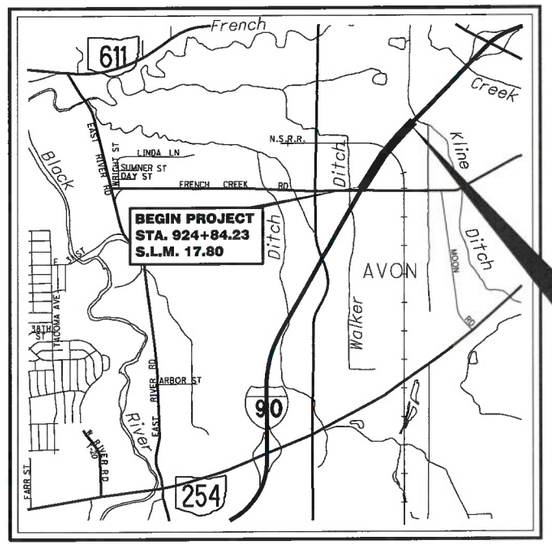


LOCATION MAP

LATITUDE: 41 °27'13" LONGITUDE: 82 °04'02"

SCALE IN MILES

0 1 2 3 4

N

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

DESIGN DESIGNATION

CURRENT ADT (2022)	54,000
DESIGN YEAR ADT (2042)	59,000
DESIGN HOURLY VOLUME (2042)	5,300
DIRECTIONAL DISTRIBUTION	0.52
TRUCKS (24 HOUR B&C)	11%
DESIGN SPEED	70
LEGAL SPEED	65
DESIGN FUNCTIONAL CLASSIFICATION:	
01 URBAN INTERSTATE	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES

Contact Two Working Days Before You Dig

OHIO811.org Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:

TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OH 44114

ENGINEERS SEAL:

STATE OF OHIO
SUSAN N. PATERSON
E-79534
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 07-13-2020

ENGINEERS SEAL:

STATE OF OHIO
RICHARD S. BLOCH
E-69517
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 07-13-2020

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LOR-90-17.85

LORAIN COUNTY

VILLAGE OF SHEFFIELD & CITY OF AVON

INDEX OF SHEETS:

PROJECT DESCRIPTION

IMPROVEMENT OF 0.79 MILES OF I.R. 90, INCLUDING REPLACEMENT OF TWO BRIDGES AND CORRESPONDING APPROACH SLABS. INCLUDES WIDENING AND OUTSIDE SHOULDER RECONSTRUCTION PERFORMED FOR MAINTENANCE OF TRAFFIC. FULL DEPTH PAVEMENT REPLACEMENT AND ADJUSTMENT TO PROFILE OVER NORFOLK SOUTHERN RAILROAD FOR VERTICAL CLEARANCE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	9.90 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	1.00 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	10.90 ACRES

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.

2019 SPECIFICATIONS

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

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

APPROVED
DATE 09/10/2020 DISTRICT DEPUTY DIRECTOR

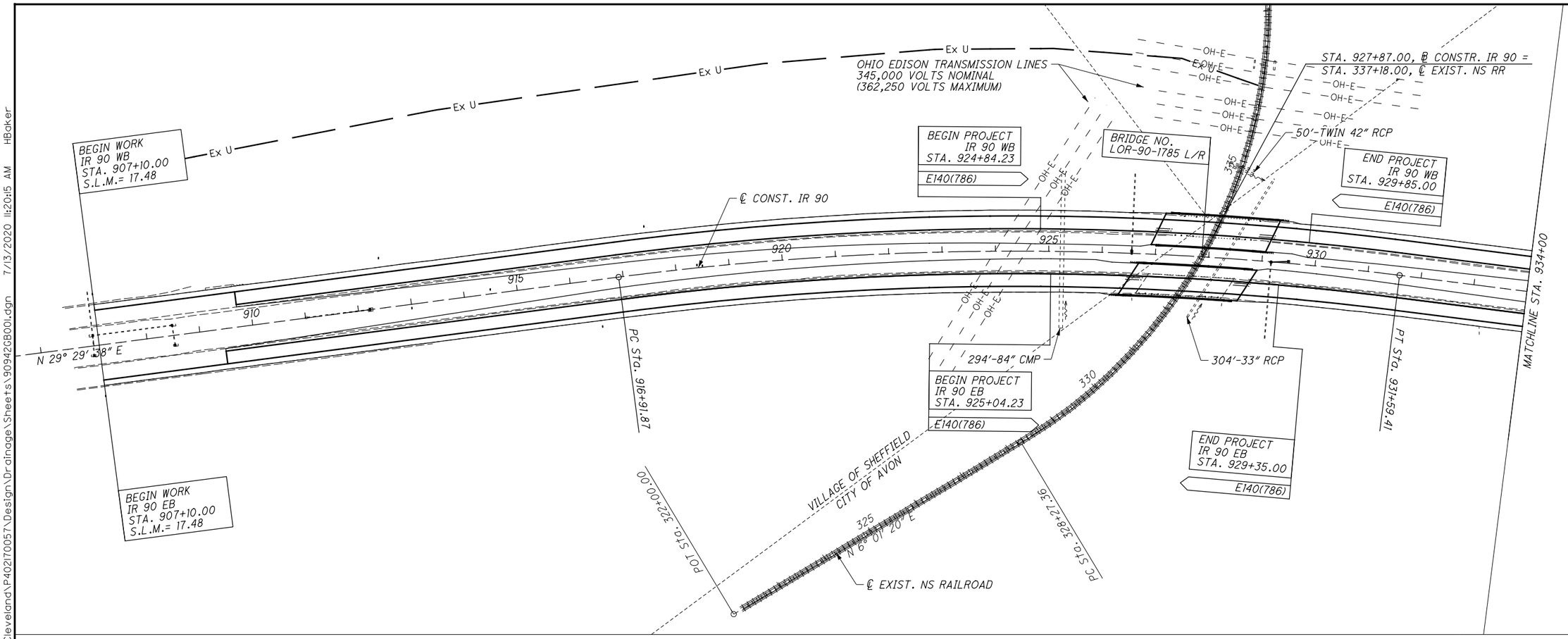
APPROVED
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DRAWINGS

AS-1-15	7-17-15	MGS-6.1	1-19-18	MT-105.10	1-17-20		
AS-2-15	1-18-19						
		MT-95.30	7-19-19	PCB-91	1-18-13		
SBR-1-13	7-20-18	MT-95.45	1-17-20				
		MT-95.50	7-21-17	TC-41.10	7-19-13		
BP-3.1	1-17-20	MT-99.20	4-19-19	TC-41.20	10-18-13		
BP-3.2	1-18-19	MT-99.30	1-17-20	TC-42.10	10-18-13		
BP-9.1	1-18-19	MT-99.60	7-15-16	TC-42.20	10-18-13		
CB-3.3	1-15-16	MT-101.70	1-17-20	TC-51.11	1-15-16		
		MT-101.75	1-17-20	TC-52.10	10-18-13		
DM-1.2	1-18-13	MT-101.90	7-21-17	TC-52.20	7-20-18		
		MT-102.10	1-17-20	TC-65.10	1-17-14		
MH-1.2	1-15-16	MT-102.20	4-19-19	TC-65.11	7-21-17		
		MT-102.30	10-16-15				
MGS-3.1	1-19-18	MT-103.10	1-19-18				
MGS-3.2	1-18-13	MT-104.10	10-16-15				

SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
800	10/16/20	WATERWAY PERMIT
808	1/18/19	DATED 3/24/2020
832	10/19/18	
846	4/17/15	
908	10/20/17	

FEDERAL PROJECT NO. E140 (786)
PID NO. 90942
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NORFOLK SOUTHERN
LOR-90-17.85
1 / 196



EXISTING AND PROPOSED CURVE DATA - ℄ CONSTRUCTION I-90

P.I. Sta. 924+29.68
Δ = 14° 40′ 32″ (RT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 737.81′
L = 1,467.54′
E = 47.31′
PC STA. 916+91.87
PT STA. 931+59.41

EXISTING CURVE DATA - ℄ EXISTING NORFOLK SOUTHERN RAILROAD

P.I. Sta. 338+88.41
Δ = 96° 00′ 00″ (LT)
Dc = 5° 59′ 50″
R = 955.37′
T = 1,061.05′
L = 1,600.74′
E = 472.41′
PC STA. 328+27.36
PT STA. 344+28.10

THERE ARE NO EXISTING LANDSCAPED AREAS WITHIN THE WORK LIMITS.

SURVEY CONTROL POINTS

CENTERLINE OF EXISTING RIGHT-OF-WAY & CONSTRUCTION I.R. 90				PROJECT GROUND COORDINATES				STATE PLANE GRID COORDINATES	
NAME	DESCRIPTION	STATION	OFFSET (FT)	NORTH (FT)	EAST (FT)	ELEVATION (FT)	FEATURE	NORTH (FT)	EAST (FT)
CP01	3″ DISK IN CONCRETE; STAMPING LOR-I90-17.31	913+76.46	82.19 RT	650127.630	2086542.036	639.55	GOVCON	650085.8940	2086406.0862
CP02	3″ DISK IN CONCRETE; STAMPING LOR-I90-17.46	922+01.39	82.87 RT	650827.347	2086964.227	654.37	GOVCON	650785.5654	2086830.2505
CP03	3″ DISK IN TRAFFIC CONTROL BOX	933+22.63	82.18 RT	651673.857	2087675.793	656.71	GOVCON	651632.0220	2087541.7710
CP04	3″ DISK IN CONCRETE; STAMPING LOR-I90-17.88	944+10.17	82.40 RT	652453.772	2088433.729	636.44	GOVCON	652411.8864	2088299.6585

PROJECT ADJUSTMENT FACTOR BASED ON: PROJECT COORDINATES (U.S. SURVEY FEET) ARE RELATIVE TO STATE PLANE GRID COORDINATES (U.S. SURVEY FEET)
HORIZONTAL DATUM - NAD 1983(2011), OHIO NORTH ZONE (3401)
VERTICAL DATUM - NAVD88
PROJECT COORDINATES ARE SCALED FROM GRID COORDINATES ABOUT THE OHIO NORTH ZONE GRID POINT N=0, E=0

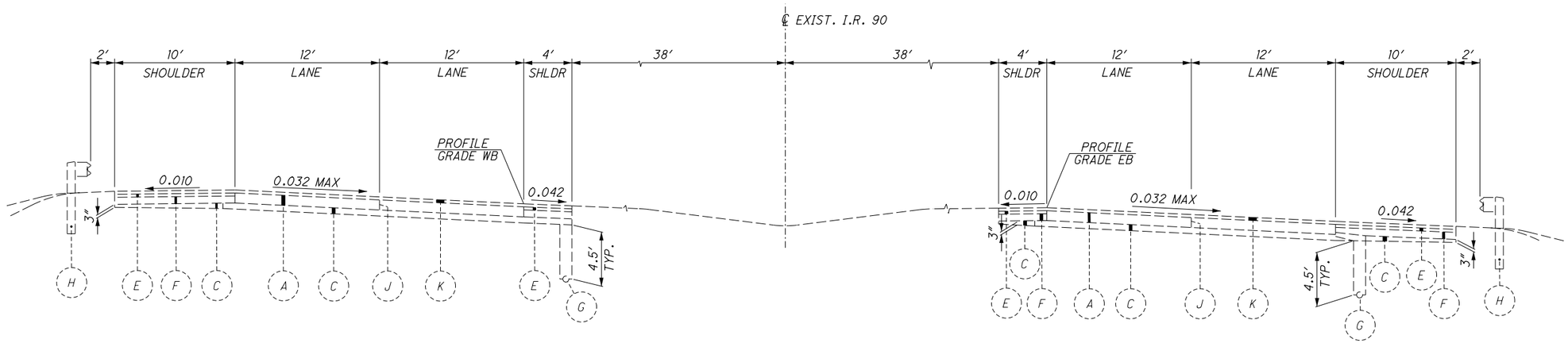
COMBINED SCALE FACTOR = 0.99993580
PROJECT ADJUSTMENT FACTOR = 1.00006420

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED MLV
CHECKED SNP

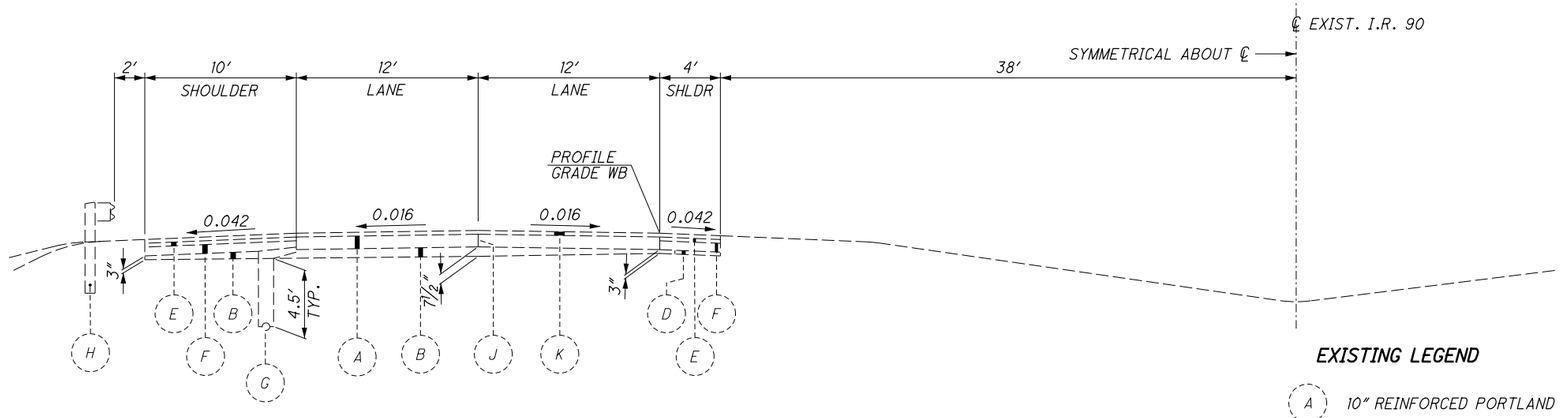
SCHEMATIC PLAN

LOR-90-17.85



SUPERELEVATED SECTION

STA. 915+57.86 TO STA. 932+93.69 E.B. & W.B.



NORMAL SECTION

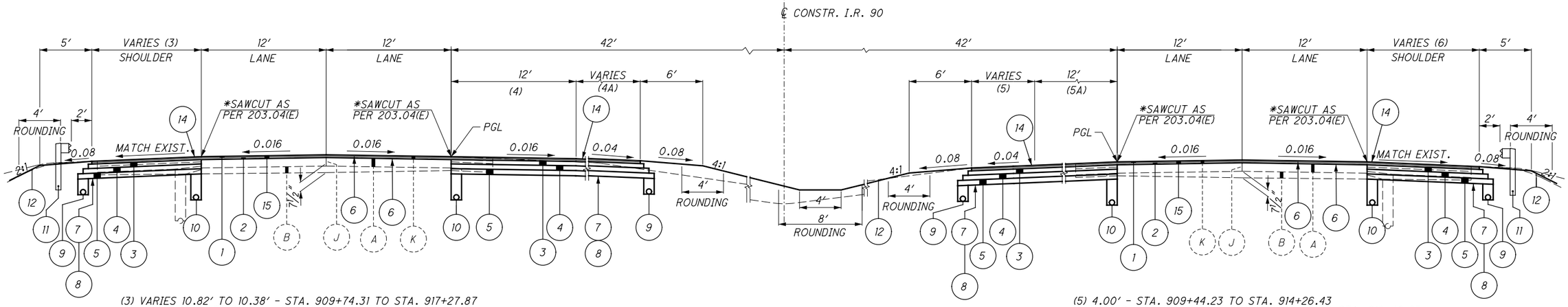
STA. 911+00.00 TO STA. 915+57.86 E.B. & W.B.
STA. 932+93.69 TO STA. 972+70.56 E.B. & W.B.

EXISTING LEGEND

- (A) 10″ REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (B) SUBBASE (DEPTH AS SHOWN)
- (C) 6″ SUBBASE
- (D) 3″ SUBBASE
- (E) 3″ BITUMINOUS AGGREGATE BASE
- (F) 7″ AGGREGATE BASE
- (G) 6″ PIPE UNDERDRAIN
- (H) GUARDRAIL
- (J) LONGITUDINAL JOINT
- (K) 5″ MAXIMUM ASPHALT OVERLAY

EXISTING TYPICAL SECTIONS

LOR-90-17.85



(3) VARIES 10.82′ TO 10.38′ - STA. 909+74.31 TO STA. 917+27.87
VARIES 10.14′ TO 10.94′ - STA. 931+23.41 TO STA. 934+37.38
VARIES 10.94′ TO 9.79′ - STA. 934+37.38 TO STA. 944+85.00

(4) VARIES 0.44′ TO 11.85′ - STA. 909+74.31 TO STA. 917+01.63
VARIES 11.85′ TO 12.00′ - STA. 917+01.63 TO STA. 921+44.01
VARIES 12.00′ TO 1.15′ - STA. 937+69.50 TO STA. 944+85.00

(4A) 4.00′ - STA. 909+74.31 TO STA. 917+01.63
VARIES 4.00′ TO 10.79′ - STA. 917+01.63 TO STA. 921+44.01
VARIES 13.82′ TO 4.00′ - STA. 931+23.41 TO STA. 937+69.50
4.00′ - STA. 937+69.50 TO STA. 944.85.00

NORMAL SECTION

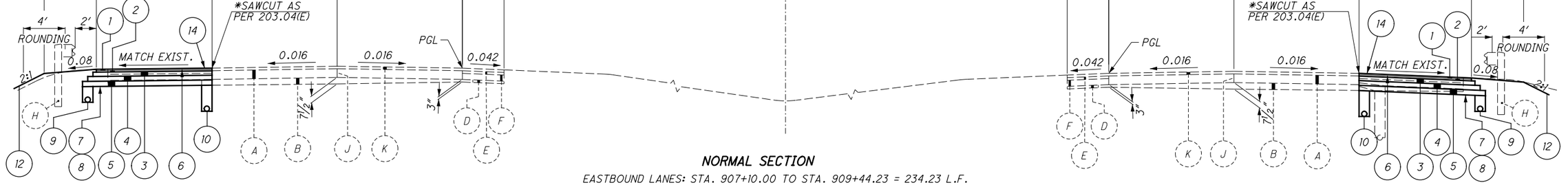
EASTBOUND LANES: STA. 909+44.23 TO STA. 915+35.87 = 591.64 L.F.
WESTBOUND LANES: STA. 909+74.31 TO STA. 917+27.87 = 753.56 L.F.
WESTBOUND LANES: STA. 931+23.41 TO STA. 944+85.00 = 594.99 L.F.
EASTBOUND LANES: STA. 933+15.41 TO STA. 945+04.84 = 121.97 L.F.

* CONTRACTOR TO SURVEY AND VERIFY LOCATION OF EXISTING EDGE OF CONCRETE WITH CORES PRIOR TO SAWCUTTING.

(5) 4.00′ - STA. 909+44.23 TO STA. 914+26.43
VARIES 4.00′ TO 11.29′ - STA. 914+26.43 TO STA. 918+48.87
VARIES 11.22′ TO 4.00′ - STA. 933+15.41 TO STA. 939+65.50
4.00′ - STA. 939+65.50 TO STA. 945+04.84

(5A) VARIES 0.83′ TO 12.00′ - STA. 909+44.23 TO STA. 914+26.43
12.00′ - STA. 914+26.43 TO STA. 918+48.87
VARIES 12.00′ TO 6.01′ - STA. 939+65.50 TO STA. 945+04.84

(6) VARIES 9.72′ TO 10.15′ - STA. 909+44.23 TO STA. 915+35.87
VAIRES 10.23′ TO 11.00′ - STA. 933+15.41 TO STA. 939+93.53
11.00′ - STA. 939+93.53 TO STA. 945+04.84

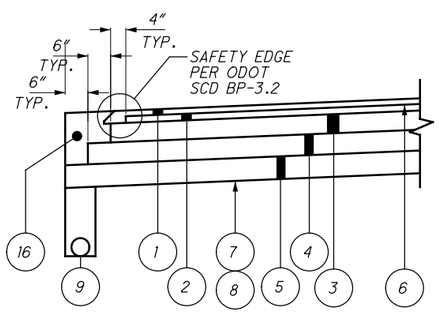


(1) VARIES 10.85′ TO 10.36′ - STA. 907+10.00 TO STA. 909+20.42
VARIES 10.36′ TO 10.82′ - STA. 909+74.31 TO STA. 909+74.31

NORMAL SECTION

EASTBOUND LANES: STA. 907+10.00 TO STA. 909+44.23 = 234.23 L.F.
WESTBOUND LANES: STA. 907+10.00 TO STA. 909+74.31 = 264.31 L.F.
EASTBOUND LANES: STA. 945+04.84 TO STA. 948+50.00 = 345.16 L.F.
WESTBOUND LANES: STA. 944+85.00 TO STA. 948+00.00 = 315.00 L.F.

(2) VARIES 10.08′ TO 9.87′ - STA. 907+10.00 TO STA. 907+99.02
VARIES 9.87′ TO 10.10′ - STA. 907+99.02 TO STA. 908+59.53
VARIES 10.10′ TO 9.72′ - STA. 908+59.53 TO STA. 909+44.23



PAVEMENT STEP DETAIL

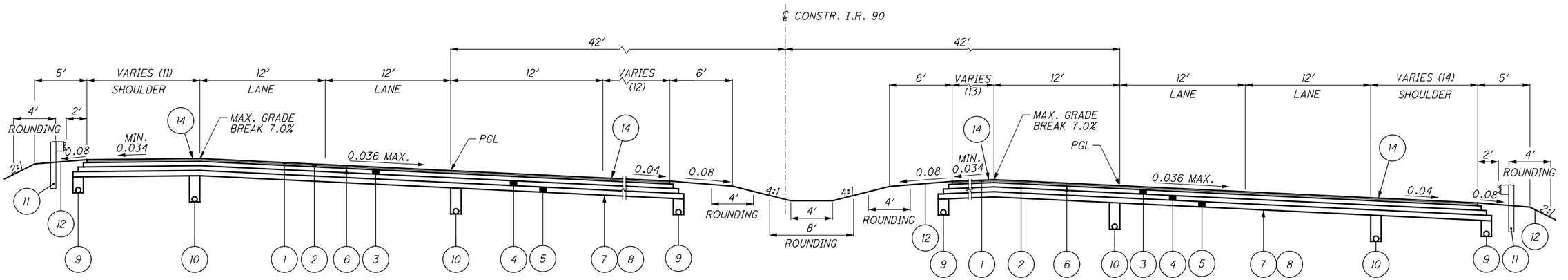
PROPOSED LEGEND

1. ITEM 442 - 1½″ ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)
2. ITEM 442 - 1¾″ ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
3. ITEM 302 - 5″ ASPHALT CONCRETE BASE, PG64-22
4. ITEM 302 - 5½″ ASPHALT CONCRETE BASE, PG64-22
5. ITEM 304 - 6″ AGGREGATE BASE
6. ITEM 407 - NON-TRACKING TACK COAT
7. ITEM 204 - PROOF ROLLING
8. ITEM 204 - SUBGRADE COMPACTION
9. ITEM 605 - 6″ BASE PIPE UNDERDRAINS (9″ TYP. DEPTH)
10. ITEM 605 - 6″ SHALLOW PIPE UNDERDRAINS (24″ TYP. DEPTH)
11. ITEM 606 - GUARDRAIL, TYPE MGS
12. ITEM 659 - SEEDING AND MULCHING
13. ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15″)
14. ITEM 618 - RUMBLE STRIPS (ASPHALT CONCRETE)
15. ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (VARIES 3.25″ TYP.)
16. ITEM 617 - COMPACTED AGGREGATE

FOR EXISTING LEGEND SEE SHEET 3

PROPOSED TYPICAL SECTIONS

LOR-90-17.85



(11) VARIES 10.90′ TO 10.27′ - STA. 924+84.23 TO STA. 926+47.59
VARIES 10.27′ TO 12.00′ - STA. 926+47.59 TO STA. 926+92.20
12.00′ - STA. 926+92.20 TO STA. 927+16.57
VARIES 12.00′ TO 12.05′ - STA. 929+28.38 TO STA. 929+52.75
VARIES 12.05′ TO 10.00′ - STA. 929+52.75 TO STA. 929+63.02
10.00′ - STA. 929+63.02 TO STA. 929+85.00

(12) 16.00′ - STA. 924+84.23 TO STA. 926+71.54
VARIES 16.00′ TO 12.00′ - STA. 926+71.54 TO STA. 926+91.26
VARIES 12.00′ TO 11.78′ - STA. 929+05.65 TO STA. 929+55.19
VARIES 11.78′ TO 16.00′ - STA. 929+55.19 TO STA. 929+85.00

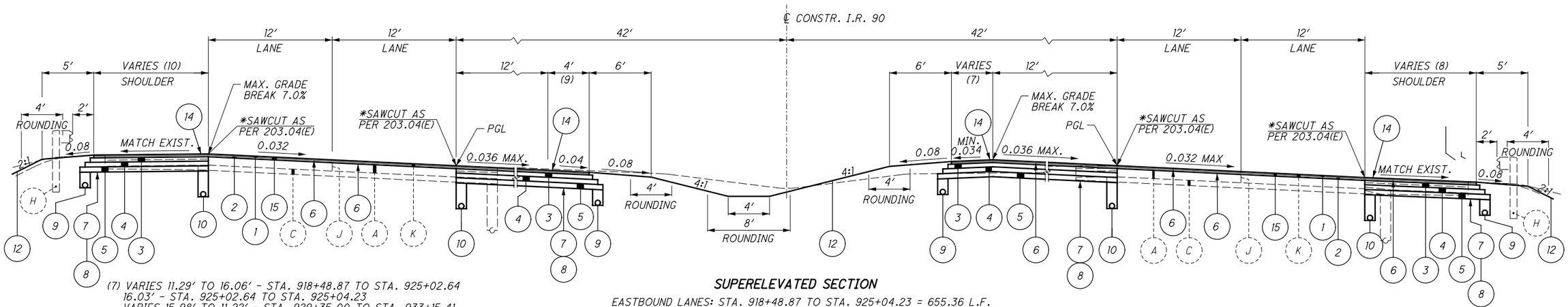
SUPERELEVATED SECTION

WESTBOUND LANES: STA. 924+84.23 TO STA. 927+16.57 = 232.34 L.F.
EASTBOUND LANES: STA. 925+04.23 TO STA. 926+69.06 = 164.83 L.F.
EASTBOUND LANES: STA. 928+58.60 TO STA. 929+35.00 = 76.40 L.F.
WESTBOUND LANES: STA. 929+05.65 TO STA. 929+85.00 = 79.35 L.F.

* CONTRACTOR TO SURVEY AND VERIFY LOCATION OF EXISTING EDGE OF CONCRETE WITH CORES PRIOR TO SAWCUTTING.

(13) 16.03′ - STA. 925+04.23 TO STA. 925+89.02
VARIES 16.03′ TO 12.15′ - STA. 925+89.02 TO STA. 926+19.20
VARIES 12.15′ TO 12.00′ - STA. 926+19.20 TO STA. 926+69.06
VARIES 12.00′ TO 15.98′ - STA. 928+92.02 TO STA. 929+12.21
15.98′ - STA. 929+12.21 TO STA. 929+35.00

(14) VARIES 10.23′ TO 10.00′ - STA. 925+04.23 TO STA. 925+17.21
10.00′ - STA. 925+17.21 TO STA. 925+97.73
VARIES 10.00′ TO 11.95′ - STA. 925+97.73 TO STA. 926+07.43
VARIES 11.95′ TO 12.00′ - STA. 926+07.43 TO STA. 926+16.94
12.00′ - STA. 926+16.94 - STA. 926+32.48
VARIES 12.00′ TO 11.95′ - STA. 928+58.60 TO STA. 928+83.64
VARIES 11.95′ TO 10.36′ - STA. 928+83.64 TO STA. 929+23.22
VARIES 10.36′ TO 10.38′ - STA. 929+23.22 TO STA. 929+85.00



(7) VARIES 11.29′ TO 16.06′ - STA. 918+48.87 TO STA. 925+02.64
16.03′ - STA. 925+02.64 TO STA. 925+04.23
VARIES 15.98′ TO 11.22′ - STA. 929+35.00 TO STA. 933+15.41

(8) VARIES 10.62′ TO 10.82′ - STA. 921+44.01 TO STA. 924+15.24
VARIES 10.82′ TO 10.51′ - STA. 924+15.24 TO STA. 924+84.23
VARIES 10.38′ TO 10.82′ - STA. 929+35.00 TO STA. 930+56.82
VARIES 10.82′ TO 10.23′ - STA. 930+56.82 TO STA. 933+15.41

(9) VARIES 10.79′ TO 16.00′ - STA. 921+44.01 TO STA. 924+84.23
VARIES 16.00′ TO 13.82′ - STA. 929+85.00 TO STA. 931+23.41

(10) VARIES 10.77′ TO 11.10′ - STA. 921+44.01 TO STA. 922+93.07
VARIES 11.10′ TO 10.90′ - STA. 922+93.07 TO STA. 924+84.23
VARIES 9.71′ TO 10.50′ - STA. 929+85.00 TO STA. 930+50.70
VARIES 10.50′ TO 10.14′ - STA. 930+50.70 TO STA. 931+23.41

SUPERELEVATED SECTION

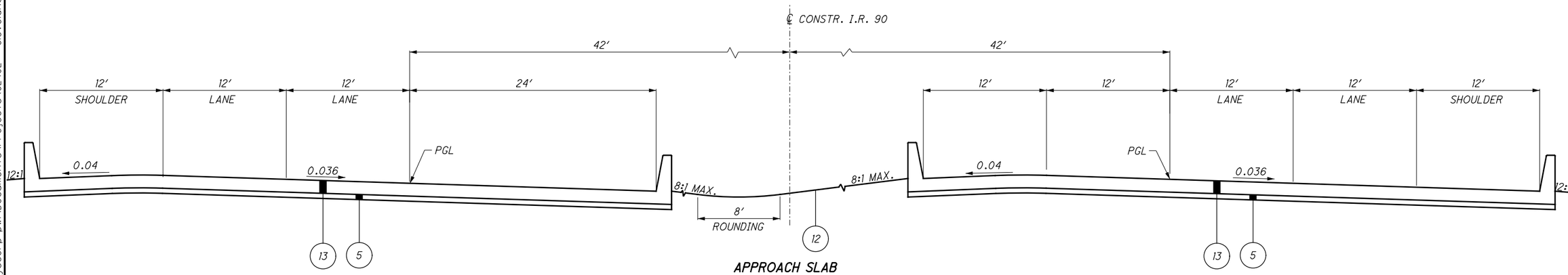
EASTBOUND LANES: STA. 918+48.87 TO STA. 925+04.23 = 655.36 L.F.
WESTBOUND LANES: STA. 921+44.01 TO STA. 924+84.23 = 340.22 L.F.
EASTBOUND LANES: STA. 929+35.00 TO STA. 933+15.41 = 380.41 L.F.
WESTBOUND LANES: STA. 929+85.00 TO STA. 931+23.41 = 138.41 L.F.

FOR EXISTING LEGEND SEE SHEET 3
FOR PROPOSED LEGEND SEE SHEET 4

PROPOSED TYPICAL SECTIONS

LOR-90-17.85

PROPOSED TYPICAL SECTIONS



APPROACH SLAB

EASTBOUND LANES: STA. 926+54.54 TO STA. 926+79.72 = 25.18 L.F.
WESTBOUND LANES: STA. 927+01.45 TO STA. 927+26.27 = 24.82 L.F.
EASTBOUND LANES: STA. 928+53.56 TO STA. 928+78.75 = 25.19 L.F.
WESTBOUND LANES: STA. 928+89.98 TO STA. 929+14.80 = 24.82 L.F.

STATION TO STATION DISTANCE IS SHOWN.
APPROACH SLABS ARE 25.00′ MEASURED ALONG
BRIDGE BEARING. REFER TO BRIDGE PLANS FOR MORE DETAILS.

FOR EXISTING LEGEND SEE SHEET 3
FOR PROPOSED LEGEND SEE SHEET 4

LOR-90-17.85

UTILITIES

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

AVON LAKE REGIONAL WATER
201 MILLER RD.
AVON LAKE, OHIO 44102
ATTN: JACK GAYDAR
PHONE: (440) 933-6226
EMAIL: Jgaydar@avonlakewater.org

OHIO EDISON TRANSMISSION
76 SOUTH MAIN ST.
AKRON, OHIO 44308
ATTN: ALAN SCHEMPP
PHONE: (330) 384-5489

RURAL LORAIN COUNTY WATER AUTHORITY
42401 STATE ROUTE 303
LAGRANGE, OHIO 44050
ATTN: JAMES TRUESDELL
PHONE: (440) 355-5121
EMAIL: jtruesdell@rlcwa.com

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

SURVEY PARAMETERS

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

VERTICAL POSITIONING:
ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID 12A

HORIZONTAL POSITIONING:
REFERENCE FRAME: NAD 83 (CONUS)
ELLIPSOID: GRS 80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: PROJECT GROUND COORDINATES
COMBINED SCALE FACTOR: 1.00007257
ENG./METRIC CONVERSION: 1 METER = 3.28083333 FEET

PROJECT GROUND COORDINATES ARE SCALED FROM OHIO STATE PLANE NORTH ZONE (3401) GRID POINT N: 631675.936 E: 2102889.245 ELEVATION: 708.68. GRID POINT ESTABLISHED USING GPS ODOT VRS RTK NETWORK. ELEVATION OF GRID POINT HELD AS PRIMARY BENCHMARK. BASIS OF BEARINGS ESTABLISHED ON BASIS OF GRID NORTH OF THE OHIO STATE PLANE NORTH (3401) COORDINATE SYSTEM.

UNITS ARE IN U.S. SURVEY FEET

ROUNDING

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

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.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

CLEARING AND GRUBBING

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

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 1,237 CU. YD.

659, REPAIR SEEDING AND MULCHING 557 SQ. YD.

659, INTER-SEEDING 557 SQ. YD.

659, COMMERCIAL FERTILIZER 1.5 TON

659, LIME .26 ACRES

659, WATER 62 M. GAL.

659, MOWING 2786 M. SQ.FT.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL WITHIN THE CONSTRUCTION LIMITS QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE THE TYPICAL SECTIONS FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING	13 HOUR.

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, DIFFERS 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 611 CONDUIT ITEM.

ENVIRONMENTAL

1. THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. THE CONTRACTOR SHALL NOT REMOVE TREES UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

2. NO WORK ATTEMPTED BELOW WATER MARKING. ODOT WILL OBTAIN AND ADHERE TO ALL APPROPRIATE WATERWAY PERMITS PRIOR TO ANY WORK BELOW THE ORDINARY HIGH WATER MARK OF ANY WATERWAY AND ALL SPECIAL PROVISIONS FOR WATERWAY PERMITS WILL BE INCLUDED IN THE PROJECT PLANS.

3. THE CONTRACTOR MUST SUBMIT THE ONLINE OEPA DEMOLITION/RENOVATION FORM TO THE OEPA WITHIN 10 BUSINESS DAYS PRIOR TO DEMOLITION OF THE STRUCTURES.

CALCULATED HB CHECKED SNP

GENERAL NOTES

LOR-90-17.85

ITEM 614 - MAINTAINING TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON ALL EXISTING ROADWAYS IN ACCORDANCE WITH THE OHIO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

PN 127 - LANE VALUE CONTRACT

THE CONTRACTOR SHALL BE ASESSED DISINCENTIVES AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE BELOW FOR EACH UNIT OF TIME THE DESCRIBED CRITICAL LANE IS RESTRICTED FROM FULL USE BY THE TRAVELING PUBLIC WITHIN THE RESTRICTED TIME PERIOD. THE DISINCENTIVES WILL BE ASSESSED FOR ALL RESTRICTIONS OF THE CRITICAL WORK.

CRITICAL WORK IS SHOWN IN THE LANE VALUE CONTRACT TABLE BELOW.

CRITICAL WORK IS DEFINED AS HAVING THE DESIGNATED SECTIONS OPEN TO UNRESTRICTED TRAFFIC AS SHOWN IN THE TABLE, OR THE ENTIRE PROJECT IF NOT OTHERWISE LISTED.

UNRESTRICTED TRAFFIC IS DEFINED AS ALL TRAFFIC LANES BEING AVAILABLE FOR USE WITH TEMPORARY SAFETY FEATURES IN PLACE.

DESCRIPTION OF CRITICAL LANE TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE $ PER TIME UNIT
2 LANES (EACH DIRECTION) OF LOR IR 90 FROM MM 17.33 TO MM 18.41	6 AM TO 7 PM	EACH MINUTE	$250

THE CONTRACTOR SHALL DIVERT TRAFFIC FROM NORMAL CHANNELS BY PLASTIC DRUMS, PORTABLE BARRIER, TRAFFIC SIGNS, AND WORK ZONE PAVEMENT MARKINGS, AS SHOWN ON SHEETS 20- 47.

A MINIMUM OF 2 LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND COMPLETED PAVEMENT. AN EXCEPTION WILL BE MADE TO THIS RULE DURING PRE-PHASE 1 TEMPORARY PAVEMENT CONSTRUCTION. DURING PRE-PHASE 1 A SINGLE LANE CLOSURE IN EACH DIRECTION WILL BE ALLOWED AT NIGHT (7PM-6AM). NIGHT CLOSURES MAY ALSO BE PERMITTED DURING PHASE 1 IF NEEDED.

THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (419) 281-0513, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL BARRICADES, SIGNS, SIGN SUPPORTS AND INCIDENTALS RELATED TO TRAFFIC CONTROL SO AS TO AVOID DAMAGE AND/OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION.

SIGNS FURNISHED SHALL BE IN NEW OR LIKE NEW CONDITIONS. LIKE NEW SIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR PROVIDING AND MAINTAINING ALL SIGNS AND BARRICADES FOR THE MAINTENANCE OF TRAFFIC AND SAFETY OF HIS/HER WORK AT THE LOCATIONS SHOWN ON THESE PLANS OR AS DIRECTED BY THE ENGINEER.

EXISTING TRAFFIC CONTROL DEVICES LOCATED WITHIN THE WORK AREA, WHICH ARE REQUIRED FOR INTERIM OR PERMANENT TRAFFIC CONTROL, SHALL BE RELOCATED TO POINTS APPROVED BY THE ENGINEER. APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED, IN COMPLIANCE WITH THE MANUAL, AT ALL TIMES WHILE TRAFFIC IS MAINTAINED. THE COST OF RELOCATION, IF REQUIRED, SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

ITEM 614 - MAINTAINING TRAFFIC (CONT.)

TRUCK MOUNTED ATTENUATORS (TMA'S) SHALL BE USED AS SHOWN IN THE STANDARD CONSTRUCTION DRAWINGS.

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

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

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

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

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $250 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED (PER THE LANE VALUE CONTRACT PN 127).

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

PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS AND PROVISIONS OF THE OHIO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

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

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 1.5 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

DRUM REQUIREMENTS

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

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

DUST CONTROL

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

ITEM 616, WATER 55 M. GAL.

ITEM 614, REPLACEMENT SIGN

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

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

AN ESTIMATED QUANTITY OF 15 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614, REPLACEMENT DRUM

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

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 50 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

WORK ZONE INCREASED PENALTIES SIGN (R11-H5a)

R11-H5a SIGNS SHALL BE FURNISHED, ERECTED AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

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

THE R11-H5a SIGNS SHALL BE MOUNTED ON 2 NO. 3 POSTS WHEN LOCATED WITHIN CLEAR ZONES.

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

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

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

ITEM 614, WORK ZONE INCREASED PENALTIES SIGN 2 EACH

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

ANY EARTHWORK REQUIRED TO CONSTRUCT THE TEMPORARY PAVEMENT SHALL BE INCLUDED AS PART OF ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, AS PER PLAN.

FLOODLIGHTING

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

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

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

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

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

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

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

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

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (CONT.)

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

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

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

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

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

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

ITEM 614, PORTABLE CHANGEABLE
MESSAGE SIGN, AS PER PLAN   18 SIGN MONTHS
(ASSUMING 2 PCMS SIGNS FOR 9 MONTHS EACH)

WORKSITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A PREQUALIFIED WORKSITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE TRAINED IN ACCORDANCE WITH CMS 614.03, SHALL HAVE SUCCESSFULLY COMPLETED ODOT ADMINISTERED WTS TESTING (AND RE-TESTING WHEN APPLICABLE) AND BE LISTED ON THE ODOT PREQUALIFIED WTS ROSTER. PREQUALIFICATION EXPIRES EVERY 5 YEARS. RE-TESTING SHALL BE SUCCESSFULLY REPEATED EVERY 5 YEARS TO REMAIN PREQUALIFIED.

THE NAME OF THE PREQUALIFIED WTS AND RELATED 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRECONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7), THE CONTRACTOR MAY DESIGNATE AN ALTERNATE (SECONDARY) WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY; HOWEVER THE PRIMARY WTS SHALL REMAIN THE POINT OF CONTACT AT ALL TIMES. ANY ALTERNATE (SECONDARY) WTS IS SUBJECT TO THE SAME TRAINING, PREQUALIFICATION AND OTHER REQUIREMENTS OUTLINED WITHIN THIS PLAN NOTE. AT ALL TIMES THE ENGINEER, OR ENGINEER'S REPRESENTATIVES, MUST BE INFORMED OF WHO THE PRIMARY WTS (AND SECONDARY WTS, IF APPLICABLE) IS AT THE CURRENT TIME.

THE WTS POSITION HAS THE PRIMARY RESPONSIBILITY OF IMPLEMENTING THE TRAFFIC MANAGEMENT PLAN (TMP), MONITORING THE SAFETY AND MOBILITY OF THE ENTIRE WORK ZONE, AND CORRECTING TEMPORARY TRAFFIC CONTROL (TTC) DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE WTS, AND ALTERNATE WTS WHEN ON DUTY, SHALL HAVE SUFFICIENT AUTHORITY TO EFFECTIVELY CARRY OUT THE IDENTIFIED WTS RESPONSIBILITIES AND DUTIES. THE DUTIES OF THE WTS ARE AS FOLLOWS:

1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS.
2. BE ON SITE FOR ALL EMERGENCY TTC NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF, AND EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TTC DEVICES.
3. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TTC MANAGEMENT IS DISCUSSED.
4. BE AVAILABLE ON SITE FOR OTHER MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST.
5. BE AWARE OF ALL EXISTING AND PROPOSED TTC OPERATIONS OF THE CONTRACTOR, SUBCONTRACTORS AND SUPPLIERS, AND ENSURE COORDINATION OCCURS BETWEEN THEM TO ELIMINATE CONFLICTING TEMPORARY AND/OR PERMANENT TRAFFIC CONTROL.
6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). THE WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE LEOS ARE ON THE PROJECT.
7. COORDINATE AND FACILITATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS THE WORK ZONE TTC FOR IMPLEMENTING THE PHASE SWITCH. SUBMIT A WRITTEN DETAIL OF MOT OPERATIONS AND SCHEDULE OF EVENTS TO IMPLEMENT THE SWITCH BETWEEN PHASE PLANS TO THE ENGINEER 5 CALENDAR DAYS PRIOR TO THIS MEETING.
8. BE PRESENT, ON SITE FOR, AND INVOLVED WITH, EACH TTC SET UP/TAKE DOWN AND EACH PHASE CHANGE IN ACCORDANCE WITH CMS 614.03.
9. ON A CONTINUAL BASIS ENSURE THAT THE TTC ZONE AND ALL RELATED DEVICES ARE INSTALLED, MAINTAINED AND REMOVED IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
10. ON A CONTINUAL BASIS FACILITATE CORRECTIVE ACTION(S) NECESSARY TO BRING DEFICIENT TTC ZONES AND ALL RELATED DEVICES INTO COMPLIANCE WITH CONTRACT DOCUMENTS IN THE TIMEFRAME DETERMINED BY THE ENGINEER.

WORKSITE TRAFFIC SUPERVISOR (CONT.)

11. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TTC DEVICES AND TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, PERFORM ONE WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:
    a. INITIAL TTC SETUP (DAY AND NIGHT REVIEW).
    b. DAILY TTC SETUP AND REMOVAL.
    c. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TTC SETUP.
    d. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA AND WITHIN THE INFLUENCE AREA(S) APPROACHING THE WORK ZONE.
    e. REMOVAL OF TTC DEVICES AT THE END OF A PHASE OR PROJECT.
    f. ALL OTHER EMERGENCY TTC NEEDS.
12. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN #11 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORKDAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TTC MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED OR COMPLETED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THE CURRENT CA-D-8 DOCUMENT CAN BE FOUND ON THE OFFICE OF CONSTRUCTION ADMINISTRATION'S INSPECTION FORMS WEBSITE.
13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.

THE DEPARTMENT WILL DEDUCT:

A. THE PRORATED DAILY AMOUNT OF ITEM 614 MAINTAINING TRAFFIC FOR ANY DAY IN WHICH THE WTS FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. THE PRORATED DAILY AMOUNT WILL BE EQUAL TO THE ORIGINAL BID AMOUNT FOR ITEM 614 MAINTAINING TRAFFIC DIVIDED BY THE DIFFERENCE BETWEEN THE ORIGINAL COMPLETION DATE AND THE FIRST DAY OF WORK, IN CALENDAR DAYS.
B. 1% OF THE ORIGINAL BID AMOUNT FOR ITEM 614 MAINTAINING TRAFFIC FOR ANY DAY THAT A TTC ISSUE IS IDENTIFIED IN THE FIELD AND IS NOT CORRECTED IN THE GIVEN TIMEFRAME PER THE ENGINEER. DEDUCTION B SHALL NOT APPLY TO SITUATIONS COVERED BY DEDUCTION C.
C. 1% OF THE ORIGINAL BID AMOUNT FOR ITEM 614 MAINTAINING TRAFFIC FOR ANY DAY THAT A LANE OR RAMP IS BLOCKED (FULLY OR PARTIALLY) WITHOUT TTC, AS DETERMINED BY THE ENGINEER. THIS DEDUCTION SHALL BE IN ADDITION TO ANY OTHER DISINCENTIVES ESTABLISHED FOR UNAUTHORIZED LANE USE.

FOR DAYS IN WHICH MORE THAN ONE DEDUCTION LISTED ABOVE OCCUR, THE HIGHEST DEDUCTION AMOUNT WILL APPLY.

IF THREE OR MORE TOTAL DAYS RESULT IN TTC ISSUES DESCRIBED IN DEDUCTION B OR C ABOVE, THE PRIMARY WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05. UPON REMOVAL THE ENGINEER SHALL NOTIFY ODOT CENTRAL OFFICE (WTSPREQUALIFICATION@DOT.OHIO.GOV) TO REGISTER A REMOVAL AGAINST THE STATEWIDE PREQUALIFICATION FOR THE PRIMARY WTS. THREE REMOVALS SHALL CAUSE STATEWIDE DISQUALIFICATION FOR ANY PREVIOUSLY PREQUALIFIED WTS.

PAYMENT FOR THE ABOVE REQUIREMENTS, RESPONSIBILITIES AND DUTIES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

TRAFFIC INCIDENT MANAGEMENT (TIM) DURING MOT

OHIO TIM IS OHIO'S TRAFFIC INCIDENT MANAGEMENT PROGRAM WHICH IS COMMITTED TO MAINTAINING THE SAFE AND EFFECTIVE FLOW OF TRAFFIC DURING EMERGENCIES AS TO PREVENT FURTHER DAMAGE, INJURY OR UNDUE DELAY OF THE MOTORING PUBLIC. IN ADDITION TO COMPLYING WITH THE PROVISION OF OMUTCD CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS, THE CONTRACTOR SHALL ACTIVELY PARTICIPATE IN TIM PLANNING AND IMPLEMENTATION AS OUTLINED BELOW.

1. SUPERINTENDENT SHALL IDENTIFY THE INDIVIDUAL PERSONS ON THE PROJECT WHO WILL, OR MAY NEED TO, PERFORM THE DUTIES HEREIN. AT A MINIMUM, INCLUDE THE SUPERINTENDENT, FOREMEN AND SUPERVISORS (OR EQUIVALENT) AS WELL AS THE WORKSITE TRAFFIC SUPERVISOR (WTS; IF APPLICABLE TO THE PROJECT). THESE INDIVIDUALLY IDENTIFIED PERSONS SHALL COLLECTIVELY BE KNOWN AS CONTRACTOR TRAFFIC INCIDENT MANAGEMENT (TIM) CONTACTS. NOTIFY THE PROJECT ENGINEER OF THE CONTRACTOR TIM CONTACTS (ALONG WITH CONTACT INFORMATION FOR EACH) AT OR BEFORE THE PRECONSTRUCTION MEETING.
2. SUPERINTENDENT SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY CONTRACTOR TIM CONTACT IS ADDED, REMOVED OR THE CONTACT INFORMATION CHANGES OVER THE COURSE OF THE PROJECT.
3. PRIOR TO THE FIRST DAY OF WORK IN THE FIELD, EACH CONTRACTOR TIM CONTACT ON THE PROJECT SHALL HAVE ATTENDED AND SUCCESSFULLY COMPLETED OHIO TIM TRAINING PROVIDED BY THE DEPARTMENT OR DESIGNEE. TRAINING INFORMATION CAN BE FOUND AT WWW.OHIOTIM.COM.
4. SUPERINTENDENT, AT A MINIMUM, SHALL ATTEND AND ACTIVELY PARTICIPATE IN A DEPARTMENT SCHEDULED TIM MEETING BEFORE CONSTRUCTION WORK BEGINS AND BEFORE EACH PHASE CHANGE. THESE MEETINGS WILL RESULT IN A DEPARTMENT ISSUED PROJECT SPECIFIC TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP). AT THE TIM MEETINGS THE ATTENDING CONTRACTOR TIM CONTACTS SHALL:

   a. COLLABORATE WITH ODOT AND SAFETY FORCES;
   b. SHARE PROJECT SPECIFIC DETAILS THAT IMPACT TIM RESPONDERS; AND
   c. RECOMMEND WAYS TO INCORPORATE NECESSARY EMERGENCY ACCESS AND OTHER TIM ELEMENTS FOR TIM RESPONDERS GIVEN PROJECT SPECIFIC WORK BEING COMPLETED AND PROJECT SPECIFIC PHASING.

5. CONTRACTOR TIM CONTACTS SHALL IMPLEMENT COMPONENTS OF THE RESULTING TIMP (SUCH AS APPROVED EMERGENCY INGRESS/EGRESS POINTS, ETC), AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH 109.05.
6. CONTRACTOR TIM CONTACTS SHALL PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS WHEN AN INCIDENT/CRASH OCCURS:

   a. IF OBSERVED OR PRESENT WHEN OCCURS, CALL 911 AND THEN NOTIFY THE TRAFFIC MANAGEMENT CENTER (TMC) TO PROVIDE THE FOLLOWING:
      i. LOCATION, INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL
      ii. NUMBER AND TYPE OF VEHICLES INVOLVED, IF KNOWN
      iii. ESTIMATED EXTENT OF DAMAGE OR INJURY, IF KNOWN
      iv. ESTIMATED NUMBER OF PATIENTS INVOLVED, IF KNOWN.
      v. ANY POTENTIAL HAZARDOUS CONDITIONS, IF KNOWN
      vi. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS (OBSERVED FROM A SAFE DISTANCE, IF APPLICABLE AND VISIBLE)

TRAFFIC INCIDENT MANAGEMENT (TIM) DURING MOT (CONT.)

   b. FOLLOWING AN INCIDENT/CRASH:
      i. INITIATE TRAFFIC MANAGEMENT/PROVIDE TEMPORARY TRAFFIC CONTROL AS INDICATED IN THE TIMP, AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH 109.05.
      ii. RECOMMEND ROADWAY REPAIR NEEDS.
      iii. PROVIDE REPAIR RESOURCES AND INITIATE REPAIRS, AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH 109.05.
      iv. ATTEND AND PARTICIPATE IN AN AFTER ACTION REVIEW (AAR).

ALL COSTS, UNLESS OTHERWISE SPECIFIED, RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614, MAINTAINING TRAFFIC. FAILURE TO PERFORM THE REQUIREMENTS OF THIS PLAN NOTE WILL RESULT IN A DAILY FINE OF 2% OF ITEM 614, MAINTAINING TRAFFIC AND MAY RESULT IN ONE OR MORE CONTRACTOR TIM CONTACTS BEING REMOVED FROM THE LIST OF OHIO TIM TRAINED INDIVIDUALS (AT THE SOLE DISCRETION OF THE OHIO TIM EXECUTIVE COMMITTEE). IN THE EVENT AN INDIVIDUAL IS REMOVED FROM THE OHIO TIM TRAINED LIST, THE INDIVIDUAL WILL BE REMOVED FROM CONTRACTOR TIM CONTACT RESPONSIBILITIES ON ALL PROJECTS.

ITEM 614, WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614 OR C&MS 621 AS SPECIFIED HEREIN.

-RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.
-RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15 THROUGH APRIL 1.

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON,THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO C&MS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER C&MS 621.08.

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

PAYMENT FOR RESURFACING WITHIN THE TRANSITION AREA SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK REQUIRED, AS PROVIDED FOR IN THE PLANS.

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

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

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

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

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

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

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

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

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

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

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

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

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	1000 HOURS

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

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

DELINEATION OF PORTABLE AND PERMANENT BARRIER

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

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

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

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

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

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE MAINTENANCE OF TRAFFIC SUBSUMMARY AND CARRIED TO THE GENERAL SUMMARY.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

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

CALCULATED MLV CHECKED JML

MAINTENANCE OF TRAFFIC NOTES

LOR-90-17.85

TRAFFIC RESTRICTIONS PLAN

THE CONTRACTOR IS REQUIRED TO SUBMIT A PLAN OUTLINING ALL ANTICIPATED TRAFFIC RESTRICTIONS PRIOR TO THE START OF EACH SEASON. THIS INCLUDES LANE CLOSURES, TRAFFIC SHIFTS, SHORT TERM CLOSURES FOR BEAM REMOVAL OR ERECTION, ETC.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURE	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS AND < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 CALENDAR DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO CLOSURE

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

ITEM 642, WORK ZONE SPEED ZONES (WZSZs)

THE FOLLOWING WORK ZONE SPEED ZONE (WZSZ) SPEED LIMIT REVISIONS HAVE BEEN APPROVED FOR USE ON THIS PROJECT WHEN WORK ZONE CONDITIONS AND FACTORS ARE MET AS DESCRIBED BELOW:

WZSZ REVISIONS NUMBER(S)	COUNTY-ROUTE-SECTION	DIRECTION
WZ-20487	LOR-90-17.33 TO LOR-90-17.84 (STA. 899+00 TO STA. 925+93)	EB & WB
WZ-20488	LOR-90-17.84 TO LOR-90-18.41 (STA. 925+93 TO STA. 956+20)	EB & WB

WZSZ LOCATIONS SHALL HAVE AN ORIGINAL (PRE-CONSTRUCTION) POSTED SPEED LIMIT OF 55 MPH OR GREATER, A QUALIFYING WORK ZONE CONDITION OF AT LEAST 0.5 MILE IN LENGTH, AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS, AND A WORK ZONE CONDITION IN PLACE THAT REDUCES THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS (I.E., LANE CLOSURE, LANE SHIFT, CROSSOVER, CONTRAFLOW AND/OR SHOULDER CLOSURE). THE LENGTH OF THE WORK ZONE CONDITION IS MEASURED FROM THE BEGINNING OF THE TAPER FOR THE SUBJECT WORK ZONE CONDITION IMPACTING THE TRAVEL LANES AND/OR SHOULDER TO THE END OF THE DOWNSTREAM TAPER, WHERE DRIVERS ARE RETURNED TO TYPICAL ALIGNMENT. AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS IS REQUIRED TO BALANCE THE ADDITIONAL EXPOSURE CREATED BY INSTALLING AND REMOVING WZSZ SIGNING WITH THE TIME NEEDED TO COMPLETE THE WORK.

IF THE WORK ZONE MEETS THESE MINIMUM CRITERIA, IT SHALL BE ANALYZED FURTHER USING TABLE 1 BELOW TO DETERMINE IF AND WHEN IT QUALIFIES FOR A SPEED LIMIT REDUCTION. DEPENDING ON THE ORIGINAL POSTED SPEED LIMIT, THE TYPE OF TEMPORARY TRAFFIC CONTROL USED, AND WHETHER OR NOT WORKERS ARE PRESENT, A WARRANTED WZSZ WILL VARY IN THE APPROVED SPEED LIMIT TO BE POSTED OVER TIME.

C&MS ITEM 614, PARAGRAPH 614.02(B), INDICATES THAT TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, A SPEED LIMIT REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE A SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION. EACH DIRECTION SHALL BE ANALYZED INDEPENDENTLY FROM EACH OTHER.

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, APPROVED LIST, SUPPLEMENTAL SPECIFICATIONS (SS) 808 AND 908, AND TRAFFIC SCD MT-104.10.

ONLY ONE WARRANTED SPEED LIMIT APPLIES AT ANY ONE TIME; SPEED LIMIT REDUCTIONS ARE NOT CUMULATIVE. WZSZS SHALL NOT BE USED FOR MOVING/MOBILE ACTIVITIES, AS DEFINED IN OMUTCD PART 6.

WHEN LOOKING UP THE WARRANTED WORK ZONE SPEED LIMITS, ALWAYS USE THE ORIGINAL, PRECONSTRUCTION, POSTED SPEED LIMIT. DO NOT USE A PRIOR OR CURRENT WORK ZONE SPEED LIMIT AS A LOOK UP VALUE IN THE TABLE. POSITIVE PROTECTION IS GENERALLY REGARDED AS PORTABLE BARRIER OR OTHER RIGID BARRIER IN USE ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WITHOUT POSITIVE PROTECTION IS GENERALLY REGARDED AS USING DRUMS, CONES, SHADOW VEHICLE, ETC., ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WORKERS ARE

ITEM 642, WORK ZONE SPEED ZONES (WZSZs) (CONT.)

CONSIDERED AS BEING PRESENT WHEN ON-SITE, WORKING WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WHEN THE WORK ZONE CONDITION REDUCING THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS IS REMOVED, THE SPEED LIMIT DISPLAYED SHALL RETURN TO THE ORIGINAL POSTED SPEED LIMIT.

TABLE 1: WARRANTED WORK ZONE SPEED LIMITS (MPH) FOR WORK ZONES ON HIGH-SPEED (55 MPH OR GREATER) MULTI-LANE HIGHWAYS

ORIGINAL POSTED SPEED LIMIT	WITH POSITIVE PROTECTION		WITHOUT POSITIVE PROTECTION	
	WORKERS PRESENT	WORKERS NOT PRESENT	WORKERS PRESENT	WORKERS NOT PRESENT
70	60	65	55	65
65	55	60	50	60
60	55	60	50	60
55	50	55	45	55

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 808, DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY 36 SIGN MNTH ASSUMING 4 DSL SIGN ASSEMBLIES FOR 9 MONTHS

ITEM 622, PORTABLE BARRIER PLACEMENT

DURING THE PLACEMENT OF THE PORTABLE BARRIER, TRAFFIC WILL BE PROHIBITED FROM OCCUPYING THE TRAVEL LANE ADJACENT TO THE BARRIER. THE BARRIER WILL BE PLACED AT NIGHT PER THE WORK HOUR RESTRICTION NOTE AND IN ACCORDANCE WITH THE PERMITTED LANE CLOSURE MAP. THE CLOSURE OF THE ADJACENT LANE WILL BE PER THE STANDARD DRAWING MT-95.30.

THE CONTRACTOR WILL SUBMIT PLAN TO THE ENGINEER FOR APPROVAL SEVEN (7) DAYS IN ADVANCE OF THE PLANNED LANE CLOSURE. WORK WILL NOT BEGIN UNTIL APPROVAL OF THE PLANS HAS BEEN GRANTED.

ALL COSTS INVOLVED IN PLACING THE PORTABLE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 622 PORTABLE BARRIER.

ITEM 253, PAVEMENT REPAIR

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED FOR ITEM 253, PAVEMENT REPAIR. THIS IS A CONTINGENCY ITEM AND SHALL ONLY BE USED AS DIRECTED BY THE ENGINEER.

ITEM 253, PAVEMENT REPAIR 3488 SY

ITEM 254, PATCHING PLANED SURFACE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED FOR ITEM 254, PATCHING OF PLANED SURFACE. THIS IS A CONTINGENCY ITEM AND SHALL ONLY BE USED AS DIRECTED BY THE ENGINEER.

ITEM 254, PATCHING PLANED SURFACE 3488 SY

ITEM 642, TRAFFIC PAINT, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND APPLYING WET REFLECTIVE (WR) OPTICS (BEADS OR ELEMENTS), GLASS BEADS, AND TRAFFIC PAINT ACCORDING TO 640, 740, AND THE ADDITIONAL REQUIREMENTS SPECIFIED BELOW.

FURNISH MATERIALS CONFORMING TO:
TRAFFIC PAINT.....740.02
GLASS BEADS.....740.09

FURNISH ONE OF THE FOLLOWING WET REFLECTIVE OPTICS: 3M CONNECTED ROADS ALL WEATHER ELEMENTS SERIES 50/51, POTTERS INDUSTRIES VISI-ULTRA, SWARCO DURALUX, OR APPROVED EQUAL.

IN ADDITION TO THE REQUIREMENTS OF 642.03, FURNISH EQUIPMENT CAPABLE OF APPLYING WR OPTICS AT THE TIME OF LINE PLACEMENT.

THE PAVEMENT SURFACE SHALL BE FREE OF LOOSE MATERIAL AND COMPLETELY DRY PRIOR TO THE APPLICATION OF THE PAVEMENT MARKINGS.

PLACE TRAFFIC PAINT AT A THICKNESS OF 20 MILS (0.51 MM). DROP WR OPTICS FROM THE FORWARD-MOST BEAD APPLICATOR GUN AT A MINIMUM RATE OF 5 POUNDS PER 100 SQUARE FEET (2.4 KILOGRAM PER 10 M2). DROP GLASS BEADS AT A MINIMUM RATE OF 8 POUNDS PER 100 SQUARE FEET (3.9 KILOGRAM PER 10 M2) FROM THE REAR BEAD APPLICATOR GUN.

THE DEPARTMENT WILL MEASURE PAVEMENT MARKINGS COMPLETE IN PLACE IN THE UNITS DESIGNATED. THE DEPARTMENT WILL MEASURE LINE QUANTITIES AS THE LENGTH OF THE COMPLETED MARKING, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT CONTRACT PRICES, OR PRICES ADJUSTED ACCORDING TO 641.11, MEASURED ACCORDING TO 641.12, WITH THE PROVISIONS SPECIFIED IN 641.13, AND AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
642	MILE	EDGE LINE, 6 INCH, TYPE 1, AS PER PLAN
642	FOOT	CHANNELIZING LINE, 8 INCH, TYPE 1, AS PER PLAN

CALCULATED MLV CHECKED JML

MAINTENANCE OF TRAFFIC NOTES

LOR-90-17.85

ITEM 614 - MAINTAINING TRAFFIC (CONT.)

SEQUENCE OF CONSTRUCTION

WORK SHALL BE PERFORMED IN 3 PHASES

PRIOR TO PHASE 1 START, THE INSIDE SHOULDER SHALL BE REMOVED AND REPLACED WITH 5' OF TEMPORARY PAVEMENT SUITABLE FOR TRAFFIC. THE INSIDE TRAFFIC LANE WILL BE PARTIALLY SHIFTED ONTO THE INSIDE SHOULDER DURING PHASE 1 OF CONSTRUCTION, AND THE CURRENT BUILD-UP IS NOT SUITABLE FOR VEHICULAR TRAFFIC. THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE TYPICAL SECTION ON SHEET 16, AND SCD MT-95.30, CLOSING THE INSIDE LANE OF TRAFFIC DURING WORKING HOURS. ALL WORK SHALL BE DONE AT NIGHT (7 PM TO 6 AM).

PRE-PHASE 1 LIMITS ARE:

I.R. 90 EASTBOUND - STA. 904+75 TO STA. 950+50
I.R. 90 WESTBOUND - STA. 904+50 TO STA. 950+75

PHASE 1

WORK TO BE PERFORMED:

1. INSTALL OUTERMOST PROPOSED UNDERDRAINS. REMOVE EXISTING PAVEMENT AS NECESSARY FOR UNDERDRAIN TRENCH. MAINTAIN DROP-OFFS IN ACCORDANCE WITH MT-101.90.
2. OUTSIDE SHOULDER RECONSTRUCTION FOR:
   EASTBOUND STA. 904+75 TO STA. 925+04.23 AND
   STA. 929+35 TO STA. 950+50
   WESTBOUND STA. 904+50 TO STA. 924+84.23
   AND STA. 929+85 TO STA. 950+75
   THIS INCLUDES REMOVAL OF EXISTING PAVEMENT, EXCAVATION, PREPARATION OF SUBGRADE, PLACE AND GRADE ITEM 304 AGGREGATE BASE, AND PLACE ALL ASPHALT PAVEMENT LAYERS. MAINTAIN DROP-OFFS IN ACCORDANCE WITH MT-101.90 AND PLACE ITEM 304 AGGREGATE BASE NIGHTLY.
3. REPLACE OUTSIDE SHOULDER WITH TEMPORARY PAVEMENT FOR:
   EASTBOUND STA. 925+04.23 TO STA. 927+47 AND
   STA. 928+92 TO 929+35
   WESTBOUND STA. 924+84.23 TO STA. 926+71 AND
   STA. 928+29 TO STA. 929+85
   LIMITS AND PROFILE SHOULD MATCH EXISTING CONDITION. THIS IS IN PREPARATION FOR TRAFFIC SHIFTS OCCURRING IN PHASE 2.

TRAFFIC MAINTENANCE:

TWO (2) LANES OF TRAFFIC WILL BE MAINTAINED IN EACH DIRECTION. LANES WILL BE REDUCED TO 11' WIDE, AND SHIFTED ONTO THE INSIDE SHOULDERS REBUILT DURING PRE-PHASE 1. WORK ZONE WILL BE PROTECTED BY THE USE OF DRUMS. ANY WORK AT NIGHT SHALL BE DONE USING SINGLE-LANE CLOSURES. ANY MATERIAL NECESSARY TO COMPLY WITH MT-101.90 DROP-OFF POLICY SHALL BE INCIDENTAL TO ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 - MAINTAINING TRAFFIC (CONT.)

SEQUENCE OF CONSTRUCTION (CONT.)

PHASE 2

WORK TO BE PERFORMED:

1. INSTALL INNERMOST PROPOSED UNDERDRAINS AND OTHER DRAINAGE ITEMS.
2. ALL INSIDE SHOULDER PAVEMENT WIDENING, INCLUDING ALL ASPHALT PAVEMENT LAYERS, SHALL BE COMPLETED.
3. FULL DEPTH PAVEMENT REPLACEMENT FOR THE EXISTING INSIDE SHOULDER AND A PORTION OF THE INNERMOST TRAVELED WAY. THIS INCLUDES REMOVAL OF EXISTING PAVEMENT, EXCAVATION, PREPARATION OF SUBGRADE, PLACE AND GRADE ITEM 304 AGGREGATE BASE, AND PLACE ALL ASPHALT PAVEMENT LAYERS. THE LIMITS OF THE TRAVELED WAY RECONSTRUCTION ARE FROM STA. 925+04.23 TO STA. 929+35 IN THE EASTBOUND DIRECTION AND FROM STA. 924+84.23 TO STA. 929+85 IN THE WESTBOUND DIRECTION.
4. WIDENING/RECONSTRUCTION OF THE INNERMOST PORTION OF BOTH BRIDGES SHALL BE COMPLETED. REFER TO STRUCTURE PLANS FOR LIMITS AND DETAIL.

TRAFFIC MAINTENANCE:

TWO (2) LANES OF TRAFFIC WILL BE MAINTAINED IN EACH DIRECTION. LANES WILL BE REDUCED TO 11' WIDE, AND SHIFTED ONTO THE OUTSIDE SHOULDERS RECONSTRUCTED DURING PHASE 1. WORK ZONE WILL BE PROTECTED BY THE USE OF PORTABLE CONCRETE BARRIER.

PHASE 3

WORK TO BE PERFORMED:

1. REMAINING FULL-DEPTH PAVEMENT REPLACEMENT OF THE TRAVELED WAY AND OUTSIDE SHOULDER BETWEEN STA. 925+04.23 AND STA. 929+35 IN THE EASTBOUND DIRECTION AND BETWEEN STA. 924+84.23 AND STA. 929+85 IN THE WESTBOUND DIRECTION SHALL BE COMPLETED. THIS INCLUDES REMOVAL OF EXISTING PAVEMENT, EXCAVATION, PREPARATION OF SUBGRADE, PLACE AND GRADE ITEM 304 AGGREGATE BASE, AND PLACE ALL ASPHALT PAVEMENT LAYERS.
2. RECONSTRUCTION OF THE OUTSIDE PORTION OF BOTH BRIDGES SHALL BE COMPLETED. REFER TO STRUCTURE PLANS FOR LIMITS AND DETAIL.

TRAFFIC MAINTENANCE:

TWO (2) LANES OF TRAFFIC WILL BE MAINTAINED IN EACH DIRECTION. LANES WILL BE REDUCED TO 11' WIDE, AND SHIFTED ONTO THE WIDENED INSIDE SHOULDERS CONSTRUCTED DURING PHASE 2. WORK ZONE WILL BE PROTECTED BY THE USE OF PORTABLE CONCRETE BARRIER.

POST-PHASE 3

WORK TO BE PERFORMED:

1. RESURFACE ALL TRAVEL LANES WITHIN THE WORK LIMITS NOT REPLACED AS PART OF THE PROJECT. THIS SHALL BE DONE WITH NIGHTTIME (7 PM TO 6 AM) MILL/FILL OPERATIONS, MAINTAINING DROP-OFFS IN ACCORDANCE WITH MT-101.90.
2. INSTALL ALL FINAL PAVEMENT MARKINGS.
3. COMPLETE ANY OTHER TASKS NECESSARY TO FULLY OPEN I.R. 90 TO THE PUBLIC.

CONSTRUCTION SCHEDULE

THE CONSTRUCTION TIMELINE SHALL FOLLOW THE SCHEDULE LISTED HERE. ANY CHANGES SHALL NOT OCCUR WITHOUT APPROVAL FROM THE ENGINEER.

1. PRE-PHASE 1 AND PHASE 1 SHALL NOT BEGIN PRIOR TO MAY 1, 2021.

2. PHASE 2 WORK SHALL BEGIN AFTER COMPLETION OF PHASE 1, AND MUST BE COMPLETED BY NOVEMBER 15, 2021.

3. PHASE 3 STRUCTURE ACTIVITIES NOT IMPACTED BY WEATHER MAY BEGIN DURING THE WINTER MONTHS. THIS MAY INCLUDE DEMOLITION, PILE DRIVING, DRILLED SHAFTS, AND SUBSTRUCTURE.

4. THE REST OF PHASE 3 WORK SHALL BE BEGIN AFTER APRIL 1, 2022, WITH POST-PHASE 3 WORK FOLLOWING AFTER.

5. ANTICIPATED COMPLETION DATE IS JULY 31, 2022.

CONSTRUCTION ACCESS POINTS

THE CONTRACTOR SHALL COMPLY WITH SCD MT-103.10 FOR PROJECT VEHICLES ENTERING AND EXITING THE WORK ZONE.

CALCULATED MLV CHECKED JML

MAINTENANCE OF TRAFFIC NOTES

LOR-90-17.85

SUMMARY OF TRAFFIC MAINTENANCE

CALCULATED MLV CHECKED JML

LOR-90-17.85

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	614 INCREASED BARRIER DELINEATION FT	614 WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS (UNIDIRECTIONAL) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (20' SPACING, ONE-WAY WHITE) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (20' SPACING, ONE-WAY YELLOW) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (120' SPACING, ONE-WAY WHITE) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (120' SPACING, ONE-WAY YELLOW) EACH	614 BARRIER REFLECTOR, TYPE 1, (ONE WAY), WHITE EACH	614 BARRIER REFLECTOR, TYPE 1, (TWO WAY), YELLOW/YELLOW EACH	614 OBJECT MARKER, ONE WAY EACH	614 OBJECT MARKER, TWO WAY EACH	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN SY	622 PORTABLE BARRIER, 32", UNANCHORED FT	622 PORTABLE BARRIER, 32", ANCHORED FT	642 EDGE LINE, 6", TYPE 1, AS PER PLAN (WHITE) MILE	642 EDGE LINE, 6", TYPE 1, AS PER PLAN (YELLOW) MILE	642 CHANNELIZING LINE, 8", TYPE 1, AS PER PLAN (WHITE) FT		
PHASE 1 QUANTITIES																								
21 - 28	EW-1	I.R. 90 WB	903+35	951+20	LT														0.91					
21 - 28	EW-2	I.R. 90 EB	904+35	951+20	RT														0.88					
21 - 28	CL-1	I.R. 90 WB	903+35	951+20	LT																4,798			
21 - 28	CL-2	I.R. 90 EB	904+35	951+20	RT																4,673			
21 - 28	EY-1	I.R. 90 WB	903+35	951+20	LT															0.91				
21 - 28	EY-2	I.R. 90 EB	904+35	951+20	RT															0.89				
21 - 22		I.R. 90 WB	903+35	907+00	LT			18																
22 - 27		I.R. 90 WB	907+00	948+00	LT					34														
27 - 28		I.R. 90 WB	948+00	951+20	LT			16																
21 - 22		I.R. 90 WB	903+35	907+00	LT			18																
22 - 27		I.R. 90 WB	907+00	948+00	LT					34														
27 - 28		I.R. 90 WB	948+00	951+20	LT			16																
21 - 22		I.R. 90 WB	903+35	907+00	LT				18															
22 - 27		I.R. 90 WB	907+00	948+00	LT						34													
27 - 28		I.R. 90 WB	948+00	951+20	LT				16															
21 - 22		I.R. 90 EB	904+35	907+10	RT			14																
22 - 27		I.R. 90 EB	907+10	948+60	RT					34														
27 - 28		I.R. 90 EB	948+60	951+20	RT			13																
21 - 22		I.R. 90 EB	904+35	907+10	RT			14																
22 - 27		I.R. 90 EB	907+10	948+60	RT					34														
27 - 28		I.R. 90 EB	948+60	951+20	RT			13																
21 - 22		I.R. 90 EB	904+35	907+10	RT				14															
22 - 27		I.R. 90 EB	907+10	948+60	RT						35													
27 - 28		I.R. 90 EB	948+60	951+20	RT				13															
21 - 24	PV-1	I.R. 90 WB	904+50	927+19	LT											1264								
21 - 24	PV-2	I.R. 90 EB	904+75	926+86	RT											1225								
25 - 28	PV-3	I.R. 90 WB	929+08	950+75	LT											1205								
25 - 27	PV-4	I.R. 90 EB	928+50	950+50	RT											1221								
24	PV-5	I.R. 90 WB	924+84.23	927+47	LT											292								
25	PV-6	I.R. 90 WB	928+29	929+85	LT											173								
24	PV-7	I.R. 90 EB	925+04.23	926+71	RT											185								
24 - 25	PV-8	I.R. 90 EB	928+29	929+35	RT											118								
PHASE 2 QUANTITIES																								
30 - 38	EW-3	I.R. 90 WB	906+04	948+95	LT														0.82					
30 - 38	EW-4	I.R. 90 EB	905+84	949+30	RT														0.82					
30 - 38	CL-3	I.R. 90 WB	906+04	948+95	LT																4,307			
30 - 38	CL-4	I.R. 90 EB	905+84	949+30	RT																4,331			
30 - 38	EY-3	I.R. 90 WB	906+04	948+95	LT															0.82				
30 - 38	EY-4	I.R. 90 EB	905+84	949+30	RT															0.82				
SUBTOTALS CARRIED TO SHEET 15								389								5,683			6.86		18,109			

SUMMARY OF TRAFFIC MAINTENANCE

LOR-90-17.85

CALCULATED MLV CHECKED JML

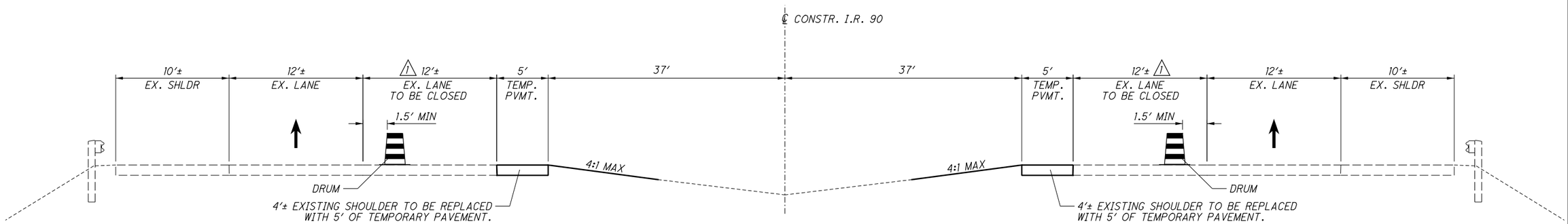
SHEET NO.	REFERENCE NO.	ALIGNMENT	STATION FROM	STATION TO	SIDE	614 INCREASED BARRIER DELINEATION FT	614 WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS (UNIDIRECTIONAL) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (20' SPACING, ONE-WAY WHITE) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (20' SPACING, ONE-WAY YELLOW) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (120' SPACING, ONE-WAY WHITE) EACH	614 WORK ZONE RAISED PAVEMENT MARKER, APP (120' SPACING, ONE-WAY YELLOW) EACH	614 BARRIER REFLECTOR, TYPE 1, (ONE WAY), WHITE EACH	614 BARRIER REFLECTOR, TYPE 1, (TWO WAY), YELLOW/YELLOW EACH	614 OBJECT MARKER, ONE WAY EACH	614 OBJECT MARKER, TWO WAY EACH	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN SY	622 PORTABLE BARRIER, 32", UNANCHORED FT	622 PORTABLE BARRIER, 32", ANCHORED FT	642 EDGE LINE, 6", TYPE 1, AS PER PLAN (WHITE) MILE	642 EDGE LINE, 6", TYPE 1, AS PER PLAN (YELLOW) MILE	642 CHANNELIZING LINE, 8", TYPE 1, AS PER PLAN (WHITE) FT		
PHASE 2 QUANTITIES (CONTINUED)																							
30 - 31		I.R. 90 WB	906+04	909+64	LT			18															
31 - 37		I.R. 90 WB	909+64	944+85	LT					30													
37 - 38		I.R. 90 WB	944+85	948+95	LT			21															
30 - 31		I.R. 90 WB	906+04	909+64	LT			18															
31 - 37		I.R. 90 WB	909+64	944+85	LT					29													
37 - 38		I.R. 90 WB	944+85	948+95	LT			21															
30 - 31		I.R. 90 WB	906+04	909+64	LT				18														
31 - 37		I.R. 90 WB	909+64	944+85	LT						29												
37 - 38		I.R. 90 WB	944+85	948+95	LT				21														
30 - 31		I.R. 90 EB	905+84	909+44	RT			18															
31 - 37		I.R. 90 EB	909+44	945+15	RT					30													
37 - 38		I.R. 90 EB	945+15	949+30	RT			21															
30 - 31		I.R. 90 EB	905+84	909+44	RT			18															
31 - 37		I.R. 90 EB	909+44	945+15	RT					30													
37 - 38		I.R. 90 EB	945+15	949+30	RT			21															
30 - 31		I.R. 90 EB	905+84	909+44	RT				18														
31 - 37		I.R. 90 EB	909+44	945+15	RT						30												
37 - 38		I.R. 90 EB	945+15	949+30	RT				21														
31		I.R. 90 EB	908+54		RT		1																
31 - 37	PB-1	I.R. 90 EB	908+74	945+15	RT												3650						
31		I.R. 90 EB	908+74	909+44	RT	80																	
31 - 37		I.R. 90 EB	909+44	945+15	RT								71		71								
31 - 38	PB-2	I.R. 90 WB	909+64	946+34	LT												3710						
31 - 37		I.R. 90 WB	909+64	944+85	LT								71		71								
37 - 38		I.R. 90 WB	944+85	946+34	LT	160																	
38		I.R. 90 WB	946+54		LT		1																
PHASE 3 QUANTITIES																							
40 - 46	EW-5	I.R. 90 WB	909+74	944+85.00	LT													0.67					
40 - 46	EW-6	I.R. 90 EB	909+44	945+05.00	RT													0.67					
40 - 46	CL-5	I.R. 90 WB	909+74	944+85.00	LT															3520			
40 - 46	CL-6	I.R. 90 EB	909+44	94+50.00	RT															3553			
40 - 46	EY-5	I.R. 90 WB	909+74	944+85.00	LT																0.67		
40 - 46	EY-6	I.R. 90 EB	909+44	945+05.00	RT																0.67		
SUBTOTALS CARRIED TO SHEET 15						240	2	409					142		142		7,360	2.68		7,073			

SHEET NO.	REFERENCE NO.	ALIGNMENT	STATION FROM	STATION TO	SIDE	614 INCREASED BARRIER DELINEATION	614 WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS (UNIDIRECTIONAL)	614 WORK ZONE RAISED PAVEMENT MARKER, APP (20' SPACING, ONE-WAY WHITE)	614 WORK ZONE RAISED PAVEMENT MARKER, APP (20' SPACING, ONE-WAY YELLOW)	614 WORK ZONE RAISED PAVEMENT MARKER, APP (120' SPACING, ONE-WAY WHITE)	614 WORK ZONE RAISED PAVEMENT MARKER, APP (120' SPACING, ONE-WAY YELLOW)	614 BARRIER REFLECTOR, TYPE 1, (ONE WAY), WHITE	614 BARRIER REFLECTOR, TYPE 1, (TWO WAY), YELLOW/YELLOW	614 OBJECT MARKER, ONE WAY	614 OBJECT MARKER, TWO WAY	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	622 PORTABLE BARRIER, 32", UNANCHORED	622 PORTABLE BARRIER, 32", ANCHORED	642 EDGE LINE, 6", TYPE 1, AS PER PLAN (WHITE)	642 EDGE LINE, 6", TYPE 1, AS PER PLAN (YELLOW)	642 CHANNELIZING LINE, 8", TYPE 1, AS PER PLAN (WHITE)		
						FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	SY	FT	FT	MILE	MILE	FT		
PHASE 3 QUANTITIES (CONTINUED)																							
40 - 43		I.R. 90 WB	909+74	924+74	LT			75															
43 - 44		I.R. 90 WB	924+74	929+85	LT					4													
44 - 46		I.R. 90 WB	929+85	944+85	LT			75															
40 - 43		I.R. 90 WB	909+74	924+74	LT			75															
43 - 44		I.R. 90 WB	924+74	929+85	LT					4													
44 - 46		I.R. 90 WB	929+85	944+85	LT			75															
40 - 43		I.R. 90 WB	909+74	924+74	LT				75														
43 - 44		I.R. 90 WB	924+74	929+85	LT						4												
44 - 46		I.R. 90 WB	929+85	944+85	LT				75														
40 - 43		I.R. 90 EB	909+44	925+04	RT			78															
43 - 44		I.R. 90 EB	925+04	929+45	RT					4													
44 - 46		I.R. 90 EB	929+45	945+05	RT			78															
40 - 43		I.R. 90 EB	909+44	925+04	RT			78															
43 - 44		I.R. 90 EB	925+04	929+45	RT					4													
44 - 46		I.R. 90 EB	929+45	945+05	RT			78															
40 - 43		I.R. 90 EB	909+44	925+04	RT				78														
43 - 44		I.R. 90 EB	925+04	929+45	RT						4												
44 - 46		I.R. 90 EB	929+45	945+05	RT				78														
42 - 43	PB-3	I.R. 90 EB	919+84	926+48	RT												660						
43 - 44	PB-5	I.R. 90 EB	926+48	928+83	RT													230					
44	PB-7	I.R. 90 EB	928+83	929+45	RT												70						
42 - 43		I.R. 90 EB	919+84	925+04	RT	515																	
43 - 44		I.R. 90 EB	925+04	929+45	RT							9		9									
43	PB-4	I.R. 90 WB	924+74	926+98	LT												230						
43 - 44	PB-6	I.R. 90 WB	926+98	929+20	LT													230					
44 - 45	PB-8	I.R. 90 WB	929+20	935+05	LT												590						
43 - 44		I.R. 90 WB	924+74	929+85	LT							10		10									
44 - 45		I.R. 90 WB	929+85	935+05	LT	515																	
SUBTOTALS FROM THIS SHEET						1,030		942				19		19			1,550	460					
SUBTOTALS FROM SHEET 13								389								5,683			6.86		18,109		
SUBTOTALS FROM SHEET 14						240	2	409					142		142			7,360	2.68		7,073		
TOTALS CARRIED TO GENERAL SUMMARY						1,270	2	1,740				19	142	19	142	5,683	1,550	7,820	9.54		25,182		

CALCULATED MLV CHECKED JML

SUMMARY OF TRAFFIC MAINTENANCE

LOR-90-17.85



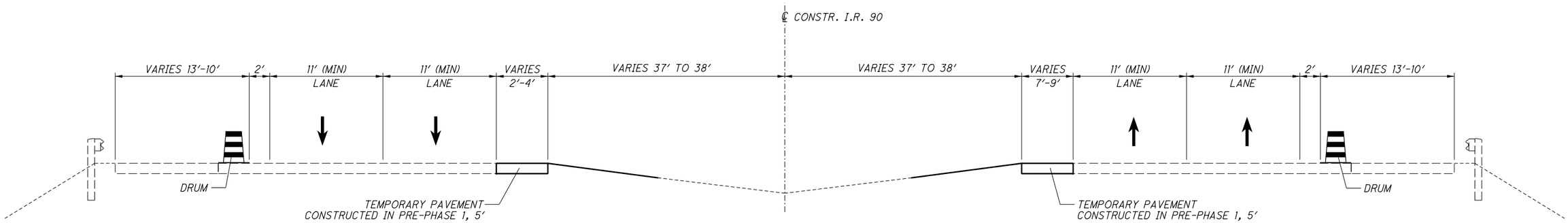
TYPICAL SECTION
I.R. 90 EASTBOUND STA. 904+75 TO STA. 950+50
I.R. 90 WESTBOUND STA. 904+50 TO STA. 950+75

1 LANE TO BE CLOSED WITH DRUMS OR CONES PER SCD MT-95.30

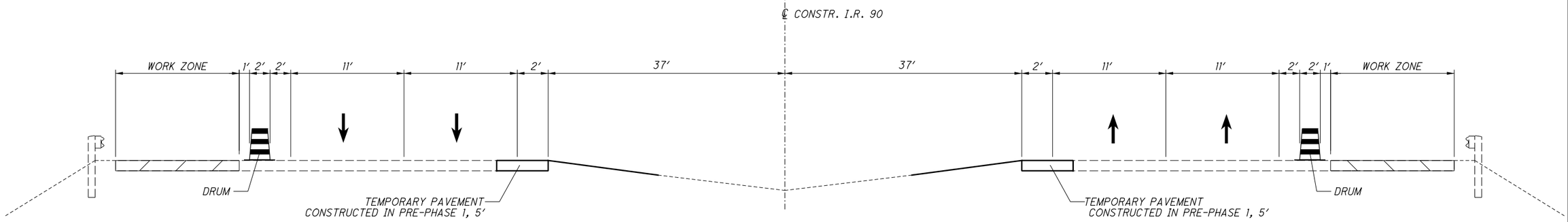
MAINTENANCE OF TRAFFIC - PRE-PHASE 1 TYPICAL SECTION

LOR-90-17.85

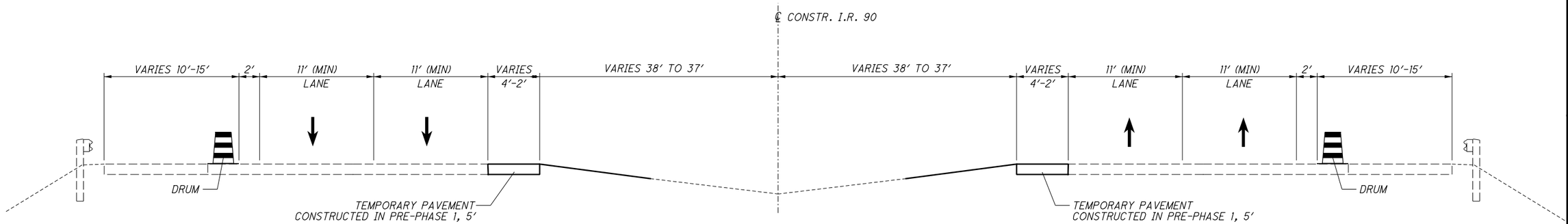
16
196



SECTION C-C



SECTION B-B

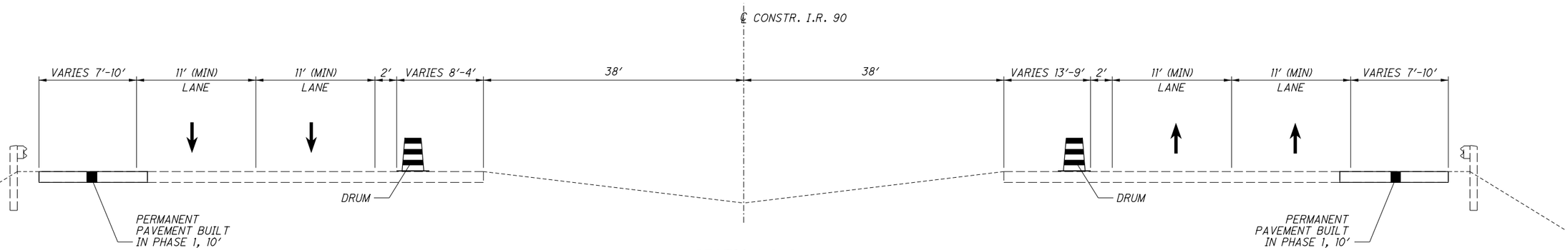


SECTION A-A

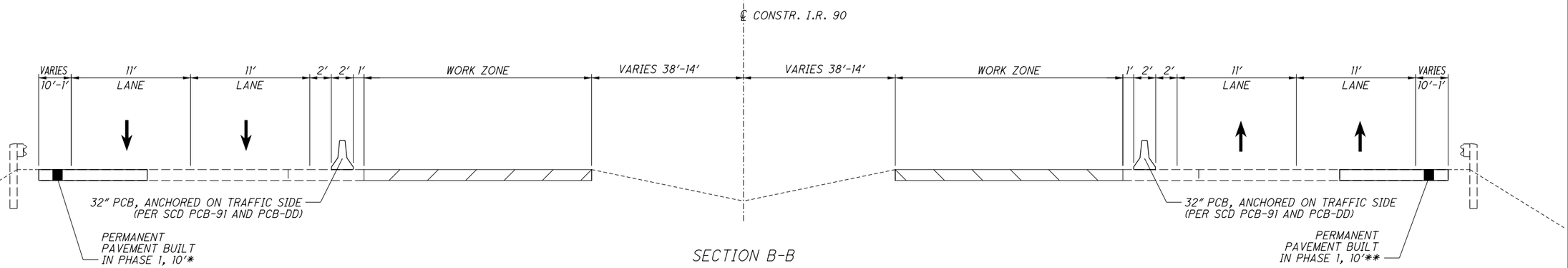
TYPICAL SECTIONS OVER THE BRIDGES ARE INCLUDED IN STRUCTURES SHEETS 131 -135.

MAINTENANCE OF TRAFFIC - PHASE 1 TYPICAL SECTIONS

LOR-90-17.85

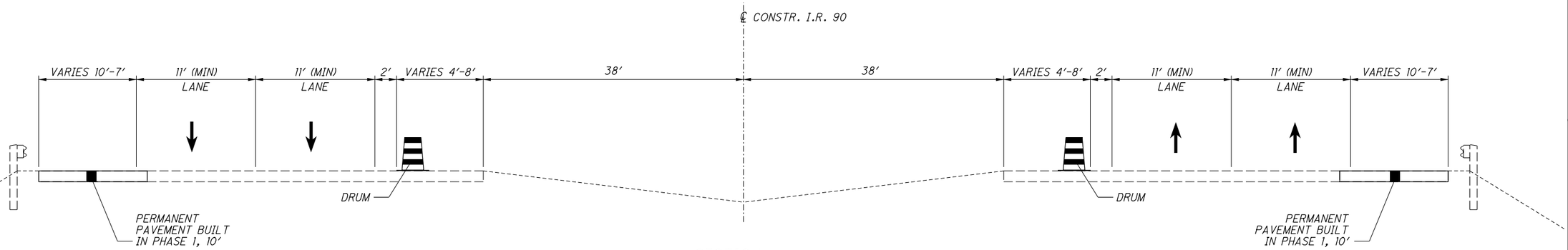


SECTION C-C



SECTION B-B

* PAVEMENT IS TEMPORARY FROM STA. 924+84.23 TO STA. 926+71 AND FROM STA. 928+29 TO STA. 929+85
** PAVEMENT IS TEMPORARY FROM STA. 925+04.23 TO STA. 927+47 AND FROM STA. 928+92 TO STA. 929+35

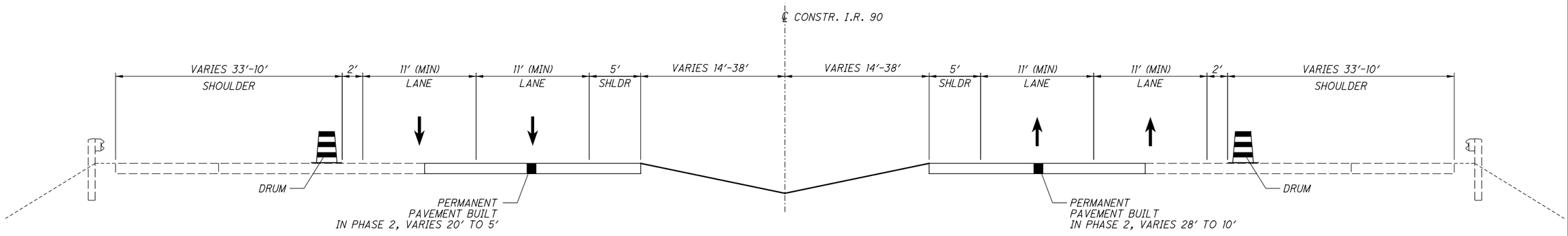


SECTION A-A

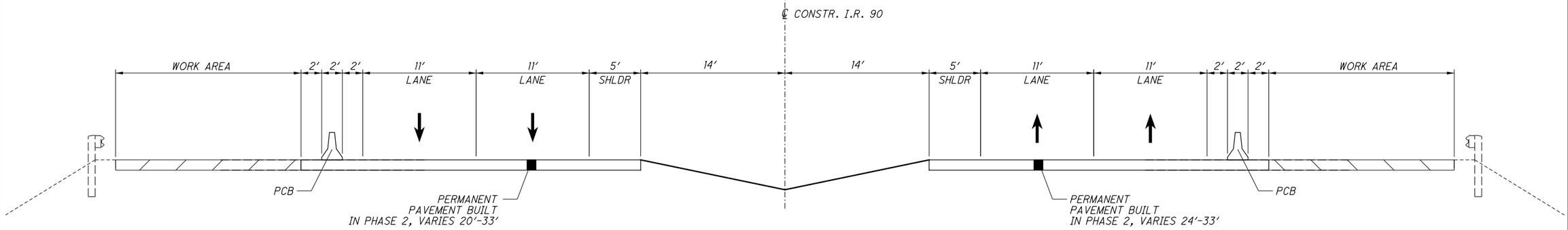
TYPICAL SECTIONS OVER THE BRIDGES ARE INCLUDED IN STRUCTURES SHEETS 131 -135.

MAINTENANCE OF TRAFFIC - PHASE 2 TYPICAL SECTIONS

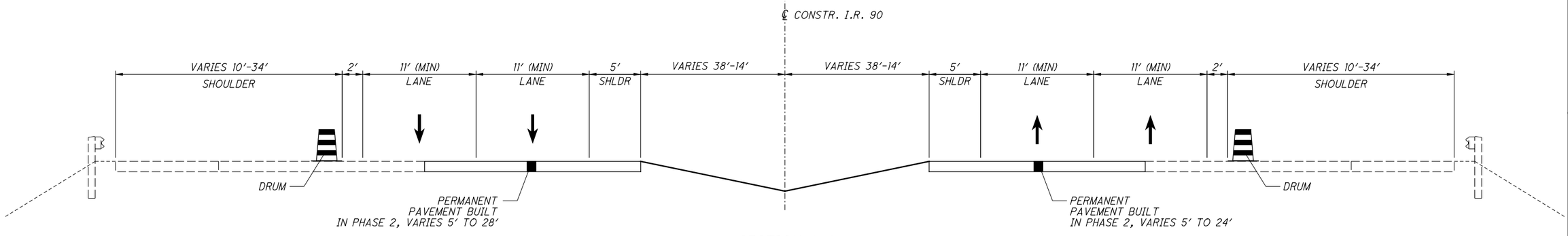
LOR-90-17.85



SECTION C-C



SECTION B-B

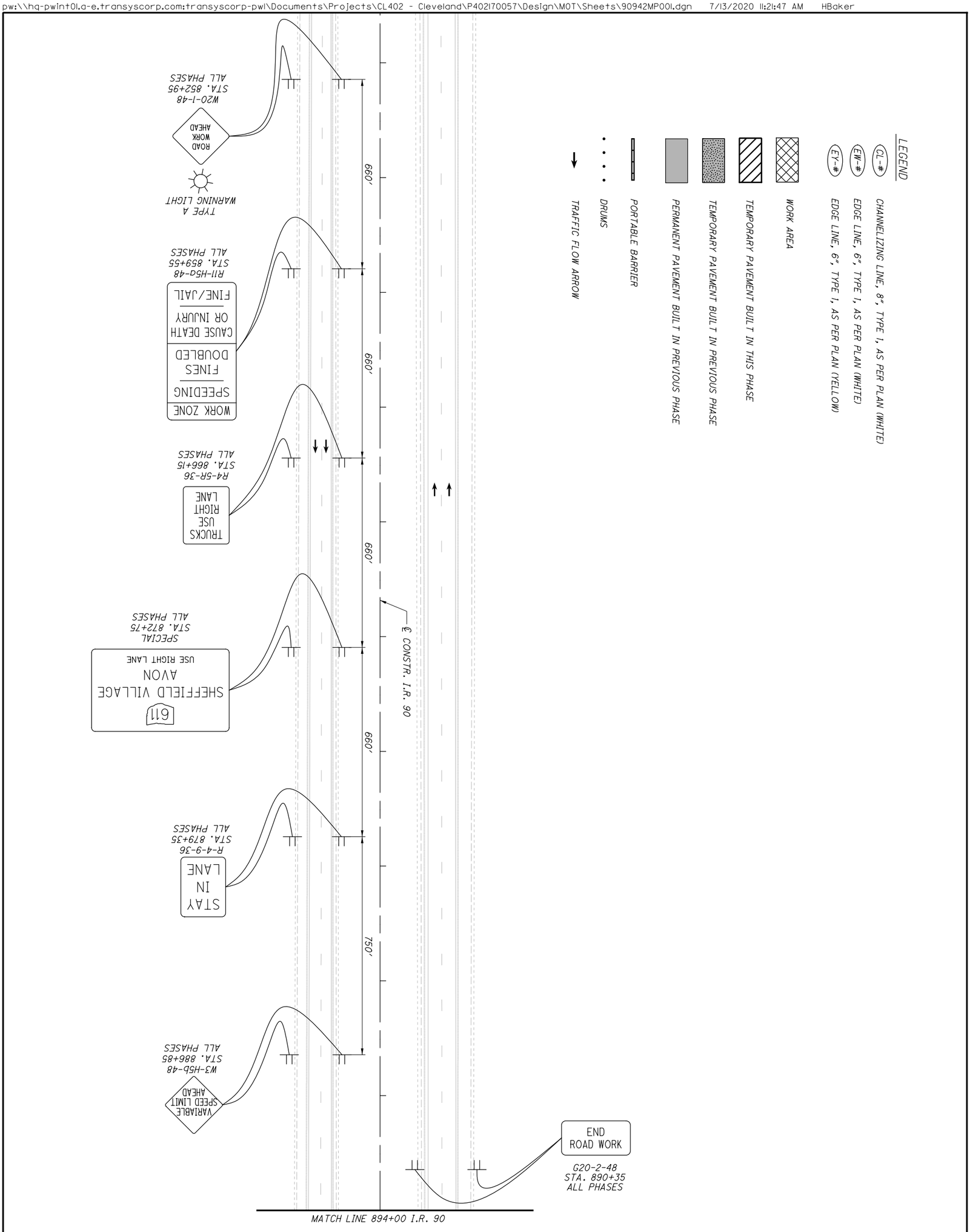


SECTION A-A

TYPICAL SECTIONS OVER THE BRIDGES ARE INCLUDED IN STRUCTURES SHEETS 131 -135.

MAINTENANCE OF TRAFFIC - PHASE 3 TYPICAL SECTIONS

LOR-90-17.85

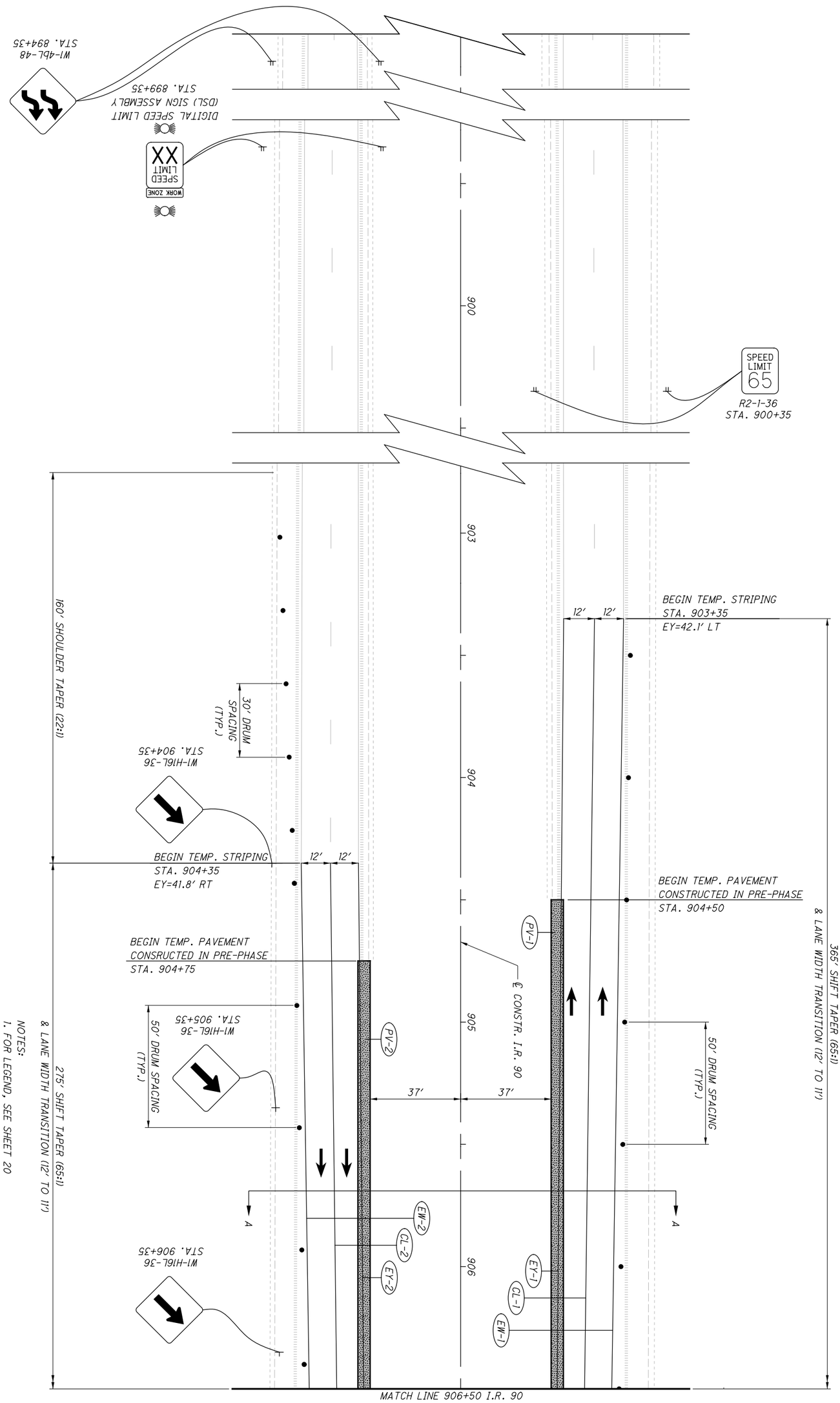


LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 1, PHASE 2 & PHASE 3 - BEGIN TO STA. 890+35

CALCULATED MLV
CHECKED JML

0 20 40 80
HORIZONTAL SCALE IN FEET



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE 1 START

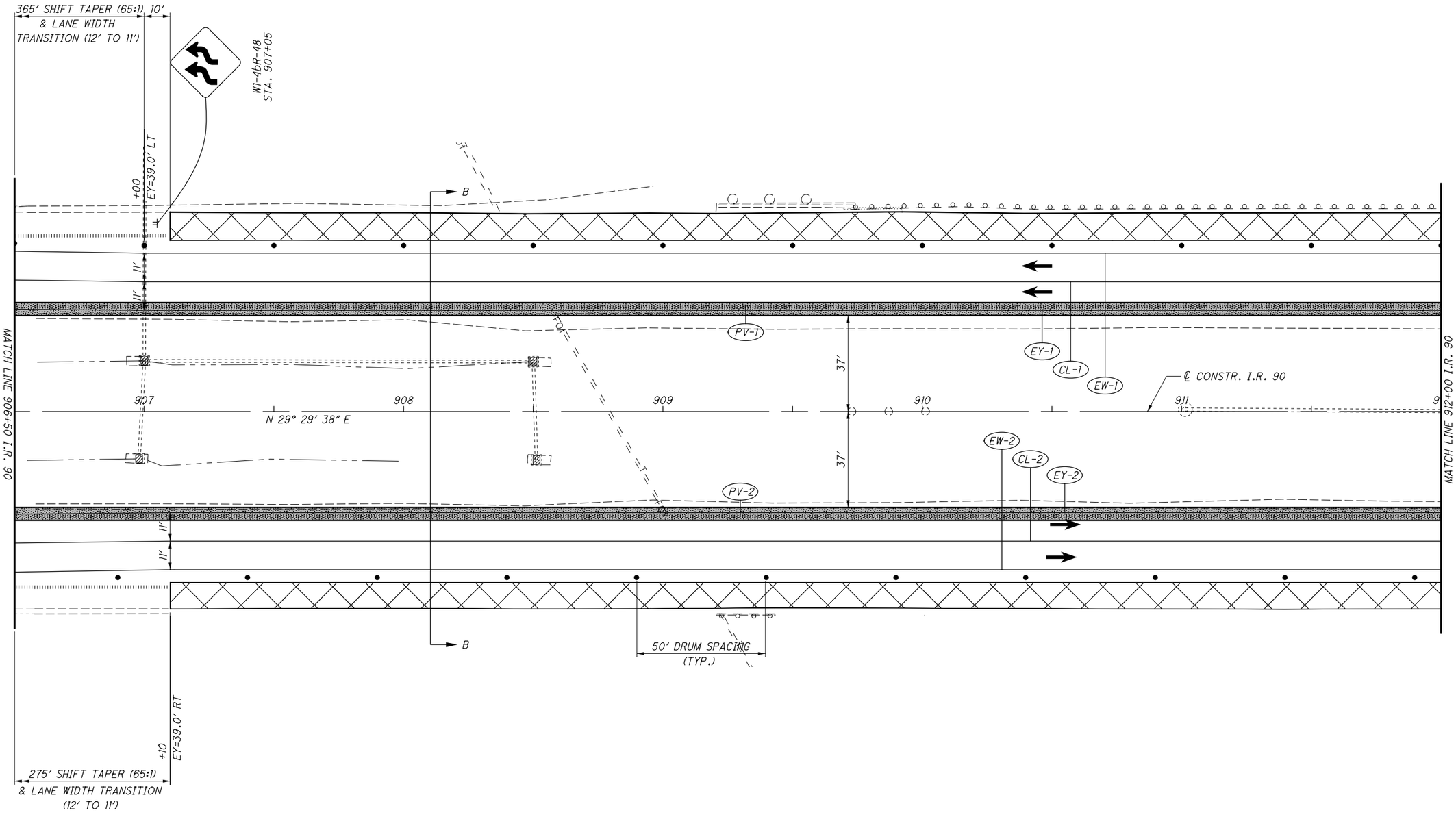
LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 894+35 TO STA. 906+50

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET

NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE 1 START



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 906+50 TO STA. 912+00

LOR-90-17.85

NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE 1 START

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 912+00 TO STA. 917+50

LOR-90-17.85

NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE I START.

MATCH LINE 923+00 I.R. 90

MATCH LINE 917+50 I.R. 90

OHIO EDISON TRANSMISSION LINES
345,000 VOLTS NOMINAL
(362,250 VOLTS MAXIMUM)

50' DRUM SPACING (TYP.)

END PERM. PAVEMENT
BEGIN TEMP. PAVEMENT
STA. 924+84

END PERM. PAVEMENT
BEGIN TEMP. PAVEMENT
STA. 925+04

℄ CONSTR. I.R. 90

END TEMP. PAVEMENT
STA. 926+71

END TEMP. PAVEMENT CONSTRUCTED IN PRE-PHASE
STA. 926+88

END TEMP. PAVEMENT CONSTRUCTED IN PRE-PHASE
STA. 927+30

END TEMP. PAVEMENT
STA. 927+47

BEGIN TEMP. PAVEMENT
STA. 928+29

BEGIN TEMP. PAVEMENT CONSTRUCTED IN PRE-PHASE
STA. 928+47

MATCH LINE 928+50 I.R. 90

NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE 1 START

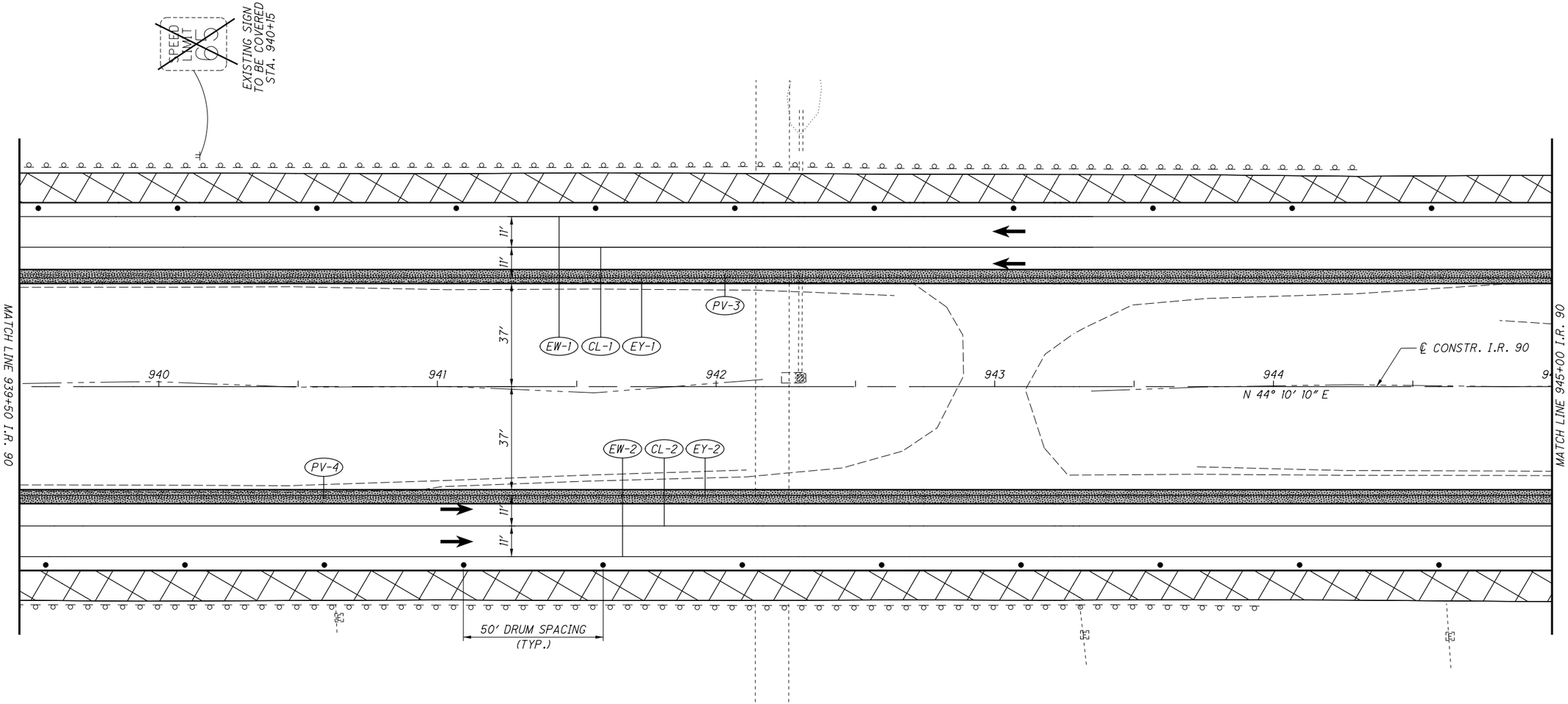
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 928+50 TO STA. 939+50

LOR-90-17.85

25
196



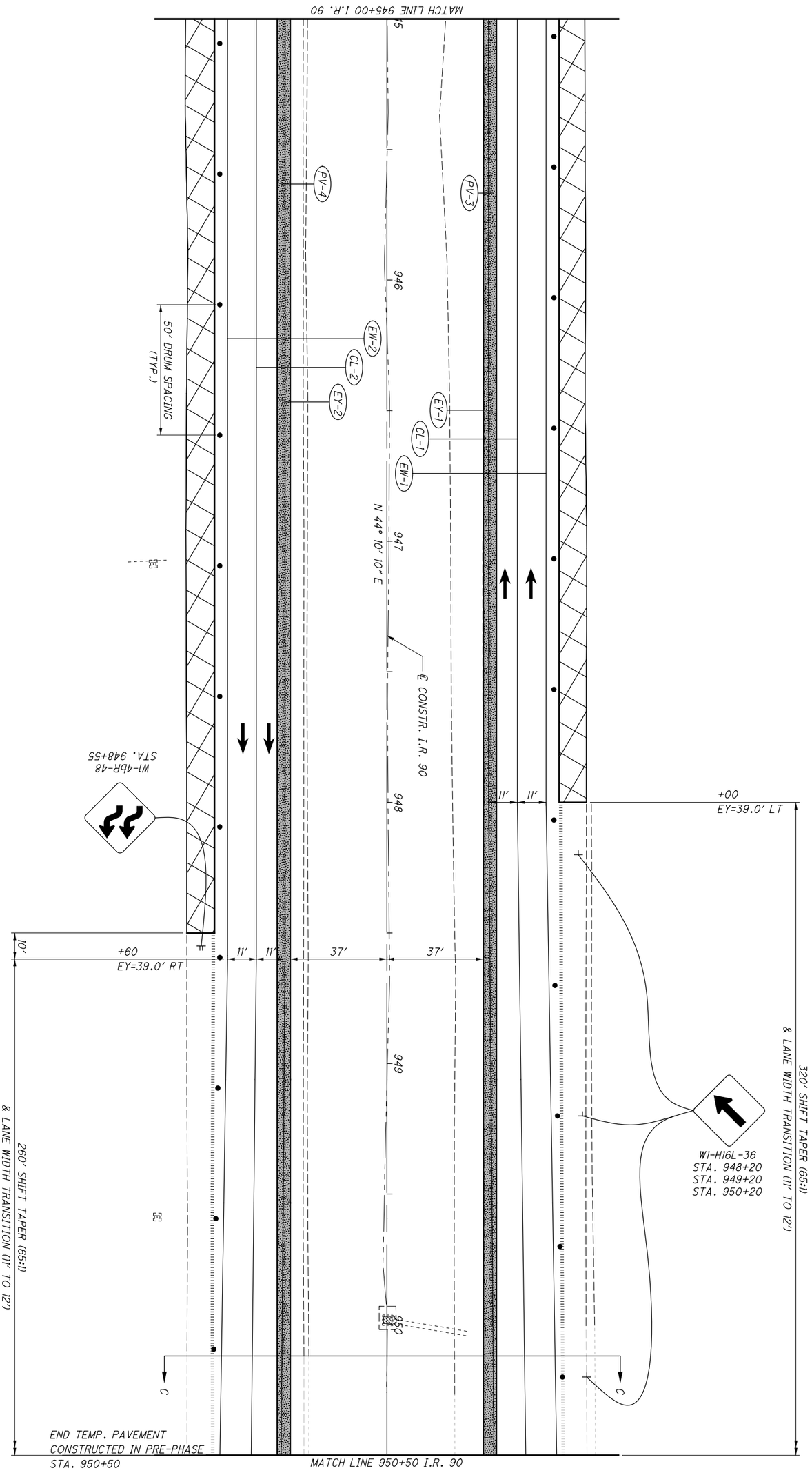
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE 1 START

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 939+50 TO STA. 945+00

LOR-90-17.85



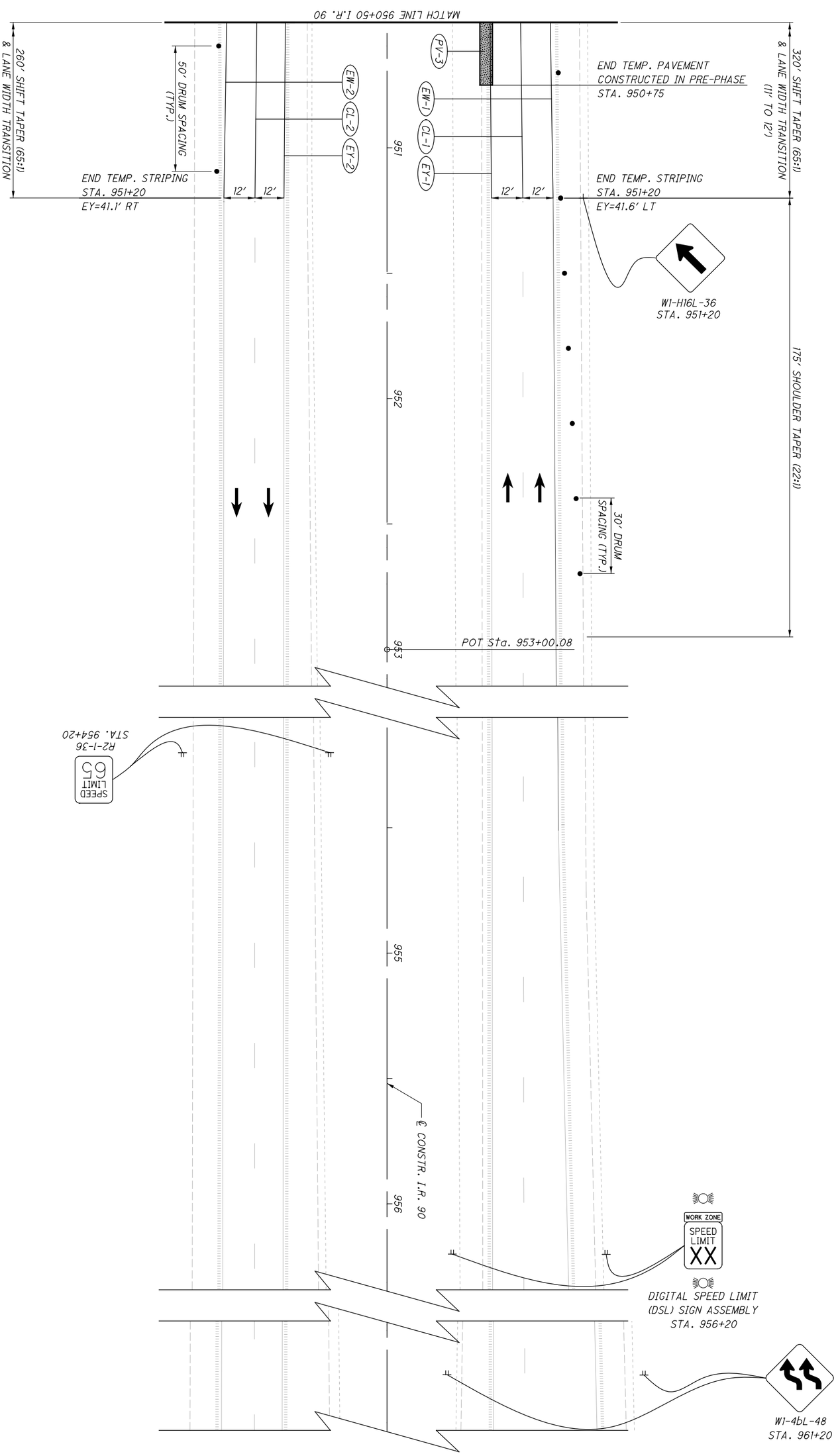
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 17
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. INSIDE SHOULDER REPLACEMENT WITH TEMPORARY PAVEMENT TO BE INSTALLED PRIOR TO PHASE 1 START

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 1
STA. 945+00 TO STA. 950+50

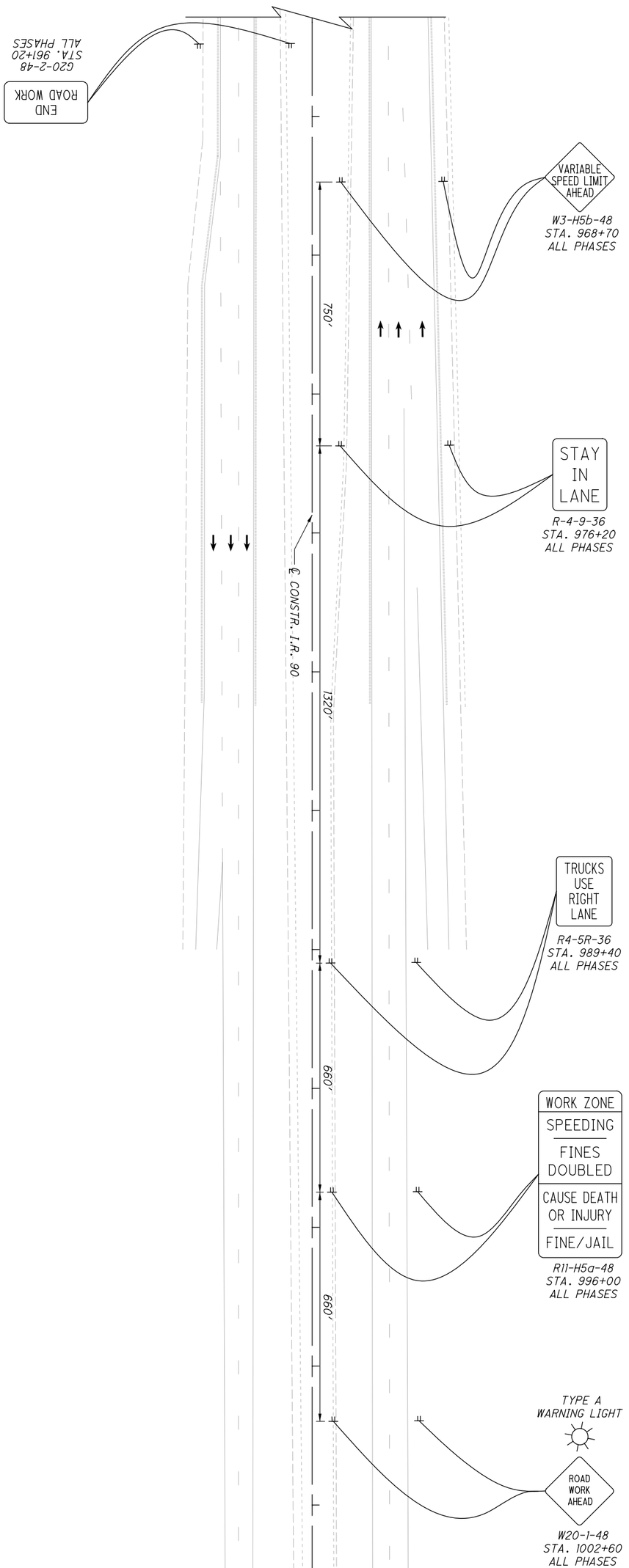
CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



NOTES:
1. FOR LEGEND, SEE SHEET 20

28 / 196	LOR-90-17.85	MAINTENANCE OF TRAFFIC - PHASE 1 STA. 950+50 TO STA. 961+20	CALCULATED MLV CHECKED JML	0 10 20 40 HORIZONTAL SCALE IN FEET



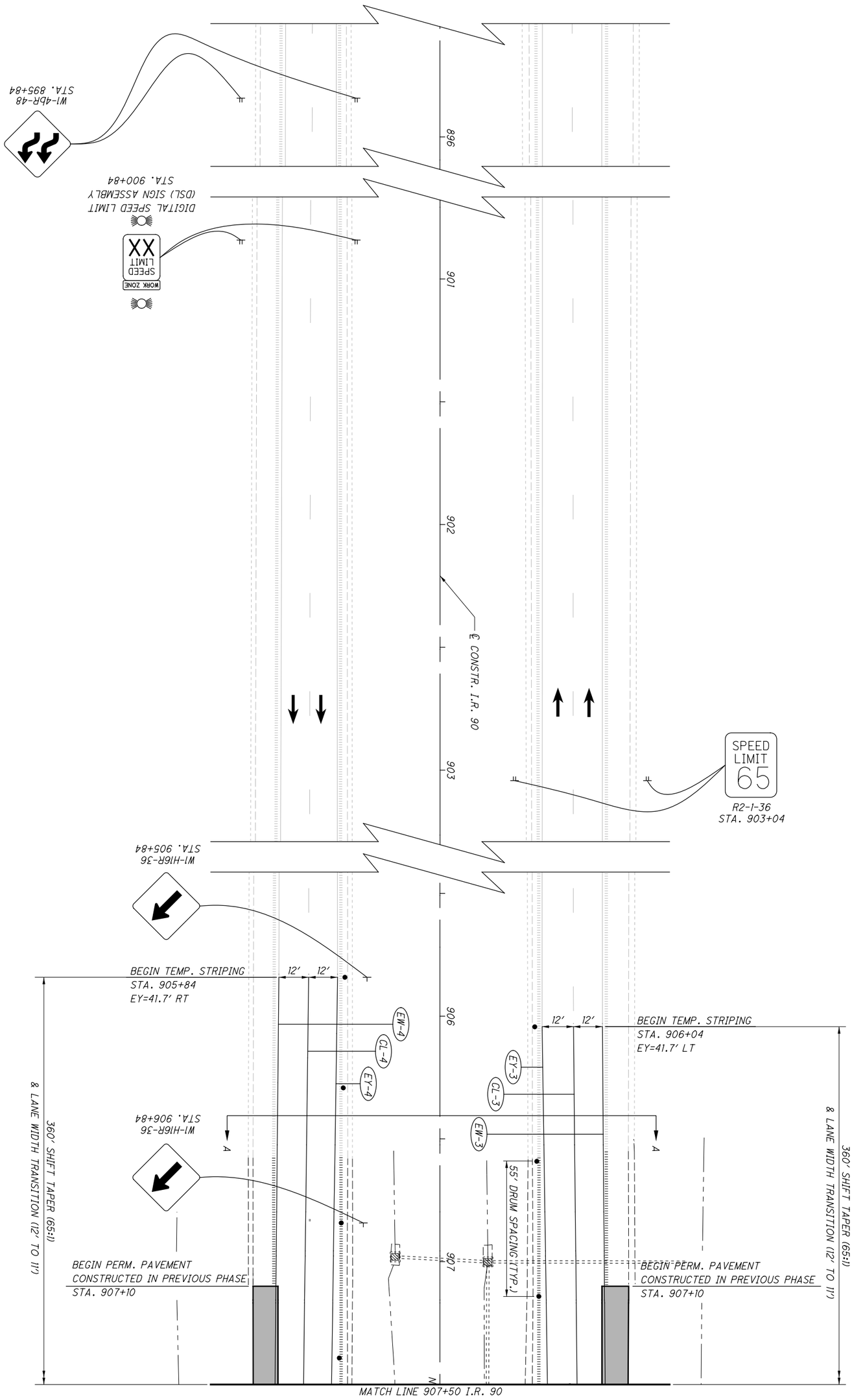
NOTES:
1. FOR LEGEND, SEE SHEET 20

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 1, PHASE 2 & PHASE 3 - 961+20 TO END

