCES MUST ANY ABRASIVE BLASTING BE DONE TO AREAS WITH ASPHALTIC CEMENT, OIL, GREASE, OR DIESEL FUEL DEPOSITS. STEEL MUST BE ALLOWED TO DRY BEFORE BLAST CLEANING BEGINS. THE QCPS SHALL INSPECT AND DOCUMENT THAT THE CLEANING CONFORMS TO SSPC-SP1 AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

B. GRINDING EDGES (QCP#2)

ALL CORNERS OF THEMALLY CUT OR SHEARED EDGES MUST HAVE 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1 1/2 INCH MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT AFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE GRINDING CONFORMS TO THIS SPECIFICATION AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

C. ABRASIVE BLASTING (QCP#3)

BEAMS AND GIRDERS MUST BE PREPARED BY THE FABRICATOR TO STEEL STRUCTURES PAINTING COUNCIL (SSPC) GRADE SIX (6) COMMERCIAL BLAST CLEANING PRIOR TO GALVANIZING. ALL MATERIALS MUST BE FREE OF PAINT MARKS. SECONDARY ANGLE, PLATES, BARS AND SHAPES NEED NOT BE BLAST CLEANED.

ABRASIVES MUST ALSO BE CHECKED FOR OIL CONTAMINATION BEFORE USE. A SMALL SAMPLE OF ABRASIVES MUST BE ADDED TO ORDINARY TAP WATER. ANY DETECTION OF AN OIL FILM ON THE SURFACE OF THE WATER MUST BE CAUSE FOR REJECTION. THE QCPS MUST PERFORM AND RECORD THIS TEST AT THE START OF EACH SHIFT.

ALL FINS, TEARS, SLIVERS AND BURRED OR SHARP EDGES THAT ARE PRESENT ON ANY STEEL MEMBER OR THAT APPEAR AFTER THE BLASTING OPERATION MUST BE CONDITIONED PER ASTM A6. WELDING REPAIRS MUST ONLTY BE PERFORMED BY THE SS863 FABRICATOR.

THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE BLAST CONFORMS TO SSPC-SP6, THAT ALL CONDITIONING IS PERFORMED PER ASTM A6, AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

D. GALVANIZING (QCP#4)

GALVANIZED PER 711.02 AND THIS SPECIFICATION. COATING THICKNESS MUST BE A MINIMUM OF 4 MILS MEASURED AS SPECIFIED.

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER AND ERECTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. PRIOR TO GALVANIZING, SURFACE IMPERFECTIONS MAY BE REPAIRED BY THE FABRICATOR IN CONFORMANCE WITH ASTM A6. IMPERFECTIONS GREATER THAN THE LIMITS ALLOWED BY ASATM A6 MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE DEPARTMENT.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DOCUMENTS OF COATING THICKNESS MUST BE PERFORMED BY THE OCPS. THE OCPS MUST RECORD THE GAGE READINGS AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

E. FAYING SURFACE CLEANING (QCP#5)

AREAS OF FIELD CONNECTIONS MUST HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPLICE PLATES, BEARINGS OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

FAYING SURFACES OF THE BOLTED SPLICES MUST BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSHING. POWER BRUSHING IS NOT PERMITTED. ALL FIELD SPLICE BOLT HOLES MUST BE FREE OF ZINC BUILD UP. AFTER GALVANIZING, EACH HOLE MUST BE CHECKED IN THE SHOP BY USING A DRIFT PIN WITH A DIAMETER 1/16 INCH GREATER THAN THE DIAMETER OF THE BOLT TO BE USED IN THAT HOLE. CONSIDERATION WILL BE GIVEN TO OTHER METHODS OF TREATING THE FAYING SURFACES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF STRUCTURAL ENGINEERING (OSE) IN ACCORDANCE WITHT CMS 108.05.

INSPECTION OF THE ROUGHENING OF THE FAYING SURFACES AND CHECKING OF HOLES WITH DRIFT PINS MUST BE PERFORMED BY THE OCPS. ACCEPTANCE OF THE FAYING SURFACES AND HOLES SHALL BE DOCUMENTED BY THE OCPS.

F. SECOND LAY DOWN (QCP#6)

AFTER GALVANIZING, MATERIALS MUST BE PLACED IN A SECOND SHOP ASSEMBLY PER CMS SECTION 863.26 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST THE FABRICATOR'S ORIGINAL RECORDED LAY DOWN DIMENSIONS. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZER'S FACILITY, BY THE FABRICATOR'S PERSONNEL, IF APPROVED BY THE OSE. THE SECOND LAY DOWN MAY BE WAIVED BY THE OSE IF THE FABRICATOR RECORDS INDIVIDUAL BEAM CAMBERS AND SWEEPS DURING THE THE FIRST LAY DOWN, AND THE NEW INDIVIDUAL BEAM CAMBERS AND SWEEPS, AFTER GALVANIZING, COMPARED TO THE FIRST LAY DOWN ARE WITHIN THE FOLLOWING TOLERANCES:

BEARING POINTS AFTER GALVANIZING, MUST BE WITHIN ± 1/8 INCH OF THE APPROVED SHOP DRAWING LAY DOWN.

CAMBER POINTS AFTER GALVANIZING MUST BE +1/4 INCH OR - 0 INCH FROM THE FIRST LAY DOWN.

SWEEP POINTS AFTER GALVANIZING MUST BE ± 3/8 INCH FROM THE FIRST LAY DOWN.

INDIVIDUAL BEAMS THAT EXCEED THE LISTED TOLERANCES MUST BE PLACED WITH AT LEAST TWO ADJACENT BEAMS IN LAY DOWN FOR CHECKING AGAINST RECORDED SHOP ASSEMBLY RECORDS PER 863.07. DOCUMENTATION OF THE SECOND LAY DOWN OR INDIVIDUAL MEMBER CAMBERS MUST BE RECORDED BY THE OCPS PER 863.26.

G. FIELD REPAIR OF DAMAGED AREAS (QCP#7)

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE CONTRACTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING IMPERFECTIONS MAY BE REPAIRED BY GRINDING AS ALLOWED BY ASTM A6 BY THE CONTRACTOR. IMPERFECTIONS THAT ARE GREATER THAN THE GRINDING LIMITS ALLOWED BY ASTM A6, MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE OSE.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DAMAGED GALVANIZING WHICH WILL BE INACCESSIBLE FOR REPAIR AFTER ERECTION MUST BE REPAIRED PRIOR TO ERECTION.

IN ORDER TO MINIMIZE DAMAGE TO THE GALVANIZED STEEL, CONCRETE SPLATTER AND FORM LEAKAGE MUST BE WASHED FROM THE SURFACE OF THE STEEL SHORTLY AFTER THE CONCRETE IS PLACED AND BEFORE IT IS DRY. IF THE CONCRETE DRIES, IT MUST BE REMOVED.

TEMPORARY ATTACHMENTS, SUPPORTS FOR SCAFFOLDING AND FINISHING MACHINE OR FORMS MUST NOT DAMAGE THE COATING SYSTEM. IN PARTICULAR, SUFFICIENT SIZE SUPPORT PADS MUST BE USED ON THE FASCIAS WHERE BRACING IS USED.

DOCUMENTATION OF GALVANIZING REPAIRS MUST BE PERFORMED BY THE OCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

H. FINAL REVIEW (QCP#8)

AFTER THE ERECTION WORK HAS BEEN COMPLETED, INCLUDING ALL CONNECTIONS AND THE APPROVED REPAIR OF ANY DAMAGED BEAMS, GIRDERS OR OTHER STEEL MEMBERS, AND THE DECK HAS BEEN PLACED, THE CONTRACTOR AND ENGINEER MUST INSPECT THE STRUCTURE FOR DAMAGED COATING (QCP #8). DAMAGED AREAS MUST BE REPAIRED BY QPCs #7. AT THE COMPLETION OF CONSTRUCTION, THE GALVANIZING MUST UNDAMAGED AND THE SURFACES FREE FROM GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER OR OTHER SILAGE. SUCH SILAGE WILL BE REMOVED BY SOLVENT CLEANING PER SSPC-SP1 (QCP #1).

DOCUMENTATION OF FINAL REVIEW MUST BE PERFORMED BY THE OCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

4.0 TESTING EQUIPMENT

THE FABRICATOR MUST PROVIDE THE OCPS INSPECTOR THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER FOR THE DURATION OF THE PROJECT.

ONE (POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FBII) AND THE CALIBRATION PLATES 38-200mm AND 250-625mm (1.5-8 MILS AND 10-25 MILS) AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D-AA86.

5.0 COATING THICKNESS

GALVANIZED THICKNESSES MUST BE DETERMINED BY USE OF TYPE 2 MAGNETIC GAGE IN ACCORDANCE WITH THE FOLLOWING:

FIVE SEPARATE SPOT MEASUREMENTS MUST BE MADE, SPACED EVENLY OVER ONE (1) RANDOMLY SELECTED. 100 SQUARE FEET OF SURFACE AREA ON EACH STRUCTURAL MEMBER. THREE GAGE READINGS MUST BE MADE FOR EACH SPOT MEASUREMENT. THE PROBE MUST BE MOVED A DISTANCE OF 1 TO 3 INCHES FOR EACH NEW GAGE READING. ANY UNUSUALLY HIGH OR LOW GAGE READING THAT CANNOT BE REPEATED CONSITENTLY MUST BE DISCARDED. THE AVERAGE (MEAN) OF THE 3 GAGE READINGS MUST BE USED AS THE SPOT MEASUREMENT. THE AVERAGE OF FIVE SPOT MEASUREMENTS FOR EACH SUCH 100 SQUARE FOOT AREA MUST NOT BE LESS THAN THE SPECIFIED THICKNESS. NO SINGLE SPOT MEASUREMENT IN ANY 100 SQUARE FOOT AREA MUST BE LESS THAN 80% OF THE SPECIFIED MINIMUM THICKNESS. ANY ONE OF 3 READINGS WHICH ARE AVERAGED TO PRODUCE EACH SPOT MEASUREMENT, MAY BE UNDER-RUN OR OVER-RUN BY A GREATER AMOUNT. THE 5 SPOT MEASUREMENTS MUST BE MADE FOR ONE (1) RANDOMLY SELECTED, 100 SQUARE FEET OF AREA ON EACH STRUCTURAL MEMBER. ALL SPLICE MATERIAL AND SECONDARY MEMBERS MUST HAVE AT LEAST ONE SPOT MEASURED ON EACH PIECE. THE PROBE MUST BE MOVED SO THAT ONE READING IS TAKEN AT EACH END AND MIDDLE OF THE PIECE FOR A TOTAL OF THREE READINGS.

THE OCPS MUST INSPECT AND PROVIDE DOCUMENTATION OF ACTUAL DATA, THE GALVANIZED THICKNESS CHECKS WERE PRFORMED PER SPECIFICATION, AND THE COATING THICKNESS MEETS THE SPECIFICATION REQUIREMENTS.

6.0 HANDLING AND SHIPPING

REASONABLE CARE MUST BE EXERCISED IN HANDLING THE GALVANIZED STEEL DURING SHIPPING, ERECTION, AND SUBSEQUENT CONSTRUCTION OF THE BRIDGE. THE STEEL MUST BE INSULATED FROM THE BINDING CHAINS BY SOFTENERS. HOOKS AND SLINGS USED TO HOIST STEEL MUST BE PADDED. DIAPHRAGMS AND SIMILAR PIECES MUST BE SPACED IN SUCH A WAY THAT NO RUBBING WILL OCCUR DURING SHIPMENT THAT MAY DAMAGE THE GALVANIZING. THE STEEL MUST BE STORED ON PALLETS AT THE JOB SITE, OR BY OTHER MEANS, SO THAT IT DOES NOT REST ON THE GROUND OR SO THAT COMPONENTS DO NOT FALL OR REST ON EACH OTHER.

7.0 SAFETY REQUIREMENTS AND PRECAUTIONS

THE CONTRACTOR MUST MEET THE SAFTEY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) IN ADDITION TO THE INSPECTION ACCESS REQUIREMENTS BELOW.

8.0 SCAFFOLDING

RUBBER ROLLERS, OR OTHER PROTECTIVE DEVICES MEETING THE APPROVAL OF THE ENGINEER, MUST BE USED ON SCAFFOLD FASTENINGS. METAL ROLLERS OR CLAMPS WHICH MAR OR DAMAGE COATED SURFACES MUST NOT BE USED.

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DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WCK		7600186	

STRUCTURE GENERAL NOTES
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

9.0 INSPECTION ACCESS FOR FIELD REPAIR

IN ADDITION TO THE REQUIREMENT OF 105.10, THE CONTRACTOR MUST FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT, TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT AND CLOSELY OBSERVE, ALL AFFECTED SURFACES. THE OPPORTUNITY MUST BE PROVIDED TO THE INSPECTOR DURING ALL PHASES OF THE WORK AND CONTINUE FOR A PERIOD OF AT LEAST TEN (10) WORKING DAYS AFTER THE TOUCH-UP WORK HAS BEEN COMPLETED. WHEN SCAFFOLDING IS USED, IT MUST BE PROVIDED IN ACCORD-ANCE WITH THE FOLLOWING REQUIREMENTS. WHEN SCAFFOLDING OR THE HANGERS OR ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE REPAIRED, THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH:

WHEN SCAFFOLDING IS SUSPENDED 43" OR MORE BELOW THE COATED SURFACE TO BE REPAIRED, TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING. ONE ROW OD GUARDRAIL MUST BE PLACED AT 42" ABOVE THE SCAFFOLDING AND THE OTHER ROW AT 20" ABOVE THE SCAFFOLDING.

WHEN THE SCAFFOLDING IS SUSPENDED AT LEAST 21", BUT LESS THAN 43" BELOW THE COATED SURFACE TO BE REPAIRED, A ROW OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING AT 20" ABOVE THE SCAFFOLDING.

TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF SCAFFOLDING NOT PREVIOUSLY MENTIONED. THE ROWS OF GUARDRAIL AT 42" AND 20" ABOVE SCAFFOLDING, AS PREVIOUSLY MENTIONED.

ALL SCAFFOLDING MUST BE AT LEAST 24" WIDE WHEN GUARDRAIL IS USED AND 28" WIDE WHEN THE SCAFFOLDING IS SUSPENDED LESS THAN 21" BELOW THE COATED SURFACE TO BE REPAIRED AND GUARDRAIL IS NOT USED. IF TWO OR MORE SCAFFOLDING ARE LAID PARALLEL TO EACH OTHER TO ACHIEVE THE PROPER WIDTH, THEY MUST BE RIGIDLY ATTACHED TO EACH OTHER TO PRECLUDE ANY DIFFERENTIAL MOVEMENT.

ALL GUARDRAIL MUST BE CONSTRUCTED AS A SUBSTANTIAL BARRIER WHICH IS SECURELY FASTENED IN PLACE AND IS FREE FROM PROTRUDING OBJECTS SUCH AS NAILS, SCREWS, AND BOLTS. THERE MUST BE AN OPENING IN THE GUARDRAIL, PROPERLY LOCATED, TO ALLOW THE INSPECTOR ACCESS ONTO THE SCAFFOLDING.

THE RAILS AND UPRIGHTS MUST BE EITHER METAL OF WOOD. IF PIPE RAILING IS USED, THE RAILING MUST HAVE A NOMINAL DIAMETER OF NO LESS THAN 1½ INCHES. IF STRUCTURAL STEEL RAILING IS USED, THE RAILS MUST BE 2 x 2 x ⅜ INCH STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING MUST BE 2 x 4 INCH (NOMINAL) STOCK. ALL UPRIGHTS MUST BE SPACED AT NO MORE THAN 8 FEET ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS MUST BE 2 x 4 INCH (NOMINAL) STOCK.

WHEN THE SURFACE TO BE INSPECTED IS MORE THAN 15 FEET ABOVE THE GROUND OR WATER, AND THE SCAFFOLDING IS SUPPORTED FROM THE STRUCTURE BEING REPAIRED, THE CONTRACTOR MUST PROVIDE THE INSPECTOR WITH A SAFETY BELT AND LIFELINE. THE LIFELINE MUST NOT ALLOW A FALL GREATER THAN 6 FEET. THE CONTRACTOR MUST PROVIDE A METHOD OF ATTACHING THE LIFELINE TO THE STRUCTURE INDEPENDENT OF THE SCAFFOLDING, CABLES, OR BRACKETS SUPPORTING THE SCAFFOLDING.

WHEN SCAFFOLDING IS MORE THAN TWO AND ONE HALF FEET ABOVE THE GROUND, THE CONTRACTOR MUST PROVIDE A LADDER FOR ACCESS ONTO THE SCAFFOLDING. THE LADDER AND ANY EQUIPMENT USED TO ATTACH THE LADDER TO THE STRUCTURE MUST BE CAPABLE OF SUPPORTING 250 POUNDS WITH A SAFETY FACTOR OF AT LEAST FOUR (4). ALL RUNGS, STEPS, CLEATS, OR TREADS MUST HAVE UNIFORM SPACING AND MUST NOT EXCEED 12" ON CENTER. AT LEAST ONE SIDE RAIL MUST EXTEND AT LEAST 36" ABOVE THE LANDING NEAR THE TOP OF THE LADDER.

AN ADDITIONAL LANDING IS REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED EXCEEDS 12". THE LANDING MUST BE A MINIMUM OF 24" WIDE AND 24" LONG". IT MUST ALSO BE OF ADEQUATE SIZE AND SHAPE SO THAT THE DISTANCE FROM THE LANDING TO THE POINT WHERE THE SCAFFOLDING IS ACCESSED DOES NOT EXCEED 12". THE LANDING MUST BE RIGID AND FIRMLY ATTACHED TO THE LADDER; HOWEVER, IT MUST NOT BE SUPPORTED BY THE LADDER. THE SCAFFOLDING MUST BE CAPABLE OF SUPPORTING A MINIMUM OF 1000 POUNDS.

IN ADDITION TO THE AFOREMENTIONED REQUIREMENTS, THE CONTRACTOR IS STILL RESPONSIBLE TO OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES.

THE CONTRACTOR MUST FURNISH ALL NECESSARY TRAFFIC CONTROL TO PERMIT INSPECTION DURING AND AFTER ALL PHASES OF THE PROJECT.

10.0 PROTECTION OF PERSONS AND PROPERTY

THE CONTRACTOR MUST INSTALL AND MAINTAIN SUITABLE SHIELDS OR ENCLOSURES TO PREVENT DAMAGE TO ADJACENT BUILDINGS, PARKED CARS, TRUCKS, BOATS, OR VEHICLES TRAVELING ON, OVER, OR UNDER STRUCTURES HAVING GALVANIZED REPAIRS. THEY MUST BE SUITABLY ANCHORED AND REINFORCED TO PREVENT INTERFERING WITH NORMAL TRAFFIC OPERATIONS IN THE OPEN LANES. PAYMENT FOR THE SHIELDS MUST BE INCLUDED AS INCIDENTAL TO THE APPLICABLE FIELD COATING OPERATION. WORK MUST BE SUSPENDED WHEN DAMAGE TO ADJACENT BUILDINGS, MOTOR VEHICLES, BOATS, OR OTHER PROPERTY IS OCCURRING.

WHEN OR WHERE ANY DIRECT OR INDIRECT DAMAGE OR INJURY IS DONE TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR MUST RESTORE, AT HIS OWN EXPENSE, SUCH PROPERTY, TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE OR INJURY WAS DONE.

11.0 POLLUTION CONTROL

THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES.

12.0 METHOD OF MEASUREMENT

THE COST OF ALL LABOR, MATERIALS, EQUIPMENT NECESSARY TO GALVANIZE AND TO FABRICATE THE STRUCTURAL STEEL IN CCORDANCE WITH SS863 AND PERFORM ANY NECESSARY FIELD REPAIR SHALL BE INCLUDED IN THIS SS863, AS PER PLAN ITEM.

13.0 BASIS OF PAYMENT

PAYMENT FOR ALL OF THE ABOVE INCLUDING ANY NECESSARY FIELD REPAIR AND FIELD GRINDING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 3.

ITEM 514 - FIELD PAINTING, MISC.: GALVANIZED STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM EU

THIS ITEM SHALL COMPLY WITH CMS ITEM 514 - PAINTING OF STRUCTURAL STEEL EXCEPT AS MODIFIED BELOW.

AN ORGANIC ZINC PRIMER COAT SHALL NOT BE APPLIED TO THE GALVANIZED STEEL AREAS NOTED IN THE PLANS TO BE PAINTED. ONLY AN EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT SHALL BE APPLIED. THEREFORE, DISREGARD ALL REFERENCES TO THE ORGANIC ZINC PRIMER COAT IN CMS ITEM 514.

GRINDING FLANGE EDGES AND REMOVING FINS, TEARS AND SLIVERS ARE INCLUDED WITH THE APPLICABLE 513 STRUCTURAL STEEL MEMBERS. THEREFORE, DISREGARD ALL REFERENCES TO THEM IN ITEM 514.

WATER QUENCHING AND CHROMATE CONVERSION COATING FOR GALVANIZED STEEL TO BE PAINTED ARE PROHIBITED, SINCE THEY WILL ADVERSELY AFFECT THE BOND BETWEEN THE GALVANIZED STEEL AND THE PAINT. THE CONTRACTOR SHALL VERIFY THEY HAVE NOT BEEN PERFORMED BY THE GALVANIZING SHOP, AND SHALL PERFORM A SPOT TEST PER ASTM B201 FOR CHECKING THE PRESENCE OF A CHROMATE CONVERSION COATING ON THE STEEL TO BE PAINTED.

CLEAN THE SURFACE AREAS TO BE PAINTED PER STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATION NO. 1 (SPCC-SP1) AS SPECIFIED IN SECTION 514.13.A. IF CLEANING WITH SOLVENTS, APPLY WITH LINT FREE RAGS OR SOFT BRISTLED NYLON BRUSHES THAT ARE FREQUENTLY CHANGED. IF CLEANING WITH AN ALKALINE SOLUTION, IT SHALL HAVE A PH RANGING FROM A MINIMUM OF 11.0 TO A MAXIMUM OF 12.0, AND SHALL BE APPLIED BY SPRAYING OR WITH A SOFT BRISTLED NYLON BRUSH. IF SPRAYING, MAINTAIN A SOLUTION TEMPERATURE OF 140° F TO 180° F. ALL CLEANED AREAS SHALL BE SUBSEQUENTLY WASHED BEFORE ABRASIVE BLASTING AS SPECIFIED IN SECTION 514.13.A, WITH THE ADDITIONAL REQUIREMENT THAT THE MAXIMUM NOZZLE PRESSURE MAY NOT EXCEED 1450 PSI. THE STEEL SHALL BE COMPLETELY DRY BEFORE PROCEEDING.

AFTER CLEANING, ABRASIVE BLASTING OF THE AREAS TO NE PAINTED AS SPECIFIED IN SECTION 514.13.C SHALL BE REQUIRED. HOWEVER, BLASTING SHALL BE PER SSPC-SP7 BRUSH-OFF BLAST CLEANING. THE RESULTANT SURFACE PROFILE SHALL HAVE AN ANGULAR SURFACE PROFILE OF A MINIMUM OF 0.50 MILS AND A MAXIMUM OF0.75 MILS. THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL SHALL BE SELECTED TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF GALVANIZED ZINC LAYERS. THE FINAL GALVANIZED ZINC MILLAGE SHALL NOT BE LESS THAN 3.0 MILS AND SHALL BE MEASURED PRIOR TO EPOXY INTERMEDIATE COAT APPLICATION. REMOVE ABRASIVES AND RESIDUE FROM SURFACES TO BE PAINTED. THE EPOXY INTERMEDIATE COAT SHALL BE APPLIED WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING.

THE INTERMEDIATE AND FINISH COAT APPLICATION SHALL BE PER SECTION 514.17.G AND THE FOLLOWING. THE EPOXY INTERMEDIATE COAT AND THE URETHANE FINISH COAT SHALL MEET THE REQUIREMENTS OF SPECIFICATION 514. THE FINISH COAT COLOR SHALL MATCH FEDERAL STANDARD FS-595B COLOR NO. XXXXX (list color here). IF THE EPOXY COAT HAS CURED MORE THAN THIRTEEN (13) DAYS WITHOUT OVERCOATING, IT SHALL BE REMOVED AND THE SURFACE REBLASTED PER SSPC-SP7 TO THE SURFACE PROFILE NOTED ABOVE. THE COMPLETION DATE (MONTH AND YEAR) OF THE FINISH COAT AND THE LETTERS "EU" SHALL BE STENCILED ON THE STEEL IN 4 INCH LETTERS WITH A BLACK URETHANE PAINT NEAR BOTH ENDS OF EACH PAINTED BEAM ON THE OUTSIDE WEB.

ONLY THE OUTSIDE FASCIAS OF THE FASCIA BEAMS SHALL BE PAINTED.

REPAIR PROCEDURES SHALL BE PER SECTION 514.22 EXCEPT THAT THE STEEL SHALL BE RETEXTURED TO A BRUSH BLAST CONDITION PER SSPC-SP7 TO THE SURFACE PROFILE NOTED ABOVE.

BASIS OF PAYMENT

PAYMENT FOR ALL OF THE ABOVE INCLUDING ANY NECESSARY FIELD REPAIR AND FIELD GRINDING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE FOLLOWING ITEMS, RESPECTIVELY:

ITEM 514 - FIELD PAINTING OF STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN	1643 S.F.
ITEM 514 - FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	1643 S.F.

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DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

STRUCTURE GENERAL NOTES

BRIDGE NO. STA-241-0781
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67A / 91

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ESTIMATED QUANTITIES

CALC'D BY: AJS DATE: 3/10/08
CHECKED BY: NCK DATE: 3/10/08

ITEM	EXT.	TOTAL	UNITS	DESCRIPTION	ABUTS.	PIERS	SUPER.	GENERAL	AS PER PLAN SHEET NO.	PARTICIPATION AT&T	PARTICIPATION DEO
202	11203	LUMP	-	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	3/28		
202	22900	340	S.Y.	APPROACH SLAB REMOVED				340			
503	11100	LUMP	-	COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP			
503	21101	286	C.Y.	UNCLASSIFIED EXCAVATION, AS PER PLAN	286				3/28		
509	10001	141357	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	9,666	5,969	125,722		3/28		
510	10000	833	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	407	426					
511	42500	36	C.Y.	CLASS C CONCRETE, PIER CAP		36					
511	44100	72	C.Y.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING	72						
511	50001	335	C.Y.	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN			335		3/28		
511	50101	28	C.Y.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			28		3/28		
511	51501	27	C.Y.	CLASS HP CONCRETE, SIDEWALK, AS PER PLAN			27		3/28		
511	52000	LUMP	-	CLASS HP CONCRETE, TEST SLAB			LUMP				
512	10100	780	S.Y.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	85	226	469				
512	10300	82	S.Y.	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN			82				
513	10260	208398	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 3			208398				
513	20000	6192	EACH	WELDED STUD SHEAR CONNECTORS			6192				
513	95030	31	EACH	STRUCTURAL STEEL, MISC.: CONDUIT SUPPORT HANGERS			31			16	15
514	00061	1643	S.F.	FIELD PAINTING OF STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN			1643		3/28		
514	00067	1643	S.F.	FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT, AS PER PLAN			1643		3/28		
516	11210	134	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			134				
516	13200	20	S.F.	1/2" PREFORMED EXPANSION JOINT FILLER			20				
516	13600	35	S.F.	1" PREFORMED EXPANSION JOINT FILLER			35				
516	44000	40	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)			40				
517	75120	178	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)			178				
518	21200	83	C.Y.	POROUS BACKFILL WITH FILTER FABRIC	83						
518	40000	132	FT	6" PERFORRATED CORRUGATED PLASTIC PIPE	132						
518	40010	60	FT	6" NON PERFORRATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	60						
SPECIAL	519 11600	234	S.F.	PATCHING CONCRETE STRUCTURE, MISC: ABUTMENT	234						
526	15001	266	S.Y.	REINFORCED CONCRETE APPROACH SLAB (T=13"), AS PER PLAN				226	25/28, 26/28		
601	20000	640	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION	640						
607	39910	190	FT	VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC			190				
625	25403	667	FT	CONDUIT, 2", 725.05, AS PER PLAN			667		3/28		
625	25803	324	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN				324		324	
625	28920	1086	FT	CONDUIT, MISC. : 4" SPLIT PVC, TYPE C			1086			1086	
630	02100	30	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				30			
630	80100	4	S.F.	SIGN, FLAT SHEET				4			

AT&T CONDUIT GENERAL NOTES

THE SCOPE OF WORK CONSISTS OF THE REPLACEMENT OF AT&T CONDUITS. THE CABLE SHALL REMAIN ACTIVE AT ALL TIMES EXCEPT FOR WHEN SERVICE IS TRANSFERRED FROM THE EXISTING CONDUITS TO THE PROPOSED CONDUITS. ALL AT&T CONDUIT REPLACEMENT WILL BE PERFORMED DURING PHASE I. THE LIMITS OF THE CONDUIT REPLACEMENT ARE FROM END TO END OF THE PRESSURE RELIEF JOINTS. CONNECTION TO EXISTING MANHOLES WILL BE DONE PRIOR TO PHASE I, BY AT&T OR AT&T'S CONTRACTOR. CONDUIT REPLACEMENT SHALL BE COORDINATED WITH AT&T AND/OR AT&T'S CONTRACTOR.

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL TELEPHONE CONDUIT SHOWN TO BE REMOVED ON THE PLANS. ANY CONCRETE ENCASEMENT DISCOVERED SHALL BE REMOVED AND DISPOSED OF AS WELL. THE CONDUIT BANK CONSISTS OF 6-4" CONDUITS. THE EXISTING CONDUIT SHALL NOT BE REMOVED UNTIL SERVICE IS TRANSFERRED TO THE PROPOSED CONDUIT.

THE CONTRACTOR SHALL FURNISH AND INSTALL 6 -4" SPLIT PVC TYPE C AND 6 - 4" IPS SPLIT STANDARD WALL FIBERGLASS CONDUIT TO REPLACE THE REMOVED CONDUITS, AS SHOWN ON THE DRAWINGS. THE INSTALLATION OF THE SPLIT CONDUIT SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS AS WELL AS NORMALLY ACCEPTED INDUSTRY STANDARDS. CONDUIT EXPANSION/ DEFLECTION ASSEMBLIES SHALL BE INSTALLED OUTSIDE THE BRIDGE BACKWALL ON EACH CONDUIT, AS SHOWN ON THE PLANS.

PRE-DRILLED HOLES SHALL BE PROVIDED IN THE STEEL SUPPORT ANGLES BETWEEN BEAMS 2 AND 3. CONDUIT HANGER ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED STEEL.

THE CONTRACTOR SHALL INSTALL A SPLIT CONDUIT EXPANSION ASSEMBLY NEAR THE CENTER OF THE BRIDGE PER DETAIL 1 ON SHEET 24/28.

DURING THE CONDUIT REPLACEMENT PROCESS, AT&T AND/ OR AT&T'S CONTRACTOR WILL TRANSITION THE CONDUIT POSITIONS FROM THE BRIDGE APPROACH SLABS TO THE EXISTING MANHOLES.

CONDUIT HANGER ASSEMBLY SHALL BE GEORGE INGRAHM OR APPROVED EQUAL. DIMENSIONS OF ASSEMBLY SHALL MEET THOSE SHOWN IN THE. PLANS. THE NUMBER OF HANGER ASSEMBLIES REQUIRED IS 16. ALL REQUIRED CONDUIT MATERIALS AND ACCESSORIES FOR THIS PROJECT SHALL BE OBTAINED FROM AT&T APPROVED SUPPLIERS.

PAYMENT FOR THE CONDUIT REPLACEMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 625, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS TO COMPLETE THE ENTIRE REPLACEMENT AS SPECIFIED AND AS SHOWN ON THE DRAWINGS.

ITEM 625 - CONDUIT, CONCRETE ENCASED, AS PER PLAN
ITEM 625 - CONDUIT, MISC. : 4" SPLIT PVC, TYPE C

PAYMENT FOR ALL SUPPORT ANGLES SHALL BE PER THE NOTES ON SHEETS 15/28 THROUGH 17/28.

GAS CONDUIT GENERAL NOTES

THE SCOPE OF WORK CONSISTS OF THE PLACEMENT OF SUPPORT HANGERS TO ACCOMODATE A 12" GAS MAIN. THE MAIN SHALL REMAIN ACTIVE AT ALL TIMES EXCEPT FOR WHEN SERVICE IS TRANSFERRED FROM THE EXISTING MAIN TO THE PROPOSED MAIN. ALL GAS MAIN REPLACEMENT WILL BE PERFORMED DURING PHASE I, BY DOMINION EAST OHIO OR DOMINION EAST OHIO'S CONTRACTOR. THE LIMITS OF THE GAS MAIN REPLACEMENT ARE FROM END TO END OF THE PRESSURE RELIEF JOINTS. CONNECTION TO EXISTING GAS VALVES WILL BE DONE PRIOR TO PHASE I BY DOMINION EAST OHIO OR DOMINION EAST OHIO'S CONTRACTOR. REPLACEMENT SHALL BE COORDINATED WITH DOMINION EAST OHIO AND/ OR DOMINION EAST OHIO'S CONTRACTOR.

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL GAS MAIN SHOWN TO BE REMOVED ON THE PLANS. ANY CONCRETE ENCASEMENT DISCOVERED SHALL BE REMOVED AND DISPOSED OF AS WELL. THE EXISTING GAS MAIN SHALL NOT BE REMOVED UNTIL SERVICE IS TRANSFERRED TO THE PROPOSED GAS MAIN.

PRE-DRILLED HOLES SHALL BE PROVIDED IN THE STEEL SUPPORT ANGLES BETWEEN BEAMS 3 AND 4. CONDUIT HANGER ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED STEEL.

DURING THE CONDUIT REPLACEMENT PROCESS, DOMINION EAST OHIO OR DOMINION EAST OHIO'S CONTRACTOR WILL TRANSITION THE CONDUIT POSITIONS FROM THE BRIDGE APPROACH SLABS TO THE EXISTING GAS VALVES.

CONDUIT HANGER ASSEMBLY SHALL BE LINN BROWN AND ASSOCIATES HANGER/ ROLLER ASSEMBLY OR APPROVED EQUAL. DIMENSIONS OF ASSEMBLY SHALL MEET THOSE SHOWN IN THE PLANS. THE NUMBER OF HANGER ASSEMBLIES REQUIRED IS 15.

PAYMENT FOR THE GAS MAIN HANGER PLACEMENT SHALL BE MADE AT THE PRICE BID FOR ITEM 513, STRUCTURAL STEEL, MISC.: CONDUIT SUPPORT HANGERS, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS TO COMPLETE THE ENTIRE REPLACEMENT AS SPECIFIED AND AS SHOWN ON THE DRAWINGS.

PAYMENT FOR ALL SUPPORT ANGLES SHALL BE PER THE NOTES ON SHEETS 15/28 THROUGH 17/28.

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

DESIGNED AJS | DRAWN AJS | CHECKED NCK | REVIEWED SSK | DATE 6/08 | REVISED | REVISED | STRUCTURE FILE NUMBER 7600186

STRUCTURE ESTIMATED QUANTITIES AND UTILITY NOTES
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

5/28

68/91

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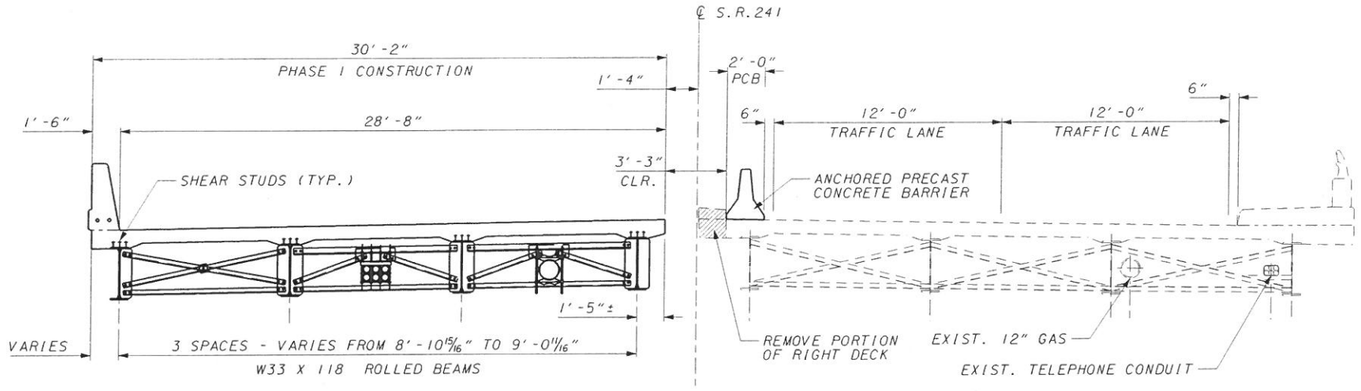
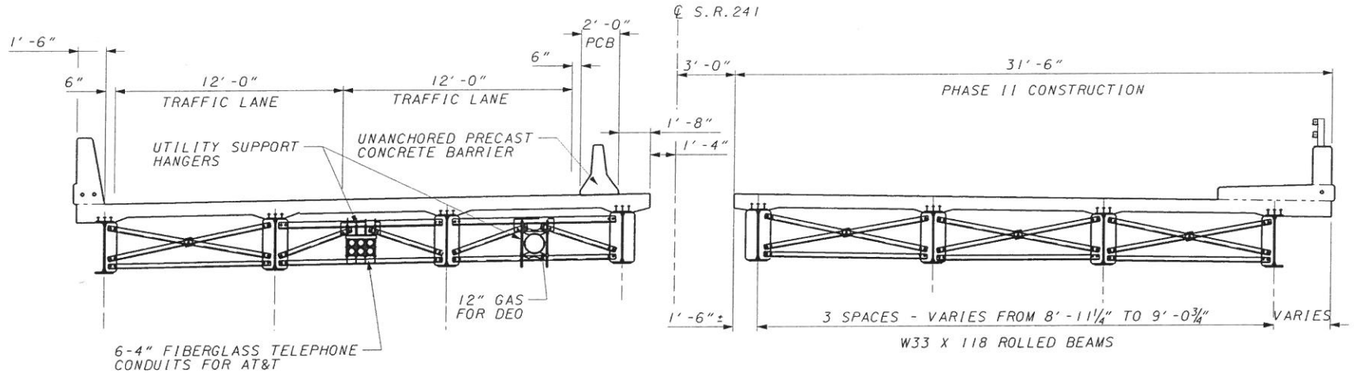


PHASE I CONSTRUCTION



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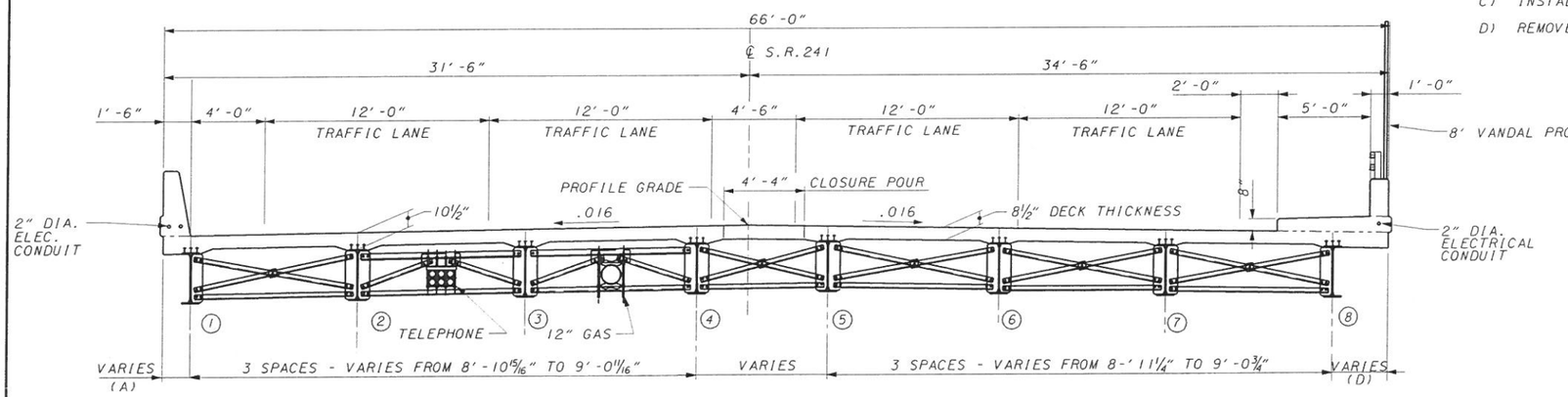

TYPICAL DECK SECTION

SUGGESTED SEQUENCE OF CONSTRUCTION:

PRIOR TO CONSTRUCTION, AT&T AND DEO WILL PERFORM ALL NECESSARY WORK, BEYOND THE APPROACH SLABS, REQUIRED FOR THE CONNECTION OF THE RELOCATED UTILITY CONDUITS.

PHASE I

A) INSTALL PORTABLE CONCRETE BARRIER. REROUTE TRAFFIC (ONE LANE EACH DIRECTION) ONTO THE RIGHT BRIDGE DECK.

B) REMOVE THE LEFT BRIDGE DECK AND BEAMS AND THE LEFT HALF OF THE APPROACH SLABS. REMOVE PORTION OF RIGHT DECK. INSTALL TEMPORARY SHORING.

C) REMOVE PORTIONS OF THE LEFT HALF OF THE ABUTMENTS, INCLUDING BACKWALLS AND A PORTION OF THE WINGWALLS.

D) DRILL DOWEL HOLES FOR REINFORCING STEEL AND BUILD ABUTMENT AND PIER BEAM SEATS TO THE ELEVATIONS SHOWN IN THE PLANS.

E) ERECT NEW BEAMS AND INSTALL STIFFENERS, CROSSFRAMES AND UTILITY SUPPORT HANGERS FOR TELEPHONE AND GAS CONDUITS.

F) CONSTRUCT NEW BACKWALL AND NEW PORTION OF WINGWALLS.

G) INSTALL AT&T PHONE CONDUIT AND DEO GAS LINE ON THE BRIDGE.

H) INSTALL SHEAR STUDS AND CONSTRUCT THE PHASE I PORTION OF THE DECK SLAB, STRIP SEAL AND APPROACH SLABS UP TO THE CLOSURE POUR.

I) CONSTRUCT THE BRIDGE DEFLECTOR PARAPET ON THE LEFT SIDE OF THE STRUCTURE.

J) AT&T AND DEO WILL PERFORM UTILITY RELOCATION WORK DURING THIS PHASE. DISCONNECT EXISTING TELEPHONE AND GAS LINES. CONNECT TELEPHONE AND GAS LINE TO THE RELOCATED LINES ON BOTH APPROACHES. THE ESTIMATED TIME FOR THIS WORK IS 8 WEEKS FOR AT&T AND 4 WEEKS FOR DEO.

PHASE II

A) INSTALL PORTABLE CONCRETE BARRIER. REROUTE TRAFFIC (ONE LANE EACH DIRECTION) ONTO THE LEFT SIDE OF THE PROPOSED STRUCTURE COMPLETED IN PHASE I. REMOVE THE PORTABLE CONCRETE BARRIER INSTALLED DURING PHASE I.

B) REMOVE THE RIGHT BRIDGE DECK, BEAMS, THE RIGHT HALF OF THE APPROACH SLABS, AND THE TELEPHONE AND GAS LINES.

C) MODIFY THE TEMPORARY SHORING INSTALLED DURING PHASE I CONSTRUCTION AS NEEDED.

D) REMOVE PORTIONS OF THE RIGHT HALF OF THE ABUTMENTS, INCLUDING BACKWALLS AND A PROTION OF THE WINGWALLS.

E) DRILL DOWEL HOLES FOR REINFORCING STEEL AND BUILD ABUTMENT AND PIER BEAM SEATS TO THE ELEVATIONS SHOWN IN THE PLANS.

F) ERECT NEW BEAMS AND INSTALL STIFFENERS AND CROSSFRAMES.

G) CONSTRUCT NEW BACKWALL AND NEW PORTION OF THWE WINGWALLS.

H) INSTALL SHEAR STUDS AND CONSTRUCT THE PHASE II PORTION OF THE DECK SLAB, AND APPROACH SLABS UP TO THE CLOSURE POUR.

I) CONSTRUCT THE SIDEWALK AND BRIDGE SIDEWALK RAILING ON THE RIGHT SIDE OF THE STRUCTURE.

PHASE III

A) INSTALL CROSSFRAMES BETWEEN BEAMS (4) AND (5) AND CAST THE CLOSURE POUR FOR THE DECK SLAB.

B) CONSTRUCT THE REMAINING PORTIONS OF THE APPROACH SLABS.

C) INSTALL 8' VANDAL PROTECTION FENCE ON RIGHT (SOUTH) PARAPET.

D) REMOVE THE BARRICADES AND OPEN BRIDGE TO TRAFFIC.