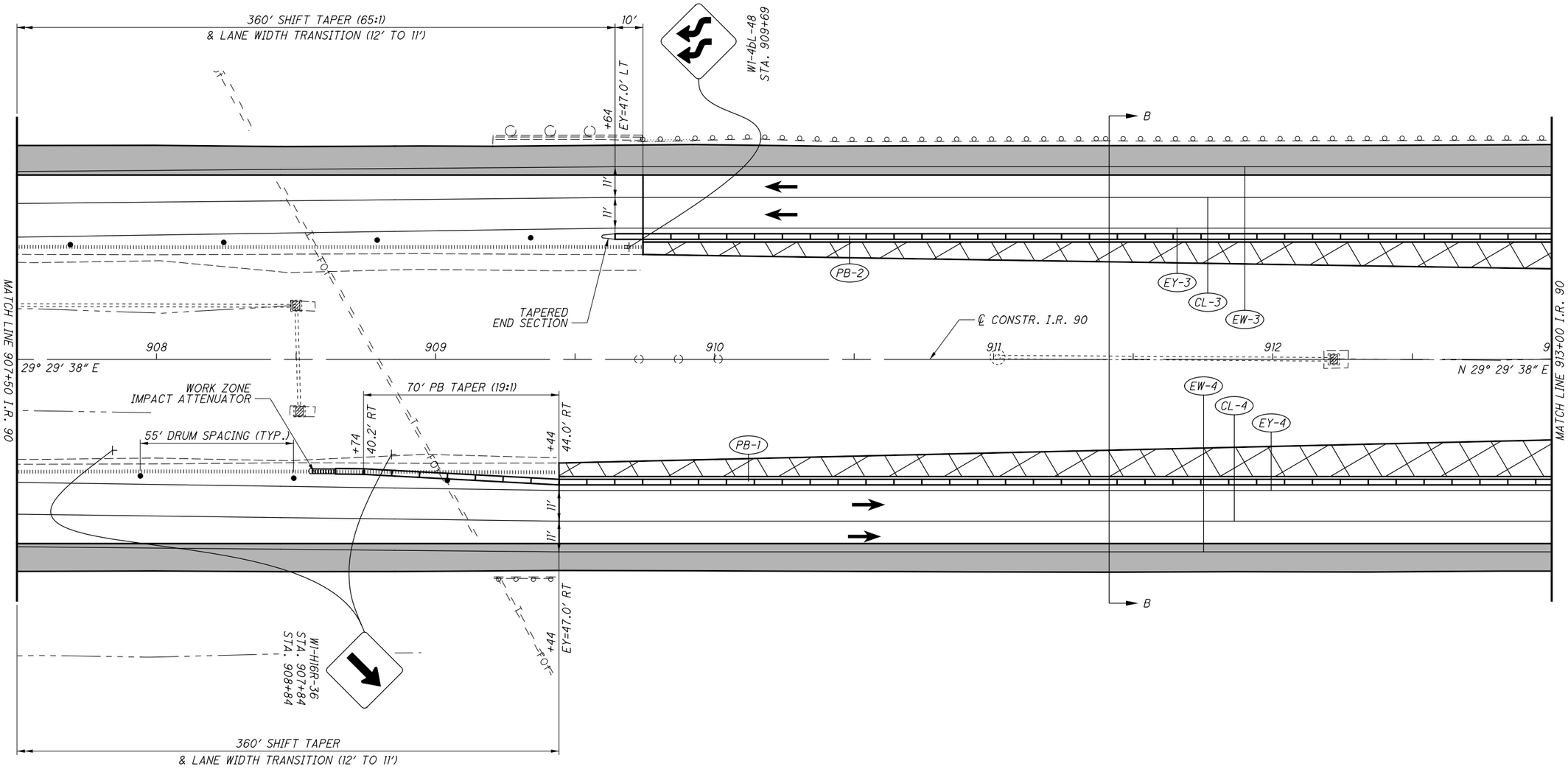
CALCULATED MLV
CHECKED JML

0 20 40 80
HORIZONTAL SCALE IN FEET



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

30 / 196	LOR-90-17.85	MAINTENANCE OF TRAFFIC - PHASE 2 STA. 895+84 TO STA. 907+50	CALCULATED MLV CHECKED JML	0 10 20 40 HORIZONTAL SCALE IN FEET



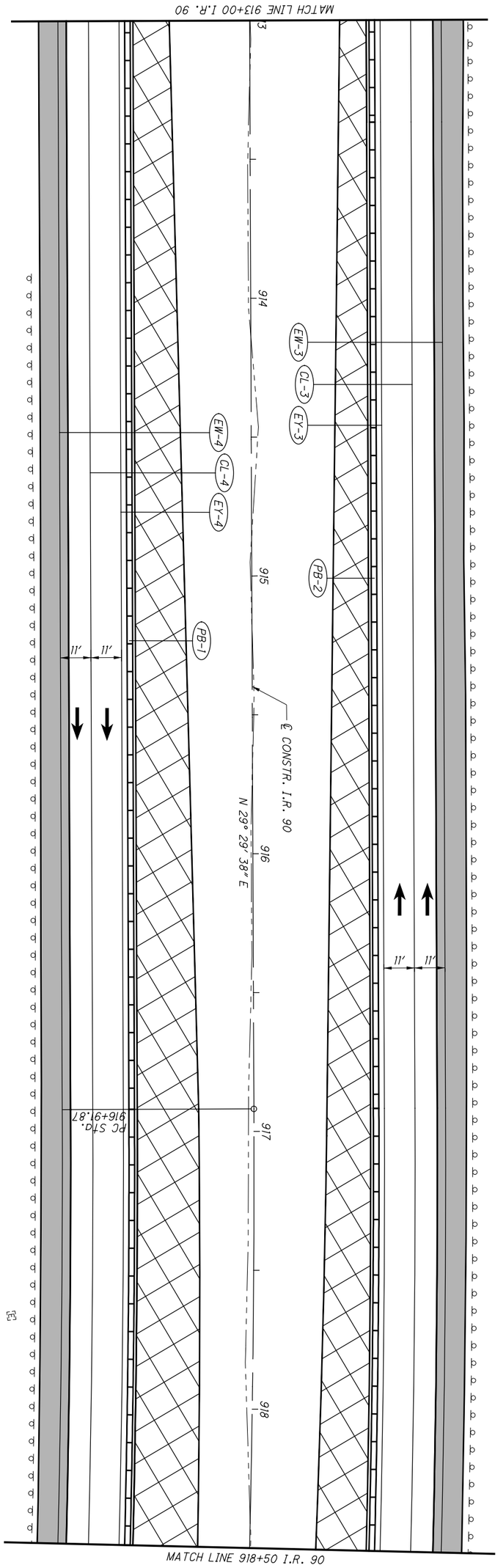
NOTES:
1. *FOR LEGEND, SEE SHEET 20*
2. *FOR TYPICAL SECTION, SEE SHEET 18*
3. *FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119*
4. *CONSTRUCTION WORK ZONE ACCESS SHALL BE ACCORDANCE WITH SCD MT-103.10.*

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 907+50 TO STA. 913+00

LOR-90-17.85



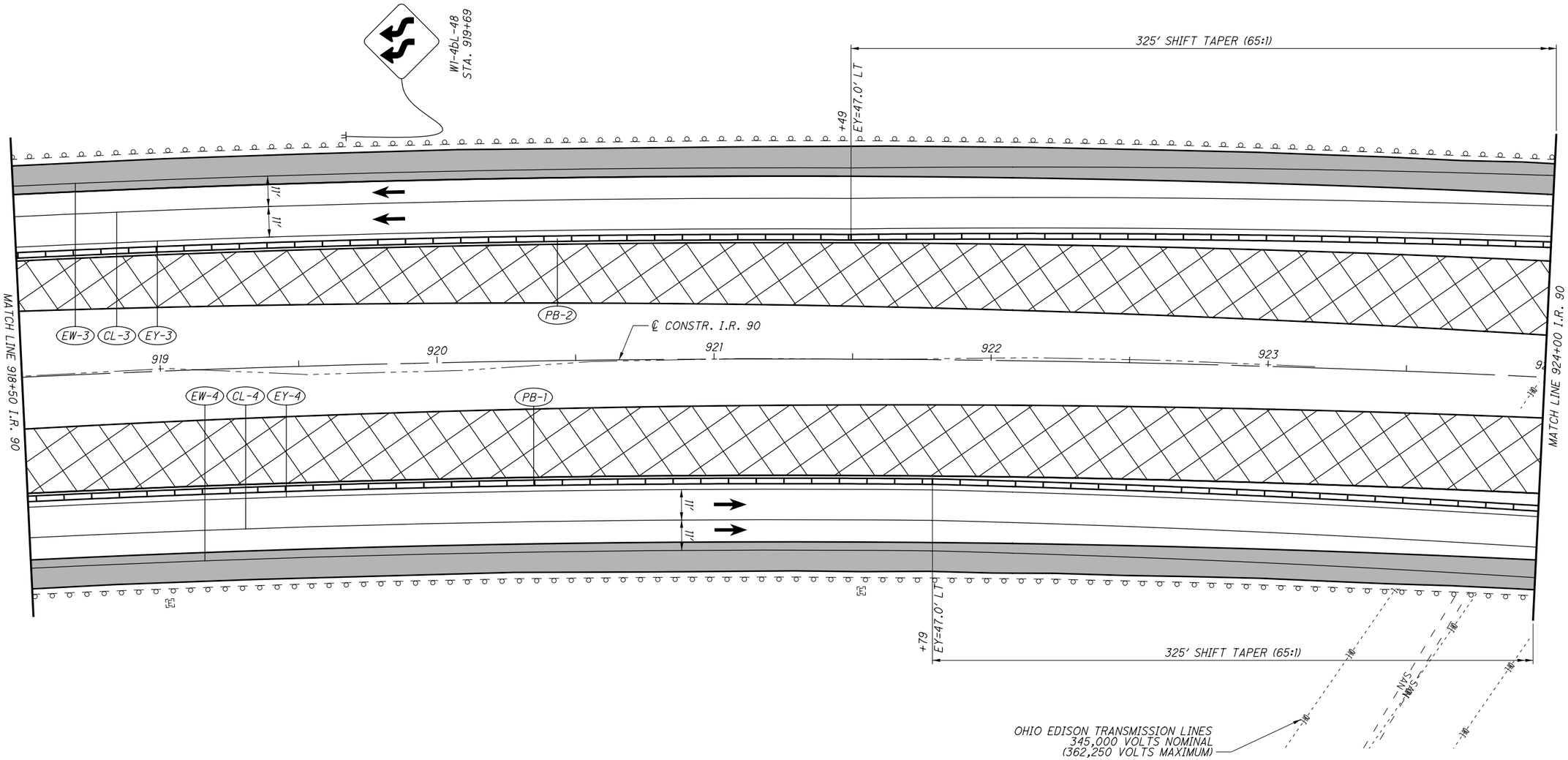
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 913+00 TO STA. 918+50

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



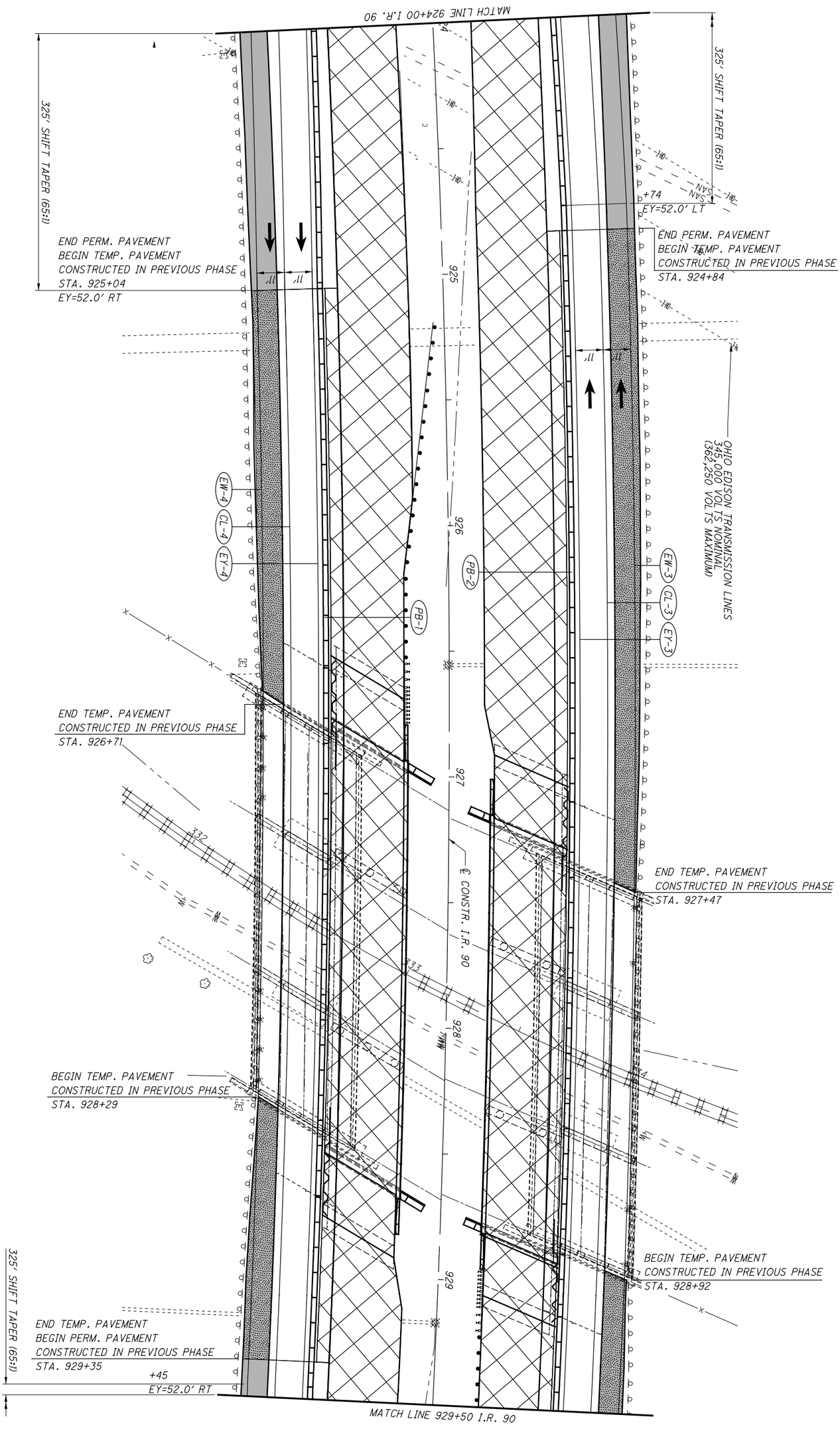
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

HORIZONTAL SCALE IN FEET
0 10 20 40

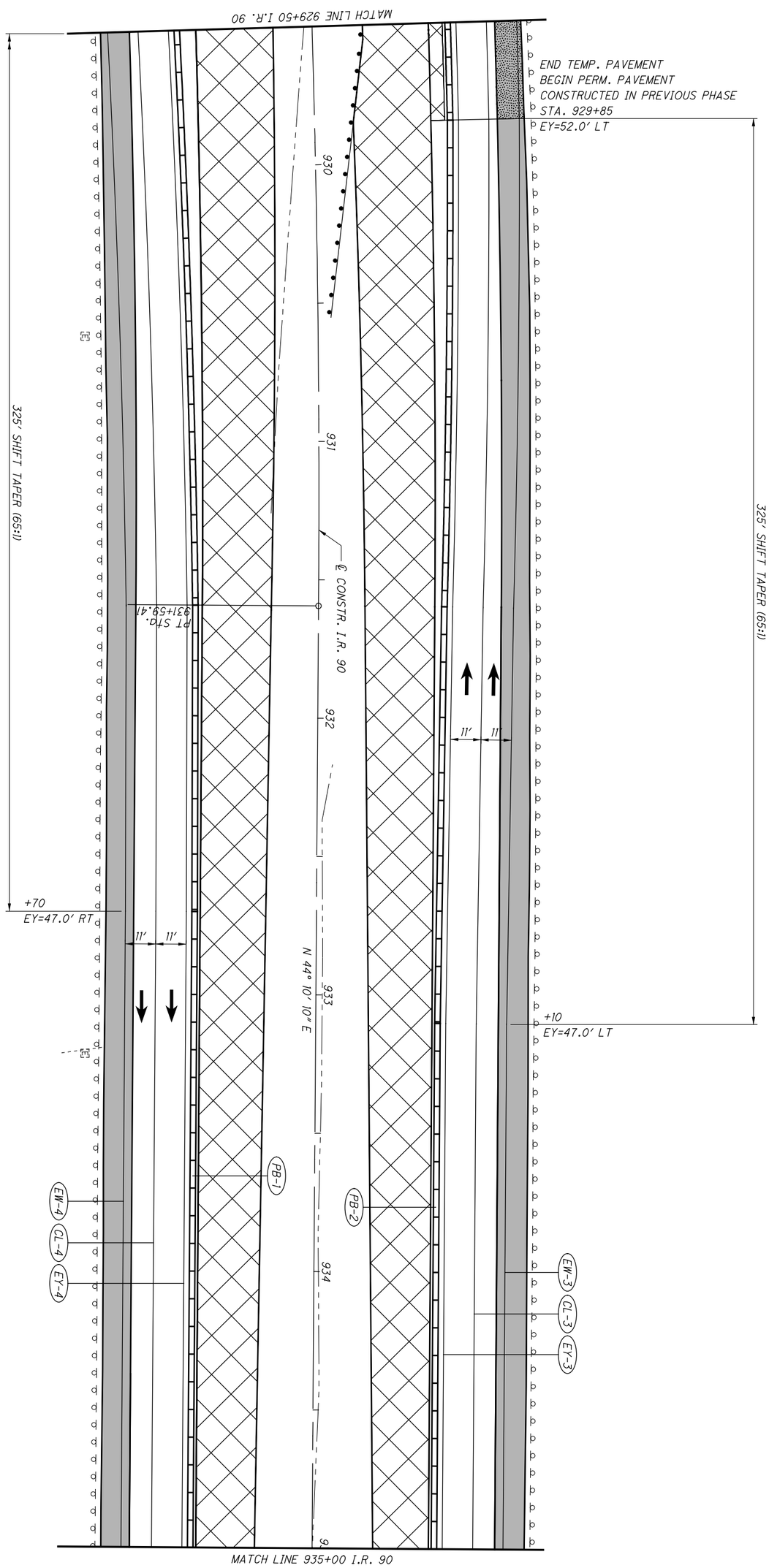
CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 918+50 TO STA. 924+00

LOR-90-17.85



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119



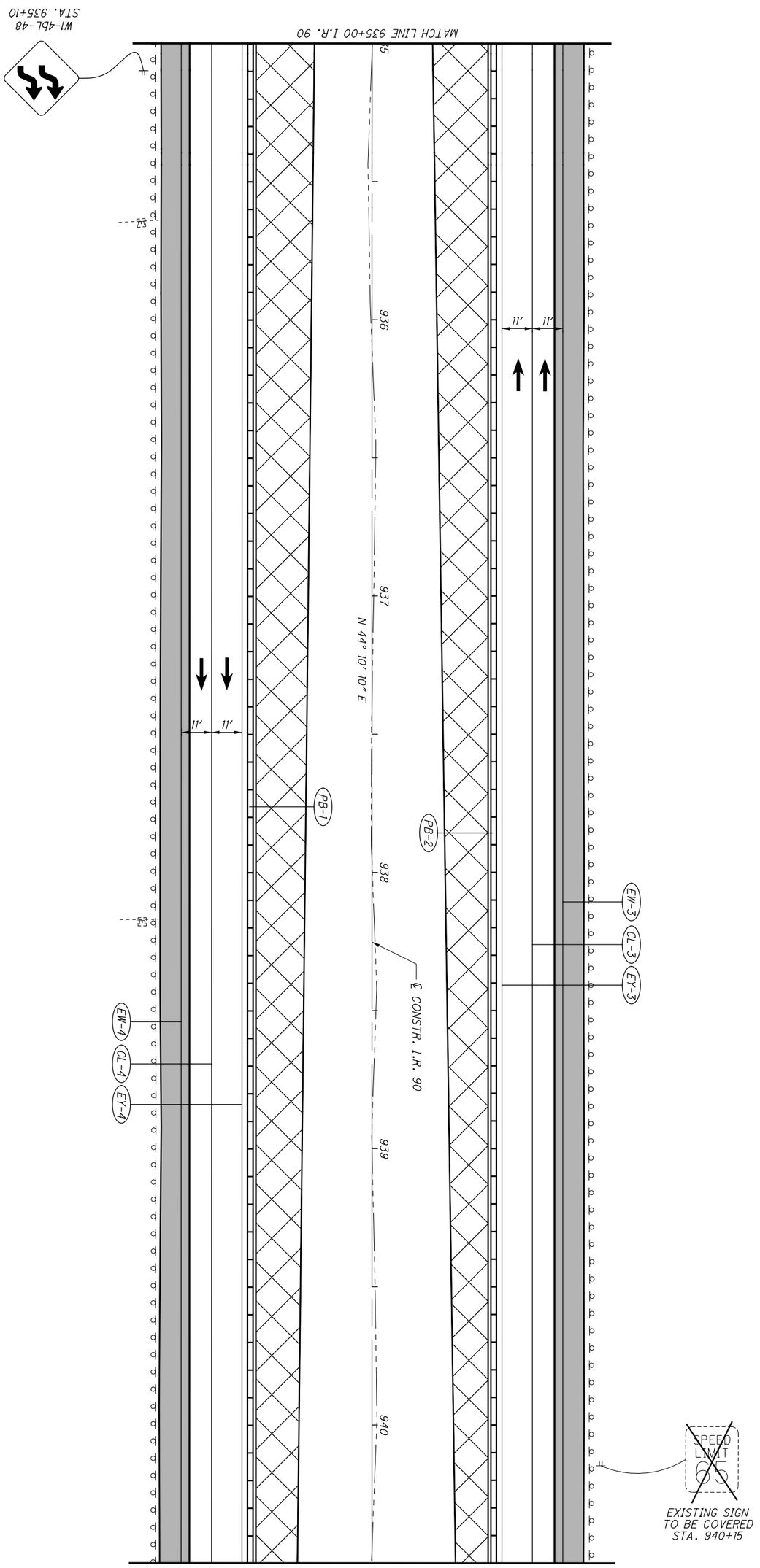
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

LOR-90-17.85

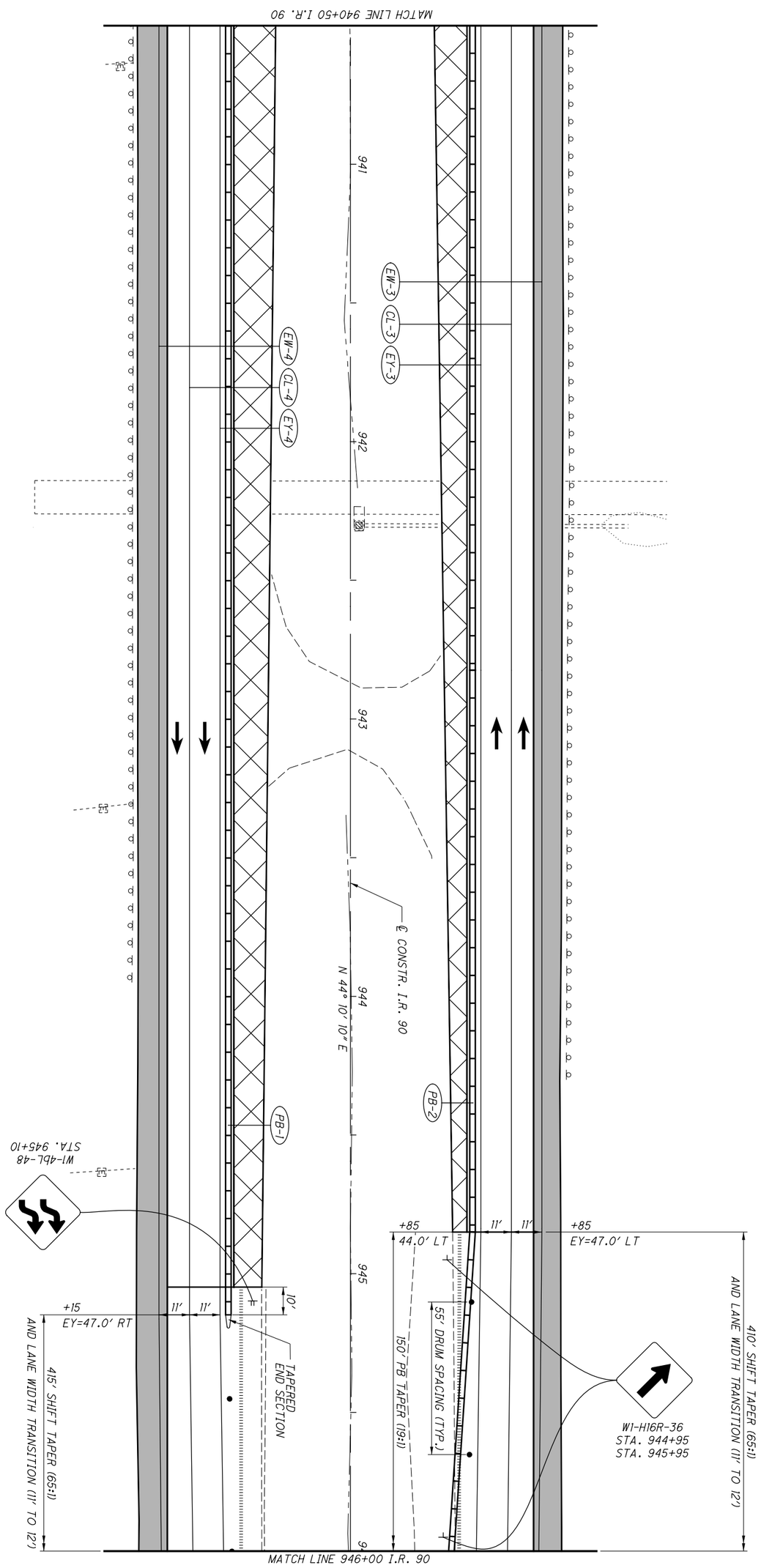
MAINTENANCE OF TRAFFIC - PHASE 2
STA. 929+50 TO STA. 935+00

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119



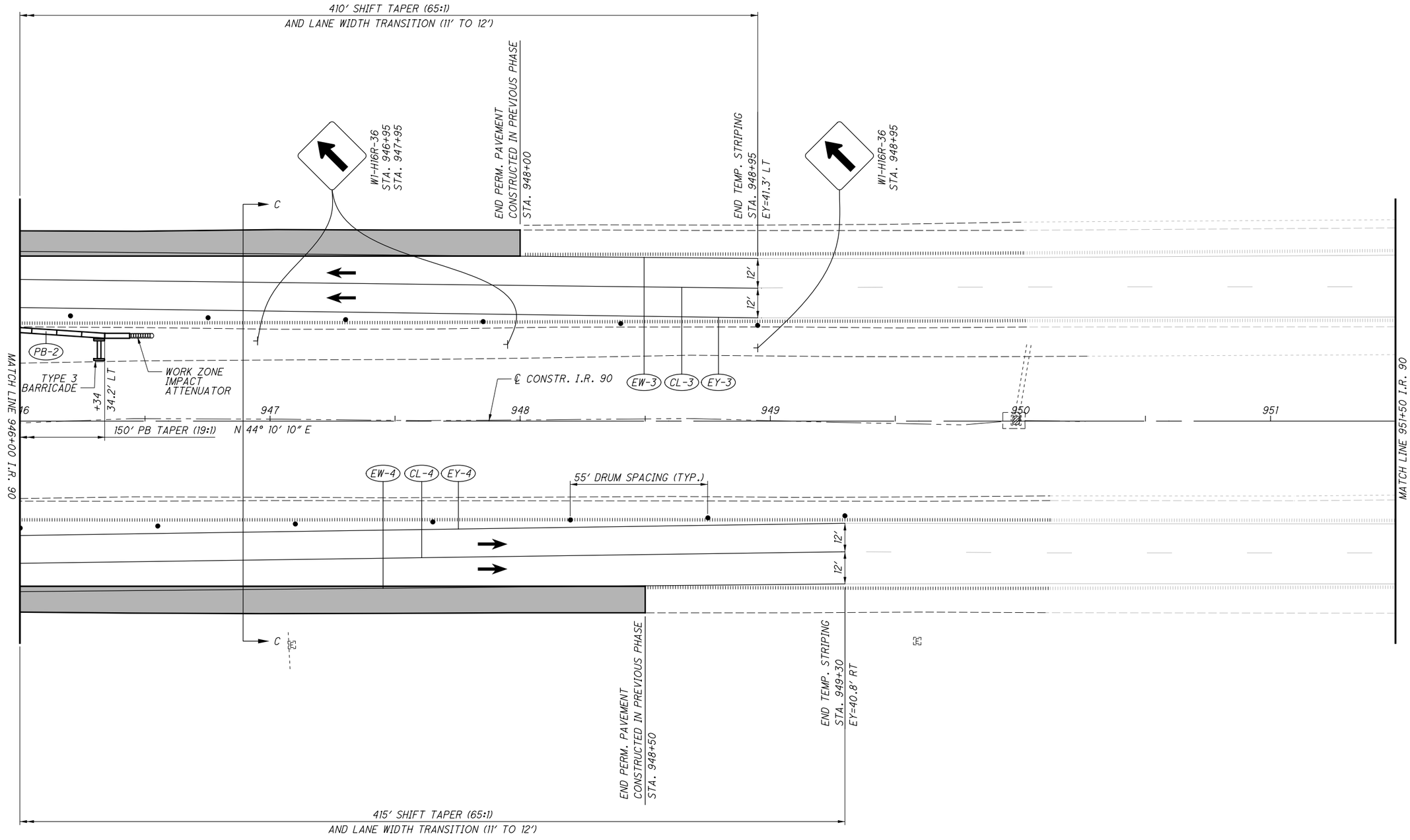
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 940+50 TO STA. 946+00

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



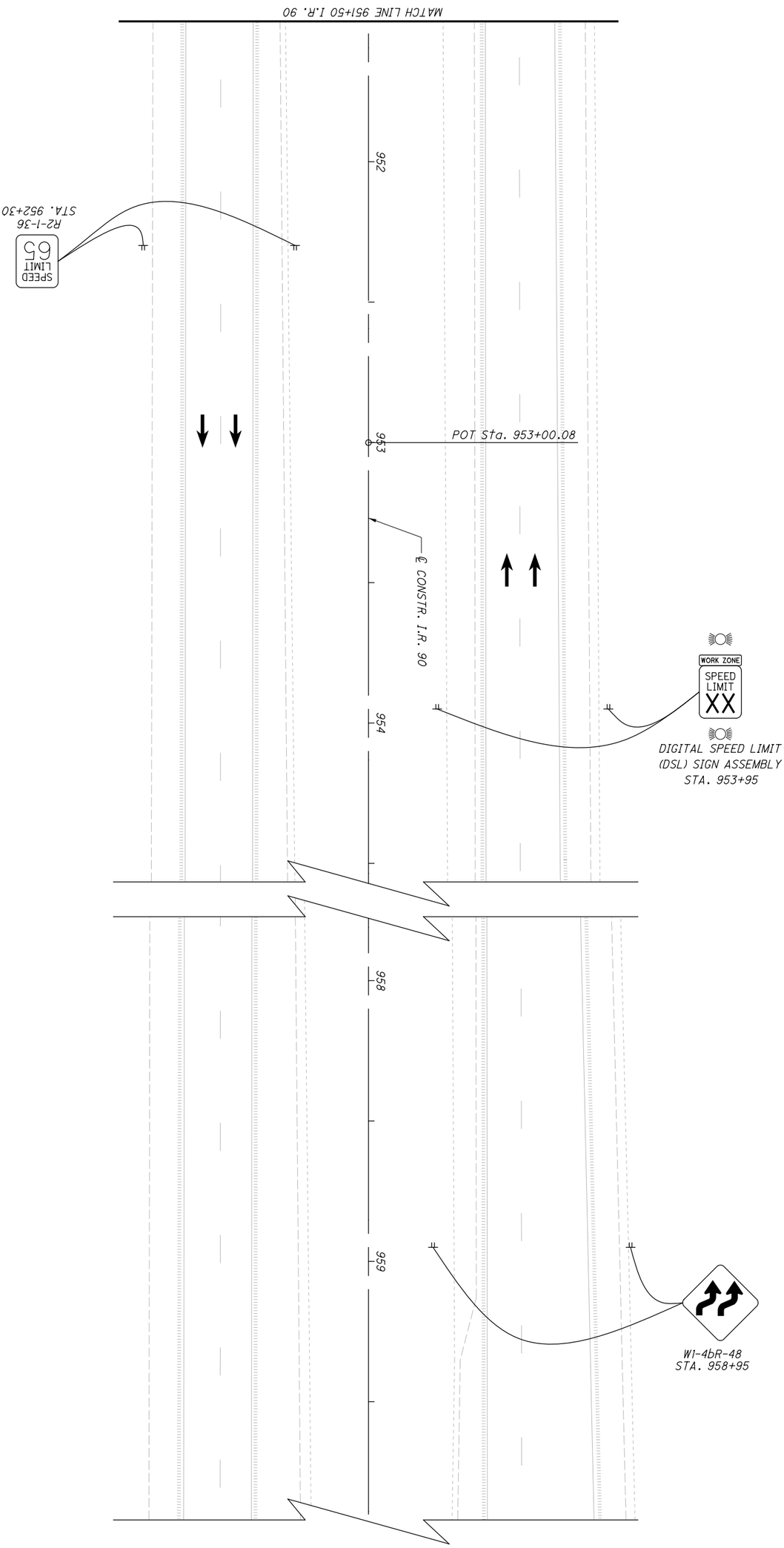
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 18
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. CONSTRUCTION WORK ZONE ACCESS SHALL BE ACCORDANCE WITH SCD MT-103.10.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 946+00 TO STA. 951+50

LOR-90-17.85



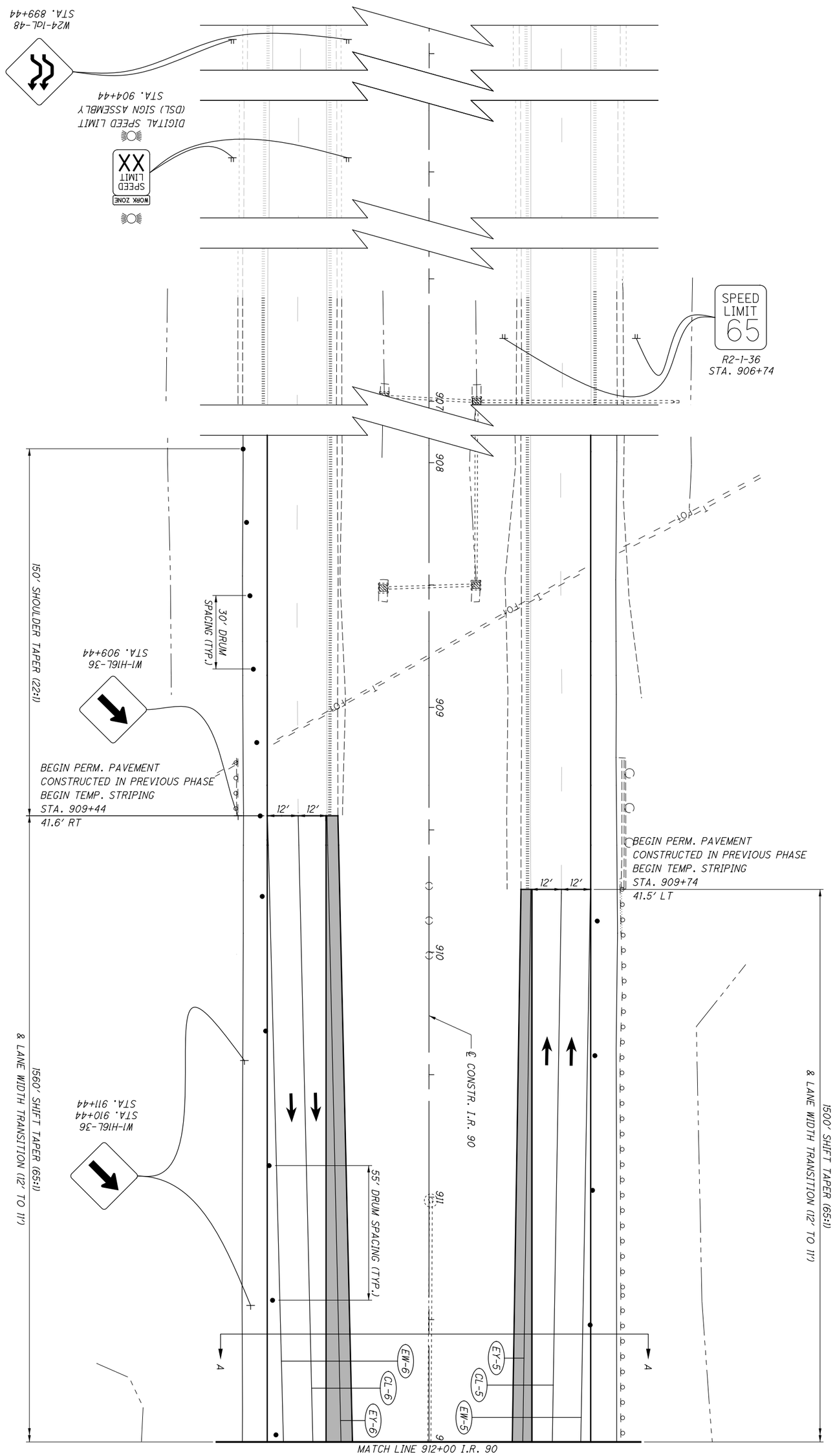
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 2
STA. 951+50 TO STA. 958+95

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



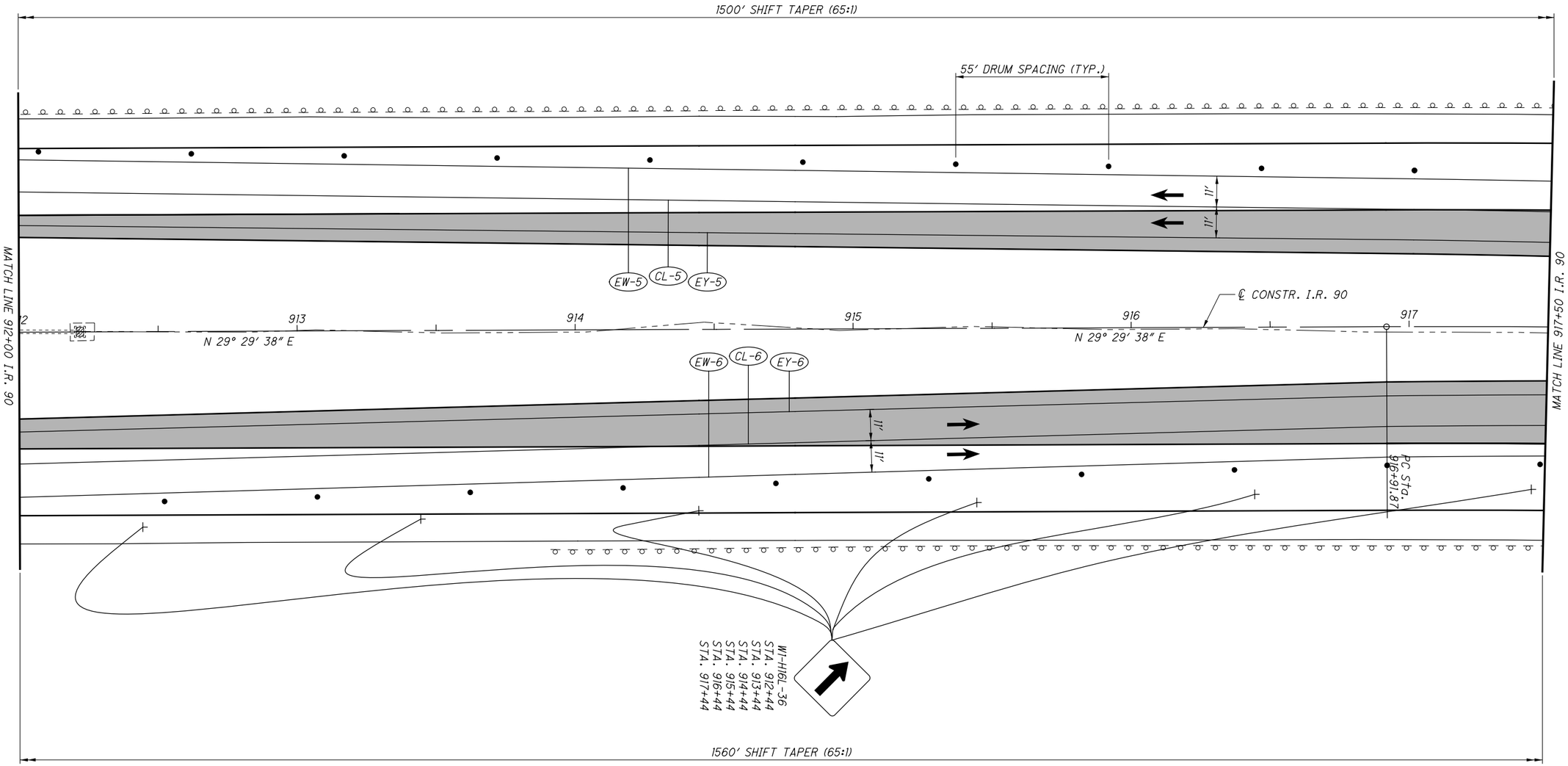
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. CONSTRUCTION WORK ZONE ACCESS SHALL BE ACCORDANCE WITH SCD MT-103.10.

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 899+44 TO STA. 912+00

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



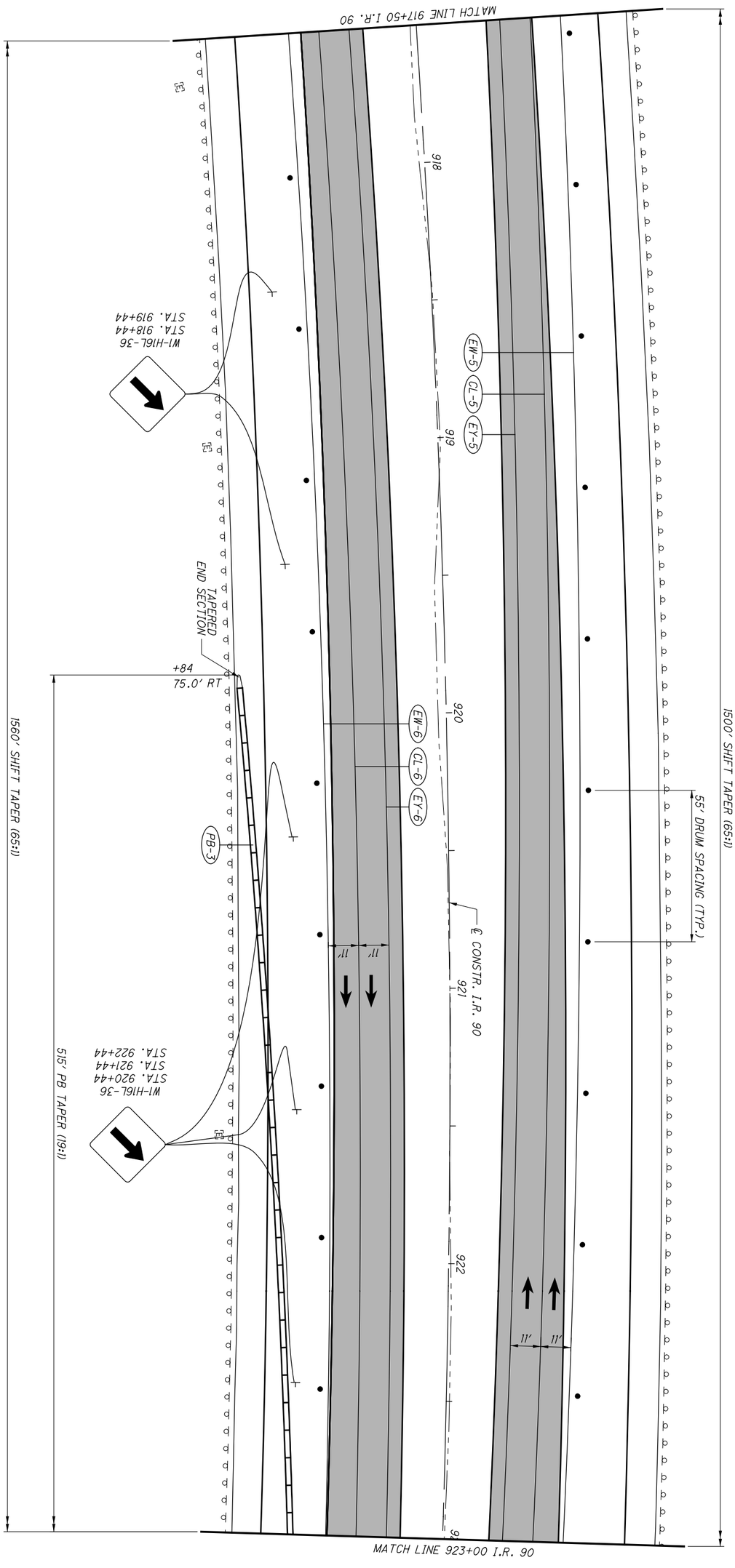
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

HORIZONTAL SCALE IN FEET
0 10 20 40

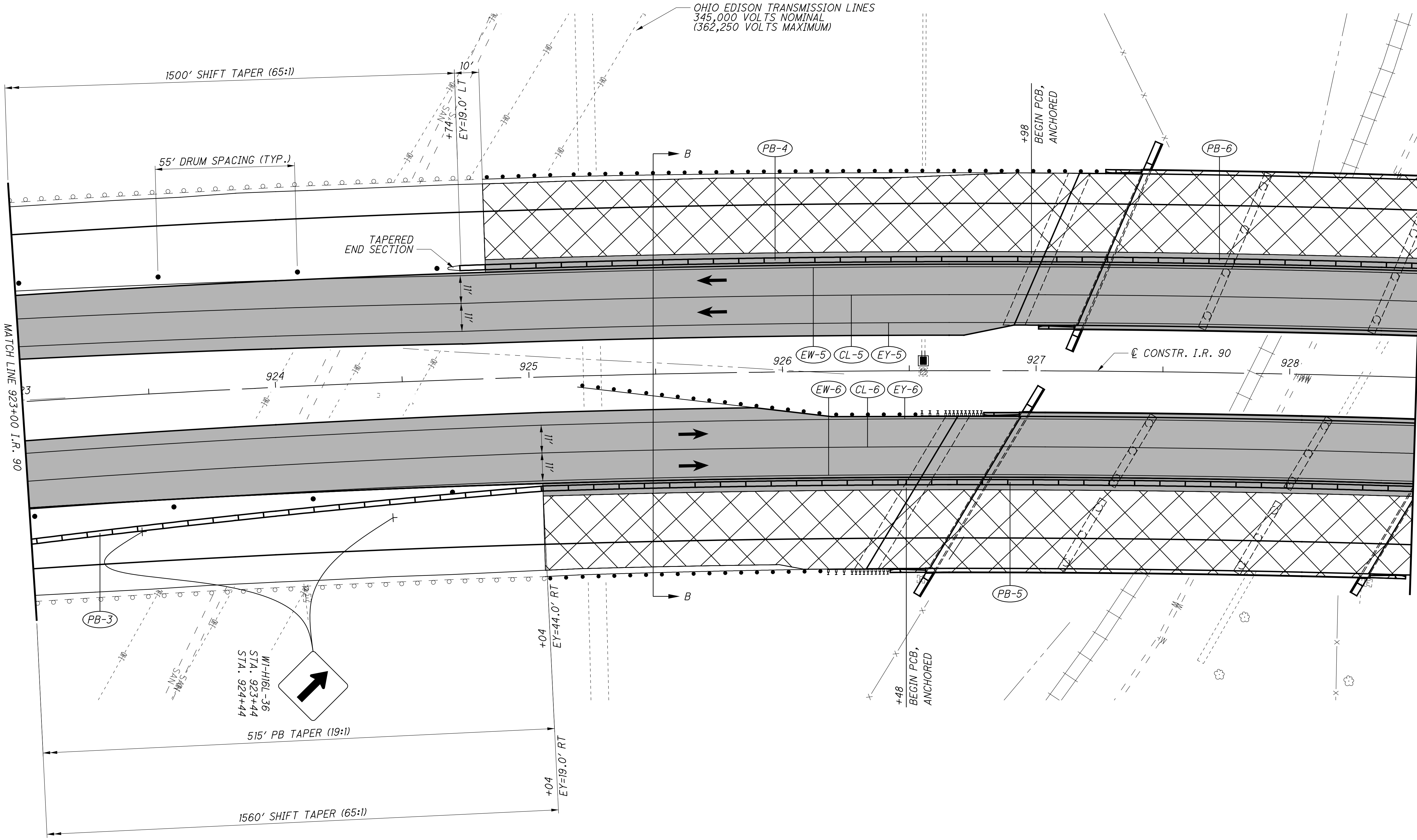
CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 912+00 TO STA. 917+50

LOR-90-17.85



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119



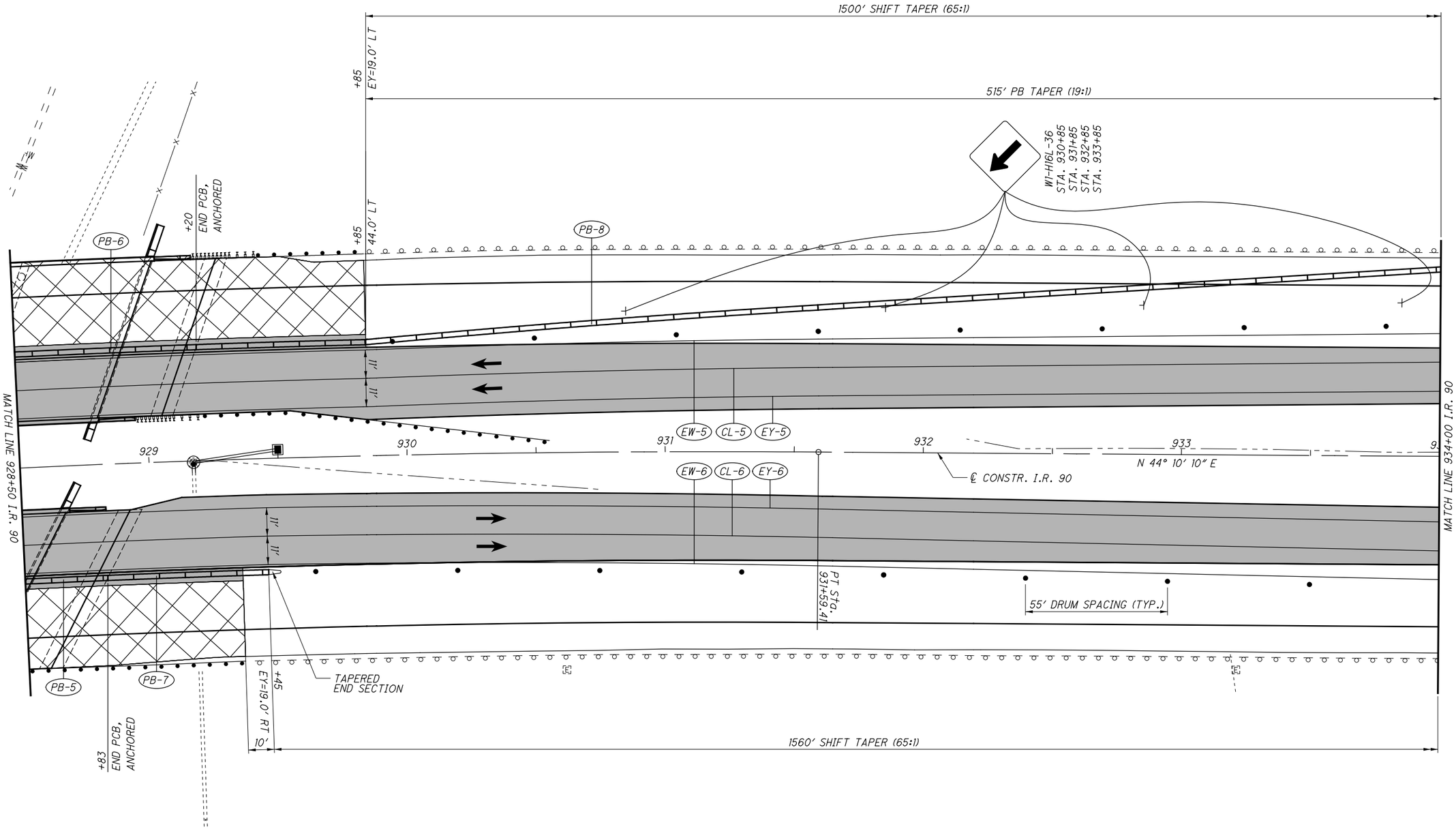
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

HORIZONTAL SCALE IN FEET: 0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 923+00 TO STA. 928+50

LOR-90-17.85



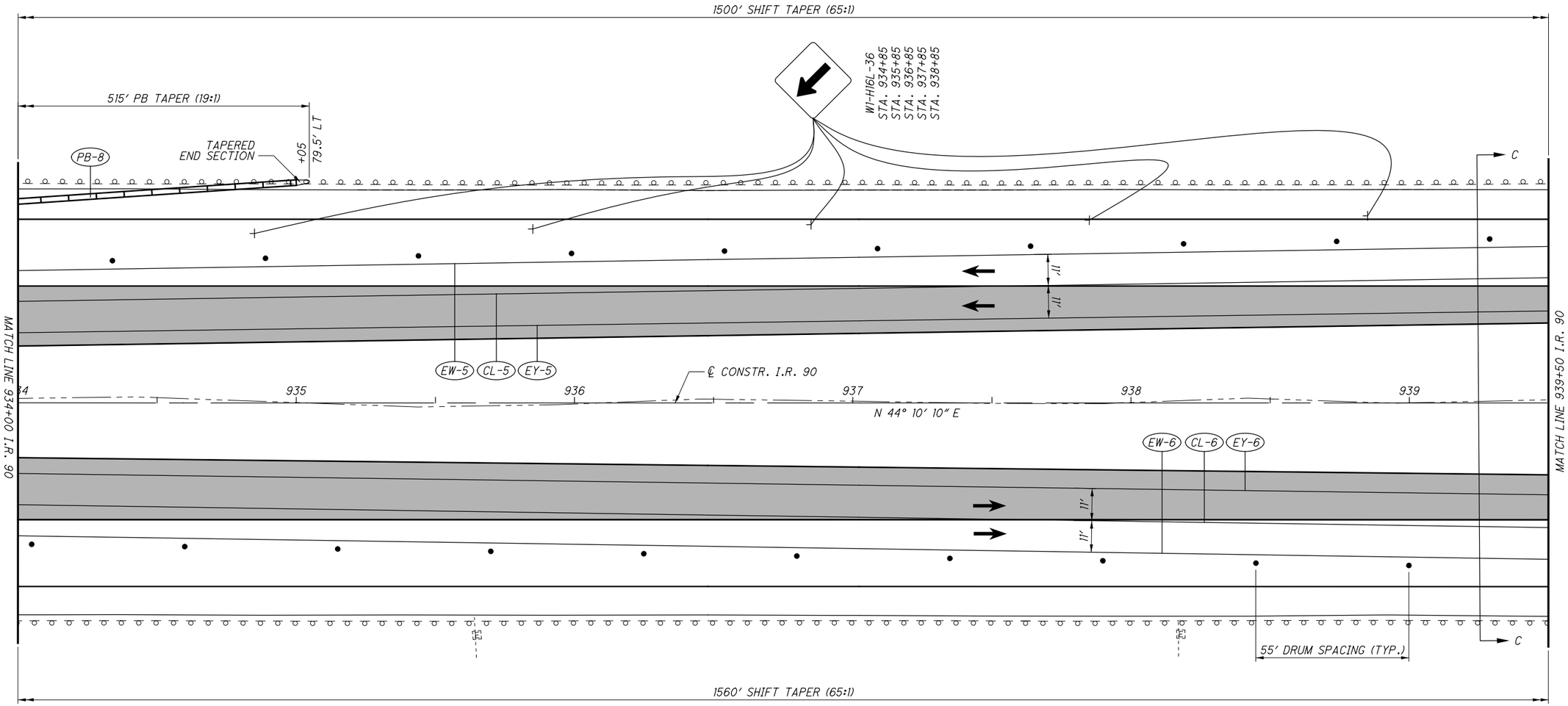
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 928+50 TO STA. 934+00

LOR-90-17.85



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 934+00 TO STA. 939+50

LOR-90-17.85

45
196

1500′ SHIFT TAPER (65:1)
AND LANE WIDTH TRANSITION (11′ TO 12′)

175′
SHOULDER
TAPER (22:1)

SPEED LIMIT 55

EXISTING SIGN
TO BE COVERED
STA. 940+15

W1-H16L-36
STA. 939+85
STA. 940+85
STA. 941+85
STA. 942+85
STA. 943+85
STA. 944+85

END PERM. PAVEMENT
CONSTRUCTED IN PREVIOUS PHASE
END TEMP. STRIPING
STA. 944+85
EY=40.7′ LT

12′
12′

EW-5 CL-5 EY-5

MATCH LINE 939+50 I.R. 90

940 941 942 943 944 945

℄ CONSTR. I.R. 90
N 44° 10′ 10″ E

MATCH LINE 945+05 I.R. 90

EW-6 CL-6 EY-6

12′
12′

55′ DRUM SPACING (TYP.)

END PERM. PAVEMENT
CONSTRUCTED IN PREVIOUS PHASE
END TEMP. STRIPING
STA. 945+05
EY=40.7′ RT

1560′ SHIFT TAPER (65:1)
AND LANE WIDTH TRANSITION (11′ TO 12′)

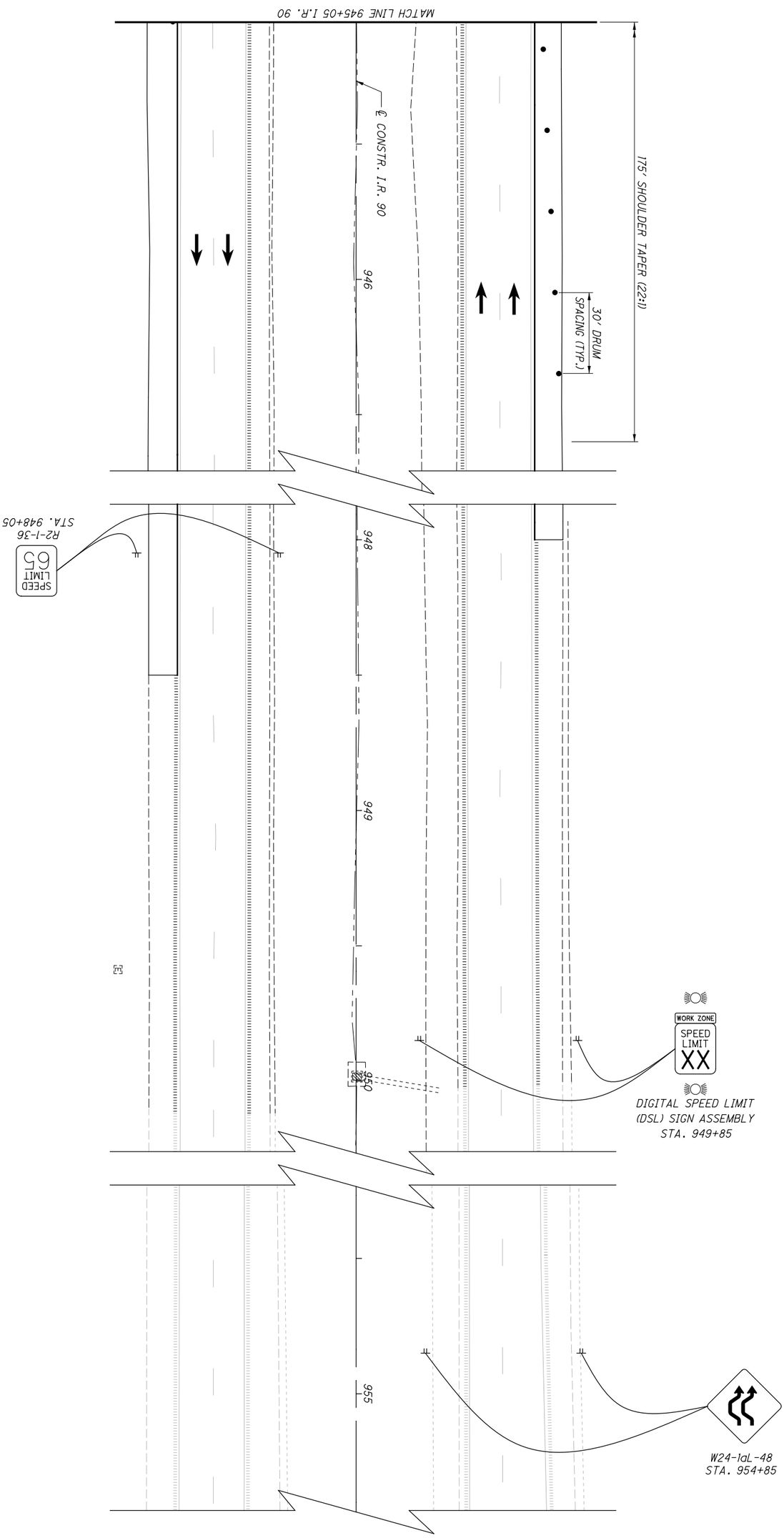
NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119
4. CONSTRUCTION WORK ZONE ACCESS SHALL BE ACCORDANCE WITH SCD MT-103.10.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 939+50 TO STA. 945+05

LOR-90-17.85



NOTES:
1. FOR LEGEND, SEE SHEET 20
2. FOR TYPICAL SECTION, SEE SHEET 19
3. FOR EXISTING SIGNS, SEE SIGNING AND PAVEMENT MARKINGS SHEETS, 111 - 119

LOR-90-17.85

MAINTENANCE OF TRAFFIC - PHASE 3
STA. 945+05 TO STA. 954+85

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET

SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
7	11	52	54	56	57	104	109	110											
																		ROADWAY	
LS														201	11000	LS		CLEARING AND GRUBBING	
			15,178											202	23000	15,178	SY	PAVEMENT REMOVED	
		1,225												202	38000	1,225	FT	GUARDRAIL REMOVED	
						6,342								203	10000	6,342	CY	EXCAVATION	
						4,363								203	20000	4,363	CY	EMBANKMENT	
			26,163											204	10000	26,163	SY	SUBGRADE COMPACTION	
13														204	45000	13	HOUR	PROOF ROLLING	
		764												606	15050	764	FT	GUARDRAIL, TYPE MGS	
		4												606	35000	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
																		EROSION CONTROL	
				69										601	20000	69	SY	CRUSHED AGGREGATE SLOPE PROTECTION	
				27										601	21050	27	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
2														659	00100	2	EACH	SOIL ANALYSIS TEST	
1,237				493										659	00300	1,730	CY	TOPSOIL	
						11,146								659	10000	11,146	SY	SEEDING AND MULCHING	
557														659	14000	557	SY	REPAIR SEEDING AND MULCHING	
557														659	15000	557	SY	INTER-SEEDING	
1.5														659	20000	1.5	TON	COMMERCIAL FERTILIZER	
0.26														659	31000	0.26	ACRE	LIME	
62														659	35000	62	MGAL	WATER	
2,786														659	40000	2,786	MSF	MOWING	
				4,439										670	00500	4,439	SY	SLOPE EROSION PROTECTION	
					LS									832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
					LS									832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
					LS									832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
					74,000									832	30000	74,000	EACH	EROSION CONTROL	
																		DRAINAGE	
				14,229										605	11100	14,229	FT	6" SHALLOW PIPE UNDERDRAINS	
				1,868										605	13300	1,868	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
				13,476										605	14000	13,476	FT	6" BASE PIPE UNDERDRAINS	
				537										611	00510	537	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
				33										611	04600	33	FT	12" CONDUIT, TYPE C	
				8										611	06100	8	FT	15" CONDUIT, TYPE C	
				2										611	98410	2	EACH	CATCH BASIN, NO. 8	
				1										611	99574	1	EACH	MANHOLE, NO. 3	
				17										611	99710	17	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
			13,665											252	01500	13,665	FT	FULL DEPTH PAVEMENT SAWING	
	3,488													253	01000	3,488	SY	PAVEMENT REPAIR	
			17,439											254	01000	17,439	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
	3,488													254	01600	3,488	SY	PATCHING PLANED SURFACE	
			7,147											302	46000	7,147	CY	ASPHALT CONCRETE BASE, PG64-22	
			4,361											304	20000	4,361	CY	AGGREGATE BASE	
			6,464											407	20000	6,464	GAL	NON-TRACKING TACK COAT	
			1,683											442	10000	1,683	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	
			1,963											442	10100	1,963	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	
			490											617	10100	490	CY	COMPACTED AGGREGATE	
			14,410											618	40100	14,410	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
																		ELECTRICAL	
		2												625	31510	2	EACH	PULL BOX REMOVED	
																		TRAFFIC CONTROL	
								59						621	00100	59	EACH	RPM	
								50						621	54000	50	EACH	RAISED PAVEMENT MARKER REMOVED	
							54							630	02100	54	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
							63							630	03100	63	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
							36							630	06500	36	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9	

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GENERAL SUMMARY

LOR-90-17.85

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		109	110	130														TRAFFIC CONTROL (CONTI.)	
		2												630	09000	2	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
		44												630	80100	44	SF	SIGN, FLAT SHEET	
		33												630	80200	33	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
		2												630	84500	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
		6												630	84900	6	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		1												630	85400	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
		8												630	86002	8	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
		2												630	86102	2	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
			2.77											644	00104	2.77	MILE	EDGE LINE, 6"	
			1.28											644	00204	1.28	MILE	LANE LINE, 6"	
			0.13											646	10010	0.13	MILE	EDGE LINE, 6"	
			0.06											646	10110	0.06	MILE	LANE LINE, 6"	
																		STRUCTURE OVER 20 FOOT SPAN (LOR-90-1785 L, 4704895)	
				LS										202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	126
				134										202	22900	134	SY	APPROACH SLAB REMOVED	
				639										202	23500	639	SY	WEARING COURSE REMOVED	
				LS										503	11100	LS		COFFERDAMS AND EXCAVATION BRACING (TEMPORARY SHORING)	
				LS										503	21300	LS		UNCLASSIFIED EXCAVATION	
				812										504	11101	812	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 1)	127
				877										504	11101	877	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 2)	127
				LS										505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
				1,500										507	00200	1,500	FT	STEEL PILES HP12X53, FURNISHED	
				1,350										507	00250	1,350	FT	STEEL PILES HP12X53, DRIVEN	
				138,107										509	10000	138,107	LB	EPOXY COATED REINFORCING STEEL	
				349										511	34447	349	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	127
				58										511	34450	58	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
				90										511	41012	90	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS	
				114										511	43512	114	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
				773										512	10100	773	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
				4										512	33000	4	SY	TYPE 2 WATERPROOFING	
				240,810										513	10281	240,810	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN	127
				8,334										513	20000	8,334	EACH	WELDED STUD SHEAR CONNECTORS	
				2										513	95030	2	EACH	STRUCTURAL STEEL, MISC.: TEMPORARY BEAM END RETROFIT	127
				137										516	13200	137	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
				124										516	13600	124	SF	1" PREFORMED EXPANSION JOINT FILLER	
				58										516	13900	58	SF	2" PREFORMED EXPANSION JOINT FILLER	
				165										516	14014	165	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
				16										516	44100	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)	
																		(15" x 14" x 2.499" PAD WITH 17" x 15" x 2.000" LOAD PLATE)	
				16										516	44201	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	178
																		AS PER PLAN	
																		(13" x 12" x 3.398" PAD WITH 17" x 13" x 1.500" TOP LOAD PLATE,	
																		14" x 13" x 1.500" BOTTOM LOAD PLATE AND HP SECTION)	
				121										518	21200	121	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
				167										518	40000	167	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
				63										518	40011	63	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	144
				40										524	94704	40	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK	
				176										524	94802	176	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK	
				59										524	94803	59	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN	127
				343										526	25010	343	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")	
				130										526	90010	130	FT	TYPE A INSTALLATION	
				1,105										601	12001	1,105	SY	RIPRAP, WITH GROUT, AS PER PLAN	127
				LS										SPECIAL	69091000	LS		AS-BUILT CONSTRUCTION PLANS	126
				54										846	00110	54	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

CALCULATED HB
CHECKED SNP

GENERAL SUMMARY

LOR-90-17.85

SHEET NUM.	PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
130							
						STRUCTURE OVER 20 FOOT SPAN (LOR-90-1785 R, 4704925)	
LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	126
134		202	22900	134	SY	APPROACH SLAB REMOVED	
688		202	23500	688	SY	WEARING COURSE REMOVED	
LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING (TEMPORARY SHORING)	
LS		503	21300	LS		UNCLASSIFIED EXCAVATION	
847		504	11101	847	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 3)	127
918		504	11101	918	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 4)	127
LS		505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
1,600		507	00200	1,600	FT	STEEL PILES HP12X53, FURNISHED	
1,440		507	00250	1,440	FT	STEEL PILES HP12X53, DRIVEN	
142,171		509	10000	142,171	LB	EPOXY COATED REINFORCING STEEL	
369		511	34447	369	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	127
61		511	34450	61	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
104		511	41012	104	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS	
120		511	43512	120	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
904		512	10100	904	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
4		512	33000	4	SY	TYPE 2 WATERPROOFING	
263,230		513	10281	263,230	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN	127
8,004		513	20000	8,004	EACH	WELDED STUD SHEAR CONNECTORS	
2		513	95030	2	EACH	STRUCTURAL STEEL, MISC.: TEMPORARY BEAM END RETROFIT	127
111		516	13200	111	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
70		516	13600	70	SF	1" PREFORMED EXPANSION JOINT FILLER	
62		516	13900	62	SF	2" PREFORMED EXPANSION JOINT FILLER	
193		516	14014	193	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
16		516	44100	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)	
						(15" x 14" x 2.499" PAD WITH 17" x 15" x 2.000" LOAD PLATE)	
16		516	44201	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (13" x 12" x 3.848" PAD WITH 17" x 13" x 1.500" TOP LOAD PLATE, 14" x 13" x 1.500" BOTTOM LOAD PLATE AND HP SECTION)	178
129		518	21200	129	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
173		518	40000	173	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
70		518	40011	70	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	144
120		524	94704	120	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK	
150		524	94802	150	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK	
75		524	94803	75	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN	127
343		526	25010	343	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")	
139		526	90010	139	FT	TYPE A INSTALLATION	
1,215		601	12001	1,215	SY	RIPRAP, WITH GROUT, AS PER PLAN	127
LS		SPECIAL	69091000	LS		AS-BUILT CONSTRUCTION PLANS	126
58		846	00110	58	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

CALCULATED HB
CHECKED SNP

GENERAL SUMMARY

LOR-90-17.85

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	8	9	10	11	15													MAINTENANCE OF TRAFFIC	
					1,270									614	11630	1,270	FT	INCREASED BARRIER DELINEATION	
					2									614	12380	2	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	
	2													614	12484	2	EACH	WORK ZONE INCREASED PENALTIES SIGN	
	15													614	12500	15	EACH	REPLACEMENT SIGN	
	50													614	12600	50	EACH	REPLACEMENT DRUM	
					1,740									614	12801	1,740	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	10
					19									614	13310	19	EACH	BARRIER REFLECTOR, TYPE 1, (ONE WAY)	
					142									614	13310	142	EACH	BARRIER REFLECTOR, TYPE 1, (TWO WAY)	
					19									614	13350	19	EACH	OBJECT MARKER, ONE WAY	
					142									614	13360	142	EACH	OBJECT MARKER, TWO WAY	
		18												614	18601	18	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	9
					5,683									615	20001	5,683	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	8
	55													616	10000	55	MGAL	WATER	
					1,550									622	41100	1,550	FT	PORTABLE BARRIER, UNANCHORED	
					7,820									622	41110	7,820	FT	PORTABLE BARRIER, ANCHORED	
					9.54									642	00105	9.54	MILE	EDGE LINE, 6", TYPE 1, AS PER PLAN	11
					25,182									642	00401	25,182	FT	CHANNELIZING LINE, 8", TYPE 1, AS PER PLAN	11
				36										808	18700	36	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	
																		INCIDENTALS	
														100	00300	LS		PREMIUM ON RAILROADS' PROTECTIVE PUBLIC LIABILITY AND PROPERTY DAMAGE	
																		LIABILITY INSURANCE	
			1,000											614	11000	LS		MAINTAINING TRAFFIC	
														614	11110	1,000	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
														619	16020	15	MNTH	FIELD OFFICE, TYPE C	
														623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
														624	10000	LS		MOBILIZATION	

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GENERAL SUMMARY

LOR-90-17.85

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVED		606 GUARDRAIL TYPE MGS	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	625 PULL BOX REMOVED												
						FT		FT	EACH	EACH												
63-65	R-1	IR-90	923+96.54	926+90.65	RT	295																
63-65	R-2	IR-90	924+84.23	927+46.86	LT	266																
63-65	G-1	IR-90	924+84.23	927+28.75	LT			248														
65	R-3	IR-90	925+04.23	926+67.76	RT	161																
65	G-2	IR-90	925+04.23	926+41.99	RT			112	1													
65	G-3	IR-90	925+19.06	926+79.39	RT			136	1													
65	R-4	IR-90	936+54.30		RT					1												
65	R-5	IR-90	928+27.38	929+35.00	RT	106																
65	R-6	IR-90	928+33.21		RT					1												
65	G-4	IR-90	928+46.04	929+35.00	RT			88														
65-67	R-7	IR-90	928+81.47	931+85.81	LT	307																
65	R-8	IR-90	928+96.18	929+85.00	LT	90																
65-67	G-5	IR-90	928+95.29	930+55.19	LT			137	1													
65	G-6	IR-90	929+18.79	929+85.00	LT			43	1													
TOTALS CARRIED TO GENERAL SUMMARY						1225		764	4	2												

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ROADWAY SUBSUMMARY

LOR-90-17.85

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LOCATION	STATION TO STATION		SIDE	LENGTH L	AVERAGE WIDTH W	SURFACE AREA A A=LxW	COMPUTER GENERATED AREA	202 PAVEMENT REMOVED	204 SUBGRADE COMPACTION	252 FULL DEPTH PAVEMENT SAWING	254 PAVEMENT PLANING, ASPHALT CONCRETE	302 5" ASPHALT CONCRETE BASE, PG64-22	302 5 1/2" ASPHALT CONCRETE BASE, PG64-22	304 6" AGGREGATE BASE	407 NON-TRACKING TACK COAT, 0.08 GAL/YD	442 1 1/2"ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	617 COMPACTED AGGREGATE	618 RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)
				FT	FT	SQ FT	SQ FT	SY	SY	FT	SY	CY	CY	CY	GAL	CY	CY	CY	FT
IR-90 WB	907+10.00		LT							10.85									
IR-90 EB	907+10.00		RT							10.08									
IR-90 WB	907+10.00	924+84.23	LT							1774.23									
IR-90 EB	907+10.00	925+04.23	RT							1794.23									
IR-90 WB	907+10.00	927+09.92	LT	1999.92															2000
IR-90 WB	907+10.00	924+84.23	LT	1774.23	10.8	19161.68		2129.08											
IR-90 WB	907+10.00	909+74.31	LT				2785.74								49.52	12.90	15.04		
IR-90 WB	907+10.00	924+84.23	LT				19590.43					302.35							
IR-90 WB	907+10.00	924+84.23	LT				20482.88						347.68						
IR-90 WB	907+10.00	924+84.23	LT				21375.37		2375.04					395.84					
IR-90 EB	907+10.00	926+37.33	RT	1927.33															1927
IR-90 EB	907+10.00	913+30.23	RT	620.23	12.5	7752.87		861.43											
IR-90 EB	907+10.00	990+44.23	RT				2339.12								41.58	10.83	12.63		
IR-90 EB	907+10.00	925+04.23	RT				18973.08					292.82							
IR-90 EB	907+10.00	925+04.23	RT				19864.73						337.19						
IR-90 EB	907+10.00	925+04.23	RT				20756.35		2306.26					384.38					
IR-90 WB	907+10.00	927+16.57	LT	2006.57														68.11	
IR-90 EB	907+10.00	926+32.48	RT	1922.48														65.26	
IR-90 EB	909+44.23	926+56.17	LT	1711.94															1712
IR-90 EB	909+44.23	925+04.23	LT	1560.00	6	9360.00		1040.00											
IR-90 EB	909+44.23	926+69.06	LT&RT				92598.83								1646.20	428.70	500.03		
IR-90 EB	909+44.23	925+04.23	LT				30885.83					476.67							
IR-90 EB	909+44.23	925+04.23	LT				31664.80						537.48						
IR-90 EB	909+44.23	925+04.23	LT				32443.80		3604.87					600.81					
IR-90 EB	909+44.23	925+04.23	LT&RT	1560.00	24	37440.00					4160.00								
IR-90 EB	909+44.23		RT							4.83									
IR-90 EB	909+44.23	925+04.23	RT							1560.00									
IR-90 EB	909+44.23	926+69.06	RT	1724.83														58.55	
IR-90 WB	909+74.31	926+96.92	RT	1722.61															1723
IR-90 WB	909+74.31		LT							4.44									
IR-90 WB	909+74.31	924+84.23	LT							1509.92									
IR-90 WB	909+74.31	912+81.03	RT	306.72	10	3067.20		340.80											
IR-90 WB	909+74.31	927+16.57	LT&RT				91135.51								1620.19	421.92	492.13		
IR-90 WB	909+74.31	924+84.23	RT				25184.76					388.68							
IR-90 WB	909+74.31	924+84.23	RT				25941.18						440.33						
IR-90 WB	909+74.31	924+84.23	RT				26697.57		2966.40					494.40					
IR-90 WB	909+74.31	924+84.23	LT&RT	1509.92	24	36238.08					4026.45								
IR-90 WB	909+74.31	926+91.26	LT	1716.95														58.28	
IR-90 WB	912+81.03	924+84.23	RT	1203.2	6	7219.2		802.13											
IR-90 EB	913+30.23	925+04.23	RT	1174	10.5	12327		1369.67											
IR-90 WB	924+84.23	927+11.32	LT&RT	227.09	40	9083.60		1009.29											
IR-90 WB	924+84.23	927+16.57	LT&RT				13971.54					215.63							
IR-90 WB	924+84.23	927+16.57	LT&RT				14193.06						240.91						
IR-90 WB	924+84.23	927+16.57	LT&RT				14414.56		1601.62					266.94					
IR-90 WB	924+84.23		LT							40.83									
IR-90 EB	925+04.23	926+52.78	LT&RT	148.55	40	5942.00		660.22											
IR-90 EB	925+04.23	926+69.06	LT&RT									0.00							
IR-90 EB	925+04.23	926+69.06	LT&RT				9179.44						155.81						
IR-90 EB	925+04.23	926+69.06	LT&RT				9324.84		1036.09					172.68					
IR-90 EB	925+04.23		RT							39.55									
IR-90 EB	926+46.72	926+70.25	RT	23.53	8.75	205.89		22.88											
IR-90 EB	926+60.10	926+87.26	LT	27.16	3.75	101.85		11.32											
IR-90 WB	927+07.10	927+30.43	RT	23.33	5.3	123.65		13.74											
IR-90 WB	927+16.36	927+43.98	LT	27.62	8.8	243.06		27.01											
TOTALS THIS SHEET								8287.56	13890.28	6748.96	8186.45	1676.15	2059.40	2315.05	3357.50	874.35	1019.84	250.20	7361.8

CALCULATED HB
CHECKED SNP

PAVEMENT SUBSUMMARY

LOR-90-17.85

LOCATION	STATION TO STATION		SIDE	LENGTH L	AVERAGE WIDTH W	SURFACE AREA A A=LxW	COMPUTER GENERATED AREA	202 PAVEMENT REMOVED	204 SUBGRADE COMPACTION	252 FULL DEPTH PAVEMENT SAWING	254 PAVEMENT PLANING, ASPHALT CONCRETE	302 5" ASPHALT CONCRETE BASE, PG64-22	302 5 1/2" ASPHALT CONCRETE BASE, PG64-22	304 6" AGGREGATE BASE	407 NON-TRACKING TACK COAT, 0.08 GAL/YD	442 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	617 COMPACTED AGGREGATE	618 RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)
				FT	FT	SQ FT	SQ FT	SY	SY	FT	SY	CY	CY	CY	GAL	CY	CY	CY	FT
IR-90 EB	928+35.20	928+59.91	RT	24.71	8.6	212.51		23.61											
IR-90 EB	928+48.73	928+72.19	LT	23.46	4	93.84		10.43											
IR-90 EB	928+58.60	945+04.84	LT&RT				87144.32								1549.23	403.45	470.58		
IR-90 EB	928+58.60	929+35.00	LT&RT				3663.06					56.53							
IR-90 EB	928+58.60	929+35.00	LT&RT				3722.26						63.18						
IR-90 EB	928+58.60	929+35.00	LT&RT				3770.16		418.91					69.82					
IR-90 EB	928+58.60	948+50.00	RT	1991.40														67.60	
IR-90 EB	928+65.99	929+35.00	LT&RT	69.01	40	2760.40		306.71											
IR-90 EB	928+66.90	948+50.00	RT	1983.10															1983
IR-90 EB	928+84.09	945+04.84	LT	1620.75															1621
IR-90 WB	928+84.33	929+10.56	RT	26.23	4.5	118.03		13.11											
IR-90 EB	928+92.02	945+04.84	RT	1612.82														54.75	
IR-90 WB	928+95.12	929+18.92	LT	23.8	4.5	107.10		11.90											
IR-90 WB	929+05.65	929+85.00	LT&RT				4145.08					63.97							
IR-90 WB	929+05.65	929+85.00	LT&RT				4211.28						71.48						
IR-90 WB	929+05.65	929+85.00	LT&RT				4260.34		473.37					78.90					
IR-90 WB	929+05.65	944+85.00	LT&RT				80687.21								1434.44	373.55	435.71		
IR-90 WB	929+05.65	944+85.00	LT	1579.35														53.61	
IR-90 WB	929+14.51	944+85.00	RT	1570.49															1570
IR-90 WB	929+15.13	929+85.00	LT&RT	69.87	40	2794.8		310.53											
IR-90 WB	929+26.16	948+00.00	LT	1873.84															1874
IR-90 WB	929+28.38	948+04.00	LT	1875.62														63.67	
IR-90 EB	929+35.00	948+50.00	RT	1915	10	19150		2127.78											
IR-90 EB	929+35.00	940+46.72	LT	1111.72	6	6670.32		741.15											
IR-90 EB	929+35.00	948+50.00	RT				20796.69					320.96							
IR-90 EB	929+35.00	948+50.00	RT				21752.69						369.23						
IR-90 EB	929+35.00	948+50.00	RT				22708.68		2523.19					420.53					
IR-90 EB	925+35.00	945+04.84	LT				29966.51					462.48							
IR-90 EB	925+35.00	945+04.84	LT				30751.21						521.97						
IR-90 EB	925+35.00	945+04.84	LT				31535.93		3503.99					584.00					
IR-90 EB	925+35.00	945+04.84	LT&RT	1969.84	24	47276.16					5252.91								
IR-90 EB	929+35.00		RT							39.80									
IR-90 EB	929+35.00	945+04.84	RT							1569.84									
IR-90 EB	929+35.00	948+50.00	RT							1915.00									
IR-90 WB	929+85.00	941+57.31	RT	1172.31	6	7033.86		781.54											
IR-90 WB	929+85.00	944+80.84	LT	1495.84	10	14958.4		1662.04											
IR-90 WB	929+85.00	944+85.00	RT				25317.76					390.74							
IR-90 WB	929+85.00	944+85.00	RT				26070.39						442.52						
IR-90 WB	929+85.00	944+85.00	RT				26821.45		2980.16					496.69					
IR-90 WB	929+85.00	948+00.00	LT				19540.96					301.58							
IR-90 WB	929+85.00	948+00.00	LT				20449.63						347.11						
IR-90 WB	929+85.00	948+00.00	LT				21358.29		2373.14					395.52					
IR-90 WB	929+85.00	944+85.00	LT&RT	1500.00	24	36000					4000.00								
IR-90 WB	929+85.00	948+00.00	LT				3204.4								56.97	14.84	17.30		
IR-90 WB	929+85.00		LT							39.87									
IR-90 WB	929+85.00	944+85.00	LT							1500.00									
IR-90 WB	929+85.00	948+00.00	LT							1815.00									
IR-90 WB	944+85.00		LT							5.15									
IR-90 EB	945+04.84	948+50.00	RT				3707.44								65.91	17.16	20.02		
IR-90 EB	945+04.84		RT							10.01									
IR-90 EB	940+46.72	945+04.84	LT	458.12	12	5497.44		610.83											
IR-90 WB	941+57.31	944+85.00	LT	327.69	8	2621.52		291.28											
IR-90 WB	948+00.00		LT							10.42									
IR-90 EB	948+50.00		RT							10.60									
TOTALS THIS SHEET								6890.91	12272.76	6915.69	9252.91	1596.27	1815.50	2045.46	3106.55	809.00	943.61	239.62	7048
TOTALS FROM SHEET 53								8287.56	13890.28	6748.96	8186.45	1676.15	2059.40	2315.05	3357.50	874.35	1019.84	250.20	7362
TOTALS CARRIED TO GENERAL SUMMARY								15178	26163	13665	17439	7147		4361	6464	1683	1963	490	14410

CALCULATED HB
CHECKED SNP

PAVEMENT SUBSUMMARY

LOR-90-17.85

DRAINAGE SUBSUMMARY

CALCULATED MLV
CHECKED SNP

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	601 CRUSHED AGGREGATE SLOPE PROTECTION SY	601 TIED CONCRETE BLOCK MAT, TYPE 1 SY	605 6" SHALLOW PIPE UNDERDRAINS FT	605 6" UNCLASSIFIED PIPE UNDERDRAINS FT	605 6" BASE PIPE UNDERDRAINS FT	ELEVATION IN	ELEVATION OUT	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	611 12" CONDUIT, TYPE C FT	611 15" CONDUIT, TYPE C FT	611 CATCH BASIN, NO. 8 EACH	611 MANHOLE, NO. 3 EACH	611 PRECAST REINFORCED CONCRETE OUTLET EACH	659 TOPSOIL CY	670 SLOPE EROSION PROTECTION SY	FOR INFORMATION ONLY 45 BEND	90 BEND	46 WYE	TEE	MASONRY COLLAR
58	UD-1	I.R. 90 WB	907+10	907+10	LT		1.8					630.09	30					1			1	2	1		
58 - 59	UD-2	I.R. 90 WB	912+50	907+10	LT					541															
58 - 59	UD-3	I.R. 90 WB	912+50	907+10	LT			541																	
59	UD-4	I.R. 90 WB	912+50	912+50	LT		1.8					634.71	27					1			1		1	2	
59 - 61	UD-5	I.R. 90 WB	917+50	912+50	LT					501															
59 - 61	UD-6	I.R. 90 WB	917+50	912+50	LT			501																	
61	UD-7	I.R. 90 WB	917+50	917+50	LT		1.8					645.47	21					1			1		1	2	
61 - 65	UD-8	I.R. 90 WB	927+12	917+50	LT					976															
61 - 65	UD-9	I.R. 90 WB	927+07	917+50	LT			969																	
59	UD-10	I.R. 90 WB	914+50	909+74.31	LT				477		639.05	MEET EX.													1
59	UD-11	I.R. 90 WB	914+50	909+74.31	LT				477		639.82	MEET EX.													1
59	UD-12	I.R. 90 WB	914+50	914+50	LT		1.8					638.72	33					1			1		1	2	
59 - 61	UD-13	I.R. 90 WB	918+40	914+50	LT			392																	
59 - 61	UD-14	I.R. 90 WB	918+40	914+50	LT					391															
61	UD-15	I.R. 90 WB	918+40	918+40	LT		1.8					646.76	36					1			1		1	2	
61 - 65	UD-16	I.R. 90 WB	929+97	918+40	LT			862																	
63 - 65	UD-17	I.R. 90 WB	926+91	922+21	LT			473					11									1		1	
61 - 65	UD-18	I.R. 90 WB	926+86	918+40	LT					849															
59	UD-19	I.R. 90 EB	913+00	909+44.23	RT				357		636.88	MEET EX.													1
59	UD-20	I.R. 90 EB	913+00	909+44.23	RT				357		635.97	MEET EX.													1
59	UD-21	I.R. 90 EB	913+00	913+00	RT		1.8					635.63	34					1			1		1	2	
59 - 61	UD-22	I.R. 90 EB	918+50	913+00	RT					550															
59 - 61	UD-23	I.R. 90 EB	918+50	913+00	RT			549																	
61	UD-24	I.R. 90 EB	918+50	918+50	RT		1.8					646.74	44					1			1		1	2	
61 - 65	UD-25	I.R. 90 EB	926+65	918+50	RT					813															
61 - 65	UD-26	I.R. 90 EB	926+50	918+50	RT			795																	
58	UD-27	I.R. 90 EB	907+10	907+10	RT		1.8					630.24	29					1			1	2	1		
58 - 61	UD-28	I.R. 90 EB	916+50	907+10	RT			941																	
58 - 61	UD-29	I.R. 90 EB	916+50	907+10	RT					941															
61	UD-30	I.R. 90 EB	916+50	916+50	RT		1.8					642.49	21					1			1		1	2	
61 - 65	UD-31	I.R. 90 EB	926+35	916+50	RT			974																	
61 - 65	UD-32	I.R. 90 EB	926+27	916+50	RT					965															
65 - 69	UD-33	I.R. 90 WB	929+33	938+50	LT					921															
65 - 69	UD-34	I.R. 90 WB	929+28	938+50	LT			925																	
69	UD-35	I.R. 90 WB	938+50	938+50	LT	33.6						645.10	22					1			1		1	2	
69 - 73	UD-36	I.R. 90 WB	938+50	948+00	LT					951															
69 - 73	UD-37	I.R. 90 WB	938+50	948+00	LT			951																	
73	UD-38	I.R. 90 WB	948+00	948+00	LT		1.8					628.63	26					1			1	2	1		
65 - 69	UD-39	I.R. 90 WB	929+19	935+50	LT			633																	
65 - 67	UD-40	I.R. 90 WB	929+55	932+42	LT			288					10									1		1	
65 - 69	UD-41	I.R. 90 WB	929+10	935+50	LT					642															
69	UD-42	I.R. 90 WB	935+50	935+50	LT		1.8					650.62	38					1			1		1	2	
69 - 71	UD-43	I.R. 90 WB	935+50	944+85	LT			936																	
69 - 71	UD-44	I.R. 90 WB	935+50	944+85	LT					936															
71	UD-45	I.R. 90 WB	944+85	944+85	LT		1.8					632.68	33					1			1	2	1		
TOTALS CARRIED TO SHEET 56						33.6	21.3	10,730	1,668	9,977			415					13							

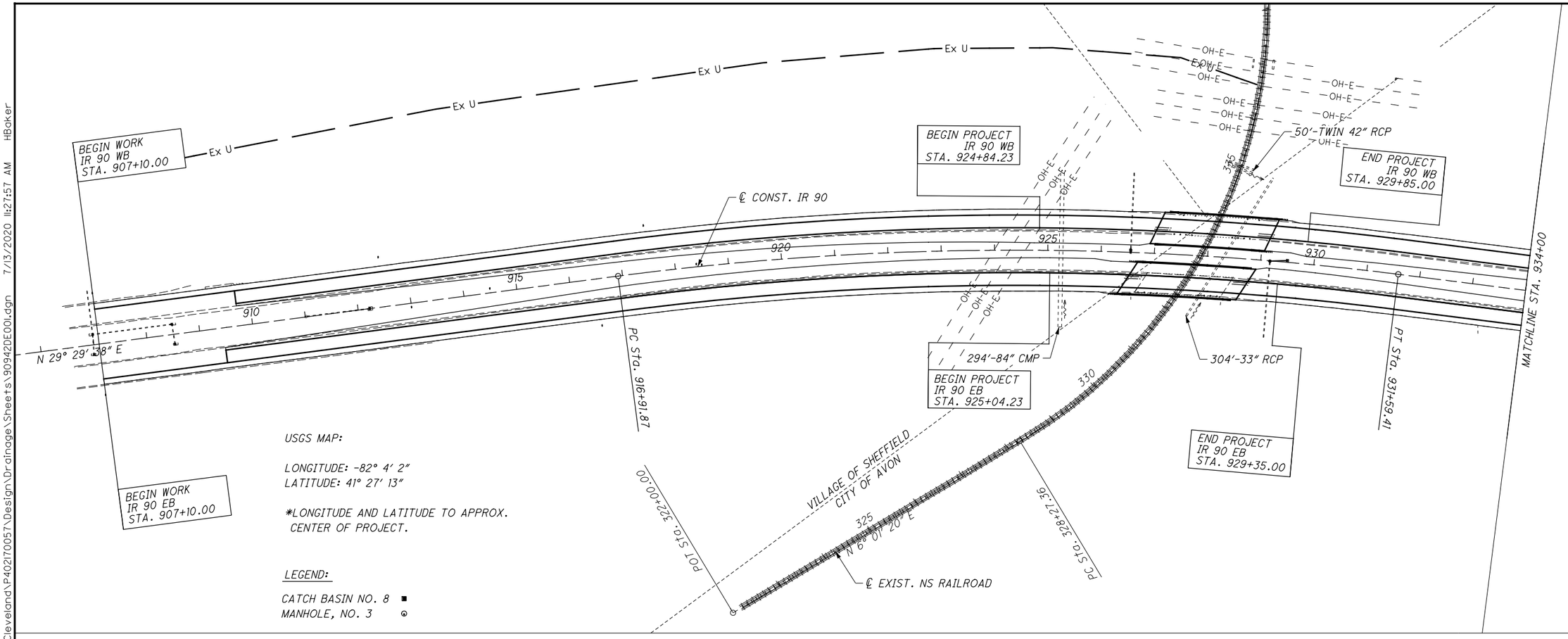
LOR-90-17.85

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	601 CRUSHED AGGREGATE SLOPE PROTECTION (SY)	601 TIED CONCRETE BLOCK MAT, TYPE 1 (SY)	605 6" SHALLOW PIPE UNDERDRAINS (FT)	605 6" UNCLASSIFIED PIPE UNDERDRAINS (FT)	605 6" BASE PIPE UNDERDRAINS (FT)	ELEVATION IN (FT)	ELEVATION OUT (FT)	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS (FT)	611 12" CONDUIT, TYPE C (FT)	611 15" CONDUIT, TYPE C (FT)	611 CATCH BASIN, NO. 8 (EACH)	611 MANHOLE, NO. 3 (EACH)	611 PRECAST REINFORCED CONCRETE OUTLET (EACH)	659 TOPSOIL (CY)	670 SLOPE EROSION PROTECTION (SY)	FOR INFORMATION ONLY: 45 BEND	90 BEND	46 WYE	TEE	MASONRY COLLAR
65 - 69	UD-46	I.R. 90 EB	928+92	937+00	RT					808															
65 - 69	UD-47	I.R. 90 EB	928+84	937+00	RT			815																	
69	UD-48	I.R. 90 EB	937+00	937+00	RT		1.8					647.95	37					1			1		1	2	
69 - 73	UD-49	I.R. 90 EB	937+00	945+04.84	RT					806															
69 - 73	UD-50	I.R. 90 EB	937+00	945+04.84	RT			806																	
73	UD-51	I.R. 90 EB	945+04.84	945+04.84	RT		1.8					632.40	38					1			1	2	1		
65 - 69	UD-52	I.R. 90 EB	928+70	938+50	RT			977																	
65 - 69	UD-53	I.R. 90 EB	928+63	938+50	RT					984															
69	UD-54	I.R. 90 EB	938+50	938+50	RT	35.8						645.13	21					1			1		1	2	
69 - 73	UD-55	I.R. 90 EB	938+50	947+50	RT			901																	
69 - 73	UD-56	I.R. 90 EB	938+50	947+50	RT					901															
73	UD-57	I.R. 90 EB	947+50	947+50	RT		1.8					629.29	26					1			1		1	2	
73	UD-58	I.R. 90 EB	947+50	948+50	RT				100		629.55	MEET EX.													1
73	UD-59	I.R. 90 EB	947+50	948+50	RT				100		630.21	MEET EX.													1
65	D-1	I.R. 90	926+55.53		LT											1									
65	D-2	I.R. 90	926+55.53	926+55.57	LT										4										
65	D-3	I.R. 90	929+17.26	929+17.27	RT										4										
65	D-4	I.R. 90	929+17.27		RT												1								
65	D-5	I.R. 90	929+17.27	929+50.00	LT/RT									33											
65	D-6	I.R. 90	929+50.00		LT											1									
59	EC-1	I.R. 90	913+25.25	914+92.99	RT															49.8	448.1				
59 - 61	EC-2	I.R. 90	914+55.00	918+24.68	LT															114.2	1027.8				
69 - 71	EC-3	I.R. 90	935+99.11	942+68.82	LT															181.9	1637.2				
69 - 71	EC-4	I.R. 90	937+50.00	942+68.82	RT															147.3	1326.0				
SUBTOTALS FROM THIS SHEET						35.8	5.3	3,499	200	3,499			122	33	8	2	1	4	493.2	4,439.1				
SUBTOTALS FROM SHEET 55						33.6	21.3	10,730	1,668	9,977			415					13							
TOTALS CARRIED TO GENERAL SUMMARY						69	27	14,229	1,868	13,476			537	33	8	2	1	17	493	4,439				

CALCULATED MLV
CHECKED SNP

DRAINAGE SUBSUMMARY

LOR-90-17.85



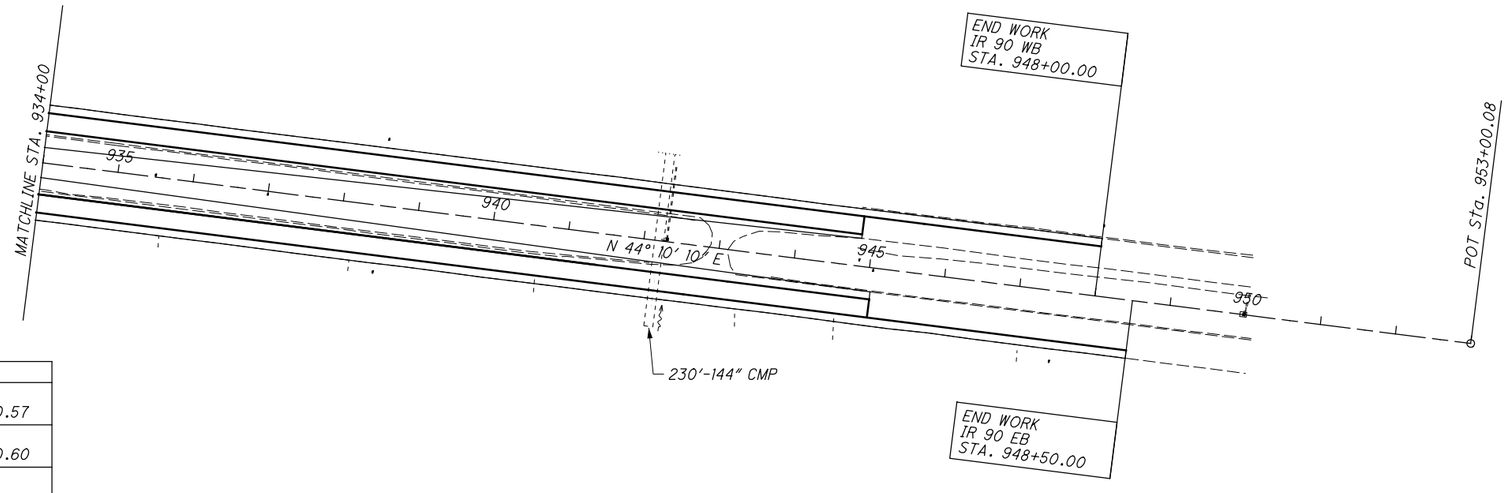
USGS MAP:

LONGITUDE: -82° 4′ 2″
LATITUDE: 41° 27′ 13″

*LONGITUDE AND LATITUDE TO APPROX. CENTER OF PROJECT.

LEGEND:

CATCH BASIN NO. 8 ■
MANHOLE, NO. 3 ◉



NOTE:

THE FOLLOWING QUANTITIES HAVE BEEN CARRIER TO THE GENERAL SUMMARY FOR PAYMENT:

ITEM 832 - STORM WATER POLLUTION PREVENTION PLAN, LUMP
ITEM 832 - STORM WATER POLLUTION PREVENTION INSPECTIONS, LUMP
ITEM 832 - STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE, LUMP
ITEM 832 - EROSION CONTRON, 74,000 EACH

PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY).....10.32 ACRES	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE..... 0.57
PROJECT EARTH DISTURBED AREA.....9.90 ACRES	RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE..... 0.60
ESTIMATED CONTRACTOR EARTH DISTURBED AREA.....1.00 ACRE	POST CONSTRUCTION BMP: VEGETATED FILTER STRIPS
NOTICE OF INTENT EARTH DISTURBED AREA.....10.90 ACRES	IMMEDIATE RECEIVING WATERS: WALKER DITCH, FRENCH CREEK CHANNEL
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE.....7.14 ACRES	SUBSEQUENT RECEIVING WATERS: BLACK RIVER, LAKE ERIE
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE.....8.95 ACRES	

PROJECT DESCRIPTION:

RESURFACING AND WIDENING OF APPROXIMATELY 4200′ OF INTERSTATE 90.
TWO BRIDGE REPLACEMENTS AND WIDENING OVER NS RAILROAD.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED MLV
CHECKED SNP

PROJECT SITE PLAN
STA. 907+10 TO STA. 948+50

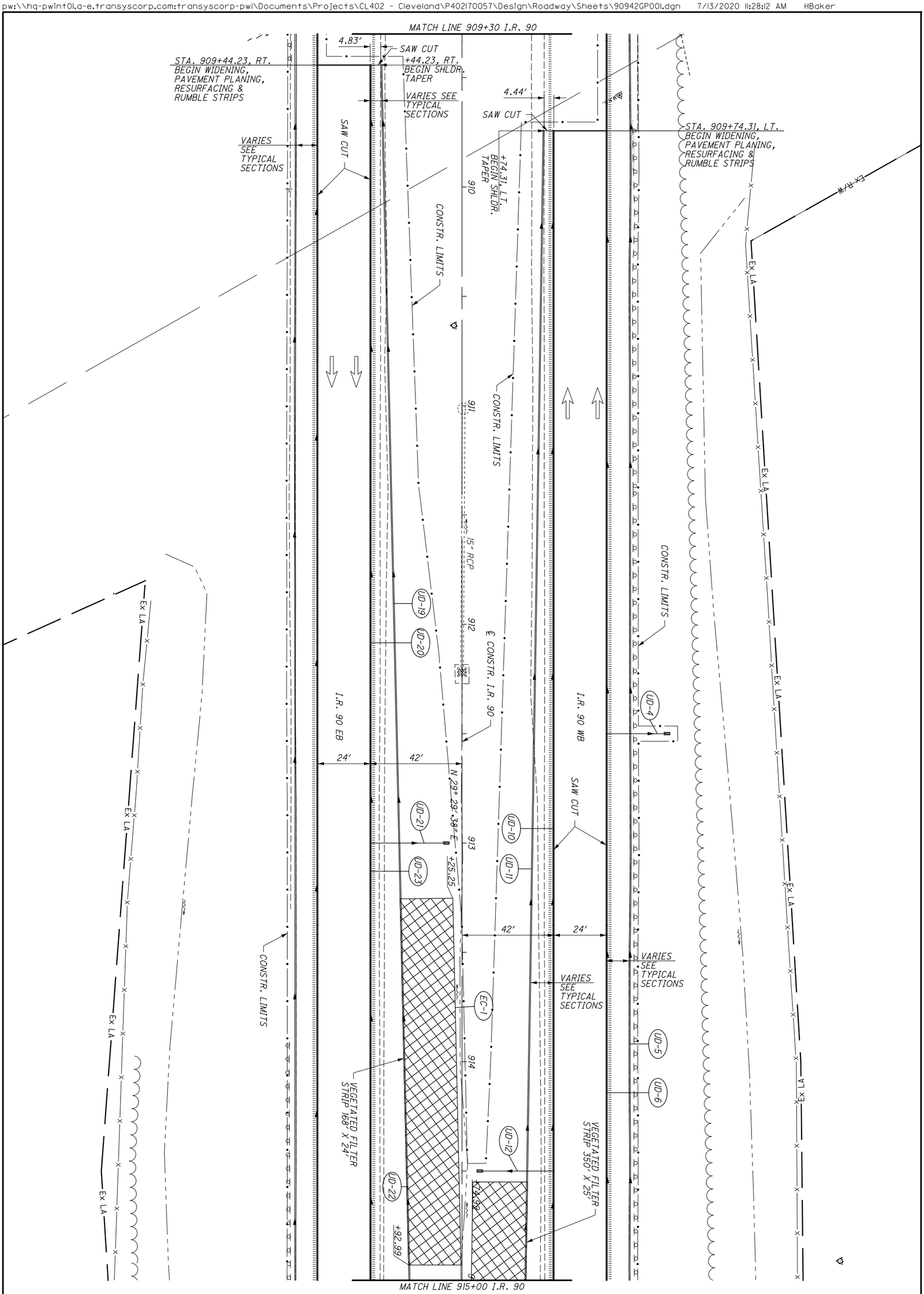
LOR-90-17.85

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED HB
CHECKED SNP

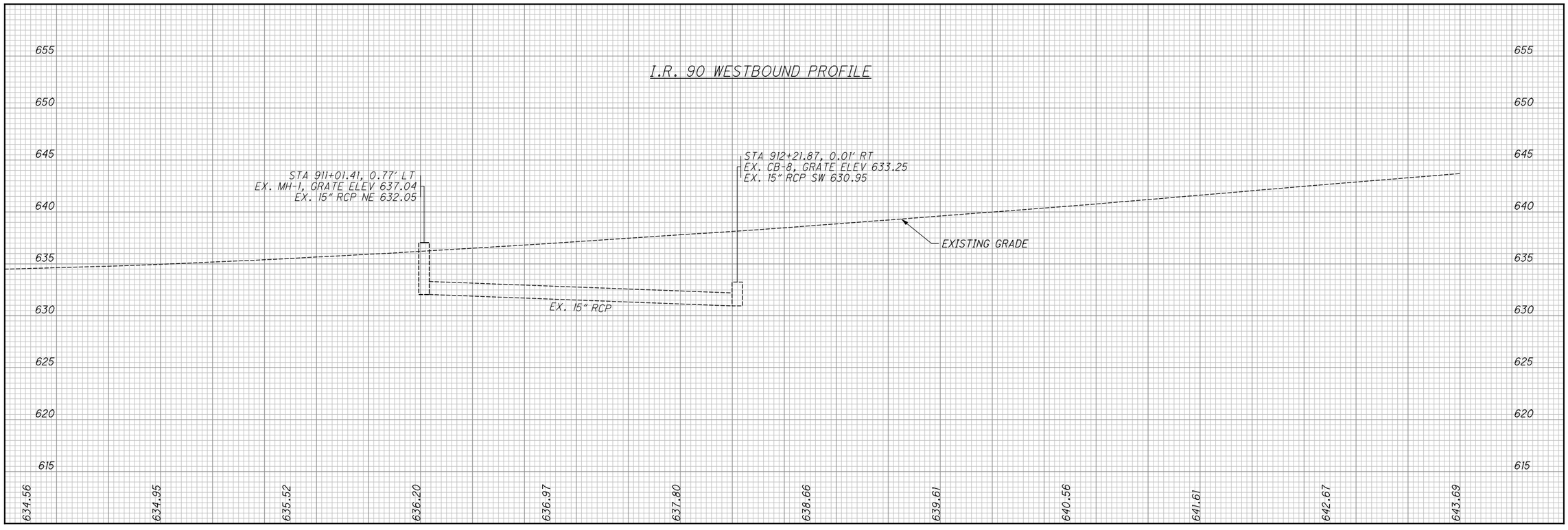
PLAN - I.R. 90
STA. 906+00 TO STA. 909+30

LOR-90-17.85

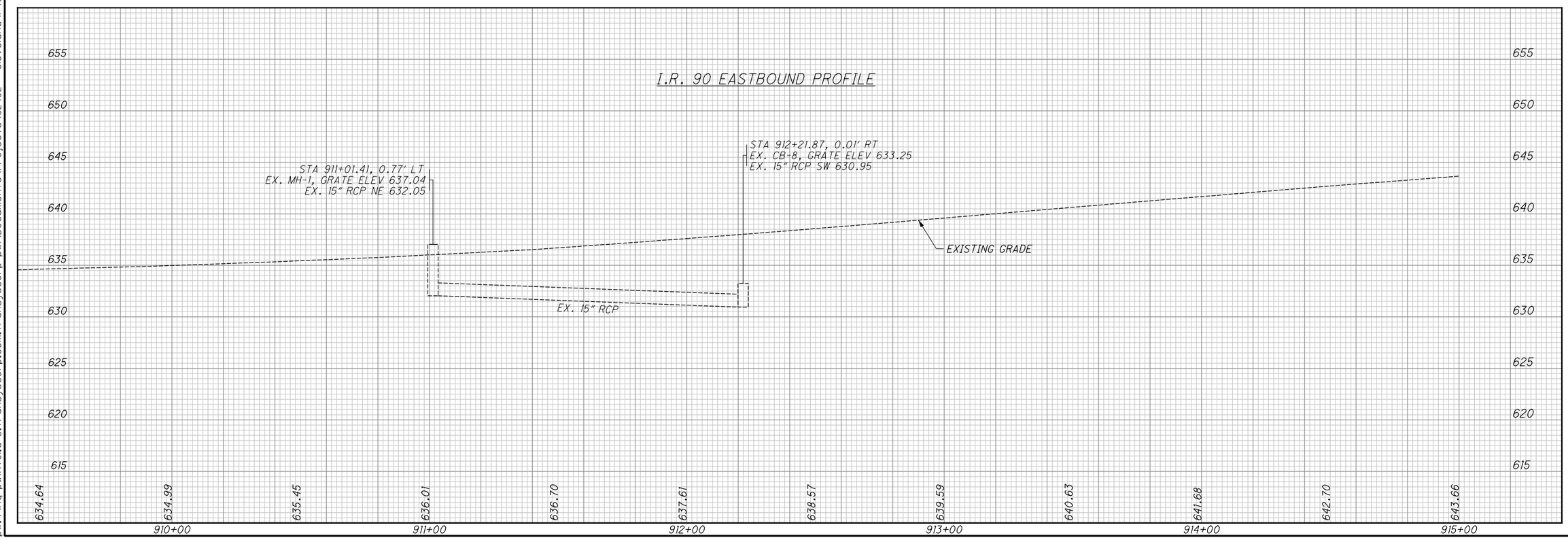


59 / 196	LOR-90-17.85	PLAN - I.R. 90 STA. 909+30 TO STA. 915+00	CALCULATED HB CHECKED SNP	0 20 10 40 HORIZONTAL SCALE IN FEET

I.R. 90 WESTBOUND PROFILE



I.R. 90 EASTBOUND PROFILE



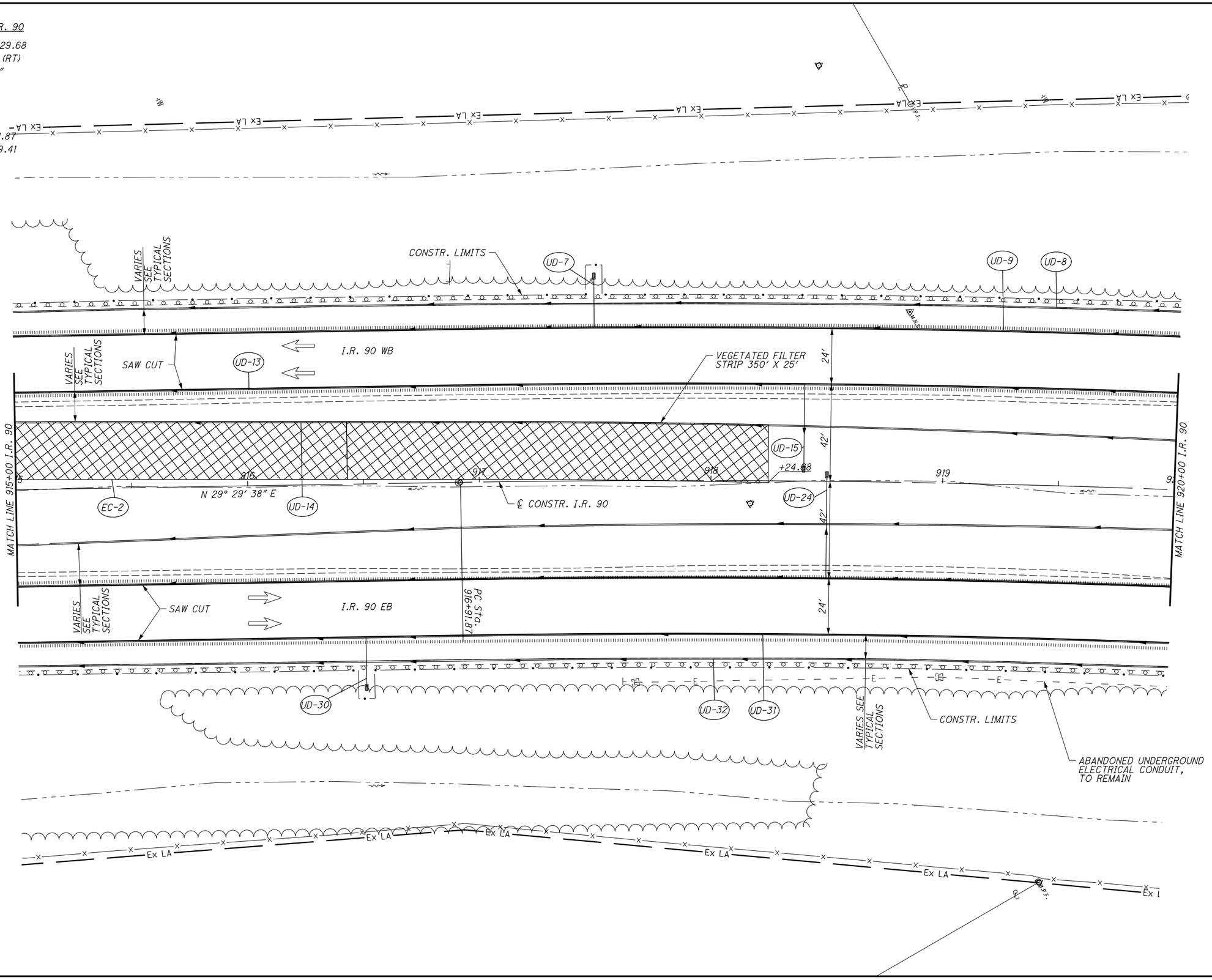
CALCULATED HB
CHECKED SNP

PROFILE - STA. 909+30 TO STA. 915+00

LOR-90-17.85

CURVE DATA I.R. 90

P.I. Sta. 924+29.68
Δ = 14° 40′ 32″ (RT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 737.81′
L = 1,467.54′
E = 47.31′
PC STA. 916+91.87
PT STA. 931+59.41

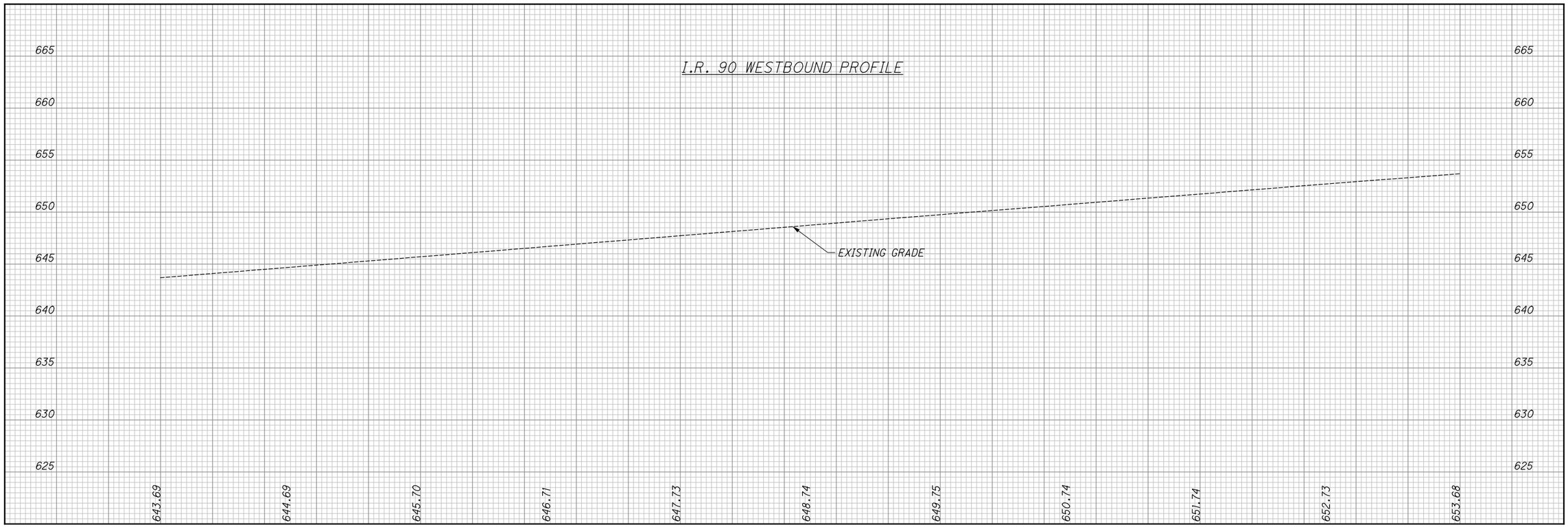


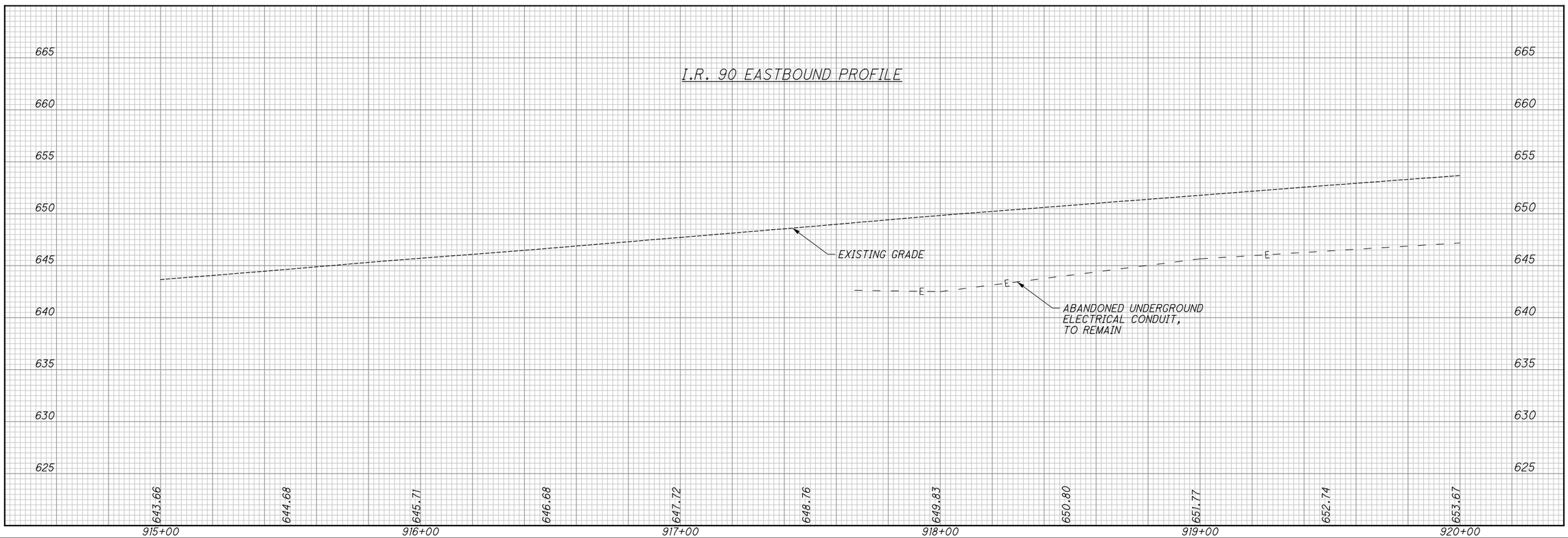
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED HB
CHECKED SNP

PLAN - I.R. 90
STA. 915+00 TO STA. 920+00

LOR-90-17.85





CALCULATED HB
CHECKED SNP

PROFILE - STA. 915+00 TO STA. 920+00

LOR-90-17.85

CURVE DATA I.R. 90
P.I. Sta. 924+29.68
Δ = 14° 40′ 32″ (RT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 737.81′
L = 1,467.54′
E = 47.31′
PC STA. 916+91.87
PT STA. 931+59.41

BEGIN PROJECT IR 90 WB STA. 924+84.23

E140 (786)

STA. 924+84.23, LT. END SHOULDER RECONSTRUCTION & WIDENING, PAVEMENT PLANING, & RESURFACING

STA. 924+84.23, LT. BEGIN FULL DEPTH PAVEMENT REPLACEMENT

G-1

GUARDRAIL, TYPE MGS

BEGIN GUARDRAIL, TYPE MGS STA. 924+84.23, TIE INTO EXIST. GUARDRAIL, LT.

EX. TYPE 5 GUARDRAIL

R-2

CONSTR. LIMITS

VARIES SEE TYPICAL SECTIONS

SAW CUT

I.R. 90 WB

UD-16

UD-18

UD-17

UD-25

UD-26

R-1

+74.25, LT. END SHLDR. TAPER

℄ CONSTR. I.R. 90

MATCH LINE 920+00 I.R. 90

MATCH LINE 925+00 I.R. 90

24′

42′

28′

I.R. 90 EB

ABANDONED UNDERGROUND ELECTRICAL CONDUIT, TO REMAIN

345,000 VOLTS NOMINAL

16" & 12" PVC FORCE MAINS

OH-E

NYS

Ex LA

Ex U

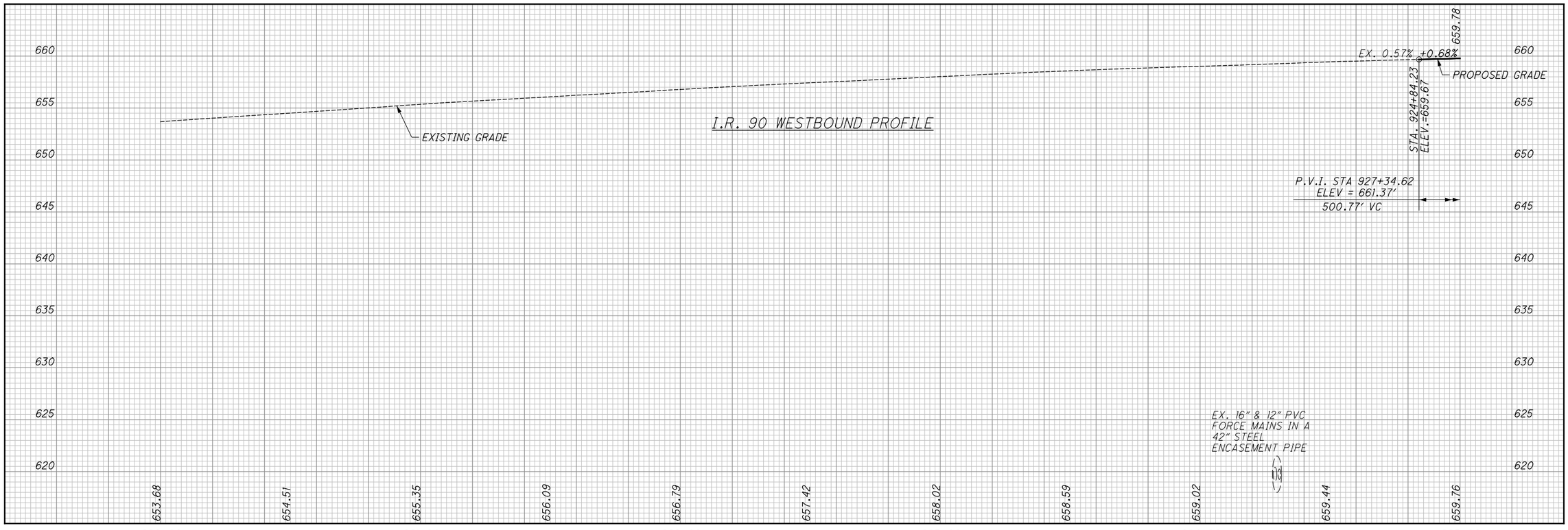
HORIZONTAL SCALE IN FEET
0 10 20 40

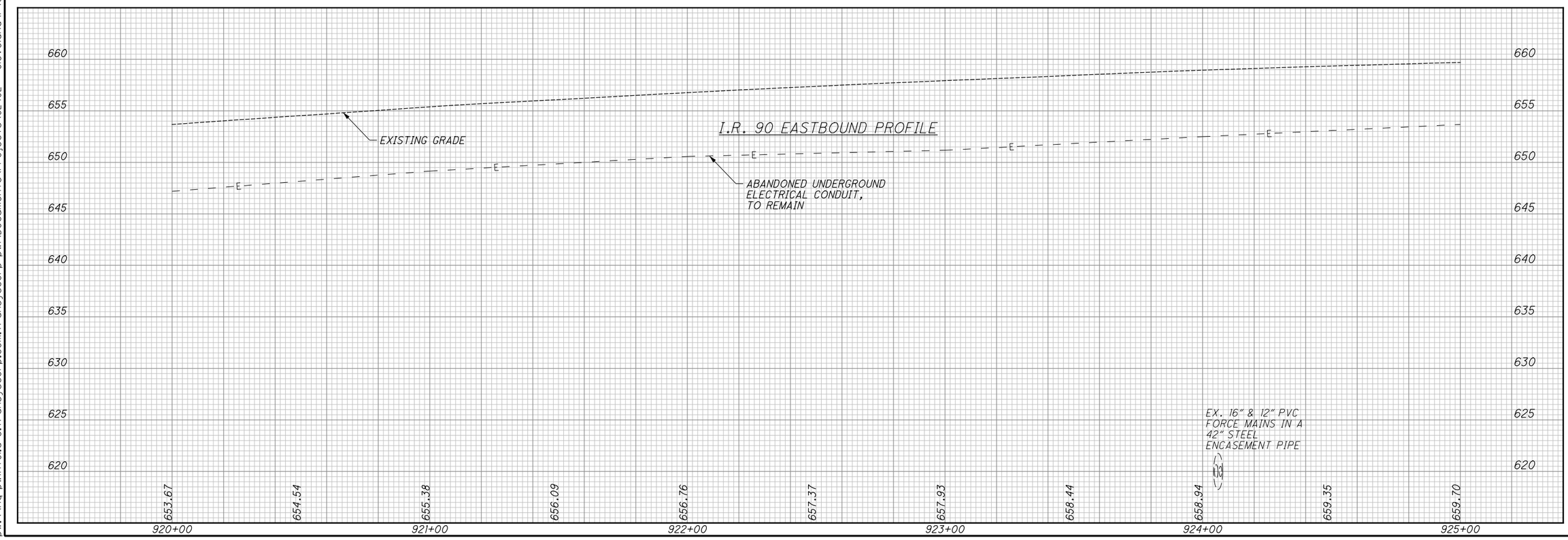
CALCULATED HB
CHECKED SNP

PLAN - I.R. 90
STA. 920+00 TO STA. 925+00

LOR-90-17.85

63
196





CALCULATED HB
CHECKED SNP

PROFILE - STA. 920+00 TO STA. 925+00

LOR-90-17.85

CURVE DATA N.S. R.R.
P.I. Sta. 338+88.41
Δ = 96° 00′ 00″ (LT)
Dc = 5° 59′ 50″
R = 955.37′
T = 1,061.05′
L = 1,600.74′
E = 472.41′
PC STA. 328+27.36
PT STA. 344+28.10

CURVE DATA I.R. 90
P.I. Sta. 924+29.68
Δ = 14° 40′ 32″ (RT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 737.81′
L = 1,467.54′
E = 47.31′
PC STA. 916+91.87
PT STA. 931+59.41

16″ & 12″ PVC FORCE MAINS
LOT NO. 6
LOT NO. 5
℄ NORFOLK SOUTHERN R.R.
VILLAGE OF SHEFFIELD LOT NO. 6
CITY OF AVON SECTION NO. 3
END PROJECT IR 90 WB STA. 929+85.00
E140 (786)
END GUARDRAIL, TYPE MGS STA. 927+28.75, 78.00′ LT.
END APPROACH SLAB STA. 927+26.27, 42.00′ LT.
BEGIN APPROACH SLAB STA. 928+89.98, 42.00′ LT.
345,000 VOLTS NOMINAL
84″ CMP
15″ RCP
24″ W.M.
33″ RCP
42″ RCP
STA. 929+85.00, LT. END FULL DEPTH PAVEMENT REPLACEMENT
STA. 929+85.00, LT. END SHOULDER RECONSTRUCTION & WIDENING, PAVEMENT PLANING, & RESURFACING
BEGIN GUARDRAIL, TYPE MGS STA. 929+42.86, 78.00′ LT.
GUARDRAIL, TYPE MGS
END GUARDRAIL, TYPE MGS STA. 929+85.00, TIE INTO EXIST. GUARDRAIL, LT.
EX. TYPE 5 GUARDRAIL
SAW CUT
VARIES SEE TYPICAL SECTIONS
G-1
EX. TYPE 5 G.R.
BEGIN APPROACH SLAB STA. 927+01.45, 42.00′ LT.
CONSTR. LIMITS
GUARDRAIL, TYPE MGS
I.R. 90 WB
MGS BTA TYPE-2
STRUCTURE NO. LOR-90-1785 L
MGS BTA TYPE-1
R-2
R-8
G-6
END APPROACH SLAB STA. 929+14.80, 42.00′ LT.
END GUARDRAIL, TYPE MGS STA. 926+54.93, 18.00′ RT.
D-2
D-6
G-5
R-7
BEGIN GUARDRAIL, TYPE MGS STA. 925+19.06, 4.35′ RT.
R-1
15″ TYPE C
℄ CONSTR. I.R. 90
EX. AIR RELEASE VAULT
STA. 927+87.00 ℄ CONSTR I.R. 90= STA. 333+18.00 ℄ N.S. R.R.
+05.65
D-4
D-5
EX. TYPE 5 G.R., TO BE REMOVED
12″ TYPE C
+85.00, LT. BEGIN SHLDR. TAPER
+89.02, RT. END SHLDR. TAPER
G-3
D-1
D-3
BEGIN GUARDRAIL, TYPE MGS STA. 929+19.61, 18.00′ LT.
+45.06, RT. BEGIN SHLDR. TAPER
MATCH LINE 925+00 I.R. 90
MATCH LINE 930+00 I.R. 90
MGS, ANCHOR ASSEMBLY, TYPE B
BEGIN APPROACH SLAB STA. 926+54.54, 42.00′ RT.
I.R. 90 EB
END APPROACH SLAB STA. 926+79.72, 42.00′ RT.
SAW CUT
EX. TYPE 5 GUARDRAIL
GUARDRAIL, TYPE MGS
BEGIN GUARDRAIL, TYPE MGS STA. 925+04.23, TIE INTO EXIST. GUARDRAIL, RT.
GUARDRAIL, TYPE MGS
EX. TYPE 5 G.R., TO BE REMOVED
R-3
G-2
R-4
R-6
R-5
G-4
END GUARDRAIL, TYPE MGS STA. 929+35.00, TIE INTO EXIST. GUARDRAIL, RT.
ABANDONED UNDERGROUND ELECTRICAL CONDUIT, TO REMAIN
END APPROACH SLAB STA. 928+78.75, 42.00′ RT.
UNNAMED TRIBUTARY OHWM ELEV. 627.46
EXISTING PULLBOX, TO BE REMOVED
CONSTR. LIMITS
STA. 924+04.23, RT. END SHOULDER RECONSTRUCTION & WIDENING, PAVEMENT PLANING, & RESURFACING
STA. 925+04.23, RT. BEGIN FULL DEPTH PAVEMENT REPLACEMENT
STA. 929+35.00, RT. END FULL DEPTH PAVEMENT REPLACEMENT
STA. 929+35.00, RT. BEGIN SHOULDER RECONSTRUCTION & WIDENING
BEGIN PROJECT IR 90 EB STA. 925+04.23
BEGIN APPROACH SLAB STA. 928+53.56, 42.00′ RT.
END PROJECT IR 90 EB STA. 929+35.00
E140 (786)
345,000 VOLTS NOMINAL
84″ CMP
15″ RCP
42″ RCP
24″ W.M.
33″ RCP
VILLAGE OF SHEFFIELD LOT NO. 5
CITY OF AVON SECTION NO. 3
END GUARDRAIL, TYPE MGS STA. 926+17.25, 78.00, RT.
ABANDONED UNDERGROUND ELECTRICAL CONDUIT, TO REMAIN
BEGIN GUARDRAIL, TYPE MGS STA. 928+46.04, 78.00′, RT.
DND
EXISTING PULLBOX, TO BE REMOVED
STRUCTURE NO. LOR-90-1785 R
MGS BTA TYPE-1
MGS BTA TYPE-2
+91.26
+71.54
+69.06
+32.48
+16.57
+28.38
+58.60
+92.02
+12.21
927
928
929
331
332
333
Ex A
Ex LA
Ex SW
Ex SL
Ex SH
Ex U
Ex CH
HS X3
SAN
OH-E
WM
VARIES SEE TYPICAL SECTIONS
24′
28′
42′
27.98′
24.15′
28.03′

CALCULATED HB CHECKED SNP

HORIZONTAL SCALE IN FEET
0 10 20 40

PLAN - I.R. 90
STA. 925+00 TO STA. 930+00

LOR-90-17.85

65
196

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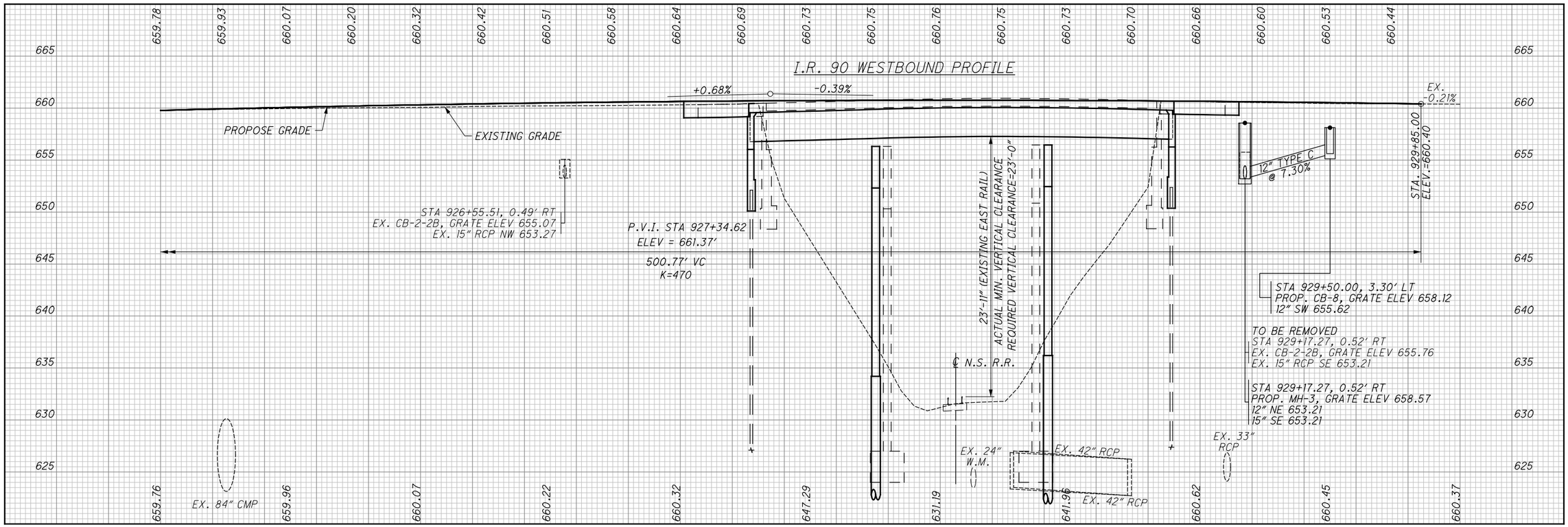
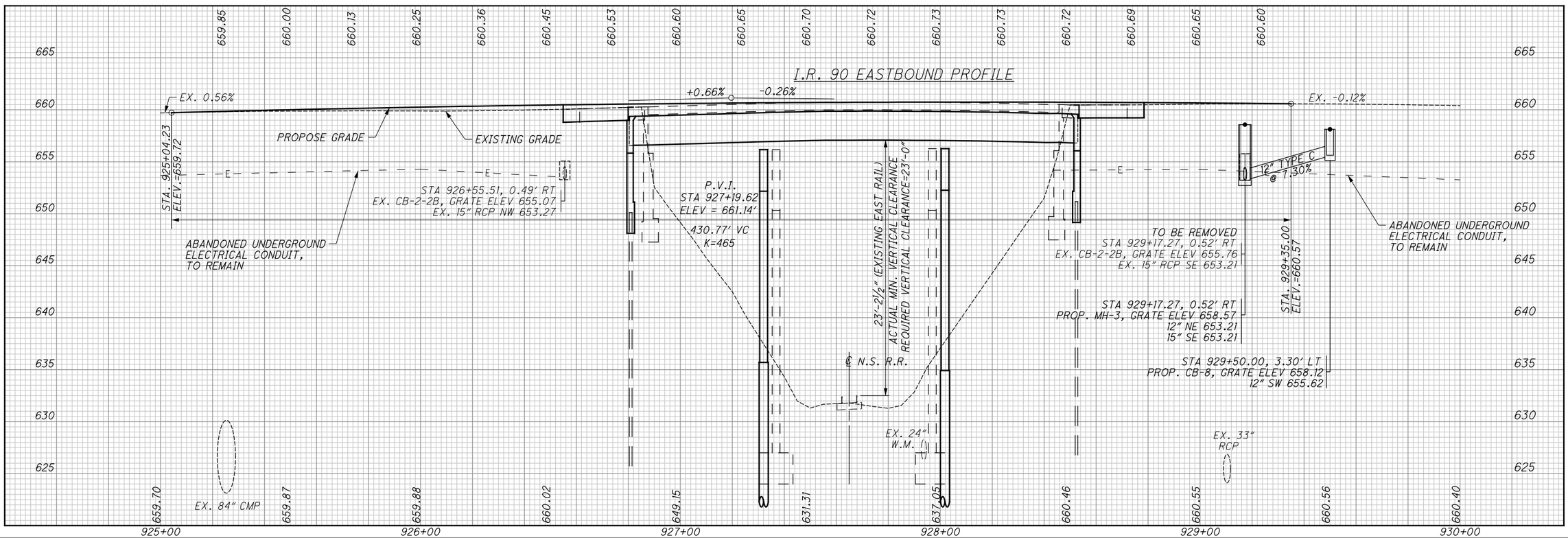


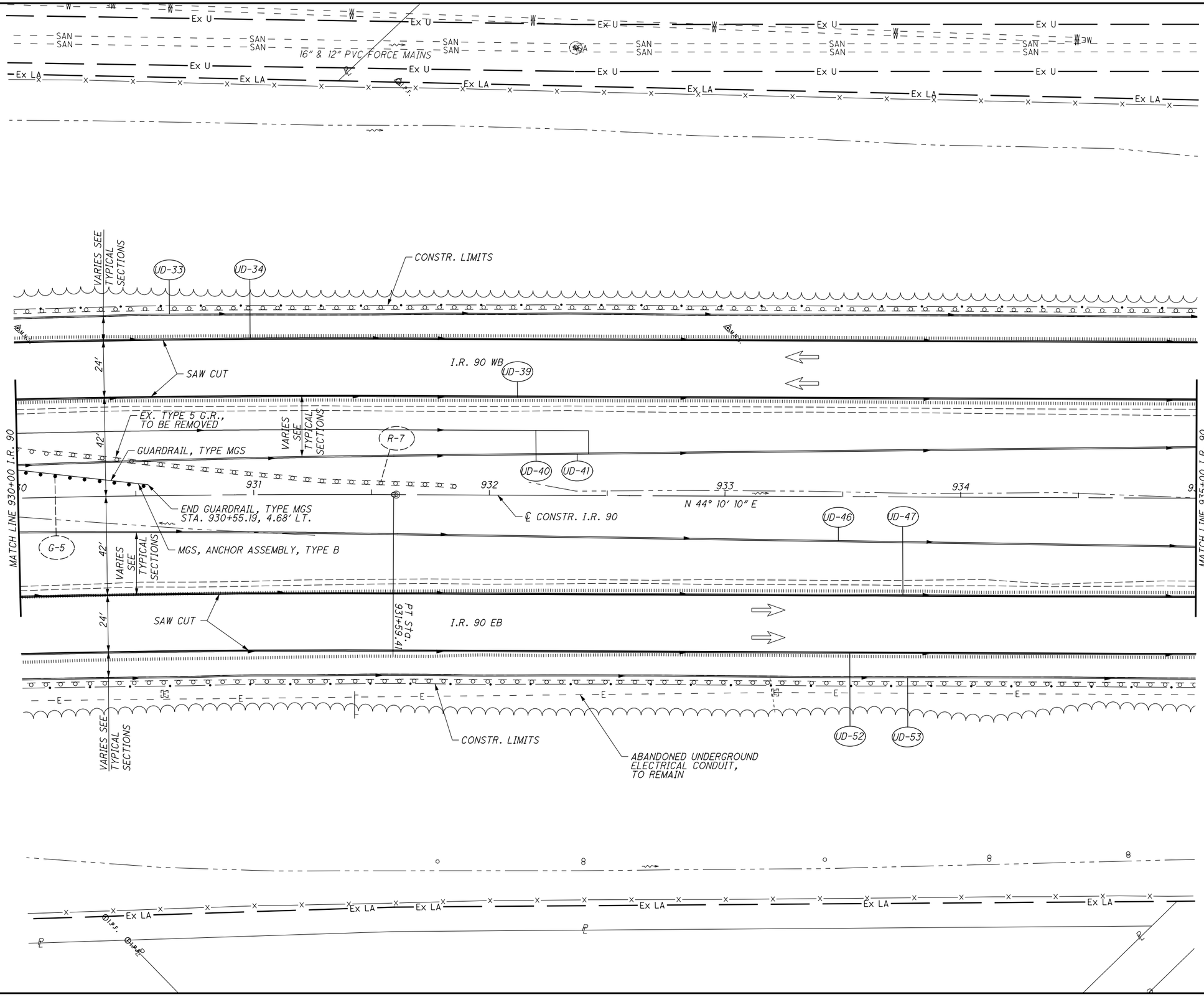


CALCULATED HB
CHECKED SNP

PROFILE - STA. 925+00 TO STA. 930+00

LOR-90-17.85

CURVE DATA I.R. 90
P.I. Sta. 924+29.68
Δ = 14° 40′ 32″ (RT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 737.81′
L = 1,467.54′
E = 47.31′
PC STA. 916+91.87
PT STA. 931+59.41



PLAN - I.R. 90
STA. 930+00 TO STA. 935+00

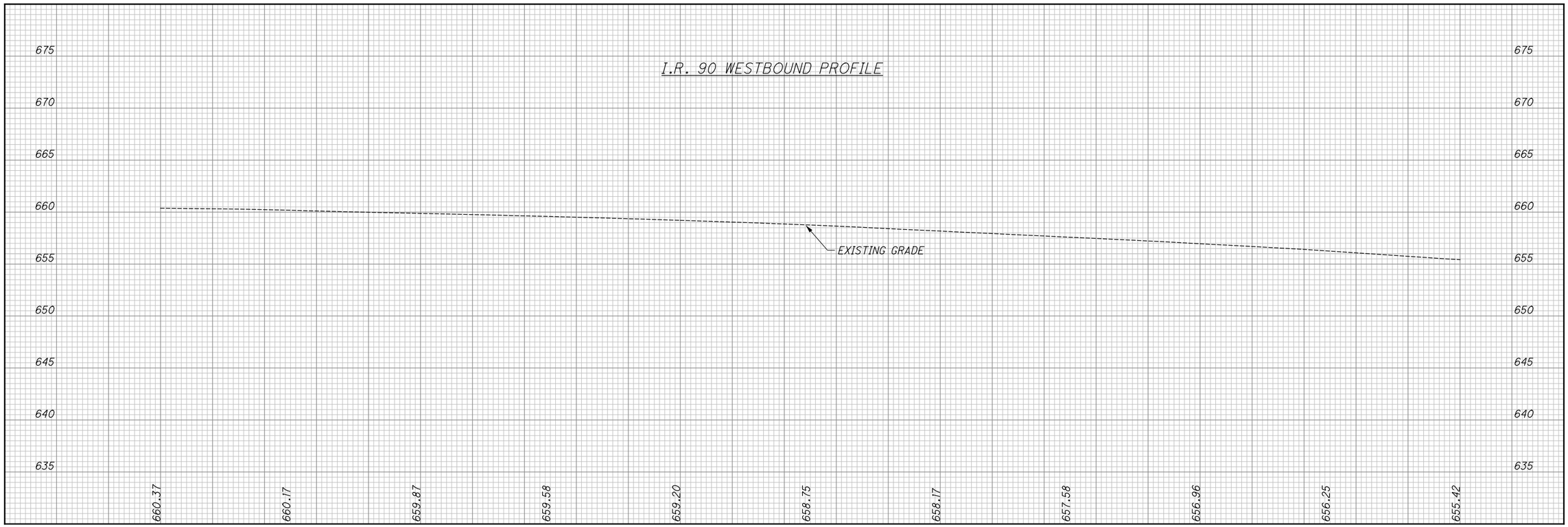
LOR-90-17.85

HORIZONTAL SCALE IN FEET
0 10 20 40

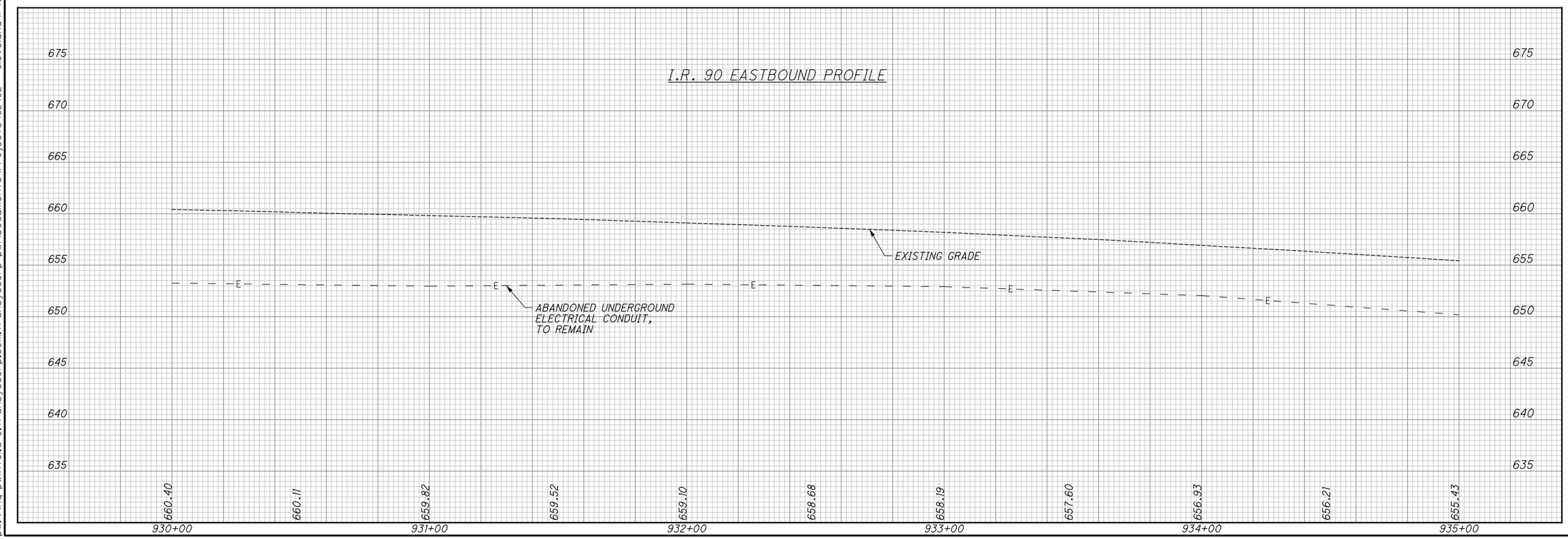
CALCULATED HB
CHECKED SNP

67
196

I.R. 90 WESTBOUND PROFILE



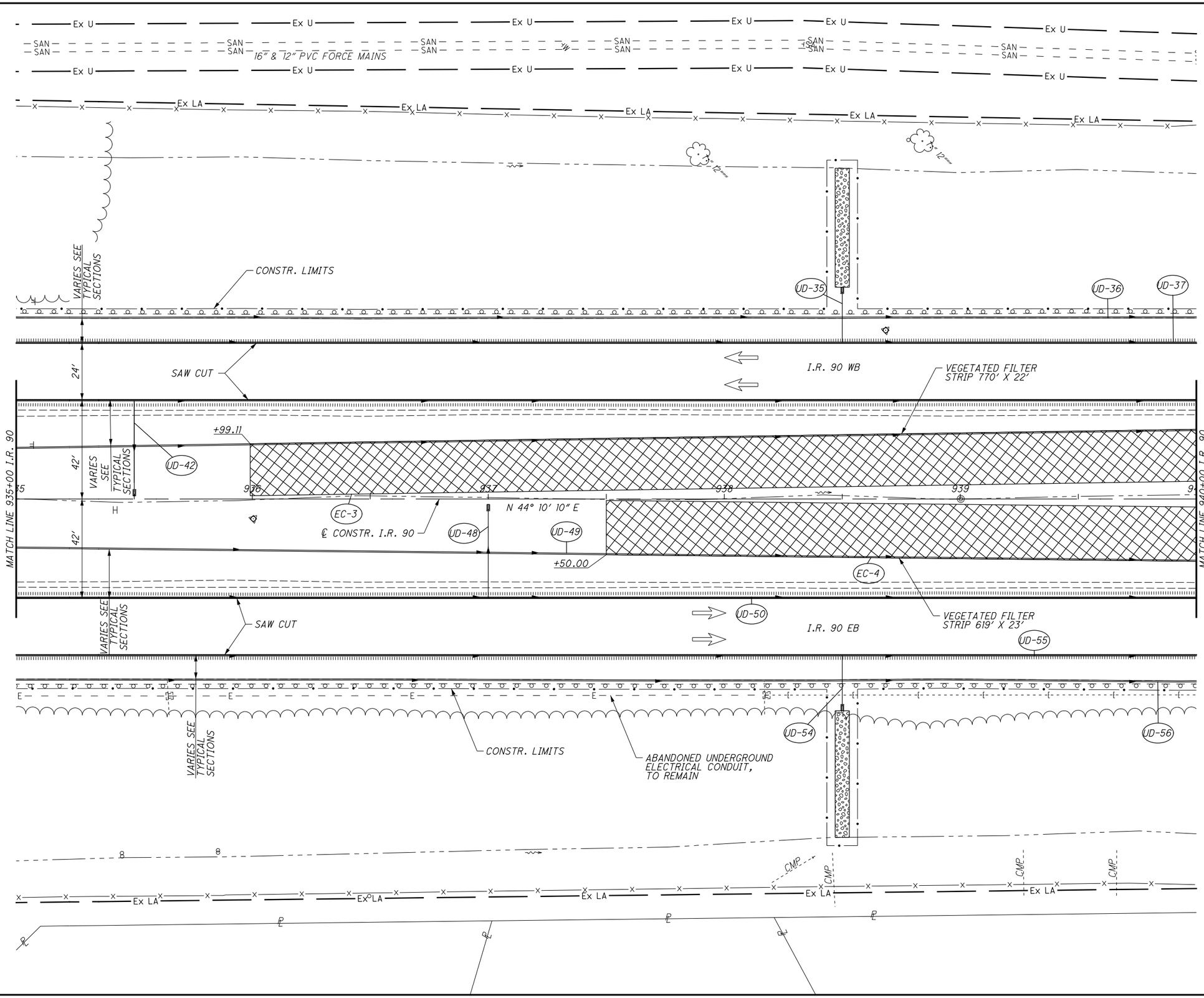
I.R. 90 EASTBOUND PROFILE



CALCULATED HB
CHECKED SNP

PROFILE - STA. 930+00 TO STA. 935+00

LOR-90-17.85

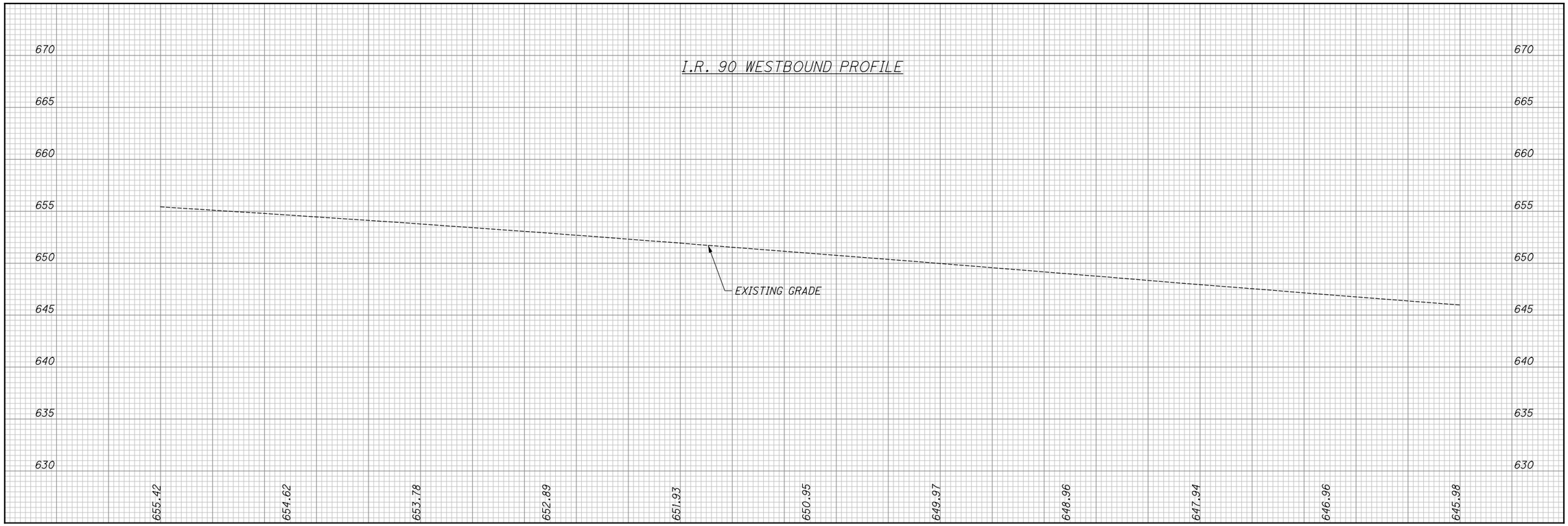


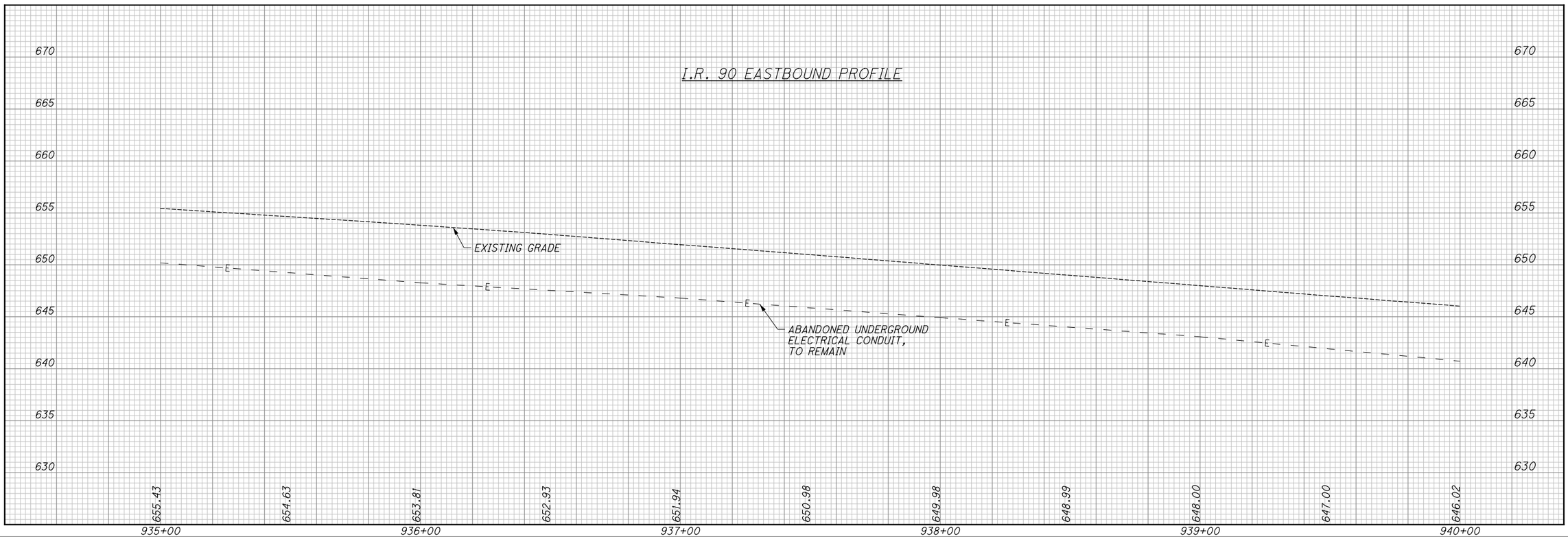
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED HB
CHECKED SNP

PLAN - I.R. 90
STA. 935+00 TO STA. 940+00

LOR-90-17.85

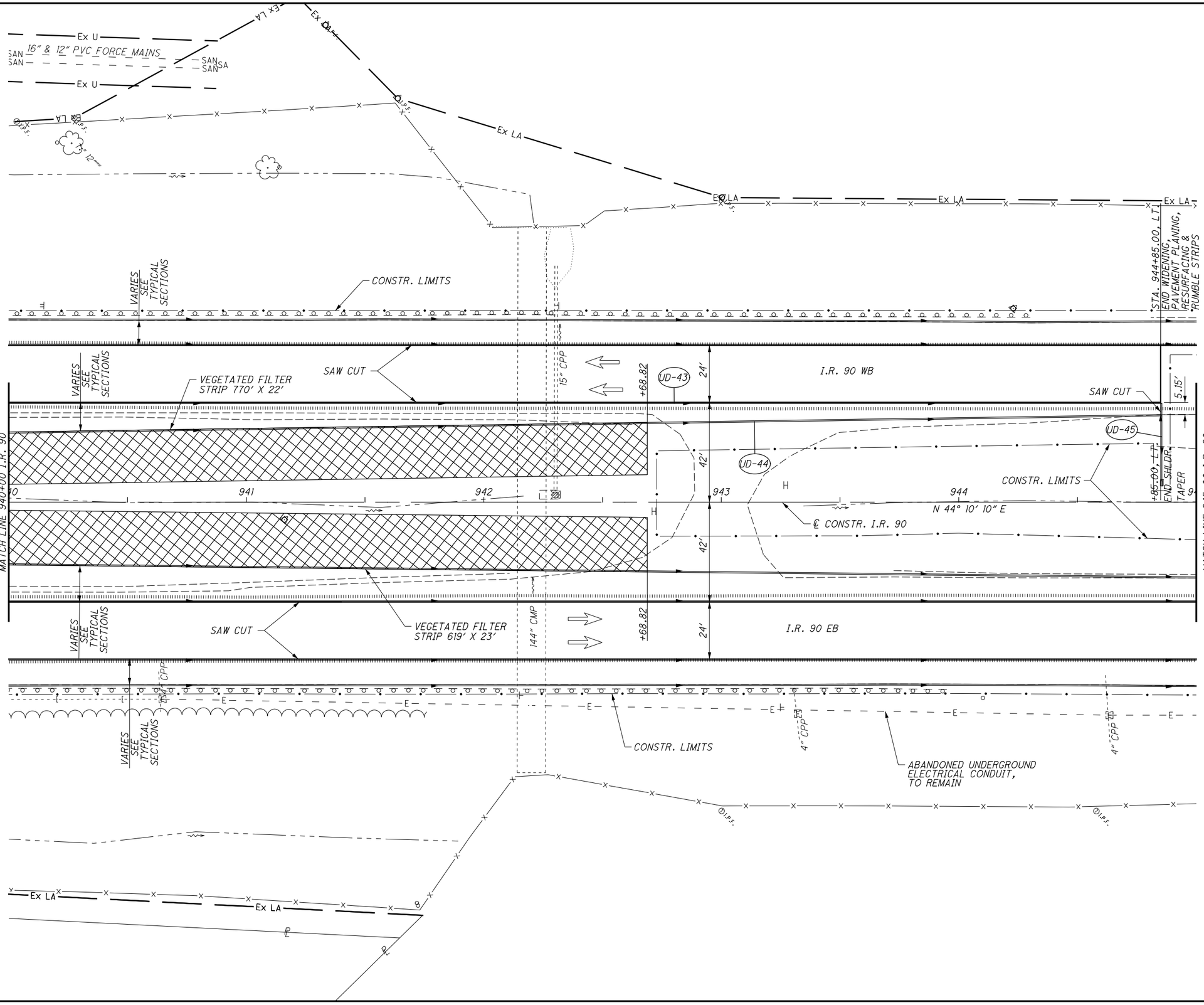




CALCULATED HB
CHECKED SNP

PROFILE - STA. 935+00 TO STA. 940+00

LOR-90-17.85



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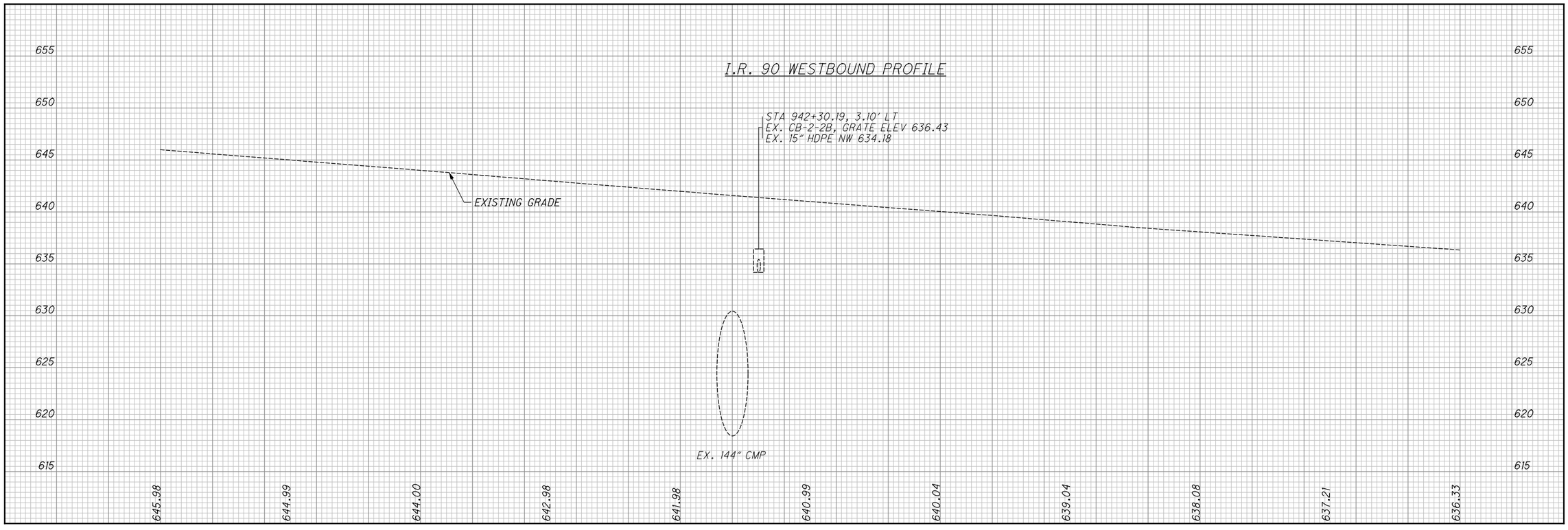
HORIZONTAL SCALE IN FEET
0 10 20 40

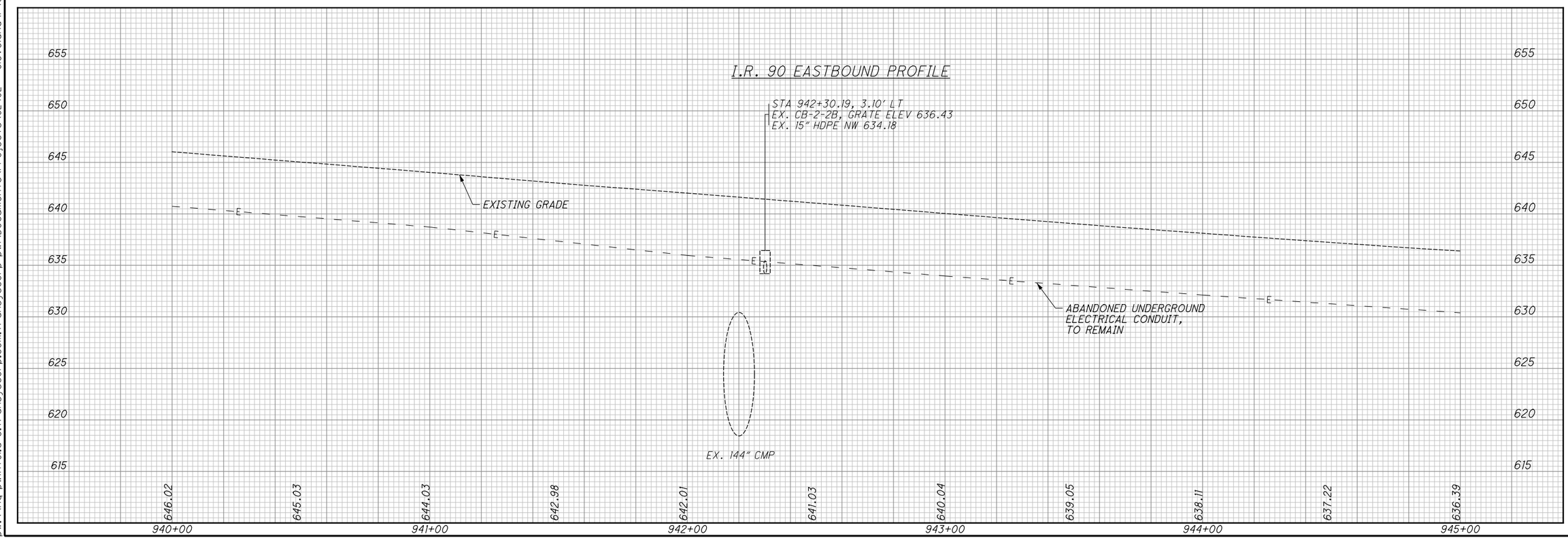
CALCULATED HB
CHECKED SNP

PLAN - I.R. 90
STA. 940+00 TO STA. 945+00

LOR-90-17.85

71
196





CALCULATED HB
CHECKED SNP

PROFILE - STA. 940+00 TO STA. 945+00

LOR-90-17.85

END WORK
IR 90 EB
STA. 948+04.00

STA. 948+00.00, LT.
END SHOULDER
RECONSTRUCTION
& RUMBLE STRIPS

Ex LA

VARIES
SEE
TYPICAL
SECTIONS

CONSTR. LIMITS

UD-38

10.42'

SAW CUT

I.R. 90 WB

945+00 I.R. 90

UD-51

946

947

948

949

950

21" RCP

+04.84, RT.
END SHLDR.
TAPER

42'

10.01'

MATCH LINE 945+00 I.R. 90

N 44° 10' 10" E

℄ CONSTR. I.R. 90

SAW CUT

CONSTR. LIMITS

UD-58

I.R. 90 EB

SAW CUT

10.60'

4" CPP

UD-57

UD-59

CONSTR. LIMITS

ABANDONED UNDERGROUND
ELECTRICAL CONDUIT,
TO REMAIN

U.I.P.

STA. 945+04.84, RT.
END WIDENING,
PAVEMENT PLANING,
RESURFACING &
RUMBLE STRIPS

STA. 948+50.00, RT.
END SHOULDER
RECONSTRUCTION
& RUMBLE STRIP

END WORK
IR 90 EB
STA. 948+54.00

HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED HB
CHECKED SNP

PLAN - I.R. 90
STA. 945+00 TO STA. 950+00

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
	0

℄ CONSTRUCTION I.R. 90

PROFILE GRADE W.B. LANES

PROFILE GRADE E.B. LANES

12" HDPE

908+00.00
633.94

908+00.00
634.09

907+50.00
634.00

907+50.00
634.12

907+10.00
634.13

907+10.00
634.13

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA		VOLUME	
CUT	FILL	CUT	FILL
16	0		
		30	0
16	0		
		30	0
16	0		
		60	0

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 907+10 TO STA. 908+00

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
	0

℄ CONSTRUCTION I.R. 90

PROFILE GRADE W.B. LANES

PROFILE GRADE E.B. LANES

909+50.00
634.56

909+50.00
634.64

PROFILE GRADE W.B. LANES

PROFILE GRADE E.B. LANES

909+00.00
634.26

909+00.00
634.38

STA 908+51.24, 18.64' RT
EX. CB-8, GRATE ELEV 631.86'
12" RCP NW 629.19

STA 908+50.04, 19.18' LT
EX. CB-8, GRATE ELEV 631.79'
12" HDPE S 629.04
12" RCP E 629.04

PROFILE GRADE W.B. LANES

PROFILE GRADE E.B. LANES

12" RCP

908+50.00
634.04

908+50.00
634.16

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA		VOLUME	
CUT	FILL	CUT	FILL
21	0		
		34	0
16	0		
		29	0
15	0		
		29	0
		92	0

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 908+50 TO STA. 909+50

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
5	6
0	
6	

℄ CONSTRUCTION I.R. 90

STA 911+01.41, 0.77' LT
EX. MH-1, GRATE ELEV 637.04'
15" RCP NE 632.05

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES

911+00.00
636.20

911+00.00
636.01

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES

910+50.00
635.52

910+50.00
635.45

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES

910+00.00
634.95

910+00.00
634.99

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA		VOLUME	
CUT	FILL	CUT	FILL
35	0	62	0
32	0	57	0
30	0	47	0
		166	0

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 910+00 TO STA. 911+00

LOR-90-17.85

℄ CONSTRUCTION I.R. 90

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
22	108	41	11	74	16
17	83	39	6	71	8
13	50	37	3	67	3
	241			212	27

CALCULATED HB
CHECKED SNP

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES
4:1
912+50.00
638.66
912+50.00
638.57

STA 912+21.87, 0.01' RT
EX. CB-8, GRATE ELEV 633.25'
15" RCP SW 630.95
912+00.00
637.80
912+00.00
637.61

15" RCP
911+50.00
636.97
911+50.00
636.70

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS
STA. 911+50 TO STA. 912+50

LOR-90-17.85

77
196

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
31	158	43	23	78	37
26	144	42	17	77	31
26	133	42	17	77	26
	435			232	94

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 913+00 TO STA. 914+00

LOR-90-17.85

78
196

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
38	208	43	34	79	62
37	200	42	33	78	58
35	183	42	30	78	49
	591			235	169

CALCULATED HB
CHECKED SNP

℄ CONSTRUCTION I.R. 90

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES
4:1
639.27
915+50.00
644.69
915+50.00
644.68

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES
4:1
638.31
915+00.00
643.69
915+00.00
643.66

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES
4:1
914+50.00
642.67
914+50.00
642.70

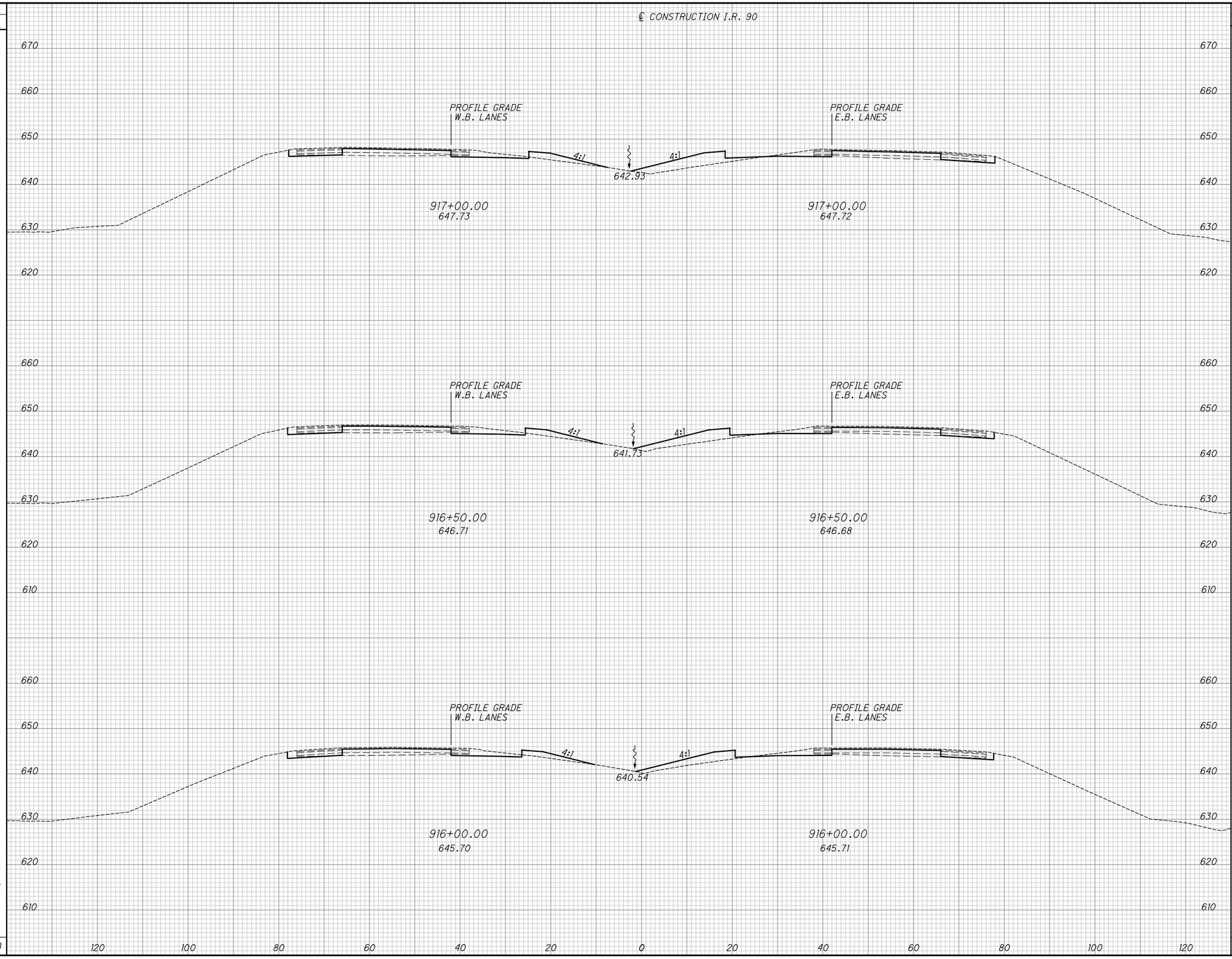
660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS
STA. 914+50 TO STA. 915+50

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
39	217	41	61	76	106
39	217	42	53	77	90
39	214	42	44	79	73
	648			232	269



CALCULATED HB

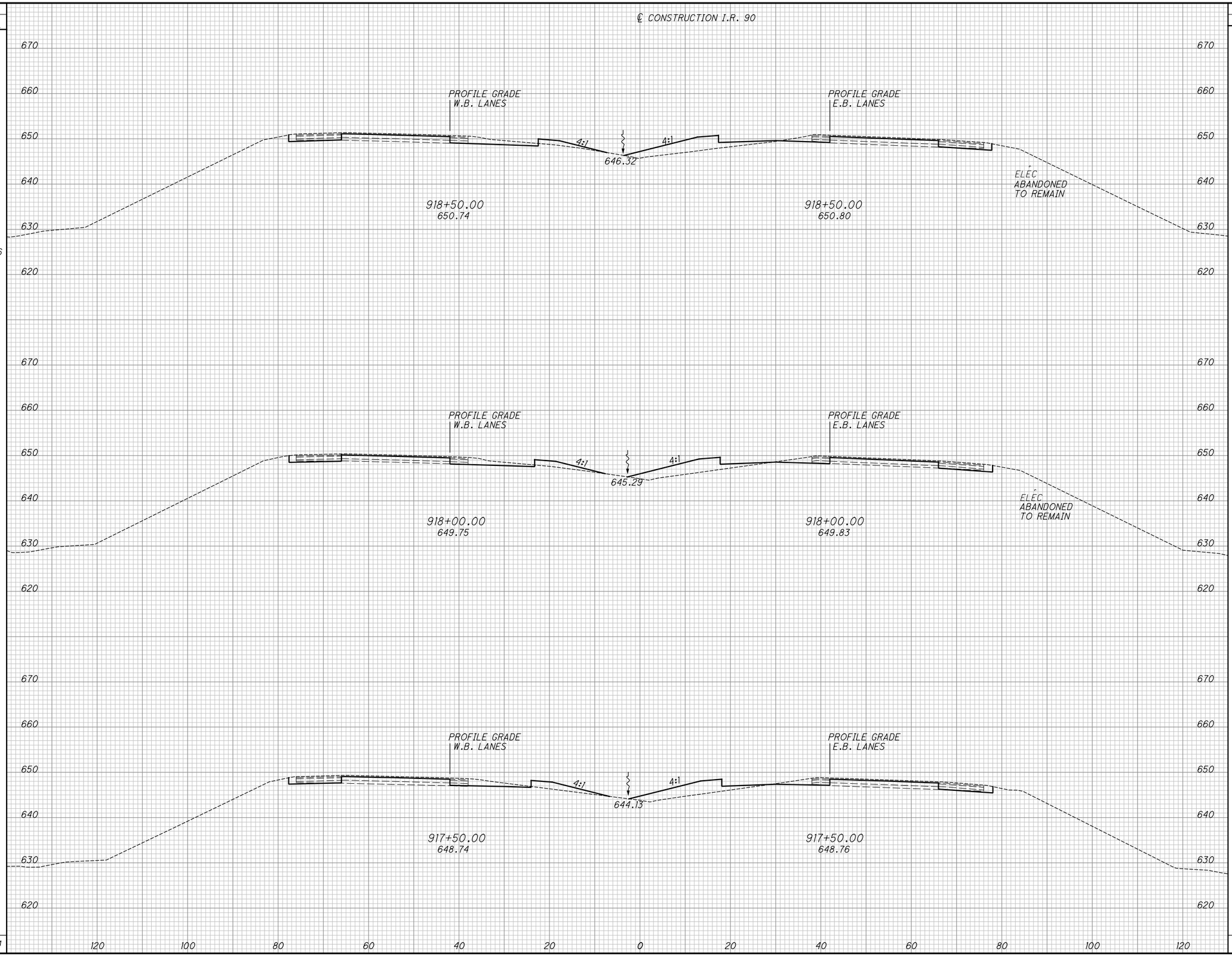
CHECKED SNP

CROSS SECTIONS
STA. 916+00 TO STA. 917+00

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
37	206	41	64	75	117
37	211	40	63	73	119
39	217	40	66	74	117
	634			222	353

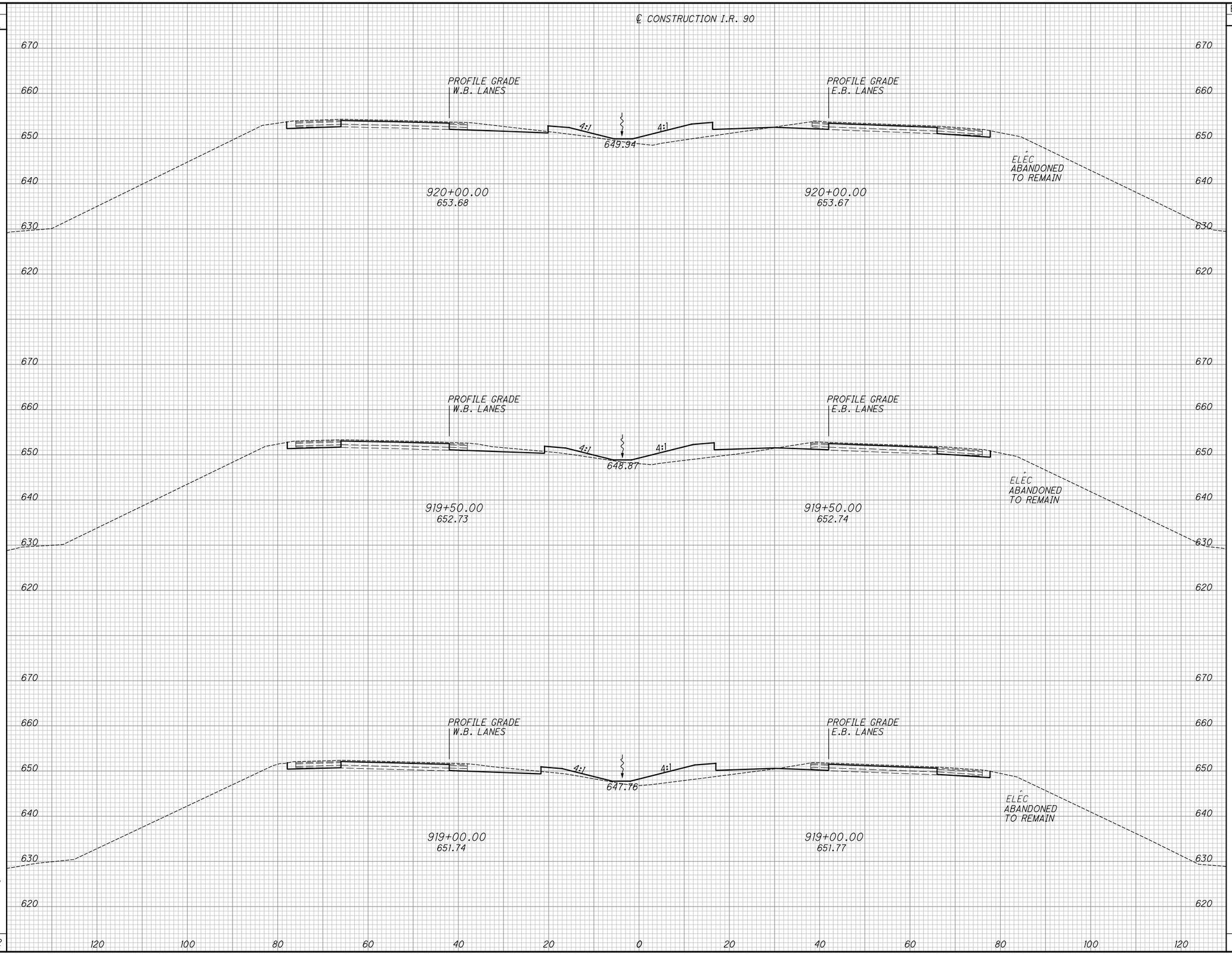
CALCULATED HB
CHECKED SNP



CROSS SECTIONS
STA. 917+50 TO STA. 918+50

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.
38	211
38	217
40	214
	642



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
46	74	81	135
42	73	79	131
43	69	78	123
		238	389

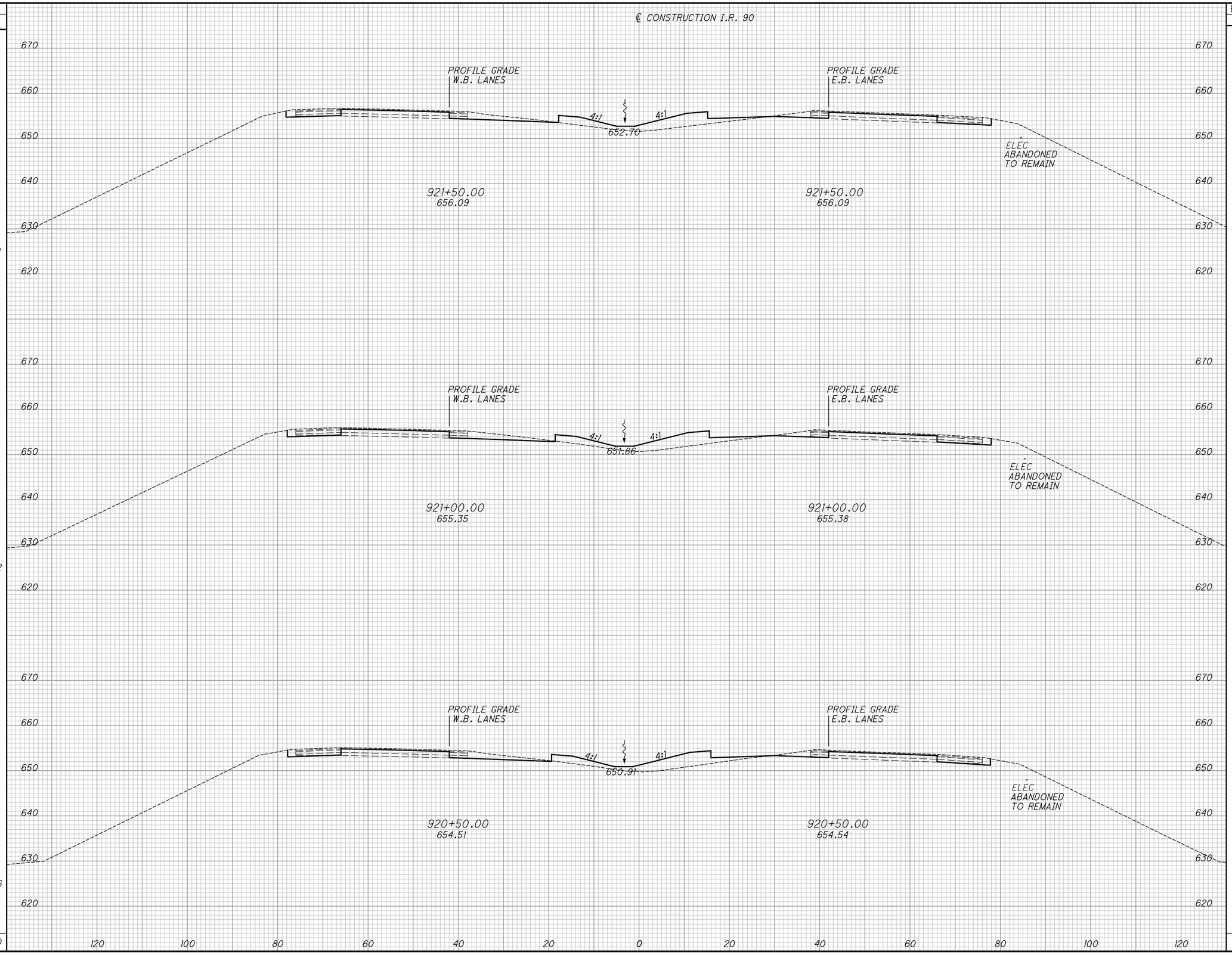
CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 919+00 TO STA. 920+00

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
34	192	42	67	81	127
35	222	45	69	81	131
36	206	42	72	81	135
	620			243	393

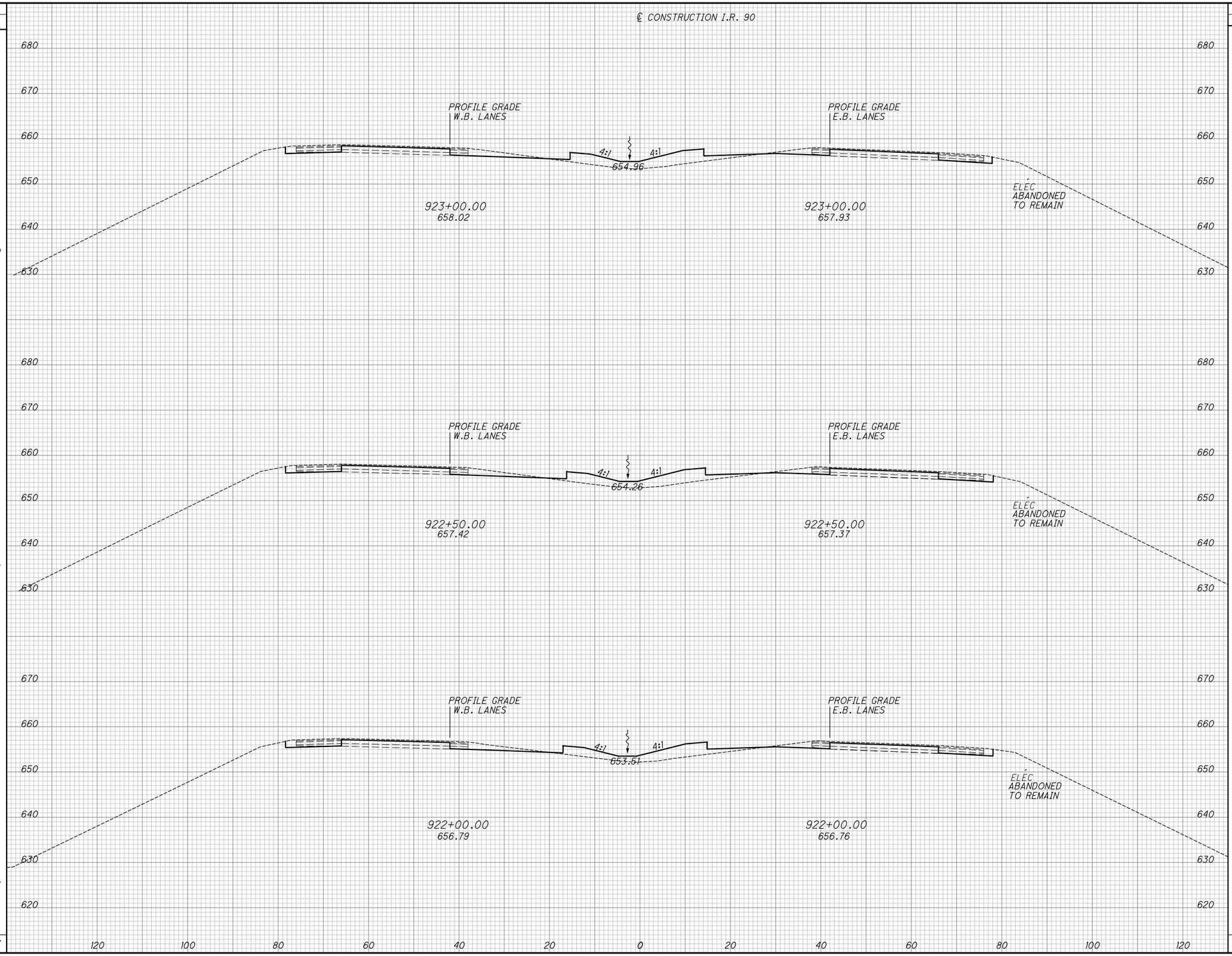
CALCULATED HB
CHECKED SNP



CROSS SECTIONS
STA. 920+50 TO STA. 921+50

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.
30	169
31	175
32	183
	527



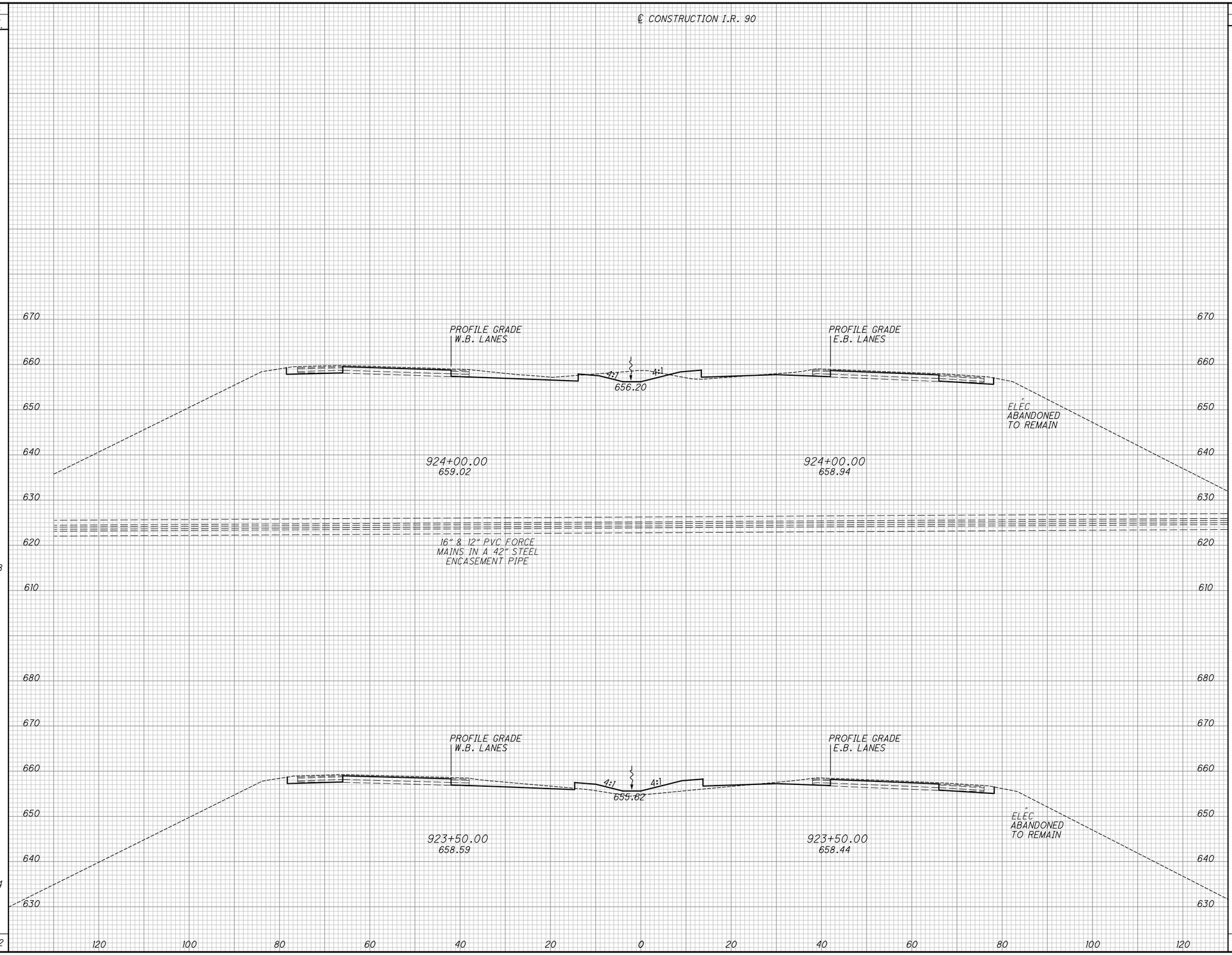
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
44	74		
43	74		
		80	137
43	71		
		79	134
		79	128
		238	399

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 922+00 TO STA. 923+00

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
28	
	158
29	
	164
	322



END AREA		VOLUME	
CUT	FILL	CUT	FILL
79	12		
		120	53
50	46		
		88	111
		208	164

CALCULATED HB
CHECKED SNP

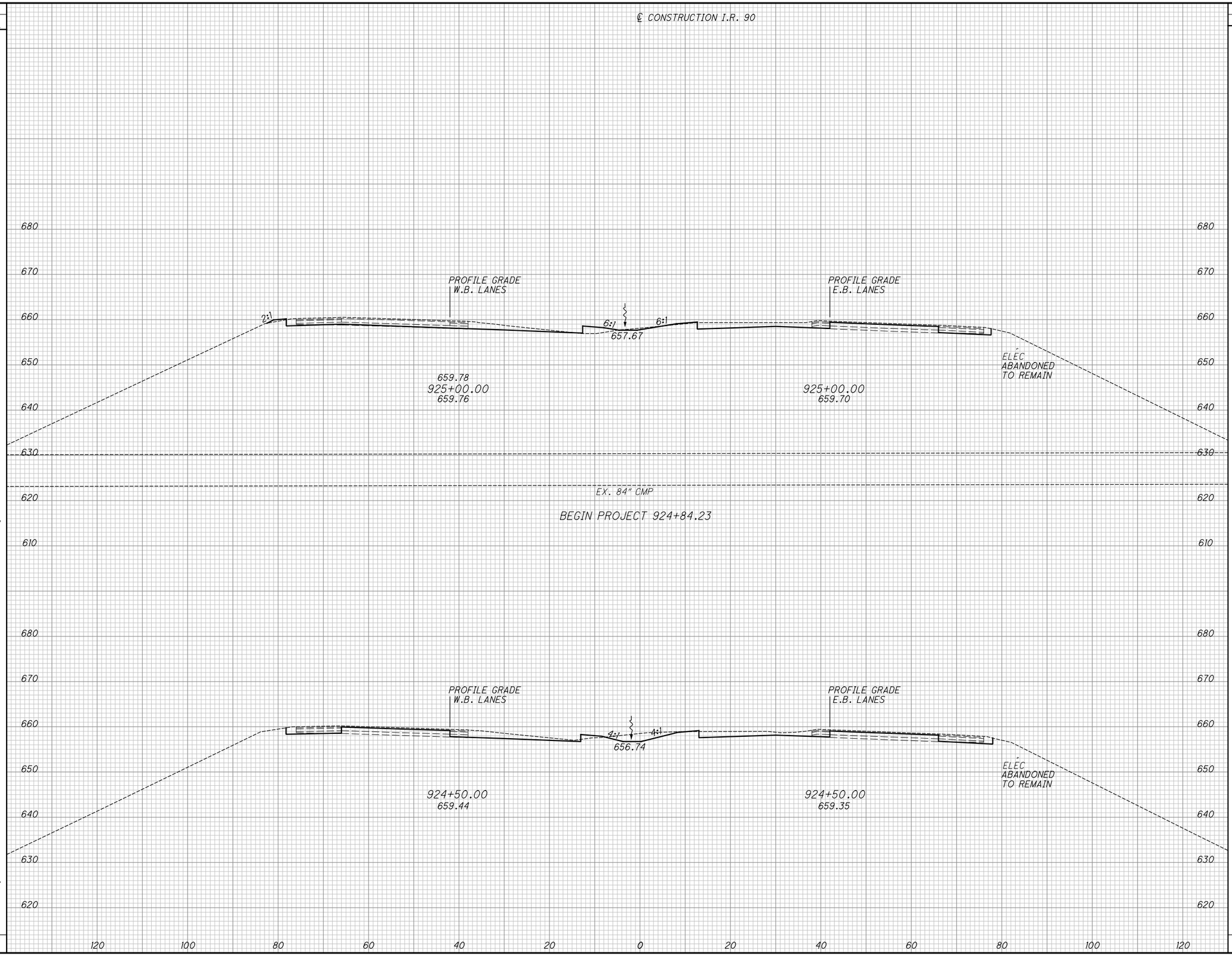
CROSS SECTIONS
STA. 923+50 TO STA. 924+00

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
30	158	80	11	154	13
27	153	87	3	153	14
	311			307	27

CALCULATED HB
CHECKED SNP

℄ CONSTRUCTION I.R. 90

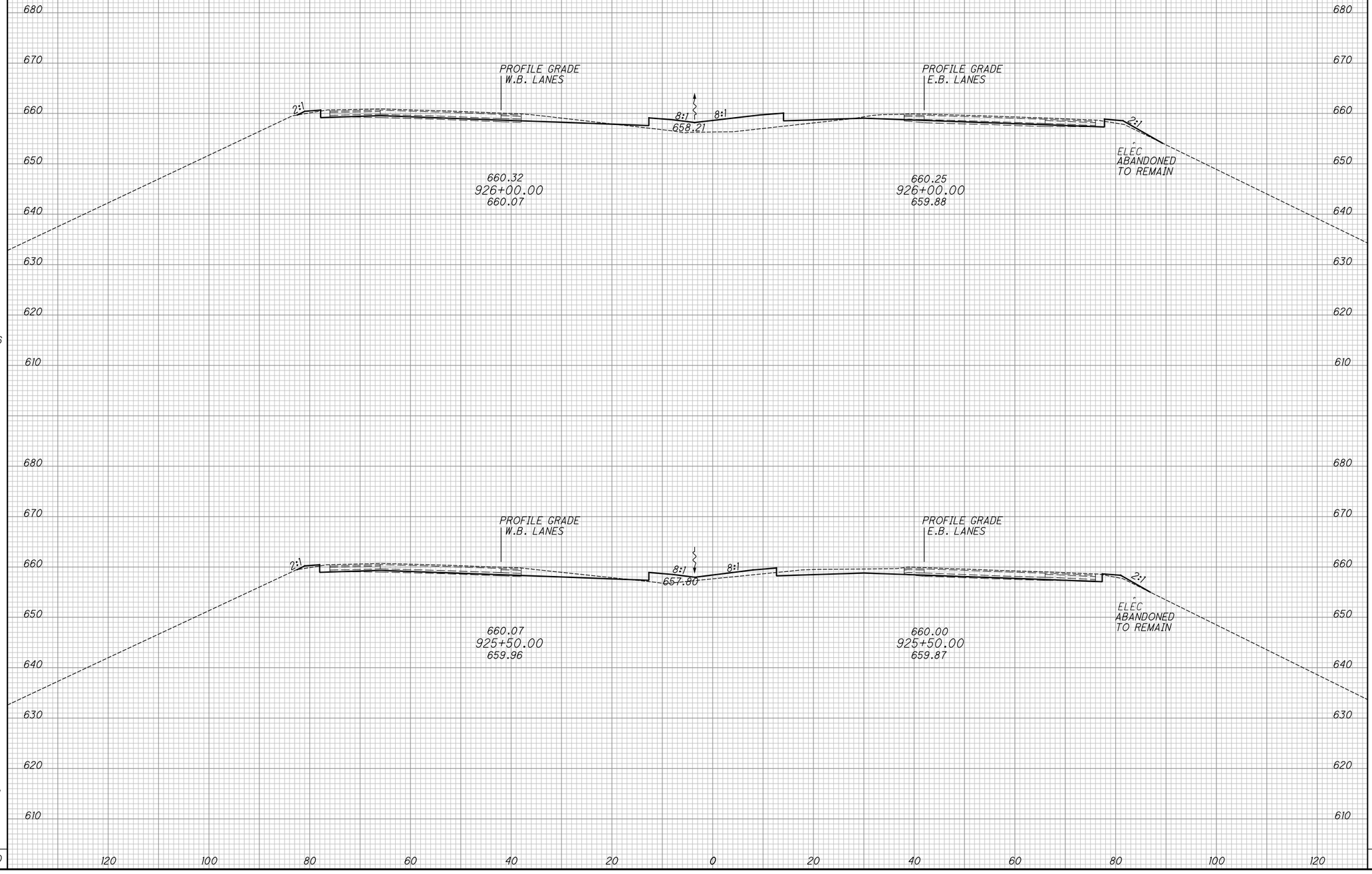


CROSS SECTIONS
STA. 924+50 TO STA. 925+00

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.
45	236
40	194
	430

℄ CONSTRUCTION I.R. 90



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
45	80	110	104
74	32	142	40
		252	144

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 925+50 TO STA. 926+00

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
50	325
67	311
	636

℄ CONSTRUCTION I.R. 90

PROFILE GRADE
W.B. LANES

SEE STRUCTURE
DETAILS

2:1

12.5:1

660.64
927+00.00
660.32

STA 926+55.53, 3.92' LT
CB-8, GRATE ELEV 658.10'
15" NW 653.23

TO BE REMOVED
STA 926+55.51, 0.49' RT
EX. CB-2-2B, GRATE ELEV 655.07'
15" RCP NW 653.27

PROFILE GRADE
W.B. LANES

PROFILE GRADE
E.B. LANES

8:1

8:1

658.15

2:1

15" RCP

4'-15" TYPE B @ ±1.0%

MASONRY COLLAR

ELEC
ABANDONED
TO REMAIN

660.51
926+50.00
660.22

660.45
926+50.00
660.02

680 670 660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA	
CUT	FILL
38	29
40	143

VOLUME	
CUT	FILL
73	159
79	206
152	365

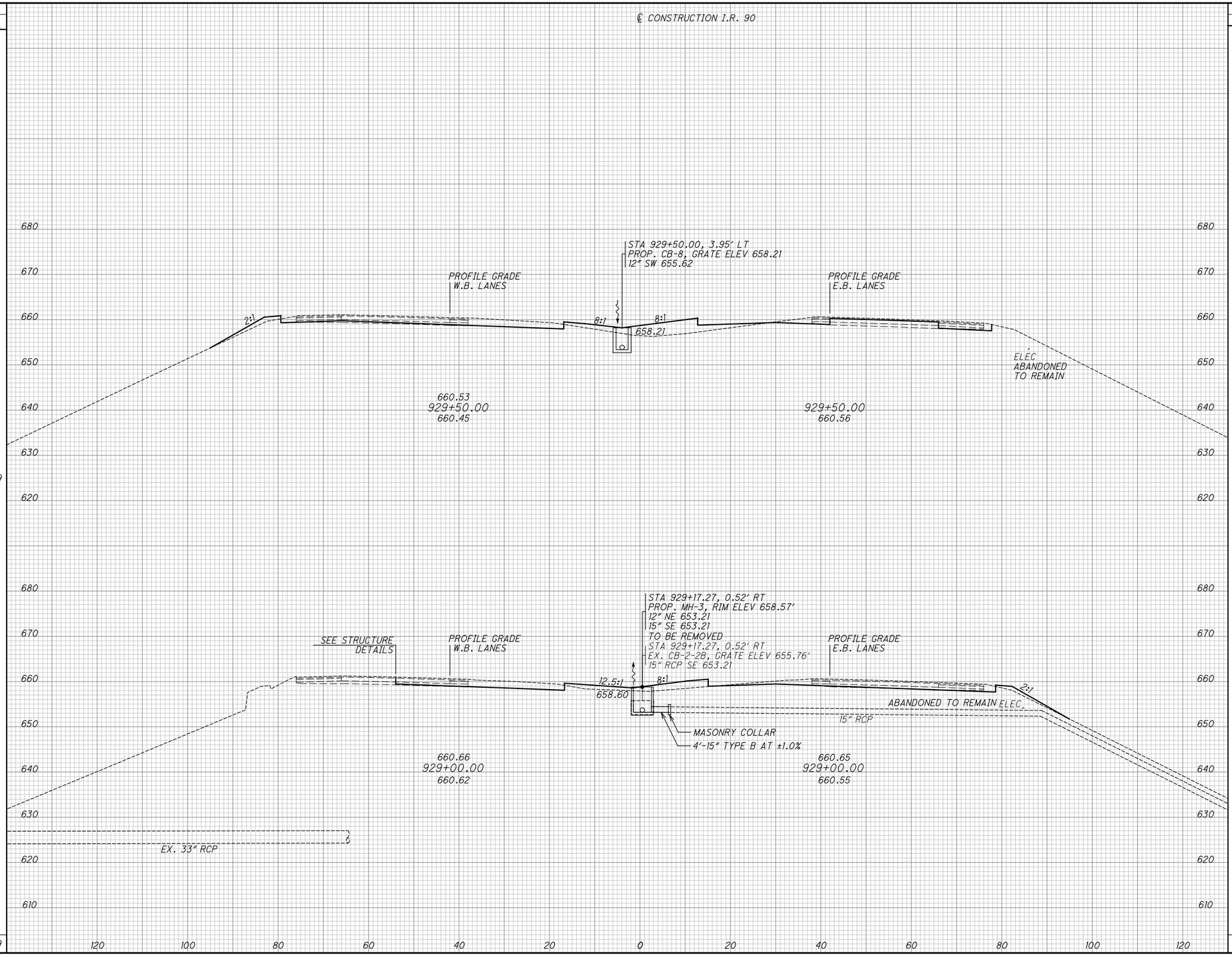
CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 926+50 TO STA. 927+00

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
47	269	65	78	131	133
50	269	76	66	131	133

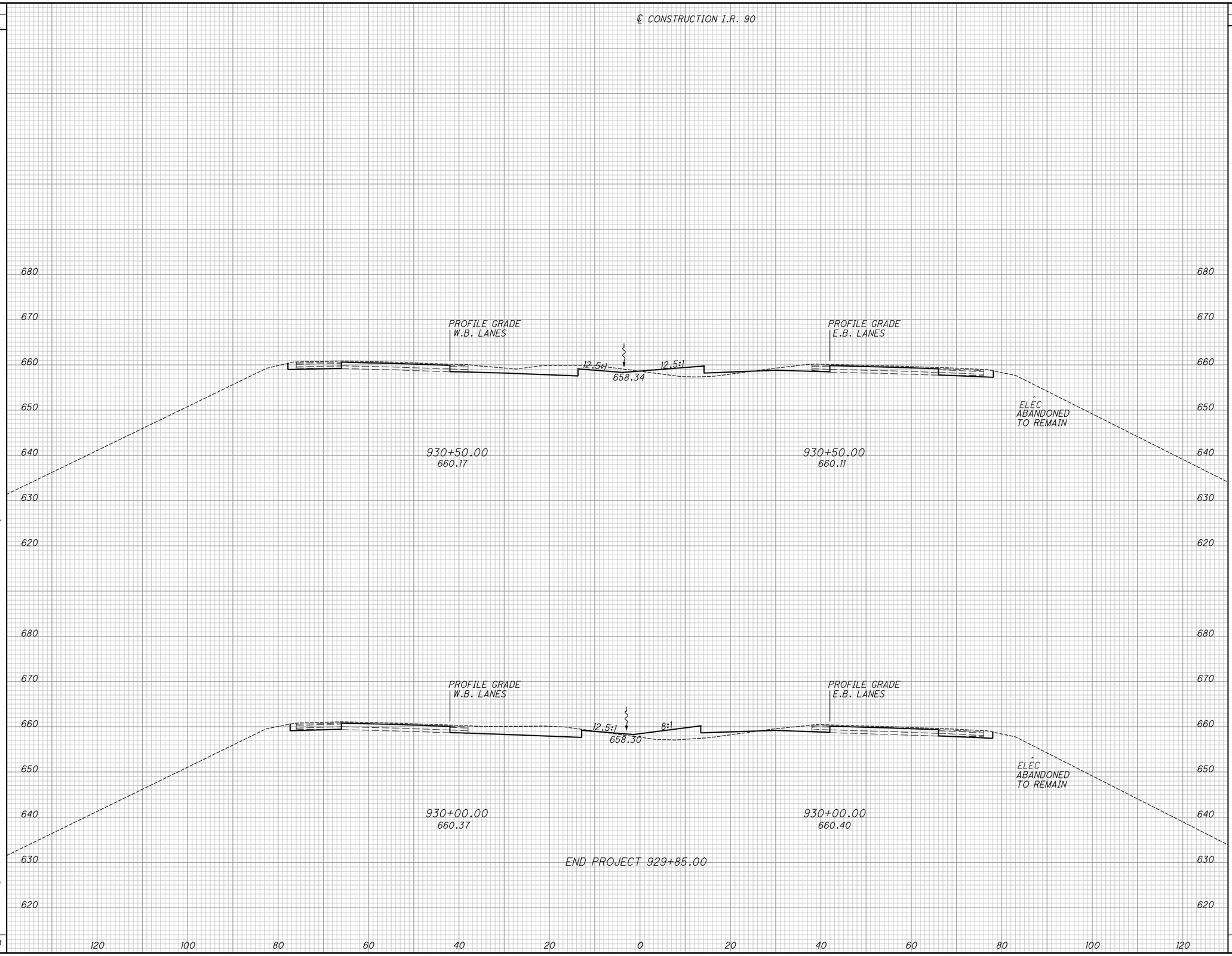
CALCULATED HB
CHECKED SNP



CROSS SECTIONS
STA. 929+00 TO STA. 929+50

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
28	153
27	231
	384



END AREA	
CUT	FILL
81	25
77	39

VOLUME	
CUT	FILL
146	59
132	108
278	167

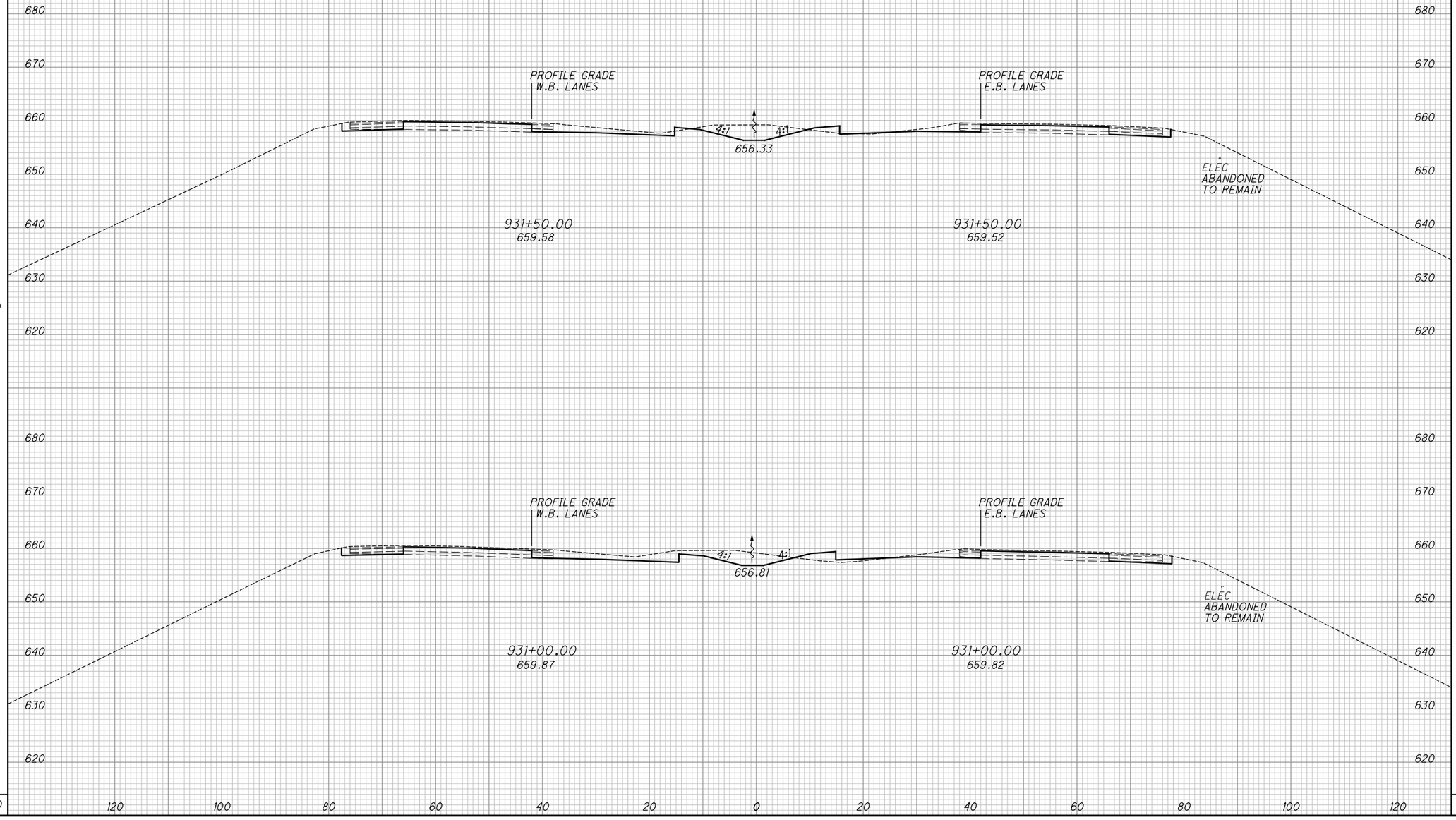
CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 930+00 TO STA. 930+50

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
31	169
30	161
	330

℄ CONSTRUCTION I.R. 90



END AREA	
CUT	FILL
87	6
92	13

VOLUME	
CUT	FILL
165	17
160	35
325	52

CALCULATED HB
CHECKED SNP

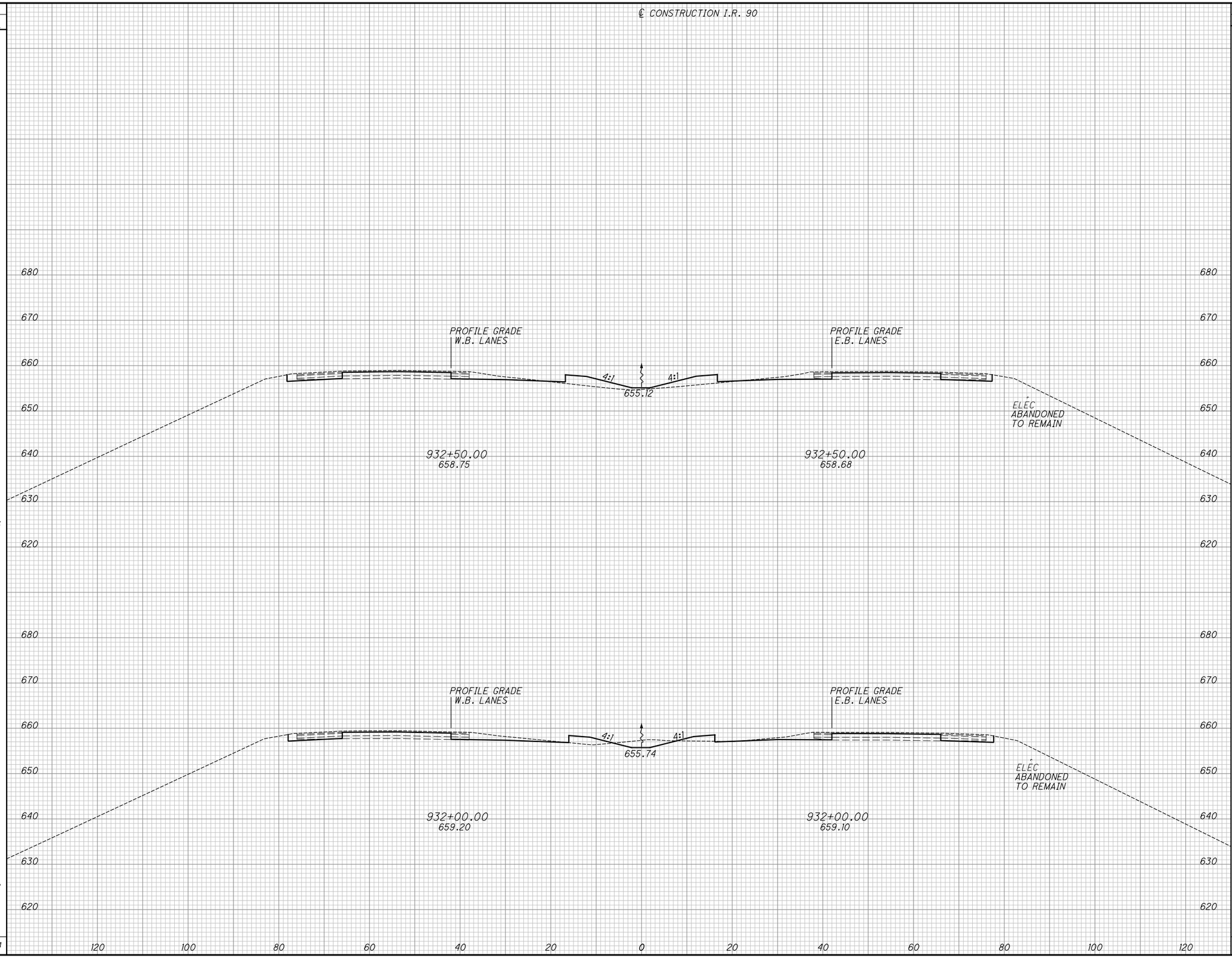
CROSS SECTIONS
STA. 931+00 TO STA. 931+50

LOR-90-17.85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
34	186	42	45	95	60
33	178	60	20	136	24
	364			231	84

CALCULATED HB CHECKED SNP

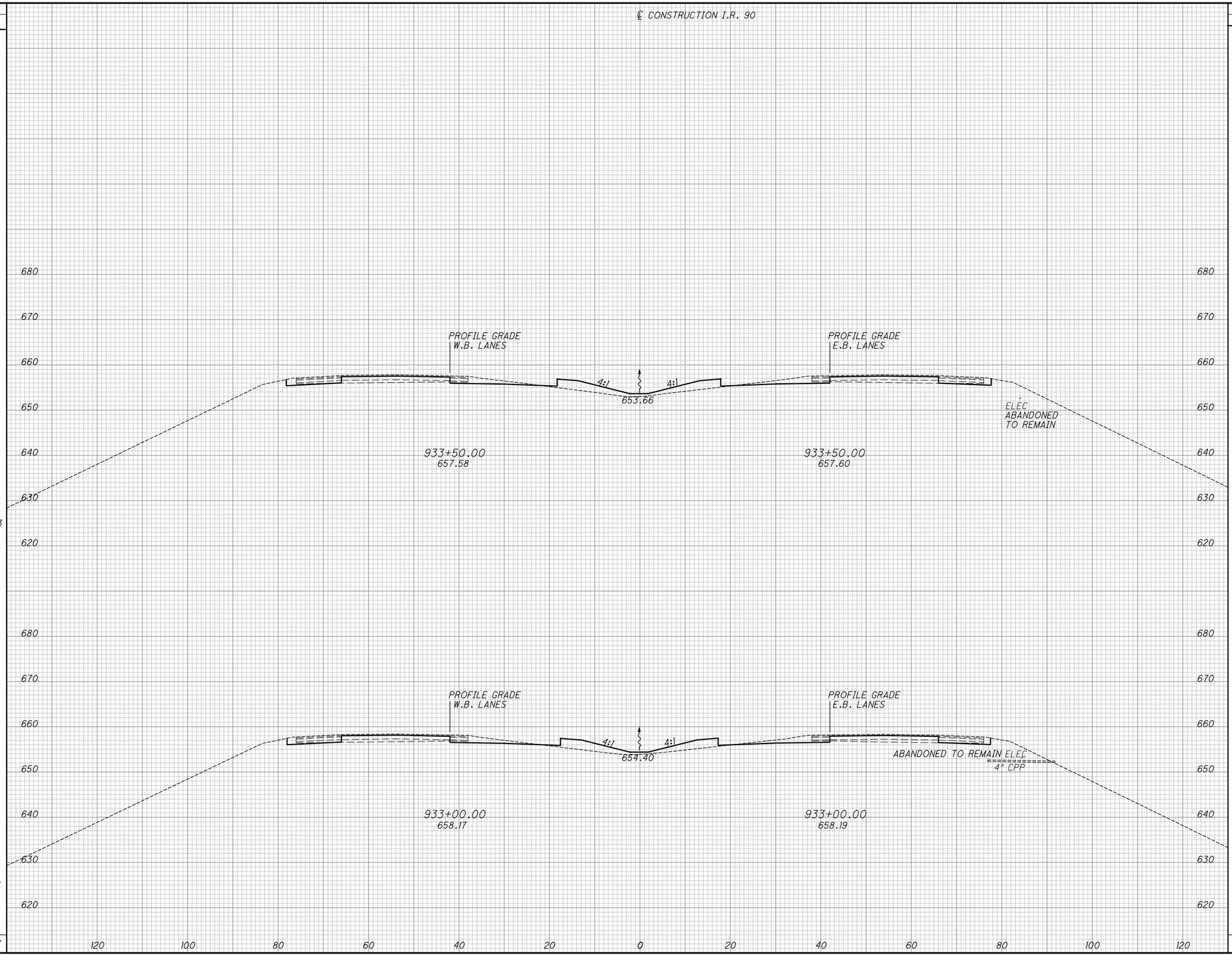
℄ CONSTRUCTION I.R. 90



CROSS SECTIONS STA. 932+00 TO STA. 932+50

LOR-90-17.85

℄ CONSTRUCTION I.R. 90



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
37	203	47	52	85	94
36	194	45	50	81	88
	397			166	182

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 933+00 TO STA. 933+50

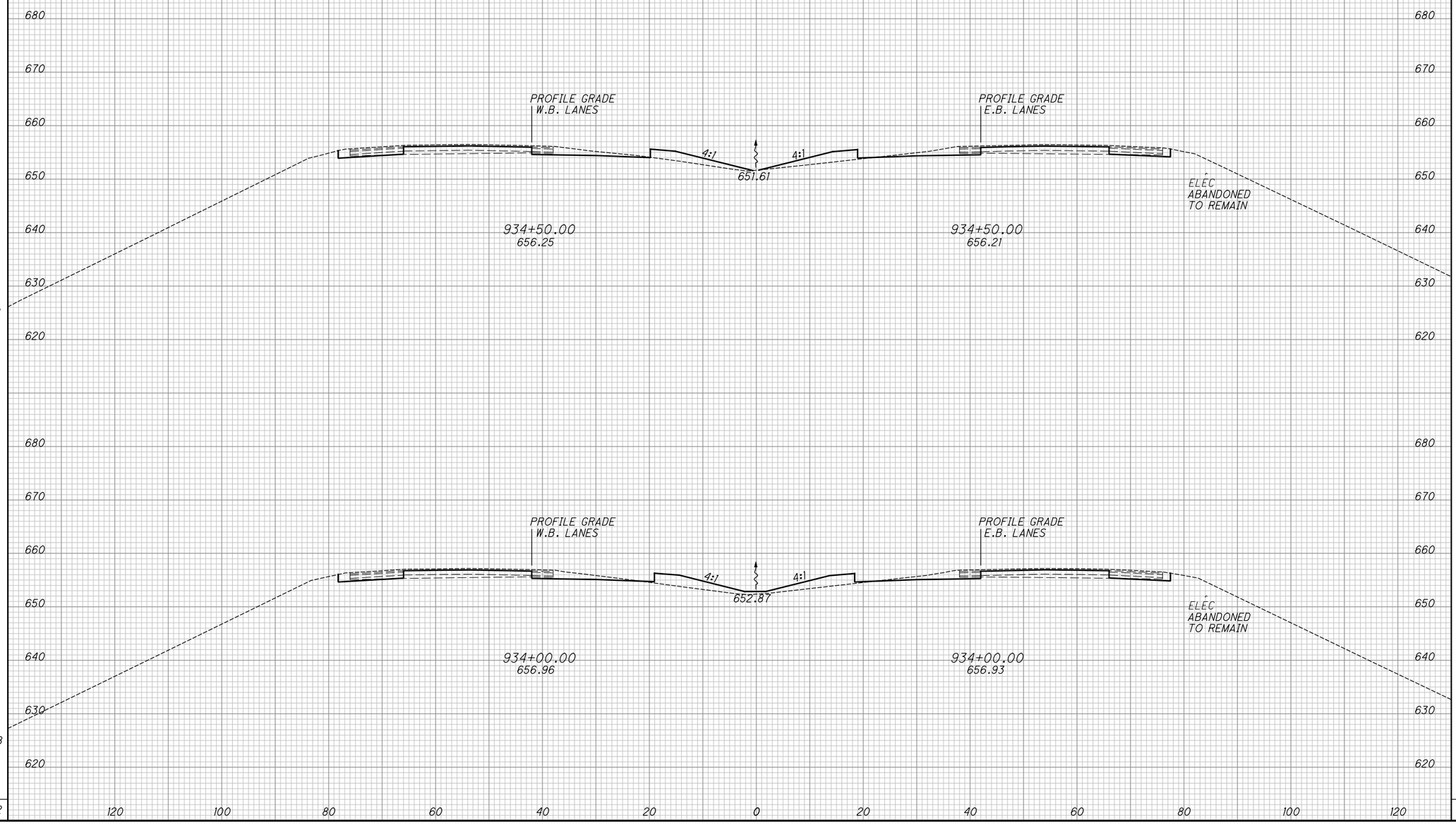
LOR-90-17.85

93
196

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
39	214	46	45	83	90
38	208	44	52	84	96
	422			167	186

CALCULATED HB
CHECKED SNP

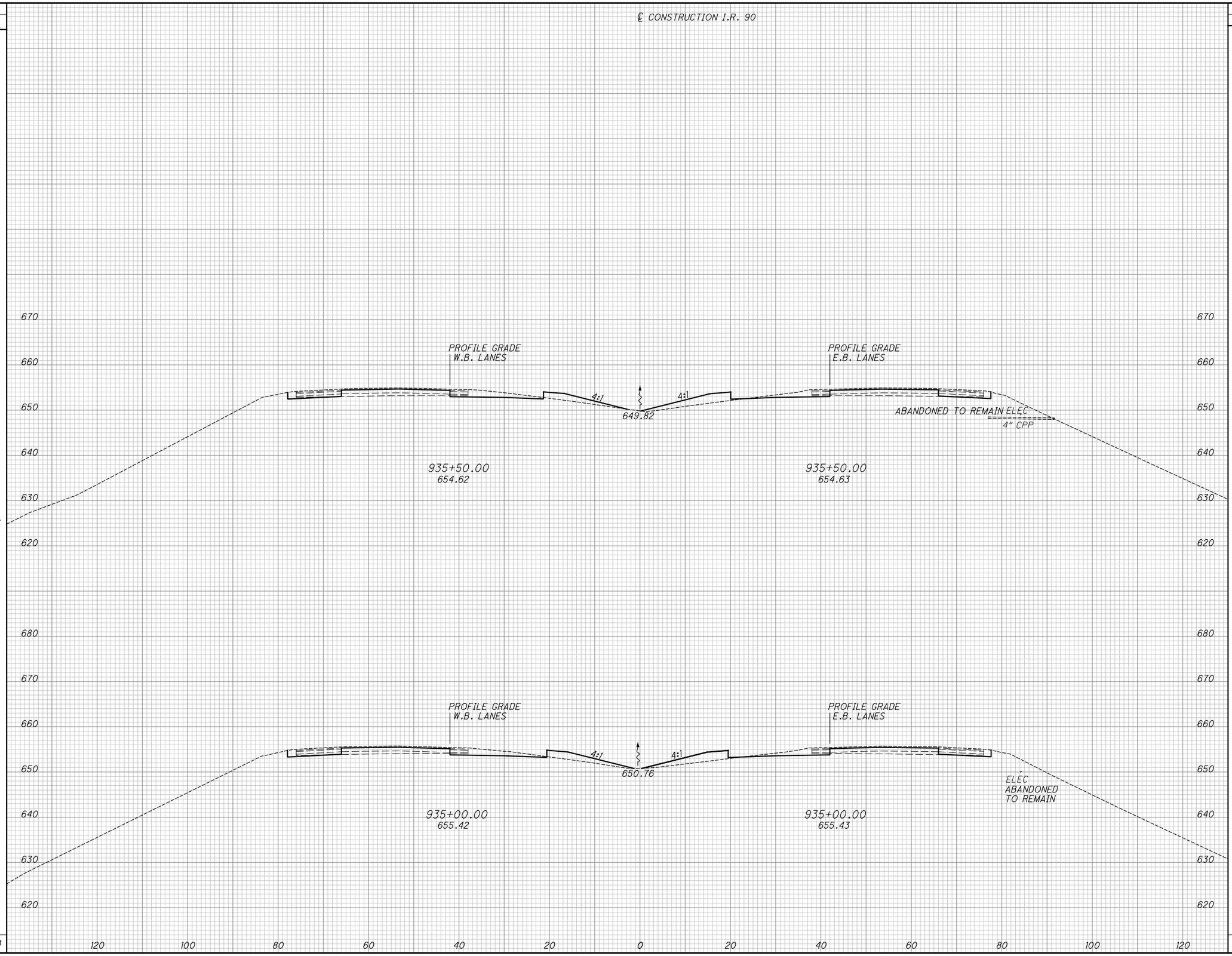
℄ CONSTRUCTION I.R. 90



CROSS SECTIONS
STA. 934+00 TO STA. 934+50

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.
39	217
39	217
	434



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
48	44		
47	45		
		88	82
		86	83
		174	165

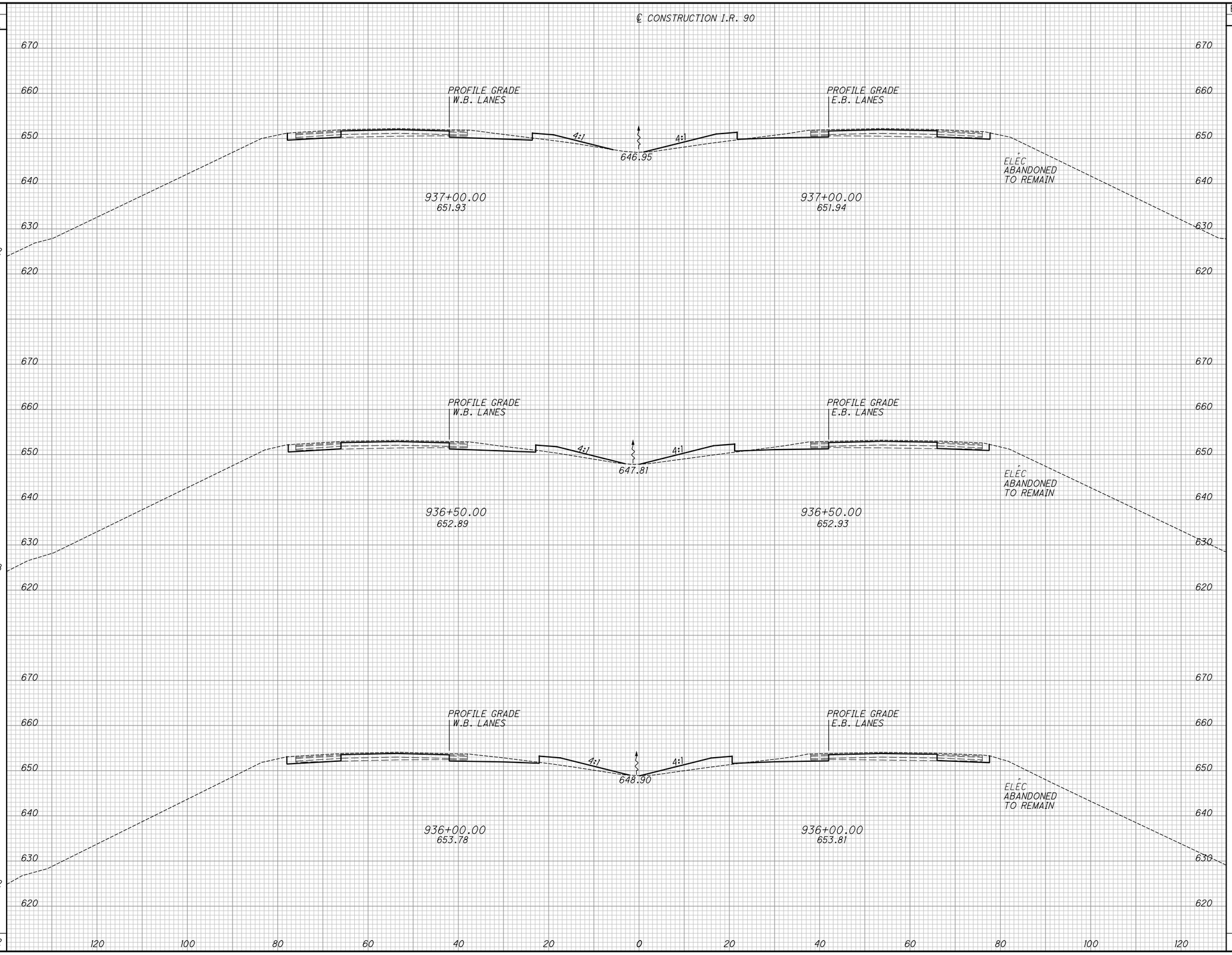
CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 935+00 TO STA. 935+50

LOR-90-17.85

95
196

SEEDING END WIDTH	SEEDING SQ. YDS.
39	222
41	228
41	222
	672



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
47	38		
		87	77
47	45		
		86	85
46	47		
		87	84
		260	246

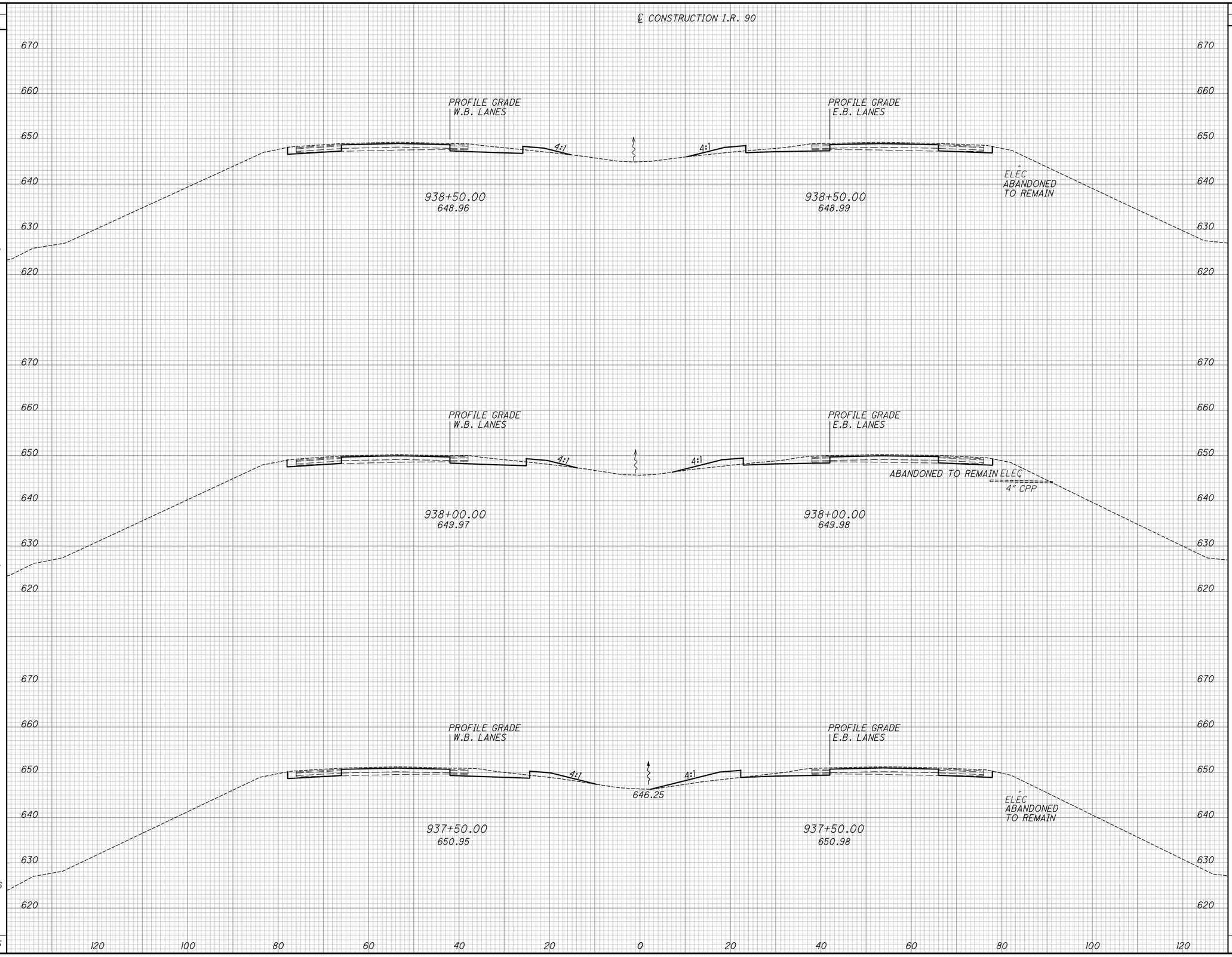
CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 936+00 TO STA. 937+00

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
24	144	49	16	92	34
28	175	50	20	91	46
35	206	49	30	89	63
	525			272	143

CALCULATED HB CHECKED SNP



CROSS SECTIONS
STA. 937+50 TO STA. 938+50

LOR-90-17.85

97
196

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
26	136	48	16	89	27
23	125	49	14	92	24
22	128	50	13	92	27
	389			273	78

CALCULATED HB CHECKED SNP

℄ CONSTRUCTION I.R. 90

PROFILE GRADE W.B. LANES

PROFILE GRADE E.B. LANES

4:1

940+00.00
645.98

940+00.00
646.02

939+50.00
646.96

939+50.00
647.00

939+00.00
647.94

939+00.00
648.00

ELEC ABANDONED TO REMAIN

670 660 650 640 630 620

120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS
STA. 939+00 TO STA. 940+00

LOR-90-17.85

98
196

℄ CONSTRUCTION I.R. 90

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
22	125	46	12	84	23
23	131	46	13	82	26
24	139	43	15	84	29
	395			250	78

CALCULATED HB CHECKED SNP

660 650 640 630 620

PROFILE GRADE W.B. LANES

PROFILE GRADE E.B. LANES

4:1

941+50.00
642.98

ELEC ABANDONED TO REMAIN

941+00.00
644.00

941+00.00
644.03

940+50.00
644.99

940+50.00
645.03

ABANDONED TO REMAIN ELEC. 4" CPP

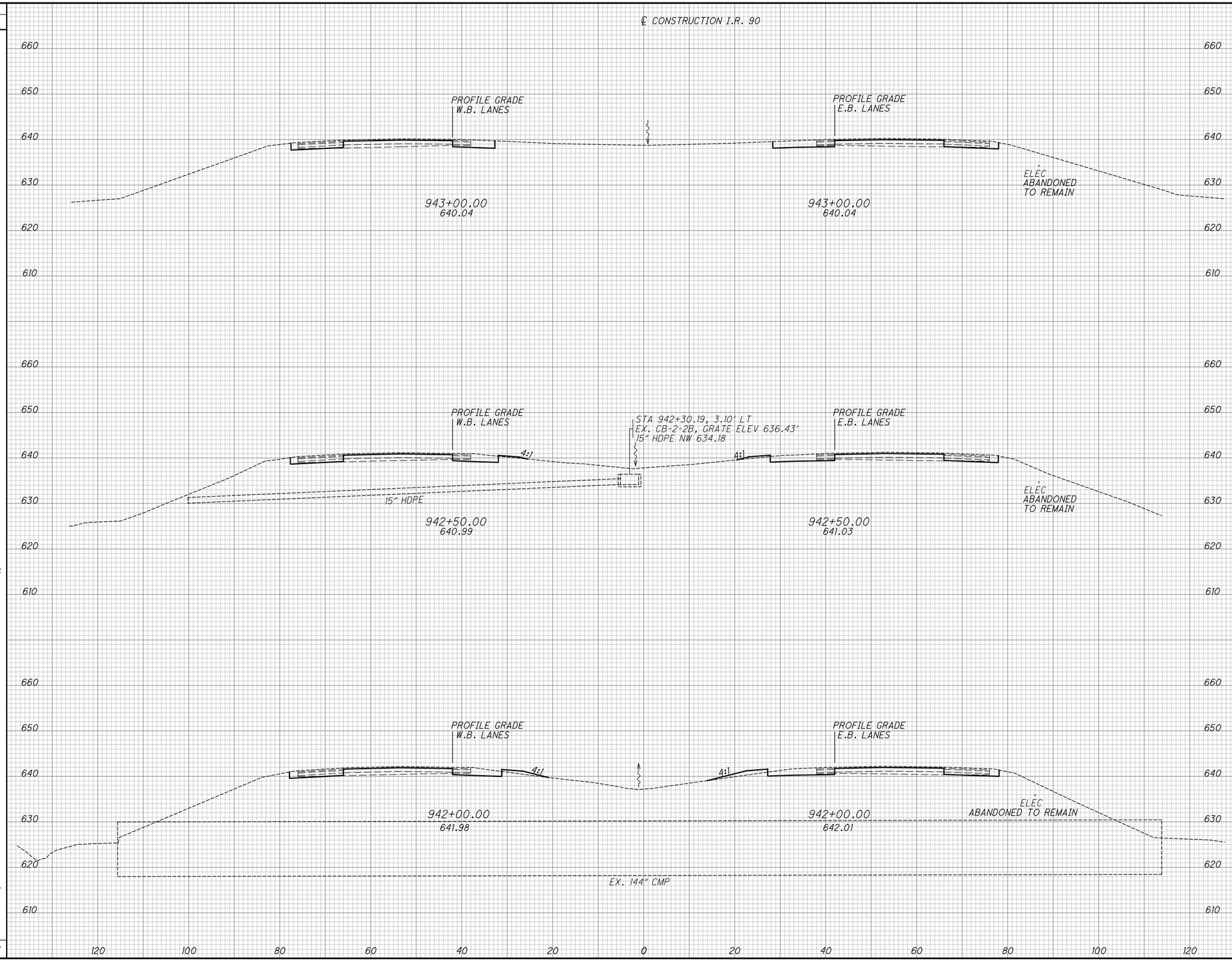
120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS STA. 940+50 TO STA. 941+50

LOR-90-17.85

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	78	43	0	81	3
14	106	44	3	82	14
24	128	45	12	83	22
	312			246	39

CALCULATED HB CHECKED SNP



CROSS SECTIONS STA. 942+00 TO STA. 943+00

LOR-90-17.85

℄ CONSTRUCTION I.R. 90

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
15	67	37	3	69	5
9	44	38	3	73	4
7	19	41	2	78	2
	130			220	11

CALCULATED HB
CHECKED SNP

PROFILE GRADE W.B. LANES
PROFILE GRADE E.B. LANES
4:1
ELEC ABANDONED TO REMAIN

944+50.00
637.21

944+50.00
637.22

944+00.00
638.08

944+00.00
638.11

943+50.00
639.04

943+50.00
639.05

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS
STA. 943+50 TO STA. 944+50

LOR-90-17.85

101
196

℄ CONSTRUCTION I.R. 90

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		15	0		
				29	0
0	19	16	0	42	2
7	61	29	1	61	4
	80			132	6

CALCULATED HB
CHECKED SNP

PROFILE GRADE W.B. LANES
946+00.00
634.75

PROFILE GRADE E.B. LANES
946+00.00
634.92

ELEC ABANDONED TO REMAIN

PROFILE GRADE W.B. LANES
945+50.00
635.49

PROFILE GRADE E.B. LANES
945+50.00
635.65

ELEC ABANDONED TO REMAIN

PROFILE GRADE W.B. LANES
945+00.00
636.33

PROFILE GRADE E.B. LANES
945+00.00
636.39

4:1

ELEC ABANDONED TO REMAIN

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS
STA. 945+00 TO STA. 946+00

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
	0

℄ CONSTRUCTION I.R. 90

PROFILE GRADE W.B. LANES
947+50.00
633.03

PROFILE GRADE E.B. LANES
947+50.00
633.11

ELEC ABANDONED TO REMAIN

PROFILE GRADE W.B. LANES
947+00.00
633.52

PROFILE GRADE E.B. LANES
947+00.00
633.64

ELEC ABANDONED TO REMAIN

PROFILE GRADE W.B. LANES
946+50.00
634.09

PROFILE GRADE E.B. LANES
946+50.00
634.25

ELEC ABANDONED TO REMAIN

660 650 640 630 620 610

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA	
CUT	FILL
17	0
17	0
16	0

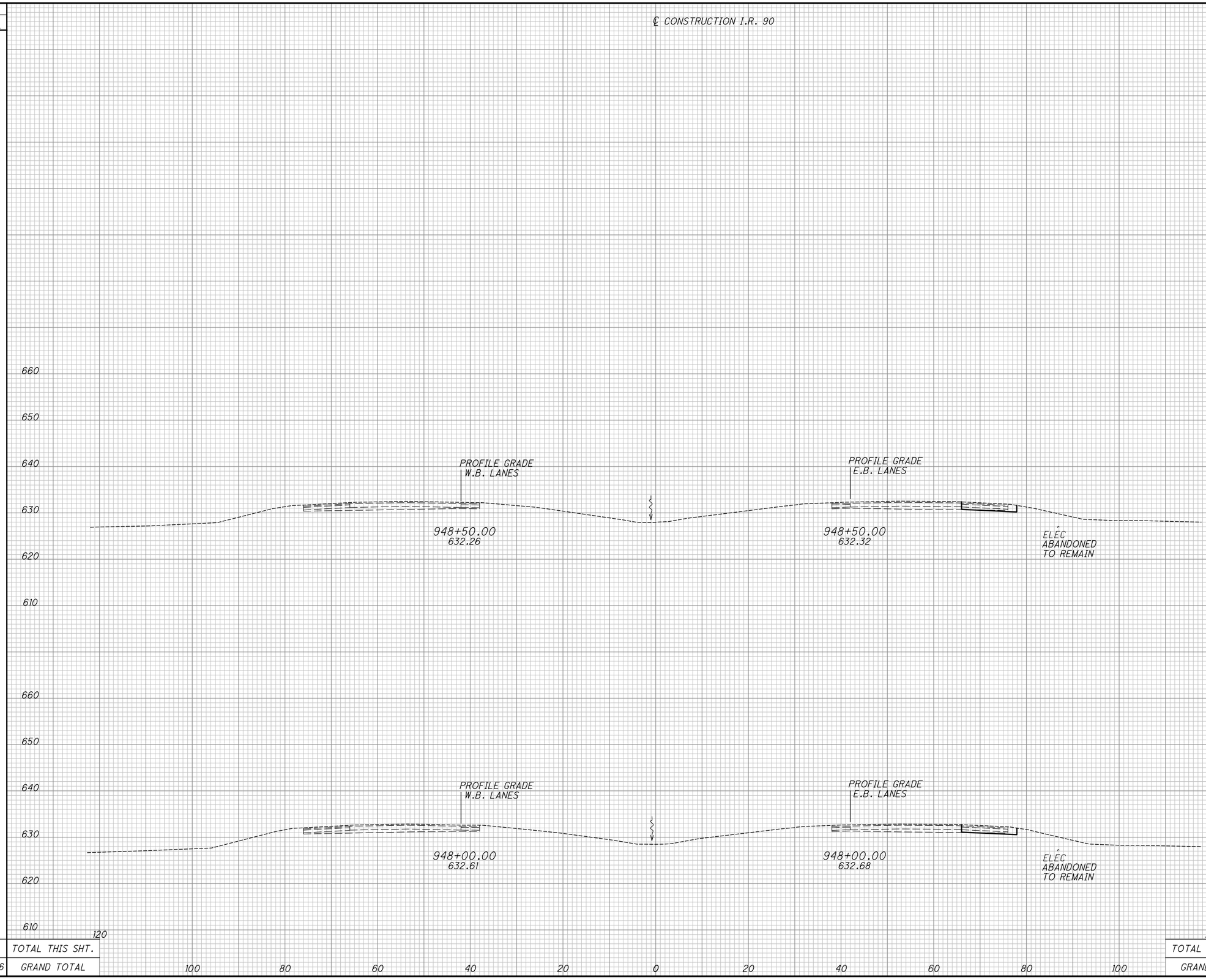
VOLUME	
CUT	FILL
31	0
30	0
29	0
90	0

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 946+50 TO STA. 947+50

LOR-90-17.85

SEEDING	
END WIDTH	SQ. YDS.
0	TOTAL THIS SHT.
11,146	GRAND TOTAL



END AREA		VOLUME	
CUT	FILL	CUT	FILL
8	0		
		15	0
8	0		
		23	0
		38	0
		6,342	4,363

TOTAL THIS SHT.
GRAND TOTAL

CALCULATED HB
CHECKED SNP

CROSS SECTIONS
STA. 948+00 TO STA. 948+50

LOR-90-17.85

104
196

C.L. CONST. I.R. 90	EASTBOUND LANES I.R. 90 (RIGHT SIDE)														
	SHOULDER/MOT PAVEMENT			SHOULDER/MOT PAVEMENT			P.G.	PAVEMENT/EDGE				SHOULDER			
STATION	SHOULDER ELEVATION	SHOULDER WIDTH	SHOULDER CROSS SLOPE	SHOULDER ELEVATION	SHOULDER WIDTH	SHOULDER CROSS SLOPE	PROFILE GRADE (EASTBOUND LANES)	PAVEMENT CROSS SLOPE	DOUBLE LANE WIDTH	TRANSITION RATE	PAVEMENT ELEVATION	SHOULDER CROSS SLOPE	SHOULDER WIDTH	SHOULDER ELEVATION	REMARKS
925+04.23	659.61	16.00	-0.034	660.15	12.00	0.036	659.72	-0.032	24.00		658.95	-0.042	10.22	658.52	BEGIN FULL DEPTH PAVEMENT
925+25.00	659.74	16.00	-0.034	660.28	12.00	0.036	659.85	-0.034	24.00		659.03	-0.041	10.00	658.62	
925+50.00	659.89	16.00	-0.034	660.43	12.00	0.036	660.00	-0.036	24.00	250:1	659.14	-0.04	10.00	658.74	
925+54.23	659.91	16.00	-0.034	660.45	12.00	0.036	660.02	-0.036	24.00		659.16	-0.04	10.00	658.76	END 50' TRANSITION
925+75.00	660.02	16.00	-0.034	660.56	12.00	0.036	660.13	-0.036	24.00		659.27	-0.04	10.00	658.87	
926+00.00	660.19	14.60	-0.034	660.68	12.00	0.036	660.25	-0.036	24.00		659.39	-0.04	10.46	658.97	
926+25.00	660.38	12.11	-0.034	660.79	12.00	0.036	660.36	-0.036	24.00		659.50	-0.04	12.00	659.02	
926+50.00	660.47	12.00	-0.034	660.88	12.00	0.036	660.45	-0.036	24.00		659.59	-0.04	12.00	659.11	
926+54.54	660.52	12.00	-0.034	660.93	12.00	0.036	660.50	-0.036	24.00		659.64	-0.04	12.00	659.16	BEGIN E.B. APPROACH SLAB
	SEE APPROACH SLAB DETAILS														
928+78.75	660.71	12.00	-0.034	661.12	12.00	0.036	660.69	-0.036	24.00		659.83	-0.04	12.00	659.35	END E.B. APPROACH SLAB
928+85.00	660.70	12.00	-0.034	661.11	12.00	0.036	660.68	-0.036	24.00		659.82	-0.04	12.00	659.34	BEGIN 50' TRANSITION
929+00.00	660.62	13.56	-0.034	661.08	12.00	0.036	660.65	-0.035	24.00	250:1	659.81	-0.041	11.29	659.35	
929+25.00	660.49	16.00	-0.034	661.03	12.00	0.036	660.60	-0.033	24.00		659.81	-0.042	10.33	659.37	
929+35.00	660.46	16.00	-0.034	661.00	12.00	0.036	660.57	-0.032	24.00		659.80	-0.042	10.38	659.37	END FULL DEPTH PAVEMENT

CALCULATED SNP
CHECKED MW

SUPERELEVATION TABLE - EASTBOUND LANES

LOR-90-17.85

REMARKS	WESTBOUND LANES I.R. 90 (LEFT SIDE)														C.L. CONST. I.R. 90
	SHOULDER			PAVEMENT/EDGE				P.G.	SHOULDER/MOT PAVEMENT			SHOULDER/MOT PAVEMENT			
	SHOULDER CROSS SLOPE	SHOULDER WIDTH	SHOULDER ELEVATION	PAVEMENT ELEVATION	TRANSITION RATE	DOUBLE LANE WIDTH	PAVEMENT CROSS SLOPE	PROFILE GRADE (EASTBOUND LANES)	SHOULDER ELEVATION	SHOULDER WIDTH	SHOULDER ELEVATION	SHOULDER ELEVATION	SHOULDER WIDTH	SHOULDER CROSS SLOPE	STATION
BEGIN FULL DEPTH REPLACEMENT	-0.042	10.90	659.98	660.44	250:1	24	0.032	659.67	-0.04	12.00	659.238	658.60	16.00	-0.04	924+84.23
	-0.039	10.86	660.15	660.57		24	0.033	659.78	-0.04	12.00	659.348	658.71	16.00	-0.04	925+00.00
	-0.035	10.94	660.39	660.77		24	0.035	659.93	-0.04	12.00	659.498	658.86	16.00	-0.04	925+25.00
END 50' TRANSITION TO EXISTING CROSS SLOPE	-0.034	10.83	660.49	660.85		24	0.036	659.99	-0.04	12.00	659.558	658.92	16.00	-0.04	925+34.23
	-0.034	10.68	660.57	660.93		24	0.036	660.07	-0.04	12.00	659.638	659.00	16.00	-0.04	925+50.00
	-0.034	10.80	660.70	661.06		24	0.036	660.20	-0.04	12.00	659.768	659.13	16.00	-0.04	925+75.00
	-0.034	10.50	660.83	661.18		24	0.036	660.32	-0.04	12.00	659.888	659.25	16.00	-0.04	926+00.00
	-0.034	10.34	660.93	661.28		24	0.036	660.42	-0.04	12.00	659.988	659.35	16.00	-0.04	926+25.00
	-0.034	10.36	661.02	661.37		24	0.036	660.51	-0.04	12.00	660.078	659.44	16.00	-0.04	926+50.00
	-0.034	11.36	661.06	661.44		24	0.036	660.58	-0.04	12.00	660.148	659.54	15.30	-0.04	926+75.00
	-0.039	12.00	661.04	661.50		24	0.036	660.64	-0.04	12.00	660.208	659.73	12.00	-0.04	927+00.00
BEGIN W.B. APPROACH SLAB	-0.04	12.00	661.03	661.51		24	0.036	660.65	-0.04	12.00	660.218	659.74	12.00	-0.04	927+01.45
	SEE APPROACH SLAB DETAILS														
END W.B. APPROACH SLAB	-0.04	12.00	661.00	661.48		24	0.036	660.62	-0.04	12.00	660.188	659.71	12.00	-0.04	929+14.80
	-0.037	12.00	661.02	661.46		24	0.036	660.60	-0.04	12.00	660.168	659.69	12.00	-0.04	929+25.00
BEGIN 50' TRANSITION TO EXISTING CROSS SLOPE	-0.034	12.00	661.03	661.43		24	0.036	660.57	-0.04	12.00	660.138	659.66	12.00	-0.04	929+35.00
	-0.036	12.00	660.93	661.36	250:1	24	0.035	660.52	-0.04	12.00	660.088	659.61	12.00	-0.04	929+50.00
	-0.04	9.54	660.85	661.23		24	0.033	660.44	-0.04	12.00	660.008	659.42	14.61	-0.04	929+75.00
END FULL DEPTH REPLACEMENT	-0.042	9.71	660.76	661.17		24	0.032	660.40	-0.04	12.00	659.968	659.33	16.00	-0.04	929+85.00

CALCULATED SNP
CHECKED MW

SUPERELEVATION TABLE - WESTBOUND LANES

LOR-90-17.85

EXISTING WESTBOUND LANES							PROPOSED WIDENING - MOT PAVEMENT				C.L. CONST. I.R. 90	PROPOSED WIDENING - MOT PAVEMENT				EXISTING EASTBOUND LANES							REMARKS
EXIST. SHOULDER		EXIST. LT. LANE			EXIST. RT. LANE		SHLDR. WIDENING		SHLDR. WIDENING			SHLDR. WIDENING		SHLDR. WIDENING		EXIST. LT. LANE			EXIST. RT. LANE		EXIST. SHOULDER		
EXISTING SHOULDER CROSS SLOPE *	EXISTING SHOULDER WIDTH *	EXISTING PAVEMENT CROSS SLOPE *	EXISTING LANE WIDTH *	CROWN	EXISTING PAVEMENT CROSS SLOPE *	EXISTING LANE WIDTH *	SHOULDER CROSS SLOPE	SHOULDER WIDTH	SHOULDER CROSS SLOPE	SHOULDER WIDTH	STATION	SHOULDER WIDTH	SHOULDER CROSS SLOPE	SHOULDER WIDTH	SHOULDER CROSS SLOPE	EXISTING LANE WIDTH *	EXISTING PAVEMENT CROSS SLOPE *	CROWN	EXISTING LANE WIDTH *	EXISTING PAVEMENT CROSS SLOPE *	EXISTING SHOULDER WIDTH *	EXISTING SHOULDER CROSS SLOPE *	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	907+10.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	907+50.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	908+00.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	908+50.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	909+00.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	909+44.23	4.00	-0.04	0.83	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	909+50.00	4.00	-0.04	0.96	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	0.44	-0.04	4.00	909+74.31	4.00	-0.04	15.20	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	0.84	-0.04	4.00	910+00.00	4.00	-0.04	2.12	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	1.62	-0.04	4.00	910+50.00	4.00	-0.04	3.28	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	2.41	-0.04	4.00	911+00.00	4.00	-0.04	4.44	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	3.20	-0.04	4.00	911+50.00	4.00	-0.04	5.59	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	3.98	-0.04	4.00	912+00.00	4.00	-0.04	6.75	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	4.77	-0.04	4.00	912+50.00	4.00	-0.04	7.91	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	5.55	-0.04	4.00	913+00.00	4.00	-0.04	9.07	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	6.34	-0.04	4.00	913+50.00	4.00	-0.04	10.23	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	7.12	-0.04	4.00	914+00.00	4.00	-0.04	11.39	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	7.91	-0.04	4.00	914+50.00	4.55	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	8.69	-0.04	4.00	915+00.00	5.71	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	9.26	-0.04	4.00	915+35.87	6.54	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	BEGIN TRANSITION E.B.
-0.042	10	-0.016	12		-0.016	12	-0.016	9.48	-0.04	4.00	915+50.00	6.86	-0.04	12.00	-0.014	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.004	12		-0.016	12	-0.016	10.26	-0.04	4.00	916+00.00	8.02	-0.04	12.00	-0.006	12	-0.004		12	-0.016	10	-0.042	
-0.042	10	0.008	12		-0.016	12	-0.016	11.05	-0.04	4.00	916+50.00	9.18	-0.04	12.00	0.003	12	0.008		12	-0.016	10	-0.042	
-0.042	10	0.018	12		-0.023	12	-0.016	11.71	-0.04	4.00	916+91.87	10.15	-0.04	12.00	0.010	12	0.018		12	-0.023	10	-0.042	PC STATION
-0.042	10	0.020	12		-0.024	12	-0.016	11.83	-0.04	4.00	917+00.00	10.21	-0.04	12.00	0.011	12	0.020		12	-0.024	10	-0.042	
-0.042	10	0.027	12		-0.028	12	-0.016	12.00	-0.04	4.26	917+27.87	10.41	-0.04	12.00	0.016	12	0.027		12	-0.028	10	-0.042	BEGIN TRANSITION W.B.
-0.042	10	0.032	12		-0.032	12	-0.020	12.00	-0.04	4.61	917+50.00	10.57	-0.04	12.00	0.019	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.028	12.00	-0.04	5.40	918+00.00	10.93	-0.04	12.00	0.028	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	6.14	918+47.87	11.28	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	FULL SUPERELEVATION / END TRANSITION
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	6.18	918+50.00	11.30	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	6.96	919+00.00	11.66	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	7.75	919+50.00	12.02	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	8.53	920+00.00	12.38	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	9.31	920+50.00	12.75	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	10.10	921+00.00	13.11	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	10.88	921+50.00	13.47	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	11.67	922+00.00	13.83	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	12.45	922+50.00	14.20	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	13.23	923+00.00	14.56	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	14.02	923+50.00	14.92	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	14.80	924+00.00	15.28	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	15.58	924+50.00	15.64	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
SEE FULL DEPTH PAVEMENT REPLACEMENT SECTION											924+84.23	16.00	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
											925+00.00	16.00	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
											925+04.23	SEE FULL DEPTH PAVEMENT REPLACEMENT SECTION											

* FOR INFORMATION ONLY. EXISTING CROSS SLOPES AND WIDTHS FROM RECORD PLANS (LOR-90-17.21; 1966). CONTRACTOR IS TO VERIFY EXISTING ELEVATIONS AND MEET EXISTING CONDITION FOR ALL OUTSIDE SHOULDER REPLACEMENT. CONTRACTOR IS TO VERIFY AND MEET EXISTING PGL ELEVATIONS IN SECTIONS OF WIDENING.