TABLE OF OVERHANGS		
LOCATION	(A) LEFT SIDE	(D) RIGHT SIDE
℄ ABUTMENT 1	2' 6 1/8"	3' 1/8"
SPAN 1 MID POINT	2' 3 11/16"	3' 2 3/16"
℄ PIER 1	2' 3 5/16"	3' 3 1/16"
℄ FIELD SPLICE 1	2' 5 1/16"	3' 2 1/2"
℄ PIER 2	1' 7 3/16"	3' 8 3/8"
℄ FIELD SPLICE 2	1' 11 5/16"	3'
℄ PIER 3	1' 10 3/8"	3' 1 5/8"
SPAN 4 MID POINT	1' 9 5/8"	3' 2 1/4"
℄ ABUTMENT 2	1' 11 5/16"	2 11 5/16"

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

PHASE CONSTRUCTION
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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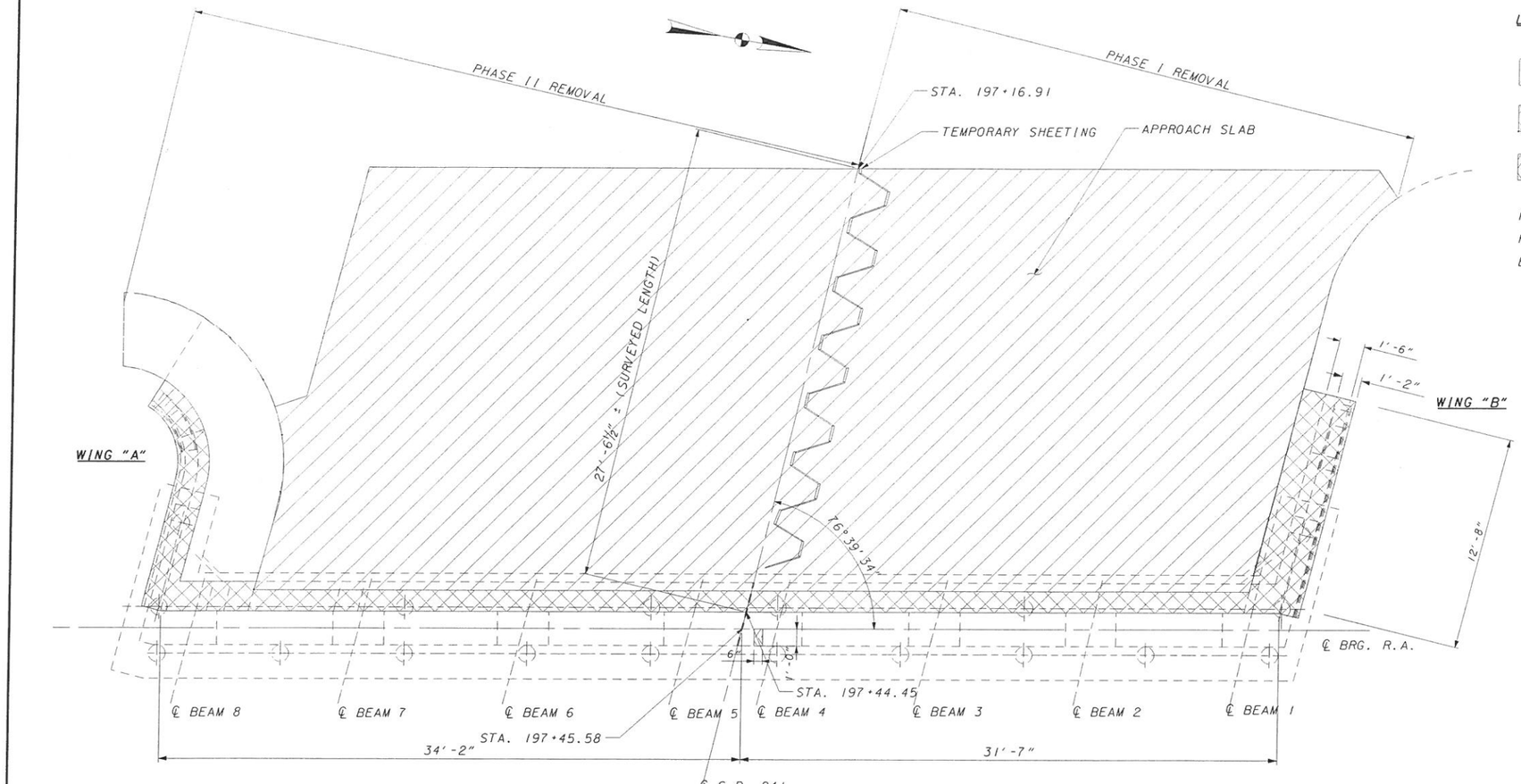

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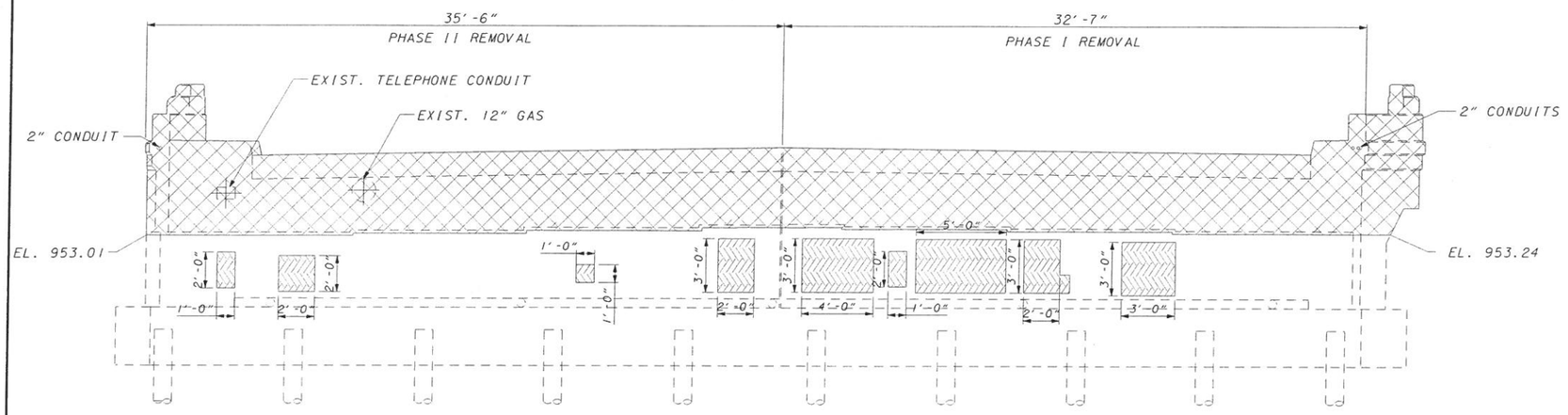
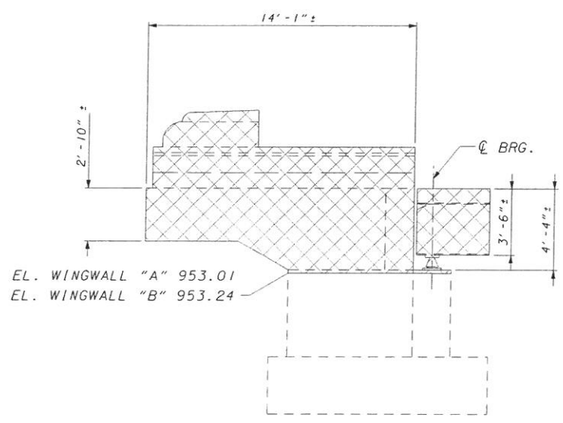


ELEVATION



WINGWALL ELEVATION

LEGEND

- APPROACH SLAB REMOVAL AREA
- PORTONS OF STRUCTURE REMOVED, AS PER PLAN
- ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
BRG. = BEARING

LOCATION	ITEM 519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.
REAR ABUTMENT	59
200% EXPANSION FACTOR	118
TOTAL	177 *

* THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET

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8350 PRESIDENTIAL GATEWAY
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REAR ABUTMENT REMOVALS AND REPAIRS

BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
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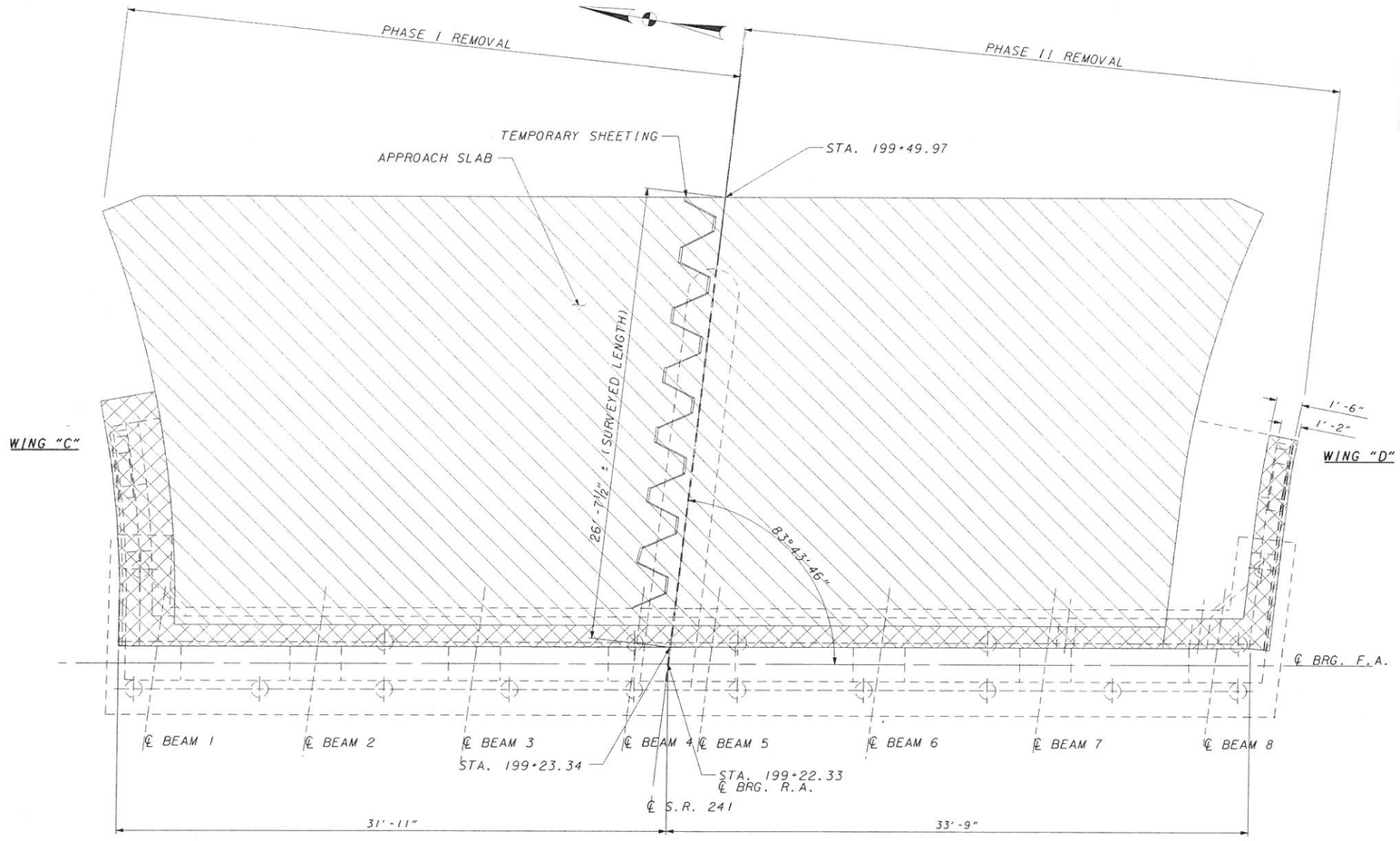

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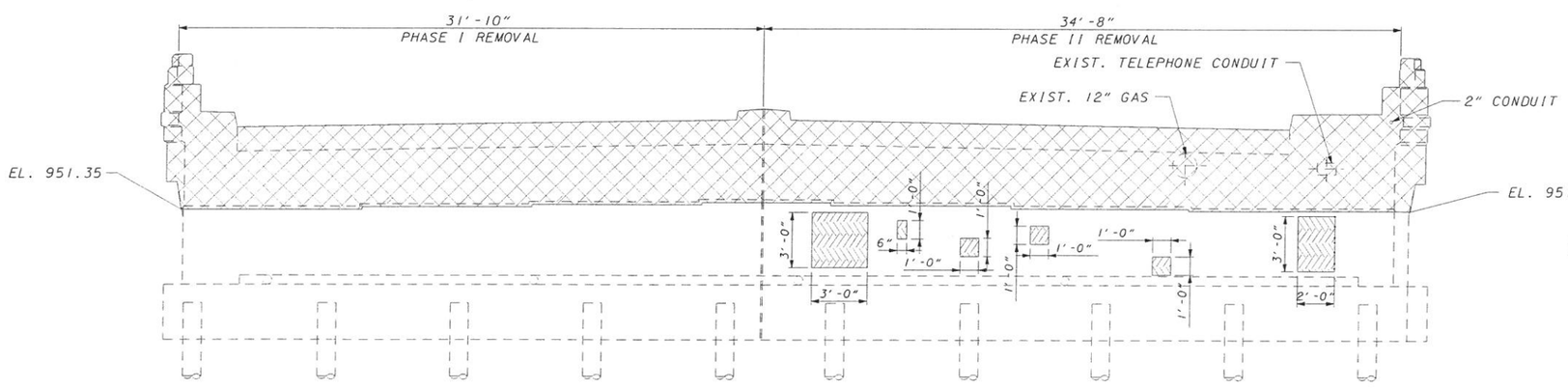

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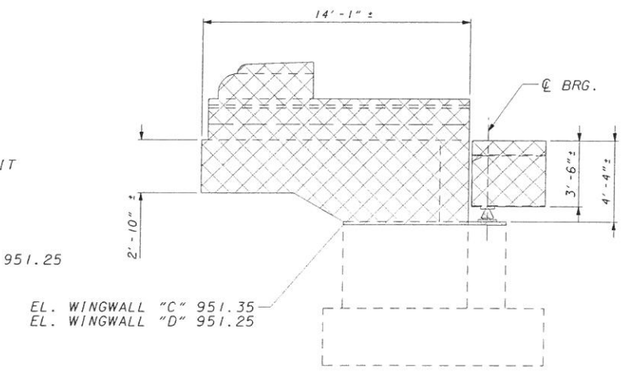

WINGWALL ELEVATION

LEGEND

APPROACH SLAB REMOVAL AREA

PORTONS OF STRUCTURE REMOVED, AS PER PLAN

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

BRG. = BEARING

LOCATION	ITEM 519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.
REAR ABUTMENT	19
200% EXPANSION FACTOR	38
TOTAL	57 *

* THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET

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RESOURCE INTERNATIONAL INC.
8350 PRESTIGE TRAIL GATEWAY
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FORWARD ABUTMENT REMOVALS AND REPAIRS

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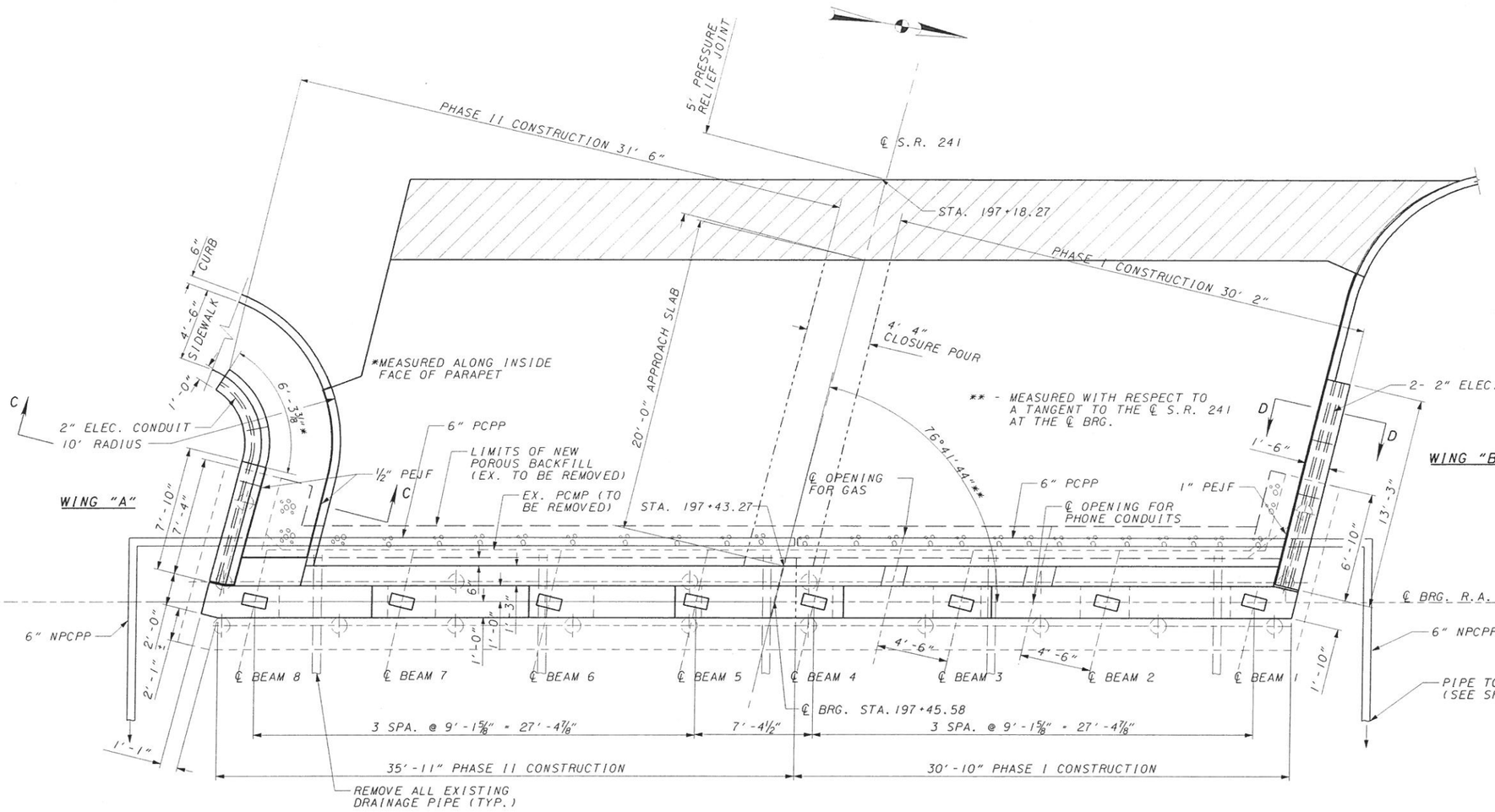
LEGEND:

R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
BRG. = BEARING
E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE
PEJF = PREFORMED EXPANSION JOINT FILLER
PCMP = PERFORATED CORRUGATED METAL PIPE
PCPP = PERFORATED CORRUGATED PLASTIC PIPE
NPCPP = NON-PERFORATED CORRUGATED PLASTIC PIPE

EL. 953.21 = EXISTING ELEVATION
EL. 953.80 = PROPOSED ELEVATION



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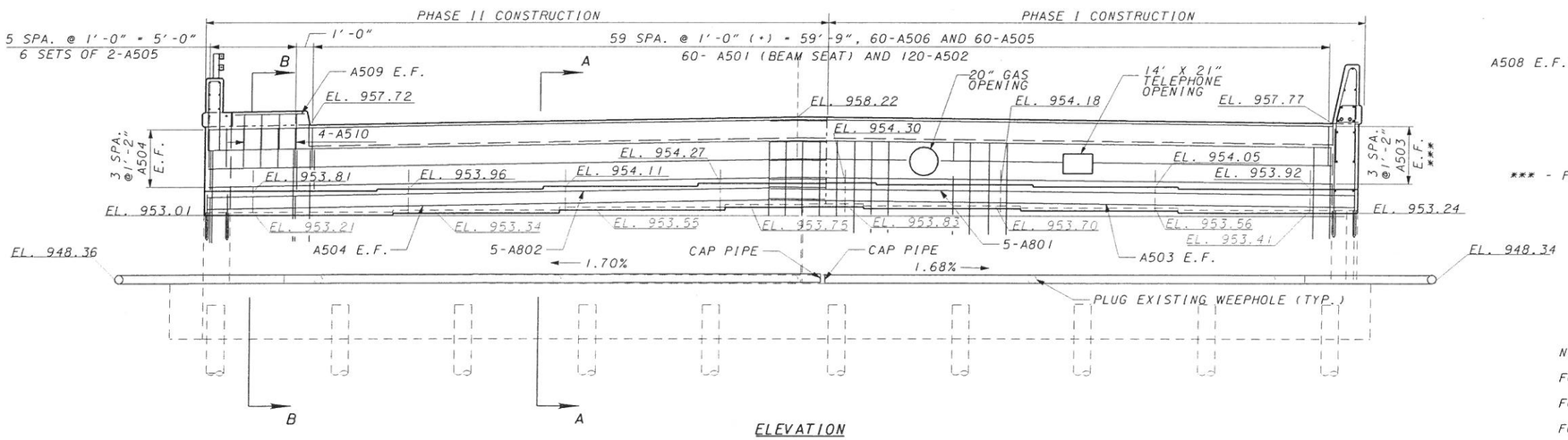
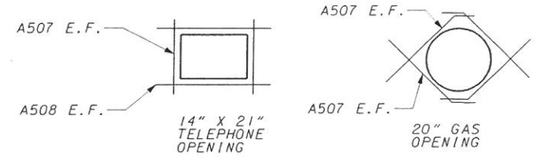


ELEVATION

BEAM SEAT ELEVATIONS ARE AT THE ℄ BRG.
DECK ELEVATIONS ARE AT THE FACE OF THE BACKWALL.



*** - FIELD CUT OR ADJUST BARS AROUND UTILITY OPENINGS.

LAP LENGTHS:

#5 BAR - 2'-6" MIN.
#8 BAR - 3'-4" MIN.

NOTE:

FOR SECTIONS, SEE SHEET 12/28.
FOR WINGWALL DETAILS, SEE SHEET 11/28 .
FOR PARAPET DETAILS, SEE SHEET 11/28 .

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PROPOSED REAR ABUTMENT DETAILS
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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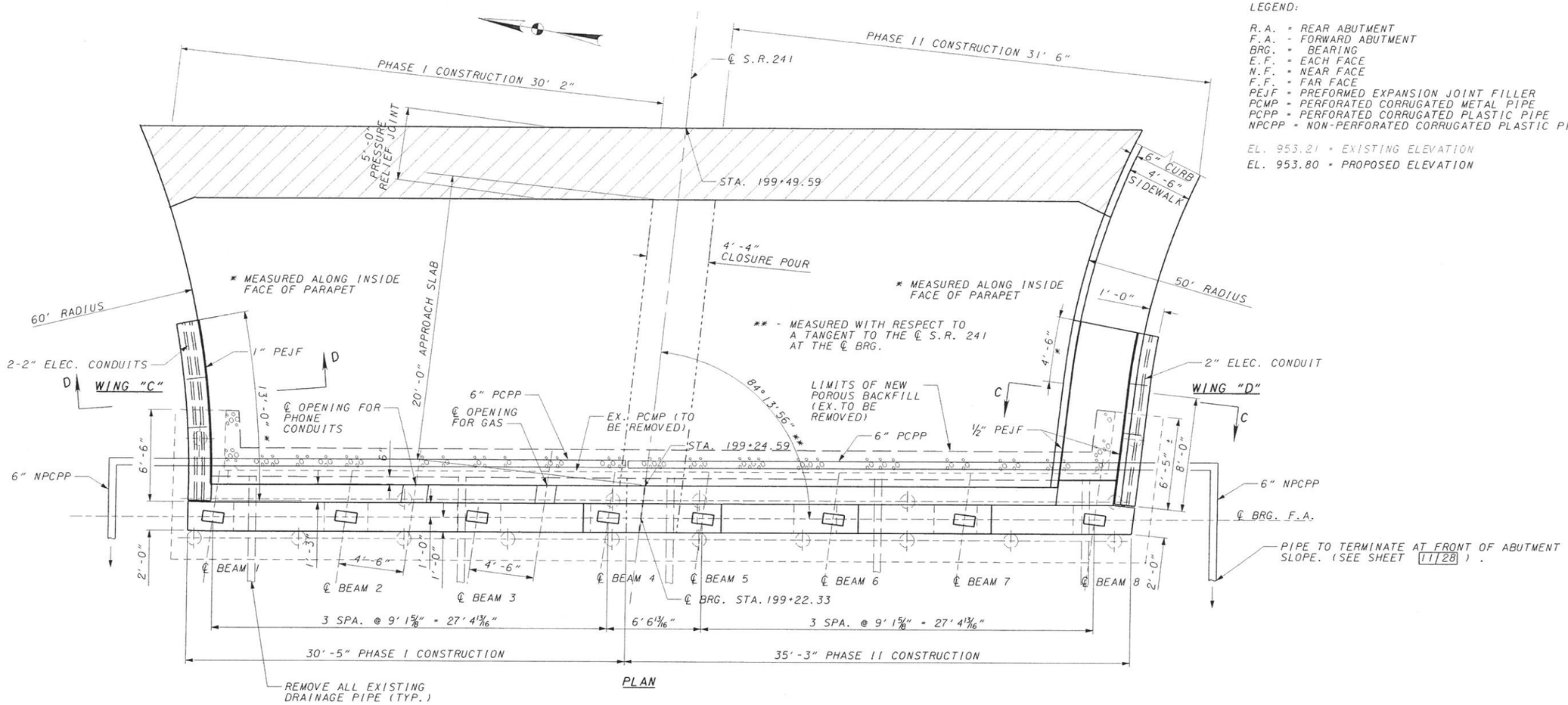
LEGEND:

R.A. = REAR ABUTMENT
F.A. - FORWARD ABUTMENT
BRG. = BEARING
E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE
PEJF = PREFORMED EXPANSION JOINT FILLER
PCMP = PERFORATED CORRUGATED METAL PIPE
PCPP = PERFORATED CORRUGATED PLASTIC PIPE
NPCPP = NON-PERFORATED CORRUGATED PLASTIC PIPE

EL. 953.21 = EXISTING ELEVATION
EL. 953.80 = PROPOSED ELEVATION



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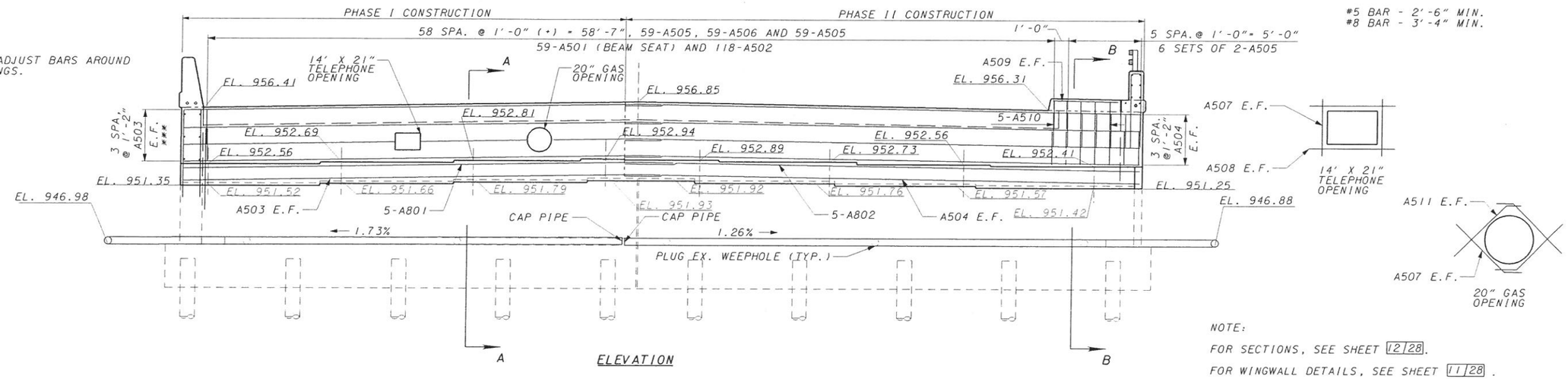

ELEVATION

*** - FIELD CUT OR ADJUST BARS AROUND UTILITY OPENINGS.

BEAM SEAT ELEVATIONS ARE AT THE ℄ BRG.
DECK ELEVATIONS ARE AT THE FACE OF THE BACKWALL.

LAP LENGTHS:

#5 BAR - 2'-6" MIN.
#8 BAR - 3'-4" MIN.

NOTE:

FOR SECTIONS, SEE SHEET 12/28.
FOR WINGWALL DETAILS, SEE SHEET 11/28.
FOR PARAPET DETAILS, SEE SHEET 11/28.

DESIGN AGENT:
RESOURCE INTERNATIONAL, INC.
8350 PRESIDENTIAL GATEWAY
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NCK		7600186	

PROPOSED FORWARD ABUTMENT DETAILS
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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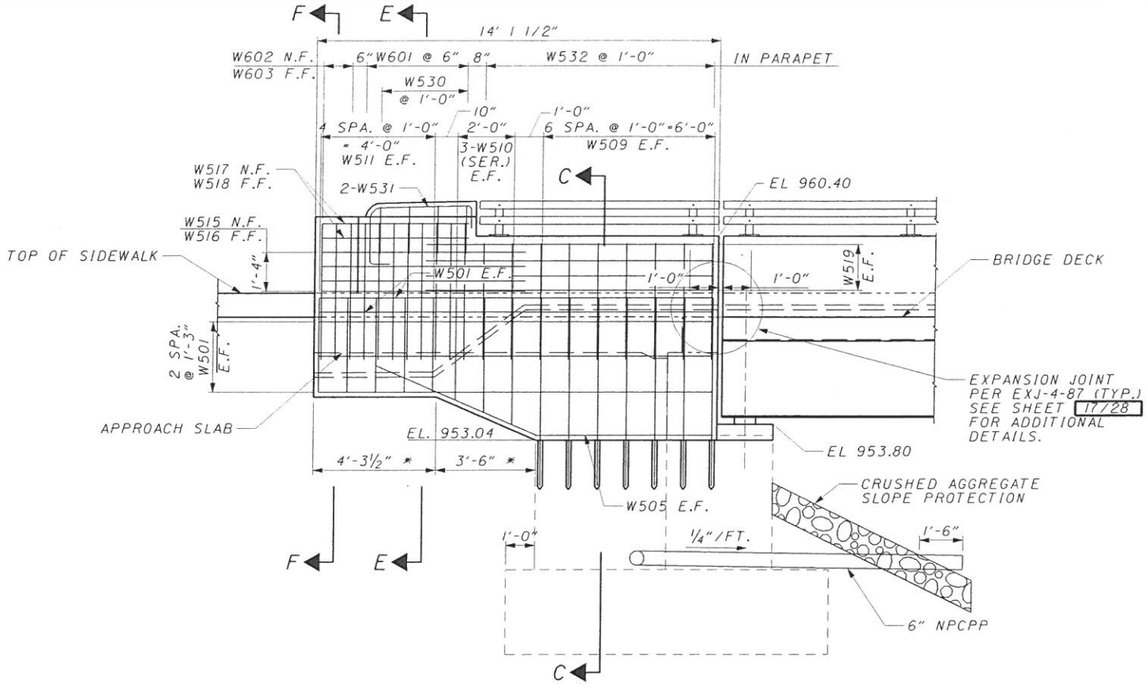
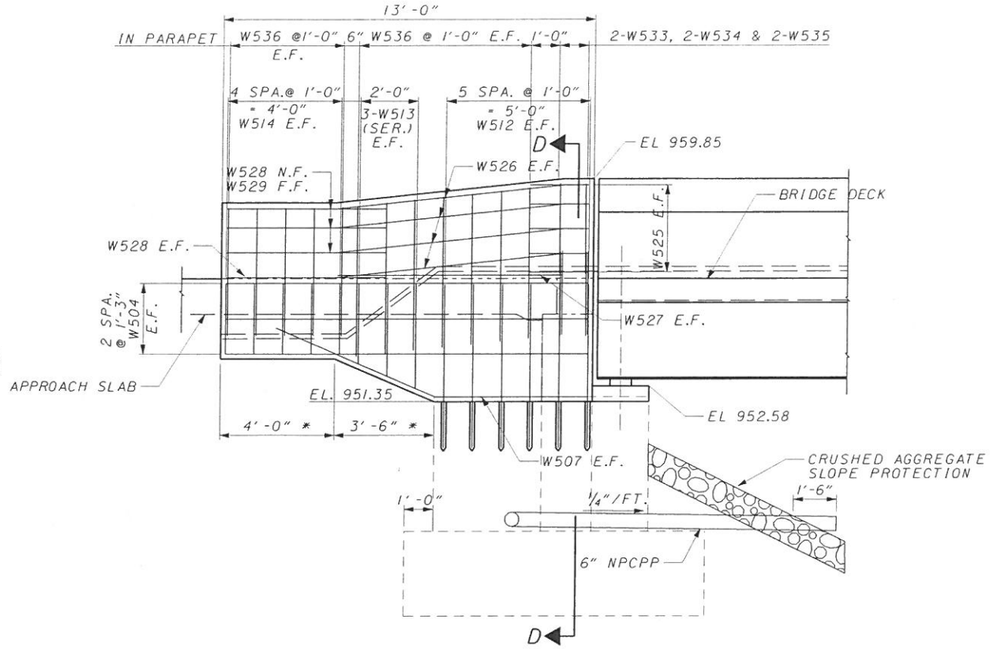


WING "A" ELEVATION

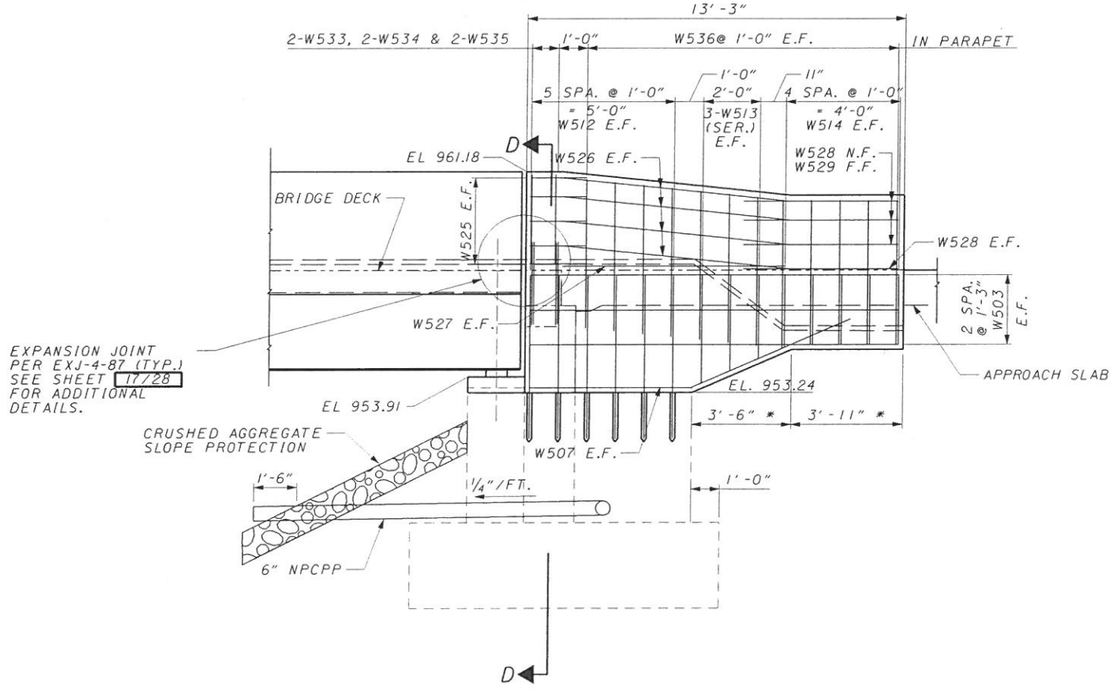
PILES NOT SHOWN

* - MEASURED ALONG INSIDE FACE OF PARAPET



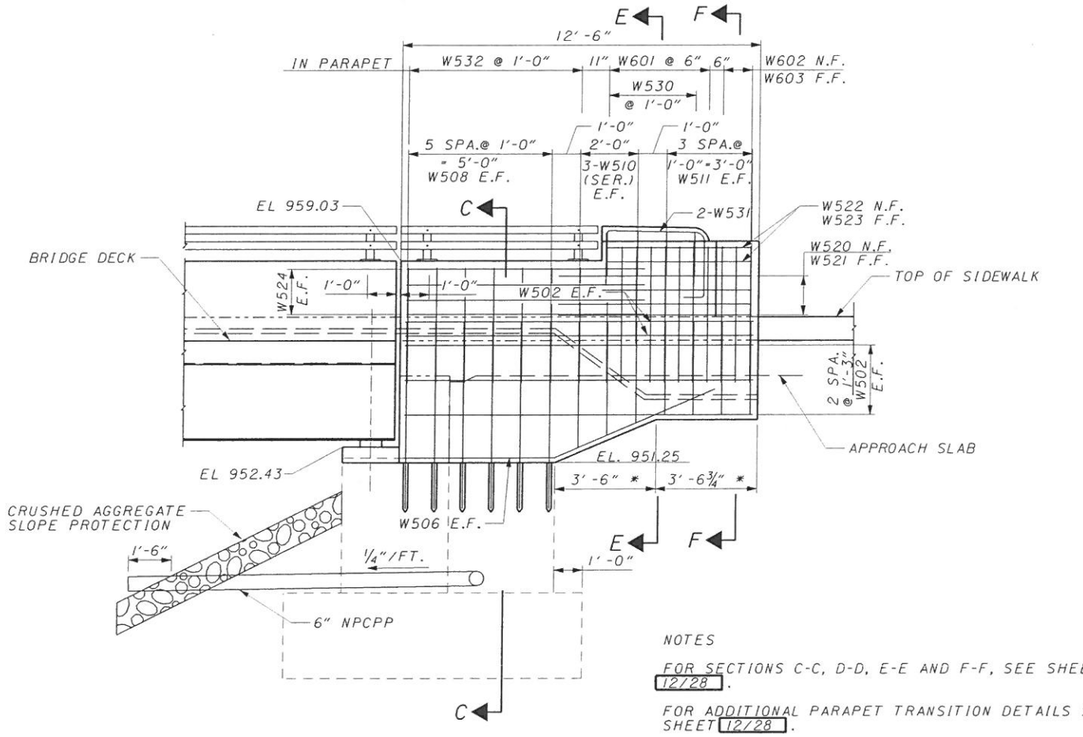
WING "C" ELEVATION

PILES NOT SHOWN



WING "B" ELEVATION

PILES NOT SHOWN



WING "D" ELEVATION

PILES NOT SHOWN

NOTES

FOR SECTIONS C-C, D-D, E-E AND F-F, SEE SHEET 12/28 .

FOR ADDITIONAL PARAPET TRANSITION DETAILS SEE SHEET 12/28 .

FOR BRIDGE PARAPETS, SEE SHEET 23/28 .

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8350 PRESIDENTIAL GATEWAY
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PROPOSED ABUTMENT DETAILS

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OVER S.R. 21

STA-241-7.81
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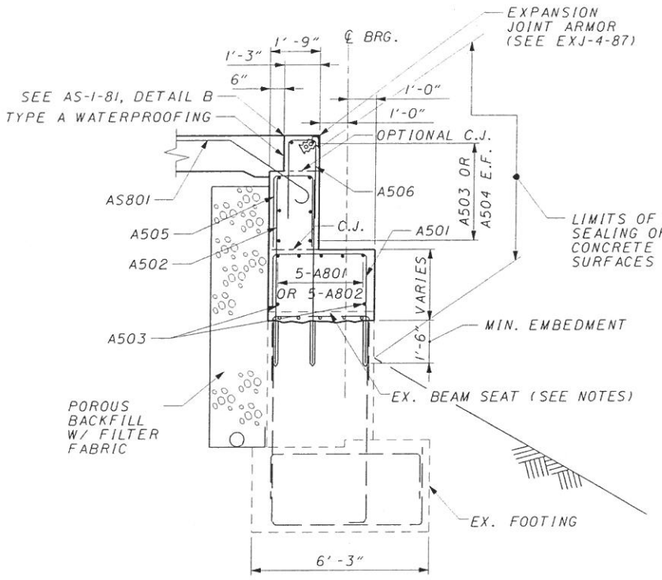
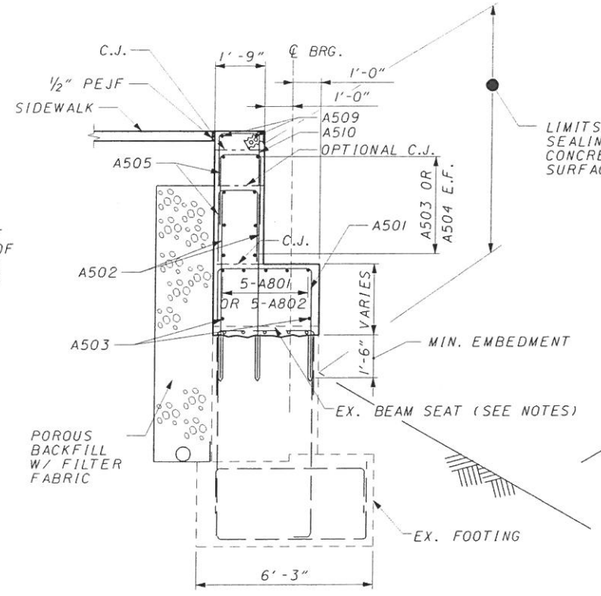
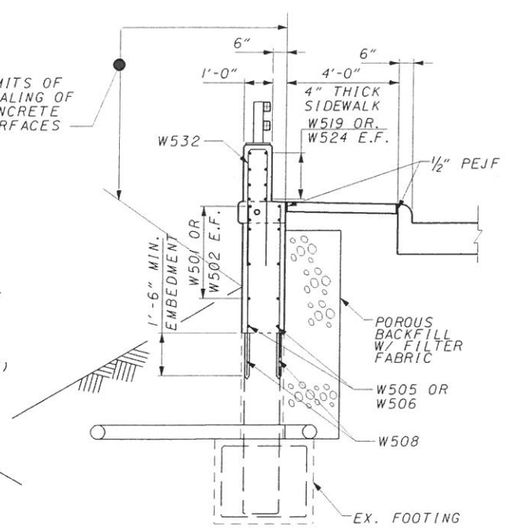


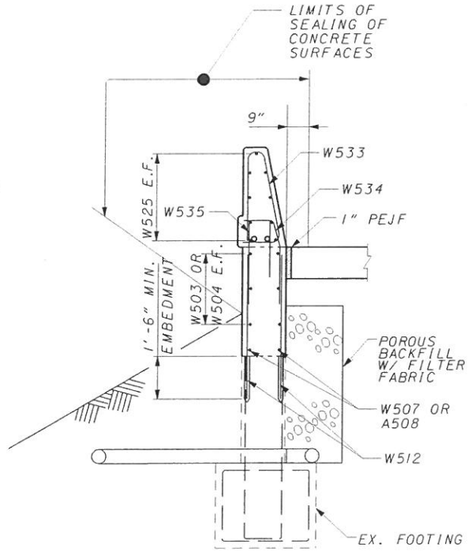
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES:

1. IN ORDER TO AVOID INTERFERENCE BETWEEN EXISTING REINFORCING AND NEW DOWELS, REMOVE A PORTION OF THE EXISTING BEAM SEAT (2 INCH MINIMUM DEPTH) TO EXPOSE EXISTING REINFORCING. PROVIDE A 1" DEEP SAW CUT IN THE FACE OF THE ABUTMENT TO ASSURE NEAT REMOVAL. EXISTING BEAM SEAT REINFORCMENT IS TO BE RETAINED.

   THE DOWEL HOLES MAY THEN BE DRILLED, AND NEW REINFORCING PLACED.

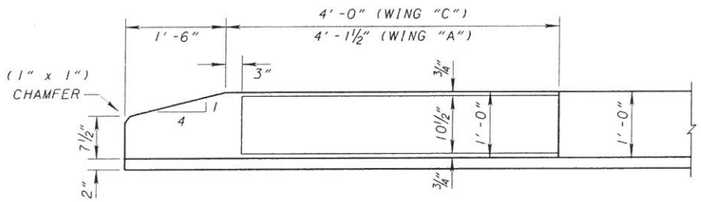
2. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW TGHE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.

3. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.

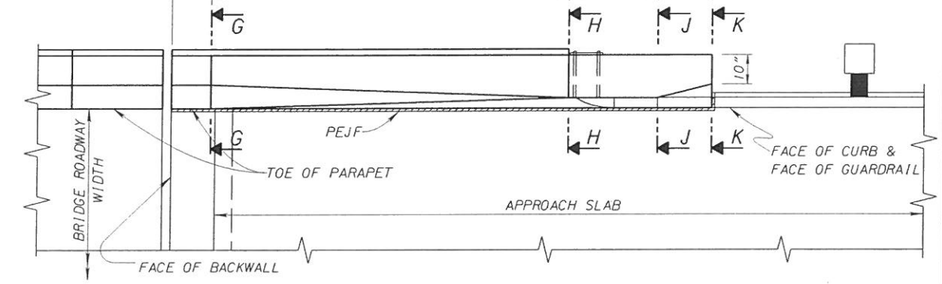
4. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

5. INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, OBSERVE THE SEATING OF BEAMS ON BEARINGS TO ASSURE THAT POSITIVE BEARING IS MAINTAINED.

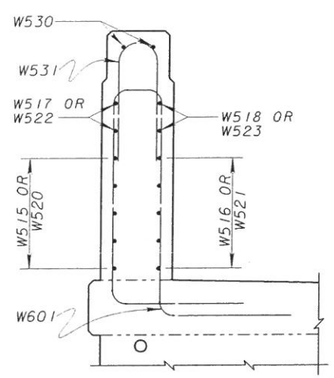
6. SEALING OF BEAM SEATS: IF THE BEAM SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY THE SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.



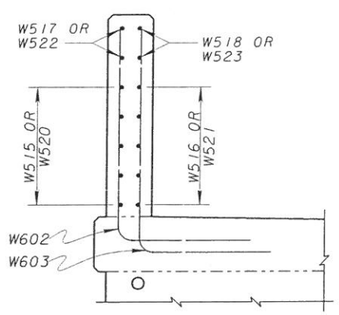
PARAPET PLAN- WING "A" AND WING "D"



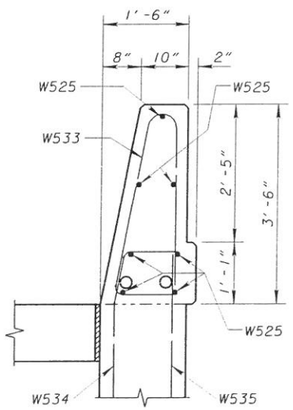
PARAPET PLAN - WING "B" AND WING "C"



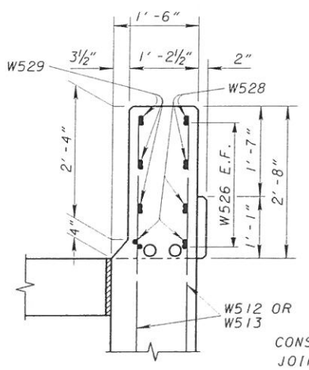
SECTION E-E



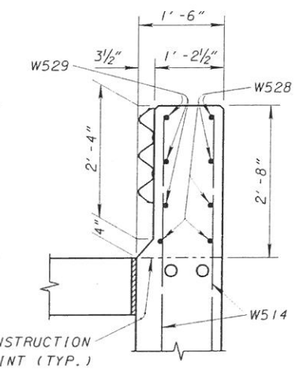
SECTION F-F



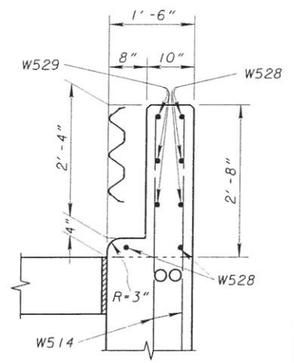
SECTION G-G



SECTION H-H



SECTION J-J



SECTION K-K

RESOURCE INTERNATIONAL INC.
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NCK		7600186	

PROPOSED ABUTMENT DETAILS

BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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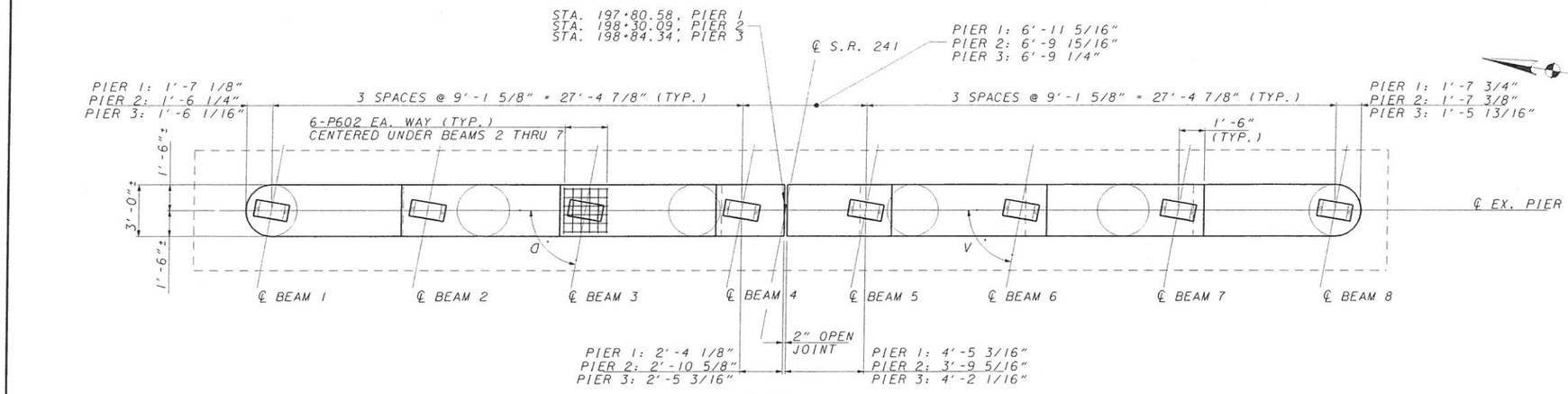
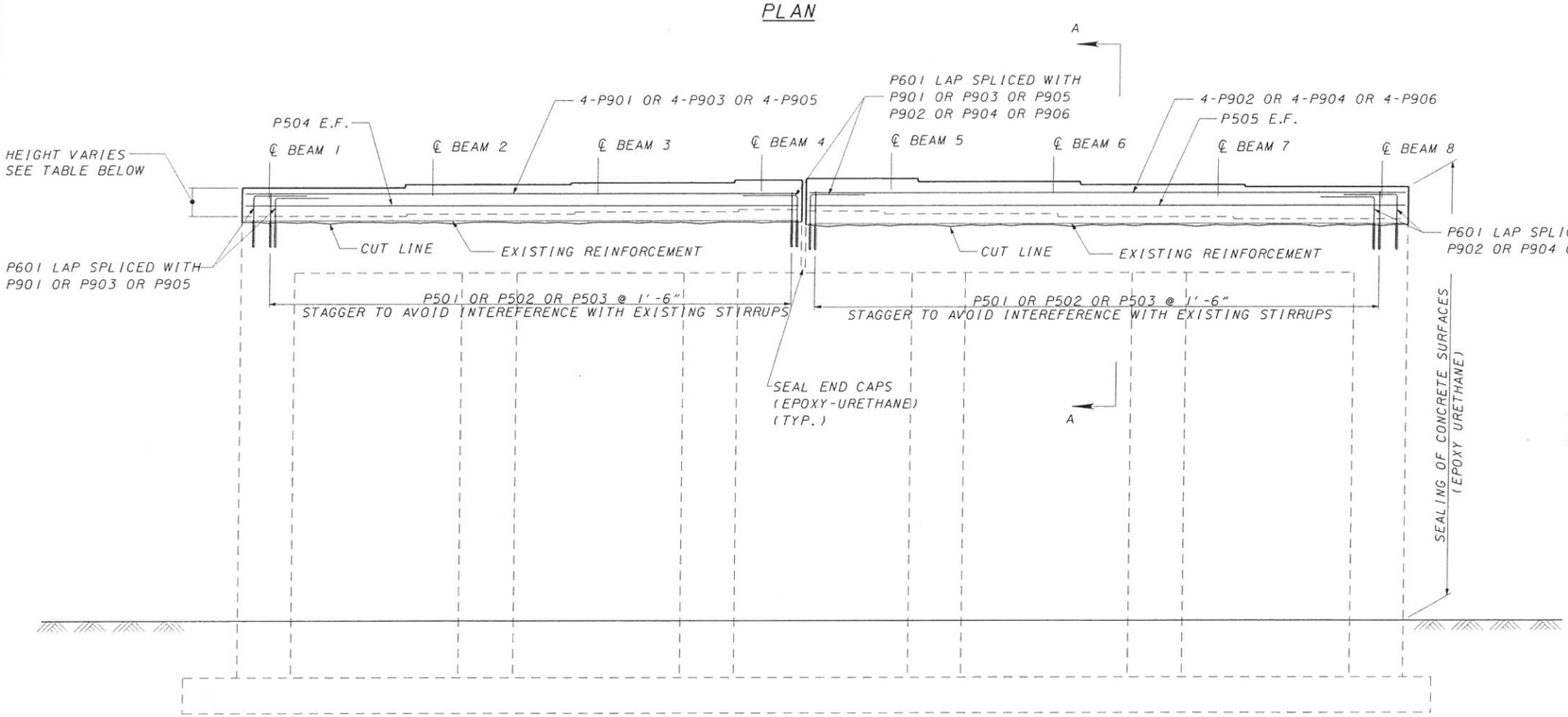
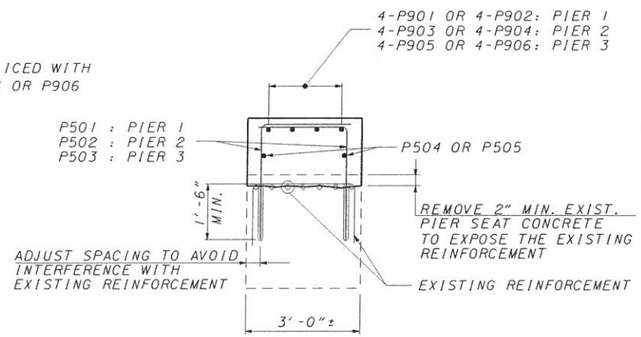


PLAN



ELEVATION



SECTION A-A

BEAM SEAT ELEVATIONS

ELEVATIONS DIFFERENCES SHOWN ARE APPROXIMATE

	PIER 1			PIER 2			PIER 3		
	EXISTING	PROPOSED	DIFFERENCE	EXISTING	PROPOSED	DIFFERENCE	EXISTING	PROPOSED	DIFFERENCE
1	952.62	953.73	1'-1 5/16"	951.95	953.46	1'-6 1/8"	951.43	953.09	1'-8 1/16"
2	952.73	953.86	1'-1 9/16"	952.07	953.60	1'-6 3/8"	951.55	953.21	1'-7 15/16"
3	952.86	953.99	1'-1 9/16"	952.17	953.74	1'-6 13/16"	951.65	953.35	1'-8 3/8"
4	952.98	954.13	1'-1 11/16"	952.34	953.87	1'-6 3/8"	951.81	953.47	1'-7 15/16"
5	952.92	954.08	1'-1 15/16"	952.32	953.85	1'-6 3/8"	951.78	953.44	1'-7 15/16"
6	952.71	953.93	1'-2 5/8"	952.13	953.70	1'-6 13/16"	951.61	953.28	1'-8 1/16"
7	952.54	953.78	1'-2 7/8"	951.97	953.55	1'-6 15/16"	951.44	953.13	1'-8 1/4"
8	952.39	953.62	1'-2 3/4"	951.84	953.40	1'-6 11/16"	951.34	952.96	1'-7 7/16"

PIER No.	D	V
1	77°22'17"	78°03'44"
2	80°11'39"	80°11'39"
3	82°36'52"	82°55'26"

BEAM ANGLES

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PROPOSED PIER DETAILS
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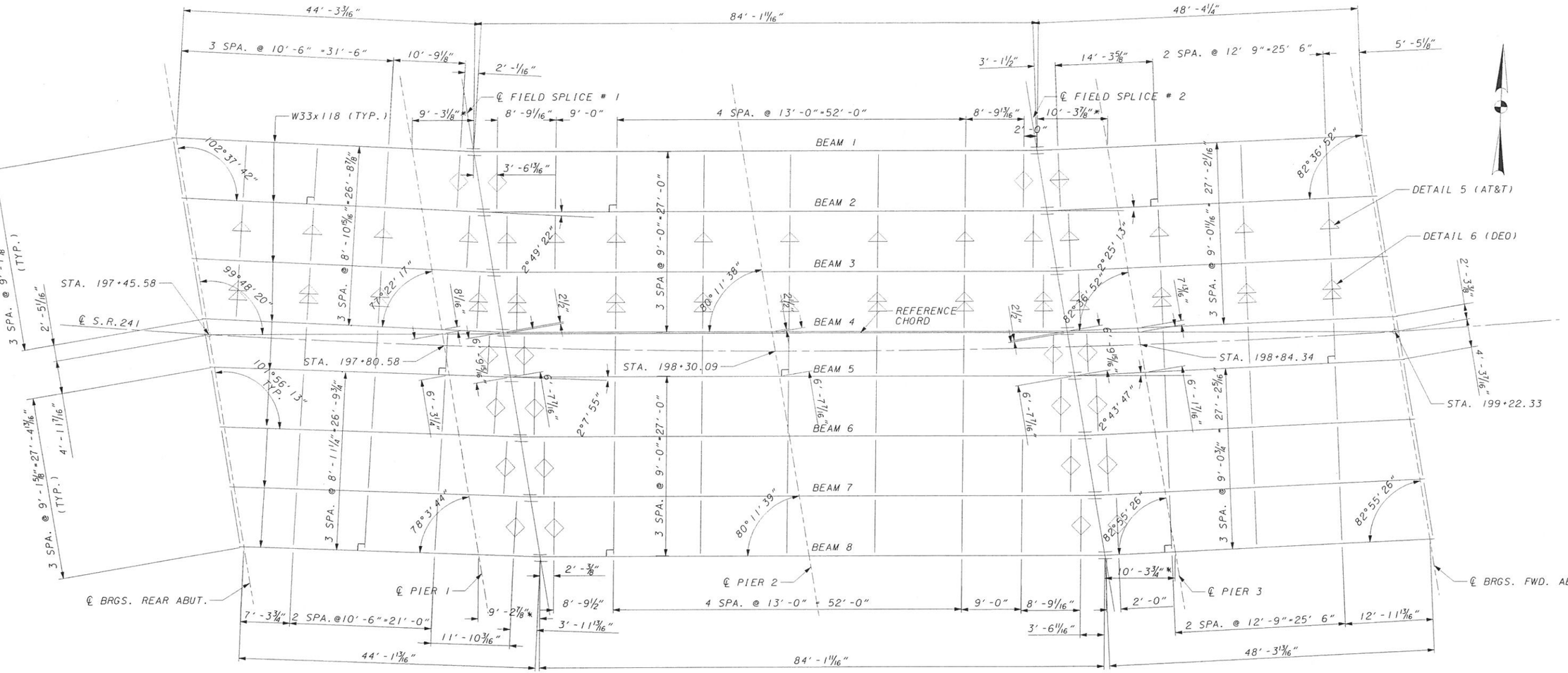


	L1	L2	L3	TOTAL
BEAMS 1 THROUGH 4	45' -0 7/16"	84' -1 11/16"	49' -1 5/16"	178' -3 7/16"
BEAMS 5 THROUGH 8	44' -11"	84' -1 11/16"	49' -0 15/16"	178' -1 5/8"

FRAMING PLAN

NOTE:

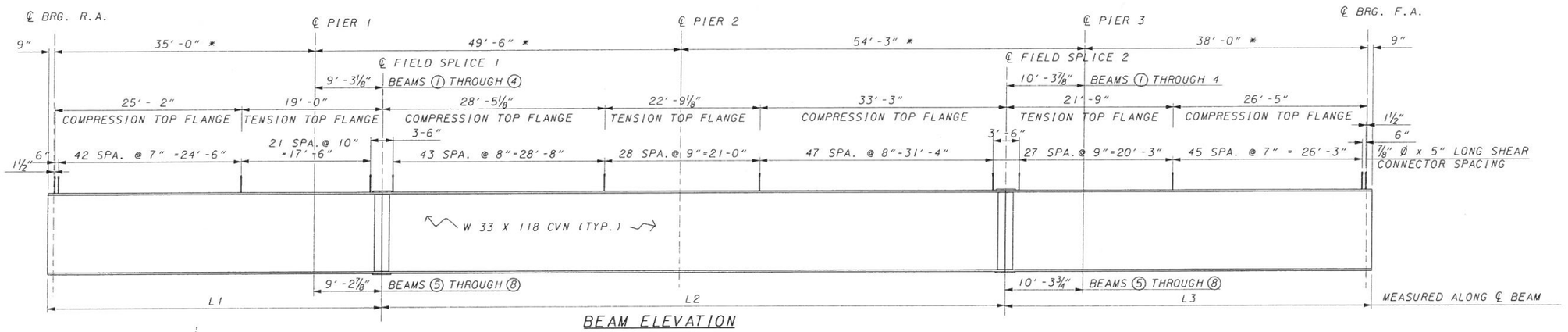
CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01

* MEASURED ALONG REFERENCE CHORD

◇ CROSS FRAMES WITH TOP HORIZONTAL L-3"x 3"x 5/16"

△ △ CROSS FRAMES FOR UTILITIES PER DETAILS ON SHEET 16|28.

SEE SHEETS 26|28 AND 27|28 FOR UTILITY LOCATIONS



BEAM ELEVATION

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6350 PRESIDENTIAL GATEWAY
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FRAMING PLAN
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OVER S.R. 21

STA-241-7.81
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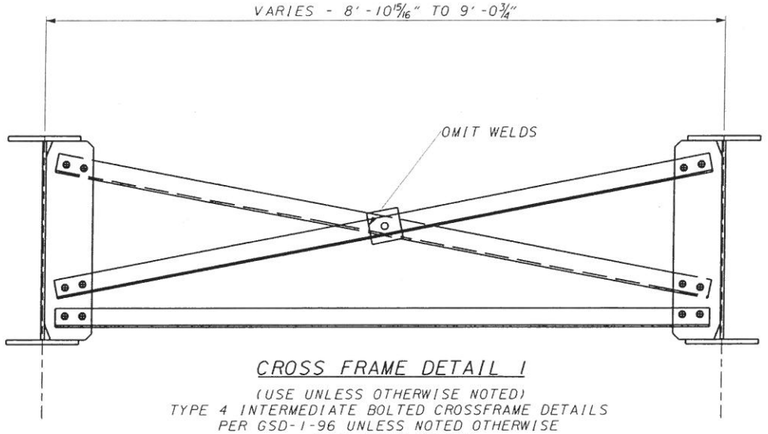
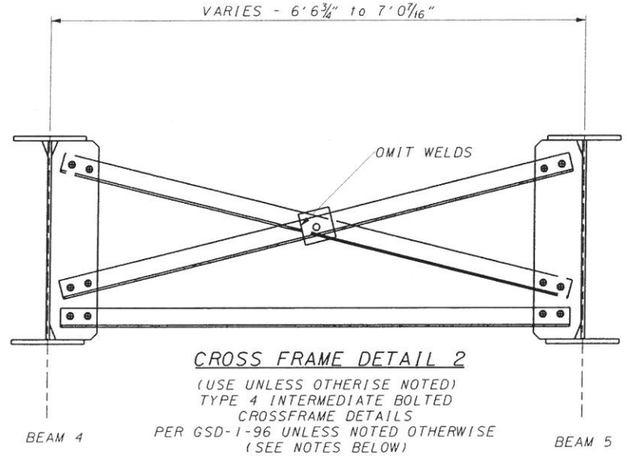


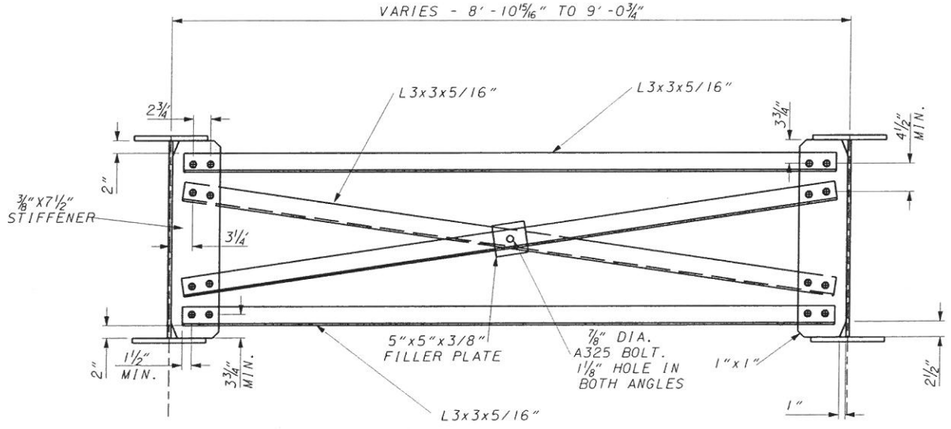
CROSS FRAME DETAIL 1

(USE UNLESS OTHERWISE NOTED)
TYPE 4 INTERMEDIATE BOLTED CROSSFRAME DETAILS
PER GSD-1-96 UNLESS NOTED OTHERWISE
(SEE NOTES BELOW)



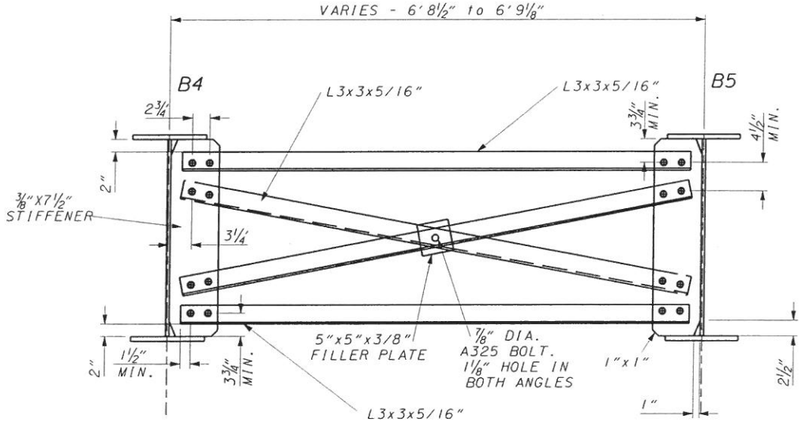
CROSS FRAME DETAIL 2

(USE UNLESS OTHERISE NOTED)
TYPE 4 INTERMEDIATE BOLTED
CROSSFRAME DETAILS
PER GSD-1-96 UNLESS NOTED OTHERWISE
(SEE NOTES BELOW)



CROSS FRAME DETAIL 3 (◇)

(USE WHERE NOTED ON FRAMING PLAN)



CROSS FRAME DETAIL 4 (◇)

(USE WHERE NOTED ON FRAMING PLAN)

NOTES

1. INSTALL STIFFENERS ACCORDING TO 513. STIFFENERS SHALL BE FILLET WELDED TO THE FLANGE AND WEB ON BOTH SIDES OF THE STIFFENER. WELD SIZE IS 1/4".
2. ALL WELDS NOTED WITHIN THESE DETAILS SHALL BE PERFORMED IN THE SHOP PRIOR TO GALVANIZATION.
3. HIGH STRENGTH BOLTS SHALL BE 7/8" DIA. A325 BOLTS UNLESS OTHERWISE NOTED.
4. ALL HOLES SHALL BE PRE-DRILLED IN THE SHOP. CROSSFRAME AND ENDFRAME HOLES SHALL BE 1 1/8" DIA. HOLES IN STIFFENERS AND GUSSET PLATES SHALL BE 1" DIA. HOLES.
5. ALL STRUCTURAL STEEL WORK RELATED TO INSTALLATION OF THE SUPPORT MEMBERS FOR THE AT&T DUCT AND GAS LINE RELOCATION SHALL CONFORM TO ITEM 513 AND BE PAID FOR BY THE RESPECTIVE UTILITY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS RELATED TO THE EXISTING STRUCTURE PRIOR TO FABRICATION AND INSTALLATION OF THE SUPPORTS. IF ANY CONFLICTS EXISTS BETWEEN FIELD CONDITIONS AND THESE DRAWINGS, CONSULT THE DEPARTMENT AND RESPECTIVE UTILITY COMPANIES PRIOR TO PROCEEDING.
6. ALL STRUCTURAL STEEL INCLUDING UTILITY HANGER SUPPORTS SHALL BE HOT-DIPPED GALVANIZED.

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SUPERSTRUCTURE DETAILS
BRIDGE NO. STA-241-0781
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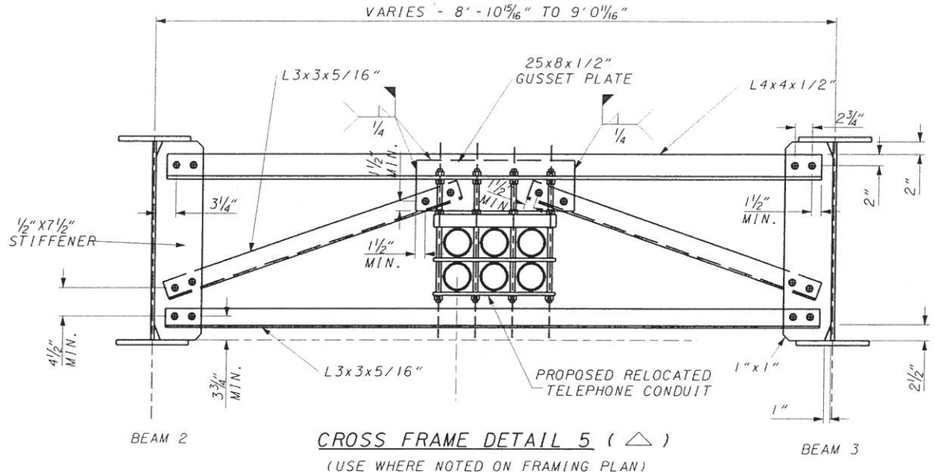
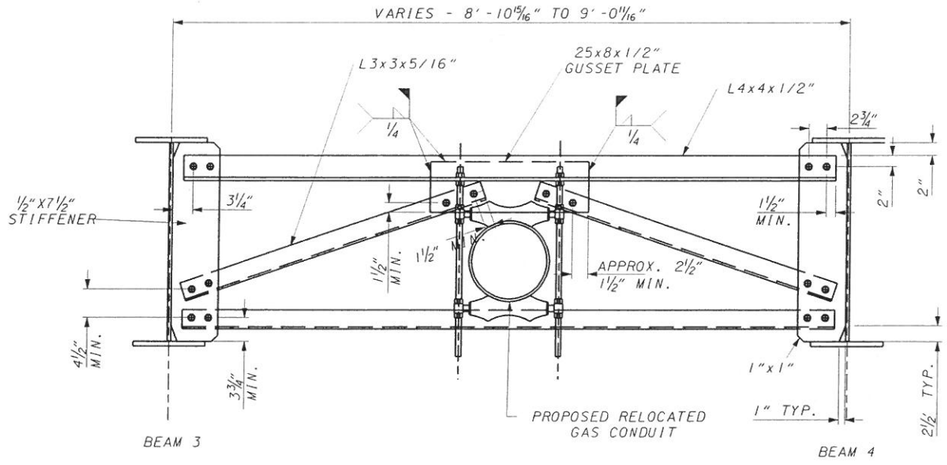


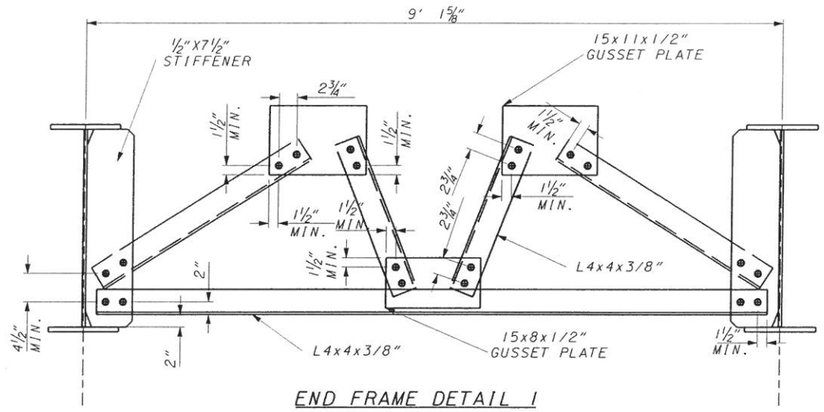
CROSS FRAME DETAIL 5 (△)

(USE WHERE NOTED ON FRAMING PLAN)



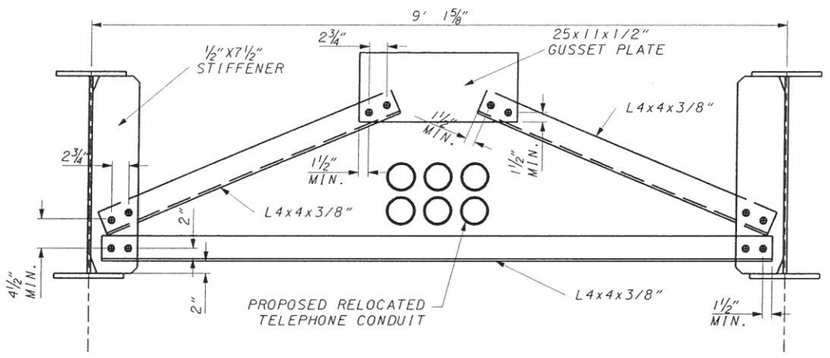
CROSS FRAME DETAIL 6 (△)

(USE WHERE NOTED ON FRAMING PLAN)

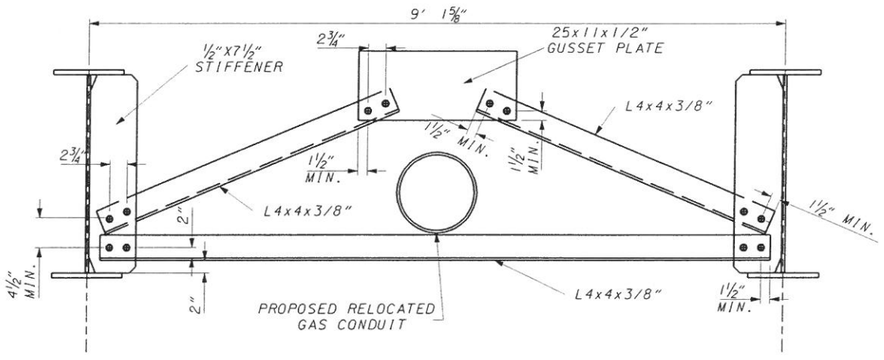


END FRAME DETAIL 1

(USE UNLESS NOTED OTHERWISE)



END FRAME DETAIL 2



END FRAME DETAIL 3

NOTES

1. INSTALL STIFFENERS ACCORDING TO 513. STIFFENERS SHALL BE FILLET WELDED TO THE FLANGE AND WEB ON BOTH SIDES OF THE STIFFENER. WELD SIZE IS 1/4".
2. ALL WELDS NOTED WITHIN THESE DETAILS SHALL BE PERFORMED IN THE SHOP PRIOR TO GALVANIZATION.
3. HIGH STRENGTH BOLTS SHALL BE 7/8" DIA. A325 BOLTS UNLESS OTHERWISE NOTED.
4. ALL HOLES SHALL BE PRE-DRILLED IN THE SHOP. CROSSFRAME AND ENDFRAME HOLES SHALL BE 1 1/8" DIA. HOLES IN STIFFENERS AND GUSSET PLATES SHALL BE 1" DIA. HOLES.
5. ALL STRUCTURAL STEEL WORK RELATED TO INSTALLATION OF THE SUPPORT MEMBERS FOR THE AT&T DUCT AND GAS LINE RELOCATION SHALL CONFORM TO ITEM 513 AND BE PAID FOR BY THE RESPECTIVE UTILITY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS RELATED TO THE EXISTING STRUCTURE PRIOR TO FABRICATION AND INSTALLATION OF THE SUPPORTS. IF ANY CONFLICTS EXISTS BETWEEN FIELD CONDITIONS AND THESE DRAWINGS, CONSULT THE DEPARTMENT AND RESPECTIVE UTILITY COMPANIES PRIOR TO PROCEEDING.
6. ALL STRUCTURAL STEEL INCLUDING UTILITY HANGER SUPPORTS SHALL BE HOT-DIPPED GALVANIZED.

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SUPERSTRUCTURE DETAILS

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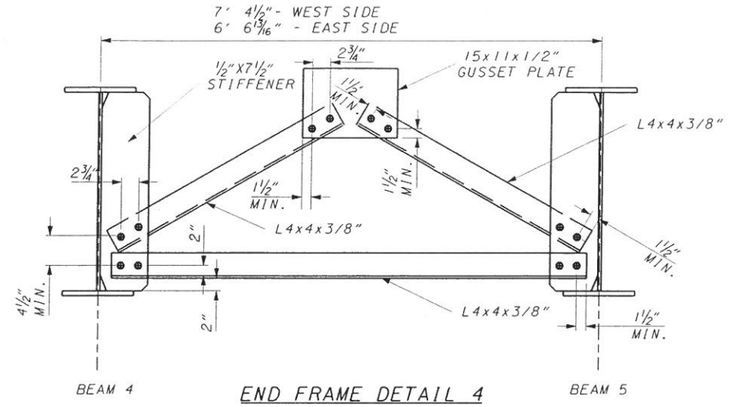
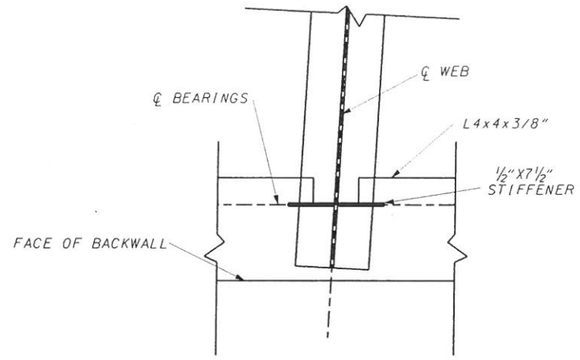
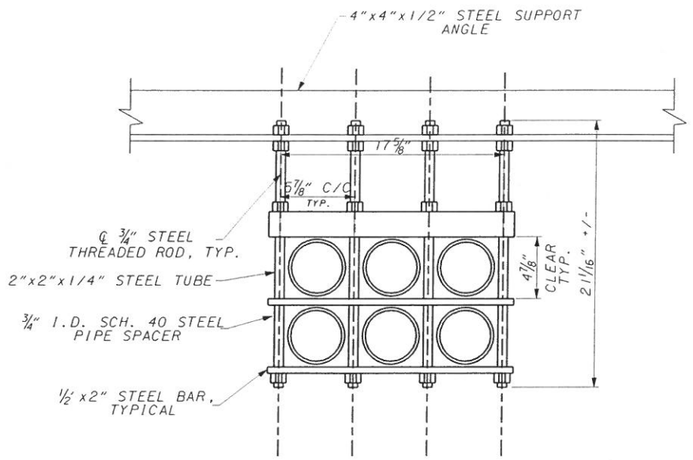


END FRAME DETAIL 4

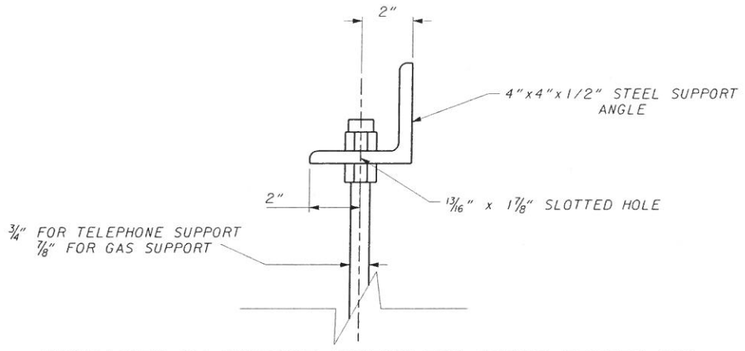


ENDFRAME, STIFFENER, WEB CONNECTION DETAIL

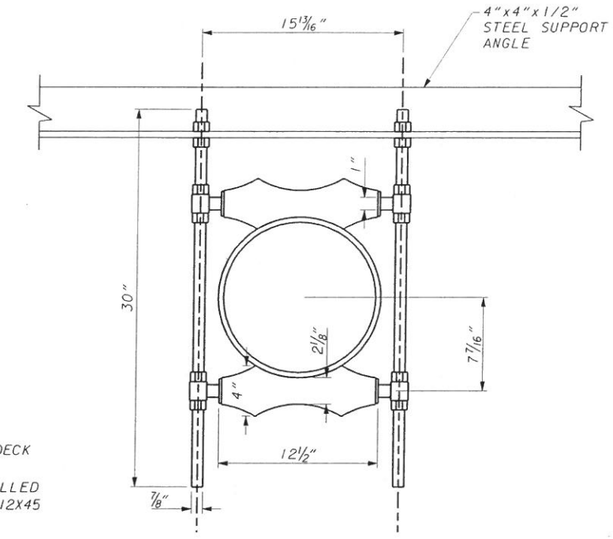


TELEPHONE CONDUIT HANGER DETAIL

ALL THREADED RODS SHALL BE PROVIDED WITH NUTS, FLAT WASHERS AND LOCK WASHERS AT EACH END.

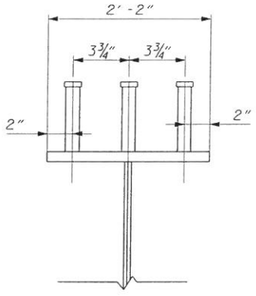


SIDE VIEW OF SUPPORT SYSTEM FOR CROSS FRAMES AND INTERMEDIATE SUPPORTS

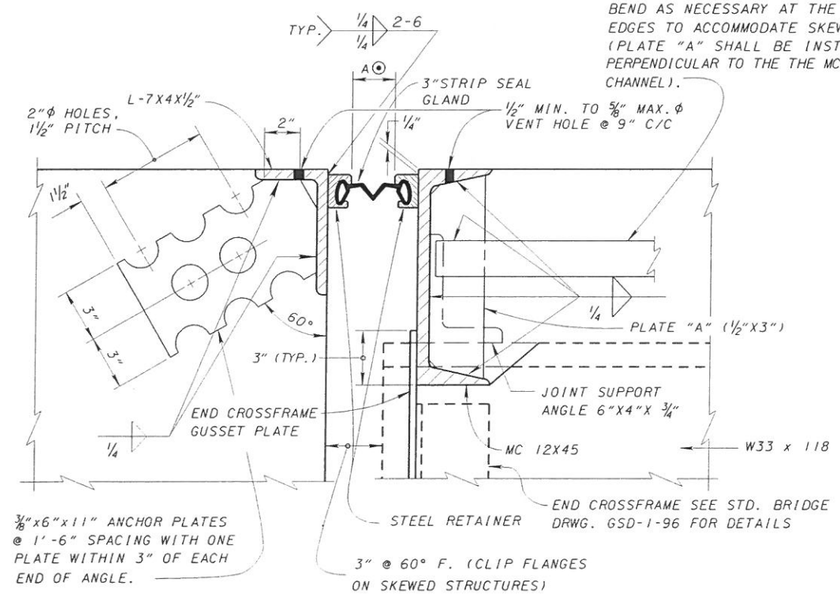


GAS CONDUIT HANGER DETAIL

ALL THREADED RODS SHALL BE PROVIDED WITH NUTS, FLAT WASHERS AND LOCK WASHERS AT EACH END.



SHEAR STUD CONNECTOR DETAIL



EXPANSION JOINT DETAIL

⊙ - FOR DIMENSION "A" , SEE TABLE THIS SHEET

TEMP.	DIM. 'A'
30° F	1¹³⁄₁₆"
40° F	1¾"
50° F	1¹¹⁄₁₆"
60° F	1⅝"
70° F	1⁹⁄₁₆"
80° F	1½"
90° F	1⁷⁄₁₆"

DIMENSION 'A' VALUES

NOTES

1. INSTALL STIFFENERS ACCORDING TO 513. STIFFENERS SHALL BE FILLET WELDED TO THE FLANGE AND WEB ON BOTH SIDES OF THE STIFFENER. WELD SIZE IS ¼".
2. ALL WELDS NOTED WITHIN THESE DETAILS SHALL BE PERFORMED IN THE SHOP PRIOR TO GALVANIZATION.
3. HIGH STRENGTH BOLTS SHALL BE ⅞" DIA. A325 BOLTS UNLESS OTHERWISE NOTED
4. ALL HOLES SHALL BE PRE-DRILLED IN THE SHOP. CROSSFRAME AND ENDFRAME HOLES SHALL BE 1⅛" DIA. HOLES IN STIFFENERS AND GUSSET PLATES SHALL BE 1" DIA. HOLES.
5. ALL STRUCTURAL STEEL WORK RELATED TO INSTALLATION OF THE SUPPORT MEMBERS FOR THE AT&T DUCT AND GAS LINE RELOCATION SHALL CONFORM WITH ITEM 513 AND BE PAID FOR BY RESPECTIVE UTILITY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS RELATED TO THE EXISTING STRUCTURE PRIOR TO FABRICATION AND INSTALLATION OF THE SUPPORTS. IF ANY CONFLICTS EXISTS BETWEEN FIELD CONDITIONS AND THESE DRAWINGS, CONSULT THE DEPARTMENT AND RESPECTIVE UTILITY COMPANIES PRIOR TO PROCEEDING.
6. ALL STRUCTURAL STEEL INCLUDING UTILITY HANGER SUPPORTS SHALL BE HOT-DIPPED GALVANIZED.
7. WELDED SHEAR CONNECTORS: INSTALL THE WELDED SHEAR CONNECTORS IN THE SHOP OR IN THE FIELD. IF THE CONNECTORS ARE SHOP INSTALLED PRIOR TO GALVANIZING, PROVIDE FALL PROTECTION ACCORDING TO OSHA STANDARDS FOR ALL WORKERS, INCLUDING THOSE ENGAGED IN CONNECTING AND IN DECKING. IF THE CONNECTORS ARE FIELD INSTALLED, REMOVE THE GALVANIC COATING BY GRINDING AT EACH CONNECTOR LOCATION PRIOR TO WELDING.

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

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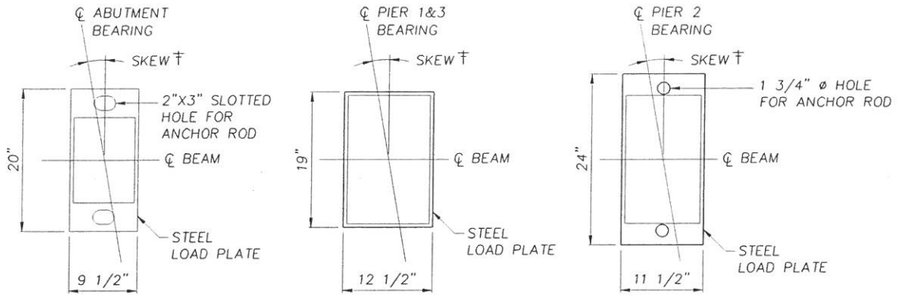
JLM	JLM	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

SUPERSTRUCTURE DETAILS
BRIDGE NO. STA-241-0781
OVER S.R.21

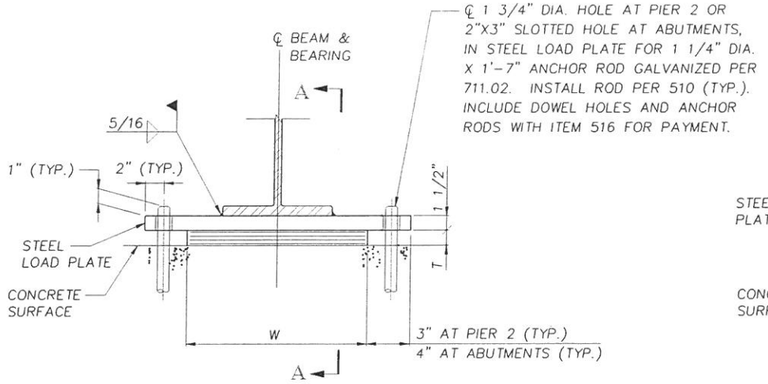
STA-241-7.81
PID No. 25238

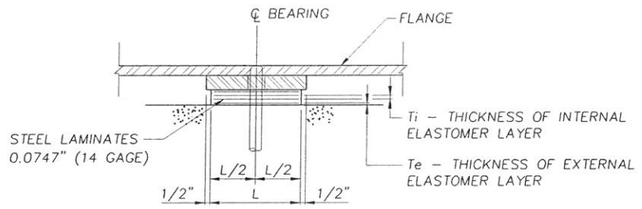


† TABLE OF SKEW ANGLES

	REAR ABUTMENT AND PIER 1	PIER 2	PIER 3 AND FORWARD ABUTMENT
BEAMS 1 THROUGH 4	12°37'43"	9°48'21"	7°23'08"
BEAMS 5 THROUGH 8	11°56'16"	9°48'21"	7°04'34"

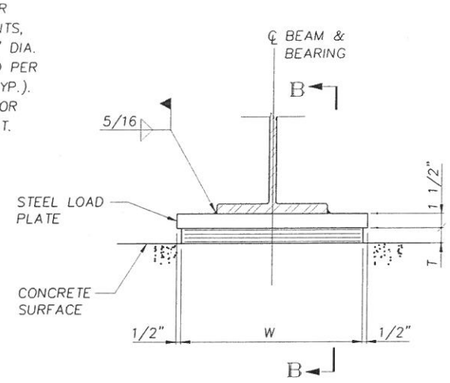
BEARING ORIENTATION PLAN

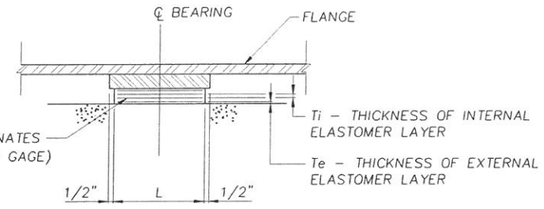




SECTION A–A

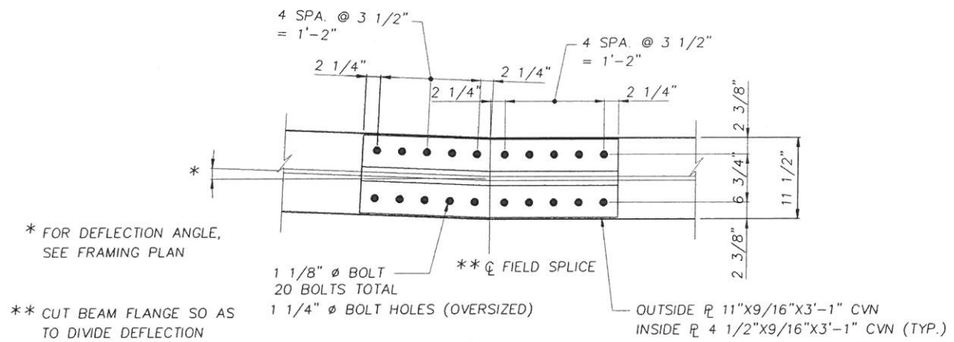
LAMINATED ELASTOMERIC BEARING EXPANSION, ANCHORED AT ABUTMENTS FIXED AT PIER 2



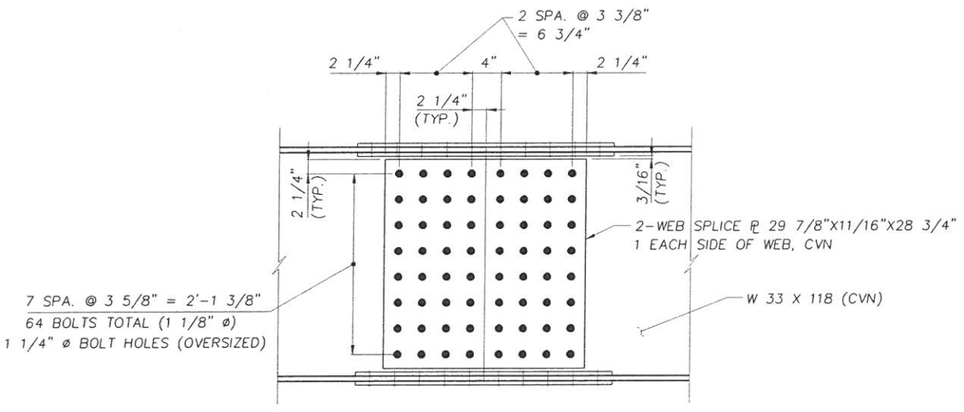


SECTION B–B

LAMINATED ELASTOMERIC BEARING EXPANSION AT PIER 1 AND 3



PLAN
(TOP & BOTTOM FLANGE SPLICE)



ELEVATION
(WEB SPLICE)

FIELD SPLICE DETAILS

TABLE OF ELASTOMERIC BEARING DATA

LOCATION	BEARING TYPE	NO. REQ'D.	L	W	T	Te	Ti	NUMBER OF INTERNAL ELASTOMER LAYERS
ABUTMENTS	EXPANSION (ANCHORED)	16	8 1/2"	12"	1.673"	0.170"	0.240"	4
PIER 1 AND 3	EXPANSION	16	11 1/2"	18"	1.769"	0.240"	0.330"	3
PIER 2	FIXED	8	10 1/2"	18"	1.589"	0.210"	0.290"	3

NOTES

1. WELDING OF THE LOAD PLATE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
2. FOLLOWING ARE THE BEARING DESIGN LOADS:

	ABUTMENTS	PIER 1&3	PIER 2
MAX. DEAD LOAD	27 KIPS	105 KIPS	109 KIPS
MAX. LIVE LOAD	58 KIPS	75 KIPS	74 KIPS
TOTAL DESIGN LOAD	85 KIPS	180 KIPS	183 KIPS

3. STEEL LOAD PLATE SHALL MEET THE REQUIREMENTS OF ASTM–A709, GRADE 50 STEEL.
4. ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.1 OF SECTION 14, BEARINGS, DIVISION I, DESIGN. TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS, EACH.
5. BEARING STEEL LOAD PLATES SHALL BE VULCANIZED BONDED UNDER HEAT AND PRESSURE TO THE ELASTOMER DURING THE MOLDING PROCESS.
6. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, THE BEAMS OR GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.
7. FINISH: ALL STEEL LOAD PLATES SHALL BE ASTM A709 AND BE CLEANED & COATED THE SAME AS ATTACHED STRUCTURAL STEEL. GALVANIZE ALL STEEL IN ACCORDANCE WITH 711.02.
8. ALL BOLTED SPLICE FASTNERS ARE 1 1/8" DIAMETER, TYPE I HIGH STRENGTH BOLTS, ASTM – A325.