CALCULATED SNP
CHECKED MW

PAVEMENT TABLE - WIDENING SECTION

LOR-90-17.85

107
196

EXISTING WESTBOUND LANES							PROPOSED WIDENING - MOT PAVEMENT				C.L. CONST. I.R. 90	PROPOSED WIDENING - MOT PAVEMENT				EXISTING EASTBOUND LANES							REMARKS
EXIST. SHOULDER		EXIST. LT. LANE			EXIST. RT. LANE		SHLDR. WIDENING		SHLDR. WIDENING			SHLDR. WIDENING		SHLDR. WIDENING		EXIST. LT. LANE			EXIST. RT. LANE		EXIST. SHOULDER		
EXISTING SHOULDER CROSS SLOPE *	EXISTING SHOULDER WIDTH *	EXISTING PAVEMENT CROSS SLOPE *	EXISTING LANE WIDTH *	CROWN	EXISTING PAVEMENT CROSS SLOPE *	EXISTING LANE WIDTH *	SHOULDER CROSS SLOPE	SHOULDER WIDTH	SHOULDER CROSS SLOPE	SHOULDER WIDTH	STATION	SHOULDER WIDTH	SHOULDER CROSS SLOPE	SHOULDER WIDTH	SHOULDER CROSS SLOPE	EXISTING LANE WIDTH *	EXISTING PAVEMENT CROSS SLOPE *	CROWN	EXISTING LANE WIDTH *	EXISTING PAVEMENT CROSS SLOPE *	EXISTING SHOULDER WIDTH *	EXISTING SHOULDER CROSS SLOPE *	
											929+35.00	SEE FULL DEPTH PAVEMENT REPLACEMENT SECTION											
											929+50.00	15.91	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
SEE FULL DEPTH PAVEMENT REPLACEMENT SECTION											929+85.00	15.56	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	15.76	930+00.00	15.20	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.036	12.00	-0.04	15.71	930+03.41	15.15	-0.034	12.00	0.036	12	0.032		12	-0.032	10	-0.042	FULL SUPERELEVATION / BEGIN TRANSITION
-0.042	10	0.032	12		-0.032	12	-0.028	12.00	-0.04	14.98	930+50.00	14.50	-0.04	12.00	0.028	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.032	12		-0.032	12	-0.020	12.00	-0.04	14.19	931+00.00	13.79	-0.04	12.00	0.020	12	0.032		12	-0.032	10	-0.042	
-0.042	10	0.027	12		-0.027	12	-0.016	12.00	-0.04	13.82	931+23.41	13.46	-0.04	12.00	0.016	12	0.027		12	-0.027	10	-0.042	END TRANSITION W.B.
-0.042	10	0.020	12		-0.020	12	-0.016	12.00	-0.04	13.40	931+50.00	13.08	-0.04	12.00	0.011	12	0.020		12	-0.020	10	-0.042	
-0.042	10	0.018	12		-0.018	12	-0.016	12.00	-0.04	13.25	931+59.41	12.95	-0.04	12.00	0.009	12	0.018		12	-0.018	10	-0.042	PT STATION
-0.042	10	0.008	12		-0.016	12	-0.016	12.00	-0.04	12.64	932+00.00	12.50	-0.04	12.00	0.003	12	0.008		12	-0.016	10	-0.042	
-0.042	10	-0.005	12		-0.016	12	-0.016	12.00	-0.04	11.88	932+50.00	11.94	-0.04	12.00	-0.005	12	-0.005		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	11.12	933+00.00	11.39	-0.04	12.00	-0.014	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	10.88	933+15.41	11.22	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	END TRANSITION E.B.
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	10.36	933+50.00	10.83	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	9.60	934+00.00	10.28	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	8.84	934+50.00	9.72	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	8.09	935+00.00	9.17	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	7.33	935+50.00	8.61	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	6.57	936+00.00	8.06	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	5.81	936+50.00	7.50	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	5.05	937+00.00	6.95	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	12.00	-0.04	4.30	937+50.00	6.39	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	11.54	-0.04	4.00	938+00.00	5.84	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	10.78	-0.04	4.00	938+50.00	5.28	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	10.02	-0.04	4.00	939+00.00	4.73	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	9.26	-0.04	4.00	939+50.00	4.17	-0.04	12.00	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	8.50	-0.04	4.00	940+00.00	4.00	-0.04	11.62	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	7.75	-0.04	4.00	940+50.00	4.00	-0.04	11.06	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	6.99	-0.04	4.00	941+00.00	4.00	-0.04	10.51	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	6.23	-0.04	4.00	941+50.00	4.00	-0.04	9.95	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	5.47	-0.04	4.00	942+00.00	4.00	-0.04	9.40	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	4.72	-0.04	4.00	942+50.00	4.00	-0.04	8.84	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	3.96	-0.04	4.00	943+00.00	4.00	-0.04	8.29	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	3.20	-0.04	4.00	943+50.00	4.00	-0.04	7.73	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	2.44	-0.04	4.00	944+00.00	4.00	-0.04	7.18	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	1.68	-0.04	4.00	944+50.00	4.00	-0.04	6.62	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	-0.016	1.15	-0.04	4.00	944+85.00	4.00	-0.04	10.23	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	945+00.00	4.00	-0.04	6.07	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	945+04.84	4.00	-0.04	6.01	-0.016	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	945+50.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	946+00.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	946+50.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	947+00.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	947+50.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
-0.042	10	-0.016	12		-0.016	12	N/A	N/A	N/A	N/A	948+00.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	948+50.00	N/A	N/A	N/A	N/A	12	-0.016		12	-0.016	10	-0.042	

* FOR INFORMATION ONLY. EXISTING CROSS SLOPES AND WIDTHS FROM RECORD PLANS (LOR-90-17.21; 1966). CONTRACTOR IS TO VERIFY EXISTING ELEVATIONS AND MEET EXISTING CONDITION FOR ALL OUTSIDE SHOULDER REPLACEMENT. CONTRACTOR IS TO VERIFY AND MEET EXISTING PGL ELEVATIONS IN SECTIONS OF WIDENING.

CALCULATED SNP
CHECKED MW

PAVEMENT TABLE - WIDENING SECTION

LOR-90-17.85

108
196

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)		630													
								GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO.3 POST	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9	BREAKAWAY STRUCTURAL BEAM CONNECTION	SIGN, FLAT SHEET	SIGN, GROUND MOUNTED EXTRUSHEET		GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL		
								FT	FT	FT	EA	SF	SF		EACH	EACH	EACH	EACH	EACH		
114	S-1	I.R. 90 EB	921+50	RT	W8-13	48 X 48			31.0			16.0									
114	R-1	I.R. 90 EB	921+50	RT	REMOVED											1		2			
115	S-2	I.R. 90 EB	926+37	RT	OM-3R	12 X 36		13.5				3.0									
115	R-2	I.R. 90 EB	926+61	RT	REMOVED											1		1			
115	S-3	I.R. 90 EB	926+75	RT	OM-3L	12 X 36		13.5				3.0									
115	R-3	I.R. 90 EB	926+82	RT	REMOVED											1		1			
115	S-4	I.R. 90 WB	927+00	LT	I-H2A	132 X 36				36.0	2		33.0		2						
115	R-4	I.R. 90 WB	927+38	LT	REMOVED												1		2		
115	R-5	I.R. 90 WB	928+89	LT	REMOVED											1		1			
115	S-5	I.R. 90 WB	929+00	LT	OM-3R	12 X 36		13.5				3.0									
115	R-6	I.R. 90 WB	929+03	LT	REMOVED											1		1			
115	S-6	I.R. 90 WB	929+24	LT	OM-3L	12 X 36		13.5				3.0									
117	R-7	I.R. 90 WB	935+07	LT	REMOVED											1		2			
117	S-7	I.R. 90 WB	935+07	LT	W8-13	48 X 48			32.0			16.0									
TOTALS CARRIED TO GENERAL SUMMARY								54	63	36	2	44	33		2	6	1	8	2		

CALCULATED MLV
CHECKED JML

SIGNING SUBSUMMARY

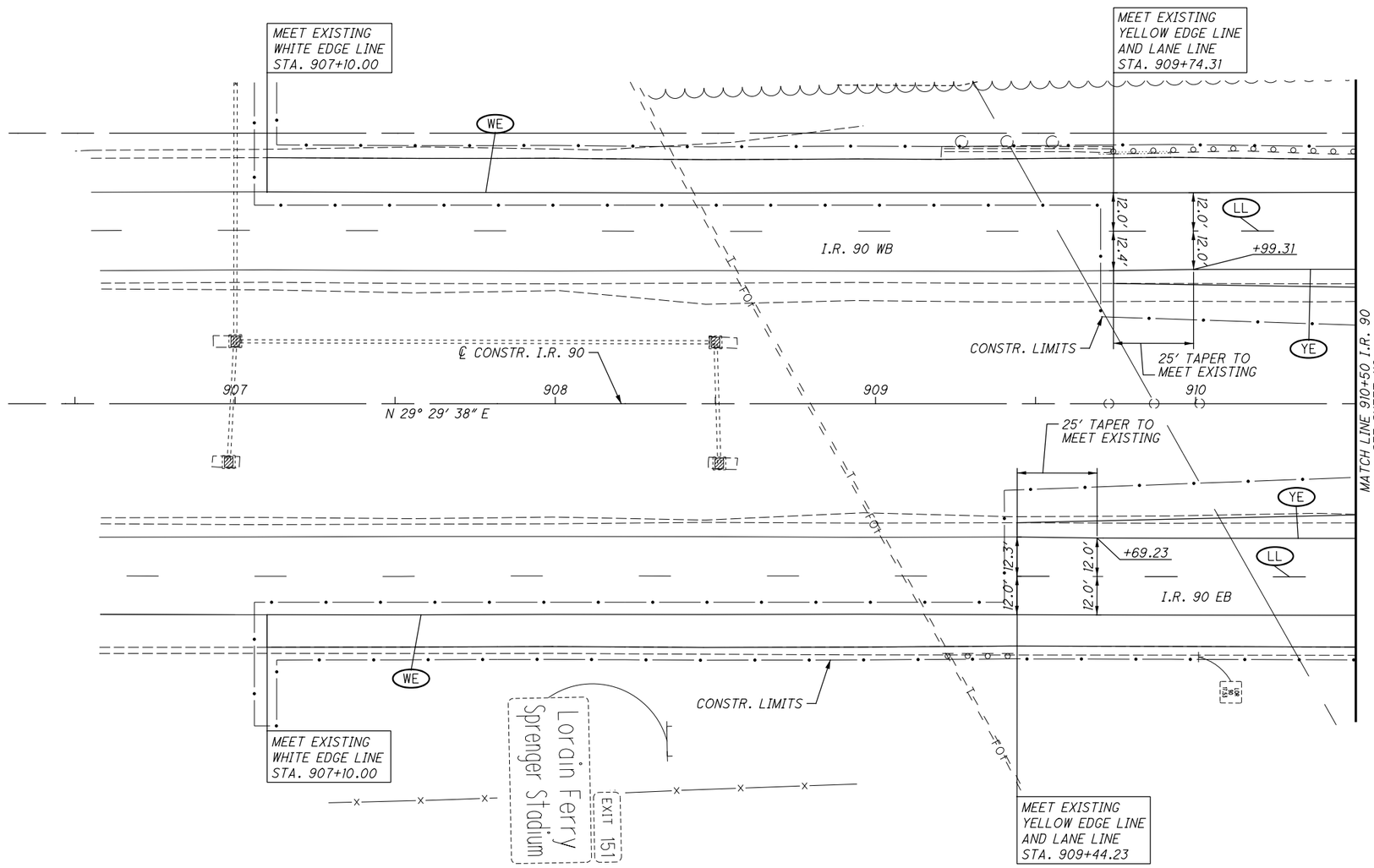
LOR-90-17.85

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE		621 RPM, 1-WAY WHITE EACH	621 SPACING		621 RAISED PAVEMENT MARKER REMOVED EACH		644 EDGE LINE, 6", WHITE FT	644 EDGE LINE, 6", YELLOW FT	644 LANE LINE, 6" FT		646 EDGE LINE, 6", WHITE FT	646 EDGE LINE, 6", YELLOW FT	646 LANE LINE, 6" FT							
111	I.R. 90 WB	907+10	910+50	LT							340													
111	I.R. 90 WB	909+74.31	910+50	LT		1	120		1			76	76											
111	I.R. 90 EB	907+10	910+50	RT							340													
111	I.R. 90 EB	909+44.23	910+50	RT		1	120		1			106	106											
112	I.R. 90 WB	910+50	915+00	LT		4	120		4		450	450	450											
112	I.R. 90 EB	910+50	915+00	RT		4	120		4		450	450	450											
113	I.R. 90 WB	915+00	920+00	LT		4	120		4		500	500	500											
113	I.R. 90 EB	915+00	920+00	RT		4	120		4		500	500	500											
114	I.R. 90 WB	920+00	925+00	LT		4	120		4		500	500	500											
114	I.R. 90 EB	920+00	925+00	RT		4	120		4		500	500	500											
115	I.R. 90 WB	925+00	927+11.55	LT							212													
115	I.R. 90 WB	925+00	927+06.51	LT		2	120						207											
115	I.R. 90 WB	925+00	927+01.45	LT								201												
115	I.R. 90 EB	925+00	927+54.54	RT								255												
115	I.R. 90 EB	925+00	927+47.22	RT		2	120						247											
115	I.R. 90 EB	925+00	927+39.87	RT							240													
115	I.R. 90 WB	927+11.55	929+23.87	LT											212									
115	I.R. 90 WB	927+06.51	929+19.35	LT		2	120										213							
115	I.R. 90 WB	927+01.45	929+14.80	LT												213								
115	I.R. 90 EB	927+54.54	928+78.28	RT												124								
115	I.R. 90 EB	927+47.22	928+71.65	RT		1	120										124							
115	I.R. 90 EB	927+39.87	928+65.00	RT											125									
115	I.R. 90 WB	929+23.87	930+00	LT							76													
115	I.R. 90 WB	929+19.35	930+00	LT		1	120						81											
115	I.R. 90 WB	929+14.80	930+00	LT								85												
115	I.R. 90 EB	928+78.28	930+00	RT								122												
115	I.R. 90 EB	928+71.65	930+00	RT		1	120						128											
115	I.R. 90 EB	928+65.00	930+00	RT							135													
116	I.R. 90 WB	930+00	935+00	LT		4	120		4		500	500	500											
116	I.R. 90 EB	930+00	935+00	RT		4	120		4		500	500	500											
117	I.R. 90 WB	935+00	940+00	LT		4	120		5		500	500	500											
117	I.R. 90 EB	935+00	940+00	RT		4	120		4		500	500	500											
118	I.R. 90 WB	940+00	944+00	LT		3	120		2		400	400	400											
118	I.R. 90 EB	940+00	944+00	RT		3	120		4		400	400	400											
119	I.R. 90 WB	944+00	948+00	LT							400													
119	I.R. 90 WB	944+00	944+85	LT		1	120		1			85	85											
119	I.R. 90 EB	944+00	948+50	RT							450													
119	I.R. 90 EB	944+00	945+05	RT		1	120					105	105											
SUBTOTALS THIS SHEET						59			50		7893	6734	6734		337	337	337							
TOTALS CARRIED TO GENERAL SUMMARY						59			50		2.77 MI		1.28 MI		0.13 MI		0.06 MI							

CALCULATED MLV
CHECKED JML

PAVEMENT MARKING SUBSUMMARY

LOR-90-17.85



ITEM 644	ODOT LINE SPECIFICATIONS	ITEM 646	ODOT LINE SPECIFICATIONS
WE	EDGE LINE, 6", WHITE	WE	EDGE LINE, 6, WHITE
YE	EDGE LINE, 6", YELLOW	YE	EDGE LINE, 6", YELLOW
LL	LANE LINE, 6"	LL	LANE LINE, 6"

SIGNING LEGEND

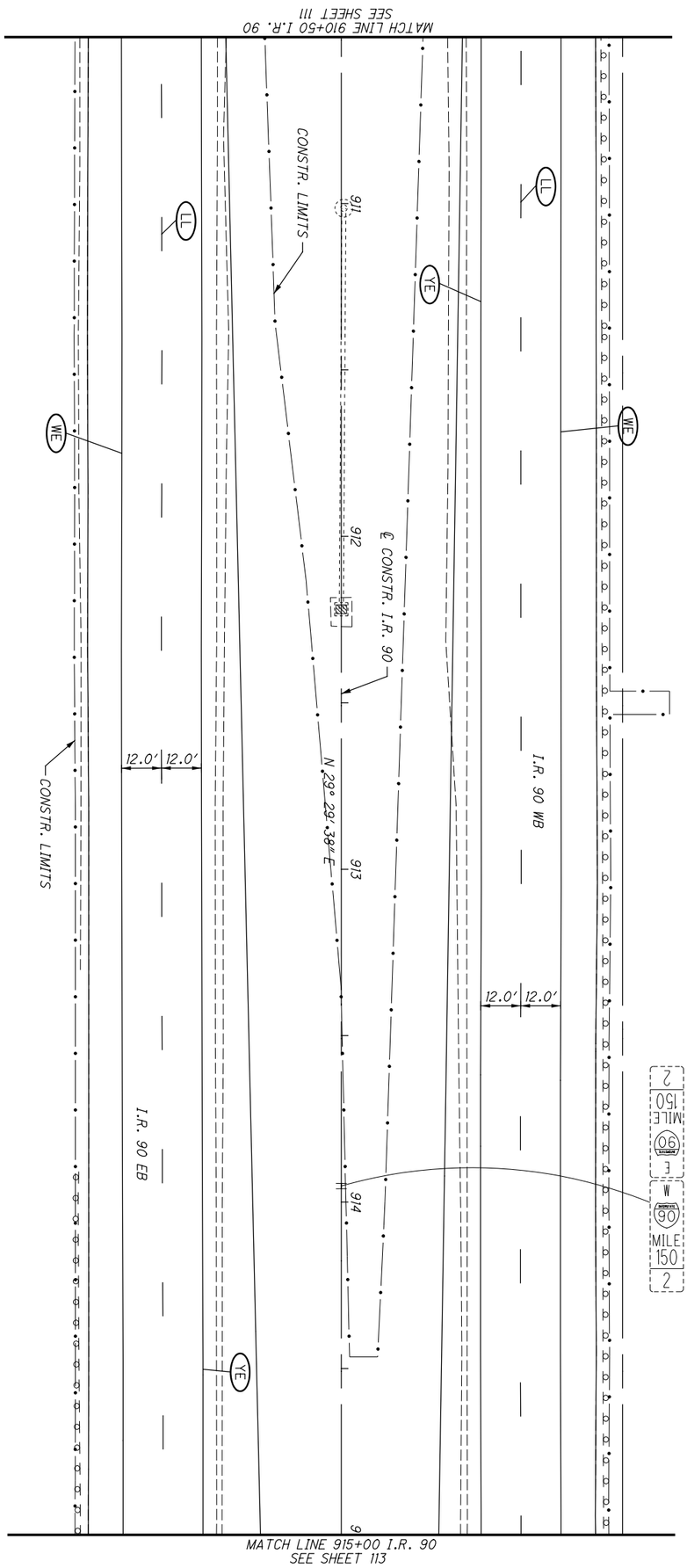
- PROPOSED SIGN
- EXISTING SIGN TO REMAIN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REMOVED AND REERECTED
- (S-#) PROPOSED SIGN
- (R-#) SIGN REMOVAL

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

SIGNING AND PAVEMENT MARKING PLAN
BEGIN TO STA. 910+50

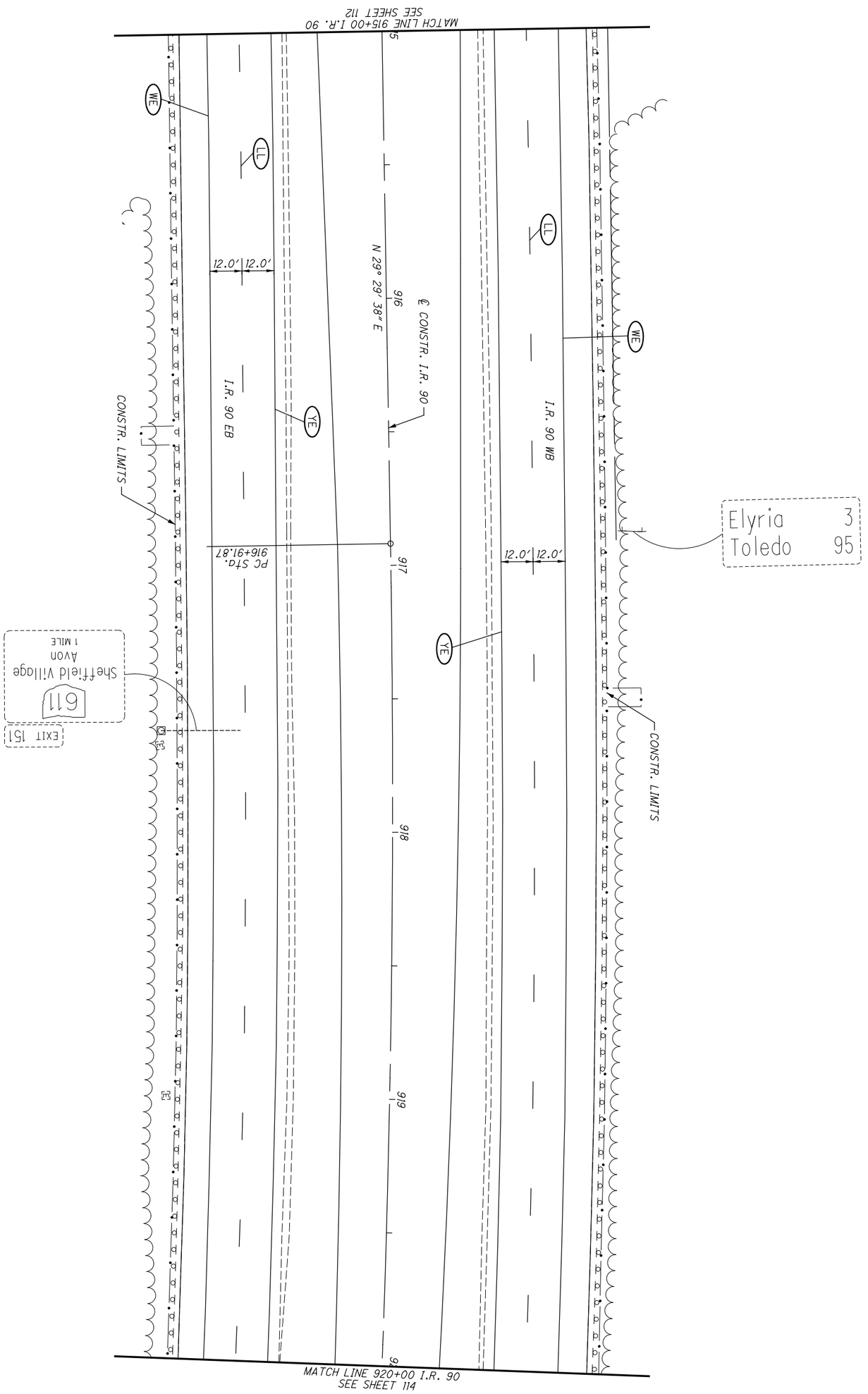
LOR-90-17.85



NOTES:

1. FOR LEGEND SEE SHEET 111

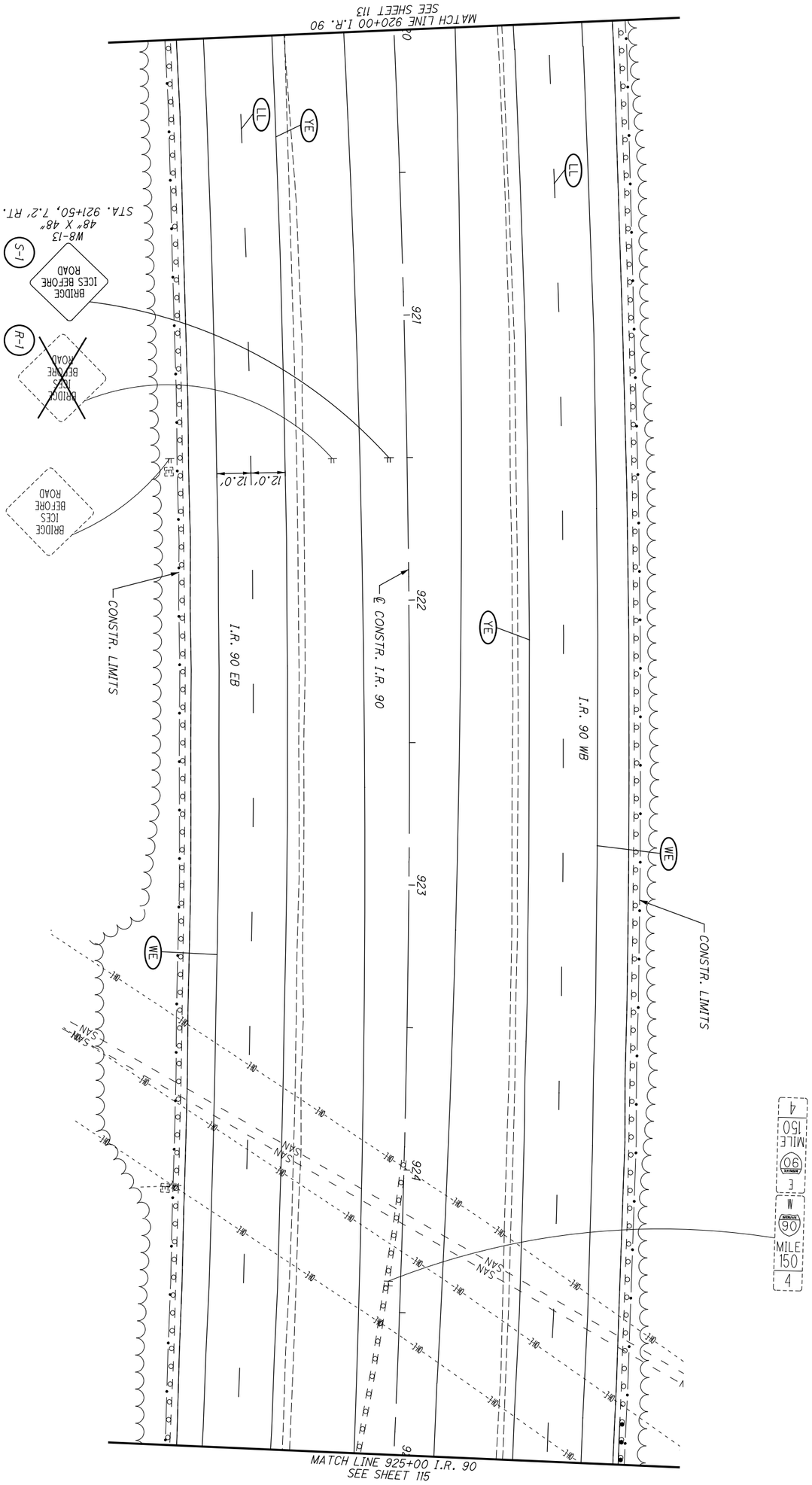
196 / 112	LOR-90-17.85	SIGNING AND PAVEMENT MARKING PLAN STA. 910+50 TO STA. 915+00	CALCULATED MLV CHECKED JML	0 10 20 40 HORIZONTAL SCALE IN FEET



NOTES:

1. FOR LEGEND SEE SHEET 111

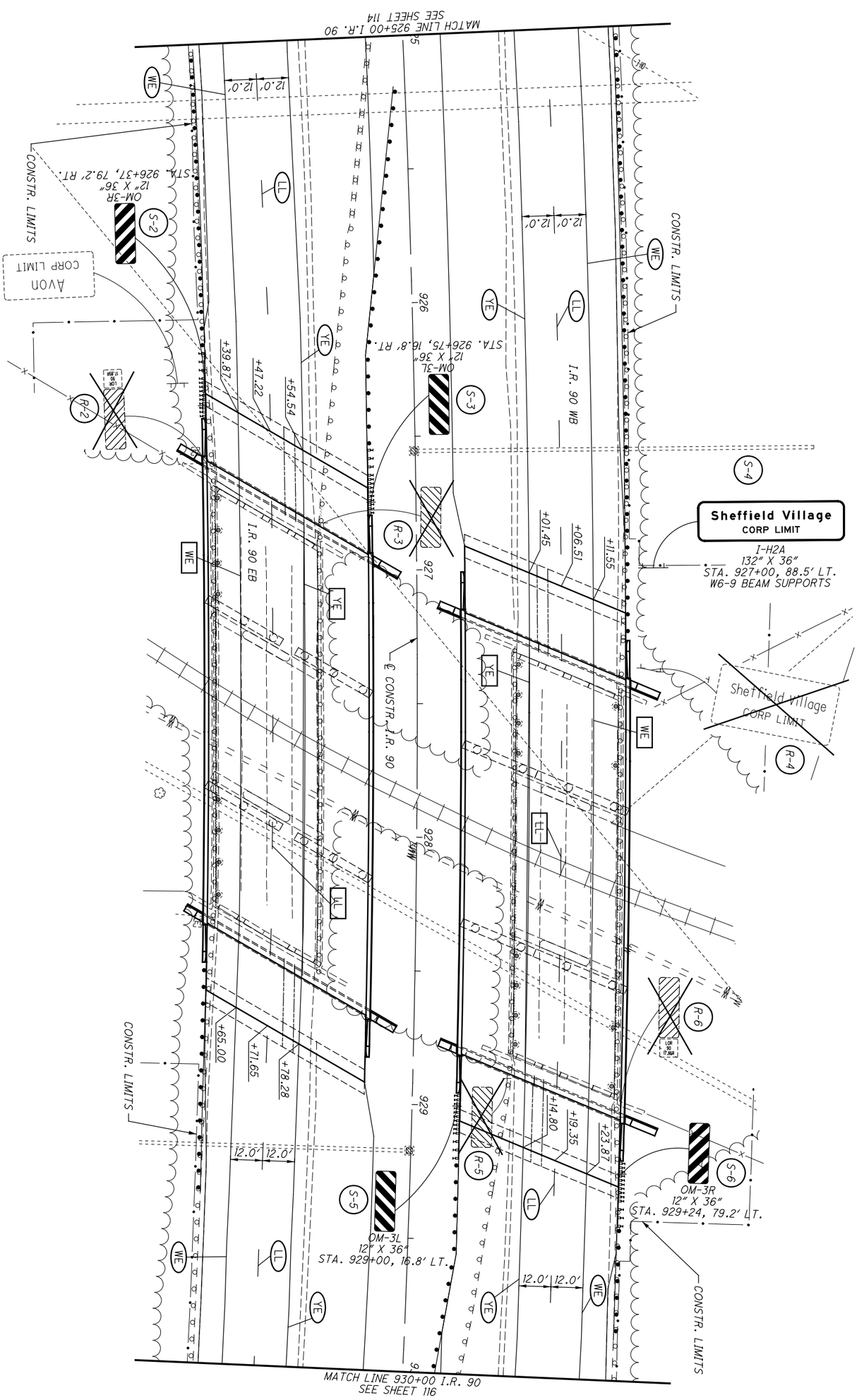
113 / 196	LOR-90-17.85	SIGNING AND PAVEMENT MARKING PLAN STA. 915+00 TO STA. 920+00	CALCULATED MLV CHECKED JML	0 10 20 40 HORIZONTAL SCALE IN FEET



NOTES:

1. FOR LEGEND SEE SHEET 111

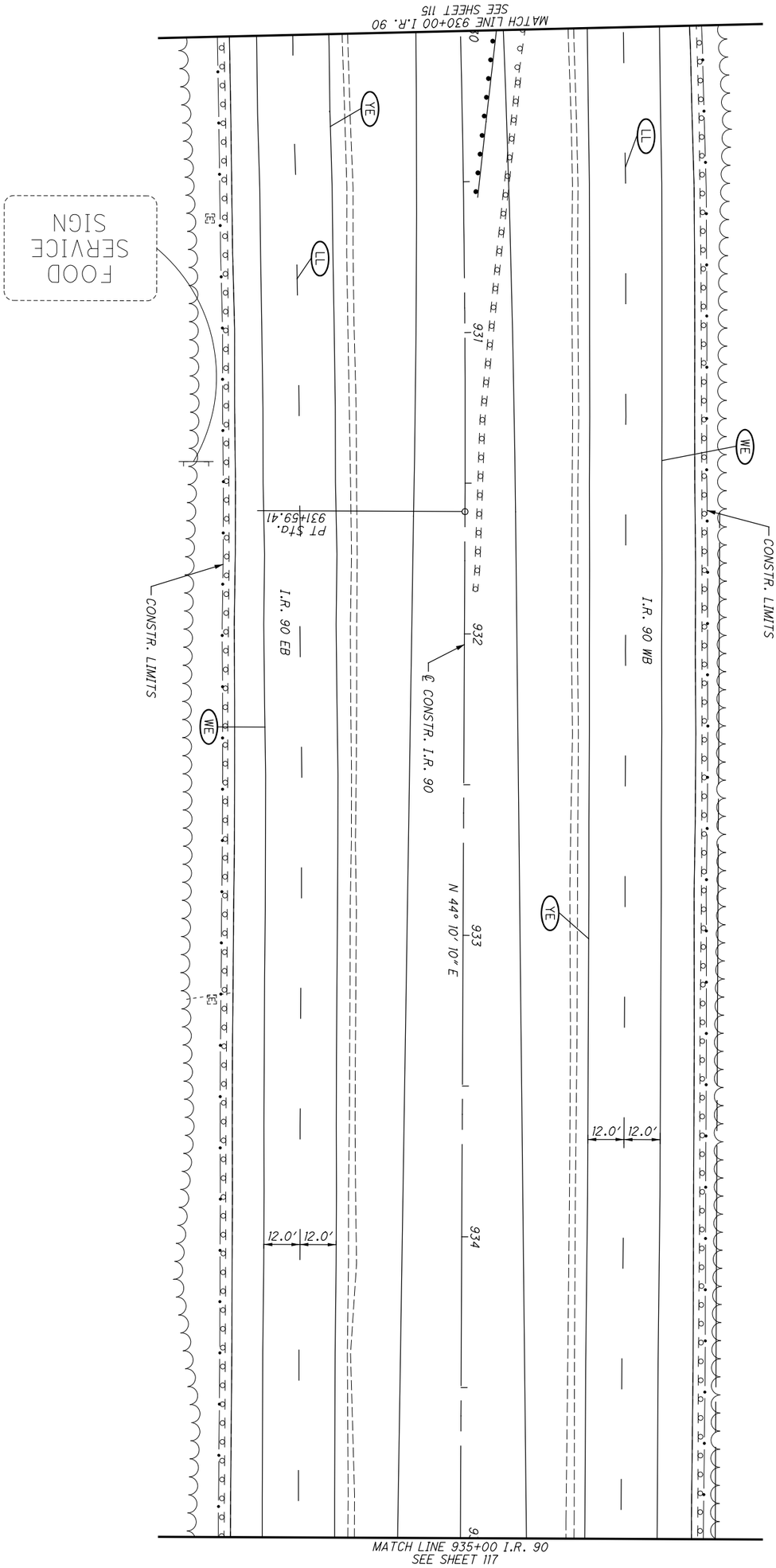
114 / 196	LOR-90-17.85	SIGNING AND PAVEMENT MARKING PLAN STA. 920+00 TO STA. 925+00	CALCULATED MLV CHECKED JML	0 20 10 40 HORIZONTAL SCALE IN FEET



NOTES:

1. FOR LEGEND SEE SHEET 111

115 / 196	LOR-90-17.85	SIGNING AND PAVEMENT MARKING PLAN STA. 925+00 TO STA. 930+00	CALCULATED MLV CHECKED JML	0 10 20 40 HORIZONTAL SCALE IN FEET



NOTES:

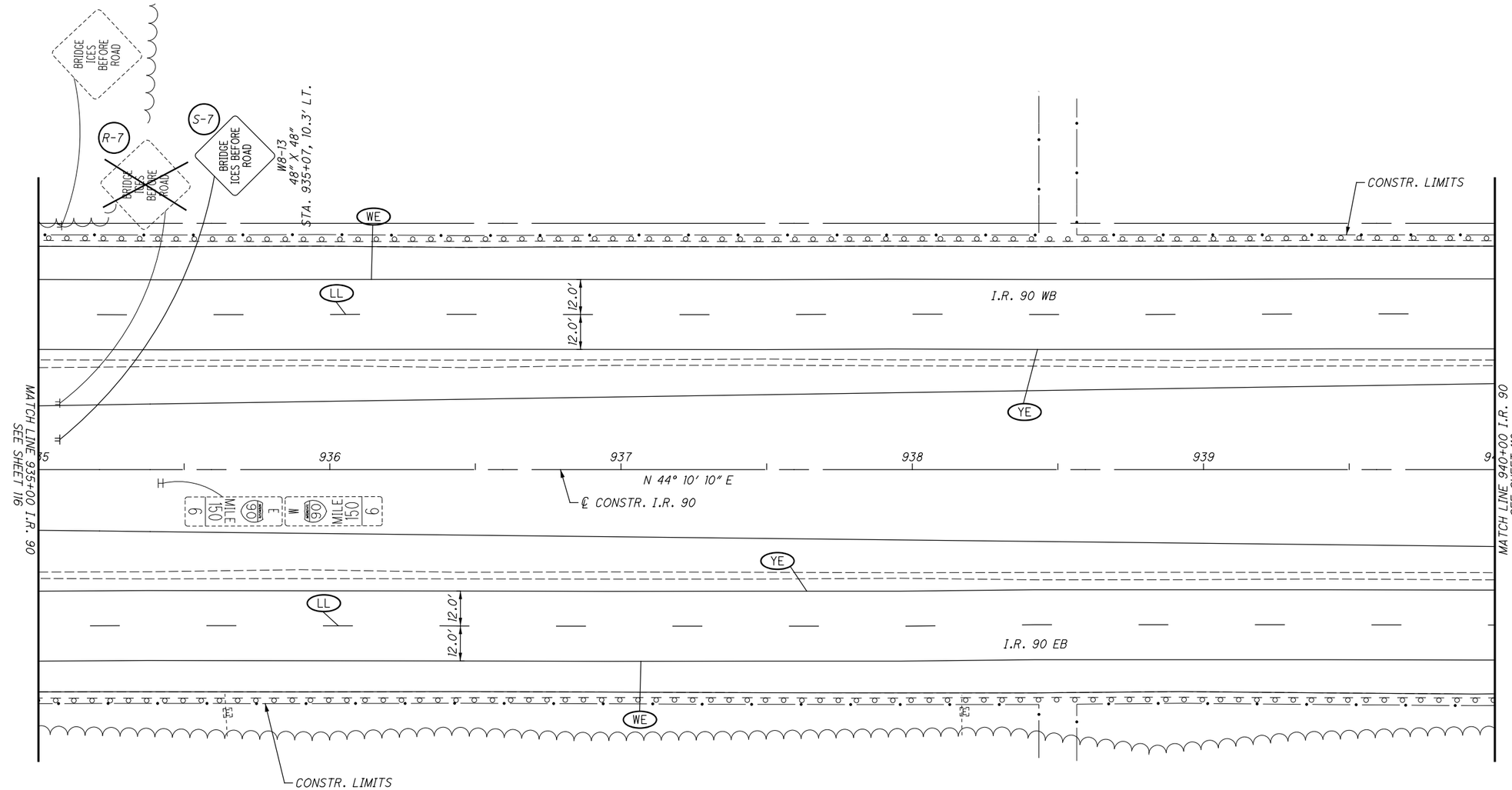
1. FOR LEGEND SEE SHEET 111

LOR-90-17.85

SIGNING AND PAVEMENT MARKING PLAN
STA. 930+00 TO STA. 935+00

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



NOTES:

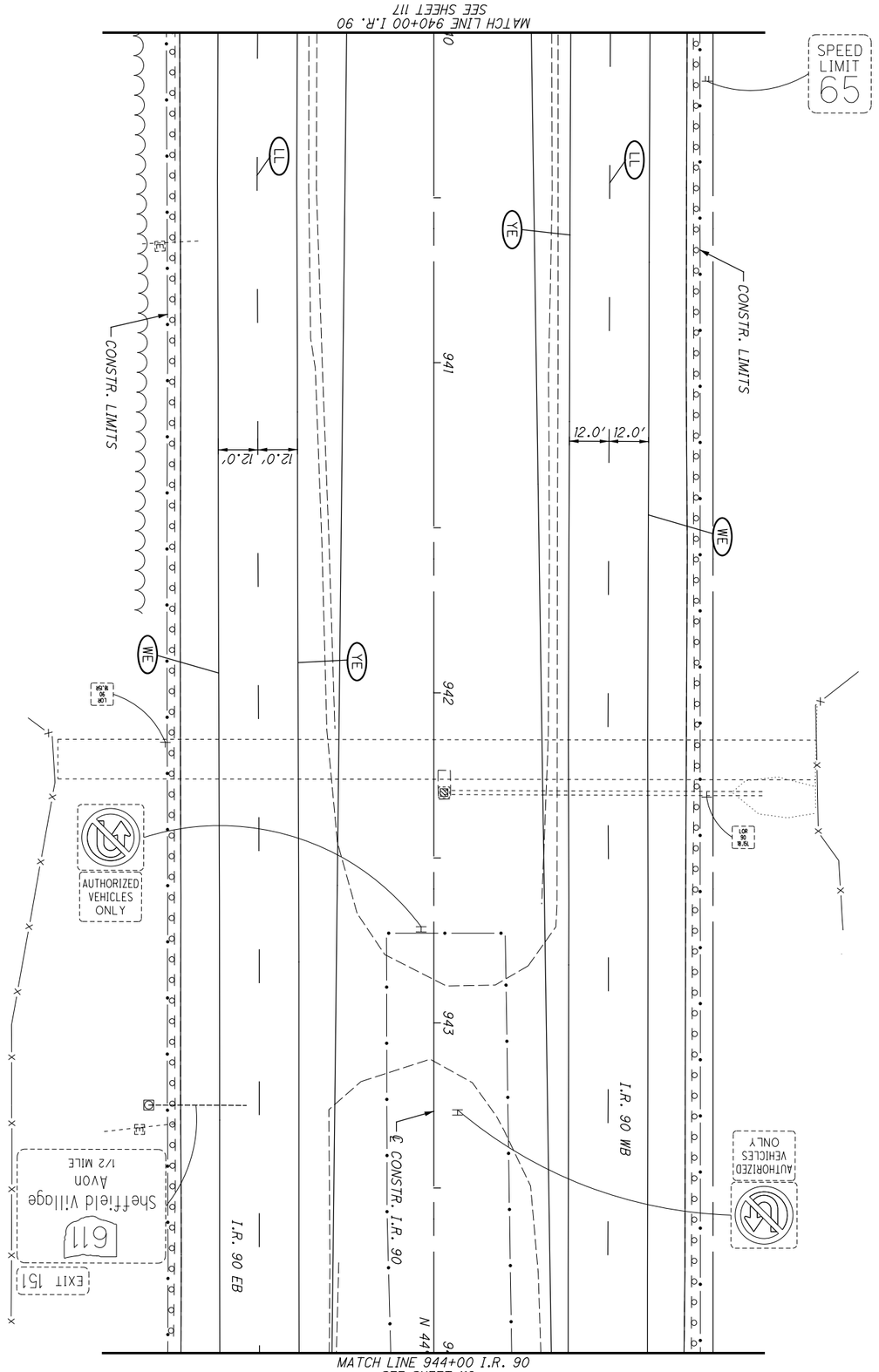
1. FOR LEGEND SEE SHEET 111

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

SIGNING AND PAVEMENT MARKING PLAN
STA. 935+00 TO STA. 940+00

LOR-90-17.85



NOTES:

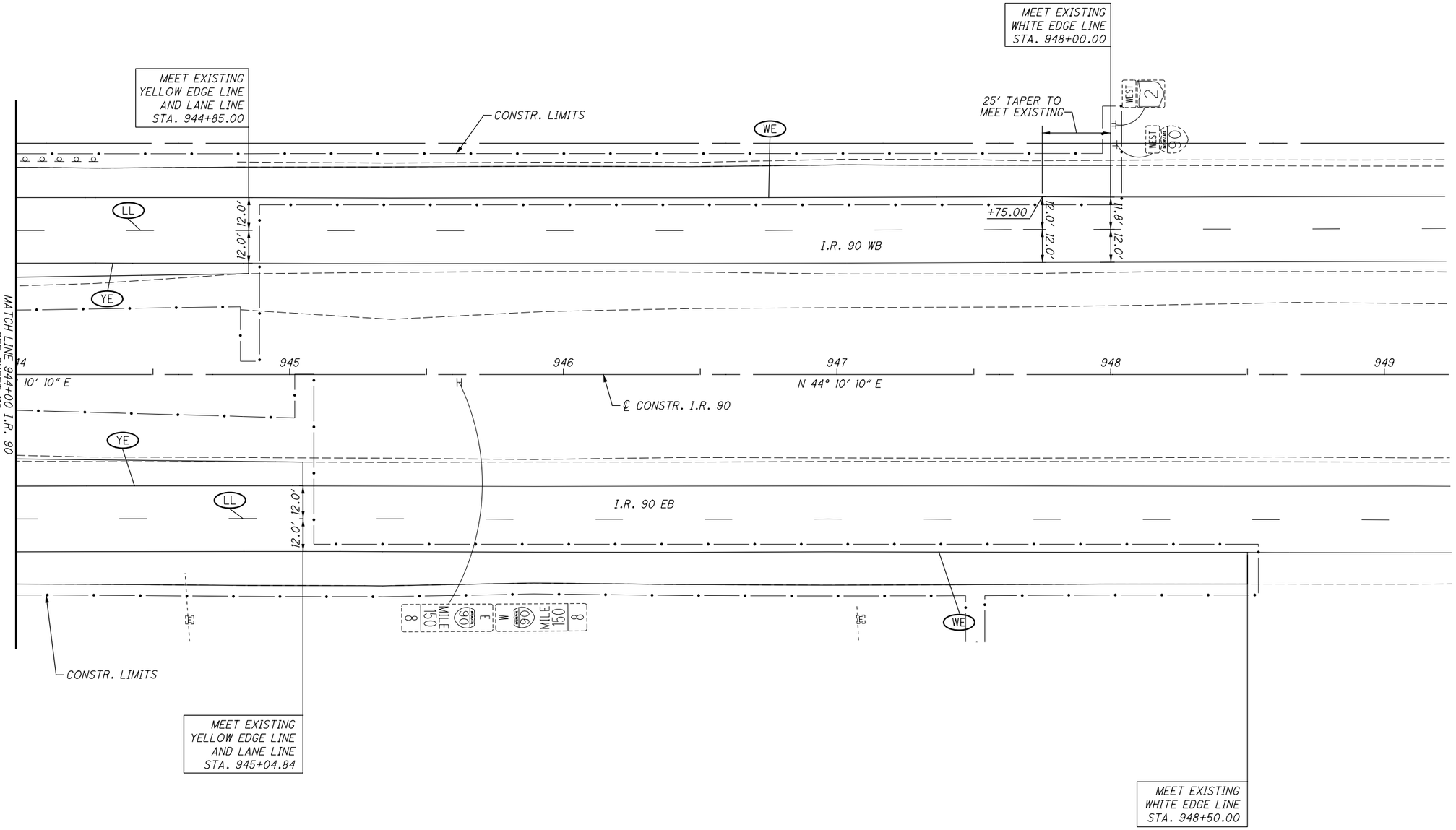
1. FOR LEGEND SEE SHEET 111

LOR-90-17.85

SIGNING AND PAVEMENT MARKING PLAN
STA. 940+00 TO STA. 944+00

CALCULATED MLV
CHECKED JML

0 10 20 40
HORIZONTAL SCALE IN FEET



NOTES:

1. FOR LEGEND SEE SHEET 111

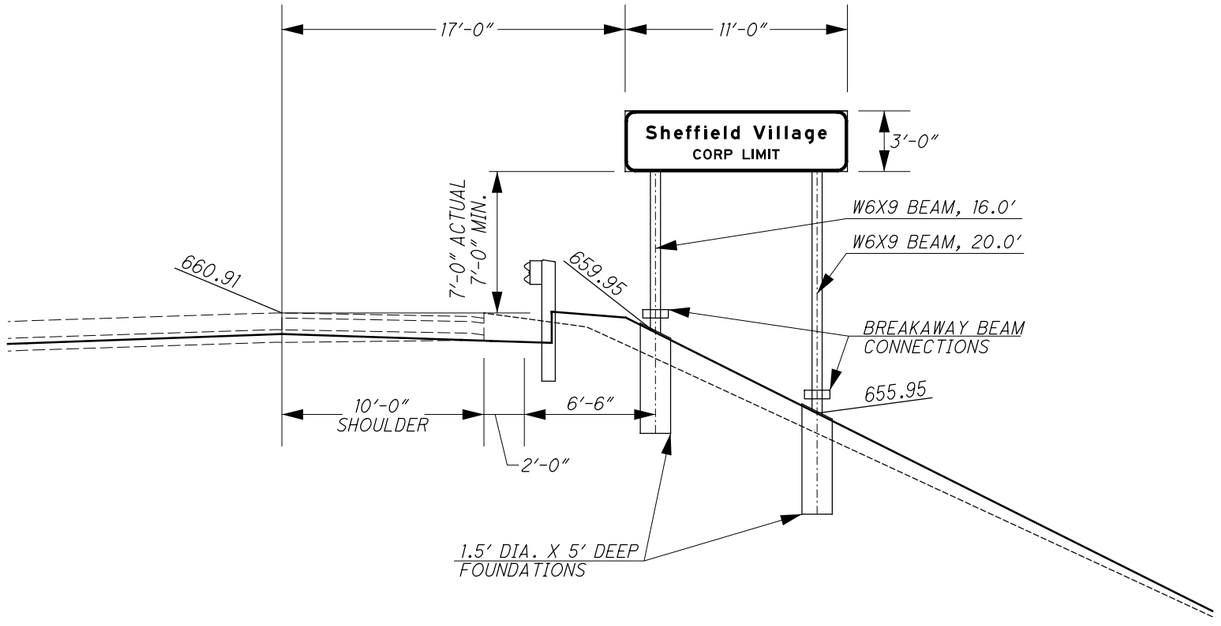
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLV
CHECKED JML

SIGNING AND PAVEMENT MARKING PLAN
STA. 944+00 TO END

LOR-90-17.85

NOTES
1. CONTRACTOR SHALL FIELD VERIFY ELEVATIONS.



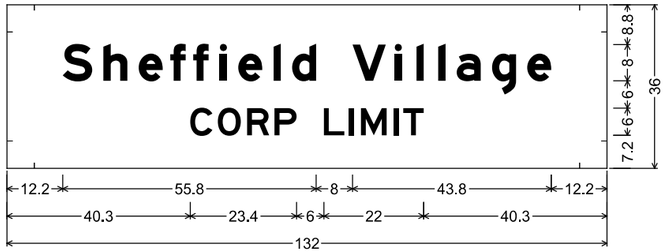
SIGN S-4
STA. 927+00 IR 90 WB

CALCULATED JML
CHECKED MLV

SIGN ELEVATION DETAILS

LOR-90-17.85

SIGN DETAIL
NTS



SIGN NUMBER	S-4
WIDTH x HGHT.	11'-0" x 3'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground Mounted
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT

Dimensions are in inches, letter locations are panel edge to lower left corner

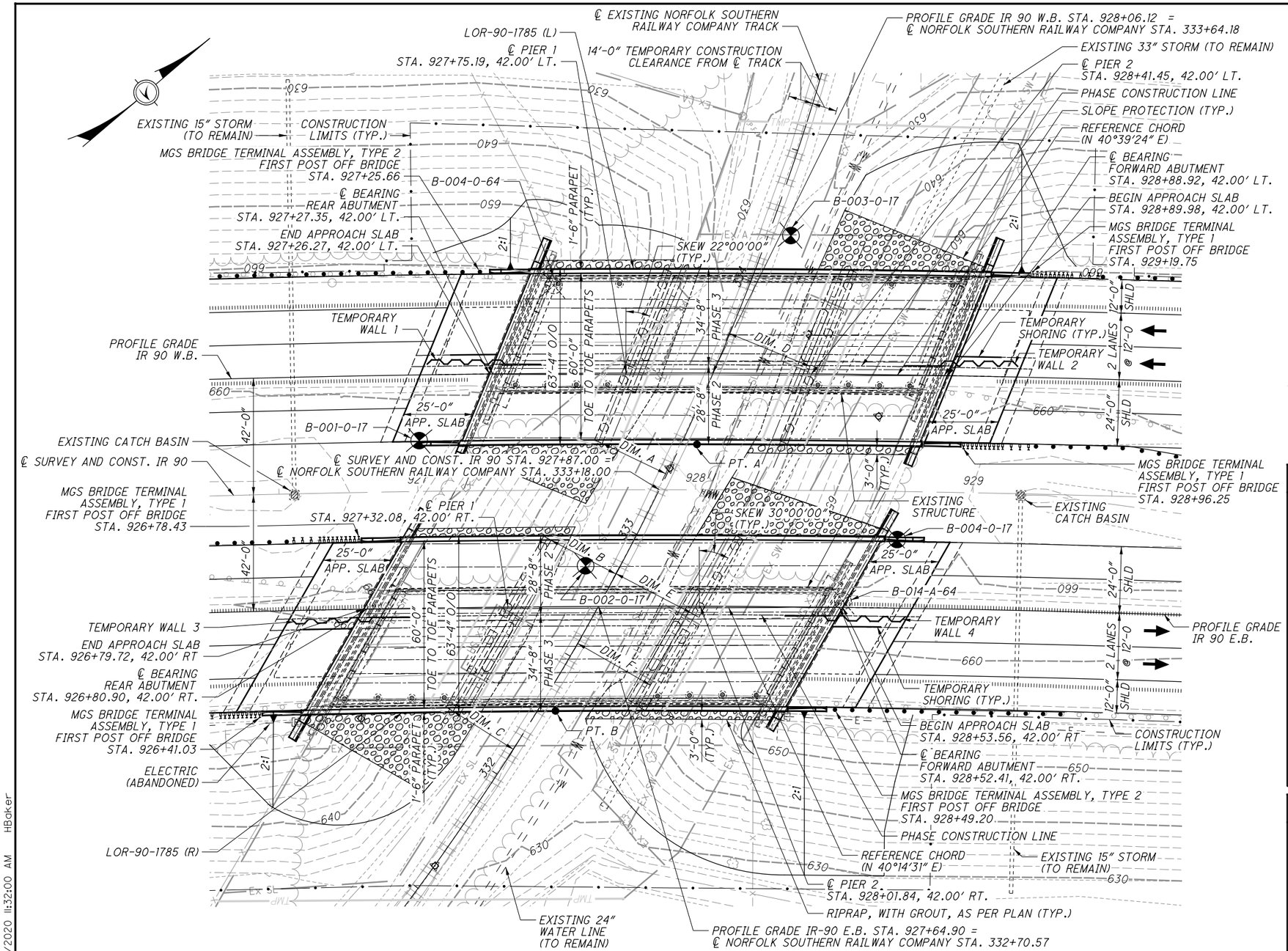
LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
S	h	e	f	f	i	e	l	d	v	i	l	l	a	g	e					HIGHWAY E MOD 2K
12.2	21.2	29.0	35.9	41.0	46.8	50.9	58.6	62.7	76.0	85.3	90.1	94.9	99.0	106.7	114.5				107.6	8.0
C	O	R	P	L	I	M	I	T												HIGHWAY E 2K
40.3	46.4	52.8	58.9	69.7	75.2	77.9	85.1	87.2											51.4	6.0

CALCULATED JML
CHECKED MLV

SIGN FABRICATION DETAILS

LOR-90-17.85

121
196



PLAN

BENCHMARK DATA

BM #1 STA. 913+76.46,	ELEV. 639.55 ,	OFFSET 82.19 ,	RT
BM #2 STA. 922+01.39,	ELEV. 654.37 ,	OFFSET 82.87 ,	RT
BM #3 STA. 933+22.63,	ELEV. 656.71 ,	OFFSET 82.18 ,	RT
BM #4 STA. 944+10.17,	ELEV. 636.44 ,	OFFSET 82.40 ,	RT

FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEET 2/196

NOTES

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

SEE PROFILE FOR ESTIMATED PILE LENGTHS.

ALL EXISTING BRIDGE ELEVATIONS HAVE BEEN ADJUSTED TO THE CURRENT PROJECT SURVEY ELEVATIONS BY THE FOLLOWING: LEFT BRIDGE = 0.96', RIGHT BRIDGE = 0.98' LOWER THAN THE ELEVATIONS IN THE ORIGINAL PLANS.

DESIGN TRAFFIC:

2023 ADT = 54,000 2023 ADTT = 5,940
2043 ADT = 59,000 2043 ADTT = 6,490
DIRECTIONAL DISTRIBUTION = 100%

LEGEND

- BORING LOCATION
- 23'-0" REQUIRED MINIMUM VERTICAL CLEARANCE
  22'-0 TEMPORARY MINIMUM VERTICAL CLEARANCE
  PT. A: 23'-11" ACTUAL MINIMUM VERTICAL CLEARANCE
  PT. B: 23'-2½" ACTUAL MINIMUM VERTICAL CLEARANCE

EXISTING STRUCTURES

TYPE: 3 SPAN CONTINUOUS STRAIGHT STEEL BEAMS WITH NON-COMPOSITE REINFORCED CONCRETE DECK SUPPORTED BY REINFORCED CONCRETE ABUTMENTS AND HAMMERHEAD PIERS

SPANS: 46'-0"±, 58'-0"±, 46'-0"± C/C BEARINGS (LOR-90-1785L)
48'-0"±, 60'-0"±, 48'-0"± C/C BEARINGS (LOR-90-1785R)

ROADWAY: 38'-0" F/F SAFETY CURB

LOADING: CF-2000 (1957) (ADEQUATE FOR AASHTO ALTERNATE LOADING)

SKEW: 22° 00' 00" LEFT FORWARD (LOR-90-1785L)
30° 00' 00" LEFT FORWARD (LOR-90-1785R)

APPROACH SLABS: 25'-0"± LONG (AS-1-54)

ALIGNMENT: 1° 00' 00" CURVE RIGHT

CROWN: 0.032 FT/FT

STRUCTURAL FILE NUMBER: 4704894 (LOR-90-1785L)
4704924 (LOR-90-1785R)

DATE BUILT: 1970, REHABILITATED (ASPHALT OVERLAY) 2010

DISPOSITION: TO BE REMOVED AND REPLACED WITH NEW STRUCTURES

PROPOSED STRUCTURES

TYPE: 3 SPAN CONTINUOUS STRAIGHT GALVANIZED STEEL GIRDERS WITH COMPOSITE REINFORCED CONCRETE DECK SUPPORTED ON REINFORCED CONCRETE INTEGRAL ABUTMENTS SUPPORTED ON PILES AND CAP AND COLUMN PIERS SUPPORTED ON DRILLED SHAFTS

SPANS: 48'-0", 66'-9", 48'-0" C/C BEARINGS (LOR-90-1785L)
50'-6", 69'-3", 50'-6" C/C BEARINGS (LOR-90-1785R)
(MEASURED ALONG REFERENCE CHORD)

ROADWAY: 60'-0" TOE/TOE PARAPET

LOADING: HL-93 AND FUTURE WEARING SURFACE OF 0.06 KSF

SKEW: 22° 00' 00" LEFT FORWARD (LOR-90-1785L)
30° 00' 00" LEFT FORWARD (LOR-90-1785R)

APPROACH SLABS: 25'-0" LONG (AS-1-15)

ALIGNMENT: 1° 00' 00" CURVE RIGHT

SUPERELEVATION: 0.036 FT/FT

LATITUDE: 41°27'12.90" N LONGITUDE: 82°04'1.37" W (LOR-90-1785L)

LATITUDE: 41°27'12.02" N LONGITUDE: 82°04'0.92" W (LOR-90-1785R)

DECK AREA: 10444 SF (LOR-90-1785L)
10929 SF (LOR-90-1785R)

RAIL TRAFFIC DATA

NORFOLK SOUTHERN RAILROAD	
TRAIN TRAFFIC:	4/DAY
OPERATING SPEED:	10 M.P.H.

HORIZONTAL CLEARANCES: (NSRR CRASHWALL CLEARANCE)
DIM. A: 25'-3¾" ACTUAL MINIMUM CLEARANCE, 25'-0" REQUIRED
DIM. B: 26'-3¾" ACTUAL MINIMUM CLEARANCE, 25'-0" REQUIRED
DIM. C: 25'-7⅜" ACTUAL MINIMUM CLEARANCE, 25'-0" REQUIRED
DIM. D: 31'-6⅝" ACTUAL MINIMUM CLEARANCE, 25'-0" REQUIRED
DIM. E: 30'-8⅛" ACTUAL MINIMUM CLEARANCE, 25'-0" REQUIRED
DIM. F: 30'-1¼" ACTUAL MINIMUM CLEARANCE, 25'-0" REQUIRED

BORING LOCATIONS

BORING NUMBER	STATION	OFFSET
B-001-0-17	927+00.75	18.33' LT.
B-002-0-17	927+60.30	27.34' RT.
B-003-0-17	928+33.63	91.72' LT.
B-004-0-17	928+72.92	17.31' RT.
B-004-0-64	927+49.46	73.69' LT.
B-014-A-64	928+53.56	39.71' RT.

HORIZONTAL CURVE DATA

P.I. Sta. 924+29.68
Δ = 14° 40' 32" (RT)
Dc = 1° 00' 00"
R = 5729.58'
T = 737.81'
L = 1467.54'
E = 47.31'

DESIGN AGENCY: TranSystems, 1100 SUPERIOR AVENUE, SUITE 1000, CLEVELAND, OHIO 44114
DESIGNED ZTW | DRAWN GJZ | CHECKED RSB | REVIEWED NFF | DATE 5/16/19
STRUCTURE FILE NUMBER 4704895/4704925
REVISED
LORAIN COUNTY
STA. 926+79.72 (R) STA. 926+53.36 (R)
STA. 927+26.27 (L) STA. 928+89.98 (L)
SITE PLAN
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RR
LOR-90-17.85
PID No. 90942
1 / 67
122 / 196

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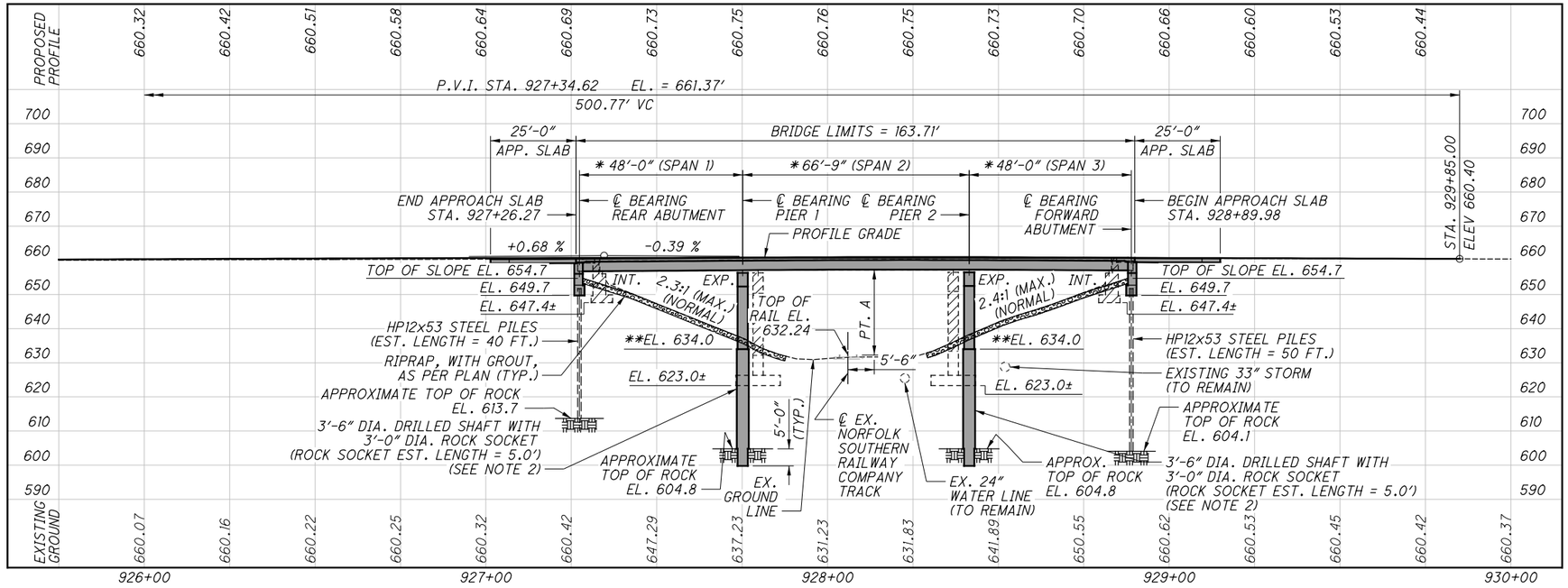
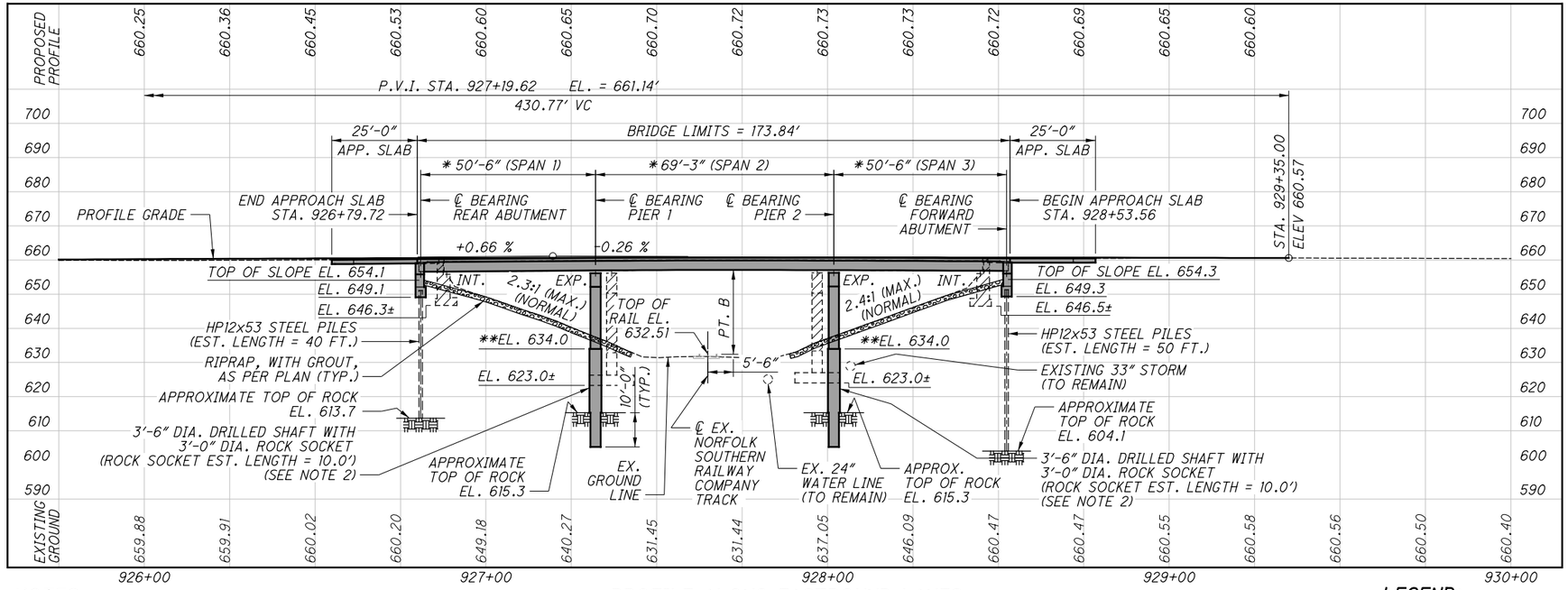


PROFILE ALONG WESTBOUND LANES

(42.00' LT. OF ℄ SURVEY AND CONST. IR 90)



PROFILE ALONG EASTBOUND LANES

(42.00' RT. OF ℄ SURVEY AND CONST. IR 90)

NOTES:

1. FOR PT. A AND PT. B, SEE SHEET 1/67.
2. NOTE THAT PIER DRILLED SHAFTS WILL BE DRILLED THROUGH THE EXISTING PIER FOOTING.
3. EXISTING BRIDGE PIERS AND FOUNDATIONS SHALL BE REMOVED TO A LEVEL AT LEAST 2 FEET BELOW TOP OF FUTURE PROPOSED FINISHED GRADE IN ACCORDANCE WITH THE NORFOLK SOUTHERN RAILWAY COMPANY PUBLIC PROJECTS MANUAL.

LEGEND:

* INDICATES MEASURED ALONG REFERENCE CHORD

** ELEVATION OF TOP OF 3'-6" DIA. DRILLED SHAFT. (ELEVATIONS ARE 1'-0" MIN. BELOW PROPOSED GROUND LINE)

LIMITS OF REMOVAL (DECK NOT SHOWN)

PROPOSED STRUCTURE

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

LORAIN COUNTY
STA. 926+79.72 (R)
STA. 926+53.36 (R)
STA. 927+26.27 (L)
STA. 928+89.98 (L)

SITE PLAN
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RR

LOR-90-17.85
PID No. 90942

2 / 67

123
196

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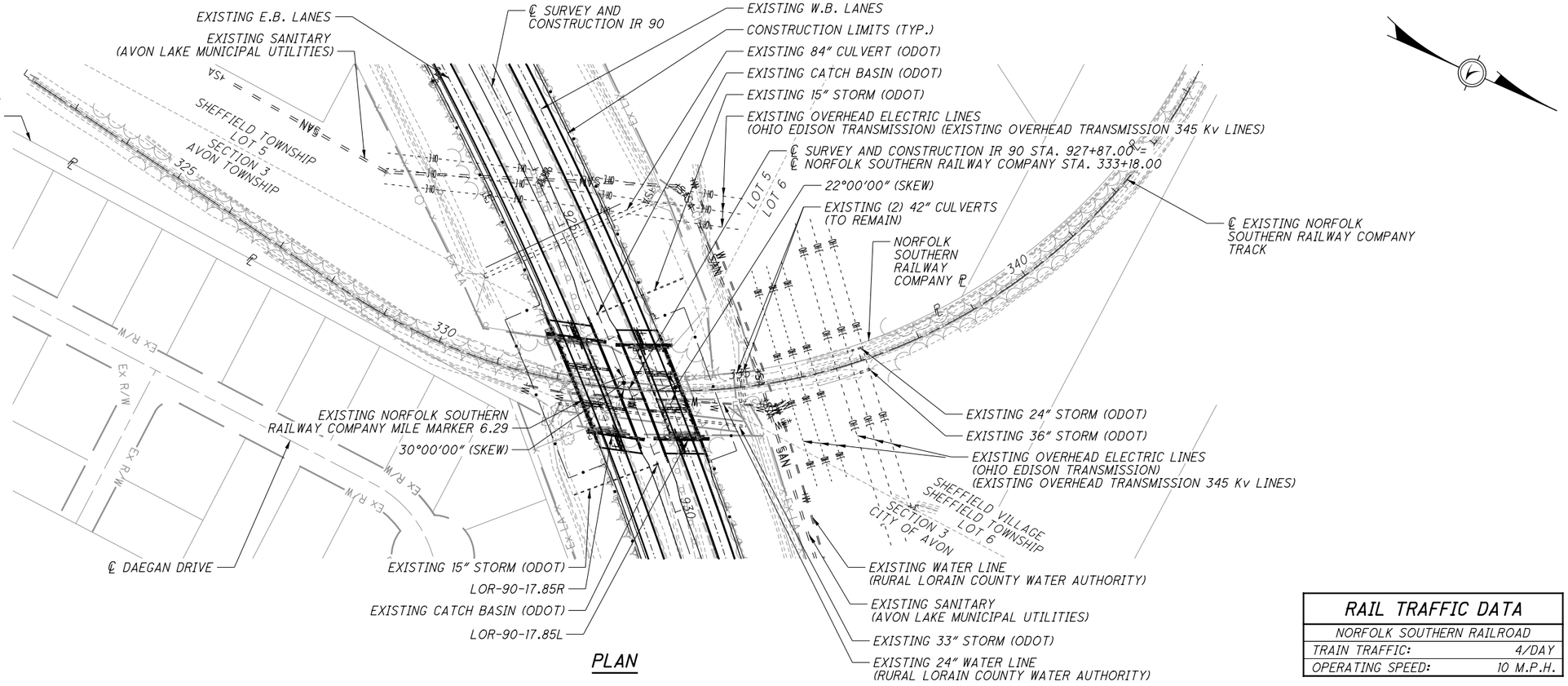


CURVE DATA IR 90

P.I. Sta. 924+29.68
Δ = 14° 40' 32" (RT)
Dc = 1° 00' 00"
R = 5729.58'
T = 737.81'
L = 1467.54'
E = 47.31'

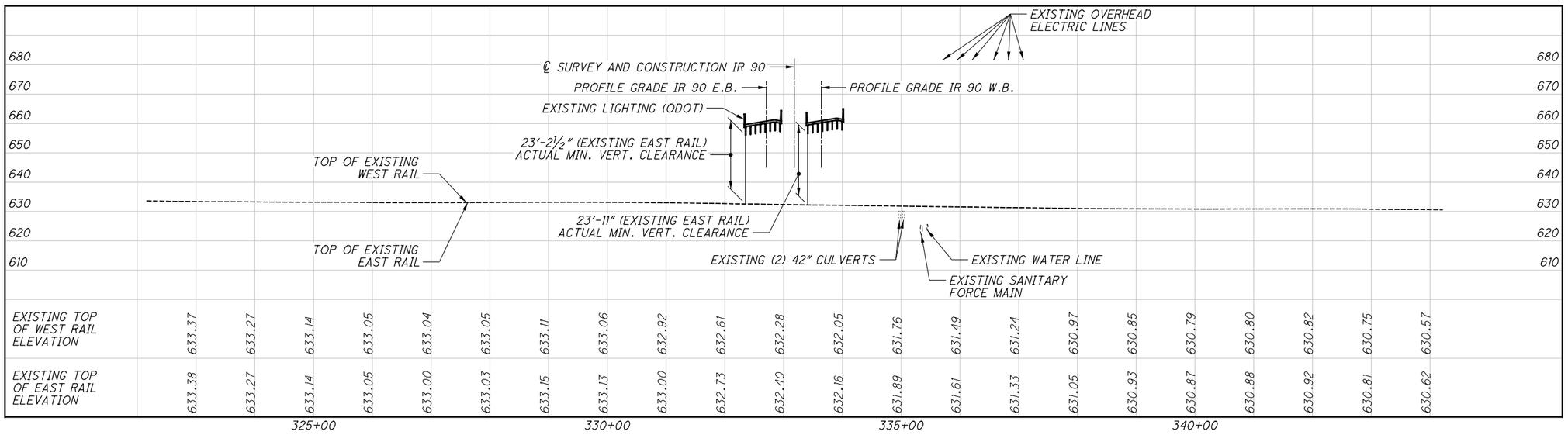
EXISTING CURVE DATA NORFOLK SOUTHERN RAILWAY COMPANY TRACK

P.I. Sta. 338+90.76
Δ = 96° 00'
Dc = 6° 00'
R = 955.37'
T = 1060.56'
L = 1600.00'
E = 472.19'

PLAN

RAIL TRAFFIC DATA

NORFOLK SOUTHERN RAILROAD	
TRAIN TRAFFIC:	4/DAY
OPERATING SPEED:	10 M.P.H.



PROFILE ALONG ℄ EXISTING NORFOLK SOUTHERN RAILWAY COMPANY TRACK

NOTE:

1. TOP OF RAIL ELEVATIONS SHALL BE CHECKED AND THE MINIMUM VERTICAL CLEARANCE VERIFIED BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE NORFOLK SOUTHERN ENGINEER PUBLIC IMPROVEMENTS.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DRAWN	REVIEWED	DATE
GJZ	NFF	5/16/19
DESIGNED	CHECKED	STRUCTURE FILE NUMBER
GJZ	RSB	4704895/4704925
	REVISED	

LORAIN COUNTY
STA. 926+79.72 (R)
STA. 928+53.36 (R)
LORAIN COUNTY
STA. 927+26.27 (L)
STA. 928+89.98 (L)

SUPPLEMENTAL SITE PLAN
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RR

LOR-90-17.85
PID No. 90942

3 / 67

124
196

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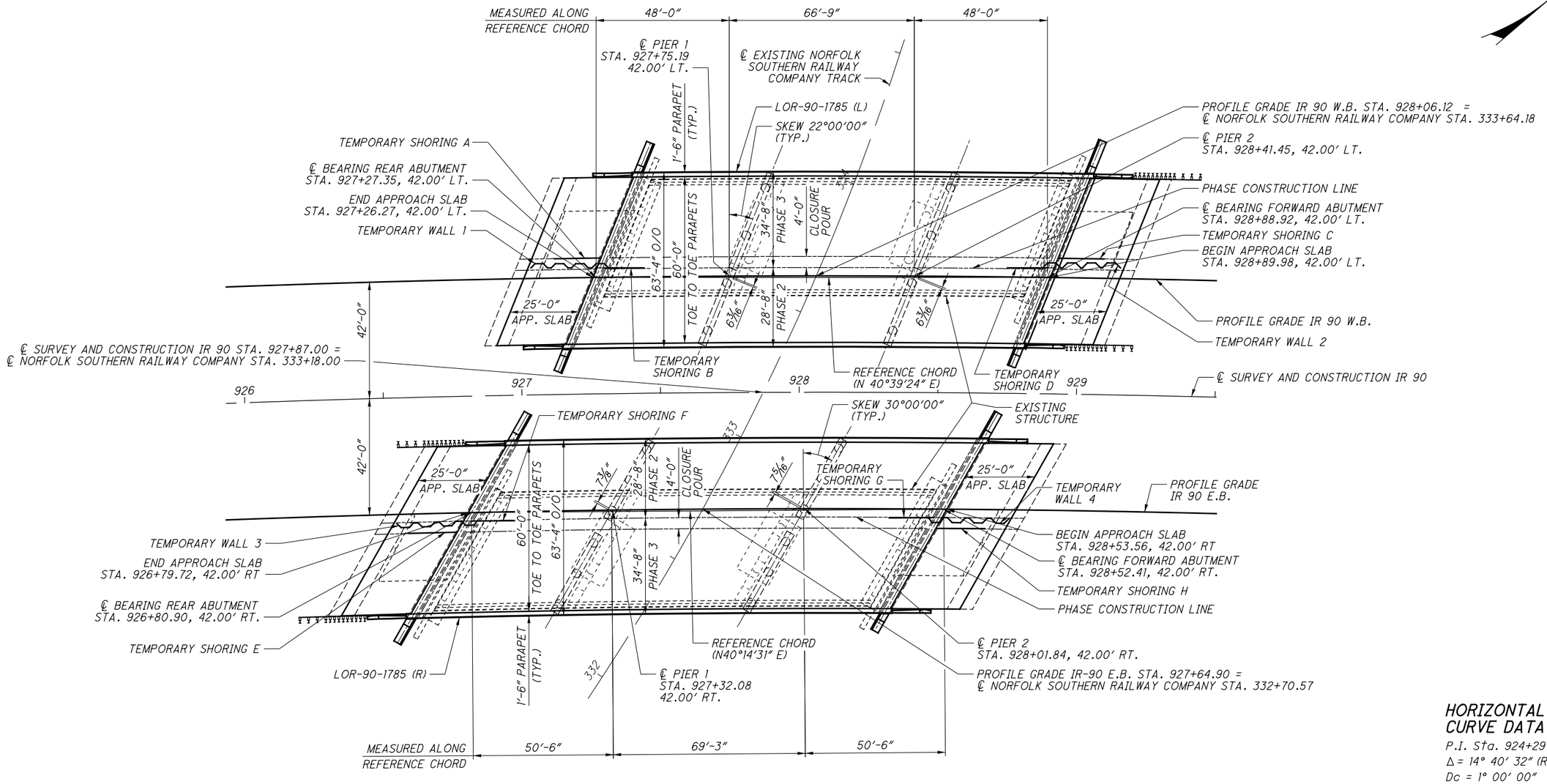

PLAN

HORIZONTAL CURVE DATA

P.I. Sta. 924+29.68
Δ = 14° 40' 32" (RT)
Dc = 1° 00' 00"
R = 5729.58'
T = 737.81'
L = 1467.54'
E = 47.31'

TEMPORARY WALL AND TEMPORARY SHORING LOCATIONS

LOCATION		TEMPORARY WALL 1	TEMPORARY WALL 2	TEMPORARY WALL 3	TEMPORARY WALL 4	TEMPORARY SHORING A	TEMPORARY SHORING B	TEMPORARY SHORING C	TEMPORARY SHORING D	TEMPORARY SHORING E	TEMPORARY SHORING F	TEMPORARY SHORING G	TEMPORARY SHORING H
BEGIN	STATION	927+04.08	928+87.21	926+53.63	928+46.99	927+12.53	927+30.39	928+93.19	928+74.57	926+57.80	926+80.82	928+32.66	928+50.24
	OFFSET	45.85' LT.	45.45' LT.	45.33' RT.	45.10' RT.	48.97' LT.	45.43' LT.	48.97' LT.	45.28' LT.	48.92' RT.	45.06' RT.	45.28' RT.	48.94' RT.
BEND POINT	STATION	—	—	926+77.32	928+52.44	—	—	—	—	—	—	—	—
	OFFSET	—	—	45.00' RT.	45.02' RT.	—	—	—	—	—	—	—	—
END	STATION	927+31.86	929+14.99	926+82.85	928+76.22	927+28.64	927+44.50	929+09.06	928+88.65	926+74.95	926+97.18	928+48.95	928+67.38
	OFFSET	45.41' LT.	45.90' LT.	45.09' RT.	45.13' RT.	48.97' LT.	45.26' LT.	48.97' LT.	45.47' LT.	48.94' RT.	45.28' RT.	45.07' RT.	48.87' RT.

NOTE:

1. TEMPORARY SHORING DESIGNATIONS INDICATE EXCAVATION BRACING THAT THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING.
2. FOR TEMPORARY WALL 1, 2, 3 & 4 DETAILS REFER TO SHEETS 61/67 AND 62/67 .

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW
DRAWN GJZ
CHECKED RSB
REVIEWED NFF
DATE 5/16/19
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

GENERAL PLAN AND GEOMETRIC LAYOUT
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

4 / 67

125 / 196

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STRUCTURE GENERAL NOTES

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:
AS-1-15 REVISED 7-17-15
AS-2-15 REVISED 1-19-18
PCB-91 REVISED 1-18-13
SBR-1-13 REVISED 7-20-18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
800 DATED 10-18-19
846 DATED 4-17-15

DESIGN SPECIFICATIONS:
THESE STRUCTURES CONFORM TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017 AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

SPECIAL DESIGN SPECIFICATIONS:
THESE BRIDGES REQUIRED THE USE OF A THREE DIMENSIONAL MODEL USING THE FINITE ELEMENT DESIGN METHOD TO ANALYZE THE STRUCTURE. THE COMPUTER PROGRAM USED FOR STRUCTURAL ANALYSIS WAS "LEAP BRIDGE STEEL". THE BRIDGE COMPONENTS DESIGNED BY THIS METHOD WERE THE GIRDERS AND CROSSFRAMES. THE DEAD AND LIVE LOAD DISTRIBUTIONS WERE AS FOLLOWS:

DEAD LOAD DISTRIBUTION: SLAB DEAD LOADS ARE DISTRIBUTED BASED ON GIRDER SPACING. THE FUTURE WEARING SURFACE AND PARAPET LOADS ARE DISTRIBUTED EVENLY TO ALL GIRDERS.

LIVE LOAD DISTRIBUTION: THE DESIGN PROGRAM CREATED A LIVE LOAD INFLUENCE SURFACE OVER THE DECK SURFACE AND DISTRIBUTED THE LOADS BASED ON THE LONGITUDINAL AND TRANSVERSE STIFFNESS. THE LIVE LOAD DISTRIBUTION FACTORS VARY ALONG THE WIDTH AND LENGTH OF THE STRUCTURE.

OPERATIONAL IMPORTANCE:
A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THESE STRUCTURES IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE SPECIFICATIONS, ARTICLE 1.3.5. AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

DESIGN LOADING:
HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KSF
STAY-IN-PLACE (SIP) FORMS OF 0.018 KSF (SPAN 2 ONLY)

DESIGN DATA:
CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFT)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

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

STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD:
EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER
HIGH MOLECULAR WEIGHT METHACRYLATE

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

EXISTING STRUCTURE PLANS:
CONSTRUCTION PLANS FOR THE EXISTING BRIDGE ARE ON FILE AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 CLARK AVENUE, ASHLAND, OHIO AND ARE AVAILABLE FOR REFERENCE.

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

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

RAILROAD COORDINATION:
ALL WORK ON, OVER, UNDER, OR ADJACENT TO NORFOLK SOUTHERN RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE NORFOLK SOUTHERN "SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS" (NS SPECIAL PROVISIONS).

"ONE CALL" SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE TWO (2) DAYS IN ADVANCE OF THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED FOR THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR AND PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.

ALL UTILITY INSTALLATIONS OR RELOCATIONS THAT ARE REQUIRED IN CONJUNCTION WITH THIS PROJECT CAN BE INSTALLED OR RELOCATED AS PART OF THE PROJECT PROVIDED THE CONSTRUCTION IS PERFORMED BY THE PROJECT CONTRACTOR OR PROJECT CONTRACTOR'S SUB-CONTRACTOR. HOWEVER, THE UTILITY MUST SUBMIT AN APPLICATION FOR THE INSTALLATION OR RELOCATION TO AECOM FOR APPROPRIATE HANDLING FOR LICENSE AGREEMENT AND APPLICABLE FEES. FOR UTILITY APPLICATIONS GO TO: www.nscorp.com > real estate > ns services > wire, pipeline, and fiber optics projects
NOTE: LICENSE AGREEMENT MUST BE EXECUTED PRIOR TO UTILITY BEING INSTALLED OR RELOCATED.

FOR PROJECTS EXCEEDING 30 DAYS OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE FLAGMAN A SMALL WORK AREA WITH A DESK/COUNTER AND CHAIR WITHIN THE FIELD/SITE TRAILER, INCLUDING THE USE OF BATHROOM FACILITIES, WHERE THE FLAGMAN CAN CHECK IN/OUT WITH THE PROJECT, AS WELL AS TO THE FLAGMAN'S HOME TERMINAL. THE WORK AREA SHOULD PROVIDE ACCESS TO TWO (2) ELECTRICAL OUTLETS FOR RECHARGING RADIO(S), AND A LAPTOP COMPUTER; AND HAVE THE ABILITY TO PRINT OFF NEEDED DOCUMENTATION AND ORDERS AS NEEDED AT THE FIELD/SITE TRAILER. THIS SHOULD AID IN MAXIMIZING THE FLAGMAN'S TIME AND EFFICIENCY ON THE PROJECT.

CONSTRUCTION CLEARANCE:
MAINTAIN A CONSTRUCTION CLEARANCE OF 14 FEET HORIZONTALLY FROM THE CENTER OF TRACKS AND 22 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 5.5 FEET FROM THE CENTER OF TRACKS, AT ALL TIMES.

AS-BUILT DRAWINGS:
ALL NECESSARY CAHANGES TO THE NORFOLK SOUTHERN RAILWAY COMPANY TRACK CLEARANCES (VERTICAL AND HORIZONTAL) AND DEPTH, SIZE, AND LOCATION OF FOUNDATION COMPONENTS MADE IN THE FIELD TO THIS CONSTRUCTION PLAN SHALL BE CAREFULLLY DOCUMENTED AND PRESENTED TO NORFOLK SOUTHERN AT THE CONCLUSION OF THE PROJECT. THEREFORE, STRICT ADHERENCE TO THE PLANS IS IN THE BEST INTERESTS OF ALL PARTIES. HOWEVER, IF CHANGES MUST BE MADE IN THE FIELD, THE CONNTRACTOR SHALL CAREFULLY AND CLEARLY RECORD THEM. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT THESE CHANGES (IF ANY) TO THE PROJECT ENGINEER IN A DOCUMENT SIGNED, DATED, AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER OR SURVEYOR IN THE STATE OF OHIO. THE PROJECT ENGINEER SHALL SUBMIT THE COMPLETED DOCUMENT TO NORFOLK SOUTHERN. ALL LABOR, MATERIALS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY TO PERFORM THIS WORK SHALL BE INCLUDED IN ITEM SPECIAL - AS-BUILT CONSTRUCTION PLANS.

MAINTENANCE OF TRAFFIC:
TWO LANES OF IR 90 TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. FOR MAINTENANCE OF TRAFFIC NOTES, PERMITTED LANE CLOSURES AND DETAILS, REFER TO ROADWAY PLANS.

CLOSE COORDINATION WITH NORFOLK SOUTHERN WILL BE REQUIRED FOR CONSTRUCTION ACTIVITIES OVER THE TRACK.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:
ALL REMOVAL SHALL BE IN ACCORDANCE WITH CMS 202 WITH THE FOLLOWING ADDITIONS. THIS WORK SHALL INCLUDE THE PHASED REMOVAL OF THE EXISTING STRUCTURES AS DETAILED IN THE PLANS. THE WORK INCLUDES ALL ELEMENTS NOT SEPARATELY LISTED FOR PAYMENT. THE STRUCTURES SHALL BE CAREFULLY REMOVED BY PHASED CONSTRUCTION METHODS. THE USE OF EXPLOSIVES AND HEADACHE BALLS WILL NOT BE PERMITTED FOR ANY DEMOLITION OF THE EXISTING STRUCTURES. SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

PHASED CONCRETE DECK REMOVAL:

WHEN NO LONGER REQUIRED TO MAINTAIN TRAFFIC, REMOVE THE CONCRETE DECK SLAB IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION DETAILED IN THE PLANS. HOWEVER, BEFORE THE REMOVAL OF PORTIONS OF THE CONCRETE DECK REQUIRED BY THE PHASED CONSTRUCTION, THE CONTRACTOR SHALL DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK TO BE REMOVED. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB AND DURING DECK PICKING OPERATIONS TO AVOID DAMAGING EXISTING STEEL MEMBERS THAT ARE TO REMAIN DURING PHASE 2 CONSTRUCTION. WHILE NO EXISTING STEEL WILL BE INCORPORATED INTO THE NEW STRUCTURES, THE ABOVE PROCEDURE IS INTENDED TO FOSTER A SAFE AND ORDERLY PHASED REMOVAL OF EXISTING SUPERSTRUCTURES SO THAT PORTIONS OF THE EXISTING STRUCTURES BEING TEMPORARILY MAINTAINED OR ANY PORTION OF NEW CONSTRUCTION ARE NOT DAMAGED.

PHASED SUBSTRUCTURE CONCRETE REMOVAL:

THE EXISTING BRIDGE PIERS AND FOUNDATIONS SHALL BE REMOVED TO A LEVEL AT LEAST 2 FEET BELOW TOP OF FUTURE FINISHED GRADE IN ACCORDANCE WITH THE NORFOLK SOUTHERN PUBLIC PROJECTS MANUAL.

THE EXISTING SUBSTRUCTURE SHALL BE REMOVED IN PHASES WHEN IT IS NO LONGER NEEDED TO MAINTAIN TRAFFIC, AS DETAILED IN THE PLANS. WHEN PORTIONS OF THE EXISTING STRUCTURE ARE TO REMAIN TO MAINTAIN TRAFFIC DURING PHASED CONSTRUCTION, HOE-RAM TYPE HAMMERS ARE NOT PERMITTED WITHIN TWO FEET OF THE PORTION TO BE TEMPORARILY PRESERVED. HAMMERS NOT EXCEEDING 90 POUNDS MAY BE USED TO REMOVE THE REMAINING TWO FOOT PORTION OF CONCRETE WITH CARE NOT TO DAMAGE THE REINFORCING STEEL AND CONCRETE OF THE PORTION OF STRUCTURE TO BE PRESERVED.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (CONTINUED):
PHASED SUBSTRUCTURE CONCRETE REMOVAL (CONTINUED):

EXISTING SUBSTRUCTURES THAT ARE NO LONGER NEEDED TO MAINTAIN TRAFFIC MAY BE REMOVED USING HOE-RAM TYPE HAMMERS AND PNEUMATIC TYPE HAMMERS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ADJACENT NEW AND EXISTING CONCRETE STRUCTURES DURING THE PHASED CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PERFORM DEMOLITION OPERATIONS SUCH THAT THERE IS NOT ANY DAMAGE TO THE NEW STRUCTURE OR TO PORTIONS OF THE EXISTING STRUCTURE BEING TEMPORARILY MAINTAINED.

MEASUREMENT & PAYMENT:

THE DEPARMENT WILL MEASURE THE QUANTITY OF ALL REMOVAL ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVAL AT THE CONTRACT BID PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 203 - EMBANKMENT, AS PER PLAN:
PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT.

PILES TO BEDROCK:
DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED WHEN THE PILE PENETRATION IS AN INCH OR LESS AFTER RECEIVING 20 BLOWS FROM THE PILE HAMMER. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE TOTAL FACTORED LOAD IS 196 KIPS PER PILE FOR THE LEFT BRIDGE ABUTMENT PILES, AND 191 KIPS PER PILE FOR THE RIGHT BRIDGE ABUTMENT PILES.

LEFT BRIDGE REAR ABUTMENT PILES:
HP12x53 PILES 45 FEET LONG, ORDER LENGTH

LEFT BRIDGE FORWARD ABUTMENT PILES:
HP12x53 PILES 55 FEET LONG, ORDER LENGTH

RIGHT BRIDGE REAR ABUTMENT PILES:
HP12x53 PILES 45 FEET LONG, ORDER LENGTH

RIGHT BRIDGE FORWARD ABUTMENT PILES:
HP12x53 PILES 55 FEET LONG, ORDER LENGTH

PILE SPLICES:
IN LIEU OF USING THE FULL PENETRATION BUTT WELDS SPECIFIED IN CMS 507.09 TO SPLICE STEEL H-PILES, THE CONTRACTOR MAY USE A MANUFACTURED H-PILE SPLICER. FURNISH SPLICERS FROM THE FOLLOWING MANUFACTURER:

ASSOCIATED PILE AND FITTING CORPORATION
8 WOOD HOLLOW RD. PLAZA 1
PARSIPPANY, NEW JERSEY 07054

INSTALL AND WELD THE SPLICER TO THE PILE SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN ASSEMBLY PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED.

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DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN ZTW | CHECKED MSL | REVIEWED NFF | DATE 5/16/19 | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

GENERAL NOTES - 1
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

STRUCTURE GENERAL NOTES

DRILLED SHAFTS:

THE MAXIMUM FACTORED LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 750 KIPS AT THE LEFT BRIDGE PIER 1 AND PIER 2, AND 555 KIPS AT THE RIGHT BRIDGE PIER 1 AND PIER 2. THIS LOAD IS RESISTED BY SIDE RESISTANCE WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY TIP RESISTANCE. THE FACTORED RESISTANCE DEVELOPED BY SIDE RESISTANCE IS 132 KIPS FOR THE LEFT BRIDGE PIER 1 AND PIER 2, AND 271 KIPS FOR THE RIGHT BRIDGE PIER 1 AND PIER 2, ASSUMED TO ACT ALONG THE BOTTOM 3 FEET OF THE BEDROCK SOCKET FOR THE LEFT BRIDGE PIER 1 AND PIER 2 AND 8 FEET FOR THE RIGHT BRIDGE PIER 1 AND PIER 2. THE FACTORED RESISTANCE PROVIDED BY THE DRILLED SHAFT TIP IS 689 KIPS AT THE LEFT BRIDGE PIER 1 AND PIER 2 AND 300 KIPS AT THE RIGHT BRIDGE PIER 1 AND PIER 2.

ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 1):
ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 2):
ITEM 503 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 3):
ITEM 503 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 4):

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH CMS 501.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN

STAY-IN-PLACE (SIP) FORMS SHALL BE USED IN THE TRANSVERSE DIRECTION BETWEEN THE GIRDERS IN SPAN 2 ONLY OF THE LEFT AND RIGHT BRIDGES AND DECK SLAB OVERHANGS SHALL BE FORMED USING TRADITIONAL METHODS.

THE FOLLOWING IS A LISTING OF THE REQUIREMENTS FOR USE OF SIP FORMS:

DESIGN, FURNISH, AND INSTALL PERMANENT GALVANIZED STEEL SIP FABRICATED METAL FORMS FOR CONCRETE DECK SLABS OF ALL INTERIOR BAYS OF BEAMS ACCORDING TO CMS SECTIONS 508.01 AND 508.02 EXCEPT AS MODIFIED BY THESE NOTES. SIP FORMS SHALL NOT BE USED AT OVERHANGS.

DESIGN SIP FORMS TO SUPPORT THE DEAD WEIGHT OF SIP FORMS, REINFORCEMENT, WET CONCRETE PLUS 50 PSF FOR CONSTRUCTION LIVE LOADS AND MEET THE DEFLECTION SPECIFICATIONS OF 508.02. ALL FLUTES SHALL BE FILLED WITH THE SAME CONCRETE MIX BEING POURED WITH THE DECK.

THE MAXIMUM ALLOWABLE WEIGHT FOR SIP FORMS SHALL BE 18 PSF. THE MAXIMUM ALLOWABLE WEIGHT INCLUDES THE ADDITIONAL CONCRETE WEIGHT REQUIRED TO FILL THE FLUTES OF THE SIP FORMS.

FABRICATE THE SIP FORMING SYSTEM ACCORDING TO ITEM 513 EXCEPT THAT FABRICATOR PRE-QUALIFICATION IS NOT REQUIRED. SUBMIT MILL TEST REPORTS FOR THE SIP FORMS ACCORDING TO 513.08. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE SIP FORMS ACCORDING TO 513.06. FURNISH FORM MATERIALS CONFORMING TO ASTM A653 WITH G235 COATING WEIGHT WITH A MINIMUM THICKNESS OF 20 GAGE. HOT DIP GALVANIZE ALL HARDWARE, HANGERS, AND INCIDENTALS.

DO NOT WELD SIP FORMS OR THEIR SUPPORTS TO THE STEEL BRIDGE MEMBERS.

ACHIEVE A ONE-INCH MINIMUM BEARING LENGTH ON ALL SUPPORTS OF A FLUTE.

PLACE CONCRETE ACCORDING TO THE CONTRACT SPECIFICATIONS:
-FILL THE ENTIRE FORM WITH DECK CONCRETE.
-UTILIZE PROPER CONSTRUCTION TECHNIQUES TO PREVENT VOIDS AND HONEYCOMBS ESPECIALLY AT ENDS OF SIP FORM SHEETS.

INSTALL SIP FORMS ACCORDING TO THESE NOTES:

1. PROVIDE THE ENGINEER WITH A WRITTEN INSTALLATION AND INSPECTION PROCEDURE. INCLUDE METHODS FOR ADJUSTING SUPPORT HEIGHTS, SIP ATTACHMENT SEQUENCE, PLACEMENT METHODS USED TO MINIMIZE COATING DAMAGE, COATING REPAIR METHODS, ACCEPTABLE TOLERANCES, AND INSPECTION CRITERIA.

2. FIELD CUT SIP FORMS USING MECHANICAL CUTTING METHODS. THERMAL CUTTING IS NOT PERMITTED.

3. PLACE FORM SUPPORTS IN DIRECT CONTACT WITH THE TOP OF THE BRIDGE'S STRUCTURAL MEMBERS.

4. SET THE HEIGHT OF THE FORM SUPPORTS SO SIP FORMS DO NOT REST DIRECTLY ON THE BRIDGE'S STRUCTURAL MEMBERS AND TO DEVELOP THE SPECIFIED DECK THICKNESS.

5. PLACE THE SIP FORMS DIRECTLY ON THE SUPPORTS.

6. CONNECT SIP FORMS TO SUPPORTS BEFORE USING THE SIP AS A WORKING SURFACE AND BEFORE THE END OF EACH WORK SHIFT.

7. PROVIDE SAFETY STOPS TO ELIMINATE HAZARDS FROM SUDDEN UPLIFT AND LATERAL MOVEMENT.

IN ADDITION TO THE REQUIREMENTS OF 105.10 FURNISH, ERECT, AND MOVE APPROPRIATE EQUIPMENT OR SCAFFOLDING TO ALLOW THE FOLLOWING INSPECTION ACCESS. PROVIDE COMPLETED INSPECTION CHECK LISTS TO DOCUMENT THE FOLLOWING INSPECTIONS:

1. PRIOR TO PLACING CONCRETE VISUALLY INSPECT SIP FORMS FOR DAMAGE.

2. TWO DAYS AFTER CONCRETE PLACEMENT, TEST DECK FOR SOUNDNESS OR BONDING OF THE FORMS BY SOUNDING ON THE FORMS WITH A HAMMER. SOUND ALL SURFACES OF AT LEAST 10% OF THE PANELS WITH THE ENGINEER.

3. REMOVE SIP FORMS IN AREAS WITH DOUBTFUL SOUNDNESS OR BONDING FOR THE ENGINEER'S VISUAL INSPECTION. DO NOT REPLACE SIP FORMS REMOVED FOR INSPECTION. REMOVE FORMS SO THAT ADJACENT FORMS OR WORK IS NOT DEBONDED OR OTHERWISE DAMAGED.

4. IF DEFECTS ARE DISCOVERED DURING THE SPECIFIED INSPECTIONS, TEST THE COMPLETE DECK AND PROPOSE REPAIR OR REMOVAL METHODS ACCEPTABLE TO THE DEPARTMENT. THE DEPARTMENT MAY REQUIRE ADVANCED NON-DESTRUCTIVE TESTING METHODS SUCH AS GROUND PENETRATING RADAR TO VERIFY THE DECK CONDITION ACCORDING TO CMS 105.11.

ALL LABOR, MATERIALS AND INCIDENTALS FOR THE FABRICATION, DESIGN AND INSTALLATION OF THE SIP FORMS SHALL BE INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN:

1.0 DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF CONSTRUCTION AND MATERIAL SPECIFICATION 513, 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 CONSTRUCTION AND MATERIAL SPECIFICATION 513, 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 513.27 AND 513.28 SHALL NOT APPLY.

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

SHEAR STUDS SHALL BE INSTALLED AS PER SECTION C&MS 513.22.

2.0 PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER C&MS 513.07, BOTH THE FABRICATOR'S QUALITY CONTROL SPECIALIST, (QCS) AND GALVANIZER'S QCS 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 GALVANIZER'S QCS (QUALITY CONTROL SPECIALIST) REQUIRED UNDER C&MS 514, IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN C&MS 514.05

3.2 QUALITY CONTROL POINTS (QCP)

QUALITY CONTROL POINTS (QCP) ARE POINTS IN TIME WHEN ONE PHASE OF THE WORK IS COMPLETE AND READY FOR INSPECTION BY THE FABRICATOR'S QCS 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 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 REJECTION OR 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 THICKNESS.COATING
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-SP 1 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 GALVANIZER'S QCS 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 THERMALLY CUT OR SHEARED EDGES MUST HAVE A 1/16-IN. RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1.5-IN. MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT EFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE GALVANIZER'S QCS 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 MATERIAL 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 GALVANIZER'S QCS 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 ONLY BE PERFORMED BY THE 513 FABRICATOR.

THE GALVANIZER'S QCS 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.

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CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN ZTW | CHECKED MSL | REVIEWED NFF | DATE 5/16/19 | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

GENERAL NOTES - 2
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

D. GALVANIZING (QCP #4)

GALVANIZED PER C&MS 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 ASTM 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 C&MS 711.02.

DOCUMENTATION OF COATING THICKNESS MUST BE PERFORMED BY THE GALVANIZER'S QCS. THE GALVANIZER'S QCS 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 WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPLICE BOLT HOLES MUST BE FREE OF ZINC BUILD UP. AFTER GALVANIZING, CLEAN EACH HOLE AS NECESSARY SO THAT A DRIFT PIN 1/16-IN. LESS THAN THE DIAMETER OF THAT HOLE CAN BE FULLY INSERTED. CONSIDERATION WILL BE GIVEN TO OTHER METHODS OF TREATING THE FAYING SURFACES AND BOLT HOLES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF MATERIAL MANAGEMENT (OMM) IN ACCORDANCE WITH C&MS 108.05.

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

F. SECOND LAY DOWN (QCP # 6)

AFTER GALVANIZING, MATERIALS MUST BE PLACED IN A SECOND SHOP ASSEMBLY PER C&MS SECTION 513.24 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST THE FABRICATORS ORIGINAL RECORDED LAY DOWN DIMENSIONS. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZER'S FACILITY, BY THE FABRICATORS PERSONNEL, IF APPROVED BY THE OFFICE OF MATERIAL MANAGEMENT (OMM). THE SECOND LAY DOWN MAY BE WAIVED BY THE OMM IF THE FABRICATOR RECORDS INDIVIDUAL BEAM CAMBERS AND SWEEPS DURING 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-IN. OF THE APPROVED SHOP DRAWING LAY DOWN.

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

SWEEP POINTS AFTER GALVANIZING MUST BE +/- 3/8-IN. 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 THE RECORDED SHOP ASSEMBLY RECORDS PER C&MS 513.24. DOCUMENTATION OF THE SECOND LAY DOWN OR INDIVIDUAL MEMBER CAMBERS MUST BE RECORDED BY THE FABRICATORS QCS OR GALVANIZER'S QCS PER C&MS 513.24.

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 OMM.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH C&MS 711.02.

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 FASCIA BEAMS WHERE BRACING IS USED.

DOCUMENTATION OF GALVANIZING REPAIRS MUST BE PERFORMED BY THE GALVANIZER'S QCS 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 QCP #7. AT THE COMPLETION OF CONSTRUCTION, THE GALVANIZING MUST BE 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 SPC-SP1(QCP #1)

DOCUMENTATION OF FINAL REVIEW MUST BE PERFORMED BY THE GALVANIZER'S QCS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

4.0 TESTING EQUIPMENT

THE FABRICATOR MUST PROVIDE THE GALVANIZER'S QCS INSPECTOR THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER FOR THE DURATION OF THE PROJECT.

ONE (POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FBI1) AND THE CALIBRATION PLATES, 1.5 -8 MILS AND 10- 25 MILS AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D-1186.

5.0 COATING THICKNESS

GALVANIZED THICKNESS 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-IN. TO 3-IN. FOR EACH NEW GAGE READING. ANY UNUSUALLY HIGH OR LOW GAGE READING THAT CANNOT BE REPEATED CONSISTENTLY 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 THAT 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 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 GALVANIZER'S QCS MUST INSPECT AND PROVIDE DOCUMENTATION OF ACTUAL DATA, THE GALVANIZED THICKNESS CHECKS WERE PERFORMED PER SPECIFICATION, AND THE COATING THICKNESS MEETS 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 SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), IN ADDITION TO THE SCAFFOLDING REQUIREMENTS BELOW.

THE CONTRACTOR IS REQUIRED TO MEET THE APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION IN ADDITION TO THE SCAFFOLDING REQUIREMENTS SPECIFIED 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 AND OTHER TYPES OF FASTENINGS WHICH WILL MARK OR DAMAGE COATED SURFACES MUST NOT BE USED.

9.0 INSPECTION ACCESS FOR FIELD REPAIR

IN ADDITION TO THE REQUIREMENT OF C&MS 105.10, THE CONTRACTOR MUST FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT, TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT CLOSELY OBSERVE), ALL AFFECTED SURFACES. THIS 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 ACCORDANCE WITH THE FOLLOWING REQUIREMENTS. WHEN SCAFFOLDING, OR THE HANGERS ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, OR WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE PAINTED, THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH:

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

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

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

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

ALL GUARDRAILS 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 OR WOOD. IF PIPE RAILING IS USED, THE RAILING MUST HAVE A NOMINAL DIAMETER OF NO LESS THAN 1.5-IN. IF STRUCTURAL STEEL RAILING IS USE, THE RAILS MUST BE 2 X 2 X 3/8-IN. STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING MUST BE 2 X 4-IN. (NOMINAL) STOCK. ALL UPRIGHTS MUST BE SPACED AT NO MORE THAN 8-FT. ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS MUST BE 2 X 4-IN. (NOMINAL) STOCK.

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

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DESIGNED ZTW
DRAWN ZTW
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REVIEWED NFF
DATE 5/16/19
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

GENERAL NOTES - 3
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

WHEN SCAFFOLDING IS MORE THAN 2.5-FT. 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-IN. ON CENTER. AT LEAST ONE SIDE RAIL MUST EXTEND AT LEAST 36-IN. ABOVE THE LANDING NEAR THE TOP OF THE LADDER.

AN ADDITIONAL LANDING MUST BE REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED, EXCEEDS 12-IN. THE LANDING MUST BE A MINIMUM OF AT LEAST 24-IN. WIDE AND 24-IN. 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-IN. 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 ACCORDANCE WITH ITEM 513 AND PERFORM ANY NECESSARY FIELD REPAIR SHALL BE INCLUDED IN THIS ITEM 513, AS PER PLAN ITEM.

13.0 BASIS OF PAYMENT

PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR THE ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN.

ITEM 513 - STRUCTURAL STEEL, MISC.: TEMPORARY BEAM END RETROFIT:

THIS WORK SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THE TEMPORARY BEAM END RETROFIT AS DETAILED IN THE PLANS AND DESCRIBED BELOW. THIS WORK SHALL BE PERFORMED PRIOR TO ANY OF THE PHASE 2 REMOVAL WORK.

QUALIFICATION:

FABRICATOR SHALL POSSESS LEVEL UF QUALIFICATION IN ACCORDANCE WITH CMS 513.

MATERIAL:

NEW PLATE MATERIAL SHALL BE ASTM A709 GRADE 50 AND SHOP PRIMED IN ACCORDANCE WITH CMS 514.

NEW BOLTS SHALL BE ⅞" DIA. TYPE 3 ASTM F3125 GRADE A325 HIGH STRENGTH BOLTS.

SUGGESTED SEQUENCE OF CONSTRUCTION:

A. FIELD VERIFY DELAMINATION LOCATION AND LIMITS PRIOR TO FABRICATION OF NEW WEB PLATES.

B. FABRICATE NEW WEB PLATES WITH SHOP DRILLED BOLT HOLES. ALTERNATIVELY, THE BOLT HOLES MAY BE FIELD DRILLED.

C. PLACE NEW WEB PLATES IN POSITION WITH APPROVED MECHANICAL METHOD. ENSURE PROPER ALIGNMENT IS MAINTAINED.

D. DRILL BOLT HOLES INTO WEB OF EXISTING BEAM AT THE CENTERLINE OF THE NEW WEB PLATE USING FABRICATED PLATE AS TEMPLATE. INSERT AND SNUG-TIGHTEN BOLTS.

E. REPEAT STEP 'D' FOR REMAINING BOLTS WORKING FROM NEW PLATE CENTER TO EDGES.

F. PROPERLY TENSION NEW BOLTS ACCORDING TO CMS 513.20 WORKING FROM NEW PLATE CENTER TO EDGES.

MEASUREMENT & PAYMENT:

THE DEPARTMENT WILL MEASURE THE QUANTITY OF TEMPORARY BEAM END RETROFIT AS AN EACH ITEM. THE DEPARTMENT WILL PAY FOR THE ACCEPTED REPAIR AT EACH BEAM END LOCATION, WHICH WILL INCLUDE ALL MATERIALS, LABOR, AND EQUIPMENT TO PERFORM THE DESCRIBED WORK, AT THE CONTRACT BID PRICE FOR ITEM 513 - STRUCTURAL STEEL, MISC.: TEMPORARY BEAM END RETROFIT.

ITEM 524 - DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN:

DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN SHALL CONFORM TO CMS 524 AND THE PROVISION LISTED BELOW.

THIS PAY ITEM INCLUDES THE DRILLING OF PROPOSED PIER DRILLED SHAFTS THROUGH THE EXISTING REINFORCED CONCRETE PIER SPREAD FOOTING. PER THE EXISTING PLANS, THE EXISTING PIER FOOTING IS 3 FEET± THICK WITH A BOTTOM MAT OF #6 AND #9 REINFORCING BARS. CONTRACTOR SHALL FIELD VERIFY EXISTING PIER SPREAD FOOTING LIMITS AND LOCATIONS.

ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO FIELD VERIFY AND DRILL THROUGH THE EXISTING PIER SPREAD FOOTING SHALL BE INCLUDED WITH ITEM 524 - 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN FOR PAYMENT.

ITEM 601 - RIPRAP, WITH GROUT, AS PER PLAN

THIS WORK SHALL BE IN ACCORDANCE WITH CMS 601.05 WITH THE FOLLOWING PROVISIONS. THE RIPRAP SHALL BE A MINIMUM OF 12 INCHES THICK AND THE FINISHED SURFACE SHALL CONFORM TO THE SLOPES SHOWN IN THE PLANS. A FILTER CONSISTING OF GEOTEXTILE FABRIC, TYPE B, CONFORMING TO CMS 712.09 IS REQUIRED BELOW THE RIPRAP.

PREPARE THE SURFACE TO RECEIVE THE FABRIC TO A RELATIVELY SMOOTH SURFACE, FREE OF OBSTRUCTION AND DEBRIS. WITH THE LONG DIMENSION PARALLEL TO THE FLOW DIRECTION, LOOSELY PLACE THE FABRIC WITHOUT WRINKLES AND CREASES. WHERE JOINTS ARE NECESSARY, PROVIDE A 12 INCH MINIMUM OVERLAP, WITH THE UPHILL STRIP OVERLAPPING THE DOWNHILL STRIP. PLACE SECURING PINS WITH WASHERS AT A MINIMUM DISTANCE APART OF TWO FEET ALONG THE JOINTS AND AT A MINIMUM DISTANCE APART OF FIVE FEET EVERYWHERE ELSE.

ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO PLACE THE RIPRAP WITH GROUT AS DESCRIBED ABOVE SHALL BE INCLUDED WITH ITEM 601 - RIPRAP, WITH GROUT, AS PER PLAN FOR PAYMENT.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.26 KIPS FOR THE LEFT BRIDGE AND 2.28 KIPS FOR THE RIGHT BRIDGE.

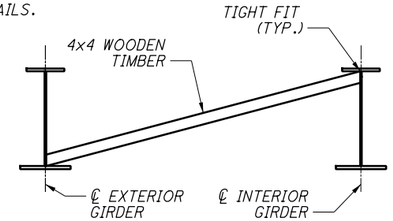
A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103 INCHES.

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 INCHES.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65 INCHES.

THE GIRDERS REQUIRE LATERAL RESTRAINT DURING THE DECK POURING OPERATION AT THE CENTERLINE OF ABUTMENT BEARINGS OF THE LEFT AND RIGHT BRIDGES. THE CONTRACTOR SHALL PROVIDE A MEANS OF TEMPORARILY BRACING THE GIRDERS TO PREVENT ROTATION, SLIDING, TIPPING, OR OTHER MOVEMENT THAT MAY RESULT FROM THE DECK POURING OPERATION IN A MANNER SATISFACTORY TO THE ENGINEER. SUBMIT SEALED CONSTRUCTION PLANS AND CALCULATIONS FOR THE GIRDER RESTRAINT PER CMS 501.05.

THE LEFT BRIDGE REQUIRES TEMPORARY TIMBER BLOCKING OF THE BOTTOM FLANGE TO PREVENT ROTATION DURING DECK PLACEMENT. THE LOCATIONS OF THE TEMPORARY TIMBER BLOCKING ARE SHOWN ON THE LEFT BRIDGE FRAMING PLAN, SHEET 33/67. SEE TEMPORARY TIMBER BLOCKING DETAIL BELOW FOR ADDITIONAL DETAILS.



TEMPORARY TIMBER BLOCKING DETAIL

ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO PROVIDE RESTRAINT OF THE GIRDERS AT THE CENTERLINE OF ABUTMENT BEARINGS DURING DECK PLACEMENT, AS WELL AS TEMPORARY TIMBER BLOCKING AS SHOWN IN THE PLANS, SHALL BE INCLUDED WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN FOR PAYMENT.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MSL		4704895/4704925	

GENERAL NOTES - 4
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

8 / 67

129
196

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MADE BY: GJZ DATE: 12/11/2019
CHECKED BY: RSB DATE: 12/12/2019

ESTIMATED QUANTITIES

STRUCTURE FILE NUMBER: 4704895 (L) / 4704925 (R)

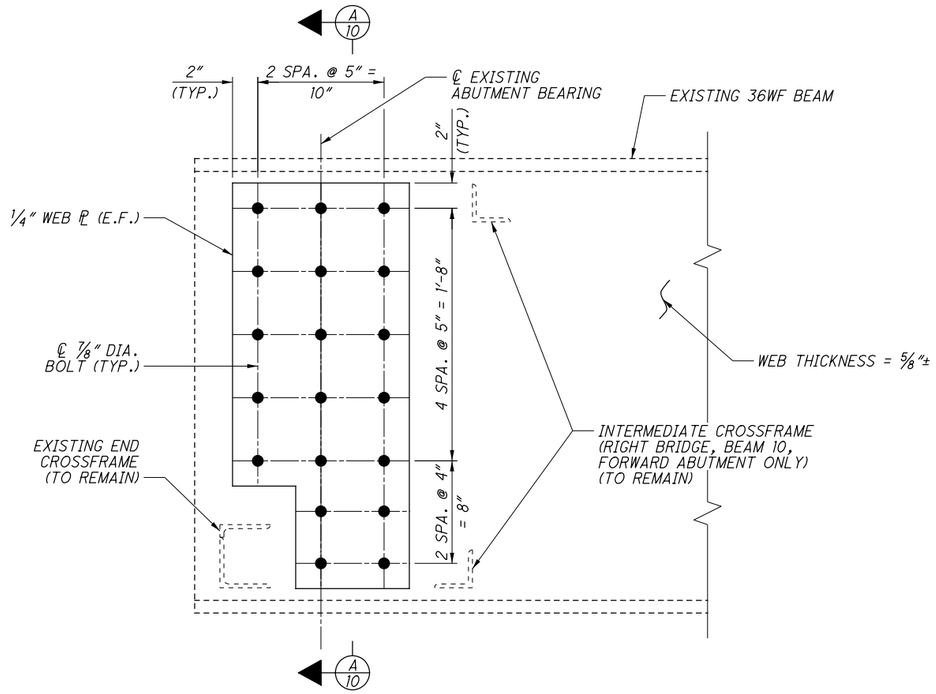
ITEM	EXTENSION	LOR-90-1785L (WESTBOUND) TOTAL	LOR-90-1785R (EASTBOUND) TOTAL	UNIT	DESCRIPTION	LOR-90-1785L (WESTBOUND) ABUTMENTS	LOR-90-1785L (WESTBOUND) PIERS	LOR-90-1785L (WESTBOUND) SUPER STRUCTURE	LOR-90-1785L (WESTBOUND) GENERAL	LOR-90-1785R (EASTBOUND) ABUTMENTS	LOR-90-1785R (EASTBOUND) PIERS	LOR-90-1785R (EASTBOUND) SUPER STRUCTURE	LOR-90-1785R (EASTBOUND) GENERAL	REFERENCE SHEET NUMBER
202	11203	LS	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS				LS	126/196
202	22900	134	134	SY	APPROACH SLAB REMOVED				134				134	
202	23500	639	688	SY	WEARING COURSE REMOVED				639				688	
503	11100	LS	LS		COFFERDAMS AND EXCAVATION BRACING (TEMPORARY SHORING)				LS				LS	
503	21300	LS	LS		UNCLASSIFIED EXCAVATION				LS				LS	
504	11101	812		SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 1)				812					127/196
504	11101	877		SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 2)				877					127/196
504	11101		847	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 3)								847	127/196
504	11101		918	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 4)								918	127/196
505	11100	LS	LS		PILE DRIVING EQUIPMENT MOBILIZATION				LS				LS	
507	00200	1500	1600	FT	STEEL PILES HP12x53, FURNISHED	1500				1600				
507	00250	1350	1440	FT	STEEL PILES HP12x53, DRIVEN	1350				1440				
509	10000	138107	142171	LB	EPOXY COATED REINFORCING STEEL	14561	25543	96619	1384	15152	24457	101178	1384	
511	34447	349	369	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN			349				369		127/196
511	34450	58	61	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			58				61		
511	41012	90	104	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS		90				104			
511	43512	114	120	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	114				120				
512	10100	773	904	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	118	304	351		122	368	369	45	
512	33000	4	4	SY	TYPE 2 WATERPROOFING	4				4				
513	10281	240810	263230	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN			240810				263230		127/196
513	20000	8334	8004	EACH	WELDED STUD SHEAR CONNECTORS			8334				8004		
513	95030	2	2	EACH	STRUCTURAL STEEL, MISC.: TEMPORARY BEAM END RETROFIT			2				2		129/196
516	13200	137	111	SF	1/2" PREFORMED EXPANSION JOINT FILLER	137				111				
516	13600	124	70	SF	1" PREFORMED EXPANSION JOINT FILLER			124		37		17	16	
516	13900	58	62	SF	2" PREFORMED EXPANSION JOINT FILLER	58				62				
516	14014	165	193	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	165				193				
516	44100	16	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)		16				16			
					(15" x 14" x 2.499" PAD WITH 17" x 15" x 2.000" LOAD PLATE)									
516	44201	16		EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN	16								178/196
					(13" x 12" x 3.398" PAD WITH 17" x 13" x 1.500" TOP LOAD PLATE,									
					14" x 13" x 1.500" BOTTOM LOAD PLATE AND HP SECTION)									
516	44201		16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN					16				178/196
					(13" x 12" x 3.848" PAD WITH 17" x 13" x 1.500" TOP LOAD PLATE,									
					14" x 13" x 1.500" BOTTOM LOAD PLATE AND HP SECTION)									
518	21200	121	129	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	121				129				
518	40000	167	173	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	167				173				
518	40011	63	70	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	63				70				144/196
524	94704	40	120	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK		40				120			
524	94802	176	150	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK		176				150			
524	94803	59	75	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN		59				75			127/196
526	25010	343	343	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")				343				343	
526	90010	130	139	FT	TYPE A INSTALLATION				130				139	
601	12001	1105	1215	SY	RIPRAP, WITH GROUT, AS PER PLAN				1105				1215	127/196
SPECIAL	69091000	LS	LS		AS-BUILT CONSTRUCTION PLANS				LS				LS	126/196
846	00110	54	58	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				54				58	

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED GJZ | DRAWN GJZ | CHECKED ZTW | REVIEWED NFF | DATE 5/16/19 | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

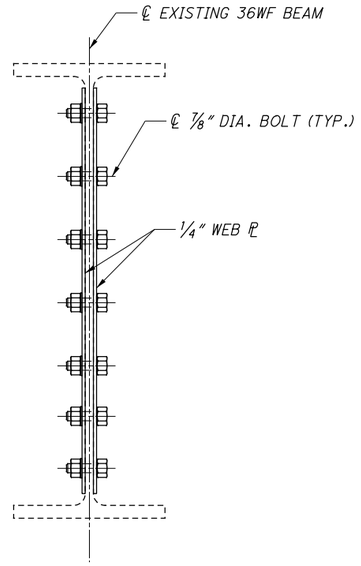
ESTIMATED QUANTITIES
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



TEMPORARY BEAM END RETROFIT - ELEVATION

(RIGHT BRIDGE, BEAM 10, FORWARD ABUTMENT SHOWN)
(RIGHT BRIDGE, BEAM 10, REAR ABUTMENT SIMILAR)
(LEFT BRIDGE, BEAM 1, REAR ABUTMENT SIMILAR)
(LEFT BRIDGE, BEAM 1, FORWARD ABUTMENT SIMILAR)



A/10 SECTION

SUGGESTED BRIDGE SEQUENCE OF CONSTRUCTION

(SEE ROADWAY PLANS FOR ADDITIONAL SEQUENCE OF CONSTRUCTION INFORMATION)

PHASE 1:

1. REPAIR THE BEAM ENDS AT FOUR (4) LOCATIONS AS SHOWN ON THIS SHEET.

PHASE 2:

1. PLACE PORTABLE CONCRETE BARRIER AS SHOWN.
2. REMOVE A PORTION OF THE EXISTING BRIDGE SUPERSTRUCTURE AND APPROACH SLABS.
3. PLACE TEMPORARY WALLS 1-4.
4. REMOVE A PORTION OF THE EXISTING BRIDGE SUBSTRUCTURE.
5. CONSTRUCT PHASE 2 PORTION OF THE SUBSTRUCTURE.
6. CONSTRUCT PHASE 2 PORTION OF THE SUPERSTRUCTURE AND APPROACH SLABS.