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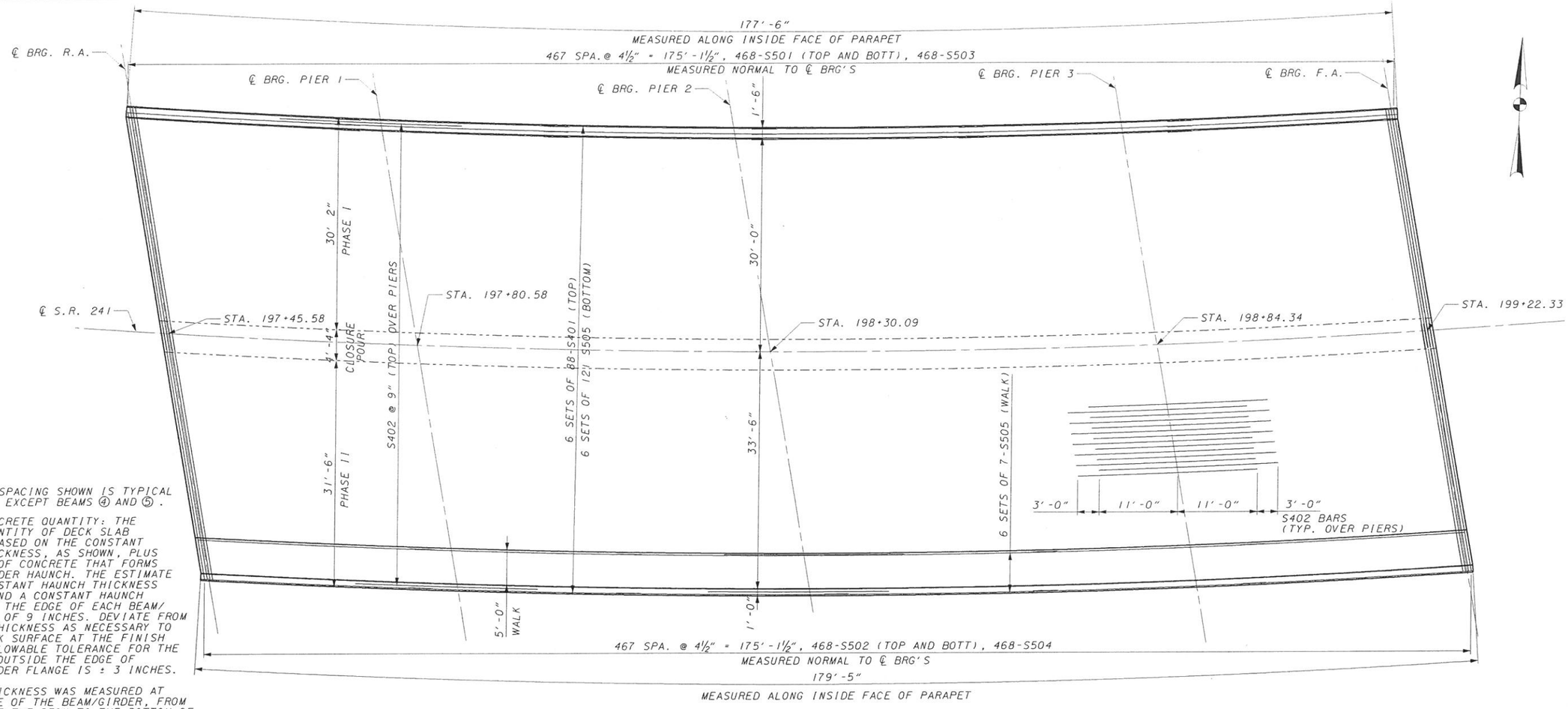
AJS		7600186	

SUPERSTRUCTURE DETAILS
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

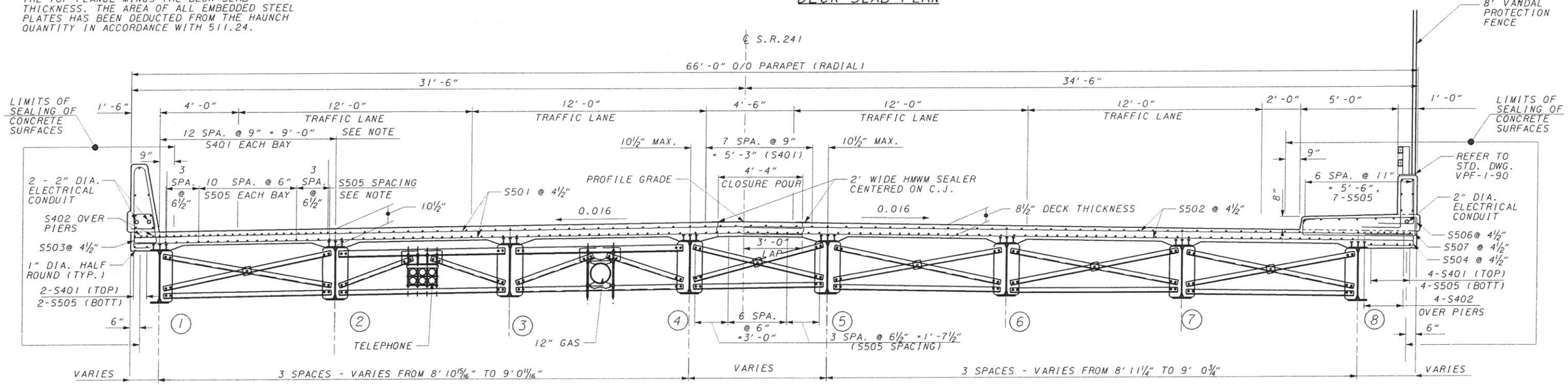


DECK SLAB PLAN

NOTES:

1. LONGITUDINAL SPACING SHOWN IS TYPICAL BETWEEN BEAMS EXCEPT BEAMS ④ AND ⑤.
2. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM/GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISH GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM/GIRDER FLANGE IS ± 3 INCHES.

THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.



TYPICAL DECK SECTION

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

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NCK		7600186	

DECK SLAB DETAILS
BRIDGE NO. STA-241-0781
OVER S.R.21

STA-241-7.81
PID No. 25238

19 / 28

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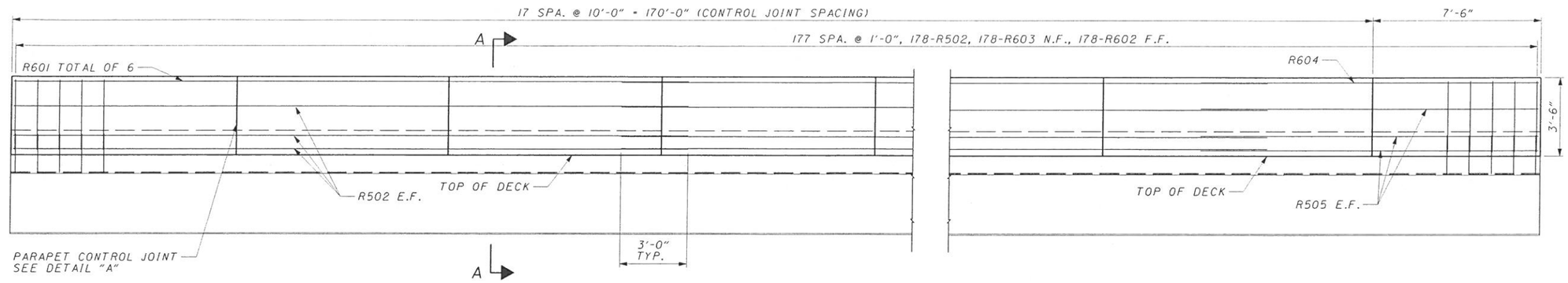
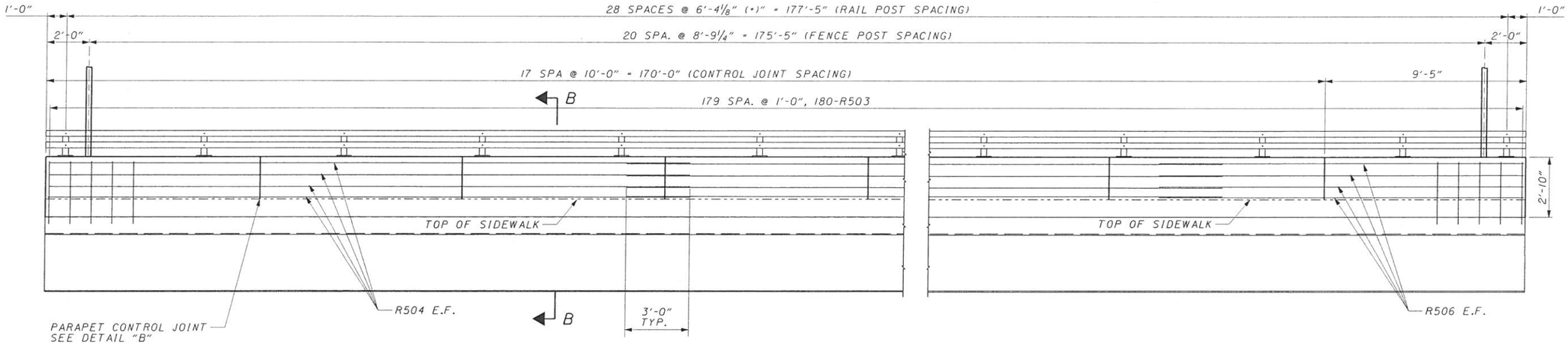
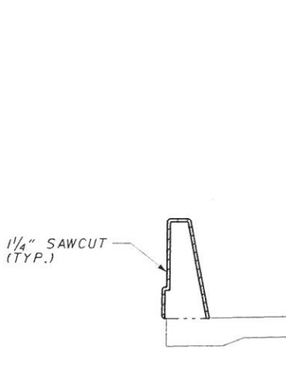


LEFT PARAPET ELEVATION

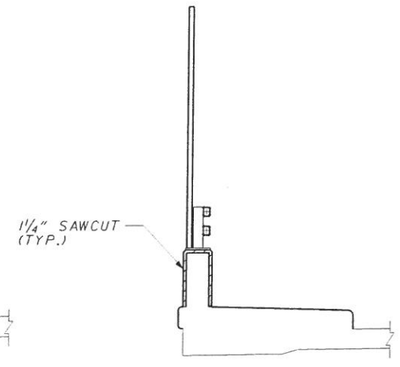


RIGHT PARAPET ELEVATION



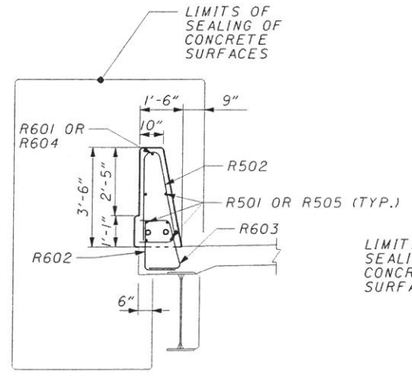
DETAIL A

(SECTION THROUGH SAWCUT)
SAWCUT PERIMETER = 8'-1"

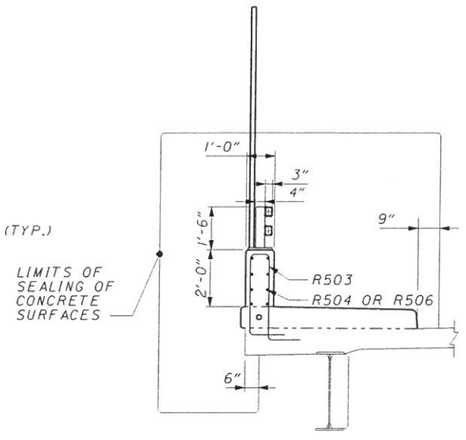


DETAIL B

(SECTION THROUGH SAWCUT)
SAWCUT PERIMETER = 4'-11"



SECTION A-A



SECTION B-B

CONTROL JOINT FOR CONCRETE PARAPETS

SAWCUT 1¼ INCH DEEP CONTROL JOINTS AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE.

USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼ INCH.

PLACE CONTROL JOINTS AT A MINIMUM OF 6'-0" AND A MAXIMUM OF 10'-0" CENTERS.

SEAL THE PERIMETER OF THE CONTROL JOINT TO A MINIMUM DEPTH OF ONE INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ONE-HALF INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

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NCK		7600186	

PARAPET DETAILS
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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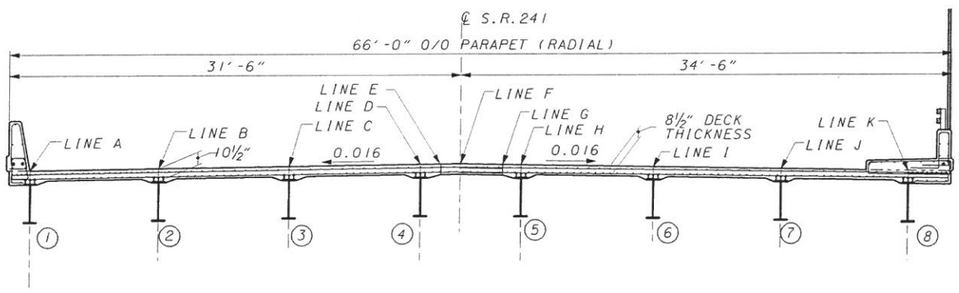
NOTE:
1. SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

DECK SCREED ELEVATIONS

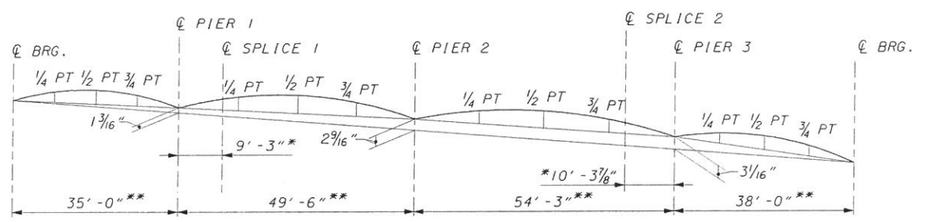
LOCATION	SPAN 1				SPAN 2					SPAN 3					SPAN 4				
	℄ BRG. R.A.	1/4 SPAN	1/2 SPAN	3/4 SPAN	℄ BRG. PIER 1	SPLICE #1	1/4 SPAN	1/2 SPAN	3/4 SPAN	℄ BRG. PIER 2	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE #2	℄ BRG. PIER 3	1/4 SPAN	1/2 SPAN	3/4 SPAN	℄ BRG. F.A.
LINE A	957.79	957.76	957.71	957.66	957.61	957.58	957.56	957.50	957.42	957.35	957.30	957.24	957.14	957.11	956.99	956.88	956.76	956.62	956.46
LINE B	957.92	957.89	957.84	957.79	957.74	957.71	957.69	957.63	957.56	957.48	957.43	957.37	957.27	957.24	957.12	957.01	956.89	956.75	956.58
LINE C	958.06	958.02	957.98	957.92	957.88	957.84	957.83	957.77	957.69	957.62	957.57	957.51	957.40	957.37	957.25	957.14	957.02	956.88	956.71
LINE D	958.19	958.15	958.11	958.05	958.01	957.98	957.96	957.90	957.83	957.76	957.71	957.64	957.53	957.51	957.38	957.27	957.15	957.01	956.84
LINE E	958.20	958.17	958.12	958.07	958.03	957.99	957.98	957.92	957.85	957.78	957.73	957.66	957.55	957.52	957.40	957.28	957.16	957.02	956.85
LINE F	958.22	958.19	958.14	958.09	958.05	958.01	958.00	957.94	957.87	957.80	957.75	957.69	957.57	957.54	957.42	957.30	957.18	957.04	956.87
LINE G	958.16	958.13	958.09	958.03	957.99	957.96	957.94	957.89	957.83	957.76	957.71	957.64	957.52	957.49	957.36	957.25	957.13	956.99	956.82
LINE H	958.14	958.11	958.07	958.01	957.97	957.94	957.92	957.87	957.81	957.74	957.69	957.62	957.50	957.47	957.34	957.23	957.11	956.97	956.80
LINE I	957.99	957.96	957.91	957.86	957.82	957.78	957.77	957.72	957.65	957.58	957.54	957.46	957.34	957.31	957.18	957.07	956.95	956.80	956.63
LINE J	957.83	957.80	957.76	957.71	957.67	957.63	957.62	957.57	957.50	957.43	957.38	957.31	957.18	957.15	957.02	956.91	956.79	956.64	956.47
LINE K	957.68	957.65	957.61	957.56	957.51	957.48	957.46	957.42	957.35	957.28	957.23	957.16	957.03	956.99	956.87	956.75	956.63	956.48	956.31

CAMBER

	SPAN 1			SPAN 2				SPAN 3				SPAN 4		
	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE #1	1/4 SPAN	1/2 SPAN	3/4 SPAN	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE #2	1/4 SPAN	1/2 SPAN	3/4 SPAN
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	0	0	1/16	0	0	0	0	0
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16	1/16	0	1/16	1/8	3/16	1/16	3/16	5/16	3/16	1/8	0	1/16	1/16
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	0	0	0	0	0	0	0	3/8	3/8	5/16	1/4	3/8	1/4
REQUIRED SHOP CAMBER	1/16	1/16	0	1/8	1/8	3/16	3/32	1/4	3/4	5/8	1/2	5/16	7/16	3/8



TYPICAL DECK SCREED SECTION



CAMBER DIAGRAM

* VARIES, SEE FRAMING PLAN.
** MEASURED ALONG LOCAL REFERENCE CORDS.

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

DESIGNED AJS | DRAWN AJS | REVIEWED SSK | DATE 6/08
CHECKED NCK | REVISED | STRUCTURE FILE NUMBER 7600186

DECK SCREED ELEVATIONS & CAMBER
BRIDGE NO. STA-241-0781
OVER S.R.21

STA-241-7.81
PID No. 25238

21 / 28

84 / 91

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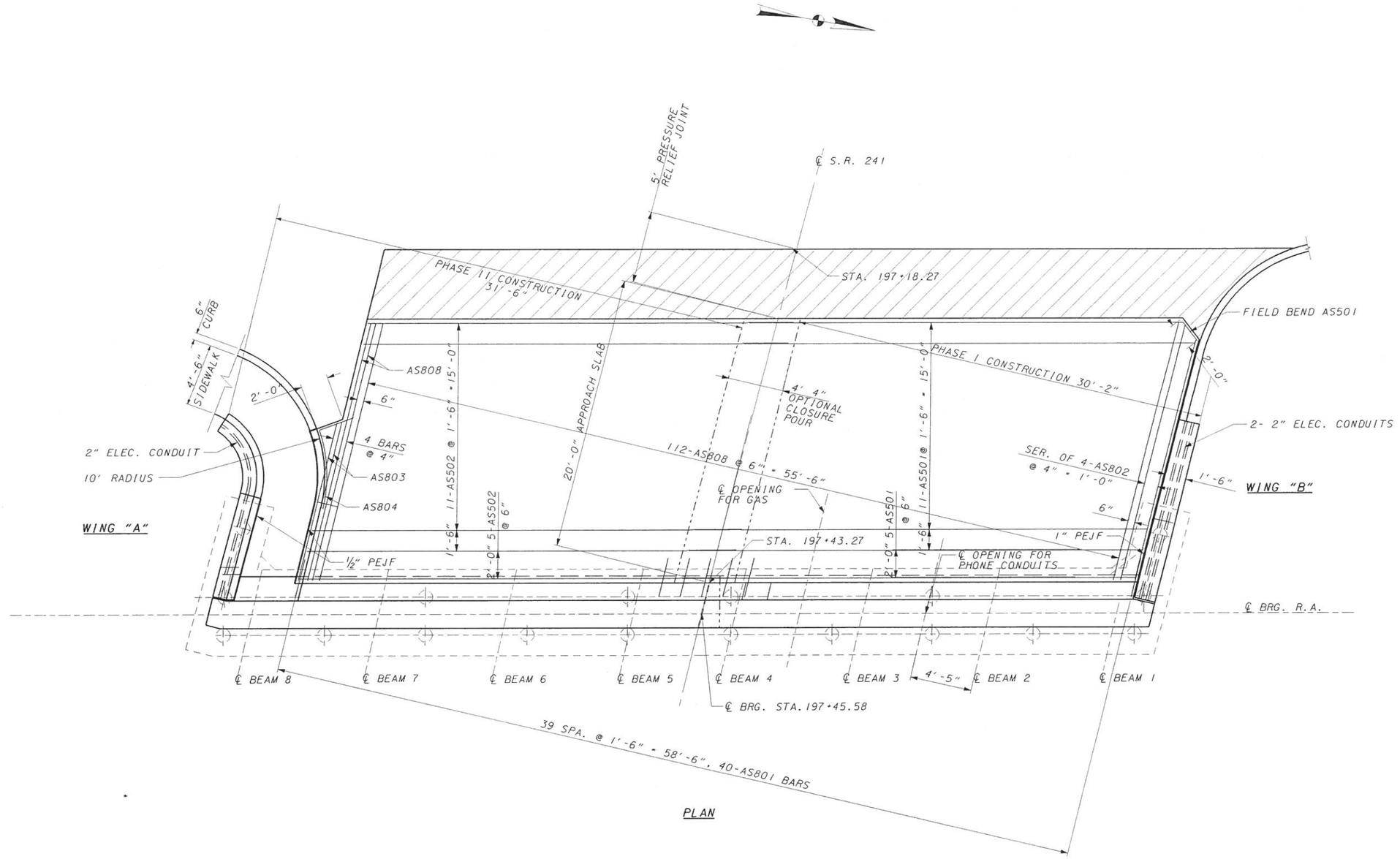

PLAN

DESIGN AGENCY
RESOURCE INTERNATIONAL INC.
8350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 825-4949

DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

PROPOSED REAR APPROACH SLAB DETAILS

BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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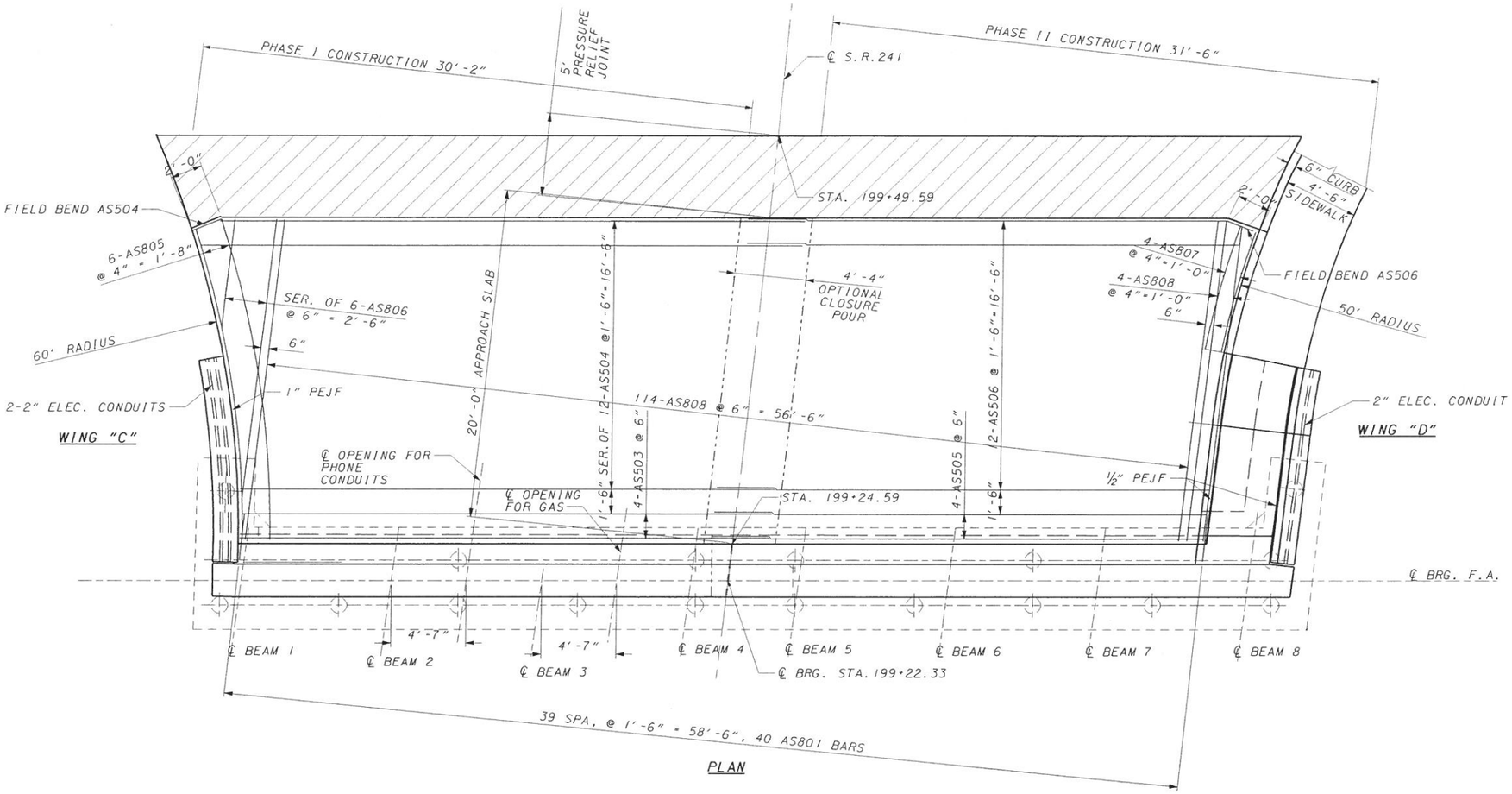

PLAN

DESIGN AGENCY
RESOURCE INTERNATIONAL INC.
8550 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 523-4949

DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
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NCK		7600186	

PROPOSED FORWARD APPROACH SLAB DETAILS

BRIDGE NO. STA-241-07.81
OVER S.R. 21

STA-241-7.81
PID No. 25238

23 / 28

86 / 91

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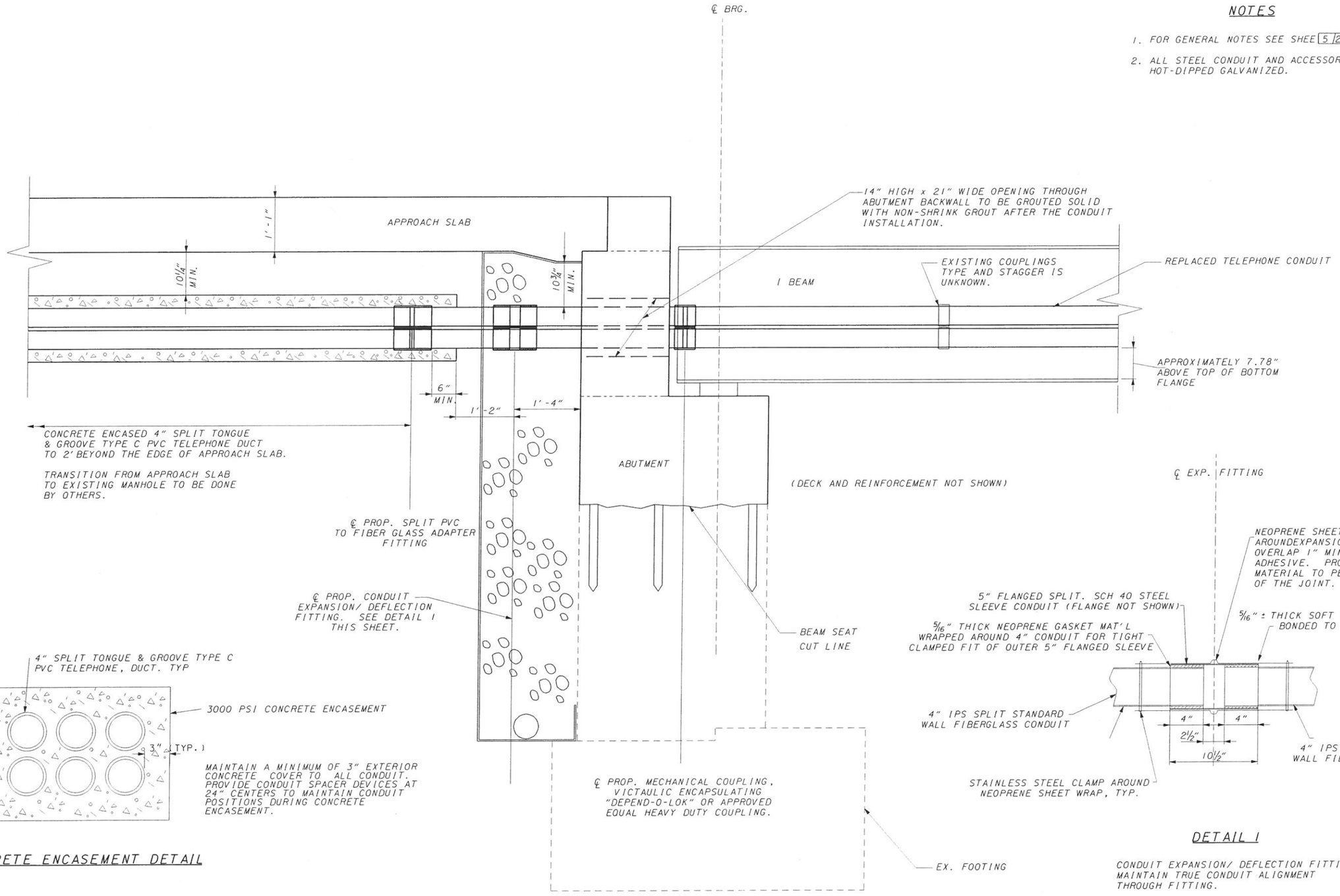
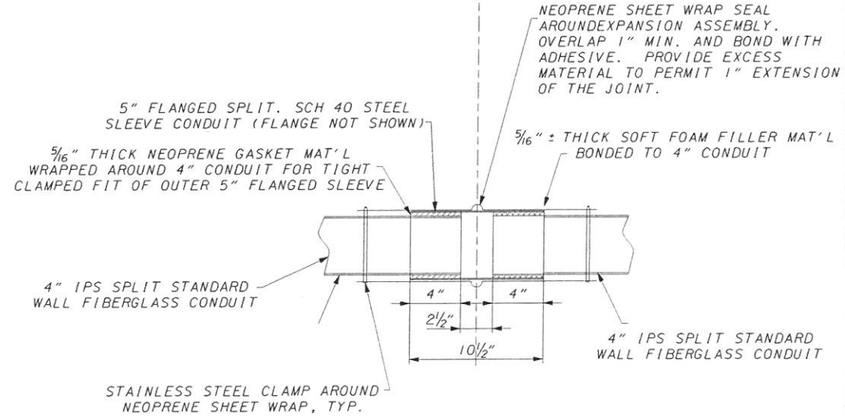
NOTES

1. FOR GENERAL NOTES SEE SHEET 5 28 .
2. ALL STEEL CONDUIT AND ACCESSORIES SHALL BE HOT-DIPPED GALVANIZED.



CONCRETE ENCASEMENT DETAIL



DETAIL 1

CONDUIT EXPANSION/ DEFLECTION FITTING MAINTAIN TRUE CONDUIT ALIGNMENT THROUGH FITTING.

PROVIDE TWO FLANGE BOLTS ON EACH SIDE OF THE FITTING WITHIN THE 4" LAP REGION AT THE NEOPRENE GASKET.

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UTILITY ABUTMENT DETAILS
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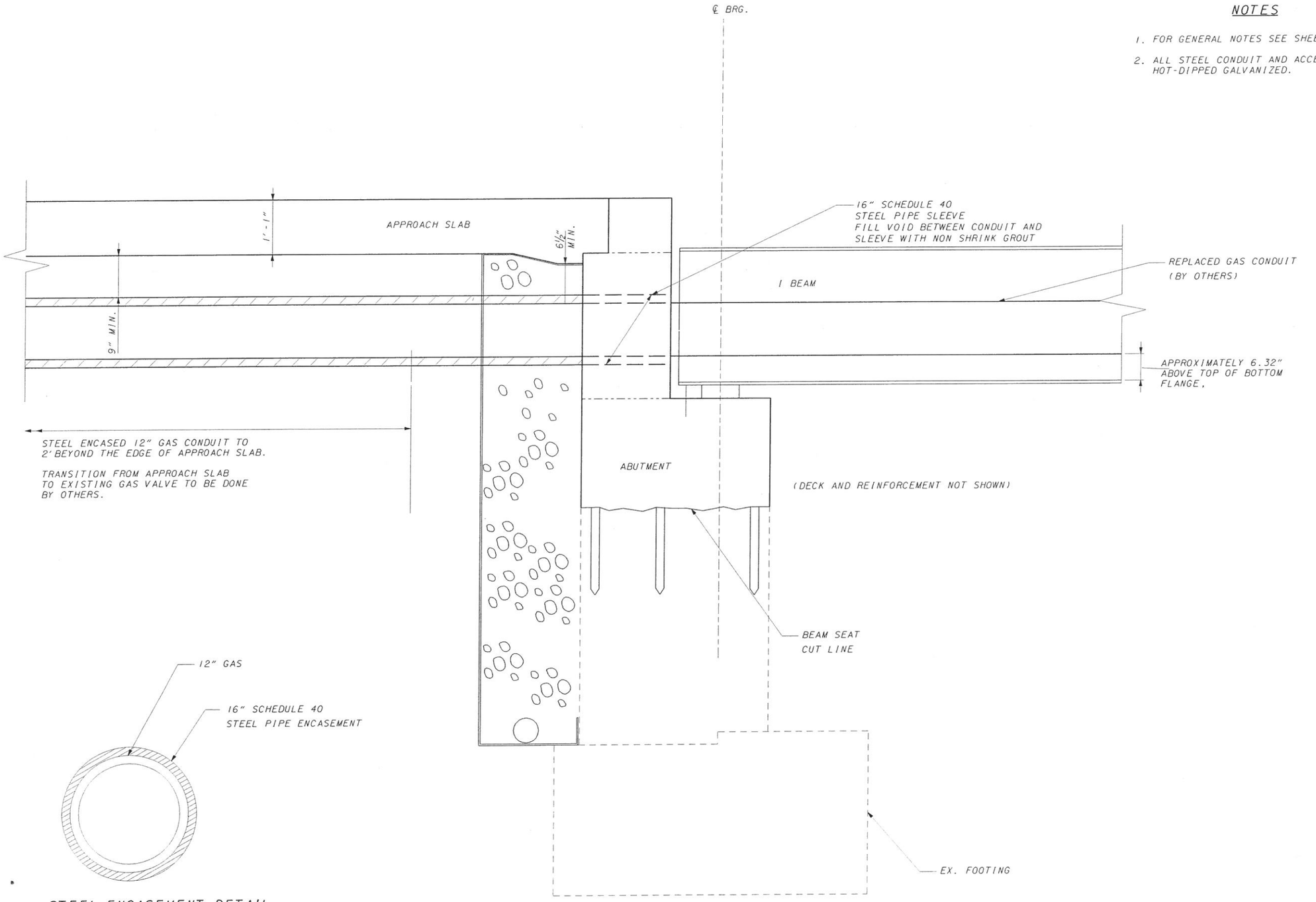
NOTES

1. FOR GENERAL NOTES SEE SHEET 5/28 .
2. ALL STEEL CONDUIT AND ACCESSORIES SHALL BE HOT-DIPPED GALVANIZED.



STEEL ENCASEMENT DETAIL

DESIGN AGENCY
RESOURCE INTERNATIONAL INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
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DESIGNED	DRAWN	REVIEWED	DATE
JLM	JLM	SSK	6/08
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UTILITY ABUTMENT DETAILS
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

...\25238utl3.dgn 6/11/2008 10:27:49 AM

AT&T CONDUIT LAYOUT

NOTES:

1. FOR GENERAL NOTES SEE SHEET 5/28.
2. FOR RELOCATED GAS LINE SEE SHEET 27/28.

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

DESIGNED	DRAWN	REVIEWED	DATE
JLM	JLM	SKK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NCK		7600186	

UTILITY PLAN
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

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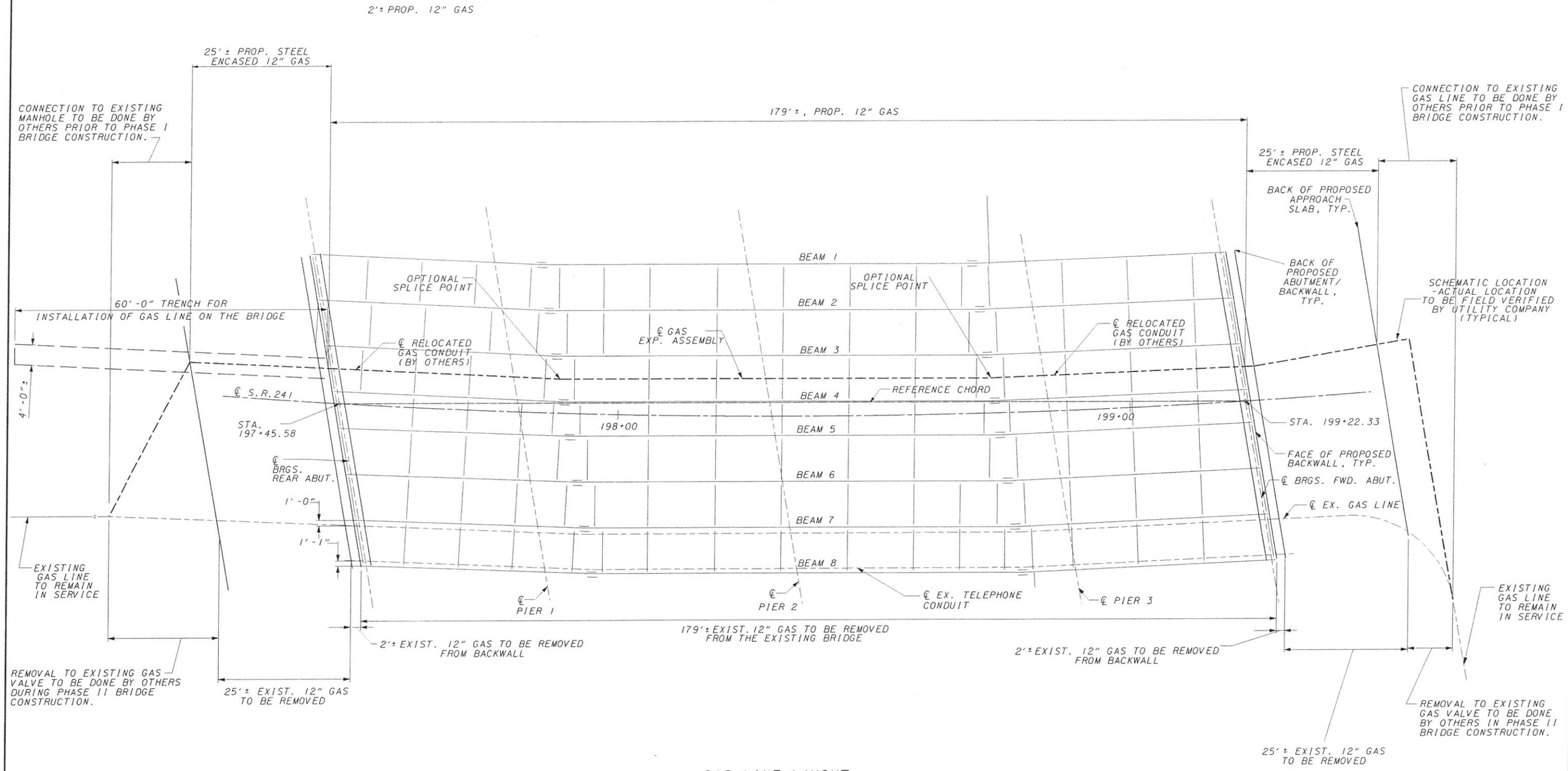

GAS LINE LAYOUT

NOTES:

1. FOR GENERAL NOTES SEE SHEET 5 / 28.
2. FOR RELOCATED TELEPHONE LINE SEE SHEET 26 / 28 .
3. ALL LABOR AND MATERIALS REQUIRED FOR INSTALLATION OF THE PROPOSED GAS LINE WILL BE PROVIDED BY DEO OR DEO'S CONTRACTOR. BRIDGE CONTRACTOR IS ONLY RESPONSIBLE FOR INSTALLATION OF SUPPORT HANGERS.

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

DESIGNED JLM | DRAWN JLM | REVIEWED SKK | DATE 6/08

CHECKED NCK | REVISED | STRUCTURE FILE NUMBER 7600186

UTILITY PLAN
BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

27 / 28

90 / 91

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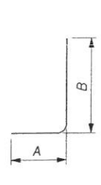
MARK	NUMBER				TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
									A	B	C	D	E	R	INC
ABUTMENTS															
	REAR	FWD.													
A501	60	59			119	6'-2"	765	2	6"	3'-5"	2'-6"				
A502	120	118			238	5'-3"	1303	STR.							
A503	10	10			20	33'-3"	694	STR.							
A504	10	10			20	35'-9"	746	STR.							
A505	72	71			143	5'-10"	870	2	2'-4"	1'-5"	2'-4"				
A506	60	59			119	6'-2"	765	2	2'-9"	11"	2'-9"				
A507	12	12			24	2'-0"	50	STR.							
A508	4	4			8	2'-1"	17	STR.							
A509	2	2			4	4'-1"	17	STR.							
A510	4	5			9	4'-8"	44	2	1'-9"	1'-5"	1'-9"				
A511	4	4			8	3'-0"	25	5	2'-6"	1'-0"	0"				
A801	5	5			10	34'-0"	908	STR.							
							955								
					SUB-TOTAL		7159								
WINGWALLS															
	WING A	WING B	WING C	WING D	TOTAL										
W501	10				10	13'-10"	144	STR.							
W502				10	10	12'-2"	127	STR.							
W503		6			6	12'-11"	81	STR.							
W504			6		6	12'-8"	79	STR.							
W505	2				2	11'-9"	25	5	5'-7"	5'-7"	2'-5"				
W506				2	2	11'-4"	24	5	5'-3"	5'-7"	2'-5"				
W507		2	2		4	11'-5"	48	5	5'-4"	5'-7"	2'-5"				
W508				12	12	6'-7"	82	STR.							
W509	12				12	6'-7"	82	STR.							
	2			2	4	3'-7"									
W510	SER.OF			SER.OF	SER.OF	TO	50	STR.							5"
	2			2	4	4'-5"									
W511	10			8	18	3'-4"	63	STR.							
W512		12	12		24	5'-9"	144	STR.							
		2	2		4	2'-10"									
W513		SER.OF	SER.OF		SER.OF	TO	41	STR.							5"
		2	2		4	3'-8"									
W514		10	10		20	2'-6"	52	STR.							
W515	4				4	7'-2"	30	STR.							
W516	4				4	7'-2"	30	STR.	6'-2'	1'-4"	4"				
W517	2				2	5'-2"	11	STR.							
W518	2				2	5'-4"	11	5	4'-0"	1'-4"	4"				
W519	8				8	10'-1"	84	STR.							
W520				4	4	6'-9"	28	STR.							
W521				4	4	6'-9"	28	5	5'-5"	1'-4"	4"				
W522				2	2	5'-1"	11	STR.							
W523				2	2	5'-1"	11	5	3'-10"	1'-4"	4"				
W524				8	8	8'-3"	69	STR.							
W525		10	10		20	2'-0"	42	STR.							
W526		8	8		16	8'-0"	134	STR.							
W527		2	2		4	7'-10"	33	STR.							
W528		4	4		8	5'-5"	45	STR.							
W529		4	4		8	5'-5"	45	6							
W530	4			4	8	3'-7"	30	8	6 1/2"	1'-8"					3 1/4"
W531	2			2	4	6'-9"	28	9							
W532	9			7	16	8'-9"	146	2	4'-1"	8"	4'-1"				
W533		2	2		4	7'-5"	31	7	1'-1"	3'-2"	3'-0"				2 3/4"
W534		2	2		4	4'-4"	18	4	2'-0"	11 1/2"	4 1/2"	1'-0"			
W535		2	2		4	3'-0"	13	STR.							
W536		24	24		48	5'-3"	263	STR.							
W601	8			8	16	9'-11"	238	10							
W602	3			3	6	4'-10"	44	1	1'-10"	3'-2"					
							42								
					SUB-TOTAL		2507								

MARK	NUMBER				TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
									A	B	C	D	E	R	INC
PIERS															
	PIER 1	PIER 2	PIER 3		TOTAL										
P501	86				86	5'-4"	478		2'-6"	2'-11"					
P502		86			86	5'-8"	508		2'-6"	3'-3"					
P503			86		86	5'-9"	516		2'-6"	3'-4"					
P504	2	2	2		6	30'-0"	188								
P505	2	2	2		6	31'-6"	197								
P601	24	24	24		72	6'-2"	667		3'-0"	3'-4"					
P602	72	72	72		216	2'-6"	811								
P901	4				4	31'-0"	422								
P902	4				4	33'-1"	450								
P903		4			4	31'-3"	425								
P904		4			4	32'-6"	442								
P905			4		4	31'-0"	422								
							443								
					SUB-TOTAL		5969								
SUPERSTRUCTURE - DECK															
					TOTAL										
S401					528	32'-0"	11287	STR.							
S402					261	25'-0"	4359	STR.							
S501					936	34'-10"	34006	STR.							
S502					936	34'-2"	33355	STR.							
S503					468	3'-2"	1546	2	10"	7"	2'-6"				
S504					468	5'-2"	2522	2	2'-4"	7"	2'-6"				
S505					726	32'-8"	24736	STR.							
S506					468	6'-4"	3091	2	8"	5'-8"	3"				
							3986								
					SUB-TOTAL		118888								
SUPERSTRUCTURE - PARAPETS															
	LEFT	RIGHT													
R501	36				36	30'-0"	1126	STR.							
R502	178				178	7'-5"	1377	7	1'-1"	3'-2"	3'-0"				
R503		180			180	3'-7"	673	8	8"	1'-8"					
R504		48			48	30'-0"	1502	STR.							
R505	6				6	15'-0"	94	STR.							
R506		8			8	17'-0"	142	STR.							
R601	6				6	30'-0"	270	STR.							
R602	178				178	2'-7"	691	1	1'-8"						
R603	178				178	3'-6"	936	11	1'-1"	1'-8"					
							23								
					SUB-TOTAL		6834								
					TOTAL		141357								

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, A501 IS A No. 5 BAR.
2. BAR DIMENSIONS ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES THE INSIDE RADIUS, UNLESS OTHERWISE NOTED.
3. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
4. "STR" IN THE TYPE COLUMN INDICATES A STRAIGHT BAR.
5. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.



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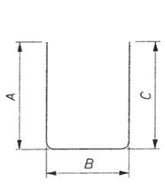

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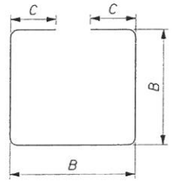

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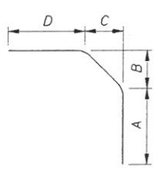

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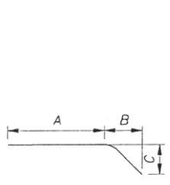

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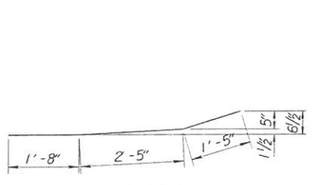
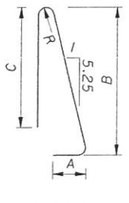
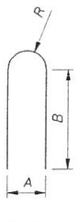


TYPE-6



TYPE-7



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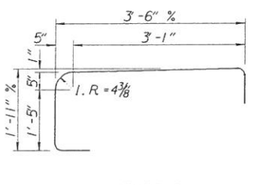

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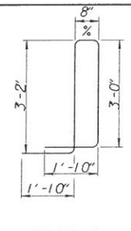
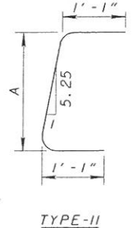


TYPE-10



TYPE-11

RESOURCE INTERNATIONAL, INC.
6360 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

DESIGN AGENCY

DESIGNED	DRAWN	REVIEWED	DATE
AJS	AJS	SSK	6/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLM		7600186	

REINFORCING SCHEDULE

BRIDGE NO. STA-241-0781
OVER S.R. 21

STA-241-7.81
PID No. 25238

28 / 28

91 / 91

...\Structure Details\25238snc.dgn 6/11/2008 10:45:08 AM

LOCATION MAP

LATITUDE: 40°46'50" LONGITUDE: 81°31'05"

SCALE IN MILES

0 2 4 6 8

N

PORTION TO BE IMPROVED _____

INTERSTATE & DIVIDED HIGHWAY _____

UNDIVIDED STATE & FEDERAL ROUTES _____

OTHER ROADS _____

DESIGN DESIGNATION

SEE PART 1

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

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

PLAN PREPARED BY:

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

25238GT001.DGN 6/18/08 RB.TWH.SCB.KH

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

STA-241-7.67
PART 2

CITY OF MASSILLON
STARK COUNTY
FOR PART 1 SEE STA-241-7.81

INDEX OF SHEETS:

STAGE 3 PLAN SUBMISSION

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

STANDARD CONSTRUCTION DRAWINGS	SUPPLEMENTAL SPECIFICATIONS
SEE PART 1	SEE PART 1
	SPECIAL PROVISIONS
	SEE PART 1

ENGINEERS SEAL:

SIGNED: _____
DATE: _____

PROJECT DESCRIPTION

MINOR BRIDGE REHABILITATION INCLUDING NEW ASPHALT SURFACE, RECONSTRUCTION OF GIRDER EXPANSION HINGES AND DECK EXPANSION JOINTS; PARTIAL BRIDGE PAINTING; AND ABUTMENT BEARING REFURBISHING.
PROJECT LENGTH = 0 MILES.

2008 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE PROVIDED.
SEE PART I PLAN DETAILS.

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.

PID NO. 25238

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
R.J. CORMAN RAILROAD

STA-241-7.67

1/24

UTILITIES:

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

GAS:

DOMINION EAST OHIO
7015 FREEMAN AVE., N.W.
N. CANTON, OHIO 44720
MICHAEL SCHREFFLER
(330) 266-2051

LIGHTING/TRAFFIC CONTROL:

CITY OF MASSILLON
(LIGHTING AND TC)
151 LINCOLN WAY EAST
MASSILLON, OHIO 44646
JOHN HAUSER
(330) 832-1176

TELEPHONE:

AT&T (OHIO)
50 W. BOWERY ST.
AKRON, OHIO 44308
JANE JEWETT
(330) 384-3449

ENVIRONMENTAL:

1. PAINTING AND SEALING OPERATIONS

   THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY-URETHANE SEALER, PAINT, OR OTHER MATERIALS USED TO REPAIR, CLEAN, SEAL OR TREAT ANY BRIDGE STRUCTURE FROM ENTERING ANY STREAMS, WETLANDS OR OTHER WATERS OF THE UNITED STATES AND TAKE THE APPROPRIATE ACTIONS IN THE EVENT OF A RELEASE.

2. CONSTRUCTION AND DEMOLITION DEBRIS

   THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE TUSCARAWAS RIVER. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

3. CONSTRUCTION EQUIPMENT IN THE RIVER

   THE CONTRACTOR SHALL NOT PLACE ANY EQUIPMENT BELOW THE ORDINARY HIGH WATER ELEVATION OF THE TUSCARAWAS RIVER.

4. ENDANGERED SPECIES HABITAT

   THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS) AND MAY IMPACT SUMMER ROOSTING HABITAT FOR THIS SPECIES. THE SUMMER ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES WILL BE PERFORMED ONLY AFTER SEPTEMBER 30 AND BEFORE APRIL 1. PRIOR TO ANY REMOVAL, THE UNDERSIDE OF THE BRIDGE SHOULD BE CAREFULLY EXAMINED FOR THE PRESENCE OF BATS, ESPECIALLY FROM APRIL 1 TO SEPTEMBER 30. IF ANY BATS ARE FOUND ROOSTING ON THE UNDERSIDE OF THE BRIDGE, THE USFWS, ECOLOGICAL SERVICES DIVISION SHOULD BE CONTACTED OR PROVIDED WITH INFORMATION.

5. BEST MANAGEMENT PRACTICES

   WATER COLUMN AND SEDIMENTATION IMPACTS SHALL BE KEPT TO A MINIMUM THROUGH THE USE OF BEST MANAGEMENT PRACTICES FOR SOIL EROSION AND SEDIMENTATION CONTROL. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OR FILLING OPERATIONS AND INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. THEY SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

TOWPATH TRAIL

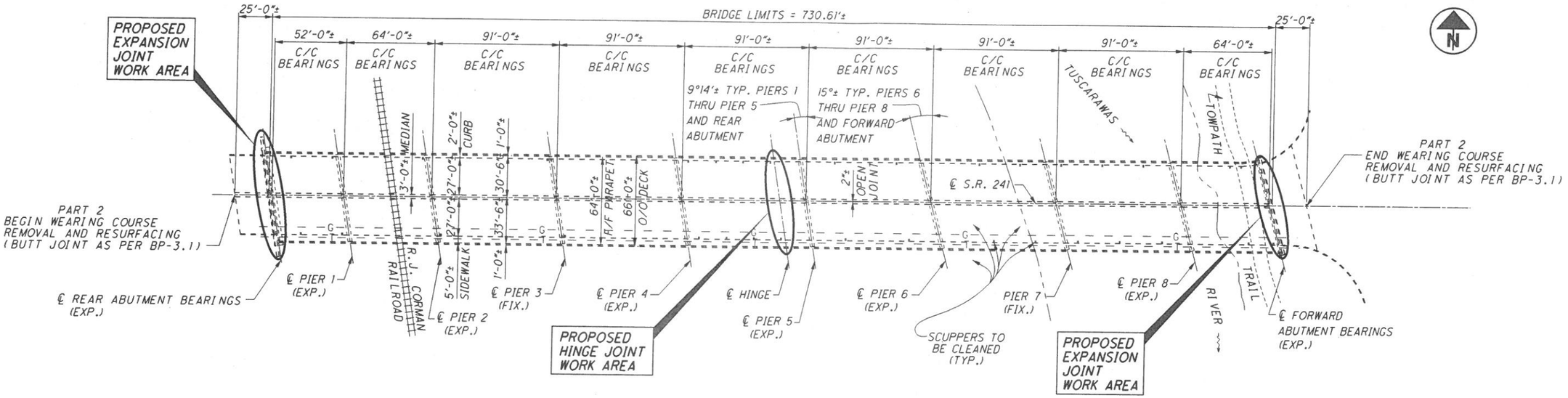
PEDESTRIAN AND BYCICLE TRAFFIC ON THE TOWPATH SHALL BE MAINTAINED AT ALL TIMES EXCEPT DURING THE ABUTMENT CLEANING, CROSSFRAME REPLACEMENT, ABUTMENT BEARING REFURBISHMENT AND BRIDGE PAINTING, DURING WHICH TIME A COMPLETE CLOSURE OF THE TOWPATH WILL BE REQUIRED. A CLOSURE FOR A MAXIMUM OF THREE (3) CONSECUTIVE WEEKS WILL BE PERMITTED FOR EACH WORK PHASE. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE THE GATES AND BARRICADES ON EACH APPROACH OF THE TOWPATH FOR EACH CLOSURE PERIOD. THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330) 786-3160 AND THE CITY OF MASSILLON TEN (10) DAYS IN ADVANCE OF WHEN EACH CLOSURE SHOULD BE IN EFFECT.

CALCULATED PDG
CHECKED DAP

GENERAL NOTES

STA-241-7.67

25238GN.DGN 6/18/08 SCB,KH



GENERAL PLAN

NOTE:

S.R. 241 TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING BRIDGE CONSTRUCTION. SEE PART I PLAN FOR THE PART-WIDTH MAINTENANCE OF TRAFFIC DETAILS.

PROPOSED WORK

I. REMOVE THE ASPHALT CONCRETE WEARING SURFACE, PATCH UNSOUND AREAS OF DECK, APPROACH SLAB AND CURBS.

II. REFURBISH BRIDGE GIRDER HINGES. THE WORK INCLUDES:

1. PROVIDING TEMPORARY SUPPORT FOR GIRDERS AT THE INTERMEDIATE EXPANSION HINGE.
2. DISASSEMBLY AND CLEANING OF HINGE COMPONENTS.
3. VISUAL INSPECTION AND NON-DESTRUCTIVE TESTING OF HINGE COMPONENTS FOR DEFECTS.
4. FABRICATION OF NEW HINGE COMPONENTS TO REPLACE ANY COMPONENTS DETERMINED TO BE DEFICIENT BY TESTING.
5. REMOVAL OF EXISTING SLOTTED BEAM GUIDES AND REPLACEMENT WITH NEW.
6. ABRASIVELY BLAST AND PAINT HINGE COMPONENTS, GIRDERS AND CROSSFRAMES WITHIN 5 FEET EACH WAY OF THE HINGE JOINTS PER SYSTEM OZEU.
7. LUBRICATION AND REASSEMBLY OF REFURBISHED HINGES.

III. REMOVE EXISTING DECK JOINT AT INTERMEDIATE HINGE AND REBUILD WITH NEW ELASTOMERIC STRIP SEALED JOINT. THE WORK INCLUDES:

1. COMPLETE REMOVAL OF THE EXISTING DECK JOINT CASTING; AND FULL-DEPTH REMOVAL OF PORTIONS OF THE EXISTING REINFORCED CONCRETE DECK, SIDEWALK, SAFETY WALK, MEDIAN AND PARAPET. THE REMOVALS ALSO INCLUDE TEMPORARY REMOVAL OF THE ALUMINUM SAFETY RAILS AND POSTS NEAR THE JOINT.
2. INSTALLATION OF A NEW STRIP SEALED EXPANSION JOINT WITH RECONSTRUCTED REINFORCED CONCRETE DECK, SIDEWALK, SAFETY WALK, MEDIAN AND PARAPET.
3. RE-INSTALLATION OF EXISTING ALUMINUM TUBE RAILING AND POSTS AT THE HINGE JOINT.
4. INSTALLATION OF WATERPROOFING AND SEALING ON THE DECK SURFACE.

IV. CLEAN DEBRIS FROM ABUTMENT SEATS.

V. REFURBISH AND RESET ABUTMENT BEARINGS.

VI. ABRASIVELY BLAST AND PAINT THE STEELWORK AT THE BRIDGE ENDS.

VII. ADD STRIP SEALED EXPANSION JOINTS TO THE EXISTING ROADWAY JOINTS AT THE ABUTMENTS.

VIII. PLACE NEW DECK WATERPROOFING AND ASPHALT CONCRETE SURFACE COURSES.

IX. SEAL MEDIAN, CURBS, SIDEWALKS AND PARAPETS.

X. CLEAN DEBRIS FROM THE BRIDGE SCUPPERS AND DOWNSPOUTS.

XI. REPLACE DETERIORATED END CROSSFRAMES AS DIRECTED BY THE ENGINEER.

PROPOSED STRUCTURE

PROPOSED WORK: REHABILITATE INTERMEDIATE GIRDER EXPANSION HINGES, AND ALL DECK JOINTS. BLAST AND PAINT STEEL BELOW ALL DECK JOINTS. REFURBISH ABUTMENT BEARINGS. CLEANOUT BRIDGE DRAINAGE SYSTEM. REMOVE EXISTING ASPHALT SURFACE, PATCH DECK AND CURBS AND PLACE NEW ASPHALT CONCRETE SURFACE.

SPANS: SAME AS EXISTING

ROADWAY: SAME AS EXISTING

SIDEWALK: SAME AS EXISTING

LOADING: SAME AS EXISTING

SKEW: SAME AS EXISTING

WEARING SURFACE: SAME AS EXISTING

APPROACH SLABS: SAME AS EXISTING

ALIGNMENT: SAME AS EXISTING

CROWN: SAME AS EXISTING

LATITUDE = 40°47'40"

LONGITUDE = 81°31'45"

CURRENT AND DESIGN AVG. DAILY TRAFFIC: (2007): 6450

DESIGN AVG. DAILY TRUCK TRAFFIC: (2007): 570

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM AND GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 52'±; 64'±; 91'±; 91'±; 91'±; 91'±; 91'±; 91'±; 64'± C/C BEARINGS

ROADWAY: 57'± F/F OF 2'± SAFETY CURB AND 5'± SIDEWALK

LOADING: C.F. 2000 (57)

SKEW: 9°14'± RT. FWD. (TYP. FOR REAR ABUTMENT & PIERS 1-5)
15° RT. FWD. (TYP. FOR FORWARD ABUTMENT & PIERS 6-8)

WEARING SURFACE: 3½"± ASPHALT

APPROACH SLABS: SPECIAL (25' LONG)

ALIGNMENT: TANGENT

YEAR BUILT: 1969

DISPOSITION: MINOR REHABILITATION

SFN: 7606176

241_0781CGP001.DGN 6/18/08 RB.TWH.SCB.KH

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
KAK	RB	JDB	6/20/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAP		7606176	

GENERAL PLAN
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

REFERENCE SHALL BE MADE TO BRIDGE STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

NONE

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE 17TH EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 2002 INCLUDING ALL SUBSEQUENT INTERIM SPECIFICATIONS, AND THE 2004 ODOT BRIDGE DESIGN MANUAL AND INTERIMS THROUGH JANUARY 18, 2008.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60 MINIMUM YEILD STRENGTH 60,000 PSI

STRUCTURAL STEEL - PROPOSED: ASTM A572/709, GRADE 50, YIELD STRESS 50 KSI

BRONZE WASHERS - ASTM B100

DECK PROTECTION METHOD:

- EPOXY COATED REINFORCING STEEL
- 2½" CONCRETE COVER
- WATERPROOFING AND ASPHALT CONCRETE OVERLAY

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

EXISTING STRUCTURE PLANS MAY BE VIEWED BY PROSPECTIVE BIDDERS AT THE ODOT DISTRICT OFFICE. AKRON, OHIO

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

CONTRACT BID PRICES SHALL BE BASED UPON THE RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

RAILROAD CONTACT:

R.J. CORMAN RAILROAD
475 WEST THIRD STREET
DOVER, OHIO 44622
ATTN: DARRELL PRIDDY
TELEPHONE: (330) 364-4567

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION IN THE BRIDGE DECK AT THE HINGE, THE SLOTTED BEAM GUIDES ON THE BOTTOM FLANGE OF THE CANTILEVERED GIRDERS AT THE INTERMEDIATE HINGE AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER.

DECK REMOVAL

THIS WORK CONSISTS OF THE REMOVAL OF PORTIONS OF THE CONCRETE DECK INCLUDING SIDEWALKS, PARAPETS, DECK JOINTS, HINGE DIAPHRAGM CONNECTION PLATES AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONT'D)

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

PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. THE METHOD OF 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. 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 MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS PROVIDED EXISTING REINFORCING STEEL TO REMAIN IN PLACE IS NOT DAMAGED. FOR REMOVALS OVER STRUCTURAL MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM STEEL GIRDER, ETC), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED ON THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

SLOTTED BEAM GUIDE REMOVAL

CAREFULLY REMOVE THE EXISTING SLOTTED BEAM GUIDES ON THE BOTTOM OF THE BOTTOM FLANGE OF THE CANTILEVERED GIRDERS AT THE INTERMEDIATE HINGE. THE ADJACENT 4" x 4" x 1" STEEL GUIDE BLOCKS ATTACHED TO THE SUSPENDED BOTTOM GIRDER FLANGES ARE TO REMAIN.

CARE SHALL BE EXERCISED TO AVOID DAMAGE TO THE EXISTING STEEL TO REMAIN IN PLACE. THIS STEEL INCLUDES, BUT IS NOT LIMITED TO, THE GIRDER FLANGES AND WEBS, AND THE STEEL GUIDE BLOCK. ANY DAMAGES TO THE EXISTING STEEL TO REMAIN SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION AND AT THE CONTRACTOR'S EXPENSE.

PAYMENT

PAYMENT FOR THE ABOVE DESCRIBED WORK, INCLUDING BOLT REMOVAL, SHALL BE MADE AT THE CONTRACT BID PRICE PER LUMP SUM FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

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

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

ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN

CONSTRUCT THE NEW PORTION OF THE BRIDGE DECK IN ACCORDANCE WITH 511 WITH THE FOLLOWING EXCEPTIONS:

1. FINISH AND TESTING OF THE CONCRETE SLAB PER 451.12 AS SPECIFIED IN 511.19 DOES NOT NEED TO BE PERFORMED.
2. THE USE OF A FINISHING MACHINE AS SPECIFIED IN 511.19 IS NOT REQUIRED, PROVIDED THE CONTRACTOR'S HAND FINISHING OF THE CONCRETE SURFACE OF THE TEST SLAB IS ACCEPTABLE TO THE ENGINEER.
3. THE BRIDGE DECK TRANSVERSE GROOVING SPECIFIED IN 511.20 SHALL BE APPLIED BY USING HAND TINES IN THE WET CONCRETE SURFACE. THE LIMITS OF THE GROOVING SPECIFIED IN 511.20 SHALL APPLY.
4. THE SEALING OF JOINTS AND CRACKS SHALL BE PERFORMED IN ACCORDANCE WITH 511.22. BECAUSE OF ADDITIONAL HMWM SEALING SPECIFIED ON THE EXISTING DECK, THE QUANTITY OF SEALING FOR TRANSVERSE JOINTS (511.22A), JOINTS AT END DAMS (511.22B) AND LONGITUDINAL JOINTS BETWEEN THE SIDEWALKS AND DECK (511.22D) SHALL BE CALCULATED AND PAID FOR AS A SEPARATE PAY ITEM.

ITEM 513 - STRUCTURAL STEEL MEMBERS

NEW STRUCTURAL STEEL MEMBERS INCORPORATED INTO THE REHABILITATED BRIDGE SHALL BE PAID FOR AS FOLLOWS:

STRUCTURAL STEEL MEMBERS, LEVEL UF - NEW SLOTTED STEEL BEAM GUIDES AND ATTACHMENT BOLTS

STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN - NEW END CROSSFRAMES

STRUCTURAL STEEL MEMBERS, LEVEL 6 - NEW HANGER LINKS

NOTE THAT NONE OF THE EXISTING LEVEL 6 STRUCTURAL STEEL MEMBERS OR THE END CROSSFRAMES ARE SCHEDULED FOR REPLACEMENT WITH NEW MATERIAL IN THESE PLANS. FOR ESTIMATING PURPOSES, THE WEIGHT OF TWO HANGER LINKS ARE INCLUDED IN THE ESTIMATED LEVEL 6 STRUCTURAL STEEL MEMBERS QUANTITY, SHOULD NEW MEMBERS BE REQUIRED. THE APPROXIMATE WEIGHT OF ONE END CROSSFRAME IN TWO BAYS BETWEEN BEAMS OR GIRDERS HAS BEEN INCLUDED FOR ESTIMATING PURPOSES IN THE LEVEL UF, AS PER PLAN QUANTITY.

NEW PINS AND NUTS, IF REQUIRED, ARE PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: NEW PINS AND NUTS, LEVEL 6.

GENERAL NOTES CONTINUED: SEE SHEET 3/22.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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GENERAL NOTES - 1
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ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN

A QUANTITY OF 500 LBS. OF STRUCTURAL STEEL HAS BEEN INCLUDED IN THE PLANS FOR USE AS NEW MATERIAL FOR END CROSSFRAMES DEEMED TO REQUIRE REPLACEMENT AS DIRECTED BY THE ENGINEER.

AFTER ABRASIVE BLASTING OF THE DESIGNATED STEELWORK, THE ENGINEER SHALL INSPECT THE CLEANED STEEL TO DETERMINE IF ANY EXISTING STEEL MEMBERS ARE EXCESSIVELY CORRODED AND REQUIRE REPLACEMENT.

NEW MATERIAL OF THE SAME SECTION AND DIMENSIONS AS ORIGINALLY CONSTRUCTED SHALL BE FABRICATED IN ACCORDANCE WITH 513, LEVEL UF, AND INSTALLED TO THE SATISFACTION OF THE ENGINEER.

AFTER INSTALLATION, THE MATERIAL SHALL BE FIELD COATED UNDER THE 514 FIELD PAINTING ITEMS.

WORK UNDER THIS ITEM SHALL INCLUDE ALL TOOLS, MATERIALS, LABOR AND INCIDENTALS REQUIRED FOR THE REMOVAL OF THE DEFICIENT BRACING MEMBER (INCLUDING GRINDING SMOOTH THE WELDS ON THE BEAM OR GIRDER WEBS), AND FURNISHING, FABRICATING AND INSTALLING THE NEW BRACING MEMBER. PAYMENT SHALL BE MADE PER POUND FOR EACH MEMBER INSTALLED AND ACCEPTED IN PLACE.

ITEM 513 - STRUCTURAL STEEL, MISC.: NEW PINS AND NUTS, LEVEL 6

WORK UNDER THIS ITEM INCLUDES THE FURNISHING OF NEW PINS AND NUTS FOR THE HINGE ASSEMBLIES. THE NUMBER OF PINS TO BE REPLACED SHALL BE DETERMINED BY THE VISUAL INSPECTION AND ULTRASONIC INSPECTION OF THE EXISTING PINS.

ANY NEW PINS REQUIRED FOR THE REHABILITATION SHALL HAVE NEW NUTS PROVIDED IN ADDITION TO THE PINS.

REPLACEMENT PINS SHALL BE STAINLESS STEEL ASTM A240, UNS 21800; STAINLESS STEEL ASTM A276, UNS 21800; OR CHROME PLATED ASTM A688, CLASS F OR G. THE NEW PINS SHALL PASS A CHARPY V-NOTCH IMPACT OF 25 FT.-LBS. AT 20°F.

STAINLESS STEEL PINS SHALL HAVE A SURFACE FINISH CONFORMING TO 513.12.

IN ORDER TO MEET THE CHARPY V-NOTCH IMPACT REQUIREMENTS, ASTM A668 PINS MAY NEED TO BE HEAT TREATED. THE LONGITUDINAL AXIS OF THE ASTM A668 PINS SHALL BE COMPLETELY HARD CHROME PLATED TO A MINIMUM THICKNESS OF 3 MILS. THE SURFACE ROUGHNESS OF THE CHROMED PINS SHALL BE LESS THAN 20 MICRO INCHES ON THE BEARING SURFACE AND LESS THAN 125 MICRO INCHES (ANSI 125) ON THE NON-BEARING SURFACE, THE ENDS AND THREADS.

THE NUTS SHALL BE ASTM A709, GRADE 50 STEEL, PRIME COATED WITH INORGANIC ZINC PER 513.

DIMENSIONS FOR THE NEW PINS ARE PROVIDED IN THE PLANS BASED ON THE ORIGINAL CONSTRUCTION DRAWINGS. THESE ARE TO BE CONSIDERED TENTATIVE AND THE CONTRACTOR SHALL FIELD VERIFY PIN DIAMETERS, HOLE DIAMETERS, AND GRIPS OF ANY NEW PINS. THE NEW PIN DIAMETERS SHALL BE SIZED SUCH THAT THEY ARE NO SMALLER THAN 1/50 INCH OF THE DIAMETER OF THE PIN HOLES OF THE EXISTING MATERIALS (HANGER LINKS, GIRDER WEBS AND PIN PLATES) THAT THEY ARE TO CONNECT.

ANY NEW PIN HOLE SURFACES, IF NECESSARY, SHALL CONFORM TO THE SURFACE FINISH DEFINED IN SECTION 513.12.

SHOP FABRICATION DRAWINGS FOR REPLACEMENT PINS SHALL BE SUBMITTED FOR APPROVAL AS PER SECTION 513 OF THE CMS UPON DETERMINATION OF THE NEED FOR REPLACEMENT. THE FABRICATION LEVEL FOR THE FRACTURE CRITICAL PINS AND NUTS SHALL BE LEVEL 6.

ANY NEW PINS, NUTS AND SET SCREWS REQUIRED FOR THE REHABILITATION OF THE HINGES SHALL BE INCLUDED WITH ITEM 513 - STRUCTURAL STEEL, MISC.: NEW PINS AND NUTS, LEVEL 6. FOR ESTIMATION PURPOSES, THE WEIGHT OF ONE NEW PIN AND TWO NEW NUTS IS INCLUDED IN THE ESTIMATED QUANTITY FOR THIS ITEM.

ITEM 513 - STRUCTURAL STEEL, MISC.: HINGE PREPARATION AND NON-DESTRUCTIVE TESTING

THIS ITEM INCLUDES ALL WORK ASSOCIATED WITH THE NON-DESTRUCTIVE TESTING OF THE HINGE AREAS. THIS WORK INCLUDES THE SURFACE PREPARATION OF THE EXISTING HINGE ASSEMBLY AND GIRDERS, VISUAL INSPECTION, ULTRASONIC INSPECTION OF THE PINS AND HANGERS, MAGNETIC PARTICAL TESTING OF THE GIRDERS, DOCUMENTATION AND REPORT PREPARATION.

THE STEEL SURFACES OF THE DISASSEMBLED HINGE ASSEMBLY AND OF THE EXISTING PLATE GIRDER SHALL BE ABRASIVELY BLAST CLEANED TO COMMERCIAL GRADE, SSPC-SP6 TO ALLOW FOR VISUAL INSPECTION. THE ABRASIVE CLEANING OF THE PLATE GIRDER SHALL BE LIMITED TO WITHIN 5'-0" OF EACH SIDE OF THE CENTERLINE OF THE HINGE. THIS SURFACE CLEANING DOES NOT FULFILL THE REQUIREMENTS OF THE PAINTING SPECIFICATIONS AND IS ONLY FOR INSPECTING THE CONDITION OF THE STEEL.

VISUAL INSPECTION OF ALL DISASSEMBLED PIECES, PINS AND GIRDERS SHALL BE MADE FOR EXCESSIVE WEAR, CORROSION, PITTING, CRACKS AND ANY OTHER NOTICEABLE DEFECTS. SECTION LOSS OF THE INDIVIDUAL PIECES SHALL BE CHECKED AND MEASURED. A WRITTEN AND PHOTOGRAPHIC RECORD OF ALL FINDINGS AND MEASUREMENTS SHALL BE MADE BY THE CONTRACTOR.

NONDESTRUCTIVE TESTING OF THE PINS AND HANGERS SHALL BE MADE BY ULTRASONIC TESTING AND SHALL BE IN ACCORDANCE WITH ASTM A388. THE PROCEDURE FOR THE ULTRASONIC TESTING SHALL BE PREPARED AND PERFORMED BY A TECHNICIAN QUALIFIED AT LEVEL II OR ABOVE, AS PER THE AMERICAN SOCIETY OF NONDESTRUCTIVE TESTING'S (ASNT) RECOMMENDED PRACTICE NO. SNT-TC-1A. THE WRITTEN PROCEDURE SHALL BE SUBMITTED TO THE DIRECTOR 30 DAYS PRIOR TO THE SCHEDULED FIRST DISMANTLING OF A HINGE ASSEMBLY.

SUSPECTED CRACKS AND OTHER DEFECTS VISUALLY NOTED ON THE GIRDER FACES IN THE VICINITY OF THE HINGES SHALL BE TESTED TO DETERMINE IF THE MEMBERS ARE CRACKED. MAGNETIC PARTICLE TESTING IN ACCORDANCE WITH ASTM A275 SHALL BE UTILIZED.

A FORMAL TYPED AND BOUND REPORT SHALL BE COMPILED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THIS PAY ITEM. FOR EACH LOCATION, LIST THE CONDITION OF THE EXISTING COMPONENTS AND RATE THE GENERAL CONDITION OF EACH ASSEMBLY, LIST THE METHODS AND RESULTS FROM THE VISUAL INSPECTION AND NONDESTRUCTIVE TESTING. INCLUDE DRAWINGS DETAILING THE ORIGINAL AND AS BUILT DIMENSIONS AND ALIGNMENTS. NOTE ANY SECTION LOSS MEASURED BY A SKETCH AND INCLUDE COLOR PHOTOGRAPHS FROM THE VISUAL INSPECTION.

THE ENGINEER SHALL REVIEW REPORT AND AUTHORIZE REPLACEMENT OF HINGE COMPONENTS BASED ON THE CONDITIONS AND FINDINGS NOTED IN THE REPORT.

PAYMENT FOR THE ABOVE DESCRIBED WORK, INCLUDING ALL TOOLS, LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK SHALL BE MADE PER LUMP SUM UNDER ITEM 513 - STRUCTURE, MISC.: HINGE PREPARATION AND NON-DESTRUCTIVE TESTING.

ITEM 513 - STRUCTURAL STEEL, MISC.: DISASSEMBLY OF EXISTING PIN AND HANGER ASSEMBLIES

WORK UNDER THIS ITEM INCLUDES ALL TOOLS, LABOR, MATERIALS AND INCIDENTALS REQUIRED TO DISASSEMBLE THE PIN AND HANGER ASSEMBLIES IN PREPARATION FOR INSPECTION, TESTING, CLEANING AND REHABILITATION. THIS WORK SHALL ALSO INCLUDE THE FIELD MEASUREMENT OF THE GAPS BETWEEN THE GIRDERS AT THE HINGE AS DETAILED IN THESE PLANS.

DISMANTLING OF EACH ASSEMBLY MAY BEGIN AFTER THE TEMPORARY SUPPORT HAS BEEN INSTALLED AND APPROVED BY THE PROJECT ENGINEER AND AFTER EXISTING DIMENSIONS OF PIN AND FLANGE ALIGNMENTS, AND EXPANSION GAPS, HAVE BEEN RECORDED BY THE CONTRACTOR. REMOVAL OPERATIONS SHALL INCLUDE REMOVING THE PIN NUTS, HANGER BARS, WASHERS AND PINS. PINS MAY BE FROZEN BY CORROSION AND ARE TO REMAIN IN PLACE IF THEY CANNOT BE REMOVED BY ORDINARY MEANS.

THE LATERALLY RESTRAINING BEAM GUIDES ARE REMOVED UNDER ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

PAYMENT FOR THE ABOVE DESCRIBED WORK SHALL BE MADE AT THE CONTRACT BID PRICE PER LUMP SUM FOR ITEM 513 - STRUCTURE, MISC.: DISASSEMBLY OF EXISTING PIN AND HANGER ASSEMBLIES.

ITEM 513 - STRUCTURAL STEEL, MISC.: ASSEMBLY OF REHABILITATED PIN AND HANGER ASSEMBLIES

WORK UNDER THIS ITEM INCLUDES ALL TOOLS, LABOR, MATERIALS AND INCIDENTALS REQUIRED TO LUBRICATE AND REASSEMBLE THE PIN AND HANGER ASSEMBLIES AFTER THE EXISTING PIECES TO BE INCORPORATED INTO THE REHABILITATED HINGE HAVE BEEN REFURBISHED AND NEW MATERIALS HAVE BEEN FURNISHED.

THE INSTALLATION OF THE LATERALLY RESTRAINING BEAM GUIDES IS PAID FOR UNDER ITEM 513, STRUCTURAL STEEL MEMBERS, LEVEL UF.

THIS WORK SHALL BE COORDINATED WITH THE FIELD PAINTING OPERATIONS TO INSURE THAT ALL STEEL SURFACES ARE APPROPRIATELY CLEANED AND COATED PRIOR TO THE REASSEMBLY OF THE HINGE COMPONENTS. REASSEMBLY OF THE REHABILITATED HINGE SHALL TAKE PLACE AS SOON AS PRACTICAL AFTER THE FIELD PAINTING AND WITHOUT ANY DELAY. LUBRICATION OF PIECES IN CONTACT WITH EACH OTHER SHALL TAKE PLACE IMMEDIATELY PRIOR TO ASSEMBLY.

THE LUBRICANT FOR USE PRIOR TO REASSEMBLY SHALL BE COMMERCIAL GRADE AUTOMOTIVE GREASE.

AFTER REASSEMBLY, SECURE EACH NUT TO THE PIN THREADS WITH TWO TACK WELDS PLACED APPROXIMATELY 180° FROM EACH OTHER ON THE PIN THREAD DIAMETER.

PAYMENT FOR THE ABOVE DESCRIBED WORK SHALL BE MADE AT THE CONTRACT BID PRICE PER LUMP SUM FOR ITEM 513 - STRUCTURE, MISC.: ASSEMBLY OF REHABILITATED PIN AND HANGER ASSEMBLIES.

ITEM 513 - STRUCTURAL STEEL, MISC.: NEW WASHER FOR PIN AND HANGER, LEVEL UF

WORK UNDER THIS ITEM INCLUDES THE MANUFACTURE AND FURNISHING OF NEW WASHERS FOR EACH OF THE REHABILITATED HINGE ASSEMBLIES.

THE NEW WASHERS SHALL BE BRONZE, CONFORMING TO THE REQUIREMENTS OF CMS 711.16, ASTM B100.

DIMENSIONS FOR THE NEW WASHERS ARE PROVIDED IN THE PLANS BASED ON THE ORIGINAL CONSTRUCTION DRAWINGS. THESE ARE TO BE CONSIDERED TENTATIVE AND THE CONTRACTOR SHALL FIELD VERIFY WASHER DIAMETERS, HOLE DIAMETERS, AND THICKNESS TO DETERMINE THE DIMENSIONS OF THE NEW WASHERS. NEW WASHER HOLE SURFACES SHALL CONFORM TO THE SURFACE FINISH DEFINED IN SECTION 513.12.

PAYMENT FOR NEW WASHERS SHALL BE MADE AT THE CONTRACT BID PRICE PER EACH UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: NEW WASHER FOR PIN AND HANGER, LEVEL UF.

ITEM 514 - FIELD PAINTING NOTES

FIELD PAINTING OF THE STRUCTURE INCLUDES PARTIAL PAINTING OF THE STEELWORK AT THE BRIDGE ENDS AND AT THE INTERMEDIATE HINGE.

THE LIMITS OF THE FIELD PAINTING OF THE BRIDGE ENDS SHALL EXTEND 10 FEET FROM THE END OF THE BEAMS AND GIRDERS. ALL EXPOSED STRUCTURAL STEEL, INCLUDING BUT NOT LIMITED TO BEAMS AND GIRDERS; STIFFENERS; CROSSFRAMES; SCUPPERS (EXTERIOR ONLY); AND SCUPPER SUPPORTS; SHALL BE ABRASIVELY BLASTED AND PAINTED.

THE GAS LINE AND UTILITY CONDUITS SHALL NOT BE PAINTED AND THE CONTRACTOR SHALL TAKE ALL NECESSARY MEANS TO PROTECT THEM FROM ABRASIVE BLASTING AND PAINT OVERSPRAY.

FIELD PAINTING OF THE HINGE ASSEMBLY SHALL INCLUDE ALL STEEL MEMBERS INCLUDING ALL CROSS FRAMES AND STIFFENERS WITHIN A 10 FEET LENGTH CENTERED ON THE CENTERLINE OF THE HINGE ASSEMBLY.

THE CONTRACTOR SHALL COORDINATE FIELD PAINTING DURING DISASSEMBLY OF HINGE MEMBERS TO ALLOW FOR PROPER COVERAGE AND CURING OF SURFACES TIGHTLY ADJACENT TO EACH OTHER. COORDINATION SHALL ALSO BE REQUIRED TO ALLOW FOR FIELD PAINTING OF REPLACEMENT STEEL MEMBERS THAT HAVE BEEN SHOP PRIMED.

THE CONTACT SURFACES OF NEW BEAM GUIDES AND GIRDER BOTTOM FLANGES, AND THE INSIDE SURFACES OF PIN HOLES SHALL RECEIVE NEW PRIME COAT ONLY.

THE NEW BRONZE WASHERS SHALL NOT BE PAINTED.

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

THE COLOR OF THE URETHANE TOP COAT SHALL CLOSELY MATCH THE COLOR OF THE EXISTING PAINT. THE COLOR SHALL BE SUBJECT TO APPROVAL FROM THE ENGINEER.

GENERAL NOTES CONTINUED: SEE SHEET 4/22.

RICHLAND ENGINEERING LIMITED
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GENERAL NOTES - 2
BRIDGE NO. STA-241-0767
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3/22

5/24

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ITEM 516, STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN

ITEM 516, VERTICAL EXTENSION OF EXPANSION JOINT, AS PER PLAN

GENERAL NOTES

STRIP SEAL

FURNISH EXTRUDED POLYCHLOROPRENE MATERIALCONFORMING TO ASTM D2628. DUE TO THE CONFIGURATION OF THE SEAL, THE RECOVERY TEST IS NOT APPLICABLE. THE PHYSICAL PROPERTIES OF THE STRIP SEAL SHALL CONFORM TO TABLE "A".

THE MANUFACTURER OR AN ACCREDITED LABORATORY SHALL TEST EACH LOT AS SPECIFIED AND SUBMIT TWO COPIES OF CERTIFIED TEST DATA SHOWING COMPLIANCE TO THE ODOT OFFICE OF MATERIALS MANAGEMENT. THE SEAL AND RETAINER ARE AN INTEGRAL SYSTEM DESIGNED AND SUPPLIED BY THE SAME MANUFACTURER. SEE "CONSTRUCTION PROCEDURE" FOR INSTALLATION.

TABLE A
(PHYSICAL PROPERTIES OF SEAL ELEMENT)

PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN. PSI	2000	D412
ELONGATION @ BREAK, MIN. (PERCENT)	250	D412
HARDNESS, TYPE A DUROMETER, POINTS	60 ± 5	MODIFIED D2240
OVEN AGING, 70 HR @ 212°F TENSILE STRENGTH, LOSS, MAX. ELONGATION, LOSS, MAX. HARDNESS, TYPE A DUROMETER, POINTS CHANGE	 20 PERCENT 20 PERCENT 0 TO +10	D573 MODIFIED D2240
OIL SWELL, ASTM OIL 3 70 HR @ 212°F, WEIGHT CHANGE MAX	 45 PERCENT	D471
OZONE RESISTANCE 20 PERCENT STRAIN, 300 PPHM IN AIR, 70 HR @ 104°F (WIPED WITH TOLUENE TO REMOVE SURFACE CONTAMINATION)	NO CRACKS	D1149
LOW TEMPERATURE STIFFENING 7 DAYS @ 14°F HARDNESS, TYPE A DUROMETER, POINTS CHANGE COMPRESSION SET, 70 HR @ 212°F MAX.	 0 TO +15 40 PERCENT	D2240 MODIFIED D2240 D395 METHOD B

LUBRICANT-ADHESIVE

FURNISH A ONE PART MOISTURE CURING POLYURETHANE COMPOUND MEETING THE REQUIREMENTS OF ASTM D4070 AND AS SPECIFIED BY THE SEAL MANUFACTURER. SEE "CONSTRUCTION PROCEDURE" FOR APPLICATION.

JOINTS IN STRIP SEALS

FURNISH SEALS IN ONE CONTINUOUS PIECE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

SEAL RETAINERS

FURNISH SOLID SHAPE STEEL RETAINERS, AS DIMENSIONED ON THE "RETAINER DETAIL", THAT ARE EXTRUDED, HOT ROLLED OR MACHINED. RETAINERS MANUFACTURED FROM BENT PLATE OR BUILT UP PIECES ARE NOT ACCEPTABLE. THE MANUFACTURER SHALL SPECIFY THE INTERNAL DIMENSIONS OF THE RETAINER TO ACHIEVE A POSITIVE SEAL AND ANCHORAGE.

AT JOINT UPTURNS, ESPECIALLY ON SKEWED BRIDGE DECKS, THE USE OF SPLIT RETAINERS MAY BE NECESSARY TO ENSURE PROPER SEAL GLAND INSTALLATION. WHERE THE SPLIT RETAINERS ARE REQUIRED, THE MANUFACTURER SHALL OBTAIN THE ENGINEER'S APPROVAL FOR THE DESIGN.

BEFORE THE GLAND IS INSTALLED, CORRECT ANY DEFECTS IN THE STEEL RETAINER OR THE ACTUAL EXPANSION JOINT THAT COULD CAUSE DAMAGE TO THE GLAND.

JOINTS IN RETAINERS

WELDS SHALL BE WATER TIGHT, PARTIAL PENETRATION WELDS AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES. GRIND FLUSH ALL WELDS IN CONTACT WITH SEAL AND JOINT ARMOR. DO NOT USE SHORT PIECES OF RETAINERS LESS THAN 6'-0" LONG, UNLESS REQUIRED AT CURBS OR SIDEWALKS. DO NOT PROVIDE ADDITIONAL SPLICES IN RETAINERS AT CURB OR SIDEWALK SECTIONS OTHER THAN THOSE DETAILED IN THE STANDARD BRIDGE DRAWINGS.

ARMOR STEEL

ALL CHANNEL SHAPES, ANGLE SHAPES AND ALL CROSS FRAME CONNECTION GUSSET PLATES, SHALL BE ASTM 709, GRADE 50 OR 50W. ALL OTHER STEEL PARTS INCLUDING RETAINERS, SHALL BE ASTM A709, GRADE 36, 50 OR 50W.