PHASE 3:

1. PLACE PORTABLE CONCRETE BARRIER AS SHOWN.
2. REMOVE THE REMAINDER OF THE EXISTING BRIDGE SUPERSTRUCTURE AND APPROACH SLABS.
3. PLACE TEMPORARY SHORING B, D, F, AND G.
4. REMOVE THE REMAINDER OF THE EXISTING BRIDGE SUBSTRUCTURE.
5. CONSTRUCT PHASE 3 PORTION OF THE SUBSTRUCTURE.
6. PLACE TEMPORARY SHORING A, C, E, AND H.
7. CONSTRUCT PHASE 3 PORTION OF THE SUPERSTRUCTURE AND APPROACH SLAB.

LEGEND:

- ● 15/16" DIAMETER HOLE FOR NEW 7/8" DIAMETER TYPE 3 ASTM A325 BOLT

NOTE:

1. FOR ADDITIONAL BEAM END RETROFIT NOTES, SEE SHEET 6/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

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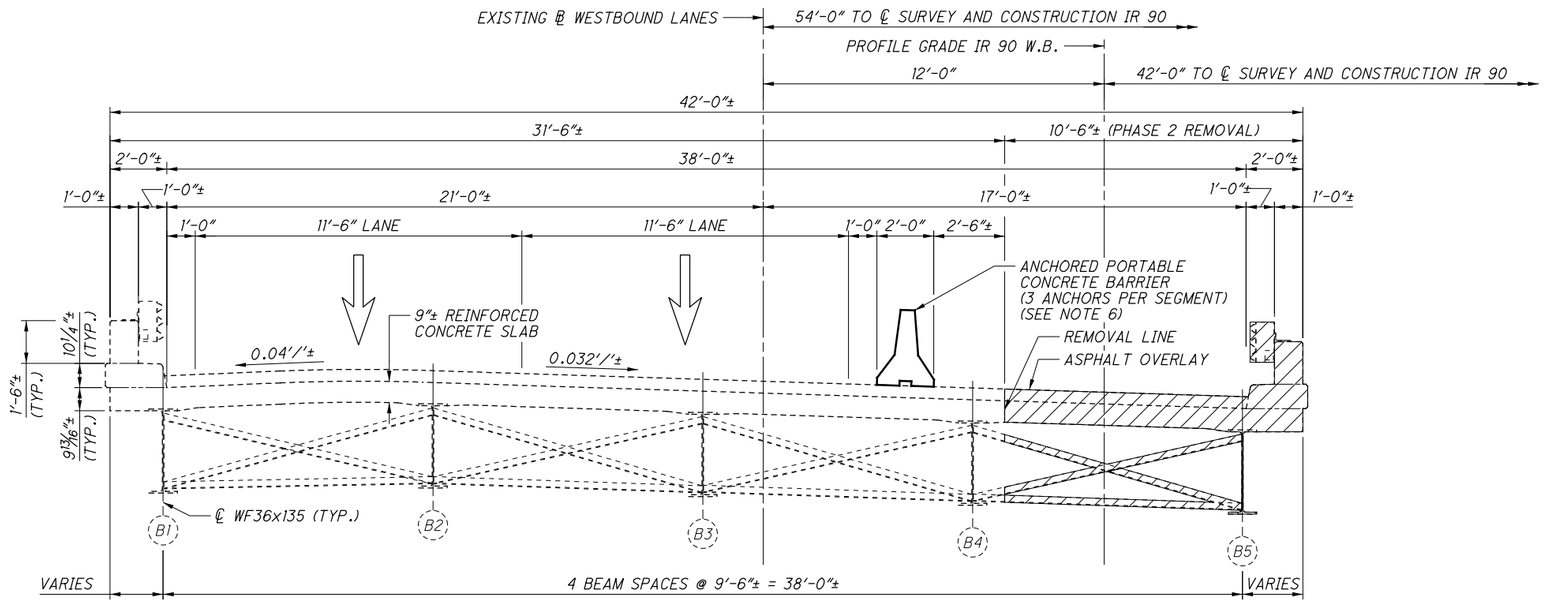
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

PRE-PHASE 1 CONSTRUCTION DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

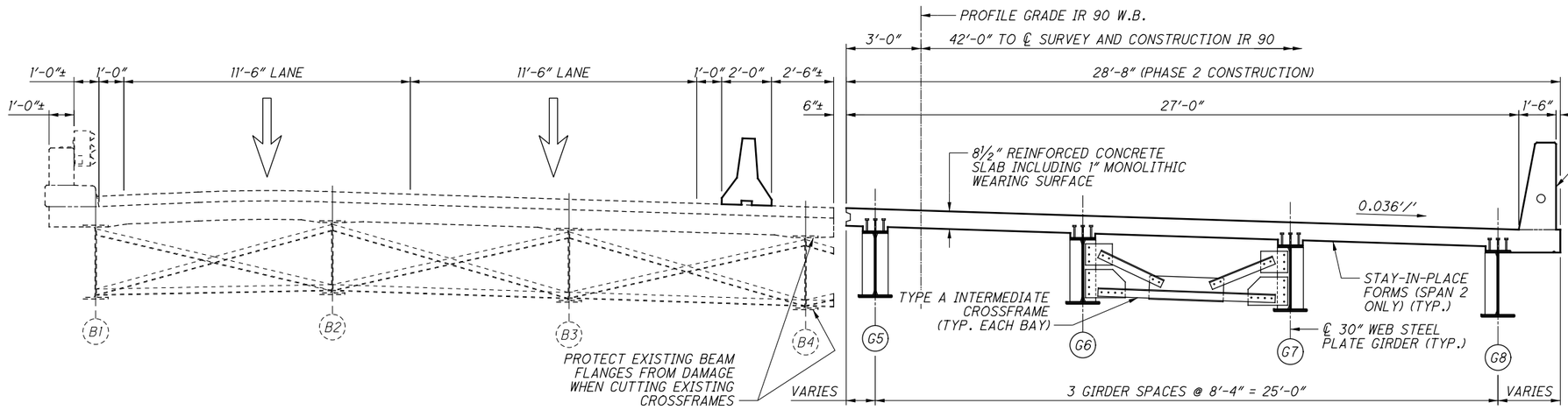
LOR-90-17.85
PID No. 90942

10/67

131/196



PHASE 2 LEFT BRIDGE REMOVAL



PHASE 2 LEFT BRIDGE CONSTRUCTION

LEGEND:

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

NOTES:

1. FOR ADDITIONAL MOT PHASING, SEE SHEETS 8/196 THRU 47/196.
2. FOR PHASE 3 LEFT BRIDGE REMOVAL AND PHASE 3 LEFT BRIDGE CONSTRUCTION, SEE SHEET 12/67.
3. FOR PHASE 2 AND PHASE 3 RIGHT BRIDGE REMOVAL AND PHASE 2 AND PHASE 3 RIGHT BRIDGE CONSTRUCTION, SEE SHEETS 13/67 AND 14/67.
4. FOR LEFT BRIDGE TRANSVERSE SECTION, SEE SHEET 47/67.
5. SEE EXISTING PLANS FOR ADDITIONAL BRIDGE DETAILS NOT SHOWN.
6. IF PARTIAL DEPTH BOLTS ARE UTILIZED FOR THE ANCHORS, THEY SHALL BE EMBEDDED A MINIMUM OF 6½" INTO FIRM CONCRETE. THE ASPHALT OVERLAY THICKNESS DOES NOT COUNT AS PART OF THE 6½" REQUIRED EMBEDMENT. IN LIEU OF PARTIAL DEPTH BOLTS, THRU BOLTS MAY BE USED FOR THE ANCHORS. INSTALL SELECTED ANCHOR TYPE PER ODOT STANDARD DRAWING PCB-91 ON THE TRAFFIC SIDE OF THE BARRIER.

DESIGN AGENCY
Train Systems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
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RSB		4704895/4704925	

LEFT BRIDGE PHASE CONSTRUCTION DETAILS - 1
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

11 / 67

132
196

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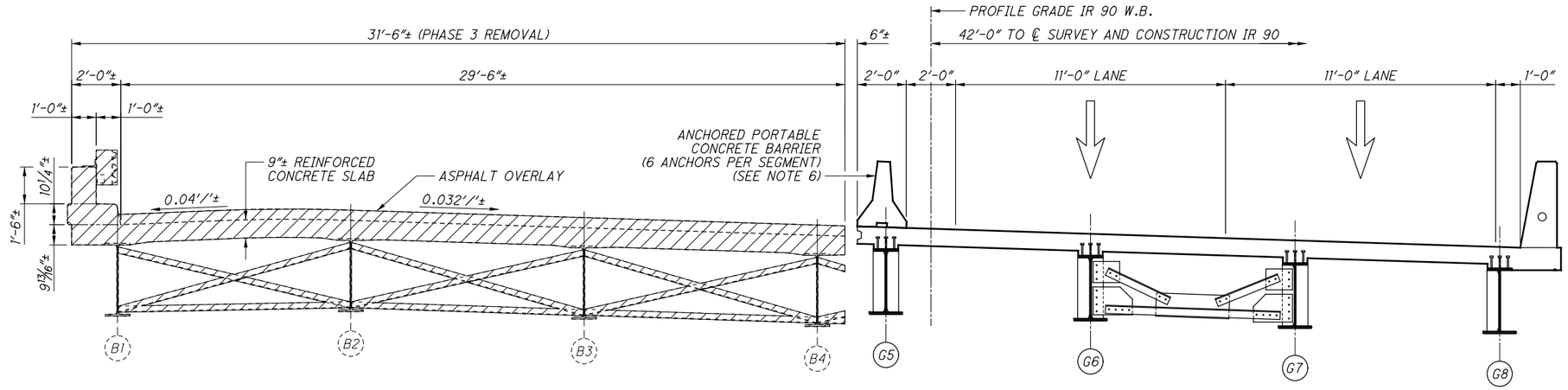
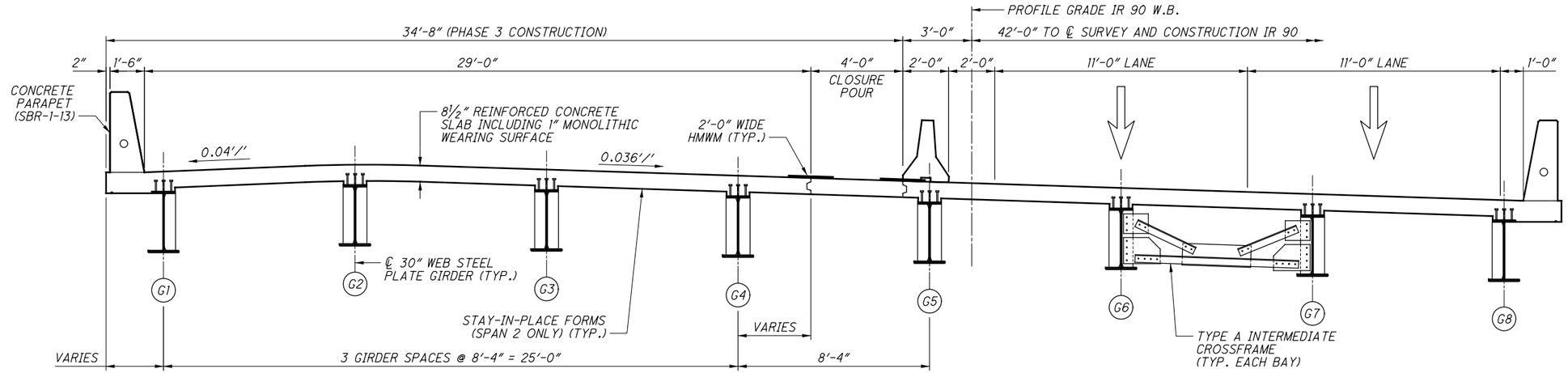


PHASE 3 LEFT BRIDGE REMOVAL



PHASE 3 LEFT BRIDGE CONSTRUCTION

LEGEND:

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

NOTES:

1. FOR ADDITIONAL MOT PHASING, SEE SHEETS 8/196 THRU 47/196.
2. FOR PHASE 2 LEFT BRIDGE REMOVAL AND PHASE 2 LEFT BRIDGE CONSTRUCTION, SEE SHEET 11/67.
3. FOR PHASE 2 AND PHASE 3 RIGHT BRIDGE REMOVAL AND PHASE 2 AND PHASE 3 RIGHT BRIDGE CONSTRUCTION, SEE SHEETS 13/67 AND 14/67.
4. FOR LEFT BRIDGE TRANSVERSE SECTION, SEE SHEET 47/67.
5. SEE EXISTING PLANS FOR ADDITIONAL BRIDGE DETAILS NOT SHOWN.
6. INSTALL ANCHORS PER ODOT STANDARD DRAWING PCB-91 ON THE TRAFFIC SIDE OF THE BARRIER.

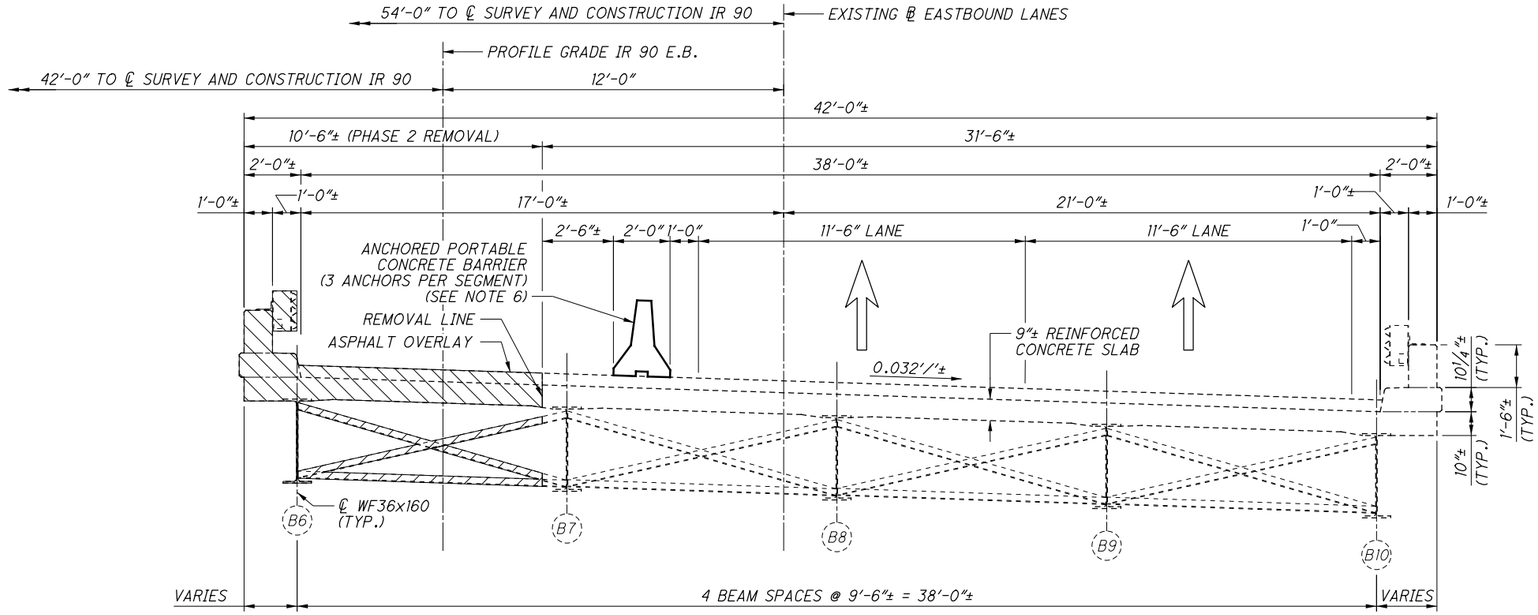
DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

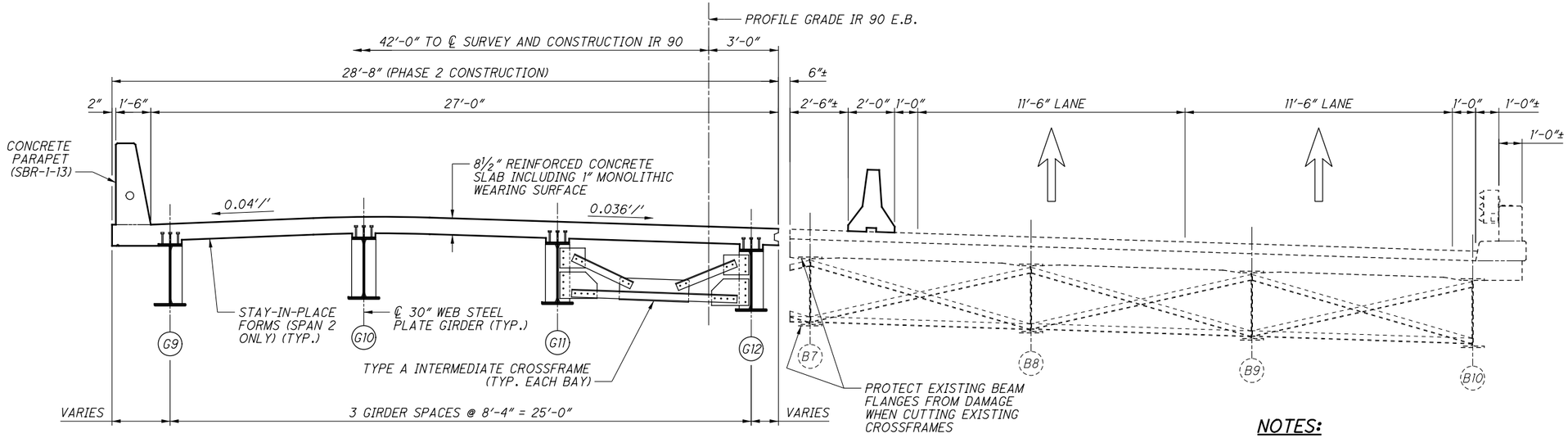
LEFT BRIDGE PHASE CONSTRUCTION DETAILS - 2
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

12/67
133/196



PHASE 2 RIGHT BRIDGE REMOVAL



PHASE 2 RIGHT BRIDGE CONSTRUCTION

LEGEND:

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

NOTES:

1. FOR ADDITIONAL MOT PHASING, SEE SHEETS 8/196 THRU 47/196.
2. FOR PHASE 3 RIGHT BRIDGE REMOVAL AND PHASE 3 RIGHT BRIDGE CONSTRUCTION, SEE SHEET 14/67.
3. FOR PHASE 2 AND PHASE 3 LEFT BRIDGE REMOVAL AND PHASE 2 AND PHASE 3 LEFT BRIDGE CONSTRUCTION, SEE SHEETS 11/67 AND 12/67.
4. FOR RIGHT BRIDGE TRANSVERSE SECTION, SEE SHEET 47/67.
5. SEE EXISTING PLANS FOR ADDITIONAL BRIDGE DETAILS NOT SHOWN.
6. IF PARTIAL DEPTH BOLTS ARE UTILIZED FOR THE ANCHORS, THEY SHALL BE EMBEDDED A MINIMUM OF 6½" INTO FIRM CONCRETE. THE ASPHALT OVERLAY THICKNESS DOES NOT COUNT AS PART OF THE 6½" REQUIRED EMBEDMENT. IN LIEU OF PARTIAL DEPTH BOLTS, THRU BOLTS MAY BE USED FOR THE ANCHORS. INSTALL SELECTED ANCHOR TYPE PER ODOT STANDARD DRAWING PCB-91 ON THE TRAFFIC SIDE OF THE BARRIER.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
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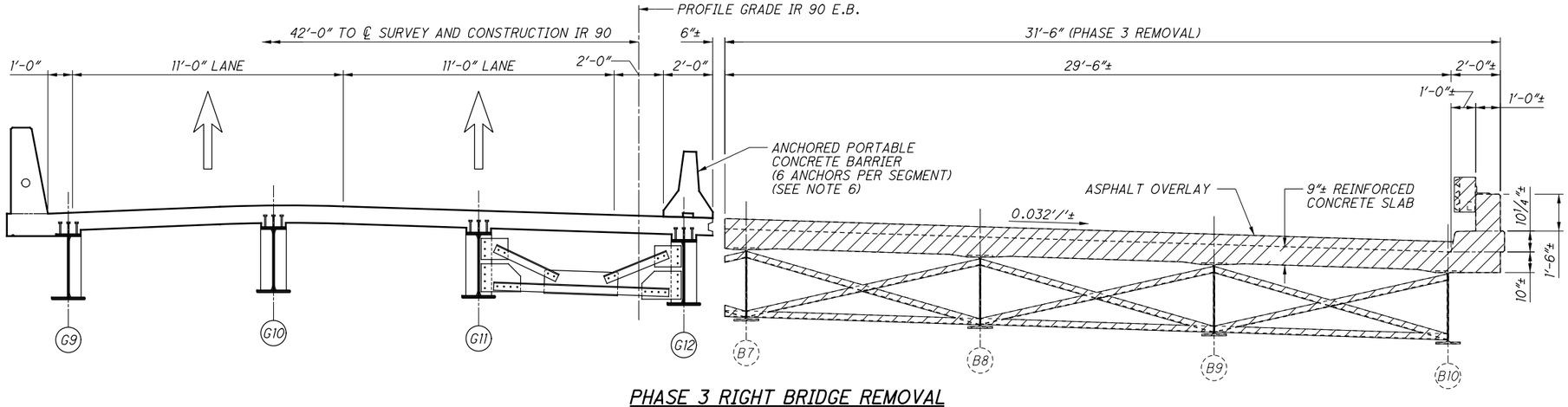
RSB		4704895/4704925	

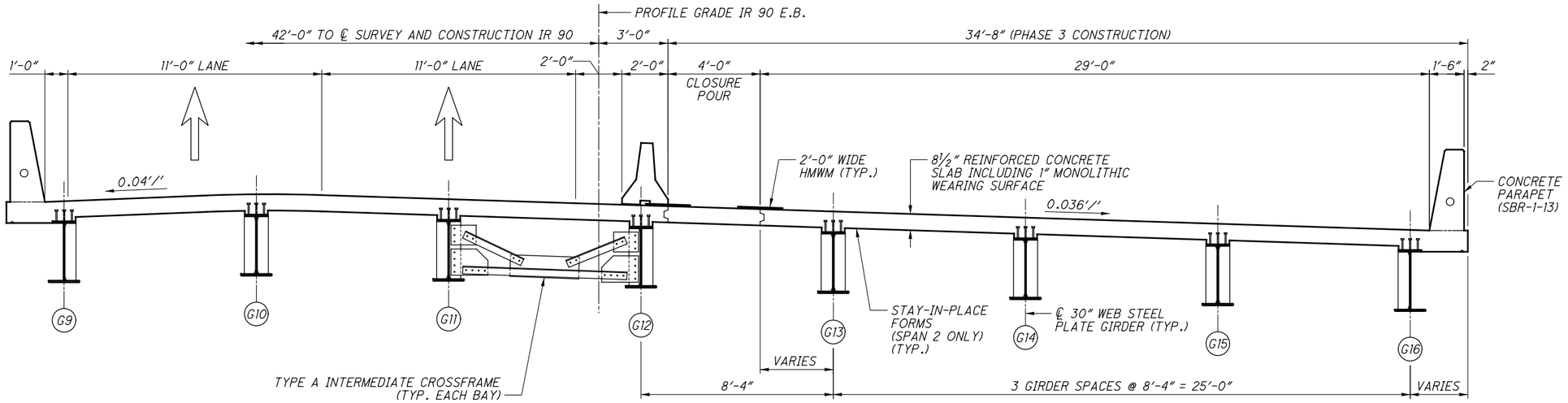
RIGHT BRIDGE PHASE CONSTRUCTION DETAILS - 1
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

13 / 67
134 / 196



PHASE 3 RIGHT BRIDGE REMOVAL



PHASE 3 RIGHT BRIDGE CONSTRUCTION

NOTES:

1. FOR ADDITIONAL MOT PHASING, SEE SHEETS 8/196 THRU 47/196.
2. FOR PHASE 2 RIGHT BRIDGE REMOVAL AND PHASE 2 RIGHT BRIDGE CONSTRUCTION, SEE SHEET 13/67.
3. FOR PHASE 2 AND PHASE 3 LEFT BRIDGE REMOVAL AND PHASE 2 AND PHASE 3 LEFT BRIDGE CONSTRUCTION, SEE SHEETS 11/67 AND 12/67.
4. FOR RIGHT BRIDGE TRANSVERSE SECTION, SEE SHEET 47/67.
5. SEE EXISTING PLANS FOR ADDITIONAL BRIDGE DETAILS NOT SHOWN.
6. INSTALL ANCHORS PER ODOT STANDARD DRAWING PCB-91 ON THE TRAFFIC SIDE OF THE BARRIER.

LEGEND:

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

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

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ZTW	ZTW	NFF	5/16/19
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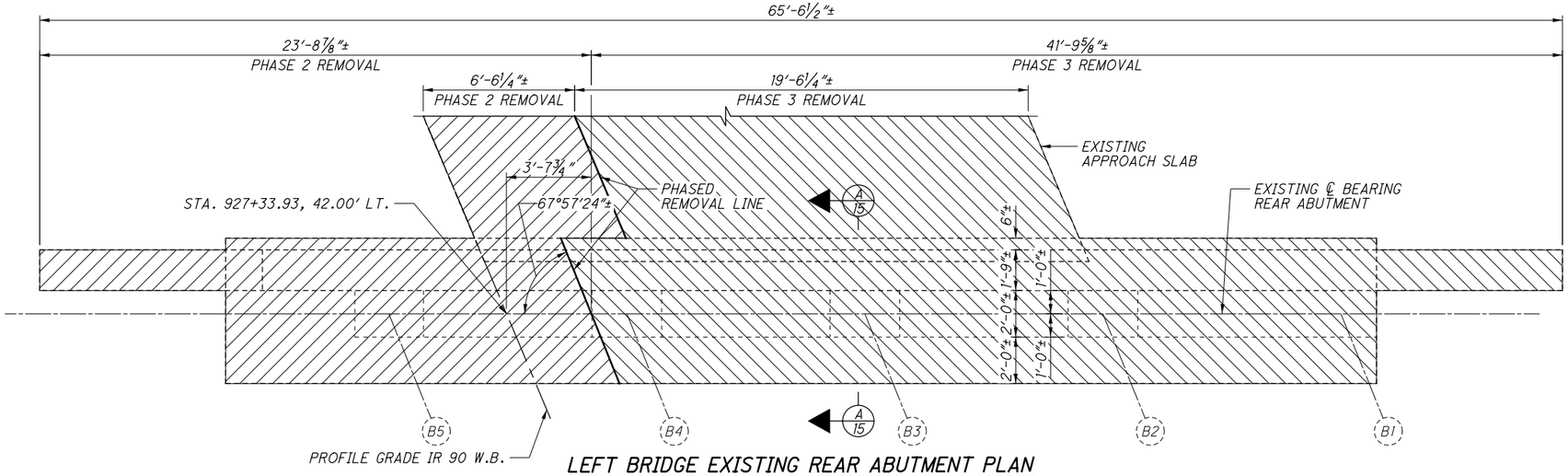
RSB		4704895/4704925	

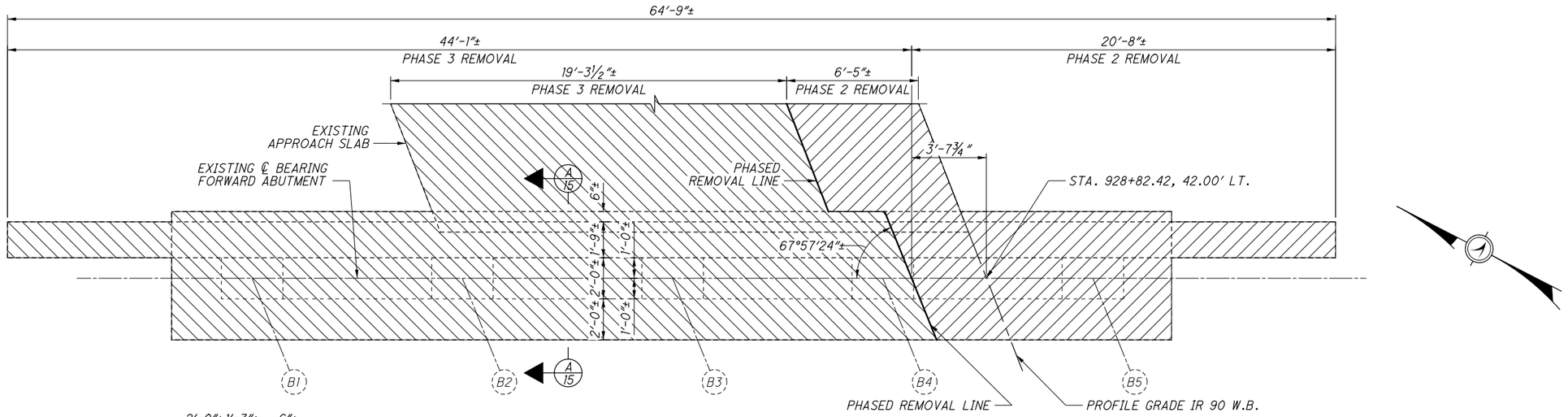
RIGHT BRIDGE PHASE CONSTRUCTION DETAILS - 2

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

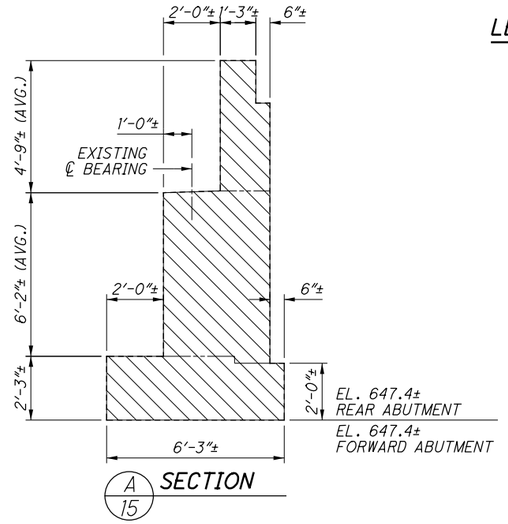
LOR-90-17.85
PID No. 90942



LEFT BRIDGE EXISTING REAR ABUTMENT PLAN



LEFT BRIDGE EXISTING FORWARD ABUTMENT PLAN



A/15 SECTION

LEGEND:

- INDICATES PHASE 2 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES PHASE 3 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

NOTES:

1. ALL EXISTING LEFT BRIDGE ELEVATIONS HAVE BEEN ADJUSTED TO THE CURRENT PROJECT SURVEY ELEVATIONS AND ARE APPROXIMATELY 0.96 FEET LOWER THAN THE ELEVATIONS IN THE ORIGINAL PLANS.
2. SEE EXISTING BRIDGE PLANS FOR ADDITIONAL ABUTMENT DETAILS NOT SHOWN.

DESIGN AGENCY
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1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

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EXISTING LEFT BRIDGE ABUTMENT REMOVAL DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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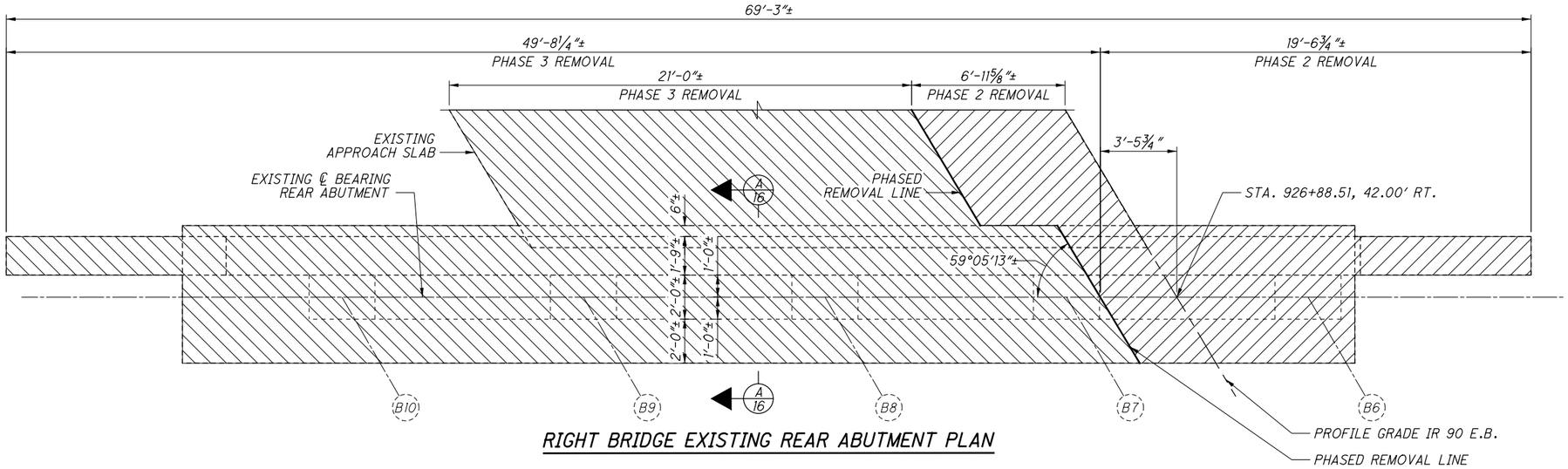
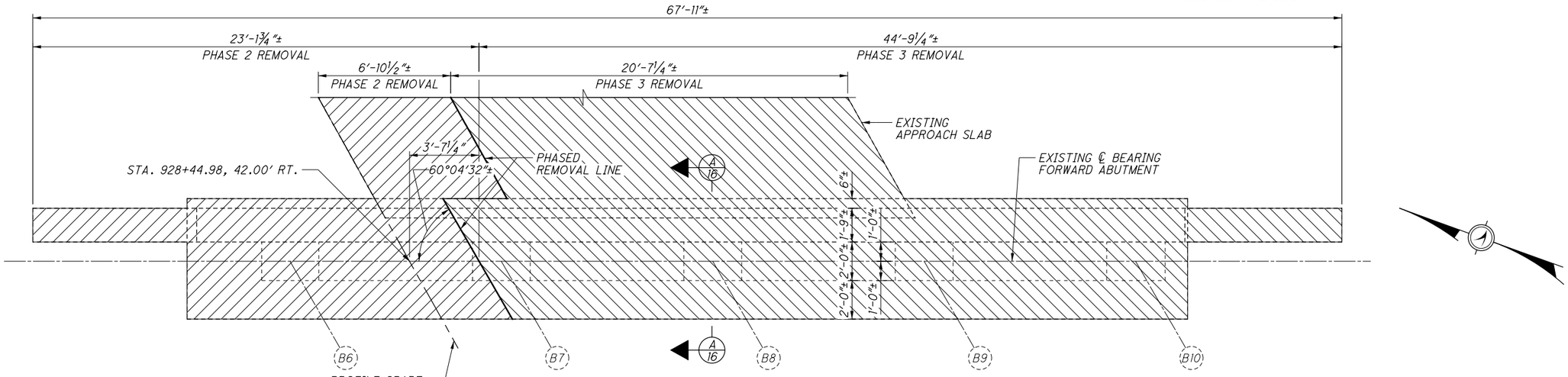
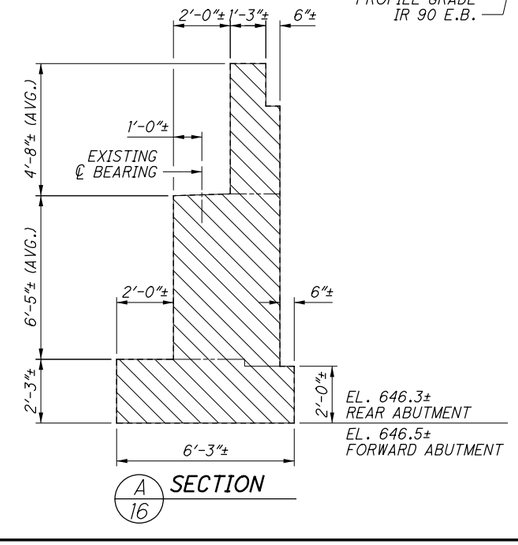


RIGHT BRIDGE EXISTING REAR ABUTMENT PLAN



RIGHT BRIDGE EXISTING FORWARD ABUTMENT PLAN



A/16 SECTION

LEGEND:

INDICATES PHASE 2 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

INDICATES PHASE 3 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

NOTES:

1. ALL EXISTING RIGHT BRIDGE ELEVATIONS HAVE BEEN ADJUSTED TO THE CURRENT PROJECT SURVEY ELEVATIONS AND ARE APPROXIMATELY 0.98 FEET LOWER THAN THE ELEVATIONS IN THE ORIGINAL PLANS.
2. SEE EXISTING BRIDGE PLANS FOR ADDITIONAL ABUTMENT DETAILS NOT SHOWN.

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EXISTING RIGHT BRIDGE ABUTMENT REMOVAL DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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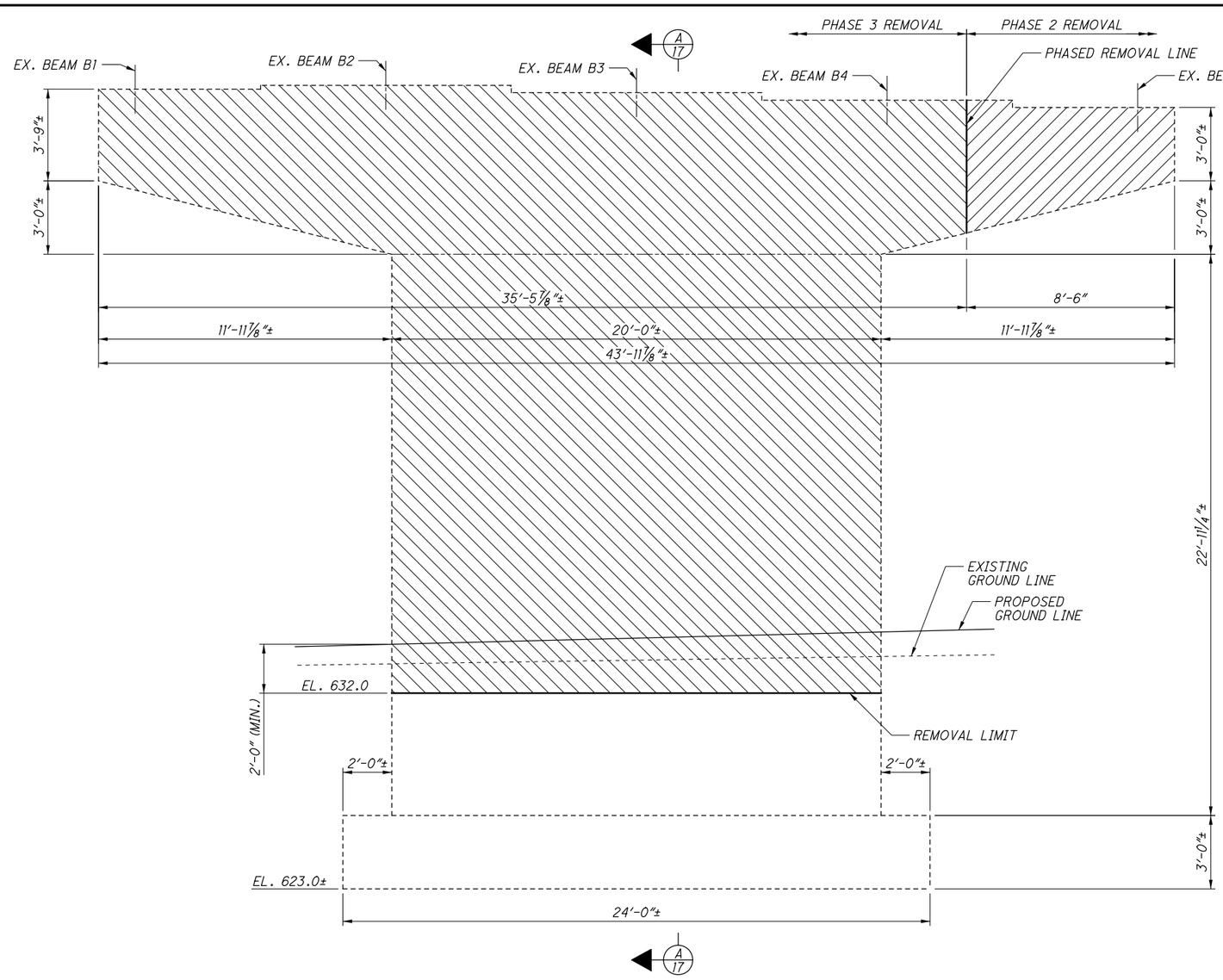
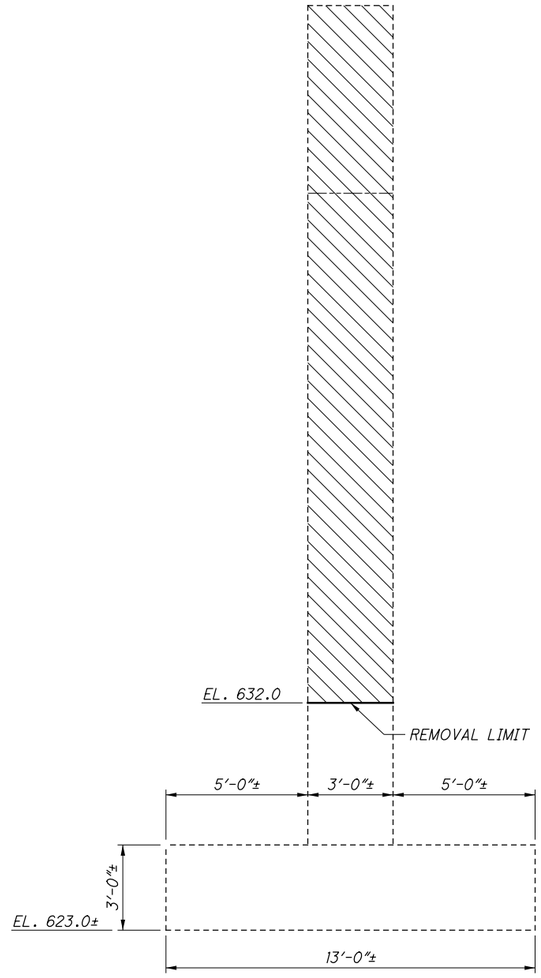


LEFT BRIDGE EXISTING PIER 1 AND PIER 2 ELEVATION



A/17 SECTION

LEGEND:

INDICATES PHASE 2 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

INDICATES PHASE 3 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

NOTES:

1. ALL EXISTING LEFT BRIDGE ELEVATIONS HAVE BEEN ADJUSTED TO THE CURRENT PROJECT SURVEY ELEVATIONS AND ARE APPROXIMATELY 0.96 FEET LOWER THAN THE ELEVATIONS IN THE ORIGINAL PLANS.
2. SEE EXISTING BRIDGE PLANS FOR ADDITIONAL PIER DETAILS NOT SHOWN.

DESIGN AGENCY
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1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

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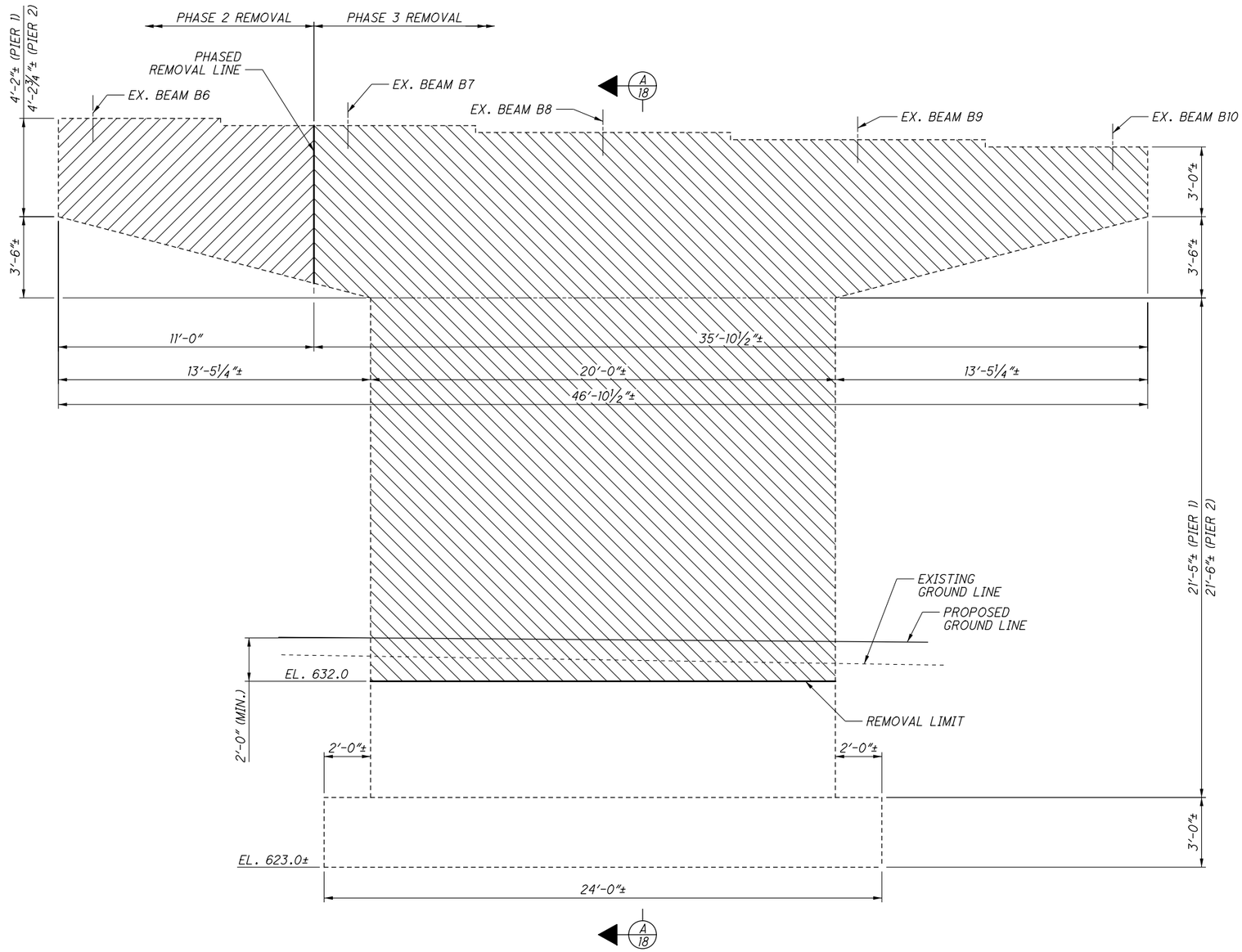
GJZ		4704895/4704925	

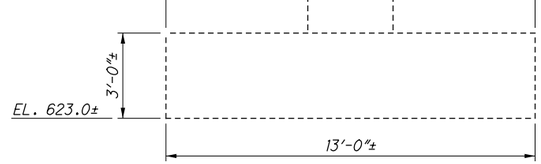
EXISTING LEFT BRIDGE PIER 1 AND PIER 2 REMOVAL DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



RIGHT BRIDGE EXISTING PIER 1 AND PIER 2 ELEVATION



A 18 SECTION

LEGEND:

- INDICATES PHASE 2 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES PHASE 3 REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

NOTES:

1. ALL EXISTING RIGHT BRIDGE ELEVATIONS HAVE BEEN ADJUSTED TO THE CURRENT PROJECT SURVEY ELEVATIONS AND ARE APPROXIMATELY 0.98 FEET LOWER THAN THE ELEVATIONS IN THE ORIGINAL PLANS.
2. SEE EXISTING BRIDGE PLANS FOR ADDITIONAL PIER DETAILS NOT SHOWN.

DESIGN AGENCY
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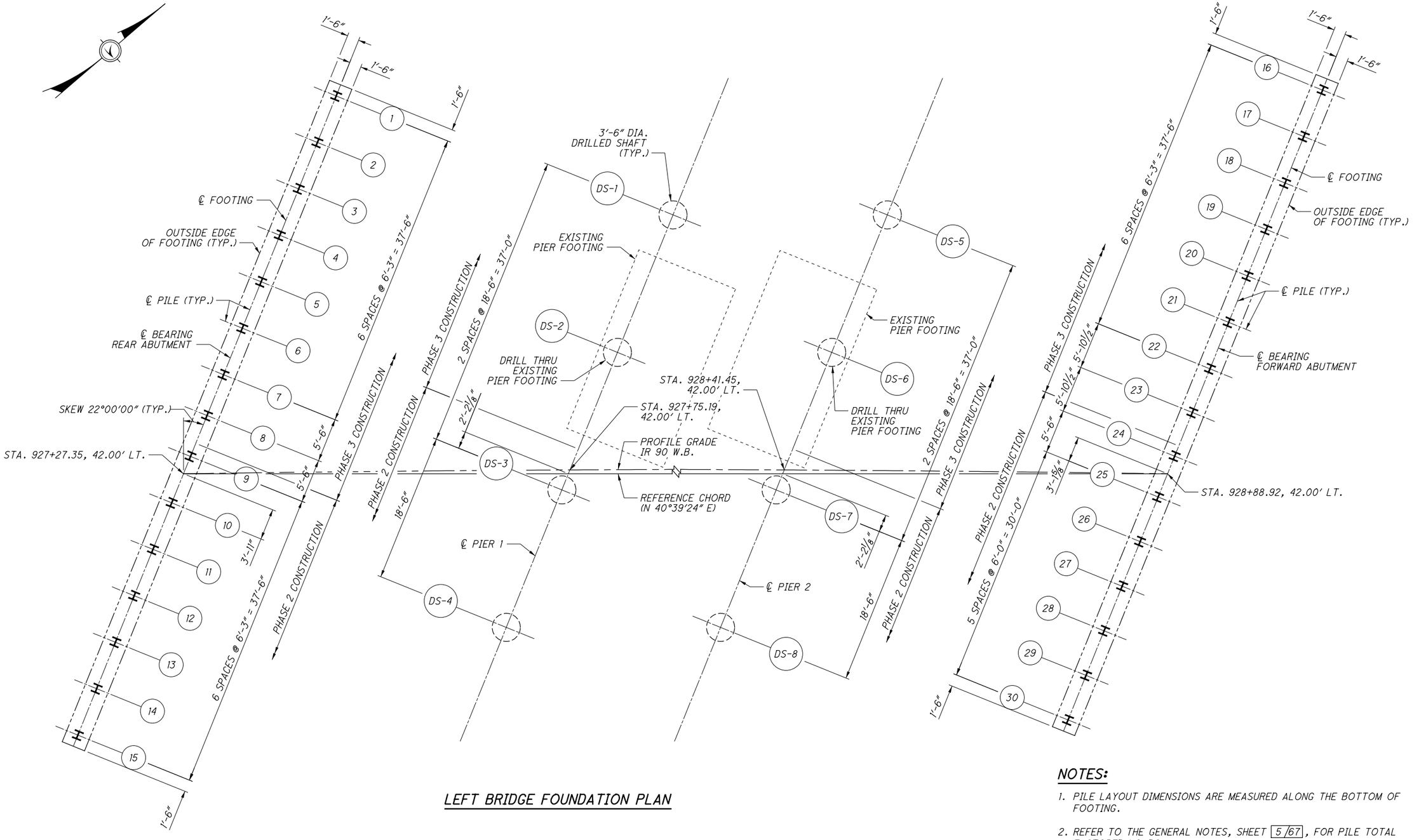
EXISTING RIGHT BRIDGE PIER 1 AND PIER 2 REMOVAL DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



LEFT BRIDGE FOUNDATION PLAN

LEGEND:

- I — VERTICAL HP12x53
- (X) — PILE IDENTIFICATION NUMBER
- (DS-X) — DRILLED SHAFT IDENTIFICATION NUMBER

NOTES:

1. PILE LAYOUT DIMENSIONS ARE MEASURED ALONG THE BOTTOM OF FOOTING.
2. REFER TO THE GENERAL NOTES, SHEET 5/67, FOR PILE TOTAL FACTORED LOADS.
3. FOR GENERAL PLAN AND GEOMETRIC LAYOUT, SEE SHEET 4/67.
4. A MINIMUM OF 14" IS PROVIDED BETWEEN THE ℄ OF PILES 9 AND 24 AND TEMPORARY WALLS 1 AND 2. THE CONTRACTOR SHALL FIELD VERIFY THE CLEARANCE AND MAY MOVE THE PILES UP TO 3" TO PROVIDE ADDITIONAL CLEARANCE IF REQUIRED.
5. DRILLED SHAFTS DS-5 THRU DS-8 ARE IN CLOSE PROXIMITY TO THE 33" STORM AND 24" WATER LINE THAT ARE TO REMAIN. EXERCISE CAUTION WHILE DRILLING AT/NEAR THE ANTICIPATED UTILITIES' DEPTH.

DESIGN AGENCY
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LEFT BRIDGE FOUNDATION PLAN
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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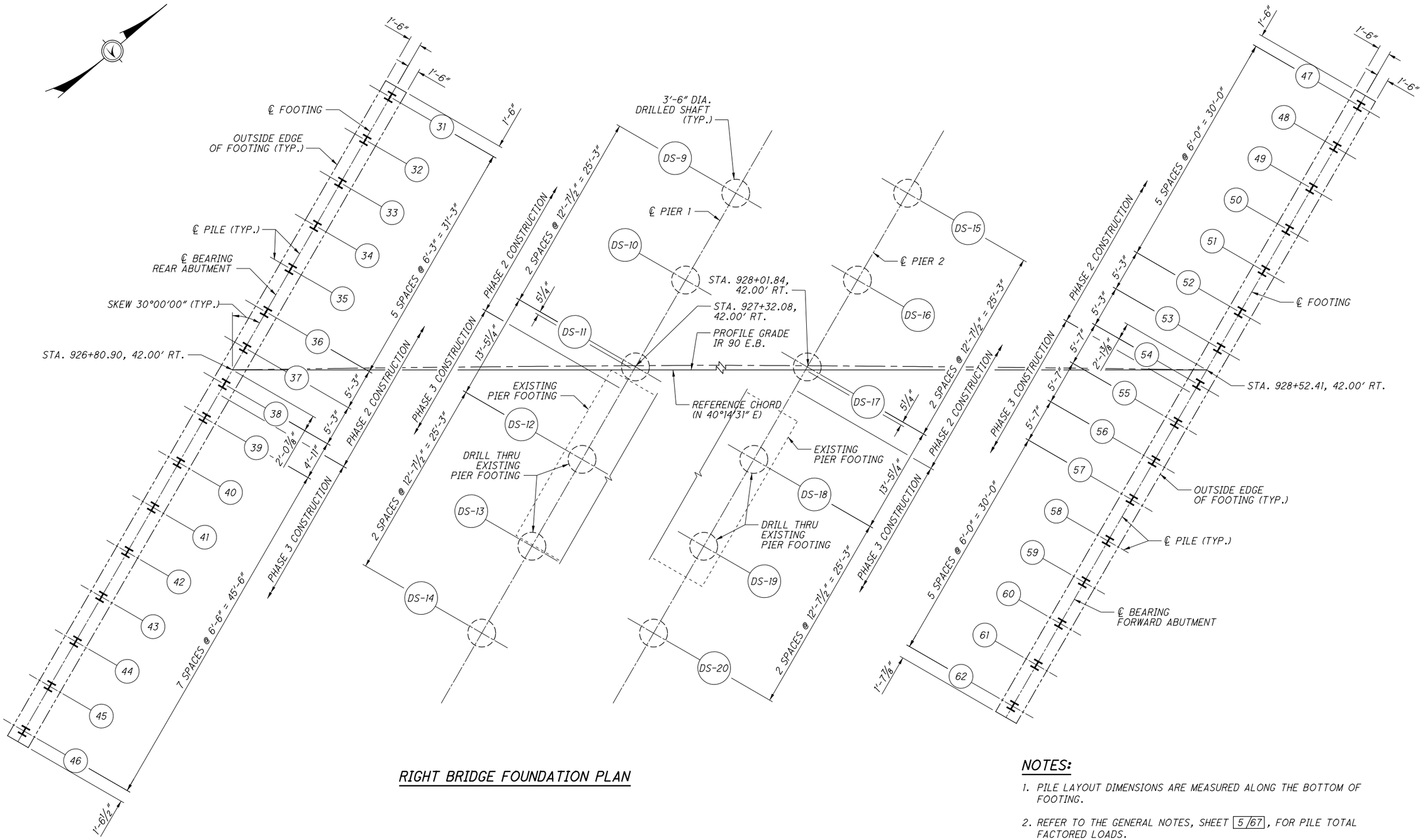

RIGHT BRIDGE FOUNDATION PLAN

LEGEND:

- I — VERTICAL HP12x53
- (X) — PILE IDENTIFICATION NUMBER
- (DS-X) — DRILLED SHAFT IDENTIFICATION NUMBER

NOTES:

1. PILE LAYOUT DIMENSIONS ARE MEASURED ALONG THE BOTTOM OF FOOTING.
2. REFER TO THE GENERAL NOTES, SHEET 5/67, FOR PILE TOTAL FACTORED LOADS.
3. FOR GENERAL PLAN AND GEOMETRIC LAYOUT, SEE SHEET 4/67.
4. A MINIMUM OF 14" IS PROVIDED BETWEEN PILES 38 AND 54 AND TEMPORARY WALLS 3 AND 4. THE CONTRACTOR SHALL FIELD VERIFY THE CLEARANCE AND MAY MOVE THE PILES UP TO 3" TO PROVIDE ADDITIONAL CLEARANCE IF REQUIRED
5. DRILLED SHAFTS DS-15 THRU DS-20 ARE IN CLOSE PROXIMITY TO THE 33" STORM AND 24" WATER LINE THAT ARE TO REMAIN. EXERCISE CAUTION WHILE DRILLING AT/NEAR THE ANTICIPATED UTILITIES' DEPTH.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

RIGHT BRIDGE FOUNDATION PLAN
BRIDGE NO. LOR-90-1785
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

20/67

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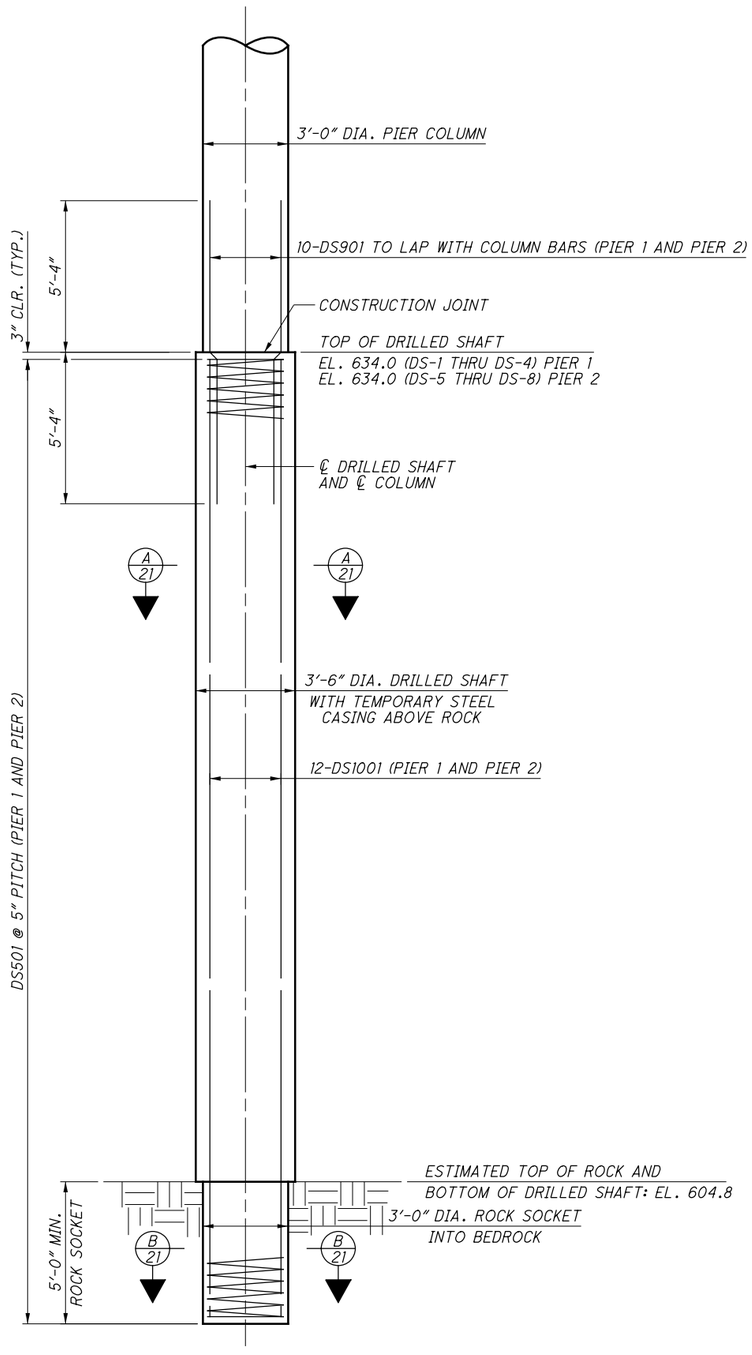
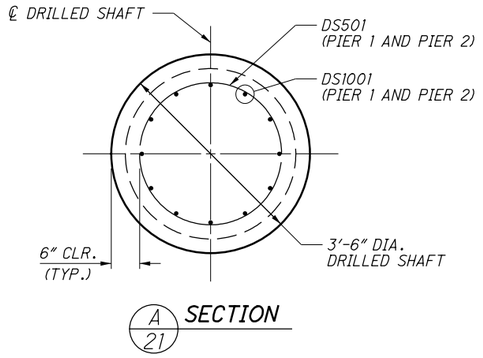
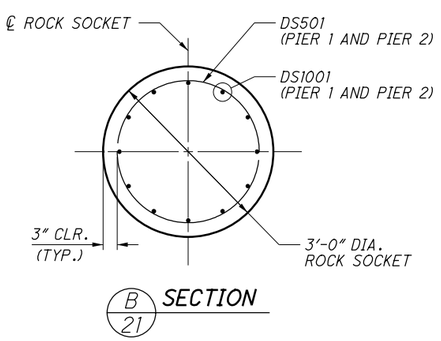


LEFT BRIDGE DRILLED SHAFT DETAIL - PIER 1 AND PIER 2

(PIER COLUMN REINFORCING NOT SHOWN FOR CLARITY)

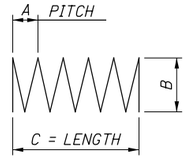


A/21 SECTION



B/21 SECTION

BAR BENDING DIAGRAMS



TYPE-27

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C
PIER 1 AND PIER 2 - DS-1 THRU DS-8							
DS501	8	43'-8"	6941	27	5"	2'-6"	43'-8"
DS901	80	10'-8"	2901	STR			
DS1001	96	43'-8"	18038	STR			
			TOTAL	27880	FOR INFORMATION ONLY		

REINFORCING STEEL 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, DS501 BAR:
   DS: LOCATION OF THE BAR IN THE STRUCTURE (DRILLED SHAFT)
   5: BAR SIZE DESIGNATION NO. 5
   01: SEQUENCE NUMBER
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED.
3. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
4. REINFORCING BARS DS501, DS901 AND DS1001 SHALL BE INCLUDED WITH ITEM 524 FOR PAYMENT.
5. THE LENGTH OF THE DS501 AND DS1001 REINFORCING BARS HAVE BEEN INCREASED BY 10 FEET TO ACCOUNT FOR THE POSSIBILITY OF THE TOP OF ROCK ELEVATION BEING DEEPER THAN EXPECTED. THE REINFORCING BARS SHALL BE CUT TO PROPER LENGTH IF THE ADDITIONAL LENGTH IS NOT REQUIRED. THE CUT ENDS OF THE EPOXY REINFORCING BARS SHALL BE REPAIRED PER CMS 509.09. THE COST OF REPAIRING THE EPOXY COATING SHALL BE CONSIDERED INCIDENTAL TO ITEM 524 FOR PAYMENT.

NOTES:

1. FOR LEFT BRIDGE FOUNDATION PLAN, SEE SHEET 19/67.
2. FOR DESIGN LOADS, SEE GENERAL NOTES, SHEET 6/67.

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LEFT BRIDGE DRILLED SHAFT DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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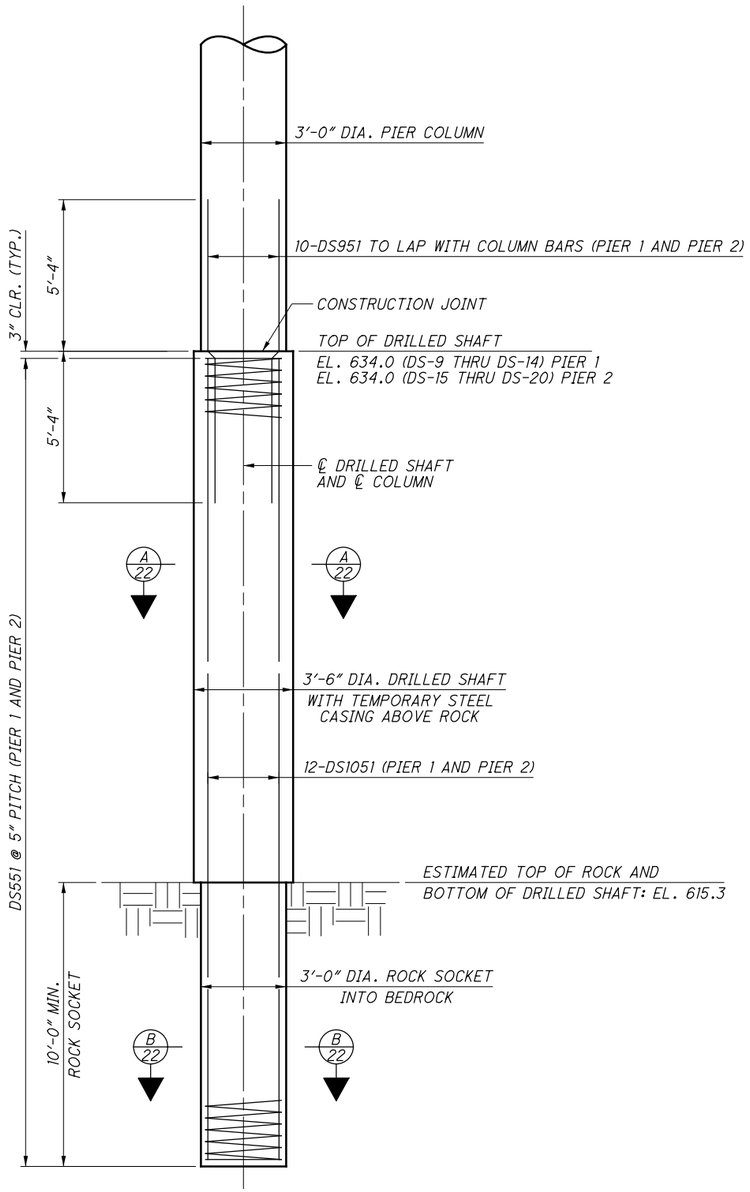
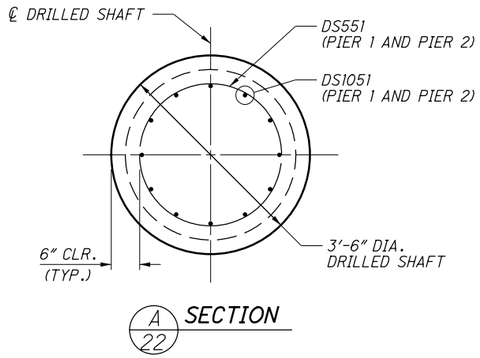
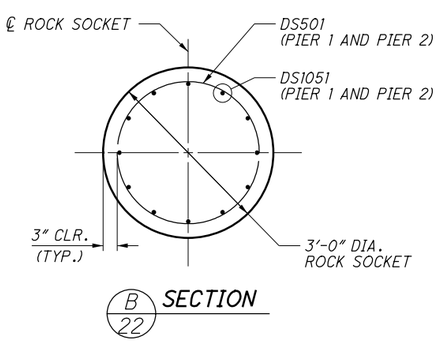


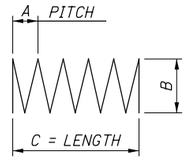
RIGHT BRIDGE DRILLED SHAFT DETAIL - PIER 1 AND PIER 2

(PIER COLUMN REINFORCING NOT SHOWN FOR CLARITY)





BAR BENDING DIAGRAMS



TYPE-27

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C
PIER 1 AND PIER 2 - DS-9 THRU DS-20							
DS551	12	38'-2"	9137	27	5"	2'-6"	38'-2"
DS951	120	10'-8"	4352	STR			
DS1051	144	38'-2"	23649	STR			
			TOTAL	37138	FOR INFORMATION ONLY		

REINFORCING STEEL 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, DS501 BAR:
   DS: LOCATION OF THE BAR IN THE STRUCTURE (DRILLED SHAFT)
   5: BAR SIZE DESIGNATION NO. 5
   01: SEQUENCE NUMBER
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED.
3. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
4. REINFORCING BARS DS551, DS951 AND DS1051 SHALL BE INCLUDED WITH ITEM 524 FOR PATMENT.
5. THE LENGTH OF THE DS551 AND DS1051 REINFORCING BARS HAVE BEEN INCREASED BY 10 FEET TO ACCOUNT FOR THE POSSIBILITY OF THE TOP OF ROCK ELEVATION BEING DEEPER THAN EXPECTED. THE REINFORCING BARS SHALL BE CUT TO PROPER LENGTH IF THE ADDITIONAL LENGTH IS NOT REQUIRED. THE CUT ENDS OF THE EPOXY REINFORCING BARS SHALL BE REPAIRED PER CMS 509.09. THE COST OF REPAIRING THE EPOXY COATING SHALL BE CONSIDERED INCIDENTAL TO ITEM 524 FOR PAYMENT.

NOTES:

1. FOR RIGHT BRIDGE FOUNDATION PLAN, SEE SHEET 20/67.
2. FOR DESIGN LOADS, SEE GENERAL NOTES, SHEET 6/67.

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RIGHT BRIDGE DRILLED SHAFT DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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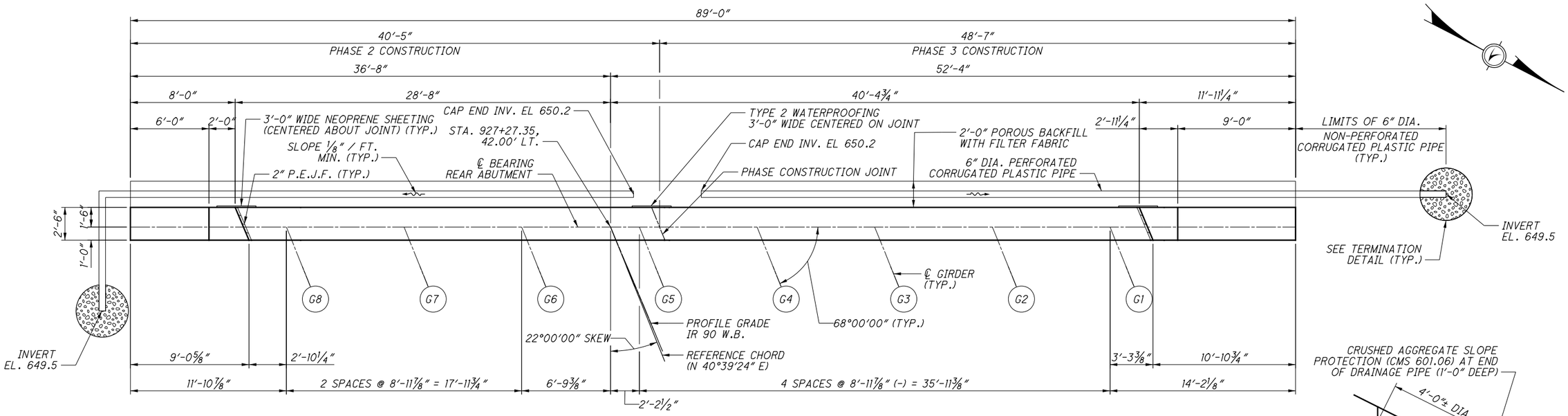
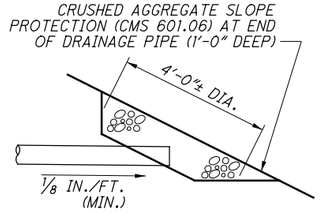


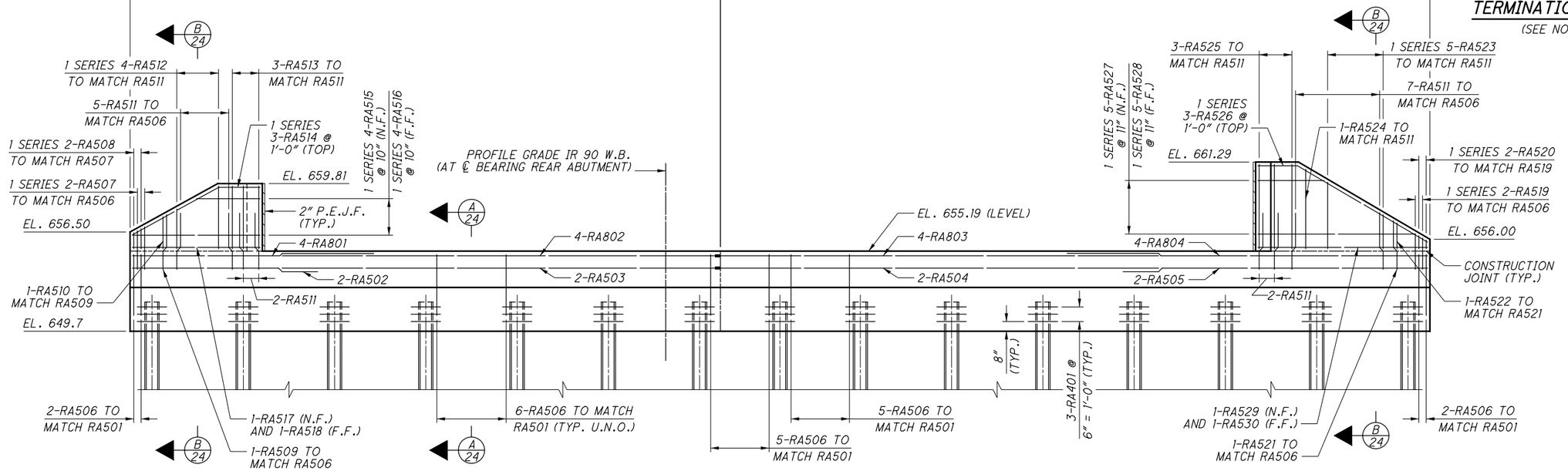
LEFT BRIDGE REAR ABUTMENT PLAN

(ABUTMENT DIAPHRAGM NOT SHOWN)
(PILES NOT SHOWN)



TERMINATION DETAIL

(SEE NOTE 3)



LEFT BRIDGE REAR ABUTMENT ELEVATION

(ABUTMENT DIAPHRAGM AND RA601 BARS NOT SHOWN)

LAP LENGTH TABLE

BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR LEFT BRIDGE FOUNDATION PLAN, SEE SHEET 19/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 63/67.
3. ALL LABOR, MATERIAL, AND INCIDENTALS REQUIRED TO PLACE CRUSHED AGGREGATE SLOPE PROTECTION AT TERMINATION DETAIL SHALL BE INCLUDED WITH ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.
4. FOR PLACEMENT OF RA601 BARS, SEE SHEET 53/67.

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CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE REAR ABUTMENT PLAN AND ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

23/67
144/196

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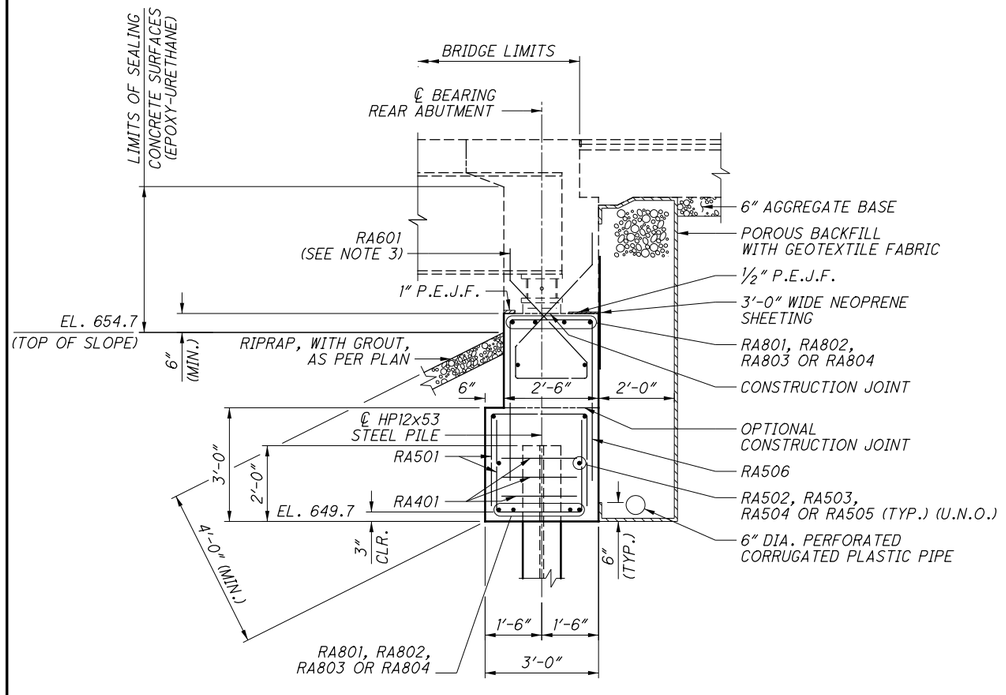
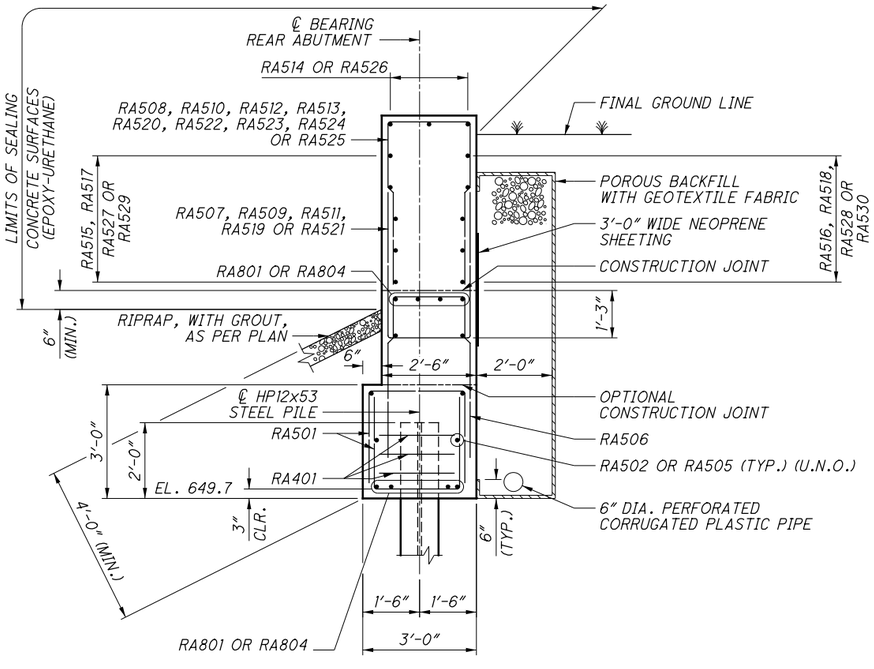
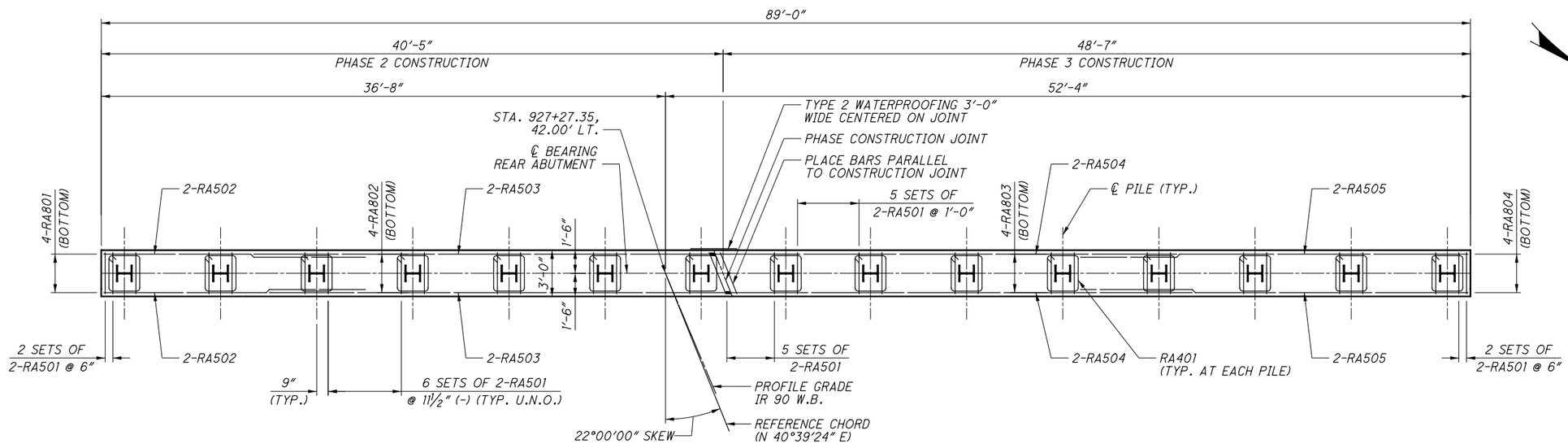


A/23 SECTION



B/23 SECTION



LEFT BRIDGE REAR ABUTMENT FOOTING PLAN

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR LEFT BRIDGE FOUNDATION PLAN, SEE SHEET 19/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 63/67.
3. FOR RA601 SPACING, SEE SHEET 53/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE REAR ABUTMENT FOOTING PLAN AND DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

24/67

145/196

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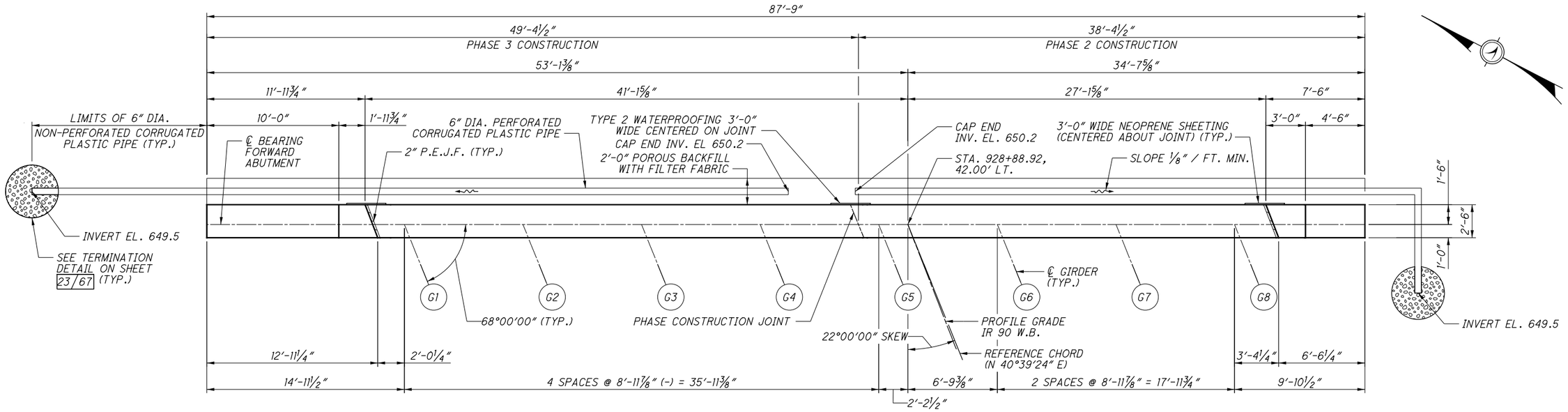
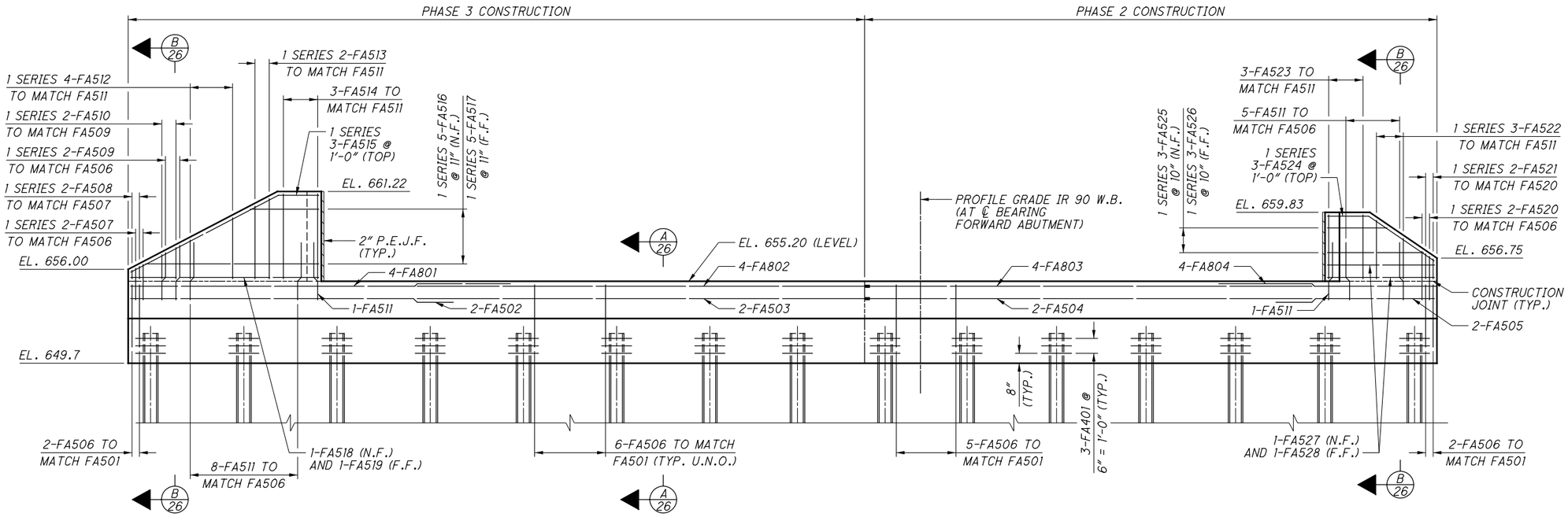


LEFT BRIDGE FORWARD ABUTMENT PLAN

(ABUTMENT DIAPHRAGM NOT SHOWN)
(PILES NOT SHOWN)



LEFT BRIDGE FORWARD ABUTMENT ELEVATION

(ABUTMENT DIAPHRAGM AND FA601 BARS NOT SHOWN)

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR LEFT BRIDGE FOUNDATION PLAN, SEE SHEET 19/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 63/67.
3. FOR PLACEMENT OF FA601 BARS, SEE SHEET 53/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

LEFT BRIDGE FORWARD ABUTMENT PLAN AND ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

25 / 67

146
196

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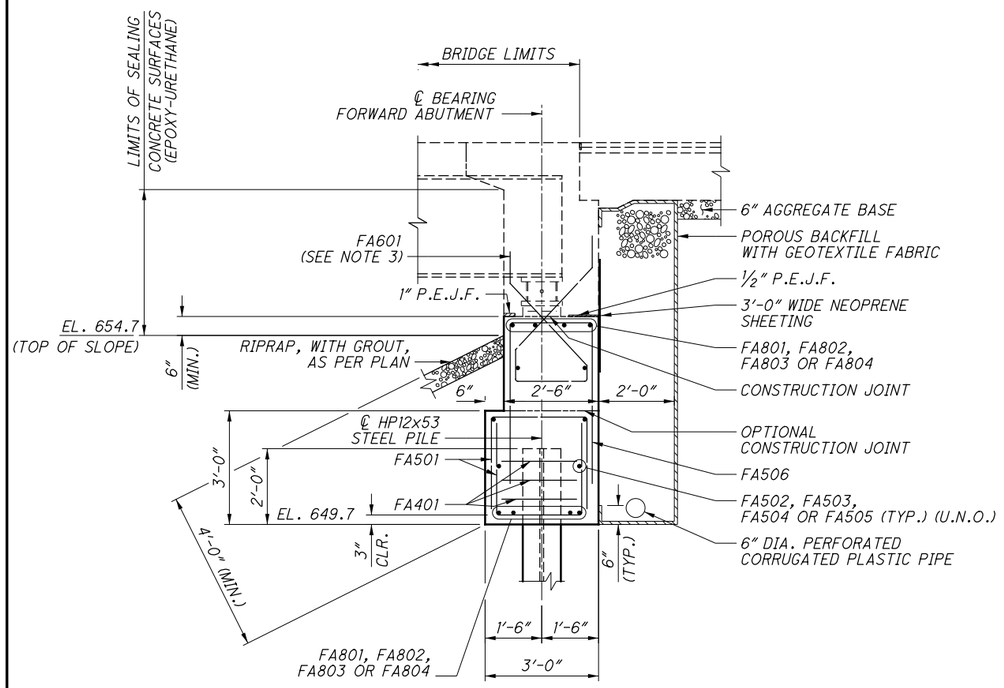
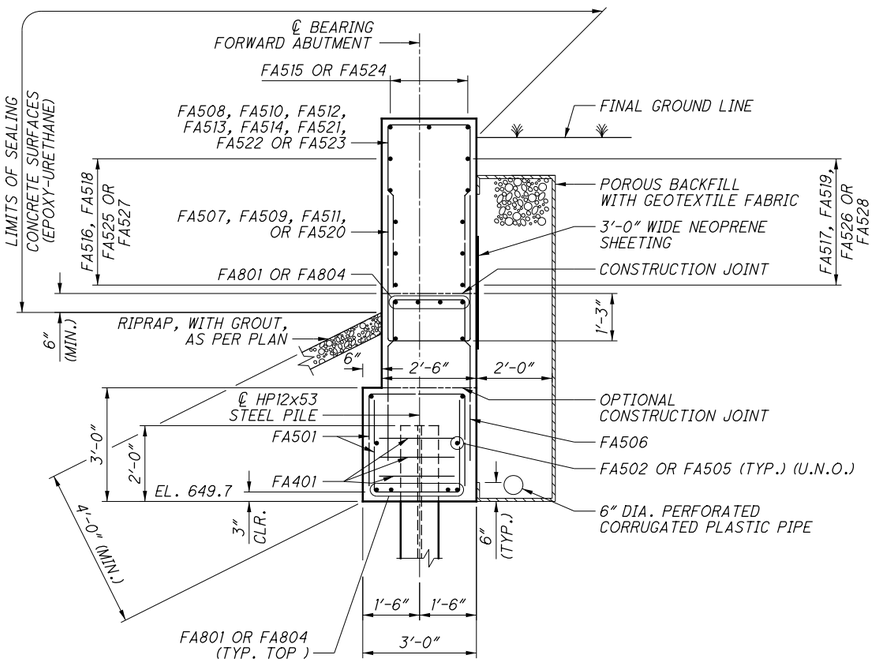
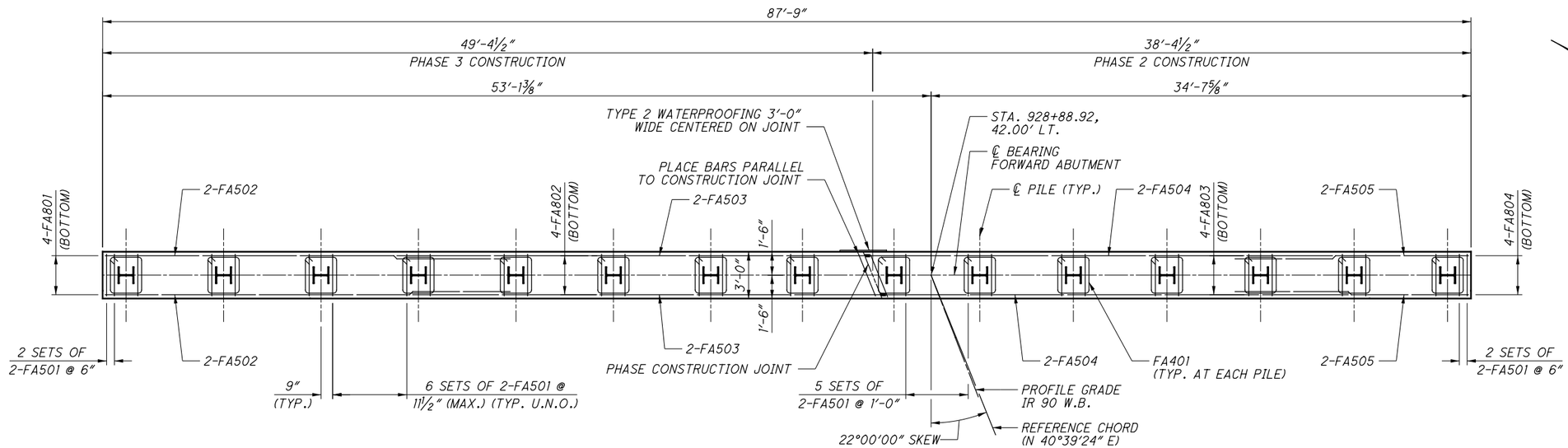


A/25 SECTION



B/25 SECTION



LEFT BRIDGE FORWARD ABUTMENT FOOTING PLAN

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR LEFT BRIDGE FOUNDATION PLAN, SEE SHEET 19/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 63/67.
3. FOR FA601 SPACING, SEE SHEET 53/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

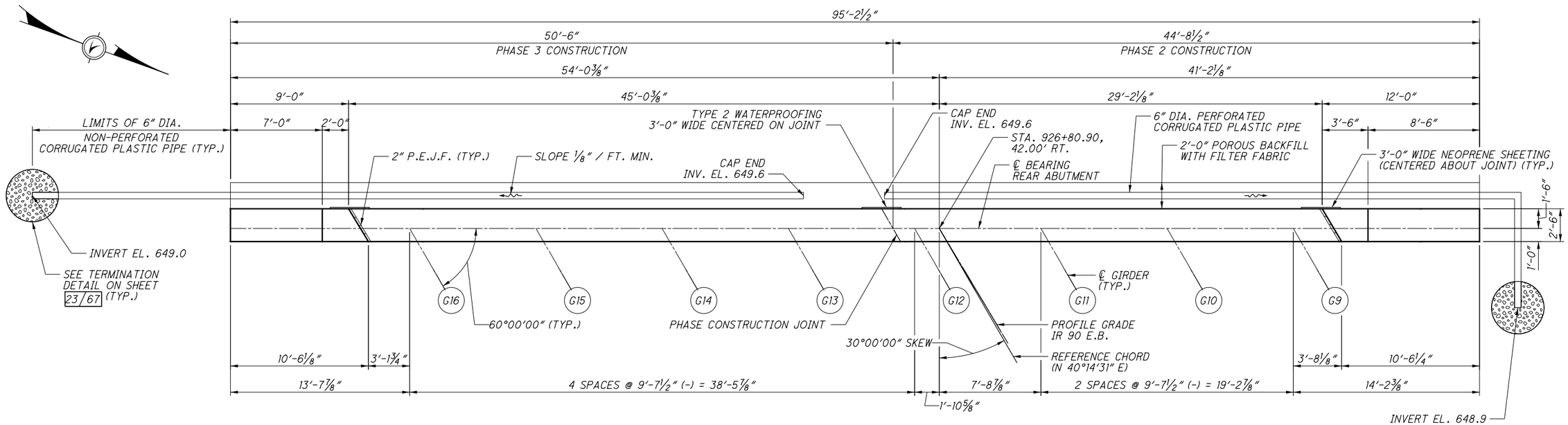
DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

LEFT BRIDGE FORWARD ABUTMENT FOOTING PLAN AND DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

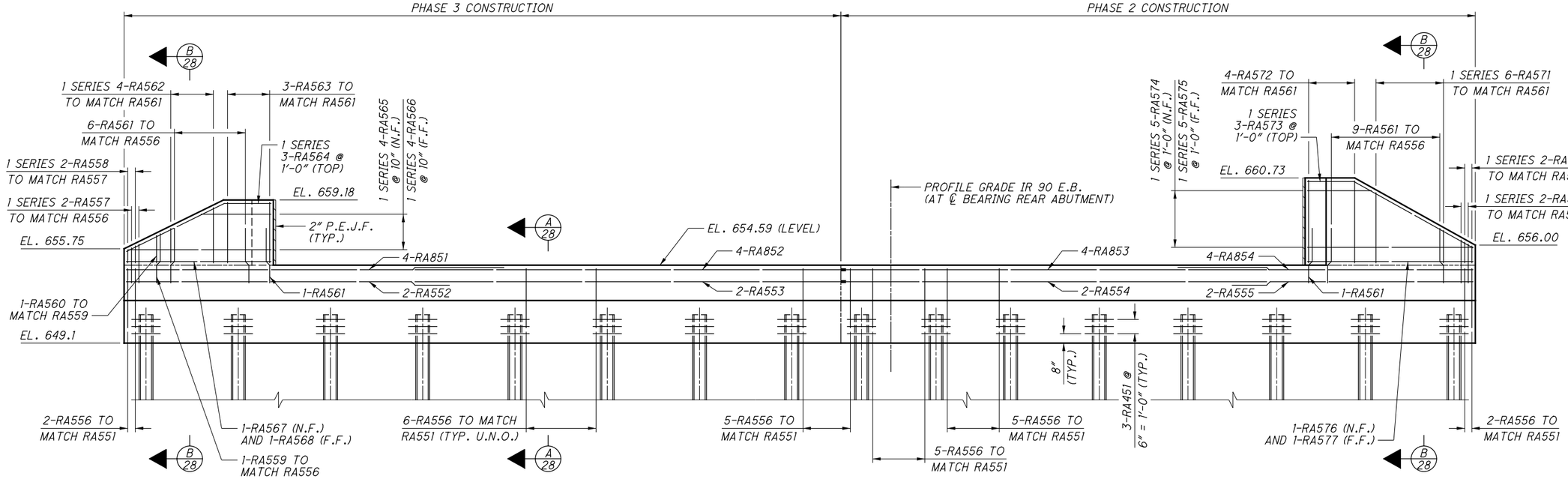
26/67

147/196



RIGHT BRIDGE REAR ABUTMENT PLAN

(ABUTMENT DIAPHRAGM NOT SHOWN)
(PILES NOT SHOWN)



RIGHT BRIDGE REAR ABUTMENT ELEVATION

(ABUTMENT DIAPHRAGM AND RA651 BARS NOT SHOWN)

LAP LENGTH TABLE

BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

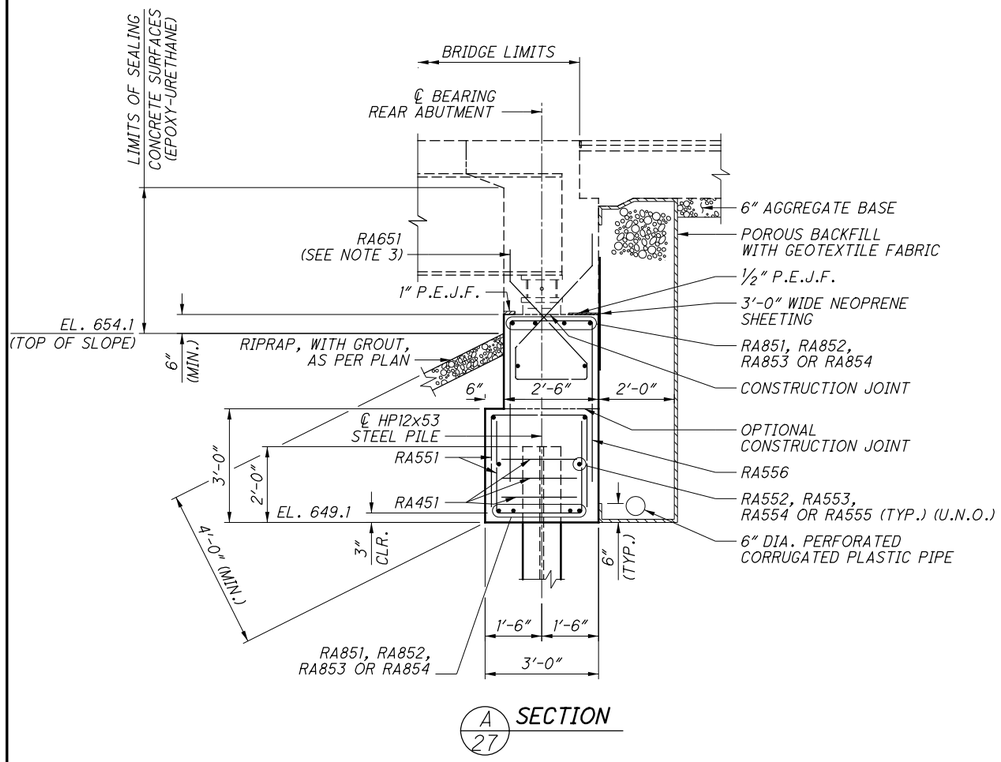
1. FOR RIGHT BRIDGE FOUNDATION PLAN, SEE SHEET 20/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 64/67.
3. FOR PLACEMENT OF RA651 BARS, SEE SHEET 54/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

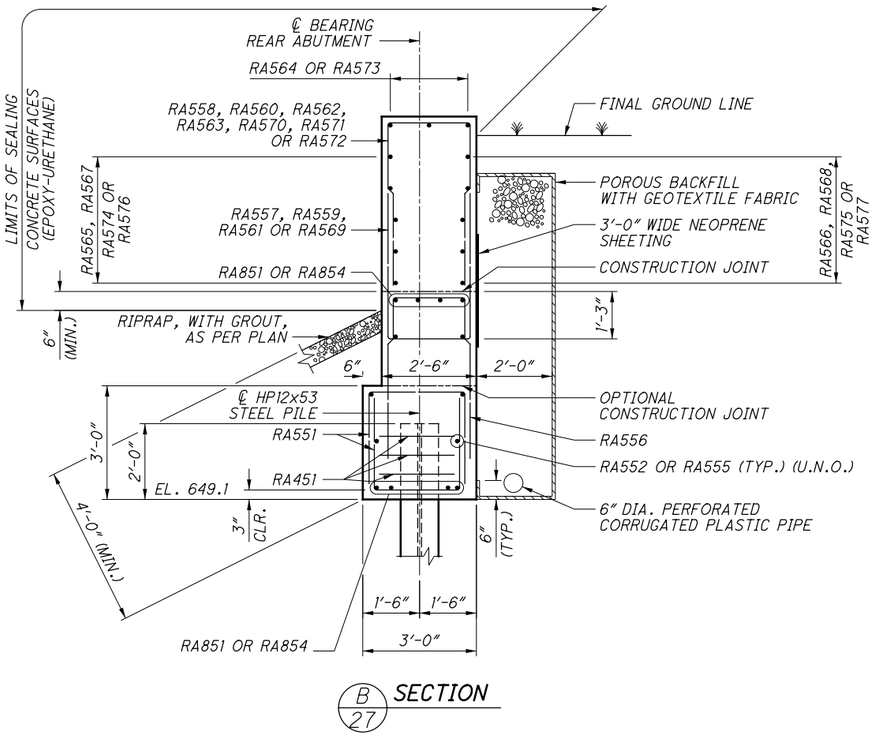
DESIGNED ZTW
DRAWN GJZ
REVIEWED NFF
DATE 5/16/19
CHECKED RSB
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

RIGHT BRIDGE REAR ABUTMENT PLAN AND ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

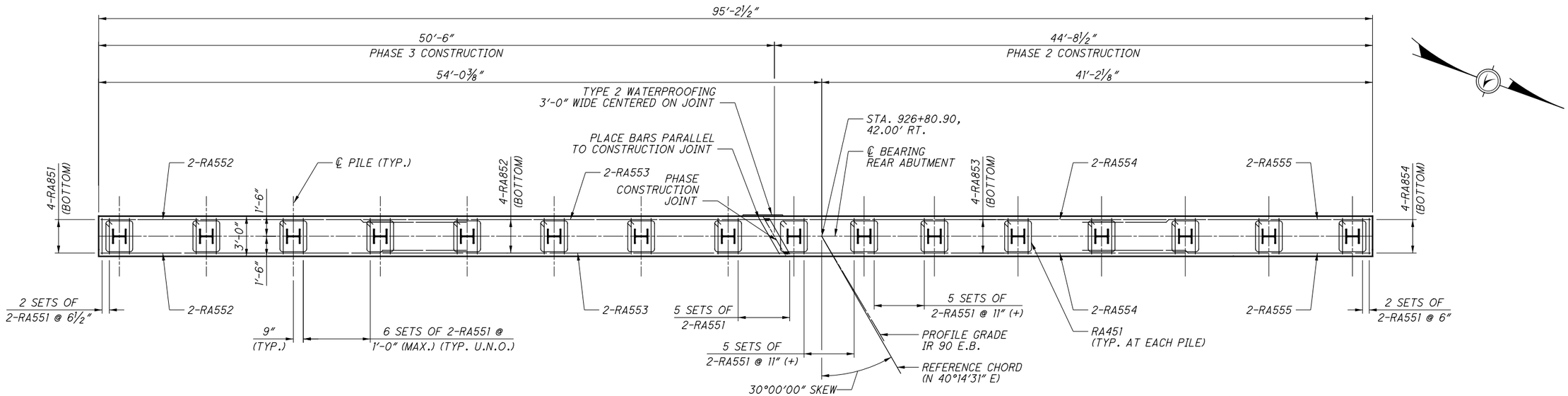
LOR-90-17.85
PID No. 90942



A 27 SECTION



B 27 SECTION



RIGHT BRIDGE REAR ABUTMENT FOOTING PLAN

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR RIGHT BRIDGE FOUNDATION PLAN, SEE SHEET 20/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 64/67.
3. FOR RA651 SPACING, SEE SHEET 54/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

RIGHT BRIDGE REAR ABUTMENT FOOTING PLAN AND DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

28/67

149/196

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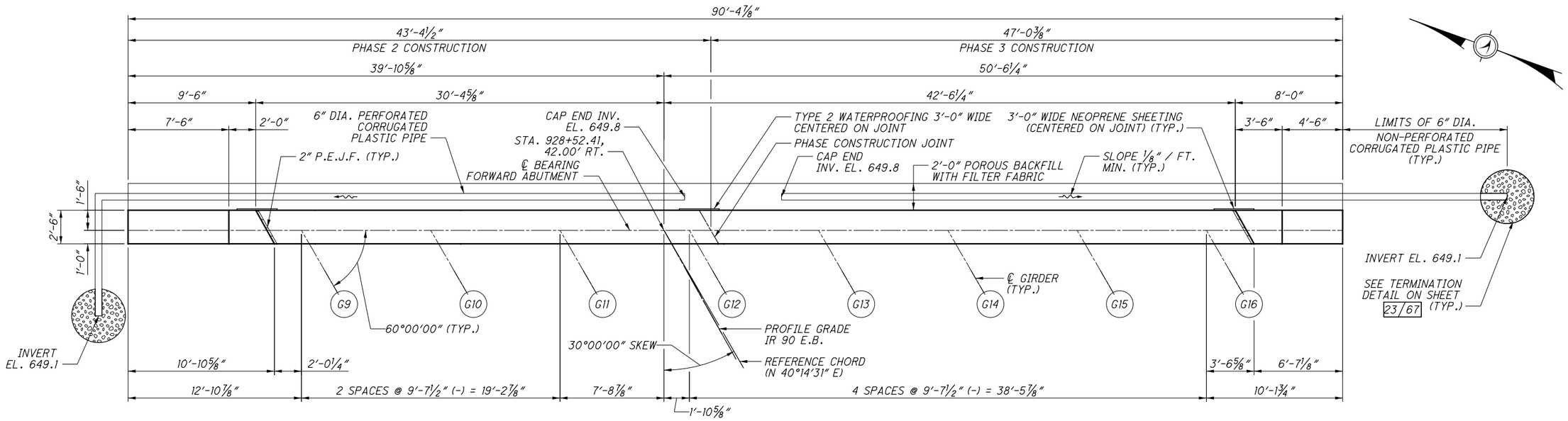
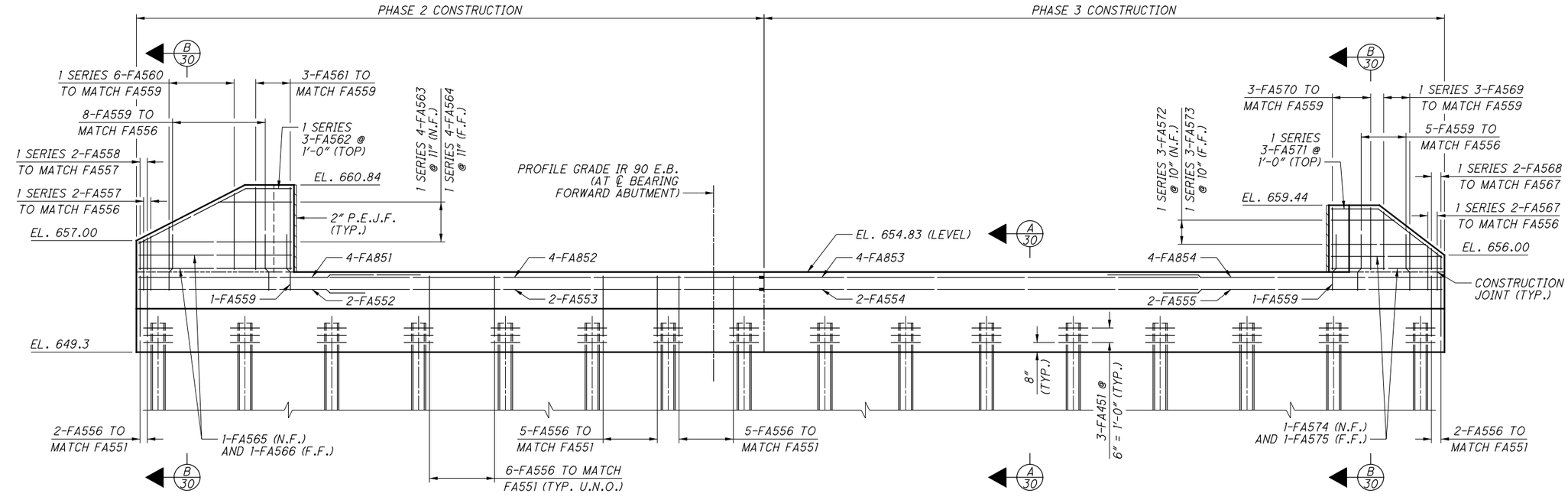


RIGHT BRIDGE FORWARD ABUTMENT PLAN

(ABUTMENT DIAPHRAGM NOT SHOWN)
(PILES NOT SHOWN)



RIGHT BRIDGE FORWARD ABUTMENT ELEVATION

(ABUTMENT DIAPHRAGM AND FA651 BARS NOT SHOWN)

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR RIGHT BRIDGE FOUNDATION PLAN, SEE SHEET 20/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 64/67.
3. FOR PLACEMENT OF FA651 BARS, SEE SHEET 54/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

RIGHT BRIDGE FORWARD ABUTMENT PLAN AND ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

29/67
150/196

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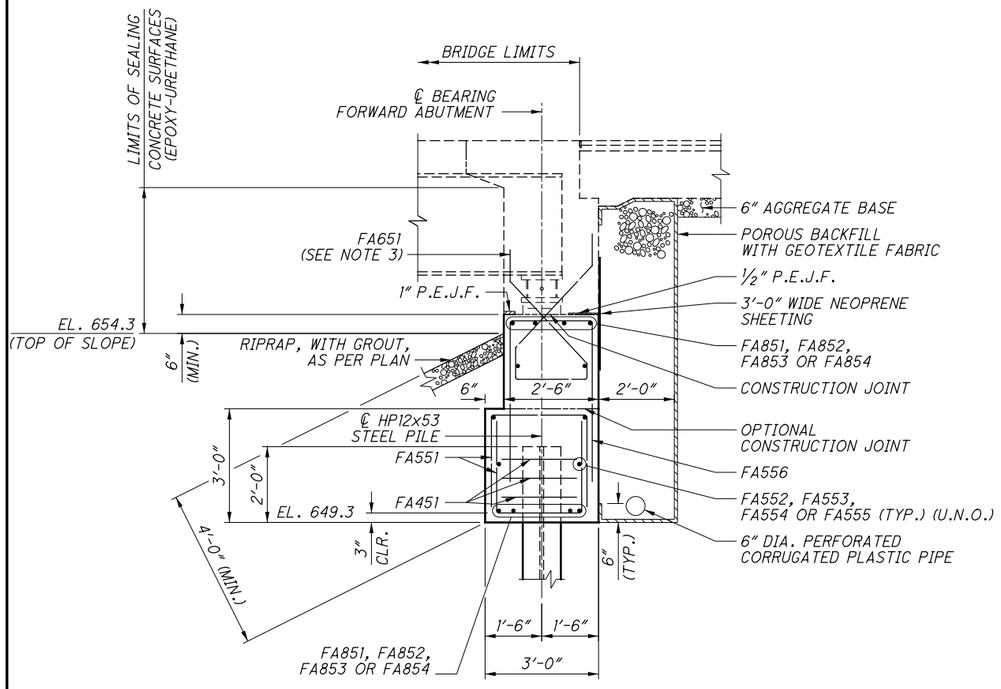
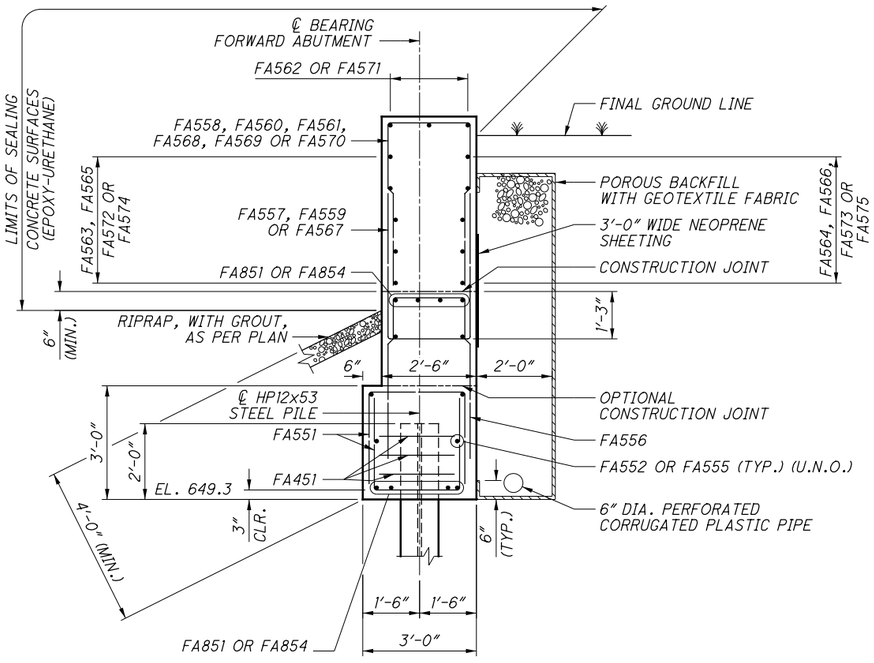
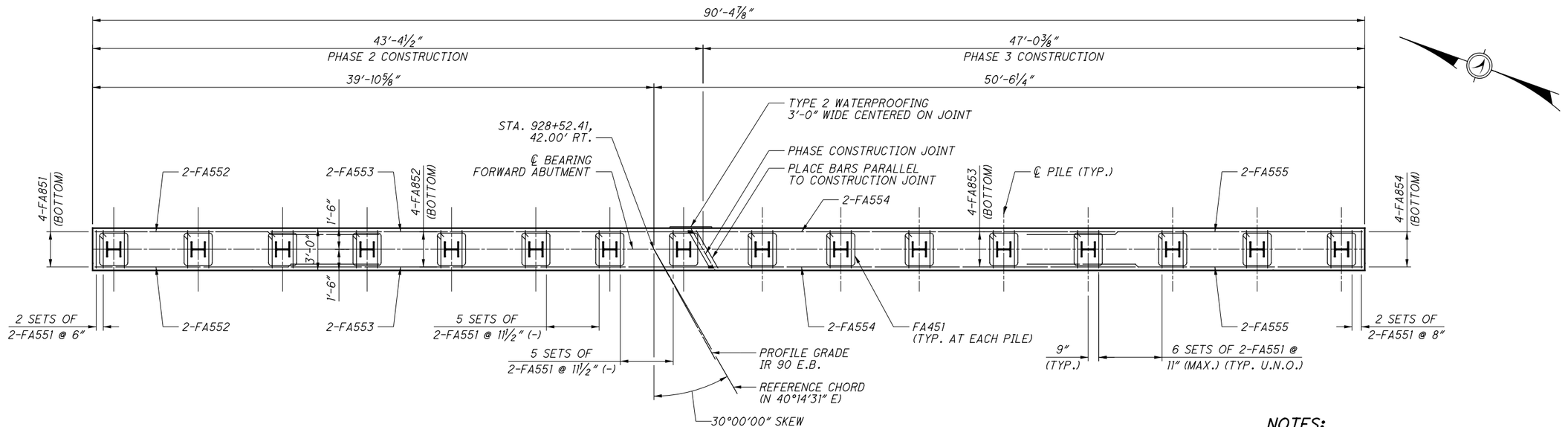


A/29 SECTION



B/29 SECTION



RIGHT BRIDGE FORWARD ABUTMENT FOOTING PLAN

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.
NO. 5 HORIZONTAL	3'-1" MIN.

NOTES:

1. FOR RIGHT BRIDGE FOUNDATION PLAN, SEE SHEET 20/67.
2. FOR REINFORCING STEEL LIST, SEE SHEET 64/67.
3. FOR FA651 SPACING, SEE SHEET 54/67.

DESIGN AGENCY: TranSystems, 1100 SUPERIOR AVENUE, SUITE 1100, CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

RIGHT BRIDGE FORWARD ABUTMENT FOOTING PLAN AND DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

30/67

151/196

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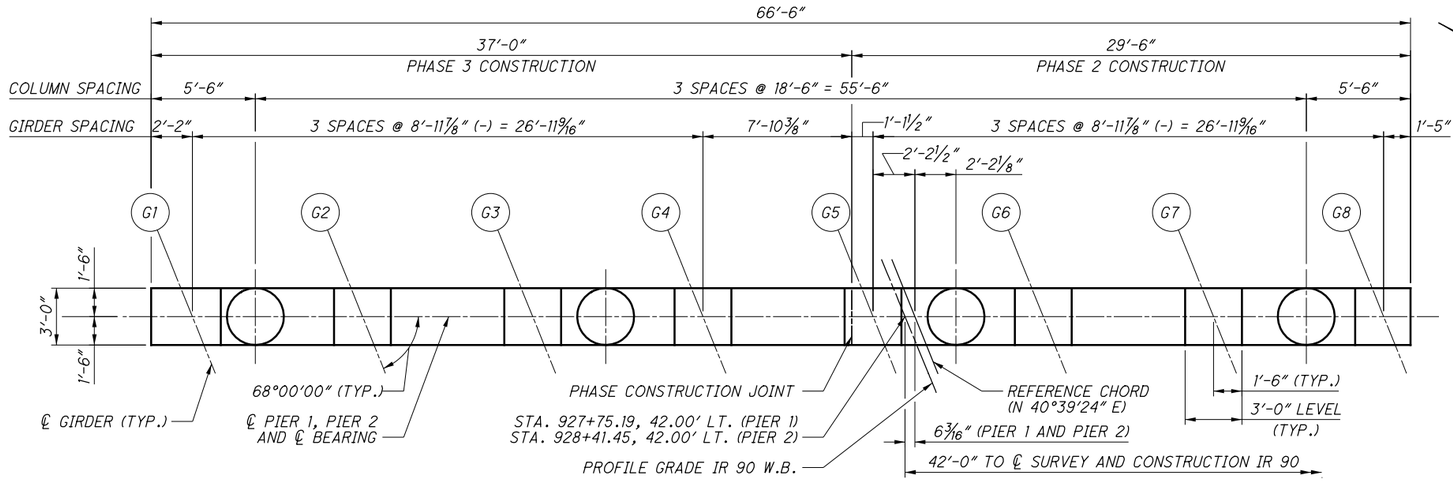
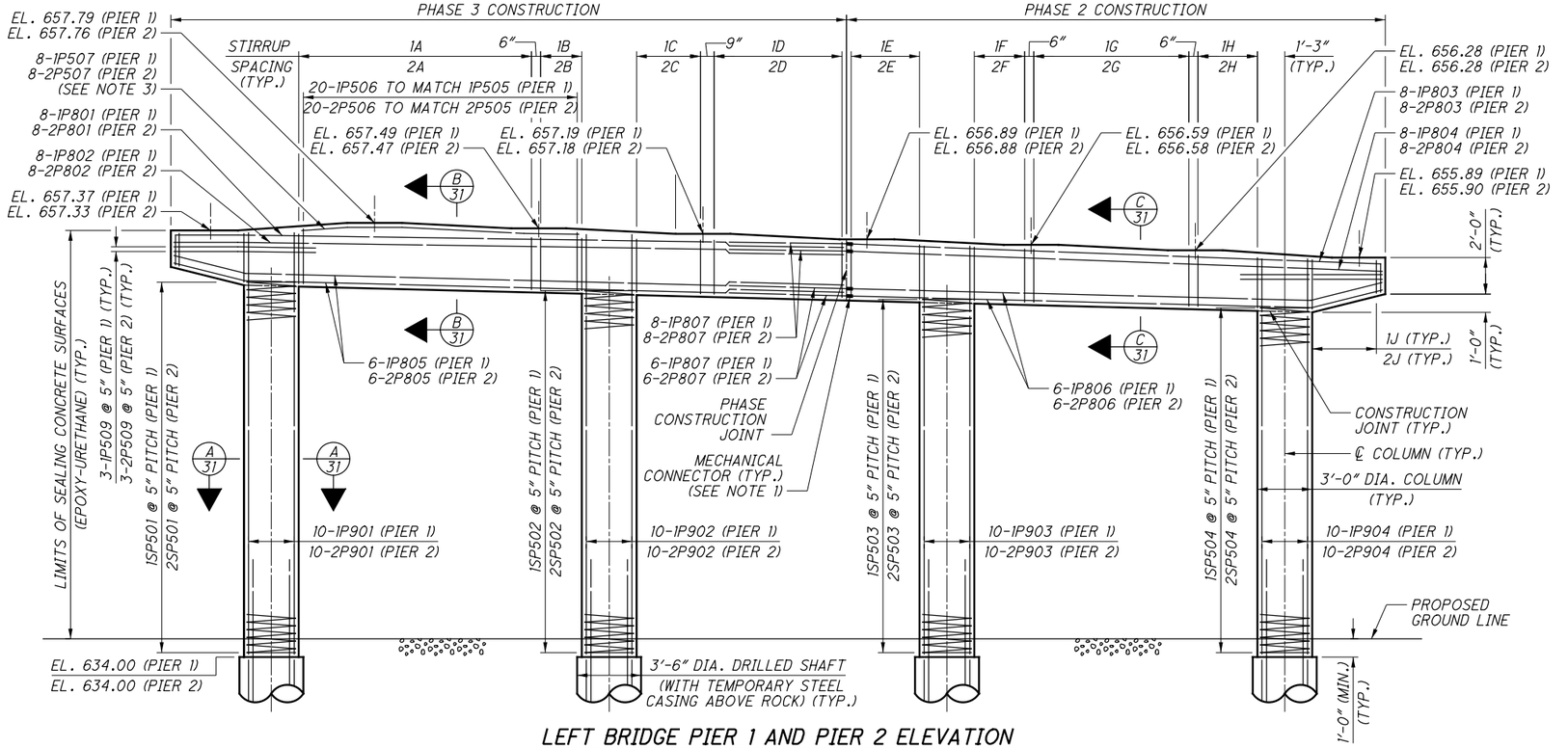


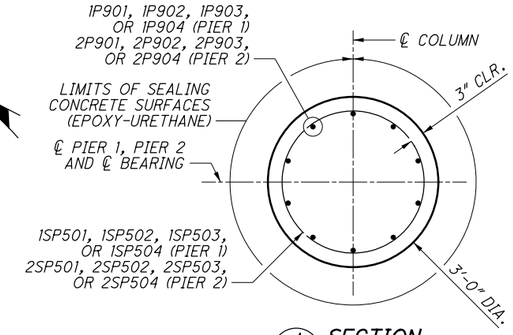
LEFT BRIDGE PIER 1 AND PIER 2 PLAN

PIER 1 CAP STIRRUP SPACING		PIER 2 CAP STIRRUP SPACING	
1A	14 SETS OF 4-1P505 @ 1'-0" = 13'-0"	2A	14 SETS OF 4-2P505 @ 1'-0" = 13'-0"
1B	6 SETS OF 4-1P505 @ 6" = 2'-6"	2B	6 SETS OF 4-2P505 @ 6" = 2'-6"
1C	6 SETS OF 4-1P505 @ 9" = 3'-9"	2C	6 SETS OF 4-2P505 @ 9" = 3'-9"
1D	6 SETS OF 4-1P505 @ 1'-5" (-) = 7'-0"	2D	6 SETS OF 4-2P505 @ 1'-5" (-) = 7'-0"
1E	9 SETS OF 4-1P505 @ 6" = 4'-0"	2E	9 SETS OF 4-2P505 @ 6" = 4'-0"
1F	7 SETS OF 4-1P505 @ 6" = 3'-0"	2F	7 SETS OF 4-2P505 @ 6" = 3'-0"
1G	7 SETS OF 4-1P505 @ 1'-5" = 8'-6"	2G	7 SETS OF 4-2P505 @ 1'-5" = 8'-6"
1H	8 SETS OF 4-1P505 @ 6" = 3'-6"	2H	8 SETS OF 4-2P505 @ 6" = 3'-6"
1J	4 SERIES OF 7-1P508 @ 8" = 4'-0"	2J	4 SERIES OF 7-2P508 @ 8" = 4'-0"

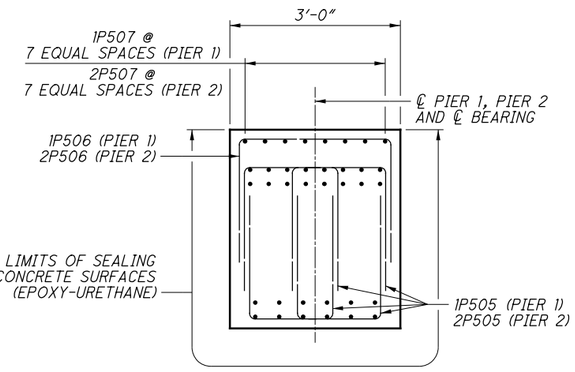
LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 8 HORIZONTAL	6'-3" MIN.
NO. 5 VERTICAL	2'-5" MIN.