JOINTS IN ARMOR STEEL

SHOP OR FIELD JOINTS IN THE ARMOR SHALL BE COMPLETE PENETRATION WELDS GROUND FLUSH WHERE IN CONTACT WITH THE RETAINER.

ARMOR COATING

COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.

DO NOT FIELD PAINT METALIZED SURFACES EXCEPT AS NOTED. CLEAN AND PAINT THE AREAS ON THE ½" GUSSET PLATES BELOW THE ARMOR STEEL CHANNEL IN CONFORMANCE WITH THE STRUCTURE'S PAINT SYSTEM. PROTECT THE METALIZED COATING WHEN BLASTING OR COATING ADJACENT STEEL MEMBERS. OVERSPRAY NEED NOT BE REMOVED.

TEMPORARY SUPPORTS

THE FABRICATOR SHALL DESIGN AND INSTALL TEMPORARY SUPPORTS TO RESIST SHIPPING, ERECTION AND CONSTRUCTION FORCES WITHOUT DAMAGE TO THE STEEL ARMOR OR COATING. THESE SUPPORTS SHALL BE ADJUSTABLE IN THE FIELD TO ACCOUNT FOR VARIABLE TEMPERATURE SETTINGS. INSTALL THE SUPPORTS AFTER THE FABRICATION AND COATING IS COMPLETE.

CONSTRUCTION PROCEDURE

ARMOR INSTALLATION

1. PLACE JOINT ASSEMBLY SO THE CHANNELS REMAIN PARALLEL TO EACH OTHER AND PERPENDICULAR TO THE ROADWAY GRADIENT.
2. SET HINGE EXPANSION JOINT WIDTH TO DIMENSION "A" NO MORE THAN FOUR HOURS PRIOR TO THE DAY'S PEAK AMBIENT TEMPERATURE. SEE PLANS FOR DIMENSION "A".
3. PLACE THE SUPERSTRUCTURE CONCRETE DURING STABLE OR RISING AMBIENT TEMPERATURES. CONCLUDE PLACEMENT AT OR IMMEDIATELY BEFORE THE DAY'S PEAK AMBIENT TEMPERATURE.
4. HAND PLACE AND VIBRATE CONCRETE UNDER JOINT ARMOR TO ACHIEVE COMPLETE CONSOLIDATION.
5. LOOSEN ANY TEMPORARY JOINT ARMOR SUPPORTS AFTER INITIAL SET OF THE CONCRETE, PREFERABLY NOT LATER THAN TWO HOURS AFTER CONCLUSION OF THE CONCRETE PLACEMENT.

SEAL INSTALLATION

1. EXAMINE THE RETAINER FOR SOILAGE OR DEFECTS THAT CAN DAMAGE THE SEAL PRIOR TO SEAL INSTALLATION. REPAIR DEFECTS.
2. NOT MORE THAN 24 HOURS PRIOR TO SEAL INSTALLATION, BLAST THE RETAINER INTERIOR PER SSPC SP6 "COMMERCIAL BLAST CLEANING", WITHOUT DAMAGING ADJACENT COATINGS. REMOVE ALL BLASTING MEDIA FROM THE RETAINER.
3. CLEAN ALL SURFACES OF THE SEAL WITH METHYL ETHYLKETONE (MEK), TOLUENE (T) OR OTHER MANUFACTURER SPECIFIED SOLVENT USING CLEAN DISPOSABLE CLOTHS. MAINTAIN THE SURFACE CLEANLINESS UNTIL INSTALLATION.
4. IMMEDIATELY BEFORE APPLYING THE LUBRICANT-ADHESIVE, BONDING SURFACES MUST BE CLEAN, DRY AND WARMER THAN 45°F. BONDING SURFACES MUST BE MAINTAINED IN THIS CONDITION UNTIL THE SEAL IS INSTALLED. LIBERALLY APPLY THE LUBRICANT-ADHESIVE TO BOTH THE RETAINER AND THE SEAL USING THE MANUFACTURER'S SPECIFIED METHODS FOR COMPLETE AND UNIFORM COVERAGE.
5. INSTALL THE SEAL WITH EQUIPMENT AND PROCEDURE SPECIFIED BY THE MANUFACTURER. ELONGATION OF THE SEAL OR STRUCTURAL DAMAGE TO THE SEAL CAUSED BY INSTALLATION METHODS WILL BE CAUSE FOR REJECTION.
6. REMOVE EXCESS LUBRICANT-ADHESIVE AFTER INSTALLATION.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

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

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS WORK SHALL CONSIST OF TWO TYPES OF JACKING OPERATIONS: THE TEMPORARY RAISING AND SUPPORTING OF THE BRIDGE SUPERSTRUCTURE ENDS AT THE ABUTMENTS TO FACILITATE THE REFURBISHING OR REPLACEMENT OF THE ROCKER BEARINGS, AND THE TEMPORARY SUPPORT OF THE BRIDGE GIRDERS AT THE INTERMEDIATE HINGE TO FACILITATE THE REMOVAL, REFURBISHING AND REINSTALLATION OF THE HINGE MEMBERS.

THE HINGE WORK ALSO SHALL INCLUDE ANY WORK REQUIRED TO MAINTAIN THE LATERAL ALIGNMENT OF THE GIRDER ENDS AT THE HINGES WHILE THE BEAM GUIDE ON THE GIRDER BOTTOM FLANGE IS REMOVED.

THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH 501.05 AND AS DETAILED IN THIS NOTE.

ABUTMENT ROCKER TEMPORARY SUPPORT AND JACKING

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

HINGE REPLACEMENT TEMPORARY SUPPORT AND JACKING

TEMPORARY SUPPORT OF THE GIRDERS AT THE HINGE SHALL BE MADE PRIOR TO THE COMMENCEMENT OF DISMANTLING OPERATIONS. IN ADDITION TO THE LOADINGS SPECIFIED IN THE GUIDE DESIGN SPECIFICATION FOR BRIDGE TEMPORARY WORKS, THE TEMPORARY SUPPORT SYSTEMS SHALL BE DESIGNED FOR FULL DEAD LOAD AS PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION AND ODOT BRIDGE DESIGN MANUAL. THE TEMPORARY SUPPORT SYSTEM SHALL BE DESIGNED TO ACCOMMODATE FORCES AND MOVEMENTS DEVELOPED IN THE SUSPENDED SPAN DUE TO THERMAL EXPANSION AND CONSTRUCTION. THE SUBMITTAL SHALL CONTAIN DESIGN CALCULATIONS, FOUNDATION INFORMATION AND DESIGN (IF ANY), FRAMING PLANS, ELEVATIONS, CONSTRUCTION DETAILS AND SECTIONS, MATERIAL LISTS AND ESTIMATED QUANTITIES.

THE CONTRACTOR'S WORK SHALL NOT ONLY ADDRESS SUPPORT OF THE SUSPENDED CANTILEVER SPAN, BUT ALSO THE UPLIFT CREATED IN THE 19'-4" GIRDER CANTILEVER OFF PIER 5 BY THE REMOVAL OF THE HINGES. PROVISION SHALL BE MADE TO ACCOMMODATE THIS UPLIFT DURING THE REMOVAL AND INSTALLATION OF THE HINGE TENSION LINKS.

PAYMENT

PAYMENT FOR THE ALL LABOR, MATERIALS, TOOLS, DESIGN AND INCIDENTALS FOR THE ABOVE DESCRIBED WORK SHALL BE MADE PER ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

GENERAL NOTES CONTINUED: SEE SHEET 5/22.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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GENERAL NOTES - 3
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

241_0781CGN003.DGN 6/18/08 SCB,KH

ITEM 517 - RAILING MISC.: RAILING REMOVED, STORED AND RE-INSTALLED

WORK UNDER THIS ITEM INCLUDES THE REMOVAL, STORAGE AND RE-INSTALLATION OF THE ALUMINUM TUBE RAILING ABOVE THE EXISTING CONCRETE PARAPET TO BE REMOVED AS PART OF THE INTERMEDIATE HINGE RECONSTRUCTION.

THE RAILING SHALL BE REMOVED TO THE ADJACENT SPLICE AND STORED IN A MANNER THAT DOES NOT DAMAGE THE RAILING UNTIL IT IS RE-INSTALLED.

THE RAILING SHALL BE RE-ATTACHED TO THE EXISTING POSTS WITH NEW 7/16"-14 X 1 1/4" STAINLESS STEEL HEX HEAD CAP SCREWS WITH ALUMINUM WASHERS. THE NEW STAINLESS STEEL HARDWARE SHALL BE PER 730.08; THE ALUMINUM WASHERS SHALL BE PER 711.20.

AS AN ALTERNATIVE TO REMOVING THE RAILING, THE RAILING MAY BE LEFT IN PLACE, BLOCKED WITH TEMPORARY SUPPORTS ON THE REMAINING PORTIONS OF THE PARAPET. BEFORE EMPLOYING THIS ALTERNATIVE, THE CONTRACTOR SHALL SATISFACTORILY DEMONSTRATE TO THE ENGINEER THAT THE NEW DECK, WALKS AND PARAPET CONCRETE CAN BE PLACED IN CONFORMANCE WITH THE PLANS WITHOUT SUBSTANTIAL INTERFERENCE FROM THE RAILING AND WITHOUT EXCESSIVE DEFORMATION OR OTHER DAMAGE TO THE RAILING.

PAYMENT FOR THE REMOVAL, STORAGE AND RE-INSTALLATION OF THE EXISTING RAILING TUBES FOR THE INTERMEDIATE HINGE TO THE FIRST SPLICE EACH SIDE OF THE HINGE SHALL BE MADE PER FOOT. PAYMENT INCLUDES ALL TOOLS, LABOR, MATERIALS INCLUDING NEW CONNECTION HARDWARE, AND INCIDENTALS REQUIRED TO SATISFACTORILY COMPLETE THE WORK, WHETHER THE CONTRACTOR PHYSICALLY REMOVES THE RAILING OR, IF PERMITTED, TEMPORARILY BLOCKS IT DURING CONSTRUCTION.

ITEM 517 - RAILING, MISC.: POST REMOVED, STORED AND RE-INSTALLED

WORK UNDER THIS ITEM INCLUDES THE REMOVAL, STORAGE AND RE-INSTALLATION OF THE ALUMINUM TUBE RAILING POSTS ABOVE THE EXISTING CONCRETE PARAPET TO BE REMOVED AS PART OF THE INTERMEDIATE HINGE RECONSTRUCTION.

THE CONTRACTOR SHALL CAREFULLY REMOVE THE SPECIFIED POSTS, INCLUDING ANY SHIMS, FROM THE ALUMINUM TUBE RAILING AND CONCRETE PARAPET TO BE REMOVED. THE POSTS SHALL BE STORED IN A MANNER THAT PREVENTS THEM FROM BEING DAMAGED.

THE POSTS SHALL BE ATTACHED TO THE CONCRETE PARAPETS WITH NEW 7/8" DIA. X 1'-1" LONG ASTM A325 BOLTS WITH HEX NUTS AND STEEL WASHERS CONFORMING TO 711.09. THE NEW MATERIAL SHALL BE GALVANIZED PER 711.02. THE THREAD LENGTH REQUIREMENTS OF A325 MAY BE WAIVED.

THE POSTS SHALL BE RE-ATTACHED TO THE ALUMINUM TUBES WITH NEW 7/16"-14 X 1 1/4" STAINLESS STEEL HEX HEAD CAP SCREWS WITH ALUMINUM WASHERS. THE NEW STAINLESS STEEL HARDWARE SHALL BE PER 730.08; THE ALUMINUM WASHERS SHALL BE PER 711.20.

PAYMENT SHALL BE MADE PER EACH RAILING POST REMOVED, STORED AND RE-INSTALLED. PAYMENT INCLUDES ALL TOOLS, LABOR, MATERIALS INCLUDING NEW CONNECTION HARDWARE, AND INCIDENTALS REQUIRED TO SATISFACTORILY COMPLETE THE WORK.

ITEM 518 - SCUPPER, VERTICAL EXTENSION, AS PER PLAN

PRIOR TO PLACEMENT OF THE ASPHALT WEARING SURFACE, THE CONTRACTOR SHALL ADD STEEL VERTICAL EXTENSIONS TO ALL OF THE EXISTING SCUPPERS BY WELDING. THE EXISTING SCUPPER SURFACES THAT WILL BE WELDED SHALL BE PREPARED BY BLASTING OR HAND TOOL CLEANING IN ACCORDANCE WITH CMS 514. ALL OF THE EXPOSED NEW AND EXISTING STEEL SCUPPER SURFACES VISIBLE FROM THE ROADWAY SHALL BE PAINTED IN ACCORDANCE WITH CMS 514.

PAYMENT FOR ALL LABOR. MATERIALS, AND EQUIPMENT FOR THE VERTICAL EXTENSION AND PAINTING OF THE SCUPPER SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 518 - SCUPPER, VERTICAL EXTENSION, AS PER PLAN.

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

WORK UNDER THIS ITEM INCLUDES THE REMOVAL OF ALL DIRT, DEBRIS, ASPHALT AND OTHER MATERIAL FULLY OR PARTIALLY CLOGGING THE SCUPPERS, DOWNSPOUTS, AND PIPE OUTLETS. THE WORK SHALL ALSO INCLUDE MINOR GRADING OF THE GROUND AT THE PIPE OUTLETS AT THE BRIDGE PIERS.

DIRT AND DEBRIS SHALL BE REMOVED WITH COMPRESSED AIR, HIGH PRESSURE WATER SPRAYING, MANUAL METHODS, OR OTHER MEANS ACCEPTABLE TO THE ENGINEER. UNDER NO CIRCUMSTANCES SHALL THE MEANS OF REMOVAL DAMAGE THE BRIDGE, DRAINAGE SYSTEM, OR DRAINAGE SYSTEM GALVANIZATION. ANY DEBRIS REMOVED FROM THE SCUPPERS SHALL BE COLLECTED AND TAKEN OFF THE SITE FOR PROPER DISPOSAL.

AFTER THE CLOGGING DEBRIS HAS BEEN REMOVED FROM THE SCUPPERS AND DOWNSPOUTS, THE PREVIOUSLY CLOGGED COMPONENTS SHALL BE WASHED OUT WITH PRESSURIZED FRESH WATER.

NO WORK NEED BE PERFORMED ON UNOBSTRUCTED SCUPPERS AND DOWNSPOUTS.

SEVERAL DOWNSPOUT OUTLETS AT THE BASES OF THE PIERS ARE PARTIALLY BELOW THE PRESENT GROUND LINE. THE CONTRACTOR SHALL GRADE THE EXISTING GROUND WITHIN THE APPROXIMATE LIMITS SHOWN IN THE PLANS TO PROVIDE FOR POSITIVE DRAINAGE AWAY FROM THE PIPE OUTLETS.

THE ELEVATION OF THE GRADED GROUND SHOULD BE NO HIGHER THAN TWO INCHES BELOW THE END OF THE DOWNSPOUT.

LUMP SUM PAYMENT FOR THE WORK DESCRIBED ABOVE SHALL BE MADE UNDER ITEM 518 - STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANOUT.

ITEM SPECIAL - STRUCTURE, MISC.: CLEANING ABUTMENT SEATS

WORK UNDER THIS ITEM INCLUDES THE REMOVAL OF ALL DIRT, BUILT-UP RUST AND OTHER DEBRIS FROM THE ABUTMENT SEATS. THE CONTRACTOR MAY EMPLOYEE COMPRESSED AIR, WATER BLASTING, HAND TOOLS OR OTHER METHODS APPROVED BY THE ENGINEER TO ACCOMPLISH THE WORK.

REGARDLESS OF THE METHOD OF REMOVAL EMPLOYED, THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT THE CLEANING OPERATIONS FROM DAMAGING PORTIONS OF THE STRUCTURE TO REMAIN. THE CONTRACTOR SHALL ALSO CLEAN OFF ANY ABUTMENT SEAT DEBRIS THAT MAY ACCUMULATE ON BEAM OR GIRDER FLANGES, OR OTHER COMPONENT SURFACES TO REMAIN, AS A RESULT OF THE CONTRACTOR'S METHOD OF CLEANING.

PAYMENT SHALL BE MADE PER LUMP SUM FOR THE COMPLETE CLEANING OF DEBRIS FROM BOTH THE REAR AND FORWARD ABUTMENT SEATS.

ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK, TYPE C

AFTER THE WEARING COURSES HAVE BEEN REMOVED FROM THE BRIDGE DECK SURFACE, ALL VISUALLY UNSOUND AREAS OF THE DECK SURFACE SHALL BE PATCHED. PATCHING OF THE DECK SHALL MEET THE REQUIREMENT OF TYPE C AS PER PROPOSAL NOTE 512.

AN ESTIMATED QUANTITY OF 440 SQ.YD. HAS BEEN INCLUDED IN THE PLAN FOR USE AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL LABOR AND MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK, TYPE C AND PAID BY THE SQUARE YARD.

ITEM SPECIAL - PATCHING CONCRETE STRUCTURE MISC.: CURB REPAIR

THIS ITEM SHALL BE USED TO REPAIR THE DETERIORATED FACE OF THE CURB ON THE BRIDGE DECK AND/OR APPROACH SLABS. THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH ITEM 519 - PATCHING CONCRETE STRUCTURES AS MODIFIED HEREIN.

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.

PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: CURB REPAIR AND WILL BE PAID FOR PER FOOT.

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GENERAL NOTES - 4

BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

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GENERAL SUMMARY - PART 2

CALCULATED KAK DATED 2/08
CHECKED PDG DATED 6/08

	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE	GENERAL	APPROACH SLABS	SEE SHEET NO.
	202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LUMP			2/22
	202	23500	4717	SQ YD	WEARING COURSE REMOVED	4384		333	
	407	10000	354	GALLON	TACK COAT	329		25	
	407	14000	190	GALLON	TACK COAT FOR INTERMEDIATE COURSE	176		14	
	448	46050	263	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	244		19	
	448	50000	197	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1H	183		14	
	509	10001	2867	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2867			2/22
**	509	20001	100	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	100			2/22
	511	50001	12.4	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN	12.4			2/22
	511	50100	0.6	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)	0.6			
	512	10300	22.3	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	22.3			
	512	33010	4384	SQ YD	TYPE 3 WATERPROOFING	4384			
	512	10100	2266	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	2266			
	513	10200	450	POUND	STRUCTURAL STEEL MEMBERS, LEVEL UF	450			
**	513	10201	500	POUND	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN	500			3/22
**	513	10320	230	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 6	230			
**	513	90000	35	POUND	STRUCTURAL STEEL, MISC.: NEW PINS AND NUTS, LEVEL 6	35			3/22
	513	95020	LUMP		STRUCTURAL STEEL, MISC.: HINGE PREPARATION AND NON-DESTRUCTIVE TESTING	LUMP			3/22
	513	95020	LUMP		STRUCTURAL STEEL, MISC.: DISASSEMBLY OF EXISTING PIN AND HANGER ASSEMBLIES	LUMP			3/22
	513	95020	LUMP		STRUCTURAL STEEL, MISC.: ASSEMBLY OF REHABILITATED PIN AND HANGER ASSEMBLIES	LUMP			3/22
	513	95030	64	EACH	STRUCTURAL STEEL, MISC.: NEW WASHER FOR PIN AND HANGER, LEVEL UF	64			3/22
	514	00050	4625	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	4625			
	514	00056	4625	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	4625			
	514	00060	4643	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	4643			
	514	00067	4643	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	4643			3/22
	514	00504	12	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	12			
	514	10000	3	EACH	FINAL INSPECTION REPAIR	3			
	516	11211	65	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	65			4/22
	516	11801	113	FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN	113			4/22
	516	45305	16	EACH	REFURBISH BEARING DEVICES, AS PER PLAN	16			4/22
	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	LUMP			4/22
	517	76300	25	FT	RAILING, MISC.: RAILING REMOVED, STORED AND RE-INSTALLED	25			5/22
	517	76302	4	EACH	RAILING, MISC.: POST REMOVED, STORED AND RE-INSTALLED	4			5/22
	518	12701	36	EACH	SCUPPER, VERTICAL EXTENSION, AS PER PLAN	36			5/22
	518	63300	LUMP		STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANOUT	LUMP			5/22
	SPECIAL	51911720	200	FT	PATCHING CONCRETE STRUCTURE, MISC.: CURB REPAIR	200			5/22
	SPECIAL	51912304	440	SQ YD	PATCHING CONCRETE BRIDGE DECK, TYPE C (SEE PROPOSAL NOTE)	440			5/22
	SPECIAL	53000200	LUMP		STRUCTURE, MISC.: CLEANING ABUTMENT SEATS	LUMP			5/22
					MISCELLANEOUS				
	614	11000	LUMP		MAINTAINING TRAFFIC		LUMP		
	619	16010	4	MONTH	FIELD OFFICE, TYPE B		4		
	623	10000	LUMP		CONSTRUCTION LAYOUT STAKES		LUMP		
	624	10000	LUMP		MOBILIZATION		LUMP		

** ITEMS INCLUDED FOR BIDDING PURPOSES ONLY.
WORK TO BE COMPLETED IF EXISTING MATERIAL IS NOT SUITABLE FOR REUSE AND AUTHORIZED BY THE ENGINEER.

RICHLAND ENGINEERING LIMITED
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DESIGNED K.AK
DRAWN SCB
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GENERAL SUMMARY - PART 2
BRIDGE NO. STA-241-0767
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STA-241-7.67
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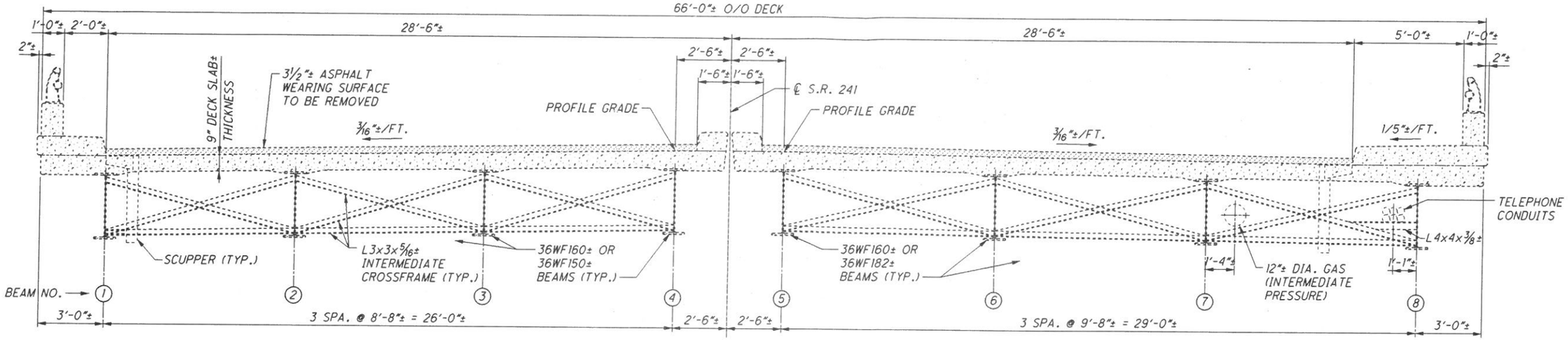
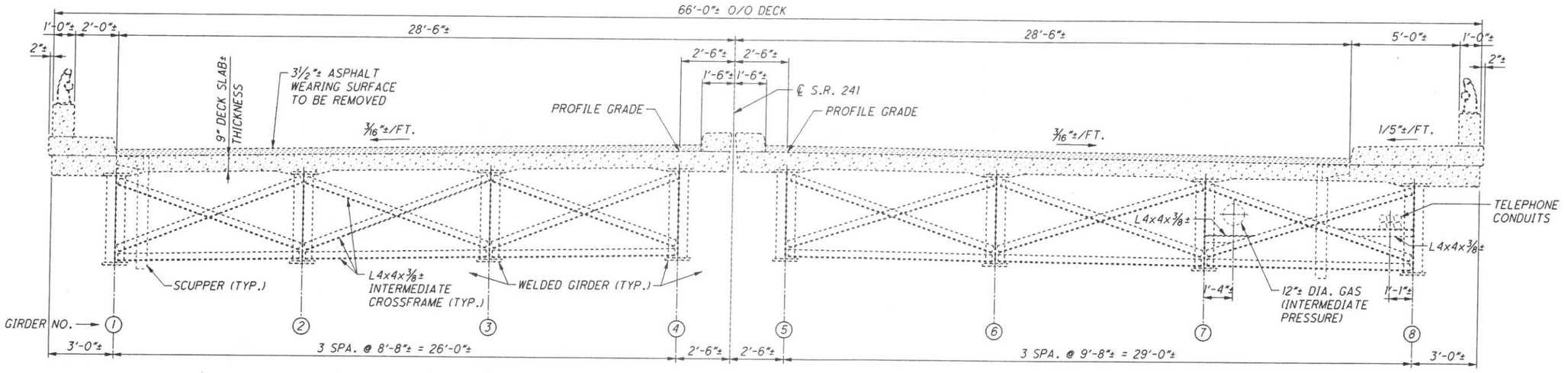


TRANSVERSE SECTION

(BEAM SPAN)



TRANSVERSE SECTION

(GIRDER SPAN)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

241_078CTS001.DGN 6/18/08 SCB.KH

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

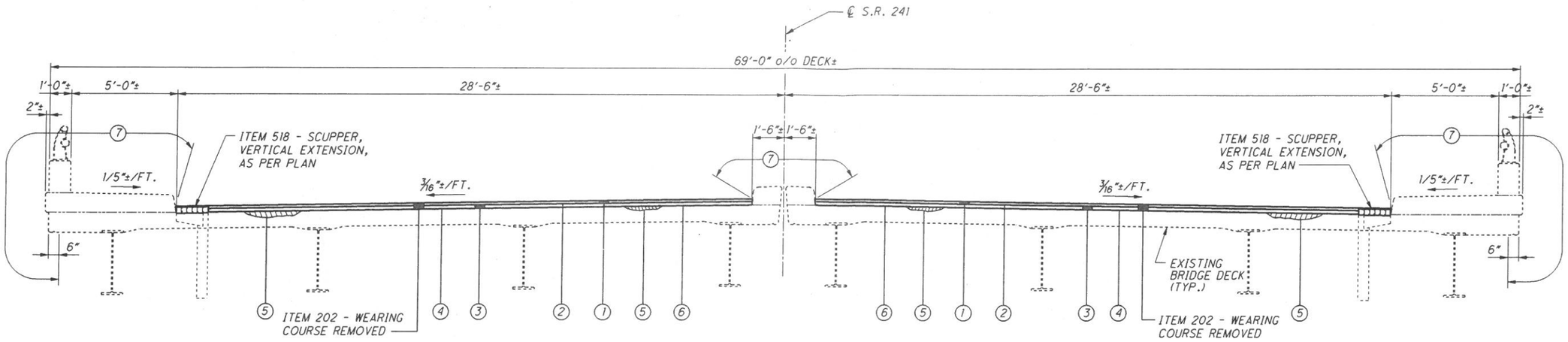
DESIGNED KAK | DRAWN KH | REVIEWED JDB | DATE 6/20/08
CHECKED DAP | REVISED | STRUCTURE FILE NUMBER 7606176

EXISTING TRANSVERSE SECTIONS
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

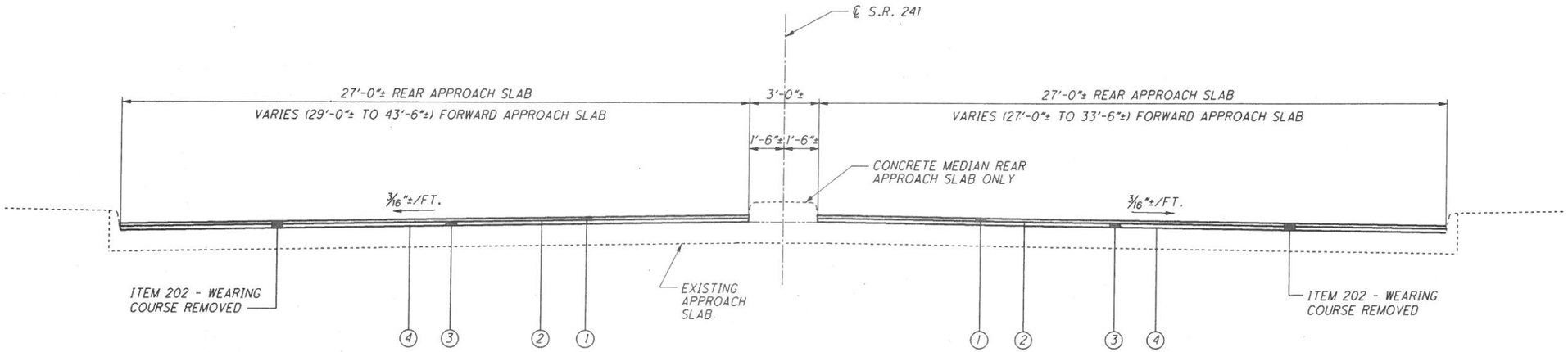
STA-241-7.67
PID No. 25238

7 / 22

9 / 24



BRIDGE TRANSVERSE SECTION



APPROACH SLAB TYPICAL

LEGEND

1. 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1H
2. 407 - TACK COAT FOR INTERMEDIATE COURSE @ 0.04 GAL./SQ.YD.
3. 448 - 2 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
4. 407 - TACK COAT @ 0.075 GAL./SQ.YD.
5. SPECIAL - PATCHING CONCRETE BRIDGE DECKS, TYPE C (SEE NOTE, SHEET 5/22)
6. 512 - TYPE 3 WATERPROOFING
7. 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

NOTES

ITEM 518 - SCUPPER, VERTICAL EXTENSION, AS PER PLAN:
SEE GENERAL NOTE SHEET 5/22 AND DETAIL SHEET 21/22.

241_078CTS003.DGN 6/18/08 SCB,KH

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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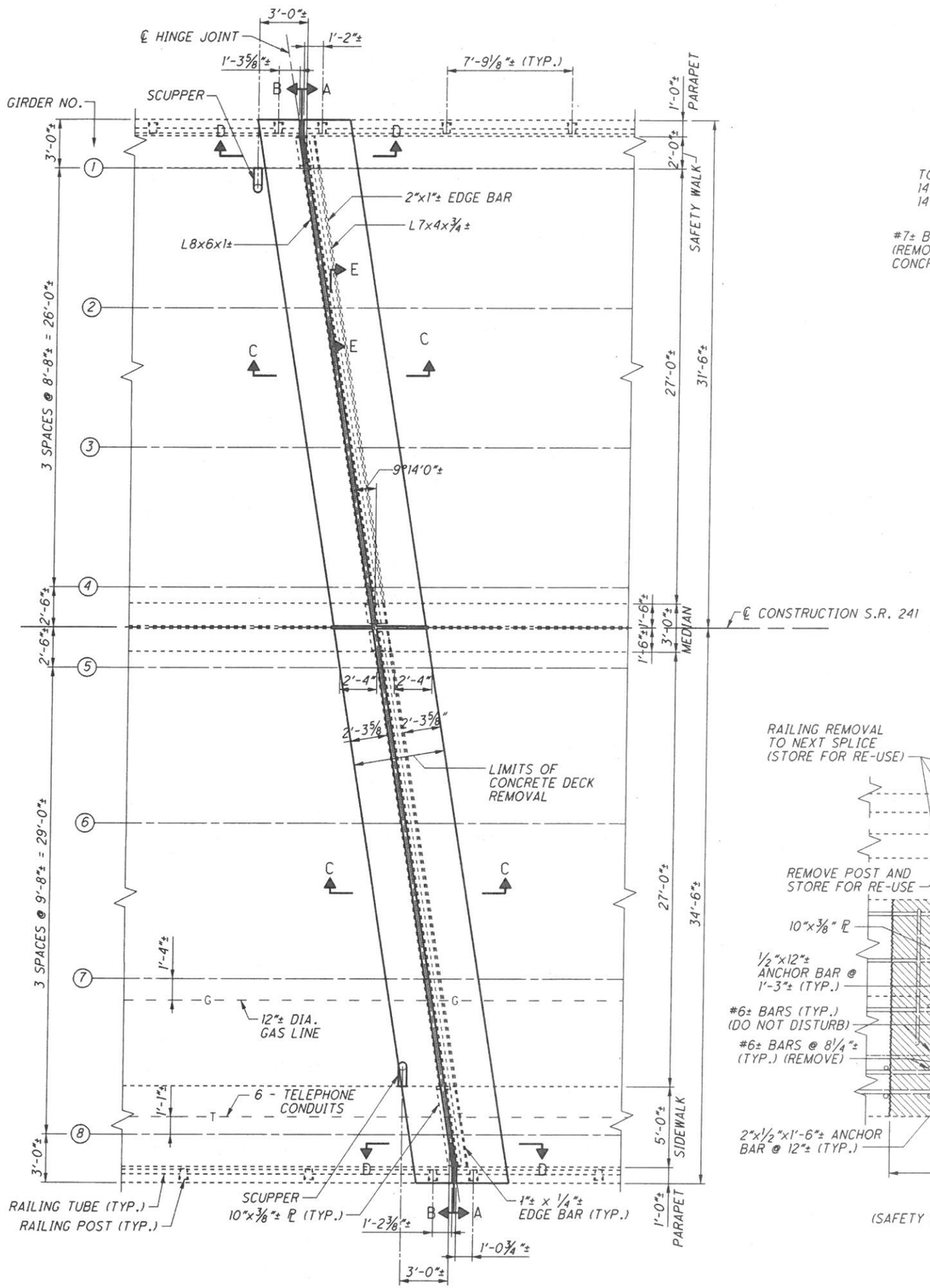
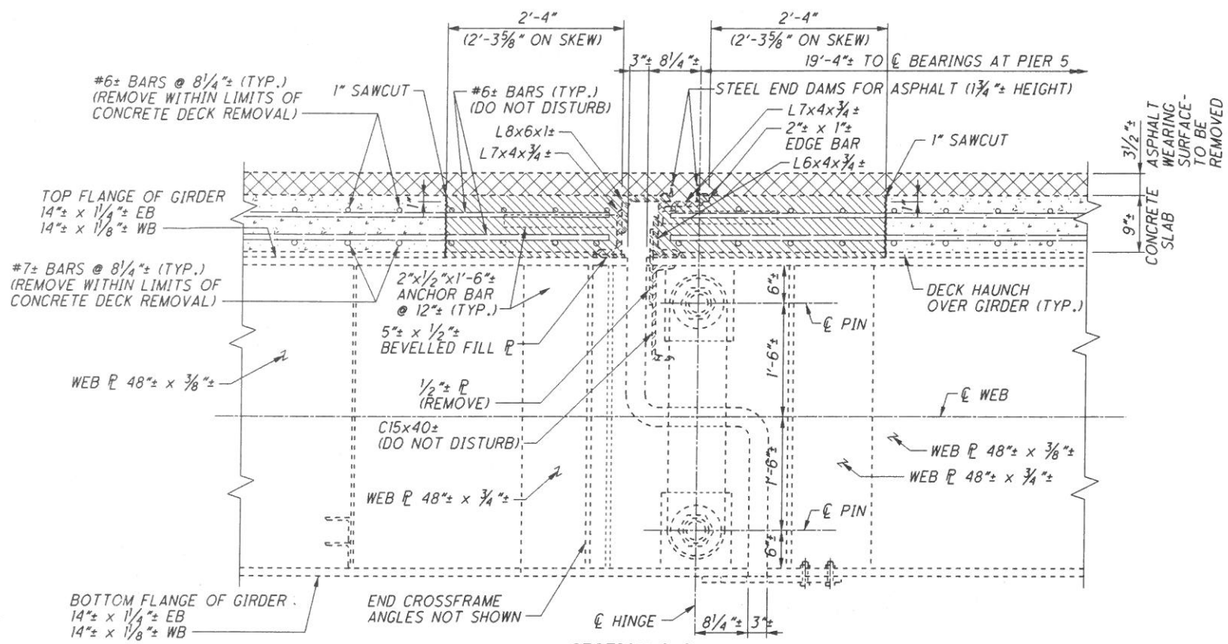
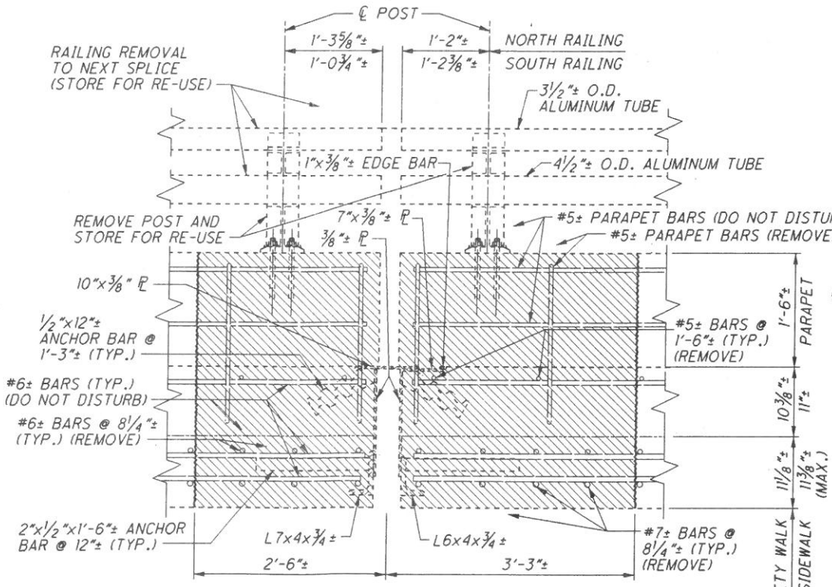


DECK PLAN AT INTERMEDIATE HINGE



SECTION C-C

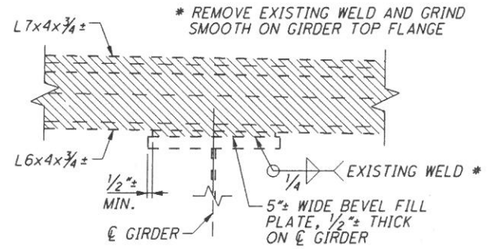
INTERMEDIATE HINGE DECK REMOVAL DETAILS



SECTION D-D

(SAFETY WALK SHOWN - SIDEWALK SIMILAR BUT OPPOSITE HAND)

SIDEWALK REMOVAL DETAILS



SECTION E-E

(TYPICAL END AT INTERMEDIATE JOINT)

EXISTING HINGE JOINT END CASTING CONSTRUCTION DETAIL FROM STANDARD DRAWING SD-1-65

(TYPICAL AT ALL GIRDER ENDS AT INTERMEDIATE JOINT)

LEGEND

ITEM 202 - WEARING COURSE REMOVED

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SECTIONS A-A & B-B: SEE SHEET 10/22.

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DECK REMOVAL PLAN AND DETAILS AT INTERMEDIATE HINGE

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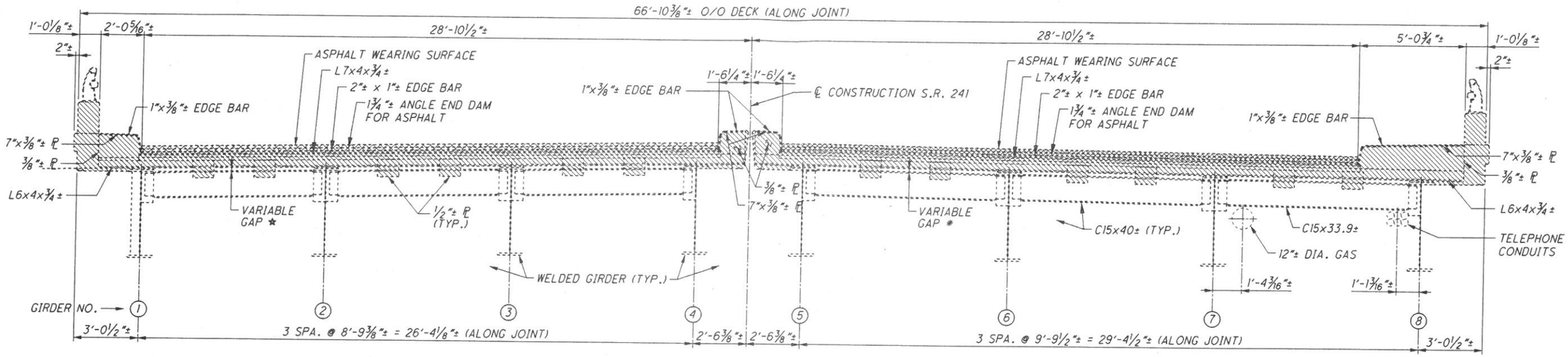
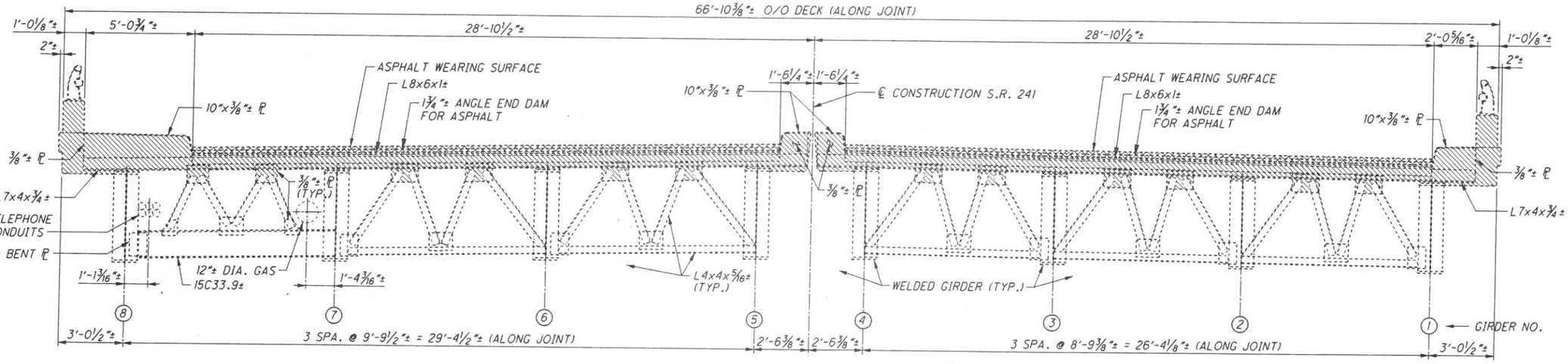


★ THE GAP BETWEEN THE TOP OF THE C15 AND THE BOTTOM OF L6x4x3/4± IN THE JOINT ARMOR VARIES FROM 0" TO SEVERAL INCHES. WHERE NOT IN DIRECT CONTACT WITH EACH OTHER, THESE MEMBERS MAY BE CONNECTED WITH A CONTINUOUS VERTICAL PLATE OR SEVERAL SMALLER WELDED PLATES. THE JOINT ARMOR ANGLE AND PLATE SHALL BE CAREFULLY REMOVED FROM THE C15, WHICH IS TO REMAIN IN PLACE. ALL CONNECTING WELDS ON THE C15 SHALL BE GROUND SMOOTH AS PART OF THE REMOVAL.

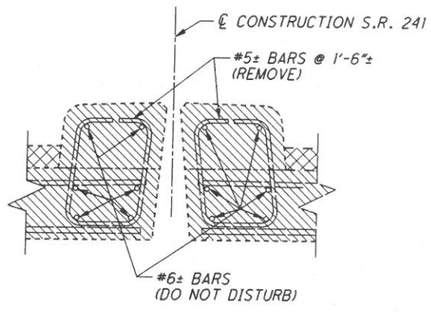
SECTION A-A REMOVAL DETAIL

(ALONG HINGE JOINT)



SECTION B-B REMOVAL DETAIL

(ALONG HINGE JOINT)



MEDIAN REMOVAL DETAILS

LEGEND

ITEM 202 - WEARING COURSE REMOVED

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

DIMENSIONS SHOWN ARE ALONG HINGE JOINT.

FOR SECTIONS A-A AND B-B: SEE SHEET 9/22.