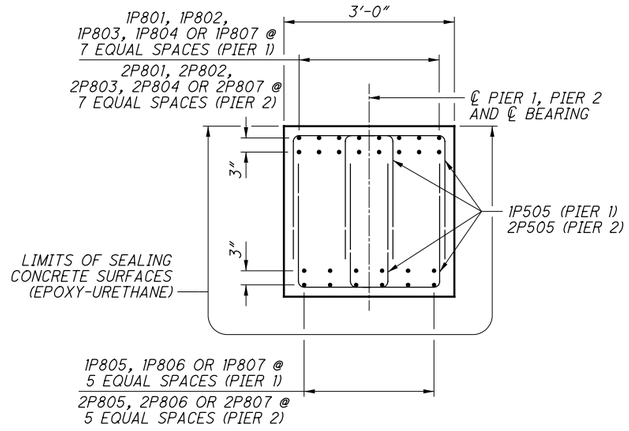
LEFT BRIDGE PIER 1 AND PIER 2 ELEVATION



A/31 SECTION



B/31 SECTION



C/31 SECTION

NOTES:

1. MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE JOINED REINFORCING STEEL AS A MINIMUM.
2. THE TOP OF THE COLUMN SPIRAL REINFORCEMENT SHALL EXTEND A MINIMUM OF 2" INTO THE PIER CAP CONCRETE.
3. FIELD BEND 1P507 AND 2P507 BARS AS REQUIRED.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED MSL | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE PIER 1 AND PIER 2 DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

31/67
152/196

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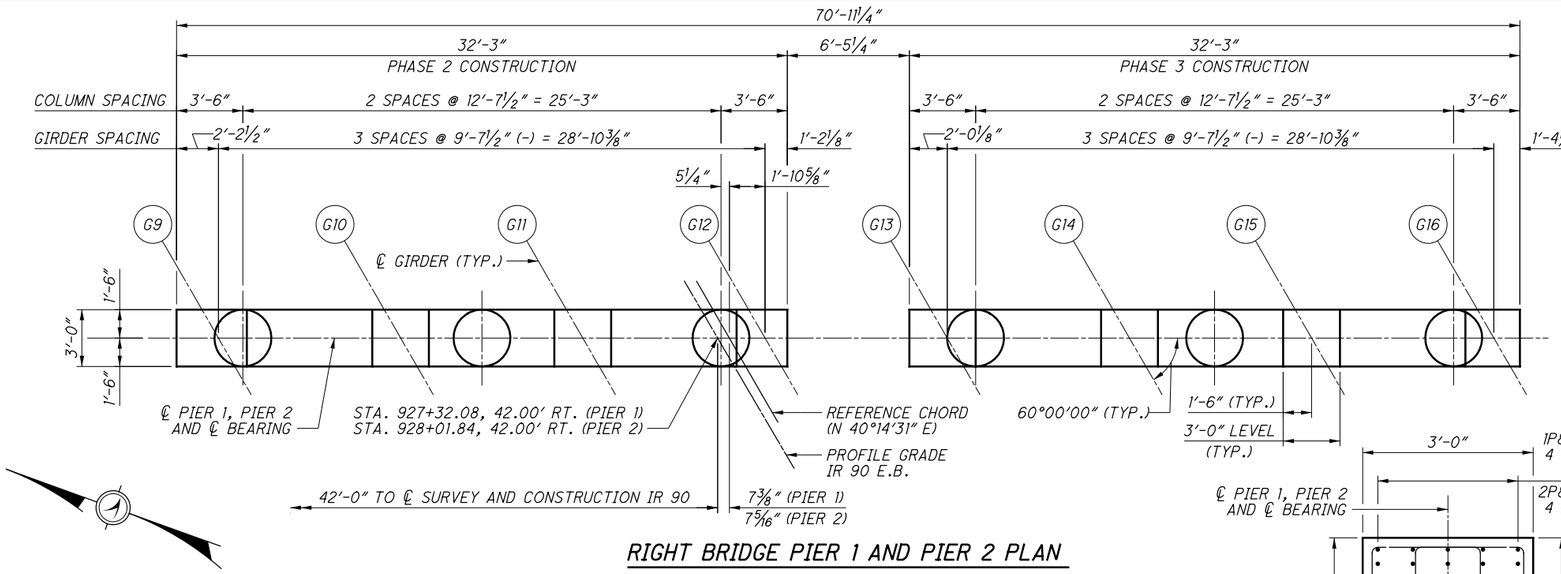
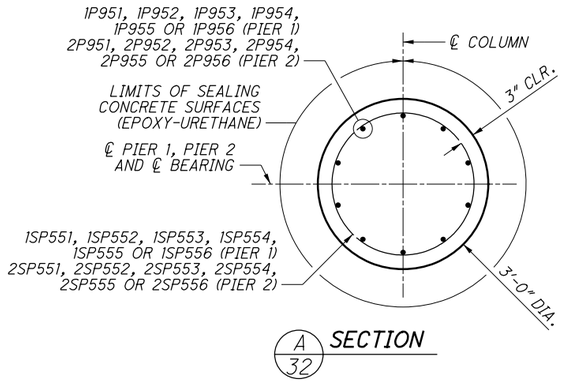
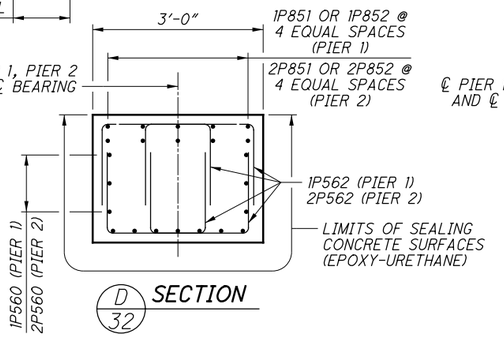


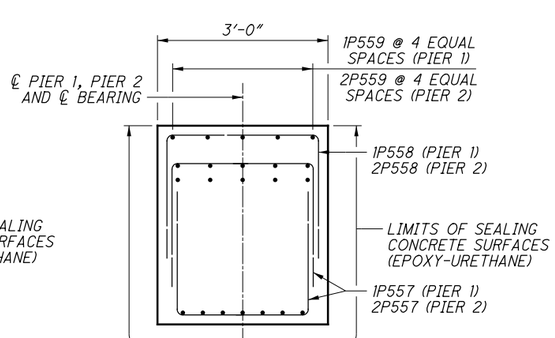
RIGHT BRIDGE PIER 1 AND PIER 2 PLAN



A/32 SECTION



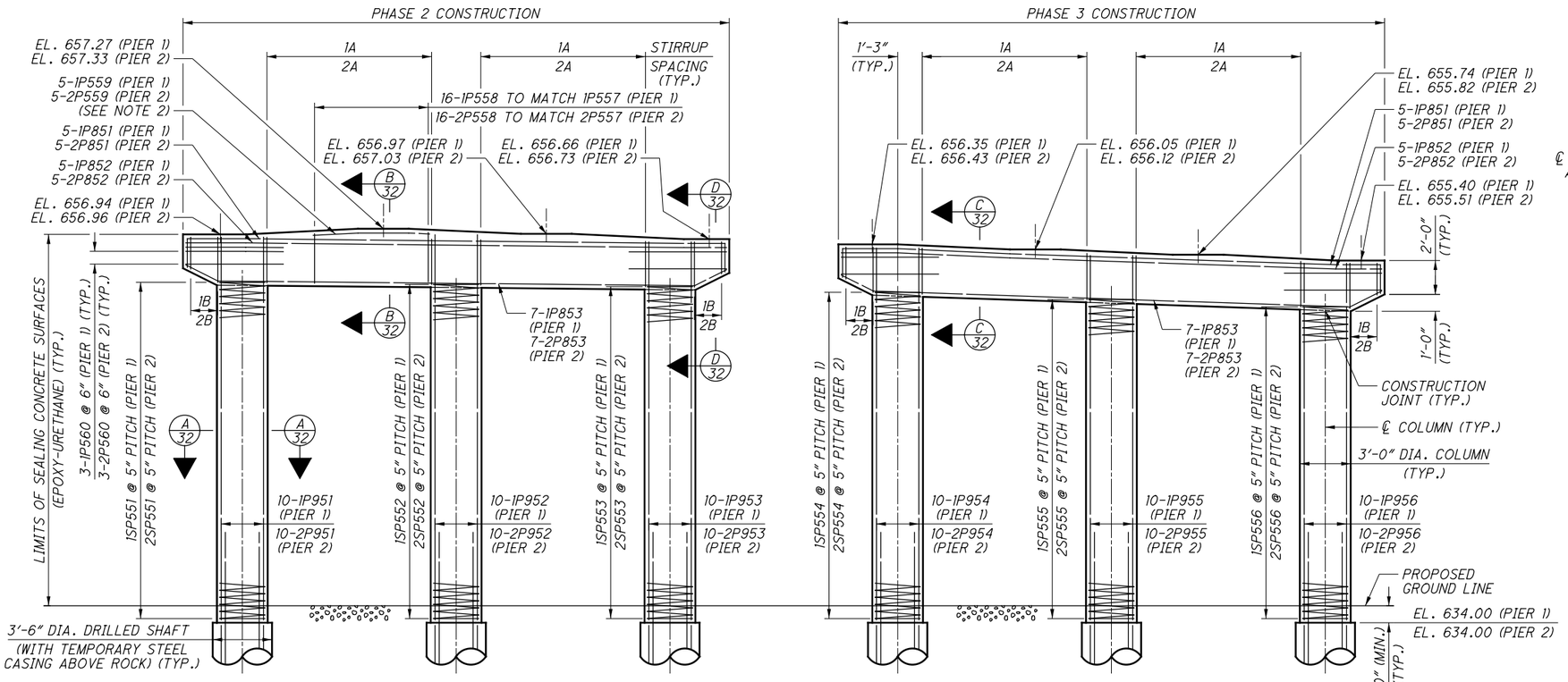
D/32 SECTION



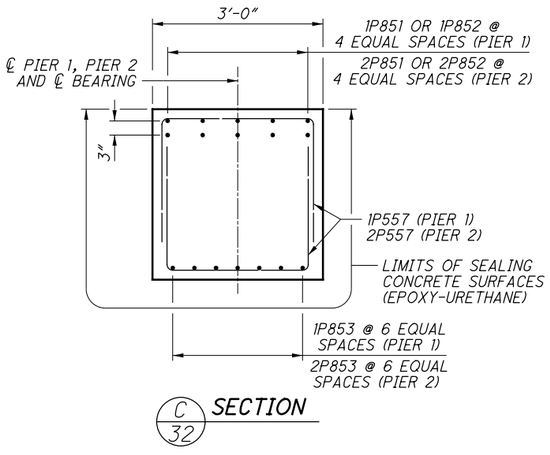
B/32 SECTION

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 VERTICAL	2'-5" MIN.

PIER 1 CAP STIRRUP SPACING		PIER 2 CAP STIRRUP SPACING	
1A	22 SETS OF 2-1P557 @ 6" (-) = 10'-1½"	2A	22 SETS OF 2-2P557 @ 6" (-) = 10'-1½"
1B	4 SERIES OF 6-1P561 @ 5" (-) = 2'-0"	2B	4 SERIES OF 6-2P561 @ 5" (-) = 2'-0"



RIGHT BRIDGE PIER 1 AND PIER 2 ELEVATION



C/32 SECTION

NOTES:

1. THE TOP OF THE COLUMN SPIRAL REINFORCEMENT SHALL EXTEND A MINIMUM OF 2" INTO THE PIER CAP CONCRETE.
2. FIELD BEND 1P559 AND 2P559 BARS AS REQUIRED.

DESIGN AGENCY: TranSystems, 1100 SUPERIOR AVENUE, SUITE 1100, CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MSL		4704895/4704925	

RIGHT BRIDGE PIER 1 AND PIER 2 DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

32 / 67

153 / 196

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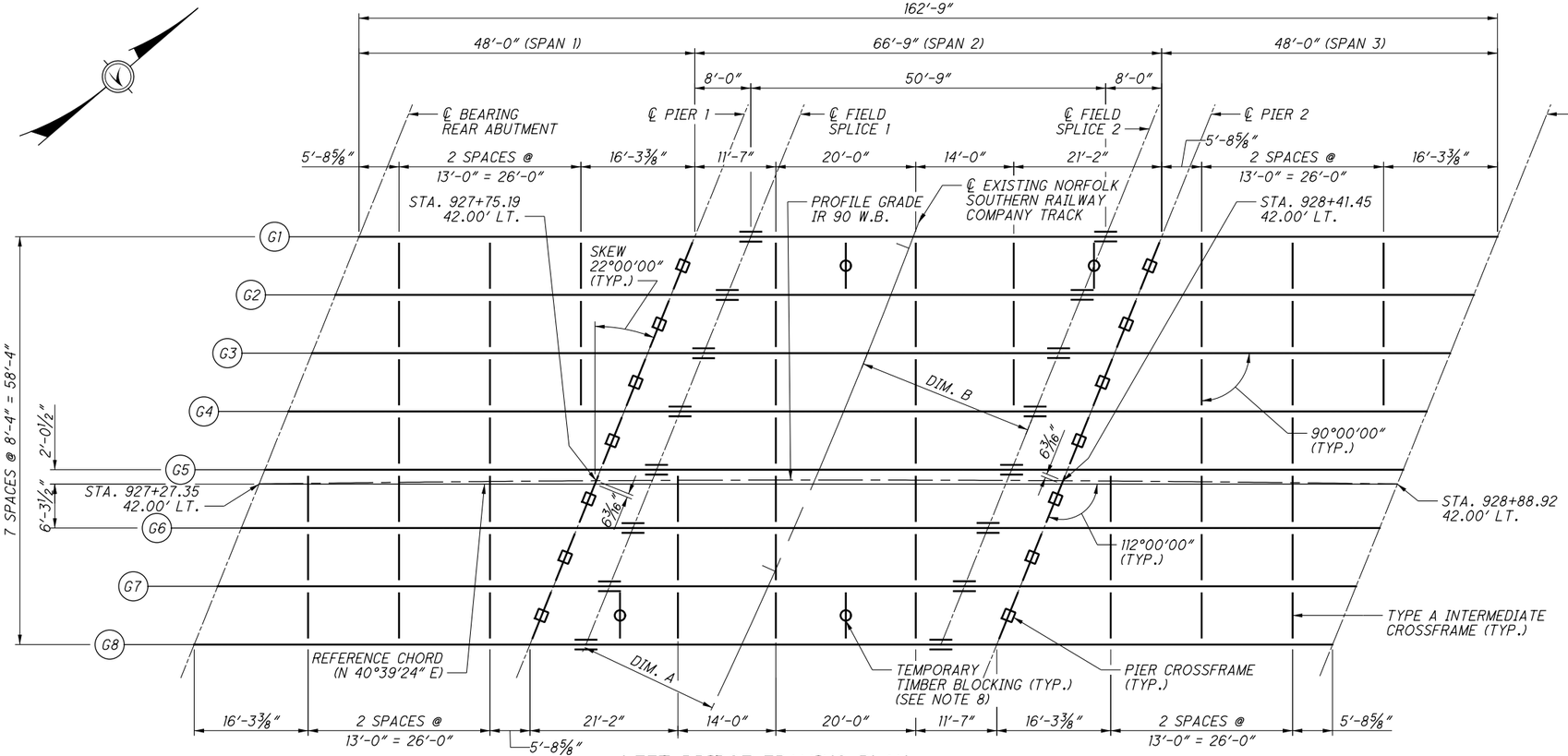
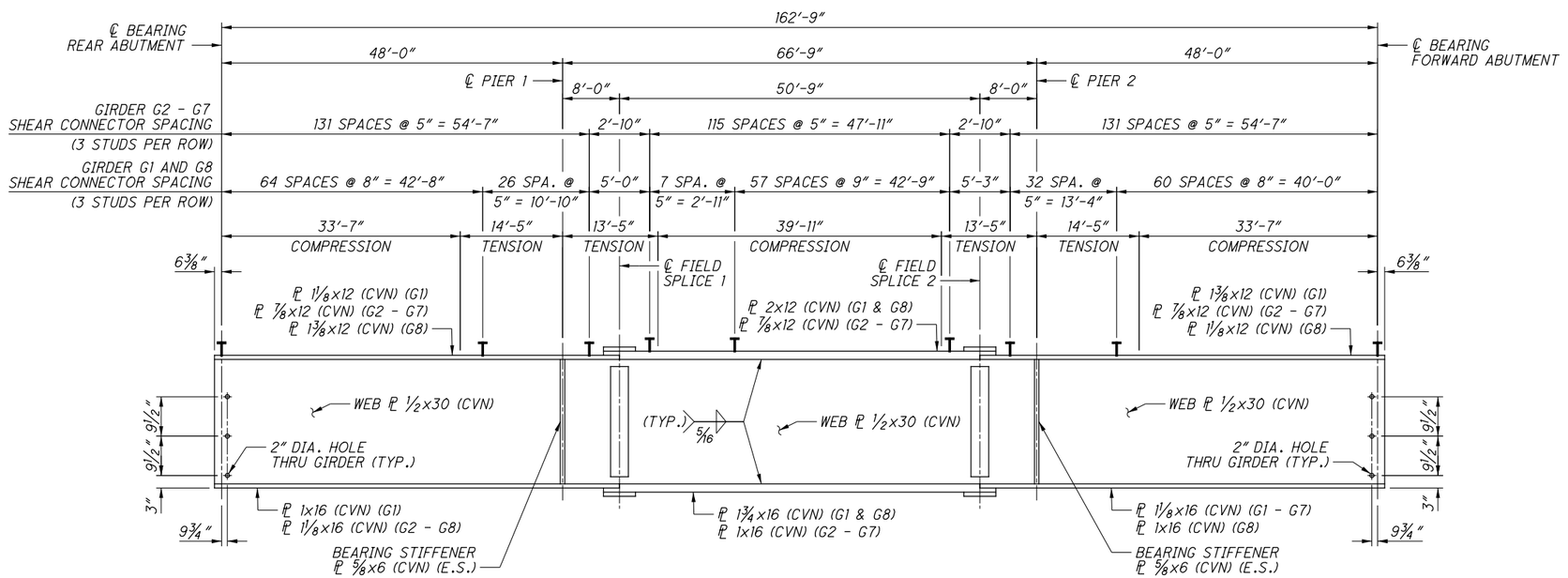
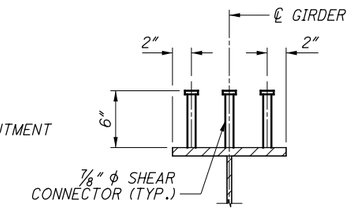


LEFT BRIDGE FRAMING PLAN

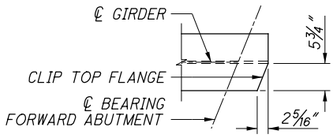


LEFT BRIDGE GIRDER ELEVATION

(DIMENSIONS SHOWN ARE MEASURED ALONG ℄ GIRDER)

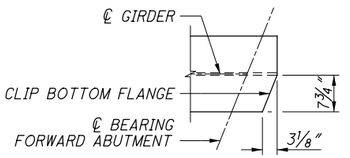


SHEAR CONNECTOR DETAIL



CLIPPED TOP FLANGE DETAIL

(FORWARD ABUTMENT SHOWN REAR ABUTMENT SIMILAR)



CLIPPED BOTTOM FLANGE DETAIL

(FORWARD ABUTMENT SHOWN REAR ABUTMENT SIMILAR)

CLEARANCES:

DIM. A: 20'-2¼" (℄ TRACK TO ℄ FIELD SPLCE 1)
DIM. B: 25'-3⅞" (℄ TRACK TO ℄ FIELD SPLCE 2)

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED ASTM A709 GRADE 50, UNLESS NOTED OTHERWISE.
2. FOR GENERAL PLAN AND GEOMETRIC LAYOUT, SEE SHEET 4/67.
3. FOR ADDITIONAL STRUCTURAL STEEL DETAILS, SEE SHEET 35/67.
4. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
5. THE GIRDER ENDS AND ALL BEARING STIFFENERS SHALL BE VERTICAL UNDER FULL DEAD LOAD. INTERIOR CROSSFRAMES AND FIELD SPLICES MAY BE NORMAL TO GRADE.
6. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST ¼" FOR THICKNESSES UP TO ¾" OR 5/16" FOR GREATER THAN ¾" THICK.
7. STUD SHEAR CONNECTORS SHALL BE PER CMS 513.22.
8. FOR ADDITIONAL TEMPORARY TIMBER BLOCKING DETAILS, SEE SHEET 6/67.
9. NO TEMPORARY SUPPORT TOWERS SHALL BE LOCATED WITHIN 15'-0" FROM THE TRACK CENTERLINE.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW
DRAWN GJZ
REVIEWED NFF
DATE 5/16/19
CHECKED MWR
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE FRAMING PLAN AND GIRDER ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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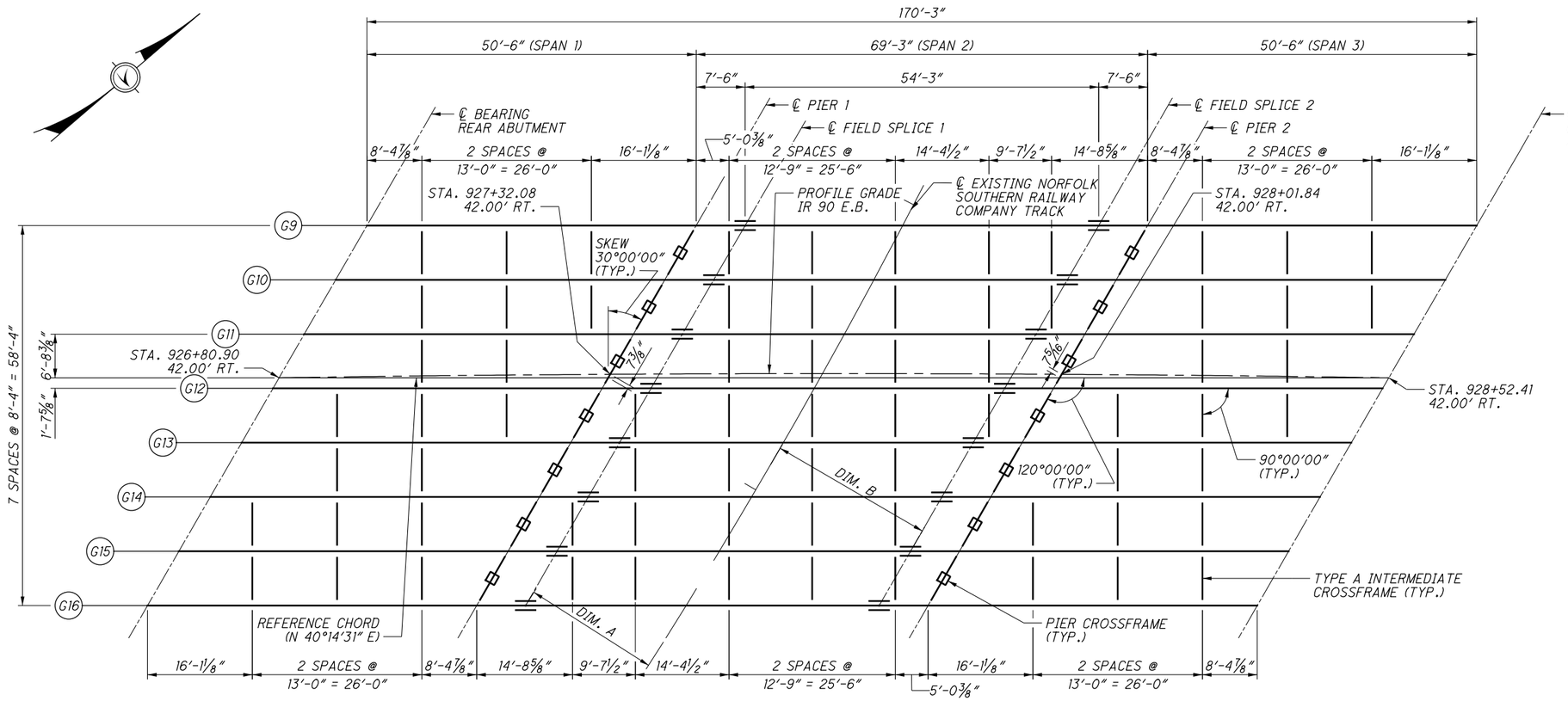
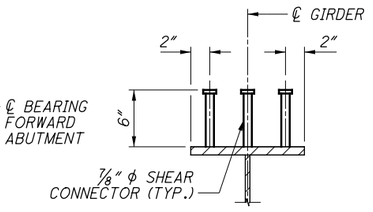
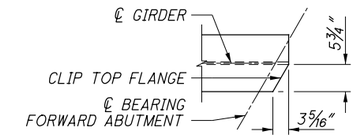


RIGHT BRIDGE FRAMING PLAN

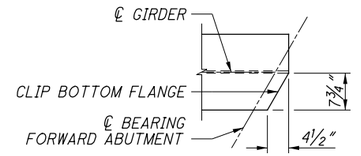


SHEAR CONNECTOR DETAIL



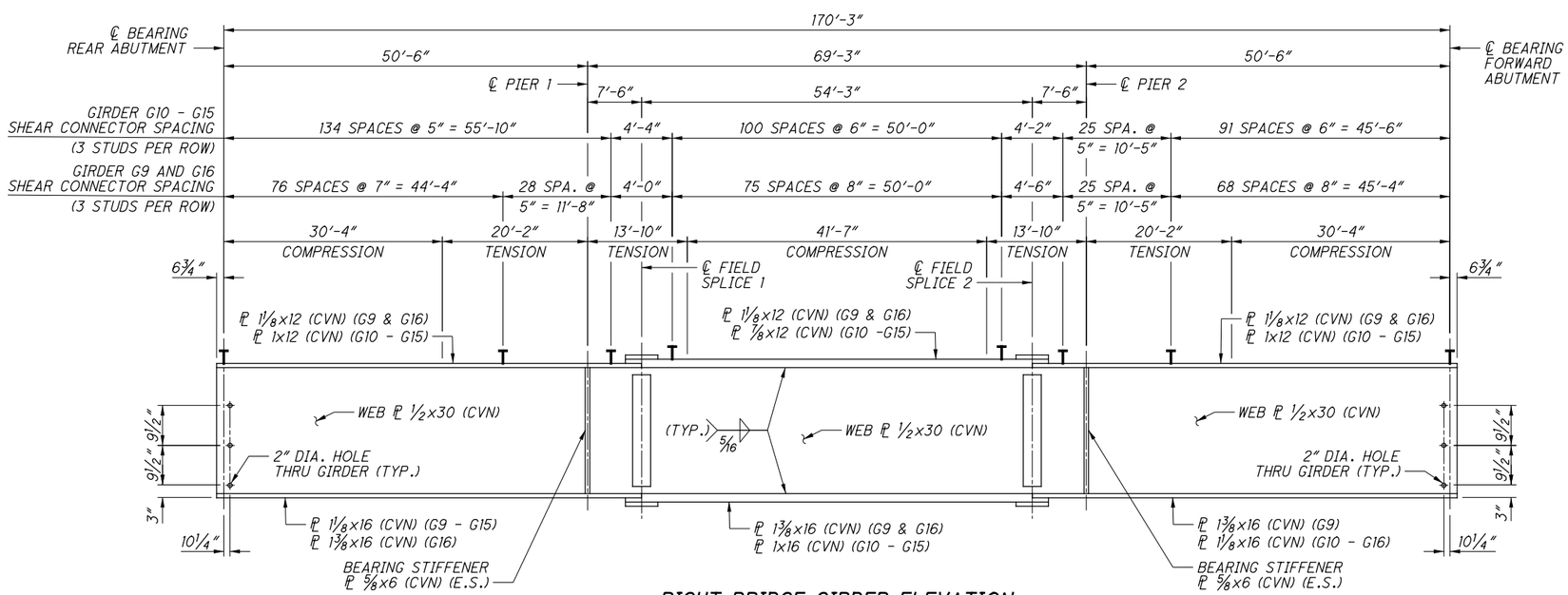
CLIPPED TOP FLANGE DETAIL

(FORWARD ABUTMENT SHOWN REAR ABUTMENT SIMILAR)



CLIPPED BOTTOM FLANGE DETAIL

(FORWARD ABUTMENT SHOWN REAR ABUTMENT SIMILAR)



RIGHT BRIDGE GIRDER ELEVATION

(DIMENSIONS SHOWN ARE MEASURED ALONG ℄ GIRDER)

CLEARANCES:

DIM. A: 20'-10½" (℄ TRACK TO ℄ FIELD SPLCE 1)
DIM. B: 25'-2⅞" (℄ TRACK TO ℄ FIELD SPLCE 2)

NOTES:

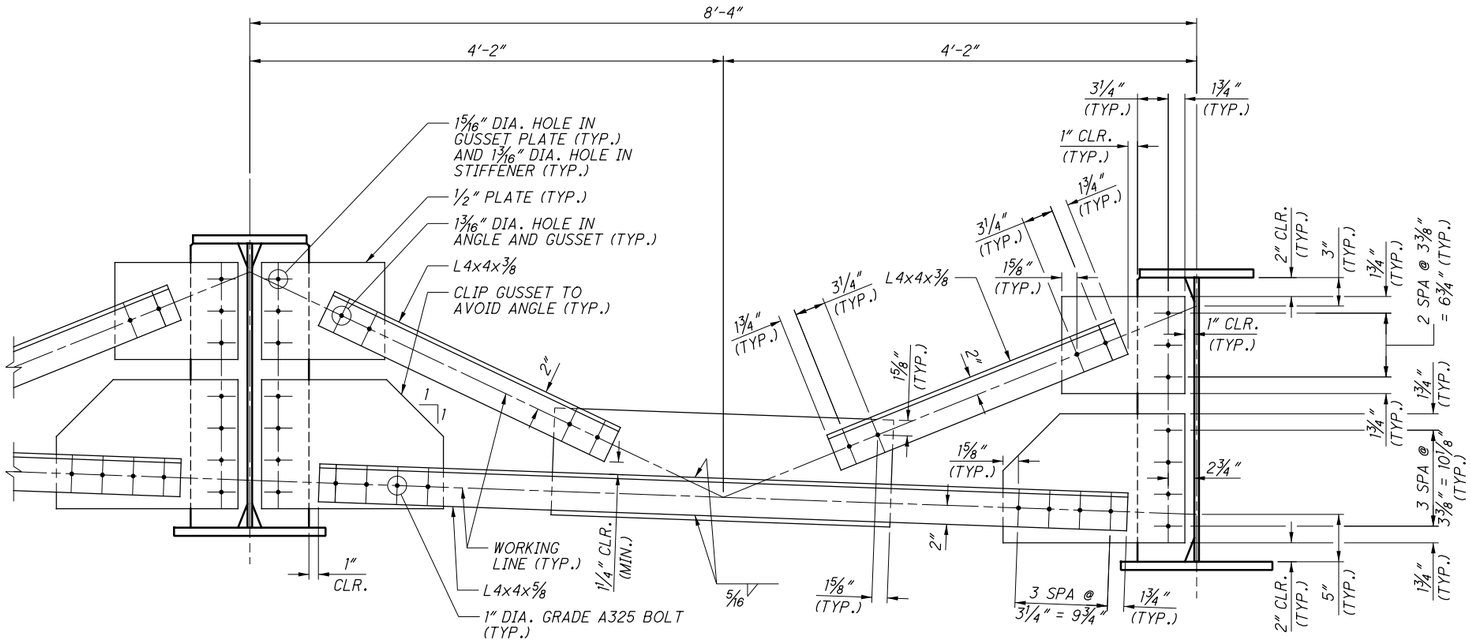
1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED ASTM A709 GRADE 50, UNLESS NOTED OTHERWISE.
2. FOR GENERAL PLAN AND GEOMETRIC LAYOUT, SEE SHEET 4/67 .
3. FOR ADDITIONAL STRUCTURAL STEEL DETAILS, SEE SHEET 35/67 .
4. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
5. THE GIRDER ENDS AND ALL BEARING STIFFENERS SHALL BE VERTICAL UNDER FULL DEAD LOAD. INTERIOR CROSSFRAMES AND FIELD SPLICES MAY BE NORMAL TO GRADE.
6. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST ¼" FOR THICKNESSES UP TO ¾" OR 5/16" FOR GREATER THAN ¾" THICK.
7. STUD SHEAR CONNECTORS SHALL BE PER CMS 513.22.
8. NO TEMPORARY SUPPORT TOWERS SHALL BE LOCATED WITHIN 15'-0" FROM THE TRACK CENTERLINE.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

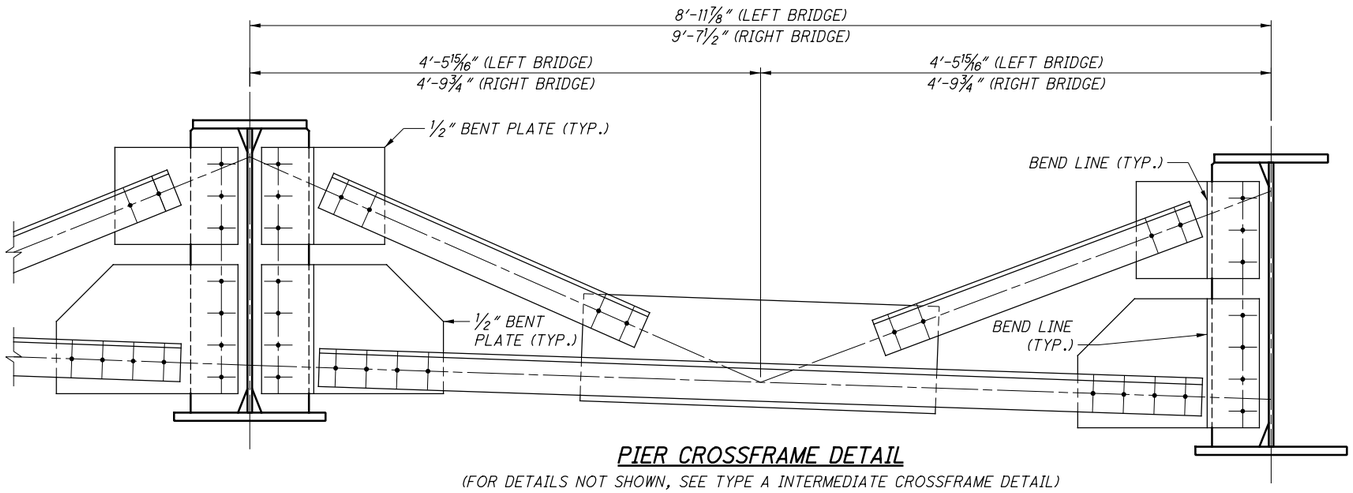
DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED MWR | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

RIGHT BRIDGE FRAMING PLAN AND GIRDER ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

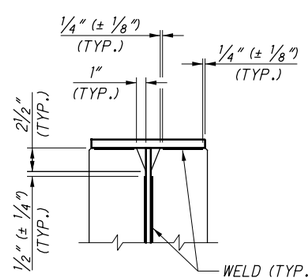


TYPE A INTERMEDIATE CROSSFRAME DETAIL

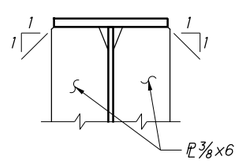


PIER CROSSFRAME DETAIL

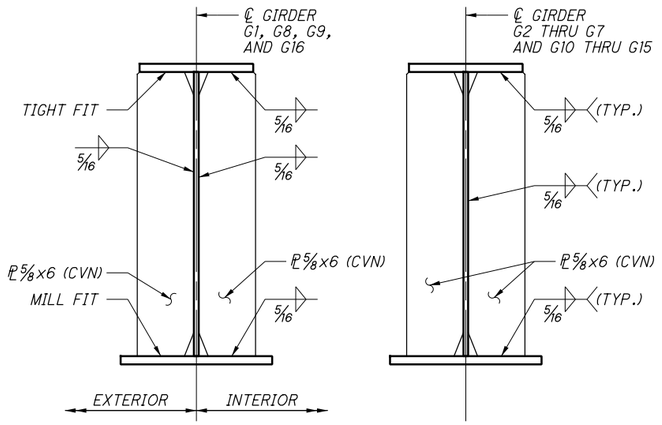
(FOR DETAILS NOT SHOWN, SEE TYPE A INTERMEDIATE CROSSFRAME DETAIL)



WELD TERMINATION DETAIL

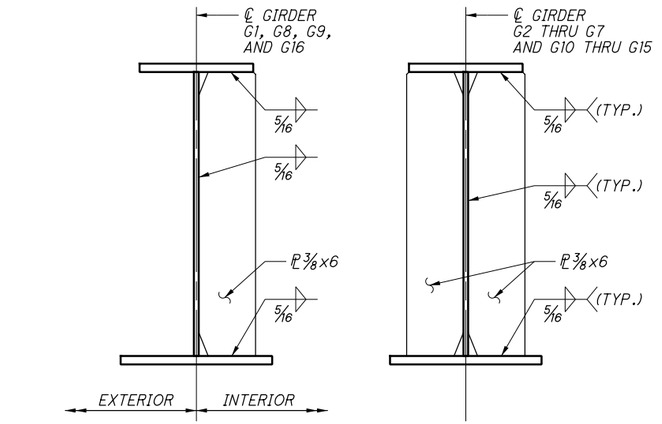


INTERMEDIATE STIFFENER CLIP



BEARING STIFFENERS AT PIERS

(CONNECTION PLATES AND BOLTS NOT SHOWN)



INTERMEDIATE STIFFENERS AT CROSSFRAMES

(CONNECTION PLATES AND BOLTS NOT SHOWN)

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50 GALVANIZED, UNLESS NOTED OTHERWISE.
2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
3. BEARING STIFFENERS SHALL BE VERTICAL UNDER FULL DEAD LOAD. INTERIOR CROSSFRAMES AND FIELD SPLICES MAY BE NORMAL TO GRADE.
4. ALL BOLTS SHALL BE 1" DIA. ASTM F3125 GRADE A325, TYPE 1 HIGH STRENGTH BOLTS.
5. FOR LEFT BRIDGE FRAMING PLAN, SEE SHEET 33/67.
6. FOR RIGHT BRIDGE FRAMING PLAN, SEE SHEET 34/67.
7. ALL HOLES IN CROSSFRAME ANGLES SHALL BE DRILLED FULL-SIZE OR SUBPUNCHED AND REAMED TO SIZE. HOLES IN CROSSFRAME ANGLES SHALL NOT BE PUNCHED FULL SIZE. ALL HOLES IN GUSSET PLATES AND STIFFENERS SHALL BE PER CMS 513.19.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

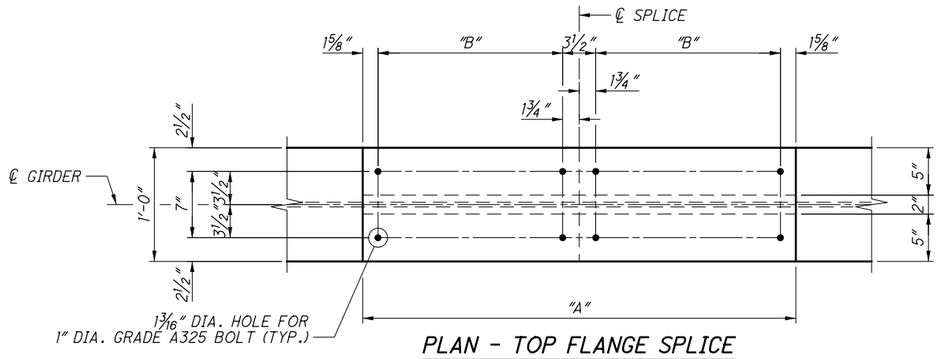
DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MWR		4704895/4704925	

STRUCTURAL STEEL DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

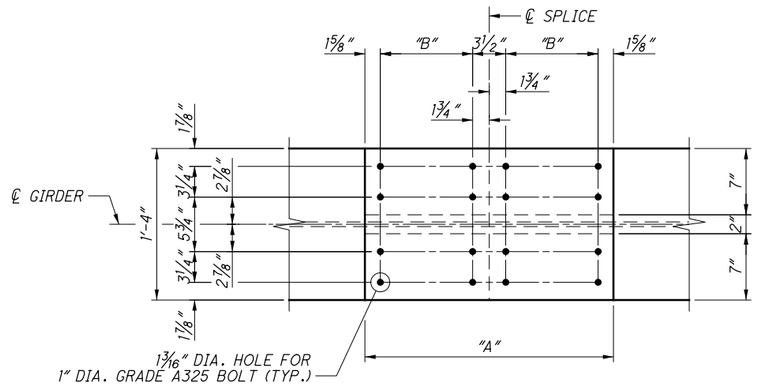
LOR-90-17.85
PID No. 90942

35/67

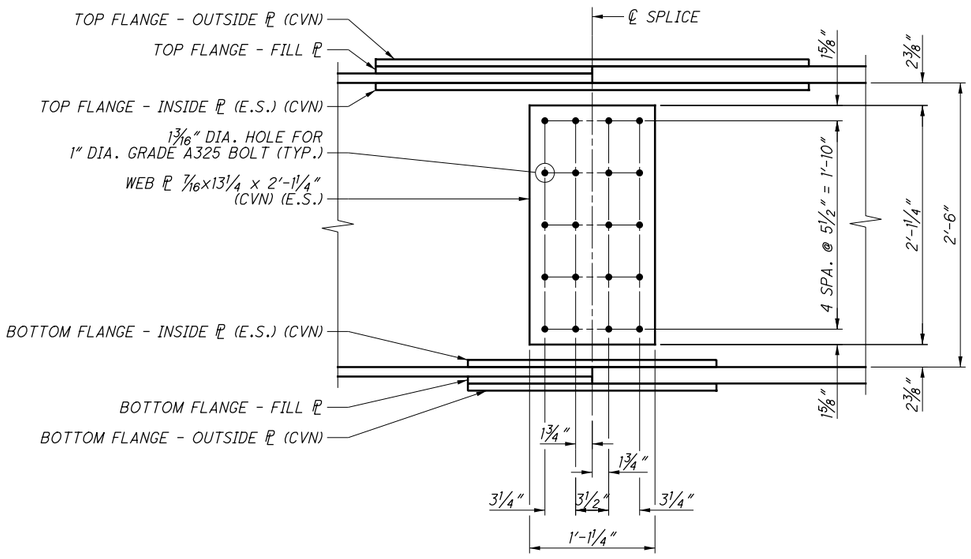
156/196



PLAN - TOP FLANGE SPLICE



PLAN - BOTTOM FLANGE SPLICE



ELEVATION - WEB SPLICE

(FIELD SPLICE 1 & 2 - GIRDERS G1 THRU G8 AND G9 THRU G16)

LEFT BRIDGE						
FIELD SPLICE	GIRDER NUMBER	TOP FLANGE				
		OUTSIDE ℄	INSIDE ℄	FILL ℄	DIM "A"	DIM "B"
1	G1	1-℄ ¾x12 x 3'-9¾" (CVN)	2-℄ ¾x5 x 3'-9¾" (CVN)	1-℄ ⅞x12 x 1'-10¾"	3'-9¾"	6 SPA. @ 3¼" = 1'-7½"
2	G1	1-℄ ¾x12 x 4'-4¼" (CVN)	2-℄ 1x5 x 4'-4¼" (CVN)	1-℄ ⅝x12 x 2'-2"	4'-4¼"	7 SPA. @ 3¼" = 1'-10¾"
1 & 2	G2 - G7	1-℄ ¾x12 x 2'-2¼" (CVN)	2-℄ ¾x5 x 2'-2¼" (CVN)	-	2'-2¼"	3 SPA. @ 3¼" = 9¾"
1	G8	1-℄ ¾x12 x 4'-4¼" (CVN)	2-℄ 1x5 x 4'-4¼" (CVN)	1-℄ ⅝x12 x 2'-2"	4'-4¼"	7 SPA. @ 3¼" = 1'-10¾"
2	G8	1-℄ ¾x12 x 3'-9¾" (CVN)	2-℄ ¾x5 x 3'-9¾" (CVN)	1-℄ ⅞x12 x 1'-10¾"	3'-9¾"	6 SPA. @ 3¼" = 1'-7½"

LEFT BRIDGE						
FIELD SPLICE	GIRDER NUMBER	BOTTOM FLANGE				
		OUTSIDE ℄	INSIDE ℄	FILL ℄	DIM "A"	DIM "B"
1	G1	1-℄ ⅝x16 x 2'-2¼" (CVN)	2-℄ ⅝x7 x 2'-2¼" (CVN)	1-℄ ¾x16 x 1'-1"	2'-2¼"	3 SPA. @ 3¼" = 9¾"
2	G1	1-℄ ⅝x16 x 2'-2¼" (CVN)	2-℄ ¾x7 x 2'-2¼" (CVN)	1-℄ ⅝x16 x 1'-1"	2'-2¼"	3 SPA. @ 3¼" = 9¾"
1 & 2	G2 - G7	1-℄ ⅝x16 x 1'-7¾" (CVN)	2-℄ ⅝x7 x 1'-7¾" (CVN)	-	1'-7¾"	2 SPA. @ 3¼" = 6½"
1	G8	1-℄ ⅝x16 x 2'-2¼" (CVN)	2-℄ ¾x7 x 2'-2¼" (CVN)	1-℄ ⅝x16 x 1'-1"	2'-2¼"	3 SPA. @ 3¼" = 9¾"
2	G8	1-℄ ⅝x16 x 2'-2¼" (CVN)	2-℄ ⅝x7 x 2'-2¼" (CVN)	1-℄ ¾x16 x 1'-1"	2'-2¼"	3 SPA. @ 3¼" = 9¾"

RIGHT BRIDGE						
FIELD SPLICE	GIRDER NUMBER	TOP FLANGE				
		OUTSIDE ℄	INSIDE ℄	FILL ℄	DIM "A"	DIM "B"
1	G9	1-℄ ¾x12 x 2'-8¾" (CVN)	2-℄ ¾x5 x 2'-8¾" (CVN)	-	2'-8¾"	4 SPA. @ 3¼" = 1'-1"
2	G9	1-℄ ¾x12 x 2'-8¾" (CVN)	2-℄ ¾x5 x 2'-8¾" (CVN)	-	2'-8¾"	4 SPA. @ 3¼" = 1'-1"
1 & 2	G10 - G15	1-℄ ¾x12 x 3'-3¼" (CVN)	2-℄ ¾x5 x 3'-3¼" (CVN)	-	3'-3¼"	5 SPA. @ 3¼" = 1'-4¼"
1	G16	1-℄ ¾x12 x 2'-8¾" (CVN)	2-℄ ¾x5 x 2'-8¾" (CVN)	-	2'-8¾"	4 SPA. @ 3¼" = 1'-1"
2	G16	1-℄ ¾x12 x 2'-8¾" (CVN)	2-℄ ¾x5 x 2'-8¾" (CVN)	-	2'-8¾"	4 SPA. @ 3¼" = 1'-1"

RIGHT BRIDGE						
FIELD SPLICE	GIRDER NUMBER	BOTTOM FLANGE				
		OUTSIDE ℄	INSIDE ℄	FILL ℄	DIM "A"	DIM "B"
1	G9	1-℄ ⅝x16 x 2'-2¼" (CVN)	2-℄ ¾x7 x 2'-2¼" (CVN)	1-℄ ¼x16 x 1'-1"	2'-2¼"	3 SPA. @ 3¼" = 9¾"
2	G9	1-℄ ¾x16 x 2'-2¼" (CVN)	2-℄ 15⁄16 x7 x 2'-2¼" (CVN)	-	2'-2¼"	3 SPA. @ 3¼" = 9¾"
1 & 2	G10 - G15	1-℄ ⅝x16 x 1'-7¾" (CVN)	2-℄ ⅝x7 x 1'-7¾" (CVN)	-	1'-7¾"	2 SPA. @ 3¼" = 6½"
1	G16	1-℄ ¾x16 x 2'-2¼" (CVN)	2-℄ 15⁄16 x7 x 2'-2¼" (CVN)	-	2'-2¼"	3 SPA. @ 3¼" = 9¾"
2	G16	1-℄ ⅝x16 x 2'-2¼" (CVN)	2-℄ ¾x7 x 2'-2¼" (CVN)	1-℄ ¼x16 x 1'-1"	2'-2¼"	3 SPA. @ 3¼" = 9¾"

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50 GALVANIZED, UNLESS NOTED OTHERWISE.
2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
3. ALL BOLTS SHALL BE 1" DIA. ASTM F3125 GRADE A325, TYPE 1 HIGH STRENGTH BOLTS.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED MWR | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

FIELD SPLICE DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

36/67
157/196

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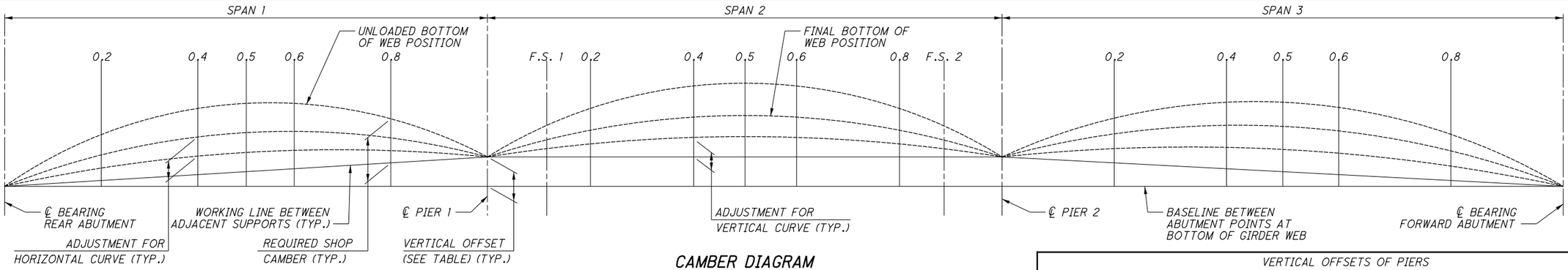


CAMBER DIAGRAM

VERTICAL OFFSETS OF PIERS

BEARING POINT	GIRDER G1	GIRDER G2	GIRDER G3	GIRDER G4	GIRDER G5	GIRDER G6	GIRDER G7	GIRDER G8
PIER 1	7/8"	15/16"	1/2"	1/2"	1/2"	9/16"	7/16"	1/2"
PIER 2	15/16"	7/8"	7/16"	1/2"	1/2"	1/2"	7/16"	1/2"

CAMBER TABLE

		SPAN 1					SPAN 2							SPAN 3				
		0.2	0.4	0.5	0.6	0.8	F.S. 1	0.2	0.4	0.5	0.6	0.8	F.S. 2	0.2	0.4	0.5	0.6	0.8
GIRDER G1	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	0	0	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	1/16"	1/8"	3/16"	3/8"	7/16"	3/8"	3/16"	1/8"	1/16"	1/8"	1/8"	1/8"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/8"	3/16"	3/16"	3/16"	1/8"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"
	REQUIRED SHOP CAMBER	1/4"	3/8"	3/8"	3/8"	5/16"	1/2"	5/8"	15/16"	1"	15/16"	5/8"	7/16"	5/16"	3/8"	3/8"	5/16"	1/4"
GIRDER G2	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	3/16"	5/16"	5/8"	11/16"	5/8"	5/16"	3/16"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"
	REQUIRED SHOP CAMBER	3/16"	3/8"	5/16"	5/16"	3/16"	7/16"	5/8"	1"	1 1/16"	1"	5/8"	7/16"	3/16"	5/16"	5/16"	3/8"	3/16"
GIRDER G3	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/16"	1/8"	1/16"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	3/16"	3/8"	11/16"	3/4"	11/16"	3/8"	3/16"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/8"	1/8"	3/16"	3/16"	1/8"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-1/8"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-1/8"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/8"	3/16"	3/16"	1/16"	-1/8"	0	5/16"	5/8"	13/16"	11/16"	5/16"	0	-1/8"	1/16"	3/16"	3/16"	1/8"
GIRDER G4	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/16"	1/8"	1/16"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	3/16"	5/16"	11/16"	11/16"	11/16"	5/16"	3/16"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-1/8"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-1/8"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/16"	1/8"	1/16"	0	-3/16"	-1/16"	1/8"	1/2"	9/16"	1/2"	1/8"	-1/16"	-3/16"	0	1/16"	1/8"	1/16"
GIRDER G5	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/16"	1/8"	1/16"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	3/16"	5/16"	11/16"	11/16"	11/16"	5/16"	3/16"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-1/8"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-1/8"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/16"	1/8"	1/16"	0	-3/16"	-1/16"	1/8"	1/2"	9/16"	1/2"	1/8"	-1/16"	-3/16"	0	1/16"	1/8"	1/16"
GIRDER G6	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/16"	1/8"	1/16"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	3/16"	3/8"	11/16"	3/4"	11/16"	3/8"	3/16"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-1/8"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-1/8"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/8"	3/16"	1/8"	1/16"	-1/8"	0	1/4"	5/8"	3/4"	5/8"	1/4"	0	-1/8"	1/16"	1/8"	3/16"	1/8"
GIRDER G7	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	3/16"	5/16"	5/8"	11/16"	5/8"	5/16"	3/16"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-1/8"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-1/8"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/8"	3/16"	1/8"	1/16"	-1/8"	0	3/16"	5/8"	11/16"	5/8"	3/16"	0	-1/8"	1/16"	1/8"	3/16"	1/8"
GIRDER G8	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	0	0	0	0	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	1/8"	1/8"	1/16"	1/8"	3/16"	3/8"	7/16"	3/8"	3/16"	1/8"	1/16"	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-1/8"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-1/8"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/16"	0	0	0	-1/8"	-1/8"	0	1/4"	5/16"	1/4"	0	-1/16"	-1/8"	0	0	1/16"	1/16"

NOTES:

1. NEGATIVE VALUES FOR DEFLECTIONS INDICATE DEFLECTIONS UPWARD. NEGATIVE VALUES FOR VERTICAL CURVE ADJUSTMENT AND REQUIRED SHOP CAMBER INDICATE VALUES BELOW THE CHORD LINE.
2. DEFLECTIONS AND ADJUSTMENTS ARE GIVEN TO THE NEAREST 1/16th INCH.
3. CAMBER AT REAR ABUTMENT, PIER 1, PIER 2, AND FORWARD ABUTMENT IS 0 INCHES.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

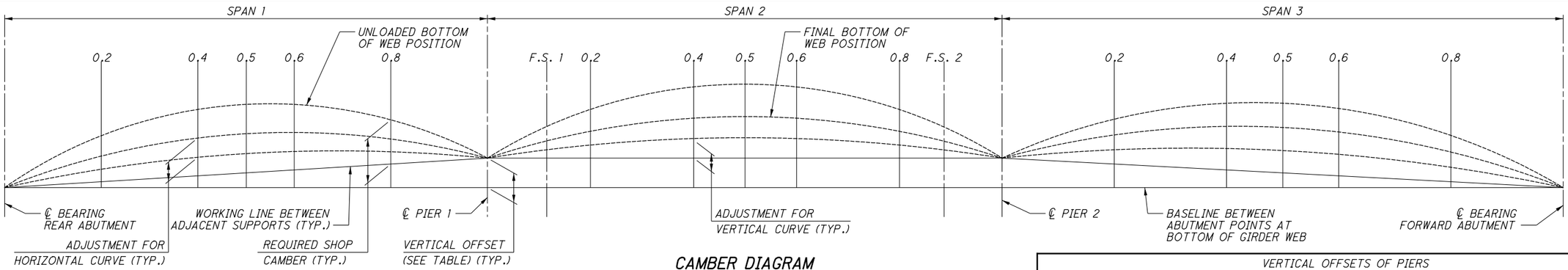
DESIGNED ZTW | CHECKED LAL
DRAWN ZTW | REVISED
REVIEWED NFF | DATE 5/16/19
STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE DEFLECTION AND CAMBER
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

37 / 67
158 / 196

...\Sheets\090_1785C_SS014.dgn 7/13/2020 11:35:37 AM HBaker



CAMBER DIAGRAM

VERTICAL OFFSETS OF PIERS								
BEARING POINT	GIRDER G9	GIRDER G10	GIRDER G11	GIRDER G12	GIRDER G13	GIRDER G14	GIRDER G15	GIRDER G16
PIER 1	1"	15/16"	9/16"	1/2"	1/2"	11/16"	5/8"	9/16"
PIER 2	1"	1 1/16"	1/2"	9/16"	9/16"	1/2"	9/16"	9/16"

CAMBER TABLE

		SPAN 1					SPAN 2							SPAN 3				
		0.2	0.4	0.5	0.6	0.8	F.S. 1	0.2	0.4	0.5	0.6	0.8	F.S. 2	0.2	0.4	0.5	0.6	0.8
GIRDER G9	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	1/8"	5/16"	9/16"	5/8"	9/16"	5/16"	1/8"	0	1/8"	1/8"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/8"	3/16"	3/16"	3/16"	1/8"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	1/8"	1/8"	1/16"
	REQUIRED SHOP CAMBER	1/4"	1/2"	1/2"	7/16"	5/16"	7/16"	13/16"	1 3/16"	1 1/4"	1 3/16"	13/16"	7/16"	5/16"	7/16"	7/16"	1/2"	1/4"
GIRDER G10	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"	1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	3/16"	3/8"	3/4"	13/16"	3/4"	3/8"	3/16"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	1/16"	1/8"	1/8"	3/16"	1/4"	3/16"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	1/8"	1/8"	1/16"
	REQUIRED SHOP CAMBER	5/16"	1/2"	1/2"	1/2"	3/8"	7/16"	11/16"	1 3/16"	1 5/16"	1 1/4"	13/16"	1/2"	5/16"	1/2"	1/2"	1/2"	5/16"
GIRDER G11	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"	1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	3/16"	7/16"	13/16"	7/8"	13/16"	7/16"	3/16"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-3/16"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	3/16"	3/16"	3/16"	1/16"	-1/8"	0	5/16"	13/16"	7/8"	13/16"	5/16"	0	-1/8"	1/16"	3/16"	3/16"	3/16"
GIRDER G12	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"	1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	3/16"	7/16"	13/16"	7/8"	13/16"	7/16"	3/16"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-3/16"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	3/16"	3/16"	3/16"	1/16"	-1/8"	0	5/16"	13/16"	7/8"	13/16"	5/16"	0	-1/8"	1/16"	3/16"	3/16"	3/16"
GIRDER G13	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"	1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	3/16"	7/16"	13/16"	7/8"	13/16"	7/16"	3/16"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-3/16"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	3/16"	3/16"	3/16"	1/16"	-1/8"	0	5/16"	13/16"	7/8"	13/16"	5/16"	0	-1/8"	1/16"	3/16"	3/16"	3/16"
GIRDER G14	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"	1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	3/16"	7/16"	13/16"	7/8"	13/16"	7/16"	3/16"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	3/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-3/16"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	3/16"	3/16"	3/16"	1/16"	-1/8"	0	5/16"	13/16"	7/8"	1 1/16"	5/16"	0	-1/8"	1/16"	3/16"	3/16"	3/16"
GIRDER G15	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"	1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"	1/8"	0	3/16"	3/8"	3/4"	13/16"	3/4"	3/8"	3/16"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-3/16"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	3/16"	3/16"	3/16"	1/16"	-1/8"	0	1/4"	3/4"	13/16"	3/4"	1/4"	0	-1/8"	1/16"	3/16"	3/16"	3/16"
GIRDER G16	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	1/16"	0	0	0	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	1/16"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"	1/8"	0	1/8"	5/16"	9/16"	9/16"	9/16"	5/16"	1/8"	0	1/8"	3/16"	3/16"	1/8"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVATURE	-1/16"	-1/8"	-1/8"	-3/16"	-3/16"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-1/4"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1/8"	3/16"	1/8"	0	-1/8"	-1/16"	3/16"	9/16"	9/16"	9/16"	3/16"	-1/16"	-1/8"	0	3/16"	3/16"	1/8"

NOTES:

1. NEGATIVE VALUES FOR DEFLECTIONS INDICATE DEFLECTIONS UPWARD. NEGATIVE VALUES FOR VERTICAL CURVE ADJUSTMENT AND REQUIRED SHOP CAMBER INDICATE VALUES BELOW THE CHORD LINE.
2. DEFLECTIONS AND ADJUSTMENTS ARE GIVEN TO THE NEAREST 1/16th INCH.
3. CAMBER AT REAR ABUTMENT, PIER 1, PIER 2, AND FORWARD ABUTMENT IS 0 INCHES.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN ZTW | REVIEWED NFF | DATE 5/16/19
CHECKED LAL | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

RIGHT BRIDGE DEFLECTION AND CAMBER
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

SPAN 1 SCREED ELEVATIONS

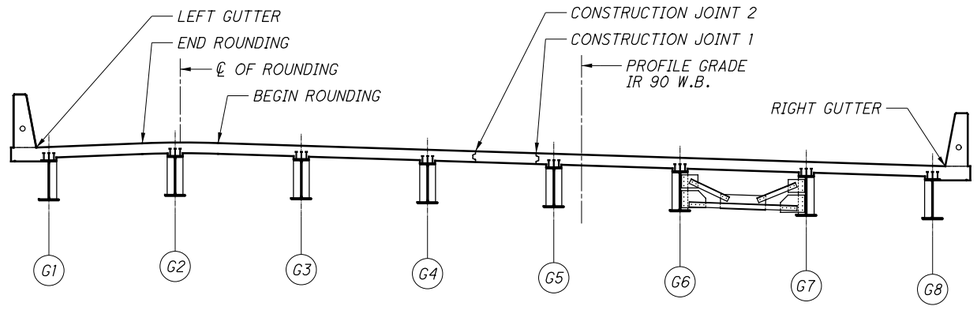
LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
LEFT GUTTER	STATION	927+42.27	927+51.77	927+61.27	927+66.02	927+70.77	927+80.27	927+89.77
	ELEVATION	661.29	661.31	661.33	661.33	661.33	661.33	661.33
END ROUNDING	STATION	927+39.39	927+48.90	927+58.41	927+63.17	927+67.93	927+77.44	927+86.95
	ELEVATION	661.57	661.59	661.60	661.61	661.61	661.61	661.61
℄ OF ROUNDING	STATION	927+38.35	927+47.87	927+57.39	927+62.15	927+66.90	927+76.42	927+85.94
	ELEVATION	661.66	661.69	661.70	661.71	661.71	661.70	661.71
BEGIN ROUNDING	STATION	927+37.32	927+46.84	927+56.36	927+61.13	927+65.89	927+75.41	927+84.93
	ELEVATION	661.57	661.60	661.61	661.62	661.62	661.61	661.62
CONSTRUCTION JOINT 2	STATION	927+30.26	927+39.82	927+49.37	927+54.15	927+58.93	927+68.48	927+78.04
	ELEVATION	660.95	660.98	660.99	661.00	661.00	661.00	661.00
CONSTRUCTION JOINT 1	STATION	927+28.60	927+38.16	927+47.72	927+52.51	927+57.29	927+66.85	927+76.41
	ELEVATION	660.80	660.83	660.85	660.85	660.85	660.85	660.86
PROFILE GRADE IR 90 W.B.	STATION	927+27.35	927+36.92	927+46.49	927+51.27	927+56.05	927+65.62	927+75.19
	ELEVATION	660.69	660.72	660.74	660.74	660.74	660.74	660.75
RIGHT GUTTER	STATION	927+17.28	927+26.90	927+36.51	927+41.32	927+46.13	927+55.74	927+65.36
	ELEVATION	659.81	659.84	659.86	659.86	659.87	659.87	659.88

SPAN 2 SCREED ELEVATIONS

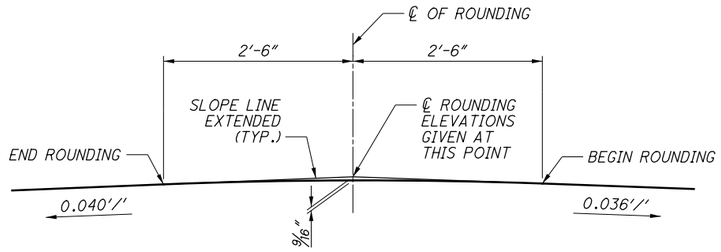
LOCATION		℄ PIER 1	℄ FIELD SPLICE 1	0.2	0.4	0.5	0.6	0.8	℄ FIELD SPLICE 2	℄ PIER 2
LEFT GUTTER	STATION	927+89.77	927+97.67	928+02.93	928+16.09	928+22.67	928+29.24	928+42.40	928+47.69	928+55.56
	ELEVATION	661.33	661.34	661.35	661.37	661.37	661.36	661.34	661.32	661.30
END ROUNDING	STATION	927+86.95	927+94.86	928+00.13	928+13.30	928+19.89	928+26.48	928+39.65	928+44.95	928+52.83
	ELEVATION	661.61	661.63	661.64	661.66	661.67	661.66	661.62	661.61	661.58
℄ OF ROUNDING	STATION	927+85.94	927+93.86	927+99.12	928+12.30	928+18.90	928+25.49	928+38.67	928+43.97	928+51.85
	ELEVATION	661.71	661.73	661.74	661.77	661.77	661.76	661.73	661.71	661.68
BEGIN ROUNDING	STATION	927+84.93	927+92.85	927+98.12	928+11.31	928+17.91	928+24.50	928+37.69	928+42.99	928+50.88
	ELEVATION	661.62	661.64	661.65	661.68	661.68	661.68	661.64	661.62	661.59
CONSTRUCTION JOINT 2	STATION	927+78.04	927+85.99	927+91.27	928+04.51	928+11.13	928+17.74	928+30.98	928+36.30	928+44.21
	ELEVATION	661.00	661.02	661.04	661.07	661.07	661.07	661.03	661.01	660.99
CONSTRUCTION JOINT 1	STATION	927+76.41	927+84.37	927+89.66	928+02.90	928+09.53	928+16.15	928+29.39	928+34.72	928+42.64
	ELEVATION	660.86	660.88	660.89	660.93	660.93	660.92	660.89	660.87	660.85
PROFILE GRADE IR 90 W.B.	STATION	927+75.19	927+83.15	927+88.44	928+01.69	928+08.32	928+14.95	928+28.20	928+33.53	928+41.45
	ELEVATION	660.75	660.77	660.79	660.82	660.82	660.82	660.78	660.76	660.74
RIGHT GUTTER	STATION	927+65.36	927+73.36	927+78.68	927+92.00	927+98.66	928+05.31	928+18.63	928+23.98	928+31.95
	ELEVATION	659.88	659.90	659.91	659.93	659.94	659.93	659.91	659.90	659.88

SPAN 3 SCREED ELEVATIONS

LOCATION		℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
LEFT GUTTER	STATION	928+55.56	928+64.98	928+74.41	928+79.12	928+83.83	928+93.26	929+02.68
	ELEVATION	661.30	661.29	661.29	661.28	661.27	661.25	661.22
END ROUNDING	STATION	928+52.83	928+62.27	928+71.71	928+76.43	928+81.14	928+90.58	929+00.02
	ELEVATION	661.58	661.57	661.57	661.57	661.56	661.54	661.51
℄ OF ROUNDING	STATION	928+51.85	928+61.29	928+70.74	928+75.46	928+80.18	928+89.63	928+99.07
	ELEVATION	661.68	661.68	661.67	661.67	661.66	661.64	661.61
BEGIN ROUNDING	STATION	928+50.88	928+60.33	928+69.77	928+74.50	928+79.22	928+88.66	928+98.11
	ELEVATION	661.59	661.59	661.58	661.58	661.57	661.55	661.52
CONSTRUCTION JOINT 2	STATION	928+44.21	928+53.69	928+63.17	928+67.91	928+72.65	928+82.13	928+91.61
	ELEVATION	660.99	660.98	660.98	660.98	660.97	660.95	660.92
CONSTRUCTION JOINT 1	STATION	928+42.64	928+52.13	928+61.61	928+66.36	928+71.10	928+80.58	928+90.07
	ELEVATION	660.85	660.84	660.84	660.84	660.83	660.81	660.78
PROFILE GRADE IR 90 W.B.	STATION	928+41.45	928+50.94	928+60.44	928+65.19	928+69.93	928+79.43	928+88.92
	ELEVATION	660.74	660.73	660.73	660.73	660.72	660.71	660.68
RIGHT GUTTER	STATION	928+31.95	928+41.49	928+51.03	928+55.80	928+60.56	928+70.10	928+79.64
	ELEVATION	659.88	659.88	659.88	659.88	659.87	659.85	659.83



LEFT BRIDGE TRANSVERSE SECTION



LEFT BRIDGE ROUNDING DETAIL

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR LEFT BRIDGE FINAL DECK SURFACE ELEVATIONS, SEE SHEETS 43/67 AND 44/67.
3. FOR LEFT BRIDGE DECK ELEVATIONS LAYOUT PLAN VIEW, SEE SHEET 43/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LAL		4704895/4704925	

LEFT BRIDGE SCREED ELEVATIONS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

39/67

160/196

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SPAN 1 SCREED ELEVATIONS

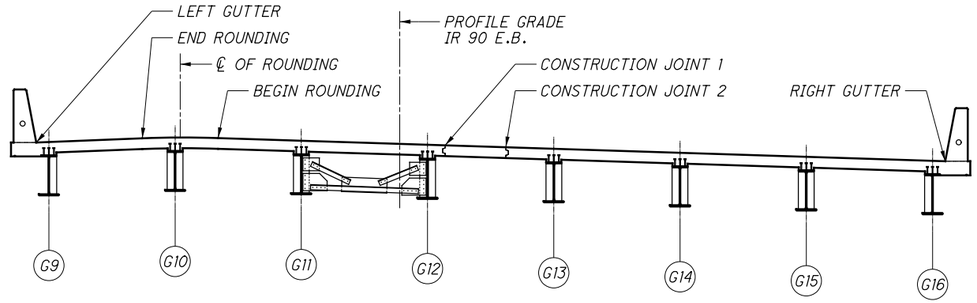
LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
LEFT GUTTER	STATION	926+95.27	927+05.45	927+15.63	927+20.72	927+25.81	927+35.99	927+46.17
	ELEVATION	660.73	660.77	660.80	660.81	660.81	660.82	660.83
END ROUNDING	STATION	926+91.09	927+01.29	927+11.48	927+16.58	927+21.68	927+31.87	927+42.07
	ELEVATION	661.00	661.04	661.07	661.08	661.08	661.09	661.11
℄ OF ROUNDING	STATION	926+89.60	926+99.80	927+10.00	927+15.11	927+20.21	927+30.41	927+40.61
	ELEVATION	661.10	661.14	661.17	661.17	661.18	661.19	661.20
BEGIN ROUNDING	STATION	926+88.10	926+98.31	927+08.52	927+13.62	927+18.72	927+28.93	927+39.14
	ELEVATION	661.00	661.04	661.07	661.08	661.09	661.10	661.11
PROFILE GRADE IR 90 E.B.	STATION	926+80.90	926+91.14	927+01.37	927+06.49	927+11.61	927+21.84	927+32.08
	ELEVATION	660.55	660.59	660.62	660.63	660.64	660.65	660.67
CONSTRUCTION JOINT 1	STATION	926+79.09	926+89.33	926+99.58	927+04.70	927+09.82	927+20.07	927+30.31
	ELEVATION	660.44	660.48	660.51	660.52	660.53	660.54	660.56
CONSTRUCTION JOINT 2	STATION	926+76.68	926+86.93	926+97.19	927+02.32	927+07.44	927+17.70	927+27.95
	ELEVATION	660.29	660.33	660.36	660.37	660.38	660.39	660.41
RIGHT GUTTER	STATION	926+59.06	926+69.39	926+79.71	926+84.88	926+90.04	927+00.36	927+10.69
	ELEVATION	659.19	659.23	659.27	659.28	659.29	659.31	659.33

SPAN 2 SCREED ELEVATIONS

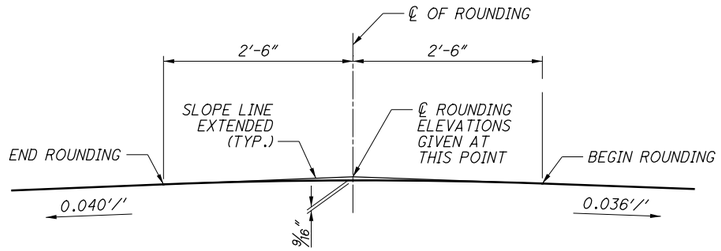
LOCATION		℄ PIER 1	℄ FIELD SPLICE 1	0.2	0.4	0.5	0.6	0.8	℄ FIELD SPLICE 2	℄ PIER 2
LEFT GUTTER	STATION	927+46.17	927+53.70	927+60.04	927+73.92	927+80.86	927+87.79	928+01.67	928+08.05	928+15.54
	ELEVATION	660.83	660.86	660.88	660.92	660.93	660.93	660.91	660.89	660.88
END ROUNDING	STATION	927+42.07	927+49.62	927+55.97	927+69.86	927+76.81	927+83.76	927+97.65	928+04.05	928+11.55
	ELEVATION	661.11	661.14	661.16	661.21	661.22	661.22	661.19	661.18	661.16
℄ OF ROUNDING	STATION	927+40.61	927+48.16	927+54.51	927+68.42	927+75.37	927+82.32	927+96.23	928+02.62	928+10.13
	ELEVATION	661.20	661.23	661.26	661.31	661.32	661.32	661.29	661.28	661.26
BEGIN ROUNDING	STATION	927+39.14	927+46.70	927+53.05	927+66.96	927+73.92	927+80.88	927+94.79	928+01.19	928+08.70
	ELEVATION	661.11	661.14	661.17	661.22	661.23	661.23	661.20	661.19	661.17
PROFILE GRADE IR 90 E.B.	STATION	927+32.08	927+39.66	927+46.03	927+59.98	927+66.96	927+73.94	927+87.89	927+94.31	928+01.84
	ELEVATION	660.67	660.70	660.73	660.78	660.79	660.80	660.77	660.75	660.74
CONSTRUCTION JOINT 1	STATION	927+30.31	927+37.90	927+44.27	927+58.23	927+65.22	927+72.20	927+86.16	927+92.58	928+00.12
	ELEVATION	660.56	660.59	660.62	660.67	660.68	660.69	660.66	660.65	660.63
CONSTRUCTION JOINT 2	STATION	927+27.95	927+35.54	927+41.92	927+55.90	927+62.89	927+69.87	927+83.85	927+90.28	927+97.82
	ELEVATION	660.41	660.44	660.47	660.52	660.54	660.54	660.51	660.50	660.48
RIGHT GUTTER	STATION	927+10.69	927+18.34	927+24.76	927+38.83	927+45.87	927+52.91	927+66.98	927+73.45	927+81.05
	ELEVATION	659.33	659.36	659.39	659.44	659.45	659.46	659.45	659.44	659.43

SPAN 3 SCREED ELEVATIONS

LOCATION		℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
LEFT GUTTER	STATION	928+15.54	928+25.60	928+35.65	928+40.68	928+45.71	928+55.76	928+65.82
	ELEVATION	660.88	660.88	660.88	660.88	660.88	660.87	660.85
END ROUNDING	STATION	928+11.55	928+21.62	928+31.70	928+36.74	928+41.77	928+51.85	928+61.92
	ELEVATION	661.16	661.16	661.17	661.17	661.17	661.16	661.13
℄ OF ROUNDING	STATION	928+10.13	928+20.21	928+30.29	928+35.33	928+40.37	928+50.45	928+60.53
	ELEVATION	661.26	661.26	661.27	661.27	661.27	661.26	661.23
BEGIN ROUNDING	STATION	928+08.70	928+18.79	928+28.87	928+33.92	928+38.96	928+49.04	928+59.13
	ELEVATION	661.17	661.17	661.18	661.18	661.18	661.17	661.14
PROFILE GRADE IR 90 E.B.	STATION	928+01.84	928+11.95	928+22.07	928+27.13	928+32.18	928+42.30	928+52.41
	ELEVATION	660.74	660.74	660.75	660.75	660.75	660.74	660.72
CONSTRUCTION JOINT 1	STATION	928+00.12	928+10.24	928+20.36	928+25.42	928+30.48	928+40.60	928+50.72
	ELEVATION	660.63	660.63	660.64	660.64	660.64	660.63	660.61
CONSTRUCTION JOINT 2	STATION	927+97.82	928+07.95	928+18.08	928+23.15	928+28.21	928+38.34	928+48.47
	ELEVATION	660.48	660.49	660.50	660.50	660.50	660.49	660.47
RIGHT GUTTER	STATION	927+81.05	927+91.25	928+01.45	928+06.55	928+11.64	928+21.84	928+32.04
	ELEVATION	659.43	659.44	659.45	659.46	659.46	659.45	659.44



RIGHT BRIDGE TRANSVERSE SECTION



RIGHT BRIDGE ROUNDING DETAIL

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR RIGHT BRIDGE FINAL DECK SURFACE ELEVATIONS, SEE SHEETS 45/67 AND 46/67.
3. FOR RIGHT BRIDGE DECK ELEVATIONS LAYOUT PLAN VIEW, SEE SHEET 45/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LAL		4704895/4704925	

RIGHT BRIDGE SCREED ELEVATIONS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

40/67

161/196

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SPAN 1 TOP OF HAUNCH ELEVATIONS

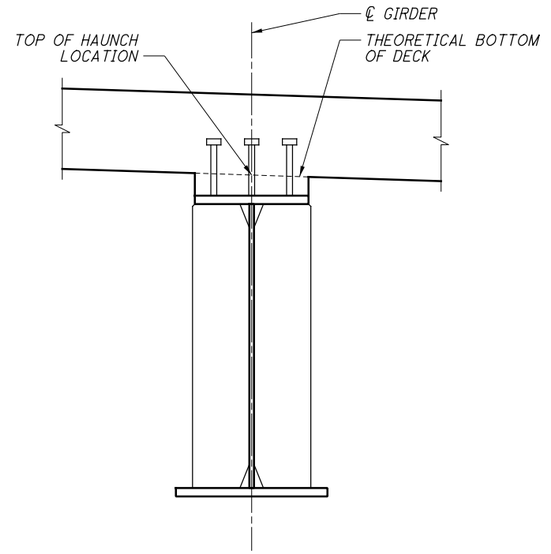
LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
GIRDER G1	STATION	927+41.94	927+51.41	927+60.88	927+65.62	927+70.36	927+79.83	927+89.30
	ELEVATION	660.61	660.64	660.66	660.66	660.66	660.66	660.67
GIRDER G2	STATION	927+38.52	927+48.00	927+57.49	927+62.23	927+66.98	927+76.46	927+85.95
	ELEVATION	660.94	660.97	660.99	660.99	660.99	660.99	661.00
GIRDER G3	STATION	927+35.09	927+44.59	927+54.09	927+58.83	927+63.58	927+73.08	927+82.58
	ELEVATION	660.67	660.69	660.70	660.70	660.70	660.70	660.70
GIRDER G4	STATION	927+31.65	927+41.16	927+50.67	927+55.43	927+60.18	927+69.70	927+79.21
	ELEVATION	660.36	660.39	660.40	660.40	660.40	660.40	660.40
GIRDER G5	STATION	927+28.19	927+37.72	927+47.25	927+52.01	927+56.77	927+66.30	927+75.83
	ELEVATION	660.06	660.08	660.10	660.10	660.10	660.09	660.10
GIRDER G6	STATION	927+24.73	927+34.27	927+43.81	927+48.58	927+53.35	927+62.89	927+72.44
	ELEVATION	659.76	659.78	659.79	659.79	659.80	659.79	659.79
GIRDER G7	STATION	927+21.26	927+30.82	927+40.37	927+45.15	927+49.92	927+59.48	927+69.03
	ELEVATION	659.45	659.48	659.49	659.49	659.49	659.49	659.49
GIRDER G8	STATION	927+17.78	927+27.35	927+36.92	927+41.70	927+46.48	927+56.05	927+65.62
	ELEVATION	659.15	659.17	659.18	659.19	659.19	659.19	659.19

SPAN 2 TOP OF HAUNCH ELEVATIONS

LOCATION		℄ PIER 1	℄ FIELD SPLICE 1	0.2	0.4	0.5	0.6	0.8	℄ FIELD SPLICE 2	℄ PIER 2
GIRDER G1	STATION	927+89.30	927+97.20	928+02.48	928+15.65	928+22.24	928+28.82	928+42.00	928+47.27	928+55.17
	ELEVATION	660.67	660.68	660.69	660.71	660.71	660.70	660.67	660.66	660.63
GIRDER G2	STATION	927+85.95	927+93.85	927+99.14	928+12.33	928+18.93	928+25.53	928+38.72	928+44.00	928+51.91
	ELEVATION	661.00	661.02	661.03	661.06	661.06	661.06	661.02	661.00	660.97
GIRDER G3	STATION	927+82.58	927+90.50	927+95.80	928+09.01	928+15.61	928+22.22	928+35.43	928+40.72	928+48.64
	ELEVATION	660.70	660.72	660.73	660.76	660.77	660.76	660.72	660.71	660.68
GIRDER G4	STATION	927+79.21	927+87.14	927+92.44	928+05.67	928+12.29	928+18.90	928+32.13	928+37.43	928+45.36
	ELEVATION	660.40	660.42	660.43	660.46	660.47	660.46	660.43	660.41	660.39
GIRDER G5	STATION	927+75.83	927+83.77	927+89.08	928+02.33	928+08.95	928+15.58	928+28.83	928+34.14	928+42.07
	ELEVATION	660.10	660.12	660.13	660.16	660.17	660.16	660.13	660.11	660.09
GIRDER G6	STATION	927+72.44	927+80.39	927+85.70	927+98.97	928+05.61	928+12.24	928+25.51	928+30.83	928+38.78
	ELEVATION	659.79	659.82	659.83	659.86	659.87	659.86	659.83	659.81	659.79
GIRDER G7	STATION	927+69.03	927+76.99	927+82.32	927+95.61	928+02.25	928+08.90	928+22.18	928+27.51	928+35.47
	ELEVATION	659.49	659.51	659.53	659.56	659.57	659.56	659.53	659.51	659.49
GIRDER G8	STATION	927+65.62	927+73.59	927+78.93	927+92.23	927+98.89	928+05.54	928+18.85	928+24.18	928+32.15
	ELEVATION	659.19	659.21	659.22	659.24	659.24	659.24	659.22	659.21	659.19

SPAN 3 TOP OF HAUNCH ELEVATIONS

LOCATION		℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
GIRDER G1	STATION	928+55.17	928+64.64	928+74.11	928+78.85	928+83.58	928+93.06	929+02.53
	ELEVATION	660.63	660.62	660.61	660.60	660.59	660.57	660.53
GIRDER G2	STATION	928+51.91	928+61.40	928+70.88	928+75.62	928+80.37	928+89.85	928+99.34
	ELEVATION	660.97	660.96	660.95	660.95	660.94	660.91	660.87
GIRDER G3	STATION	928+48.64	928+58.14	928+67.64	928+72.39	928+77.14	928+86.64	928+96.14
	ELEVATION	660.68	660.68	660.68	660.68	660.67	660.66	660.63
GIRDER G4	STATION	928+45.36	928+54.88	928+64.39	928+69.15	928+73.90	928+83.41	928+92.93
	ELEVATION	660.39	660.38	660.38	660.38	660.38	660.65	660.34
GIRDER G5	STATION	928+42.07	928+51.60	928+61.13	928+65.89	928+70.66	928+80.18	928+89.71
	ELEVATION	660.09	660.08	660.08	660.08	660.08	660.07	660.04
GIRDER G6	STATION	928+38.78	928+48.32	928+57.86	928+62.63	928+67.40	928+76.94	928+86.48
	ELEVATION	659.79	659.79	659.79	659.79	659.78	659.77	659.75
GIRDER G7	STATION	928+35.47	928+45.03	928+54.58	928+59.36	928+64.14	928+73.69	928+83.24
	ELEVATION	659.49	659.49	659.49	659.49	659.49	659.47	659.45
GIRDER G8	STATION	928+32.15	928+41.72	928+51.29	928+56.08	928+60.86	928+70.43	928+80.00
	ELEVATION	659.19	659.19	659.19	659.19	659.19	659.17	659.15



LEFT BRIDGE TOP OF HAUNCH DETAIL

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR LEFT BRIDGE FINAL DECK SURFACE ELEVATIONS, SEE SHEETS 43/67 AND 44/67.
3. FOR LEFT BRIDGE DECK ELEVATIONS LAYOUT PLAN VIEW, SEE SHEET 43/67.
4. FOR LEFT BRIDGE TRANSVERSE SECTION, SEE SHEET 47/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED LAL | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE TOP OF HAUNCH ELEVATIONS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

41/67
162/196

SPAN 1 TOP OF HAUNCH ELEVATIONS

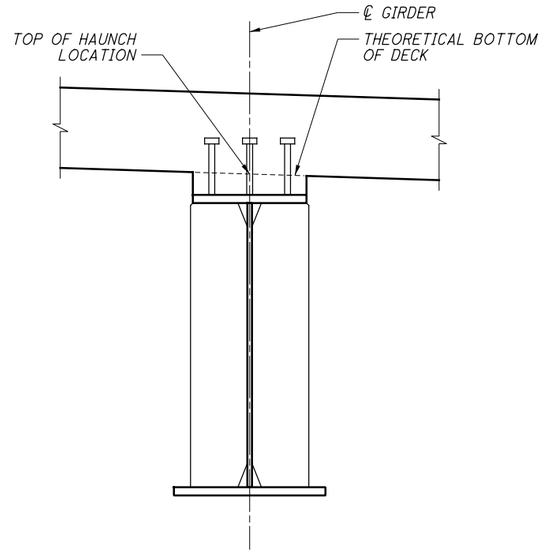
LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
GIRDER G9	STATION	926+94.78	927+04.91	927+15.05	927+20.11	927+25.18	927+35.31	927+45.45
	ELEVATION	660.06	660.10	660.13	660.14	660.15	660.16	660.17
GIRDER G10	STATION	926+89.84	926+99.99	927+10.14	927+15.21	927+20.29	927+30.43	927+40.58
	ELEVATION	660.37	660.42	660.45	660.46	660.47	660.48	660.49
GIRDER G11	STATION	926+84.89	926+95.05	927+05.21	927+10.29	927+15.38	927+25.54	927+35.70
	ELEVATION	660.09	660.13	660.15	660.16	660.17	660.17	660.19
GIRDER G12	STATION	926+79.92	926+90.10	927+00.28	927+05.36	927+10.45	927+20.63	927+30.81
	ELEVATION	659.78	659.82	659.84	659.85	659.86	659.86	659.88
GIRDER G13	STATION	926+74.94	926+85.13	926+95.32	927+00.42	927+05.51	927+15.71	927+25.90
	ELEVATION	659.47	659.51	659.53	659.54	659.55	659.56	659.57
GIRDER G14	STATION	926+69.94	926+80.15	926+90.36	926+95.46	927+00.56	927+10.77	927+20.98
	ELEVATION	659.16	659.20	659.22	659.23	659.24	659.25	659.26
GIRDER G15	STATION	926+64.93	926+75.15	926+85.37	926+90.48	926+95.60	927+05.82	927+16.04
	ELEVATION	658.85	658.89	658.91	658.92	658.93	658.94	658.96
GIRDER G16	STATION	926+59.91	926+70.14	926+80.38	926+85.50	926+90.61	927+00.85	927+11.09
	ELEVATION	658.53	658.57	658.60	658.61	658.62	658.63	658.65

SPAN 2 TOP OF HAUNCH ELEVATIONS

LOCATION		℄ PIER 1	℄ FIELD SPLICE 1	0.2	0.4	0.5	0.6	0.8	℄ FIELD SPLICE 2	℄ PIER 2
GIRDER G9	STATION	927+45.45	927+52.97	927+59.34	927+73.24	927+80.19	927+87.14	928+01.03	928+07.41	928+14.93
	ELEVATION	660.17	660.20	660.22	660.26	660.27	660.27	660.24	660.23	660.21
GIRDER G10	STATION	927+40.58	927+48.12	927+54.50	927+68.42	927+75.37	927+82.33	927+96.25	928+02.63	928+10.17
	ELEVATION	660.49	660.52	660.55	660.60	660.61	660.61	660.58	660.57	660.55
GIRDER G11	STATION	927+35.70	927+43.25	927+49.64	927+63.58	927+70.55	927+77.51	927+91.45	927+97.84	928+05.39
	ELEVATION	660.19	660.22	660.24	660.30	660.31	660.31	660.28	660.27	660.25
GIRDER G12	STATION	927+30.81	927+38.37	927+44.77	927+58.72	927+65.70	927+72.68	927+86.64	927+93.04	928+00.60
	ELEVATION	659.88	659.91	659.94	659.99	660.00	660.00	659.98	659.97	659.95
GIRDER G13	STATION	927+25.90	927+33.47	927+39.88	927+53.86	927+60.85	927+67.83	927+81.81	927+88.22	927+95.79
	ELEVATION	659.57	659.60	659.63	659.68	659.70	659.70	659.68	659.66	659.65
GIRDER G14	STATION	927+20.98	927+28.56	927+34.98	927+48.97	927+55.97	927+62.97	927+76.97	927+83.39	927+90.97
	ELEVATION	659.26	659.30	659.32	659.38	659.39	659.42	659.37	659.36	659.34
GIRDER G15	STATION	927+16.04	927+23.63	927+30.06	927+44.08	927+51.09	927+58.10	927+72.12	927+78.55	927+86.14
	ELEVATION	658.96	658.99	659.02	659.07	659.08	659.09	659.07	659.05	659.04
GIRDER G16	STATION	927+11.09	927+18.69	927+25.13	927+39.17	927+46.19	927+53.21	927+67.25	927+73.69	927+81.29
	ELEVATION	658.65	658.68	658.70	658.75	658.76	658.77	658.75	658.75	658.74

SPAN 3 TOP OF HAUNCH ELEVATIONS

LOCATION		℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
GIRDER G9	STATION	928+14.93	928+25.06	928+35.20	928+40.26	928+45.33	928+55.46	928+65.59
	ELEVATION	660.21	660.21	660.21	660.21	660.20	660.19	660.16
GIRDER G10	STATION	928+10.17	928+20.31	928+30.46	928+35.54	928+40.61	928+50.76	928+60.90
	ELEVATION	660.55	660.55	660.55	660.55	660.55	660.53	660.50
GIRDER G11	STATION	928+05.39	928+15.55	928+25.71	928+30.80	928+35.88	928+46.04	928+56.20
	ELEVATION	660.25	660.26	660.27	660.27	660.27	660.27	660.25
GIRDER G12	STATION	928+00.60	928+10.78	928+20.95	928+26.04	928+31.13	928+41.31	928+51.48
	ELEVATION	659.95	659.95	659.97	659.97	659.97	659.97	659.95
GIRDER G13	STATION	927+95.79	928+05.98	928+16.18	928+21.27	928+26.37	928+36.56	928+46.75
	ELEVATION	659.65	659.65	659.67	659.67	659.67	659.67	659.65
GIRDER G14	STATION	927+90.97	928+01.18	928+11.39	928+16.49	928+21.60	928+31.80	928+42.01
	ELEVATION	659.34	659.35	659.37	659.37	659.37	659.37	659.35
GIRDER G15	STATION	927+86.14	927+96.36	928+06.58	928+11.69	928+16.81	928+27.03	928+37.25
	ELEVATION	659.04	659.05	659.06	659.07	659.07	659.07	659.05
GIRDER G16	STATION	927+81.29	927+91.53	928+01.77	928+06.88	928+12.00	928+22.24	928+32.48
	ELEVATION	658.74	658.75	658.76	658.77	658.77	658.77	658.76



RIGHT BRIDGE TOP OF HAUNCH DETAIL

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR RIGHT BRIDGE FINAL DECK SURFACE ELEVATIONS, SEE SHEETS 45/67 AND 46/67.
3. FOR RIGHT BRIDGE DECK ELEVATIONS LAYOUT PLAN VIEW, SEE SHEET 45/67.
4. FOR RIGHT BRIDGE TRANSVERSE SECTION, SEE SHEET 48/67.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LAL		4704895/4704925	

RIGHT BRIDGE TOP OF HAUNCH ELEVATIONS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

42/67

163
196

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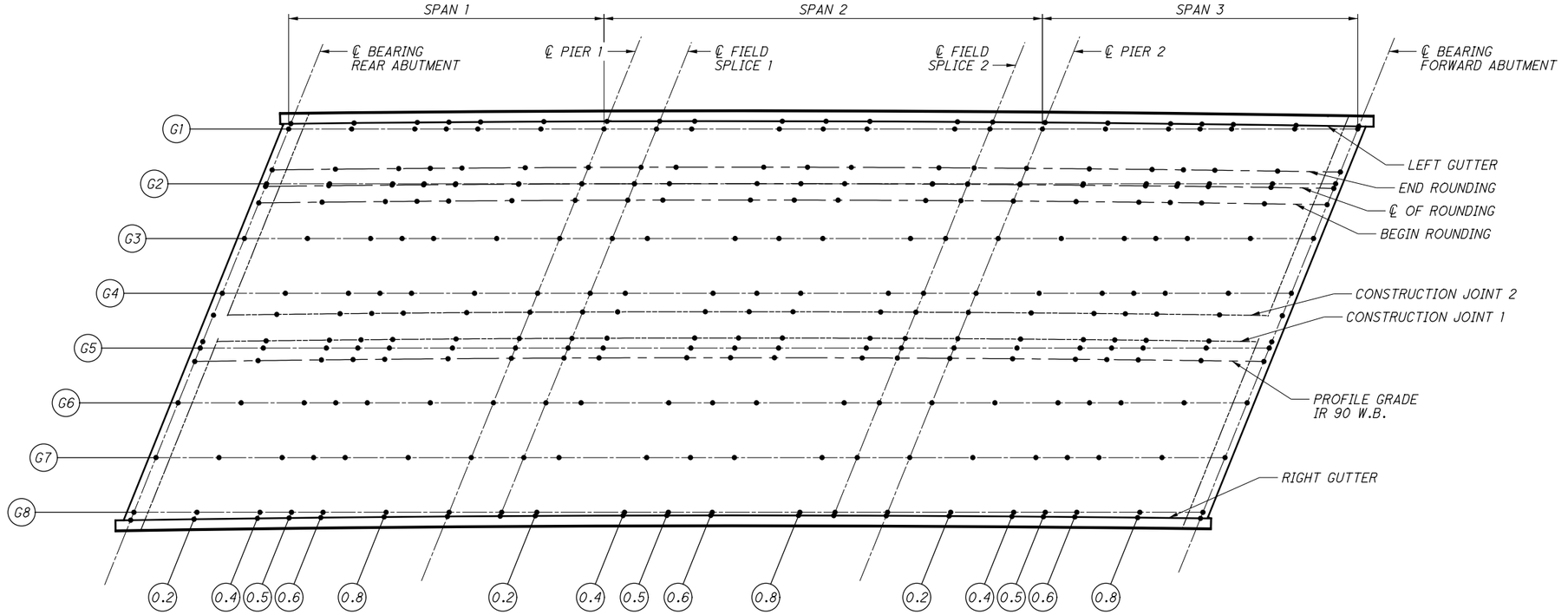

BRIDGE DECK ELEVATIONS LAYOUT

NOTES:

1. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
2. FOR LEFT BRIDGE SPAN 2 AND SPAN 3 ELEVATIONS, SEE SHEET 44/67.

FINAL DECK SURFACE ELEVATIONS - SPAN 1

LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
LEFT GUTTER	STATION	927+42.27	927+51.77	927+61.27	927+66.02	927+70.77	927+80.27	927+89.77
	ELEVATION	661.29	661.30	661.31	661.31	661.32	661.32	661.33
GIRDER G1	STATION	927+41.94	927+51.41	927+60.88	927+65.62	927+70.36	927+79.83	927+89.30
	ELEVATION	661.32	661.34	661.35	661.36	661.36	661.37	661.37
END ROUNDING	STATION	927+39.39	927+48.90	927+58.41	927+63.17	927+67.93	927+77.44	927+86.95
	ELEVATION	661.57	661.58	661.59	661.59	661.60	661.60	661.61
GIRDER G2	STATION	927+38.52	927+48.00	927+57.49	927+62.23	927+66.98	927+76.46	927+85.95
	ELEVATION	661.65	661.67	661.68	661.69	661.69	661.70	661.71
℄ OF ROUNDING	STATION	927+38.35	927+47.87	927+57.39	927+62.15	927+66.90	927+76.42	927+85.94
	ELEVATION	661.66	661.68	661.69	661.69	661.70	661.70	661.71
BEGIN ROUNDING	STATION	927+37.32	927+46.84	927+56.36	927+61.13	927+65.89	927+75.41	927+84.93
	ELEVATION	661.57	661.59	661.60	661.60	661.60	661.61	661.62
GIRDER G3	STATION	927+35.09	927+44.59	927+54.09	927+58.83	927+63.58	927+73.08	927+82.58
	ELEVATION	661.38	661.38	661.39	661.40	661.40	661.40	661.41
GIRDER G4	STATION	927+31.65	927+41.16	927+50.67	927+55.43	927+60.18	927+69.70	927+79.21
	ELEVATION	661.07	661.08	661.09	661.09	661.10	661.10	661.10

FINAL DECK SURFACE ELEVATIONS - SPAN 1

LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
CONSTRUCTION JOINT 2	STATION	927+30.26	927+39.82	927+49.37	927+54.15	927+58.93	927+68.48	927+78.04
	ELEVATION	660.95	660.96	660.98	660.98	660.99	660.99	661.00
CONSTRUCTION JOINT 1	STATION	927+28.60	927+38.16	927+47.72	927+52.51	927+57.29	927+66.85	927+76.41
	ELEVATION	660.80	660.82	660.83	660.84	660.84	660.85	660.86
GIRDER G5	STATION	927+28.19	927+37.72	927+47.25	927+52.01	927+56.77	927+66.30	927+75.83
	ELEVATION	660.77	660.78	660.79	660.79	660.79	660.80	660.80
PROFILE GRADE IR 90 W.B.	STATION	927+27.35	927+36.92	927+46.49	927+51.27	927+56.05	927+65.62	927+75.19
	ELEVATION	660.69	660.71	660.72	660.73	660.73	660.74	660.75
GIRDER G6	STATION	927+24.73	927+34.27	927+43.81	927+48.58	927+53.35	927+62.89	927+72.44
	ELEVATION	660.46	660.48	660.48	660.49	660.49	660.50	660.50
GIRDER G7	STATION	927+21.26	927+30.82	927+40.37	927+45.15	927+49.92	927+59.48	927+69.03
	ELEVATION	660.16	660.17	660.18	660.19	660.19	660.20	660.20
GIRDER G8	STATION	927+17.78	927+27.35	927+36.92	927+41.70	927+46.48	927+56.05	927+65.62
	ELEVATION	659.86	659.87	659.88	659.88	659.89	659.89	659.90
RIGHT GUTTER	STATION	927+17.28	927+26.90	927+36.51	927+41.32	927+46.13	927+55.74	927+65.36
	ELEVATION	659.81	659.83	659.84	659.85	659.86	659.87	659.88

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
GJZ		4704895/4704925	

LEFT BRIDGE FINAL DECK SURFACE ELEVATIONS - 1
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

43/67

164/196

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FINAL DECK SURFACE ELEVATIONS - SPAN 2

LOCATION		℄ PIER 1	℄ FIELD SPLICE 1	0.2	0.4	0.5	0.6	0.8	℄ FIELD SPLICE 2	℄ PIER 2
LEFT GUTTER	STATION	927+89.77	927+97.67	928+02.93	928+16.09	928+22.67	928+29.24	928+42.40	928+47.69	928+55.56
	ELEVATION	661.33	661.33	661.33	661.33	661.33	661.32	661.31	661.31	661.30
GIRDER G1	STATION	927+89.30	927+97.20	928+02.48	928+15.65	928+22.24	928+28.82	928+42.00	928+47.27	928+55.17
	ELEVATION	661.37	661.38	661.38	661.38	661.37	661.37	661.36	661.35	661.34
END ROUNDING	STATION	927+86.95	927+94.86	928+00.13	928+13.30	928+19.89	928+26.48	928+39.65	928+44.95	928+52.83
	ELEVATION	661.61	661.61	661.61	661.61	661.61	661.60	661.59	661.59	661.58
GIRDER G2	STATION	927+85.95	927+93.85	927+99.14	928+12.33	928+18.93	928+25.53	928+38.72	928+44.00	928+51.91
	ELEVATION	661.71	661.71	661.71	661.71	661.71	661.70	661.69	661.69	661.68
℄ OF ROUNDING	STATION	927+85.94	927+93.86	927+99.12	928+12.30	928+18.90	928+25.49	928+38.67	928+43.97	928+51.85
	ELEVATION	661.71	661.71	661.71	661.71	661.71	661.70	661.70	661.69	661.68
BEGIN ROUNDING	STATION	927+84.93	927+92.85	927+98.12	928+11.31	928+17.91	928+24.50	928+37.69	928+42.99	928+50.88
	ELEVATION	661.62	661.62	661.62	661.62	661.62	661.61	661.61	661.60	661.59
GIRDER G3	STATION	927+82.58	927+90.50	927+95.80	928+09.01	928+15.61	928+22.22	928+35.43	928+40.72	928+48.64
	ELEVATION	661.41	661.41	661.41	661.41	661.41	661.40	661.40	661.40	661.39
GIRDER G4	STATION	927+79.21	927+87.14	927+92.44	928+05.67	928+12.29	928+18.90	928+32.13	928+37.43	928+45.36
	ELEVATION	661.10	661.11	661.11	661.11	661.11	661.11	661.10	661.10	661.09
CONSTRUCTION JOINT 2	STATION	927+78.04	927+85.99	927+91.27	928+04.51	928+11.13	928+17.74	928+30.98	928+36.30	928+44.21
	ELEVATION	661.00	661.00	661.01	661.01	661.01	661.00	661.00	661.00	660.99
CONSTRUCTION JOINT 1	STATION	927+76.41	927+84.37	927+89.66	928+02.90	928+09.53	928+16.15	928+29.39	928+34.72	928+42.64
	ELEVATION	660.86	660.86	660.86	660.86	660.86	660.86	660.86	660.85	660.85
GIRDER G5	STATION	927+75.83	927+83.77	927+89.08	928+02.33	928+08.95	928+15.58	928+28.83	928+34.14	928+42.07
	ELEVATION	660.80	660.81	660.81	660.81	660.81	660.81	660.80	660.80	660.80
PROFILE GRADE IR 90 W.B.	STATION	927+75.19	927+83.15	927+88.44	928+01.69	928+08.32	928+14.95	928+28.20	928+33.53	928+41.45
	ELEVATION	660.75	660.75	660.75	660.76	660.75	660.75	660.75	660.75	660.74
GIRDER G6	STATION	927+72.44	927+80.39	927+85.70	927+98.97	928+05.61	928+12.24	928+25.51	928+30.83	928+38.78
	ELEVATION	660.50	660.51	660.51	660.51	660.51	660.51	660.50	660.50	660.50
GIRDER G7	STATION	927+69.03	927+76.99	927+82.32	927+95.61	928+02.25	928+08.90	928+22.18	928+27.51	928+35.47
	ELEVATION	660.20	660.20	660.21	660.21	660.21	660.21	660.20	660.20	660.20
GIRDER G8	STATION	927+65.62	927+73.59	927+78.93	927+92.23	927+98.89	928+05.54	928+18.85	928+24.18	928+32.15
	ELEVATION	659.90	659.90	659.90	659.91	659.91	659.91	659.91	659.90	659.90
RIGHT GUTTER	STATION	927+65.36	927+73.36	927+78.68	927+92.00	927+98.66	928+05.31	928+18.63	928+23.98	928+31.95
	ELEVATION	659.88	659.88	659.88	659.89	659.89	659.89	659.89	659.89	659.88

FINAL DECK SURFACE ELEVATIONS - SPAN 3

LOCATION		℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
LEFT GUTTER	STATION	928+55.56	928+64.98	928+74.41	928+79.12	928+83.83	928+93.26	929+02.68
	ELEVATION	661.30	661.29	661.28	661.27	661.26	661.24	661.22
GIRDER G1	STATION	928+55.17	928+64.64	928+74.11	928+78.85	928+83.58	928+93.06	929+02.53
	ELEVATION	661.34	661.33	661.31	661.30	661.29	661.27	661.24
END ROUNDING	STATION	928+52.83	928+62.27	928+71.71	928+76.43	928+81.14	928+90.58	929+00.02
	ELEVATION	661.58	661.57	661.56	661.55	661.54	661.53	661.51
GIRDER G2	STATION	928+51.91	928+61.40	928+70.88	928+75.62	928+80.37	928+89.85	928+99.34
	ELEVATION	661.68	661.66	661.65	661.64	661.63	661.61	661.58
℄ OF ROUNDING	STATION	928+51.85	928+61.29	928+70.74	928+75.46	928+80.18	928+89.63	928+99.07
	ELEVATION	661.68	661.67	661.66	661.65	661.65	661.63	661.61
BEGIN ROUNDING	STATION	928+50.88	928+60.33	928+69.77	928+74.50	928+79.22	928+88.66	928+98.11
	ELEVATION	661.59	661.58	661.57	661.56	661.56	661.54	661.52
GIRDER G3	STATION	928+48.64	928+58.14	928+67.64	928+72.39	928+77.14	928+86.64	928+96.14
	ELEVATION	661.39	661.38	661.37	661.37	661.36	661.35	661.34
GIRDER G4	STATION	928+45.36	928+54.88	928+64.39	928+69.15	928+73.90	928+83.41	928+92.93
	ELEVATION	661.09	661.09	661.08	661.07	661.07	661.06	661.04
CONSTRUCTION JOINT 2	STATION	928+44.21	928+53.69	928+63.17	928+67.91	928+72.65	928+82.13	928+91.61
	ELEVATION	660.99	660.98	660.97	660.96	660.96	660.94	660.92
CONSTRUCTION JOINT 1	STATION	928+42.64	928+52.13	928+61.61	928+66.36	928+71.10	928+80.58	928+90.07
	ELEVATION	660.85	660.84	660.83	660.82	660.81	660.80	660.78
GIRDER G5	STATION	928+42.07	928+51.60	928+61.13	928+65.89	928+70.66	928+80.18	928+89.71
	ELEVATION	660.80	660.79	660.78	660.78	660.77	660.76	660.75
PROFILE GRADE IR 90 W.B.	STATION	928+41.45	928+50.94	928+60.44	928+65.19	928+69.93	928+79.43	928+88.92
	ELEVATION	660.74	660.73	660.72	660.71	660.71	660.69	660.68
GIRDER G6	STATION	928+38.78	928+48.32	928+57.86	928+62.63	928+67.40	928+76.94	928+86.48
	ELEVATION	660.50	660.49	660.48	660.48	660.48	660.47	660.45
GIRDER G7	STATION	928+35.47	928+45.03	928+54.58	928+59.36	928+64.14	928+73.69	928+83.24
	ELEVATION	660.20	660.19	660.19	660.18	660.18	660.17	660.16
GIRDER G8	STATION	928+32.15	928+41.72	928+51.29	928+56.08	928+60.86	928+70.43	928+80.00
	ELEVATION	659.90	659.90	659.89	659.89	659.89	659.87	659.86
RIGHT GUTTER	STATION	928+31.95	928+41.49	928+51.03	928+55.80	928+60.56	928+70.10	928+79.64
	ELEVATION	659.88	659.88	659.87	659.86	659.86	659.84	659.83

NOTES:

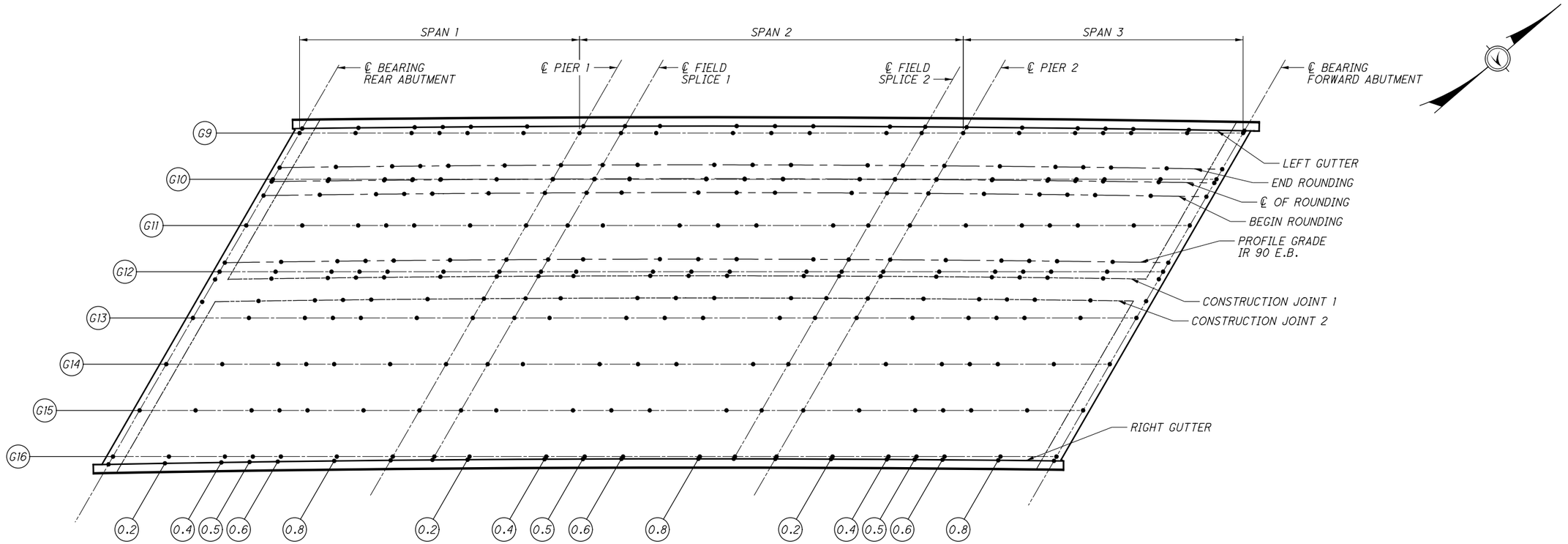
1. *FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.*
2. *FOR LEFT BRIDGE DECK ELEVATIONS LAYOUT AND SPAN 1 ELEVATIONS, SEE SHEET 43/67.*

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
GJZ		4704895/4704925	

LEFT BRIDGE FINAL DECK SURFACE ELEVATIONS - 2
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



RIGHT BRIDGE DECK ELEVATIONS LAYOUT

NOTES:

1. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
2. FOR RIGHT BRIDGE SPAN 2 AND SPAN 3 ELEVATIONS, SEE SHEET 46/67.

FINAL DECK SURFACE ELEVATIONS - SPAN 1

LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
LEFT GUTTER	STATION	926+95.27	927+05.45	927+15.63	927+20.72	927+25.81	927+35.99	927+46.17
	ELEVATION	660.73	660.76	660.78	660.79	660.80	660.82	660.83
GIRDER G9	STATION	926+94.78	927+04.91	927+15.05	927+20.11	927+25.18	927+35.31	927+45.45
	ELEVATION	660.76	660.79	660.82	660.83	660.84	660.86	660.88
END ROUNDING	STATION	926+91.09	927+01.29	927+11.48	927+16.58	927+21.68	927+31.87	927+42.07
	ELEVATION	661.00	661.03	661.05	661.06	661.07	661.09	661.11
GIRDER G10	STATION	926+89.84	926+99.99	927+10.14	927+15.21	927+20.29	927+30.43	927+40.58
	ELEVATION	661.08	661.11	661.14	661.15	661.16	661.19	661.20
℄ OF ROUNDING	STATION	926+89.60	926+99.80	927+10.00	927+15.11	927+20.21	927+30.41	927+40.61
	ELEVATION	661.10	661.12	661.15	661.16	661.17	661.19	661.20
BEGIN ROUNDING	STATION	926+88.10	926+98.31	927+08.52	927+13.62	927+18.72	927+28.93	927+39.14
	ELEVATION	661.00	661.03	661.05	661.06	661.07	661.09	661.11
GIRDER G11	STATION	926+84.89	926+95.05	927+05.21	927+10.29	927+15.38	927+25.54	927+35.70
	ELEVATION	660.80	660.82	660.84	660.85	660.86	660.88	660.90
PROFILE GRADE IR 90 E.B.	STATION	926+80.90	926+91.14	927+01.37	927+06.49	927+11.61	927+21.84	927+32.08
	ELEVATION	660.55	660.58	660.60	660.62	660.63	660.65	660.67

FINAL DECK SURFACE ELEVATIONS - SPAN 1

LOCATION		℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
GIRDER G12	STATION	926+79.92	926+90.10	927+00.28	927+05.36	927+10.45	927+20.63	927+30.81
	ELEVATION	660.49	660.51	660.53	660.54	660.55	660.57	660.59
CONSTRUCTION JOINT 1	STATION	926+79.09	926+89.33	926+99.58	927+04.70	927+09.82	927+20.07	927+30.31
	ELEVATION	660.44	660.47	660.49	660.50	660.52	660.54	660.56
CONSTRUCTION JOINT 2	STATION	926+76.68	926+86.93	926+97.19	927+02.32	927+07.44	927+17.70	927+27.95
	ELEVATION	660.29	660.32	660.34	660.35	660.37	660.39	660.41
GIRDER G13	STATION	926+74.94	926+85.13	926+95.32	927+00.42	927+05.51	927+15.71	927+25.90
	ELEVATION	660.18	660.20	660.22	660.23	660.24	660.26	660.28
GIRDER G14	STATION	926+69.94	926+80.15	926+90.36	926+95.46	927+00.56	927+10.77	927+20.98
	ELEVATION	659.87	659.89	659.91	659.92	659.93	659.95	659.97
GIRDER G15	STATION	926+64.93	926+75.15	926+85.37	926+90.48	926+95.60	927+05.82	927+16.04
	ELEVATION	659.55	659.58	659.60	659.61	659.62	659.64	659.66
GIRDER G16	STATION	926+59.91	926+70.14	926+80.38	926+85.50	926+90.61	927+00.85	927+11.09
	ELEVATION	659.24	659.27	659.29	659.30	659.31	659.34	659.35
RIGHT GUTTER	STATION	926+59.06	926+69.39	926+79.71	926+84.88	926+90.04	927+00.36	927+10.69
	ELEVATION	659.19	659.22	659.25	659.27	659.28	659.31	659.33

DESIGN AGENCY
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ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
GJZ		4704895/4704925	

RIGHT BRIDGE FINAL DECK SURFACE ELEVATIONS - 1

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

FINAL DECK SURFACE ELEVATIONS - SPAN 2

LOCATION		℄ PIER 1	℄ FIELD SPLICE 1	0.2	0.4	0.5	0.6	0.8	℄ FIELD SPLICE 2	℄ PIER 2
LEFT GUTTER	STATION	927+46.17	927+53.70	927+60.04	927+73.92	927+80.86	927+87.79	928+01.67	928+08.05	928+15.54
	ELEVATION	660.83	660.84	660.85	660.86	660.87	660.87	660.88	660.88	660.88
GIRDER G9	STATION	927+45.45	927+52.97	927+59.34	927+73.24	927+80.19	927+87.14	928+01.03	928+07.41	928+14.93
	ELEVATION	660.88	660.89	660.90	660.91	660.92	660.92	660.92	660.92	660.92
END ROUNDING	STATION	927+42.07	927+49.62	927+55.97	927+69.86	927+76.81	927+83.76	927+97.65	928+04.05	928+11.55
	ELEVATION	661.11	661.12	661.12	661.14	661.14	661.15	661.16	661.16	661.16
GIRDER G10	STATION	927+40.58	927+48.12	927+54.50	927+68.42	927+75.37	927+82.33	927+96.25	928+02.63	928+10.17
	ELEVATION	661.20	661.21	661.22	661.23	661.24	661.25	661.25	661.26	661.26
℄ OF ROUNDING	STATION	927+40.61	927+48.16	927+54.51	927+68.42	927+75.37	927+82.32	927+96.23	928+02.62	928+10.13
	ELEVATION	661.20	661.21	661.22	661.24	661.24	661.25	661.26	661.26	661.26
BEGIN ROUNDING	STATION	927+39.14	927+46.70	927+53.05	927+66.96	927+73.92	927+80.88	927+94.79	928+01.19	928+08.70
	ELEVATION	661.11	661.12	661.13	661.15	661.15	661.16	661.17	661.17	661.17
GIRDER G11	STATION	927+35.70	927+43.25	927+49.64	927+63.58	927+70.55	927+77.51	927+91.45	927+97.84	928+05.39
	ELEVATION	660.90	660.91	660.91	660.93	660.94	660.94	660.95	660.96	660.96
PROFILE GRADE IR 90 E.B.	STATION	927+32.08	927+39.66	927+46.03	927+59.98	927+66.96	927+73.94	927+87.89	927+94.31	928+01.84
	ELEVATION	660.67	660.68	660.69	660.71	660.71	660.72	660.73	660.73	660.74
GIRDER G12	STATION	927+30.81	927+38.37	927+44.77	927+58.72	927+65.70	927+72.68	927+86.64	927+93.04	928+00.60
	ELEVATION	660.59	660.60	660.61	660.62	660.63	660.64	660.65	660.65	660.66
CONSTRUCTION JOINT 1	STATION	927+30.31	927+37.90	927+44.27	927+58.23	927+65.22	927+72.20	927+86.16	927+92.58	928+00.12
	ELEVATION	660.56	660.57	660.58	660.60	660.60	660.61	660.62	660.62	660.63
CONSTRUCTION JOINT 2	STATION	927+27.95	927+35.54	927+41.92	927+55.90	927+62.89	927+69.87	927+83.85	927+90.28	927+97.82
	ELEVATION	660.41	660.42	660.43	660.45	660.46	660.47	660.48	660.48	660.48
GIRDER G13	STATION	927+25.90	927+33.47	927+39.88	927+53.86	927+60.85	927+67.83	927+81.81	927+88.22	927+95.79
	ELEVATION	660.28	660.29	660.30	660.32	660.33	660.33	660.35	660.35	660.35
GIRDER G14	STATION	927+20.98	927+28.56	927+34.98	927+48.97	927+55.97	927+62.97	927+76.97	927+83.39	927+90.97
	ELEVATION	659.97	659.98	659.99	660.01	660.02	660.03	660.04	660.05	660.05
GIRDER G15	STATION	927+16.04	927+23.63	927+30.06	927+44.08	927+51.09	927+58.10	927+72.12	927+78.55	927+86.14
	ELEVATION	659.66	659.68	659.69	659.71	659.72	659.72	659.74	659.74	659.75
GIRDER G16	STATION	927+11.09	927+18.69	927+25.13	927+39.17	927+46.19	927+53.21	927+67.25	927+73.69	927+81.29
	ELEVATION	659.35	659.37	659.38	659.40	659.41	659.42	659.43	659.44	659.45
RIGHT GUTTER	STATION	927+10.69	927+18.34	927+24.76	927+38.83	927+45.87	927+52.91	927+66.98	927+73.45	927+81.05
	ELEVATION	659.33	659.35	659.36	659.38	659.39	659.40	659.42	659.42	659.43

FINAL DECK SURFACE ELEVATIONS - SPAN 3

LOCATION		℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
LEFT GUTTER	STATION	928+15.54	928+25.60	928+35.65	928+40.68	928+45.71	928+55.76	928+65.82
	ELEVATION	660.88	660.88	660.87	660.87	660.87	660.86	660.85
GIRDER G9	STATION	928+14.93	928+25.06	928+35.20	928+40.26	928+45.33	928+55.46	928+65.59
	ELEVATION	660.92	660.92	660.91	660.90	660.90	660.88	660.86
END ROUNDING	STATION	928+11.55	928+21.62	928+31.70	928+36.74	928+41.77	928+51.85	928+61.92
	ELEVATION	661.16	661.16	661.15	661.15	661.15	661.14	661.13
GIRDER G10	STATION	928+10.17	928+20.31	928+30.46	928+35.54	928+40.61	928+50.76	928+60.90
	ELEVATION	661.26	661.25	661.24	661.24	661.23	661.22	661.21
℄ OF ROUNDING	STATION	928+10.13	928+20.21	928+30.29	928+35.33	928+40.37	928+50.45	928+60.53
	ELEVATION	661.26	661.26	661.25	661.25	661.25	661.24	661.23
BEGIN ROUNDING	STATION	928+08.70	928+18.79	928+28.87	928+33.92	928+38.96	928+49.04	928+59.13
	ELEVATION	661.17	661.17	661.17	661.16	661.16	661.15	661.14
GIRDER G11	STATION	928+05.39	928+15.55	928+25.71	928+30.80	928+35.88	928+46.04	928+56.20
	ELEVATION	660.96	660.96	660.96	660.96	660.96	660.96	660.96
PROFILE GRADE IR 90 E.B.	STATION	928+01.84	928+11.95	928+22.07	928+27.13	928+32.18	928+42.30	928+52.41
	ELEVATION	660.74	660.74	660.74	660.73	660.73	660.73	660.72
GIRDER G12	STATION	928+00.60	928+10.78	928+20.95	928+26.04	928+31.13	928+41.31	928+51.48
	ELEVATION	660.66	660.66	660.66	660.66	660.66	660.66	660.66
CONSTRUCTION JOINT 1	STATION	928+00.12	928+10.24	928+20.36	928+25.42	928+30.48	928+40.60	928+50.72
	ELEVATION	660.63	660.63	660.63	660.63	660.62	660.62	660.61
CONSTRUCTION JOINT 2	STATION	927+97.82	928+07.95	928+18.08	928+23.15	928+28.21	928+38.34	928+48.47
	ELEVATION	660.48	660.48	660.48	660.48	660.48	660.48	660.47
GIRDER G13	STATION	927+95.79	928+05.98	928+16.18	928+21.27	928+26.37	928+36.56	928+46.75
	ELEVATION	660.35	660.36	660.36	660.36	660.36	660.36	660.36
GIRDER G14	STATION	927+90.97	928+01.18	928+11.39	928+16.49	928+21.60	928+31.80	928+42.01
	ELEVATION	660.05	660.06	660.06	660.06	660.06	660.06	660.06
GIRDER G15	STATION	927+86.14	927+96.36	928+06.58	928+11.69	928+16.81	928+27.03	928+37.25
	ELEVATION	659.75	659.75	659.76	659.76	659.76	659.76	659.76
GIRDER G16	STATION	927+81.29	927+91.53	928+01.77	928+06.88	928+12.00	928+22.24	928+32.48
	ELEVATION	659.45	659.45	659.46	659.46	659.46	659.46	659.46
RIGHT GUTTER	STATION	927+81.05	927+91.25	928+01.45	928+06.55	928+11.64	928+21.84	928+32.04
	ELEVATION	659.43	659.44	659.44	659.44	659.44	659.44	659.44

NOTES:

1. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
2. FOR RIGHT BRIDGE DECK ELEVATIONS LAYOUT AND SPAN 1 ELEVATIONS, SEE SHEET 45/67 .