DESIGN AGENCY
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MANSFIELD, OHIO 44902

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DECK REMOVAL DETAILS
BRIDGE NO. STA-241-0767
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STA-241-7.67
PID No. 25238

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12/24

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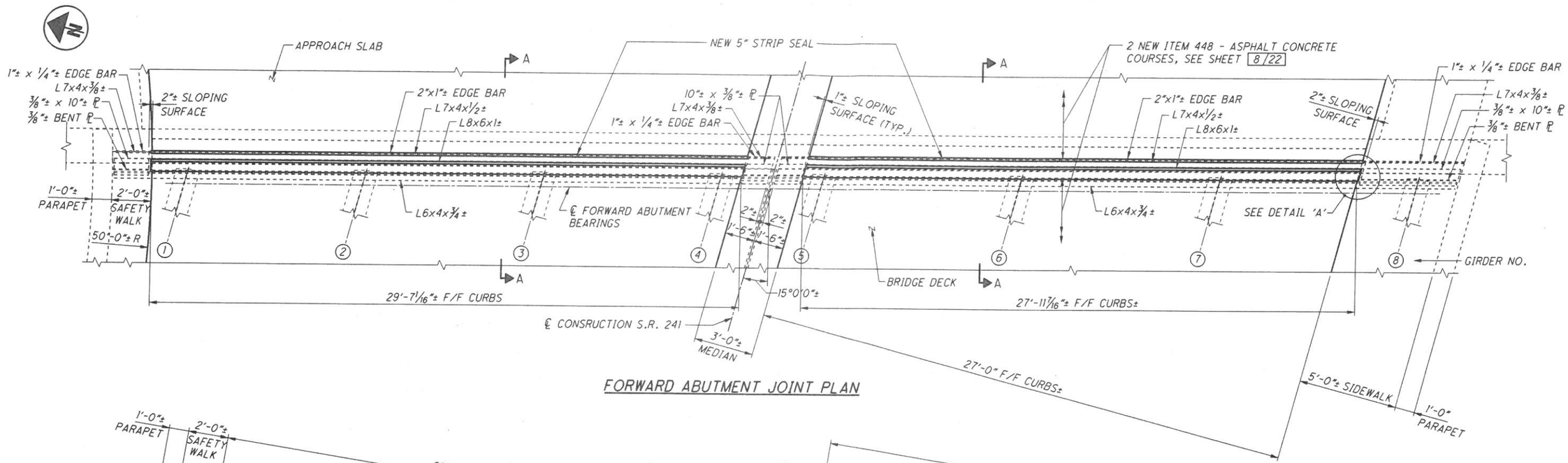
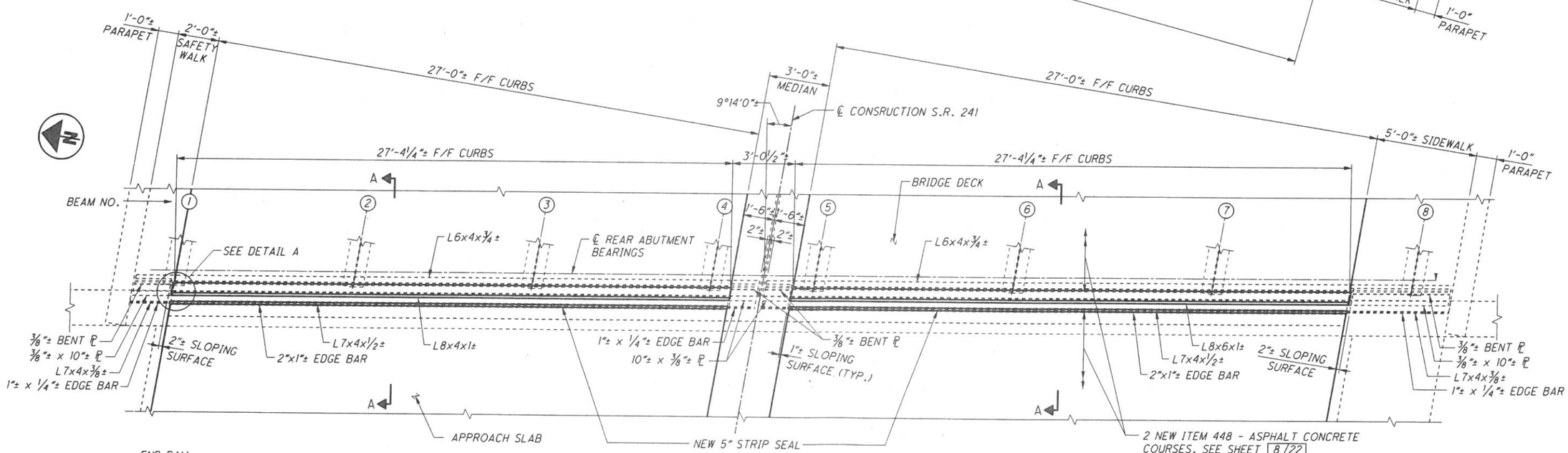
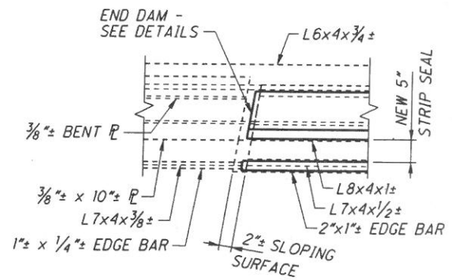


FORWARD ABUTMENT JOINT PLAN



REAR ABUTMENT JOINT PLAN



DETAIL A

NOTES

JOINT MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

EXISTING JOINT ANCHOR PLATES NOT SHOWN FOR CLARITY.

SECTION A-A: SEE SHEET 12/22.

NEW END DAM DETAILS: SEE SHEET 12/22.

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ABUTMENT JOINT PLAN
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
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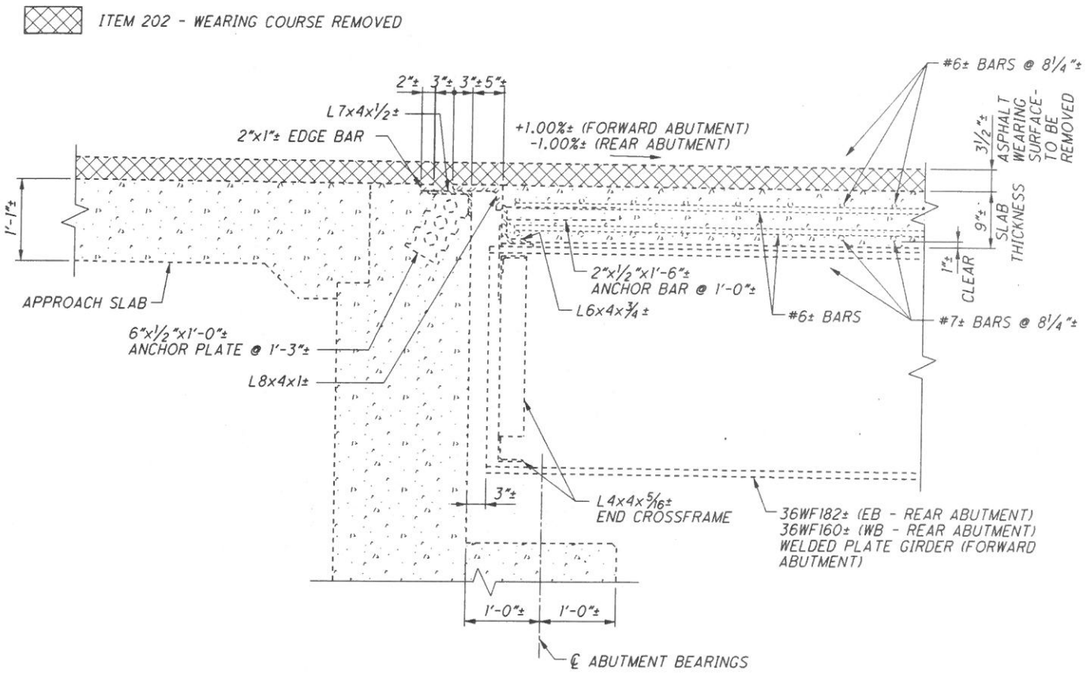
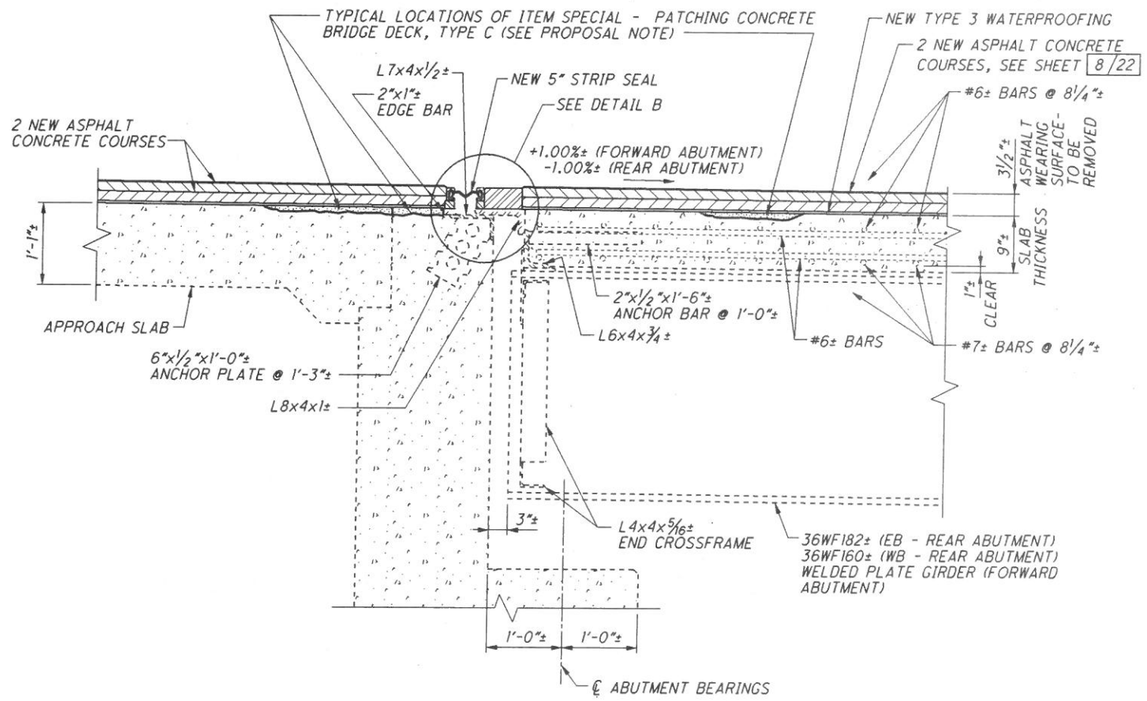
11/22
13/24



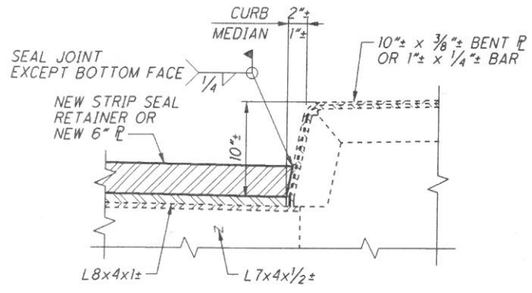
SECTION A-A

ASPHALT PAVEMENT REMOVAL AT ABUTMENT JOINTS

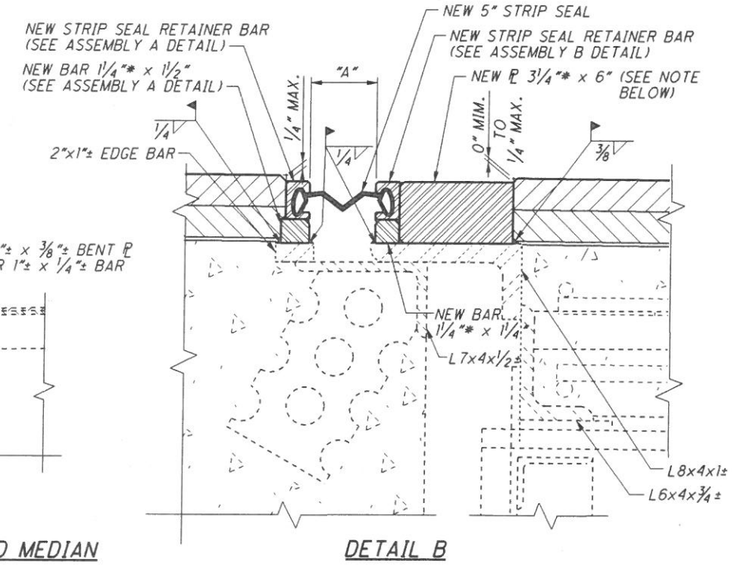


SECTION A-A

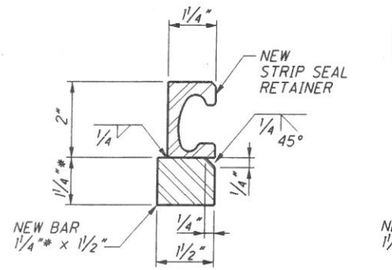
PROPOSED ABUTMENT JOINT MODIFICATION



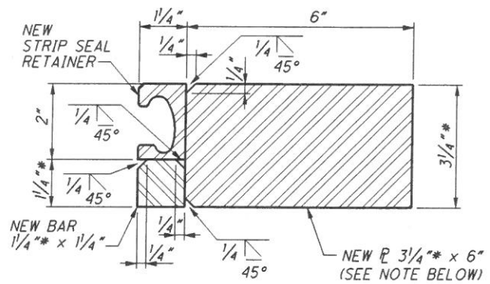
END DAM DETAILS AT SIDEWALK, SAFETY WALK AND MEDIAN



DETAIL B



ASSEMBLY A



ASSEMBLY B

FABRICATION SEQUENCE
1. ATTACH STEEL RETAINER TO BAR
2. ATTACH THESE MEMBERS TO 6" PLATE

* THE HEIGHTS OF THE NEW BARS AND PLATE ARE BASED ON ASSUMED ASPHALT THICKNESS OF 3 1/2".

3 1/4" PLATE THICKNESS: AT THE CONTRACTOR'S OPTION, TWO PLATES MAY BE FURNISHED IN LIEU OF A SINGLE 3 1/4" PLATE. THE TWO PLATES, SHALL BE WELDED TOGETHER WITH COMPLETE PENETRATION GROOVE WELDS ON ALL SIDES, GROUND SMOOTH TO FACILITATE THE FABRICATION OF ASSEMBLY B.

JOINT SETTING TABLE

TEMPERATURE (°F)	REAR ABUTMENT " DIM. A "	FORWARD ABUTMENT " DIM. A "
30°	4"	3 1/8"
40°	3 13/16"	3 3/4"
50°	3 11/16"	3 5/8"
60°	3 1/2"	3 1/2"
70°	3 3/8"	3 3/8"
80°	3 3/16"	3 1/4"
90°	3"	3 1/8"

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SECTION A-A: SEE SHEET 11/22.

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ABUTMENT JOINT DETAILS

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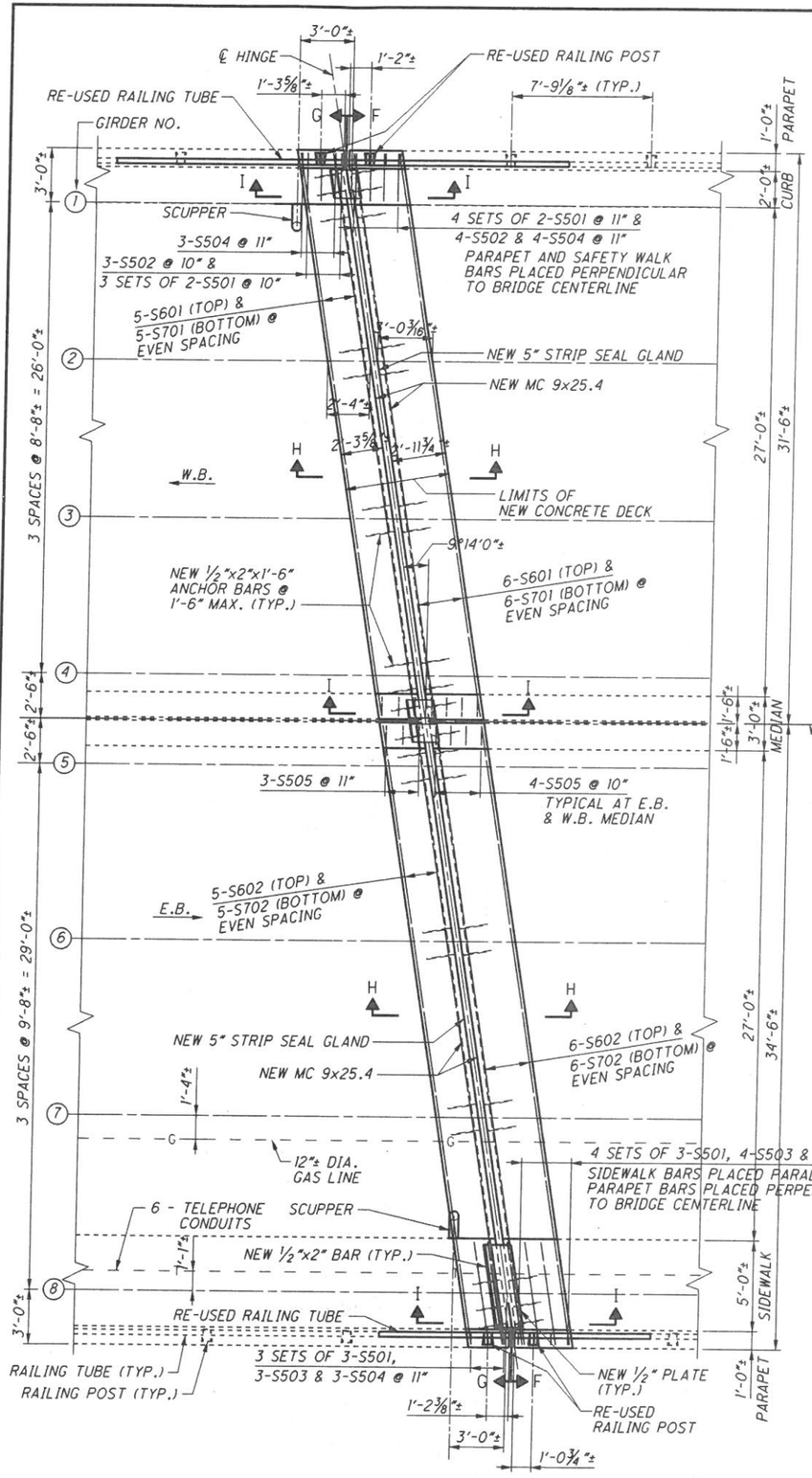


PROPOSED DECK PLAN AT INTERMEDIATE HINGE

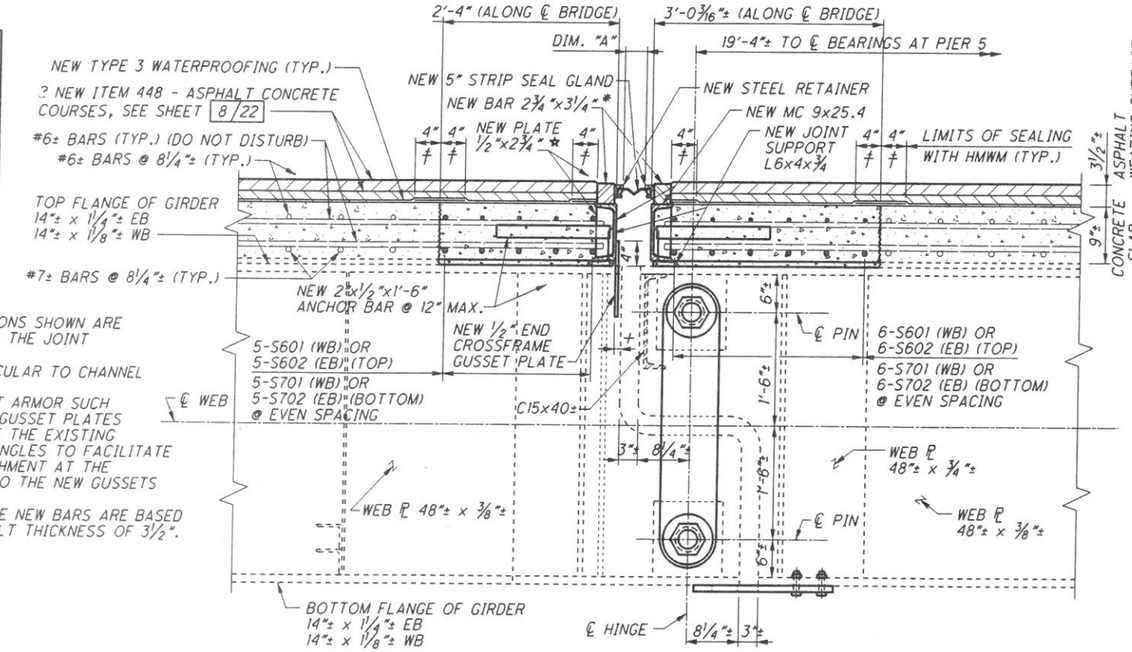
JOINT SETTING TABLE	
TEMPERATURE (°F)	HINGE " DIM. A "
30°	3.17"
40°	2.88"
50°	2.61"
60°	2.32"
70°	2.05"
80°	1.76"
90°	1.47"

† - THE HMWM DIMENSIONS SHOWN ARE PERPENDICULAR TO THE JOINT

★ - INSTALL PERPENDICULAR TO CHANNEL

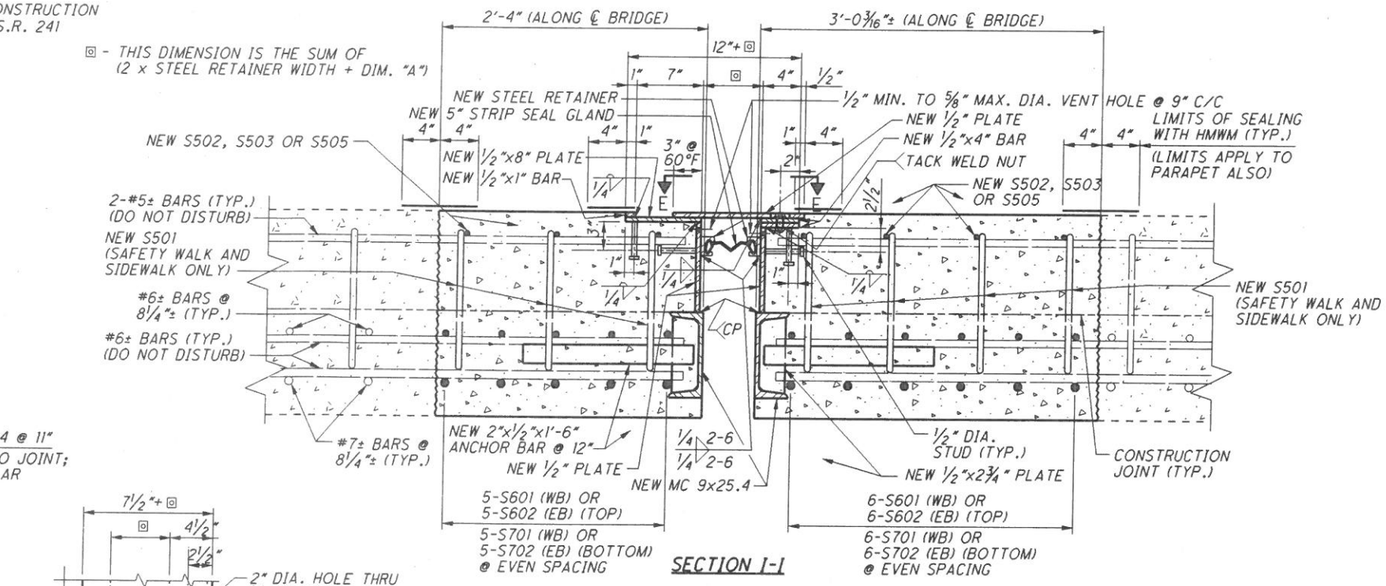
+ - SET THE NEW JOINT ARMOR SUCH THAT THE NEW ½" GUSSET PLATES ARE TIGHT AGAINST THE EXISTING END CROSSFRAME ANGLES TO FACILITATE THE WELDED ATTACHMENT AT THE EXISTING ANGLES TO THE NEW GUSSETS

✱ - THE HEIGHTS OF THE NEW BARS ARE BASED ON ASSUMED ASPHALT THICKNESS OF 3½".



SECTION H-H

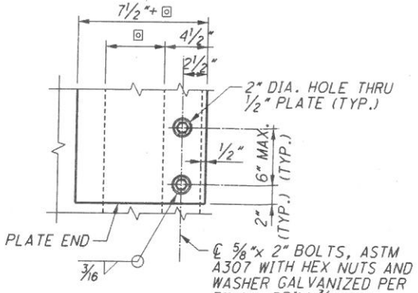
PROPOSED DECK EXPANSION JOINT AT HINGE



SECTION I-I

SECTION THROUGH MEDIAN

(SECTIONS THROUGH SIDEWALK AND SAFETY WALK SIMILAR)



VIEW E-E

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

EXISTING LONGITUDINAL REINFORCING STEEL TO REMAIN IN PLACE MAY REQUIRE FIELD TRIMMING TO FIT WITH NEW JOINT CONFIGURATION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL PAYMENTS SHALL BE MADE.

NOTATION: E.B. - EASTBOUND
W.B. - WESTBOUND
DIM. - DIMENSION

SECTIONS F-F & G-G: SEE SHEET 15/22.

SIDEWALK, SAFETY WALK AND MEDIAN DETAILS: SEE SHEET 16/22.

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PROPOSED DECK PLAN AND DETAILS AT INTERMEDIATE HINGE

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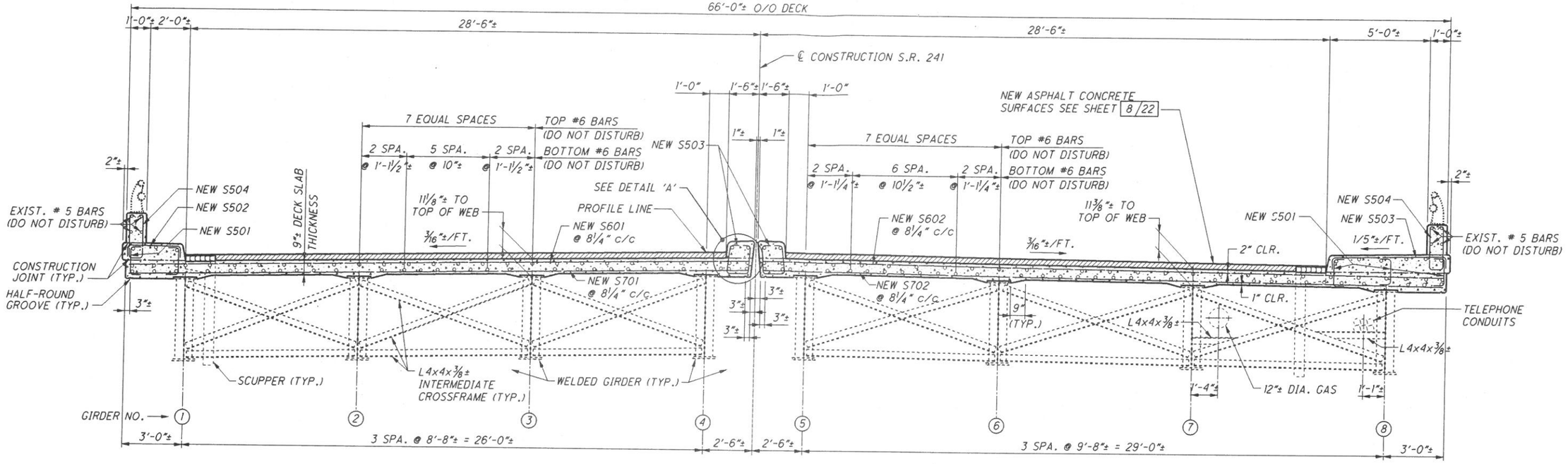
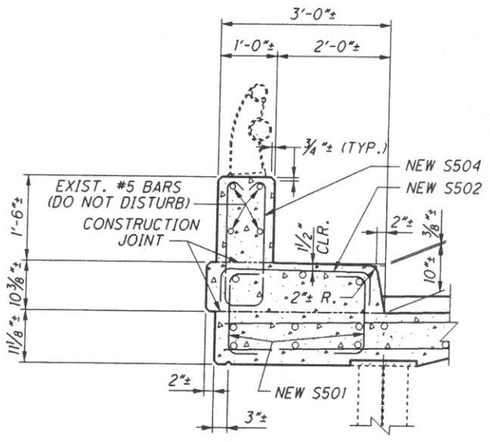
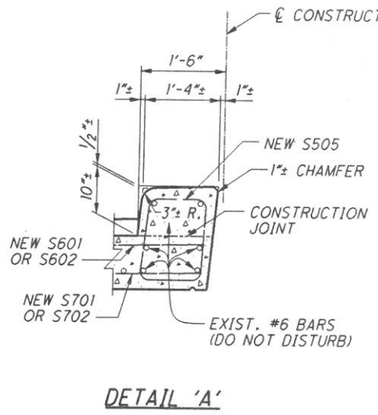


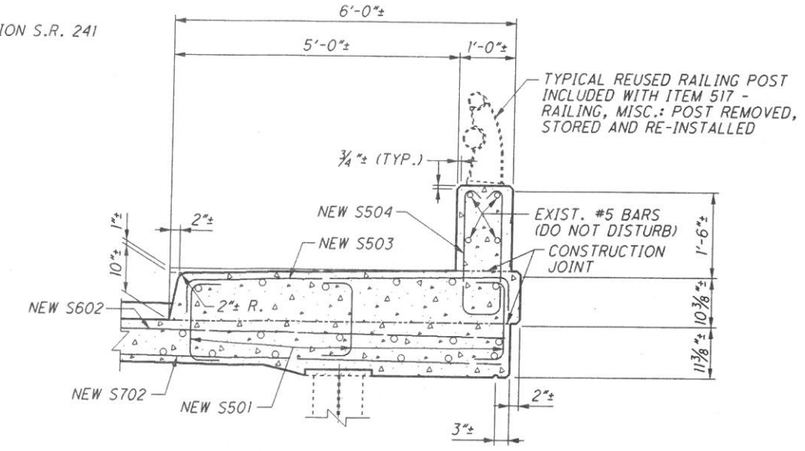
TRANSVERSE SECTION
(GIRDER SPAN)



SAFETY WALK, PARAPET & FASCIA DETAIL



DETAIL 'A'



SIDEWALK, PARAPET & FASCIA DETAIL

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE AS SHOWN ON THE TRANSVERSE SECTION. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE NEW HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE SHOULD MATCH THE EXISTING HAUNCH WIDTH AT EACH GIRDER WHERE IT BUTTS INTO THE EXISTING HAUNCH.

THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

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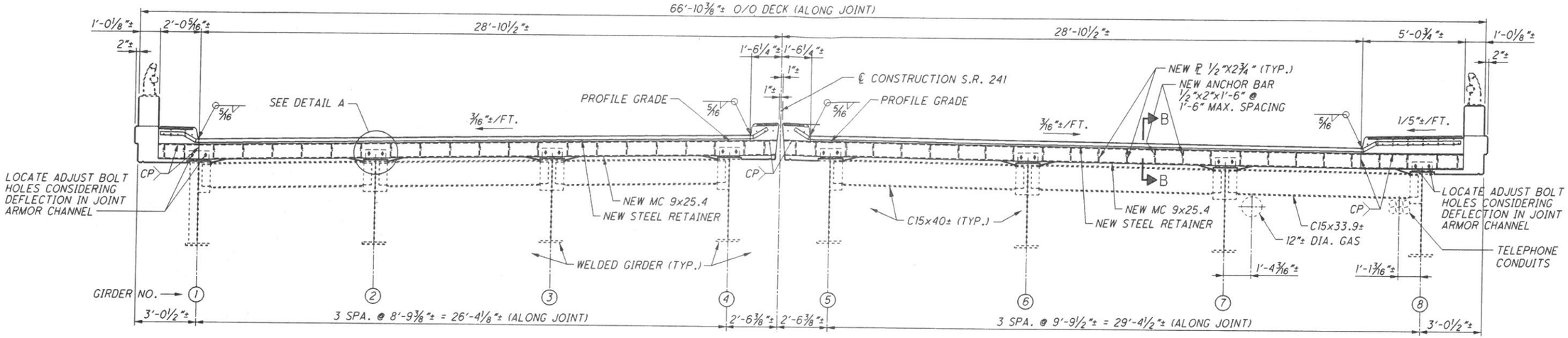
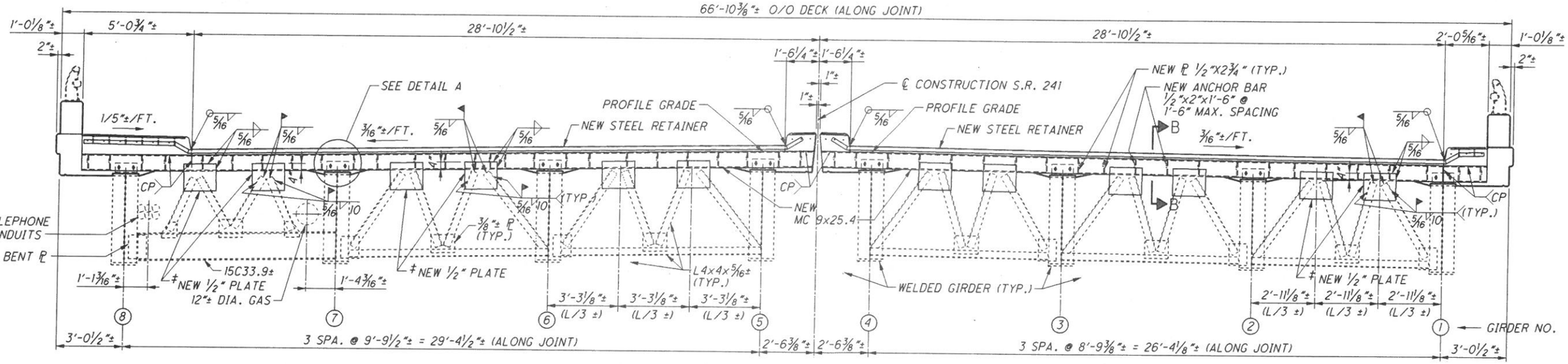
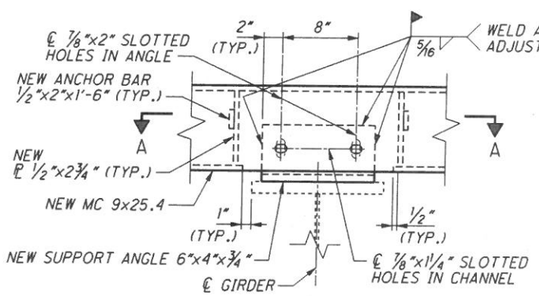


SECTION F-F
(ALONG HINGE JOINT)

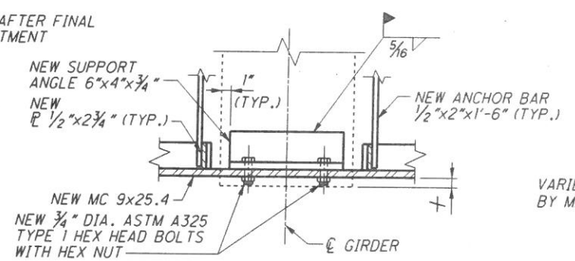
‡ - INCLUDE WITH EXPANSION JOINT FOR COATING AND PAYMENT



SECTION G-G
(ALONG HINGE JOINT)

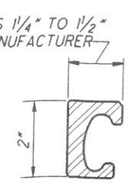


DETAIL A

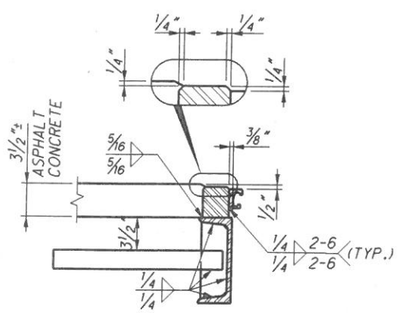


SECTION A-A

\+ - SET THE NEW JOINT ARMOR SUCH THAT THE NEW ½" GUSSET PLATES ARE TIGHT AGAINST THE EXISTING END CROSSFRAME ANGLES TO FACILITATE THE WELDED ATTACHMENT OF THE EXISTING ANGLES TO THE NEW GUSSETS



RETAINER DETAIL



SECTION B-B

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

DIMENSIONS SHOWN ALONG HINGE JOINT.

NEW ½" GUSSET PLATES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING THE NEW GUSSETS CONNECTING THE EXISTING END DIAPHRAGM ANGLES TO THE NEW ARMORED JOINT AT THE HINGE. USING FIELD MEASUREMENTS, THE CONTRACTOR SHALL ESTABLISH THE ACTUAL LOCATION OF THE EXISTING GUSSETS BETWEEN THE GIRDERS AND FURNISH THIS INFORMATION TO THE FABRICATOR TO INSURE THAT THE NEW GUSSETS WILL ADEQUATELY ALIGN WITH THE EXISTING DIAPHRAGM ANGLES.

THE CONTRACTOR SHALL ALSO ENLARGE THE NEW PLATE DIMENSIONS WITH RESPECT TO THE EXISTING PLATES TO INSURE THAT THE SPECIFIED LENGTH OF WELD AND OVERLAP ON THE NEW JOINT CHANNEL CAN BE ACCOMMODATED.

FOR SECTION F-F AND G-G: SEE SHEET 13/22.

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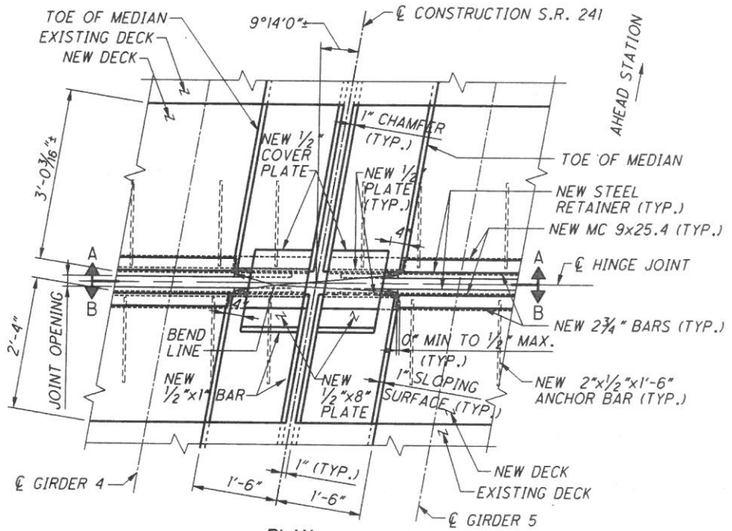
KAK	KH	JDB	6/20/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAP		7606176	

PROPOSED DECK AND INTERMEDIATE HINGE DETAILS - 1

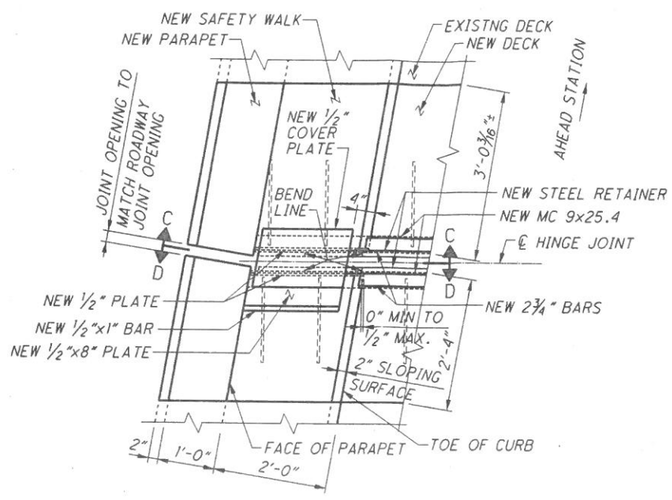
STA-241-7.67
PID No. 25238

BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

241_078CEX005.DGN 6/18/08 SCB,KH

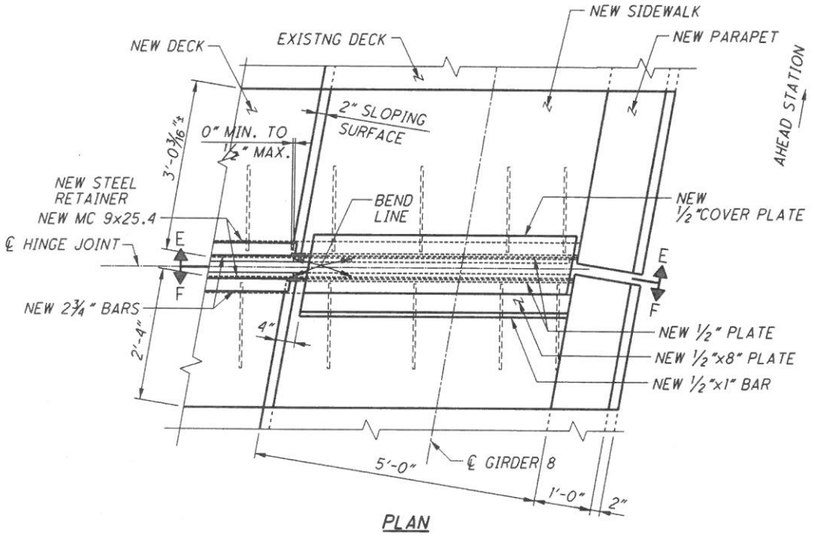


PLAN



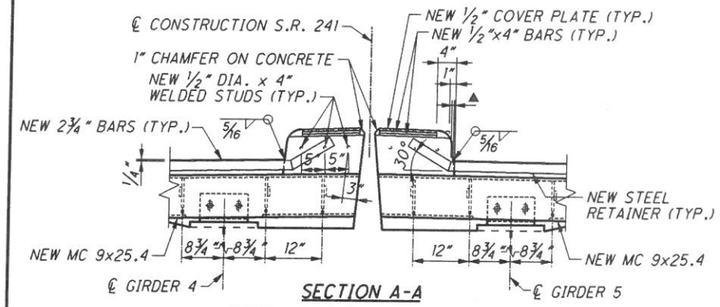
PLAN

(ALUMINUM RAILING NOT SHOWN FOR CLARITY)



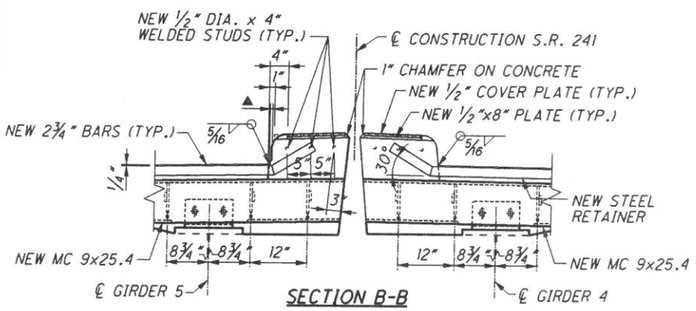
PLAN

(ALUMINUM RAILING NOT SHOWN FOR CLARITY)



SECTION A-A

(MEDIAN ON SKEW - LOOKING AHEAD)

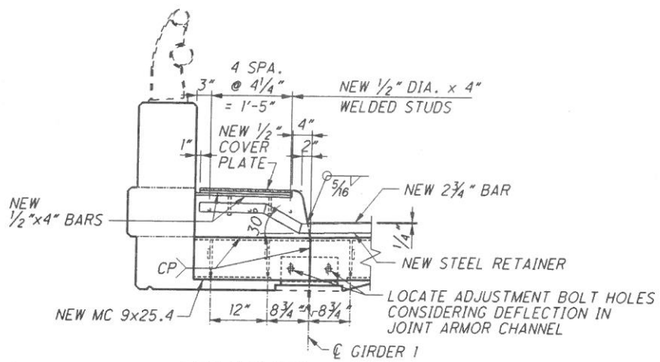


SECTION B-B

(MEDIAN ON SKEW - LOOKING BACK)

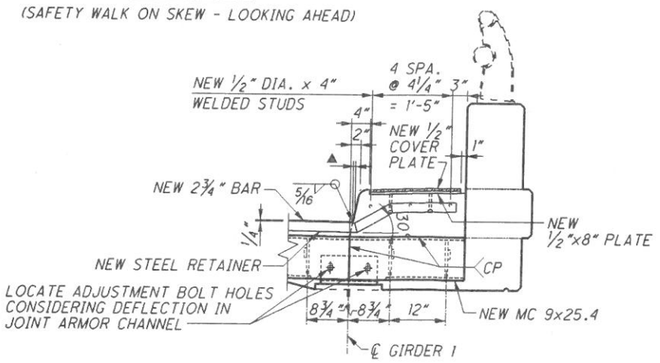
PROPOSED JOINT AT MEDIAN

▲ - 0" MIN. TO ½" MAX. AT BREAKPOINT IN RETAINER. THIS DIMENSION WILL ONLY APPLY TO THE SIDE OF JOINT ASSEMBLY WHICH IS NEAREST TO THE CURB LINE.