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
GJZ		4704895/4704925	

RIGHT BRIDGE FINAL DECK SURFACE ELEVATIONS - 2
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

46/67

167
196

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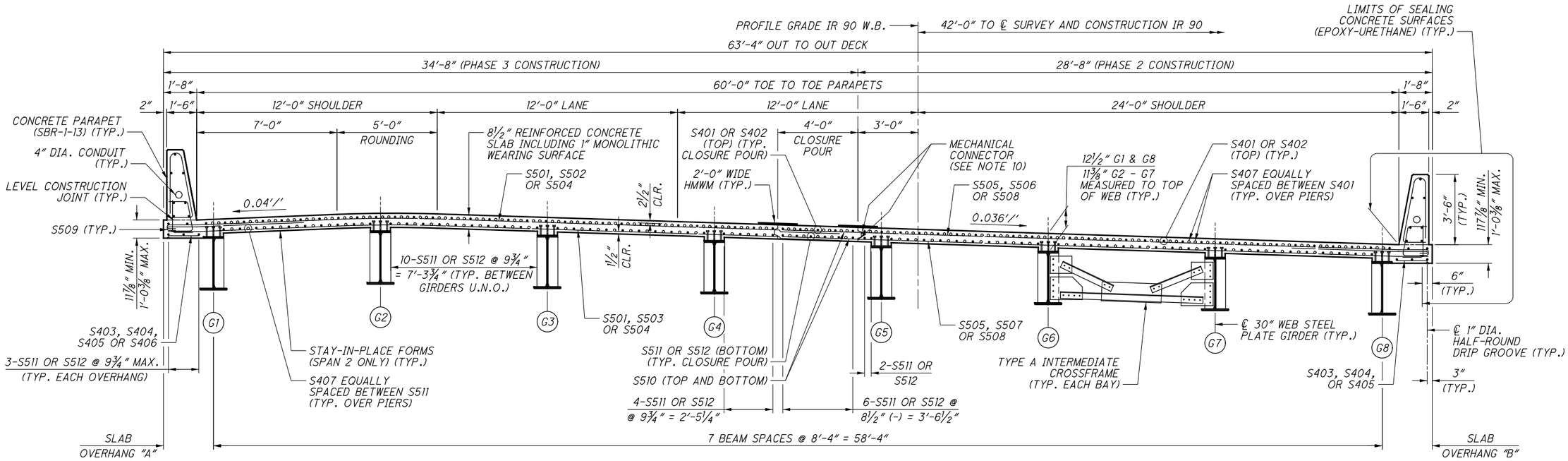


LEFT BRIDGE TRANSVERSE SECTION

SLAB OVERHANG "A" - SPAN 1 (SEE NOTE 9)							
LOCATION	℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
STATION AT ℄ G1	927+41.94	927+51.41	927+60.88	927+65.62	927+70.36	927+79.83	927+89.30
SLAB OVERHANG A	2'-5¾"	2'-7"	2'-8"	2'-8⅜"	2'-8⅛"	2'-9½"	2'-10"

SLAB OVERHANG "A" - SPAN 2 (SEE NOTE 9)							
LOCATION	℄ PIER 1	0.2	0.4	0.5	0.6	0.8	℄ PIER 2
STATION AT ℄ G1	927+89.30	928+02.48	928+15.65	928+22.24	928+28.82	928+42.00	928+55.17
SLAB OVERHANG A	2'-10"	2'-10⅜"	2'-10¼"	2'-10⅛"	2'-9⅞"	2'-9⅛"	2'-8"

SLAB OVERHANG "A" - SPAN 3 (SEE NOTE 9)							
LOCATION	℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
STATION AT ℄ G1	928+55.17	928+64.64	928+74.11	928+78.85	928+83.58	928+93.06	929+02.53
SLAB OVERHANG A	2'-8"	2'-7"	2'-5¾"	2'-5"	2'-4⅜"	2'-2¾"	2'-0⅞"

SLAB OVERHANG "B" - SPAN 1 (SEE NOTE 9)							
LOCATION	℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
STATION AT ℄ G8	927+17.78	927+27.35	927+36.92	927+41.70	927+46.48	927+56.05	927+65.62
SLAB OVERHANG B	2'-10¼"	2'-8½"	2'-7"	2'-6¼"	2'-5⅝"	2'-4½"	2'-3½"

SLAB OVERHANG "B" - SPAN 2 (SEE NOTE 9)							
LOCATION	℄ PIER 1	0.2	0.4	0.5	0.6	0.8	℄ PIER 2
STATION AT ℄ G8	927+65.62	927+78.93	927+92.23	927+98.89	928+05.54	928+18.85	928+32.15
SLAB OVERHANG B	2'-3½"	2'-2½"	2'-1⅞"	2'-1¾"	2'-1⅝"	2'-1¾"	2'-2¼"

SLAB OVERHANG "B" - SPAN 3 (SEE NOTE 9)							
LOCATION	℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
STATION AT ℄ G8	928+32.15	928+41.72	928+51.29	928+56.08	928+60.86	928+70.43	928+80.00
SLAB OVERHANG B	2'-2¼"	2'-2⅞"	2'-3⅝"	2'-4"	2'-4⅝"	2'-5¾"	2'-7⅛"

NOTES:

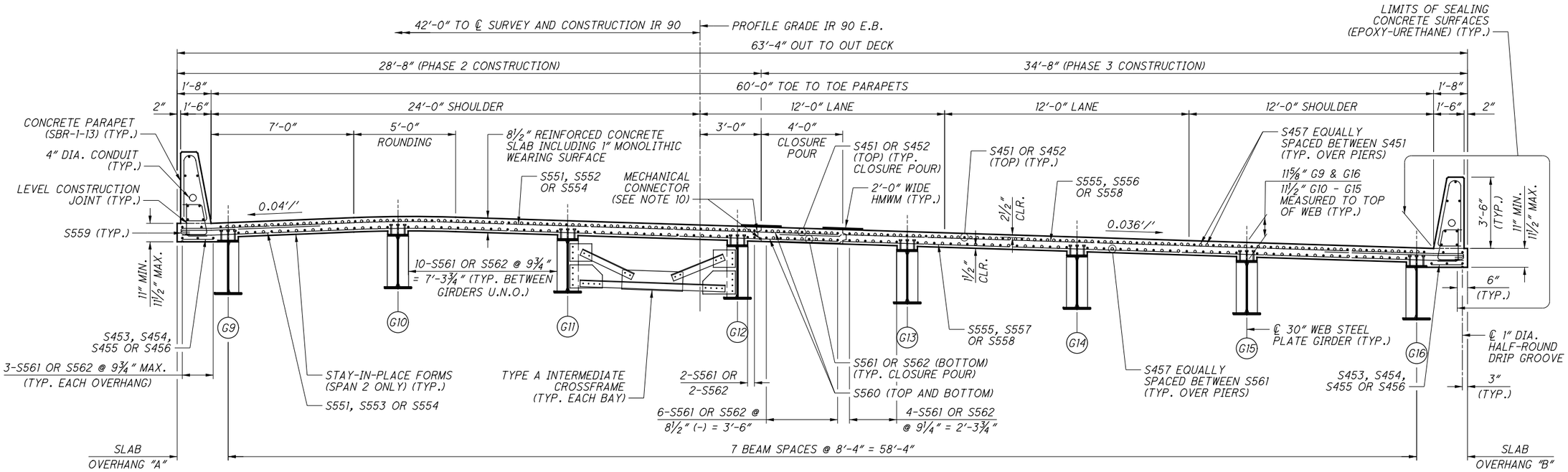
1. FOR PHASE 2 AND PHASE 3 LEFT BRIDGE REMOVAL AND PHASE 2 AND PHASE 3 LEFT BRIDGE CONSTRUCTION, SEE SHEETS 11/67 AND 12/67 .
2. FOR RIGHT BRIDGE TRANSVERSE SECTION, SEE SHEET 48/67.
3. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 4 INCHES FOR GIRDER G1 AND G8, AND 2⅞ INCHES FOR GIRDERS G2 THRU G7, AND A HAUNCH WIDTH EQUAL TO THE TOP FLANGE WIDTH. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. ALL COSTS ASSOCIATED WITH THE ADDITIONAL DECK SLAB CONCRETE IN THE FULLY FILLED STAY-IN-PLACE FORM RIBS SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED FOR PAYMENT WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN.
4. 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 CMS 511.23.
5. FOR LEFT BRIDGE ROUNDING DETAIL, SEE SHEET 39/67.
6. FOR LEFT BRIDGE SLAB PLAN, SEE SHEET 49/67.
7. FIELD BEND S501, S502, S503 AND S504 BARS AS REQUIRED.
8. FOR RAILING ELEVATION AND DETAILS, SEE SHEET 52/67 .
9. SLAB OVERHANG DIMENSIONS ARE MEASURED NORMAL TO G1 AND G8.
10. MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE BARS JOINED.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW
DRAWN ZTW
REVIEWED NFF
DATE 5/16/19
CHECKED RSB
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE TRANSVERSE SECTION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



RIGHT BRIDGE TRANSVERSE SECTION

SLAB OVERHANG "A" - SPAN 1 (SEE NOTE 9)							
LOCATION	℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
STATION AT ℄ G9	926+94.78	927+04.91	927+15.05	927+20.11	927+25.18	927+35.31	927+45.45
SLAB OVERHANG A	2'-5⅞"	2'-7¼"	2'-8½"	2'-9"	2'-9⅜"	2'-10¼"	2'-10¾"

SLAB OVERHANG "A" - SPAN 2 (SEE NOTE 9)							
LOCATION	℄ PIER 1	0.2	0.4	0.5	0.6	0.8	℄ PIER 2
STATION AT ℄ G9	927+45.45	927+59.34	927+73.24	927+80.19	927+87.14	928+01.03	928+14.93
SLAB OVERHANG A	2'-10¾"	2'-11⅛"	2'-11⅛"	2'-11"	2'-10¾"	2'-10"	2'-8¾"

SLAB OVERHANG "A" - SPAN 3 (SEE NOTE 9)							
LOCATION	℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
STATION AT ℄ G9	928+14.93	928+25.06	928+35.20	928+40.26	928+45.33	928+55.46	928+65.60
SLAB OVERHANG A	2'-8¾"	2'-7⅝"	2'-6⅜"	2'-5⅝"	2'-4¾"	2'-3"	2'-1"

SLAB OVERHANG "B" - SPAN 1 (SEE NOTE 9)							
LOCATION	℄ BEARING REAR ABUTMENT	0.2	0.4	0.5	0.6	0.8	℄ PIER 1
STATION AT ℄ G16	926+59.91	926+70.14	926+80.38	926+85.50	926+90.61	927+00.85	927+11.09
SLAB OVERHANG B	3'-0½"	2'-10⅜"	2'-8½"	2'-7⅝"	2'-6¾"	2'-5¼"	2'-4"

SLAB OVERHANG "B" - SPAN 2 (SEE NOTE 9)							
LOCATION	℄ PIER 1	0.2	0.4	0.5	0.6	0.8	℄ PIER 2
STATION AT ℄ G16	927+11.09	927+25.13	927+39.17	927+46.19	927+53.21	927+67.25	927+81.29
SLAB OVERHANG B	2'-4"	2'-2½"	2'-1½"	2'-1¼"	2'-1"	2'-0¾"	2'-1"

SLAB OVERHANG "B" - SPAN 3 (SEE NOTE 9)							
LOCATION	℄ PIER 2	0.2	0.4	0.5	0.6	0.8	℄ BEARING FORWARD ABUTMENT
STATION AT ℄ G16	927+81.29	927+91.53	928+01.77	928+06.88	928+12.00	928+22.24	928+32.48
SLAB OVERHANG B	2'-1"	2'-1⅜"	2'-2"	2'-2½"	2'-2⅞"	2'-4"	2'-5¼"

NOTES:

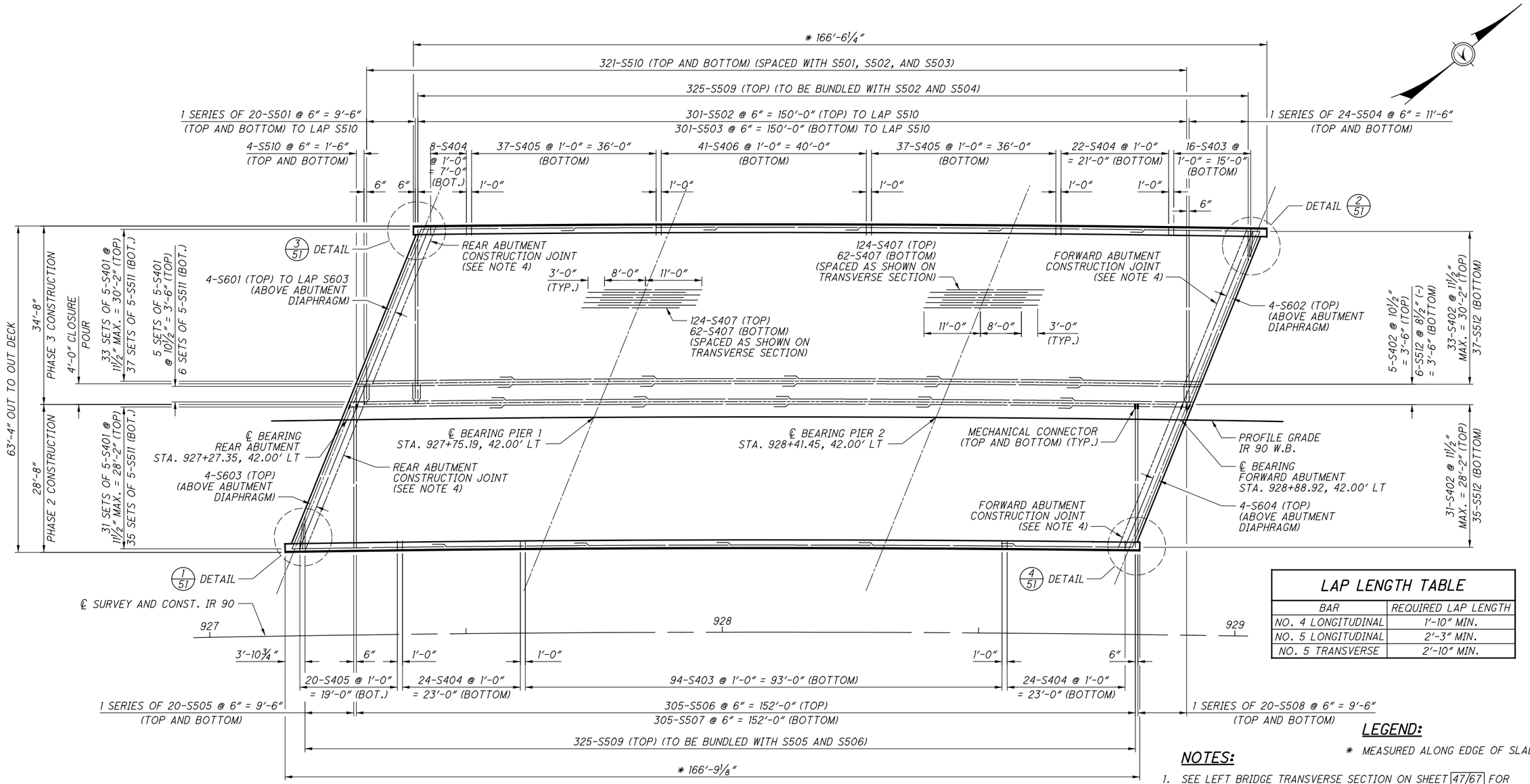
1. FOR PHASE 2 AND PHASE 3 RIGHT BRIDGE REMOVAL AND PHASE 2 AND PHASE 3 RIGHT BRIDGE CONSTRUCTION, SEE SHEETS 13/67 AND 14/67.
2. FOR LEFT BRIDGE TRANSVERSE SECTION, SEE SHEET 47/67.
3. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 3⅛" INCHES FOR GIRDER G9 AND G16, AND 3" INCHES FOR GIRDERS G10 THRU G15, AND A HAUNCH WIDTH EQUAL TO THE TOP FLANGE WIDTH. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. ALL COSTS ASSOCIATED WITH THE ADDITIONAL DECK SLAB CONCRETE IN THE FULLY FILLED STAY-IN-PLACE FORM RIBS SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED FOR PAYMENT WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN.
4. 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 CMS 511.23.
5. FOR RIGHT BRIDGE ROUNDING DETAIL, SEE SHEET 40/67.
6. FOR RIGHT BRIDGE SLAB PLAN, SEE SHEET 50/67.
7. FIELD BEND S551, S552, S553 AND S554 BARS AS REQUIRED.
8. FOR RAILING ELEVATION AND DETAILS, SEE SHEET 52/67.
9. SLAB OVERHANG DIMENSIONS ARE MEASURED NORMAL TO G9 AND G16.
10. MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE BARS JOINED.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN ZTW | REVIEWED NFF | DATE 5/16/19
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

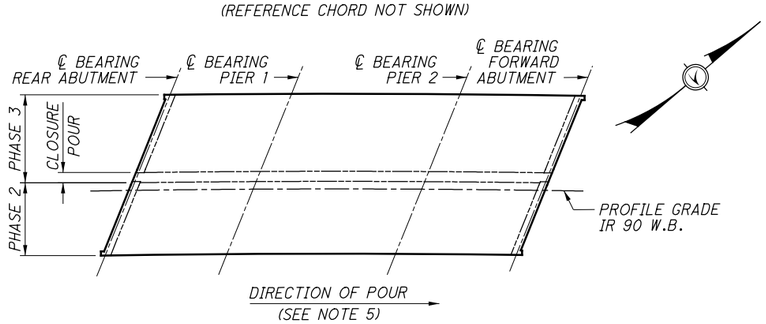
RIGHT BRIDGE TRANSVERSE SECTION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



LEFT BRIDGE SLAB PLAN

(REFERENCE CHORD NOT SHOWN)



SUGGESTED DECK CONCRETE POURING SEQUENCE PLAN

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 4 LONGITUDINAL	1'-10" MIN.
NO. 5 LONGITUDINAL	2'-3" MIN.
NO. 5 TRANSVERSE	2'-10" MIN.

LEGEND:

* MEASURED ALONG EDGE OF SLAB

NOTES:

1. SEE LEFT BRIDGE TRANSVERSE SECTION ON SHEET 47/67 FOR SPACING OF BOTTOM LONGITUDINAL BARS AND ADDITIONAL SLAB DETAILS.
2. FOR PARAPET DETAILS, SEE SHEET 52/67 .
3. FOR REINFORCING STEEL LIST, SEE SHEET 66/67 .
4. FOR ADDITIONAL DIAPHRAGM DETAILS, SEE SHEET 53/67 .
5. START POUR, PARALLEL TO THE SUBSTRUCTURE SKEW, AT THE REAR ABUTMENT CONSTRUCTION JOINT AND PROCEED TO THE FORWARD ABUTMENT CONSTRUCTION JOINT IN ONE CONTINUOUS POUR. PROCEDURE IS SAME FOR PHASE 2 AND PHASE 3 CONSTRUCTION. THIS SUGGESTED DECK CONCRETE POURING SEQUENCE WILL RESULT IN AN UNFACTORED LOAD OF 1.0 KIPS OF UPLIFT AT EACH GIRDER AT THE FORWARD ABUTMENT. THE CONTRACTOR SHALL PROVIDE A MEANS OF RESTRAINING THE GIRDER TO RESIST THE UPLIFT FORCE. THE CONTRACTOR SHALL ALSO PROVIDE TEMPORARY BRACING OF THE GIRDERS AT THE CENTERLINE OF ABUTMENT BEARINGS. SEE DECK PLACEMENT DESIGN ASSUMPTIONS NOTE ON SHEET 6/67 FOR ADDITIONAL INFORMATION.

DESIGN AGENCY
Trans Systems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MWR		4704895/4704925	

LEFT BRIDGE SLAB PLAN
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

49 / 67

170 / 196

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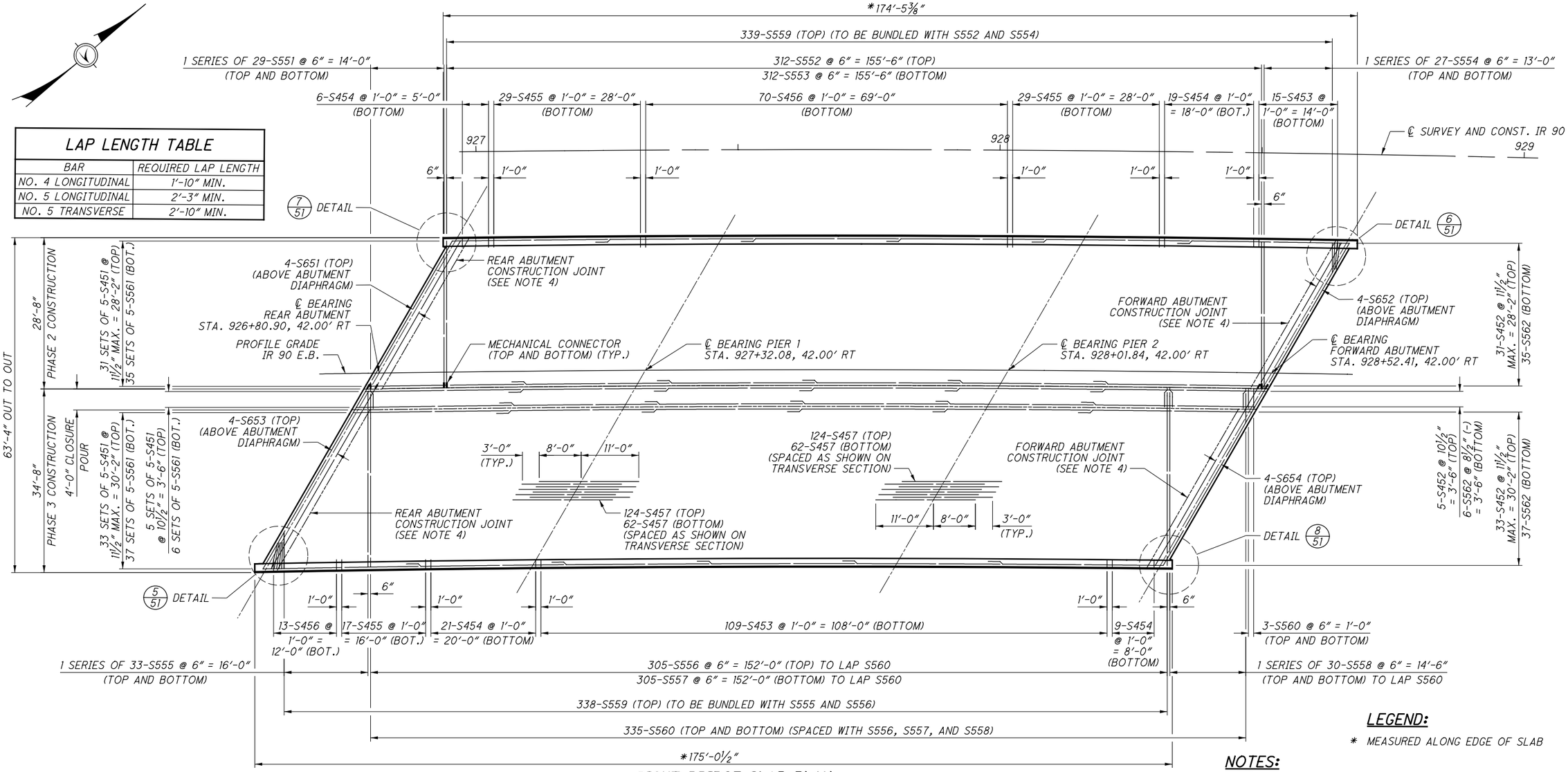
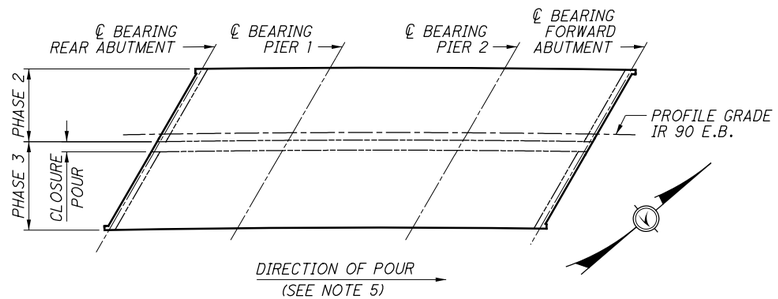
LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 4 LONGITUDINAL	1′-10″ MIN.
NO. 5 LONGITUDINAL	2′-3″ MIN.
NO. 5 TRANSVERSE	2′-10″ MIN.



RIGHT BRIDGE SLAB PLAN

(REFERENCE CHORD NOT SHOWN)



SUGGESTED DECK CONCRETE POURING SEQUENCE PLAN

LEGEND:

* MEASURED ALONG EDGE OF SLAB

NOTES:

1. SEE RIGHT BRIDGE TRANSVERSE SECTION ON SHEET 48/67 FOR SPACING OF BOTTOM LONGITUDINAL BARS AND ADDITIONAL SLAB DETAILS.
2. FOR PARAPET DETAILS, SEE SHEET 52/67 .
3. FOR REINFORCING STEEL LIST, SEE SHEET 66/67 .
4. FOR ADDITIONAL DIAPHRAGM DETAILS, SEE SHEET 54/67 .
5. START POUR, PARALLEL TO THE SUBSTRUCTURE SKEW, AT THE REAR ABUTMENT CONSTRUCTION JOINT AND PROCEED TO THE FORWARD ABUTMENT CONSTRUCTION JOINT IN ONE CONTINUOUS POUR. PROCEDURE IS SAME FOR PHASE 2 AND PHASE 3 CONSTRUCTION. THIS SUGGESTED DECK CONCRETE POURING SEQUENCE WILL RESULT IN AN UNFACTORED LOAD OF 2.0 KIPS OF UPLIFT AT EACH GIRDER AT THE FORWARD ABUTMENT. THE CONTRACTOR SHALL PROVIDE A MEANS OF RESTRAINING THE GIRDER TO RESIST THE UPLIFT FORCE. THE CONTRACTOR SHALL ALSO PROVIDE TEMPORARY BRACING OF THE GIRDERS AT THE CENTERLINE OF ABUTMENT BEARINGS. SEE DECK PLACEMENT DESIGN ASSUMPTIONS NOTE ON SHEET 6/67 FOR ADDITIONAL INFORMATION.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED MWR | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

RIGHT BRIDGE SLAB
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

50 / 67

171 / 196

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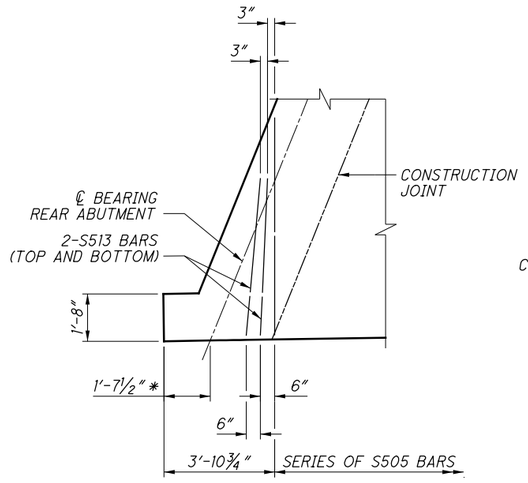
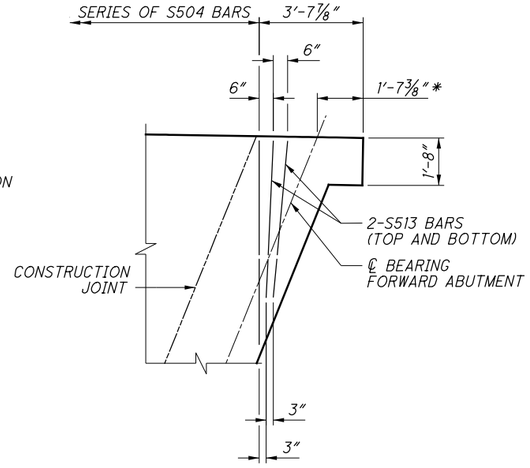
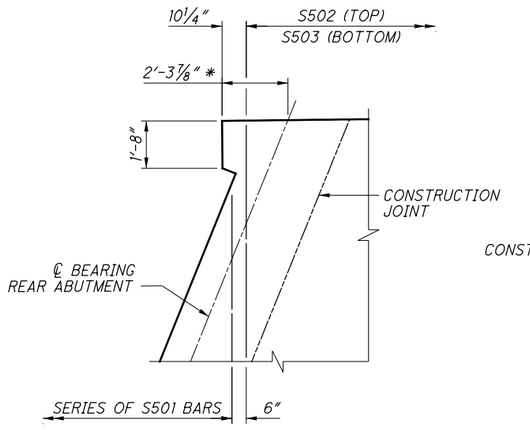


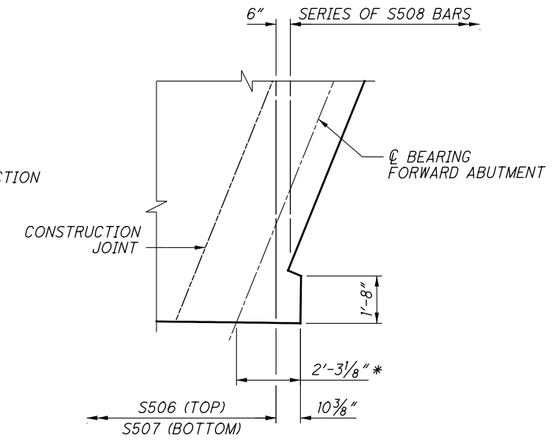
1 / 49 DETAIL



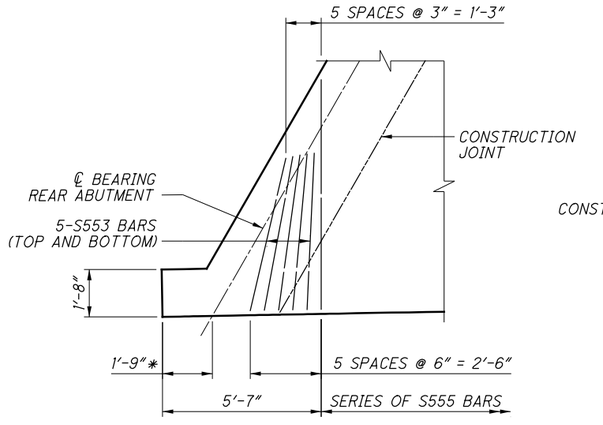
2 / 49 DETAIL



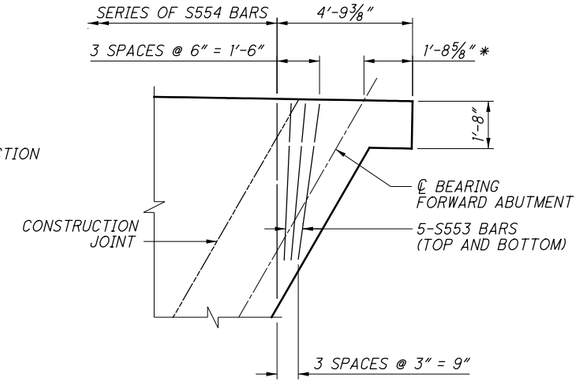
3 / 49 DETAIL



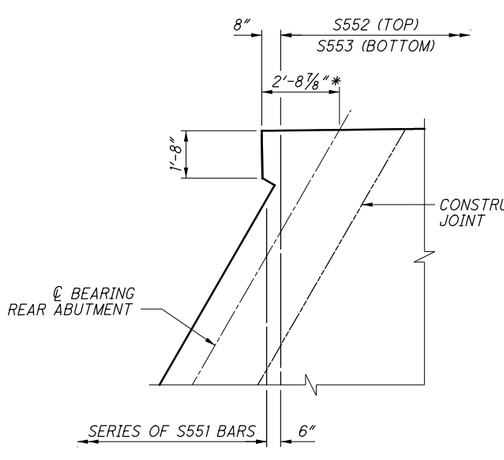
4 / 49 DETAIL



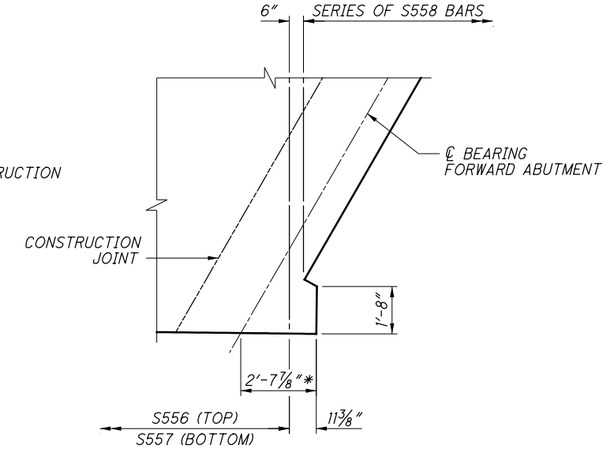
5 / 50 DETAIL



6 / 50 DETAIL



7 / 50 DETAIL



8 / 50 DETAIL

LEGEND:

* MEASURED ALONG EDGE OF SLAB

DESIGN AGENCY
Trans Systems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | CHECKED RSB | REVIEWED NFF | DATE 5/16/19 | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

SLAB DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

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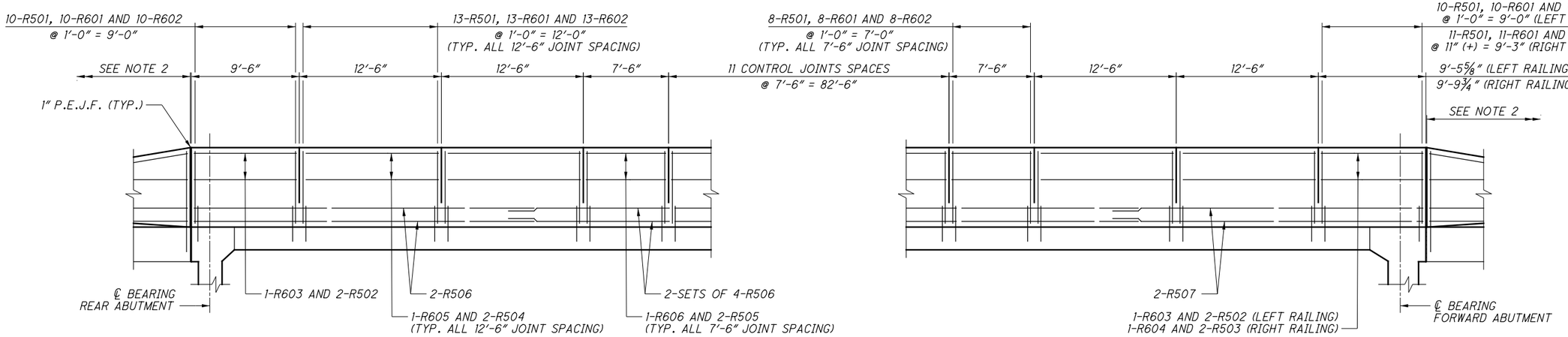
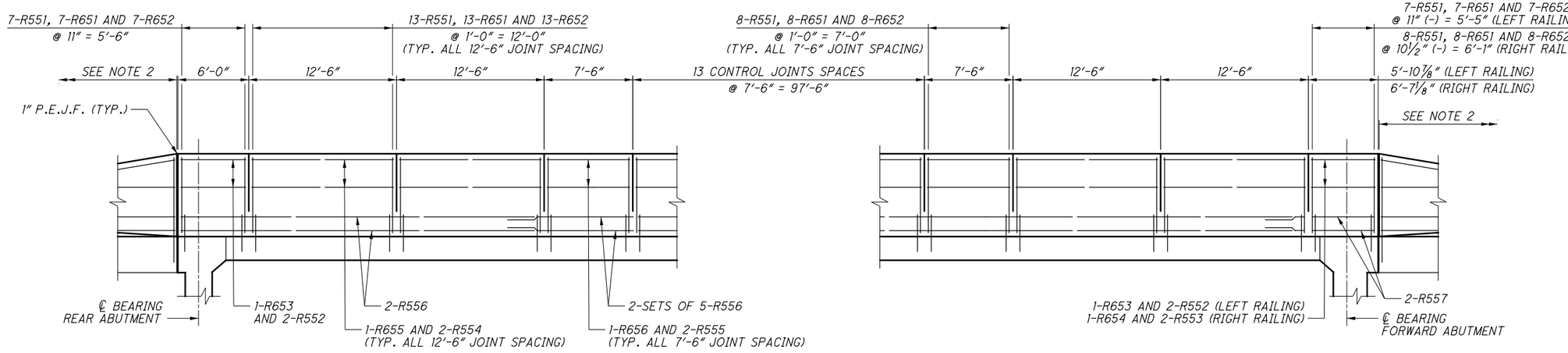


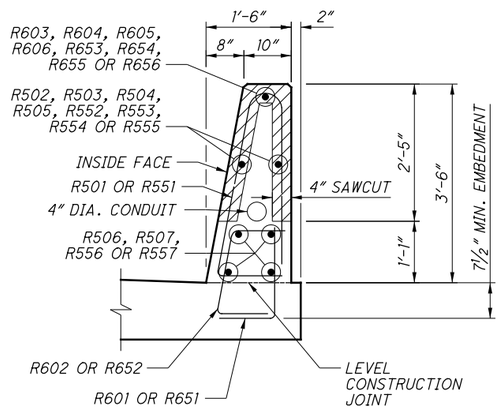
LEFT BRIDGE RAILING ELEVATION

(LEFT RAILING SHOWN, RIGHT RAILING SAME EXCEPT AS NOTED)



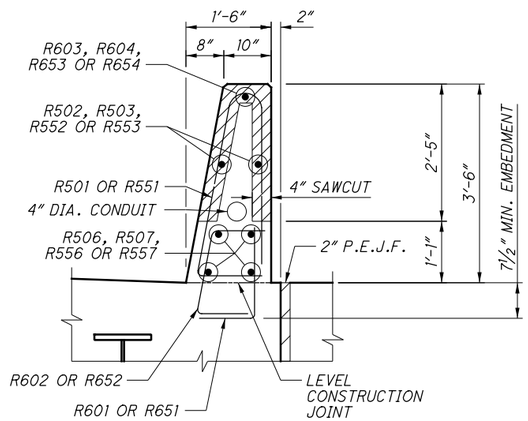
RIGHT BRIDGE RAILING ELEVATION

(LEFT RAILING SHOWN, RIGHT RAILING SAME EXCEPT AS NOTED)



TYPICAL BRIDGE RAILING SECTION

(DECK REINFORCEMENT NOT SHOWN)



TYPICAL DIAPHRAGM RAILING SECTION

(DIAPHRAGM REINFORCEMENT NOT SHOWN)

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
NO. 5 HORIZONTAL	2'-3" MIN.

NOTES:

1. HORIZONTAL DIMENSIONS ARE GIVEN ALONG RAILING INSIDE FACE.
2. FOR RAILING DETAILS ON APPROACH SLAB, SEE SHEET 60/67.
3. FOR ADDITIONAL RAILING DETAILS NOT SHOWN, SEE ODOT STANDARD DRAWING SBR-1-13.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
GJZ	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		4704895/4704925	

RAILING ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

52/67

173
196

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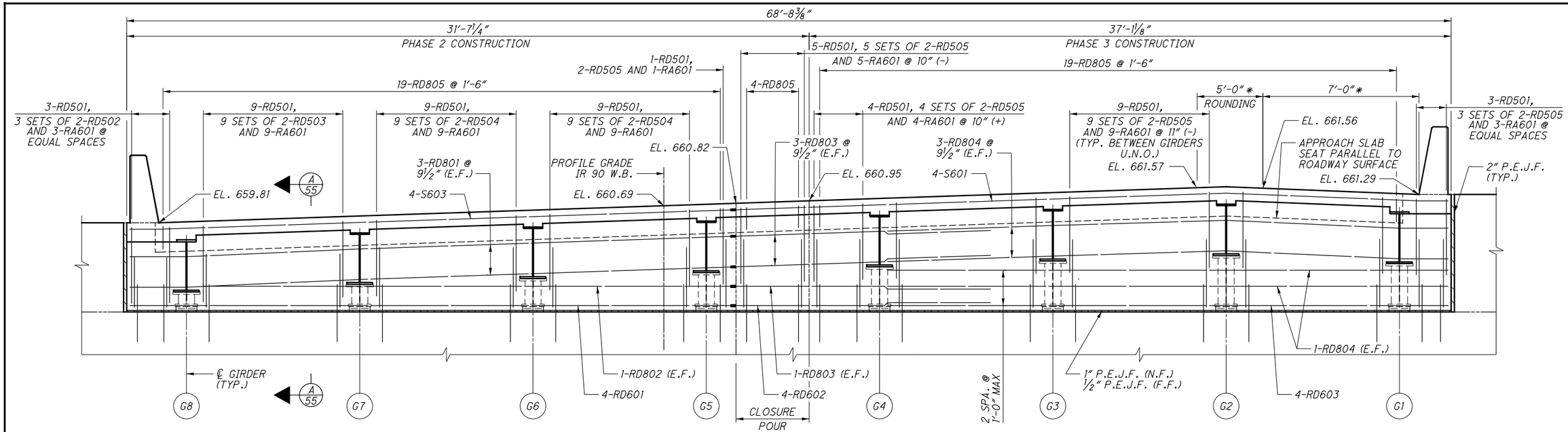
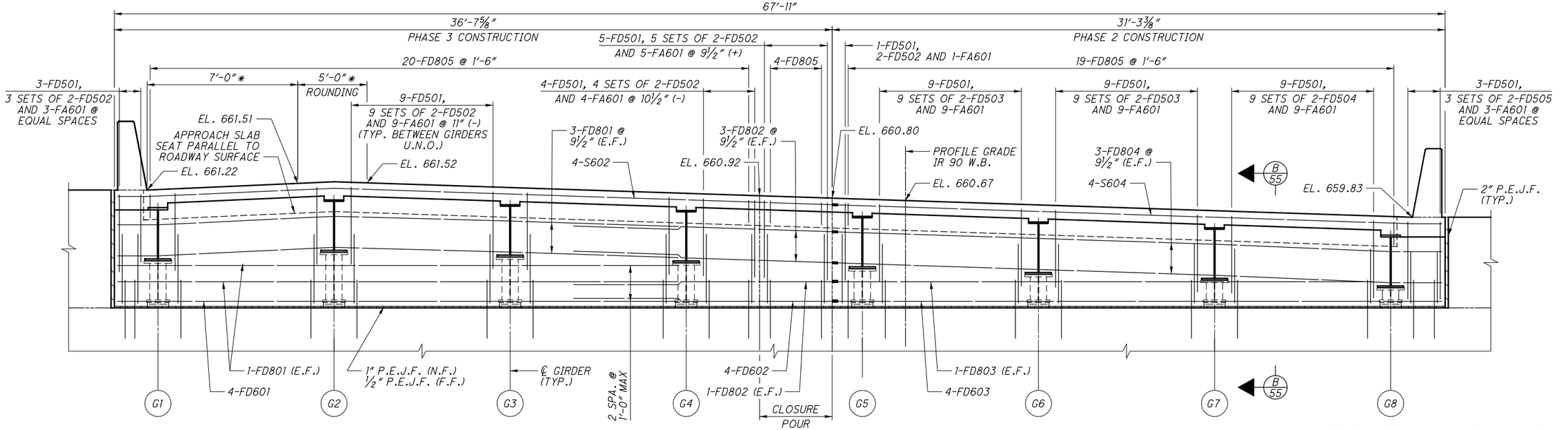


LEFT BRIDGE REAR ABUTMENT DIAPHRAGM ELEVATION



* - DIMENSIONS MEASURED RADIAL TO PROFILE GRADE

LEFT BRIDGE FORWARD ABUTMENT DIAPHRAGM ELEVATION

NOTES:

1. PLACE THE DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER ENDS OF AN INDIVIDUAL PHASE AFTER THE DECK PLACEMENT IN THE ADJACENT SPAN IS COMPLETE. PROCEDURES THAT PLACE THE ABUTMENT DIAPHRAGM WITH THE DECK CONCRETE MAY BE APPROVED BY THE ENGINEER IF THE PLACEMENT SUBMITTAL CAN ASSURE THAT THE DECK CONCRETE IN THE ADJACENT SPAN WILL BE PLACED BEFORE CONCRETE IN THE DIAPHRAGM HAS REACHED ITS INITIAL SET. PLACE CLOSURE POUR CONCRETE IN THE DIAPHRAGM AND DECK CONCURRENTLY.
2. FOR LEFT BRIDGE REAR ABUTMENT PLAN AND ELEVATION, SEE SHEET 23/67.
3. FOR LEFT BRIDGE REAR ABUTMENT FOOTING PLAN AND DETAILS, SEE SHEET 24/67.
4. FOR LEFT BRIDGE FORWARD ABUTMENT PLAN AND ELEVATION, SEE SHEET 25/67.
5. FOR LEFT BRIDGE FORWARD ABUTMENT FOOTING PLAN AND DETAILS, SEE SHEET 26/67.
6. ALL VERTICAL REINFORCING SHALL BE PLACED PARALLEL TO GIRDERS.
7. FOR REINFORCING STEEL LIST, SEE SHEET 67/67.
8. HORIZONTAL DIMENSIONS ARE MEASURED ALONG THE ℄ BEARING.
9. MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE BARS JOINED.

LAP LENGTH TABLE

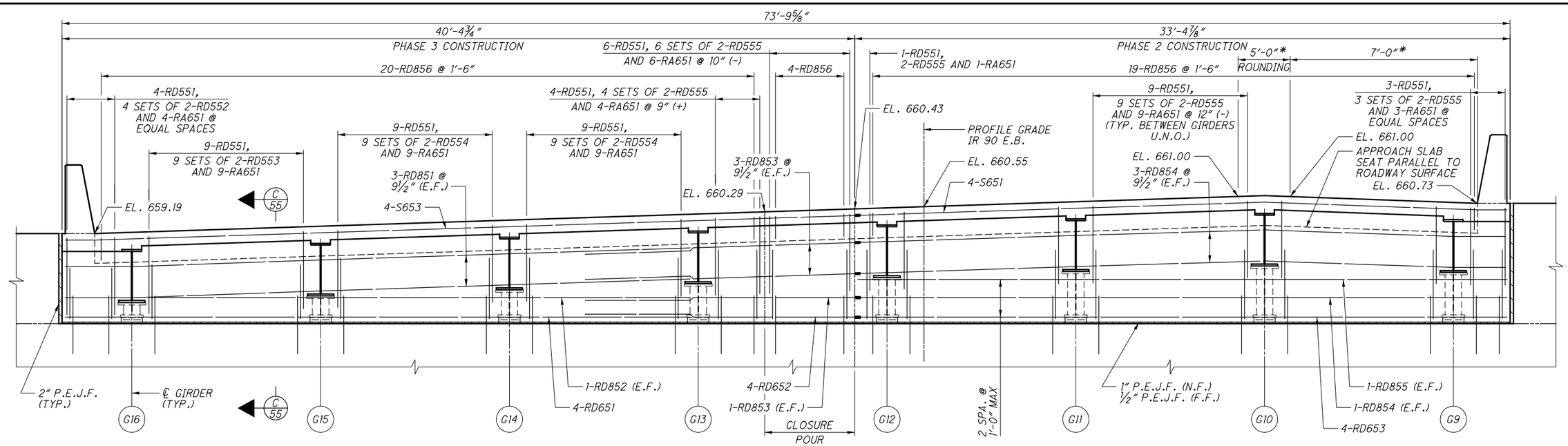
BAR	REQUIRED LAP LENGTH
NO. 6 HORIZONTAL	3′-7″ MIN.
NO. 8 HORIZONTAL	5′-4″ MIN.
NO. 5 VERTICAL	2′-5″ MIN.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

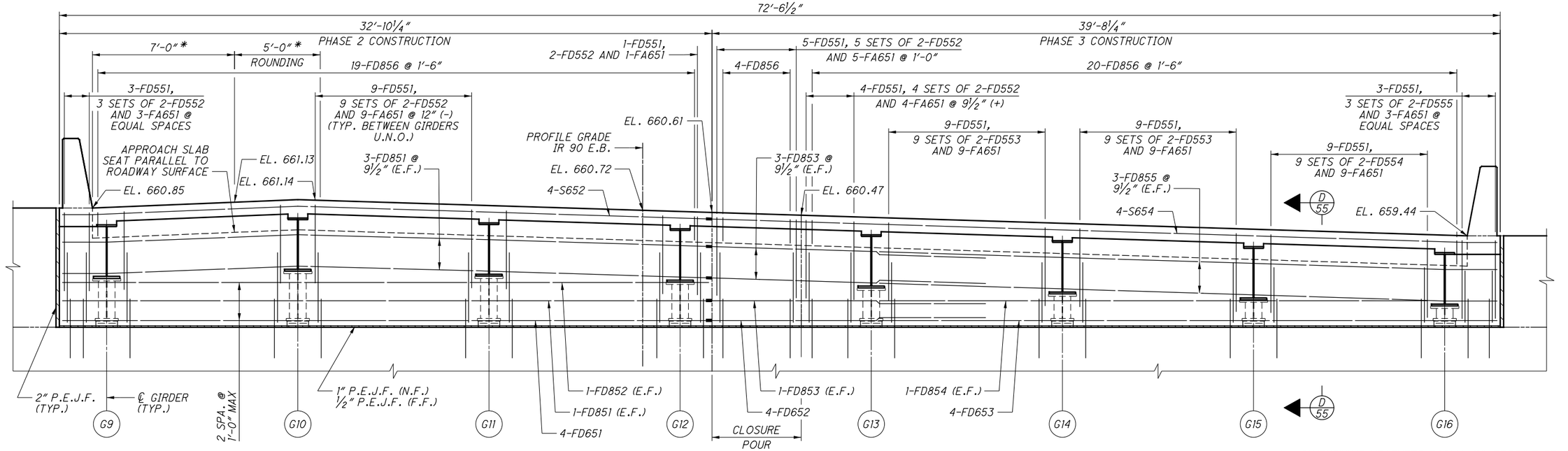
DESIGNED ZTW
DRAWN GJZ
CHECKED RSB
REVIEWED NFF
DATE 5/16/19
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

LEFT BRIDGE REAR AND FORWARD ABUTMENT DIAPHRAGM ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



RIGHT BRIDGE REAR ABUTMENT DIAPHRAGM ELEVATION



* - DIMENSIONS MEASURED RADIAL TO PROFILE GRADE

NOTES:

1. PLACE THE DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER ENDS OF AN INDIVIDUAL PHASE AFTER THE DECK PLACEMENT IN THE ADJACENT SPAN IS COMPLETE. PROCEDURES THAT PLACE THE ABUTMENT DIAPHRAGM WITH THE DECK CONCRETE MAY BE APPROVED BY THE ENGINEER IF THE PLACEMENT SUBMITTAL CAN ASSURE THAT THE DECK CONCRETE IN THE ADJACENT SPAN WILL BE PLACED BEFORE CONCRETE IN THE DIAPHRAGM HAS REACHED ITS INITIAL SET. PLACE CLOSURE POUR CONCRETE IN THE DIAPHRAGM AND DECK CONCURRENTLY.
2. FOR RIGHT BRIDGE REAR ABUTMENT PLAN AND ELEVATION, SEE SHEET 27/67.
3. FOR RIGHT BRIDGE REAR ABUTMENT FOOTING PLAN AND DETAILS, SEE SHEET 28/67.
4. FOR RIGHT BRIDGE FORWARD ABUTMENT PLAN AND ELEVATION, SEE SHEET 29/67.
5. FOR RIGHT BRIDGE FORWARD ABUTMENT FOOTING PLAN AND DETAILS, SEE SHEET 30/67.
6. ALL VERTICAL REINFORCING SHALL BE PLACED PARALLEL TO GIRDERS.
7. FOR REINFORCING STEEL LIST, SEE SHEET 67/67.
8. HORIZONTAL DIMENSIONS ARE MEASURED ALONG THE ℄ BEARING.
9. MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE BARS JOINED.

RIGHT BRIDGE FORWARD ABUTMENT DIAPHRAGM ELEVATION

LAP LENGTH TABLE

BAR	REQUIRED LAP LENGTH
NO. 6 HORIZONTAL	3'-7" MIN.
NO. 8 HORIZONTAL	5'-4" MIN.
NO. 5 VERTICAL	2'-5" MIN.

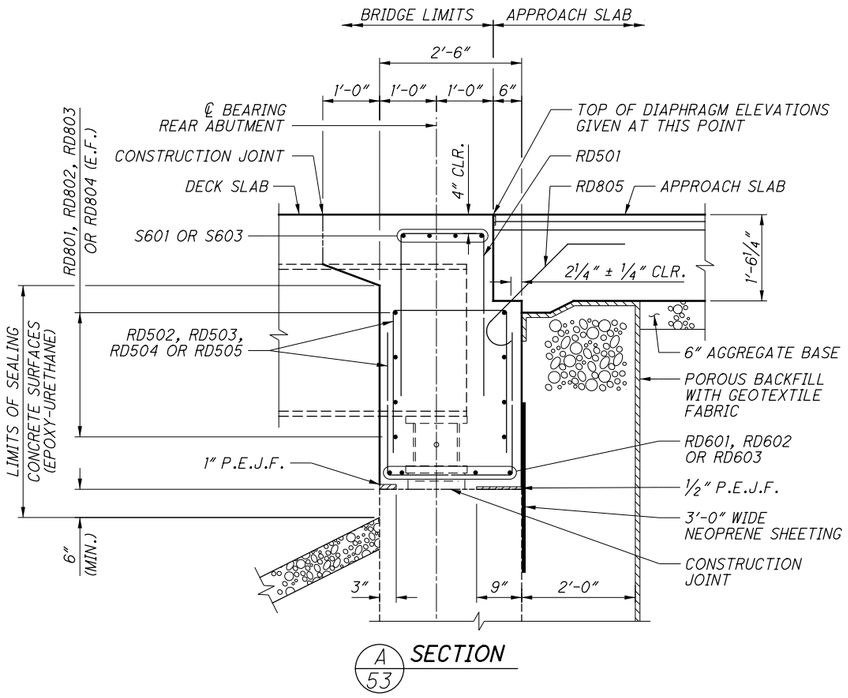
DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW
DRAWN GJZ
CHECKED RSB
REVIEWED NFF
DATE 5/16/19
REVISED
STRUCTURE FILE NUMBER 4704895/4704925

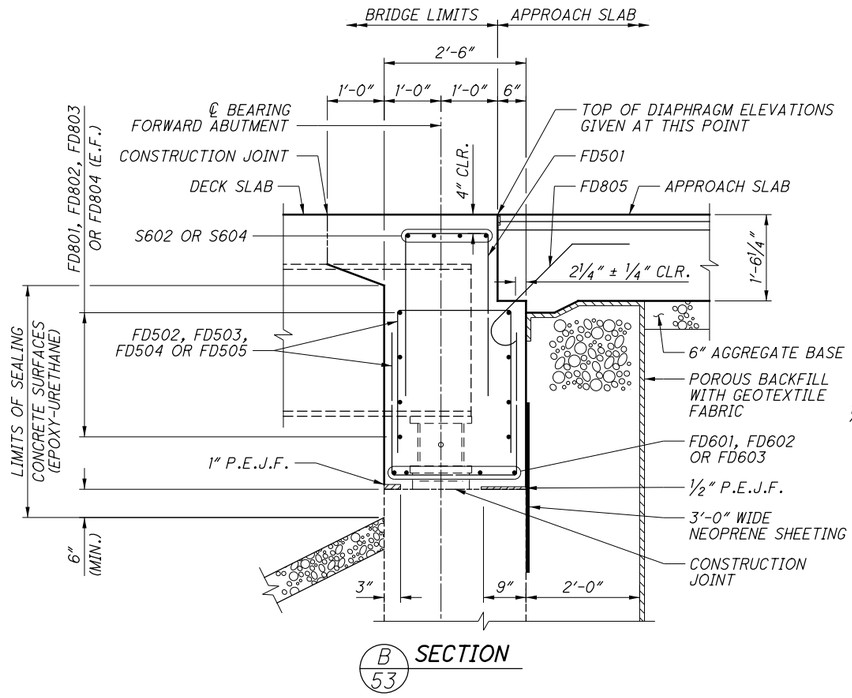
RIGHT BRIDGE REAR AND FORWARD ABUTMENT DIAPHRAGM ELEVATION
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

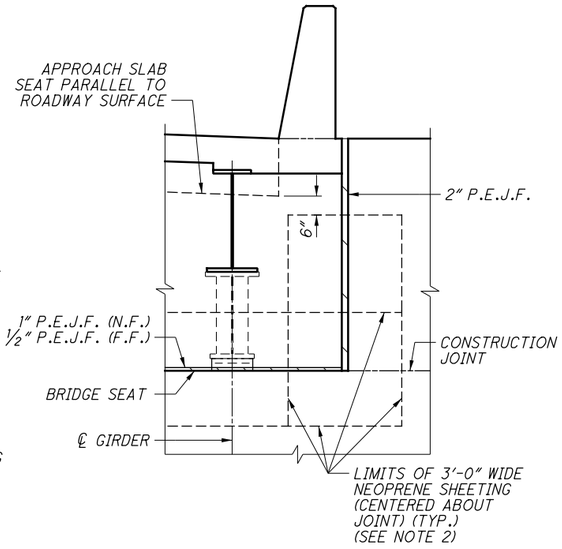
54/67
175
196



A 53 SECTION

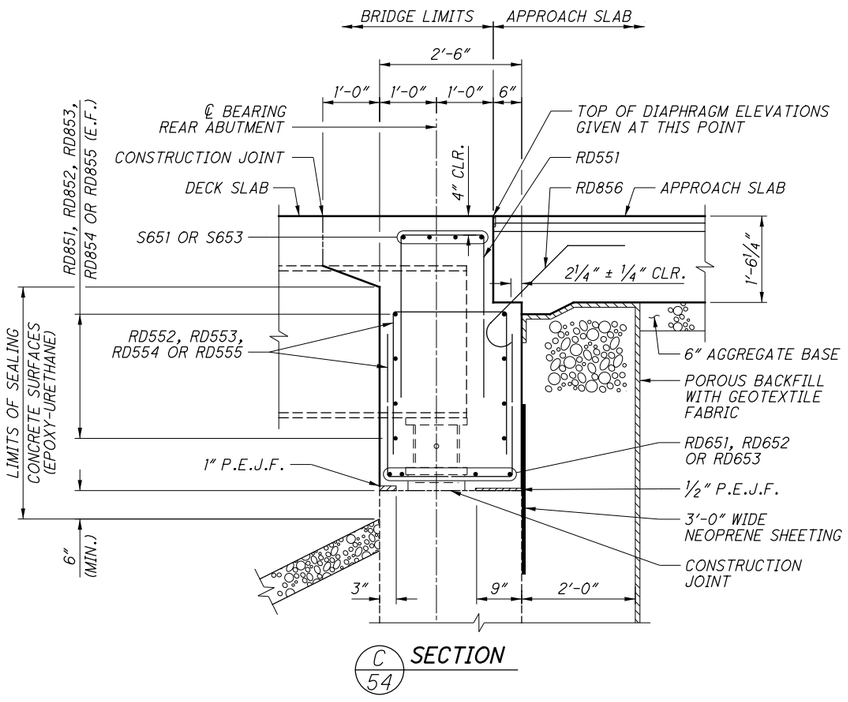


B 53 SECTION

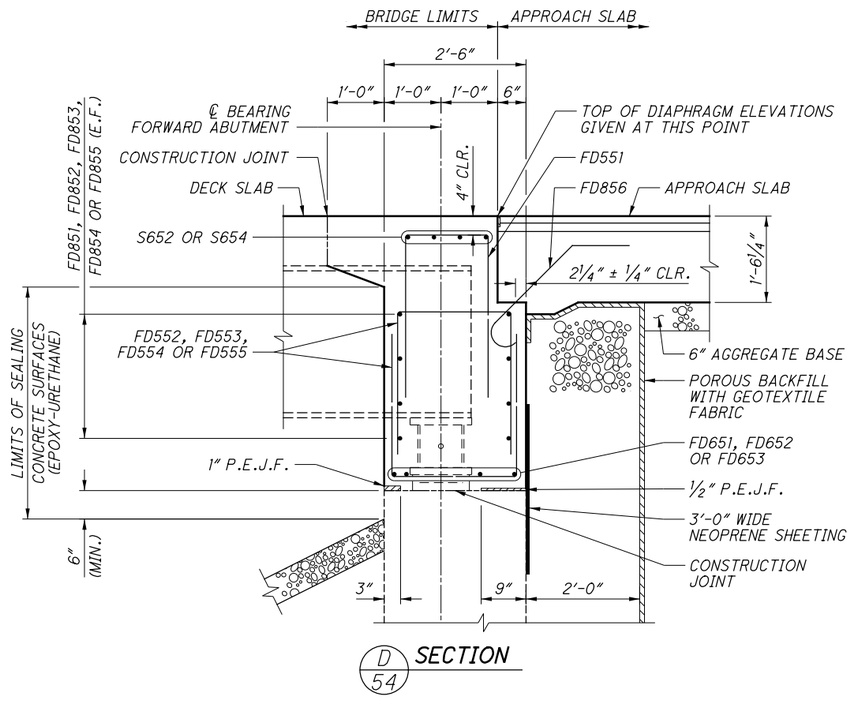


NEOPRENE SHEETING PLACEMENT DETAIL

(SIMILAR AT CLOSURE POUR VERTICAL CONSTRUCTION JOINTS)



C 54 SECTION



D 54 SECTION

NOTES:

1. SEE SHEETS 53/67 AND 54/67 FOR ADDITIONAL NOTES AND ABUTMENT DIAPHRAGM DETAILS.
2. FOR ADDITIONAL NEOPRENE SHEETING PLACEMENT REQUIREMENTS, SEE CMS 516.05.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

DIAPHRAGM DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

LEFT BRIDGE ELASTOMERIC BEARING DATA

LOCATION	TYPE	NO. REQ'D.	**REACTION (K) DL	**REACTION (K) *LL	MAXIMUM DESIGN LOAD (K)	Le (in.)	We (in.)	ti (in.)	te (in.)	No. of ti's	No. of te's	NO. INTERNAL LAMINATES	Te (in.)
REAR ABUTMENT	EXP	8	66	69	135	12	13	0.375	0.250	7	1	7	3.398
PIER 1	EXP	8	113	109	222	14	15	0.375	0.250	5	1	5	2.499
PIER 2	EXP	8	113	109	222	14	15	0.375	0.250	5	1	5	2.499
FORWARD ABUTMENT	EXP	8	66	70	136	12	13	0.375	0.250	7	1	7	3.398

* LL DENOTES LIVE LOAD WITHOUT DYNAMIC LOAD ALLOWANCE

** REACTIONS ARE SERVICE LOADS (I.E. UNFACTORED)

BOTTOM LOAD PLATE DATA

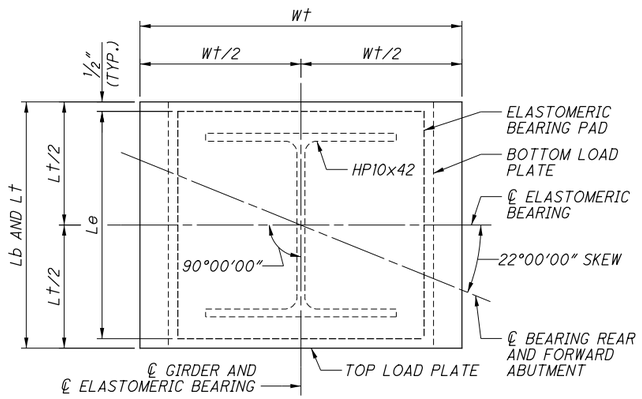
LOCATION	Wb (in.)	Lb (in.)	Tb (in.)
REAR ABUTMENT	14	13	1.5
FORWARD ABUTMENT	14	13	1.5

TOP LOAD PLATE DATA

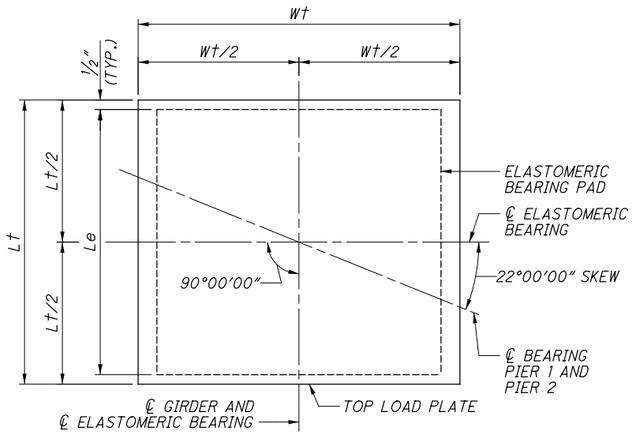
LOCATION	Wt (in.)	Lt (in.)	Th (in.)
REAR ABUTMENT	17	13	1.500
PIER 1	17	15	2.000
PIER 2	17	15	2.000
FORWARD ABUTMENT	17	13	1.500

HP10x42 HEIGHT DATA

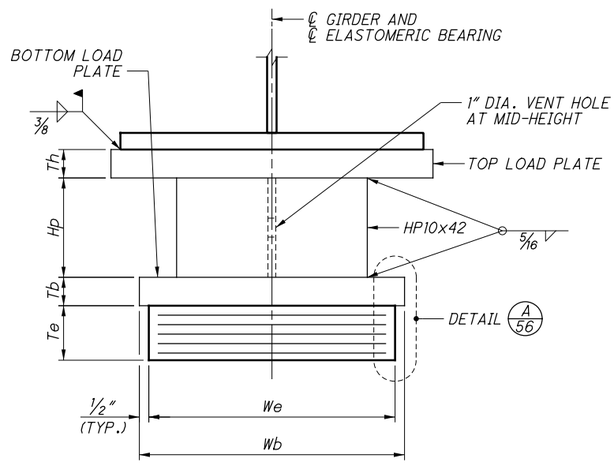
LOCATION	Hp (in.) G1	G2	G3	G4	G5	G6	G7	G8
REAR ABUTMENT	23.640	28.560	25.320	21.720	18.000	14.400	10.800	6.000
LOCATION	Hp (in.) G1	G2	G3	G4	G5	G6	G7	G8
FORWARD ABUTMENT	22.440	27.720	24.840	21.240	17.640	14.160	10.560	6.000



PLAN

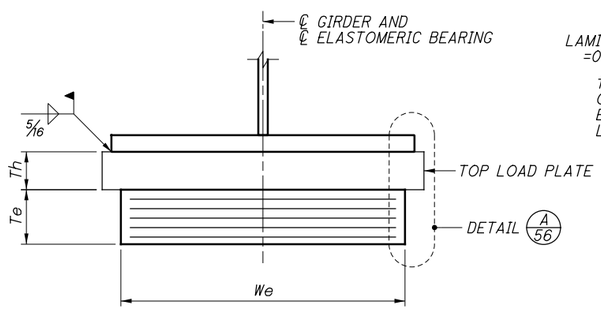


PLAN



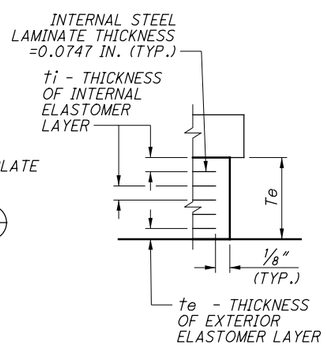
ELEVATION

ELASTOMERIC EXPANSION BEARING
REAR AND FORWARD ABUTMENTS



ELEVATION

ELASTOMERIC EXPANSION BEARING
PIER 1 AND PIER 2



A/56 DETAIL

NOTES:

1. STEEL LOAD PLATE AND HP SECTION SHALL BE ASTM A709 GRADE 50 STEEL AND SHALL BE SHOP PRIMED IN ACCORDANCE WITH CMS 514.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND SHALL BE VISIBLE AFTER THE BEARING IS INSTALLED.
4. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, INCLUDING LOAD PLATES AND HP SECTIONS. PAYMENT WILL BE AT THE UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | CHECKED MWR | REVIEWED NFF | DATE 5/16/19

STRUCTURE FILE NUMBER 4704895/4704925

REVISED

LEFT BRIDGE BEARING DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

56/67

177/196

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RIGHT BRIDGE ELASTOMERIC BEARING DATA

LOCATION	TYPE	NO. REQ'D.	** REACTION (K)		MAXIMUM	Le	We	ti	te	No. of ti's	No. of te's	NO. INTERNAL LAMINATES	Te
			DL	*LL	DESIGN LOAD (K)	(in.)	(in.)	(in.)	(in.)				(in.)
REAR ABUTMENT	EXP	8	73	71	144	12	13	0.375	0.250	8	1	8	3.848
PIER 1	EXP	8	121	112	232	14	15	0.375	0.250	5	1	5	2.499
PIER 2	EXP	8	121	113	234	14	15	0.375	0.250	5	1	5	2.499
FORWARD ABUTMENT	EXP	8	73	63	136	12	13	0.375	0.250	8	1	8	3.848

* LL DENOTES LIVE LOAD WITHOUT DYNAMIC LOAD ALLOWANCE

** REACTIONS ARE SERVICE LOADS (I.E. UNFACTORED)

BOTTOM LOAD PLATE DATA

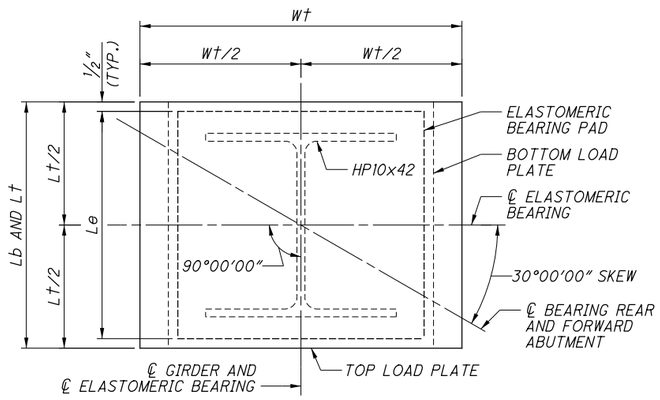
LOCATION	Wb	Lb	Tb
	(in.)	(in.)	(in.)
REAR ABUTMENT	14	13	1.5
FORWARD ABUTMENT	14	13	1.5

TOP LOAD PLATE DATA

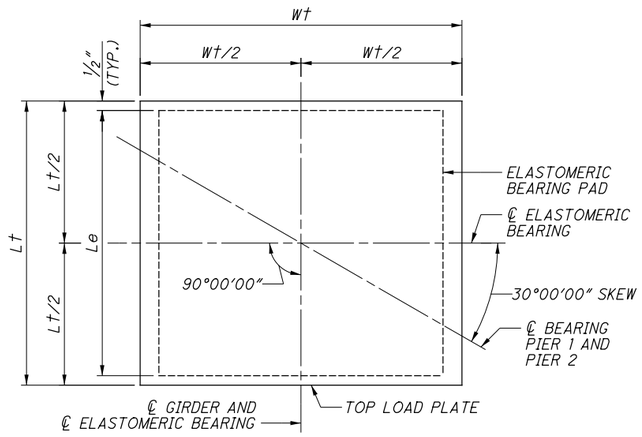
LOCATION	Wt	Lt	Th
	(in.)	(in.)	(in.)
REAR ABUTMENT	17	13	1.500
PIER 1	17	15	2.000
PIER 2	17	15	2.000
FORWARD ABUTMENT	17	13	1.500

HP10x42 HEIGHT DATA

LOCATION	Hp (in.)							
	G9	G10	G11	G12	G13	G14	G15	G16
REAR ABUTMENT	24.480	28.440	25.080	21.360	17.640	13.800	10.080	6.000
LOCATION	Hp (in.)							
	G9	G10	G11	G12	G13	G14	G15	G16
FORWARD ABUTMENT	22.560	27.000	24.120	20.520	16.920	13.320	9.720	6.000



PLAN



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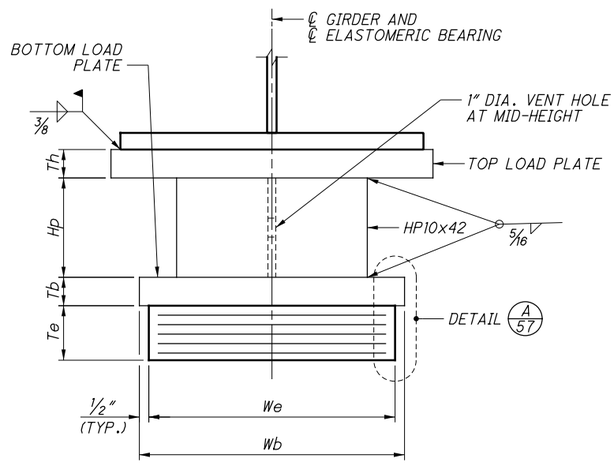
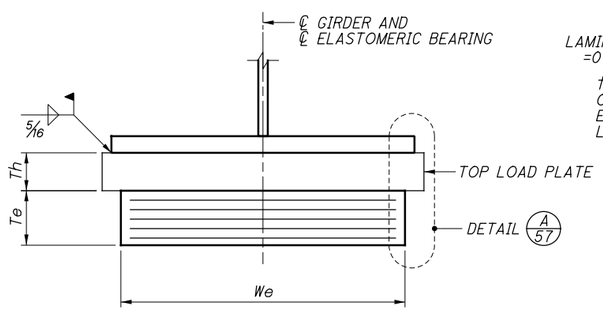


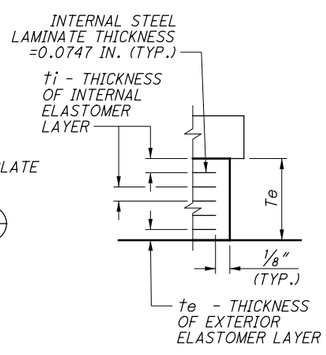
ELEVATION

ELASTOMERIC EXPANSION BEARING
REAR AND FORWARD ABUTMENTS



ELEVATION

ELASTOMERIC EXPANSION BEARING
PIER 1 AND PIER 2



A/57 DETAIL

NOTES:

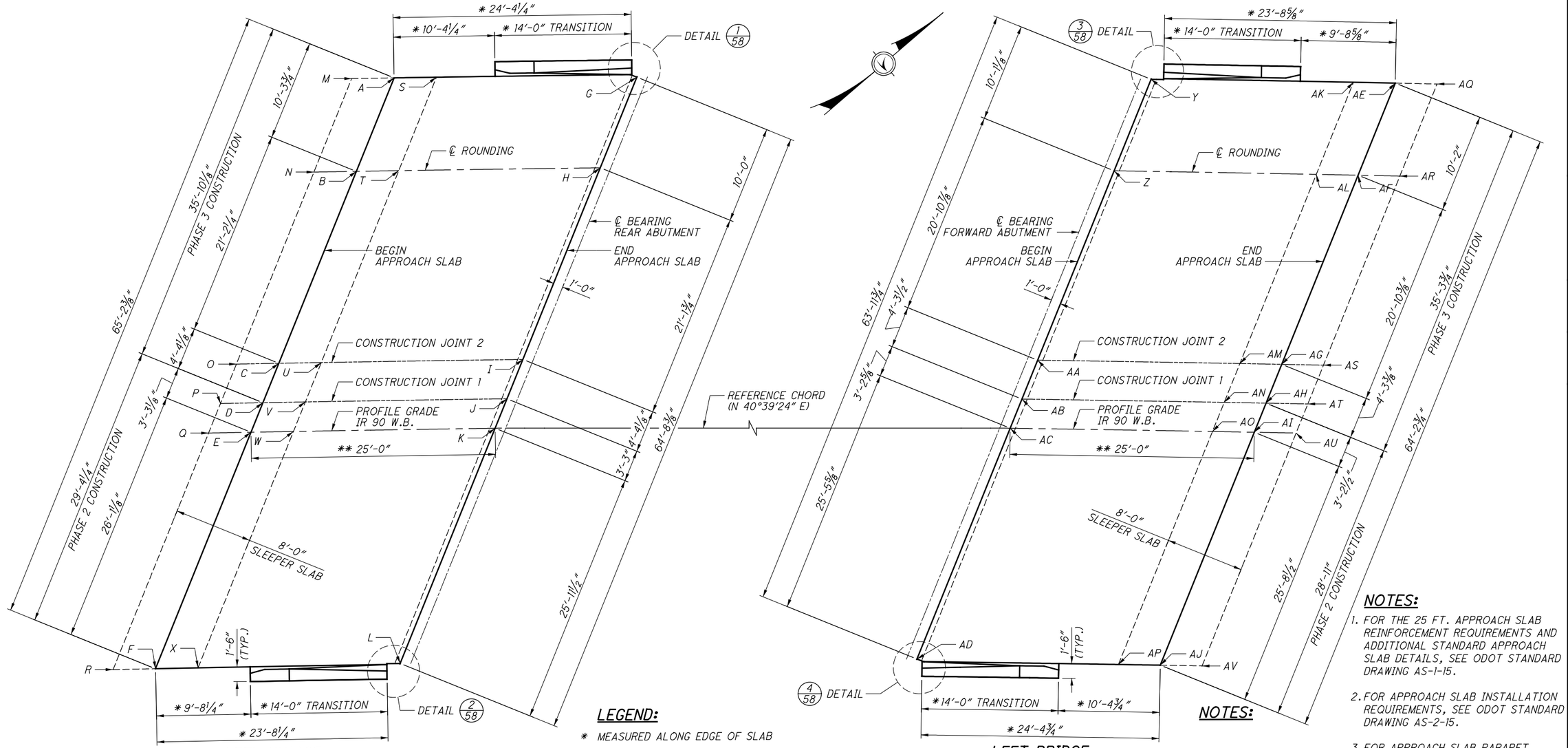
1. STEEL LOAD PLATE AND HP SECTION SHALL BE ASTM A709 GRADE 50 STEEL AND SHALL BE SHOP PRIMED IN ACCORDANCE WITH CMS 514.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND SHALL BE VISIBLE AFTER THE BEARING IS INSTALLED.
4. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, INCLUDING LOAD PLATES AND HP SECTIONS. PAYMENT WILL BE AT THE UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN.

DESIGN AGENCY
Tran Systems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DATE 5/16/19
REVIEWED NFF
STRUCTURE FILE NUMBER 4704895/4704925
DRAWN GJZ
REVISED
DESIGNED ZTW
CHECKED MWR

RIGHT BRIDGE BEARING DETAILS
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



LEGEND:

* MEASURED ALONG EDGE OF SLAB

** MEASURED ALONG PROFILE GRADE IR 90 W.B.

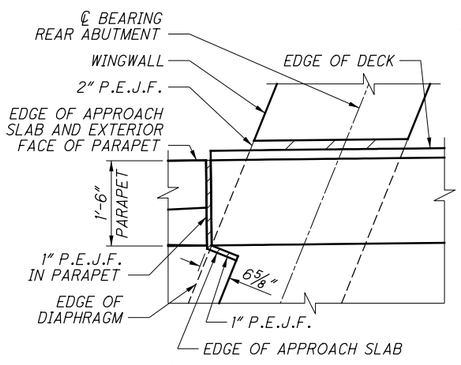
*** DIMENSION FOR DETAIL 3/58

NOTES:

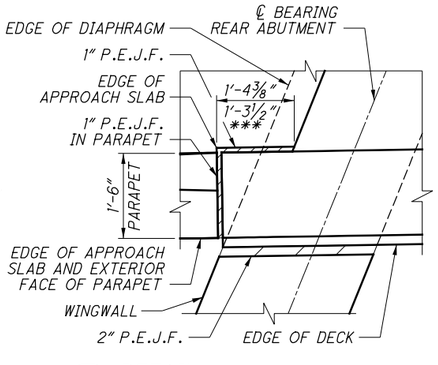
1. FOR THE 25 FT. APPROACH SLAB REINFORCEMENT REQUIREMENTS AND ADDITIONAL STANDARD APPROACH SLAB DETAILS, SEE ODOT STANDARD DRAWING AS-1-15.
2. FOR APPROACH SLAB INSTALLATION REQUIREMENTS, SEE ODOT STANDARD DRAWING AS-2-15.
3. FOR APPROACH SLAB PARAPET DETAILS, SEE SHEET 60/67.
4. APPROACH SLAB SURFACE ELEVATIONS ARE GIVEN AT TOP OF CONCRETE APPROACH SLAB, UNDERNEATH THE ASPHALT.

REAR APPROACH SLAB LOCATIONS

APPROACH SLAB SURFACE ELEVATIONS (SEE NOTE 4)				SLEEPER SLAB SURFACE ELEVATIONS			
	STATION	OFFSET	ELEVATION		STATION	OFFSET	ELEVATION
A	927+16.57	78.00 LT.	660.98	M	927+12.28	78.00 LT.	659.72
B	927+12.60	68.50 LT.	661.30	N	927+08.30	68.50 LT.	660.04
C	927+04.41	49.00 LT.	660.63	O	927+00.10	49.00 LT.	659.37
D	927+02.72	45.00 LT.	660.49	P	926+98.40	45.00 LT.	659.23
E	927+01.45	42.00 LT.	660.37	Q	926+97.13	42.00 LT.	659.12
F	926+91.26	18.00 LT.	659.48	R	926+86.92	18.00 LT.	658.23
G	927+41.09	77.73 LT.	661.03	S	927+20.85	78.00 LT.	659.74
H	927+37.28	68.50 LT.	661.34	T	927+16.89	68.50 LT.	660.06
I	927+29.19	49.00 LT.	660.68	U	927+08.72	49.00 LT.	659.39
J	927+27.52	45.00 LT.	660.53	V	927+07.03	45.00 LT.	659.24
K	927+26.27	42.00 LT.	660.42	W	927+05.77	42.00 LT.	659.13
L	927+16.23	18.08 LT.	659.54	X	926+95.60	18.00 LT.	658.25



1/58 DETAIL (DETAIL 1 SHOWN, DETAIL 4 SIMILIAR)



2/58 DETAIL (DETAIL 2 SHOWN, DETAIL 3 SIMILIAR)

FORWARD APPROACH SLAB LOCATIONS

APPROACH SLAB SURFACE ELEVATIONS (SEE NOTE 4)				SLEEPER SLAB SURFACE ELEVATIONS			
	STATION	OFFSET	ELEVATION		STATION	OFFSET	ELEVATION
Y	929+03.71	77.92 LT.	660.95	AK	929+24.16	78.00 LT.	659.65
Z	929+00.13	68.50 LT.	661.29	AL	929+20.58	68.50 LT.	659.99
AA	928+92.67	49.00 LT.	660.65	AM	929+13.21	49.00 LT.	659.36
AB	928+91.14	45.00 LT.	660.51	AN	929+11.69	45.00 LT.	659.22
AC	928+89.98	42.00 LT.	660.40	AO	929+10.55	42.00 LT.	659.11
AD	928+80.81	18.26 LT.	659.56	AP	929+01.37	18.00 LT.	658.27
AE	929+28.38	78.00 LT.	660.89	AQ	929+32.60	78.00 LT.	659.63
AF	929+24.81	68.50 LT.	661.23	AR	929+29.04	68.50 LT.	659.97
AG	929+17.45	49.00 LT.	660.60	AS	929+21.70	49.00 LT.	659.34
AH	929+15.94	45.00 LT.	660.46	AT	929+20.19	45.00 LT.	659.20
AI	929+14.80	42.00 LT.	660.35	AU	929+19.05	42.00 LT.	659.09
AJ	929+05.65	18.00 LT.	659.51	AV	929+09.92	18.00 LT.	658.25

DESIGN AGENCY
Train Systems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MWR		4704895/4704925	

LEFT BRIDGE APPROACH SLAB DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

58/67
179/196

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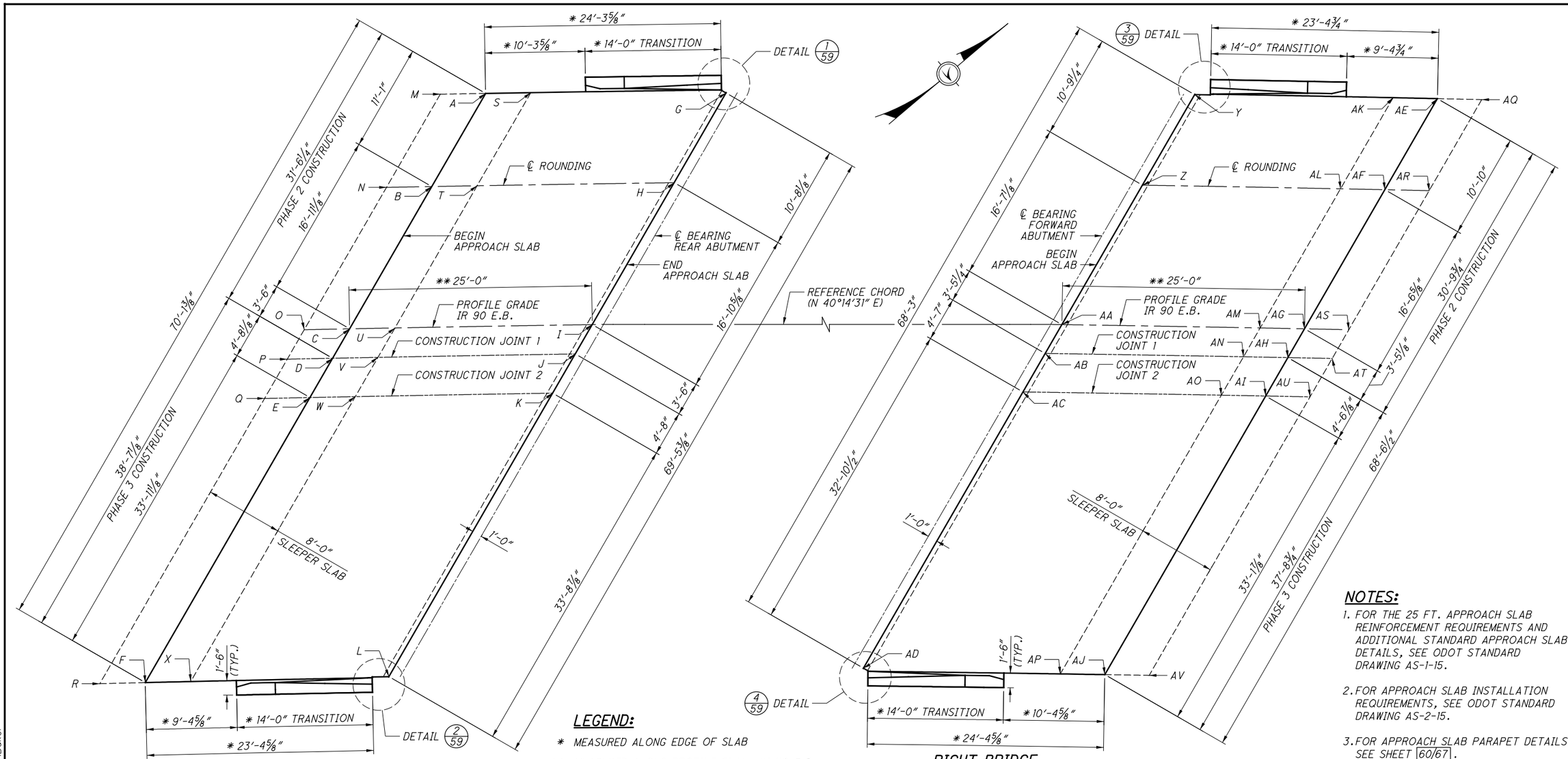


RIGHT BRIDGE
FORWARD APPROACH SLAB PLAN

LEGEND:

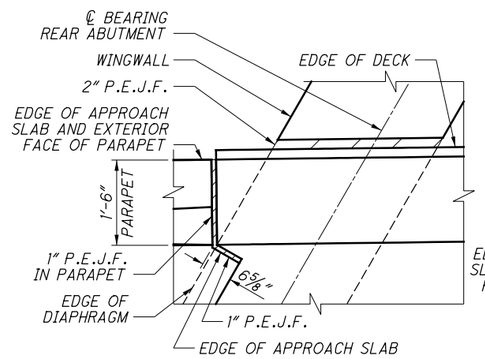
* MEASURED ALONG EDGE OF SLAB

** MEASURED ALONG PROFILE GRADE IR 90 E.B.

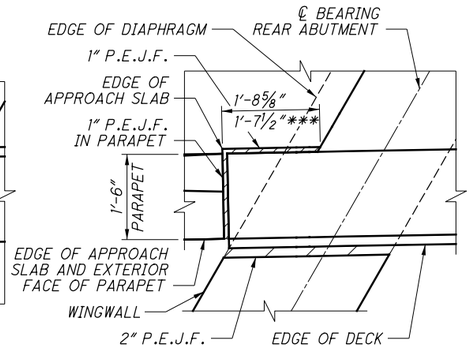
*** DIMENSION FOR DETAIL 3/59

NOTES:

1. FOR THE 25 FT. APPROACH SLAB REINFORCEMENT REQUIREMENTS AND ADDITIONAL STANDARD APPROACH SLAB DETAILS, SEE ODOT STANDARD DRAWING AS-1-15.
2. FOR APPROACH SLAB INSTALLATION REQUIREMENTS, SEE ODOT STANDARD DRAWING AS-2-15.
3. FOR APPROACH SLAB PARAPET DETAILS, SEE SHEET 60/67.
4. APPROACH SLAB SURFACE ELEVATIONS ARE GIVEN AT TOP OF CONCRETE APPROACH SLAB, UNDERNEATH THE ASPHALT.



1/59 DETAIL
(DETAIL 1 SHOWN, DETAIL 4 SIMILIAR)



2/59 DETAIL
(DETAIL 2 SHOWN, DETAIL 3 SIMILIAR)

REAR APPROACH SLAB LOCATIONS

	APPROACH SLAB SURFACE ELEVATIONS (SEE NOTE 4)				SLEEPER SLAB SURFACE ELEVATIONS		
	STATION	OFFSET	ELEVATION		STATION	OFFSET	ELEVATION
A	926+69.06	18.00 RT.	660.39	M	926+64.38	18.00 RT.	659.12
B	926+63.33	27.50 RT.	660.70	N	926+58.64	27.50 RT.	659.43
C	926+54.54	42.00 RT.	660.20	O	926+49.83	42.00 RT.	658.93
D	926+52.71	45.00 RT.	660.08	P	926+48.00	45.00 RT.	658.82
E	926+50.27	49.00 RT.	659.93	Q	926+45.56	49.00 RT.	658.67
F	926+32.48	78.00 RT.	658.82	R	926+27.73	78.00 RT.	657.55
G	926+93.91	18.33 RT.	660.47	S	926+73.74	18.00 RT.	659.15
H	926+88.43	27.50 RT.	660.77	T	926+68.02	27.50 RT.	659.46
I	926+79.72	42.00 RT.	660.28	U	926+59.24	42.00 RT.	658.96
J	926+77.91	45.00 RT.	660.16	V	926+57.42	45.00 RT.	658.85
K	926+75.50	49.00 RT.	660.01	W	926+54.99	49.00 RT.	658.70
L	926+57.93	77.92 RT.	658.92	X	926+37.22	78.00 RT.	657.59

FORWARD APPROACH SLAB LOCATIONS

	APPROACH SLAB SURFACE ELEVATIONS (SEE NOTE 4)				SLEEPER SLAB SURFACE ELEVATIONS		
	STATION	OFFSET	ELEVATION		STATION	OFFSET	ELEVATION
Y	928+66.92	18.08 RT.	660.58	AK	928+87.44	18.00 RT.	659.30
Z	928+61.68	27.50 RT.	660.91	AL	928+82.19	27.50 RT.	659.63
AA	928+53.56	42.00 RT.	660.45	AM	928+74.14	42.00 RT.	659.17
AB	928+51.88	45.00 RT.	660.34	AN	928+72.47	45.00 RT.	659.07
AC	928+49.63	49.00 RT.	660.20	AO	928+70.24	49.00 RT.	658.93
AD	928+33.38	77.68 RT.	659.18	AP	928+53.96	78.00 RT.	657.90
AE	928+92.02	18.00 RT.	660.54	AQ	928+96.59	18.00 RT.	659.28
AF	928+86.78	27.50 RT.	660.88	AR	928+91.37	27.50 RT.	659.62
AG	928+78.75	42.00 RT.	660.42	AS	928+83.35	42.00 RT.	659.16
AH	928+77.08	45.00 RT.	660.31	AT	928+81.68	45.00 RT.	659.06
AI	928+74.85	49.00 RT.	660.17	AU	928+79.46	49.00 RT.	658.91
AJ	928+58.60	78.00 RT.	659.15	AV	928+63.24	78.00 RT.	657.89

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MWR		4704894/4704924	

RIGHT BRIDGE APPROACH SLAB DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

59 / 67

180 / 196

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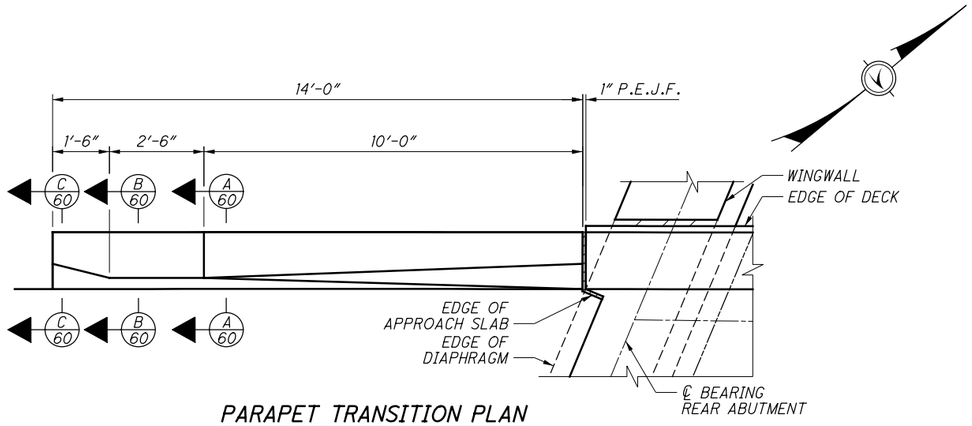
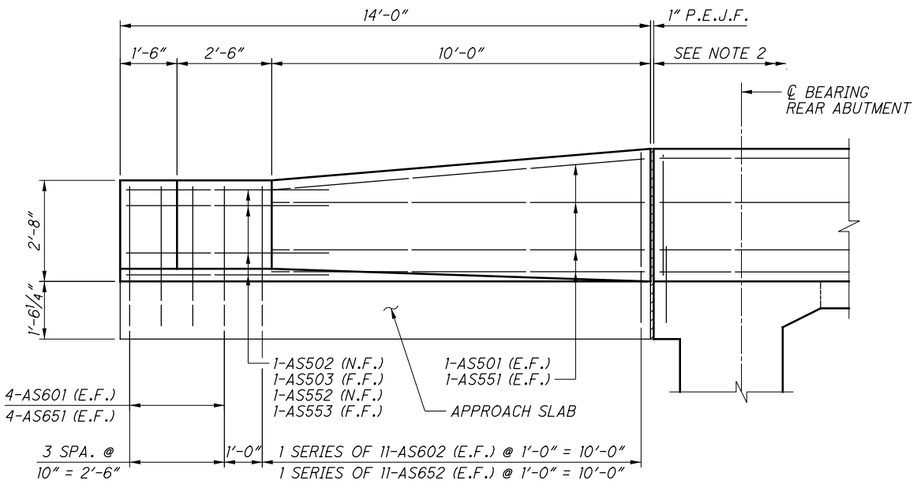


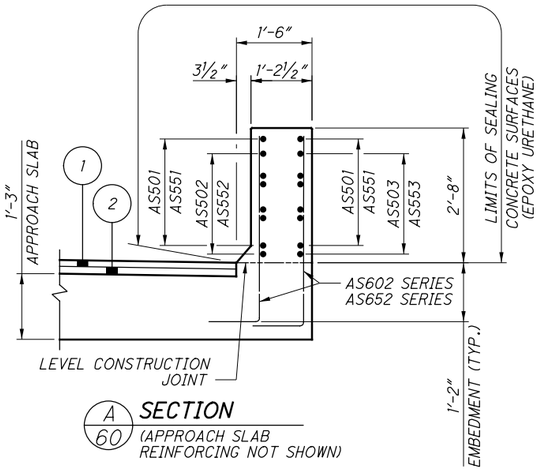
PARAPET TRANSITION PLAN

(LEFT AND RIGHT BRIDGE)
(REAR ABUTMENT LEFT SIDE SHOWN, FORWARD ABUTMENT AND RIGHT SIDE SIMILAR)

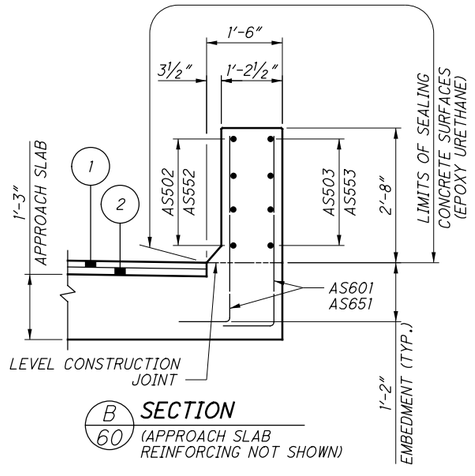


PARAPET TRANSITION ELEVATION

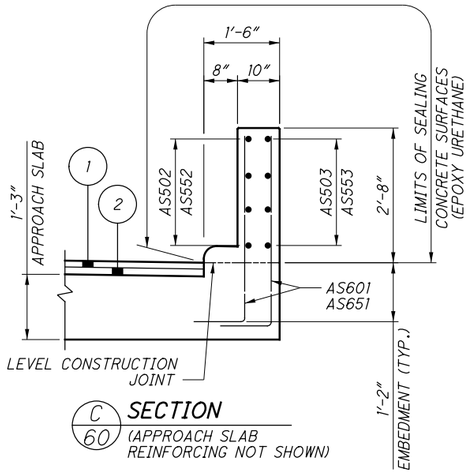
(LEFT AND RIGHT BRIDGE)
(REAR ABUTMENT LEFT SIDE SHOWN, FORWARD ABUTMENT AND RIGHT SIDE SIMILAR)



A 60 **SECTION**
(APPROACH SLAB REINFORCING NOT SHOWN)



B 60 **SECTION**
(APPROACH SLAB REINFORCING NOT SHOWN)



C 60 **SECTION**
(APPROACH SLAB REINFORCING NOT SHOWN)

LEGEND:

(1) ITEM 442 - 1½″ ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)

(2) ITEM 442 - 1¾″ ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

NOTES:

1. FOR APPROACH SLAB PLANS AND ADDITIONAL NOTES AND DETAILS, SEE SHEETS 58/67 AND 59/67.
2. FOR RAILING DETAILS ON SUPERSTRUCTURE, SEE SHEET 53/67.
3. APPROACH SLAB SURFACE ELEVATIONS ARE GIVEN AT TOP OF CONCRETE APPROACH SLAB, UNDERNEATH THE ASPHALT.

DESIGN AGENCY
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1100 SUPERIOR AVENUE, SUITE 1100
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
MWR		4704895/4704925	

APPROACH SLAB PARAPET DETAILS

BRIDGE NO. LOR-90-1785
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

60/67
181/196

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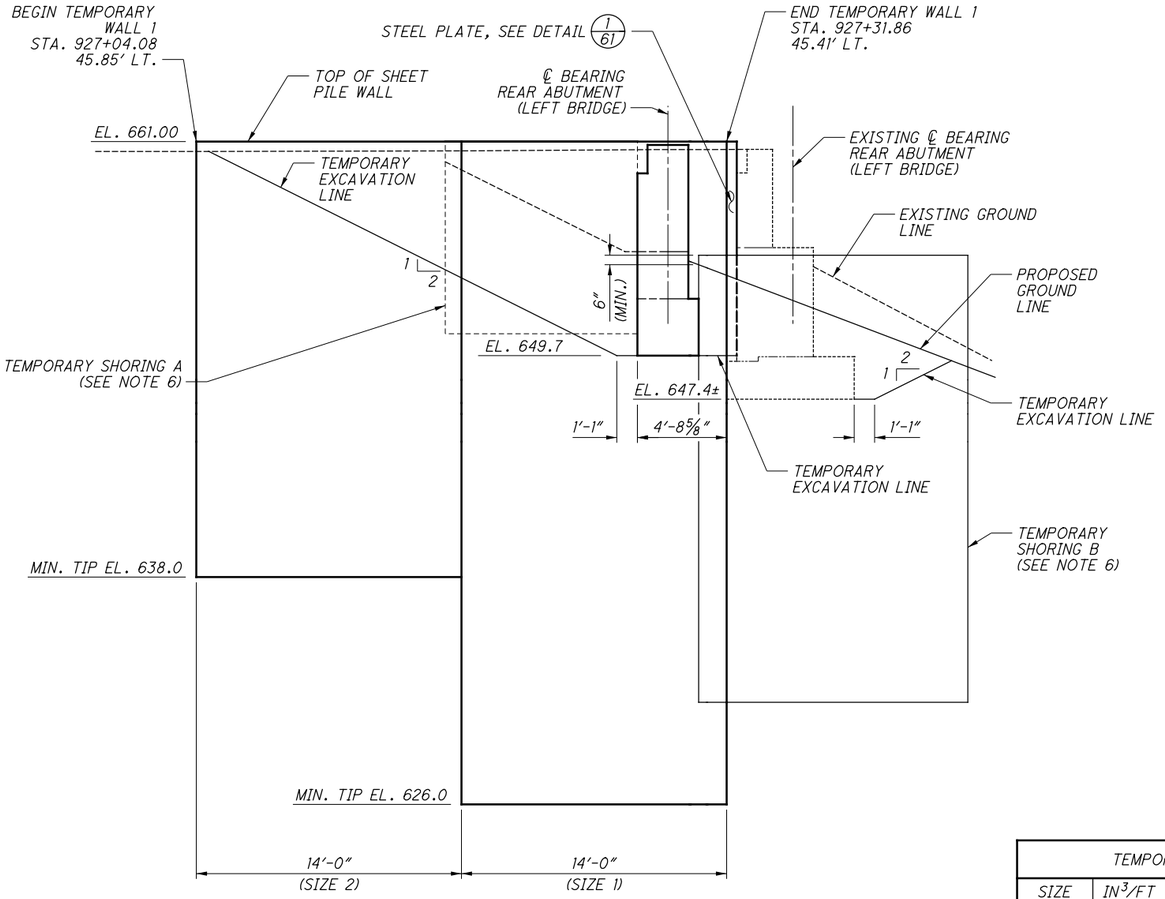
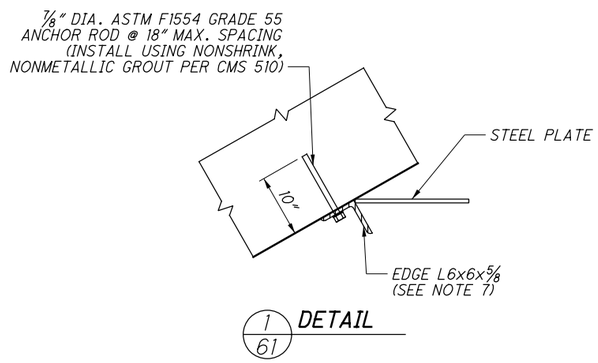


TEMPORARY WALL 1 ELEVATION

(LOOKING NORTH)
(ABUTMENT PILES NOT SHOWN)

TEMPORARY WALL 1		
SIZE	IN^3/FT	MATERIAL
1	48.4	ASTM A572 GRADE 50
2	24.2	ASTM A572 GRADE 50

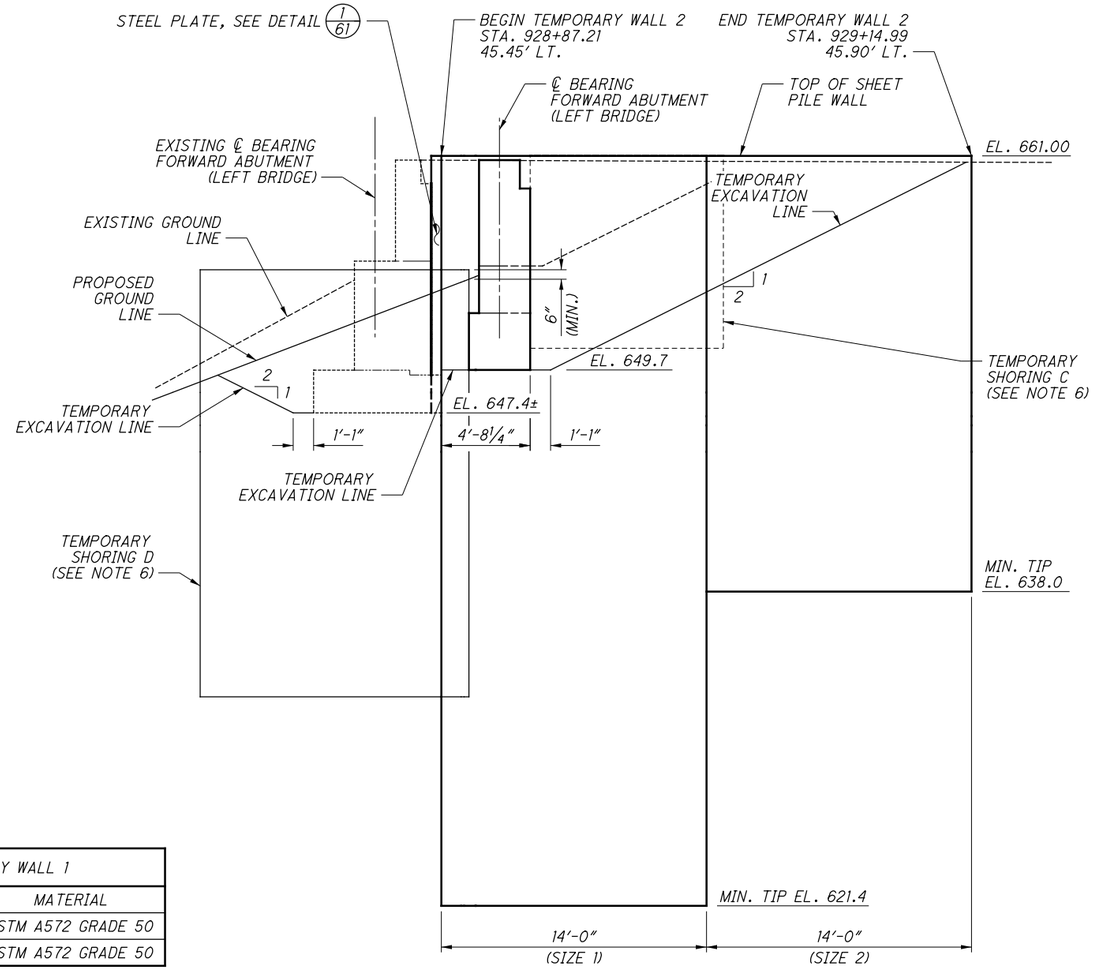
TEMPORARY WALL 2		
SIZE	IN^3/FT	MATERIAL
1	68.5	ASTM A572 GRADE 50
2	24.2	ASTM A572 GRADE 50



1/61 DETAIL

NOTES:

1. FOR PLAN VIEW OF TEMPORARY WALLS 1 AND 2 AND TEMPORARY SHORING A, B, C AND D, SEE SHEET 4/67.
2. ALL STATIONS AND OFFSETS ARE ALONG THE FRONT EXPOSED FACE OF THE SHEET PILING.
3. THE INSTALLATION AND PARTIAL REMOVAL OF TEMPORARY WALL 1 SHALL BE INCLUDED WITH ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 1) FOR PAYMENT.
4. THE INSTALLATION AND PARTIAL REMOVAL OF TEMPORARY WALL 2 SHALL BE INCLUDED WITH ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 2) FOR PAYMENT.
5. FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION, SEE SHEET 10/67.
6. TEMPORARY SHORING DESIGNATIONS INDICATE EXCAVATION BRACING THAT THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING.
7. POSITION EDGE ANGLES SNUGLY AGAINST STEEL PLATE AND WEDGE AS NECESSARY TO ENSURE FULL CONTACT WITH STEEL PLATE. ANCHOR EACH ANGLE WITH 7/8" DIAMETER ANCHOR RODS WITH 10" MINIMUM EMBEDMENT INTO CONCRETE PER CMS 510. NONSHRINK, NONMETALLIC GROUT SHALL CONFORM TO CMS 705.20. PAYMENT SHALL BE INCLUDED WITH ITEM 504.
8. THE TEMPORARY WALLS SHALL BE REMOVED TO 6 INCHES BELOW THE AGGREGATE BASE ONCE THEY ARE NO LONGER REQUIRED FOR SUPPORT OF EXCAVATIONS.



TEMPORARY WALL 2 ELEVATION

(LOOKING NORTH)
(ABUTMENT PILES NOT SHOWN)

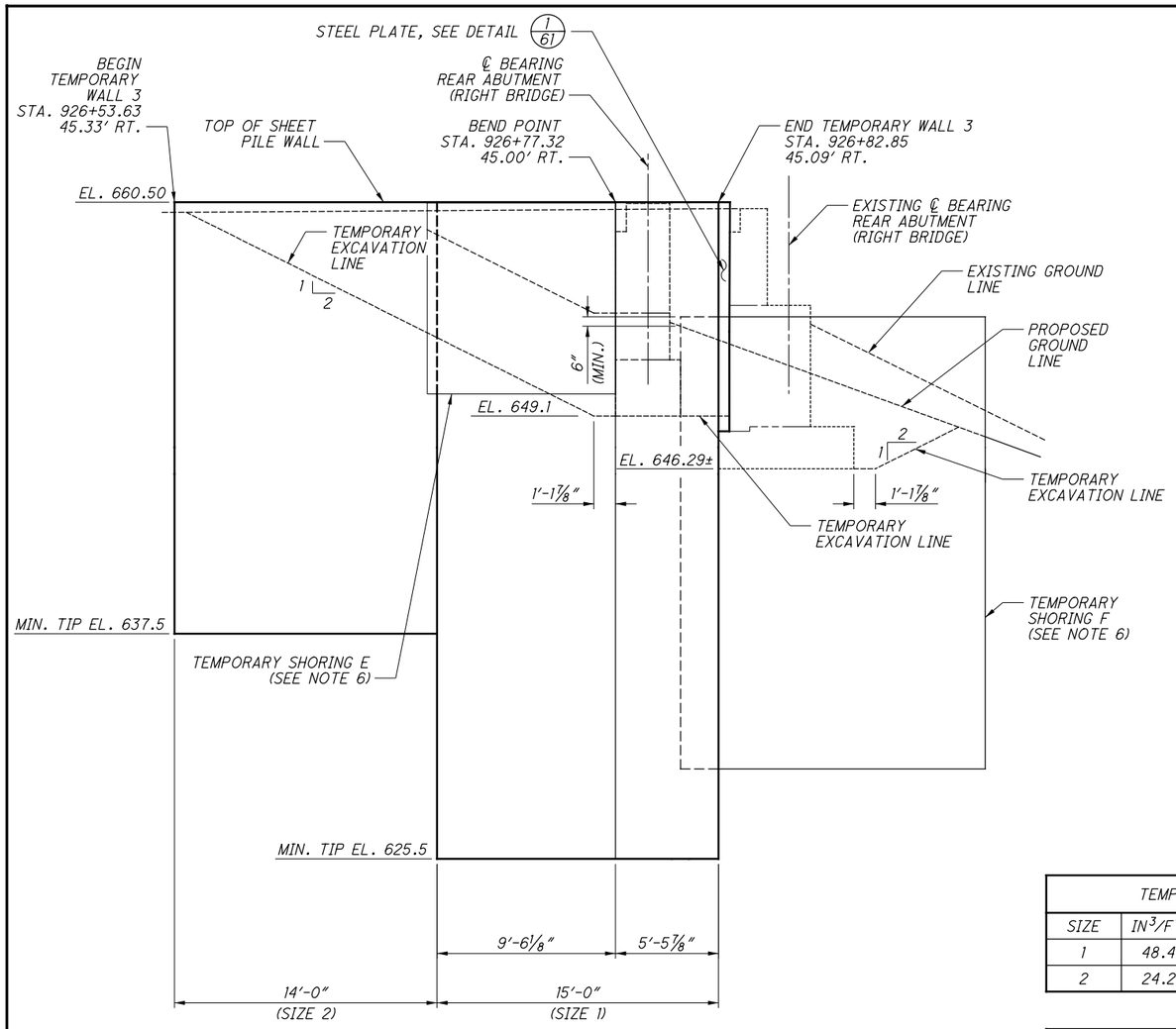
DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MSL		4704895/4704925	

TEMPORARY WALL 1 AND WALL 2 DETAILS

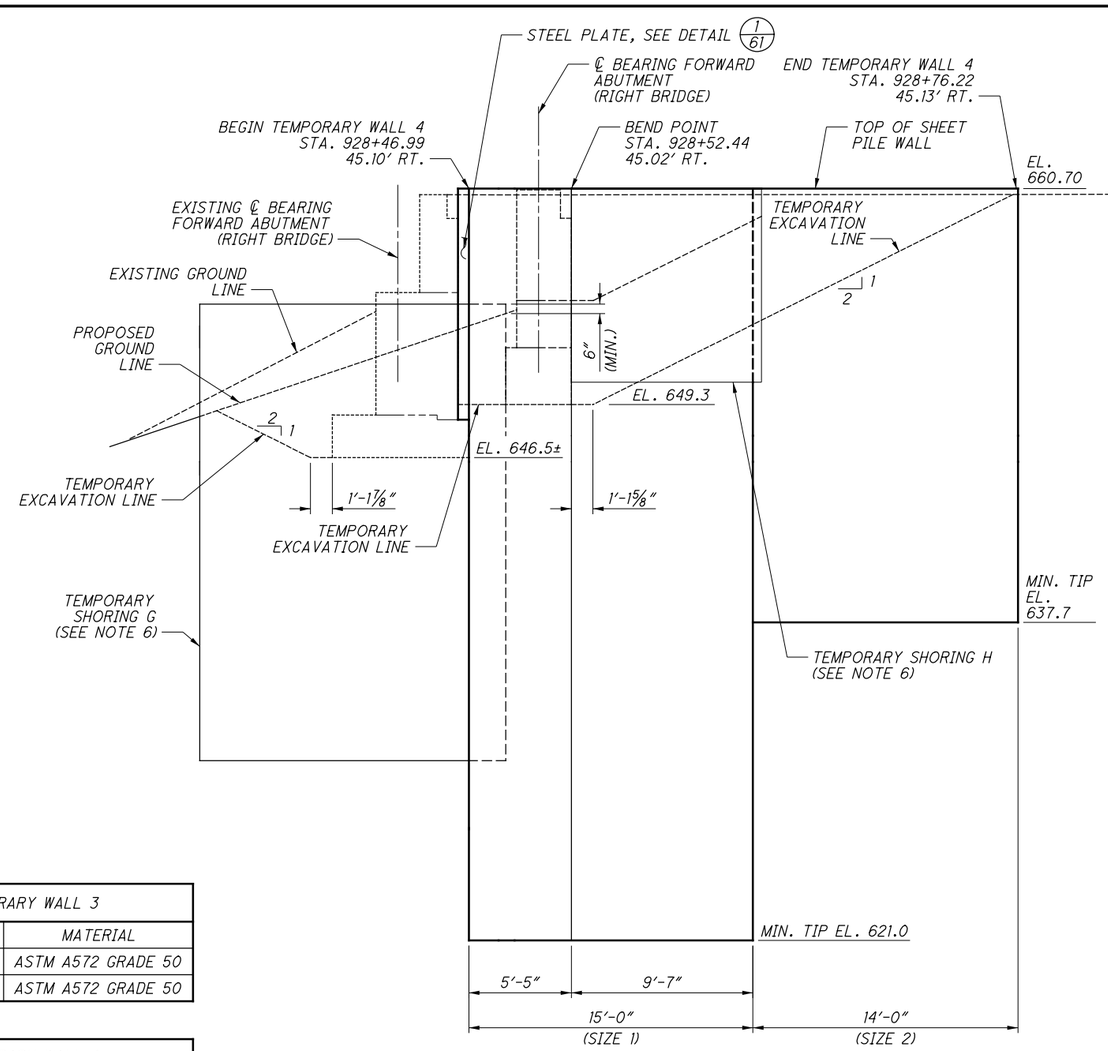
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942



TEMPORARY WALL 3 ELEVATION

(LOOKING NORTH)
(ABUTMENT PILES NOT SHOWN)



TEMPORARY WALL 4 ELEVATION

(LOOKING NORTH)
(ABUTMENT PILES NOT SHOWN)

TEMPORARY WALL 3		
SIZE	IN^3/FT	MATERIAL
1	48.4	ASTM A572 GRADE 50
2	24.2	ASTM A572 GRADE 50

TEMPORARY WALL 4		
SIZE	IN^3/FT	MATERIAL
1	68.5	ASTM A572 GRADE 50
2	24.2	ASTM A572 GRADE 50

NOTES:

1. FOR PLAN VIEW OF TEMPORARY WALLS 3 AND 4 AND TEMPORARY SHORING E, F, G AND H, SEE SHEET 4/67.
2. ALL STATIONS AND OFFSETS ARE ALONG THE FRONT EXPOSED FACE OF THE SHEET PILING.
3. THE INSTALLATION AND PARTIAL REMOVAL OF TEMPORARY WALL 3 SHALL BE INCLUDED WITH ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 3) FOR PAYMENT.
4. THE INSTALLATION AND PARTIAL REMOVAL OF TEMPORARY WALL 4 SHALL BE INCLUDED WITH ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN (TEMPORARY WALL 4) FOR PAYMENT.
5. FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION, SEE SHEET 10/67.
6. TEMPORARY SHORING DESIGNATIONS INDICATE EXCAVATION BRACING THAT THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING.
7. THE TEMPORARY WALLS SHALL BE REMOVED TO 6 INCHES BELOW THE AGGREGATE BASE ONCE THEY ARE NO LONGER REQUIRED FOR SUPPORT OF EXCAVATIONS.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1100
CLEVELAND, OHIO 44114

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
MSL		4704895/4704925	

TEMPORARY WALL 3 AND WALL 4 DETAILS

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

62/67

183
196

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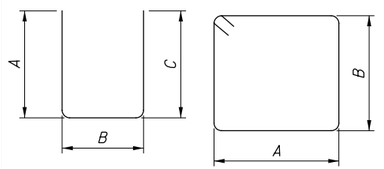
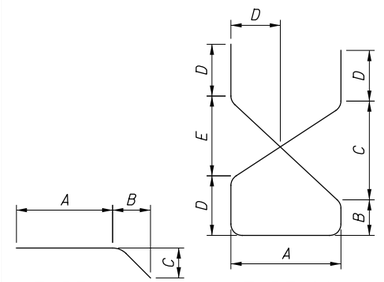
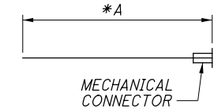
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - REAR ABUTMENT											
RA401	45	9′-0″	271	3	2′-0″	2′-3″					
RA501	172	7′-5″	1331	2	2′-6″	2′-8″	2′-6″				
RA502	6	13′-11″	87	STR							
RA503	6	30′-0″	188	38							
RA504	6	30′-0″	188	39							
RA505	6	22′-1″	138	STR							
RA506	86	11′-9″	1054	2	4′-11″	2′-2″	4′-11″				
	1	6′-11″			2′-6″		2′-6″				
RA507	SER OF	TO	15	2	TO	2′-2″	TO			3″	
	2	7′-5″			2′-9″		2′-9″				
	1	4′-1″			1′-1″		1′-1″				
RA508	SER OF	TO	9	2	TO	2′-2″	TO			3″	
	2	4′-7″			1′-4″		1′-4″				
RA509	1	9′-1″	9	2	3′-7″	2′-2″	3′-7″				
RA510	1	6′-3″	7	2	2′-2″	2′-2″	2′-2″				
RA511	16	9′-7″	160	2	3′-10″	2′-2″	3′-10″				
	1	7′-3″			2′-8″		2′-8″				
RA512	SER OF	TO	37	2	TO	2′-2″	TO			6¼″	
	4	10′-5″			4′-3″		4′-3″				
RA513	3	10′-5″	33	2	4′-3″	2′-2″	4′-3″				
	1	8′-8″				1′-8″	11″				
RA514	SER OF	TO	28	19	6′-9″	TO	TO			5″	
	3	9′-6″				2′-5″	1′-4″				
	1	4′-3″									
RA515	SER OF	TO	27	STR						1′-5⅜″	
	4	8′-7″									
	1	3′-5″									
RA516	SER OF	TO	23	STR						1′-5⅜″	
	4	7′-9″									
RA517	1	8′-7″	9	STR							
RA518	1	7′-9″	8	STR							
	1	5′-11″			2′-0″		2′-0″				
RA519	SER OF	TO	13	2	TO	2′-2″	TO			4″	
	2	6′-7″			2′-4″		2′-4″				
	1	3′-1″			7″		7″				
RA520	SER OF	TO	7	2	TO	2′-2″	TO			4″	
	2	3′-9″			11″		11″				
RA521	1	8′-3″	9	2	3′-2″	2′-2″	3′-2″				
RA522	1	5′-5″	6	2	1′-9″	2′-2″	1′-9″				
	1	6′-7″			2′-4″		2′-4″				
RA523	SER OF	TO	46	2	TO	2′-2″	TO			6½″	
	5	10′-11″			4′-6″		4′-6″				
RA524	1	12′-9″	13	2	5′-5″	2′-2″	5′-5″				
RA525	3	13′-5″	42	2	5′-9″	2′-2″	5′-9″				
	1	12′-1″				1′-6″	11″				
RA526	SER OF	TO	39	19	10′-4″	TO	TO			6″	
	3	13′-1″				2′-5″	1′-5″				
	1	3′-6″									
RA527	SER OF	TO	35	STR						1′-6¾″	
	5	9′-9″									
	1	4′-5″									
RA528	SER OF	TO	39	STR						1′-6¾″	
	5	10′-8″									
RA529	1	10′-8″	11	STR							
RA530	1	11′-6″	12	STR							
RA601	70	11′-7″	1218	26	2′-6″	5″	2′-7″	10″	1′-9″		
RA801	8	17′-0″	363	STR							
RA802	8	30′-0″	641	38							
RA803	8	30′-0″	641	39							
RA804	8	25′-2″	538	STR							
TOTAL REAR ABUTMENT			7295								

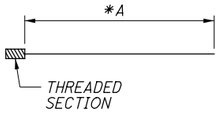
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - FORWARD ABUTMENT											
FA401	45	9′-0″	271	3	2′-0″	2′-3″					
FA501	174	7′-5″	1346	2	2′-6″	2′-8″	2′-6″				
FA502	6	22′-10″	143	STR							
FA503	6	30′-0″	188	39							
FA504	6	30′-0″	188	38							
FA505	6	11′-9″	74	STR							
FA506	87	11′-9″	1066	2	4′-11″	2′-2″	4′-11″				
	1	5′-11″			2′-0″		2′-0″				
FA507	SER OF	TO	13	2	TO	2′-2″	TO			3″	
	2	6′-5″			2′-3″		2′-3″				
	1	3′-1″			7″		7″				
FA508	SER OF	TO	7	2	TO	2′-2″	TO			3″	
	2	3′-7″			10″		10″				
	1	7′-11″			3′-0″		3′-0″				
FA509	SER OF	TO	18	2	TO	2′-2″	TO			6″	
	2	8′-11″			3′-6″		3′-6″				
	1	5′-1″			1′-7″		1′-7″				
FA510	SER OF	TO	12	2	TO	2′-2″	TO			6″	
	2	6′-1″			2′-1″		2′-1″				
FA511	15	9′-7″	150	2	3′-10″	2′-2″	3′-10″				
	1	7′-1″			2′-7″		2′-7″				
FA512	SER OF	TO	36	2	TO	2′-2″	TO			6″	
	4	10′-1″			4′-1″		4′-1″				
	1	11′-7″			4′-10″		4′-10″				
FA513	SER OF	TO	25	2	TO	2′-2″	TO			6″	
	2	12′-7″			5′-4″		5′-4″				
FA514	3	13′-3″	41	2	5′-8″	2′-2″	5′-8″				
	1	13′-0″				1′-8″	10″				
FA515	SER OF	TO	42	19	11′-2″	TO	TO			5″	
	3	13′-10″				2′-4″	1′-3″				
	1	4′-6″									
FA516	SER OF	TO	42	STR						1′-9″	
	5	11′-6″									
	1	3′-8″									
FA517	SER OF	TO	37	STR						1′-9″	
	5	10′-8″									
FA518	1	12′-6″	13	STR							
FA519	1	11′-8″	12	STR							
	1	7′-5″			2′-9″		2′-9″				
FA520	SER OF	TO	16	2	TO	2′-2″	TO			4″	
	2	8′-1″			3′-1″		3′-1″				
	1	4′-7″			1′-4″		1′-4″				
FA521	SER OF	TO	10	2	TO	2′-2″	TO			4″	
	2	5′-3″			1′-8″		1′-8″				
	1	7′-3″			2′-8″		2′-8″				
FA522	SER OF	TO	27	2	TO	2′-2″	TO			7½″	
	3	9′-9″			3′-11″		3′-11″				
FA523	3	10′-7″	33	2	4′-4″	2′-2″	4′-4″				
	1	7′-3″				1′-7″	1′-1″				
FA524	SER OF	TO	24	19	5′-4″	TO	TO			4½″	
	3	8′-0″				2′-3″	1′-6″				
	1	3′-0″									
FA525	SER OF	TO	13	STR						1′-3″	
	3	5′-6″									
	1	3′-11″									
FA526	SER OF	TO	16	STR						1′-2½″	
	3	6′-4″									
FA527	2	6′-3″	13	STR							
FA528	2	7′-1″	15	STR							
FA601	70	11′-7″	1218	26	2′-6″	5″	2′-7″	10″	1′-9″		
FA801	8	26′-0″	555	STR							
FA802	8	30′-0″	641	39							
FA803	8	30′-0″	641	38							
FA804	8	15′-0″	320	STR							
TOTAL FORWARD ABUTMENT			7266								

BAR BENDING DIAGRAMS









* REINFORCING BAR UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH ADJUSTMENT AND/OR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF CONNECTOR USED.

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, AR501 BAR: AR: LOCATION OF THE BAR IN THE STRUCTURE (REAR ABUTMENT) 5: BAR SIZE DESIGNATION NO. 5 01: SEQUENCE NUMBER
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT BARS ARE INDICATED BY "STR".

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

REINFORCING STEEL LIST - 1

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

63 / 67

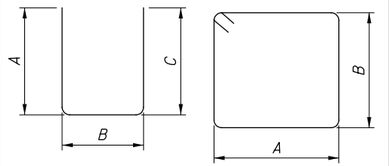
184
196

...\Sheets\090_1785C_SL001.dgn 7/13/2020 11:38:26 AM HBaker

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - REAR ABUTMENT											
RA451	48	9'-0"	289	3	2'-0"	2'-3"					
RA551	182	7'-5"	1408	2	2'-6"	2'-8"	2'-6"				
RA552	6	24'-2"	151	STR							
RA553	6	30'-0"	188	39							
RA554	6	30'-0"	188	38							
RA555	6	18'-5"	115	STR							
RA556	91	11'-9"	1115	2	4'-11"	2'-2"	4'-11"				
	1	6'-7"			2'-4"		2'-4"				
RA557	SER OF	TO	14	2	TO	2'-2"	TO				3"
	2	7'-1"			2'-7"		2'-7"				
	1	3'-9"			11"		11"				
RA558	SER OF	TO	8	2	TO	2'-2"	TO				3"
	2	4'-3"			1'-2"		1'-2"				
RA559	1	8'-7"	9	2	3'-4"	2'-2"	3'-4"				
RA560	1	5'-9"	6	2	1'-11"	2'-2"	1'-11"				
RA561	17	9'-7"	170	2	3'-10"	2'-2"	3'-10"				
	1	6'-9"			2'-5"		2'-5"				
RA562	SER OF	TO	34	2	TO	2'-2"	TO				6"
	4	9'-9"			3'-11"		3'-11"				
RA563	3	10'-5"	33	2	4'-3"	2'-2"	4'-3"				
	1	9'-6"				1'-8"	10"				
RA564	SER OF	TO	32	19	7'-8"	TO	TO				8½"
	3	10'-11"				2'-11"	1'-5"				
	1	4'-9"									
RA565	SER OF	TO	30	STR							1'-8⅜"
	4	9'-10"									
	1	3'-6"									
RA566	SER OF	TO	25	STR							1'-8⅜"
	4	8'-7"									
RA567	1	10'-0"	10	STR							
RA568	1	8'-10"	9	STR							
	1	7'-1"			2'-7"		2'-7"				
RA569	SER OF	TO	15	2	TO	2'-2"	TO				4"
	2	7'-9"			2'-11"		2'-11"				
	1	4'-3"			1'-2"		1'-2"				
RA570	SER OF	TO	10	2	TO	2'-2"	TO				4"
	2	4'-11"			1'-6"		1'-6"				
	1	6'-7"			2'-4"		2'-4"				
RA571	SER OF	TO	57	2	TO	2'-2"	TO				6½"
	6	11'-9"			4'-11"		4'-11"				
RA572	4	13'-7"	57	2	5'-10"	2'-2"	5'-10"				
	1	11'-5"				1'-8"	11"				
RA573	SER OF	TO	38	19	9'-7"	TO	TO				8½"
	3	12'-10"				2'-11"	1'-7"				
	1	3'-1"									
RA574	SER OF	TO	35	STR							1'-9½"
	5	10'-3"									
	1	4'-4"									
RA575	SER OF	TO	41	STR							1'-9½"
	5	11'-6"									
RA576	1	10'-3"	11	STR							
RA577	1	11'-6"	12	STR							
RA651	72	11'-6"	1244	26	2'-6"	5"	2'-7"	10"	1'-9"		
RA851	8	27'-4"	584	STR							
RA852	8	30'-0"	641	39							
RA853	8	30'-0"	641	38							
RA854	8	21'-7"	461	STR							
TOTAL REAR ABUTMENT			7681								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - FORWARD ABUTMENT											
FA451	48	9'-0"	289	3	2'-0"	2'-3"					
FA551	184	7'-5"	1423	2	2'-6"	2'-8"	2'-6"				
FA552	6	17'-1"	107	STR							
FA553	6	30'-0"	188	38							
FA554	6	30'-0"	188	39							
FA555	6	20'-8"	129	STR							
FA556	92	11'-9"	1127	2	4'-11"	2'-2"	4'-11"				
	1	8'-7"			3'-4"		3'-4"				
FA557	SER OF	TO	18	2	TO	2'-2"	TO				3"
	2	9'-1"			3'-7"		3'-7"				
	1	5'-9"			1'-11"		1'-11"				
FA558	SER OF	TO	13	2	TO	2'-2"	TO				3"
	2	6'-3"			2'-2"		2'-2"				
FA559	15	9'-7"	150	2	3'-10"	2'-2"	3'-10"				
	1	7'-11"			3'-0"		3'-0"				
FA560	SER OF	TO	64	2	TO	2'-2"	TO				5⅜"
	6	12'-5"			5'-3"		5'-3"				
FA561	3	13'-3"	41	2	5'-8"	2'-2"	5'-8"				
	1	10'-2"				1'-8"	10"				
FA562	SER OF	TO	34	19	8'-4"	TO	TO				6½"
	3	11'-3"				2'-8"	1'-4"				
	1	4'-11"									
FA563	SER OF	TO	32	STR							1'-10"
	4	10'-5"									
	1	3'-9"									
FA564	SER OF	TO	27	STR							1'-10"
	4	9'-3"									
FA565	2	10'-5"	22	STR							
FA566	2	9'-3"	19	STR							
	1	6'-9"			2'-5"		2'-5"				
FA567	SER OF	TO	15	2	TO	2'-2"	TO				6"
	2	7'-9"			2'-11"		2'-11"				
	1	3'-11"			1'-0"		1'-0"				
FA568	SER OF	TO	9	2	TO	2'-2"	TO				6"
	2	4'-11"			1'-6"		1'-6"				
	1	7'-1"			2'-7"		2'-7"				
FA569	SER OF	TO	27	2	TO	2'-2"	TO				8½"
	3	9'-11"			4'-0"		4'-0"				
FA570	3	10'-5"	33	2	4'-3"	2'-2"	4'-3"				
	1	7'-5"				1'-6"	1'-2"				
FA571	SER OF	TO	25	19	5'-7"	TO	TO				7½"
	3	8'-8"				2'-5"	1'-11"				
	1	3'-0"									
FA572	SER OF	TO	13	STR							1'-1"
	3	5'-2"									
	1	4'-2"									
FA573	SER OF	TO	16	STR							1'-1"
	3	6'-4"									
FA574	2	6'-4"	13	STR							
FA575	2	7'-6"	16	STR							
FA651	70	11'-6"	1209	26	2'-6"	5"	2'-7"	10"	1'-9"		
FA851	8	20'-3"	433	STR							
FA852	8	30'-0"	641	38							
FA853	8	30'-0"	641	39							
FA854	8	23'-10"	509	STR							
TOTAL FORWARD ABUTMENT			7471								

BAR BENDING DIAGRAMS



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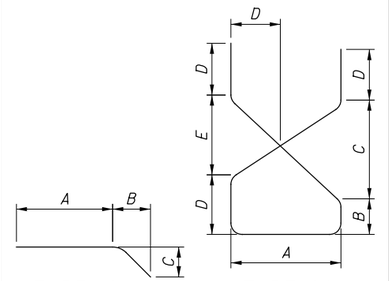

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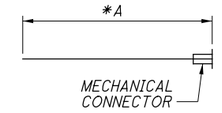

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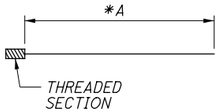

TYPE-39

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DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW
DRAWN GJZ
CHECKED RSB
REVIEWED NFF
DATE 5/16/19
STRUCTURE FILE NUMBER 4704895/4704925
REVISED

REINFORCING STEEL LIST - 2
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

64/67
185/196

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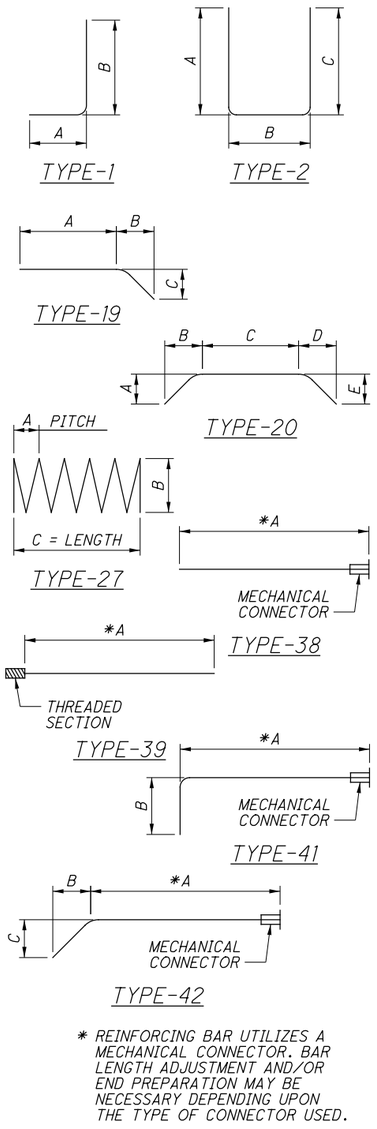
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - PIER 1											
1SP501	1	20'-6"	421	27	5"	2'-6"	20'-6"				
1SP502	1	20'-1"	412	27	5"	2'-6"	20'-1"				
1SP503	1	19'-7"	403	27	5"	2'-6"	19'-7"				
1SP504	1	19'-2"	395	27	5"	2'-6"	19'-2"				
1P505	252	6'-11"	1818	2	2'-8"	1'-10"	2'-8"				
1P506	20	8'-5"	176	2	3'-0"	2'-8"	3'-0"				
1P507	8	16'-8"	139	STR							
	8	4'-11"			1'-8"		1'-8"				
1P508	SER OF	TO	346	2	TO	1'-10"	TO				2"
	7	6'-11"			2'-8"		2'-8"				
1P509	6	17'-6"	110	2	7'-8"	2'-5"	7'-8"				
1P801	8	38'-0"	812	1	1'-8"	36'-7"					
1P802	8	36'-7"	781	STR							
1P803	8	30'-8"	655	41	1'-7"	29'-3"					
1P804	8	29'-4"	627	38	29'-4"						
1P805	12	36'-9"	1177	19	32'-9"	3'-11"	11"				
1P806	12	29'-4"	940	42	25'-5"	3'-10"	1'-1"				
1P807	28	6'-5"	480	39	6'-5"						
1P901	10	23'-2"	788	STR							
1P902	10	23'-1"	785	STR							
1P903	10	22'-6"	765	STR							
1P904	10	21'-9"	740	STR							
TOTAL PIER 1			12770								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - PIER 1											
1SP551	1	20'-2"	414	27	5"	2'-6"	20'-2"				
1SP552	1	20'-0"	411	27	5"	2'-6"	20'-0"				
1SP553	1	19'-11"	409	27	5"	2'-6"	19'-11"				
1SP554	1	19'-6"	401	27	5"	2'-6"	19'-6"				
1SP555	1	19'-0"	392	27	5"	2'-6"	19'-0"				
1SP556	1	18'-8"	385	27	5"	2'-6"	18'-8"				
1P557	176	7'-7"	1392	2	2'-7"	2'-8"	2'-7"				
1P558	16	8'-3"	138	2	2'-11"	2'-8"	2'-11"				
1P559	5	7'-2"	37	STR							
1P560	12	13'-7"	170	2	5'-9"	2'-4"	5'-9"				
	16	5'-1"			1'-9"		1'-9"				
1P561	SER OF	TO	601	2	TO	1'-10"	TO				2¼"
	6	6'-11"			2'-8"		2'-8"				
1P851	10	34'-10"	930	2	1'-8"	31'-11"	1'-8"				
1P852	10	31'-11"	852	STR							
1P853	14	32'-3"	1206	20	11"	1'-11"	28'-1"	1'-11"	1'-0"		
1P951	10	22'-7"	768	STR							
1P952	10	22'-8"	771	STR							
1P953	10	22'-3"	757	STR							
1P954	10	21'-11"	745	STR							
1P955	10	21'-6"	731	STR							
1P956	10	21'-0"	714	STR							
TOTAL PIER 1			12224								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - PIER 2											
2SP501	1	20'-6"	421	27	5"	2'-6"	20'-6"				
2SP502	1	20'-1"	412	27	5"	2'-6"	20'-1"				
2SP503	1	19'-7"	403	27	5"	2'-6"	19'-7"				
2SP504	1	19'-2"	395	27	5"	2'-6"	19'-2"				
2P505	252	6'-11"	1818	2	2'-8"	1'-10"	2'-8"				
2P506	20	8'-5"	176	2	3'-0"	2'-8"	3'-0"				
2P507	8	16'-8"	139	STR							
	8	4'-11"			1'-8"		1'-8"				
2P508	SER OF	TO	346	2	TO	1'-10"	TO				2"
	7	6'-11"			2'-8"		2'-8"				
2P509	6	17'-6"	110	2	7'-8"	2'-5"	7'-8"				
2P801	8	38'-0"	812	1	1'-8"	36'-7"					
2P802	8	36'-7"	781	STR							
2P803	8	30'-8"	655	41	1'-7"	29'-3"					
2P804	8	29'-4"	627	38							
2P805	12	36'-9"	1177	19	32'-9"	3'-11"	11"				
2P806	12	29'-5"	943	42	25'-5"	3'-10"	1'-1"				
2P807	28	6'-5"	480	39	6'-5"						
2P901	10	23'-2"	788	STR							
2P902	10	23'-1"	785	STR							
2P903	10	22'-6"	765	STR							
2P904	10	21'-9"	740	STR							
TOTAL PIER 2			12773								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - PIER 2											
2SP551	1	20'-3"	415	27	5"	2'-6"	20'-3"				
2SP552	1	20'-1"	412	27	5"	2'-6"	20'-1"				
2SP553	1	20'-0"	411	27	5"	2'-6"	20'-0"				
2SP554	1	19'-7"	403	27	5"	2'-6"	19'-7"				
2SP555	1	19'-1"	393	27	5"	2'-6"	19'-1"				
2SP556	1	18'-9"	387	27	5"	2'-6"	18'-9"				
2P557	176	7'-7"	1392	2	2'-7"	2'-8"	2'-7"				
2P558	16	8'-3"	138	2	2'-11"	2'-8"	2'-11"				
2P559	5	7'-2"	37	STR							
2P560	12	13'-7"	170	2	5'-9"	2'-4"	5'-9"				
	16	5'-1"			1'-9"		1'-9"				
2P561	SER OF	TO	601	2	TO	1'-10"	TO				2¼"
	6	6'-11"			2'-8"		2'-8"				
2P851	10	34'-10"	930	2	1'-8"	31'-11"	1'-8"				
2P852	10	31'-11"	852	STR							
2P853	14	32'-3"	1206	20	11"	1'-11"	28'-1"	1'-11"	1'-0"		
2P951	10	22'-7"	768	STR							
2P952	10	22'-8"	771	STR							
2P953	10	22'-3"	757	STR							
2P954	10	21'-11"	745	STR							
2P955	10	21'-6"	731	STR							
2P956	10	21'-0"	714	STR							
TOTAL PIER 2			12233								

BAR BENDING DIAGRAMS



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DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED NFF | DATE 5/16/19
CHECKED RSB | REVISED | STRUCTURE FILE NUMBER 4704895/4704925

REINFORCING STEEL LIST - 3

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

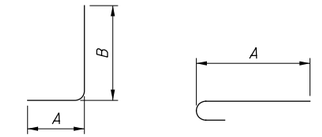
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - SUPERSTRUCTURE											
S401	345	30'-0"	6914	STR							
S402	69	25'-11"	1195	STR							
S403	110	1'-3"	92	STR							
S404	78	1'-6"	78	STR							
S405	94	1'-9"	110	STR							
S406	41	2'-0"	55	STR							
S407	372	19'-0"	4721	STR							
	2	7'-8"									
S501	SER OF	TO	807	STR							1'-2¾"
	20	31'-0"									
S502	301	34'-1"	10700	16	33'-6"						
S503	301	33'-6"	10517	STR							
	2	7'-2"									
S504	SER OF	TO	1018	STR							1'-1¾"
	24	33'-6"									
	2	7'-8"									
S505	SER OF	TO	751	STR							1'-1"
	20	28'-4"									
S506	305	29'-1"	9252	40	28'-6"						
S507	305	28'-6"	9066	38	28'-6"						
	2	2'-7"									
S508	SER OF	TO	600	38							1'-2⅞"
	20	26'-2"									
S509	650	7'-10"	5311	16	7'-3"						
S510	650	3'-9"	2542	39							
S511	390	30'-0"	12203	STR							
S512	78	28'-0"	2278	STR							
S513	8	5'-6"	46	STR							
S601	4	36'-10"	221	39							
S602	4	36'-5"	219	39							
S603	4	31'-5"	189	38							
S604	4	31'-1"	187	38							
TOTAL SUPERSTRUCTURE			79072								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - SUPERSTRUCTURE											
S451	345	30'-0"	6914	STR							
S452	69	34'-2"	1575	STR							
S453	124	1'-3"	104	STR							
S454	55	1'-6"	55	STR							
S455	75	1'-9"	88	STR							
S456	83	2'-0"	111	STR							
S457	372	19'-0"	4721	STR							
	2	1'-10"									
S551	SER OF	TO	839	38							10¼"
	29	25'-11"									
S552	312	29'-1"	9464	40	28'-6"						
S553	312	28'-6"	9274	38							
	2	6'-10"									
S554	SER OF	TO	995	STR							10"
	27	28'-6"									
	2	8'-0"									
S555	SER OF	TO	1454	STR							9⅞"
	33	34'-3"									
S556	305	34'-1"	10842	16	33'-6"						
S557	305	33'-6"	10657	STR							
	2	6'-2"									
S558	SER OF	TO	1179	STR							10½"
	30	31'-6"									
S559	677	8'-0"	5649	16	7'-5"						
S560	670	3'-9"	2621	39							
S561	390	30'-0"	12203	STR							
S562	78	36'-3"	2949	STR							
S563	16	5'-6"	92	STR							
S651	4	33'-2"	199	38							
S652	4	32'-7"	196	38							
S653	4	40'-2"	241	39							
S654	4	39'-6"	237	39							
TOTAL SUPERSTRUCTURE			82659								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - RAILING											
R501	353	7'-4"	2700	23	11"	3'-3"	3'-0"			2¾"	
R502	6	9'-1"	57	STR							
R503	2	9'-5"	20	STR							
R504	16	12'-2"	203	STR							
R505	52	7'-2"	389	STR							
R506	40	30'-0"	1252	STR							
R507	8	28'-0"	234	STR							
R601	353	2'-5"	1281	1	1'-0"	1'-6½"					
R602	353	3'-2"	1679	28	1'-6½"	11"	1'-0"				
R603	3	9'-1"	41	STR							
R604	1	9'-5"	14	STR							
R605	8	12'-2"	146	STR							
R606	26	7'-2"	280	STR							
TOTAL RAILING			8296								

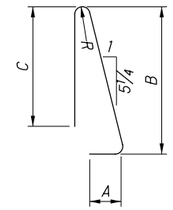
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - RAILING											
R551	373	7'-4"	2853	23	11"	3'-3"	3'-0"			2¾"	
R552	6	5'-6"	34	STR							
R553	2	6'-3"	13	STR							
R554	16	12'-2"	203	STR							
R555	60	7'-2"	448	STR							
R556	48	30'-0"	1502	STR							
R557	8	8'-4"	70	STR							
R651	373	2'-5"	1354	1	1'-0"	1'-6½"					
R652	373	3'-2"	1774	28	1'-6½"	11"	1'-0"				
R653	3	5'-6"	25	STR							
R654	1	6'-3"	9	STR							
R655	8	12'-2"	146	STR							
R656	30	7'-2"	323	STR							
TOTAL RAILING			8754								

BAR BENDING DIAGRAMS



TYPE-1

TYPE-16



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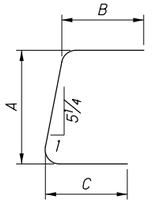

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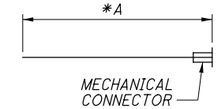

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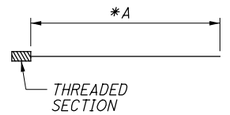
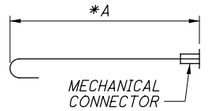


TYPE-39



TYPE-40

* REINFORCING BAR UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH ADJUSTMENT AND/OR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF CONNECTOR USED.

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, AR501 BAR: AR: LOCATION OF THE BAR IN THE STRUCTURE (REAR ABUTMENT) 5: BAR SIZE DESIGNATION NO. 5 01: SEQUENCE NUMBER
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT BARS ARE INDICATED BY "STR".

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DATE 5/16/19
REVIEWED NFF
STRUCTURE FILE NUMBER 4704895/4704925
DRAWN GJZ
REVISED
DESIGNED ZTW
CHECKED RSB

REINFORCING STEEL LIST - 4
BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

66 / 67
187 / 196

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MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - REAR DIAPHRAGM											
RD501	70	9'-1"	663	2	3'-10"	1'-8"	3'-10"				
RD502	6	7'-3"	45	2	2'-7"	2'-4"	2'-7"				
RD503	18	7'-7"	142	2	2'-9"	2'-4"	2'-9"				
RD504	36	8'-3"	310	2	3'-1"	2'-4"	3'-1"				
RD505	80	9'-1"	758	2	3'-6"	2'-4"	3'-6"				
RD601	4	31'-5"	189	38	31'-5"						
RD602	4	10'-7"	64	39	10'-7"						
RD603	4	30'-0"	180	STR							
RD801	6	31'-5"	503	38	31'-5"						
RD802	2	27'-8"	148	38	27'-8"						
RD803	8	13'-3"	283	39	13'-3"						
RD804	10	29'-1"	777	STR							
RD805	42	5'-1"	570	18	2'-9"	1'-0"	1'-0"				
TOTAL REAR DIAPHRAGM			4632								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - FORWARD DIAPHRAGM											
FD501	70	9'-1"	663	2	3'-10"	1'-8"	3'-10"				
FD502	80	9'-1"	758	2	3'-6"	2'-4"	3'-6"				
FD503	36	8'-1"	304	2	3'-0"	2'-4"	3'-0"				
FD504	18	7'-7"	142	2	2'-9"	2'-4"	2'-9"				
FD505	6	7'-3"	45	2	2'-7"	2'-4"	2'-7"				
FD601	4	30'-0"	180	STR							
FD602	4	10'-3"	62	39	10'-3"						
FD603	4	31'-1"	187	38	31'-1"						
FD801	10	28'-8"	765	STR							
FD802	8	13'-3"	283	39	13'-3"						
FD803	2	27'-8"	148	38	27'-8"						
FD804	6	31'-1"	498	38	31'-1"						
FD805	43	5'-1"	584	18	2'-9"	1'-0"	1'-0"				
TOTAL FORWARD DIAPHRAGM			4619								

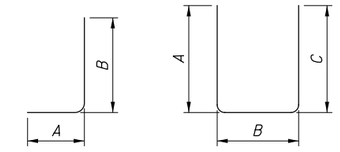
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT BRIDGE - APPROACH SLABS											
AS501	32	9'-10"	328	STR							
AS502	16	5'-8"	95	25	1'-10"	2'-5"	1'-5"	1½"	5"		
AS503	16	5'-8"	95	STR							
AS601	32	4'-6"	216	1	1'-0"	3'-8"					
	8	4'-6"				3'-8"					
AS602	SER OF	TO	650	1	1'-0"	TO					1"
	11	5'-4"				4'-6"					
TOTAL APPROACH SLABS			1384								

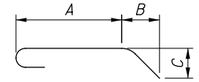
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - REAR DIAPHRAGM											
RD551	72	9'-4"	701	2	3'-10"	1'-11"	3'-10"				
RD552	8	7'-5"	62	2	2'-7"	2'-6"	2'-7"				
RD553	18	7'-9"	145	2	2'-9"	2'-6"	2'-9"				
RD554	36	8'-5"	316	2	3'-1"	2'-6"	3'-1"				
RD555	82	9'-3"	791	2	3'-6"	2'-6"	3'-6"				
RD651	4	30'-0"	180	STR							
RD652	4	13'-11"	84	39	13'-11"						
RD653	4	33'-3"	200	38	33'-3"						
RD851	6	30'-0"	481	STR							
RD852	2	27'-7"	147	STR	27'-7"						
RD853	8	15'-8"	335	39	15'-8"						
RD854	8	33'-3"	710	38	33'-3"						
RD855	2	33'-1"	177	STR							
RD856	43	5'-3"	603	18	2'-11"	1'-0"	1'-0"				
TOTAL REAR DIAPHRAGM			4932								

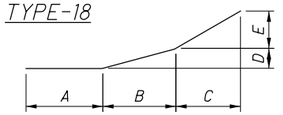
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - FORWARD DIAPHRAGM											
FD551	70	9'-4"	681	2	3'-10"	1'-11"	3'-10"				
FD552	80	9'-3"	772	2	3'-6"	2'-6"	3'-6"				
FD553	36	8'-3"	310	2	3'-0"	2'-6"	3'-0"				
FD554	18	7'-9"	145	2	2'-9"	2'-6"	2'-9"				
FD555	6	7'-5"	46	2	2'-7"	2'-6"	2'-7"				
FD651	4	32'-8"	196	38	32'-8"						
FD652	4	13'-3"	80	39	13'-3"						
FD653	4	30'-0"	180	STR							
FD851	8	32'-8"	698	38	32'-8"						
FD852	2	32'-6"	174	STR							
FD853	8	15'-0"	320	39	15'-0"						
FD854	2	27'-7"	147	STR							
FD855	6	30'-0"	481	STR							
FD856	43	5'-3"	603	18	2'-11"	1'-0"	1'-0"				
TOTAL FORWARD DIAPHRAGM			4833								

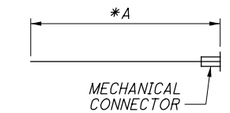
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT BRIDGE - APPROACH SLABS											
AS551	32	9'-10"	328	STR							
AS552	16	5'-8"	95	25	1'-10"	2'-5"	1'-5"	1½"	5"		
AS553	16	5'-8"	95	STR							
AS651	32	4'-6"	216	1	1'-0"	3'-8"					
	8	4'-6"				3'-8"					
AS652	SER OF	TO	650	1	1'-0"	TO				1"	
	11	5'-4"				4'-6"					
TOTAL APPROACH SLABS			1384								

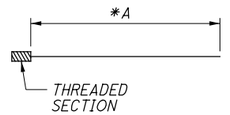
BAR BENDING DIAGRAMS











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DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	NFF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4704895/4704925	

REINFORCING STEEL LIST - 5

BRIDGE NO. LOR-90-1785 L/R
IR 90 OVER NORFOLK SOUTHERN RAILROAD

LOR-90-17.85
PID No. 90942

67 / 67

188
196

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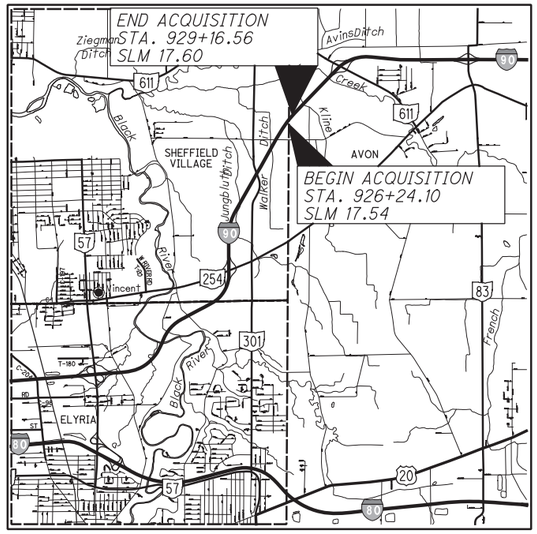
RIGHT OF WAY LEGEND SHEET LOR-90-17.85

LORAIN COUNTY
CITY OF AVON
SECTION NO. 3
VILLAGE OF SHEFFIELD
ORIGINAL LOT NOS. 5 & 6



LOCATION MAP

LATITUDE: 41°27'13" LONGITUDE: 82°04'02"

SCALE IN MILES

0 1 2 3 4

N

UTILITY OWNERS NAME & ADDRESS	
AVON LAKE REGIONAL WATER *ATTN: JACK GAYDAR* *201 MILLER ROAD* *AVON LAKE, OHIO 44012* *PHONE: (440) 933-6226* *EMAIL: Jgaydar@avonlakewater.org*	*FIRST ENERGY / OHIO EDISON* *ATTN: ALAN SCHEMPP* *76 SOUTH MAIN STREET* *AKRON, OHIO 44308* *PHONE: (330) 384-5489*
RURAL LORAIN COUNTY WATER AUTHORITY *ATTN: JAMES TRUESDELL* *42401 STATE ROUTE 303* *LAGRANGE, OHIO 4050* *PHONE: (440) 355-5121* *EMAIL: jtruesdell@rlcwa.com*	
NOTES: THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNER OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C.	

CONVENTIONAL SYMBOLS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (Ex) (Pr)
Center Line
Right of Way (Ex) Ex R/W
Right of Way (Pr) R/W
Standard Highway Ease.(Ex) Ex SH
Standard Highway Ease.(Pr) SH
Temporary Right of Way TMP
Channel Ease. (Pr) CH
Utility Ease. (Ex) Ex U
Railroad or
Guardrail (Ex) (Pr)
Construction Limits
Edge of Pavement (Ex)
Edge of Pavement (Pr)
Edge of Shoulder (Ex)
Edge of Shoulder (Pr)
Ditch / Creek (Ex)
Ditch / Creek (Pr)
Tree Line (Ex)
Ownership Hook Symbol , Example
Property Line Symbol , Example
Break Line Symbol , Example
Tree (Pr) , Tree (Ex) , Shrub (Ex)
Tree (Remove) , Shrub (Remove)
Evergreen (Ex) , Stump
Evergreen (Remove) , Stump (Remove)
Wetland (Pr) , Grass (Pr) , Aerial Target
Post (Ex) , Mailbox (Ex) MB , Mailbox (Pr) MB
Light (Ex) , Telephone Marker (Ex) TEL
Fire Hydrant (Ex) , Water Meter (Ex) WM
Water Valve (Ex) , Utility Valve Unknown (Ex.)
Telephone Pole (Ex) , Power Pole (Ex)
Light Pole (Ex)

INDEX OF SHEETS:

TYPES OF TITLE LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
WD = WARRANTY DEED
PRW = PROPERTY RIGHT FEE SIMPLE
SH = STANDARD HIGHWAY EASEMENT
LA = LIMITED ACCESS EASEMENT
T = TEMPORARY EASEMENT
CH = CHANNEL EASEMENT
A = AERIAL EASEMENT
SL = SLOPE EASEMENT
PRE = PROPERTY RIGHT EASEMENT

STRUCTURE KEY

RESIDENTIAL
COMMERCIAL
OUT-BUILDING

PROJECT CONTROL

COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE (3401)
HORIZONTAL DATUM: NAD83 (2011)
GRID TO GROUND MULTIPLIER: 1.00006420
COMBINED SCALE FACTOR: 0.99993580
PROJECT ADJUSTMENT FACTOR (STATE PLANE GRID (METERS) TO PROJECT GROUND (US SURVEY FEET)): 3.28104397
ENGLISH TO METRIC CONVERSION: 3.28083333

I, Scott Hawkins, P. S. have conducted a survey of the existing conditions for the Ohio Department of Transportation in October 2017. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinate System, North Zone on NAD 83 (2011) datum. The Project Coordinates (US Survey feet) are relative to State Plane Grid Coordinates (meters or US Survey feet) by a Grid to Ground multiplier of 1.00006420. Elevations of project control points and benchmarks are based on Geoid 12-A of the NAVD88 datum and were established by conventional differential leveling from CP02. The elevation of CP02 was determined by averaging 10 ODOT VRS-Derived GNSS observations obtained on 10-04-2017. As a part of this project I have reestablished the centerline of existing Right of Way for property takes contained herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words "I" and "my" as used herein are to mean either myself or someone working under my direct supervision.

Scott Hawkins, Professional Land Surveyor No. 8429 Date: _____

SURVEYORS SEAL

I, Amy M. Kelly, P. S. have conducted a survey of the existing conditions (topo) for the Ohio Department of Transportation in August 2018. The results of that survey are contained herein. As a part of this project I have reestablished the locations of the existing property lines for property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. As a part of this work I have set right of way monuments at the property corners, property line intersection, points along the right of way and/or angle points on the right of way, Section Corners and other points as shown herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words "I" and "my" as used herein are to mean either myself or someone working under my direct supervision.

Amy M. Kelly, Professional Land Surveyor No. 8469 Date: 11/20/2019

SURVEYORS SEAL

STATE OF OHIO
AMY M. KELLY
S-8469
REGISTERED
PROFESSIONAL SURVEYOR

PROJECT DESCRIPTION

IMPROVEMENT OF 0.89 MILES OF I.R. 90, INCLUDING REPLACEMENT OF TWO BRIDGES AND CORRESPONDING APPROACH SLABS. INCLUDES WIDENING AND OUTSIDE SHOULDER RECONSTRUCTION PREFORMED FOR MAINTENANCE OF TRAFFIC. FULL DEPTH PAVEMENT REPLACEMENT AND ADJUSTMENT TO PROFILE OVER NORFOLK SOUTHERN RAILROAD FOR VERTICAL CLEARANCE.

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 REVISED CODE OF OHIO.

PLANS PREPARED BY:

FIRM NAME : BRAMHALL ENGINEERING & SURVEYING COMPANY
R/W DESIGNER: JAMES T. SCOTT JR., P.E.
R/W REVIEWER: AMY M. KELLY, P.S.
FIELD REVIEWER: ERIC SZUNYOGH
PRELIMINARY FIELD REVIEW DATE: 02/25/2019
TRACINGS FIELD REVIEW DATE: 05/13/2019
OWNERSHIP UPDATED BY: AMY M. KELLY, P.S.
DATE COMPLETED: 11/20/2019
PLAN COMPLETION DATE: 11/20/2019

FEDERAL PROJECT NO. E 140 (786)
PID NO. 90942
CALCULATED JTS CHECKED AMK
RIGHT OF WAY LEGEND SHEET
LOR-90-17.85
1 / 8
189 / 196

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LOR-90-17.85

LORAIN COUNTY, OHIO
CITY OF AVON
SECTION NO. 3
VILLAGE OF SHEFFIELD
ORIGINAL LOT NOS. 5 & 6

BASIS FOR STATIONING:
THE EXISTING CENTERLINE OF R/W OF I.R. 90 AS PROVIDED BY O.D.O.T. DISTRICT 3.

STATIONING FOR PROJECT IS FROM MONUMENTS SHOWN ON ICH 144, SEC. "B", USED TO DELINEATE DISTANCES ONLY.

ALL REFERENCES FOR R/W INFORMATION ARE FROM THE CENTERLINE OF R/W UNLESS OTHERWISE NOTED.

BASIS OF EXISTING RIGHT OF WAY:
THE EXISTING R/W WIDTHS AND CENTERLINES WERE PROVIDED FROM O.D.O.T. DISTRICT 3. PROPERTY LINE LOCATIONS WERE DETERMINED USING RECORD DOCUMENTATION FROM THE LORAIN COUNTY RECORDER'S OFFICE.

MONUMENT LEGEND

- EXISTING R/W MONUMENT BOX
- PROPOSED R/W MONUMENT BOX
- EXISTING CONCRETE MONUMENT
- PROPOSED CONCRETE MONUMENT
- RAILROAD SPIKE FOUND
- RAILROAD SPIKE SET
- I.R.F. IRON PIN FOUND
- I.R.F. IRON PIN FOUND W/ ID CAP
- I.R.S. IRON PIN SET W/ ID CAP
- P.F. IRON PIPE FOUND
- P.S. IRON PIPE SET
- P.K.F. P.K. NAIL FOUND
- P.K.S. P.K. NAIL SET
- EXISTING CONTROL POINT

BASIS FOR BEARINGS:
ALL BEARINGS SHOWN ARE FOR PROJECT USE ONLY.
ALL BEARINGS SHOWN ARE RELATIVE TO STATE PLANE GRID COORDINATE SYSTEM, OHIO NORTH ZONE (3401), NAD83 (2011). DATUM BASED ON GPS (VRS) OBSERVATIONS.

NOTE:
SETTING OF ALL MONUMENTS SHALL BE PERFORMED BY A SURVEYOR REGISTERED IN THE STATE OF OHIO. THE MONUMENT ASSEMBLIES AND REFERENCE MONUMENTS WILL BE INSTALLED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE IRON PIN AND CAP (WHEN REQUIRED) ARE TO BE INSTALLED BY THE CONTRACTOR'S SURVEYOR.

CHANGES OR ALTERATIONS TO THE LOCATION OF ANY MONUMENTS SHOWN IN THIS TABLE, REQUIRE PRIOR APPROVAL FROM THE DISTRICT REAL ESTATE ADMINISTRATOR OF THE OHIO DEPARTMENT OF TRANSPORTATION. IN THE EVENT THAT CHANGES OR ALTERATIONS ARE APPROVED, A REVISED CENTERLINE PLAT WITH THE NEW LOCATIONS SHALL BE RECORDED IN THE APPLICABLE COUNTY RECORDS AND THE OHIO DEPARTMENT OF TRANSPORTATION. SPECIFICATIONS FOR MONUMENT ASSEMBLIES, REFERENCE MONUMENTS AND RIGHT OF WAY MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1.

SURVEYORS SEAL

I, Amy M. Kelly, P. S. have conducted a survey of the existing conditions (topo) forthe Ohio Department of Transportation in August 2018. The results of that survey are contained herein. As a part of this project I have reestablished the locations of the existing property lines for property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. As a part of this work I have set right of way monuments at the property corners, property line intersection, points along the right of way and/or angle points on the right of way, Section Corners and other points as shown herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words "I" and "my" as used herein are to mean either myself or someone working under my direct supervision.

Amy M. Kelly, Professional Land Surveyor No. 8469 — 11/20/2019

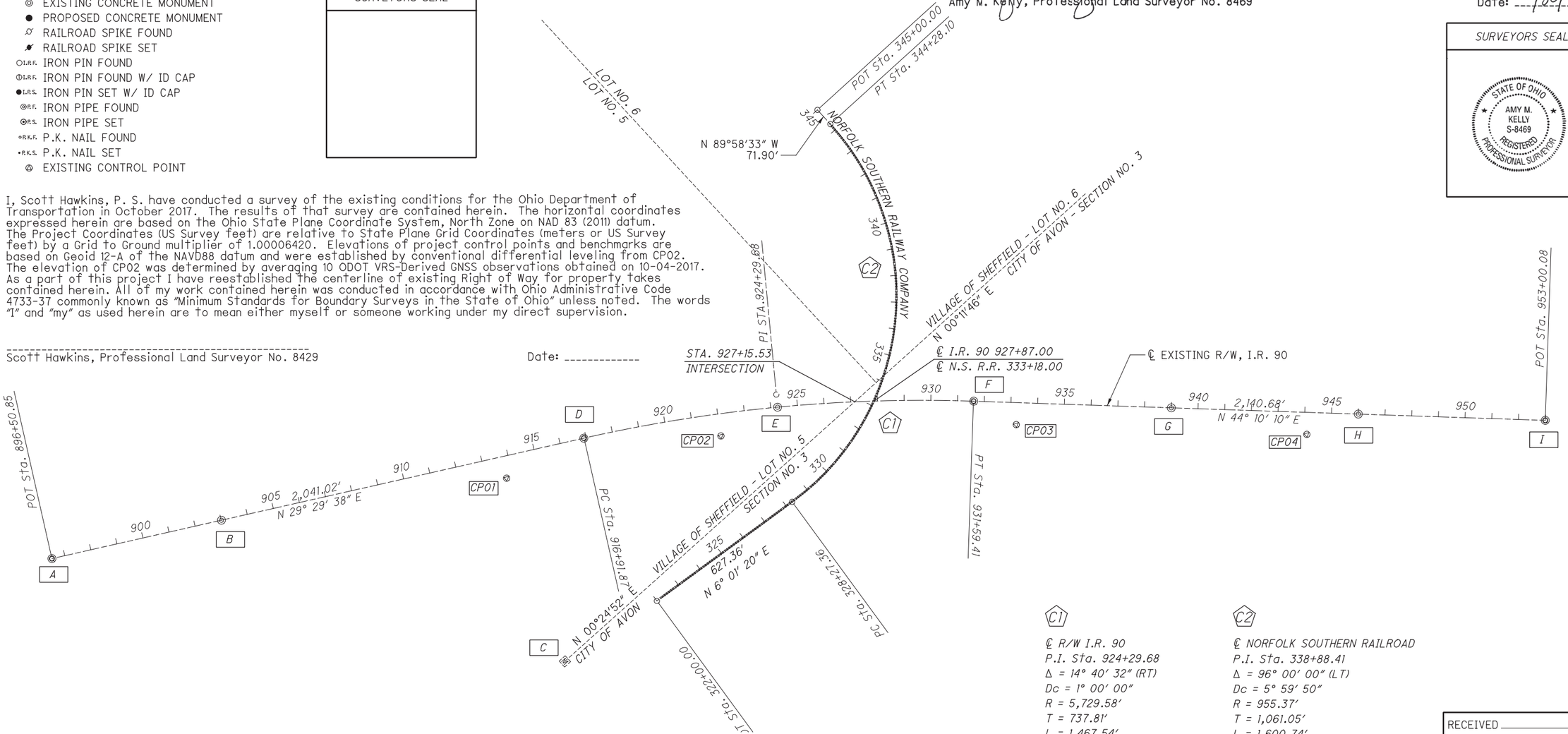
Date: 11/20/2019

SURVEYORS SEAL

STATE OF OHIO
AMY M. KELLY
S-8469
REGISTERED PROFESSIONAL SURVEYOR

I, Scott Hawkins, P. S. have conducted a survey of the existing conditions for the Ohio Department of Transportation in October 2017. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinate System, North Zone on NAD 83 (2011) datum. The Project Coordinates (US Survey feet) are relative to State Plane Grid Coordinates (meters or US Survey feet) by a Grid to Ground multiplier of 1.00006420. Elevations of project control points and benchmarks are based on Geoid 12-A of the NAVD88 datum and were established by conventional differential leveling from CP02. The elevation of CP02 was determined by averaging 10 ODOT VRS-Derived GNSS observations obtained on 10-04-2017. As a part of this project I have reestablished the centerline of existing Right of Way for property takes contained herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words "I" and "my" as used herein are to mean either myself or someone working under my direct supervision.

Scott Hawkins, Professional Land Surveyor No. 8429 — Date: _____



C1
℄ R/W I.R. 90
P.I. Sta. 924+29.68
Δ = 14° 40' 32" (RT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 737.81'
L = 1,467.54'
E = 47.31'
C = 1,463.53'
C.B. = N 36° 49' 54" E

C2
℄ NORFOLK SOUTHERN RAILROAD
P.I. Sta. 338+88.41
Δ = 96° 00' 00" (LT)
Dc = 5° 59' 50"
R = 955.37'
T = 1,061.05'
L = 1,600.74'
E = 472.41'
C = 1,419.96'
C.B. = N 41° 58' 40" W

RECEIVED _____, 20____
RECORDED _____, 20____
BOOK _____ PAGE _____
_____
COUNTY RECORDER

HORIZONTAL SCALE IN FEET
0 100 200 400

PID NO. 90942

R/W DESIGNER JTS
R/W REVIEWER AMK

CENTERLINE PLAT

LOR-90-17.85

2 / 8

190 / 196

I:\ProjectData\LOR\90942\Design\RW\Sheets\90942_RC001.dgn Sheet 11/20/2019 3:00:38 PM Jitalpas

EXISTING MONUMENTATION FOUND

PROJECT ADJUSTMENT FACTOR BASED ON: Project coordinates (U.S. Survey Feet) are relative to State Plane Grid coordinates (U.S. Survey Feet)

COMBINED SCALE FACTOR = 0.99993580
PROJECT ADJUSTMENT FACTOR (STATE PLANE GRID (METERS) TO PROJECT GROUND (US SURVEY FEET)) = 3.28104397
GRID TO GROUND MULTIPLIER = 1.00006420
ENG./METRIC CONV.= 3.28083333

Horizontal Datum - NAD 1983(2011), Ohio North Zone (3401) Vertical Datum - NAVD88
PROJECT coordinates are scaled from GRID coordinates about the Ohio North Zone grid point N=0, E=0

CENTERLINE OF RIGHT-OF-WAY S.R. 90					PROJECT GROUND COORDINATES					STATE PLANE GRID COORDINATES				
NAME	DESCRIPTION	STATION	OFFSET (ft)	RT/LT	NORTH (ft)	EAST (ft)	ELEVATION (ft)	FEATURE	NAME	NORTH (ft)	EAST (ft)	ORTHO HT (m)	NORTH (m)	EAST (m)
A (CMON60)	DEPTH: 4" NOTE: GOOD	896+50.85	0.00	RT	648666.110	2085620.918	637.68	CMON	A (CMON60)	648624.467	2085487.028	194.365	197701.1330	635657.7173
B (CMON61)	DEPTH: 4" NOTE: GOOD	903+01.10	0.03	RT	649232.078	2085941.080	636.22	CMON	B (CMON61)	649190.400	2085807.169	193.921	197873.6295	635755.2967
C	MONUMENT BOX WITH 1" PIN	914+37.88	798.71	RT	649828.328	2087195.932	633.55	MONBOX	C	649786.612	2087061.943	193.106	198055.3549	636137.7510
D (CMON63)	DEPTH: 0" NOTE: GOOD	916+91.08	0.00	RT	650441.938	2086628.388	642.37	CMON	D (CMON63)	650400.182	2086491.433	195.796	198242.3719	635963.8608
E (CMON64)	DEPTH: 0" NOTE: GOOD	924+25.78	0.03	RT	651056.553	2087027.001	658.93	CMON	E (CMON64)	651014.758	2086893.020	200.842	198429.6949	636086.2648
F (CMON65)	DEPTH: 4" NOTE: GOOD	931+60.52	0.00	RT	651614.831	2087503.888	659.07	CMON	F (CMON65)	651572.999	2087369.876	200.886	198599.8474	636231.6107
G (CMON66)	DEPTH: 4" NOTE: GOOD	939+00.21	-0.03	LT	652145.420	2088019.271	643.55	CMON	G (CMON66)	652103.554	2087885.226	196.156	198761.5608	636388.6898
H (CMON67)	DEPTH: 4" NOTE: GOOD	946+00.21	-0.05	LT	652647.537	2088507.006	630.02	CMON	H (CMON67)	652605.639	2088372.930	192.029	198914.5967	636537.3421
I (CMON68)	DEPTH: 4" NOTE: GOOD	953+00.08	0.00	RT	653149.507	2088994.702	627.09	CMON	I (CMON68)	653107.577	2088860.595	191.136	199067.5876	636685.9827

CONTROL POINTS

PROJECT ADJUSTMENT FACTOR BASED ON: Project coordinates (U.S. Survey Feet) are relative to State Plane Grid coordinates (U.S. Survey Feet)

COMBINED SCALE FACTOR = 0.99993580
PROJECT ADJUSTMENT FACTOR= 1.00006420
ENG./METRIC CONV.= 3.28083333

Horizontal Datum - NAD 1983(2011), Ohio North Zone (3401) Vertical Datum - NAVD88
PROJECT coordinates are scaled from GRID coordinates about the Ohio North Zone grid point N=0, E=0

CENTERLINE OF EXISTING RIGHT-OF-WAY & CONSTRUCTION S.R. 90					PROJECT GROUND COORDINATES					STATE PLANE GRID COORDINATES				
NAME	DESCRIPTION	STATION	OFFSET (ft)	RT/LT	NORTH (ft)	EAST (ft)	ELEVATION (ft)	FEATURE	NAME	NORTH (ft)	EAST (ft)	ORTHO HT (m)	NORTH (m)	EAST (m)
CP01	3" DISK IN CONCRETE; STAMPING LOR-I90-17.31	913+76.46	82.19	RT	650127.630	2086542.036	639.55	GOVCON	CP01	650085.8940	2086406.0862	194.936	198146.5768	635938.4566
CP02	3" DISK IN CONCRETE; STAMPING LOR-I90-17.46	922+01.39	82.87	RT	650827.347	2086964.227	654.37	GOVCON	CP02	650785.5654	2086830.2505	199.452	198359.9371	636067.1325
CP03	3" DISK IN TRAFFIC CONTROL BOX	933+22.63	82.18	RT	651673.857	2087675.793	656.71	GOVCON	CP03	651632.0220	2087541.7710	200.167	198617.8375	636284.0044
CP04	3" DISK IN CONCRETE; STAMPING LOR-I90-17.88	944+10.17	82.40	RT	652453.772	2088433.729	636.44	GOVCON	CP04	652411.8864	2088299.6585	193.987	198855.5407	636515.0089

FEDERAL PROJECT NO. E 140 (786)
PID NO. 90942
CALCULATED JTS CHECKED AMK
CENTERLINE PLAT DATA
LOR-90-17.85

RECEIVED _____, 20____
RECORDED _____, 20____
BOOK _____ PAGE _____
COUNTY RECORDER

LORAIN COUNTY
CITY OF AVON
SECTION NO. 3
VILLAGE OF SHEFFIELD
ORIGINAL LOT NOS. 5 & 6

ABBE ROAD
Ex R/W

03-00-006-000-214
SHEFFIELD METALS REAL ESTATE, LLC
LOT NO. 6
LOT NO. 5

03-00-005-000-055
SHEFFIELD METALS
REAL ESTATE, LLC
5467 EVERGREEN PARKWAY

EVERGREEN PARKWAY
Ex R/W

EX. EVERGREEN PARKWAY R/W

03-00-006-000-007
WALLS PROPERTY HOLDINGS, LLC

Ex SW

NORFOLK SOUTHERN RAILWAY COMPANY

03-00-006-000-006
VILLAGE OF SHEFFIELD

VILLAGE OF SHEFFIELD
CITY OF AVON

03-00-006-504-001
PENNSYLVANIA LINES, LLC,
A DELAWARE LIMITED
LIABILITY COMPANY

LOT NO. 6
SECTION NO. 3

04-00-003-500-001
PENNSYLVANIA LINES, LLC,
A DELAWARE LIMITED
LIABILITY COMPANY

04-00-003-101-494
CITY OF AVON

Ⓐ
03-00-006-000-009
STATE OF OHIO (PARCEL 92-WL-1)
D.V. 934, P. 524

03-00-006-000-215
MK LANDLORD (DE) LIMITED
PARTNERSHIP, A DELAWARE
CORPORATION

BEGIN ACQUISITION
926+24.10

Ex U
Ex CH
Ex LA

03-00-005-000-060
MK LANDLORD (DE)
LIMITED PARTNERSHIP,
A DELAWARE CORPORATION
5477 EVERGREEN PARKWAY

04-00-003-101-050
STATE OF OHIO

940
935
930
925
920
915
910

INTERSTATE ROUTE 90

END ACQUISTION
929+16.56

EX. INTERSTATE ROUTE
90 LIMITED ACCESS R/W

03-00-005-000-059
VILLAGE OF SHEFFIELD

EX. INTERSTATE ROUTE
90 LIMITED ACCESS R/W

200'

EX. C.E.I. EASEMENT
(DEDICATION PLAT, EVERGREEN
PARKWAY P.V. 45, P.12)

03-00-005-000-020
STATE OF OHIO

LOT NO. 5

03-00-005-000-046
FRENCH CREEK SELF STORAGE
5545 FRENCH CREEK ROAD

03-00-005-000-031
CLEVELAND ELECTRIC ILLUMINATING COMPANY
SECTION NO. 3

03-00-005-000-026
BONNIE M. KAJGANICH &
RICHARD E. CUMMINS
5529 FRENCH CREEK ROAD

FRENCH CREEK ROAD
Ex R/W

VILLAGE OF SHEFFIELD
CITY OF AVON

04-00-003-500-001
PENNSYLVANIA LINES, LLC, A DELAWARE LIMITED
LIABILITY COMPANY

NORFOLK & SOUTHERN RAILWAY COMPANY

04-00-003-101-574-FAIRFIELD ESTATES SUBDIVISION PH.3 HOMEOWNERS ASSOCIATION, INC.

FAIRFIELD ESTATES
SUBDIVISION NO. 03
VOL. 102, P. 03

DAEGAN DRIVE

EX. DAEGAN DRIVE R/W

EX. FAIRFIELD DRIVE R/W

FAIRFIELD DRIVE

FAIRFIELD ESTATES
SUBDIVISION NO. 02
VOL. 89, P. 76

STRUCTURE KEY

- RESIDENTIAL
- COMMERCIAL
- OUT-BUILDING

REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 11/20/2019

HORIZONTAL SCALE IN FEET
0 60 120 240

PID NO. 90942

R/W DESIGNER JTS
R/W REVIEWER AMK

MAP

PROPERTY MAP

LOR-90-17.85

4 / 8

192
196

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TOTAL NUMBER OF :

1 OWNERSHIPS
2 PARCELS
4 TOTAL TAKES
0 OWNERSHIPS W/ STRUCTURES INVOLVED

ALL AREAS IN

PARCEL NO.	OWNER	SHEET NOS.	OWNERS RECORD VOLUME / INSTRUMENT #	OWNERS RECORD PAGE	AUDITOR'S PARCEL NUMBER	AUDITOR'S RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1	PENNSYLVANIA LINES, LLC, A DELAWARE LIMITED LIABILITY COMPANY	4, 6, 7, 8	2002-0851798		04-00-003-500-001	6.82					NONE			STATE			
1-SH1							0.0090	0.0258	0.0068	0.0190			0.0190		FOR BRIDGE RECONSTRUCTION; TOTAL P.R.O. PARCEL 94-A*		
1-SH2							0.0090	0.0258	0.0063	0.0195			0.0195		FOR BRIDGE RECONSTRUCTION; TOTAL P.R.O. PARCEL 94-B*		
1-SH3							0.0090	0.0243	0.0063	0.0195		0.0195			FOR BRIDGE RECONSTRUCTION; TOTAL P.R.O. PARCEL 94-E*		
1-SH4							0.0054	0.0142	0.0033	0.0109		0.0109			FOR BRIDGE RECONSTRUCTION; TOTAL P.R.O. PARCEL 94-F*		
1-T1								0.8224							FOR BRIDGE RECONSTRUCTION		
					03-00-006-504-001	4.01					NONE			STATE			
1-T2								0.0449							FOR BRIDGE RECONSTRUCTION		

* ALL REFERENCES TO EXISTING PARCEL 94 PER D.V. 978, P. 317-326

NET TAKE = GROSS TAKE - PRO IN TAKE

NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

GRANTEE:

ALL RIGHT OF WAY ACQUIRED IN THE NAME OF
STATE OF OHIO, DEPARTMENT OF TRANSPORTATION
UNLESS OTHERWISE SHOWN.

* DENOTES RIGHT OF WAY ENCROACHMENT

+ DENOTES REMOVAL ITEMS
SEE CORRESPONDING RIGHT
OF WAY PLAN SHEET FOR
DESCRIPTION

NOTE: ALL TEMPORARY PARCELS TO
BE OF 30 MONTH DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY
EASEMENTS TO BE USED FOR STORAGE OF
MATERIAL OR EQUIPMENT BY THE CONTRACTOR
UNLESS NOTED OTHERWISE.

TYPES OF TITLE LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
WD = WARRANTY DEED
PRW = PROPERTY RIGHT FEE SIMPLE
SH = STANDARD HIGHWAY EASEMENT
LA = LIMITED ACCESS EASEMENT
T = TEMPORARY EASEMENT
CH = CHANNEL EASEMENT
A = AERIAL EASEMENT
SL = SLOPE EASEMENT
PRE = PROPERTY RIGHT EASEMENT

REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 11/20/2019

FEDERAL PROJECT NO. E 140 (786)
PID NO. 90942
STATE JOB NO. 00000
R/W DESIGNER JTS
R/W REVIEWER AMK

SUMMARY OF ADDITIONAL RIGHT OF WAY

LOR-90-17.85

LORAIN COUNTY, OHIO
CITY OF AVON
SECTION NO. 3
VILLAGE OF SHEFFIELD
ORIGINAL LOT NOS. 5 & 6

C1
℄ R/W I.R. 90
P.I. Sta. 924+29.68
Δ = 14°40'32" (RT)
Dc = 1°00'00"
R = 5,729.58'
T = 737.81'
L = 1,467.54'
E = 47.31'
C = 1,463.53'
C.B. = N 36°49'54" E

1 04-00-006-504-001
PENNSYLVANIA LINES, LLC,
A DELAWARE LIMITED LIABILITY COMPANY
INST. #2002-0851798

2 03-00-005-000-031
CLEVELAND ELECTRIC ILLUMINATING COMPANY

3 03-00-006-000-009
STATE OF OHIO
(PARCEL 92-WL-1)
D.V. 934, P. 524

4 03-00-006-000-215
MK LANDLORD (DE) LIMITED PARTNERSHIP,
A DELAWARE CORPORATION

5 04-00-003-500-001
PENNSYLVANIA LINES, LLC,
A DELAWARE LIMITED LIABILITY COMPANY
INST. #2002-0851798

STRUCTURE NO. LOR-00090-17850L
STRUCTURE NO. LOR-00090-17850R
BEGIN ACQUISITION STA. 926+24.10
END ACQUISITION STA. 929+16.56
STA. 927+15.53 INTERSECTION
STA. 927+87.00 ℄ I.R. 90 = STA. 333+18.00 ℄ N.S. R.R.
℄ CONSTRUCTION I.R. 90
℄ NORFOLK SOUTHERN RAILROAD
NORFOLK SOUTHERN RAILWAY COMPANY
VILLAGE OF SHEFFIELD LOT NO. 5
CITY OF AVON SECTION NO. 3
VILLAGE OF SHEFFIELD LOT NO. 6
CITY OF AVON SECTION NO. 3
LOT NO. 5
LOT NO. 6
I.R. 90 WB
I.R. 90 EB
16" & 12" PVC FORCE MAINS
COMMERCIAL/INDUSTRIAL
COMMERCIAL
RESIDENTIAL
EX. L/A FENCE
EX. TREES/BRUSH (TO BE REMOVED)
CONSTRUCTION LIMITS
EX. SIGN (TO BE REMOVED)
EX. WOODS
EX. BRUSH
RUMBLE STRIP
APPROACH SLAB
CORP LIMIT SIGN (DO NOT DISTURB)
EX. SIGN (TO BE REMOVED)
EX. ELEC. BOX (TO BE REMOVED)
EX. CB (TO BE REMOVED)
PROP. 12" CONDUIT, TYPE C
CB NO. 8
MH NO. 3
84" CMP
15" RCP
33" RCP
42" RCP
24" W.M. (DO NOT DISTURB)
I-T1
I-T2
I-SH1
I-SH2
I-SH3
I-SH4
Ex CH
Ex LA
Ex SL
Ex A
Ex SW
MS x3
HS x3
TMP

REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 11/20/2019

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

PID NO. 90942

R/W DESIGNER JTS
R/W REVIEWER AMK

RIGHT OF WAY TOPO SHEET

LOR-90-17.85

6 / 8

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LORAIN COUNTY, OHIO
CITY OF AVON
SECTION NO. 3
VILLAGE OF SHEFFIELD
ORIGINAL LOT NOS. 5 & 6

	ROADWAY		PERMANENT EASEMENTS FOR BRIDGE FOOTERS			
POINT	STATION	OFFSET	PARCEL	COURSE	DISTANCE	BEARING
A	927+41.07	11.82' RT.	1-SH1	A-B	15.00'	N 70°14'31" E
B	927+54.07	19.36' RT.		B-C	74.94'	S 19°45'29" E
C	927+15.90	84.06' RT.		C-D	15.00'	S 70°14'31" W
D	927+02.80	76.43' RT.		D-A	74.94'	N 19°45'29" W
E	928+10.47	11.71' RT.	1-SH2	E-F	15.00'	N 70°14'31" E
F	928+23.56	19.09' RT.		F-G	74.94'	S 19°45'29" E
G	927+86.18	84.25' RT.		G-H	15.00'	S 70°14'31" W
H	927+72.99	76.78' RT.		H-E	74.94'	N 19°45'29" W
I	928+49.80	83.63' LT.	1-SH3	I-J	15.00'	N 62°39'24" E
J	928+63.56	78.13' LT.		J-K	70.50'	S 27°20'36" E
K	928+37.84	12.57' LT.		K-L	15.00'	S 62°39'24" W
L	928+23.95	18.14' LT.		L-I	70.50'	N 27°20'36" W
M	927+92.10	63.93' LT.	1-SH4	M-N	55.45'	S 27°20'47" E
N	927+71.24	12.61' LT.		N-O	15.00'	S 62°39'24" W
O	927+57.41	18.34' LT.		O-P	26.95'	N 27°20'47" W
P	927+67.65	43.25' LT.		P-M	32.20'	N 00°24'52" E

Ex CH
Ex LA
Ex SW
Ex SH
Ex SL
TMP
HS
MS
LOT NO. 5
LOT NO. 6
CONSTRUCTION LIMITS
CHANNEL EASEMENT VOL. 978, P.325 PARCEL 94-X
DRAINAGE EASEMENT VOL. 978, P.324 PARCEL 94-S-1
04-00-006-504-001 PENNSYLVANIA LINES, LLC, A DELAWARE LIMITED LIABILITY COMPANY INST. #2002-0851798
VILLAGE OF SHEFFIELD LOT NO. 6 CITY OF AVON SECTION NO. 3
928+15.19, 132.83' LT. I-90
929+16.56, 131.37' LT. I-90
03-00-006-000-009 STATE OF OHIO (PARCEL 92-WL-1) D.V. 934, P.524
N 42°02'36" E 55.86'
N 42°02'36" E 47.86'
928+69.78, 131.81' LT. I-90
63.85'
N 29°46'16" W
96.78'
N 00°11'46" E
1-T2
0.0449 AC. (1,954.28 S.F.)
927+94.14, 72.68' LT. I-90
S 88°40'36" W 5.37'
927+97.68, 68.68' LT. I-90
AERIAL EASEMENT VOL. 978, P. 318 PARCEL 94-AERIAL
PERPETUAL EASEMENT VOL. 978, P.321 PARCEL 94-E
1-SH3
0.0243 AC. (1,057.50 S.F.)
PERPETUAL EASEMENT VOL. 978, P.322 PARCEL 94-F
1-SH4
0.0142 AC. (618.02 S.F.)
N 00°24'52" E 114.83'
157.83'
S 27°01'48" E
PERPETUAL EASEMENT VOL. 978, P.321 PARCEL 94-D
BEGIN ACQUISITION STA. 926+24.10
STA. 927+15.53 INTERSECTION
℄ I-90 927+87.00
℄ N.S. R.R. 333+18.00
927+09.82, 4.67' RT. I-90
℄ CONSTRUCTION I.R. 90
928+59.51, 15.57 RT. I-90
END ACQUISITION STA. 929+16.56
LIMITED ACCESS VOL. 978, P. 317 PARCEL 94-A-LA
PERPETUAL EASEMENT VOL. 978, P.320 PARCEL 94-B
PERPETUAL EASEMENT VOL. 978, P.319 PARCEL 94
PERPETUAL EASEMENT VOL. 978, P.320 PARCEL 94-A
1-SH1
0.0258 AC. (1,124.10 S.F.)
1-SH2
0.0258 AC. (1,124.10 S.F.)
N 00°24'52" E
N 19°50'40" W 164.66'
S 19°50'08" E 132.05'
PERPETUAL EASEMENT VOL. 978, P.320 PARCEL 94-C
DRAINAGE EASEMENT VOL. 978, P.324 PARCEL 94-S
NORFOLK SOUTHERN RAILWAY COMPANY
SLOPE EASEMENT VOL. 978, P.323 PARCEL 94-SL-1
AERIAL EASEMENT VOL. 978, P. 318 PARCEL 94-AERIAL
1-T1
0.8224 AC. (35,822.05 S.F.)
SLOPE EASEMENT VOL. 978, P.322 PARCEL 94-SL
927+94.01, 130.70' RT. I-90
926+24.10, 145.95' RT. I-90
S 40°04'03" W 145.91'
S 00°23'33" W 25.70'
927+73.84, 147.23' RT. I-90
LIMITED ACCESS VOL. 978, P. 317 PARCEL 94-LA
04-00-003-500-001 PENNSYLVANIA LINES, LLC, A DELAWARE LIMITED LIABILITY COMPANY INST. #2002-0851798
C1
℄ R/W I.R. 90
P.I. Sta. 924+29.68
Δ = 14°40'32" (RT)
Dc = 1°00'00"
R = 5,729.58'
T = 737.81'
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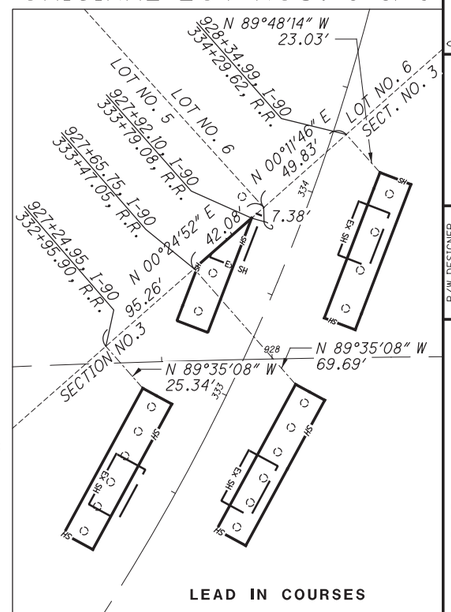
E = 47.31'
C = 1,463.53'
C.B. = N 36°49'54" E



MONUMENT LEGEND

- ▣ EXISTING R/W MONUMENT BOX
- ◎ EXISTING CONCRETE MONUMENT
- ○I.P.F. IRON PIN FOUND
- ⊙I.P.F. IRON PIN FOUND W/ ID CAP
- ◎P.F. IRON PIPE FOUND

EASEMENT LEGEND

- Ex A — EX. AERIAL EASEMENT
- Ex CH — EX. CHANNEL EASEMENT
- Ex LA — EX. LIMITED ACCESS EASEMENT
- Ex SL — EX. SLOPE EASEMENT
- Ex SW — EX. SEWER EASEMENT
- Ex SH — EX. STANDARD HIGHWAY EASEMENT
- SH — PR. STANDARD HIGHWAY EASEMENT
- TMP — PR. TEMPORARY EASEMENT

REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 11/20/2019

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

PID NO. 90942

R/W DESIGNER JTS
R/W REVIEWER AMK

RIGHT OF WAY BOUNDARY SHEET

LOR-90-17.85

7 / 8

195
196

LORAIN COUNTY, OHIO
CITY OF AVON
SECTION NO. 3
VILLAGE OF SHEFFIELD
ORIGINAL LOT NOS. 5 & 6

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP				
			AERIAL	HIGHWAY	SLOPE	SEWER	TEMPORARY
1-SH1	HIGHWAY	0.0258 AC.	0.0258 AC.	--	0.0258 AC.	--	0.0258 AC.
1-SH2	HIGHWAY	0.0258 AC.	0.0258 AC.	--	0.0258 AC.	0.0172 AC.	0.0258 AC.
1-SH3	HIGHWAY	0.0243 AC.	0.0243 AC.	--	0.0243 AC.	0.0079 AC.	0.0243 AC.
1-SH4	HIGHWAY	0.0142 AC.	0.0142 AC.	--	0.0142 AC.	--	0.0142 AC.
1-T1	TEMPORARY	0.8224 AC.	0.7650 AC.	0.1044 AC.	0.6163 AC.	0.1128 AC.	--
1-T2	TEMPORARY	0.0449 AC.	0.0076 AC.	--	0.0046 AC.	--	--

POINT	ROADWAY		RAILROAD		PERMANENT EASEMENTS FOR BRIDGE FOOTERS			
	STATION	OFFSET	STATION	OFFSET	PARCEL	COURSE	DISTANCE	BEARING
A	927+41.07	11.82' RT.	332+85.83	35.33' LT.	1-SH1	A-B	15.00'	N 70°14'31" E
B	927+54.07	19.36' RT.	332+85.37	20.33' LT.		B-C	74.94'	S 19°45'29" E
C	927+15.90	84.06' RT.	332+08.82	19.54' LT.		C-D	15.00'	S 70°14'31" W
D	927+02.80	76.43' RT.	332+08.03	34.52' LT.		D-A	74.94'	N 19°45'29" W
E	928+10.47	11.71' RT.	333+17.77	26.20' RT.	1-SH2	E-F	15.00'	N 70°14'31" E
F	928+23.56	19.09' RT.	333+16.86	41.17' RT.		F-G	74.94'	S 19°45'29" E
G	927+86.18	84.25' RT.	332+44.96	39.31' RT.		G-H	15.00'	S 70°14'31" W
H	927+72.99	76.78' RT.	332+44.77	24.32' RT.		H-E	74.94'	N 19°45'29" W
I	928+49.80	83.63' LT.	334+18.31	25.89' RT.	1-SH3	I-J	15.00'	N 62°39'24" E
J	928+63.56	78.13' LT.	334+17.79	40.88' RT.		J-K	70.50'	S 27°20'36" E
K	928+37.84	12.57' LT.	333+50.17	40.86' RT.		K-L	15.00'	S 62°39'24" W
L	928+23.95	18.14' LT.	333+49.66	25.87' RT.		L-I	70.50'	N 27°20'36" W
M	927+92.10	63.93' LT.	333+79.08	21.64' LT.	1-SH4	M-N	55.45'	S 27°20'47" E
N	927+71.24	12.61' LT.	333+22.43	19.72' LT.		N-O	15.00'	S 62°39'24" W
O	927+57.41	18.34' LT.	333+21.43	34.69' LT.		O-P	26.95'	N 27°20'47" W
P	927+67.65	43.25' LT.	333+49.38	36.05' LT.		P-M	32.20'	N 00°24'52" E

NOTE: RAILWAY STATIONING OBTAINED FROM OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT NO. 3

BEGIN ACQUISITION STA. 926+24.10

END ACQUISITION STA. 929+16.56

STA. 927+15.53 INTERSECTION

℄ I-90 927+87.00
℄ N.S. R.R. 333+18.00

℄ CONSTRUCTION I.R. 90

℄ R/W I.R. 90
P.I. Sta. 924+29.68
Δ = 14°40'32" (RT)
Dc = 1°00'00"
R = 5,729.58'
T = 737.81'
L = 1,467.54'
E = 47.31'
C = 1,463.53'
C.B. = N 36°49'54" E

℄ NORFOLK SOUTHERN RAILWAY COMPANY
P.I. Sta. 338+88.41
Δ = 96°00'00" (LT)
Dc = 5°59'50"
R = 955.37'
T = 1,061.05'
L = 1,600.74'
E = 472.41'
C = 1,419.96'
C.B. = N 41°58'40" W

CHANNEL EASEMENT VOL. 978, P.325 PARCEL 94-X

04-00-006-504-001
PENNSYLVANIA LINES, LLC, A DELAWARE LIMITED LIABILITY COMPANY INST. #2002-0851798

DRAINAGE EASEMENT VOL. 978, P.324 PARCEL 94-S-1

928+15.19, 132.83' LT. I-90
334+53.63, 23.25' LT. R.R.

929+16.56, 131.37' LT. I-90
334+80.77, 76.65' RT. R.R.

CONSTRUCTION LIMITS

03-00-006-000-009
STATE OF OHIO (PARCEL 92-WL-1)
D.V. 934, P. 524

N 42°02'36" E 55.86'

N 42°02'36" E 47.86'

928+69.78, 131.81' LT. I-90
334+68.93, 30.46' RT. R.R.

AERIAL EASEMENT VOL. 978, P. 318 PARCEL 94-AERIAL

927+94.14, 72.68' LT. I-90
333+88.18, 23.03' LT. R.R.

927+97.68, 68.68' LT. I-90
333+85.75, 18.21' LT. R.R

S 88°40'36" W 5.37'

PERPETUAL EASEMENT VOL. 978, P.321 PARCEL 94-E

PERPETUAL EASEMENT VOL. 978, P.322 PARCEL 94-F

0.0142 AC. (618.02 S.F.)

0.0243 AC. (1,057.50 S.F.)

PERPETUAL EASEMENT VOL. 978, P.321 PARCEL 94-D

0.0449 AC. (1,954.28 S.F.)

PERPETUAL EASEMENT VOL. 978, P.319 PARCEL 94

PERPETUAL EASEMENT VOL. 978, P.320 PARCEL 94-A

0.0258 AC. (1,124.10 S.F.)

927+09.82, 4.67' RT. I-90
332+76.47, 66.10' LT. R.R.

928+59.51, 15.57 RT. I-90
333+34.26, 72.12' RT. R.R.

LIMITED ACCESS VOL. 978, P. 317 PARCEL 94-LA

PERPETUAL EASEMENT VOL. 978, P.320 PARCEL 94-B

0.0258 AC. (1,124.10 S.F.)

PERPETUAL EASEMENT VOL. 978, P.320 PARCEL 94-C

DRAINAGE EASEMENT VOL. 978, P.324 PARCEL 94-S

SLOPE EASEMENT VOL. 978, P.323 PARCEL 94-SL-1

AERIAL EASEMENT VOL. 978, P. 318 PARCEL 94-AERIAL

SLOPE EASEMENT VOL. 978, P.322 PARCEL 94-SL

0.8224 AC. (35,822.05 S.F.)

927+94.01, 130.70' RT. I-90
332+11.29, 70.15' RT. R.R.

926+24.10, 145.95' RT. I-90
331+00.98, 54.00' LT. R.R.

S 40°04'03" W 145.91'

S 00°23'33" W 25.70'

927+73.84, 147.23' RT. I-90
331+88.27, 62.76' RT. R.R.

CONSTRUCTION LIMITS

LIMITED ACCESS VOL. 978, P. 317 PARCEL 94-LA

04-00-003-500-001
PENNSYLVANIA LINES, LLC, A DELAWARE LIMITED LIABILITY COMPANY INST. #2002-0851798

VILLAGE OF SHEFFIELD LOT NO. 5 CITY OF AVON SECTION NO. 3

VILLAGE OF SHEFFIELD LOT NO. 6 CITY OF AVON SECTION NO. 3

NORFOLK SOUTHERN RAILWAY COMPANY

LOT NO. 5

LOT NO. 6

SECT. NO. 3

LEAD IN COURSES

928+34.99
334+29.62, I-90 R.R.

N 89°48'14" W 23.03'

927+92.10
333+79.06, I-90 R.R.

N 00°11'46" E 49.83'

927+65.75
333+47.03, I-90 R.R.

N 00°24'52" E 42.06'

927+24.95
332+95.90, I-90 R.R.

95.26'

7.38'

63°50'52"

N 89°35'08" W 25.34'

N 89°35'08" W 69.69'

MONUMENT LEGEND

- EXISTING R/W MONUMENT BOX
- EXISTING CONCRETE MONUMENT
- I.R.F. IRON PIN FOUND
- I.R.F. IRON PIN FOUND W/ ID CAP
- P.R.F. IRON PIPE FOUND

EASEMENT LEGEND

- Ex A — EX. AERIAL EASEMENT
- Ex CH — EX. CHANNEL EASEMENT
- Ex LA — EX. LIMITED ACCESS EASEMENT
- Ex SL — EX. SLOPE EASEMENT
- Ex SW — EX. SEWER EASEMENT
- Ex SH — EX. STANDARD HIGHWAY EASEMENT
- SH — PR. STANDARD HIGHWAY EASEMENT
- TMP — PR. TEMPORARY EASEMENT

REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 11/20/2019

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

PID NO. 90942

R/W DESIGNER JTS
R/W REVIEWER AMK

RAILROAD PLAT

LOR-90-17.85

8 / 8

196 / 196

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PROJECT DESCRIPTION

LOR-90-17.85 (PID 90942) IS A BRIDGE REPLACEMENT PROJECT FOR THE EXISTING BRIDGE CARRYING INTERSTATE ROUTE 90 (IR-90) OVER THE NORFOLK SOUTHERN RAILROAD IN THE VILLAGE OF SHEFFIELD AND CITY OF AVON, LORAIN COUNTY, OHIO.

HISTORIC RECORDS

IN 1964, AN EXPLORATION WAS PERFORMED FOR THE STRUCTURE LOR-90-1785 L & R AS PART OF THE LOR-90-17.21 PROJECT AT THAT TIME. TWO BORINGS, B-4 AND B-14A HAVE BEEN USED FOR DESIGN OF THE CURRENT PROJECT AND ARE PRESENTED HERE. THOSE BORINGS HAVE BEEN RENUMBERED TO B-004-0-64 AND B-014-A-64 FOR THE CURRENT PROJECT

GEOLOGY

THE PROJECT SITE IS LOCATED WITHIN THE ERIE LAKE PLAIN, PART OF THE HURON-ERIE LAKE PLAINS. THIS AREA IS CHARACTERIZED AS THE EDGE OF THE VERY LOW-RELIEF (10 FT), ICE-AGE LAKE BASIN SEPARATED FROM THE MODERN LAKE ERIE BY SHORELINE CLIFFS WITH MAJOR STREAMS IN DEEP GORGES BEING CHARACTERISTIC. THE GEOLOGY IN THIS REGION IS DESCRIBED AS PLEISTOCENE-AGE LACUSTRINE SAND, SILT, CLAY AND WAVE-PLANED GLACIAL TILL OVER DEVONIAN- AND MISSISSIPPI-AGE SHALES AND SANDSTONES.

THE GEOLOGY AT THE BRIDGE SITE IS MAPPED AS 5 TO 15 FT OF WISCONSINAN-AGE TILL UNDERLAIN BY DEVONIAN-AGE SHALE BEDROCK. THE TILL HAS BEEN DEPOSITED DIRECTLY FROM ICE OF SERVAL ADVANCES AND IS DESCRIBED AS CONSISTING OF AN UNSORTED MIX OF SILT, CLAY, GRAVEL AND BOULDERS WHICH MAY CONTAIN SILT, SAND AND GRAVEL LENSES. THIS TILL IS THE MOST COMMON SURFICIAL UNIT IN THE MAPPED AREA AND MAY BE OLDER THAN WISCONSINAN IN BURIED VALLEYS AND THICKER AREAS.

BASED ON THE BEDROCK GEOLOGIC UNITS MAP OF OHIO BEDROCK WITHIN THE PROJECT AREA, CONSISTS OF OHIO SHALE. THIS UNIT IS COMPRISED OF DEVONIAN-AGE, CARBONACEOUS TO CLAYEY BLACK SHALE AND SHALE AND IS CHARACTERIZED AS BEING LAMINATED TO THINLY BEDDED. BASED ON THE ODNR BEDROCK TOPOGRAPHY MAP OF OHIO, BEDROCK ELEVATIONS AT THE BRIDGE SITE CAN BE EXPECTED TO BE BETWEEN 600 AND 625 FT ABOVE MEAN SEA LEVEL (AMSL), PUTTING BEDROCK AT A DEPTH RANGING FROM 5 TO 60 FT BELOW GROUND SURFACE (BGS).

THE SOILS DIRECTLY UNDERLYING THE PROJECT SITE HAVE BEEN MAPPED BY THE NATURAL RESOURCES CONSERVATION SERVICE AS UDORTHENTS. UDORTHENTS ARE SOILS THAT HAVE BEEN DISTURBED CUTTING OR FILLING AND ARE NOT RATED FOR LOCAL ROADS. SOILS IN AREAS IMMEDIATELY ADJACENT TO THE PROJECT BOUNDARIES HAVE BEEN MAPPED AS A COMBINATION OF FITCHVILLE SILT LOAM, LORAIN SILTY CLAY LOAM, AND MINER SILTY CLAY LOAM. THE SOILS OF THE FITCHVILLE SERIES ARE CHARACTERIZED AS VERY DEEP, SOMEWHAT POORLY DRAINED SOILS FORMED IN STRATIFIED WISCONSINAN AGE GLACIOLACUSTRINE SEDIMENTS ON TERRACES IN VALLEYS ON TILL PLAINS AND LAKE PLAINS. THE FITCHVILLE SERIES IS COMPRISED OF PREDOMINANTLY FINE-GRAINED SOILS WITH THE AND CLASSIFIES AS A-4, A-6 AND A-7 TYPE SOILS ACCORDING TO THE AASHTO METHOD OF SOIL CLASSIFICATION. THE SOILS OF THE LORAIN SERIES ARE CHARACTERIZED AS VERY DEEP, VERY POORLY DRAINED SOILS FORMED IN WISCONSINAN AGE FINE-TEXTURED GLACIOLACUSTRINE SEDIMENTS IN DEPRESSIONS ON LAKE PLAINS, TERRACES AND TILL PLAINS. SOILS OF THE MINER SERIES ARE CHARACTERIZED AS VERY DEEP, VERY POORLY DRAINED SOILS FORMED LOW-LIME TILL PRINCIPALLY DERIVED FROM ACID SHALE ON LAKE AND TILL PLAINS. THE LORAIN AND MINER SERIES ARE BOTH COMPRISED OF PREDOMINANTLY FINE-GRAINED SOILS AND CLASSIFY AS A-6 AND A-7 TYPE SOILS ACCORDING TO THE AASHTO METHOD OF SOIL CLASSIFICATION.

SUBSURFACE EXPLORATION

THE SUBSURFACE EXPLORATIONS WERE CONDUCTED BETWEEN DECEMBER 17, 2018 AND JANUARY 9, 2019 AND INCLUDED 4 BORINGS DRILLED TO DEPTHS BETWEEN 30.3 FT AND 65.3 FT BELOW GROUND SURFACE.

BORINGS WERE DRILLED BY NEAS USING A CME-55X (ATV-MOUNTED) ROTARY DRILL RIG UTILIZING 3.25-INCH DIAMETER HOLLOW STEM AUGERS. STANDARD PENETRATION TESTS WERE CONDUCTED USING A CME AUTO-HAMMERS CALIBRATED ON NOVEMBER 11, 2017 TO BE 85.0% EFFICIENT.

DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (SPT) (AASHTO T206). SAMPLES WERE COLLECTED CONTINUOUSLY FOR ROADWAY BORINGS AND AT VARYING INTERVALS (I.E., 2.5-FT AND 5.0-FT INTERVALS) FOR STRUCTURE BORINGS. IN GENERAL SOIL SAMPLES FOR THE STRUCTURES WERE RECOVERED AT 2.5-FT INTERVALS FROM THE SURFACE TO 35 FT AND AT 5.0-FT INTERVALS THEREAFTER. WHEN BEDROCK WAS ENCOUNTERED, CORE SAMPLES WERE COLLECTED IN VARYING INCREMENTS USING NQ2, TRIPLE TUBE, CORE BARREL, WITH WATER AS THE CIRCULATION FLUID.

LEGEND

		ODOT CLASS	CLASSIFIED MECH./VISUAL	
	GRAVEL AND/OR ST. FRAGS. WITH SAND AND SILT	*A-2-4*	*1*	*6*
	SANDY SILT	*A-4a*	*2*	*2*
	SILT	*A-4b*	*1*	*1*
	SILT AND CLAY	*A-6a*	*6*	*10*
	SILTY CLAY	*A-6b*	*2*	*3*
	CLAY	*A-7-6*	*5*	*4*
		TOTAL	*17*	*26*
	SHALE	*VISUAL*		
	SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	*VISUAL*		
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	*VISUAL*		

EXPLORATION LOCATION - PLAN VIEW

HISTORIC BORING LOCATION - PLAN VIEW

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

WC INDICATES WATER CONTENT IN PERCENT.

W— INDICATES FREE WATER ELEVATION.

N INDICATES STANDARD PENETRATION RESISTANCE.

N_{60} INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.

X/Y/Z NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X= NUMBER OF BLOWS FOR FIRST 6 INCHES.
Y= NUMBER OF BLOWS FOR SECOND 6 INCHES.
Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.

X/Y/D" NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X= NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED).
Y/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.

⊖ INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.

SS INDICATES A SPLIT-SPOON SAMPLE.

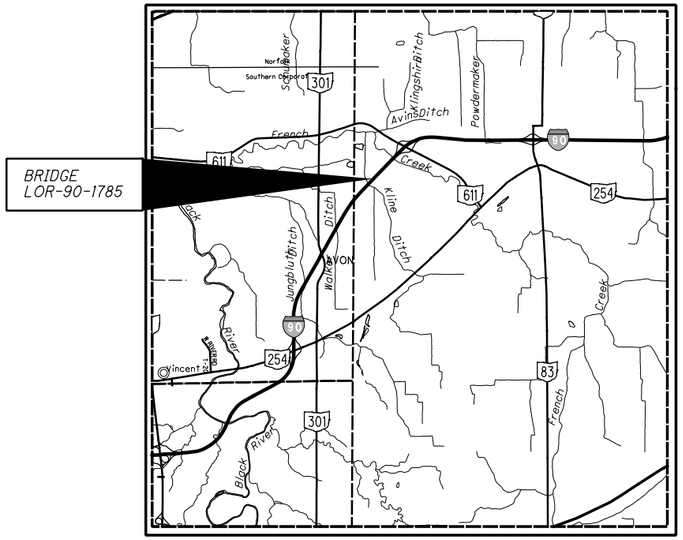
ST INDICATES A SHELBY TUBE SAMPLE.

TR INDICATES THE TOP OF ROCK.

NQ2 INDICATES TRIPLE TUBE, CORE BARREL.

SUBSURFACE EXPLORATION, CONTINUED

SPLIT SPOON SAMPLES COLLECTED AS PART OF THE SPT WERE PLACED IN SEALED GLASS CONTAINERS AND TRANSPORTED TO NEAS'S GEOTECHNICAL LABORATORY IN COLUMBUS, OH. THE BORINGS WERE BACKFILLED OR SEALED ACCORDING TO ODOT REQUIREMENTS. FIELD BORING LOGS WERE PREPARED BY DRILLING PERSONNEL, AND INCLUDED A LITHOLOGICAL DESCRIPTION OF THE SOILS AND ROCK ENCOUNTERED, SPT TEST RESULTS RECORDED AS BLOWS PER 6-INCH INCREMENT OF PENETRATION, AND ESTIMATED UNCONFINED SHEAR STRENGTH VALUES ON SPECIMENS EXHIBITING COHESION (ESTIMATED BY MEANS OF HAND PENETROMETER). GROUNDWATER RELATED OBSERVATIONS WERE RECORDED AS APPROPRIATE.



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

N

PARTICLE SIZE DEFINITIONS

12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT / CLAY
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE	

HISTORIC BORING DESCRIPTION		ODOT CLASS	CLASSIFIED MECH./VISUAL	
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	*A-1-b*	*2*	*0*
	GRAVEL AND/OR ST. FRAGS. WITH SAND AND SILT	*A-2-4*	*1*	*0*
	SANDY SILT	*A-4a*	*6*	*0*
	SILT AND CLAY	*A-6a*	*1*	*0*
		TOTAL	*10*	*0*
	SHALE	*VISUAL*		

RECON. - KA 11/13/2017
DRILLING - JH 12/17/2018 - 01/09/2019
DRAWN - EB 5/10/2019
REVIEWED - BPA 5/10/2019

DESIGN AGENCY
NEAS, INC.
2800 CORPORATE EXCHANGE DR., STE 240
COLUMBUS, OH 43231
(614) 714-0270 FAX (614) 714-0323

PID NO. 90942

SOIL PROFILE

LOR-90-17.85

RECONNAISSANCE

FIELD RECONNAISSANCE WAS CONDUCTED ON NOVEMBER 13, 2017 ALONG IR-90 AT THE NSRR RAILROAD CROSSING IN LORAINE COUNTY, OHIO. SITE CONDITIONS, INCLUDING THE EXISTING PAVEMENT CONDITIONS, WERE NOTED AND PHOTOGRAPHED DURING THE VISITS.

THE EXISTING BRIDGE CARRYING IR-90 OVER THE NSRR RAILROAD IS A THREE SPAN CONTINUOUS STEEL BEAM BRIDGE WHICH CARRIES TWO LANES OF TRAFFIC IN EACH DIRECTION ON A REINFORCED CONCRETE SLAB. THE SLAB IS ATOP CONCRETE STUB TYPE ABUTMENTS AND T-TYPE ("HAMMERHEAD") PIERS. THE EMBANKMENT SLOPES AT THE SITE GENERALLY APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY.

EXISTING EMBANKMENT SLOPES APPEARED TO BE AT GRADES RANGING BETWEEN 2 HORIZONTAL TO 1 VERTICAL (2H:1V) AND 1.5H:1V WITH THE STEEPER SLOPES GENERALLY LOCATED BENEATH EACH STRUCTURE AND ADJACENT TO THE RAILWAY. IT WAS NOTED THAT AREAS ALONG THE REAR ABUTMENT EMBANKMENT APPEARED TO HAVE BEEN TRAVERSED BY WILDLIFE CREATING NATURAL TRAILS OR BENCHES IN THE SLOPE. OVERALL, THE BRIDGE APPEARED TO BE IN FAIR CONDITION WITH SOME STRUCTURAL WEAR OBSERVED AT BOTH THE FORWARD AND REAR ABUTMENT LOCATIONS. REINFORCEMENT BARS WERE EXPOSED AT VARIOUS LOCATION AND CORROSION WAS NOTED ALONG BEAM SEATS AND BEAM SECTIONS. HOWEVER, NO APPARENT SIGNS OF STRUCTURAL DISTRESS DUE TO GEOTECHNICAL CONCERNS WERE OBSERVED DURING OUR FIELD RECONNAISSANCE VISIT.

THE EXISTING BRIDGE STRUCTURE APPEARED TO BE WELL DRAINED WITH NO APPARENT SIGNS OF SIGNIFICANT EROSION OR DRAINAGE ISSUES AT THE BRIDGE SITE. AT THE TOE OF THE LEFT STRUCTURE EMBANKMENT SLOPES, SOME SIGNS OF STANDING WATER WERE OBSERVED. AN APPROXIMATELY 36-INCH DIAMETER STORM PIPE WAS OBSERVED TO BE RUNNING BENEATH THE FORWARD ABUTMENT EMBANKMENT SLOPE. THE NOTED STORM SEWER WAS OBSERVED TO BE IN GOOD CONDITION AND FUNCTIONING PROPERLY AT THE TIME OF OUR VISIT.

OVERALL THE PAVEMENT AT THE SITE WAS OBSERVED TO BE IN FAIR TO POOR CONDITION WITH FREQUENT LOW TO MODERATELY SEVERE DISTRESS OBSERVED. DISTRESSES CONSISTED OF TRANSVERSE AND LONGITUDINAL CRACKING, CRACK SEALING WITH CRACK SEALING DEFICIENCY, AND TWO LARGE PAVEMENT PATCHES ON BOTH LEFT AND RIGHT STRUCTURES. THE PAVEMENT APPEARED TO BE WELL DRAINED WITH WATER DIRECTED TO DRAINS ON EITHER SIDE OF THE BRIDGE.

EXPLORATION FINDINGS

THE GENERAL SUBSURFACE PROFILE IS RELATIVELY UNIFORM AND CONSISTENT WITH THE GEOLOGICAL MODEL FOR THE PROJECT. THE SUBSURFACE PROFILE WITHIN THE PROPOSED PROJECT AREA GENERALLY CONSISTED OF NATURAL GLACIAL TILL SOILS OVER SHALE BEDROCK WITH THE EXCEPTION OF THE BORINGS PERFORMED AT THE ABUTMENT LOCATIONS. THE BORINGS PERFORMED WITHIN THE IR-90 MEDIAN WERE EXTENDED THROUGH THE EMBANKMENT SUPPORTING IR90 (B-001-0-17 AND B-004-0-17) AND ENCOUNTERED 27 TO 32 FT OF EMBANKMENT FILL. THE REFERENCED FILL SOILS GENERALLY CONSISTED OF MEDIUM STIFF TO HARD, MODERATELY TO HIGHLY PLASTIC COHESIVE MATERIAL WITH A 4.5-FT THICK LAYER OF NONCOHESIVE, GRANULAR FILL ENCOUNTERED IN THE TOP OF BORING B-001-0-17. THE NATURAL TILL SOILS ENCOUNTERED EITHER UNDERLYING THE EMBANKMENT SOILS OR IMMEDIATELY BELOW THE GROUND SURFACE (B-002-0-17 AND B003017) CAN BE DESCRIBED AS BOTH MEDIUM STIFF TO HARD COHESIVE MATERIAL AND LOOSE TO VERY DENSE NON-COHESIVE MATERIAL. BEDROCK WAS ENCOUNTERED WITHIN EACH OF THE PROJECT BORINGS PERFORMED BETWEEN ELEVATIONS OF 607 AND 619 FT AMSL.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING,SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2019.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET.

DRAWN EB | CHECKED BPA

SOIL PROFILE
EXPLORATION NOTES (CONT.)

LOR-90-17.85

NEAS
National Engineering & Architectural Services Inc.
5710 Westbourne Avenue
Columbus, OH 43213
614-892-0162

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: LOR-90-17.85, Boring Location: B-001-0-17, NQ2-1, Depth: 46.7 - 47.1ft)

Tested Date: 2/6/2019

Specimen Properties

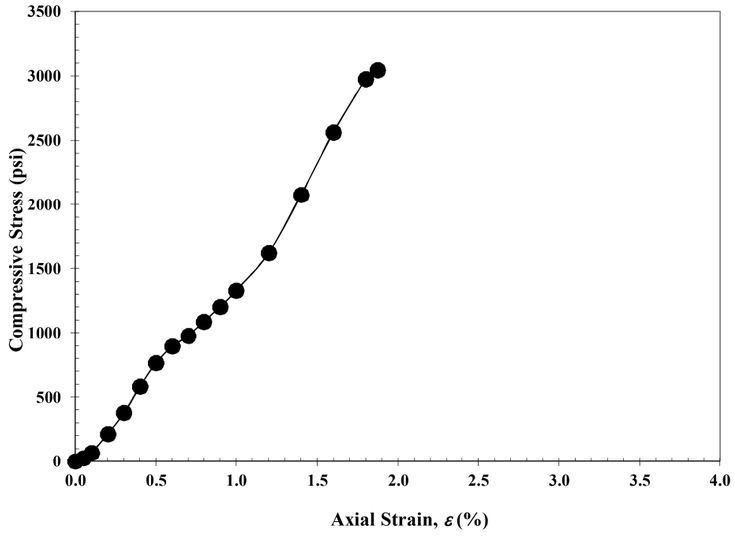
Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.76
Length to Diameter Ratio:	2.41
Area, A (in^2):	3.07
Volume, V (in^3):	14.60
Wet Mass of Specimen (lb):	1.3
Moisture Content (%):	3.8
Dry Mass of Specimen (lb):	1.2
Wet Unit Weight, γ (lb/ft^3):	150.9
Dry Unit Weight, γ_d (lb/ft^3):	145.3

Final Specimen Figure

Results

Unconfined Compressive Strength (psi): **3049** **21** (MPa)

Strain (%): **1.9**



Notes: SHALE, dark gray, slightly weathered, slightly strong, laminated, fissile.

Sample trimming procedure does not conform to ASTM D4543 and the results reported may differ from the results obtained from a test specimen that meets the requirements of Practice D4543.

NEAS
National Engineering & Architectural Services Inc.
5710 Westbourne Avenue
Columbus, OH 43213
614-892-0162

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: LOR-90-17.85, Boring Location: B-001-0-17, NQ2-2, Depth: 52.1 - 52.5ft)

Tested Date: 2/7/2019

Specimen Properties

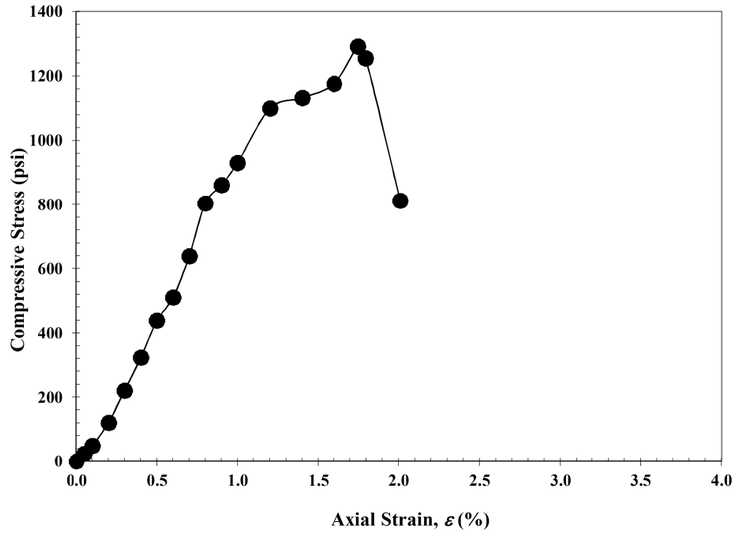
Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.23
Length to Diameter Ratio:	2.14
Area, A (in^2):	3.07
Volume, V (in^3):	12.98
Wet Mass of Specimen (lb):	1.1
Moisture Content (%):	3.1
Dry Mass of Specimen (lb):	1.1
Wet Unit Weight, γ (lb/ft^3):	148.9
Dry Unit Weight, γ_d (lb/ft^3):	144.5

Final Specimen Figure

Results

Unconfined Compressive Strength (psi): **1292** **9** (MPa)

Strain (%): **1.7**



Notes: SHALE, dark gray, slightly weathered, weak, laminated, fissile.

Sample trimming procedure does not conform to ASTM D4543 and the results reported may differ from the results obtained from a test specimen that meets the requirements of Practice D4543.

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STRUCTURE FOUNDATION EXPLORATION

LABORATORY TEST DATA

LOR-90-17.85

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NEAS
National Engineering & Architectural Services Inc.
5710 Westbourne Avenue
Columbus, OH 43213
614-892-0162

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

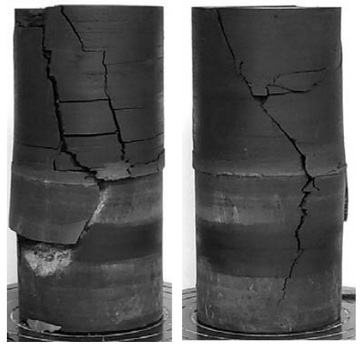
(Project: LOR-90-17.85, Boring Location: B-002-0-17, NQ2-1, Depth: 22.0 - 22.4ft)

Tested Date: 2/7/2019

Specimen Properties

Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.49
Length to Diameter Ratio:	2.27
Area, A (in^2):	3.07
Volume, V (in^3):	13.78
Wet Mass of Specimen (lb):	1.2
Moisture Content (%):	4.5
Dry Mass of Specimen (lb):	1.2
Wet Unit Weight, γ (lb/ft^3):	151.4
Dry Unit Weight, γ_d (lb/ft^3):	145.0

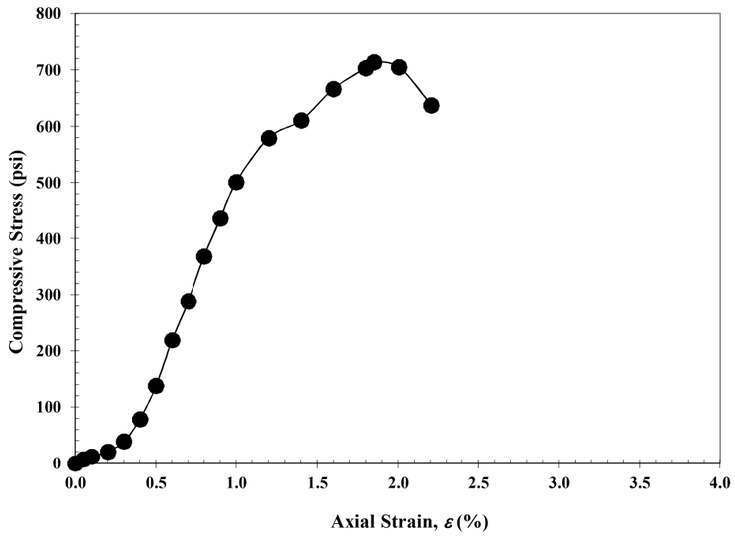
Final Specimen Figure



Results

Unconfined Compressive Strength (psi): **714** **5** (MPa)

Strain (%): **1.8**



Notes: SHALE, dark gray, slightly weathered, very weak, laminated, fissile.

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Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

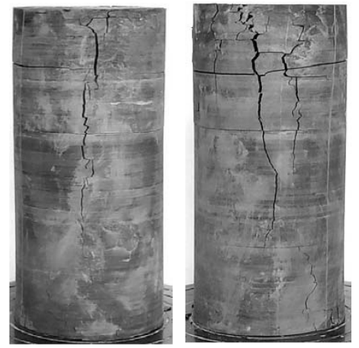
(Project: LOR-90-17.85, Boring Location: B-002-0-17, NQ2-2, Depth: 28.7 - 29.1ft)

Tested Date: 2/6/2019

Specimen Properties

Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.38
Length to Diameter Ratio:	2.21
Area, A (in^2):	3.09
Volume, V (in^3):	13.55
Wet Mass of Specimen (lb):	1.2
Moisture Content (%):	3.2
Dry Mass of Specimen (lb):	1.1
Wet Unit Weight, γ (lb/ft^3):	149.6
Dry Unit Weight, γ_d (lb/ft^3):	144.9

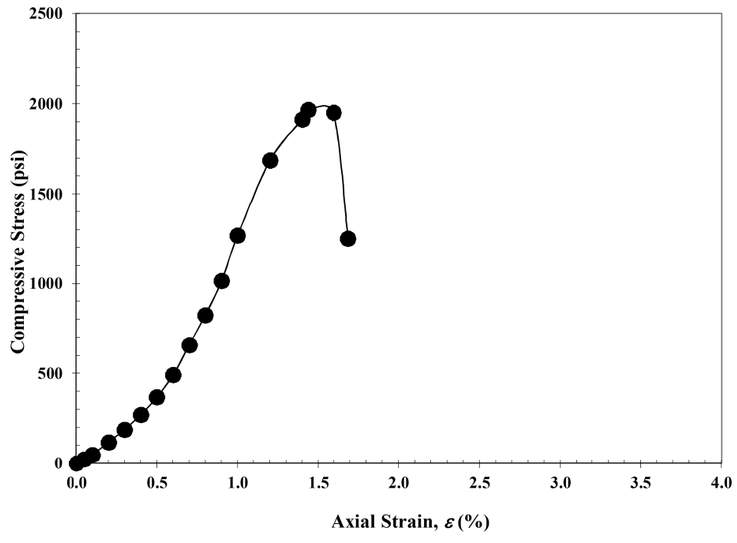
Final Specimen Figure



Results

Unconfined Compressive Strength (psi): **1968** **14** (MPa)

Strain (%): **1.4**



Notes: SHALE, dark gray, slightly weathered, slightly strong, laminated, fissile.

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STRUCTURE FOUNDATION EXPLORATION

LABORATORY TEST DATA

LOR-90-17.85

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NEAS
National Engineering & Architectural Services Inc.
5710 Westbourne Avenue
Columbus, OH 43213
614-892-0162

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: LOR-90-17.85, Boring Location: B-003-0-17, NQ2-1, Depth: 31.3 - 31.7ft)

Tested Date: 2/6/2019

Specimen Properties

Average Dia., D_{avg} (in):	1.99
Average Height, H_{avg} (in):	4.29
Length to Diameter Ratio:	2.16
Area, A (in^2):	3.10
Volume, V (in^3):	13.29
Wet Mass of Specimen (lb):	1.1
Moisture Content (%):	3.0
Dry Mass of Specimen (lb):	1.1
Wet Unit Weight, γ (lb/ft^3):	148.8
Dry Unit Weight, γ_d (lb/ft^3):	144.5

Final Specimen Figure

Results

Unconfined Compressive Strength (psi): **1272** **9** (MPa)

Strain (%): **1.0**

Notes: SHALE, dark gray, slightly weathered, weak, laminated, fissile.

Sample trimming procedure does not conform to ASTM D4543 and the results reported may differ from the results obtained from a test specimen that meets the requirements of Practice D4543.

NEAS
National Engineering & Architectural Services Inc.
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Columbus, OH 43213
614-892-0162

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: LOR-90-17.85, Boring Location: B-003-0-17, NQ2-2, Depth: 39.3 - 39.7ft)

Tested Date: 2/6/2019

Specimen Properties

Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.54
Length to Diameter Ratio:	2.30
Area, A (in^2):	3.07
Volume, V (in^3):	13.94
Wet Mass of Specimen (lb):	1.2
Moisture Content (%):	3.4
Dry Mass of Specimen (lb):	1.2
Wet Unit Weight, γ (lb/ft^3):	150.0
Dry Unit Weight, γ_d (lb/ft^3):	145.1

Final Specimen Figure

Results

Unconfined Compressive Strength (psi): **3607** **25** (MPa)

Strain (%): **1.3**

Notes: SHALE, dark gray, slightly weathered, moderately strong, laminated, fissile.

Sample trimming procedure does not conform to ASTM D4543 and the results reported may differ from the results obtained from a test specimen that meets the requirements of Practice D4543.

DRAWN EB CHECKED BPA

STRUCTURE FOUNDATION EXPLORATION

LABORATORY TEST DATA

LOR-90-17.85

NEAS
National Engineering & Architectural Services Inc.
5710 Westbourne Avenue
Columbus, OH 43213
614-892-0162

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: LOR-90-17.85, Boring Location: B-004-0-17, NQ2-1, Depth: 58.3 - 58.7ft)

Tested Date: 2/7/2019

Specimen Properties

Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.62
Length to Diameter Ratio:	2.34
Area, A (in^2):	3.07
Volume, V (in^3):	14.17
Wet Mass of Specimen (lb):	1.2
Moisture Content (%):	2.8
Dry Mass of Specimen (lb):	1.2
Wet Unit Weight, γ (lb/ft^3):	147.1
Dry Unit Weight, γ_d (lb/ft^3):	143.1

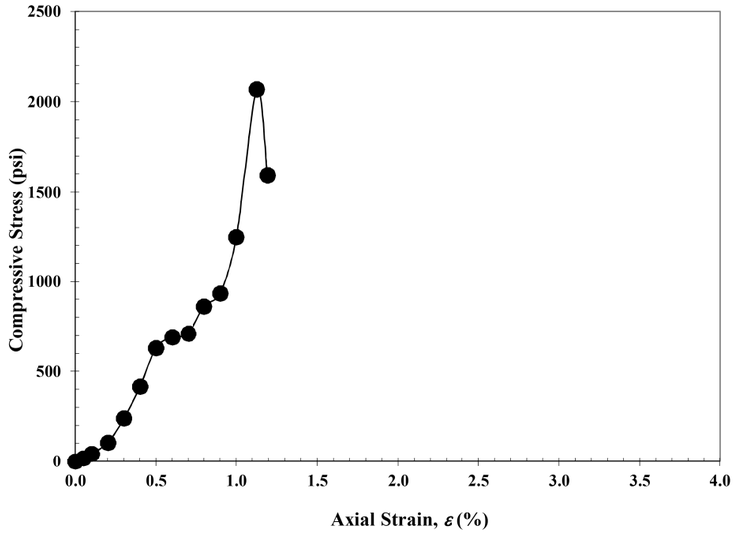
Final Specimen Figure

Results

Unconfined Compressive Strength (psi): **2070**

14 (MPa)

Strain (%): **1.1**



Notes: SHALE, dark gray, slightly weathered, slightly strong, laminated, fissile.

Sample trimming procedure does not conform to ASTM D4543 and the results reported may differ from the results obtained from a test specimen that meets the requirements of Practice D4543.

NEAS
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Columbus, OH 43213
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Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

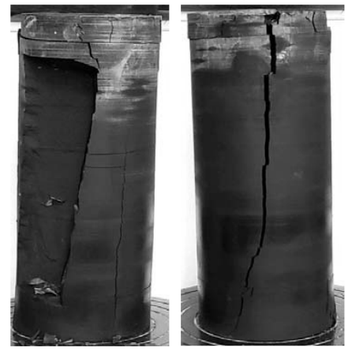
(Project: LOR-90-17.85, Boring Location: B-004-0-17, NQ2-2, Depth: 60.3 - 60.7ft)

Tested Date: 2/7/2019

Specimen Properties

Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.82
Length to Diameter Ratio:	2.44
Area, A (in^2):	3.07
Volume, V (in^3):	14.77
Wet Mass of Specimen (lb):	1.3
Moisture Content (%):	3.4
Dry Mass of Specimen (lb):	1.3
Wet Unit Weight, γ (lb/ft^3):	156.1
Dry Unit Weight, γ_d (lb/ft^3):	151.0

Final Specimen Figure

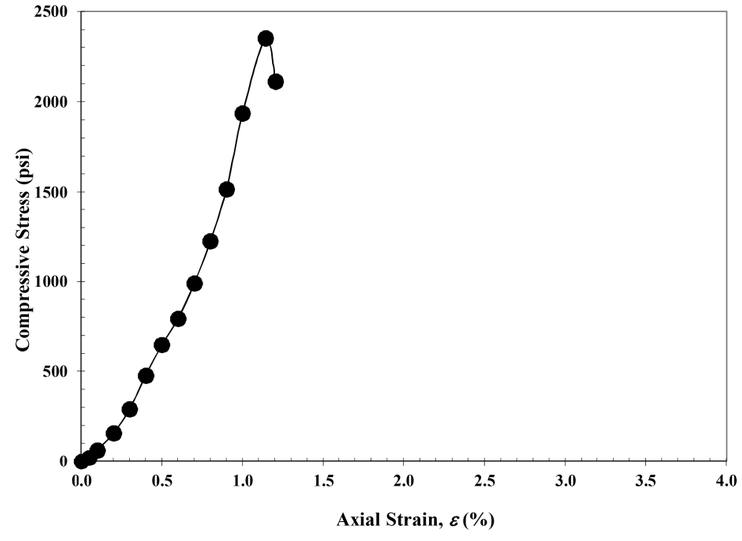


Results

Unconfined Compressive Strength (psi): **2353**

16 (MPa)

Strain (%): **1.1**



Notes: SHALE, dark gray, slightly weathered, slightly strong, laminated, fissile.

Sample trimming procedure does not conform to ASTM D4543 and the results reported may differ from the results obtained from a test specimen that meets the requirements of Practice D4543.

DRAWN EB | CHECKED BPA

STRUCTURE FOUNDATION EXPLORATION

LABORATORY TEST DATA

LOR-90-17.85

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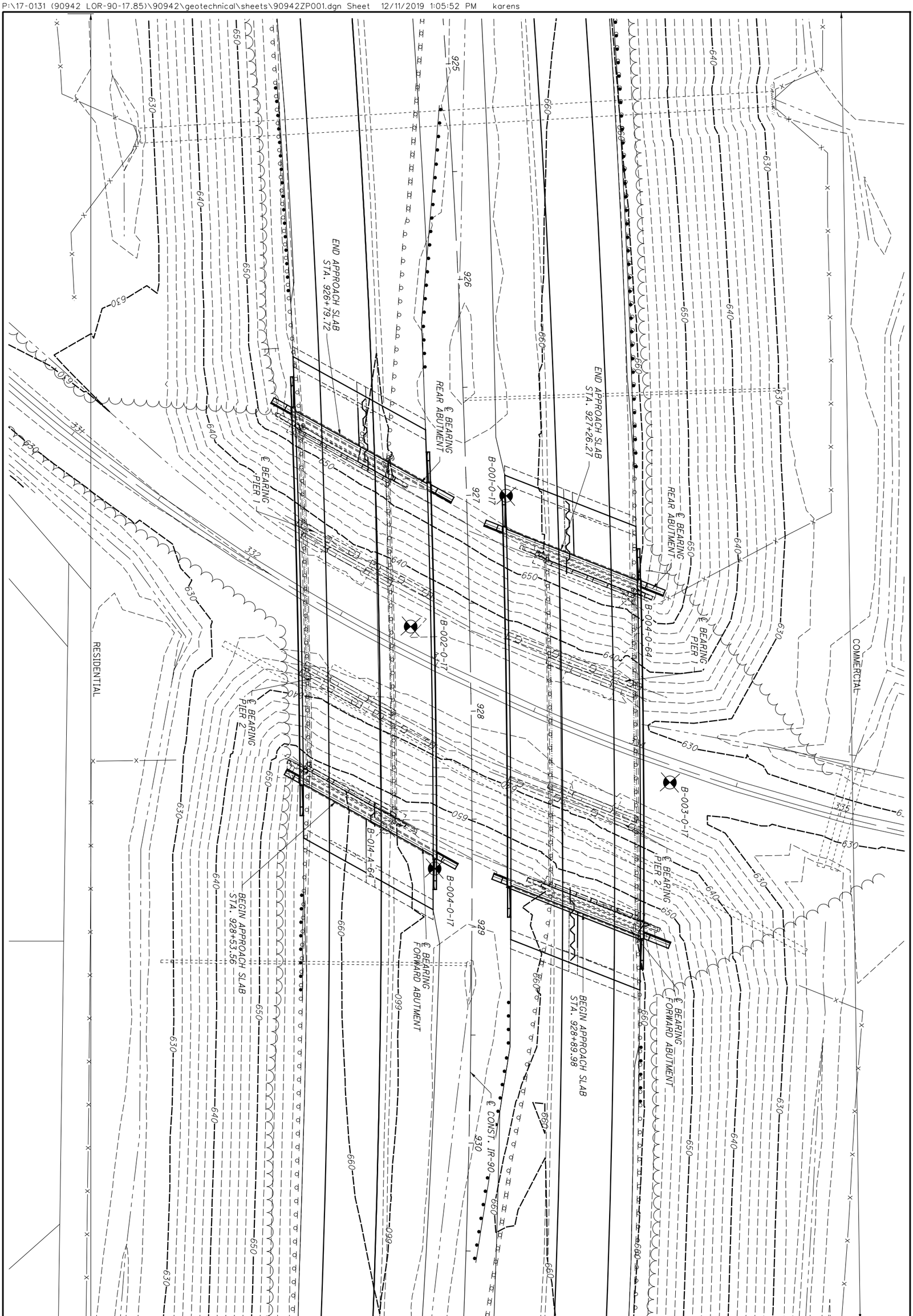
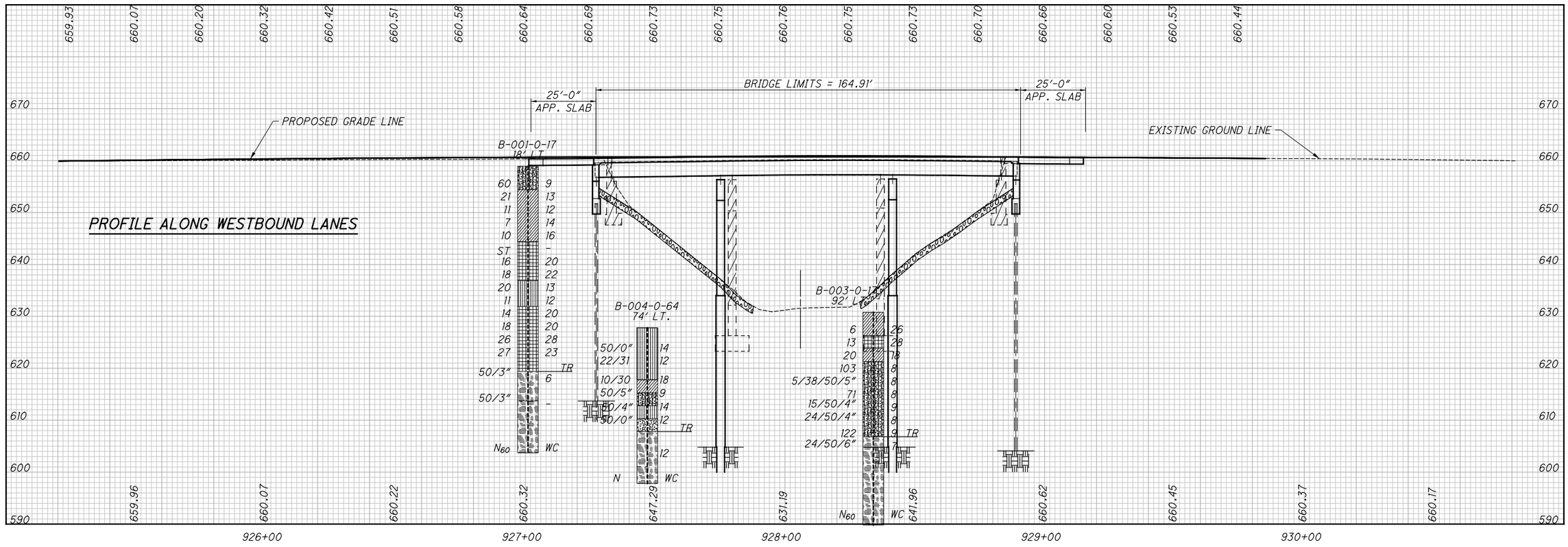
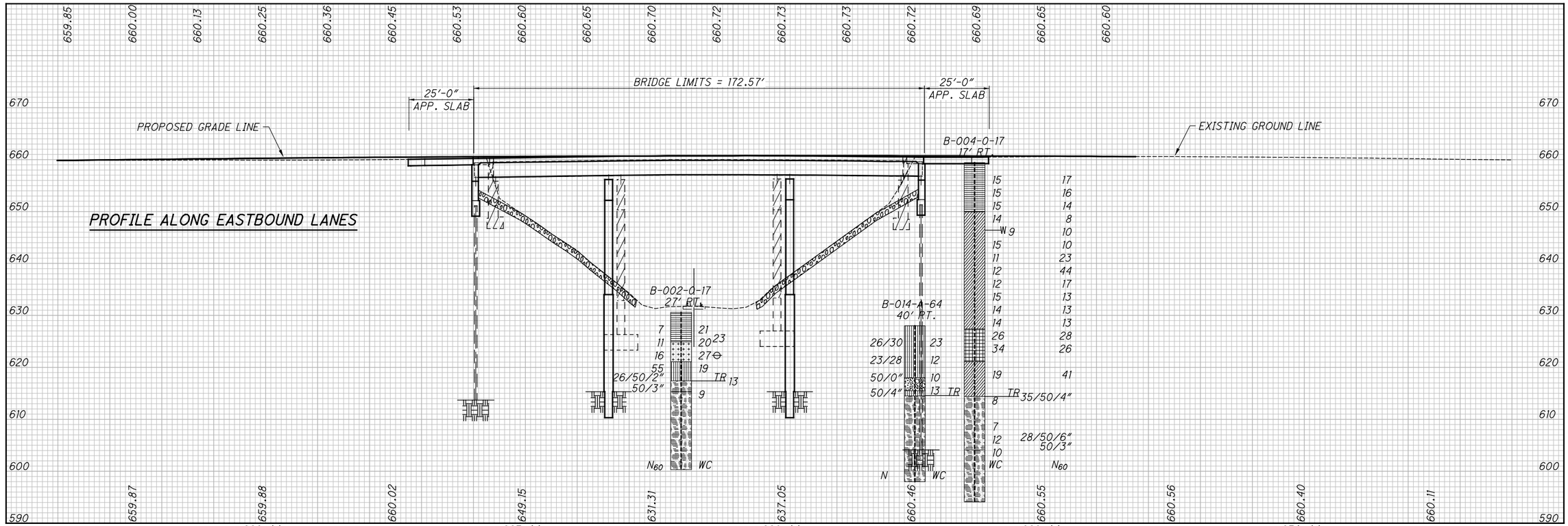


	7/14	LOR-90-17.85	STRUCTURE FOUNDATION EXPLORATION BR. NO LOR-90-1785 L&R OVER NORFOLK SOUTHERN RR.	DRAWN EB CHECKED BPA	0 20 10 40 HORIZONTAL SCALE IN FEET





HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN EB
CHECKED BPA

STRUCTURE FOUNDATION EXPLORATION
BR. NO LOR-90-1785 L&R OVER NORFOLK SOUTHERN RR.

LOR-90-17.85

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PROJECT: LOR-90-17.85	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET: 927+01, 18' LT.	EXPLORATION ID B-001-0-17
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: NEAS / E. ROLLER	HAMMER: CME AUTOMATIC	ALIGNMENT: IR-90	
PID: SFN:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 11/21/17	ELEVATION: 658.9 (MSL) EOB: 55.2 ft.	PAGE 1 OF 1
START: 12/19/18 END: 12/19/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 85	LAT / LONG: 41.453376, -82.067532	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY DENSE, DARK BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	658.9		4 6 36	60	100	SS-1	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
VERY STIFF TO HARD, BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING AND ROOTS, DAMP	654.4		7 7 8	21	33	SS-2	4.5+	9	10	18	29	34	30	16	14	13	A-6a (7)	
			3 4 4	11	44	SS-3	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
			2 2 3	7	33	SS-4	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	
			2 3 4	10	33	SS-5	3.25	6	10	14	38	32	31	18	13	16	A-6a (8)	
VERY STIFF TO HARD, BROWN AND GRAY, **CLAY**, SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP	644.4				-	ST-6	-	-	-	-	-	-	-	-	-	-		
			3 5 6	16	56	SS-7	4.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
			3 4 9	18	100	SS-8	2.75	3	3	9	32	53	48	23	25	22	A-7-6 (16)	
HARD, GRAY, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, DAMP	636.9		3 6 8	20	56	SS-9	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	
			3 4 4	11	100	SS-10	4.5+	8	12	14	39	27	25	16	9	12	A-4a (6)	
VERY STIFF TO HARD, BROWN AND DARK GRAY, **CLAY**, SOME SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, DAMP	631.9		4 4 6	14	72	SS-11	4.5+	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
			2 5 8	18	100	SS-12	3.75	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
			5 8 10	26	100	SS-13	4.5+	1	1	7	29	62	61	28	33	28	A-7-6 (20)	
			5 8 11	27	100	SS-14	4.5+	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
SHALE, DARK BROWN AND GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, FISSILE.	619.4	TR	50/3"	-	100	SS-15	-	-	-	-	-	-	-	-	-	6	Rock (V)	
SHALE, DARK GRAY, SLIGHTLY TO MODERATELY WEATHERED, WEAK TO SLIGHTLY STRONG, LAMINATED, FISSILE, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: HIGH ANGLE FROM 47.3' - 48.0', HIGHLY FRACTURED TO MODERATELY FRACTURED, OPEN TO TIGHT, SLIGHTLY ROUGH, BLOCKY/DISTURBED/SEAMY, GOOD TO FAIR SURFACE CONDITION; RQD 34%, REC 97%. @46.7' TO 47.1'; Qu = 3049 PSI	613.7		50/3"		100	SS-16	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			29		93	NQ2-1											CORE	
@52.1' TO 52.5'; Qu = 1292 PSI	603.7	EOB	38		100	NQ2-2											CORE	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 70 GAL. BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/1/19 17:18 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\LOR-90-17.85\GINT FILES\LOR-90-17.85.GPJ

9/14	LOR-90-17.85	STRUCTURE FOUNDATION EXPLORATION BRIDGE NO. LOR-90-1785 L&R OVER NORFOLK SOUTHERN RR BORING LOG B-001-0-17	DRAWN EB CHECKED BPA

PROJECT: LOR-90-17.85	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET: 927+60, 27' RT.	EXPLORATION ID B-002-0-17
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: NEAS / J.HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR-90	
PID: SFN:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 11/21/17	ELEVATION: 630.6 (MSL) EOB: 30.3 ft.	PAGE 1 OF 1
START: 1/8/19 END: 1/9/19	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 85	LAT / LONG: 41.453420, -82.067265	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
STIFF TO VERY STIFF, GRAY AND ORANGISH BROWN, **SILTY CLAY**, SOME SAND, LITTLE TO SOME GRAVEL, CONTAINS WOOD FRAGMENTS AND ROOTS, DAMP TO MOIST	630.6																	
		1																
		2																
		3	2 2 3	7	39	SS-1	1.50	29	10	15	24	22	39	22	17	21	A-6b (4)	
		4																
	624.9	5																
MEDIUM DENSE, ORANGISH BROWN AND GRAY BECOMING BROWN, **SILT**, SOME SAND, LITTLE CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST TO WET			2 3 5	11	50	SS-2A	2.50	-	-	-	-	-	-	-	-	23	A-6b (V)	
		6				SS-2B	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
		7																
		8	3 5 6	16	100	SS-3	-	0	0	30	58	12	NP	NP	NP	27	A-4b (7)	
	621.1	9																
HARD, BROWN AND GRAY BECOMING DARK GRAY, **SANDY SILT**, LITTLE GRAVEL, TRACE CLAY, WET TO MOIST		10																
		11	2 7 32	55	100	SS-4	4.5+	15	7	35	33	10	NP	NP	NP	19	A-4a (2)	
		12																
	617.4	13	26 50/2"	-	100	SS-5	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	
SHALE, DARK GRAY, SEVERELY WEATHERED, VERY WEAK TO WEAK.		TR 14																
	615.3	15	50/3"	-	100	SS-6	-	-	-	-	-	-	-	-	-	9	Rock (V)	
SHALE, DARK GRAY, SLIGHTLY WEATHERED, VERY WEAK TO SLIGHTLY STRONG, LAMINATED, FISSILE, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: HIGH ANGLE FROM 17.3' - 17.4', 21.0' - 21.4', AND 21.6' - 23.5', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO TIGHT, SLIGHTLY ROUGH, BLOCKY TO INTACT WITH DISINTIGRATED ZONES, GOOD TO POOR SURFACE CONDITION; RQD 40%, REC 96%.		16																
		17																
		18																
		19																
		20	28		93	NQ2-1											CORE	
@22.0' TO 22.4'; Qu = 714 PSI		21																
		22																
		23																
		24																
		25																
		26																
		27																
		28	65		100	NQ2-2											CORE	
@28.7' TO 29.1'; Qu = 1968 PSI		29																
	600.3	30 EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/1/19 17:18 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\LOR-90-17.85\GINT FILES\LOR-90-17.85.GPJ

PROJECT: LOR-90-17.85	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET: 928+34, 92' LT.
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: NEAS / J.HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR-90
PID: SFN:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 11/21/17	ELEVATION: 630.8 (MSL) EOB: 41.0 ft.
START: 1/7/19 END: 1/9/19	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 85	LAT / LONG: 41.453787, -82.067417

EXPLORATION ID B-003-0-17

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 630.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF, DARK GRAY AND BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, MOIST			1 2 2	6	44	SS-1	2.50	-	-	-	-	-	-	-	-	26	A-6a (V)	
	626.3																	
VERY STIFF, DARK GRAY MOTTLED WITH GRAY AND ORANGISH BROWN, **CLAY**, SOME SILT, TRACE SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, MOIST			3 4 5	13	100	SS-2	4.00	1	2	8	33	56	59	27	32	28	A-7-6 (20)	
	623.8																	
HARD, ORANGISH BROWN AND GRAY, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP			3 5 9	20	100	SS-3	4.5+	4	9	15	39	33	34	19	15	18	A-6a (9)	
	621.3																	
VERY DENSE, GRAYISH BROWN BECOMING GRAY AND DARK GRAY, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, STONE FRAGMENTS ARE SHALE, DAMP			6 23 50	103	100	SS-4	-	25	26	16	24	9	22	17	5	8	A-2-4 (0)	
			5 38 50/5"	-	100	SS-5	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
			5 27 23	71	100	SS-6	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
			15 50/4"	-	100	SS-7	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
			24 50/4"	-	100	SS-8	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
			24 36 50	122	100	SS-9	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
	606.8	TR																
SHALE, DARK GRAY, HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, FISSILE.			24 50	-	92	SS-10	-	-	-	-	-	-	-	-	-	7	Rock (V)	
	604.8																	
SHALE, DARK GRAY, SLIGHTLY WEATHERED, WEAK TO MODERATELY STRONG, LAMINATED, FISSILE, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: HIGH ANGLE FROM 32.3' - 33.2', AND 35.3' - 35.5', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO TIGHT, SLIGHTLY ROUGH, BLOCKY TO INTACT, GOOD TO FAIR SURFACE CONDITION; RQD 68%, REC 92%.			54		88	NQ2-1											CORE	
@31.3' TO 31.7'; Qu = 1272 PSI																		
			97		100	NQ2-2											CORE	
@39.3' TO 39.7'; Qu = 3607 PSI																		
	589.8	EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/1/19 17:19 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\LOR-90-17.85\GINT FILES\LOR-90-17.85.GPJ

PROJECT: LOR-90-17.85
TYPE: BRIDGE
PID: SFN:
START: 12/17/18 END: 12/17/18

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / E. ROLLER
DRILLING METHOD: 3.25" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 11/21/17
ENERGY RATIO (%): 85

STATION / OFFSET: 928+73, 17' RT.
ALIGNMENT: IR-90
ELEVATION: 659.4 (MSL) EOB: 65.3 ft.
LAT / LONG: 41.453670, -82.067024

EXPLORATION ID B-004-0-17

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF TO HARD, BROWN AND GRAY BECOMING BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, SS-3 CONTAINS TRACE IRON STAINING, DAMP	659.4		3 6 6	17	100	SS-1	4.00	-	-	-	-	-	-	-	-	15	A-6b (V)	
			4 5 6	16	100	SS-2	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)	
			3 4 6	14	100	SS-3	4.5+	16	8	10	28	38	39	19	20	15	A-6b (10)	
HARD, BROWN AND GRAY, **SILT AND CLAY**, TRACE TO "AND" GRAVEL, LITTLE TO SOME SAND, DAMP	649.9		5 3 3	9	50	SS-4	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	
		W 646.4	4 3 4	10	89	SS-5	4.5+	37	9	8	22	24	30	17	13	9	A-6a (3)	
			3 3 4	10	100	SS-6	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
			5 7 9	23	100	SS-7	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	
			3 6 25	44	56	SS-8	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
			4 5 7	17	67	SS-9	4.5+	8	12	16	37	27	28	17	11	12	A-6a (6)	
			2 4 5	13	56	SS-10	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
			5 4 5	13	89	SS-11	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	
			3 4 5	13	56	SS-12	4.50	13	10	13	32	32	30	17	13	14	A-6a (7)	
	627.4																	
HARD, DARK GRAY AND BROWN, **CLAY**, SOME TO "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST			5 8 12	28	100	SS-13	4.5+	1	1	8	29	61	60	26	34	26	A-7-6 (20)	
			3 6 12	26	100	SS-14	4.50	8	9	10	40	33	42	22	20	34	A-7-6 (12)	
	621.1																	
HARD, BROWNISH GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, MOIST			6 11 18	41	100	SS-15	4.5+	-	-	-	-	-	-	-	-	19	A-6a (V)	
	614.4	TR																
SHALE, GRAY AND BROWNISH GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG.			35 50/4"	-	100	SS-16	-	-	-	-	-	-	-	-	-	8	Rock (V)	
			2 11 50	86	89	SS-17	-	-	-	-	-	-	-	-	-	7	Rock (V)	
			28 50	-	100	SS-18	-	-	-	-	-	-	-	-	-	12	Rock (V)	
	604.1		50/3"	-	100	SS-19	-	-	-	-	-	-	-	-	-	10	Rock (V)	
SHALE, DARK GRAY, SLIGHTLY TO MODERATELY WEATHERED, WEAK TO SLIGHTLY STRONG, LAMINATED, FISSILE, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: HIGH ANGLE FROM 64.0' - 64.3', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO TIGHT. SLIGHTLY ROUGH, BLOCKY/DISTURBED/SEAMY TO INTACT, GOOD SURFACE CONDITION; RQD 63%, REC 94%. @58.3' TO 58.7'; Qu = 2070 PSI			42		94	NQ2-1												CORE	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 5/1/19 17:19 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\LOR-90-17.85\GINT FILES\LOR-90-17.85.GPJ

LOR-90-17.85

STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. LOR-90-1785 L&R OVER NORFOLK SOUTHERN RR
BORING LOG B-004-0-17

DRAWN EB
CHECKED BPA

PID:	SFN:	PROJECT: LOR-90-17.85	STATION / OFFSET: 928+73, 17' RT.	START: 12/17/18	END: 12/17/18	PG 2 OF 2	B-004-0-17

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
SHALE, DARK GRAY, SLIGHTLY TO MODERATELY WEATHERED, WEAK TO SLIGHTLY STRONG, LAMINATED, FISSILE, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: HIGH ANGLE FROM 64.0' - 64.3', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO TIGHT, SLIGHTLY ROUGH, BLOCKY/DISTURBED/SEAMY TO INTACT, GOOD SURFACE CONDITION; RQD 63%, REC 94%. *(continued)* @60.3' TO 60.7'; Qu = 2353 PSI	599.4	61 62 63 64 65	83		94	NQ2-2											CORE	
	594.1	EOB																

NOTES: GROUNDWATER ENCOUNTERED AT 13.0' DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 85 GAL. BENTONITE GROUT

B-004-0-64

LOG OF BORING

Date Started 12-2-54 Sample Type SS Dia. 1 3/8" Water Elev.
Date Completed 12-2-54 Casing Length Dia.
Boring No. B-4 Station & Offset 527+47, 74' Lt (REAR ABUTMENT) Surface Elev. 626.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	Soil Class.
626.5	0														
	2														
	4														
623.5	6	50/4			Dark Grey and Brown Gravelly Silt	1	34	6	8	30	22	26	5	14	
621.0	8	22/3"			Grey and Brown Gravelly Silt	2	28	5	7	33	27	25	6	12	
618.5	10	10/3"			Grey Gravelly Clay	3	23	2	2	18	55	35	11	18	
616.0	12	50* (0.4')			Dark Grey Silty Sandy Gravel	4	53	8	9	20	10	NP	NP	9	
613.5	14	50* (0.3')			Grey Sandy Gravelly Silt	5	38	9	8	20	25	NP	NP	14	
611.0	16	50/4			Dark Grey Silty Sand with Shale Fragments	6	40	28	10	10	12	NP	NP	12	
600.5	20				TOP OF ROCK										
	22														
	24		4.9	0.1	Shale, black, carbonaceous, fissile, firm, slightly jointed. Core loss 6%.										
	26														
	28		4.5	0.5											
590.5	30				BOTTOM OF BORING										

* Refusal

B-014-A-64

LOG OF BORING

Date Started 12-3-54 Sample Type SS Dia. 1 3/8" Water Elev.
Date Completed 12-3-54 Casing Length NONE Dia. NONE
Boring No. B-14A Station & Offset 526+50, 40'Rt (FORWARD ABUTMENT) Surface Elev. 626.7

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	Soil Class.
626.7	0														
	2														
	4														
623.7	6	26/3"			Grey and Brown Sandy Gravelly Silt	1	31	9	11	20	29	29	10	23	
621.2	8	23/2"			Grey Sandy Gravelly Silt	2	36	9	11	23	21	24	6	12	
618.7	10	50/4			Dark Grey Silty Sandy Gravel	3	61	12	6	10	11	25	4	10	
616.2	12	50*			Dark Grey Silt and Shale Fragments	4	54	6	3	31	6	NP	22	13	
615.2	14	(0.3')			TOP OF ROCK										
	16														
	18		2.1	2.9											
	20				Shale, black, carbonaceous, fissile, medium-firm, broken and slightly weathered in top 8.0'. Core loss 2%.											
	22														
	24		3.8	1.2											
	26														
	28														
	28		5.0	0.0											
598.7	30				BOTTOM OF BORING										

* Refusal

14/14	LOR-90-17.85	STRUCTURE FOUNDATION EXPLORATION BRIDGE NO. LOR-90-1785 OVER NORFOLK SOUTHERN RR HISTORIC BORING LOGS B-004-0-64 & B-014-A-64	DRAWN EB CHECKED BPA