SECTION C-C

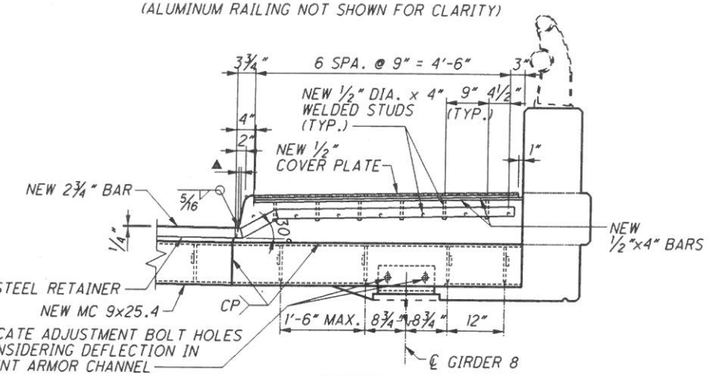
(SAFETY WALK ON SKEW - LOOKING AHEAD)



SECTION D-D

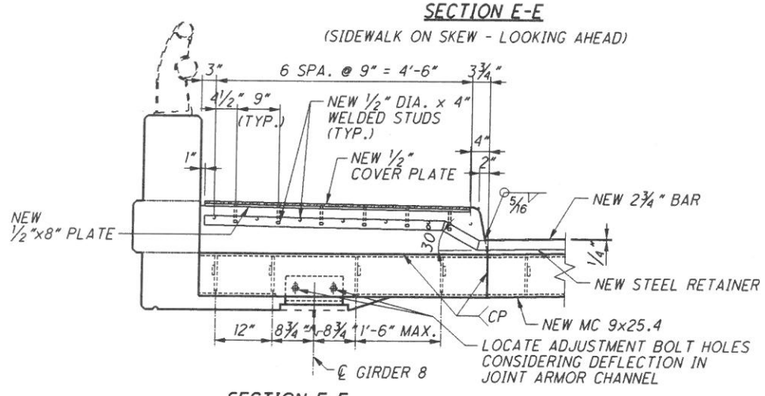
(SAFETY WALK ON SKEW - LOOKING BACK)

PROPOSED JOINT AT SAFETY WALK



SECTION E-E

(SIDEWALK ON SKEW - LOOKING AHEAD)



SECTION F-F

(SIDEWALK ON SKEW - LOOKING BACK)

PROPOSED JOINT AT SIDEWALK WALK

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

241_078CEX004.DGN 6/18/08 SCB,KH

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

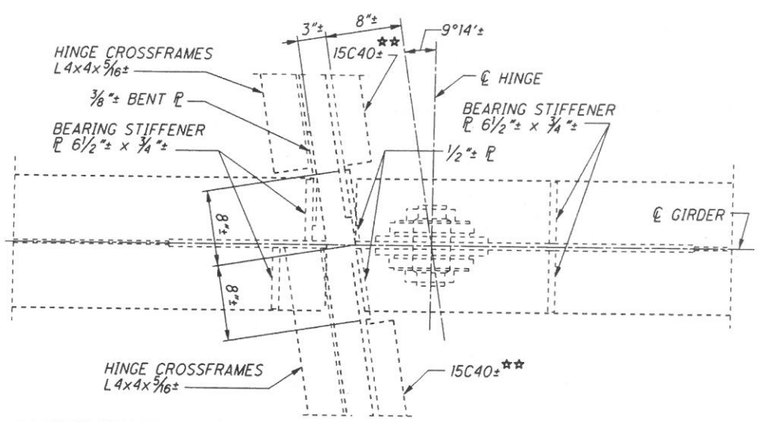
DESIGNED K.AK | DRAWN K.H | REVIEWED JDB | DATE 6/20/08
CHECKED DAP | REVISED | STRUCTURE FILE NUMBER 7606176

PROPOSED DECK AND INTERMEDIATE HINGE DETAILS - 2
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

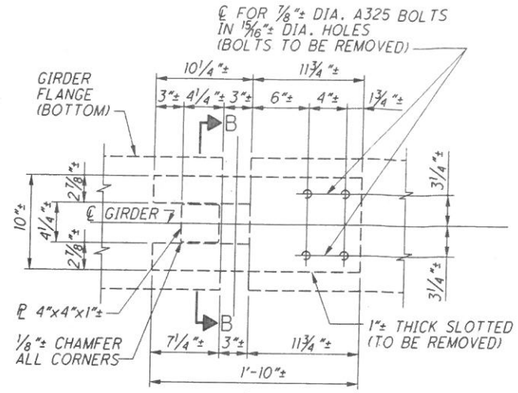
16 / 22

18 / 24

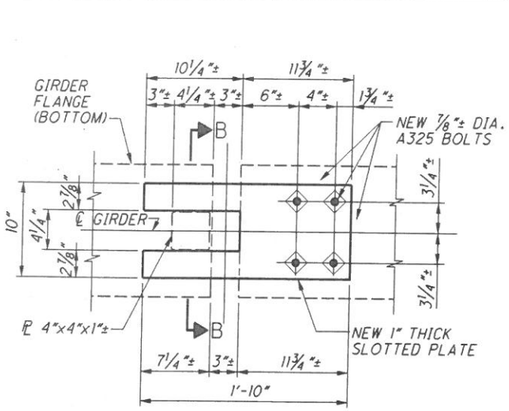


** HINGE CROSSFRAMES SHOWN ARE TYPICAL FOR EACH BAY. SIZES AND ARRANGEMENT WILL VARY IN THE BAY WITH THE UTILITY LINES

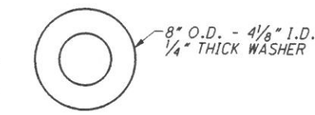
HINGE PLAN



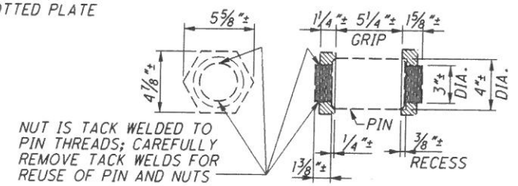
GUIDE PLATE DETAIL
(EXISTING)



GUIDE PLATE DETAIL
(PROPOSED)
(8 REQUIRED)

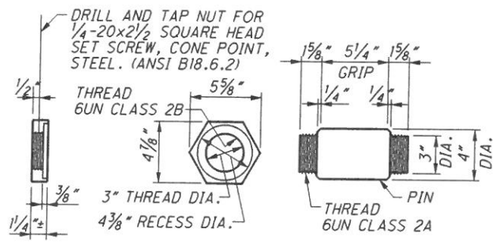


NEW BRONZE WASHER
(64 REQUIRED)

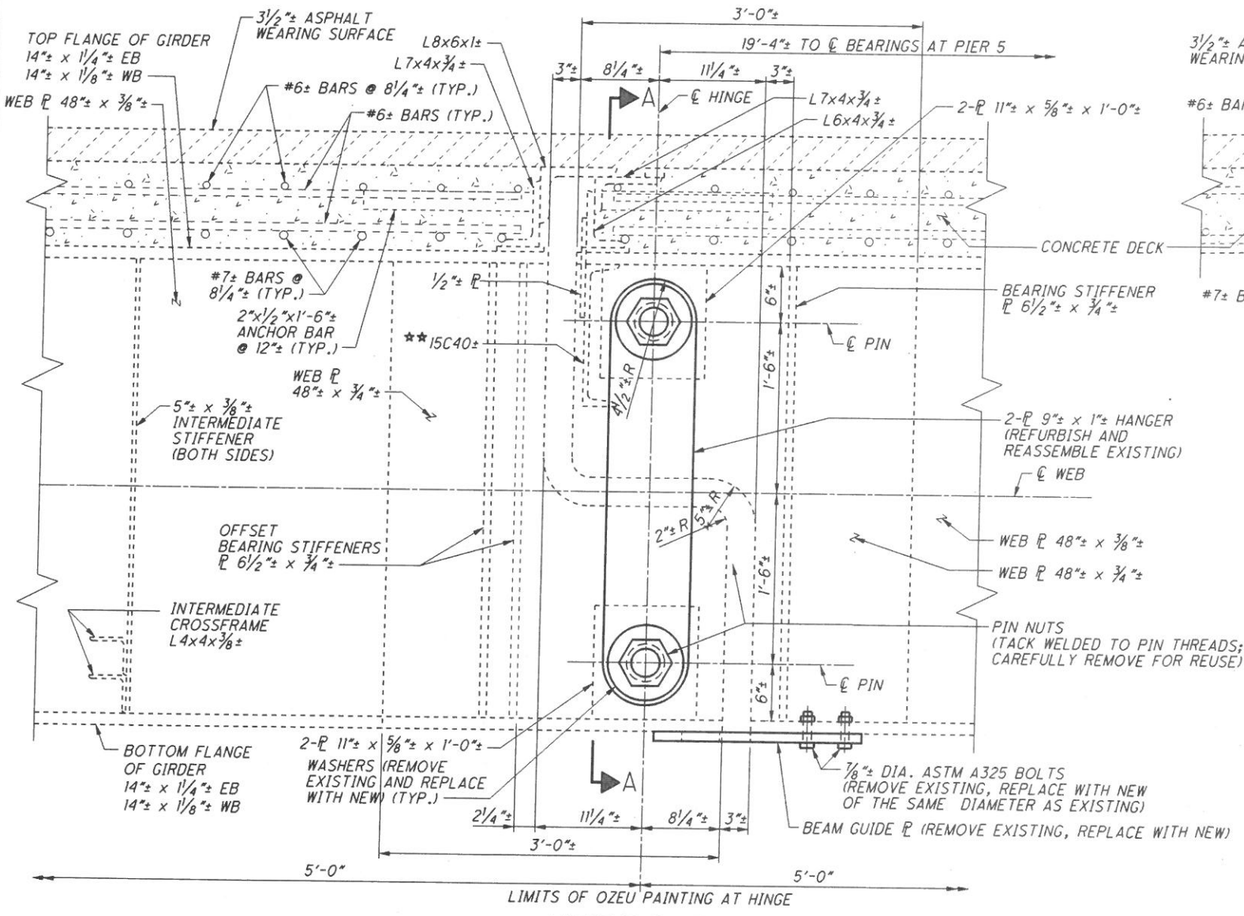


NUT IS TACK WELDED TO PIN THREADS; CAREFULLY REMOVE TACK WELDS FOR REUSE OF PIN AND NUTS

EXISTING HANGER PIN AND NUT DETAIL

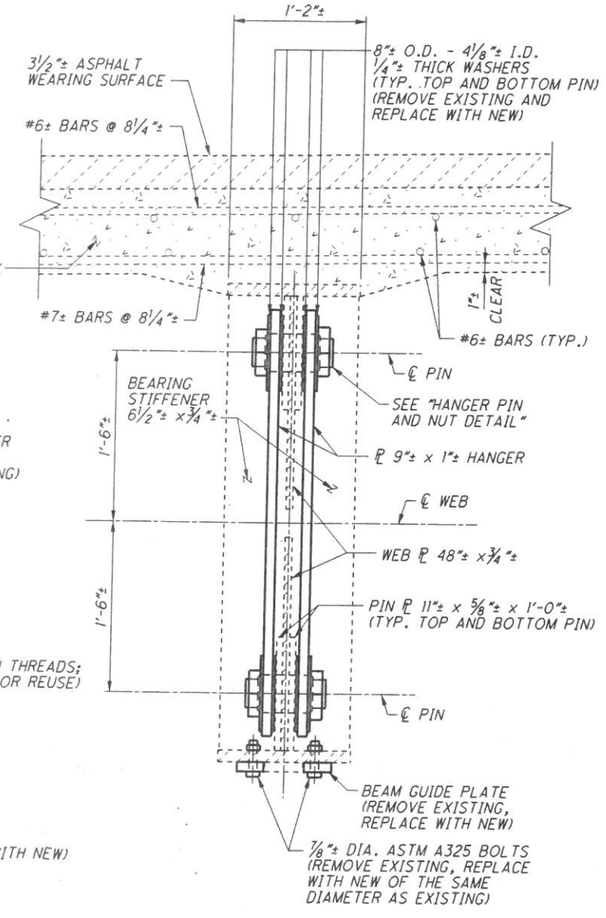


NEW HANGER PIN AND NUT DETAIL
(IF NEEDED)



HINGE ELEVATION

NOTE: HINGE CROSSFRAME ANGLE NOT SHOWN IN THIS VIEW FOR CLARITY. EXISTING DECK AND EXPANSION JOINT ARE SHOWN IN THIS ELEVATION.



SECTION A-A

BOLT LEGEND

◈ - REMOVE EXISTING RIVET OR BOLT. INSTALL NEW FIELD BOLT AND NUT. NEW MATERIAL TO EXISTING BOLT HOLE.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

241_0781CSD002.DGN 6/18/08 RB,SCB,KH

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED KAK | DRAWN RB | REVIEWED JDB | DATE 6/20/08 | STRUCTURE FILE NUMBER 7606176 | CHECKED DAP | REVISED

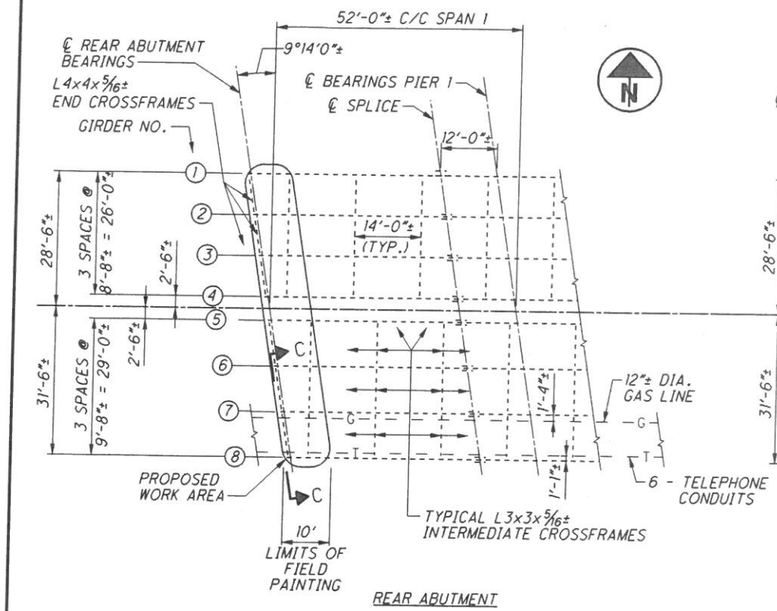
HINGE REHABILITATION DETAILS

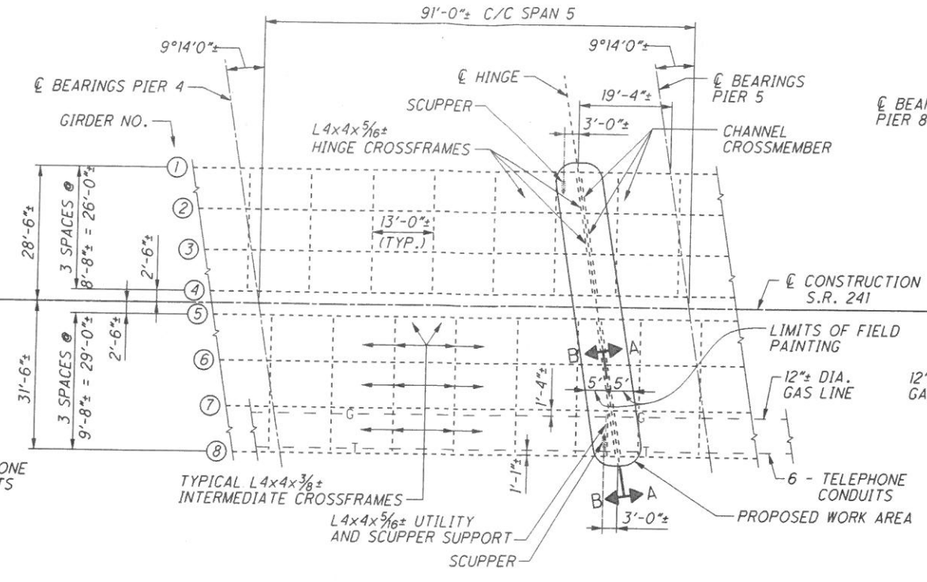
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

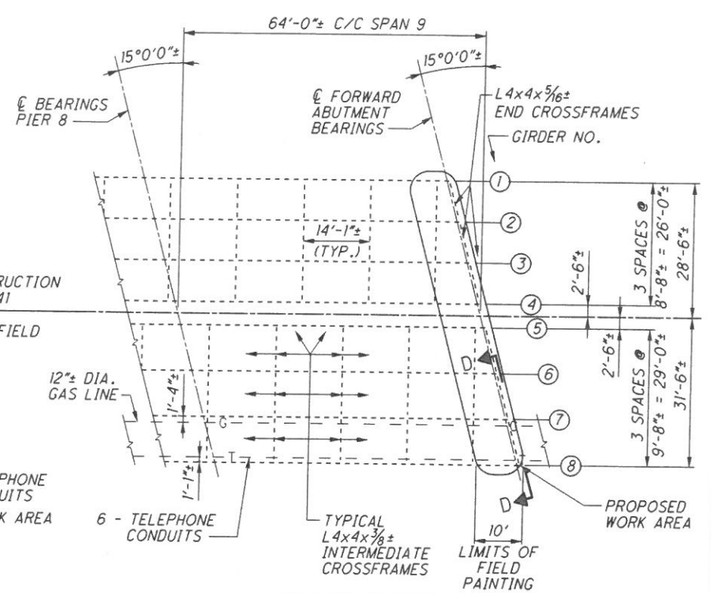
STA-241-7.67
PID No. 25238

17 / 22

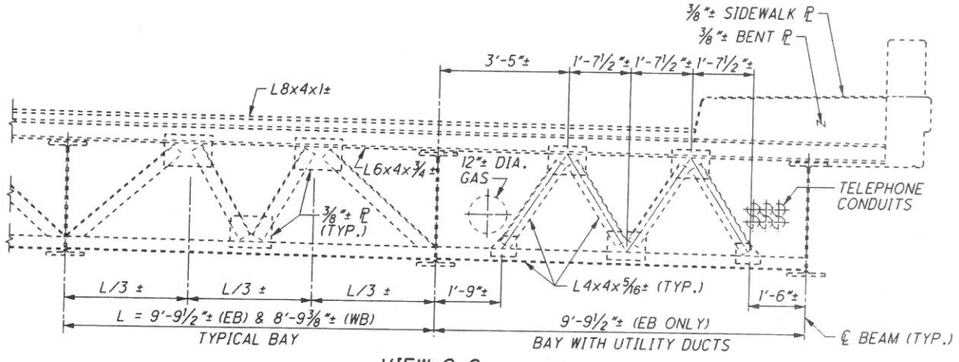
19 / 24





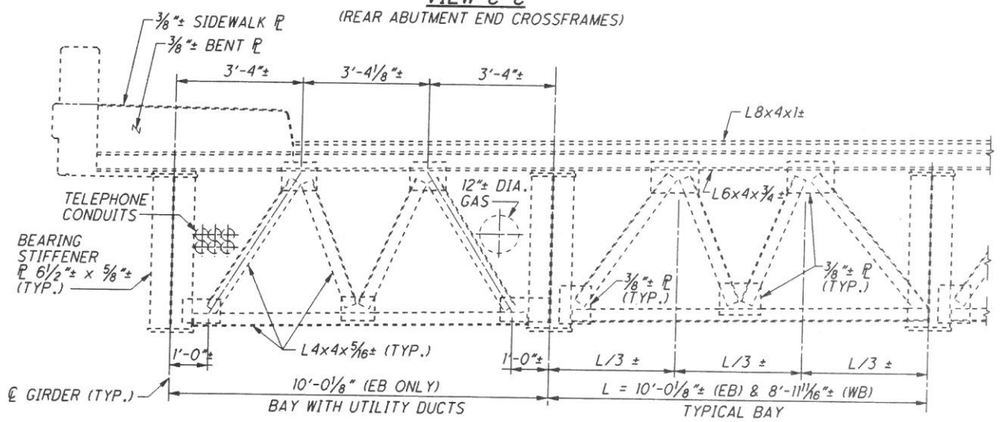


PARTIAL FRAMING PLAN



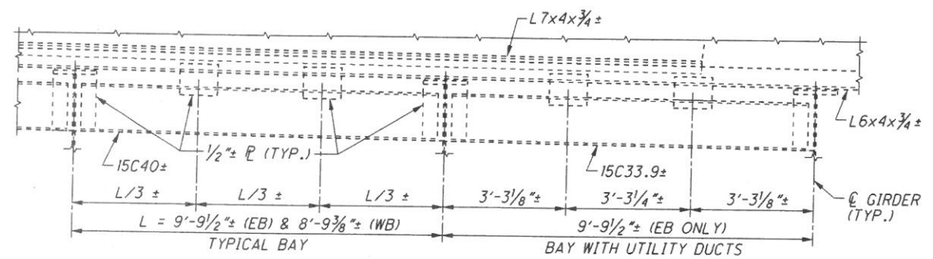
VIEW C-C

(REAR ABUTMENT END CROSSFRAMES)

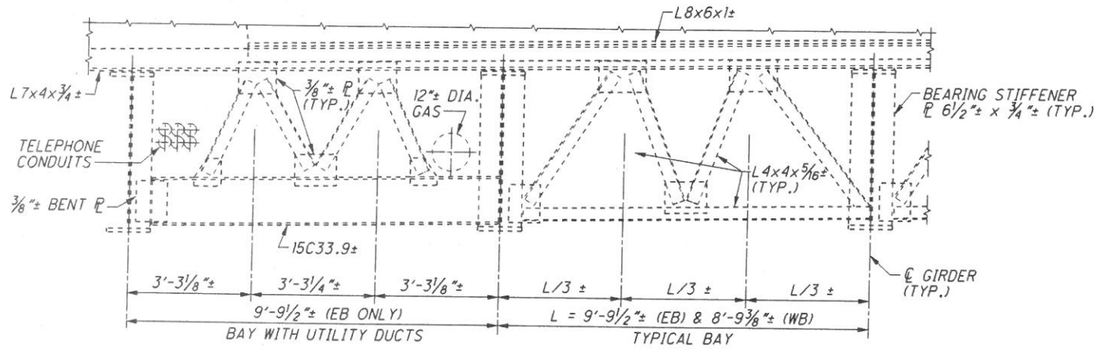


VIEW D-D

(FORWARD ABUTMENT END CROSSFRAMES)



SECTION A-A



SECTION B-B

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

NOTATION: EB - EASTBOUND; WB - WESTBOUND

SECTIONS VIEWS: EXISTING JOINT CONFIGURATIONS SHOWN.

INTERMEDIATE CROSSFRAMES WITHIN THE PAINTING LIMITS SHALL BE PAINTED. IF THE CROSSFRAME IS ONLY PARTIALLY WITHIN THE SPECIFIED LIMITS, PAINT THE ENTIRE CROSSFRAME.

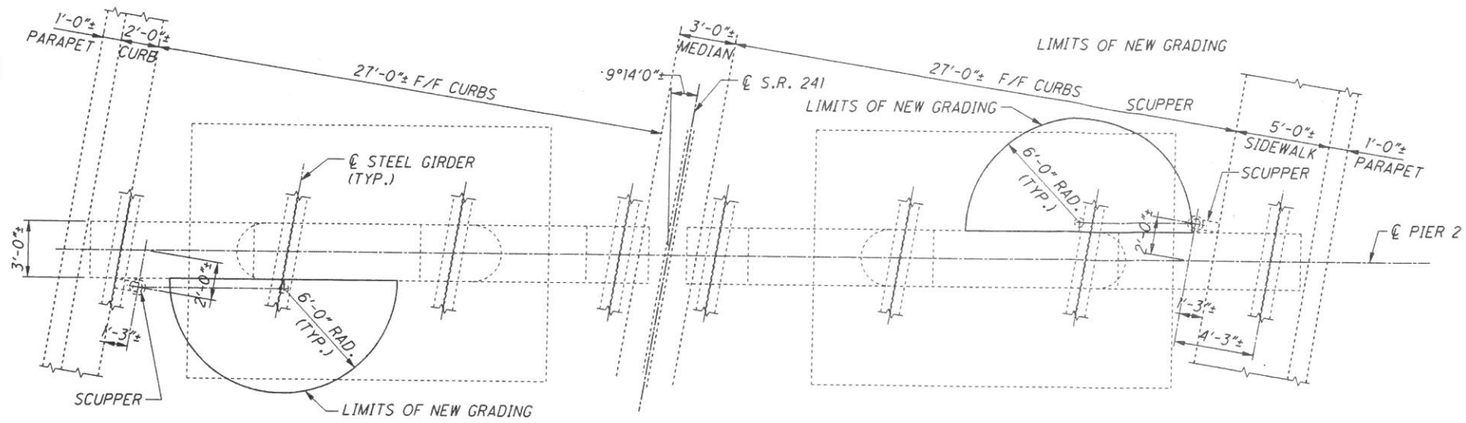
DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
KAK	KH	JDB	6/20/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAP		7606176	

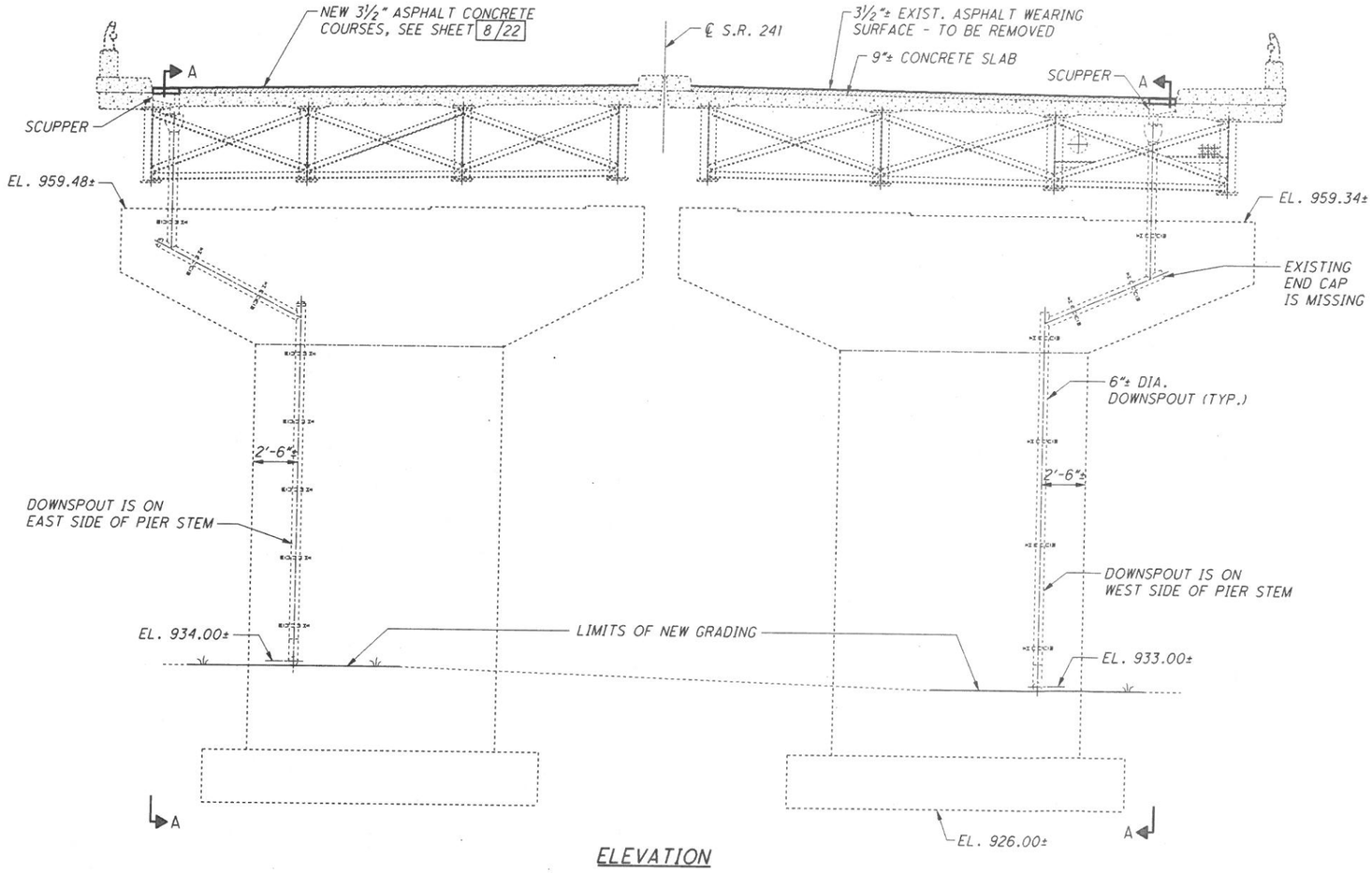
PARTIAL FRAMING PLAN
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

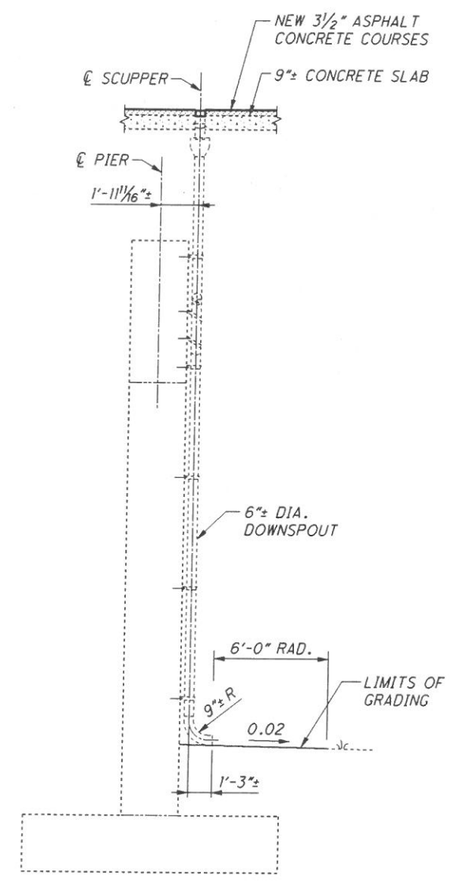
241_078CSD003.DGN 6/18/08 SCB,KH



PLAN



ELEVATION



SECTION A-A

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

ITEM 518 - STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANOUT: SEE GENERAL NOTE SHEET 5/22.

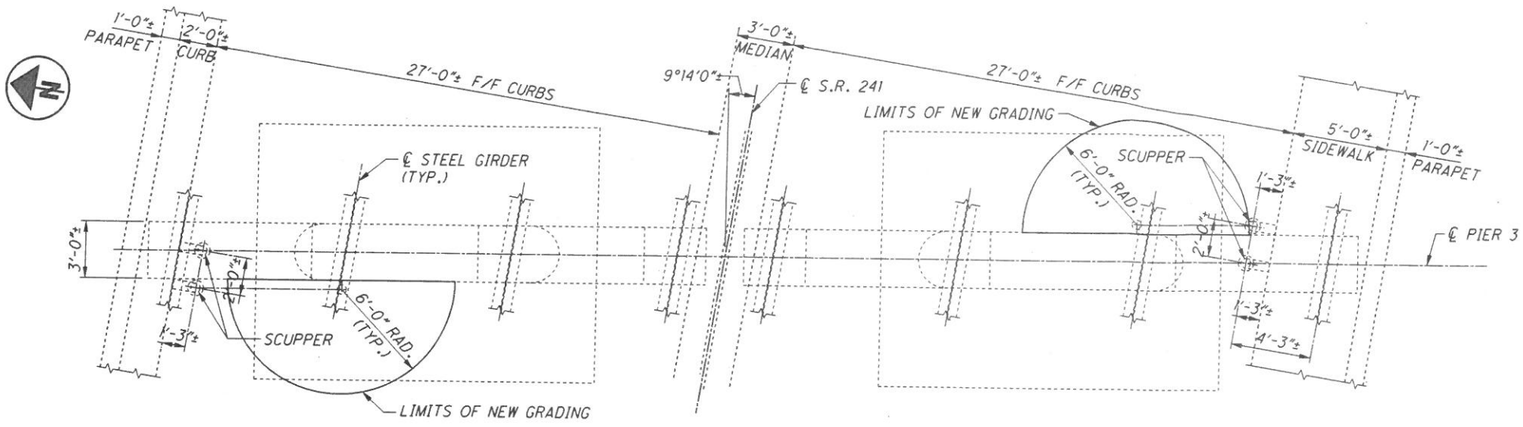
241_078CMD001.DGN 6/18/08 SCB,KH

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

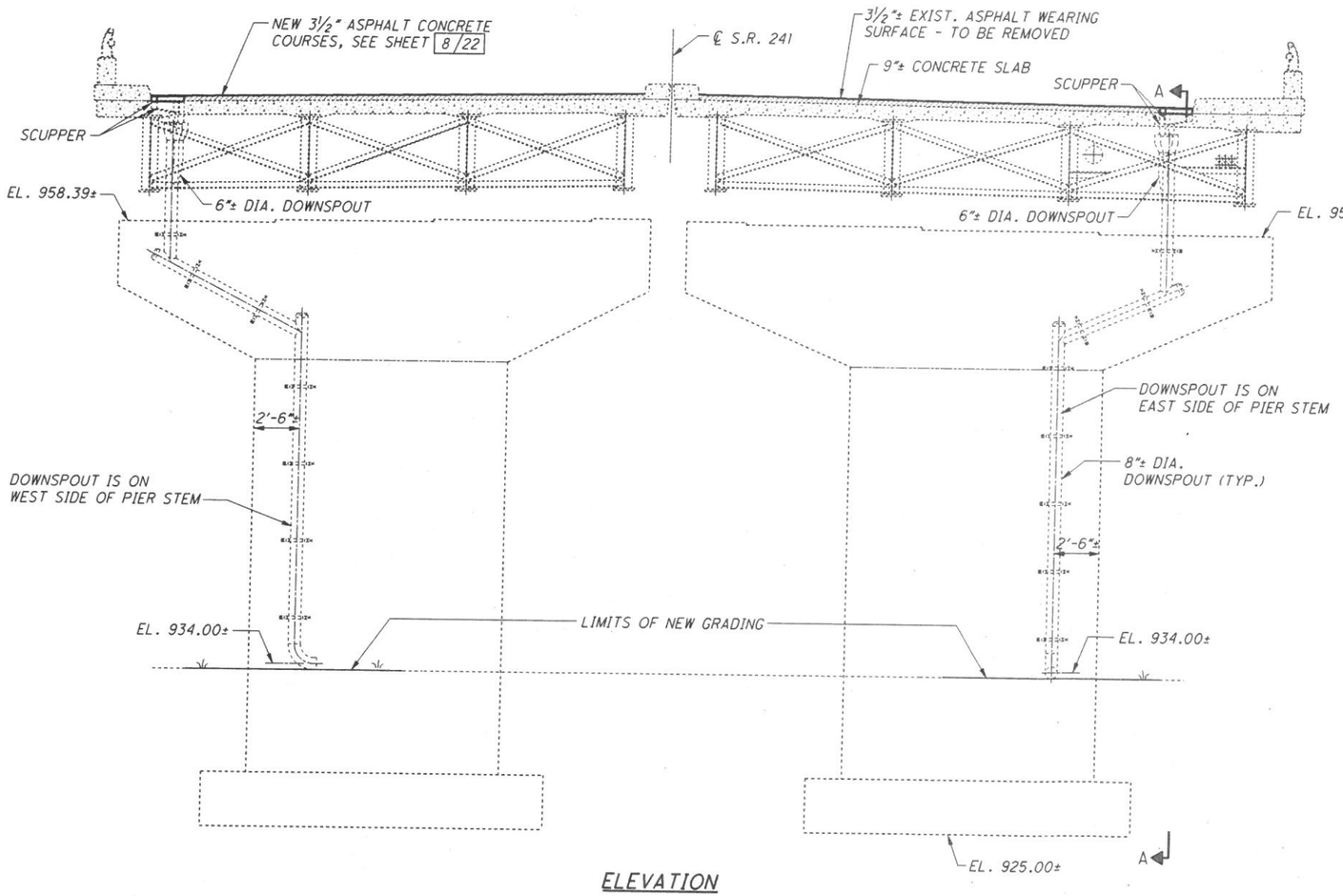
DESIGNED	DRAWN	REVIEWED	DATE
KAK	KH	JDB	6/20/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAP		7606176	

PIER 2 DRAINAGE DETAILS
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

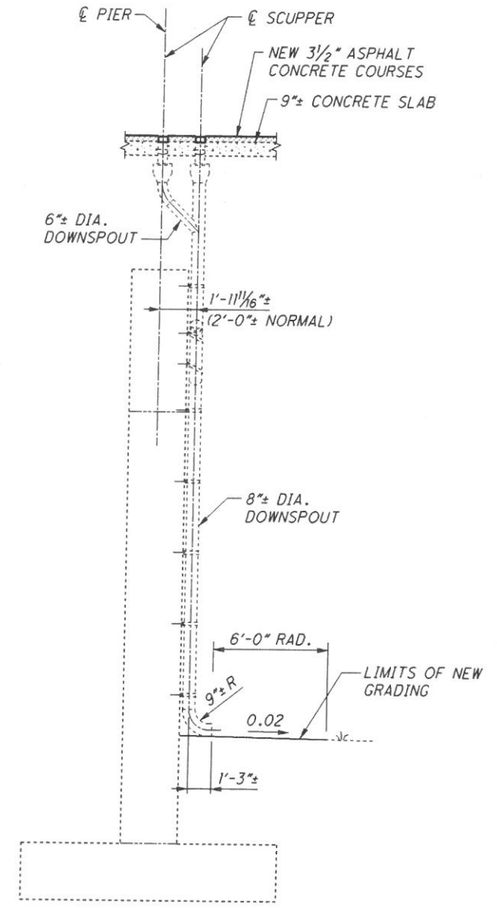
STA-241-7.67
PID No. 25238



PLAN



ELEVATION



SECTION A-A

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

ITEM 518 - STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANOUT: SEE GENERAL NOTE SHEET 5/22 .

241_078CMD002.DGN 6/18/08 SCB,KH

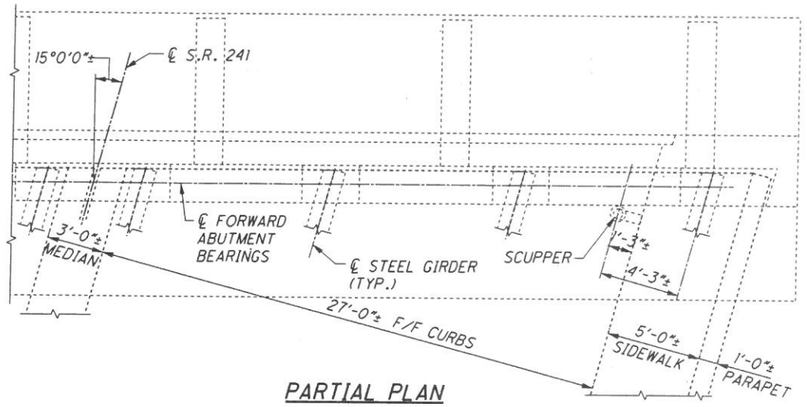
DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
KAK	KH	JDB	6/20/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAP		7606176	

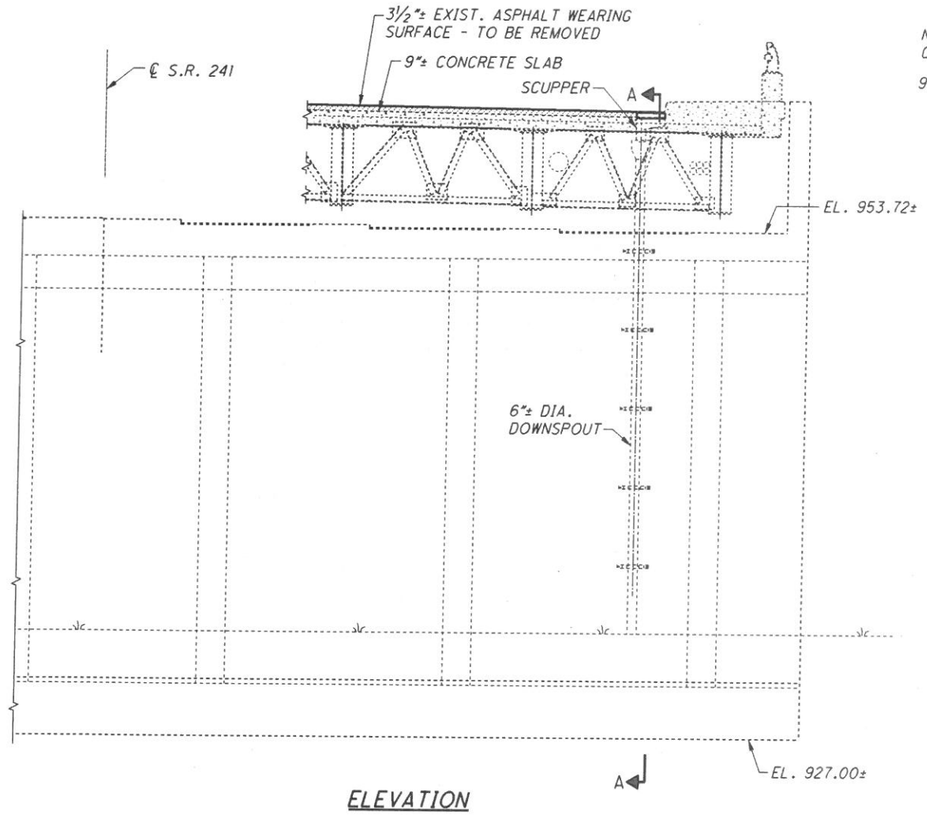
PIER 3 DRAINAGE DETAILS

BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

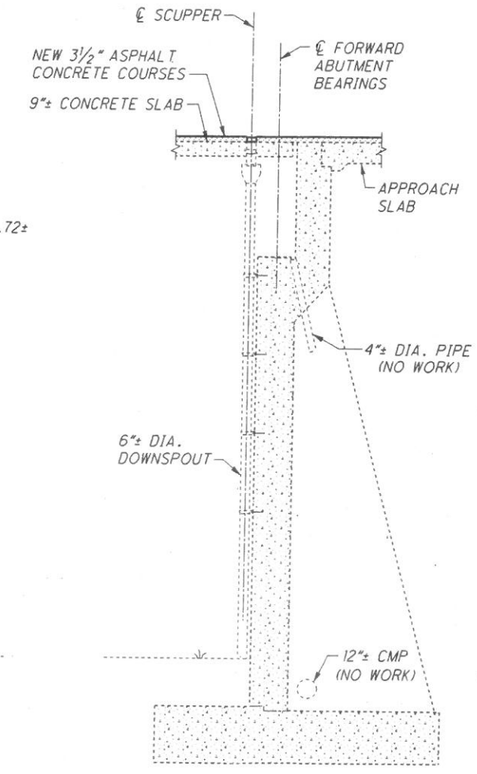
STA-241-7.67
PID No. 25238



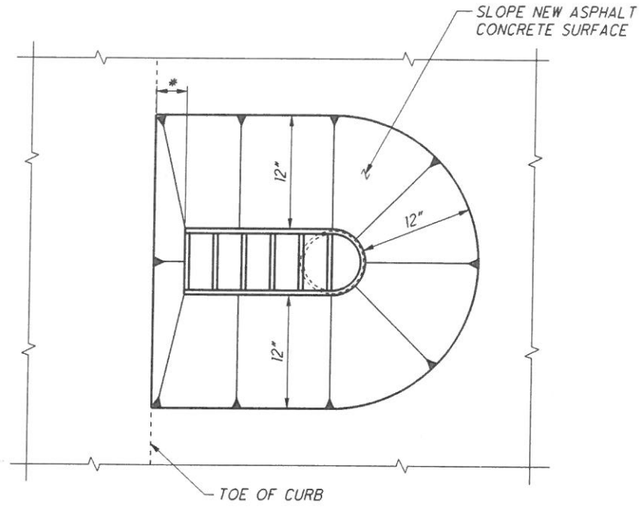
PARTIAL PLAN



ELEVATION

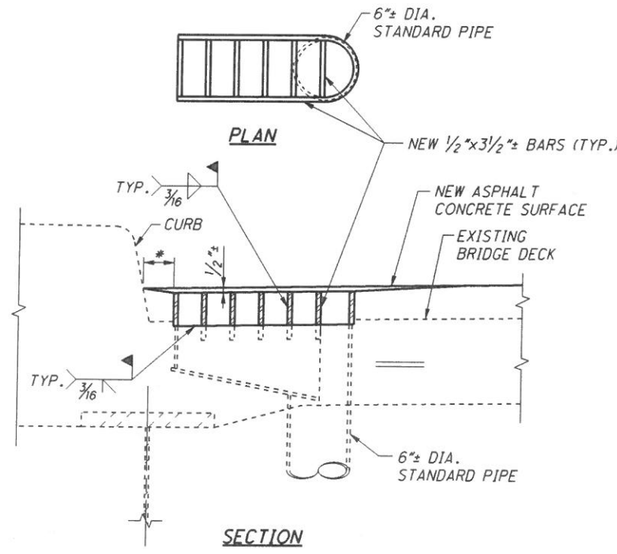


SECTION A-A



PLAN AT SCUPPER

* DISTANCE FROM THE CURB TO THE SCUPPERS VARIES (MINIMUM = 0")



SCUPPER VERTICAL EXTENSION

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

ITEM 518 - STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANOUT:
SEE GENERAL NOTE SHEET 5/22.

ITEM 518 - SCUPPER, VERTICAL EXTENSION, AS PER PLAN:
SEE GENERAL NOTE SHEET 5/22.

DESIGN AGENCY
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
KAK	KH	JDB	6/20/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAP		7606176	

FORWAD ABUTMENT DRAINAGE DETAILS
BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

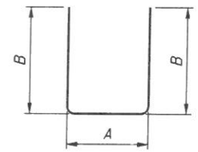
21/22

23/24

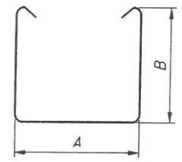
241_078CMD003.DGN 6/18/08 SCB,KH

MARK	NUMBER			LENGTH	WEIGHT (LBS.)	TYPE	DIMENSIONS						
	W.B. (LEFT)	E.B. (RIGHT)	TOTAL				A	B	C	D	E	R	INC
SUPERSTRUCTURE													
S501	14	21	35	2'-4"	85	1	1'-5"	0'-7"					
S502	7		7	3'-5"	25	1	2'-6"	0'-7"					
S503		7	7	6'-6"	47	1	5'-7"	0'-7"					
S504	7	7	14	5'-8"	83	2	0'-8"	2'-2"					
S505	7	7	14	4'-5"	65	3							
S601	11		11	31'-4"	518	STR							
S602		11	11	34'-4"	567	STR							
S701	11		11	31'-4"	705	STR							
S702		11	11	34'-4"	772	STR							
TOTAL					2867								

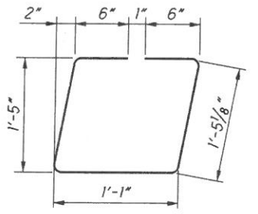
CALCULATED KH DATED 3/08
CHECKED KAK DATED 3/08



TYPE 1



TYPE 2



TYPE 3

NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST LETTER IDENTIFIES BAR LOCATION, THE NEXT DIGIT INDICATES THE BAR SIZE DESIGNATION, THE REMAINING DIGITS STATE THE SEQUENCE NUMBER.

EXAMPLE: S511
A=LOCATION OF THE BAR IN ABUTMENTS
S = LOCATION OF THE BAR IN STRUCTURE (SUPERSTRUCTURE)
5 = BAR SIZE DESIGNATION
11 = SEQUENCE NUMBER

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL TO BE EPOXY COATED.

NOTATION: W.B. - WESTBOUND
E.B. - EASTBOUND

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED KAK | DRAWN SCB | REVIEWED JDB | DATE 6/20/08
CHECKED DAP | REVISED | STRUCTURE FILE NUMBER 7606176

REINFORCING STEEL LIST

BRIDGE NO. STA-241-0767
OVER R.J. CORMAN RAILROAD AND TUSCARAWAS RIVER

STA-241-7.67
PID No. 25238

22/22

24/24

241_0781CRL001.DGN 6/18/08 SCB,KH